MMA10G-TRM4K-12G Modular 4K/60 12G-SDI/HDMI Gateway



CONNECT, COLLABORATE, SHARE RESOURCES, MANAGE

Evertz' MMA-10G is a network-based AV distribution solution constructed using Evertz' award winning SDVN (Software Defined Video Network) architecture. MMA-10G utilizes a highly reliable 10GE infrastructure for routing video and audio and offers unprecedented scalability and reliability.



Key Features



- Two 12G-SDI (BNC) inputs or outputs (software defined), two HDMI 2.0a inputs and two HDMI 2.0a outputs (software defined)
- Three main modes of operation: dual receive, dual transmit, and single transceive
- Supports 2SI method of transport outlined in SMPTE 425-5
- Resolution up to 4096x2160p @ 60 Hz, 4:2:2 color sampling
- High-quality output scaling and frame sync
- Full integration with MAGNUM-AV management system
- Remote monitoring capabilities using SNMP protocol
- Web-based configuration

Modular 10GE SDI/HDMI Gateway

The MMA10G-TRM4K-12G is a versatile 10GE SDI/HDMI gateway that has three main modes of operation:

- Dual transmit mode allows you to ingest uncompressed broadcast video and audio from the two 12G-SDI inputs and output via the two 10G fiber links at up to 4K60 with visually lossless compression.
- Dual receive mode allows you to ingest up to 4K60 compressed video and audio from the two 10G fiber links and output via the two SDI outputs uncompressed.
- Single transceive mode allows you to use one 12G-SDI port as an input and one 12G-SDI port as an output.

It also integrates two HDMI 2.0a input and two HDMI 2.0a output ports allowing for ultra low latency HDMI transport. The MMA10G-TRM4K-12G is a modular device and is installed in an Evertz rack mount modular frame. This approach offers flexibility and density as well as a secure and reliable solution for mounting next to servers.

12Gbps SDI and HDMI 2.0a Interfaces

For its two SDI inputs/outputs, the MMA10G-TRM4K-12G supports multiple resolutions within the SMPTE 2082-10, 2048-2, 296M, 274M, and 259M standards, as well as the 2SI method of 4K transport detailed in the SMPTE 425-5 standard. The MMA10G-TRM4K-12G's two HDMI 2.0a inputs and two output supports resolutions of up to 4096x2160p @ 60 Hz, 4:4:4 color sampling. The MMA10G-TRM4K-12G features customizable EDID tables and scaling on the output paths that insure the smoothest handoff between sources and sinks.

High-Quality Scaling and Frame Sync

The MMA10G-TRM4K-12G employs EvertzAV's latest in scaling technology with high-quality algorithms providing the best picture quality possible. The MMA10G-TRM4K-12G also supports frame sync capabilities that can be locked to genlock.

Fully Integrated with Evertz' MAGNUM-AV Controller

The MMA10G-TRM4K-12G is a managed element of the MMA-10G network which is controlled by MAGNUM-AV. MAGNUM-AV simplifies management and control over the system and allows for simple user control using EvertzAV's virtual control panels and touch friendly graphical user interfaces (VUE) or via third-party control systems.

Remote Monitoring

The MMA10G-TRM4K-12G can be remotely monitored via the SNMP protocol using Evertz' award winning VistaLINK Pro NMS software suite. VistaLINK allows a single user from a single workstation complete visibility into the operation of the MMA-10G ecosystem. Users can prevent issues from becoming outages quickly and easily using Evertz' VistaLINK Pro.

MMA10G-TRM4K-12G





av.evertz.com

Contents Subject to Change Rev. 06 North America/International AV Sales avsales@evertz.com +1 905-335-3700



CONNECT. COLLABORATE. SHARE RESOURCES. MANAGE.

