

EMR-288X288-A

High Density Modular Audio Router (AES, Analog, MADI, TimeCode, Data)



The EMR is a multi-format modular router that provides a high density solution without compromising functionality. The EMR provides a unified platform for routing digital audio, analog audio, MADI audio, data, and time code. The EMR uses a packet routing core that allows for highly dense applications and also provides the flexibility for expansion as demands grow.

A single 6RU frame can accommodate 288x288 AES, 288 data ports, 288x288 time code signals, or a mix of everything in between. Expansion beyond this is as easy as adding another frame. With two 6RU frames, the EMR can accommodate 576x576 AES signals with full redundancy.

The modular design of the EMR means that there are no limitations to the signal formats that can be added to the router, or limitations to the size at which it can be expanded to. Other products that can be combined with the EMR are video routing, master controllers, multi-viewers and more.

Configuration

The EMR allows any mix of formats within a frame. The inputs and outputs are scalable in blocks of 96 or 48 depending on the format. A system consists of the input stage, the crosspoint, and the output stage. Each input and output device is connected to the crosspoint through a proprietary TDM connection. It is the use of this connection that provides the flexibility for the system to scale and evolve with changing needs.

Scalability

The EMR can be scaled well beyond a single frame. A single crosspoint module can support up to 16 input modules and 16 output modules, allowing a system to scale to 1536x1536 AES. For larger requirements, multiple crosspoint modules can be combined to scale even further. There really is no limit to the range of the EMR.

Redundancy

Each input and output card in the EMR contains multiple TDM interfaces that allow connections to multiple crosspoints. Each input card provides multiple TDM outputs that can be used for redundant connections, and each output card provides multiple TDM inputs that can be setup to automatically failover if the primary connection fails. The redundancy structure of the EMR minimizes the chances of any failure to the system.

Control

Control of the EMR is via two redundant frame controllers. When combined with the EQX server, the EMR can be controlled using a wide range of control panels and interfaces. The EMR also provides a SNMP interface to control various configuration options.

System Integration

When combined with the EQX, the EMR provides the ability to route audio universally across various formats. Embedded audio from EQX video sources can be de-embedded and routed to AES, analog, or MADI destinations. The system also allows discrete audio sources from AES, analog or MADI to be routed to audio embedders on the EQX. This unique system provides maximum flexibility for routing any audio source to any audio destination.

►Features & Benefits

Audio Routing

- Support for unbalanced/balanced AES, analog, and MADI audio formats
- Input and output sample rate conversion
- Processing capabilities for per channel gain, inversion, mono-mixing and SoftSwitching (cross and v-fade)
- Advanced audio monitoring for loss, silence, over, phase and mono
- Unique HD video output with audio level display for all audio inputs

Port Data Routing

- Support for RS-232 and RS-422 devices (software selectable in banks of 12)
- Conversion between RS-232 and RS-422 devices
- Manual or automatic sensing of controlling and controlled devices
- Sony interface for detecting controlling or controlled devices

Time code Routing

- Decoding and encoding capabilities for advanced monitoring
- Handles shuffle speeds up to 70x

Advanced system control & interfacing

- Supports the full range of Quartz remote control panels
- Full VistaLINK® PRO command & control, SNMP & AVM
- Supports a wide selection of control protocols
- Ethernet, Serial RS-422/RS-232 connections
- Full integration with 3rd party automation systems

High availability, 24/7 design

- Full modular design
- All modules are hot swappable
- All components are front accessible
- Passive I/O
- External MI connection
- Redundant frame controller
- Redundant crosspoint
- Redundant power supply
- Comprehensive system monitoring bus
- VistaLINK® PRO SNMP monitoring of I/O modules



High Density Modular Audio Router (AES, Analog, MADI, TimeCode, Data)

