**CERTIFICADO DE EXISTENCIA Y REPRESENTACIÓN LEGAL**

**Fecha Expedición: 7 de diciembre de 2022 Hora: 12:22:03**
Recibo No. AB22718750
Valor: $ 6,500

**CÓDIGO DE VERIFICACIÓN B2271875075276**

**Verifique el contenido y confiabilidad de este certificado, ingresando a www.ccb.org.co/certificadoselectronicos y digite el respectivo código, para que visualice la imagen generada al momento de su expedición. La verificación se puede realizar de manera ilimitada, durante 60 días calendario contados a partir de la fecha de su expedición.**

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EL JUEVES 1 DE DICIEMBRE DE 2022, SE REALIZARÁN LAS ELECCIONES DE JUNTA DIRECTIVA DE LA CÁMARA DE COMERCIO DE BOGOTÁ. LA INSCRIPCIÓN DE LISTAS DE CANDIDATOS DEBE HACERSE DURANTE LA SEGUNDA QUINCENA DEL MES DE OCTUBRE. PARA MÁS INFORMACIÓN, PODRÁ COMUNICARSE AL TELÉFONO 5941000 EXT. 2597, AL CORREO ELECCIONJUNTADIRECTIVA@CCB.ORG.CO, DIRIGIRSE A LA SEDE PRINCIPAL (AVENIDA EL DORADO #68D-35, PISO 4), O A TRAVÉS DE LA PÁGINA WEB WWW.CCB.ORG.CO

## CON FUNDAMENTO EN LA MATRÍCULA E INSCRIPCIONES EFECTUADAS EN EL REGISTRO MERCANTIL, LA CÁMARA DE COMERCIO CERTIFICA:

## NOMBRE, IDENTIFICACIÓN Y DOMICILIO

Razón social: MATIZZO SAS
Nit: 900583298 3 Administración : Direccion Seccional De Impuestos De Bogota, Regimen Comun
Domicilio principal: Bogotá D.C.

## MATRÍCULA

Matrícula No. 02284773
Fecha de matrícula: 15 de enero de 2013
Último año renovado: 2022
Fecha de renovación: 29 de marzo de 2022
Grupo NIIF: GRUPO II

El empresario se acogió al beneficio que establece el artículo 7 de la Ley 1429 del 29 de diciembre de 2010, y que al realizar la renovación de la matrícula mercantil informó bajo gravedad de juramento los siguientes datos:
El empresario MATIZZO SAS realizó la renovación en la fecha: 29 de marzo de 2022.
El número de trabajadores ocupados reportado por el empresario en su última renovación es de: 18.

## UBICACIÓN



Signature Not Verified
Constanza del Pilar Puentes Trujillo

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| | |
|---|---|
| Dirección del domicilio principal: | Carrera 57 A 44 38 Casa |
| Municipio: | Bogotá D.C. |
| Correo electrónico: | info@matizzo.com |
| Teléfono comercial 1: | 3003054 |
| Teléfono comercial 2: | 3123449274 |
| Teléfono comercial 3: | 3204476606 |

| | |
|---|---|
| Dirección para notificación judicial: | Carrera 57 A 44 38 Casa |
| Municipio: | Bogotá D.C. |
| Correo electrónico de notificación: | info@matizzo.com |
| Teléfono para notificación 1: | 3003054 |
| Teléfono para notificación 2: | 3123449274 |
| Teléfono para notificación 3: | 3204476606 |

La persona jurídica NO autorizó para recibir notificaciones personales a través de correo electrónico, de conformidad con lo establecido en los artículos 291 del Código General del Procesos y 67 del Código de Procedimiento Administrativo y de lo Contencioso Administrativo.

## CONSTITUCIÓN

Por Documento Privado del 12 de enero de 2013 de Asamblea de Accionistas, inscrito en esta Cámara de Comercio el 15 de enero de 2013, con el No. 01697743 del Libro IX, se constituyó la sociedad de naturaleza Comercial denominada MATIZZO SAS.

## TÉRMINO DE DURACIÓN

La persona jurídica no se encuentra disuelta y su duración es indefinida.

## OBJETO SOCIAL

La sociedad tendrá como objeto principal labores de ingeniería y arquitectura. Así mismo, podrá realizar cualquier otra actividad económica lícita tanto en Colombia como en el extranjero. La sociedad podrá llevar a cabo, en general, todas las operaciones, de cualquier

naturaleza que ellas fueren, relacionadas con el objeto mencionado, así como cualesquiera actividades similares, conexas o complementarias o que permitan facilitar o desarrollar el comercio o la industria de la sociedad.

## CAPITAL

* CAPITAL AUTORIZADO *

Valor : $468.563.354,00
No. de acciones : 1.949.261,00
Valor nominal : $240,38

* CAPITAL SUSCRITO *

Valor : $468.563.354,00
No. de acciones : 1.949.261,00
Valor nominal : $240,38

* CAPITAL PAGADO *

Valor : $234.281.677,00
No. de acciones : 974.630,00
Valor nominal : $240,38

## REPRESENTACIÓN LEGAL

La representación legal de la Sociedad por Acciones Simplificada estará a cargo de una persona natural, accionista, quien tendrá como suplente un representante legal suplente, designado para un término de un año por la Asamblea General de Accionistas.

## FACULTADES Y LIMITACIONES DEL REPRESENTANTE LEGAL

La sociedad será gerenciada, administrada y representada legalmente ante terceros por el representante legal, quien no tendrá restricciones de contratación por razón de la naturaleza ni de la cuantía de los actos que celebre. Por lo tanto, se entenderá que el representante legal podrá celebrar o ejecutar todos los actos y

contratos comprendidos en el objeto social o que se relacionen directamente con la existencia y el funcionamiento de la sociedad. El representante legal se entenderá investido de los más amplios poderes para actuar en todas las circunstancias en nombre de la sociedad, con excepción de aquellas facultades que, de acuerdo con los estatutos, se hubieren reservado los accionistas. En las relaciones frente a terceros, la sociedad quedará obligada por los actos y contratos celebrados por el representante legal. Le está prohibido al representante legal y a los demás administradores de la sociedad, por sí o por interpuesta persona, obtener bajo cualquier forma o modalidad jurídica préstamos por parte de la sociedad u obtener de parte de la sociedad aval, fianza o cualquier otro tipo de garantía de sus obligaciones personales. El representante legal suplente tendrá las mismas facultades y restricciones establecidas en la presente minuta para el representante legal principal.

## NOMBRAMIENTOS

### REPRESENTANTES LEGALES

Por Documento Privado del 12 de enero de 2013, de Asamblea de Accionistas, inscrita en esta Cámara de Comercio el 15 de enero de 2013 con el No. 01697743 del Libro IX, se designó a:

| CARGO | NOMBRE | IDENTIFICACIÓN |
|---|---|---|
| Representante Legal | Jorge Luis Rodriguez Rodriguez | C.C. No. 000001030547422 |

| CARGO | NOMBRE | IDENTIFICACIÓN |
|---|---|---|
| Suplente | Luis Hernando Duran Galeano | C.C. No. 000000080927696 |

### REVISORES FISCALES

Por Acta No. 006 del 2 de febrero de 2022, de Asamblea de Accionistas, inscrita en esta Cámara de Comercio el 11 de febrero de 2022 con el No. 02791575 del Libro IX, se designó a:

**CERTIFICADO DE EXISTENCIA Y REPRESENTACIÓN LEGAL**

**Fecha Expedición: 7 de diciembre de 2022 Hora: 12:22:03**
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**CÓDIGO DE VERIFICACIÓN B2271875075276**

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| CARGO | NOMBRE | IDENTIFICACIÓN |
|---|---|---|
| Revisor Fiscal Principal | Yeimy Yohana Rodriguez Diaz | C.C. No. 000001069743097 T.P. No. 246050-T |

## REFORMAS DE ESTATUTOS

Los estatutos de la sociedad han sido reformados así:

| DOCUMENTO | INSCRIPCIÓN |
|---|---|
| Acta No. 8 del 28 de octubre de 2016 de la Asamblea de Accionistas | 02153486 del 28 de octubre de 2016 del Libro IX |
| Acta No. BOG009 del 30 de diciembre de 2019 de la Asamblea de Accionistas | 02559130 del 2 de marzo de 2020 del Libro IX |

## RECURSOS CONTRA LOS ACTOS DE INSCRIPCIÓN

De conformidad con lo establecido en el Código de Procedimiento Administrativo y de lo Contencioso Administrativo y la Ley 962 de 2005, los actos administrativos de registro, quedan en firme dentro de los diez (10) días hábiles siguientes a la fecha de inscripción, siempre que no sean objeto de recursos. Para estos efectos, se informa que para la Cámara de Comercio de Bogotá, los sábados NO son días hábiles.

Una vez interpuestos los recursos, los actos administrativos recurridos quedan en efecto suspensivo, hasta tanto los mismos sean resueltos, conforme lo prevé el artículo 79 del Código de Procedimiento Administrativo y de los Contencioso Administrativo.

A la fecha y hora de expedición de este certificado, NO se encuentra en curso ningún recurso.

## CLASIFICACIÓN DE ACTIVIDADES ECONÓMICAS - CIIU

Actividad principal Código CIIU: 7112

**CERTIFICADO DE EXISTENCIA Y REPRESENTACIÓN LEGAL**

**Fecha Expedición: 7 de diciembre de 2022 Hora: 12:22:03**
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Actividad secundaria Código CIIU: 6202
Otras actividades Código CIIU: 6201

## TAMAÑO EMPRESARIAL

De conformidad con lo previsto en el artículo 2.2.1.13.2.1 del Decreto 1074 de 2015 y la Resolución 2225 de 2019 del DANE el tamaño de la empresa es Mediana

Lo anterior de acuerdo a la información reportada por el matriculado o inscrito en el formulario RUES:

Ingresos por actividad ordinaria $ 7.005.563.650
Actividad económica por la que percibió mayores ingresos en el período - CIIU : 7112

## INFORMACIÓN COMPLEMENTARIA

Que, los datos del empresario y/o el establecimiento de comercio han sido puestos a disposición de la Policía Nacional a través de la consulta a la base de datos del RUES.

Los siguientes datos sobre RIT y Planeación son informativos: Contribuyente inscrito en el registro RIT de la Dirección de Impuestos, fecha de inscripción : 10 de marzo de 2021. Fecha de envío de información a Planeación : 10 de abril de 2022. \n \n Señor empresario, si su empresa tiene activos inferiores a 30.000 SMLMV y una planta de personal de menos de 200 trabajadores, usted tiene derecho a recibir un descuento en el pago de los parafiscales de 75% en el primer año de constitución de su empresa, de 50% en el segundo año y de 25% en el tercer año. Ley 590 de 2000 y Decreto 525 de 2009. Recuerde ingresar a www.supersociedades.gov.co para verificar si su empresa está obligada a remitir estados financieros. Evite sanciones.

El presente certificado no constituye permiso de funcionamiento en ningún caso.

**********
Este certificado refleja la situación jurídica registral de la

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sociedad, a la fecha y hora de su expedición.

**********

Este certificado fue generado electrónicamente con firma digital y cuenta con plena validez jurídica conforme a la Ley 527 de 1999.

**********

Firma mecánica de conformidad con el Decreto 2150 de 1995 y la autorización impartida por la Superintendencia de Industria y Comercio, mediante el oficio del 18 de noviembre de 1996.





REPUBLICA DE COLOMBIA
IDENTIFICACION PERSONAL
CEDULA DE CIUDADANIA

NUMERO 1.030.547.422

RODRIGUEZ RODRIGUEZ
APELLIDOS

JORGE LUIS
NOMBRES

FIRMA



INDICE DERECHO

FECHA DE NACIMIENTO 19-JUL-1988
BUENAVENTURA
(VALLE)
LUGAR DE NACIMIENTO

1.76 ESTATURA
O+ G.S. RH
M SEXO

27-JUL-2006 BOGOTA D.C.
FECHA Y LUGAR DE EXPEDICION

REGISTRADORA NACIONAL
ALMABEATRIZ RENGIFO LOPEZ

P-1500108-45151813-M-1030547422-20060911 00518 06254O 02 214720240

Bogotá 09 de diciembre de 2022

EL SUSCRITO REPRESENTANTE LEGAL Y LA SUSCRITA REVISORA FISCAL DE LA SOCIEDAD MATIZZO SAS

CERTIFICAN:

Que la empresa MATIZZO SAS, identificada con Nit 900.583.298-3, cumplió en forma oportuna y completa durante los últimos seis meses con el pago de todos los salarios, prestaciones legales y extra legales, indemnizaciones, trabajo suplementario, horas extras diurnas, nocturnas, festivas y dominicales, recargos, dotaciones, seguros, y en general, el cumplimiento de todas las obligaciones de afiliación y aportes al Sistema General de Seguridad Social Integral y demás pagos parafiscales (ICBF, SENA, Cajas de Compensación Familiar, etc.) que la ley le imponen en su calidad de único empleador de sus trabajadores.

Se suscribe el presente documento en Bogotá D.C. a los nueve (09) días del mes de diciembre de 2022.

REVISORA FISCAL
YEIMY YOHANA RODRIGUEZ DIAZ
T.P. NO. 246050-T

REPRESENTANTE LEGAL
JORGE LUIS RODRÍGUEZ
C.C 1’030.547.422

Bogotá D.C., 11 de Noviembre de 2022

Señores
**CONCEJO DE BOGOTÁ**
Bogotá D.C., Colombia

**Referencia:** Certificado de exclusividad MATIZZO SAS

Con la presente TELEVIC CONFERENCE N.V. certifica que la empresa MATIZZO SAS, es un canal autorizado para ofrecer y comercializar nuestros productos y cuentan con la exclusividad de la marca para el Concejo de Bogotá, con el fin de garantizar la interoperabilidad de las distintas salas de la entidad.

Basado en lo anterior y de acuerdo a su perfil, profesionalismo y experiencia, nos complace en confirmar que MATIZZO S.A.S cuenta con la exclusividad para la venta, comercialización, soporte, mantenimiento y garantía de las soluciones necesarias para asegurar la interoperabilidad de los equipos de las diferentes salas de conferencia y debates del Concejo de Bogotá y está autorizada por TELEVIC CONFERENCE N.V. para atender todos los asuntos en referencia a la venta, instalación, configuración, entrenamiento y soporte de nuestra plataforma y por ende gozan del respaldo total de TELEVIC CONFERENCE N.V.

Cualquier aclaración adicional por favor no duden en comunicarse con nosotros que con gusto será atendida.

Cordialmente,



**Simon Talloen**
Sales Manager Latam
Televic Conference N.V.
s.talloen@televic.com
www.televic-conference.com

CONTRALORÍA
GENERAL DE LA REPÚBLICA

# LA CONTRALORÍA DELEGADA PARA RESPONSABILIDAD FISCAL , INTERVENCIÓN JUDICIAL Y COBRO COACTIVO

## CERTIFICA:

Que una vez consultado el Sistema de Información del Boletín de Responsables Fiscales 'SIBOR', hoy viernes 09 de diciembre de 2022, a las 17:35:22, el número de identificación de la Persona Jurídica, relacionado a continuación, NO SE ENCUENTRA REPORTADO COMO RESPONSABLE FISCAL.

| | |
|---|---|
| Tipo Documento | Nit |
| No. Identificación | 9005832983 |
| Código de Verificación | 9005832983221209173522 |

Esta Certificación es válida en todo el Territorio Nacional, siempre y cuando el tipo y número consignados en el respectivo documento de identificación, coincidan con los aquí registrados.

De conformidad con el Decreto 2150 de 1995 y la Resolución 220 del 5 de octubre de 2004, la firma mecánica aquí plasmada tiene plena validez para todos los efectos legales.

YEZID LOZANO PUENTES
Contralor Delegado

Generó: WEB

CONTRALORÍA
GENERAL DE LA REPÚBLICA

# LA CONTRALORÍA DELEGADA PARA RESPONSABILIDAD FISCAL , INTERVENCIÓN JUDICIAL Y COBRO COACTIVO

## CERTIFICA:

Que una vez consultado el Sistema de Información del Boletín de Responsables Fiscales 'SIBOR', hoy viernes 09 de diciembre de 2022, a las 17:34:42, el número de identificación, relacionado a continuación, NO SE ENCUENTRA REPORTADO COMO RESPONSABLE FISCAL.

| | |
|---|---|
| Tipo Documento | Cédula de Ciudadanía |
| No. Identificación | 1030547422 |
| Código de Verificación | 103054742222121209173442 |

Esta Certificación es válida en todo el Territorio Nacional, siempre y cuando el tipo y número consignados en el respectivo documento de identificación, coincidan con los aquí registrados.

De conformidad con el Decreto 2150 de 1995 y la Resolución 220 del 5 de octubre de 2004, la firma mecánica aquí plasmada tiene plena validez para todos los efectos legales.

YEZID LOZANO PUENTES
Contralor Delegado

Generó: WEB

71.98.2902

- **Sistema central**

# Plixus AE-R

## Plixus Audio Engine (Recording)




## Description

The Plixus audio engine is a 19” rack mountable device that provides audio processing and signal handling required for the Plixus network.

> It is the beating heart of conference venues that require reliable processing. With core audio functions available right inside the Plixus AE-R, meetings are up and running without the need of an additional computer.

A simple interface gets you all controls right at your fingertips: a volume dial adjusts the volume, a simple record button starts or stops the meeting recording. And with an integrated web server, operators have full control over all settings through an easy, modern, and intuitive web interface. Finally, with a compact 1U design, the Plixus AE-R fits in anywhere.

### All in One Cat 5e Cable

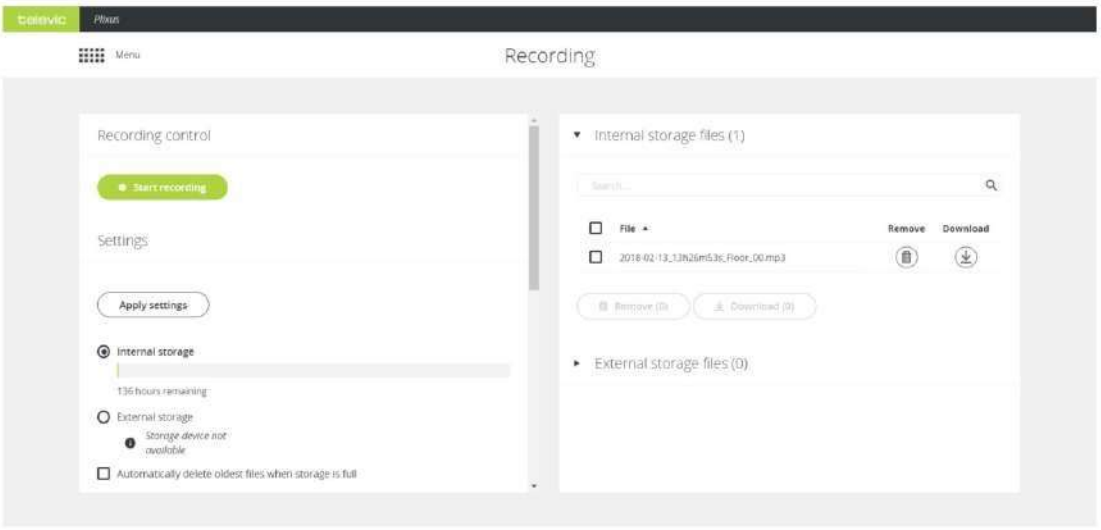
The Plixus AE-R has four conference ports. A single cat 5e network cable interconnects the delegate units in daisy-chain or in closed loop for extra redundancy using Televic’s patented Dual Branch technology. This standard cable transports high-quality audio.

### Dante™: Easy Third-party Interfacing

To work with third-party equipment, the Plixus AE-R supports an optional Dante™ audio networking card (64x64) (71.98.2950). As a result, the conference system can easily interconnect to Dante™-enabled devices such as Lingua Infrared, DSPs, audio mixers or recording devices. Through the Dante controller software, the audio can then be routed between any Dante enabled device that is available on the network. Even in redundant configurations.



televic conference




### Web Server with User-friendly Interface

A built-in web server makes control over the meetings simple. It's as easy as browsing to the Plixus Core web page and getting started. With an updated user-friendly interface, controlling and configuring Plixus AE-R becomes a joy. From initialization and microphone management to interpretation channels, audio routing and camera control. You can even monitor the status of your network using the built-in Diagnostics application (Note: more advanced functions such as Voting, Agenda Management, Speech Time, etc. require dedicated licenses.)

### Straightforward Recording

The Plixus AE-R makes recording meetings a breeze. A simple button starts or stops the recording of the floor and up to 3 other languages. The status is visible through a LED next to the button. With an internal recording capacity of 8 GB, over 100 hours of audio (single-stream, 128 kbps MP3 recording ) can be recorded. A USB port easily expands the available recording memory: just plug and record. Recorded meetings can be downloaded from the engine's web page with a single click.

### External Power Supply

The Plixus AE-R uses an external power supply which brings several advantages. First off, it ensures the unit makes no noise. Secondly, it guarantees the Plixus AE-R's small footprint: only 1U. And third, with room for a second power supply, it provides an additional level of redundancy.

## Benefits

### Rock-solid Network Performance

Plixus is a packet-based network with a proprietary protocol developed by Televic, specifically for mission-critical conference applications. Through dynamic bandwidth attribution, it offers guaranteed audio quality.

### HD Audio

The philosophy of Plixus is to maximize the use of available bandwidth so that there is no need to compromise on audio quality. Audio is passed uncompressed over the network at 48 kSps.

### Closed Architecture, Open Interfacing

The Plixus conference network is closed and open at the same time. While for the benefit of security no third-party devices or connections are allowed on the mission critical part of the network, the Plixus Engine at the edge of the network has an open interface. In this way the best of both worlds are combined: open yet secure interfacing.

### Self-healing Topology

The packet-based nature of Plixus allows the conference network to be aware of its topology at any moment. During normal operation data will travel the shortest route from the Plixus Engine to the delegate unit and vice versa. In case of a failure along that route (i.e. a unit failing or a cable breaking) Plixus will self-correct and calculate a new shortest route so that data packets still reach their intended destination, resulting in uninterrupted meetings.

### Loop Cabling

For this self-healing mechanism to work, redundant paths must be provided through loop cabling. You may also set up Plixus Network Extenders in a redundant configuration.

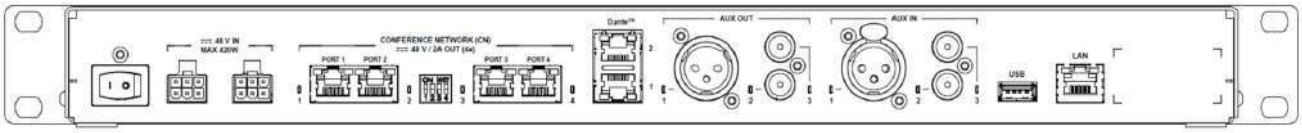
## Features

- Easy built-in recording
- No pc required for core functionality
- Seamless combination of wired and wireless units
- Wireless range extension
- 802.1X (MD5, TLS, PEAP-MSCHAPv2) for LAN port only
- Combinations for wireless room split/combine application
- USB port for expandable memory to record longer meetings (volumes up to 500 GB)
- Integrated dynamics processor with programmable threshold, ratio, attack and release of noise gate, AGC and limiter functions.
- Supports interpretation with a default of 11 languages + floor (can be extended to 63 + floor through different licenses)
- Dante™ multi-channel networked audio (maximum 64 channels) via separate add-on card (71.98.2950 Dante Audio Networking Card)

### Buttons & Modes

- ON/OFF Power button
- A volume dial on the front allows direct adjustment of the system volume
- Single push button to start or stop recordings
- LED indicator to show recording status (ON/OFF)
- DLP switch to enable and disable power to the Plixus conference ports

## Connectivity



- 2 Power connectors
- 4 Conference network ports
- DLP switch
- 2 redundant Dante ports
- 1 USB 2.0 ports
- LAN port
- 1 Balanced XLR audio input
- 1 Balanced XLR audio output
- 2 Unbalanced Cinch audio inputs
- 2 Unbalanced Cinch audio outputs

## Accessoiries

71.98.2930 Plixus PS

Rack mountable power supply for setups where a Plixus NEXT is needed

71.98.2931 Plixus AE-R PS

For other setups with more than 40 delegate units

## Certification

| Region | Certification |
|---|---|
| Europe | CE |

## Specifications

| Mechanical | |
|---|---|
| Material | Steel |
| Color | Black, RAL9011 |
| Size (mm) | 482 (w) × 43 (h) × 195 (d) |
| Size packed (mm) | 567 (w) × 141 (h) × 257 (d) |
| Weight | 2700g |
| Weight packed | 4800g |
| **Electrical** | |
| Supply Voltage | External, 90-264 VAC, 47-63 Hz |
| Consumption | Max 445 W (including external power) |
| Audio Quality | 24 bit, 48 kSps |
| **Power Over Cable** | |
| Voltage | 48 VDC |
| Continuous output current | 2 A |

| Recording | |
|---|---|
| Internal | |
| Size | 8 GB |
| Format | MP3 |
| Quality | 64, 128, 196, 256 kbps |
| External | |
| Connection | USB 2.0 |
| Format | NTFS |
| Maximum Size | 500 GB |
| **Network** | |
| Cable type | Cat 5e, shielded, FTP |
| Maximum length between units | 80 m |
| Maximum total cable length within a loop | 400 m |
| Connector | RJ45 standard (shielded) |
| Security | 802.1X (MD5, TLS, PEAP-MSCHAPv2) for LAN port only |
| **IP Control Port** | |
| IP control port link speed | 100 Mbps |
| **AUX IN XLR Balanced** | |
| Nominal input level | +4 dBu |
| Maximum input level | +24 dBu |
| Input impedance | 10 kΩ |
| Dynamic range | > 90 dB |
| Frequency response | 20-20,000 Hz |
| **AUX OUT Balanced** | |
| Nominal output level | +4 dBu |
| Maximum output level | +24 dBu |
| Dynamic range | > 90 dB |
| Frequency response | 20-20,000 Hz |
| THD @ nominal level | 0.1% |
| Load impedance | > 600 Ω |
| **AUX IN RCA Unbalanced** | |
| Nominal input level | -10 dBV |
| Maximum input level | 10 dBV |
| Input impedance | 10 kΩ |
| Dynamic range | > 90 dB |
| Frequency response | 20-20,000 Hz |

| AUX OUT RCA Unbalanced | |
|---|---|
| Nominal output level | -10 dBV |
| Maximum output level | 10 dBV |
| Dynamic range | > 90 dB |
| Frequency response | 20-20,000 Hz |
| THD @ nominal level | 0.1% |
| Load impedance | > 10 kΩ |
| **Dante™ Interface** | |
| Link Speed | 1 Gbps |
| Sample Rate | 48 kSps |
| Sample width | 24 bit |
| Maximum number of input channels | 64 |
| Maximum number of output channels | 64 |
| **Environment** | |
| Operation temperature | 5-50 °C |

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71.98.2930

- **Fuente de alimentación para microfonía**

# Plixus PS

Plixus Power Supply




## Description

The Plixus PS is a 1U high 19” rack mount 48 VDC/1000W power supply. The front panel is equipped with a rocker mains switch with built-in indicator and a 48 V indicator. The unit comes with 6 Phoenix connectors included.

## Features

- On/Off rocker switch with built-in indicator
- 48 V LED
- Power good TTL output provided on a sub D9 connector
- Mains fuses

## Connectivity



The 230 V mains is connected to the Plixus 1U by means of a EN60320 c13 connector at the back of the power supply. Six 3-pin detachable Phoenix connectors are provided at the rear of the Plixus PS/1U to branch off the 48 V.



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conference

## Certification

| Region | Certification |
|---|---|
| Europe | CE |

## Specifications

| Mechanical | |
|---|---|
| Material | Steel |
| Housing | 1U 19 rack module |
| Color | RAL 9011 |
| Size (mm) | 260 (w) × 45 (h) × 485 (d) |
| Size packed (mm) | 295 (w) × 100 (h) × 495 (d) |
| Weight | 4590 g |
| Weight packed | 5180 g |
| **Electrical** | |
| Mains power input | 100-240 VAC 60/50 Hz |
| Mains connector | EN60360 c13 |
| Inrush current | 25 A / 115 VAC<br>40 A / 230 VAC |
| Mains fuses | T14 A / 125VAC<br>T6.3 A / 230 VAC |
| Output voltage | 48 VDC |
| Output connector | 3-pin detachable phoenix terminal block |
| Power Good TTL output | Open collector, low when switched on, max 10 mA |
| Protection | Short circuit<br>Overload<br>Temperature<br>Over voltage |
| Cooling | Forced |
| Technology | Switched Mode Power Supply |

71.98.2911

- **Extensor de red del sistema de conferencia**

# Plixus Next

## Plixus New Network Extender



### Description

The Plixus NEXT is an updated version of the original Plixus Network Extender.

> It adds flexibility in powering ports, as well as diagnostic options, in a slimmer footprint with less power consumption.

Just like the original Plixus Network Extender, the Plixus NEXT allows for extension of the Plixus® conference architecture to enable a higher number of units on the network. It also creates a level of redundancy: 2 loops may be created with one extension unit. Additionally, Plixus NEXT devices may be daisy-chained to deploy very large installations of connected devices.

New in the Plixus NEXT is a DIP switch to provide fine-grained control over powering the ports. With up to 16 combinations, various ports may be configured in a flexible way. See DIP switch Table on the next page.

Finally, the Plixus NEXT has a new streamlined design. It is40% lighter, 30% smaller, and uses 50% less power.

## Connectivity

- Two upstream ports towards the CU.
- Four powered downstream ports towards the network.
- The Network Extender supports redundant loopcabling.
- The Network Extender is powered via the WAGOconnector on the unit.
- DIP switch with up to 16 combinations for flexible portpowering.

## Certification

| Region | Certification |
|---|---|
| Europe | CE |

## Specifications

| Mechanical | |
|---|---|
| Material | Steel |
| Color | Tiger Carbon 01 |
| Size (mm) | 135 (w) × 145 (h) × 25 (d) |
| Size packed (mm) | TBD |
| Weight | 400 |
| Weight packed | TBD |
| **Network Power Connector** | |
| Voltage | 48 VDC |
| Current consumption | Max 8 A |
| Power dissipation | 7 W |

| Conference Network Ports (Upstream) | |
|---|---|
| Link speed | 1000 Mbps |
| **Conference Network Ports (Downstream)** | |
| Power over cable | 48 VDC |
| Power over cable<br>Continuous current | 2 A per port<br>1A per cable pair |
| Link speed | 1000 Mbps |

## DIP Switch Table

| DIP Switch Setting | | | | Ports Powered at startup | Startup delay of first port (s) | Port interval (s) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | All Ports | 0 | 0 | Standard setting |
| 0 | 0 | 0 | 0 | None | NA | NA | No power, only data. Switches activated after startup, will power corresponding ports. |
| 1 | 0 | 0 | 0 | Port 1 | 0 | NA | 1 port powered |
| 0 | 1 | 0 | 0 | Ports 1+2 | 0 | 0.5 | 2 ports powered |
| 1 | 1 | 0 | 0 | Ports 1+2+3 | 0 | 0.5 | 3 ports powered |
| 0 | 0 | 1 | 0 | All Ports | 0 | 0.5 | delay 0 to 1.5 |
| 1 | 0 | 1 | 0 | All Ports | 2 | 0.5 | delay 2 to 3.5 |
| 0 | 1 | 1 | 0 | All Ports | 4 | 0.5 | delay 4 to 5.5 |
| 1 | 1 | 1 | 0 | All Ports | 6 | 0.5 | delay 6 to 7.5 |
| 0 | 0 | 0 | 1 | All Ports | 8 | 0.5 | delay 8 to 9.5 |
| 1 | 0 | 0 | 1 | All Ports | 10 | 0.5 | delay 10 to 11.5 |
| 0 | 1 | 0 | 1 | All Ports | 12 | 0.5 | delay 12 to 13.5 |
| 1 | 1 | 0 | 1 | All Ports | 14 | 0.5 | delay 14 to 15.5 |
| 0 | 0 | 1 | 1 | All Ports | 16 | 0.5 | delay 16 to 17.5 |
| 1 | 0 | 1 | 1 | All Ports | 18 | 0.5 | delay 18 to 19.5 |
| 0 | 1 | 1 | 1 | None | NA | 0 | Remote control* |

***Planned for future release**

- **Pantalla táctil unidad multimedia**

# I-Series 4 for Android™

## All-in-One Touchscreen



**Google™ Mobile Services**

**Android 10**

**Enterprise-Grade Support**

## Product Overview

One of our most popular product lines ever, the I-Series has been used across the globe for everything from self-service, point-of-sale and price checkers to industrial controls and visitor management. Available in 10-, 15- and 22-inch sizes, Elo's I-Series delivers a powerful, commercial-grade interactive platform complete with a Full HD 10-touch display, flexible Android 10 OS and enhaced CPU performance with your choice of Qualcomm or Rockchip processor options.

Start changing the way customers and employees interact by deploying a new generation of interactive technologies that provides seamless integration, effortless provisioning and simplified device management via EloView or your preferred management tools.

