SATURN
Matrix Switcher

- Ultra-Flat Response
- Choice of front panel control or blank front panel
- RS-232/422 control port
- Breakaway
- Virtual Matrix Levels
- Programmable macro functions
- Global and local presets
- Groupings
- Optional volume control
- Optional SYNC input for vertical interval switching
- Optional redundant power supply
- Linkable enclosures
- Rack mounting ears included
- Audio connections support balanced or unbalanced

The SATURN is designed for flexibility, I/O boards simply slide into place as needed to increase matrix size. This can be done at the time of purchase, or later in the field. Multiple signal types in various I/O ranges can be combined in the same enclosure (as space allows) or in the same system via linking enclosures.

ULTRA-FLAT RESPONSE
The video frequency response in the Saturn is a tight +/- 3 dB, unlike other manufacturers who specify only –3 dB to allow for the use of excessive peaking, damaging the signal, to record a wider bandwidth.

CUSTOMIZABLE
The Saturn is available in multiple enclosure types: 32x32 enclosures for routing up to 32x32 per signal type, skewed enclosures that provide a cost-effective solution for installations with very uneven I/O requirements, enclosures that accommodate CAT-5 conversion and routing, and enclosures that utilize HD-15 connectors to pass RGBHV in 1/3 the rack space of traditional BNC connectors.

VIRTUAL MATRIX
For even more flexibility virtual matrix programming levels allow multiple enclosures to be treated as a single system, or single enclosures to be treated as multiple independent routers.

MULTIPLE CONTROL OPTIONS
Choose from local control panel or blank front panel. All models come with standard RS-232/422 control port.

RGB SPECTRUM®
a visual communications company™

SATURN | 32x32

Simply build your system in increments of 4 inputs and/or outputs (up to 32x32) in each available signal type. Multiple signal types can be combined in the same enclosure (as space allows) or in the same system via linking enclosures. With routing boards built into the enclosure, I/O boards simply slide into place as needed to increase matrix size at the time of purchase, or in the field.
Conversion and routing of composite, S-video and stereo over CAT-5 is also available within the Saturn. Systems can be configured with composite, S-video and stereo (in) to CAT-5 (out), or CAT-5 (in) to composite, S-video and stereo (out). For even more flexibility inputs can be switched out to either (e.g. S-video inputs can be switched between S-video outputs and S-video over CAT-5 outputs). Routing of RGBHV over CAT-5 is easily handled in the Saturn when paired with RGB Spectrum transmitters and receivers.

I/O RANGE

4x4, 4x8, 4x12, 4x16, 4x20, 4x24, 4x28, 4x32
8x4, 8x8, 8x12, 8x16, 8x20, 8x24, 8x28, 8x32
12x4, 12x8, 12x12, 12x16, 12x20, 12x24, 12x28, 12x32
16x4, 16x8, 16x12, 16x16, 16x20, 16x24, 16x28, 16x32
20x4, 20x8, 20x12, 20x16, 20x20, 20x24, 20x28, 20x32
24x4, 24x8, 24x12, 24x16, 24x20, 24x24, 24x28, 24x32
28x4, 28x8, 28x12, 28x16, 28x20, 28x24, 28x28, 28x32
32x4, 32x8, 32x12, 32x16, 32x20, 32x24, 32x28, 32x32

SIGNAL TYPES

Composite, S-video, Y/c
HDTV, Y/Pb/Pr, YUV
RGB, RGsB, RGBS, RGBHV
SD-SDI, HD-SDI
Mono audio, Stereo audio
Microphone audio
S/PDIF, AES 75 Ω
RS-422 control signal routing
RGBHV over CAT-5
Conversion and routing of composite,
S-video and stereo over CAT-5.

SATURN | 4x60 / 60x4

The Saturn skewed enclosures are the most cost-effective solution for systems with very uneven I/O requirements. With routing boards built into the enclosure, I/O boards simply slide into place as needed to increase matrix size at the time of purchase, or in the field. And, as with all Saturn systems multiple signal types in various I/O ranges can be combined in the same system.
For even more flexibility RGB Spectrum technology allows three boards (4 connectors per board) in each enclosure to change from inputs to outputs, or outputs to inputs, in the field. (e.g. a 4x60 can be reconfigured with new boards to a 16x48).

