SECTION 27 41 16

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

GUIDE SPECIFICATION

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Specifier: Please see PART 4 for a listing of products specified in this Guide Specification.

Table of Contents

1 GENERAL 4

1.1 Description: Single cable 4K60 4:4:4 HDMI Receiver 4

2 PRODUCTS 4

2.1 Receiver Type 15 4

2.1.1 Basis of Design 4

2.1.2 Device Architecture 4

2.1.3 Functions 4

2.1.4 Connectors 4

2.1.5 Power 5

2.1.6 Compliance 5

2.2 Receiver Type 16 5

2.2.1 Basis of Design 5

2.2.2 Device Architecture 6

2.2.3 Functions 6

2.2.4 Connectors 6

2.2.5 Power 8

2.2.6 Compliance 9

2.3 Receiver Type 17 9

2.3.1 Basis of Design 9

2.3.2 Device Architecture 9

2.3.3 Functions 9

2.3.4 Connectors 9

2.3.5 Power 10

2.3.6 Compliance 10

2.4 Receiver Type 18 11

2.4.1 Basis of Design 11

2.4.2 Device Architecture 11

2.4.3 Functions 11

2.4.4 Connectors 11

2.4.5 Power 12

2.4.6 Compliance 12

2.5 Receiver Type 19 13

2.5.1 Basis of Design 13

2.5.2 Device Architecture 13

2.5.3 Functions 13

2.5.4 Connectors 13

2.5.1 Power 14

2.5.2 Compliance 14

2.6 Receiver Type 20 14

2.6.1 Basis of Design 15

2.6.2 Device Architecture 15

2.6.3 Functions 15

2.6.4 Connectors 15

2.6.5 Power 16

2.6.6 Compliance 16

2.7 Receiver Type 21 16

2.7.1 Basis of Design 17

2.7.2 Device Architecture 17

2.7.3 Functions 17

2.7.4 Connectors 17

2.7.5 Power 18

2.7.6 Compliance 18

3 EXECUTION 18

4 APPENDICES 18

4.1 SPECIFIED PRODUCTS 19

4.1.1 Crestron HD-RX-4KZ-101 19

4.1.2 Crestron HD-RX-4K-210-C-E 19

4.1.3 Crestron HD-RX-4KZ-101-1G 19

4.1.4 Crestron HD-RXC-4KZ-101 19

4.1.5 Crestron HD-RXC-4KZ-101-1G 19

4.1.6 Crestron HD-RXCA-4KZ-101 19

4.1.7 Crestron HD-RXC-4KZ-101 19

# GENERAL

NOT USED in this Guide Specification. Specifier shall Specify PART 1 administrative and procedural requirements as needed.

## Description: Single cable 4K60 4:4:4 HDMI Receiver

# PRODUCTS

## Receiver Type 1

Specifier Note:

*The HD-RX-4KZ-101 is a DM Lite® 4K60 4:4:4 receiver designed to interoperate with a DM Lite® transmitter or DMPS Lite™ switcher for the transmission of an HDMI® signal.*

### Basis of Design

#### Crestron HD-RX-4KZ-101

Specifier Note:

HD-RX-4KZ-101
https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RX-4KZ-101

### Device Architecture

#### Physical Form factor

##### Device enclosure to be made of black finished metal with vented sides

##### Device weight: 11.82 oz (335 g)

#### Mounting Options

##### Freestanding

##### Surface mount via attachable mounting bracket

##### Attachment to single rack rail

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 20% to 90% RH (non-condensing)

### Functions

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

### Connectors

#### The device shall include the following connectors:

##### One (1) HDMI output with support for the following:

###### HDMI with HDR10, HDR10+, Dolby Vision, Deep Color

###### Common resolutions: 1920x1080 60Hz to 4096x2160 DCI 4K 4:4:4 30Hz

###### HDCP 2.3 compliant

###### DVI-D with adaptor

###### EDID

###### CEC Pass-through

##### One (1) RJ45 single cable HDMI transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) 2.1 x 5.5 mm DC power connector supporting the following characteristic:

###### 24 VDC 1.25 A power input

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) Green LED indicating a valid link to device by same manufacturer

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### One (1) Green LED indicating transmission of HDMI signal

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M202047002

## Receiver Type 2

Specifier Note:

