

# EMR Audio Router (Hybrid Router)

High Density Modular Audio Router (AES, Analog, MADI, Time Code, 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, A-LINK 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 master control switchers, 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 1536 x 1536 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

When combined with MAGNUM, 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, MADI destinations or A-LINK. The system also allows discrete audio sources from AES, analog, MADI or A-LINK 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, MADI audio and Studer A-LINK formats
- Sample rate conversion
- Processing capabilities for per channel gain, inversion, mono-mixing, quad-mixing and per channel audio delay
- Advanced audio monitoring for loss, silence, over, phase and mono
- Unique HD video output with audio level display for all audio inputs
- Mono breakaway mode support in panels, L and R channels can be routed to different outputs
- Mono mixing between L and R channels, swapping, L to both, R to both, analog phase inversion and gain

### Port Data Routing

- Support for RS-232 and RS-422 devices (selectable)
- 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
- 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 crosspoint
- Redundant power supply
- Comprehensive system monitoring bus
- VistaLINK® PRO SNMP monitoring of I/O modules

# EMR Audio Router (Hybrid Router)

## High Density Modular Audio Router (AES, Analog, MADI, Time Code, Data)



### Specifications

#### Configuration:

AES inputs: Selectable in blocks of 96 or 48  
 AES outputs: Selectable in blocks of 96 or 48

Analog inputs: Selectable in blocks of 48 (stereo)  
 Analog outputs: Selectable in blocks of 48 (stereo)

MADI inputs: Selectable in blocks of 8 or 16  
 MADI outputs: Selectable in blocks of 8 or 16

A-link (bidirectional) Selectable in blocks of 2

LTC inputs: Selectable in blocks of 96 or 48  
 LTC outputs: Selectable in blocks of 96 or 48

RS-232/RS-422 ports: Selectable in blocks of 48 (RS-232 and RS-422 selectable)

#### Audio Inputs - AES:

Sample Rates: 44.1kHz, 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 ST 276-1  
 Impedance: 75Ω  
 Return Loss: 25dB, 0.1 - 6.0kHz  
 Connectors: DIN 1.0/2.3

#### Audio Outputs - AES:

Sample Rates: 44.1kHz, 48kHz

#### Balanced Version:

Signal Level: 2.0 – 7.0V p-p  
 Impedance: 110Ω, transformer coupled  
 DC Isolation: ±50V  
 Rise/fall Time: 3.5 – 10ns  
 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 (20Hz-20kHz range)  
 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 (20Hz-20kHz range)  
 Input Impedance: 12kΩ minimum  
 Signal Level: 0dBu 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 (20Hz-20kHz range)  
 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  
 Signal Level: 0.2 – 7V p-p  
 Connectors: D50 female

#### Data Output Port:

Type: RS-232 and RS-422, selectable  
 Signal Level: 2 – 7V p-p  
 Impedance: 110Ω  
 Connectors: D50 female

#### LTC Reader:

Standard: SMPTE ST 12-1  
 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 ST 12-1  
 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/RS-422 2x D9 female

#### Electrical:

EMX6-FR: Auto ranging, 100 ↔ 240 VAC, 50/60 Hz  
 AC Mains Input: 50/60 Hz

Max Operating Current: 9.5 A (@ 115 VAC nominal), 4.0 A (@ 220 VAC nominal)

#### Max Power Consumption:

850 W  
 Max Module Load: 650 W (40 W per slot)  
 Power Supply Configuration: 1 supply standard, optional redundant supply requires separate inlet  
 Connector: IEC 60320 - 1 per power supply

#### EMX3-FR:

AC Mains Input: Auto ranging, 100 ↔ 240 VAC, 50/60 Hz  
 Max Operating Current: 4.6 A (@ 100 V/60Hz), 1.85A (@ 240 V/50Hz)

#### Max Power Consumption:

450 W  
 Max Module Load: 360 W (24 W per slot)  
 Power Supply Configuration: 1 supply standard, optional redundant supply requires separate inlet  
 Connector: IEC 60320 - 1 per power supply

#### Maximum Module Load:

EMX3-FR: 360W (72W per slot)  
 EMX6-FR: 650W (43W per slot)  
 Fuses: 6.3 amps, 250 Volt ceramic time delay 5 x 20 mm – 2 per power supply