**Available in 10", 15" or 22" widescreen sizes with high-performance computing and sleek edge-to-edge glass PCAP touchscreen**

**Enterprise-Grade Support - Security updates, seamless provisioning, Elo Home, OEMConfig and more**

**Deploy content, manage settings and maintain the OS with EloView**

**Modular design with flexible mounting**

## I-Series 4 for Android AiO Touchscreen

| Specifications | 10-inch model | 15-inch model | 22-inch model |
|---|---|---|---|
| Diagonal Size | 10.1" (256.54mm) | 15.6" (396.24mm) | 21.5" (546.10mm) |
| Operating System | Android 10 with Google Play Services and EloView content deployment and management | | |
| Processor | Standard: Qualcomm Snapdragon SDA660; Value: Rockchip RK3399 | | |
| Memory | 4GB | | |
| Storage | Standard: 64GB; Value: 32GB | | |
| I/O Ports | 1x USB 3.0 support (900mA), Type C USB output, Micro SD slot, GPIO, Ethernet 1x LAN (Gigabit), DC in<br>4x micro-USB 2.0 Elo Edge Connect ports (Support for 1.2A on one port and 500mA for the remaining three ports) | | |
| Wireless | 802.11a/b/g/n/ac + Bluetooth 5.0 | | |
| Webcam | Standard: 8MP, Max Resolution: 1920x1080 30fps, Auto Focus, Focus Range: >10cm; Value: 5MP, Max Resolution: 1920x1080 30fps, Auto Focus | | |
| Speakers | Standard: 2x 0.8W; Value: 2x 2W | | |
| Audio | Standard: 2x built-in Digital Microphones; Value: 1x built-in Analog Microphone | | |
| Active Display Area | 8.54" x 5.34" / 217 mm x 136 mm | 13.55" x 7.62" / 344 mm x 194 mm | 18.74" x 10.54" / 476 mm x 268 mm |
| Resolution | Standard: 1920 x 1200 @ 60Hz<br>Value: 1280 x 800 @ 60Hz | 1920 x 1080 @ 60Hz | |
| Touch Technology | TouchPro® PCAP (Projected Capacitive) - up to 10 touches | | |
| Aspect Ratio | 16:10 | 16:9 | 16:9 |
| Number of Colors | 8-bit (16.7M) | | |
| Brightness | Standard: LCD Panel: 450 nits; PCAP: 387 nits<br>Value: LCD Panel: 300 nits; PCAP: 250 nits | Standard: LCD Panel: 300 nits; PCAP: 258 nits<br>Value: LCD Panel: 250 nits; PCAP: 215 nits | Standard: LCD Panel: 250 nits; PCAP: 215 nits<br>Value: LCD Panel: 250 nits; PCAP: 215 nits |
| Response Time | 25 ms | | Standard Model: 14 ms; Value Model: 5 ms |
| Viewing Angle | Horizontal: ±85° or 170° total / Vertical: ±85° or 170° total | Standard: Horizontal: ±89° or 178° total / Vertical: ±89° or 178° total<br>Value: Horizontal: ±80° or 160° total / Vertical: ±80° or 160° total | Standard: Horizontal: ±89° or 178° total / Vertical: ±89° or 178° total<br>Value: Horizontal: ±85° or 170° total / Vertical: ±80° or 160° total |
| Contrast Ratio | Standard: 900:1; Value: 800:1 | 700:1 | 1000:1 |
| Power | AC input voltage: 100-240 VAC; Input frequency: 50-60 Hz | | |
| Power Consumption | Standard: On: 8.5W; Off: 0.4W; Sleep: 4.5W<br>Value: On: 7.2W; Off: 0.4W; Sleep: 3.4W | Standard: On: 11.0W; Off: 0.4W; Sleep: 4.4W<br>Value: On: 10.0W; Off: 0.4W; Sleep: 3.4W | Standard: On: 19.8W; Off: 0.4W; Sleep: 4.4W<br>Value: On: 15.7W; Off: 0.45W; Sleep: 3.4W |
| Power Over Ethernet | Supported via Elo PoE Device PN: E413396 - Reference the I-Series 4.0 user guide for details. | | |
| Dimensions (W x D x H) | 9.96" x 6.65" x 0.87" /<br>252.9 mm x 169.0 mm x 22.1 mm | Standard: 14.87" x 9.83" x 0.88" /<br>377.7 mm x 249.7 mm x 22.3 mm<br>Value: 15.34" x 9.83" x 0.88" /<br>389.7 mm x 249.7 mm x 22.3 mm | 20.66" x 12.79" x 1.17" /<br>524.8 mm x 324.8 mm x 29.7 mm |
| Shipping Dimensions | Standard: 12.6" x 6.0" x 9.3" /<br>320 mm x 150 mm x 235 mm<br>Value: 12.4" x 5.5" x 9.0" /<br>315 mm x 140 mm x 228 mm | Standard: 17.7" x 6.5" x 13.0" /<br>450 mm x 165 mm x 330 mm<br>Value: 18.3" x 6.3" x 13.0" /<br>465 mm x 160 mm x 330 mm | Standard: 23.2" x 6.6" x 15.8" /<br>590 mm x 168 mm x 400 mm<br>Value: 23.6" x 6.6" x 16.0" /<br>600 mm x 168 mm x 406 mm |
| Weight | Standard: 2.0 lbs / 0.9 kg; Value: 1.8 lbs / 0.8 kg | Standard: 3.9 lbs / 1.8 kg; Value: 3.5 lbs / 1.6 kg | Standard: 8.4 lbs / 3.8 kg; Value: 9.5 lbs / 4.3 kg |
| Shipping Weight | Standard: 4.5 lbs / 2.1 kg; Value: 4.9 lbs / 2.2 kg | Standard: 7.8 lbs / 3.5kg; Value: 7.2 lbs / 3.3 kg | Standard: 12.4 lbs / 5.6 kg; Value: 16.1 lbs / 7.3 kg |
| Temperature | Operating: 32°F to 104°F (0°C to 40°C); Storage: -4°F to 122°F (-20°C to 50°C) | | |
| Humidity | Operating: 20%-80%; Storage: 5%-95% | | |
| Mounting Options | VESA 75mm | VESA 75mm and 100mm | |
| Warranty | 2 years standard | | |
| Extended Warranty | 3 year - Elo P/N: E819394; 4 year - Elo P/N: E819598; 5 year - Elo P/N: E819795<br>2 year + AUR - Elo P/N: E819985; 3 year + AUR - Elo P/N: E820186; 4 year + AUR - Elo P/N: E820388; 5 year + AUR - Elo P/N: E820582 | | |
| Security Updates | Complimentary security updates provided for 3 months; Optional extended coverage available with EloCare OS 350 package | | |
| Regulatory Approvals | UL/cUL (US); FCC (US); IC (Canada); CE (Europe); CB (International); VCCI, MIC (Japan); RCM (Australia) | | |
| Supported Country List | Canada, USA, Australia, Japan, New Zealand, Austria, Belgium, Czech Republic, Denmark, France, Germany, United Kingdom, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Spain, Sweden, Switzerland, Turkey, Brazil | | |
| What's in the Box | I-Series, NA Power Cable, EU Power Cable, 1x Power Brick (E153026), Quick Install Guide, Screws for cable cover door (located in the power/Ethernet bay) | | |

## Ordering Information

| Family | Part Number | Size | Processor | Color | Memory | Storage |
|---|---|---|---|---|---|---|
| Standard | E389883 | 10-inch | Qualcomm Snapdragon SDA660 | Black | 4GB | 64GB |
| | E411266 | 10-inch | Qualcomm Snapdragon SDA660 | White (MTO) | | |
| | E390075 | 15-inch | Qualcomm Snapdragon SDA660 | Black | | |
| | E412033 | 15-inch | Qualcomm Snapdragon SDA660 | White (MTO) | | |
| | E390263 | 22-inch | Qualcomm Snapdragon SDA660 | Black | | |
| | E412818 | 22-inch | Qualcomm Snapdragon SDA660 | White (MTO) | | |

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- **Micrófono cuello de ganso unidad multimedia**

# D-Mic 40 SL

## Directional Microphone, 40 cm



## Description

The removable gooseneck microphone is equipped with a screw lock connector for easy connection to the different delegate and interpreter units.

> Its unidirectional response results in optimal performance even in environments with a lot of ambient noise.

The gooseneck design also allows for a large freedom of movement. Another important advantage is the very low susceptibility to interference from mobile phones.

Finally, the D-MIC SL microphones deliver a rich, natural sound. It enables longer and more comfortable meetings where participants experience less strain produced by traditional artificial and mechanical microphone sounds. The light ring is dark (opaque) when the microphone is switched off, it lights up red when active, and green when in request.

The D-MICxxSL is available in a 30, 40, 50 and 70 cm version, as well as in a fully flexible 40 cm version.

## Specifications

| Mechanical | |
|---|---|
| Material | Brass |
| Color | Matt black, RAL 9011 |
| Size (mm) | 405 (w) × 25 (h) × 25 (d) |
| Size packed (mm) | 480 (w) × 50 (h) × 50 (d) |
| Weight | 100g |
| Weight packed | 175g |
| **Electrical** | |
| Transducer principle | Back electret (condenser) |
| Operating principle | Pressure gradient |
| Polar pattern | Unidirectional, cardioid |
| Nominal conditions | Bias resistor = 1k2<br>Vdd = 3.3 V DC<br>1 Pa = 94 dB SPL |
| Max SPL @ 1 kHz | 110 dB SPL (1% THD+N) |
| Signal to noise ratio | > 67 dB(A) |
| Free field sensitivity | (-40.5±2) dBV @ 1Pa, 1KHz |

| | |
|---|---|
| Power supply | 3.3 V DC, 0.5 mA |
| Consumption | 0.5 mA (without LED ring)<br>Max 25 mA (with LED ring) |
| Connection | Screw lock |

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# Confidea F-DI

## Confidea Flushmount Delegate Interpretation Unit



### Description

> The Confidea F-DI is Televic's delegate panel for discussion systems, with an integrated speaker and simultaneous interpretation.

Its small form factor, housed in an elegant casing, permits a minimalistic integration into any meeting room furniture. The integrated speaker creates a distributed sound field in the meeting room, increasing intelligibility without the need for an additional room sound system.

The panel has a screw-lock connector to fit a removable microphone (available in 30, 40 or 50 cm versions). A 3.5 mm jack socket is available to connect headphones or a hearing loop for the hearing impaired. For simultaneous interpretation, the panel has a channel selector and headphones volume adjustment.

The information display shows the channel number & ISO code of the selected language and the volume setting. The chairman version of this panel has additional controls (see Confidea F-CI 71.98.0513).

### Benefits

The Confidea F-DI is a sleek and discreet solution that is perfectly suited to conference rooms without an existing sound system. The ability to connect headphones provides accessibility for the hearing impaired. The clear and easy channel selector allows for user-friendly simultaneous interpretation conferences.

The unit is available in a variety of custom colors, sizes and finishes to blend in neatly in any environment. The Confidea F-DI is backed by the Plixus® network and redundant cabling to ensure maximum reliability. Finally, its shielded microphone is immune to mobile phone interference.

## Features

- Basic discussion function
- Interpretation function
- Tactile microphone push button with integrated LED
- Headphone volume adjustment
- Language channel selector
- Channel information display
- Integrated loudspeaker
- Rounded corners for easy installation
- Trademark natural Televic Sound
- Available in custom colors, sizes, finishes

## Connectivity

- Screw-lock microphone connector. Microphones sold separately.

| | |
|---|---|
| **D-MIC30SL** | **71.98.0053** |
| **D-MIC40SL** | **71.98.0054** |
| **D-MIC50SL** | **71.98.0055** |

- Two RJ 45 connectors for loop through cabling
- 3.5 mm stereo jack socket for headphones
- Plixus-powered

## Software

- To fully configure, manage, and use the unit, Televic's CoCon management software is required. The following standard licenses are available:

| | |
|---|---|
| **CoCon Discussion** | **71.98.1101** |
| **CoCon Signage** | **71.98.1102** |
| **CoCon Interpretation** | **71.98.1107** |

## Certifications

| Region | Certification |
|---|---|
| Europe | CE |

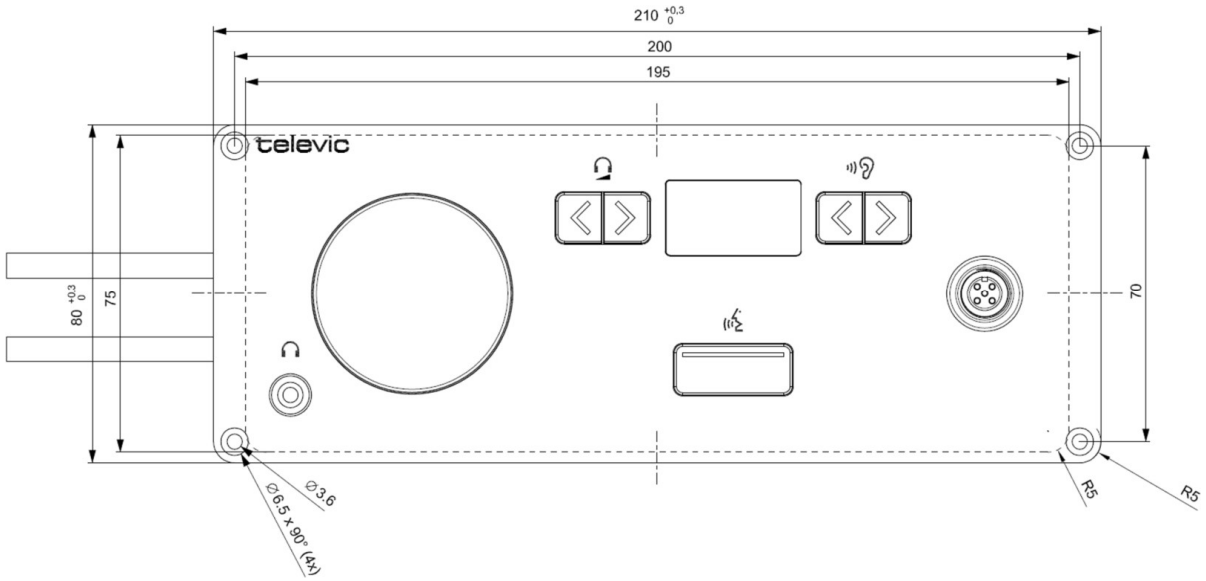
## Specifications

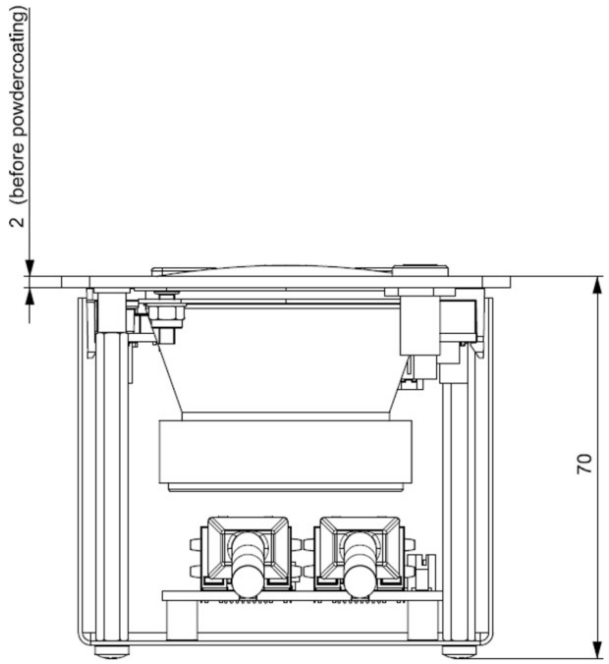
**71.98.0503**

| | |
|---|---|
| **Mechanical** | |
| Material | Steel |
| Color | Tiger coating Carbon 01 |
| Size (mm) | 210 (w) × 80 (h) × 70 (d) |
| Size packed (mm) | 250 (w) × 120 (h) × 85 (d) |
| Weight | 740g |
| Weight packed | 860g |
| **Electrical** | |
| Voltage | 48 VDC |
| Current consumption | 4 W |
| **Speaker Output** | |
| Maximum output power | > 1 W |
| Frequency response | 200-20,000 Hz |
| Dynamic range | > 90 dB |
| THD @ nominal level | < 0.1% |
| Load impedance | 8 Ω |
| **Headphone Output** | |
| Maximum output | > 10 mW |
| Frequency response | 22-22,000 Hz |
| Dynamic range | > 90 dB |
| THD @ nominal level | < 0.1% |
| Load impedance | 16-32 Ω |
| **Microphone Input** | |
| Dynamic range | > 90 dB |
| Frequency response | 20-20,000 Hz |
| THD @ nominal level | 0.1% |
| **Display** | |
| Display Type | OLED |
| Resolution | 128 × 64 |
| Character Height | 5 mm |

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## Technical Drawing




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71.98.0513

# Confidea F-CI

## Confidea Flushmount Chairman Interpretation Unit



### Description

> The Confidea F-CI is Televic's chairman panel for discussion systems, with an integrated speaker and simultaneous interpretation.

Its small form factor, housed in an elegant casing, permits a minimalistic integration into any meeting room furniture. The integrated speaker creates a distributed sound field in the meeting room, increasing intelligibility without the need for an additional room sound system.

The panel has a screw-lock connector to fit a removable microphone (available in 30, 40 or 50 cm versions). A 3.5 mm jack socket is available to connect headphones or a hearing loop for the hearing impaired. For simultaneous interpretation, the panel has a channel selector and headphones volume adjustment.

The information display shows the ISO code of the selected language and the volume setting. The chairman version has 2 additional buttons compared to the delegate unit: "Next-in-line" and "Priority".

### Benefits

The Confidea F-CI is a sleek and discreet solution that is perfectly suited to conference rooms without an existing sound system. The ability to connect headphones provides accessibility for the hearing impaired. The clear and easy channel selector allows for user-friendly simultaneous interpretation conferences.

The unit is available in a variety of custom colors, sizes and finishes to blend in neatly in any environment. The Confidea F-CI is backed by the Plixus® network and redundant cabling to ensure maximum reliability. Finally, its shielded microphone is immune to mobile phone interference.

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## Features

- Basic discussion function
- Interpretation function
- Tactile microphone push button with integrated LED
- Tactile Priority push button
- Tactile Next-in-line push button
- Headphone volume adjustment
- Language channel selector
- Channel information display
- Integrated loudspeaker
- Rounded corners for easy installation
- Trademark natural Televic Sound
- Available in custom colors, sizes, finishes

## Connectivity

- Screw-lock microphone connector. Microphones sold separately.

| | |
|---|---|
| **D-MIC30SL** | **71.98.0053** |
| **D-MIC40SL** | **71.98.0054** |
| **D-MIC50SL** | **71.98.0055** |

- Two RJ 45 connectors for loop through cabling
- 3.5 mm stereo jack socket for headphones
- Plixus-powered

## Software

- To fully configure, manage, and use the unit, Televic's CoCon management software is required. The following standard licenses are available:

| | |
|---|---|
| **CoCon Discussion** | **71.98.1101** |
| **CoCon Signage** | **71.98.1102** |
| **CoCon Interpretation** | **71.98.1107** |

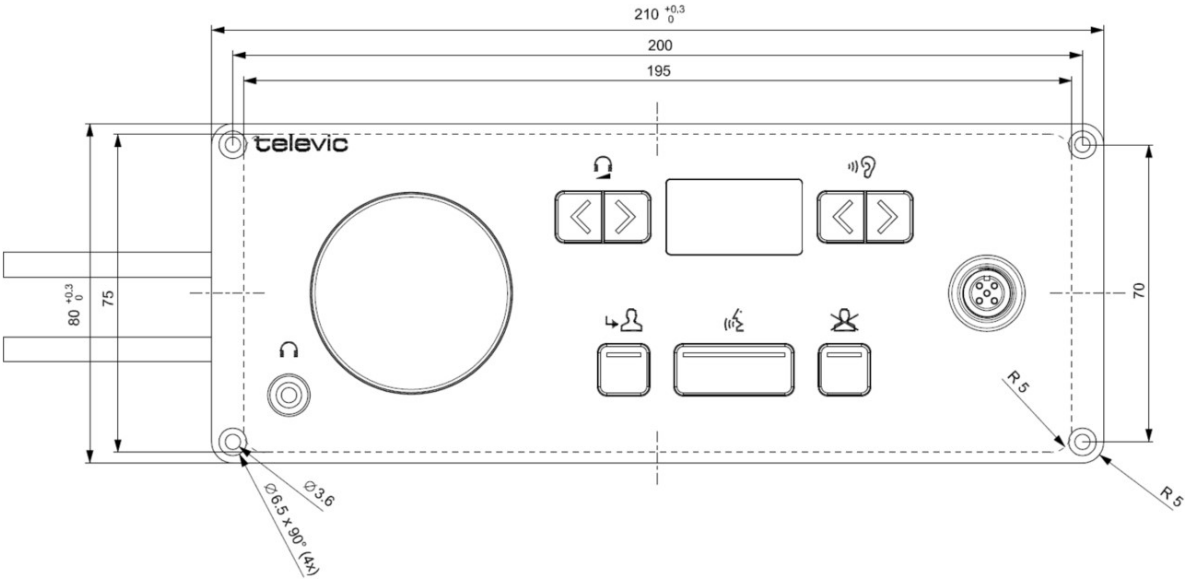
## Certifications

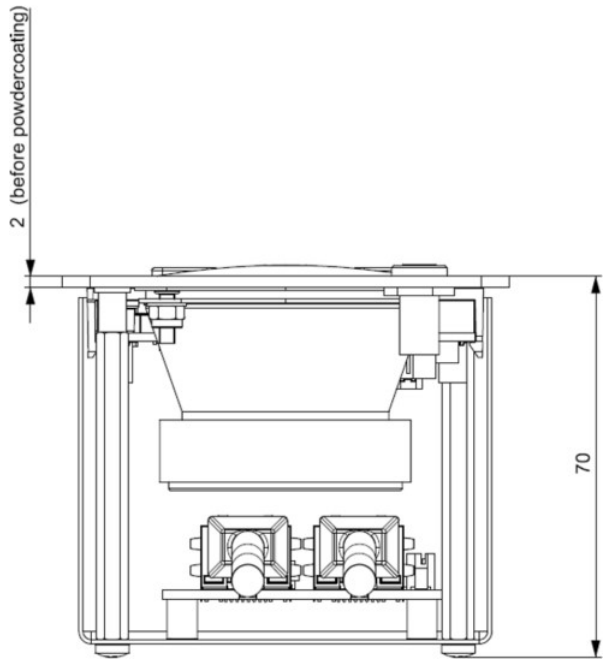
| Region | Certification |
|---|---|
| Europe | CE |

## Specifications

| | |
|---|---|
| **Mechanical** | |
| Material | Steel |
| Color | Tiger coating Carbon 01 |
| Size (mm) | 210 (w) × 80 (h) × 70 (d) |
| Size packed (mm) | 250 (w) × 120 (h) × 85 (d) |
| Weight | 740g |
| Weight packed | 860g |
| **Electrical** | |
| Voltage | 48 VDC |
| Current consumption | 4 W |
| **Speaker Output** | |
| Maximum output power | > 1 W |
| Frequency response | 200-20,000 Hz |
| Dynamic range | > 90 dB |
| THD @ nominal level | < 0.1% |
| Load impedance | 8 Ω |
| **Headphone Output** | |
| Maximum output | > 10 mW |
| Frequency response | 22-22,000 Hz |
| Dynamic range | > 90 dB |
| THD @ nominal level | < 0.1% |
| Load impedance | 16-32 Ω |
| **Microphone Input** | |
| Dynamic range | > 90 dB |
| Frequency response | 20-20,000 Hz |
| THD @ nominal level | 0.1% |
| **Display** | |
| Display Type | OLED |
| Resolution | 128 × 64 |
| Character Height | 5 mm |

## Technical Drawing




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- **Switch audiovisual**

# MS120-8 Compact Switch

Layer 2 access switch with 1G SFP uplinks, small form-factor, and optional PoE+




## CLOUD-MANAGED COMPACT ACCESS SWITCHES

Cisco Meraki **MS120-8** compact switches provide Layer 2 access switching in a fanless, compact form factor. All models include 1G SFP uplinks, integrated mounting brackets, and a Kensington security slot, making them ideal for rapid and secure deployment to branch locations.

Cisco Meraki switches are built from the ground-up to be easily managed without compromising any of the power and flexibility traditionally found in enterprise-class switches.

To bring up a Meraki switch, simply plug it in. Meraki switches do not require CLI for switch configuration or port management.

Meraki's centralized management platform gives administrators granular visibility into their network. Our dashboard helps you keep track of every configuration change in your network with our detailed event and change logs.

## INDUSTRY LEADING CLOUD MANAGEMENT

Cloud management has a number of benefits that make it easier to build networks large and small:

- Automatic email alerts from power loss, downtime, excessive Layer 1 errors, or configuration changes
- Powerful remote diagnostic tools such as packet capture to help isolate and troubleshoot network issues
- Role-based administration
- Firmware upgrades and enhancements from the Meraki cloud
- Virtual Stacking enables switch port configuration changes on the dashboard interface without the need to physically stack switches
- Incredible network transparency with application, operating system, client, and hostname visibility
- Zero-touch provisioning for rapid deployment across sites

### Product Highlights

- Gigabit access switching with 8 x 1GbE ports and optional PoE/PoE+
- 2 x 1G SFP uplink interfaces on all models
- Fanless operation
- 20 Gbps non-blocking compact switch
- 67/124 watt PoE budget with PoE+ support and dynamic power allocation for powering access points, phones, cameras, and other PoE-enabled devices
- 6 dedicated QoS queues for converged voice, video, and data applications
- Integrated mounting brackets for wall or desk mounting, with included Kensington security slot
- Lifetime hardware warranty and advanced replacement at no additional cost

# Features and Capabilities

Meraki switches include all of the traditional Ethernet features found in modern enterprise access switches, including:

## Branch & Campus Access

- Quality-of-Service (QoS) to prioritize mission-critical traffic such as voice and video
- Voice VLAN support for simplified VoIP deployments
- CDP/LLDP with detailed neighbor discovery and visibility
- Port Mirroring support for monitoring network traffic at line rate
- IGMP Snooping to optimize network performance for multicast applications
- Link Aggregation Control Protocol (LACP) for high-capacity trunking

## Network Security

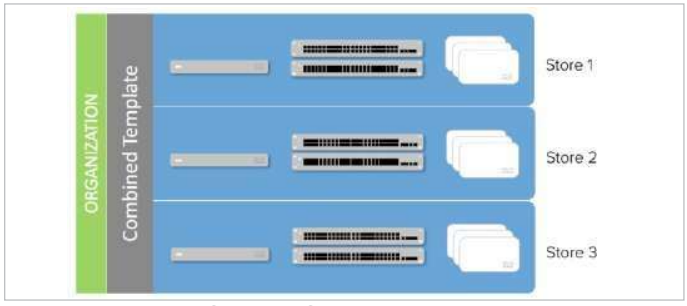
- IEEE 802.1X, MAB, and Hybrid authentication support for wired access control with RADIUS server monitoring
- ACL support (IPv4 & IPv6) and MAC whitelisting
- Single-Host/Multi-Domain/Multi-Host/Multi Authentication
- Change of Authorization (CoA) and RADIUS accounting support
- DHCP snooping to prevent users from adding unauthorized DHCP servers on the network
- Rapid Spanning Tree, BPDU Guard, Root Guard, UDLD and other safeguards to help prevent misconfigurations and reduce convergence time
- Per-port VLAN configuration
- Multiple administrative roles with sophisticated security policy management

## Network Troubleshooting & Automation

- Virtual Stacking helps IT admins make configuration changes to hundreds of switch ports in seconds with our intuitive dashboard interface
- Configuration templates for rapid, zero-touch provisioning and auditing of all sites
- Network Topology for automatic and interactive network mapping
- Remote cable testing, packet capture, and client discovery
- Staged, automatic, and scheduled firmware upgrades for the complete network

## Rapid Deployment & Configuration

With Meraki's secure cloud architecture, device provisioning and orchestration becomes completely streamlined. Zero-touch configuration coupled with configuration templates let administrators define a switch configuration once and then bind thousands of switches to a profile, reducing overhead and increasing network security.




Template network configuration for distributed deployments

## Application Layer Visibility

Meraki switches include integrated Layer 7 fingerprinting without the need to purchase additional modules or services. Identify hundreds of applications from business apps to BitTorrent and YouTube.

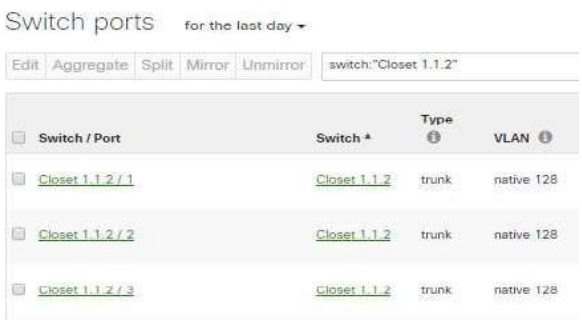
User fingerprinting allows administrators to quickly identify individual users by device and tune network resources for optimum performance.

## Unified Software Architecture

Meraki switches run the same operating system used by all of our products, which allows us to deliver a consistent user experience for network management.

When connected, new MS120-8 switches automatically reach out to the Meraki cloud and download the most current configuration. Future updates can be user-scheduled, ensuring the network is kept up-to-date with bug fixes, security updates, and new features.

Virtual Stacking with Meraki





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# Simplified Management and Operations

Meraki's cloud-managed architecture makes it simpler than ever to quickly provision and reconfigure switch ports with security, QoS, and other parameters. The Meraki dashboard provides unified policies, event logs, and monitoring, which make it easy to manage and scale large network deployments.

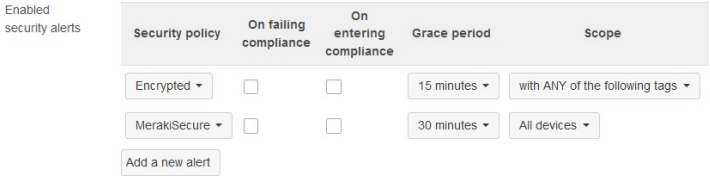
By providing a complete, powerful set of management functions over the web, Meraki cloud-based management eliminates the need for proprietary command line configuration interfaces, which require expensive and time-consuming certifications. Meraki MS switches can be fully deployed and provisioned in minutes, without requiring any local configuration or staging. Additional or replacement switches can be sent to remote offices and installed by non-technical staff, saving thousands of dollars in time and travel expenses.

The Meraki MS family also includes several remote diagnostic features, from network connectivity and cable integrity tests to latency measurement tools. For deep client troubleshooting, administrators can even perform per-port remote packet captures without any additional probes or hardware on-site.

Scheduled & automatic firmware updates




Automatic E-mail Alerts




# Designed for Reliability & Environmental Efficiency

The Meraki switch family was designed for reliable operation in network closets, which are prone to high temperatures and limited ventilation. By minimizing total component count and only using proven switching silicon, Meraki is able to deliver highly reliable products with exceptional mean time between failure (MTBF) ratings.

Each Meraki switch also operates with a split-plane architecture, where silicon-based switching and data forwarding are separated from software-based control and management. By decoupling the underlying switching logic from control, each unit is able to deliver wire-speed switching even when advanced software features such as Layer 7 host and OS fingerprinting are enabled.

Finally, the highly integrated designs of Meraki switches result in power and cooling savings in large deployment environments of 30-60% when compared with similar managed Gigabit switches.

### DISTRIBUTED BRANCHES & REMOTE SITES

Meraki's cloud-based system makes it easy to manage a single switch, or thousands of distributed switches, from a single interface.

- Troubleshoot problems remotely; e.g., find which port has a bad cable attached.
- Add or replace switches without having to send a technician on-site. Switches automatically download their current configuration as soon as they are connected to the network.
- Receive email alerts or SMS messages whenever there's a problem at a remote site.

### CAMPUS EDGE

MS switches are ideal for small and large scale campus deployments, where reliability, scalability, and managability are top priorities.

- Virtual Stacking helps IT admins control port access policies, apply VLANs, toggle port power and more.
- SFP uplinks with link aggregation provide high speed connectivity to the core of the network.
- Receive alerts if any switch loses connectivity, before users complain.


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# Dimensions & Interfaces

| Model | Physical Dimensions (H x W x D)* | Weight | Interface | Switching Capacity |
|---|---|---|---|---|
| MS120-8-HW | 1.1 x 8.74 x 5.91”<br>(2.8 x 22.2 x 15cm) | 2.36 lb (1.07 kg) | • 8 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)<br>• 2 x 1G SFP uplink | 20 Gbps |
| MS120-8LP-HW | 1.1 x 8.74 x 5.91”<br>(2.8 x 22.2 x 15cm) | 2.76 lb (1.25 kg) | • 8 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)<br>• 2 x 1G SFP uplink | 20 Gbps |
| MS120-8FP-HW | 1.75 x 8.97 x 8.58”<br>(4.4 x 22.7 x 23cm) | 3.42 lb (1.55 kg) | • 8 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)<br>• 2 x 1G SFP uplink | 20 Gbps |

# What’s Included

| | |
|---|---|
| All Models | 1 x Mounting screw kit and anchor |
| MS120-8-HW and MS120-8LP-HW | 1 x External Power Supply |



Power Adapter



Wall Screws & Anchors

# Power Options & Specifications

| Model | Idle / Full Load Power | Available PoE/PoE+ Power | Power Supply Configuration | Power Supply/Model Number |
|---|---|---|---|---|
| MS120-8-HW | 6 / 9 W | – | External Power Supply | DC 12V/2.5A, 30W, MA-PWR-30WAC |
| MS120-8LP-HW | 7 / 88 W | 67 W | External Power Supply | DC 54V/1.67A, 90W, MA-PWR-90WAC |
| MS120-8FP-HW | 9 / 162 W | 124 W | Fixed internal | DC 56V/2.7A, 150W |

Meraki offers a variety of high-speed SFP pluggable optics for use with the MS120-8 Compact switches. Full specifications and compatibility information is available in the Meraki Accessories datasheet: https://meraki.cisco.com/lib/pdf/meraki_datasheet_sfp.pdf

# Specifications

**Management**

Managed via the web with the Meraki cloud management platform

Integrated with Meraki wireless and complete portfolio of IT products and solutions

Zero-touch remote provisioning (no staging needed)

Detailed historical per-port and per-client usage statistics

DHCP, client, and hostname fingerprinting

SNMP and Syslog support for integration with other network management solutions

Automatic firmware upgrades with scheduling control

**Remote Diagnostics**

Email, SMS and mobile push notification alerts [1]

Ping, traceroute, cable testing, and link failure detection with alerting

Remote packet capture

Dynamic and interactive network discovery and topology

Combined event and configuration change logs with instant search

**Stacking**

Virtual Stacking supports thousands of switch ports in a single logical stack for unified management, monitoring, and configuration

**Ethernet Switching Capabilities**

802.1p Quality of Service, 8 queues (w/ 6 configurable for DSCP-to-CoS mapping)

802.1Q VLAN and trunking support for up to 4,094 VLANs

802.1w, 802.1D Rapid Spanning Tree Protocol (RSTP, STP)

STP Enhancements: BPDU guard, Root guard, Loop guard, UDLD

802.1ab Link Layer Discovery Protocol (LLDP) and Cisco Discovery Protocol (CDP)

802.3 ad Link aggregation with up to 8 ports per aggregate, Multichassis aggregates supported on stacked switches

Port mirroring

IGMP snooping for multicast filtering

MAC forwarding entries: 16K for all models

**Security**

Integrated multi-factor authentication for Dashboard management

Role-based access control (RBAC) with granular device and configuration control

Corporate wide password policy enforcement

IEEE 802.1X RADIUS and MAB, hybrid authentication and RADIUS server testing

Single-Host/Multi-Domain/Multi-Host/Multi Authentication

Port security: Sticky MAC, MAC whitelisting

DHCP snooping, detection and blocking

IPv4 and IPv6 ACLs

**Performance**

Switching capacity: 20Gbps

Forwarding rate: 14.88mpps with standard packet size

Jumbo frame support (9578 byte ethernet frame)

Flow control support

**Power**

Power input: 100 - 240 VAC, 47-63 Hz

Power consumption: 6-162 W

External power supply for MS120-8, MS120-8 LP

**Mounting**

Wall or utility board mountable with included mount hardware

Desktop-mountable with included feet

Kensington lock slot included

**Environment**

Operating temperature: 0 °C to 45 °C

Humidity: 5 to 95% non-condensing

Fanless operation

**Regulatory[2]**

CSA-US (US, Canada)

FCC (USA)

IC (Canada)

CE (Europe)

RCM (Australia/New Zealand)

RoHS

**Warranty**

Full lifetime hardware warranty with next-day advanced replacement included

**MTBF Ratings**

| Model | MTBF (at 25c) |
|---|---|
| MS120-8-HW | 784,221 |
| MS120-8-LP-HW | 502,221 |
| MS120-8-FP-HW | 347,479 |

[1] Requires carrier-supported email to SMS gateway and/or Meraki Mobile app

[2] *For international availability, please contact sales@meraki.com*

- **Códec de Videoconferencia**

# Webex Room Kit Plus PTZ 4K Integrator Bundle



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webex by CISCO

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Figure 1. Webex Room Kit Plus PTZ 4K bundle with an additional Webex Quad Camera unit in a large conference room

The Webex® Room Kit Plus PTZ 4K Integrator Bundle is a powerful collaboration solution that integrates with up to two flat-panel displays to bring more intelligence and versatility to your collaboration spaces. This package combines the performance of the Webex Codec Pro collaboration engine, the flexibility of the Webex PTZ 4K pan-tilt-zoom camera and the purpose-built Webex Room Navigator table stand control panel to offer maximum flexibility and premium video collaboration in scenarios where you need special camera placement, want to view objects close up, or view a wide area with pan-tilt-zoom capability.