Specifications

SMPTE 239M: SMPTE 239M: SMPTE 239M: VCDC 422.10.bit SMPTE 239M: SMPTE 249M: VCDCr 422.10.bit: SMPTE 2049.2.YCDCr 422.10.bit: Addio Input Impedance Audio Input Impedance Audio Output Level Line level (4dBu) Audio Output Level Line level (4dBu) Col Col Audio Output Level Line level (4dBu) Col Col Audio Output Level Line level (4dBu) Col Col SMP Suport <	Video Inputs/Outputs	2 SDI (BNC) (software defined), 2 HDMI 2.0a inputs, and 2 HDMI 2.0a output (software defined)
SNPE 296M, VCbC 4-22, 10-bit. SP15Upported Resolutions SNPE 2770, 02.254 Hz, 720p 02.54 Hz, 720p 02.957 Hz, 720p 03.04, 720p 05.954 Hz, 720p 06.04 Hz, 720p 02.957 Hz, 1080p 03.04 Hz, 720p 06.04 Hz, 700p 02.957 Hz, 1080p 03.04 Hz, 720p 02.957	SDI Supported Resolutions	SMPTE 259M:
SDI Supported Resolutions- 1700 p 23.98 Hz 720 p 02.41z, 720 p e 25.97, 720 p e 30.91z, 720 p e 50.94, 720 p e 50.94, 1270 p e 0.94SDI Supported Resolutions- 1000 p e 25.98 Hz 1000 p e 24.Hz, 1000 p e 29.97 Hz, 1000 p e 30.91 z SMFTE 204.94, VCbCr 4-22, 10-bit: SMFTE 204.94,		
SND Supported Resolutions SIMDTE 274M, YCbC7 42.2 (1-bit. SD1 Supported Resolutions I 1080 (9 0 0 24 H1, 1080 (9 0 24 H1, 1080 (9 0 25 99 H1, 2 1080 (1 0 0 0 0 0 1 1 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 1 1 0		
SDI Supported Resolutions1 1080p @ 23 98 Hz 1080p @ 24 Hz 1080p @ 25 Hz 1080p @ 29 79 Hz 1080p @ 30 Hz 1080p @ 50 Hz 2068 Hz 1080p @ 59 98 Hz 2068 Hz 2068 Hz 2068 Hz Softwarz 2068 Hz 2008 Hz 2068 Hz 20		
1080p φ 50 Hz 1080p φ 59 94 Hz 1080p φ 60 HzSMPTE 208-2, YCbCr 422, 10-bit: 2048x1080p φ 23 98 Hz 208x1080p φ 24 Hz 2048x1080p φ 47.95 Hz 2048x1080p φ 48 Hz SMPTE 2082-10, YCbCr 422, 10-bit: 3440x2160p φ 50 Hz, 3440x2160p φ 59 94 Hz 3840x2160p φ 50 Hz 4058x2160p φ 50 Hz, 3440x2160p φ 59 94 Hz 3840x2160p φ 50 Hz 4058x2160p φ 67.95 Hz 4056x2160p φ 59.94 Hz 4056x2160p φ 50 Hz 4058x2160p φ 47.95 Hz 4056x2160p φ 59.94 Hz 4056x2160p φ 59.94 Hz 4056x2160p φ 59.94 Hz 4056x2160p φ 59.94 Hz 4058x2160p φ 47.95 Hz 4056x2160p φ 47.95 Hz 4056x2160p φ 50 Hz 4058x2160p φ 47.95 Hz 4056x2160p φ 59.94 Hz 4050x2160p φ 47.95 Hz 4056x2160p φ 47.95 Hz 4056x2160p φ 50 Hz 4000 At 4050x2160p φ 60 Hz (4-44 c0) sampling)Audio Input Impedance Audio Input LevelInelevel (4480u)Audio Output Impedance Audio Output Impedance60 ΩAudio Output Impedance Audio Output LevelInelevel (4480u)DCC Outputs2 SFP- (see available accesories)Output ScalingYesFBM AudioYesSMMP SupportYesNMP SupportYesControlYesControl SystemMACNUM-AVWeb Based Configuration YesSecurity Compliance ComplianceCompliant with applicable Do Network Device Security Technical Implementation Cuide (STIC) findingsForther Voltage7Power Consuption400Output Voltage7Power Consuption400Output Voltage7Power Consuption32'to 104'F (0'to 40'C)		
SMPTE 2004-2, YCbcY 4.22, 10-bitv2004510800 p23 5981 Z2008/10800 p24 H2, 2004X10800 p49.51 X2, 2005X10800 p49.91 X2, 0006X21600 p49.91 X2, 000		
SMPTE 2082-10. YCbCr 4-22_10-biti 3840x2160p @ 5014z_3840x2160p @ 5014z_4095x2160p @ 5014z_401200000Audio Output Inpedance600		
i Stabd2160p SDH2.SB402160p SDH2.SB402160p GBH2.dB402160p SDH2.dB402160p SDH2.dB		
Indext and the second		
Audio Inputs1 stereo unbalanced analog (terminal header)Audio Input ImpedanceHigh impedanceAudio Input LevelLine level (+4dBu)Audio Outputs1 stereo unbalanced analog (terminal header)Audio Output Impedance60 ΩAudio Output LevelLine level (+4dBu)Audio Output LevelEine level (+4dBu)Audio Output LevelSFP+ (see available accessories)Output ScalingVesPMDH AudioVesNMP SupportVesIn-Band ControlYesControl SystemMacNUM-AVWeb-Based ConfigurationYesSecurity ComplianceCompliant with aplicable Do Network Devices Security Technical Implementation Cuide (STIC) findingsModular Design2Power Consumption40WOutput Solars32' to 104'F (0' to 40'C)		
Audio Input ImpedanceHigh impedanceAudio Input LevelLine level (4dBu)Audio Outputs1 stereo unbalanced analog (terminal header)Audio Output Impedance60 ΩAudio Output LevelEine level (4dBu)10CE Outputs2 SFP+ (see valiable accessories)Output ScalingYesHDMI AudioYesSNMP SupportYesIn-Band ControlYesControl SystemMacNUM-AVWeb-Based ConfigurationYesSoluty DomplianceCompliant with applicable Don Network Device Security Technical Implicable Implic	HDMI Supported Resolutions	Up to 4096x2160p @ 60 Hz (4:4:4 color sampling)
