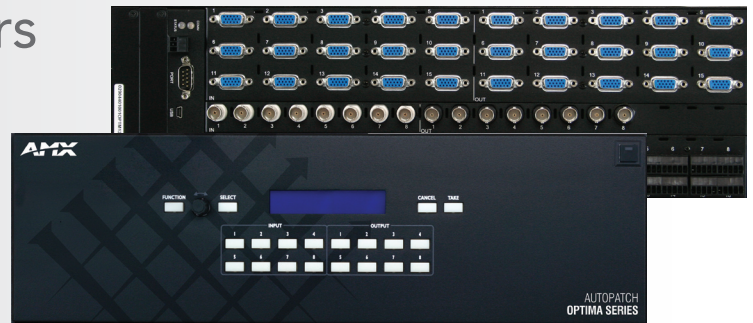


## AutoPatch Matrix Switchers

# Optima mix-and-match

analog / digital / CatPro  
matrix switcher



**This unique mix-and-match style matrix switcher has more than 50 board options. Simply choose the boards that fit your integration puzzle and populate the enclosure with any combination of boards.**

#### CONSOLIDATE SPACE WHILE EXPANDING CONTROL

Eliminate multiple small matrix switchers with one Optima switching system and combine everything under a single control view. This allows ultimate routing flexibility, consolidates power consumption, saves rack space, uses a single RS-232 connection on your control master and much more.

#### SUPERIOR PERFORMANCE

Manage the signal distribution for an entire facility with a single routing system without sacrificing quality. The Optima maintains the Ultra-Flat bandpass and superior specifications AutoPatch is known for whether the system has a single signal type or every available signal type.

- Ultra-Flat Response
- RS-232 control port; simple BCS serial control protocol
- Optional TCP/IP control via APWeb
- Choice of front panel control or blank front panel
- Standard volume control (analog audio)
- Virtual Matrix technology allows endless possible breakaway and "signal follow signal" user defined routing scenarios
- Groupings, macros, and global and local presets

#### BOARD OPTIONS\*

4x2, 4x4, 4x8  
8x4, 8x8  
16x16, 16x24  
20x4, 20x20  
24x4, 24x16  
36x4

#### AVAILABLE SIGNAL TYPES\*

Composite, S-video, Y/c  
HDTV, Y/Pb/Pr, YUV  
RGB, RGsB, RGBS, RGBHV  
SD-SDI, HD-SDI, DVI  
Mono audio, Stereo audio  
S/PDIF, TosLink,  
AES 75 Ω

RGBHV + Stereo (in) to CatPro (RJ-45) out

\*The available I/O range for each signal type may vary. Please see the complete "Optima Configuration Guide on [www.amx.com](http://www.amx.com) for a complete board list and simple mix-and-match configuration instructions.



## GENERAL

AC Power:	100-240 VAC single phase, 50-60 Hz
Power Consumption (max):	125 Watts per loaded enclosure
Humidity:	0 to 90% non-condensing
Operational Temperature:	32° to 110° F (0 to 43° C)
Enclosure Dimensions:	12" (30.5 cm) depth
	17.4" (44.2 cm) width without mounting ears
	18.9" (48 cm) width with mounting ears
Height:	3.5" (8.9 cm) height 2 RU
Weight:	10 lbs (4.54 kg) per loaded enclosure 2 RU
Height:	5.2" (13.21 cm) height 3 RU
Weight:	12 lbs (5.44 kg) per loaded enclosure 3 RU
Approvals:	CE, UL, CUL

## STANDARD AUDIO

Input Level (max):	+22 dBu, balanced
Input Impedance:	18 k $\Omega$
Output Level (max):	+22 dBu, balanced
Output Impedance:	50 $\Omega$
Frequency Response:	<+/-0.2 dB 20 Hz to 20 kHz
THD + Noise:	<0.03% (20 Hz to 20 kHz, Vin = -10 to +10 dBu), <0.01% (20 Hz to 20 kHz, Vin = 0 to +22 dBu)
Signal to Noise Ratio:	>120 dB (20 Hz to 20 kHz, Vin = +20 dBu)
Crosstalk:	<-110 dB (1 kHz, Vin = +20 dBu) Output Volume Control
Adjustment Range:	+10 dB to -70 dB (mute)
Connectors:	5T

## DIGITAL AUDIO (S/PDIF &amp; TosLink)

Resolution:	16 to 24 bit
Sample Rate:	32 kHz, 44.1 kHz, 48 kHz, 96 kHz
Rise & Fall Time:	<20 nS
Jitter:	<5 nS
Input Signal Amplitude:	0.2 Vpp to 2.5 Vpp terminated (S/PDIF)
Output Signal Amplitude:	0.4 Vpp to 1.0 Vpp terminated into 75 $\Omega$ (S/PDIF)
CDR (Reclocking):	Yes
Connectors:	S/PDIF (RCA) & TosLink (optical)

## STANDARD VIDEO

Input Level (max):	+/-5 V (unterminated) +/-2.5 V (terminated)
Input Impedance:	75 $\Omega$
Output Level (max):	+/-5 V (unterminated) +/-2.5 V (terminated)
Output Impedance:	75 $\Omega$
Frequency Response:	50 MHz or better (+/-3dB) 15 MHz or better (+/-1 dB)
Crosstalk:	<-60 dB (f = 5 MHz)
Differential Gain:	<0.2% or better (f = 3.58 MHz)
Differential Phase:	<0.2° or better (f = 3.58 MHz)
Signal to Noise Ratio:	> 65 dB (Vin = 0.7 V, 100% IRE)
Connectors Options:	BNC, S-video