# Product overview

The Room Kit Plus PTZ 4K integrator package delivers an industry-leading audio and video experience that customers have come to expect from Cisco. In addition, the bundle provides flexibility for large meeting rooms and collaboration spaces that can benefit from a pan-tilt-zoom camera. The PTZ 4K Camera is an intelligent pan-tilt-zoom camera that delivers 20x optical, 12x digital zoom, and 4K ultra HD video.

It also offers AI-powered face and upper-body detection and framing while providing a high level of flexibility for custom and specialized integrations to enable natural interactions that remote participants can follow just like in-person attendees. Bundled with the Webex Room Kit Plus collaboration kit, the PTZ 4K Camera can take the meeting experience to a new level with powerful zoom, rapid and noiseless pan-tilt, and crystal-clear close-ups on distant objects and participants.

The Room Kit Plus PTZ 4K bundle is rich in functionality and experience, and is priced and designed to be easily scalable to all of your collaboration spaces–whether registered on the premises or to the Webex cloud service. Figure 2 shows the default components of the package.

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Figure 2. Default components of the Webex Room Kit Plus PTZ 4K bundle

# Features and benefits

Table 1. Key features of the Webex Room Kit Plus PTZ 4K integrator bundle

| FEATURE SUMMARY | DESCRIPTION |
|---|---|
| Smart meetings | • Powerful imaging with one intelligent, high-quality pan-tilt-zoom camera<br>• Provides ultra HD 4K video with outstanding clarity, rich colors, great smoothness, superb resolution, and frame rate<br>• 20x optical and 12x digital zoom<br>• Automatic noise suppression reduces disruptive sounds coming from the meeting room (e.g., typing, paper rustling)<br>• Simplified meeting-join experience with One Button to Push (OBTP) for scheduled devices in a Webex meeting, whether registered on premises or to the Webex cloud service<br>• Easily controlled by the Webex Room Navigator control unit or with a Webex App-enabled device<br>• End-to-end security<br>• Optimized for the Webex experience while also supporting third-party video conference and cloud meeting services |

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Table 1. Key features of the Webex Room Kit Plus PTZ 4K integrator bundle

| FEATURE SUMMARY | DESCRIPTION |
|---|---|
| Smart presentations | • Supports dual screens for video and content<br>• Supports dual content sources for local meetings<br>• View whiteboard content and annotations shared from a Webex Board, Webex Desk Pro, or the Webex App; participate in whiteboarding sessions through the Webex App<br>• 4K content sharing (local 30 fps, remote 5 fps)<br>• Wired or wireless content sharing<br>• PresenterTrack: intelligent face and upper body detection and tracking allows for keeping presenters visible in the video conference and at a high zoom level while they move around in a predefined presentation area |
| Smart integrations | • Automatic screen and display integration through HDMI Consumer Electronics Control (CEC)<br>• Pair with up to two flat-panel screens to view remote participants and content<br>• Supports Wi-Fi<br>• Control system integration: Control peripherals such as lights and blinds through the Webex Room Navigator |
| Built for cloud and premises | • Flexibility to register on the premises or to Webex in the cloud<br>• Hardware is optimized to run on a cloud platform for great experiences in shared rooms and spaces with easy access to hosted conferences |

## An affordable way to purchase hardware

Webex Hardware as a Service provides a new way to purchase hardware with a simple, scalable, and flexible way to pay. Stay up to date with the latest models of Cisco IP phones and Webex devices to enhance collaboration and create workspaces for the future. And get ready for all the power of Cisco's unified cloud platform.
Learn more about Webex Hardware as a Service and the devices available.

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# Webex Room Kit Plus PTZ 4K Integrator Bundle prominent features and differentiators

## Bring more intelligence and equal collaboration experiences to your meeting space

Part of the Webex devices portfolio, the Webex Room Kit Plus PTZ 4K bundle enables users to fully realize a high-definition experience and provide superior video quality. Designed specifically for premium video conferencing, the PTZ 4K Camera provides crystal-clear, true-to-life quality for interaction and collaboration. It is optimized for use with Webex Codec Plus, and works seamlessly with Webex Room Navigator for smart camera control. The components of the Room Kit Plus PTZ 4K are fully managed IT assets with centralized device management and insights in Webex Control Hub.

The Webex Room Kit Plus PTZ 4K bundle can augment the video collaboration experience in the following use cases:

- **Enhanced video experience** - Upgrade from your legacy telepresence system to a powerful and intelligent video collaboration bundle for your larger collaboration spaces.
- **Build your own room system** - Use a single pan-tilt-zoom camera for imaging or combine the PTZ 4K Camera with an intelligent Webex Quad Camera or SpeakerTrack 60 Camera to take the meeting experience to a new level with crystal-clear close-ups, automatic face detection and framing, and speaker tracking capabilities.
- **Intelligent boardrooms and meeting spaces** - Give your presenters the freedom to move around and present more naturally while ensuring remote meeting attendees don't lose sight of active speakers. The integration bundle is powered by sophisticated, AI-based presenter detection, framing, and tracking technology.
- **Hybrid court hearings** - Benefit from uncompromised video quality and improved visibility for remote participants when joining courtroom hearings via video conferencing.
- **Hybrid education** – Provide a high-quality video experience and improved visibility of the presenter for remote students joining classrooms, auditoriums, and lecture theaters via video conferencing.

# Product sustainability

Information about Cisco's Environmental, Social, and Governance (ESG) initiatives and performance is provided in Cisco's Corporate Social Responsibility (CSR) and sustainability reporting.

Table 2. Cisco environmental sustainability information

| SUSTAINABILITY TOPIC | REFERENCE |
|---|---|
| Information on product-material-content laws and regulations | Materials |
| Information on electronic waste laws and regulations, including our products, batteries, and packaging | WEEE compliance |

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Table 2. Cisco environmental sustainability information

| SUSTAINABILITY TOPIC | | REFERENCE |
|---|---|---|
| | Information on product takeback and reuse program | Cisco Takeback and Reuse Program |
| General | Sustainability inquiries | Contact csr_inquiries@cisco.com |
| Material | Product packaging weight and materials | Contact environment@cisco.com |

# Product specifications

Table 3 lists the specifications for the Webex Room Kit Plus PTZ 4K and select specifications for relevant cameras and peripherals where noted.

Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| Software compatibility | • Cisco Collaboration Endpoint (CE) Software Version 9.14.5 or later, or Cisco Webex RoomOS |
| Default components in Webex Room Kit Plus PTZ 4K integrator bundle | • Webex Codec Plus<br>• Webex PTZ 4K Camera<br>• Webex Room Navigator control unit |
| Optional hardware components | • Cisco Table Microphone, Cisco Ceiling Microphone, wall mount for Codec Plus, various cables |
| Bandwidth | • Up to 6 Mbps point to point |

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Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| Minimum bandwidth for resolution and frame rate | H.264<br>• 720p30 from 768 kbps<br>• 720p60 from 1152 kbps<br>• 1080p30 from 1472 kbps<br>• 1080p60 from 2560 kbps |
| Firewall traversal | • Cisco Expressway™ technology<br>• H.460.18, H.460.19 firewall traversal |
| Video standards | • H.264, H.265, and H.263 for TANDBERG™ MXP interoperability only |
| Video inputs | • One HDMI input supports formats up to a maximum 1080p60<br>• Two HDMI inputs support formats up to a maximum 4K (3840 x 2160) at 30 fps, including HD1080p60<br>• Extended Display Identification Data (EDID)<br>• Consumer Electronics Control (CEC) 2.0 |
| Video outputs | • 2 HDMI outputs support formats up to 3840 x 2160@60 fps (4Kp60)<br>• Consumer Electronics Control (CEC) 2.0 |
| Encode and decode | • Main video: Full HD 1080p60<br>• Presentation channel: UHD 4K 2160p5, including 1080p30 and 720p60 |
| Audio standards | • G.711, G.722, G.722.1, G.729, AAC-LD, and Opus |
| Audio features | • High-quality 20-kHz audio<br>• Prepared for inductive loop (line out)<br>• Automatic Gain Control (AGC)<br>• Automatic noise reduction<br>• Active lip synchronization |

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Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| Audio inputs | • Three microphones, 4-pin mini-jack<br>• Embedded audio on two HDMI inputs |
| Audio outputs | • 1 line out mini-jack (stereo) (Codec Plus)<br>• Embedded audio on one HDMI output<br>• HDMI input #1 supports Audio Return Channel (ARC) |
| PresenterTrack | • Intelligent face and upper body detection and tracking allows for keeping presenters visible in the video conference<br>• Once the presenter appears in the “trigger zone”, the pan-tilt-zoom camera follows him/her with best overview, framing and optimal zoom level, allowing the presenter to move around within the defined stage area and remain visible for remote participants. |
| Speaker tracking (Quad Camera, SpeakerTrack 60) | • The Room Kit Plus PTZ 4K is also compatible and can be paired with the Webex SpeakerTrack 60 Camera or the Webex Quad Camera bar as well for intelligent framing and speaker tracking capabilities.<br>• Quad Camera offers 6-element microphone array for accurate speaker tracking<br>• Quad Camera can support group framing feature with 5x zoom capability<br>• SpeakerTrack 60 can support close-up feature with 20x zoom capability |
| Dual stream | • H.239 (H.323) dual stream<br>• BFCP Session Initiation Protocol (SIP) dual stream<br>• Support resolutions up to 3840 x 2160p5 (4Kp5), 1080p30 and 720p60 |
| Wireless sharing | • Webex clients (up to 3840 x 2160p5)<br>• Cisco Intelligent Proximity client (up to 1920 x 1080p5) |

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Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| MultiSite features (embedded multipoint) (optional upgrade) | • Adaptive SIP/H.323 MultiSite:<br>– 3-way resolution up to 1080p30 plus content up to 4Kp5<br>– 4-way resolution up to 720p30 plus content up to 4Kp5<br>• Full individual audio and video transcoding<br>• H.323/SIP/VoIP in the same conference<br>• Support for presentation (H.239, BFCP) from any participant at resolutions up to 3840 x 2160p5<br>• Best impression (automatic continuous presence layouts)<br>• Encryption and dual stream from any site |
| Protocols | • H.323<br>• SIP<br>• Webex<br>• ISDN PRI/BRI using the optional ISDN Link |
| Embedded encryption | • H.323 and SIP point to point<br>• Standards-based: H.235 v3 and Advanced Encryption Standard (AES)<br>• Automatic key generation and exchange |
| IP network features | • DNS lookup for service configuration<br>• Differentiated Services (DiffServ) (Quality of Service [QoS])<br>• IP-adaptive bandwidth management (including flow control)<br>• Automatic gatekeeper discovery<br>• Dynamic playout and lip-sync buffering<br>• H.245 Dual-Tone Multifrequency (DTMF) tones in H.323<br>• DTMF tones in SIP, RFC 4733<br>• Date and time support using Network Time Protocol (NTP)<br>• Uniform Resource Identifier (URI) dialing<br>• Dynamic Host Configuration Protocol (DHCP)<br>• 802.1X network authentication<br>• 802.1Q Virtual LAN<br>• 802.1p [QoS and Class of Service (CoS)]<br>• Cisco Media Assure and ClearPath, including packet loss-based downspeeding |

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Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| Call control | • Cisco Collaboration Cloud / Webex<br>• Cisco Unified Communications Manager (UCM)<br>– Native registration UCM<br>– Requires UCM Version 10.5.2 or later with device pack for Room Kit Plus<br>• Cisco Expressway<br>– Native registration with Expressway<br>• Webex<br>• Third-party H.323 gatekeepers and standards-based SIP proxies |
| IPv6 network support | • Single call stack support for both H323 and SIP<br>• Dual-stack IPv4 and IPv6 for DHCP, SSH, HTTP, HTTPS, DNS, and DiffServ<br>• Support for static IP address assignment, stateless auto-configuration, and DHCP v6 |
| Security features | • Management using HTTPS and SSH<br>• IP administration password<br>• Password to access administration features on the Cisco Webex Room Navigator controller<br>• Disable IP services<br>• Network settings protection |
| Certificate management | • Certificate Authority Proxy Function (CAPF) support for additional security<br>• Manufacturer-Installed Certificates (MIC)<br>• Locally Significant Certificates (LSC)<br>• X.509 Digital Certificates (DER encoded binary); both DER and Base-64 formats are acceptable for the client and server certificates; certificates with a key size of 1024, 2048, and 4096 are supported |

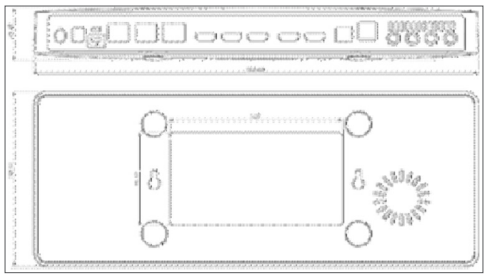
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Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| Network interfaces Codec Plus | • 1 Ethernet (RJ-45) 10/100/1000 for LAN<br>• 1 Ethernet (RJ-45) 10/100/1000 for direct pairing with camera (camera control)<br>• 1 Ethernet (RJ-45) 10/100/1000 with PoE, 1 dedicated for direct pairing with the Webex Room Navigator<br>• Wi-Fi 802.11a/b/g/n/ac 2.4 GHz and 5 GHz for LAN<br>• 2x2 Multiple Input and Multiple Output (MIMO)<br><br>**Note:** Due to compliance regulations, it is required that 802.11d is enabled in the access point for the product to operate properly within 5725 MHz – 5875 MHz.<br><br>Using a Wi-Fi connection is a flexible option; however an Ethernet connection is always preferred for high performance. |
| Other interfaces | • 1xUSB A port, USB-B, uUSB, factory reset pinhole |
| Power supply | • 100 to 240 VAC, 50/60 Hz, 12V DC input<br>• Average 20 W, peak 70 W |
| Operating temperature and humidity | • 0° to 35°C (32° to 95°F) ambient temperature<br>• 10% to 90% Relative Humidity (RH) |
| Storage and transport temperature | • -20° to 60°C (-4° to 140°F) at RH 10% to 90% (noncondensing) |
| Locking mechanism | • Kensington security lock |

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Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| Dimensions | <br>• Codec Plus:<br>– Width: 14.1 in. (35.9 cm)<br>– Height: 1.7 in. (4.3 cm)<br>– Depth: 5.6 in. (14.3 cm)<br>– Weight: 3.9 lb. (1.77 kg)<br>• PTZ 4K Camera:<br>– Width: 6.3 in. (15.8 cm)<br>– Height (at max tilt): 7.0 in. (17.7 cm)<br>– Depth: 8.0 in. (20.0 cm)<br>– Weight: 3.75 lb (1.7 kg) |
| Webex PTZ 4K Camera overview | • 1920 x 1080 at 60 fps / 3840 x 2160 at 30 fps resolution<br>• Zoom 240x total<br>– 20x optical zoom<br>– 12x digital zoom<br>• Pan and tilt<br>– Pan range: +/- 170 degrees<br>– Tilt range: -20 degrees to +90 degrees<br>• Field of View (FoV)<br>– Horizontal FoV: 70 degrees<br>• 1.0 m to infinity (wide) focus distance<br>• F-value: 2.0 – 3.8<br>• Camera control: Visca over IP (LAN port)<br>• Focus, white balance, and brightness: Manual or automatic<br>• Video interfaces<br>– HDMI 2.0<br>• Power<br>– 12V/3A<br>– 100 to 120/200 to 240 VAC, 50/60 Hz<br>– PoE+ (IEEE802.3at compatible)<br>Must be used with power supply FSP040-RHAN3, Phihong POE29U-1AT(PL) or Microsemi PD-9001GR/AT/AC<br>• Available with wall mount and upside-down ceiling mount |

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Table 3. Product specifications

| SPECIFICATION | DESCRIPTION |
|---|---|
| Approvals and compliance | Regulatory compliance<br>• Directive 2014/30/EU (EMC Directive)<br>• Directive 2014/53/EU (Radio Equipment Directive)<br>• Directive 2011/65/EU (RoHS)<br>• Directive 2002/96/EU (WEEE)<br>• NRTL approved (Product Safety)<br>• FCC Listed (Radio Equipment)<br>Standards<br>• Radio: EN 300 328, EN 301 893, EN 300 440<br>• EMC: EN 301 489-1 and -17, EN 55032 - Class A, EN 55024<br>• Safety: EN 60950-1, EN 62479, EN 62311<br>• FCC CFR 47 Part 15B (EMC) - Class A<br>• FCC CFR 47 Part 15C (RF)<br>• FCC CFR 47 Part 15E (RF)<br>Please check the Product Approval Status Database for approval documents per country. |

# Ordering information

To place an order, contact your local Cisco representative and refer to Table 4.

Table 4. Ordering information

| PRODUCT NAME | PART NUMBER | COMPLIANCE MODEL NUMBER |
|---|---|---|
| Webex Room Kit Plus PTZ 4K – bundle SKU | CS-KITPLPTZ4K-K9 | - |
| Cisco Codec Plus | CS-CODEC-PLUS+ | TTC7-25 |
| Webex PTZ 4K Camera | CS-CAM-PTZ4K+ | EVI-X200C |

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Table 4. Ordering information

| PRODUCT NAME | PART NUMBER | COMPLIANCE MODEL NUMBER |
|---|---|---|
| Webex Room Navigator control unit | CS-T10-TS+ | TTC5-15 |
| **Software options – ordered separately** | | |
| Remote monitoring | L-KIT-RM (L-TP-RM) | - |
| MultiSite (embedded multipoint) | L-KITPLUS-MS | - |
| **Hardware options – ordered separately** | | |
| Webex PTZ 4K Camera power supply | PSU-12VDC-40W2= | - |
| Webex PTZ 4K Camera wall mount bracket | CS-PTZ4K-BRKT= | - |
| Power injector | AIR-PWRINJ6 | - |
| **Spares** | | |
| Cisco Codec Plus | CS-CODEC-PLUS= | TTC7-25 |
| Webex PTZ 4K Camera | CS-CAM-PTZ4K= | EVI-X200C |

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Cisco and our partners provide a broad portfolio of intelligent, personalized services and support that can help you realize the full value of your Cisco Collaboration investment by increasing business agility and network availability. Our portfolio of services helps you accelerate business innovation through a network-based collaboration platform that enables businesses to collaborate anywhere, at any time.

For more information about these services, visit our Collaboration Services website.

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Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.



For more information
Learn more about the Webex Room Kit Plus
Learn more about the Webex PTZ 4K Camera
Download the Webex App

Date January 2022

C78-744987-02

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webex by cisco

# Webex PTZ 4K Camera




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webex by CISCO

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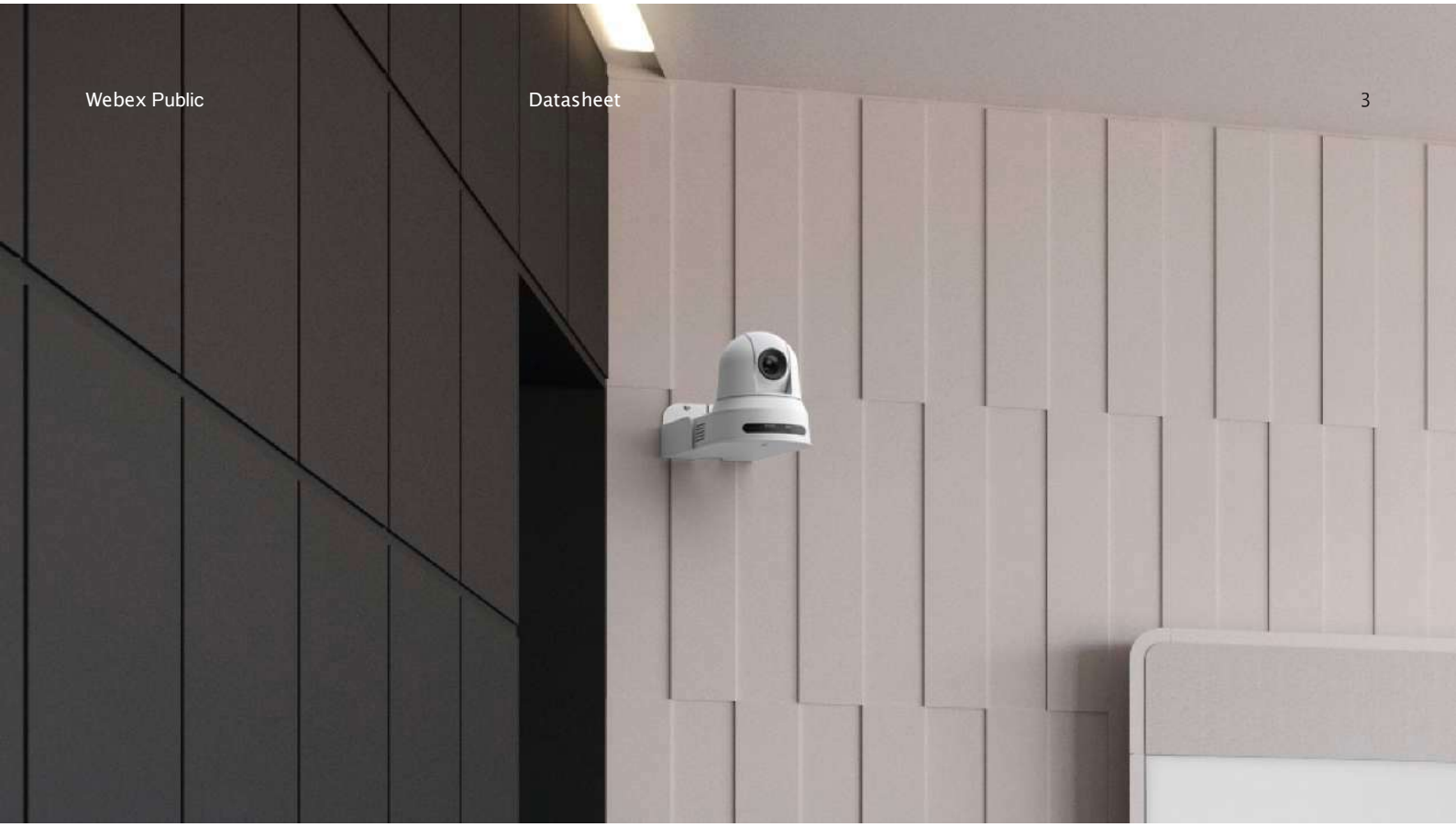
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# The Webex® PTZ 4K Camera is a premium pan-tilt-zoom camera that provides superior video quality, powerful zoom capabilities, intelligent AI-based features, and flexibility for optimized video collaboration experiences.

## Product overview

Webex PTZ 4K Camera is a premium pan-tilt-zoom camera that provides a high-quality imaging solution for video conferencing and maximum flexibility for larger conference rooms. It seamlessly supports meeting spaces where you need special camera placement, want to view objects close up, or view a wide area with pan-tilt-zoom capability.

The camera can be easily connected to your video codec over an HDMI video interface and flexibly mounted on the wall or on the ceiling of the conference or training room to provide improved visibility and an inclusive meeting experience for remote participants. It is a powerful solution for integration into larger collaboration rooms, bringing advanced pan-tilt capability and an uncompromised video collaboration experience into conference meeting rooms, boardrooms, courtrooms, and lecture theatres.

Featuring a powerful zoom capability, Webex PTZ 4K Camera provides high-quality video for close-up views and framing of distant objects, prototypes, and the presenter or speakers who are sitting on the far end. Combined with Codec Pro or Codec Plus, it features AI-powered face and upper-body detection to enable natural interactions that remote participants can follow just like in-person attendees. Wherever you need to work and meet, the PTZ 4K Camera allows presenters move around more freely by detecting, framing, and tracking them as they stand to present, and as they naturally move around in front of the room, as if they were on stage.

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Figure 1. Webex PTZ 4K Camera



# Features and benefits

Table 1. Features and benefits

| FEATURE | BENEFIT |
|---|---|
| 4K Ultra HD video | Provides superior video with outstanding clarity, rich colors, great smoothness, superb resolution and frame rate<br><br>Enables inclusive video collaboration for remote participants |
| 240x total zoom | Helps ensure the best view at all times with high-quality video output for close-up and framing of distant objects and speakers |
| PresenterTrack | Artificial intelligence-based face and upper body detection and tracking allows for keeping presenters visible in the video conference and at a high zoom level while they move around in a predefined presentation area |
| Flexible mounting | Can be installed and mounted on the wall or even on the ceiling with upside-down mounting in larger spaces and rooms with special camera placement requirements |
| Camera control | Allows you to drive the pan-tilt-zoom for the best overviews and store preset positions for instant access to specific views using Webex Room Navigator |

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Table 1. Features and benefits

| FEATURE | BENEFIT |
|---|---|
| Device inventory | Enables easy device management for administrators on Webex Control Hub when connected to a codec |
| Firmware upgrade | Supports remote firmware upgrades and troubleshooting |

# Prominent feature

## Bring more intelligence and equal collaboration experiences to your meeting space

Part of the Cisco® collaboration peripherals portfolio, the Webex PTZ 4K Camera enables users to fully realize a high-definition experience and provide superior video quality. Designed specifically for video conferencing, the camera provides crystal-clear, true-to-life quality for interaction and collaboration. It is ideal for use with Webex Codec Pro and Codec Plus, and works seamlessly with Webex Room Navigator for smart camera control. Connected to a video codec, the Webex PTZ 4K Camera is a fully managed IT asset with centralized device management and insights in the Control Hub.

The Webex PTZ 4K Camera can augment the video collaboration experience in the following use cases:

- **Upgrade video** – The camera upgrades an existing telepresence camera to high-quality 4K video and powerful zoom options for your larger collaboration spaces.
- **Extend video** – Used as an additional camera alongside your Webex Room Kit Plus or Room Kit Pro bundle, the PTZ 4K Camera can take the meeting experience to a new level with crystal-clear close-ups on distant objects and participants.
- **Intelligent boardrooms and meeting spaces** – Let your presenters to move around and present more naturally while ensuring remote meeting attendees don't lose sight of active speakers, powered by sophisticated, AI-based presenter detection, framing, and tracking technology.
- **Hybrid court hearings** – The PTZ 4K Camera provides uncompromised video quality and improved visibility for remote participants when joining courtroom hearings via video conferencing.
- **Hybrid education** – Provide a high-quality video experience and improved visibility of the presenter for remote students joining classrooms and lecture theaters via video conferencing.

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# Product specifications

Table 2. Webex PTZ 4K Camera specifications

| SPECIFICATION | WEBEX PTZ 4K CAMERA |
|---|---|
| Product ID | CS-CAM-PTZ4K= |
| Resolution | 1920 x 1080 at 60 fps<br>3840 x 2160 at 30 fps |
| Zoom | 20x optical zoom + 12x digital zoom<br>240x total zoom |
| Pan and tilt | Pan range: +/- 170 degrees<br>Tilt range: -20 degrees to +90 degrees<br>Pan speed: 1.1 degree/sec ~ 300 degrees/sec<br>Tilt speed: 1.1 degree/sec ~ 126 degrees/sec |
| Field of View (FoV) | Horizontal FoV: 70° |
| Focus distance | 1.0 m to infinity (wide) |
| F-value | 2.0 - 3.8 |
| Camera control | Visca over IP (LAN port) |
| Focus, white balance, and brightness | Manual or automatic |
| Video interfaces | HDMI 2.0 |

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Table 2. Webex PTZ 4K Camera specifications

| SPECIFICATION | WEBEX PTZ 4K CAMERA |
|---|---|
| Power | 12V/3A<br>100 to 120/200 to 240 VAC, 50/60 Hz<br>PoE+ (IEEE802.3at compatible)<br>Must be used with power supply FSP040-RHAN3, Phihong POE29U-1AT(PL) or Microsemi PD-9001GR/AT/AC |
| Operating temperature and humidity | 0° to 40°C (32° to 104°F) ambient temperature<br>20% to 80% relative humidity (RH) |
| Storage and transport temperature | -20° to 60°C (-4° to 140°F) at RH 20% to 95% (noncondensing) |
| Dimensions | Width: 6.3 in. (15.8 cm)<br>Height (at max tilt): 7.0 in. (17.7 cm)<br>Depth: 8.0 in. (20.0 cm)<br>Weight: 3.75 lb (1.7 kg) |
| Network interfaces | One LAN/Ethernet<br>(RJ-45) 10/100 Mbit - |

# Regulatory compliance

- Directive 2014/30/EU (EMC Directive)
- Directive 2011/65/EU (RoHS)
- Directive 2002/96/EU (WEEE)
- NRTL approved (Product Safety)

# Standards

- EMC: EN 55032 - Class A, EN 55035
- Safety: EN 62368-1
- FCC CFR 47 Part 15B (EMC) - Class A

Please check product approval status database https://www.ciscofax.com/ for approval documents per country.

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# Ordering information

To place an order, visit the Cisco Ordering homepage. The below table provides ordering information.

Table 3. Ordering information

| PRODUCT NAME | PART NUMBER | COMPLIANCE MODEL NUMBER |
|---|---|---|
| Webex PTZ 4K Camera | CS-CAM-PTZ4K= | EVI-X200C |
| Webex PTZ 4K Camera Power Supply | PSU-12VDC-40W2= | - |
| Webex PTZ 4K Camera Wall Mount Bracket | CS-PTZ4K-BRKT= | - |
| Webex PTZ 4K Camera Ceiling Mount Bracket | CS-PTZ4K-CLNGMNT | - |
| **Bundle options** | | |
| Webex Room Kit Plus with Webex PTZ 4K Camera –Bundle SKU | CS-KITPLPTZ4K-K9 | - |
| Webex Room Kit Pro with Webex PTZ 4K Camera –Bundle SKU | CS-KITPRO-PTZ4K-K9 | - |

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# Product sustainability

Information about Cisco's Environmental, Social and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability reporting.

Table 4. Cisco environmental sustainability information

| SUSTAINABILITY TOPIC | | REFERENCE |
|---|---|---|
| General | Information on product-material-content laws and regulations | Materials |
| | Information on electronic waste laws and regulations, including our products, batteries and packaging | WEEE Compliance |
| | Information on product takeback and resuse program | Cisco Takeback and Reuse Program |
| | Sustainability Inquiries | Contact: csr_inquiries@cisco.com |
| Material | Product packaging weight and materials | Contact: environment@cisco.com |

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For more information

For more information about Webex cameras, or contact your loca Cisco account representative or authorized Cisco partner.

Date May 2022

C78-744958-03

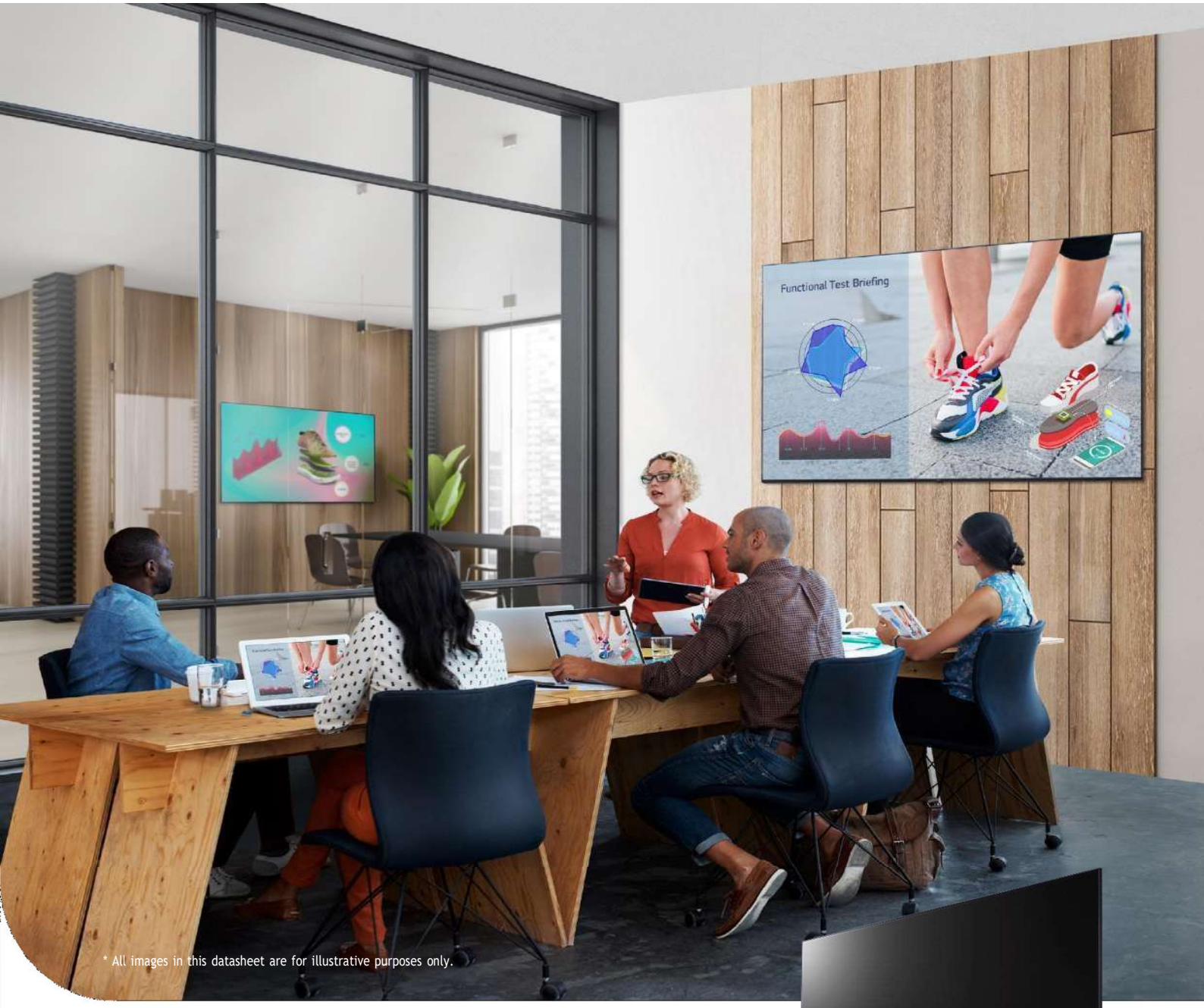
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* All images in this datasheet are for illustrative purposes only.

**UHD Signage** UL3J-B

# LG webOS UHD Signage

- Superb Picture Quality with Ultra HD Resolution
- Sophisticated Slim Design
- High-Performance with webOS 6.0
- Various Sensor Connection
- Compatible with LG One:Quick Share
- Compatible with AV Control Systems

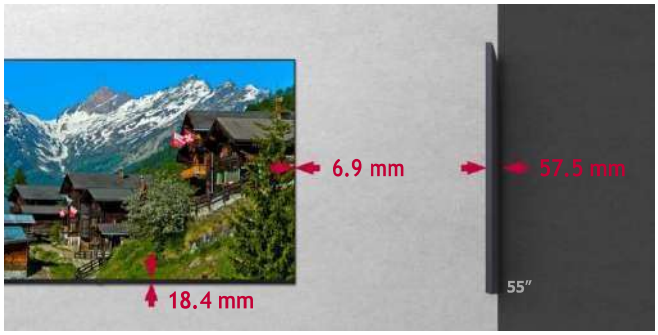
| UL3J-B | |
|---|---|
| Inch | 86” / 75” / 65” / 55” / 50” / 43” |
| Screen Resolution | 3,840 × 2,160 (UHD) |
| Operation Time | 16 Hours / 7 Days |
| Brightness | 86” / 75” : 330 nits<br>65” / 55” / 50” : 400 nits<br>43” : 300 nits |
| LG Solution Compatibility | LG One:Quick Share, LG ConnectedCare, LG SuperSign CMS/Control, Promota App* |

* Not available for Europe/CIS Region



## Superb Picture Quality with Ultra HD Resolution

With the resolution of UHD, it makes the color and details of the contents vivid and realistic. In addition, the wide viewing angle applied with an IPS panel, provides clear contents.




