SECTION 27 41 16

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

Equipment Specified in this section:

DMC-4KZ-C

DMC-4KZ-C-DSP

DMC-4KZ-CO-HD

DMC-4KZ-HD

DMC-4KZ-HD-DSP

DM-MD8X8, DM-MD16X16, DM-MD32X32

DM-MD8X8-RPS, DM-MD16X16-RPS, DM-MD32X32-RPS

DM-RMC-4KZ-100-C

DM-TX-4KZ-202-C

DM-TX-4KZ-302-C

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INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

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1. GENERAL
   1. SUMMARY
      1. Section Includes
         1. High Definition configurable Audio-Video distribution systems, components and accessories.
2. PRODUCTS
   1. SYSTEM MAIN CHASSIS
      1. Manufacturers:
         1. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products of Crestron Electronics, Inc., Rockleigh, NJ 07647, Phone (800)237-2041, Fax: (201)767-1903, www.crestron.com, with the following components and characteristics.
      2. Description
         1. Card-cage matrix switchers with configurable input and output card modules. Through the use of interchangeable input and output modules the matrix switcher shall support various input formats up to 4K60 4:4:4 HDR. Matrix Card-cage shall support local device input and output card types and special purpose cards for use with long distance transmitter and receiver devices by same manufacturer and HDBaseT compatible devices. Switcher shall include a built-in Ethernet switch. Switcher shall be available in 8x8, 16x16, and 32x32 chassis sizes. Switcher shall be capable of stand-alone operation or integrated operation using a control processor from the same manufacturer. Input and output cards shall be field-interchangeable. Any input slot shall be routable to any output slot. Setup and diagnostics tools shall be built-in and accessible through the front panel interface. Additional configuration and management tools shall be available through software applications provided by same manufacturer.
         2. The card-cage matrix shall be compatible with 4K60 4:4:4 HDR input and output cards from same manufacturer as well as previous generations of input and output cards from the same manufacturer.

Specifier: Existing Crestron DM-MD8X8/16X16/32X32 chassis units may be updated to 4K60 4:4:4 HDR capability by replacing existing i/o cards and DM transmitters and receivers with current 4K60 4:4:4 HDR capable models as listed in the following sections.

* + 1. Basis-of-Design Products: Crestron **DM-MD8X8**, **DM-MD16X16**, and **DM-MD32X32**
       1. Crestron modular matrix switchers: **DM-MD8X8**, **DM-MD16X16**, and **DM-MD32X32** ;

Specifier: Redundant power supply versions are also available: **DM-MD8X8-RPS**, **DM-MD16X16-RPS**, and **DM-MD32X32-RPS**

* + 1. System Capacity
       1. Main chassis shall be available in the following input and output capacities:
          1. 8 Input x 8 Output
          2. 16 Input x 16 Output
          3. 32 Input x 32 Output
    2. Input and Output Modules
       1. The Switcher shall support the following input and output signal card types:
          1. Input card:

Single input connection.

* + - * 1. Output card:

One, two, or four output connections, configurable in groups of two.

* + 1. Multi-Format Audio Backplane
       1. The matrix Switcher shall support the option to maintain two audio formats for a single surround sound source device using a single input module.
          1. Audio formats:

Format 1: Native multi-channel audio generated by source.

Format 2: Stereo down-mix of native multi-channel source audio.

Specifier Note: Audio format 2 requires the “DSP” input card type.

* + 1. Audio Breakaway
       1. Within a single switcher chassis, source audio inputs shall be routable to any active video output.
       2. Switcher shall be capable of routing stereo audio and surround audio separately when an input slot is equipped with an input card with DSP functionality.
  1. HDMI 4K60 4:4:4 HDR INPUT CARD

SPECIFIER:

Surround Sound DSP down-mix is available on an optional version of this card,

Use model: [DMC-4KZ-HD-DSP]

* + 1. Description
       1. The HDMI input card shall accept one 4K60 4:4:4 HDR HDCP2 HDMI signal.
       2. 4K60 4:4:4 HDR HDCP2.2 HDMI Operation:
          1. When installed in the matrix chassis, the input signal shall be switchable to installed 4K output cards for 4K signal transmission.

