

DXLink™ 4K HDMI Receiver Module

DX-RX-4K (FG1010-510)



Overview

The DXLink 4K HDMI Receiver is a 4K and Ultra High Definition (UHD) capable distance transport solution that features built-in SmartScale® Technology to deliver HDMI with HDCP that is perfectly scaled for each connected display automatically, eliminating the integration challenges that can occur when sources and displays have different optimal resolutions. It accepts audio, video, control and Ethernet over one shielded Cat6A or Cat7 standard twisted pair cable up to 70 meters.

Common Applications

DXLink HDMI Receiver Modules are the perfect for receiving HDMI and control signals over long distances from a remote DXLink Transmitter Module or other compatible AMX Transmitter such as Solecis. The receiver's built-in control ports can be used to control a destination device and the ICS Lan port provides IP an access point with used in conjunction with the Enova DGX 100 Series.

Features

- **4K and Ultra High Definition (UHD) Support** – Experience high-quality video resolution for 4K devices.
- **Only One Cable** – Receive audio and video while passing control, Ethernet and power over one twisted pair cable
- **SmartScale Technology** – Automatically responds to the display's declared EDID information and scales the video to the best resolution and video parameters for that display without manual setup; this prevents inferior video quality when sources are forced to lower resolutions to support the least capable display in the system
- **Native NetLinX® Control Everywhere** - Control connected destination devices using the built-in IR and RS-232 ports
- **Standard Twisted Pair Cable** – Save time and effort in installation by leveraging cost effective twisted pair cable, see the Cabling for Success with DXLink white paper for more details
- **HDCP Compliant**
- **DXLink Direct Connection with DXLink Wallplates** – When DXLink Wallplates are receiving Power over DXLink from the PS-POE-AT-TC or PDXL-2, they can be connected directly to a DXLink Receiver for a point-to-point solution. Solecis Digital Switchers can also be used in point-to-point applications with a DXLink Receiver.

* AMX only supports the following DXLink Power sourcing devices for the DX-RX: Enova DGX 800/1600/3200/6400 Digital Media Switcher, Compatible Enova DVX All-In-One Presentation Switcher (Enova DVX-2150HD or DVX-2155HD), PS-POE-AT-TC High Power PoE Injector, PDXL-2 Power over DXLink Controller, Solecis SDX-510M-DX and SDX-514M-DX. AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the DXLink equipment. The DXLink HDMI 4K RX can also be powered via the included desktop power supply (ENERGY STAR® qualified) with power cord.

Specifications

GENERAL	
Dimensions (HWD)	1" x 8 3/4" x 5 1/5" (2.54 x 22.22 cm x 13.18 cm)
Weight	Approx. 1.1 lb (0.50 kg) Shipping Weight: Approx. 2.2 lb (1.00 kg)
Mounting Options	Compatible with all V Style versatile mounting options including rack, surface or pole (for V Style Mounting kits, see www.amx.com)
Compatible AMX Products	<ul style="list-style-type: none"> • Enova DGX 800/1600/3200/6400 Digital Media Switchers with DGX-O-DXL-4K DXLink Twisted Pair 4K Output Board installed • DX-TX-DWP-4K, DXLink 4K HDMI Decor Style Wallplate TX as a point-to-point solution (when Wallplates are powered by PS-POE-AT-TC or PDXL-2) • SDX-414-DX, Solecis 4x1 4K HDMI Digital Switcher with DXLink Output • SDX-514M-DX, Solecis 5x1 4K Multi-Format Digital Switcher with DXLink Output • SDX-814-DX, Solecis 8x1 4K HDMI Digital Switcher with DXLink Output • PS-POE-AT-TC, High Power PoE Injector • PDXL-2, Power over DXLink Controller <p>NOTE: For passage of 4K signal content, 4K products must be used. DXLink Twisted Pair 4K Receiver is also compatible with the following DXLink Twisted Pair (non-4K) equipment. Conditions may apply, please reference hardware reference manuals or contact technical support for details:</p> <ul style="list-style-type: none"> • Enova DGX 8/16/32/64 Digital Media Switchers with DGX-O-DXL Twisted Pair Output Board installed • Enova DVX-3255HD, DVX-3256HD, DVX-2255HD, DVX-3250HD and DVX-2250HD All-In-One Presentation Switchers • DX-TX-DWP and DX-TX-WP, DXLink Multi-Format Wallplate Transmitters as a point-to-point solution (when Wallplates are powered by PS-POE-AT-TC or PDXL-2) • DX-TX, DXLink Multi-Format TX Module • SDX-410-DX, Solecis 4x1 HDMI Digital Switcher with DXLink Output • SDX-510M-DX, Solecis 5x1 Multi-Format Digital Switcher with DXLink Output • SDX-810-DX, Solecis 8x1 HDMI Digital Switcher with DXLink Output
MTBF	896,000 hrs
Regulatory Compliance	CE UL cUL, FCC Class A RoHS WEEE
Included Accessories	Desktop power supply (ENERGY STAR® qualified): 1 per module