Configuration: AES inputs AES outputs	Selectable in blocks of 96 Selectable in blocks of 96
Analog inputs Analog outputs	Selectable in blocks of 48 (stereo) Selectable in blocks of 48 (stereo)
MADI inputs MADI outputs	Selectable in blocks of 16 Selectable in blocks of 16
LTC inputs LTC outputs	Selectable in blocks of 96 Selectable in blocks of 96
RS-232/422 ports	Selectable in blocks of 48 (RS-232 and RS-422 selectable in blocks of 12)
Audio Inputs - AES: Sample Rates 32kHz, 44.1 kHz, 48kHz	
Balanced Version Standard AES3-1992 Signal Level 0.2 - 7.0V p-p Impedance 110Ω ±20%, transformer coupled DC on Input ±50V Connectors D50 female	
Unbalanced Version Standard SMPTE 276M Impedance 75Ω Return Loss 25dB, 0.1 - 6.0kHz Connectors DIN 1.0/2.3	
Audio Outputs - AES Sample Rates 32kHz, 44.1 kHz, 48kHz	
Balanced Version Signal Level 2.0 - 7.0V p-p Impedance 110Ω, transformer coupled DC Isolation ±50V Rise/fall Time 3.5 - 10 ns Connectors D50 female	
Unbalanced Version Signal Level 1.0 V p-p ±50%, Impedance 75Ω Return Loss 25dB, 0.1 - 6.0kHz Jitter Conforms to ANSI S4.40-1992 Connectors DIN 1.0/2.3	
Analog Audio Sampling Freq :48kHz Freq Response ±0.08dB Output Impedance 400Ω Input Impedance 12kΩ minimum Signal Level 0dBfs = 18dBu or 24dBu Noise -110dB A-weighted THD+N >95dB (typically > 98dB) DC Offset >±30mV Crosstalk <-95dB I/O Delay 1.3ms @ 48kHz Dynamic Range 24 bits Connectors D50 female	
Analog to Digital Conversion Sampling Freq 48kHz Freq Response ±0.05dB Input Impedance 12kΩ minimum Signal Level 0dBfs to 18dBu or 24dBu Noise -113dB A-weighted THD+N >95dB (typically > 98dB) CMRR >85dB @ 1kHz Crosstalk <-95dB I/O Delay 0.85ms @ 48kHz Connectors D50 female	
Digital to Analog Conversion Sampling Freq 48kHz Freq Response ±0.06dB Output Impedance 400Ω Signal Level 0dBfs to 18dBu or 24dBu Noise -115dB A-weighted THD+N >95dB (typically > 98dB) DC Offset >±30mV Crosstalk <-95dB I/O Delay 1.3ms @ 48kHz Dynamic Range 24 bits Connectors D50 female	
Data Input Port Type RS-232 and RS-422, selectable in blocks of 12 Signal Level 0.2 - 7V p-p Connectors D50 female	
Data Input Port Type RS-232 and RS-422, selectable in blocks of 12 Signal Level 2 - 7V p-p Impedance 110Ω Connectors D50 female	
LTC Reader Standard SMPTE 12M-1 Level 2 - 4V p-p, unbalanced or balanced Speed 1/30th to 70x play speed, fwd and rev, machine dependent Connectors DIN 1.0/2.3 (unbalanced), D50 female (balanced)	
LTC Generator Standard SMPTE 12M-1 Level Adjustable, 0.5 - 4.5V p-p Rise Time 40±10ms Jitter <2ms Connectors DIN 1.0/2.3 (unbalanced), D50 female (balanced)	
Switching Reference Reference Inputs 2x BNC, analog 525/625 or DARS Impedance 75Ω terminating Connectors BNC per IEC 61169-8 Annex A	
Control Ethernet 2x RJ45 Serial RS-232/422 2x D9 female	
Electrical Supply Auto ranging, 100 - 240VAC, 50/60Hz Power Consumption 850 W Redundant PSU Optional	
Physical Height 10.5" (266mm) Width 19.0" (483mm) Depth 14.5" (368mm) Module Capacity 15 single slot EMR series modules Weight Approx. 17.4 lbs (7.9kg) with 2 power supplies, no slots occupied Approx. 32.0 lbs (14.5kg) with 2 power supplies, all slots occupied	

Configuration	
EMR-9696-AESU	EMR 96x96 Digital Audio (Unbalanced) Router
EMR-9696-AESB	EMR 96x96 Digital Audio (Balanced) Router
EMR-4848-AA	EMR 48x48 Stereo Analog Audio Router
EMR-9696-LTC	EMR 96x96 Time Code Router
EMR-48-PR	EMR 48 Port Data Router

Ordering Options	
+PS	Redundant Power Supply
+FC	Redundant Controller Module
+SRC	Sample Rate Conversion
+DSP	Gain, inversion, mono-mix, SoftSwitching
+MIX	Quad mixer
+VMON	Video output monitor

EMX6-FR	EMX 6RU Router Chassis with 15 slots
EMX3-FR	EMX 3RU Router Chassis with 5 slots
EMX-FC	EMX frame controller