#### Physical:

Dimensions:  
 EMX3-FR: 19"W x 5.25"H x 15.75"D (483mm W x 133mm H x 400mm D)  
 EMX6-FR: 19"W x 10.5"H x 15.75"D (483mm W x 266mm H x 400mm D)  
 Temperature: 0-40°C  
 Module Capacity:  
 EMX3-FR: 5 single slot modules  
 EMX6-FR: 15 single slot modules  
 Weight:  
 EMX3-FR: 32lbs (14.5kg) Full  
 17.4lbs (8kg) Empty  
 EMX6-FR: 64lbs (29g) Full  
 34.8lbs (16kg) Empty

# EMR Audio Router (Hybrid Router)

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## Ordering Information - EMR Audio Router

<b>EMX6-FR</b>	EMX 6RU Router Chassis with 15 slots
<b>EMX3-FR</b>	EMX 3RU Router Chassis with 5 slots
<b>EMX-FC</b>	EMX frame controller
<b>EMR-IP96-AESU</b>	96 Unbalanced AES inputs with TDM outputs
<b>EMR-IP48-AESU</b>	48 Unbalanced AES inputs with TDM outputs
<b>EMR-IP96-AESB</b>	96 Balanced AES inputs with TDM outputs
<b>EMR-IP48-AESB</b>	48 Balanced AES inputs with TDM outputs
<b>EMR-IP48-AA</b>	48 Analog stereo inputs with TDM outputs
<b>EMR-IP96-LTC</b>	96 LTC inputs with TDM outputs
<b>EMR-IP48-LTC</b>	48 LTC inputs with TDM outputs
<b>EMR-IP16-MADI</b>	16 MADI inputs with TDM outputs
<b>EMR-OP96-AESU</b>	96 Unbalanced AES outputs with TDM inputs
<b>EMR-OP48-AESU</b>	48 Unbalanced AES outputs with TDM inputs
<b>EMR-OP96-AESB</b>	96 Balanced AES outputs with TDM inputs
<b>EMR-OP48-AESB</b>	48 Balanced AES outputs with TDM inputs
<b>EMR-OP48-AA</b>	48 Analog stereo outputs with TDM inputs
<b>EMR-OP96-LTC</b>	96 LTC outputs with TDM inputs
<b>EMR-OP48-LTC</b>	48 LTC outputs with TDM Inputs
<b>EMR-OP16-MADI</b>	16 MADI outputs with TDM inputs
<b>EMR-IO8-MADI</b>	8 MADI inputs with TDM outputs, and 8 MADI outputs with TDM inputs
<b>EMR-ADMX-48x48</b>	48 TDM inputs and 48 TDM outputs
<b>EMR-ADMX-16x16A</b>	16 TDM inputs and 16 TDM outputs

<b>7800EMR-ALINK2</b>	STUDER A-LINK - Evertz TDM Audio Router module
<b>7800FR</b>	3RU Multiframe (holds up to 15 single slot modules with AC power supply)
<b>7800FR-QT</b>	3RU Quiet Multiframe (holds up to 15 single slot modules with AC power supply)
<b>7801FR</b>	1RU Multiframe (holds up to 4 single or 2 dual slot modules with AC power supply)
<b>7800FR-48VDC</b>	3RU Multiframe (holds up to 15 single slot modules with 48V DC power supply)
<b>7800FR-ACDC</b>	3RU Multiframe (holds up to 15 single slot modules with AC and 48V DC power supply)

### Ordering Options (EMX)

<b>+6PS</b>	Redundant Power Supply for EMX6-FR
<b>+3PS</b>	Redundant Power Supply for EMX3-FR
<b>+DLY</b>	Audio delay

### Ordering Options (7800FR)

<b>+78P</b>	Redundant power supply for 7800FR
<b>+78PQT</b>	Redundant power supply for 7800FR-QT
<b>+781PS</b>	Redundant power supply for 7801FR
<b>+78PDC</b>	Redundant power supply for 7800FR-48VDC

### Accessories

<b>7800PS</b>	Additional power supply for 7800FR
<b>7800PS-QT</b>	Additional power supply for 7800FR-QT
<b>7801PS</b>	Additional power supply for 7801FR
<b>7800PS-48VDC</b>	Additional power supply for 7800FR-48VDC
<b>7800RS-15</b>	Rear 15" support kit for 3RU 7800 series frames
<b>7700FC/7800FC</b>	VistaLINK Frame Controller for 3RU 7800 series frames
<b>7800FR-QT-KIT1</b>	Kit to convert 7800FR with single power supply to 7800FR-QT
<b>7800FR-QT-KIT2</b>	Kit to convert 7800FR with dual power supply to 7800FR-QT