I/O RANGE

4x36, 4x40, 4x44, 4x48, 4x52, 4x56, 4x60
8x36, 8x40, 8x44, 8x48, 8x52, 8x56
12x36, 12x40, 12x44, 12x48, 12x52
16x36, 16x40, 16x44, 16x48
36x4, 36x8, 36x12, 36x16
40x4, 40x8, 40x12, 40x16
44x4, 44x8, 44x12, 44x16
48x4, 48x8, 48x12, 48x16
52x4, 52x8, 52x12
56x4, 56x8
60x4

SIGNAL TYPES

Composite, S-video, Y/c
HDTV, Y/Pb/Pr, YUV
RGB, RGsB, RGBS, RGBHV
Mono audio, Stereo audio
Microphone audio
S/PDIF, AES 75 Ω

GENERAL

AC Power:	100-240 VAC single phase, 47-63 Hz
Power Consumption (max):	240 Watts per loaded enclosure
Operational Temperature:	32° to 110° F (0° to 43° C)
Humidity:	0 to 90% non-condensing
Enclosure Dimensions:	17” (43.18 cm) depth 17.4” (44.2 cm) width without mounting ears 18.8” (47.7 cm) width with mounting ears
Height:	5.2” (13.0 cm) 3 RU
Weight:	Appx. 22 lbs (9.98 kg) per loaded enclosure
Approvals:	CE, UL, cUL, FCC

STANDARD AUDIO

Input Level (max):	+22 dBu, balanced
Input Impedance:	18 kΩ
Output Level (max):	+22 dBu, balanced
Output Impedance:	50 Ω
Frequency Response:	<+/- 0.1 dB (20 Hz to 20 kHz)
THD + Noise:	<0.02% (20 Hz to 20 kHz, Vin = -10 to +22 dBu), no volume control <0.03% (20 Hz to 20 kHz, Vin = -10 to +22 dBu), volume control
Crosstalk:	<-95 dB (1 kHz, Vin = +20 dBu)
Signal to Noise Ratio:	>110 dB (20 Hz to 20 kHz, Vin = +20 dBu)
Input Gain Adj. Range:	-6 dB to + 6dB
Output Gain Adj. Range:	-10 dB to + 6dB
Output Volume Control Adj.	+10 dB to -70 dB (muted) Connector Options: 3T, 5T

STANDARD VIDEO

Input Level (max):	+/- 2.5 Volts
Input Impedance:	75 Ω
Output Level (max):	+/- 2.5 Volts
Output Impedance:	75 Ω
Frequency Response:	50 MHz or better (+/- 3 dB) 20 MHz or better (+/- 1 dB)
Crosstalk:	<-50 dB (f = 5 MHz)
Connectors:	BNC

WIDEBAND VIDEO

Input Level:	+/- 1.0 Volts
Input Impedance:	75 Ω
Output Level:	+/- 1.0 Volts
Output Impedance:	75 Ω
Frequency Response:	300 MHz or better (+/- 3 dB) 200 MHz or better (+/- 1.5 dB) 60 MHz or better (+/- 1 dB)
Crosstalk:	<-60 dB (f = 5 MHz) <-30 dB (f = 150 MHz)
Sync Input/Output Level:	TTL
Connectors:	BNC

DIGITAL VIDEO (SD-SDI & HD-SDI)

SD-SDI:	Conforms to SMPTE-259M
HD-SDI:	Conforms to SMPTE-259M & SMPTE-292M
Input Level (max):	0.8 V +/- 10%
Input Impedance:	75 Ω
Output Impedance:	75 Ω
Output Level (max):	0.8 Vpp +/- 10%
Timing Jitter:	<0.1 UI @ 360 Mbps (SD-SDI) <0.2 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
Bit Rates (SD-SDI):	143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps, 540Mbps*
Bit Rates (SD-SDI):	143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps, 540 Mbps*, 1.485 Gbps
Data Type:	8 bit or 10 bit
Auto Cable Equalization:	Up to 350m of Belden 8281 or equivalent at 270 Mbps (SD-SDI)
Auto Cable Equalization:	Up to 104m of Belden 1694 @ 1.485 Gbps
Reclocking:	Yes
Connectors:	BNC

STANDARD AUDIO* (CAT-5)

Input Level (max):	+22 dBu, balanced + 8 dBu, unbalanced
Input Impedance:	18 kΩ
Output Level (max):	+22 dBu, balanced + 8 dBu, unbalanced
Output Impedance:	50 Ω
Frequency Response:	<+/- 0.2 dB (20 Hz to 20 kHz)
THD + Noise:	<0.04% (f = 20 Hz to 20 kHz, Vin = -10 dBu to +22 dBu), balanced <0.03% (f = 20 Hz to 20 kHz, Vin = -10 dBu to +8 dBu), unbalanced
Signal to Noise Ratio:	>110 dB (20 Hz to 20 kHz, Vin = +20 dBu), balanced >90 dB (20 Hz to 20 kHz, Vin = +4 dBu), unbalanced
Crosstalk:	<-90 dB @ 1 kHz, Vin = +20 dBu, balanced <-85 dB @ 1kHz, Vin = +2 dBu, unbalanced
Signal Type:	Will route stereo or mono audio
Connector Options:	5T to RJ-45, RJ-45 to 5T, or RJ-45 to RJ-45

STANDARD VIDEO** (CAT-5)