Specifier: The DMC-4K-HD-HDCP2(DSP) card is compatible with original/existing and current DM-MD8X8, DM-MD16X16, and DM-MD32X32 chassis units. Existing chassis units may be upgraded to 4K capability by replacing existing i/o cards and DM receivers with 4K capable models.

* + - 1. Input card shall utilize VESA Display Stream Compression (DSC) to handle the extreme bandwidth requirement of resolutions beyond 4K30 4:4:4 and 4K60 4:2:0. DSC shall be applied only to 4K60 4:4:4 and HDR input signals. All other signals shall be transported uncompressed. The HDMI output port of input card shall always be an uncompressed signal.
    1. Basis of design product: Crestron **DMC-4KZ-HD** DigitalMedia 4K60 4:4:4 HDR input card.
    2. Modular Design: Input card shall be a modular unit with the following characteristics:
       1. Input card module shall be one of many available input modules available from same manufacturer.
       2. Modular component of compatible card frame matrix switcher.
       3. Module shall be a direct replacement for non 4K60 4:4:4 HDR version of same card by the same manufacturer. Additional system programming or configuration to accommodate card replacement shall not be required.
       4. Occupy 1 input card slot in compatible matrix switcher.
       5. Include 1 HDMI pass through output.
          1. 4K60 4:4:4 HDR HDCP2.2
          2. HDMI output includes audio and video from source.
       6. Include 1 stereo analog audio output via RCA connectors:
          1. Stereo audio extracted from HDMI source signal.

Specifier: To retain surround source audio for downstream HDMI signal as well as creating stereo down-mix, use model DMC-4KZ-HD-DSP.

* + - 1. Field installable plug-in card.
    1. HDMI input:
       1. Connector: 19-pin type A female HDMI
       2. Format:
          1. 4K60 4:4:4 HDR HDMI
          2. Deep Color and 3D
          3. HDCP2.2 compliant
       3. Input video resolution requirements:
          1. Maximum Resolutions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Scan | Resolution | Frame | Color | Color |
| Type | Rate | Sampling | Depth |
| Progressive | 4096x2160 DCI 4K | 24 Hz | 4:4:4 | 36 bit |
| & | 30 Hz | 4:4:4 | 36 bit |
| 3840x2160 4K UHD | 60 Hz | 4:4:4 | 36 bit |
|  | 60 Hz | 4:4:4 | 24 bit |
| 2560x1600 WQXGA | 60 Hz | 4:4:4 | 36 bit |
| 1920x1080 HD 1080p | 60 Hz | 4:4:4 | 36 bit |
| Interlaced | 1920x1080 HD 1080i | 30 Hz | 4:4:4 | 36 bit |

* + - * 1. NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 600 MHz
    1. Video output:
       1. Local HDMI output:
          1. Connector: 19-pin Type A female HDMI.
          2. HDMI signal includes:

Video source signal at native resolution up to 4K60 4:4:4 HDR.

Embedded source audio signal.

* + - 1. Matrix backplane:
         1. HDMI signal includes:

Source video at native resolution up to 4K60 4:4:4 HDR.

Embedded source audio signal. Stereo audio and surround audio if DSP input card is utilized.

* + 1. USB:
       1. Local USB port
          1. Connector: USB Type A female connector
          2. Support for:

USB HID devices

* + 1. Audio/surround formats:
       1. 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
    2. Analog audio output.
       1. 2 female RCA connectors.
       2. Stereo source pass through.
       3. Digital to analog conversion:
          1. 24 bit 48 kHz
       4. Surround formats shall be mixed to stereo in optional version of input card.

Specifier: To retain surround source audio for downstream HDMI signal as well as creating stereo down-mix, use model DMC-4KZ-HD-DSP.

