- **MARCAS Y REFERENCIAS OFRECIDAS**

ÍTEM	TIPO DE EQUIPO	MARCA	REFERENCIA
1	Altavoz de arreglo aumentado de 2 vías	D&B	Z0733
2	Cadena de colgado de altavoces	D&B	Z5453
3	Marco para colgado de altavoces	D&B	Z5455
4	Cadena de seguridad para colgado de altavoces	D&B	Z5454
5	Subwoofer cardioide para colgar, especifico para instalaciones	D&B	Z0538
6	Procesador de señal de audio	D&B	DS100
7	Licencia de software Soundscape para la gestión de la señal basada en objetos.	D&B	En-Scene
8	Licencia de software de Soundscape que mejora o crea un entorno acústico, en interiores o al aire libre (...)	D&B	En-Space
9	Amplificador de cuatro canales x 1600w especifico para instalaciones	D&B	Z2770
10	Puente de red de audio	D&B	DS10
11	Soporte de pared para altavoz	D&B	Z5422
12	Altavoz coaxial compacto de 2 vías específico para instalaciones	D&B	Z1617
13	Switch de red Niveo administrable	NIVEO	NGSM8T2
14	Cable Encauchetado 2X12	PROEL	HPC624
15	Programación, calibración, capacitación, soporte y acompañamiento.	D&B	PROG
16	Accesorios y puesta en funcionamiento.	D&B	PFUN
17	Consola de audio de 120 canales	YAMAHA	DM7
18	Rack de entradas y salidas de audio Yamaha Rio 3224-D2	YAMAHA	Rio3224-D2
19	Mezcladora híbrida	PRESONUS	STUDIOLIVEAR12C
20	Gestionador AD600US	SHURE	AD600US
21	Receptor inalámbrico de 4 canales Shure AD4QUS-A	SHURE	AD4QUS-A
22	Transmisor inalámbrico de mano Shure ADX2BR/SM58-G55	SHURE	ADX2BR/SM58-G55
23	Transmisor inalambrico bodypack Shure AD1 G55	SHURE	AD1 G55
24	Distribuidor Shure UA845UWB	SHURE	UA845UWB
25	Receptor inalámbrico de 4 canales Shure ULXD4Q-L50	SHURE	ULXD4Q-L50

ÍTEM	TIPO DE EQUIPO	MARCA	REFERENCIA
26	Transmisor inalámbrico de mano ULXD2/SM58-L50	SHURE	ULXD2/SM58-L50
27	Transmisor inalámbrico ULXD1	SHURE	ULXD1
28	Antena Shure UA874WB.	SHURE	UA874WB
29	Transmisor de monitoreo inalámbrico Shure P10T-H22	SHURE	P10T-H22
30	Receptor de monitoreo inalámbrico Shure P10R+G10	SHURE	P10R+G10
31	Combinador de antena PA821B	SHURE	PA821B
32	Antena Shure PA805SWB	SHURE	PA805SWB
33	batería recargable Shure SB900B	SHURE	SB900B
34	Cargador Shure SBC800-US	SHURE	SB800-US
35	Cargador tipo rack para baterías Shure SBRC-US	SHURE	SBRC-US
36	Modulo de carga Shure SBM920	SHURE	SBM920
37	Cable coaxial Shure UA850	SHURE	UA850
38	Cable coaxial Shure UA825	SHURE	UA825
39	micrófono AKG PCC 160	AKG	PCC 160
40	micrófono de solapa Shure UL4T	SHURE	UL4T
41	micrófono Shure Beta52A	SHURE	BETA 52A
42	micrófono Shure Sm57-LC	SHURE	SM57-LC
43	micrófono Shure Sm58-LC	SHURE	SM58-LC
44	micrófono Shure SM7B	SHURE	SM7B
45	micrófono Shure Beta91A	SHURE	BETA91A
46	micrófono Shure KSM8/B	SHURE	KSM8/B
47	micrófono Shure KSM32/SL	SHURE	KSM32/SL
48	micrófono Shure SM81-LC	SHURE	SM81-LC
49	micrófono Shure beta 98H/C	SHURE	BETA98H/C
50	Caja directa Radial JDI	RADIAL	JDI
51	Caja directa Radial JDI STEREO	RADIAL	JDI STEREO
52	Caja directa Radial JDI DUPLEX	RADIAL	JDI DUPLEX
53	Cable XLR 3m	PROEL	DHG240LU3
54	Cable XLR 6m	PROEL	DHG240LU6
55	Cable XLR 9m	PROEL	DHG240LU10
56	Cable XLR 15m	PROEL	BULK250LU15
57	Cable TRS 3.5 a 2x RCA	PROEL	BULK540LU3
58	Cable TRS 3.5 a 2x TS 6.3	PROEL	NYS231 - NP2X – HPC80
59	Cable TS 6.3mm	PROEL	DHG100LU5
60	Cable digital de audio 1 metro (carrete)	SYNTAX	7XDDS03SXN
61	Cable encauchetado 4x14 (carrete)	PROEL	HPC640BK
62	Conector speakon	NEUTRIK	NL4FX-4
63	Conector XLR hembra	PROEL	XLR3FVPROBK
64	Conector XLR macho	PROEL	XLR3MVPROBK
65	Cable HDMI 3 metros	PROEL	PRHDMI30
66	Cable HDMI 10 metros	PROEL	PRHDMI100

ÍTEM	TIPO DE EQUIPO	MARCA	REFERENCIA
67	Cable SDI 3 metros	BELDEN	1694 A, 4694RBUHD1
68	Cable SDI 10 metros	BELDEN	1694 A, 4694RBUHD1
69	Cable SDI 20 metros	BELDEN	1694 A, 4694RBUHD1
70	Caja de escenario XLR 12 canales	PROEL	EBN1204
71	Base para micrófono corta	K&M	25900-300-55
72	Base para micrófono larga	K&M	25200-300-55
73	Soporte para altavoz con malacate	HERCULES	SS700B
74	audífonos in-ear Shure SE425-CL	SHURE	SE425-CL
75	audífonos profesionales de diadema	SHURE	SRH840A
76	Monitor de estudio	IK MULTIMEDIA	ILOUD MTM SINGLE
77	Altavoz autoamplificado	QSC	K8.2
78	Caja de transporte con Rack 8 RU	NACIONAL	Modelo similar a los existentes en el teatro
79	Caja de transporte para monitores M6	NACIONAL	Modelo similar a los existentes en el teatro-
80	Gabinete servidor	DAGA	GF-2486
81	Computador MAcBook Pro 16 pulgadas	APPLE	MACBOOK PRO 16” CHIP M2 PRO
82	Multipuerto USB-C 6 en 1 para computadores Apple	SATECHI	Multipuerto 8 en 1 USB-C 4K Ethernet V2
83	Licencia Software Qlab	QLAB	QLAB 5
84	Licencia Software Smaart (v9)	Smaart	Smaart v9 perpetua
85	Router inalámbrico	TP-LINK	Archer AX90
86	Regulador de voltaje	FURMAN	P-2400 AR
87	Acondicionador de voltaje para rack	FURMAN	M-8X2
88	Multitoma	FURMAN	SS-6B
89	mezclador de video portátil de 4 entradas SDI	blackmagicdesign	ATEM SDI Pro ISO SDI
90	Mezclador de video portátil de 4 entradas HDMI	blackmagicdesign	ATEM MINI Pro ISO
91	Convertidor de video Bidireccional	blackmagicdesign	SDI/HDMI 3G w PSU
92	Monitor de video de 60"	SAMSUNG	UN60AU7000PXPA
93	Monitor de video de 43"	SAMSUNG	UN43AU7000PXPA
94	Video proyector de 5000 lúmens	Panasonic	PT-VMZ51
95	Video proyector de 12000 lúmens	Panasonic	PT-RZ120B
96	Tarjeta de entradas AVID SRI-192	AVID	SRI-192

ÍTEM	TIPO DE EQUIPO	MARCA	REFERENCIA
97	Tarjeta de salidas AVID SRI-192	AVID	SRO-192

Con la suscripción del presente anexo manifestamos los equipos ofertados cumplen con las características técnicas y los términos y condiciones establecidas en el presente proceso de contratación



_____

OSWALDO RUEDA ROBLES
YAMAKI SAS
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NIT 800.179.308

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Altavoz ALi90









Idioma (ES) Descargas Ventas y Servicios d&b Soundscape

Altavoz de arreglo aumentado de 2 vías y formato medio específico para instalaciones

- Componentes 2 x motores LF de 10"; 1 x motor de compresión de salida de 1,4" con bobina de 3"
- Dispersión 90° x 30°
- SPL máx. 139 dB
- Peso 22 kg / 48,5 lb

Número de artículo Z0733

dónde comprar

PresentaciónDatos técnicosDescargasAccesoriosTutorialesAplicaciones

Datos del sistema

Respuesta de frecuencia (-5 dB, estándar)	60 Hz - 18 kHz
Respuesta de frecuencia (-5 dB, modo CUT)	95 Hz - 18 kHz
Presión acústica máx. (1 m, campo libre)[1] con D20/30D con D40/D80/40D	 138 dB 139 dB
Cajas por canal del amplificador	2

Datos del altavoz

Nominal dispersion angle (h x v - horizontal setup)	90 ° x 30 °
Impedancia nominal	8 ohms
Capacidad de manejo de potencia (RMS/pico 10 ms)	400/1800 W
Ajustes de angulación entre las cajas	20 ... 40° (5° increment)

Idioma (ES) Descargas Ventas y Servicios d&b Soundscape

Dimensiones/peso

Dimensiones (Al x An x Pr)	322 x 700 x 356 mm 12.7 x 27.6 x 14"
Peso	22 kg 48.5 lb

[1] 1 m, campo libre, señal de prueba pico máx. de SPL: ruido rosa con factor de cresta 4, un altavoz alimentado

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AL60

Augmented arrays



AL90

Augmented arrays





ALi60

Augmented arrays

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Software **Prensa**

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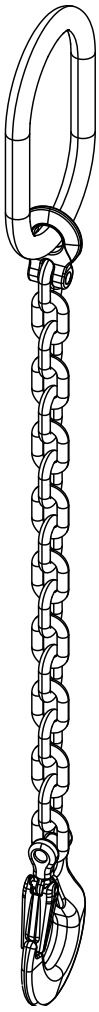
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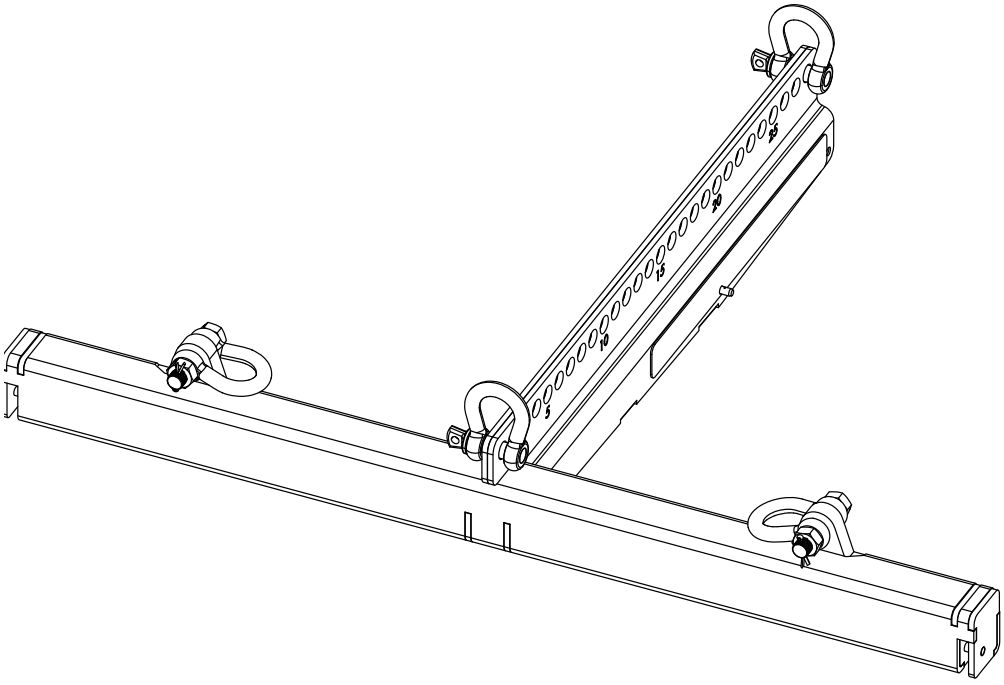
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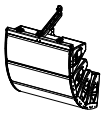
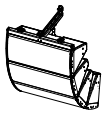
Z5453 Cadena del conector del elevador AL



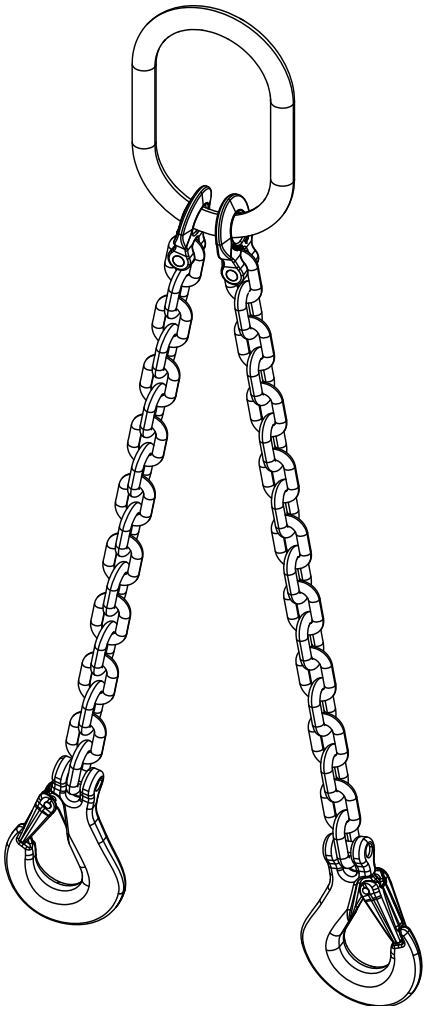


Z5455 Estructura de rigging AL



Z5454 Cadena de seguridad AL





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Subwoofer Vi

Subwoofers

Subwoofer cardioide de alto rendimiento para colgar específico para instalaciones

- Componentes de 18"/12"
- Dispersión cardioide
- SPL máx. 137 dB
- Peso 62 kg / 137 lb

Número de artículo Z0538

dónde comprar

Datos del sistema

Respuesta de frecuencia (-5 dB, estándar)	37 - 115 Hz
Respuesta de frecuencia (-5 dB, modo 100 Hz)	37 - 95 Hz
Presión acústica máx. (1 m, campo libre)[1] con D20/30D con D40/D80/40D[2]	 133 dB 137 dB
Cajas por canal del amplificador	2

Datos del altavoz

Configuración	Subwoofer cardioide de alto rendimiento para colgar específico para instalaciones

Ajustes de angulación entre las cajas	0° y 2,5°
Componentes	1 x motor de 18" 1 x motor de 12"
Conexiones	2 x NL4 M

Dimensiones/peso

Dimensiones (Al x An x Pr)	606 x 700 x 728 mm 23,8 x 27,5 x 28,6"
Peso	62 kg 137 lb

[1] 1 m, campo libre, señal de prueba pico máx. de SPL: ruido rosa con factor de cresta 4, un altavoz alimentado

[2] Cuando se utiliza con D40/40D, el valor se aplica a un altavoz por canal

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V7P

Fuentes puntuales



V10P

Fuentes puntuales



V8

Arreglos en línea

V1

Arre

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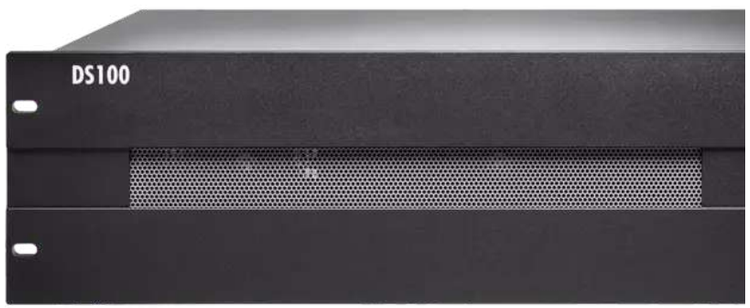
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« Volver a Procesamiento y matriz









DS100 Signal Engine

Plataforma DSP orientada a red y habilitada para Dante

- Plataforma de procesamiento para d&b Soundscape
- Matriz de audio de 64 x 64 con ajustes de nivel y delay en todos los puntos de cruce
- Procesamiento de I/O, EQ, ganancia, delay, polaridad
- I/O Dante
- I/O de frecuencia de muestreo: 48/96 kHz
- Latencia (de entrada Dante a salida Dante): < 1,4 ms a 48 kHz / < 1,6 ms a 96 kHz

dónde comprar

Descripción del producto

El procesador de señal DS100 Signal Engine es el hardware, una plataforma DSP controlada por red y habilitada para Dante que proporciona una gestión completa de señales en el ya bien conocido flujo de trabajo «d&b Workflow». Incluye una matriz de 64 x 64, con control de delay y nivel para todos los puntos de cruce y procesamiento completo de señal en todas las entradas y salidas, además de admitir frecuencias de muestreo de 48 o 96 kHz. DS100 Signal Engine se integra en el concepto operativo del software de Control remoto R1 de d&b. Esta integración también incluye la agrupación de parámetros en vistas Remote y guardar las escenas en instantáneas.

Las funciones avanzadas de ArrayCalc y R1 simplifican la integración de esas funciones de la matriz en las configuraciones de los altavoces d&b. Esto incluye desde la configuración del Puente de red DS10 hasta la preparación de una conexión de salida Dante para conectar los altavoces. Además, todas las funciones de matriz se pueden controlar mediante el protocolo OSC, es decir, pueden controlarse remotamente y automatizarse mediante ese protocolo de

d&b En-Scene es el módulo de software de Soundscape para la gestión de la señal basada en objetos. Este módulo amplía la función de matriz básica del DS100 con una herramienta de posicionamiento basado en objetos para cada entrada. Además de la posibilidad de posicionar y mover de manera independiente hasta 64 objetos de sonido, se proporciona un control basado en algoritmo de hasta 64 altavoces que utiliza las posiciones de altavoz y su asignación a grupos de funciones. Cada posición de altavoz necesita una salida en la matriz. Las posiciones de altavoz que se utilizan para En-Scene pueden utilizarse con la matriz estática al mismo tiempo. Todo esto puede configurarse y controlarse a través de ArrayCalc y R1 en el flujo de trabajo d&b Workflow.

En-Scene puede controlarse también a través de OSC. Esta compatibilidad permite la integración del posicionamiento basado en objetos mediante los plug-ins adecuados en el software de audio y los controles del espectáculo o directamente en las mesas de mezclas. Si En-Scene se instala en el DS100, el usuario puede seleccionar libremente cuáles de los 64 canales de entrada del DS100 trabajarán basados en objetos y cuáles se utilizarán para las funciones de matriz estática. En un DS100 pueden utilizarse ambos modos de funcionamiento simultáneamente.

d&b En-Space es el módulo de software de Soundscape que mejora o crea un entorno acústico, en interiores o al aire libre, basándose en la convolución de señales de audio en un gran número de respuestas de impulso capturadas en espacios de actuaciones célebres por su acústica, desde pequeñas salas para música de cámara a grandes salas de conciertos.

En-Space aplica la exclusiva tecnología de emulación de zona de límites. La respuesta de la sala utiliza un conjunto de 144 respuestas de la zona de límites para 64 posiciones distribuidas a lo largo de la circunferencia y el borde del escenario del recinto. Las respuestas muestreadas se toman desde mediciones límite en las paredes, que es exactamente la ubicación desde la que las fuentes de altavoz de En-Space posteriormente las reproducirán.

En-Space es una tecnología en línea, lo que significa que genera o amplía el entorno acústico sin utilizar bucles de feedback de micrófono. Puede ajustarse y controlarse rápidamente, y permite que sea una realidad acceder a algunos de los espacios de actuaciones más célebres del mundo en situaciones de instalación permanente o móvil.

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DS10

DS20



R90

Software

ArrayCalc

R1

NoizCalc

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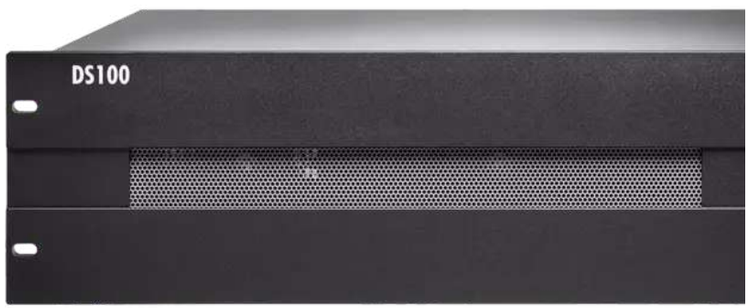
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« Volver a Procesamiento y matriz









DS100 Signal Engine

Plataforma DSP orientada a red y habilitada para Dante

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- Procesamiento de I/O, EQ, ganancia, delay, polaridad
- I/O Dante
- I/O de frecuencia de muestreo: 48/96 kHz
- Latencia (de entrada Dante a salida Dante): < 1,4 ms a 48 kHz / < 1,6 ms a 96 kHz

dónde comprar

Procesamiento de la señal digital

Procesamiento de entrada (64 canales)	64 canales PEQ de 8 bandas con nivel de agudos/graves Ganancia de -120 a +24 dB Delay hasta 500 ms Polaridad 0° / 180° Mute On/Off
Procesamiento de la matriz (64 x 64)	Matriz 64 x 64 Level+Delay Ganancia de -120 a +10 dB Delay on/off hasta 500 ms Mute On/Off
Procesamiento de salida (64 canales)	64 canales PEQ de 16 bandas con nivel de agudos/graves Ganancia de -120 a +10 dB

Controles e indicadores

POWER	Conmutador de pulsador con anillo-indicador LED integrado

Entradas digitales

DIGITAL IN	64 Dante, AES67
Muestreo	48 / 96 kHz

Salidas digitales

DIGITAL OUT	64 Dante, AES67

Condiciones de funcionamiento

Intervalo de temperaturas	de 0 °C a 50 °C de 32 °F a 122 °F
Temperatura de almacenamiento	de -20 °C a 70 °C de -4 °F a 158 °F

Conectores

ETHERNET	1 x RJ45 LAN 100/1000 Mbps OCA/AES70, OSC
Red	Red de audio Dante 2 x RJ45 para principal/secundario Dante

Voltaje nominal de la red	de 100 a 240 V, 50 – 60 Hz

Dimensiones/peso

Peso (kg/lb)	11,2 kg/24,7 lb
Dimensiones (Al x An x Pr)	3 RU x 19" x 481 mm 3 RU x 19" x 18,93"

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DS10

DS20



R90

Software

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R1

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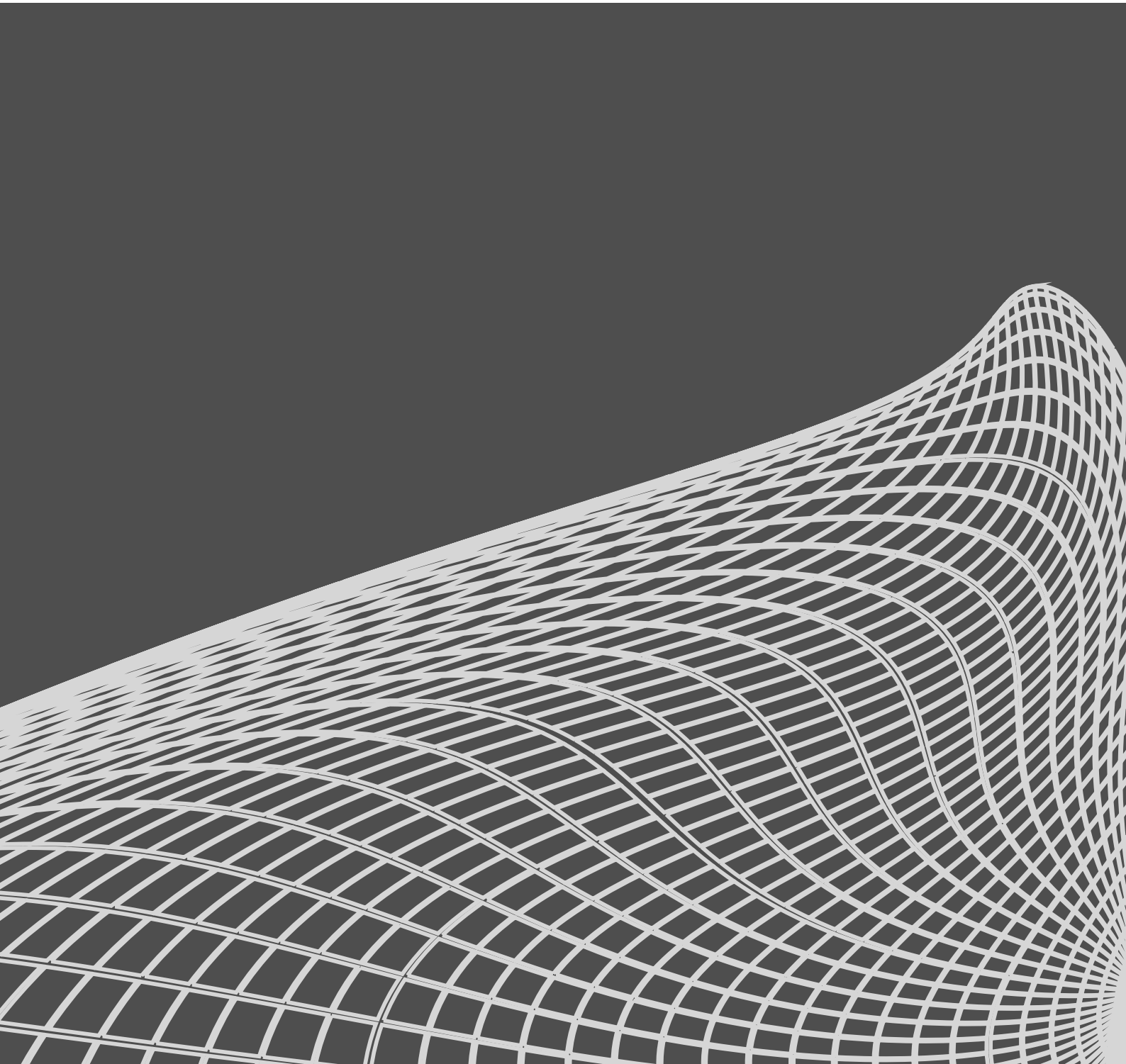
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Descarga ArrayCalc Viewer

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501

TI 501
d&b Soundscape System design and operation
1.10 en



General information

TI 501 d&b Soundscape
System design and operation

Version: 1.10 en, 11/2021, D5501.EN .01

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Contents

1 Introduction **4**
1.1 DS100 Signal Engine 4
1.2 En-Scene: Sound object positioning 4
1.3 En-Space: Virtual acoustics 4
1.4 The En-Scene algorithm 4
2 En-Scene - System design in ArrayCalc **6**
2.1 En-Scene 180 and En-Scene 360 6
2.2 Venue view 6
2.3 Sources view and Function groups 6
2.3.1 Frontfills (Mode: Frontfill) 7
2.3.2 Main (Mode: Main) 7
2.3.3 360 System (Mode: Surround) 7
2.3.4 Subwoofers (Mode: SUB array) 7
2.3.5 Additional systems 7
2.3.6 Embedded function group modes 8
2.3.7 Level requirements 8
2.3.8 Time alignment 8
2.4 Prediction of object level distribution and localization 8
2.5 Amplifier and channel assignment 9
2.5.1 Audio network devices 9
2.5.2 Additional loudspeakers 9
2.5.3 Dante preset 9
3 En-Scene - Operation with R1 ..... **10**
3.1 DS100 Matrix input settings 10
3.2 DS100 Matrix output settings 10
3.3 Positioning view 10
3.4 Sound objects 10
3.5 Acoustic properties of Sound objects 10
3.5.1 Spread 10
3.5.2 Spread factor 11
3.5.3 Delay mode 11
3.5.4 Object placement 11
3.5.5 Sound object routing and level 11
3.6 OSC control 11
3.7 Position control and coordinate mapping 12
3.8 Temperature 12
4 En-Space - System design in ArrayCalc **13**
4.1 Venue view 13
4.2 Sources view 13
5 En-Space - Sampled spaces **14**
5.1 Space #1: Modern - small 14
5.2 Space #2: Classic - small 14
5.3 Space #3: Modern - medium 14
5.4 Space #4: Classic - medium 14
5.5 Space #5: Modern - large 14
5.6 Space #6: Classic - large 14
5.7 Space #7: Modern - medium 2 15
5.8 Space #8: Theater - small 15
5.9 Space #9: Cathedral 15
6 En-Space - Operation with R1 ..... **16**
6.1 Zone mixing at matrix inputs 16
6.2 Zone mixing at the mixing console 16
6.3 Zone mixing by En-Scene 16
7 En-Space room parameters **17**
7.1 Predelay factor 17
7.2 Rear level 17
7.3 En-Scene output faders 17
8 R1 and DS100 - Additional features **18**
8.1 Manual matrix 18
8.2 Grouping of channels 18
8.3 Snapshots 18
8.4 DS100 Scenes 18
9 DS100 Block diagram **20**
10 Function groups overview **21**

This Technical Information paper will explain the procedure for designing and operating a d&b Soundscape system.

The aim of d&b Soundscape is to provide the most realistic spatial reproduction of sound in a given environment.

d&b Soundscape integrates into the d&b Workflow. The system is designed in the d&b ArrayCalc V10 Simulation software. DS100, loudspeakers and amplifiers are configured and controlled using the d&b R1 V3 Remote control software.

At its heart d&b Soundscape comprises the DS100 Signal Engine and the En-Scene/En-Space software modules.

1.1 DS100 Signal Engine

The DS100 Signal Engine is a 64 x 64 channel digital audio matrix. Inputs and outputs provide extensive signal processing, matrix crosspoints control level and delay.

The DS100 is equipped with a Dante network interface. AES3 outputs to d&b amplifiers can be provided by additional DS10 Audio Network Bridges (up to 16 channels per DS10).

The DS100 hosts the optional En-Scene and/or the En-Space software modules which control all related matrix functions. Further matrix outputs can be operated manually from R1.

1.2 En-Scene: Sound object positioning

With the En-Scene software module, a d&b Soundscape system can place multiple Sound objects at individual locations on stage or in other areas of the venue.

En-Scene is a form of distance based panning between multiple loudspeakers covering the audience areas. Unlike with stereophonic reproduction it provides an authentic image of all sounds to the whole audience. Sound objects can be placed and moved to any desired position during the show.

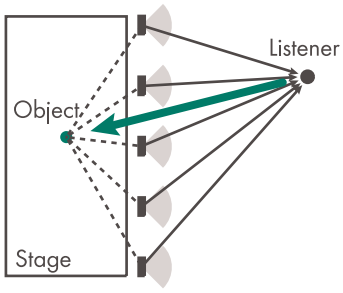
1.3 En-Space: Virtual acoustics

With the En-Space software module, a d&b Soundscape system can add the acoustics of different concert halls to your local environment, be it outdoor or in a venue, which is an essential feature for the reproduction of acoustical instruments.

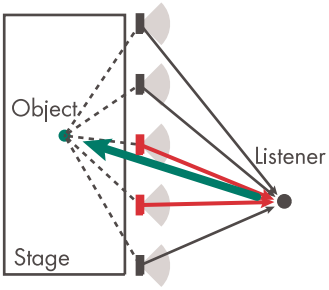
En-Space is a 3D reverb engine which comes with a set of concert venues of various characteristics and sizes. Using the technology of boundary plane emulation each room is sampled and reproduced with the highest accuracy and spatial resolution.

1.4 The En-Scene algorithm

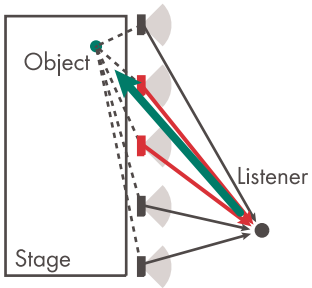
The audience areas will be covered with different loudspeaker groups, so-called Function groups. A function group often is an array of identical loudspeakers horizontally equally spaced and each driven from its dedicated amplifier channel and DS100 output. A function group images a sound object by reproducing it with different levels and delays using all loudspeakers of the group.



The En-Scene algorithm considers the mix of the listeners psycho acoustical perception as well as acoustic effects between the sources to calculate the transfer functions for the relevant matrix crosspoints. Maintaining the rules of the precedence effect (or "law of the first wavefront") ensures accurate spatial localization.

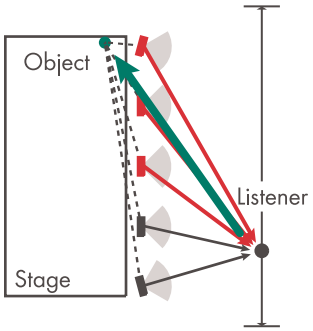


The loudspeakers with the earliest arrival times (red) provide the relevant direction information to the listener. Unlike when arraying sources all driven with identical signal this method of sound reproduction requires multiple loudspeakers to cover each listener. As a consequence loudspeakers covering close audiences need to have a larger horizontal dispersion than with a conventional system design.



The perception of the direction of the object will be the best when the coverage area of the relevant (red) loudspeakers extends to the listener.

With an audience area not much wider than the stage, turning the loudspeakers on the outer edges towards the center can improve cross stage localization of objects.



En-Scene supports any shape of loudspeaker array. Linear as well as convex or concave designs are possible.

The algorithm considers the position and orientation of the loudspeakers towards the sound object. The individual levels and delays of each source depend on the horizontal angle between Sound object and speaker axis, its distance and the Sound object properties (see ⇒ Chapter 3.5 "Acoustic properties of Sound objects" on page 10).

When objects are placed inside the coverage area of all sources a level-only panning algorithm will be applied. When objects are moved the perceived level and tonal balance will not be affected.

An En-Scene system comprises a DS100 Signal Engine, the En-Scene software and multiple loudspeakers/amplifiers to cover the audience areas.

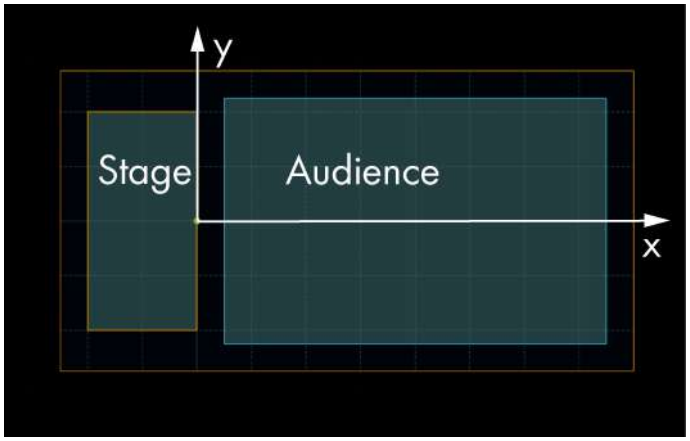
2.1 En-Scene 180 and En-Scene 360

En-Scene supports a variety of venue and sound designs. However, depending on the type of event an essential decision is if a 180 system or a 360 system is required. Should sound objects represent artists, instruments or other sources on a stage an En-Scene 180 system is sufficient. It is arranged at and around the stage front or proscenium. Only when sound objects should be played from other directions or located and moved in and around the audience area an additional En-Scene 360 surround system will be required. This setup can also be used as an En-Space system for room emulation.

2.2 Venue view

As usual the venue must be entered in the d&b ArrayCalc Simulation software. Make sure that in the ArrayCalc «Project settings» ⇒ «Advanced features» menu the «Soundscape» and «Audio networking» options are enabled.

In ArrayCalc stick to the usual orientation of stage and audience areas.



For En-Scene applications, in addition to the audience areas some additional venue elements must be created: The «Positioning» areas. Positioning areas (e.g. the stage) need to be rectangular.

In R1, positioning areas are displayed as a reference to enable locating and moving of sound objects. The position of an object can be anywhere in the x-y plane and is not limited to the inside of the area.

Positioning areas also serve to adapt and calibrate coordinate systems of external position control devices which are connected via the OSC interface of the DS100, like tracking systems, VST plug-ins, show control systems, etc.
For further details, refer to ⇒ Chapter 3.7 "Position control and coordinate mapping" on page 12).

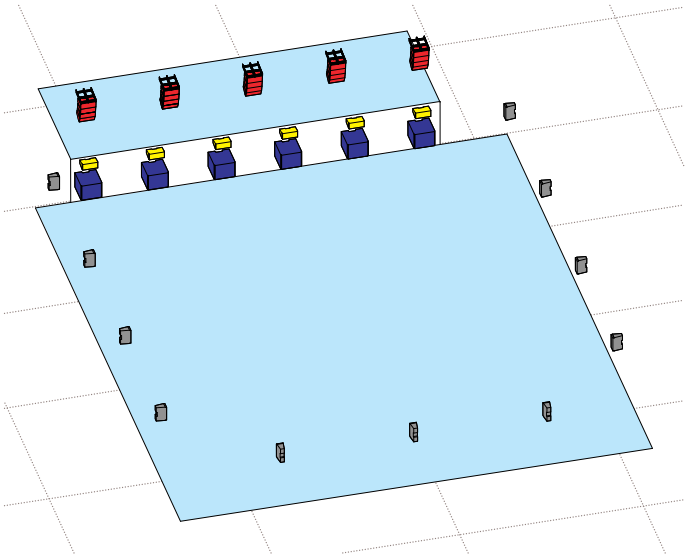
2.3 Sources view and Function groups

In the «Sources» view enter and place all loudspeakers and assign them to «Function groups».

En-Scene provides up to 16 function groups. There are different modes for function groups available which differ for example in their level and delay gradients depending on their respective tasks in the system. The corresponding mode must be selected for each group. Function groups are configured in the «Devices» view in ArrayCalc. By default the following groups are provided:

#	Name	Mode	Remarks
1	Mono SUBs	SUB array	LF, no object positioning.
2	Main	Main	Object positioning.
3	Frontfills	Frontfill	Object positioning.
4	360	Surround	Surround object positioning.
5	SUBs	SUBs group	LF object positioning.
6	Mono outfills	Outfill	Extension to Main system.
7	Delays	Delay line	Delay line with positioning.
8	AUX	Mono out	Mono feed for fills, delays.
9	Ceiling	Ceiling	En-Space only.
10	Outfill embd.	Outfill embedded	Outfill with 360 system.
11	Delays embd.	Delay line embedded	Delay line with 360 system.

You can modify the settings or define more groups as required and select the respective mode for each of them. When multiple audience areas should be covered best control options and results will be achieved when the loudspeakers serving each area are assigned to their individual function group. Therefore multiple function groups with the same mode are possible.



Example setup with four Function groups:
T10 Main system (red), Frontfills (yellow), 360 speakers (grey) and Y-SUB array (blue)

In the «Sources» dialog, each line array source or group of point sources can now be assigned to **one** function group.

Depending on the size and layout of the venue and the type of program to be played, a different set of groups are required.

A Soundscape system may contain multiple Function groups with the same mode. However, in order to maintain correct imaging one audience area should only be covered by one group of each type. In above example all 360 speakers need to be in one Function group. Additional audience areas (balcony, top tier) should be given their dedicated Surround Function group.

Typical setups may consist of groups with the following modes.

2.3.1 Frontfills (Mode: Frontfill)

Frontfills are commonly used along the stage front to cover the front area of the main listening plane. In order to provide sufficient angle resolution to the image of the sound objects, the spacing of the speakers should not exceed 70% of the distance to the front row of the audience.

1. In ArrayCalc, this part of the system can easily be entered by selecting «Add point sources» in the «Sources» view.
2. Define the loudspeaker type, number of cabinets, stage width, height, and cabinet aiming.
   ↳ For an easier overview when wiring the system, we recommend you to sort all speakers within each group clockwise (seen from FoH). The layout automatically created by ArrayCalc for an array of frontfills will be in reverse order. Entering a negative value for «Equally spaced along xx m» will create the required order.
3. Assign the frontfills to a function group with the mode «Frontfill».

2.3.2 Main (Mode: Main)

The main system covers the central audience area. It is also a horizontal array of equally spaced sources but located above the stage. As the distance to the target audience is larger here, the spacing may be larger. Here as well, the distance between the sources should not exceed 70% of the distance to the closest target audience row. The further the throw of the frontfills, the fewer positions will be required for the main systems.

Depending on the level requirements, point source loudspeakers may be sufficient, however, line arrays provide a more controlled level distribution towards the far field. Using wider dispersion cabinets (120°) in the lower section of the array enhances localization at the front while maintaining clarity at the distance.

Note: Please note that the main system must be placed in the rig above the stage. Sight line and weight limits need to be considered.

With line arrays, the «Add array» function is used. As an example, a fivefold main system would typically consist of five identical arrays (the use of two L/R pairs and one single array is also possible but its assignment to matrix outputs is not as straightforward and needs more attention).

The use of ArrayProcessing will be helpful not only to achieve the required throw for the far field but also to create the best transition to the frontfills.

The respective Function group mode is «Main».

2.3.3 360 System (Mode: Surround)

With an En-Scene 360 design, sound objects can be moved not only on stage but also in and around the audience areas. For this purpose, additional surround speakers are required. They can be placed along the boundaries of the space and should cover a significant part of the audience area each. Using ArrayCalc, the best combination of mounting height and vertical directivity of the loudspeakers should be evaluated to achieve an even coverage.

Surround speakers automatically combine with groups with the modes Frontfill and Main, thus they will take over an object when it is within their positioning range (i.e. behind them).

In a typical setup, surround speakers will be less powerful than the Main systems. This is sufficient for single sound objects, but it will obviously not be possible to play the whole audio program at full level from the respective direction.

In ArrayCalc, Surround speakers can be added using multiple point source groups, e.g. three groups for rear and left/right side walls. They must be assigned to a function group with the mode «Surround».

2.3.4 Subwoofers (Mode: SUB array)

Subwoofers can also be deployed as a function group providing imaging of low frequency sound objects. To do so, they are entered as a point source group and assigned to a function group with the mode «SUBs group».

Alternatively, when even coverage and maximum output level is preferred, subwoofers can be configured as a mono SUB array. In this case, they are defined as a Function group with the mode «SUB array».

2.3.5 Additional systems

Depending on the size and shape of the venue, additional groups of loudspeakers may be required.

Remote audience areas can be covered by delay lines. Delay speakers can be assigned to the function group («Delay line» mode) when they should contribute to the imaging of objects or, when closely covering smaller areas assigned to a «Mono out» group, which is fed by a mono mix of the Sound objects.

Another requirement may be the addition of a powerful L/R line array system for the far field where detailed imaging is less important than best intelligibility. It is not recommended to add these sources to the function group of the main positioning group since objects would be played at different levels according to their distance to the far field sources. It is best to create a second function group with the mode «Main» which only includes the L/R sources. In order not to disturb the imaging created by the Main system, the far field arrays should really only cover the remote part of the audience area. ArrayProcessing will help to minimize the vertical overlap with the main system.

Besides the main or far field system additional outfills may be required to cover the areas left and right off the stage. The function group mode «Outfill» will produce a mono signal but will adapt the delays of all objects to the main and far field systems in order to provide a smooth transition.

2.3.6 Embedded function group modes

For the «Delay line» and «Outfill» Function group modes, there are additional "embedded" versions. Those modes should be considered when delay or outfill speakers are used with a 360 system. Using the "embedded" mode, the level of an object will be linked to its level on the (first) Main function group.
As a consequence, when an object is reproduced by the Surround system and therefore disappears from Main and Frontfill speakers, it also disappears from Outfill or Delay line speakers. This avoids disturbing the localization of surround effects by sound from those groups.

2.3.7 Level requirements

Unlike the SPL plot in ArrayCalc the reproduction of a sound object typically does not use all available loudspeakers. In order to provide a smooth level distribution and to achieve consistent headroom, the maximum output of the individual sources needs to be looked at. In ArrayCalc, use the individual «Mute» buttons of the sources to evaluate the capabilities of the respective sources.

Please note that when different types of loudspeakers or arrays are used in a Soundscape system, the En-Scene and En-Space algorithms will not compensate for differences in system sensitivity. Level adjustments are best made at the individual amplifier channels using the ArrayCalc 3D plot.

2.3.8 Time alignment

Function groups must be correctly time aligned to each other to achieve the desired accuracy in reproducing objects for all audience areas.
As the delay time for each sound object and loudspeaker is created in the DS100 matrix crosspoint, the time alignment between the source groups is also not performed using the signal delay of the amplifiers. Instead, it is set in ArrayCalc in the «Devices» ⇒ «Function groups» ⇒ «Configuration» table. Here each function group can be assigned a Group delay setting, which is then applied to the DS100 signal processing matrix.

Name	Mode	Group delay	Spread factor
Main	Main system	0.0 ms	1.0
Frontfills	Frontfill	0.0 ms	1.0
FX	Surround	0.0 ms	1.0

This table also provides the possibility to set the Spread factor for each Function group participating in En-Scene.
Please refer to ⇒ Chapter 3.5.1 "Spread" on page 10 and ⇒ Chapter 3.5.2 "Spread factor" on page 11 to learn more about these parameters.

Please note that the «Alignment» view in ArrayCalc may be used to derive the required delays for the source groups, however the settings need to be applied to the function groups.

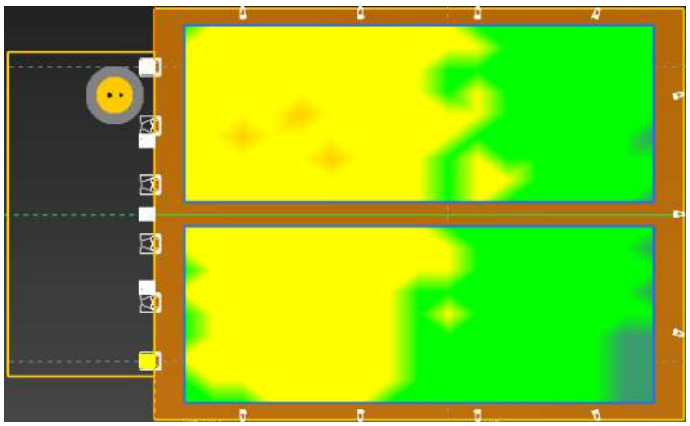
Reset the delay settings of the individual sources obtained in this way before saving the project.
Should individual corrections of the delay time within a function group be necessary, e.g. due to speakers mounted in different heights, this must be performed using the individual delay settings of the amplifier channels on the «Sources» tab.

When ArrayProcessing is used for parts of the system the other loudspeakers need to be time aligned accordingly by adding 5.9 ms of delay to the respective amplifier channels.

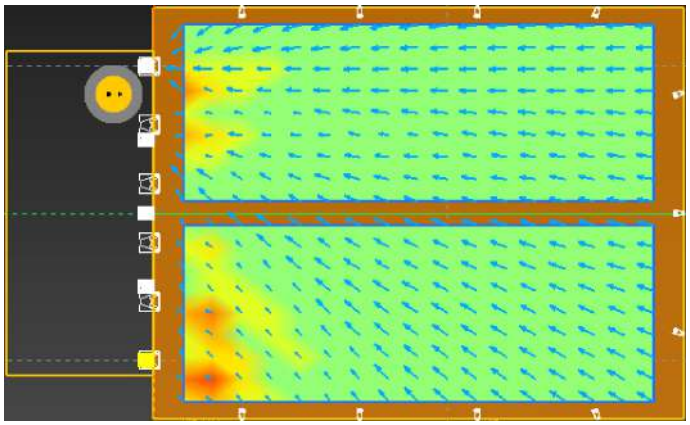
The Function group delay settings as well as the Spread factors can be modified later when online in R1 in the «Devices» ⇒ «DS100» ⇒ «Function groups» view.

2.4 Prediction of object level distribution and localization

In ArrayCalc on the «Soundscape» tab, the level of the reproduced sound object and its acoustically perceived position can be displayed for all listening areas. Using the object position and its properties (Spread and Delay modes) ArrayCalc plots the average SPL from 1 kHz to 4 kHz using a complex summation of the signals of all sources. The simulation takes into account all loudspeakers assigned to En-Scene function groups using their respective En-Scene processing and all relevant settings available in ArrayCalc like Function group delay, Spread factor, Mute, Level, Delay or ArrayProcessing as well as temperature and humidity.



Using the same parameter set ArrayCalc also predicts the localization accuracy of the object position for all listening areas. While the arrows point at the perceived direction of the object position, the color mapping indicates the deviation from the actual position of the object.



Please note that the perceived position of an En-Scene object may depend on the program material and its spectral content and transient behavior. ArrayCalc offers the choice between two different perception models.

1. **Precedence:** An empiric model based on the precedence effect or "law of the first wave front". It follows the observation that when a signal is played from multiple sources, the perceived origin is a combination of the various source positions dominated by the one with the wavefront arriving first at the listener's ear. The model focuses on transient sounds and the frequency range above 4 kHz.
2. **Binaural:** A model based on the research of *M. Dietz* and *H. Wierstorf* using the impulse responses of all sources and a generic set of binaural HRTFs. It derives the perceived direction from an analysis of the interaural transfer functions and resulting binaural cues in the 500 Hz to 2 kHz band. Areas with shorter arrows indicate a reduced convergence of the results.

2.5 Amplifier and channel assignment

After all loudspeakers have been placed they need to be assigned to amplifier channels, DS10 and DS100 matrix outputs.

For ease of use we recommend to maintain to the default order of the function groups and to sort the arrays and point source groups in the «Sources» view accordingly. The order of arrays or point source groups forming one «Function group» should be clockwise around the FoH. To avoid any wiring mismatches during the setup, the order should also be kept within a point source group. Source groups and cabinets can be easily resorted using drag an drop within the «Sources» view.

Amplifier settings

In the «Devices» ⇒ «Sources» table start editing the default settings of amplifier type, amplifier ID, output channel and input source for each «Source» on the «Cabinets» tab to effectively use all amplifier channels.
In installed applications, it might be useful to assign all channels in a straight forward way to avoid unused amplifier and DS10 channels. With mobile setups, however, the existing amplifier rack configurations as well as cable runs and possible rack locations need to be considered. Main arrays with an uneven number of amplifier channels may leave some channels unused.
The «Configure amps» function in the respective «Devices» ⇒ «Sources» dialog automatically sets inputs to digital when sources are assigned to a DS100 function group. It puts the input source settings of point source groups in an ascending order (1 for output A, 2 for B and so on). Line arrays only have one single input setting which has to be set manually.

2.5.1 Audio network devices

1. In ArrayCalc select the «Devices» view and in the «Audio network devices» table enter a DS100 and the required number of DS10s.
2. Assign the respective DS10 output for each source.
   ↳ Consider that AES3 outputs come in pairs which should feed a 1/2 or 3/4 input pair of one amplifier.
3. Finally assign DS100 outputs to the sources.
   ↳ As this is a Dante network connection to the DS10s it can be done in a straight forward way starting from output 1. The «Configure patch» function in the respective «Devices» ⇒ «Sources» dialog will do this automatically for each source group. ArrayCalc will check the validity of IDs, input settings and the channel assignments of all devices before saving the project.
   For an immediate check go to «Devices» ⇒ «Sources», open the «>>» menu and select «Validate patch».

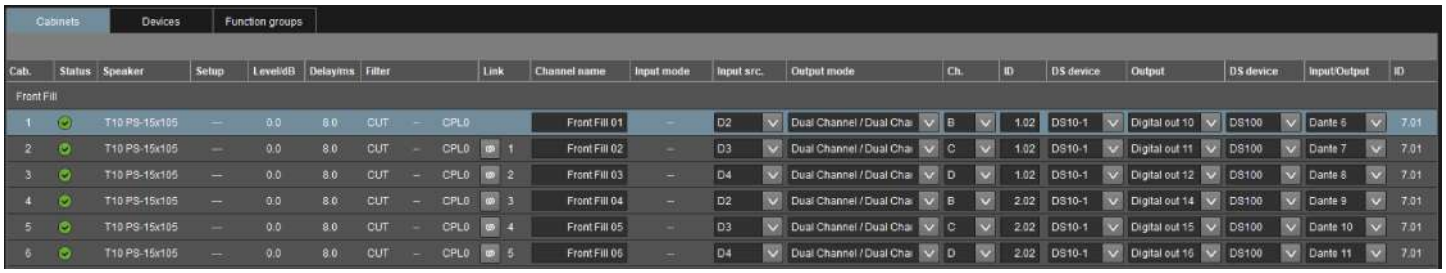
2.5.2 Additional loudspeakers

Additional loudspeakers that are not participating in the d&b Soundscape processing, such as e.g. stage monitors, can also be part of the project, however, they are not assigned to a function group. If required, they can also be linked to DS10 channels and available matrix outputs of the DS100. They can be controlled from the manual matrix controls of R1 (place them at the top of the «Sources» table and use consecutive DS100 outputs. This is useful for the layout of the respective matrix controls in an R1 «Remote view»).

2.5.3 Dante preset

ArrayCalc can create a Dante preset file which provides the routing of DS100 outputs to DS10 outputs for the project.

1. Go to «Devices» ⇒ «Audio network devices».
2. At the top right of the «Devices» view open the «>>» menu and select «Export as Dante preset file».
3. Load the Preset file and apply it to the Dante network using the Dante Controller software.
4. Then patch the desired inputs/objects from the transmitters in the network (e.g. mixing console or DAW) to the respective DS100 input channels.



Example channel assignment for a 6 x T10 frontfill setup

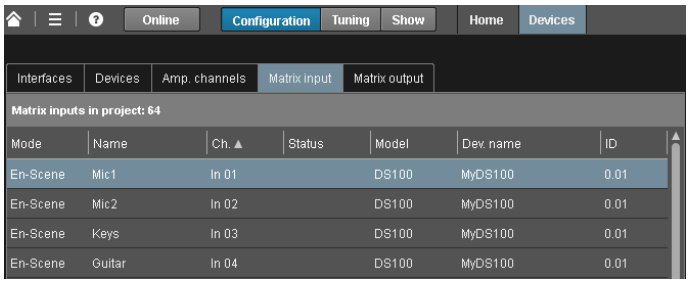
R1 downloads the project configuration to the devices, controls all user parameters, and manages the properties and positions of the En-Scene Sound objects.

Note: Please note that in contrast to the older *.dbac2 and *.r1p file formats, R1 and ArrayCalc now share the same *.dbpr project file format. Changes and additions made in R1 can be saved at any time while the file can still be further modified in ArrayCalc, e.g. to adjust loudspeaker positions or change channel assignments and create a new Dante Preset file.

1. Open the project file in R1
2. Select «Tuning» mode and go «Online».
3. In the «Overview» view, reload the default snapshot created in ArrayCalc.

3.1 DS100 Matrix input settings

1. In the «Configuration» mode open the «Devices» view and the «Matrix input» tab.
2. On the «Properties» tab on the right-hand side, enter a «Name» and select «En-Scene» as «Input configuration» for all required input channels.
   ↳ When changing to «Tuning» mode, the «General» and «EQ» tabs on the right-hand side provide the input processing options for each channel: «Gain», «Delay», «Mute», «Polarity», and an 8-band parametric «EQ».



3.2 DS100 Matrix output settings

The «Matrix output» tab is also to be found on the «Devices» view.

In «Tuning» mode, the «General» and «EQ» tabs on the right-hand side provide the processing options for each output channel: «Gain», «Delay», «Mute», «Polarity», and a 16-band parametric «EQ».

3.3 Positioning view

In the R1 «Home» view in «Configuration» mode, create a new «Positioning view» and assign a «Positioning area» to this view.

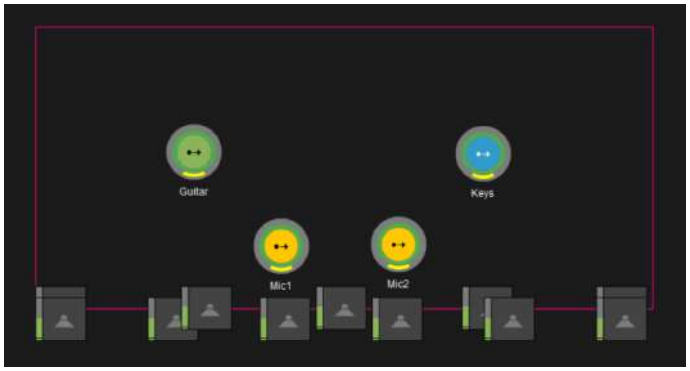
The positioning area serves as a reference to place and move the respective objects within the venue. However, the position of an object can be anywhere in the x-y plane and is not limited to the inside of the area.

There can be more than one positioning area in the design (e.g. a setup with multiple stages). You can create as many positioning views as you like.

3.4 Sound objects

Each En-Scene input channel may be represented by a «Sound object» in a «Positioning view».

1. In «Configuration» mode, drag sound objects either from the «Controls» menu on the right or from the «Matrix inputs» table on the left into the view.
2. In the «Properties» menu «Name» and «Color» of each object can be defined.



Positioning area with sound objects, indicators for level (green) and spread (yellow)

Sound objects can be moved individually or in groups.

1. To group sound objects, go to the «Groups» view.
2. Add a new group to the tree, and assign the respective «Matrix inputs» to this group.
3. Back in the «Positioning view» add another «Sound object» and assign it to the group.
   ↳ With «Relative» selected, all objects of the group can be placed individually to each other but the group can be moved as a whole. The triangle at the upper right corner of the icon indicates its exact position.

   It may be helpful to create multiple positioning views for one positioning area, e.g. using one for moving the groups and another for arranging objects within a group.

3.5 Acoustic properties of Sound objects

In «Tuning» mode, the acoustic properties of each sound object (i.e. Matrix input) can be configured. This includes level, delay, EQ, delay mode and spread.

3.5.1 Spread

The «Spread» of an object defines whether it is reproduced rather focused or wide. Wide objects deliver a less sharp image and provide a more even level coverage.

Wide objects make use of the level of more speaker positions than focused ones and therefore are less demanding regarding the SPL capability of the individual loudspeakers.

The «Spread» of an object is defined in the «Devices» view on the «Matrix input» ⇒ En-Scene tab for each input. It can also be controlled by a «Digital» control placed in a «Remote view» and assigned to the respective «Matrix input» or group of inputs. The «Spread» value ranges from 0 (focused) to 1 (wide).

3.5.2 Spread factor

Using the Spread factor, the spread of an object can be adjusted for each function group. In R1 in the «Devices» ⇒ «DS100» ⇒ «Function groups» table, a value between 0.5 and 2 can be set for each group. The default factor is 1.
The Spread of an object is multiplied with the set value and the result applies to the respective function group. The maximum Spread of 1 is not exceeded. Spread and Spread factor are not effective for function groups without object positioning (Outfill, Outfill embedded, SUB array, Ceiling, Mono out).

3.5.3 Delay mode

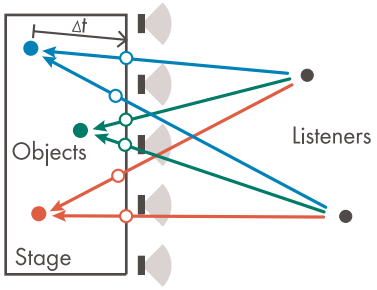
Three delay modes are available for sound objects. «Tight», «Full» and «Off». The delay mode can be configured individually for each object. The «Delay mode» option is also found in the «Devices» view on the «Matrix input» ⇒ «En-Scene» tab.

When the Delay mode is set to «Off», En-Scene only uses level shading to image an object by a function group. All relevant sources of the function group will reproduce the objects simultaneously, only the delay setting of the whole function group will be applied for alignment with other function groups. Delay mode «Off» may provide less precise localization of an object, however, it avoids signal artifacts with fast moving objects.

When the delay mode is set to «Full», level and delay are used. Objects will be reproduced by all function groups with the latency equaling the actual acoustical path length providing consistent time alignment in the entire venue.

For acoustic or locally amplified instruments the «Full» mode should be selected in order to preserve the image and timing of direct to reproduced sound of those sources.

When the delay mode is set to «Tight», the total latency of its reproduction through all function groups is minimized. The signal delay of each object is reduced by Δt equaling the distance to the closest loudspeaker of the Function group. Relative delay values between the sources of the group are kept therefore the localization of the object is not affected.



«Tight» mode beneficial for a mix of electronic instruments and/or pre-recorded material, in order to reduce relative delays between the channels depending on the placement of the objects in the «Positioning view» (i.e. stage), thus keeping the mix "tight".

«Tight» mode also is of advantage for moving Sound objects as it reduces the variation speed of the signal delays.

Note: Please note that the delay modes «Off» and «Tight» are dependent on correct delay settings of all function groups in the R1 «Devices» ⇒ «DS100» view. The delay mode «Full», however, does not apply these settings, instead it uses the geometry of the system layout to determine the delay values.

3.5.4 Object placement

With delay modes «Tight» or «Full» selected, the sound of an object is reproduced by multiple loudspeakers with different delay times each depending on the distance between the object and the respective loudspeaker. Consequently, objects in different positions are played through the same loudspeakers with different delay times. This behavior corresponds to the natural propagation of sound. However, it may create audible effects regarding the relative timing of instruments. Therefore, like with acoustic music, make sure that the physical distribution of the band or orchestra in relevant listening directions stays within acceptable limits. As a rule of thumb, a distance of 10 m (30 ms) between rhythmic instruments should not be exceeded.

3.5.5 Sound object routing and level

As a default, all objects will be routed to all function groups or - in a 360 configuration - to the combined function groups of Main and Surround or Front fills and Surround.

Using the Sound object routing matrix for each En-Scene input, the send gain to each function group can be set manually. This can be useful to modify the mix for a particular function group or to completely remove an object from it. At each crosspoint, either "Mute" or the gain can be set using absolute or relative faders. The latter being particularly useful when multiple crosspoints are selected.
As an example, to factor in the direct sound from stage, the level of all voices on the front fills could be reduced.



The matrix can be accessed under «Devices» ⇒ «DS100» ⇒ «Sound object routing» or with the respective control in a Remote view.

3.6 OSC control

Most parameters within the DS100 Signal Engine cannot only be controlled by R1 but also via OSC messages, for example, level and delay of matrix inputs, outputs, and crosspoints as well as Scene recall and object positions. A detailed description of the DS100 OSC protocol is provided at www.dbaudio.com under “Downloads”.

d&b provides plug-ins for DAWs and several console manufacturers supporting the OSC protocol (see https://github.com/dbaudio-soundscape).

3.7 Position control and coordinate mapping

En-Scene object positions can be controlled by external devices like mixing consoles, show control systems, DAWs or tracking devices.

In most cases, it will be necessary to map the coordinate systems of the controlling device to the En-Scene system. En-Scene uses the coordinate system given by ArrayCalc internally.

The mapping is done in «Configuration» mode in the R1 «Devices» view on the «DS100» ⇒ «Coordinate mapping» tab. Make sure the coordinate system of the positioning device is parallel to one side of the positioning area and input the values the device provides for two diagonal points of the rectangle. The OSC message to address sound objects using this mapping is displayed on the tab.

3.8 Temperature

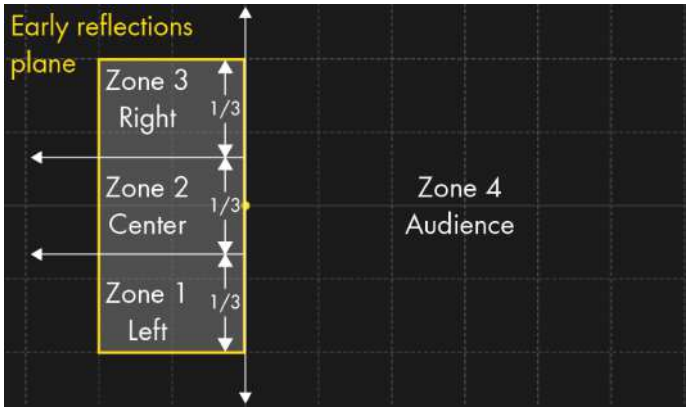
In R1 on the «Devices» ⇒ «DS100» ⇒ «Ambient conditions» tab, the current ambient temperature can be set. The value is used to align signal delays with the actual speed of sound. Delay values set manually (function group and matrix cross-point delays) are not modified by this parameter.

An En-Space system comprises a DS100 Signal Engine, the En-Space software and multiple loudspeakers/amplifiers to cover the audience with the reverberation signature of the sampled space. The En-Space convolver engine provides 64 independent output channels for up to 64 loudspeaker sources to create the sound field. The En-Space and En-Scene software modules can be operated in parallel on the same DS100 Signal Engine. They can share matrix inputs and outputs as well as loudspeaker sources.

4.1 Venue view

As usual, the venue must be entered into the d&b Simulation software. Make sure that in the ArrayCalc «Project settings» ⇒ «Advanced features» tab the «Soundscape» and «Audio networking» features are enabled.

For En-Space applications, in addition to the audience areas, the «Early reflections» zone must be defined. In most applications this will be the stage. The «Early reflections» plane splits the venue into four zones with individual early reflection patterns.



Sound objects (e.g. acoustic sources) located on this plane will obtain dedicated early reflection patterns of the measured stage, depending on their spatial positions (Zones 1, 2, 3). Sound objects placed in Zone 4 obtain less early reflections and a more even spatial level distribution. Please note that the «Early reflections» plane must be rectangular and a rotation of it is not permitted. When there is no «Early reflections» plane defined, the assignment of inputs to zones can be done manually (See also ⇒ Chapter 6.1 "Zone mixing at matrix inputs" on page 16).

4.2 Sources view

Speakers should surround the whole audience. They will typically be placed along boundary walls or in open-air environments along the boundaries of the audience area including the stage front.

In order to achieve the best emulation result, every single loudspeaker should cover as much of the audience area as possible. Therefore speakers with wide horizontal dispersion are advantageous. The ideal vertical coverage pattern depends on the loudspeaker mounting height and the size of the audience area. The larger the distances to be covered and the lower the speaker is placed the higher will be the required vertical directivity to achieve the desired effect for the whole audience. When mounting height is restricted like for example in outdoor situations, 24C column speakers may be useful.

Often a system will combine both En-Space and En-Scene performance. All En-Scene function groups will be used for the En-Space reproduction simultaneously and no additional configuration in ArrayCalc is required.

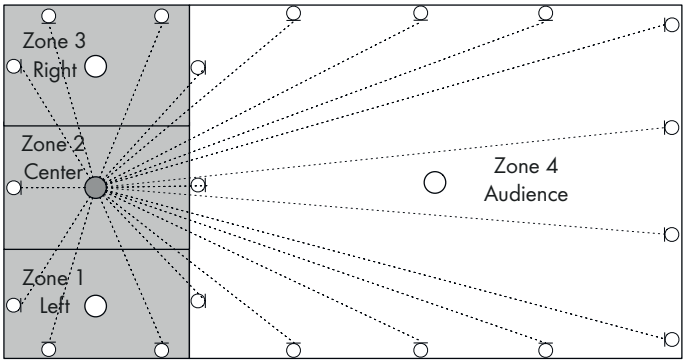
If no En-Scene setup is present, the En-Space sources should also be assigned to the respective function groups that match their physical position in the setup. Choose between groups with the modes Main system, Frontfill, Outfill, Ceiling or Surround.

The configuration of amplifier channels, DS10 and DS100 outputs as well as patching of the Dante network is done in the same manner as described above for En-Scene.

En-Space comes with a set of sampled concert venues, modern architecture and classical ones in different sizes.

When combining a sampled space with your local environment be aware that the acoustic responses of both rooms will add up. It is not possible to shorten the reverb of the actual venue, it will always be extended. Therefore, the venue should have a considerably shorter reverberation time than the sampled space otherwise the audible effect is limited.

En-Space applies the unique technology of boundary plane emulation. The room response is not created from free field measurements taken from within the space but from a set of 144 boundary plane responses for 64 positions distributed along the circumference and stage lip of the venue. The sampled responses are taken from boundary measurements at the walls, which is exactly the location from where the En-Space loudspeaker sources will later reproduce them. This generates the sound field of the sampled space with highest accuracy.



For each of the 64 En-Space loudspeaker positions, the library provides individual boundary responses for objects on stage and objects in front of the stage. For the Main system there are individual responses for all 4 zones in order to most accurately reproduce early reflections.

The 64 positions were chosen to easily match the sources of an En-Space setup, however, sampled space and actual venue do not have to have the same size or shape. The DS100 automatically maps the En-Space convolver outputs to the matrix outputs in such a way that the respective boundary responses of the sampled space match each actual loudspeaker position and function.

En-Space uses all available Function groups of the types SUB array, Main system (7), Frontfill (9), Surround (40), SUBs group (7), Outfill, Mono out, Delay line (7) and Ceiling (7). The number in brackets indicates the maximum amount of positions per group which will be given individual uncorrelated boundary responses. More positions are possible, thus gradually increasing correlation.

5.1 Space #1: Modern - small



Blaibach
Concert Hall
Capacity: 200 seats
Reverberation time: 2.0 s
(T40, 200 Hz - 2 kHz)

5.2 Space #2: Classic - small



Schubert Saal,
Vienna Concert Hall
Capacity: 350 seats
Reverberation time: 1.9 s
(T40, 200 Hz - 2 kHz)

5.3 Space #3: Modern - medium



Angelika-Kauffmann
-Saal, Schwarzenberg
Capacity: 600 seats
Reverberation time: 1.7 s
(T40, 200 Hz - 2 kHz)

5.4 Space #4: Classic - medium



Mozart Saal,
Vienna Concert Hall
Capacity: 700 seats
Reverberation time: 2.1 s
(T40, 200 Hz - 2 kHz)

5.5 Space #5: Modern - large



KKL Luzern
Capacity: 1900 seats
Reverberation time: 2.6 s
(T40, 200 Hz - 2 kHz)

5.6 Space #6: Classic - large



Großer Saal,
Vienna Concert Hall
Capacity: 1850 seats
Reverberation time: 2.4 s
(T40, 200 Hz - 2 kHz)

5.7 Space #7: Modern - medium 2



Bing Concert Hall, Stanford
Capacity: 850 seats
Reverberation time: 2.2 s
(T40, 200 Hz - 2 kHz)

5.8 Space #8: Theater - small



Teatro Alighieri, Ravenna
Capacity: 830 seats
Reverberation time: 1.3 s
(T40, 200 Hz - 2 kHz)

5.9 Space #9: Cathedral



Basilika San Vitale, Ravenna
Capacity: –
Reverberation time: 5.6 s
(T40, 200 Hz - 2 kHz)

1. Open the project file in R1, select «Tuning» mode and go «Online».
2. In the «Overview» view reload the default snapshot created by ArrayCalc.
3. In the «Devices» view under «Devices» ⇒ «DS100» on the «En-Space Room» tab, select the sampled space.
   ↳ The «En-Space Zones» tab contains level faders and an 8 band EQ for each of the four source zones of the space. It may be useful to create a new Remote view with the relevant controls, such as a List element for the Room selector and Faders for the «En-Space Send» of the input channels.

Any DS100 input in either En-Scene or Matrix configuration can be used for En-Space reproduction. The mix to the four zones can be performed in different ways as described below.

6.1 Zone mixing at matrix inputs

On the «Devices» ⇒ «Matrix inputs» ⇒ «En-Space» tab, each matrix input provides a control for the En-Space reverb level of the channel. It is supplemented by four more controls for the sends to the zones Left, Center, Right, and Audience.

6.2 Zone mixing at the mixing console

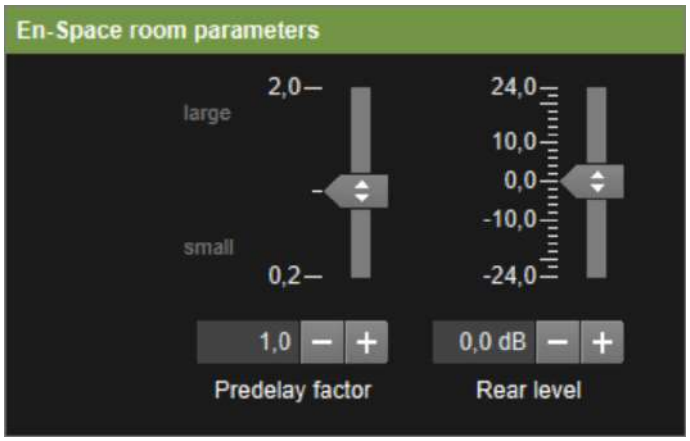
Alternatively, the mix to zones can be performed at the mixing console using for example four AUX sends for each zone routed to four DS100 inputs in Matrix configuration, each is feeding one zone.

6.3 Zone mixing by En-Scene

For all matrix inputs configured for En-Scene operation, the zone mixing is performed automatically according to the position of the object.

On the «Devices» ⇒ «Matrix inputs» ⇒ «En-Space» tab, only set the overall reverb level for the channel, the four zone levels will be controlled by En-Scene.

Independent of the En-Space venue selected, its response can be modified to match the characteristics of your Soundscape design. The room parameters can be set on the «Devices» ⇒ «Room» tab or using the respective template in your workspace.



7.1 Predelay factor

The «Predelay factor» scales the predelays of all boundary responses of the selected venue. The range extends from 0.2 to 2. The default value of 1 preserves the response of the originally measured venue. Larger values delay the onset of the room response, while smaller values shorten this time.

The «Predelay factor» can be used to modify the perceived size of the room. Please note that predelay factors smaller than 1 should only be applied when the actual venue is smaller than the En-Space room selected. Otherwise the En-Space reproduction of an object may occur earlier than the direct sound.

7.2 Rear level

The «Rear level» fader adjusts the En-Space level gradient from the front to the back of the room. The range extends from –24 dB to +24 dB, where positive values gradually increase the reverberation level towards the back.

«Rear level» can be used to adjust the direct to reverberant field ratio along the depth of the room. A main system with very high directivity (line arrays) will cause a smaller level drop over distance than point source speakers and therefore may need a higher En-Space level at the rear.

The «Rear level» fader can also compensate for the higher level drop towards the rear of a large measured venue when reproduced in a considerably smaller room

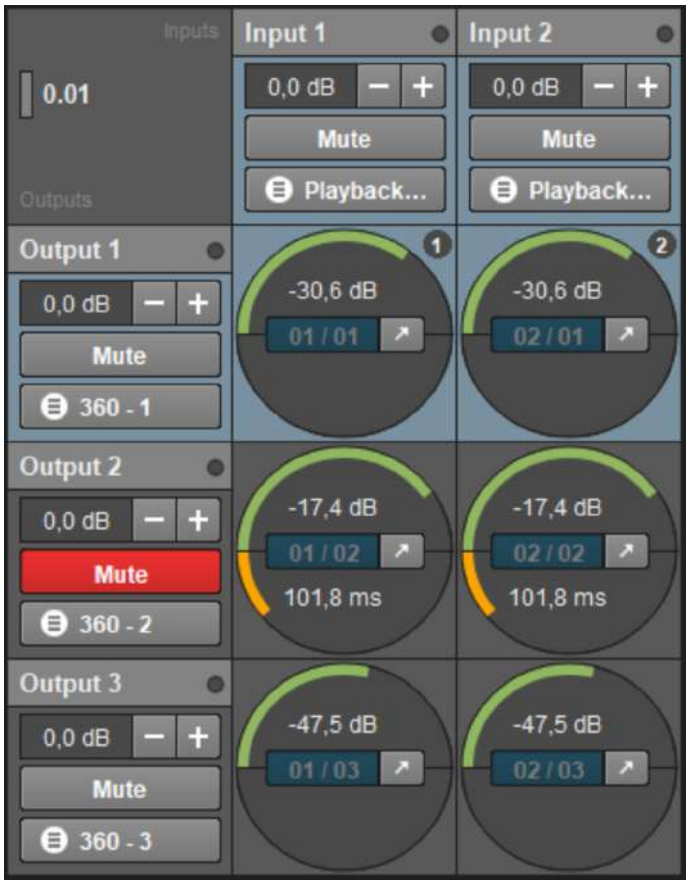
7.3 En-Scene output faders

If necessary, the En-Space level of individual loudspeaker positions can be modified using the Output faders («Devices» ⇒ «En-Space Outputs») of the respective En-Space output.

The «Rear level» adjustment is added to the «Output level» setting of each En-Space output.

8.1 Manual matrix

The DS100 signal matrix can also be operated manually by the controls on the «Devices» ⇒ «Devices» ⇒ «DS100» tabs - or more conveniently by controls in a remote view. The «Matrix crosspoint» control provides an array of level and delay controls for a user defined range of matrix crosspoints which can be operated individually or by means of multi-selection.



The menu button on the input and output fields of the matrix control opens the respective input and output processing options. Also with En-Scene and/or En-Space at work, the available DS100 matrix output channels can be used for manual matrix operation.

8.2 Grouping of channels

Matrix input and output channels, just like amplifier channels, can be grouped in R1.

Note: Please note that this does not "link" the channels.

The known controls such as EQ and Faders - also relative - can be placed in a remote view and applied to the group.

8.3 Snapshots

The Snapshot options of R1 also apply to all DS100 control elements. Make sure all parameters to be captured in a snapshot are represented by respective controls in a remote view - for example input or output processing, En-Scene sound object positions, En-Space sends or the room selector.

8.4 DS100 Scenes

The DS100 provides a local memory for Scenes. Scenes are organized numerically in a range from 0.01 to 999.99 and contain a user selectable set of parameters which may include En-Scene, En-Space and/or matrix settings.



Scenes are created in R1 («Device Scenes»). This is done by choosing the Positioning and Remote views that contain the desired DS100 control elements, and assigning a name and a scene number (n.mm). If a set of Scenes with an identical selection of controls but different settings needs to be created the «Duplicate» function can be used followed by an «Update» of the duplicated Scenes without having to select the relevant views for each Scene.

Object positions on a «Positioning view» can be stored with absolute coordinates or relative to a coordinate mapping of a «Positioning area» (e.g. the stage, see ⇒ Chapter 3.7 "Position control and coordinate mapping" on page 12). Using a coordinate mapping allows the Scene to be used in different venues with different stage sizes simply by creating the mapping with the respective number in the new project.



Scenes can be recalled using the «Recall» button or by stepping through the DS100 scene memory using «Previous» or «Next». All three functions can also be assigned to switches in a Remote view or triggered by OSC commands. A Scene recall by OSC is done on the basis of the scene number.

While having the DS100 connected, new scenes or updates to existing scenes are directly applied to both the DS100 and the R1 scene memory.

Scenes can also be created offline in R1 without the DS100 being present. When recalling a Scene offline R1 simulates its behavior. The «Previous» or «Next» commands are not available.

As soon as the DS100 is connected, the «Manage & synchronize» dialog allows the synchronization of Scenes between R1 and the DS100 in both directions.

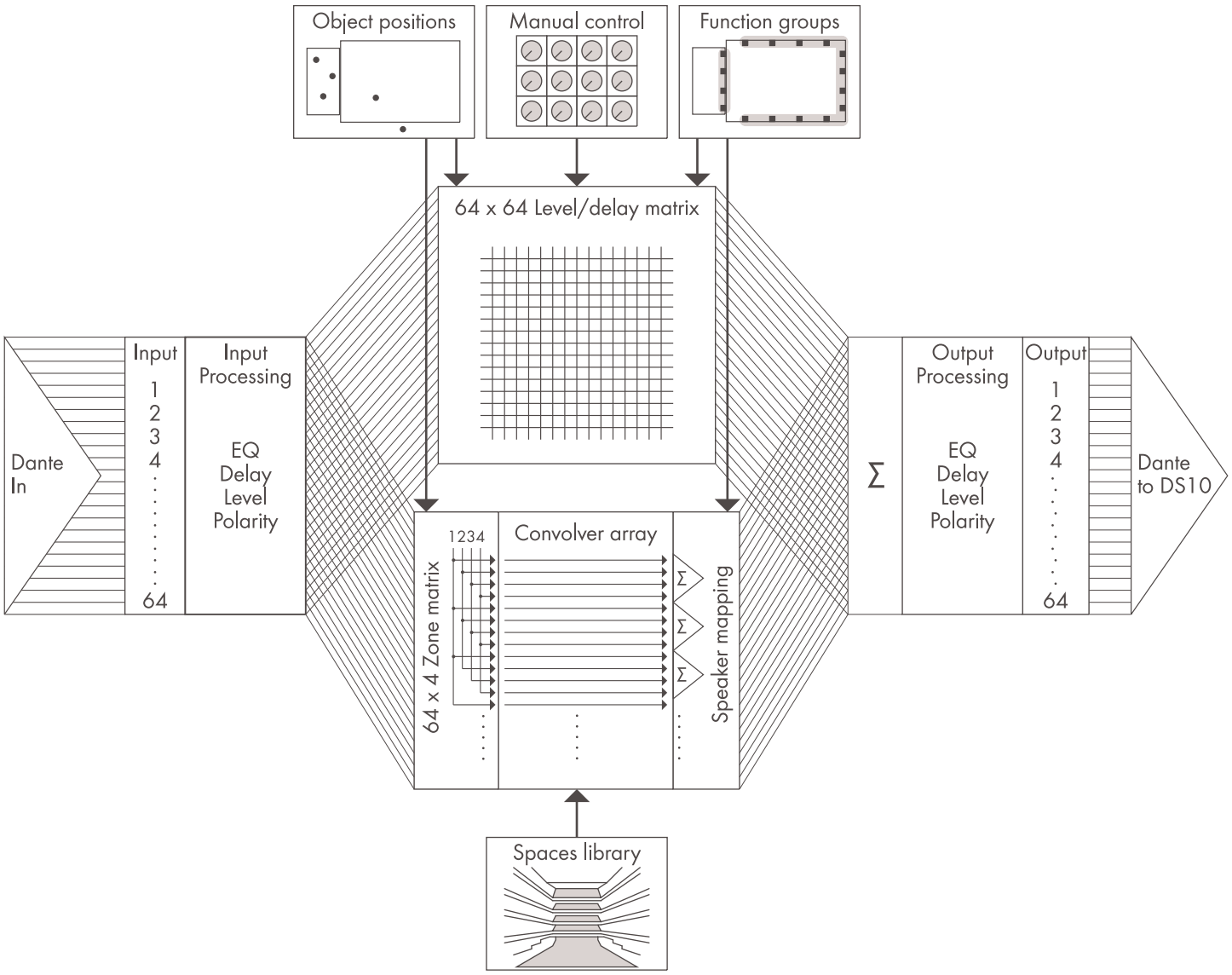


Within the Scene list, a yellow 'different values' icon (≠) is shown for all scenes where R1 data does not match the device data. Scenes available within the device only, can be identified by a light gray font being used for showing the scene name.



Having different scene contents and scene lists within the device and R1 might lead to unexpected behavior.

Note: Please note that a scene does not include the DS100 channel input modes (En-Scene/Matrix). It only contains parameters of the selected DS100 and no other settings of R1 or any connected devices.


Object positions
Manual control
Function groups
64 x 64 Level/delay matrix
Dante In
Input
1
2
3
4
64
Input Processing
EQ
Delay
Level
Polarity
1234
64 x 4 Zone matrix
Convolver array
Speaker mapping
Σ
Output Processing
EQ
Delay
Level
Polarity
Output
1
2
3
4
64
Dante to DS10
Spaces library

Mode	En-Scene operation			En-Space operation
	Level	Delay	Object sharing[1] with	
SUB array	mono, all objects –3 dB	according to Delay mode	/	●
Main	object positioning	according to Delay mode	Surround	● (7)[2]
Frontfill	object positioning	according to Delay mode	Surround	● (9)[2]
Surround	object positioning	according to Delay mode	Main, Frontfill	● (40)[2]
SUBs group	object positioning	according to Delay mode	/	● (7)[2]
Outfill/ Outfill embedded	mono, all objects –3 dB	according to Delay mode	/	●
Delay line/ Delay line embedded	object positioning	according to Delay mode	/	● (7)[2]
Mono out	mono, all objects –3 dB	/	/	●
Ceiling	/	/	/	● (7)[2]

[1] If present, these function groups will automatically merge to reproduce sound objects. The level and positioning algorithm will be applied to the combined group.

[2] Number of independent convolver responses available per function group.

501

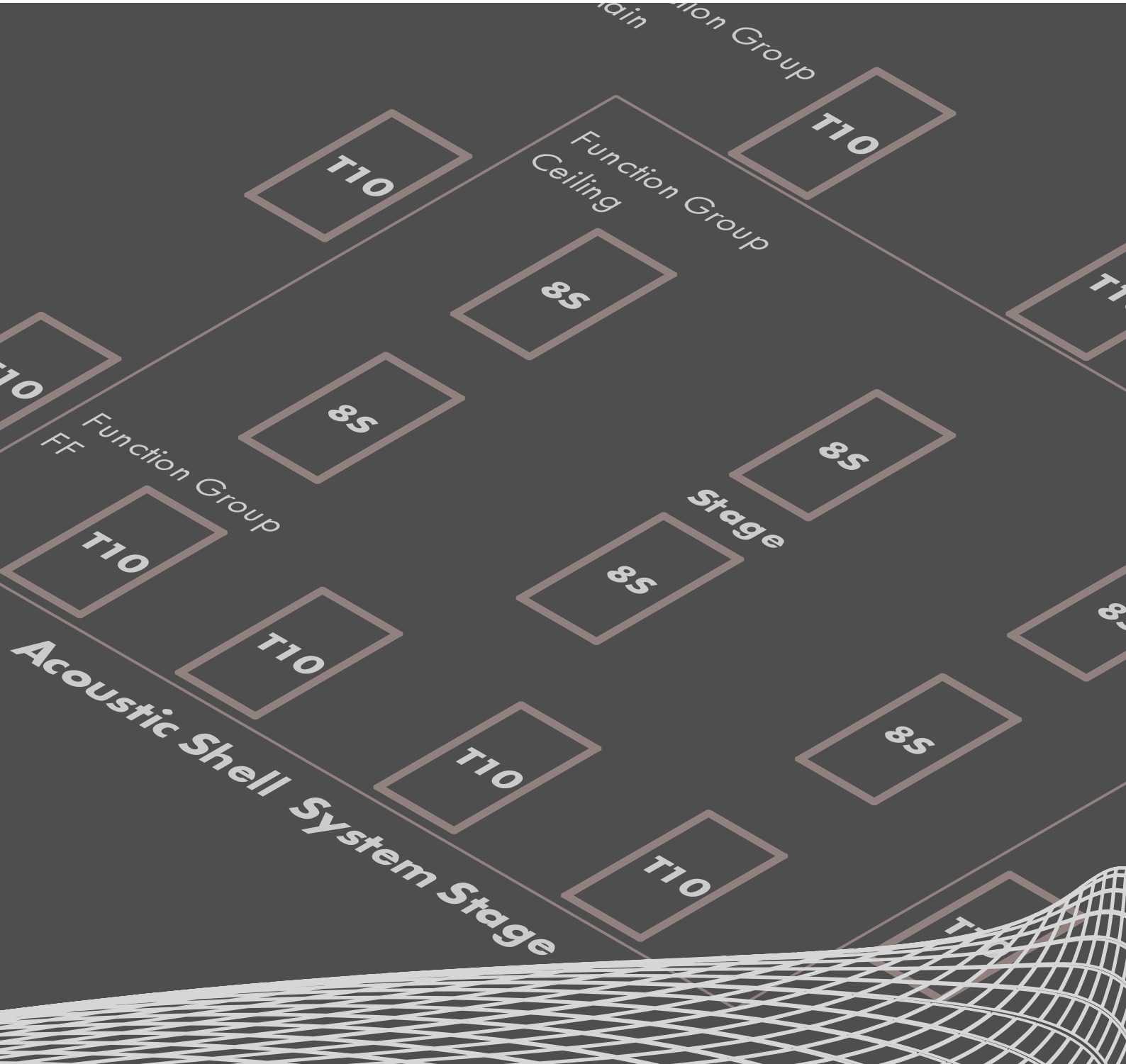
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502

TI 502
Acoustic shell
Stage acoustics using
En-Space
1.1 en



General information

TI 502 Acoustic shell
Stage acoustics using En-Space

Version: 1.1 en, 02/2021, D5502.EN .01

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Contents

1 Acoustic shell - Stage acoustics using En-Space **4**
1.1 Introduction 4
1.2 DS100 Signal Engine with En-Space 4
1.3 Loudspeaker setup and function groups 4
1.4 Input configuration 4
1.5 Microphone placement 4
1.6 Mixing in zones 4
1.6.1 Zone mixing at matrix inputs 5
1.6.2 Zone mixing at the mixing console 5
1.6.3 Zone mixing by En-Scene 5
2 Example applications **6**
2.1 Ravenna Festival 2019 - Pala de André 6
2.2 Example design En-Space only 7
2.3 Example design Acoustic shell plus En-Scene 8

1.1 Introduction

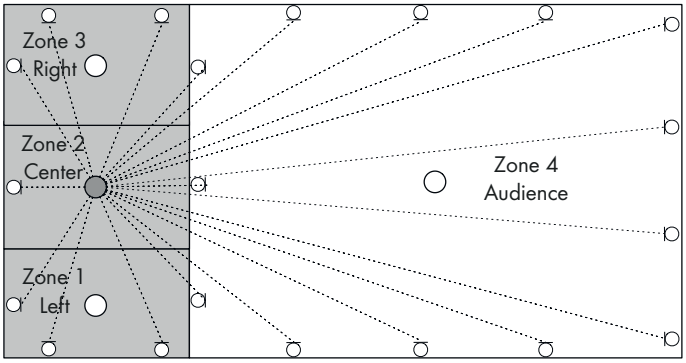
The acoustic properties of a concert hall are essential for all kinds of acoustic and orchestral music. The musical instruments require a certain amount and balance of early reflections and reverberance to amplify their performance ensuring a good experience for the audience as well as for the musicians.

Even the acoustics on stage need to fulfill certain criteria regarding level, early and late reverb to ensure a good audibility for all musicians as a prerequisite for a concerted performance.

If this not provided by the venue, as for example on open-air stages, multipurpose venues of all sizes or in dry spaces, a Soundscape system with En-Space can create the desired acoustic environment for the musicians on stage - an "acoustic shell".

1.2 DS100 Signal Engine with En-Space

The En-Space module in the DS100 is a 3D room emulation tool which comes with a set of HQ concert venues of various characteristics and sizes. Using the technology of boundary plane emulation, each room is sampled and reproduced with the highest accuracy and spatial resolution. For each room, the En-Space library provides reverb responses for 64 loudspeaker positions classified in different function groups. Each position with individual boundary responses for objects on stage and objects in front of the stage. For the Main system, there are individual responses for 4 zones in order to most accurately reproduce early reflections.



1.3 Loudspeaker setup and function groups

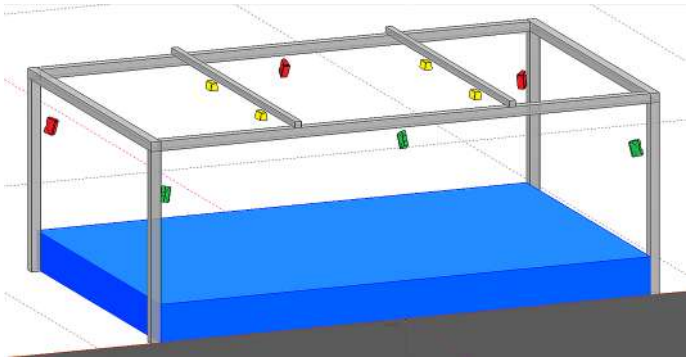
The loudspeakers should act as an acoustic shell and surround the orchestra on all sides as well as above in order to provide a homogeneous sound field. Distances to the musicians and microphones should be as consistent as possible to provide a uniform level for all orchestra members as well as to avoid feedback loops.

The function groups with the matching boundary responses for this application are Main, Frontfill, Surround and Ceiling.

As the Main function group provides specific responses for the three zones on stage, it should perform the main coverage work from the rear and the sides. To close the circle at the stage front, the Frontfill or Surround function group types may be used, the latter providing a more diffuse characteristic with less early reflections.

The Ceiling function group represents reflections from above the stage but also acts as a fill ensuring a smooth level distribution across the whole stage area.

To ensure a natural sound field with a high degree of decorrelation of the sources, all relevant locations on stage should be covered by multiple function groups. Make sure that in ArrayCalc the stage and its zones are represented by an "Early reflections" plane.



Loudspeaker placement above the stage:
Main (red), Ceiling (yellow) and Frontfills (green)

In the above example, speakers with higher vertical directivity (T10) are used on the edges while overhead mounted speakers provide wider dispersion (8S).

1.4 Input configuration

Please make sure that no En-Scene inputs are used to feed the acoustic shell. This would cause a direct sound component on the shell speakers. If En-Scene is used on the same DS100 to operate the audience sound system, disable the send to the function groups used for the shell for those inputs in R1 on the «Devices» ⇒ «DS100» ⇒ «Sound object routing» tab. The Ceiling function group is the only one that does not participate in En-Scene reproduction.

We strongly recommend using separate DS100 processors for En-Scene reproduction for the audience and the acoustic shell as this provides full freedom regarding function groups and En-Space room configuration.

1.5 Microphone placement

Close miking all instruments will offer maximum flexibility as this will achieve the highest reverb gain and will also provide individual channels for En-Scene operation.

When only the acoustic shell should be fed, overhead microphones provide a very good result. We recommend using at least three positions to achieve a good separation of the zones on stage. Overhead microphones require relatively little effort, however, individual instruments cannot be adjusted and the maximum reverb level may be limited.

1.6 Mixing in zones

The instruments on stage should be mixed into three zone sends depending on their position on stage: Left - Center - Right.
If ambient microphones above the audience are used, a fourth send can be added.

1.6.1 Zone mixing at matrix inputs

On the «Devices» ⇒ «Matrix inputs» ⇒ «En-Space» tab, each matrix input provides a control for the En-Space reverb level of the channel. It is supplemented by four additional controls for the sends to the zones Left, Center, Right and Audience.

1.6.2 Zone mixing at the mixing console

The mix to zones can be performed more conveniently at the mixing console using for example four AUX sends for each zone routed to four DS100 inputs in Matrix configuration, each feeding one zone.

In R1 on the «Devices» ⇒ «Matrix input» ⇒ «En-Space» tab, set the Level fader for the respective Zone to 0 dB.

1.6.3 Zone mixing by En-Scene

For all matrix inputs configured for En-Scene operation, the zone mixing is performed automatically according to the position of the object.

On the «Devices» ⇒ «Matrix inputs» ⇒ «En-Space»tab, only set the overall reverb level for the channel, the four zone levels will be controlled by En-Scene.

> **Note:** Please make sure En-Scene inputs are muted at the «Sound object routing» matrix for the function groups used for the acoustic shell.

2.1 Ravenna Festival 2019 - Pala de André

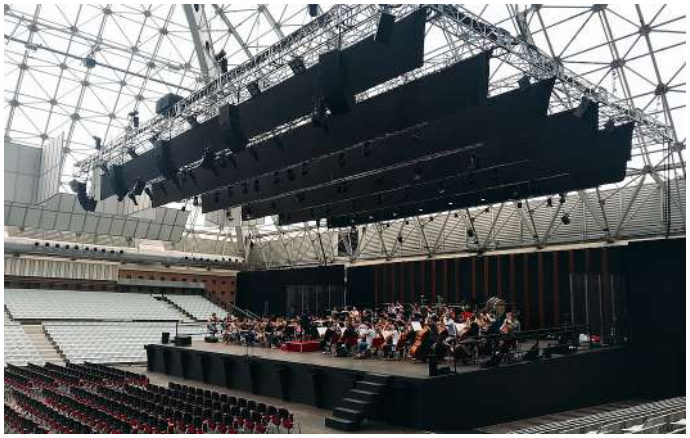
Pala de André is a large multipurpose venue mainly used for sports events and concerts. With its 3500 seats, the venue is well suited to host the main concerts of the Ravenna Festival. It has a partially transparent, approx. 20 m high pyramidal roof made out of tarpaulin.



The roof is not very soundproof therefore noise floor inside the building is relatively high. A main road passes next to the building. The reverberation time is approximately 2.4 seconds (T30, 160 Hz – 4 kHz), unoccupied.

Due to the building's symmetrical shape, there are strong sound reflections inside the venue. Diffusion elements and absorbers suspended from the ceiling have been installed to mitigate this problem. The orchestra's stage, which was especially built for the Ravenna Festival, is a temporary construction. In the past, a wooden acoustic reflector was installed above the orchestra to provide early reflections for the musicians on stage. However, due to weight reasons, the reflector option was dropped and the steep roof causes the sound to be reflected away from the orchestra.

Therefore En-Space was used as an "acoustic shell" to produce electroacoustic reverberation for the musicians on stage. In addition to the En-Scene/En-Space system for the audience, the instrument microphones were fed to a second DS100, which provided the signals for the loudspeaker shell around and above the musicians. Since the orchestra setup on stage is static, a manual matrix configuration was used to distribute the input signals to the En-Space zones. For this reason, the orchestra was divided into three groups.

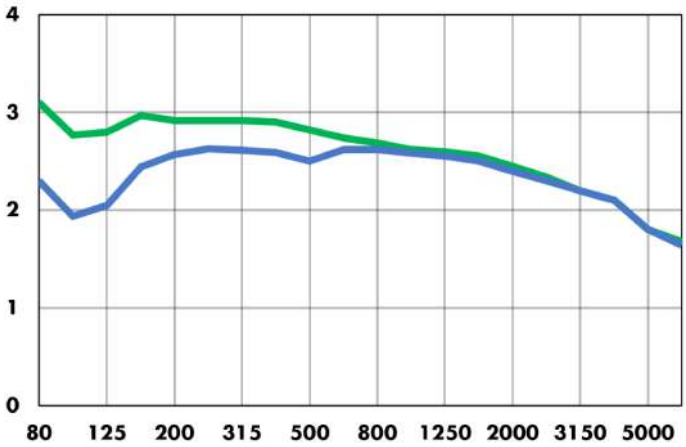


Stage with rig carrying main system and acoustic shell

The loudspeaker system design was realized using seven main speakers (T10, Main function group type), nine ceiling speakers (E8, Ceiling function group type) and four 360° speakers (Y10P, Surround function group type). With this setup, it was possible to provide all musicians with sound evenly without making individual speakers very loud. The main system was installed in a u-shape around the stage, in analogy to the IR measurement positions in the original En-Space venues. The main speakers in the shell design were responsible for the lateral envelopment of the musicians while the 360° speakers mounted on the front truss were used to increase the impression of space. The ceiling speakers helped to fill up the wide stage (approximately 20 meters) with reverberation.



Y10P loudspeakers of the acoustic shell and Y8/Y12 main system on the front truss

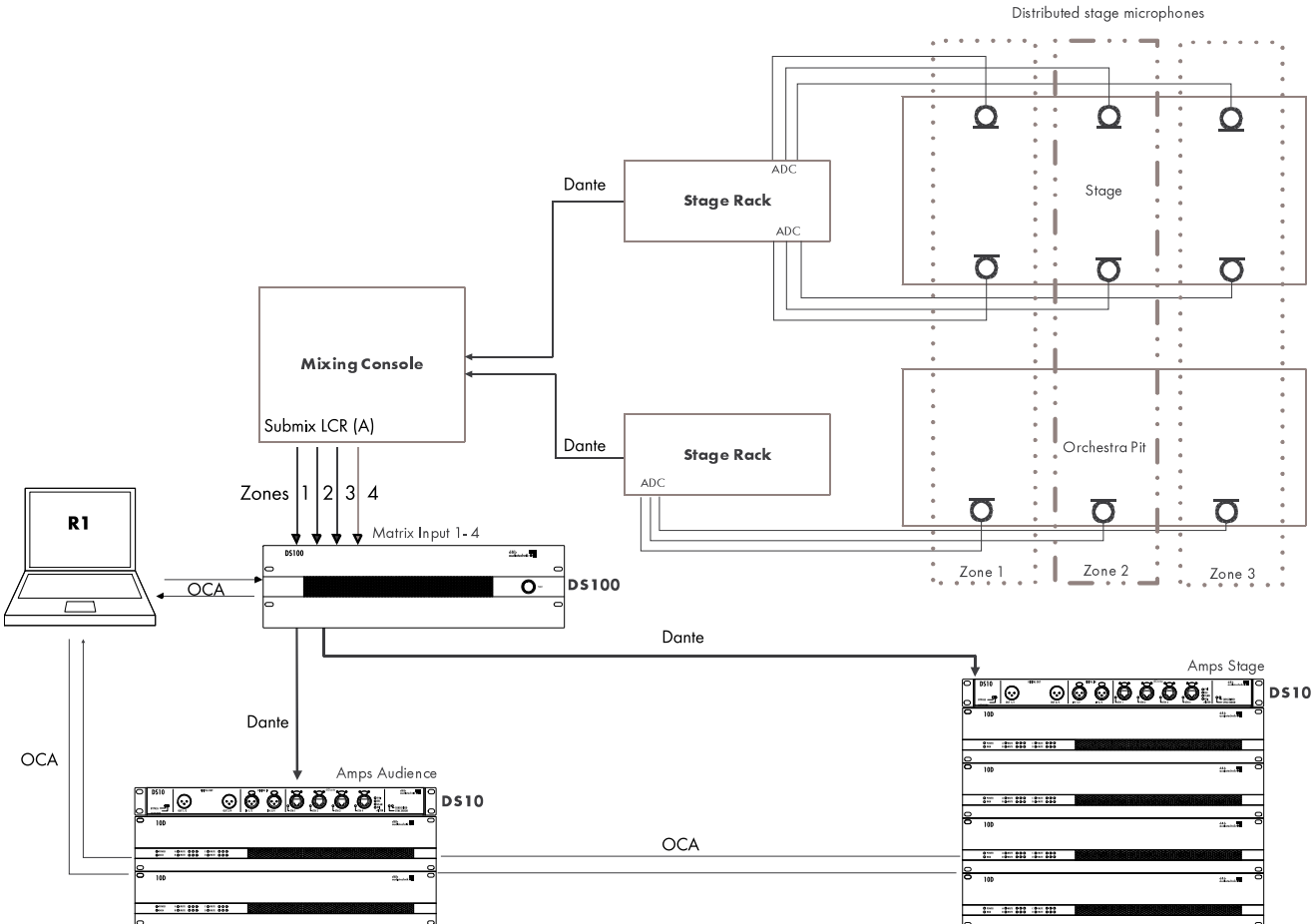


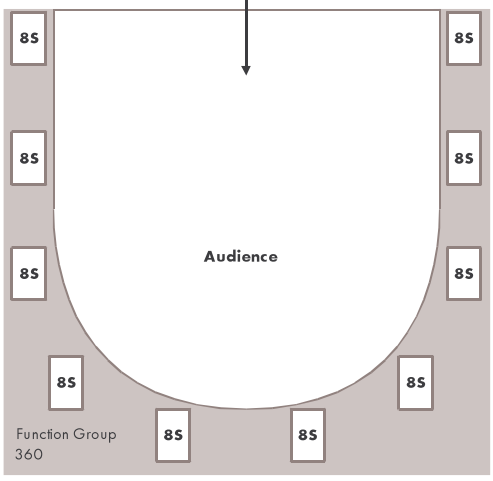
Reverberation time T30 (s) on stage with (green) and without (blue) acoustic shell

The system was controlled from FoH via R1 fed directly from the main mixing console. Both DS100 engines used the "Modern medium 2" room (Bing Concert Hall) in its original size (Predelay factor 1). The tuning effort was minimal and the system provided sufficient gain before feedback (approx. 10 dB).
As a result, applying the acoustic shell system at Pala de André both musicians and conductor perceived and enjoyed a significantly improved acoustic environment.

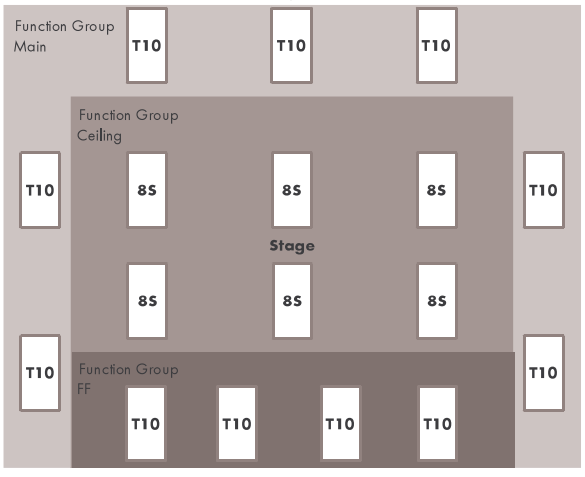
2.2 Example design En-Space only

This schematic shows a design that provides En-Space room emulation for the audience and the stage from a single DS100.





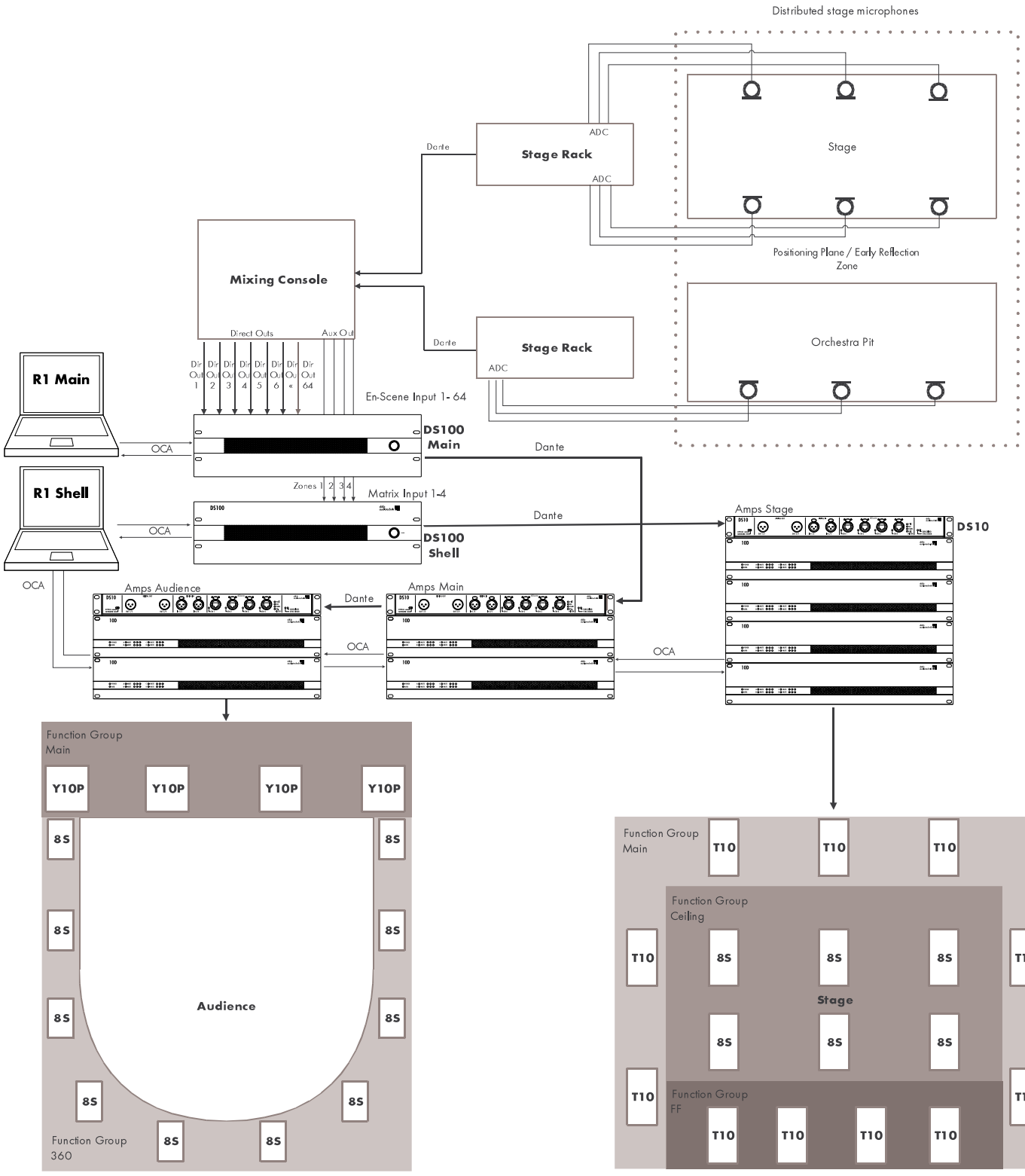
360 Soundscape System Audience



Acoustic Shell System Stage

2.3 Example design Acoustic shell plus En-Scene

This schematic shows a design that provides En-Scene plus En-Space room emulation for the audience and the acoustic shell for the stage using separate DS100 engines.



360 Soundscape System Audience

Acoustic Shell System Stage

502

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d&b En-Scene.

d&b En-Scene es el módulo de software de Soundscape para la gestión de la señal basada en objetos. Este módulo amplía la función de matriz básica del DS100 con una herramienta de posicionamiento basado en objetos para cada entrada. Además de la posibilidad de posicionar y mover de manera independiente hasta 64 objetos de sonido, se proporciona un control basado en algoritmo de hasta 64 altavoces que utiliza las posiciones de altavoz y su asignación a grupos de funciones. Cada posición de altavoz necesita una salida en la matriz. Las posiciones de altavoz que se utilizan para En-Scene pueden utilizarse con la matriz estática al mismo tiempo. Todo esto puede configurarse y controlarse a través de ArrayCalc y R1 en el flujo de trabajo d&b Workflow.

En-Scene puede controlarse también a través de OSC. Esta compatibilidad permite la integración del posicionamiento basado en objetos mediante los plug-ins adecuados en el software de audio y los controles del espectáculo o directamente en las mesas de mezclas. Si se instala En-Scene en el DS100, el usuario puede elegir libremente cuáles de los 64 canales de entrada de DS100 deben trabajar basándose en objetos y cuáles se utilizarán para las funciones de matriz estática. En un DS100 pueden utilizarse ambos modos de funcionamiento simultáneamente.

Especificaciones técnicas de En-Scene

Parámetros de posicionamiento

Posicionamiento	X & Y Respecto a una de las 4 áreas de posicionamiento a través de OSC

Propiedades acústicas de los objetos de sonido

Modos Delay:	
Off	posicionamiento basado en nivel
Estrecho	posicionamiento basado en nivel y delay con latencia minimizada
Completo	posicionamiento basado en nivel y delay alineados temporalmente con la posición absoluta del objeto



1/4 [Translate to Spanish:] Positioning view R1

Características del sistema de altavoces con d&b En-Scene

Salidas de En-Scene

En-Scene puede posicionar hasta 64 posibles salidas de altavoz. Cada posición de altavoz necesita una salida en la matriz. Las posiciones de altavoz que se utilizan para En-Scene (posicionamiento basado en objetos) pueden utilizarse con la matriz estática al mismo tiempo.

En-Scene proporciona modos diferentes para grupos de altavoces que optimizan los algoritmos para su respectiva tarea en el sistema:

Modos para grupos de altavoces:

Sistema principal	Sistema principal para posicionamiento
Frontfills	Frontfills a lo largo de la parte frontal del escenario con posicionamiento de objetos
Línea de delay	Línea de delay con posicionamiento de objetos
Surround	Posicionamiento de objetos para sonido envolvente
Grupo de SUBs	LF/subwoofers con posicionamiento de objetos
Arreglo de SUBs	LF/subarreglo sin posicionamiento de objetos
Outfills	Señal mono con delay de objeto adoptado en el sistema principal
AUX	Mono signal without delays

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En-Space Software.



< 8/9 >

Alighieri Theatre, Ravenna

d&b En-Space es el módulo de software de Soundscape que mejora o crea un entorno acústico, en interiores o al aire libre, basándose en la convolución de señales de audio en un gran número de respuestas de impulso capturadas en espacios de actuaciones célebres por su acústica, desde pequeñas salas para música de cámara a grandes salas de conciertos.

En-Space aplica la tecnología exclusiva de emulación de la zona de límites. La respuesta de la sala utiliza un conjunto de 144 respuestas de la zona de límites para 64 posiciones distribuidas a lo largo de la circunferencia y el borde del escenario del recinto. Las respuestas muestreadas se toman desde mediciones límite en las paredes, que es exactamente la ubicación desde la que las fuentes de altavoz de En-Space posteriormente las reproducirán.

permite que acceder a algunos de los espacios de actuaciones más célebres del mundo sea una realidad en situaciones de instalación permanente o móvil.



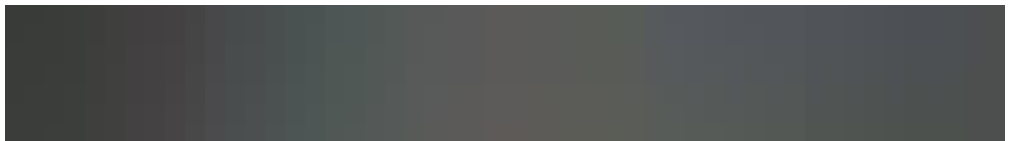
< 3/3 > R1 En-Space Inputs

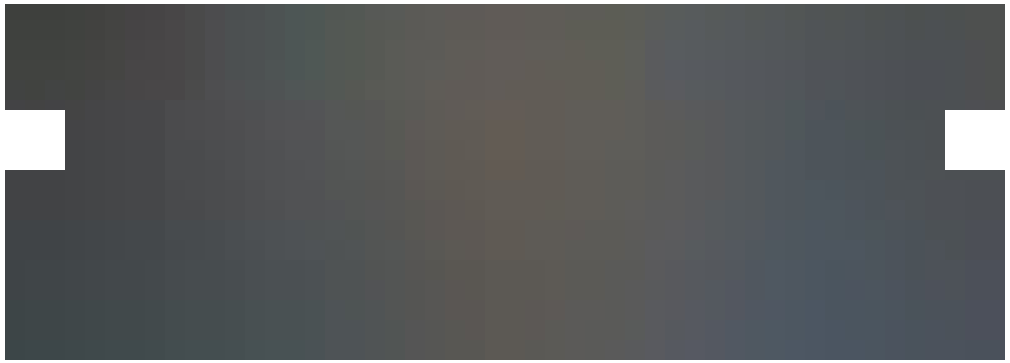
Especificaciones técnicas de En-Space:

Convolucionadores	hasta 144
Duración de respuesta al impulso	hasta 10 seg.

Salas:

Espacio 1:





© HeidelbergCement

< 1/2 > Concert Hall Blaibach

Descripción:

Moderna, pequeña
Sala de conciertos de Blaibach

Aforo	200 localidades
Tiempo de reverberación	2,0 seg.
T40	200 Hz – 2 kHz

Espacio 2:





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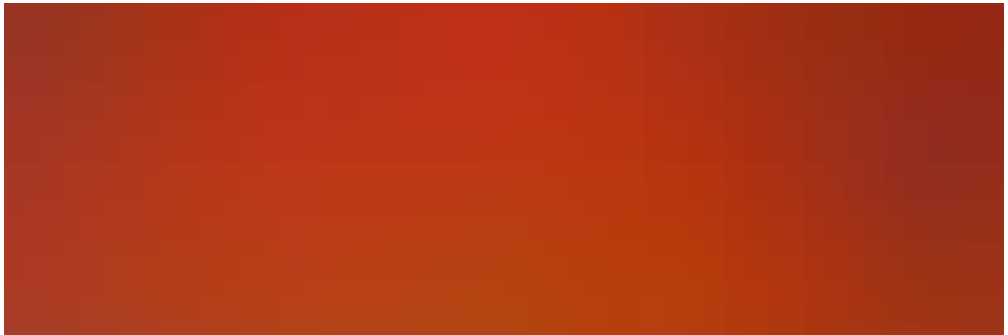
< 1/2 > Concert Hall, Vienna - Schubert Hall

Descripción:

Clásica, pequeña
Sala Schubert, Sala de conciertos de Viena-Wiener Konzerthaus

Aforo	350 localidades
Tiempo de reverberación	1,9 seg.
T40	200 Hz – 2 kHz

Espacio 3:





© Schwarzenberg Tourismus

< 1/2 > Angelika Kaufmann Hall, Congress Center Schwarzenberg

Descripción:

Moderna, mediana
Sala Angelika Kauffmann, Centro de Congresos de Schwarzenberg

Aforo	600 localidades
Tiempo de reverberación	1,7 seg.
T40	200 Hz – 2 kHz

Espacio 4:





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< 1/2 > Concert Hall, Vienna - Mozart Hall

Descripción::

Clásica, mediana
Sala Mozart, Sala de conciertos de Viena-Wiener Konzerthaus

Aforo	700 localidades
Tiempo de reverberación	2.1 seg.
T40	200 Hz – 2 kHz

Espacio 5:





© KKL Luzern, Switzerland

< 1/2 > Culture- and Congress Center, Luzern - Concert Hall

Descripción:

Moderna, grande
KKL Luzern

Aforo	1,900 localidades
Tiempo de reverberación	2,6 seg.
T40	200 Hz – 2 kHz

Espacio 6:





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< 1/2 > Concert Hall, Vienna - Great Hall

Descripción:

Clásica, grande
Sala grande (Großer Saal), Sala de conciertos de Viena-Wiener Konzerthaus

Aforo	1,850 localidades
Tiempo de reverberación	2.4 seg.
T40	200 Hz – 2 kHz

Espacio 7:





1/2 Bing Concert Hall, Stanford

Descripción:

Moderna, mediana
Bing Concert Hall, Stanford

Aforo	850 localidades
Tiempo de reverberación	2,2 seg.
T40	200 Hz – 2 kHz

Espacio 8:





1/2

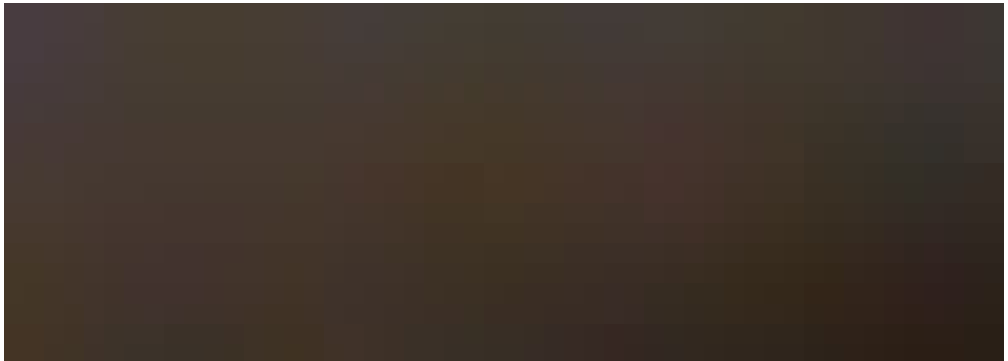
Alighieri Theatre, Ravenna

Descripción:

Teatro - pequeño
Teatro Alighieri, Ravenna

Aforo	830 localidades
Tiempo de reverberación	1,3 seg.
T40	200 Hz – 2 kHz

Espacio 9:





1/2 San Vitale Cathedral, Ravenna

Descripción:

Catedral
San Vitale, Ravenna

Aforo	-
Tiempo de reverberación	5,6 seg.
T40	200 Hz – 2 kHz

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amplificador 30D

Amplificador de cuatro canales específico para la instalación

- Potencia máxima de salida 4 x 1600 W en 4 Ω
- Todas las configuraciones actuales de altavoces de d&b excepto la serie SL
- 5 GPIO (General Purpose Input Output) libremente asignables + Fallo general

Número de artículo Z2770

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Procesamiento de señales digitales

Igualada	2 x PEQ de 16 bandas/muesca/estantería/asimétrico
Entradas analógicas y digitales de latencia	0,3 ms
Ajuste de retraso	0,3 ms - 10 s
Configuraciones	altavoces actuales de d&b (excepto la serie SL) y modo lineal
Interruptores de función	Circuitos específicos de altavoces de d&b

Controles e indicadores

FUERZA	Interruptor de alimentación de red (panel trasero)
ISP, GR, OVL A/B	Indicadores LED

Conectores

ENTRADA ANALÓGICA (A1 - A4)	Phoenix Euroblock macho de 3 pines
ENLACE ANALÓGICO (A1 - A4)	Phoenix Euroblock macho de 3 pines
ENTRADA DIGITAL (D1/2, D3/4)	Phoenix Euroblock macho de 3 pines, AES3
ENLACE DIGITAL (Salida)	Phoenix Euroblock macho de 3 pines
Muestreo digital AES/EBU	48 kHz/96 kHz

Tasa de muestreo	48/96 kHz / 2 canales/n
GPIO (entrada y salida de propósito general)	1 x Phoenix Euroblock macho de 6 pines
PODER	2 x RJ 45 paralelo
ETERNET	2 x RJ 45, 10/100 Mbit Ethernet
Conector de red	powerCON® –
FALLA	1 x Phoenix Euroblock macho de 3 pines

Datos (ajuste lineal con filtro subsónico)

Potencia máxima de salida por canal (THD+N < 0,5 %, todos los canales activados)	
CF = 6 dB a 4/8 ohmios	4 x 1000/800 W
CF = 12 dB a 4/8 ohmios	4 x 1600/800 W

Fuente de alimentación

Tipo	Fuente de alimentación de modo conmutado de rango universal con corrección activa del factor de potencia (PFC)
Tensión de red nominal	100 a 240 V, 50 – 60 Hz

Dimensiones y peso

Dimensiones (Al. x An. x Pr.)	2 UR x 19" x 435 mm/17,1"
Peso	10,6 kg/23,4 libras

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« Volver a Procesamiento y Matriz









Puente de red de audio DS10

Interfaz entre los amplificadores de d&b y el protocolo de transporte de audio Dante

- 16 canales de salida digital AES3
- 4 canales de entrada digital AES3
- Conmutador de red integrado de 5 puertos

Donde comprar

BYPASS/RED	Interruptor de palanca
SUSCRITO (Suscripción RX)	Indicador LED verde
ERROR DE SINCRONIZACIÓN	Indicador LED rojo
Cambiar modos de puerto/pérdida de audio	Indicadores LED

Entradas digitales

Sincronización	Convertidor de frecuencia de muestreo (SRC)

Salidas digitales

SALIDA DIGITAL	XLR macho de 3 pines AES3
Muestreo	48 / 96kHz
Sincronización	Red Dante

Red

Conectores	etherCON ® conmutador Ethernet de 5 puertos integrado 100/1000 Mbit

Temperatura de almacenamiento	–20 °C ... 70 °C / –4 °F ... 158 °F
Rango de temperatura	0 °C ... 40 °C / 32 °F ... 104 °F

Fuente de alimentación

Conector de red	powerCON® –
Proteccion al sobrevoltaje	Hasta 400 VCA
Tensión de red nominal	100 - 240 V, 50 - 60 Hz

Dimensiones y peso

Dimensiones (Al. x An. x Pr.)	1RU x 19“ x 232 mm
Peso	3,75 kg/8,26 libras

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DS100 **DS20**



R90

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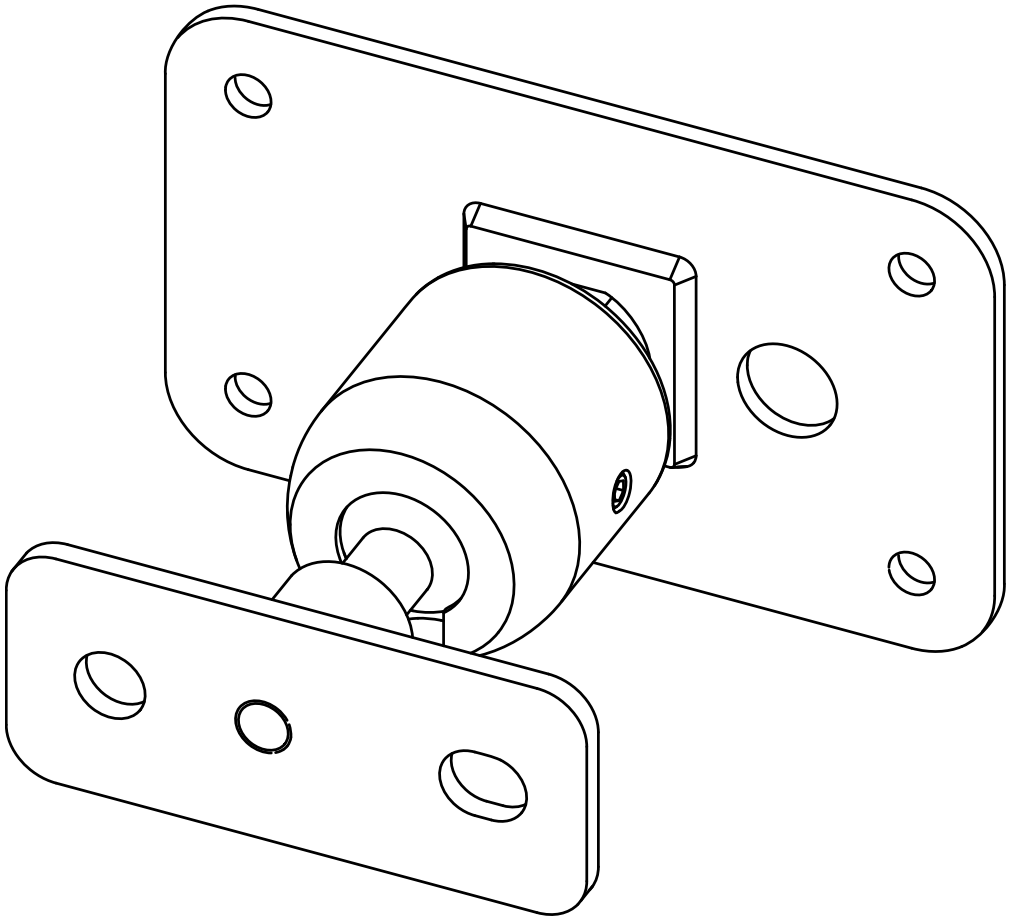
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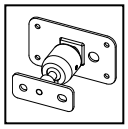
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Z5422 Montaje en pared S








Z5422 – Mounting instructions

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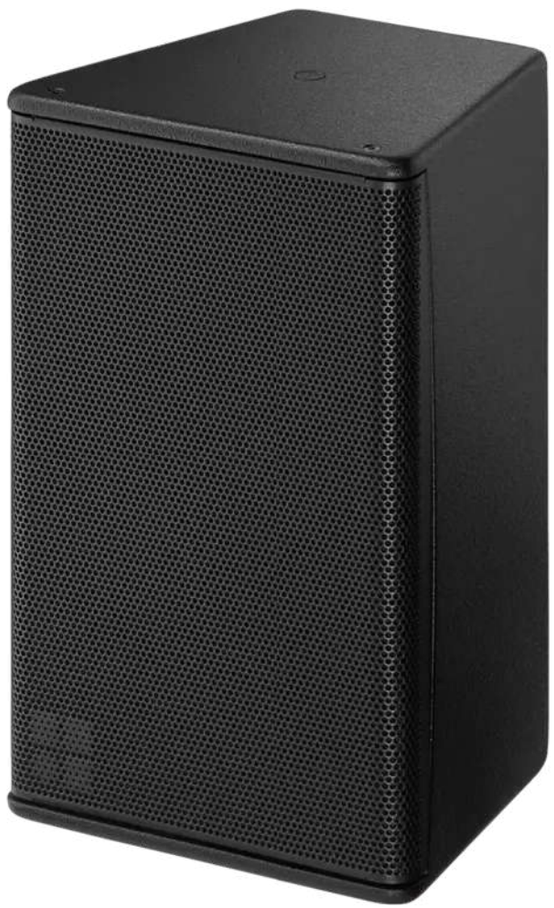
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altavoz 8S

Fuentes puntuales

Altavoz coaxial compacto de 2 vías específico para instalaciones

- Componentes 8"/1"
- Dispersión 100° cónica
- SPLmáx 127 dB
- Peso 7,4 kg / 16 libras

Número de artículo Z1617

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Datos de sistema

Respuesta de frecuencia (-5 dB estándar)	70 Hz - 20 kHz
Respuesta de frecuencia (modo CUT de -5 dB)	110 Hz - 20 kHz
máx. presión de sonido [1]	
con 10D	124dB
con D20/5D/30D	127dB
con D40/D80/40D	127dB
Gabinetes por canal de amplificador	3

Datos del altavoz

Configuración	Altavoz coaxial compacto de 2 vías

Capacidad de manejo de energía (RMS/pico 10 ms)	150/800W
Ángulo de dispersión nominal (hxv)	100° cónico
Componentes	Controlador de 8" con imán de neodimio Controlador de compresión de 1" Red cruzada pasiva montada coaxialmente
Conexiones	2 bloques de terminales de tornillo NL4

Dimensiones y peso

Dimensiones (Al. x An. x Pr.)	352 x 224 x 205 mm 13,9 x 8,8 x 8,1"
Peso	7,4 kg 16 libras

un patrón de dispersión simétrica en el plano horizontal y vertical, mientras que el gabinete se puede montar en cualquier posición. Con su respuesta de frecuencia de 70 Hz a 20 kHz, el 8S se puede usar como un sistema de rango completo y también se puede complementar con subwoofers de la serie xS. El recinto está construido de madera contrachapada marina con un acabado de pintura negra o blanca resistente a los impactos. El frente del gabinete del altavoz está protegido por una rejilla de metal rígido respaldada por una espuma acústicamente transparente y los paneles superior e inferior incorporan un inserto roscado M8. El panel trasero incorpora dos insertos roscados M8, dos conectores NL4 y un bloque de terminales de tornillo de dos polos.