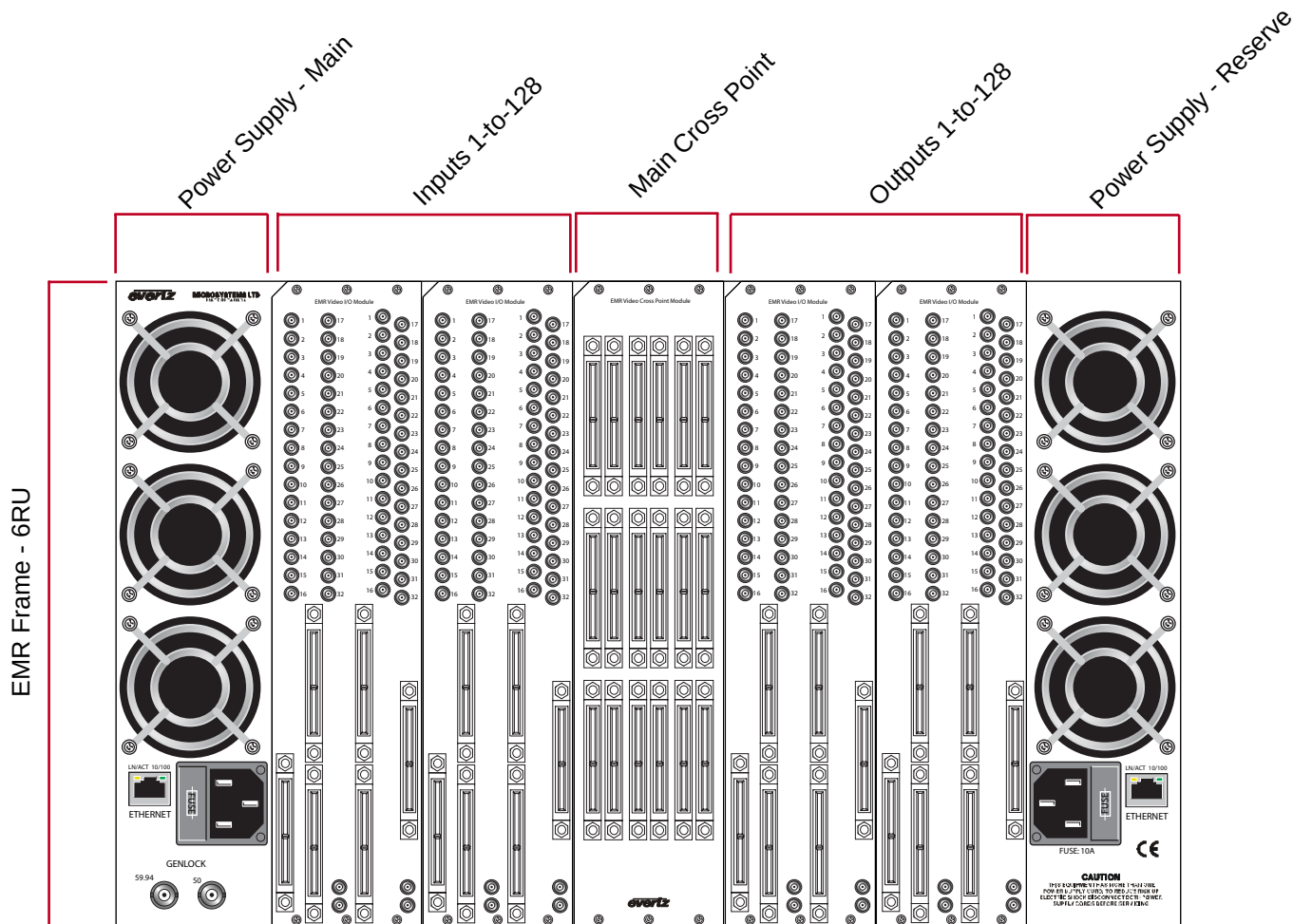
EMR-IP96-AESU	96 Unbalanced AES inputs with TDM outputs
EMR-IP48-AESU	48 Unbalanced AES inputs with TDM outputs
EMR-IP96-AESB	96 Balanced AES inputs with TDM outputs
EMR-IP48-AESB	48 Balanced AES inputs with TDM outputs
EMR-IP48-AA	48 Analog stereo inputs with TDM outputs
EMR-IP96-LTC	96 LTC inputs with TDM outputs
EMR-IP48-LTC	48 LTC inputs with TDM outputs
3000MADI16-TDM4	16 MADI inputs with TDM outputs

