

**MEDIUM ROUTERS - MRX SYSTEMS****FEATURES**

- Wide range of Sigma and third party control options
- Lowest cost per crosspoint in its class
- Separate 1 RU power frame supplies up to five routers
- Redundant power supply option
- Ideal for space limited applications
- Designed to meet the highest reliability standard
- Comprehensive Sigma five-year warranty



Medium in name only: Sigma MRX routers are full-featured, high quality routers that provide one level of 32x32 switching in just 1 RU. Digital, analog, audio, video, balanced, and terminating: these highly reliable routers accommodate all switching needs in a modular system that makes service a snap.

MRX systems can also be combined with other Sigma routing families utilizing the same extensive range of control panels and software control systems.

Each MRX system comes with a power and control frame (MRXPSF) that houses a system control interface (SCIMRX) and slots for four power supplies.

In conjunction with our SigMatriX software, the MRX can be programmed to initiate system salvo switching. This is especially useful in the event of EAS activation. The salvo is user determined and the EAS interface is controlled via contact closure.

Prices and specifications are subject to change without notice

# MEDIUM ROUTERS - MRX SYSTEMS

The specifications listed below apply to standard features and signal options for all MRX systems. MRX systems are available with most combinations of available signal types. To see our full list of available MRX systems, please visit our website at [www.sigmatechsys.com](http://www.sigmatechsys.com).

## SPECIFICATIONS

### ANALOG AUDIO - MRX16A, MRX24A, MRX32A

Input/Impedance	30 k $\Omega$ , balanced
Input Level	+24 dBu, maximum
Output Level	+24 dBu, max. into 600 $\Omega$ +26 dBu max. into high impedance
Frequency Response	$\pm 0.1$ dB 10 Hz to 30 kHz any level; $\pm 0.25$ dB to 100 kHz
Hum and Noise	<-90 dBu w/ 22 kHz low pass filter
THD	<0.05%, max., worst case at +24 dBu
Crosstalk	90 dB min. below referenced channel 10 Hz to 20 kHz, all inputs driven, 600 $\Omega$ loads, 110 dB typ.
Gain	Unity $\pm 0.2$ dB, 600 $\Omega$ termination
Connectors	3 pin pluggable terminals
Operating Temp.	0 $^{\circ}$ to 50 $^{\circ}$ celsius

### ANALOG VIDEO - MRX16V, MRX24V, MRX32V

Input/Impedance	75 $\Omega$ Terminated (VI-16T)
Input Level	1.4 V p-p maximum
Input Coupling	DC
Input Return Loss	35 dB minimum to 5 MHz
Input DC Offset	$\pm 0.3$ V
Tilt, Field, and Line	<1% maximum
Output Impedance	75 $\Omega$ , source terminated
Output Level	1.4 V p-p maximum
Output Coupling	DC
Frequency Response	$\pm 0.1$ dB from DC to 25 MHz
Bandwidth	50 MHz
Hum and Noise	-65 dB rms below 1Vp-p
Differential Phase	<0.15 $^{\circ}$ at 4.43 MHz 10-90% APL
Differential Gain	<0.15% at 4.43 MHz 10-90% APL
Input Gain Variation	< $\pm 0.15$ dB maximum
Crosstalk	>40 dB below 1V p-p @ 5 MHz
Connectors	BNC
Operating Temp.	0 $^{\circ}$ to 50 $^{\circ}$ celsius

