MODULAR MULTI-PLANE MATRIX SWITCHER

SMX SYSTEM MULTIMATRIX

Truly modular, field-configurable matrix switching system

- Field reconfigurable and updatable card cage frame design
- Selection of matrix cards in most common signal types and I/O sizes:
  - Stereo Audio
  - Composite Video
  - S-Video
  - VGA
  - Wideband RGB
  - 3G HD-SDI
  - DVI
  - HDMI
  - Fiber Optic
- RS-232 and IP Link® Ethernet control

Extron® Electronics

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Introduction

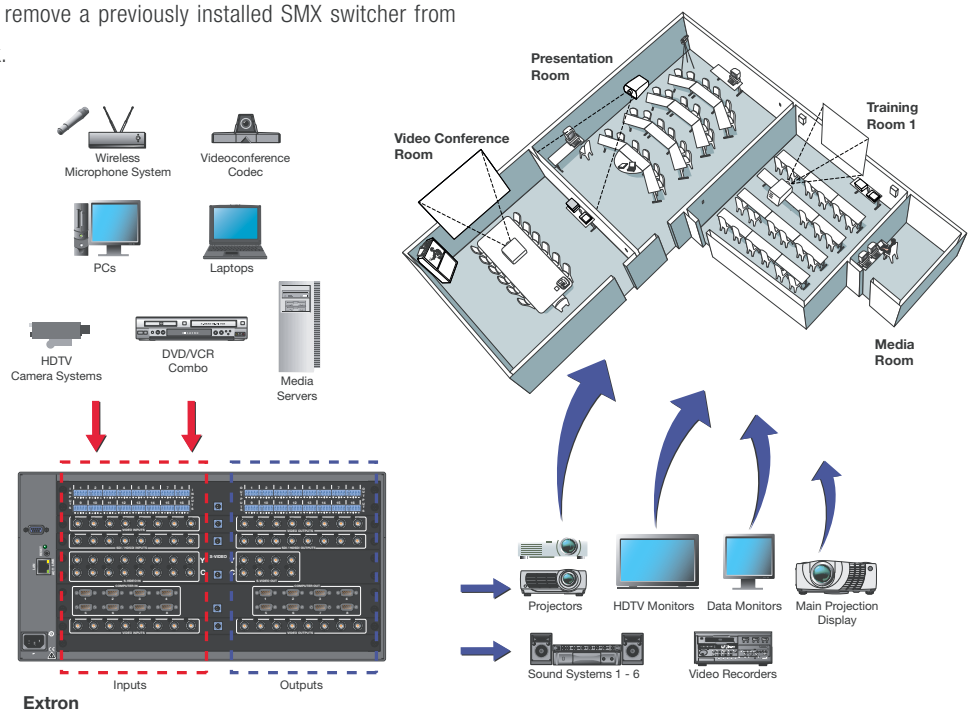
The **SMX System MultiMatrix** Series of multi-plane matrix switchers combines multiple, independent analog and digital matrix switchers in a truly modular, field-configurable frame. It supports up to 10 independent matrix switchers, all under a single point of control. The SMX combines the proven reliability and high performance of Extron's popular CrossPoint, MAV Plus, HDXP Plus, and MVX Series matrix switchers with the efficiency of a modular matrix switcher design. The SMX System is an ideal choice for medical imaging systems, conference and training facilities, and other mid-sized applications that require the switching of different signal types, a small footprint, and a cost-effective upgrade path for ongoing I/O or signal format changes.

The heart of the SMX System MultiMatrix is a field re-configurable frame designed to facilitate the installation of new and replacement matrix switcher boards with a minimum of time and labor. The unique, hot-swappable card-cage design quickly aligns each matrix board on its own horizontal plane. Matrix boards can be installed without switcher disassembly, new firmware, or even the need to remove a previously installed SMX switcher from the rack.

Three frames, available in 3U, 4U, and 5U sizes, provide six, eight, and ten slots, respectively. Simply select the combination of analog, wideband, digital, and stereo audio matrix boards that best fit the application, and then install them in any order. As A/V signal routing needs change over time, choose new matrix boards to adapt the SMX to the new requirements.