EMR-OP96-AESU	96 Unbalanced AES outputs with TDM inputs
EMR-OP48-AESU	48 Unbalanced AES outputs with TDM inputs
EMR-OP96-AESB	96 Balanced AES outputs with TDM inputs
EMR-OP48-AESB	48 Balanced AES outputs with TDM inputs
EMR-OP48-AA	48 Analog stereo outputs with TDM inputs
EMR-OP96-LTC	96 LTC outputs with TDM inputs
EMR-OP48-LTC	48 LTC outputs with TDM Inputs
300TDM4-MAD16	16 MAD1 outputs with TDM inputs

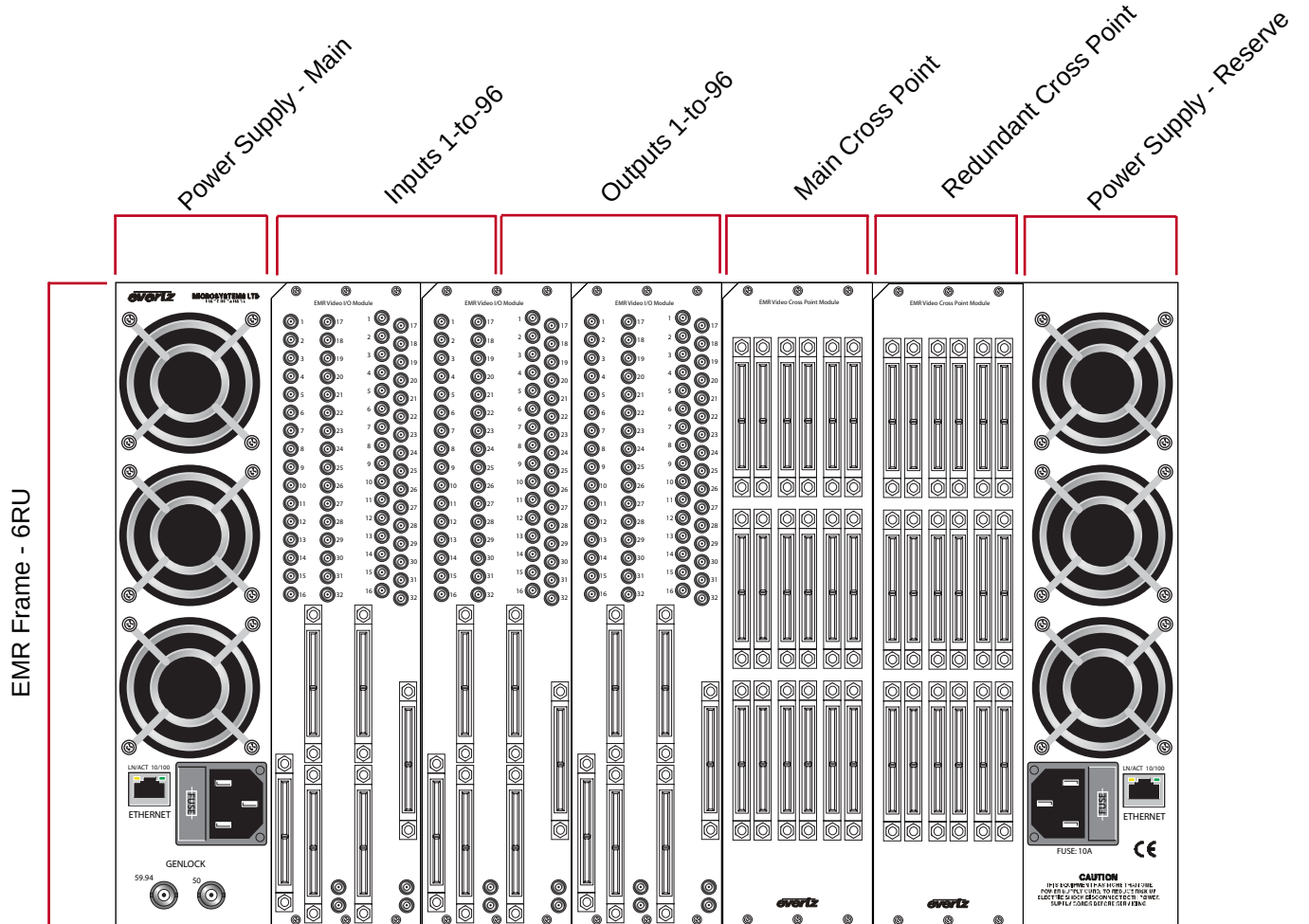
EMR-PR48 48 ports with 4 TDM inputs and 4 TDM outputs
EMR-ADMX-16x16 16 TDM inputs and 16 TDM outputs