### DIGITAL AUDIO - MRXCDAF, MRXTDAF

Signal Type	AES-3id 1995 (unbalanced) AES-3 1992 (balanced)
Connectors	75 $\Omega$ BNC (unbalanced) 3 pin removable terminal block (balanced)
Inputs	Single-ended, terminated, 1 V p-p max. (unbalanced) Differential, terminated, 7 V p-p max. (balanced)
Input Return Loss	15 dB min. from 0.1 MHz to 6.0 MHz (unbalanced)
Input Impedance	75 $\Omega$ from 0.1 MHz to 6.0 MHz (unbalanced) 110 $\Omega$ ( $\pm 20\%$ ) from 0.1 MHz to 6.0 MHz (balanced)
Input Cable Length	1000ft. max. (unbalanced) 500 ft. max. (balanced)
Outputs	Single ended, 1 V p-p max. (unbalanced) Differential, 7 V p-p max. (4.3 V p-p typical) (balanced)
Output Impedance	75 $\Omega$ from 0.1 MHz to 6.0 MHz (unbalanced) 110 $\Omega$ ( $\pm 20\%$ ) from 0.1 MHz to 6.0 MHz (balanced)
Output Return Loss	15 dB min. from 0.1 MHz to 6.0 MHz (unbalanced)
Rise and Fall Time	30 ns < tr < 44ns, 10% to 90% (rise) 30 ns < tf < 44ns, 10% to 90% (fall) (unbalanced) 5 ns < tr < 30ns, 10% to 90% (rise) 5 ns < tf < 30ns, 10% to 90% (fall) (balanced)
Serial Data Rates	3.072 Mb/s max. (Fs = 48 kHz max.)
Serial Data Jitter	$\pm 20$ ns p-p max.
Reclocking	Automatic
Input CMR	7V peak from DC to 20kHz (balanced)
Output Common Mode Noise	30 dB min. below signal from DC to 6 MHz (balanced)
Electrical Length	80 nsec typical
Operating Temp.	0 $^{\circ}$ to 50 $^{\circ}$ celsius

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## SPECIFICATIONS (CONT.)

### DIGITAL VIDEO - MRXDVF

Signal Type	SMPTE259M
Connectors	75 $\Omega$ BNC
Inputs	Single-ended, terminated, 800 mV p-p
Input Return Loss	15 dB minimum from 5 MHz to 270 MHz
Equalization	Auto, 750 ft. (Belden 1694A or equivalent)
Outputs	800 mVp-p max. ( $\pm 10\%$ )
Outputs Return Loss	15 dB min. from 5 MHz to 270 MHz
Output DC Offset	0.0 V $\pm 0.5$ V
Rise and Fall Time	0.4 ns < tr < 1.50 ns, 20%-80% (rise time) 0.4 ns < tf < 1.50 ns, 20%-80% (fall time)  tr-tf  < 0.5 ns (difference of tr and tf < 0.5 ns
Overshoot	Max. 10% of total amplitude
Serial Jitter	500 ps p-p max.
Reclocking	Automatic
Electrical Length	11 ns typical
Operating Temp.	0 $^{\circ}$ to 50 $^{\circ}$ celsius

### MECHANICAL

Dimensions (1 Frame)	1.75" H x 19" W 10" D
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### POWER AND CONTROL FRAME

AC Input Voltage	100-240 VAC, 50-60 Hz
AC Input Connectors	3 pin IEC (2 total per frame)
Power Supply Type	AC-DC switching, forced air cooling
Max. Removable	2 in non-redundant configuration
Supplies	4 in redundant configuration
DC Outputs	2 per MRXPSU ( 8 total per frame)
DC Output Connectors	4 pin for MRX analog 6 pin for MRX digital
DC Output Voltage	Dual $\pm 18$ VDC for MRX analog Dual +18 VDC for MRX digital
AC Input Power	85 W supplying max. load for MRX digital systems 60 W supplying max. load for MRX analog systems 120 W supplying max. load for MRX analog and digital systems
Operating Temp.	0 $^{\circ}$ to 50 $^{\circ}$ celsius

### SCIMRX

Data Trans. System	RS-232 and RS-422
Serial Port Baud Rate	Up to 57.6 Kb baud
Control Levels	Four or Eight
Communications Line	Coaxial, up to 2000 feet
Control Panels	Up to 64 on 2 communication lines
Number of Salvos	Up to 10 from Master Control Panel
Protocol	Simple ASCII, supports Xon/Xoff
External Sync Ref. Connectors	Composite sync or blackburst BNC for comm. line and external sync 9 pin "D" for serial port

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