In a conference center application, such as the one depicted below, A/V signal routing can require five or more separate matrix switchers - each with its own control panel and power supply. In addition to a large, complex A/V equipment rack, such a system design also requires a very complex control system, with a separate control port for each matrix switcher. With the SMX System MultiMatrix, these same, varied signal routing tasks can be consolidated, with one control point for the entire A/V signal routing system.

The SMX System MultiMatrix also requires significantly less rack space than a traditional, multiple switcher system. Many of the matrix boards require only one-half unit of rack space, allowing two separate switchers to be mounted in the same space as most small, standalone matrix switchers.



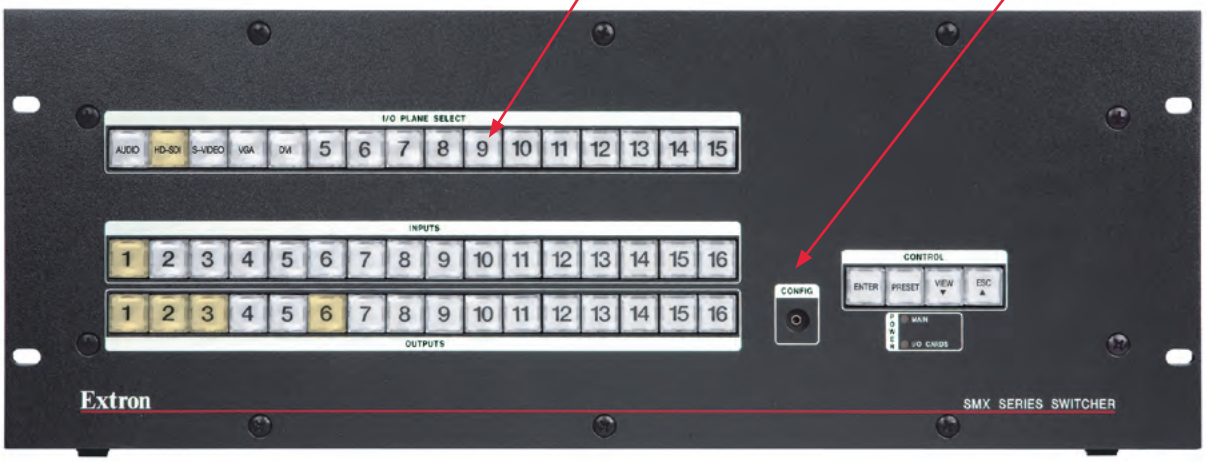
Extron
SMX System MultiMatrix
Modular Multi-Plane Matrix Switcher

Overview

Single Point of Control
Select any of up to 10 separate switchers from the front control panel, RS-232, or IP Link

Back-lit input/output selection buttons
I/O selection and crosspoint ties are easily identifiable using back-lit buttons with clear overlay labels, enabling simple front panel operation

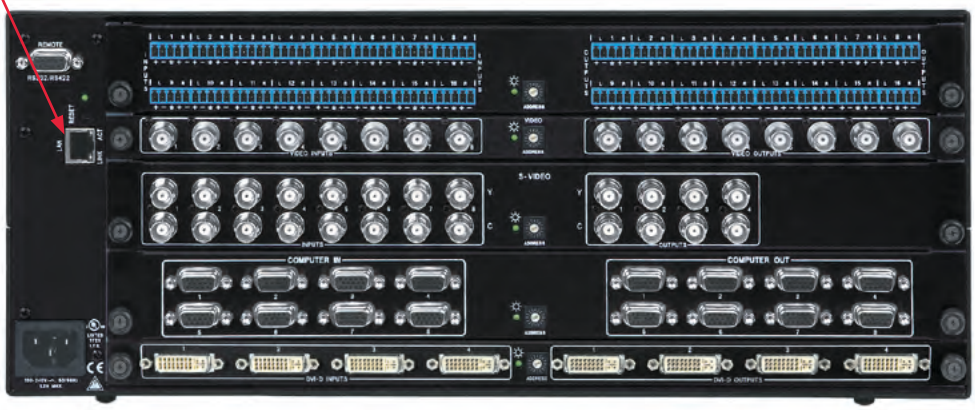
Configuration Port
The SMX MultiMatrix can be conveniently set up and configured after installation, using the front panel serial configuration port



