VGA Video/Audio Matrix Switch
VEEMUX®

Switch audio and video from many computers among multiple monitors and speakers

- Configure and control the switch through Ethernet, serial port or front panel buttons.
- NTI Switch Control Program with Graphical User Interface (GUI control) is included.
- Equipped with Liquid Crystal Display (LCD) and RS232 Control.
- Switch VGA video directly. Each output provides one video signal and one stereo audio signal.
- Each input can be independently connected to any or all outputs.
- Video bandwidth is 200 MHz or greater.
- Supports 1920x1200 video resolution at a refresh rate of 85 Hz.
- Crestron® compatible.

The VEEMUX switch is the ideal solution for any application where information from many computers is being presented, such as:

- Digital signage.
- Classrooms.
- Boardrooms.
- Trade shows.
- Conference and entertainment facilities.
- Courtrooms.
- Command centers.
- Control rooms.

DIGITAL SIGNAGE

VEEMUX® SM-8X8-AV-LCD (Front and Back)

The VEEMUX® SM-nXm-AV-LCD audio/video matrix switch routes audio and video input from many computers to multiple displays (projectors, monitors, etc.) and speakers. This switch can drive standard VGA cables, thus eliminating the need for external interfaces and coax cable connections via BNC connectors.

Signals from a range of input sources can be distributed to various output devices. A single computer video output can be routed to one or more monitors. Each video output is buffered from each input, ensuring signal integrity throughout the system. When switching ports, the audio automatically mutes until the video has been synchronized. The audio can also be muted on command.

Specifications

Video Input
- Female 15-pin HD connectors.
- Impedance: 75 Ohms.

Video Output
- Female 15-pin HD connectors.
- 1920x1200 video resolution with no degradation.
- Impedance: 75 Ohms.
- Bandwidth: 200 Mhz, fully loaded.

Audio Input
- 3.5mm stereo audio jacks.
- Impedance: 10k Ohm.
- Maximum Input Level: 1 Vrms or 2.5Vp-p.

Audio Output
- 3.5mm stereo audio jacks.
- Drives 8-Ohm speakers.
- Unbalanced Gain: user defined.
- Frequency Response: 20 Hz to 20 kHz, ±0.5 dB.
- Total Harmonic Distortion + Noise: 0.01% at 1kHz.
- Gain Adjustment: -20 dB to +10 dB in 2 dB steps.
- 200 mW RMS of continuous power per output.
- When switching ports, audio mutes until video has been synchronized.

Regulatory Approvals
- CE, FCC, RoHS

Environmental
- Operating temperature: 32°F to 100°F (0°C to 38°C)
- Storage temperature: -20°F to 140°F (-30°C to 60°C)
- Operating/storage relative humidity: 17 to 90% non-condensing RH.

Power
- 110 or 220 VAC at 50 or 60 Hz via IEC connector. (Country-specific power supply cable included.)

Power Consumption			
Model	Watts	Model	Watts
8x4	15	16x16	30
8x8	20	32x2	20
16x2	15	32x16	35

MTBF			
Model	Hours	Model	Hours
8x4	59,106	16x16	48,879
8x8	54,568	32x2	49,923
16x2	62,031	32x16	42,025

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Built-In Control Methods

Front Panel Interface

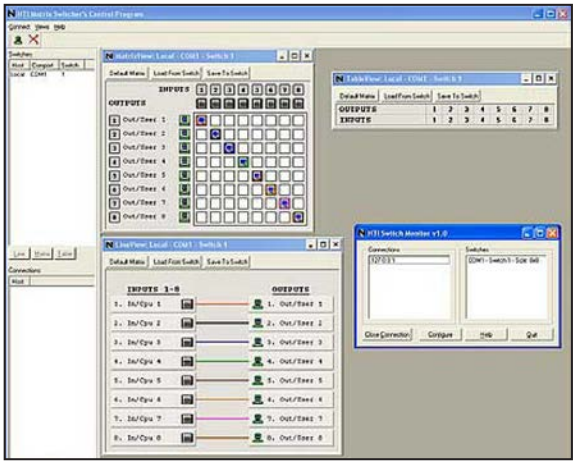
- Configuration and control can be done using the front panel buttons.
- Keypad allows selection of the input source to be routed to the desired outputs.
- LED Matrix Display visually shows which inputs are connected to which outputs. (Available on the 8x8, 16x8, 16x12, 16x16, 32x8 and 32x16 video matrix switches.)

RS232 Control

- Standard control method.
- Configuration and control can be done through the serial port.
- Baud rate: 1200 through 9600.
- Address up to 15 units with one serial port.
- Changes multiple input-to-output connections quickly and efficiently.

Matrix Control Software

- Supports Microsoft WindowsÂ® 95/98/NT/ME/2000/XP/Vista/7.
- Intuitive graphical software provides fast switch control of up to 15 NTI switches using an RS232 connection.
- Control switches with simple drag-n-drop interfaces.
- Supports control over daisy-chained configurations.
- Save and load feature allows frequently used matrix switch configurations to be recalled with the click of a button.
  - Up to nine configurations can be saved/recalled from the switch's internal memory.
- Automatically displays status for all attached switches each time the program is started.
- Auto-Update: the view will automatically update when the switch changes configuration.
- Includes HTML help feature.
- View and control multiple switches simultaneously with three unique and powerful views:
  - Matrix View
  - Table View
  - Line View



