MEG 14-40-L-II | MAT 153-S
Gooseneck Microphone and Tablestand

FEATURES

- Intuitive handling
- Clearly visible LED ring and microphone button
- Proven Sennheiser KE 10 microphone capsule
- Powered with standard XLR 3 cable

Experience clearly structured meetings and discussions as the intuitive handling will lead the focus on the content – not the technology. Both, the clearly visible LED ring and the prominent microphone button make great sound performance easily accessible. The proven Sennheiser KE 10 capsule provides best speech intelligibility. Powered with just a standard XLR 3 cable, both microphone and LEDs are integrated in a bigger setup with a finger snap and make even spontaneous discussion setups possible using just a mixing console. The TTL-logic output serves for various control purposes such as camera control. The MAT 153-S with the MEG 14-40-L-II is as versatile as it is easy to operate.

SPECIFICATIONS

MEG 14-40-L-II

Pick-up pattern	cardioid
Frequency response	50 Hz - 20 kHz
Acoustic principle	gooseneck microphone (condenser)
Output impedance @ 1 kHz	< 100 Ω
Sensitivity	15 mV/Pa
Max. sound pressure level	130 dB @ 1 kHz < 3 %
Equivalent noise level	37 dB (CCIR) 26 dB (A)
Power supply microphone	12 V - 48 V phantom power (P 12 - P 48)
Current consumption	3 mA
Power supply signal light ring	12 - 30 V DC 1 - 18 mA green
Connector	XLR-5M
Temperature	Operation: 0 °C to 40 °C (32 °F to 104 °F) Storage: -25 °C to +70 °C (-13 °F to 158 °F)

MAT 153-S

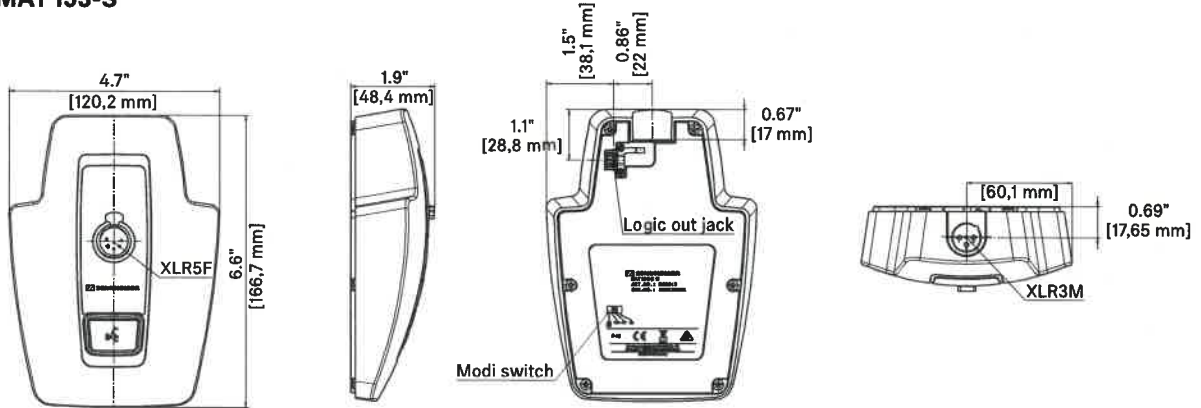|		
Current consumption	3.7 mA	
Logic input	high level input voltage > 2.0 V low level input voltage > 0.8 V	
Logic output	high level output voltage > 2.4 V low level output voltage > 0.4 V	
Connector	MIC IN: XLR-5F MIC OUT: XLR-3M 3x terminal	
Power supply	48 V phantom power (P 48)	
Weight	approx. 1,200 g (42.33 oz)	
Dimensions (W x D x H)	120 x 170 x 43 mm (4.72" x 6.69" x 1.69")	
Temperature	Operation:	-10 °C to 50 °C (14 °F to 122 °F)
	Storage:	-25 °C to 70 °C (-13 °F to 158 °F)
Microphone activation modes	PTT: PTM: ON/OFF: ON:	Push to talk Push to mute Toggle on/off Permanently on or external logic control

MEG 14-40-L-II | MAT 153-S
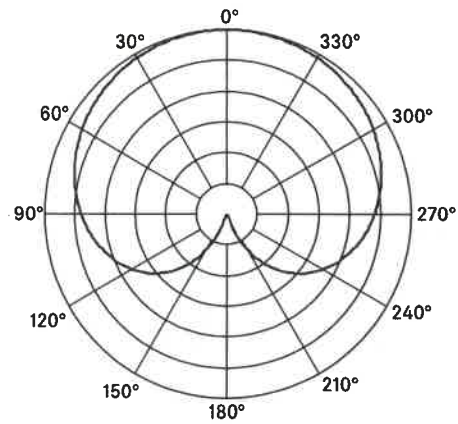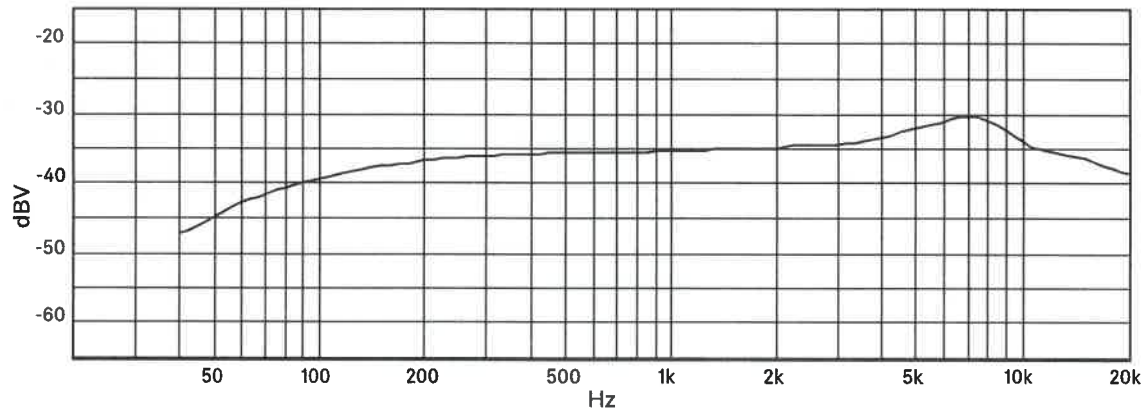## Gooseneck Microphone and Tablestand

DIMENSIONS

MAT 153-S

4.7" [120,2 mm]

1.9" [48,4 mm]

1.5" [38,1 mm]

0.86" [22 mm]

1.1" [28,8 mm]

0.67" [17 mm]

Logic out jack

XLR5F

6.6" [166,7 mm]

Modi switch

[60,1 mm]

0.69" [17,65 mm]

XLR3M

MEG 14-40-L-II

XLR5F

Ø 0.73" [19 mm]

Ø 0.9" [22,8 mm]

18" [450 mm]
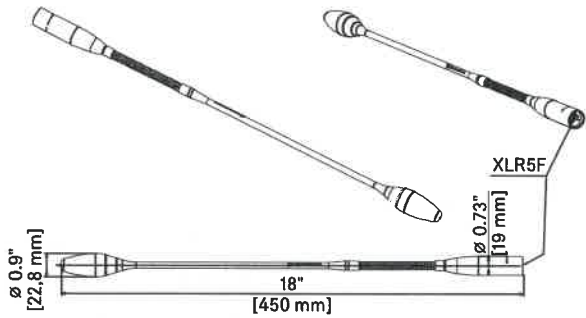
POLAR PATTERN MEG 14-40-L-II

0°
30°
330°
60°
300°
90°
270°
120°
240°
150°
210°
180°

FREQUENCY RESPONSE MEG 14-40-L-II

dBV

-20
-30
-40
-50
-60

50   100   200   500   1k   2k   5k   10k   20k

Hz

MEG 14-40-L-II | MAT 153-S
Gooseneck Microphone and Tablestand

ARCHITECT'S SPECIFICATION

The microphone shall be a pre-polarized condenser micro-phone designed for permanent installation or portable applications. It shall have a microphone capsule with a car-dioid polar pattern with uniform 120° angle of acceptance (-3 dB). The microphone shall include a green lighted LED ring below the capsule for indicating the activity of the microphone.

It shall have a frequency response of 50 Hz to 20,000 Hz and be capable of handling sound input levels up to 130 dB SPL. Nominal equivalent noise level shall be 26 dBA (37 dB weighted as per CCIR 468-3). Output shall be low impe-dance balanced (< 100 Ω). Operating temperature shall be 0 °C to 40 °C (32 °F to 104 °F). The microphone shall operate from an external 12 V to 48 V DC phantom power source; current consumption shall be 3 mA. The lighted LED ring shall operate from an external 8 – 30 V AC or DC power source; current consumption shall be 3 mA. The microphone shall offer radio frequency interference (RFI) shielding against intermodulation from wireless equipment or devices.

The microphone shall be a gooseneck design ensuring precise alignment of the microphone. It shall incorporate a self-contained power module with an XLR-5M connector at the base, which includes connection for the lighted LED ring power supply. The microphone shall be a small-diame-ter gooseneck design with a diameter of 8 mm (0.31") and an overall length of 457.2 mm (18"). Head diameter shall be 22.8 mm (0.9"). The microphone weight shall be 147 g (4.72 oz). Finish shall be matte black.

The microphone shall be Sennheiser MEG 14-40-L-II.

The table stand for connecting and operating XLR goosen-eck microphones shall be rugged and unobtrusive. It shall have a programmable microphone button (Toggle on/off, PTM, PTT and permanent on) and a bi-color LED ring for status indication shall be provided.

The table stand shall feature an XLR-5F microphone input, an XLR-3M microphone output and a TTL logic connector with logic inputs and outputs. The logic output voltage shall be high level > 2.4 and low level < 0.4 V, the logic in-put voltage shall be high level > 2.0 V and low level < 0.8 V. The table stand shall operate on 48 V phantom power. Current consumption shall be 3.7 mA. Dimensions shall be 120 x 170 x 43 mm (4.72" x 6.69" x 1.69"). Weight shall be 1,200 grams (42.33 oz). Operating temperature shall range from -10 °C to +50 °C (+14 °F to +122 °F).

The table stand shall be the Sennheiser MAT 153-S.

PRODUCT VARIANTS

MEG 14-40-L-II B - black	Art. No. 506398
MAT 153-S B - black	Art. No. 505626

Evolution Wireless Digital
EW-D 835-S SET | Handheld Set

Versatile and feature-rich digital wireless system for those who sing, speak or play instruments that allows for seamless product pairing and management via the EW-D Smart Assist App.

Receive state-of-the-art live sound featuring Sennheiser's renowned e 835 capsule on a lightweight handheld transmitter with integrated mute switch.

FEATURES

- Digital wireless eliminates noise, interference and static bursts
- UHF transmission greatly enhances range, reliability and scalability
- Mobile App streamlines setup and operation and eliminates complicated menus
- Automated setup creates reliable connections with minimal time and effort
- Up to 2,240 selectable frequencies
- Transmission range: up to 100 m in an ideal environment (without obstacles)
- Lithium Ion battery pack delivers up to 12 hours of operation (up to 8 hours of operation with AA batteries)
- 56 MHz Bandwidth will allow for up to 90 channels
- Preserves every detail of even the most dynamic performances with 134 dB transmitter dynamic range

DELIVERY INCLUDES

- EW-D EM rack receiver
- EW-D SKM-S handheld transmitter
- MMD 835 microphone module
- MZQ 1 microphone clamp
- 2 rod antennas
- power supply with country adapters
- rackmount set
- 4 rubber feet
- quick guide
- safety guide
- manufacturer declaration sheet

Evolution Wireless Digital
EW-D 835-S SET | Handheld Set

PRODUCT VARIANTS

EW-D 835-S SET (Q1-6)	470.2 - 526 MHz	Art. no. 508750
EW-D 835-S SET (R1-6)	520 - 576 MHz	Art. no. 508751
EW-D 835-S SET (R4-9)	552 - 607.8 MHz	Art. no. 508752
EW-D 835-S SET (S1-7)	606.2 - 662 MHz	Art. no. 508753
EW-D 835-S SET (S4-7)	630 - 662 MHz	Art. no. 508754
EW-D 835-S SET (S7-10)	662 - 693.8 MHz	Art. no. 508755
EW-D 835-S SET (U1/5)	823.2 - 831.8 MHz & 863.2 - 864.8 MHz	Art. no. 508756
EW-D 835-S SET (V3-4)	925.2 - 937.3 MHz	Art. no. 508758
EW-D 835-S SET (Y1-3)	1785.2 - 1799.8 MHz	Art. no. 508759

ACCESSORIES

EW-D ASA (Q-R-S)	Active Antenna Splitter	470 - 694 MHz	Art. no. 508879
EW-D ASA (T-U-V-W)	Active Antenna Splitter	694 - 1075 MHz	Art. no. 508880
EW-D ASA (X-Y)	Active Antenna Splitter	1350 - 1805 MHz	Art. no. 508881
EW-D ASA CN/ANZ (Q-R-S)	Active Antenna Splitter	470 - 694 MHz	Art. no. 508998
EW-D AB (Q)	Antenna Booster	470 - 550 MHz	Art. no. 508873
EW-D AB (R)	Antenna Booster	520 - 608 MHz	Art. no. 508874
EW-D AB (S)	Antenna Booster	606 - 694 MHz	Art. no. 508875
EW-D AB (U)	Antenna Booster	823 - 865 MHz	Art. no. 508876
EW-D AB (V)	Antenna Booster	902 - 960 MHz	Art. no. 508877
EW-D AB (Y)	Antenna Booster	1785 - 1805 MHz	Art. no. 508878
ADP UHF (470 - 1075 MHz)	Passive directional antenna	470 - 1075 MHz	Art. no. 508863
BA 70	Rechargeable battery pack for SK and SKM-S		Art. no. 508860
L 70 USB	Charger for BA 70 rechargeable battery pack		Art. no. 508861
EW-D CHARGING SET	Set of L 70 USB charger and 2 BA 70 rechargeable battery packs		Art. no. 508862
EW-D COLOR CODING SET	Colored labels for wireless link identification for EM, SKM-S, SK		Art. no. 508989
EW-D SK COLOR CODING	Colored labels for wireless link identification for SK		Art. no. 508990
EW-D SKM COLOR CODING	Colored labels for wireless link identification for SKM-S		Art. no. 508991
EW-D EM COLOR CODING	Colored labels for wireless link identification for EM		Art. no. 508992

Evolution Wireless Digital
EW-D 835-S SET | Handheld Set

MICROPHONE COMPATIBILITY

Microphone modules compatible with the EW-D SKM-S handheld transmitter

MMD 835-1	Dynamic microphone module with cardioid polar pattern
MMD 845-1	Dynamic microphone module with supercardioid polar pattern
MME 865-1	Pre-polarized condenser microphone module with supercardioid polar pattern
MMD 935-1	Dynamic microphone module with cardioid polar pattern
MMD 945-1	Dynamic microphone module with supercardioid polar pattern
MMK 965-1	Condenser microphone module with switchable cardioid and supercardioid polar pattern
MMD 42-1	Dynamic microphone module with omni-directional polar pattern
Neumann KK 204	Condenser microphone module with cardioid polar pattern
Neumann KK 205	Condenser microphone module with supercardioid polar pattern
MM 435	Dynamic microphone module with cardioid polar pattern
MM 445	Dynamic microphone module with supercardioid polar pattern
ME 9002	Pre-polarized condenser microphone module with omni-directional polar pattern
ME 9004	Pre-polarized condenser microphone module with cardioid polar pattern
ME 9005	Pre-polarized condenser microphone module with supercardioid polar pattern

Evolution Wireless Digital
EW-D 835-S SET | Handheld Set

SPECIFICATIONS

System

Audio link frequency ranges	Q1-6	470.2 - 526 MHz
	R1-6	520 - 576 MHz
	R4-9	552 - 607.8 MHz
	S1-7	606.2 - 662 MHz
	S4-7	630 - 662 MHz
	S7-10	662 - 693.8 MHz
	U1/5	823.2 - 831.8 MHz & 863.2 - 864.8 MHz
	V3-4	925.2 - 937.3 MHz
	Y1-3	1785.2 - 1799.8 MHz
Bluetooth® Low Energy (BLE) frequency range	2402 - 2480 MHz	
Audio frequency response	20 Hz - 20 kHz (-3 dB) @ 3 dBfs	
Audio THD	≤ -60 dB for 1 kHz @ -3 dBfs input level	
Dynamic range	134 dB	
System latency	1.9 ms	
Operating temperature	-10 °C - +55 °C (14 °F - 131 °F)	
Relative humidity	5 - 95 % (non-condensing)	

EW-D EM (Rack Receiver)

Input voltage	11 - 13 V ⎓
Input current	≤ 300 mA
Transmit power (radiated)	BLE: max. 10 mW EIRP
Audio output power	18 dBu max.
Dimensions	212 x 44 x 189 mm (8.35" x 1.73" x 7.44")
Weight (without antennas and power supply)	approx. 1000 g (2.2 lbs)

Set in packaging

Dimensions	405 x 350 x 73 mm (15.91" x 13.78" x 2.87")
Weight	3.0 kg (6.61 lbs)

EW-D SKM-S (Handheld Transmitter)

Input voltage	2.0 - 4.35 V
Input current	< 300 mA
Power supply	2 AA batteries 1.5 V (alkali manganese) or BA 70 rechargeable battery pack
Occupied bandwidth	200 kHz
Transmit power (radiated)	Audio link: 10 mW ERP (Range Y1-3: 12 mW ERP) BLE: max. 10 mW EIRP
Dimensions (ø x l) (incl. MMD 835 microphone module)	50 x 268 mm (1.97" x 10.55")
(without microphone module)	40 x 200 mm (1.57" x 7.87")
Weight (without batteries) (incl. MMD 835 microphone module)	approx. 304 g (0.67 lbs)
(without microphone module)	approx. 195 g (7.14 lbs)

MMD 835 (Microphone Module)

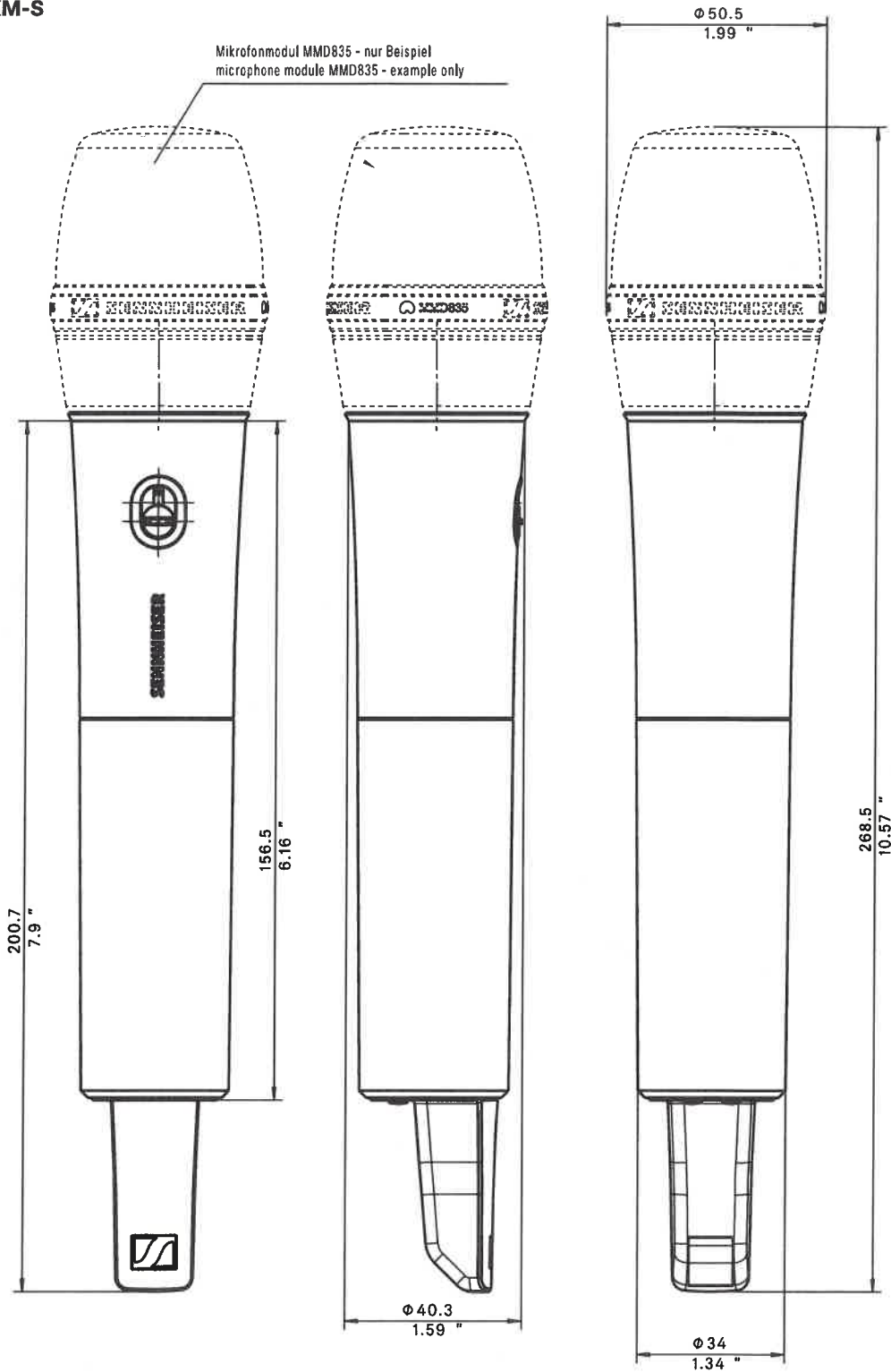|	
Transducer principle	dynamic
Sensitivity	2.1 mV/Pa
Sound pressure level	154 dB SPL
Pick-up pattern	cardioid

Evolution Wireless Digital
EW-D 835-S SET | Handheld Set
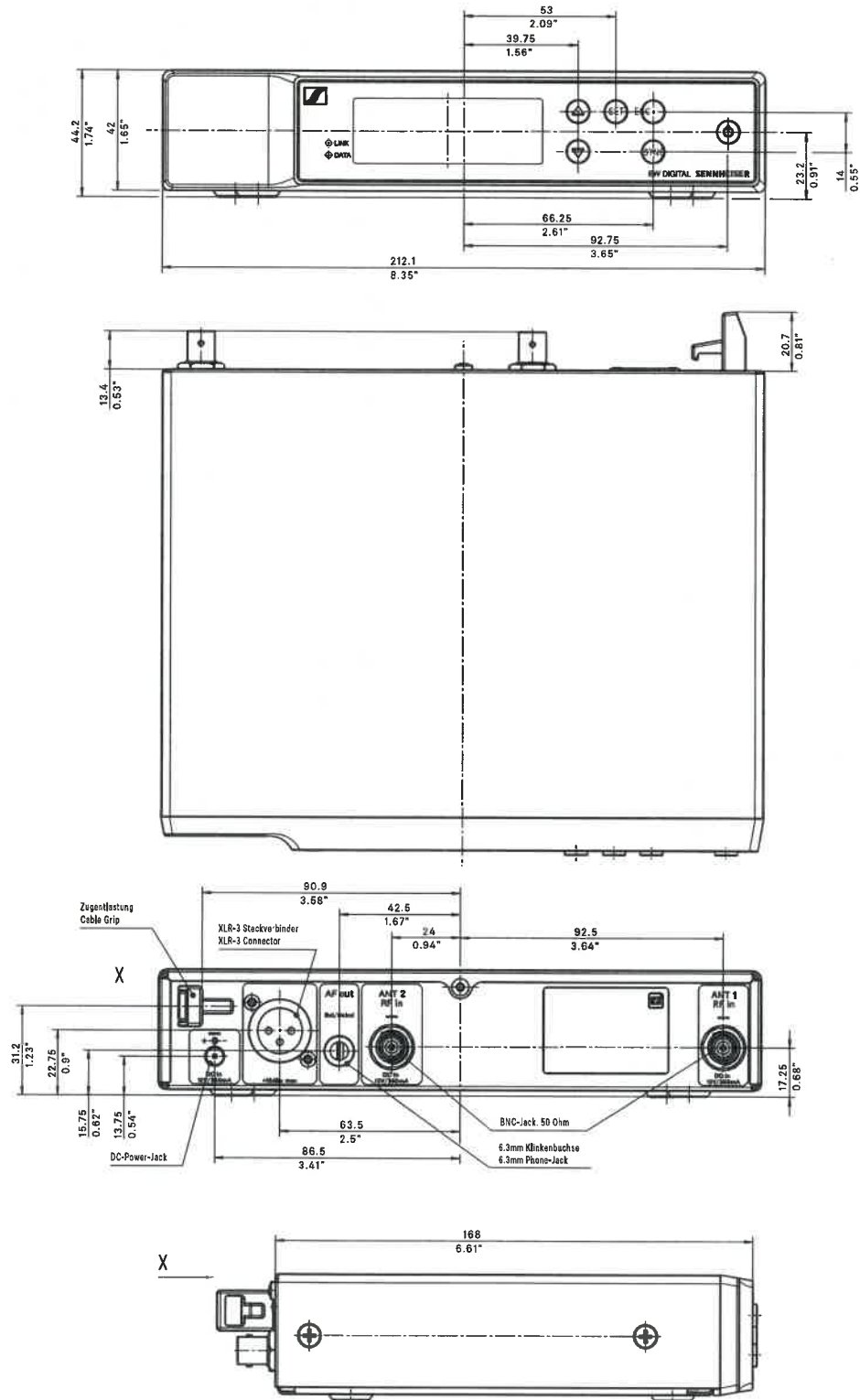
DIMENSIONS

EW-D EM

Evolution Wireless Digital
EW-D 835-S SET | Handheld Set

DIMENSIONS

EW-D SKM-S

Mikrofonmodul MMD835 - nur Beispiel
microphone module MMD835 - example only

Φ50.5
1.99 "

200.7
7.9 "

156.5
6.16 "

268.5
10.57 "

Φ40.3
1.59 "

Φ34
1.34 "

Evolution Wireless Digital
EW-D 835-S SET | Handheld Set

ARCHITECT'S SPECIFICATION

EW-D EM rack receiver

The stationary receiver with switching diversity technology shall be for use with a companion transmitter as part of a digital wireless RF transmission system.

The receiver shall operate within ten UHF frequency ranges, with a switching bandwidth of up to 56 MHz: 470.2 – 526 MHz, 520 – 576 MHz, 552 – 607.8 MHz, 606.2 – 662 MHz, 630 – 662 MHz, 662 – 693.8 MHz, 823.2 – 831.8 MHz, 863.2 – 846.8 MHz, 925.2 – 937.3 MHz, 1785.2 – 1799.8 MHz; selectable frequencies shall be up to 2,240.

The receiver shall feature Bluetooth® Low Energy (BLE) at a frequency range between 2402 and 2480 MHz for remote controlling the devices via a control App for iOS and Android.

The audio frequency response shall be between 20 Hz and 20 kHz (-3 dB) @ 3 dBfs. Audio total harmonic distortion (THD) shall be ≤ -60 dB for 1 kHz @ -3 dBfs input level. Dynamic range shall be 134 dB.

The receiver shall be menu-driven with a backlit LC display showing the current frequency, channel number, metering of RF level, metering of AF level, lock status, muting function, mute lock status, antenna switching diversity, app connection, gain, audio output level, menu and battery status of the associated transmitter. An auto-lock feature shall be provided to prevent settings from being accidentally altered.

The receiver shall feature a balanced XLR-3M audio output with a maximum output of +18 dBu along with an unbalanced ¼" (6.3 mm) audio output with a maximum output of +12 dBu. Two BNC-type input sockets shall be provided for connecting the antennas.

The receiver shall operate on 12 V power supplied from the power supply unit or from a Sennheiser EW-D ASA antenna splitter. Power consumption shall be ≤ 300 mA. The receiver shall have a rugged metal housing; dimensions shall be approximately 212 x 44 x 189 mm (8.35" x 1.73" x 7.44"). Weight shall be approximately 1000 grams (2.2 lbs) without antennas and power supply. Operating temperature shall range from −10 °C to +55 °C (+14 °F to +131 °F).

The receiver shall be the Sennheiser EW-D EM.

EW-D SKM-S handheld transmitter

The handheld transmitter shall be for use with a companion receiver as part of a digital wireless RF transmission system.

The handheld transmitter shall operate within ten UHF frequency ranges, with a switching bandwidth of up to 56 MHz: 470.2 – 526 MHz, 520 – 576 MHz, 552 – 607.8 MHz, 606.2 – 662 MHz, 630 – 662 MHz, 662 – 693.8 MHz, 823.2 – 831.8 MHz, 863.2 – 846.8 MHz, 925.2 – 937.3 MHz, 1785.2 – 1799.8 MHz; selectable frequencies shall be up to 2,240.

The audio frequency response shall be between 20 Hz and 20 kHz (-3 dB) @ 3 dBfs. Audio total harmonic distortion (THD) shall be ≤ -60 dB for 1 kHz @ -3 dBfs input level. Dynamic range shall be 134 dB.

A programmable mute switch shall be provided to mute or unmute the audio signal.

The handheld transmitter's parameters shall be configurable in the associated receiver's menu and synchronized with the handheld transmitter via Bluetooth Low Energy (BLE).

Power shall be supplied to the handheld transmitter by two 1.5 V AA size batteries or by one Sennheiser BA 70 rechargeable battery pack. Operating time shall be typically 12 hours with a battery pack and up to 8 hours with AA batteries.