The Complete Solution Provider



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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 1536 x 1536 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

When combined with MAGNUM, 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, MADI destinations or A-LINK. The system also allows discrete audio sources from AES, analog, MADI or A-LINK 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, MADI audio and Studer A-LINK formats
- Sample rate conversion
- Processing capabilities for per channel gain, inversion, mono-mixing, quad-mixing and per channel audio delay
- Advanced audio monitoring for loss, silence, over, phase and mono
- Unique HD video output with audio level display for all audio inputs
- Mono breakaway mode support in panels, L and R channels can be routed to different outputs
- Mono mixing between L and R channels, swapping, L to both, R to both, analog phase inversion and gain

### Port Data Routing

- Support for RS-232 and RS-422 devices (selectable)
- 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
- 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 crosspoint
- Redundant power supply
- Comprehensive system monitoring bus
- VistaLINK® PRO SNMP monitoring of I/O modules

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### Specifications

#### Configuration:

AES inputs: Selectable in blocks of 96 or 48  
 AES outputs: Selectable in blocks of 96 or 48

Analog inputs: Selectable in blocks of 48 (stereo)  
 Analog outputs: Selectable in blocks of 48 (stereo)

MADI inputs: Selectable in blocks of 8 or 16  
 MADI outputs: Selectable in blocks of 8 or 16

A-link (bidirectional) Selectable in blocks of 2

LTC inputs: Selectable in blocks of 96 or 48  
 LTC outputs: Selectable in blocks of 96 or 48

RS-232/RS-422 ports: Selectable in blocks of 48 (RS-232 and RS-422 selectable)

#### Audio Inputs - AES:

Sample Rates: 44.1kHz, 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 ST 276-1  
 Impedance: 75Ω  
 Return Loss: 25dB, 0.1 - 6.0kHz  
 Connectors: DIN 1.0/2.3

#### Audio Outputs - AES:

Sample Rates: 44.1kHz, 48kHz

#### Balanced Version:

Signal Level: 2.0 – 7.0V p-p  
 Impedance: 110Ω, transformer coupled  
 DC Isolation: ±50V  
 Rise/fall Time: 3.5 – 10ns  
 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 (20Hz-20kHz range)  
 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 (20Hz-20kHz range)  
 Input Impedance: 12kΩ minimum  
 Signal Level: 0dBu 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 (20Hz-20kHz range)  
 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  
 Signal Level: 0.2 – 7V p-p  
 Connectors: D50 female

#### Data Output Port:

Type: RS-232 and RS-422, selectable  
 Signal Level: 2 – 7V p-p  
 Impedance: 110Ω  
 Connectors: D50 female

#### LTC Reader:

Standard: SMPTE ST 12-1  
 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 ST 12-1  
 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/RS-422 2x D9 female

#### Electrical:

EMX6-FR: Auto ranging, 100 ↔ 240 VAC, 50/60 Hz  
 AC Mains Input: 50/60 Hz

Max Operating Current: 9.5 A (@ 115 VAC nominal), 4.0 A (@ 220 VAC nominal)

#### Max Power Consumption:

850 W  
 Max Module Load: 650 W (40 W per slot)

#### Power Supply Configuration:

1 supply standard, optional redundant supply requires separate inlet  
 Connector: IEC 60320 - 1 per power supply

#### EMX3-FR:

AC Mains Input: Auto ranging, 100 ↔ 240 VAC, 50/60 Hz  
 Max Operating Current: 4.6 A (@ 100 V/60Hz), 1.85A (@ 240 V/50Hz)

#### Max Power Consumption:

450 W  
 Max Module Load: 360 W (24 W per slot)

#### Power Supply Configuration:

1 supply standard, optional redundant supply requires separate inlet  
 Connector: IEC 60320 - 1 per power supply

#### Maximum Module Load:

EMX3-FR: 360W (72W per slot)  
 EMX6-FR: 650W (43W per slot)  
 Fuses: 6.3 amps, 250 Volt ceramic time delay 5 x 20 mm – 2 per power supply

#### Physical:

Dimensions:  
 EMX3-FR: 19"W x 5.25"H x 15.75"D (483mm W x 133mm H x 400mm D)  
 EMX6-FR: 19"W x 10.5"H x 15.75"D (483mm W x 266mm H x 400mm D)  
 Temperature: 0-40°C

