1G AV-over-IP Receiver for 4K60 signals with Dante audio support
Lightware's new 1Gb AV-over-IP extension family GEMINI GVN where scalability, flexibility and rapid deployment are in focus. It boasts enhanced features like. Gemini GVN is a virtual matrix system, designed for seamless switching of audio, video, and USB transmission, featuring a delay of less than 1 frame.



Details

Lightware's revolutionary GEMINI GVN 1Gb AV-over-IP extender family, where scalability, flexibility, and rapid deployment take center stage. Designed to meet the demands of modern audiovisual environments, the GEMINI GVN is a virtual matrix system that seamlessly switches audio, video, and USB transmission with unparalleled ease.

At the heart of the GEMINI GVN system is the Matrix Management Unit (MMU) device, providing full functionality from a centralized control point, eliminating the need for individual endpoint configurations. With seamless switching capabilities, users can effortlessly manage their audiovisual setup for optimal performance.

Equipped with Lightware's Advanced EDID Management system, the GEMINI GVN ensures that the decoders are capable of scaling HDMI 2.0 video signals up to a maximum resolution of 4K UHD @ 60 Hz either on CAT (up to 100 meters) or on fiber optics (up to 10 kms) with HDR, HDR+, and Dolby Vision support.

Supporting RS-232 control channel, the GEMINI GVN offers enhanced control options for a seamless user experience. The built-in USB ports support KVM functionality and can handle USB 2.0 touch screen, webcam, mass storage, further enhancing connectivity and versatility.

Compliant with HDCP standards, the GEMINI GVN guarantees secure content transmission. With support for the DHCP network management protocol, configuration and management become effortless, simplifying system integration.

The Dante variants can connect the audio layer to the Dante network in the Gemini ecosystem and send/receive streams back and forth. On the transmitter side, the stereo LPCM audio embedded in HDMI or received via the analog input can be sent to the Dante network, or the audio received from the Dante network can be output via the analog output. On the receiver side, receive a Dante audio stream and embed it in the HDMI output or output an analog output. The receiver can transmit audio from the analog input to the Dante network.

The TX device utilizes PoE (IEEE 802.3af) remote power supply, while the RX requires PoE+, providing efficient power delivery for seamless operation. As part of our commitment to sustainability, no power supply is included, but available separately if needed, aligning with our green policy.

Operating on a 1G Ethernet network, the GEMINI GVN boasts low power consumption (~10W), reducing energy costs and environmental impact. Additionally, our commitment to sustainability extends to our packaging, which is made from paper-based materials, further minimizing our ecological footprint.

Features

- **SFP cage for single mode or multimode SFP modules (the optical module is not part of the product)**
- **Transmission distance of up to 80km (when SM SFP module is used)**
- **Transmission distance of up to 550m (when MM SFP module is used)**
- **Supports PoE PD (IEEE 802.3af)**
- **HDMI 2.0 input up to 4K@60Hz 4:4:4 resolution**
- **HDCP 2.2 support**
- **Visually Lossless Video Codec (proprietary codec based on JPEG2000)**
- **Zero frame latency (~3 ms end-to-end latency at 4K60 transmission)**
- **Local HDMI 2.0 output up to 4K@60Hz 4:4:4 resolution**
- **All audio formats supported by the HDMI 2.0 standard are supported up to 7.1-channels, LPCM, compressed audio and High-Bitrate audio (e.g. DTS-X, Dolby Digital, Dolby Atmos)**
- **2×2 channels of Dante/AES67 audio**
- **Analog audio support (LPCM stereo) with selectable direction (input or output)**
- **Offers a RS-232 port**
- **Support the distance up to 100m (328ft) between the transmitter endpoint and Network Switch (Cat5e)**
- **Supports full USB2.0 over IP**
- **Supports USB K+M (keyboard and mouse) over IP**
- External UL certified 12V power supply (not part of the product, can be purchased separately)
- Compatible with Lightware rack shelf
- Eco-friendly paper-based packaging
- UKCA, CB, CE EMC, CE LVD, FCC Certification
- Security including AES-256 encryption, 802.1x, SSH
- Support downscaled, preview MJPEG video stream up to 1280x720