Occupied bandwidth shall be 200 kHz. Transmit power (radiated) shall be 10 mW ERP (1785.2 – 1799.8 MHz Range: 12 mW ERP).

The handheld transmitter shall have a rugged metal housing; dimensions shall be approximately 50 mm (1.97") in diameter and 268 mm (10.55") in length including a Sennheiser MMD 835 microphone module. Weight including MMD 835 microphone module shall be approximately 304 grams (0.67 lbs). Operating temperature shall range from −10 °C to +55 °C (+14 °F to +131 °F).

The handheld transmitter shall be the Sennheiser EW-D SKM-S.

The microphone head suitable for use with the handheld transmitter shall be a dynamic type with a cardioid pick-up pattern and a sensitivity of 2.1 mV/Pa. Maximum sound pressure level shall be 154 dB SPL.

The microphone head shall be the Sennheiser MMD 835.

Evolution Wireless Digital
EW-D ME4 SET | Lavalier Set

Versatile and feature-rich digital wireless system for those who sing, speak or play instruments that allows for seamless product pairing and management via the Smart Assist App.

With a metal housing, the robust bodypack transmitter and unobstrusive clip-on microphone ME 4 (cardioid) with high speech intelligibility suit perfectly for daily use on stage.

FEATURES

- Digital wireless eliminates noise, interference and static bursts
- UHF transmission greatly enhances range, reliability and scalability
- Mobile App streamlines setup and operation and eliminates complicated menus
- Automated setup creates reliable connections with minimal time and effort
- Up to 2,240 selectable frequencies
- Transmission range: up to 100 m in an ideal environment (without obstacles)
- Lithium Ion battery pack delivers up to 12 hours of operation (up to 8 hours of operation with AA batteries)
- 56 MHz Bandwidth will allow for up to 90 channels
- Preserves every detail of even the most dynamic performances with 134 dB transmitter dynamic range

DELIVERY INCLUDES

- EW-D EM rack receiver
- EW-D SK bodypack transmitter
- ME 4 lavalier microphone
- 2 rod antennas
- power supply with country adapters
- rackmount set
- 4 rubber feet
- quick guide
- safety guide
- manufacturer declaration sheet

Evolution Wireless Digital
EW-D ME4 SET | Lavalier Set

PRODUCT VARIANTS

EW-D ME4 SET (Q1-6)	470.2 - 526 MHz	Art. no. 508720
EW-D ME4 SET (R1-6)	520 - 576 MHz	Art. no. 508721
EW-D ME4 SET (R4-9)	552 - 607.8 MHz	Art. no. 508722
EW-D ME4 SET (S1-7)	606.2 - 662 MHz	Art. no. 508723
EW-D ME4 SET (S4-7)	630 - 662 MHz	Art. no. 508724
EW-D ME4 SET (S7-10)	662 - 693.8 MHz	Art. no. 508725
EW-D ME4 SET (U1/5)	823.2 - 831.8 MHz & 863.2 - 864.8 MHz	Art. no. 508726
EW-D ME4 SET (V3-4)	925.2 - 937.3 MHz	Art. no. 508728
EW-D ME4 SET (Y1-3)	1785.2 - 1799.8 MHz	Art. no. 508729

ACCESSORIES

EW-D ASA (Q-R-S)	Active Antenna Splitter	470 - 694 MHz	Art. no. 508879
EW-D ASA (T-U-V-W)	Active Antenna Splitter	694 - 1075 MHz	Art. no. 508880
EW-D ASA (X-Y)	Active Antenna Splitter	1350 - 1805 MHz	Art. no. 508881
EW-D ASA CN/ANZ (Q-R-S)	Active Antenna Splitter	470 - 694 MHz	Art. no. 508998
EW-D AB (Q)	Antenna Booster	470 - 550 MHz	Art. no. 508873
EW-D AB (R)	Antenna Booster	520 - 608 MHz	Art. no. 508874
EW-D AB (S)	Antenna Booster	606 - 694 MHz	Art. no. 508875
EW-D AB (U)	Antenna Booster	823 - 865 MHz	Art. no. 508876
EW-D AB (V)	Antenna Booster	902 - 960 MHz	Art. no. 508877
EW-D AB (Y)	Antenna Booster	1785 - 1805 MHz	Art. no. 508878
ADP UHF (470 - 1075 MHz)	Passive directional antenna	470 - 1075 MHz	Art. no. 508863
BA 70	Rechargeable battery pack for SK and SKM-S		Art. no. 508860
L 70 USB	Charger for BA 70 rechargeable battery pack		Art. no. 508861
EW-D CHARGING SET	Set of L 70 USB charger and 2 BA 70 rechargeable battery packs		Art. no. 508862
EW-D COLOR CODING SET	Colored labels for wireless link identification for EM, SKM-S, SK		Art. no. 508989
EW-D SK COLOR CODING	Colored labels for wireless link identification for SK		Art. no. 508990
EW-D SKM COLOR CODING	Colored labels for wireless link identification for SKM-S		Art. no. 508991
EW-D EM COLOR CODING	Colored labels for wireless link identification for EM		Art. no. 508992

Evolution Wireless Digital
EW-D ME4 SET | Lavalier Set

MICROPHONE COMPATIBILITY

Lavalier and headset microphones compatible with the EW-D SK bodypack transmitter

ME 2	Omni-directional lavalier microphone Models produced from 2021 onward, featuring a gold-plated connector*
ME 4	Cardioid lavalier microphone Models produced from 2021 onward, featuring a gold-plated connector*
MKE Essential Omni	Omni-directional lavalier microphone
MKE 2 Gold	Omni-directional lavalier microphone Models produced from 2018 onward, featuring a blue serial number plate
MKE 1	Omni-directional lavalier microphone
ME 3	Cardioid headset microphone Models produced from 2021 onward, featuring a gold-plated connector*
HSP Essential Omni	Omni-directional headset microphone
HSP 2	Omni-directional headset microphone Models produced from March 2020 onward (featuring code 1090 or later)
HS 2	Omni-directional headset microphone Models produced from 2021 onward, featuring a gold-plated connector*
SL Headmic 1	Omni-directional headset microphone

* Models produced prior to 2021 will feature a nickel connector. Earlier models may pick up noise when placed close to the transmitter and are not recommended for use

Evolution Wireless Digital
EW-D ME4 SET | Lavalier Set

SPECIFICATIONS

System

Audio link frequency ranges	Q1-6	470.2 - 526 MHz
	R1-6	520 - 576 MHz
	R4-9	552 - 607.8 MHz
	S1-7	606.2 - 662 MHz
	S4-7	630 - 662 MHz
	S7-10	662 - 693.8 MHz
	U1/5	823.2 - 831.8 MHz & 863.2 - 864.8 MHz
	V3-4	925.2 - 937.3 MHz
	Y1-3	1785.2 - 1799.8 MHz
Bluetooth® Low Energy (BLE) frequency range	2402 - 2480 MHz	
Audio frequency response	20 Hz - 20 kHz (-3 dB) @ 3 dBfs	
Audio THD	≤ -60 dB for 1 kHz @ -3 dBfs input level	
Dynamic range	134 dB	
System latency	1.9 ms	
Operating temperature	-10 °C - +55 °C (14 °F - 131 °F)	
Relative humidity	5 - 95 % (non-condensing)	

EW-D EM (Rack Receiver)

Input voltage	11 - 13 V ⎓
Input current	≤ 300 mA
Transmit power (radiated)	BLE: max. 10 mW EIRP
Audio output power	18 dBu max.
Dimensions	212 x 44 x 189 mm (8.35" x 1.73" x 7.44")
Weight (without antennas and power supply)	approx. 1000 g (2.2 lbs)

Set in packaging

Dimensions	405 x 350 x 73 mm (15.91" x 13.78" x 2.87")
Weight	2.8 kg (6.17 lbs)

EW-D SK (Bodypack Transmitter)

|	
Input voltage	2.0 - 4.35 V
Input current	< 300 mA
Power supply	2 AA batteries 1.5 V (alkali manganese) or BA 70 rechargeable battery pack
Occupied bandwidth	200 kHz
Transmit power (radiated)	Audio link: 10 mW ERP (Range Y1-3: 12 mW ERP) BLE: max. 10 mW EIRP
Dimensions (without antenna)	63 x 80 x 20 mm (2.48" x 3.15" x 0.79")
Weight (without batteries)	approx. 120 g (0.26 lbs)

ME 4 (Lavalier Microphone)

Transducer principle	pre-polarized condensor microphone
Pick-up pattern	cardioid
Sensitivity (free field, no load) (1 kHz)	40 mV/Pa
Max. SPL at 1 kHz	120 dB
Frequency response	50 to 18,000 Hz
Equivalent noise level A-weighted	31 dB
Connector	3.5 mm jack
Cable length	approx. 1.60 m (62.99")
Supply voltage	7.5 V

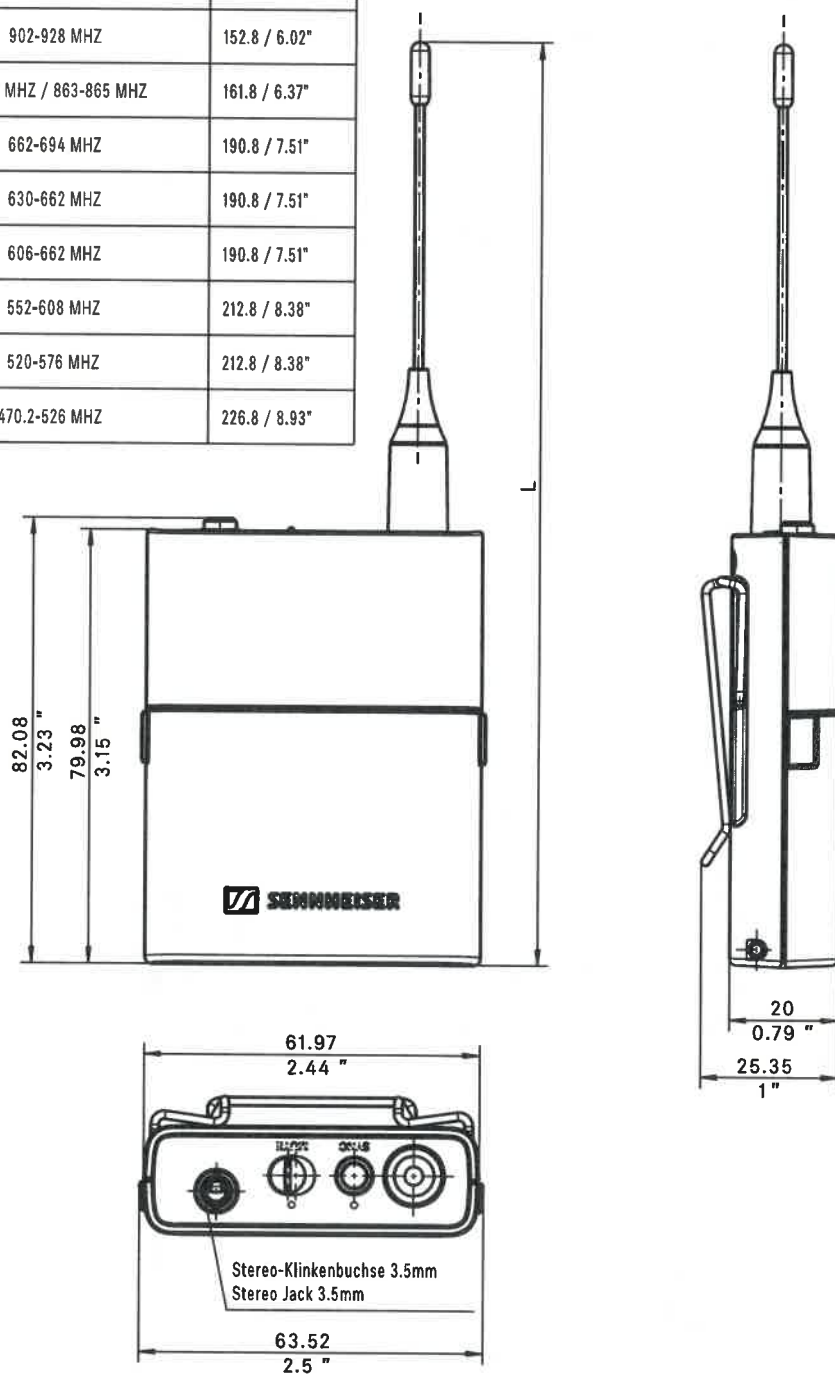# Evolution Wireless Digital
EW-D ME4 SET | Lavalier Set

DIMENSIONS

EW-D EM
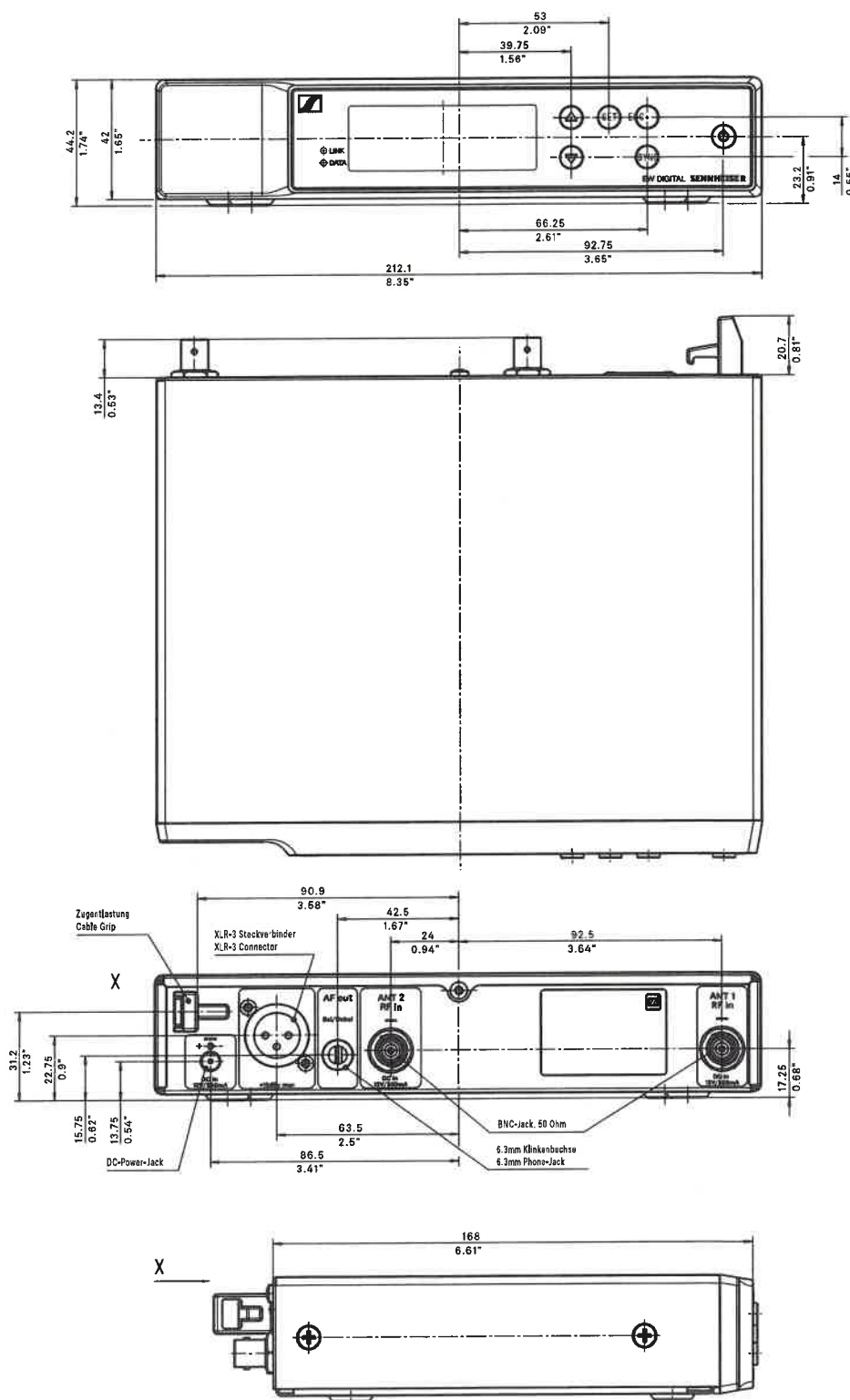
Evolution Wireless Digital
EW-D ME4 SET | Lavalier Set

DIMENSIONS

EW-D SK

Frequenzbereich Frequency range	L
1785-1805 MHZ	198.8 / 7.83"
925-937.5 MHZ	152.8 / 6.02"
902-928 MHZ	152.8 / 6.02"
823-832 MHZ / 863-865 MHZ	161.8 / 6.37"
662-694 MHZ	190.8 / 7.51"
630-662 MHZ	190.8 / 7.51"
606-662 MHZ	190.8 / 7.51"
552-608 MHZ	212.8 / 8.38"
520-576 MHZ	212.8 / 8.38"
470.2-526 MHZ	226.8 / 8.93"

82.08
3.23 "

79.98
3.15 "

L

20
0.79 "

25.35
1 "

61.97
2.44 "

Stereo-Klinkenbuchse 3.5mm
Stereo Jack 3.5mm

63.52
2.5 "

Evolution Wireless Digital
EW-D ME4 SET | Lavalier Set

ARCHITECT'S SPECIFICATION

EW-D EM rack receiver

The stationary receiver with switching diversity technology shall be for use with a companion transmitter as part of a digital wireless RF transmission system.

The receiver shall operate within ten UHF frequency ranges, with a switching bandwidth of up to 56 MHz: 470.2 – 526 MHz, 520 – 576 MHz, 552 – 607.8 MHz, 606.2 – 662 MHz, 630 – 662 MHz, 662 – 693.8 MHz, 823.2 – 831.8 MHz, 863.2 – 846.8 MHz, 925.2 – 937.3 MHz, 1785.2 – 1799.8 MHz; selectable frequencies shall be up to 2,240.

The receiver shall feature Bluetooth® Low Energy (BLE) at a frequency range between 2402 and 2480 MHz for remote controlling the devices via a control App for iOS and Android.

The audio frequency response shall be between 20 Hz and 20 kHz (-3 dB) @ 3 dBfs. Audio total harmonic distortion (THD) shall be ≤ -60 dB for 1 kHz @ -3 dBfs input level. Dynamic range shall be 134 dB.

The receiver shall be menu-driven with a backlit LC display showing the current frequency, channel number, metering of RF level, metering of AF level, lock status, muting function, mute lock status, antenna switching diversity, app connection, gain, audio output level, menu and battery status of the associated transmitter. An auto-lock feature shall be provided to prevent settings from being accidentally altered.

The receiver shall feature a balanced XLR-3M audio output with a maximum output of +18 dBu along with an unbalanced ¼" (6.3 mm) audio output with a maximum output of +12 dBu. Two BNC-type input sockets shall be provided for connecting the antennas.

The receiver shall operate on 12 V power supplied from the power supply unit or from a Sennheiser EW-D ASA antenna splitter. Power consumption shall be ≤ 300 mA. The receiver shall have a rugged metal housing; dimensions shall be approximately 212 x 44 x 189 mm (8.35" x 1.73" x 7.44"). Weight shall be approximately 1000 grams (2.2 lbs) without antennas and power supply. Operating temperature shall range from –10 °C to +55 °C (+14 °F to +131 °F).

The receiver shall be the Sennheiser EW-D EM.

EW-D SK bodypack transmitter

The bodypack transmitter shall be for use with a companion receiver as part of a digital wireless RF transmission system.

The bodypack transmitter shall operate within ten UHF frequency ranges, with a switching bandwidth of up to 56 MHz: 470.2 – 526 MHz, 520 – 576 MHz, 552 – 607.8 MHz, 606.2 – 662 MHz, 630 – 662 MHz, 662 – 693.8 MHz, 823.2 – 831.8 MHz, 863.2 – 846.8 MHz, 925.2 – 937.3 MHz, 1785.2 – 1799.8 MHz; selectable frequencies shall be up to 2,240.

The audio frequency response shall be between 20 Hz and 20 kHz (-3 dB) @ 3 dBfs. Audio total harmonic distortion (THD) shall be ≤ -60 dB for 1 kHz @ -3 dBfs input level. Dynamic range shall be 134 dB.

A programmable mute switch shall be provided to mute or unmute the audio signal.

The bodypack transmitter's parameters shall be configurable in the associated receiver's menu and synchronized with the bodypack transmitter via Bluetooth Low Energy (BLE).

Power shall be supplied to the bodypack transmitter by two 1.5 V AA size batteries or by one Sennheiser BA 70 rechargeable battery pack. Operating time shall be typically 12 hours with a battery pack and up to 8 hours with AA batteries.

Occupied bandwidth shall be 200 kHz. Transmit power (radiated) shall be 10 mW ERP (1785.2 – 1799.8 MHz Range: 12 mW ERP).

The bodypack transmitter shall have a rugged metal housing; dimensions shall be approximately 63 x 80 x 20 mm (2.48" x 3.15" x 0.79") without antenna. Weight without the batteries shall be approximately 120 grams (0.26 lbs). Operating temperature shall range from –10 °C to +55 °C (+14 °F to +131 °F).

The bodypack transmitter shall be compatible with microphones for every application: Sennheiser lavalier microphones ME 2, ME 4, MKE 1, MKE 2 Gold and MKE Essential Omni, Sennheiser headset microphones HS 2, HSP 2, HSP Essential Omni, ME 3 and SL Headmic 1.

The bodypack transmitter shall be the Sennheiser EW-D SK.

DATA SHEET

DESONO™
CM60DTD

TWO-WAY 6.5-INCH
CEILING LOUDSPEAKER

biamp.

zoom Certified

FEATURES

- Zoom Certified
- Requires only 6.2" (157 mm) mounting depth
- High speech intelligibility coupled with full-range music reproduction
- Thin-edge, magnetically attached grille
- Tap switch allows for 70V/100V or 16Ω low impedance operation
- Tuned bass reflex port for optimized low frequency performance
- Loudspeaker overload protection for 24/7 failsafe operation
- ETL listed to conform with UL Std 1480A and UL 2043; Certified to CSA C22.2#62368-1

TECHNICAL SPECIFICATIONS

Operating Mode	Passive
Operating Environment	Indoor
Operating Range (-10dB)	75 Hz to 22 kHz
Nominal Beamwidth (H x V)	150° conical
Transducers	LF 1 x 6.5" (165 mm) coated paper cone HF 1 x 1" (25 mm) soft dome
Continuous Power Handling @ Nominal Impedance	31V 60W @ 16Ω (240W peak)
Nominal Sensitivity @ 1m	@ 1W @ 2.83V 86 dB 83 dB
Nominal Maximum SPL @ 1m	Peak Continuous 110 dB 104 dB
Transformer	70V: 60W, 30W, 15W, 7.5W, 3.75W 100V: 60W, 30W, 15W, 7.5W
Protection	3-step self-resetting protection
Recommended Amplifiers	60W - 120W @ 16Ω (31V - 44V)

PHYSICAL

Input Connection	(1) 4-way Euroblock connector with permanent pass-through
Mounting Provisions	2 mounting clamps with grip range of 0.2" - 2.6" (3 - 65 mm); Cover plate with 0.75" (22 mm) NPT knockout for conduit connectors
Safety Features	2 hang points
Compliance	ETL listed to comply with UL 1480A and UL 2043; Certified to CSA C22.2#62368-1; Suitable for use in air handling spaces per NFPA 70, NFPA 90 Conforms with City of Chicago Codes
Dimensions H x Dia.	6.2" x 10.2" (157 mm x 258 mm)
Cutout Diameter	9.1" (232 mm)
Weight	8.8 lbs (4.0 kg)
Finish	Refer to the Technical Drawings (page 3)
Accessories (included)	Tile rails; tile rail spacers; cutout template

OPTIONS

Accessories	SQGR square grille

APPLICATIONS

Conference Rooms · Hallways · Training Rooms · Multipurpose Rooms · Lunch Rooms · Manufacturing Areas · Offices · Waiting Rooms

DESCRIPTION

The Desono CM60DTD two-way 6.5" ceiling loudspeaker delivers crystal clear audio for all your public address and background music needs. Its 6.5" coated paper woofer and 1" tweeter results in a high SPL and extremely low distortion, ensuring exceptional clarity over the entire frequency spectrum.

The CM60DTD utilizes a 5-position switchable transformer ranging from 3.75W to 60W with low-impedance bypass for constant-voltage operation, making it an excellent choice for large areas of BGM.

Designed with the installer in mind, they can be blind-mounted from below the ceiling, and feature a magnetic grille for easy toolless installation and removal that can also be painted to match the room decor. Additionally, the tap switch is located on the face of the loudspeaker, so adjustments can be made without requiring ceiling access.

Desono CM60DTD loudspeakers are an ideal choice for a multitude of environments that demand superior speech intelligibility and full range music reproduction.
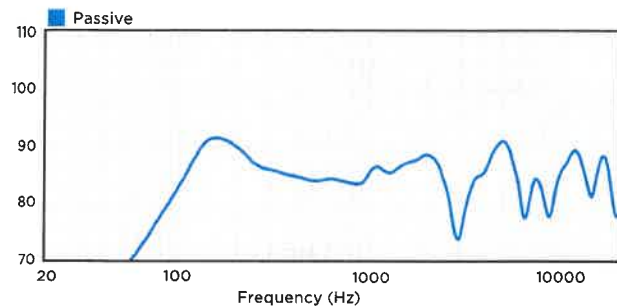
Biamp strives to improve its products on a continual basis. Specifications are therefore subject to change without notice.

Data presented on this spec sheet represents the basic performance specifications for the model. For a detailed analysis of this loudspeaker's performance, please download the GLL file from our website: biamp.com
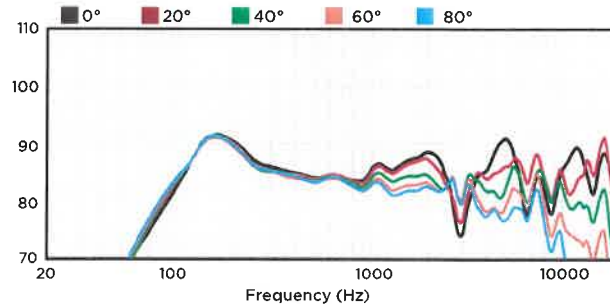
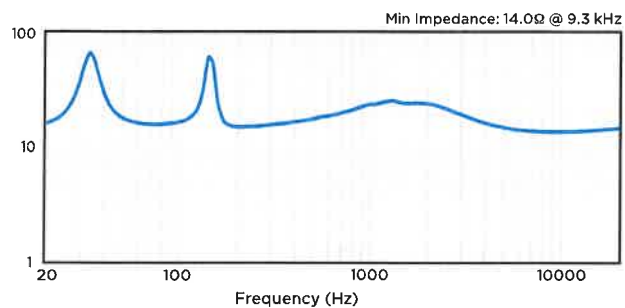# DESONO
CM60DTD
TWO-WAY 6.5-INCH
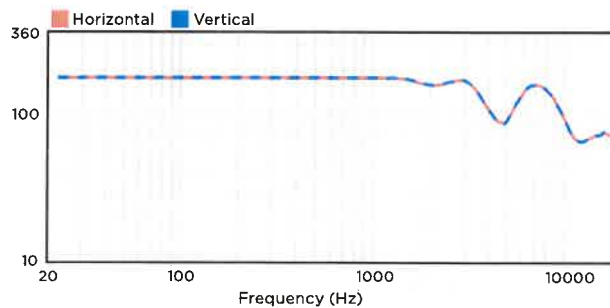## CEILING LOUDSPEAKER

FREQUENCY RESPONSE (dB SPL)

Passive

VERTICAL OFF-AXIS DOWN RESPONSE (dB)

0°   20°   40°   60°   80°

IMPEDANCE (Ohms)

Min Impedance: 14.0Ω @ 9.3 kHz

BEAMWIDTH (Degrees)

Horizontal   Vertical

DESONO
CM60DTD
TWO-WAY 6.5-INCH
CEILING LOUDSPEAKER

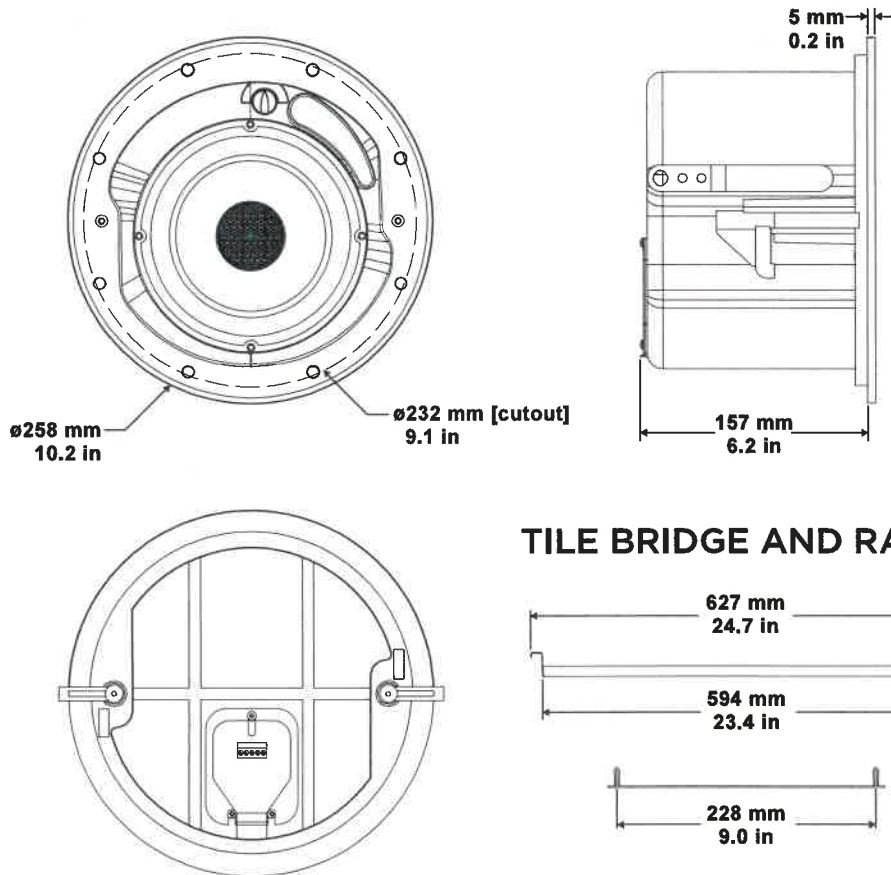## TECHNICAL DRAWING / DIMENSIONS / FINISH

H x W (diameter)
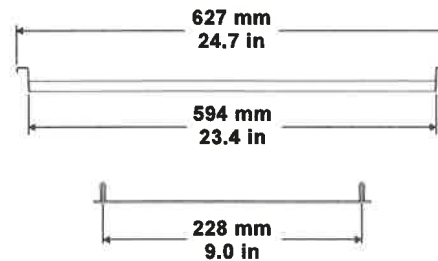6.2" x 10.2"
(157 mm x 258 mm)

Unit Weight
8.8 lbs (4.0 kg)

Shipping Weight
11.6 lbs (5.3 kg)

Grille:
Steel, White (RAL 9010) finish

Enclosure / Finish
Steel, matte finish

5 mm
0.2 in

ø258 mm
10.2 in

ø232 mm [cutout]
9.1 in

157 mm
6.2 in

TILE BRIDGE AND RAILS

627 mm
24.7 in

594 mm
23.4 in

228 mm
9.0 in

QSC

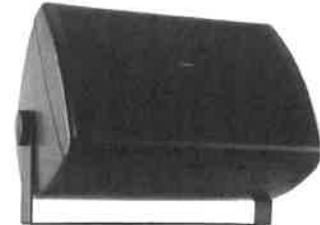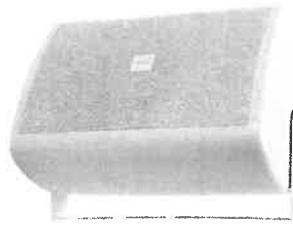## AcousticCoverage™ Series

AC-S4T

Small format, surface mount
loudspeaker

Features

- High quality transducers provide exceptional clarity through the critical voice range.