Screen Shot of the NTI Switch Control Program with GUI interface

Ethernet

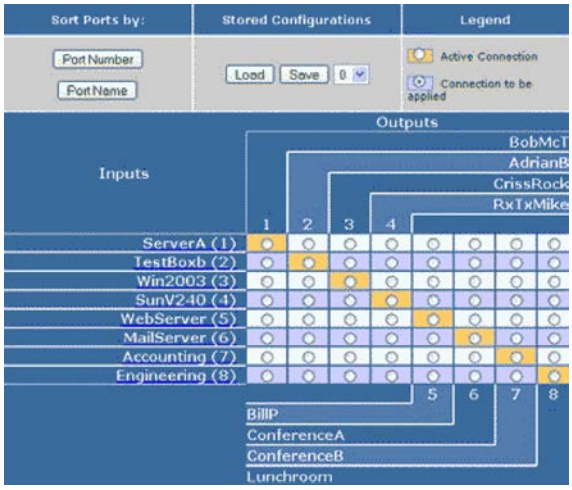
- Standard control method. Available on all models except desktop units.
- Female RJ45 connector.
- 10/100 BaseT Ethernet interface.
- Supported protocol: HTTP, HTTPS, Telnet.
- Configuration and control can be done over the Internet via Web Server or Telnet.

Web Server

- Password (optional SSL encryption) and Administrator configurable timeout to ensure security.
- Up to 25 users can be logged into the web page at one time.
- Users and administrators can access the following pages:
  - Switch page – connect any input to any output, save and recall up to 10 connection configurations, force compensation on all ports. Ports can be listed in order by port name or port number.
  - Change password page – administrator and users can change their password.
  - Help page – review documentation on the usage of the web interface.
  - Update Webserver page – restart the webserver to resynchronize all settings with the VEEMUX proper.
  - Logout page – view currently active users and logout of the web interface.
- The Administrator can access the following Administrative only pages:
  - Web setup page – configure IP address, subnet mask and timeout.
  - Serial setup page – configure serial speed and serial settings.
  - Ports settings page – assign names to inputs/outputs.
  - Update Firmware page – load firmware updates.

Telnet

- Security is ensured by the Administrative password.
- Commands are similar to RS232 commands.
- The telnet server listens on ports 2000 and 2005.
  - Port 2000 is for an operator telnet session.
  - Port 2005 is intended for a software control type session.



Screen Shot of Web interface

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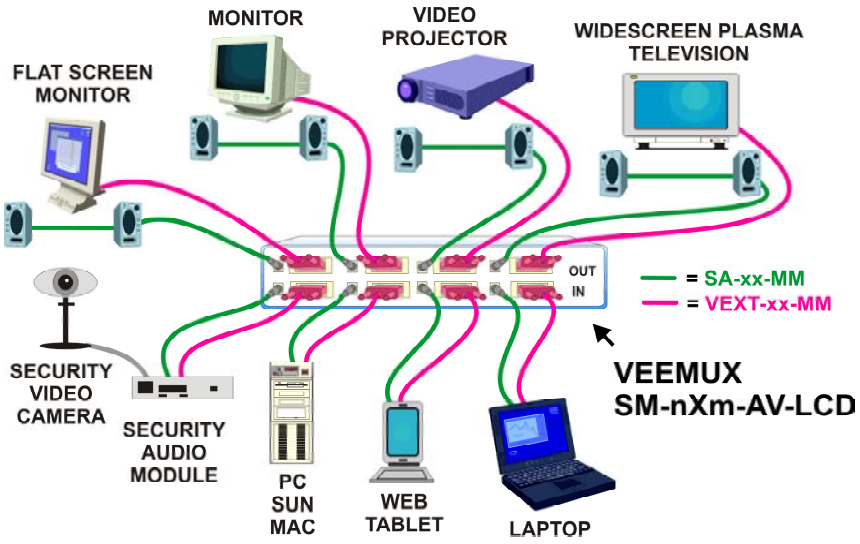
Configuration and Cable Illustration



Ordering Specifications

Audio/Video Matrix Switch

This example explains the VEEMUX switch part number by breaking it down into the available options. When ordering, choose the options that you require.

	Number of Inputs (Computers)		Number of Outputs (Monitors)		Audio/Video		Optional Control Method
SM -	*n*	X	*m*	-	AV	- LCD	- IR
	"n" = 8, 16, 32		"m" = 2, 4, 8, 12, 16			LCD = Liquid Crystal Display Standard	IR = Infrared

Audio/Video Matrix Switch Models

NTI Part #	# of Audio/ Video Inputs (n)	# of Audio/ Video Outputs (m)	Rack Units	Rack Size WxDxH
SM-8X4-AV-LCD	8	4	2RU	19x10x3.5 in. (482x254x89 mm)
SM-8X8-AV-LCD	8	8	2RU	19x12x3.5 in. (482x305x89 mm)
SM-16X2-AV-LCD	16	2	2RU	19x10x3.5 in. (482x254x89 mm)
SM-16X16-AV-LCD	16	16	3RU	19x12x5.25 in. (482x305x133 mm)
SM-32X2-AV-LCD	32	2	4RU	19x12x7 in. (482x305x178 mm)
SM-32X16-AV-LCD	32	16	4RU	19x12x7 in. (482x305x178 mm)

Cables

- Interface cables between the computers and the switch are required for proper operation.
- Recommended NTI video cables:
  - VGA interface cable (VEXT-xx-MM).
  - VGA to BNC cable (VINT-5B-6).
- Recommended NTI audio cables.
  - SA-xx-MM
- Cables not included.

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