*The Crestron HD‑RX‑4K-210-C-E is a multiformat AV switch and receiver that provides HDMI® video switching and audio presentation capabilities in areas such as conference rooms and classrooms. Equipped with onboard control ports, the HD‑RX‑4K-210-C-E can control various devices in a room.*

### Basis of Design

#### Crestron HD-RX-4K-210-C-E

Specifier Note:

HD-RX-4K-210-C-E
https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RX-4K-210-C-E

### Device Architecture

#### Physical Form factor

##### Device enclosure to be made of black finished metal with vented sides

##### Device weight: 2.3 lb. (1.05 kg) with mounting bracket attached

#### Mounting Options

##### Surface mount via attachable mounting bracket

##### Attachment to single rack rail

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 10% to 90% RH (non-condensing)

##### Heat Dissipation: 30.7 BTU/hr

### Functions

#### The receiver shall support input switching with the following options:

##### Remote switching and control via web interface

##### Automatic switching to active input

##### Manual switching via integrated selection buttons

##### Remote switching and control via control processor by same manufacturer

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### Two (2) Pushbuttons for manual input selection

##### Two (2) LEDs indicating input status corresponding to Pushbuttons in 2.2.4.1.2 with the following modes:

###### Green - Video is switched

###### Amber - Video is detected but not switched

##### One (1) Pushbutton for enabling or disabling automatic switching of inputs

##### One (1) Green LED indicating automatic switching of inputs is enabled

##### One (1) Pushbutton for display of IP address on HDMI output

##### One (1) Red LED indicating that control described in 2.2.4.1.6 has been pressed

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Ethernet link established

###### Flashing Amber - Ethernet activity

### Connectors

#### The device shall include the following connectors:

##### One (1) HDMI input with support for the following:

###### HDMI with Deep Color and 4K

###### HDCP 2.2 compliant

###### DisplayPort Dual-Mode

######  Common resolutions: 1920x1080@60Hz to 4096x2160 DCI 4K 4:2:0@60Hz

###### Custom resolutions: pixel clock rates up to 300 MHz

###### DVI-D with adaptor

###### EDID

##### One (1) RJ45 single cable HDMI transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Remote switching and control via control processor by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) HDMI output with support for the following:

###### HDMI with Deep Color 4K60 4:2:0

###### HDCP 2.2 compliant

###### Video scaling

4K video scaler

Intelligent frame rate conversion and Deep Color Support

Content-adaptive noise reduction

3:2/2:2 pull-down detection and recovery

Scaler output resolutions, Progressive: Auto, 1920x1080@60Hz, to 4096x2160 DCI 4K 4:2:0@60Hz

Custom resolutions: pixel clock rates up to 300 MHz

###### DVI-D with adaptor

###### EDID

###### CEC

##### One (1) Stereo line-level audio output supporting the following characteristics:

###### Maximum output Level: 4 Vrms balanced, 2 Vrms unbalanced

###### Output Impedance: 200 Ω balanced, 100 Ω unbalanced

##### One (1) RJ45 100BASE-TX/1000BASE-T Ethernet port

##### Two (2) 2-pin detachable terminal block Digital Input Output control ports supporting the following characteristics:

###### Digital input rated to 0-24 VDC, input impedance 20k Ω; logic threshold > 3.125 V low/0 and < 1.875 V high/1

###### Digital output: 250 mA sink from maximum 24 VDC, catch diodes for use with real world loads

###### Analog input rated for 0-10 VDC, protected to 24 VDC maximum, input impedance 21k Ω with pull-up resistor disabled

###### Programmable 5 V, 2k Ω pull-up resistor per pin

##### Two (2) 2-pin detachable terminal block Relay control ports supporting the following characteristics:

###### Comprised of two (2) normally open, isolated relays rated at 1 A, 30 VAC/VDC

###### MOV arc suppression across contacts

##### One (1) 2-pin 3.5 mm detachable terminal block IR output control port supporting the following characteristic:

###### IR up to 60 kHz

##### One (1) 5-pin 3.5 mm detachable terminal block Serial control port supporting the following characteristic:

###### Bidirectional RS-232 up to 115.2k baud with hardware and software handshaking

##### One (1) 2.1 x 5.5 mm DC power connector supporting the following characteristic:

###### 24 VDC 1.25 A power input

##### One (1) USB Type A connector supporting service and firmware updates

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M1845001

## Receiver Type 3

Specifier Note:

