Enova® DGX DXLink™ Twisted Pair 4K Output Board

DGX-O-DXL-4K (FG1061-580)

Overview

The DGX-O-DXL-4K is a 4K and Ultra High Definition (UHD) capable and HDCP compliant twisted pair cable output board for the Enova DGX 800, Enova DGX 1600, Enova DGX 3200, and Enova DGX 6400 Digital Media Enclosures. It has four connections per board designed to transmit audio and video to DXLink Twisted Pair Receivers while passing bi-directional control and Ethernet signals over one shielded Cat6A or Cat7 standard twisted pair cable up to 70 m. DXLink Power is available from the DXLink Output Board to power DXLink Twisted Pair Receivers.

Common Applications

The Enova DGX DXLink Twisted Pair Output Board is ideal for applications where destination devices are located up to 70 meters away from the Enova DGX Digital Media Switcher and need to be distributed throughout a commercial or residential environment.

Features

- **4K and Ultra High Definition (UHD) Support** – Experience high-quality video resolution for 4K device
- **Only One Cable** – Send audio and video while passing control, Ethernet and power over one twisted pair cable
- **Send HDMI signals up to 70 Meters** – Extend the reach of the HDMI with HDCP signals far beyond the capabilities of typical HDMI cabling

- **Standard Twisted Pair Cable** – Save time and effort in installation by leveraging pre-existing cost effective twisted pair cable, see the [Cabling for Success with DXLink](#) white paper for more details
- **Hot Swappable** – Easily add or replace I/O boards at any time after deployment - the system automatically recognizes the new configuration and activates the boards
- **HDCP Compliant**

Additional Features
- **Remotely Powered Receivers** - DXLink Power* is available from the DXLink Output Board to power DXLink Receivers
- **3D Support** - Pass through latest video formats including 3D and Deep Color
- **Surround Sound Support** - Pass through high definition surround sound including Dolby TrueHD, Dolby Digital, DTS-HD Master Audio, DTS, and 2-channel through 8-channel L-PCM

*Power over DXLink to DXLink Receivers must be supplied by one of the following DXLink Power sourcing devices: Enova DGX 800/1600/3200/6400 Digital Media Switcher (with a DXLink Twisted Pair Output Board installed), Compatible Enova DVX All-In-One Presentation Switcher (2155HD or 2150HD), PS-POE-AT-TC High Power PoE Injector or PDXL-2 Power over DXLink Controller. 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 Receiver Module can also be powered via the included desktop power supply (ENERGY STAR® qualified) with power cord

Specifications

GENERAL	
Compatible AMX Products	Must be used in conjunction with an Enova DGX 800, 1600, 3200 or 6400 Digital Media Enclosure and a DXLink Twisted Pair Receiver. Compatible with all AMX 4K DXLink Twisted Pair Receivers including 4K HDMI Receiver Module. Also compatible with (non 4K) DXLink Twisted Pair Receivers including DXLink HDMI Receiver Module. For passage of 4K signal content, DXLink Twisted Pair 4K Boards must be used in conjunction with DXLink Twisted Pair 4K Transmitters and Receivers. Additional compatibility is available between DXLink Twisted Pair 4K equipment and DXLink Twisted Pair (non-4K) equipment (see the "DXLink Compatibility" Appendix in the "DXLink Twisted Pair 4K Transmitters and Receivers Hardware Reference Manual" at www.amx.com).
Recommended Accessories	• DXLink 4K HDMI Receiver Module (FG1010-510) • DXLink 4K Decor Style Wallplate Transmitters (US) (FG1010-330-BL/WH)
Regulatory Compliance	See Enova DGX Digital Media Switcher Enclosure for regulatory compliance

USB (HID) KEYBOARD & MOUSE	
USB (HID) Transport	Use the Enova DGX Digital Media Switcher in conjunction with DXLink Transmitters and Receivers (twisted pair and/or fiber), connect a DXLink Transmitter with HID hardware support to a PC and a DXLink Receiver to a keyboard and mouse, the system then emulates commands from the receiver back to the PC. A list is available of HID devices which have been tested and found to work well with the latest firmware (see ["DXLink HID Keyboard and Mouse Supported](#)

