VIDEO MATRIX SWITCH

Switch video from many computers among multiple monitors

VEEMUX® SM-8X8-15V-LCD (Front and Back)

Features and Applications

The VEEMUX® Video Matrix Switch routes video from many computers to multiple displays (projectors, monitors, etc.). 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, in essence creating a "matrix" pattern of interconnection possibilities. A single computer video output can be routed to one or more monitors. Each image will be as crisp and clear as if directly connected to the original source. Each video output is buffered from each input, insuring signal integrity throughout the system.

- Configure and control the switch through Ethernet, serial port or front panel buttons.
  - Control switching via optional Infrared remote control.
- Matrix Control Software with Graphical User Interface is included.
- Equipped with Liquid Crystal Display (LCD) for front panel operation.
- Inputs and outputs can be named.

- Switch VGA video directly.
- Each output provides one video signal.
- Each input can be independently connected to any or all outputs.
- Video bandwidth is 200 MHz or greater, fully loaded.
- Supports 1920x1200 video resolution at a refresh rate of 85 Hz.

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

- Classrooms.
- Boardrooms.
- Trade shows.
- Conference and entertainment facilities.

- Digital signage.
- Courtrooms.
- Command centers.
- Control rooms.

Specifications

Video Input

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

Power

- 110 or 220 VAC at 50 or 60 Hz via IEC connector.
- The smaller models use AC adapters as their power source.

Video Output

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

Environmental

- Operating temperature: 0°C to 38°C (32°F to 100°F).
- Storage temperature: -30°C to 60°C (-20°F to 140°F).
- Operating and Storage Relative Humidity: 17 to 90% non-condensing RH.

Regulatory Approvals

- Rackmount units: CE, FCC, RoHS
  - The 4x2, 4x4, 8x2, 8x4 are also UL and cUL
- Desktop units: RoHS

Warranty

- Two years.

Power Consumption

NTI Part #	Power (W)	NTI Part #	Power (W)
SM-4X2-15V-LCD	5	SM-4X2-15V-LCD-DT	5
SM-4X4-15V-LCD	10	SM-4X4-15V-LCD-DT	10
SM-8X2-15V-LCD	10	SM-8X2-15V-LCD	10
SM-8X4-15V-LCD	10	SM-8X4-15V-LCD-DT	10
SM-8X8-15V-LCD	15	SM-16X2-15V-LCD	10
SM-16X4-15V-LCD	15	SM-16X8-15V-LCD	15
SM-16X12-15V-LCD	20	SM-16X16-15V-LCD	25
SM-32X2-15V-LCD	15	SM-32X4-15V-LCD	15
SM-32X8-15V-LCD	15	SM-32X16-15V-LCD	30

NETWORK TECHNOLOGIES INCORPORATED

☎ **800.RGB.TECH (800.742.8324)**
Toll Free: US & Canada

330.562.7070
International calls

Switch video from many computers among multiple monitors

MTBF

NTI Part #	MTBF (hrs)	NTI Part #	MTBF (hrs)
SM-4X2-15V-LCD	92,988	SM-4X2-15V-LCD-DT	89,275
SM-4X4-15V-LCD	89,874	SM-4X4-15V-LCD-DT	86,360
SM-8X2-15V-LCD	68,657	SM-8X2-15V-LCD	77,896
SM-8X4-15V-LCD	65,960	SM-8X4-15V-LCD-DT	74,442
SM-8X8-15V-LCD	60,588	SM-16X2-15V-LCD	69,698
SM-16X4-15V-LCD	66,636	SM-16X8-15V-LCD	62,739
SM-16X12-15V-LCD	58,909	SM-16X16-15V-LCD	56,694
SM-32X2-15V-LCD	59,708	SM-32X4-15V-LCD	54,080
SM-32X8-15V-LCD	56,080	SM-32X16-15V-LCD	51,163

Configuration and Cable Illustration

Use Existing Cable

VEXT-xx-MM
(VGA Male-Male Cable)

SM-4x4-15V-LCD
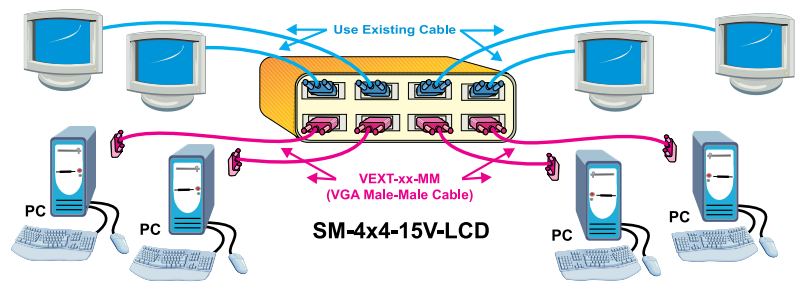
Built-In Control Methods

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

- 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.

Commands

- CC - save connection configuration.
- RC - recall conncetion configuration.
- RV - read switch type and version.
- CS - causes one INx/OUTx connection to occur.
- CA - causes all inputs to connect to specified output.
- RO - reads what input is connected to specified output.
- RU - reads size of matrix, reports number of inputs and number of outputs on specified switch.
- EA - set the IP address.
- EM - set the IP mask.
- EG - set the default gateway.
- ET - set the webserver timeout.
- GO* - read input connected to specified output.
- GM* - read input connected to all outputs.
- SS* - enables/disables port change auto status.