IP Link Ethernet control enables the SMX to be managed and proactively monitored from any authorized Web client

Hot-Swappable Back Plane
Matrix boards can be installed or removed at any time without disrupting other switcher planes

Truly Modular and Field-Configurable
Modular, multi-plane chassis design supports multiple, independent switchers in any configuration



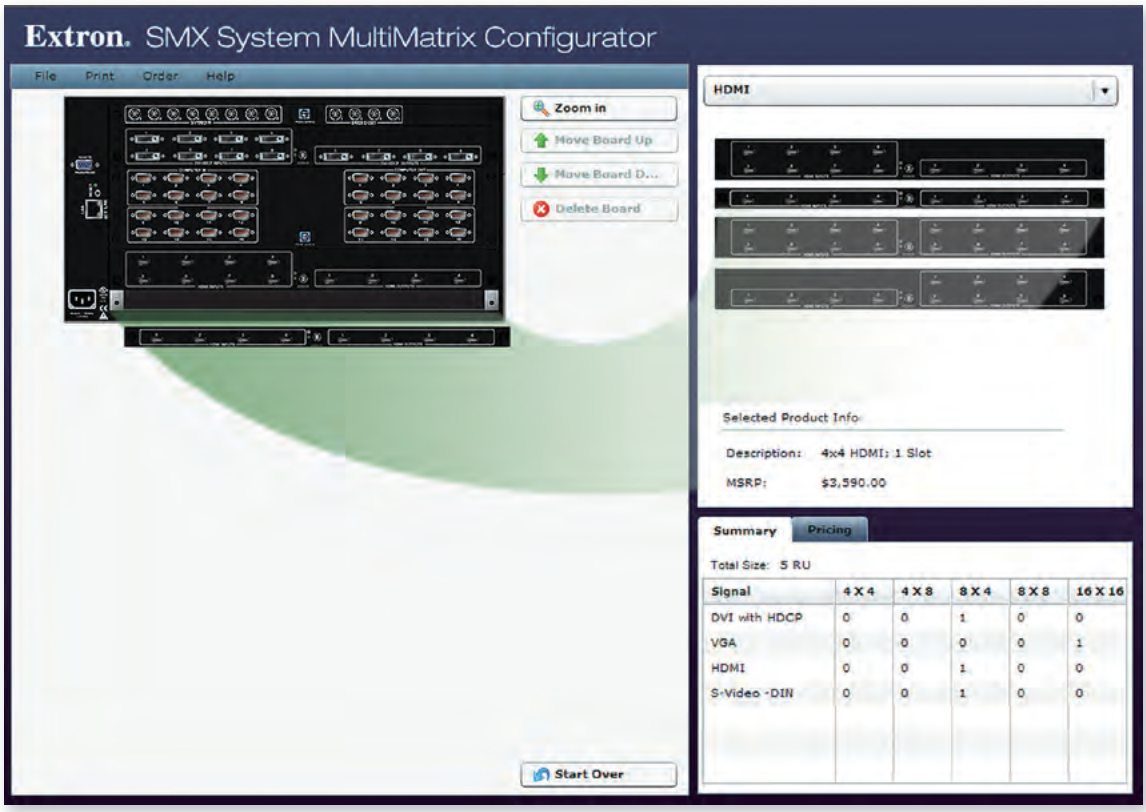
SMX 300 - 3U with 6 slots

SMX 400 - 4U with 8 slots

SMX 500 - 5U with 10 slots

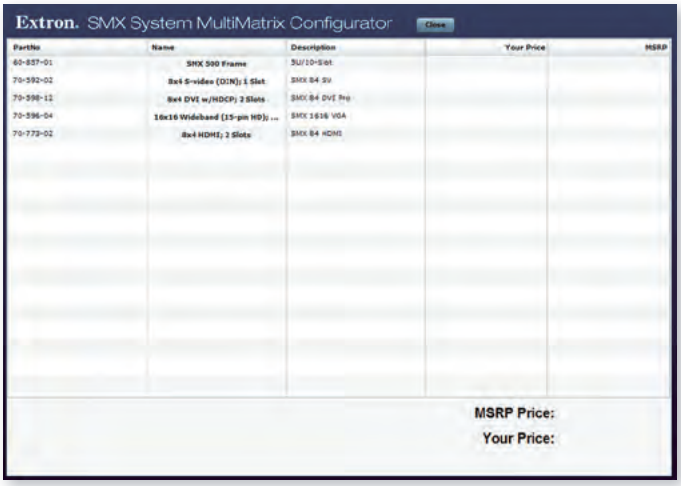
Online Configurator

The SMX Matrix Configurator is an online configuration utility that allows you to virtually configure different SMX switchers, with the click of a mouse, using the Extron Web site. The dynamic, graphical user interface makes system customization easy. As you configure each SMX, a running price total and bill of materials reflects the changes in your system design. You can save system designs for later recall, print the designs and bills of material, or export them to Microsoft Excel®. Extron resellers can order configured systems online through the Extron Reseller-only Web site. This simple yet powerful configuration tool makes it easy to create and purchase an SMX System MultiMatrix for virtually any analog or digital signal routing need.



The Web-Based SMX Matrix Configurator features:

- **Point-and-click or drag-and-drop simplicity** – Simply drag matrix boards into the frame and click to rearrange or delete
- **Dynamic parts list and price total** – Automatically maintains a list of the SMX Frame and matrix boards selected, and a running total of the as-configured price
- **Single, as-built part number** – Provides a unique identifier for each SMX configuration you order, simplifying the process for future orders of the same configuration
- **Save and Recall** – Creates an as-configured drawing and bill of materials for system documentation of client approval requirements
- **Export to Excel** – SMX pricing and materials data can be exported to Microsoft Excel® for billing, tracking, or archive purposes