## Sophisticated Slim Design

This series is thin in bezel size and thickness*, which saves space and enables easy installation. In addition, it increases the immersive experience from the screen and provides a sophisticated design, improving the décor of the space where the product is installed.

* Compared to LG's UL3G series




## High-Performance with LG webOS 6.0

LG webOS 6.0, upgraded in SoC* and web engine, is available on UL3J series for a smooth execution of several tasks. LG webOS smart signage platform enhances user convenience with intuitive GUI.**

* SoC : System On Chip
** GUI : Graphical User Interface




## Various Sensor Connection

LG webOS smart signage platform helps to easily provide value-added solutions* by supporting simple connections with external sensors** such as GPIO, NFC/RFID, temperature sensors, etc., via USB plug-in.

* e.g. showing specific promotional information according to weather change to store visitors
** External sensors need to be purchased separately and tested for compatibility with webOS platform.




## LG's Simple Advertisement Helper, Promota

Using LG's Promota* application, downloadable on a mobile device, you can easily create your own display contents. With Promota, you can add text and images to create an online profile for your business as well as deliver information such as event news, seasonal menus, promotions, and even more to your customers while recommending easy-to-use templates relevant to your industry.

* LG Promota is can be downloaded from the App Store and Google Play store. (Not available for Europe/CIS Region)




❶ Easy Pairing ❷ Plug and Play ❸ One Click for Wireless Screen Share

## LG's Wireless Screen Sharing Solution, LG One:Quick Share

LG One:Quick Share is a wireless screen sharing solution available through the UL3J series, USB transmission unit, and its app. You can simply share personal PC screen to the display with it's USB dongle button and embedded Wi-Fi*, and can adjust the basic setting values (volume, picture mode, auto bright, etc.) of the connected display without a remote control. Also, the Office Meeting Mode** helps you to display the agenda, note before the meeting starts.

* Users need to set up Soft AP enabled at Network Menu of the Signage.
** Users can enable Office Meeting Mode at EZ Setting Menu of the Signage.
*** LG One:Quick Share needs to be purchased separately.



## Remote Monitoring and Control

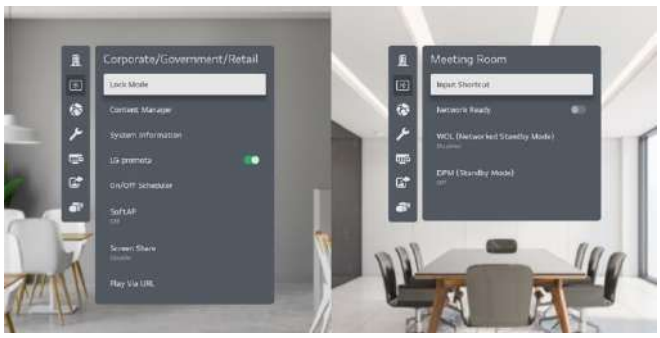
This web-based monitoring solution is user-friendly and allows the user to be at ease. It enables the user to have full access anywhere at anytime from their mobile phone & PC under network-accessible environment while having access to both current and past data. It allows the user to monitor the unit, make adjustments and control the unit remotely in real time.



## Compatible with AV Control Systems

The UL3J series supports Crestron Connected®* for high compatibility with professional AV controls to achieve seamless integration and automated control**, boosting business management efficiency.

* Initial setting from display is required for Crestron Connected® compatibility.
** Network based control




## Easy Menu Setup for Vertical Needs

UL3J series increases users' convenience by organizing frequently used menus* by industry.

* Pre-set Support Vertical : Corporate / Government / Retail, Meeting room



## Compatible with Video Conference System

For effective visual meeting, the UL3J series supports its compatibility with Cisco solutions that offers powerful and integrated control* for a smarter video conference.

* Using an HDMI cable connection (HDMI cable is optional)

## Easy Content Distribution & SW Update

UL3J series features embedded Wi-Fi making it easy to distribute content wirelessly and update Firmware under the same network.

## Wireless Access Point

UL3J series operates as a virtual router which can be an wireless access point for mobile devices.






## Built-in Speaker

Contents will be enriched with sound effects from built-in speakers, without the need for purchasing or installing external speakers.

## Real-time LG ConnectedCare Service

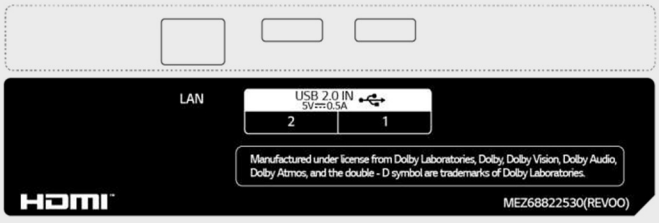
Maintenance is easy and fast with the optional LG ConnectedCare* service, a cloud service solution provided by LG. It remotely manages the status of displays in client workplaces for fault diagnosis and remote-control services, supporting the stable operation of clients' businesses.

* The availability of the 'LG ConnectedCare' service differs by region, and it needs to be purchased separately. So please contact the LG sales representative in your region for more details.

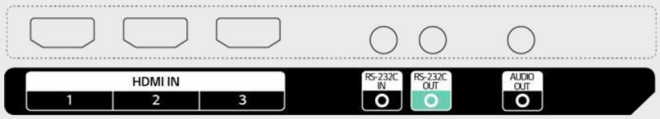
## CONNECTIVITY

### 86"

Rear

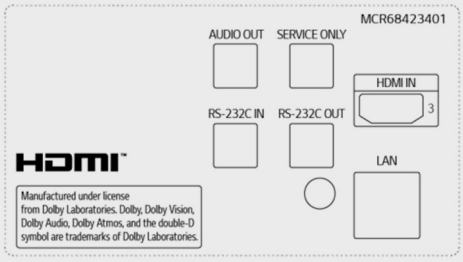



Side




### 75" / 65" / 55" / 50" / 43"

Rear

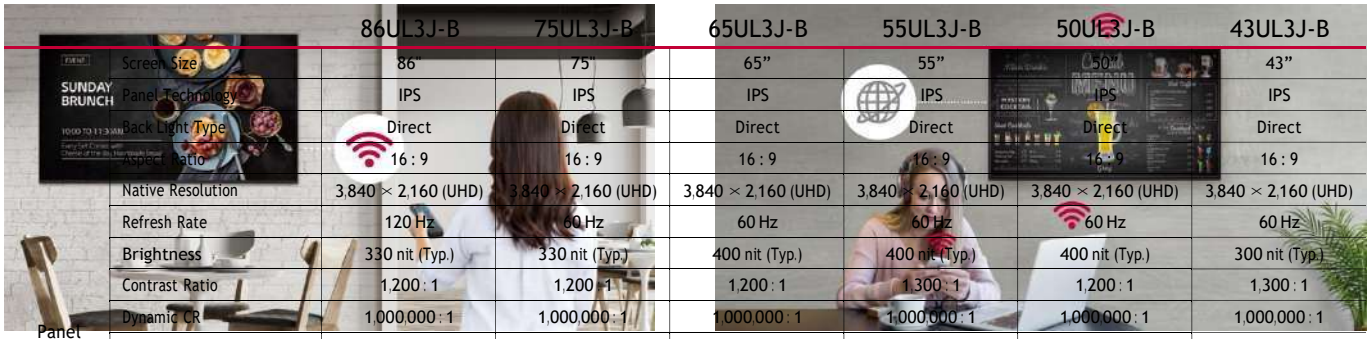



Side




* Jack Panels may differ from the above image, so please contact LG sales team to verify before ordering.

# SPECIFICATIONS




| | | 86UL3J-B | 75UL3J-B | 65UL3J-B | 55UL3J-B | 50UL3J-B | 43UL3J-B |
|---|---|---|---|---|---|---|---|
| Panel | Screen Size | 86” | 75” | 65” | 55” | 50” | 43” |
| | Panel Technology | IPS | IPS | IPS | IPS | IPS | IPS |
| | Back Light Type | Direct | Direct | Direct | Direct | Direct | Direct |
| | Aspect Ratio | 16 : 9 | 16 : 9 | 16 : 9 | 16 : 9 | 16 : 9 | 16 : 9 |
| | Native Resolution | 3,840 × 2,160 (UHD) | 3,840 × 2,160 (UHD) | 3,840 × 2,160 (UHD) | 3,840 × 2,160 (UHD) | 3,840 × 2,160 (UHD) | 3,840 × 2,160 (UHD) |
| | Refresh Rate | 120 Hz | 60 Hz | 60 Hz | 60 Hz | 60 Hz | 60 Hz |
| | Brightness | 330 nit (Typ.) | 330 nit (Typ.) | 400 nit (Typ.) | 400 nit (Typ.) | 400 nit (Typ.) | 300 nit (Typ.) |
| | Contrast Ratio | 1,200 : 1 | 1,200 : 1 | 1,200 : 1 | 1,300 : 1 | 1,200 : 1 | 1,300 : 1 |
| | Dynamic CR | 1,000,000 : 1 | 1,000,000 : 1 | 1,000,000 : 1 | 1,000,000 : 1 | 1,000,000 : 1 | 1,000,000 : 1 |
| | Color Gamut | DCI 80% | DCI 80% | DCI 80% | DCI 80% | DCI 80% | DCI 80% |
| | Viewing Angle (H × V) | 178 × 178 | 178 × 178 | 178 × 178 | 178 × 178 | 178 × 178 | 178 × 178 |
| | Color Depth | 1.07 Billion Colors (Advanced 8 bit) | 1.07 Billon Colors (8bit + FRC) | 1.07 Billon Colors (8bit + FRC) | 1.07 Billon Colors (10 bit) | 1.07 Billon Colors (10 bit (D)) | 1.07 Billon Colors (10 bit (D)) |
| | Response Time | 5 ms (G to G) | 8 ms (G to G) | 8 ms (G to G) | 8 ms (G to G) | 12 ms (G to G) | 8 ms (G to G) |
| | Surface Treatment (Haze) | 3% | 1% | 1% | 3% | 3% | 3% |
| | Life time | 30,000 Hrs (Min.) | 30,000 Hrs (Min.) | 30,000 Hrs (Min.) | 30,000 Hrs (Min.) | 30,000 Hrs (Min.) | 30,000 Hrs (Min.) |
| | Operation Hours (Hours/Day) | 16 / 7 | 16 / 7 | 16 / 7 | 16 / 7 | 16 / 7 | 16 / 7 |
| | Portrait / Landscape | No / Yes | Yes / Yes | Yes / Yes | Yes / Yes | Yes / Yes | Yes / Yes |
| Connectivity | Input | HDMI (3, HDCP 2.2/1.4), RS-232C In (4 Pin Phone-jack), RJ45 (LAN), USB 2.0 (2, Type A) | | | | | |
| | Output | Audio Out, RS-232C Out (4 Pin Phone-jack) | | | | | |
| Mechanical Specification | Bezel Color | Ashed Blue | Ashed Blue | Ashed Blue | Ashed Blue | Ashed Blue | Ashed Blue |
| | Bezel Width | Off : 6.9 mm (T/R/L), 18.4 mm (B) On : 15.9 mm (T/R/L), 19.9 mm (B) | Off : 7.9 mm (T/R/L), 18.4 mm (B) On : 13.9 mm (T/R/L), 19.9 mm (B) | Off : 6.8 mm (T/R/L), 18.4 mm (B) On : 12.8 mm (T/R/L), 19.9 mm (B) | Off : 6.9 mm (T/R/L), 18.4 mm (B) On : 12.8 mm (T/R/L), 19.9 mm (B) | Off : 7.3 mm (T/R/L), 18.4 mm (B) On : 12.8 mm (T/R/L), 19.9 mm (B) | Off : 6.9 mm (T/R/L), 18.4 mm (B) On : 12.8 mm (T/R/L), 19.9 mm (B) |
| | Weight (Head) | 45.2 kg | 31.4 kg | 21.5 kg | 14.0 kg | 11.7 kg | 8.8 kg |
| | Packed Weight | 57.7 kg | 40.3 kg | 27.5 kg | 18.8 kg | 14.4 kg | 10.9 kg |
| | Monitor Dimension (W×H×D) | 1,927 × 1,104 × 59.9 mm | 1,678 × 964 × 59.9 mm | 1,454 × 838 × 57.7 mm | 1,235 × 715 × 57.5 mm | 1,121 × 651 × 57.1 mm | 967 × 564 × 57.1 mm |
| | Carton Dimensions (W×H×D) (Box Outer Size) | 2,115 × 1,215 × 228 mm | 1,820 × 1,115 × 200 mm | 1,600 × 970 × 172 mm | 1,360 × 810 × 162 mm | 1,215 × 775 × 152 mm | 1,055 × 660 × 142 mm |
| | VESA™ Standard Mount Interface | 600 × 400 mm | 400 × 400 mm | 300 × 300 mm | 300 × 300 mm | 200 × 200 mm | 200 × 200 mm |
| Key Feature | Internal Memory 8 GB, Built-in Wi-Fi, Sensor (Temperature Sensor, Auto Brightness Sensor), Local Key Operation (Power On/Off Only), webOS 6.0, Embedded CMS (Local Contents Scheduling, Group Manager), USB Plug & Play, Fail Over, Background Image (Booting Logo Image, No Signal Image), Sync Mode (RS-232C Sync, Local Network Sync), Screen Share, Video Tag (4, Max One HDMI Input), Play via URL, Rotation (Screen Rotation, External Input Rotation), Gapless Playback, Setting Data Cloning, SNMP, ISM (Image Sticking Minimization) Method, Auto Set ID, Status Mailing, Control Manager, 3rd Party Compatibility (Cisco Certi (TBD, Oct-), Crestron Connected, Power (Smart Energy Saving, PM Mode, Wake on LAN, Network Ready), Beacon, HDMI-CEC[1], SI Sever Setting, webRTC, Proidiom | | | | | | |
| Environment Conditions | Operation Temperature | 0°C to 40°C (Portrait Scene : 0°C to 30°C) | 0°C to 40°C (Portrait Scene : 0°C to 35°C) | 0°C to 40°C (Portrait Scene : 0°C to 35°C) | 0°C to 40°C (Portrait Scene : 0°C to 35°C) | 0°C to 40°C (Portrait Scene : 0°C to 35°C) | 0°C to 40°C (Portrait Scene : 0°C to 35°C) |
| | Operation Humidity | 10% to 80% | 10% to 80% | 10% to 80% | 10% to 80% | 10% to 80% | 10% to 80% |
| Power | Power Supply | AC 100-240V~, 50/60Hz | AC 100-240 V~, 50/60 Hz | AC 100-240 V~, 50/60 Hz | AC 100-240 V~, 50/60 Hz | AC 100-240 V~, 50/60 Hz | AC 100-240V~, 50/60Hz |
| | Power Type | Built-in Power | Built-in Power | Built-in Power | Built-in Power | Built-in Power | Built-in Power |
| Power Consumption | Typ. / Max. | 220 W / 300 W | 155 W / 220 W | 130 W / 187 W | 105 W / 160 W | 105 W / 150 W | 80 W / 120 W |
| | BTU (British Thermal Unit) | 751 BTU/Hr (Typ.), 1,024 BTU/Hr (Max.) | 529 BTU/Hr (Typ.), 751 BTU/Hr (Max.) | 444 BTU/Hr (Typ.), 638 BTU/Hr (Max.) | 358 BTU/Hr (Typ.), 546 BTU/Hr (Max.) | 358 BTU/Hr (Typ.), 512 BTU/Hr (Max.) | 273 BTU/Hr (Typ.), 409 BTU/Hr (Max.) |
| | Smart Energy Saving | 154 W | 108.5 W | 91 W | 73.5 W | 66 W | 56 W |
| | DPM | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W |
| | Power off | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W |
| Sound | Speaker | Yes | Yes | Yes | Yes | Yes | Yes |
| Certification | Safety | CB / NRTL | CB | CB | CB | CB | CB |
| | EMC | FCC Class “A” / CE | FCC Class “A” / CE | FCC Class “A” / CE | FCC Class “A” / CE | FCC Class “A” / CE | FCC Class “A” / CE |
| | ErP / Energy Star | Yes (OldErP for Jordan) / No | Yes (OldErP for Jordan) / Yes | Yes (OldErP for Jordan) / Yes | Yes (OldErP for Jordan) / Yes | Yes (OldErP for Jordan) / Yes | Yes (OldErP for Jordan) / No |
| Software Compatibility | SuperSign CMS, SuperSign Control / Control+, SuperSign WB, SuperSign Media Editor, Promota (Not Available for EU/CIS), LG ConnectedCare[2] | | | | | | |
| Language | English, French, German, Spanish, Italian, Korean , Chinese (Simplified), Chinese (Original), Portugues (Brazil), Swedish, Finnish, Norwegian, Danish, Russian, Japanese, Portugues (Europe), Dutch, Czech, Greek, Turkish, Arabic, Polski | | | | | | |
| Accessory | Basic | Remote Controller, Power Cord, Regulation Book, Phone to D-Sub9 Gender, Cable Holder | | | | | |

1) Compatibility may differ by equipment.
2) The availability can differ by region.

* Specifications are subject to change without notice. Please make sure to check the product manual for details about product usage.



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10

LG
Life's Good

*OWNER'S MANUAL*

# *LG Digital Signage*

## *(MONITOR SIGNAGE)*

*Please read this manual carefully before operating your set and retain it for futurereference.*

*98UM5J-B*
*110UM5J-B*

# PRODUCT SPECIFICATIONS



*Without prior notice, all product information and specifications contained in this manual are subject to change toimprove the performance of the product.*

| **98UM5J-B** | | |
|---|---|---|
| Input/Output Ports | NETWORK, HEADPHONE, USB IN, SPDIF,<br>HDMI IN 1, HDMI IN 2, HDMI IN 3 | |
| Resolution | Recommended Resolution | 3840 x 2160 @ 60 Hz (HDMI1, HDMI2, HDMI3) |
| | Max Resolution | |
| Power Voltage | 100-240 V~ 50/60 Hz 6.0 A | |
| Environmental Conditions | Operating Temperature<br>Operating Humidity | 0 ˚C to 40 ˚C (32 ˚F to 104 ˚F)<br>10 % to 80 % (Condition for preventing condensation) |
| | Storage Temperature<br>Storage Humidity | -20 ˚C to 60˚C (-4 ˚F to 140 ˚F)<br>5 % to 85 % (Condition for preventing condensation)<br>* Product box packaging storage conditions |
| Power Consumption | On Mode | 560 W (Typ.) |
| | Sleep Mode / Standby Mode | ≤ 0.5 W |

| **110UM5J-B** | | |
|---|---|---|
| Input/Output Ports | NETWORK, HEADPHONE, USB IN, SPDIF,<br>HDMI IN 1, HDMI IN 2, HDMI IN 3 | |
| Resolution | Recommended Resolution | 3840 x 2160 @ 60 Hz (HDMI1, HDMI2, HDMI3) |
| | Max Resolution | |
| Power Voltage | 100-240 V~ 50/60 Hz 6.5 A | |
| Environmental Conditions | Operating Temperature<br>Operating Humidity | 0 ˚C to 40 ˚C (32 ˚F to 104 ˚F)<br>10 % to 80 % (Condition for preventing condensation) |
| | Storage Temperature<br>Storage Humidity | -20 ˚C to 60˚C (-4 ˚F to 140 ˚F)<br>5 % to 85 % (Condition for preventing condensation)<br>* Product box packaging storage conditions |
| Power | On Mode | 580 W (Typ.) |

| | | |
|---|---|---|
| Consumption | Sleep Mode / Standby Mode | ≤ 0.5 W |

| Model Name | Size (Width x Height x Thickness) (mm) | Weight (kg) |
|---|---|---|
| 98UM5J-B | 2198 x 1253 x 79.5 | 78 |
| | Size (Width x Height x Thickness) (inches) | Weight (lbs) |
| | 86.5 x 49.3 x 3.1 | 171.9 |
| Model Name | Size (Width x Height x Thickness) (mm) | Weight (kg) |
| 110UM5J-B | 2474 x 1408 x 99 | 80 |
| | Size (Width x Height x Thickness) (inches) | Weight (lbs) |
| | 97.4 x 55.4 x 3.8 | 176.3 |

*HDMI (PC) Support Mode*

| Resolution | Horizontal Frequency (kHz) | Vertical Frequency (Hz) | Note |
|---|---|---|---|
| 1366 x 768 | 49.1 | 60 | |
| 1280 x 960 | 60 | 60 | |
| 1280 x 800 | 49.5 | 60 | |
| 1280 x 1024 | 63.9 | 60 | |
| 1920 x 1080 | 67.5 | 60 | |
| 3840 x 2160 | 67.5 | 60 | |

*HDMI (DTV) Support Mode*

| Resolution | Horizontal Frequency (kHz) | Vertical Frequency (Hz) | Note |
|---|---|---|---|
| 1920 x 1080i | 28.125 | 50 | |
| 1920 x 1080i | 33.72 | 59.94 | |
| 1920 x 1080i | 33.75 | 60 | |
| 1920 x 1080p | 33.716 | 29.976 | |
| 1920 x 1080p | 33.75 | 30 | |
| 1920 x 1080p | 67.432 | 59.94 | |
| 1920 x 1080p | 67.5 | 60 | |
| 3840 x 2160p | - | 60 | |

| Wireless module (WCT2GM2511) Specifications | |
|---|---|
| Wireless LAN (IEEE 802.11a/b/g/n/ac) | |
| Frequency range (MHz) | Output power (Max.) (dBm) |
| 2400 to 2483.5 | 17 |
| 5150 to 5725 | 17 |
| 5725 to 5850 | 14 |
| Bluetooth | |
| Frequency range (MHz) | Output power (Max.) (dBm) |

- **Sistema de transmisión inalámbrica**

## VIA Connect²

Solución inalámbrica de presentación, colaboración y videoconferencia

| HDMI | Ethernet - RJ-45 | 4K/60 UHD (4:2:0)



VIA Connect² es una plataforma de presentación y colaboración inteligente, segura, inalámbrica y por cable que simplifica el trabajo real durante las reuniones y las clases. Con cualquier portátil o dispositivo móvil, los usuarios pueden ver, editar y comentar documentos en sesiones en tiempo real. Los participantes de la reunión pueden mostrar o transmitir videos completos e ininterrumpidos hasta 4K@60Hz desde su dispositivo, e incluso reproducir videos de YouTube® a máxima velocidad. Hasta cuatro participantes pueden compartir sus pantallas simultáneamente en la pantalla principal, ya sea utilizando la función de duplicación de la aplicación VIA, la duplicación de iOS a través de AirPlay ™, la duplicación de Windows y Android a través de Miracast ™ o la duplicación de ChromeBook. La solución puede gestionar la mayoría de los espacios de reunión de tamaño pequeño a mediano y es ideal para aulas y espacios de reunión. VIA Connect² es supercompacto (74x74mm) y fácil de instalar, con conectividad Wi-Fi y LAN integrada, e incluye un cifrado de 1024 bits líder en el sector para un uso seguro en la red interna

FEATURES

3rd party Security Certification



ca rá fiable - Una interfaz de usuario sencilla e intuitiva permite a los usuarios de dispositivos iOS ™, Android ™, Chromebook ™, PC y Mac ™ conectarse al instante a una pantalla principal. El Wi-Fi de 2,4GHz/5GHz y las antenas MIMO establecen y mantienen una conexión rápida y fiable

- Airplay, Miracast, a través del navegador

- La función VIA Versa permite a los usuarios conectarse de forma inalámbrica a la cámara de grado profesional y a los medios audiovisuales en sus espacios de reunión de forma fácil e instantánea

Potente función de seguridad - autenticación de usuario 802.1x, cifrado de 1024 bits, código de sala dinámico

Wi-Fi y LAN integradas

Amplia funcionalidad de colaboración - pizarra, uso compartido de archivos, visualización de la pantalla principal, chat, etc

Transmisión de vídeo de alta calidad - admite una resolución de hasta 4K@60Hz mediante la función multimedia de la aplicación VIA

Visualización simultánea - Cuatro participantes pueden presentar simultáneamente contenidos en la pantalla principal

Transmisión de vídeo en directo sin interrupciones - Transmite contenido en directo desde salas de reuniones, aulas y estudios mediante RTMP/RTMPS a todas las plataformas principales, como YouTube™, Kaltura™, Panopto™ y más

Entrada cableada HDMI de hasta 4K@60 - Permite el cableado, la conmutación automática, para conectar un ordenador o cualquier cámara, reproductor multimedia u ordenador que admita señales HDCP

USB inalámbrico - Admite micrófono, altavoz y cámara

Gestión basada en la nube - Perfectamente compatible con VIA Site Management (VSM)

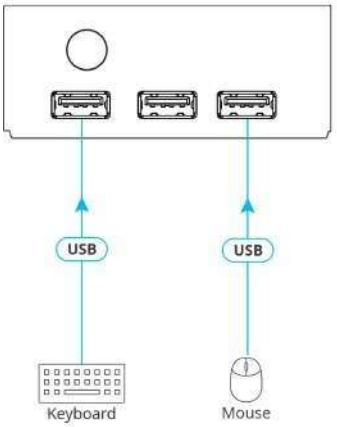
Instalación fácil y flexible - Con un factor de forma supercompacto, puede instalarse discretamente en la parte posterior de una pantalla, un proyector o casi en cualquier lugar

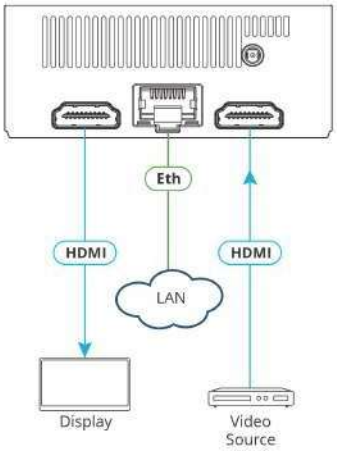
## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Ports | 1 Ethernet: En un conector RJ-45 |
| | 2 USB 3.0: En un conector USB tipo A hembra |
| | 1 USB 2.0: En un conector USB tipo A hembra |
| | 2 Pin connector: Video Switching control |
| Outputs | 1 HDMI 2.0: |
| Inputs | 1 HDMI 2.0: |
| Video | Resolución máxima: hasta 4K@60 para entrada y salida |
| | Cámaras de conferencia web probadas con la función VIA Versa: Logitech MeetUp, Logitech C270, Logitech BCC950, Logitech C525, Logitech Brio UHD PRO, Logitech C310, Logitech C922, Logitech Rally, Avaya HC020, Avaya HC050, Huddly GO, Yamaha CS700, Minrray MG100A, Microsoft Livecam HD–3000, TedGem 1080p, Vaddio HuddleSHOT, Yealink UVC80, Bose Videobar VB1, BIAMP Devio SCR–20, BIAMP Devio SCR–25,LUMENS B10U, LUMENS B11U, LUMENS B2U, MAXHUB — UCS10, Aver CAM340+, Aver VB342+, Yealink UVC30ROOM, Aver CAM340+, Avonic AV–CM44–VCUC–B PTZ, Konftel C50 PTZ |
| | Aplicaciones de videoconferencia probadas con la función VIA Versa Teams y Zoom |
| | Todos los nombres de marcas, nombres de productos y marcas comerciales son propiedad de sus respectivos dueños |
| Audio | Dispositivos de audio para conferencias web probados con la función VIA Versa Altavoz Aver VB432 (micrófono), Yamaha YVC-330 (altavoz, micrófono, pasarela telefónica Bluetooth), Yamaha YVC-1000 (altavoz, micrófono, pasarela telefónica Bluetooth), Nureva HDL300 (altavoz) |
| General | Procesador Intel® Gemini Lake QC SOC |
| | Memoria: LPDDR4 de 4 GB (2400) |
| | Almacenamiento: EMMC de 32 GB |
| | Redes 1 x Gigabit LAN Wi-Fi 802.11 ac/b/g/n de doble banda |
| | Sistema operativo: Linux |
| Power | Fuente de entrada: 12V CC |
| | Consumo 1.3A |
| Environmental Conditions | Temperatura de funcionamiento: 0° a +40°C (32° a 104°F) |
| | Temperatura de almacenamiento: –40° a +70°C (–40° a 158°F) |
| | Humedad: 10% a 90%, RHL sin condensación |
| Regulatory Compliance (Standards Compliance) | Seguridad: CE |
| Enclosure | Tipo: Aluminio |
| | Ventilación ventilación con disipador |
| | Kensington lock : |

| | |
|---|---|
| Accessories | Incluye Adaptador de corriente, cable de control de conmutación de video, montaje VESA |
| Product Dimensions | 7.00cm x 7.00cm x 3.34cm (2.76" x 2.76" x 1.31" ) W, D, H |
| Product Weight | 0.2kg (0.4lbs) approx |
| Shipping Dimensions | 49.00cm x 18.60cm x 58.80cm (19.29" x 7.32" x 23.15" ) W, D, H |
| Shipping Weight | 0.6kg (1.3lbs) approx |



- **Distribuidor HDMI 1:2**

# 1:2 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support

- > *Splits one HDMI® source to two outputs*
- > *Handles 4K60 4:4:4 and HDR video signals [1]*
- > *Fully compatible with HD 1080p, UHD 4K, and DCI 4K sources and displays*
- > *Handles 3D video and Deep Color*
- > *Handles Dolby® TrueHD, Dolby Atmos®, DTS HD®, DTS:X®, and uncompressed 7.1 linear PCM audio*
- > *Selectable handling of HDCP 2.2 or HDCP 1.4*
- > *EDID management options*
- > *Input and output video presence indication*
- > *No programming or control system required*
- > *Thin profile – less than one inch deep*
- > *Surface, shelf, or single rack rail mountable*
- > *External 100-240V universal power pack included*

The Crestron® HD-DA2-4KZ-E is a simple to use, high-performance 4K AV distribution amplifier designed to split a single HDMI® signal to feed two separate displays, switchers, and/or other devices. It provides full support for UHD and DCI 4K60 4:4:4 and HDR video, HDCP 1.4 or 2.2 copy protection, and high-bitrate 7.1 audio, to ensure optimal performance and compatibility for any HD or 4K video application. No programming or control system is required for operation.[1]

*For larger applications, refer to models HD-DA4-4KZ-E and HD-DA8-4KZ-E.*




## SPECIFICATIONS

### Video

Input Signal Type: HDMI w/HDR10, Deep Color, 3D, & 4K60 4:4:4 support [1] (DVI & Dual-Mode DisplayPort compatible [2])
Output Signal Type: HDMI w/HDR10, Deep Color, 3D, & 4K60 4:4:4 support [1] (DVI compatible [2])
Copy Protection: Selectable for HDCP 2.2, HDCP 1.4, or HDCP disabled

Maximum Resolutions:

| Scan Type | Resolution | Frame Rate | Color Sampling | Color Depth |
|---|---|---|---|---|
| Progressive | 4096x2160 DCI 4K & 3840x2160 4K UHD | 24 Hz | 4:4:4 | 36 bit |
| | | 30 Hz | 4:4:4 | 36 bit |
| | | 60 Hz | 4:2:2 | 36 bit |
| | | 60 Hz | 4:4:4 | 24 bit |
| | 2560x1600 WQXGA | 60 Hz | 4:4:4 | 36 bit |
| | 1920x1080 HD1080p | 60 Hz | 4:4:4 | 36 bit |
| Interlaced | 1920x1080 HD1080i | 30 Hz | 4:4:4 | 36 bit |

*NOTE: Common resolutions are shown; other resolutions are supported at pixel clock rates up to 600 MHz*

### Audio

Input Signal Type: HDMI (Dual-Mode DisplayPort compatible [2])
Output Signal Type: HDMI
Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS®, DTS-ES, DTS 96/24, DTS HD High Res, DTS HD Master Audio, DTS:X, LPCM up to 8 channels

### Communications

USB: USB 2.0 host; supports firmware update and custom EDID upload via a USB flash drive
HDMI: HDCP & EDID (does not pass CEC)
HDCP Version: Selectable for HDCP 2.2, 1.4, or OFF;
HDCP encrypted content is blanked in OFF mode
EDID Mode: Selectable for DEFAULT or COPY 1ST;

- The factory default EDID is 4K60 4:4:4 non-HDR video with 2-channel LPCM audio;
- The factory default EDID can be replaced with a custom EDID via USB;
- Sliding the switch from DEFAULT to COPY 1ST copies and stores the EDID from the device at OUTPUT 1 and passes it to the INPUT source device;
- Sliding the switch from COPY 1ST to DEFAULT erases the stored EDID and uses the factory default or custom EDID;

*Note: Changing the device at OUTPUT 1 will not update the stored EDID until the switch is moved to DEFAULT and back to COPY 1ST*

### Connectors

INPUT: (1) HDMI Type A connector, female;
HDMI digital video/audio input [1];
(DVI & Dual-Mode DisplayPort compatible [2])

OUTPUT 1 – 2: (2) HDMI Type A connectors, female;
HDMI digital video/audio outputs [1];
(DVI compatible [2])

SERVICE: (1) USB Type A connector, female;
USB 2.0 host port;
For firmware update and custom EDID upload via a USB flash drive

# HD-DA2-4KZ-E 1:2 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support




**HD-DA2-4KZ-E – Front View**




**HD-DA2-4KZ-E – Rear View**

24VDC 0.75A: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2407WU power pack included

## Controls & Indicators

PWR: (1) Bi-color LED, indicates operating power is supplied via the power pack; illuminates amber while booting, green when operating
SETUP: (1) Pushbutton and (1) red LED, restores factory settings
RESET: (1) Recessed pushbutton for hardware reset
INPUT: (1) Green LED, indicates video signal presence at the HDMI input
OUTPUT 1 – 2: (2) Green LEDs, each indicates video signal transmission at the corresponding HDMI output
HDCP: (1) 3-position slide switch, selects the HDCP version (OFF, 1.4, or 2.2)
EDID: (1) 2-position slide switch, selects the EDID mode (DEFAULT or COPY 1ST)

## Power

Power Pack (included): Input: 100-240 Volts AC, 50/60 Hz;
Output: 0.75 Amps @ 24 Volts DC;
Model: PW-2407WU
Power Consumption: 4.3 W (typical)

## Environmental

Temperature: 32° to 104° F (0° to 40° C)
Humidity: 10% to 90% RH (non-condensing)

## Enclosure

Chassis: Metal, black finish, with (2) integral mounting flanges
Mounting: Freestanding, surface mount, or attach to a single rack rail

## Dimensions

Height: 0.87 in (22 mm)
Width: 5.73 in (146 mm)
Depth: 4.67 in (119 mm)

## Compliance

CE, IC, FCC part 15 Class B digital device

## MODELS & ACCESSORIES

### Available Models

HD-DA2-4KZ-E: 1:2 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support

### Included Accessories

PW-2407WU: Wall Mount Power Pack, 24VDC, 0.75A, 2.1mm, Universal (Qty. 1 included)

### Available Accessories

CBL-HD Series: High-Speed HDMI® Cables

Notes:

1. 4K60 4:4:4 and HDR support requires the use of HDMI cables and couplers with a minimum TMDS bandwidth of 18 Gbps. If 4K60 4:2:0 or 4K30 4:4:4 performance is acceptable, cables and couplers with a minimum bandwidth of 10.2 Gbps may be used. Please be aware that bandwidth loss is cumulative, so performance may be reduced when inserting multiple cables and couplers inline.
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. CBL-HD-DVI interface cables are available separately.