Audio Input LevelLine level (4dBu)Audio Outputs1 stereo unbalanced analog (terminal header)Audio Output Impedance60 ΩAudio Output LevelLine level (4dBu)10CE Outputs2 SFP+ (see available accessories)Output ScalingVesHDMI AudioPasthrough support for Dolby Digital"/AC-3, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS*,	Audio Inputs	1 stereo unbalanced analog (terminal header)
Audio Outputs1 stereo unbalanced analog (terminal header)Audio Output Impedance600 ΩAudio Output LevelLine level (+4dBu)10CE Outputs2 SFP+ (see available accessories)Output ScalingYesHDMI AudioPPCM (up to 8 channels) Pastrinough support for Dolby Digital"/AC-3, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS [*] , DTS-ES, DTS-HD High Res, DTS-HD Master Audio, DTS.XSNMP SupportYesIn-Band ControlYesControl SystemMaGNUM-AVWeb-Based ConfigurationYesSouly To Souly Doligital Do Network Devices Security Technical Implementation Guide (STIC) findingsModular Design7000/7801 device, installed in 7800/7801FRSlots2DC Input Voltage12VDC provided by framePower Consumption60VOperating Temperature32' to 104' F (0' to 40' C)	Audio Input Impedance	High impedance
Audio Output Impedance600 ΩAudio Output LevelLine level (4dBu)1OCE Outputs2 SFP+ (see available accessories)Output ScalingYesHDMI AudioLPCM (up to 8 channels) Passthrough support for Dolby Digital*/AC-3, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS*, DTS-ES, DTS-HD High Res, DTS-HD Master Audio, DTS:XSNMP SupportYesIn-Band ControlYesControl SystemMACNUM-AVWeb-Based ConfigurationYesSourd V ComplianceCompliant with applicable Do Network Devices Security Technical Implementation Cuide (STIC) findingsSolts2Power Consumption40WOperating Temperature32*to 104*F0*to 40°C)	Audio Input Level	Line level (+4dBu)
Audio Output LevelLine level (+4dBu)1OCE Outputs2 SFP+ (see available accessories)Output ScalingYesHDMI AudioLPCM (up to 8 channels) Passthrough support for Dolby Digital*/AC-3, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS*, DTS-HD, High Res, DTS-HD Master Audio, DTS:XSNMP SupportYesIn-Band ControlYesControl SystemMACNUM-AVWeb-Based ConfigurationYesSourty ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIG) findingsSolts2DC Input Voltage12VDC provided by framePower Consumption40WOperating Temperature32* to 104* F (0° to 40° C)	Audio Outputs	1 stereo unbalanced analog (terminal header)
IOGE Outputs2 SFP- (see available accessories)Output ScalingYesHDMI AudioLPCM (up to 8 channels) Passthrough support for Dolby Digital*/AC-3, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS*, DTS-ES, DTS-HD High Res, DTS-HD Master Audio, DTS:XSNMP SupportYesIn-Band ControlYesControl SystemMAGNUM-AVWeb-Based ConfigurationYesSoluti ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIC) findingsModular Design2Slots2D CInput Voltage12VDC provided by framePower Consumption60WOperating Temperature32* to 104* F(0* to 40* C)	Audio Output Impedance	600 Ω
Output ScalingYesHDMI AudioLPCM (up to 8 channels) Pasthrough support for Dolby Digital*/AC-3, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS*, DTS-ES, DTS-HD High Res, DTS-HD Master Audio, DTS:XSNMP SupportYesIn-Band ControlYesControl SystemMACNUM-AVWeb-Based ConfigurationYesSoluti ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIC) findingsModular Design780/7801 device, installed in 7800/7801 FRSolts2DC Input Voltage12VDC provided by framePower ConsumptionGuite (find find find)Operating TemperatureSit find find find find find)	Audio Output Level	Line level (+4dBu)
HDMI AudioLPCM (up to 8 channels) Passthrough support for Dolby Digital®/AC-3, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS®, DTS-ES, DTS-HD High Res, DTS-HD Master Audio, DTS:XSNMP SupportYesIn-Band ControlYesControl SystemMACNUM-AVWeb-Based ConfigurationYesSecurity ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIG) findingsModular Design3800/7801 device, installed in 7800/7801FRSlots2DC Input Voltage12VDC provided by framePower Consumption40WOperating Temperature32° to 104° F (0° to 40° C)	10GE Outputs	2 SFP+ (see available accessories)