- **Order online** – Once configured to your specifications, the SMX System MultiMatrix can be ordered online through the Extron Reseller-only Web site



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Matrix Board Removal and Replacement

The SMX System MultiMatrix combines multiple, independent analog and digital matrix switchers in a modular, field-configurable frame system. Matrix boards are hot-swappable and can be installed, removed, or replaced in 3 easy steps, without disrupting the operation of other switcher planes.

Step 1

For new installations: Loosen the screws retaining the cover plate over the slot(s) that will receive the new matrix switcher board. Remove the cover plate.

To remove a previously installed matrix board: Disconnect the cables from the board. Loosen the screws retaining the matrix board and remove it from the frame.

Step 1

Step 2

Slide in the new matrix board. Make sure that the new board is fully seated. Tighten the screws just until snug against the plate and attach the cables.

Step 2

Step 3

Set the rotary switch, located in the center of the matrix board, to the number reflecting the switching plane for the new matrix board.

Note: For RGBHV systems, set the rotary switch to the same plane number for each board. This will allow the boards to switch as a single switcher.

Step 3

Initializing the new matrix board

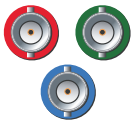
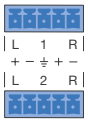
The SMX control panel firmware automatically recognizes the new matrix board or boards without disrupting the operation of other switching planes. The auto-recognition sequence takes approximately 45 seconds, after which the new matrix board is ready for use.

SMX 4U

SMX Matrix Boards

Matrix switcher boards are available to support a wide variety of video and audio signal formats. The SMX System MultiMatrix supports up to 10 independent matrix switchers, all under a single point of control.

