

# Enova DGX DXLink 4K60 Twisted Pair Output Board

DGX-0-DXL-4K60 [FG1061-582]



## Overview

The AMX Enova DGX DXLink 4K60 Twisted Pair Output Board distributes full 4K60 4:4:4 video end-to-end securely as well as audio, control, Ethernet, and USB 2.0 over one shielded Cat6, Cat6A or Cat7 standard twisted pair cable. It supports HDMI 2.0 features and is HDCP 2.2 compliant with support for full 4K60 4:4:4 video and High Dynamic Range (HDR) for optimum image quality and pixel-for-pixel image reproduction without chroma subsampling. It has four connections per board and is compatible with the Enova DGX 800, Enova DGX 1600, Enova DGX 3200, and Enova DGX 6400 enclosures. DXLink Power is available from the DXLink Output Board to power DXLink Twisted Pair Receivers.

## Common Applications

The Enova DGX DXLink 4K60 Twisted Pair Output board is ideal for extending full 4K60 4:4:4 video end to end securely in any situation where the highest video quality is required:

- Colleges and universities that transmit audio and video within or between classrooms for collaborative or distributed learning.
- Corporations that distribute audio and video within meeting spaces or throughout facilities for corporate communications.

- Healthcare facilities distributing high-resolution video within training rooms, simulation rooms, or labs.
- Government entities that have operation centers with multiple analysts screening and analyzing video from a variety of sources for threat assessment, security and operational monitoring.

#### Features

- HDMI 2.0 4K60 4:4:4 Over Distance – Ideal for users running critical viewing applications such as operations centers requiring transport which uses the full fidelity of their displays
- High Dynamic Range (HDR) and Deep Color Support – Support for HDR10 and 36-bit Deep Color
- HDCP 2.2 – Supports the latest video standards to realize the full capabilities of HDMI interfaces, including transport of HDCP 2.2 Premium Content protected media such as 4K UHD Movies
- HDBaseT Compatible – Compliant with the HDBaseT standard, making them compatible with third party HDBaseT sources and displays
- USB 2.0 – High-speed USB 2.0 data from devices like web cameras and storage devices are transmitted without the need for separate cables
- As Always, Just One Cable – Just like all current DXLink solutions, video, audio and control are delivered over a single twisted pair cable. Many competitive products require dual cable runs which adds significant cost. 4K60 4:4:4 can be transmitted up to 100m when using Cat6a shielded cable or better
- Twisted Pair Cable – Save time and effort in installation by leveraging cost effective twisted pair cable

#### Specifications

GENERAL	
Compatible AMX Products	<p>Must be used in conjunction with an Enova DGX 800, 1600, 3200 or 6400 Digital Media Enclosure and a DXLink Twisted Pair Transmitter.</p> <p>For passage of 4K signal content, DXLink Twisted Pair 4K Boards must be used in conjunction with DXLink Twisted Pair 4K Transmitters and Receivers.</p> <p>Additional compatibility is available between DXLink Twisted Pair 4K60 equipment and DXLink Twisted Pair (non-4K60) equipment (see the “DXLink Compatibility” Appendix in the “DXLink Twisted Pair 4K Transmitters and Receivers Hardware Reference Manual” at <a href="http://www.amx.com">www.amx.com</a>).</p>
Recommended Accessories	DXLink 4K60 HDMI Receiver Module (FG1010-512-01)
Regulatory Compliance	See Enova DGX Digital Media Switcher Enclosure for regulatory compliance

USB	
USB Transport	<p>USB HID and USB 2.0 are supported point-to-point to DXLink 4K60 HDMI Transmitters.</p> <p>The DXLink Output board is automatically configured as either Host or Device depending on the mode selected on the attached DXLink 4K60 Receiver</p>
USB 2.0 Speed	High-Speed, Full-Speed and Low-Speed Support