Example 1
EMR 128x128 (single cross point)



Example 2
EMR 96x96 (main & redundant cross point)



Example 3
EMR 288x2288 (Single Cross Point)

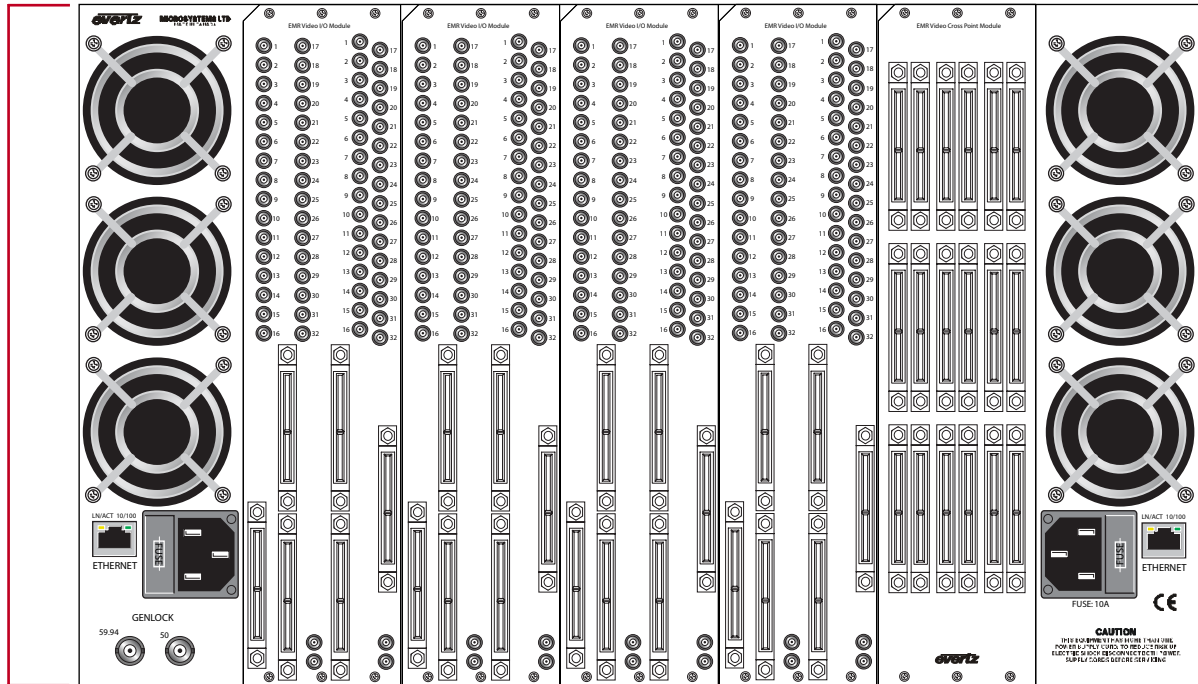