SMX ANALOG MATRIX SWITCHER BOARDS

Signal Type	Description	I/O Size
 Composite Video	**Composite Video Matrix Switcher Boards** • 150 MHz (-3 dB) video bandwidth, fully loaded • NTSC, PAL, and SECAM compatible • Video input signal detection • Vertical interval switching and genlock • Use three boards for analog component video up to 720p and 1080i	Model / Version / Part# SMX 84 V — 8x4 Composite video; 1 Slot — 70-591-02 SMX 88 V — 8x8 Composite video; 1 Slot — 70-591-03 SMX 1616 V — 16x16 Composite video; 2 Slots — 70-591-04
 S-video	**S-video Matrix Switcher Boards** • 150 MHz (-3 dB) video bandwidth, fully loaded • NTSC, PAL, and SECAM compatible • Video input signal detection	Model / Version / Part# SMX 84 SV — 8x4 S-video (DIN); 1 Slot — 70-592-02 SMX 88 SV — 8x8 S-video (DIN); 1 Slot — 70-592-03 SMX 1616 SV — 16x16 S-video (DIN); 2 Slots — 70-592-04
 S-video	**S-video (2 BNC) Matrix Switcher Boards** • 150 MHz (-3 dB) video bandwidth, fully loaded • NTSC, PAL, and SECAM compatible • Video input signal detection	Model / Version / Part# SMX 84 YC — 8x4 S-video (2 BNC); 2 Slots — 70-593-02 SMX 88 YC — 8x8 S-video (2 BNC); 2 Slots — 70-593-03 SMX 1616 YC — 16x16 S-video (2 BNC); 4 Slots — 70-593-04
 VGA	**Wideband VGA Matrix Switcher Boards** • 350 MHz (-3 dB) RGB video bandwidth • Triple Action Switching™ for RGB delay • ADSP™ Advanced Digital Sync Processing technology • DSVP™ Digital Sync Validation Processing	Model / Version / Part# SMX 84 VGA — 8x4 Wideband (15-pin HD); 2 Slots — 70-596-02 SMX 88 VGA — 8x8 Wideband (15-pin HD); 2 Slots — 70-596-03 SMX 1616 VGA — 16x16 Wideband (15-pin HD); 4 Slots — 70-596-04
 Ultra-Wideband Video	**Ultra Wideband Matrix Switcher Boards** • 400 MHz (-3 dB) RGB video bandwidth • Triple Action Switching™ for RGB Delay • Use three boards for HD analog component video up to 1080p	Model / Version / Part# SMX 84 WB — 8x4 Wideband (BNC); 1 Slot — 70-594-02 SMX 88 WB — 8x8 Wideband (BNC); 1 Slot — 70-594-03 SMX 1616 WB — 16x16 Wideband (BNC); 2 Slots — 70-594-04
 Sync	**Sync Matrix Switcher Boards** • Designed for RGBHV matrix switching applications • ADSP™ Advanced Digital Sync Processing technology • DSVP™ Digital Sync Validation Processing	Model / Version / Part# SMX 88 SYNC — 8x8 Single-channel Sync; 1 Slot — 70-595-03 SMX 1616 SYNC — 16x16 Single-channel Sync; 2 Slots — 70-595-04 SMX 88 H+V — 8x8 H+V Sync; 2 Slots — 70-595-05
 Stereo Audio	**Stereo Audio Matrix Switcher Boards** • Switches balanced or unbalanced stereo audio signals • Audio input gain and attenuation • Audio output volume adjustment and muting • Audio breakaway	Model / Version / Part# SMX 84 A — 8x4 Stereo Audio; 1 Slot — 70-599-02 SMX 88 A — 8x8 Stereo Audio; 1 Slot — 70-599-03 SMX 1616 A — 16x16 Stereo Audio; 2 Slots — 70-599-04