* 1. SINGLE UTP/STP CABLE 4K60 4:4:4 HDR INPUT CARD

SPECIFIER:

Surround Sound DSP down-mix is available on an optional version of this card, use model: [DMC-4KZ-C-DSP]

* + 1. Description
       1. The input Card shall receive transmissions of up to 4K60 4:4:4 HDR, from compatible transmitters
       2. The input card shall support distances of up to 330 feet (100 km) when paired with compatible transmitters from same manufacturer.
       3. The HDMI input card shall accept one 4K60 4:4:4 HDR HDCP2 signal from compatible 4K60 4:4:4 HDR HDCP2 transmitter.
       4. The single cable UTP or STP input card shall accept transmitted signal and convert to HDMI signal. This signal shall be available as an output on the matrix.
       5. The output card shall transmit over manufacturer suggested STP cable, CAT5e or CAT6 cable, or better.
          1. Contact manufacturer prior to cable installation and use manufacturers suggested transmission cable, connectors, and installation methods for all segments of signal path.
       6. Input card shall utilize VESA Display Stream Compression (DSC) to handle the extreme bandwidth requirement of resolutions beyond 4K30 4:4:4 and 4K60 4:2:0. DSC shall be applied only to 4K60 4:4:4 and HDR input signals. All other signals shall be transported uncompressed. The HDMI output port of input card shall always be an uncompressed signal.

Specifier: The DMC-4KZ-C-HD and DMC-4KZ-C-HD -DSP card is compatible with original/existing and current DM-MD8X8, DM-MD16X16, and DM-MD32X32 chassis units. Existing chassis units may be upgraded to 4K60 4:4:4 HDR capability by replacing existing i/o cards and DM transmitters with 4K60 4:4:4 HDR capable models.

* + 1. Basis of design product: Crestron **DMC-4KZ-C** DigitalMedia 4K60 4:4:4 HDR input card.
    2. Modular Design: Input card shall be a modular unit with the following characteristics:
       1. Input card module shall be one of many available input modules available from same manufacturer.
       2. Modular component of compatible card frame matrix switcher.
       3. Module shall be a direct replacement for non 4K60 4:4:4 HDR version of same card by the same manufacturer. Additional system programming or configuration to accommodate card replacement shall not be required.
       4. Occupy 1 input card slot in compatible matrix switcher.
       5. Include 1 HDMI pass through output.
          1. 4K60 4:4:4 HDR HDCP2
          2. HDMI output includes audio and video from transmission source.
       6. Include 1 stereo analog audio output:
          1. Stereo audio extracted from HDMI source signal.

Specifier: To retain surround source audio for downstream HDMI signal as well as creating stereo down-mix, use model DMC-4KZ-C -DSP.

* + - 1. Field installable plug-in card.
    1. Transmitter receive input:
       1. Connector: 1 female shielded RJ-45 connector
       2. Convert compatible transmitter signal to HDMI with audio for HDMI pass-through output and provide stereo audio for local RCA output.
       3. Convert compatible transmitter signal to HDMI, surround/stereo audio, for connection to matrix switcher backplane.
       4. Format:
          1. 4K60 4:4:4 HDR
          2. Deep Color and 3D
          3. HDCP content protection
       5. Input video resolution requirements:
          1. Maximum resolutions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Scan | Resolution | Frame | Color | Color |
| Type | Rate | Sampling | Depth |
| Progressive | 4096x2160 DCI 4K | 24 Hz | 4:4:4 | 36 bit |
| & | 30 Hz | 4:4:4 | 36 bit |
| 3840x2160 4K UHD | 60 Hz | 4:4:4 | 36 bit |
|  | 60 Hz | 4:4:4 | 24 bit |
| 2560x1600 WQXGA | 60 Hz | 4:4:4 | 36 bit |
| 1920x1080 HD 1080p | 60 Hz | 4:4:4 | 36 bit |
| Interlaced | 1920x1080 HD 1080i | 30 Hz | 4:4:4 | 36 bit |

* + - * 1. *NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 600 MHz*
      1. Remote Power Sourcing:
         1. Input Card, through RJ-45 input connection shall be capable of remotely powering transmitter through optional power supply.

Specifier: Use PoDM/PoDM+ power supply model(s): DM-PSU-ULTRA-MIDSPAN, and DM-PSU-8/16-PLUS for remote powering compatible transmitters and receivers.

