

## Epica® DGX 288

Customizable Matrix Switcher Large-scale Single Strand Multimode/Single Mode Fiber Matrix Switching  
EPICADGX288-ENC (FG1055-288), Epica DGX 288 Enclosure



### Overview

The Epica DGX 288 is a modular matrix switcher designed to transport uncompressed video, including HDMI with HDCP, and embedded audio, over single strand multimode or single mode fiber. With AMX exclusive DGX Technology, the system offers simple signal conversion between analog and digital signal source devices. Supporting 10 Gbps, the DGX and DXLink Fiber transport layer ensures perfect pixel for pixel reproduction of high-resolution content for today and tomorrow. This combined with maximum field serviceability makes the Epica DGX 288 the perfect solution when maximum signal quality, speed and security all need to be met without compromise.

This dense 17 rack unit system utilizes LC fiber module connectors that contain both input and output connections on same connector resulting in a 288x288 matrix switcher that is just 1 rack unit larger than our 144x144. Start with the enclosure and customize the system with single mode or multimode fiber boards that contain 16 connections, for a full 16x16 matrix, on each board, up to 288x288. For flexibility, a combination of multimode and single mode boards can be used in the same enclosure with all inputs routing to any or all outputs.

Designed with maximum reliability in mind for mission-critical installations, the Epica DGX 288 has field-serviceable fiber module connectors, fan kits, CPU, and power supplies. Its enhanced cooling system dedicates an entire rack unit at the top of the unit to a field serviceable fan tray with additional cooling in the back of the unit. Fiber modules can be easily replaced allowing for an individual connection to be serviced while the rest of the matrix switcher inputs and outputs remain operational. CPU and power supply kits are also field serviceable.

The Epica DGX 288 is compatible with DXLink Multi-Format Simplex Transmitters and DXLink HDMI Simplex Receivers, and can receive and send signals from or to any Enova DGX system utilizing simplex fiber boards. This makes the Epica DGX 288 the ideal solution for very large infrastructures that require multiple systems that are directed to a central hub for wider distribution. Multimode fiber can transmit at distances up to 300 meters while single mode fiber transmits up to 10Km. These distances can be repeated from connection to connection, pass crystal clear, high resolution video with zero compression, along with audio. The DXLink Fiber Receivers feature SmartScale® Technology which automatically responds to the display's declared EDID information, scales the video resolution, and adjusts the video parameters to match the display's native format. SmartScale Technology ensures every display operates at its preferred resolution and eliminates the incompatibilities that can arise in matrix switching systems when the output resolution of the source is not supported by some or all of the displays in the system.

#### **Common Applications**

The Epica DGX 288 routes and transmits pure high resolution analog and digital video up to 300 meters on multimode fiber, or 10 kilometers on single mode fiber making it the perfect solution for government agencies, command-and-control environments, universities, hospitals, casinos, retail environments, or any facility that demands the highest quality video be shared between rooms, buildings, or across an entire campus or city.

#### **Custom Request**

AMX manufactures a full range of customizable matrix switchers to accommodate multiple signal types in various input/output ranges. Please contact us at 800.222.0193 (US) or 469.624.7400 (International).

#### **Features**

- **HDMI/HDCP Switching with Simplicity of Analog** - End-to-end distribution of HDMI/HDCP without interruption or key constraints using InstaGate Pro Technology
- **4K and Ultra High Definition (UHD) Content Ready** – Designed to support future resolutions for years to come

- **Industry Leading Data Rate** - DXLink is leading the way with an optical transport rate of 10 Gbps
- **Fiber Your Way** - Designed for use with single strand multimode or single mode fiber with LC connectors providing ease of installation to meet the needs of any installation
- **Field Serviceable SFP Fiber Modules** - Reduces downtime by allow a single module to be replaced while other inputs and outputs (even those on the same board) continue to operate without interruption
- **Analog to Digital Video Conversion with Scaled Outputs** - Converts any source signal to digital and uses SmartScale Technology to automatically output video that is perfectly scaled for each connected display
- **Secure and Isolated** - Fiber inherently provides extra security and electrical isolation making it the transport method of choice for many mission-critical secure environments
- **HDCP Compliance Over Fiber** - Use in conjunction with DXLink Fiber Transmitters and Receivers to send video and audio up to 20 kilometers on single mode fiber and 600 meters on multimode fiber (10 kilometers to the matrix switcher and 10 kilometers after the matrix switcher with single mode fiber, and 300 meters to the matrix switcher and 300 meters after the matrix switcher on multimode fiber)
- **Fully Redundant Power Supplies** - With independent power paths for maximum reliability