*Not GUI compatible.

Ethernet

- Available on all models except desktop units.
- Female RJ45 connector.
- 10/100 BaseT Ethernet interface.
- Supported protocols: 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.

330.562.1999
Worldwide fax

**email** sales@ntigo.com

www.networktechinc.com

VIDEO MATRIX SWITCH

Switch video from many computers among multiple monitors

Matrix Control Software

- Supports Microsoft Windows® 95/98/NT/ME/2000/XP.
- Intuitive graphical software provides fast switch control of up to 15 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.
- Inputs and outputs can be named.
- 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.
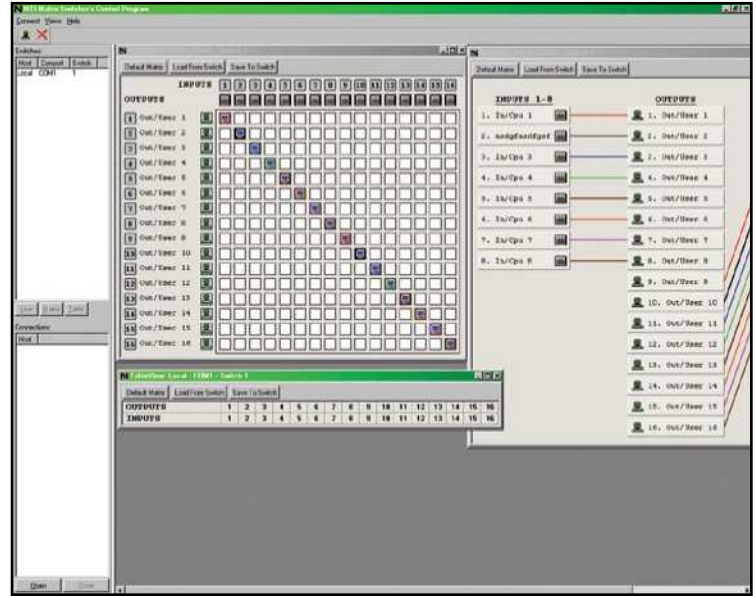
Screen shot of NTI's matrix control management software with a GUI interface.

Desktop Option

VEEMUX SM–8X4–15V–LCD-DT (Front and Back)

- Optional feature. Only available on the 4x2, 4x4, 8x2 and 8x4 video matrix switches.
- Add "-DT" to part number to specify this option.

Infrared Control Option

IRT-64X32 – Infrared remote control for video matrix switches controls up to 64 inputs and 32 outputs.

- Up to 64 inputs and 32 outputs can be controlled.
- Transmitter can be up to 15 meters away.
- Control up to 4 switches with one remote.
  - Controls a maximum of 64 inputs and 32 outputs.
- Add "-IR" to part number to specify this option.

NETWORK TECHNOLOGIES INCORPORATED

☎ 800.RGB.TECH (800.742.8324)
Toll Free: US & Canada

330.562.7070
International calls

Switch video from many computers among multiple monitors

Ordering Specifications

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) | 15-pin VGA | | Optional Desktop Style | Optional Control Method |

SM - n X m - 15V - LCD - DT IR

"n" = 4, 8, 16, 32   "m" = 2, 4, 8, 12, 16   LCD = Liquid Crystal Display Standard   IR = Infrared

Video Matrix Switch Models

NTI Part #	# of Video Inputs (n)	# of Video Outputs (m)	Desktop Size WxDxH (mm)	Rack Units	Rack Size WxDxH (mm)
SM-4X2-15V-LCD	4	2	NA	1RU	482x254x44
SM-4X2-15V-LCD-DT	4	2	254x190.5x84	NA	NA
SM-4X4-15V-LCD	4	4	NA	1RU	482x254x44
SM-4X4-15V-LCD-DT	4	4	254x190.5x84	NA	NA
SM-8X2-15V-LCD	8	2	NA	1RU	482x254x44
SM-8X2-15V-LCD-DT	8	2	254x190.5x84	NA	NA
SM-8X4-15V-LCD	8	4	NA	1RU	482x254x44
SM-8X4-15V-LCD-DT	8	4	254x190.5x84	NA	NA
SM-8X8-15V-LCD	8	8	NA	1RU	482x254x44
SM-16X2-15V-LCD	16	2	NA	1RU	482x254x44
SM-16X4-15V-LCD	16	4	NA	1RU	482x254x44
SM-16X8-15V-LCD	16	8	NA	2RU	482x305x89
SM-16X12-15V-LCD	16	12	NA	2RU	482x305x89
SM-16X16-15V-LCD	16	16	NA	2RU	482x305x89
SM-32X2-15V-LCD	32	2	NA	2RU	482x305x89
SM-32X4-15V-LCD	32	4	NA	2RU	482x305x89
SM-32X8-15V-LCD	32	8	NA	2RU	482x305x89
SM-32X16-15V-LCD	32	16	NA	3RU	482x305x133

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).

- Cables not included.