* + 1. Video output:
       1. Local HDMI output:
          1. Connector: 19-pin Type A female HDMI.
          2. HDMI signal includes:

Video source signal at native resolution up to 4K60 4:4:4 HDR

Embedded source audio signal.

* + - 1. Matrix backplane:
         1. HDMI signal includes:

Source video at native resolution up to 4K60 4:4:4 HDR

Embedded source audio signal. Stereo audio and surround audio if DSP input card is utilized.

* + 1. Audio/surround formats:
       1. 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
    2. Analog audio output.
       1. 2 female RCA connectors.
       2. Stereo source pass through.
       3. Digital to analog conversion:
          1. 24 bit 48 kHz
       4. Surround formats shall be mixed to stereo in optional version of input card.

Specifier: To retain surround source audio for downstream HDMI signal as well as creating stereo down-mix, use model DMC-4KZ-C-DSP.

* 1. SINGLE UTP/STP CABLE 4K60 4:4:4 HDR TRANSMISSION OUTPUT CARD
     1. Description
        1. The Output Card shall provide up to 4K60 4:4:4 HDR transmission of any routed source signal, within the matrix chassis.
        2. The output card shall support distances of up to 330 feet (100 km) when paired with compatible receivers from same manufacturer.
        3. The output card shall transmit over manufacturer suggested STP cable, CAT5e or CAT6 cable, or better.
           1. Contact manufacturer prior to cable installation and use manufacturers suggested transmission cable, connectors, and installation methods for all segments of signal path.
        4. The Output Card shall provide two discrete 4K60 4:4:4 HDR outputs.
        5. The Output Card shall interface with HDBaseT supported 4K60 4:4:4 HDR single cable receivers.
        6. The card shall provide two 4K60 4:4:4 HDR single cable HDBaseT type outputs:
           1. One HDMI uncompressed pass-through output shall be included for one of the single cable HDBaseT type outputs.
        7. 4K Operation:
           1. The Output Card shall support transmission of 4K60 4:4:4 HDR HDMI signals from compatible source to compatible sink using 4K60 4:4:4 HDR switching, transmission and interfacing components from Output Card manufacturer.
        8. Input card shall utilize VESA Display Stream Compression (DSC) to handle the extreme bandwidth requirement of resolutions beyond 4K30 4:4:4 and 4K60 4:2:0. DSC shall be applied only to 4K60 4:4:4 and HDR input signals. All other signals shall be transported uncompressed. The HDMI output port of the output card shall always be an uncompressed signal.

Specifier: The DMC-4KZ-CO-HD card is compatible with original/existing and current DM-MD8X8, DM-MD16X16, and DM-MD32X32 chassis units. Existing chassis units may be upgraded to 4K60 4:4:4 HDR capability by replacing existing i/o cards and DM receivers with 4K60 4:4:4 HDR capable models.

* + 1. Basis of design product: Crestron **DMC-4KZ-CO-HD**
       1. Crestron **DMC-4KZ-CO-HD** DigitalMedia 4K60 4:4:4 HDR output card.
    2. Modular Design:
       1. Output card shall be a modular unit with the following characteristics:
          1. Output card module shall be one of many available output modules available from same manufacturer.
          2. Modular component of compatible card frame matrix switcher.
          3. Occupy output card slot space in compatible matrix switcher.
          4. Field installable plug-in card.
       2. Module shall be a direct replacement for non 4K60 4:4:4 HDR version of same card by the same manufacturer. Additional system programming or configuration to accommodate card replacement shall not be required.
    3. Output Card Source:
       1. All outputs shall be sourced by the matrix backplane. Matrix backplane shall include all sources connected to matrix input cards.
    4. Outputs:
       1. Connectors:
          1. Female shielded RJ-45 connector for each transmission output.
          2. Female 19-pin Type A HDMI for parallel output channel.
       2. Format:
          1. 4K60 4:4:4 HDR
          2. Deep Color and 3D
          3. HDCP2.2 content protection
          4. Signal includes:

Video source signal at native resolution up to 4K60 4:4:4 HDR.