	Unless using DXLink Power as described above, only the provided desktop power supply should be used, and it must not be altered in any way
Recommended Accessories	<ul style="list-style-type: none"> • AVB-VSTYLE-SURFACE-MNT, V Style Module Surface Mount (FG1010-722) • AVB-VSTYLE-RMK-1U, V Style Module Tray (FG1010-720) • AVB-VSTYLE-RMK-FILL-1U, V Style Module Tray w/fill Plates (FG1010-721) • AVB-VSTYLE-POLE-MNT, V Style Module Pole Mount (FG1010-723) • CC-NIRC, NetLinX IR Emitter Cable (FG10-000-11) • IR03, External IR Receiver Module (FG-IR03) • PS-POE-AT-TC High Power PoE Injector (FG423-84) • PDXL-2 Power over DXLink Controller (FG1090-170)

DXLINK	
Transport Layer Throughput (Max)	10.2 Gbps
Twisted Pair Cable Type	<ul style="list-style-type: none"> • Shielded Cat6A or Cat7 DXLink twisted pair cable runs for DXLink equipment shall only be run within a common building where a common building is defined as: the walls of the structure(s) are physically connected and the structure(s) share a single ground reference For more details and helpful cabling information, reference the white paper titled Cabling for Success with DXLink, or contact your AMX representative
Twisted Pair Cable Length	Up to 262 ft. (80 m)

ACTIVE POWER REQUIREMENTS	
AC Power	<ul style="list-style-type: none"> • 100 to 240 VAC single phase, 50 Hz to 60 HZ • 0.6 A @ 115 VAC max.
DXLink Power	<p>Power can also be supplied by a DXLink Power sourcing device such as an Enova DGX 100 Series Digital Media Switcher or Solecis 5x1 4K Digital Switcher (SDX-514M-DX), PS-POE-AT-TC High Power PoE Injector (FG423-84), or PDXL-2 Power over DXLink Controller (FG1090-170). AMX does not support the use of any other power supplies or PoE injectors as these may potentially damage the DXLink equipment.</p> <p>When installed in conjunction with the Enova DGX 100 Series Digital Media Switcher, use the Enova DGX 100 Series Configuration Tool located at www.amx.com/enova to determine the power requirements of the configuration and whether any of the DXLink Transmitters or Receivers should be powered with the local power supplies or the supported Power over DXLink injector. The configuration tool contains instructions on how to determine power requirements.</p> <p>AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the DXLink equipment.</p>
Power Consumption (Max)	18.5 W
Power Connector	2.1 mm DC power jack

POWER SUPPLY	
External, Included	<p>Desktop power supply (ENERGY STAR® qualified): 1 per module</p> <p>Unless using DXLink Power as described above, only the provided desktop power supply should be used, and it must not be altered in any way</p>
External, Optional	<p>Power can also be supplied by a DXLink Power sourcing device such as:</p> <ul style="list-style-type: none"> • Enova DGX 800/1600/3200/6400 Digital Media Switcher with DGX-O-DXL-4K DGX DXLink Twisted Pair 4K Output Board installed • PS-POE-AT-TC, High Power PoE Injector • PDXL-2, Power over DXLink Controller • SDX-514M-DX, Soleics 5x1 4K HDMI Digital Switcher with DXLink Output (FG1010-355) <p>When installed in conjunction with an Enova DGX 100 series use the Enova DGX 100 series Configuration Tool located at AMX.com/enova to determine the power requirements of the configuration</p> <p>AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the DXLink equipment</p>

ENVIRONMENTAL	
Temperature (Operating)	32° to 104° F (0° to 40° C)
Temperature (Storage)	-22° to 158° F (-30° to 70° C)
Humidity (Operating)	5% to 85% RH (non-condensing)
Humidity (Storage)	0% to 90% RH (non-condensing)
Heat Dissipation (Max)	63 BTU/hr