HDMI AudioPassthrough support for Dolby Digital®/AC-3, Dolby Digital PLN, Dolby TrueHD, Dolby Atmos, DTS®, DTS-HD High Res, DTS-HD Master Audio, DTS.XSNMP SupportYesIn-Band ControlYesControl SystemMACNUM-AVWeb-Based ConfigurationYesSecurity ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Giffle Giff	Output Scaling	Yes
High Res, DTS-HD Master Audio, DTS:XSNMP SupportYesIn-Band ControlYesControl SystemMACNUM-AVWeb-Based ConfigurationYesSecurity ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIG) findingsModular Design7800/7801 device, installed in 7800/7801FRSlots2DC Input Voltage12VDC provided by framePower ConsumptionGuide 104° F (0° to 40° C)Operating Temperature32° to 104° F (0° to 40° C)	HDMI Audio	
In-Band ControlYesControl SystemMACNUM-AVWeb-Based ConfigurationYesSecurity ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIG) findingsModular Design7800/7801 device, installed in 7800/7801FRSlots2DC Input Voltage12VDC provided by framePower Consumption600032° to 104° F (0° to 40° C)		
Control SystemMACNUM-AVWeb-Based ConfigurationYesSecurity ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIC) findingsModular Design7800/7801 device, installed in 7800/7801FRSlots2DC Input Voltage12VDC provided by framePower Consumption40WOperating Temperature32° to 14°° F 0° to 40° C)	SNMP Support	Yes
Web-Based ConfigurationYesSecurity ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIG) findingsModular Design7800/7801 device, installed in 7800/7801 FRSlots2DC Input Voltage12VDC provided by framePower Consumption40WOperating Temperature32° to 104° F (0° to 40° C)	In-Band Control	Yes
Security ComplianceCompliant with applicable DoD Network Devices Security Technical Implementation Guide (STIG) findingsModular Design7800/7801 device, installed in 7800/7801FRSlots2DC Input Voltage12VDC provided by framePower Consumption40WOperating Temperature32° to 14°° F (0° to 40° C)	Control System	MAGNUM-AV
Modular Design 7800/7801 device, installed in 7800/7801 FR Slots 2 DC Input Voltage 12VDC provided by frame Power Consumption 40W Operating Temperature 32° to 104° F (0° to 40° C)	Web-Based Configuration	Yes
Slots 2 DC Input Voltage 12VDC provided by frame Power Consumption 40W Operating Temperature 32° to 104° F (0° to 40° C)	Security Compliance	Compliant with applicable DoD Network Devices Security Technical Implementation Guide (STIG) findings
DC Input Voltage 12VDC provided by frame Power Consumption 40W Operating Temperature 32° to 104° F (0° to 40° C)	Modular Design	7800/7801 device, installed in 7800/7801FR
Power Consumption 40W Operating Temperature 32° to 104° F (0° to 40° C)	Slots	2
Operating Temperature 32° to 104° F (0° to 40° C)		12VDC provided by frame
	Power Consumption	40W
Relative Humidity 10% to 90% RH (non-condensing)	Operating Temperature	32° to 104° F (0° to 40° C)
	Relative Humidity	10% to 90% RH (non-condensing)

Ordering Information

MMA10G-TRM4K-12G	Modular 4K/60 12G-SDI/HDMI gateway with high-quality scaling and frame sync

Available Accessories

7801FR	Modular frame, 1RU, 4 slots
7801FC	Modular frame controller for 1RU
7800FR-QT	Modular quiet frame, 3RU, 15 slots, dual PS
7800FC	Modular frame controller for 3RU
MMA10G-SFP-TR85	SFP+, 10GE, 850nm, MMF, 50/125, LC/LC
MMA10G-SFP2-TR13	SFP+, 10GE, 1310nm, SMF, 9/125, LC/LC, 10Km
MMA10G-SFP-SFP-MM3	3m SFP+ to SFP+ fiber patch cable, 10GE, AOC, 850nm

EvertzAV, the EvertzAV logo, and VistaLINK are either trademarks or registered trademarks of Evertz Microsystems Ltd. HDMI and the HDMI logo are either trademarks or registered trademarks of HDMI Licensing LLC. Other trademarks, registered trademarks, and trade names mentioned in this document may refer to either the entities claiming the marks and names or their products and are hereby acknowledged. © 2022 Evertz Microsystems Ltd.