Embedded audio signal

Embedded Ethernet

* + - 1. Single UTP/STP cable transmission connection
         1. Supports HDBaseT signal specifications.
         2. HDR10
         3. Deep Color
         4. 3D
         5. 4K60 4:4:4 support
         6. Supports remote power over UTP/STP cable through connected compatible power source
         7. The output card shall support transmissions over manufacturer suggested STP cable, CAT5e or CAT6 cable, or better.

Specifier: For maximum 4K signal transmission distance, specify Crestron DM-CBL-ULTRA cable. Contact manufacturer prior to cable installation and use manufacturer’s current suggested transmission cable, connectors, and installation methods for all segments of signal path.

* + - 1. Remote Power Sourcing:
         1. Output Card, through RJ-45 output connection shall be capable of remotely powering transmission receivers through optional power supply.

Specifier: Use PoDM/PoDM+ power supply model(s): DM-PSU-ULTRA-MIDSPAN, and DM-PSU-8/16-PLUS for remote powering compatible transmitters and receivers.

* 1. 4K60 4:4:4 HDR TRANSMITTER TYPE 1
     1. Description
        1. The signal transmitters shall extend 4K60 4:4:4 HDR HDMI or DisplayPort AV, USB, Data, and Control over a single UTP/STP cable to compatible transmission receiver modules or ports. The following source formats shall be supported:
           1. 4K60 4:4:4 HDR HDMI, HDR and HDCP2.2 compliant

Deep Color

3D

* + - * 1. DVI
        2. Dual-Mode DisplayPort
        3. 4K60 4:4:4 DisplayPort

Deep Color

* + - * 1. USB HID (Human Interface Device)
      1. Switching:

Transmitter shall include integrated switching with signal sensing.

* + - * 1. Switching modes:

Automatic: switcher shall switch to the last detected input.

Controlled: control processor controls source switching and audio break-away switching.

* + - 1. Input card shall utilize VESA Display Stream Compression (DSC) to handle the extreme bandwidth requirement of resolutions beyond 4K30 4:4:4 and 4K60 4:2:0. DSC shall be applied only to 4K60 4:4:4 and HDR input signals. All other signals shall be transported uncompressed. The HDMI output port of transmitter units shall always be an uncompressed signal.
    1. Basis of design product: Crestron **DM-TX-4KZ-302-C** 4K60 4:4:4 HDR Transmitter
    2. Performance
       1. The transmitter shall meet the following minimum A/V requirements:
          1. Two (2) HDMI video, audio, and control input:

Supports 4K60 4:4:4 HDR HDMI

Supports HDCP 2.2

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

Supports DVI-D with adaptor.

Supports Dual-Mode DisplayPort with adaptor.

CEC device control

* + - * 1. DisplayPort:

Supports 4K60 4:4:4 HDR

Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS, DTS ES, DTS 96/24, DTS HD High Res, DTS HD Master Audio, LPCM up to 8 channels

* + - * 1. One (1) USB Type A Host port.

Supports USB HID compliant devices

* + - * 1. One (1) USB Type B port.

Supports USB HID compliant host devices

Supports device setup

* + - * 1. HDMI digital video/audio output

One (1) 19-pin Type A HDMI female connector

Supports 4K60 4:4:4

Supports HDCP 2.2

HDR10

Deep Color

3D

DVI compatible

* + - * 1. Ethernet Port

One (1) 8-wire RJ-45

10/100 Mbps, auto-switching, auto negotiating, auto-discovery, full/half duplex, DHCP

* + - * 1. Single UTP/STP cable transmission connection

Supports HDBaseT signal specifications.

HDR10

Deep Color

3D

4K60 4:4:4 support

Supports remote power over UTP/STP cable through matrix switcher or midspan injector.

Supports CAT5e.

Signal transmission up to 330 feet.

Specifier: For maximum 4K signal transmission distance, specify Crestron DM-CBL-ULTRA cable. Contact manufacturer prior to cable installation and use manufacturer’s current suggested transmission cable, connectors, and installation methods for all segments of signal path.