- Improved musicality often not seen in typical BGM class products.

- Ported baffle for increased low frequency extension down to 70 Hz.

- Low saturation 70/100V transformers with 8 ohm bypass.

- 4-pole Euroblock connector eases system wiring.

- Advanced voicing via QSC Intrinsic Correction™, applied using the Q-SYS™ Platform or CXD Series amplifier platforms.

- Available in black (RAL 9011) or white (RAL 9010)

- Complete EASE, CAD & BIM information available online

Wide Area Paging · Background Music · Distance Conferencing Reinforcement· Healthcare Facilities · Concourses · Transportation Terminals · Ancillary Support in Larger Systems

The QSC AcousticCoverage™ Series AC-S4T is a surface mounted 4" two-way loudspeaker with 70/100V transformer, suitable for a wide variety of audio/video conferencing reinforcement, voice paging and background music applications.

AcousticCoverage™ Series is designed to offer integrators a cost effective solution for applications where voice reinforced coverage is of primary concern, while providing improved musicality often not seen in typical BGM class products.

A high quality 100 mm [4 in] polypropylene cone transducer with butyl rubber surround and a 25 mm [1 in] aluminium dome tweeter offers pristine clarity through the critical vocal range for increased speech intelligibility. With 130 degrees of conical coverage, the AC-S4T reduces the number of loudspeakers required for even coverage in close proximity.

The UV treated high impact ABS enclosure and ported baffle assembly has been optimally tuned for added musicality, creating low frequency extension down to 70 Hz. To maintain this frequency response, the AC-S4T utilizes a 16-watt low-saturation and low-loss 70/100V transformer with varying selectable taps, including an 8Ω bypass.

To further enhance performance and speed of install with optimum result, advanced voicing via QSC Intrinsic Correction™ techniques are obtainable usingthe Q-SYS™ Platform and in CXD Series amplifiers for a complete QSC systems solution.

Installers will appreciate the 4-pole Euroblock connector for loop thru wiring, located on the rear of the enclosure. Eliminating the termination hassles of star topology wiring designs, the generous Euroblock of the AC-S4T can accept four 18AWG pairs.
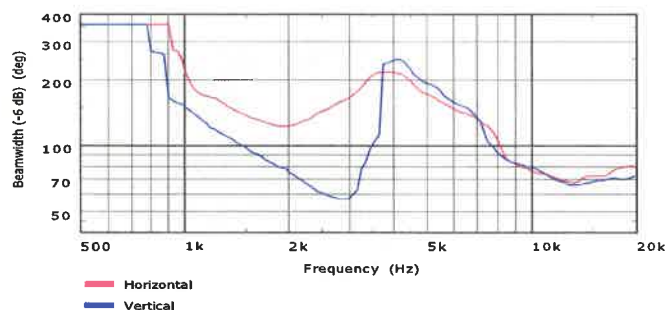
The AC-S4T features brass inserts to accept the included yoke mount and is secured using the supplied thumb bolts. The grille is adorned with a spring loaded and rotatable logo for installation convenience in either horizontal or vertical deployments.

The AC-S4T is available in white (RAL 9010) or black (RAL 9011) to match complimenting QSC product families. The AC-S4T may also be painted to match any décor.
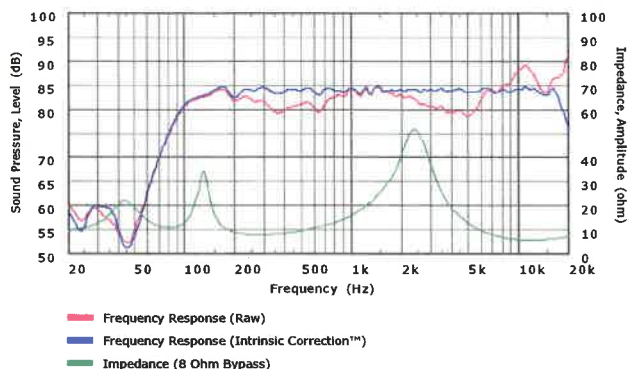
To assist in successful systems integration, complete EASE, CAD, and BIM files are available for download online.
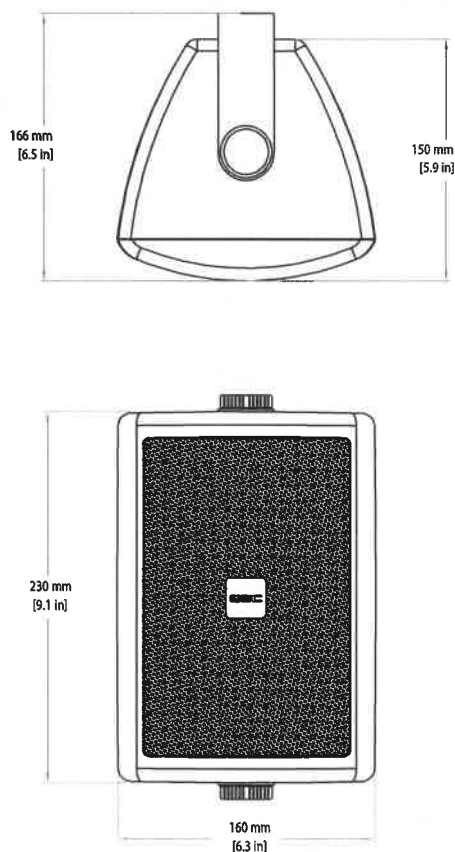
AC-S4T Details

Beamwidth:

- Horizontal
- Vertical

Impedance / Frequence Response:

- Frequency Response (Raw)
- Frequency Response (Intrinsic Correction™)
- Impedance (8 Ohm Bypass)

Dimensions:

166 mm [6.5 in]

150 mm [5.9 in]

230 mm [9.1 in]

160 mm [6.3 in]

Specifications:

System Details	AC-S4T
Effective frequency range[1]	70 Hz – 20 kHz
Rated noise power / voltage[2]	16 watts / 11.3 volts (rms)
Broad-band sensitivity[3]	85 dB SPL
Coverage angle (-6 dB)	130° conical (500 Hz - 5 kHz)
Directivity factor (Q)	6
Directivity Index	8 dB
Maximum continuous SPL[4]	97 dB
Maximum peak SPL[4]	103 dB
Rated impedance	8 ohms
Recommended amplifier	32 watts
Transformer taps	70 V: 16, 8, 4, 2, 1 watts 100V: 16, 8, 4, 2 watts 8 ohm bypass
LF transducer	100 mm [4 in] Polypropylene woofer 25 mm [1 in] voice-coil
HF transducer	25 mm [1 in] Aluminium dome tweeter 25 mm [1 in] voice-coil
Input connector type	Euroblock connector with parallel output
Enclosure material	UV treated, high impact ABS polymer
Grille material	Powder coated steel
Yoke material	Powder coated steel, brass inserts
Enclosure Details	
Ingress protection	IP-44
Operating environment	Designed for indoor use
Operating Temperature Range	-20 to 50° C [-4 to 122° F]
Net weight	2.4 kg [5.3 lb]
Product dimensions	230 x 160 x 150 mm [9.1 x 6.3 x 5.9 in]
Shipping weight	5.3 kg [11.8 lb] (pair packed)
Shipping dimensions	292 x 206 x 368 mm [11.5 x 8.1 x 14.5 in] (pair packed)
Included accessories	Yoke mount system, euroblock connector

[1] Free-field, -10 dB from on-axis sensitivity
[2] IEC60268-1 noise signal for 2 hours
[3] On-Axis, free-field sensitivity, 2.83V, 1 m
[4] Calculated from rated noise voltage and sensitivity

As part of QSC's ongoing commitment to product development, specifications are subject to change without notice.

Q-SYS NC-110
Q-SYS NC-12x80
Q-SYS NC-20x60

KEY FEATURES

- NC-110: fixed-lens, electronic pan, tilt, zoom (ePTZ) with 110° horizontal field of view

- NC-12x80: 12x optical zoom, 80° horizontal field of view

- NC-20x60: 20x optical zoom, 60° horizontal field of view

- Professional quality video conferencing for the Q-SYS AV-to-USB bridging solution

- Distribute video via the Q-LAN network anywhere it is needed

- Add as many network-based NC Series cameras to a design as needed to enable multi-camera functionality when integrating web conferencing platforms

- Distribute video via the Q-LAN network anywhere it is needed

- Simultaneously stream IP feeds and HDMI or SDI (PTZ models only)

- User-configurable resolution and quality for IP streams (up to 1080p), providing greater flexibility for a wide variety of use cases

- Comprehensive management via Q-SYS Designer Software and Q-SYS Reflect Enterprise Manager

- Complete camera imaging controls, including white balance, focus and exposure

- Image Rotation control inverts the video when the camera is mounted upside down. For PTZ cameras, the optional ceiling mount accessory is the PTZ-CMB1

- Power over Ethernet

- Local 12 V connection for PTZ models (power supply not included)

- PTZ models include PTZ-WMB1 wall mount bracket for simple installation; ePTZ model has built-in mounting hardware

- Includes lens cover for privacy (NC-110 only)

Q-SYS NC Series Cameras

Network cameras for collaboration

The Q-SYS NC Series conference cameras deliver high-quality video feeds natively to the Q-SYS Platform. With three models to choose from, these network cameras offer a simple and scalable video solution for any size meeting space.

Driven by the Q-SYS OS, the NC Series integrate seamlessly into any Q-SYS system, allowing for easy camera feed routing anywhere on the network without the need for complicated programming or video matrix hardware. These camera video feeds are delivered to any modern video conferencing applications such as Microsoft Teams, Zoom, Google Meet, and Cisco Webex via any Q-SYS AV bridging peripheral

BENEFITS

Rightsized camera options: Choose the right camera for your room. The Q-SYS NC-110 EPTZ camera drives the Q-SYS AV bridging solution into smaller, wider or more value-engineered room types and applications, while the Q-SYS NC-12x80 and Q-SYS NC-20x60 deliver professional PTZ functionality and presets, enabling larger and/or reconfigurable room layouts.

Network transport, USB delivery: NC Series solves the cable length limitations of traditional cameras solutions by enlisting a single network cable for video, power and control data transport into Q-SYS, and then employs USB technology to deliver the video to its intended PC/compute device. This greatly simplifies system design and deployment by eliminating the need for costly, unreliable USB cabling. Furthermore, NC Series goes beyond the traditional 1-to-1 limitation found in most USB cameras by allowing for a "many-to-any" scenario that allows users to integrate as many NC Series cameras as needed in their Q-SYS system design

and take advantage of network-based realtime camera switching

Multiple camera support for UC platforms: Q-SYS uses the power of the network (rather than dedicated switching hardware) to allow you to add as many NC Series cameras to your system as you desire and do live switching between the cameras, all while delivering a singular UVC/UAC stream to your application of choice

Universal Compatibility: The feeds from NC Series cameras, along with Q-SYS room audio, can be delivered to the conferencing application of your choice. With this functionality, Q-SYS can scale the meeting experience for Zoom, Microsoft Teams, Google Meet, Cisco Webex and more into rooms of any size or configuration to ensure a great experience parity for both in-room and remote meeting participants.

Designed for Q-SYS: NC Series collaboration cameras are native to Q-SYS, a cloud-manageable audio, video and control **platform**, built to deliver scalable, flexible AV solutions into the future. At its foundation, the **Q-SYS OS** serves as the software foundation that manages your NC Series cameras along with a multitude of other native **Q-SYS Products** in the platform. Additionally, its modern IT architecture and development tools of the **Q-SYS Platform** enables an entire **Ecosystem** of third-party devices developed by approved Q-SYS Partners, as well as a worldwide community of Q-SYS developers.

Q-SYS NC Series Conference Cameras

	NC-12x80	NC-20x60	NC-110
System Details			
Description	Network PTZ conference camera		Network EPTZ conference camera
Image sensor	1/2.8" low-noise CMOS	1/1.8" low-noise CMOS	1/2.8" low-noise CMOS
Lens characteristics (wide to tele)	12x optical zoom f=3.47 to 41.65 mm F1.84 to F3.72	20x optical zoom f=6.25 to 125 mm F1.58 to F3.95	Fixed focus Lens 8x max zoom, 2x lossless f=1.86 mm Supports EPTZ
System scanning mode	Progressive		
Signal-to-noise ratio	≥ 55 dB		
Horizontal rotation range	± 170°		Supports EPTZ
Vertical rotation range	-30° to +90°		Supports EPTZ
Pan speed range	1.7° to 100°/s		
Tilt speed range	1.7° to 69.9°/s		
Horizontal and vertical flip	Supported (enables ceiling-mounted installations)		
Camera Imaging			
Minimum illumination	0.5 Lux @ (F1.8, AGC ON)		
Shutter	1/30s to 1/1000s		
White balance	Auto, indoor, outdoor, one push, manual, specified color temperature		
Digital noise reduction	3D digital noise reduction		
Supported Video Formats			
Supported bridging formats	Core Nano, Core 8 Flex, NV-32-H (Core Capable), I/O-USB Bridge: **MJPEG & YUY2** Core 110f: **YUY2** (360p max resolution on USB 2.0, 1080p30 max resolution on USB 3.0)		
Supported bridging resolutions	**1080p:** 30, 15 fps | **720p:** 30, 15 fps | **360p:** 30, 15 fps | **180p:** 30, 15 fps		
IP stream resolutions (preview window)	H.264 @ 360p, 270p or 180p		
HDMI output (RGB 4:4:4 8 bit)	2160p @ 25, 29.97, 30 fps 1080p @ 25, 29.97, 30, 50, 59.94, 60 fps 1080i @ 50, 59.94, 60 fps 720p @ 30, 50, 59.94, 60 fps		No HDMI output
3G-SDI output	1080p @ 25, 29.97, 30, 50, 59.94, 60 fps 1080i @ 50, 59.94, 60 fps 720p @ 50, 59.94, 60 fps		No SDI output
Power			
DC power input	12 V (±20%), 12 W, JEITA connector		N/A
Power over Ethernet (PoE)	PoE Type 1, Class 3		PoE Type 1, Class 2
Power consumption	12.95 W max		6.4 W max
General Specifications			
Network interface	1000BaseT (IEEE 802.3ab) Ethernet interface		
Operating temperature	0°C - 40°C		
Storage temperature	-40°C - 60°C		
Size	6.7 x 7.95 x 5.6 in (170 x 201 x 142 mm)		7.6 x 2.2 x 3.8 in (194.5 x 54.7 x 95.7 mm), with bracket
Net weight	3.5 lbs (1.6 kg)		0.9 lbs (0.4 kg), with bracket

NC-110
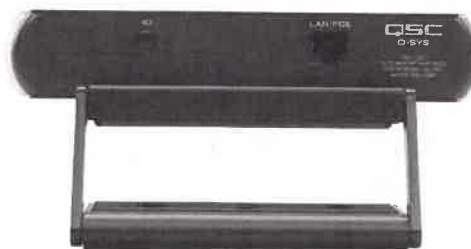
NC-12x80

NC-20x60

7,200 Lumens · 5,000,000:1 Contrast Ratio · WUXGA
3LCD · Laser Light Source · 4K Scaler

EK-720LU

Conference Series Projector

Key Features

- 7,200 center lumens bright with 80% uniformity and a 5,000,000:1 contrast ratio.
- High brightness and contrast with long life 20,000 hour Laser + Phosphor Light Source.
- 10-bit color processing, for superior color reproduction.
- Native WUXGA resolution. Compatible with inputs up-to UXGA, WUXGA and 4K.
- Supports analog and digital video input in all color standards up-to 1080p.
- Supports 4K video input via HDMI.
- Convenient mid-range (1.6:1) manual zoom and focus lens.
- Horizontal, Vertical & Corner Keystone Correction.
- Pincushion/Barrel & 6 point Geometric Correction.
- Horizontal & Vertical Manual Lens Shift. Wired network control.
- Compatible with Crestron RoomView™ & AMX Device Discovery Technology.
- Built-in 16 Watt amplifier and speaker system. Closed Caption decoding.

HDBT™

EIKI

RoomView connected

EK-720LU
WUXGA 3LCD Laser Projector

EIKI

· Specifications

Model	EK-720LU
Display Type	0.64" 3LCD
Resolution	WUXGA (1920 x 1200)
Aspect Ratio	16:10
Brightness (Center Lumens)	7,200 lumens
Contrast Ratio	5,000,000:1
Projection Light Source	Laser (Blue) + Phosphor
Light Source Life	20,000 hours
Image Diagonal	30-300"
Lens (F Value / Focal Length)	f: 1.5-2.08; FL: 0.677-1.09 in (17.2-27.7 mm)
Zoom Ratio	Manual x 1.6
Throw Distance	2.5-42 ft (0.77-12.8 m)
Throw:Width Ratio	1.22-1.98:1
Lens Shift	V: + 60% H: +/- 29% (Manual)
Keystone Correction	V: +/- 30° H: +/- 30°, Corner Keystone
Projection Elevation Adjustment	up-to 3.5°
Scanning Frequency	H Sync. 15-100 KHz, V Sync. 24-85 Hz
Dot Clock	up-to 300 MHz
Input Signals - Computer	4K (3840 x 2160) - VGA (640 x 480)
Input Signals - Video	1080 i/p, 720 p, 576 i/p, 480 i/p
	HDMI In	HDMI x 2
	VGA In	Dsub15 x 1
	HDBaseT In	RJ45 x 1
Terminal	USB	USB Type A x 1 (Memory Viewer)
	USB	USB Type B x 2 (Firmware)
	VGA Out	Dsub15 x 1
	Audio In	3.5mm MiniStereo x 1
	Audio Out	3.5mm MiniStereo x 1
Built-in Speaker	Mono 16 Watt
Fan Noise (Eco / Normal)	27.5 dB / 37.5 dB
Dimensions (H x W x D)	5.3 x 15.9 x 14.7 in (13.5 x 40.5 x 37.3 cm)
Weight	17.0 lb (7.7 kg)
Power Requirements	100-240V AC, 50/60 Hz
Power Consumption	0.5 W in Eco Standby mode, up-to 360 W
Thermal Dissipation	1,228 BTU
Standard Accessories	Detachable AC Power Cord, VGA Cable, Quick Start Guide,

· Dimensions

5.3"
14.7"
15.9"

· Terminals

USB Type-A (Memory Viewer)
HDMI In 1 & 2
VGA In
VGA Out
Audio Out
USB Type-B (Firmware)
LAN
HDBaseT
RS-232C
Audio In
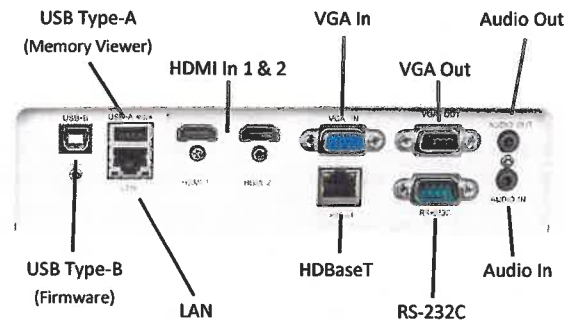
· Lens Specs

1.6X Manual Zoom and Focus Lens
f: 1.5-2.08; FL: 0.677-1.09 in (17.2-27.7 mm)
Throw to Width: 1.22-1.98:1

Distance Chart

		Screen Width (feet)				
		4	6	10	12	16
Throw Distance (feet)	Wide	4.9	7.3	12.2	14.7	19.6
	Tele	7.9	11.9	19.8	23.8	31.7

Eiki International, Inc.

Targa

Electrically operated projection screen with motor–in–roller

Please check all appropriate selections and attach room schedule with verified dimensions.

Specifications

_____ *(Qty.)* **Projection screens, size** _____h. x _____w.,
Electrically operated, motorized, surface mounted, vertical roll up projection screen.

ELECTRIC OPERATOR: Tubular motor concealed inside screen roller tube. Location: [Left hand: standard] [Right hand: As scheduled].

STANDARD MOTOR: Mounted inside screen roller on rubber isolation insulators. Motor UL certified, rated 110-120V AC, 60 Hz, 1.1 Amp current draw. Three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches.

QUIET MOTOR: Mounted inside screen roller on rubber isolation insulators. Motor operates at 44dB. UL certified, rated 110-120V AC, 60 Hz, three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches.

CASE: One-piece, 22-gauge steel with flat back design. Endcaps finished to match case, forming universal wall or ceiling hanging brackets. Case size 5⅞" high x 5¼" deep *(149mm high x 133mm deep).*

FINISH: {White *(standard)*] [Black] scratch-resistant polyester finish.

ROLLER: 3" *(76mm)* dia. Metal roller, mounted on rubber insulated supports.

VIEWING SURFACE ATTACHMENT: Viewing surface attached to roller using double-sided tape. Bottom of viewing surface attached to weighted dowel.

VIEWING SURFACE: Fire retardant and mildew resistant. Matt White XT1000E and Contrast Grey XH800E viewing surfaces are certified to GREENGUARD GOLD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg.

Please Note: Matt White XT1000E surfaces up to 10' *(305cm)* high will be seamless.

CONTROL: 3-position control switch to stop or reverse screen at any point. Switch complete with cover plate. Other control options available.

MOUNTING: [Wall/Ceiling *(standard)*]. Attachment hardware provided by installer.

OPTIONAL EXTENSION BRACKETS: Plastic brackets provide 6" *(152mm)* clearance from wall. Finish: [white] [black].

OPTIONAL FLOATING MOUNTING BRACKETS: For use when stud location is not convenient for built-in mounting brackets. Brackets mount to wall studs or other support structure. Screen case mounts to brackets with secure floating bands.

OPTIONAL CEILING OPENING TRIM KIT: Trims opening when screen is to be recessed above the ceiling. Aluminum with white finish.

Please Note: Ceiling Opening Trim Kit is for use in an acoustical, drop ceiling only. Not recommended for drywall or hard ceilings.

PATENT INFORMATION: http://www.draperinc.com/legal/patents
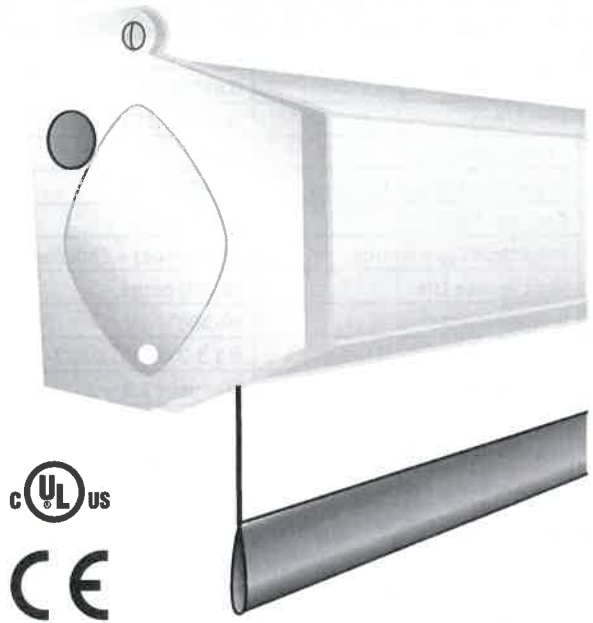
DOWNLOADABLE 3-PART SPECIFICATIONS: www.draperinc.com/documents.aspx.

Entire unit certified by Underwriters' Laboratories, Inc. for the U.S. and Canada.

Please note: Dimensions of rollers, operators, and hardware at manufacturer's discretion.

c (UL) us

C E

Select Viewing Surface:

- ☑ Matt White XT1000E *(1.0 gain)*: GREENGUARD Gold certified *(Through 8' x 10' (2.4m x 3m)*
- ☐ Contrast Grey XH800E *(0.8 gain)*: GREENGUARD Gold certified
- ☐ Pearl White CH1900E *(1.9 gain)*
- ☐ ClearSound White Weave XT900E *(0.9 gain)*
- ☐ ClearSound Grey Weave XH600E *(0.6 gain)*
- ☐ Chroma Key Green

- ☐ Other: _____

GREENGUARD

Optional Accessories

- ☐ Mounting Brackets
  - ☐ 6" *(152mm)* Extension Bracket
    - ☐ Black   ☐ White
  - ☐ Floating Mounting Brackets *(for wall and ceiling)*
    - ☐ Black   ☐ White
- ☐ Additional Drop _____ *(Beyond standard 12" (30cm)*
- ☐ Total Drop _____ *(Standard 12" (30cm) + Additional drop)*
  - ☐ Black *(standard)*
  - ☐ Same color as viewing surface *(Total screen height cannot exceed 12' (3.7m); extra drop increases length of case)*
- ☐ Black Masking Borders *(Optional on AV format sizes; standard all others)*
- ☐ Optional Ceiling Opening Trim Kit for Recessed Installations

  Please Note: Draper® recommends 12" *(30cm)* extra drop when ordering Ceiling Opening Trim Kit. The Ceiling Opening Trim Kit is for use in an acoustical, drop ceiling only. Not recommended for drywall or hard ceilings.

DRAPER®

Draper, Inc. | 411 S. Pearl St. Spiceland, IN 47385
draperinc.com | 765.987.7999 | 800.238.7999
© 2023 All Rights Reserved | **FORM: Targa_Sub23**

PROJECT: _____

_____

ARCHITECT: _____

CONTRACTOR: _____

SUPPLIER: _____

DATE: _____   **REVISED:** _____

Targa

Select Motors and Controls:

Standard Voltage Motor and Control Options:

- ☑ 110-120V AC *(standard)*
- ☐ Optional Quiet Motor[1]
- ☐ Optional 220V motor
- ☐ Optional 220V Quiet Motor

> **Please Note:** These motors come with one 110V-120V AC 3-position wall switch *(silver wall plate with black rocker).*

- ☐ Single Station Wall Switch *(standard)*
- ☐ Substitute white switch*(es)* for silver wall plate with black rocker
- ☐ Optional Key Operated Switch
  - ☐ Power Supply Key Switch *(on-off)*
  - ☐ 3-Position Key Control
  - ☐ 3-Position Switch with Hinged Key-Locking Coverplate

> **Please Note:** Do not wire motors in parallel.

> **Please Note:** Additional information about wiring is available on installation instructions for this product.

Low-Voltage Control Options:

- ☐ Internal LVC-IV *(Low-Voltage Control Module)*
- ☐ External LVC-IV *(Low-Voltage Control Module)*
- ☐ Motor with Built-in Low-Voltage Controller *(ILT motor)*
  - ☐ Plug & Play option
- ☐ Quiet motor with Low-Voltage Controller *(Quiet ILT)* [2]
  - ☐ Plug & Play option

> **Please Note:** Select Control Options for Low-Voltage from below.