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NGSM8T2

8-Port 10/100/1000M + 2 Gigabit SFP Ports Layer 2/3 Full Managed Switch

NGSM16T2

16-Port 10/100/1000M + 2 Gigabit SFP Ports Layer 2/3 Full Managed Switch

NGSM24T2 / NGSM24T2-AV

24-Port 10/100/1000M + 2 Gigabit SFP Ports Layer 2/3 Full Managed Switch: Front Port/Rear Port

More information:
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Product Specification

Introduction

NGSM8T2/NGSM16T2/NGSM24T2 is 8/16/24-port 10/100/1000Base-T + 2 Gigabit SFP L2 Full Managed Switch that is designed for small or medium network environment to strengthen its network connection. The switch equipped with internal AC to DC power module as system power. The added 2 SFP slots support 100M and Gigabit Fiber transceiver for long distance transmission. The Switch embedded L2 Full Managed software engine to support SNMP, 802.1Q VLAN, QoS, RSTP, LACP, LLDP, 802.1X and Access Management… etc. The 4K VLAN, 8 physical queues, 5 groups link aggregation groups are superb functionality for all applications. With these features, the switch is ideal for the SMB network environment to strengthen its network connection.

2 Gigabit SFP Open Slots

The switch supports 2 additional SFP open slots to uplink to servers, storage, or other switching devices for long reach applications. The 2 SFP slots support legacy 100M SFP transceiver. If the 100M fiber infrastructure is constructed and 100M bandwidth is enough, the 100M SFP transceiver can be an optional choice for the legacy 100M network environment.

Full Layer 2/3 Management Features

The switch includes full Layer 2/3 Management features. The software set includes up to 4K 802.1Q VLAN and advanced Protocol VLAN, Private VLAN, MVR… advanced VLAN features. There are 8 physical queues Quality of Service, IPv4/v6 Multicast filtering, Rapid Spanning Tree protocol to avoid network loop, Multiple Spanning Tree Protocol to integrate VLAN and Spanning Tree, LACP, LLDP; sFlow, port mirroring, cable diagnostic and advanced Network Security features. It also provides telnet CLI for management and SNMP, Web GUI for in band Management.

Advanced Security

The switch supports advanced security features. For switch management, there are secured HTTPS and SSH, the login password, configuration packets are secured. The port binding allows to bind specific MAC address to the port, only the MAC has the privilege to access the network. The 802.1X port based Access Control, every user should be authorized first when they want to access the network. AAA is the short of the Authentication, Authorization and Accounting with RADIUS, TACAS+ server. Layer 2/3 Access Control List allows user to define the access privilege based on IP, MAC, Port number… etc.

Optical DDM

DDM is Digital-Diagnostic-Monitoring which provides a user with critical information concerning the status of the transmitted and received signals. This approach allows for better fault isolation and error detection. Digital diagnostic monitor the SFP module's temperature, Supply Voltage, and TX, RX, Sensitivity, etc. With these collected digitized values, the system administrator can trigger an alarm and simply record the data into a register.

Virtual Stacking

NGSM8T2/NGSM16T2/NGSM24T2 supports Virtual Stacking function, which allows multiple eten switches of different models to stack virtually and managed as a single one switch.

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Specifications

Interface		NGSM8T2	NGSM16T2	NGSM24T2
10 Base-T/100 Base-TX/1000 Base-T RJ45 Ports		8	16	24
100/1000Base-SX/LX SFP Port		2		
System Performance				
Packet Buffer		4Mbits		
MAC Address Table Size		8K		
Switching Capacity		20Gbps	32Gbps	52Gbps
Forwarding Rate		14.88Mpps	26.8Mpps	38.7Mpps
L2 Features				
Auto-negotiation, Auto MDI/MDIX		•		
Flow Control (duplex)	802.3x (Full)	•		
	Back-Pressure (Half)	•		
Spanning Tree	IEEE 802.1D (STP)	•		
	IEEE 802.1w (RSTP)	•		
	IEEE 802.1s (MSTP)	•		
VLAN	VLAN Group	4K		
	Tagged Based	•		
	Port-based	•		
	Voice VLAN	Voice VLAN with OUI		
Link Aggregation	IEEE 802.3ad with LACP	•		
	Static Trunk	•		
	Max. LACP Link Aggregation Group	5		
	Max. Port per Link Aggregation Group	8		
IGMP Snooping	IGMP Snooping v1/v2/v3	Supports 1024 IGMP groups		
	IGMP Static Multicast Addresses	Supports 1024 static multicast addresses		
	IPv6 MLD Snooping	Supports 1024 MLD groups		
	MLD Static Multicast Addresses	Supports 1024 static multicast addresses		
	Querier, Immediate Leave	•		
Storm Control (Broadcast/Multi-cast/Un-known Unicast)		•		
Jumbo Frame Support		9.6KB		
Static Routing		Up to 32 Static Routes		
QoS Features				
Number of priority queue		8 queues/port		
Rate Limiting	Ingress	Yes, 1KBps/1pps		
	Egress	Yes, 1KBps/1pps		
DiffServ (RFC2474 Remarking)		•		
Scheduling (WRR, Strict, Hybrid)		•		
CoS	IEEE 802.1p	•		
	IP ToS precedence, IP DSCP	•		
Security				
Management System User Name/Password Protection		•		
User Privilege		Set user privilege up to 15 Level		
Port Security (MAC-based)		•		
IEEE 802.1x Port-based Access Control		•		
ACL (L2/L3/L4)		•		
IP Source Guard		•		
RADIUS (Authentication, Authorization, Accounting)		•		
TACACS+		•		
HTTP & SSL (Secure Web)		•		
SSH v2.0 (Secured Telnet Session)		•		
MAC/IP Filter		•		
Management				
Command Line Interface (CLI)		•		
Web Based Management		•		
Telnet		•		
Access Management Filtering		SNMP/WEB/SSH/TELNET		
Firmware Upgrade via HTTP		•		
Dual Firmware Images		•		
Configuration Download/Upload		•		
SNMP (v1/v2c/v3)		•		
RMON (1,2,3,&9 groups)		•		
DHCP (Client/Relay/Option82/Snooping/Server)		•		
System Event/Error Log		•		
NTP/LLDP		•		

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Cable Diagnostics	•
IPv6 Configuration	•
Port Mirroring	•
Virtual Stacking	•
Physical Characteristics	
Dimension (H*W*D)	230 × 124 × 44 mm
LED	Power, Link/Act, SFP
Weight	1.1 KG
Power Requirement	
Power Input	100~240VAC, Internal Power Supply
Max. Power Consumption	10W
Environment Limits	
Operating Temperature	0~45°C
Storage Temperature	-20~80°C
Operating Humidity	5~90% (non-condensing)
Certifications	
EMI	FCC Part 15 Subpart B Class B, CE EN 55032 Class B
EMS	IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-4-11
Safety	IEC-60950-1
Standard	
IEEE 802.3 – 10Base-T	•
IEEE 802.3u - 100Base-TX	•
IEEE 802.3ab - 1000Base-T	•
IEEE 802.3z - 1000 Base-SX/LX	•
IEEE 802.3az - Energy Efficient Ethernet (EEE)	•
IEEE 802.3x - Flow Control	•
IEEE 802.1Q - VLAN	•
IEEE802.1v - Protocol VLAN	•
IEEE 802.1p - Class of Service	•
IEEE 802.1D - Spanning Tree	•
IEEE 802.1w - Rapid Spanning Tree	•
IEEE 802.1s - Multiple Spanning Tree	•
IEEE 802.3ad - Link Aggregation Control Protocol (LACP)	•
IEEE 802.1AB - LLDP (Link Layer Discovery Protocol)	•
IEEE 802.1X - Access Control	•

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Niveo Professional NGS-Series Enterprise Switches

L2/3 Managed Gigabit Switch (Rear and front port) 10-18-26-50-52 Ports
L2/3 Managed Gigabit PoE+ Switch (Rear and front port) 10-18-26-50-52 Ports

More information:
WWW.NIVEOPROFESSIONAL.COM
INFO@NIVEOPROFESSIONAL.COM

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Introduction

The Niveo Professional NGS-Series Enterprise Switches offer a wide range of configurations, designed for Audio/Video, Security and Broadcast integrations.

True Enterprise Grade

The switches are designed and build with chipsets for industrial and enterprise application, made by US Chip manufacturers.

- Higher performance, extreme stability
- Capable of running in toucher conditions
- Extreme endurance

Convenient Design for AV and IT

The NGS-Series offers switches in both front and rear port configurations for easy patching and clean looking finish in AV-racks:



2 IT-Design Switches



1 AV-Design Switches

Supporting Video-Over-IP Solutions: Small to extremely large

The Niveo Managed NGSM(E)-Switches are optimized for Video-over-IP, providing multicasting with IPGM Querier and Fast Leave to support very crisp switching of channels. The switches support any mainstream Video-over-IP Solution:

With the advanced Niveo Professional Virtual Stacking feature, the switches **support Video-over-IP designs up to 2300-endpoints**!

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QSC Q-SYS Audio/Video Qualified

The entire managed switch series has been qualified for QSC Q-SYS audio and video and is currently the only vendor that can make that claim.

Supporting Audio Distribution

All managed Niveo switches support most common industry standard Audio and Video distribution Protocols:

Unparalleled PoE-features: No more locked up PoE devices!

No more locked up Control Panels, frozen IP Cams or non responding microphones!
No more customer complaints and Physical resets!
Many PoE-powered devices are prone to lock ups due to power fluctuations. With the Niveo Professional NGSM-PoE switches, this is no longer an issue. The switches prevent most freezes and automatically corrects them:

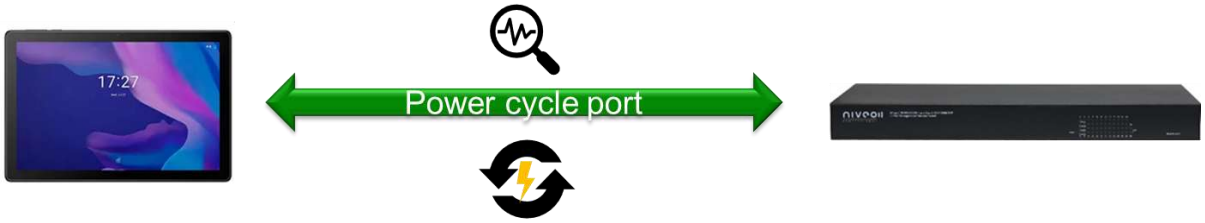
Line Filtering

The unique Niveo line-filtering in the Managed PoE+ switches remove most power fluctuation and prevents most lock ups of PoE-devices.



Self-Healing PoE

The Niveo Self-Healing PoE feature automatically monitors any device it gives PoE power to and, in case of a locked-up device, it will automatically power cycle that particular port, correcting over 99% of these issues.



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Power Scheduling
Installing a network with energy saving targets? The Niveo Professional Switches help out with the Power Scheduling feature. The easy to use scheduler let you make the switch turn down PoE on ‘idle’ hours and fire it up when needed.

Reduced Fan Noise

The Niveo Professional Switches actively manages the fan speeds. Reducing the speed when possible to limit the noise to a minimum and rev it up when needed.

Check the cables

Experiencing unexpected loss of Data or Power or you do not trust existing category cable?
The Niveo VeriPhy feature can check the integrity of connected Category cables. The switches can check through the resistance on the cable the likelihood of compromised capacity.

Unparalleled Quality and Warranty

All Niveo NGS-switches are designed and constructed with true enterprise grade chipsets and components, to assure extreme durability and reliability needed for corporate networks. With **MTTF measures well over 100.000 hours**, these switches are designed to compete with Cisco Catalyst, Extreme Networks and Juniper switches and to stand out by great length against retail grade products from companies like Cisco SMB, Netgear, TP-Link and Luxul.

The manufacturing and quality standards go above and beyond its peers to assure the highest quality products. Every switch that leaves the factory goes through a rigid 72 hour stress testing, to make sure all functions meet the requirements.

Niveo Professional is proud to offer 10 Years limited warranty upon registration of the unit.

Ultimate Installer Support

All Niveo Switches come included with lifetime access to software updates and support, without any additional costs for care packs.
The Niveo Switches come the ultimate installer support, making networking design and configuration a light breeze.

Support team is proud to assist integrators with:

- Network design advise
- Configuration assistance
- Creating configuration files
- Trouble shooting

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Enterprise Switches Selection Table

Switches:	Gigabit Ports	Gigabit Fiber Ports	10Gb Fiber Ports (SFP+)	Virtual Stacking	PoE+	PoE+ Budget	Management	Supports Dante AES67 Cobranet	Supports Q-sys	Rear-ports	Supports HD-Over-IP	Warranty in years
NGSE8H	8				•	130W						10
NGSE8H-AV	8				•	130W				•		10
NGSE8Hx	8				•	235W						10
NGSE8Hx-AV	8				•	235W				•		10
NGSM8T2	8	2					L2/3	•	•		•	10
NGSME8H	8	2			•	130W	L2/3	•	•		•	10
NGSME8H-AV	8	2			•	130W	L2/3	•	•	•	•	10
NGSME8Hx	8	2			•	235W	L2/3	•	•		•	10
NGSME8Hx-AV	8	2			•	235W	L2/3	•	•	•	•	10
NGS16TP	16							•				10
NGSM16T2	16	2					L2/3	•	•		•	10
NGSME16T2H	16	2			•	250W	L2/3	•	•		•	10
NGSME16T2H-AV	16	2			•	250W	L2/3	•	•	•	•	10
NGS24TP	24							•				10
NGS24TP-AV	24							•		•		10
NGSM24T2	24						L2/3	•	•		•	10
NGSM24T2-AV	24						L2/3	•	•	•	•	10
NGSME24T2H	24			•	•	500W	L2/3	•	•		•	10
NGSME24T2H-AV	24			•	•	500W	L2/3	•	•	•	•	10
NGSM48T2	48		2	•			L2/3	•	•		•	10
NGSME48T2H	48		2	•	•	500W	L2/3	•	•		•	10
NGSM48T4	48		4	•	•		L2/3	•	•		•	10
NGSME48T4H	48		4	•	•	520W	L2/3	•	•		•	10
NGSME48T4Hx	48		4	•	•	1200W	L2/3	•	•		•	10
NGSME48T4H-RD	48		4	•	•	2*520W	L2/3	•	•		•	10
NGSME48T4Hx-RD	48		4	•	•	2*1200W	L2/3	•	•		•	10

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Specifications Managed PoE+ Switches

Interface	NGSME8H(-AV)	NGSME8x(-AV)	NGSME16T2H(-AV)	NGSME24T2H(-AV)	NGSME48T2H	NGSME48T4H	NGSME48T4Hx	NGSME48T4H-RP	NGSME48T4Hx-RP
10 Base-T/100 Base-TX/1000 Base-T RJ45 Ports	8	8	8	24	48	48	48	48	48
100/1000Base-SX/LX SFP Port	2	2	2	2					
10G SFP+ Slot					2	4	4	4	4
Rear-port version available (-AV)	•	•	•	•					
Console Port for CLI Management	1								
System Performance									
Packet Buffer	4Mb				32Mb				
MAC Address Table Size	8K				32K				
Switching Capacity (Gbps)	20		36	52	136	176			
Forwarding Rate (Mbps)	14.88		26.8	38.7	74.4	130.94			
PoE Features									
IEEE 802.3 af/at	•	•	•	•	•	•	•	•	•
Number of PSE Ports	8	8	16	24	24	48	48	48	48
Max. PoE Budget (W)	130	235	250	500	500	520	1200	520	1200
Dual Power (Redundant)								•	•
External/Internal Power	Internal Power								
Power Feeding Detecting Capability on PD	•	•	•	•	•	•	•	•	•
PD Alive Check	•	•	•	•	•	•	•	•	•
PD Classification	•	•	•	•	•	•	•	•	•
Power Management (per-port)									
Enable/Disable PoE	•	•	•	•	•	•	•	•	•
Priority Setting Per	•	•	•	•	•	•	•	•	•
Power Level Setting	•	•	•	•	•	•	•	•	•
Overloading Protection	•	•	•	•	•	•	•	•	•
L2 Features									
Auto-negotiation	•	•	•	•	•	•	•	•	•
Auto MDI/MDIX	•	•	•	•	•	•	•	•	•
Flow Control (duplex)									
802.3x (Full)	•	•	•	•	•	•	•	•	•
Back-Pressure (Half)	•	•	•	•	•	•	•	•	•
Spanning Tree									
IEEE 802.1D (STP)	•	•	•	•	•	•	•	•	•
IEEE 802.1w (RSTP)	•	•	•	•	•	•	•	•	•
IEEE 802.1s (MSTP)	•	•	•	•	•	•	•	•	•
VLAN									
VLAN Group	4K	4K	4K	4K	4K	4K	4K	4K	4K
Tagged Based	•	•	•	•	•	•	•	•	•
Port-based	•	•	•	•	•	•	•	•	•
Voice VLAN	Voice VLAN with OUI								
Private Vlan	•	•	•	•	•	•	•	•	•
MVR	•	•	•	•	•	•	•	•	•
Mac-Based Vlan	•	•	•	•	•	•	•	•	•
Protocol-Based Van	•	•	•	•	•	•	•	•	•
Link Aggregation									
IEEE 802.3ad with LACP	•	•	•	•	•	•	•	•	•
Static Trunk	•	•	•	•	•	•	•	•	•
Max. LACP Link Aggregation Group	5	5	5	13	26	26	26	26	26
Max. Port per Link Aggregation Group	8	8	8	16	8	8	8	8	8
IGMP Snooping									
IGMP Snooping v1/v2/v3	Supports 1024 IGMP groups								
IGMP Static Multicast Addresses	Supports 1024 static multicast addresses								
IPv6 MLD Snooping	Supports 1024 MLD groups								

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MLD Static Multicast Addresses	Supports 1024 static multicast addresses								
Querier, Immediate Leave	•	•	•	•	•	•	•	•	•
Storm Control (Broadcast/Multi-cast/Un-known Unicast)	•	•	•	•	•	•	•	•	•
Jumbo Frame Support	9.6KB								
QOS Features									
Number of priority queue	8								
Rate Limiting Ingress 1KBps/1pps	•	•	•	•	•	•	•	•	•
Rate Limiting Egress 1KBps/1pps	•	•	•	•	•	•	•	•	•
CoS									
IEEE 802.1p	•	•	•	•	•	•	•	•	•
IP ToS precedence, IP DSCP	•	•	•	•	•	•	•	•	•
DiffServ (RFC2474 Remarking)	•	•	•	•	•	•	•	•	•
Scheduling (WRR, Strict, Hybrid)	•	•	•	•	•	•	•	•	•
MANAGEMENT									
Command Line Interface (CLI)	•	•	•	•	•	•	•	•	•
Web Based Management	•	•	•	•	•	•	•	•	•
Telnet	•	•	•	•	•	•	•	•	•
Access Management Filtering									
SNMP	•	•	•	•	•	•	•	•	•
WEB	•	•	•	•	•	•	•	•	•
SSH	•	•	•	•	•	•	•	•	•
TELNET	•	•	•	•	•	•	•	•	•
Firmware Upgrade via HTTP	•	•	•	•	•	•	•	•	•
Dual Firmware Images	•	•	•	•	•	•	•	•	•
Configuration Download/Upload	•	•	•	•	•	•	•	•	•
SNMP (v1/v2c/v3)	•	•	•	•	•	•	•	•	•
RMON (1,2,3,&9 groups)	•	•	•	•	•	•	•	•	•
DHCP (Client/Relay/Option82/Snooping)	•	•	•	•	•	•	•	•	•
System Event/Error Log	•	•	•	•	•	•	•	•	•
NTP/LLDP	•	•	•	•	•	•	•	•	•
Cable Diagnostics	•	•	•	•	•	•	•	•	•
IPv6 Configuration	•	•	•	•	•	•	•	•	•
Port Mirroring One to One/Many to One	•	•	•	•	•	•	•	•	•
sFlow	•	•	•	•	•	•	•	•	•
Remote Ping	•	•	•	•	•	•	•	•	•
UPnP	•	•	•	•	•	•	•	•	•
EEE Configuration	•	•	•	•	•	•	•	•	•
Mechanical									
Power Input	100-240VAC								
Dimension (H*W*D)	44*330*220 mm			44*440*331 mm					
LED	Power, PoE, Link/Act, SFP								
Operating Temperature	0~45°C			0~40°C					
Storage Temperature	-20~80°C			-20~90°C					
Operating Humidity	5~90% (non-condensing)								
Weight	2.2Kg		2.5Kg	4.7Kg	5.37Kg				
Certification	CE, FCC								
Standard									
IEEE 802.3 – 10Base-T	•	•	•	•	•	•	•	•	•
IEEE 802.3u - 100Base-TX	•	•	•	•	•	•	•	•	•
IEEE 802.3ab - 1000Base-T	•	•	•	•	•	•	•	•	•
IEEE 802.3z - 1000 Base-SX/LX	•	•	•	•	•	•	•	•	•
IEEE 802.3af - Power over Ethernet (PoE)	•	•	•	•	•	•	•	•	•
IEEE 802.3at - Power over Ethernet (PoE+)	•	•	•	•	•	•	•	•	•
IEEE 802.3az - Energy Efficient Ethernet (EEE)	•	•	•	•	•	•	•	•	•
IEEE 802.3x - Flow Control	•	•	•	•	•	•	•	•	•
IEEE 802.1Q - VLAN	•	•	•	•	•	•	•	•	•
IEEE802.1v - Protocol VLAN	•	•	•	•	•	•	•	•	•
IEEE 802.1p - Class of Service	•	•	•	•	•	•	•	•	•
IEEE 802.1D - Spanning Tree	•	•	•	•	•	•	•	•	•
IEEE 802.1w - Rapid Spanning Tree	•	•	•	•	•	•	•	•	•

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IEEE 802.1s - Multiple Spanning Tree	•	•	•	•	•	•	•	•	•
IEEE 802.3ad - Link Aggregation Control Protocol (LACP)	•	•	•	•	•	•	•	•	•
IEEE 802.1AB - LLDP (Link Layer Discovery Protocol)	•	•	•	•	•	•	•	•	•
IEEE 802.1X - Access Control	•	•	•	•	•	•	•	•	•
Security									
Management System User Name/Password Protection	•	•	•	•	•	•	•	•	•
User Privilege	Set user privilege up to 15 Level								
MAC Based Authentication	•	•	•	•	•	•	•	•	•
WEB Based Authentication	•	•	•	•	•	•	•	•	•
IEEE 802.1x Port-based Access Control	•	•	•	•	•	•	•	•	•
ACL (L2/L3/L4)	•	•	•	•	•	•	•	•	•
IP Source Guard	•	•	•	•	•	•	•	•	•
RADIUS (Authentication, Authorization, Accounting)	•	•	•	•	•	•	•	•	•
TACACS+	•	•	•	•	•	•	•	•	•
HTTP & SSL (Secure Web)	•	•	•	•	•	•	•	•	•
SSH v2.0 (Secured Telnet Session)	•	•	•	•	•	•	•	•	•
Virtual Stacking					•	•	•	•	•
MAC/IP Filter	•	•	•	•	•	•	•	•	•

Specifications Managed Switches

Interface	**NGSM8T2**	**NGSM16T2(-AV)**	**NGSM24T2(-AV)**	**NGSM48T2**	**NGSME48T4**
10 Base-T/100 Base-TX/1000 Base-T RJ45 Ports	8	16	24	48	48
100/1000Base-SX/LX SFP Port	2	2	2		
10G SFP+ Slot				2	4
Rear-port version available (-AV)	•	•	•	•	
Console Port for CLI Management	1				
System Performance					
Packet Buffer	4Mb			32Mb	
MAC Address Table Size	8K			32K	
Switching Capacity (Gbps)	20	36	52	136	176
Forwarding Rate (Mbps)	14.88	26.8	38.7	74.4	130.94
L2 Features					
Auto-negotiation	•	•	•	•	•
Auto MDI/MDIX	•	•	•	•	•
Flow Control (duplex)					
802.3x (Full)	•	•	•	•	•
Back-Pressure (Half)	•	•	•	•	•
Spanning Tree					
IEEE 802.1D (STP)	•	•	•	•	•
IEEE 802.1w (RSTP)	•	•	•	•	•
IEEE 802.1s (MSTP)	•	•	•	•	•
VLAN					
VLAN Group	4K	4K	4K	4K	4K
Tagged Based	•	•	•	•	•
Port-based	•	•	•	•	•
Voice VLAN	Voice VLAN with OUI				
Private Vlan	•	•	•	•	•
MVR	•	•	•	•	•
Mac-Based Vlan	•	•	•	•	•
Protocol-Based Van	•	•	•	•	•

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Link Aggregation					
IEEE 802.3ad with LACP	•	•	•	•	•
Static Trunk	•	•	•	•	•
Max. LACP Link Aggregation Group	5	5	13	26	26
Max. Port per Link Aggregation Group	8	8	16	8	8
IGMP Snooping					
IGMP Snooping v1/v2/v3	Supports 1024 IGMP groups				
IGMP Static Multicast Addresses	Supports 1024 static multicast addresses				
IPv6 MLD Snooping	Supports 1024 MLD groups				
MLD Static Multicast Addresses	Supports 1024 static multicast addresses				
Querier, Immediate Leave	•	•	•	•	•
Storm Control (Broadcast/Multi-cast/Un-known Unicast)	•	•	•	•	•
Jumbo Frame Support	9.6KB				
QOS Features					
Number of priority queue	8				
Rate Limiting Ingress 1KBps/1pps	•	•	•	•	•
Rate Limiting Egress 1KBps/1pps	•	•	•	•	•
CoS					
IEEE 802.1p	•	•	•	•	•
IP ToS precedence, IP DSCP	•	•	•	•	•
DiffServ (RFC2474 Remarking)	•	•	•	•	•
Scheduling (WRR, Strict, Hybrid)	•	•	•	•	•
MANAGEMENT					
Command Line Interface (CLI)	•	•	•	•	•
Web Based Management	•	•	•	•	•
Telnet	•	•	•	•	•
Access Management Filtering					
SNMP	•	•	•	•	•
WEB	•	•	•	•	•
SSH	•	•	•	•	•
TELNET	•	•	•	•	•
Firmware Upgrade via HTTP	•	•	•	•	•
Dual Firmware Images	•	•	•	•	•
Configuration Download/Upload	•	•	•	•	•
SNMP (v1/v2c/v3)	•	•	•	•	•
RMON (1,2,3,&9 groups)	•	•	•	•	•
DHCP (Client/Relay/Option82/Snooping)	•	•	•	•	•
System Event/Error Log	•	•	•	•	•
NTP/LLDP	•	•	•	•	•
Cable Diagnostics	•	•	•	•	•
IPv6 Configuration	•	•	•	•	•
Port Mirroring One to One/Many to One	•	•	•	•	•
sFlow	•	•	•	•	•
Remote Ping	•	•	•	•	•
UPnP	•	•	•	•	•
EEE Configuration	•	•	•	•	•
Mechanical					
Power Input	100-240VAC				
Dimension (H*W*D)	44*330*220 mm		44*440*331 mm		
LED	Power, PoE, Link/Act, SFP				
Operating Temperature	0~45°C		0~40°C		
Storage Temperature	-20~80°C		-20~90°C		
Operating Humidity	5~90% (non-condensing)				
Weight	2.2Kg	2.5Kg	4.7Kg	5.37Kg	
Certification	CE, FCC c-UL-us				
Standard					
IEEE 802.3 – 10Base-T	•	•	•	•	•
IEEE 802.3u - 100Base-TX	•	•	•	•	•
IEEE 802.3ab - 1000Base-T	•	•	•	•	•
IEEE 802.3z - 1000 Base-SX/LX	•	•	•	•	•
IEEE 802.3af - Power over Ethernet (PoE)	•	•	•	•	•

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IEEE 802.3at - Power over Ethernet (PoE+)	•	•	•	•	•
IEEE 802.3az - Energy Efficient Ethernet (EEE)	•	•	•	•	•
IEEE 802.3x - Flow Control	•	•	•	•	•
IEEE 802.1Q - VLAN	•	•	•	•	•
IEEE802.1v - Protocol VLAN	•	•	•	•	•
IEEE 802.1p - Class of Service	•	•	•	•	•
IEEE 802.1D - Spanning Tree	•	•	•	•	•
IEEE 802.1w - Rapid Spanning Tree	•	•	•	•	•
IEEE 802.1s - Multiple Spanning Tree	•	•	•	•	•
IEEE 802.3ad - Link Aggregation Control Protocol (LACP)	•	•	•	•	•
IEEE 802.1AB - LLDP (Link Layer Discovery Protocol)	•	•	•	•	•
IEEE 802.1X - Access Control	•	•	•	•	•
Security					
Management System User Name/Password Protection	•	•	•	•	•
User Privilege	Set user privilege up to 15 Level				
MAC Based Authentication	•	•	•	•	•
WEB Based Authentication	•	•	•	•	•
IEEE 802.1x Port-based Access Control	•	•	•	•	•
ACL (L2/L3/L4)	•	•	•	•	•
IP Source Guard	•	•	•	•	•
RADIUS (Authentication, Authorization, Accounting)	•	•	•	•	•
TACACS+	•	•	•	•	•
HTTP & SSL (Secure Web)	•	•	•	•	•
SSH v2.0 (Secured Telnet Session)	•	•	•	•	•
Virtual Stacking			•	•	•
MAC/IP Filter	•	•	•	•	•

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builds Network and Power products for AV and Security integrators, designed by and supported with AV and Security integrators.
Our aim is to make Network and Power as good as it can be with the application in mind. Selected proven technologies, combined with a range of proprietary feature, built with the best available chipsets and components make these products stand out against all its peers. The unparalleled support make it a class on its own!

Niveo Professional offers products in the following categories:

Enterprise Switches





Enterprise Routers



Fiber Accessories





UPS Systems



PDU's



Wireless Networks



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PROFESSIONAL TWISTED FLEXIBLE LOUDSPEAKER CABLES O.F.C.

CAVI SPEAKER

Linea professionale di cavi flessibili per diffusori acustici, proposta in una vasta gamma di configurazioni per garantire le migliori prestazioni e per adattarsi alle esigenze di ogni connessione con impianti audio dalle applicazioni standard a quelle più critiche. La guaina esterna in PVC e la composizione dei conduttori interni ultra- flessibili, garantiscono sempre un perfetto avvolgimento. Le applicazioni tipiche sono: amplificazione, sistemi di altoparlanti distribuiti e l'installazione in studi di registrazione.

SPEAKER CABLES

Professional line of flexible loudspeaker cables, feature a wide range of configurations to guarantee the best achievable performance from standard applications to the most critical ones. Suitable for amplifier to loudspeakers connections. The PVC overall jacket and the composition of the ultra-flexible inner conductors always grant a perfect winding. The typical applications are: sound reinforcement, distributed speaker systems and studio installation.

CABLE PARA COLUMNAS

Línea profesional de cables flexibles para columnas, dotada con numerosas configuraciones para garantizar el mejor rendimiento posible. Desde las aplicaciones estándar hasta las más críticas. Aptos para conexiones de amplificador a columnas. La cubierta exterior en PVC y la composición de los conductores internos muy flexibles hacen de manera que estos cables garanticen siempre un perfecto rebobinado. Las aplicaciones típicas son: reforzado del sonido, sistemas de distribución de columnas e instalación en estudios.





HPC610BK – HPC620BK – HPC624BK – HPC626BK

• Cavo ultra-flessibile a 2 conduttori twistati per diffusori acustici passivi, proposto in diverse configurazioni di sezione.

• Ultra-flexible 2 twisted conductors speaker cable for passive loudspeakers, proposed in different configurations.

• Cable flexible de 2 conductores trenzados para columnas. Propuesto en diferentes configuraciones de sección.

TECHNICAL SPECIFICATIONS

HPC610BK - HPC620BK - HPC624BK - HPC626BK

Application fields	Passive speaker connections, sound reinforcement, studio installation, live
Conductors	Bare copper – 0,25 mm
Lay up	two conductors twisted in short concentric layers

Jacket	Ultra - Flexible PVC – 60 Shore
Colour	Black (other colours on request)
Working Temperature range	-20°C/+70°C
Minimum bending radius	10 x overall diameter

Additional notes	Construction & Controls complying with CEI 20-20 regulations
Packaging	100 m standard carton / wooden reel 300 m wooden reel HPC610BKR300 HPC620BKR300 HPC624BKR300

Order Code	Conductors	Conductors Insulation	Jacket O.D.	Electrical Resistance @ 20°C	Electrical Capacitance @ 1 KHz	Weight Kg / Km
HPC610BK	16 AWG = 30 x 0.25 mm (1.50 mm²)	Ø 2,70 mm	Ø 7,00 mm	12 Ohm/Km (conductor)	115 pF/m (conductor/ conductor)	136
HPC620BK	14 AWG = 48 x 0.25 mm (2.50 mm²)	Ø 3,20 mm	Ø 8,40 mm	7,40hm/Km (conductor)	131 pF/m (conductor/ conductor)	161
HPC624BK	12 AWG = 80 x 0.25 mm (4 mm²)	Ø 4,00 mm	Ø 11,00 mm	4,5 Ohm/Km (conductor)	116 pF/m (conductor/ conductor)	198
HPC626BK	10 AWG = 120 x 0.25 mm (4 mm²)	Ø 4,90 mm	Ø 12,00 mm	2,95 Ohm/Km (conductor)	125 pF/m (conductor/ conductor)	260





HPC640BK - HPC644

• Cavo ultra-flessibile a 4 conduttori twistati per diffusori acustici passivi, proposto in diverse configurazioni di sezione.

• Ultra-flexible 4 twisted conductors speaker cable for passive loudspeakers, proposed in different configurations.

• Cable flexible de 4 conductores trenzados para columnas. Propuesto en diferentes configuraciones de sección.

TECHNICAL SPECIFICATIONS

HPC640BK - HPC644

Application fields	Passive speaker connections, sound reinforcement, live
Conductors	Bare copper – 0,25 mm
Lay up	Four conductors twisted in short concentric layers

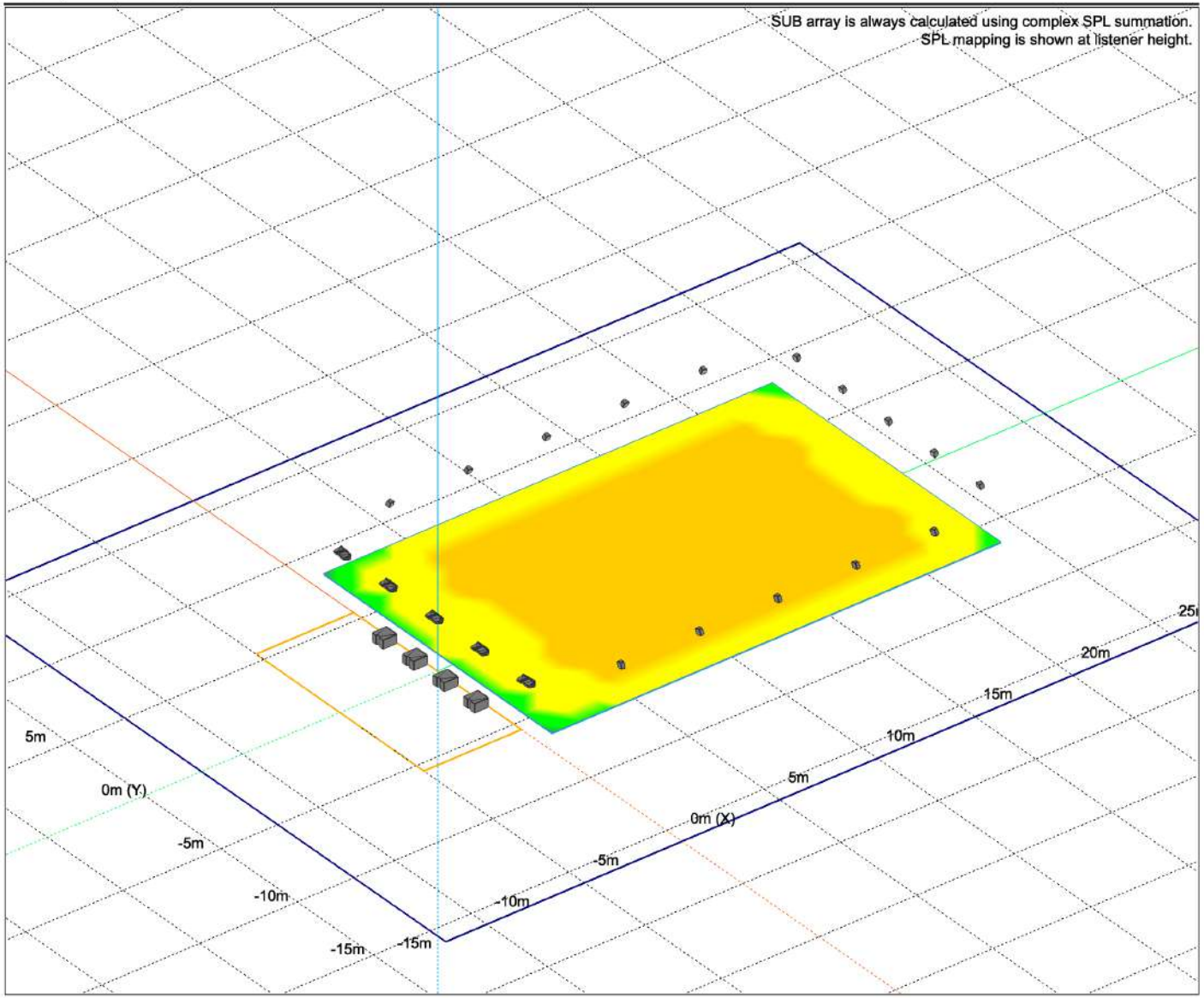
Jacket	Ultra - Flexible PVC – 60 Shore
Colour	Black (other colours on request)
Working Temperature range	-20°C/+70°C
Minimum bending radius	10 x overall diameter

Additional notes	Construction & Controls complying with CEI 20-20 regulations
Packaging	100 m standard carton / wooden reel 300 m wooden reel HPC640BKR300 (other lengths on request)

Order Code	Conductors	Conductors Insulation	Jacket O.D.	Electrical Resistance @ 20°C	Electrical Capacitance @ 1 KHz	Weight Kg / Km
HPC640BK	14 AWG = 48 x 0.25 mm (2.50 mm2)	Ø 3,45 mm	Ø 11,00 mm	7,4 Ohm/Km (conductor)	85 pF/m (conductor/ conductor)	204
HPC644	12 AWG = 53 x 0.25 mm (4.00 mm2)	Ø 4,20 mm	Ø 13,20 mm	4,5 Ohm/Km (conductor)	120 pF/m (conductor/ conductor)	345

3D plot

Live (Pink A, 0.0 dBu)



SPL calculation

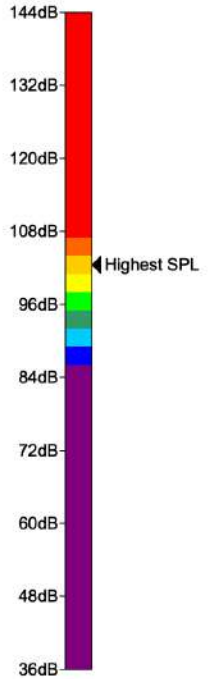
Resolution:	High (1m)
Highest SPL:	102.5 dB

Simulated signal

Level:	0.0 dBu
Signal:	Pink noise A
Show interferences:	Off

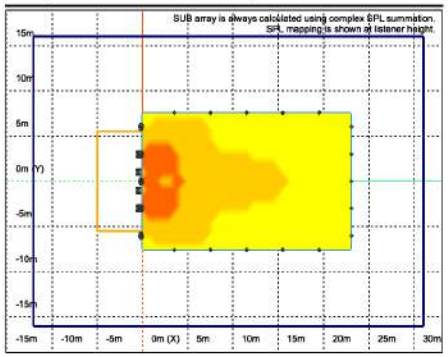
Air absorption

On/Off:	On
Temperature:	20 °C
Humidity:	60.0 %



3D plot

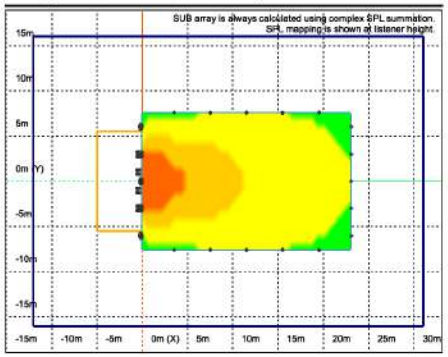
A (80 Hz, 1/3 oct., 0.0 dBu)



SPL calculation	
Resolution:	High (1m)
Highest SPL:	120.0 dB

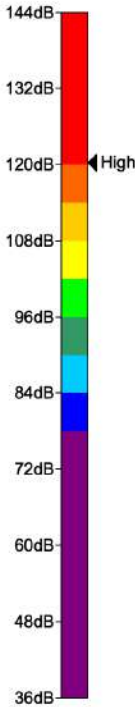
Air absorption	On
Temperature:	20 °C
Humidity:	60.0 %

B (40 Hz, 1/3 oct., 0.0 dBu)

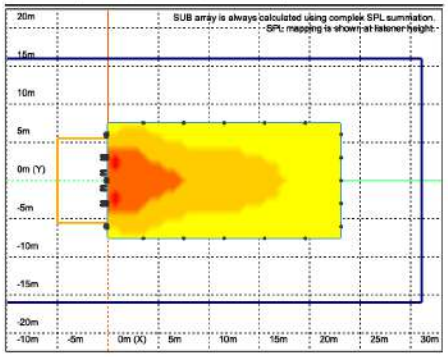


SPL calculation	
Resolution:	High (1m)
Highest SPL:	118.1 dB

Air absorption	On
Temperature:	20 °C
Humidity:	60.0 %



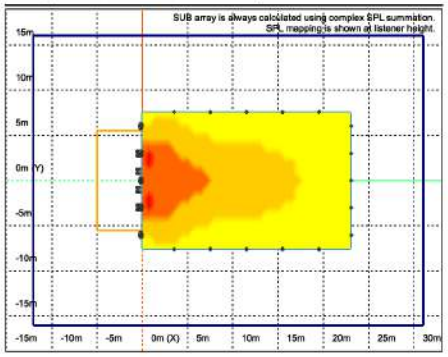
Live (63 Hz, 1/3 oct., 0.0 dBu)



SPL calculation	
Resolution:	High (1m)
Highest SPL:	120.3 dB

Air absorption	On
Temperature:	20 °C
Humidity:	60.0 %

C (63 Hz, 1/3 oct., 0.0 dBu)



SPL calculation	
Resolution:	High (1m)
Highest SPL:	120.3 dB

Air absorption	On
Temperature:	20 °C
Humidity:	60.0 %

YAMAHA

Make Waves



DIGITAL MIXING CONSOLE

DM7 SERIES

GO ABOVE AND **BEYOND**

More than 30 years since the release of Yamaha's first digital mixer, the DMP7, the landscape of professional audio has seen a steady progression in technological advancements and innovations that have impacted mixing and recording styles significantly. DM7 series mixing consoles represent a sizable step forward in this evolution of form, functionality, and flexibility with their intuitive UI, compact design, and comprehensive suite of powerful features that allow them to outperform other mixers in their class in an impressive range of audio environments. From broadcasting, streaming, and music production, to live hybrid events and concert performances, the advanced capabilities of the DM7 series set a new standard in operability and workflow while simultaneously staying true to Yamaha's sonic tradition of "natural sound". As the times continue to change, your DM7 will keep you ahead of the curve with a user experience that's a cut above anything in its class, and sonic performance well beyond the expectations of audiences and engineers alike.



LIVE SOUND



PAC/THEATER



HOW



STADIUM/ARENA



CORPORATE EVENT



STREAMING



BROADCAST



PRODUCTION



Throughout Yamaha's long history of developing state-of-the-art digital mixers, there is one concept that we have consistently adhered too— the ideal starting point for sound creation is a totally natural, or "transparent" sound. This concept of natural sound is exemplified by the DM7 series high-end input section, producing a high-fidelity, uncolored sound that serves as the engineer's canvass to color, shape, and recreate, using the DM7 series built-in plug-ins, EQ, and dynamics. All in all, the DM7 series has evolved in every aspect to help engineers create their ideal sound.



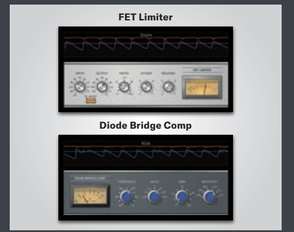
OFF TO A SOLID START



It all starts with your sound, and if the input section of your mixer is compromised or lacking in any way, your mix isn't likely to meet your, or your audience's expectations. To meet our own very strict standard of sound quality, the inputs of Yamaha consoles and I/Os are meticulously designed and constructed. We take every aspect of the initial input stage into consideration in order to achieve our signature "transparent sound", from the individual components, power supply, and grounding, to the circuit layout, and mechanical structure of the inputs.
In addition, the DM7 series supports sample rates up to 96kHz for superior, high-resolution sound quality.

POWERFUL CHANNEL STRIP

The DM7 series Channel Strip is equipped with numerous advanced functions for convenient, intuitive sound creation. In addition to the Channel EQ inherited from the RIVAGE PM, the newly added FET Limiter and Diode Bridge Compressor offer expanded dynamics control, while the new "History" function combines with the existing comps and gates for easier and more precise dynamics adjustment than ever. The "Mix Balance" parameter is yet another new function that allows you to easily mix the original sound with a compressed sound and apply parallel compression. In addition, the order of EQ and Dynamics 2 can now be changed to suit your creative preferences, further expanding the range of sound creation.
The DM7 series also features the Dan Dugan automatic mixer with up to 64 channels in the channel strip as a standard feature. In cooperation with Dan Dugan Sound Design, a US company renowned for its proprietary algorithm-based automatic microphone mixer, the automatic mixer function can be conveniently accessed from the channel strip without the need for EQ RACK resources.
The input meters now also include a histogram display to help adjust HA levels.



EXTENSIVE PLUG-INS AND NEW EFFECTS

The DM7 series is equipped with an extensive suite of plug-ins to accommodate a wide range of applications, including VCM models of the renowned Portico 5033 equalizer and Portico 5043 compressor/limiter— both developed through close cooperation with Rupert Neve Designs. Also included are Yamaha's original plug-ins, such as the DaNSe dynamic noise suppressor, and the Dynamic EQ, which are well known among audio engineers.
The FX RACK features high-quality multi-effects processors with forty-three types of high-grade effects including the newly equipped REV HD and REV R3 to inspire a broader depth of creative sound reproduction.



Yamaha digital mixers are known for offering a high level of operability that professional users demand, staying up to date with the constantly evolving state of the art. The M7CL offers analog-like operability; the CL series, a more refined operation with a brushed-up version of Centralogic; and the DM7 series puts an emphasis on intuitive operation and high efficiency via multiple displays and an advanced Selected Channel View.



OPERABILITY

ADVANCED GUI FOR INTUITIVE CONTROL



The DM7 series advanced graphical user interface is an audio engineer's delight, offering the ultimate in touch operation convenience that gives users instant intuitive access to the console's impressive depth of functionality.
The Selected Channel View, which provides a list of operational information on the channel strip, retains the best aspects of previous GUI's but with an updated operation format that requires fewer steps and less time than ever before.
The same familiar touch screen operation that you use in your daily life is now available on your mixer.

CONFIGURE THE IDEAL DM7 SYSTEM TO SUIT YOUR WORKFLOW



The DM7 series ranges from the full-featured DM7-EX, which combines a large 2-bay DM7 with a DM7 control panel equipped with a physical controller, to the rack-mountable DM7 Compact, which is powerful and flexible despite its compact size. With four DM7 systems in total, bundled software, controllable devices, and more, this versatile lineup makes it easier than ever to find the perfect fit for your mixing style, environment, and workflow.

UTILITY SCREEN FOR STREAMLINED PERFORMANCE



The DM7 series multiple touch screens provide fast, intuitive operability that will make your mixing experience easier and more enjoyable. The large 12-inch screen provides convenient operation that will allow you to focus more energy on sound creation, and includes the Selected Channel View which ensures all the relevant mixing information you need is close at hand. The newly added 7-inch Utility screen allows you to monitor essentials such as Scene List, User Defined Keys, and Meter at all times for quick and efficient operation.

ADVANCED SELECTED CHANNEL VIEW AND VISIBLE OVERVIEW

The DM7 series inherited the Selected Channel View and Overview from the RIVAGE PM series, but also features an updated, more intuitive operation, suitable for the increasing demands of the current state of the art. The Selected Channel View provides a list of important information for each individual channel, giving you quick access to the parameters you want to adjust. It also incorporates the advantages of touch panel operation to reduce the number of steps required to carry out tasks.
Overview, which enables analog console-like operation, is also still available. It lists information on multiple channels, allowing quick access to the parameters of the channel you're using.



YOUR SETTINGS IN YOUR LANGUAGE

The DM7 series features a multi-language option for individual channel names enabling more comfortable and intuitive operation. Displaying the names of artists and instruments in native languages will also help operators with limited audio production or sound reinforcement experience to operate the system.



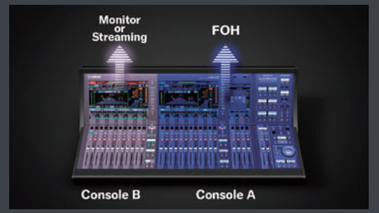
* Multi-language channel names can be inputted via the Editor or StageMix.

Engineers are required to deftly respond to the various demands of each artist and client on a daily basis to deliver the best sound possible to their audiences. Yamaha has enabled the DM7 series with cutting-edge technologies that allow engineers to focus on being creative in a limited time frame and establish a fast and efficient workflow without compromise.



FUNCTIONALITY

SPLIT MODE TURNS ONE CONSOLE INTO TWO MIXERS



Split Mode allows you to use one mixer as if it were two. Even if you only have one DM7 series console due to space limitations, you can mix FOH and Monitor, or FOH and Streaming, etc. just as you would with two separate consoles.

"ASSIST" LETS YOU FOCUS YOUR CREATIVITY



Yamaha digital mixers have always evolved along with emerging technologies, and perhaps even more importantly, we have adapted a lot of their functionality and operability in response to feedback and input from the people that use our mixers on a daily basis. The DM7 series newly added "Assist", is an efficient new feature that takes care of important, but more procedural tasks, allowing operators to hone their creative workflow. Assist is a function that "suggests" HA adjustment, naming, and balanced fader levels—all audio engineering essentials— to help engineers focus on more creative work and communication, thereby reducing setup and preparation time. HA Assist suggests a suitable HA level according to the input signal level, Naming Assist uses input signal information to suggest an icon/channel name for each channel, and Fader Assist suggests fader balance for the assigned channel. These suggestions will continue to evolve based on your feedback and recommendations.

DANTE INTERFACE FOR HIGH CHANNEL COUNT AND FLEXIBLE CONNECTIVITY



The DM7 series offers 144ch in/out via Dante, a combination of software, hardware and networking protocols which has become an industry standard, adopted and integrated into audio equipment from professional audio manufacturers. Dante allows for the transmission of hundreds of audio channels over a single Ethernet cable, allowing you to build a powerful system with a flexible and expandable network without having to worry about the number of channels in any field. Of course, HA Remote and device control are also supported, and the Device Mount function allows for easy patching and control with Dante enabled equipment.

VERSATILE USB CONNECTION



The DM7 series USB Type-C connector provides 18 in/out audio interface functions for recording, streaming, play back, connection to conferencing systems, and more. It also enables additional functionality with MIDI Control, and DAW Remote features to expand your sound creation toolbox and streamline your workflow.

DAW REMOTE FOR EFFICIENT AUDIO PRODUCTION

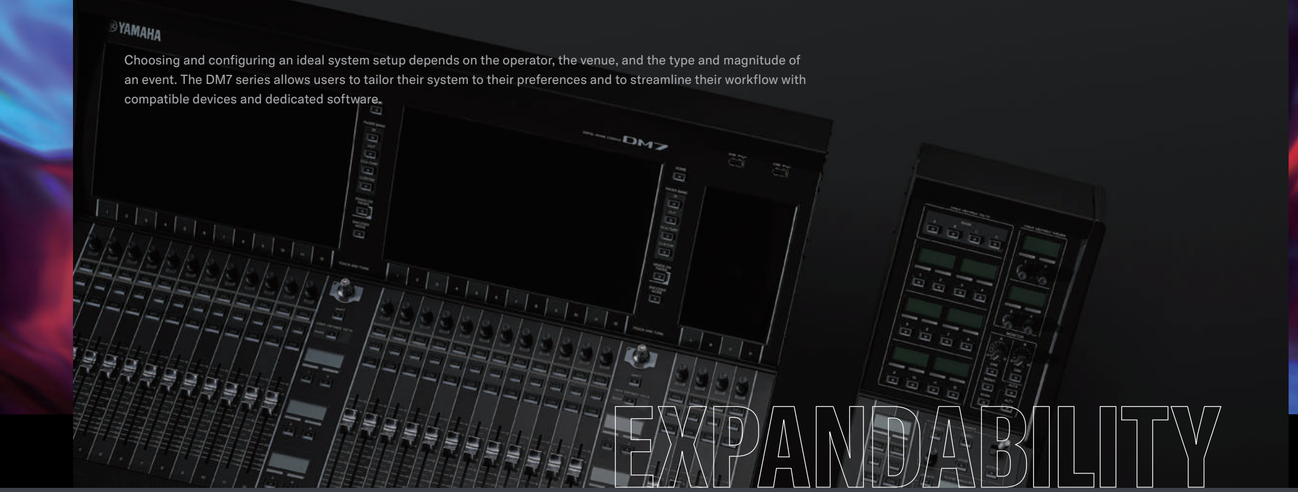


The DM7 series is the perfect mixer for music production and audio recording using a DAW. The DAW Remote function allows operations such as volume control, playback, stop, and more, to be performed using physical controllers such as the unit's faders and keys, providing smooth operation for audio production and recording applications. DAW Remote Mode can be accessed by simply pressing fader bank DCA and selecting DAW Remote.

REDUNDANT POWER SUPPLIES FOR SERIOUS RELIABILITY



Power failure is a major risk when operating any professional audio device so we've equipped the DM7 series with dual power supply units to reduce the risk of power loss resulting in downtime during a show. If a problem occurs with one power source, operation will continue unaffected as long as the second power source is active.



Choosing and configuring an ideal system setup depends on the operator, the venue, and the type and magnitude of an event. The DM7 series allows users to tailor their system to their preferences and to streamline their workflow with compatible devices and dedicated software.

EXPANDABILITY

BROADCAST PACKAGE AND THEATRE PACKAGE FOR ENHANCED, SPECIALIZED CONTROL

Valuable, specialized features can be accessed by adding the Broadcast Package/Theatre Package. The Broadcast Package includes 5.1 surround support, Mix Minus, Loudness Meter, and other functions required for broadcast applications and used conveniently in broadcast mixes.
The Theatre Package provides features that can be used effectively in musicals and other theatrical applications, including Actor Library, DCA Scene Grid, AFC Image Control, and other functions which can enhance mixing in theatrical applications significantly.





PY SLOT FOR EXPANSION CARDS

The DM7 series is equipped with an up to 64 in/out PY slot that allows users to customize the console's functionality and connectivity. The PY64-MD, which supports 64-in 64-out audio input/output via MADI, the PY8-AE with 8-in 8-out AES/EBU D-sub 25-pin connector, and the PY-MIDI-GPI, which has a DIN 5-pin and D-sub 15-pin connectors to expand MID/GPI control terminals, all providing flexible support for a variety of systems.



COMPATIBLE SOFTWARE FOR CONVENIENT CONTROL

In recent years, it has become common for digital mixing consoles to enable wireless mixing, monitor mixing, offline advance preparation, and remote control using a variety of applications. The DM7 series offers dedicated applications DM7 Editor and DM7 StageMix, as well as the Yamaha applications MonitorMix, ProVisionaire Contol, and ProVisionaire Touch. The DM7 series is also equipped with an OSC (Open Sound Control) Server function, allowing control of the DM7 series from OSC-compatible devices.



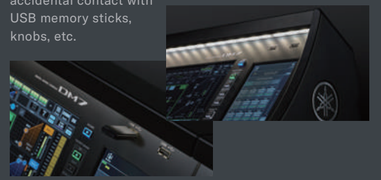


Audio Engineers are far more than just concert staff doing "background work". They may not be on stage, but they are an integral part of a live performance and require a high level of expertise, broad experience, and a sophisticated musicality that supports the artists' musical expression.
Yamaha has been manufacturing musical instruments for over 130 years, and it is always a consideration during the design process to not only make a great sounding, eminently playable instrument, but also to focus on the form and aesthetic and how it will complement the artist playing it.
In the DM7 series, we designed the consoles to be easy to operate so that mixing engineers can use them confidently and creatively even in challenging situations, while at the same time making them look sleek and attractive when they are being operated by the engineering artist helming them.

DESIGN

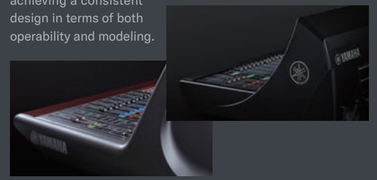
FUNCTIONAL AND ATTRACTIVE LAYOUT

Strip lights illuminate fader surfaces to give engineers an advantage in darkened live venues. However, conventional mixing consoles have lacked a sense of uniformity with the strip lights often protruding unattractively. With the DM7 series, we designed the side pad connecting the strip light and fader surfaces with a smooth curve, creating a sense of unity. The shape of the side pad prevents light leakage from the strip light while serving as a guard to prevent accidental contact with USB memory sticks, knobs, etc.



CONSISTENT USER EXPERIENCE

Mixing engineers must set up, and create the best sound possible within a tight timeframe, but because the environment and equipment used varies from venue to venue, a console that is difficult to operate can increase workload. The DM7 series layout of buttons and knobs, functions, and graphics all adopt interface standards from other Yamaha series mixers for a familiar feel. The DM7 series also inherits the smooth lines of the RIVAGE PM, CL, and QL consoles achieving a consistent design in terms of both operability and modeling.



COMPACT AND LIGHTWEIGHT CONSTRUCTION FOR EASY SETUP AND TRANSPORT

Ease of transport and a fast setup are among the most important features for mixing consoles in most environments and applications. With the DM7 series, the angle of the display, the pitch of the faders and buttons, and the position of the strip lights have all been carefully designed to maintain the high operability and visibility of the display in a compact chassis. The DM7 Compact can also be rack-mounted by removing the side pads, making the most of limited space at live sites.

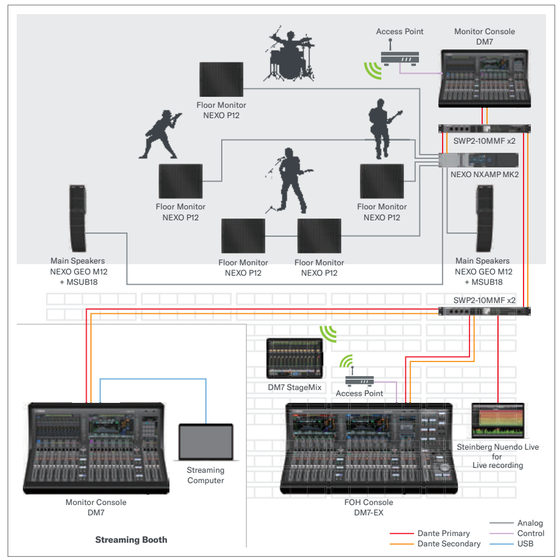


Systems

LIVE SOUND (+STREAMING)

Create simple custom live sound systems with Dante

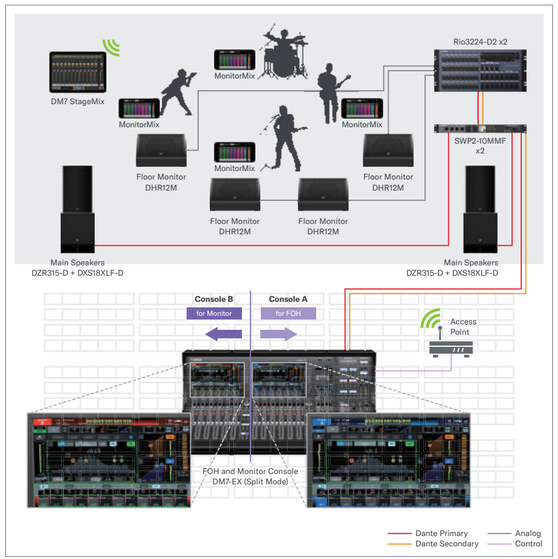
The DM7 series keeps system design simple with Dante—even live sound systems with multiple consoles.
Each piece of equipment is connected with thin, lightweight Ethernet cables.
The Port to Port function is used to turn the local inputs of the DM7 for the monitors into a stage box for connecting other mixers via Dante to cut down on equipment.
The gain compensation function makes it possible to adjust the levels from each console. Also, installing the bundled Steinberg Nuendo Live software on computers connected via Dante facilitates live recordings.



HOUSE OF WORSHIP

Split mode enables FOH and monitor mixing

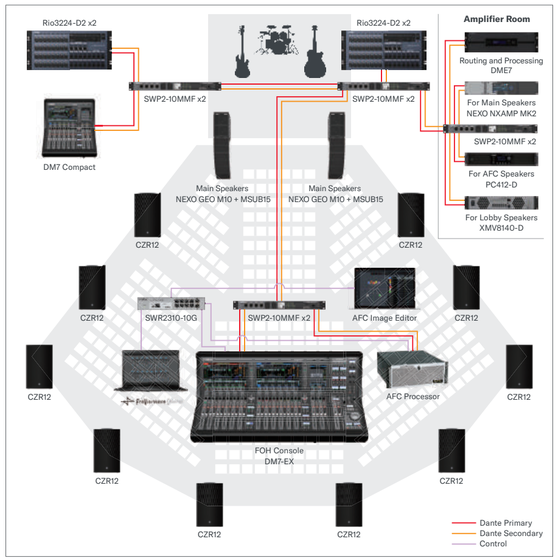
The functions of the DM7 paired with the sound systems of smaller churches make announcing efficient and easy with minimal equipment.
A DM7 installed in the FOH booth can be used in split mode to turn it into a combination FOH-monitor mixer and put together a range of Scenes individually. MonitorMix can be used to give artists the power to adjust their own monitors to their liking.
The HA, Naming, and Fader Assist functions offer help and save time when less-experienced volunteers are at the controls.
Control and monitoring of I/O and DZR speakers can be performed directly on the mixer, centralizing system management.



THEATER

DM7 readily accommodates large systems

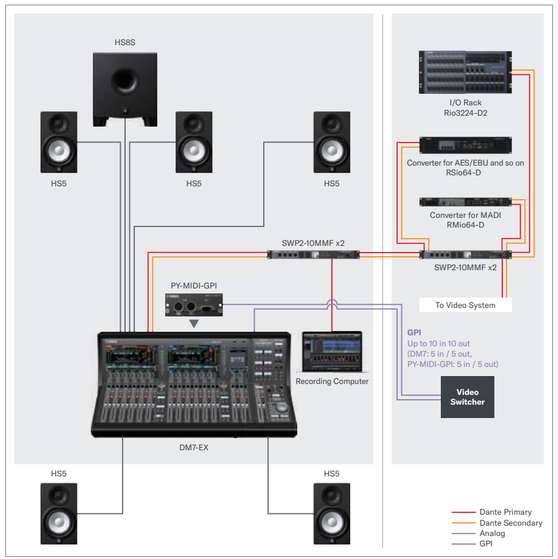
The DM7 series features a Theatre Package, a controller with physical controls, and two differently sized consoles that give engineers and venues the ability to create their ideal systems.
In the system shown here, the engineer uses AFC Image, utilizing the DM7-EX panner for smooth control of the hall's immersive sound.
All equipment is connected via Dante, and ProVisionaire Control can be used for control.



BROADCAST (OB VAN)

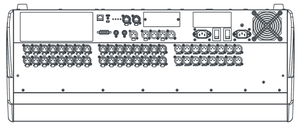
Improved workflow with a full lineup of broadcast functions that belie the compact size of the DM7-EX.

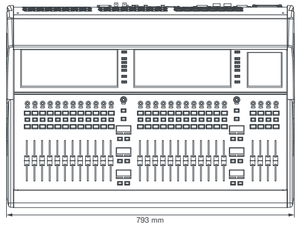
The wide range of controls and Broadcast Package of the provide audio mixing systems with a variety of functions, including 5.1 Surround mixing, monitor control, and an Audio Follow Video function that ties audio to video by following tally signals via GPI. Enjoy flexible connectivity through conversion to different formats enabled by a Dante backbone network.

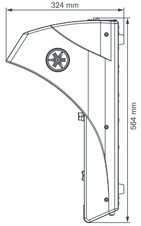


Dimensions

DIGITAL MIXING CONSOLE
DM7







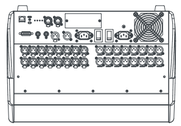


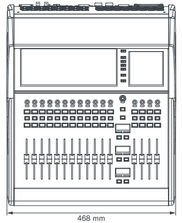
Front

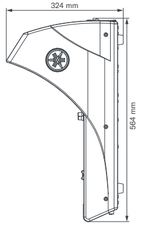


Rear

DIGITAL MIXING CONSOLE
DM7 COMPACT







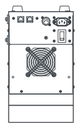


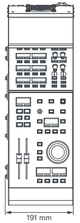
Front

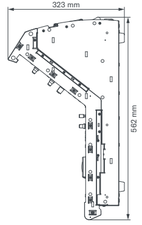


Rear

DM7 CONTROL









Front



Rear

Related Software / Application



DM7 Editor

The DM7 Editor is a standalone application for computers running Windows or Mac operating systems, for both extended online operation and offline setup and editing.



DM7 StageMix

StageMix

DM7 StageMix is an iPad application that enables remote control of the DM7 series through a simple and intuitive graphical interface. The engineer can control the mix parameters from the performer's position on the stage.



MonitorMix

MonitorMix

The MonitorMix application for iOS and Android devices puts control of each performer's monitor mix into the palm of their own hand.



Console File Converter

The Yamaha Console File Converter is an application that allows data to be shared between a number of Yamaha digital mixing consoles.



ProVisionaire Control/Touch

The ProVisionaire Control/Touch are software that allows you to create control panels tailored to your installation and operation methods to remotely control and monitor your equipment.

Bundled Software



VST Rack Elements

The VST Rack Elements software is plug-in host software that uses VST plug-ins, letting you create the exact effect rack you want.



Nuendo Live

Nuendo Live is a solution designed especially for live-recording engineers, production houses and rental companies which puts an emphasis on reliability, user-friendly operation and superior sound quality.

Related Product



Rio3224-D2



Rio1608-D2

Rio3224-D2/ Rio1608-D2

The second generation of R series Dante-enabled I/O Racks (AD/DA) offers significant advances in sound, reliability, and visual status confirmation. They can be used with the DM7 series, as well as the RIVAGE PM digital mixing system and the CL and QL series digital mixing cosoles.



SWP2-10SMF



SWP2-10MMF

SWP2 series

The SWP2 series network switch with 10G uplink ports allows a Dante optimized setup and VLAN presets to be recalled by flipping DIP switches.



RK1

Rack mount kit for DM7 Compact.



PY64-MD

PY8-AE

PY-MIDI-GPI

PY64-MD/PY8-AE/PY-MIDI-GPI

The PY card is an optional interface card for the DM7 series, allowing easy communication via MADI, AES/EBU and extending control connections in MIDI/GPI.

General Specifications

		DM7	DM7 Compact
Mixing Capacity		120 Inputs, 48 Mix + 12 Matrix + 2 Stereo	72 Inputs, 48 Mix + 12 Matrix + 2 Stereo
Sampling Frequency		48 kHz / 96 kHz	
Signal Delay		Less than 1.5 ms, INPUT to OMNI OUT @Fs=96 kHz	
Screen		12.1″ multi-touch screen × 2, 7″ multi-touch screen × 1	12.1″ multi-touch screen × 1, 7″ multi-touch screen × 1
Fader		100 mm touch-sensitive motorized fader × 28	100 mm touch-sensitive motorized fader × 16
Power Requirements		100-240 V, 50/60 Hz	
Power Consumption		240 W	
Dimensions (W x H x D)		793 mm × 324 mm × 564 mm (31.3″ x 12.8″ x 22.2″) including the rubber feet	468 mm × 324 mm × 564 mm (18.5″ x 12.8″ x 22.2″) including the rubber feet
Weight		23.5kg (51.8 lbs)	16.5kg (36.4 lbs)
NC Value *1	Fan Speed LOW	NC=20	
	Fan Speed HIGH	NC=30	
Operating Temperature Range		Min: 0°C, Max: 40°C	
Storage Temperature Range		Min: –20°C, Max: 60°C	
Accessories		Owner's Manual, AC power cord ×2, Dust cover, Cable hook, Nuendo Live and VST Rack Elements Download Information leaflet	
Optional Items		PY cards, DM7 Control (CTL-DM7)	PY cards, DM7 Control (CTL-DM7), Rack Mount Kit RK1

*1. Measured 30 cm horizontally away and vertically up from the unit (front pad).

YAMAHA
Make Waves

https://www.yamahaproaudio.com/

*All specifications are subject to change without notice. *All trademark and registered trademarks are property of their respective owners.

YAMAHA CORPORATION
P.O.BOX1, Hamamatsu Japan



Serie DM7

				DM7 compacto
Descri	**Describir**			
Capac mezcl	**Capacidad de mezcla**	**Canales de entrada**	nono	72 mono
		Mezclar Autobuses		48
		Matrices	ntrada a matriz admitida)	12 (entrada a matriz admitida)

		Autobuses estéreo		**DM7 compacto**
		Monobuses		2
		Autobuses de señal	téreo B se puede cambiar)	1 (Estéreo B se puede cambiar)
	Especificaciones generales			
Espec	**Conectores de E/S**	**Entrada analogica**		
Conec E/S		**Salida analógica**		16
		dante		16
		Entrada AES/UER	ario secundario	Primario secundario
		Salida AES/UER	canales) con SRC	0
		Ranura de expansión (ranura PY)	canales) con SRC	1 (2 canales)
		E/S de reloj de palabras		1
		midi	era	En fuera
		GPI	rotocolo MIDI compatible con USB a HOST)	No (protocolo MIDI compatible con USB a HOST)
		USB A DISPOSITIVO	radas / 5 salidas	5 entradas / 5 salidas
		HOST USB A	ardar/cargar archivo, grabar/reproducir 2 pistas)	2 (guardar/cargar archivo, grabar/reproducir 2 pistas)
		ethernet	B tipo C, USB 2.0)	1 (USB tipo C, USB 2.0)
		Puente de medidor		Sí
		Lámpara	pantalla	En la pantalla
		Salida de video	de luz LED incorporada)	0 (tira de luz LED incorporada)
		TC de entrada		No
		Los telefonos		Sí
		California		1
		Fuente de alimentación redundante externa	o de bloqueo en V)	2 (tipo de bloqueo en V)
			te de alimentación dual incorporada	Fuente de alimentación dual incorporada
	Memoria de escena	**Número de escenas**		

				DM7 compacto
		Retirar seguro		
Memo escen		Recuperación de enfoque		500
		Tiempo de desvanecimiento		Sí
		Avance		Sí
		Carga selectiva / Guardar		Sí
		pastas globales	ctualización futura	Sí: Actualización futura
		Lista de eventos		Sí
		Cubrir		Sí
		Aislar		No
		Teclas de control táctil		No
	Funciones del canal de entrada	Entrada A/B		No
		Compensación de ganancia		No
Funcio canal		Ganancia Digital		Sí
		atenuador		Sí
		HPF	6 dB a +24 dB)	Sí (-96 dB a +24 dB)
		PEQ	6 dB a +24 dB)	Sí (-96 dB a +24 dB)
		LPF	z to 2,000 Hz, -6/-12/-18/-24 dB/oct Selectable	20 Hz to 2,000 Hz, -6/-12/-18/-24 dB/oct Selectable
		Dinámica 1	nd Full PEQ (4 algorithms, RTA overlay supported)	4 Band Full PEQ (4 algorithms, RTA overlay supported)
			z to 20 kHz, -6/-12 dB/oct	20 Hz to 20 kHz, -6/-12 dB/oct
		Dinámica 2	cy Comp / Comp260 / Expander / Gate / Ducking / De-Esser	Legacy Comp / Comp260 / Expander / Gate / Ducking / De-Esser
		Retardo de entrada	cy Comp / Comp260 / Expander / Gate / Ducking / De-Esser Limiter / Diode Bridge Comp	Legacy Comp / Comp260 / Expander / Gate / Ducking / De-Esser / FET Limiter / Diode Bridge Comp
		Cacerola	0 ms to 1,000 ms)	Yes (0 ms to 1,000 ms)
		Grupo DCA	er Nominal / LR Nominal	Center Nominal / LR Nominal
		Implementación de DCA		

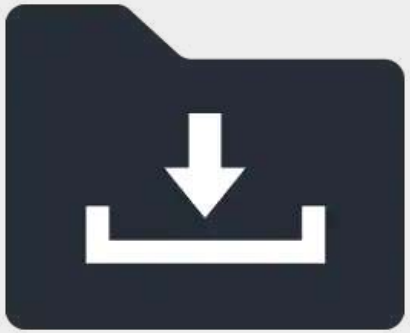
				DM7 compacto
		Grupo MUTE		
		Número de inserciones	utput DCA supported)	24 (Output DCA supported)
		Automezclador Dan Dugan		Yes
		salida directa		12
	Funciones del canal de salida	PEQ	s on 1 insert point	4 slots on 1 insert point
		GEQ	Up to 64ch)	Yes (Up to 64ch)
		Dinámica 1		Yes
Outpu Functi		Retardo del canal de salida	nd Full PEQ	8 Band Full PEQ
		Grupo MUTE	l Rack (EQ Rack)	Virtual Rack (EQ Rack)
		Número de inserciones	cy Comp / Comp260 / Expander / Gate / Ducking / De-Esser / Limiter / Diode Bridge Comp	Legacy Comp / Comp260 / Expander / Gate / Ducking / De-Esser / FET Limiter / Diode Bridge Comp
	Estante de primera calidad	Número de recursos DSP	0 ms to 1,000 ms)	Yes (0 ms to 1,000 ms)
		Complementos montables		12
			s on 1 insert point	4 slots on 1 insert point
Premi				64
	Bastidor de efectos	Número de recursos DSP	Portico5033 / RND Portico5043 / Portico 5045 / U76 / Opt-Comp276 / Buss Comp 369 / MBC4 / DaNSe / EQ-1A / lizer601 / Dynamic EQ / Dynamic EQ4 / REV-X / OpenDeck log Delay / Max100 / Vintage Phaser / Dual Phaser / itch	RND Portico5033 / RND Portico5043 / Portico 5045 / U76 / Opt-2A / Comp276 / Buss Comp 369 / MBC4 / DaNSe / EQ-1A / Equalizer601 / Dynamic EQ / Dynamic EQ4 / REV-X / OpenDeck / Analog Delay / Max100 / Vintage Phaser / Dual Phaser / HQ.Pitch
		Número de tipos de efectos		
Effect	Estante del ecualizador	Número de recursos DSP		16
		Dispositivos montables		43
EQ Ra	dante	Número de canales de E/S		32
		Número de dispositivos de E/S que se pueden descubrir desde la consola	ndGEQ / Flex15GEQ / 8Band PEQ (RTA overlay supported)	31BandGEQ / Flex15GEQ / 8Band PEQ (RTA overlay supported)
Dante			n / 144 out	144 in / 144 out
		Número de dispositivos de E/S que se pueden		

				DM7 compacto
		Número de dispositivos de E/S con control remoto HA		
		Parche Dante desde Consola	127 *1	127 *1
	USB a anfitrión	Número de canales de E/S de audio		24
		MIDI USB		24
	Monitor	Solo Mode		Yes
		Oscilador		
USB t	Otras funciones	Puerto a puerto	/ 18 out	18 in / 18 out
		Lector/pantalla de código de tiempo		Yes
Monit		Persecución de código de tiempo		Yes
		GPI	Wave 1ch / Sine Wave 2ch / Pink Noise / Burst Noise	Sine Wave 1ch / Sine Wave 2ch / Pink Noise / Burst Noise
Other		midi		Yes
		Servidor OSC		Yes
		Mando a distancia DAW		No
		Nuendo Live: Integración de control	5 in / 5 out)	Yes (5 in / 5 out)
		Prueba de sonido virtual	USB MIDI)	Yes (USB MIDI)
		Monitoreo de micrófonos inalámbricos		Yes
		ACR		Yes
		Compensación de retraso		Yes
		Retardo del puerto de salida		Yes
		Entrada secundaria		Yes
		Niveles de usuario		Yes
		Enlace de canal		Yes
			(Up to 20 ports) *Future Update	Yes (Up to 20 ports) *Future Update

				DM7 compacto
		Enlace de canal temporal		
		Nombres de canales en varios idiomas		Yes
		Mezcla/matriz a entrada		Yes
		Modo dividido		Yes
		Asistir	Future Update	Yes *Future Update
	Interfaz de usuario	pantallas		Yes
		Faders		
		Codificadores de canal/pantalla		Yes
		Pantallas de nombre/color del canal		Yes
			HA / Naming / Fader)	Yes (HA / Naming / Fader)
User I		Bancos de faders personalizados	multi-touch x 2, 7” multi-touch x 1	12.1” multi-touch x 1, 7” multi-touch x 1
		Teclas de cambio	4	12 + 4
		Claves definidas por el usuario		Yes
		Perillas definidas por el usuario	n-screen)	No (on-screen)
		Perillas táctiles y giratorias		Yes
		Perillas de nivel de monitor		Yes
		Reposabrazos	ce: 12 (6 keys x 4 banks), Utility Screen (On-screen): 12 (12 x 4 banks)	Surface: 6 (6 keys x 4 banks), Utility Screen (On-screen): 12 (12 keys x 4 banks)
		Montable en bastidor		
	Software	Editor	by 4 encoders below the Utility screen)	Yes (by 4 encoders below the Utility screen)
		mezcla de escenario		Yes
		mezcla de monitores		No
		Convertidor de archivos de consola		Yes
				Yes
Softwa		ProVisionaire Control/táctil	r DM7 (Windows/Mac)	Editor DM7 (Windows/Mac)
		Paquete de software	la de escenario DM7	Mezcla de escenario DM7

	Dimensiones	**EN**		**DM7 compacto**
		H		Sí
		D		Sí
	Peso neto			Sí
	Accesorios incluidos		ete de transmisión, paquete de teatro	Paquete de transmisión, paquete de teatro
Dimen	**Accesorios**		nm (31,3")	468 mm (18,5")
	H		324 mm (12,8") *incluidas las patas de goma	324 mm (12,8") *incluidas las patas de goma
	D		564 mm (22,2")	564 mm (22,2")
Peso neto			23,5 kg (51,8 libras)	16,5 kg (36,4 libras)
Accesorios incluidos			Manual del propietario, cables de alimentación de CA, cubierta antipolvo, gancho para cable (para USB TO HOST), Nuendo Live, VST Rack Elements	Manual del propietario, cables de alimentación de CA, cubierta antipolvo, gancho para cable (para USB TO HOST), Nuendo Live, VST Rack Elements
Accesorios			-	RK-1

*1 Este es el número máximo de dispositivos de E/S que se muestra en la LISTA DE DISPOSITIVOS EN LÍNEA de Dante SETUP. Solo los dispositivos que se muestran en la lista se pueden montar desde la consola.



Descargas



Noticias y eventos



Casos de estudio



Formación y soporte



Contenido Especial



Acerca de

Contáctanos ›



Serie R (AD/DA) 2ª generación

			24-D2	Rio1608-D2
Espec	**Especificaciones generales**			
Tasa d frecue muest	**Tasa de frecuencia de muestreo**	**Externo**	Hz, 48 kHz, 88,2 kHz, 96 kHz, +4,1667 %, +0,1 %, –0,1 %, –4,0 00 ppm)	44,1 kHz, 48 kHz, 88,2 kHz, 96 kHz, +4,1667 %, +0,1 %, –0,1 %, –4,0 % (±200 ppm)
Retard	**Retardo de señal**		s de 1,7 ms, Rio INPUT a Rio OUTPUT se conectan con PM10 nte Dante, Fs= 96 kHz, latencia de recepción de Dante urada en 0,25 ms	Menos de 1,7 ms, Rio INPUT a Rio OUTPUT se conectan con PM10 mediante Dante, Fs= 96 kHz, latencia de recepción de Dante configurada en 0,25 ms
Distor	**Distorsión armónica total**		s del 0,05% 20 Hz-20 kHz@+4 dBu en 600 Ω, Fs= 48 kHz, s del 0,05 % 20 Hz-40 kHz@+4 dBu en 600 Ω, Fs= 96 kHz, ADA a SALIDA, Ganancia de entrada= Mín. .	Menos del 0,05% 20 Hz-20 kHz@+4 dBu en 600 Ω, Fs= 48 kHz, Menos del 0,05 % 20 Hz-40 kHz@+4 dBu en 600 Ω, Fs= 96 kHz, ENTRADA a SALIDA, Ganancia de entrada= Mín. .

			24-D2	Rio1608-D2
Respu	Respuesta frecuente		–1,5 dB 20 Hz-20 kHz, consulte la salida de +4 dBu a 1 kHz, ADA a SALIDA, Fs= 48 kHz / +0,5, –1,5 dB 20 Hz-40 kHz, lte la salida de +4 dBu a 1 kHz, ENTRADA a SALIDA, Fs= 96	+0,5, –1,5 dB 20 Hz-20 kHz, consulte la salida de +4 dBu a 1 kHz, ENTRADA a SALIDA, Fs= 48 kHz / +0,5, –1,5 dB 20 Hz-40 kHz, consulte la salida de +4 dBu a 1 kHz, ENTRADA a SALIDA, Fs= 96 kHz
	Gama dinámica			
Gama	Nivel de zumbido y ruido	Ruido de entrada equivalente	B típ., Convertidor DA, 108 dB típ., ENTRADA a SALIDA, ncia de entrada = Min.	112 dB típ., Convertidor DA, 108 dB típ., ENTRADA a SALIDA, Ganancia de entrada = Min.
Nivel y ruid		Ruido de salida residual	dBu típ., ganancia de entrada = máx.	–128 dBu típ., ganancia de entrada = máx.
	Diafonía		Bu, maestro ST desactivado	–88 dBu, maestro ST desactivado
Diafon			B, canales de ENTRADA/SALIDA adyacentes, ganancia de la = -6dB, a 1 kHz *Medido con un filtro de 30dB/octava a 22kHz	-100dB, canales de ENTRADA/SALIDA adyacentes, ganancia de entrada = -6dB, a 1 kHz *Medido con un filtro de 30dB/octava a 22kHz
Reque	Requerimientos de energía			
	El consumo de energía		40 V, 50/60 Hz	100-240 V, 50/60 Hz
El con	Dimensiones	EN		72W
Dimen		H	m (18,9")	480 mm (18,9")
		D	m (8,7")	132 mm (5,2")
	Peso neto		m (14,5")	368 mm (14,5")
Peso n	Accesorios		g (29,8 libras)	9,6 kg (21,2 libras)
Acces	Otros		al del propietario, cable de alimentación de CA (250 cm)	Manual del propietario, cable de alimentación de CA (250 cm)
Otros			NC: MODO VENTILADOR BAJO: NC=20 / ALTO: NC=30 ión de medición: 1 m desde el frente de la unidad), Rango de eratura de funcionamiento: 0 - 40 °C, Rango de temperatura de almacenamiento: –20 - 60 °C	Valor NC: MODO VENTILADOR BAJO: NC=15 / ALTO: NC=25 (Posición de medición: 1 m desde el frente de la unidad), Rango de temperatura de funcionamiento: 0 - 40 °C, Rango de temperatura de almacenamiento: –20 - 60 °C

La distorsión armónica total se mide con un filtro de 18 dB/octava a 80 kHz
El zumbido y el ruido se miden con un filtro A-Weight.
La diafonía se mide con un filtro de 30 dB/octava a 22 kHz

Características de entrada analógica

Terminales de entrada	GANAR	Impedancia de carga real	Para uso con nominal	Nivel de entrada	conector

				Nominal	máx. antes del clip	
ENTRADA 1-16	+66dB	7.5kΩ	Micrófonos de 50-600 Ω y líneas de 600 Ω	-62 dBu (0,616 mV)	-42 dBu (6,16 mV)	Tipo XLR-3-31 (Equilibrado) *1
	-6dB			+10 dBu (2,45 V)	+30 dBu (24,5 V)	
ENTRADA 17-32 *2	+66dB	7.5kΩ	Micrófonos de 50-600 Ω y líneas de 600 Ω	-62 dBu (0,616 mV)	-42 dBu (6,16 mV)	Tipo XLR-3-31 (Equilibrado) *1
	-6dB			+10 dBu (2,45 V)	+30 dBu (24,5 V)	

*1. Los conectores tipo XLR-3-31 son balanceados. (1= TIERRA, 2= CALIENTE, 3= FRÍO)
*2. Solo Rio3224-D2
* En estas especificaciones, 0dBu= 0,775 Vrms.
* Se suministran +48 V CC (alimentación fantasma) a los conectores de tipo INPUT XLR a través de cada interruptor individual controlado por software.

Características de la salida analógica

Terminales de salida	Impedancia de fuente real	Para uso con nominal	Selección de nivel de salida máx. SW * 1	Nivel de salida		conector
				Nominal	máx. antes del clip	
SALIDA 1-8	75Ω	Líneas de 600 Ω	+24dB (predeterminado)	+4dBu (1,23 V)	+24 dBu (12,3 V)	Tipo XLR-3-32 (Equilibrado) *2
			+18dB	-2dBu (616mV)	+18 dBu (6,16 V)	
SALIDA 9-16 *3	75Ω	Líneas de 600 Ω	+24dB (predeterminado)	+4dBu (1,23 V)	+24 dBu (12,3 V)	Tipo XLR-3-32 (Equilibrado) *2
			+18dB	-2dBu (616mV)	+18 dBu (6,16 V)	

*1. Hay interruptores dentro del cuerpo para preestablecer el nivel máximo de salida.
*2. Los conectores tipo XLR-3-32 son balanceados. (1= TIERRA, 2= CALIENTE, 3= FRÍO)
*3. Solo Rio3224-D2
* En estas especificaciones, 0dBu= 0,775 Vrms.

Características de entrada y salida digital

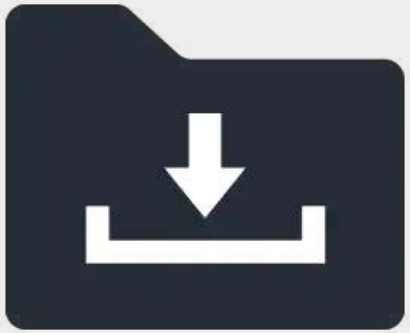
Terminales	Formato	Longitud de datos	Nivel	Audio	conector

Primario secundario	dante	24 bits o 32 bits	1000Base-T	32 canales (Rio3224-D2 a otros dispositivos) 24 canales (Otros dispositivos a Rio3224-D2) 16 canales (Rio1608-D2 a otros dispositivos) 8 canales (Otros dispositivos a Rio1608-D2)	etherCON Cat5e

Características de salida digital

Terminales		Formato	Longitud de datos	Nivel	conector
SALIDA AES/EBU 1-8 *1	AES/UER	AES/EBU Uso profesional *1	24 bits	RS422	Tipo XLR-3-32 (Equilibrado) *2

*1. Rio3224-D2 solamente
*2. Los conectores tipo XLR-3-32 son balanceados. (1= TIERRA, 2= CALIENTE, 3= FRÍO)



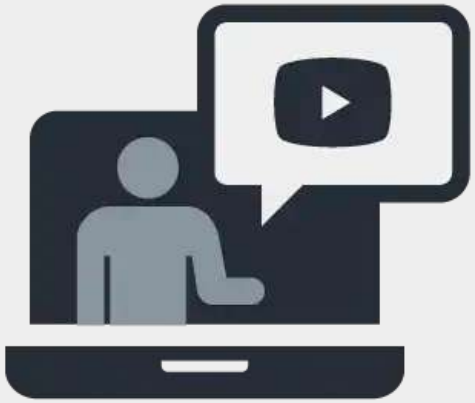
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Serie R (AD/DA) 2ª generación

Racks de E/S preparados para Dante con mejoras en sonido, fiabilidad y pantallas de visualización

Los Rio3224-D2 y Rio1608-D2 de Yamaha son racks de E/S de altas prestaciones con conexión para redes de audio Dante incorporada. Diseñados y fabricados para conseguir una transparencia sonora excepcional, fieles a la filosofía de "sonido natural" de Yamaha, estos racks juegan un papel fundamental en la dotación de prestaciones de la mesa a ellos asociada, ofrecen una enorme libertad de ubicación y de combinaciones multiunidad, y proporcionan la redundancia necesaria para lograr una alta fiabilidad. Los Rio3224-D2 y Rio1608-D2 no son solo componentes estándar del sistema de mezclas digital RIVAGE PM7, sino que también son totalmente compatibles con las mesas de mezclas digitales de las series CL y QL, y ofrecen una prestaciones de audio y una operatividad excepcionales para poder aprovechar al máximo el potencial de las redes de audio Dante.



Vídeo tutorial



Yamaha RIVAGE/CL/QL: Cómo los nuevos racks Rio-D2 pueden mejorar un sistema

Kevin Kimmel, director de productos de mezcla de Yamaha Corporation of America, presenta dos nuevas unidades de rack de E/S equipadas con Dante: Rio3224-D2 y Rio1608-D2. Estos racks de E/S se pueden utilizar con el nuevo sistema de mezclas digital RIVAGE PM7, así como también con las actuales mesas de mezclas digitales de las series CL y QL.

Información del Producto

Rio3224-D2 Rack de E/S





Este rack de E/S de alta capacidad y altas prestaciones es compatible con las mesas de las series CL y QL de Yamaha, además de con la serie RIVAGE PM. Dispone de 32 entradas analógicas, 16 salidas analógicas

y 8 salidas digitales AES/EBU. El Rio3224-D2 se conecta directamente a las redes de audio digital Dante, lo que permite una flexible configuración del sistema. Cuenta con dos fuentes de alimentación internas, lo que supone una alta fiabilidad, y su pantalla gráfica/de caracteres permite una fácil confirmación visual.

- 32 entradas y 16 salidas analógicas, y 8 salidas digitales.
- Admite conexiones redundantes con conectores primarios y secundarios. También es compatible con conexiones de cadena.
- Pantalla con información completa y control local de ganancia y otros parámetros.
- Lleva dos fuentes de alimentación internas para máxima fiabilidad.
- Consumo eléctrico: 120 W
- Dimensiones (an. x al. x pro.): 480 x 220 x 368 mm
- Peso neto: 13,5 kg

Registro ⇄

Rio1608-D2 Rack de E/S








Este rack de E/S de altas prestaciones dispone de 16 entradas analógicas y 8 salidas analógicas, y es compatible con las mesas de las series CL y QL de Yamaha, además de con la serie RIVAGE PM. El Rio1608-D2 se conecta directamente a las redes Dante de audio digital, lo que permite una flexible configuración del sistema. Cuenta con dos fuentes de alimentación internas, lo que supone una alta fiabilidad, y su pantalla gráfica/de caracteres permite una fácil confirmación visual.

- 16 entradas analógicas + 8 salidas analógicas.

- Admite conexiones redundantes con conectores primarios y secundarios. También es compatible con conexiones de cadena.
- Pantalla con información completa y control local de ganancia y otros parámetros.
- Lleva dos fuentes de alimentación internas para máxima fiabilidad.
- Consumo eléctrico: 72 W
- Dimensiones (an. x al. x pro.): 480 x 132 x 368 mm
- Peso neto: 9,6 kg

Registro

Productos relacionados



Serie RIVAGE PM

El punto de partida ideal para que un ingeniero de audio pueda ser creativo es disponer de un sonido transparente y sin colorear. Todos los mezcladores Yamaha están construidos con esa filosofía, con el objetivo de que los ingenieros puedan capturar con fidelidad el sonido del escenario, sin coloración, y después añadir toques creativos según se requiera. Los valores del compromiso inquebrantable de Yamaha con este concepto se ponen de manifiesto en toda la serie RIVAGE PM.



DM7 Series

The DM7 series is an innovative digital mixer lineup that not only guarantees unparalleled sound quality, ease of operation, and high reliability for connecting engineers, artists, and audiences, but is also highly scalable and flexible enough to be adapted for various applications. It can be configured in a variety of forms depending on the engineer's preferences to support a wide range of applications.



Serie CL

La serie de mesas de mezclas digitales CL de Yamaha representa un nuevo nivel de refinamiento. Estas mesas ofrecen una experiencia de mezcla avanzada y accesible, junto con una pureza sonora y funciones de modelado de sonido que darán al técnico más imaginativo una libertad creativa sin precedentes. La serie CL



encarna lo último en sonido para directo en el formato más expresivo y avanzado del momento.



Serie QL

Las mesas de la serie QL ofrecen prestaciones de mezcla, procesamiento y enrutamiento “todo en uno” para sonorizaciones a pequeña o mediana escala de actuaciones en directo, actos corporativos, intervenciones habladas o instalaciones fijas, entre otras.

Los colores y acabados pueden ser diferentes a estos en los productos actuales.



StudioLive™ ARc-Series

Audio Interface/Analog Mixer/Stereo SD Recorder

Owner's Manual



PreSonus® www.presonus.com

English

Table of Contents

1 Overview — 1

1.1 Introduction — 1

1.2 About This Manual — 1

1.3 What is in the Box — 2

1.4 What is in your My PreSonus Account — 2

2 Getting Started — 3

2.1 Level-Setting Procedure — 3

3 Hookup — 5

3.1 Connections and Controls — 5

3.1.1 Inputs — 5

3.1.2 Outputs — 6

3.1.3 Rear Panel Connections — 7

3.2 Channel Controls — 7

3.2.1 Digital Returns — 8

3.3 The Super Channel — 9

3.3.1 Pairing a Bluetooth Device — 9

3.4 Aux Buses — 9

3.4.1 Monitor Bus Controls — 10

3.4.2 Creating Monitor Mixes — 10

3.5 Internal FX Bus — 11

3.5.1 Effects Presets — 11

3.5.2 Internal FX Bus Return — 12

3.5.3 Creating Internal Effects Mixes — 12

3.5.4 Using an External Effects Processor — 13

3.6 Master Section Controls — 14

3.6.1 Control Room Levels — 14

3.7 Typical Band Setup Diagram — 15

3.8 Typical Home Studio Setup Diagram — 16

4 SD Recording and Playback — 17

4.1 SD Recording — 17

4.2 SD Playback — 18

5 Connecting to a Computer — 19

5.1 Installation for Windows — 19

5.1.1 Universal Control (Windows only) — 20

5.1.2 Loopback Recording (Windows only) — 20

5.1.3 Using the StudioLive for System Sound — 22

5.2 Installation for macOS — 23

5.2.1 Using the StudioLive for System Sound — 23

5.3 Using the StudioLive with Popular Audio Applications — 24

5.4 Digital Sends and Returns — 25

5.4.1 Digital Sends — 25

5.4.2 Digital Returns — 26

6 Capture 2 — 27

6.1 Installation Instructions — 27

6.1.1 macOS — 27

6.1.2 Windows — 28

6.2 Start Page — 29

6.2.1 Tagging and Organizing a Session — 29

6.2.2 Creating a Session — 30

6.2.3 Open a Session — 31

6.2.4 Audio Device and Sample Rate — 31

6.2.5 Options Menu — 32

6.3 The Session Page — 34

6.3.1 Track Column — 35

6.3.2 Transport — 35

6.3.3 Time Display — 36

6.3.4 Timeline Ruler — 36

6.3.5 Navigating the Session — 36

6.3.6 Editing Tools — 37

6.3.7 Meter Bridge — 42

6.3.8 Markers and the Marker List — 42

6.4 Recording a Session in Capture — 44

6.5 Importing and Exporting Audio Files — 45

6.5.1 Importing Audio Files into Capture — 45

6.5.2 Export Audio Files — 46

6.6 Mixing Your Capture Sessions — 47

6.6.1 Exporting Your Final Mix to an Audio File — 47

6.6.2 Mixing a Capture 2 Session in Studio One — 47

6.6.3 Mixing a Capture 2 Session in a Different Recording Application — 47

6.7 Capture 2 Key Commands — 49

7 Studio One Artist Quick Start — 50

7.1 Installation and Authorization — 50

7.2 Setting Up Studio One — 51

7.2.1 Configuring Audio Devices — 52

7.2.2 Configuring MIDI Devices — 53

7.3 Creating a New Song — 56

7.3.1 Configuring Your I/O — 57

7.3.2 Creating Audio and MIDI Tracks — 59

7.3.3 Recording an Audio Track — 60

7.3.4 Adding Virtual Instruments and Effects — 60

8 Resources — 62

8.1 EQ Frequency Guides — 62

8.2 Block Diagrams — 64

8.2.1 StudioLive AR16c, and AR12c Block Diagram — 64

8.2.2 StudioLive AR8c Block Diagram — 65

8.3 Recall Sheets — 66

8.3.1 AR16c and AR12c Recall Sheet — 66

8.3.2 AR8c Recall Sheet — 67

8.4 Technical Specifications — 68

9 Troubleshooting — 71

9.1 Troubleshooting — 71

1 Overview

1.1 Introduction



Thank you for purchasing a PreSonus® StudioLive™ ARc-series audio interface analog mixer, the world's most advanced analog recording system. PreSonus Audio Electronics has designed the StudioLive ARc-series mixers utilizing high-grade components to ensure optimum performance. Loaded with high-headroom XMAX microphone preamplifiers; a built-in USB-C™ compatible USB 2.0 recording and playback engine; parametric EQ on every channel; onboard Bluetooth™ playback; integrated stereo SD recording and playback; a multi-effects processor with a dedicated mix bus; monitor mixes; extensive LED metering; and more, StudioLive ARc breaks new boundaries for studio recording and live performance. All you need are a few microphones and cables, speakers, and your instruments, and you are ready to mix and record in the studio or in front of a live audience!

We encourage you to contact us with questions or comments regarding this product. PreSonus Audio Electronics is committed to constant product improvement, and we value your suggestions highly. We believe the best way to achieve our goal of constant product improvement is by listening to the real experts: our valued customers. We appreciate the support you have shown us through the purchase of this product.

For technical support, ***please see Section 9.1: Troubleshooting***.

1.2 About This Manual

We suggest that you use this manual to familiarize yourself with the features, applications, and connection procedures before using your StudioLive ARc-series mixer. This will help you avoid problems during installation and setup. This manual covers the hardware functions and features of all three StudioLive ARc-series mixers. When functional differences are called out, the AR16c will be mentioned first, followed by the AR12c, and then the AR8c.

Licenses and installers for Universal Control, Capture™ and Studio One® Artist can be found in your My PreSonus user account.

Throughout this manual you will find Power User Tips. These tips provide mixing tricks, some of which are unique to the StudioLive ARc mixers, as well as explanations of various audio terms. In addition, you will find an assortment of audio tutorials throughout this manual.

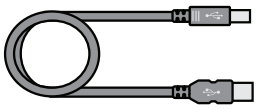
Thank you, once again, for buying our product. We are confident that you will enjoy your StudioLive ARc mixer!

1.3 What is in the Box

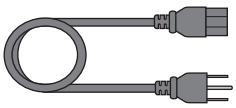
In addition to this manual, your StudioLive package contains the following:



- PreSonus StudioLive AR16c, AR12c, or AR8c Audio Interface / Analog Mixer / Stereo SD Recorder

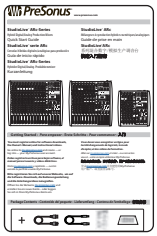


- 1 meter USB cable



- IEC power cord

- Rack ear mounting kit (AR16c only. AR8c and AR12c rack ear mounting kits sold separately)



- StudioLive ARc-series Quick Start Guide

1.4 What is in your My PreSonus Account

Once you register your StudioLive AR mixer at My.PreSonus.com, you will find the following software available for download in your user account:

- StudioLive ARc-Series Owners Manual
- Universal Control
- Capture multitrack-recording software
- Studio One Artist DAW software and bundled content

2 Getting Started

Before you begin, here are a few general rules of thumb:

- Always turn down the Main, Control Room, and Phones level controls before making connections.
- Before plugging or unplugging a microphone while other channels are active, mute the channel to which you are connecting.
- Channel levels should be set on or near the "U" mark whenever possible. The "U" indicates unity gain, meaning the signal is neither boosted nor attenuated.
- Do not allow your inputs to clip. Watch the signal indicators and make sure the red Clip indication illuminates rarely, if ever. Clipping (overloading) the inputs can result in digital distortion, which sounds terrible.

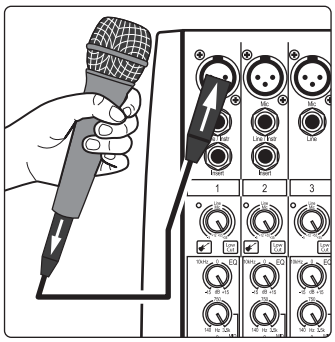
Warning: *Engaging phantom power or connecting sources without muting the channels can result in a very loud pop that can potentially damage your sound equipment. Always mute your channels before engaging Phantom power or connecting sources.*

P.A. and studio equipment should be powered on in the following order:

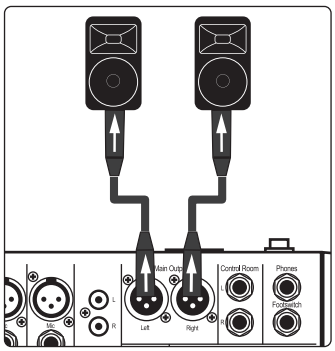
- Sound sources (keyboards, direct boxes, microphones, etc.) connected to the StudioLive ARc inputs
- StudioLive ARc mixer
- Computer (if applicable)
- Power amplifiers or powered monitors

When it's time to power down, your system should be turned off in the reverse order. Now that you know what not to do, let's get some audio going!

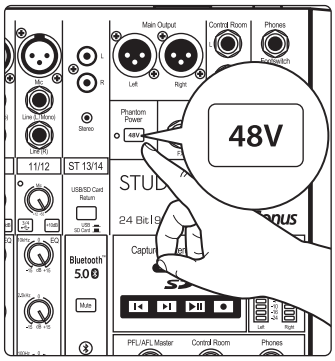
2.1 Level-Setting Procedure



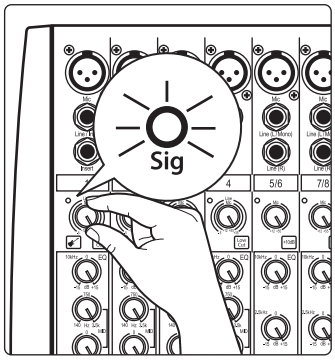
1. Grab a microphone and a mic cable and plug them into the Channel 1 mic input.



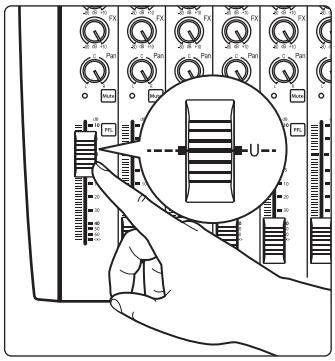
2. Connect the Main outputs of your StudioLive ARc to your power amplifier or powered monitors.
3. Bring down all the level controls on your StudioLive ARc to the lowest setting.
4. Make sure that the Mic/Line knob on Channel 1 is turned all the way counter-clockwise.
5. Plug your StudioLive ARc-series mixer into a power outlet and turn it on.



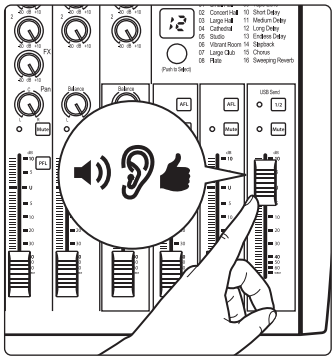
6. If your microphone requires phantom power, engage the 48V button on your StudioLive ARc mixer.
7. Turn on your amplifier or powered monitors.
8. Speak or sing into your microphone at approximately the same volume you expect during the performance.



9. Turn the trim knob on Channel 1 clockwise while watching the signal indicator. Adjust the Channel 1 trim knob until the signal/clip indicator is red, then back down until it is green and just below clipping at the loudest input level.



10. Raise the Channel 1 level control to unity gain (denoted with a "U").



11. Bring up the Main level until you can comfortably listen to your microphone through your speakers.
12. Sculpt the sound by adding EQ to taste.

3 Hookup

3.1 Connections and Controls

3.1.1 Inputs



Microphone Inputs. Your StudioLive ARc-series mixer is equipped with high-gain XMAX microphone preamplifiers for use with all types of microphones.



48-volt Phantom Power. The StudioLive ARc mixers provide global 48V phantom power for all microphone inputs.

WARNING: Phantom power is required for condenser microphones but can severely damage some dynamic mics, especially ribbon mics. Therefore, unless the manufacturer of your dynamic mics clearly states that phantom power will not damage them, you should use condenser mics only, with phantom power on, or dynamic mics only, with phantom power off.

Power User Tip: *Dynamic microphones and ribbon microphones are generally lower-output devices and require no external power source. The most important thing to note about ribbon microphones is that they very rarely require phantom power. In fact, unless a ribbon microphone calls specifically for phantom power, sending phantom power to it can cause severe damage. Condenser microphones are generally more sensitive than dynamic and ribbon microphones and typically require external +48V phantom power. Always review your microphone's documentation to ascertain the manufacturer's recommended operating practices.*



Line-level Inputs. Each channel of your StudioLive ARc-series mixer has a ¼-inch, balanced TRS connection for line-level input. Typical examples of line-level connections are synthesizer outputs, CD/DVD-player outputs, and (with exceptions) signal-processor inputs and outputs.

Note: *As with any mixer, plugging in a microphone or a line-level input device, or turning phantom power on or off, will create a momentary spike in the audio output of your StudioLive ARc mixer. Because of this, it is highly recommended that you mute or turn down the channel trim before changing connections or turning phantom power on or off. This simple step will add years to life of your audio equipment.*

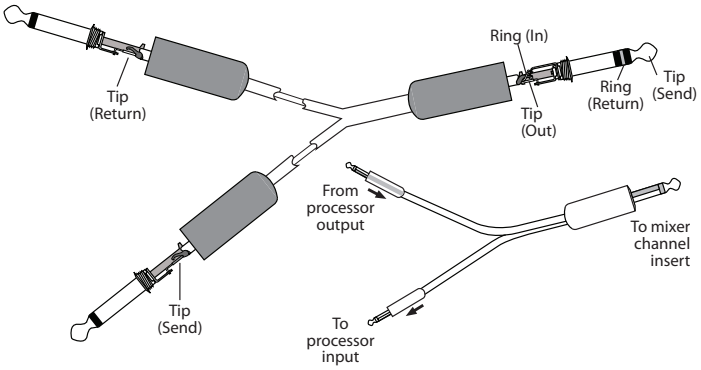


Instrument Inputs. Channels 1 and 2 are equipped with an input that can be switched between line and instrument. Use these ¼-inch connections for instruments that don't have internal preamps (guitar, bass, etc.). ***See Input Source button in Section 3.2 for more information***.

Power User Tip: *Active instruments have an internal preamp and a line-level output. This type of instrument should be plugged into a line input, rather than an instrument input. Plugging a line-level source into an instrument input risks damage to the input and results in a very loud and often distorted audio signal.*



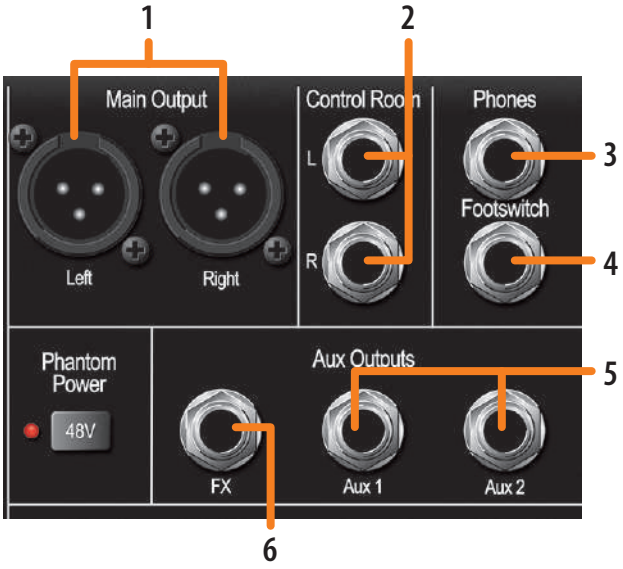
Insert (AR16c and AR12c). Channels 1 and 2 on the StudioLive AR16c and AR12c also have inserts. These unbalanced, ¼-inch connectors can be used to connect external processors (such as compressors, EQs, de-essers, and filters) to the channel inputs.



Insert-connector wiring:

Tip = send (output to inserted device)
Ring = return (input from inserted device)
Sleeve = common ground

3.1.2 Outputs



1. **Main.** The StudioLive ARc-series mixers feature with XLR main outputs.

2. **Control Room.** These are the balanced control-room outputs. The Control Room knob on the top panel controls the level.

3. **Phones.** This ¼-inch TRS connection is for use with headphones. The Phones knob on the top panel controls the level.

4. **Footswitch.** This connection allows you to use an external footswitch (not included) to mute the effects return.

   Power User Tip: *Your StudioLive will follow the behavior of the type of footswitch you use. A latching footswitch allows you to mute the effects return until you engage the footswitch a second time. A momentary footswitch will allow you to mute the effects return only while the footswitch is depressed.*

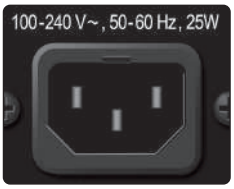
5. **Aux.** The StudioLive ARc-series mixers are equipped with 2/2/1 aux mix outputs. Aux mixes are routed to these outputs. ***See Section 3.4*** for more information on creating Aux mixes for monitoring.

6. **FX.** The FX send mix is routed to this output, allowing you to create an additional monitor mix. When this output is engaged, the internal effects processor is bypassed. More information about creating effects mixes and the effects processor can be found in ***Section 3.5***.

3.1.3 Rear Panel Connections



USB-C™ compatible connection. Use this port to connect your StudioLive ARc-series mixer to a USB port on your computer when using the mixer as an audio interface. ***See Section 5*** for further information. Your StudioLive ARc mixer is a USB 2.0 device and is compatible with nearly all USB connections.



Power-input. Plug in the provided IEC power cable here.



Power switch. Push the top part of the switch to turn on your StudioLive ARc mixer. Push the bottom part of the switch to turn it off.

3.2 Channel Controls



1. **Input-signal indicator.** Each channel features an LED next to the trim control that illuminates green whenever an input signal is present. The LED color will change to red if the signal (pre- or post-EQ) reaches -3 dB.

2. **Input Gain control.** These knobs provide 43 dB of variable gain for mic inputs and 40 dB of variable gain for line inputs (mono channels only).

3. **Input Source button.** Channels 1 and 2 offer an Input Source button that lets you select instrument- or line-level for the ¼-inch inputs on these channels. Press this button to engage the instrument preamp when connecting guitars or a passive bass.

   Note: *Engaging the Instrument preamp will disable the microphone preamp on the XLR connection.*

4. **Low Cut Filter (Mono channels only).** When engaged, all frequencies below 100 Hz will be attenuated (cut) at a slope of -18 dB/octave.

Power User Tip: *Use the Low Cut filter to remove unwanted low-frequencies from your source signal, rather than trying to EQ them out.*



The stereo channels are equipped with a **+10 dB Boost**. When engaged, this raising the level of both the mic and the line inputs by +10 dB.

5. **High shelving EQ Gain control.** Sets the level of the high-band center frequency (10 kHz) from -15 to +15 dB.

Power User Tip: *A high shelving EQ is like a treble-control knob on a stereo. In this mode, the Center Frequency control selects the shelving frequency.*

6. **Mid peaking EQ frequency control (AR16c and AR12c, mono channels only).** Sets the center frequency of the Mid EQ. You can adjust the center frequency from 140 Hz to 3.5 kHz. This control is available on the Mono input channels only.

7. **Mid peaking EQ gain control.** Sets the level of the mid-band center frequency from -15 to +15 dB. The center frequency can be adjusted on the mono inputs of the AR16c and AR12c. All other inputs and the AR8c have fixed center frequency at 2.5 kHz.

8. **Low shelving EQ gain control.** Sets the level of the low-band center frequency (100 Hz) from -15 to +15 dB.

   Power User Tip: *A low shelving EQ is like a bass-control knob on a stereo. In this mode, the Center Frequency control selects the shelving frequency.*

9. **Aux sends.** These are the level controls for each channel to the corresponding aux mix. The AR16c and AR12c provide two aux mixes, and the AR8c provides one Aux mix. ***See Section 3.4*** for more information on using the aux bus to create a monitor mix.

10. **FX send.** This is the level control for each channel for the effects mix. ***See Section 3.5*** for more information on creating effects mixes.

11. **Pan.** This sets the channels position in the Main stereo mix.

    Power User Tip: *Panning can be a great way to achieve better separation in your main mix. Using pan in conjunction with level will allow you to create more definition and space between each channel's signal.*

12. **Mute button and indicator.** This button mutes its channel in all outputs. The LED to the left of it will illuminate red when the channel is muted.

13. **PFL (Pre-Fader Listen) button.** This button will solo its channel to the Control Room and Headphone outputs, pre-fader. When no PFL button is engaged, the Main mix is routed to these outputs.

    Power User Tip: *If you can't hear the main mix or a channel in your headphones, make sure that PFL is not engaged on an unused channel.*

14. **Channel level.** Controls the overall level of the channel.

3.2.1 Digital Returns



The last stereo channel (15/16, 11/12, 5/6) provides a digital playback streaming option. The Digital Return button routes playback streams 3 and 4 from your audio software to this channel. When engaged, the analog source will be bypassed; however, the signal will still be routed to the digital send so that it can be recorded or processed by a plug-in. For more information, ***see your StudioLive ARc-series Software Reference Manual*** in your My PreSonus account.

3.3 The Super Channel



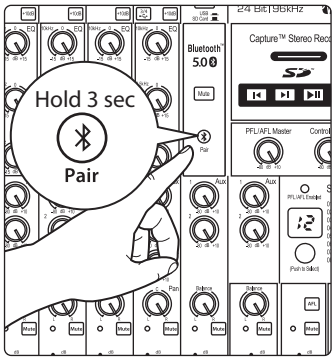
Each StudioLive ARc-series mixer features a unique Super Channel that allows you to connect several analog and digital sources at once so you can get the most out of your mixer.

1. **RCA inputs.** These unbalanced inputs allow you to connect a stereo line-level device, such as a Blu-ray player or karaoke machine.
2. **1/8-inch stereo input.** This is an unbalanced, stereo, 1/8-inch connection for line-level devices such as smartphones and tablets.
3. **USB / SD Card Return.** By default, playback for the onboard SD recorder is routed to the Super Channel. Engaging this button will route USB playback streams 1-2 to the Super Channel instead. More information on using your StudioLive ARc-series mixer as an audio interface can be found in the ***Section 5***.
4. **Bluetooth Mute.** Press this button to mute the Bluetooth source for your ARc mixer.
5. **Bluetooth pairing.** Use this button to pair your Bluetooth device with your ARc-series mixer. ***See Section 3.3.1 for pairing instructions***.

Power User Tip: *All available sources are summed into the Super Channel. Because this channel only selects line-level devices, the majority of which have onboard level controls, you can use this channel to expand the input flexibility of your StudioLive ARc-series mixer.*

3.3.1 Pairing a Bluetooth Device

To pair a new device to your StudioLive ARc-series mixer:



1. Press and hold the Bluetooth pairing button for three seconds.
2. The Bluetooth button will flash once every second.
3. Search for new Bluetooth devices from the device to which you'd like to pair (smartphone, tablet, etc).
4. Select "StudioLive AR16c/AR12c/AR8c" from the available Bluetooth devices list on the pairing device.
5. The Bluetooth button will illuminate solid when paired successfully.

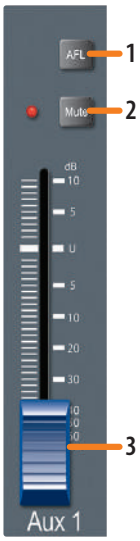
Note: *If previously paired, your StudioLive ARc mixer will connect automatically. The Bluetooth pairing button will flash rapidly (two to three times per second) while the Bluetooth module detects connected devices and will illuminate solid when it is successfully paired.*

3.4 Aux Buses

The aux bus provides outputs to route auxiliary mixes that are separate from the main mix. StudioLive ARc-series mixers are equipped with 2/2/1 aux buses, which have physical output jacks, and one internal effects bus.

Aux buses can be used for many applications, the two most common of which are creating monitor mixes and inserting external effects processors into the mix.

3.4.1 Monitor Bus Controls



1. **AFL button.** This button will solo the aux bus to the aux outputs after the fader.

   Power User Tip: *Using this control to listen in on a performer's monitor mix can be a great way to quickly dial in just the right amount of each signal and get to a great monitor mix more quickly.*

2. **Mute button.** This button will mute or unmute its aux bus. The LED to the left of it will illuminate red when the aux bus output is muted.

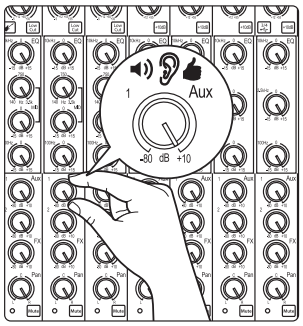
   Power User Tip: *Muting an aux bus output during performance breaks is a quick and easy way to prevent accidental signal spikes or feedback.*

3. **Output level.** Adjusts the master level of the aux output.

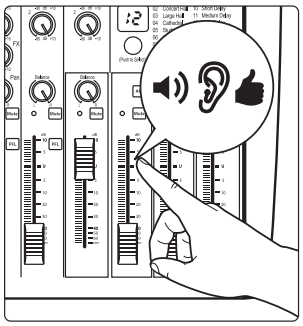
3.4.2 Creating Monitor Mixes

Creating custom monitor mixes is critical. If musicians can't hear themselves or their bandmates, their performances will suffer. A monitor mix can be mono or stereo. Most often, an individual live monitor mix is mono and is sent to a floor-wedge or sidefill monitor. (The obvious exception is in-ear monitor systems.) A studio monitor mix is usually stereo because it is sent to a headphone amplifier that requires both a left- and a right-channel input. In both cases, the function of the aux bus is the same.

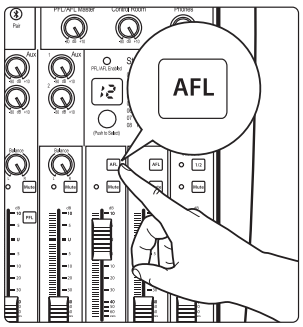
As an example, let's create a mix for Aux Bus 1:



1. The Aux 1 send control for each channel sets the send level in the Aux 1 mix. Use these knobs the same way that you use the output level controls to dial in your main mix. Ask your musicians what they would like in their monitor mix and use their requests as a starting point.



2. Use the Aux 1 Output control to adjust the overall output level.

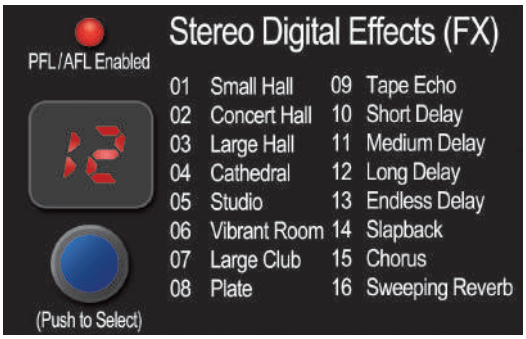


3. Press the Aux 1 AFL button to listen to the mix through the headphone or control room outputs as you make final adjustments to the mix.

3.5 Internal FX Bus

Each StudioLive ARc-series mixer is equipped with an internal effects processor with 16 effects presets. This section will cover each preset, as well as how to add and use effects in your mix.

3.5.1 Effects Presets



To select an effects preset, simply turn the encoder until the desired preset number is displayed and press the encoder.

Preset Descriptions and Uses

No.	Name	Description	When to Use
1	Small Hall	Adds a medium reverb time to emulate a small concert hall	• Gives vocals and instruments a "big" vibe • Adds a greater sense of space
2	Concert Hall	Emulates a large concert hall with softer surfaces	• Adds rich fullness to acoustic instruments and solo vocals
3	Large Hall	Provides long pre-delay and reverb time	• Gives acoustics instruments and vocals a "larger than life" feel
4	Cathedral	Emulates a large cathedral by adding long pre-delays and reflections	• Adds a rich, ethereal feel to any instrument
5	Studio	Emulates an acoustically treated studio room to provide a more intimate and warmer tone	• Soften harsh instruments • Gives vocals a lush vibe • Adds subtle ambience to a mix
6	Vibrant Room	Emulates the sound of large room with hard surfaces to provide many early reflections	• Adds life to a flat room • Helps a vocal or instrument stand out in a mix
7	Large Club	Warm and full reverb to emulate the sound of a large acoustic venue	• All purpose reverb for overall mixes
8	Plate	Emulates a vintage plate reverb by providing many early reflections without pre-delay	• Fattens up percussion and backing vocals
9	Tape Echo	This medium-length, clean delay emulates the traditional tape echo	• Great for vocals and guitars for a retro vibe
10	Short Delay	Provides 300 ms delay	• Helps a vocal or guitar cut through a mix
11	Medium Delay	Provides 380 ms delay	• Adds drama to a vocal or sample
12	Long Delay	Provides 480 ms delay	• Subtle, dreamy effect for vocals and instruments
13	Endless Delay	Combines a large room reverb with a long delay	• Because Purple Rain
14	Slapback	Adds a single, relatively quick delay of the original signal to emulate vintage tape-based delay units	• Vintage sound for guitars • Fun effect for vocals
15	Chorus	Plays with the phase of the signal to create a modulated, sweeping effect	• Good effect for electric guitar and key-boards for a vintage vibe
16	Sweeping Reverb	Adds a rich reverb to a chorus effect	• Thickens and enhances instruments

3.5.2 Internal FX Bus Return



The internal FX return allows you to adjust the amount of the effects output you would like in your main and monitor mixes.

1. **Aux sends.** These are the level controls for the effects output in each aux mix. The AR16c and AR12c provide two aux mixes; the AR8c provides one aux mix. ***See Section 3.4.2*** for more information on creating aux mixes.

2. **Balance.** This sets the FX return's position in the main stereo mix.

3. **Mute button.** This button will mute or unmute the FX return. The LED to the left of it will illuminate red when the FX output is muted.