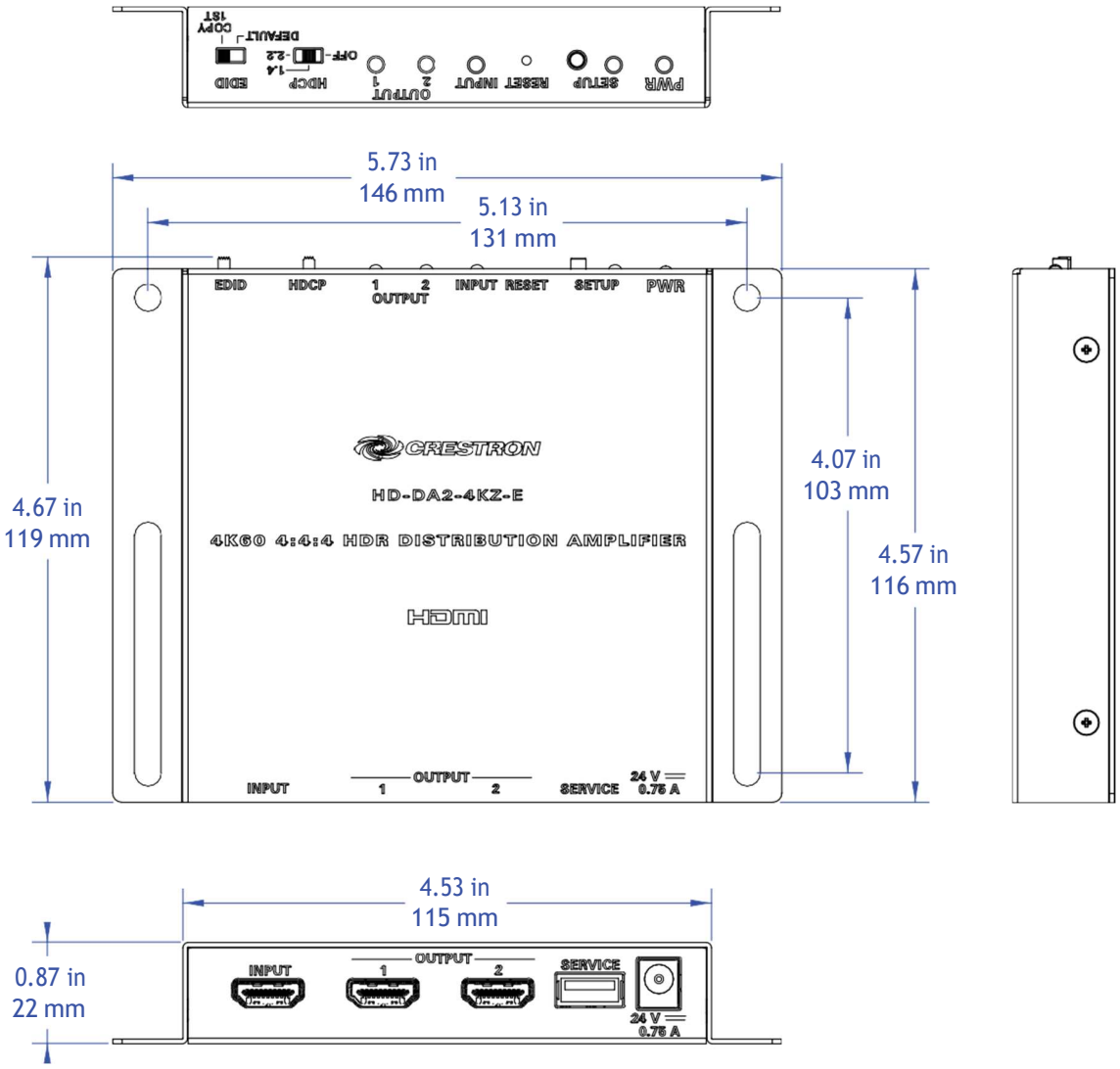
This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at https://www.crestron.com/How-To-Buy/Find-a-Representative or by calling 855-263-8754.

The specific patents that cover this and other Crestron products are listed online at https://www.crestron.com/legal/patents.

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# HD-DA2-4KZ-E 1:2 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support




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www.crestron.com

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*Specifications subject to change without notice. Revised 04/08/21*

- **Distribuidor HDMI 1:4**

# 1:4 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support

- > *Splits one HDMI® source to four outputs*
- > *Handles 4K60 4:4:4 and HDR video signals [1]*
- > *Fully compatible with HD 1080p, UHD 4K, and DCI 4K sources and displays*
- > *Handles 3D video and Deep Color*
- > *Handles Dolby® TrueHD, Dolby Atmos®, DTS HD®, DTS:X®, and uncompressed 7.1 linear PCM audio*
- > *Selectable handling of HDCP 2.2 or HDCP 1.4*
- > *EDID management options*
- > *Input and output video presence indication*
- > *No programming or control system required*
- > *Thin profile – less than one inch deep*
- > *Surface, shelf, or single rack rail mountable*
- > *External 100-240V universal power pack included*

The Crestron® HD-DA4-4KZ-E is a simple to use, high-performance 4K AV distribution amplifier designed to split a single HDMI® signal to feed up to four separate displays, switchers, and/or other devices. It provides full support for UHD and DCI 4K60 4:4:4 and HDR video, HDCP 1.4 or 2.2 copy protection, and high-bitrate 7.1 audio, to ensure optimal performance and compatibility for any HD or 4K video application. No programming or control system is required for operation.[1]

*For smaller or larger applications, refer to models HD-DA2-4KZ-E and HD-DA8-4KZ-E.*

## SPECIFICATIONS

### Video

Input Signal Type: HDMI w/HDR10, Deep Color, 3D, & 4K60 4:4:4 support [1] (DVI & Dual-Mode DisplayPort compatible [2])
Output Signal Type: HDMI w/HDR10, Deep Color, 3D, & 4K60 4:4:4 support [1] (DVI compatible [2])
Copy Protection: Selectable for HDCP 2.2, HDCP 1.4, or HDCP disabled

Maximum Resolutions:

| Scan Type | Resolution | Frame Rate | Color Sampling | Color Depth |
|---|---|---|---|---|
| Progressive | 4096x2160 DCI 4K & 3840x2160 4K UHD | 24 Hz | 4:4:4 | 36 bit |
| | | 30 Hz | 4:4:4 | 36 bit |
| | | 60 Hz | 4:2:2 | 36 bit |
| | | 60 Hz | 4:4:4 | 24 bit |
| | 2560x1600 WQXGA | 60 Hz | 4:4:4 | 36 bit |
| | 1920x1080 HD1080p | 60 Hz | 4:4:4 | 36 bit |
| Interlaced | 1920x1080 HD1080i | 30 Hz | 4:4:4 | 36 bit |

*NOTE: Common resolutions are shown; other resolutions are supported at pixel clock rates up to 600 MHz*

# HD-DA4-4KZ-E 1:2 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support




## Audio

Input Signal Type: HDMI (Dual-Mode DisplayPort compatible [2])
Output Signal Type: HDMI
Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS®, DTS-ES, DTS 96/24, DTS HD High Res, DTS HD MasterAudio, DTS:X, LPCM up to 8 channels

## Communications

USB: USB 2.0 host; supports firmware update and custom EDID upload via a USB flash drive
HDMI: HDCP & EDID (does not pass CEC)
HDCP Version: Selectable for HDCP 2.2, 1.4, or OFF;
HDCP encrypted content is blanked in OFF mode
EDID Mode: Selectable for DEFAULT or COPY 1ST;

- The factory default EDID is 4K60 4:4:4 non-HDR video with2-channel LPCM audio;
- The factory default EDID can be replaced with a custom EDIDvia USB;
- Sliding the switch from DEFAULT to COPY 1ST copies and stores the EDID from the device at OUTPUT 1 and passes it to the INPUTsource device;
- Sliding the switch from COPY 1ST to DEFAULT erases the storedEDID and uses the factory default or custom EDID;

*Note: Changing the device at OUTPUT 1 will not update the storedEDID until the switch is moved to DEFAULT and back to COPY 1ST*

## Connectors

INPUT: (1) HDMI Type A connector, female;
HDMI digital video/audio input [1];
(DVI & Dual-Mode DisplayPort compatible [2])

OUTPUT 1 – 4: (4) HDMI Type A connectors, female;
HDMI digital video/audio outputs [1];
(DVI compatible [2])

SERVICE: (1) USB Type A connector, female;
USB 2.0 host port;
For firmware update and custom EDID upload via a USB flash drive

# HD-DA4-4KZ-E 1:4 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support




**HD-DA4-4KZ-E – Front View**




**HD-DA4-4KZ-E – Rear View**

24VDC 0.75A: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2407WU power pack included

## Controls & Indicators

PWR: (1) Bi-color LED, indicates operating power is supplied via the power pack; illuminates amber while booting, green when operating
SETUP: (1) Pushbutton and (1) red LED, restores factory settings
RESET: (1) Recessed pushbutton for hardware reset
INPUT: (1) Green LED, indicates video signal presence at the HDMI input
OUTPUT 1 – 4: (4) Green LEDs, each indicates video signal transmission at the corresponding HDMI output
HDCP: (1) 3-position slide switch, selects the HDCP version (OFF, 1.4, or 2.2)
EDID: (1) 2-position slide switch, selects the EDID mode (DEFAULT or COPY 1ST)

## Power

Power Pack (included): Input: 100-240 Volts AC, 50/60 Hz;
Output: 0.75 Amps @ 24 Volts DC;
Model: PW-2407WU
Power Consumption: 5.5 W (typical)

## Environmental

Temperature: 32° to 104° F (0° to 40° C)
Humidity: 10% to 90% RH (non-condensing)

## Enclosure

Chassis: Metal, black finish, with (2) integral mounting flanges
Mounting: Freestanding, surface mount, or attach to a single rack rail

## Dimensions

Height: 0.87 in (22 mm)
Width: 8.09 in (206 mm)
Depth: 4.67 in (119 mm)

## Compliance

CE, IC, FCC part 15 Class B digital device

## MODELS & ACCESSORIES

### Available Models

HD-DA4-4KZ-E: 1:4 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support

### Included Accessories

PW-2407WU: Wall Mount Power Pack, 24VDC, 0.75A, 2.1mm, Universal (Qty. 1 included)

### Available Accessories

CBL-HD Series: High-Speed HDMI® Cables

Notes:

1. 4K60 4:4:4 and HDR support requires the use of HDMI cables and couplers with a minimum TMDS bandwidth of 18 Gbps. If 4K60 4:2:0 or 4K30 4:4:4 performance is acceptable, cables and couplers with a minimum bandwidth of 10.2 Gbps may be used. Please be aware that bandwidth loss is cumulative, so performance may be reduced when inserting multiple cables and couplers inline.
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. CBL-HD-DVI interface cables are available separately.

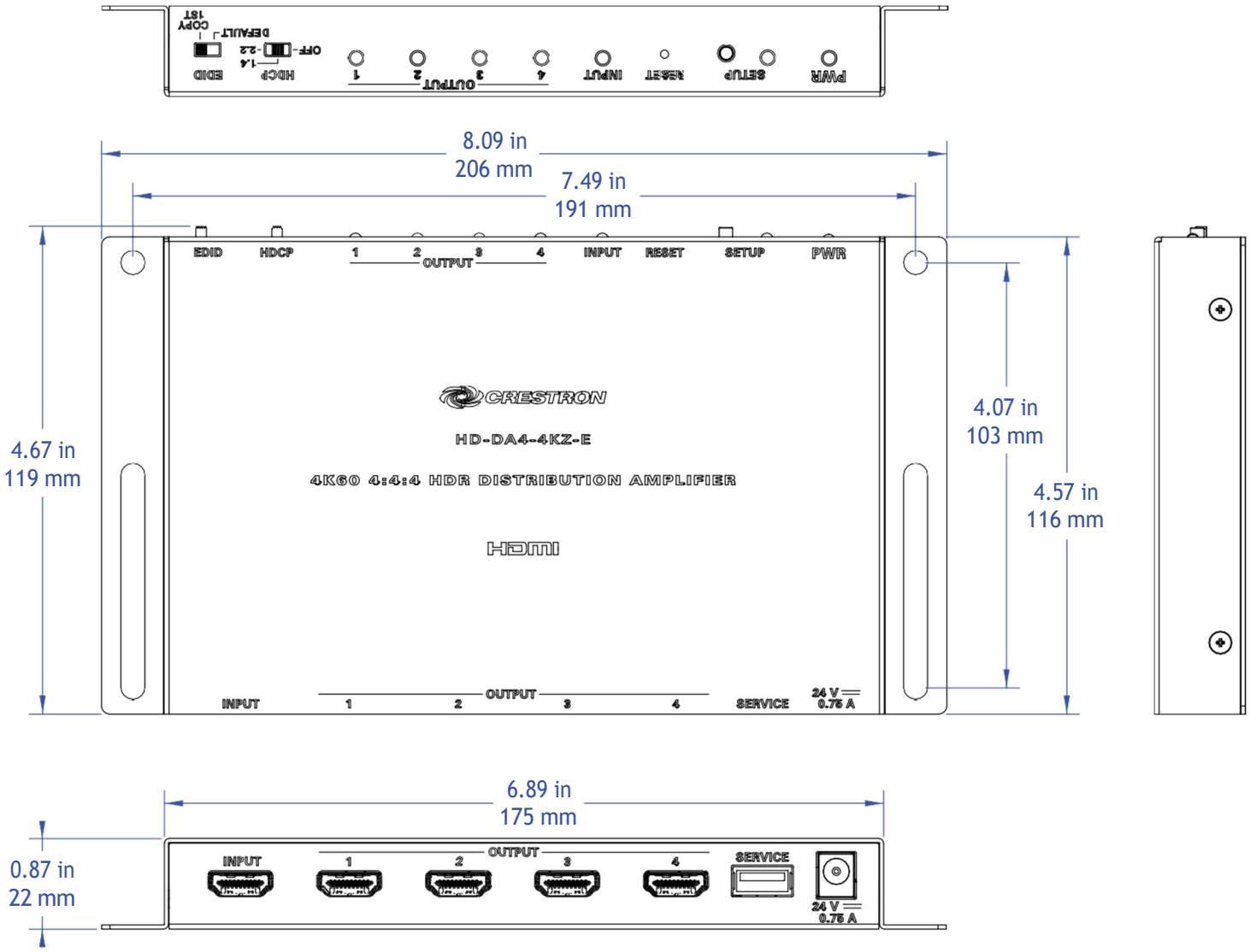
This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at https://www.crestron.com/How-To-Buy/Find-a-Representative or by calling 855-263-8754.

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# HD-DA4-4KZ-E 1:4 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support




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www.crestron.com

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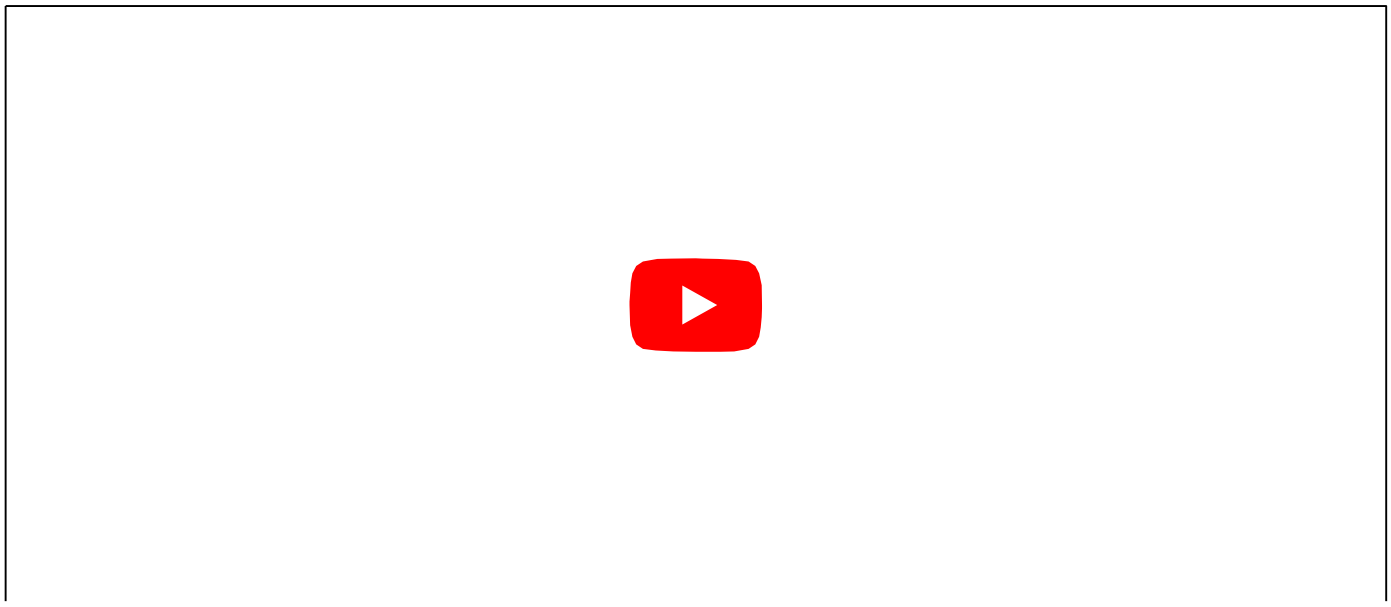
- **Transmisor de video a través de la red**
- **Receptor de video a través de la red**

# PB9000-SE+ AV Over IP Sender

Aavara® AV Over IP best features and benefits for AV system integration and video distribution solution.

***Work with*** ⬇ PB9000-RE **Receiver**

Inquriy Now PB9000-RE



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aavara

7.1 ch Audio

aavara 4K OVER IP

AV over IP










HDMI In

HDMI Loop out

S/PDIF TOSLINK

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# PB9000-SE+

## 4K Over IP Sender with HDMI Loopout & S/ PDIF Toslink Output

PB9000-SE+ 4K/KVM over IP Sender is a great 4K video distribution solution for Residential, KVM and Signage deployment, integrating Web-based Aavara AV Master Control Software and 3rd Party Control drivers for centralizing control.

- HDMI Input & HDMI loopout Port
- S/PDIF Toslink Opticsl Audio Output for up to 5.1 ch LPCM, Dolby Digital/AC3 and DTS digital audio output AV receiver/amplifer.
- Aavara AV Master Web Control interface
- Major Controller Integration: SAVANT, Control4, AMX, RTI, Crestron, Extron, Elan g!, Neets and more.
- Independent Matrix Routing for Video, Audio, IR, RS232, USB
- Seamless Cross Display KVM Switching
- IR Remote Signal Pass-Thru & IP Command
- CEC Pass-Thru & IP Command Control
- USB 2.0 Pass-Thru
- VideoWall Easy Setup & Flexibile Operate by Easy Web Interface configuration
- Asymmtric VideoWall Support
- Keyboard Hotkeys Control
- Message On Screen
- Video Snapshot

PB9000 fully meets the high demand of Residential application as Home AV matrix w/ 4K HDR, Dolby Atmos/DTS X and 3D support. 60 fps video which is running very smoothly in Sports program video. And ideal for DOOH in Commercial Installation which demand Higher Video Quality, Analog Audio Line out to support Active Speaker for public area, IR, CEC and RS-232 to control the Displays. In addition, 4K Ultra HD & KVM w/ HighSpeed USB connection available.

- Manual

PB9000W-SE Wall Plate

PB9000-RE

PB9000HD-SE

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FEATURES

Atmos/DTS X) connection.

- Featuring 4K resolution Broadcasting, Multicasting & VideoWall solution
- Built-in Aavara AV Master Web Interface for easy central AV Switching Control
- Integrate 3rd Party Control System: Control4, AMX, RTI, Crestron and Elan g!
- Excellent Solution for HDMI USB KVM & Residential/Commercial over Ethernet Network
- Unicast, Broadcast & Multicast HDMI, USB, RS-232 & IR Over Gigabit Ethernet
- VGA Out on Receiver for Non-HDCP Video Pass-Thru
- Video Resolutions Up to 4K Ultra HD, 1080p 3D and 1920 x 1200 (WUXGA)
- Lossless LPCM, DTS® & Dolby® Atmos ch Audio Pass-Thru
- Analog Audio In/Out for Extenal Active Speaker & Microphone
- USB Type B Port for USB Pass-Thru.
- Flexible VideoWall & Asymmtric VideoWall by Easy Web Interface configuration
- Easy to Use IR Remote Control Video Channel Switching
- Power Over Ethernet 802.3af
- Message On Screen & Video Snapshot function

## SPECS

- HDMI Spec.:v1.4 Compatible
- DVI Spec.:v1.0 Compliant
- HDCP Spec.:v2.2 Compliant
- 4K Video Resolution: Up to 4K @ 60Hz 4:2:0 input, 4K@30Hz 4:2:0 output
- PC DVI Input Resolution:Up to1920x1200@60Hz
- PC VGA Input Resolution:Up to1920x1080@60Hz
- HDMI Audio In/ Out:Up to 7.1ch LPCM, DTS® X, Dolby Digital ,Dolby® Atmos
- S/PDIF Toslink Optical Digital Audio Out (on PB9000-SE+ Sender):Up to 5.1ch LPCM, DTS®, Dolby Digital/AC3
- Distance:Point to Point 120M by Cat6 cable, KMs by Fiber, unlimited within LAN
- USB Extension:USB 2.0 Type A ports x 4 Receiver, USB 2.0 Type B ports x 1 Sender
- RS-232 Baudrate:300~230, 400bps, Default 115,200bps
- IR Control Pass Thru:20~60KHz, Two-way IR Pass- Thru
- Operating Temperature:0-40ºC
- Storage Temperature:-20~50ºC
- Humidity Range:5%~90%RH
- Power Consumption:5W
- Power Adapter:DC 5V/2A
- Material:Metal
- Dimension (LxWxH):257x115x28mm
- Weight:550g
- Optional Accessory: Wall Mounting Kit (MK-100), 1U Rack Mount Kit(MK-1U, IR Emitter/ Receiver

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# · Procesador de audio

## Q-SYS Core 110f

KEY FEATURES

- 128 x 128 network audio channels
- 16 x 16 USB audio channels
- 24 channels of analog I/O, including 8 configurable Flex channels
- Supports up to 32 x 32 channels of Software-based Dante (8 x 8 included)
- 16 x 16 GPIO logic ports
- Multiple instance VoIP lines
- Single POTS telephone line
- 3 year warranty

Certified for Microsoft Teams

works with Google Meet



### Q-SYS Core 110f

Network + Analog I/O Processor

The Q-SYS™ Core 110f processor provides a solution for small, single room projects up to the largest Enterprise scale deployments. Q-SYS is a cloud-manageable audio, video, and control platform that provides the system integrator and end-user a unified software design tool and feature set suitable for projects of any scale. The continuity of Q-SYS is unique within the competitor space and allows the Q-SYS Core 110f to leverage all the features that are available across the entire Q-SYS Platform to be used in the following applications: video conference bridging, Acoustic Echo Canceling (AEC) and sound reinforcement in small to large meeting or multipurpose rooms, sound reinforcement in performance venues such as house of worship and theater, background music systems, wide area paging in airports, convention centers and hospitals.

The Q-SYS Core 110f offers a total of 8 balanced analog microphone/line level audio inputs and 8 balanced analog microphone/line level audio outputs. In addition to the fixed 8x8 analog audio I/O, the Core 110f features a software definable bank of 8 balanced analog audio Flex channels, a unique QSC innovation, where each channel can be independently configured during design or run time as either a microphone/line level input or a microphone/line level output. As such, the Core 110f offers class leading 24 analog I/O density plus additional specialized I/O such as VoIP, POTS, Internal Media Playback/ Recording HDD and USB.

The Q-SYS Core 110f supports a class leading USB audio device port connection that enables the processor to appear in a Microsoft Windows or Mac OS host operating system simultaneously as both a USB audio and video device. The USB device port (B type) implementation supports up to 16x16 digital audio channels in a flexible, design time configuration environment that can advertise as multiple virtual USB device instances to the host operating system concurrently over a single physical USB connection. It can also act as a video bridge for Q-SYS conference camera streams. In addition to the USB device port, the Core 110f provides 6 USB Host ports (A type) which enable the Core to host external USB devices.

# Q-SYS Core 110f

## BENEFITS

- **Class leading I/O:** Q-SYS Core 110f has 24 analog I/O + USB, POTS and VoIP simultaneously in a single rack space and one SKU, offering the best cost to I/O ratio in a single chassis product available on the market from any manufacturer.
- **Flex Channels:** Nearly all the flexibility of a card-based DSP solution without the cost and inconvenience of multiple SKU's and custom parts ordering.
- **Unified software platform:** Single training investment in one software design tool rather than needing to learn several platforms to scale from small to large systems or support different applications.
- **Industry leading hardware design:** Future proof investment in standards based software and computer technology running on Intel processors.
- **Industry first, software based DSP:** Q-SYS suite of conferencing technology applications built and owned by QSC from the ground up allowing for continued refinement.
    - o Software based routable AEC; no additional hardware needed
    - o SIP Softphones offering multiple instances per Q-SYS Core; no additional hardware needed
    - o Gain sharing and gating automixers
- **True IT Software Integration:** The Core 110f provides more than just networked audio integration and is not just another hardware DSP. Q-SYS is primarily a software platform that offers greater software integration functionality such as native support for LDAP contact server integration, SNMP monitoring, SIP Softphones, and software based routable AEC implementation.

## KEY FEATURES

- 128 x 128 channels of Q-LAN™ network audio in single channel streams
- Includes 8 x 8 Software-based Dante channels (licensable up to 32 x 32)
- 24 channels of analog I/O, including 8 configurable Flex channels
- Up to 16 assignable and routeable AEC processor instances
- Dual Gigabit Ethernet ports with assignable application resources offering any combination of VoIP, Q-LAN Control, Q-LAN audio or network redundancy
- USB AV bridging (16 x 16 audio + Q-SYS camera support)
- 16 General Purpose Inputs (GPI) x 16 General Purpose Outputs (GPO)
- Internal universal power supply plus 12 Volt DC external power supply input for redundancy or non-mains power supply sources
- Single software platform for system configuration, control and monitoring via Q-SYS Designer Software over Ethernet with support for static or Auto/DHCP TCP/IP addressing
- POTS telephone interface via a standard RJ-11 connector
- Supports up to 4 VoIP Softphone instances in addition to the onboard POTS telephone interface
- CE marked, UL listed, and RoHS compliant
- 3-year warranty






## Q-SYS Core 110f

### INPUTS

| | |
|---|---|
| **Input Frequency Response** | |
| 20 Hz to 20 kHz @ +21dBu | +0.05% / -0.5% |
| **Input THD+N @ 1KHz** | |
| @ +21 dBu Sensitivity & +21 dBu input | < 0.1% |
| @ +21 dBu Sensitivity & +10 dBu input | < 0.0015% |
| @ +10 dBu Sensitivity & +8 dBu input | < 0.0007% |
| @ -10 dBu Sensitivity & -10.5 dBu input | < 0.0006% |
| @ -39 dBu Sensitivity & -39.5 dBu input | < 0.007% |
| **EIN (no weighting, 20Hz to 20kHz)** | < -121 dB |
| **Input to Input Crosstalk @1 kHz** | > 110 dB typical, 90 dB max |
| **Input Dynamic Range** | |
| @ +21 dBu Sensitivity | > 109.5 dB |
| @ +10 dBu Sensitivity | > 106.4 dB |
| @ -10 dBu Sensitivity | > 104.6 dB |
| @ -39 dBu Sensitivity | > 104.6 dB |
| **Input Common Mode Noise Rejection** | |
| @ +21 dBu Sensitivity | 50.7 dB |
| @ +10 dBu Sensitivity | 56.5 dB |
| @ -10 dBu Sensitivity | 73.2 dB |
| @ -39 dBu Sensitivity | 63.2 dB |
| **Input Impedance (balanced)** | 5k Ω nominal |
| **Input Sensitivity Range (1dB Steps)** | -39 dBu min to +21 dBu max |
| **Phantom Power** | +48 V DC, 10 mA per input max |
| **Sampling Rate** | 48 kHz |
| **A/D – D/A Converters** | 24-bit |

### OUTPUTS

| | |
|---|---|
| **Output Frequency Response** | |
| 20 Hz to 20 kHz @ all settings | +0.2 / -0.5 dB |
| **Output THD** | 0.003%, +10 dBu max output level |
| **Output Crosstalk @1kHz** | > 100 dB typical, 90 dB max |
| **Output Dynamic Range** | > 108 dB |
| **Output Impedance (balanced)** | 220 Ω |
| **Output Level Range: (1dB Steps)** | -39 dBu min to +21 dBu max |

### USB INPUTS & OUTPUTS

| | |
|---|---|
| **USB B** | |
| Bit Depth | 16-bit |
| Number of Channels | Up to 16 x 16 |
| Sample Rate | 48 kHz |
| **Product Dimensions (HWD)** | 1.75 x 19.0 x 11.12 in (44 x 483 x 282.5 mm) |
| **Shipping Dimensions (HWD)** | 6.0 x 23 x 14 in (152 x 584 x 365 mm) |
| **Power Consumption** | 60 W typical, 120 W max |
| **BTU/Heat load:** | 205 BTU/Hour |
| **Net Weight** | 11 lb (5.0 kg) |
| **Shipping Weight** | 12.4 lb (5.6 kg) |
| **Compliance** | Part 15B (USA), FCC part 68 / TIA-968-B (USA), JATE (Japan), AS/ACIF S002 (Australia), PTC200 (New Zealand), ES203 021 (Europe), ANATEL Resolution 473 (Brazil), NOM-151-SCTI (Mexico), PSTN01 (Taiwan), Industry Canada CS-03 (Canada), CE marked (Europe), UL and C-UL listed (USA & Canada), RCM (Australia), EAC (Eurasian Customs Union) & RoHS Directive (Europe) |



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· **Amplificador de sonido ambiental**

# ISA Series

## Professional Power Amplifiers

ISA280 | ISA450 | ISA750 | ISA1350 | ISA300Ti | ISA500Ti | ISA800Ti



The ISA Installed System Amplifiers are designed to meet the needs of sound system designers and contractors worldwide. Three models feature isolated 25, 70, and 100 volt outputs for distributed sound systems, while four low impedance models are rated for 2 ohm operation. The ISA 1350 drives 70 volt lines directly with 1500 watts per channel. Versatile loading options and a comprehensive set of features make the ISA Series a rugged, cost-effective power solution for any permanently installed sound system.