- ☐ 24 Volt 3-Button Switch *(standard)*
  - Number of 24V switches: _____
- ☐ Radio Frequency Remote Control *(only with 24V)*
- ☐ Infrared Remote Control *(only with 24V)*
- ☐ Optional Key Operated Switch
  - ☐ Power Supply Key Switch *(on-off)*
  - ☐ 24 Volt 3-Button Switch with Hinged Key-Locking Coverplate
    Number of 24V switches: _____

[1] Quiet Motor Size Limitations				
OPTIVIEW SURFACES:	AV	NTSC	HDTV	16:10
144" x 144"	200"	184"	189"

[2] Quiet Motor w/ Internal LVC Size Limitations				
OPTIVIEW SURFACES:	AV	NTSC	HDTV	16:10
108" x 144"	180"	184"	165"

Dimensions & Data

NOMINAL DIAGONAL	IMAGE AREA [H X W]	OVERALL SIZE	CASE LENGTH	NET WT.	QTY.
16:10 Format					
76"[3] (193cm)	40" x 64" (101.6cm x 162.6cm)	52" x 69½" (132.1cm x 176.5cm)	76½" (194.3cm)	34 lb (15.4kg)	
85" (215.9cm)[3]	45" x 72" (114.3cm x 182.9cm)	57" x 74" (144.8cm x 188cm)	81" (205.7cm)	36 lb (16.3kg)	
94" (238.7cm)[3]	50" x 80" (127cm x 203.2cm)	62" x 83½" (157.5cm x 212.1cm)	90½" (229.9cm)	40 lb (18.7kg)	
109" (276.9cm)[3]	57½" x 92" (146cm x 233.7cm)	69½" x 96" (176.5cm x 243.8cm)	103" (261.6cm)	44 lb (20kg)	
113"[3] (287cm)	60" x 96" (152.4cm x 243.8cm)	72" x 100" (182.9cm x 254cm)	107" (271.8cm)	45 lb (20.4kg)	
123" (312.4cm)	65" x 104" (165.1cm x 264.2cm)	69" x 108" (175.3cm x 274.3cm)	115" (292.1cm)	46 lb (10.9kg)	
137" (348cm)	72½" x 116" (184.2cm x 294.6cm)	76½" x 120" (194.3cm x 304.8cm)	127" (322.6cm)	54 lb (24.5kg)	
165" (419.1cm)	87½" x 140" (222.2cm x 355.6cm)	92½" x 144" (235cm x 365.8cm)	151" (383.5cm)	70 lb (31.8kg)	
189" (480cm)	100" x 160" (254cm x 406.4cm)	105" x 164" (266.7cm x 416.6cm)	171" (434.3cm)	85 lb (38.6kg)	

NOMINAL DIAGONAL	IMAGE AREA [H X W]	OVERALL SIZE	CASE LENGTH	NET WT.	QTY.
4:3 NTSC Video Format					
6' (182.8cm)	42½" x 56½" (108cm x 143.5cm)	46½" x 59½" (118.1cm x 151.1cm)	66½" (168.9cm)	30 lb (13.6kg)	
7' (213.4cm)	50" x 66½" (127cm x 168.9cm)	53½" x 69½" (135.9cm x 176.5cm)	76½" (194.3cm)	35 lb (15.9kg)	
100" (254cm)	60" x 80" (152.4cm x 203.2cm)	64" x 83½" (162.6cm x 212.1cm)	90½" (229.9cm)	40 lb (18.7kg)	
10' (304.8cm)	69" x 92" (175.3cm x 233.7cm)	73" x 96" (185.4cm x 243.8cm)	103" (261.6cm)	44 lb (20kg)	
11' (335.3cm)	78" x 104" (198.1cm x 264.2cm)	83" x 108" (210.8cm x 274.3cm)	115" (292.1cm)	47 lb (21.3kg)	
150" (381cm)	87" x 116" (221cm x 294.6cm)	92" x 120" (233.7cm x 304.8cm)	127" (322.6cm)	54 lb (24.5kg)	
15' (457.2cm)	105" x 140" (266.7cm x 355.6cm)	109" x 144" (276.9cm x 365.8cm)	151" (383.5cm)	61 lb (27.7kg)	
200" (508cm)	118" x 158" (299.7cm x 401.3cm)	123" x 162" (312.4cm x 411.5cm)	169" (429.3cm)	77 lb (34.9kg)	

[3] These sizes include 12" *(30cm)* black drop as standard.
Targa screens are available in larger sizes. See Premier XL and Targa XL submittal form.

Custom Size					

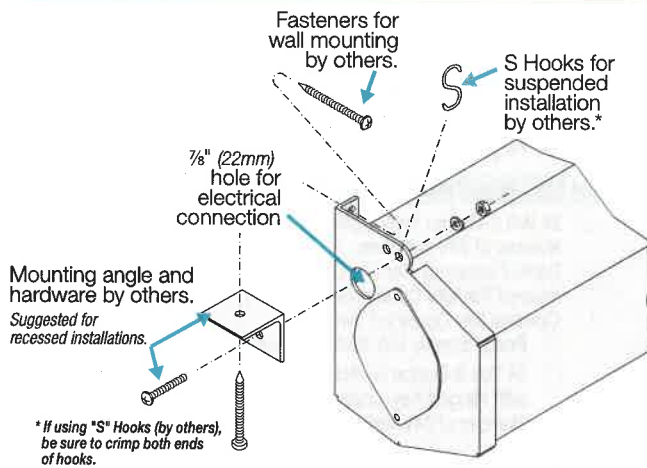| NOMINAL DIAGONAL	IMAGE AREA [H X W]	OVERALL SIZE	CASE LENGTH	NET WT.	QTY.
16:9 HDTV Format					
73" (185.4cm)[3]	36" x 64" (91.4cm x 162.6cm)	48" x 69½" (121.9cm x 176.5cm)	76½" (194.3cm)	34 lb (15.4kg)	
82" (208.3cm)[3]	40½" x 72" (102.9cm x 182.9cm)	52½" x 74" (133.4cm x 188cm)	81" (205.7cm)	36 lb (16.3kg)	
92" (233.7cm)[3]	45" x 80" (114.3cm x 203.2cm)	57" x 83½" (144.8cm x 212.1cm)	90½" (229.9cm)	40 lb (18.7kg)	
100" (254cm)[3]	49" x 87" (124.5cm x 221cm)	61" x 91" (154.9cm x 231.1cm)	98" (248.92cm)	43 lb (19.5kg)	
106" (269.2cm)[3]	52" x 92" (132.1cm x 233.7cm)	64" x 96" (162.6cm x 243.8cm)	103" (261.6cm)	43 lb (19.5kg)	
110" (279.4cm)[3]	54" x 96" (137.2cm x 243.8cm)	66" x 100" (167.6cm x 254cm)	107" (271.8cm)	45 lb (20.4kg)	
119" (302.3cm)	58" x 104" (147.3cm x 264.2cm)	62" x 108" (157.5cm x 274.3cm)	115" (292.1cm)	46 lb (10.9kg)	1
133" (337.8cm)	65" x 116" (165.1cm x 294.6cm)	69" x 120" (175.3cm x 304.8cm)	127" (322.6cm)	54 lb (24.5kg)	
161" (408.9cm)	79" x 140" (200.7cm x 355.6cm)	84" x 144" (213.4cm x 365.8cm)	151" (383.5cm)	70 lb (31.8kg)	
184" (467.4cm)	90" x 160" (228.6cm x 406.4cm)	95" x 164" (241.3cm x 416.6cm)	171" (434.3cm)	77 lb (34.9kg)	

SIZTE [H X W]	CASE LENGTH	NET WT.	QTY.
AV Format			
70" x 70" (177.8cm x 177.8cm)	76½" (194.3cm)	35 lb (15.9kg)	
84" x 84" (213.4cm x 213.4cm)	90½" (229.9cm)	40 lb (18.7kg)	
72" x 96" (182.9cm x 243.8cm)	103" (261.6cm)	44 lb (20kg)	
96" x 96" (243.8cm x 243.8cm)	103" (261.6cm)	45 lb (20.4kg)	
7' x 9' (213.4cm x 274.3cm)	115" (292.1cm)	47 lb (21.3kg)	
9' x 9' (274.3cm x 274.3cm)	115" (292.1cm)	49 lb (22.2kg)	
8' x 10' (243.8cm x 304.8cm)	127" (322.6cm)	54 lb (24.5kg)	
10' x 10' (304.8cm x 304.8cm)	127" (322.6cm)	58 lb (26.3kg)	
9' x 12' (274.3cm x 365.8cm)	151" (383.5cm)	61 lb (27.7kg)	
12' x 12' (365.8cm x 365.8cm)	151" (383.5cm)	74 lb (33.6kg)	
Custom Size			

Methods of Installation

Fasteners for wall mounting by others.

S Hooks for suspended installation by others.*

⅞" (22mm) hole for electrical connection

Mounting angle and hardware by others.
Suggested for recessed installations.

* If using "S" Hooks (by others), be sure to crimp both ends of hooks.

Types of Installation

WALL

Appropriate hardware provided by installer.

SUSPENDED

Appropriate hardware provided by installer.

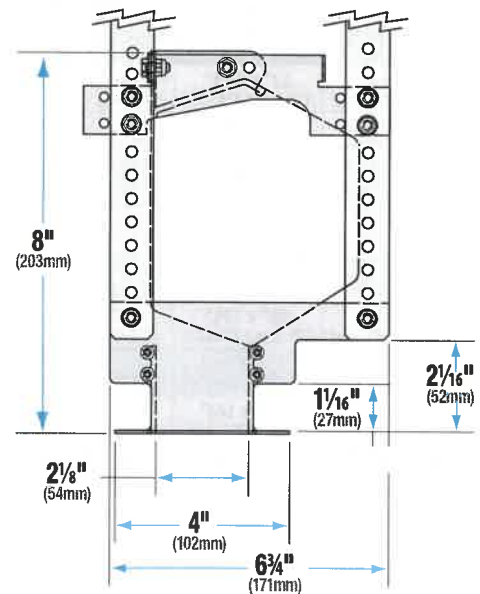*If using "S" Hooks, installer must crimp both ends of hooks to safely secure the screen.*

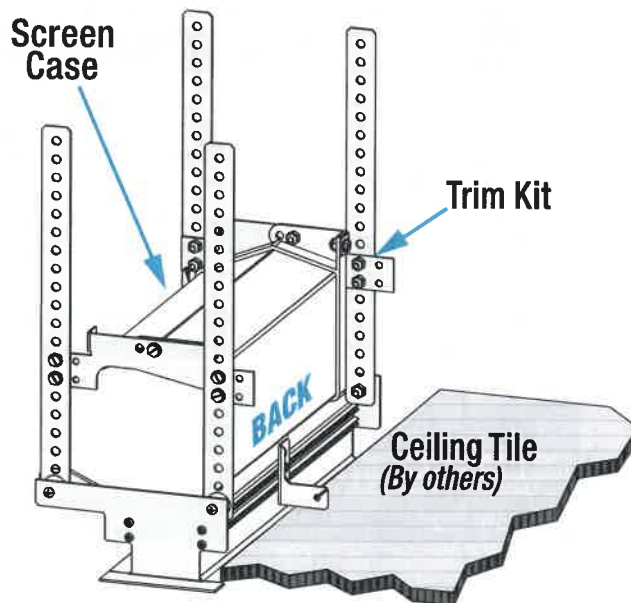**Please Note:** If using "S" Hooks, installer must crimp both ends of the "S" hooks to safely secure the screen.

Optional Ceiling Opening Trim Kit

Screen Case

Trim Kit

BACK

Ceiling Tile
(By others)

8" (203mm)

2⅛" (54mm)

4" (102mm)

6¾" (171mm)

1¹/₁₆" (27mm)

2¹/₁₆" (52mm)

Optional Floating Mounting Bracket
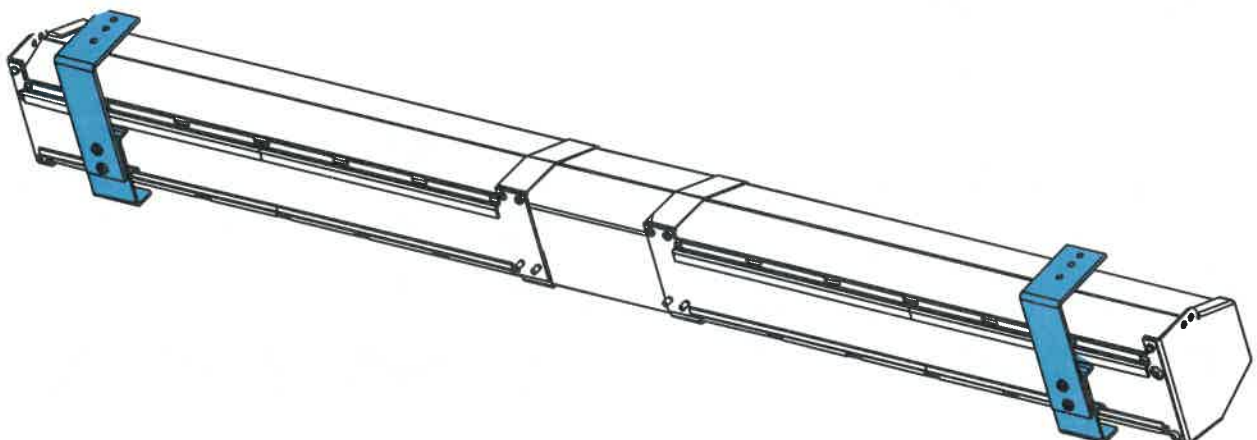
Case Dimensions

PLEASE NOTE: Internal LVC-IV will increase overall case length by 1¹³⁄₁₆" *(46mm)*.

2⁵⁄₁₆"
(59mm)

5¼"
(134mm)

5⅞"
(150mm)

⅞"(22mm) **dia. electrical connection hole**

Fabric width + 7" (192mm)

3½"(96mm)

Viewing Surface

![Visionary NETWORK AUDIO VIDEO logo]

DuetE-5 • Encoder | DuetD-5 • Decoder
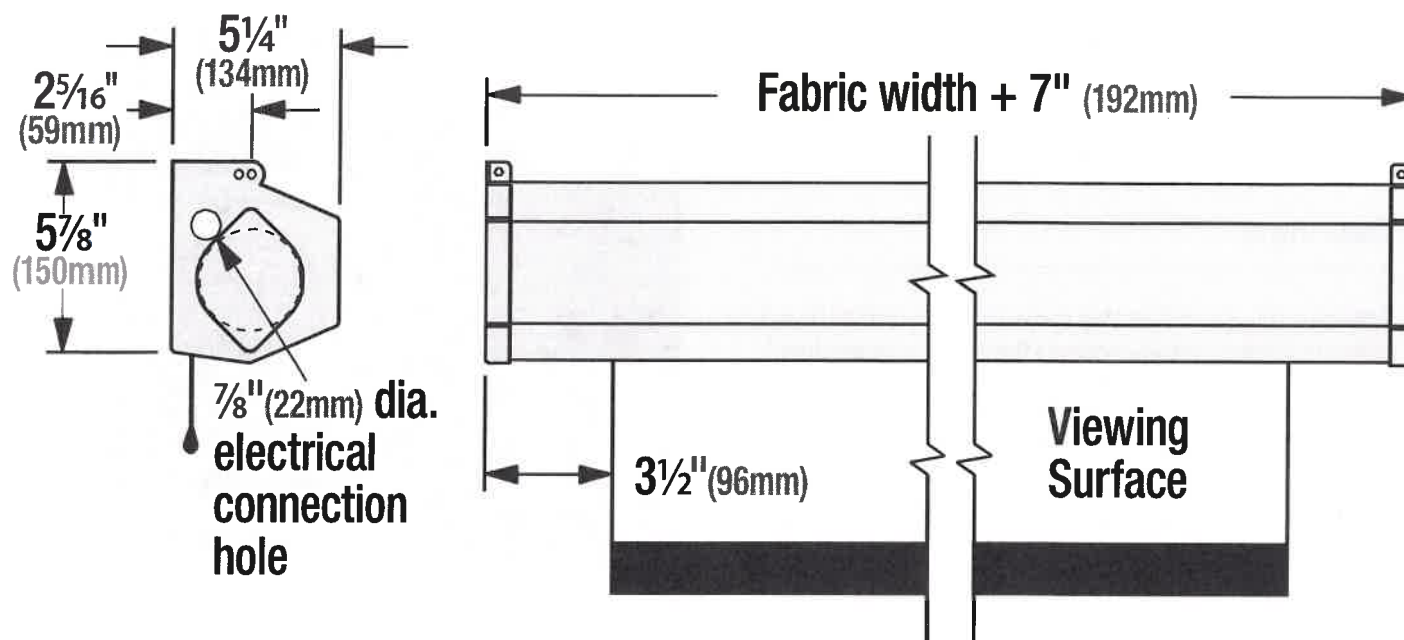
Distribute 4K60 4:4:4 & Dante® / AES67 over Gigabit Ethernet

Overview

Building on the groundbreaking success of the PacketAV® Duet-2, Visionary Solutions proudly presents the next-generation Duet-5 4K60 4:4:4 capable 1GbE AV over IP encoder and decoder. This cutting-edge solution continues to redefine networked AV, converging Dante®/AES67 audio and Video over IP on a single platform.

The Duet-5 supports 4K60 4:4:4 video and Dante®/AES67 audio over a single Gigabit Ethernet port, streamlining connectivity and enhancing efficiency in AV installations. With USB-C integration, the Duet-5 offers seamless soft-codec integration and compatibility with a wide range of peripherals for an even more versatile AV experience. The Duet-5 delivers 4K60 4:4:4 video with ultra-low latency of one frame, ensuring visually lossless, cinema-quality video performance.

Bypassing traditional switch matrix distribution constraints, Visionary's encoders and decoders harness the power of converged IP networks, providing exceptional flexibility and scalability for professional AV and IT applications.

Compatible with industry-standard IP networks, Visionary's PacketAV® and PackeTV® products can be deployed on existing enterprise networks or separate private networks for dedicated video traffic. This versatile approach simplifies installation while

DuetD-5 • Decoder

DuetE-5 • Encoder

accommodating the increasing demand for 4K UHD video in corporate, educational, medical, and government environments.

The Visionary Solutions Duet-5 4K60 4:4:4 capable 1GbE encoder and decoder sets a new benchmark in AV over IP technology, combining cutting-edge features with the proven reliability and performance of the Duet-2. Elevate your AV installations with the Duet-5, the ideal solution for delivering stunning visuals, flexible audio routing, and advanced network capabilities to meet the demands of today's professional AV environments.

Features

4K60 4:4:4 Video Support

- Experience ultra-high-definition video with 4K resolution at 60 frames per second and full 4:4:4 color sampling for unparalleled image quality, suitable for professional applications where every detail matters.

Isochronous USB 2.0 over IP

- Enables real-time data transfer for USB devices, such as webcams and microphones, over the network. This feature simplifies the deployment of video conferencing solutions and offers greater flexibility in AV system design. By leveraging the AV over IP infrastructure, it allows seamless integration and extension of USB peripherals.

Single Main Gigabit LAN Port for 4K60 4:4:4 Video, Dante®/AES67, Control, and Powered Device (PD)

- A single Ethernet port for Video over IP and Dante®/ AES67 audio embedding and de-embedding, with VLAN tagging capability to separate Audio & Video network traffic as needed

Full Motion MJPEG Substream

- Maximize bandwidth efficiency and enhance video quality with a full motion MJPEG substream, delivering smooth, high-quality video feeds for preview or monitoring purposes without impacting the primary 4K60 4:4:4 video stream.

DuetE-5 • Encoder | DuetD-5 • Decoder

Features cont.

Ethernet Expansion Port - Power Sourcing Equipment (PSE)

- This port enables network connectivity for control and IP traffic pass-through to remote LAN devices (ex. displays, projectors, control touch-panels).
- The port can also be used to daisy-chain multiple endpoints for easy video wall creation or extend distances to displays

USB-C Connectivity

Encoder: USB-C Input

- Connect easily and share media from your Mac, Laptop, Tablet, Mobile, and Other USB-C enabled devices
- *Note: Not all devices will be compatible; Source devices must support DisplayPort Alt Mode for USB Type-C or Thunderbolt.*

Decoder: USB-C Output

- Enables soft-codec integration via driverless USB 2.0 connection to a PC for web conferencing applications such as Zoom, Skype, Cisco WebEx, and Microsoft Teams
- Capture, record, and stream meetings, presentations, conference cameras, and security footage directly to your PC
- Dynamically switch and view decoder output on your PC for recording, editing, videoconferencing, and streaming applications
- Use the PC streaming software of your choice and live broadcast your signal to any online video platform
- Bridge Dante®/AES67 audio into soft-codec via USB-C
- Eliminate distance limitations with USB cables and extension - access right where you need it, close to every device that needs it
- USB Video Class (UVC) - compliant, a video capture standard that's compatible with Mac OSX, Windows®, Linux® and Android operating systems
- Output Resolutions up to 4K30

Dynamic OSD text overlay capabilities

- The ability to overlay dynamic or fixed text on screen enables displaying of alerts, announcements, special instructions, clocks / timers, schedules, and other messaging

Power connected devices with PoE pass-through

- Encoders and Decoders only require standard PoE power (15w or lower), however, when PoE+ is supplied to the Main LAN port you can pass-through PoE power to devices connected to the Ethernet Expansion Port

Multiple selectable local input sources w/ HDMI loop-through (Encoder)

- 2 x HDMI® and 1 x USB-C input and 1 x HDMI output
- Switching between the three inputs can be performed automatically using auto-switching (input detect) mode, programmatically via a control system, or through a web browser
- HDMI loop-through: display any of the three locally connected sources

Enterprise Level Security –AES Encryption, 802.1x, HTTPS, SSH

Enterprise applications demand a secure Network AV solution

- AES Stream Encryption - The Advanced Encryption Standard, or AES, is a worldwide standard and was adopted as the standard encryption algorithm by the U.S. government for encrypting classified information
- HTTPS Secure API - Using secure SSL/TLS communications HTTPS provides integrity that a client is communicating with the real API and receiving back authentic data. It also ensures privacy for applications and users using the API
- 802.1x Authentication for Network access control - 802.1X provides a secure authentication mechanism for any device trying to access a network
- SSH Network Protocol - SSH is a network protocol used to remotely access and manage a device through command line communications. The key difference between Telnet (used by other AV over IP manufacturers) and SSH is that SSH uses encryption, which means that all data transmitted over a network is secure

HDMI 2.0 and HDCP 2.2, 2.3 Compliant

DuetE-5 • Encoder | DuetD-5 • Decoder

Features cont.

Mass Configuration

- Auto Discover all endpoints on the network, export to .CSV file (all configurable parameters included), make changes offline, upload .CSV file through embedded web page of encoder/decoder and push configuration to the network

- No external software required – mass configuration capabilities built into the endpoint embedded webpage UI

LLDP Support

- Link Layer Discovery Protocol (LLDP) is a protocol used by network devices for advertising their identity, capabilities, and neighbors on a local area network based on IEEE 802 technology

- Allows for dynamic control of endpoints based on automatic discovery of physical location

QoS Support

- Quality of Service (QoS) is an advanced feature that prioritizes network traffic resulting in performance improvement for critical network traffic

Control

- Vision Lite Control Software

- 3rd Party Control Drivers [Crestron, QSC, Symetrix, RTI, etc.]

- *API providing access to the full range of features on the encoders and decoders offered to qualified System Integrators

Seamless Fast Switching

- Tearing free, no black screen, no frame lock

Independent Routing

- Independently route all signals with the ability to separately matrix video, audio (including Dante®/AES67), USB, IR, and serial (RS-232)

Auto Video Scaler

- No need to worry about configuring the source resolution

- 4K in/1080P out, 1080P in/4K out

Dynamically Optimized (Adaptive) bit-rate compression CODEC w/ built-in AI

- Visionary's highly efficient video compression codec is a modified full frame encoding that dynamically optimizes for fine lines (computer generated graphics) or motion video by using sophisticated AI to analyze the input source content. Actively matching the level of compression to a scene by leveraging periods of low motion video content reduces the stream's size and enhances performance - enabling, without compromising image quality, Visually Lossless transmission of computer generated graphics or full-motion video sources.

- Adjustable Video Bitrate: (50 – 200 Mbps or Auto [800Mbps max])

GPIO - 2x2 I/O User Configurable

- Control third party devices from any endpoint on the network

USB 2.0 over IP (KVM), RS-232 over IP, IR over IP, and CEC over IP

- Control practically any remotely located device using USB devices and interfaces

- Also supports KVM over IP

- Control any device with an RS-232 interface

- HDMI CEC signal extension over IP

- Seamlessly control infrared devices

KVM Multi Display Roaming

- Switch keyboard and mouse control automatically and seamlessly between PC's by moving the cursor across the boundaries of a display and 'roaming' to adjacently mapped displays.
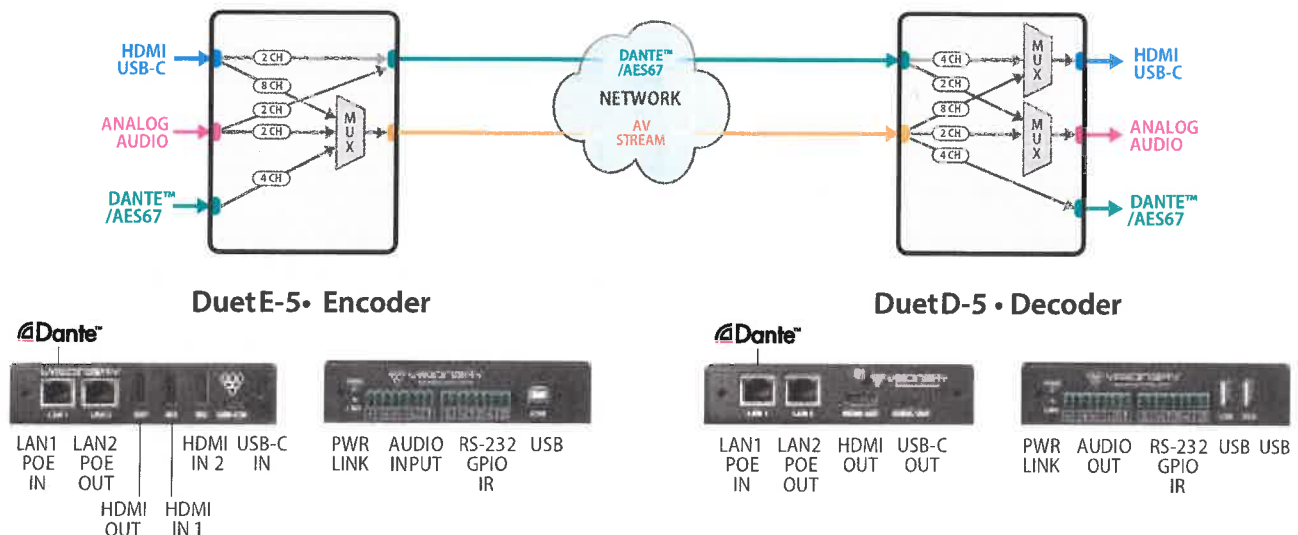
Built in Video Wall Functions

- A Single platform to support distributed displays and Video Walls; without separate expensive video wall processors and controllers

- Enhanced Video Wall functionality – supports video rotation 180/270 degrees

- Easily create video walls using normal commodity displays

- Built-in video wall processor that allows you to build up to a 16×16 video wall

VISIONARY
NETWORK AUDIO VIDEO

DuetE-5 • Encoder | DuetD-5 • Decoder

Benefits

- A single Gigabit LAN Port for PoE Power, 4K60 4:4:4 Video, Dante®/AES67, and Control
- Secure Network Isolation - VLAN Tagging separates AV traffic on the corporate network
- One LAN drop to decoder enables local IP control of connected devices through Ethernet expansion port
- Built in connectivity for web conference soft-codec AV integration
- Eliminates need for separate AV Bridging hardware
- Capture, record, and stream meetings directly to PC (USB-C)
- Effortlessly share media from your USB-C enabled devices
- Acts as an in-rack or Bring Your Own Device (BYOD) endpoint for presentation sharing and conferencing applications

- Local input switching
- Easy Control Integration
- Ultra-low Latency [~1 frame - visually lossless]
- Low bitrates
- No fiber or 10 Gigabit switch required
- Low-Cost network switches are used
- Scalable / Unlimited Distribution
- Any number and combination of inputs/outputs [in increments of one]
- Standard network cabling [CAT5e/6]
- Utilize existing network resources
- Rapid deployment
- Single network for AV and IT
- Reduced operating costs