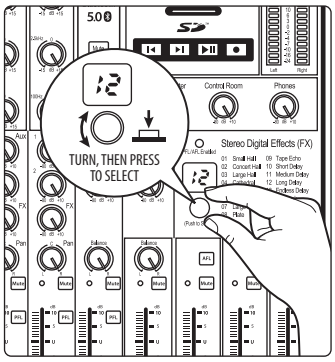
   Power User Tip: *Mute the FX return during performance breaks while the band is speaking to the audience to create a more professional show.*

4. **FX level.** Adjusts the master level of the effects output in your main mix.

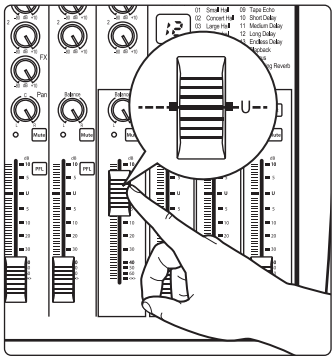
3.5.3 Creating Internal Effects Mixes

There are at least two main advantages to creating an effects mix, rather than inserting an effect in a channel. First, several channels can be sent to a single processor. In addition to greatly simplifying the number of parameters you have to control, this can create a cohesive sound in your mix. The second advantage of creating an effects mix is that you can vary the level sent from each channel to the processor, rather than patching the output directly into the effect. This allows you to add a lot or a little of an effect to any given channel.

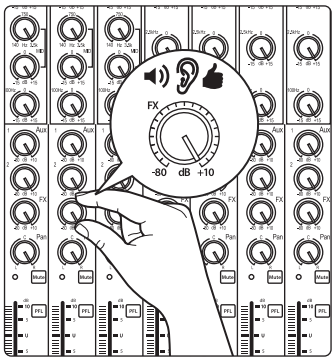
Your StudioLive ARc-series mixer's internal effects bus is used much in the same way the aux buses are used to create monitor mixes.



1. To begin, select the effects preset you would like to use by turning the Effects encoder to the desired number and pressing the encoder.



2. Raise the FX return output level to unity.



3. Use the FX send controls on each channel the same way that you use the faders to set the output level to your main mix. The higher a channel's level is in the effects mix, the more processed ("wetter") it will sound.

   Let's say that you are using reverb to liven up a relatively dead room. You might send a little bit of each input to the reverb, but you probably will not want much of the drums and bass to be processed, as too much reverb could reduce their impact and leave your mix without a sturdy foundation. So rather than turning the FX-send level for the kick drum channel all the way up, turn it to the 8 or 9 o'clock position, so that its saturation is between 20% and 30%. This way, only a small portion of the kick-drum input will be affected by the reverb.

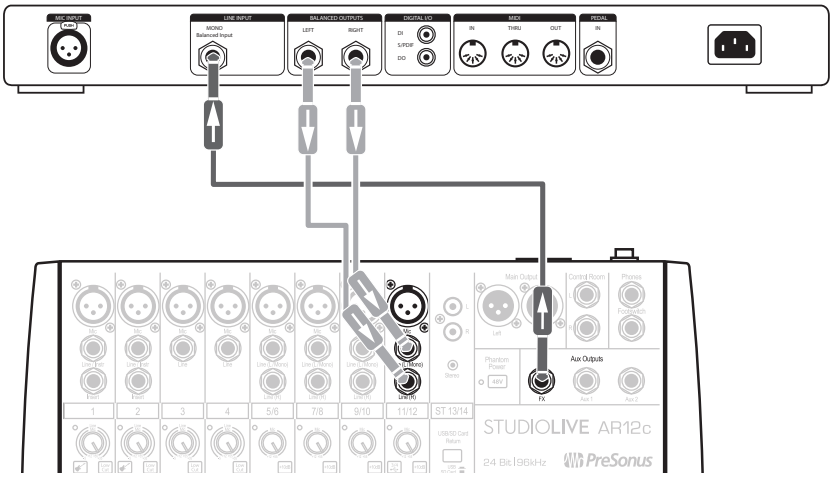
4. Use the FX return level fader to increase or decrease the overall effects mix in the Mains to taste.

5. To send the FX return mix to a monitor mix, adjust the FX return's monitor send control to taste.

3.5.4 Using an External Effects Processor

This section will detail how to use an external effects processor, bypassing your StudioLive ARc mixer's internal processor.

1. To begin, connect the FX output to the input of your external effects processor and connect the outputs of your processor to a stereo channel on your StudioLive ARc mixer.



2. Turn up the output level of the stereo channel to unity.

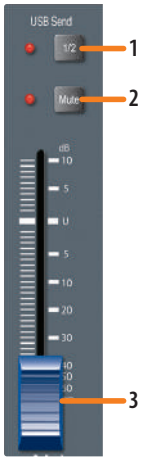
3. Use the FX send controls on each channel the same way that you use the faders to set the output level to your main mix. The higher a channel's level is in the effects mix, the more processed ("wetter") it will sound.

4. Use the stereo channel's Level control to increase or decrease the overall effects mix in the Mains to taste.

5. To send the FX return mix to a monitor mix, adjust the stereo channel's monitor send control to taste.

Power User Tip: *You can also use the FX output to create an additional monitor mix when multiple monitor mixes are of greater importance than adding effects.*

3.6 Master Section Controls



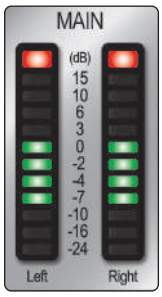
1. **USB 1-2 Send.** By default, the main mix can be recorded to your computer on the last USB send pair (17-18 / 13-14 / 7-8). If you are only recording the main mix on your computer, engaging the USB 1-2 Send button will simplify setup in most situations.

   Note: *When this button is enabled, Channels 1 and 2 cannot be recorded individually, although they will still be a part of the Main mix.*

2. **Main Mute button.** This button will mute or unmute the Main bus. The LED to the left of it will illuminate red when the main outputs are muted.

   Power User Tip: *Muting the main mix during performance breaks is a quick and easy way to prevent accidental signal spikes or feedback.*

3. **Output-level control.** Adjusts the master level of the Main output.



4. **Main output meters.** These peak meters display the output levels of the main stereo bus. These meters are scaled from -24 to +15 dBu. For best performance, the highest level of your mix should stay between the "0" and "+6" indicators.

   Because the StudioLive ARc mixer main outputs are electrical, rather than digital, it is more advantageous to meter them relative to voltage. The Main meters display signals from -24 to +15 dBu (-42 to -3 dBFS). This means that if you play back a digital signal over USB or from the SD card at -18 dBFS, it will register in the Main meters as 0 dBu. Conversely if you record a signal over USB that registers at 0 dBu in the Main Meters, it will display at -18 dBFS in any application that meters in dBFS.

3.6.1 Control Room Levels

StudioLive ARc-series mixers feature a headphone output and control-room outputs, allowing you to listen to the main mix and the Solo bus. Whenever a channel is soloed, it will automatically be routed to the control room and headphone outputs. When no channel is soloed, the main mix will be heard through these outputs.

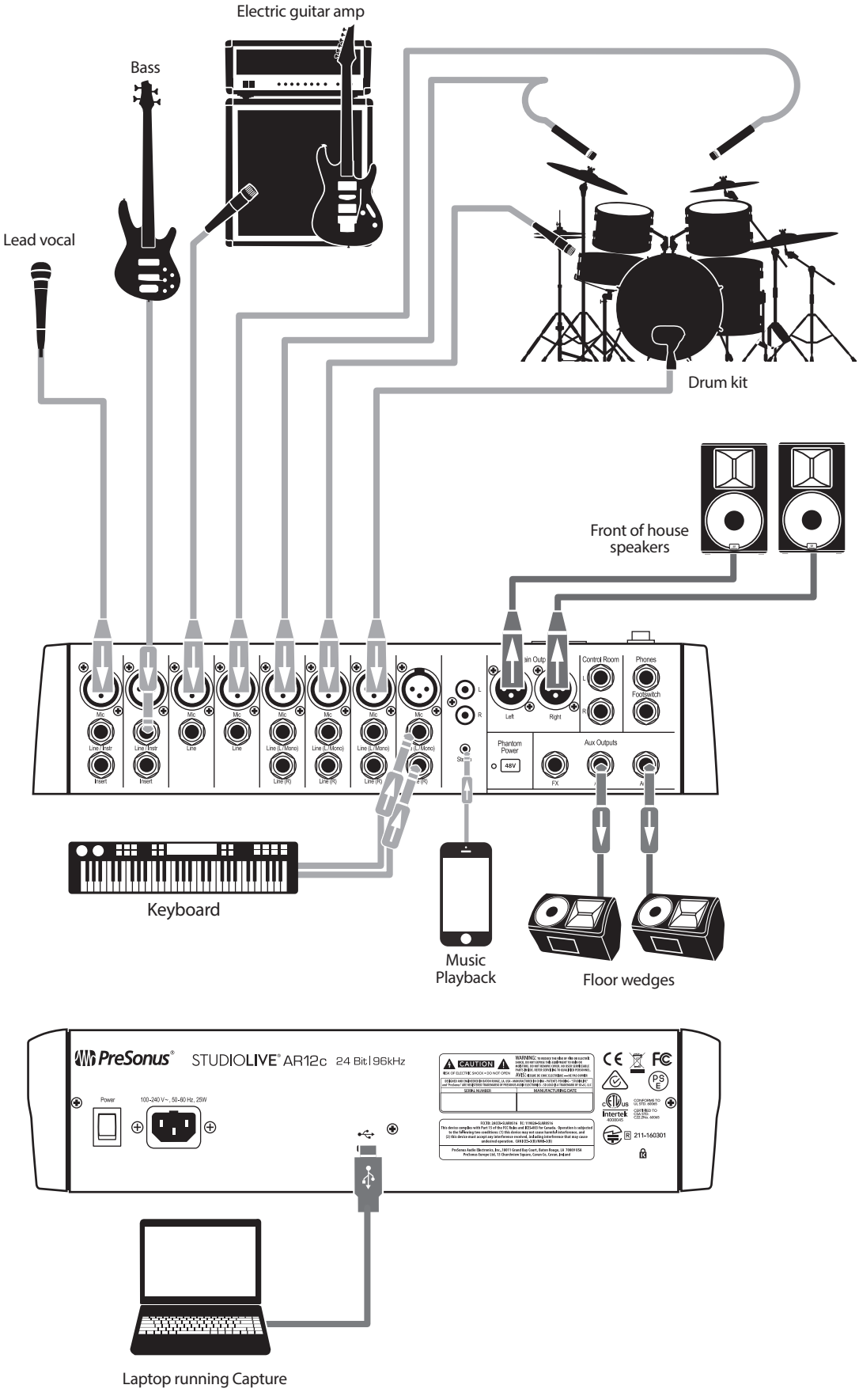


1. **PFL / AFL Master knob.** Adjusts the overall level of the Solo bus.

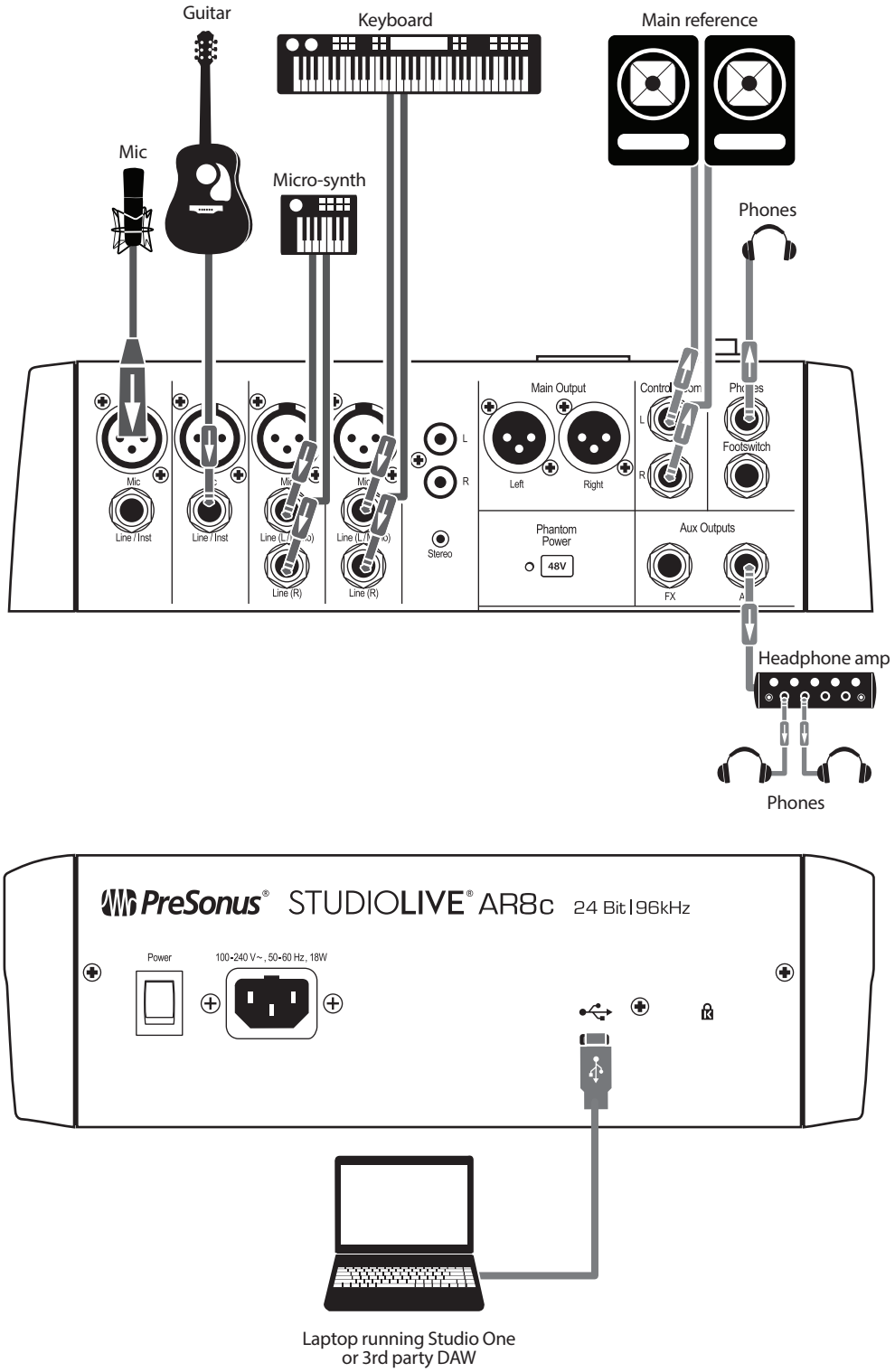
2. **Control Room knob.** Adjusts the overall level of the control-room monitor outputs.

3. **Phones knob.** Adjusts the overall level of the headphone output.

3.7 Typical Band Setup Diagram



3.8 Typical Home Studio Setup Diagram

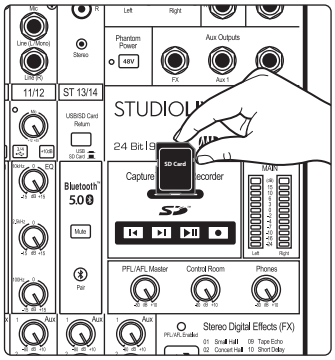


4 SD Recording and Playback

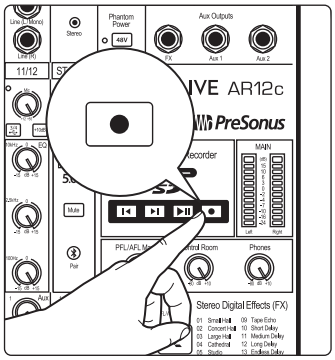
StudioLive ARc-series mixers are equipped with an onboard stereo SD recorder that allows you to record the main mix as a stereo WAV file to any FAT16-formatted SD card or FAT32-formatted SDHC card. You can also load stereo WAV and MP3 files onto an SD or SDHC card to play audio during a show.

4.1 SD Recording

This section explains on how to record the main mix as a stereo WAV file:



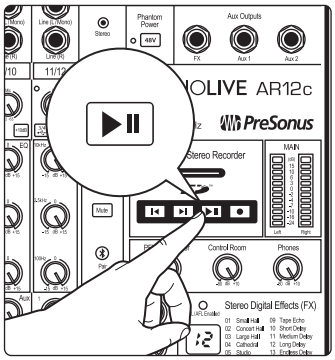
1. Insert a FAT16-formatted SD card or FAT32-formatted SDHC card into your StudioLive ARc mixer. An SD card will provide up to 2 GB of storage space. An SDHC card will provide up to 32 GB.



2. Press the Record button.

3. Recording will begin when the Play/Pause and Record buttons are both illuminated.

   If no SD card is recognized, the Record button will flash three times.



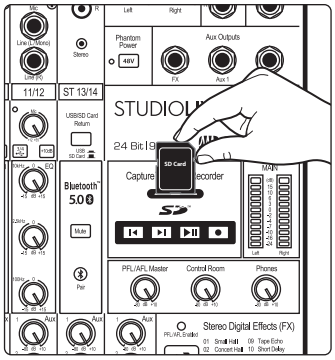
4. Press the Play/Pause button to stop the recording.

   Once complete, you can transfer your recordings onto your computer by inserting the SD card into your computer's SD card reader and copying the files to your computer's hard drive. Each file will be labeled with an "SL-ARc" heading, followed by a number.

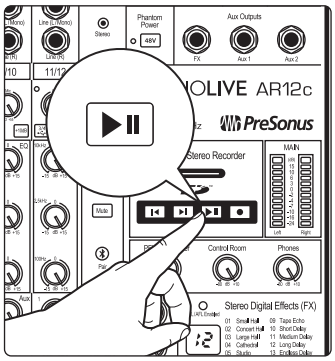
4.2 SD Playback

Playing files from the SD card is a great way to listen to a performance right away, and it can be useful during a performance. SD cards can be preloaded with backing tracks for performance or rehearsal. Or load an SD card with your favorite break music and never be caught without the right adapter or cable again.

To play audio from your SD recorder:

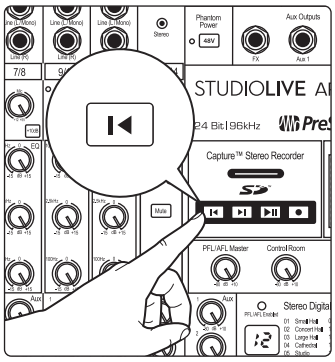


1. Insert into your StudioLive ARc mixer a FAT16-formatted SD card or FAT32-formatted SDHC card that has been pre-loaded with WAV or MP3 files or that you have recorded to using your StudioLive ARc mixer.

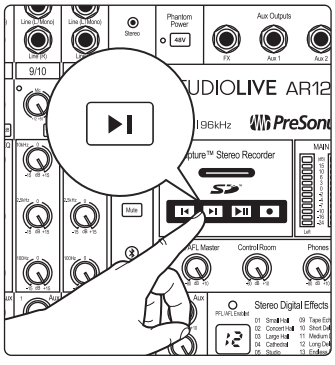


2. Press the Play/Pause button. The current stereo audio file will begin to play at the last position. Playback will continue through all files, in alphanumeric order, until the end of the last file has been reached; then playback will stop automatically.

3. Press the Play/Pause button again to pause playback at the current file position.



4. Press the Return to Zero button to restart the current audio file. Press again to move to the beginning of the previous file.



5. Press the Go to End button to advance playback to the end of the current audio file. Press again to move to the end of the next file.

5 Connecting to a Computer

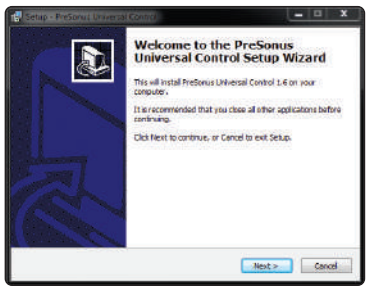
Connecting your StudioLive ARc mixer to your computer is quick and easy. For Mac users, just connect your mixer to a free USB connection on your computer and you're ready to go. For Windows users, you must first install Universal Control. This will install both the ASIO/WDM driver and the control panel for your StudioLive ARc-series mixers. We made this installer as simple and easy to follow as possible, and it will take you through each step of the installation process. Please read each message carefully to ensure the StudioLive driver and the control panel are properly installed. In particular, be careful not to connect your StudioLive mixer to the computer too soon.

Please visit **www.presonus.com** for the latest system requirements and an updated list of compatible hardware. It is also recommend that you check your recording software's system requirements.

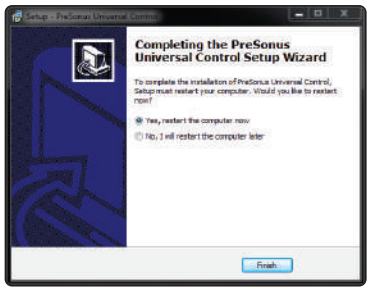
Power User Tip: *The speed of your processor, amount of RAM, and capacity, size, and speed of your hard drives will greatly affect the overall performance of your recording system. A faster processor and more RAM can reduce signal latency (delay) and improve overall performance.*

5.1 Installation for Windows

Before beginning the installation setup, please quit all applications, including antivirus software, and disconnect the StudioLive mixer from your computer.



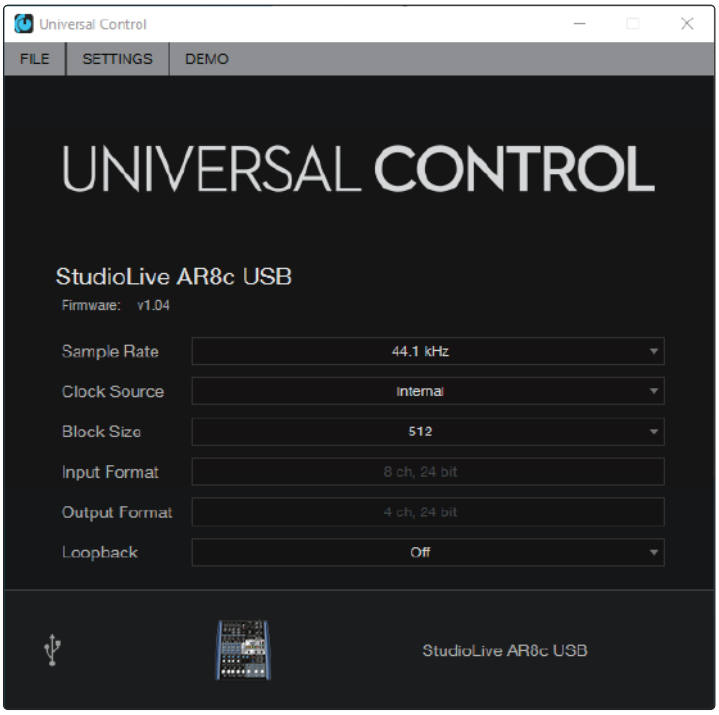
Follow the onscreen instructions to complete the installation. When the installer has finished, it will prompt you to reboot your computer.



Click "Finish" to automatically restart your PC. Once your computer has rebooted, connect the StudioLive. When the Found New Hardware wizard launches, follow the "Recommended" steps.

Your StudioLive is now synced to your computer and ready to use!

5.1.1 Universal Control (Windows only)



Sample Rate. Changes the sample rate.

You can set the sample rate to 44.1, 48, 88.2, or 96 kHz. A higher sample rate will increase the fidelity of the recording but will increase the file size and the amount of system resources necessary to process the audio.

Safe Mode. Adjusts the Input Buffer Size.

These modes allow you to adjust the input buffer size to optimize performance for your computer.

When adjusting the safe mode, the block size will be adjusted automatically to provide the best performance.

Block Size. Sets the buffer size.

From this menu, you can set the buffer size from 16 to 4,096 samples (Mac), or 64 to 8192 samples (Windows). Lowering the buffer size will lower latency; however, this will also increase performance demands on your computer. In general, you will want to set the buffer size as low as your system can safely support. If you begin to hear pops, clicks, or distortion in your audio path, try raising the buffer size.

Note: *When adjusting the block size, the Safe Mode will automatically change to provide the best performance.*

5.1.2 Loopback Recording (Windows only)

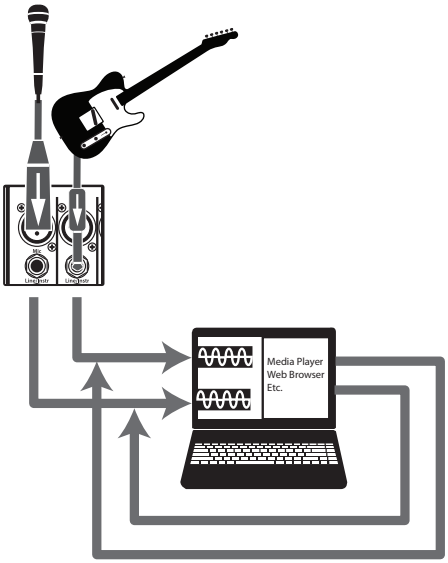
The windows drivers for the StudioLive ARc-series mixers provide two virtual streams that allow you to record the output of on audio application in another application. Loopback can be useful in a variety of situations:

- Recording the audio from a video game or YouTube video for a podcast or livestream.
- Recording a vocal in real time over a karaoke track played from a web browser or media player.

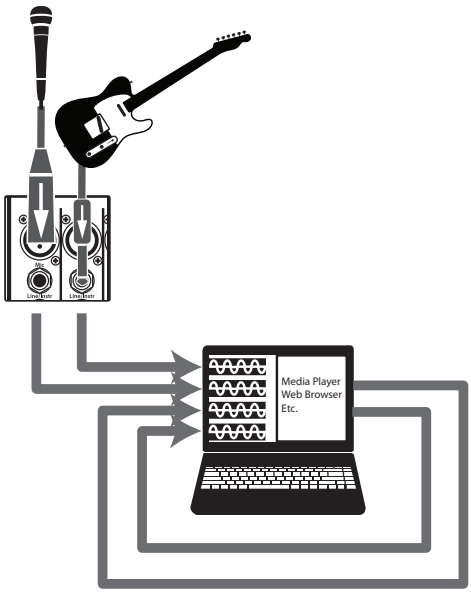
Power User Tip: *Because the StudioLive ARc-series mixers are class compliant Core Audio devices, these virtual streams are not available in macOS. However, there are several third-party applications that provide this functionality in macOS.*

From Universal Control, you can enable or disable Loopback and pick the streams on which the loopback audio will be recorded.

When Loopback is enabled and "Merge Loopback with 1/2" is selected, the audio from another application will be recorded with the audio source connected to analog inputs 1 and 2 on your StudioLive ARc-series mixer.



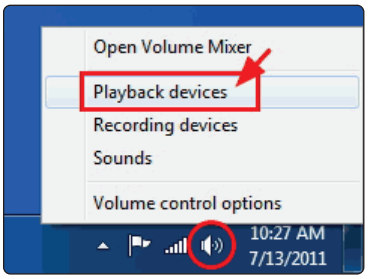
When Loopback is enabled and "Virtual" is selected, the audio from another application will be recorded on the last pair of driver inputs (AR8c: 9/10, AR12c: 15/16, AR16c: 19/20).



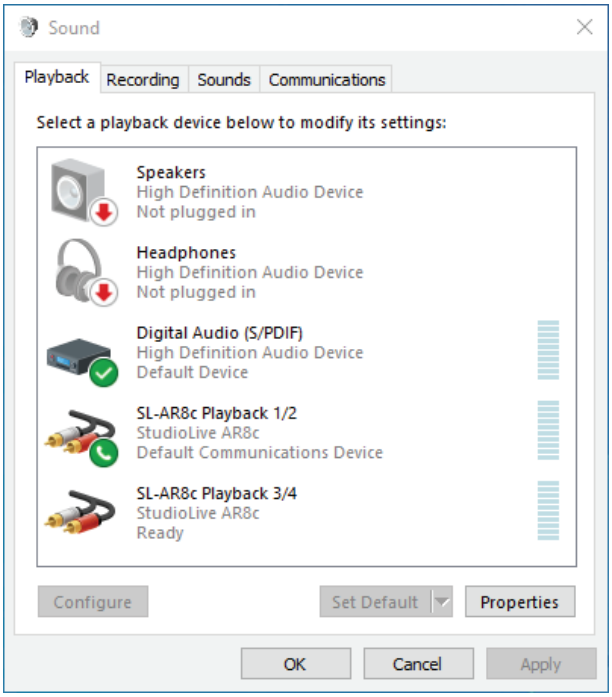
Power User Tip: *When using either option, you will need to select Outputs 1 and 2 in the audio application your want to record. Make sure to select Outputs 3 and 4 in the audio application in which your recording to avoid a feedback loop.*

5.1.3 Using the StudioLive for System Sound

Click on the small speaker icon in the bottom right corner of the screen and select "Playback Devices."

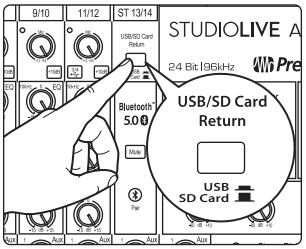


Select StudioLive ARc playback channels 1/2. This will route your system audio to the USB return on the Super Channel of your mixer. Select "Set Default" at the bottom of the screen and click OK.



Now that your StudioLive ARc-series mixer is setup as the default playback device for your computer's operating system you can use it for basic playback from your computer via your media player or from your Internet browser.

To playback system audio from your computer through your mixer, press the USB/SD Card Return button on the Super Channel and make sure it is in the down position.



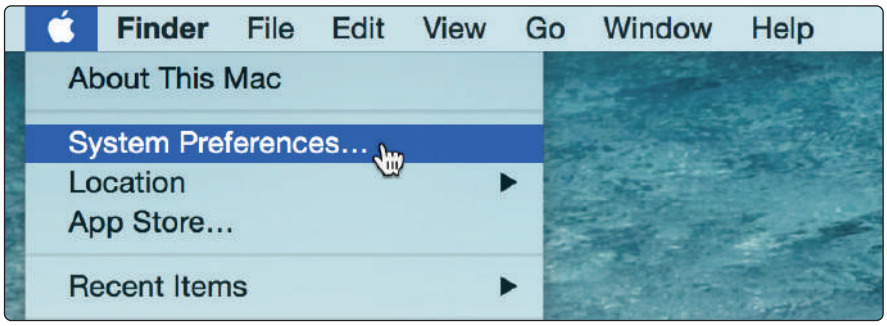
5.2 Installation for macOS

The StudioLive ARc mixers are class compliant audio devices in macOS. No installation is required. Just connect your mixer to a free USB connection

5.2.1 Using the StudioLive for System Sound

You can configure your StudioLive ARc-series mixer as the audio interface for computer system audio (for iTune playback, Skype, etc.) from the System Preferences menu.

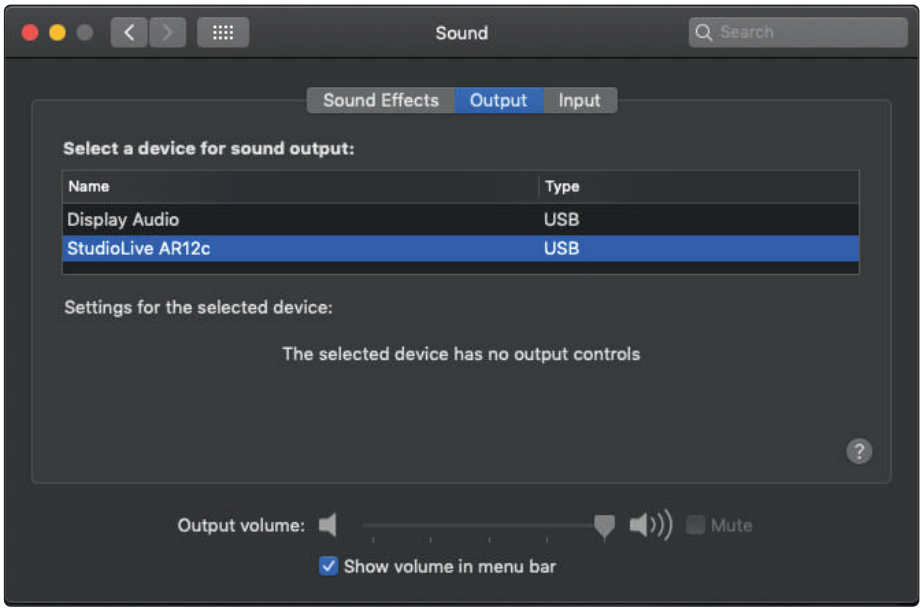
1. Open System Preferences

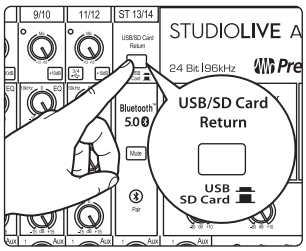




2. Open your System Sound Preferences

3. Select your StudioLive ARc-series mixer from the Outputs list. If you would like to use your StudioLive mixer for System input, select it from the inputs tab as well.





To playback system audio from your computer through your mixer, press the USB/SD Card Return button on the Super Channel and make sure it is in the down position.

5.3 Using the StudioLive with Popular Audio Applications

Below are basic driver-setup instructions for several popular audio applications. Complete setup instructions for PreSonus Studio One Artist and a brief tutorial on its features are located in **Section 7** of this manual.

Steinberg Cubase 4+

1. Launch Cubase.
2. Go to Devices | Device Setup.
3. Select "VST Audio System" from the Devices column in the Device Setup.
4. Select PreSonus FireStudio from the ASIO Driver dropdown list.
5. Click "Switch" to begin using the StudioLive Driver.
6. Once you have successfully changed the driver, go to Devices | VST Connections to enable your input and output buses.

Ableton Live 5+

1. Launch Ableton Live.
2. Go to Options | Preferences | Audio.
3. Choose Driver Type: ASIO | Audio Device: ASIO PreSonus StudioLive ARc
4. Go to Input Config : Enable and select the desired Input channels.
5. Go to Output Config : Enable and select the desired Output channels.
6. You may now select the StudioLive's inputs and outputs for each track created in Live.

Apple Logic Pro/Express 7+:

1. Launch Logic Pro/Express.
2. Go to Logic | Preferences | Audio.
3. Click on the Devices Tab.
4. On the Core Audio tab, check Enabled.
5. Select PreSonus StudioLive ARc from the device menu.
6. You will be asked if you'd like to relaunch Logic. Click "try (re)launch."
7. Your StudioLive features custom I/O labels for faster work flow. To enable these labels for use in Logic, go to Options | Audio | I/O Labels.
8. The second column in the pop-up window will be named "Provided by Driver." Activate each of these labels for your StudioLive. When you are done, close this window.
9. You are now ready to use your StudioLive.

Avid Pro Tools 9+

1. Launch Pro Tools.
2. Got to Setup | Hardware and select PreSonus StudioLive ARc from the Peripherals list. Click OK.
3. Go to Setup | Playback Engine and select PreSonus FireStudio from the menu at the top of the window. Click OK.

Cakewalk Sonar 6+

1. Launch Sonar.
2. Go to Options | Audio... and click on the Advanced tab.
3. Change the Driver Mode to "ASIO."
4. Click the "OK" button.
5. Restart Sonar.
6. Go to Options | Audio... and click on the Drivers tab.
7. Highlight all input and output drivers beginning with "PreSonus StudioLive ARc."
8. Go to Options | Audio... and click on the General tab.
9. Set the Playback Timing Master to "PreSonus StudioLive ARc ... DAW Out 1."
10. Set the Recording Timing Master to "PreSonus StudioLive ARc ... Mic/Inst 1."

5.4 Digital Sends and Returns

When using the StudioLive as an audio interface, it is important to understand the terms "digital send" and "digital return." Because the audio interface in the StudioLive is completely integrated with the other functions of the mixer, the USB I/O is designed to work as an independent bus. You can route (send) signals from other buses to the USB bus, and its output (return) signal is hard-coded to designated mixer channels.

The StudioLive AR8c has 8 available sends and 4 returns.

The StudioLive AR12c has 14 available sends and 4 returns.

The StudioLive AR16c has 18 available sends and 4 returns.

5.4.1 Digital Sends

Each Mono and Stereo channel on the StudioLive ARc-series mixer has its own digital send. This allows you to record every channel input on its own track in Capture, Studio One Artist, or your favorite Core Audio and ASIO audio application.

The Main bus also features its own digital send on the final pair of digital sends (AR8c: 7/8, AR12c: 13/14, and AR16c: 17/18).

Note: *In Windows, these sends are the second to the last pair. The last pair of driver inputs are reserved for loopback functionality.* ***See Section 5.1.2*** *for more information.*



The Main bus can also be recorded on the first two digital sends by engaging the USB send 1/2 button on your StudioLive ARc-series mixer. When this button is engaged, Channels 1 and 2 cannot be recorded independently, but they will be recorded as part of the Main Mix. This is a great option for recording rehearsals and podcasts.

5.4.2 Digital Returns



The last two stereo channels on the StudioLive ARc mixers are hard-coded to receive two stereo digital returns. Digital returns 1/2 are available on the Super Channel, Digital returns 3/4 are routed to the last stereo channel (AR8c: 7/8, AR12c: 13/14, and AR16c: 17/18). Outputs 1 through 4 in your recording application route these playback streams to these channels on the StudioLive (that is, the software's Outputs 1/2 always go to StudioLive ARc Super Channel and Output 3/4 always go to the last stereo channel). Once you route a track in your recording application to play through one of these outputs, it will always be accessible on its channel by simply pressing the Digital Return button.

Power User Tip: *It is important to think of your digital returns and your analog inputs in the same way. When a digital return is engaged, it replaces the analog input in the mix.*

6 Capture 2



PreSonus® Capture™ 2.0 is a multitrack digital-audio recording application designed to make recording with StudioLive™ mixers quick and easy. With the look and feel of a digital multitrack hard-disk recorder, it is instantly familiar. It uses the same high-quality audio engine as PreSonus' groundbreaking Studio One® DAW, and its Session files can be opened directly in Studio One—no conversion or exporting required.

Capture 2 was designed exclusively for StudioLive-series mixers, allowing instant setup and recording directly from the mixer, with no configuration. Just launch Capture 2 and click Record Now. At the end of the show, click Stop, save the file, and you're done!

6.1 Installation Instructions

6.1.1 macOS

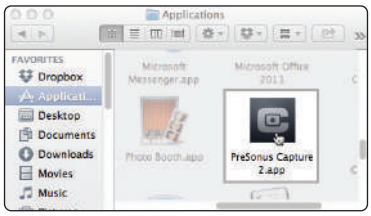
Installing Capture 2 on macOS machines is as simple as drag-and-drop.



1. Double-click on the Capture .dmg file.



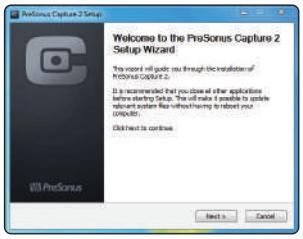
2. Drag the Capture 2 icon to the Applications folder shortcut.



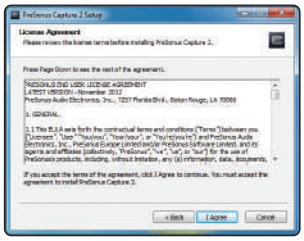
3. Once Capture has been copied to your hard drive, it is ready to use. Simply open your Application folder and double-click on the Capture 2 icon.

6.1.2 Windows

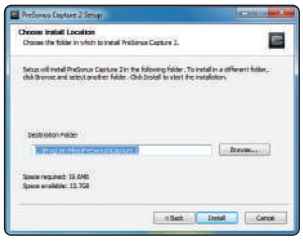
The Windows installer for Capture 2 was designed with easy-to-follow onscreen instructions to make the installation process quick and simple.



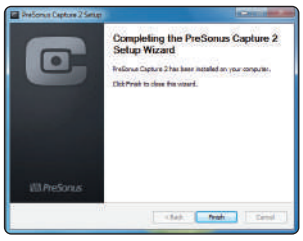
1. When you launch the Capture.exe file, a Welcome Screen will launch. If you haven't already done so, close all other open applications before clicking "Next."



2. Before Capture 2 can be installed on your computer, you must first agree to the licensing terms. Click "I agree."



3. By default, Capture 2 will install in the Program Files folder on your computer. It is highly recommended that you do not change this default location. Click "Install."

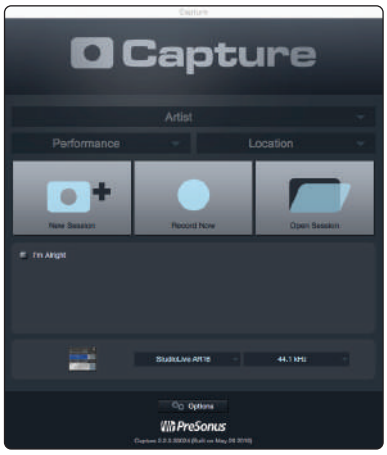


4. Once Capture 2 has been successfully installed on your computer, you can click "Finish" to exit the install wizard. You're ready to start recording!

6.2 Start Page

You will be taken to the Start page when Capture 2 is launched. The Start page allows you to create a new Session, open a Session stored on your computer, view recent Sessions, and verify that your StudioLive is properly communicating with its driver. In addition, you can begin recording instantly by just clicking the Record Now button.

6.2.1 Tagging and Organizing a Session

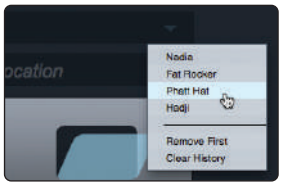


At the top of the Start page, you will find the three Name Scheme fields: Artist, Performance, and Location. By entering information into each of these fields, your Session will be automatically named with this information, in this order, and tagged with the same helpful metadata.

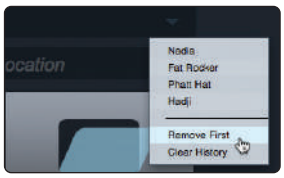
These tags also help to keep your files organized. Rather than throwing every Session into a single folder, all tagged Sessions will automatically be put into an organized folder hierarchy. By default, Capture 2 inserts the date of performance and creates subfolders. These options can be changed in the Options menu, ***see Section 6.2.5*** for details.

By default, the folder tree is Artist/Performance/Location. This structure is useful for regularly gigging bands that want to archive performances (e.g., Artist: PreSonus All Stars, Performance: Winter Tour 2017, Location: Baton Rouge – Manship Theatre). However, Capture 2 doesn't limit you to this folder structure. You can change the folder hierarchy from the Options menu. Here are other available Name Schemes:

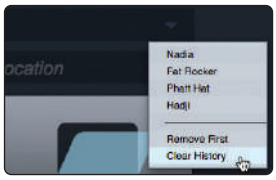
- **Location/Artist/Performance.** This Name Scheme is especially useful for venue owners who are archiving the performances on their stage (e.g., Location: Manship Theatre/PreSonus All Stars/Winter Tour 2017.
- **Location/Performance/Artist.** Use this Name Scheme when recording an entire festival (e.g., PreSonuSphere/Stage 1/PreSonus All Stars).



As you archive your performances, Capture 2 stores a history of the names you have entered into each field. To use a name again, simply click on the pull-down menu for that field and select it from the list.

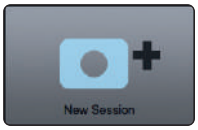


To clear the currently selected name from the list, select Remove First from the pull-down menu.



To remove every name in the list, select Clear History. Once the history has been cleared, it cannot be undone, so be certain before you choose this option.

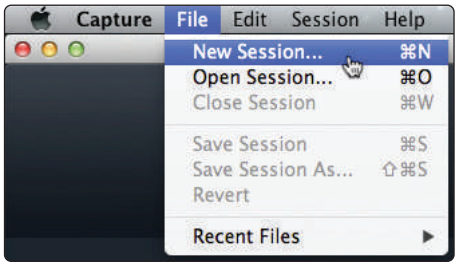
6.2.2 Creating a Session



Below the Name Scheme fields, you will find the New Session button. Click on the New Session button to create an empty Session.

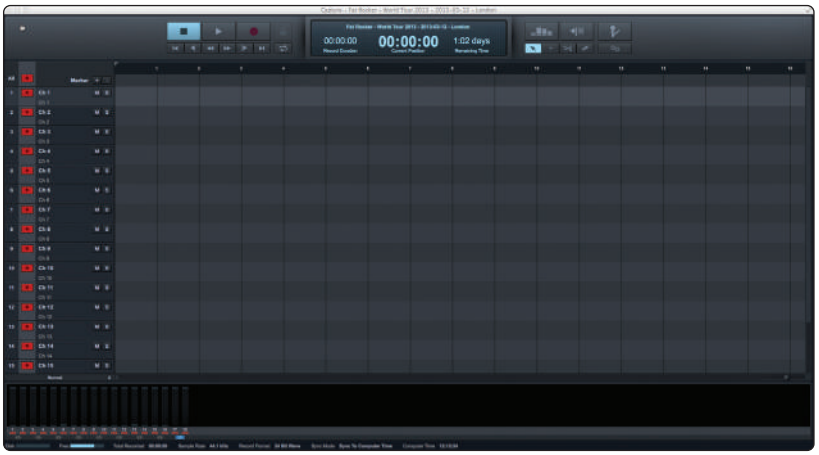
Power User Tip: *A Session is a Capture 2 file in which you record, arrange, and edit your audio files. Session files should not be confused with audio files. Think of a Capture 2 Session as you would a StudioLive scene. It is a snapshot of which audio files were recorded and how they were edited.*

You can also create a new Session by doing one of the following:

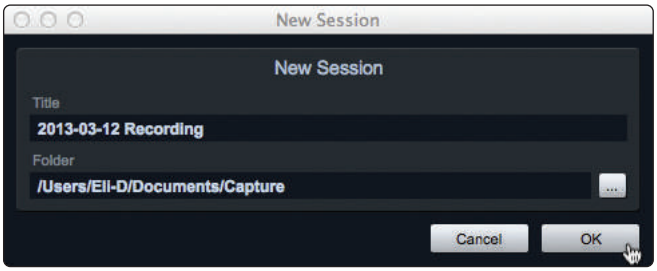


- Navigate to File/New Session.
- Press [Ctrl]/[Cmd]+N on the keyboard.

If you have filled in the Name Scheme fields, your new Session will launch automatically.



If you have not filled in these fields, a setup menu will open.

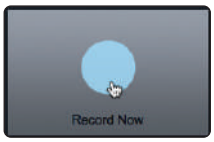


- **Session Title.** This will be the title of your Session and will be the Session filename, as well as the name of the new folder that contains all data related to your Session.
- **Session Folder.** This is where new Sessions and all related data will be saved. The Session location can be chosen each time you create a Session. By default, the new Session location will be the Capture 2 folder in your Documents folder.



You can choose a different file location by clicking on the Browse button and browsing to a new location. The last known save location will appear as the default the next time you create a new Session.

Power User Tip: *The Name Scheme fields have been added to Capture 2 to help keep your Sessions organized and to make your archived library of live performances more easily searchable. Because of this, we highly recommend that you always take a moment to fill in these fields.*

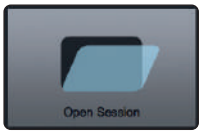


Record Now! Clicking the Record Now button on the Start page will launch a new Session, arm all tracks for recording, and begin recording immediately. If you do not have any of the Name Scheme fields customized, your Session will be labeled with today's date.

6.2.3 Open a Session

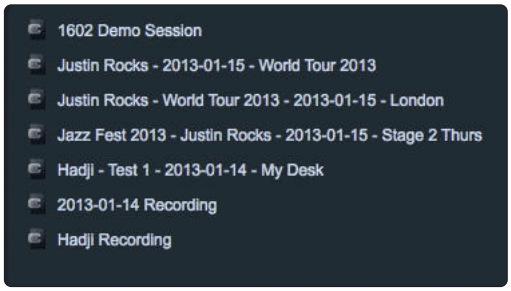
The Capture 2 Start page provides two different ways to quickly open previous Sessions.

Open Session Button



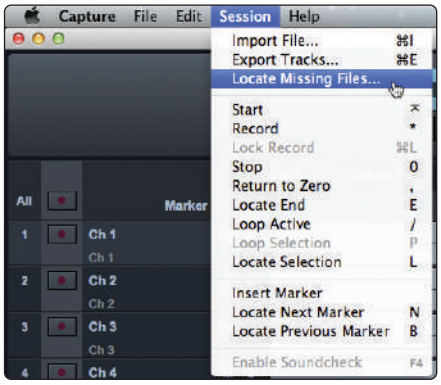
Clicking on the Open Session button will open a browser that will allow you to browse for, and open, an existing Session.

Recent Files List



Located below the Open Session button, you will find the Recent Files list. This list includes links to the most recently opened documents. Click on any of these links to quickly open the Session.

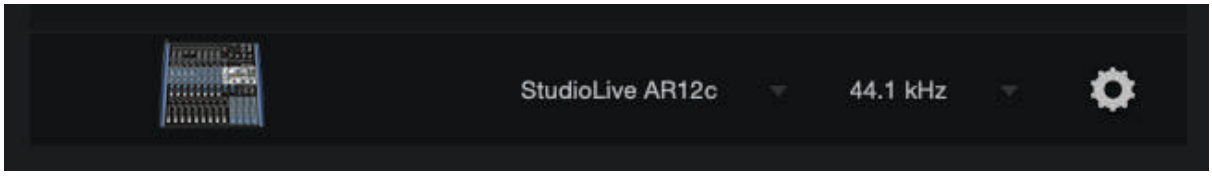
Locate Missing Files



In the event that the Session you open is missing audio files, Capture will help you find them. Use Session>Locate Missing Files to search your computer for lost resources.

6.2.4 Audio Device and Sample Rate

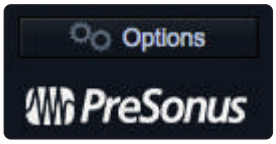
Capture 2 was created for use with PreSonus StudioLive-series mixers and fully functions only with that device. The Audio Device menu displays the currently selected audio driver. When a StudioLive ARc Mixer is connected, you should select "StudioLive AR16c/AR12c/AR8c" from the Audio Device list.



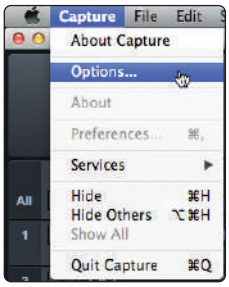
If the currently selected audio device has exactly two outputs (as with the built-in audio card in a Mac), Capture goes into Stereo mode. While in Stereo mode, Capture connects all tracks to the stereo output and adjusts the volume of the output automatically to account for stereo summing. Stereo mode enables you to listen to Sessions while away from your StudioLive. Unless the StudioLive's driver is selected, you cannot create a new Session or record new audio.

The Sample Rate menu displays the currently configured sample rate.

6.2.5 Options Menu

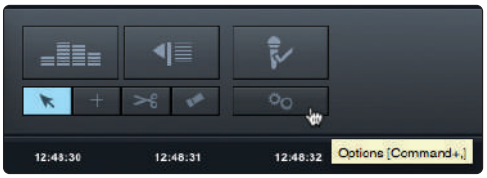


The Options button can be found just above the bottom of the Start page. This launches the Options menu.



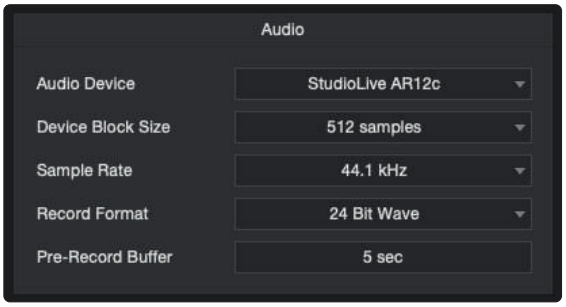
This menu can also be accessed from Capture>Options.

It can also be accessed by clicking on the Options button on the Session page.



The Options menu provides all the tools necessary to configure your Session preferences.

Audio Options



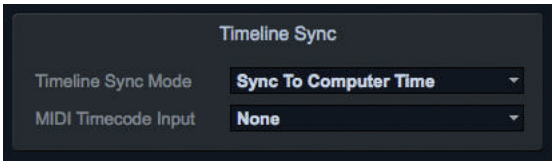
- **Audio Device.** At the top of the Audio Options, you will find the Audio Device menu. This is the same menu that is on the Start page. ***See Section 6.2.4 for information***.
- **Device Block Size.** This displays the buffer size. In general, the higher the buffer size is set, the more stable your recording environment will be.
- **Sample Rate.** The Sample Rate menu is also found on the Start page. ***See Section 6.2.4 for information***.
- **Record Format.** The Record Format menu allows you to choose the bit-depth of the recorded audio. You can select 16-bit WAV, 24-bit WAV, or 32-bit floating-point WAV.

Power User Tip: *The higher the bit-depth of your audio, the better its resolution, and the bigger the resulting file size will be. In general, we recommend recording at 24-bit.*

- **Pre-Record.** Capture 2 allows you to set a Pre-Record buffer. This buffer starts recording audio before your click the Record button so you won't miss the beginning of a performance. The Pre-Record buffer time is user-selectable, between five seconds and one minute.

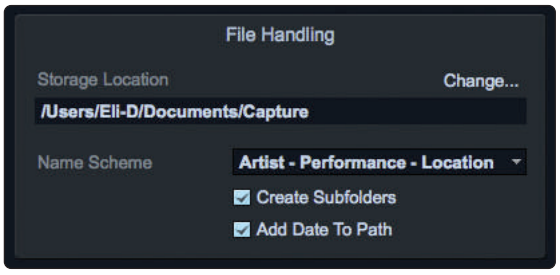
Power User Tip: *The higher the Pre-Record buffer is set, the more RAM Capture 2 will require. While this will not cause problems on modern systems that are equipped with copious amounts of RAM, it is highly recommended that the Pre-Record buffer be set as low as possible on systems with the minimum amount of required RAM (2 GB).*

Timeline Sync Options



- **Timeline Sync Mode.** Capture 2 features a Timeline Sync mode. This allows you to align the timeline in your recording Session to the time of day or to sync it to an external MIDI Time Code signal. This will also affect the timestamp information, which is written into the audio files.
  - **No sync.** The timeline will start at 0 and will display the length of your recording (in minutes and seconds only). This option is useful when you only want to track the length of your recording.
  - **Sync to computer time.** The timeline ruler will start at the exact time of day the recording began. This option is useful when recording multiple performances over the course of a day (e.g., at a festival stage).
  - **Sync to MTC.** Capture will align the timeline to incoming MIDI Time Code. This option is useful when recording audio for a live video.
- **MIDI Time Code Input.** To use the Sync to MTC option, you must provide Capture with an input for the source time code. You can select that source from this menu.

File Handling Options



As discussed in ***Section 6.2.1***, Capture 2 provides an assortment of useful tools to organize and label Capture Sessions.

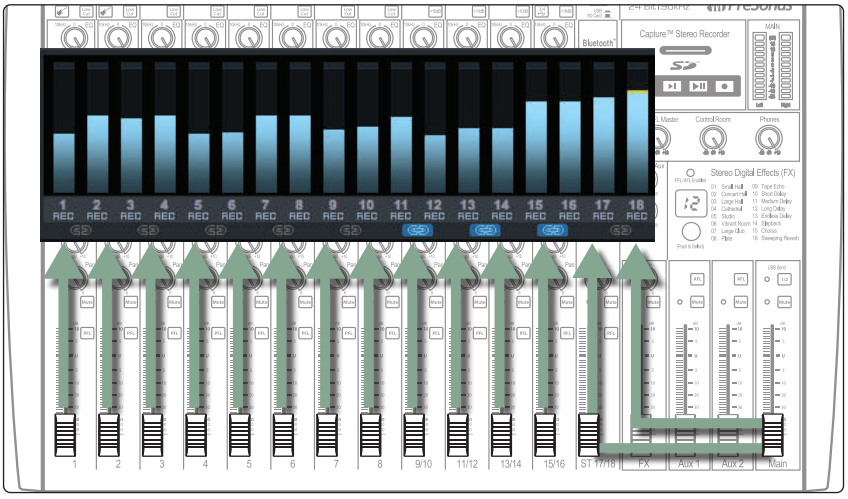
- **Storage Location.** By default, all Capture Sessions are stored in the Capture subfolder in your Documents folder. You can set a new default location by clicking on the "Change…" link. This will launch a browser window, allowing you to find a new location for your Capture Sessions.
- **Name Scheme.** ***Section 6.2.1*** discusses the various options for naming and organizing your files. This option enables you to select the order in which your files are categorized.
- **Create Subfolders.** Clicking the Create Subfolders options will create a folder for each of the three naming conventions: Artist, Performance, and Location. If this box is not checked, your Session and the resulting audio files will still be labeled using these tags but a folder hierarchy will not be created. This box is enabled by default.
- **Add Date to Path.** By default, Capture automatically adds the date of the Session to the Session name. You can remove the date by unchecking this option.

6.3 The Session Page

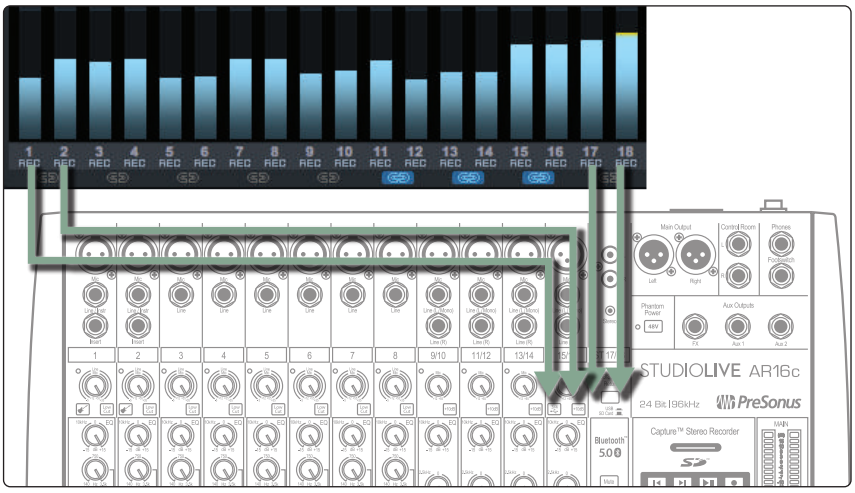
Capture 2 features a single-window user interface so you don't need to manage multiple windows and views. When a new Session is created, or an existing Session is opened, you will be taken to the Session page. This page contains all of the necessary tools to record and edit multitrack audio.

When you launch Capture 2, a recording track is created for each input channel on your StudioLive ARc mixer, including the Main bus. The Main bus track, in turn, is automatically patched to the first two digital returns located on the Super Channel on your StudioLive ARc mixer for playback. Channels 1 and 2 are routed to the Digital Returns 3/4 on the last stereo channel. The following diagrams show these configurations.

Capture 2 Recording Routing



Capture 2 Playback Routing

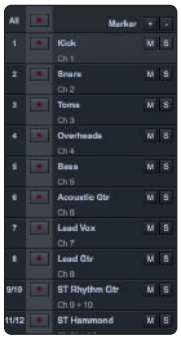


There is no need to set up audio inputs and outputs in Capture 2, as the software automatically detects which StudioLive model is connected and auto-configures for it. Each channel from the StudioLive ARc mixer is represented with a mono input track in the Track column of the Session and has a corresponding level meter in the meter bridge.

An additional stereo track will also be added to the Session for recording the main mix.

Power User Tip: *Unlike a DAW application, like Studio One Artist, Capture has no mix engine of its own, relying, instead, on the physical mixer connected to it to do the mixing and the summing. Because of this, once you're ready to mix your recordings, you will need to move you audio over to your favorite DAW application. If your favorite DAW is Studio One, you can simply open your Capture session from the Studio One Start page.* ***See Section 6.6.2*** *for details.*

6.3.1 Track Column



Along the left side of the Session page, you will find the Track column. The Track column contains a dedicated audio track for each audio input into Capture 2 from the StudioLive ARc mixer, plus a stereo audio track to record the main mix.

Track Naming.

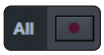


To name a track, double-click on the default name to open a text-edit box. Enter the name you would like to use and hit Enter.

There are several benefits to giving each track in your Session a name. First, it allows you to know at a glance what is being recording where. Second, if you name your tracks before you begin recording, the audio file recorded on your named track will be given the same name. So, for example, instead of a bass line being recorded as Track 15, it would be recorded as Bass.

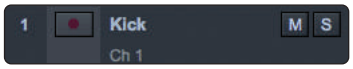
Power User Tip: *As with Studio One, you can press the Tab key to move to the next track's name field.*

Arm All.



In the upper left-hand corner, you will find the Arm All button. Click this button to arm (enable) all inputs for recording.

Track Controls.



Each track in the Track column features the same controls.

Record Arm Button. Next to each track number is the Record Arm button. When this button is active, Capture 2 is ready to record audio that is routed to the track.

Power User Tip: *The track number to the left of each track in the list corresponds directly to the same channel number on your StudioLive ARc mixer.*

Track Mute. Each track features a Mute button. This mutes the track during playback.

Track Solo. Each track features a Solo button. This will solo the track and mute all other tracks during playback (similar to the SIP function on the StudioLive).

6.3.2 Transport



The Transport is located in the top left corner of the Session page. It contains all the functions you need to navigate through your Session.



Stop. Stops playback.



Play. Starts playback at the current playback-cursor position.



Record. Starts recording at the current playback-cursor position.



Session Lock. The Record Lock button prevents the recording from accidentally being stopped by an errant press of the space bar. Session Lock is automatically enabled when Capture starts recording. It can be defeated by simply clicking on it.

Power User Tip: *Markers can still be edited and dropped while Session Lock is enabled.*



Return to Zero. Returns the playback cursor to the beginning of the Session.



Previous Marker. Jumps the playback cursor to the previous marker.



Rewind. Rewinds as long as this button is enabled.



Fast Forward. Fast-forwards as long as this button is enabled.



Next Marker. Jumps the playback cursor to the next marker.



Go To End. Jumps the playback cursor to the end of the recorded audio.



Loop. Engages/disengages Loop mode. ***See Section 6.3.6.6*** for more information.

6.3.3 Time Display



The Time Display provides you with critical information about your recording.

Session Name. Displays the name of the current Session.

Record Duration. Displays how long the current Session has been recording.

Cursor Time. Displays the current timeline position of the playback cursor.

Remaining Time. Displays the remaining time that can be recorded, based on the size of the available storage left on the hard drive to which you are recording.

6.3.4 Timeline Ruler



At the top of the Session Editor, you will find the Timeline Ruler. This displays time increments in seconds.

As mentioned in ***Section 6.2.5***, you can set the Timeline Ruler to sync to your computer's clock or to an external MIDI Time Code source.

6.3.5 Navigating the Session

Zooming

You can zoom in and out of your Session, with respect to time, in the Session Edit window, so that you can look at the entire length of the Session or just view a small region of time to make accurate edits. You can also zoom in and out with respect to the size of the audio files in your Session.

To zoom, do one of the following:



- To zoom in or out, click-and-drag left or right on the Horizontal Zoom scroll bar in the lower right-hand corner of the Edit window.
- Press [Ctrl]/[Cmd]+[+] on the keyboard to zoom in slightly. Press [Ctrl]/[Cmd]+[-] on the keyboard to zoom out slightly.

- Click inside the Timeline Ruler at any point in time and drag down or up to zoom in or out.



- In the lower left-hand corner of the Edit window, you will find the vertical-zoom controls. These controls increase or decrease the height of the tracks and audio files.

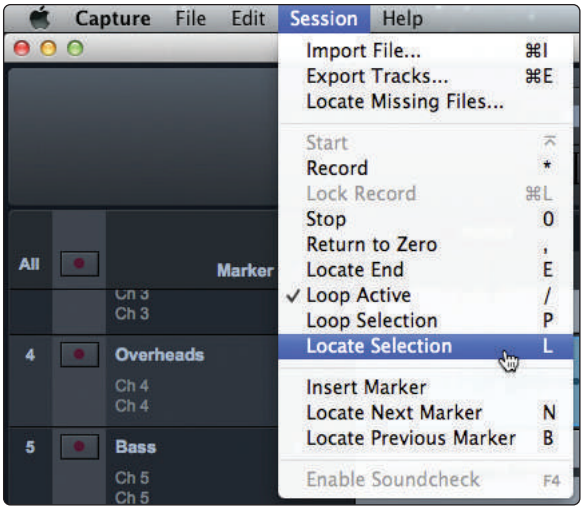
Scrolling



To scroll left and right through time in your Session, click-and-drag the horizontal scroll bar near the bottom of the Edit window.

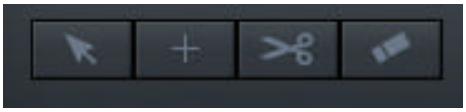
You can also scroll through your Session by clicking and dragging the Timeline Ruler left or right.

Locate Selection



To jump the playback cursor to the beginning of any audio event, press L on the keyboard or select Session>Locate Selection.

6.3.6 Editing Tools



In the upper right corner, you will see four editing-tool buttons. These tools will determine the function of your mouse during editing.

Power User Tip: *The audio-editing process can be unforgiving. Small inaccuracies when splitting, moving, or performing other actions on recorded audio can lead to unwanted results. As simple as it may seem, the act of listening while editing is often overlooked. For instance, when sizing the edges of a vocal part to remove unwanted sounds between words, it is tempting to make the edits based on the visual representation of the waveform. While this may work sometimes, it is much better to listen as you size the events to be sure you are not removing any critical part of the vocals. Listening to your edits as you make them will save time and frustration in nearly every case.*

6.3.6.1 Arrow Tool

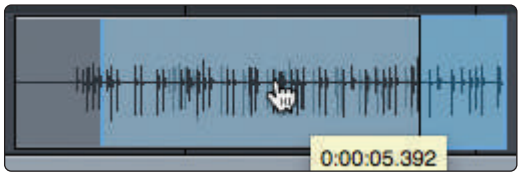


This is the default tool for access to most functions. Click on the Arrow tool button or press [number 1] on the keyboard to select the Arrow tool.

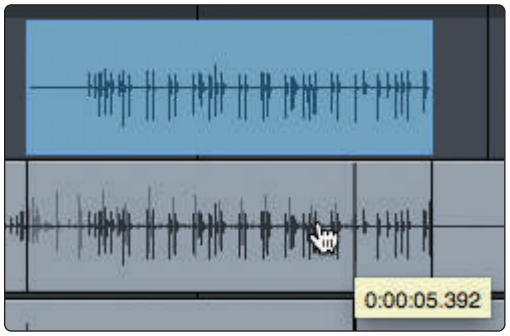
The Arrow tool can be used for the following purposes:

Move an Event.

To move an audio event using the Arrow tool, click anywhere on the event and drag left, right, up, or down. Dragging the event left or right will move the event backward or forward in time. When dragging an event left or right beyond the viewable arrangement, hold [Space Bar] on the keyboard to speed up the scrolling.



Dragging the event up or down will move the event to another track. When dragging an event from one track to another (up or down), the position of the event will be constrained within an automatic snapping range to make it easy to keep the event at the same time position. To defeat this snapping, hold Shift while dragging the event up or down.



Rearrange Tracks.

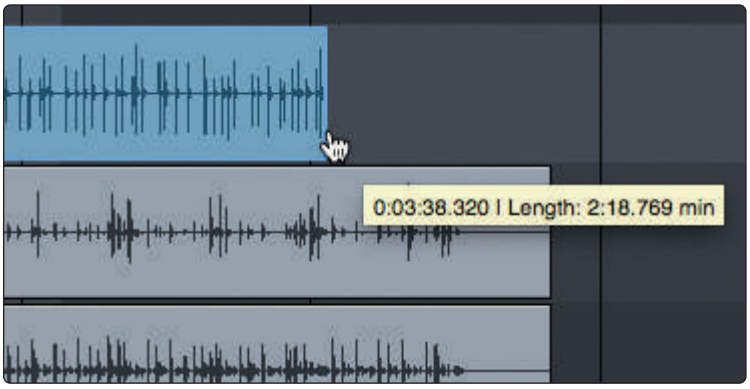
To rearrange tracks using the Arrow tool, click on the track you want to move and drag up or down in the Tracks list. You will notice a blue line following your mouse. When you drop the track, it will be inserted where the blue line is located.



Size an Event.

Events can be thought of as windows into audio files and musical performances, where what you see is what you hear. You can resize events to make them shorter or longer so that only a portion of the audio or musical data is seen and heard.

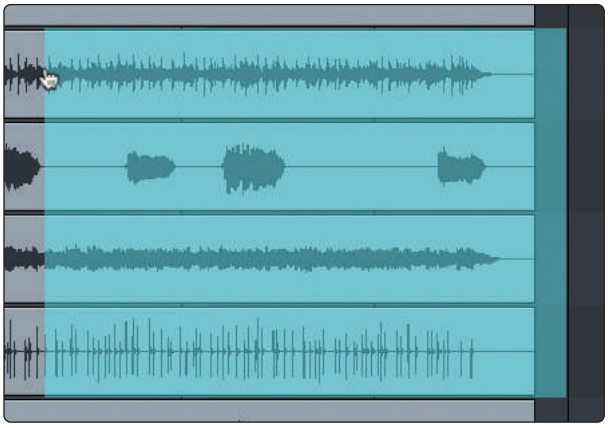
To size any event using the Arrow tool, float the mouse to the left or right edge of the event to reveal the Sizing tool. When this tool appears, click-and-drag left or right to size the event. Events can be sized and resized nondestructively any number of times.



Select Multiple Events.

Multiple events can be selected in order to edit them all at once, with a single action. To select multiple events with the Arrow tool, do one of the following:

- Click outside of the range of an event and then drag over any other events; a gray box will be drawn while you drag over the target-selection area. Release the mouse button once the box is drawn over all of the events you wish to edit, and these events will be selected for editing.

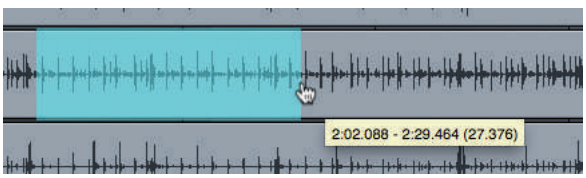


- Click on any event; then, while holding [Shift] on the keyboard, click on any other events to select them. This allows you to select multiple events that are not in close proximity to each other. All selected events can then be edited at once.

6.3.6.2 Range Tool



The Range tool is used to select a range, or area, within events. Click on the Range tool button or press [number 2] on the keyboard to select the Range tool.



To select a range within an event, using the Range tool, click-and-drag over the area to be selected; a gray box will be drawn over the target selection area.

Release the mouse button when the box is drawn over the range of the events you wish to select. The range you have selected is now treated as a single, consolidated event.

The Range tool can be useful in several ways:

- You can use the Range tool to select the content of several audio events across multiple tracks for a specific portion of a song (say, an amazing drum groove) and then use the Arrow tool to move that section of audio to another section of a song (say, to replace a drum groove).
- Another common use of the Range tool is to quickly select and delete a range of audio within an event, rather than using the Split tool to make two splits, then select and delete the section with the Arrow tool.

Power User Tip: *When you float the mouse cursor over a selected range, the Arrow tool will temporarily appear. This makes it easy to quickly select and edit a range of events.*

To select multiple, discontiguous ranges across any event, on any track, hold the [Shift] key while using the Range tool. Continue to hold [Shift] and use the Arrow tool to select whole events. For instance, when using the Arrow tool, if you press and hold [Ctrl], you get the Range tool. Press and hold [Ctrl] and [Shift] to select multiple ranges, then continue to hold [Shift] but release [Ctrl]; now you have the Arrow tool and can select whole events. All of your selections will remain selected.

Selected ranges can be sized by floating the Range tool at the left/right edge of the selection. You also can split a selected range at the left and right edges of the selection by choosing Split Range from the Edit menu or by pressing [Ctrl]/[Cmd]+[Alt]+[X] after selecting a range.

6.3.6.3 Split Tool



Using the Split tool, single events can be split into multiple events. Click on the Split Tool button or press [number 3] on the keyboard to select the Split tool.

With the Split tool selected, a vertical and horizontal line will be drawn near the current mouse-cursor position. The vertical line indicates the exact time position of the Split tool, while the horizontal line underscores the track on which the event to be split resides. The Split tool is directly affected by the current Snap settings.

Click on any event with the Split tool to split the event at that position. By splitting a single event, you create two events that can be edited independently. If multiple events are selected across multiple tracks, the Split tool will affect all of the selected events in the same way.

It is also possible to split selected events at the timeline cursor, without using the Split tool, by pressing [Alt]+[X] on the keyboard.

6.3.6.4 Eraser Tool



The Eraser tool is used to delete an event. Click on the Eraser Tool button or press [number 4] on the keyboard to select the Eraser tool. To delete any event using the Eraser tool, simply click on the event. The Eraser tool is unaffected by the current selection and will only affect the event that is directly clicked on.

However, if you click on a selected element with the Eraser tool, all currently selected elements will be erased.

6.3.6.5 Common Editing Actions

Like most software applications, Capture 2 supports basic cut, copy, and paste actions. Once you've selected an event, or a range of events, you can perform these actions as follows:

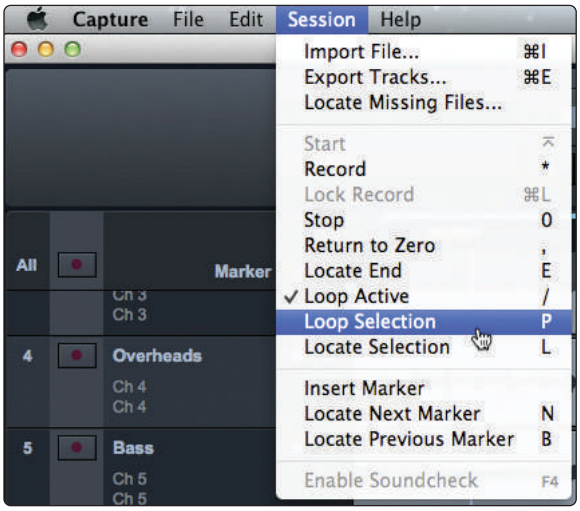
- **Cut:** Press [Ctrl]/[Cmd]+X on the keyboard to cut the current selection or select Edit>Cut.
- **Copy:** Press [Ctrl]/[Cmd]+C on the keyboard to copy the current selection or select Edit>Copy.

- **Paste:** Once a selection is cut or copied, press [Ctrl]/[Cmd]+V on the keyboard to paste the selection or select Edit>Paste. The selection will be pasted to the current playback-cursor position, or to the beginning of the track from which the selection originated if the playback cursor is not currently set anywhere.

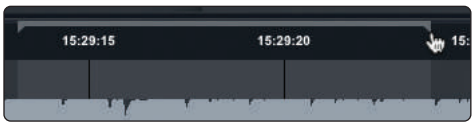
6.3.6.6 Looping

To loop the playback of any range of your Capture 2 Session, do one of the following:

- **Loop Selection.** Select an event with the Arrow tool or select a range with the Range tool. Go to Session>Loop Selection or press P on your keyboard. This will create a loop the exact length of the selected audio event. The range will be indicated by a bar drawn in the timeline, with flags at both ends.



- **Custom Loop Range.** To create a custom loop range, mouse over the gray line above the timeline ruler. Notice that your cursor changes to a Pencil tool, and you can draw your loop range.



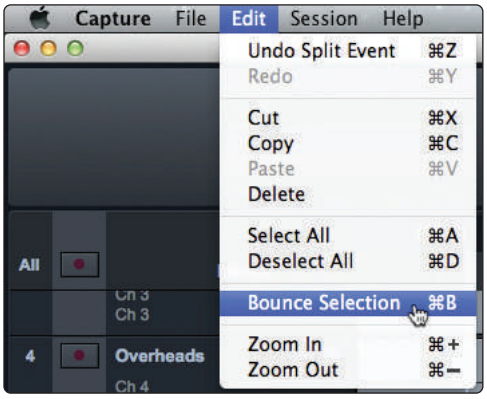


Once your loop range is set, you can click on the Loop button in the transport, or press [L] or [/] on the keyboard, to engage Loop mode.

Please Note: *Engaging Record in the transport will disable Loop mode and will begin recording at the current playback-cursor position. It is not possible to engage Loop while recording.*

6.3.6.7 Bounce Selection

Once you have edited an audio file, you may wish to create a new audio file that includes all of your edits. To do this, use the Range tool to select the events you would like to merge as described in ***Section 6.3.6.2*** and press [Ctrl]/[Cmd]+[B] on the keyboard or go to Edit>Bounce Selection.



6.3.7 Meter Bridge



Capture 2 provides input and output metering when a track is being recorded or played back. These peak-style meters at the bottom of the Session page feature clip indicators for each input into Capture 2 from the StudioLive ARc-series mixer.

Record Arm.



Below each meter, you will find another Record Arm button. This button provides the same functionality as the Record Arm button in the Track column. ***See Section 6.3.1*** for more information.

Link Button.

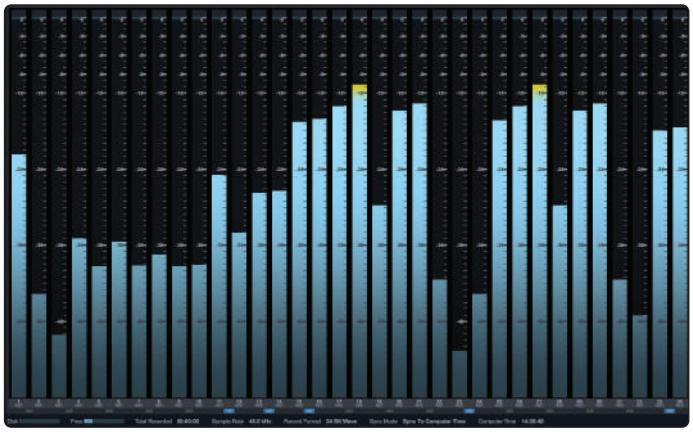


Between each meter you will find a Link button. When this button is active, Capture 2 will record that track as a stereo-interleaved file. By default, the mix mix track is stereo linked.

Big Meter Mode.



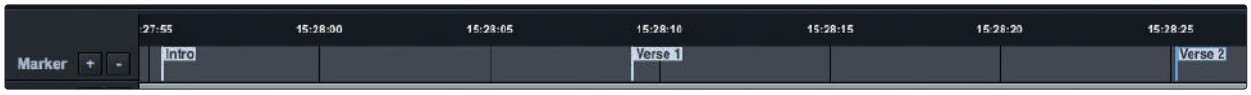
The Big Meter Mode button is located in the upper right corner of the Session page, above the editing tools.



When this button is engaged, the lower three-quarters of the Session page will display detailed metering for every track. While in this mode, the Marker Lane, transport, mode buttons, and editing tools will still be visible.

6.3.8 Markers and the Marker List

The Marker Lane.



The Marker Lane is located just below the Timeline Ruler. It displays any markers you have created.

In Capture 2, the Marker Lane is used to place markers at desired places in the timeline, after which navigation to the markers is easy. Markers are also helpful when exporting your Session to individual mixes or for editing in another recording application.

Power User Tip: *We highly recommend that markers be inserted during the recording of a live performance, as the markers will make the rest of the production process much easier.*

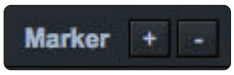
The Marker List.



The Marker List button is located above the editing tools on the right side of the Session page. Clicking on the button will open the Marker List, which provides an overview of every marker in your Session and offers an easier way to quickly name markers and move them around your Session.

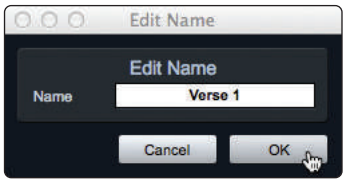
6.3.8.1 Inserting, Naming, Deleting, and Moving Markers

Marker Lane.



Adding/Deleting Markers. At the top of the Track column, you will see the Add/Remove Marker buttons. To insert a new marker into the Marker Lane, with playback running or stopped, click on the Add Marker (+) button, or press [Insert] on the keyboard. Each new marker will be numbered sequentially by default (#1, #2, #3….).

Select a marker and click on the Remove Marker (-) button to remove the marker.



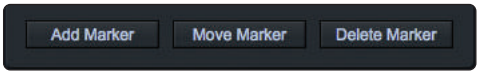
Naming Markers. To rename a marker, double-click on the marker in the Marker Lane, type in a new name, and then press [Enter] on the keyboard.

Moving Markers. To move a marker, click on it in the Marker Lane and drag it to the desired location.

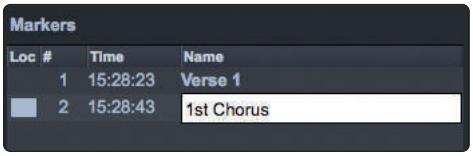


Marker List.

At the bottom of the Marker List, you will find three buttons.



Adding Markers. Click on Add Marker to add a marker at the current playback-cursor position.



When a Marker is added to the Marker List, the Name field automatically becomes editable. Enter a new name and hit Enter. This name can be edited later by double-clicking on it.

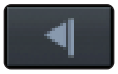
Moving Markers. Clicking on the Move Marker button will move the currently selected marker in the Marker List to the current playback position in the timeline.

Deleting Markers. To remove a marker, select it in the Marker List and click on the Delete Marker button.

6.3.8.2 Navigating Markers

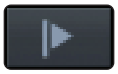
It is possible to quickly jump the playback cursor between markers in the Marker Lane. Jumping to markers during playback allows quick comparisons between different sections of your Session.

To navigate to a previous marker, do one of the following:



- Click on the Previous Marker button in the transport.
- Press [B] on the keyboard, to jump to the previous marker.

To navigate to the next marker, do one of the following:



- Click on the Next Marker button in the transport.
- Press [N] on the keyboard, to jump to the next marker.

To jump to any marker in your Session, open the Marker List and click on the Location field. The playback cursor will jump to this location in the timeline.



6.4 Recording a Session in Capture

Setting Input Levels. Setting the proper input level is critical to making a good live mix and a good recording. The basic idea is to set the input gain on the StudioLive ARc-series mixer as high as possible without overloading the input. Overloading the input will cause clipping (digital distortion), which is particularly unpleasant and will ruin the recording. This damage cannot be undone in software. There is a clip indicator for each input on the StudioLive ARc mixer for this purpose.

If an input channel is not clipping on your StudioLive ARc-series mixer, you can be sure that it will not clip in Capture 2. ***Refer to Section 2.1*** for the proper level-setting procedure.

You will monitor live audio input on the StudioLive ARc-series mixer; there is no separate monitoring capability within Capture 2. ***Please refer to Section 3.4.2*** for information on creating monitor mixes.



Arming Tracks. To record to an audio track, the track must be record-enabled, or "armed." Capture 2 provides two Record Enable buttons for each input: one on the track and on the meter bridge. Once an audio track is record enabled, you are ready to record audio to that track.



Hit Record! To activate recording, click on the Record button in the transport. The Record button will turn red, and the Play button will turn green. The playback cursor will start to scroll from left to right from its current position, and new audio events will be recorded to record-enabled tracks.



Recording will continue until you manually stop it by clicking on the Stop button in the Transport or by pressing [Spacebar] on the keyboard.



When you press Record, the Session automatically locks. This prevents you from accidentally stopping recording Session. You must disable Session Lock before you can stop recording.

6.5 Importing and Exporting Audio Files

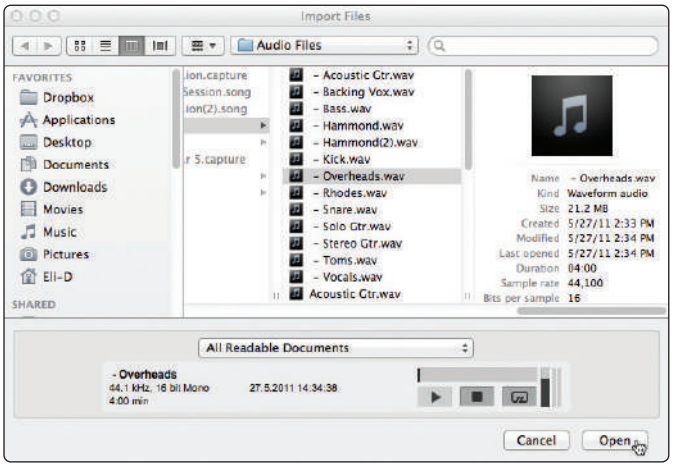
6.5.1 Importing Audio Files into Capture

It is possible to import WAV and AIFF audio files into your Session.

1. To import an audio file, select Import Audio File from the Session menu, or [Ctrl]/[Cmd]+I on the keyboard, to open the Import File menu.



2. Browse to the desired file and click on it to select it.



3. Click on Open to import the file into your Session.

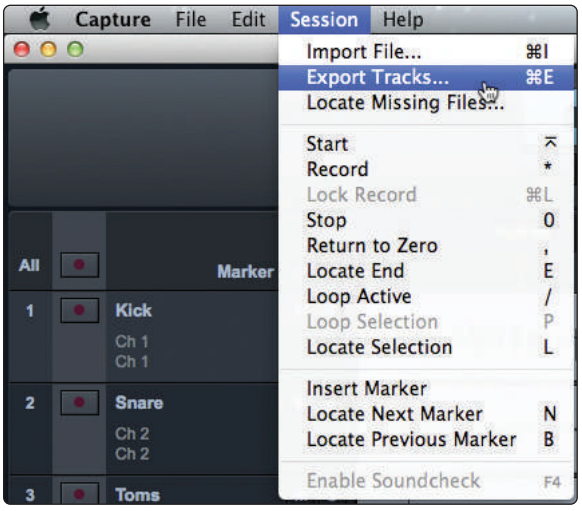
4. An audio event for the imported file will be created and placed on the currently selected track in your Session, at the current playback-cursor position.

Power User Tip: *When browsing for files in the Import File menu, it is possible to listen to the audio files as you are browsing in the Preview Player. Click the Play button in the Preview Player to play the currently selected audio file. Click the Stop button to stop playback. Click the Loop button to loop the playback of the currently selected audio file.*



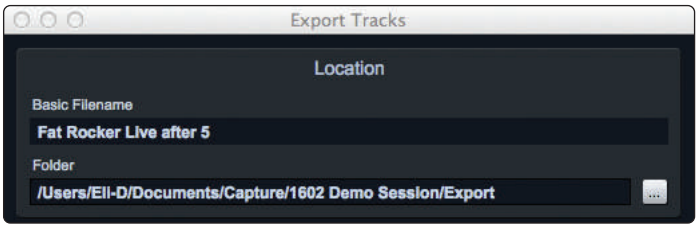
6.5.2 Export Audio Files

To export audio from your Session in Capture 2, navigate to Session/Export Tracks, or press [Ctrl]/[Cmd]+E on the keyboard to open the Export to Tracks menu.



Location.

In the top section of the Export Tracks menu, select a location and name for the audio file.

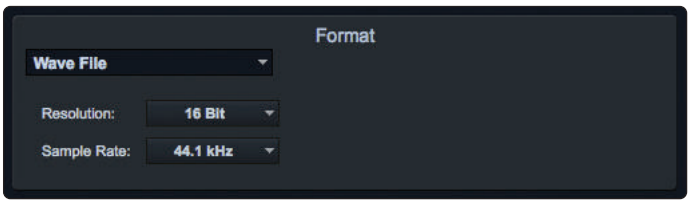


Click on the Browse button to choose a file location.

Double-click on the filename, type in a new name, and then press Enter to choose a name for the file. Each file that is exported will begin with the filename you enter, followed by the name of the track from which it was exported and the first marker of the marker pair (if applicable). Examples: "French Quarter Fest 2012 – Kick" or "French Quarter Fest 2012 – Kick – Chorus."

Format.

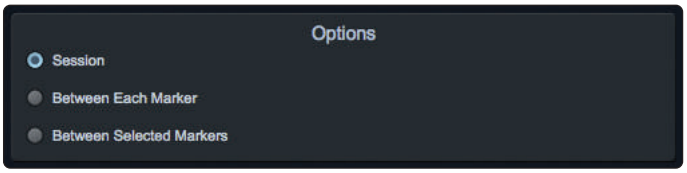
In the middle section of the Export Tracks menu, select the format of the mixdown audio file. Choose from WAV or AIFF, and then choose the desired resolution and sample rate.



If you wish to put your audio on a standard audio CD, the format should be a WAV file with 16-bit resolution and a 44.1 kHz sample rate.

Options.

The bottom section of the Export Tracks menu has several options that will affect how files are created:



- **Export Session** will export the entire range of your Session to the furthest point in time that any audio event on a track extends.
- **Export Between Each Marker** will export separate files for each range between the markers in the Marker Lane.
- **Export Between Selected Markers** will export audio files between the ranges of any two selected markers in the Marker Lane.

6.6 Mixing Your Capture Sessions

6.6.1 Exporting Your Final Mix to an Audio File

The most common physical medium on which recordings are published is the audio CD. In order to put your final mix on an audio CD, the mix file must be a 16-bit, 44.1 kHz WAV file. Once you have recorded your final mix to the Auxiliary Stereo track in Capture 2, it is recommended you export the audio from the Auxiliary Stereo track to an audio file for this purpose. ***See Section 6.5.2*** for details on Exporting Audio Tracks in Capture 2.

Once the correct audio file for your mix has been exported, you may use any CD-burning application (including PreSonus Studio One Professional) to put that mix on a recordable audio CD.

6.6.2 Mixing a Capture 2 Session in Studio One

Many users want to use Capture 2 strictly as a track-recording tool and will mix and sweeten the recorded tracks later in a DAW. PreSonus has included a copy of Studio One Artist with your StudioLive for this purpose. All versions of Studio One can open Capture 2 Session files. All markers, edits, track names, etc., will be preserved, and no further effort is required. Simply launch Studio One and open your Capture 2 Session. ***See Section 7*** for more details.

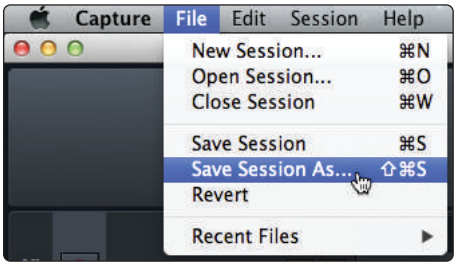
6.6.3 Mixing a Capture 2 Session in a Different Recording Application

For users who wish to mix their Capture 2 Session in a DAW other than Studio One, there are several ways in which to import your Capture 2 Session.

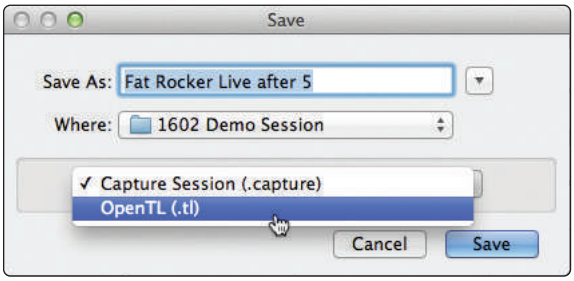
Save a Capture 2 Session as OpenTL

Many audio-recording programs can open OpenTL (Open Track List) files. An OpenTL file provides a reference for all of the audio tracks and audio events, with their corresponding positions, in a Capture 2 Session, so that another audio program can reconstruct your Session automatically. This makes it possible for you to open your Capture 2 Session and work as you normally do in your favorite recording application.

To save an OpenTL version of your Session, select Save Session As in the File menu of Capture 2.



Name the file as usual, and choose OpenTL (*.tl) in the Save As Type selection box.



Click on Save to save your Session as an OpenTL document and confirm the command by clicking Yes in the confirmation window. This file will be placed by default in your Session folder and will not overwrite the original Capture 2 Session file. Note that the OpenTL format will not save your markers.

Import Capture 2 Session Audio Files Directly

Some audio-editing applications (such as digital audio workstations, or DAWs) do not support the OpenTL format, which makes the options somewhat limited when importing Sessions created in other programs. In this case, you must manually import the audio events from your Capture 2 Session into the audio-editing application, using whatever means possible in that program. Refer to the documentation of your software for more information on this process.

Note that in some cases, you may have more than one audio event on a given track, as opposed to a single continuous audio event, or you may have audio events that do not have the same start position. In either case, it is highly recommended that you first export the audio for each track before attempting to import into an audio-editing program, as described in the Export Audio Files portion of this section.

Be sure to select the Export Tracks option in the Export Audio File menu, as shown, so that the result of the process will be a single continuous audio file for each track in the Session.

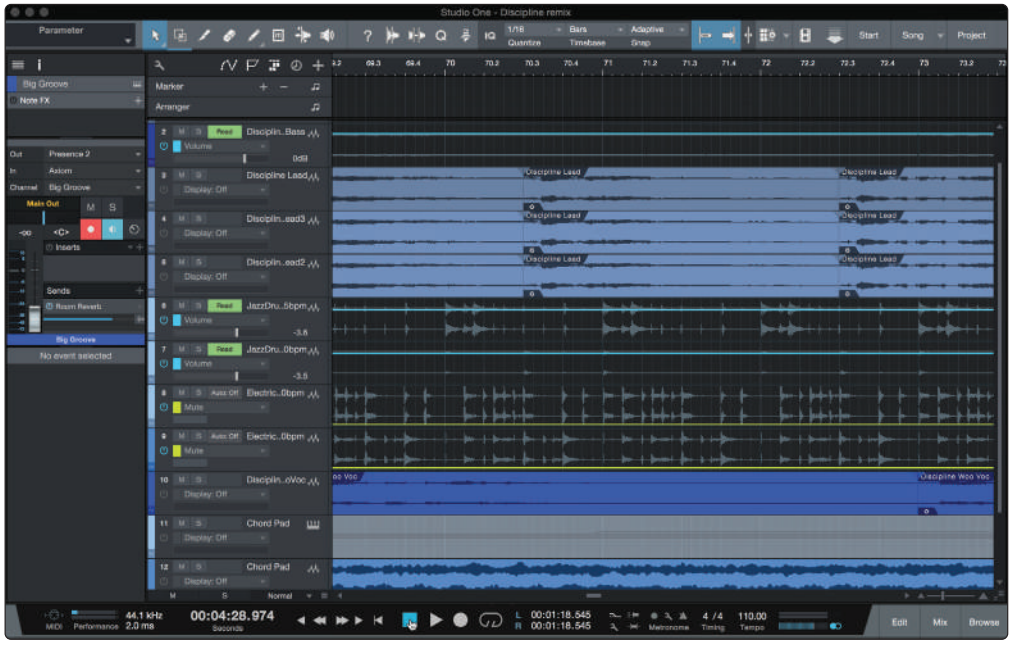
Once you have single, continuous audio files for each track, directly importing the files into an audio editor is much easier. All that is required to reconstruct your Capture 2 Session is to align each file at the same start time. For complete information on exporting tracks from Capture 2, ***please review Section 6.5.2***.

6.7 Capture 2 Key Commands

Action	Key Command
File Menu	
New Session	Cntrl/Cmd+N
Open Session	Cntrl/Cmd+O
Close Session	Cntrl/Cmd+W
Save Session	Cntrl/Cmd+S
Save Session As	Cntrl/Cmd+Shift+S
Quit	Cntrl/Cmd+Q
Edit Menu	
Undo	Cntrl/Cmd+Z
Redo	Cntrl/Cmd+Y
Cut	Cntrl/Cmd+X
Copy	Cntrl/Cmd+C
Paste	Cntrl/Cmd+V
Delete	Del
Select All	Cntrl/Cmd+A
Deselect All	Cntrl/Cmd+D
Bounce Selection	Cntrl/Cmd+B
Zoom In	Cntrl/Cmd + or E
Zoom Out	Cntrl/Cmd - or W
Zoom Full	F
Session Menu	
Import File	Command+I
Export Tracks	Command+E
Toggle Start/Stop	Space Bar
Record	NumPad *
Stop	0
Return to Zero	,
Go to End	E
Loop Active	/
Loop Selection	P
Locate Selection	L
Insert Marker	Ins, I
Insert Named Marker	Shift+Ins, Shift+I
Locate Next Marker	N
Locate Previous Marker	B
Enable Sound Check	F4
Tools	
Select Arrow Tool	1
Select Range Tool	2
Select Split Tool	3
Select Eraser Tool	4
Views	
Options	Cntrl/Cmd+[+]
Big Meters	F2
Marker List	F3
Enable Soundcheck	F4

Action	Key Command
Transport	
Toggle Start/Stop	Space Bar
Start	Enter
Record	NumPad *
Stop	NumPad 0
Return to Zero	NumPad
Record Lock	Cntrl/Cmd+L
Navigation	
Focus Next	Tab
Focus Previous	Shift+Tab
Left	Left Arrow
Extend Selection Left	Shift+Left Arrow
Extend Selection Left Add	Cntrl/Cmd+Shift+Left Arrow
Skip Left	Cntrl/Cmd+Left Arrow
Right	Right Arrow
Extend Selection Right	Shift+Right Arrow
Extend Selection Right Add	Cntrl/Cmd+Shift+Right Arrow
Skip Right	Cntrl/Cmd+Right Arrow
Up	Up Arrow
Extend Selection Up	Shift+Up Arrow
Extend Selection Up Add	Cntrl/Cmd+Shift+Up Arrow
Skip Up	Cntrl/Cmd+Up Arrow
Down	Down Arrow
Extend Selection Down	Shift+Down Arrow
Extend Selection Down Add	Cntrl/Cmd+Shift+Down Arrow
Skip Down	Cntrl/Cmd+Down Arrow
Page Up	Page Up
Extend Selection Page Up	Shift+Page Up
Extend Selection Page Up Add	Cntrl/Cmd+Shift+Page Up
Skip Page Up	Cntrl/Cmd+Page Up
Page Down	Page Down
Extend Selection Page Down	Shift+Page Down
Extend Selection Page Down Add	Cntrl/Cmd+Shift+Page Down
Skip Page Down	Cntrl/Cmd+Page Down
Start	Home
Extend Selection Start	Shift+Home
Extend Selection Start Add	Cntrl/Cmd+Shift+Home
Skip Start	Cntrl/Cmd+Home
End	End
Extend Selection End	Shift+End
Extend Selection End Add	Cntrl/Cmd+Shift+End
Skip End	Cntrl/Cmd+End

7 Studio One Artist Quick Start



All PreSonus professional recording products come with Studio One Artist recording and production software. Whether you are about to record your first album or your fiftieth, Studio One Artist provides you with all of the tools necessary to capture and mix a great performance.

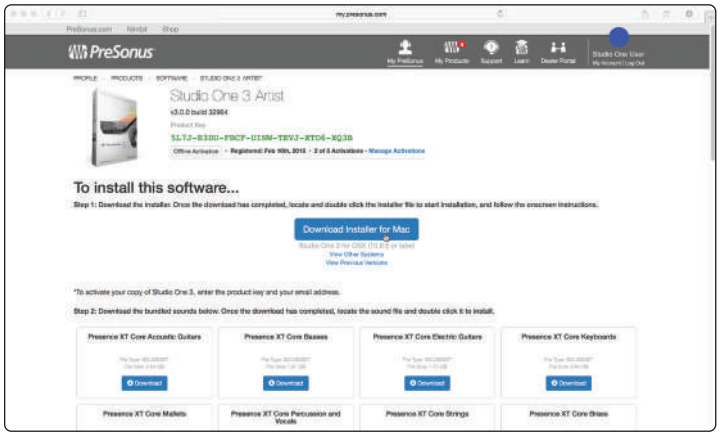
Power User Tip: *As a valued PreSonus customer, you are eligible for a discount upgrade to Studio One Professional. For more details on the Studio One upgrade program for PreSonus customers, please visit* http://studioone.presonus.com/.

7.1 Installation and Authorization

Once you have installed the drivers for your audio interface and connected it to your computer, you can use the included PreSonus Studio One Artist music-production software to begin recording, mixing, and producing your music. To install Studio One Artist, log into your My PreSonus account and register your interface. Your product key for Studio One Artist will automatically be registered to your My PreSonus account with your hardware registration.

Downloading and running the Studio One installer.

To install Studio One Artist, download the Studio One Artist installer from your My PreSonus account to the computer on which you will use it.



- **Windows users:** Launch the Studio One Artist installer and follow the onscreen instructions.
- **Mac users:** Drag the Studio One Artist application into the Applications folder on your Mac hard drive.

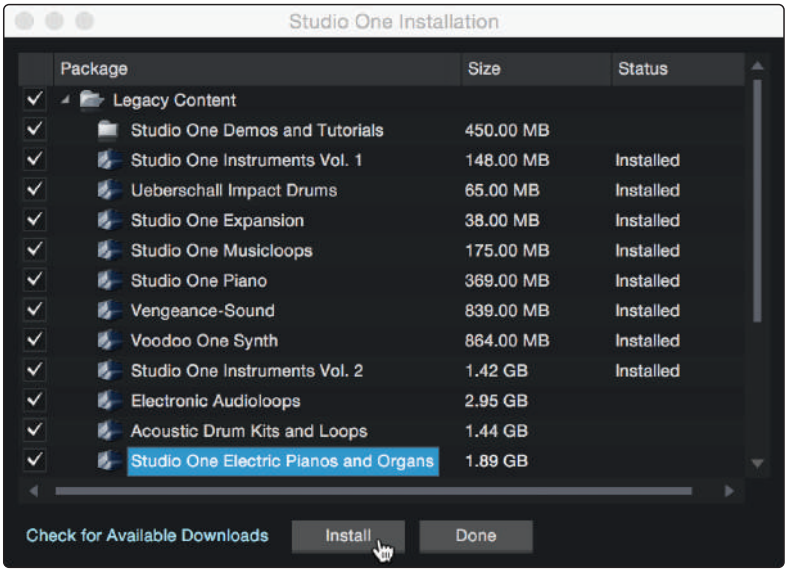
Authorizing Studio One

When Studio One is launched for the first time on your computer, it will communicate with your My PreSonus account and verify your registration. To ensure a seamless authorization process, make sure to download your installer to the computer on which you will be using it and be sure that your computer is connected to the Internet when you launch the application for the first time.

Installing bundled content for Studio One Artist.

Studio One Artist comes bundled with an array of demo and tutorial materials, instruments, loops, and samples. The Studio One Artist bundle includes all that you need to begin producing music.

The first time you launch Studio One Artist, you will be prompted to install its companion content. Select the content you wish to add and click "Install." The content will automatically begin to download and install from your My PreSonus user account.



Power User Tip: *You may be prompted to enter your My PreSonus user account information. Clicking "Remember Credentials" will allow you to have immediate access to any content you purchase from the PreSonus Marketplace.*

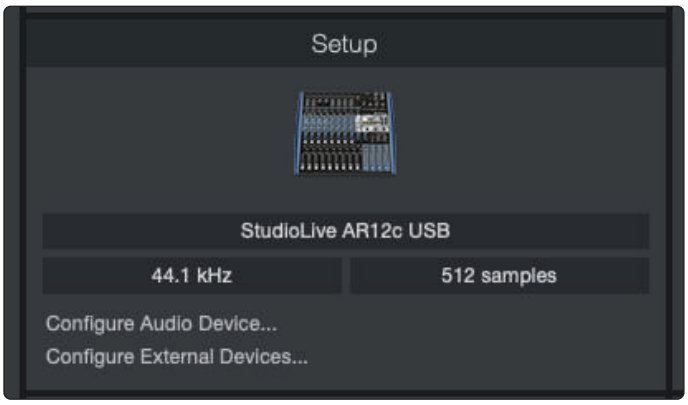
7.2 Setting Up Studio One

Studio One Artist was designed to work with PreSonus interfaces and provides unique interoperability and simplified setup. When Studio One Artist is launched, by default you will be taken to the Start page. On this page, you will find document-management and device-configuration controls, as well as a customizable artist profile, a news feed, and links to demos and tutorials from PreSonus. If you have an Internet connection on your computer, these links will be updated as new tutorials become available on the PreSonus Web site.

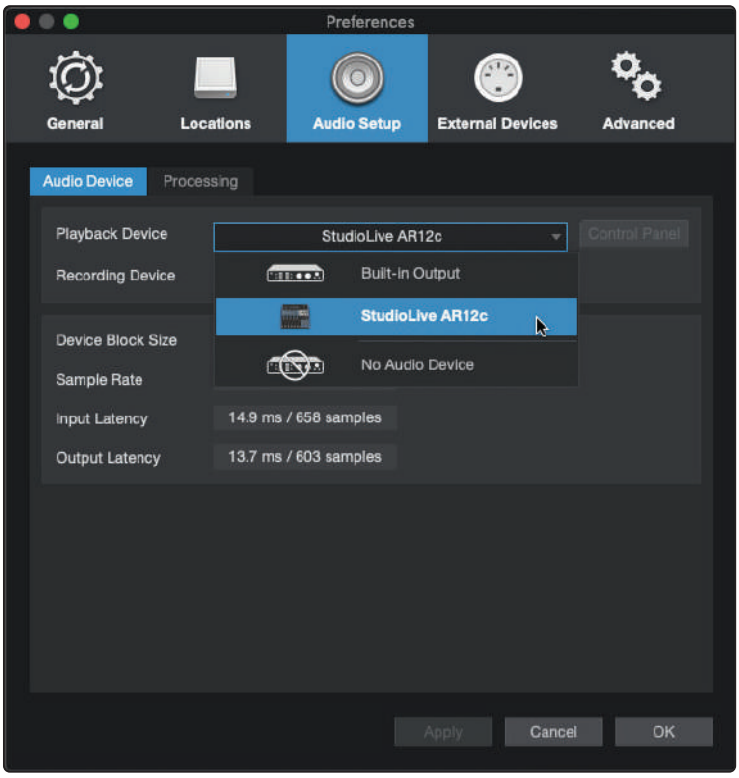
Complete information on all aspects of Studio One Artist is available in the Reference Manual PDF located within Studio One. The information in this tutorial covers only the basic aspects of Studio One Artist and is intended to get you set up and recording as quickly as possible.

7.2.1 Configuring Audio Devices

1. In the middle of the Start page, you will see the Setup area. Studio One Artist automatically scans your system for all available drivers and selects a driver. By default, it will choose a PreSonus driver if one is available.



2. If you do not see your device listed on the Start page when you launch Studio One, click on the Configure Audio Devices link in the Setup area to open the Options window.



In the Options window, click on the Audio Setup tab and select your device driver from the pull-down.

7.2.2 Configuring MIDI Devices

From the External Devices window in Studio One Artist, you can configure your MIDI keyboard controller, sound modules, and control surfaces. This section will guide you through setting up your MIDI keyboard controller and sound modules. Please consult the Reference Manual located within Studio One for complete setup instructions for other MIDI devices.

If you are using a third-party MIDI interface or USB MIDI-controller keyboard, you must install any required drivers for these devices before beginning this section. Please consult the documentation that came with your MIDI hardware for complete installation instructions.

If you do not have any MIDI devices, please skip to Section 7.3.

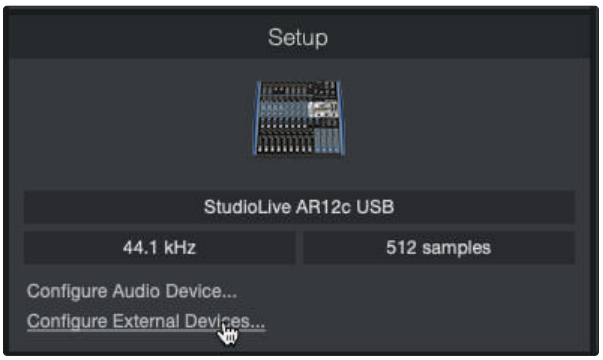
Setting up an external MIDI keyboard controller from the Start page.

A MIDI keyboard controller is a hardware device that is generally used for playing and controlling other MIDI devices, virtual instruments, and software parameters. In Studio One Artist, these devices are referred to as Keyboards, and they must be configured before they are available for use. In some cases, your MIDI keyboard controller is also used as a tone generator. Studio One Artist views the controller and tone-generation functions as two different devices; a MIDI keyboard controller and a sound module. The MIDI controls (keyboard, knobs, faders, etc.) will be set up as a Keyboard. The sound modules will be set up as an Instrument.

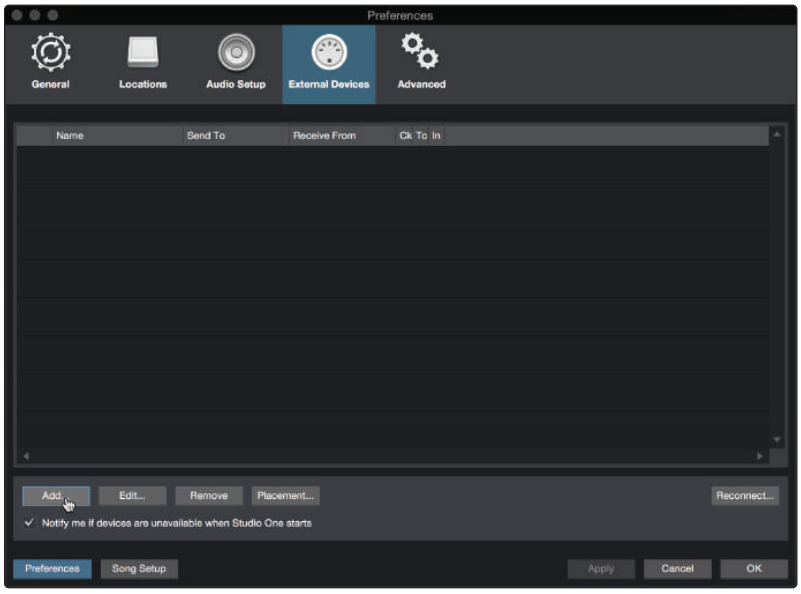
You can set up your external MIDI devices from the Setup area in the Start page. Before setting up a new Song for recording, take a moment to configure external devices.

Make sure you have connected the MIDI Out of your external MIDI controller to a MIDI In on your PreSonus audio interface (if available) or other MIDI interface. If you are using a USB MIDI controller, connect it to your computer and power it on.

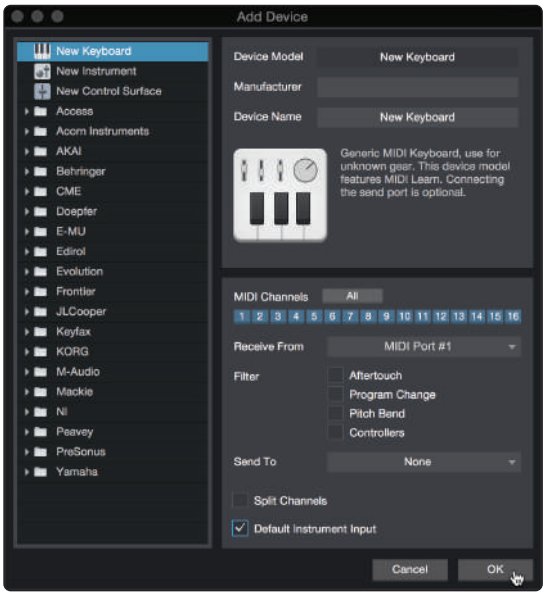
1. Click on the Configure External Devices link in the Setup area on the Start page to launch the External Devices window.



2. Click the Add button. This will launch the Add Device window.



3. From the menu on the left, select your MIDI controller from the list of manufacturers and models. If you do not see your MIDI controller listed, select New Keyboard. At this point, you can customize the name of your keyboard by entering the manufacturer and device names.



4. You must specify which MIDI channels will be used to communicate with this keyboard. For most purposes, you should select all MIDI channels. If you are unsure of which MIDI channels to choose, select all 16.

5. Studio One allows you to filter out specific control functions. If you would like Studio One to ignore Aftertouch, Pitch Bend, Program Change, or All CC messages, enable filtering for any or all of these messages.

6. In the Receive From drop-down menu, select the MIDI interface input from which Studio One Artist will receive MIDI data (that is, the MIDI port to which your keyboard is connected).

Power User Tip: *In the Send To drop-down menu, select the MIDI interface output from which your Studio One Artist will send MIDI data to your keyboard. If your keyboard controller doesn't need to receive MIDI data from Studio One, you can leave this unselected.*

7. If this is the only keyboard that you will use to control your external synthesizers and virtual instruments, you should check the box next to Default Instrument Input. This will automatically assign your keyboard to control all MIDI devices in Studio One Artist.

8. Click OK.

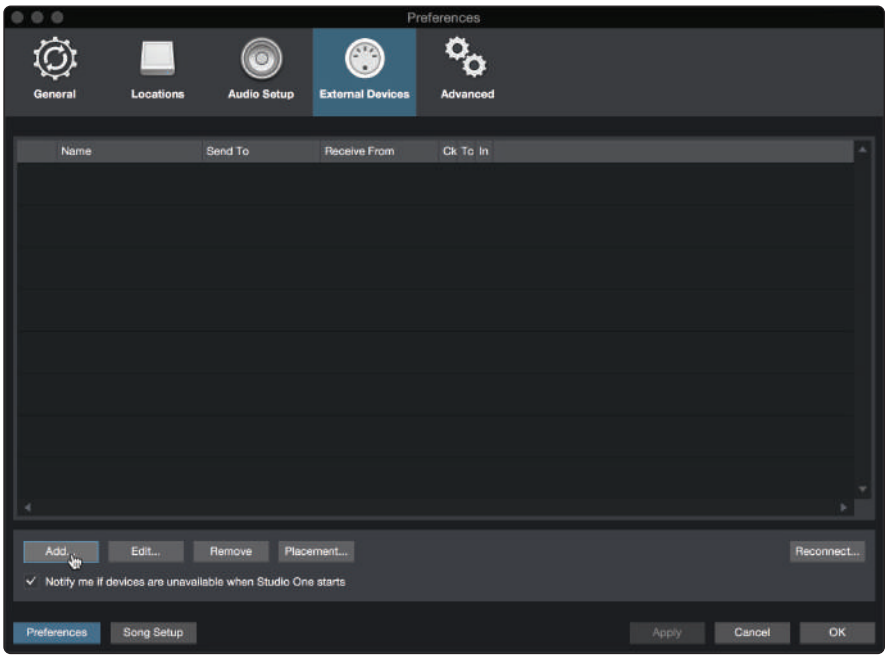
If you have a sound module that you'd like to connect, leave the External Devices window open and proceed to the next part of this section. If not, you can close the window and skip to the next section.

Setting up an external MIDI sound module from the Start page.

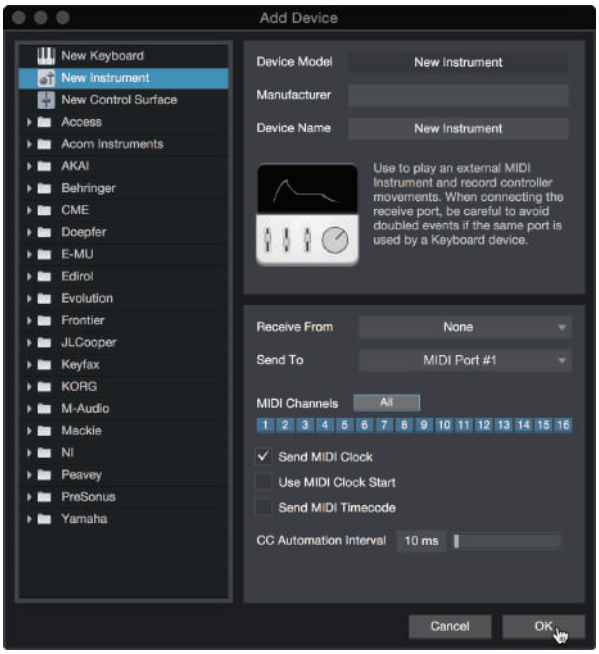
MIDI instrument controllers (keyboards, MIDI guitars, etc.) send musical information in the form of MIDI data to tone modules and virtual instruments, which respond by generating sound, as instructed. Tone modules can be standalone sound devices or can be integrated into a MIDI instrument, such as a keyboard synthesizer. Studio One Artist refers to all tone generators as Instruments. Once you have set up your MIDI keyboard controller, take a moment to configure your sound module.

Make sure you have connected the MIDI In of your external sound module to the MIDI Out of your MIDI interface.

1. In the External Devices window, click the Add button.



2. Select your device in the menu on the left. If your device is not listed, select New Instrument. At this point you can customize the name of your keyboard by entering the manufacturer and device names.



3. Specify which MIDI channels will be used to communicate with this sound module. For most purposes, you should select all MIDI channels. If you are unsure of which MIDI channels to select, we suggest you select all 16.

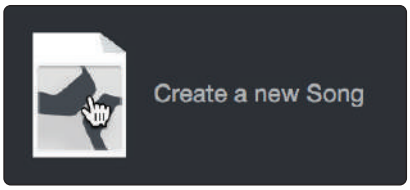
4. In the Send To menu, select the MIDI interface output from which Studio One Artist will send MIDI data to your sound module. Click OK and close the External Devices window. You are now ready to start recording in Studio One Artist.

The rest of this Quick Start Guide will go over how to set up a Song and will discuss some general workflow tips for navigating through the Studio One Artist environment.

7.3 Creating a New Song

Now that you've configured your audio and MIDI devices, let's create a new Song. We'll start by setting up your default audio I/O.

1. From the Start page, select Create a New Song.



2. In the New Song window, name your Song and choose the directory in which you'd like it saved. From the Interfaces tab, you can select custom templates for your StudioLive ARc-series mixer that will set all configuration and I/O settings for you. The rest of section will describe creating a Song from an empty session.

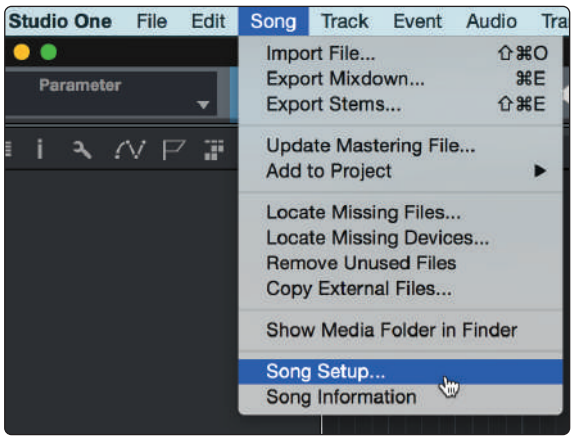


3. Select Empty Song from the Templates list. At this point, you should give your Song a name and select your preferred sample rate and bit depth for recording and playback. You can also set the length of your Song and the type of time format you would like the timeline to follow (notation bars, seconds, samples, or frames). Click the OK button when you are finished.

Power User Tip: *If you plan to import loops into your Song, make sure that the Stretch Audio Files to Song Tempo option is selected. This will automatically import loops at the correct BPM.*

7.3.1 Configuring Your I/O

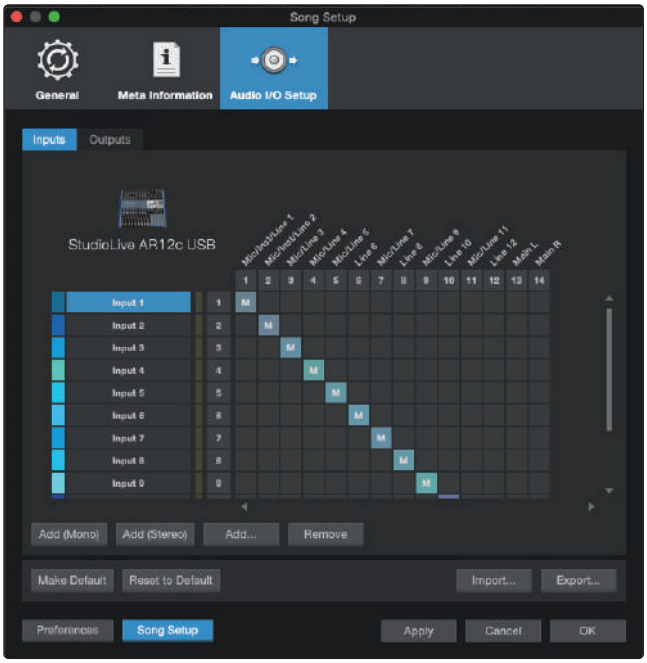
1. Click on Song | Song Setup to set your sample rate and resolution and configure your audio I/O.



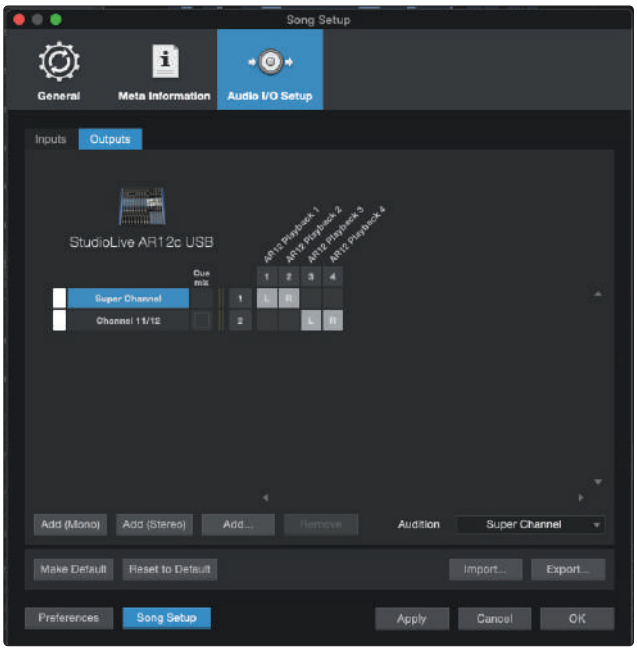
2. Click on the Audio I/O Setup tab.



3. From the Inputs tab, you can enable any or all of the inputs on your StudioLive ARc mixer that you'd like to have available. We recommend that you create a mono input for each of the inputs on your interface. If you plan on recording in stereo, you should also create a few stereo inputs. You can give each input a custom name by simply clicking on the default name. Press the TAB key to edit the next name.



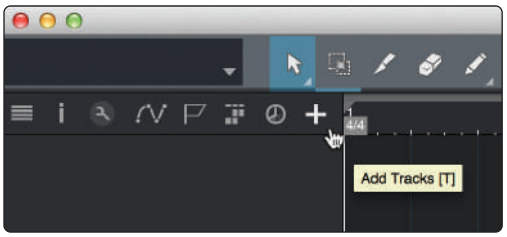
4. Click on the Outputs tabs to enable any or all of the outputs on your StudioLive ARc Mixer. In the lower right corner, you will see the Audition select menu. This allows you to choose the output from which you will audition audio files prior to importing them into Studio One Artist. In general, you will want this to be the main output bus. You can give each output a custom name by simply clicking on the default name. Press the TAB key to edit the next name.



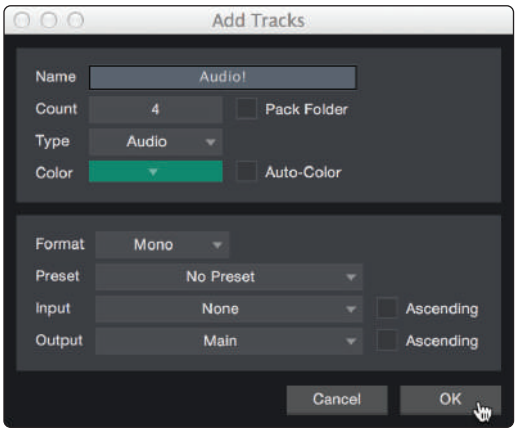
Power User Tip: *If you would like this I/O configuration to be the same every time you open Studio One, click the Make Default button.*

7.3.2 Creating Audio and MIDI Tracks

1. In the upper left corner of the Arrange window, you will notice several buttons. The button furthest to the right is the Add Tracks button. Click on this button to open the Add Tracks window.

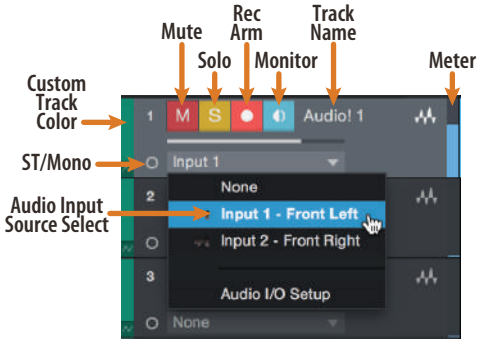


2. In the Add Tracks window, you can customize the track name and color, add a preset rack of effects, and set the physical source for the input and output of your audio tracks. Most important, you can select the number and type of tracks you'd like to create.



- **Audio.** Use this track type to record and playback audio files.
- **Instrument.** Use this track to record and playback MIDI data to control external MIDI devices or Virtual Instrument plug-ins.
- **Automation.** This track type lets you create automated parameter controls for your session.
- **Folder.** This track helps you to manage your session as well as to quickly edit multiple tracks at once.

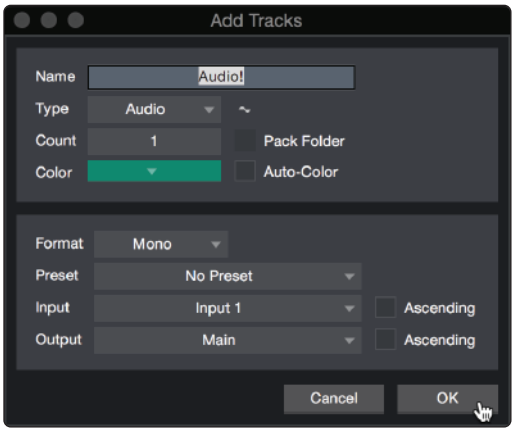
Power User Tip: *If you would like to add an audio track for each of the available inputs, simply go to Track | Add Tracks for All Inputs.*



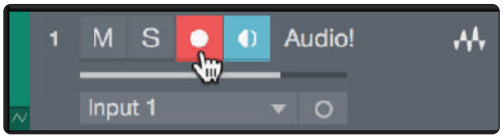
Note: *MIDI tracks are nearly identical to Audio tracks. The Input Source list for MIDI tracks lists available external MIDI devices as well as any virtual instruments that have been added to the Song.*

7.3.3 Recording an Audio Track

1. To begin recording, create an audio track from the Add Tracks window, set its input to Input 1 on your StudioLive ARc-series mixer, and connect a microphone to the same input.



2. Select Record Enable on the track. Turn up the Input 1 level on your audio interface while speaking/singing into the microphone. You should see the input meter in Studio One Artist react to the input. Adjust the gain so the input level is near its maximum without clipping (distorting).



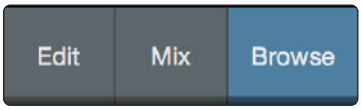
You are now ready to start recording. For complete instructions, please consult the Studio One Reference manual located in Help | Studio One Reference Manual.

7.3.4 Adding Virtual Instruments and Effects

You can add plug-ins and instruments to your Song by dragging-and-dropping them from the browser. You can also drag an effect or group of effects from one channel to another, drag in customized effects chains, and instantly load your favorite virtual-instrument preset without ever scrolling through a menu.