SMX Matrix Boards

SMX DIGITAL MATRIX SWITCHER BOARDS

Signal Type	Description	I/O Size
 HD-SDI	**Multi-Rate Serial Digital Matrix Switcher Boards** • Complies with all SMPTE and ITU standards for Serial Digital video • Supports data rates from 19 Mbps to 2.97 Gbps, including 3G-SDI • Input equalization to 300 feet (100 m) or more • User-selectable reclocking	Model / Version / Part# SMX 44 HD-SDI / 4x4 Multi-Rate SDI; 1 Slot / 70-597-01 SMX 84 HD-SDI / 8x4 Multi-Rate SDI; 1 Slot / 70-597-02 SMX 88 HD-SDI / 8x8 Multi-Rate SDI; 1 Slot / 70-597-03 SMX 1616 HD-SDI / 16x16 Multi-Rate SDI; 2 Slots / 70-597-04
 DVI	**DVI Matrix Switcher Boards** • Single-link DVI-D data rates to 165 MHz • Supports computer-video to 1920x1200, HDTV to 1080p • EDID Minder automatically manages display ID communication between source and display • Provides +5VDC, 250mA power on each output for external peripheral devices • Input cable equalization to 100' (30 m) at 1920x1200 • Automatic output reclocking	Model / Version / Part# SMX 44 DVI / 4x4 DVI-D; 1 Slot / 70-598-01 SMX 48 DVI / 4x8 DVI-D; 2 Slots / 70-598-05 SMX 84 DVI / 8x4 DVI-D; 2 Slots / 70-598-02 SMX 88 DVI / 8x8 DVI-D; 2 Slots / 70-598-03
 DVI	**HDCP Compliant DVI Matrix Switcher Boards** • HDCP compliant • Single-link DVI-D data rates to 165 MHz • Supports computer-video to 1920x1200, HDTV to 1080p • EDID Minder automatically manages display ID communication between source and display • Provides +5VDC, 250mA power on each output for external peripheral devices • Input cable equalization to 100' (30 m) at 1920x1200 • Automatic output reclocking	Model / Version / Part# SMX 44 DVI Pro / 4x4 DVI-D/HDCP; 1 Slot / 70-598-11 SMX 48 DVI Pro / 4x8 DVI-D/HDCP; 2 Slots / 70-598-15 SMX 84 DVI Pro / 8x4 DVI-D/HDCP; 2 Slots / 70-598-12 SMX 88 DVI Pro / 8x8 DVI-D/HDCP; 2 Slots / 70-598-13
 HDMI	**HDMI Matrix Switcher Boards** • HDCP compliant • Supports computer-video to 1920x1200, HDTV to 1080p • EDID Minder automatically manages display ID communication between source and display • Provides +5VDC, 250mA power on each output for external peripheral devices • Input cable equalization to 100' (30 m) at 1920x1200 • Automatic output reclocking	Model / Version / Part# SMX 44 HDMI / 4x4 HDMI; 1 Slot / 70-773-01 SMX 48 HDMI / 4x8 HDMI; 2 Slots / 70-773-05 SMX 84 HDMI / 8x4 HDMI; 2 Slots / 70-773-02 SMX 88 HDMI / 8x8 HDMI; 2 Slots / 70-773-03
 Fiber Optic	**Fiber Optic Matrix Switcher Boards** • Fully compatible with Extron FOX Series Fiber Optic Extender product line • High speed digital switching up to 4.25 Gbps • Input video signal detection • Alarm notification for fiber link loss • Industry-standard LC connectors • MM - Multimode and SM - Singlemode versions available	Model / Version / Part# SMX 88 FOX 4G MM / 8x8 Multimode; 1 Slot / 70-634-03 SMX 88 FOX 4G SM / 8x8 Singlemode; 1 Slot / 70-635-03 SMX 1616 FOX 4G MM / 16x16 Multimode; 2 Slots / 70-634-04 SMX 1616 FOX 4G SM / 16x16 Singlemode; 2 Slots / 70-635-04