Audio Workflow

DuetE-5• Encoder

DuetD-5 • Decoder
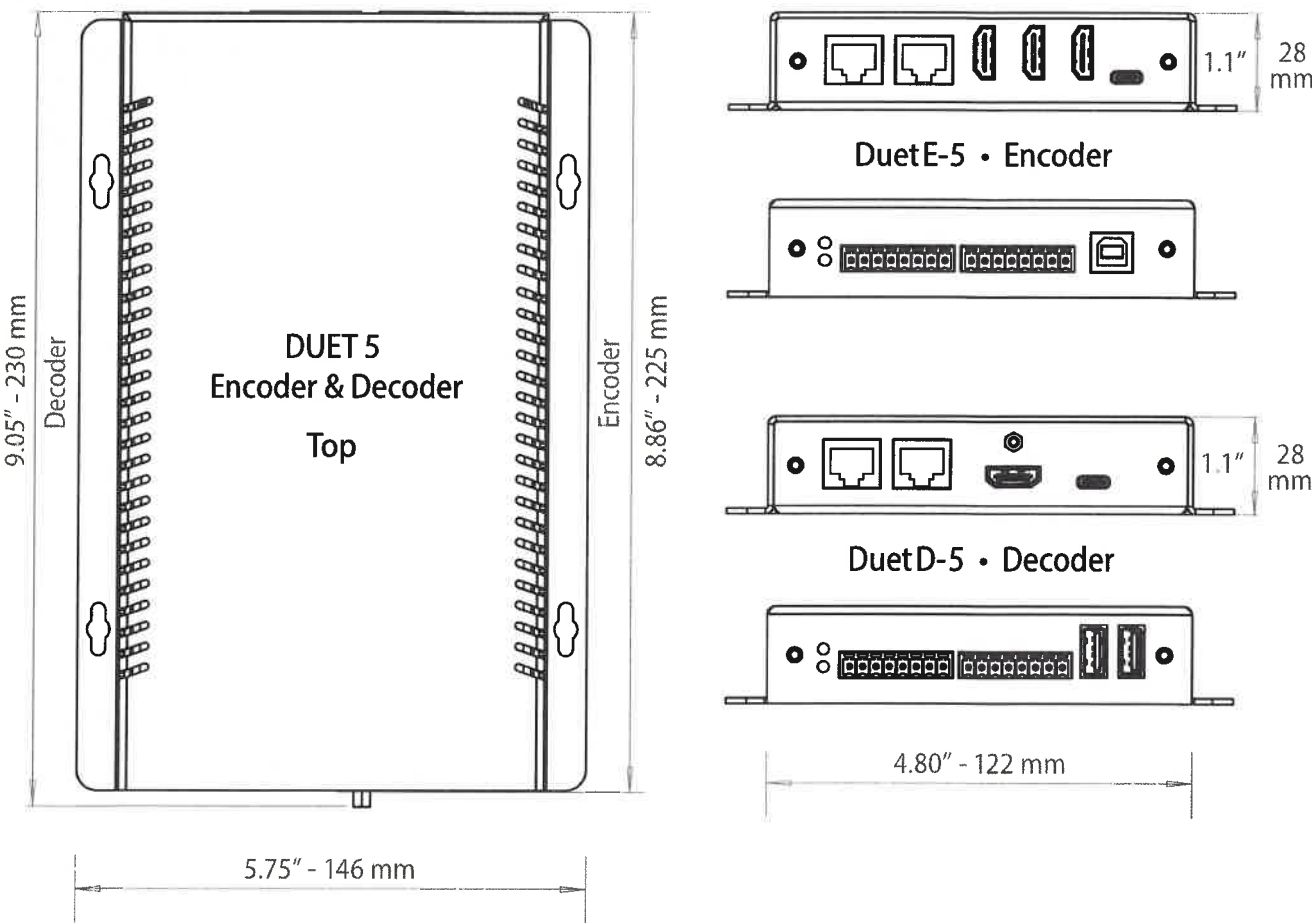
DuetE-5 connectors: LAN1 POE IN, LAN2 POE OUT, HDMI IN 2, USB-C IN, HDMI OUT, HDMI IN 1, PWR LINK, AUDIO INPUT, RS-232 GPIO IR, USB

DuetD-5 connectors: LAN1 POE IN, LAN2 POE OUT, HDMI OUT, USB-C OUT, PWR LINK, AUDIO OUT, RS-232 GPIO IR, USB USB

VISIONARY
NETWORK AUDIO VIDEO

DuetE-5 • Encoder | DuetD-5 • Decoder

Specifications

Encoding/Decoding

Video Codec	JPEG2000 based visually lossless video compression algorithm
Audio Codec	Dante® / AES67
Bit Rates	50 to 800 Mbps
Latency	Ultra-Low Latency (visually lossless video) Standard Mode: 17ms @ 1080p60 & 4K60 4:4:4 • 33ms @ 4K30 Low Latency Mode: 5ms @ 4K60 4:4:4
Streaming Protocols	IP, UDP, TCP, ICMP, IGMP
Copy Protection	HDCP 2.2, 2.3 AES-256 Encryption

Video

Maximum Resolutions	High Dynamic Range (HDR) 4K60 4:4:4 HDR 8 bit 4K30 4:4:4 HDR 12 bit 1080p60 4:4:4 HDR 12 bit 1080p30 4:4:4 HDR 12 bit Supports HDR10, HDR10+, HLG, Dolby Vision
Input Signal Types (Encoder)	2x HDMI & 1x USB-C capable of receiving source input video formats up to 4K60 4:4:4 (DisplayPort Alt Mode for USB Type-C or Thunderbolt)
Output Signal Types	Decoder: 1x HDMI capable of scaling and outputting video formats up to 4K60 4:4:4 Decoder: 1x USB-C capable of scaling and outputting video formats up to 1080p60 4:4:4 Encoder: (HDMI Loop Out) capable of outputting video formats up to 4K60 4:4:4
Switcher (Encoder)	2 x HDMI® and 1 x USB-C input and 1 x HDMI output (manual or auto-switching)
Scaler (Decoder)	Supports a wide range of resolutions and rates, up to 4K in/1080P out, 1080P in/4K out, image rotation, and video wall up to 16x16 Integrated scaling helps optimize image quality and switching performance

Audio

Input Signal Types	HDMI Audio, Analog Stereo Audio. Dante®/AES67 Network Audio (up to 4 channels) • 1 analog stereo input, unbalanced or balanced • 1 digital input de-embedded from HDMI
Output Signal Types	HDMI Digital Audio (NLPCM pass-through), Analog Stereo Audio, Dante®/AES67 Network Audio • 1 digital audio output via HDMI • 1 Analog Stereo Audio balanced output • 1 Dante/AES67 digital audio output (up to 4 channels)
Digital Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby True HD, Dolby Atmos, DTS ®, DTS-ES, DTS96/24, DTS-HD High Res, DTS-HD Master Audio, DTS:X, LPCM up to 8 channels.
Analog Formats	Stereo 2-channel
Analog-To-Digital Conversion	24-bit 48 kHz
Digital-To-Analog Conversion	24-bit 48 kHz
Dante™/AES67	24-bit 48 kHz
Analog Output Volume Adjustment	-80 to +20 dB

Communication & Control of External Devices

Ethernet	Network connectivity for control and IP traffic pass-through to remote LAN devices
USB	USB 2.0 host or device signal extension and routing
GPIO	For extension and control of third-party devices
Serial / RS-232	Bi-directional device control and monitoring
IR	Device control via infrared
HDMI	HDCP 2.2, 2.3, EDID (encoder), CEC (decoder)

Connectors

LAN 1	8-pin RJ-45 connector, female; 100BASE-TX / 1000BASE-T Ethernet port / PD port POE+ (IEEE 802.3at), POE+ Only required for LAN2 PSE
LAN2	8-pin RJ-45 connector, female; 100BASE-TX / 1000BASE-T Ethernet port / PSE port POE (IEEE 802.3af)
HDMI INPUT 1 & 2 (Encoder)	(2) HDMI Type A connectors, female; HDMI digital video/audio inputs
HDMI Outputs (Encoder loop-through & Decoder output)	HDMI Type A connectors, female; HDMI digital video/audio inputs
USB-C	Encoder input: (1) USB Type C connector, female; Decoder output: (1) USB Type C connector, female;
1st - 8 pin Euroblock 3.81mm pitch connector	Encoder Stereo Balanced Analog Audio Input Decoder Stereo Balanced Analog Audio Output
2nd - 8 pin Euroblock 3.81mm pitch connector	Shared GPIO / RS-232 / IR ports
USB Host (Decoder)	(2) USB Type-A connector, female; USB 2.0 host port; USB signal extender port for connection to a mouse, keyboard, or other USB 2.0 device
USB Device (Encoder)	(1) USB Type-B connector, female; USB 2.0 device port; USB signal extender port for connection to a computer or other USB 2.0 host

Power

Power Consumption	12 W typical

Environmental

Cooling	Convection / no fan (no moving parts)
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	41 BTU/hr
Acoustic Noise	0 dBA

Form Factor

Dimensions	Height: 1.1 in. (28 mm) Width: 5.75 in. (146 mm) Depth: Encoder 8.86 in. (225 mm) Decoder 9.05 in. (230 mm)
Weight	1.0 lb (0.45 kg)

Compliance

	CE, FCC, C-tick, RoHS, WEEE

DuetE-5 • Encoder | DuetD-5 • Decoder

Dimensions

DuetE-5 • Encoder

DuetD-5 • Decoder

1.1" 28 mm

4.80" - 122 mm

9.05" – 230 mm Decoder

8.86" – 225 mm Encoder

DUET 5
Encoder & Decoder

Top

5.75" - 146 mm

E5-WP-H · Wallplate Encoder w/HDMI Only

Powerful AV Encoding in a convenient, Wallplate form-factor

Overview

Introducing the next-generation E5-WP-H 4K60 4:4:4 AV over IP wallplate encoder from Visionary Solutions, a pioneer in networked AV solutions. Based on the revolutionary PacketAV® Duet Wallplate Encoder, the E5-WP-H now comes in a simplified HDMI only version, designed for streamlined installations and optimized for 4K60 4:4:4 video transmission.

The E5-WP-H offers a streamlined HDMI only input, making installations easier and more efficient, while retaining the high-quality performance of its predecessor.

Delivering cinema-quality 4K60 4:4:4 video with ultra-low latency (~1 frame - visually lossless), the E5-WP-H ensures exceptional video performance in a variety of professional AV applications.

The E5-WP-H is powered over Ethernet (PoE), reducing cable clutter and simplifying installation, while maintaining reliable power delivery.

Visionary's PacketAV® AV over IP products, including the E5-WP-H, can be deployed on any industry-standard IP network, either on existing enterprise networks or physically separate parallel networks (private networks), ensuring seamless integration with your existing infrastructure.

Bypassing the limitations of traditional switch matrix distribution systems, the E5-WP-H harnesses the flexibility and scalability of converged IP networks, making it an ideal choice for professional AV designers and IT directors seeking future-proof solutions.

The E5-WP-H wallplate encoder can be easily installed in any standard wall box, offering a discreet and professional appearance while providing powerful AV over IP capabilities.

Embrace the future of networked AV with the E5-WP-H 4K60 4:4:4 AV over IP wallplate encoder from Visionary Solutions. Designed for simplified installations without compromising on performance, the E5-WP-H offers unparalleled video quality, flexibility, and scalability for your AV distribution needs.

Features

4K60 4:4:4 Video Support

- Experience ultra-high-definition video with 4K resolution at 60 frames per second and full 4:4:4 color sampling for unparalleled image quality, suitable for professional applications where every detail matters.

Full Motion MJPEG Substream

- Maximize bandwidth efficiency and enhance video quality with a full motion MJPEG substream, delivering smooth, high-quality video feeds for preview or monitoring purposes without impacting the primary 4K60 4:4:4 video stream.

One Gigabit LAN Port for 4K60 4:4:4 Video and Control

- A single Ethernet port for AV over IP and POE Power Input

LLDP Support

- Link Layer Discovery Protocol (LLDP) is a protocol used by network devices for advertising their identity, capabilities, and neighbors on a local area network based on IEEE 802 technology

- Allows for dynamic control of endpoints based on automatic discovery of physical location

E5-WP-H • Wallplate Encoder w/HDMI Only

Features cont.

Dynamically Optimized (Adaptive) bit-rate compression CODEC w/ built-in AI

- Visionary's highly efficient video compression codec is a modified full frame encoding that dynamically optimizes for fine lines (computer generated graphics) or motion video by using sophisticated AI to analyze the input source content. Actively matching the level of compression to a scene by leveraging periods of low motion video content reduces the stream's size and enhances performance - enabling, without compromising image quality, Visually Lossless transmission of computer generated graphics or full-motion video sources.

- Adjustable Video Bitrate: (50 – 200 Mbps or Auto [800Mbps max])

QoS Support

- Quality of Service (QoS) is an advanced feature that prioritizes network traffic resulting in performance improvement for critical network traffic

Control

- Vision Lite Control Software
- 3rd Party Control Drivers [Crestron, QSC, Symetrix, RTI, etc.]
- *API providing access to the full range of features on the encoders and decoders offered to qualified System Integrators

HDMI 2.0 and HDCP 2.2, 2.3, Compliant

Enterprise Level Security –AES Encryption, 802.1x, HTTPS, SSH

Enterprise applications demand a secure Network AV solution

- AES Stream Encryption - The Advanced Encryption Standard, or AES, is a worldwide standard and was adopted as the standard encryption algorithm by the U.S. government for encrypting classified information

- HTTPS Secure API - Using secure SSL/TLS communications HTTPS provides integrity that a client is communicating with the real API and receiving back authentic data. It also ensures privacy for applications and users using the API

- 802.1x Authentication for Network access control - 802.1X provides a secure authentication mechanism for any device trying to access a network

- SSH Network Protocol - SSH is a network protocol used to remotely access and manage a device through command line communications. The key difference between Telnet (used by other AV over IP manufacturers) and SSH is that SSH uses encryption, which means that all data transmitted over a network is secure

Seamless Fast Switching

- Tearing free, no black screen, no frame lock

Independent Routing

- Independently route all signals with the ability to separately matrix video & audio

![Visionary Network Audio Video logo]

E5-WP-H • Wallplate Encoder w/HDMI Only

Benefits

- A single Gigabit LAN Port for PoE Power, 4K60 4:4:4 Video, and Control
- Secure Network Isolation - VLAN Tagging separates AV traffic on the corporate network
- Easy installation in a wall, floor, or lectern
- Mounts into standard Decora style wallplates
- Easy Control Integration
- Ultra-low Latency [~1 frame - visually lossless]
- Low bitrates
- No fiber or 10 Gigabit switch required

- Low-Cost network switches are used
- Scalable / Unlimited Distribution
- Any number and combination of inputs/outputs [in increments of one]
- Standard network cabling [CAT5e/6]
- Utilize existing network resources
- Rapid deployment
- Single network for AV and IT
- Reduced operating costs

Fits conveniently into a 2-gang US or UK back box with no modification

- Low Heat / Power: Natural convection via vent openings on front, sides, and top
- 45 Degree Ethernet connector allows easy access from any side of electrical boxes while providing bend radius relief for category cable.
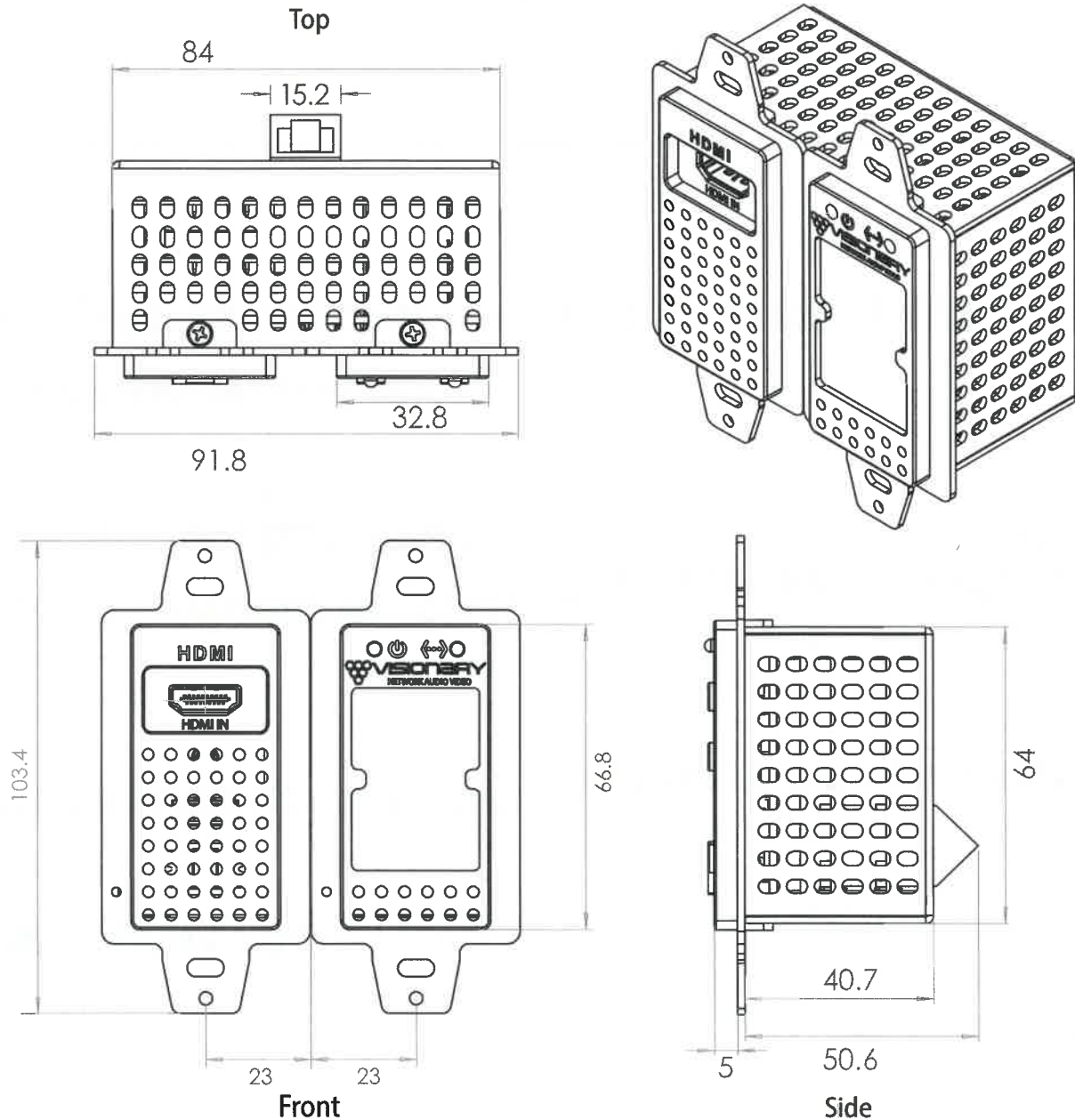
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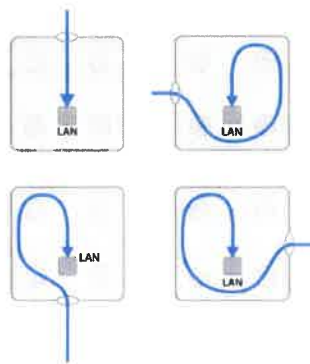
E5-WP-H • Wallplate Encoder w/HDMI Only

Audio Workflow
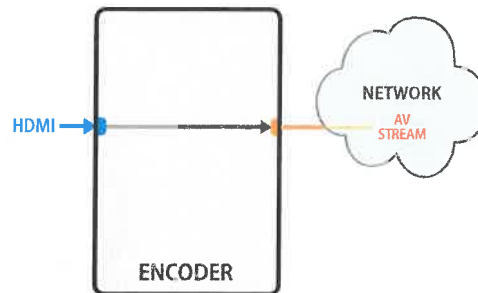
Specifications

Encoding

Video Codec	JPEG2000 based visually lossless video compression algorithm
Audio Codec	LPCM up to 8 Channels
Bit Rates	50 to 800 Mbps
Latency	Ultra-low Latency (visually lossless video) 17ms @ 1080p60 & 4K60 33ms @ 4K30
Streaming Protocols	IP, UDP, TCP, ICMP, IGMP
Copy Protection	HDCP 2.2, 2.3, AES-256 Encryption

Video

Maximum Resolutions	High Dynamic Range (HDR) 4K60 4:4:4 HDR 8 bit 4K30 4:4:4 HDR 12 bit 1080p60 4:4:4 HDR 12 bit 1080p30 4:4:4 HDR 12 bit Supports HDR10, HDR10+, HLG, Dolby Vision
Input Signal Types (Encoder)	1x HDMI capable of receiving source input video formats up to 4K60 4:4:4

Audio

Input Signal Types	HDMI Audio • 1 digital input de-embedded from HDMI
Output Signal Types	HDMI Digital Audio (NLPCM pass-through)
Digital 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.
Analog Formats	Stereo 2-channel
Analog-To-Digital Conversion	24-bit 48 kHz
Digital-To-Analog Conversion	24-bit 48 kHz
Analog Output Volume Adjustment	-80 to +20 dB

Communication & Control of External Devices

HDMI	HDCP 2.2, 2.3 EDID

Connectors

LAN	8-pin RJ-45 connector, female; 100BASE-TX / 1000BASE-T Ethernet port / PD port POE (IEEE 802.3af)
HDMI INPUT	(1) HDMI Type A connector, female; HDMI digital video/audio input

Power

Power Consumption	12 W max

Environmental

Cooling	Convection / no fan (no moving parts)
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	25 BTU/hr
Acoustic Noise	0 dBA

Form Factor

Dimensions	Height: 4.07 in. (103.4 mm) Width: 3.61 in. (91.8 mm) Depth: 2 in. (50.6 mm)
Weight	1.0 lb (0.45 kg)

Compliance

	CE, FCC, C-tick, RoHS, WEEE

NETWORK AUDIO VIDEO

E5-WP-H • Wallplate Encoder w/HDMI Only

Dimensions • (in mm)

Top

84

15.2

91.8

32.8

103.4

23   23

Front

66.8

64

40.7

5   50.6

Side

![Visionary Network Audio Video logo]

E5200 • Encoder | D5200 • Decoder
*UPGRADEABLE

Distribute 4K60 4:4:4 & Dante®/ AES67 over Gigabit Ethernet
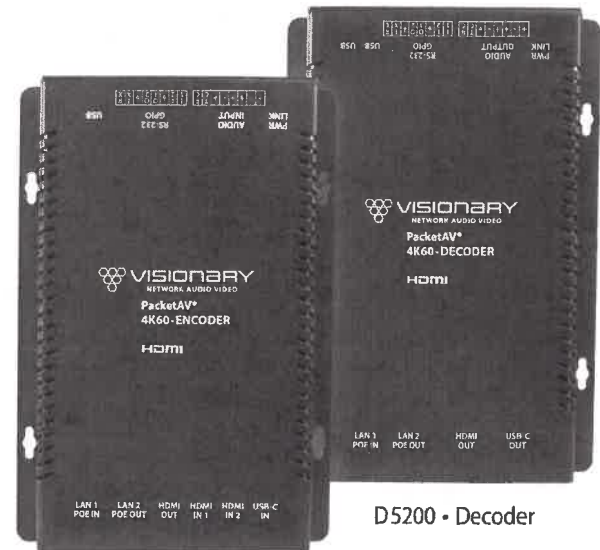
Overview

Introducing the next-generation E/D5200 4K60 4:4:4 AV over IP endpoints from Visionary Solutions. Building on the paradigm-shifting PacketAV® Duet platform, which pioneered true convergence by supporting Dante®/AES67* and Video over IP, the E/D5200 takes performance and versatility to new heights.

The E/D5200 delivers powerful 4K60 4:4:4 video and Dante®/AES67* audio over a single Gigabit Ethernet port, streamlining connectivity and simplifying AV system design.

With USB-C compatibility, the E/D5200 ensures seamless integration with modern devices and applications, expanding the possibilities for networked AV systems.

Harnessing the power of converged IP networks, the E/D5200 endpoints offer unparalleled scalability and flexibility, allowing professional AV designers and IT directors to leverage Visionary Solutions' products as alternatives to conventional distribution systems.

Visionary Solutions' PackeTV® and PacketAV® products can be deployed on any industry-standard IP network, either on existing enterprise IP networks or a physically separate parallel network (private network), ensuring easy installation and minimal disruption to data or voice traffic.

D5200 • Decoder

E5200 • Encoder

Upgradable with PacketAV Dante®/AES67 Module: The E/D5200 is upgradable with a separately purchased PacketAV Dante®/AES67 Module, providing even more versatility and adaptability to your networked AV system.

Experience the future of networked AV with Visionary Solutions' E/D5200 4K60 4:4:4 AV over IP endpoints. Designed for the ever-evolving converged AV/IT environment, these next-generation endpoints continue to deliver powerful performance and unparalleled flexibility to meet the growing demand for 4K video and seamless integration.

* Upgradable with a separately purchased PacketAV Dante®/AES67 Module

Features

4K60 4:4:4 Video Support

- Experience ultra-high-definition video with 4K resolution at 60 frames per second and full 4:4:4 color sampling for unparalleled image quality, suitable for professional applications where every detail matters.

Isochronous USB 2.0 over IP

- Enables real-time data transfer for USB devices, such as webcams and microphones, over the network. This feature simplifies the deployment of video conferencing solutions and offers greater flexibility in AV system design. By leveraging the AV over IP infrastructure, it allows seamless integration and extension of USB peripherals.

Full Motion MJPEG Substream

- Maximize bandwidth efficiency and enhance video quality with a full motion MJPEG substream, delivering smooth, high-quality video feeds for preview or monitoring purposes without impacting the primary 4K60 4:4:4 video stream.

Single Main Gigabit LAN Port for 4K60 4:4:4 Video, Dante®/AES67*, Control, and Powered Device (PD)

- A single Ethernet port for Video over IP and Dante®/ AES67* audio embedding and de-embedding, with VLAN tagging capability to separate Audio & Video network traffic as needed

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NETWORK AUDIO VIDEO

E5200 • Encoder | D5200 • Decoder

Features cont.

USB-C Connectivity

Encoder: USB-C Input

- Connect easily and share media from your Mac, Laptop, Tablet, Mobile, and Other USB-C enabled devices
- *Note: Not all devices will be compatible; Source devices must support DisplayPort Alt Mode for USB Type-C or Thunderbolt.*

Decoder: USB-C Output

- Enables soft-codec integration via driverless USB 2.0 connection to a PC for web conferencing applications such as Zoom, Skype, Cisco WebEx, and Microsoft Teams
- Capture, record, and stream meetings, presentations, conference cameras, and security footage directly to your PC
- Dynamically switch and view decoder output on your PC for recording, editing, videoconferencing, and streaming applications
- Use the PC streaming software of your choice and live broadcast your signal to any online video platform
- Bridge Dante®/AES67 * audio into soft-codec via USB-C
- Eliminate distance limitations with USB cables and extension - access right where you need it, close to every device that needs it
- USB Video Class (UVC) - compliant, a video capture standard that's compatible with Mac OSX, Windows®, Linux® and Android operating systems
- Output Resolutions up to 4K30

Multiple selectable local input sources w/ HDMI loop-through (Encoder)

- 2 x HDMI® and 1 x USB-C input and 1 x HDMI output
- Switching between the three inputs can be performed automatically using auto-switching (input detect) mode, programmatically via a control system, or through a web browser
- HDMI loop-through: display any of the three locally connected sources

Seamless Fast Switching

- Tearing free, no black screen, no frame lock

Dynamically Optimized (Adaptive) bit-rate compression CODEC w/ built-in AI

- Visionary's highly efficient video compression codec is a modified full frame encoding that dynamically optimizes for fine lines (computer generated graphics) or motion video by using sophisticated AI to analyze the input source content. Actively matching the level of compression to a scene by leveraging periods of low motion video content reduces the stream's size and enhances performance - enabling, without compromising image quality, Visually Lossless transmission of computer generated graphics or full-motion video sources.
- Adjustable Video Bitrate: (50 – 200 Mbps or Auto [800Mbps max])

Enterprise Level Security –AES Encryption, 802.1x, HTTPS, SSH

Enterprise applications demand a secure Network AV solution

- AES Stream Encryption - The Advanced Encryption Standard, or AES, is a worldwide standard and was adopted as the standard encryption algorithm by the U.S. government for encrypting classified information
- HTTPS Secure API - Using secure SSL/TLS communications HTTPS provides integrity that a client is communicating with the real API and receiving back authentic data. It also ensures privacy for applications and users using the API
- 802.1x Authentication for Network access control - 802.1X provides a secure authentication mechanism for any device trying to access a network
- SSH Network Protocol - SSH is a network protocol used to remotely access and manage a device through command line communications. The key difference between Telnet (used by other AV over IP manufacturers) and SSH is that SSH uses encryption, which means that all data transmitted over a network is secure

Power connected devices with PoE pass-through

- Encoders and Decoders only require standard PoE power (15w or lower), however, when PoE+ is supplied to the Main LAN port you can pass-through PoE power to devices connected to the Ethernet Expansion Port

E5200 • Encoder | D5200 • Decoder

Features cont.

Dynamic OSD text overlay capabilities

- The ability to overlay dynamic or fixed text on screen enables displaying of alerts, announcements, special instructions, clocks / timers, schedules, and other messaging

Mass Configuration

- Auto Discover all endpoints on the network, export to .CSV file (all configurable parameters included), make changes offline, upload .CSV file through embedded web page of encoder/ decoder and push configuration to the network
- No external software required – mass configuration capabilities built into the endpoint embedded webpage UI

LLDP Support

- Link Layer Discovery Protocol (LLDP) is a protocol used by network devices for advertising their identity, capabilities, and neighbors on a local area network based on IEEE 802 technology
- Allows for dynamic control of endpoints based on automatic discovery of physical location

QoS Support

- Quality of Service (QoS) is an advanced feature that prioritizes network traffic resulting in performance improvement for critical network traffic

Control

- Vision Lite Control Software
- 3rd Party Control Drivers [Crestron, QSC, Symetrix, RTI, etc.]
- *API providing access to the full range of features on the encoders and decoders offered to qualified System Integrators

Ethernet Expansion Port - Power Sourcing Equipment (PSE)

- This port enables network connectivity for control and IP traffic pass-through to remote LAN devices (ex. displays, projectors, control touch-panels).
- The port can also be used to daisy-chain multiple endpoints for easy video wall creation or extend distances to displays

GPIO - 2x2 I/O User Configurable

- Control third party devices from any endpoint on the network

USB 2.0 over IP (KVM), RS-232 over IP, IR over IP, and CEC over IP

- Control practically any remotely located device using USB devices and interfaces
- Also supports KVM over IP
- Control any device with an RS-232 interface
- HDMI CEC signal extension over IP
- Seamlessly control infrared devices

KVM Multi Display Roaming

- Switch keyboard and mouse control automatically and seamlessly between PC's by moving the cursor across the boundaries of a display and 'roaming' to adjacently mapped displays.