Opening the browser.

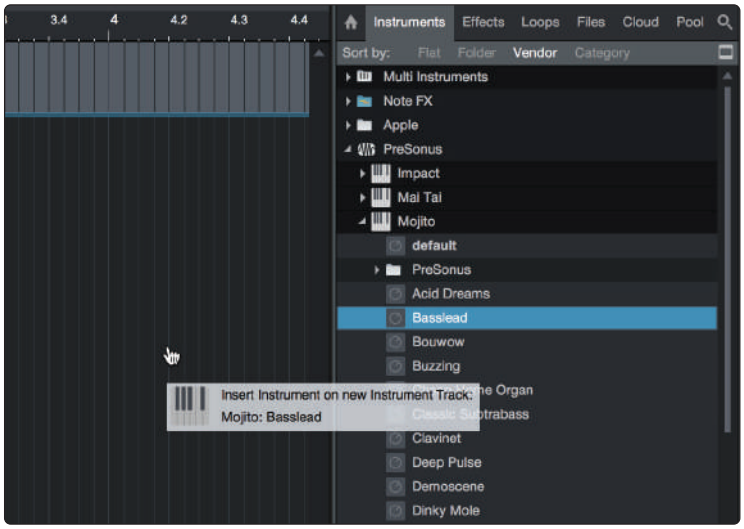
In the lower right corner of the Arrange window are three buttons:



- The Edit button opens and closes the audio and MIDI editors.
- The Mix button opens and closes the Mixer window.
- The Browse button opens the browser, which displays all of the available virtual instruments, plug-in effects, audio files, and MIDI files, as well as the pool of audio files loaded into the current session.

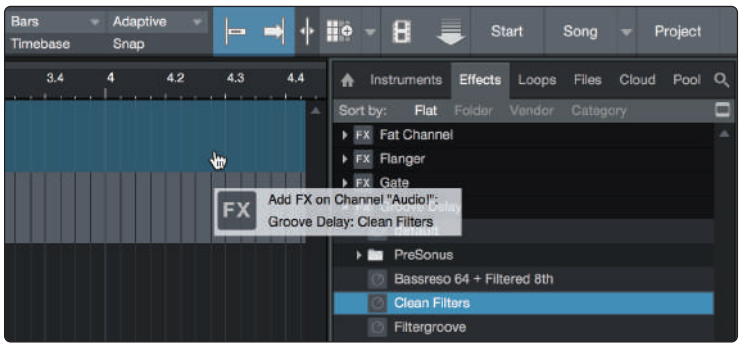
Drag-and-drop virtual instruments.

To add a virtual instrument to you session, open the browser and click on the Instrument button. Select the instrument or one of its patches from the instrument browser and drag it into the Arrange view. Studio One Artist will automatically create a new track and load the instrument as the input.



Drag-and-drop effects.

To add a plug-in effect to a track, click the Effects button in the browser and select the plug-in or one of its presets in the effects browser. Drag-and-drop the selection over the track to which you would like to add the effect.



Drag-and-drop audio and MIDI files.

Audio and MIDI files can be quickly located, auditioned, and imported into your Song by dragging them from the file browser into the Arrange view. If you drag the file to an empty space, a new track will be created with that file placed at the position to which you dragged it. If you drag the file to an existing track, the file will be placed as a new part of the track.



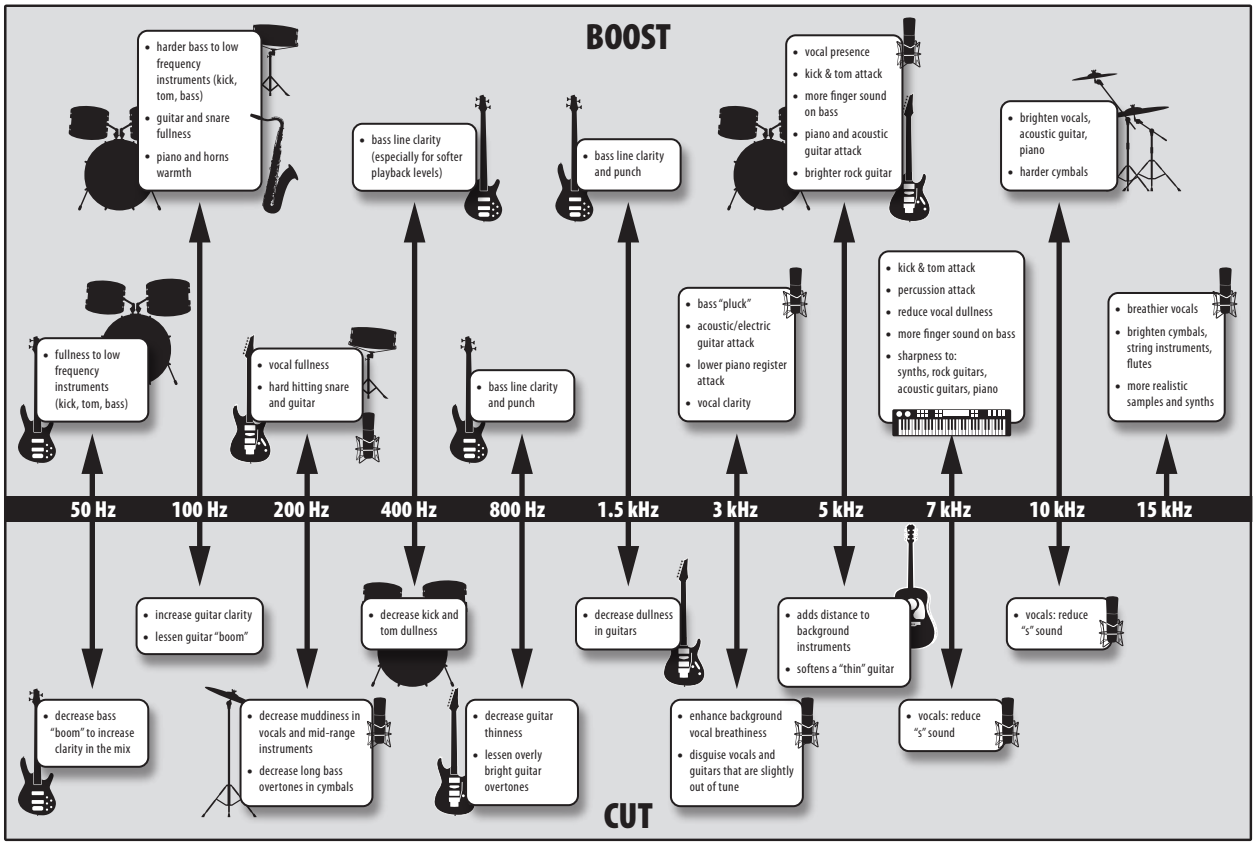
8 Resources

8.1 EQ Frequency Guides

Table 1

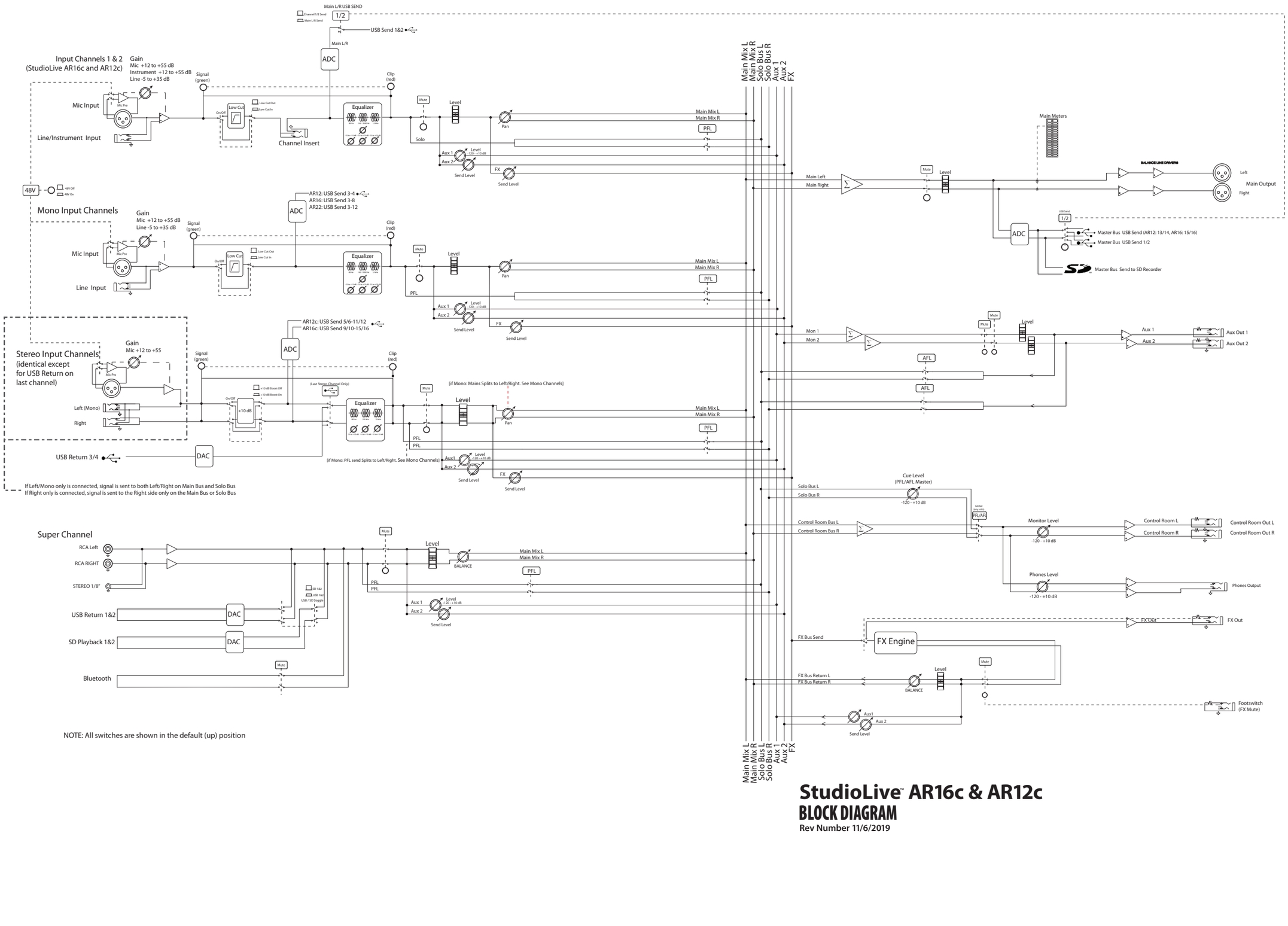
Instrument	What to Cut	Why to Cut	What to Boost	Why to Boost
Human Voice	7 kHz	Sibilance	8 kHz	Big sound
	2 kHz	Shrill	3 kHz and above	Clarity
	1 kHz	Nasal	200-400 Hz	Body
	80 Hz and below	Popping P's		
Piano	1-2 kHz	Tinny	5 kHz	More presence
	300 Hz	Boomy	100 Hz	Bottom end
Electric Guitar	1-2 kHz	Shrill	3 kHz	Clarity
	80 Hz and below	Muddy	125 Hz	Bottom end
Acoustic Guitar	2-3 kHz	Tinny	5 kHz and above	Sparkle
	200 Hz	Boomy	125 Hz	Full
Electric Bass	1 kHz	Thin	600 Hz	Growl
	125 Hz	Boomy	80 Hz and below	Bottom end
String Bass	600 Hz	Hollow	2-5 kHz	Sharp attack
	200 Hz	Boomy	125 Hz and below	Bottom end
Snare Drum	1 kHz	Annoying	2 kHz	Crisp
			150-200 Hz	Full
			80 Hz	Deep
Kick Drum	400 Hz	Muddy	2-5 kHz	Sharp attack
	80 Hz and below	Boomy	60-125 Hz	Bottom end
Toms	300 Hz	Boomy	2-5 kHz	Sharp attack
			80-200 Hz	Bottom end
Cymbals	1 kHz	Annoying	7-8 kHz	Sizzle
			8-12 kHz	Brilliance
			15 kHz	Air
Horns	1 kHz	Honky	8-12 kHz	Big sound
	120 Hz and below	Muddy	2 kHz	Clarity
String section	3 kHz	Shrill	2 kHz	Clarity
	120 Hz and below	Muddy	400-600 Hz	Lush and full

Table 2


BOOST
• harder bass to low frequency instruments (kick, tom, bass)
• guitar and snare fullness
• piano and horns warmth
• bass line clarity (especially for softer playback levels)
• bass line clarity and punch
• vocal presence
• kick & tom attack
• more finger sound on bass
• piano and acoustic guitar attack
• brighter rock guitar
• brighten vocals, acoustic guitar, piano
• harder cymbals
• fullness to low frequency instruments (kick, tom, bass)
• vocal fullness
• hard hitting snare and guitar
• bass line clarity and punch
• bass "pluck"
• acoustic/electric guitar attack
• lower piano register attack
• vocal clarity
• kick & tom attack
• percussion attack
• reduce vocal dullness
• more finger sound on bass
• sharpness to: synths, rock guitars, acoustic guitars, piano
• breathier vocals
• brighten cymbals, string instruments, flutes
• more realistic samples and synths
50 Hz
100 Hz
200 Hz
400 Hz
800 Hz
1.5 kHz
3 kHz
5 kHz
7 kHz
10 kHz
15 kHz
• increase guitar clarity
• lessen guitar "boom"
• decrease kick and tom dullness
• decrease dullness in guitars
• adds distance to background instruments
• softens a "thin" guitar
• vocals: reduce "s" sound
• decrease bass "boom" to increase clarity in the mix
• decrease muddiness in vocals and mid-range instruments
• decrease long bass overtones in cymbals
• decrease guitar thinness
• lessen overly bright guitar overtones
• enhance background vocal breathiness
• disguise vocals and guitars that are slightly out of tune
• vocals: reduce "s" sound
CUT

8.2 Block Diagrams

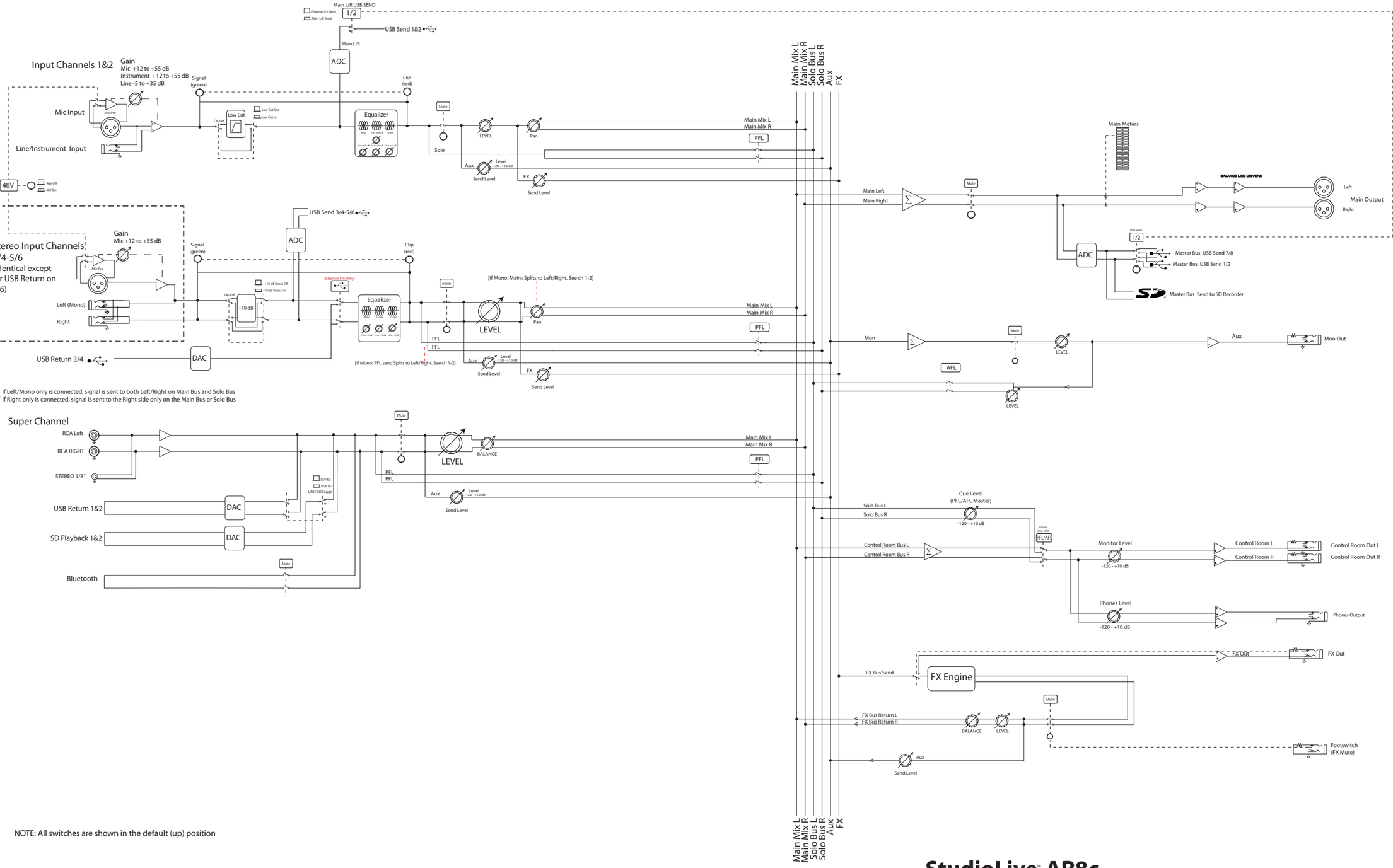
8.2.1 StudioLive AR16c, and AR12c Block Diagram



StudioLive™ AR16c & AR12c
BLOCK DIAGRAM
Rev Number 11/6/2019

NOTE: All switches are shown in the default (up) position

8.2.2 StudioLive AR8c Block Diagram

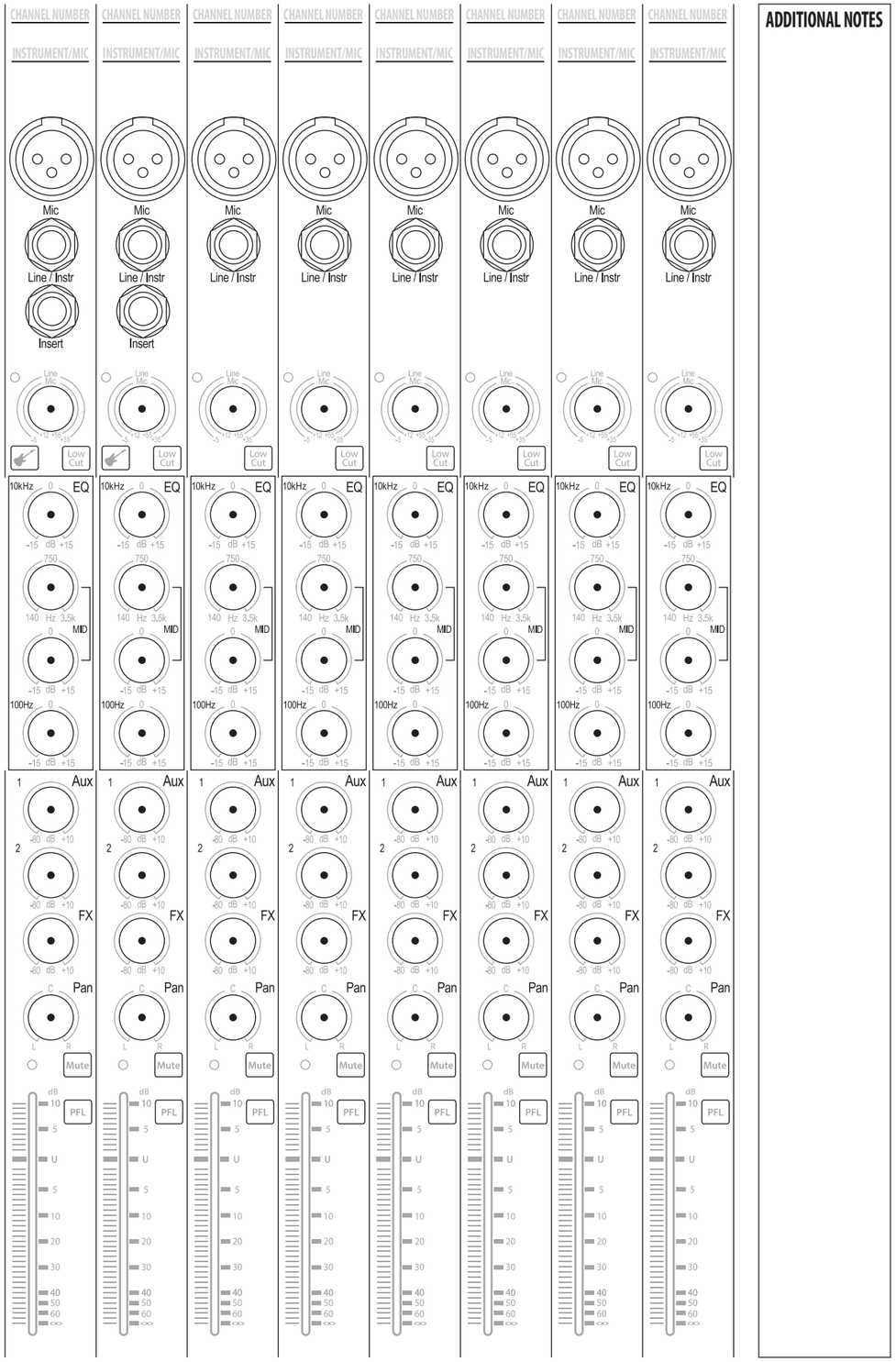


NOTE: All switches are shown in the default (up) position

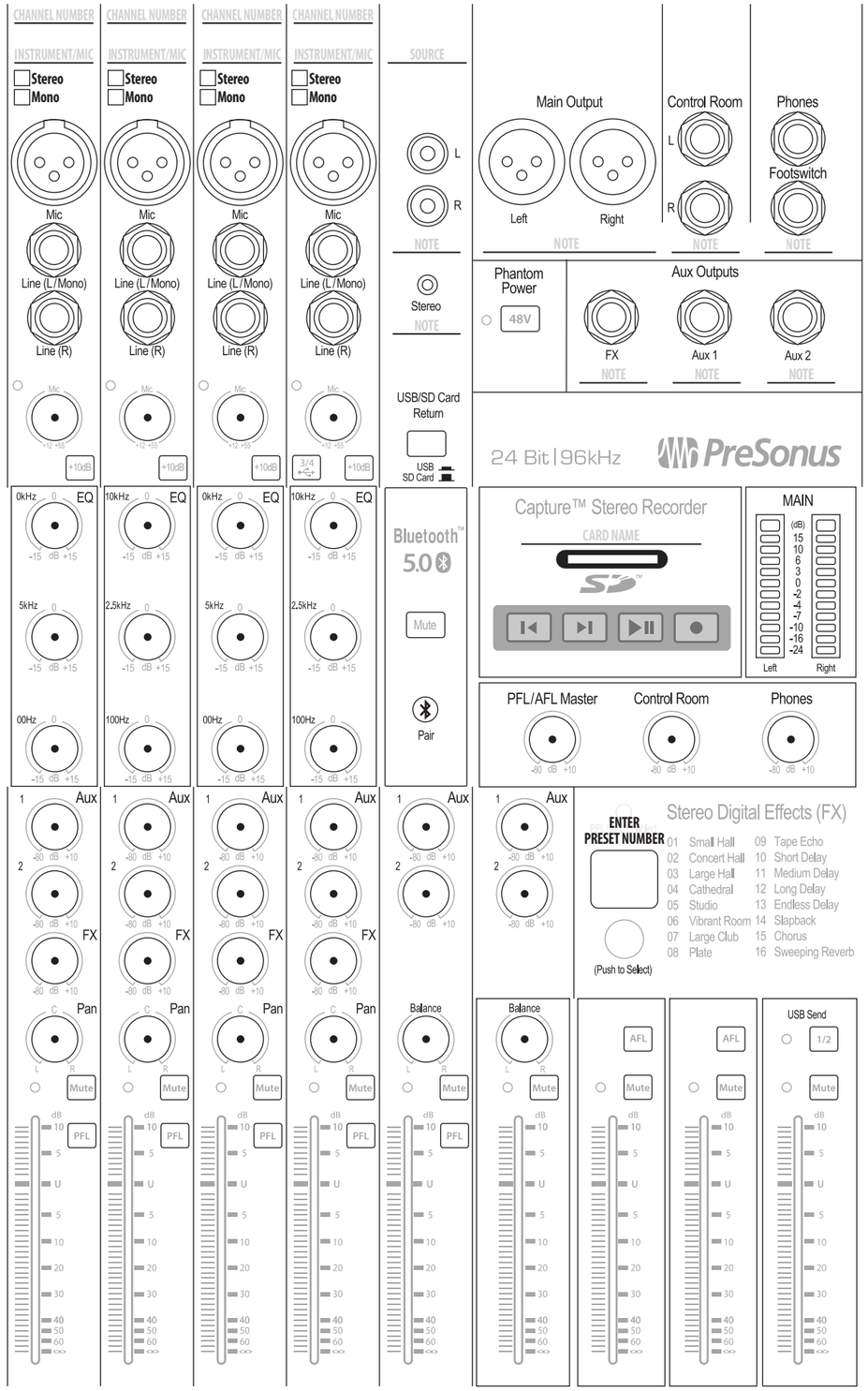
StudioLive™ AR8c
BLOCK DIAGRAM
Rev Number 11/6/2019

8.3 Recall Sheets

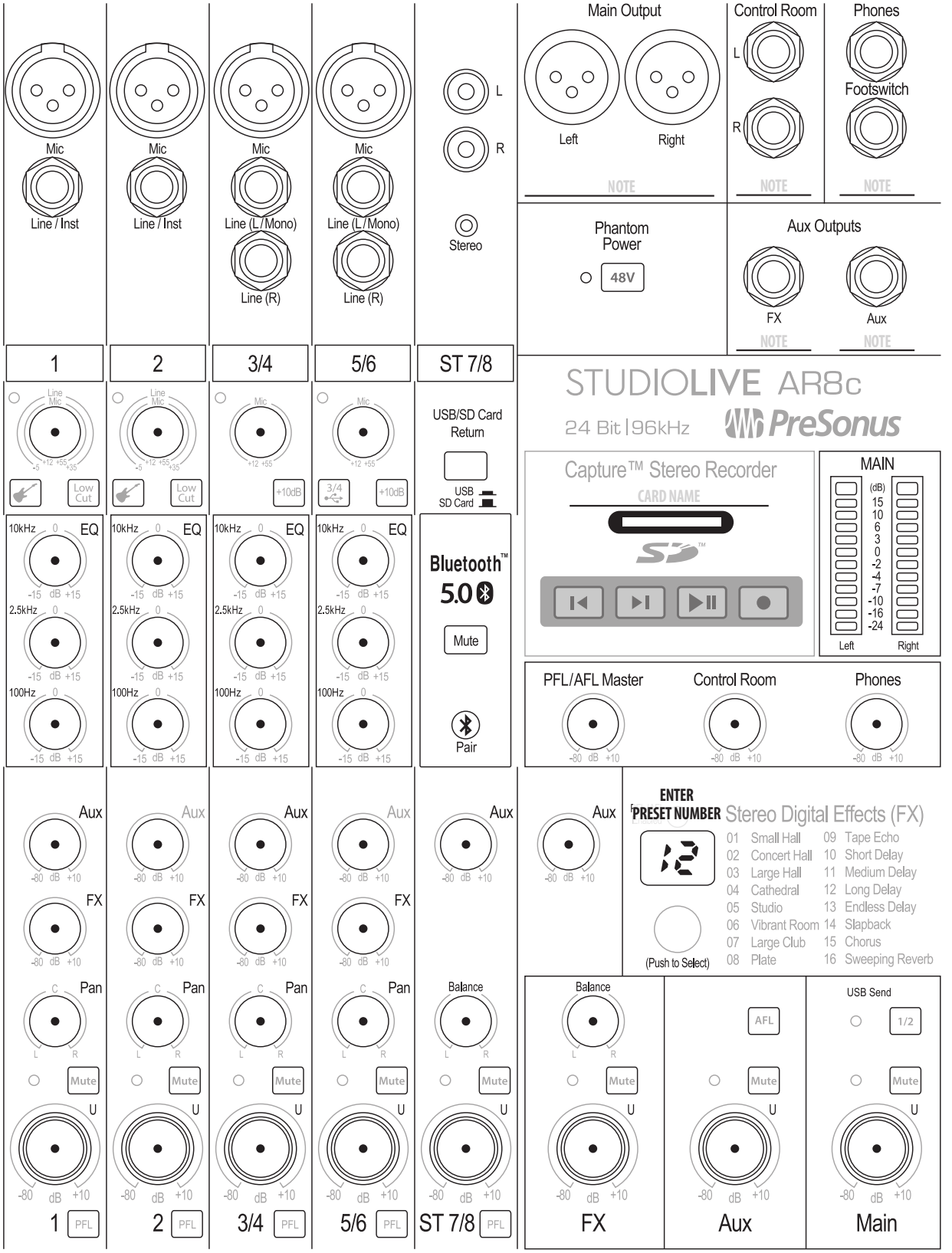
8.3.1 AR16c and AR12c Recall Sheet



ADDITIONAL NOTES



8.3.2 AR8c Recall Sheet



8.4 Technical Specifications

Microphone Preamp

Type	XLR Female, Class A XMAX
Maximum Input level (unity gain)	+9 dBu +/- 1.0 dB
Gain Control Range	43 dB (+12 to +55 dB)
Frequency Response to Analog Outputs	20 Hz to 20 kHz, +0.5/-1.5 dB
Frequency Response to USB (Direct)	20 Hz to 20 kHz, +0.5/- 1.5 dB
S/N Ratio to Outputs (+4 dBu)	94 dB
THD+N (min. gain, A-wtd)	< 0.01%
Input Impedance	1 kΩ
EIN (+55 dB gain, 150Ω input, 20 Hz-22 kHz, A-wtd)	< -128 dBu
Common Mode Rejection Ratio (1 kHz, +55 dB gain)	65 dB
Phantom Power	+48 V, ±3V, Global

*Note: All channel inputs sum through mic preamp.

Instrument Inputs

Type	¼"TS Female, Unbalanced, Hi-Z
Maximum Input Level (min. gain, 1 kHz@0.5% THD+N)	+9 dBu ±1.0 dB
Gain Control Range	43 dB (+12 to +55 dB)
Frequency Response to Analog Outputs	20 Hz to 20 kHz, +0.5/-1.5 dB
Frequency Response to USB (Direct)	20 Hz to 20 kHz, +0.5/-1.5 dB
Dynamic Range (min. gain, A-wtd)	> 105 dB
Dynamic Range (mid. Gain, unwtd)	> 108 dB
THD+N (1 kHz, -1 dBFS, A-wtd)	< 0.01%
THD+N (1 kHz, -1 dBFS, unwtd)	< 0.01%
Input Impedance	> 1 MΩ

*Note: All Channel Inputs sum through Mic preamp.

Line Inputs

Type	¼"TRS Female, Balanced
Maximum Input Level (min. gain, 1 kHz@0.5% THD+N)	+26 dBu +/- 1.0 dB
Gain Control Range	Mono Channels: 40 dB +/- 1.0 dB (-5 to +35 dB), Stereo Channels: 0 dB or +10 dB (+10 dB Boost)
Frequency Response to Analog Outputs	20 Hz to 20 kHz, +0.5/-1.5 dB
Frequency Response to USB (Direct)	20 Hz to 20 kHz, +0.5/-1.5 dB
S/N Ratio to Analog Outputs (+4 dBu)	85 dB
THD+N (1 kHz, -1 dBFS, A-wtd)	< 0.01%
Input Impedance (Balanced)	10 kΩ

Main, Control Room, Aux, and FX Outputs

Type (Main Outputs)	XLR Male, Impedance Balanced
Type (Control Room, Monitor, FX Outputs)	¼"TRS Female, Balanced
Rated Output Level (Main Outputs)	+24 dBu, ±1.0 dB
Rated Output Level (Control Room, Aux, FX Outputs)	+18 dBu
Frequency Response	20 Hz to 20 kHz, +0.5/-1.5 dB
Dynamic Range (A-wtd)	> 108 dB
THD+N (Bandwidth 20~20 kHz, -1 dBFS, unwtd)	< 0.01%
Output Impedance	100 Ω

Headphone Output

Type	¼"TRS Female, Stereo, Unbalanced
Maximum Output Level	150 mW/channel @ 56Ω
Frequency Response	20 Hz to 20 kHz, +0.5/-1.5 dB
Dynamic Range (a-wtd)	> 103 dB
THD+N (Bandwidth 20~20 kHz, -1 dBFS, unwtd)	< 0.01%

System Crosstalk

Input to Output (Ref = +4 dBu, 20 Hz to 20 kHz, unwtd)	-90 dBu
Adjacent Channels (Ref = +4 dBu, 20 Hz to 20 kHz, unwtd)	-85 dBu

Signal Level LED

Signal	-30 dBFS (pre-EQ)
Clip	-3.0 dB before clip (pre- or post-EQ)

Channel EQ

Low Cut	100 Hz, -18 dB/octave
High Shelving	±15 dB @ 10 kHz
Mid Peaking (Mono Channels: AR16c, AR12c)	±15 dB @ 140 Hz to 3.5 kHz (variable)
Mid Peaking (Stereo Channels: AR16c, AR12c, All: AR8c)	±15 dB @ 2.5 kHz
Mid-Band Q	Boost: 1.0, Cut: 2.5
Low Shelving	±15 dB @ 100 Hz

Audio Interface

Host Interface	USB 2.0
ADC Dynamic Range (Component)	114 dB
DAC Dynamic Range (Component)	114 dB
Signal to Noise (A-wtd)	-96 dB
Bit Depth	24-bit
Internally Supported Sample Rates	44.1, 48, 88.2, 96 kHz
Jitter	<80 ps RMS (20 Hz – 20 kHz)
Jitter Attenuation	>60 dB (1 ns in => 1 ps out)

SD Recorder

Supported Media Format	FAT16-formatted SD Card, FAT32-formatted SDHC Card
Media Storage Capacity	SD Card: 2 GB, SDHC Card: 32 GB
Recording File Format	Stereo WAV
Playback File Formats	Stereo WAV, MP3
Sampling Rate (WAV)	44.1 kHz
Bit Depth	Recording: 24-bit, Playback: 16- and 24-bit

Power

Connector	IEC
Input Voltage Range	90 to 240 VAC

Physical	AR16c	AR12c	AR8c
Length	15.6″ (397 mm)	15.6″ (397 mm)	12.3″ (313 mm)
Width (chassis only)	18.9″ (480 mm)	15″ (381 mm)	11″ (284 mm)
Maximum Height	3.5″ (89 mm)	3.5″ (89 mm)	3.5″ (89mm)
Weight	14.1 lbs (6.4 kg)	11.9 lbs (5.4 kg)	7.1 lbs (3.2 kg)

Global Warming

Recommended Ambient Operating Temperature 0˚ to 40˚ Celsius / 32˚ to 104˚ Fahrenheit

9 Troubleshooting

9.1 Troubleshooting

Please check the PreSonus Web site (www.presonus.com) regularly for software information and updates, firmware updates, and support documentation, including frequently asked questions.

Online technical support is available from within your My PreSonus account.

PreSonus telephone technical support is available to customers in the USA on Monday through Friday from 9 a.m. to 5 p.m. Central Time by calling 1-225-216-7887. Customers outside of the USA should contact their national or regional distributor for telephone technical support. A list of international distributors is provided at www.presonus.com/buy/international_distributors.

No Output on a Channel

Check the signal-present LED and verify that there is signal on that channel. If no signal is present, check the cable and the input source. Verify that the trim control is set at an appropriate level. Make sure the channel is not muted. Make sure that if your device requires phantom power, phantom power is engaged for the channel.

No Output on the Solo Bus While Monitoring

Verify that both the Cue volume and the headphone, or monitor, volume is at a reasonable level for comfortable listening and that the PFL button is engaged on the desired channels..

Can't Hear Main Mix in Headphones

Verify the headphone output control is at a sufficient level. Make sure that no PFL or AFL buttons are engaged.

Control Room Level Not Affecting Volume

Verify that your monitors are connected to the Control Room outputs of your StudioLive ARc, not the Main outputs.

Main Fader Doesn't Control Mix Level

Verify that your monitors are connected to the Main outputs, not the Control Room outputs.

Microphone Preamp 1 or 2 Doesn't Pass Audio

First, verify that the Instrument input button is not engaged. This disables the microphone preamp. Next, verify that your microphone cable is operational and that the trim control is set at an appropriate level.

Added bonus: PreSonus' previously Top Secret recipe for. . .

Chicken and Andouille Gumbo

Ingredients:

- 1 C All-Purpose flour
- ¾ C Vegetable Oil
- 1 large onion (diced)
- 1 small onion (quartered)
- 6 celery stalks (diced)
- 1 large green bell pepper (diced)
- 3 cloves garlic (2 minced, 1 whole)
- 1 lb link Andouille sausage
- 4 Chicken leg quarters
- 4 qt water
- 4 bay leaves
- 1 tsp thyme
- 1 tsp Old Bay seasoning
- 1-2 C frozen okra, sliced
- ¼ C fresh parsley, minced
- 6-8 eggs (optional)

Cooking Instructions:

1. In a large pot, combine whole chicken leg quarters, water, quartered onion, Old Bay, 2 bay leaves and 1 whole clove garlic. Cover and bring to a low boil. Simmer stock until chicken is falling off the bone. Remove the chicken and set aside. Discard the onion, bay leaves, and garlic, reserving the liquid.
2. In a heavy saucepan, heat 1 Tbsp of the oil on medium high heat and brown the andouille until it is cooked through. Set aside sausage for later.
3. In the same saucepan, add and heat remaining oil. Slowly add flour 1-2 Tbsp at a time, stirring continuously. Continue cooking and stirring the roux until it is a dark brown (it should look like melted dark chocolate). Be careful to not to get the oil too hot or the flour will burn and you'll have to start over.
4. Once roux has reached the correct color, add diced onion, celery, green pepper, and minced garlic. Cook until vegetables are very tender. Do not cover.
5. Slowly add 1 quart of chicken broth and bring to a low boil, stirring constantly.
6. Transfer roux mixture to a soup pot and bring to low boil. Do not cover, the roux will settle on the bottom of the pot and burn.
7. Add remaining chicken broth, bay leaves, and thyme. Simmer for 30 minutes.
8. While gumbo is simmering, debone and shred chicken and slice the andouille.
9. Add chicken and andouille to gumbo and return to a simmer. Simmer for 30-45 minutes.
10. Stir in frozen okra and parsley and bring to a rolling boil.
11. **Optional:** Crack one egg into a teacup and quickly pour into the boiling gumbo. Repeat with the other eggs being careful not to cluster them too closely. After all the eggs have risen back to the surface, reduce heat and simmer.
12. Correct seasoning with salt and pepper (red, white and/or black) if necessary.
13. Serve over rice with potato salad.

Serves 12

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All specifications subject to change without notice... except the recipe, which is a classic.





StudioLive™ AR-Series

Audio Interface/Analog Mixer/Stereo SD Recorder

Owner's Manual













SD™

PreSonus®

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Part# 70-22000144-A





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AD600

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1 Reseña Escribe una reseña SKU: AD600-DC

FUENTE DE ALIMENTACIÓN INCLUIDA :

NINGUNO A NOSOTROS

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DESCRIPCIÓN GENERAL DETALLES

- Coordinación de RF completa y avanzada para su red
- Escaneo rápido en tiempo real para encontrar frecuencias disponibles y monitorear la actividad de RF
- Gran pantalla a color de 6,6 pulgadas para ver y analizar el espectro de RF
- Coordinación de RF guiada para ahorrar tiempo y esfuerzo en entornos de RF desafiantes
- Herramientas para ver, analizar y escuchar la actividad de RF
- Rango de sintonización: 174 MHz a 2 GHz para soporte de múltiples bandas de frecuencia
- (6) conexiones de antena para respaldar la cobertura de múltiples antenas y zonas
- Captura y almacenamiento de datos para archivar información de RF para su análisis
- Red habilitada para implementaciones de sistemas a gran escala
- Conexiones USB para almacenamiento externo de datos de escaneos, registros de eventos y otros datos

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guiada para planificar, escanear RF e implementar frecuencias en todo su sistema, o profundice más para tener un control completo. Hay herramientas adicionales disponibles para analizar el espectro, capturar datos y realizar estudios de RF del sitio. Supervise el audio demodulado de su red utilizando Dante Browse y escuche las funciones de Dante. El AD600 cuenta con una gran pantalla de panel frontal a todo color de 6,6 pulgadas que facilita la visualización de la información, mientras que el escaneo y el monitoreo en tiempo real de las actividades de RF mantienen la información en vivo disponible cuando más la necesita.



VER EL VÍDEO

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AD600 Videos



Shure Axient Digital AD600 How to use the Display Scan Tools



Shure Axient Digital AD600

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Antenna Configuration



Shure Axient Digital AD600 How to use Dante Browse



Shure Axient Digital AD600 How to use the Listen Tool

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Axient® Digital Dual-Channel Portable Wireless Receiver

Superior Axient Digital RF performance, spectral efficiency, and transparent audio quality in a portable, slot-in design. Axient Digital. Now portable.

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5 Stars	1
4 Stars	0
3 Stars	0
2 Stars	0
1 Star	0

Benefits

1	Connectivity
1	Durability
1	Ease of Use
1	Features
1	Sound Quality

1 Review

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100% of respondents would recommend this to a friend

Reviewed by 1 customer

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This product is so amazing

By sandeep **From** India **Submitted** 10 months ago

I know Shure creates wonders and this is one of the masterpieces I would ever have purchased

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Ver nuestros socios



AD4Q

Receptor inalámbrico digital de cuatro canales

1 Reseña Escribe una reseña

SKU: AD4Q-DC=-A

BANDA DE FRECUENCIA : A B C ?

FUENTE DE ALIMENTACIÓN INCLUIDA : NINGUNO A NOSOTROS

Seleccione una Combinación:

AD4Q-DC=-A: Receptor inalámbrico digital de cuatro ca

$7,474.00

DONDE COMPRAR

DESCRIPCIÓN GENERAL DETALLES

- Amplio rango de sintonización hasta 184 MHz
- Verdadera recepción de diversidad digital por canal para resistencia a caídas
- Control en red con el software Wireless Workbench® y la aplicación para iOS ShurePlus™ Channels
- Modo Quadversity para cobertura de antena extendida y relación señal-ruido de RF mejorada
- El conector para auriculares del panel frontal permite el monitoreo de Dante™ Cue y Dante™ Browse
- Conmutador Ethernet configurable para salida digital redundante Dante o AES67
- Salidas XLR y AES3 conmutables
- El medidor de calidad del canal muestra la relación señal-ruido de RF
- Bloqueo de conectores de CA
- Versión de módulo de CC disponible para admitir alimentación redundante

Axient Digital ofrece opciones de receptor doble y cuádruple que abren la puerta a una gama completa de funciones, desde RF de alto rendimiento hasta audio digital

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Más información → Aceptar y cerrar

Nota : cuando compre componentes inalámbricos por separado, haga coincidir sus bandas de frecuencia para garantizar el funcionamiento adecuado del sistema.

ESCUCHE CÓMO LOS PROFESIONALES DE AUDIO DE PRIMER NIVEL UTILIZAN AXIENT DIGITAL PARA LOGRAR LO IMPOSIBLE.

Aprende más

Vídeos

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Vídeos AD4Q



Shure Axient Digital



Shure Axient Digital empuja los límites de RF

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Cambiar Preferencias De Cookies

Productos relacionados

ALL (10) COMPARABLE (1) ACCESSORIES (9)



AD4D-DC=-A

AD4D

Two-Channel Digital Wireless Receiver

Compatible with all AD series and ADX series transmitters.

$3,896.00 LEARN MORE



LPC

Locking AC Power Connector

Locking AC power connector for Axient® Digital receivers.

LEARN MORE



UA845UWB

Antenna Distribution System

Antenna distribution system expan wireless microphone system by sp 1 pair of antennas and amplifies RI signals.

$1053.00

ADD TO CART

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Reviews

Ratings Distribution

5 Stars	1
4 Stars	0
3 Stars	0
2 Stars	0
1 Star	0

Benefits

1	Connectivity
1	Durability
1	Ease of Use
1	Features
1	Sound Quality

1 Review

WRITE A REVIEW

100% of respondents would recommend this to a friend

Best Uses Broadcast 1 | Conferencing & Discussion 1 | House of Worship 1 | Live Performance 1 | Meetings 1 | [+more]

Reviewed by 1 customer

Enter Search Terms

Most Recent

5

I have used them all over the country issue free.

By Talley A **From** Wichita Falls, TX **Submitted** 2 years ago

I have used these in NYC, Dallas, Chicago, Atlanta, LA, Detroit, and lots of other places. I have found it to be trouble free. Very easy to set up with Wireless Workbench. Setting up the options for the push to talk switch on the transmitter is easy too. It has been well worth the investment.

More Details

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Documentation

User Guide & Specs

- AD4Q User Guide (en)

Architect Specifications

- Axient Digital AD Architect Specifications (en)
- Axient Digital ADX Architect Specifications (en)

Tools

Wireless Frequency Finder

This tool provides recommended frequencies for Shure Wireless System use in the United States.

Wireless Accessory Wizard

With a few simple inputs, this selection wizard provides recommended items for your wireless microphone setup, and/or a diagram on how the antennas and antenna distribution are connected.

Wireless Mic Remote

Software & Firmware

SUU

A modern audio network can't do its job with outdated software (and the time you spend searching for each latest version is time lost). Easy-to-use and free-to-download, the Shure Update Utility helps you update compatible Shure products while managing all of your device firmware. Giving you one less thing to worry about.

Wireless Workbench 7

Wireless Workbench is our free software for audio professionals that puts a full suite of RF spectrum management tools in one place to give you full command of your compatible wireless devices. Guarantee that you are prepared to succeed in any RF environment – no matter the location.

Find An Answer

ULX-D, QLX-D, AXT400, Axient Digital control with Yamaha QL and CL consoles

WWB6 Ports and Protocol Information

Disqualified Network Switches for Shure Dante Devices

Understanding Dante Flows

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Getting the most out of Axient Digital with Wireless Workbench 6



Gearhouse integrates Axient Digital wireless into innovative SportsCom referee microphone system



Axient Digital frequency diversity delivers flawless referee audio for Notre Dame football



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SHURE

SPECIAL OFFERS Buscar

ADX2/SM58

CONTACTA UN EXPERTO SHURE



ADX2/SM58

ADX2/SM58 Transmisor de Micrófono Inalámbrico de Mano

BANDA DE FRECUENCIAS: G55

CONTACTA UN EXPERTO SHURE

GENERAL DETALLES

- Maletín metálico ligero, duradero y resistente a la humedad en acabado negro
- Hasta 9 horas de ejecución con batería recargable SB920A
- Contactos externos para carga acoplada con radomo opcional totalmente cubierto
- Con el Diversity ShowLink habilitado para el control remoto del transmisor y para automáticamente evitar interferencias
- Dos modos de transmisión: Estándar para una cobertura óptima y nueva Alta Densidad para el máximo recuento de canales del sistema y una cobertura robusta
- Cifrado habilitado, transmisión segura

El ADX2/SM58 es un transmisor de micrófono inalámbrico de mano compatible con los Sistemas Inalámbricos Digitales Axient®.

- Funciona con los Sistemas Inalámbricos Digitales Axient®
- Cuenta con la cápsula SM58®

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ESCUCHE CÓMO LOS PROFESIONALES DE AUDIO DE PRIMER NIVEL UTILIZAN AXIENT DIGITAL PARA LOGRAR LO IMPOSIBLE.

Saber Más

Videos

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ADX2/SM58 Videos



Shure Axient Digital



Shure Axient Digital pushes the limits of RF

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Productos Relacionados

TODO (22) PRODUCTOS PARA COMPARAR (6) ACCESORI



ADX2/B58

ADX2/B58 Transmisor De Micrófono Inalámbrico De Mano

Un elegante transmisor de mano metálico con control remoto ShowLink. Cápsula Beta 58A®, acabado en negro.

SABER MÁS



ADX2/B87A

ADX2/B87A Transmisor De Micrófono Inalámbrico De Mano

Un elegante transmisor de mano metálico con control remoto ShowLink. Cápsula Beta®87A, acabado en negro.

SABER MÁS



ADX2/B87C

ADX2/B87C Transmisor De Micrófono Inalámbrico De Mar

Un elegante transmisor de mano n con control remoto ShowLink. Cáp Beta®87C, acabado en negro.

SABER MÁS

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Axient Digital vs ULX-D

Más Info



Getting the most out of Axient Digital with Wireless Workbench 6



Axient Digital de Shure transformó la calidad del audio en los servicios en vivo y online de la Iglesia El Lugar de Su Presencia

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SB920A

SB920A BATERÍA PARA ADX2

CONTACTA UN EXPERTO SHURE

GENERAL

Los transmisores de mano ADX2 y ADX2FD utilizan exclusivamente baterías recargables de litio-ion SB920A.

Productos Relacionados

TODO (21) PRODUCTOS (4) COMPATIBLE (17)

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Más información →

Aceptar y cerrar



SBM920

SBM920 MÓDULO DE CARGA PARA SB920A

MÓDULO DE CARGA PARA SB920A

SABER MÁS



SBC240

SBC240

SBC240 CARGADOR PARA ADX1, ADX2, L/PS60

CARGADOR PARA ADX1, ADX2, L/PS60

SABER MÁS



SBC840

SBC840 Cargador Em Red De (Posiciones

Cargador en red de ocho posicione baterías SB910 y SB920A

SABER MÁS

Soporte

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Documentos de ayuda

Material Safety Data Sheet

SB920 Material Safety Data Sheet (en) (57 KB)

Hoja de características

Axient Digital Spec Sheet (en) (2554 KB)

Catálogos

Manual de Usuario

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Encuentre una respuesta

Cuidado de la batería recargable Shure

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AD1 AD1 TRANSMISOR BODYPACK

CONTACTA UN EXPERTO SHURE









AD1

AD1 Transmisor Bodypack

BANDA DE FRECUENCIAS: G55

CONTACTA UN EXPERTO SHURE

GENERAL DETALLES

- Dos modos de transmisión: Estándar para una cobertura óptima y el nuevo Alta densidad para operar con el máximo de canales y una sólida cobertura
- Transmisión segura con encriptado
- Dos opciones de conector: TA4 y LEMO3
- Antena de 1/4 de onda desmontable
- Cómodas opciones de alimentación con baterías recargables de iones de litio AA o SB900A
- Contactos externos para estaciones de carga

El AD1 es un transmisor bodypack inalámbrico, compatible con los sistemas inalámbricos Axient® Digital.

Con un rendimiento de RF excepcional y una amplia banda de sintonización de hasta 184 MHz, el AD1 pone el audio digital inalámbrico de calidad profesional al alcance de la mano.

Al comprar componentes inalámbricos por separado, sus bandas de frecuencias deben coincidir para que el sistema funcione correctamente.

ESCUCHE CÓMO LOS PROFESIONALES DE AUDIO DE PRIMER NIVEL UTILIZAN AXIENT DIGITAL PARA LOGRAR LO IMPOSIBLE.

Saber Más

Videos

Shure Axient Digital Wireless System

AD1 Videos



Shure Axient Digital



Shure Axient Digital pushes the limits of RF

Productos Relacionados

TODO (20) PRODUCTOS PARA COMPARAR (7) ACCESORI



AD2/KSM8

AD2/KSM8 Transmisor De Mano Inalámbrico

Un transmisor de mano robusto de grandes prestaciones. Disponible en negro o níquel.

SABER MÁS



AD2/KSM9HS

AD2/KSM9HS Transmisor De Mano Inalámbrico

Un transmisor de mano robusto de grandes prestaciones. Disponible en negro o níquel.

SABER MÁS



AD2/B87C

AD2/B87C Transmisor De Man Inalámbrico

Un transmisor de mano robusto de grandes prestaciones.

SABER MÁS

Soporte

Servicio y Reparación **Contáctanos** **Shure Audio Institute** **Shure Tech Portal**

Documentos de ayuda

Manual de Usuario

AD1 User Guide (es)

Especificaciones de diseño

Axient Digital AD Architect Specifications (en)

Safety Information

Hoja de características

Encuentre una respuesta

Compatibilidad de micrófonos de solapa y auriculares con sistemas inalámbricos

Error de Reposition Battery

Más Info



Getting the most out of Axient Digital with Wireless Workbench 6



Gearhouse integrates Axient Digital wireless into innovative SportsCom referee microphone system



Axient Digital frequency diversity delivers flawless referee audio for Notre Dame football



A H C

SUSCRÍBETE A LA NEWSLETTER DE SHURE (INGLÉS)

SHURE
SOUND EXTRAORDINARY

America Latina

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UA845UWB

Sistema de distribución de antena

Escribe la primera reseña SKU: UA845UWB

$1053.00

DESCRIPCIÓN GENERAL DETALLES

1 AÑADIR A LA CESTA BUSCAR EN LA TIENDA

ó

Envío Gratis Desde $50

Política de devolución de 30 días

Antena activa/Sistema de distribución de energía, cinco vías, VHF y UHF de banda ancha, fuente de alimentación interna. Divisor de antena activo de cinco vías y sistema de distribución de energía para receptores U4S, UR4S, U4D y UR4D, receptores AD4, ULXD4, UXLD4D, ULXD4Q, receptores SLX4, BLXR4 y QLXD4.

El modelo UA845UWB de Shure es un sistema de distribución de antena VHF y UHF amplificado que expande un sistema de micrófono inalámbrico al dividir un par de antenas en múltiples Shure Axient Digital, UHF-R, ULX-D, BLX4R, SLX4 y BLX4R. También amplifica las señales de RF para compensar la pérdida de inserción debido a la división de la potencia de la señal en múltiples conectores de salida. Cada UA845UWB permite que hasta cuatro receptores utilicen las mismas antenas. Los conectores CASCADE permiten conexiones a un quinto receptor o un segundo UA845UWB.

Expansibilidad. El sistema de distribución de antenas UA845UWB está diseñado para grandes sistemas inalámbricos Axient Digital, UHF-R, ULX-D™, QLX-D, SLX, BLX4R. Cada unidad permite que hasta cuatro receptores inalámbricos usen las mismas dos antenas, y los puertos CASCADE permiten la conexión a un quinto receptor o un segundo UA845UWB.

Compatibilidad. El UA845UWB es compatible con todos los receptores de micrófonos inalámbricos Shure Axient Digital, UHF-R, ULX-D, SLX, BLX4R, QLX-D que funcionan dentro de un rango de frecuencia compatible (consulte Rangos de frecuencia portadora UHF en la sección Especificaciones).

Puertos CASCADA. Dos puertos CASCADE de antena tipo BNC de 50 Ω permiten una unidad UA845UWB adicional o un quinto receptor inalámbrico. Un gran sistema inalámbrico puede funcionar con un solo par de antenas.

Conectores de SALIDA y SALIDA de alimentación para sistemas inalámbricos UHF y UHF-R® de Shure. Se pueden conectar en cadena hasta cinco receptores U4 o UR4 y alimentarlos desde una sola fuente a través de los conectores de SALIDA de alimentación. NO APLICA A ULX o ULX-D.

Antena activa/Sistema de distribución de energía, cinco vías, VHF, UHF, 1,2, 1,5 y 1,8 GHz, fuente de alimentación interna.

UA845UWB también está disponible sin cable.

Productos relacionados

TODOS (33) RELACIONADO (6) COMPATIBLES (27)



UA844+SWB

UA844+

Sistema De Distribución De Antena

Sistema de distribución de energía y divisor de antena activo de cinco vías UHF (470-952 MHz) de banda ancha, fuente de alimentación externa.

$614.00

AÑADIR A LA CESTA



UA221

Divisor De Antena Pasiva

El divisor de antena pasivo divide una señal entrante en 2 señales salientes o combina 2 señales entrantes en 1 señal.

$179.00

AÑADIR A LA CESTA



UA8-174-216

UA8

Antena Dipolo De ½ Onda

La antena dipolo de 1/2 onda ofrec posicionamiento de 45 grados en r con la posición horizontal o vertica una mayor flexibilidad y una mejor recepción de RF.

$32.00

AÑADIR A LA CESTA

Reseñas

Sin reseñas

ESCRIBE LA PRIMERA RESEÑA

Puntuación de la marca SHURE

No hay reseñas sobre este producto, pero así es como se califica a SHURE en general en la categoría ACCESORIOS.

4.6 / 5

Apoyo

ADVERTENCIA: Proposición 65 de California >

Documentación

Guía del usuario y especificaciones

UA845UWB User Guide (en)

BIM

UA845SWB BIM (en)

Training



How to Set Up Antenna

Tools

Wireless Accessory Wizard

With a few simple inputs, this selection wizard provides recommended items for your wireless microphone setup, and/or a diagram on how the antennas and antenna distribution are connected.

Wireless Mic Remote Antennas Tool

Enter distance between antenna and receiver to get setup recommendations for the receiver.

Find An Answer

UA845UWB DC Bias Voltage Off Feature

How to calculate RF signal loss in coaxial antenna cable

Termination of unused ports on antenna distribution amp

Termination on antenna splitters

Further Reading



All About Wireless: RF System Connectivity

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ULXD4Q

ULXD4Q Receptor inalámbrico digital cuádruple



BANDA DE FRECUENCIAS: G50 H50 J50A

CONTACTA UN EXPERTO SHURE

GENERAL DETALLES

- Cuatro receptores en un robusto chasis metálico de 1 unidad de rack, con fuente de alimentación interna.
- Hasta 72 MHz de banda de sintonización (en función de la región).
- El barrido optimizado localiza y prioriza automáticamente las frecuencias abiertas para poder asignarlas manualmente a los transmisores mediante sincronización por infrarrojos.
- La diversity en frecuencia del transmisor de petaca garantiza un audio ininterrumpido en aplicaciones críticas.
- Controles de ganancia (hasta 60 dB), vúmetros de LED y salidas XLR para cada canal.
- La suma de audios envía dos o más canales de audio a salidas XLR seleccionadas en el receptor, y se controla mediante el ajuste de ganancia de los canales.
- Conexión de red Ethernet para: óptima coordinación y asignación de frecuencias de varios receptores; compatibilidad con el software Wireless Workbench® 6 para una coordinación, monitorización y control mejorados; soporte para audio digital en red Dante™.
- Compatible con los sistemas de control AMX y Crestron.
- Detección y alertas de interferencias.
- Pantalla LCD y controles intuitivos en el frontal con varias opciones de bloqueo, además de vúmetros LED de audio y RF con indicador de picos.
- Antenas de media onda desmontables.
- Audio digital de 24 bits/48 kHz.
- Ancho de banda de 20 Hz a 20 kHz, con una respuesta plana en frecuencia.

- Rango dinámico de más de 120 dB.
- Hasta 22 transmisores activos en un canal de 8 MHz; en el modo de alta densidad admite hasta 63 transmisores activos en un canal de 8 MHz.
- Con encriptación AES de 256 bits para una transmisión inalámbrica segura.

Videos

ULX-D Quad and Dual Receivers | Shure

ULXD4Q Videos



Shure ULX-D Digital Wireless System: Quad and Dual Receivers



ULX-D digital wireless system: Dante

Productos Relacionados

TODO (22) PRODUCTOS PARA COMPARAR (4) ACCESORI



ULXD4=-G50

ULXD4

ULXD4 Receptor Inalámbrico Digital

Receptor inalámbrico digital con rendimiento RF inteligente que aprovecha el espectro con mayor eficiencia, ideal para aplicaciones de refuerzo sonoro profesional de cualquier tamaño.

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ULXD4D=-G50

ULXD4D

ULXD4D Receptor Inalámbrico Digital Dual

Receptor inalámbrico digital dual diseñado para aplicaciones de refuerzo sonoro profesional.

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AD4D

AD4D Receptor Inalámbrico Di De 2 Canales

Compatible con todos los transmis las series AD (ya disponibles) y AD (disponibles próximamente).

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Soporte

Servicio y Reparación **Contáctanos** **Shure Audio Institute** **Shure Tech Portal**

Documentos de ayuda

Manual de Usuario

ULXD4D ULXD4Q User Guide (es)

Secuencia de Comandos

ULX-D Command Strings (en)

General

Disqualified Network Switches for

CAD

ULXD4Q CAD (en) (1070 KB)

Software & Firmware

Wireless Workbench 7

Wireless Workbench es el software gratuito de Shure para los profesionales del audio que combina un conjunto completo de herramientas de gestión del espectro de RF y ofrece un control total de los dispositivos inalámbricos compatibles. De este modo, se podrán superar los desafíos de cualquier entorno de RF, sin importar la ubicación.

SUU

Una red de audio moderna no puede hacer su trabajo con un software desactualizado (y lo que te demoras buscando la versión más reciente es una pérdida de tiempo). Fácil de usar y con descarga gratuita, la SUU te ayuda a actualizar todos los productos Shure compatibles, mientras administra todo el firmware de tu dispositivo. Ya tienes una

Encuentre una respuesta

Actualización y problemas del firmware del ULX-D

Actualización de firmware para transmisores ULX-D

Error FPGA del transmisor ULX-D

Conectar en cascada las antenas del ULXD

Más Info



Queen Sirikit National Convention Center (QSNCC) Elevates with Shure Thailand



Reconocida Escuela de EU.UU. Abre Unidad en São Paulo con el Mismo Estándar de Calidad de Audio Internacional



Meisei University Prevents Interference And Improves Workflows With ULX-D

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MHz	SB900B		alkaline	
	1/10 mW	20 mW	1/10 mW	20 mW
902 to 928	>7:30	>4:40	>7	>4
174 to 216	>8:30	>6:35	8	>5
1240 to 1800	>8	>6:05	>6	>4:30

Note: The SB900B Shure rechargeable battery uses SBC200, SBC800 and SBC220 chargers.
Los valores dados en esta tabla corresponden a baterías frescas y de alta calidad. El tiempo de funcionamiento depende del fabricante y de la edad de las baterías.

Rango de frecuencias y potencia de salida del transmisor

Banda	Rango de frecuencias (MHz)	Alimentación (mW RMS)* (Lo/Nm/Hi)
G50	470 a 534	1/10/20
G51	470 a 534	1/10/20
G52	479 a 534	1/10
G53	470 a 510	1/10/20
G62	510 a 530	1/10/20
H50	534 a 598	1/10/20
H51	534 a 598	1/10/20
H52	534 a 565	1/10
J50	572 a 636	1/10/20
J50A△	572 a 608	1/10/20

Banda	)	(LO/NIII/HI)
J51	572 a 636	1/10/20
K51	606 a 670	1/10
L50	632 a 696	1/10/20
L51	632 a 696	1/10/20
L53	632 a 714	1/10/20
M19	694 a 703	1/10/20
P51	710 a 782	1/10/20
R51	800 a 810	1/10/20
JB (Tx únicamente)	806 a 810	1/10
AB (Rx y Tx)	770 a 810	Banda 'A' (770-805): 1/10/20
		Banda 'B' (806-809): 1/10
Q12	748 a 758	1/10/20
Q51	794 a 806	10
V50	174 a 216	1/10/20
V51	174 a 216	1/10/20
V52	174 a 210	10
X50	925 a 932	1/10
X51	925 a 937,5	10

SHURE

SPECIAL OFFERS Buscar

ULXD2/SM58

CONTACTA UN EXPERTO SHURE



ULXD2/SM58

ULXD2/SM58 Transmisor de mano digital ULXD2 con cápsula SM58

BANDA DE FRECUENCIAS: G50 J50A

CONTACTA UN EXPERTO SHURE

GENERAL DETALLES

- Respuesta en frecuencia plana de 30 Hz a 20 kHz (la respuesta real dependerá del micrófono).
- Cápsulas microfónicas Shure intercambiables:
- Encriptación AES de 256 bits para aplicaciones que requieran transmisiones seguras.
- El intervalo de ganancia específico de Shure optimiza el rango dinámico del sistema para cualquier fuente de entrada y elimina la necesidad de ajustar la ganancia del transmisor.
- La batería recargable de iones de litio de Shure ofrece hasta 11 horas de funcionamiento, medición precisa en horas y minutos y efecto memoria nulo.
- Contactos externos para estaciones de carga (estación de carga dual SBC200).
- Pantalla LCD retroiluminada, con controles y menú de fácil navegación.
- Sólida construcción de metal.
- Bloqueo de frecuencia y encendido.

El ULXD2 de Shure es un transmisor de mano inalámbrico, compatible con los sistemas inalámbricos digitales ULX-D. Con un cuerpo de aluminio robusto pero ligero y antena integrada, el ULXD2 ofrece una calidad de audio y un funcionamiento RF fiables, encriptación AES de 256 bits para una transmisión segura y opciones de recarga avanzada para aplicaciones de refuerzo sonoro profesional.

Videos

Shure ULX-D Digital Wireless System: Wide Selectio...

ULXD2/SM58 Videos



ULX-D digital wireless system: Wide Selection of Mics

Productos Relacionados

TODO (30) PRODUCTOS PARA COMPARAR (8) ACCESORI



ULXD2/B58

ULXD2/B58 Transmisor De Mano Digital ULXD2 Con Cápsula Beta 58A

Incluye el micrófono Beta 58A y el transmisor inalámbrico de mano ULXD2 para ofrecer un rendimiento RF excepcional sin comprometer la calidad del audio.

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ULXD2/B87A=-G50

ULXD2/B87A

ULXD2/B87A Transmisor De Mano Digital ULXD2 Con Cápsula Beta 87A

Incluye el micrófono Beta 87A y el transmisor inalámbrico de mano ULXD2 para ofrecer un rendimiento RF excepcional sin comprometer la calidad del audio.

SABER MÁS



ULXD2/B87C=-G50

ULXD2/B87C

ULXD2/B87C Transmisor De M Digital ULXD2 Con Cápsula Be

Incluye el micrófono Beta 87C y el transmisor inalámbrico de mano U para ofrecer un rendimiento RF excepcional sin comprometer la ca del audio.

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Soporte

Servicio y Reparación **Contáctanos** **Shure Audio Institute** **Shure Tech Portal**

Documentos de ayuda

Hoja de características

- ULX-D Spec Sheet (en) (1121 KB)

CAD

- ULXD2 CAD (en) (73 KB)
- ULXD2/SM58 CAD (en) (240 KB)

Catálogos

Encuentre una respuesta

Actualización y problemas del firmware del ULX-D

Actualización de firmware para transmisores ULX-D

¿Funcionará un transmisor QLX-D con un receptor ULX-D y viceversa?

Error FPGA del transmisor ULX-D

Más Info



Queen Sirikit National Convention Center (QSNCC) Elevates with Shure Thailand



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ULX-D®

DIGITAL WIRELESS SYSTEMS



Shure ULX-D® Digital Wireless offers uncompromising 24-bit audio clarity and extremely efficient RF performance with single, dual, and quad channel receivers for any size professional sound reinforcement application. Generations ahead of any other available system in its class, ULX-D brings a new level of performance to professional sound reinforcement.

UNCOMPROMISING PROFESSIONAL DIGITAL WIRELESS

24-bit/48 kHz digital audio that delivers incredibly clear and accurate sound reproduction

20 Hz – 20 kHz frequency range with flat response

Greater than 120 dB dynamic range

Wide selection of trusted Shure Microphones

Available in UHF, VHF and ISM (900MHz) Frequency Bands (region dependent)

EXTREMELY EFFICIENT AND RELIABLE RF PERFORMANCE

Up to 64 MHz overall tuning range (region dependent)

Up to 17 active transmitters in one 6 MHz TV channel (22 on an 8 MHz TV channel)

High Density mode enables up to 47 active transmitters in one 6 MHz TV channel

Rock-solid signal stability with no audio artifacts over the entire 100 meter range

Optimized scanning automatically finds, prioritizes, and selects the cleanest frequencies available

SCALABLE, INTELLIGENT HARDWARE

Single (half-rack), Dual and Quad (full-rack) receiver form factors

AES 256-bit encryption equipped for secure wireless transmission

Dante Domain Manager compatible

Wireless Workbench® 6 compatible for advanced coordination, monitoring and control; features Site Survey tool for scanning frequencies in the 902-928 MHz ISM band

Compatible with the Shure SB900A Rechargeable Battery and SBC chargers

APPLICATIONS

- Installed Audio
- Critical Audio Performances
- High channel counts
- Secure presentations

PRODUCT HIGHLIGHTS

- 24-bit/48 kHz Digital Wireless Audio
- High Density Mode
- Single, Dual, and Quad Channel Receivers
- Advanced Rechargeability
- Dante Domain Manager Compatible
- Boundary and Gooseneck Base Transmitters are available in black and white color options

SHURE

ULX-D® DIGITAL WIRELESS SYSTEMS

SPECIFICATIONS (SUBJECT TO CHANGE)

RF Carrier Range	174–216 MHz, 470–865 MHz, 1492–1525 MHz, 1785–1805 MHz Note: Varies by region (See Frequency Range and Ouput Power table)
Working Range	100 m (328 ft) Note: Actual range depends on RF signal absorption, reflection and interference.
RF Tuning Step Size	25 kHz, varies by region
Image Rejection	>70 dB, typical
RF Sensitivity	-98dBm at 10^{-5} BER
Latency	<2.9 ms
Audio Frequency Response	ULXD1: 20 Hz – 20 kHz (±1 dB) ULXD2: 30 Hz – 20 kHz (±1 dB) Note: Dependent on microphone type
Audio Dynamic Range System Gain @ +10	XLR Analog Output: >120 dB, A-weighted Dante Digital Output (Dual and Quad receivers): 130 dB (typical), A-weighted
Total Harmonic Distortion –12 dBFS input, System Gain @ +10	<0.1%
System Audio Polarity	Positive pressure on microphone diaphragm produces positive voltage on pin 2 (with respect to pin 3 of XLR output) and the tip of the 6.35 mm (1/4-inch) output.
Operating Temperature Range	–18 °C (0 °F) to 50 °C (122 °F) Note: Battery characteristics may limit this range.
Storage Temperature Range	–29°C (–20°F) to 74°C (165°F) Note: Battery characteristics may limit this range.

FREQUENCY RANGE

Band	Range (MHz)	Transmitter Output (mW)
V50	174 to 216	1/10/20
V51	174 to 216	1/10/20
G50	470 to 534	1/10/20
G51	470 to 534	1/10/20
G52	479 to 534	1/10
H50	534 to 598	1/10/20
H51	534 to 598	1/10/20
H52	534 to 565	1/10
J50	572 to 636	1/10/20
K51	606 to 670	1/10
L50	632 to 696	1/10/20
L51	632 to 696	1/10/20
P51	710 to 782	1/10/20
R51	800 to 810	1/10/20
JB (Tx only)	806 to 810	1/10
AB (Rx and Tx)	770 to 810	"A" band (770.250-805.750): 1/10/20 "B" band (806.125-809.750): 1/10
Q51	794 to 806	1/10/20
X52	902 to 928	1/10/20
X50	925 to 932	1/10
X51	925 to 937.5	1/10
X52	902 to 928	0.25/10/20
X53	902 to 907.5; 915 to 928	0.25/10/20
X54	915 to 928	0.25/10/20
Z16	1240 to 1260	1/10/20

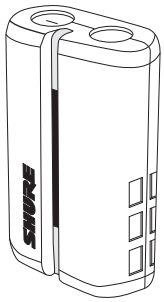
*Note: Not all frequencies available in all regions. Contact your authorized Shure dealer for availability.

NOTE:

This Radio equipment is intended for use in musical professional entertainment and similar applications. This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.

RECHARGEABLE POWER MANAGEMENT (sold separately)

SB900A RECHARGEABLE BATTERY



ULX-D transmitters are compatible with the SB900A lithium-ion rechargeable battery, which provides over 9 hours of continuous use and precise tracking of remaining life and charge cycle details.

SBC200 DUAL DOCKING RECHARGING STATION

This compact and portable unit charges batteries while in transmitters or out. Up to 4 SBC200's can be chained toget.her to run off one power supply.

SBC220 2-BAY NETWORKED CHARGING STATION

Enables docked charging and storage for any combination of two SB900A batteries or ULXD1, ULXD2 wireless transmitters. When connected to a network, the charging status of each transmitter can be viewed remotely. Up to four SBC220 units can be linked together to share power and network connectivity.

SBC800 EIGHT BATTERY RECHARGING STATION

This compact and portable unit charges up to 8 SB900A batteries to full capacity within 3 hours, with status LEDs to indicate power levels. SB900A batteries fit securely in the charger for easy, efficient storage and transport.

BATTERY RUNTIMES

(Note: Frequency Band Dependent)

BATTERY TYPE	1 MW	10 MW	20 MW
SB900A	> 9 hours	> 9 hours	> 7 hours
Alkaline	> 8 hours	> 8 hours	< 6 hours
NiMH	> 8 hours	> 8 hours	< 6 hours
Li-primary	10-16 hours	10-16 hours	7-9 hours

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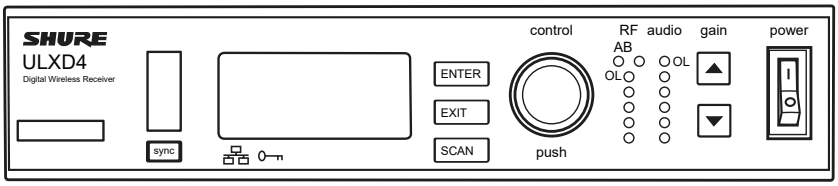
ULXD4 DIGITAL WIRELESS RECEIVER

OVERVIEW

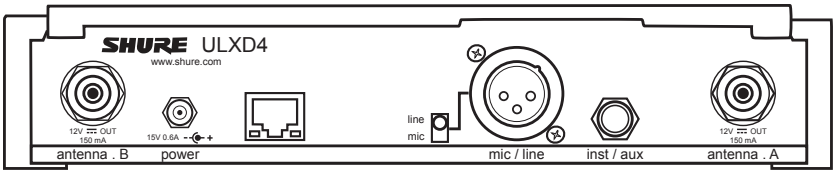
The Shure ULXD4 is a half-rack wireless receiver for use with ULX-D® Digital Wireless Systems. With an expansive set of professional features, including 24-bit/48kHz digital audio quality, efficient and intelligent RF performance, and AES 256-bit encryption, ULX-D offers uncompromising wireless tailored for professional sound reinforcement.

FEATURES

- Up to 64 MHz tuning range
- Predictive switching diversity
- Intelligent scanning automatically finds and deploys the cleanest frequencies to transmitters over IR sync
- Interference detection and alerts provided on both the receiver and WWB6
- Front panel gain adjustment buttons provide up to 60 dB additional gain
- AES 256-bit encryption-enabled for applications where secure transmission is needed
- Ethernet networking for streamlined setup across multiple receivers, WWB6 integration (coming soon), and AMX/Crestron control
- Support for frequency coordination with Axient Spectrum Manager (coming soon)
- Rugged metal chassis
- Intuitive front panel LCD menu and controls
- Easily readableUpgraded LCD with adjustable contrast and brightness
- Audio and RF LED meters with peak indicator
- Front panel lockout
- XLR and ¼" outputs
- Remoteable ½ wave antennas
- Furnished rack hardware



ULXD4
Front Panel



ULXD4
Back Panel

SPECIFICATIONS

(SUBJECT TO CHANGE)

Dimensions	197 mm × 171 mm × 42 mm (7.75 in. × 6.75 in. × 1.65 in.), H × W × D
Weight	913 g (2.0 lbs), without antennas
Housing	Galvanized Steel

RF OUTPUT

Spurious Rejection	>80 dB, typical
Connector Type	BNC
Impedance	50 Ω
Bias Voltage	12 - 13 V DC, 170 mA maximum, per antenna

AUDIO INPUT

Gain Adjustment Range	-18 to +42 dB in 1 dB steps (plus Mute setting)
Configuration	1/4" (6.35 mm): Impedance balanced (Tip=audio, Ring=no audio, Sleeve=ground) XLR: Balanced (1=ground, 2=audio +, 3=audio -)
Impedance	1/4" (6.35 mm): 100 Ω (50 Ω Unbalanced) XLR: 100 Ω
Full Scale Output	1/4" (6.35 mm): +12 dB XLR: LINE setting= +18 dBV, MIC setting= -12 dBV
Mic/Line Switch	30 dB pad
Phantom Power Protection	1/4" (6.35 mm): Yes XLR: Yes

NETWORKING

Power Over Ethernet (PoE)	No, protected
Network Interface	Single Port Ethernet 10/100 Mbps
Network Addressing Capability	DHCP or Manual IP address
Maximum Ethernet Cable Length	100 m (328 ft)

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ULXD1

ULXD1 Transmisor digital Bodypack

BANDA DE FRECUENCIAS: G50 J50A V50 X52

CONNECTOR: TQG (TA4F, MINI DE 4 PINES) LEMO3

Elije una combinación:

ULXD1=-G50: Transmisor bodypack, banda de frecuenc

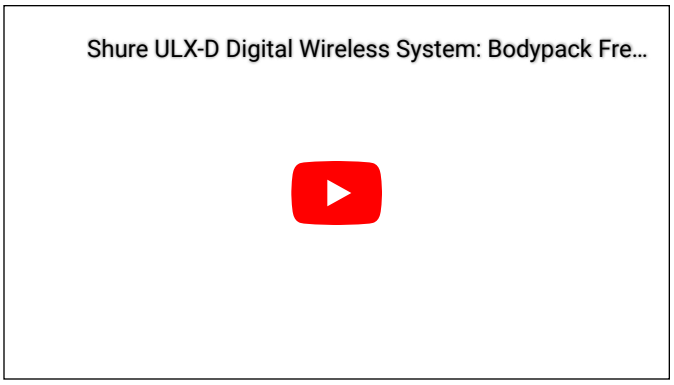
CONTACTA UN EXPERTO SHURE

GENERAL DETALLES

- Encriptación AES de 256 bits para aplicaciones que requieran transmisiones seguras.
- El intervalo de ganancia específico de Shure optimiza el rango dinámico del sistema para cualquier fuente de entrada y elimina la necesidad de ajustar la ganancia del transmisor.
- La batería recargable de iones de litio de Shure ofrece hasta 11 horas de funcionamiento, medición precisa en horas y minutos y efecto memoria nulo.
- Contactos externos para estaciones de carga (estación de carga dual SBC200).
- Pantalla LCD retroiluminada, con controles y menú de fácil navegación.
- Sólida construcción de metal.
- Antena de ¼ de onda desmontable.
- Bloqueo de frecuencia y encendido.

El ULXD1 es un transmisor bodypack inalámbrico, compatible con los sistemas inalámbricos digitales ULX-D. Con un cuerpo de aluminio robusto pero ligero, el ULXD1 ofrece una calidad de audio y un funcionamiento RF fiables, encriptación AES de 256 bits para una transmisión segura y opciones de recarga avanzada para aplicaciones de refuerzo sonoro profesional.

Videos



ULXD1 Videos



ULX-D digital wireless system: Bodypack Frequency Diversity

Productos Relacionados

TODO (33) PRODUCTOS PARA COMPARAR (9) ACCESORI



ULXD2/B58

ULXD2/B58 Transmisor De Mano Digital ULXD2 Con Cápsula Beta 58A

Incluye el micrófono Beta 58A y el transmisor inalámbrico de mano ULXD2 para ofrecer un rendimiento RF excepcional sin comprometer la calidad del audio.

SABER MÁS



ULXD2/B87A=-G50

ULXD2/B87A

ULXD2/B87A Transmisor De Mano Digital ULXD2 Con Cápsula Beta 87A

Incluye el micrófono Beta 87A y el transmisor inalámbrico de mano ULXD2 para ofrecer un rendimiento RF excepcional sin comprometer la calidad del audio.

SABER MÁS



ULXD2/B87C=-G50

ULXD2/B87C

ULXD2/B87C Transmisor De M Digital ULXD2 Con Cápsula Be

Incluye el micrófono Beta 87C y el transmisor inalámbrico de mano U para ofrecer un rendimiento RF excepcional sin comprometer la ca del audio.

SABER MÁS

Soporte

Servicio y Reparación | **Contáctanos** | **Shure Audio Institute** | **Shure Tech Portal**

Documentos de ayuda

Manual de Usuario

- ULX-D User Guide (es)

CAD

- ULXD1 CAD (en) (342 KB)

Software & Firmware

Wireless Workbench 7

Wireless Workbench es el software gratuito de Shure para los profesionales del audio que combina un conjunto completo de herramientas de gestión del espectro de RF y ofrece un control total de los dispositivos inalámbricos compatibles. De este modo, se podrán superar los desafíos de cualquier entorno de RF, sin importar la ubicación.

ShurePlus™ Channels

ShurePlus Channels permite la monitorización y control remotos y en tiempo real de los sistemas inalámbricos de Shure. Dispone de medidor de audio, indicador de RF y cuenta con funciones como nivel de señal ShowLink, asignación de frecuencias e información de canal, banda y grupo.

Encuentre una respuesta

¿Funcionará un transmisor QLX-D con un receptor ULX-D y viceversa?

Actualización y problemas del firmware del ULX-D

Actualización de firmware para transmisores ULX-D

Error FPGA del transmisor ULX-D

Más Info



Straubing-Bogen Council Installs DIS DCS 6000 & Shure ULX-D Mic System In Main Debating Chamber



Reconocida Escuela de EU.UU. Abre Unidad en São Paulo con el Mismo Estándar de Calidad de Audio Internacional



Santa Clara University Refreshes Graduate School of Business Classrooms with Shure Microflex® Advance™

SUSCRÍBETE A LA NEWSLETTER DE SHURE (INGLÉS)

SHURE
SOUND EXTRAORDINARY

America Latina

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MHz	SB900B		alkaline	
	1/10 mW	20 mW	1/10 mW	20 mW
902 to 928	>7:30	>4:40	>7	>4
174 to 216	>8:30	>6:35	8	>5
1240 to 1800	>8	>6:05	>6	>4:30

Note: The SB900B Shure rechargeable battery uses SBC200, SBC800 and SBC220 chargers.
Los valores dados en esta tabla corresponden a baterías frescas y de alta calidad. El tiempo de funcionamiento depende del fabricante y de la edad de las baterías.

Rango de frecuencias y potencia de salida del transmisor

Banda	Rango de frecuencias (MHz)	Alimentación (mW RMS)* (Lo/Nm/Hi)
G50	470 a 534	1/10/20
G51	470 a 534	1/10/20
G52	479 a 534	1/10
G53	470 a 510	1/10/20
G62	510 a 530	1/10/20
H50	534 a 598	1/10/20
H51	534 a 598	1/10/20
H52	534 a 565	1/10
J50	572 a 636	1/10/20
J50A△	572 a 608	1/10/20

Banda	)	(LO/MID/HI)
J51	572 a 636	1/10/20
K51	606 a 670	1/10
L50	632 a 696	1/10/20
L51	632 a 696	1/10/20
L53	632 a 714	1/10/20
M19	694 a 703	1/10/20
P51	710 a 782	1/10/20
R51	800 a 810	1/10/20
JB (Tx únicamente)	806 a 810	1/10
AB (Rx y Tx)	770 a 810	Banda 'A' (770-805): 1/10/20
		Banda 'B' (806-809): 1/10
Q12	748 a 758	1/10/20
Q51	794 a 806	10
V50	174 a 216	1/10/20
V51	174 a 216	1/10/20
V52	174 a 210	10
X50	925 a 932	1/10
X51	925 a 937,5	10



UA874

Antena direccional activa

3 Reseñas Escribir una reseña SKU: UA874US

Seleccione una Combinación:

UA874US: ANTENA DIRECCIONAL ACTIVA 470-698MHz

$404.00

1 AÑADIR A LA CESTA BUSCAR EN LA TIENDA

ó

Envío Gratis Desde $50

Política de devolución de 30 días

DESCRIPCIÓN GENERAL DETALLES

La serie de antenas UA874 ofrece una recepción de señal inalámbrica mejorada para sistemas inalámbricos VHF y UHF. Las características incluyen el rechazo de señales de RF fuera del área de cobertura y un amplificador integrado con cuatro configuraciones de ganancia.

Productos relacionados

TODOS (25) COMPATIBLES (25)



ULXD4Q=-G50

ULXD4Q

Receptor Inalámbrico Digital De Cuatro Canales

Cuatro canales de calidad de audio sin concesiones, estabilidad de la señal de RF y funciones de configuración avanzadas en una sola unidad de rack que ahorra espacio.

$6,453.00 APRENDE MÁS



ULXD4D=-G50

ULXD4D

Receptor Inalámbrico Digital De Doble Canal

Dos canales de calidad de audio sin concesiones, estabilidad y eficiencia de la señal de RF y funciones de configuración avanzadas en una sola unidad de rack.

$3,226.00 APRENDE MÁS



ULX-D®

Sistemas Inalámbricos Digitale

Desde la gestión de diversas fuent sonido hasta la protección de la se RF, los sistemas inalámbricos digit ULX-D® son seguros y duraderos p grandes eventos e instalaciones.

APRENDE MÁS

Reseñas

Distribución de Calificaciones

5 estrellas	2
4 estrellas	1
3 estrellas	0
2 estrellas	0
1 estrella	0

Beneficios

3	Facilidad de uso
2	Durabilidad
2	Calidad de sonido

3 Reseñas

ESCRIBE UNA RESEÑA

100% de los encuestados recomendaría esto a un amigo

Revisado por 3 clientes

Ingrese los términos de búsqueda

Más reciente

4

Excelente desempeño

por carlos r **Desde** Doral, Florida **Enviado** hace 8 meses

Comprador verificado Enviado como parte de una promoción

Rendimiento de alta ganancia. Rango de larga distancia.

Más detalles

5

Las antenas direccionales valen cada centavo, ¡especialmente en VHF!

Por Jonathan, W. **Desde** New Kensington, Pensilvania Comprador verificado Enviado como parte de una promoción **Enviado** hace 2 años

Con el nivel de ruido de VHF aumentado en la actualidad alrededor de los omnipresentes equipos de red que rodean los modernos sistemas de audio de alto rendimiento, las antenas direccionales ayudan a resolver parte del problema del ruido. Junto con un conjunto de sistemas VHF QLXD, un par de estos en el espacio de distancia adecuado ayudan a mantener una señal sólida en condiciones de mucho ruido, manteniendo contentos a los decodificadores y brindando esa excelente transmisión de audio por la que se conocen los sistemas inalámbricos digitales de Shure. #lotería de carreras

Más detalles

5

Gran herramienta que produce un gran resultado.

por Rashad **Desde** Margate Florida Comprador verificado Enviado como parte de una promoción **Enviado** hace 4 años

Compré estas antenas para un evento muy grande. Nuestro principal problema al prepararnos para este evento fue que estábamos justo en medio de dos importantes estudios de televisión. Entonces, RF era extremadamente estrecho. Después de analizar todo con el banco de trabajo inalámbrico shure. Era hora de poner en funcionamiento los sistemas inalámbricos. Es seguro decir que no tuvimos problemas con las conexiones ni interrupciones. Estas antenas son impresionantes.

Más detalles

Mostrando Reseñas 1-3 Volver arriba

Apoyo

Servicio y Reparación

Contáctenos

Instituto de audio Shure

Portal tecnológico de Shure

ADVERTENCIA: Proposición 65 de California >

Documentación

Guía del usuario y especificaciones

- Guía del usuario de UA874 (es)
- Guía del usuario de UA874V (es)

CANALLA

UA874 CAD (es) (35 KB)

Herramientas

Asistente para accesorios inalámbricos

Con unas pocas entradas simples, este asistente de selección proporciona elementos recomendados para la configuración de su micrófono inalámbrico y/o un diagrama sobre cómo se conectan las antenas y la distribución de antenas.

Herramienta de antenas remotas de micrófono inalámbrico

Ingrese la distancia entre la antena y el receptor para obtener recomendaciones de configuración para el receptor.

Encontrar una respuesta

Combinación de múltiples antenas UA874

Colocación de UA874

Calcule el área operativa efectiva de UA874, UA870 o PA805

Consumo actual - UA830, UA870, UA874, UABIAST

Further Reading



All About Wireless: Transmission Lines, Part I



All About Wireless: Antenna Types and Characteristics



The Top Six Church Audio Questions for 2012



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P10T

Wireless Transmitter

No Reviews Write the First Review



Shure's P10T is a networkable, full-rack, dual-channel wireless transmitter used in conjunction with the P10R Wireless Bodypack Receiver as part of the PSM® 1000 Personal Monitor System. The P10T Wireless Transmitter combines state-of-the-art technology with touring-grade features for professional monitoring applications of any size with no room for error. It offers a 72 MHz to 80 MHz tuning bandwidth, networked remote control via Wireless Workbench® software, advanced rechargeability options, and PSM® 900 backwards compatibility.

SELECT A COMBINATION

P10T=-H22: PSM Wireless Transmitter, Frequency band vers

TALK TO A SALES REPRESENTATIVE

DETAILS EXPLORE REVIEWS ACCESSORIES SUPPORT VIEW IN TECH PORTAL



PRODUCT DETAILS

The P10T is a networkable, full-rack, dual channel wireless transmitter used in conjunction with the P10R Wireless Bodypack Receiver as part of the PSM®1000 Personal Monitor System. It offers a 72 MHz wide tuning bandwidth, networked remote control via Wireless Workbench® software,

advanced rechargeability options, and PSM®900 backwards compatibility.

Connections include balanced ¼" and XLR, loop out, dual Ethernet ports, and headphone monitor out.

Comes with front or back mountable antennas, and power and Ethernet jumper cables.

Note: When purchasing separate wireless components, please match their frequency bands to ensure proper system operation

Select a Combination

P10T=-G10: PSM Wireless Transmitter, Freq

FEATURES

- Full rack, dual-channel transmitter in a professional, touring grade chassis
- 72 MHz wide tuning range provides flexibility and performance in crowded, unpredictable RF environments
- Networkable over Ethernet connection to provide comprehensive frequency coordination and transmitter remote control via Wireless Workbench® software:
  - RF mute enable/disable
  - RF output power adjustments
  - Aux/line level
  - Audio input level
  - Channel/device name edit
  - Firmware updates
- Backwards-compatible with PSM®900 receivers
- RF Mute Switch allows system setup without causing RF interference
- Sync RF scan information from a P10R bodypack quickly and easily over IR link
- Switchable 10/50/100 mW output power provides a robust RF link in a variety of

frequency plot on the menu screen with selectable zoom

- Front panel audio input gain adjustment and LED level meter with clipping indicator
- Exceptional transmitter linearity vastly reduces frequency intermodulation, allowing more compatible channels per frequency range
- High-contrast LCD with grouped menu items provides an intuitive user interface
- Front or back mountable antennas
- Compatible with PA821B and PA821A antenna combiners
- Loop out connectors for multiple mix setups and easy installation
- Switchable +4dBu and -10 dBV input level
- Balanced, ¼" and XLR connectors
- 1/8" headphone out on the front panel for easy monitoring

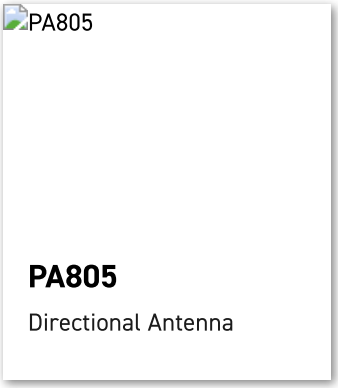
$3,260

TALK TO A SALES REPRESENTATIVE

Accessories

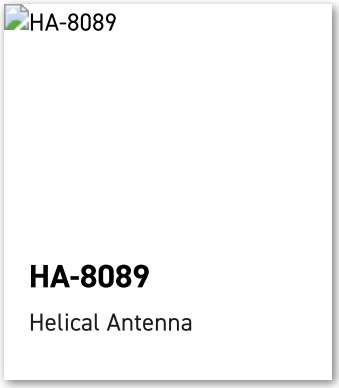
Filter Accessories By:

All



PA805

Directional Antenna



HA-8089

Helical Antenna

UA8
½ Wave Dipole Antenna

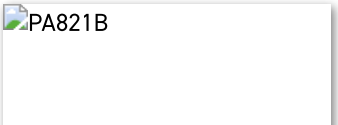
UA806
Coaxial Cable



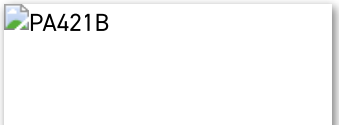
UA825
Coaxial Cable



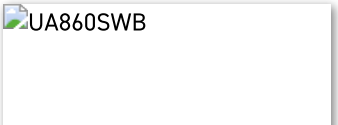
PA725
Coaxial Cable



PA821B
Antenna Combiner for PSM® Wireless Systems



PA421B
Antenna Combiner for PSM® Wireless Systems



UA860SWB
Omnidirectional Antenna

Reviews

No Reviews

WRITE THE FIRST REVIEW

There are no reviews on this product, but here is how SHURE is rated overall.

4.6 / 5

Support

Customer Support

Service & Repair

Detailed policy information regarding customer service numbers, service modifications, and replacement parts.

SERVICE & REPAIR

Contact Us

Submit a ticket directly to Shure Customer Service staff, or reach out via phone or email.

CONTACT US

Resources

Shure Tech Portal

Complete product documentation, technical support materials, software and firmware, and other tools and resources for all Shure products, in one place.

SIGN IN

Documentation

User Guide & Specs

PSM1000 User Guide en (en) — Read on pubs.shure.com

Spec Sheet

PSM1000 Spec Sheet en (en) — Download PDF (315 KB)

CAD

P10T CAD en (en) — Download File (490 KB)

Brochure

PSM Brochure en (en) — Download PDF

Frequency Compatibility Chart

BIM

P10T BIM en (en) — Download File

Tools

Wireless Frequency Finder

This tool provides recommended frequencies for Shure Wireless System use in the United States.

Wireless Accessory Wizard

With a few simple inputs, this selection wizard provides recommended items for your wireless microphone setup, and/or a diagram on how the antennas and antenna distribution are connected.

Software & Firmware

SUU

A modern audio network can't do its job with outdated software (and the time you spend searching for each latest version is time lost). Easy-to-use and free-to-download, the Shure Update Utility helps you update compatible Shure products while managing all of your device firmware. Giving you one less thing to worry about.

Wireless Workbench 7

Wireless Workbench is our free software for audio professionals that puts a full suite of RF spectrum management tools in one place to give you full command of your compatible wireless devices. Guarantee that you are prepared to succeed in any RF environment – no matter the location.

ShurePlus™ Channels

time precision monitoring and control of Shure wireless systems. Features include audio metering, RF indicator, ShowLink signal strength, and frequency assignments with band, group, and channel information.

Find An Answer

Point to point (PTP) mode on P10T

P10T transmitter with P9RA receiver; P9T transmitter with P10R receiver

Will a P9R or P10T work with a P7T transmitter?

Why does the P10T have two antenna outputs and not a summed output?

PSM900 vs PSM1000 - Primary Differences

WWB6 Ports and Protocol Information

Case Studies







selects Axient Digital wireless to defeat technical challenges of live Las Vegas broadcast

The 2018 ACM Awards were held in the MGM Grand Garden Arena in Las Vegas, with a reputation as one of the city's more challenging RF venues.

Selects Shure Wireless for Mayweather-Pacquiao Prize Fight

The stakes were high for more than just the boxers during the May 2, 2015 fight between Floyd Mayweather, Jr. and Manny Pacquiao. Televised live, the pay-per-view event was a rare collaboration between Showtime and HBO, and both networks expected technical perfection. Handling the selection, deployment, and coordination of wireless microphones, IEMs, and intercoms for the event was the team from Soundtronics, led by Mark Barbuti.

Wireless Wows at the 2015 International Motor Show

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SHURE®
LEGENDARY
PERFORMANCE™

PSM® 1000 PERSONAL MONITOR SYSTEM



The PSM 1000 Personal Monitor System from Shure brings personal monitoring to its most advanced level yet.

The full-rack, dual-channel, networkable transmitter is ideally suited for the demands of professional touring and installation applications, and the diversity bodypack receivers deliver pristine RF signal and audio quality. Networkability over Ethernet connection enables remote control of transmitter functions and comprehensive frequency coordination via Wireless Workbench® software.

APPLICATIONS

- Touring Sound
- House of Worship
- Broadcast
- Theater
- IFB

PRODUCT HIGHLIGHTS

- Touring-Grade Features and Design
- Robust RF Performance and Networked Control
- Advanced Lithium-Ion Rechargeability

PSM® 1000 System Specifications

RF Carrier Range	470–952 MHz (regionally dependent)
Compatible Frequencies	39 per band
Tuning Bandwidth	72 MHz – 80 MHz (regionally dependent)
Operating Range (environment dependent)	90m (300ft)
Audio Frequency Response	35Hz – 15kHz
Stereo Separation	60 dB
Signal-To-Noise Ratio (A-Weighted)	90 dB (typical)
Total Harmonic Distortion (ref. ±34 kHz deviation @1 kHz)	<0.5% (typical)
Companding	Patented Shure Audio Reference Companding
Spurious Rejection (ref. 12 dB SINAD)	>80 dB (typical)
Frequency Stability	±2.5 ppm
MPX Pilot Tone	19 kHz (±0.3 kHz)
Modulation	FM, MPX Stereo (±34 kHz deviation, nominal)
Operating Temperature	-18 to +57 °C

Frequency Range

Band	Range	RF Output Power***
G10	470-542 MHz	10 / 50 / 100 mW
G10E	470-542 MHz	10 / 50 / 100 mW
G10J	470-542 MHz	6 / 10 mW
G11	479-542 MHz	10 mW
G62	510-530 MHz	10 mW
H8Z	518-582 MHz	10 / 50 mW
J8	554-626 MHz	10 / 50 / 100 mW
J8A	554-616 MHz	10 / 50 / 100 mW
J8E	554-626 MHz	10 / 50 mW
J8J	554-626 MHz	6 / 10 mW
K10E	596-668 MHz	10 / 50 mW
L8	626-698 MHz	10 / 50 / 100 mW
L8A	653-663 MHz	10 mW
L8E	626-698 MHz	10 / 50 mW
L8J	626-698 MHz	6 / 10 mW
L9E	670-742 MHz	10 / 50 mW
L11J	670-714 MHz	6 / 10 mW
P8	710-790 MHz	10 / 50 mW
Q21	710-787 MHz	10 / 50 mW
Q22E	750-822 MHz	10 / 50 mW
R27	794-806 MHz	10 / 50 mW
X1	944-952 MHz	10 / 50 / 100 mW
X7	925-937.5 MHz	10 mW

Antennas, Combiners and Accessories

EAC-IFB	Coiled IFB Earphone Cable for Shure Earphones
PA821B	8-to-1 antenna combiner for better RF performance
PA421B	4-to-1 antenna combiner with power distribution to 4 transmitters (better RF performance and eliminates need for external power supply)
PA805SWB	Passive Directional Antenna
PA301	Protective Cover for P9RA and P10R body pack receivers
HA-8089	Helical Antenna (470-900 MHz)
HA-8091	Domed Helical Antenna (470-900 MHz)
HA-8241	Helical Antenna (944-952 MHz)
UA860SWB	Passive Omnidirectional Antenna
UA802	Coaxial Cable, BNC-BNC, RG58C/U type, 50 Ohm, 2 ft length (0.6 m)
UA806	Coaxial Cable, BNC-BNC, RG58C/U type, 50 Ohm, 6 ft length (2 m)
UA825	Coaxial Cable, BNC-BNC, RG8X/U type, 50 Ohm, 25 ft length (7.5 m)
UA850	Coaxial Cable, BNC-BNC, RG8X/U type, 50 Ohm, 50 ft length (15 m)
UA8100	Coaxial Cable, BNC-BNC, RG8X/U type, 50 Ohm, 100 ft length (30 m)

Furnished Accessories

P10R Antenna	
UA700	470–542 MHz
UA710	540–626 MHz
UA720	596–692 MHz
UA730	692–830 MHz
UA740	830–952 MHz
P10T Antenna	
UA820G10	470–542 MHz
UA820H8	518–582 MHz
UA820J8	554–626 MHz
UA820K1	596–668 MHz
UA820L8	626–698 MHz
UA820LCH	670–742 MHz
UA820P8	710-790 MHz
UA820Q2	750–822 MHz
UA820X	944–952 MHz
95A9023	Front Mount Antenna Cable
95A2313	Zipper Bag
53B8443	Link Bar
90AR8100	Hardware Kit (Rackmounting Screws)
90B8977	Bumper Kit

NOTE: This Radio equipment is intended for use in musical professional entertainment and similar applications. This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.

Rechargeable Power Management



SB900A Rechargeable Battery
The P10R+ bodypack is compatible with the SB900A, a lithium-ion rechargeable battery, providing up to 10 hours of continuous use and precise tracking of remaining life and charge cycle details.

SBC800 Recharging Station
Charges up to eight SB900A batteries to full capacity within three hours, with status LEDs to indicate power levels. SB900A batteries fit securely in the charger for easy, efficient storage and transport.

SBC200 Dual Docking Recharging Station
This compact and portable unit charges two SB900A batteries. Up to four SBC200's can be chained together to run off one power supply.

SBC10-100 Single Battery Recharging Station
The SBC10-100 charges one battery at a time and can be powered from either A/C power sources or USB ports.

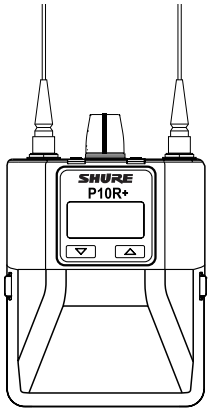
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Component Specifications

P10R+
Wireless Bodypack Receiver



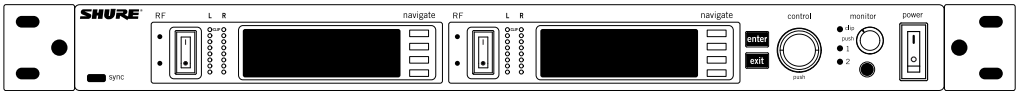
The P10R+ is a low profile, diversity bodypack receiver for use with the PSM® 1000 Wireless Personal Monitor System. It offers premium features like full bandwidth RF scan and Automatic RF Gain Control for unparalleled signal stability and channel availability, all packed in the slimmest form factor available. CueMode allows monitoring of different stage mixes and storing of up to 20 separate channels from one bodypack for quick and easy mix reference. Optional advanced rechargeability eliminates the need for disposable batteries and provides extended usage times with reliable battery life, cycle count, and health metering.

Tri-band RF Filtering	–3 dB at 30.5 MHz from the center frequency of each band	
Active RF Gain Control	31 dB (adjusts RF sensitivity to provide more RF dynamic range)	
RF Sensitivity (20 dB SINAD)	2.2 µV	
Squelch Threshold	22 dB SINAD (±3 dB), default setting	
Adjacent Channel Rejection	>70 dB	
Intermodulation Attenuation	>70 dB	
Blocking	>80 dB	
Image Rejection	>90 dB	
Audio Output Power (1kHz @ <1% distortion, peak power, @16Ω)	100 mW per output	
Minimum Load Impedance	4 Ω	
Output Impedance	<1 Ω	
4-Band Parametric EQ	Low Shelf	Selectable Gain: ±2 dB, ±4 dB, ±6 dB @100 Hz
	Low Mid	Selectable Gain: ±2 dB, ±4 dB, ±6 dB @160 Hz, 250 Hz, 400 Hz, 500 Hz, 630 Hz Selectable Q: 0.7, 1.4, 2.9, 5.0, 11.5
	High Mid	Selectable Gain: ±2 dB, ±4 dB, ±6 dB @1 kHz, 1.6 kHz, 2.5 kHz, 4 kHz, 6.3 kHz Selectable Q: 0.7, 1.4, 2.9, 5.0, 11.5
	High Shelf	Selectable Gain: ±2 dB, ±4 dB, ±6 dB @10 kHz
Volume Limiter	Selectable: 0 dB to -48 dB in 3 dB steps	
Volume Lock *Limits volume adjustment knob.* *Selected value analogous to volume knob increment.*	Selectable: 0 dB to -70 dB	
Battery Life	4–6 hours (continuous use) with AA batteries	
Net Weight	158 g, without batteries	
Dimensions	99 mm x 66 mm x 23 mm (3.9 in. x 2.6 in. x 0.9 in.) H x W x D	

P10T
Dual Wireless Transmitter

The P10T is a networkable, full-rack, dual channel wireless transmitter used in conjunction with the P10R+ Bodypack receiver as part of the PSM® 1000 Wireless Personal Monitor System. It offers a 72 MHz wide tuning bandwidth, networked remote control via Wireless Workbench software, advanced rechargeability options, and PSM 900 backwards compatibility. Connections include balanced ¼" and XLR, loop out, dual Ethernet ports, and headphone monitor out. Comes with front or back mountable antennas, and power and Ethernet jumper cables.

RF Output Power	Selectable: 10, 50, 100 mW (regionally dependent)
RF Output Impedance	50 Ω (typical)
Net Weight	4.7 Kg (10.4 lb)
Dimensions	44 X 483 X 343 mm
Power Requirement (RF on, 100 mW power mode, no audio)	Input: 100-240V AC, 50/60 Hz, 0.5A max (5.5 max outlet loaded) Output: 100-240V AC, 5A max, unswitched
Audio Input	
Connector Type	Combination XLR and 6.35 mm (1/4") TRS
Polarity	XLR: Non-inverting (pin 2 positive with respect to pin 3) 6.35 mm (1/4") TRS: Tip positive with respect to ring
Configuration	Electronically balanced
Impedance	70.2 kΩ (actual)
Nominal Input Level	Switchable: +4 dBu, –10 dBV
Maximum Input Level	+4 dBu: +29.2 dBu –10 dBV: +12.2 dBu
Pin Assignments	XLR: 1=ground, 2=hot, 3=cold 6.35 mm (1/4") TRS: Tip=hot, Ring=cold, Sleeve=ground
Phantom Power Protection	Up to 60 V DC
Audio Output	
Connector Type	6.35 mm (1/4") TRS
Configuration	Electronically balanced
Impedance	Connected directly to inputs



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P10R+

Receptor de petaca Diversity

1 Reseña Escribe una reseña

Con una arquitectura híbrida analógica/digital, el receptor Bodypack de diversidad de doble antena P10R+ ofrece el más alto nivel de personalización de sonido hasta el momento, poniendo al alcance de su mano una calidad de audio líder en su categoría, un sólido rendimiento de RF y funciones para giras.

SELECCIONE UNA COMBINACIÓN

P10R+=-G10: Receptor inalámbrico PSM, versión de banda d

$919

HABLE CON UN REPRESENTANTE DE VENTAS



DETALLES EXPLORAR RESEÑAS ACCESORIOS APOYO VER EN EL PORTAL TECNOLÓGICO

VER EL VÍDEO



DETALLES DE PRODUCTO

El P10R+ de Shure es un receptor bodypack de diversidad de bajo perfil para usar con el sistema de monitoreo personal PSM® 1000. El receptor Bodypack de diversidad de doble antena P10R+ lleva el monitoreo personal a su nivel más alto hasta el momento, poniendo al alcance de su mano una calidad de audio líder en su categoría, un sólido rendimiento de RF y funciones para giras. Su avanzada tecnología de procesamiento de señales digitales ofrece una calidad de audio incomparable con más headroom, mejor separación estéreo y mayor fidelidad. Con funciones premium como escaneo de RF de ancho de banda completo, filtrado de RF frontal de precisión y control automático de ganancia de RF, P10R+ satisface las necesidades de las aplicaciones de audio profesional de todos los tamaños, incluidas las aplicaciones IEM e IFB.

Seleccione una combinación

P10R+=-G10: Receptor inalámbrico PSM, versión de ban

CARACTERÍSTICAS

Diseño y rendimiento de grado Touring

- Los receptores bodypack de diversidad de antena doble con tecnología avanzada de procesamiento de señales digitales mejoran drásticamente la recepción de la señal y aumentan el alcance
- El control en red a través de una conexión Ethernet simplifica enormemente la configuración para un gran número de canales y permite el control remoto a través del software Wireless Workbench
- CueMode permite monitorear diferentes mezclas de escenario y almacenar hasta 20 canales separados en una unidad de cuerpo para una referencia rápida y fácil
- La tecnología MixMode ® combina dos canales de audio separados para escuchar simultáneamente en ambos oídos o transmitir dos fuentes de programas IFB independientes
- La compatibilidad con los receptores PSM® 900 (en el mismo rango de frecuencia) facilita la gestión de inventario optimizada para las necesidades de alquiler y giras

Robusto rendimiento de RF y control en red

- El filtrado de RF de front-end de precisión reduce significativamente la interferencia de RF para una señal

- El control automático de ganancia de RF evita la distorsión de la señal debido a la sobrecarga de RF antes de que pueda afectar el rendimiento
- La coordinación de frecuencias en red simplifica la configuración para un gran número de canales.
  - El escaneo de ancho de banda completo de los receptores de petaca P10R+ encuentra frecuencias limpias y compatibles y proporciona un gráfico de espectro visible desde la pantalla del menú de petaca
  - La sincronización IR le permite enviar las frecuencias identificadas y el diagrama de espectro al transmisor P10T directamente

Calidad de audio excepcional

- La avanzada tecnología de procesamiento de señales digitales en los receptores P10R+ ofrece más headroom, separación estéreo mejorada y mayor fidelidad de audio
- Companding de referencia de audio patentado que ofrece un sonido natural y transparente

Opciones avanzadas de recarga

- La batería recargable de iones de litio SB900 brinda tiempos de uso prolongados y un seguimiento preciso de la vida útil restante y los detalles del ciclo de carga
- El cargador de ocho bahías SCB800-US carga hasta ocho baterías SB900 por completo en dos horas y tiene LED de estado de carga para cada batería.
- El cargador de base dual SBC200 funciona con SB900A, PSM 900 (solo P9RA y P9RA+), PSM 1000 (solo P10R y P10R+), sistemas inalámbricos digitales QLX-D ®, sistemas inalámbricos digitales ULX-D ® y sistemas inalámbricos digitales Axient ® (AD1) . y AD2 solamente), disponible con y sin fuente de alimentación
- El cargador de acoplamiento dual en red SBC220 funciona con SB900A, PSM 900 (solo P9RA+), PSM 1000 (solo P10R+), sistemas inalámbricos digitales QLX-D, sistemas inalámbricos digitales ULX-D y Axient Digital (solo AD1 y AD2), disponibles con y sin fuente de alimentación. Cuando el SBC220 está conectado a una red, la información de la batería de cada transmisor se puede ver de forma remota.

$919

HABLE CON UN REPRESENTANTE DE VENTAS

Accesorios



SBC800
Cargador de batería de 8 unidades



WA620
Bolsa de brazo de neopreno para petaca



SBC200
Estación de recarga de acoplamiento doble



SBC-AX
Módulo de carga



SBC-DC
Adaptador de voltios de CC



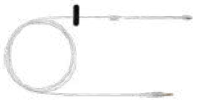
UA7xx
Antenas de repuesto: UA700, UA700-V, UA710, UA720, UA730, UA700Z17, UA700Z18



SB900B
Batería recargable de iones de litio



SBC10-100
Cargador de batería individual USB para batería SB900 o SB900B



EAC-IFB
Cable accesorio para usar con auriculares Sound Isolating™



WA570A
Funda de cinturón para transmisores de cuerpo inalámbricos



SBC210
Cargador de batería de 2 bahías

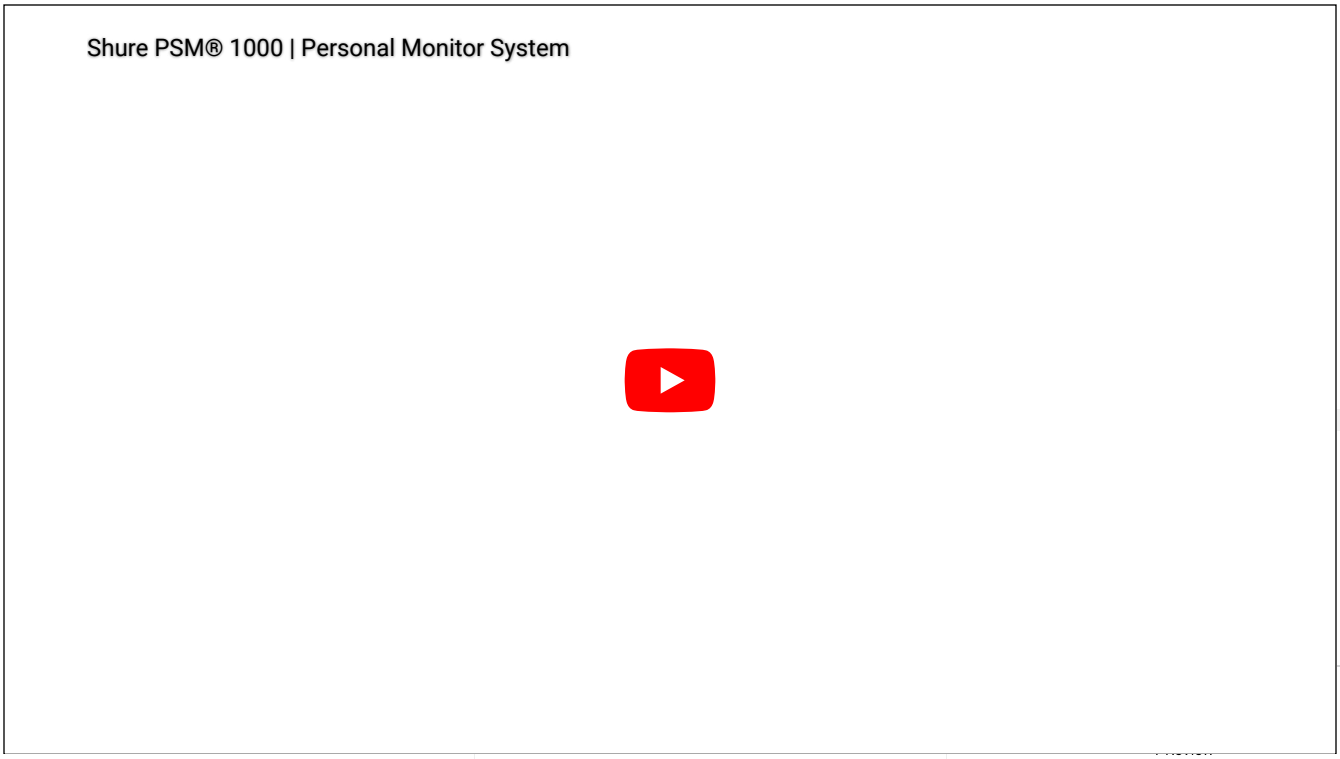


SBRC
Cargador de baterías Shure



agua para P9RA y P10R

Vídeos



5 Stars	1	1	Durability
4 Stars	0	1	Ease of Use
3 Stars	0	1	Features
2 Stars	0		
1 Star	0		

WRITE A REVIEW

100% of respondents would recommend this to a friend

Best Uses Live Performance 1

Reviewed by 1 customer

Ingrese los términos de búsqueda

Most Recent

5

New IEM pack works perfectly

By LS **From** LA, CA Verified Buyer Submitted as part of a promotion **Submitted** 5 years ago

Dual antenna is much mire solid tahn previous single antenna model. Very happy with the new purchase.

Displaying Review 1-1 Back to Top

Support

Customer Support

Service & Repair

Detailed policy information regarding customer service numbers, service modifications, and replacement parts.

SERVICE & REPAIR

Contact Us

Submit a ticket directly to Shure Customer Service staff, or reach out via phone or email.

CONTACT US

Resources

Shure Tech Portal

Complete product documentation, technical support materials, software and firmware, and other tools and resources for all Shure products, in one place.

SIGN IN

Documentation

User Guide & Specs

PSM1000 User Guide en (en) — Read on pubs.shure.com

Spec Sheet

PSM1000 Spec Sheet en (en) — Download PDF (315 KB)

Brochure

PSM Brochure en (en) — Descargar PDF

Folleto de difusión (Estudio de TV) es (es) — Descargar PDF

Tabla de compatibilidad de frecuencias

Tabla de compatibilidad de frecuencias PSM1000 es (es) — Descargar archivo

Herramientas

Buscador de frecuencia inalámbrica

Esta herramienta brinda frecuencias recomendadas para el uso del sistema inalámbrico Shure en los Estados Unidos.

Una red de audio moderna no puede hacer su trabajo con un software obsoleto (y el tiempo que dedica a buscar cada versión más reciente es tiempo perdido). Fácil de usar y de descarga gratuita, la utilidad de actualización de Shure lo ayuda a actualizar los productos Shure compatibles mientras administra todo el firmware de su dispositivo. Dándote una cosa menos de qué preocuparte.

Encontrar una respuesta

P9RA frente a P9RA+ y P10R frente a P10R+

Uso de escaneos P10R+ en Wireless Workbench

transmisor P10T con receptor P9RA; Transmisor P9T con receptor P10R

Consumo de corriente P10R

PSM900 vs PSM1000 - Diferencias principales

Adaptador de batería P10R marcado como QUITAR

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Product Specifications

PA821B Antenna Combiner



PA821B Antenna Combiner (front and rear views)

Overview

Shure PA821B Antenna Combiners are complementary accessories for Shure PSM® Personal Stereo Monitor systems. When multiple systems are required for monitoring applications, the PA821B combiners quietly and efficiently optimize RF management for up to eight PSM transmitters when racked in a central location, while also reducing rack clutter. (Directly replaces PA821A).

Features

- Combines up to eight PSM® transmitters to a single antenna set
  - Improved intermodulation artifacts for cleaner RF environment
  - Reduces rack clutter
- Wideband operation (470-865 MHz or 865-960 MHz)
- Daisy-chain up to 2 combiners with the expansion port
- LED indications of signal presence, signal overload
- Improved fan design significantly improves thermal efficiency and ambient noise
- Optional modification to enable combining of microphone receiver antennas (contact Shure Service Department for more details)
  - Provides +15V bias on RF inputs to power antennas
  - Requires modification of unit by qualified service technician

Available Models

PA821B	Eight-port PSM Antenna Combiner, 470-865 MHz
PA821BX	Eight-port PSM Antenna Combiner, 865-960 MHz

Specifications

RF Frequency Range	PA821B: 470-865 MHz PA821BX: 865-960 MHz
Impedance	50 Ω
Operating Temperature Range	–18 °C (0 °F) to 63 °C (145 °F)
Power Requirements	100 to 240 V AC, 50-60 Hz
Current Drain	1.59 A (referenced at 100 V AC) (159 VA)
Power Consumption	143 W max.
RF Input	
Connector Type	BNC
Configuration	Active
Impedance	50 Ω
RF Gain	0 dB (±2 dB)
LED Indicator Min. Detection Threshold	2.5 dBm
LED Indicator Overload Threshold	>24 dBm
Main Output	
Connectory Type	BNC
Impedance	50 Ω
Expansion Port	
Connector Type	BNC
Configuration	Passive
Impedance	50 Ω
Insertion Loss	<4 dB
RF Expansion Port Normal Operating Range	33 dBm (2 W)

Included Accessories

IEC Power Cord	Four (4) 2 ft. DC power output cables
Four (4) 22 in. coaxial cables, BNC terminated	One (1) 11 in. coaxial cable, BNC terminated

Optional Accessories

Passive omnidirectional antenna	Passive directional antenna
Helical antenna	BNC-terminated coaxial cables (RG-8X/U; various lengths)

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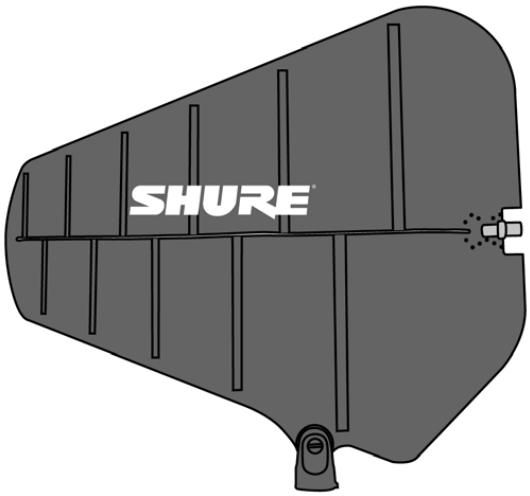
PA805Z

Passive Directional Antenna for PSM Wireless Systems

General Description

The Shure PA805 is a directional antenna for increased range and reduced interference as compared to omnidirectional 1/2-wave antennas.

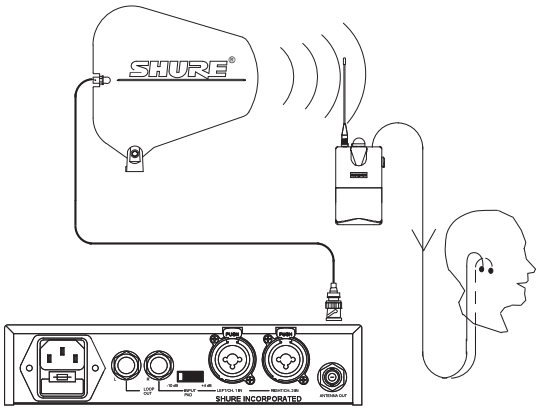
The PA805 can be mounted on a microphone stand or mounted to a wall using the integral swivel adapter bracket.



Installation Instructions

1. Determine the length of cable required to connect the PA805 Antenna to the Wireless Transmitter or Antenna Combiner. Use only as long a cable as necessary, because there is more power loss with longer cables.

   Always use low-loss 50 ohm cable, such as RG8X/U or equivalent.
2. Use antenna cable to connect the antenna to the ANTENNA OUT of the Wireless Transmitter or Antenna Combiner.
3. Mount the antenna so that it points toward the intended coverage area.



Note: Using too many transmission antennas in one installation can reduce performance. To combine PSM antennas, use a PA821 Antenna Combiner.

Selecting Antenna Cables

Use 50 ohm low-loss coaxial cable, such as RG-8U. Shure offers pre-terminated antenna cables ranging from 6 to 100 feet.

NOTE: When ordering cables from Shure, select the low-loss "Z" models (available for longer cables) when using frequency bands above 1000 MHz.

Cable Maintenance

To maintain top performance for antenna cables:

- Avoid sharp bends or kinks in the cables.
- Do not deform cables with makeshift clamps, such as bending a nail over the cable.
- Do not use in permanent outdoor installations.
- Do not expose to extreme moisture.

Antenna Placement

Use the following guidelines when mounting antennas:

- Antennas and receivers must be from the same band.
- Mount antennas at least one wavelength (two feet) apart.
- Position antennas so there is nothing obstructing a line of sight to the transmitter (including the audience).
- Keep antennas away from metal objects.

Important: Always perform a "walk around" test to verify coverage before using a wireless system during a speech or performance. Experiment with antenna placement to find the optimum location. If necessary, mark "trouble spots" and ask presenters or performers to avoid those areas.

Find More Information Online

For more information, visit http://www.shure.com

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Specifications

Frequency Range

PA805SWB	470–952
PA805X	650–1100
PA805Z	1240–1930

Dimensions

H x W x D

PA805SWB	334 x 378 x 27 mm (13.15 x 14.88 x 1.10 in.)
PA805X	226 x 234 x 27.9 mm (8.90 x 9.21 x 1.10 in.)
PA805Z	226 x 234 x 27.9 mm (8.90 x 9.21 x 1.10 in.)

Net Weight

PA805SWB	11.3 oz. (319 g) with mounting accessories
PA805X	8 oz. (227 g)
PA805Z	8 oz. (227 g)

Antenna Gain

PA805	6 dBi typical
PA805SWB	6.5 dBi typical
PA805X	6 dBi typical
PA805Z	6dBi typical
3 dB Beam Width	100 degrees

Radiation Pattern

Directional; Cardioid

Connector

50 Ω, Female, BNC-type

Stand Adapter

5/8-27 thread mount

Certifications

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

The CE Declaration of Conformity can be obtained from:
www.shure.com/europe/compliance

Authorized European representative:
Shure Europe GmbH
Headquarters Europe, Middle East & Africa
Department: EMEA Approval
Jakob-Dieffenbacher-Str. 12
75031 Eppingen, Germany
Phone: +49-7262-92 49 0
Fax: +49-7262-92 49 11 4
Email: info@shure.de







SB900B

Batería recargable de iones de litio

5 Reseñas Escribe una reseña SKU: SB900B

$126.00

1 AÑADIR A LA CESTA BUSCAR EN LA TIENDA

ó

Envío Gratis Desde $50

Política de devolución de 30 días

DESCRIPCIÓN GENERAL

Compatible con los sistemas de monitoreo personal Axient Digital (AD1, AD2 y AD3), ULX-D y QLX-D Wireless y PSM 1000, PSM 900 y PSM 300 (P3RA).

Productos relacionados

TODOS (45) COMPARABLES (6) COMPATIBLES (39)



SBC10-100

Cargador De Batería Individual USB Para Batería SB900 O SB900B

El cargador de batería simple USB se puede alimentar desde fuentes de alimentación de CA y puertos USB para cargar 1 batería Shure SB900 o SB900B.

$63.00

AÑADIR A LA CESTA



SBC200

SBC200

Estación De Recarga De Acoplamiento Doble

La estación de recarga de acoplamiento doble carga las baterías SB900B dentro o fuera de sus transmisores.

$209.00

AÑADIR A LA CESTA



SBC800

Cargador De Batería De 8 Unidades

El cargador de 8 baterías carga 8 baterías SB900B a plena capacidad en 3 horas.

$576.00

AÑADIR A LA CESTA



SBRC

Shure Battery Rack Charger

Accommodates up to 8 Shure rechargeable bodypack and hanc transmitter batteries in a single r space.

$668.00

LEARN

Reviews

Ratings Distribution

5 Stars	5
4 Stars	0
3 Stars	0
2 Stars	0
1 Star	0

Benefits

4	Ease of Use
3	Durability
2	Features
1	Connectivity

5 Reviews

WRITE A REVIEW

100% of respondents would recommend this to a friend

Reviewed by 5 customers

Enter Search Terms

Most Recent

5

Amazing product!