SIGNAL TRANSPORT – DXLINK W/HDCP	
Compatible Formats	HDMI Video, Audio, Ethernet, USB (HID), USB (2.0), Power, Serial Control and IR Control
Signal Type Support	DXLink Twisted Pair
DXLink Twisted Pair Power	<p>The DXLink Twisted Pair Output Board provides Power over DXLink to Connected DXLink Receivers.</p> <p>DXLink Twisted Pair 4K60 Transmitters and Receivers can also receive power from external DXLink sourcing device.</p> <p>Approved Power over DXLink sourcing devices include:</p> <ul style="list-style-type: none"> <li>• Enova DGX 800/1600/3200/6400 Digital Media Switcher (with a DXLink Twisted Pair Board installed)</li> <li>• PS-POE-AT-TC High-Power PoE Injector</li> <li>• PDXL-2 Power over DXLink Controller</li> </ul> <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> <p>DXLink Twisted Pair 4K60 Transmitters and Receivers can also be powered via a desktop power supply (ENERGY STAR® qualified) with power cord.</p> <p>Use the Enova DGX Configuration Tool located at <a href="http://AMX.com/enova">AMX.com/enova</a> 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.</p>
Connectors	(4) RJ-45 Ports, (4) Micro-USB AB Ports
Twisted Pair Cable Type	<p>Shielded Cat6, Cat6A and Cat7</p> <p>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.</p> <p>For more details and helpful cabling information, reference the white paper titled “Cabling for Success with DXLink” available at <a href="http://www.amx.com">www.amx.com</a> or contact your AMX representative.</p>
Twisted Pair cable Length	<p>Shielded Cat6A and Cat7 supports up to 328 ft. (100 m) all resolutions.</p> <p>Shielded Cat6 supports up to 262 ft (80 m).</p>
Video Data Rate (Max)	18 Gbps
Video Pixel Clock (Max)	600 MHz

Resolution Support	<p>480p up to 3840x2160 @ 60Hz 4:4:4 and 4:2:2</p> <ul style="list-style-type: none"> <li>• 3840x2160p@50/60 Hz, 4:2:0</li> <li>• 4096x2160p@50/60 Hz, 4:2:0</li> </ul>
Deep Color Support	<p>24-bit, 30-bit, 36-bit</p> <p>- 30 and 36-bit color are supported in CTA-861 formats up to 3840x2160p@30Hz 4:4:4; 3840x2160p@50/60Hz 4:2:2; 3840x2160p@50/60Hz 4:2:0 and 4096x2160p@50/60 Hz, 4:2:0</p> <p>- 30 and 36-bit color formats require any downstream DXLink DX-RX-4K60 Scaler to be placed in Bypass mode</p>
Color Space Support	<p>sRGB, BT.601, BT.709, BT.2020</p> <p>RGB 4:4:4, YCbCr 4:4:4, 4:2:2 and 4:2:0</p> <p>- YCbCr 4:4:4, 4:2:2 and 4:2:0 will be output as RGB 4:4:4 when a downstream DX-RX-4K60 has its scaler enabled.</p> <p>- Output format color-space follows input format on non-scaled output boards</p>
4K Resolution Support	<ul style="list-style-type: none"> <li>• 3840x2160p@24/25/30/50/60 Hz 4:4:4 and 4:2:2</li> <li>• 3840x2160p@50/60 Hz, 4:2:0</li> <li>• 4096x2160p@50/60 Hz, 4:2:0</li> </ul> <p>- Must be used in conjunction with an Enova DGX 800, 1600, 3200 or 6400 Digital Media Enclosure built after June 1, 2016.</p>
Audio Format Support	<p>Dolby TrueHD, Dolby Digital, Dolby Digital Plus, DTS-HD MA, DTS, 2 CH through 8 CH L-PCM</p> <p>- Dolby Digital and DTS support up to 48 kHz, 5.1 channels</p> <p>- When a downstream DX-RX-4K60 is in the signal path, audio formats other than 2CH LPCM require the DX-RX-4K60 to have its scaler set to bypass.</p>
Audio Resolution	16 bit to 24 bit
Audio Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192 kHz
AIE Board Support	Yes, insertion of 2 CH LPCM
Audio Switching Board Support	<ul style="list-style-type: none"> <li>• Supports break-away audio switching of 2 CH L-PCM for all channels</li> <li>• Supports downmix from one input channel of Dolby True-HD, Dolby Digital, DTS-HD, DTS, or 2 to 8 channel L-PCM</li> </ul>

	<ul style="list-style-type: none"> <li>- Downmix supported on 4k video inputs with pixel clocks up to 297MHz (up to 3840x2160p @ 30Hz)</li> </ul>
HDCP Support	<p>Supports HDCP 1.x and HDCP 2.x for full matrix HDCP support (includes any input to any or all outputs)</p> <ul style="list-style-type: none"> <li>- HDCP 2.2 support required by input/output board for passage of HDCP 2.2 Premium Content</li> <li>- Key Management System</li> <li>- AMX HDCP InstaGate Pro Technology</li> <li>- Key support up to max 31 devices downstream on one output</li> </ul>
CEC Support	None
ICSP, TCP/IP, USB, IR, Serial and Control Management	Control distribution is managed by the Enova DGX on-board NetLinx NX Controller and Ethernet Switch
EDID Support	<p>EDID provided by Enova DGX Digital Media Switcher to the digital (HDMI) input on the DXLink Transmitter</p> <p>EDID is user re-programmable and can be copied from the display connected to the downstream RX.</p>

About AMX by HARMAN

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