Specifications

General	Compliance	CE, UKCA	
	EMC (emission)	EN 55032:2015+A1:2020	
	EMC (immunity)	EN 55035:2017+A11:2020	
	RoHS	EN 63000:2018	
	Electrical safety	EN 62368-1:2020	
	Warranty	3 years	
	Operating temperature	0° to +45 °C (+32° to +113 °F)	
	Operating humidity	10% to 90%, non-condensing	
	Cooling	Passive	
Power	**GVN-HDMI-TX210AP**	Power consumption (max, measured)	11 W
		Heat dissipation (max)	38 BTU/h
	GVN-HDMI-RX110AP	Power consumption (max, measured)	11 W*
		Heat dissipation (max)	38 BTU/h
		* without USB devices	
	GVN-MMU-X100	Power consumption (max, measured)	4 W
		Heat dissipation (max)	14 BTU/h

Specifications

Enclosure	Enclosure Material	1 mm steel
	Dimensions in mm	221W x 120D x 26H
	Dimensions in inch	8.7W x 4.14D x 1.02H
	Weight (GVN-MMU-X100)	700 g (1.54 lb)
	Weight (GVN-HDMI-TX210AP)	712 g (1.57 lb)
	Weight (GVN-HDMI-RX110AP)	714 g (1.57 lb)
Video Input (GVN-HDMI-TX210AP)		
HDMI Input Port	Connector type	19-pole HDMI type A receptacle
	AV standard	DVI 1.0, HDMI 1.4, HDMI 2.0
	HDCP Compliance	v2.2
	Color space	RGB, YCbCr
	Supported resolutions at 8 bits/color	up to 3840x2160@60Hz (4:4:4) or 3840x2160@60Hz (4:2:0), 1920x1080@60Hz (4:4:4) or 4096x2160@60Hz (4:2:0) up to 12 bits/color
	Dante Digital Audio	2×2 channels of Dante/AES67 audio
	Audio formats	Embedded LPCM, Dolby Digital 5.1 ch, Dolby Digital Plus, Dolby Digital Pro-Logic, Dolby True-HD, DTS:X, Dolby Atmos, DTS 5.1 ch, DTS 96/24, DTS-ES Discrete, DTS-ES Matrix, DTS-HD High Resolution Audio, DTS-HD Master Audio

AV Input Port (GVN-HDMI-RX110AP)	
Connector type	RJ45 connector
Power Over Ethernet	yes (IEE 802.3at)
HDCP Compliance	v2.2
Color space	RGB, YCbCr
Supported resolutions at 8 bits/color	up to 4096x2160@60Hz (4:4:4) or 4096x2160@60Hz (4:2:0), up to 3840x2160@60Hz (4:4:4) or 3840x2160@60Hz (4:2:0); 1920x1080@60Hz (4:4:4) or 4096x2160@60Hz (4:2:0) up to 12 bits/color
Audio formats	8 channel PCM, Dolby TrueHD; DTS-HD Master Audio7.1
SFP Module Slot (GVN-HDMI-RX110AP)	
Number of ports	1
Supported data rate	1 Gbps
Accepted interfaces	SFP optical transceiver modules

Specifications

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	Dante Digital Audio	2×2 channels of Dante/AES67 audio

Ethernet Ports (GVN-MMU-X100)	
Connector type	RJ45 female connector
Ethernet data rate	1 Gigabit, full duplex with autodetect
Power over Ethernet (PoE)	via GVN Network RJ45 connector (IEEE802.3af)

AV Output Port (GVN-HDMI-TX210AP)		
USB Ports	Connector type	A-type receptacle
	USB compliance	USB 2.0 (5V DC)
	Connector type	B-type receptacle
	USB compliance	USB 2.0 (5V DC)
RS-232 Ports	Connector type	3-pole Phoenix connector
	Baud rates	between 9600 and 115200 baud
	Data bits	8
	Parity	None / Odd / Even
	Stop bits	02.jan
Analog Audio Output	Connector type	5-pole Phoenix connector
	Audio formats	2-ch LPCM
	Sampling frequency	48 kHz