Power Supply - Main

Inputs 1-to-256

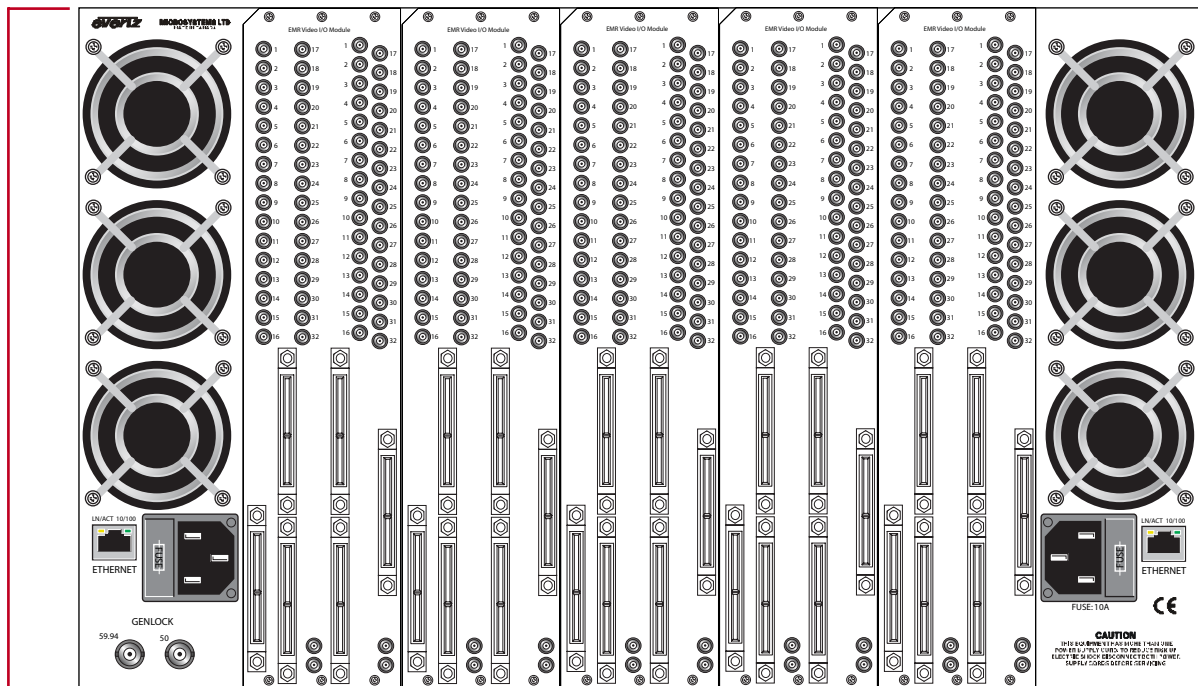
Main Cross Point

Power Supply - Reserve

EMR Frame - 6RU



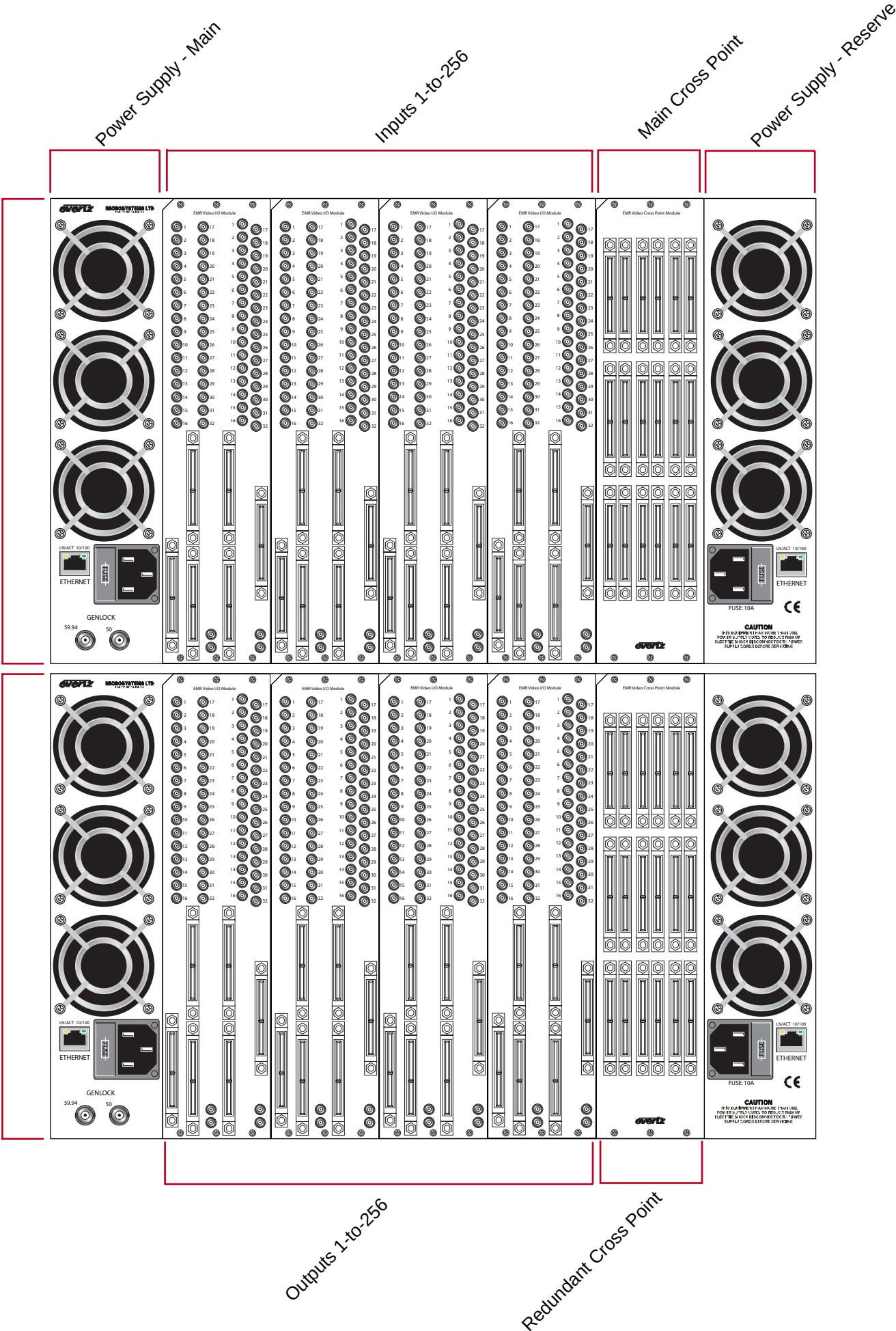
EMR Frame - 6RU