Input Level (max):	+/- 1 Volts
Input Impedance:	75 Ω
Output Level (max):	+/- 1 Volts
Output Impedance:	75 Ω
Frequency Response:	35 MHz or better (+/- 3dB), 3’ CAT-5, 5e, 6 15 MHz or better (+/- 3dB), 300’ CAT-5, 5e, 6 10 MHz or better (+/- 3dB), 1000’ CAT-5, 5e, 6
Crosstalk:	<50 dB (f = 5 MHz)
Differential Gain:	<0.2% or better (f = 3.58 MHz, 10-90% APL)
Differential Phase:	<1° or better (f = 3.58 MHz, 10-90% APL)
Signal to Noise Ratio:	> 65 dB (Vin = 0.7 V, 100% IRE)
Signal Type:	Composite, S-video
Connector Options(S-video):	S-video to RJ-45, RJ-45 to S-video, or RJ-45 to RJ-45
Connector Options(composite):	BNC to RJ-45, RJ-45 to BNC, or RJ-45 to RJ-45

WIDEBAND VIDEO** (CAT-5)

Input Level (max):	+/- .5 Volts
Input Impedance:	75 Ω
Output Level (max):	+/- .5 Volts
Output Impedance:	75 Ω
HV Sync Input / Output:	TTL
Resolution:	From VGA (640x480) to UXGA (1600x1200 @ 60Hz) over all distances ≤400 feet
Signal Type:	RGBHV
Connectors:	RJ-45 to RJ-45

*Balanced specifications are measured in conjunction with RGB Spectrum balanced stereo transmitter/receiver pair, unbalanced specifications are measured in conjunction with RGB Spectrum unbalanced transmitter/receiver pair. For additional information and free design assistance please contact RGB Spectrum.

**All video specifications are measured in conjunction with RGB Spectrum transmitter/ receiver pairs. The RGBHV series of CAT-5 products is intended for use in systems where the complete signal path does not contain more than one transmitter and one receiver, with or without a switcher. For additional information and free design assistance please contact RGB Spectrum.

SATURN | Series4

Designed to route RGBHV over HD-15 connections. A single 4 rack unit enclosure can hold up to 32x32 RGBHV at 1/2 the cost of the traditional BNC model. For even more flexibility audio boards, and video boards using traditional BNC connectors, can be combined in the same enclosure (as space allows), or in the same system via linking enclosures. The Saturn Series4 maintains a consistent high bandwidth linearity (300 MHz at +/-3 dB) and low crosstalk.

I/O RANGE

4x4, 4x8, 4x12, 4x16, 4x20, 4x24, 4x28, 4x32
8x4, 8x8, 8x12, 8x16, 8x20, 8x24, 8x28, 8x32
12x4, 12x8, 12x12, 12x16, 12x20, 12x24, 12x28, 12x32
16x4, 16x8, 16x12, 16x16, 16x20, 16x24, 16x28, 16x32
20x4, 20x8, 20x12, 20x16, 20x20, 20x24, 20x28, 20x32
24x4, 24x8, 24x12, 24x16, 24x20, 24x24, 24x28, 24x32
28x4, 28x8, 28x12, 28x16, 28x20, 28x24, 28x28, 28x32
32x4, 32x8, 32x12, 32x16, 32x20, 32x24, 32x28, 32x32

SIGNAL TYPES

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

SATURN Series4 Specifications

GENERAL

AC Power:	100-240 VAC single phase, 47-63 Hz
Power Consumption (max):	240 Watts per loaded enclosure
Operational Temperature:	32° to 110° F (0° to 43° C)
Humidity:	0 to 90% non-condensing
Enclosure Dimensions:	17” (43.18 cm) depth 17.4” (44.2 cm) width without mounting ears 18.8” (47.7 cm) width with mounting ears
Height:	7” (17.8 cm) 4 RU
Weight:	Appx. 22-24 lbs (9.98-10.88 kg) per loaded enclosure
Approvals:	CE, UL, cUL, FCC

STANDARD AUDIO

(See Saturn 32x32 Specifications)

STANDARD VIDEO, WIDEBAND VIDEO

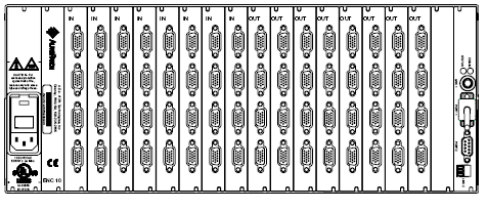
(See Saturn 32x32 Specifications)

RGBHV OVER HD-15 CONNECTORS

Input/Output Level (max):	+/- 1 Volts
I/O Impedance:	75 Ω
Frequency Response:	300 MHz or better (+/- 3 dB)
Crosstalk:	< -50 (f = 5 MHz) / < -30 (f = 150 MHz)
Sync I/O Level:	TTL

SATURN | Series4 FEATURES

- Ultra-Flat Response
- Choice of front panel control or blank front panel
- RS-232/422 control port
- Breakaway
- Virtual Matrix Levels
- Programmable macro functions
- Global and local presets
- Groupings
- Optional volume control
- Optional SYNC input for vertical interval switching
- Optional redundant power supply
- Linkable enclosures
- Rack mounting ears included
- Audio connections support balanced or unbalanced



32x32 RGBHV (HD-15 connectors) 4 RU
1 of thousands of possible configurations

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