## Specifications

GENERAL	
Signal Type Support	<p>DXLink Single Mode or Multi-Mode Fiber, Simplex (Connectivity between products requires matching model types, multimode to multimode or single mode to single mode.)</p> <p>DXLink Single Mode or Multi-Mode Fiber, Simplex (Connectivity between TX and Input Connection and Output Connection and RX requires matching model types, multimode to multimode or single mode to single mode. The backplane architecture of the Enova DGX 288 allows for single mode inputs to be routed to multimode outputs and vice versa)</p>
Compatible AMX Products	<p>EPICADGX288-VIO-SMF-S, Epica DGX 288 Single Mode Fiber Input/Output Board, Simplex (FG1055-520)            EPICADGX288-VIO-MMF-S, Epica DGX 288 Multimode Fiber Input/Output Board, Simplex (FG1055-521)</p> <p>Note: Simplex infrastructure does not support control transport over fiber (such as Ethernet, USB, IR, Serial Control or EDID); although when used as part of a complete AMX controlled solution that includes NX Control hardware, control can be provided if a supplemental independent network connection is used.</p>
Compatible Signal Types	Video with embedded audio (with or without HDCP) over fiber
Dimensions	<p>20 3/4 in. (75.247 cm) depth; 21 3/4 in. (55.245 cm) with extractors            19 in. (48.260 cm) width with rack mounting ears            29 5/8 in. (75.247 cm) height (17 RU)</p>
Weight	Approximately 198 lb. (89.8 kg) per loaded enclosure
Shipping Weight	Approximately 300 lb. (136.0 kg) per loaded enclosure
MTBF	257,517 hrs
Per Channel Aggregate Data Rate (max.)	12.8 Gbps
Noise Level	< 71 dBA @ 1m (Typical @ 25°C)
Airflow	Forced air (inlet on bottom front and sides; exhaust on top)
Regulatory Compliance	UL 60950-1, CSA 60950-1, IEC 60950-1, CE EN 60950-1, CCC, CE EN 55032 Class A, CE EN 55024, FCC CFR Title

	47 Part 15 Subpart B Class A, ICES-003 Class A, RoHS, WEEE
Safety Certifications	Class 1 Eye Safe per requirements of IEC 60825-1 / CDRH
Control Port (Serial)	Bidirectional RS-232 <ul style="list-style-type: none"> <li>• Baud rates of 9600 (default), 19200, 38400, 57600, 115200</li> <li>• DB-9</li> </ul>
Control Port (USB)	USB Mini-B <ul style="list-style-type: none"> <li>- Baud rates of 9600, 19200</li> </ul>

Active Power Requirements	
AC Power per Supply	100 VAC to 240 VAC single phase, 50/60 Hz
Power Capacity (Max)	5392 Watts, @ 115 VAC 10988 Watts, @ 230 VAC
Power Consumption (Max)	2578 Watts, fully loaded SFP Fiber IO
Power Factor Correction (PFC)	Supported, 0.99

Environmental	
Thermal Dissipation Full Capacity (max.)	18398 BTU/hr, @ 115 VAC 37492 BTU/hr, @230 VAC
Thermal Dissipation (max.)	8796 BTU/hr, fully loaded SFP Fiber IO
Operational Temperature	32° F to 104° F (0° C to 40° C)
Storage Temperature	-22° F to 158° F (-30° C to 70° C)
Operational Humidity	5% to 85% RH (non-condensing)
Storage Humidity	0 to 90% RH (non-condensing)

DXLink Fiber	
Transport Layer Throughput	10.3125 Gbps
Video Data Rate (max.)	4.95 Gbps
Video Pixel Clock (max.)	165 MHz
Progressive Resolution Support	480p up to 1920x1200,60 Hz
Interlaced Resolution Support	480i, 576i, 1080i
2K Resolution Support	2048x1024,47Hz; 2048x1080,60Hz; 2048x1152,60Hz; 2048x1536,24Hz - 2K formats are only compatible with DVI, HDMI, and DXLink Fiber Input/Output Boards and require the output or RX Scaler to be set in Bypass mode
Color Depth Support	24-bit
Color Space Support	RGB 4:4:4 YCbCr 4:4:4 and 4:2:2 (Input signal support is for YCbCr 4:4:4 and 4:2:2; output color-space is converted to RGB 4:4:4.)
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  The scaler on the corresponding DXLink Fiber RX must be set to Bypass mode.
Audio Format Support	Dolby TrueHD, Dolby Digital, DTS-HD Master Audio, DTS <ul style="list-style-type: none"> <li>• 2 CH through 8 CH L-PCM</li> </ul>