*THX is a trademark of THX Ltd.*

ISA Power Amplifiers

| | Watts per channel | | | |
|---|---|---|---|---|
| Model | 70V* | 8Ω** | 4Ω** | 2Ω† |
| ISA280 | – | 185 | 280 | 430 |
| ISA450 | – | 260 | 425 | 700 |
| ISA750 | – | 450 | 650 | 1200 |
| ISA1350 | 1500†† | 800 | 1300 | 2000 |
| ISA300Ti | 300 | 185 | 280 | 430 |
| ISA500Ti | 500 | 260 | 425 | 700 |
| ISA800Ti | 800 | 450 | 650 | 1200 |

** 50 Hz - 16 kHz, 0.5% THD*
*** 20 Hz - 20 kHz, 0.1% THD*
*†1 kHz, 1% THD*
*†† Direct Output, 70V, less than 0.5% THD, 20 - 20 kHz*

## Features

- Four models for low impedance applications
- ISA1350 drives 70 volt lines directly with 1500 watts per channel
- Three "Ti" versions include low impedance and isolated 25, 70, and 100 voltoutputs for distributed audio systems
- ISA450 and ISA750: THX™ approved for professional cinema applications
- Rear panel gain controls for tamper resistant operation with 2 dB detents for quickand repeatable settings
- XLR and detachable Euro style input connectors
- DataPort V2 for use with DPV2 compatible signal processing accessories(XC-3, SF-3, LF-3) and DSP-3/DSP-4 (with external power supply)
- Independent defeatable clip limiters for reduced distortion
- Selectable high-pass filters protect speakers and prevent speaker transformer saturation with minimal effect on program material (30 Hz or 70 Hz on non-"Ti"models, 50 Hz or 75 Hz on "Ti" models)
- Class H complementary bipolar output circuitry reduces AC power draw and wasteheat by 40% on ISA750 and ISA800Ti, and by 50% on ISA1350
- Front panel indicators include power, signal, and clip (and protect on ISA1350)
- Covered barrier strip output connectors for safety agency compliance
- Automatic variable-speed fan for quiet normal operation with maximum coolingon demand
- Rear-to-front air flow keeps equipment racks cool
- Stereo, bridge, or parallel operating modes
- Comprehensive protection circuitry including DC, infrasonic, thermal overload, andshort circuit protection
- 3 year warranty plus optional 3 year extended service contract

## "Ti" Models

- Isolated 25, 70, 100 volt, and low impedance outputs available simultaneously
- Simple barrier strip connection determines output mode
- "Ti" models have fully isolated 25, 70, and 100 volt outputs

# ISA Series

Specifications

| | ISA280 | ISA450 | ISA750 | ISA1350 | ISA300Ti | ISA500Ti | ISA800Ti |
|---|---|---|---|---|---|---|---|
| Stereo Mode (both channels driven) | | | Continuous avera | ge output power per channel | | | |
| 8Ω / 20 Hz - 20 kHz / 0.1% THD | 185 W | 260 W | 450 W | 800 W | 185 W | 260 W | 450 W |
| 4Ω / 20 Hz - 20 kHz / 0.1% THD | 280 W | 425 W | 650 W | 1300 W | 280 W | 425 W | 650 W |
| 2Ω / 1 kHz / 1% THD | 430 W | 700 W | 1200 W | 2000 W | 430 W | 700 W | 1200 W |
| Direct Ouput, Stereo Mode | | | | | | | |
| 70V / 20 Hz - 20 kHz / +0,-0.3 dB / 0.5% THD | – | – | – | 1500 W | – | – | – |
| XF Output Power, Stereo Mode | | | | | | | |
| 70V or 100V / 50 Hz - 16 kHz / 0.5% THD | – | – | – | – | 300 W | 500 W | 800 W |
| 25V / 50 Hz - 16 kHz / 0.5% THD | – | – | – | – | 200 W | 300 W | 500 W |
| Bridge Mono Mode | | | | Continuous average output power | | | |
| 8Ω / 1 kHz / 0.1% THD | 600 W | 900 W | 1500 W | 2800 W | 600 W | 900 W | 1500 W |
| 4Ω / 1 kHz / 1% THD | 830 W | 1400 W | 2400 W | 4000 W | 830 W | 1400 W | 2400 W |
| XF Output Power, Bridge Mono Mode 140V or 200V / 50Hz - 16 kHz / 0.5% THD | – | – | – | – | 600 W | 1000 W | 1600 W |
| Signal to Noise (20 Hz - 20 kHz) | 100 dB | 100 dB | 100 dB | 100 dB | 100 dB | 100 dB | 100 dB |
| Distortion (SMPTE-IM) | < 0.01% | < 0.01% | < 0.02% | < 0.01% | < 0.01% | < 0.01% | < 0.02% |
| Input Sensitivity at 8Ω | 1.15V (+3.4 dBU) | 1.07V (+2.8 dBU) | 1.07V (+2.8 dBU) | 1.24V (+4.1 dBU) | 1.15V (+3.4 dBU) | 1.07V (+2.8 dBU) | 1.07V (+2.8 dBU) |
| Gain at 8Ω | 33.4x (30.5 dB) | 44.7x (33 dB) | 56.2x (35 dB) | 64.0x (36.1 dB) | 33.4x (30.5 dB) | 44.7x (33 dB) | 56.2x (35 dB) |
| Output Circuitry | AB | AB | Class H, 2-tier | Class H, 3-tier | AB | AB | Class H, 2-tier |
| Distortion (typical) | | | | | | | |
| 20 Hz - 20 kHz: 10 dB below rated power | < 0.03% THD / 4Ω and 8Ω | | | | | | |
| 1.0 kHz and below: full rated power | < 0.03% THD / 4Ω and 8Ω | | | | | | |
| Frequency Response (10 dB below rated ouput power) | ISA280, ISA450, ISA750 and ISA1350: 20 Hz-20 kHz, +0/-1 dB \| -3 dB points, 5 Hz and 50 kHz | | | | | | |
| | ISA300Ti, ISA500Ti, ISA800Ti Direct outputs: -3 dB at 50 Hz, -0.5 dB at 20 kHz XF outputs: 50 Hz - 16 kHz, +0/-3 dB | | | | | | |
| Damping Factor (direct outputs) | > 200 at 8Ω / ISA1350: > 250 | | | | | | |
| Output Regulation (isolated outputs) | < 1.5 dB | | | | | | |
| Input Impedance | 10k ohms unbalanced, 20k ohms balanced | | | | | | |
| Input Clipping | 10 Vrms (+22 dBu) / ISA1350: 4.53 Vrms (+15.3 dBu) | | | | | | |
| Cooling | Continuously variable speed fan, back-to-front air flow | | | | | | |
| Connectors | Input: Active balanced, 3-pin euro style detachable terminal block and XLR (pin 2+) | | | | | | |
| | Output: Covered barrier strips, DataPort V2 / HD-15 connector | | | | | | |
| Controls | Front: AC switch | | | | | | |
| | Rear: Ch. 1 & 2 gain knobs / 10-position DIP switch | | | | | | |
| Indicators | Power-On: Green LED \| Signal: Green LED (1 per channel) \| Protect: Red LED (ISA 1350) \| Clip: Red LED (1 per channel) | | | | | | |
| Amplifier Protection | Full short circuit, open circuit, thermal, ultrasonic, and RF protection. Stable into reactive or mismatched loads | | | | | | |
| Load Protection | On/off muting | | | | | | |
| | Triac crowbar: ISA750, ISA1350 and ISA800Ti | | | | | | |
| | AC coupling: ISA280, ISA300Ti, ISA450, ISA500Ti | | | | | | |
| Dimensions (HWD) | 5.25" (13.3 cm) 3 rack spaces x 19" (48.3 cm) rack mounting x 15.9" (40 cm) deep from front mounting rails | | | | | | |
| Weight | | | | | | | |
| Net | 36 lbs (16.3 kg) | 42 lbs (19 kg) | 47 lbs (21.3 kg) | 68 lbs (30.8 kg) | 44 lbs (20.0 kg) | 49 lbs (22.3 kg) | 57 lbs (26 kg) |
| Shipping | 42 lbs (19.1 kg) | 48 lbs (22 kg) | 53 lbs (24.0 kg) | 77 lbs (34.4 kg) | 50 lbs (22.7 kg) | 55 lbs (25 kg) | 63 lbs (28.6 kg) |
| Power Requirements | 100, 120, 230 VAC, 50 - 60 Hz | | | | | | |

*Specifications subject to change without notice.*

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qscaudio.com

• Parlantes para sonido ambiental

**AD-S802T**
Preliminary



## AcousticDesign™ Series
## AD-S802T-BK
## AD-S802T-WH

(x8) 2.75" columnar surface mount loudspeaker

### Features

- Consistent tonal characteristics across the entire AcousticDesign Series for surface, ceiling, and pendant applications
- Weather resistant construction for outdoor usage, IP-54 rated
- UL1480A certified
- PTT (Progressive Taper Topology™) network reduces unwanted side lobes
- Low-saturation and low-loss 70/100V transformers with low impedance bypass
- Sealed input cover plate with removable gland nut
- Close to wall quick hang pan/tilt mounting bracket
- Intrinsic Correction™ voicings available via the Q-SYS Platform including CXD amplifiers
- Available in black (RAL 9011) or white (RAL 9010)
- Complete EASE, CF2, CAD, & BIM information available online

**Lecture Halls · Atriums · Education · Transportation Terminals · Worship Facilities**
**Court Houses · Concourses · Large System Ancillary Support**

The QSC AcousticDesign™ AD-S802T is a columnar array line consisting of eight weather treated 2.75" transducers. Columnar loudspeakers are ideally suited for a wide variety of acoustically difficult applications where speech intelligibilty is a primary concern.

The AcousticDesign Series offers integrators a premium quality installed sound solution where performance, consistent coverage, and aesthetics are paramount. Specifically designed to maintain a consistent tonal characteristic across the entire family in ceiling, surface, and pendant applications, the AcousticDesign Series allows integrators seamless transitions within blended installations.

With rugged powder coated aluminum construction, stainless steel hardware, and sealed input panel cover, the AD-S802T is designed for indoor or outdoor use, exceeding IEC60529 IP-54 ratings for dust and splash resistance.

A carefully crafted PTT (Progressive Taper Topology™) network is utilized to create a passive curvature of the array line which greatly reduces side lobing, often problematic of straight array lines, resulting in precise and consistent directivity control.

The accurate frequency response of the AD-S802T is maintained even in 70/100V applications by use of a low-loss, low-saturation transformer with selectable taps, including a bypass for low impedance application, using a rotary selector located behind the sealed input cover plate.

The input cover plate comes with an attached wire sealing gland nut for direct cable attachments onto a locking 4-pole Euro-style connector for added security of the wire terminations. The gland nut may be removed in provision of alternative conduit or flex tubing landed requirements.

Installers will appreciate the quick-hang pan/tilt mounting bracket supplied the AD-S802T. This feature greatly reduces the amount live-load time during high reach installation, allowing the installer to work faster, safer, and smarter. The mount includes a zero pan locking screw in consideration of wind load conditions. The mount may be attached to several landing positions on the enclosure to provide a close to wall appearance. When tilt is not required, the tilt section of the mount may be removed to bring the enclosure even closer to the wall. A shoulder eyebolt is supplied to provide a safety tether anchor point.

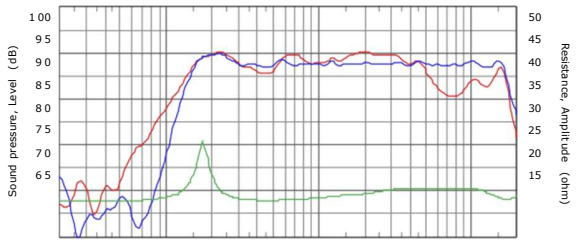
Intrinsic Correction™ voicings that optimize performance and speed the install process are easily deployed via the Q-SYS Platform including CXD-Q Series amplifiers, as part of a complete QSC systems solution.

The AD-S802T is available in QSC standard black (RAL 9011) or white (RAL 9010) and may be painted to match any decor.

For your system integration needs, complete EASE, CF2, CAD, and BIM files are available for download at QSC.com.

# AD-S802T-BK, AD-S802T-WH Details

## Impedance / Frequency Response:




## Specifications

| System Details | AD-S802T-BK, AD-S802T-WH |
|---|---|
| Transducer | (x8) 69.8 mm [2.75 in] weather treated paper cone woofer |
| Effective frequency range [1, 2, 3, 8] | 90 Hz – 17 kHz |
| Rated noise power / voltage [6] | 120 watts / 31 volts (rms) |

# VC-4-PC-3

- **Procesador de control de señales**



- *Offers server-based control system software preinstalled on a micro computer*
- *Ideal for small to medium-sized deployments*
- *Employs a powerful Dell® micro computer*
- *Ships with Crestron Virtual Control software (VC-4) preinstalled and fully configured*
- *Provides a scalable virtual control platform*
- *Streamlines deployment, maintenance, and management*
- *Supports XiO Cloud® cloud-based monitoring*
- *Supports C#, SIMPL, and SIMPL# Pro programming*
- *Integrates directly with IP-controllable devices over the network*
- *Integrates with serial, IR, CEC, and other controllable devices via decentralized control ports on DM®, DM NVX®, and other Crestron® interfaces*
- *Employs enterprise-grade security to ensure maximum reliability and privacy*
- *Includes three room licenses with purchase*
- *Includes external power adapter*

The Crestron® VC-4-PC-3 is a powerful Dell® micro computer that comes with Crestron Virtual Control software (VC-4) preinstalled and fully configured. The VC-4-PC-3 is secured and ready for operation out of the box and only needs power and an Ethernet connection to function. All standard Crestron Virtual Control functions and features are readily available without requiring any configuration or Linux® OS knowledge. The VC-4-PC-3 includes three room licenses with purchase and is perfect for small to medium-sized deployments.[1,2]

**NOTE:** When running in a virtualized environment, Crestron Virtual Control can leverage the hypervisor's fault tolerance and high-availability features. The VC-4-PC-3 runs as a standalone computer and, therefore, cannot leverage these features. If these features are desired, Crestron Virtual Control software must be installed in an existing virtualized environment that supports them.

Crestron Virtual Control is a control platform for enterprise applications that can be used in place of hardware-based Crestron control systems. The platform runs programs to control multiple rooms over the network from a single, centralized location. Cloud-based monitoring is also available using the XiO Cloud® service.

Crestron Virtual Control can be integrated with a variety of devices, including audio, video, lighting, motorized shades, thermostats, door locks, sensors, and security systems. Connected devices can be controlled directly via Ethernet, and those that require a serial, IR, or other hardware interface can be integrated via decentralized control ports on a DM NVX® encoder/decoder, DM® transmitter or receiver, CEN-CI3 series interface, or the CEN-IO wired and wireless series of I/O modules. Cresnet® network devices can be integrated via a DIN-CENCN-2 bridge, and wireless Crestron devices can also be integrated via an infiNET EX® wireless gateway.

Crestron Virtual Control streamlines deployment and maintenance by allowing a single program to be deployed across multiple rooms. Support for C#, SIMPL, and SIMPL#Pro programming languages gives programmers design flexibility and enables programs to be shared with hardware-based control systems. Crestron Virtual Control also employs enterprise-grade security to ensure maximum reliability and privacy.

**Licensing**

The VC-4-PC-3 includes three room licenses with purchase.[2] Additional rooms can be added to the VC-4-PC-3 by purchasing the desired number of room licenses (VC-4-ROOM).

**NOTE:** The VC-4-PC-3 requires access to the XiO Cloud® service to validate its licenses. An active XiO Cloud account is required, subject to the terms of the Crestron Cloudware License.[3] However, a paid XiO Cloud subscription is not required to manage licenses for the VC-4-PC-3. For more information, refer to the XiO Cloud feature page.

Use the provided form to add Crestron Virtual Control licenses to your XiO Cloud service account.

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# VC-4-PC-3

## Computer with Crestron Virtual Control Server Software

## Specifications

### Computer

| | |
|---|---|
| **Model** | Dell® OptiPlex® 7080 Micro Desktop computer |
| **Processor** | Intel Core® i5-10500T CPU @ 2.30GHz |
| **RAM** | 8 GB DDR4 2666MT/s |
| **Storage** | 256 GB SSD |
| **Graphics** | Intel® UHD Graphics 630 |
| **Network** | Intel I219-LM 100/1000 Mbps Ethernet |
| **Operating System** | AlmaLinux OS® 8.6 software |

### Communications

| | |
|---|---|
| **Ethernet** | 100/1000 Mbps |
| **USB** | USB 3.2 host ports for mouse and keyboard (used for optional configuration through command line interface) |

### Buttons and Indicators

| | |
|---|---|
| **Power** | (1) Push button with LED backlight;<br>For power on/off and reset |
| **LAN** | (2) LEDs on LAN port;<br>Indicate Ethernet link status and activity |

### Connectors

| | |
|---|---|
| **Audio (Front)** | (1) 3.5 mm universal audio connector (not used) |
| **Line-Out (Front)** | (1) 3.5 mm line-out audio connector (not used) |
| **USB-C (Front)** | (1) USB Type-C® 3.2 (Gen 2) connector, female (not used) |
| **SSUSB 3.2 Gen 2 (Front)** | (1) USB Type-A 3.2 (Gen 2) connector, with PowerShare, female;<br>Connects to a keyboard or mouse for optional command line configuration |
| **Antenna** | (2) Wireless antenna slots;<br>Includes one attached wireless antenna (not used) |
| **HDMI** | (1) HDMI® connector, female;<br>Connects to a monitor for optional command line configuration |
| **LAN** | (1) 8-pin RJ-45 connector, female;<br>100BASE-TX/1000BASE-T Ethernet port |
| **SSUSB 3.2 Gen 1** | (2) USB Type-A 3.2 (Gen 1) connectors, female;<br>Provides one port with Smart Power;<br>Connects to a keyboard or mouse for optional command line configuration |
| **SSUSB 3.2 Gen 2** | (2) USB Type-A 3.2 (Gen 2) connectors, female;<br>Connects to a keyboard or mouse for optional command line configuration |
| **Kensington Lock** | (1) Slot for optional Kensington® lock |
| **DisplayPort** | (2) DisplayPort™ 1.4 connectors, female;<br>Connects to a monitor for optional command line configuration |
| **19.5VDC** | (1) DC power connector;<br>19.5VDC power input;<br>For included power adapter |

### Power

| | |
|---|---|
| **Power Adapter (Included)** | Input: 100–240VAC, 50/60 Hz;<br>Output: 130 W @ 19.5V |

### Environmental

| | |
|---|---|
| **Operating Temperature** | 50 to 95°F (10 to 35°C) |
| **Storage Temperature** | -40 to 149°F (-40 to 65°C) |

### Construction

| | |
|---|---|
| **Enclosure** | Metal, plastic |
| **Mounting** | Freestanding, optional VESA® mount and Kensington® lock capabilities |

### Dimensions

| | |
|---|---|
| **Height** | 1.40 in. (36 mm) |
| **Width** | 7.20 in. (183 mm) |
| **Depth** | 7.00 in. (178 mm) |

### Weight

2.87 lb (1.30 kg)

To search for product certificates, refer to support.crestron.com/app/certificates.

## Model

**VC-4-PC-3**
Computer with Crestron Virtual Control Server Software

## Included Accessories

**VC-4-ROOM**
Crestron Virtual Control Server Software - Single-Room License
(Qty. 3 included)

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# VC-4-PC-3

## Computer with Crestron Virtual Control Server Software

### Available Accessories

For a list of available accessories, visit the VC-4-PC-3 product page.

Notes:

1. For optimal performance, Crestron recommends running no more than 25 rooms and/or 250 devices on the VC-4-PC-3.
2. The three included room licenses must be requested using the provided form and then applied within the XiO Cloud service. No rooms will run on the VC-4-PC-3 until the room licenses are requested and applied. Any additional room licenses (VC-4-ROOM) must be purchased separately.
3. The XiO Cloud® service is licensed under Crestron's Cloudware License Agreement, available at www.crestron.com/Legal/software-products-on-premises-and-cloudware/cloudware-license-agreement.

This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/How-To-Buy/Find-a-Representative or contact us for additional information by visiting www.crestron.com/contact/our-locations for your local contact.

The original language version of this document is U.S. English.
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This product is licensed under Crestron's On Premises Software License and Maintenance Agreement, available at www.crestron.com/Legal/software-products-on-premises-and-cloudware.

This product is covered under the Creston standard limited warranty, which can be found at www.crestron.com/warranty.

The specific patents that cover Crestron products are listed online at www.crestron.com/legal/patents.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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# VC-4

## Crestron Virtual Control Server Software

Crestron VIRTUAL CONTROL

- *Offers a centralized server-based alternative to individual hardware-based control systems*
- *Provides a scalable virtual control platform*
- *Streamlines deployment, maintenance, and management*
- *Supports XiO Cloud® cloud-based monitoring*
- *Supports C#, SIMPL, and SIMPL# Pro programming*
- *Integrates directly with IP-controllable devices*
- *Integrates with serial, IR, CEC, and other controllable devices via decentralized control ports on DM®, DM NVX®, and other Crestron® interfaces*
- *Enables server redundancy for increased reliability*
- *Employs enterprise-grade security to ensure maximum reliability and privacy*
- *Includes software mobility license that enables functionality for Crestron software solutions*
- *Per-room licensing makes it easy to determine the number of licenses required for an installation*

Crestron® Virtual Control (VC-4) is a server-based control platform for enterprise applications that can be used in place of hardware-based Crestron control systems. The platform runs programs to control multiple rooms over the network from a single, centralized location. Cloud-based monitoring is also available using the XiO Cloud® service.

**NOTE:** When running in a virtualized environment, Crestron Virtual Control can leverage the hypervisor's fault tolerance and high-availability features. If Crestron Virtual Control is installed on a bare-metal server (such as a standalone computer), it cannot leverage these features. If these features are desired, Crestron Virtual Control software must be installed in an existing virtualized environment that supports them.

Crestron Virtual Control can be integrated with a variety of devices, including audio, video, lighting, motorized shades, thermostats, door locks, sensors, and security systems. Connected devices can be controlled directly via Ethernet, and those that require a serial, IR, or other hardware interface can be integrated via decentralized control ports on a DM NVX® encoder/decoder, DM® transmitter or receiver, CEN-CI3 series interface, or the CEN-IO wired and wireless series of I/O modules. Cresnet® network devices can be integrated via a DIN-CENCN-2 bridge, and wireless Crestron devices can also be integrated via an infiNET EX® wireless gateway.

Crestron Virtual Control supports server redundancy for increased reliability. For large buildings, Crestron Virtual Control streamlines deployment and maintenance by allowing a single program to be deployed across multiple rooms. Support for C#, SIMPL, and SIMPL#Pro programming languages gives programmers design flexibility and enables programs to be shared with hardware-based control systems. Crestron Virtual control also employs enterprise-grade security to ensure maximum reliability and privacy.

Crestron Virtual Control is sold through Authorized Crestron Dealers, and requires installation on a customer-supplied server running a supported Linux® server operating system.

### Licensing

The Crestron Virtual Control licensing model is similar to a traditional hardware purchase model: purchase a specified number of room licenses, and the Crestron Virtual Control installation will run the number of rooms purchased. Each room license also includes one software mobility license (SW-MOBILITY) that enables functionality for various Crestron software solutions.

**NOTE:** The VC-4 server requires access to the XiO Cloud® service to validate its licenses. An active XiO Cloud account is required, subject to the terms of the Crestron Cloudware License Agreement[1]. However, a paid XiO Cloud subscription is not required to manage licenses for a VC-4 server. An XiO Cloud account is not required to run the VC-4 server during its 90-day trial period. For more information, refer to the XiO Cloud feature page.

Use the provided form to add Crestron Virtual Control licenses to your XiO Cloud service account.

## Model

**VC-4-ROOM**
Crestron Virtual Control Server Software - Single-Room License

## Available Accessories

For a list of available accessories, visit the VC-4-ROOM product page.

Note:

1. The XiO Cloud® service is licensed under Crestron's Cloudware License Agreement, available at www.crestron.com/Legal/software-products-on-premises-and-cloudware/cloudware-license-agreement.

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CRESTRON

# VC-4

## Crestron Virtual Control Server Software

This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/How-To-Buy/Find-a-Representative or contact us for additional information by visiting www.crestron.com/contact/our-locations for your local contact.

The original language version of this document is U.S. English.
All other languages are a translation of the original document.

The product warranty can be found at www.crestron.com/warranty.

The specific patents that cover Crestron products are listed online at www.crestron.com/legal/patents.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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# VC-4

## Crestron Virtual Control Server Software

### Minimum Server Requirements

| | |
|---|---|
| **Operating System** | Red Hat Enterprise Linux® 8.2 software (64-bit version) or greater;<br>AlmaLinux OS® 8.3 software (64-bit version) or greater;<br>Rocky Linux™ OS 8.4 software (64-bit version) or greater |

> **NOTE:** Version 9.x of any of the listed operating systems is not currently supported.

| | |
|---|---|
| **Network Interface** | 1 Gbps |
| **Hard Drive** | 100 GB |
| **Disk Space** | 100 GB |

### CPU Cores Required

| | Average Devices Per Room | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| **50** | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 |
| **100** | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 16 | 16 |
| **200** | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 16 | | | | | | | | | | |
| **300** | 4 | 4 | 8 | 8 | 8 | 8 | | | | | | | | | | | | | | |
| **400** | 4 | 4 | 8 | 8 | 16 | | | | | | | | | | | | | | | |
| **500** | 4 | 8 | 8 | 16 | | | | | | | | | | | | | | | | |

### RAM (GB) Required

| | Average Devices Per Room | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| **50** | 4 | 4 | 8 | 8 | 8 | 16 | 16 | 16 | 16 | 16 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| **100** | 4 | 8 | 16 | 16 | 16 | 32 | 32 | 32 | 32 | 32 | 32 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| **200** | 8 | 16 | 32 | 32 | 32 | 64 | 64 | 64 | 64 | 64 | | | | | | | | | | |
| **300** | 16 | 32 | 32 | 64 | 64 | 64 | | | | | | | | | | | | | | |
| **400** | 16 | 32 | 64 | 64 | 64 | | | | | | | | | | | | | | | |
| **500** | 16 | 32 | 64 | 64 | | | | | | | | | | | | | | | | |

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# Pantalla táctil de control

## 10.1 in. Tabletop Touch Screen




- *Next generation Crestron® tabletop touch screen*
- *10.1 in. (257 mm) widescreen active-matrix color display and 1920 x 1200 WUXGA display resolution*
- *Capacitive touch screen display*
- *Custom-programmable virtual control buttons*
- *Supports Crestron HTML5 and Smart Graphics® software custom user projects*
- *Built-in Rava® SIP intercom*
- *Built-in speakers and microphone*
- *H.265, H.264, or MJPEG streaming video display*
- *Native apps for Crestron Home™ OS, Sonos® home sound control, Zoom Rooms™ conferencing control, Microsoft Teams® online meeting solution, and various room scheduling services*
- *Built-in Bluetooth® communications beacon*
- *Built-in web browsing*
- *Single wire Ethernet connection with PoE or PoE+ power*
- *Wi-Fi® network connectivity*
- *USB 2.0 port*
- *Enterprise grade security and authentication*
- *Web, cloud, or device-based configuration*

The Crestron® TS-1070 is a stylish and versatile tabletop touch screen that is ideal for residential and enterprise applications. The TS-1070 features a 10.1 in. (257 mm) capacitive touch screen display with custom-programmable control buttons and support for Smart Graphics® software and HTML5-based custom UI projects. PoE and Wi-Fi® network connectivity and a modern tabletop design allow the touch screen to be deployed just about anywhere.

### Advanced Touch Screen Control

The TS-1070 offers a sleek and powerful user interface for controlling technology in a home, boardroom, classroom, or command center. The touch screen provides an intuitive interface that is fully customizable with easy-to-use capacitive controls, true feedback, and real-time status display. A built-in proximity sensor wakes the screen without requiring any user interaction, and automatic brightness controls ensure optimal visibility under varying lighting conditions.

### Custom-Programmable Virtual Buttons

The TS-1070 provides a universal status bar that is populated with virtual buttons for quick access to common touch screen functions. The touch screen comes preconfigured with virtual buttons for Power, Home, Lights, Up, Down, and Microphone. Each button can be programmed via a Crestron control system to provide custom functionality, and unused buttons can be hidden individually. The universal status bar is expanded or hidden using simple swipe gestures on touch screen display.

### Dynamic User Interfaces

The TS-1070 supports custom user interfaces created with Crestron HTML5 User Interface and Smart Graphics technologies, allowing greater flexibility for UI developers and programmers.

- Crestron HTML5 User Interface enables UI designers to develop rich, front-end user interfaces with increased reusability and efficiency using modern web methodologies. Crestron HTML5 User Interface development tools are provided to simplify creating user interfaces built on standard web technologies
- Smart Graphics enables programmers to integrate fluid gesture-driven controls, animated feedback, rich metadata, embedded apps and widgets, and full-motion video into their user interfaces. Smart Graphics provides dynamic features such as graphical buttons and sliders, lists and toolbars, drag-and-drop objects, dashboard widgets, screensavers, and customizable themes.

### Voice Recognition

With built-in voice recognition, spoken commands can be issued to the TS-1070 to quickly turn devices on or off, select and play a specific media source, change the channel, choose a lighting scene, lower the window shades, lock the doors, arm the security system, or enter a password. Simply say a command and Crestron does the rest.[1,2]

### Streaming Video

Native support for H.265, H.264, and MJPEG formats allows the TS-1070 to display live streaming video from an IP camera, a streaming encoder (Crestron DM-TXRX-100-STR, or similar), or a DigitalMedia™ switcher.[3] Video is delivered to the touch screen over Ethernet, eliminating the need for any extra video wiring.

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# TS-1070

## 10.1 in. Tabletop Touch Screen

### Rava SIP Intercom

Rava SIP Intercom Technology enables hands-free VoIP communication with other Rava-enabled touch screens and door stations. Rava works over Ethernet, supporting 2-way intercom and paging without requiring any special wiring. VoIP phone capability is also possible through integration with a SIP-compatible IP phone system or SIP server, allowing hands-free telephone functionality complete with speed-dialing, caller ID, custom ringers, and other enhancements. Built-in echo cancellation affords full-duplex performance for clear, seamless voice communication using the integrated microphone and speakers.[2]

### Sonos App

Sonos and Crestron have partnered to provide a powerful whole-house music experience. From any touch screen in the house, browse for tracks, artists, or playlists using all the services available from Sonos and instantly play them in any room using Sonos® wireless speakers or a Crestron Sonnex® multiroom audio system. The Sonos app runs natively on the TS-1070, enabling enhanced control of Sonos products as part of a complete Crestron system. The app checks for updates nightly so it's always current, and support for the Sonos S2 App is provided.[1]

### Crestron Room Scheduling App

As part of a complete enterprise room scheduling solution, the TS-1070 can be deployed as a scheduling panel via the Crestron room scheduling app. A Crestron scheduling panel can be installed at the entrance of a meeting room to provide indication of the room's availability and a view of its schedule for the day. If desired, the room can be reserved on the spot for an ad hoc meeting. A CEN-ODT-C-POE occupancy sensor can also be paired to the touch screen, allowing for occupancy status to be reported instantly to the scheduling app for no-shows and unscheduled room usage.[3,4]

Running the Crestron Scheduling App, the TS-1070 integrates directly with Crestron Fusion® software, Microsoft Exchange Server® software (for users of Outlook® software and Office 365® software), the Google Calendar™ calendaring app (including G Suite™ software), CollegeNET® 25Live® scheduling software, or Ad Astra™ software. IBM® Notes® software is also supported through a Crestron Fusion on-premises server.

### Third-Party Scheduling Apps

The TS-1070 also includes support various third-party scheduling applications. New providers are made available via firmware updates. Whatever provider you choose, setup is as simple as connecting the touch screen to the network and choosing an app from the web-based setup menu or built-in setup screens. The selected app downloads from the cloud and installs on the touch screen without any programming or control system required.[5,6]

### Zoom Rooms App

The Zoom Rooms™ conferencing control application enables the TS-1070 to be used as a touch screen control panel for a Zoom Rooms software-based conferencing and collaboration solution. The TS-1070 offers a superior alternative to a consumer tablet device, providing a more reliable and secure platform. The TS-1070 may be configured to run the Zoom Rooms app exclusively, or to allow toggling between the Zoom Rooms app and touch screen control mode. The latter option is used to integrate Zoom Rooms conferencing into a larger AV system while providing touch screen control for both.[7]

**NOTE:** The Zoom ultrasonic proximity signal is supported up to an average of 9 ft (2.74 m) from the TS-1070 touch screen to an end user device. The range will vary based on environmental noise, the sensitivity of the end user device, and the orientation to the touch screen.

### Microsoft Teams App

The Microsoft Teams® online meeting solution is the hub for teamwork in Office 365® software, engaging people through messaging, voice over IP, online meetings, conferencing, content sharing, and collaboration. The Microsoft Teams application on the TS-1070 enables presentation, calling, conferencing, and collaboration – all through a single touch screen console, with exceptional full-duplex wideband audio and HD video. A consistent user experience in every meeting space is provided via the familiar and intuitive Microsoft Teams UI, affording simple operation, built-in calendaring, and one-touch meeting joins.

**NOTE:** The TS-1070 must be operated in Microsoft Teams mode in conjunction with a UC-ENGINE or UC-BRKT-100-ASSY.

### Crestron Home OS Control

The TS-1070 may be used to control a Crestron Home™ OS whole home solution. Select the Crestron Home app from the touch screen to control lighting, shades, climate, media, security, and cameras, including the ability to create and recall scenes that create a desired ambiance throughout a home. A TS-1070 may be installed in each room to provide easy access to various Crestron Home functions for both the room and the home.

### Bluetooth Beacon

The built-in Bluetooth® proximity detection beacon enhances the intelligence and personalization of a Crestron system by enabling a smartphone or tablet device to always know what room it is in. It works with the Crestron Go App and Crestron App to determine when the mobile device is in or near the same room as the beacon, and signals the mobile app to automatically display the appropriate controls and information for the room.[2,8]

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# TS-1070

## 10.1 in. Tabletop Touch Screen

### Web Browsing

Using its built-in web browser, the TS-1070 provides access to online program guides and other web-based services, and it can be used to control DVRs and other devices without having to pick up a separate tablet or smartphone.[1]

### Wired and Wi-Fi Connectivity

An Ethernet LAN connection is all that is required to wire the TS-1070, containing all control, video, intercom, and power signals within a single wire.

For deployments without access to Ethernet, the touch screen can also be connected the network over Wi-Fi communications via a local wireless access point (WAP).

### Power over Ethernet

Using PoE technology, the TS-1070 gets its operating power directly through the network cable. PoE (Power over Ethernet) eliminates the need for a local power supply or any dedicated power wiring. Crestron PoE switches (CEN-SW-POE-5 or CEN-SWPOE-16[3]) offer a total networking solution with built-in PoE for multiple touch screens. A PoE Injector (PWE-4803RU[3]) is also available to support a single touch screen.

**NOTE:** PoE+ is required when connecting a light bar or hallway sign via USB. Refer to the "Power" specifications for more details.

### High-Speed USB Port

The TS-1070 provides a high-speed USB 2.0 port for connecting supported Crestron accessories to the touch screen.[3]

### Enterprise-Grade Security

Crestron touch screens employ enterprise-grade networking with robust security features such as 802.1X authentication, TLS encryption, HTTPS connectivity, and Active Directory® service integration. These features are imperative to protect your network against service interruptions and malicious intrusions, and to ensure compliance with your organization's network policies. Cloud-based provisioning and management streamlines the process of configuring, monitoring, and updating every touch screen on the network. Additional support for SNMP allows the touch screen to be monitored by your IT administrator.

### XiO Cloud Service

The TS-1070 is compatible with the XiO Cloud® service, which is an IoT (Internet of Things) based platform for remotely provisioning, monitoring, and managing Crestron devices across an enterprise or an entire client base. Built on the Microsoft® Azure® software platform and utilizing Microsoft's industry-leading Azure IoT Hub technology, XiO Cloud enables installers and IT managers to deploy and manage thousands of devices in the time it previously took to manage just one. Unlike other virtual machine-based cloud solutions, Azure services provide unlimited scalability to suit the ever-growing needs of an enterprise. For more information, visit www.crestron.com/xiocloud.

### Crestron One™ App Support

The TS-1070 is compatible with the Crestron One™ mobile room control app. The Crestron One app creates a peer-to-peer network over Bluetooth communications between a mobile device and the TS-1070 in the room, allowing mobile-optimized room controls to be pushed to the device from the touch screen. Programmers can specify the controls that display on the mobile app by mapping joins from Smart Graphics projects to the mobile project. A SW-MOBILITY license is required to enable mobile room control functionality.

### Optional Mounting Accessories

The TS-770/1070-SMK allows the touch screen to be mounted permanently to a tabletop and permits up to 330 degree swivel rotation.