Built in Video Wall Functions

- A Single platform to support distributed displays and Video Walls; without separate expensive video wall processors and controllers
- Enhanced Video Wall functionality – supports video rotation 180/270 degrees
- Easily create video walls using normal commodity displays
- Built-in video wall processor that allows you to build up to a 16×16 video wall

Auto Video Scaler

- No need to worry about configuring the source resolution
- 4K in/1080P out, 1080P in/4K out

Independent Routing

- Independently route all signals with the ability to separately matrix video, audio (including Dante®/AES67 ∗), USB, IR, and serial (RS-232)
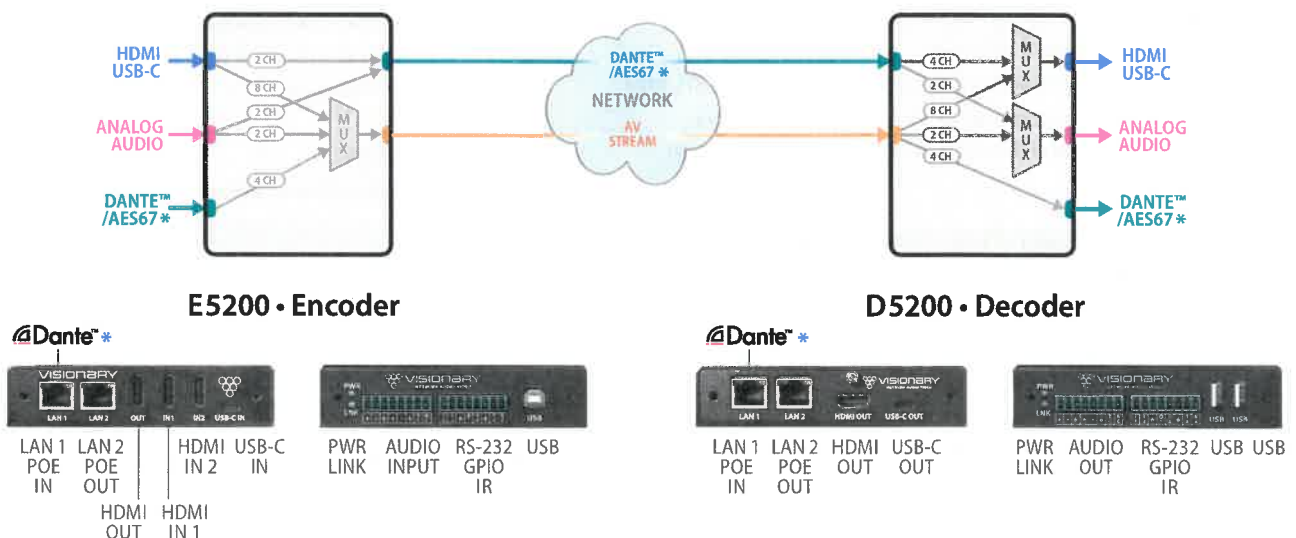
HDMI 2.0 and HDCP 2.2, 2.3 Compliant

VISIONARY
NETWORK AUDIO VIDEO

E5200 • Encoder | D5200 • Decoder

Benefits

- A single Gigabit LAN Port for PoE Power, 4K60 4:4:4 Video, Dante®/AES67 *, and Control

- Secure Network Isolation - VLAN Tagging separates AV traffic on the corporate network

- One LAN drop to decoder enables local IP control of connected devices through Ethernet expansion port

- Built in connectivity for web conference soft-codec AV integration

- Eliminates need for separate AV Bridging hardware

- Capture, record, and stream meetings directly to PC (USB-C)

- Effortlessly share media from your USB-C enabled devices

- Acts as an in-rack or Bring Your Own Device (BYOD) endpoint for presentation sharing and conferencing applications

- Local input switching

- Easy Control Integration

- Ultra-low Latency [~1 frame - visually lossless]

- Low bitrates

- No fiber or 10 Gigabit switch required

- Low-Cost network switches are used

- Scalable / Unlimited Distribution

- Any number and combination of inputs/outputs [in increments of one]

- Standard network cabling [CAT5e/6]

- Utilize existing network resources

- Rapid deployment

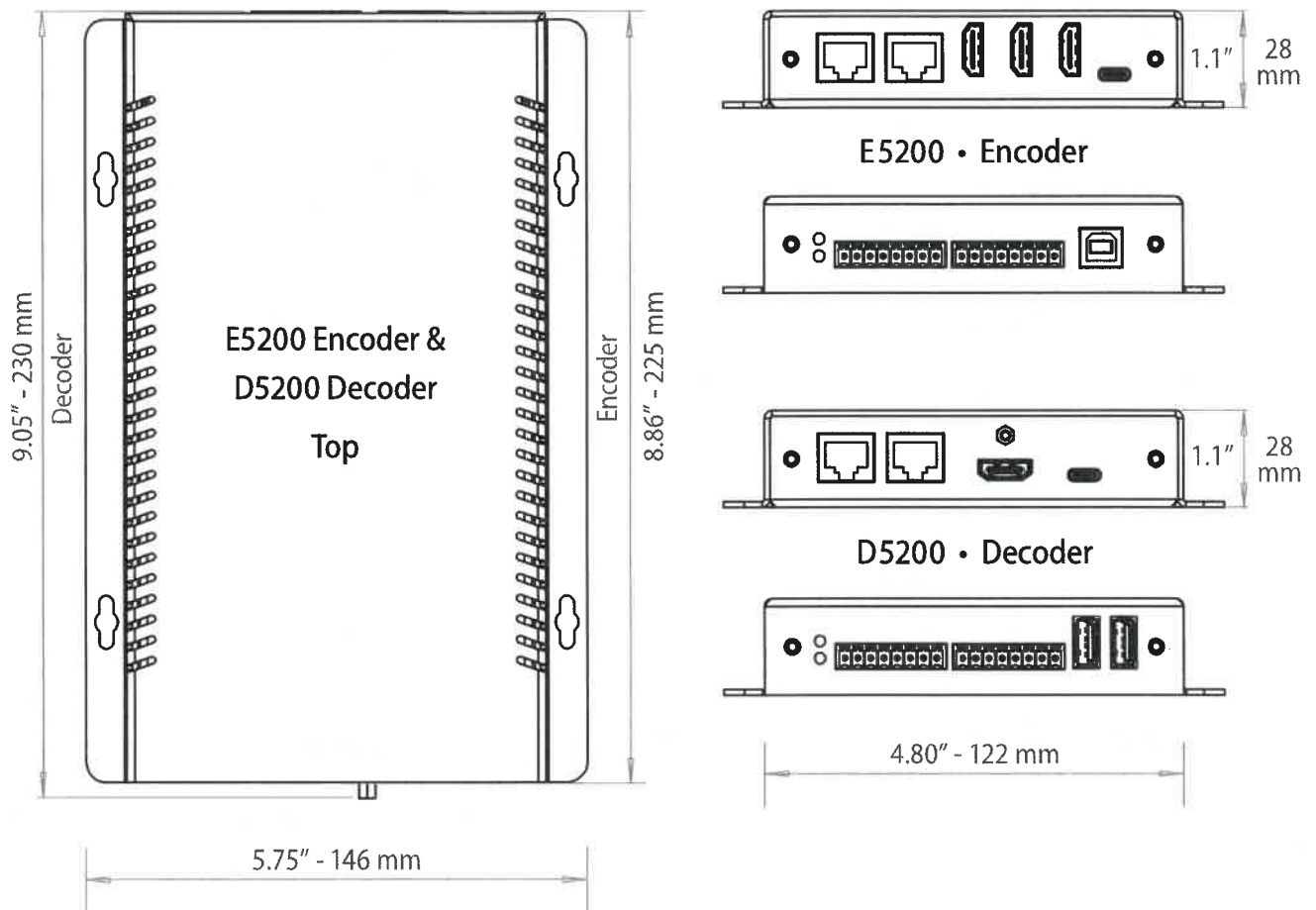- Single network for AV and IT

- Reduced operating costs

Audio Workflow

E5200 • Encoder

D5200 • Decoder

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NETWORK AUDIO VIDEO

E5200 • Encoder | D5200 • Decoder

Specifications

Encoding / Decoding	
Video Codec	JPEG2000 based visually lossless video compression algorithm
Audio Codec	Dante® / AES67 ✱
Bit Rates	50 to 800 Mbps
Latency	Ultra-low Latency (visually lossless video) 17ms @ 1080p60 & 4K60 4:4:4 33ms @ 4K30 4:4:4
Streaming Protocols	IP, UDP, TCP, ICMP, IGMP
Copy Protection	HDCP 2.2, 2.3 AES-256 Encryption

Video	
Maximum Resolutions	High Dynamic Range (HDR) 4K60 4:4:4 HDR 8 bit 4K30 4:4:4 HDR 12 bit 1080p60 4:4:4 HDR 12 bit 1080p30 4:4:4 HDR 12 bit Supports HDR10, HDR10+, HLG, Dolby Vision
Input Signal Types (Encoder)	2x HDMI & 1x USB-C capable of receiving source input video formats up to 4K60 4:4:4 (DisplayPort Alt Mode for USB Type-C or Thunderbolt)
Output Signal Types:	Decoder: 1x HDMI capable of scaling and outputting video formats up to 4K60 4:4:4 Decoder: 1x USB-C capable of scaling and outputting video formats up to 1080p60 4:4:4 Encoder: (HDMI Loop Out) capable of outputting video formats up to 4K60 4:4:4
Switcher (Encoder)	2 x HDMI and 1 x USB-C input and 1 x HDMI output (manual or auto-switching)
Scaler (Decoder)	Supports a wide range of resolutions and rates, up to 4K in/1080P out, 1080P in/4K out, image rotation, and video wall up to 16x16 Integrated scaling helps optimize image quality and switching performance

Audio	
Input Signal Types	HDMI Audio, Analog Stereo Audio. Dante®/AES67✱ Network Audio (up to 4 channels) • 1 analog stereo input, unbalanced or balanced • 1 digital input de-embedded from HDMI
Output Signal Types	HDMI Digital Audio (NLPCM pass-through), Analog Stereo Audio, Dante®/AES67✱ Network Audio • 1 digital audio output via HDMI • 1 Analog Stereo Audio balanced output • 1 Dante/AES67 digital audio output (up to 4 channels)
Digital 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.
Analog Formats	Stereo 2-channel
Analog-To-Digital Conversion	24-bit 48 kHz
Digital-To-Analog Conversion	24-bit 48 kHz
Dante™/AES67	24-bit 48 kHz
Analog Output Volume Adjustment	-80 to +20 dB

Communication & Control of External Devices	
Ethernet	Network connectivity for control and IP traffic pass-through to remote LAN devices
USB	USB 2.0 host or device signal extension and routing
GPIO	For extension and control of third-party devices
Serial / RS-232	Bi-directional device control and monitoring
IR	Device control via infrared
HDMI	HDCP 2.2, 2.3 EDID (encoder), CEC (decoder)

Connectors	
LAN 1	8-pin RJ-45 connector, female; 100BASE-TX / 1000BASE-T Ethernet port / PD port POE+ (IEEE 802.3at), POE+ Only required for LAN2 PSE
LAN2	8-pin RJ-45 connector, female; 100BASE-TX / 1000BASE-T Ethernet port / PSE port POE (IEEE 802.3af)
HDMI INPUT 1 & 2 (Encoder)	(2) HDMI Type A connectors, female; HDMI digital video/audio inputs
HDMI Outputs (Encoder loop-through & Decoder output)	HDMI Type A connectors, female; HDMI digital video/audio inputs
USB-C	Encoder input: (1) USB Type C connector, female; Decoder output: (1) USB Type C connector, female;
1st - 8 pin Euroblock 3.81mm pitch connector	Encoder Stereo Balanced Analog Audio Input Decoder Stereo Balanced Analog Audio Output
2nd - 8 pin Euroblock 3.81mm pitch connector	Shared GPIO / RS-232 / IR ports
USB Host (Decoder)	(2) USB Type-A connector, female; USB 2.0 host port; USB signal extender port for connection to a mouse, keyboard, or other USB 2.0 device
USB Device (Encoder)	(1) USB Type-B connector, female; USB 2.0 device port; USB signal extender port for connection to a computer or other USB 2.0 host

Power	
Power Consumption	12 W typical

Environmental	
Cooling	Convection / no fan (no moving parts)
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	41 BTU/hr
Acoustic Noise	0 dBA

Form Factor	
Dimensions	Height: 1.1 in. (28 mm) Width: 5.75 in. (146 mm) Depth: Encoder 8.86 in. (225 mm) Decoder 9.05 in. (230 mm)
Weight	1.0 lb (0.45 kg)

Compliance	
	CE, FCC, C-tick, RoHS, WEEE

E5200 • Encoder | D5200 • Decoder

Dimensions

E5200 Encoder &
D5200 Decoder

Top

9.05" – 230 mm

Decoder

Encoder

8.86" – 225 mm

5.75" – 146 mm

1.1"   28 mm

E5200 • Encoder

1.1"   28 mm

D5200 • Decoder

4.80" – 122 mm

Q-SYS

TSC-50-G3
TSC-70-G3
TSC-101-G3

KEY FEATURES

- High performance network touch screen controllers for Q-SYS

- Enhanced onboard processor with increased resolution and significantly improved screen transitions on all models

- Customizable RGB LED status indicators (7-inch and 10 in models only)

- Integrated proximity sensor wakes the screen on approach while an ambient light sensor adjusts screen brightness

- Build inuitive and scalable UCIs in the same software program as your DSP and control programming for a streamlined design and deployment process

- Supports CSS-based styling letting users build more dynamic UCI themes and apply global styles across multiple UCIs

- UCI Controller (in Beta) is an alternative method of building UCIs from a template of control types to simplify deployment and scalability of multiple UCIs

- Supports Power over Ethernet to allow for power and data on a single cable for simple, single-cable installation

- All models support landscape/portrait orientation when wall-mounted

- Optional table top mount accessory available (5-inch model supports landscape/portrait mounting)

- Universal mounting options: Included accessories for mounting to US standard and European wall and junction boxes

- Available in three sizes (5-inch, 7-inch, 10.1-inch)

Q-SYS TSC-G3 Series

Network touch screen controllers for Q-SYS

The Q-SYS TSC Series Gen 3 are high-performance network touch screen controllers native to Q-SYS. Available in three sizes (5-inch, 7-inch, 10-inch), these PoE-capable (power over Ethernet) devices support a wide range of applications needing a fully-customizable user control interface (UCI).

Like all Q-SYS products, the TSC Series Gen 3 integrate seamlessly into a system design and take full advantage of drag-and-drop integration and robust control engine within Q-SYS to provide users with intuitive AV controls for any space.

The Next Generation of Q-SYS Touch Screens – The TSC Series Gen 3 network touch screen controllers offer a complete redesign, built for higher performance and modern aesthetics. This series offers increased resolutions with significantly improved screen transitions on all models. Furthermore, the enhanced onboard video processor makes these screens future-ready for upcoming Q-SYS video features.

The 7-inch and 10-inch models also feature RGB LED status indicators on the side of the touchscreen that can be fully customizable to signify anything from call/mute status, room-in-use, and beyond.

Lastly, each model supports vertical and horizontal orientation, and allows for wall-mounting in a single-gang wall box (TSC-50-G3), dual-gang wall box (TSC-70-G3 & TSC-101-G3), or table-top mounting with optional accessory (not included).

Fully Customizable User Control Interface – Q-SYS offers a unique drag-and-drop UCI creation utility within Q-SYS Designer Software for building intuitive and scalable interfaces without the need for any programming. Each TSC Series Gen 3 network touchscreen can display anything from a few simple controls on single page GUIs to comprehensive GUI's with reactive controls that change based on system status. It's also simple to import corporate logos and other graphical elements to enable UCIs tailored to each customer's unique requirements.

Additionally, Q-SYS supports CSS-based styling, which allows integrators to build more dynamic UCI themes and apply global styles across multiple UCIs (or system designs). Q-SYS also offers the new UCI Controller feature (in Beta) that make it much simpler to copy, reuse, and modify UCIs to allow for easier deployment and scalability of multiple UCIs.

Designed for Q-SYS – TSC Series Gen 3 network touch screen controllers are high-performance devices native to Q-SYS, a cloud-manageable audio, video, and control platform, built to deliver scalable, flexible AV solutions well into the future. At its foundation, the **Q-SYS OS** serves as the software foundation that manages your TSC Series devices along with a multitude of other native **Q-SYS Products**. Additionally, the modern IT architecture and development tools of the Q-SYS Platform enable an entire Ecosystem of third-party devices developed by approved **Q-SYS Partners**, as well as a worldwide community of Q-SYS developers using the available tools found in **Q-SYS Open.**

Q-SYS TSC-G3 Series

	TSC-50-G3	TSC-70-G3	TSC-101-G3
Display			
Type	Projective capacitive (PCAP) multi-touch technology, high-resolution 24-bit color display		
Panel dimensions (WHD)	5.55 x 3.2 x 1.49 in (141 x 81.3 x 37.8 mm)	7.28 x 4.53 x 1.54 in (185 x 115 x 39.1 mm)	9.97 x 6.24 x 1.54 in (253.2 x 158.5 x 39.1 mm)
Viewable screen dimensions (diagonal)	4.99 in (126.7 mm)	7 in (177.8 mm)	10.07 in (255.8 mm)
Resolution	1280 x 720 px	1280 x 800 px	1920 x 1200 px
Aspect ratio	16:9	16:10	16:10
Contrast ratio	800:1	850:1	800:1
Brightness	450 Nits	400 Nits	380 Nits
Customizable LED status indicators	No	Yes	Yes
Panel orientation	Landscape / portrait	Landscape / portrait	Landscape / portrait
Wall-mountable	Yes (accessories included)	Yes (accessories included)	Yes (accessories included)
Table top	Optional table top stand accessory	Optional table top stand accessory, supports landscape orientation only	Optional table top stand accessory, supports landscape orientation only
Sensors			
Ambient light sensor	Yes	Yes	Yes
Proximity detection (wake on approach)	No	Yes	Yes
I/O			
LAN (1x RJ45)	1 Gbps		
USB 3.1 (1x Type-C)	No	Yes (for future use)	Yes (for future use)
Power			
Power over Ethernet	PoE Class 2	PoE Class 3	PoE+ Class 4
Weight			
Product weight (net)	8.8 oz (249 g)	19.9 oz (564 g)	33.4 oz (947 g)
Environmental			
Operating temperature	0°-50° C (32°-122° F)		
BTUs	18 typical	26 typical	47 typical
Humidity	5-85% rh non-condensing		

*Specs subject to change without notice

TSC-101-G3

(shown with optional table top stand, available for TSC-70-G3 and TSC-101-G3)

Q-SYS

+1·800·854·4079 | +1·714·754·6175 | **WWW.QSYS.COM**

QSC

MP-A Series
MP-A20V | MP-A40V | MP-A80V

Multi-channel amplifiers

Features

- FlexAmp Technology allows each pair of amplifier channels to deliver up to 400 W total power, in any ratio.

- Class-D output circuitry and switchmode power supply for high efficiency and low cost of ownership

- 1RU amplifier design for rack space savings

- Load selector for driving 4 Ω, 8 Ω, 70 V or 100 V on each channel

- Selectable 80 Hz highpass filter offered on each channel

- Power saving features - Auto-standby (after 28 minutes with seamless auto-ramp when signal returns) and remote standby input

- Amp status remote output

- Legacy of rock-solid QSC amplifier dependability

Introduction

The MP-A Series music and paging amplifier family builds on a 50 year legacy of QSC amplifier dependability and quality while offering an incredible amount of flexibility for business music and paging applications.

FlexAmp Technology

FlexAmp Technology simplifies system design by allowing a single high channel count amplifier to meet the needs of systems that would typically utilize multiple amplifiers of different power levels. It achieves this by allowing the installer to configure each pair of channels (e.g. ch 1-2, or 3-4, etc.) to deliver up to 400 W combined output power, in any mix. This makes for an amazing amount of flexibility, especially when paired with the output mode switch that offers settings for 4 Ω, 8 Ω, 70 V and 100 V.

Additional capabilities of the MP-A series include an 80 Hz highpass filter available on each output, as well as a remote input for putting the amplifier into standby mode for fire safety systems and an amplifier status signal on the remote output for system verification.

Flexibility

For an example of versatility of the MP-A Series, imagine the MP-A40V in a typical restaurant scenario. Output A of the amplifier is set up for a 20 W 70 V load for a pair of ceiling loudspeakers in the bathrooms while output B is set up in 4 Ω mode for driving one or two Lo-Z subwoofers with up to 380 W. Output C is set up with the highpass filter engaged for driving 250 W into 70 V ceiling loudspeakers in the main dining room, while output D is driving 150 W into 8 Ω surface-mount loudspeakers on the patio.

Power and Space Efficiency

MP-A Series amplifiers are extremely efficient with class-D output circuitry and switchmode power supplies. In addition, all models offer seamless Standby mode when not in use for 28 minutes and auto-ramp circuitry that ensures quiet and fast power up from Standby when signal is present. This combination of output topology and energy saving circuitry make for extreme efficiency and low operational costs. The 1RU chassis means that the MP-A Series amplifiers are perfect for installations with rack space restrictions.

MP-A Series

Model	MP-A20V	MP-A40V	MP-A80V
Channels	2	4	8
Power (all channels driven)			
4 Ω	200 W	200 W	200 W
8 Ω	200 W	200 W	200 W
70 V	200 W	200 W	200 W
100 V	200 W	200 W	200 W
FlexAmp Technology	Allows each pair of amplifier channels to deliver up to 400 W total power, in any ratio		
Typical distortion (4-8 Ω)	< 0.01%		
Maximum distortion (4-8 Ω)	< 1%		
Damping factor	100		
Output circuitry	Class D		
Protection	Short circuit, open circuit, over current, thermal, RF protection, DC fault, inrush limiting		
Gain at 8 Ω	30 dB		
Input impedance	> 10k, balanced or unbalanced		
Input sensitivity	1.23 V (+4 dBu)		
Maximum input level	12.3 V (+24 dBu)		
Frequency response at 8 Ω	20 Hz – 20 kHz +/- 0.5 dB		
Signal to noise	> 103 dB		
User-configurable operating modes (per channel)	DIP switch selectable, low impedance 4 Ω or 8 Ω, high impedance direct drive 70 V or 100 V		
Highpass filter	80 Hz DIP switch engaged per channel		
Cooling			
Type	Forced air cooling, thermally regulated fan speed, side/rear-to-front airflow		
Operating temperature range	Maximum: -10° - 50° C, recommended: 0° - 35° C, performance may be reduced above 40° C		
Connectors			
Input connectors	Two 3.5 mm Euro, 3-pin (green)	Four 3.5 mm Euro, 3-pin (green)	Eight 3.5 mm Euro, 3-pin (green)
Remote connectors	One 3.5 mm Euro, 5-pin (black)	One 3.5 mm Euro, 5-pin (black)	One 3.5 mm Euro, 5-pin (black)
Output connectors	One 5.0 mm Euro, 4-pin (green)	Two 5.0 mm Euro, 4-pin (green)	Four 5.0 mm Euro, 4-pin (green)
Front panel indicators	Power, signal (per channel), limit / mute / protect (per channel)		
Rear panel indicators	Bi-Color LED signal / limit / mute / protect		
Remote I/O	Remote standby, amplifier status enunciation on 3.5 mm connectors		
AC Power Input	Universal power supply with PFC, 100-240VAC, 50 - 60 Hz		
Agency approvals	UL, CE, RoHS/WEEE compliant, FCC Class B (conducted and radiated emissions)		
Dimensions (HWD) inches	1.75 in x 19 in x 14.8 in		
Dimensions (HWD) mm	44 mm x 483 mm x 377 mm		
Net weight	7.7 lb (3.5 kg)	9.3 lb (4.2 kg)	12.8 lb (5.8 kg)
Shipping weight	12.3 lb (5.6 kg)	13.9 lb (6.3 kg)	17.4 lb (7.9 kg)

Specifications subject to change without notice.

QSC

please recycle

Q-SYS Core 110f

KEY FEATURES

- Up to 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)
- Supports up to four (4) Q-SYS NM-T1 tabletop microphones
- Multiple instance VoIP lines
- Single POTS telephone line
- 3 year warranty

Q-SYS Core 110f

Network + Analog I/O Processor (v2)

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 8 x 8 analog audio I/O, the Core 110f features a software definable bank of 8 balanced analog audio Flex channels, a unique Q-SYS 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 4 USB Host ports (A type) which enable the Core to host external USB devices.
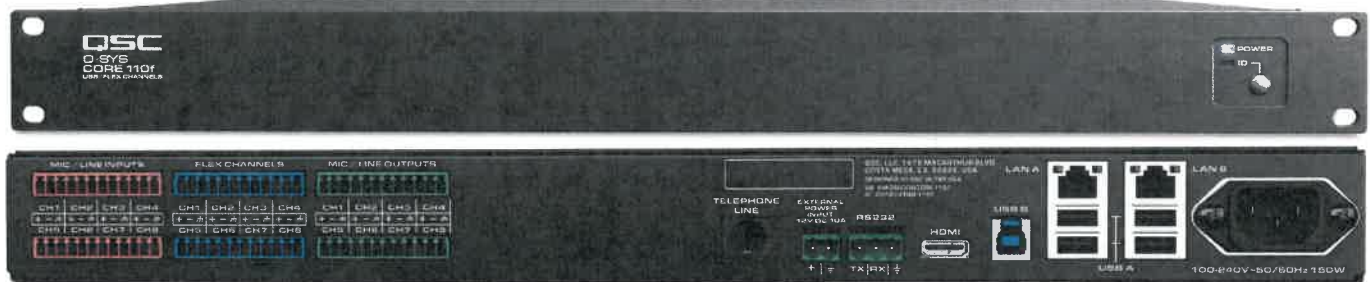
Certified for
Microsoft Teams

works with
Google Meet

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 Q-SYS 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. Note that when video bridging is in use, network I/O capacity is reduced (80 x 64 on systems with firmware version 9.7 or later; 64 x 64 on systems with firmware version 9.6 or earlier).

- 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

- Supports up to four (4) Q-SYS NM-T1 network tabletop microphones

- 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)

- 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   v2

PROCESSOR	Intel 64-bit architecture
AUDIO PROCESSING	32-bit floating point
Q-LAN NETWORK AUDIO TRANSPORT	32-bit floating point

INPUTS

Input Frequency Response 20 Hz to 20 kHz @ +21dBu	+0.05% / -0.5%
Input THD+N @ 1KHz @ +21 dBu Sensitivity & +21 dBu input @ +21 dBu Sensitivity & +10 dBu input @ +10 dBu Sensitivity & +8 dBu input @ -10 dBu Sensitivity & -10.5 dBu input @ -39 dBu Sensitivity & -39.5 dBu input	< 0.1% < 0.0015% < 0.0007% < 0.0006% < 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 @ +10 dBu Sensitivity @ -10 dBu Sensitivity @ -39 dBu Sensitivity	> 109.5 dB > 106.4 dB > 104.6 dB > 104.6 dB
Input Common Mode Noise Rejection @ +21 dBu Sensitivity @ +10 dBu Sensitivity @ -10 dBu Sensitivity @ -39 dBu Sensitivity	 50.7 dB 56.5 dB 73.2 dB 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

Q-SYS Core 110f

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)

Switching Engineered for AV over IP

Introducing the NETGEAR AV Line of M4250 Switches, developed and engineered for audio/video professionals with dedicated service and support. M4250 has been built from the ground up for the growing AV over IP market, combining years of networking expertise in AV with M4300 and M4500 series with best practices from leading experts in the professional AV market. AV codecs

generally use 1Gbps or 10Gbps per stream and the AV Line of M4250 targets the widespread 1Gbps codecs.

PoE+, Ultra90 PoE++ and rear-facing ports ensure a clean integration in AV racks. M4250 switches come pre-configured for standard audio and video signals. When requirements are more specific, an AV user interface offers customization with port-based profiles. For audio,

Dante, Q-SYS, AES67, and AVB profiles are available. For video the M4250 offers profiles for NVX, AMX, Q-SYS, NDI, Dante etc. as well as audio/video/control mixed profiles. When multiple switches are used, NETGEAR IGMP Plus™ brings automation for you to just connect them together, or with M4300 and M4500 switches.

Highlights

Extended AV features

- Dedicated AV web-based GUI interface for more specific AV installations
- Color-based AV profiles can be applied to the different ports
- Dante, Q-SYS, AES67 and AVB audio profiles
- NVX, SVSI, Q-SYS, NDI and Dante video profiles
- Audio / video / control mixed profiles
- Automatic switch interconnect with NETGEAR Auto-Trunk, Auto-LAG and IGMP Plus
- Common Layer 2 and Layer 3 switching engine across all M4250 models

- Built-in IT web GUI, console, telnet and SSH consistent with other NETGEAR M4300 and M4500 series
- Feature set includes static, RIP and PIM routing, DHCP Server and PTPv2

Audio Video Bridging (AVB) services

- AVB is one of the many features designed into the M4250 product line
- AVB is an industry standard for transporting content over a network
- AVB is used most often when very low latency is required such as in live performances when lip sync is critical

Other IT use cases

- Standard or recessed mounting with all ports in the back, or all ports in the front

- Fully featured L2/L3/L4 platform for midsize Enterprise campus networks, IoT and IPTV

Industry standard management

- Industry standard command line interface (CLI), main NETGEAR IT web interface (GUI), SNMP, sFlow and RSPAN
- The NETGEAR Engage™ Controller manages all M4250, M4300, M4350, and M4500 switches for your AV installations.