## WIDEBAND VIDEO

Input Level (max):	+/-3 V (unterminated) +/-1.5 V (terminated)
Input Impedance:	75 $\Omega$
Output Level (max):	+/-3 V (unterminated) +/-1.5 V (terminated)
Output Impedance:	75 $\Omega$
Frequency Response:	300 MHz or better (+/-3 dB) 100 MHz or better (+/-1.5 dB)
Crosstalk:	<-60 dB (f = 5 MHz) <-35 dB (f = 150 MHz)
Signal to Noise Ratio:	> 65 dB (Vin = 0.7 V, 100% IRE)
Connector Options:	BNC, HD-15

## DIGITAL VIDEO (SD-SDI/HD-SDI)

Standard (SD - SDI):	Conforms to SMPTE 259M
Standard (HD - SDI):	Conforms to SMPTE-259M & SMPTE-292M
Input Impedance:	75 $\Omega$
Input Level (max):	0.8 Vpp, +/-10%
Output Impedance:	75 $\Omega$
Output Level (max):	0.8 Vpp, +/-10%
Timing Jitter:	<0.1 UI @ 360 Mbps (SD - SDI) <0.1 UI @ 1.485 Gbps (HD - SDI)
Alignment Jitter:	<0.1 UI @ 360 Mbps (SD - SDI) <0.1 UI @ 1.485 Gbps (HD - SDI)
Rise and Fall Time:	600 ps, +/-100 ps
Rise and fall overshoot:	<0.1%
Bit Rates (SD - SDI):	143 Mbps, 177 Mbps*, 270 Mbps, 360 Mbps, 540 Mbps* Data not available for 177 & 540 Mbps bit rate)
Bit Rates (HD - SDI):	143 Mbps, 177 Mbps*, 270 Mbps, 360 Mbps, 540 Mbps*, 1.485 Gbps (Data not available for 177 & 540 Mbps bit rate)
Data Type:	8 bit or 10 bit
Auto Cable Equalization (SD - SDI):	Up to 350m of Belden 8281 or equivalent @ 270 Mbps
Auto Cable Equalization (HD - SDI):	Up to 140m of Belden 1694A or equivalent at 1.485 Gb/s Up to 100m of Belden 8281 or equivalent at 1.485 Gb/s
CDR (Reclocking):	Yes
Connectors:	BNC

## DIGITAL VIDEO (DVI)

Pixel Bandwidth (Bit Rate):	1.65 Gbps Resolution Support
(CRTs and Flat Panels):	Up to 1600x1200 @ 60 Hz refresh rate
Specification Compliant:	DVI 1.0, DVI-D
Skew Tolerance:	Up to one pixel clock cycle (high clock and data jitter tolerance)
DDC Support:	Provided by the Optima
Connectors:	DVI-I (DVI-D is the supported signal type) *540 Mbps is untested

## RGBHV + Stereo In to CatPro Out

Signal Types:	Input: RGBHV + Stereo Audio (HD-15 & 5T) Output: CatPro RGBHV + Stereo Audio (RJ-45)
Maximum Resolution:	1600x1200(4:3) and 1920x1080p(16:9) @ 60Hz up to 1000 ft
RGB In Signal Level Range (max):	+0.75 V to -0.3 V typical (terminated)
RGB Out Signal Level Range (max):	+0.75 V to -0.3 V typical (terminated, user adjustable with gain and peak using CatPro Receiver)
RGB Out Skew Adjustment:	0 to 62 ns, in 2 ns increments on RGB channels (user adjustable using CatPro Receiver)
RGB In/Out Impedance:	75
RGB SNR:	> 50 dB (Vin = 0.7 V, 100% IRE)
RGB Crosstalk:	< -60 dB (f = 5 MHz) < -45 dB (f = 30 MHz)
Sync In Impedance:	2.2k
Sync In/Out Polarity:	Active High or Low (output follows input polarity) Sync
Out Signal Levels:	Low = 0 V, High = +5 V (unterminated)
Audio In/Out Signal Type:	Stereo, Balanced or Unbalanced In / Unbalanced Out
Audio In/Out Signal Level (max):	+8 dBu
Audio In Impedance:	18k
Audio Output Impedance:	< 5
Audio Frequency Response:	< $\pm$ 0.3 dB, 20 Hz to 20 kHz
Audio THD+N:	< 0.04 %, 1 kHz, -10dBu to +4dBu
Audio Crosstalk:	< -95 dB (1 kHz, Vin = +4 dBu)
Audio SNR:	> 85 dB, 20 Hz to 20 kHz Vin = +8dBu
Audio Out Volume Adj. Range:	Mute to +6 dB (user adjustable at CatPro Receiver)
Compatible Cable Types:	RGBHV + Stereo Out Connector Female RJ-45 Category Cable 5, 5e, 6, 6e, UTP, and STP * * All measurements were taken using Cat5e Cable



IT'S YOUR WORLD. TAKE CONTROL.