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# TS-1070

## 10.1 in. Tabletop Touch Screen

## Specifications

### Touch Screen Display

| | |
|---|---|
| **Display Type** | TFT active matrix color LCD |
| **Size** | 10.1 in. (257 mm) diagonal |
| **Aspect Ratio** | 16:10 WUXGA |
| **Resolution** | 1920 x 1200 pixels |
| **Brightness** | 400 nits (cd/m$^2$) |
| **Contrast** | 1000:1 |
| **Color Depth** | 24 bit, 16.7M colors |
| **Illumination** | Edgelit LED with auto brightness control |
| **Viewing Angle** | ±80° horizontal, ±80° vertical |
| **Touch Screen** | Projected capacitive, 5-point multitouch capable |

### Buttons

| | |
|---|---|
| **Virtual Buttons** | (6) Virtual buttons in collapsible universal tool bar, per-button show/hide, preconfigured with icons for Power, Home, Lights, Up, Down, and Microphone, optional custom programming via control system for additional functions |
| **Reset** | (1) Pin hole on bottom for hardware reset |

### Graphics Engine

Crestron HTML5 and Smart Graphics® software technology, multilanguage web browser[1], multilanguage onscreen keyboard, screensaver, single scalable streaming video window, native room scheduling applications[4,5,6], native Sonos® app[1], native Zoom Rooms™ app[7], native Microsoft Teams® app, native Crestron Home™ OS app, setup and diagnostics via web browser, cloud, or onscreen UI

### Room Scheduling Support

| | |
|---|---|
| **Crestron Scheduling App** | Crestron Fusion® software, Microsoft Exchange Server® and Office 365® software, Google Calendar™ calendaring app and G Suite™ software, CollegeNET® 25Live® software, and Ad Astra™ software (IBM® Notes® software is also supported through Crestron Fusion on-premises server only)[4] |
| **Third-Party Apps** | Includes support for various third-party scheduling applications.[5,6] |

### Languages

| | |
|---|---|
| **Smart Graphics** | Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English (UK), English (US), Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian, Slovak, Spanish, Swedish, Thai |
| **Onscreen Keyboard** | Arabic, Chinese (Simplified), Croatian, Czech, Danish, Dutch, English (UK), English (US), Finnish, French (Canada), French (Switzerland), German, Hebrew, Hungarian, Italian, Japanese, Norwegian Bokmal, Polish, Portuguese, Russian, Serbian, Spanish, Swedish, Turkish |
| **Voice Recognition[1]** | Afrikaans (South Africa); Chinese, Mandarin (China, Simplified); Chinese, Mandarin (Hong Kong, Simplified); Chinese, Mandarin (Taiwan, Traditional); Chinese, Yue (Hong Kong, Traditional); Czech (Czech Republic); Dutch (Netherlands); English (Australia); English (Canada); English (Generic); English (India); English (New Zealand); English (South Africa); English (UK); English (US); French (France); German (Germany); isiZulu (South Africa); Italian (Italy); Japanese (Japan); Korean (South Korea); Polish (Poland); Portuguese (Brazil); Russian (Russia); Spanish (Spain); Turkish (Turkey) |
| **Web Browser[1]** | Arabic, Bulgarian, Catalan, Chinese, Croatian, Czech, Danish, Dutch, English, Filipino, Finnish, French, German, Greek, Hebrew, Hindi, Hungarian, Indonesian, Italian, Japanese, Korean, Latvian, Lithuanian, Norwegian Bokmal, Pashto, Persian, Polish, Portuguese, Romanian, Romansh, Russian, Serbian, Slovak, Slovenian, Spanish, Swedish, Thai, Turkish, Ukrainian, Vietnamese |
| **Room Scheduling [4]** | Chinese (Simplified), Chinese (Traditional), Danish, Dutch (Netherlands), English (US), English (UK), French, German, Hebrew, Italian, Japanese, Korean, Norwegian, Portuguese (Brazil), Portuguese (Portugal), Russian, Spanish, Swedish |

### Memory

| | |
|---|---|
| **RAM** | 2 GB LPDDR3 |
| **Storage** | Firmware/Application: 16 GB eMMC pSLC |
| **Maximum Project Size** | 600 MB |

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# TS-1070

## 10.1 in. Tabletop Touch Screen

### Wired Communications

| | |
|---|---|
| **Ethernet** | 100 Mbps, auto switching, auto negotiating, auto discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), IEEE 802.1X, SNMP, IPv4 or IPv6, Active Directory® service authentication, HTTPS web browser setup, XiO Cloud® client, IEEE 802.3at compliant |

### Wireless Communications

| | |
|---|---|
| **Transceiver** | IEEE 802.11a/b/g/n/ac Wi-Fi (2.4 or 5 GHz 2-way RF), static IP or dynamic IP via DHCP |
| **Security** | 64 and 128-bit WEP, WPA and WPA2-PSK with TKIP and AES |
| **Range** | Up to 50 ft (15 m), subject to site-specific conditions |
| **Bluetooth® Hardware** | Crestron Bluetooth beacon[2,8] |

### Streaming Decoder

| | |
|---|---|
| **Video Formats** | H.265, H.264 (MPEG-4 part 10 AVC, MJPEG) |
| **Audio Formats** | AAC Stereo |
| **Bitrates** | Up to 25 Mbps (20 Mbps maximum recommended) |
| **Input Resolutions** | Up to 1920x1080@30fps |
| **Protocol** | RTSP |

### Audio

| | |
|---|---|
| **Features** | Built-in microphone and speakers, Rava® SIP Intercom, voice recognition[1,2] |
| **Audio Feedback Formats** | MP3 |

### Connectors

| | |
|---|---|
| **LAN PoE** | (1) 8-pin RJ45 connector, female, with 2 LED indicators;<br>100BASE-TX Ethernet port;<br>PoE+ PD port;<br>Green and yellow LEDs indicate Ethernet port status |
| **USB** | (1) USB Type A connector, female;<br>USB 2.0 host port |

### Power

| | |
|---|---|
| **PoE (Power over Ethernet)** | IEEE 802.3at Type 2 compliant PoE+ PD (Powered Device);<br>Normally requests 15 W from an 802.3at Type 2 PSE with LLDP advanced power management;<br>With room scheduling and USB enabled, requests 18 W from an 802.3at Type 2 PSE with LLDP;<br>Requests 30 W (PoE+ Class 4) from an 802.3 at Type 2 PSE without LLDP;<br>Requests 15.4 W (PoE Class 0) from an 802.3af (or 802.3at Type 1) PSE |

**NOTE:** Enabling the USB port requires use of an 802.3at Type 2 PoE+ PSE.

### Environmental

| | |
|---|---|
| **Temperature** | 32 to 104 °F (0 to 40 °C) |
| **Humidity** | 10% to 95% RH (noncondensing) |
| **Heat Dissipation** | 44 BTU/hr |

### Construction

| | |
|---|---|
| **Housing** | Plastic, smooth black or white finish, edge-to-edge glass with black or white surround |

### Dimensions

| | |
|---|---|
| **Height** | 5.29 in. (134 mm) |
| **Width** | 9.63 in. (245 mm) |
| **Depth** | 4.67 in. (119 mm) |

### Weight

2.44 lb (1105 g)

### Compliance

**Regulatory Model: M201923006**

IC, CE, FCC Part 15 Class B digital device

## Models

**TS-1070-B-S**
10.1 in. Tabletop Touch Screen, Black Smooth

**TS-1070-W-S**
10.1 in. Tabletop Touch Screen, White Smooth

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## Available Accessories

For supported accessories, visit the appropriate TS-1070 product page at www.crestron.com.

Notes:

1. Voice recognition, web browsing, weather information, and certain other functions require an Internet connection.
2. The microphone and Bluetooth® transceiver may be defeated programmatically at any time.
3. Item(s) sold separately. Refer to each product's spec sheet for complete information.
4. Room scheduling mode requires the TS-1070 to be designated exclusively for room scheduling use, which precludes use of certain features and functions described in this spec sheet. For design assistance, contact the Crestron True Blue support team at www.crestron.com/support.
5. Refer to the firmware release notes for a list of all scheduling apps that are supported by that firmware release.
6. Additional subscriptions and/or licenses may be required. Refer to each provider's website for details about the capabilities and requirements of its scheduling application and services. Third-party apps typically run on the TS-1070 as they do on a tablet device. The TS-1070 runs only one app, which is selected at setup. Only the apps approved and delivered by Crestron can run on the TS-1070.
7. A complete Zoom Rooms solution requires a mini PC or Mac computer running Zoom software, a Zoom Rooms subscription, plus additional peripherals and cables. Visit zoom.us/zoomrooms for more information about Zoom Rooms capabilities, hardware requirements, and subscription plans. For design assistance, contact the Crestron True Blue support team at www.crestron.com/support.
8. The TS-1070 provides an integrated, equivalent alternative to the standalone PP-100-W beacon. For more details, refer to the PP-100-W spec sheet. Bluetooth technology is used solely for proximity detection and does not transmit or receive any control, multimedia, or personal data. Crestron Bluetooth beacons are only visible to Bluetooth enabled devices that are specifically programmed and configured to work with them.

This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/How-To-Buy/Find-a-Representative or by calling 855-263-8754.

This product is covered under the Crestron standard limited warranty. Refer to www.crestron.com/warranty for full details.

The specific patents that cover Crestron products are listed online at patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

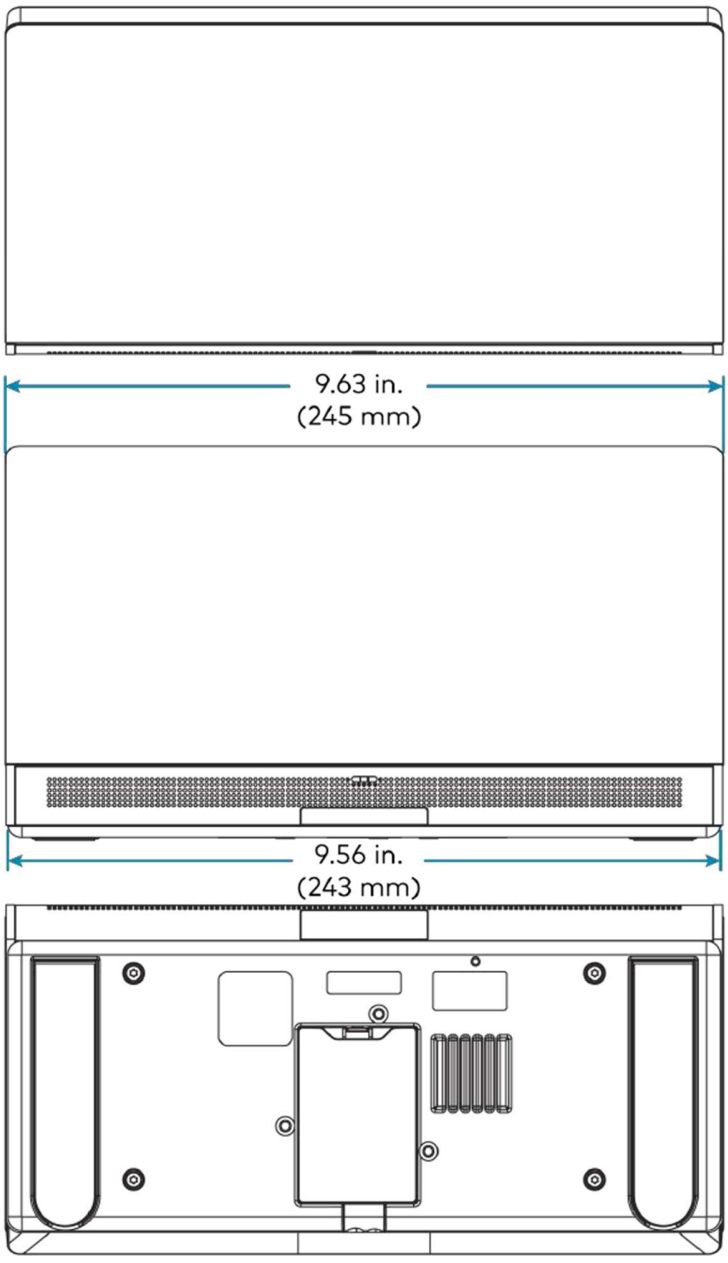
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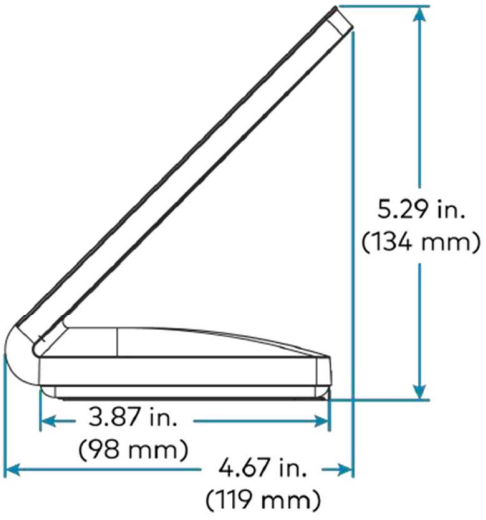
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Rev 02/12/21

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# ATEM 1 M/E Constellation HD



ATEM 1 M/E Constellation HD is a high definition live production switcher packed with advanced features! The single M/E design includes 10 standards converted 3G-SDI inputs and 6 independent 3G-SDI aux outputs! It also includes a USB webcam output, DVE, chroma keyers, media players, multiview and more!

**$995**

## Connections

**Total Video Inputs**
10

**Total Video Outputs**
6

**SDI Rates**
1.5G, 3G

**Total Audio Inputs**
2 x balanced 1/4 inch Jack,
1 x 5 pin XLR Talkback.

**Total Audio Outputs**
1 x 5 pin XLR Talkback.

**SDI Audio Inputs**
2 Ch embedded audio on all SDI inputs.

**SDI Audio Outputs**
2 Ch embedded audio on all SDI outputs.

**Timecode Connections**
None

**Reference Input**
Tri-Sync or Black Burst.

**Video Input Re-Sync**
On all 10 inputs.

**Frame Rate and Format Converters**
On all 10 inputs.

**SDI Aux Outputs**
Any of the 6 SDI outputs.

**SDI Preview Outputs**
Any of the 6 SDI outputs.

**SDI Program Outputs**
Any of the 6 SDI outputs.

**Down Converted SDI Program Output**
None

**Webcam Output**
1 x USB-C supporting 720p or 1080p at PGM frame rate.

**Total Multi Views**
1 x 3G-SDI

**Control Panel Connection**
Ethernet. Direct connection between panel and chassis, or via network.

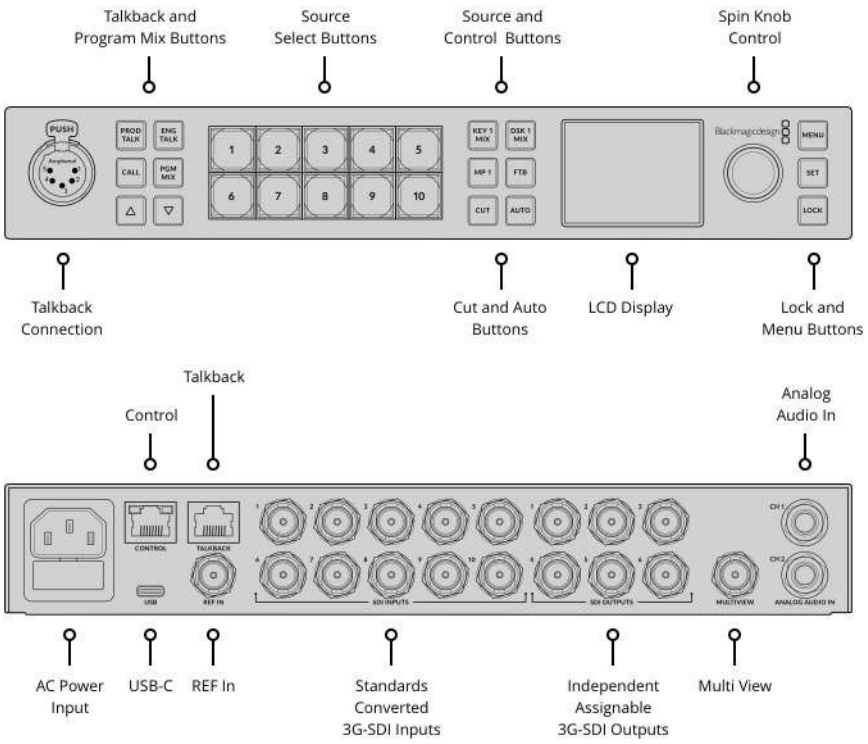
**Internal Timecode Generator**
Yes

**Talkback**
RJ45 for 3rd party talkback systems.

**Tally Output**
Added via ethernet connection to Blackmagic Design GPI and Tally Interface product. (Not included).

**Ethernet**
Supports 10/100/1000 BASE-T.

**Computer Interface**
1 x USB-C supports USB 3.1 Gen 1 (5Gb/s)




## Standards

**SD Video Standards**
None

**HD Video Standards**
720p50, 720p59.94, 720p60
1080i50, 1080i59.94, 1080i60
1080p23.98, 1080p24, 1080p25,
1080p29.97, 1080p30, 1080p50,
1080p59.94, 1080p60

**SDI Compliance**
SMPTE 292M, SMPTE 296M,
SMPTE 424M, SMPTE 425M level A
and B.

**Video Sampling**
4:2:2

**Color Precision**
10-bit.

**Color Space**
REC 709

**SDI Auto Switching**
Automatically detects between 1.5G-SDI and level A or level B 3G-SDI.

## Product Specifics

**Upstream Keyers**
4

**Downstream Keyers**
1

**Advanced Chroma Keyers**
4

**Talkback Support**
Yes

**Mix Minus Support**
Yes

**Linear/Luma Keyers**
5

**Transition Keyer (Stinger/DVE)**
1 Stinger, 1 DVE.

**Total Number of Layers**
7

**Pattern Generators**
5

**Color Generators**
2

**Control Panel**
Front fascia emergency switching, software or optional hardware panel.

**Routable Windows**
16

**Tally**
Red for program and green for preview indication.

**Windows Source Labels**
Yes

## Multi View Monitoring

**Multi View Monitoring**
1 x multi view configurable to 16, 13, 10, 7 or 4 up view. Includes monitoring of Program, Preview, Inputs, Media Players, DSK, Clean Feed with optional labels and audio meters.

**Multi View Video Standard**
HD

**Display Minimum Resolution**
1366 x 768

## Media Player

**Media Players**
2

**Channels**
Fill and key for each media player.

**Media Pool Still Image Capacity**
20

**Media Pool Clip Capacity**
2 x up to 1080p60.

**Media Player Clip Length in 720 HD**
400 frames.

**Media Player Clip Length in 1080 HD**
200 frames.

**Media Pool Still Image Format**
PNG, TGA, BMP, GIF, JPEG and TIFF.

**Media Pool Video File Format**
TGA Sequence.

**Media Pool Audio File Format**
WAV, MP3 and AIFF.

## Display

**Front panel**
Built in 2.2 inch LCD monitor for video, 10 LED buttons for setup and emergency switching, 4 source buttons, 6 talkback selection and mix buttons, menu control knob and set button, front panel lock button.

## Processing

**Processing Delay**
< 10 lines.

**Audio Mixer**
28 Channel mixer
Selectable On/Off/Audio-Follow-Video.
Level and Peak metering.
Master gain control.
6 band parametric EQ, Dynamics including Expander, Gate, Compressor and Limiter.

**Down Conversion**
None

## Software

**Control Panel Included**
ATEM Software Control Panel included free for Mac 11.11 Big Sur, Mac 12 Monterey or later and Windows 10 or 11.

**Software Updates**
Using USB or Ethernet connection directly connected to Mac OS or Windows computers. Includes ATEM Setup Utility.

**Configuration**
Set via ATEM Software Control Panel, excluding ATEM chassis IP address which is set via the ATEM Setup Utility connected via USB to chassis.

## Operating Systems

Mac 11.1 Big Sur,
Mac 12.0 Monterey or later.

Windows 10 and 11.

## Power Requirements

**Power Supply**
1 x Internal 100 - 240 AC.

**Power Usage**
36W

## Physical Specifications



## Physical Installation

**Physical Installation**
2/3 rack unit width, 1 rack unit height.

**Optional Accessories**
Teranex Mini Rack Shelf

## Environmental Specifications

| Operating Temperature | Storage Temperature | Relative Humidity |
| --- | --- | --- |
| 0° to 40° C (32° to 104° F) | -20° to 60° C (-4° to 140° F) | 0% to 90% non-condensing |

## What's Included

ATEM 1 M/E Constellation HD
Welcome wallet with QR code for software download

## Warranty

12 Month Limited Manufacturer's Warranty.

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Blackmagic Design Authorized Reseller

- **Equipo de transmisión de audio y video streaming**

## YoloBox Pro

### Exterior




### Dimensions & Weight



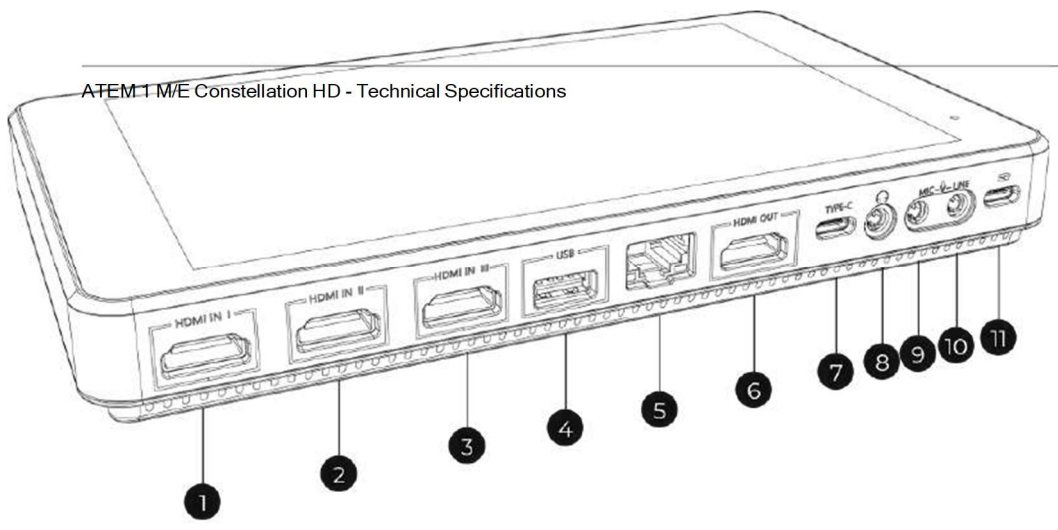

Height: 27 mm

Width: 129 mm

Length: 218 mm

Weight: 750 g

### Ports




1 HDMI IN 1: Video input

2 HDMI IN 2: Video input

3 HDMI IN 3: Video input

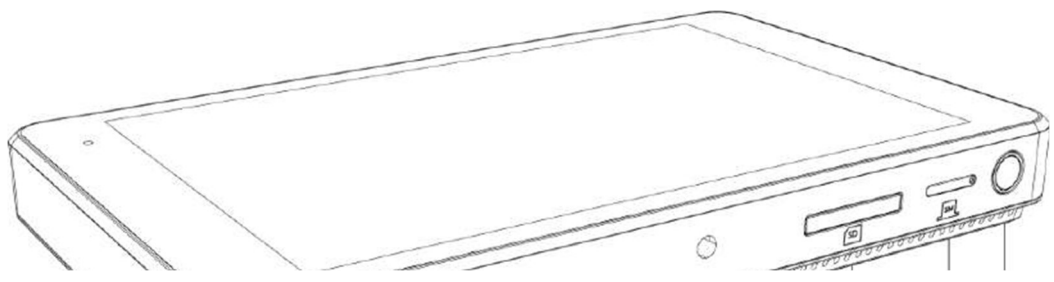
4 USB IN: Video input
(Please note in some usb webcams, only video can be captured.)

5 Ethernet: Connect to Internet by Ethernet cable

6 HDMI OUT: Video output

7 TYPE-C 3.0: A fully functional interface supports input

8 AUDIO OUT: Connect with 3.5mm monitor headphones



# YoloBox Pro

11 TYPE-C: Power connector

12 1/4" Screw Hole: Mount YoloBox Pro with camera

13 Insert SD card as video sources (video & PDF) & for recording

14 SIM Card Slot: Insert SIM Card to connect to Internet

15 Power Button: Turn on and turn off

## Encoded Format

Video Encoded Format: H.264

Audio Encoded Format: AAC (44.1k)

Video Recorded format: MP4

Audio Input Format: 32kHz/44.1kHz/48kHz/16-bit/16kHz

Video Input Format: 1080i/ 720p/ 1080p

Live Broadcast Resolution: 540P/720P/1080P

## Video Storage

Storage Card Type: SD Card

Storage Card Capacity: Expanded to 128G in FAT32 Format

## Network Connection

WiFi: 2.4G/5G

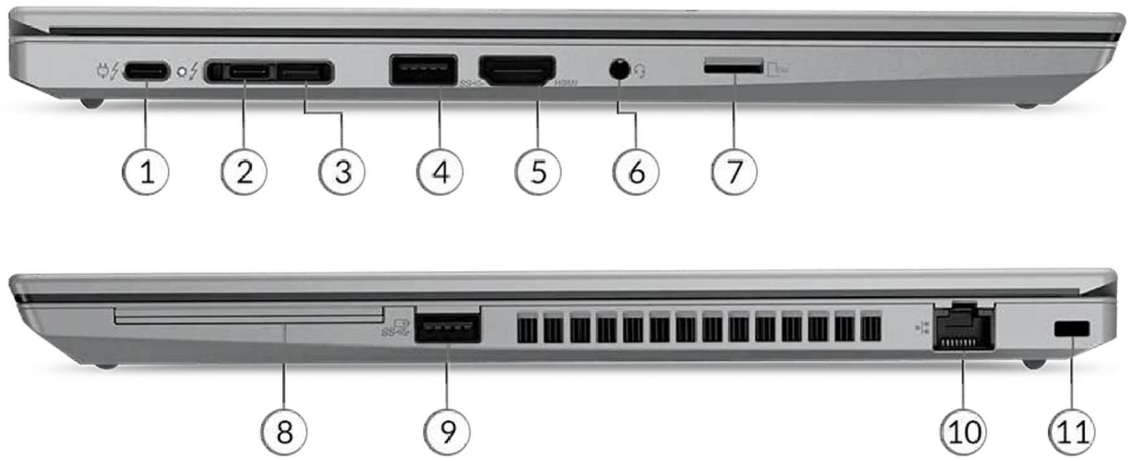
4G Network Countries & Frequency Band For

Users: [NA: Variant for North America (US/Canada/Mexico)]
B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B41/B66/B71

Notes: Mexico B4
For Non-US/Canada/Mexico Users: (EM:Variant for EMEA/India/Korea/Taiwan/South Asia/Latin America/Australia/New Zealand) Users:
B1/B2/B3/B4/B5/B7/B8/B20/B28/B38/B39/B40/B41

Notes: Thailand B7

## OVERVIEW




| | |
|---|---|
| 1. Thunderbolt 4 | 7. microSD card reader |
| 2. Thunderbolt 4 | 8. Smart card reader * |
| 3. Side docking connector * | 9. USB 3.2 Gen 1 (Always On) |
| 4. USB 3.2 Gen 1 | 10. Ethernet (RJ-45) * |
| 5. HDMI 2.0 | 11. Kensington Security Slot |
| 6. Headphone / microphone combo jack (3.5mm) | |

Notes:

- Ports with * are only available on selected models
- Optional nano-SIM card slot on the rear side (not shown on the sample product above)
- The combination of 1, 2 and 3 is side docking connector

# PERFORMANCE

## Processor

**Processor Family**

11th Generation Intel® Core™ i5 / i7 Processor

**Processor**[**][1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---|---|---|---|---|---|---|---|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Notes:

1. Intel Iris Xe Graphics capability requires system to be configured with dual-channel memory. On the system with single-channel memory, Intel Iris Xe Graphics will function as Intel UHD Graphics.

## Operating System

**Operating System**[**]

- Windows® 11 Pro 64
- Windows 11 Home 64
- Windows 11 Home 64 Single Language
- Windows 11 DG Windows 10 Pro 64
- Windows 10 Pro 64
- Windows 10 Home 64
- Windows 10 Home 64 Single Language
- Ubuntu Linux LTS
- No operating system

## Graphics

**Graphics**[**][1]

| Graphics | Type | Memory | TGP | Key Features |
|---|---|---|---|---|
| Intel UHD Graphics | Integrated | Shared | Share CPU TDP | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | Share CPU TDP | DirectX 12.1 |
| NVIDIA® T500 Laptop GPU | Discrete | 4GB GDDR6 | 18W | DirectX 12 |

Notes:

1. Intel Iris Xe Graphics capability requires system to be configured with dual-channel memory. On the system with single-channel memory, Intel Iris Xe Graphics will function as Intel UHD Graphics.

## Monitor Support

**Monitor Support**[1]

Supports up to 4 independent displays (native display and 3 external monitors via HDMI® and Thunderbolt™)
• HDMI supports up to 4K@60Hz
• Thunderbolt supports up to 5K@60Hz

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited.

## Chipset

**Chipset**

Intel SoC (System on Chip) platform

## Memory

**Max Memory**[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-3200
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-3200

**Memory Slots**

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

**Memory Type**

DDR4-3200 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

## Storage

**Storage Support**[1]

One drive, up to 2TB M.2 2280 SSD

**Storage Slot**[2]

One M.2 2280 PCIe® Gen 3x4 slot, supports M.2 2242/2280 SSD

**Storage Type****[3]

| Disk Type | Interface | RPM | Offering | Security |
|---|---|---|---|---|
| M.2 2242 SSD | PCIe NVMe®, PCIe 3.0 x4 | - | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | - | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | - | Opal2 |

**RAID**

No support

Notes:

1. The storage capacity supported is based on the test results with current Lenovo storage offerings. The system may support larger storage as the technology develops.
2. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds
3. System comes with one M.2 SSD slot that supports PCIe 3.0.
   PCIe x4 SSD may be PCIe 3.0 x4 or PCIe 4.0 x4 as substitution.

## Removable Storage

**Optical**

None

**Card Reader**

MicroSD card reader

## Multi-Media

**Audio Chip**

High Definition (HD) Audio, Realtek® ALC3287 codec

**Speakers**

Stereo speakers, 2W x2, Dolby® Audio™

**Microphone**

- Dual array microphone, far-field
- No microphone

**Camera****

- HD 720p, with privacy shutter, fixed focus
- IR & HD 720p hybrid, with privacy shutter, fixed focus
- No camera

## Battery

**Battery**

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

**Max Battery Life**[1]

MobileMark® 2018: 9.3 hr
JEITA 2.0: 15.8 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, JEITA 2.0, continuous 1080p video playback (with 150nits brightness and default volume level) or Google Power Load Test (PLT) battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

## Power Adapter

**Power Adapter****[1][2]

- 45W USB-C® (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 45W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- No power adapter

Notes:

1. AC adapter offerings depend on the country.
2. No power adapter is for special bid only.

# DESIGN

## Display

**Display****[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|---|---|---|---|---|---|---|---|---|---|---|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | DC dimming |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | DC dimming |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, DisplayHDR™ 400, DC dimming |

**Color Calibration**

- X-Rite® Pantone® factory color calibration (UHD display)
- No color calibration

**Touchscreen**

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
   In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to https://www.calrecycle.ca.gov/Electronics/Consumer

## Input Device

**Keyboard**

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

**Keyboard Backlight**

- LED backlight
- Non-backlight

**UltraNav™**

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

## Mechanical[1]

**Dimensions (WxDxH)**

365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)

**Weight**

| Models | Weight |
|---|---|
| Aluminium models | 1.783 kg (3.93 lbs) |
| PC + ABS models | 1.75 kg (3.86 lbs) |

**Case Color****

- Black
- Storm grey

**Case Material****

- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PC + ABS (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

1. The system dimensions and weight vary depending on configurations.

# CONNECTIVITY

## Network

**Ethernet****

- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- No Ethernet (Using optional ethernet adapter or dock)

**WLAN + Bluetooth®**[1][2]**

- Intel Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1
- No WLAN and Bluetooth

**WWAN****

- Wireless WAN upgradable to 4G (with antenna ready)
- Quectel EM120R-GL, 4G LTE CAT12, M.2 card
- Quectel EM120R-GL, 4G LTE CAT12, M.2 card, with embedded eSIM functionality
- Quectel EM160R, 4G LTE CAT16, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

**SIM Card****

- eSIM
- Gemalto eSIM card (physical)
- No SIM card inbox

**NFC**

- Near Field Communication
- No support

Notes:

1. Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitation
2. Wi-Fi 6 and Wi-Fi 6E full features might be limited by country level restrictions.
   6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.

## Ports[1]

**Standard Ports**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4® 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.0

- 1x microSD card reader
- 1x Headphone / microphone combo jack (3.5mm)

**Optional Ports*****

- 1x Ethernet (RJ-45)
- 1x Side docking connector
- 1x Smart card reader
- 1x Nano-SIM card slot (WWAN support models)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
   USB 2.0: 480 Mbit/s;
   USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
   USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
   Thunderbolt 3/4: 40 Gbit/s

## Docking

**Docking**

Various docking solutions supported via side docking connector (optional), Thunderbolt or USB-C.
For more compatible docking solutions, please visit Docking for ThinkPad® P15s Gen 2

## Monitor Cable

**Monitor Cable*****

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to VGA Adapter
- Lenovo USB-C to DisplayPort Adapter
- No monitor cable

# SECURITY & PRIVACY

## Security

**Security Chip**

Discrete TPM 2.0, TCG certified

**Physical Locks**

Kensington® Security Slot™, 3 x 7 mm

**Smart Card Reader**

- Smart card reader
- No smart card reader

**Fingerprint Reader**

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

**BIOS Security**

- Power-on password
- Supervisor password
- NVMe password
- Self-healing BIOS

**Other Security**

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello

# MANAGEABILITY

## System Management

**System Management**[1]

- Intel vPro
- Non-vPro

Notes:
1. Intel vPro offers a superset of DASH's defined capabilities.

# SERVICE

## Warranty

**Base Warranty**[**][1]

- 1-year depot service
- 1-year depot with 2-year system board service (Korea only)
- 1-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

Notes:
1. More information of warranty policy, please access https://pcsupport.lenovo.com/warranty

# ENVIRONMENTAL

## Operating Environment

**Temperature**[1]

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

**Humidity**

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

**Altitude**

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:
1. When you charge the battery, its temperature must be no lower than 10°C (50°F).

# CERTIFICATIONS

## Green Certifications

**Green Certifications**

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO Certified Notebooks 8
- RoHS compliant

## Other Certifications

**Mil-Spec Test**

MIL-STD-810H military test passed

## ISV Certifications

**ISV Certifications**

Please visit www.thinkworkstations.com/isv-certifications/

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected

models.

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**ULX-D® Wireless Systems**



# 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

## 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™ digital networked audio over Ethernet
- Wireless Workbench® 6 compatible for advanced coordination, monitoring and control; features

### 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™ Networked Audio over Ethernet**

Site Survey tool for scanning frequencies in the 902-928 MHz ISM band

- Compatible with the Shure SB900A Rechargeable Battery and SBC chargers

# System Specifications

| | |
|---|---|
| RF Carrier Range | 174-216 MHz, 470-865 MHz, 1492-1525 MHz, 1785-1805 MHz<br>*Note: Varies by region (See Frequency Range and Ouput Power table)* |
| Working Range | 100 m (328 ft)<br>*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 | -98 dBm at $10^{-5}$ BER |
| Latency | <2.9 ms |
| Audio Frequency Response | ULXD1: 20 Hz – 20 kHz (±1 dB)<br>ULXD2: 30 Hz – 20 kHz (±1 dB)<br>Note: Dependent on microphone type |
| Audio Dynamic Range<br>System Gain @ +10 | XLR Analog Output: >120 dB, A-weighted<br>Dante Digital Output (Dual and Quad receivers): 130 dB (typical), A-weighted |
| Total Harmonic Distortion<br>–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)<br>*Note: Battery characteristics may limit this range.* |
| Storage Temperature Range | –29°C (–20°F) to 74°C (165°F)<br>*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 | |
| 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<br>"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.*

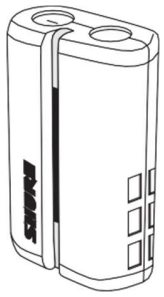
## Furnished Accessories

| | |
|---|---|
| All Systems | |
| PS41US* | Power supply |
| 95T9279* | 1/2 Wave Receiver Antenna (2) |
| 95K2035 | 2' BNC Cable (2) |
| 98A8994 | BNC Bulkhead Adapter (2) |
| 90AZ8100 | Rackmout Hardware kit |
| 95A16941 | 5' ethernet cable |
| 80B8201 | 2 x AA batteries (bodypack systems) |
| Handheld Systems | |
| 95T9279 | Microphone Clip (handheld systems) |
| 95B2313 | Handheld Zipper Bag (bodypack systems) |
| Bodypack Systems | |
| 95G9043* | Bodypack Antenna |
| 95A2313 | Bodypack Zipper Bag (bodypack systems) |

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 12 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 together to run off one power supply.

**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 | >11 hours | >11 hours | >7 hours |
| Alkaline | <11 hours | <11 hours | <5.5 hours |
| NiMH | <11 hours | <11 hours | <8 hours |
| Li-primary | 12.5-18 hours | 12.5-18 hours | 9.5-12 hours |

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# Component Specifications

## ULXD4 Digital Wireless Receiver

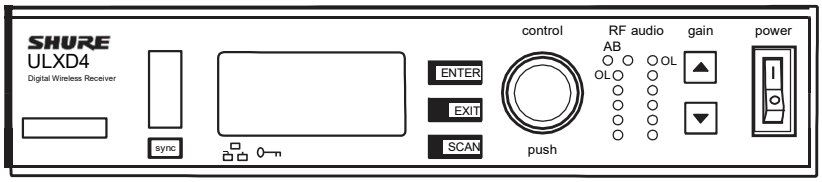
### Overview

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.