BACK CONNECTORS	
Local Power	2.1 mm DC Power Jack
DXLink Input	RJ-45
ICS LAN/Ethernet Port	RJ-45 Connector, TCP/IP Port (ICS LAN 10/100)
Serial	<p>3.5mm Pluggable Phoenix Terminal Block Bidirectional RS-232</p> <p>Standard NetLinx Baud Rate 1200 to 115k</p> <p>Parity support: Odd/Even/None</p>
IR Control	<p>Port (IR RX) for use with IR03 Receiver (Optional Accessory FG-IR03)</p> <p>Port (IR TX) for use with CC-NIRC Emitter (Optional Accessory FG10-000-11)</p>
USB (HID) Keyboard & Mouse	USB Type A Connector ("Device")
HDMI Output	HDMI Type A Female
Analog Stereo Output	3.5mm Mini-Stereo Jack

CONTROL	
Advanced Configuration Interface	USB Mini-B Connector

INDICATORS	
Power Indicator	Green indicates whether or not the module is powered on
Video Indicator	Green LED indicates the presence of video and audio signals through the module
Audio Indicator	Green LED indicates the presence of audio signals through the module
Scaling Button and LEDs	1 push button and 3 green LEDs; use Scaling button to select one of the 3 Scaling options: Bypass, Auto (default), or Manual. The factory default is Auto (default).
IR TX Indicator	Red LED lights during the transmission of IR data via the rear IR port
IR RX Indicator	Yellow LED lights during the receipt of IR data via the rear IR port
RS-232 TX Indicator	Red LED shows serial transmit (TX) data activity
RS-232 RX Indicator	Yellow LED shows serial receive (RX) data activity
LINK/ACT	Active LAN connection to an AMX Network (Blinking = #3 Toggle OFF) Green LED lights when the Ethernet cable is connected and an active link is established. This LED also blinks when receiving Ethernet data packets
Status	LAN connection is active; green LED lights when the Controller is programmed and communicating properly
CEC LED Indicator	Not currently supported
USB LED Indicator	When illuminated, the LED indicates that the USB port connection has been established (for details, see page 14 of DXLink Twisted Pair Transmitters and Receiver Hardware Reference Manual).
ID Pushbutton	Places the Receiver in ID Mode for setting the NetLink ID (device only) and provides additional functionality, such as placing the device in Static IP Mode or DHCP Mode.

USB (HID) KEYBOARD & MOUSE	
USB (HID)	(1) USB Type A Connector ("DEVICE") Use in conjunction with an Enova DGX 100 Series Digital Media Switcher, connect a DXLink TX (twisted pair or fiber) to a PC and emulate keyboard and mouse commands from a DXLink Fiber Receiver (twisted pair or fiber). The Solecis SDX-514M-DX functions as a DXLink Transmitter in this scenario. For a list of HID devices which have been tested and found to be working well with the latest firmware please visit: " DXLink HID Keyboard and Mouse Supported Devices ".

HDMI	
Compatible Formats	HDMI , HDCP, DVI (DVI requires conversion cable)
Signal Type Support	HDMI, DVI-D (Single Link with a DVI-HDMI Cable Adapter) DisplayPort++ (input only with HDMI cable adapter)
Input Signal Type	DXLink from any of the following: DX-TX-DWP-4K,