By Johnny S. **From** Houston, TX Verified Buyer Submitted as part of a promotion **Submitted** 27 days ago

We use eight microphones on a daily basis. The lithium batteries along with the charging stations that connect to a single power supply make it very easy to have a central place to store the microphones and save so much money and waste from having to purchase and throw out AA batteries. Worth every penny!

More Details

5

Charge and recharge every day for years

By Diane J **From** San Francisco Verified Buyer Submitted as part of a promotion **Submitted** 3 months ago

To power handheld wireless SM 58 and wireless gooseneck podium mic QLXD4

More Details

5

We love these!

By RonnieH **From** Nashville,TN Verified Buyer Submitted as part of a promotion **Submitted** 1 year ago

We use Shure everywhere we go. These batteries have long life and long run time.

More Details

5

Quick, easy and cost effective

By Christopher B **From** Columbus, OH Verified Buyer Submitted as part of a promotion **Submitted** 1 year ago

We purchased 2 rechargeable batteries for our new PSM 300 in ear monitoring system. Still in the testing/getting-used-to mode with the system, but the batteries have worked like a charm. Price was very competitive, delivered as promised and the confidence of dealing directly with Shure made for a great package and complete satisfaction with our purchase.

More Details

5

Excellent. Essential.

By Kassie c **From** New york Verified Buyer Submitted as part of a promotion **Submitted** 1 year ago

Works flawlessly. Great for the road.

More Details

Displaying Reviews 1-5 Back to Top

Support

Service & Repair

Contact Us

Shure Audio Institute

Shure Tech Portal

WARNING: California's Proposition 65 >

Documentation

User Guide & Specs

- Guide to Rechargeable Lithium-Ion Batteries (en)
- SB900B User Guide (en)

Training



How to Care for Shure

Find An Answer

SB900A vs. SB900B

SB900A Battery Pack versus AA alkaline cells

Health and lifetime of Shure rechargeable batteries

SB900 Life Cycles

Further Reading



PSM 300 vs PSM 900: July Subscriber Question of the Month



Shure audio technology enables work according to the "New Work" concept at the headquarters of Sparkasse Bremen



NYU Shanghai adapts to hybrid and remote learning with Zoom and Shure



Straubing-Bogen Council Installs DIS DCS 6000 & Shure ULX-D Mic System In Main Debating Chamber

SIGN UP FOR OUR NEWSLETTER

ABOUT US

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SBC800

SBC800 Cargador para 8 baterías

CONTACTA UN EXPERTO SHURE

GENERAL

Cargador que permite cargar 8 baterías SB900A al máximo de su capacidad en 3 horas. Dispone de pilotos LED para indicar el nivel de carga de las baterías.

Productos Relacionados

TODO (29) PRODUCTOS (1) COMPATIBLE (28)



SB900B

SB900A Batería Recargable De Iones De Litio

Batería recargable de iones de litio que ofrece una sencilla opción de alimentación para los sistemas inalámbricos de Shure.

SABER MÁS



P9RA+=-G6

P9RA+

P9RA+ Receptor De Bodypack

El Receptor P9RA+ de Bodypack de Shure ofrece una tecnología avanzada de procesamiento de señal digital para proporcionar un amplio espacio libre, fuerte separación estéreo y alta fidelidad de audio.

SABER MÁS



QLXD2/K9HS=-J50A

QLXD2/KSM9HS

QLXD2/KSM9HS Transmisor De Mano QLXD2 Con Cápsula KSM9HS

Incluye una KSM9HS y un transmisor de mano QLXD2 para la transmisión inalámbrica de voces en espacios para actuaciones musicales y celebraciones religiosas.

SABER MÁS

Soporte






Servicio y Reparación **Contáctanos** **Shure Audio Institute** **Shure Tech Portal**

Documentos de ayuda

Manual de Usuario

SBC800 User Guide (es)

CAD

SBC800 CAD (en) (909 KB)

BIM

SBC800 BIM (en)

Encuentre una respuesta

SBC800 - LED amarillo parpadeante

Cuidado de la batería recargable Shure

Más Info



Shure Axient® Brings Top-Notch Sound to the Legendary Grand Ole Opry

SUSCRÍBETE A LA NEWSLETTER DE SHURE (INGLÉS)

SHURE
SOUND EXTRAORDINARY

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SBRC

Battery Rack Charger

User guide for SBRC battery rack charger.
Version: 5.1 (2021-K)

Table of Contents

SBRC Battery Rack Charger 3

WARNING 3

Note: 3

SBRC Rack Mount Charger 3

Features 3

Included Components 4

Optional Accessories 4

Optional Accessories 4

Mounting Instructions 4

Batteries 5

Charging Modules 5

Controls And Connectors 5

Charge Status LED 7

Controls 7

Inserting Batteries into the Charging Bay 8

Home Screen and Battery Status 8

Monitoring Menu 8

Time to Full 9

Charge Status 9

Battery Health 9

Cycle Count 9

Batt. Temp. (Battery Temperature) 9

Network Status 9

Utility Menu 10

IP Address Mode: Automatic 10

IP Address Mode: Manual 10

GW Address 10

Subnet 10

MAC (MAC Address) 11

Brightness 11

Display Invert 11

Setting the Fan Speed 11

Fan (Cooling Fan Mode) 11

Storage Mode 11

Firmware 11

Serial Number 11

Device ID 12

Storage Mode 12

Recovering a Battery from Deep Discharge 12

Firmware Updates 13

Troubleshooting and Error Messages 13

Energy Efficiency Mode 14

Specifications 14

Certifications 15

Information to the user 16

SBRC
Battery Rack Charger

WARNING

- Battery packs may explode or release toxic materials. Risk of fire or burns. Do not open, crush, modify, disassemble, heat above 140°F (60°C), or incinerate.
- Follow instructions from manufacturer
- Only use Shure charger to recharge Shure rechargeable batteries
- WARNING: Danger of explosion if battery incorrectly replaced. Replace only with same or equivalent type.
- Never put batteries in mouth. If swallowed, contact your physician or local poison control center
- Do not short circuit; may cause burns or catch fire
- Do not charge or use battery packs other than Shure rechargeable batteries
- Dispose of battery packs properly. Check with local vendor for proper disposal of used battery packs.
- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like
- Do not immerse the battery in liquid such as water, beverages, or other fluids.
- Do not attach or insert battery with polarity reversed.
- Keep away from small children.
- Do not use abnormal batteries.
- Pack the battery securely for transport.

WARNING: Danger of explosion if incorrect battery replaced. Operate only with AA batteries.

Note:

- This equipment is intended to be used in professional audio applications.
- EMC conformance is based on the use of supplied and recommended cable types. The use of other cable types may degrade EMC performance.
- Use this battery charger only with the Shure charging modules and battery packs for which it is designed. Use with other than the specified modules and battery packs may increase the risk of fire or explosion.
- Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

Please follow your regional recycling scheme for batteries, packaging, and electronic waste.

SBRC Rack Mount Charger

The Shure Battery Rack Charger (SBRC) supports up to eight rechargeable batteries in a compact, single rack space. SBRC accepts interchangeable charging modules that accommodate Shure Lithium-ion batteries including AXT910, AXT920, and SB900B. An easy-to-read front panel displays essential battery parameters including charge status, time-to-full, and battery health indicators (such as temperature and cycle count). When connected to a network, Shure Wireless Workbench® software provides remote monitoring of the SBRC to track battery status.

Features

- Interchangeable charging modules for mixing and matching eight bodypack and handheld transmitter batteries

- Touring-ready battery charging and storage solution with comprehensive status display
- Charges batteries to 50 percent capacity within one hour; full capacity within three hours.
- Fully networkable for monitoring of all charging status parameters in Shure Wireless Workbench software
- Storage mode for charging or discharging batteries to optimal storage voltage
- Tracks battery health metrics for charging cycle count and percentage of original capacity
- Simple three-button interface control

Included Components

IEC AC Power Cable (1)	Part number varies by region. Contact your local Shure representative for more information
Shielded 3-foot Ethernet Cable (1)	C803
Hardware Kit (1)	90XN1371
Mounting Screws for Charger Modules (8)	30B13476

Optional Accessories

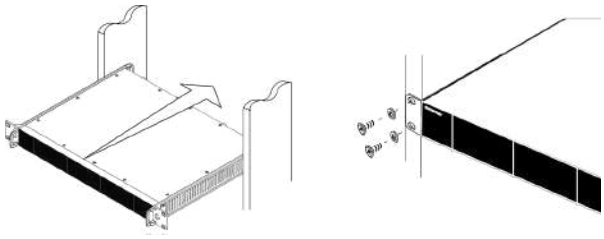
Optional Accessories

SBC-AX Charging Module for SB900B	SBC-AX
SBM910 Charging Module for SB910	SBM910
SBM910M Charging Module for SB910M	SBM910M
SBM920 Charging Module for SB920 and SB920A	SBM920

Mounting Instructions

This component is designed to fit into an audio rack.

Warning: To prevent injury this apparatus must be securely attached to the rack.



Batteries

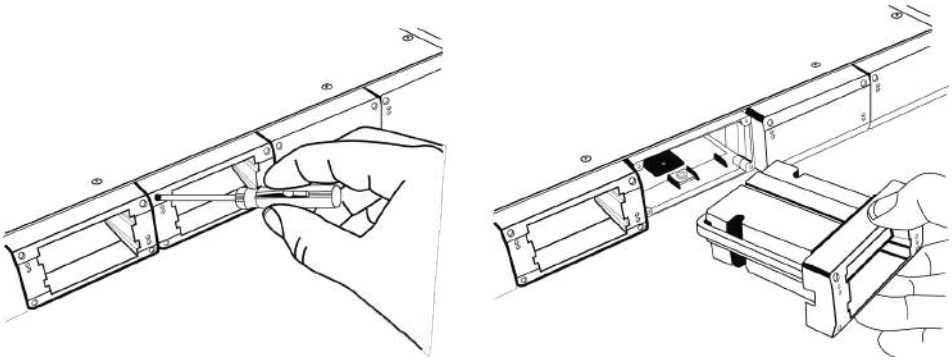
This charging station supports the following Shure charging modules and Lithium-ion rechargeable batteries:

Module	Battery
SBC-AX	SB900B
SBM910	SB910
SBM910M	SB910M
SBM920	SB920, SB920A

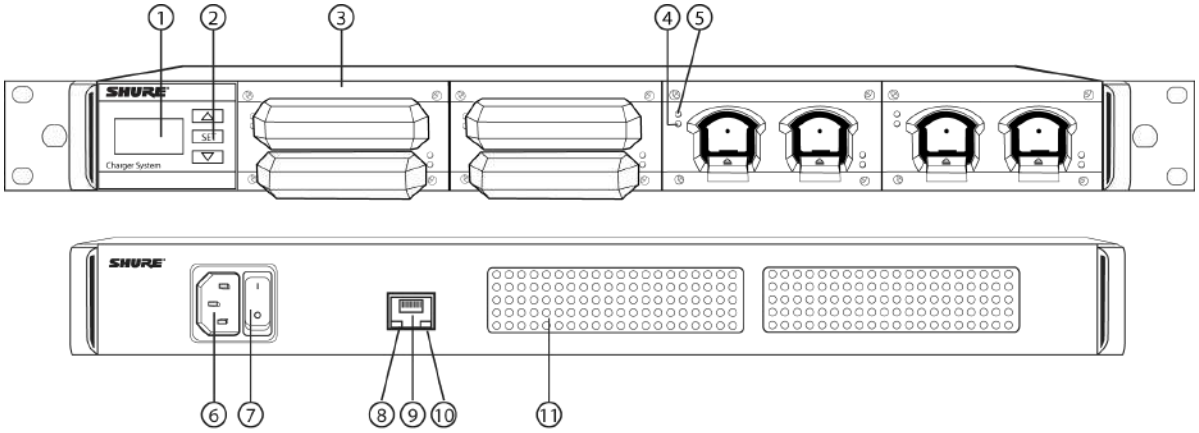
Charging Modules

Caution! Remove AC power and batteries when installing charger modules.

- To remove a module, remove the four (4) mounting screws and pull.
- To install, slide the module into the housing (noting the orientation of the guide rails) until it is flush with the housing.
- Replace the screws.



Controls And Connectors



① Display Screen

Displays battery status and menu settings.

② Control Buttons

For navigating the menu screen. Press and hold both arrow buttons to enter or exit the utility menu.

③ Charging Module

Interchangeable modules for Shure lithium-ion batteries.

④ Charge Status LED

Indicates battery charge status

⑤ Monitoring Selection LED

This white LED shows which battery is selected in the monitoring menu.

⑥ AC Power In (locking)

Connect to AC mains with supplied power cable.

⑦ Power Switch

Powers the unit on and off.

⑧ Network Speed LED (amber)

Off = 10 Mbps

On = 100 Mbps

⑨ Ethernet Port

Connect to an Ethernet network to enable remote control and monitoring.

⑩ Network Status LED (green)

Off = No network link

On = Network link active

Flashing = Network link active, flash rate corresponds to traffic volume.

⑪ Cooling Fan Vent

Clean fan screen as needed to maintain airflow.

Charge Status LED

Each charger bay has an LED to indicate the status of the battery.

LED Color	Charging Mode	Display	Battery Status
Green	Charging Complete	Home Screen	Battery charged
Red	Charging	Home Screen	Battery charging
	Deep Discharge Recovery	Home Screen	Battery charging
	Charging	Warm	Battery charging, temperature warm
Red Flashing	Storage Mode	Store at 3.8V	Battery charging or discharging to 3.8 volts
Amber	Storage Mode	Store at 3.8V	Battery voltage at 3.8 volts
Amber Flashing	Charging	Error - press SET for info	Charging error, press SET button for information
	Deep Discharge Recovery	Error - press SET for info	Deep Discharge Recovery failed
	Charging	Warm	Battery charged to 80 percent
	Charging	Hot	Charging stopped, battery hot
	Charging	Cold	Charging stopped, battery cold

Controls

1. Use the arrow buttons to scroll to the desired menu.
2. Press the SET button to enter the selected menu item.
3. Use the arrow buttons to change a menu parameter.
4. Press SET to save the setting.

Press and hold both arrow buttons to enter or exit the Utility menu.

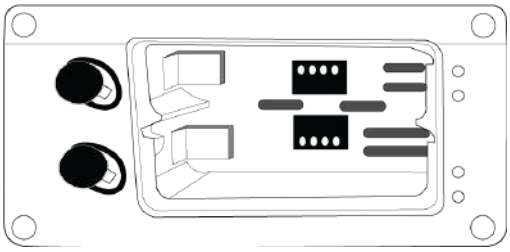
Press and hold the SET button for 1 second to activate the Hardware Identify feature in Wireless Workbench.

SBM910 SBM910M SBM920 -- Axient Charging Module

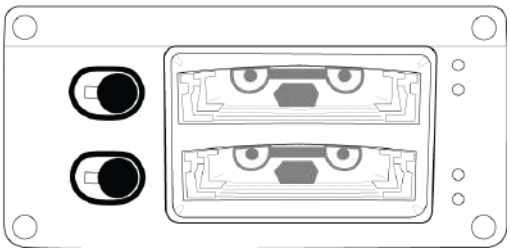
SBM910, SBM910M, SBM920, SBC-AX

These charging modules are for use with the Shure SBRC battery charger.

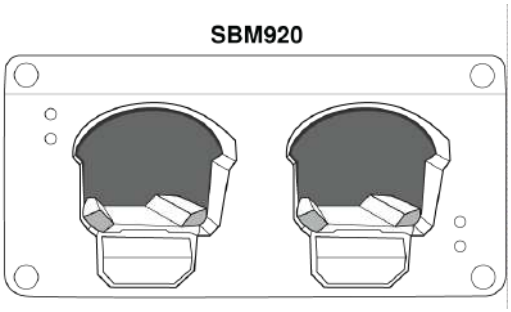
SBM910

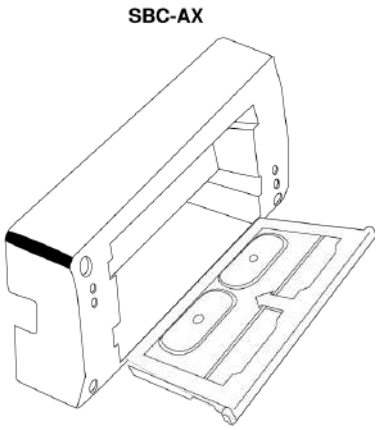


SBM910M



SBM920





WARNING

- Battery packs may explode or release toxic materials. Risk of fire or burns. Do not open, crush, modify, disassemble, heat above 140°F (60°C), or incinerate.
- Follow instructions from manufacturer
- Only use Shure charger to recharge Shure rechargeable batteries
- WARNING: Danger of explosion if battery incorrectly replaced. Replace only with same or equivalent type.
- Never put batteries in mouth. If swallowed, contact your physician or local poison control center
- Do not short circuit; may cause burns or catch fire
- Do not charge or use battery packs other than Shure rechargeable batteries
- Dispose of battery packs properly. Check with local vendor for proper disposal of used battery packs.
- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like

Installation

Handheld and bodypack charging modules may be installed interchangeably into the charger.

Caution! Remove power and batteries when installing charging modules.

- To remove a module, remove the four (4) mounting screws and pull.
- To install, slide the module into the housing (noting the orientation of the guide rails) until it is flush with the housing.
- Replace the screws.

Furnished Accessories

Included Components

Mounting Screws (8) for Charger Modules (30B13476)

Specifications

Dimensions

44 x 86 x 100 mm (1.8 x 3.4 x 4.0 in.)

Housing

Molded ABS, Cast aluminum

Weight

SBM910	102 g (3.6 oz.)
SBM910M	90.4 g (3.2 oz.)
SBM920	116.5 g (4.1 oz.)
SBC-AX	119 g (4.2 oz.)

Certifications

Meets essential requirements of the following European Directives:

- WEEE Directive 2002/96/EC, as amended by 2008/34/EC
- RoHS Directive 2011/65/EU
  Note: Please follow your regional recycling scheme for batteries and electronic waste



UA850

UA850 Cable coaxial

DÓNDE COMPRAR

GENERAL

Cable coaxial de 15 m de longitud para frecuencias de trabajo inferiores a 1 GHz.



UA825

UA825 Cable coaxial

DÓNDE COMPRAR

GENERAL

Cable coaxial de BNC a BNC, de 7,6 m de longitud.

Theater on stage miking
Houses of worship
Conference and lectern

- Supercardioid polar pattern rejects the pit orchestra and offers an impressive gain before feedback
- Phase coherent cardioid® design prevents coloration from surface sound reflections
- Finely crafted, rugged housing withstand the rigors of the stage
- Low profile to be inconspicuously placed on the stage-floor
- Industry standard stage-floor microphone



PCC-160

The Crown PCC®-160 (Phase Coherent Cardioid®) is a surface-mounted supercardioid microphone intended for professional applications on stage floors, lecterns, conference tables, and news desks—wherever improved gain-before-feedback and articulation are important.

Similar to the Pressure Zone Microphone® (PZM®), the PCC® is designed to be used on a relatively large boundary surface. Unlike the PZM®, the Phase Coherent Cardioid® uses a sub miniature supercardioid mic capsule. Its directional polar pattern improves gain-before-feedback, reduces unwanted room noise and rejects sounds from the rear. Surface-mounting creates a “half-supercardioid” polar pattern and increases directivity 3 dB. Since the microphone capsule is placed on a boundary, direct and reflected sounds arrive at the diaphragm in-phase. This coherent addition of direct and reflected waves increases sensitivity 6 dB and prevents phase cancellations. The mic capsule is small enough to ensure phase coherency up to the highest frequencies in the audible spectrum, resulting in a wide, smooth frequency response free of phase interference. Clarity and reach are also enhanced.

Self-contained electronics eliminate the need for an in-line preamp box. The PCC® -160 can be phantom powered directly from the console or other remote power source providing 12 to 48 V. If battery power is required, a battery supply unit can be inserted anywhere in the mic line right up to the console or mixer. A “bass tilt” switch allows the user to tailor the low-end response for particular applications. Thanks to its low profile and black finish, the microphone becomes almost invisible in use. A side-mounted connector complements the form factor of the PCC® -160, allowing the unit to be placed effectively at the stage edge, at the top of a lectern or in other tight spots. If desired, the cable can be hard-wired for bottom entry.

The heavy-gauge, all steel body protects the unit from accidental abuse. Permanent mounting is enabled by screw holes in the base. Engineering attention-to-detail has assured years of trouble-free use from this reliable microphone.

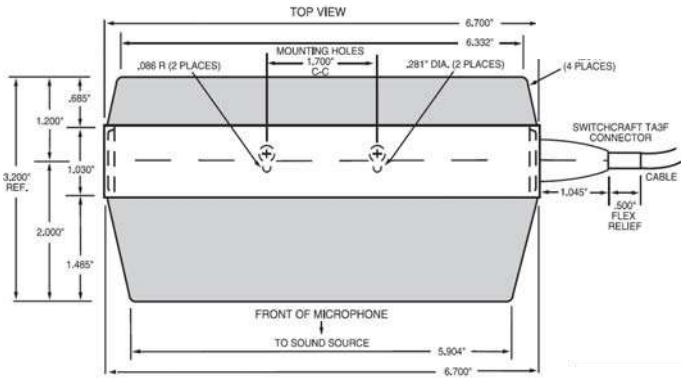
Capable of withstanding up to 120 dB SPL with-out distorting, the PCC® -160 will never overload in practical use. Its electret condenser capsule provides a wide, smooth frequency response from 50 Hz to 18 kHz. RFI suppression is included. Self-noise is low, and sensitivity is very high to override mixer noise in distant-miking applications. Output impedance is 150 ohms, balanced.

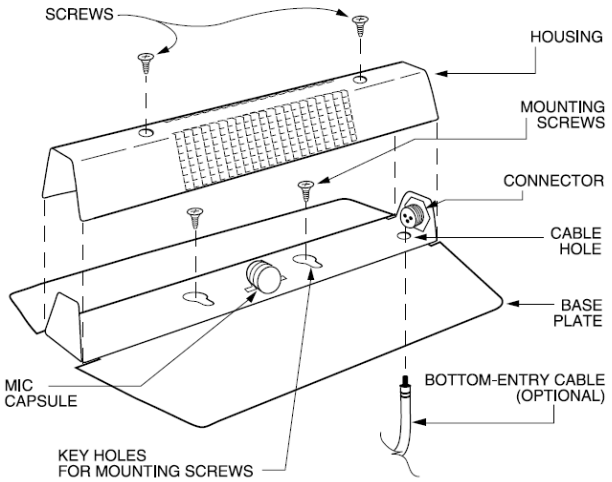
Operating Instructions

Unbalanced operation: If you are using a phantom power supply that does NOT include an isolation transformer, and you desire an unbalanced output, use pin 2 as hot and pin 1 as ground. This procedure prevents distortion in the PCC® circuit. Do not unbalance the output of the supply by connecting pin 3 to pin 1. If you are using a phantom supply containing an iso-lation transformer (such as the Crown PH-1A AC/Battery Supply), then you can unbalance the output by connecting pin 3 to pin 1 in the cable feeding the mixer. This results in 6 dB more sensitivity. The PCC® includes two keyhole slots in its base to accept mounting screws. Note: The porous foam liner in the housing must go toward the front of the microphone; the dense foam liner goes toward the rear. Otherwise the frequency response and polar pattern will be degraded.

Placement suggestions for the PCC® -160 are in the Crown® Boundary Microphone Applications Guide and Speech Sound Reinforcement Application Guide, available online at http://www.crownaudio. com/mic_web/mic-library.htm.

BASS TILT SWITCH: On the bottom of the micro-phone is a bass-tilt switch which allows the user to tailor the low-end response for particular applications. In general, use the FLAT position. Use the CUT position to reduce room rumble and air-handler noise. Use the BOOST position to compensate for low-frequency losses when the PCC® is placed on small boundaries such as lectern shelf-tops.





Architects' & Engineers' Specifications

The microphone shall be the PCC® -160 or equivalent.
The microphone shall be a half-supercardioid electret condenser type, utilizing a subminiature transducer of rugged construction. A smooth frequency response from 50 Hz to 18,000 Hz shall be obtained, with a uniform off-axis response, over 20 dB down at the rear nulls. The microphone will exhibit excellent off-axis response and gain-before-feedback.
The microphone shall employ the principle of phase coherency achieved by mounting a small-diameter element very near a boundary, thus eliminating comb filtering in the audible spectrum. A 15-foot (4.6-m), two-conductor shielded cable with TA3F and A3M connectors shall be supplied with the microphone. The microphone shall have a sensitivity of 22 mV/Pa. The microphone shall accept a 120 dB SPL input while providing no greater than 3 percent THD (open-circuit termination). Equivalent noise shall be 22 dBA typical.
The Crown Model PCC® -160 is specified.

Specifications:

Polar pattern:	supercardioid
Frequency range:	50 to 18,000 Hz
Impedance:	150 ohms
Sensitivity:	22mV/Pa (-30dBV)
Equivalent noise level:	22 dB-A
Maximum SPL:	120 dB
Cable:	4,6 m (15ft.)
Finish:	black
Net weight:	170 g (6 oz.)
Item number:	PCC-170 6000H50110

Fig. 1 Frequency Response

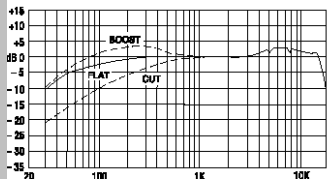
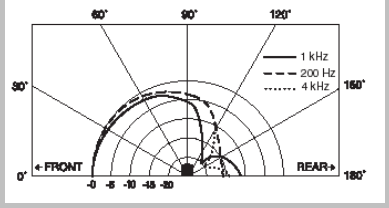


Fig. 2 Vertical Plane Polar Response



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e-mail: akgusa@harman.com

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Theater on stage miking
Houses of worship
Conference and lectern

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The heavy-gauge, all steel body protects the unit from accidental abuse. Permanent mounting is enabled by screw holes in the base. Engineering attention-to-detail has assured years of trouble-free use from this reliable microphone.

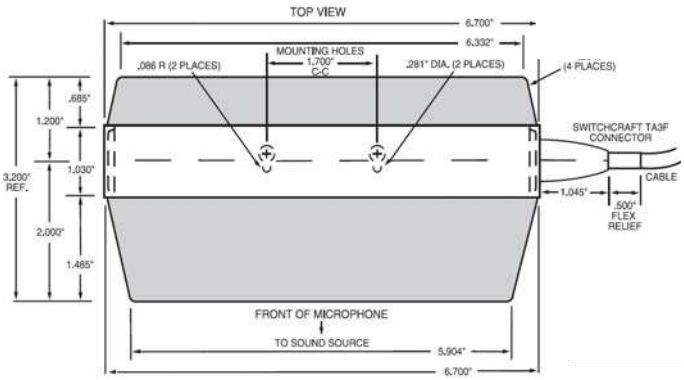
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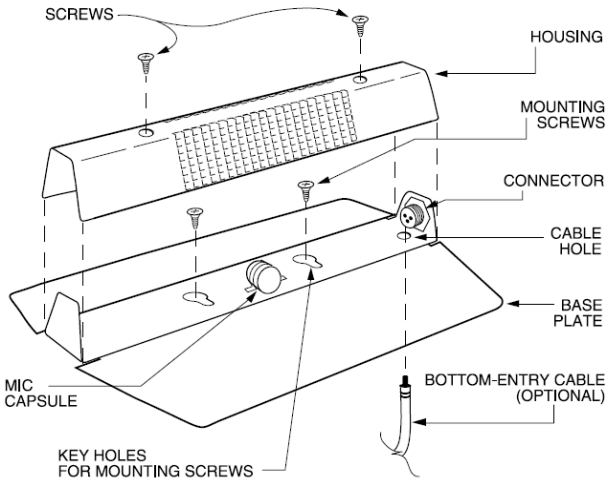
Operating Instructions

Unbalanced operation: If you are using a phantom power supply that does NOT include an isolation transformer, and you desire an unbalanced output, use pin 2 as hot and pin 1 as ground. This procedure prevents distortion in the PCC® circuit. Do not unbalance the output of the supply by connecting pin 3 to pin 1. If you are using a phantom supply containing an iso-lation transformer (such as the Crown PH-1A AC/Battery Supply), then you can unbalance the output by connecting pin 3 to pin 1 in the cable feeding the mixer. This results in 6 dB more sensitivity. The PCC® includes two keyhole slots in its base to accept mounting screws. Note: The porous foam liner in the housing must go toward the front of the microphone; the dense foam liner goes toward the rear. Otherwise the frequency response and polar pattern will be degraded.

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Architects' & Engineers' Specifications

The microphone shall be the PCC® -160 or equivalent.
The microphone shall be a half-supercardioid electret condenser type, utilizing a subminiature transducer of rugged construction. A smooth frequency response from 50 Hz to 18,000 Hz shall be obtained, with a uniform off-axis response, over 20 dB down at the rear nulls. The microphone will exhibit excellent off-axis response and gain-before-feedback.
The microphone shall employ the principle of phase coherency achieved by mounting a small-diameter element very near a boundary, thus eliminating comb filtering in the audible spectrum. A 15-foot (4.6-m), two-conductor shielded cable with TA3F and A3M connectors shall be supplied with the microphone. The microphone shall have a sensitivity of 22 mV/Pa. The microphone shall accept a 120 dB SPL input while providing no greater than 3 percent THD (open-circuit termination). Equivalent noise shall be 22 dBA typical.
The Crown Model PCC® -160 is specified.

Specifications:

Polar pattern:	supercardioid
Frequency range:	50 to 18,000 Hz
Impedance:	150 ohms
Sensitivity:	22mV/Pa (-30dBV)
Equivalent noise level:	22 dB-A
Maximum SPL:	120 dB
Cable:	4,6 m (15ft.)
Finish:	black
Net weight:	170 g (6 oz.)
Item number:	PCC-170 6000H50110

Fig. 1 Frequency Response

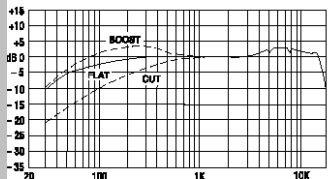
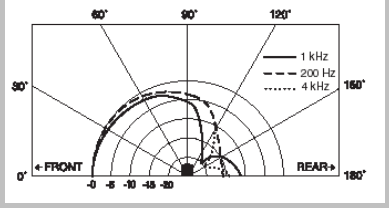


Fig. 2 Vertical Plane Polar Response



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Specifications subject to change without notice.

A Harman International Company

UL4

UniPlex Lavalier Microphone

Web guide for UniPlex UL4.
Version: 1.1 (2022-J)

Table of Contents

UL4 UniPlex Lavalier Microphone **3**

General Description **3**

Features 3

Lavalier Distance **3**

Tie Clip **3**

Snap-Fit Windscreen **4**

Accessories **4**

Furnished Accessories 4

Optional Accessories 4

Replacement Parts 5

Specifications **5**

Frequency Response 7

Polar Pattern 8

Wiring and Termination **8**

Typical Wiring Table 8

MTQG Connector Assembly 9

Certifications **9**

UL4
UniPlex Lavalier Microphone

General Description



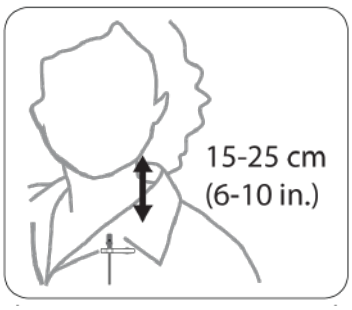
The Shure UniPlex UL4 is a professional subminiature cardioid lavalier microphone that is ideal for speech applications in broadcast, corporate, and conference environments. The subminiature design and custom cardioid element provide robust audio performance. Each microphone is supplied with a storage pouch, single tie clip, and snap-fit windscreen.

Features

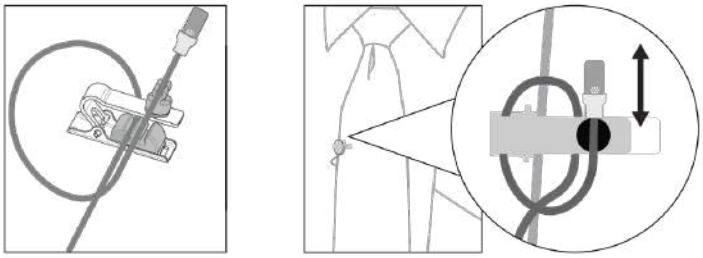
- 5 mm cardioid subminiature design for discrete placement
- 1.6 mm PLEX Cable technology, paintable cable, and no memory effect
- Professional sound quality for speech applications
- High RF immunity, compatible with Shure digital wireless systems without RF interference
- Included case, tie clip, and windscreen
- TA4F and LEMO terminations for variable wireless system connectivity
- Available in Black, Tan, Cocoa, and White finishes

Note: Only use UL4 with Shure wireless systems

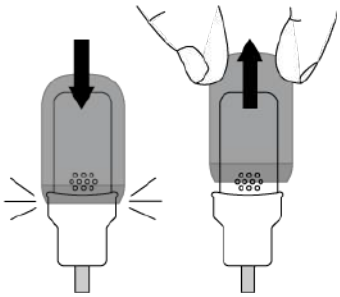
Lavalier Distance



Tie Clip



Snap-Fit Windscreen



Accessories

Furnished Accessories

Furnished Accessories	UL4 Black	UL4 Tan	UL4 Cocoa	UL4 White
Single Tie Clip	RPMDL4STC/B (1)	RPMDL4STC/T (1)	RPMDL4STC/C (1)	RPMDL4STC/W (1)
Snap-Fit Windscreen	RPMUL4SFWS/B (1)	RPMUL4SFWS/T (1)	RPMUL4SFWS/C (1)	RPMUL4SFWS/W (1)
Case	RPMDL4CASE	RPMDL4CASE	RPMDL4CASE	RPMDL4CASE
Preamplifier (UL4B/C-XLR only)	RPM400TQG	N/A	N/A	N/A

Accessories are available in Black (/B), Tan (/T), Cocoa (/C), and White (/W) color varieties. Please consult your Shure representative for available options.

Optional Accessories

TA4F/TQG XLR Preamplifier	RPM400TQG

Lemo XLR Preamplifier	RPM400LEMO
Black Dual Tie Clip, qty.1	RPMDL4DTC/B
White Dual Tie Clip, qty.1	RPMDL4DTC/W
Tan Dual Tie Clip, qty.1	RPMDL4DTC/T
Cocoa Dual Tie Clip, qty.1	RPMDL4DTC/C

Replacement Parts

RPMUL4SFWS/B	UL4 SNAP-FIT WINDSCREEN, BLACK, QTY 3
RPMUL4SFWS/C	UL4 SNAP-FIT WINDSCREEN, COCOA, QTY 3
RPMUL4SFWS/T	UL4 SNAP-FIT WINDSCREEN, TAN, QTY 3
RPMUL4SFWS/W	UL4 SNAP-FIT WINDSCREEN, WHITE, QTY 3
RPMDL4STC/B*	SINGLE TIE CLIP, BLACK, QTY. 3
RPMDL4STC/C*	SINGLE TIE CLIP, COCOA, QTY. 3
RPMDL4STC/T*	SINGLE TIE CLIP, TAN, QTY. 3
RPMDL4STC/W*	SINGLE TIE CLIP, WHITE, QTY. 3
RPMDL4CASE*E	DL4 POUCH, LAVALIER

*Also compatible with DuraPlex and TwinPlex 1.6 mm microphones.

Specifications

Microphone Capsule

MEMS

Polar Pattern

Cardioid

Frequency Response

40 Hz to 20 kHz

Sensitivity

MTQG	-42 dBV/Pa [1]
LEMO	-37 dBV/Pa [1]

Self-Noise, A-Weighted, Equivalent Acoustical

MTQG	32 dB SPL-A
LEMO	32 dB SPL-A

Signal-To-Noise Ratio [2]

MTQG	62 dB-A
LEMO	62 dB-A

Maximum SPL [3]

130 dB SPL,1 kHz at 1% THD, typical

Dynamic Range

98 dB typical

Microphone Current Draw

530 µA, maximum

Bias Voltage

Recommended Operating Voltage

3.5-5 V DC minimum, 5.5 V DC maximum

Housing

Molded ABS

Polarity

MTQG	Positive pressure on diaphragm produces positive voltage on pin 3 with respect to pin 1
LEMO	Positive pressure on diaphragm produces positive voltage on pin 3 with respect to pin 1

Cable Diameter

1.6 mm

Cable Length

66 in. (1.67 m)

Net Weight

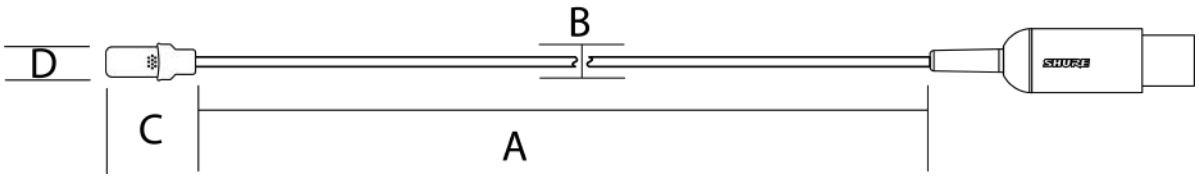
12.5 g (0.44 oz.)

[1] 1 Pa=94 dB SPL

[2] S/N ratio is the difference between 94 dB SPL and equivalent SPL of self noise, A-weighted

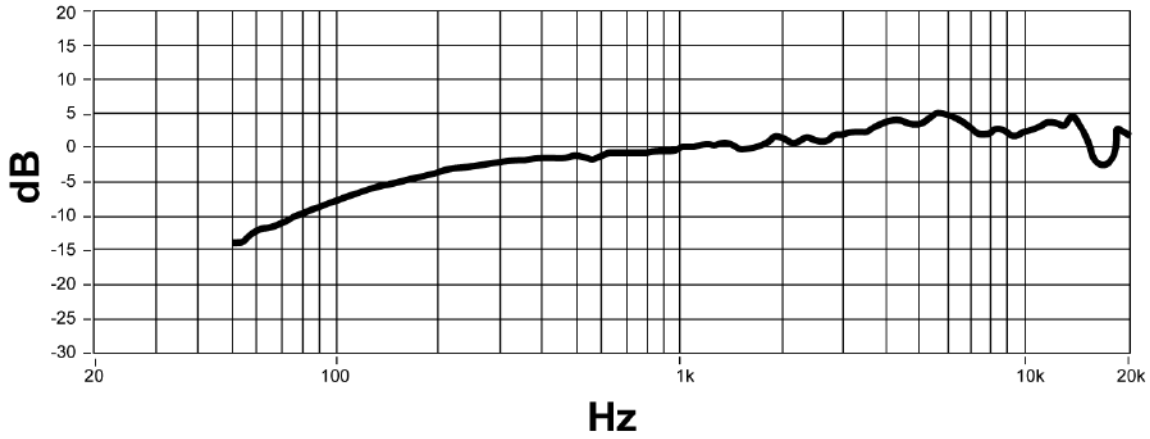
[3] THD of microphone preamplifier when applied input signal level is equivalent to cartridge output at specified SPL

Dimensions

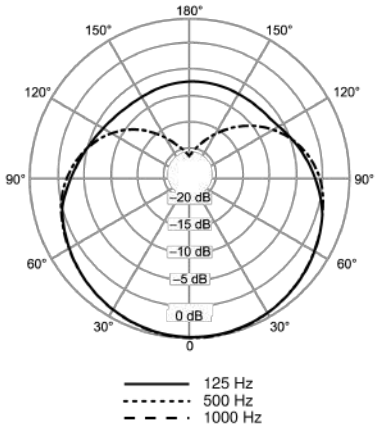


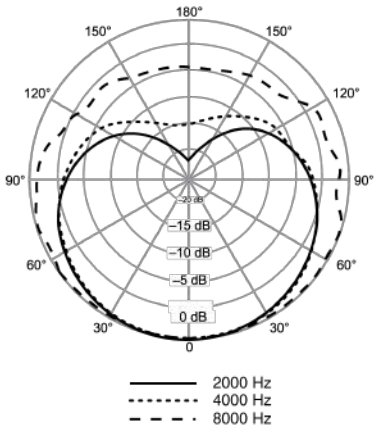
	A Cable Length	B Cable Diameter	C Microphone Length	D Microphone Diameter
UL4	66 in. (1.67 m)	1.6 mm	17 mm	5 mm

Frequency Response



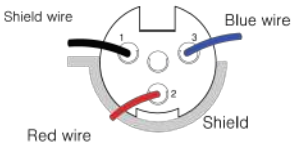
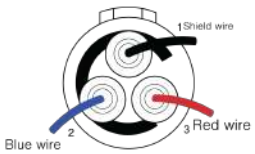
Polar Pattern





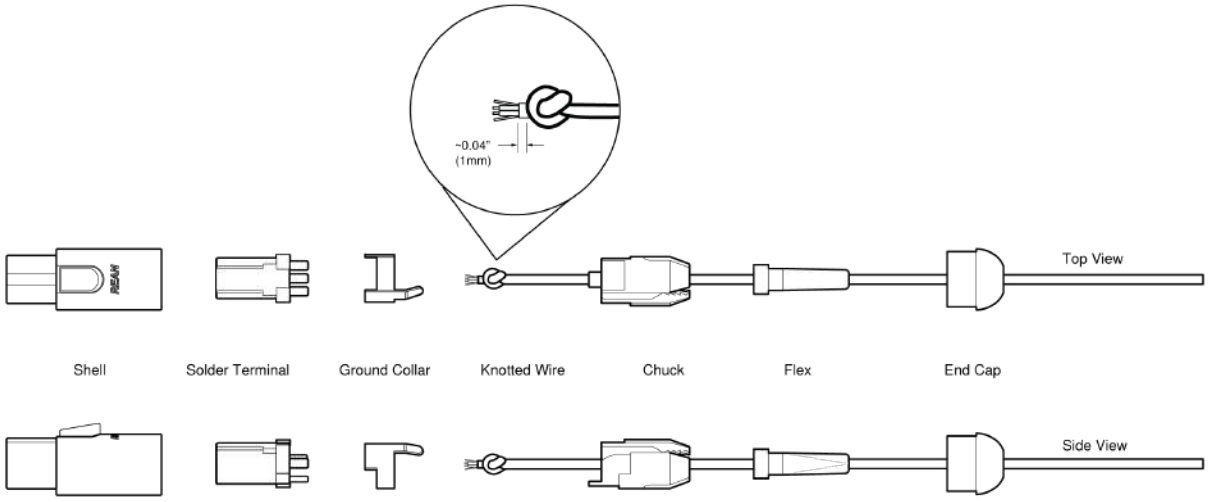
Wiring and Termination

Typical Wiring Table

Series	Cable Construction	Electrical Design	Polarity	Replacement Connector	For Use With	Wiring	Line Art (From Solder Side)
UL4-MTQG	1.6 mm cable with 2 conductors, 2 shield wires and shield	3-Wire (Source Follower)	Positive with respect to ground	WA430	All Shure TA4F Bodypacks	Red wire: Bias (2) Blue wire: Audio (3) Shield wire: Ground (1) Shield: Ground (Shell)	
UL4-LEMO	1.6 mm cable with 2 conductors, 2 shield wires	2-Wire (Common Source)	Negative with respect to ground	WA416	Shure Lemo bodypacks (ADX1-Lemo, Shure UR1M-Lemo, ULXD1-Lemo)	Red wire: Audio/Bias (3) Blue wire: Bias (2) Shield wire: Ground (1)	

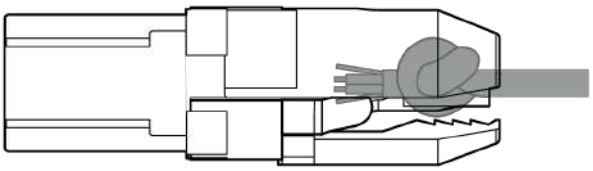
Series	Cable Construction	Electrical Design	Polarity	Replacement Connector	For Use With	Wiring	Line Art (From Solder Side)
	and shield						

MTQG Connector Assembly



Exploded View

Note: Make sure to solder the shield to ground collar.



Assembled View

Certifications

Note: Testing is based on the use of supplied and recommended cable types. The use of other than shielded (screened) cable types may degrade EMC performance.

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

Authorized European representative:
Shure Europe GmbH
Global Compliance
Jakob-Dieffenbacher-Str. 12

75031 Eppingen, Germany
Phone: +49-7262-92 49 0
Email: info@shure.de
www.shure.com

UL4 UNIPLEX CARDIOID SUBMINIATURE LAVALIER MICROPHONE

SPECIFICATIONS
(SUBJECT TO CHANGE)

Microphone Capsule	MEMS
Polar Pattern	Cardioid
Frequency Response	40 Hz to 20 kHz
Sensitivity	–42.5 dBV/Pa (Pa=94 dB SPL)
Self-Noise	32 dB SPL-A *A-weighted, Equivalent Acoustical*
Signal-to-Noise Ratio	62 dB-A
Maximum SPL	130.0 dB SPL *1 kHz @ 1% THD, typical*
Dynamic Range	98 dB *Typical*
Microphone Current Draw	530 µA, maximum
Bias Voltage ***Recommended Operating Voltage***	3.5-5 VDC (5.5VDC MAX)
Housing	Molded ABS
Polarity	MTQG: Positive Pressure on diaphragm produces positive voltage on Pin 3 with respect to Pin 1 LEMO: Positive pressure on diaphragm produces positive voltage on Pin 3 with respect to Pin 1
Cable Diameter	1.6 mm
Cable Length	66.0 in (1.67 m)
Net Weight	12.5 g (0.44 oz)
Capsule Dimensions ***(L × D)***	17 mm × 5 mm

AVAILABLE MODELS

UL4B/C-LM3-A	UniPlex Cardioid Lavalier Mic, LEMO Connector (Black)
UL4B/C-MTQG-A	UniPlex Cardioid Lavalier Mic, MTQG Connector (Black)
UL4C/C-LM3-A	UniPlex Cardioid Lavalier Mic, LEMO Connector (Cocoa)
UL4C/C-MTQG-A	UniPlex Cardioidl Lavalier Mic, MTQG Connector (Cocoa)
UL4T/C-LM3-A	UniPlex Cardioid Lavalier Mic, LEMO Connector (Tan)
UL4T/C-MTQG-A	UniPlex Cardioid Lavalier Mic, MTQG Connector (Tan)
UL4W/C-LM3-A	UniPlex Cardioid Lavalier Mic, LEMO Connector (White)
UL4W/C-MTQG-A	UniPlex Cardioid Lavalier Mic, MTQG Connector (White)
UL4B/C-XLR-A	UniPlex Cardioid Lavalier Mic, XLR Connector w/RPM400 (Black)

OVERVIEW

The Shure UniPlex UL4 is a professional MEMS lavalier microphone that is ideal for speech and performance applications in broadcast, corporate, and conference environments. The subminiature design and custom cardioid element provide robust audio performance. Each microphone is supplied with a storage pouch, single tie clip, and snap fit windscreen.

The advanced 1.6 mm Shure Plex cable, first introduced with the award-winning TwinPlex subminiature microphone, lasts longer than competing cables due to a dual redundant ground which doubles as a secondary shield. It also offers virtually zero "memory effect," won't kink, and is fully paintable.

FEATURES

- 5 mm cardioid subminiature design for discrete placement and improved gain-before-feedback
- Professional sound quality for speech and presentation applications
- Advanced 1.6 mm Shure Plex cable:
  - Dual redundant ground in cable serves as secondary shield for unprecedented longevity
  - Immune to memory effect and kinks
  - Fully paintable with typical theater paints, pens, and polishes
- Available in four colors: Black, Cocoa, Tan, White
- Available in three connector types: TA4F (mTQG), LEMO*, and XLR
- Kit includes the following accessories: Case, Snap-fit Windscreen, Single Tie Clip

**NOTE: Shure UniPlex UL4 lavalier microphone with LEMO termination is compatible only with Shure LEMO bodypack transmitters and preamplifiers.*



UL4B
UniPlex Directional Subminiature Lavalier Microphone (Black)

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Updated 09/01/2022

UL4 UNIPLEX CARDIOID SUBMINIATURE LAVALIER MICROPHONE

FURNISHED ACCESSORIES

Single Tie Clip

Snap-Fit Windscreen

Case

Threaded TA4F Adapter
(MTQG SKUs Only)

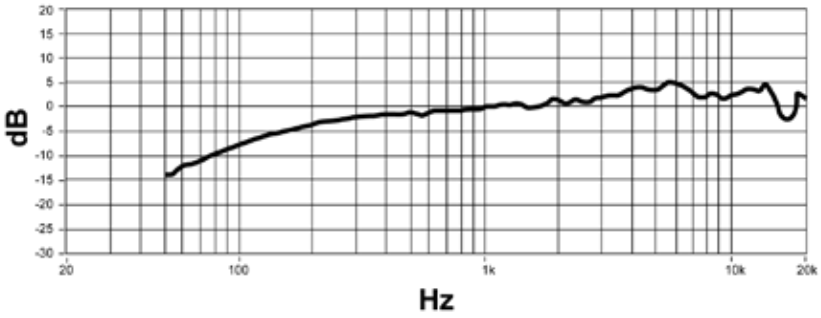


Included Accessories
RPM400 Optional (shown in black)

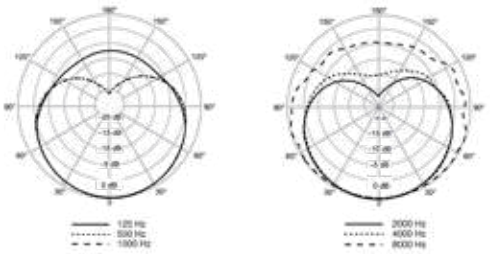
REPLACEMENT ACCESSORIES

95A49658	UL4 SNAP-FIT Windscreen, Black, Qty. 3	**RPDL4DTC/B**	Dual Tie Clip, Black, Qty. 3
95B49658	UL4 SNAP-FIT Windscreen, Cocoa, Qty. 3	**RPMDL4DTC/C**	Dual Tie Clip, Cocoa, Qty. 3
95C49658	UL4 SNAP-FIT Windscreen, Tan, Qty. 3	**RPMDL4DTC/T**	Dual Tie Clip, Tan, Qty. 3
95D49658	UL4 SNAP-FIT Windscreen, White, Qty. 3	**RPMDL4DTC/W**	Dual Tie Clip, White, Qty. 3
RPMDL4STC/B	Single Tie Clip, Black, Qty. 3	**RPM400TQG**	TA4F-XLR Preamp
RPMDL4STC/C	Single Tie Clip, Cocoa, Qty. 3	**RPM400LEMO**	LEMO3-XLR Preamp
RPMDL4STC/T	Single Tie Clip, Tan, Qty. 3	**95A44074**	Zippered Carrying Pouch
RPMDL4STC/W	Single Tie Clip, White, Qty. 3		

FREQUENCY RESPONSE



POLAR PATTERN



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Updated 09/01/2022

Model BETA 52®A User Guide

MODEL BETA 52®A



SUPERCARDIOID DYNAMIC INSTRUMENT MICROPHONE

GENERAL

The Shure BETA 52®A is a high output dynamic microphone with a tailored frequency response designed specifically for kick drums and other bass instruments. It provides superb attack and "punch," and delivers studio quality sound even at extremely high sound pressure levels.

The BETA 52A features a modified supercardioid pattern throughout its frequency range to insure high gain before feedback and excellent rejection of unwanted sound. A built–in dynamic locking stand adapter with an integral XLR connector simplifies installation, particularly if the microphone is to be placed inside a kick drum. The stand adapter keeps the microphone position fixed and resists slipping, even when subjected to sharp blows and strong vibrations. A hardened steel mesh grille protects the BETA 52A from the abuse and wear associated with touring.

FEATURES

- *Frequency response shaped specifically for kick drums and bass instruments*
- *Built–in dynamic locking stand adapter with integral XLR connector simplifies setup, especially inside a kick drum*
- *Studio quality performance, even at extremely high sound pressure levels*
- *Supercardioid pattern for high gain before feedback and superior rejection of unwanted noise*
- *Hardened steel mesh grille that resists wear and abuse*
- *Advanced pneumatic shock mount system that minimizes transmission of mechanical noise and vibration*
- *Neodymium magnet for high signal–to–noise ratio output*
- *Low sensitivity to varying load impedance*
- *Legendary Shure quality and reliability*

APPLICATIONS AND PLACEMENT

The most common BETA 52A applications and placement techniques are listed in the following table. Keep in mind that microphone technique is largely a matter of personal taste– there is no one "correct" microphone position.

Application	Suggested Microphone Placement	Tone Quality
Kick Drum	5 to 7.5 cm (2 to 3 in.) away from beater head, slightly off-center from beater.	Sharp attack; maximum bass sound, highest sound pressure level.
	20 to 30 cm (8 to 12 in.) from beater head, on-axis with beater.	Medium attack; balanced sound.
	20 to 30 cm (8 to 12 in.) from beater head, 15 to 20 cm (6 to 8 in.) from edge of head.	Medium attack; thin, reduced bass sound.
	5 to 7.5 cm (2 to 3 in.) away from outside head, on-axis with beater (double head kickdrum only).	Softer attack; balanced, resonant sound.
		NOTE: To "tighten" the beat, place a pillow or blanket on bottom of drum against beater head.
Electric Bass Amplifier	2.5 cm (1 in.) from speaker, on-axis with center of speaker cone.	Sharp attack; emphasized bass.
	2.5 cm (1 in.) from speaker, at edge of speaker cone.	Sharp attack; higher frequency sound.
	10 to 15 cm (4 to 6 in.) from speaker, on-axis with center of speaker cone.	Sharp attack; full, balanced sound.
	60 to 90 cm (2 to 3 ft.) from speaker, on-axis with center of speaker cone.	Soft attack; mellow, higher frequency sound.

MOUNTING THE BETA 52A ON A MICROPHONE STAND

The built–in stand adapter features a **dynamic locking system** that permits adjustments to the microphone's position, but resists slipping when struck or bumped. To mount the BETA 52A on a stand and adjust its position, proceed as follows:

1. Screw the integral stand adapter onto the end of a microphone stand (see Figure 3). Adjust the stand height and position as necessary.
2. Pivot the BETA 52A until it is in the desired position relative to the drum head or loudspeaker.
3. Lock the BETA 52A in place by rotating the adjustment knob on the stand adapter clockwise until it is tight. Do NOT overtighten the knob with tools.
4. If necessary, make minor adjustments to the microphone position without loosening the adjustment knob.
5. Connect an audio cable to the integral XLR connector.

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SPECIFICATIONS

Type

Dynamic (moving coil)

Frequency Response

20 to 10,000 Hz

NOTE: The curve below shows on–axis response at a distance of 2 feet from a uniform sound source. Your response may vary, depending on microphone position

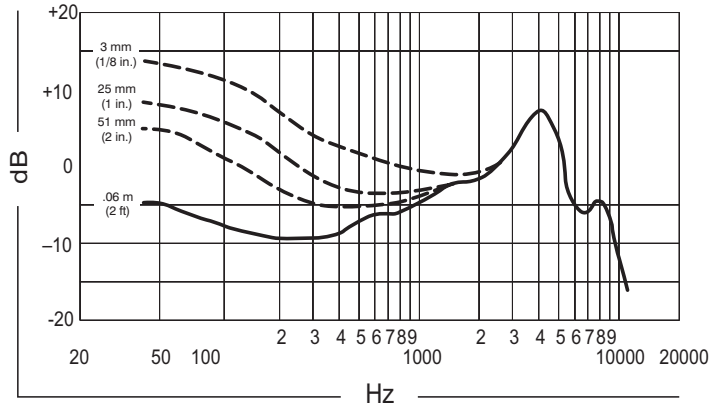


FIGURE 1

Polar Pattern

Supercardioid, rotationally symmetrical about microphone axis

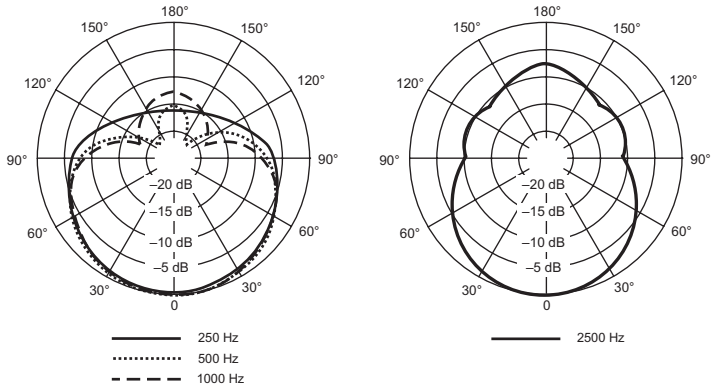


FIGURE 2

Output Level (at 1,000 Hz)

Open Circuit Voltage: –64 dBV/Pa* (0.6 mV)

*1 Pa = 94 dB SPL

Impedance

Rated impedance is 150 Ω (45 Ω actual) for connection to microphone inputs rated low Z

Phasing

Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

Maximum SPL

174 dB at 1000 Hz (calculated)

Connector

Three–pin professional audio connector (male XLR type)

Case

Silver blue enamel–painted die cast metal with hardened, matte-finished steel grille

Adjustable, Locking Stand Adapter

Integral, dynamic locking, adjustable through 180°, with standard 5/8”-27 thread

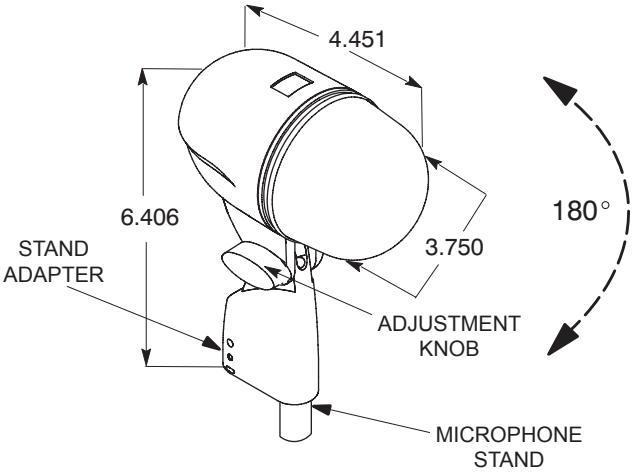


FIGURE 3

Net Weight

605 grams (21.6 oz)

CERTIFICATION

Eligible to bear CE Marking. Conforms to European EMC Directive 89/336/EEC. Meets applicable tests and performance criteria in European Standard EN55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.

FURNISHED ACCESSORIES

Storage Bag 26A25
5/8” to 3/8” (Euro) Thread Adapter 95A2050

OPTIONAL ACCESSORIES

7.6 m (25 ft) Cable C25E, C25F

REPLACEMENT PARTS

Cartridge R175
Screen and Grille Assembly RK321
Plug (connector) Assembly 90F1984

NOTE: Use care when removing the cartridge holder from the base to prevent breakage of the lead wires.

For additional Service or parts information, please contact Shure’s Service department at 1–800–516–2525. Outside the United States, please contact your authorized Shure Service Center.

MICROPHONE DYNAMIQUE SUPERCARDIOÏDE POUR INSTRUMENTS

GÉNÉRALITÉS

Le Shure BETA 52®A est un microphone dynamique à haut niveau de sortie présentant une courbe de réponse spécialement étudiée pour les grosses–caisses et autres instruments basse. Il offre une attaque et un ”punch” exceptionnels et une qualité de studio, même dans des conditions de pression acoustique extrême.

Le BETA 52A maintient une configuration cardioïde dans toute sa gamme de fréquences pour assurer un gain élevé avant Larsen et un excellent rejet des bruits indésirables. L’adaptateur de pied intégral, réglable et verrouillable avec connecteur XLR simplifie l’installation, en particulier lorsque le micro est placé à l’intérieur de la grosse caisse. La grille en acier trempé protège le BETA 52A des rigueurs des tournées.

AVANTAGES

- *Courbe de réponse spécialement étudiée pour les grosses–caisses et instruments basse.*
- *L’adaptateur de pied intégral, réglable et verrouillable avec connecteur XLR simplifie l’installation, en particulier lorsque le micro est placé à l’intérieur de la grosse caisse.*
- *Qualité studio, même à des pressions acoustiques élevées.*
- *Configuration supercardioïde pour un gain élevé avant Larsen et rejet supérieur des bruits indésirables.*
- *Grille en acier trempé résistante à l’usure et aux mauvais traitements.*
- *Système antichocs pneumatique avancé, réduisant la transmission des bruits mécaniques et des vibrations.*
- *Aimant au néodymium pour un rapport signal/bruit élevé.*
- *Faible sensibilité aux changements d’impédance de charge.*
- *Qualité et fiabilité légendaires de Shure.*

APPLICATIONS ET PLACEMENT

Les applications les plus courantes du BETA 52A sont indiquées dans le tableau ci–dessous. Ne pas oublier que la technique de placement des micros est surtout une question de goût personnel et qu’il n’y a pas de position ”correcte”.

Application	Placement Suggéré	Sonorit
Grosse caisse	5 à 7,5 cm de la peau de frappe, légèrement décalé par rapport à la batte.	Attaque franche, basse maximum, pression acoustique maximum.
	20 à 30 cm de la batte, dans son axe.	Attaque moyenne, son équilibré.
	20 à 30 cm de la batte, 20 à 30 cm du cerclage.	Attaque moyenne, petit son, basses réduites.
	5 to 7.5 cm (2 to 3 in.) away from outside head, on-axis with beater (double head kickdrum only).	Attaque douce, son équilibré et résonnant.
		REMARQUE : pour un son plus ”net” placer un coussin ou une couverture dans le bas de la caisse, contre la peau de frappe
Amplis de basse électrique	2,5 cm du haut–parleur, au centre.	Attaque franche, dominance graves.
	2,5 cm du haut–parleur, sur le bord de la membrane.	Attaque franche, son plus aigu.
	10 à 15 cm du haut–parleur, au centre.	Attaque franche, son plein et équilibré.
	60 à 90 cm du haut–parleur, au centre.	Attaque douce, son plus aigu.

MONTAGE DU BETA 52A SUR UN PIED DE MICROPHONE

L’adaptateur de pied intégré présente un **système de verrouillage dynamique** permettant d’ajuster la position du microphone tout en empêchant qu’il glisse s’il est heurte’ par les baguettes du batteur. Pour monter le microphone BET 52A sur un pied et ajuster la position, procéder comme suit :

1. Visser l’adaptateur intégré sur le haut d’un pied de microphone (voir la figure 3). S’assurer que la vis de blocage de l’adaptateur est desserrée. Régler a hauteur du pied.
2. Faire pivoter le microphone BETA 52A jusqu’a la position désirée par rapport a la peau de la caisse ou au haut–parleur.
3. Serrer la vis de blocage a la main (en la tournant vers la droite) pour bloquer le microphone en position. NE PAS serrer la vis en excès.
4. Si nécessaire, modifier légèrement la position du microphone sans desserrer la vis.
5. Brancher un câble de microphone sur le connecteur XLR intégré.

CARACTÉRISTIQUES

Type

Dynamique (bobine mobile)

Courbe de réponse

20 à 10 000 Hz

REMARQUE : la courbe ci–dessous montre la réponse en axe à une distance de 60 cm d'une source sonore uniforme. La courbe de réponse peut varier en fonction du placement du microphone.

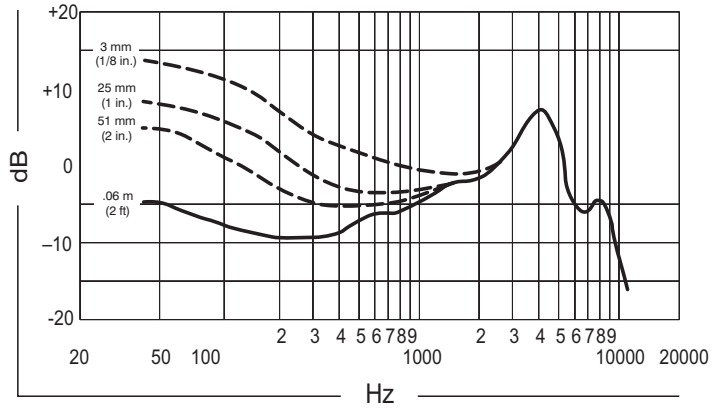


FIGURE 1

Courbe de directivité

Supercardioïde, rotativement symétrique autour de l'axe du microphone

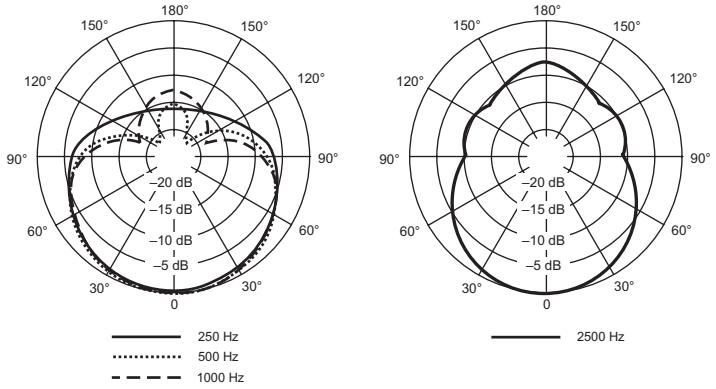


FIGURE 2

Niveau de sortie (à 1000 Hz)

Tension en circuit ouvert : –64 dBV/Pa* (0,6 mV)

*1 Pa = 94 dB SPL

Impédance

L'impédance nominale est de 150 Ω (45 Ω réelle) pour connexion aux entrées de micros basse impédance.

Phase

Une pression positive sur le diaphragme produit une tension positive sur la broche 2 par rapport à la broche 3.

Pression acoustique maximum

174 dB à 1 000 Hz (calculée)

Connecteur

Connecteur professionnel 3 broches type XLR.

Corps

Fonte émaillé bleu argenté avec grille sphérique matte en acier trempé.

Adaptateur de pied réglable, verrouillable

Intégral, à emboîtement, verrouillable, réglable à travers 180. avec filet standard de 5/8"–27

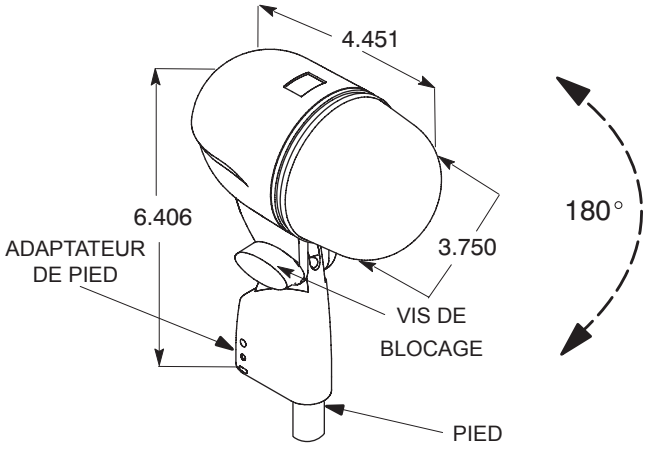


FIGURE 3

Poids net

605 grammes

HOMOLOGATION

Autorisé à porter la marque CE. Conforme à la directive CEM européenne 89/336/CEE. Conforme aux critères applicables de test et de performances de la norme européenne EN 55103 (1996) parties 1 et 2 pour les environnements résidentiels (E1) et d'industrie légère (E2).

ACCESSOIRES FOURNIS

Étui de rangement 26A25
Adaptateur de filet 5/8 à 3/8 po. (Europe). 95A2050

ACCESSOIRES EN OPTION

Câble de 7,6 m C25E, C25F

PIÈCES DE RECHANGE

Cartouche R175
Grille. RK321
Prise (connecteur) 90F1984

Pour plus de détails sur les réparations ou les pièces, contacter le service Entretien Shure au 1–800–516–2525. À l'extérieur des États–Unis, contacter le centre de réparations Shure agréé.

DYNAMISCHES SUPERNIEREN–TAUCHSPUL-MIKROPHON FÜR INSTRUMENTE

ALLGEMEINES

Beim Shure BETA 52®A handelt es sich um ein dynamisches Tauchspulmikrophon mit hoher Ausgangsleistung und einem zugeschnittenen Frequenzverhalten, das eigens für Pedaltrommeln und andere Baßinstrumente entwickelt wurde. Es bietet überragenden Toneinsatz und „Schlagklang“ sowie Klang in Studioqualität selbst bei äußerst hohen Schalldruckpegeln.

Das BETA 52A erhält eine Supernierencharakteristik über seinen gesamten Frequenzbereich hinweg aufrecht, um hohe Verstärkung vor der Rückkopplung und ausgezeichnete Unterdrückung unerwünschter Töne zu gewährleisten. Ein integrierter verstellbarer, einrastender Stativadapter mit eingebautem XLR–Stecker erleichtert die Installation, insbesondere wenn das Mikrophon innerhalb einer Pedaltrommel angebracht werden soll. Außerdem schützt ein Gittergrill aus gehärtetem Stahl das BETA 52A vor dem vor allem auf Tourneen auftretenden Mißbrauch und Verschleiß.

MERKMALE:

- *Frequenzverhalten eigens auf Pedaltrommeln und Baßinstrumente zugeschnitten.*
- *Integrierter verstellbarer, einrastender Stativadapter mit eingebautem XLR–Stecker erleichtert die Aufstellung, insbesondere innerhalb einer Pedaltrommel.*
- *Leistung in Studioqualität selbst bei äußerst hohen Schalldruckpegeln.*
- *Supernierencharakteristik für hohe Verstärkung vor der Rückkopplung und überragende Unterdrückung unerwünschter Töne.*
- *Gittergrill aus gehärtetem Stahl, widerstandsfähig gegen Verschleiß und Mißbrauch.*
- *Modernstes pneumatisch Schwingmetalldämpfer–System, dadurch nur minimale Übertragung von mechanischen Geräuschen und Vibrationen.*
- *Neodym–Magnet für hohe Signalrauschabstandsausgabe.*
- *Geringe Empfindlichkeit gegen variable Abschlußimpedanz.*
- *Bewährte Shure Qualität und Zuverlässigkeit .*

ANWENDUNG UND AUFSTELLUNG

Die gebräuchlichsten Anwendungen und Aufstellungsverfahren für das BETA 52A sind in der Tabelle unten aufgeführt. Beachten Sie bitte, daß der Mikrophoneinsatz weitgehend eine „Geschmackssache“ ist – von „richtigen“ oder „falschen“ Mikrophonpositionen kann hier also nicht die Rede sein.

Anwendung	Empfohlene Mikrophonauf–Stellung	Tonqualität
Pedaltrommel	5 bis 7,5 cm Abstand vom Schlegelkopf, etwas exzentrisch zum Schlegel.	Scharfer Toneinsatz, stärkster Baßklang, höchster Schalldruckpegel.
	20 bis 30 cm Abstand vom Schlegelkopf, axial zum Schlegel.	Mittelstarker Toneinsatz, ausgeglichener Klang.
	20 bis 30 cm Abstand vom Schlegelkopf, 15 bis 20 cm Abstand von der Fellkante.	Mittelstarker Toneinsatz, dünner, reduzierter Baßklang.
	5 bis 7,5 cm Abstand vom Außenfell, axial zum Schlegel (nur bei Doppelfell–Pedaltrommeln).	Weicherer Toneinsatz, ausgeglichener, resonanter Klang.
		HINWEIS: Zum „Anziehen“ des Schlages ein Kissen oder eine Decke auf die Unterseite der Trommel gegen den Schlegelkopf legen.
Elektrische Baßverstärker	2,5 cm Abstand vom Lautsprecher, axial zur Mitte des Lautsprechertrichters.	Scharfer Toneinsatz, Klang mit dominantem Baß.
	2,5 cm Abstand vom Lautsprecher, axial zur Kante des Laut-sprechertrichters.	Scharfer Toneinsatz, Klang mit höherer Frequenz.
	10 bis 15 cm Abstand vom Lautsprecher, axial zur Mitte des Lautsprechertrichters.	Scharfer Toneinsatz, voller, ausgeglichener Klang.
	60 bis 90 cm Abstand vom Lautsprecher, axial zur Mitte des Lautsprechertrichters.	Weicher Toneinsatz, lieblicher Klang mit höherer Frequenz.

MONTAGE DES BETA 52A AUF EINEN MIKROFONSTÄNDER

Der integrierte Ständeradapter weist ein **dynamisches Verschlußsystem** auf, das ein Verstellen der Mikrofonposition erlaubt, jedoch bei Auftreffen von Trommelschlegeln ein Verrutschen verhindert. Zur Montage des BETA 52A auf einen Stander und zum Einstellen der Mikrofonposition gehen Sie wie folgt vor:

1. Schrauben Sie den integrierten Standeradapter auf das Ende eines Mikrofonständers auf (siehe Abbildung 3). Stellen Sie die Ständerhöhe nach Bedarf ein. Achten Sie dabei darauf, daß die Anpassungschraube am Adapter locker ist.
2. Drehen Sie das BETA 52A, bis die gewunschte Stellung im Verhältnis zum Trommelfell bzw. Lautsprecher erreicht ist.
3. Arretieren Sie das BETA 52A, indem Sie die Anpassungschraube auf dem Ständeradapter im Uhrzeigersinn leicht anziehen. Die Fingerschraube NICHT zu anziehen!
4. Die Mikrofonstellung kann bei Bedarf ohne Lösen der npassungschraube geringfügig justiert werdern.
5. Schließen Sie ein Tonkabel an den eingebauten XLR–Stecker an.

SPEZIFIKATIONEN

Typ

Dynamisch (Tauchspule)

Frequenzverhalten

20 bis 10.000 Hz

HINWEIS: Die Kurve unten zeigt ein axiales Verhalten in einem Abstand von 60 cm von einer gleichförmigen Tonquelle. Das Frequenzverhalten ist von der Mikrophonstellung abhängig.

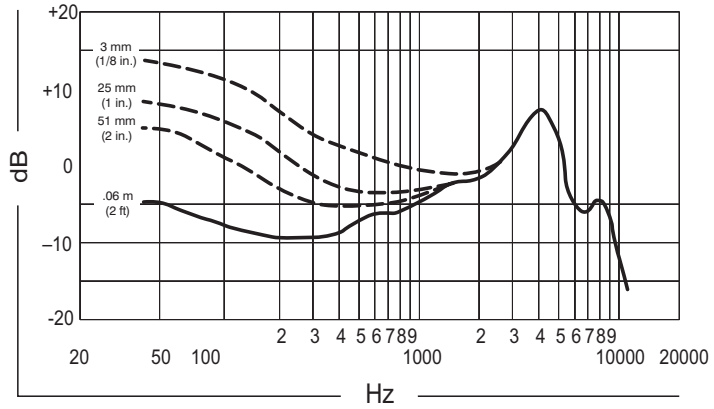


ABBILDUNG 1

Polarcharakteristik

Supernierencharakteristik, rotationssymmetrisch um Mikrophonachse, gleichförmig mit Frequenz

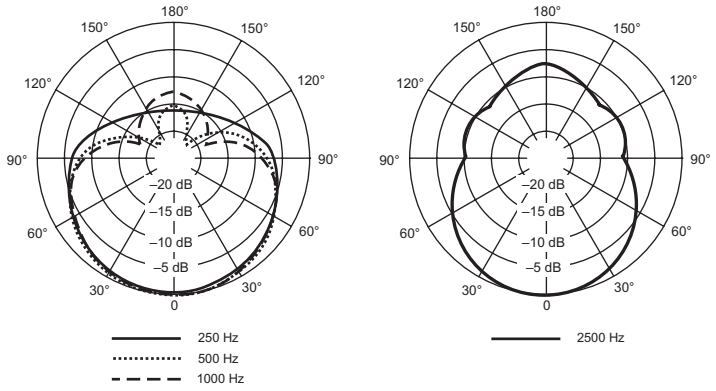


ABBILDUNG 2

Ausgangspegel (bei 1000 Hz)

Leerlaufspannung: –64 dBV/Pa* (0,6 mV)

*1 Pa = 94 dB SPL0 dB = 1 V/.Bar

Impedanz

Die Nennimpedanz für den Anschluß an niederohmige ikrophoneingänge beträgt 150 Ω (Ist–Wert 45 Ω)

Phasenabgleich

Positiver Druck auf die Membran erzeugt positive Spannung an Stift 2 gegenüber Stift 3

Maximaler Schalldruckpegel

174 dB bis 1.000 Hz (Berechnung)

Stecker

Dreipoliger Profi–Tonstecker (XLR–Steckertyp)

Gehäuse

Silberblaues einbrennlackiertes Druckgußmetall mit gehärtetem Stahlgittergrill in matter Oberflächenausführung

Verstellbarer, einrastender Stativadapter

Integrierte formschlüssige Verbindung, durch 180. verstellbar mit 5/8”–27 Standardgewinde

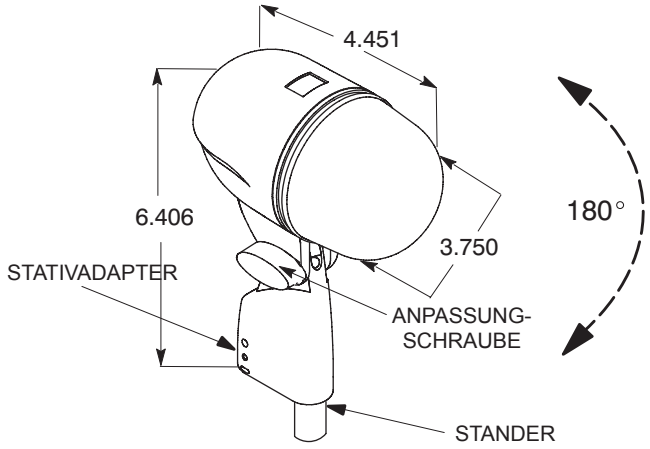


ABBILDUNG 3

Nettogewicht

605 Gramm

ZERTIFIZIERUNG

Zur CE–Kennzeichnung berechtigt. Entspricht der EU–Richtlinie über elektromagnetische Verträglichkeit 89/336/EEC. Erfüllt die Prüfungs– und Leistungskriterien der europäischen Norm EN 55103 (1996) Teil 1 und 2 für Wohngebiete (E1) und Leichtindustriegebiete (E2).

MITGELIEFERTES ZUBEHÖR

Tasche 26A25
5/8 zu 3/8 Inch (Euro) Gewindeadapter 95A2050

SONDERZUBEHÖR

Kabel, 7,6 m. C25E, C25F

ERSATZTEILE

Kapsel R175
Grill– und Windschirm–Baugruppe RK321
Stecker– (Anschluß–) Baugruppe 90F1984

Weitere Informationen über Kundendienst oder Ersatzteile erhalten Sie von der Shure–Kundendienstabteilung unter der Rufnummer 1–800–516–2525. Außerhalb der Vereinigten Staaten wenden Sie sich bitte an Ihr zuständiges Shure–Kundendienstzentrum.

MICROFONO DINAMICO DE SUPERCARDIOIDE PARA INSTRUMENTOS

GENERALIDADES

El Shure BETA 52®A es un micrófono dinámico con señal de salida de alta intensidad y una respuesta da frecuencias ajustada que ha sido diseñado específicamente para captar bombos y otros instrumentos de sonido grave. Proporciona sensibilidad y claridad óptimas y ofrece sonido de calidad de estudio, aun bajo niveles de presión acústica extremadamente altos.

El BETA 52A mantiene un patrón de captación supercardioide en toda su gama de frecuencias para lograr un alto valor de ganancia antes de realimentación y excelente rechazo de ruidos no deseados. Su adaptador para pedestal integral y con traba, con conector XLR incorporado, simplifica su instalación, particularmente si el mismo va a colocarse en el interior de un bombo. La rejilla de acero endurecido protege al BETA 52A del abuso y desgaste que generalmente se experimenta durante las ejecuciones públicas.

CARACTERISTICAS

- *Respuesta da frecuencias ajustada específicamente para captar bombos e instrumentos de sonido grave*
- *Su adaptador para pedestal integral y con traba, con conector XLR incorporado, simplifica su instalación, especialmente al colocarlo en el interior de un bombo*
- *Calidad de estudio, aun bajo niveles de presión acústica extremadamente altos*
- *Patrón supercardioide para lograr un alto valor de ganancia antes de realimentación y un rechazo superior de los sonidos no deseados*
- *La rejilla de acero endurecido resiste el desgaste y abuso*
- *El sistema neumático de montaje contra choques reduce al mínimo la transmisión de ruido mecánico y vibraciones*
- *El imán de neodimio produce una salida con alta relación de señal a ruido*
- *Baja sensibilidad a las variaciones de la impedancia de carga*
- *La legendaria calidad y confiabilidad de Shure*

USOS Y COLOCACION

Algunas de las técnicas más comunes de uso y colocación del micrófono BETA 52A se indican en la tabla siguiente. Recuerde que la técnica de uso de los micrófonos es en gran parte cuestión de gusto personal—no existe una posición de micrófono que sea la ”correcta”.

USO	COLOCACION SUGERIDA DEL MICROFONO	CALIDAD DEL TONO
Tambor bombo	De 5 a 7,5 cm de la maza, ligeramente descentrado respecto a ésta.	Respuesta rápida, frecuencias bajas máximas, máxima intensidad de sonido.
	De 20 a 30 cm de la maza, en línea con el eje de ésta.	Respuesta media, sonido equilibrado.
	De 20 a 30 cm de la maza y de 150 a 200 mm del borde de la membrana.	Respuesta media, sonido agudo con frecuencias bajas reducidas.
	De 5 a 7,5 cm de la membrana exterior, sobre el eje de la maza (sólo en bombos con dos membranas).	Respuesta más suave, sonido más equilibrado y resonante.
		NOTA: Para definir los golpes con mayor claridad, coloque una almohada o una manta en la parte inferior del tambor, contra la cabeza de la maza.
Amplificador de bajo eléctrico	A 2,5 cm del parlante, sobre el eje del centro del cono de éste.	Respuesta rápida, sonido sumamente grave.
	A 2,5 cm del parlante, sobre el eje del borde del cono de éste.2	Respuesta rápida, sonido con más frecuencias altas.
	De 10 a 15 cm del parlante, en línea con el centro del cono de éste.	Respuesta rápida, sonido equilibrado y lleno.
	De 60 a 90 cm del parlante, en línea con el centro del cono de éste.	Respuesta suave, sonido más melodioso y con más frecuencias altas.

MONTAJE DEL BETA 52A EN PEDESTAL PARA MICROFONOS

El adaptador incorporado para pedestal cuenta con un **sistema dinámico de traba** que permite ajustar la posición del micrófono pero resiste su movimiento en caso que el baterista lo golpee con los palillos. Para montar el BETA 52A en un pedestal y ajustar su posición, efectué el procedimiento siguiente:

1. Atornille el adaptador incorporado en el extremo de un pedestal para micrófonos (vea la Figura 3). Ajuste la altura del pedestal según sea necesario.Asegurese que el tornillo de ajuste de adaptador este flojo.
2. Gire el BETA 52A en sentido hasta ponerlo en la posición deseada en relación con el tambor o el altopriante a captarse.
3. Trabe el BETA 52A en su lugar girando el tornillo de ajuste del adaptador en sentido horario hasta apretarlo con la mano. NO apriete el tornillo de ajuste en exceso.
4. De ser necesario, haga un ajuste ligero de la posición del micrófono sin aflojar el tornillo de ajuste.
5. Conecte un cable de audio al conector tipo XLR incorporado.

ESPECIFICACIONES

Tipo

Dinámico (bobina móvil)

Respuesta a frecuencias

20 a 10.000 Hz

NOTA: La curva abajo ilustrada muestra la respuesta de una fuente sonora uniforme colocada en el eje de captación a una distancia de 0,6 m. La respuesta obtenida en la práctica variará según la posición del micrófono.

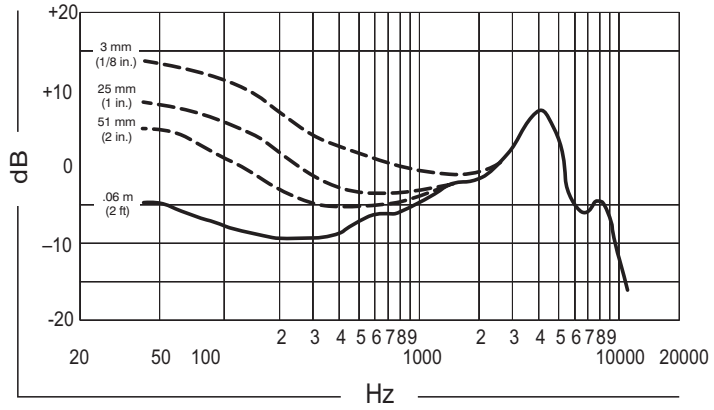


FIGURA 1

Patrón polar

Supercardioide, simétrico respecto al eje del micrófono

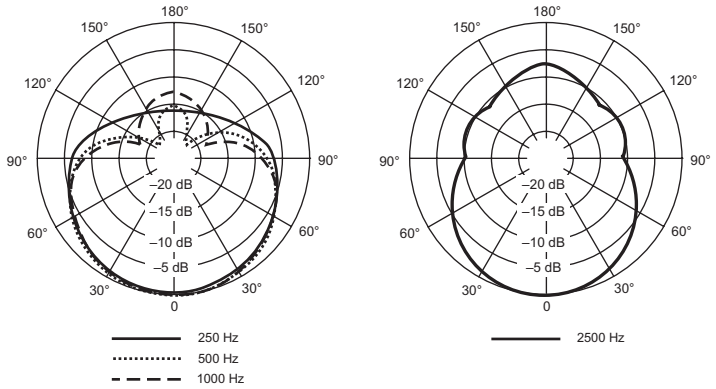


FIGURA 2

Nivel de salida (a 1.000 Hz)

Voltaje en circuito abierto: –64 dBV/Pa* (0,6 mV)

*1 Pa = 94 dB SPL

Impedancia

La impedancia nominal es de 150 Ω (real: 45 Ω) para conexión a entradas de micrófono de baja impedancia (baja Z)

Fasaje

Una presión positiva en el diafragma del micrófono produce un tensió positivo en la pin 2 con respecto a la pin 3

Nivel de presión acústica (NPA) máx.

174 dB a 1.000 Hz (calculado)

Conector

Conector de audio de tres pins profesional (tipo XLR macho)

Caja

Metal troquelado pintado de color plateado azul con rejilla de acero endurecido con acabado mate

Adaptador para pedestal ajustable y con traba

Incorporado, con traba dinámico, y ajustable a través de 180. con rosca estándar de 5/8”–27

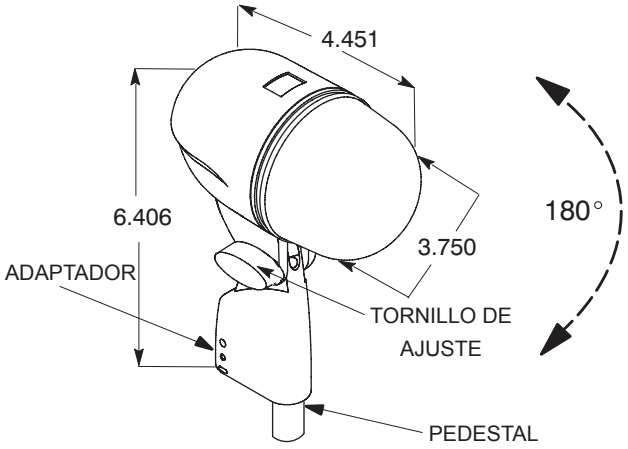


FIGURA 3

Peso neto

605 g

CERTIFICACIONES

Califica para llevar las marcas CE. Cumple la directiva europea 89/336/EEC de compatibilidad electromagnética. Se ajusta a los criterios correspondientes de verificación y funcionamiento establecidos en la norma europea EN 55103 (1996), partes 1 y 2, para zonas residenciales (E1) y zonas de industria ligera (E2).

ACCESORIOS SUMINISTRADOS

Bolsa de almacenamiento 26A25
Adaptador de roscas de 5/8 a 3/8 pulg (Euro) . . .95A2050

ACCESORIOS OPCIONALES

Cable de 7,6 m C25E, C25F

REPUESTOS

Cartucho R175
Conjunto de pantalla y rejilla RK321
Conjunto de enchufe (conector) 90F1984

Para información adicional acerca del servicio o repuestos, llame al Departamento de servicio Shure al teléfono 1–800–516–2525. Fuera de los EE.UU., llame al servicentro autorizado de productos Shure.

MICROFONO DINAMICO A SUPERCARDIOIDE PER STRUMENTI

INTRODUZIONE

Il modello BETA 52®A della Shure è un microfono dinamico ad uscita elevata con risposta in frequenza adattata specificamente all'uso con grancasse ed strumenti di tono grave. Fornisce attacco ed "impatto" superbi, e consente di ottenere suoni di qualità professionale anche a livelli estremamente elevati di pressione sonora.

Il BETA 52A presenta una caratteristica di ricezione a supercardioide in tutto il campo di frequenza, assicurando così un elevato guadagno a monte della retroazione ed un'eccellente reiezione dei suoni indesiderati. L'installazione è semplificata dall'adattatore incorporato per supporto, bloccabile e regolabile, con connettore XLR incorporato, specialmente se si desidera collocare il microfono dentro una grancassa. Infine, una griglia in acciaio temprato protegge il microfono dall'abuso e dall'usura associati a continui spostamenti.

CARATTERISTICHE

- *Risposta in frequenza adattata specificamente a grancasse ed altri strumenti di tono grave.*
- *Adattatore incorporato per supporto, bloccabile e regolabile, con connettore XLR incorporato, che semplifica l'installazione,*
- *specialmente all'interno di una grancassa.*
- *Prestazioni di qualità professionale, anche a livelli estremamente elevati di pressione sonora.*
- *Diagramma di ricezione a supercardioide, che presenta un elevato guadagno a monte della retroazione ed una reiezione superiore dei suoni indesiderati.*
- *Griglia in acciaio temprato, resistente all'usura e agli abusi.*
- *Avanzato sistema di montaggio antivibrazione pneumatico, che riduce al minimo la trasmissione di vibrazioni e suoni di natura meccanica.*
- *Magnete al neodimio, per ottenere un elevato rapporto segnale/rumore all'uscita.*
- *Bassa sensibilità a variazioni dell'impedenza di carico.*
- *Le leggendarie qualità e affidabilità Shure.*

APPLICAZIONI E COLLOCAZIONE

La tabella che segue riporta le più comuni applicazioni e tecniche di collocazione del modello BETA 52A. Ricordare sempre che le tecniche microfoniche dipendono largamente dalle preferenze personali e che non esiste un'unica posizione "giusta" del microfono.

APPLICAZIONE	COLLOCAZIONE SUGGERITA	QUALITÀ DEI TONI
Grancassa	Da 5 a 7,5 cm di distanza dalla battitoia, leggermente fuori asse rispetto alla battitoia stessa.	Attacco nitido, massima intensità dei toni bassi, massimo livello di pressione sonora.
	Da 20 a 30 cm di distanza dalla battitoia, lungo l'asse della stessa.	Attacco medio, suono bilanciato.
	Da 20 a 30 cm di distanza dalla battitoia, da 15 a 20 cm di distanza dal bordo della stessa.	Attacco medio, toni bassi ridotti e affievoliti.
	Da 5 a 7,5 cm di distanza dalla battitoia esterna, lungo l'asse del battente (solo per grancasse a doppia battitoia).	Attacco più graduale, suono risonante e bilanciato.
		NOTA: per rendere il ritmo "più compatto" mettere un cuscino o una coperta sul fondo della cassa, contro la battitoia.
Amplificatore per bassi elettrici	2,5 cm di distanza dall'altoparlante, lungo l'asse del cono ell'altoparlante stesso.	Scharfer Toneinsatz, Klang mit dominantem Baß.
	2,5 cm di distanza dall'altoparlante e lungo l'orlo del cono ell'altoparlante stesso.	Scharfer Toneinsatz, Klang mit höherer Frequenz.
	Da 10 a 15 cm di distanza dall'altoparlante, lungo l'asse del cono dell'altoparlante stesso.	Scharfer Toneinsatz, voller, ausgeglichener Klang.
	Da 60 a 90 cm di distanza dall'altoparlante, lungo l'asse del cono dell'altoparlante stesso.	Weicher Toneinsatz, lieblicher Klang mit höherer Frequenz.

MONTAGGIO DEL MODELLO BETA 52A SU UN'ASTA DA MICROFONO

L'adattatore incorporato per asta presenta un **sistema di bloccaggio dinamico** che consente di regolare la posizione del microfono, ma si oppone a possibili spostamenti causati dagli urti delle bacchette. Per montare il BETA 52A su un'asta e regolarne la posizione, procedere come segue:

1. Avvitare l'adattatore integrale per asta sull'estremità di un'asta da microfono (vedi Figura 3). Regolare l'altezza dell'asta come desiderato. Accertarsi che la vite a testa piatta sull'adattatore sia allentata.
2. Girare il BETA 52A verticalmente finche non si trovi nella posizione desiderata rispetto alla battitoia o all'altoparlante.
3. Bloccare il BETA 52A in posizione serrando a mano, in senso orario, la vite a testa piatta. NON serrarla eccessivamente.
4. Se necessario, variare leggermente la posizione del microfono senza allentare la vite a testa piatta.
5. Collegare un cavo audio al connettore integrale XLR.

DATI TECNICI

Tipo

Dinamico (bobina mobile)

Risposta in frequenza

Da 20 a 10.000 Hz

NOTA: il grafico che segue mostra la risposta lungo l'asse ad una distanza di 60 cm da una sorgente sonora uniforme. In una specifica applicazione la risposta può variare, a seconda della posizione del microfono.

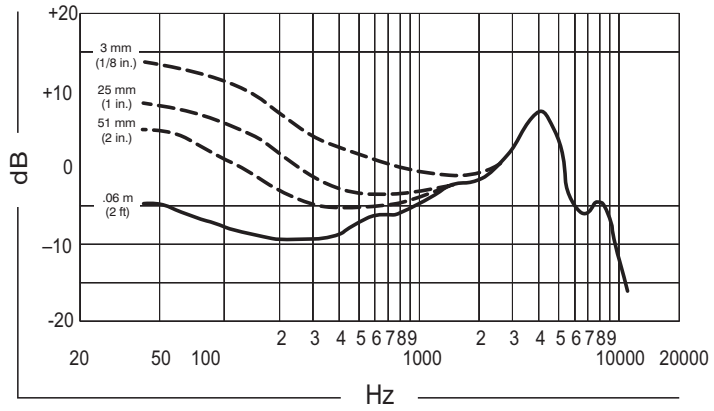


FIGURA 1

Diagramma polare

A supercardioide con simmetria rotazionale rispetto all'asse del microfono

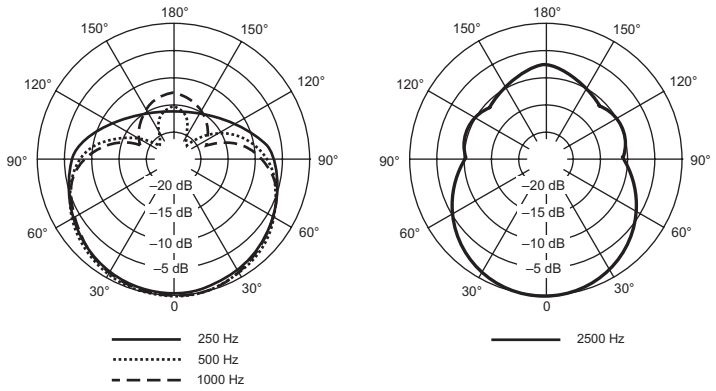


FIGURA 2

Livelli di uscita (a 1.000 Hz)

Tensione a circuito aperto: –64 dBV/Pa* (0,6 mV)

*1 Pa = 94 dB SPL

Impedenza

Valore nominale: 150 Ω (45 Ω effettivi) per il collegamento a ingressi microfonici con bassi valori nominali di impedenza.

Relazione di fase

Una pressione positiva sul diaframma produce una tensione positiva al piedino 2 rispetto al piedino 3.

Livello di pressione sonora (SPL) massimo

174 dB a 1.000 Hz (calcolato)

Connettore

Connettore audio professionale a tre piedini (tipo XLR maschio).

Contenitore

Corpo in metallo pressofuso con smaltatura blu–argento e griglia in acciaio temprato con finitura opaca.

Adattatore regolabile e bloccabile per supporto

Incorporato, con blocco dinamico, regolabile per 180. con filettatura standard 5/8"–27

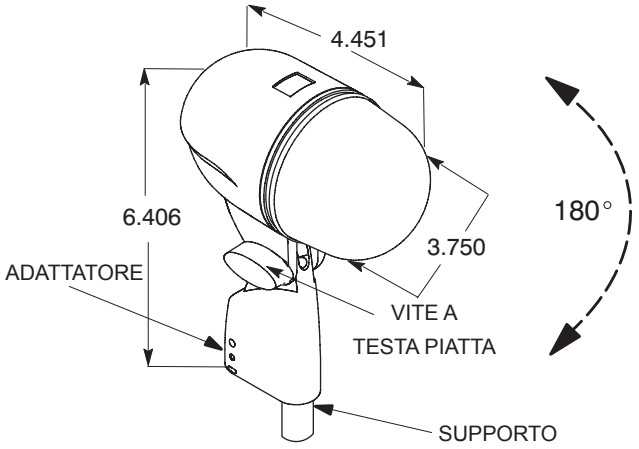


FIGURA 3

Peso netto

605 g

CERTIFICAZIONI

Contrassegnabile con il marchio CE. Conforme alla direttiva europea sulla compatibilità elettromagnetica 89/336/CEE. Conforme ai criteri sulle prestazioni e alle prove pertinenti specificati nella norma europea EN 55103 (1996) parti 1 e 2, per ambienti residenziali (E1) e industriali leggeri (E2).

ACCESSORI IN DOTAZIONE

Fodero 26A25
Adattatore per filettatura (Euro) da 5/8 a 3/8 di poll 95A2050

OPTIONAL

Cavo, 7,6 m C25E, C25F

RICAMBI

Cartuccia R175
Gruppo griglia e schermo RK321
Gruppo spina (connettore) 90F1984

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SHURE®
LEGENDARY
PERFORMANCE™

SM57

UNIDIRECTIONAL DYNAMIC MICROPHONE

MICROPHONE ÉLECTRODYNAMIQUE UNIDIRECTIONNEL

MICROFONO DINAMICO UNIDIREZIONALE

GERICHTETES DYNAMISCHES MIKROFON

MICROFONO DINAMICO UNIDIRECCIONAL

ダイナミック型マイクロホン/単一指向性



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27D2903 (Rev. 3)

Printed in U.S.A.

SPECIFICATIONS
CARACTÉRISTIQUES
SPECIFICHE TECNICHE
TECHNISCHE DATEN
ESPECIFICACIONES
仕様

Type	Dynamic (moving coil)
Frequency Response	40 to 15,000 Hz
Polar Pattern	Cardioid
Output Impedance	310 Ω
Sensitivity **(at 1 kHz, open circuit voltage)**	–56.0 dBV/Pa (1.6 mV) 1 Pascal=94 dB SPL
Polarity	Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3
Weight	Net: 0.284 kg (0.625 lbs)
Connector	Three-pin professional audio (XLR), male
Case	Dark gray, enamel-painted, die-cast steel with a polycarbonate grille and a stainless steel screen.

Tipo	Dinámico (bobina móvil)
Respuesta de frecuencia	40 a 15.000 Hz
Patrón polar	Cardioide
Impedancia de salida	310 Ω
Sensibilidad **(a 1 kHz, voltaje en circuito abierto)**	–56,0 dBV/Pa (1,6 mV) 1 Pascal=94 dB SPL
Polaridad	Una presión positiva en el diafragma del micrófono produce un voltaje positivo en la clavija 2 con respecto a la clavija 3
Peso	Neto: 0,284 kg (0,625 lb)
Conector	Conector de audio de tres clavijas profesional (tipo XLR), macho
Estuche	Acero troquelado esmaltado en color gris oscuro con una rejilla de policarbonato y una malla de acero inoxidable.

Type	Dynamique (bobine mobile)
Réponse en fréquence	40 à 15.000 Hz
Courbe de directivité	Cardioïde
Impédance de sortie	310 Ω
Sensibilité **(à 1 kHz, tension en circuit ouvert)**	–56,0 dBV/Pa (1,6 mV) 1 Pascal=94 dB NPA
Polarité	Une pression acoustique positive sur le diaphragme produit une tension positive sur la broche 2 par rapport à la broche 3.
Poids	Net: 0,284 kg
Connecteur	Audio professionnel à trois broches (XLR), mâle
Corps	Acier moulé peint vernis gris foncé avec une grille en polycarbonate et un écran en acier inoxydable.

Tipo	Dinamico (a bobina mobile)
Risposta in frequenza	40 a 15.000 Hz
Diagramma polare	Cardioide
Impedenza di uscita	310 Ω
Sensibilità **(a 1 kHz, tensione a circuito aperto)**	–56,0 dBV/Pa (1,6 mV) 1 Pascal=94 dB di SPL
Polarità	Una pressione positiva sul diaframma produce una tensione positiva sul piedino 2 rispetto al piedino 3.
Peso	Netto: 0,284 kg (0,625 lbs)
Connettore	Tipo audio, professionale, a tre piedini (XLR), maschio
Involucro	Acciaio pressofuso, smaltato, grigio scuro, con griglia in policarbonato e schermo in acciaio inossidabile.

Typ	Dynamisch (Tauchspule)
Übertragungsbereich	40 bis 15.000 Hz
Richtcharakteristik	Niere
Ausgangsimpedanz	310 Ω
Empfindlichkeit **(bei 1 kHz, Leerlaufspannung)**	–56,0 dBV/Pa 1 Pascal=94 dB Schalldruckpegel
Polarität	Positiver Druck an der Membran erzeugt positive Spannung an Pin 2 in Bezug auf Pin 3.
Gewicht	Netto: 0,284 kg
Stecker	Dreipoliger (XLR) Profi-Audiostecker
Gehäuse	Dunkelgrauer, einbrennlackierter Druckgussstahl mit Polycarbonat-Grill und Edelstahl-Abschirmung.

型	ダイナミック型（ムービングコイル方式）
周波数特性	40 ~ 15,000 Hz
指向特性	カーディオイド
出力インピーダンス	310 Ω
感度 **(1 kHz、開回路電圧)**	–56.0 dBV/Pa (1.6 mV) 1 パスカル=94 dB SPL
極性	ダイヤフラムへの正の圧力により、3番ピンに対して2番ピンに陽極電圧が生成される
質量	本体: 0.284 kg
コネクター	プロオーディオ用3ピン (XLR)、オス
ケース	ダークグレーエナメル加工ダイカストスチールボディとポリカーボネートグリル、ステンレススチールスクリーン

SM58

Vocal Microphone

The Shure legendary cardioid dynamic vocal microphone, SM58, user guide.
Version: 6.0 (2022-L)

Table of Contents

SM58 Vocal Microphone **3**

General Description **3**

Features 3

Placement **3**

General Rules for Use 3

Applications And Placement 4

Avoiding Pickup of Unwanted Sound Sources 4

Proximity Effect 4

Specifications **4**

Accessories **6**

Furnished Accessories 6

Optional Accessories 6

Replacement Parts 7

Certifications **7**

SM58
Vocal Microphone

General Description

The Shure SM58® is a unidirectional (cardioid) dynamic vocal microphone for professional vocal use in sound reinforcement and studio recording. A highly effective, built-in, spherical filter minimizes wind and breath “pop” noise. A cardioid pickup pattern isolates the main sound source while minimizing unwanted background noise. The SM58 has a tailored vocal response for a sound which is a world standard. Rugged construction, a proven shockmount system, and a steel-mesh grille ensure that even with rough handling, the SM58 will perform consistently. Outdoors or indoors, singing or speech, the SM58 is the overwhelming choice of professionals worldwide.

Features

- Performance tested, industry standard
- Uniform cardioid pick-up pattern for maximum gain before feedback and excellent rejection of off-axis sound
- Tailored frequency response specifically shaped for vocals, with brightened midrange and bass roll off to control proximity effect
- Advanced pneumatic shock mount system that minimizes transmission of mechanical noise and vibration
- Steel-mesh grille and enamel-coated metal construction resist wear and abuse
- Effective built in pop-filter reduces undesirable wind and breathe noise
- Furnished with zippered storage bag and break-resistant stand adapter
- On/Off switch (SM58S only)
- Extremely durable under the heaviest use
- Shure quality, ruggedness and reliability

Placement

General Rules for Use

- Aim the microphone toward the desired sound source (such as the talker, singer, or instrument) and away from unwanted sources.
- Place the microphone as close as practical to the desired sound source.
- Work close to the microphone for extra bass response.
- Use only one microphone to pick up a single sound source.
- Use the fewest number of microphones as practical.
- Keep the distance between microphones at least three times the distance from each microphone to its source.
- Place microphones as far as possible from reflective surfaces.
- Add a windscreen when using the microphone outdoors.
- Avoid excessive handling to minimize pickup of mechanical noise and vibration.
- Do not cover any part of the microphone grille with your hand, as this will adversely affect microphone performance.

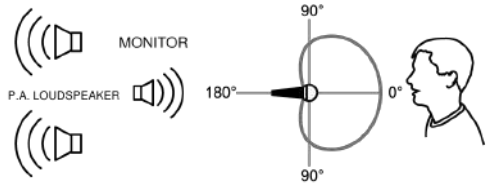
Applications And Placement

The following table lists the most common applications and placement techniques. Keep in mind that microphone technique is largely a matter of personal taste; there is no one “correct” microphone position.

Application	Suggested Microphone Placement	Tone Quality
Vocals	Lips less than 15 cm (6 in.) away or touching the wind-screen, on axis to microphone.	Robust sound, emphasized bass, maximum isolation from other sources.
	15 to 60 cm (6 in. to 2 ft.) away from mouth, just above nose height.	Natural sound, reduced bass.
	20 to 60 cm (8 in. to 2 ft.) away from mouth, slightly off to one side.	Natural sound, reduced bass and minimal “s” sounds.
	90 cm to 1.8 m (3 to 6 ft.) away.	Thinner, distant sound; noticeable levels of ambient noise.

Avoiding Pickup of Unwanted Sound Sources

Place the microphone so that unwanted sound sources, such as monitors and loudspeakers, are directly behind it. To minimize feedback and ensure optimum rejection of unwanted sound, always test microphone placement before a performance.



Recommended Loudspeaker Locations for Cardioid Microphones

Proximity Effect

Unidirectional (cardioid) microphones progressively boost bass frequencies by 6 to 10 dB below 100 Hz when the microphone is at a distance of about 6 mm (1/4 in.) from the sound source. This phenomenon, known as proximity effect, can be used to create a warmer, more powerful sound. To prevent explosive low frequency sound during close-up use, the bass response gradually rolls off. This provides greater control and helps the user take advantage of proximity effect.

Specifications

Type

Dynamic (moving coil)

Frequency Response

50 to 15,000 Hz

Polar Pattern

Cardioid

SM7B

Cardioid Dynamic Vocal Microphone

Shure SM7B dynamic microphone online user guide. Includes information on the frequency response, how to mount, preamp recommendations, and specs.

Version: 2.3 (2023-A)

Table of Contents

SM7B Cardioid Dynamic Vocal Microphone **3**

General Description **3**

Microphone Placement **3**

Windscreen 5

Mounting Instructions **5**

Preamplifier Use **6**

Install or Remove the Stand Adapter **7**

Adjust the Frequency Response Switches **8**

Additional Tips 9

Specifications **9**

Accessories **11**

Furnished Accessories 11

Optional Accessories 12

Replacement Parts 12

SM7B
Cardioid Dynamic Vocal Microphone

General Description

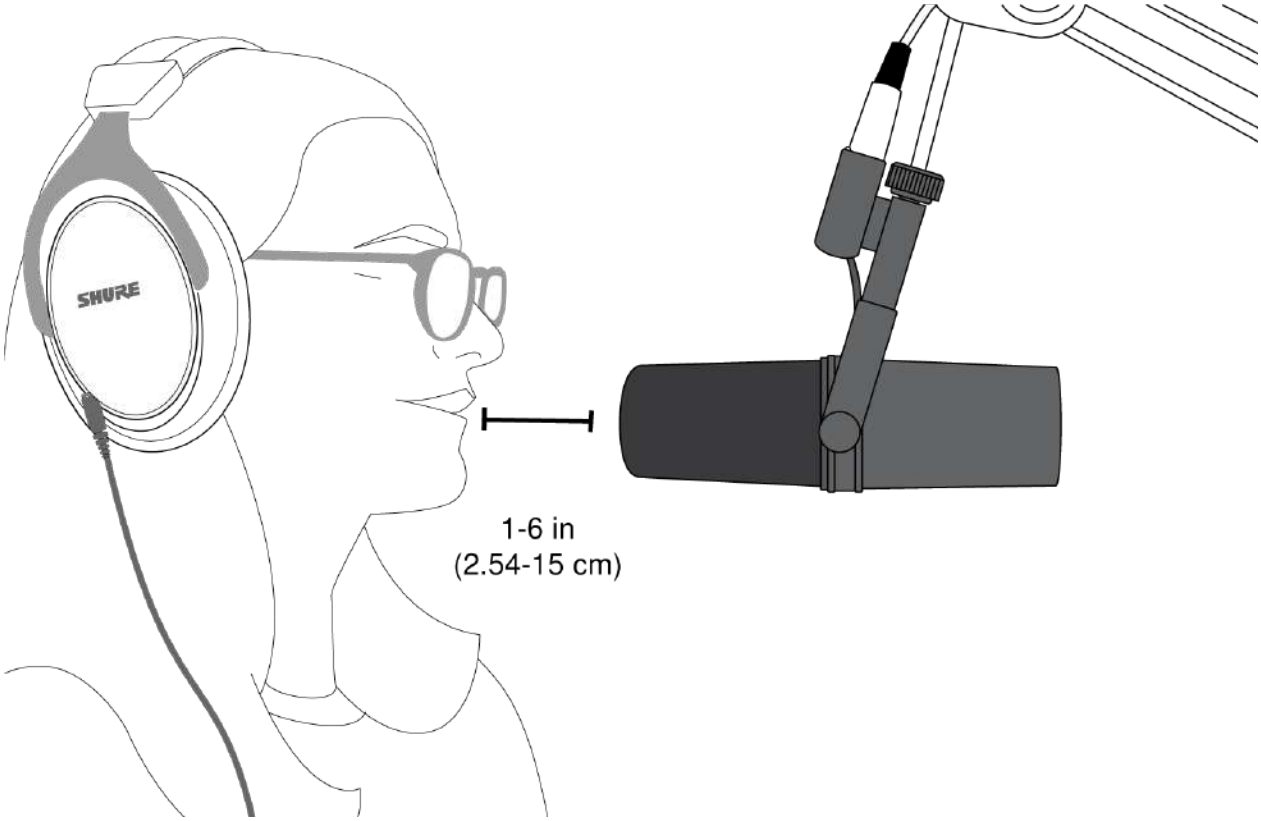
The Model SM7B dynamic microphone has a smooth, flat, wide-range frequency response appropriate for music and speech in all professional audio applications. It features excellent shielding against electromagnetic hum generated by computer monitors, neon lights, and other electrical devices. In addition to its standard windscreen, it also includes the A7WS windscreen for close-talk applications.

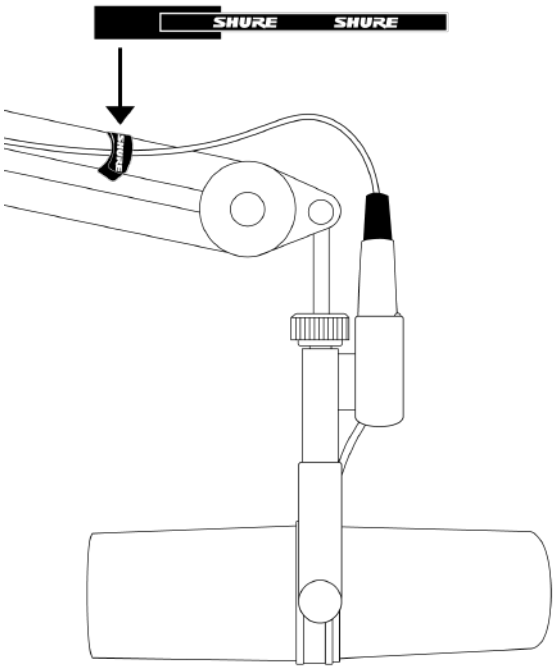
The SM7B is an outstanding choice for the following applications:

- Recording Studio—Instrumental and Vocal
- Location Recording
- Motion Picture and Television Scoring
- Television, Talk Shows, and News Desks
- Radio Announcing and Production
- Narration

Microphone Placement

Speak directly into the mic, 1 to 6 inches (2.54 to 15 cm) away to block off-axis noise. For a warmer bass response, move closer to the microphone. For less bass, move the microphone away from you.





Velcro Cable Tie

Use the enclosed velcro tie to secure the cable.

Windscreen

Use the standard windscreen for general voice and instrumental applications.

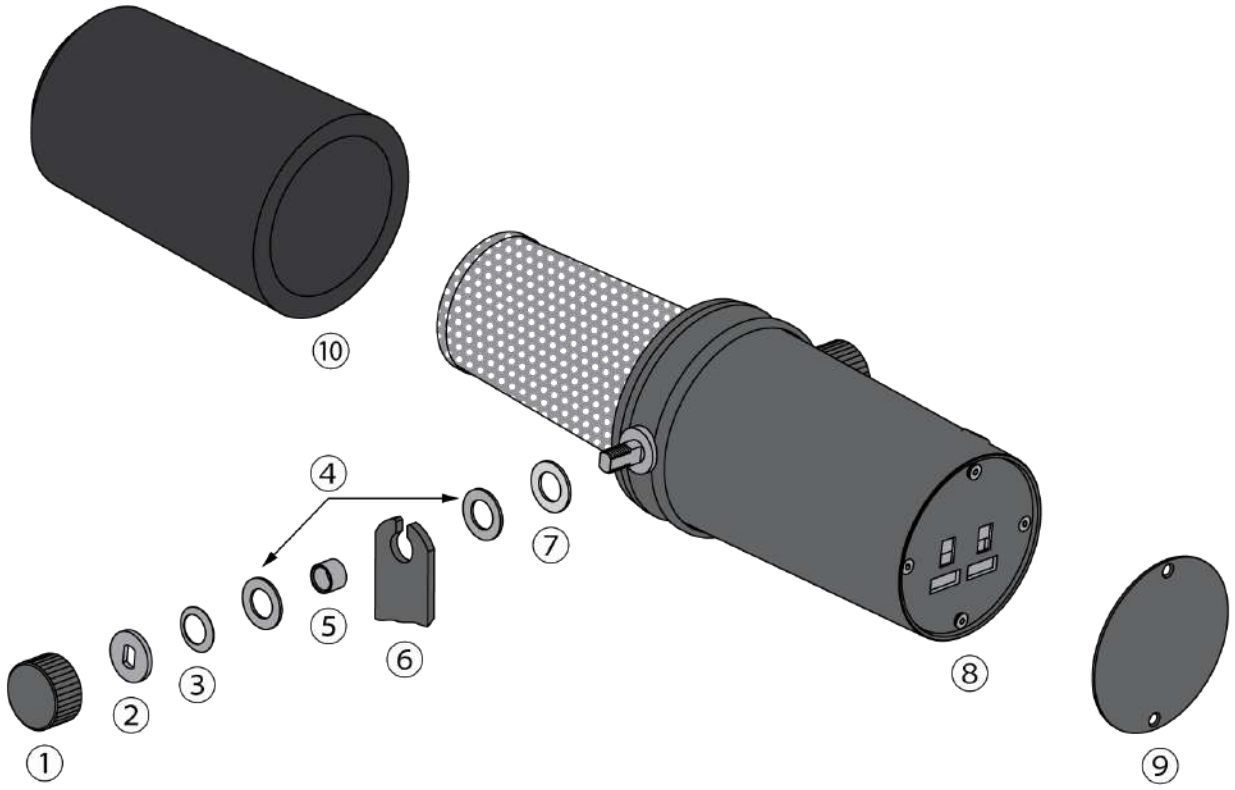
When you speak, you may hear vocal pops from some consonant sounds (known as plosives). To prevent more plosive sounds and wind noise, you can use the larger A7WS windscreen.

Mounting Instructions

The default setup for the SM7B is for a boom mount. To set up the SM7B for a microphone stand:

1. Remove tightening nuts on the sides.
2. Remove the fitted washers, the lock washers, the outer brass washers, and the brass sleeves.
3. Slide the bracket off the microphone. Be careful not to lose the washers still on the microphone.
4. Invert and rotate the bracket. Slide it back onto the bolts over the brass and plastic washers still on the microphone. The bracket should fit so the XLR connector faces the rear of the microphone and the Shure logo on the back of the microphone is right-side up.
5. Replace the brass sleeves. Be sure they are seated properly within the inner washers.
6. Replace the outer brass washers, the lock washers, and the fitted washers.
7. Replace the tightening nuts and tighten the microphone at the desired angle.

Note: If the tightening nuts do not hold the microphone in place, you may need to re-position the brass sleeves and the washers.



Mounting Assembly - Exploded View

① Tightening nut

② Fitted washer

③ Lock washer

④ Brass washers

⑤ Brass sleeve

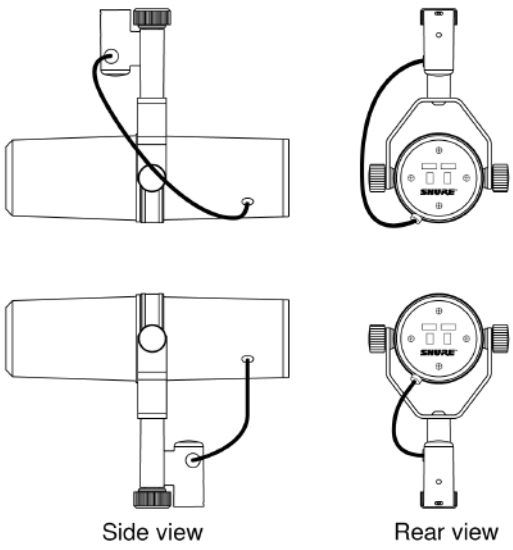
⑥ Mounting bracket

⑦ Plastic washer

⑧ Response switches

⑨ Switch cover

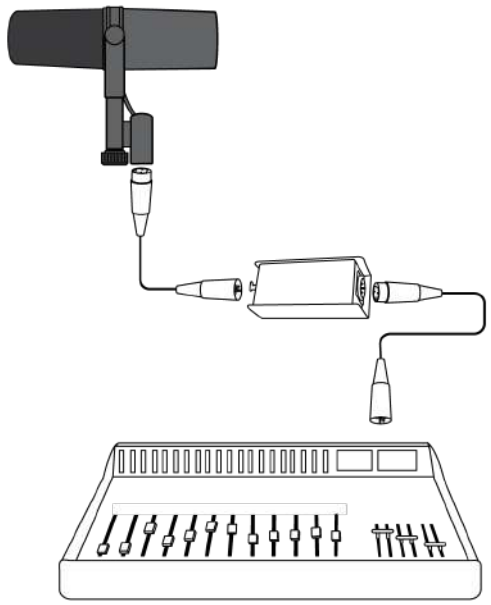
⑩ Windscreen



Boom and Microphone Stand Mounting Configuration

Preamplifier Use

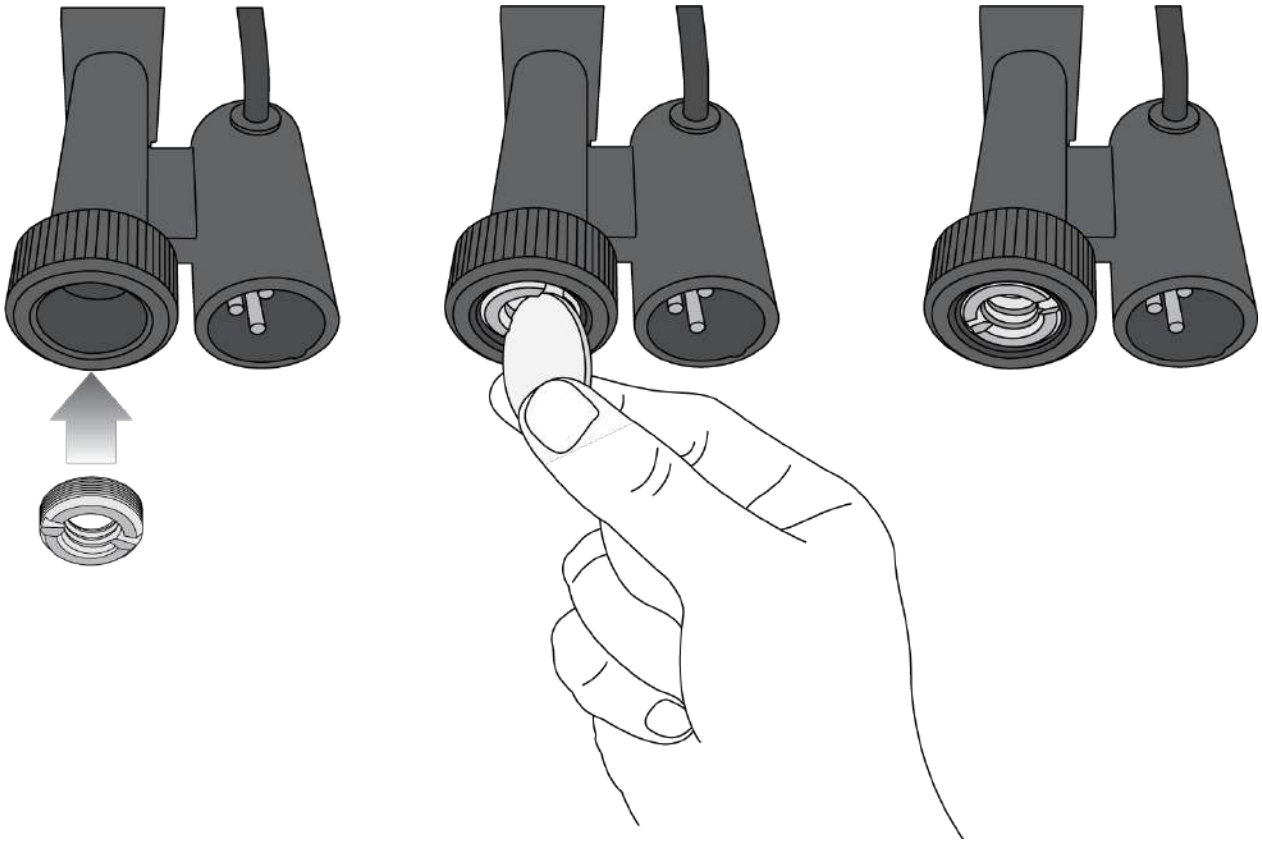
The SM7B has a sensitivity rating at -59 dB and requires more gain than what most entry-level or mid-tier preamplifiers can deliver. Use an inline boost amplifier or stronger preamp if your preamp does not have more than 60 dB of gain.



Preamplifier Configuration

Install or Remove the Stand Adapter

To mount the microphone on a 3/8 in. stand, insert the included brass stand adapter and tighten it with a coin or screwdriver.



Important: Make sure that the slots on the adapter face outward.



Adjust the Frequency Response Switches

You can use a pen, pencil, or screwdriver to move the switches on the back panel. This adjusts the frequency response.

Note: You can change the switch settings while the mic is in use or plugged in.



Flat Response

Flat response: This default setting works for most applications.



Bass Rolloff

Bass rolloff: If you want to reduce the bass, push the left switch down. This can help lower background hum from A/C, HVAC, or traffic.



Presence Boost

Presence boost: If you want a brighter sound in the mid-range frequencies, push the right switch up. This can help improve vocal clarity.

Additional Tips

Visit Shure Educational Articles for more information on recording techniques for different instruments and applications.

Specifications

Type

Dynamic (moving coil)

Frequency Response

50 to 20,000 Hz

Polar Pattern

Cardioid

Output Impedance

150 Ω

Sensitivity
(@ 1 kHz, open circuit voltage)

-59 dBV/Pa[1] (1.12 mV)

Hum Pickup
(typical, at 60 Hz, equivalent SPL/mOe)

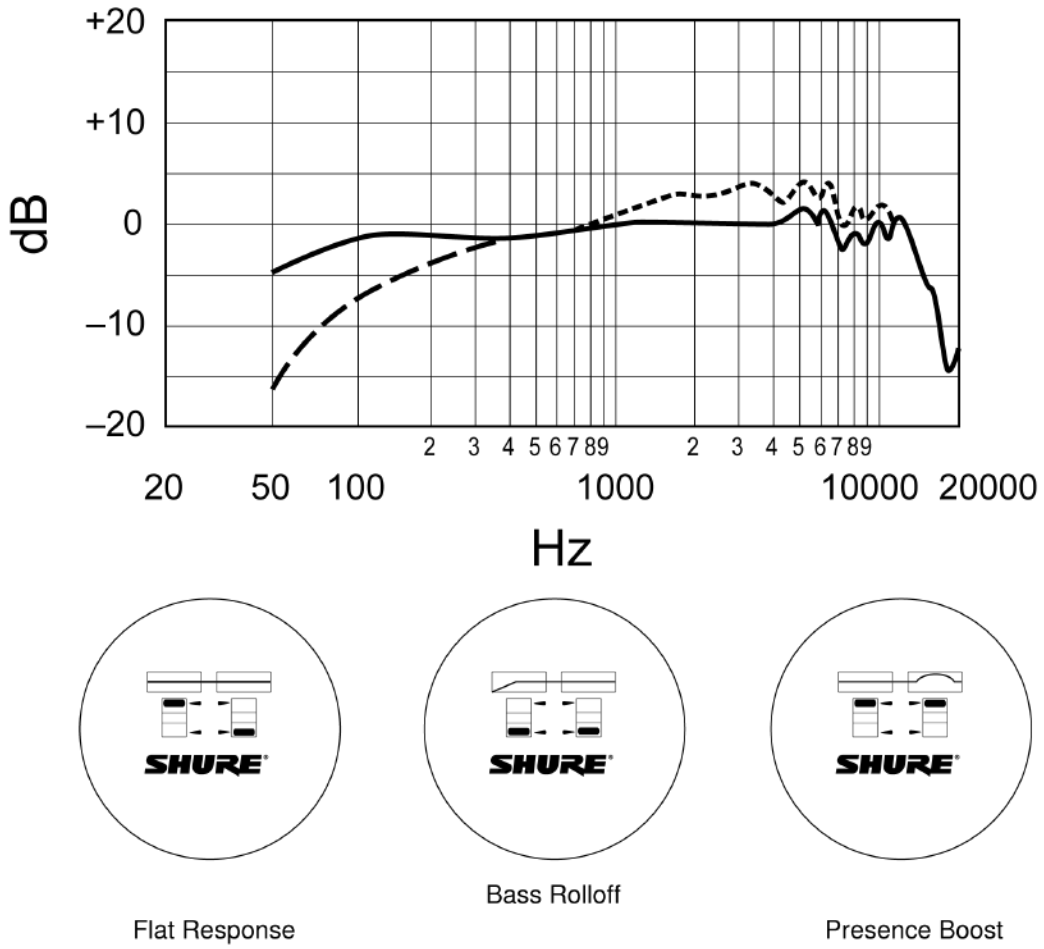
11 dB

Polarity
Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

Net Weight
0.764 kg (1.69 lbs)

Housing
Dark gray enamel aluminum and steel case with dark gray foam windscreen.