Industry leading warranty

- NETGEAR M4250 series is covered under NETGEAR ProSAFE Limited Lifetime Hardware Warranty*
- 90 days of Technical Support via phone and email, Lifetime Technical Support through online chat and Lifetime Next Business Day hardware replacement

Product Brief

The NETGEAR AV Line M4250 series was designed with input from AV Professionals. The result is a line of switches built from the ground up to support 1Gb audio and video over IP with customized hardware and software along with dedicated service and support.

NETGEAR M4250 series key features:

- Ranges from 8 to 48 ports with a variety of PoE+ and Ultra90 PoE++ options for 15.4W, 30W, 60W, 75W and 90W AVoIP endpoints

- Uplink options include 1G for audio installations or standalone video installations as well as 10G uplinks for larger scale video deployments

- Also includes 12-port multi-gigabit Ethernet and 16-port 1G/10G fiber models for plug and play aggregation in a star topology

- Rackmount models designed for a clean integration with traditional, rack-mounted, AV equipment

- The M4250 switches come with a sleek, black display panel with status in front and all cabling plus additional status in the back

- Reversed mounting is possible when ports are desired on the front of the rack

- A second pair of rackmount ears allows the switches to be mounted recessed by 2-inches to allow for the cabling

- Software-controlled fan adjustments enable the fans to be turned off when ambient temperature and PoE loads are appropriate for a totally fanless operation

- Threaded holes on the bottom (4xM5 for 50x100mm VESA) and in front (1xM10 for clamps) allow for universal mounting options outside the rack as well

- New! M4250 desktop versions for use outside of the AV racks in conference rooms, mobile studios, on the wall, under a table or behind a screen

NETGEAR M4250 series AV software features:

- Pre-configured for audio and video over IP out of the box, the M4250 switches enable encoders and decoders to be connected with zero configuration

- When more configuration is required, an AV web-based GUI is available

- This interface has been specially designed for AV installers with specific AV-related controls made more accessible and with port-based profiles

- For audio, profiles for Dante, Q-SYS, AES67, and AVB are built-in

- For video, the M4250 offers profiles for NVX, SVSI, Q-SYS, NDI, Kramer KDS, Aurora Multimedia, ZeeVee, Atlona, Dante and SDVoE

- Other AV CODECs and manufacturers are supported as well as audio/video/control mixed profiles

- IGMP Plus™ means AV-over-IP multicasting will work out of the box and not flood your network

- The Engage™ Controller manages all M4250, M4300, M4350, and M4500 switches for your AV installations with Auto-LAG / Auto-Trunk

NETGEAR M4250 series other software features:

- All M4250 switches share the same high-end NETGEAR Layer 2 / Layer 3 switching engine for a consistent experience

- All switches in the M4250 series have another main, IT web-based GUI for midsize Enterprise campus networks, IoT and IPTV

- Additional features include static, RIP and PIM-SM, DM and SSM multicast routing, DHCP Server and PTPv2 Transparent Clock (1-step E2E)

- Advanced classifier-based, time-based hardware implementation for L2 (MAC), L3 (IP) and L4 (UDP/TCP transport ports) security and prioritization

- Selectable Port-Channel / LAG (802.3ad - 802.1AX) L2/L3/L4 hashing for fault tolerance and load sharing with any type of Ethernet channeling

- Voice VLAN with SIP, H323 and SCCP protocols detection and LLDP-MED IP phones automatic QoS and VLAN configuration

- Efficient authentication tiering with successive DOT1X, MAB and Captive Portal methods for streamlined BYOD

- Comprehensive IPv4/IPv6 static and dynamic routing including Policy-based routing and 6-to-4 tunneling

- Advanced IPv4/IPv6 security implementation including malicious code detection, DHCP Snooping, IP Source Guard protection and DoS attacks mitigation

NETGEAR M4250 series management features:

- DHCP/BootP innovative auto-installation including firmware and configuration file upload automation

- Industry standard SNMP, RMON, MIB, LLDP, AAA, sFlow, RSPAN and PTPv2

- Service port for out-of-band Ethernet management (OOB)

- Standard RS232 straight-through serial RJ45 and USB Type-C ports for local management console

- Standard USB-A port for local storage, logs, configuration or image files

- Dual firmware image for updates with minimum service interruption

- Single-pane-of-glass NMS300 management platform with mass configuration support

- Industry standard command line interface (CLI) for IT admins used to other vendors commands

- Fully functional Web console (main GUI) for IT admins who prefer an easy to use graphical interface

- Dedicated AV web-based GUI interface available at [switch IP address:8080] for AV installations

NETGEAR M4250 series warranty and support:

- NETGEAR ProSAFE Limited Lifetime Hardware Warranty**

- Included Lifetime Technical Support

- Included Lifetime Next Business Day Hardware Replacement

- Offering free network design services and installation support, the NETGEAR Engineering Services Team is ready to help ensure your 1G deployments with the M4250 AV over IP switches go as smooth as possible. Just drop us an email at ProAVDesign@netgear.com to get started!

GSM4210PX
GSM4210PD

Components and Modules

M4250-40G8XF-PoE+
AV Line Managed Switch

Ordering information

- Americas: GSM4248PX-100NAS
- Europe: GSM4248PX-100EUS
- Asia Pacific: GSM4248PX-100AJS
- China: GSM4248PX-100PRS
- Warranty: Lifetime ProSAFE Hardware Warranty

- 40-port 10/100/1000BASE-T (RJ45) PoE+ with 960W PoE budget
- 8-port 1000/10GBASE-X (SFP+)
- 240 Gbps non-blocking fabric across 48 ports
- Out-of-band 1G Ethernet management port
- USB-C and RJ45 RS232 console ports and USB-A storage port
- Front black display panel and all ports in the back
- Possible reversed mounting with ports in the front
- Rack-mounting standard brackets
- Longer brackets for recessed mounting (2 inches / 5 cm)
- Threaded hole in front (1xM10) for clamps
- Threaded holes on the bottom (4xM5) for 50x100mm VESA plates
- Selectable fan modes for quiet or cool operation
- Dimensions (WxDxH): 440 x 43.2 x 400 mm
- Weight: 6.31Kg (13.91lb)

Q-SYS QIO-GP8x8

KEY FEATURES

- Native control I/O expander for Q-SYS
- Eight (8) logic inputs and eight (8) logic outputs
- Power-over-Ethernet capable
- Daisy-chain up to four QIO network I/O expanders on a single network run (with local daisy-chained DC power)
- Simple drag-and-drop integration and comprehensive management via Q-SYS Designer Software and Q-SYS Reflect Enterprise Manager
- Surface- or rack-mountable
- Includes surface mounting hardware
- QIO-RMK rack mounting kit sold separately
- QIO-PSU DC power supply sold separately

Q-SYS QIO-GP8x8

Network GPIO expander for Q-SYS

The Q-SYS QIO-GP8x8 expands your Q-SYS system's capabilities to enable streamlined interoperability with non-networked control devices via GPIO connectivity. By separating local I/O from processing hardware, the QIO Series network I/O expanders offer modular and easily scalable network I/O to support your desired topology.

BENEFITS

The Right I/O Where You Need IT: The QIO-GP8x8 allows you to provide your Q-SYS system with greater flexibility to deploy Serial control connectivity where it's most convenient. Each of the QIO Series I/O expanders features a compact form factor that can be rack- or surface-mounted:

QIO-GP8x8: The QIO-GP8x8 provides eight (8) logic inputs and eight (8) logic outputs to provide further GPIO expansion to systems needing to interface with occupancy sensors, push buttons, LED indicators, buzzers and more.

Expanded I/O Customization: QIO Series is intended to present a simpler way to add network I/O connectivity to Q-SYS systems, decoupling the physical location of the I/O from processing hardware to support distributed or centralized processing architectures. Additionally, QIO Series lets you customize your I/O configuration, and compliments the strengths of newer Q-SYS Core models that were designed with fewer onboard I/O options (Core Nano, Core 8 Flex, or NV-32-H (Core Capable).

Simplicity & Scalability: Daisy-chain up to four of the QIO Series devices on a single network run (with local daisy-chained DC power) to consume fewer network ports, avoid rack clutter, and allow for quicker future expansion without pulling additional network cables. Alternatively, QIO Series are also PoE-capable, providing simple single cable connectivity (when devices aren't daisy-chained)

Designed for Q-SYS: QIO Series network I/O are native to Q-SYS, a cloud-manageable audio, video and control platform, built to deliver scalable, flexible AV solutions well into the future. At its foundation, the Q-SYS OS serves as the software foundation that manages your QIO Series devices along with a multitude of other native Q-SYS Products in the platform. Additionally, the modern IT architecture and development tools of the Q-SYS Platform enable an entire Ecosystem of third-party devices developed by approved Q-SYS Partners, as well as a worldwide community of Q-SYS developers using the available tools found in Q-SYS Open.

Q-SYS QIO-GP8x8

Serial Ports

|	
General purpose inputs	0-24 VDC analog input, digital, or contact closure; configurable pull-up to +12 V
General purpose outputs	Open collector, 24 VDC @ 200 mA sink max; internal pull-up to 3.3.V
GPIO 12 VDC power pins	12 VDC out at 100 mA max per pin, with resettable fuse

Other Connectors

External power supply	24 VDC nominal, 2.5 A on Euro connector with second connector for daisy-chaining (QIO-PSU power supply sold separately)
LAN (PoE)	Gigabit LAN connection for Q-LAN, PoE
PoE specification	Conforms to IEEE 802.3af Type 1
LAN (Thru)	Ethernet daisy-chaining

General

LAN (Thru)	Ethernet daisy-chaining
Dimensions	5.5 x 4.25 x 1.59 in (139.7 x 108 x 40.4 mm)
Weight	1.18 lb (0.54 kg)
Mounting options	Surface- and wall-mountable (hardware included) Rack-mountable; 1RU, quarter-rack width (QIO-RMK rack kit sold separately)

Environmental

Ambient operating temperature range	0° to +50°C *If installing a GP8x8 in a multi-unit rack assembly with units on all sides, the maximum operating temperature should not exceed 40°C when devices are placed above or below.
Thermal dissipation	9.1 BTU / Hour
Humidity	0%-85% through 30°C non-condensing
Storage temperature	-20° to 70°C
Storage temperature	-20° to 70°C
Compliance	FCC 47 CFR Part 15, IC ICES-003, CE (EN55032, EN55035), EU RoHS directive 2011/65/EU, WEEE directive 2012/19/EU, China RoHS directive GB/T26572, EAC, UL, C-UL, NOM-019
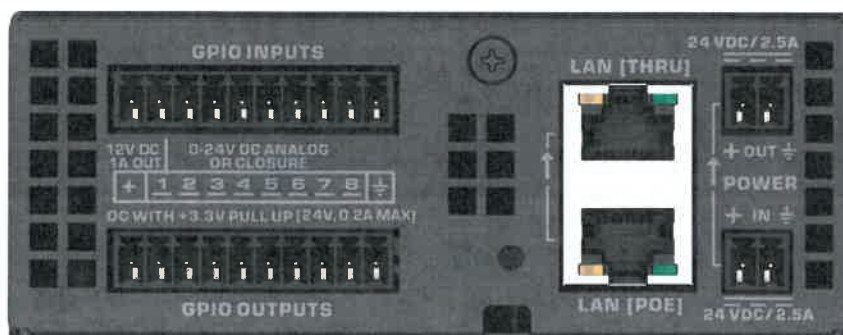
Q-SYS™

Q-SYS QIO-ML4i
Q-SYS QIO-L4o
Q-SYS QIO-ML2x2

KEY FEATURES

- Native audio I/O expanders for Q-SYS

- **QIO-ML4i:** Four (4) mic/line inputs

- **QIO-L4o:** Four (4) line outputs

- **QIO-ML2x2:** Two (2) mic/line inputs and two (2) line outputs

- Professional mic/line level inputs with +48 VDC phantom power and/or line outputs

- Microphone detection on inputs enables monitoring, usage statistics, and failure notifications

- Power-over-Ethernet capable

- Daisy-chain up to four QIO network I/O expanders on a single network run (with local daisy-chained DC power)

- Simple drag-and-drop integration and comprehensive management via Q-SYS Designer Software and Q-SYS Reflect Enterprise Manager

- Surface- or rack-mountable

- Includes surface mounting hardware

- QIO-RMK rack mounting kit sold separately

- QIO-PSU DC power supply sold separately

Q-SYS QIO Series

Network audio I/O expanders for Q-SYS

The Q-SYS QIO Series network audio I/O expanders extend your Q-SYS system's capabilities and enable streamlined interoperability with non-networked audio devices. By separating local I/O from processing hardware, the QIO Series offer modular and easily scalable network I/O to support your desired topology.

BENEFITS

The right I/O where you need it: QIO Series network I/O allows you to provide your Q-SYS system with greater flexibility to deploy mic/line audio connectivity where it's most convenient. Each of the three models featuers a compact form factor that can be rack- or surface-mounted.

Audio I/O models: feature professional mic/line level inputs with +48 VDC phantom power and/or line outputs to ensure high-performance and compatibility, along with microphone detection on inputs to enable monitoring, usage statistics and failure notifications.

- QIO-ML4i: Four (4) mic/line inputs

- QIO-L4o: Four (4) line outputs

- QIO-ML2x2: Two (2) mic/line inputs and two (2) line outputs

Expanded I/O customization: QIO Series is intended to present a simpler way to add network I/O connectivity to Q-SYS systems, decoupling the physical location of the I/O from processing hardware to support distributed or centralized processing architectures. Additionally, QIO Series lets you customize your I/O configuration, and compliments the strengths of newer Q-SYS Core models that were designed with fewer onboard I/O options (Core Nano, Core 8 Flex, or NV-32-H (Core Capable).

Simplicity & scalability: Daisy-chain up to four of the QIO Series devices on a single network run (with local daisy-chained DC power) to consume fewer network ports, avoid rack clutter, and allow for quicker future expansion without pulling additional network cables. Alternatively, QIO Series are also PoE-capable, providing simple single cable connectivity (when devices aren't daisy-chained).

Designed for Q-SYS: QIO Series network I/O are native to Q-SYS, a cloud-manageable audio, video and control platform, built to deliver scalable, flexible AV solutions well into the future. At its foundation, the **Q-SYS OS** serves as the software foundation that manages your QIO Series devices along with a multitude of other native **Q-SYS Products** in the platform. Additionally, the modern IT architecture and development tools of the Q-SYS Platform enable an entire Ecosystem of third-party devices developed by approved **Q-SYS Partners**, as well as a worldwide community of Q-SYS developers using the available tools found in **Q-SYS Open**.

Q-SYS QIO Series

	QIO-ML4i	QIO-ML2x2	QIO-L4o
Connectivity	Four (4) mic/line inputs	Two (2) mic/line inputs and two (2) line outputs	Four (4) line outputs
Mic/Line Inputs			
Maximum input level	+24 dBu		-
Preamplifier gain range	0 dB to 60 dB		-
Input sensitivity range	- 36 dBu TO +24 dBu		-
Phantom power	+48 VDC, 10 mA maximum per input		-
Input Frequency Response			
20 Hz to 20 kHz	+/- 1.0 dB		-
Input THD+N @ 1 KHz			
@ +24 dBu sensitivity & +24 dBu input	< 0.1%		-
@ +24 dBu sensitivity & +10 dBu input	< 0.05%		-
@ +10 dBu sensitivity & +8 dBu input	< 0.015%		-
@ -10 dBu sensitivity & -10.5 dBu input	< 0.015%		-
@ -36 dBu sensitivity & -36.5 dBu input	< 0.015%		-
Equivalent Input Noise	< - 120 dBu, no weighting @ 20 Hz to 20 kHz		-
Input to input crosstalk @ 1 kHz	> 85 dB		-
Input Dynamic Range			
@ +24 dBu sensitivity	> 105 dB		-
@ +10 dBu sensitivity	> 100 dB		-
@ -10 dBu sensitivity	> 95 dB		-
@ -36 dBu sensitivity	> 80 dB		-
Input impedance	5 kΩ single-ended, 10 kΩ balanced		-
Line Outputs			
Output audio range level		-	-36 dBu to +24 dBu
Input Frequency Response			
20 Hz - 20 kHz		-	+/- 0.5 dB
Output THD+N @ 1 KHz			
+10 dBu output level		-	< 0.01%
Output dynamic range		-	108 dB
Output to output crosstalk @ 1 kHz		-	> 85 dB
Output Impedance		-	150 Ω to 300 Ω
Sample rate	48 kHz		
Bit depth	24 bit		

Q-SYS QIO Series

	QIO-ML4i	QIO-ML2x2	QIO-L4o
Other Connectors			
External power supply	24 VDC nominal, 2.5 A on Euro connector with second connector for daisy-chaining (QIO-PSU power supply sold separately)		
LAN (PoE)	Gigabit LAN connection for Q-LAN, PoE		
PoE specification	Conforms to IEEE 802.3af Type 1		
LAN (Thru)	Ethernet daisy-chaining		
General			
Dimensions	8.5 x 4.25 x 1.59 in (215.9 x 108 x 40.4 mm)		
Weight	1.72 lb (0.78 kg)		
Mounting options	Surface- and wall-mountable (hardware included) Rack-mountable; 1RU, quarter-rack width (QIO-RMK rack kit sold separately)		
Environmental			
Ambient operating temperature range	0°C to +50°C		
Thermal dissipation	25.9 BTU / Hour	20.5 / Hour	11.9 BTU / Hour
Humidity	0% - 85% through 30°C, non-condensing		
Storage temperature	-20° to 70°C		
Compliance	FCC 47 CFR Part 15, IC ICES-003, CE (EN55032, EN55035), EU RoHS directive 2011/65/EU, WEEE directive 2012/19/EU, China RoHS directive GB/T26572, EAC, UL, C-UL, NOM-019		

QIO-ML2x2
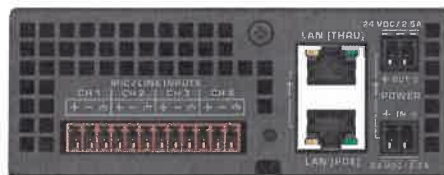
QIO-ML4i

QIO-L4o

PS753

4K Desktop Document Camera

A 4K document camera with 300x zoom, HDMI, VGA, USB, and IP streaming.

Lumens® PS753 is a 300x zoom desktop document camera with a professional Sony imaging sensor. It delivers vivid colors and detailed pictures whether it is reproducing a document or a 3D object. The PS753 is easy to connect to computers, displays, and networks, with HDMI, VGA, USB, and IP outputs. It is designed for use in lecture halls and professional meetings, which require the highest resolution images for display on large screens or where the capture of fine detail is essential.

Key Features

- 4K Resolution with 300x zoom
- Supports HDMI, VGA, Ethernet, and USB output
- Shooting area (20.5" x 12.1") larger than A3
- Records to USB drives
- HDMI pass-through up to 4K resolution
- 5-year warranty*

Superior Image Quality

With a 4K camera and powerful zoom, the PS753 delivers remarkably detailed images to screens and projectors.
The high-performance Sony sensor faithfully reproduces textures and colors in real-time, with excellent control over image noise.

Wide Shooting Area

Lumens PS753 is extremely versatile, capable of reproducing documents and objects larger than A3 in size (over 20.5" x 12.1" / 50cm x 30cm). This gives presenters and demonstrators the flexibility that less powerful visualizers cannot match.
Where the operator needs a close-up shot, the 300x zoom can capture the finest detail. For maximum versatility, the ePTZ functionality changes the camera angle and position to focus on a specific part of the object. This gives you the precise image you need every time.

Multi-Angle Lighting

The Lumens PS753 has dual lights on adjustable gooseneck mounts: any object is perfectly lit from above without glare or reflections. It also has a backlit LED light under the display area, making the visualizer ready to illuminate photo negatives and X-rays from below.

Easy to Use

Despite its advanced features, Lumens PS753 is very easy to use. The Auto-Tune immediately calibrates the camera to deliver a perfectly focused image with accurate colors. The annotation tool allows the user to draw over the image on the screen without installing any additional software. It's fast, convenient, and simple to use. Use the included Ladibug software for advanced image control and connect to remote guests using your favorite conferencing platforms, such as Zoom, Meet, Skype, Teams, or WebEx.

Fast Installation

The PS753 is very easy to install. Power is provided over your Ethernet network (PoE) without additional power supplies. The system can output live pictures over a connection that suits the way you work: it links directly to a display or projector over HDMI or VGA or streams images over your network.
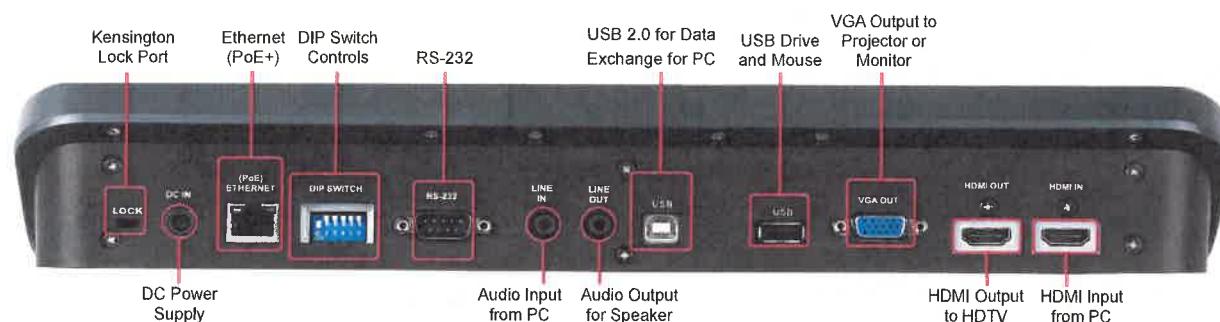
Product Specifications

Camera	
Sensor	1/2.8" 8M CMOS Color Image Sensor
Total Pixels	8.6 MP
Total Zoom	300x (max.)
Zoom	30x
Digital Zoom	30x (max.)
Output Resolution	XGA / 720p / 1080p / 2160p
Frame Rate	30 fps for all resolution 60fps for 1080p and 720p
Shooting Area Max.	522 x 308 mm (20.5" x 12.1")
Sharpness	MTF 1700 Lines (at 2160p)
Focus Mode	Auto / Manual
Image Rotation	0° / 90° / 180° / 270° /Flip / Mirror
Lamp	1. Dual LED Side Lamps supported by a gooseneck 2. Built-in A4 size (297 x 210 mm) LED Backlight
Arm	Mechanical Arm

Input & Output	
Power Supplied	External, 12V DC Adapter (100~240 VAC) / PoE+
Input	HDMIx1 (Support 4K), HDMI Pass-Through
Output	HDMI2.0 x1 / VGA x1(up to 1080p) / USB 2.0 / IP Streaming
Control	RS-232 / USB / Ethernet

USB	
USB Image Transmission	USB 2.0 (480 Mbps)
Driver	UVC / UAC
USB Video Format	H.264 / MJPEG / YUV
USB Host	USB 2.0 Type-A x1 (For Mouse, USB Flash Drive)

Audio	
Built-in Microphone	Yes
Audio In	Built-in Mic, Line In (3.5mm)
Audio Out	Line Out (3.5mm)

Network	
Ethernet	RJ-45 (PoE+, IEEE802.3at)
IP Stream Format	RTSP(H.264)

Storage	
Memory Slot	USB 2.0 Flash Drive, Expandable to 4TB
Built-in Memory	100 JPEG

Features	
Auto Tune	Yes, One Button for Optimization Image
Video / Audio Recording	One touch Button records image and sound synchronously
Onboard annotation	Yes, Support USB Mouse
Image Mode	Photo / Text / Film / Slide / Microscope
Freeze	Yes
Pan	Yes
Picture in Picture (PIP)	Yes
Mask / Spotlight	Yes
Lock Down Mode	Yes
Auto Erase	Yes
Image Capture	Single or Continuous Capturing
Standalone AV Recording	Yes, H.264 1080p
Ladibug™ Software	Support Windows 11, 10, 7 / Mac OS X / Chrome OS

General	
Anti-Theft	Kensington Anti-Theft Lock Device
VESA Mount	Yes, 75mm x 75mm
Included Accessories	Power Adapter, Power Cable, USB Cable, HDMI Cable
Power Consumption	DC In : 16W PoE : 18W
Dimensions: (WxHxD)	Folded : 15.2" x 6" x 22.3" (385 x 152 x 566 mm) Open : 15.2" x 23.1" x 18.3" (385 x 588 x 466 mm)
Weight	12.3 lbs (5.6 kg)

I/O Connections

Kensington Lock Port · Ethernet (PoE+) · DIP Switch Controls · RS-232 · USB 2.0 for Data Exchange for PC · USB Drive and Mouse · VGA Output to Projector or Monitor

DC Power Supply · Audio Input from PC · Audio Output for Speaker · HDMI Output to HDTV · HDMI Input from PC

DENON
PROFESSIONAL

www.denonpro.com   PHONE: [401] 658.3131   August 7, 2024

DN-500BD MKII

Blu-Ray, DVD and CD/SD/USB Player

Key Features:

- Plays Blu-Ray, DVD, CD and files from SD/USB media
- Supported Blu-Ray disc formats: BD25, BD50, BD-RE, BD-ROM and BD-R
- Supported DVD formats: DVD, DVD+R, DVD+RW and DVD-RW
- Supported audio disc formats: CD, CD-R, CD-RW, DTS Music Disc (DTS Audio CD, 5.1 Music Disc), HDCD, Super Video CD (SVCD) and Video CD (VCD)
- SD/USB supported video, audio and picture file formats: .3gp, .asf, .avi, .dat, .mkv, .mov, .mp4, .mpg, .m2ts, .ogm, .rmvb, .tp, .ts, .wmv, .ass, .smi, .srt, .ssa, .sub, .ape, .flac, .m4a (AAC), .mp3, .wav, .gif, .jpg (or .jpeg) and .png
- USB/SD file systems: FAT16, FAT32 and NTFS
- Discrete 7.1ch analog audio output
- XLR balanced audio output
- RS-232C and IP control capability
- Power-on Play button eliminates extra steps, and provides simplified, ultra-fast startup
- Panel lock and IR remote lock functions prevent unwanted or accidental operation
- Improved, easy-to-read OLED display
- OSD (On Screen Display) hiding mode eliminates unwanted menu items and disc transport icons
- Transport controls located conveniently on the front panel

Specifications:

- Digital System
  - System
    - Digital media player (Blu-ray Disc, DVD, CD, SD, USB device [mass storage class]) AVCHD playback format
  - Supported Disc Formats
    - Blu-ray Disc: BD25, BD50, BD-ROM, BD-R, BD-RE
      - BD25, BD50, BD-ROM, BD-R, BD-RE
    - DVD:
      - DVD, DVD+R, DVD-R, DVD+RW, DVD-RW
    - CD:
      - CD, CD-R, CD-RW, DTS Music Disc (DTS Audio CD, 5.1 Music Disc), HDCD, Super Video CD (SVCD), Video CD (VCD)
  - Supported File Formats
    - Video:
      - .3gp, .asf, .avi, .dat, .mkv, .mov, .mp4, .mpg, .m2ts, .ogm, .rmvb, .tp, .ts, .wmv
    - Subtitles:
      - .ass, .smi, .srt, .ssa, .sub
    - Audio:
      - .ape, .flac, .m4a (AAC), .mp3, .wav, .wma
    - Picture:
      - .gif, .jpg (or .jpeg), .png
  - Supported File Systems
    - FAT16, FAT32, NTFS
    - SD card with 128GB total capacity
    - USB drive (mass storage class) with 2 TB total capacity
  - Video
    - Resolutions
      - Auto, 480i/576i, 480p/576p, 720p, 1080i, 1080p
    - Aspect Ratios

- Repeat mode offers an uninterrupted playback loop
- Occupies only a single rack space (1RU)

Overview:

DENON PROFESSIONAL'S VERSATILE DN-500BDMKII BLU-RAY PLAYER

The Denon Professional DN-500BDMKII Blu-ray disc and media player is a compact, high performance unit that handles all popular optical video and audio CD playback formats for unrivaled capability from a single disc playback device. For even more versatility, front-loading SD and USB ports deliver access to video, audio and picture files such as AVI, MOV, MP4, MP3, WAV, FLAC, GIF, JPEG, PNG, and more.

The DN-500BDMKII offers a tremendous amount of performance and flexibility in a space-saving single rack unit (1RU) chassis. It provides the wide range of connection and control capabilities that are essential to the professional user, making it ideal for use in corporate A/V, education, theaters, house of worship, and more. These include RS-232C and IP controllability and XLR balanced audio outputs. The DN-500BD also has discrete 7.1 channel analog outputs for simple connection to powered speakers or signal management devices.

The Denon Professional DN-500BDMKII will play virtually every Blu-ray, DVD, and audio CD format, making it easy to utilize multiple disc formats within a system. Supported formats include BD25, BD50, BD-RE, DVD, DVD+R, DVD+RW, DVD-R, DVD-RW and Audio CD (CD-R, CD-RW), DTS Music Disc, and HDCD. Using the built-in LAN port, users may optionally access additional content via BD Live.