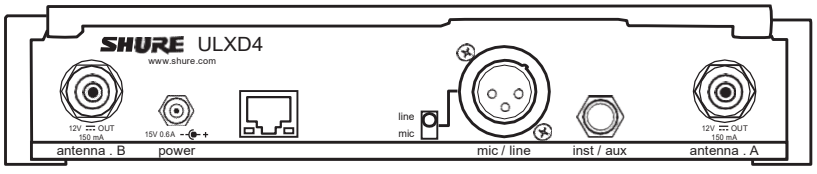
- Up to 64 MHz tuning range
- Predictive switching diversity
- Intelligent scanning automatically finds and deploys the cleanest frequencies to transmitters over IR sync
- Interference detection and alerts provided on both the receiver and WWB6
- Front panel gain adjustment buttons provide up to 60 dB 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

### Product Specifications

| | |
|---|---|
| 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 Input** | |
| Spurious Rejection | >80 dB, typical |
| Connector Type | BNC |
| Impedance | 50 Ω |
| Bias Voltage | 12 - 13 V DC, 170 mA maximum, per antenna |
| **Audio Output** | |
| 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)<br>XLR: Balanced (1=ground, 2=audio +, 3=audio -) |
| Impedance | 1/4" (6.35 mm): 100 Ω (50 Ω Unbalanced)<br>XLR: 100 Ω |
| Full Scale Output | 1/4" (6.35 mm): +12 dBV<br>XLR: LINE setting= +18 dBV, MIC setting= -12 dBV |
| Mic/Line Switch | 30 dB pad |
| Phantom Power Protection | 1/4" (6.35 mm): Yes<br>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) |




ULXD4 Front Panel




ULXD4 Back Panel

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# Component Specifications

## ULXD4D Dual Channel Digital Wireless Receiver

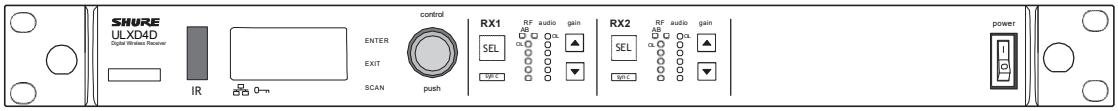
### Overview

The Shure ULXD4D Dual Channel Digital Wireless Receiver offers two channels of uncompromising audio quality, RF signal stability, and advanced setup features in a space-efficient single rack unit. Digital wireless processing delivers premium 24-bit/48 kHz audio and RF spectrum efficiencies that dramatically increase the number of available compatible channels. With an expansive set of enhanced features including AES 256-bit encryption for security and Dante™ digital networking for audio over Ethernet, the ULXD4D brings a new level of performance to professional sound reinforcement.

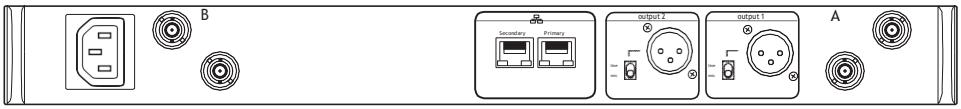
- Two receivers in a rugged 1RU metal chassis with internal power supply
- Individual gain controls, LED meters, and XLR outputs for each channel
- Up to 64 MHz tuning range (region dependent)
- Digital predictive switching diversity
- High Density mode optimizes ULX-D systems to simultaneously operate significantly more channels in applications up to 30 meters
- RF cascade ports allow distribution of RF signal to another unit
- Optimized scanning automatically finds, prioritizes, and deploys the cleanest frequencies to transmitters over IR sync
- Bodypack Frequency Diversity ensures uninterrupted audio for mission-critical applications
- AES 256-bit encryption-enabled for secure transmission
- Audio summing routes both audio channels to each XLR receiver output
- Dante™ digital networked audio over Ethernet
- Up to 60 dB independently adjustable gain for each channel
- Ethernet networking for streamlined frequency coordination and deployment across multiple receivers
- Wireless Workbench® 6 (WWB6) software integration for advanced coordination, monitoring, and control
- Interference detection and alerts provided on both the receiver and WWB6
- AMX®/Crestron® control
- AXT600 Axient® Spectrum Manager compatible
- Intuitive front panel LCD menu and controls with lockout feature
- Audio and RF LED meters with peak indicator
- XLR connectors with switchable mic/line output level
- Remoteable ½ wave antennas

### Product Specifications

| | |
|---|---|
| Dimensions | 44 mm × 482 mm × 274 mm (1.73 in. × 18.97 in. × 10.79 in.), H × W × D |
| Weight | 3.36 kg (7.4 lbs), without antennas |
| Housing | Steel; Extruded Aluminum |
| Power Requirements | 100 to 240 V AC, 50-60 Hz, 0.26 A max. |
| **RF Input** | |
| Spurious Rejection | >80 dB, typical |
| Connector Type | BNC |
| Impedance | 50 Ω |
| Bias Voltage | 12-13 V DC, 150 mA maximum, per antenna |
| **Audio Output** | |
| Gain Adjustment Range | -18 to +42 dB in 1 dB steps (plus Mute setting) |
| Configuration | XLR: Balanced (1=ground, 2=audio +, 3=audio -) |
| Impedance | 100 Ω |
| Full Scale Output | LINE setting= +18 dBV, MIC setting= -12 dBV |
| Mic/Line Switch | 30 dB pad |
| Phantom Power Protection | Yes |
| **Networking** | |
| Network Interface | Dual Port Ethernet 10/100 Mbps, 1 Gbps |
| Network Addressing Capability | DHCP or Manual IP address |
| Maximum Ethernet Cable Length | 100 m (328 ft) |
| **Cascade Output** | |
| Connector Type | BNC: For connection of 1 additional receiver |
| Configuration | Unbalanced, passive |
| Impedance | 50 Ω |
| Insertion Loss | 0 dB |



ULXD4D Front Panel



ULXD4D Back Panel

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# Component Specifications

## ULXD4Q Quad Channel Digital Wireless Receiver

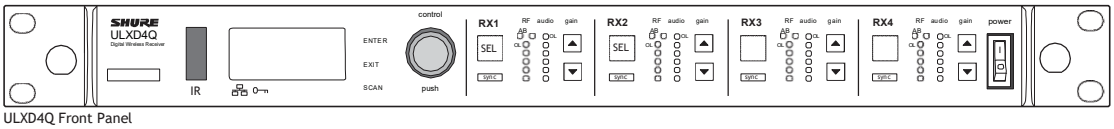
### Overview

The Shure ULXD4Q Quad Channel Digital Wireless Receiver offers four channels of uncompromising audio quality, RF signal stability, and advanced setup features in a space-efficient single rack unit. Digital wireless processing delivers premium 24-bit/48 kHz audio and RF spectrum efficiencies that dramatically increase the number of available compatible channels. With an expansive set of enhanced features including AES 256-bit encryption for security and Dante™ digital networking for audio over Ethernet, the ULXD4D delivers the most wireless performance per square inch.

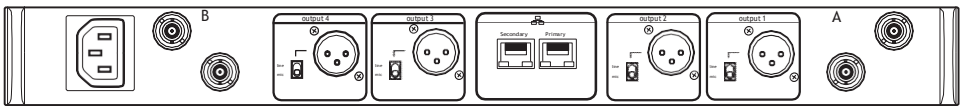
- Four receivers in a rugged 1RU metal chassis with internal power supply
- Individual gain controls, LED meters, and XLR outputs for each channel
- Up to 64 MHz tuning range (region dependent)
- Digital predictive switching diversity
- High Density mode optimizes ULX-D systems to simultaneously operate significantly more channels in applications up to 30 meters
- RF cascade ports allow distribution of RF signal to another unit
- Optimized scanning automatically finds, prioritizes, and deploys the cleanest frequencies to transmitters over IR sync
- Bodypack Frequency Diversity ensures uninterrupted audio for mission-critical applications
- AES 256-bit encryption-enabled for secure transmission
- Audio summing routes two or more audio channels to combinations of receiver outputs. Use each channel's gain adjustment to reach the desired mix.
- Dante™ digital networked audio over Ethernet Two receivers in a rugged 1RU metal chassis with internal power supply
- Individual gain controls, LED meters, and XLR outputs for each channel
- Ethernet networking for streamlined frequency coordination and deployment across multiple receivers
- Interference detection and alerts provided on both the receiver and WWB6
- Up to 60 dB independently adjustable gain for each channel
- Wireless Workbench® 6 software integration for advanced coordination, monitoring, and control AMX/Crestron control
- Compatible with the AXT600 Axient™ Spectrum Manager
- Intuitive front panel LCD menu and controls with lockout feature
- Upgraded LCD with adjustable contrast and brightness
- Audio and RF LED meters with peak indicator
- Switchable mic/line output level
- Remoteable ½ wave antennas

### Product Specifications

| | |
|---|---|
| Dimensions | 44 mm x 482 mm x 274 mm (1.73 in. x 18.97 in. x 10.79 in.), H x W x D |
| Weight | 3.45 Kg (7.6 lbs), without antennas |
| Housing | Steel; Extruded Aluminum |
| Power Requirements | 100 to 240 V AC, 50-60 Hz, 0.32 A max. |
| **RF Input** | |
| Spurious Rejection | >80 dB, typical |
| Connector Type | BNC |
| Impedance | 50 Ω |
| Bias Voltage | 12 - 13 V DC, 150 mA maximum, per antenna |
| **Audio Output** | |
| Gain Adjustment Range | -18 to +42 dB in 1 dB steps (plus Mute setting) |
| Configuration | XLR: Balanced (1=ground, 2=audio +, 3=audio -) |
| Impedance | 100 Ω |
| Full Scale Output | LINE setting= +18 dBV, MIC setting= -12 dBV |
| Mic/Line Switch | 30 dB pad |
| Phantom Power Protection | Yes |
| **Networking** | |
| Network Interface | Dual Port Ethernet 10/100 Mbps, 1 Gbps |
| Network Addressing Capability | DHCP or Manual IP address |
| Maximum Ethernet Cable Length | 100 m (328 ft) |
| **Cascade Output** | |
| Connector Type | BNC: For connection of 1 additional receiver |
| Configuration | Unbalanced, passive |
| Impedance | 50 Ω |
| Insertion Loss | 0 dB |



ULXD4Q Front Panel



ULXD4Q Back Panel

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# Component Specifications

## ULXD2 Wireless Handheld Transmitter

### Overview

The Shure ULXD2 is a handheld wireless transmitter compatible with ULX-D® Digital Wireless Systems. Offering premium 20 Hz – 20 kHz audio quality, advanced rechargeability options, and a wide selection of interchangeable Shure microphone heads, the ULXD2 delivers uncompromising wireless performance for professional sound reinforcement applications. The ULXD2 is offered with SM58®, SM86, SM87A, Beta 58A®, Beta 87A, and Beta 87C.

- 30 Hz to 20 kHz range with flat frequency response (actual response is microphone dependent)
- Interchangeable Shure microphone cartridges, including the legendary SM58®
- >120 dB dynamic range
- 1, 10, and 20 mW selectable RF output power
- 5 segment battery fuel gauge
- Shure lithium-ion rechargeable battery pack provides up to 12 hours of battery life, precision metering, and zero memory effect
- Up to 11 hours continuous use with 2 × AA batteries
- Backlit LCD with easy to navigate menu and controls
- 100 meter (300 ft) operating range
- Rugged metal construction
- Frequency and power lockout

### Product Specifications

| | |
|---|---|
| Gain Offset Range | 0 to 21 dB (in 3 dB steps) |
| Battery Type | Shure SB900A Rechargeable Li-Ion or LR6 AA batteries 1.5 V |
| Battery Runtime<br>*@ 10 mW* | Shure SB900A: >11 hours<br>Alkaline: 11 hours<br>*See Battery Runtime Chart* |
| Dimensions | 256 mm × 51 mm (10.1 in. × 2.0 in.) L × Dia.<br>V50, V51 Bands: 278 mm × 51 mm (10.9 in. × 2.0 in.) L × Dia. |
| Weight | 340 g (12.0 oz.), without batteries<br>V50, V51 Bands: 348 g (12.3 oz.), without batteries |
| Housing | Machined aluminum |

**Audio Input**

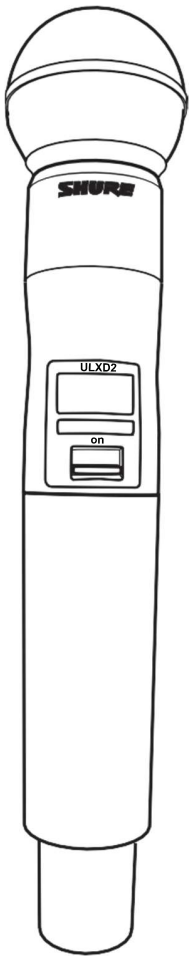
| | |
|---|---|
| Configuration | Unbalanced |
| Maximum Input Level<br>*1 kHz at 1% THD* | 145 dB SPL (SM58), typical<br>*Note: Dependent on microphone type* |
| Preamplifier Equivalent Input Noise (EIN)<br>*System Gain Setting ≥ +20* | 120 dBV, A-weighted, typical |

**RF Output**

| | |
|---|---|
| Antenna Type | Integrated Single Band Helical |
| Occupied Bandwidth | <200 kHz |
| Modulation Type | Shure Proprietary Digital |
| Power | 1 mW, 10 mW, 20 mW<br>*See Frequency Range and Ouput Power table, varies by region* |

### Microphone Options

| | |
|---|---|
| ULXD2/SM58 | ULXD2 Handheld Transmitter with SM58® Cardioid Microphone |
| ULXD2/SM86 | ULXD2 Handheld Transmitter with SM86 Cardioid Microphone |
| ULXD2/SM87A | ULXD2 Handheld Transmitter with SM87A Supercardioid Microphone |
| ULXD2/BETA 58 | ULXD2 Handheld Transmitter with Beta®58A Supercardioid Microphone |
| ULXD2/BETA 87A | ULXD2 Handheld Transmitter with Beta®87A Supercardioid Microphone |
| ULXD2/BETA 87C | ULXD2 Handheld Transmitter with Beta®87C Cardioid Microphone |
| ULXD2/KSM9 | ULXD2 Handheld Transmitter with KSM9 Dual-Pattern Condenser Vocal Microphone |
| ULXD/KSM9HS | ULXD2 Handheld Transmitter with KSM9HS Dual-Pattern Condenser Vocal Microphone |
| ULXD2/K8B | ULXD2 Handheld Transmitter with KSM8 Dualdyne™ Dual-Diaphragm Cardioid Dynamic Microphone (Black) |
| ULXD2/K8N | ULXD2 Handheld Transmitter with KSM8 Dualdyne™ Dual-Diaphragm Cardioid Dynamic Microphone (Nickel) |




ULXD2
Wireless Handheld Transmitter

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Policía Nacional de Colombia

(Default.aspx)

Portal de Servicios al Ciudadano PSC

# Sistema Registro Nacional de Medidas Correctivas RNMC

Consulta Ciudadano

## La Policía Nacional de Colombia informa:

Que a la fecha, 09/12/2022 05:33:24 p. m. el ciudadano con Cédula de Ciudadanía Nº. **1030547422 .**

## NO TIENE MEDIDAS CORRECTIVAS PENDIENTES POR CUMPLIR.

De conformidad con la Ley 1801 de 2016 "Por la cual se expide el Código Nacional de Seguridad y Convivencia Ciudadana". Registro interno de validación No. **48223500** . La persona interesada podrá verificar la autenticidad del presente documento a través de la página web institucional digitando https://www.policia.gov.co, menú ciudadanos/ consulta medidas correctivas, con el documento de identidad y la fecha de expedición del mismo. Esta consulta es válida siempre y cuando el número de cédula corresponda con el documento de identidad suministrado.

Nueva Busqueda | Imprimir

GUARDIANES de tus DERECHOS
Personería de Bogotá, D. C.

**CERTIFICADO ORDINARIO VÍA WEB**
**No. 8365883**

**Bogotá D.C., 9 de Diciembre de 2022 - 17:38 pm**

**CERTIFICADO DE ANTECEDENTES DISCIPLINARIOS**
**LA PERSONERÍA DE BOGOTÁ, D.C.**

**CERTIFICA**

Que una vez consultado el sistema de Registro de Sanciones e Inhabilidades Disciplinarias de la Personería de Bogotá D.C., el señor(a) **JORGE LUIS RODRIGUEZ RODRIGUEZ**, quien se identifica con la CÉDULA DE CIUDADANÍA No.: **UNO MIL TREINTA MILLONES QUINIENTOS CUARENTA Y SIETE MIL CUATROCIENTOS VEINTIDOS** de BOGOTA D.C.

**1030547422**

**NO REGISTRA SANCIONES NI INHABILIDADES VIGENTES**

Esta Certificación es válida, siempre y cuando el número consignado en el respectivo documento de identificación, coincida con el aquí registrado. El certificado de Antecedentes Disciplinarios expedido por la Personería de Bogotá D.C., contiene las anotaciones de sanciones e inhabilidades disciplinarias que reporten las Entidades Distritales y las dependencias de la Personería de Bogotá D.C., con atribuciones Disciplinarias.

**ADVERTENCIAS:**

Cuando se trate de nombramiento o posesión en cargos que exijan para su desempeño ausencia de antecedentes, se certificarán todas las anotaciones que figuren en el registro. (Artículo 238 - Ley 1954 de 2019).

Tres o más sanciones disciplinarias en los últimos cinco (5) años por faltas graves o leves dolosas o por ambas, constituye inhabilidad para desempeñar cargos públicos. Esta inhabilidad tendrá una duración de tres (3) años contados a partir de la ejecutoria de la últma sanción. (numeral 2°, artículo 42 - Ley 1952 de 2019).

Certificado expedido de conformidad con el numeral 5, artículo 102 del Decreto Ley 1421 de 1993, artículo 238 de la Ley 1952 de 2019, numeral 4.5, artículo 16 y numeral 6, artículo 21 del Acuerdo Distrital 755 de 2019.

Para todos los efectos esta certificación debe ser complementada con la expedida por la Procuraduría General de la Nación.

El presente certificado tiene vigencia de tres (3) meses a partir de la fecha de su expedición.

Certificado expedido sin costo alguno.

**WILLIAM JAVIER MURCIA ACEVEDO**
Jefe Oficina Asesora Jurídica

PROCURADURIA GENERAL DE LA NACION

# CERTIFICADO DE ANTECEDENTES

## CERTIFICADO ORDINARIO No. 211160360

WEB
17:36:09


Bogotá DC, 09 de diciembre del 2022

La PROCURADURIA GENERAL DE LA NACIÓN certifica que una vez consultado el Sistema de Información de Registro de Sanciones e Inhabilidades (SIRI), el(la) señor(a) MATIZZO SAS identificado(a) con NIT número 9005832983:

NO REGISTRA SANCIONES NI INHABILIDADES VIGENTES

**ADVERTENCIA:** La certificación de antecedentes deberá contener las anotaciones de las sanciones o inhabilidades que se encuentren vigentes. Cuando se trate de nombramiento o posesión en cargos que exijan para su desempeño ausencia de antecedentes, se certificarán todas las anotaciones que figuren en el registro. (Artículo 238 Ley 1952 de 2019)

**NOTA:** El certificado de antecedentes disciplinarios es un documento que contiene las anotaciones e inhabilidades generadas por sanciones penales, disciplinarias, inhabilidades que se deriven de las relaciones contractuales con el estado, de los fallos con responsabilidad fiscal, de las decisiones de pérdida de investidura y de las condenas proferidas contra servidores, ex servidores públicos y particulares que desempeñen funciones públicas en ejercicio de la acción de repetición o llamamiento en garantía. **Este documento tiene efectos para acceder al sector público, en los términos que establezca la ley o demás disposiciones vigentes.** Se integran al registro de antecedentes solamente los reportes que hagan las autoridades nacionales colombianas. En caso de nombramiento o suscripción de contratos con el estado, es responsabilidad de la Entidad, validar la información que presente el aspirante en la página web: http://www.procuraduria.gov.co/portal/antecedentes.html

CARLOS ARTURO ARBOLEDA MONTOYA
Jefe División de Relacionamiento Con El Ciudadano

**ATENCIÓN :**
**ESTE CERTIFICADO CONSTA DE 01 HOJA(S), SOLO ES VALIDO EN SU TOTALIDAD. VERIFIQUE QUE EL NUMERO DEL CERTIFICADO SEA EL MISMO EN TODAS LAS HOJAS.**

PROCURADURIA GENERAL DE LA NACION

# CERTIFICADO DE ANTECEDENTES

## CERTIFICADO ORDINARIO No. 211160438

WEB
17:37:22


Bogotá DC, 09 de diciembre del 2022

La PROCURADURIA GENERAL DE LA NACIÓN certifica que una vez consultado el Sistema de Información de Registro de Sanciones e Inhabilidades (SIRI), el(la) señor(a) JORGE LUIS RODRIGUEZ RODRIGUEZ identificado(a) con Cédula de ciudadanía número 1030547422:

NO REGISTRA SANCIONES NI INHABILIDADES VIGENTES

**ADVERTENCIA:** La certificación de antecedentes deberá contener las anotaciones de las sanciones o inhabilidades que se encuentren vigentes. Cuando se trate de nombramiento o posesión en cargos que exijan para su desempeño ausencia de antecedentes, se certificarán todas las anotaciones que figuren en el registro. (Artículo 238 Ley 1952 de 2019)

**NOTA:** El certificado de antecedentes disciplinarios es un documento que contiene las anotaciones e inhabilidades generadas por sanciones penales, disciplinarias, inhabilidades que se deriven de las relaciones contractuales con el estado, de los fallos con responsabilidad fiscal, de las decisiones de pérdida de investidura y de las condenas proferidas contra servidores, ex servidores públicos y particulares que desempeñen funciones públicas en ejercicio de la acción de repetición o llamamiento en garantía. **Este documento tiene efectos para acceder al sector público, en los términos que establezca la ley o demás disposiciones vigentes.** Se integran al registro de antecedentes solamente los reportes que hagan las autoridades nacionales colombianas. En caso de nombramiento o suscripción de contratos con el estado, es responsabilidad de la Entidad, validar la información que presente el aspirante en la página web: http://www.procuraduria.gov.co/portal/antecedentes.html

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DIAN
POR UNA COLOMBIA MÁS HONESTA

# Formulario del Registro Único Tributario

**001**

2. Concepto 1 3 Actualización de oficio

4. Número de formulario 14858694075

(415)7707212489984(8020) 000001485869407 5

| 5. Número de Identificación Tributaria (NIT) | 6. DV | 12. Dirección seccional | 14. Buzón electrónico |
|---|---|---|---|
| 9 0 0 5 8 3 2 9 8 | 3 | Impuestos de Bogotá 3 2 | |

## IDENTIFICACIÓN

| 24. Tipo de contribuyente | 25. Tipo de documento | 26. Número de Identificación | 27. Fecha expedición |
|---|---|---|---|
| Persona jurídica 1 | | | |

| Lugar de expedición | 28. País | 29. Departamento | 30. Ciudad/Municipio |
|---|---|---|---|
| | | | |

| 31. Primer apellido | 32. Segundo apellido | 33. Primer nombre | 34. Otros nombres |
|---|---|---|---|
| | | | |

35. Razón social
MATIZZO SAS

| 36. Nombre comercial | 37. Sigla |
|---|---|
| MATIZZO SAS | |

## UBICACIÓN

| 38. País | 39. Departamento | 40. Ciudad/Municipio |
|---|---|---|
| COLOMBIA 1 6 9 | Bogotá D.C. 1 1 | Bogotá, D.C. 0 0 1 |

41. Dirección principal
CR 57 A 4438

42. Correo electrónico corporativo@matizzo.com

| 43. Código postal | 44. Teléfono 1 | 45. Teléfono 2 |
|---|---|---|
| | 3 1 2 3 4 4 9 2 7 4 | 3 2 0 4 4 7 6 6 0 6 |

## CLASIFICACIÓN

### Actividad económica

| Actividad principal | | Actividad secundaria | | Otras actividades | | Ocupación | |
|---|---|---|---|---|---|---|---|
| 46. Código | 47. Fecha inicio actividad | 48. Código | 49. Fecha inicio actividad | 50. Código 1 | 2 | 51. Código | 52. Número establecimientos |
| 7 1 1 2 | 2 0 1 3 0 1 1 2 | 4 6 5 2 | 2 0 2 2 0 1 0 1 | 6 2 0 9 | 6 2 0 2 | | |

### Responsabilidades, Calidades y Atributos

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53. Código | 5 | 7 | 9 | 1 0 | 1 4 | 4 2 | 4 8 | 5 2 | 5 5 | | | | | | | | | | | | | | | | | |

05- Impto. renta y compl. régimen ordinar
07- Retención en la fuente a título de rent
09- Retención en la fuente en el impuesto
10- Obligado aduanero
14- Informante de exogena
42- Obligado a llevar contabilidad
48 - Impuesto sobre las ventas - IVA
52 - Facturador electrónico
55 - Informante de Beneficiarios Finales

### Obligados aduaneros

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 54. Código | 2 2 | 2 3 | | | | | | | | |

| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

### Exportadores

| 55. Forma | 56. Tipo |
|---|---|
| 3 | 3 |

| Servicio | 1 | 2 | 3 |
|---|---|---|---|
| 57. Modo | 2 | | |
| 58. CPC | 9 7 | | |

**IMPORTANTE: Sin perjuicio de las actualizaciones a que haya lugar, la inscripción en el Registro Único Tributario -RUT-, tendrá vigencia indefinida y en consecuencia no se exigirá su renovación**

### Para uso exclusivo de la DIAN

59. Anexos SI [ ] NO [X] 60. No. de Folios: 0 61. Fecha 2022 - 09 - 02 / 08 : 56: 05

La información suministrada a través del formulario oficial de inscripción, actualización, suspensión y cancelación del Registro Único Tributario (RUT), deberá ser exacta y veraz; en caso de constatar inexactitud en alguno de los datos suministrados se adelantarán los procedimientos administrativos sancionatorios o de suspensión, según el caso.
Parágrafo del artículo 1.6.1.2.20 del Decreto 1625 de 2016
Firma del solicitante:

Sin perjuicio de las verificaciones que la DIAN realice.
Firma autorizada:

984. Nombre ACTUACIÓN DE OFICIO AUTOMÁTICA
985. Cargo

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DIAN
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# Formulario del Registro Único Tributario

**001**



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4. Número de formulario: 14858694075

(415)7707212489984(8020) **000001485869407 5**

| 5. Número de Identificación Tributaria (NIT) | 6. DV | 12. Dirección seccional | 14. Buzón electrónico |
|---|---|---|---|
| 9 0 0 5 8 3 2 9 8 | 3 | Impuestos de Bogotá 3 2 | |

## Características y formas de las organizaciones

| | | | | | |
|---|---|---|---|---|---|
| 62. Naturaleza | 2 | 63. Formas asociativas | 1 2 | 64. Entidades o insitutos de derecho público de orden nacional, departamental, municipal y descentralizados | |
| 65. Fondos | | 66. Cooperativas | | 67. Sociedades y organismos extranjeros | |
| 68. Sin personería jurídica | | 69. Otras organizaciones no clasificadas | | 70. Beneficio | 1 |

## Constitución, Registro y Última Reforma

| Documento | 1. Constitución | 2. Reforma |
|---|---|---|
| 71. Clase | 0 4 | |
| 72. Número | | |
| 73. Fecha | 2 0 1 3 0 1 1 2 | |
| 74. Número de notaría | | |
| 75. Entidad de registro | 0 3 | |
| 76. Fecha de registro | 2 0 1 3 0 1 1 5 | |
| 77. No. Matrícula mercantil | 2 2 8 4 7 7 3 | |
| 78. Departamento | 1 1 | |
| 79. Ciudad/Municipio | 4 | |

Vigencia

| | | |
|---|---|---|
| 80. Desde | 2 0 1 3 0 1 1 2 | |
| 81. Hasta | | |

## Composición del Capital

| | |
|---|---|
| 82. Nacional | 1 0 0 % |
| 83. Nacional público | 0 . 0 % |
| 84. Nacional privado | 1 0 0 . 0 % |
| 85. Extranjero | 0 % |
| 86. Extranjero público | 0 . 0 % |
| 87. Extranjero privado | 0 . 0 % |

## Entidad de vigilancia y control

88. Entidad de vigilancia y control

## Estado y Beneficio

| Item | 89. Estado actual | 90. Fecha cambio de estado | 91. Número de Identificación Tributaria (NIT) | 92. DV |
|---|---|---|---|---|
| 1 | 8 1 | 2 0 1 6 1 2 1 6 | | - |
| 2 | | Año Mes Día | | - |
| 3 | | Año Mes Día | | - |
| 4 | | Año Mes Día | | - |
| 5 | | Año Mes Día | | - |

## Vinculación económica

| 93. Vinculación económica | 94. Nombre del grupo económico y/o empresarial | 95. Número de Identificación Tributaria (NIT) de la Matriz o Controlante | 96. DV. |
|---|---|---|---|
| | | | |

97. Nombre o razón social de la matriz o controlante

| 170. Número de identificación tributaria otorgado en el exterior | 171. País | 172. Número de identificación tributaria sociedad o natural del exterior con EP | |
|---|---|---|---|
| | | | |

173. Nombre o razón social de la sociedad o natural del exterior con EP

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# Formulario del Registro Único Tributario
## Representación

**001**



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4. Número de formulario: 14858694075

(415)7707212489984(8020) **000001485869407 5**

| 5. Número de Identificación Tributaria (NIT) | 6. DV | 12. Dirección seccional | 14. Buzón electrónico |
|---|---|---|---|
| 9 0 0 5 8 3 2 9 8 | 3 | Impuestos de Bogotá 3 2 | |

**Representación**

**1**

| 98. Representación | 99. Fecha inicio ejercicio representación |
|---|---|
| REPRS LEGAL PRIN 1 8 | 2 0 1 3 0 1 1 5 |

| 100. Tipo de documento | 101. Número de identificación | 102. DV | 103. Número de tarjeta profesional |
|---|---|---|---|
| Cédula de Ciudadaní 1 3 | 1 0 3 0 5 4 7 4 2 2 | | |

| 104. Primer apellido | 105. Segundo apellido | 106. Primer nombre | 107. Otros nombres |
|---|---|---|---|
| RODRIGUEZ | RODRIGUEZ | JORGE | LUIS |

| 108. Número de Identificación Tributaria (NIT) | 109. DV | 110. Razón social representante legal |
|---|---|---|
| | | |

**2**

| 98. Representación | 99. Fecha inicio ejercicio representación |
|---|---|
| REPRS LEGAL SUPL 1 9 | 2 0 1 3 0 1 1 5 |

| 100. Tipo de documento | 101. Número de identificación | 102. DV | 103. Número de tarjeta profesional |
|---|---|---|---|
| Cédula de Ciudadan 1 3 | 8 0 9 2 7 6 9 6 | | |

| 104. Primer apellido | 105. Segundo apellido | 106. Primer nombre | 107. Otros nombres |
|---|---|---|---|
| DURAN | GALEANO | LUIS | HERNANDO |

| 108. Número de Identificación Tributaria (NIT) | 109. DV | 110. Razón social representante legal |
|---|---|---|
| | | |

**3**

| 98. Representación | 99. Fecha inicio ejercicio representación |
|---|---|
| | |

| 100. Tipo de documento | 101. Número de identificación | 102. DV | 103. Número de tarjeta profesional |
|---|---|---|---|
| | | | |

| 104. Primer apellido | 105. Segundo apellido | 106. Primer nombre | 107. Otros nombres |
|---|---|---|---|
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| 108. Número de Identificación Tributaria (NIT) | 109. DV | 110. Razón social representante legal |
|---|---|---|
| | | |

**4**

| 98. Representación | 99. Fecha inicio ejercicio representación |
|---|---|
| | |

| 100. Tipo de documento | 101. Número de identificación | 102. DV | 103. Número de tarjeta profesional |
|---|---|---|---|
| | | | |

| 104. Primer apellido | 105. Segundo apellido | 106. Primer nombre | 107. Otros nombres |
|---|---|---|---|
| | | | |

| 108. Número de Identificación Tributaria (NIT) | 109. DV | 110. Razón social representante legal |
|---|---|---|
| | | |

**5**

| 98. Representación | 99. Fecha inicio ejercicio representación |
|---|---|
| | |

| 100. Tipo de documento | 101. Número de identificación | 102. DV | 103. Número de tarjeta profesional |
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| | | | |

| 104. Primer apellido | 105. Segundo apellido | 106. Primer nombre | 107. Otros nombres |
|---|---|---|---|
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| 108. Número de Identificación Tributaria (NIT) | 109. DV | 110. Razón social representante legal |
|---|---|---|
| | | |

COPIA CERTIFICADO DOCUMENTO SIN COSTO

DIAN
POR UNA COLOMBIA MÁS HONESTA

# Formulario del Registro Único Tributario
## Revisor Fiscal y Contador

**001**



Espacio reservado para la DIAN

4. Número de formulario: 14858694075

(415)7707212489984(8020) **000001485869407 5**

| 5. Número de Identificación Tributaria (NIT) | 6. DV | 12. Dirección seccional | 14. Buzón electrónico |
|---|---|---|---|
| 9 0 0 5 8 3 2 9 8 | 3 | Impuestos de Bogotá 3 2 | |

**Revisor Fiscal y Contador**

**Revisor fiscal principal**

| 124. Tipo de documento | 125. Número de identificación | 126. DV | 127. Número de tarjeta profesional |
|---|---|---|---|
| Cédula de Ciudadanía 1 3 | 1 0 6 9 7 4 3 0 9 7 | | 2 4 6 0 5 0 T |

| 128. Primer apellido | 129. Segundo apellido | 130. Primer nombre | 131. Otros nombres |
|---|---|---|---|
| RODRIGUEZ | DIAZ | YEIMY | YOHANA |

| 132. Número de Identificación Tributaria (NIT) | 133. DV | 134. Sociedad o firma designada |
|---|---|---|
| | | |

135. Fecha de nombramiento: 2 0 2 2 0 2 1 4

**Revisor fiscal suplente**

| 136. Tipo de documento | 137. Número de identificación | 138. DV | 139. Número de tarjeta profesional |
|---|---|---|---|
| | | | |

| 140. Primer apellido | 141. Segundo apellido | 142. Primer nombre | 143. Otros nombres |
|---|---|---|---|
| | | | |

| 144. Número de Identificación Tributaria (NIT) | 145. DV | 146. Sociedad o firma designada |
|---|---|---|
| | | |

147. Fecha de nombramiento:

**Contador**

| 148. Tipo de documento | 149. Número de identificación | 150. DV | 151. Número de tarjeta profesional |
|---|---|---|---|
| Cédula de Ciudadanía 1 3 | 1 0 3 2 4 2 5 5 9 7 | | 1 6 1 6 7 6 T |

| 152. Primer apellido | 153. Segundo apellido | 154. Primer nombre | 155. Otros nombres |
|---|---|---|---|
| GUTIERREZ | VASQUEZ | FAIVER | ANDRES |

| 156. Número de Identificación Tributaria (NIT) | 157. DV | 158. Sociedad o firma designada |
|---|---|---|
| 9 0 0 4 5 9 0 6 7 | 9 | GUTIERREZ & HERRERA CONSULTORES S A S |

159. Fecha de nombramiento: 2 0 2 1 1 0 1 4

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