[1] 1 Pa=94 dB SPL



Typical Frequency Response

BETA91A

Half-Cardioid Condenser Microphone

The Shure half-cardioid electret condenser microphone, BETA91A, user guide.
Version: 3.1 (2021-B)

Table of Contents

BETA91A Half-Cardioid Condenser Microphone **3**

General Description **3**

Features 3

Applications **3**

General Rules for Use 3

Applications and Placement 3

Mounting the Microphone **4**

Half-cardioid Polar Pattern **4**

Contour Switch **4**

Load Impedance **5**

Power Requirements **5**

Accessories **5**

Furnished Accessories 5

Optional Accessories 6

Replacement Parts 6

Specifications **6**

Certifications **8**

BETA91A
Half-Cardioid Condenser Microphone

General Description

The Shure Beta 91A is designed for use with kick drums, piano and other traditional low frequency applications. Tailored for bass-heavy environments, this microphone features a powerful low frequency response and integrated preamplifier and XLR connection for easy setup and minimal stage clutter. The Beta 91A combines superior attack and punch for studio-quality sound, even at extremely high sound pressure levels (SPLs).

Features

- Premier live performance microphone with Shure quality, ruggedness, and reliability
- Uniform half-cardioid polar pattern (in the hemisphere above mounting surface) for maximum gain before feedback and rejection of off-axis sound
- Tailored frequency response for kick drums and bass-heavy instruments
- Wide dynamic range for use in high SPL environments
- Two-position contour switch enhances attack and clarity
- Integrated preamp and XLR connector reduce stage clutter and provide a quick, secure setup
- Low profile design requires no external mounting hardware
- Steel grille and die-cast metal construction resist wear and abuse

Applications

General Rules for Use

This table lists the most common applications and placement techniques. Keep in mind that microphone technique is largely a matter of personal taste; there is no one "correct" microphone position.

- Aim the microphone toward the desired sound source; angle unwanted sounds toward its *null* point.
- Use the fewest amount of microphones as practical to increase the *Potential Acoustic Gain* and prevent feedback.
- Follow the *3 to 1 Rule* by spacing each microphone by at least three times the distance to its source to reduce *Phase Cancellation*.
- Place microphones as far as possible from reflective surfaces to reduce *Comb Filtering*.
- When using directional microphones, work closely to the microphone for extra bass response to take advantage of *Proximity Effect*.
- Avoid excessive handling to minimize pickup of mechanical noise and vibration.
- Do not cover any part of the microphone grille, as this will adversely affect microphone performance.

Applications and Placement

Location and room acoustics strongly affect the sound quality of microphones. To achieve the best overall sound for a particular application, it may be necessary to experiment with microphone placement and room treatments.

Product Specifications

KSM8 Dualdyne™ Handheld Dynamic Vocal Microphone



KSM8/N



KSM8/B

Overview

The premium KSM8 Dualdyne Cardioid Vocal Dynamic Microphone is a groundbreaking feat of engineering design as the world's first-ever dual-diaphragm dynamic handheld microphone. Meticulously crafted for revolutionary vocal reproduction and sound-reinforcement control for world-class live performance in top-tier professional venues. Featuring the single purest cardioid polar pattern that Shure has developed to date, the patented Dualdyne cartridge of the KSM8 virtually eliminates proximity effect and masters off-axis rejection while providing sound professionals the signal clarity typical of condenser microphones without processing, along with the reliability of dynamic microphone feedback control.

Features

- Patented cartridge design featuring two ultra-thin diaphragms (one active and one passive) and groundbreaking inverted airflow system.
- Exceptional control of proximity effect vastly increases working distance without on-axis coloration.
- Accurate frequency response due to controlled proximity effect which allows for neutral mid-and-high frequency reproduction, resulting in the most natural sounding dynamic microphone available.
- Off-axis attenuation is flat and broad resulting in superior quality of rejection of unwanted sound sources for increased vocal clarity.
- Advanced Pneumatic Shock Mount design for exceptional rejection of handling noise without any loss of low frequency response.
- Dent-resistant, hardened carbon-steel grille design lined with hydrophobic woven fabric provides exceptional plosive and wind protection, while offering virtually waterproof protection.
- Available in select Shure wireless systems, compatible with all interchangeable Shure handheld wireless transmitters

Available Models

KSM8/N	Includes zipper case and swivel adapter (Brushed Nickel Finish)
KSM8/B	Includes zipper case and swivel adapter (Black finish)
RPW170	KSM8 Dualdyne cardioid dynamic wireless microphone capsule (Brushed Nickel finish)
RPW174	KSM8 Dualdyne cardioid dynamic wireless microphone capsule (Black Finish)

Specifications

Cartridge Type	Dual-Diaphragm Dynamic (moving coil)
Frequency Response	40 to 16,000 Hz
Polar Pattern	Cardioid
Output Impedance	300 ohms
Sensitivity *at 1 kHz, open circuit voltage*	-51.5 dBV/Pa (2.66 mV)
Polarity	Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3
Net Weight	330 g (11.64 oz.)
Connector	Three-pin professional audio (XLR), male
Housing	Die-cast Aluminum with Paint or Brushed Nickel Finish

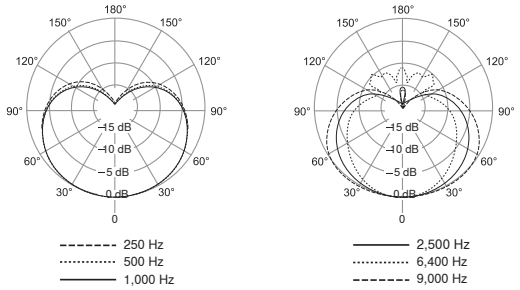
Furnished Accessories

AK8C	Zippered carrying case for KSM8
A25E	Black, Soft-flex Swivel Adapter for KSM8 and KSM9

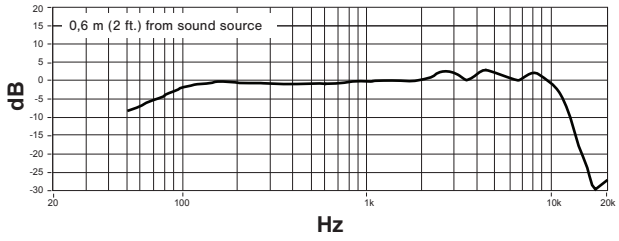
Optional Accessories and Replacement Parts

A85WS	Black foam windscreen for KSM8, SM58, SM86, SM87A, Beta® 87A and Beta 87C
A25E	Black, Soft-flex Swivel Adapter for KSM8 and KSM9
RPM266	Black replacement grille for KSM8 wired and wireless
RPM268	Brushed Nickel replacement grille for KSM8 wired and wireless.

Polar Pattern



Frequency Response



SHURE®

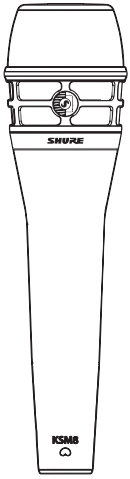
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User Guide
Le Guide de l'Utilisateur
Bedienungsanleitung
Guida dell'Utente
Instrucciones de Uso
Manual do Usuário
Руководство пользователя
取扱説明書
사용자 안내서
用户指南

KSM8



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27A23175 (Rev. 2)
Printed in U.S.A.

Specifications

Type
Dual Diaphragm Dynamic (moving coil)

Frequency Response
40 to 16,000 Hz

Polar Pattern
Cardioid

Output Impedance
300 Ω

Sensitivity
at 1 kHz, open circuit voltage
-51.5 dBV/Pa[1] (1.85 mV)

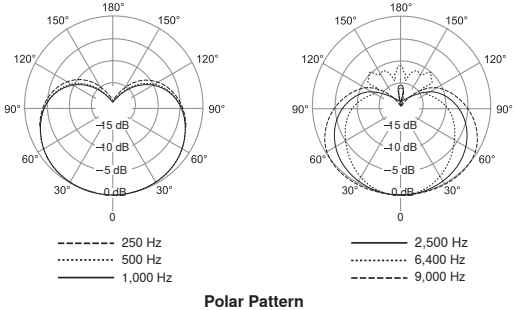
Polarity
Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

Net Weight
330 g (11.64oz.)

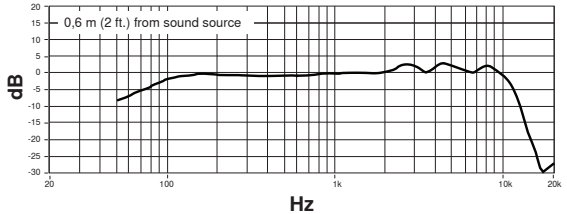
Connector
Three-pin professional audio (XLR), male

Housing
Die-cast Aluminum with Paint or Brushed Nickel Finish

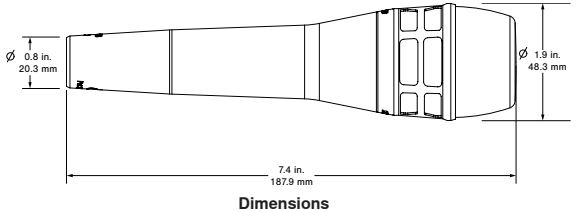
[1] 1 Pa=94 dB SPL



Polar Pattern



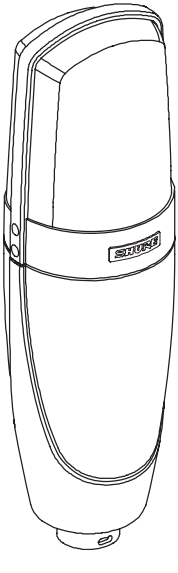
Frequency Response



Dimensions

User Guide
Le Guide de l'Utilisateur
Bedienungsanleitung
Guía del Usuario
Guida dell'Utente
ユーザーガイド

KSM32



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27C3044 (Rev. 6)

Printed in U.S.A.

SHURE INCORPORATED

KSM32 CARDIOID CONDENSER MICROPHONE



Thank you for selecting the KSM32.

Over 75 years of audio experience has contributed to making the KSM32 one of the finest microphones available.

If you have any questions that are not answered in this booklet, please contact Shure Applications Engineering at 847-600-8440, Monday through Friday, from 8:00 am to 4:30 pm, CST. In Europe, call 49-7131-7214-0. Our web address is www.shure.com.

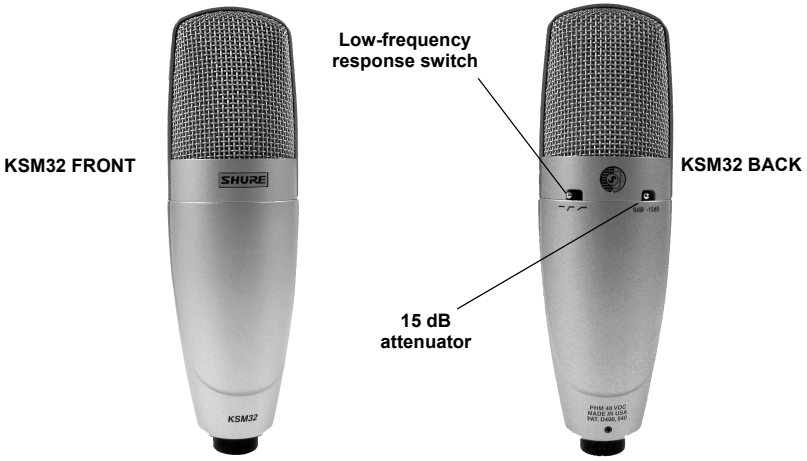


FIGURE 1. KSM32 Front and Back

GENERAL DESCRIPTION

The Shure® KSM32 is a side-address condenser microphone with a cardioid polar pattern. Designed for studio use but rugged enough for live applications, the KSM32 has a permanently-biased 3/4-inch diaphragm, extremely low self-noise, and an extended frequency response specially tailored for vocal tracking and instrument recording.

FEATURES

- *Class A, transformerless preamplifier circuitry eliminates cross-over distortion for improved linearity across the full frequency range*
- *Embossed, high-compliance diaphragm provides extended low frequency response*
- *Ultra-thin, 2.5 µm, gold-layered, low mass, Mylar® diaphragm for excellent transient response*
- *15 dB attenuation switch for handling extremely high sound pressure levels (SPL)*
- *Switchable low-frequency filter provides greater flexibility to reduce background noise or to counteract proximity effect*
- *Integrated three-stage pop protection grille reduces "pop" and other breath noise*
- *Internal shock mount reduces transmission of handling noise*

PERFORMANCE CHARACTERISTICS

- *Extended frequency response*
- *Very low self noise*
- *Exceptional low-frequency reproduction*
- *High output level*
- *High input SPL capability*
- *No crossover distortion*
- *Extremely uniform polar response*
- *Superior common mode rejection and suppression of radio frequency interference*

MODEL VARIATIONS

The **KSM32/SL** has a champagne-colored finish and comes with the following accessories:

- *Locking aluminum carrying case*
- *ShureLock™ elastic-suspension shock mount*
- *ShureLock™ swivel mount*
- *Protective velveteen pouch*

The **KSM32/CG** has a non-reflective, charcoal-gray finish for situations where less microphone visibility is preferred, such as live sound and stage production. It comes with the following accessories:

- *ShureLock™ Swivel mount*
- *Padded, zippered carrying bag*

APPLICATIONS

Some typical applications for the KSM32 are listed below. Microphone use, however, is largely a matter of personal taste. The KSM32 may be used for a variety of applications other than those listed.

- *Voice and vocals*
- *Close-miking of acoustic instruments such as piano, guitar, violins, drums, and percussion*
- *Brass and woodwind instruments*
- *Low-frequency instruments such as double bass and kick drum*
- *Overhead miking for drums or percussion*
- *Orchestras, choirs, wind ensembles*
- *Room ambience pick-up (guitar amplifier or drums)*

NOTE: Sound quality is strongly affected by microphone location and room acoustics. To achieve the best overall sound for a particular application, it may be necessary to experiment with microphone placement and various room treatments.

OPERATION

Mounting

The ShureLock swivel mount and elastic shock mount provide a secure means of fastening the microphone to a floor or boom stand. When using the swivel mount, the internal shock mount provides good isolation. For greater reduction of noise from external vibrations, use the elastic shock mount.

It is important when mounting the microphone that the threaded, knurled locking grip on the shock mount or swivel mount is screwed securely onto the threads at the base of the microphone. Do not overtighten.

Power

The KSM32 requires phantom power and performs optimally with a 48 Vdc supply (IEC-268-15/DIN 45 596). However, it will operate with slightly decreased headroom and sensitivity with supplies as low as 11 Vdc. Most modern mixers provide phantom power. Phantom power can only be transmitted to the KSM32 through a cable terminated with XLR connectors at each end.

Positioning the Microphone

The front of the KSM32 is marked by the SHURE logo. See Figure 1. Position this side of the microphone toward the sound source. The rear of the microphone is marked by the logo, the low-frequency filter switch, and the 15 dB attenuation switch.

Selecting Low-Frequency Response

A three-position switch on the back of the KSM32 allows you to adjust the low-frequency response of the microphone. The low-frequency filter settings can be used to reduce wind noise, room noise or proximity effect. See Figure 2.

Flat response. Provides the most natural sound in most applications.

Low-frequency cutoff. Provides a 15 dB-per-octave cutoff at 80 Hz. Helps eliminate floor rumble and low-frequency room noise from heating and air conditioning systems. This setting may also be used to compensate for proximity effect or to reduce low frequencies that make an instrument sound dull or muddy.

Low-Frequency Rolloff. Provides a 6 dB-per-octave rolloff filter at 115 Hz. Use this to compensate for proximity effect or to reduce low frequencies that could make an instrument sound dull or muddy.

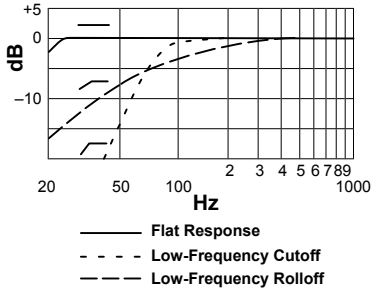


FIGURE 2

LOW FREQUENCY RESPONSES

Setting Attenuation

The attenuation switch on the back of the KSM32 reduces the signal level from the cartridge by 15 dB without altering the frequency response. This can prevent extremely high SPLs (ie. close miked drums and guitar cabinets) from overloading the microphone. To activate attenuation, move the switch to the "-15 dB" position.

0 dB - Use this switch for "quiet" to "normal" sound levels.

-**15 dB** - Use this switch position when in close proximity with extremely loud sound sources such as kick drum, snare drum, or loud guitar cabinets.

In situations where the high output capability of the KSM32 might overload the microphone preamplifier of a console or mixer, use an attenuation switch (pad) in the mixer or an external inline attenuator such as the Shure A15AS.

Integral Pop Filter

The KSM32 grille consists of 3 separate mesh layers that act as an integral pop filter which helps reduce wind and breath noise. Depending on the performer, an external pop-protection screen or windscreen (See Figure 3) may be necessary when close-miking vocalists.



FIGURE 3. PS-6 POPPER STOPPER™ POP FILTER

Load Impedance

Shure recommends a load impedance of at least 1000 Ω. When used with modern microphone preamplifiers (rated at 2500 Ω), the KSM32 provides higher maximum SPL capability and output clipping level. When the attenuation switch is set to the -15 dB position, the KSM32 can handle sound pressure levels of up to 160 dB and output +15 dBV into a load of 5500 Ω or greater, with microphone attenuation.

SM81

Instrument Microphone

The Shure high-quality, unidirectional condenser microphone, SM81, user guide.

Version: 3.1 (2022-E)

Table of Contents

SM81 Instrument Microphone **3**

General Description **3**

Power Requirements **3**

Selecting Low-Frequency Response **3**

Setting Attenuation **3**

Proximity Effect **4**

Specifications **4**

Accessories **7**

Furnished Accessories 7

Optional Accessories 7

Replacement Parts 7

Certifications **7**

SM81
Instrument Microphone

General Description

The Shure Model SM81 is a high-quality, unidirectional condenser microphone designed for studio recording, broadcasting, and sound reinforcement. Its wide frequency response, low noise characteristics, and low RF susceptibility have made it a standard for applications involving acoustic instruments, especially guitar, piano, and cymbals. The SM81 is ruggedly constructed. It operates on phantom power and performs over a wide range of temperatures and humidity conditions. It is furnished with a swivel adapter, attenuator-switch lock, foam windscreen, and case for carrying and storage. Other accessories are available.

Power Requirements

This microphone requires phantom power and performs best with a 48 Vdc supply (IEC-61938). However, it will operate with slightly decreased headroom and sensitivity with supplies as low as 11 Vdc.

Most modern mixers provide phantom power. You must use a **balanced** microphone cable: XLR-to-XLR.

Selecting Low-Frequency Response

A three-position switch allows you to adjust the low-frequency response of the microphone. Use these settings to reduce wind noise, room noise or proximity effect.

Flat response provides the most natural sound in most applications.



Low-frequency cutoff attenuates 18 dB-per-octave below 80 Hz. Helps eliminate floor rumble and low-frequency room noise from heating and air conditioning systems. This setting may also be used to compensate for proximity effect or to reduce low frequencies that make an instrument sound dull or muddy.



Low-frequency rolloff attenuates 6 dB-per-octave below 100 Hz. Compensates for proximity effect or to reduce low frequencies that could make an instrument sound dull or muddy.

Setting Attenuation

The attenuation switch reduces the signal level from the cartridge by 10 dB without altering the frequency response. This can prevent extremely high SPLs (e.g., close-miked drums and guitar cabinets) from overloading the microphone. To activate attenuation, rotate the switch to the “–10 dB” position.

NOTE: Turning the ring part way does not produce incremental levels of attenuation.

The attenuation switch may be locked in place. Use the following steps:

1. Unscrew the grille and cartridge assembly.

2. Rotate the attenuation switch to the desired position (0 or –10).

3. Insert the ring lock (small, clear piece of plastic) in the area behind the ring between the pin and slot.

4. Replace the grille and cartridge assembly.

Proximity Effect

Unidirectional (cardioid) microphones progressively boost bass frequencies by 6 to 10 dB below 100 Hz when the microphone is at a distance of about 6 mm (1/4 in.) from the sound source. This phenomenon, known as proximity effect, can be used to create a warmer, more powerful sound. To prevent explosive low frequency sound during close-up use, the bass response gradually rolls off. This provides greater control and helps the user take advantage of proximity effect.

Specifications

Type

Electret Condenser

Frequency Response

20 to 20,000 Hz

Polar Pattern

Cardioid

Output Impedance

EIA rated at 150 Ω (85 Ω actual)

Sensitivity

at 1 kHz, open circuit voltage

-45 dBV/Pa[1] (5.6 mV)

Maximum SPL

1 kHz at 1% THD, 1 kΩ load

136 dB SPL

Signal-To-Noise Ratio

Ref. 94 dB SPL at 1 kHz

78 dB[2]

Clipping Level

1 kHz at 0.25% THD, 1 kΩ load

-4 dBV (0.63 V)

Hum Pickup

typical, at 60 Hz, equivalent SPL/mOe

-3 dB

Polarity

Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

Weight

Net	0.230 kg (0.5 lbs)
Packaged	0.740 kg (1.625 lbs)

Attenuator Switch

0 or −10 dB, lockable

Connector

Three-pin professional audio (XLR), male

Housing

Steel construction with vinyl metallic paint finish and stainless steel screens

Environmental Conditions

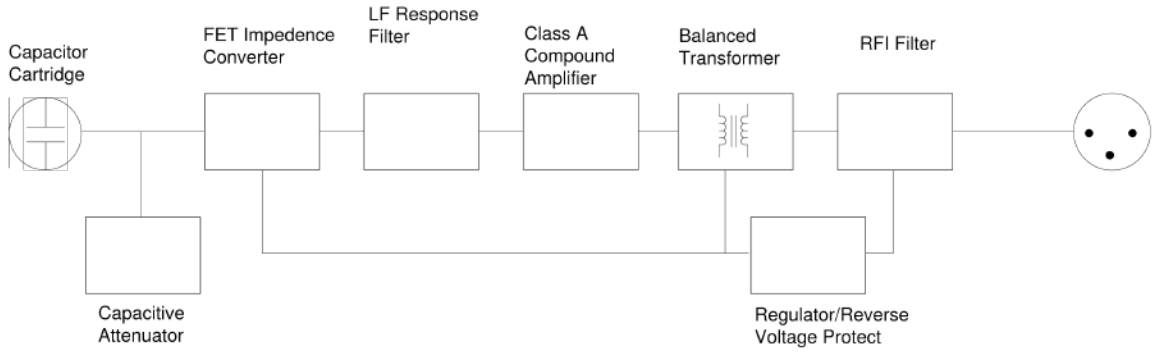
Operating Temperature	-6.7° to 49° C (20° to 120° F)
Storage Temperature	-29° to 74° C (-20° to 165° F)
Relative Humidity	0 to 95%

Power Requirements

11 to 52 V DC phantom power (1.2 mA)

[1] 1 Pa=94 dB SPL

[2] S/N ratio is difference between 94 dB SPL and equivalent SPL of self noise, A-weighted



Block Diagram

SHURE®

LEGENDARY
PERFORMANCE™

BETA 98H/C

Cardioid Condenser Microphone

Microphone électrostatique cardioïde

Micrófono de condensador de cardioide

Nieren-Kondensatormikrofon

Microfono cardioide a condensatore

カーディオイドコンデンサー型マイクロホン

Кардиоидный конденсаторный микрофон

단일지향성 콘덴서 마이크

心形电容话筒



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27A14090 (Rev. 2)

Printed in U.S.A.

BETA 98H/C

Cardioid Condenser Microphone

General Description

The Beta 98H/C miniature cardioid condenser microphone clamps onto the bell of wind instruments or onto the rim of percussion instruments. The integrated gooseneck and ratcheting swivel joint allows the mic to be easily positioned and secured, and an isolation shockmount reduces the transmission of instrument vibrations. A gooseneck angle brace is included to provide better retention of the desired microphone placement.

Featuring a highly consistent cardioid polar pattern, the Beta 98H/C provides high gain before feedback and smooth off-axis rejection. It's ability to handle extremely high sound presure levels (SPL) makes it ideal for live sound reinforcement on a variety of instruments.

Features

- Premier live performance microphone with Shure quality, ruggedness, and reliability
- Uniform cardioid pick-up pattern for maximum gain before feedback and excellent rejection of off-axis sound
- Tailored frequency response specifically shaped for open, natural sound reproduction
- Wide dynamic range for use in high sound pressure level SPL environments
- Adjustable gooseneck, angle brace and ratcheting swivel joint allow for optimal microphone positioning
- Compact, lightweight construction provide a low degree of visibility
- Interchangeable microphone cartridges with different polar patterns are available
- Snap-fit foam windscreens stay in place, minimizing wind noise

Power Requirements

This microphone requires phantom power and performs best with a 48 Vdc supply (IEC-61938). However, it will operate with slightly decreased headroom and sensitivity with supplies as low as 11 Vdc.

Most modern mixers provide phantom power. You must use a **balanced** microphone cable: XLR-to-XLR or XLR-to-TRS.

Applications And Placement

The following table lists the most common applications and placement techniques. Keep in mind that microphone technique is largely a matter of personal taste; there is no one "correct" microphone position.

APPLICATION	SUGGESTED MICROPHONE PLACEMENT	TONE QUALITY
Reed Instruments	Place microphone a few inches from and aiming into bell.	Bright, minimizes feedback and leakage.
Brass & Woodwinds	Brass: 30 to 90 cm (1 to 3 ft.) away, on-axis with bell of instrument.	Bright, clear sound.
	Woodwinds: 2.5 to 15 cm (1 to 6 in.) away, on-axis with bell of instrument.	Bright, clear sound.
	Bell of instrument 90° off-axis from front of mic.	Softer, mellow sound.



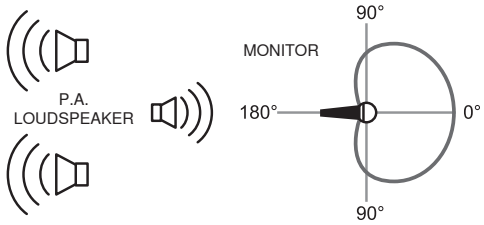


General Rules for Use

- Do not cover any part of the microphone grille with your hand, as this will adversely affect microphone performance.
- Aim the microphone toward the desired sound source (such as the talker, singer, or instrument) and away from unwanted sources.
- Place the microphone as close as practical to the desired sound source.
- Work close to the microphone for extra bass response.
- For better gain before feedback, use fewer microphones.
- Keep the distance between microphones at least three times the distance from each microphone to its source ("three to one rule").
- Place microphones as far as possible from reflective surfaces.
- Add a windscreen when using the microphone outdoors.
- Avoid excessive handling to minimize pickup of mechanical noise and vibration.

Avoiding Pickup of Unwanted Sound Sources

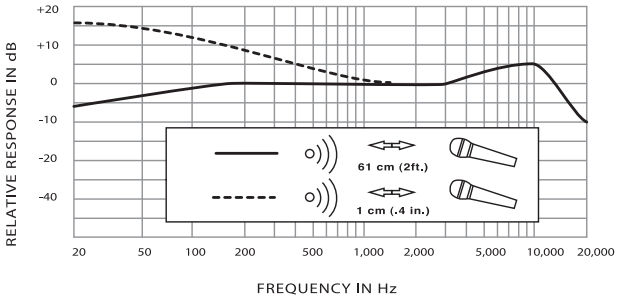
A cardioid microphone has the greatest sound rejection at the rear of the microphone. Place the microphone so that unwanted sound sources, such as monitors and loudspeakers, are directly behind it. To minimize feedback and ensure optimum rejection of unwanted sound, always test microphone placement before a performance.



RECOMMENDED LOUDSPEAKER LOCATIONS FOR CARDIOID MICROPHONES

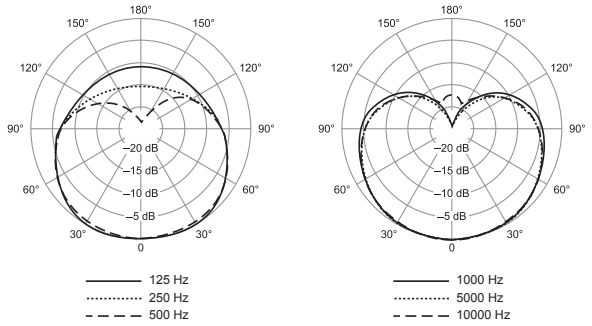
Proximity Effect

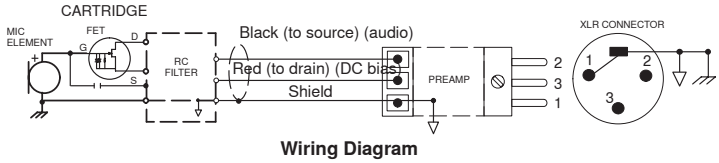
Directional microphones progressively boost bass frequencies as the microphone is placed in closer proximity to the source. This phenomenon, known as proximity effect, can be used to create a warmer, more powerful sound.



SPECIFICATIONS

Type	Electret Condenser
Frequency Response	20 to 20,000 Hz
Polar Pattern	Cardioid
Output Impedance	150 Ω
Sensitivity (at 1 kHz, open circuit voltage)	–56 dBV/Pa (1.6 mV) 1 Pascal=94 dB SPL
Maximum SPL (1 kHz at 1% THD, 1kΩ load)	155 dB SPL (typical)
Equivalent Output Noise (A-weighted)	31 dB SPL (typical)
Signal-to-Noise Ratio (referenced at 94 dB SPL at 1 kHz)	63 dB S/N ratio is difference between 94 dB SPL and equivalent SPL of self noise, A-weighted
Dynamic Range (at 1 kHz, 1 kΩ load)	124 dB 132 dB
Preamplifier Output Clipping Level (1% THD)	3 dBV (1.4 V)
Polarity	Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3
Power Requirements	11 to 52 Vdc phantom





Wiring Diagram

Accessories and Parts

Furnished Accessories

Zippered Carrying Bag	95A2398
In-Line Preamplifier (1 piece)	RPM626

Optional Accessories

Supercardioid cartridge	RPM110
Metal Locking Windscreen	A412MWS

Replacement Parts

Snap-Fit Windscreen (4 per package)	RK183WS
Cardioid cartridge	RPM108
Clamp Assembly (A98D)	RPM618

CERTIFICATION

Eligible to bear CE Marking. Conforms to European EMC Directive 2004/108/EC. Meets Harmonized Standards EN55103-1:1996 and EN55103-2:1996, for residential (E1) and light industrial (E2) environments.

The Declaration of Conformity can be obtained from:

Authorized European representative:
Shure Europe GmbH
Headquarters Europe, Middle East & Africa
Department: EMEA Approval
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75031 Eppingen, Germany
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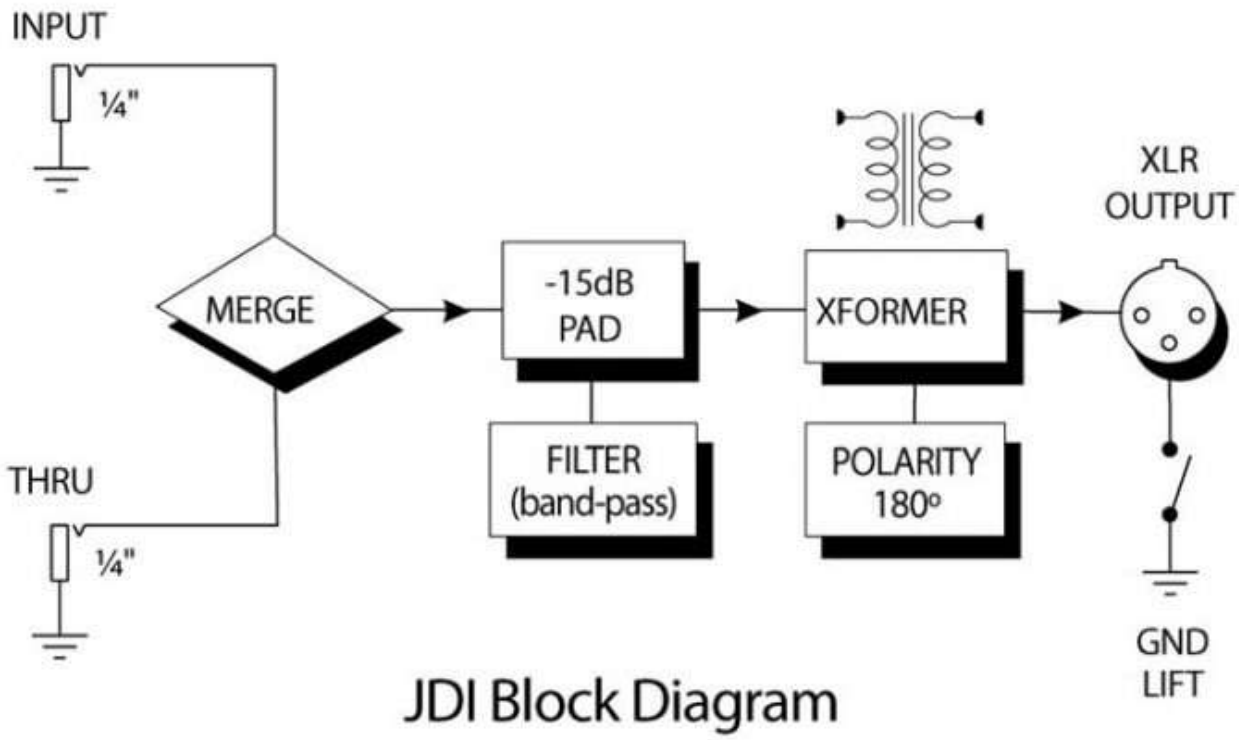
JDI

Introducción

Especificaciones JDI

El Radial JDI es una caja directa pasiva de fase coherente que emplea un transformador de audio Jensen® laminado en níquel con distorsión de fase prácticamente nula, gran manejo de dinámica y respuesta plana de regla de 10 Hz a 40 kHz. Radial JDI es simplemente la mejor caja directa pasiva del mundo. Con su carcasa de acero resistente y su construcción interna de vigas en I, el JDI está diseñado para funcionar de manera confiable durante años incluso en los entornos de gira más duros. Ideal para teclados, bajos e instrumentos acústicos de todo tipo, el JDI Duplex y el JD6 también están disponibles para aplicaciones estéreo y multicanal.

Especificaciones **Diagrama de bloques** **gráficos**



JDI Block Diagram

Recursos JDI

Número de pieza: R800 1010 00

Hoja inteligente

Fotos

Compañía

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Carreras
Historia
Relaciones con artistas
Lista de clientes

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JDI

Introducción

Características JDI







JDI

Introducción



4

A través de

El conector pasante de 1/4" pasa la señal del instrumento al amplificador de escenario. Se convierte en una entrada cuando se activa la función "Fusionar".

Recursos JDI

Número de pieza: R800 1010 00

Hoja inteligente
Fotos

JDI

Introducción

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JDI

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Especificaciones **Diagrama de bloques** **gráficos**

Especificaciones

Tipo de circuito de audio:	Pasivo, basado en transformador
Transformador:	JT-DB-EPC
Número de canales:	Canal único (mono)
Respuesta frecuente:	20 Hz ~ 20 KHz (± 0,2 dB)
Gama dinámica:	135dB
Distorsión armónica total:	0.05% de 20Hz ~ 20kHz @-10dB
Desviación de fase:	0,3° a 100 Hz; 3° a 20 Hz
Impedancia de entrada:	140 k ohmios, desequilibrado
Impedancia de salida:	150 ohmios, balanceado

Especificaciones

Entrada máxima:	+21dB @ 20Hz ~ 20kHz

Características

Pad de entrada, Mono Sum, inversión de polaridad de 180°, elevación a tierra, filtro de altavoz

General

Construcción:	Chasis de acero calibre 14 y carcasa exterior
Finalizar:	Recubrimiento en polvo duradero
Tamaño (largo x ancho x profundidad):	5" x 3,3" x 1,8" (127 mm x 84,1 mm x 45,5 mm)
Peso:	1,55 libras (703 gramos)
Tamaño de envío (largo x ancho x profundidad):	6,5" x 4" x 3" (165 mm x 102 mm x 76 mm)
Peso de envío:	1,92 libras (870,9 gramos)
Fuerza:	Pasivo, no requiere energía
Condiciones:	Para uso en lugares secos solo entre 5°C y 40°C
Garantía:	Radial 3 años, transferible

Recursos JDI

Número de pieza: R800 1010 00

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Radial™ Smart Sheet

JDI™ PASSIVE DIRECT BOX

JDI Order No. R800 1010 00



The Radial JDI™ is the world's finest passive direct box. It features a premium Jensen transformer to isolate the signal and reject noise while at the same time boasting an extremely wide frequency response and virtually zero distortion of all types.

The heart of any passive DI is the audio transformer, which determines the frequency response and distortion characteristics of the direct box, and imparts character on the signal when saturated. The JDI employs a Jensen JT-DB-EPC audio transformer to produce a ruler-flat frequency response from 10Hz up to 40kHz, while minimizing phase and harmonic distortion and isolating the signal to prevent hum and buzz from ground loops. When connected to high-output sources such as active basses or electronic instruments, the JDI transformer saturates instead of clipping, producing a warm sounding bessel curve that emulates some of the most sought-after vintage equipment.

Built with 14 gauge steel to handle the harshest touring environment, the JDI is the perfect choice when signal quality is critical, delivering only the natural, pure sound of your instrument on a live stage or in the recording studio.

Features

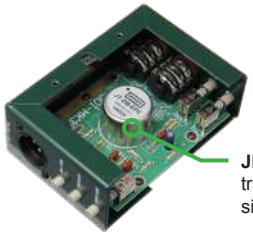
- *Jensen transformer equipped passive DI*
- *Eliminates hum and buzz from ground loops*
- *Virtually zero phase & harmonic distortion*
- *Extraordinary signal handling and noise rejection*

Applications

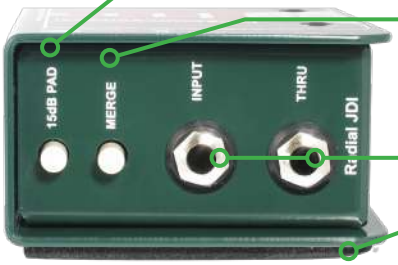
- *Great with high-output electronic instruments*
- *Ideal for acoustic guitars & active basses*
- *Merge stereo keyboards to mono*
- *Perfect for live performance & studio recording*

Cool Stuff

- *Build tough to survive the road*
- *Passive operation, no power required*
- *Impossible to overload*
- *3 year transferable warranty*



JENSEN EQUIPPED nickel core transformer provides distortion-free signal transfer and 100% isolation.



-15dB PAD reduces input sensitivity for active high-output instruments.

MERGE FUNCTION turns the input and thru jacks into a passive mixer to sum stereo signals to mono and save valuable inputs on the mixer.

INPUT connects to the instrument, **THRU** feeds the amplifier.

FULL BOTTOM PAD improves electrical isolation and keeps the JDI from moving around on busy stages.



XLR balanced, mic-level output used to feed a mixer or a mic preamp.

BOOK-END DESIGN creates a protective zone around the jacks and switches.

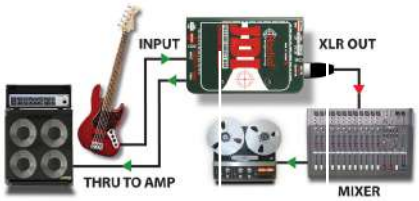
PARALLEL SPEAKER interface option introduces a second -30dB pad with band-pass filter to emulate a 12" guitar speaker.

GROUND LIFT disconnects pin-1 at the XLR output to help eliminate hum and buzz from ground loops.

POLARITY reverses pins 2 and 3 at the XLR output.

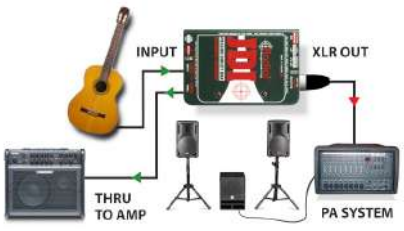
Using the JDI with Electric Bass

The JDI is often selected for high output bass guitars, as it is able to handle huge signal levels without distortion or signal degradation. On stage it sends the pure sound of the bass to the PA with minimal loading. In the studio, it is perfect for recording direct.



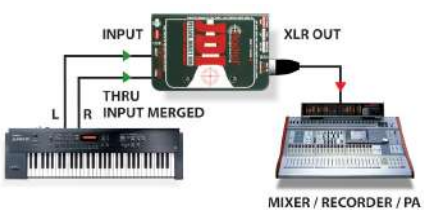
Using the JDI with Acoustic Guitar

Most acoustic guitars have built-in preamps that can produce harsh-sounding peaks. The JDI naturally smoothes out these transients for a warmer tone, and because the JDI is able to handle hot output levels it will not distort.



Using the JDI with Keyboards

Today's digital keyboards are not only very dynamic, they also have a tremendously wide frequency response. The JDI is able to withstand excessive signal levels at all frequencies without introducing distortion or phase shift.



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Estéreo JDI

BUY NOW

Especificaciones estéreo JDI

El Radial JDI Stereo es una caja directa pasiva de dos canales que está equipada con dos transformadores de audio Jensen. Estos asombrosos dispositivos no solo equilibran la señal, sino que también reducen la impedancia para permitir largos recorridos de cable sin ruido. Cada transformador presenta una pila de núcleo de níquel única, una técnica de bobinado patentada, dos escudos de Faraday para eliminar el ruido de alta frecuencia y una lata protectora exterior MuMETAL® para proteger contra campos externos. Esto da como resultado una distorsión excepcionalmente baja de todos los tipos al tiempo que puede manejar transitorios extremos en todas las frecuencias. Con su carcasa de acero resistente y su construcción interna de vigas en I, el estéreo JDI está diseñado para funcionar de manera confiable durante años, incluso en los entornos de gira más duros. El JDI Stereo es simplemente la mejor caja directa estéreo pasiva del mundo.

Especificaciones **Diagrama de bloques** **gráficos**

Especificaciones

Tipo de circuito de audio:	Pasivo, basado en transformador
Transformador:	Jensen JT-DBE
Número de canales:	Dos canales (doble mono)
Respuesta frecuente:	20 Hz ~ 20 KHz (± 0,2 dB)
Gama dinámica:	135dB
Distorsión armónica total:	0.05% de 20Hz ~ 20kHz @-10dB
Desviación de fase:	0,3° a 100 Hz; 3° a 20 Hz

Especificaciones

Impedancia de entrada:	140 k ohmios, desequilibrado
Impedancia de salida:	150 ohmios, balanceado
Entrada máxima:	+21dB @ 20Hz ~ 20kHz

Características

Almohadilla de entrada, elevación de tierra	
Conectores de entrada:	Desequilibrado 1/4"
Conectores de salida:	Salida XLR, 1/4" a través

General

Construcción:	Chasis de acero calibre 14 y carcasa exterior
Tamaño (largo x ancho x profundidad):	5" x 3,3" x 1,8" (127 mm x 84,1 mm x 45,5 mm)
Peso:	1,55 libras (703 gramos)
Tamaño de envío (largo x ancho x profundidad):	6,5" x 4" x 3" (165 mm x 102 mm x 76 mm)
Peso de envío:	1,92 libras (870,9 gramos)
Fuerza:	Pasivo, no requiere energía
Condiciones:	Para uso en lugares secos solo entre 5°C y 40°C
Garantía:	Radial 3 años, transferible

Recursos estéreo JDI

Número de pieza: R800 1012 00

Hoja inteligente
Fotos

Compañía

Contacto
Carreras
Historia
Relaciones con artistas
Lista de clientes

Apoyo

Apoyo técnico
Preguntas sobre productos
Garantía radial

enlaces rápidos

¿Qué es un DI?
Comparación de DI
Preguntas DI

familia radial

Primacústica
Transformadores Jensen

Mantente en contacto

email@ejemplo.com ENTREGAR

política de privacidad

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Especificaciones JDI dúplex

Radial JDI Duplex es una caja directa de doble canal de alto rendimiento que está diseñada para proporcionar la máxima flexibilidad para el ingeniero de audio en las aplicaciones más exigentes. Cuenta con dos transformadores laminados de níquel hechos a medida para una transferencia de señal óptima con una distorsión mínima absoluta de todo tipo. El análisis revela una respuesta excepcionalmente lineal de 10 Hz a 40 kHz con un cambio de fase prácticamente nulo en todas las frecuencias críticas. El excelente rendimiento se confirma aún más con una transformada rápida de Fourier que produce una generación de armónicos de orden uniforme deseable y una curva de Bessel cálida cuando se presiona con fuerza. Con su carcasa de acero resistente y su construcción interna de vigas en I, el Duplex está diseñado para funcionar de manera confiable durante años en los entornos de gira más duros.



Informe verde

Radial Green Report es un informe comparativo que analiza cuatro cajas directas populares en giras profesionales, estudios y transmisiones.

Ver PDF

Especificaciones **Diagrama de bloques** **gráficos**

Especificaciones

Tipo de circuito de audio:	Pasivo, basado en transformador
Transformador:	Jensen JT-DBE
Número de canales:	2
Respuesta frecuente:	20 Hz ~ 20 kHz a +/- 0,2 dB
Gama dinámica:	135dB
Distorsión armónica total:	0,001%; 1kHz/+4dBu; carga de 600 ohmios
Desviación de fase:	-1° a 20 Hz; 0,5° a 150 Hz; carga de 600 ohmios
Impedancia de entrada:	PAD de 140k ohmios apagado; PAD de 10k ohmios encendido
Impedancia de salida:	600 ohmios
Entrada máxima:	+20dB @ 1kHz

Características

Pad de entrada, suma mono, inversión de polaridad de 180°, levantamiento de tierra	
Conectores de entrada:	1/4", RCA, 3,5 mm, XLR
Conectores de salida:	XLR, 1/4" a través
Extras:	Entrada de nivel de línea o hi-Z

General

Construcción:	Chasis de acero calibre 14 y carcasa exterior
Tamaño (largo x ancho x profundidad):	160 mm x 48 x 127 mm (6,3" x 1,9" x 5")
Peso:	1 kg (2,2 libras)
Tamaño de envío (largo x ancho x profundidad):	210 x 159 x 83 mm (8,25" x 6,25" x 3,25")
Peso de envío:	1,43 kg (3,15 libras)
Fuerza:	Pasivo, no requiere energía

Especificaciones

Condiciones:	Para uso en lugares secos solo entre 5°C y 40°C
Garantía:	Radial 3 años, transferible

Recursos dúplex JDI

Número de pieza: R800 1020 00

Hoja inteligente
Fotos

enlaces rápidos

¿Qué es un DI?
Comparación de DI
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familia radial

Primacústica
Transformadores Jensen

Mantente en contacto

email@ejemplo.com ENTRE GAR

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NEW

PRO CABLES
PROFESSIONAL BALANCED CABLES "GOLD SERIES"



DHG140

Balanced cable

Ø 6.3 mm STEREO JACK PLUG – Ø 6.3 mm STEREO JACK PLUG

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH
2° schermo: a treccia di rame stagnato
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high grade PVC
2nd shield: dense braided tinned copper wire

CODE	Length
DHG140LU1	1 mt (3,28 ft)
DHG140LU2	2 mt (6,56 ft)
DHG140LU3	3 mt (9,84 ft)
DHG140LU5	5 mt (16,40 ft)



DHG210

Balanced cable

Ø 6.3 mm STEREO JACK PLUG – 3P FEMALE XLR

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH
2° schermo: a treccia di rame stagnato
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high grade PVC
2nd shield: dense braided tinned copper wire

CODE	Length
DHG210LU1	1 mt (3,28 ft)
DHG210LU2	2 mt (6,56 ft)
DHG210LU3	3 mt (9,84 ft)
DHG210LU5	5 mt (16,40 ft)



DHG230

Balanced cable

Ø 6.3 mm STEREO JACK PLUG – 3P MALE XLR

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH
2° schermo: a treccia di rame stagnato
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high grade PVC
2nd shield: dense braided tinned copper wire

CODE	Length
DHG230LU05	0,5 mt (1,64 ft)
DHG230LU1	1 mt (3,28 ft)
DHG230LU2	2 mt (6,56 ft)
DHG230LU3	3 mt (9,84 ft)
DHG230LU5	5 mt (16,40 ft)
DHG230LU10	10 mt (32,81 ft)



DHG240

Balanced cable

3P FEMALE XLR – 3P MALE XLR

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH
2° schermo: a treccia di rame stagnato
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high grade PVC
2nd shield: dense braided tinned copper wire

CODE	Length
DHG240LU05	0,5 mt (1,64 ft)
DHG240LU1	1 mt (3,28 ft)
DHG240LU2	2 mt (6,56 ft)
DHG240LU3	3 mt (9,84 ft)
DHG240LU5	5 mt (16,40 ft)
DHG240LU6	6 mt (19,69 ft)
DHG240LU10	10 mt (32,81 ft)

PRO CABLES
PROFESSIONAL BALANCED CABLES *"BULK" Series*

BULK140

• Cavo professionale bilanciato con connessioni spina jack Stereo Ø 6.3 mm PROEL - spina jack Stereo Ø 6.3 mm PROEL/S5CPRO - HPC225 - S5CPRO. Colore disponibile: BK.
• *New professional assembled balanced cable with PROEL Ø 6.3 mm Stereo jack plug, metal housing connections/ S4CPRO - HPC225 - S4CPRO. Available in Black.*



HPC225 BK



CODE	Length
BULK140LU1	1 mt (3.28 ft)
BULK140LU2	2 mt (6.56 ft)
BULK140LU3	3 mt (9.84 ft)

BULK210

• Cavo professionale bilanciato con connessioni spina jack Stereo Ø 6.3 mm PROEL - presa volante XLR 3P PROEL/ S5CPRO - HPC225 - XLR3FVPRO. Colore disponibile: BK.
• *New professional assembled balanced cable with PROEL Ø 6.3 mm Stereo jack plug, metal housing - PROEL XLR 3P female cable mount, metal housing and backshell connections/S3CPRO - HPC225 - XLR3FVPRO. Available in Black.*



HPC225 BK



CODE	Length
BULK210LU05	0.5 mt (1.64 ft)
BULK210LU1	1 mt (3.28 ft)
BULK210LU2	2 mt (6.56 ft)
BULK210LU3	3 mt (9.84 ft)
BULK210LU5	5 mt (16.40 ft)

BULK230

• Cavo professionale bilanciato con connessioni jack Stereo Ø 6.3 mm PROEL - spina volante XLR 3P PROEL/S5CPRO - HPC225 - XLR3MVPRO. Colore disponibile: BK.
• *New professional assembled balanced cable with PROEL Ø 6.3 mm Stereo jack plug, metal housing - PROEL XLR 3P male cable mount, metal housing and backshell connections/S3CPRO - HPC225 - XLR3MVPRO. Available in Black.*



HPC225 BK



CODE	Length
BULK230LU05	0.5 mt (1.64 ft)
BULK230LU1	1 mt (3.28 ft)
BULK230LU2	2 mt (6.56 ft)
BULK230LU3	3 mt (9.84 ft)
BULK230LU5	5 mt (16.40 ft)
BULK230LU10	10 mt (32.81 ft)

BULK250

• Cavo professionale bilanciato con connessioni presa volante XLR 3P PROEL - spina volante XLR 3P PROEL/ XLR3FVPRO - HPC225 - XLR3MVPRO. Colore disponibile: BK.
• *New professional assembled balanced cable with PROEL XLR 3P male cable mount - PROEL XLR 3P female cable mount, metal housing and backshell connections/XLR3FVPRO - HPC225 - XLR3MVPRO. Available in Black.*



HPC225 BK



CODE	Length
BULK250LU05	0,5 mt (1.64 ft)
BULK250LU1	1 mt (3.28 ft)
BULK250LU2	2 mt (6.56 ft)
BULK250LU3	3 mt (9.84 ft)
BULK250LU5	5 mt (16.40 ft)
BULK250LU6	6 mt (19.69 ft)
BULK250LU10	10 mt (32.81 ft)
BULK250LU15	15 mt (49.21 ft)
BULK250LU20	20 mt (65.62 ft)

MIDI CABLES



BULK410

• Cavo professionale MIDI con connessioni 5P DIN stampate. Colore disponibile: BK.
• *New professional assembled MIDI cable with 5P DIN moulded connections. Available in Black.*

HPC410 BK



CODE	Length
BULK410LU15	1.5 mt (4.92 ft)
BULK410LU3	3 mt (9.84 ft)
BULK410LU5	5 mt (16.40 ft)

PRO CABLES
PROFESSIONAL AUDIO INTERCONNECTIONS *"BULK" Series*

BULK535

• Cavo "INSERT" con connessioni stampate PROEL spina jack Stereo Ø 6.3 mm - 2 x spina jack Mono Ø 6.3mm. Colore disponibile: BK.
• *Assembled "INSERT" cable with PROEL Ø 6.3 mm moulded Stereo jack plug - 2 x PROEL Ø 6.3 mm moulded Mono jack plug connections. Available in Black.*



CODE	Length
BULK535LU18	1.8 mt (5.91 ft)
BULK535LU3	3 mt (9.84 ft)

BK

BULK540

• Cavo adattatore "Y" con connessioni stampate PROEL spina jack Stereo Ø 3.5 mm - 2 x spina RCA. Colore disponibile: BK.
• *Assembled "Y" adapter cable with PROEL Ø 3.5 mm moulded Stereo jack plug - 2 x PROEL moulded RCA plug connections. Available in Black.*



CODE	Length
BULK540LU18	1.8 mt (5.91 ft)
BULK540LU3	3 mt (9.84 ft)

BK

BULK545

• Cavo audio "STEREO" con connessioni stampate PROEL 2 x spina RCA - 2 x spina RCA. Colore disponibile: BK.
• *Assembled "STEREO" cable with 2 x PROEL moulded RCA plug - 2 x PROEL moulded RCA plug connections. Available in Black.*



CODE	Length
BULK545LU18	1.8 mt (5.91 ft)
BULK545LU3	3 mt (9.84 ft)

BK

BULK550

• Cavo adattatore "Y" con connessioni stampate PROEL spina jack Stereo Ø 6.3 mm - 2 x spina RCA. Colore disponibile: BK.
• *Assembled "Y" adapter cable with PROEL Ø 6.3 mm moulded Stereo jack plug - 2 x PROEL moulded RCA plug connections. Available in Black.*



CODE	Length
BULK550LU18	1.8 mt (5.91 ft)
BULK550LU3	3 mt (9.84 ft)

BK

BULK555

• Cavo audio "SINGLE LINK" con connessioni stampate PROEL 2 x spina jack Mono Ø 6.3 mm - 2 x spina RCA. Colore disponibile: BK .
• *Assembled "SINGLE LINK" audio cable with 2 x PROEL moulded RCA plug - 2 x PROEL Ø 6.3 mm moulded Mono jack plug connections. Available in Black.*



CODE	Length
BULK555LU18	1.8 mt (5.91 ft)
BULK555LU3	3 mt (9.84 ft)

BK

BULK560

• Nuovo cavo audio "STEREO" con connessioni stampate PROEL 2 x jack spina Mono Ø 6.3 mm > 2 x jack spina Mono Ø 6.3 mm. Colore disponibile: BK.
• *Assembled "STEREO" audio cable with 2 x PROEL Ø 6.3 mm moulded Mono jack plug - 2 x PROEL Ø 6.3 mm moulded Mono jack plug connections. Available in Black.*



CODE	Length
BULK560LU18	1.8 mt (5.91 ft)
BULK560LU3	3 mt (9.84 ft)

BK

BULK565KIT

• Nuovo e pratico set di 6 cavi adattatori per le più comuni connessioni DJ. Tutti i cavi sono assemblati utilizzando connettori stampati PROEL. Colore disponibile: BK.
• *New and practical 6 professional assembled DJ cables set. All the cables are assembled with moulded PROEL connectors. Available in Black.*

DESCRIPTION	Length
3.5 mm Stereo male - 6.3 mm Mono female	0.30 mt (0.98 ft)
3.5mm Stereo male - 3.5mm Stereo female	0.60 mt (1.96 ft)
3.5mm Stereo male - 3.5mm Stereo male, 150cm	1.50 mt (4.92 ft)
3.5mm Stereo male - 2 x 3.5mm Stereo female, 30cm	0.30 mt (0.98 ft)
3.5mm Stereo male - 2 x RCA male, 150cm	1.50 mt (4.92 ft)
3.5mm Stereo male - 2 x 6.3mm Mono female, 60cm	0.60 mt (1.96 ft)

NEW



BK

CONNECTORS
MONO/STEREO JACK CABLE MOUNT PLUGS Ø 6.3 MM

NP2XAU
NP2RXAU

• Connettore jack Mono NEUTRIK per strumenti che rappresenta la soluzione perfetta per i cambi di strumenti come chitarre elettriche e può evitare i classici e noiosi rumori tipicamente associati all'inserimento e al disinserimento del cavo da uno strumento collegato all'amplificatore. Disponibile nella versione dritta (NP2XAU) e ad angolo (NP2RXAU).
• Neutrik, new Professional Ø 6.3 mm "SILENT" Mono jack plug, gold plated contacts, red rubber overlay, silent switch. Special version of 2 pole plug with integrated switch which automatically mutes (shorts) a guitar cable to avoid annoying pops and squeals when hot swapping guitars. Available models: straight (NP2XAU) and right angle (NP2RXAU).



NP2X
NP2XBAG

• Jack Mono professionale NEUTRIK Ø 6.3 mm - 1/4" dal minimo ingombro (Ø 14.5 mm). Contatto realizzato in un unico pezzo senza rivetti e con esclusivo sistema di ritenzione del cavo. Disponibile nella versione nickel (NP2X) e cromato nero con contatti argento (NP2XBAG).
• Neutrik, new Professional Ø 6.3 mm Mono jack plug, nickel contacts, extra slim design (shell with a width of 14.5 mm) for best handling convenience. Precision machined one-piece contacts, improved chuck type strain relief for reliable cable retention. Available with nickel shell (NP2X) and chrome black shell (NP2XBAG).



NP3X
NP3XBAG

• Jack Stereo professionale NEUTRIK Ø 6.3 mm. - 1/4" con le stesse caratteristiche dell'NP2X. Disponibile nella versione nickel (NP3X) e cromato nero con contatti argento (NP3XBAG).
• Neutrik, new Professional Ø 6.3 mm Stereo jack plug, nickel contacts, extra slim design (shell with a width of 14.5 mm) for best handling convenience. Same features as per NP2X. Available with nickel shell (NP3X) and chrome black shell (NP3XBAG).



NP2RX
NP2RXBAG

• Jack Mono professionale ad angolo NEUTRIK Ø 6.3 mm - 1/4" dal minimo ingombro (Ø 14.5 mm). Contatto realizzato in un unico pezzo senza rivetti e con esclusivo sistema di ritenzione del cavo. Disponibile nella versione nickel (NP2RX) e cromato nero con contatto argento (NP2RXBAG).
• Neutrik, new Professional Ø 6.3 mm Right angle Mono jack plug, nickel contacts, extra slim design (shell with a width of 14.5 mm) for best handling convenience. Precision machined one-piece contacts, improved chuck type strain relief for reliable cable retention. Available with nickel shell (NP2RX) and chrome black shell (NP2RXBAG).



NP2C

• Jack Mono professionale NEUTRIK Ø 6.3 mm - 1/4". Contatto realizzato in un unico pezzo senza rivetti e con esclusivo sistema di ritenzione del cavo. Disponibile nella versione nickel con contatti argento (NP2C).
• Neutrik Ø 6.3 mm - 1/4" professional mono jack male plug, all metal, no rivets and with the exclusive cable clamping system, 2 poles.



NP3C

• Jack Stereo professionale NEUTRIK Ø 6.3 mm. - 1/4" con le stesse caratteristiche dell'NP2C. Disponibile nella versione nickel con contatti argento. (NP3C).
• Neutrik Ø 6.3 mm - 1/4" professional stereo jack male plug, all metal, no rivets and with the exclusive cable clamping system, 3 poles.



NP3TT1

• Jack professionale "BANTAM" NEUTRIK Ø 4.4 mm, corpo in plastica, impugnatura ergonomica con contatti a saldare, 3 poli.
• Neutrik Ø 4.4 mm. "BANTAM" jack male plug, plastic shell, ergonomic handle with solder contacts, 3 poles.



NTP3RC

• Jack Stereo professionale NEUTRIK Ø 3.5 mm - 1/8" interamente in metallo, senza viti e con l'esclusivo serracavo, 3 poli.
• Neutrik, new Professional Ø 3.5 mm Right angle Stereo jack plug, solder termination, chuck type strain relief, bushing. Available with nickel housing and nickel contacts (NTP3RC)



BULK CABLES
HIGH-QUALITY BALANCED MICROPHONE INSTALLATION CABLES O.F.C.



HPC80

• Cavo coassiale bilanciato per installazione con guaina esterna schermata con nastro in alluminio - O.F.C. (Oxygen Free Copper) dal diametro ridotto - Sezione 2 x 0.22 mm².
• *Balanced coaxial installation cable (2 x 0,22 mm²) with small diameter aluminium foil shielded overall jacket - O.F.C. (Oxygen Free Copper).*

HPC80

Application fields	• Patch-bay connections • Multieffect connections • Rack system connections
Conductors	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)
Insulation	PE Ø 1.05 mm
Shield	Aluminium foil 100%
Jacket	Flexible PVC 80 shore Ø 4.00 mm
Drain wire	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)

Colour	Black
Electrical resistance	< 87 Ohm/Km (conductor) @ 20°C
Electrical capacitance	63 pF/m (conductor/conductor) @ 1 KHz 107 pF/m (conductor/shield) @ 1 KHz
Nominal Impedance	80 ± 3 Ohm
Attenuation	1 MHz = 2.10 dB/100 m 3 MHz = 3.60 dB/100 m 6 MHz = 5.00 dB/100 m 8 MHz = 5.80 dB/100 m 10 MHz = 6.50 dB/100 m

Velocity of Propagation	66%
Operating temperature	-20°C/+80°C
Working tension	< 50 V AC < 75 V DC
Weight	20 Kg/Km
Minimum bending radius	25 mm
Packaging	100 m carton reel 300 m carton reel HPC80R300 500 m wooden reel HPC80R500



HPC85

• Cavo coassiale bilanciato per installazione con guaina esterna schermata con nastro in alluminio e resistente alla fiamma - O.F.C. (Oxygen Free Copper) dal diametro ridotto - Sezione 2 x 0.22 mm².
• *Balanced coaxial installation cable (2 x 0,22 mm²) with small diameter aluminium foil shielded flame resistant overall jacket - O.F.C. (Oxygen Free Copper).*

HPC85

Application fields	• Patch-bay connections • Multieffect connections • Rack system connections
Conductors	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)
Insulation	XLPE Ø 1.10 mm
Shield	Aluminium foil 100%
Jacket	Flexible PVC 76 shore Ø 3.40 mm Complying with CEI 20-22 II regulations
Drain wire	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)

Colour	Black
Electrical resistance	< 87 Ohm/Km (conductor) @ 20°C
Electrical capacitance	63 pF/m (conductor/conductor) @ 1 KHz 107 pF/m (conductor/shield) @ 1 KHz
Nominal Impedance	80 ± 3 Ohm
Attenuation	1 MHz = 2.10 dB/100 m 3 MHz = 3.60 dB/100 m 6 MHz = 5.00 dB/100 m 8 MHz = 5.80 dB/100 m 10 MHz = 6.50 dB/100 m

Velocity of Propagation	66%
Operating temperature	-20°C/+80°C
Working tension	< 50 V AC < 75 V DC
Weight	19 Kg/Km
Minimum bending radius	25 mm
Packaging	100 m carton reel 300 m carton reel HPC85R300 500 m wooden reel HPC85R500



HPC90

• Cavo bilanciato digitale AES/EBU per installazione con guaina esterna schermata con nastro in alluminio e resistente alla fiamma - O.F.C. (Oxygen Free Copper) dal diametro ridotto - Sezione 2 x 0.22 mm².
• *Balanced AES/EBU Audio Digital cable (2 x 0,22 mm²) small diameter aluminium foil shielded flame resistant overall jacket. - O.F.C. (Oxygen Free Copper).*

HPC90

Application fields	• Patch connections, gooseneck microphones • Home recording connections • Rack and console connections
Conductors	Bare copper 24 AWG = 28 x 0,10 mm (0.22 mm²)
Insulation	PE Ø 1.20 mm
Shield	Aluminium foil coverage 100%
Jacket	Flame resistant PVC 70 shore Ø 3.00 mm

Drain wire	Tinned copper 25 AWG = 7 x 0.18 mm (0.18 mm²)
Colour	Black
Electrical resistance	87 Ohm/Km (conductor) @ 20°C
Electrical capacitance	37 pF/m (conductor/conductor) @ 1 KHz 57 pF/m (conductor/shield) @ 1 KHz
Nominal Impedance	110 Ohm
Velocity of Propagation	80 %

Operating temperature	-20°C/+70°C
Working tension	< 50 V AC < 75 V DC
Weight	10 Kg/Km
Minimum bending ra dius	20 x cable section radius
Packaging	100 m carton reel 300 m carton reel HPC90R300

BULK CABLES
HIGH-QUALITY BALANCED MICROPHONE INSTALLATION CABLES O.F.C.



HPC80

• Cavo coassiale bilanciato per installazione con guaina esterna schermata con nastro in alluminio - O.F.C. (Oxygen Free Copper) dal diametro ridotto - Sezione 2 x 0.22 mm².
• *Balanced coaxial installation cable (2 x 0,22 mm²) with small diameter aluminium foil shielded overall jacket - O.F.C. (Oxygen Free Copper).*

HPC80

Application fields	• Patch-bay connections • Multieffect connections • Rack system connections
Conductors	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)
Insulation	PE Ø 1.05 mm
Shield	Aluminium foil 100%
Jacket	Flexible PVC 80 shore Ø 4.00 mm
Drain wire	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)

Colour	Black
Electrical resistance	< 87 Ohm/Km (conductor) @ 20°C
Electrical capacitance	63 pF/m (conductor/conductor) @ 1 KHz 107 pF/m (conductor/shield) @ 1 KHz
Nominal Impedance	80 ± 3 Ohm
Attenuation	1 MHz = 2.10 dB/100 m 3 MHz = 3.60 dB/100 m 6 MHz = 5.00 dB/100 m 8 MHz = 5.80 dB/100 m 10 MHz = 6.50 dB/100 m

Velocity of Propagation	66%
Operating temperature	-20°C/+80°C
Working tension	< 50 V AC < 75 V DC
Weight	20 Kg/Km
Minimum bending radius	25 mm
Packaging	100 m carton reel 300 m carton reel HPC80R300 500 m wooden reel HPC80R500



HPC85

• Cavo coassiale bilanciato per installazione con guaina esterna schermata con nastro in alluminio e resistente alla fiamma - O.F.C. (Oxygen Free Copper) dal diametro ridotto - Sezione 2 x 0.22 mm².
• *Balanced coaxial installation cable (2 x 0,22 mm²) with small diameter aluminium foil shielded flame resistant overall jacket - O.F.C. (Oxygen Free Copper).*

HPC85

Application fields	• Patch-bay connections • Multieffect connections • Rack system connections
Conductors	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)
Insulation	XLPE Ø 1.10 mm
Shield	Aluminium foil 100%
Jacket	Flexible PVC 76 shore Ø 3.40 mm Complying with CEI 20-22 II regulations
Drain wire	Tinned copper 24 AWG = 7 x 0.20 mm (0.22 mm²)

Colour	Black
Electrical resistance	< 87 Ohm/Km (conductor) @ 20°C
Electrical capacitance	63 pF/m (conductor/conductor) @ 1 KHz 107 pF/m (conductor/shield) @ 1 KHz
Nominal Impedance	80 ± 3 Ohm
Attenuation	1 MHz = 2.10 dB/100 m 3 MHz = 3.60 dB/100 m 6 MHz = 5.00 dB/100 m 8 MHz = 5.80 dB/100 m 10 MHz = 6.50 dB/100 m

Velocity of Propagation	66%
Operating temperature	-20°C/+80°C
Working tension	< 50 V AC < 75 V DC
Weight	19 Kg/Km
Minimum bending radius	25 mm
Packaging	100 m carton reel 300 m carton reel HPC85R300 500 m wooden reel HPC85R500



HPC90

• Cavo bilanciato digitale AES/EBU per installazione con guaina esterna schermata con nastro in alluminio e resistente alla fiamma - O.F.C. (Oxygen Free Copper) dal diametro ridotto - Sezione 2 x 0.22 mm².
• *Balanced AES/EBU Audio Digital cable (2 x 0,22 mm²) small diameter aluminium foil shielded flame resistant overall jacket. - O.F.C. (Oxygen Free Copper).*

HPC90

Application fields	• Patch connections, gooseneck microphones • Home recording connections • Rack and console connections
Conductors	Bare copper 24 AWG = 28 x 0,10 mm (0.22 mm²)
Insulation	PE Ø 1.20 mm
Shield	Aluminium foil coverage 100%
Jacket	Flame resistant PVC 70 shore Ø 3.00 mm

Drain wire	Tinned copper 25 AWG = 7 x 0.18 mm (0.18 mm²)
Colour	Black
Electrical resistance	87 Ohm/Km (conductor) @ 20°C
Electrical capacitance	37 pF/m (conductor/conductor) @ 1 KHz 57 pF/m (conductor/shield) @ 1 KHz
Nominal Impedance	110 Ohm
Velocity of Propagation	80 %

Operating temperature	-20°C/+70°C
Working tension	< 50 V AC < 75 V DC
Weight	10 Kg/Km
Minimum bending ra dius	20 x cable section radius
Packaging	100 m carton reel 300 m carton reel HPC90R300

CONNECTORS

STEREO JACK CABLE MOUNT PLUGS/SOCKETS Ø 3.5 MM

NYS231
NYS231BG

• Jack Stereo Ø 3.5 - 1/8" mm REAN, interamente in metallo. Disponibile nella versione nickel (NYS231) e cromato nero con contatti dorati (NYS231BG).
• *REAN, new Ø 3.5 mm Stereo jack plug. Precision machined contacts. Available with nickel shell and nickel contacts (NYS231) and chrome black shell with gold plated contacts (NYS231BG).*



NYS240
NYS240BG

• Jack Stereo femmina volante Ø 3.5 mm - 1/8" REAN, interamente in metallo. Disponibile nella versione nickel (NYS240) e cromato nero con contatti dorati (NYS240BG).
• *REAN, new Ø 3.5 mm Stereo jack socket. Precision machined contacts. Available with nickel shell and nickel contacts (NYS240) and chrome black shell with gold plated contacts (NYS240BG).*



"RCA" CABLE MOUNT & PANEL MOUNT CONNECTORS

NYS3730

• Spina volante RCA REAN, con contatti dorati e con corpo interamente in metallo. Colore nero
• *REAN, RCA plug with gold plated contacts, black chromium shell, chuck type strain relief. Black ring colour.*



NYS3732

• Spina volante RCA REAN, con contatti dorati e con corpo interamente in metallo. Colore rosso.
• *REAN, RCA plug with gold plated contacts, black chromium shell, chuck type strain relief. Red ring colour.*



"ETHERCON" CABLE MOUNT & PANEL MOUNT CONNECTORS

NE8MC

• Spina volante NEUTRIK RJ45 per la trasmissione dati (sia 10Base-T sia 100Base-T) in ambienti estremi. Utilizzato per tutti i cavi CAT 5, questo connettore viene utilizzato anche per il protocollo luci DMX. Colore: Nichelato. Connettore RJ45 non incluso nella confezione.
• *Neutrik RJ45 cable mount male plug for data transmission (both 10BaseT and 100Base-T systems) in harsh environments. Used for all CAT 5 cables, this connector is also used for the DMX light protocol. Colour: Nickel plated. ATTENTION: RJ45 connector is not included.*



NE8MCB

• Spina volante NEUTRIK RJ45 per la trasmissione dati (sia 10Base-T sia 100Base-T) in ambienti estremi. Utilizzato per tutti i cavi CAT 5, questo connettore viene utilizzato anche per il protocollo luci DMX. Colore: nero. Connettore RJ45 non incluso nella confezione.
• *Neutrik RJ45 cable mount male plug for data transmission (both 10BaseT and 100Base-T systems) in harsh environments. Used for all CAT 5 cables, this connector is also used for the DMX light protocol. Colour: Black. ATTENTION: RJ45 connector is not included.*



NE8FDV

• Presa da pannello Neutrik RJ45 per la trasmissione dati (sia 10Base-T sia 100Base-T) in ambienti estremi. Utilizzato per tutti i cavi CAT 5, questo connettore viene utilizzato anche per il protocollo luci DMX. Provvista di tasto di PUSH, , contatti orizzontali per connessioni dirette con cavo CAT 5.
• *Neutrik RJ45 panel mount female receptacle for data transmission (both 10Base-T and 100Base-T) in harsh environments. Used for all CAT 5 cables, this connector is also employed for the DMX lighting protocol. Equipped with latch, horizontal contacts for direct connections with CAT 5 cable.*



PRO CABLES

PROFESSIONAL INSTRUMENT CABLES "GOLD SERIES"



DHG100

Instrument cable

Ø 6.3 mm MONO JACK PLUG – Ø 6.3 mm MONO JACK PLUG

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH ad alta conduttività
2° schermo: a treccia di rame rosso
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high conductivity PVC
2nd shield: dense braided red copper wire

CODE	Length
DHG100LU05	0,5mt (1,64 ft)
DHG100LU1	1 mt (3,28 ft)
DHG100LU2	2 mt (6,56 ft)
DHG100LU3	3 mt (9,84 ft)
DHG100LU5	5 mt (16,40 ft)
DHG100LU6	6 mt (19,69 ft)
DHG100LU10	10 mt (32,81 ft)



DHG120

Instrument cable

Ø 6.3 mm MONO JACK PLUG – Ø 6.3 mm RIGHT ANGLE MONO JACK PLUG

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH ad alta conduttività
2° schermo: a treccia di rame rosso
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high conductivity PVC
2nd shield: dense braided red copper wire

CODE	Length
DHG120LU3	3 mt (9,84 ft)
DHG120LU5	5 mt (16,40 ft)
DHG120LU6	6 mt (19,69 ft)

PROFESSIONAL UNBALANCED CABLES "GOLD SERIES"



DHG200

Unbalanced cable

Ø 6.3 mm MONO JACK PLUG – 3P FEMALE XLR

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH
2° schermo: a treccia di rame stagnato
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high grade PVC
2nd shield: dense braided tinned copper wire

CODE	Length
DHG200LU3	3 mt (9,84 ft)
DHG200LU5	5 mt (16,40 ft)
DHG200LU10	10 mt (32,81 ft)



DHG220

Unbalanced cable

Ø 6.3 mm MONO JACK PLUG – 3P MALE XLR

• Guaina esterna: Ø 6.5 mm PVC ad alta flessibilità
1° schermo: PVC DH
2° schermo: a treccia di rame stagnato
• *Overall jacket: Ø 6.5 mm high grade flexible PVC*
1st shield: DH high grade PVC
2nd shield: dense braided tinned copper wire

CODE	Length
DHG220LU1	1 mt (3,28 ft)
DHG220LU3	3 mt (9,84 ft)
DHG220LU5	5 mt (16,40 ft)
DHG220LU10	10 mt (32,81 ft)

Single pair digital AES/EBU

7XDDS03SXN

SYNTAX® single pair DIGITAL AES/EBU-DMX CABLE, (standard AES/EBU and DMX use specifications) is manufactured with reliably consistent impedance and features a special polymer sheath for low capacitance.
To ensure a high protection level from EMI/RFI noise, the shield is made up of two different screens:
- the first is a aluminium/polyester foil;
- the second is a high-density spiral tinned copper.

The drain wire between the two screens makes connection easier.
Matt black PVC external jacket, flame retardant, trampling-proof, impact absorbing and flexible for longer lifespan.



Conductors: tinned OFC 24 AWG - 19x0,12 mm
Conductors jacket: red/blue Foam Skin Ø 1,4 mm
Drain wire: tinned OFC 24 AWG - 19x0,12 mm
Screen 1: aluminium/polyester foil 100% cov.
Screen 2: high density spiral tinned OFC 95% cov.
External jacket: Black PVC flame retardant Ø 5,5 mm
D.C.R.: conductors < 90 Ω/Km
D.C.R.: shield < 40 Ω/Km
Capacitance: cond./cond. 1Khz 40 nF/Km
Capacitance: cond./shield 1Khz 80 nF/Km
Nominal Impedence: 1-4 Mhz 110 Ω/100 mt
Operating temperature: -30° +70° C.
Flame resistance: IEC 60332.1

CE RohS

VALENTINI - via Asti 84/A - 10090 RIVOLI (TO) - tel. +39 0119594160 - fax +39 0119594166 - www.syntaxnet.it - info@syntaxnet.it

BULK CABLES
PROFESSIONAL TWISTED FLEXIBLE LOUDSPEAKER CABLES O.F.C.

• Linea professionale di cavi flessibili per diffusori acustici, proposta in una vasta gamma di configurazioni per garantire le migliori prestazioni e per adattarsi alle esigenze di ogni connessione con impianti audio dalle applicazioni standard a quelle più critiche. La guaina esterna in PVC e la composizione dei conduttori interni ultra- flessibili, garantiscono sempre un perfetto avvolgimento. Le applicazioni tipiche sono: amplificazione, sistemi di altoparlanti distribuiti e l'installazione in studi di registrazione.

• Professional line of flexible loudspeaker cables, feature a wide range of configurations to guarantee the best achievable performance from standard applications to the most critical ones. Suitable for amplifier to loudspeakers connections. The PVC overall jacket and the composition of the ultra-flexible inner conductors always grant a perfect winding. The typical applications are: sound reinforcement, distributed speaker systems and studio installation.



HPC610BK – HPC620BK – HPC624BK – HPC626BK

• Cavo ultra-flessibile a 2 conduttori twistati per diffusori acustici passivi, proposto in diverse configurazioni di sezione.
• Ultra-flexible 2 twisted conductors speaker cable for passive loudspeakers, proposed in different configurations.

HPC610BK - HPC620BK - HPC624BK - HPC626BK

Application fields	Passive speaker connections, sound reinforcement, studio installation, live
Conductors	Bare copper – 0,25 mm
Lay up	two conductors twisted in short concentric layers
Jacket	Ultra - Flexible PVC – 60 Shore

Colour	Black (other colours on request)
Working Temperature range	-20°C/+70°C
Minimum bending radius	10 x overall diameter
Additional notes	Construction & Controls complying with CEI 20-20 regulations

Packaging	100 m standard carton / wooden reel 300 m wooden reel HPC610BKR300 HPC620BKR300 HPC624BKR300

Order Code	Conductors	Conductors Insulation	Jacket O.D.	Electrical Resistance @ 20°C	Electrical Capacitance @ 1 KHz	Weight Kg / Km
HPC610BK	16 AWG = 30 x 0.25 mm (1.50 mm²)	Ø 2,70 mm	Ø 7,00 mm	12 Ohm/Km (conductor)	115 pF/m (conductor/conductor)	136
HPC620BK	14 AWG = 48 x 0.25 mm (2.50 mm²)	Ø 3,20 mm	Ø 8,40 mm	7,40hm/Km (conductor)	131 pF/m (conductor/conductor)	161
HPC624BK	12 AWG = 80 x 0.25 mm (4 mm²)	Ø 4,00 mm	Ø 11,00 mm	4,5 Ohm/Km (conductor)	116 pF/m (conductor/conductor)	198
HPC626BK	10 AWG = 120 x 0.25 mm (6 mm²)	Ø 4,90 mm	Ø 12,00 mm	2,95 Ohm/Km (conductor)	125 pF/m (conductor/conductor)	260



HPC640BK – HPC644

• Cavo ultra-flessibile a 4 conduttori twistati per diffusori acustici passivi, proposto in diverse configurazioni di sezione.
• Ultra-flexible 4 twisted conductors speaker cable for passive loudspeakers, proposed in different configurations.

HPC640BK - HPC644

Application fields	Passive speaker connections, sound reinforcement, live
Conductors	Bare copper – 0,25 mm
Lay up	Four conductors twisted in short concentric layers
Jacket	Ultra - Flexible PVC – 60 Shore

Colour	Black (other colours on request)
Working Temperature range	-20°C/+70°C
Minimum bending radius	10 x overall diameter
Additional notes	Construction & Controls complying with CEI 20-20 regulations

Packaging	100 m standard carton / wooden reel 300 m wooden reel HPC640BKR300 (other lengths on request)

Order Code	Conductors	Conductors Insulation	Jacket O.D.	Electrical Resistance @ 20°C	Electrical Capacitance @ 1 KHz	Weight Kg / Km
HPC640BK	14 AWG = 48 x 0.25 mm (2.50 mm2)	Ø 3,45 mm	Ø 11,00 mm	7,4 Ohm/Km (conductor)	85 pF/m (conductor/conductor)	204
HPC644	12 AWG = 53 x 0.25 mm (4.00 mm2)	Ø 4,20 mm	Ø 13,20 mm	4,5 Ohm/Km (conductor)	120 pF/m (conductor/conductor)	345



NL4FX-4

*** DESCATALOGADO ***
Reemplazo/sucesor directo: NL4FXX-WS (cable de 6 a 12 mm de diámetro exterior) y NL4FXX-WL (cable de 10 a 16 mm de diámetro exterior)

conector de cable de 4 polos, alivio de tensión tipo mandril, buje amarillo

El estándar de la industria para conexiones de altavoces ofrece conectores de cable extremadamente confiables y robustos con un sistema de bloqueo confiable. Cuentan con contactos sólidos con terminales tipo tornillo

que incluyen una protección de cable trenzado que también ofrece terminación de soldadura.

características y beneficios Descargas Información técnica Accesorios Descargar Ficha Técnica

características y beneficios

- Corriente nominal 40 A rms continua
- Solo 3 piezas, fácil de montar.
- Sistema de bloqueo fácil y extremadamente preciso "Quick Lock"
- Alivio de tensión de 1 pieza, mandril para cable de 7 a 14,5 mm de diámetro exterior
- Terminación tipo tornillo mejorada para la mayor fuerza de extracción
- Señal de audio de hasta 50 A, ciclo de trabajo del 50 %
- Materiales de alto impacto - duraderos y fiables
- Agarre mejorado en el pestillo
- Codificación de colores posible
- Garantías de diseño integradas "Made by Neutrik®"

Descargas

- Archivo 3D NL4FX
- Dibujo NL4FX
- Dibujo NL4FX
- Instrucciones de montaje: serie SPX de speakON
- Guía de productos - Sección Conectores de altavoces
- Resumen de conectores speakON
- Asociación Canadiense de Normas SpeakON
- Sugerencia de cableado de speakON

Información técnica

Producto

Título	NL4FX-4
Tipo de conección	habla
Género	femenino

Eléctrico

Resistencia de contacto	< 2 mΩ (después de la vida útil)
Resistencia dieléctrica	4 kV CC (pico)
Resistencia de aislamiento	> 1 GΩ (después del calor húmedo)
Corriente nominal por contacto	40 A rms continuos
Corriente nominal por contacto	50 A señal de audio, ciclo de trabajo 50 %
Tensión nominal	250 V ca

Atención	¡SpeakON NO debe utilizarse como conector de alimentación o de alimentación de CA!

Mecánico

Diámetro exterior del cable	7 - 14,5 mm
Retención de cables	≥ 220 N (sujeto al diámetro exterior del cable y al material)
Toda la vida	> 5000 mating cycles
Wiresize	4 mm² / 6 mm² (screw type terminals/soldering)
Wiresize	12 AWG / 10 AWG
Wiring	screw type terminals or soldering
Locking device	Quick Lock (latch)

Material

Contact plating	4 µm Ag
Contacts	Brass (CuZn39Pb3)
Insert	PBTP 20 % GR
Locking element	Zinc diecast (ZnAl4Cu1)

Shell	PBTP 20 % GR
Strain relief	Polyacetal (POM)

Environmental

Flammability	UL 94 HB
Solderability	Complies with IEC 68-2-20
Temperature range	-30 °C to +80 °C

Accessories







LRX **NLRR** **NL4MMX**

AUDIO
XLR
Plugs & Jacks
Phono (RCA)
speakON
opticalCON
FIBERFOX
etherCON
powerCON
Patch Panels
XIRIUM PRO
DANTE Interface
MILAN OEM
Solutions
Accessories

VIDEO
BNC
opticalCON
FIBERFOX
opticamSWITCH
Phono (RCA)
powerCON
Accessories
PoE Injector

LIGHTING
XLR
etherCON
opticalCON
FIBERFOX
powerCON
Accessories

POWER
powerCON
TRUE1 TOP
Discontinued
powerCON
TRUE1
powerCON blue / grey
powerCON 32 A
powerCON
Accessories
PoE Injector
Professional
POWER CABLES

DATA
opticalCON
etherCON
Multimedia
8 + 2 pole XLR
PoE Injector
FIBERFOX

INDUSTRIAL
Circular connectors
powerCON
etherCON
XLR
Plugs & Jacks
opticalCON
FIBERFOX

HEALTHCARE
opticalCON
HYBRID MED
opticalCON
QUAD MED
powerCON
etherCON
neutriCON



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XLR CABLE MOUNT FEMALE CONNECTORS

XLR3FV
XLR5FV

• Presa volante spina XLR con manicotto nichelato. Disponibile nella versione a 3 poli (XLR3FV) ed a 5 poli (XLR5FV). Confezione standard: 4 pezzi.
• *Professional XLR cable mount female socket, nickel plated shell. Available models: 3P (XLR3FV) - 5P (XLR5FV) Master pack: 4 pcs.*



XLR3F

• Presa volante XLR 3 poli con manicotto nichelato e molla passacavo in PVC. Confezione standard: 4 pezzi.
• *3-pole XLR cable mount female socket with nickel plated shell and PVC cable spring. Master pack: 4 pcs.*



XLR3FVPROBK

• Presa volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore anello nero. Disponibile nella versione a 3 poli (XLR3FVPROBK).Confezione 4 pezzi.
• *Professional XLR cable mount female socket, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3FVPROBK) - Colour: black ring. Master pack: 4 pcs.*



XLR3FVPRORD

• Presa volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore anello rosso. Disponibile nella versione a 3 poli (XLR3FVPRORD).Confezione 4 pezzi.
• *Professional XLR cable mount female socket, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3FVPRORD) Colour: red ring. Master pack: 4 pcs.*



XLR3FVBK

• Presa volante XLR 3 poli, manicotto nero. Confezione standard: 4 pezzi.
• *3-pole XLR cable mount female socket, nickel plated black shell. Master pack: 4 pcs.*



XLR3FVPRO
XLR5FVPRO

• Presa volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore: argento. disponibile nella versione a 3 poli (XLR3FVPRO) e 5 poli (XLR5FVPRO).Confezione 4 pezzi.
• *Professional XLR cable mount female socket, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3FVPRO) - 5-pole (XLR5FVPRO) Colour: silver ring. Master pack: 4 pcs.*



XLR3FVPROBL

• Presa volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore anello blue. Disponibile nella versione a 3 poli (XLR3FVPROBL).Confezione 4 pezzi.
• *Professional XLR cable mount female socket, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3FVPROBL) Colour: blue ring. Master pack: 4 pcs.*



XLR3PFNK

• Nuovo connettore professionale XLR 3 poli femmina. Dotato di contatti argentati e robusto guscio realizzato in pressofusione di zinco placcato in chromo. Passacavo in morbido materiale plastico e pinza interna in nylon per un'accurata ritenzione del cavo. Colore argento satinato. Confezione standard: 5 pezzi.
• *New professional 3P female XLR connector. Featuring silver plated contacts and heavy duty chromium plated die cast zinc alloy shell. It is provided with two pieces soft material strain relief and inner nylon claw for an accurate cable retention. Satin silver color. Master pack: 5 pcs.*

NEW



XLR3PFBK

• Nuovo connettore professionale XLR 3 poli femmina, dalle stesse caratteristiche dell'XLR3PFNK, ma con guscio in metallo di colore nero. Confezione standard: 5 pezzi.
• *New professional 3P female XLR connector, with same features as the model n° XLR3PFNK, but with black plated die cast zinc alloy shell. Master pack: 5 pcs.*

NEW



XLR CABLE MOUNT MALE CONNECTORS

XLR3MV
XLR5MV

• Spina volante XLR con manicotto nichelato. Modelli disponibili: 3 poli (XLR3MV) e 5 poli (XLR5MV). Confezione standard: 4 pezzi.
• *Professinal XLR cable mount male plug, nickel plated shell. Available models: 3P (XLR3MV) - 5P (XLR5MV) Master pack: 4 pcs.*



XLR3M

• Spina volante XLR 3 poli, manicotto nichelato e molla passacavo in PVC. Confezione standard: 4 pezzi.
• *3-pole XLR cable mount male plug, nickel plated shell and PVC cable spring. Master pack: 4 pcs.*



XLR3MVPROBK

• Spina volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore anello nero. Disponibile nella versione a 3 poli (XLR3MVPROBK).Confezione 4 pezzi.
• *Professional XLR cable mount male plug, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3MVPROBK) Colour: black ring. Master pack: 4 pcs.*



XLR3MVPRORD

• Spina volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore anello rosso. Disponibile nella versione a 3 poli (XLR3MVPRORD).Confezione 4 pezzi.
• *Professional XLR cable mount male plug, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3MVPRORD) Colour: red ring. Master pack: 4 pcs.*



XLR3MVBK

• Spina volante XLR 3 poli, manicotto nichelato nero. Confezione standard: 4 pezzi.
• *3-pole XLR cable mount male plug, nickel plated black shell. Master pack: 4 pcs.*



XLR3MVPRO
XLR5MVPRO

• Spina volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore: argento. disponibile nella versione a 3 poli (XLR3MVPRO) e 5 poli (XLR5MVPRO).Confezione 4 pezzi.
• *Professional XLR cable mount male plug, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3MVPRO) - 5-pole (XLR5MVPRO) Colour: silver ring. Master pack: 4 pcs.*



XLR3MVPROBL

• Spina volante XLR professionale. Manicotto in alluminio pressofuso nichelato e ghiera stringicavo in alluminio nichelato, pinza interna in nylon con molla terminale in PVC. Colore anello blue. Disponibile nella versione a 3 poli (XLR3MVPROBL).Confezione 4 pezzi.
• *Professional XLR cable mount male plug, nickel plated die cast aluminium shell and nickel plated aluminium coupling ring, inner nylon clamping system with PVC terminal spring. Available models: 3-pole (XLR3MVPROBL) Colour: blue ring. Master pack: 4 pcs.*



XLR3PMNK

• Nuovo connettore professionale XLR 3 poli maschio. Dotato di contatti argentati e robusto guscio realizzato in pressofusione di zinco placcato in chromo. Passacavo in morbido materiale plastico e pinza interna in nylon per un'accurata ritenzione del cavo. Colore argento satinato. Confezione standard: 5 pezzi.
• *New professional 3P male XLR connector. Featuring silver plated contacts and heavy duty chromium plated die cast zinc alloy shell. It is provided with two pieces soft material strain relief and inner nylon claw for an accurate cable retention. Satin silver color. Master pack: 5 pcs.*



XLR3PMBK

• Nuovo connettore professionale XLR 3 poli maschio, dalle stesse caratteristiche dell'XLR3PFNK, ma con guscio in metallo di colore nero. Confezione standard: 5 pezzi.
• *New professional 3P male XLR connector, with same features as the model n° XLR3PFNK, but with black plated die cast zinc alloy shell. Master pack: 5 pcs.*



PRO AV ACCESSORIES

NEW PROFESSIONAL VIDEO CABLES

• Nuova linea di cavi AudioVideo assemblati con le più innovative tecnologie e componenti e con connessioni trattate con sistemi anticorrosione. Struttura del cavo estremamente flessibile e resistente, per un ottimale trasferimento del segnale e facilità di installazione.

• New AudioVideo interconnection cable series, assembled with innovative technologies and components and with corrosion-free contacts treatment. High resistance extra flexible cable structure for easy installation and durability.

PRHDMI

• Cavo HDMI 1.4 con Ethernet, dedicato alle interconnessioni HDTV. Connettori stampati con struttura in metallo per un perfetto contatto elettromagnetico. Contatti dorati ed isolamenti multipli per performance di alto livello e insensibilità alle interferenze EMI e RFI. Massima linearità nella trasmissione del segnale AudioVideo per immagini e audio purissimi. Conduttori in rame OFC individualmente schermati e guaina esterna in PVC ad alta resistenza. Disponibile nel colore nero.

• 1.4 HDMI Ethernet cable, dedicated to the HDTV AudioVideo connections. Metal structure molded connectors for a perfect electromechanical contact. Gold plated contacts and multiple shielding for extreme performances against EMI and RFI interferences. Maximum linearity in signal transmission for the purest images and sound. Individually shielded OFC conductors and high resistant PVC overall jacket. Available in black.



CODE	Length
PRHDMI018	1,8 m (5,91 ft)
PRHDMI030	3 m (9,84 ft)
PRHDMI050	5 m (16.40 ft)
PRHDMI100	10 m (32.81 ft)
PRHDMI150	15 m (49.21 ft)
PRHDMI200	20 m (65.62 ft)

PRVGA

• Cavo professionale VGA con connessioni D-SUB 15 poli (con ferrite) principalmente utilizzato per monitor, flat panels e proiettori. Trasporta il segnale video RGBHV con DDC2 digital clock e data. Dotato di nuclei in ferrite antidisturbo per una ottimale trasmissione video e per una qualità superiore del segnale. Le connessioni sono in metallo nichelato e sono resistenti alle corrosioni. Il guscio è realizzato in polietilene resistente alle deformazioni e la guaina esterna è in PVC ad alta resistenza. Disponibile nel colore nero.

• Professional VGA cable with D-SUB 15-pin (with ferrites) connections, mainly used for monitors, flat panels and projectors. It carries the video signal in RGBHV with DDC2 digital clock and data. Featuring ferrites noise-free cores for optimal video transmission and a higher quality signal. Corrosion-free nickel-plated metal connections. The shell is made of warp-resistant polyethylene and high resistant PVC overall jacket. Available in black.



CODE	Length
PRVGA018	1,8 m (5,91 ft)
PRVGA030	3 m (9,84 ft)
PRVGA050	5 m (16.40 ft)
PRVGA100	10 m (32.81 ft)
PRVGA150	15 m (49.21 ft)
PRVGA200	20 m (65.62 ft)
PRVGA250	25 m (82,02 ft)
PRVGA300	30 m (98,43 ft)



1694A

Coaxial SDI de 75 ohmios, RG-6, 18 AWG, BC sólido, lámina + 95 % trenzado TC, junta de PVC, CMR



Coaxial SDI de 75 ohmios, RG-6, 18 AWG Conductor de cobre desnudo sólido, aislamiento de PE, lámina + 95 % de blindaje trenzado de cobre estañado, cubierta de PVC, CMR

Ficha de datos

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Especificaciones

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Descripción del producto

Aplicaciones adecuadas	Vídeo digital, UHDTV de 6 Gb/s, HD-SDI 1080p

Detalles de construcción



CONDUCTOR

Tamaño	varamiento	nom. Diámetro	Material
18 AWG	Sólido	0.040 pulgadas	BC - Cobre desnudo

AISLAMIENTO

Material	nom. Diámetro de aislamiento	Codigo de color
PE - Polietileno (Espuma)	0,180 pulgadas (4,57 mm)	Blanco

ESCUDO EXTERIOR

Capa	Tipo de escudo exterior	Material	Nombre comercial del material	Cobertura
1	Cinta	Trilaminado (Alum+Poly+Alum)	Duofoil®	100%
2	Trenza	Cobre estañado (TC)		95%

CHAQUETA EXTERNA

Material	nom. Diámetro
PVC - Cloruro de polivinilo	0,274 pulgadas (6,96 mm)

Diámetro total del cable (nominal)	0,274 pulgadas (6,96 mm)

Características electricas

PÉRDIDA DE RETORNO

Frecuencia	mín. Pérdida de retorno
5 - 1600 MHz	23dB
1600 - 4500 megaciclo	21dB
4500 - 6000 megaciclo	15dB

ATENUACIÓN



5 MHz	0,52 dB/100 pies
6 MHz	0,57 dB/100 pies
7 MHz	0,61 dB/100 pies
10 MHz	0,71 dB/100 pies
12 MHz	0,78 dB/100 pies
25 MHz	1,08 dB/100 pies
67,5 MHz	1,65 dB/100 pies
71,5 MHz	1,69 dB/100 pies
88,5 MHz	1,86 dB/100 pies
100 MHz	1,95 dB/100 pies
135 MHz	2,24 dB/100 pies
143 MHz	2,3 dB/100 pies
180 MHz	2,57 dB/100 pies
270 MHz	3,17 dB/100 pies
360 MHz	3,69 dB/100 pies
540 MHz	4,5 dB/100 pies
720 MHz	5,3 dB/100 pies
750 MHz	5,4 dB/100 pies
1000 MHz	6,3 dB/100 pies
1500 MHz	7,8 dB/100 pies
2000 MHz	9,2 dB/100 pies
2250 MHz	9,8 dB/100 pies
3000 MHz	11,5 dB/100 pies
4500 MHz	14,5 dB/100 pies
6000 MHz	17,7 dB/100 pies

ELECTRICIDAD

nom. Conductor DCR	nom. Escudo exterior DCR	nom. Capacitancia Cond-to-Shield	nom. Impedancia característica	nom. Velocidad de prop.
6,4 ohmios/1000 pies	3,8 ohmios/1000 pies (12 ohmios/km)	16,2 pF/pie (53,1 pF/m)	75 ohmios	82%



Características mecánicas

TEMPERATURA

Temperatura UL	Operando
60°C	-30°C a +75°C

RADIO DE DOBLAJE

Instalación mín.
2,75 pulgadas (69,9 mm)

máx. Tensión de tracción	69 libras (31 kg)
Peso del cable a granel	41 libras/1000 pies

Estándares y Cumplimiento

Idoneidad ambiental	Interior/Exterior, Interior, Resistencia a los rayos UV, Aéreo: solo negro, cuando se apoya en un cable mensajero
Sostenibilidad	CA Prop 65
Inflamabilidad / Reacción al fuego	Eje vertical UL1666
Cumplimiento de RCP	RCP Euroclase: Eca; RCP Clase UKCA: Eca
Cumplimiento NEC / UL	RMC
Cumplimiento con CEC/C(UL)	CMG
Cumplimiento de directivas europeas	Marca CE de la UE, Directiva de la UE 2015/863/EU (enmienda RoHS 2), REACH, Directiva de la UE 2011/65/EU (RoHS 2), Directiva de la UE 2012/19/EU (WEEE)
Cumplimiento de la normativa del Reino Unido	Marca UKCA
Cumplimiento de APAC	RoHS de China II (GB/T 26572-2011)
Número de pleno	1695A

Notas del producto



Historia

Actualización y Revisión	Número de revisión: 0.586 Fecha de revisión: 07-03-2023

Ocultar especificaciones

Números de parte

Artículo #	Color	Tipo de publicación	Longitud	UPC/EAN	Nota
1694A.00152	Negro	Carrete	152 metros	8719605003317	
1694A.00305	Negro	Carrete	305 metros	8719605003324	
1694A 010500	Negro	Carrete	500 pies	612825358169	C
1694A 010Z500	Negro	CarreteTuff Box	500 pies	612825434726	

Mostrar todos los números de piezas

Cable coaxial de vídeo

Catálogos

Manuales de referencia

Inst. instrumento HD 3P BNC Rev.4.20JAN2021.pdf



Fecha: 2004-01-01

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Overview +

4694RBUHD1 B50

12 GHz BNC Compression Connector



12 GHz BNC Plug, One Piece RG-6 Compression Connector

Data Sheet

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Specifications

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Physical Characteristics (Overall)

Packaging	50 per package
Number of Pieces	1

Connectors



Body	Brass, Nickel Plated
Contact	Brass, Gold Plated
Insulator	PTFE

Electrical Characteristics

IMPEDANCE

Nominal Characteristic Impedance
75 Ohm

RETURN LOSS

Frequency [MHz]	Minimum Return (RL)
5-1485	15 dB
1485-3000	10 dB
3000-6000	7 dB
6000-12000	4 dB

Electrical Characteristics Notes	SMPTE 2082-1 Return Loss or better

Mechanical Characteristics

Footprint/Type	Coax
Connector Interface Type	BNC
Gender	Male - plug
Connector Series Name	UHD
Color Band	Green
Locking	No
Tool Compatibility	CPLCRBC-BR (compression), PSA59/6 (strip)
Termination Type	Compression



Standards

RG Type	6

Applicable Environmental and Other Programs

Environmental Space	Indoor
EU Directive 2000/53/EC (ELV)	Yes
EU Directive 2011/65/EU (RoHS 2)	Yes
EU Directive 2012/19/EU (WEEE)	Yes
EU Directive 2015/863/EU (RoHS 2 amendment)	Yes
EU Directive Compliance	EU Directive 2003/11/EC (BFR)

Suitability

Suitability - Indoor	Yes
Suitability - Outdoor	No

Plenum/Non-Plenum

Plenum (Y/N)	No

History

Update and Revision	Revision Number: 0.39 Revision Date: 03-04-2023

Hide Specifications

Part Numbers



Resources

Product Bulletins

4K UHD Coax Cables and Connectors Product Bulletin

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EBN1204



Caja de escenario de audio - 12 ENTRADAS/4 SALIDAS. Características pequeño peso y dimensión. Conectores NEUTRIK de montaje en panel con contactos chapados en oro XLR de alta calidad. Conexiones de montaje en cable protegidas por cubiertas de PVC y cableadas con conectores metálicos XLRPRO. Características del cable multinúcleo CMF

- Modelo: EBN1204
- Peso: 8,19 kg

- EAN: 8032496010708
- Este producto tiene una cantidad mínima de 1

(http://beta.b2b.proel.com/index.php?route=product/manufacturer/info&manufacturer_id=O22)

DESCRIPCIÓN **ESPECIFICACIONES TÉCNICAS**

Caja de escenario de audio - 16 canales - 12 IN / 4 OUT - Longitud del cable: 25 m

Las cajas de escenario de EBN Audio están construidas utilizando una caja de metal con acabado en polvo epoxi, presentando un peso y unas dimensiones reducidos gracias a los circuitos impresos profesionales utilizados, donde se cablean en automático conectores XLR de contactos NEUTRIK chapados en oro de alta calidad. Las terminaciones de montaje de cable están protegidas por cubiertas de PVC y cableadas con conectores metálicos de la serie PROEL XLRPRO. Para las conexiones se utiliza cable multinúcleo Serie CMF, con contacto de tierra. Configuraciones disponibles desde 8 hasta 40 canales en diferentes longitudes.

PRODUCTOS RELACIONADOS **LA GENTE TAMBIÉN COMPRÓ**



(http://beta.b2b.proel.com/proe stage-ebn8)

EBN8 (http://beta.b2b.proel...

TE PODRÍA GUSTAR **DE LA MISMA MARCA**



(http://beta.b2b.proel.com/proe stage-ebn1604)

EBN1604 (http://beta.b2b.p...



(http://beta.b2b.proel.com/proe stage-ebn2408)

EBN2408 (http://beta.b2b.p...



(http://beta.b2b.proel.com/prc stage-ebn2408lu50)

EBN2408LU50 (http://beta...

VISTO RECIENTEMENTE **MAS VISTO**



EBN1206 (http://beta.b2b.proel.com/proel-stage-ebn1206?search=EBN1204&description=true)

Póngase En Contacto Con Proel Para Obtener Información



PRO238BK (http://beta.b2b.proel.com/proel-stage-pro238bk?search=EBN1204&description=true)

Póngase En Contacto Con Proel Para Obtener Información

HPC620BK (http://beta.b2b.proel.com/proel-stage-hpc620bk?search=EBN1204&description=true)

Póngase En Contacto Con Proel Para Obtener Información



EKBMG01 (http://beta.b2b.proel.com/proel-stage-ekbmg01?search=EBN1204&description=true)

Póngase En Contacto Con Proel

PROEL

Diseñamos, producimos y distribuimos sistemas de audio e iluminación, instrumentos musicales y accesorios relacionados en el mercado internacional.

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259

Microphone stand

Product variant

25900-300-55 - black



Data

Boom arm	2-piece telescopic design
Boom arm clamping	T-bar locking screw
Boom arm length	from 435 to 745 mm
EAN	4016842213887
Height	from 425 to 645 mm
Height adjustment	clutch
Leg construction	socket with foldable legs
Material	steel
Rod combination	2-piece folding design
Size when folded	115 x 85 x 580 mm
Special features	low-level microphone stand; zinc die-cast base
Threaded connector	3/8"
Type	black
Weight	2.08 kg

Low-level, telescopic stand with foldable legs. Comes with 2-piece boom arm.

252

Microphone stand

Product variant

25200-300-55 - black



Data

Boom arm	2-piece telescopic design
Boom arm clamping	T-bar locking screw
Boom arm length	from 425 to 725 mm
EAN	4016842205004
Height	from 620 to 1,470 mm
Height adjustment	non-scratching locking screws
Leg construction	socket with foldable legs
Material	steel
Product Category	Topline
Rod combination	3-piece folding design
Size when folded	110 x 85 x 730 mm
Special features	zinc die-cast base folds very small
Threaded connector	3/8"
Type	black
Weight	2.68 kg

Three-piece telescoping shaft. Metal, non-marring height-adjustment mechanisms, complete with boom arm.

SOPORTE PARA ALTAVOZ GEAR UP

SS700B



DESCRIPCIÓN GENERAL DE LAS ESPECIFICACIONES

ESPECIFICACIONES:

- Altura: 1150 mm - 2180 mm (45,3″ - 85,9″)
- Peso: 6,2 kg (13,7 libras)
- Radio de la base: 660 mm (26″)
- Capacidad de carga: 45 kg (99,2 libras)
- Tamaño plegado: 1165 mm x 210 mm x 190 mm (46″ x 8,3″ x 7,5″)
- Acepta bridas: 35 mm, 38 mm (1 - 3/8″, 1 - 1/2″)

PASE EL CURSOR PARA HACER ZOOM

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Casa del Músico La Colonial

Buscar

CARRITO



STAND CABINA HERCULES SS700B HIDRAULICO

SKU: ST-SS700B

Precio

$895.000^{00}

El precio incluye IVA

Envío nacional GRATIS si tu compra supera los $450.000

Distribuidores autorizados

Pago 100% seguro

Impuesto incluido.

Agregar al carrito

Comprar ahora

Sistema de Bloqueo Quik-N-EZ para regular la altura
Tubos de aluminio par mayor resistencia y menor peso
Altura:117-210cm
Peso:3kg
Diámetro de la base:150cm
Capacidad de carga:45 kg
Diámetros aceptados:35, 38mm







SE425 PROFESIONAL

Audífonos in-ear profesionales Sound Isolating™

DÓNDE COMPRAR

GENERAL DETALLES CONTENIDO DE LA CAJA

Los audífonosSE425 in-ear Profesionales Sound Isolating™ proporcionan un sonido preciso y natural a través de dos transductores de alta definición. Su diseño discreto y seguro incluye un cable desmontable con alambre moldeable para mantener los Audífonos en su lugar sin que los cables molesten. La tecnología de aislamiento de sonido bloquea hasta 37 dB de ruido exterior.

Incluye un estuche premium de transporte, un adaptador de 1/4" y un kit de ajuste con una selección de tapones para un ajuste personalizado.

Productos Relacionados

TODO (13) PRODUCTOS (3) PRODUCTOS PARA COMPARAR (4



PSM 300

PSM 300 Sistema De Monitorización Personal In-Ear Estéreo

Sistema de monitorización personal estéreo con audífonos SE112 In-Ear Sound Isolating , montaje en rack, antena de 1/4 de onda, fuente de alimentación, bolsa con cremallera y 2 pilas AA.

SABER MÁS



PSM 900

PSM 900 Sistema De Monitorización Personal In-Ear

El sistema de monitorización personal In-Ear ofrece una gran calidad de audio y un rendimiento de RF impecable para las aplicaciones profesionales.

SABER MÁS



PSM 1000

PSM 1000 Sistema De Monitorización Personal In-Ear

El sistema de monitorización personal In-Ear está formado por un transmisor de dos canales y un receptor diversity de petaca para ofrecer un audio optimizado.

SABER MÁS

SE1

Audífo
Sound

Los au
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Soporte

Documentos de ayuda

Manual de Usuario

- SE315 SE425 SE535 User Guide (es)
- Earphone User Guide (es)

Catálogos

- PSM Brochure (en)
- Broadcast Brochure (TV Studio) (en)

SUSCRÍBETE A LA NEWSLETTER DE SHURE (INGLÉS)

SHURE
SOUND EXTRAORDINARY

America Latina

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SRH840A

Guía de usuario

Auriculares profesionales de referencia

Descripción general

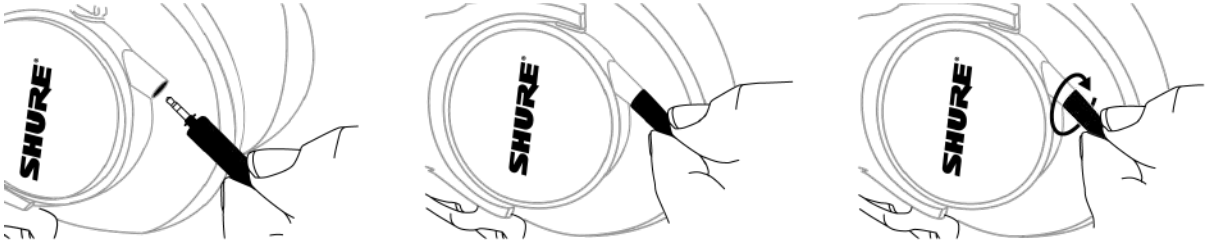
Los nuevos auriculares de estudio profesionales SRH840A son ideales para grabar, crear contenido y monitorear. Una respuesta de frecuencia adaptada con precisión y controladores dinámicos de neodimio de 40 mm brindan graves ricos, rango medio claro y agudos extendidos. Una diadema acolchada y liviana combinada con la durabilidad de Shure brindan la mejor experiencia auditiva.

- La respuesta de frecuencia adaptada con precisión ofrece graves ricos, rango medio claro y agudos extendidos
- Los controladores dinámicos de neodimio de 40 mm de baja distorsión ofrecen una respuesta de frecuencia natural y bien equilibrada
- La diadema cómoda y liviana proporciona una comodidad superior para un uso prolongado
- El diseño circumaural cerrado se coloca cómodamente sobre las orejas y reduce el ruido de fondo
- Se pliega para facilitar su transporte y almacenamiento
- El diseño elegante y duradero se ve muy bien en la cámara y resiste los rigores del uso constante
- El cable de bloqueo desmontable bloquea de forma segura el cable en el auricular y permite un fácil reemplazo
- Incluye cable recto desmontable, bolsa de transporte, adaptador chapado en oro roscado de ¼" (6,3 mm) y 2 años de garantía

Para limpiar los auriculares, utilice un paño suave y húmedo.

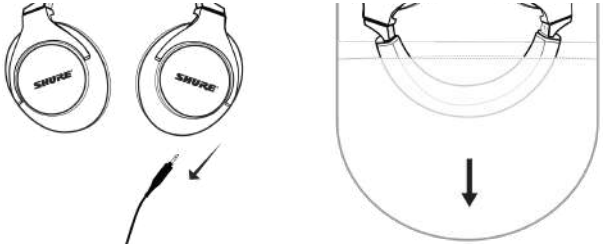
PRECAUCIÓN: No use limpiadores que contengan solventes. Mantenga líquidos y objetos extraños fuera de las aberturas del motor.

Bloqueo de cables



Almacenamiento





Especificaciones

Tipo de transductor

Imán dinámico de neodimio

Tamaño del controlador

40mm

Respuesta frecuente

5 a 25.000 Hz

Sensibilidad

@ 1kHz

97dB/mW

Impedancia

@ 1kHz

40 Ω

Peso

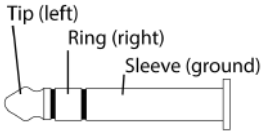
273 g (9,63 onzas)

conector

Conector estéreo chapado en oro de 1/8” (3,5 mm) con adaptador roscado chapado en oro de 1/4” (6,3 mm)

Cable

3 m (9,84 pies) / desmontable, recto, cobre sin oxígeno



Accesorios

Accesorios suministrados

Bolsa de transporte para auriculares profesionales	HPACP1
Cable de audio para auriculares de bayoneta de 3,5 mm	SRH-CABLE

Piezas de repuesto

Cable de comunicación de auriculares de bayoneta universal de 3,5 mm	RMCH1-UNI
Conjunto de cable de bobina de repuesto para auriculares SRH	SRH-CABLE-ENROLLADO

PRECAUCIONES DE SEGURIDAD

Los posibles resultados de un uso incorrecto están marcados con uno de los dos símbolos, "ADVERTENCIA" y "PRECAUCIÓN", según la inminencia del peligro y la gravedad del daño.

	ADVERTENCIA: Ignorar estas advertencias puede causar lesiones graves o la muerte como resultado de una operación incorrecta.
	PRECAUCIÓN: Ignorar estas precauciones puede causar lesiones moderadas o daños a la propiedad como resultado de una operación incorrecta.

PRECAUCIÓN

- Nunca desmonte ni modifique el dispositivo, ya que pueden producirse fallas.
- No lo someta a una fuerza extrema y no tire del cable, ya que se pueden producir fallas.
- Mantenga el producto seco y evite la exposición a temperaturas y humedad extremas.

ADVERTENCIA

- No intente modificar este producto. Hacerlo podría resultar en lesiones personales y/o fallas en el producto.

Este dispositivo puede producir un volumen de sonido superior a 85 dB SPL. Verifique su nivel máximo permitido de exposición continua al ruido en función de los requisitos de protección laboral de su país.

ADVERTENCIA

ESCUCHAR AUDIO A VOLÚMENES EXCESIVOS PUEDE CAUSAR DAÑOS AUDITIVOS PERMANENTES. UTILICE EL VOLUMEN LO MÁS BAJO POSIBLE. La sobreexposición a niveles de sonido excesivos puede dañar sus oídos y provocar una pérdida auditiva permanente inducida por el ruido (NIHL). Utilice las siguientes pautas establecidas por la Administración de Salud y Seguridad Ocupacional (OSHA) sobre el tiempo máximo de exposición a los niveles de presión sonora antes de que se produzcan daños auditivos.

90dB SPL a las 8 horas	**95dB SPL** a las 4 horas	**100dB SPL** a las 2 horas	**105dB SPL** a las 1 hora
110dB SPL a la ½ hora	**115dB SPL** a los 15 minutos	**120dB SPL** Evite o se pueden producir daños.	

GARANTÍA LIMITADA

Shure Incorporated ("Shure") por la presente garantiza al comprador consumidor original únicamente que, salvo que se especifique lo contrario a continuación, este producto estará libre de cualquier defecto en los materiales y la mano de obra durante el uso normal durante un período de dos (2) años a partir de la fecha de compra del consumidor. fecha original de compra directamente de Shure o de un revendedor autorizado de Shure.

Cualquier batería recargable contenida o empaquetada con este producto está garantizada por un período de un (1) año a partir de la fecha de compra original del consumidor. Sin embargo, las baterías recargables son consumibles y su capacidad se reducirá

A su exclusivo criterio, Shure reparará o reemplazará el producto defectuoso y se lo devolverá de inmediato. Para que esta garantía sea válida, el consumidor debe, en el momento de devolver el producto, presentar un comprobante de compra en forma de recibo de compra original directamente de Shure o de un revendedor autorizado de Shure. Si Shure elige reemplazar el producto defectuoso, entonces Shure se reserva el derecho de reemplazar el producto defectuoso con otro producto del mismo modelo o un modelo de calidad y características al menos comparables, a criterio exclusivo de Shure.

Si cree que este producto es defectuoso dentro del período de garantía, vuelva a embalar cuidadosamente la unidad, asegúrela y devuélvala con el comprobante de compra, franqueo prepago, a Shure Incorporated, Atención: Departamento de Servicio, a la dirección que se indica a continuación.

Fuera de los Estados Unidos, devuelva el producto a su distribuidor o centro de servicio autorizado. Las direcciones se enumeran en www.Shure.com o se pueden obtener comunicándose con Shure en la dirección que se indica a continuación.

Esta garantía no es transferible. Esta garantía no se aplica en casos de abuso o uso indebido del producto, uso contrario a las instrucciones de Shure, desgaste normal, caso fortuito, uso negligente, compra a un tercero que no sea Shure o a un revendedor autorizado por Shure, reparación no autorizada , o modificación del producto.

TODAS LAS GARANTÍAS IMPLÍCITAS DE COMERCIABILIDAD O IDONEIDAD PARA UN PROPÓSITO EN PARTICULAR QUEDAN RENUNCIADAS EN LA MEDIDA EN QUE LO PERMITA LA LEY APLICABLE Y, EN LA MEDIDA EN QUE NO SE PERMITA, SE LIMITAN A LA DURACIÓN Y LOS TÉRMINOS DE ESTA GARANTÍA. SHURE TAMBIÉN SE RENUNCIA A TODA RESPONSABILIDAD POR DAÑOS INCIDENTALES, ESPECIALES O CONSECUENTES.

Algunos estados no permiten limitaciones sobre la duración de una garantía implícita, o la exclusión o limitación de daños incidentales o consecuentes, por lo que es posible que la limitación anterior no se aplique a usted. Esta garantía le otorga derechos legales específicos y es posible que tenga otros derechos que varían de un estado a otro.

Esta garantía no restringe los derechos del consumidor exigidos por las leyes aplicables.

ESTA GARANTÍA REEMPLAZA TODAS LAS DEMÁS GARANTÍAS ASOCIADAS O INCLUIDAS CON ESTE PRODUCTO, EXCEPTO QUE CUALQUIER SOFTWARE CONTENIDO O EMPAQUETADO CON ESTE PRODUCTO SE EXCLUYE DE ESTA GARANTÍA Y EN SU LUGAR

Centros de Servicio

Estados Unidos, Canadá, Latinoamérica, Caribe

Shure incorporado

Atención: Departamento de Servicio

945 Chaddick Dr.

Wheeling, IL 60090-6449 EE. UU.

Europa, Medio Oriente y África

Shure Europa GmbH

Atención: Servicio

Jakob-Dieffenbacher-Str. 12,

75031 Eppingen, Alemania

IndonesiaCentro de servicio Resmi:

Línea directa de Yakarta (021) 612 6388

Medán (061) 6612550

Surabaya (031) 5032219

Jogyakarta (0274) 371710

Denpasar (0361) 766788

Certificaciones

Este producto cumple con los requisitos esenciales de todas las directivas europeas relevantes y es elegible para la marca CE.

La Declaración de conformidad CE se puede obtener en: www.shure.com/europe/compliance

Representante europeo autorizado:

Shure Europa GmbH

Cumplimiento global

Jakob-Dieffenbacher-Str. 12

75031 Eppingen, Alemania

Teléfono: +49-7262-92 49 0

Correo electrónico: info@shure.de

www.shure.com

iLoud MTM

Información (index.ph
Inmersivo (index.php'
Especificaciones (inde
Imágenes (index.php?
Video (index.php?p=v
Versiones (index.php'
Comparación (index.p
Reseñas (index.php?p
Artistas (index.php?p
aplicaciones (index.ph
Manuales (index.php?

OFERTAS ESPECIALES 6 ESTE MES



Información (in
Inmersivo (inde
Especificaciones
Imágenes (inde
Video (index.ph
Versiones (inde
Comparación (i
Reseñas (index
Artistas (index.

OFERTAS ESPECIALES 6 ESTE MES

COMPRAR AHORA

$399.99 OR $67 x 6 MONTHS

Especificaciones

Especificaciones de iLoud MTM

- **Tipo** : monitor de estudio de 2 vías/3 altavoces biamplificado, controlado digitalmente
- **Controladores LF** : 2 woofers medios de polipropileno de 3,5" hechos a medida
- **Controlador HF** : tweeter de cúpula de seda con cámara trasera de baja distorsión de 1”
- **Diseño acústico** : reflejo de bajos sintonizado DSP
- **Número de amperios por altavoz** : 2
- **Tipo de amplificadores** : Clase D de alta eficiencia
- **Potencia total** : 100 W RMS
- **Potencia de baja frecuencia** : 70W RMS
- **Potencia de alta frecuencia** : 30W RMS
- **Tipo de cruce** : orden variable de fase lineal
- **Frecuencia de cruce** : 3,1 kHz
- **Respuesta de frecuencia** : de 50 Hz a 24 kHz +/- 2dB (40 Hz -6dB cuando no está cal, -3 dB cuando está cal)
- **Respuesta de fase** : el sistema permanece coherente dentro de +/- 15° de 200 Hz a 20 kHz
- **Sensibilidad a +4dBu** : la señal de 0dBu genera un SPL de 100 dB a 1 m
- **Sensibilidad a -10dBV** : la señal de -11dBu genera un SPL de 100 dB a 1 m
- **SPL máximo a 1 m, un altavoz en reproducción, en el eje** : 103 dB desde 200 Hz hacia arriba de onda sinusoidal, 95 dB a 100 Hz sinusoidal, 93 dB de ruido rosa
- **Configuración de ubicación** : interruptores manuales para extensión LF, recorte LF, recorte HF, posición de escritorio
- **Interruptor de extensión LF** : Establece el punto -3dB de la respuesta de frecuencia a 40, 50, 60 u 80 Hz (LFE)
- **Interruptor LF** : Estante bajo, +2dB o -3dB desde 100Hz hacia abajo
- **Conmutador HF** : estante alto, +2dB o -2dB desde 8kHz en adelante
- **Interruptor de escritorio** : -4dB a 160Hz y +1dB a 1,8kHz

Información (index.ph
Inmersivo (index.php
Especificaciones (inde
Imágenes (index.php
Video (index.php?p=v
Versiones (index.php
Comparación (index.p
Reseñas (index.php?p
Artistas (index.php?p
aplicaciones (index.pl
Manuales (index.php

OFERTAS ESPECIALES 6 ESTE MES

COMPRAR AHORA
iLoud MTM $399.99 OR $72 x 6 months

- **Calibración** : Calibración digital totalmente automática e integrada, micrófono incluido
- **Micrófono de medición** : omnidireccional, micrófono de medición de precisión basado en Mems
- **Control completo de DSP**
- **Conectores** : 1 entrada combinada XLR-1/4" TRS balanceada; Entrada de micrófono TS ARC de 1/8", 1 x USB tipo B (solo para uso de servicio), toma de alimentación de CA
- **Requisito de alimentación** : 90 a 240 V CA, rango automático, 50 o 60 Hz, consumo de energía máximo de 120 W

Dimensiones

- Tamaño: 264 mm/10,39" x 160 mm/6,3" x 130 mm/5,12"
- Peso (por altavoz): 2,5kg/5.5lbs (altavoz + pie)

El paquete incluye

- 1 monitor iLoud MTM
- Cable de alimentación

OFERTAS ESPECIALES 6 ESTE MES

Información (index.ph
Inmersivo (index.php
Especificaciones (inde
Imágenes (index.php?
Video (index.php?p=v
Versiones (index.php
Comparación (index.p
Reseñas (index.php?p
Artistas (index.php?p
aplicaciones (index.pl
Manuales (index.php?

- Micrófono de arco
- Abrazadera de micrófono ARC
- Cable XLR a 1/8" (3,5 mm) TS para micrófono ARC (2,5 m/8,2 pies)
- Soporte inclinable
- Pies de apoyo horizontales
- llave de bloqueo

***Detalle legal** | **Garantía (/warranty)**

TIENDA Y SERVICIO

INFORMACIÓN DE COMPRAS Y PREGUNTAS FRECUENTES (/faq/shop)
(/userarea/)
ENCUENTRA UN DISTRIBUIDOR (/dealers/)

COMPRAR AHORA
iLoud MTM $399.99 OR $67 x 6 MONTHS

Información (index.ph
Inmersivo (index.php'
Especificaciones (inde
Imágenes (index.php?
Video (index.php?p=v
Versiones (index.php'
Comparación (index.p
Reseñas (index.php?p
Artistas (index.php?p
aplicaciones (index.pl
Manuales (index.php?

OFERTAS ESPECIALES 6 ESTE MES

ÚNETE A NUESTRA LISTA DE CORREO

iLoud MTM

COMPRAR AHORA

$399.99 OR $67 x 6 MONTHS

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(/rdrct.php?l=forum)

COMPAÑÍA

NOTICIAS (/news/)
SOBRE NOSOTROS (/about-us/)
CONTÁCTANOS (/contact-us/)
TRABAJOS (/jobs/)
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Información (index.ph
Inmersivo (index.php'
Especificaciones (inde
Imágenes (index.php?
Video (index.php?p=v
Versiones (index.php'
Comparación (index.p
Reseñas (index.php?p
Artistas (index.php?p
aplicaciones (index.pl
Manuales (index.php?