In addition to its extremely high performance and wide range of format playback capabilities, the DN-500BDMKII anticipates your requirements and operational patterns by providing features that maximize the unit's ease of use.

The Denon Professional DN-500BDMKII combines no-compromise performance, wide-ranging connection and control capability, and compatibility with virtually every disc and digital file format there is—all in a compact single rack space unit. Its unique combination of performance, versatility and compact size is ideally suited to the professional user.

- 16:9 Full, 16:9 Normal, 4:3 Pan & Scan, 4:3 Letterbox
  - System
    - NTSC, PAL, Multi (if supported by TV)
  - HDMI Color Space: 4
    - RGB PC Level, RGB Video Level, YCbCr (4:4:4), YCbCr 4:2:2
- Decoding
  - Video:
    - MPEG-1; MPEG-2; MPEG-4; MPEG-4 AVC (H.264); VC-1 (Windows Media Video); Xvid
  - Audio:
    - AAC; Dolby Digital; Dolby Digital Plus; Dolby TrueHD; DTS Digital Surround; DTS-HD; WMA
- Audio
  - Analog Outputs
    - Output Level (balanced XLR):
      - +4 dBu = +1.786 dBV
    - Output Level (unbalanced RCA):
      - +6 dBV
  - Digital Output
    - Output Level (coaxial):
      - 0.5V, 75â„¦
    - Signal Format:
      - AES/EBU
  - Surround Audio
    - DTS-Master Audio, DTS-HD High Resolution Audio, DTS Digital Surround, Dolby TrueHD, Dolby Digital (AC-3), Dolby Digital Plus (7.1ch)
  - Frequency Response:
    - 20 Hz – 20 kHz (+0.5 dB)
  - Signal-to-Noise Ratio:
    - > 100 dB (A-weighted)
  - Total Harmonic Distortion:
    - < 0.05%
  - Dynamic Range:
    - > 100 dB (A-weighted)
  - Headroom:
    - 6 dB
  - Channel Separation:
    - > 90 dB
- Outputs
  - (2) XLR audio outputs (L/R, balanced)
  - (2) RCA audio outputs (L/R, unbalanced)
  - (8) RCA audio outputs (7.1 surround sound)
  - (1) Coaxial digital audio/visual output
  - (1) HDMI audio/visual output
  - (1) RJ-45 LAN port
  - (1) 9-pin D-Sub female RS-232C port
  - (1) IEC power connection
- Communication
  - Remote Control
    - Infrared protocol, > 200 mV transmission output level
  - Serial Remote
    - Connector:
      - 9-pin D-Sub female, RS-232C
    - Mode:
      - Full duplex
    - Baud Rate:
      - 9600 or 38400 bps (selectable)
  - Ethernet
    - Connector:
      - LAN port
    - Standards:
      - Ethernet (10 Mbps), Fast Ethernet (100 Mbps)
  - Environmental Conditions
    - Operating temperature:
      - 41 – 95 °F (5 – 35 °C)
    - Operating humidity:

- 25 – 85%, no condensation
- General
  - Power
    - Connection:
      - IEC
    - Requirement:
      - 100–240 VAC, 50/60 Hz
    - Consumption:
      - 15 W typical, < 0.5 W standby
  - Dimensions (width x depth x height, with rack ears)
    - 19.00" x 10.75" x 1.73" (483 mm x 273 mm x 44 mm)
  - Weight (with rack ears)
    - 5.9 lbs. (2.7 kg)

AudioPressBox®

APB-008 IW-EX

- Audio Press Box – In wall Expander unit, 8 Line/MIC Outputs

APB-008IW

FEATURES

- 8 High quality balanced Outputs, each Output is independent transformer isolated
- Each Output is switchable between LINE or MIC Output level.
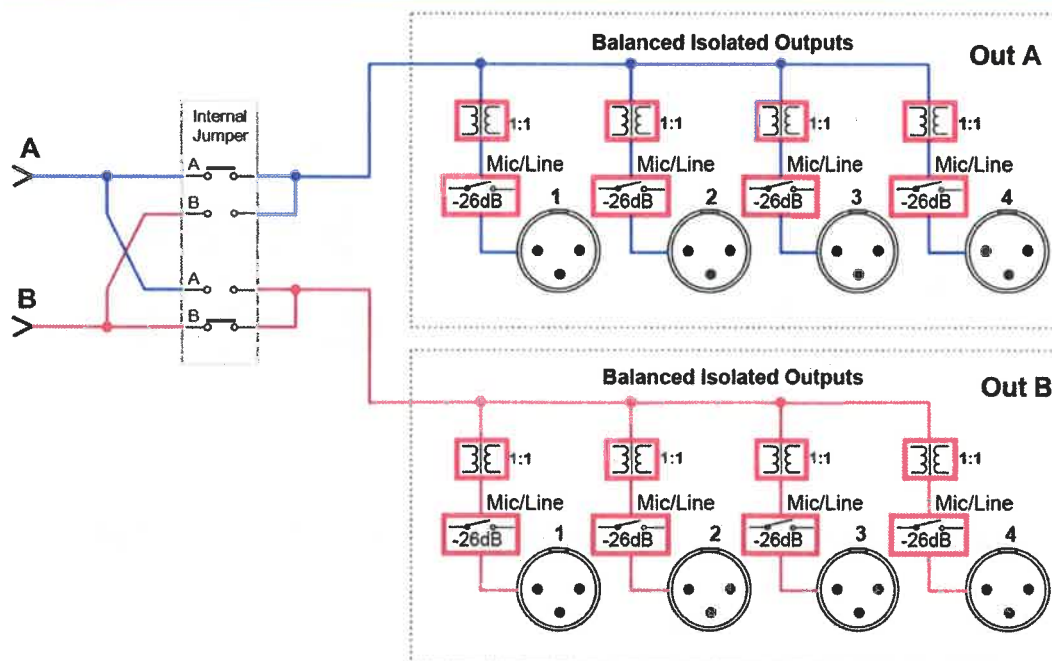- 2 internal Output Groups: 4x Output A and 4x Output B

Note: Requires a drive unit: APB-208 R (RPS), APB -400 R (RPS), APB-D100, APB-D100 R, APB-D200 R

ADVANTAGES

- **Professional**
  APB is a sophisticated tool for professional audio distribution at press conferences, presentations and other events.

- **Easy to use**
  Perfect signal conditioning means securing a high quality, constant and identical signal for all connected users, without possibilty of interacting.

- **Fixed installation**
  AudioPressBox expanders are a perfect solution for any fixed installation. Whether it is an on-wall, in-wall or a floor box solution, you always get the same, perfect functionality.

Mediatech Central Europe, a.s., Drienova 34, Bratislava, 821 02, Slovak Republic, EU
Tel: +421-2-20 999 700 | E-mail: sales@audiopressbox.com | Web: www.audiopressbox.com

AudioPressBox®

BLOCK DIAGRAM APB-008 IW-EX

Balanced Isolated Outputs — Out A

Balanced Isolated Outputs — Out B

TECHNICAL SPECIFICATION

Type	Expander
Groups	2
Inputs	1x Bus A 1x Bus B
Input connectors	ballanced, 3-pin phoenix connector
Ouputs	4x Bus A, Line/MIC level 4x Bus B, Line/MIC level
Output connectors	ballanced, XLR-M connector
Transfomer isolated outputs	Yes (each output)
Nominal Output level	MIC: -20dBu LINE: +6 dBu
Output Impedance	MIC: 220Ω LINE: 600Ω

Home > ... > Accessories > EW-D Charging Set

EW-D Charging Set

Article No. 508862

Buy options   ★

1 / 1

Set of L 70 USB charger and 2 BA 70 rechargeable battery packs for use with Evolution Wireless Digital bodypack transmitter SK and handheld transmitter SKM-S.

Versatile and feature-rich digital wireless system for those who sing, speak or play instruments that allows for seamless product pairing and management via the EW-D Smart Assist App. Receive state-of-the-art live sound.

Top Specs

Weight (g)

462

Read More

Tech Specs

Dimensions

Height (mm)	**83**
Length (mm)	180
Weight (g)	462
Width (mm)	133
Product height	83

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, Electronic Specialty Company

of _____Dunbar_____, _____WV_____, as Principal, and Western Surety Company

of_____Chicago_____, _____IL_____, a corporation organized and existing under the laws of the State of

SD_____ with its principal office in the City of_____Chicago_____, as Surety, are held and firmly bound unto the State

of West Virginia, as Obligee, in the penal sum of Five Percent of Amount Bid _____ ($____5%____) for the payment of which,

well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for Hearing Room A-V Presentation Sys 201 Brooks St. Char. 25301 - CRFQ-0926-PSC2500000003 - According to Plans & Specifications

NOW THEREFORE,

(a)   If said bid shall be rejected, or

(b)   If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby waive notice of any such extension.

WITNESS, the following signatures and seals of Principal and Surety, executed and sealed by a proper officer of Principal and Surety, or by Principal individually if Principal is an individual, this ___16th___ day of _____October_____, ___2024___.

Principal Seal

Electronic Specialty Company
(Name of Principal)

By _____
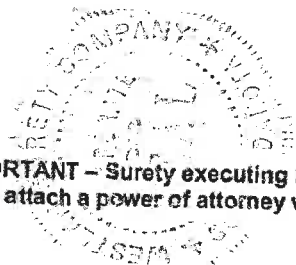(Must be President, Vice President, or
Duly Authorized Agent)

PRESIDENT
(Title)

Surety Seal

Western Surety Company
(Name of Surety)

By: _____
Patricia A. Moye, WV Resident Agent   Attorney-in-Fact

IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance, must affix its seal, and must attach a power of attorney with its seal affixed.

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Kimberly J Wilkinson, Gregory T Gordon, Patricia A Moye, Jeremy B Stanley, Terri L Dodrill, Individually

of Charleston, WV, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 17th day of October, 2022.

WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota
County of Minnehaha } ss

On this 17th day of October, 2022, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

March 2, 2026

M. BENT
NOTARY PUBLIC
SOUTH DAKOTA

M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this **16th** day of **October, 2024**.

WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Form F4280-7-2012

Go to www.cnasurety.com > Owner / Obligee Services > Validate Bond Coverage, if you want to verify bond authenticity.

Proc Folder:	1512634		**Reason for Modification:**
Doc Description:	Hearing Room A-V Presentation Sys 201 Brooks St. Char. 25301		Addendum 03
Proc Type:	Central Purchase Order		

Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2024-10-07	2024-10-16 13:30	CRFQ 0926 PSC2500000003	4

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON   WV   25305
US

VENDOR

Vendor Customer Code: 000000200878

Vendor Name : Electronic Specialty Company

Address : 1325

Street : Dunbar Ave

City : Dunbar

State : WV   **Country :** USA   **Zip :** 25064

Principal Contact : Shane Higgins

Vendor Contact Phone: (304)766-6277   **Extension:**

FOR INFORMATION CONTACT THE BUYER
Larry D McDonnell
304-558-2063
larry.d.mcdonnell@wv.gov

Vendor Signature X _(signature)_   **FEIN#** 55-04525548   **DATE** 10/14/2024

All offers subject to all terms and conditions contained in this solicitation

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ PSC25*03

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[✓] Addendum No. 1   [ ] Addendum No. 6

[✓] Addendum No. 2   [ ] Addendum No. 7

[✓] Addendum No. 3   [ ] Addendum No. 8

[ ] Addendum No. 4   [ ] Addendum No. 9

[ ] Addendum No. 5   [ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Electronic Specialty Company
_____
Company

_____
Authorized Signature

10/14/2024
_____
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Mark Wood, A/V Sales Manager

(Address) 1325 Dunbar Ave. Dunbar, WV 25064

(Phone Number) / (Fax Number) (304)766-6277

(email address) markw@electronicspecialty.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through *wv*OASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Electronic Specialty Company

(Company)

(Signature of Authorized Representative)
Mark Wood, A/V Sales Manager

(Printed Name and Title of Authorized Representative) (Date)
(304)766-6277   (304) 766-6270

(Phone Number) (Fax Number)
markw@electronicspecialty.com

(Email Address)

Revised 8/24/2023

11.3. Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

11.4. Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

11.4.1. Vendor shall sign in and out at the Guard's desk and let the Agency's Facilities Manager know when they are onsite. Vendor's staff shall wear a visitor's badge.

11.4.2. Vendor's staff is only permitted to be in the approved work area and should not roam around the facility or enter any spaces they are not authorized to be in

11.5. Vendor shall inform all staff of Agency's security protocol and procedures.

12. MISCELLANEOUS:

12.1. Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.
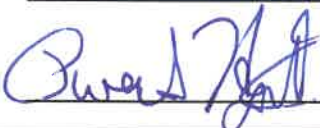
Contract Manager: Joe Hose

Telephone Number: (304)549-5594

Fax Number: (304) 766-6270

Email Address: joeh@electronicspecialty.com

EXHIBIT A - PRICING PAGE - REVISED

CRFQ PSC2500000003				
TOTAL INSTALLATION & DELIVERY COST				
201 BROOKS STREET CHARLESTON, WV 25301				
Item Number	**QTY**	**Description**	**Unit Price**	**TOTAL**
3.1.1	21	18" Fixed Gooseneck Microphones	$606.03	$12,726.63
3.1.2	4	Rechargeable Wireless Microphones - two (2) lapel, two (2) XLR	$754.65	$3,018.60
3.1.3	16	Ceiling Mounted Speakers	$143.10	$2,289.60
3.1.4	2	Wall Mounted Speakers	$102.45	$204.90
3.1.5	6	Video Cameras	$3,600.77	$21,604.62
3.1.6	2	Laser LCD Video Projectors	$3,645.00	$7,290.00
3.1.7	2	Video Display Projector Screens	$1,174.50	$2,349.00
3.1.8	1	Presentation System	$18,400.50	$18,400.50
3.1.9	1	Control System; Control Panels - one (1) fixed, one (1) wireless	$11,725.30	$11,725.30
3.1.10	1	Video Conferencing Capabiltiy	$3,288.61	$3,288.61
3.1.11	1	Document Camera	$2,068.20	$2,068.20
3.1.12	1	CD/DVD Video Netowrk Streamer	$400.94	$400.94
3.1.13	1	Additional Items: two (2) Audio press boxes and wall plate connections, five (5) Ethernet pulls, eight (8) HDMI cable wall mount.	$6,103.08	$6,103.08
3.1.14	1	Turn Key Installation for all equipment listed in Exhibit B - Project Plans	$12,530.02	$12,530.02
Total				$104,000.00

Vendor	Electronic Specialty Company
Contact Name	Owen S. Higgins II (Shane), President
Phone Number	304-766-6277
Email	Shane@electronicspecialty.com
Signature	

ELECTRONIC SPECIALTY COMPANY

1325 DUNBAR AVENUE ● P.O. BOX 400 ● DUNBAR, WV 25064
PHONE 304-766-6277 ● 800-642-5500 ● FAX 304-766-6270

WEST VIRGINIA PUBLIC SERVICE COMMISSION
201 Brooks St
Charleston, WV

DATE: October 15, 2024 *(Our 77th Year)*

PROPOSAL NUMBER: 24-1014-MW1

REFERENCE: CRFQ-0926-PSC2500000003

WE ARE PLEASED TO SUBMIT OUR EQUIPMENT LIST FOR THE ABOVE PROJECT.

West Virginia Public Service Commission Hearing Room A/V Upgrade

Detailed Bill of Material

		3.1.1	
SENNHEISER	21	MAT 153 + MEG14-40-L-II SET	18" GOOSNECK MICROPHONE w/LED RING INDICATOR W/ TABLE STAND
RDL	21	D-XLR2	XLR 3-pin Female & 3-pin Male on Decora® Wall Plate
		3.1.2	
SENNHEISER	2	EW-D ME4 SET (Q1-6)	Lavalier Microphone System
SENNHEISER	2	EW-D 835-S SET (Q1-6)	Digital wireless handheld set
		3.1.3	
Biamp	16	CM60DTD	CEILING MOUNTED SPEAKER
		3.1.4	
QSC	2	AC-S4T-WH	SURFACE MOUNTED SPEAKER
		3.1.5	
QSC	6	NC-12X80	12x Optical Zoom 80° Horizontal Field of View, PTZ Network Camera
QSC	6	PTZ-CMB1	Accessory Wall Mount Bracket for PTZ Camera, NC-12x80 and NC-20x60.
		3.1.6	
EIKI	2	EK-720LU	3LCD Laser Projector
		3.1.7	
DRAPER	2	116240	Projection Screen
		3.1.8	
VISIONARY SOLUTIONS	11	E5-WP-WH	VISIONARY SOLUTIONS ENCODERS
VISIONARY SOLUTIONS	1	E5200	VISIONARY SOLUTIONS ENCODERS
VISIONARY SOLUTIONS	2	DUET D-5	VISIONARY SOLUTIONS DECODERS
		3.1.9	
QSC	1	TSC-101-G3	Q-SYS 10.1" PoE Touch Screen Controller
APPLE	1	IPAD	
QSC	1	TSC-710t-G3	Table top mounting accessory
NETGEAR	1	GSM4248PX-100NAS	POE+ MNGD SWITCH PERP

Contractor Licenses: WV #WV 010229 ● VIRGINIA #2705 106093 ● KENTUCKY #005601 ● OHIO #201336501043

QSC	1	CORE 110f-v2	Unified Core with 24 local audio I/O channels
QSC	1	MP-A80V	1600W FlexAmp technology Hi-Z / Lo-Z amplifier, 8 x 200W into 4Ω, 8Ω, 70V
		3.1.10	
QSC	1	SLQUD-110-P	Q-SYS Core 110 UCI Deployment Software License
QSC	1	SLQSE-110-P	Q-SYS Core 110 Scripting Engine Software License
QSC	1	SLQBR-P	Q-SYS AV Bridging feature license for touch screen
QSC	3	QIO-GP8x8	Q-SYS peripheral providing control expansion with 8 logic inputs
Liberty AV	14	COMET-H02M	COMET-H02M
QSC	2	QIO-ML4i	Q-SYS peripheral providing 4 mic/line inputs
		3.1.11	
LUMENS	1	PS753	DOCUMENT CAMERA
		3.1.12	
Denon	1	DN500BDMKIIXUS	Blu-Ray, DVD & CD/SD/USB Player
		3.1.13	
RapcoHorizon	43	RM1-6	Six foot Mic Cable
SENNHEISER	2	EW-D CHARGING SET	EW-D CHARGING SET
Biamp	2	spa-tr-200	10pk trim ring
AUDIO PRESS BOX	2	APB-008-IW-EX	Passive In-wall AudioPressBox
MONOPRICE	2	43544	24 PORT PATCH PANEL
MONOPRICE	48	5384	Monoprice Cat6 Punch Down Keystone Jack

<div align="center">

STATE OF WEST VIRGINIA
ADDENDUM TO VENDOR'S STANDARD CONTRACTUAL FORMS

</div>

State Agency, Board, or Commission (the "State"):

Vendor: Electronic Specialty Company

Contract/Lease Number ("Contract"):

Commodity/Service:

The State and the Vendor are entering into the Contract identified above. The Vendor desires to incorporate one or more forms it created into the Contract. Vendor's form(s), however, include(s) one or more contractual terms and conditions that the State cannot or will not accept. In consideration for the State's incorporating Vendor's form(s) into the Contract, the Vendor enters into this Addendum which specifically eliminates or alters the legal enforceability of certain terms and conditions contained in Vendor's form(s). Therefore, on the date shown below each signature line, the parties agree to the following contractual terms and conditions in this Addendum are dominate over any competing terms made a part of the Contract:

1. **ORDER OF PRECEDENCE:** This Addendum modifies and supersedes anything contained on Vendor's form(s) whether or not they are submitted before or after the signing of this Addendum. IN THE EVENT OF ANY CONFLICT BETWEEN VENDOR'S FORM(S) AND THIS ADDENDUM, THIS ADDENDUM SHALL CONTROL.

2. **PAYMENT** – Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software licenses, subscriptions, or maintenance may be paid annually in advance.

    Any language imposing any interest or charges due to late payment is deleted.

3. **FISCAL YEAR FUNDING** – Performance of this Contract is contingent upon funds being appropriated by the WV Legislature or otherwise being available for this Contract. In the event funds are not appropriated or otherwise available, the Contract becomes of no effect and is null and void after June 30 of the current fiscal year. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

4. **RIGHT TO TERMINATE** – The State reserves the right to terminate this Contract upon thirty (30) days written notice to the Vendor. If this right is exercised, the State agrees to pay the Vendor only for all undisputed services rendered or goods received before the termination's effective date. All provisions are deleted that seek to require the State to (1) compensate Vendor, in whole or in part, for lost profit, (2) pay a termination fee, or (3) pay liquidated damages if the Contract is terminated early.

    Any language seeking to accelerate payments in the event of Contract termination, default, or non-funding is hereby deleted.

5. **DISPUTES** – Any language binding the State to any arbitration or to the decision of any arbitration board, commission, panel or other entity is deleted; as is any requirement to waive a jury trial.

    Any language requiring or permitting disputes under this Contract to be resolved in the courts of any state other than the State of West Virginia is deleted. All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

    Any language requiring the State to agree to, or be subject to, any form of equitable relief not authorized by the Constitution or laws of State of West Virginia is deleted.

6. **FEES OR COSTS:** Any language obligating the State to pay costs of collection, court costs, or attorney's fees, unless ordered by a court of competent jurisdiction is deleted.

7. **GOVERNING LAW** – Any language requiring the application of the law of any state other than the State of West Virginia in interpreting or enforcing the Contract is deleted. The Contract shall be governed by the laws of the State of West Virginia.

8. **RISK SHIFTING** – Any provision requiring the State to bear the costs of all or a majority of business/legal risks associated with this Contract, to indemnify the Vendor, or hold the Vendor or a third party harmless for any act or omission is hereby deleted.

9. **LIMITING LIABILITY** – Any language limiting the Vendor's liability for direct damages to person or property is deleted.

10. **TAXES** – Any provisions requiring the State to pay Federal, State or local taxes or file tax returns or reports on behalf of Vendor are deleted. The State will, upon request, provide a tax exempt certificate to confirm its tax exempt status.

11. **NO WAIVER** – Any provision requiring the State to waive any rights, claims or defenses is hereby deleted.

12. **STATUTE OF LIMITATIONS** – Any clauses limiting the time in which the State may bring suit against the Vendor or any other third party are deleted.

13. **ASSIGNMENT** – The Vendor agrees not to assign the Contract to any person or entity without the State's prior written consent, which will not be unreasonably delayed or denied. The State reserves the right to assign this Contract to another State agency, board or commission upon thirty (30) days written notice to the Vendor. These restrictions do not apply to the payments made by the State. Any assignment will not become effective and binding upon the State until the State is notified of the assignment, and the State and Vendor execute a change order to the Contract.

14. **RENEWAL** – Any language that seeks to automatically renew, modify, or extend the Contract beyond the initial term or automatically continue the Contract period from term to term is deleted. The Contract may be renewed or continued only upon mutual written agreement of the Parties.

15. **INSURANCE** – Any provision requiring the State to maintain any type of insurance for either its or the Vendor's benefit is deleted.

16. **RIGHT TO REPOSSESSION NOTICE** – Any provision for repossession of equipment without notice is hereby deleted. However, the State does recognize a right of repossession with notice.

17. **DELIVERY** – All deliveries under the Contract will be FOB destination unless the State expressly and knowingly agrees otherwise. Any contrary delivery terms are hereby deleted.

18. **CONFIDENTIALITY** – Any provisions regarding confidential treatment or non-disclosure of the terms and conditions of the Contract are hereby deleted. State contracts are public records under the West Virginia Freedom of Information Act ("FOIA") (W. Va. Code §29B-a-1, et seq.) and public procurement laws. This Contract and other public records may be disclosed without notice to the vendor at the State's sole discretion.

    Any provisions regarding confidentiality or non-disclosure related to contract performance are only effective to the extent they are consistent with FOIA and incorporated into the Contract through a separately approved and signed non-disclosure agreement.

19. **THIRD-PARTY SOFTWARE** – If this Contract contemplates or requires the use of third-party software, the vendor represents that none of the mandatory click-through, unsigned, or web-linked terms and conditions presented or required before using such third-party software conflict with any term of this Addendum or that is has the authority to modify such third-party software's terms and conditions to be subordinate to this Addendum. The Vendor shall indemnify and defend the State against all claims resulting from an assertion that such third-party terms and conditions are not in accord with, or subordinate to, this Addendum.

20. **AMENDMENTS** – The parties agree that all amendments, modifications, alterations or changes to the Contract shall be by mutual agreement, in writing, and signed by both parties. Any language to the contrary is deleted.

    Notwithstanding the foregoing, this Addendum can only be amended by (1) identifying the alterations to this form by using *Italics* to identify language being added and ~~strikethrough~~ for language being deleted (do not use track-changes) and (2) having the Office of the West Virginia Attorney General's authorized representative expressly agree to and knowingly approve those alterations.

State: _____	Vendor: ___Electronic Specialty Company___
By: _____	By: _____
Printed Name: _____	Printed Name: ___Owen S. Higgins, II___
Title: _____	Title: ___President___
Date: _____	Date: ___10/14/2024___

CONTRACTOR LICENSE

AUTHORIZED BY THE

West Virginia Contractor Licensing Board

NUMBER: WV010229

CLASSIFICATION:

ELECTRICAL
SPECIALTY
LOW VOLTAGE SYSTEMS <80 VOLTS
COMMUNICATION & SOUND

ELECTRONIC SPECIALTY COMPANY
PO BOX 400
DUNBAR, WV 25064-0400

DATE ISSUED	EXPIRATION DATE
SEPTEMBER 26, 2024	SEPTEMBER 26, 2025

_____
Authorized Signature

_____
Chair, West Virginia Contractor
Licensing Board

WEST VIRGINIA CONTRACTOR LICENSING BOARD

A copy of this license must be readily available for inspection by the Board on every job site where contracting work is being performed. This license number must appear in all advertisements, on all bid submissions, and on all fully executed and binding contracts. This license is non-transferable. This license is being issued under the provisions of West Virginia Code, Chapter 30, Article 42.

State of West Virginia
VENDOR PREFERENCE CERTIFICATE

Certification and application is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

1. ☐ **Application is made for 2.5% vendor preference for the reason checked:**
Bidder is an individual resident vendor and has resided continuously in West Virginia, or bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia, for four (4) years immediately preceding the date of this certification; **or,**

☑ Bidder is a resident vendor partnership, association, or corporation with at least eighty percent of ownership interest of bidder held by another entity that meets the applicable four year residency requirement; **or,**

☐ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or,**

2. ☑ **Application is made for 2.5% vendor preference for the reason checked:**
Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

3. ☐ **Application is made for 2.5% vendor preference for the reason checked:**
Bidder is a nonresident vendor that employs a minimum of one hundred state residents, or a nonresident vendor which has an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia and employs a minimum of one hundred state residents, and for purposes of producing or distributing the commodities or completing the project which is the subject of the bidder's bid and continuously over the entire term of the project, on average at least seventy-five percent of the bidder's employees or the bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years and the vendor's bid; **or,**

4. ☑ **Application is made for 5% vendor preference for the reason checked:**
Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or,**

5. ☐ **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**
Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or,**

6. ☐ **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**
Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

7. **Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.**
☐ Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) rescind the contract or purchase order; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Electronic Specialty Company   **Signed:** _(signature)_

Date: 10/14/2024   **Title:** Owen S. Higgins, II, President

Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: **(1)** the debt owed is an amount greater than one thousand dollars in the aggregate; or **(2)** the debtor is in employer default.

> **EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

> **DEFINITIONS:**

> **"Debt"** means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

> **"Employer default"** means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

> **"Related party"** means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: **Electronic Specialty Company**

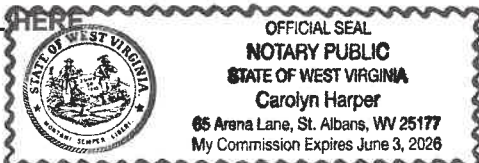Authorized Signature: *(signature)*　　　Owen S. Higgins, II, President　　Date: 10/14/24

State of __West Virginia__

County of __Kanawha__ , to-wit:

Taken, subscribed, and sworn to before me this 14 day of __October__ , 20 24

My Commission expires __June 03__ , 20 26

AFFIX SEAL HERE　　　　　　　NOTARY PUBLIC __Carolyn Harper__

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
Carolyn Harper
65 Arena Lane, St. Albans, WV 25177
My Commission Expires June 3, 2026

Purchasing Affidavit (Revised 01/19/2018)

State of West Virginia
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT
West Virginia Code §21-1D-5

STATE OF WEST VIRGINIA,

COUNTY OF _Kanawha_ **, TO-WIT:**

I, _Thomas Epps_ , after being first duly sworn, depose and state as follows:

1. I am an employee of _Electronic Specialty Company_ ; and,
    <div align="center">(Company Name)</div>

2. I do hereby attest that _Electronic Specialty Company_
    <div align="center">(Company Name)</div>

    maintains a written plan for a drug-free workplace policy and that such plan and policy are in compliance with *West Virginia Code* §21-1D.

The above statements are sworn to under the penalty of perjury.

Printed Name: _Thomas Epps_

Signature: _Thomas B. E___

Title: _Vice President_

Company Name: _Electronic Specialty Company_

Date: _10/14/2024_

Taken, subscribed and sworn to before me this _14_ day of _October, 2024_.

By Commission expires _June 03, 2026_

(Seal)

Carolyn Harper
(Notary Public)

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
Carolyn Harper
65 Arena Lane, St. Albans, WV 25177
My Commission Expires June 3, 2026

Rev. July 7, 2017