*The HD-RX-4KZ-101-1G is a DM Lite® 4K60 4:4:4 wall plate receiver designed to interoperate with a DM Lite® transmitter or DMPS Lite™ switcher for the transmission of an HDMI® signal.*

### Basis of Design

#### Crestron HD-RX-4KZ-101-1G

Specifier Note:

HD-RX-4KZ-101-1G
https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RX-4KZ-101-1G-B

### Device Architecture

#### Physical Form factor

##### Device enclosure and bracket to be composed of metal with black polycarbonate front label overlay

##### Device weight: 5.33 oz (152 g)

#### Mounting Option

##### Wall mount device, mounts in a 1-gang (or larger) 2-1/4 inch (57 mm) deep U.S. electrical box or plaster ring (not included)

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 20% to 90% RH (non-condensing)

### Functions

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

#### Remote control via control processor by same manufacturer

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) Green LED indicating a valid link to device by same manufacturer

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### One (1) Green LED indicating transmission of HDMI signal

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

### Connectors

#### The device shall include the following connectors:

##### One (1) HDMI output with support for the following:

###### CEC Pass-through

###### HDMI with HDR10, HDR10+, Dolby Vision, Deep Color and 4K60 4:4:4

###### HDCP 2.3 compliant

###### Common resolutions: 1920x1080 60Hz to 4096x2160 DCI 4K 4:4:4 60Hz

###### Custom resolutions: pixel clock rates up to 600 MHz

###### DVI-D with adaptor

###### EDID

##### One (1) RJ45 single cable HDMI transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) 2-pin 3.5 mm detachable terminal block supporting the following characteristic:

###### 24 VDC 0.75 A power input

##### One (1) Chassis grounding lug

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M202045001

## Receiver Type 4

Specifier Note:

*The HD‑RXC‑4KZ‑101 is a DM Lite® 4K60 4:4:4 receiver designed to interoperate with a DM Lite® transmitter or DMPS Lite™ switcher for the transmission of HDMI®, RS-232, and IR signals.*

### Basis of Design

#### Crestron HD-RXC-4KZ-101

Specifier Note:

HD-RXC-4KZ-101

*https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RXC-4KZ-101*

### Device Architecture

#### Physical Form factor

##### Device enclosure to be made of black finished metal with vented sides

##### Device weight: 11.82 oz (335 g)

#### Mounting Options

##### Freestanding

##### Surface mount via attachable mounting bracket

##### Attachment to single rack rail

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 20% to 90% RH (non-condensing)

### Functions

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

#### Remote control via control processor by same manufacturer

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) Green LED indicating a valid link to device by same manufacturer

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### One (1) Green LED indicating transmission of HDMI signal

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

### Connectors

#### The device shall include the following connectors:

##### One (1) 4-pin 3.5 mm detachable terminal block IR input/output control port supporting the following characteristics:

###### IR input connects to IR signal source and transmits signal to IR out port on transmitter device from same manufacturer

###### IR output connects to IR emitter and transmits IR signal from source connected to transmitter device from same manufacturer

###### IR up to 60 kHz

##### One (1) 3-pin 3.5 mm detachable terminal block Serial control port supporting the following characteristics:

###### Bidirectional RS-232 up to 115.2k baud

###### Passes RS-232 TD/RD data to/from RS-232 port on transmitter device from same manufacturer

##### One (1) HDMI output with support for the following:

###### CEC Pass-through

###### HDMI with HDR10, HDR10+, Dolby Vision, Deep Color and 4K60 4:4:4

###### HDCP 2.3 compliant

###### DVI-D with adaptor

###### EDID

###### Common resolutions: 1920x1080 60Hz to 4096x2160 DCI 4K 4:4:4 60Hz

###### Custom resolutions: pixel clock rates up to 600 MHz

##### One (1) RJ45 single cable transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Remote switching and control via control processor by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) 2.1 x 5.5 mm DC power connector supporting the following characteristic:

###### 24 VDC 1.25 A power input

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M202047002

## Receiver Type 5

Specifier Note:

*The HD-RXC-4KZ-101-1G is a DM Lite® 4K60 4:4:4 wall plate receiver designed to interoperate with a DM Lite® transmitter or DMPS Lite™ switcher for the transmission of HDMI®, RS-232, and IR signals.*

### Basis of Design

#### Crestron HD-RXC-4KZ-101-1G

Specifier Note:

HD-RXC-4KZ-101-1G

https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RXC-4KZ-101-1G-B

### Device Architecture

#### Physical Form factor

##### Device enclosure and bracket to be composed of metal with black polycarbonate front label overlay

##### Device weight: 5.4 oz (153 g)

#### Mounting Option

##### Wall mount device, mounts in a 1-gang (or larger) 2-1/4 inch (57 mm) deep U.S. electrical box or plaster ring (not included)

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 20% to 90% RH (non-condensing)

### Functions

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) Green LED indicating a valid link to device by same manufacturer

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### One (1) Green LED indicating transmission of HDMI signal

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

### Connectors

#### The device shall include the following connectors:

##### One (1) 4-pin 3.5 mm detachable terminal block IR input/output control port supporting the following characteristics:

###### IR input connects to IR signal source and transmits signal to IR out port on transmitter device from same manufacturer

###### IR output connects to IR emitter and transmits IR signal from source connected to transmitter device from same manufacturer

###### IR up to 60 kHz

##### One (1) 3-pin 3.5 mm detachable terminal block Serial control port supporting the following characteristics:

###### Bidirectional RS-232 up to 115.2k baud

###### Passes RS-232 TD/RD data to/from RS-232 port on transmitter device from same manufacturer

##### One (1) HDMI output with support for the following:

###### CEC Pass-through

###### HDMI with HDR, HDR10+, Dolby Vision, Deep Color and 4K60 4:4:4

###### Common resolutions: 1920x1080 60Hz to 4096x2160 DCI 4K 4:4:4 60Hz

###### Custom resolutions: pixel clock rates up to 600 MHz

###### HDCP 2.3 compliant

###### DVI-D with adaptor

###### EDID

##### One (1) RJ45 single cable transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Remote switching and control via control processor by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) 2-pin 3.5 mm detachable terminal block supporting the following characteristic:

###### 24 VDC 0.75 A power input

##### One (1) Chassis grounding lug

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M202045001

## Receiver Type 6

Specifier Note:

*The HD‑RXCA‑4KZ‑101 is a DM Lite® 4K60 4:4:4 receiver designed to interoperate with a DM Lite® transmitter or DMPS Lite™ switcher for the transmission of HDMI®, RS-232, IR, and analog audio signals.*

### Basis of Design

#### Crestron HD-RXCA-4KZ-101

Specifier Note:

HD-RXCA-4KZ-101

https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RXCA-4KZ-101

### Device Architecture

#### Physical Form factor

##### Device enclosure to be made of black finished metal with vented sides

##### Device weight: 11.92 oz (338 g)

#### Mounting Options

##### Freestanding

##### Surface mount via attachable mounting bracket

##### Attachment to single rack rail

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 20% to 90% RH (non-condensing)

### Functions

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

#### Remote control via control processor by same manufacturer

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) Green LED indicating a valid link to device by same manufacturer

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### One (1) Green LED indicating transmission of HDMI signal

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

### Connectors

#### The device shall include the following connectors:

##### One (1) 4-pin 3.5 mm detachable terminal block IR input/output control port supporting the following characteristics:

###### IR input connects to IR signal source and transmits signal to IR out port on transmitter device from same manufacturer

###### IR output connects to IR emitter and transmits IR signal from source connected to transmitter device from same manufacturer

###### IR up to 60 kHz

##### One (1) 3-pin 3.5 mm detachable terminal block Serial control port supporting the following characteristics:

###### Bidirectional RS-232 up to 115.2k baud

###### Passes RS-232 TD/RD data to/from RS-232 port on transmitter device from same manufacturer

##### One (1) HDMI output with support for the following:

###### CEC Pass-through

###### HDMI with HDR10, HDR10+, Dolby Vision, Deep Color and 4K60 4:4:4

###### HDCP 2.3 compliant

###### DVI-D with adaptor

###### EDID

###### Common resolutions: 1920x1080 60Hz to 4096x2160 DCI 4K 4:4:4 60Hz

###### Custom resolutions: pixel clock rates up to 600 MHz

##### One (1) RJ45 single cable transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Remote switching and control via control processor by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) 2.1 x 5.5 mm DC power connector supporting the following characteristic:

###### 24 VDC 1.25 A power input

##### One (1) JIS F05 female (TOSLINK) optical fiber connector supporting the following characteristic:

###### S/PDIF optical digital audio input

##### One (1) 5-pin 3.5 mm detachable terminal block balanced/unbalanced Stereo line-level audio output supporting the following characteristics:

###### Maximum output Level: 4 Vrms balanced, 2 Vrms unbalanced

###### Output Impedance: 200 Ω balanced, 100 Ω unbalanced

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M202047002

## Receiver Type 7

Specifier Note:

*The HD‑RXA‑4KZ‑101 is a DM Lite® 4K60 4:4:4 receiver designed to interoperate with a DM Lite® transmitter or DMPS Lite™ switcher for the transmission of HDMI® and analog audio signals.*

### Basis of Design

#### Crestron HD-RXA-4KZ-101

Specifier Note:

HD-RXA-4KZ-101

https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RXA-4KZ-101

### Device Architecture

#### Physical Form factor

##### Device enclosure to be made of black finished metal with vented sides

##### Device weight: 11.85 oz (336 g)

#### Mounting Options

##### Freestanding

##### Surface mount via attachable mounting bracket

##### Attachment to single rack rail

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 20% to 90% RH (non-condensing)

### Functions

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

#### Remote control via control processor by same manufacturer

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) Green LED indicating a valid link to device by same manufacturer

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### One (1) Green LED indicating transmission of HDMI signal

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

### Connectors

#### The device shall include the following connectors:

##### One (1) HDMI output with support for the following:

###### CEC Pass-through

###### HDMI with HDR10, HDR10+, Dolby Vision, Deep Color and 4K60 4:4:4

###### HDCP 2.3 compliant

###### DVI-D with adaptor

###### EDID

###### Common resolutions: 1920x1080 60Hz to 4096x2160 DCI 4K 4:4:4 60Hz

###### Custom resolutions: pixel clock rates up to 600 MHz

##### One (1) RJ45 single cable transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Remote switching and control via control processor by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) 2.1 x 5.5 mm DC power connector supporting the following characteristic:

###### 24 VDC 1.25 A power input

##### One (1) 5-pin 3.5 mm detachable terminal block balanced/unbalanced Stereo line-level audio output supporting the following characteristics:

###### Maximum output Level: 4 Vrms balanced, 2 Vrms unbalanced

###### Output Impedance: 200 Ω balanced, 100 Ω unbalanced

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M202047002

## Receiver Type 8

Specifier Note:

*The Crestron HD‑RX‑4K-210-C-E-POE is a multiformat AV switch and receiver that provides HDMI® video switching and audio presentation capabilities in areas such as conference rooms and classrooms. Equipped with onboard control ports, the HD‑RX‑4K-210-C-E-POE can control various devices in a room. PoE+ eliminates the need for the HD‑RX‑4K-210-C-E-POE or the connected DM Lite transmitter to be connected to the PW-2412WU power pack (sold separately for the HD-RX-4K-210-C-E-POE).*

### Basis of Design

#### Crestron HD-RX-4K-210-C-E-POE

Specifier Note:

HD-RX-4K-210-C-E-POE
https://www.crestron.com/Products/Video/HDMI-Solutions/HDMI-Extenders/HD-RX-4K-210-C-E-POE

### Device Architecture

#### Physical Form factor

##### Device enclosure to be made of black finished metal with vented sides

##### Surface mount via attachable mounting bracket

##### Device weight: 2.3 lb. (1.05 kg) with mounting bracket attached

#### Mounting Options

##### Surface mount via attachable mounting bracket

##### Attachment to single rack rail

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

##### 10% to 90% RH (non-condensing)

##### Heat Dissipation: 35.8 BTU/hr

### Functions

#### The receiver shall support input switching with the following options:

##### Remote switching and control via web interface

##### Automatic switching to active input

##### Manual switching via integrated selection buttons

##### Remote switching and control via control processor by same manufacturer

#### Single UTP/STP cable transmission receiver

##### Signal transmission up to 230 feet.

##### Minimum cable type supported: UTP/STP CAT5e

### Controls and Indicators

#### The device shall include the following indicators:

##### One (1) LED indicating that power is provided to device with the following modes:

###### Green - device is operational

###### Amber - device is booting

##### Two (2) Pushbuttons for manual input selection

##### Two (2) LEDs indicating input status corresponding to Pushbuttons in 2.2.4.1.2 with the following modes:

###### Green - Video is switched

###### Amber - Video is detected but not switched

##### One (1) Pushbutton for enabling or disabling automatic switching of inputs

##### One (1) Green LED indicating automatic switching of inputs is enabled

##### One (1) Pushbutton for display of IP address on HDMI output

##### One (1) Red LED indicating that control described in 2.2.4.1.6 has been pressed

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Connection established to device by same manufacturer