	DXLink 4K HDMI Decor Style Wallplate TX, DXLink Enova DGX 100 Series with DGX-O-DXL-4K DGX DXLink Twisted Pair 4K Output Board installed, and compatible Solecis Digital Switchers including SDX-414-DX, SDX-514M-DX and SDX-814-DX
Output Signal Type	HDMI DVI-D (Single Link with Cable Adapter)
Output Connector	HDMI Type A Female
Output Scaling	SmartScale [®] , Manual Configuration, or Bypass
SmartScale [®] Output Resolution Support	All resolutions between 480p and 1920 x 1200 @ 60 Hz via automatic SmartScale [®] query of the display's preferred EDID Detailed Timing Definition
Output Nominal Voltage	1.0 Vpp Differential
Output Re-clocking	Yes
+5V DDC Pin Output	50 mA when using Enova DXLink Power, 500 mA when using local 12V supply
+5V USB Output	150 mA when using Enova DXLink Power, 500 mA when using local 12V supply
Output Rise Time / Fall Time	425 ps typ (20% - 80%)
Propagation Delay (Typical)	25 ms when scaling; 5 us when in Bypass mode
HDMI Audio Synchronization	Video Formats @ 60Hz frame rate: In scaling mode, Audio lags video by 37ms typ (30ms to 45ms). In bypass mode, Audio lags video by 36ms Video Formats @ 30Hz frame rate: In scaling mode, Audio lags video by 28ms typ (20ms to 36ms). In bypass mode, Audio lags video by 36ms
Data Rate (max)	4.95 Gbps / 6.75 Gbps 6.75 Gbps supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Pixel Clock (max)	165 MHz / 225 MHz 255 MHz supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Progressive Resolution Support	480p up to 4096 x 2160 @ 60 Hz* *Y/Cb/Cr 4:2:0 NOTE: See full list of formats in the DXLink Twisted Pair 4K Transmitters/Receivers Hardware Reference Manual on page 82.
Deep Color Support	24-bit, 30-bit*, 36-bit* *Only supported when the Receiver scaler is in Bypass mode using CEA-861 formats and the resolution is 1080p/60 or less.
Color Space Support	RGB: 4:4:4 Y/Cb/Cr 4:4:4 and 4:2:2 Input signal support for Y/Cb/Cr 4:4:4 and 4:2:2, output color-space is converted to RGB 4:4:4
3D Format Support	HDMI Primary Formats <ul style="list-style-type: none"> • Frame Packing 1080p up to 24Hz • Frame Packing 720p up to 50/60Hz • Frame Packing 1080i up to 50/60Hz • Top-Bottom 1080p up to 24Hz • Top-Bottom 720p up to 50/60Hz • Side-by-Side Half 1080i up to 50/60Hz NOTE: Scaler on the corresponding output board or Receiver must be set to Bypass mode.

4K Format Support	<ul style="list-style-type: none"> • 3840 x 2160p @24/25/30 Hz • 4096 x 2160p @24/25/30 Hz • 3840 x 2160p @60 Hz, 4:2:0* • 4096 x 2160p @60 Hz, 4:2:0* <p>*Supported by DX-RX-4K when in Bypass scaling mode.</p> <p>NOTE: See full list of formats in the DXLink Twisted Pair Transmitters/Receiver Hardware Reference Manual on page 82.</p>
Audio Format Support	<p>Dolby TrueHD, Dolby Digital, DTS-HD Master Audio, DTS, 2 CH L-PCM, 6 CH L-PCM, 8 CH L-PCM</p> <p>Dolby Digital and DTS support up to 48kHz, 5.1 channels</p>
Audio Resolution	16 bit to 24 bit
Audio Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192kHz
Local Audio Support	RX extraction
HDCP Support	<p>Yes</p> <ul style="list-style-type: none"> • Supports AMX HDCP InstaGate Pro® Technology. • When used with Enova DGX switchers, the key support is up to 16 sinks per output, independent of the source device. • When used as a single point-to-point solution, key support is defined by the source device.
CEC Support	CEC is not currently supported

STEREO AUDIO	
Output Signal Types	Stereo analog
Analog Output Level (max)	+2 dBu, unbalanced; >= 3 kohm load
Analog Output Frequency Response	< +0 dB to -0.5 dB, 20 Hz to 20 kHz
Analog Audio Output THD+N	<0.03 %, 1 kHz, -10 dBu to +2 dBu
Analog Audio Out SNR	>85 dB, 20 Hz to 20 kHz Vin=+2 dBu
Audio Synchronization	<p>Video Formats @ 60Hz frame rate: In scaling mode, Audio lags video by 37ms typ (30ms to 45ms). In bypass mode, Audio lags video by 36ms.</p> <p>Video Formats @ 30Hz frame rate: In scaling mode, Audio lags video by 28ms typ (20ms to 36ms). In bypass mode, Audio lags video by 36ms</p>
Connector	3.5 mm mini-stereo jack (analog stereo)

For a detailed PDF or DXF pictorial drawing please visit: <http://www.amx.com/products/DX-RX-4K.asp>

About AMX by HARMAN

Founded in 1982 and acquired by HARMAN in 2014, AMX® is dedicated to providing AV solutions for an IT World. AMX solves the complexity of managing technology with reliable, consistent and scalable systems comprising control, video switching and distribution, digital signage and technology management. AMX systems are deployed worldwide in conference rooms, classrooms, network operation/command centers, homes, hotels, entertainment venues and broadcast facilities, among others. AMX is part of the HARMAN Professional Group, the only total audio, video, lighting, and control vendor in the professional AV market. HARMAN designs, manufactures and markets premier audio, video, infotainment and integrated control solutions for the automotive, consumer and professional markets. Revised 5.20.16. ©2016 Harman. All rights reserved. Specifications subject to change.

www.amx.com | +1.469.624.7400 | 800.222.0193