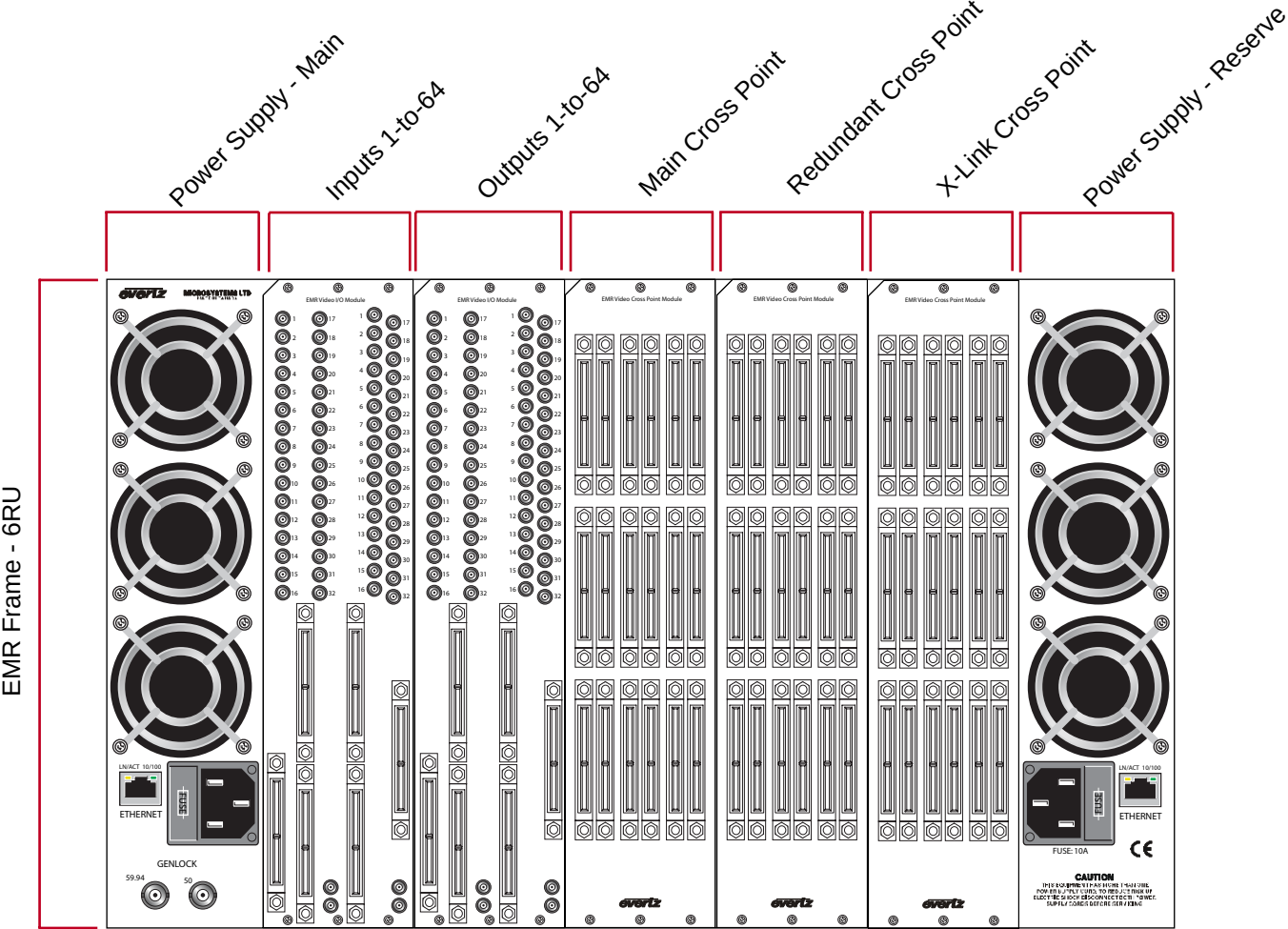
Outputs 1-to-288

Inputs 257-to-288

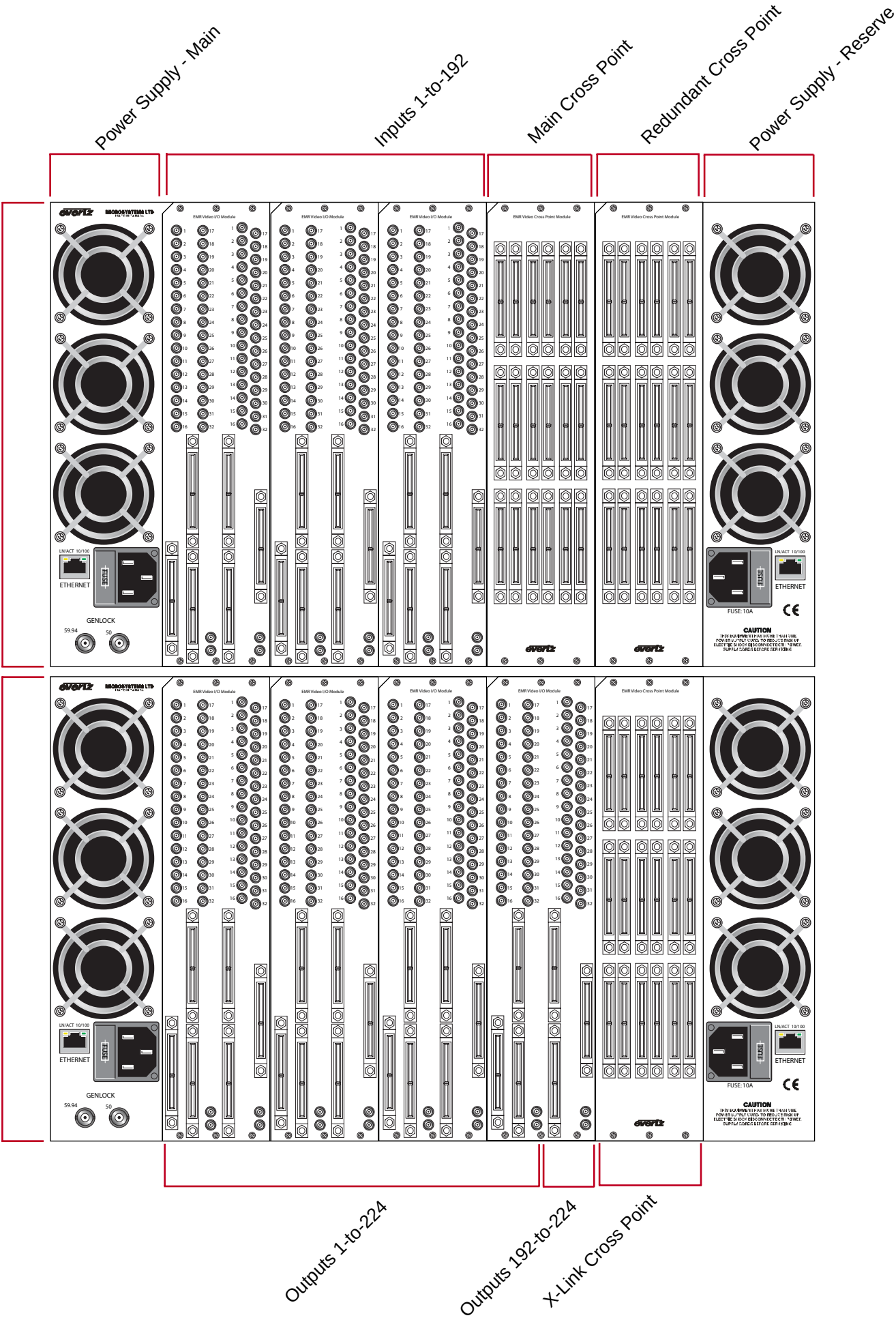
Example 4
EMR 256x256 (Main & Redundant Cross Point)



Example 5
EMR 64x64 +288 X-Link (main & redundant cross point)



Example 6
EMR 224x224 +288 X-Link (Main & Redundant Cross Point)



Example 7
EMR 288x288 +288 X-Link (Main & Redundant Cross Point)