###### Flashing Amber - non-HDCP video

###### Amber - HDCP video

##### Two (2) LEDs on RJ-45 connector with the following modes:

###### Green - Ethernet link established

###### Flashing Amber - Ethernet activity

### Connectors

#### The device shall include the following connectors:

##### One (1) HDMI input with support for the following:

###### CEC capability

###### HDMI with Deep Color and 4K

###### HDCP 2.2 compliant

###### DisplayPort Dual-Mode

###### Common resolutions: 1920x1080@60Hz to 4096x2160 DCI 4K 4:2:0@60Hz

###### Custom resolutions: pixel clock rates up to 300 MHz

###### DVI-D with adaptor

###### EDID

##### One (1) RJ45 single cable HDMI transmission input with support for the following:

###### Link port for connection to compatible transmission device by same manufacturer

###### Remote switching and control via control processor by same manufacturer

###### Power sharing option for connected remote transmission device

##### One (1) HDMI output with support for the following:

###### HDMI with Deep Color 4K60 4:2:0

###### HDCP 2.2 compliant

###### Video scaling

4K video scaler

Intelligent frame rate conversion and Deep Color Support

Content-adaptive noise reduction

3:2/2:2 pull-down detection and recovery

Scaler output resolutions, Progressive: Auto, 1920x1080@60Hz, to 4096x2160 DCI 4K 4:2:0@60Hz

Custom resolutions: pixel clock rates up to 300 MHz

###### DVI-D with adaptor

###### EDID

##### One (1) 5-pin 3.5 mm detachable terminal block balanced/unbalanced Stereo line-level audio output supporting the following characteristics:

###### Maximum output Level: 4 Vrms balanced, 2 Vrms unbalanced

###### Output Impedance: 200 Ω balanced, 100 Ω unbalanced

##### One (1) RJ45 100BASE-TX/1000BASE-T POE+ Powered Device Ethernet port with support for:

###### IEEE 802.3at Type 2 POE+ Class 4 (25.5 W)

##### Two (2) 2-pin detachable terminal block Digital Input Output control ports supporting the following characteristics:

###### Digital input rated to 0-24 VDC, input impedance 20k Ω; logic threshold > 3.125 V low/0 and < 1.875 V high/1

###### Digital output: 250 mA sink from maximum 24 VDC, catch diodes for use with real world loads

###### Analog input rated for 0-10 VDC, protected to 24 VDC maximum, input impedance 21k Ω with pull-up resistor disabled

###### Programmable 5 V, 2k Ω pull-up resistor per pin

##### Two (2) 2-pin detachable terminal block Relay control ports supporting the following characteristics:

###### Comprised of two (2) normally open, isolated relays rated at 1 A, 30 VAC/VDC

###### MOV arc suppression across contacts

##### One (1) 2-pin 3.5 mm detachable terminal block IR output control port supporting the following characteristic:

###### IR up to 60 kHz

##### One (1) 5-pin 3.5 mm detachable terminal block Serial control port supporting the following characteristic:

###### Bidirectional RS-232 up to 115.2k baud with hardware and software handshaking

##### One (1) 2.1 x 5.5 mm DC power connector supporting the following characteristic:

###### 24 VDC 1.25 A power input

##### One (1) USB Type A connector supporting service and firmware updates

### Power

#### Power supply

##### Power supply shall support device and connected equipment

#### Power supply modes

##### Local or remote DC power source

###### Remote power supplied by opposite end of TX/RX pair.

##### IEEE 802.3at Type 2 Class 4 (25.5 W) POE+ provided by a POE+ port of Gigabit ethernet switch

#### Typical Power Consumption: 10.5 W

### Compliance

#### UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

#### Regulatory Model M1845001

# EXECUTION

NOT USED in this Guide Specification. Specifier shall Specify PART 3 On-Site work as needed.

# APPENDICES

## SPECIFIED PRODUCTS

### Crestron HD-RX-4KZ-101

### Crestron HD-RX-4K-210-C-E

### Crestron HD-RX-4KZ-101-1G

### Crestron HD-RXC-4KZ-101

### Crestron HD-RXC-4KZ-101-1G

### Crestron HD-RXCA-4KZ-101

### Crestron HD-RXA-4KZ-101

### Crestron HD-RX-4K-210-C-E-POE