	<ul style="list-style-type: none"> <li>• Dolby Digital and DTS support up to 48 kHz, 5.1 channels</li> </ul>
Audio Resolution	16 bit to 24 bit
Audio Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192 kHz
EDID Support	<p>EDID provided by connected DXLink Fiber Transmitter*</p> <p>- EDID is user re-programmable at the Transmitter</p> <p>* DXLink, Simplex boards/units do not support EDID transfer and control transport (such as Ethernet, USB, IR, and Serial Control). See the Epica DGX 288 Reference Manual for more information.</p>
HDCP Support	<ul style="list-style-type: none"> <li>• Full matrix HDCP support (includes any input to any or all outputs)</li> <li>• Key Management System</li> <li>• AMX HDCP InstaGate Pro® Technology</li> <li>• Key support up to 16 destinations per output/receiver, independent of source device</li> </ul>
CEC Support	None
Fiber Transceiver Type	10G SFP+
Connectors	16 LC Simplex Fiber ports (with an input and an output connector on each) conforming to ANSI TIA/EIA 604-10 (FOCIS 10A)
Fiber Cable Types and Supported Length	<p>Single mode – 9/125 mm @ 6.21 miles (10 km)</p> <p>Multimode – OM3 50/125 mm @ 984 ft. (300 m)</p>
Optical Wavelength	<p>Single mode – 1310 nm</p> <p>Multimode – 850 nm</p>
Single Mode Optical Budget	<p>7.4 dB (typical) between DXLink Fiber transceivers</p> <ul style="list-style-type: none"> <li>- Optical Modulation Amplitude (OMA): -5.2 dBm (min.)</li> <li>- Optical Modulation Amplitude (OMA) Sensitivity: -12.6 dBm (typical)</li> </ul>
Power Indicator	<p>Constant Green – at least one power supply is receiving power from a source circuit</p> <p>Off – no power supplies are receiving power</p>
Redundant Power Supply (RPS) Indicator	<ul style="list-style-type: none"> <li>• Solid Green – all four power supplies are powered on</li> <li>• Flashing Green – three power supplies are powered on</li> <li>• Solid Red – one or two power supplies are powered on*</li> <li>• Off – none of the power supplies are receiving power</li> </ul> <p>*If the enclosure receives inadequate power, the enclosure's boards will become inoperable and the system will not send or receive signals until at the system receives enough power to resume functional status.</p>
Single Mode Optical Transceiver Mean Output Power	-8.2 dBm to 0.5 (average power)
Multimode Optical Budget	<ul style="list-style-type: none"> <li>• 6.8 dB (typical) between DXLink Fiber transceivers</li> <li>• Optical Modulation Amplitude (OMA): -4.3 dBm (min.)</li> <li>• Optical Modulation Amplitude (OMA) Sensitivity: -11.1 dBm (typical)</li> </ul>
Multimode Optical Transceiver Mean Output Power	-1 dBm (average power)
DXLink Fiber Input Port Propagation Delay	5 ms
DXLink Fiber Output Port Propagation Delay	5 ms

<b>Connectors and Signal Types</b>	
DXLink Fiber (LC Simplex) Transceiver (Signal support depends on the type of DXLink Fiber Transmitters and Receivers used.)	HDMI with embedded digital audio DVI with or without HDCP or embedded digital audio Analog video input (RGBHV, RGBS, RGsB, Y/Pb/Pr) Digital audio or analog stereo audio

<b>EDID Resolutions Supported through Fiber Transmitter DDC</b>	
Standard Timing Identification (Default Shipping EDID*)	See the Epica DGX 288 Reference Manual for more information.

**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 2.10.2017. ©2017 Harman. All rights reserved. Specifications subject to change.

[www.amx.com](http://www.amx.com) | +1.469.624.7400 | 800.222.0193