Specifications

SMX Enclosures – SMX 300 Frame, SMX 400 Frame, SMX 500 Frame

CONTROL/REMOTE – SWITCHER HOST PORTS

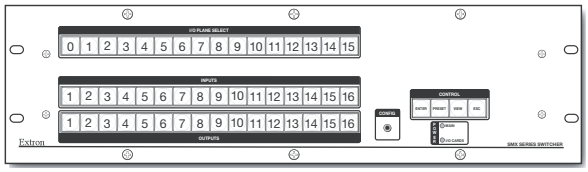
Serial host control port	1 bidirectional RS-232 or RS-422, rear panel 9-pin female D connector 1 bidirectional RS-232 front panel 2.5 mm mini stereo jack
Baud rate and protocol	9600 (default), 19200, 38400, 115200 baud (adjustable); 8 data bits, 1 stop bit, no parity
Serial control pin configurations	
9-pin female D connector	
RS 232	2 = TX, 3 = RX, 5 = GND
RS 422	2 = TX-, 3 = RX-, 5 = GND, 7 = RX+, 8 = Tx+
Mini stereo jack	
RS-232	Tip = TX, ring = RX, sleeve = GND
Ethernet control port	1 RJ-45 female
Ethernet data rate (for network communication)	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP
Ethernet default settings	Link speed and duplex level = autodetected IP address = 192.168.254.254, subnet mask = 255.255.0.0, default gateway = 0.0.0.0 DHCP = off
Web server	Up to 200 simultaneous sessions 2 MB nonvolatile user memory
Program control	Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer ver. 6 or higher, Telnet

GENERAL

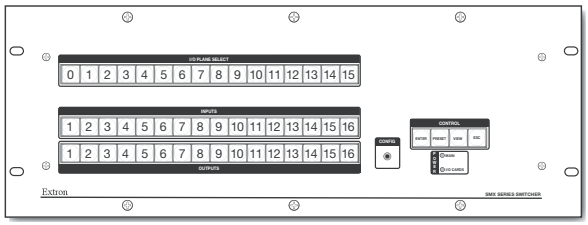
Power	100 VAC to 240 VAC, 50/60 Hz, 200 watts, internal
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Forced air, left to right (as viewed from front panel)
Rack mount	Yes
Enclosure type	Metal
Enclosure dimensions (Depth excludes connectors. Width excludes rack ears.)	
SMX 300 BME	5.25" H x 17.0" W x 12" D (3U high, full rack wide) 13.3 cm H x 43.2 cm W x 30.5 cm D
SMX 400 BME	7.0" H x 17.0" W x 12" D (4U high, full rack wide) 17.8 cm H x 43.2 cm W x 30.5 cm D
SMX 500 BME	8.75" H x 17.0" W x 12" D (5U high, full rack wide) 22.2 cm H x 43.2 cm W x 30.5 cm D
Product/Shipping/DIM weight	
3-U chassis with cards installed	
Unit weight	16.80 lbs
Shipping weight	22.00 lbs
Dim Weight	25.00 lbs
4-U chassis with cards installed	
Unit weight	20.30 lbs
Shipping weight	26.00 lbs
Dim Weight	25.00 lbs
5-U chassis with cards installed	
Unit weight	23.90 lbs
Shipping weight	30.00 lbs
Dim Weight	25.00 lbs
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

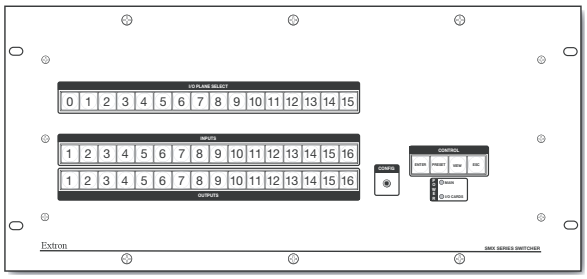
Model	Version Description	Part number
SMX 300 Frame	3U/6-slot frame	60-855-01
SMX 400 Frame	4U/8-slot frame	60-856-01
SMX 500 Frame	5U/10-slot frame	60-857-01



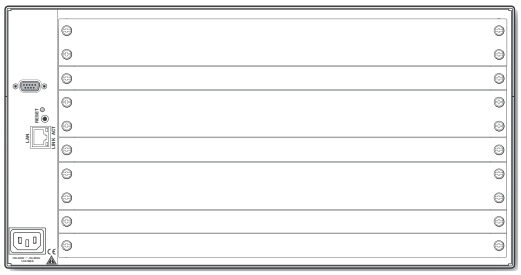
SMX 3U



SMX 4U



SMX 5U



SMX 5U Back

Specifications are subject to change without notice. For full specifications see www.extron.com.

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