#### Module Capacity:

EMX3-FR: 5 single slot modules  
 EMX6-FR: 15 single slot modules

#### Weight:

EMX3-FR: 32lbs (14.5kg) Full  
 17.4lbs (8kg) Empty  
 EMX6-FR: 64lbs (29g) Full  
 34.8lbs (16kg) Empty

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## Ordering Information - EMR Audio Router

<b>EMX6-FR</b>	EMX 6RU Router Chassis with 15 slots
<b>EMX3-FR</b>	EMX 3RU Router Chassis with 5 slots
<b>EMX-FC</b>	EMX frame controller
<b>EMR-IP96-AESU</b>	96 Unbalanced AES inputs with TDM outputs
<b>EMR-IP48-AESU</b>	48 Unbalanced AES inputs with TDM outputs
<b>EMR-IP96-AESB</b>	96 Balanced AES inputs with TDM outputs
<b>EMR-IP48-AESB</b>	48 Balanced AES inputs with TDM outputs
<b>EMR-IP48-AA</b>	48 Analog stereo inputs with TDM outputs
<b>EMR-IP96-LTC</b>	96 LTC inputs with TDM outputs
<b>EMR-IP48-LTC</b>	48 LTC inputs with TDM outputs
<b>EMR-IP16-MADI</b>	16 MADI inputs with TDM outputs
<b>EMR-OP96-AESU</b>	96 Unbalanced AES outputs with TDM inputs
<b>EMR-OP48-AESU</b>	48 Unbalanced AES outputs with TDM inputs
<b>EMR-OP96-AESB</b>	96 Balanced AES outputs with TDM inputs
<b>EMR-OP48-AESB</b>	48 Balanced AES outputs with TDM inputs
<b>EMR-OP48-AA</b>	48 Analog stereo outputs with TDM inputs
<b>EMR-OP96-LTC</b>	96 LTC outputs with TDM inputs
<b>EMR-OP48-LTC</b>	48 LTC outputs with TDM Inputs
<b>EMR-OP16-MADI</b>	16 MADI outputs with TDM inputs
<b>EMR-IO8-MADI</b>	8 MADI inputs with TDM outputs, and 8 MADI outputs with TDM inputs
<b>EMR-ADMX-48x48</b>	48 TDM inputs and 48 TDM outputs
<b>EMR-ADMX-16x16A</b>	16 TDM inputs and 16 TDM outputs

<b>7800EMR-ALINK2</b>	STUDER A-LINK - Evertz TDM Audio Router module
<b>7800FR</b>	3RU Multiframe (holds up to 15 single slot modules with AC power supply)
<b>7800FR-QT</b>	3RU Quiet Multiframe (holds up to 15 single slot modules with AC power supply)
<b>7801FR</b>	1RU Multiframe (holds up to 4 single or 2 dual slot modules with AC power supply)
<b>7800FR-48VDC</b>	3RU Multiframe (holds up to 15 single slot modules with 48V DC power supply)
<b>7800FR-ACDC</b>	3RU Multiframe (holds up to 15 single slot modules with AC and 48V DC power supply)

### Ordering Options (EMX)

<b>+6PS</b>	Redundant Power Supply for EMX6-FR
<b>+3PS</b>	Redundant Power Supply for EMX3-FR
<b>+DLY</b>	Audio delay

### Ordering Options (7800FR)

<b>+78P</b>	Redundant power supply for 7800FR
<b>+78PQT</b>	Redundant power supply for 7800FR-QT
<b>+781PS</b>	Redundant power supply for 7801FR
<b>+78PDC</b>	Redundant power supply for 7800FR-48VDC

### Accessories

<b>7800PS</b>	Additional power supply for 7800FR
<b>7800PS-QT</b>	Additional power supply for 7800FR-QT
<b>7801PS</b>	Additional power supply for 7801FR
<b>7800PS-48VDC</b>	Additional power supply for 7800FR-48VDC
<b>7800RS-15</b>	Rear 15" support kit for 3RU 7800 series frames
<b>7700FC/7800FC</b>	VistaLINK Frame Controller for 3RU 7800 series frames
<b>7800FR-QT-KIT1</b>	Kit to convert 7800FR with single power supply to 7800FR-QT
<b>7800FR-QT-KIT2</b>	Kit to convert 7800FR with dual power supply to 7800FR-QT

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