COMPRAR AHORA

iLoud MTM

$399.99 OR $67 x 6 MONTHS

©1996-2023 IK Multimedia Producciones SRL

IK Multimedia Production srl - Via dell'Industria, 46 - 41122 Módena, Italia - Teléfono: +39 059 285496 - Fax: +39 059 2861671 - CF/PI: IT02359550361 - SDI: M5UXCR1

IK Multimedia US, LLC - 590 Sawgrass Corporate Pkwy. - Sunrise, FL 33325 - Teléfono: (954) 846-9101 - Fax: (954) 846-9077

Información (index.ph

Inmersivo (index.php

Especificaciones (inde

Imágenes (index.php?

Video (index.php?p=v

Versiones (index.php

Comparación (index.p

Reseñas (index.php?p

Artistas (index.php?p

aplicaciones (index.pl

Manuales (index.php?

OFERTAS ESPECIALES 6 ESTE MES

K8.2

Comprar en linea Rentar / Comprar Local

Alimentado de 2 vías de 8 pulgadas

61 Comentarios | Escribe tu reseña

355
Comparte



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El QSC K.2 Series™ representa el mejor altavoz de su clase para los exigentes profesionales del audio de hoy. La combinación perfecta de diseño elegante, rendimiento de audio superior, alta funcionalidad, operación simple e intuitiva y confiabilidad genuina de QSC, K.2 ofrece resultados extraordinarios para los usuarios en aplicaciones portátiles e instaladas.





355
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Recursos

Documentos

Guías de aplicación

Documentos/Guías Traducidas

Dibujos

Facilidad y datos CLF

galería de imágenes

Artículos de blog

Accesorios

K.2 Actualización de firmware

355
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Registre su producto

Características

- El mejor rendimiento de audio de su clase
- Módulo amplificador de clase D de 2000 vatios
- Sintonización Intrinsic Correction™ y gestión de altavoces
- El diseño Directivity Matched Transition ® (DMT) proporciona una excelente respuesta de potencia y un rendimiento constante en toda el área de escucha
- La apariencia refinada y profesional luce excelente en cualquier aplicación
- Caja de ABS resistente para una larga vida útil y una durabilidad duradera
- Despliegue en PA principal o posición de monitor de piso
- Ajustes preestablecidos de fábrica y escenas guardables/recuperables para aplicaciones de uso común
- Pantalla digital multifunción para controlar y seleccionar las funciones de los altavoces, incluidos cruce, ecualización, retardo y contorno de frecuencia
- Monturas de copa de dos polos (estándar y con inclinación hacia abajo de 7,5 grados)
- Racores M10 para aplicaciones suspendidas
- El panel de seguridad opcional evita la manipulación no autorizada de los controles
- Información completa de EASE y CAD disponible en línea
- Garantía de 6 años (con registro del producto)

> Potencia avanzada y DSP

> Preajustes

> Escenas

355
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Salidas

Cobertura

Diseño Flexible

Modelo	K8.2
Configuración	Altavoz activo multiusos de 2 vías
Transductor de baja frecuencia	203 mm (8 pulgadas), cono
Transductor de alta frecuencia	Controlador de compresión de diafragma de titanio de 35,6 mm (1,4 pulgadas)
Respuesta de frecuencia (-6dB)	59 Hz - 20 kHz
Rango de frecuencia (-10dB)	55 Hz - 20 kHz
Ángulo de cobertura nominal	105° Axisimétrico
Enfriamiento del amplificador SPL [1] nominal máximo	128 dB a 1 M, pico 122 dB a 1 M, continuo Clase D Pico: 1800 W (LF), 225 W (HF) Ventilador silencioso de velocidad variable
Control S	Potencia 3 × Nivel Codificador rotatorio (pulsador) 2 ×x botones de selección

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Modelo	K8.2
	3 × LED de señal de entrada Entrada A Micrófono seleccionado LED Entrada B Hi-Z seleccionado LED Limitador activo LED
Conectores	2 combos XLR/F ¼–inch con bloqueo (entrada de micrófono/línea y entrada Hi-Z/línea 1 × 3,5 mm TRS (entrada estéreo) 2 × XLR/M (salida de bucle) 1 × XLR/M (salida mixta) 1 × conector de alimentación IEC de bloqueo
Entrada de alimentación de CA	Fuente de alimentación universal 100 – 240 VCA, 50 – 60 Hz
Consumo de energía CA 1/8 de energía [2]	100 VCA, 2,1 A / 120 VCA, 1,9 A / 240 VCA, 1,1 A
Consumo de energía de CA: en espera	0,2 A a cualquier voltaje
Detalles del recinto	
Recinto	ABS resistente a impactos
Puntos de conexión	2 × insertos roscados M10 más Pull-Back
Color	Negro (RAL 9011)
Reja	Acero revestido calibre 18, forro interno de tela
Dimensiones del altavoz (alto x ancho x profundidad)	449 × 280 × 269 mm 17,7 × 11 × 10,6 pulgadas
Dimensiones de la caja (Al. × An. × Pr.)	500 × 380 × 368 mm 19,7 × 15 × 14,5 pulgadas

355
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Modelo	K8.2
Peso neto	12,2 kg/27 libras
Peso de envío	14,4 kg/31,7 libras
Regulador	CE, RAEE, UL, China RoHS, RoHS II, FCC Clase B
Accesorios Opcionales	K8 Tote, K8 Cubierta exterior M10 Kit-C, K.2-LOC Cubierta de bloqueo K8.2 Yugo

[1] Calculado para 1 m, basado en la sensibilidad (espacio completo para sistemas de rango completo y espacio medio para sistemas de subwoofer y solo LF) y la capacidad de potencia máxima del amplificador.

La potencia de 2 1/8 es representativa del consumo de corriente con material de programa de música típico con recorte ocasional.

Todas las especificaciones están sujetas a cambios sin previo aviso.

Debido a la demanda sin precedentes, este producto puede estar actualmente agotado en algunos minoristas. Continuamos reponiendo el suministro regularmente y estamos trabajando para cumplir con todos los pedidos lo más rápido posible. Consulte con su distribuidor para obtener las últimas actualizaciones de entrega.

Suscríbete a nuestro boletín

Compañía

Audio profesional QSC

355
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Visión, Misión y Valores

Nuestro equipo de liderazgo

Junta de QSC, LLC

Noticias

Contactos

Oficinas globales y regionales

División Q-SYS

Conéctate con nosotros

Comentarios del sitio web

Ayuda

Apoyo

Atención al cliente

Garantía

Registración del producto

Capacitación

Legal

ESG

355
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Condiciones de venta

política de privacidad

Política de cookies

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Su aliado estratégico en Audio, Video, Control, Iluminación e Instrumentos Musicales

Señores

Ministerio de Cultura

SELECCIÓN ABREVIADA POR SUBASTA INVERSA ELECTRÓNICA MC SAS MC-SAS-0096-2023 Colombia

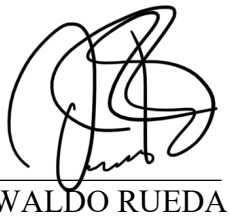
REF: ENTREGA DE TORNILLOS ITEM 80

OBJETO
ADQUISICIÓN E INSTALACIÓN DE LA DOTACIÓN COMPLEMENTARIA EN TRAMOYA, ILUMINACIÓN ESCÉNICA, AUDIO Y SONIDO Y TODOS SUS ACCESORIOS Y COMPLEMENTOS PARA EL CORRECTO FUNCIONAMIENTO DEL CENTRO NACIONAL DE LAS ARTES.

Por medio de la presente nos comprometemos en caso de ser adjudicados entregar las 100 tuercas enjauladas con tornillo negro y arandela plástica según indica el Anexo TECNICO 4A – GRUPO 3 Ítem 80

Gabinete para piso tipo servidor, 42 UR, Altura externa: 1.980mm, ancho 610mm, profundidad 1.066mm, incluye Juego de 100 tuercas enjauladas con tornillo negro y arandela plástica. Garantía de 1 año por defectos de fabricación.

Cordialmente



OSWALDO RUEDA ROBLES
YAMAKI SAS
C.C 79.530.512
NIT: 800.179.308

QUEST®
INTERNATIONAL S.A.

MODELO TL

Formato: 19"
Ancho: 610 mm (24")
Fondo: 1,066 mm (42")

Gabinete de Piso para Servidores y Data Centers



Referencia:

GF-2486

Formato de Montaje: 19"
Altura útil: **42U**
Altura Externa: 1,980 mm (78")
Ancho: 610 mm
Profundidad: 1,066 mm

ESPECIFICACIONES

DIMENSIONES	
Altura util	42U
Ancho	610 mm (24")
Profundidad	1,066 mm (42")
Parales demarcados	Si, bajo estandar EIA-310D
Fondo útil Máximo (Paral a Paral)	987 mm (38,5")

VENTILACIÓN	
Ventilación Posterior:	Puerta posterior de doble con micro perforaciones Hexagonales al 65% cada una.
Puerta Frontal:	Marco metálico con microperforaciones Hexágonales al 75%
Paneles laterales	Sistema de 49 Ventilas ubicadas en la parte inferior.
CAPACIDAD DE CARGA	
Estática:	952,5 kg (2,100 lbs)
Dinámica	165 kg (363,7 lbs)
CERTIFICACIONES	UL- 2416
ESTANDARES	
Cumplimiento de Estándares	EIA-310D IEC 297-2 PCI DSS

c UL us
LISTED
TELECOMMUNICATIONS ENCLOSURE SYSTEM
E490713

ANSI PCI IEC

QUEST®
INTERNATIONAL S.A.

Excelente diseño para la optimización de refrigeración pasiva.

MODELO TL

Formato: 19"
Ancho: 610 mm (24")
Fondo: 1,066 mm (42")



Extracción Rápida del calor

Con el objetivo de agilizar la circulación del aire y brindar condiciones de funcionamiento óptimas sin que la densidad de carga térmica afecte los equipos el exceso de calor debe ser **evacuado del gabinete rápidamente.**

El modelo GF-2486 esta provisto de una puerta frontal micro perforada así como ventilas laterales que permiten la circulación masiva de aire desde el frente hasta la parte posterior de la unidad.

La puerta posterior doble cuenta con microperforaciones al 75% en cada una de ellas, permitiendo un intercambio rápido del aire caliente generado por los equipos.

REFERENCIA: GF-2486

c UL us
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E490713

QUEST® INTERNATIONAL S.A.

QUEST® INTERNATIONAL S.A.

Gabinete de Piso para Servidores y Data Centers



Ranuras superiores para acceso de cables

Ranuras para ventiladores adicionales en la parte superior

Rieles laterales soldados a la estructura que brindan alta resistencia adicional al gabinete

Parales de montaje dispuestos sobre rieles, para permitir el ajuste preciso de los equipos.

Cerradura de seguridad de 1/4 de vuelta que restringe el acceso de personal no autorizado

Puerta frontal extraventilada para el ingreso de aire

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E490713

Ventilas laterales que permiten el ingreso de aire por convección desde los laterales del gabinete

Tapas removibles que permiten el ingreso de cables desde la base del gabinete.

Ruedas y Niveladores para movilizar la unidad hasta el sitio de instalación

ESPECIFICACIONES

GENERALES

El gabinete de Piso para Servidores y Data Centers, brinda una extracción rápida del calor generado por los equipos, aprovechando el intercambio de aire frío que ingresa desde la puerta frontal del gabiente y desde las ventilas laterales de la unidad.
Ideal para equipos con profundidades hasta de 106 cm (41,96 in). como Servidores y UPS Rackeables que por la densidad instalada de estos equipos se requiere expulsar el calor generado por los mismos.

La puerta posterior es doble lo que facilita el montaje y revisiones en espacios reducidos y cuenta con micro perforaciones al 65 % en cada una de ellas para facilitar la salida de aire desde la parte posterior de la unidad. Cerradura de seguridad que restringe el acceso de personal no autorizado a la unidad.

La puerta frontal es curva y esta construida en un marco metálico con micoperforaciones hexagonales al 75% que permiten el ingreso de grandes volúmenes de aire frío, cuenta con cerradura de seguridad que restringe el acceso de personal no autorizado.

Las tapas laterales son desmontables por medio de cerradura y para facilitar la instalación de equipos de manera práctica y segura, en su parte inferior están provistas 49 ventilas que permiten el ingreso de aire frió por convección.

El techo cuenta con ranuras que permiten la instalación de 6 unidadades de ventilación adicionales y agujeros para permitir el ingreso de cables, la base cuenta con paneles 3 paneles removibles para permitir el acceso de cables en el caso de que el cableado se administre por medio de piso falso.

4 Parales de montaje dispuestos sobre un sistema de de rieles a cada uno de su lados los cuales permiten un ajuste preciso de los equipos hasta una profundidad máxima de 987 mm (38,5 in). Marcado bajo el estandar EIA-310D y con perforaciones cuadradas para uso con tuerca tipo Push. El sistema de rieles está soldado a la unidad lo que brinda excelente resistencia y estabilidad al gabinete. La capacidad de carga estática es de 952 kg (2,100 lbs) y de 165 kg (364 lb) de carga Dinámica.

Ruedas instaladas que permiten movilizar el gabinete hasta esl sitio que será instalado, Cuenta con 4 Niveladores que permiten compensar las variaciones en altura del piso y garantizar que todo el gabinete se encuentre estable.

Cuenta con Cable equipotencial de Conexión eléctrica en todas las superficies metálicas expuestas que transportan corriente, como Protección contra descargas eléctricas accidentales, además de barraje a tierra en barra de cobre de 1/8" x 1/2" para 6 conexiones con capacidad nominal de 85 amperios.

Construido en acero laminado en frío de diversos calibres y esquinas hexagonales de aluminio inyectado que brindan, gran apariencia además de evitar deformaciones en las esquinas por golpes accidentales en su montaje. Todo el conjunto es tratado en tanques especiales con procesos desengrasantes y fosfatizantes que garantizan su resistencia a la oxidación. Los acabados son en pintura de polvo electrostática horneada y fijada por paneles infrarrrojos.

Gabinete completamente armado para facilitar su instalación y transporte.

Garantía de 5 años.

ESPECIFICACIONES TÉCNICAS

Modelo:	GF-2486
Altura útil Rieles de Montaje	42U, marcados bajo el estándar EIA-19",Racks de Telecomunicaciones o equipamiento para telecomunicaciones con perforaciones así (5/8",5/8" y 1/2") para tuerca tipo Push.
Características Físicas	**Dimensiones Externas** Alto (H): 1,980 mm. Ancho (W): 610 mm Fondo (D): 1,066 mm
Capacidad de Carga	Estática: 952,5 kg (2,100 lb). Dinámica: 165 Kg (363,7 lb).
Características Eléctricas	**Cable equipotencial** : Cable equipotencial de Conexión eléctrica en todas las superficies metálicas expuestas que transportan corriente, como protección contra descargas eléctricas accidentales. **Barraje a tierra** : Barraje a Tierra en barra de cobre de 1/8" x 1/2" para 6 conexiones con capacidad nominal de 85 amperios.
Sistema de Ventilación	• Puerta frontal con microperforaciones Hexagonales al 75% y puerta Posterior Doble con micro perforaciones hexagonales al 65%. • Techo provisto de 6 ranuras habilitables para la instalación de ventiladores. • Paneles laterales con 29 ventilas dispuestas en la parte inferior para permitir el ingreso de aire por convección para facilitar el intercambio de aire.
Estructura	• Construcción en acero laminado en frío de diversos calibres y esquinas hexagonales de aluminio inyectado para evitar deformaciones en las esquinas por golpes accidentales en su montaje. Conjunto tratado en tanques especiales con procesos desengrasantes y fosfatizantes que garantizan resistencia a la oxidación. • Acabados en pintura de polvo electrostática horneada y fijada por paneles infrarrrojos. Cumple con los estándares: UL-2416 y PCI DSS.
Paneles laterales	2 Paneles laterales desmontables con cerradura para facilitar la instalación y mantenimiento de equipos.
Panel Superior (Techo)	6 Ranuras superiores para instalación de ventiladores adicionales (Opcional) 3 ranuras para ingreso de cables dispuesta así: 2 laterales y 1 Posterior
Paneles inferiores	3 Paneles inferiores desmontables para permitir el ingreso de cables desde la base del gabinete.
Puerta Frontal	Puerta Metálica curva con marco metálico y microperforaciones al 75% para ingreso de grandes volúmenes de aire, con cierre de seguridad tipo maneta con grado de protección IP-65**.**
Rieles de Montaje	Elaborados en acero galvanizado de 2,5 mm y acabados en pintura electrostática marcados bajo el estándar EIA-310D.

INTERNATIONAL S.A.

GF-2486

ESPECIFICACIONES TÉCNICAS

Certificaciones	UL- 2416
Estandares	EIA-310D IEC 297-2 UL- 2416 PCI DSS
Accesorios Incluidos	4 Ruedas con capacidad de carga dinámica de 165 Kg (363,7 lb). 4 Niveladores 40 Tuercas Tipo Push 40 Tornillos 12-24 80 Arandelas 2 Llaves para puerta frontal 4 Llaves para paneles laterales. Instrucciones de montaje.: UL- 2416 y PCI DSS
Grado de Protección NEMA	IP-20
Garantía	5 años por defectos de fábrica

c UL us
LISTED
TELECOMMUNICATIONS
ENCLOSURE SYSTEM
E490713

14 pulgadas | 16 pulgadas



Acabado



Color plata Gris espacial

Chip

Chip M2 Pro de Apple

CPU de 12 núcleos con
8 núcleos de rendimiento y
4 de eficiencia

GPU de 19 núcleos

Neural Engine
de 16 núcleos

200 GB/s de ancho de
banda de memoria

Motor multimedia

H.264, HEVC, ProRes y
ProRes RAW con

Chip M2 Pro de Apple

CPU de 12 núcleos con
8 núcleos de rendimiento y
4 de eficiencia

GPU de 19 núcleos

Neural Engine
de 16 núcleos

200 GB/s de ancho de
banda de memoria

Motor multimedia

H.264, HEVC, ProRes y
ProRes RAW con

Chip M2 Max de Apple

CPU de 12 núcleos con
8 núcleos de rendimiento y
4 de eficiencia

GPU de 38 núcleos

Neural Engine
de 16 núcleos

400 GB/s de ancho de
banda de memoria

Motor multimedia

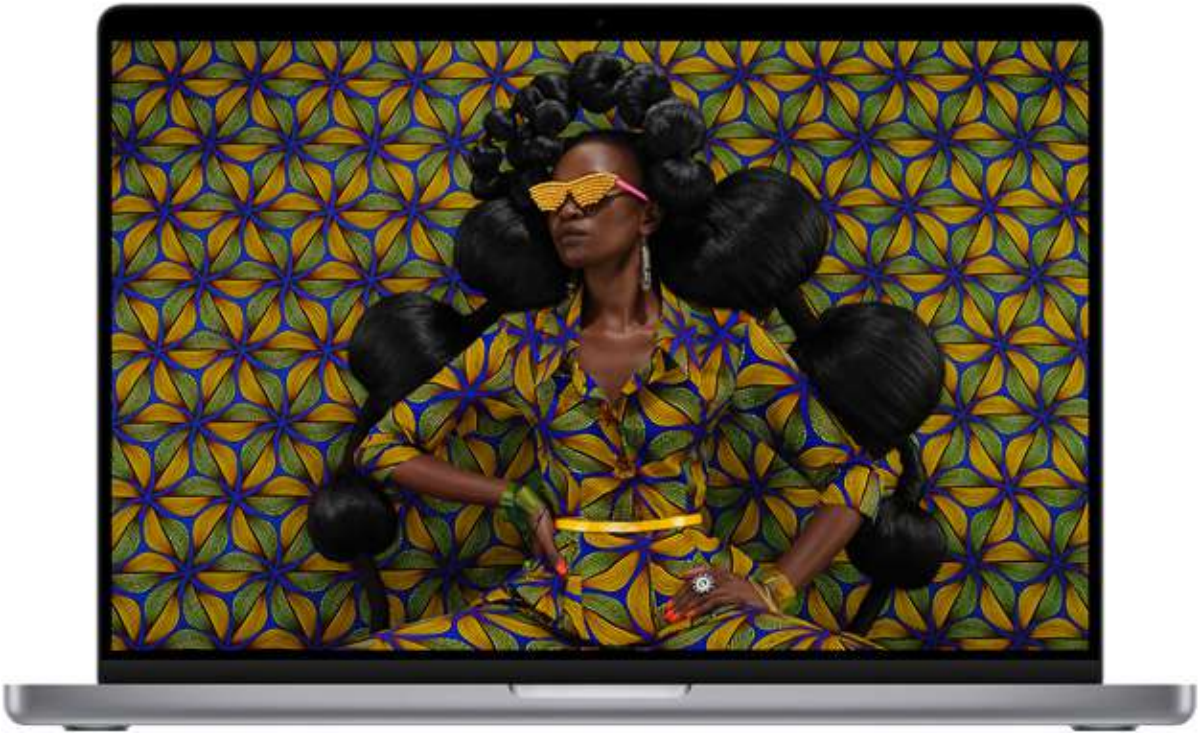
H.264, HEVC, ProRes y
ProRes RAW con

aceleración por hardware	aceleración por hardware	aceleración por hardware
Motor de decodificación de video	Motor de decodificación de video	Motor de decodificación de video
Motor de codificación de video	Motor de codificación de video	Dos motores de codificación de video
Motor de codificación y decodificación ProRes	Motor de codificación y decodificación ProRes	Dos motores de codificación y decodificación ProRes
Configurable con:	**Configurable con:**	—
Chip M2 Max con CPU de 12 núcleos y GPU de 30 núcleos o chip M2 Max con CPU de 12 núcleos y GPU de 38 núcleos	Chip M2 Max con CPU de 12 núcleos y GPU de 30 núcleos o chip M2 Max con CPU de 12 núcleos y GPU de 38 núcleos	

Pantalla

Pantalla Liquid Retina XDR

Pantalla Liquid Retina XDR de 16,2 pulgadas (diagonal)[1]; resolución nativa de 3456 x 2234 a 254 pixeles por pulgada



XDR (rango dinámico extremo)

Relación de contraste 1.000.000:1

Brillo XDR constante de 1.000 nits en toda la pantalla y pico de brillo de 1.600 nits[2] (sólo contenido HDR)

Brillo SDR de 500 nits

Colores

1.000 millones de colores

Amplia gama de colores (P3)

Tecnología True Tone

Frecuencias de actualización

Tecnología ProMotion con frecuencias de actualización adaptativas de hasta 120 Hz

Frecuencias de actualización fijas: 47,95 Hz, 48 Hz, 50 Hz, 59,94 Hz, 60 Hz

Memoria

16 GB

16 GB de memoria unificada

Configurable con:

32 GB (M2 Pro o M2 Max), 64 GB (M2 Max) o 96 GB (M2 Max con GPU de 38 núcleos)

16 GB

16 GB de memoria unificada

Configurable con:

32 GB (M2 Pro o M2 Max), 64 GB (M2 Max) o 96 GB (M2 Max con GPU de 38 núcleos)

32 GB

32 GB de memoria unificada

Configurable con:

64 GB (M2 Max) o 96 GB (M2 Max con GPU de 38 núcleos)

Batería y

Hasta 22 horas de reproducción de video en la app Apple TV

Cable de USB-C a MagSafe 3

Carga rápida con el adaptador de corriente USB-C de 140 W incluido

Almacenamiento[4]

512 GB	1 TB	1 TB
SSD de 512 GB	SSD de 1 TB	SSD de 1 TB
Configurable con:	**Configurable con:**	**Configurable con:**
1 TB, 2 TB, 4 TB u 8 TB	2 TB, 4 TB u 8 TB	2 TB, 4 TB u 8 TB

Carga y expansión

Ranura para tarjeta SDXC

Puerto HDMI

Entrada de 3,5 mm para audífonos

Puerto MagSafe 3

Tres puertos Thunderbolt 4 (USB-C) compatibles con:

Carga

DisplayPort

Thunderbolt 4 (hasta 40 Gb/s)

USB 4 (hasta 40 Gb/s)



Compatibilidad con monitores

Chip M2 Pro

Es compatible simultáneamente con la resolución nativa de la pantalla integrada en 1.000 millones de colores y:

Hasta dos monitores externos con resolución hasta 6K a 60 Hz a través de Thunderbolt o un monitor externo con resolución hasta 6K a 60 Hz a través de Thunderbolt y un monitor externo con resolución hasta 4K a 144 Hz a través de HDMI

Un monitor externo con resolución 8K a 60 Hz o un monitor externo con resolución 4K a 240 Hz a través de HDMI

Chip M2 Max

Es compatible simultáneamente con la resolución nativa de la pantalla integrada en 1.000 millones de colores y:

Hasta cuatro monitores externos: hasta tres monitores externos con resolución 6K a 60 Hz a través de Thunderbolt y un monitor externo con resolución hasta 4K a 144 Hz a través de HDMI

Hasta tres monitores externos: hasta dos monitores externos con resolución 6K a 60 Hz a través de Thunderbolt y un monitor externo con resolución hasta 8K a 60 Hz o un monitor externo con resolución 4K a 240 Hz a través de HDMI

Salida de video digital Thunderbolt 4

Compatibilidad con salida DisplayPort nativa a través de USB-C

Salida de video digital HDMI

Compatible con un monitor con resolución hasta 8K a 60 Hz o resolución 4K a 240 Hz

Reproducción de video

Los formatos compatibles incluyen HEVC, H.264 y ProRes

HDR con Dolby Vision, HDR10 y HLG

Reproducción de audio

Los formatos compatibles incluyen AAC, MP3, Apple Lossless, FLAC, Dolby Digital, Dolby Digital Plus y Dolby Atmos

Teclado y trackpad

Magic Keyboard retroiluminado con:

78 (EE.UU.) o 79 (ISO) teclas, incluidas 12 teclas de función de altura estándar y 4 teclas de flecha en forma de “T” invertida

Touch ID

Sensor de luz ambiente

Trackpad Force Touch con control preciso del cursor y sensibilidad a la presión; permite clics fuertes, aceleradores, trazos sensibles a la presión y gestos Multi-Touch



Trackpad Force Touch

Conexión inalámbrica

Wi-Fi

Wi-Fi 6E (802.11ax)[5]

Bluetooth

Bluetooth 5.3

Cámara

Cámara FaceTime HD de 1080p
Procesador de señal de imagen avanzado con video computacional

Audio

Sistema de sonido de seis parlantes de alta fidelidad con woofers con cancelación de fuerza

Amplio sonido estéreo

Compatible con audio espacial al reproducir música o video con Dolby Atmos en los parlantes integrados

Audio espacial con seguimiento dinámico de la cabeza al usar los AirPods (tercera generación), AirPods Pro y AirPods Max

Sistema de tres micrófonos con calidad de estudio, alta relación señal/ruido y tecnología beamforming direccional

Entrada de 3,5 mm para audífonos con compatibilidad avanzada para audífonos de alta impedancia

Puerto HDMI compatible con salida de audio multicanal

Requisitos operativos

Tensión eléctrica: 100-240 V CA

Frecuencia: 50 Hz a 60 Hz

Temperatura operativa: 10 a 35 ºC

Temperatura de almacenamiento: –25 a 45 °C

Humedad relativa: 0% a 90% sin condensación

Altitud de funcionamiento: probado hasta 3.000 m

Altitud máxima de almacenamiento: 4.500 m

Altitud máxima de transporte: 10.500 m

Tamaño y peso

Grosor: 1,68 cm

Ancho: 35,57 cm

Profundidad: 24,81 cm

Peso (M2 Pro): 2,15 kg[6]

Peso (M2 Max): 2,16 kg[6]

24,81 cm

35,57 cm

1,68 cm

Sistema operativo

macOS

macOS es el sistema operativo para computadores de escritorio más avanzado del mundo. Y macOS Ventura mejora aún más todo lo que te encanta hacer con tu Mac, para que puedas trabajar, jugar y disfrutar como nunca antes.

Más información ›

Accesibilidad

Las funcionalidades de accesibilidad ayudan a las personas con alguna discapacidad a aprovechar al máximo su nuevo MacBook Pro. Gracias al soporte integrado para visión, audición, motricidad y aprendizaje, crear y hacer cosas asombrosas está al alcance de todos.

Más información ›

Funcionalidades incluidas:

VoiceOver	Aumentar Contraste	Dictado
Zoom	Reducir Movimiento	Control por Botón

Subtítulos opcionales Texto a Voz

Apps integradas[7]


App Store


Libros



Calendario


Contactos


FaceTime


Encontrar


GarageBand


Casa


iMovie


Keynote


Mail


Mapas


Mensajes


Música


Notas


Numbers


Pages


Photo Booth


Fotos


Podcasts


Vista Previa


QuickTime Player


Recordatorios


Safari


Atajos


Bolsa


Time Machine



TV


Notas de Voz

En la caja

MacBook Pro de 16 pulgadas

Adaptador de corriente USB-C de 140 W

Cable de USB-C a MagSafe 3 (2 m)

Configúralo al hacer el pedido

Configura tu MacBook Pro con estas opciones:

M2 Max con CPU de 12 núcleos, GPU de 30 núcleos y Neural Engine de 16 núcleos

M2 Max con CPU de 12 núcleos, GPU de 38 núcleos y Neural Engine de 16 núcleos

32 GB de memoria unificada (M2 Pro y M2 Max)

64 GB de memoria unificada (M2 Max)

96 GB de memoria unificada (M2 Max con GPU de 38 núcleos)

SSD de 1 TB, 2 TB, 4 TB u 8 TB

El MacBook Pro y el medio ambiente

El MacBook Pro de 16 pulgadas está diseñado con las siguientes características para reducir el impacto ambiental[8]:

Ver el informe medioambiental del MacBook Pro de 16 pulgadas ›

Fabricado con los mejores materiales

Más de 35% de contenido reciclado en el producto entero[9], lo que incluye:

Aluminio 100% reciclado en la carcasa

Tierras raras 100% recicladas en todos los imanes

Estaño 100% reciclado en la soldadura de varios circuitos impresos

Oro 100% reciclado en las placas de varios circuitos impresos

35% o más de plástico reciclado en varios componentes

Eficiencia energética

Certificado por ENERGY STAR®[10]

Química inteligente[11]

Vidrio de la pantalla sin arsénico

Fabricación ecológica

El programa de cero residuos de Apple ayuda a los proveedores a eliminar los desechos que terminan en los basureros

Todas las instalaciones de ensamblaje final de los proveedores están haciendo la transición hacia el uso de energía 100% renovable en la fabricación de productos Apple

Empaque responsable

El 100% de la fibra virgen de madera proviene de bosques gestionados de manera responsable

Empaque fabricado con un 97% de fibra y sin envoltura de plástico[12]

Apple y el medio ambiente

Nuestro compromiso es crear nuestros productos sin tener que extraer recursos de la tierra y lograr que todas nuestras actividades y productos sean neutrales en emisiones de carbono para el 2030.

Ver el compromiso de Apple ›

Sin mercurio, BFR, PVC ni berilio

Accesorios

Software para el Mac

Final Cut Pro

Logic Pro

Monitores y adaptadores

Studio Display

Pro Display XDR

Monitor LG UltraFine 4K

Adaptador de Thunderbolt 3 (USB-C) a Thunderbolt 2

Adaptador de USB-C a USB

Adaptador multipuerto de USB-C a AV digital

Adaptador multipuerto de USB-C a VGA

Adaptador de USB-C a Gigabit Ethernet de Belkin

Otros accesorios

Cable de USB-C a Lightning

Cable de USB-C a MagSafe 3

Cable de carga USB-C

Adaptador de corriente USB-C de 140 W

Magic Keyboard con Touch ID

Magic Keyboard con Touch ID y teclado numérico

Magic Keyboard

Magic Keyboard con teclado numérico

Magic Trackpad

Magic Mouse

Paño de pulido

Encuentra el MacBook Pro perfecto para ti.

Comparar los modelos de Mac ›

1. Las pantallas de los MacBook Pro de 14 pulgadas y 16 pulgadas tienen esquinas redondeadas en la parte superior. Si se miden en forma de rectángulo estándar, las

pantallas tienen 14,2 pulgadas y 16,2 pulgadas en diagonal (el área real de visualización es menor).

2. A temperaturas inferiores a 25 °C.
3. La potencia real es de 69,6 Wh (modelo de 14 pulgadas) o 99,6 Wh (modelo de 16 pulgadas). Pruebas realizadas por Apple en noviembre y diciembre de 2022 con sistemas en preproducción del MacBook Pro de 14 pulgadas con el chip M2 Pro de Apple, CPU de 12 núcleos, GPU de 19 núcleos, 16 GB de RAM y SSD de 1 TB, y sistemas en preproducción del MacBook Pro de 16 pulgadas con el chip M2 Pro de Apple, CPU de 12 núcleos, GPU de 19 núcleos, 16 GB de RAM y SSD de 1 TB. La prueba de productividad de Internet inalámbrico mide la duración de la batería navegando 25 sitios web populares de forma inalámbrica con el brillo de la pantalla configurado a 8 clics desde el ajuste más bajo. La prueba de reproducción de video en la app Apple TV mide la duración de la batería reproduciendo contenido HD de 1080p con el brillo de la pantalla configurado a 8 clics desde el ajuste más bajo. La duración de la batería varía según el uso y la configuración. Para obtener más información, visita apple.com/co/batteries.
4. 1 GB = 1.000 millones de bytes y 1 TB = 1 millón de millones de bytes. La capacidad formateada real es menor.
5. La conectividad Wi-Fi 6E está disponible en los países donde hay compatibilidad. Requiere macOS 13.2 o posterior en Japón.
6. El peso varía según la configuración y el proceso de fabricación.
7. iMovie, GarageBand, Pages, Numbers y Keynote están disponibles en el Mac App Store. Para descargar apps, se necesita un Apple ID y un dispositivo compatible con la versión de OS que requiera cada app.
8. Información actualizada a la fecha de lanzamiento del producto.
9. El contenido reciclado del producto es la relación entre la masa de material reciclado certificado y la masa total del dispositivo, sin incluir el empaque ni los accesorios en la caja.
10. ENERGY STAR y el símbolo de ENERGY STAR son marcas comerciales registradas de la Agencia de Protección Ambiental de Estados Unidos.
11. La Especificación de Sustancias Reguladas de Apple describe las restricciones de Apple en cuanto al uso de ciertas sustancias químicas en los materiales de los productos Apple, accesorios, procesos de fabricación y empaques usados para enviar productos a los consumidores finales de Apple. Estas restricciones están basadas en leyes o directivas internacionales, normativas de agencias regulatorias, requisitos de etiqueta ecológica, estándares medioambientales y las políticas de Apple. Ningún producto Apple contiene PVC ni ftalatos, excepto los cables de corriente alterna en India, Tailandia (cables de corriente alterna de dos patas) y Corea del Sur, donde seguimos trabajando para que las autoridades aprueben nuestras alternativas a estos materiales. Los productos Apple cumplen con la Directiva 2011/65/UE de la Unión Europea y sus modificaciones, incluidas las exenciones relacionadas con el uso de plomo, como las soldaduras a altas temperaturas. Apple trabaja para eliminar gradualmente el uso de estas sustancias exentas en los nuevos productos cuando sea posible desde el punto de vista técnico.
12. Basado en el empaque de venta de Apple. El contenido de fibra se basa en un desglose de los empaques de venta en Estados Unidos por peso. Los adhesivos, tintas y recubrimientos están excluidos de nuestros cálculos de contenido de plástico y peso del empaque.

No todas las configuraciones están disponibles en todos los países. Las afirmaciones sobre el rendimiento varían según el modelo y la configuración de cada modelo.

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Hub Multipuerto Satechi Tipo USB-C V2 8 en 1 4K Ethernet - Gris Espacial

$429.000,00

Selecciona tu método de entrega*

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Envío a Domicilio es ¡GRATIS! desde $220.000

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SKU: ST-TCMA2M


EXPANSION PORTS AND SLOTS.
USB-C SUPPORT.
SATECHI ALUMINUM MULTI-PORT ADAPTER V2
USB-C Charging
Gigabit Ethernet
3 x USB-A Data Port
Micro/SD Card Readers
4K HDMI
4K HDMI
SATECHI


EXPANSION PORTS AND SLOTS.
USB-C SUPPORT.
SATECHI ALUMINUM MULTI-PORT ADAPTER V2
USB-C Charging
Gigabit Ethernet
3 x USB-A Data Port
Micro/SD Card Readers
4K HDMI
4K HDMI
SATECHI





ADAPTADOR V2 CON UPGRADE





VISTAS 4K HDMI ESTUPENDAS





ADAPTADOR Y CARGADOR

ADAPTADOR V2 CON UPGRADE Transferencia de carga víUSB-C (hasta 60 W); Salida de video HDMI (hasta 4k 60Hz); 3 puertos de datos USB-A (hasta 5 Gbps); Lectores de tarjetas Micro/SD (UHS-I); y Gigabit Ethernet (admite 10/100/1000 Mbps).

VISTAS 4K HDMI ESTUPENDAS	Simplemente conecta tu cable HDMI desde el adaptador multipuerto al monitor para disfrutar de una hermosa y nítida imagen de video de alta resolución hasta 4K @ 60Hz.
ADAPTADOR Y CARGADOR	No creas que vas a sacrificar tu puerto USB-C. Con el sistema de transferencia de carga puedes cargar fácilmente tus dispositivos Tipo-C mientras usas los otros puertos.


ALL THE ESSENTIAL PORTS
UPGRADED FOR YOU



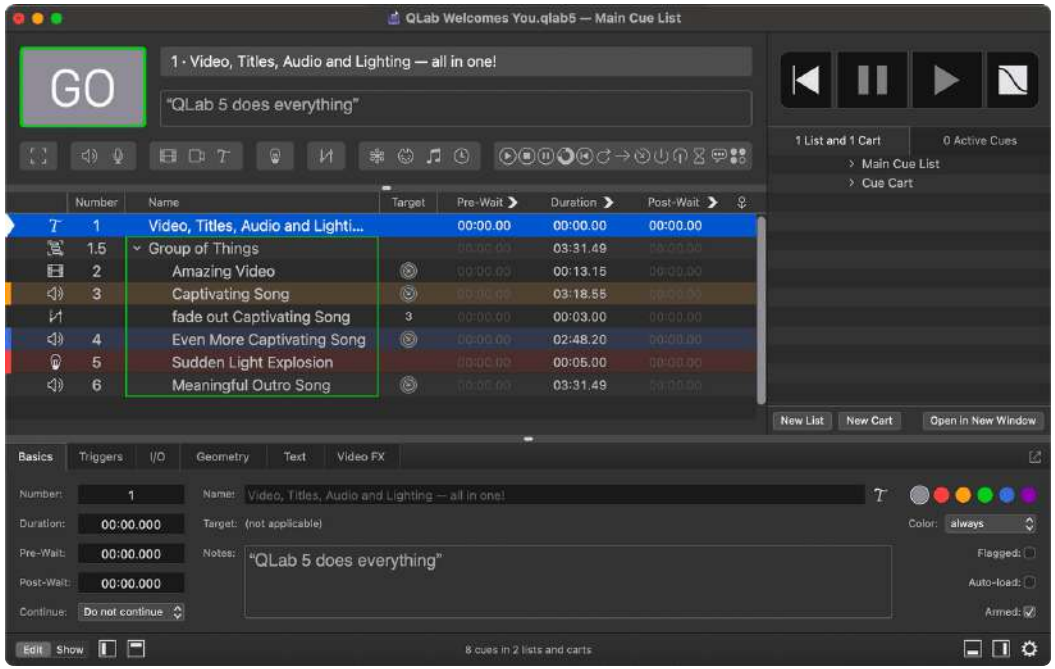
Compatibilidad con las Mac:

- MacBook Pro M2 (2022)
- MacBook Pro M1 Pro y Max (2021)
- MacBook Pro M1 (2020)
- MacBook Pro (2016 y posteriores)

- MacBook Air M2 (2022)
- MacBook Air M1 (2020)
- MacBook Air (2018 y posteriores)
- iMac M1 (2020), iMac (2019 y 2017)
- iMac Pro
- iPad Pro M1 (2021)
- iPad Pro (2018 y posteriores)

Información importante:

- La función de carga USB-C admite dispositivos con protocolo USB PD 2.0 y superior.
- El puerto MagSafe 3 de la MacBook Pro (16 pulgadas, M1 Pro/Max, 2021) cargará hasta 140 W, mientras que el puerto USB-C del adaptador multipuerto Satechi admitirá 60 W máx. Para una carga más rápida, usa el puerto MagSafe 3 directamente en la computadora.
- Los puertos USB-A no admiten carga ni lectores de CD, inclusive Apple SuperDrive.
- Recomendamos conectar un sólo disco duro USB externo a la vez.
- El puerto HDMI sólo admite dispositivos con DisplayPort a través de USB-C con modo Alt.
- La temperatura de funcionamiento es de 86 a 122 °F.



El estándar de la industria por una razón.

QLab ofrece un lugar central para construir sus señales de control de sonido, video, iluminación y espectáculos. Cree diseños intrincados y tenga la flexibilidad de cambiarlos rápidamente. Colabore de forma remota con otros diseñadores en un solo espacio de trabajo o sincronice entre departamentos utilizando nuestras funciones de control de presentación. Cuando haya terminado de

diseñar, ejecute todo el programa simplemente presionando el botón "IR". Explore solo algunas de nuestras funciones a continuación y pruébelas todas gratis usando el modo de demostración .

Lista completa de funciones

Explore una lista completa de características de QLab.

Características de QLab5

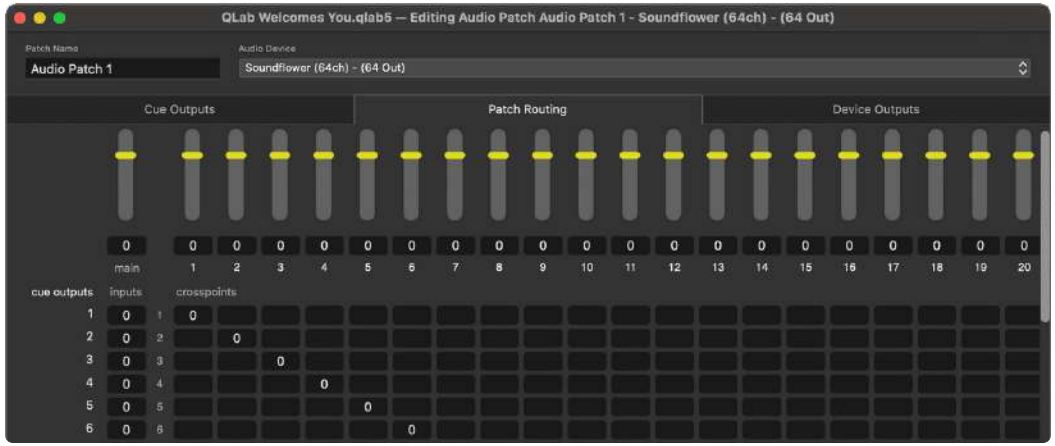
Características por licencia

Vea un desglose de las funciones incluidas en cada licencia.

Licencias de QLab5

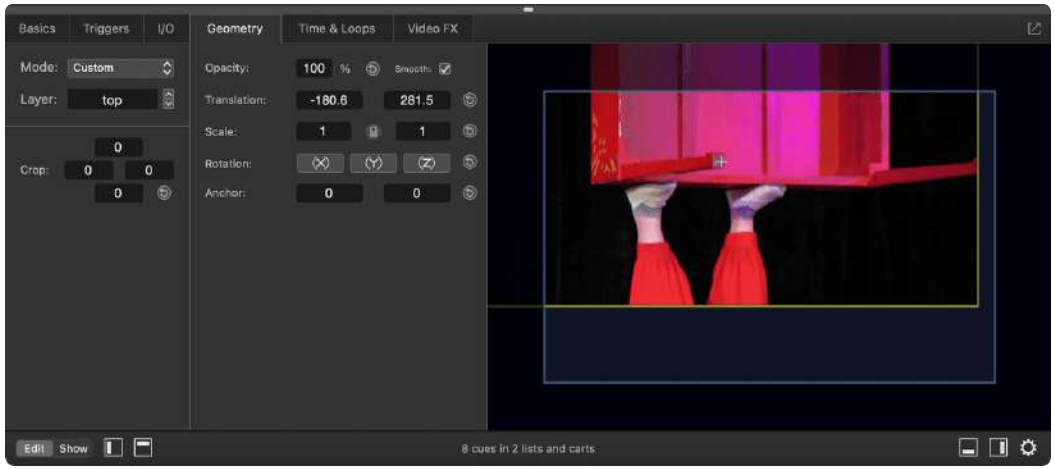
Empezar

Muchas funciones son completamente gratuitas, ¡de verdad! Descargue QLab hoy para verlo usted mismo.



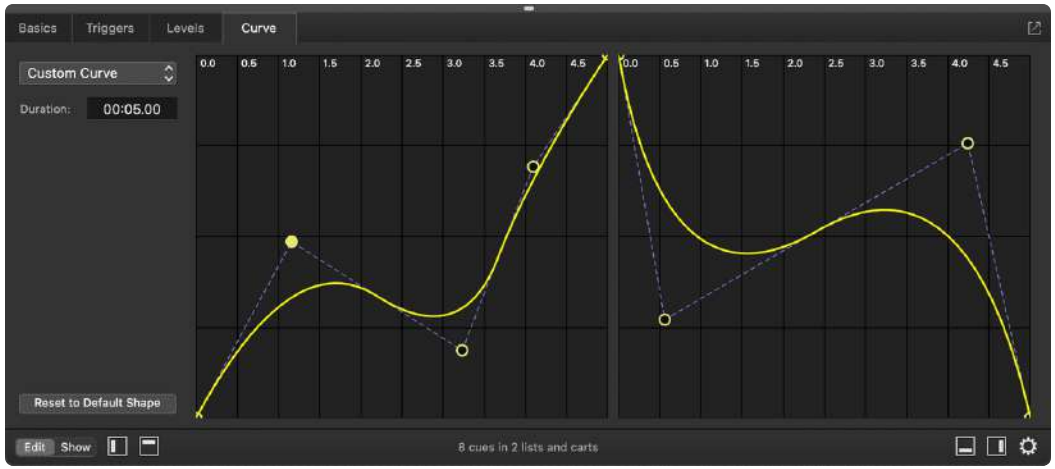
Audio

Con la confianza de diseñadores de sonido de todo el mundo, QLab es el mejor software para crear y reproducir señales de audio para eventos en vivo. ¿Necesitas tocar un trueno para una obra de teatro escolar? Arrastre y suelte su archivo de audio en el espacio de trabajo y estará listo para comenzar. ¿Necesita enviar hasta 64 canales de salida de audio a un conjunto de altavoces personalizado? No hay problema: QLab tiene enrutamiento de audio basado en matriz y soporte de audio multicanal. QLab también tiene cadenas de efectos de audio, soporte para Dante, AVB y NDI, sofisticadas herramientas de mezcla y mucho más.



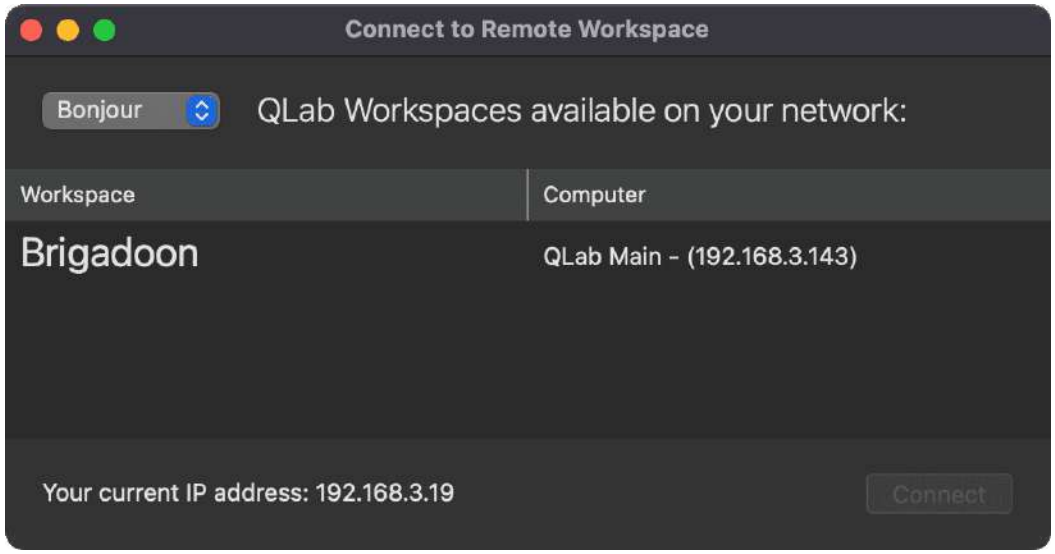
Video

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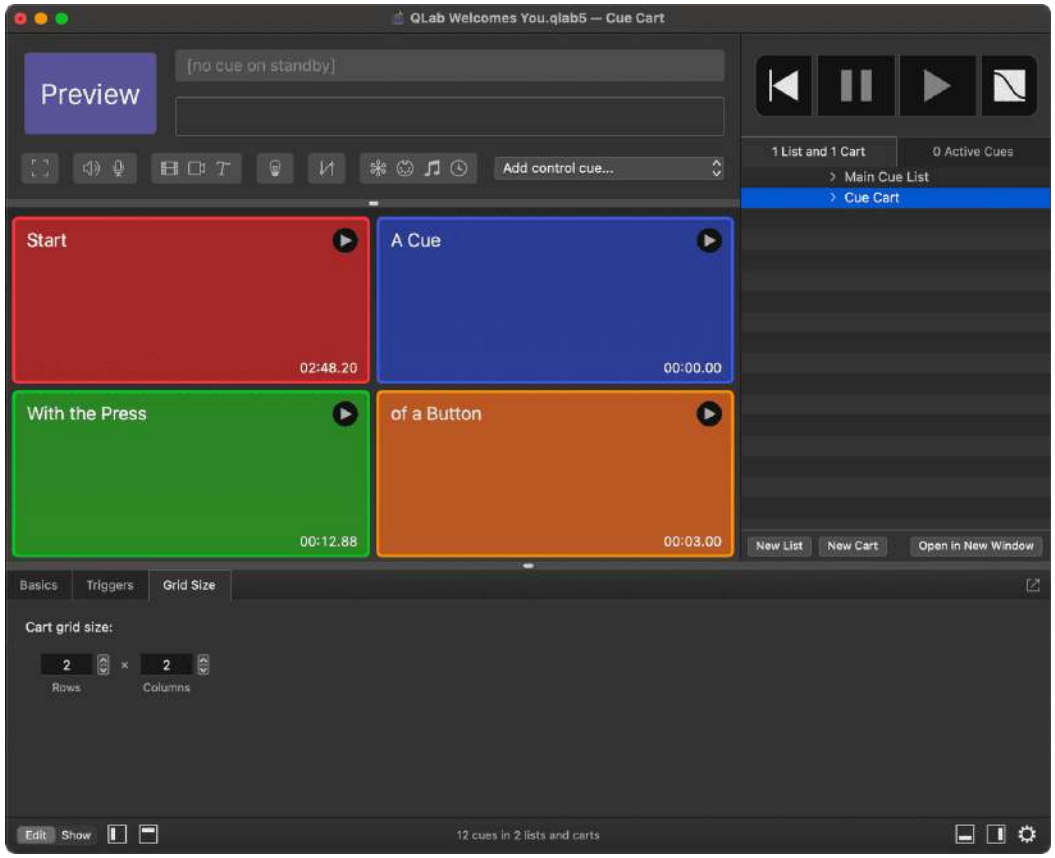
Encendiendo

Parchee y controle sus luces con las mismas indicaciones flexibles e intuitivas que usa para controlar audio y video. Controle un número ilimitado de universos DMX a través de Art-Net o USB. QLab viene con cientos de definiciones de instrumentos de iluminación incluidas, o puede agregar la suya propia a nuestra biblioteca.



Colaborar

Nuevo en QLab 5, varios usuarios pueden iniciar sesión en un solo espacio de trabajo. Use la conexión remota para editar su diseño desde una tabla técnica, permita que varios departamentos colaboren en un solo espacio de trabajo, otorgue a su director de escena acceso de solo lectura y mucho más.



flujo de trabajo

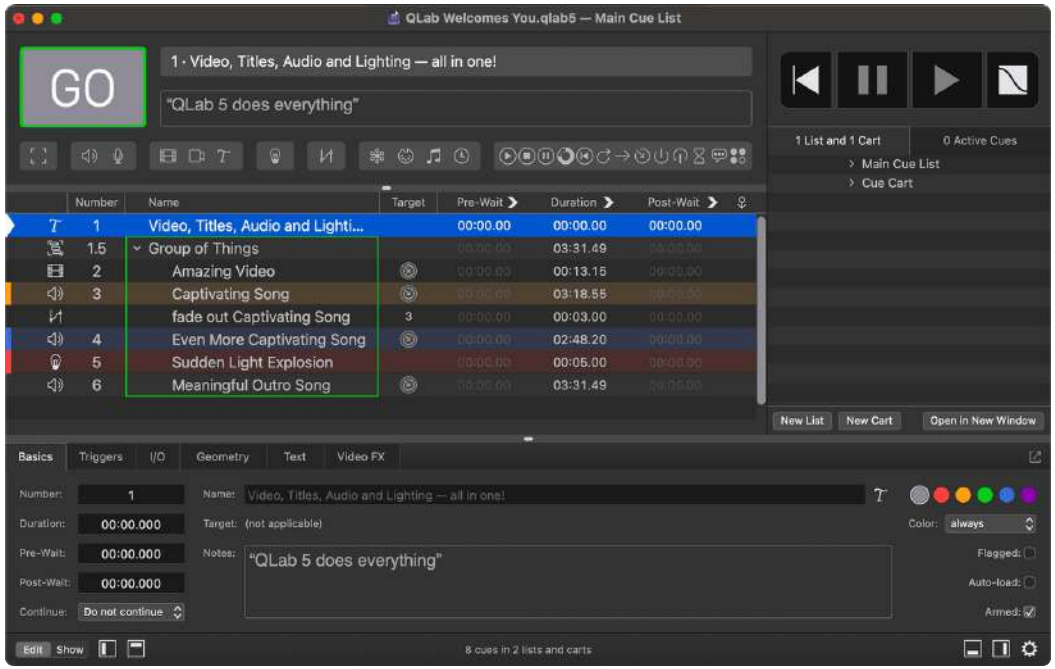
Si bien todas las piezas de QLab son poderosas por sí mismas, la verdadera elegancia del programa es la forma en que todas funcionan juntas. Hay tantas maneras de personalizar sus señales: active una señal desde otra, inicie 18 efectos de sonido a la vez, recorra una lista de reproducción al azar, ¡o incluso configure sus señales para que comiencen según la hora del día! También puede usar el

modo de línea de tiempo para ajustar los tiempos de inicio relativos de sus señales con arrastrar y soltar. Nuestro modo Cart integrado le permite activar sus señales con solo presionar un botón.

OSC	**AppleScript**	**midi**
LTC	**CCM**	...¡y más!

Mostrar control

QLab tiene un amplio soporte para los protocolos OSC, MIDI y de código de tiempo para el control de espectáculos entrantes o salientes. Nuevo en QLab 5, QLab se sincroniza con el código de tiempo entrante. Las señales de red pueden enviar mensajes OSC, ASCII y hexadecimales personalizados a



El estándar de la industria por una razón.

QLab ofrece un lugar central para construir sus señales de control de sonido, video, iluminación y espectáculos. Cree diseños intrincados y tenga la flexibilidad de cambiarlos rápidamente. Colabore de forma remota con otros diseñadores en un solo espacio de trabajo o sincronice entre departamentos utilizando nuestras funciones de control de presentación. Cuando haya terminado de

diseñar, ejecute todo el programa simplemente presionando el botón "IR". Explore solo algunas de nuestras funciones a continuación y pruébelas todas gratis usando el modo de demostración .

Lista completa de funciones

Explore una lista completa de características de QLab.

Características de QLab5

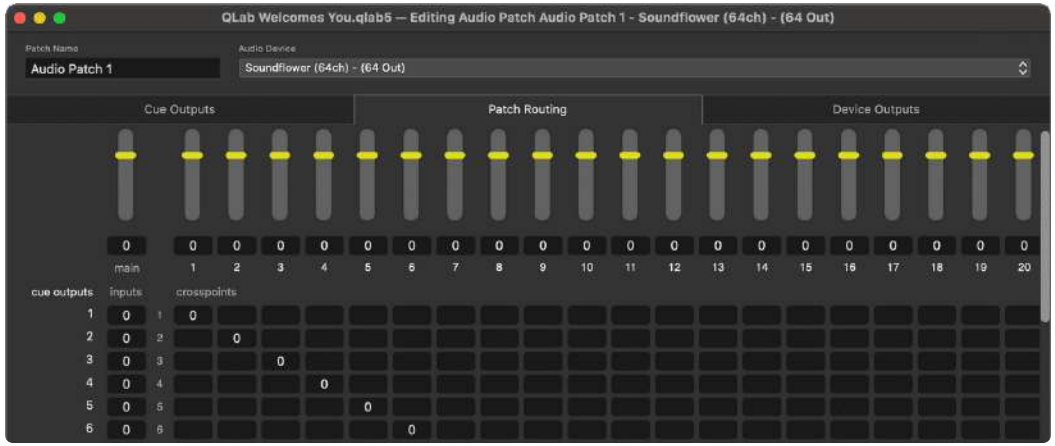
Características por licencia

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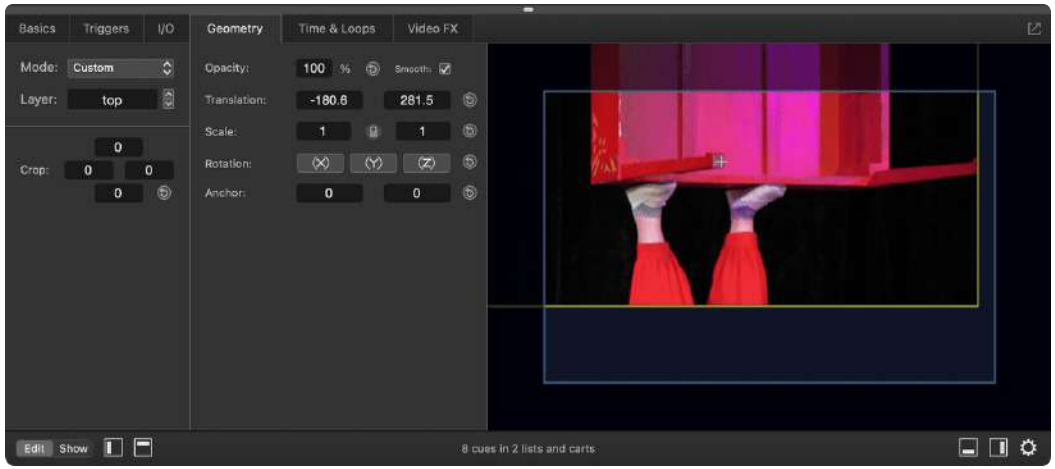
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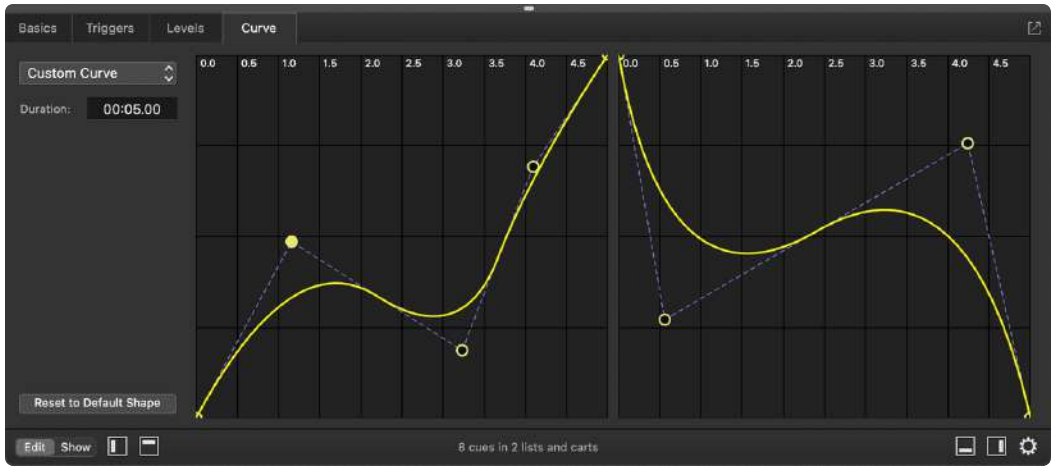
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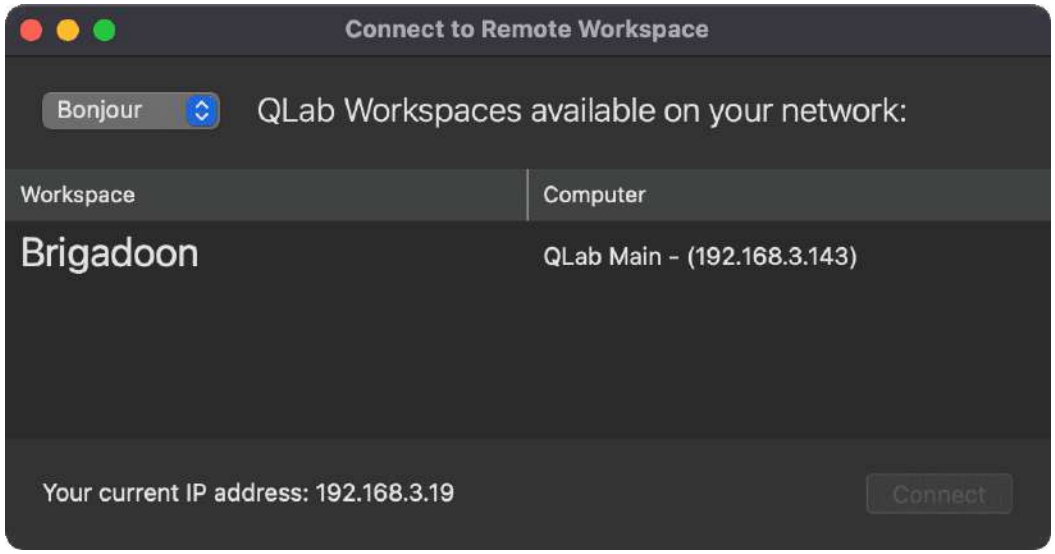
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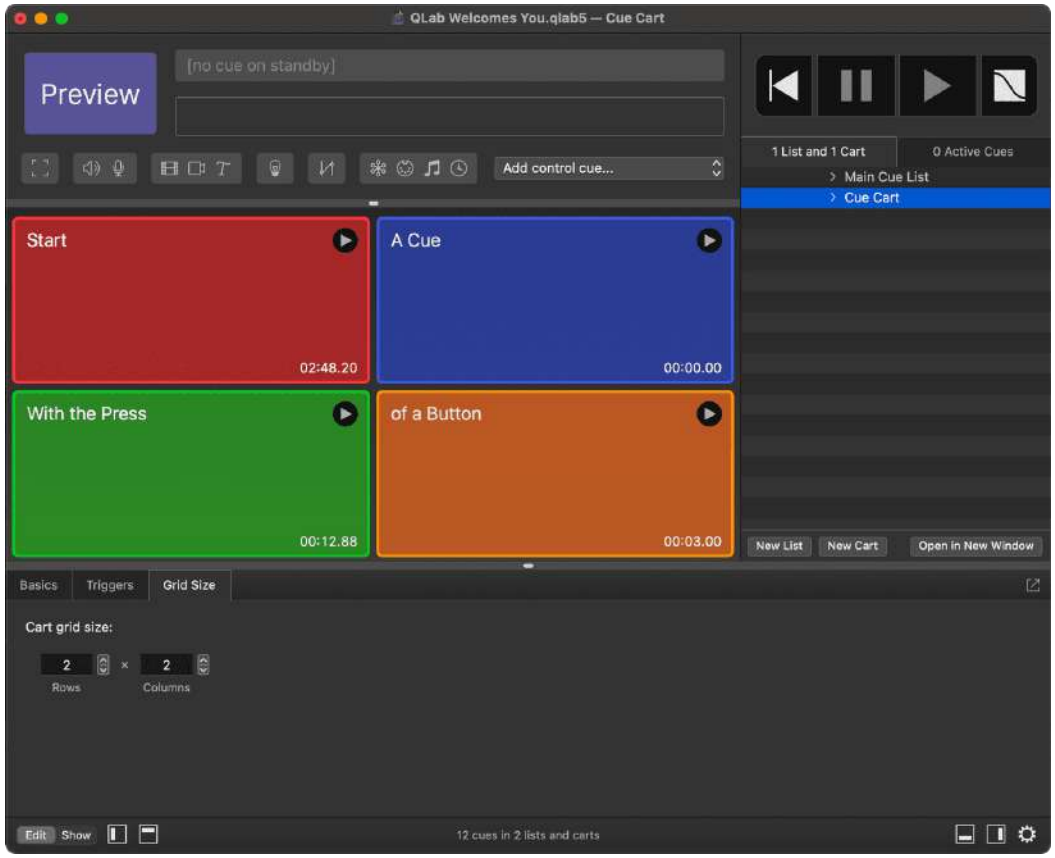
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El manual de QLab 5

Actualizado el 1 de agosto de 2023 para QLab 5.2.1.
Consulte el registro de cambios para ver las novedades de esta versión.

¡Bienvenido a QLab 5!

Este manual es un manual de referencia completo y detallado destinado a cubrir todos los aspectos y detalles de QLab y proporcionar información adyacente cuando sea relevante. Se puede leer directamente en caso de que sea el tipo de persona a la que le gusta leer los manuales de referencia directamente, pero ha sido diseñado para permitirle leer solo la sección que es relevante para una pregunta que tiene o un problema que está tratando. tratando de resolver

QLab 5 contiene enlaces específicos del contexto a este manual que se pueden encontrar haciendo clic derecho (o control-clic) en señales o controles en el inspector, o haciendo clic en botones que se refieren a obtener ayuda.

Diferentes personas encuentran que las diferentes formas de aprendizaje son las más accesibles, y nuestro objetivo es tratar de proporcionar acceso multimodal al aprendizaje QLab tanto como sea posible.

La sección Tutoriales alberga ejemplos independientes que exploran un solo tema de una manera enfocada y práctica. Algunos tutoriales están diseñados para acompañar una sección específica del manual; estos están vinculados desde la sección del manual correspondiente. Otros tutoriales están destinados a valerse por sí mismos. Algunos tutoriales son simplemente ensayos sobre temas que no forman parte de QLab en sí, pero que muchos usuarios de QLab encontrarán útiles en general.

Puede descargar una versión en PDF de esta documentación haciendo clic aquí .

¿Qué es QLab?

QLab 5 es un programa de control de espectáculos y reproducción de medios en vivo. Su diseño se basa en conceptos y convenciones de las industrias cinematográfica, televisiva y teatral, pero pretende ser lo suficientemente flexible y adaptable para usarse en muchos otros contextos.

QLab se ejecuta en computadoras Mac y generalmente sigue los principios de diseño e interacción de macOS. Si es nuevo en la Mac, o si desea refrescar los conceptos básicos del uso de una Mac, consulte nuestro tutorial sobre el tema.

General

- **Novedades de QLab 5.** Una descripción general de las novedades de QLab 5.
- **Cambiar registro.** Un registro completo de todos los cambios en cada versión de QLab 5.
- **Recomendaciones del sistema.** Una exploración de los requisitos mínimos y la compatibilidad de hardware y software.
- **Preparando tu Mac.** Cómo obtener el mejor rendimiento QLab posible de su Mac.
- **Atajos de teclado.** Una lista completa de los atajos de teclado predeterminados en QLab.
- **Licencias.** Uso de licencias y gestión de licencias.
- **Funciones por licencia.** ¿Qué características requieren qué licencia?
- **Preferencias de QLab.** Preferencias que se aplican a QLab en su conjunto.

Fundamentos

- **El espacio de trabajo.** Un recorrido visual por la ventana principal de QLab.

- **Configuración del espacio de trabajo.** Un recorrido visual por la ventana Configuración del espacio de trabajo.
- **Plantillas de espacio de trabajo.** Creación de nuevos espacios de trabajo de acuerdo a sus necesidades específicas.
- **Guardar, administrar y mover espacios de trabajo.** Tratar con espacios de trabajo fuera de QLab.
- **señales** ¿Qué son las señales? ¿Qué tipos de cues tiene QLab?
- **El inspector.** El corazón de la programación y edición de señales.
- **Listas de Cue.** La unidad básica de la estructura de indicaciones secuenciales.
- **Carros de tacos.** La unidad básica de la estructura de señales no secuenciales.
- **Señales de grupo.** La herramienta esencial de organización de señales.
- **Secuencias de Cue.** Cuando dos señales van caminando, ¿cuál habla? (Spoiler: generalmente ambos).

Herramientas de flujo de trabajo

- **El menú Herramientas.** Cargar a tiempo, Renumerar señales, Saltar a señal, Grabar secuencia de señal y algunos otros.
- **Encontrar.** Buscando en su espacio de trabajo.
- **Propiedades de Pegar Cue.** también conocido como Fancy Paste.
- **La ventana del lanzador.** Un punto de partida.
- **La ventana de estado del espacio de trabajo.**
- **Supervisar ventanas.**
- **La ventana de estado del código de tiempo.**
- **Señales de audición.**

- Controles de anulación.

Audio

- ⓘ Introducción al Audio en QLab 5.
- Señales de audio.
- Señales de micrófono.
- ⚙ El editor de parches de salida de audio.
- Desvanecimiento de audio y efectos de audio.

Video

- ⓘ Introducción al Vídeo en QLab 5.
- Señales de video.
- Señales de cámara.
- Señales de texto.
- *FX* Vídeos de referencia del modo de fusión .
- ⚙ Salida de vídeo.
- Uso de NDI para entrada y salida de video en red.
- Desvanecimiento de video y efectos de video.

Encendiendo

- Introducción a la Iluminación en QLab 5.
- Señales de luz.
- El tablero de luces.
- El lenguaje de comandos de iluminación.
- El editor de parches de luz.
- La Biblioteca de la Luz. Una lista de las definiciones de instrumentos de luz que se incluyen con QLab.

Redes, MIDI y Show Control

- Colaboración. Edición colaborativa multiusuario de los espacios de trabajo de QLab.
- Remoto QLab. Aplicación de control remoto para iOS de QLab.
- Usando OSC. Controlando QLab con OSC.
- Uso de MIDI y MSC. Controlando QLab con MIDI y MSC (MIDI Show Control).
- Uso de código de tiempo. Controlando QLab con código de tiempo.
- Señales de red.
- señales MIDI.
- Cues de archivos MIDI.

- Señales de código de tiempo.

Scripting y Automatización

- Diccionario OSC.
- Consultas OSC.
- Diccionario de AppleScript.
- Señales de guión.
- Referencia de parámetros.
- OSC y ejemplos de secuencias de comandos.

Otros tipos de señales

- Señales de transporte. Señales de inicio, parada, pausa, carga y reinicio.
- Señales de desvanecimiento.
- Ir a señales.
- Señales de destino.
- Señales de armado y desarmado.
- Señales de espera.
- Señales de memoria.

Tutoriales

Empezando

- Cero a audio
- Cero a vídeo
- Cero a luces
- Cero a MIDI
- Cero a la red

Conceptos básicos

- el botónGO
- Secuencias de referencia
- Flujo de trabajo de audio
- Flujo de trabajo de vídeo

Referencia general

- Cómo usar una Mac
- Redes informáticas básicas para teatro
- Entendiendo USB-C

Video

- Demostración del modo de fusión

MIDI, redes, secuencias de comandos y control de espectáculos

- Herramientas de código de tiempo
- Caja de herramientas de Sam

Smaart está disponible en 4 ediciones diferentes. Todas las ediciones se derivan de la misma base de código, lo que garantiza que todas comparten la misma GUI fundamental, la misma estructura de comando y control, los mismos paradigmas operativos y son cohesivos hasta en las teclas de acceso rápido.

La única diferencia entre las ediciones es su conjunto de funciones.



Suite inteligente

Smaart Suite es la edición insignia con todas las funciones que incluye los tres modos de medición potentes de Smaart (tiempo real, respuesta de impulso y SPL) sin limitaciones funcionales. Para usuarios que requieren el conjunto completo de funciones de Smaart en los tres modos de medición.

Aprende más


Smaart®
RT

Inteligente RT

Smaart RT es el modo en tiempo real de Smaart Suite como una edición independiente que contiene todas las capacidades básicas de medición basadas en FFT multimotor: RTA, espectrógrafo, función de transferencia y respuesta de impulso en vivo. Para usuarios que simplemente requieren la funcionalidad avanzada completa del Modo en tiempo real.

Aprende más


Smaart®
LE

Smaart LE

Smaart LE es una versión simplificada y optimizada del modo de tiempo real de Smaart en el que muchas de las configuraciones y ajustes avanzados para las mediciones de espectro, función de transferencia e IR en vivo están preestablecidos y fijos. En efecto, como operar RT en su configuración de medición predeterminada.

Aprende más



Inteligente SPL

Smaart SPL es el poder del modo SPL de Smaart Suite como una edición independiente. Smaart SPL incluye todas las funciones de registro y medición de SPL multicanal, monitoreables de forma remota, que se encuentran en Smaart Suite, en un paquete simplificado y enfocado en un propósito.

Aprende más


10EaZy Mic #1092
68.5
Max: 74.4
dB A SPL Slow
10EaZy Mic #1092
67.3
Max: 78.4
LAeq10
Rational HQ
73.3
Limit: LAeq 30 min @ 80dB
22.5 Hz -108.04 dB
75.0

Acerca de Smaart

Smaart es la plataforma de software de prueba y medición acústica más utilizada de audio profesional.

Aprende más

NOTICIAS DE PRODUCTOS SMAART

View all



Actualización de Smaart v9.1 disponible

20 DE DICIEMBRE DE 2022

Esta primera actualización importante de la plataforma Smaart v9 presenta una serie de nuevas funciones, mejoras



¡Ha llegado Smaart v9!

27 DE SEPTIEMBRE DE 2022

¡Feliz día de lanzamiento de v9!



Ventas de licencias de Smaart temporalmente fuera de línea

23 DE SEPTIEMBRE DE 2022

Las ventas de Smaart License estarán temporalmente fuera de



Fecha de lanzamiento de Smaart v9

30 DE AGOSTO DE 2022

Marquen sus calendarios... ¡Se acerca Smaart v9!

de rendimiento y correcciones de errores.

línea, el lunes 26 de septiembre

1/2

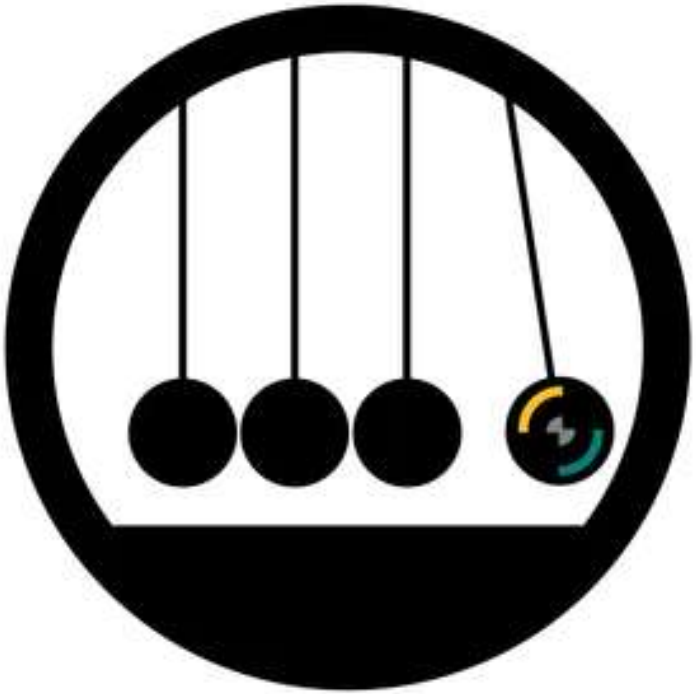
Ver todo



Comparación de ediciones de Smaart

¿No está seguro de qué edición de Smaart es la adecuada para usted? Aquí tienes algunos datos para ayudarte a decidir.

Comparar ediciones





Opciones de licencia

Smaart está disponible como Licencia perpetua o como Licencia de suscripción anual.

Detalles de licencia

Requerimientos mínimos del sistema

Los requisitos mínimos del sistema para la plataforma Smaart v9 difieren de las versiones anteriores.
Lea atentamente los requisitos para asegurarse de que v9 sea compatible con su sistema.

Requisitos mínimos del sistema de Smaart v9

GALERÍA DE USUARIOS DE SMAART







VER MÁS

¿Necesitas ayuda?

Contáctenos

Servicio al Cliente

Términos de servicio

Cancelación, Devoluciones y Reembolsos

Políticas de envío

política de privacidad

Inscríbase al boletín

Haga clic aquí para suscribirse a actualizaciones mensuales por correo electrónico sobre nuevos productos, información de capacitación y actualizaciones.

enlaces rápidos

Buscar

Tienda del hogar

Hogar

País/región

dólares estadounidenses | Colombia

© 2023, Acústica racional

Configuración de cookies Aceptar todas las Cookies

INALÁMBRICOS

Estándares	**Wi-Fi 6** IEEE 802.11ax/ac/n/a 5 GHz IEEE 802.11ax/n/b/g 2.4 GHz
Velocidades Wi-Fi	**AX6600** 5 GHz: 4804 Mbps (802.11ax, HE160) 5 GHz: 1201 Mbps (802.11ax) 2.4 GHz: 574 Mbps (802.11ax)
Rango WiFi	**Casas de 4 dormitorios** 8 antenas fijas de alto rendimiento Varias antenas forman una matriz de refuerzo de señal para cubrir más direcciones y áreas grandes Beamforming Concentra la intensidad de la señal inalámbrica hacia los clientes para ampliar el alcance de WiFi FEM de alta potencia Mejora la potencia de transmisión para fortalecer la cobertura de la

	señal. 4T4R Varias transmisiones en la misma banda fortalecen la tolerancia a fallas en la transmisión
Capacidad Wi-Fi	**Muy alto** Tri-Band Asignar dispositivos a diferentes bandas para un rendimiento óptimo 4 × 4 MU-MIMO Se comunica simultáneamente con múltiples clientes MU-MIMO OFDMA Se comunica simultáneamente con múltiples clientes Wi-Fi 6 Equidad de tiempo aire Mejora la eficiencia de la red al limitar la ocupación excesiva DFS Accede a una banda extra para reducir la congestión. 8 corrientes Conecte sus dispositivos a más ancho de banda
Modos de trabajo	Modo router Modo punto de acceso

Procesador	CPU de cuatro núcleos a 1,5 GHz
Puertos Ethernet	1 puerto WAN / LAN de 2,5 Gbps 1 puerto WAN / LAN de 1 Gbps 3 puertos LAN de 1 Gbps
Soporte USB	1 × puerto USB 3.0 1 × puerto USB 2.0 Formatos de partición compatibles: NTFS, exFAT, HFS +, FAT32 Funciones compatibles: Máquina del tiempo de Apple Servidor FTP Servidor multimedia Servidor Samba
Botones	Botón de encendido / apagado de Wi-Fi Botón de encendido / apagado Botón LED de encendido / apagado Botón WPS Botón de reinicio
Energía	12 V ⎓ 3.3 A

Cifrado WiFi	WPA WPA2 WPA3 WPA/WPA2-Enterprise (802.1x)
Seguridad de Red	Cortafuegos SPI Control de acceso Enlace IP y MAC Puerta de enlace de capa de aplicación **Seguridad HomeShield** Protección de IoT en tiempo real Bloqueador de sitios maliciosos Sistema de Prevención de Intrusión Prevención de ataques DDoS Escáner de red doméstica
Red de Invitados	1 red de invitados de 5 GHz-1 1 red de invitados de 5 GHz-2 1 red de invitados de 2,4 GHz
Servidor VPN	• Servidor OpenVPN • Servidor VPN PPTP • Servidor VPN L2TP
Cliente VPN	• Cliente VPN abierto • Cliente VPN PPTP • Cliente VPN L2TP

Protocolos	IPv4 IPv6
Kits de servicio	HomeShield Más información>
OneMesh™	Compatible con OneMesh ™ Sin reemplazar sus dispositivos existentes o comprar un ecosistema WiFi completamente nuevo, OneMesh ™ lo ayuda a crear una red más flexible que cubre toda su casa con los productos TP-Link OneMesh ™. Más información & gt; Todos los productos OneMesh & gt;
Controles parentales	**Controles parentales HomeShield** Perfiles personalizados Biblioteca de filtros de contenido profesional Tiempo familiar Hora de acostarse Fuera de tiempo Recompensas de tiempo Clasificación de tiempo familiar en línea Pausar Internet Informes semanales y mensuales
Tipos de WAN	IP dinámica IP estática PPPoE

	PPTP L2TP
Calidad de servicio	QoS por dispositivo
Servicio de almacenamiento en la nube	Actualización automática de firmware ID de TP-Link DDNS
Reenvío NAT	Reenvío de puertos Activación de puerto DMZ UPnP Servidor virtual
IPTV	Proxy IGMP Inspección IGMP Puente Etiqueta VLAN
DHCP	Dirección de reservas Lista de clientes DHCP Servidor
DDNS	TP-Link NO-IP DynDNS
Gestión	Aplicación Tether Página web

Requisitos del sistema	Internet Explorer 11+, Firefox 12.0+, Chrome 20.0+, Safari 4.0+ u otro navegador habilitado para JavaScript Módem por cable o DSL (si es necesario) Suscripción con un proveedor de servicios de Internet (para acceso a Internet)
Certifications	FCC, CE, RoHS
Ambiente	Temperatura de funcionamiento: 0 ℃ ~ 40 ℃ (32 ℉ ~ 104 ℉) Temperatura de almacenamiento: -40 ℃ ~ 70 ℃ (-40 ℉ ~ 158 ℉) Humedad de funcionamiento: 10% ~ 90% sin condensación Humedad de almacenamiento: 5% ~ 90% sin condensación

DATOS DE PRUEBA

Potencia de transmisión WiFi	CE: <20dBm{2.4GHz} <23dBm{5.15GHz~5.35GHz} <30dBm{5.47GHz~5.725GHz} FCC: <24dBm{5.47GHz~5.725GHz } <30dBm{2.4GHz &5.15GHz~5.25GHz&5.725GHz~5.825GHz }
Sensibilidad de recepción WiFi	2.4GHz: 11n HT20 MCS0:-95dBm 11ax HE20 MCS11:-64dBm 11ax HE40 MCS11:-62dBm

	5GHz-1: 11ac VHT20 MCS0:-92dBm 11ax HE20 MCS11:-61dBm 11ax HE40 MCS11:-58dBm 11ax HE80 MCS11:-55dBm 5GHz-2: 11ac VHT20 MCS0:-95dBm 11ax HE20 MCS11:-61dBm 11ax HE40 MCS11:-58dBm 11ax HE80 MCS11:-55dBm 11ax HE160 MCS11:-53dBm

FÍSICO

Dimensiones (An. × Pr. × Al.)	12.2 × 8.1 × 6.8 in (311 × 207 × 174 mm)
Contenidos del paquete	Router Wi-Fi Archer AX90 Adaptador de corriente Cable Ethernet RJ45 Guía de Instalación Rápida

Para más información sobre su versión de hardware, por favor, vaya a la página de soporte, y consulte el datasheet de su versión.

Comunicado de prensa: triplique su experiencia de Wi-Fi con el enrutador AX6600 Tri-Band Wi-Fi 6

† Las velocidades máximas de señal inalámbrica son las velocidades físicas derivadas de las especificaciones del estándar IEEE 802.11. El rendimiento de datos inalámbricos y la cobertura inalámbrica reales no están garantizados y variarán como resultado de las condiciones de la red, las limitaciones del cliente y los factores ambientales, incluidos los materiales de construcción, los obstáculos, el volumen y la densidad del tráfico y la ubicación del cliente.

‡ El uso de Wi-Fi 6 (802.11ax) y funciones que incluyen OFDMA, MU-MIMO, 1024-QAM o HE160 requieren que los clientes también admitan las funciones correspondientes . Es posible que el ancho de banda de 160 MHz no esté disponible en algunas regiones / países debido a restricciones regulatorias

§ Las velocidades de Internet de 2.5 Gbps requieren planes de servicio y equipos compatibles .

△ El ahorro de energía de la batería de los clientes requiere que los clientes también admitan el estándar Wi-Fi 802.11ax. La reducción de energía real puede variar como resultado de las condiciones de la red, las limitaciones del cliente y los factores ambientales .

* HomeShield incluye el plan básico gratuito. Se aplican tarifas para el Plan Pro. Visita tp-link.com/ homeshield para más información .

** El uso de WPA3 requiere que los clientes también admitan la función correspondiente.

*** Es posible que este enrutador no admita todas las funciones obligatorias ratificadas en el borrador 3.0 de la especificación IEEE 802.11ax .

**** Es posible que se requieran más actualizaciones de software para la disponibilidad de funciones .

Suscripción

Dirección de correo electrónico Suscríbete

Síguenos

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Archer AX90 Nuevo

Router Archer AX90 Wi-Fi 6 AI de Triple Banda AX6600

- **Velocidad Wi-Fi 6 AI de Triple Banda 6,6Gbps.** Velocidad hasta 4804 Mbps (5 GHz) + 1201 Mbps (5 GHz) + 574 Mbps (2.4 GHz).
- **Amplia Conectividad.** 1 puerto WAN / LAN de 2,5 Gbps, 1 puerto WAN / LAN de 1 Gbps, 3 puertos LAN Gigabit y 2 puertos USB.
- **8 antenas de alta ganancia.** Con la tecnología Beamforming incluída en las antenas garantizan una amplia cobertura.
- **Más dispositivos conectados.** La tecnología OFDMA y MU-MIMO permiten transmitir los datos a múltiples dispositivos simultáneamente.
- **Protección TP-Link HomeShield.** Protege la red del hogar y sus dispositivos con avanzadas funciones de seguridad
- **Potente CPU Quad-Core a 1,5GHz.** Este procesador asegura unas velocidades de transmisión estables incluso con muchos dispositivos conectados.
- **Red Wi-Fi de alto nivel de seguridad.** El cifrado WPA3 ofrece una protección Wi-Fi integral ante potenciales ciberataques.

Compre ahora

What is Wi-Fi 6?

INTERNET EN TODA LA CASA CON WI-FI 6 AI

P-2400 AR





Regulador de voltaje / acondicionador de energía Prestige 20A

El P-2400 AR de 20 amperios ofrece 120 voltios de CA estables para proteger el equipo de problemas causados por irregularidades en el voltaje de la línea de CA, como caídas, apagones o sobrevoltajes, todo lo cual puede causar que los equipos electrónicos sensibles funcionen mal o sufran daños.

DESCRIPCIÓN | CARACTERÍSTICAS | ESPECIFICACIONES | OTRAS ESPECIFICACIONES | GARANTÍA | RECURSOS

Otras especificaciones

General
Serie Prestigio Familiar

Voltaje de línea 120 (voltios)

Número de puntos de venta 14

Número de bancos aislados 2

Descripciones de tomacorrientes Los 14 tomacorrientes regulados y acondicionados: 12 en el panel posterior y 2 en el frente

Montable en bastidor Sí

Orejas de rack incluidas Sí

Medidor(es) del panel frontal El voltímetro/amperímetro LED muestra el voltaje de entrada y el consumo de corriente de entrada

Luz(es) multimedia delantera(s) No

Control Panel frontal:
– Interruptor de encendido/apagado
– Botón de atenuación del medidor de voltaje

Regulación de voltaje Rango de captura de regulación:
97 VAC a 137 VAC

Cumplimiento cETLus

Carga USB 1 cargador USB en el panel frontal

Disparador de bajo voltaje N/A

Cable de alimentación de CA 10 pies cautivo 3/12 AWG, cable negro con enchufe NEMA 20

Dimensiones 19" de ancho x 12" de profundidad x 3,5" de alto

Peso 39 libras

Consumo de energía 13 vatios

Protección de CA
Tecnología de protección de CA True RMS Regulación de voltaje
Apagado de voltaje extremo
Protección sin sacrificio con cero contaminación a tierra

Apagado por bajo voltaje 90V

Apagado de sobrevoltaje 145 VAC

Clasificación de corriente máxima 20 (amperios)

Nivel de sujeción inicial Pico de 188 VCA a 3000 amperios

Filtración
Tecnología de filtración LiFT

Clasificación de filtración 10 dB a 10 KHZ
40 dB a 100 KHZ
50 dB a 500 KHZ

Protección de línea de señal No

Datos de envío
Longitud 23,9 (pulgadas)

Ancho 22.8 (pulgadas)

Altura 10.4 (pulgadas)

Peso 45.4 (libras)

Unidad de medida cada uno

UPC 654061028192

Paquete maestro Cantidad 1

Otras especificaciones
Tiempo de respuesta: 1 nanosegundo
Corriente de sobretensión máxima: 6500 amperios

Proposición 65 Advertencia
Advertencia: ADVERTENCIA: Cáncer y daños reproductivos: www.P65Warnings.ca.gov

P-2400 AR





Regulador de voltaje / acondicionador de energía Prestige 20A

El P-2400 AR de 20 amperios ofrece 120 voltios de CA estables para proteger el equipo de problemas causados por irregularidades en el voltaje de la línea de CA, como caídas, apagones o sobrevoltajes, todo lo cual puede causar que los equipos electrónicos sensibles funcionen mal o sufran daños.

DESCRIPCIÓN | CARACTERÍSTICAS | ESPECIFICACIONES | OTRAS ESPECIFICACIONES | GARANTÍA | RECURSOS

Descripción

El P-2400 AR acepta voltaje de entrada entre 97V-137V y lo transforma a una salida constante de 120V, ±5V. Los voltajes más allá de ese rango también se pueden convertir a niveles utilizables, según la variación del rango. Con su sólida capacidad de 20 A, el P-2400 AR es ideal para equipos de alta corriente como amplificadores de potencia o para alimentar racks de A/V en grandes instalaciones.

Además, el P-2400 AR es un acondicionador de energía con todas las funciones que filtra y purifica la energía de CA, lo que reduce el ruido de la línea y garantiza un rendimiento óptimo. Su equipo no solo funcionará mejor con la tecnología de filtrado lineal (LiFT) de Furman, sino que también estará completamente protegido por nuestra exclusiva protección multietapa (SMP) y apagado por voltaje extremo (EVS). Este circuito proporciona el más alto nivel de protección de energía disponible.

Productos relacionados



or de potencia equilibrado
te Prestige de 10 A, exportación
V



SS-6B

Tira supresora de sobretensiones de chasis de metal 2x3 de 6 salidas

Ver Más →



F1500-UPS E

SAI de montaje en bastidor de 1500 VA; 230V-240V

Ver Más →

ANTERIOR PRÓXIMO

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M-8X2



Acondicionador de energía estándar 15A

Instale un M-8×2 en la ranura superior de su rack, y las ocho salidas conmutadas en el panel posterior encenderán y protegerán todo su equipo hasta una carga de 15 amperios.

DESCRIPCIÓN | CARACTERÍSTICAS | ESPECIFICACIONES | OTRAS ESPECIFICACIONES | GARANTÍA | RECURSOS

Características

Filtración de ruido

- Filtrado de ruido de CA para reducir la frecuencia de radio y la interferencia electromagnética (RFI/EMI)

Protección contra sobretensiones

- La protección contra picos y sobretensiones garantiza que el equipo se mantenga seguro y que su energía se mantenga limpia

9 puntos de venta totales

- 8 salidas en el panel trasero y 1 salida en el panel frontal

Clasificación de 15 amperios

- Clasificación de 15 amperios, con disyuntor

Indicador “Protección OK”

- El indicador LED del panel frontal le permite saber que su equipo está protegido

Indicador de espacio entre verrugas en la pared

◦ Las salidas traseras se han espaciado para acomodar incluso las verrugas y adaptadores de pared más voluminosos.

Productos relacionados



Serie Merit 15A con



AC-210A E

Acondicionador de potencia de dos salidas 10A. Exportar.

Ver Más →



ELITE-16 PF EI

Acondicionador de potencia de cine en casa 16A con factor de potencia, exportación 220V-240V

Ver Más →



CN-3600S

Acondicion de 16 A, 23

Ver Más →

ANTERIOR PRÓXIMO

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M-8X2



Acondicionador de energía estándar 15A

Instale un M-8×2 en la ranura superior de su rack, y las ocho salidas conmutadas en el panel posterior encenderán y protegerán todo su equipo hasta una carga de 15 amperios.

DESCRIPCIÓN | CARACTERÍSTICAS | ESPECIFICACIONES | OTRAS ESPECIFICACIONES | GARANTÍA | RECURSOS

Descripción

Un acondicionador de energía de la serie Merit es la solución de alimentación de CA de bajo costo perfecta para cualquier sistema de montaje en rack. El M-8×2 está diseñado para aplicaciones donde no se requieren luces.

Aplicaciones

PLACAS DE INSTRUMENTOS

Tienes un rack para tus efectos, preamplificadores, afinador... ¿Vas a enchufarlo a la pared? Un gran pico y tu plataforma se convierte en humo. La protección contra sobretensiones/picos de nivel estándar de Furman defiende su equipo de los picos y sobretensiones que son tan comunes en los conciertos y lugares de práctica. Con la filtración RFI/EMI de nivel estándar de Furman, obtendrá un tono más silencioso sin chasquidos, crujidos y la estación de radio local saliendo de su amplificador.

GRABACIÓN

¿No puedes rastrear de dónde viene ese ruido? ¿Su mezcla suena plana? Con la filtración RFI/EMI de nivel estándar de Furman, reducirá el nivel de ruido causado por la energía de CA sucia que ingresa a su consola o DAW. La protección contra sobretensiones y picos de nivel estándar de Furman evita

que su equipo digital sensible actúe de forma extraña o se queme debido a los picos y sobretensiones cotidianos. Con una capacidad de 15 A y nueve salidas en total, es suficiente para alimentar todo tu estudio doméstico.

EQUIPO DJ

Los bares, clubes y otros lugares para eventos tienen algunas de las peores fuentes de alimentación que existen: desde los compresores de aire que se encienden y apagan hasta los espectáculos de luces que suben y bajan las cargas de corriente, la alimentación de CA puede ser una carga para los circuitos de su equipo. La protección y filtración de nivel estándar de Furman evita que entren las cosas malas.

SONIDO PROFESIONAL

Cuando estás dando conciertos, nunca sabes qué tipo de poder obtendrás. El desgaste de las plataformas móviles finalmente pasa factura, por eso es inteligente conectarse a la protección de nivel estándar y la filtración RFI/EMI de Furman. Mantiene su equipo seguro y sonando limpio. Ya sea que esté organizando un espectáculo en el club local o animando a la banda de la iglesia para su próximo servicio, asegúrese de darles un poder en el que puedan confiar.

Productos relacionados



or de potencia SmartSequencing

Ver Más →



SPR-16 IE

Regulador de voltaje de referencia 16A, 230V

Ver Más →



M-8LX

Acondicionador de energía Serie Merit 15A con luces

Ver Más →



ANTERIOR PRÓXIMO

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SS-6B

Tira supresora de sobretensiones de chasis de metal de 2 × 3 salidas, 6 salidas

Obtenga seis tomacorrientes donde los necesite con este supresor de sobretensiones en bloque.

DESCRIPCIÓN | CARACTERÍSTICAS | OTRAS ESPECIFICACIONES | GARANTÍA | RECURSOS

Otras especificaciones

General
Serie de enchufes Family Pro

Voltaje de línea 120 (voltios)

Número de puntos de venta 6

Descripciones de los tomacorrientes Los 6 tomacorrientes están filtrados y protegidos contra sobretensiones

Control de encendido/apagado de todos los tomacorrientes a través del interruptor de encendido.

Carga USB N/A

Disparador de bajo voltaje N/A

Cable de alimentación de CA Cable cautivo de 15 pies

Dimensiones 3.5″ ancho x 1.5″ profundidad x 9.5″ alto

Peso 2.64 libras

Protección de CA
Tecnología de protección de CA Protección estándar contra picos y sobretensiones: UL VPR: 400 V, UL nominal.
Disipación de energía de un solo pulso, 540 julios

Apagado por bajo voltaje N/A

Apagado por sobrevoltaje N/A

Clasificación de corriente máxima 15 (amperios)

Filtración
Tecnología de filtración Filtración RFI/EMI de nivel estándar – Filtro: -20dB Min, 100kHz – 1MHz

Protección de línea de señal No

Datos de envío
Longitud 7.5 (pulgadas)

Ancho 2.5 (pulgadas)

Altura 10.8 (pulgadas)

Peso 3 (libras)

Unidad de medida cada uno

UPC 654061011224

Paquete maestro Cantidad 10

Proposición 65 Advertencia
Advertencia: ADVERTENCIA: Cáncer y daños reproductivos: www.P65Warnings.ca.gov

Productos relacionados



erencia 16A, 230V



AC-215A

Acondicionador de potencia de dos salidas 10A

Ver Más →



M-10LX E

Acondicionador de energía estándar de 10 A con luces, 230 V

Ver Más →



M-8S

Acondicion con secuen

Ver Más →

ANTERIOR PRÓXIMO

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ATEM SDI Pro ISO

Especificaciones técnicas

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Descripción

Este modelo incluye todas las prestaciones de la versión ATEM SDI y además permite grabar y transmitir hasta cinco señales en tiempo real, a fin de obtener imágenes limpias de todas las fuentes y editarlas. Asimismo, se crea un archivo de proyecto de DaVinci Resolve que brinda la posibilidad de editar la producción, por ejemplo, para volver a mezclar el audio o etalonar el material grabado.

Descargar manual Descargar software

Precio

Total de entradas de video

4

Total de salidas

3

Total de salidas auxiliares

2

Total de entradas de audio

2 x 3.5 mm estéreo

Total de salidas de audio

No disponible, audio integrado solamente.

Conexión para código de tiempo

No disponible

Entradas de video SDI

4 x SDI 3G/HD de 10 bits.

2 canales de audio integrados.

Resincronización de fuentes

En todas las entradas SDI.

Conversión de formatos y frecuencia de imagen

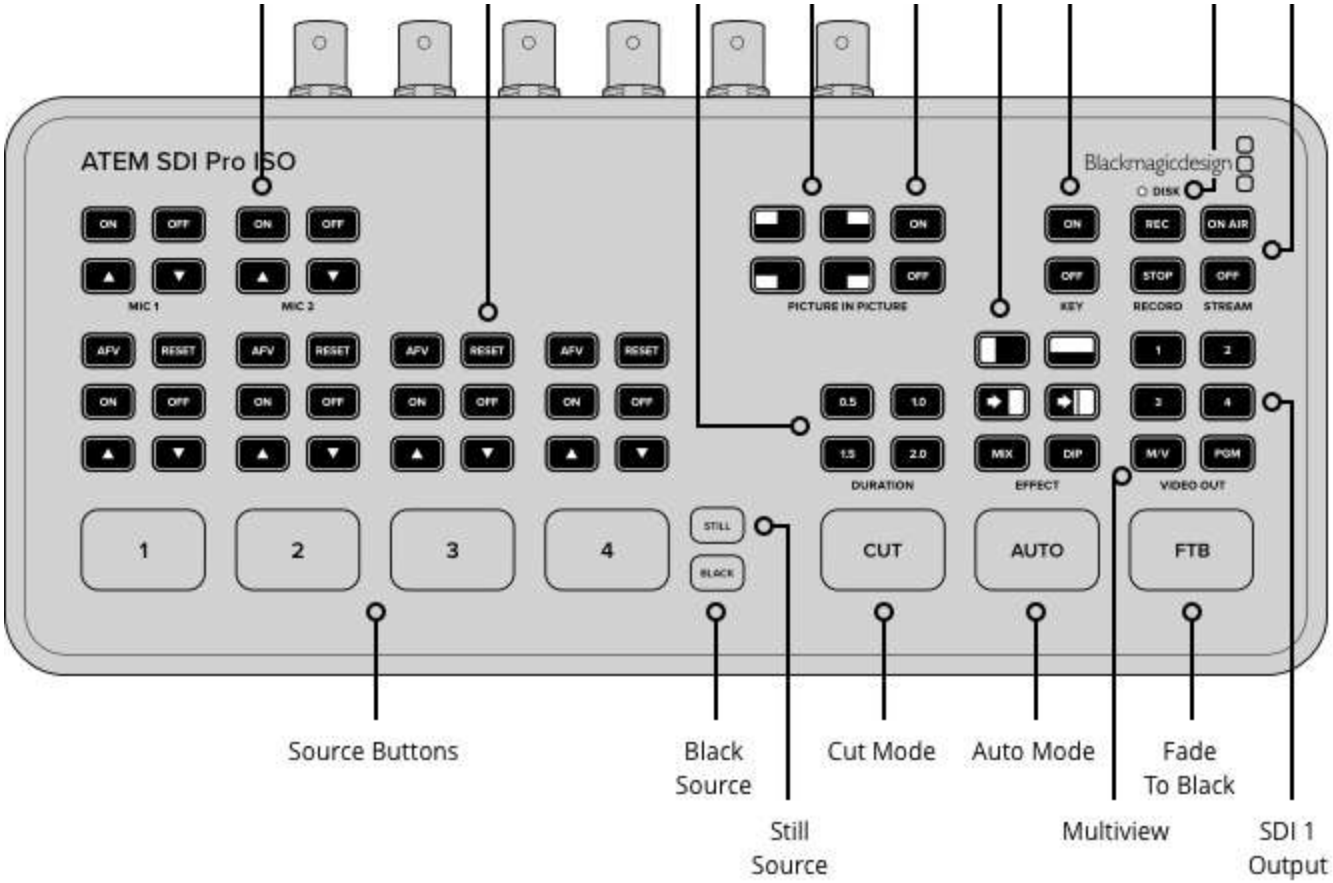
En todas las entradas SDI.

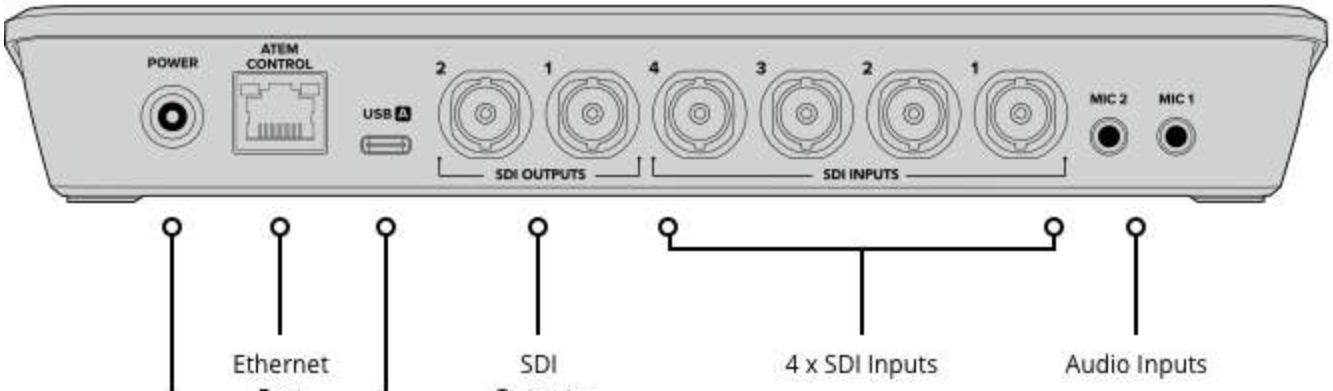
Salidas SDI principales

2

Ethernet

Puerto Ethernet compatible con estándares 10/100/1000 BaseT para actualizar el dispositivo, controlarlo mediante el software, transmitir por Internet y conectar paneles directamente o a través de una red.


ATEM SDI Pro ISO
Blackmagicdesign
MIC 1
MIC 2
PICTURE IN PICTURE
KEY
RECORD
STREAM
DURATION
EFFECT
VIDEO OUT
1
2
3
4
STILL
BLACK
CUT
AUTO
FTB
Source Buttons
Black Source
Still Source
Cut Mode
Auto Mode
Multiview
Fade To Black
SDI 1 Output


POWER
ATEM CONTROL
USB A
SDI OUTPUTS
SDI INPUTS
MIC 2
MIC 1
Ethernet
SDI
4 x SDI Inputs
Audio Inputs

720p50, 720p59.94, 720p60.
1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60.
1080i50, 1080i59.94, 1080i60.

Formatos HD (salida)
1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60.

Formatos de transmisión por Internet
1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60.

Formatos UHD
No disponible

Muestreo de video
YUV 4:2:2

Precisión cromática
10 bits

Espacios cromáticos
Rec. 709

Conversión de espacios cromáticos
Mediante soporte físico en tiempo real.

Especificaciones del producto

Compositores para superposiciones previas
1

Compositores para superposiciones posteriores
1

Solo efectos visuales digitales (DVE).

Total de capas

5

Generadores de carta de ajuste

1

Generadores de color

2

Efectos con bordes y sombra paralela

1

Interfaz

Resolución mínima del monitor de 1366 x 768.

Audio

Mezcla de audio

6 entradas y 2 canales de mezcla.
Opciones para cada canal: On/Off/Audio-Follow-Video con control individual de la ganancia.
Indicador de volumen y picos. Herramientas de audio Fairlight: compresor, puerta de ruido, limitador y ecualizador paramétrico de 6 bandas. Control de ganancia principal.

Entrada analógica

Audio estéreo no balanceado

Retraso en entrada analógica

Hasta 8 fotogramas

Impedancia de entrada

1.8 k

ATEM SDI Pro ISO

Transmisión

Transmisión directa

Permite transmitir en directo por Internet mediante el protocolo RTMP y una red Ethernet o una conexión móvil compartida mediante el puerto USB-C.

Grabación

Grabación directa de audio y video

Puerto de expansión USB-C 3.1 de primera generación para grabar directamente en unidades de almacenamiento externas.

Grabación de video

Grabación de hasta 4 fuentes SDI en archivos .mp4 (H.264) a un máximo de 70 Mb/s, en el formato de funcionamiento del mezclador, con audio AAC.
Grabación de la señal principal en archivos .mp4 (H.264) con audio AAC, según los ajustes de calidad y el formato de funcionamiento del mezclador.

Grabación de audio

6 entradas con 2 canales cada una, grabados en archivos .wav individuales de 24 bits a 48 KHz. Incluye 2 entradas para señales analógicas en estéreo y 4 entradas SDI con 2 canales de audio integrado.

Conmutación

Programa con cambios de plano grabado en archivos .drp como un proyecto de DaVinci Resolve.

Sistema de archivos

ExFAT (Windows/Mac) o HFS+ (Mac).

Supervisión simultánea de imágenes

Supervisión simultánea de imágenes

10 ventanas configurables para el anticipo o el programa (izquierda o derecha), las 4 fuentes SDI, el reproductor multimedia y el estado de la transmisión y la grabación, así como medidores de audio.

Reproductores multimedia

1

Canales

Imagen en primer plano y canal alfa para cada reproductor.

Capacidad del panel multimedia (imágenes)

20 con imagen principal y canal alfa.

Formatos de imagen compatibles

PNG, TGA, BMP, GIF, JPEG y TIFF.

Control

Panel de control

Panel de control integrado. Software para controlar cámaras. Compatible con paneles físicos opcionales.

Conexión para paneles de control

Compatible con estándares 10/100/1000 Base-T. Permite la conexión del panel con el mezclador en forma directa o mediante una red Ethernet. El modelo ATEM Pro ISO admite la conexión directa mediante el puerto USB-C. Actualización del software mediante el puerto USB-C o la red Ethernet.

Compatibilidad con paneles de control

Incluye el programa ATEM Software Control. Compatible con dispositivos ATEM 1 M/E Advanced Panel, ATEM 2 M/E Advanced Panel y ATEM 4 M/E Advanced Panel. El mezclador también puede configurarse mediante el programa Blackmagic Videohub Hardware Panel Setup para asignar fuentes a destinos mediante unidades Videohub Smart Control Pro o Videohub Master Control Pro.

Panel de control incluido

ATEM Software Control para macOS 11.0 (Big Sur), macOS 12.0 (Monterey), o versiones posteriores, y Windows 10 de 64 bits o Windows 11.

Soporte informático

Sistemas operativos



Mac 11.0 Big Sur,
Mac 12.0 Monterey o posterior



Windows 10 de 64 bits.
Windows 11.

Requisitos energéticos

Fuente de alimentación

1 fuente externa x 12 V.

Consumo

36W

Especificaciones físicas



Especificaciones ambientales

Temperatura de funcionamiento

5 °C a 40 °C (41 °F a 104 °F)

Artículos incluidos

ATEM SDI Pro ISO
Fuente de alimentación universal externa de 12 V (CC) con adaptadores para distintas tomas de corriente.

Garantía

12 meses de garantía limitada otorgada por el fabricante.

ATEM SDI

ATEM SDI
€329

Comprar en línea €329

ATEM SDI Pro ISO
€755

Comprar en línea €755

ATEM SDI Extreme ISO
€1 409

Comprar en línea €1 409

Mezcladores ATEM
Ultimatte
Grabadores digitales y almacenamiento
Captura y reproducción
Escáner Cintel

Monitorización audiovisual
Almacenamiento en redes
MultiView
Direccionamiento y distribución
Transmisión y codificación

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ATEM Mini Pro ISO

Especificaciones técnicas

Buscar distribuidores Imprimir PDF

Descripción

Mezclador económico para producciones en directo que incluye 4 entradas HDMI con conversión de formatos, salida USB que permite detectarlo como una cámara web, herramientas de audio con ecualizador y procesadores de dinámica, efectos visuales digitales, transiciones, composiciones por crominancia con fondos verdes y 20 imágenes para títulos, entre otras prestaciones. El modelo ATEM Mini Pro permite grabar archivos H.264 en unidades USB, transmitir directamente a través de plataformas tales como YouTube Live, Facebook y Twitch, y supervisar las señales de varias cámaras en un solo monitor. Por su parte, la versión ATEM Mini Pro ISO brinda la posibilidad de grabar hasta cinco señales limpias en archivos de DaVinci Resolve para su posterior edición, a fin de realizar el montaje con mayor rapidez, o en formato Blackmagic RAW con el propósito de finalizar el proyecto en definición UHD.

Conexiones

Total de entradas de video

4

Total de salidas

2

Total de salidas auxiliares

1

Total de entradas de audio

2 x 3.5 mm estéreo

ATEM Mini Pro ISO

Total de salidas de audio

No disponible, audio integrado solamente.

Conexión para código de tiempo

No disponible.

Entradas de video HDMI

4 x HDMI tipo A, HD de 10 bits conmutable.

2 canales de audio integrados.

Resincronización de fuentes

En todas las entradas HDMI.

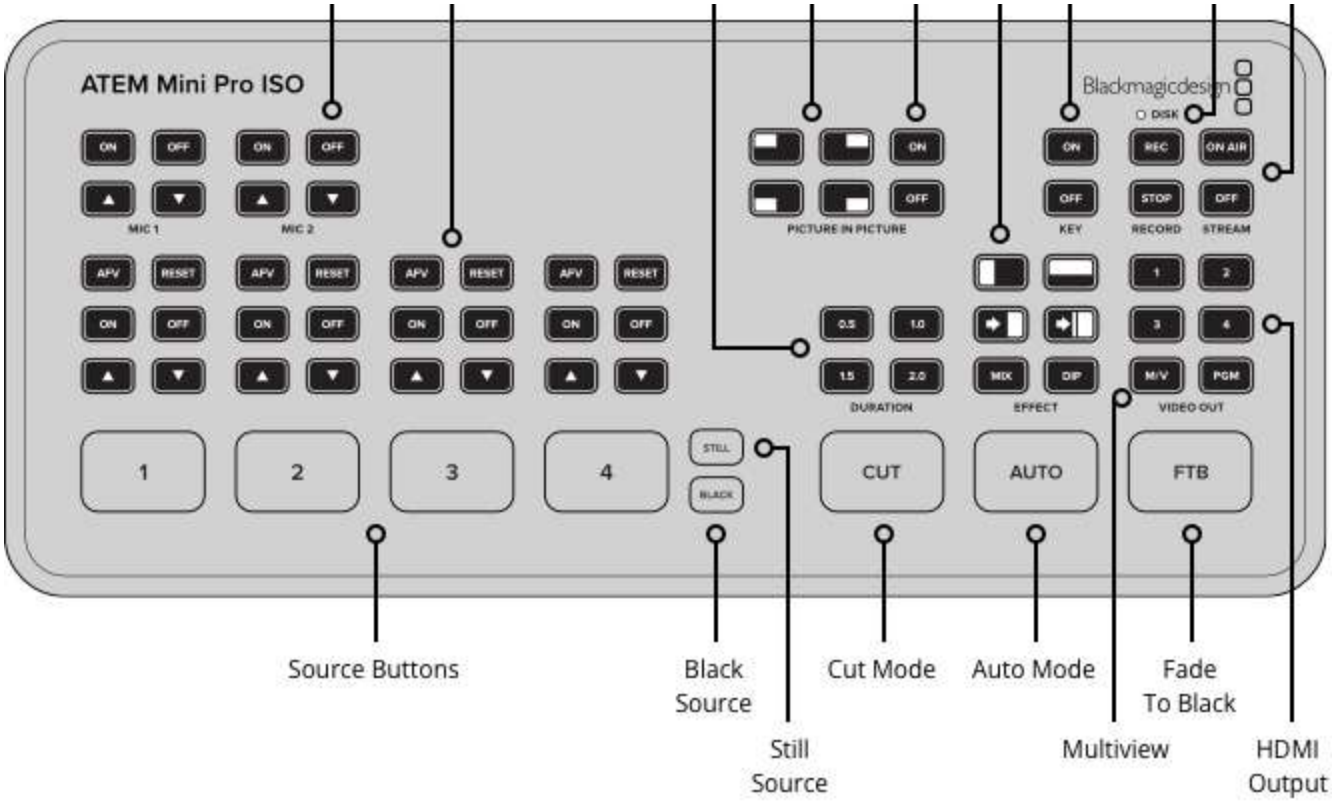
Conversión de formatos y frecuencia de imagen

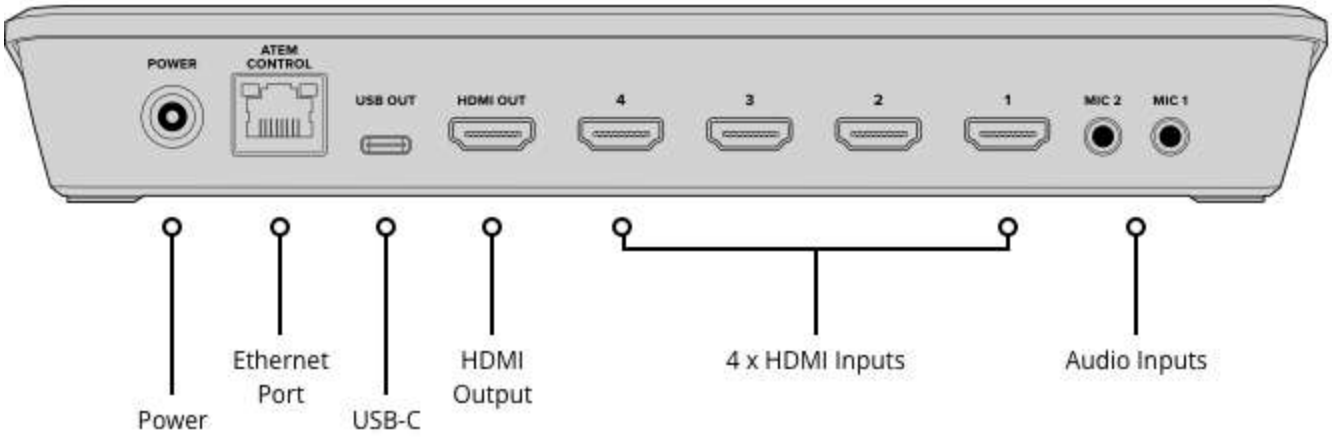
En todas las entradas HDMI.

Salidas HDMI principales

1

unidades de almacenamiento externas.


ATEM Mini Pro ISO
Blackmagicdesign
DISK
ON
OFF
MIC 1
MIC 2
AFV
RESET
PICTURE IN PICTURE
KEY
REC
ON AIR
STOP
RECORD
STREAM
0.5
1.0
1.5
2.0
DURATION
MIX
DIP
EFFECT
M/V
PGM
VIDEO OUT
1
2
3
4
STILL
BLACK
CUT
AUTO
FTB
Source Buttons
Black Source
Still Source
Cut Mode
Auto Mode
Multiview
Fade To Black
HDMI Output


POWER
ATEM CONTROL
USB OUT
HDMI OUT
4
3
2
1
MIC 2
MIC 1
Power
Ethernet Port
USB-C
HDMI Output
4 x HDMI Inputs
Audio Inputs

1080i50, 1080i59.94, 1080i60

Formatos HD (salida)
1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60

Formatos de transmisión por Internet
1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60

Formatos UHD
No disponible.

Muestreo de video
YUV 4:2:2

Precisión cromática
10 bits

Espacios cromáticos
Rec. 709

Resoluciones HDMI admitidas para equipos informáticos
1280 x 720p 50Hz, 59.94Hz , 60Hz
1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
1920 x 1080i 50, 59.94Hz , 60Hz

Conversión de espacios cromáticos
Mediante soporte físico en tiempo real.

Especificaciones del producto

Compositores para superposiciones previas
1

2

Compositor para transiciones
Solo efectos visuales digitales (DVE).

Total de capas
5

Generadores de carta de ajuste
1

Generadores de color
2

Efectos con bordes y sombra paralela
1

Interfaz
Resolución mínima del monitor de 1366 x 768.

Audio

Mezcla de audio
6 entradas y 2 canales de mezcla.
Opciones para cada canal: On/Off/Audio-Follow-Video con control individual de la ganancia.
Indicador de volumen y saturación. Herramientas de audio Fairlight: compresor, puerta de ruido, limitador y ecualizador paramétrico de 6 bandas. Control de ganancia principal.

Entrada analógica
Audio estéreo no balanceado

Retraso en entrada analógica
Hasta 8 fotogramas

Disponible en las conexiones de 3.5 mm.

Transmisión

Transmisión directa

Transmite directamente por Internet mediante una red Ethernet y el protocolo RTMP.

Grabación

Grabación directa de audio y video

Puerto de expansión USB-C 3.1 de primera generación para grabar directamente en unidades de almacenamiento externas.

Grabación de video

Grabación de hasta 4 fuentes HDMI en archivos .mp4 (H.264) a un máximo de 70 Mb/s, en el formato de funcionamiento del mezclador, con audio AAC.
Grabación de la señal principal en archivos .mp4 (H.264) con audio AAC, según los ajustes de calidad y el formato de funcionamiento del mezclador.

Grabación de audio

6 entradas con 2 canales cada una, grabados en archivos .wav individuales de 24 bits a 48 KHz. Incluye 2 entradas para señales analógicas en estéreo y 4 entradas HDMI con 2 canales de audio integrado.

Conmutación

Programa con cortes y cambios de plano grabado en archivos .drp como un proyecto de DaVinci Resolve.

Sistema de archivos

ExFAT (Windows/Mac) o HFS+ (Mac).

Supervisión simultánea de imágenes

Reproductor multimedia

Reproductores multimedia

1

Canales

Imagen en primer plano y canal alfa para cada reproductor.

Capacidad del panel multimedia (imágenes)

20 con imagen principal y canal alfa.

Formatos de imagen compatibles

PNG, TGA, BMP, GIF, JPEG y TIFF.

Control

Panel de control

Panel de control integrado. Software para controlar cámaras. Compatible con panel físico opcional.

Conexión para paneles de control

Compatible con estándares 10/100/1000 Base-T. Permite la conexión del panel con el mezclador en forma directa o mediante una red Ethernet. También admite una conexión directa mediante el puerto USB-C. Actualización del software mediante el puerto USB-C o la red Ethernet.

Compatibilidad con paneles de control

Incluye el programa ATEM Software Control. Compatible con dispositivos ATEM 1 M/E Advanced Panel, ATEM 2 M/E Advanced Panel y ATEM 4 M/E Advanced Panel. El mezclador también puede configurarse mediante el programa Blackmagic Videohub Hardware Panel Setup para asignar fuentes a destinos mediante unidades Videohub Smart Control Pro o Videohub Master Control Pro.

Panel de control incluido

ATEM Software Control para macOS 10.14 (Mojave), macOS 10.15 (Catalina) o versiones posteriores, y Windows 10 de 64 bits solamente.

Modificación de ajustes mediante el programa ATEM Software Control, salvo la dirección IP del mezclador, que se configura con el programa utilitario a través de una conexión USB.

Sistemas operativos



Mac 10.14 Mojave,
Mac 10.15 Catalina o posterior



Windows 10 de 64 bits.

Requisitos energéticos

Fuente de alimentación
1 fuente externa x 12 V.

Consumo
36 W











550 g

Especificaciones ambientales

Temperatura de funcionamiento

5 °C a 40 °C (41 °F a 104 °F)

Artículos incluidos

ATEM Mini Pro ISO
Fuente de alimentación universal externa de 12 V (CC) con adaptadores para distintas tomas de corriente.

Garantía

12 meses de garantía limitada otorgada por el fabricante.

ATEM Mini

Todos

ATEM Mini Pro
US$295

Buscar distribuidores

ATEM Mini Pro ISO
US$495

Buscar distribuidores

ATEM Mini Extreme
US$995

Buscar distribuidores

ATEM Mini Extreme ISO

ATEM 1 M/E Advanced Panel 10
US$3,079

Buscar distribuidores

ATEM Camera Control Panel
US$3,079

Buscar distribuidores

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Micro Converter BiDirectional SDI/HDMI 3G wPSU



Micro Converter BiDirectional SDI/HDMI 3G wPSU

Technical Specifications

Find Reseller Print PDF

Description

Get the world's smallest bidirectional broadcast quality converter! Convert SDI to HDMI and at the same time HDMI to SDI, even in different formats! Plus it supports camera control protocol conversion, so you can use Blackmagic Pocket Cinema Cameras with professional SDI live production switchers! Includes 100 to 240V AC power supply with international socket adapters.

Download Manual Download Software

Connections

SDI Video Inputs

1 x SD, HD or 3G-SDI.

SDI Video Outputs

Automatically matches the HDMI video input.

HDMI Video Inputs

HDMI Type A in.

HDMI Outputs

HDMI Type A out.

Multi Rate Support

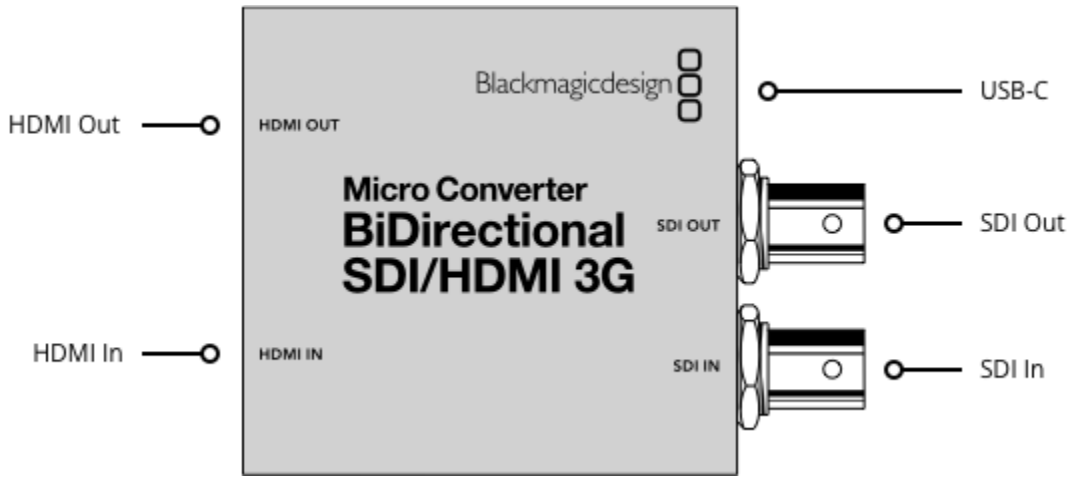
Auto detection of SD or HD.

Updates, Configurations and Power

USB Type-C.

Reclocking

Yes



720p50, 720p59.94, 720p60
1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p47.95, 1080p48, 1080p50, 1080p59.94, 1080p60
1080PsF25, 1080PsF29.97, 1080PsF30
1080i50, 1080i59.94, 1080i60
2Kp23.98 DCI, 2Kp24 DCI, 2Kp25 DCI, 2Kp29.97 DCI, 2Kp30 DCI, 2Kp47.95 DCI, 2Kp48 DCI, 2Kp50 DCI, 2Kp59.94 DCI, 2Kp60 DCI
2KPsF25 DCI, 2KPsF29.97 DCI, 2KPsF30 DCI

SDI Compliance
SMPTE 259M, SMPTE 292M, SMPTE 296M, SMPTE 424M, SMPTE 425M

SDI Video Rates
SDI video connections are automatically switchable between standard definition and high definition, and user selectable for level A or B via setup utility.

SDI Color Precision
4:2:2

SDI Color Space
YUV

SDI Auto Switching
Automatically detects SD, HD and 3G-SDI

HDMI Video Standards
525i29.97 NTSC, 625i25 PAL
720p50, 720p59.94, 720p60
1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p47.95, 1080p48, 1080p50, 1080p59.94, 1080p60
1080i50, 1080i59.94, 1080i60

HDMI Color Precision
4:2:2

HDMI Color Space
YUV

Camera Control

Bidirectional signal conversion supports Blackmagic Camera Control and Tally.

Settings Control

Via MacOS™ and Windows™ software utility connected by USB.

Operating Systems



Mac 10.15 Catalina,
Mac 11.1 Big Sur or later.



Windows 10, 64-bit.

Software

+5V universal power supply included with international socket adapters for most countries.