* + - * 1. Power supply modes:

Remote power over UTP/STP cable through matrix switcher or midspan injector.

Specifier: Use PoDM/PoDM+ power supply model(s): DM-PSU-ULTRA-MIDSPAN, and DM-PSU-8/16-PLUS for remote powering this transmitter.

Local DC power source.

* + - * 1. Mounting:

Freestanding.

Surface mount.

Rack rail mount.

* + - 1. The transmitter shall meet the following minimum control requirements:
         1. One (1) bidirectional RS-232 port:

One (1) 5-pin 3.5mm detachable terminal block.

GND, TX, RX, CTS, RTS support.

Up to 115.2k baud, hardware and software handshaking support.

* + - * 1. One (1) IR/Serial port:

One (1) 2-pin 3.5mm detachable terminal block.

IR output up to 1.1 MHz.

1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud.

* + - 1. The transmitter shall meet the following table interface connectivity minimum requirements:

Direct USB connection for power and control signal connection to table interface by same manufacturer.

Specifier: The Crestron TT-100 and TT2-100 series cable caddy units are supports for control and may be powered via USB.

Table interface control buttons shall be supported.

Table interface feedback LED indicators shall be supported.

* 1. 4K60 4:4:4 HDR TRANSMITTER TYPE 2
     1. Description
        1. The signal transmitters shall extend 4K60 4:4:4 HDR HDMI or DisplayPort video, audio, and data over a single UTP/STP cable to compatible transmission receiver modules or ports. The following source formats shall be supported:
           1. 4K60 4:4:4 HDR HDMI, HDR and HDCP2.2 compliant

Deep Color

3D

* + - * 1. DVI
        2. Dual-Mode DisplayPort
        3. USB HID (Human Interface Device)
      1. Switching:

Transmitter shall include integrated switching with signal sensing.

* + - * 1. Switching modes:

Automatic: switcher shall switch to the last detected input.

Controlled: control processor controls source switching and audio break-away switching.

* + - 1. Input card shall utilize VESA Display Stream Compression (DSC) to handle the extreme bandwidth requirement of resolutions beyond 4K30 4:4:4 and 4K60 4:2:0. DSC shall be applied only to 4K60 4:4:4 and HDR input signals. All other signals shall be transported uncompressed. The HDMI output port of transmitter units shall always be an uncompressed signal.
    1. Basis of design product: Crestron **DM-TX-4KZ-202-C** 4K60 4:4:4 HDR Transmitter
    2. Performance
       1. The transmitter shall meet the following minimum A/V requirements:
          1. Two (2) HDMI video, audio, and control input:

Supports 4K60 4:4:4 HDR HDMI

Supports HDCP 2.2

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

Supports DVI-D with adaptor.

Supports Dual-Mode DisplayPort with adaptor.

CEC device control

* + - * 1. One (1) USB Type A Host port.

Supports USB HID compliant devices

* + - * 1. One (1) USB Type B port.

Supports USB HID compliant host devices

Supports device setup

* + - * 1. HDMI digital video/audio output

One (1) 19-pin Type A HDMI female connector

Supports 4K60 4:4:4

Supports HDCP 2.2

HDR10

Deep Color

3D

DVI compatible

* + - * 1. Ethernet Port

One (1) 8-wire RJ-45

10/100 Mbps, auto-switching, auto negotiating, auto-discovery, full/half duplex, DHCP

* + - * 1. Single UTP/STP cable transmission connection

Supports HDBaseT signal specifications.

HDR10

Deep Color

3D

4K60 4:4:4 support

Supports remote power over UTP/STP cable through matrix switcher or midspan injector.

Supports CAT5e.

Signal transmission up to 330 feet.

Specifier: For maximum 4K signal transmission distance, specify Crestron DM-CBL-ULTRA cable. Contact manufacturer prior to cable installation and use manufacturer’s current suggested transmission cable, connectors, and installation methods for all segments of signal path.

* + - * 1. Power supply modes:

Remote power over UTP/STP cable through matrix switcher or midspan injector.