SIGNAL TRANSPORT – DXLINK W/HDCP	
Compatible Formats	HDMI Video, Audio, Ethernet, USB (HID), Power, Serial Control and IR Control
Signal Type Support	DXLink Twisted Pair
DXLink Twisted Pair Power	The DXLink Twisted Pair Output Board provides Power over DXLink DXLink Twisted Pair 4K (and non 4K) Transmitters and Receivers can have power supplied over twisted pair cable when connected to a DXLink Input or Output Board on the Enova DGX Digital Media Switcher. Approved Power over DXLink sourcing devices for DXLink Twisted Pair Receiver include: • Enova DGX 800/1600/3200/6400 Digital Media Switcher (with a DXLink Twisted Pair Board installed) • PS-POE-AT-TC High Power PoE Injector • PDXL-2 Power over DXLink Controller When installed in conjunction with an Enova DGX use the Enova DGX Configuration Tool located at AMX.com/enova to determine the power requirements of the configuration. 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. To use PS-POE-AT-TC or PDXL-2 as a power source the wallplates require firmware v1.2.40 or above. Use the Enova DGX Configuration Tool located at AMX.com/enova to determine the power requirements of a configuration and whether any of the DXLink Transmitters or Receivers should be powered with the local power supply. The configuration tool contains instructions on how to determine power requirements.
Connectors	(4) RJ-45 Ports
Transport Layer Throughput (Max)	10.2 Gbps
Twisted Pair Cable Type	Shielded Cat6A and 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" available at www.amx.com or contact your AMX representative.
Twisted Pair Cable Length	Up to 262 ft. (80 m) for full 4K signal support Up to 328 ft. (100 m) for 1080p and below
Video Data Rate (max)	8.91 Gbps (max)
Video Pixel Clock (max)	297 MHz

Progressive Resolution Support	480p up to 4096 x 2160p, 60 Hz* *Y/Cb/Cr 4:2:0, with 4K RX Scaler in Bypass mode NOTE: See full list of supported formats in "DXLink Twisted Pair 4K Transmitters and Receivers Hardware Reference Manual".
Deep Color Support	Up to 1080p: 24-bit, 30-bit, 36-bit 30-bit, 36-bit only supported up to 1080p and when the HDMI Output Board Scaler or DXLink RX Scaler is in Bypass mode and format is 1080p/60 or less.
Color Space Support	RGB 4:4:4 Y/Cb/Cr 4:4:4 and 4:2:2 Input signal for Y/Cb/Cr 4:4:4 and 4:2:2, output color-space is converted to RGB 4:4:4 4:2:0 only supported at 2160p 50/60Hz with 4K RX Scaler in Bypass mode
3D Format Support	• Frame Packing 1080p up to 24 Hz • Frame Packing 720p up to 50/60 Hz • Frame Packing 1080i up to 50/60 Hz • Top-Bottom 1080p up to 24 Hz • Top-Bottom 720p up to 50/60 Hz • Side-by-Side Half 1080i up to 50/60 Hz Scaler on corresponding Output Board or RX must be set to Bypass mode
4K Resolution Support	• 3840x2160p@24/25/30 Hz • 4096x2160p@24/25/30 Hz • 3840x2160p@60 Hz, 4:2:0* • 4096x2160p@60 Hz, 4:2:0* * Supported by DX-RX-4K when in Bypass Scaling mode. NOTE: See full list of supported formats in the "DXLink Twisted Pair 4K Transmitters and Receivers Hardware Reference Manual".
Audio Format Support	Dolby TrueHD, Dolby Digital, DTS-HD Master Audio, DTS, 2 CH through 8 CH L-PCM (Dolby Digital and DTS support up to 48 kHz, 5.1 channels)
Audio Resolution	16 bit to 24 bit
Audio Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192kHz
Local Audio Support	Yes, insertion and/or extraction of 2 CH L-PCM selectable by channel
Audio Switching Board Support	• Supports break-away audio switching of 2 CH L-PCM for all channels • Supports downmix from one input channel of Dolby True-HD, Dolby Digital, DTS-HD, DTS, or 2 to 8 channel L-PCM
EDID Support	EDID provided by Enova DGX Digital Media Switcher to the digital (HDMI) input on the DXLink Transmitter EDID is user re-programmable
HDCP Support	Full matrix HDCP 1.4 support (includes any input to any or all outputs) • Key Management System • AMX HDCP InstaGate Pro® Technology • Key support up to 16 destinations per output, independent of source device
CEC Support	None

ICSP, TCP/IP, USB, IR, Serial, and Control Management	Control distribution is managed by the Enova DGX on-board NetLinx NX Master and Ethernet Switch
DXLink Output Board Propagation Delay	5 us