Power Consumption

2.5 W

Operational Voltage Range

4.4 to 5.25V DC

Environmental Specifications

Operating Temperature

0° to 40° C (32° to 104° F)

Storage Temperature

-20° to 60° C (-4° to 140° F)

Relative Humidity

0% to 90% non-condensing

Physical Specifications



6.13 oz

What's Included

Micro Converter BiDirectional SDI/HDMI 3G wPSU
+5V universal power supply with international socket adapters

Warranty

3 Year Limited Manufacturer's Warranty.

Micro Converters

Micro Converters

Micro Converter HDMI to SDI 3G
$55

Buy Now

$69

Micro Converter HDMI to SDI 3G wPSU
$65

Buy Now

Micro Converter SDI to HDMI 3G wPSU
$69

Buy Now

Micro Converter BiDirectional SDI/HDMI 3G wPSU
$79

Buy Now

Micro Converter HDMI to SDI 12G
$125

Buy Now

Micro Converter SDI to HDMI 12G
$145

Buy Now

Micro Converter BiDirectional SDI/HDMI 12G
$165

Buy Now

Micro Converter HDMI to SDI 12G wPSU
$135

Buy Now

$179

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AR

SmartThings

60" AU7000 UHD 4K Smart TV (2021)

UN60AU7000PXPA

5.0 (77)

- Úsalo con SmartThings
- Colores increíbles para una imagen vibrante y vívida
- Siente los tonos de colores vívidos con el potente 4K
- Movimiento suave para una imagen clara

Nuevo modelo disponible

Conócelo

Elige tu tamaño

43” 50” 55” 58” 60” 65” 70” 75” 85”

60" AU7000 UHD 4K Smart TV (2021)

60”

Imágenes (13)







COMPRAR AHORA

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QUIERO MANEJAR OK, VAMOS!



SmartThings

Especificaciones

Resolución	Color	Microatenuación	Sistema operativo
3,840 x 2,160	**PurColor**	**Atenuación UHD**	**Tizen™**

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Serie

7

Pantalla

Tamaño de pantalla
60"

Resolución
3,840 x 2,160

Video

Motor de imágenes
Procesador Crystal 4K

Mil millones de colores
Sí

PQI (Índice de calidad de la imagen)
2000

HDR (Alto rango dinámico)
HDR

HDR 10+
Soporte

HLG (Registro híbrido Gamma)
Sí

Contraste
Gran contraste

Color
PurColor

Detección de brillo y color
Detección de brillo

Microatenuación
Atenuación UHD

Potenciador de contraste

Movimiento automático Plus

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Modo Cineasta (FMM)
Si

Audio

Dolby Digital Plus
Sí

Sonido adaptable
Sonido adaptable

Q-Symphony
Sí

Salida de sonido (RMS)
20 W

Tipo de altavoz
2 CH

Audio Bluetooth
Sí

Servicio inteligente

Televisor inteligente Samsung
Inteligente

Sistema operativo
Tizen™

Navegador web
Si

Soporte para aplicaciones SmartThings
Sí

Galería
Sí

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Sí

Sí

Fácil configuración
Sí

Ejecución de aplicaciones
Sí

Baja energía de Bluetooth
Sí

Wifi Direct
Sí

Sonido del televisor al celular
Sí

Replicación de sonido
Sí

DeX inalámbrico
Sí

Servicio web
Microsoft 365

Función de juego

Modo de juego automático (ALLM)
Sí

Sintonizador/transmisión

Transmisión digital
ISDB-T/DVB-T/ATSC

Sintonizador análogo
Sí (Trinorma)

Soporte principal para televisor
Sí

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3

1

Ethernet (LAN)
Si

Salida para audio digital (Óptico)
1

Entrada para RF (Entrada terrestre y de cable)
1/1 (Uso común de la entrada terrestre)/0

Soporte para HDMI A / Canal de retorno
Sí

eARC
Sí

Interruptor rápido para HDMI
Sí

LAN inalámbrico integrado
Sí (WiFi5)

Bluetooth
Sí (BT4.2)

Anynet+ (HDMI-CEC)
Si

Diseño

Diseño
Nuevo sin bisel

Tipo de bisel
3 lados sin bisel

Tipo delgado
Diseño delgado

Color delantero
GRIS TITÁN

Tipo de soporte
SLIM FIT

Color del soporte
GRIS TITÁN

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Si

Si

Subtítulos
Si

Connect Share™ (HDD)
Si

ConnectShare™ (USB 2.0)
Si

EPG
Si

Idioma en pantalla
Idiomas locales

BT HID integrado
Si

Soporte para USB HID
Si

Soporte para IPv6
Si

Soporte para MBR
Si

Accesibilidad

Accesibilidad-Guía de voz
Inglés estadounidense

Accesibilidad-Aprende sobre el control remoto del TV/Aprende sobre la pantalla de menú
Inglés estadounidense

Accesibilidad-Otros
Agrandar, contraste alto, inversión de colores, escala de grises, zoom de lenguaje de señas, audio de múltiples salidas, repetición de botón de cámara lenta

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energía

AC 100-240 V 50/60 Hz

190 W

Sensor ecológico
Si

Clase de eficiencia energética
A

Apagado automático
Si

Dimensiones

Tamaño del paquete (ancho x alto x prof.)
1508 x 902 x 172 mm

Ajustar medida con soporte (anch. x alt. x prof.)
1351.3 x 852.8 x 282.1 mm

Ajustar medida sin soporte (anch. x alt. x prof.)
1351.3 x 775.1 x 59.9 mm

Soporte (básico) (anch. x prof.)
1099.7 x 282.1 mm

Especificaciones de VESA
400 x 300 mm

Peso

Peso del paquete
24.4 kg

Peso del equipo con soporte
17.5 kg

Peso del equipo sin soporte
17.2 kg

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TM2140A

Si

Control inteligente de Samsung (Incluido)
Si

Minisoporte para montaje en pared
Si

Compatible soporte Vesa para montaje en pared
Si

Manual para usuarios
Si

Manual electrónico
Si

Cable de alimentación
Si

Ocultar todas las specs

★★★★★ 5.0 (77) Escriba una reseña

Reseñas

Muestra de puntuación

Seleccionar una fila para filtrar reseñas.

5 estrellas		75
4 estrellas		2
3 estrellas		0
2 estrellas		0
1 estrella		0

Calificación general

5.0 ★★★★★
77 reseñas

69 de 69 (100.00%) autores de reseña recomiendan este producto

Reseñar este producto

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AR

Imágenes (23) Videos (1)



SmartThings

43" AU7000 UHD 4K Smart TV (2021)

UN43AU7000PXPA

5.0 (77)

- Úsalo con SmartThings
- Colores increíbles para una imagen vibrante y vívida
- Siente los tonos de colores vívidos con el potente 4K
- Movimiento suave para una imagen clara

Nuevo modelo disponible

Conócelo

Elige tu tamaño

43” 50” 55” 58” 60”

65” 70” 75” 85”

43" AU7000 UHD 4K Smart TV (2021)

43”

COMPRAR AHORA



SmartThings

Especificaciones

Resolución	Color	Microatenuación	Sistema operativo
3,840 x 2,160	**PurColor**	**Atenuación UHD**	**Tizen™**

Tipo de producto

LED

Serie

7

Pantalla

Tamaño de pantalla
43"

Resolución
3,840 x 2,160

Video

Motor de imágenes
Procesador Crystal 4K

PQI (Índice de calidad de la imagen)
2000

HDR (Alto rango dinámico)
HDR

HDR 10+
Soporte

HLG (Registro híbrido Gamma)
Sí

Contraste
Gran contraste

Color
PurColor

Detección de brillo y color
Detección de brillo

Microatenuación
Atenuación UHD

Potenciador de contraste
Sí

Movimiento automático Plus
Sí

Modo de película
Sí

Soporte para Modo natural
Si

Modo Cineasta (FMM)
Sí

Audio

Dolby Digital Plus
Sí

Sonido adaptable
Sonido adaptable

Q-Symphony
Q-Symphony

Salida de sonido (RMS)
20 W

Tipo de altavoz
2 CH

Enlace para habitaciones múltiples
Sí

Audio Bluetooth
Sí

Servicio inteligente

Televisor inteligente Samsung
Inteligente

Sistema operativo
Tizen™

Navegador web
Sí

Soporte para aplicaciones SmartThings
Sí

Función inteligente

Móvil a TV: Duplicación, DLNA
Sí

Replicación con un toque en el móvil
Sí

Baja energía de Bluetooth
Sí

Wifi Direct
Sí

Sonido del televisor al celular
Sí

Replicación de sonido
Sí

Sintonizador/transmisión

Transmisión digital
ISDB-T/DVB-T/ATSC

Sintonizador análogo
Sí (Trinorma)

Conectividad

HDMI
3

USB
1

Ethernet (LAN)
Si

Salida para audio digital (Óptico)
1

Entrada para RF (Entrada terrestre y de cable)
1/1 (Uso común de la entrada terrestre)/0

Soporte para HDMI A / Canal de retorno
Sí

eARC
Sí

Interruptor rápido para HDMI
Sí

LAN inalámbrico integrado
Sí (WiFi5)

Bluetooth
Sí (BT4.2)

Anynet+ (HDMI-CEC)
Si

Diseño

Diseño
Nuevo sin bisel

Tipo de bisel
3 lados sin bisel

Tipo delgado
Diseño delgado

Color delantero
GRIS TITÁN

Tipo de soporte
SLIM FIT

Color del soporte
GRIS TITÁN

Función adicional

Visión nítida digital
Si

Búsqueda automática de canales
Si

Subtítulos
Si

Connect Share™ (HDD)
Sí

ConnectShare™ (USB 2.0)
Sí

EPG
Si

Idioma en pantalla
Idiomas locales

BT HID integrado
Sí

Soporte para USB HID
Si

Soporte para IPv6
Sí

Soporte para MBR
Sí

Accesibilidad

Accesibilidad-Guía de voz
Inglés estadounidense

Accesibilidad-Aprende sobre el control remoto del TV/Aprende sobre la pantalla de menú
Inglés estadounidense

Accesibilidad-Otros
Agrandar, contraste alto, inversión de colores, escala de grises, zoom de lenguaje de señas, audio de múltiples salidas, repetición de botón de cámara lenta

Solución ecológica y de energía

Fuente de alimentación
AC 100-240V 50/60 Hz

Consumo de energía (máx.)
130 W

Sensor ecológico
Si

Clase de eficiencia energética
A

Apagado automático
Si

Dimensiones

Tamaño del paquete (ancho x alto x prof.)
1081 x 670 x 143 mm

Ajustar medida con soporte (anch. x alt. x prof.)
963.9 x 627.8 x 192.5 mm

Ajustar medida sin soporte (anch. x alt. x prof.)
963.9 x 558.9 x 59.6 mm

Soporte (básico) (anch. x prof.)
841.7 x 192.5 mm

Peso

Peso del paquete
11.8 kg

Peso del equipo con soporte
8.3 kg

Peso del equipo sin soporte
8.1 kg

Accesorio

Modelo de control remoto
TM2140A

Baterías (para el control remoto)
Si

Minisoporte para montaje en pared
Si

Compatible soporte Vesa para montaje en pared
Si

Manual para usuarios
Si

Manual electrónico
Si

Cable de alimentación
Si

Panasonic CONNECT



Clear and Vivid 7,000 lm Projection from the Lightest and Smallest Body in Class

PT-VMZ51

Deliver clear, striking images in well-lit open meeting spaces and classrooms from the smallest and lightest LCD laser projector in its class. High 7,000 lm brightness, 3,000,000:1 contrast, and vivid color creates an engaging presentation experience.

Key Features

- Compact and lightweight LCD laser projector
- Clear Images That Are Easy to See in Bright Rooms
- Installation Flexibility Adapts Projection to Any Space
- Smooth and Effortless Collaboration

Panasonic CONNECT






PT-VMZ51

https://eu.connect.panasonic.com/fi/en/products/projectors/pt-vmz51

Projector type	LCD projectors
LCD Panel | Panel Size	16.3 mm (0.64 in) diagonal (16:10 aspect ratio)
LCD Panel | Pixels	2,304,000 (1920 x 1200) pixels
Light Source	Laser diode
Light Output*1 *2	5,200 lm
Time until light output declines to 50 %*3	20,000 hours (NORMAL/QUIET)/24,000 hours (ECO)
Resolution	WUXGA (1920 x 1200 pixels)
Contrast Ratio*1	3,000,000:1 (Full On/Full Off) (When [PICTURE MODE] is set to [DYNAMIC] and [DYNAMIC CONTRAST] is set to [1].)
Screen Size (Diagonal)	0.76–7.62 m (30–300 in), 16:10 aspect ratio
Center-to-corner zone ratio*1	85 %
Lens	1.6x manual zoom (throw ratio: 1.09–1.77:1), manual focus lens, F 1.60–2.12, f 15.30–24.64 mm
Digital Zoom Extender *4	Throw ratio 1.09–2.21:15 (Corresponding value. When used together with optical zoom.)
Lens shift | Vertical (from center of screen)	+44 %, 0 % (manual)
Lens shift | Horizontal (from center of screen)	+20 %, -20 % (manual)
Keystone Correction Range	Vertical: ±25 °, Horizontal: ±35 °
Terminals | HDMI 1/2 IN	HDMI 19-pin x 2 (Compatible with HDCP, Deep Color, 4K/30p6 signal input), CEC supported
Terminals | Computer 1 In	D-sub 15-pin (female) x 1 (RGB/YPBPR/YCBCR)
Terminals | Computer 2 In	D-sub 15-pin (female) x 1 (RGB/YPBPR/YCBCR)
Terminals | AUDIO 1/2 IN	M3 stereo mini-jack x 2
Terminals | Variable Audio Out	M3 stereo mini-jack x 1
Terminals | Serial In	D-sub 9-pin (female) x 1 for computer control (RS-232C compliant)
Terminals | DIGITAL LINK/LAN	RJ-45 x 1 for network and DIGITAL LINK connection (video/network/serial control) (HDBaseT™ compliant), 100Base-TX (Compatible with PJLink™ [Class 2], HDCP, Deep Color, 4K/30p*6 signal input)
Terminals | LAN	RJ-45 x 1 for network control, 10Base-T, 100Base-TX, compatible with PJLink™ [Class 2]
Terminals | USB(VIEWER/WIRELESS/DC OUT)	USB connector (Type A) x 1 for Memory Viewer function, optional AJ-WM50 Series Wireless Module, power supply (DC 5 V, maximum 2 A*7)
Power Supply	AC 100 V–240 V, 50/60 Hz
Power consumption*8 | Maximum power consumption	305 W (3.1–1.3 A) (310 VA) (Power consumption is 295 W at 200–240 V)
Power consumption*8 | On-mode power consumption (Light Power) [Normal]	270 W (100–120 V), 255 W (200–240 V)
Power consumption*8 | On-mode power consumption (Light Power) [Eco]	195 W (100–120 V), 185 W (200–240 V)
Power consumption*8 | On-mode power consumption (Light Power) [Quiet]	190 W (100–120 V), 180 W (200–240 V)
Filter*9	Included (Estimated maintenance time: approx. 20,000 hours)
Built in Speaker	10 W monaural
Cabinet Materials	Molded plastic
Operation noise*1	36 dB (NORMAL/ECO), 26 dB (QUIET)
Dimensions (W x H x D)	399 mm x 115 mm x 348 mm (15 23/32″ x 4 17/32″ x 13 11/16″) (not including protruding parts) 399 mm x 133 mm x 348 mm (15 23/32″ x 5 1/4″ x 13 11/16″) (with feet at shortest position)
Operating Environment	Operating temperature: 0–45 °C (32–113 °F)*11,*12 , Operating humidity: 20–80 % (no condensation)
Weight with supplied lens*10	Approx. 6.5 kg (14.33 lbs)
Applicable Software	Multi Monitoring & Control Software, Logo Transfer Software, Presenter Light Software for Windows®*13, Wireless Projector App for iOS/Android™*14

Note	Note: Availability varies by country or region. *1 Measurement, measuring conditions, and method of notation all comply with ISO/IEC 21118: 2020 international standards. Value is average of all products when shipped. *2 When [PICTURE MODE] is set to [DYNAMIC], [LIGHT POWER] is set to [NORMAL], [DAYLIGHT VIEW] is set to [OFF], and [AUTO POWER SAVE] is set to [OFF]. *3 Around this time, light output will have decreased to approximately 50 % of its original level ([PICTURE MODE]: [DYNAMIC], [DYNAMIC CONTRAST] set to [2], temperature 30 °C (86 °F), elevation 700 m (2,297 ft) with 0.15 mg/m3 of particulate matter). Estimated time until light output declines to 50 % varies depending on environment. *4 Resolution decreases when using this function. 6-Point Screen Correction, V/H Keystone Correction, and curved-screen correction are not available when using this function, and range of corner adjustment is limited. *5 When Digital Zoom Extender is set to 80%. *6 4K signals are converted to the projector's resolution upon projection. *7 On standby, power supply is available with Quick Startup set to ON or Power Management set to Ready. *8 Measurement, measuring conditions, and method of notation all comply with ISO/IEC 21118: 2020 international standards. On-mode power consumption measured at 25 °C (77 °F) operating temperature at an altitude of 700 m (2,297 ft). *9 Filter cleaning cycle varies depending on environment. Filter can be washed and reused up to two times. Filter cleaning cycle: 20,000 hours (under dust conditions of 0.08 mg/m3), 10,000 hours (under dust conditions of 0.15 mg/m3). *10 Average value. May differ depending on the actual unit. *11 Light output is limited at operating temperatures higher than 30 °C (86 °F), and projectors cannot be operated at altitudes higher than 2,700 m (8,858 ft) above sea level. *12 When optional AJ-WM50 Series wireless module is attached, operating temperature range becomes 0–40 °C (32–104 °F). *13 When using Presenter Light Software, images are projected with 1280 x 800 dots or 1024 x 768 dots onto the screen. Also, your PC display resolution may be forcibly changed, and audio playback disrupted or become noisy, while images and sound are being transmitted. *14 When using the Wireless Projector app, display resolution differs depending on your iOS/Android™ device and the display device. The maximum supported display resolution is WXGA (1280 x 800)

DLP™ Projector

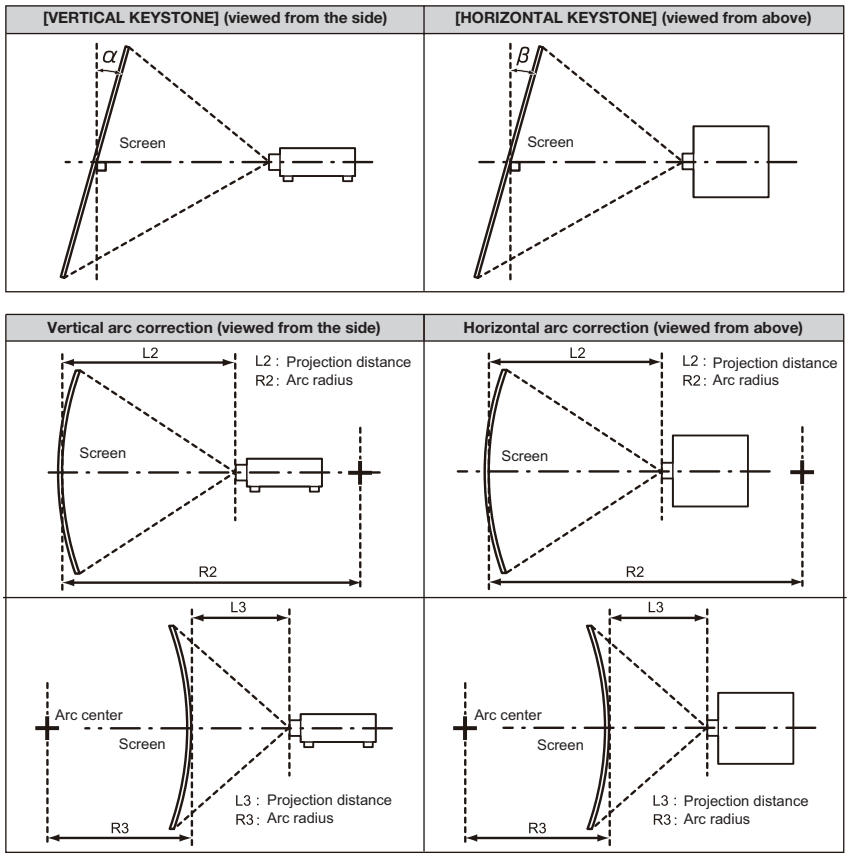
PT-RZ120B/RZ120LB/RZ120W/RZ120LW

Specifications

Main unit

Power supply		AC 100V - 240V, 50Hz/60Hz
Power consumption		1,100 W (11 A - 4.5 A)
		NORMAL: 730W ECO: 590W SHUTTER: 100W *Operating Temperature: 25 °C (77 °F), Altitude: 700 m (2,297 ft), IEC62087: 2008 Broadcast contents, Picture mode: Standard, Dynamic Contrast2
		STANDBY MODE [ECO]: 0.5W STANDBY MODE [NORMAL]: 7W STANDBY MODE (When the [QUICK STARTUP] function is enabled): Approx. 100 W
BTU value		Max 3,754 BTU
DLP™ chip	Panel size	17.0 mm (0.67 in) diagonal (16:10 aspect ratio)
	Projection system	DLP™ chip x 1, DLP™ system
	Pixels	2,304,000 (1920 x 1200)
Light source		Laser Diode
Light output*1		12,000 lm (ANSI)*2/12,600 lm (Center)*3 (When [OPERATING MODE] is set to [NORMAL]) 9,600 lm (When [OPERATING MODE] is set to [ECO]) 10,000 lm (When [OPERATING MODE] is set to [QUIET1]) 8,000 lm (When [OPERATING MODE] is set to [QUIET2])
Time until light output declines to 50 %*4		20,000 hours (NORMAL)/24,000 hours (ECO)
Resolution		1920 x 1200 pixels
Contrast*2		10,000:1 (All White/All Black) (Dynamic Contrast3)
Screen size		1.27-15.24 m (50-600 in), 1.27-5.08 m (50-200 in) with ET-DLE055, 2.54-8.89 m (100-350 in) with ET-DLE035, 16:10 aspect ratio
Center-to-corner uniformity*2		90%
Lens	PT-RZ120B/W	Powered zoom/focus lenses (1.7-2.4:1), F 1.7-1.9, f 25.6–35.7 mm
	PT-RZ120LB/LW	Optional powered zoom/focus lenses and fixed-focus lens
Compatible signal	RGB	Resolution: 640 x 400 to 1920 x 1200 Dot clock frequency: 162 MHz or less PIAS (Panasonic Intelligent Auto Scanning) system
	YP_BP_R (YC_BC_R)	Resolution: 480i/576i to 1920 x 1080 Dot clock frequency: 148.5 MHz or less The HD/SYNC and VD terminals do not support 3 value SYNC.
	DVI-D	Moving image signal resolution: 480i*5/576i*5 to 1920 x 1080 Still image signal resolution: 640 x 400 to 1920 x 1200 (non-interlace) Dot clock frequency: 25 MHz to 162 MHz
	HDMI	Moving image signal resolution: 480i*5/576i*5 to 4096 x 2160 Still image signal resolution: 640 x 400 to 1920 x 1200 (non-interlace) Dot clock frequency: 25 MHz to 594 MHz
	DIGITAL LINK	Moving image signal resolution: 480i*5/576i*5 to 4096 x 2160 Still image signal resolution: 640 x 400 to 1920 x 1200 (non-interlace) Dot clock frequency: 25 MHz to 297 MHz
	SDI	SD-SDI signal HD-SDI signal 3G-SDI signal

Geometry correction range



Projection lens Model No.	Only [KEYSTONE] used		[KEYSTONE] and [CURVED] used together				Only [CURVED] used	
	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Min. value of R2/L2	Min. value of R3/L3	Min. value of R2/L2	Min. value of R3/L3
Supplied lens/ ET-DLE170	±40	±15	±20	±15	0.9	1.7	0.5	1
ET-DLE035*6	+5/-0	0	—	—	—	—	—	—
ET-DLE055	±22	±15	±8	±8	1.7	4.3	1	2.6
ET-DLE060	±16	±10	—	—	—	—	—	—
ET-DLE085	±22	±15	±8	±8	1.7	4.3	1	2.6
ET-DLE105	±22	±15	±8	±8	1.7	4.3	1	2.6
ET-DLE150	±40	±15	±20	±15	1.1	2.6	0.6	1.5
ET-DLE250	±40	±15	±20	±15	0.7	1.3	0.4	0.7
ET-DLE350	±40	±15	±20	±15	0.4	0.8	0.3	0.5
ET-DLE450	±40	±15	±20	±15	0.3	0.6	0.2	0.3

When using the optional Upgrade Kit (Model No.: ET-UK20)

Projection lens Model No.	Only [KEYSTONE] used*7		[KEYSTONE] and [CURVED] used together				Only [CURVED] used	
	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Min. value of R2/L2	Min. value of R3/L3	Min. value of R2/L2	Min. value of R3/L3
Supplied lens/ ET-DLE170	±40	±40	±20	±15	0.7	1.3	0.4	0.7
ET-DLE035*6	+5/-0	0	—	—	—	—	—	—
ET-DLE055	±22	±15	±8	±8	1.3	3.3	0.8	1.9
ET-DLE060	±16	±10	—	—	—	—	—	—
ET-DLE085	±22	±15	±8	±8	1.3	3.3	0.8	1.9
ET-DLE105	±22	±15	±8	±8	1.3	3.3	0.8	1.9
ET-DLE150	±40	±40	±20	±15	0.9	2	0.5	1.1
ET-DLE250	±40	±40	±20	±15	0.5	1	0.3	0.6
ET-DLE350	±45	±40	±20	±15	0.3	0.6	0.2	0.4
ET-DLE450	±45	±40	±20	±15	0.2	0.4	0.2	0.3

Optical axis shift	Vertical: +50%, -16%(powered) (When using the ET-DLE060, +40%, -16%) Horizontal: +30%, -10%(powered) (When using the ET-DLE060, +19%, -10%) (When using the ET-DLE085/ET-DLE105, +28%, -10%) **NOTE: Optical axis shift function cannot be operated when used with the ET-DLE055. If using the ET-DLE035, the optical axis is fixed.**		
Installation	Ceiling/floor, front/rear		
Terminals	SDI IN		BNC x 1, 3G-SDI signal: SMPTE ST 424, 425-2 compliant HD-SDI signal: SMPTE ST 292 compliant SD-SDI signal: SMPTE ST 259 compliant
	HDMI IN		HDMI 19-pin x 1, Deep Color, compatible with HDCP2.2, 4K/60p signal*8
	DVI-D IN		DVI-D 24-pin x 1, DVI 1.0 compliant, compatible with HDCP, for single link only
	RGB 1 IN		BNC ×5
		R, G, B	R: 0.7 Vp-p, 75 ohms, G: 0.7 Vp-p (G: 1.0 Vp-p for sync on G), 75 ohms, B: 0.7 Vp-p, 75 ohms
		Y, P_B, P_R (Y, C_B, C_R)	HD, VD/SYNC: TTL, high impedance, positive/negative automatic Y: 1.0 Vp-p (including sync signal), P_B/P_R (C_B/C_R): 0.7 Vp-p, 75 ohms
	RGB 2 IN		D-sub HD 15-pin (female) ×1
		R, G, B	R: 0.7 Vp-p, 75 ohms, G: 0.7 Vp-p (G: 1.0 Vp-p for sync on G), 75 ohms, B: 0.7 Vp-p, 75 ohms
		Y, P_B, P_R (Y, C_B, C_R)	HD, VD/SYNC: TTL, high impedance, positive/negative automatic Y: 1.0 Vp-p (including sync signal), P_B/P_R(C_B/CR): 0.7 Vp-p, 75 ohms
	SERIAL/MULTI PROJECTOR SYNC IN		D-sub 9-pin (female) ×1 for external control (RS-232C compliant)
	SERIAL/MULTI PROJECTOR SYNC OUT		D-sub 9-pin (male) x 1 for link control
	REMOTE 1 IN		M3 jack x 1 for wired remote control
	REMOTE 1 OUT		M3 jack x 1 for link control (for wired remote control)
	REMOTE 2 IN		D-sub 9-pin (female) ×1 for external control (parallel)
	DIGITAL LINK/LAN		RJ-45 x 1 for network and DIGITAL LINK (video/network/serial control) (HDBaseT™ compliant), PJLink (class 2) compatible, 100Base-TX, Art-Net compatible, HDCP 2.2 compatible, Deep Color compatible, 4K/60p signal*8
	LAN		RJ-45 x 1 for network connection, PJLink (class 2) compatible, 10Base-T/100Base-TX, Art-Net compatible
Power cord length			3.0 m (9 ft 10 in)
Cabinet materials			Molded plastic
Dimensions (W x H x D)	PT-RZ120B/RZ120W		498 x 200*9 x 581mm (19-19/32 x 7-7/8*9 x 22-7/8in) with supplied lens
	PT-RZ120LB/RZ120LW		498 x 200*9 x 538 mm (19-19/32 x 7-7/8*9 x 21-3/16in) without lens
Weight	PT-RZ120B/RZ120W		Approx. 23.6 kg (51.9 lbs.) with supplied lens
	PT-RZ120LB/RZ120LW		Approx. 22.8 kg (50.2 lbs.) without lens
Operation noise			44 dB [NORMAL] /41 dB [QUIET1] / 38 dB [QUIET2])
Laser Classification	Laser Class		USA and Canada: Class 3R (IEC 60825-1:2007) Other countries or regions: Class 1 (IEC/EN 60825-1:2014)
	Risk Group	Standard zoom lens, ET-DLE170, ET-DLE035, ET-DLE055, ET-DLE060, ET-DLE085, ET-DLE105, ET-DLE150	Risk Group 2 (IEC 62471-5:2015)
		ET-DLE250, ET-DLE350, ET-DLE450	Risk Group 3 (IEC 62471-5:2015)
Operating temperature			0-45 °C (32-113 °F)*10
Operating humidity			10%-80% (no condensation)

Remote control unit

Power supply	3 V DC (AAA/R03/LR03 battery x 2)
Operation range	Approx. 30 m (98 ft 5 in) when operated from directly in front of the signal receptor
Dimensions (W × H × D)	48 x 145 x 27 mm (1-7/8 x 5-23/32 x 1-1/16 in)
Weight*11	Approx. 102 g (3.6 ozs.) including batteries

Other Applications

Multi Monitoring and Control Software (for Windows)
Logo Transfer Software (for Windows)
Geometry Manager Pro (for Windows)
Smart Projector Control (iOS/Android)

Supplied accessories

Power cord with secure lock (× 1) (× 2 for Europe / ASIA models)
Wireless/wired remote control unit (× 1)
Batteries for remote control (AAA/R03 or AAA/LR03 battery x 2)
CD-ROM (Operating Instructions) (× 1)
Lens Mount Cover (× 1)
Lens cover (× 1) (Only models with lens)

Optional accessories

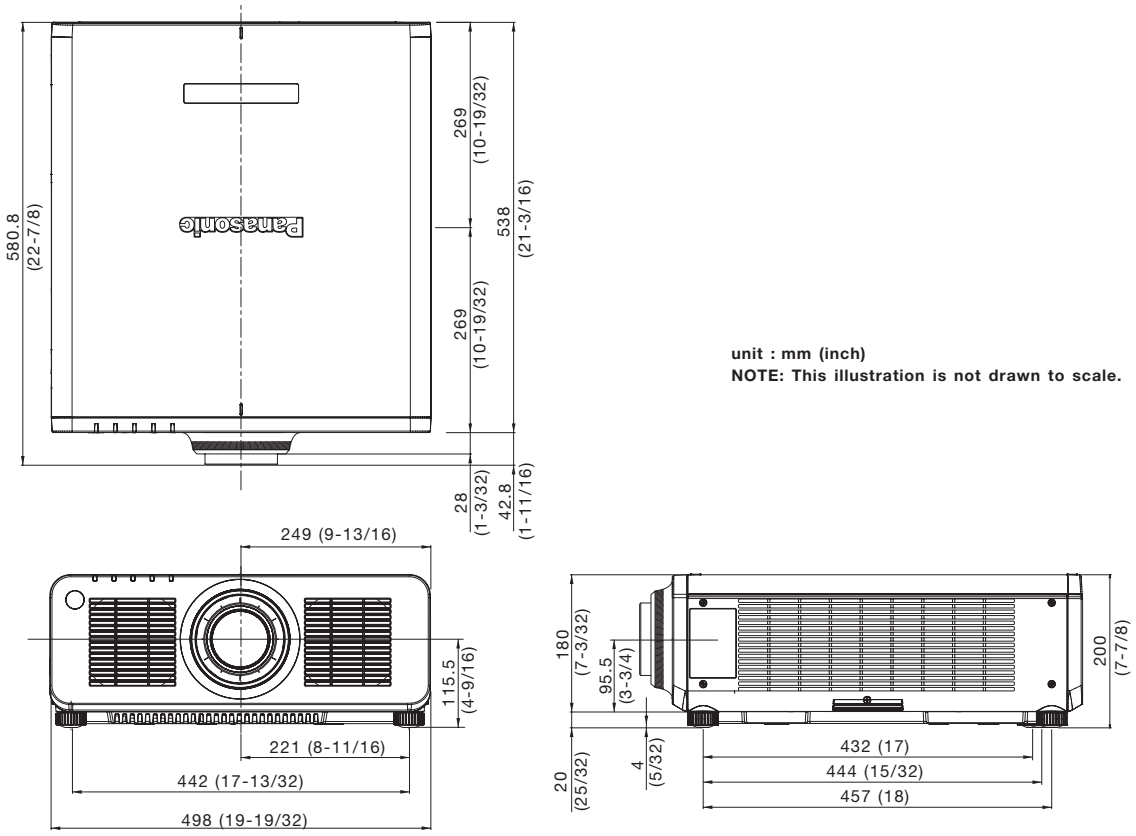
Digital interface box	ET-YFB100G
Digital LINK Switcher	ET-YFB200G
Zoom lens	ET-DLE020*12
Zoom lens	ET-DLE060
Zoom lens	ET-DLE085
Zoom lens	ET-DLE105
Zoom lens	ET-DLE150
Zoom lens	ET-DLE170 (same as supplied lens)
Zoom lens	ET-DLE250
Zoom lens	ET-DLE350
Zoom lens	ET-DLE450
Fixed-focus lens	ET-DLE035
Fixed-focus lens	ET-DLE055
Ceiling mount bracket	ET-PKD120H (for high ceilings) ET-PKD120S (for low ceilings)
High-ceiling mount bracket (6-axis adjustment mechanism)	ET-PKD130H
Attachment for ceiling mount bracket	ET-PKD130B
Geometry Manager Pro Upgrade kit	ET-UK20
Auto Screen Adjustment Upgrade kit	ET-CUK10/CUK10P
Early Warning Software	ET-SWA100*13

***1 Value is for the supplied standard zoom lens. The value varies depending on the lens.**
***2 Measurement, measuring conditions, and method of notation all comply with ISO/IEC 21118:2020 international standards.**
***3 Average light-output value of all shipped products measured at center of screen in NORMAL Mode.**
***4 Around this time, light output will have decreased by approximately 50 %. IEC62087: 2008 Broadcast contents, NORMAL Mode, Dynamic Contrast [3], under conditions with 30 °C (86 °F), 700 m (2,297 ft) above sea level, and 0.15 mg/m³ of particulate matter. Estimated time until light output declines to 50 % varies depending on environment.**
***5 Only the vertical keystone correction angle can be corrected in the direction in which the projector body moves away from the screen.**
***6 When [VERTICAL KEYSTONE] and [HORIZONTAL KEYSTONE] are used simultaneously, correction cannot be made exceeding total of 55°.**
• When [GEOMETRY] is used, the focus of the entire screen may be lost as correction increases.
• Make the curved screen a circular arc shape with one part of a perfect circle removed.
• Adjustment range of the [GEOMETRY] items may not match the listed projection range depending on the projection lens. Use this projector within the projection range, otherwise the correction may not work.
***7 Only compatible with dot clock frequency of 27 MHz (pixel repetition signal).**
***8 4K/60p signals are converted to the projector's resolution (1920 x 1200 pixels) upon projection. Supported terminals: DIGITAL LINK/HDMI®**
***9 With legs at shortest position.**
***10 Limits the luminance when used in locations from 0 m to 2,700 m (0 ft to 8,858 ft) above sea level at ambient temperatures of 30 °C (86 °F) or higher, or from 2,700 m to 4,200 m (8,858 ft to 13,780 ft) above sea level at ambient temperatures of 25 °C (77 °F) or higher.**
***11 Average value. Weight varies for each product.**
***12 For details, see the Spec File of each individual lens.**
***13 The symbol at the end of the part number will vary depending on the type of license.**

DLP™ Projector

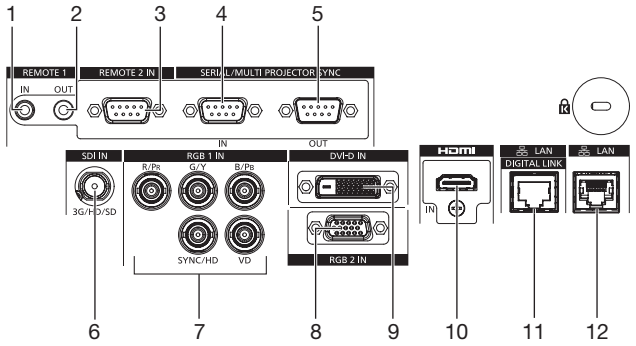
PT-RZ120B/RZ120LB/RZ120W/RZ120LW

Dimensions



unit : mm (inch)
NOTE: This illustration is not drawn to scale.

Terminals

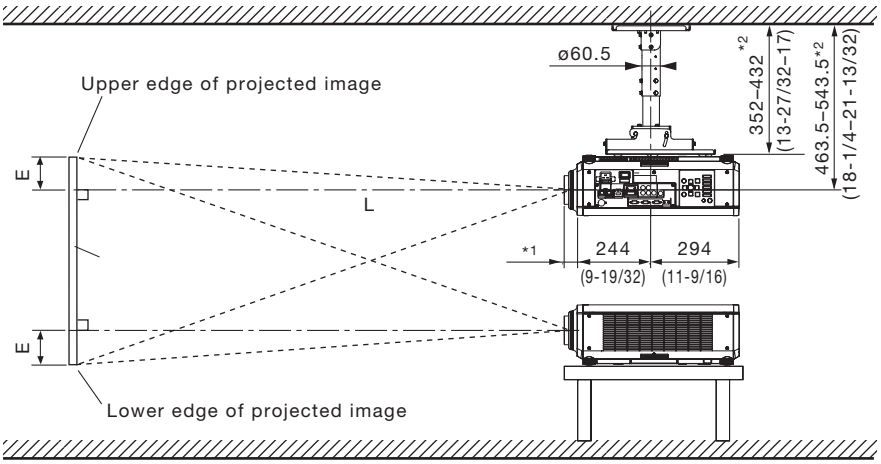


1 REMOTE 1 INPUT
2 REMOTE 1 OUTPUT
3 REMOTE 2 INPUT
4 SERIAL/MULTI PROJECTOR SYNC INPUT
5 SERIAL/MULTI PROJECTOR SYNC OUTPUT
6 SDI INPUT
7 RGB 1 INPUT
8 RGB 2 INPUT
9 DVI-D INPUT
10 HDMI INPUT
11 DIGITAL LINK/LAN
12 LAN

DLP™ Projector

PT-RZ120B/RZ120LB/RZ120W/RZ120LW

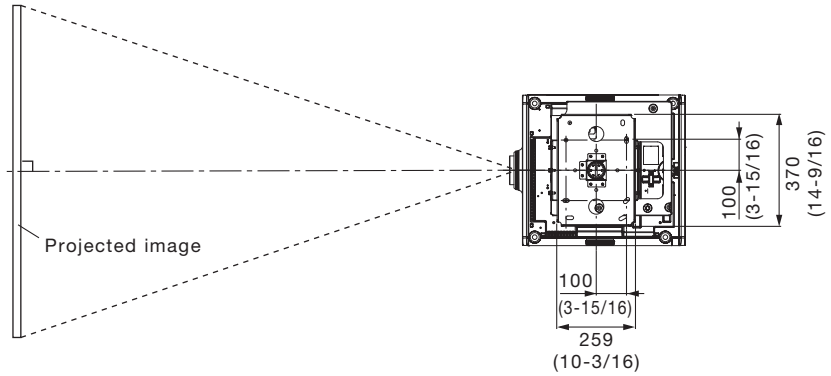
Standard setting-up position (If using other than the ET-DLE035)



***1 When the lens protrudes to the maximum.**
104 mm (4-3/32 in) with the ET-DLE060
84 mm (3-5/16 in) with the ET-DLE085
88 mm (3-15/32 in) with the ET-DLE105
44 mm (1-23/32 in) with the ET-DLE150
43 mm (1-11/16 in) with the supplied lens/ET-DLE170
45 mm (1-25/32 in) with the ET-DLE250
51mm (2 in) with the ET-DLE350
95 mm (3-3/4 in) with the ET-DLE450
27 mm (1-1/16 in) with the ET-DLE055

***2 Adjustable in 40 mm (1-9/16 in) steps.**

unit : mm (inch)



NOTE:

Illustrations show the projector installed using optional ceiling mount bracket ET-PKD120H, optional bracket assembly ET-PKD130B and an optional lens.

This illustration is not drawn to scale.

Caution:

- All construction work should be done by a qualified technician.
- When mounting to the ceiling, use the special mounting bracket. Furthermore, in order to prevent it from falling down from the ceiling, use the supplied wire on the mounting bracket.

Projection distance for 16:10 aspect ratio screen (If using other than the ET-DLE035)

Unit: meters

Screen size (diagonal)	Distance to screen (L)																Height from the edge of screen to center of lens (H)		
	Zoom																Fixed-focus		
	ET-DLE060 Zoom lens		ET-DLE085 Zoom lens		ET-DLE105 Zoom lens		ET-DLE150 Zoom lens		*Supplied lens ET-DLE170 Zoom lens*		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens	Supplied lens ET-DLE085 105/150/250 350/450	ET-DLE060	ET-DLE055
	Throw ratio																			
	0.600-0.801:1		0.782-0.977:1		0.978-1.32:1		01.30-1.89:1		1.71-2.41:1		2.27-3.62:1		3.58-5.45:1		5.36-8.58:1		0.785:1			
[m] [in]	min.	max.	min.	max.	min.	max.	min.	max.	*min.*	*max.*	min.	max.	min.	max.	min.	max.				
1.27 / 50	0.63	0.84	0.82	1.04	1.03	1.41	1.38	2.01	***1.82***	***2.57***	2.42	3.87	3.80	5.81	5.66	9.12	0.83	0 – 0.44	0.07 – 0.44	0.34
1.52 / 60	0.76	1.02	1.00	1.25	1.25	1.70	1.66	2.43	***2.20***	***3.10***	2.92	4.65	4.59	7.00	6.85	11.01	1.00	0 – 0.53	0.08 – 0.53	0.40
1.78 / 70	0.90	1.20	1.17	1.47	1.47	1.99	1.95	2.84	***2.58***	***3.63***	3.42	5.44	5.38	8.19	8.04	12.89	1.18	0 – 0.62	0.09 – 0.62	0.47
2.03 / 80	1.03	1.38	1.35	1.68	1.68	2.28	2.23	3.25	***2.95***	***4.16***	3.92	6.23	6.16	9.38	9.23	14.78	1.35	0 – 0.71	0.11 – 0.71	0.54
2.29 / 90	1.17	1.56	1.52	1.90	1.90	2.57	2.52	3.66	***3.33***	***4.69***	4.42	7.02	6.95	10.57	10.43	16.66	1.53	0 – 0.80	0.12 – 0.80	0.61
2.54 / 100	1.31	1.74	1.70	2.11	2.12	2.86	2.81	4.08	***3.71***	***5.21***	4.92	7.81	7.74	11.76	11.62	18.55	1.70	0 – 0.89	0.13 – 0.89	0.67
3.05 / 120	1.58	2.10	2.05	2.55	2.55	3.44	3.38	4.90	***4.47***	***6.27***	5.91	9.39	9.31	14.14	14.00	22.31	2.05	0 – 1.07	0.16 – 1.07	0.81
3.81 / 150	1.99	2.63	2.57	3.19	3.20	4.32	4.24	6.14	***5.60***	***7.86***	7.41	11.75	11.68	17.71	17.58	27.97	2.58	0 – 1.33	0.20 – 1.33	1.01
5.08 / 200	2.67	3.53	3.44	4.27	4.29	5.77	5.67	8.20	***7.50***	***10.50***	9.91	15.70	15.61	23.66	23.54	37.39	3.45	0 – 1.78	0.27 – 1.78	1.35
6.35 / 250	3.35	4.42	4.31	5.35	5.37	7.23	7.10	10.26	***9.39***	***13.14***	12.41	19.64	19.55	29.61	29.50	46.81	—	0 – 2.22	0.34 – 2.22	—
7.62 / 300	4.03	5.32	5.18	6.43	6.46	8.68	8.53	12.33	***11.28***	***15.79***	14.91	23.59	23.49	35.56	35.46	56.24	—	0 – 2.67	0.40 – 2.67	—
8.89 / 350	4.71	6.21	6.06	7.51	7.54	10.14	9.96	14.39	***13.18***	***18.43***	17.40	27.53	27.42	41.51	41.42	65.66	—	0 – 3.11	0.47 – 3.11	—
10.16 / 400	5.39	7.11	6.93	8.59	8.63	11.59	11.39	16.45	***15.07***	***21.07***	19.90	31.48	31.36	47.46	47.38	75.08	—	0 – 3.55	0.54 – 3.55	—
12.70 / 500	6.75	8.90	8.67	10.75	10.80	14.50	14.25	20.58	***18.86***	***26.36***	24.90	39.37	39.23	59.36	59.30	93.93	—	0 – 4.44	0.67 – 4.44	—
15.24 / 600	8.11	10.69	10.42	12.91	12.97	17.41	17.11	24.70	***22.64***	***31.65***	29.89	47.25	47.11	71.25	71.22	112.77	—	0 – 5.33	0.81 – 5.33	—

Unit: feet

Screen size (diagonal)	Distance to screen (L)																Height from the edge of screen to center of lens (H)		
	Zoom																Fixed-focus		
	ET-DLE060 Zoom lens		ET-DLE085 Zoom lens		ET-DLE105 Zoom lens		ET-DLE150 Zoom lens		*Supplied lens ET-DLE170 Zoom lens*		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens	Supplied lens ET-DLE085 105/150/250 350/450	ET-DLE060	ET-DLE055
	Throw ratio																			
	0.600-0.801:1		0.782-0.977:1		0.978-1.32:1		01.30-1.89:1		1.71-2.41:1		2.27-3.62:1		3.58-5.45:1		5.36-8.58:1		0.785:1			
[m] [in]	min.	max.	min.	max.	min.	max.	min.	max.	*min.*	*max.*	min.	max.	min.	max.	min.	max.				
1.27 / 50	2.1	2.8	2.7	3.4	3.4	4.6	4.5	6.6	***6.0***	***8.4***	7.9	12.7	12.5	19.1	18.6	29.9	2.7	0 – 1.5	0.2 – 1.5	1.1
1.52 / 60	2.5	3.4	3.3	4.1	4.1	5.6	5.5	8.0	***7.2***	***10.2***	9.6	15.3	15.1	23.0	22.5	36.1	3.3	0 – 1.7	0.3 – 1.7	1.3
1.78 / 70	2.9	3.9	3.9	4.8	4.8	6.5	6.4	9.3	***8.5***	***11.9***	11.2	17.9	17.6	26.9	26.4	42.3	3.9	0 – 2.0	0.3 – 2.0	1.5
2.03 / 80	3.4	4.5	4.4	5.5	5.5	7.5	7.3	10.7	***9.7***	***13.6***	12.8	20.4	20.2	30.8	30.3	48.5	4.4	0 – 2.3	0.4 – 2.3	1.8
2.29 / 90	3.8	5.1	5.0	6.2	6.2	8.4	8.3	12.0	***10.9***	***15.4***	14.5	23.0	22.8	34.7	34.2	54.7	5.0	0 – 2.6	0.4 – 2.6	2.0
2.54 / 100	4.3	5.7	5.6	6.9	7.0	9.4	9.2	13.4	***12.2***	***17.1***	16.1	25.6	25.4	38.6	38.1	60.8	5.6	0 – 2.9	0.4 – 2.9	2.2
3.05 / 120	5.2	6.9	6.7	8.4	8.4	11.3	11.1	16.1	***14.7***	***20.6***	19.4	30.8	30.6	46.4	45.9	73.2	6.7	0 – 3.5	0.5 – 3.5	2.6
3.81 / 150	6.5	8.6	8.4	10.5	10.5	14.2	13.9	20.1	***18.4***	***25.8***	24.3	38.6	38.3	58.1	57.7	91.8	8.5	0 – 4.4	0.7 – 4.4	3.3
5.08 / 200	8.7	11.6	11.3	14.0	14.1	18.9	18.6	26.9	***24.6***	***34.5***	32.5	51.5	51.2	77.6	77.2	122.7	11.3	0 – 5.8	0.9 – 5.8	4.4
6.35 / 250	11.0	14.5	14.1	17.6	17.6	23.7	23.3	33.7	***30.8***	***43.1***	40.7	64.4	64.1	97.1	96.8	153.6	—	0 – 7.3	1.1 – 7.3	—
7.62 / 300	13.2	17.4	17.0	21.1	21.2	28.5	28.0	40.4	***37.0***	***51.8***	48.9	77.4	77.1	116.7	116.3	184.5	—	0 – 8.7	1.3 – 8.7	—
8.89 / 350	15.4	20.4	19.9	24.6	24.8	33.3	32.7	47.2	***43.2***	***60.5***	57.1	90.3	90.0	136.2	135.9	215.4	—	0 – 10.2	1.5 – 10.2	—
10.16 / 400	17.7	23.3	22.7	28.2	28.3	38.0	37.4	54.0	***49.4***	***69.1***	65.3	103.3	102.9	155.7	155.4	246.3	—	0 – 11.7	1.8 – 11.7	—
12.70 / 500	22.1	29.2	28.5	35.3	35.4	47.6	46.7	67.5	***61.9***	***86.5***	81.7	129.2	128.7	194.7	194.6	308.2	—	0 – 14.6	2.2 – 14.6	—
15.24 / 600	26.6	35.1	34.2	42.3	42.5	57.1	56.1	81.1	***74.3***	***103.8***	98.1	155.0	154.6	233.8	233.7	370.0	—	0 – 17.5	2.6 – 17.5	—

- **The value for L (distance to screen) varies slightly within ±5% depending on the zoom lens characteristics.**
- **The zoom lens characteristics may cause slight image distortion.**
- **When using keystone correction is used, the image is corrected in the direction that reduces its projected size.**
- **The brightness varies depending on the zoom setting.**

Note: When the ET-DLE055 is mounted, the optical lens shift function cannot be used.

Projection distance for 16:9 aspect ratio screen (If using other than the ET-DLE035)

Unit: meters

Screen size (diagonal)	Distance to screen (L)																	Height from the edge of screen to center of lens (H)		
	Zoom																Fixed-focus			
	ET-DLE060 Zoom lens		ET-DLE085 Zoom lens		ET-DLE105 Zoom lens		ET-DLE150 Zoom lens		*Supplied lens ET-DLE170 Zoom lens*		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens			
	Throw ratio																			
	0.600-0.802:1		0.783-0.977:1		0.979-1.32:1		1.30-1.89:1		1.72-2.41:1		2.27-3.62:1		3.58-5.45:1		5.36-8.58:1		0.786:1	Supplied lens ET-DLE085 105/150/250 350/450	ET-DLE060	ET-DLE055
[m] [in]	min.	max.	min.	max.	min.	max.	min.	max.	*min.*	*max.*	min.	max.	min.	max.	min.	max.				
1.27 / 50	0.64	0.87	0.85	1.07	1.06	1.45	1.42	2.07	***1.87***	***2.64***	2.49	3.97	3.91	5.98	5.82	9.39	0.85	-0.06 – 0.46	0 – 0.46	0.31
1.52 / 60	0.78	1.05	1.03	1.29	1.29	1.75	1.71	2.49	***2.26***	***3.19***	3.00	4.79	4.72	7.20	7.05	11.32	1.03	-0.07 – 0.55	0 – 0.55	0.37
1.78 / 70	0.92	1.24	1.21	1.51	1.51	2.05	2.00	2.92	***2.65***	***3.73***	3.51	5.60	5.53	8.43	8.27	13.26	1.21	-0.09 – 0.64	0 – 0.64	0.44
2.03 / 80	1.06	1.42	1.39	1.73	1.73	2.35	2.30	3.34	***3.04***	***4.27***	4.03	6.41	6.34	9.65	9.50	15.20	1.39	-0.10 – 0.73	0 – 0.73	0.50
2.29 / 90	1.20	1.60	1.57	1.95	1.96	2.64	2.59	3.77	***3.43***	***4.82***	4.54	7.22	7.15	10.87	10.72	17.13	1.57	-0.11 – 0.82	0 – 0.82	0.56
2.54 / 100	1.34	1.79	1.75	2.17	2.18	2.94	2.89	4.19	***3.82***	***5.36***	5.05	8.03	7.96	12.09	11.95	19.07	1.75	-0.12 – 0.91	0 – 0.91	0.62
3.05 / 120	1.62	2.16	2.10	2.62	2.63	3.54	3.47	5.04	***4.60***	***6.45***	6.08	9.65	9.58	14.54	14.40	22.94	2.11	-0.15 – 1.10	0 – 1.10	0.75
3.81 / 150	2.04	2.71	2.64	3.28	3.29	4.44	4.36	6.31	***5.76***	***8.08***	7.62	12.08	12.00	18.21	18.08	28.75	2.65	-0.19 – 1.37	0 – 1.37	0.93
5.08 / 200	2.74	3.63	3.54	4.39	4.41	5.93	5.82	8.43	***7.71***	***10.80***	10.19	16.14	16.05	24.32	24.20	38.44	3.55	-0.25 – 1.83	0 – 1.83	1.25
6.35 / 250	3.44	4.55	4.43	5.50	5.52	7.43	7.29	10.55	***9.65***	***13.51***	12.75	20.19	20.10	30.44	30.33	48.12	—	-0.31 – 2.28	0 – 2.28	—
7.62 / 300	4.14	5.47	5.33	6.61	6.64	8.93	8.76	12.67	***11.60***	***16.23***	15.32	24.25	24.14	36.55	36.45	57.81	—	-0.37 – 2.74	0 – 2.74	—
8.89 / 350	4.84	6.39	6.23	7.72	7.76	10.42	10.23	14.79	***13.55***	***18.95***	17.89	28.30	28.19	42.67	42.58	67.49	—	-0.44 – 3.20	0 – 3.20	—
10.16 / 400	5.54	7.31	7.12	8.83	8.87	11.92	11.70	16.91	***15.49***	***21.66***	20.46	32.35	32.24	48.78	48.71	77.18	—	-0.50 – 3.65	0 – 3.65	—
12.70 / 500	6.93	9.15	8.91	11.05	11.10	14.91	14.64	21.15	***19.38***	***27.10***	25.59	40.46	40.33	61.01	60.96	96.55	—	-0.62 – 4.57	0 – 4.57	—
15.24 / 600	8.33	10.99	10.71	13.27	13.33	17.90	17.58	25.39	***23.27***	***32.53***	30.72	48.57	48.42	73.24	73.21	115.91	—	-0.75 – 5.48	0 – 5.48	—

Unit: feet

Screen size (diagonal)	Distance to screen (L)																	Height from the edge of screen to center of lens (H)		
	Zoom																Fixed-focus			
	ET-DLE060 Zoom lens		ET-DLE085 Zoom lens		ET-DLE105 Zoom lens		ET-DLE150 Zoom lens		*Supplied lens ET-DLE170 Zoom lens*		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens			
	Throw ratio																			
	0.600-0.802:1		0.783-0.977:1		0.979-1.32:1		1.30-1.89:1		1.72-2.41:1		2.27-3.62:1		3.58-5.45:1		5.36-8.58:1		0.786:1	Supplied lens ET-DLE085 105/150/250 350/450	ET-DLE060	ET-DLE055
[m] [in]	min.	max.	min.	max.	min.	max.	min.	max.	*min.*	*max.*	min.	max.	min.	max.	min.	max.				
1.27 / 50	2.1	2.8	2.8	3.5	3.5	4.8	4.6	6.8	***6.1***	***8.7***	8.2	13.0	12.8	19.6	19.1	30.8	2.8	-0.2 – 1.5	0 – 1.5	1.0
1.52 / 60	2.6	3.5	3.4	4.2	4.2	5.7	5.6	8.2	***7.4***	***10.5***	9.8	15.7	15.5	23.6	23.1	37.1	3.4	-0.2 – 1.8	0 – 1.8	1.2
1.78 / 70	3.0	4.1	4.0	5.0	5.0	6.7	6.6	9.6	***8.7***	***12.2***	11.5	18.4	18.1	27.6	27.1	43.5	4.0	-0.3 – 2.1	0 – 2.1	1.4
2.03 / 80	3.5	4.7	4.5	5.7	5.7	7.7	7.5	11.0	***10.0***	***14.0***	13.2	21.0	20.8	31.7	31.2	49.9	4.6	-0.3 – 2.4	0 – 2.4	1.6
2.29 / 90	3.9	5.3	5.1	6.4	6.4	8.7	8.5	12.4	***11.2***	***15.8***	14.9	23.7	23.5	35.7	35.2	56.2	5.2	-0.4 – 2.7	0 – 2.7	1.8
2.54 / 100	4.4	5.9	5.7	7.1	7.2	9.6	9.5	13.7	***12.5***	***17.6***	16.6	26.3	26.1	39.7	39.2	62.6	5.7	-0.4 – 3.0	0 – 3.0	2.0
3.05 / 120	5.3	7.1	6.9	8.6	8.6	11.6	11.4	16.5	***15.1***	***21.2***	19.9	31.7	31.4	47.7	47.2	75.3	6.9	-0.5 – 3.6	0 – 3.6	2.5
3.81 / 150	6.7	8.9	8.7	10.8	10.8	14.6	14.3	20.7	***18.9***	***26.5***	25.0	39.6	39.4	59.7	59.3	94.3	8.7	-0.6 – 4.5	0 – 4.5	3.1
5.08 / 200	9.0	11.9	11.6	14.4	14.5	19.5	19.1	27.7	***25.3***	***35.4***	33.4	52.9	52.7	79.8	79.4	126.1	11.7	-0.8 – 6.0	0 – 6.0	4.1
6.35 / 250	11.3	14.9	14.5	18.1	18.1	24.4	23.9	34.6	***31.7***	***44.3***	41.8	66.2	65.9	99.9	99.5	157.9	—	-1.0 – 7.5	0 – 7.5	—
7.62 / 300	13.6	17.9	17.5	21.7	21.8	29.3	28.8	41.6	***38.1***	***53.2***	50.3	79.5	79.2	119.9	119.6	189.7	—	-1.2 – 9.0	0 – 9.0	—
8.89 / 350	15.9	21.0	20.4	25.3	25.5	34.2	33.6	48.5	***44.4***	***62.2***	58.7	92.8	92.5	140.0	139.7	221.4	—	-1.4 – 10.5	0 – 10.5	—
10.16 / 400	18.2	24.0	23.4	29.0	29.1	39.1	38.4	55.5	***50.8***	***71.1***	67.1	106.1	105.8	160.0	159.8	253.2	—	-1.6 – 12.0	0 – 12.0	—
12.70 / 500	22.7	30.0	29.2	36.2	36.4	48.9	48.0	69.4	***63.6***	***88.9***	84.0	132.8	132.3	200.2	200.0	316.8	—	-2.0 – 15.0	0 – 15.0	—
15.24 / 600	27.3	36.0	35.1	43.5	43.7	58.7	57.7	83.3	***76.4***	***106.7***	100.8	159.4	158.9	240.3	240.2	380.3	—	-2.5 – 18.0	0 – 18.0	—

- **The value for L (distance to screen) varies slightly within ±5% depending on the zoom lens characteristics.**
- **The zoom lens characteristics may cause slight image distortion.**
- **When using keystone correction is used, the image is corrected in the direction that reduces its projected size.**
- **The brightness varies depending on the zoom setting.**

Note: When the ET-DLE055 is mounted, the optical lens shift function cannot be used.

Projection distance for 4:3 aspect ratio screen (If using other than the ET-DLE035)

Unit: meters

Screen size (diagonal)	Distance to screen (L)																	Height from the edge of screen to center of lens (H)		
	Zoom																Fixed-focus			
	ET-DLE060 Zoom lens		ET-DLE085 Zoom lens		ET-DLE105 Zoom lens		ET-DLE150 Zoom lens		*Supplied lens ET-DLE170 Zoom lens*		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens	Supplied lens ET-DLE085 105/150/250 350/450	ET-DLE060	ET-DLE055
	Throw ratio																			
	0.724-0.965:1		0.943-1.18:1		1.18-1.59:1		1.56-2.27:1		2.06-2.90:1		2.73-4.35:1		4.30-6.55:1		6.46-10.3:1		0.946:1			
[m] [in]	min.	max.	min.	max.	min.	max.	min.	max.	*min.*	*max.*	min.	max.	min.	max.	min.	max.				
1.27 / 50	0.71	0.96	0.94	1.18	1.18	1.60	1.56	2.29	***2.07***	***2.92***	2.75	4.39	4.32	6.60	6.45	10.37	0.94	0 – 0.50	0.08 – 0.50	0.38
1.52 / 60	0.87	1.16	1.14	1.42	1.42	1.93	1.89	2.75	***2.50***	***3.52***	3.31	5.28	5.21	7.95	7.80	12.50	1.14	0 – 0.60	0.09 – 0.60	0.46
1.78 / 70	1.02	1.37	1.33	1.67	1.67	2.26	2.21	3.22	***2.93***	***4.12***	3.88	6.17	6.10	9.29	9.14	14.63	1.34	0 – 0.70	0.11 – 0.70	0.53
2.03 / 80	1.18	1.57	1.53	1.91	1.91	2.59	2.54	3.69	***3.35***	***4.72***	4.44	7.07	7.00	10.64	10.49	16.77	1.54	0 – 0.80	0.12 – 0.80	0.61
2.29 / 90	1.33	1.77	1.73	2.16	2.16	2.92	2.86	4.15	***3.78***	***5.31***	5.01	7.96	7.89	11.99	11.84	18.90	1.74	0 – 0.91	0.14 – 0.91	0.69
2.54 / 100	1.48	1.97	1.93	2.40	2.41	3.25	3.18	4.62	***4.21***	***5.91***	5.57	8.85	8.78	13.34	13.19	21.03	1.93	0 – 1.01	0.15 – 1.01	0.76
3.05 / 120	1.79	2.38	2.32	2.89	2.90	3.91	3.83	5.55	***5.07***	***7.11***	6.71	10.64	10.56	16.03	15.89	25.30	2.33	0 – 1.21	0.18 – 1.21	0.91
3.81 / 150	2.25	2.99	2.91	3.62	3.63	4.89	4.80	6.96	***6.35***	***8.91***	8.40	13.32	13.24	20.07	19.94	31.70	2.93	0 – 1.51	0.23 – 1.51	1.14
5.08 / 200	3.02	4.00	3.90	4.84	4.86	6.54	6.42	9.29	***8.50***	***11.90***	11.23	17.78	17.69	26.80	26.69	42.37	3.92	0 – 2.01	0.30 – 2.01	1.52
6.35 / 250	3.79	5.01	4.89	6.07	6.09	8.19	8.04	11.63	***10.64***	***14.89***	14.06	22.25	22.15	33.54	33.44	53.04	—	0 – 2.51	0.38 – 2.51	—
7.62 / 300	4.56	6.03	5.88	7.29	7.32	9.84	9.66	13.96	***12.78***	***17.88***	16.88	26.71	26.61	40.27	40.18	63.70	—	0 – 3.02	0.46 – 3.02	—
8.89 / 350	5.33	7.04	6.86	8.51	8.55	11.48	11.28	16.30	***14.93***	***20.88***	19.71	31.18	31.06	47.01	46.93	74.37	—	0 – 3.52	0.53 – 3.52	—
10.16 / 400	6.10	8.05	7.85	9.73	9.78	13.13	12.90	18.63	***17.07***	***23.87***	22.54	35.64	35.52	53.74	53.68	85.04	—	0 – 4.02	0.61 – 4.02	—
12.70 / 500	7.64	10.08	9.82	12.17	12.23	16.42	16.13	23.30	***21.36***	***29.85***	28.19	44.58	44.43	67.21	67.17	106.37	—	0 – 5.03	0.76 – 5.03	—
15.24 / 600	9.18	12.11	11.80	14.62	14.69	19.72	19.37	27.97	***25.64***	***35.84***	33.85	53.51	53.35	80.68	80.67	127.70	—	0 – 6.04	0.91 – 6.04	—

Unit: feet

Screen size (diagonal)	Distance to screen (L)																	Height from the edge of screen to center of lens (H)		
	Zoom																Fixed-focus			
	ET-DLE060 Zoom lens		ET-DLE085 Zoom lens		ET-DLE105 Zoom lens		ET-DLE150 Zoom lens		*Supplied lens ET-DLE170 Zoom lens*		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens	Supplied lens ET-DLE085 105/150/250 350/450	ET-DLE060	ET-DLE055
	Throw ratio																			
	0.724-0.965:1		0.943-1.18:1		1.18-1.59:1		1.56-2.27:1		2.06-2.90:1		2.73-4.35:1		4.30-6.55:1		6.46-10.3:1		0.946:1			
[m] [in]	min.	max.	min.	max.	min.	max.	min.	max.	*min.*	*max.*	min.	max.	min.	max.	min.	max.				
1.27 / 50	2.3	3.2	3.1	3.9	3.9	5.2	5.1	7.5	***6.8***	***9.6***	9.0	14.4	14.2	21.7	21.1	34.0	3.1	0 – 1.7	0.3 – 1.7	1.3
1.52 / 60	2.9	3.8	3.7	4.7	4.7	6.3	6.2	9.0	***8.2***	***11.5***	10.9	17.3	17.1	26.1	25.6	41.0	3.7	0 – 2.0	0.3 – 2.0	1.5
1.78 / 70	3.4	4.5	4.4	5.5	5.5	7.4	7.3	10.6	***9.6***	***13.5***	12.7	20.3	20.0	30.5	30.0	48.0	4.4	0 – 2.3	0.4 – 2.3	1.8
2.03 / 80	3.9	5.1	5.0	6.3	6.3	8.5	8.3	12.1	***11.0***	***15.5***	14.6	23.2	23.0	34.9	34.4	55.0	5.0	0 – 2.6	0.4 – 2.6	2.0
2.29 / 90	4.4	5.8	5.7	7.1	7.1	9.6	9.4	13.6	***12.4***	***17.4***	16.4	26.1	25.9	39.3	38.9	62.0	5.7	0 – 3.0	0.5 – 3.0	2.3
2.54 / 100	4.9	6.5	6.3	7.9	7.9	10.7	10.4	15.2	***13.8***	***19.4***	18.3	29.0	28.8	43.8	43.3	69.0	6.3	0 – 3.3	0.5 – 3.3	2.5
3.05 / 120	5.9	7.8	7.6	9.5	9.5	12.8	12.6	18.2	***16.6***	***23.3***	22.0	34.9	34.7	52.6	52.1	83.0	7.6	0 – 4.0	0.6 – 4.0	3.0
3.81 / 150	7.4	9.8	9.6	11.9	11.9	16.1	15.8	22.8	***20.8***	***29.2***	27.6	43.7	43.4	65.8	65.4	104.0	9.6	0 – 5.0	0.8 – 5.0	3.8
5.08 / 200	9.9	13.1	12.8	15.9	16.0	21.5	21.1	30.5	***27.9***	***39.0***	36.8	58.3	58.0	87.9	87.6	139.0	12.8	0 – 6.6	1.0 – 6.6	5.0
6.35 / 250	12.4	16.5	16.0	19.9	20.0	26.9	26.4	38.1	***34.9***	***48.9***	46.1	73.0	72.7	110.0	109.7	174.0	—	0 – 8.3	1.3 – 8.3	—
7.62 / 300	15.0	19.8	19.3	23.9	24.0	32.3	31.7	45.8	***41.9***	***58.7***	55.4	87.6	87.3	132.1	131.8	209.0	—	0 – 9.9	1.5 – 9.9	—
8.89 / 350	17.5	23.1	22.5	27.9	28.0	37.7	37.0	53.5	***49.0***	***68.5***	64.7	102.3	101.9	154.2	154.0	244.0	—	0 – 11.6	1.8 – 11.6	—
10.16 / 400	20.0	26.4	25.8	31.9	32.1	43.1	42.3	61.1	***56.0***	***78.3***	73.9	116.9	116.5	176.3	176.1	279.0	—	0 – 13.2	2.0 – 13.2	—
12.70 / 500	25.1	33.1	32.2	39.9	40.1	53.9	52.9	76.5	***70.1***	***97.9***	92.5	146.2	145.8	220.5	220.4	349.0	—	0 – 16.5	2.5 – 16.5	—
15.24 / 600	30.1	39.7	38.7	48.0	48.2	64.7	63.6	91.8	***84.1***	***117.6***	111.1	175.5	175.0	264.7	264.7	419.0	—	0 – 19.8	3.0 – 19.8	—

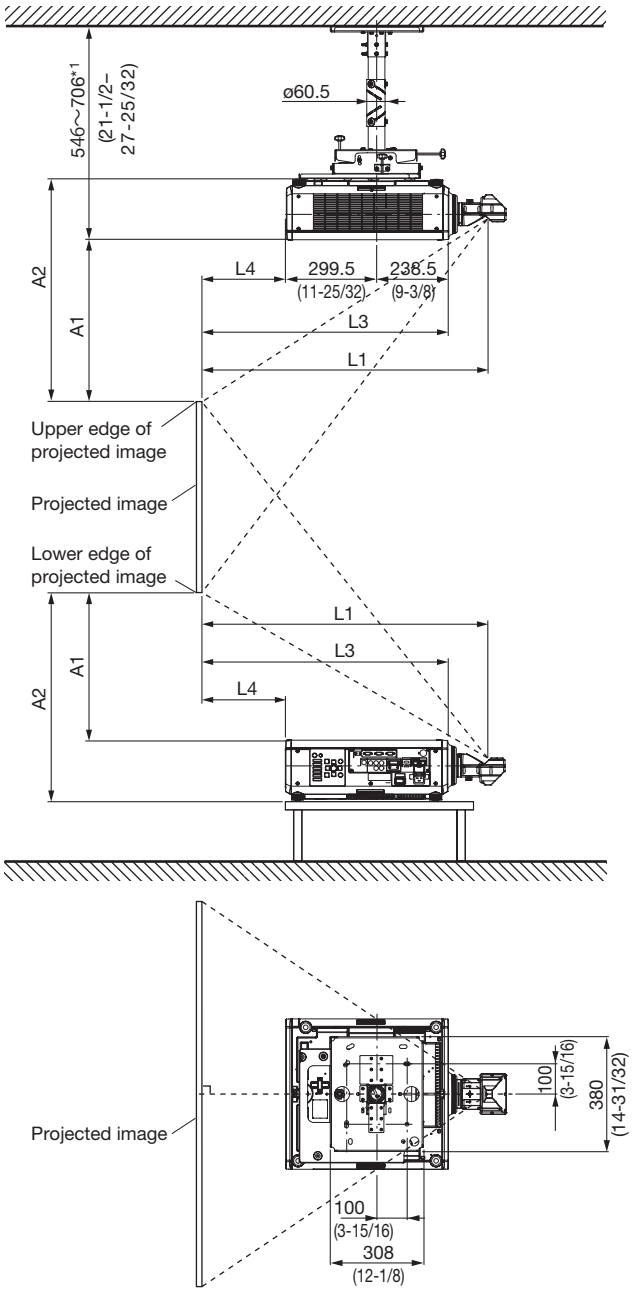
- **The value for L (distance to screen) varies slightly within ±5% depending on the zoom lens characteristics.**
- **The zoom lens characteristics may cause slight image distortion.**
- **When using keystone correction is used, the image is corrected in the direction that reduces its projected size.**
- **The brightness varies depending on the zoom setting.**

Note: When the ET-DLE055 is mounted, the optical lens shift function cannot be used.

DLP™ Projector

PT-RZ120B/RZ120LB/RZ120W/RZ120LW

Standard setting-up position (If using the ET-DLE035)



NOTE:

Illustrations show the projector installed using optional ceiling mount bracket ET-PKD130H, optional bracket assembly ET-PKD130B and an optional lens.

This illustration is not drawn to scale.

***1 Continuous height adjustment possible.**

unit : mm (inch)

NOTE:

Illustrations show the projector installed using optional ceiling mount bracket ET-PKD130H, optional bracket assembly ET-PKD130B and an optional lens.

This illustration is not drawn to scale.

Caution:

- All construction work should be done by a qualified technician.
- When mounting to the ceiling, use the special mounting bracket. Furthermore, in order to prevent it from falling down from the ceiling, use the supplied wire on the mounting bracket.

Projection distance for 16:10 aspect ratio screen (If using the ET-DLE035)

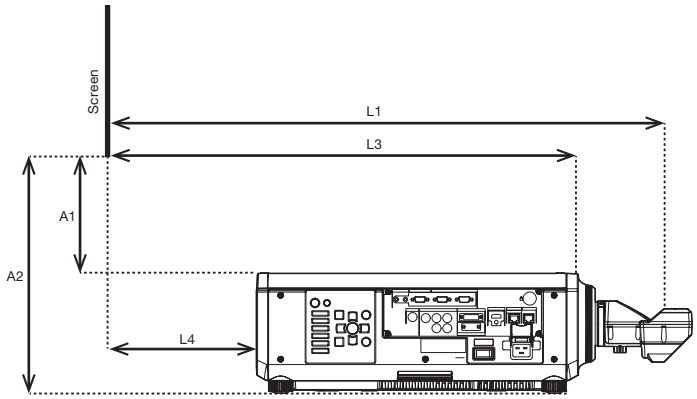
Unit : meters

Throw ratio				Ultra-short focal length lens ET-DLE035 Close-up system dimensions				
				0.380:1				
Diagonal image size (Inches)	Diagonal image size (m)	Height (SH)	Width (SW)	Projection distance (From mirror reflective surface to screen) (L1)	From front of set to screen (L3)	From rear of set to screen (L4)	From top of set to bottom edge of screen (A1)	From bottom of set to bottom edge of screen (A2)
100	2.54	1.35	2.15	0.82	0.65	0.11	0.43	0.63
120	3.05	1.62	2.59	0.98	0.82	0.28	0.53	0.73
150	3.81	2.02	3.23	1.23	1.06	0.52	0.68	0.88
200	5.08	2.69	4.31	1.63	1.47	0.93	0.93	1.13
250	6.35	3.37	5.39	2.04	1.87	1.34	1.18	1.38
300	7.62	4.04	6.46	2.45	2.28	1.74	1.43	1.63
350	8.89	4.71	7.54	2.85	2.69	2.15	1.69	1.89

Unit : feet

Throw ratio				Ultra-short focal length lens ET-DLE035 Close-up system dimensions				
				0.380:1				
Diagonal image size (Inches)	Diagonal image size (m)	Height (SH)	Width (SW)	Projection distance (From mirror reflective surface to screen) (L1)	From front of set to screen (L3)	From rear of set to screen (L4)	From top of set to bottom edge of screen (A1)	From bottom of set to bottom edge of screen (A2)
100	2.54	4.4	7.1	2.7	2.1	0.4	1.4	2.1
120	3.05	5.3	8.5	3.2	2.7	0.9	1.7	2.4
150	3.81	6.6	10.6	4.0	3.5	1.7	2.2	2.9
200	5.08	8.8	14.1	5.4	4.8	3.0	3.1	3.7
250	6.35	11.0	17.7	6.7	6.1	4.4	3.9	4.5
300	7.62	13.3	21.2	8.0	7.5	5.7	4.7	5.4
350	8.89	15.5	24.7	9.4	8.8	7.1	5.5	6.2

* The value for L1 may contain an error of within ±5%.
* When using keystone correction, the images will be corrected so that they will tend to be smaller than the specified screen size.
* This measurement is not the distance between the rear of the projector and the wall, but is instead the distance between the rear of the projector and the screen surface. Leave at least 500 mm of space between the rear of the projector and the wall and any other objects in order to provide adequate ventilation space. If setting up the projector in a closed room, be sure to provide separate air conditioning and ventilation equipment. If there is insufficient ventilation in the room, radiated heat may build up and cause the protection circuit of the projector to operate.



L1: Projection distance
(from screen to mirror reflective surface)
L3: From screen to front of set
L4: From screen to rear of set
A1: From bottom edge of screen to top of set
A2: From bottom edge of screen to bottom of set

Projection Distance Calculation Table

Screen aspect ratio 16:10

Projection distance calculation formula

L1 (m) = 0.3205 x Diagonal image size + 0.0047

Calculation formula for distance from top of set to bottom edge of screen

A1 (m) = 0.1977 x Diagonal image size - 0.07210

Projection distance for 16:9 aspect ratio screen (If using the ET-DLE035)

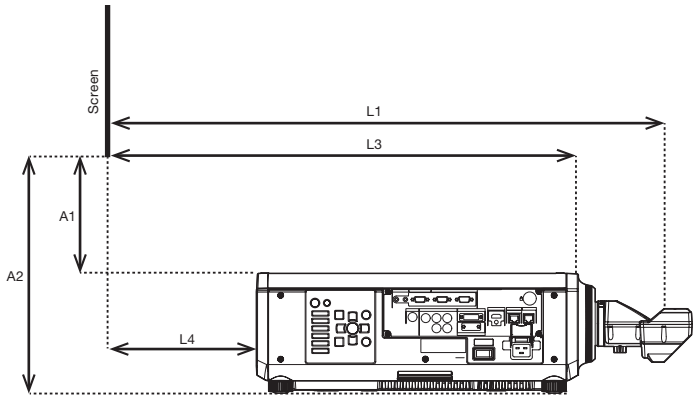
Unit : meters

Throw ratio				Ultra-short focal length lens ET-DLE035 Close-up system dimensions				
				0.380:1				
Diagonal image size (Inches)	Diagonal image size (m)	Height (SH)	Width (SW)	Projection distance (From mirror reflective surface to screen) (L1)	From front of set to screen (L3)	From rear of set to screen (L4)	From top of set to bottom edge of screen (A1)	From bottom of set to bottom edge of screen (A2)
100	2.54	1.25	2.21	0.84	0.68	0.14	0.51	0.71
120	3.05	1.49	2.66	1.01	0.84	0.30	0.63	0.83
150	3.81	1.87	3.32	1.26	1.09	0.56	0.81	1.01
200	5.08	2.49	4.43	1.68	1.51	0.97	1.10	1.30
250	6.35	3.11	5.54	2.10	1.93	1.39	1.39	1.59
300	7.62	3.74	6.64	2.51	2.35	1.81	1.68	1.88
350	8.89	4.36	7.75	2.93	2.77	2.23	1.98	2.18

Unit : feet

Throw ratio				Ultra-short focal length lens ET-DLE035 Close-up system dimensions				
				0.380:1				
Diagonal image size (Inches)	Diagonal image size (m)	Height (SH)	Width (SW)	Projection distance (From mirror reflective surface to screen) (L1)	From front of set to screen (L3)	From rear of set to screen (L4)	From top of set to bottom edge of screen (A1)	From bottom of set to bottom edge of screen (A2)
100	2.54	4.1	7.3	2.8	2.2	0.4	1.7	2.3
120	3.05	4.9	8.7	3.3	2.8	1.0	2.1	2.7
150	3.81	6.1	10.9	4.1	3.6	1.8	2.6	3.3
200	5.08	8.2	14.5	5.5	5.0	3.2	3.6	4.3
250	6.35	10.2	18.2	6.9	6.3	4.6	4.6	5.2
300	7.62	12.3	21.8	8.2	7.7	5.9	5.5	6.2
350	8.89	14.3	25.4	9.6	9.1	7.3	6.5	7.1

* The value for L1 may contain an error of within ±5%.
* When using keystone correction, the images will be corrected so that they will tend to be smaller than the specified screen size.
* This measurement is not the distance between the rear of the projector and the wall, but is instead the distance between the rear of the projector and the screen surface. Leave at least 500 mm of space between the rear of the projector and the wall and any other objects in order to provide adequate ventilation space. If setting up the projector in a closed room, be sure to provide separate air conditioning and ventilation equipment. If there is insufficient ventilation in the room, radiated heat may build up and cause the protection circuit of the projector to operate.



L1: Projection distance
(from screen to mirror reflective surface)
L3: From screen to front of set
L4: From screen to rear of set
A1: From bottom edge of screen to top of set
A2: From bottom edge of screen to bottom of set

Projection Distance Calculation Table

Screen aspect ratio 16:9

Projection distance calculation formula

L1 (m) = 0.3294 x Diagonal image size + 0.0047

Calculation formula for distance from top of set to bottom edge of screen

A1 (m) = 0.2304 x Diagonal image size - 0.07210

Projection distance for 4:3 aspect ratio screen (If using the ET-DLE035)

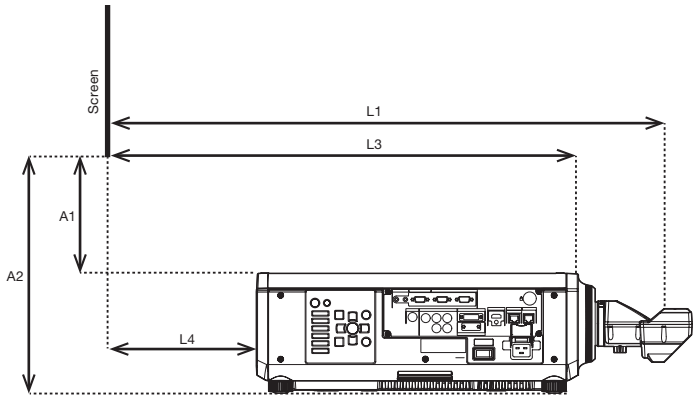
Unit : meters

Throw ratio				0.456:1	Ultra-short focal length lens ET-DLE035 Close-up system dimensions			
Diagonal image size (Inches)	Diagonal image size (m)	Height (SH)	Width (SW)	Projection distance (From mirror reflective surface to screen) (L1)	From front of set to screen (L3)	From rear of set to screen (L4)	From top of set to bottom edge of screen (A1)	From bottom of set to bottom edge of screen (A2)
100	2.54	1.52	2.03	0.93	0.76	0.22	0.50	0.70
120	3.05	1.83	2.44	1.11	0.94	0.41	0.61	0.81
150	3.81	2.29	3.05	1.39	1.22	0.68	0.78	0.98
200	5.08	3.05	4.06	1.85	1.68	1.14	1.06	1.27
250	6.35	3.81	5.08	2.31	2.14	1.60	1.35	1.55
300	7.62	4.57	6.10	2.77	2.60	2.07	1.63	1.83
350	8.89	5.33	7.11	3.23	3.06	2.53	1.92	2.12

Unit : feet

Throw ratio				0.456:1	Ultra-short focal length lens ET-DLE035 Close-up system dimensions			
Diagonal image size (Inches)	Diagonal image size (m)	Height (SH)	Width (SW)	Projection distance (From mirror reflective surface to screen) (L1)	From front of set to screen (L3)	From rear of set to screen (L4)	From top of set to bottom edge of screen (A1)	From bottom of set to bottom edge of screen (A2)
100	2.54	5.0	6.7	3.0	2.5	0.7	1.6	2.3
120	3.05	6.0	8.0	3.6	3.1	1.3	2.0	2.7
150	3.81	7.5	10.0	4.6	4.0	2.2	2.6	3.2
200	5.08	10.0	13.3	6.1	5.5	3.8	3.5	4.2
250	6.35	12.5	16.7	7.6	7.0	5.3	4.4	5.1
300	7.62	15.0	20.0	9.1	8.5	6.8	5.4	6.0
350	8.89	17.5	23.3	10.6	10.1	8.3	6.3	6.9

* The value for L1 may contain an error of within ±5%.
* When using vertical keystone correction, the images will be corrected so that they will tend to be smaller than the specified screen size.
* This measurement is not the distance between the rear of the projector and the wall, but is instead the distance between the rear of the projector and the screen surface. Leave at least 500 mm of space between the rear of the projector and the wall and any other objects in order to provide adequate ventilation space. If setting up the projector in a closed room, be sure to provide separate air conditioning and ventilation equipment. If there is insufficient ventilation in the room, radiated heat may build up and cause the protection circuit of the projector to operate.



L1: Projection distance
(from screen to mirror reflective surface)
L3: From screen to front of set
L4: From screen to rear of set
A1: From bottom edge of screen to top of set
A2: From bottom edge of screen to bottom of set

Projection Distance Calculation Table

Screen aspect ratio 4:3

Projection distance calculation formula

L1 (m) = 0.3628 x Diagonal image size + 0.0047

Calculation formula for distance from top of set to bottom edge of screen

A1 (m) = 0.2238 x Diagonal image size - 0.07210

Calculation of the projection distance

For a screen size different from the above, use the equation below to calculate the projection distance.

Aspect ratio 16:10

ET-DLE060	minimum	L (m) = (diagonal screen size in inches) × 0.0136 - 0.0549
	maximum	L (m) = (diagonal screen size in inches) × 0.0179 - 0.0518
ET-DLE085	minimum	L (m) = (diagonal screen size in inches) × 0.0174 - 0.0471
	maximum	L (m) = (diagonal screen size in inches) × 0.0216 - 0.0442
ET-DLE105	minimum	L (m) = (diagonal screen size in inches) × 0.0217 - 0.0511
	maximum	L (m) = (diagonal screen size in inches) × 0.0291 - 0.0472
ET-DLE150	minimum	L (m) = (diagonal screen size in inches) × 0.0286 - 0.0540
	maximum	L (m) = (diagonal screen size in inches) × 0.0413 - 0.0498
Supplied lens/ ET-DLE170	**minimum**	**L (m) = (diagonal screen size in inches) × 0.0379 - 0.0746**
	maximum	**L (m) = (diagonal screen size in inches) × 0.0529 - 0.0725**
ET-DLE250	minimum	L (m) = (diagonal screen size in inches) × 0.0500 - 0.0800
	maximum	L (m) = (diagonal screen size in inches) × 0.0789 - 0.0792
ET-DLE350	minimum	L (m) = (diagonal screen size in inches) × 0.0787 - 0.1351
	maximum	L (m) = (diagonal screen size in inches) × 0.1190 - 0.1346
ET-DLE450	minimum	L (m) = (diagonal screen size in inches) × 0.1192 - 0.3017
	maximum	L (m) = (diagonal screen size in inches) × 0.1885 - 0.2991
ET-DLE035	(fixed focus)	L1 (m) = (diagonal screen size in inches) × 0.0081 + 0.0047 L3 (m) = L1-0.166 L4 (m) = L1-0.704
ET-DLE055	(fixed focus)	L (m) = (diagonal screen size in inches) × 0.0175 - 0.0476

Aspect ratio 16:9

ET-DLE060	minimum	L (m) = (diagonal screen size in inches) × 0.0140 - 0.0549
	maximum	L (m) = (diagonal screen size in inches) × 0.0184 - 0.0518
ET-DLE085	minimum	L (m) = (diagonal screen size in inches) × 0.0179 - 0.0471
	maximum	L (m) = (diagonal screen size in inches) × 0.0222 - 0.0442
ET-DLE105	minimum	L (m) = (diagonal screen size in inches) × 0.0223 - 0.0511
	maximum	L (m) = (diagonal screen size in inches) × 0.0299 - 0.0472
ET-DLE150	minimum	L (m) = (diagonal screen size in inches) × 0.0294 - 0.0540
	maximum	L (m) = (diagonal screen size in inches) × 0.0424 - 0.0498
Supplied lens/ ET-DLE170	**minimum**	**L (m) = (diagonal screen size in inches) × 0.0389 - 0.0746**
	maximum	**L (m) = (diagonal screen size in inches) × 0.0543 - 0.0725**
ET-DLE250	minimum	L (m) = (diagonal screen size in inches) × 0.0513 - 0.0800
	maximum	L (m) = (diagonal screen size in inches) × 0.0811 - 0.0792
ET-DLE350	minimum	L (m) = (diagonal screen size in inches) × 0.0809 - 0.1351
	maximum	L (m) = (diagonal screen size in inches) × 0.1223 - 0.1346
ET-DLE450	minimum	L (m) = (diagonal screen size in inches) × 0.1225 - 0.3017
	maximum	L (m) = (diagonal screen size in inches) × 0.1937 - 0.2991
ET-DLE035	(fixed focus)	L1 (m) = (diagonal screen size in inches) × 0.0084 + 0.0047 L3 (m) = L1-0.166 L4 (m) = L1-0.704
ET-DLE055	(fixed focus)	L (m) = (diagonal screen size in inches) × 0.0180 - 0.0476

Aspect ratio 4:3

ET-DLE060	minimum	L (m) = (diagonal screen size in inches) × 0.0154 - 0.0549
	maximum	L (m) = (diagonal screen size in inches) × 0.0203 - 0.0518
ET-DLE085	minimum	L (m) = (diagonal screen size in inches) × 0.0197 - 0.0471
	maximum	L (m) = (diagonal screen size in inches) × 0.0244 - 0.0442
ET-DLE105	minimum	L (m) = (diagonal screen size in inches) × 0.0246 - 0.0511
	maximum	L (m) = (diagonal screen size in inches) × 0.0329 - 0.0472
ET-DLE150	minimum	L (m) = (diagonal screen size in inches) × 0.0324 - 0.0540
	maximum	L (m) = (diagonal screen size in inches) × 0.0467 - 0.0498
Supplied lens/ ET-DLE170	**minimum**	**L (m) = (diagonal screen size in inches) × 0.0429 - 0.0746**
	maximum	**L (m) = (diagonal screen size in inches) × 0.0599 - 0.0725**
ET-DLE250	minimum	L (m) = (diagonal screen size in inches) × 0.0565 - 0.0800
	maximum	L (m) = (diagonal screen size in inches) × 0.0893 - 0.0792
ET-DLE350	minimum	L (m) = (diagonal screen size in inches) × 0.0891 - 0.1351
	maximum	L (m) = (diagonal screen size in inches) × 0.1347 - 0.1346
ET-DLE450	minimum	L (m) = (diagonal screen size in inches) × 0.1349 - 0.3017
	maximum	L (m) = (diagonal screen size in inches) × 0.2133 - 0.2991
ET-DLE035	(fixed focus)	L1 (m) = (diagonal screen size in inches) × 0.0092 + 0.0047 L3 (m) = L1-0.166 L4 (m) = L1-0.704
ET-DLE055	(fixed focus)	L (m) = (diagonal screen size in inches) × 0.0198 - 0.0476

- **Distances calculated with the above equations will include a slight error.**

Formula for calculating possible heights when using the ET-DLE035

If using a screen size which has not been previously mentioned, use the following calculation formulas to obtain the possible setting-up height.

For screen aspect ratio of 16:10
Possible setting-up height A1 (mm) = Projection screen size (inches) x 5.0-72.1
Possible setting-up height A2 (mm) = A1 + 200

For screen aspect ratio of 16:9
Possible setting-up height A1 (mm) = Projection screen size (inches) x 5.9-72.1
Possible setting-up height A2 (mm) = A1 + 200

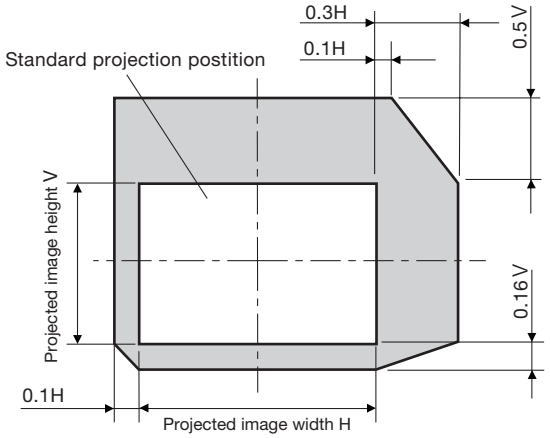
For screen aspect ratio of 4:3
Possible setting-up height A1 (mm) = Projection screen size (inches) x 5.7-72.1
Possible setting-up height A2 (mm) = A1 + 200

* There may be a small margin of error in the values obtained from the above formulas.

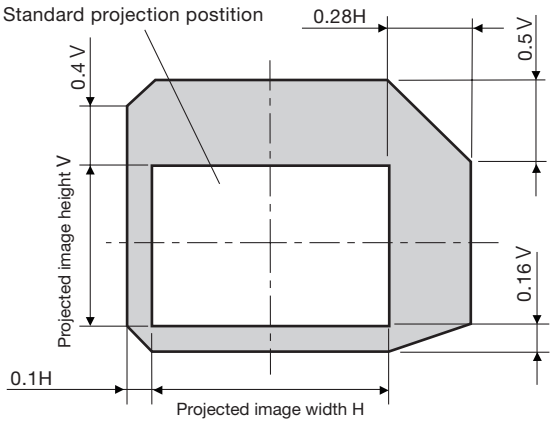
Shift range

Optical axis shift function allows to shift the position of a projected image as shown below.

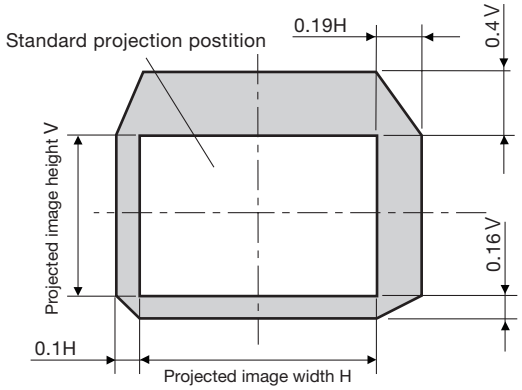
When ET-DLE170(Standard zoom lens)/ET-DLE150/ET-DLE250/ ET-DLE350/ET-DLE450 is mounted.



When the ET-DLE085 and ET-DLE105 is mounted.



When the ET-DLE060 is mounted.

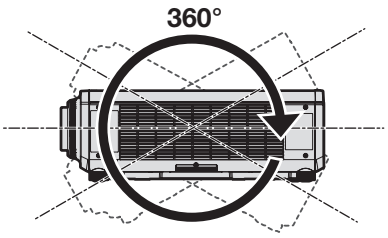


• The ET-DLE055 has a fixed short-focus lens. Therefore, the lens shift function provided in the main unit cannot be used.

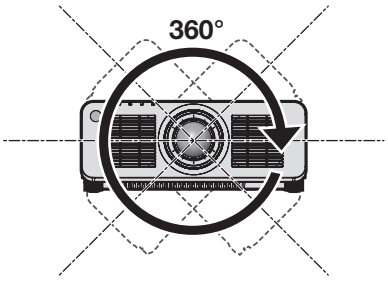
Installable angle

Install the projector at an angle within the range shown below.

FULL 360-degree projection



360° vertically



360° horizontally



360° tilted
(combination of vertical and horizontal)

List of compatible signals

The following table specifies the video signals compatible with the projector.
This projector supports the signal with ✓ in the compatible signal column.

- The content of the compatible signal column is as follows.
  ––RGB: RGB1 input, RGB2 input
  ––DVI-D: DVI-D input
  ––HDMI: HDMI input
  ––DL: DIGITAL LINK input

Signal name (SIGNAL FORMAT)	Resolution (Dots)	Scanning freq.		Dot clock freq.	Compatible signal			
		Horizontal (kHz)	Vertical (Hz)	(MHz)	RGB	DVI-D	HDMI	DL
480/60i	720 x 480i	15.7	59.9	13.5	✓	—	—	—
576/50i	720 x 576i	15.6	50.0	13.5	✓	—	—	—
480/60i	720(1440) x 480i*1	15.7	59.9	27.0	—	✓	✓	✓
576/50i	720(1440) x 576i*1	15.6	50.0	27.0	—	✓	✓	✓
480/60p	720 x 480	31.5	59.9	27.0	✓	✓	✓	✓
576/50p	720 x 576	31.3	50.0	27.0	✓	✓	✓	✓
720/60p	1280 x 720	45.0	60.0*2	74.3	✓	✓	✓	✓
720/50p	1280 x 720	37.5	50.0	74.3	✓	✓	✓	✓
1080/60i	1920 x 1080i	33.8	60.0*2	74.3	✓	✓	✓	✓
1080/50i	1920 x 1080i	28.1	50.0	74.3	✓	✓	✓	✓
1080/24p	1920 x 1080	27.0	24.0*2	74.3	✓	✓	✓	✓
1080/24sF	1920 x 1080i	27.0	48.0*2	74.3	✓	✓	✓	✓
1080/25p	1920 x 1080	28.1	25.0	74.3	✓	✓	✓	✓
1080/30p	1920 x 1080	33.8	30.0*2	74.3	✓	✓	✓	✓
1080/60p	1920 x 1080	67.5	60.0*2	148.5	✓	✓	✓	✓
1080/50p	1920 x 1080	56.3	50.0	148.5	✓	✓	✓	✓
3840 x 2160/24p	3840 x 2160	54.0	24.0*2	297.0	—	—	✓	✓
3840 x 2160/25p	3840 x 2160	56.3	25.0	297.0	—	—	✓	✓
3840 x 2160/30p	3840 x 2160	67.5	30.0*2	297.0	—	—	✓	✓
3840 x 2160/60p	3840 x 2160	135.0	60.0*2	297.0	—	—	✓*3	✓*3
	3840 x 2160	135.0	60.0*2	594.0	—	—	✓	—
3840 x 2160/50p	3840 x 2160	112.5	50.0	297.0	—	—	✓*3	✓*3
	3840 x 2160	112.5	50.0	594.0	—	—	✓	—
4096 x 2160/24p	4096 x 2160	54.0	24.0*2	297.0	—	—	✓	✓
4096 x 2160/25p	4096 x 2160	56.3	25.0	297.0	—	—	✓	✓
4096 x 2160/30p	4096 x 2160	67.5	30.0*2	297.0	—	—	✓	✓
4096 x 2160/60p	4096 x 2160	135.0	60.0*2	297.0	—	—	✓*3	✓*3
	4096 x 2160	135.0	60.0*2	594.0	—	—	✓	—
4096 x 2160/50p	4096 x 2160	112.5	50.0	297.0	—	—	✓*3	✓*3
	4096 x 2160	112.5	50.0	594.0	—	—	✓	—
640 x 400/70	640 x 400	31.5	70.1	25.2	✓	✓	✓	✓
640 x 400/85	640 x 400	37.9	85.1	31.5	✓	✓	✓	✓
640 x 480/60	640 x 480	31.5	59.9	25.2	✓	✓	✓	✓
640 x 480/67	640 x 480	35.0	66.7	30.2	✓	✓	✓	✓
640 x 480/73	640 x 480	37.9	72.8	31.5	✓	✓	✓	✓
640 x 480/75	640 x 480	37.5	75.0	31.5	✓	✓	✓	✓
640 x 480/85	640 x 480	43.3	85.0	36.0	✓	✓	✓	✓
800 x 600/56	800 x 600	35.2	56.3	36.0	✓	✓	✓	✓
800 x 600/60	800 x 600	37.9	60.3	40.0	✓	✓	✓	✓
800 x 600/72	800 x 600	48.1	72.2	50.0	✓	✓	✓	✓
800 x 600/75	800 x 600	46.9	75.0	49.5	✓	✓	✓	✓
800 x 600/85	800 x 600	53.7	85.1	56.3	✓	✓	✓	✓
832 x 624/75	832 x 624	49.7	74.6	57.3	✓	✓	✓	✓
1024 x 768/50	1024 x 768	39.6	50.0	51.9	✓	✓	✓	✓
1024 x 768/60	1024 x 768	48.4	60.0	65.0	✓	✓	✓	✓
1024 x 768/70	1024 x 768	56.5	70.1	75.0	✓	✓	✓	✓
1024 x 768/75	1024 x 768	60.0	75.0	78.8	✓	✓	✓	✓
1024 x 768/82	1024 x 768	65.5	81.6	86.0	✓	✓	✓	✓
1024 x 768/85	1024 x 768	68.7	85.0	94.5	✓	✓	✓	✓
1024 x 768/100	1024 x 768	81.4	100.0	113.3	✓	✓	✓	✓
1024 x 768/120	1024 x 768	98.8	120.0	139.1	✓	✓	✓	✓

Signal name (SIGNAL FORMAT)	Resolution (Dots)	Scanning freq. Horizontal (kHz)	Scanning freq. Vertical (Hz)	Dot clock freq. (MHz)	Compatible signal RGB	DVI-D	HDMI	DL
1152 x 864/60	1152 x 864	53.7	60.0	81.6	✓	✓	✓	✓
1152 x 864/70	1152 x 864	64.0	70.0	94.2	✓	✓	✓	✓
1152 x 864/75	1152 x 864	67.5	75.0	108.0	✓	✓	✓	✓
1152 x 864/85	1152 x 864	77.1	85.0	119.7	✓	✓	✓	✓
1152 x 870/75	1152 x 870	68.7	75.1	100.0	✓	✓	✓	✓
1280 x 720/50	1280 x 720	37.1	49.8	60.5	✓	✓	✓	✓
1280 x 720/60	1280 x 720	44.8	59.9	74.5	✓	✓	✓	✓
1280 x 720/100	1280 x 720	76.3	100.0	131.8	✓	✓	✓	✓
1280 x 720/120	1280 x 720	92.6	120.0	161.6	✓	✓	✓	✓
1280 x 768/50	1280 x 768	39.6	49.9	65.3	✓	✓	✓	✓
1280 x 768/60	1280 x 768	47.8	59.9	79.5	✓	✓	✓	✓
	1280 x 768*4	47.4	60.0	68.3	✓	✓	✓	✓
1280 x 768/75	1280 x 768	60.3	74.9	102.3	✓	✓	✓	✓
1280 x 768/85	1280 x 768	68.6	84.8	117.5	✓	✓	✓	✓
1280 x 800/50	1280 x 800	41.3	50.0	68.0	✓	✓	✓	✓
1280 x 800/60	1280 x 800	49.7	59.8	83.5	✓	✓	✓	✓
	1280 x 800*4	49.3	59.9	71.0	✓	✓	✓	✓
1280 x 800/75	1280 x 800	62.8	74.9	106.5	✓	✓	✓	✓
1280 x 800/85	1280 x 800	71.6	84.9	122.5	✓	✓	✓	✓
1280 x 960/60	1280 x 960	60.0	60.0	108.0	✓	✓	✓	✓
1280 x 1024/50	1280 x 1024	52.4	50.0	88.0	✓	✓	✓	✓
1280 x 1024/60	1280 x 1024	64.0	60.0	108.0	✓	✓	✓	✓
1280 x 1024/66	1280 x 1024	72.3	66.3	125.0	✓	✓	✓	✓
1280 x 1024/72	1280 x 1024	78.2	72.0	135.1	✓	✓	✓	✓
1280 x 1024/75	1280 x 1024	80.0	75.0	135.0	✓	✓	✓	✓
1280 x 1024/85	1280 x 1024	91.1	85.0	157.5	✓	✓	✓	✓
1366 x 768/50	1366 x 768	39.6	49.9	69.0	✓	✓	✓	✓
1366 x 768/60	1366 x 768	47.7	59.8	85.5	✓	✓	✓	✓
1400 x 1050/50	1400 x 1050	54.1	50.0	99.9	✓	✓	✓	✓
1400 x 1050/60	1400 x 1050	64.0	60.0	108.0	✓	✓	✓	✓
	1400 x 1050	65.3	60.0	121.8	✓	✓	✓	✓
	1400 x 1050	65.2	60.0	122.6	✓	✓	✓	✓
1400 x 1050/72	1400 x 1050	78.8	72.0	149.3	✓	✓	✓	✓
1400 x 1050/75	1400 x 1050	82.2	75.0	155.9	✓	✓	✓	✓
1440 x 900/50	1440 x 900	46.3	49.9	86.8	✓	✓	✓	✓
1440 x 900/60	1440 x 900	55.9	59.9	106.5	✓	✓	✓	✓
1600 x 900/50	1600 x 900	46.4	49.9	96.5	✓	✓	✓	✓
1600 x 900/60	1600 x 900	55.9	60.0	119.0	✓	✓	✓	✓
1600 x 1200/50	1600 x 1200	61.8	49.9	131.5	✓	✓	✓	✓
1600 x 1200/60	1600 x 1200	75.0	60.0	162.0	✓	✓	✓	✓
1680 x 1050/50	1680 x 1050	54.1	50.0	119.5	✓	✓	✓	✓
1680 x 1050/60	1680 x 1050	65.3	60.0	146.3	✓	✓	✓	✓
1920 x 1080/50	1920 x 1080	55.6	49.9	141.5	✓	✓	✓	✓
1920 x 1080/60	1920 x 1080*4	66.6	59.9	138.5	✓	✓	✓	✓
	1920 x 1080*5	67.2	60.0	173.0	✓	—	—	—
1920 x 1200/50	1920 x 1200	61.8	49.9	158.3	✓	✓	✓	✓
1920 x 1200/60	1920 x 1200*5	74.6	59.9	193.3	✓	—	—	—
1920 x 1200/60RB	1920 x 1200*4	74.0	60.0	154.0	✓	✓	✓	✓

***1 Pixel-Repetition signal (dot clock frequency 27.0 MHz) only**
***2 The signal with 1/1.001x vertical scanning frequency is also supported.**
***3 YPBPR 4:2:0 format only**
***4 VESA CVT-RB (Reduced Blanking)-compliant**
***5 Samples the pixels in the image processing circuit and projects the image.**

NOTE:
• A signal with a different resolution is converted to the number of display dots. The number of display dots is 1920 x 1200.
• The "i" at the end of the resolution indicates an interlaced signal.
• When interlaced signals are connected, flickering may occur on the projected image.

DLP™ Projector

PT-RZ120B/RZ120LB/RZ120W/RZ120LW

List of plug and play compatible signals

Signal with ✓ in the plug and play compatible signal column is the signal described in the EDID (extended display identification data) of the projector. For the signal without ✓ in the plug and play compatible signal column, the resolution may not be selected on the computer even if the projector is supporting it.

- Input corresponding to each item in the plug and play signal column is as follows.
  ––RGB2: RGB2 input
  ––DVI-D: DVI-D input
  ––HDMI: HDMI input
  ––DIGITAL LINK: DIGITAL LINK input

Signal name (SIGNAL FORMAT)	Resolution (Dots)	Scanning freq.		Dot clock freq. (MHz)	Plug and play compatible signal									
		Horizontal (kHz)	Vertical (Hz)		RGB2	DVI-D			HDMI			DIGITAL LINK		
						EDID1	EDID2	EDID3	4K/60p	4K/30p	2K	4K/60p	4K/30p	2K
480/60i	720 x 480i	15.7	59.9	13.5	—	—	—	—	—	—	—	—	—	—
576/50i	720 x 576i	15.6	50.0	13.5	—	—	—	—	—	—	—	—	—	—
480/60i	720(1440) x 480i*1	15.7	59.9	27.0	—	—	—	—	—	—	—	—	—	—
576/50i	720(1440) x 576i*1	15.6	50.0	27.0	—	—	—	—	—	—	—	—	—	—
480/60p	720 x 480	31.5	59.9	27.0	—	✓	—	✓	✓	✓	✓	✓	✓	✓
576/50p	720 x 576	31.3	50.0	27.0	—	✓	—	✓	✓	✓	✓	✓	✓	✓
720/60p	1280 x 720	45.0	60.0*2	74.3	—	✓	—	✓	✓	✓	✓	✓	✓	✓
720/50p	1280 x 720	37.5	50.0	74.3	—	✓	—	✓	✓	✓	✓	✓	✓	✓
1080/60i	1920 x 1080i	33.8	60.0*2	74.3	—	✓	—	✓	✓	✓	✓	✓	✓	✓
1080/50i	1920 x 1080i	28.1	50.0	74.3	—	✓	—	✓	✓	✓	✓	✓	✓	✓
1080/24p	1920 x 1080	27.0	24.0*2	74.3	—	✓	—	✓	✓	✓	✓	✓	✓	✓
1080/24sF	1920 x 1080i	27.0	48.0*2	74.3	—	—	—	—	—	—	—	—	—	—
1080/25p	1920 x 1080	28.1	25.0	74.3	—	✓	—	✓	✓	✓	✓	✓	✓	✓
1080/30p	1920 x 1080	33.8	30.0*2	74.3	—	✓	—	✓	✓	✓	✓	✓	✓	✓
1080/60p	1920 x 1080	67.5	60.0*2	148.5	—	✓	—	✓	✓	✓	✓	✓	✓	✓
1080/50p	1920 x 1080	56.3	50.0	148.5	—	✓	—	✓	✓	✓	✓	✓	✓	✓
3840 x 2160/24p	3840 x 2160	54.0	24.0*2	297.0	—	—	—	—	✓	✓	—	✓	✓	—
3840 x 2160/25p	3840 x 2160	56.3	25.0	297.0	—	—	—	—	✓	✓	—	✓	✓	—
3840 x 2160/30p	3840 x 2160	67.5	30.0*2	297.0	—	—	—	—	✓	✓	—	✓	✓	—
3840 x 2160/60p	3840 x 2160	135.0	60.0*2	297.0	—	—	—	—	✓*3	—	—	✓*3	—	—
	3840 x 2160	135.0	60.0*2	594.0	—	—	—	—	✓	—	—	—	—	—
3840 x 2160/50p	3840 x 2160	112.5	50.0	297.0	—	—	—	—	✓*3	—	—	✓*3	—	—
	3840 x 2160	112.5	50.0	594.0	—	—	—	—	✓	—	—	—	—	—
4096 x 2160/24p	4096 x 2160	54.0	24.0*2	297.0	—	—	—	—	✓	✓	—	✓	✓	—
4096 x 2160/25p	4096 x 2160	56.3	25.0	297.0	—	—	—	—	✓	✓	—	✓	✓	—
4096 x 2160/30p	4096 x 2160	67.5	30.0*2	297.0	—	—	—	—	✓	✓	—	✓	✓	—
4096 x 2160/60p	4096 x 2160	135.0	60.0*2	297.0	—	—	—	—	✓*3	—	—	✓*3	—	—
	4096 x 2160	135.0	60.0*2	594.0	—	—	—	—	✓	—	—	—	—	—
4096 x 2160/50p	4096 x 2160	112.5	50.0	297.0	—	—	—	—	✓*3	—	—	✓*3	—	—
	4096 x 2160	112.5	50.0	594.0	—	—	—	—	✓	—	—	—	—	—
640 x 400/70	640 x 400	31.5	70.1	25.2	—	—	—	—	—	—	—	—	—	—
640 x 400/85	640 x 400	37.9	85.1	31.5	—	—	—	—	—	—	—	—	—	—
640 x 480/60	640 x 480	31.5	59.9	25.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
640 x 480/67	640 x 480	35.0	66.7	30.2	—	—	—	—	—	—	—	—	—	—
640 x 480/73	640 x 480	37.9	72.8	31.5	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
640 x 480/75	640 x 480	37.5	75.0	31.5	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
640 x 480/85	640 x 480	43.3	85.0	36.0	—	—	—	—	—	—	—	—	—	—
800 x 600/56	800 x 600	35.2	56.3	36.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
800 x 600/60	800 x 600	37.9	60.3	40.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
800 x 600/72	800 x 600	48.1	72.2	50.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
800 x 600/75	800 x 600	46.9	75.0	49.5	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
800 x 600/85	800 x 600	53.7	85.1	56.3	—	—	—	—	—	—	—	—	—	—
832 x 624/75	832 x 624	49.7	74.6	57.3	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1024 x 768/50	1024 x 768	39.6	50.0	51.9	—	—	—	—	—	—	—	—	—	—
1024 x 768/60	1024 x 768	48.4	60.0	65.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1024 x 768/70	1024 x 768	56.5	70.1	75.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1024 x 768/75	1024 x 768	60.0	75.0	78.8	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1024 x 768/82	1024 x 768	65.5	81.6	86.0	—	—	—	—	—	—	—	—	—	—
1024 x 768/85	1024 x 768	68.7	85.0	94.5	—	—	—	—	—	—	—	—	—	—
1024 x 768/100	1024 x 768	81.4	100.0	113.3	—	—	—	—	—	—	—	—	—	—

DLP™ Projector

PT-RZ120B/RZ120LB/RZ120W/RZ120LW

Signal name (SIGNAL FORMAT)	Resolution (Dots)	Scanning freq. Horizontal (kHz)	Scanning freq. Vertical (Hz)	Dot clock freq. (MHz)	Plug and play compatible signal									
					RGB2	DVI-D			HDMI			DIGITAL LINK		
						EDID1	EDID2	EDID3	4K/60p	4K/30p	2K	4K/60p	4K/30p	2K
1024 x 768/120	1024 x 768	98.8	120.0	139.1	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1152 x 864/60	1152 x 864	53.7	60.0	81.6	—	—	—	—	—	—	—	—	—	—
1152 x 864/70	1152 x 864	64.0	70.0	94.2	—	—	—	—	—	—	—	—	—	—
1152 x 864/75	1152 x 864	67.5	75.0	108.0	—	—	—	—	—	—	—	—	—	—
1152 x 864/85	1152 x 864	77.1	85.0	119.7	—	—	—	—	—	—	—	—	—	—
1152 x 870/75	1152 x 870	68.7	75.1	100.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1280 x 720/50	1280 x 720	37.1	49.8	60.5	—	—	—	—	—	—	—	—	—	—
1280 x 720/60	1280 x 720	44.8	59.9	74.5	—	—	—	—	—	—	—	—	—	—
1280 x 720/100	1280 x 720	76.3	100.0	131.8	—	—	—	—	—	—	—	—	—	—
1280 x 720/120	1280 x 720	92.6	120.0	161.6	—	—	—	—	—	—	—	—	—	—
1280 x 768/50	1280 x 768	39.6	49.9	65.3	—	—	—	—	—	—	—	—	—	—
1280 x 768/60	1280 x 768	47.8	59.9	79.5	—	—	—	—	—	—	—	—	—	—
	1280 x 768*4	47.4	60.0	68.3	—	—	—	—	—	—	—	—	—	—
1280 x 768/75	1280 x 768	60.3	74.9	102.3	—	—	—	—	—	—	—	—	—	—
1280 x 768/85	1280 x 768	68.6	84.8	117.5	—	—	—	—	—	—	—	—	—	—
1280 x 800/50	1280 x 800	41.3	50.0	68.0	—	—	—	—	—	—	—	—	—	—
1280 x 800/60	1280 x 800	49.7	59.8	83.5	—	—	—	—	—	—	—	—	—	—
	1280 x 800*4	49.3	59.9	71.0	—	—	—	—	—	—	—	—	—	—
1280 x 800/75	1280 x 800	62.8	74.9	106.5	—	—	—	—	—	—	—	—	—	—
1280 x 800/85	1280 x 800	71.6	84.9	122.5	—	—	—	—	—	—	—	—	—	—
1280 x 960/60	1280 x 960	60.0	60.0	108.0	—	—	—	—	—	—	—	—	—	—
1280 x 1024/50	1280 x 1024	52.4	50.0	88.0	—	—	—	—	—	—	—	—	—	—
1280 x 1024/60	1280 x 1024	64.0	60.0	108.0	—	—	—	—	—	—	—	—	—	—
1280 x 1024/66	1280 x 1024	72.3	66.3	125.0	—	—	—	—	—	—	—	—	—	—
1280 x 1024/72	1280 x 1024	78.2	72.0	135.1	—	—	—	—	—	—	—	—	—	—
1280 x 1024/75	1280 x 1024	80.0	75.0	135.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1280 x 1024/85	1280 x 1024	91.1	85.0	157.5	—	—	—	—	—	—	—	—	—	—
1366 x 768/50	1366 x 768	39.6	49.9	69.0	—	—	—	—	—	—	—	—	—	—
1366 x 768/60	1366 x 768	47.7	59.8	85.5	—	—	—	—	—	—	—	—	—	—
1400 x 1050/50	1400 x 1050	54.1	50.0	99.9	—	—	—	—	—	—	—	—	—	—
1400 x 1050/60	1400 x 1050	64.0	60.0	108.0	—	—	—	—	—	—	—	—	—	—
	1400 x 1050	65.3	60.0	121.8	—	—	—	—	—	—	—	—	—	—
	1400 x 1050	65.2	60.0	122.6	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1400 x 1050/72	1400 x 1050	78.8	72.0	149.3	—	—	—	—	—	—	—	—	—	—
1400 x 1050/75	1400 x 1050	82.2	75.0	155.9	—	—	—	—	—	—	—	—	—	—
1440 x 900/50	1440 x 900	46.3	49.9	86.8	—	—	—	—	—	—	—	—	—	—
1440 x 900/60	1440 x 900	55.9	59.9	106.5	—	—	—	—	—	—	—	—	—	—
1600 x 900/50	1600 x 900	46.4	49.9	96.5	—	—	—	—	—	—	—	—	—	—
1600 x 900/60	1600 x 900	55.9	60.0	119.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1600 x 1200/50	1600 x 1200	61.8	49.9	131.5	—	—	—	—	—	—	—	—	—	—
1600 x 1200/60	1600 x 1200	75.0	60.0	162.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓
1680 x 1050/50	1680 x 1050	54.1	50.0	119.5	—	—	—	—	—	—	—	—	—	—
1680 x 1050/60	1680 x 1050	65.3	60.0	146.3	—	—	—	—	—	—	—	—	—	—
1920 x 1080/50	1920 x 1080	55.6	49.9	141.5	—	—	—	—	—	—	—	—	—	—
1920 x 1080/60	1920 x 1080*4	66.6	59.9	138.5	—	—	—	—	—	—	—	—	—	—
	1920 x 1080*5	67.2	60.0	173.0	—	—	—	—	—	—	—	—	—	—
1920 x 1200/50	1920 x 1200	61.8	49.9	158.3	—	—	—	—	—	—	—	—	—	—
1920 x 1200/60	1920 x 1200*5	74.6	59.9	193.3	—	—	—	—	—	—	—	—	—	—
1920 x 1200/60RB	1920 x 1200*4	74.0	60.0	154.0	✓	—	✓	✓	✓	✓	✓	✓	✓	✓

***1 Pixel-Repetition signal (dot clock frequency 27.0 MHz) only**
***2 The signal with 1/1.001x vertical scanning frequency is also supported.**
***3 YPBPR 4:2:0 format only**
***4 VESA CVT-RB (Reduced Blanking)-compliant**
***5 Samples the pixels in the image processing circuit and projects the image.**

NOTE:
• A signal with a different resolution is converted to the number of display dots. The number of display dots is 1920 x 1200.
• The "i" at the end of the resolution indicates an interlaced signal.
• When interlaced signals are connected, flickering may occur on the projected image.

List of SDI compatible signals

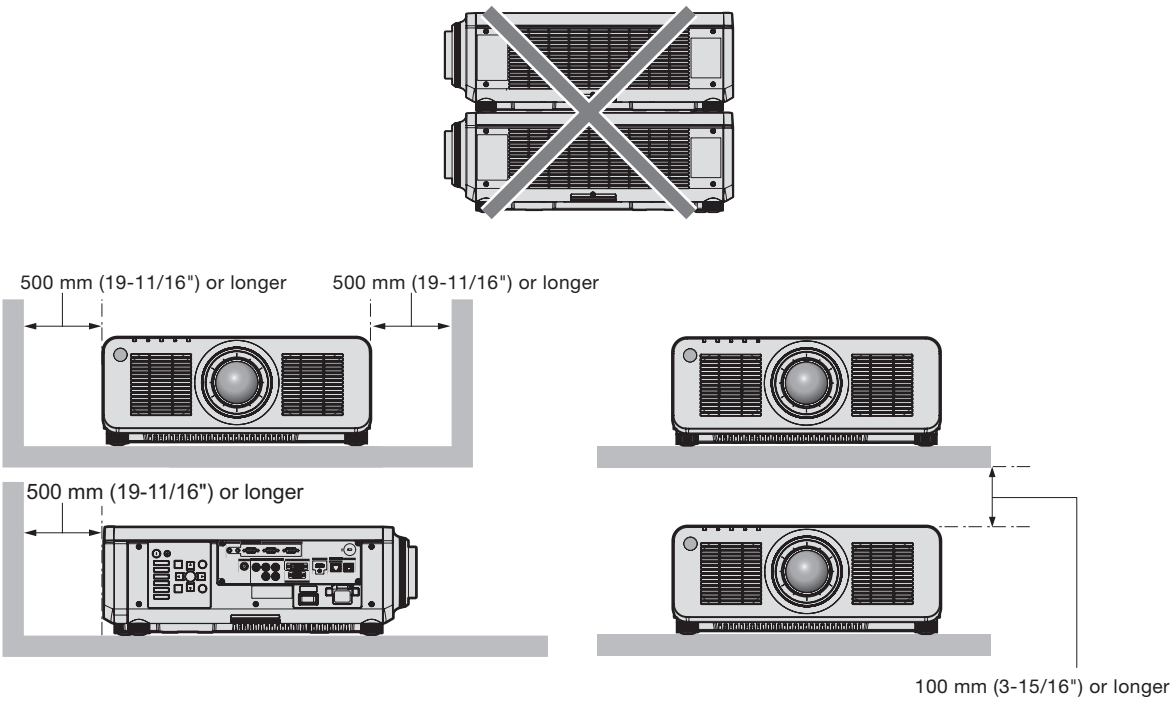
The following table specifies the SDI signals that the projector can project.

Compatible signal	Resolution (Dots)	Scanning freq. H (KHz)	Scanning freq. V (Hz)	Dot clock freq. (MHz)	Format	Color space	Sampling
480/60i	720 x 480i	15.7	59.9	27.0	SD-SDI	YC_BC_R	4:2:2 10bit
576/50i	720 x 576i	15.6	50.0	27.0	SD-SDI	YC_BC_R	4:2:2 10bit
720/60p	1280 x 720	45.0	60.0*1	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
720/50p	1280 x 720	37.5	50.0	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
1080/60i	1920 x 1080i	33.8	60.0*1	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
	1920 x 1080i	33.8	60.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	1920 x 1080i	33.8	60.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	1920 x 1080i	33.8	60.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	1920 x 1080i	33.8	60.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
1080/50i	1920 x 1080i	28.1	50.0	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
	1920 x 1080i	28.1	50.0	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	1920 x 1080i	28.1	50.0	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	1920 x 1080i	28.1	50.0	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	1920 x 1080i	28.1	50.0	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
1080/24p	1920 x 1080	27.0	24.0*1	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
	1920 x 1080	27.0	24.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	1920 x 1080	27.0	24.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	1920 x 1080	27.0	24.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	1920 x 1080	27.0	24.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
1080/24sF	1920 x 1080i	27.0	48.0*1	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
	1920 x 1080i	27.0	48.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	1920 x 1080i	27.0	48.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	1920 x 1080i	27.0	48.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	1920 x 1080i	27.0	48.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
1080/25p	1920 x 1080	28.1	25.0	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
	1920 x 1080	28.1	25.0	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	1920 x 1080	28.1	25.0	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	1920 x 1080	28.1	25.0	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	1920 x 1080	28.1	25.0	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
1080/30p	1920 x 1080	33.8	30.0*1	74.3	HD-SDI	YP_BP_R	4:2:2 10bit
	1920 x 1080	33.8	30.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	1920 x 1080	33.8	30.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	1920 x 1080	33.8	30.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	1920 x 1080	33.8	30.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
1080/60p	1920 x 1080	67.5	60.0*1	148.5	3G-SDI Level-A	YP_BP_R	4:2:2 10bit
	1920 x 1080	67.5	60.0*1	148.5	3G-SDI Level-B	YP_BP_R	4:2:2 10bit
1080/50p	1920 x 1080	56.3	50.0	148.5	3G-SDI Level-A	YP_BP_R	4:2:2 10bit
	1920 x 1080	56.3	50.0	148.5	3G-SDI Level-B	YP_BP_R	4:2:2 10bit
2K/24p	2048 x 1080	27.0	24.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	2048 x 1080	27.0	24.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	2048 x 1080	27.0	24.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	2048 x 1080	27.0	24.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
2K/25p	2048 x 1080	28.1	25.0	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	2048 x 1080	28.1	25.0	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	2048 x 1080	28.1	25.0	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	2048 x 1080	28.1	25.0	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
2K/30p	2048 x 1080	33.8	30.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 10bit
	2048 x 1080	33.8	30.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 10bit
	2048 x 1080	33.8	30.0*1	74.3	3G-SDI Level-A	RGB	4:4:4 12bit
	2048 x 1080	33.8	30.0*1	74.3	3G-SDI Level-B	RGB	4:4:4 12bit
2K/48p	2048 x 1080	54.0	48.0*1	148.5	3G-SDI Level-A	YP_BP_R	4:2:2 10bit
	2048 x 1080	54.0	48.0*1	148.5	3G-SDI Level-B	YP_BP_R	4:2:2 10bit
2K/50p	2048 x 1080	56.3	50.0	148.5	3G-SDI Level-A	YP_BP_R	4:2:2 10bit
	2048 x 1080	56.3	50.0	148.5	3G-SDI Level-B	YP_BP_R	4:2:2 10bit
2K/60p	2048 x 1080	67.5	60.0*1	148.5	3G-SDI Level-A	YP_BP_R	4:2:2 10bit
	2048 x 1080	67.5	60.0*1	148.5	3G-SDI Level-B	YP_BP_R	4:2:2 10bit

***1 The signal with 1/1.001x vertical scanning frequency is also supported.**

Notes on projector placement and operation

- Prevent hot and cool air from the air conditioning system to blow directly to the ventilation ports (intake and exhaust) of the projector.
- Do not stack projectors on top of each other.
- Do not block the ventilation ports (intake and exhaust) of the projector.



- Do not install the projector in a confined space.
  When installing the projector in a confined space, provide air conditioning or ventilation separately. Exhaust heat may accumulate when the ventilation is not enough, triggering the protection circuit of the projector.

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Proporciona 2 puertos Gigabit Ethernet independientes, de cobre y fibra (mediante SFP)

Tarjeta opcional MADI MADI-192
Proporciona MADI bidireccional sobre conectores BNC

MLN-192 Milan Option Card
Permite la conexión a dispositivos A/V

Opciones de Stage 64 y Stage 32

Tarjeta de entrada analógica SRI-192
Ofrece 8 entradas de micrófono/línea analógicas, con preamplificadores de micrófono de alto rendimiento

Tarjeta de salida analógica SRO-192
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