Specifier: Use PoDM/PoDM+ power supply model(s): DM-PSU-ULTRA-MIDSPAN, and DM-PSU-8/16-PLUS for remote powering this transmitter.

Local DC power source.

* + - * 1. Mounting:

Freestanding.

Surface mount.

Rack rail mount.

* + - 1. The transmitter shall meet the following minimum control requirements:
         1. One (1) bidirectional RS-232 port:

One (1) 5-pin 3.5mm detachable terminal block.

GND, TX, RX, CTS, RTS support.

Up to 115.2k baud, hardware and software handshaking support.

* + - * 1. One (1) IR/Serial port:

One (1) 2-pin 3.5mm detachable terminal block.

IR output up to 1.1 MHz.

1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud.

* + - 1. The transmitter shall meet the following table interface connectivity minimum requirements:

Direct USB connection for power and control signal connection to table interface by same manufacturer.

Specifier: The Crestron TT-100 and TT2-100 series cable caddy units are supports for control and may be powered via USB.

Table interface control buttons shall be supported.

Table interface feedback LED indicators shall be supported.

* 1. 4K60 4:4:4 HDR RECEIVER
     1. Description
        1. The signal receiver shall receive long distance 4K60 4:4:4 HDR HDMI transmission from compatible transmitter modules or ports. Receiver shall include the following outputs types and connections:
           1. 4K60 4:4:4 HDR HDMI, HDR and HDCP2.2 compliant

Deep Color

3D

* + - * 1. DVI
      1. Receiver shall include the following control port types for remote device control.
         1. Serial RS-232 communication.
         2. Infrared (IR) control.
      2. Input card shall utilize VESA Display Stream Compression (DSC) to handle the extreme bandwidth requirement of resolutions beyond 4K30 4:4:4 and 4K60 4:2:0. DSC shall be applied only to 4K60 4:4:4 and HDR input signals. All other signals shall be transported uncompressed. The HDMI output port of receiver shall always be an uncompressed signal.
      3. Receiver unit shall be a direct replacement for non 4K60 4:4:4 HDR version of same device type by the same manufacturer.
    1. Basis of design product: Crestron **DM-RMC-4KZ-100-C** 4K60 4:4:4 HDR receiver
    2. Performance

The receiver shall meet the following minimum requirements:

* + - 1. HDMI digital video, audio, and control output:
         1. One (1) 19-pin Type A HDMI female connector
         2. Supports 4K60 4:4:4 HDR HDMI
         3. Deep Color
         4. 3D
         5. Supports HDCP 2.2
         6. HDMI audio Support:

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

* + - * 1. CEC device control.
      1. Ethernet Port
         1. One (1) 8-wire RJ-45
         2. 10/100 Mbps, auto-switching, auto negotiating, auto-discovery, full/half duplex, DHCP
      2. Single UTP/STP cable transmission connection
         1. Supports HDBaseT signal specifications.
         2. HDR10
         3. Deep Color
         4. 3D
         5. 4K60 4:4:4 support
         6. Supports remote power over UTP/STP cable through matrix switcher or midspan injector.
         7. The receiver shall support transmissions over manufacturer suggested STP cable, CAT5e or CAT6 cable, or better.

Specifier: For maximum 4K signal transmission distance, specify Crestron DM-CBL-ULTRA cable. Contact manufacturer prior to cable installation and use manufacturer’s current suggested transmission cable, connectors, and installation methods for all segments of signal path.

* + - 1. Power supply:
         1. Supports remote power over UTP/STP cable through matrix switcher or midspan injector.
         2. Local DC power source.
      2. Mounting:
         1. Freestanding.
         2. Surface mount.
         3. Rack rail mount.
      3. One (1) bidirectional RS-232 port:
         1. One (1) 5-pin 3.5mm detachable terminal block.
         2. GND, TX, RX, CTS, RTS support.
         3. Up to 115.2k baud, hardware and software handshaking support.
      4. Two (2) IR/Serial ports:
         1. One (1) 4-pin 3.5mm detachable terminal block.
         2. IR output up to 1.1 MHz.
         3. 1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud.