

2007 Product Guide



Extenders via CAT5 _____

KVM Drawers _____

Audio/Video Matrix Switches _____

KVM Switches _____

Video & KVM Splitters _____

Server Environment Monitoring Systems _____

Console Serial Switches _____

Video Switches _____

Video Converters _____

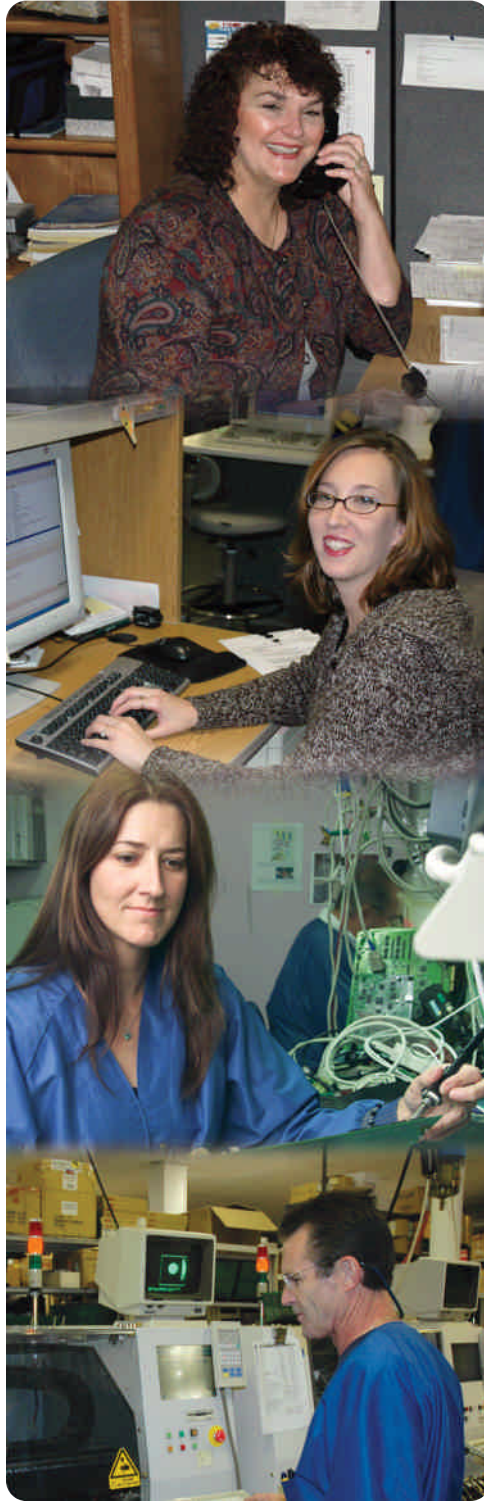
Cables _____



ORDERING INFORMATION

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European Parliament and Council (EC) of the European Union approved a directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment. The directive became European Law in February 2003. The accepted abbreviation for the directive is **RoHS** (*Restriction of Hazardous Substances*).

Network Technologies Incorporated is working very hard to ensure that our products are in compliance with this directive.

NTI's Guarantee...

We are committed to providing our customers with high quality products that are easy to use. All of our units are rigorously tested to ensure proper and long lasting operation. Complete customer satisfaction is supported with a one (1) year warranty.

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NTI's products are guaranteed to meet your quality standards

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KVM EXTENDER

Extend control up to 600 feet away from a PC or NTI KVM switch with no loss of signal

Available Models:

- **300' extenders**
- **600' extenders**



Built-In Surge Protection

Available Options:

- **Audio**
- **RS232**

XTENDEX® ST-C5KVM-600 (Remote and Local unit)

Features & Applications

The XTENDEX® KVM Extender provides local and remote KVM (PS/2 keyboard, PS/2 mouse and VGA monitor) access to a PC or NTI KVM switch up to 300/600 feet using CAT5 UTP cable.

- Supports two users: one local and one remote.
- Local unit provides local KVM access.
- Allows local and remote access to network servers.
- Sharpest and clearest VGA of any manufacturer.
- Built-in surge protection.
- Available with optional stereo audio or RS232 (ST-C5KVM-300 available with audio option only).
- Keep-alive keyboard/mouse emulation for flawless operation.
- Use in-house CAT5/5e/6 wiring to locate a keyboard, monitor and mouse remotely.

Specifications

Local Unit

Host Connection

- Supports a PC, SUN Fire™ V20z or NTI Switch.
- One male 15-pin HD/two male 6-pin miniDIN connectors for PC or NTI KVM switch.
- Optional RS232 support—female 9-pin D connector (ST-C5KVM-600 only).
- Optional stereo audio support—3.5mm stereo plug.

Local Access

- Crisp and clear 1920x1440 video resolution.
- One female 15-pin HD connector.
- Two female 6-pin miniDIN connectors.
- NTI recommends using identical keyboards and mice at local and remote units.
- Optional RS232 support—male 9-pin D connector (ST-C5KVM-600 only).
- Optional stereo audio support—3.5mm stereo jack.

Remote Unit

- Supports resolutions up to 1920x1440; refer to the resolution charts on page 5.
- One female 15-pin HD connector.
- Two female 6-pin miniDIN connectors.
- Optional 3.5mm stereo audio connection.
- Optional male 9-pin D connector for RS232 (ST-C5KVM-600 only).

Video Quality Adjustment

- See chart below for the method of adjusting video quality for different lengths of CAT5/5e/6 cable.

NTI Part #	Video Quality Adjustment
ST-C5KVM-600	Automatic
ST-C5KVMA-600	Automatic
ST-C5KVMRS-600	Automatic
ST-C5KVM-300	Manual
ST-C5KVMA-300	Manual

Power

- Local and remote unit: 110 or 220 VAC at 50 or 60 Hz via AC adapter.

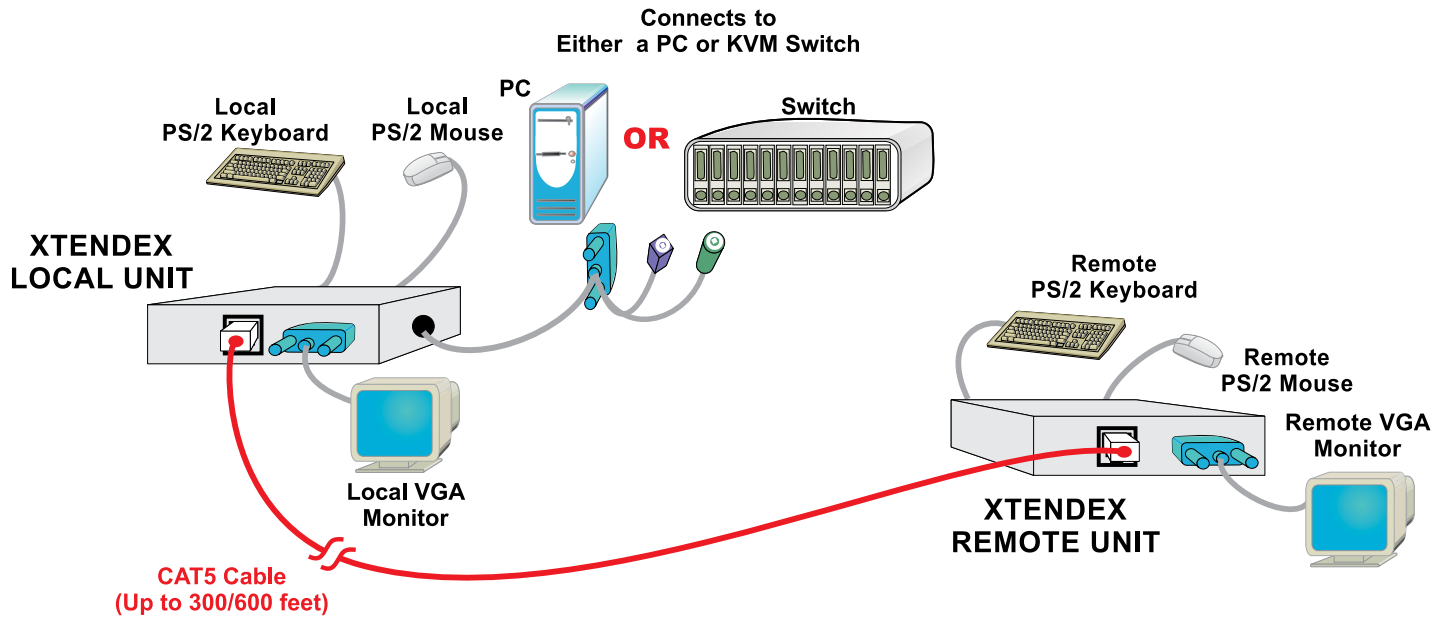
Regulatory Approvals

- CE



Extend control up to 600 feet away from a PC or NTI KVM switch with no loss of signal

Configuration and Cable Illustration



Options

- Choose between stereo audio or RS232.

Stereo Audio

- Available on ST-C5KVM-600 and ST-C5KVM-300.
- Stereo audio can be heard both locally and remotely.
- Frequency response: 20 Hz to 20 kHz, +/-1 dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%.
- Stereo crosstalk: -70 dB.
- Input impedance: 10k Ohms.
- Maximum I/O levels: 3.1Vp-p (line level).
- Requires powered speakers.

RS232

- Available on ST-C5KVM-600.
- Supports TXD, RXD, DTR, DSR, CTS and RTS.
- Baud rate up to 56K.
- Support for a touch screen monitor.

Cables

- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors.
- Cables not included.



Warning!

- These units are not designed to be connected to an ethernet card, ethernet router, hub, switch or any other ethernet RJ45 connector of an ethernet device. Damage to devices connected to the ethernet may result.

Resolutions for ST-C5KVM-600

Cable	Distance (feet)	Resolution
CAT5/CAT5e (UTP)	600	1024x768 at 60Hz
CAT5/CAT5e (UTP)	400	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	300	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	100	1920x1440 at 60Hz
CAT6 (UTP)	300	1024x768 at 60Hz
CAT6 (UTP)	200	1280x1024 at 60Hz
CAT6 (UTP)	100	1920x1440 at 60Hz

Resolutions for ST-C5KVM-300

Cable	Distance (feet)	Resolution
CAT5/CAT5e (UTP)	300	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	150	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	100	1920x1440 at 60Hz
CAT6 (UTP)	300	1024x768 at 60Hz
CAT6 (UTP)	150	1280x1024 at 60Hz
CAT6 (UTP)	100	1600x1200 at 60Hz

KVM Extender Models

Supported Features	NTI Part #	Maximum Extension (ft)	Local and Remote Unit Sizes WxDxH (in)
KVM	ST-C5KVM-600	600	3.5x3.1x1.2
KVM + Audio	ST-C5KVMMA-600	600	3.5x3.1x1.2
KVM + RS232	ST-C5KVMRS-600	600	3.5x3.1x1.2
KVM	ST-C5KVM-300	300	3.5x3.1x1.2
KVM + Audio	ST-C5KVMMA-300	300	3.5x3.1x1.2



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VGA EXTENDER

Extend a VGA monitor up to 600 feet away from a computer

Available Models:

- **300' extenders**
 - Does not require power supply on remote unit
- **600' extenders**



Built-In Surge Protection

Available options:

- **Audio**
- **RS232**

XTENDEX® ST-C5V-600 (Remote and Local unit)

Features & Applications

The XTENDEX® VGA Extender transmits VGA video up to 300/600 feet away from a computer using CAT5 cable. Each video extender consists of a local unit that connects to a computer and also supplies video to a local monitor, and a remote unit that connects to a monitor.

- Supports local and remote VGA monitors.
- Sharpest and clearest VGA of any manufacturer.
- Built-in surge protection.
- Available with optional stereo audio or RS232 (ST-C5V-300 available with audio option only.)
- Use in-house CAT5/5e/6 phone wiring to locate a monitor remotely.

Specifications

Local Unit

Host Connection

- Supports a PC, SUN, MAC or NTI switch with VGA video.
- Male 15-pin HD connector for computer connection.
- Optional RS232 support—female 9-pin D connector (ST-C5V-600 only).
- Optional stereo audio support—3.5mm stereo plug.

Local Access

- Crisp and clear 1920x1440 video resolution.
- Female 15-pin HD connector for local VGA monitor.
- Optional RS232 support—male 9-pin D connector (ST-C5V-600 only).
- Optional stereo audio support—3.5mm stereo jack.

Remote Unit

- Supports resolutions up to 1920x1440; refer to the resolution charts on page 7.
- Female 15-pin HD connector.
- Optional 3.5mm stereo audio connection.
- Optional male 9-pin D connector for RS232 (ST-C5V-600 only).

Video Quality Adjustment

- See chart below for the method of adjusting video quality for different lengths of CAT5/5e/6 cable.

NTI Part #	Video Quality Adjustment
ST-C5V-600	Manual
ST-C5VA-600	Automatic
ST-C5VRS-600	Automatic
ST-C5V-300	Manual
ST-C5VA-300	Manual

Regulatory Approvals

- CE

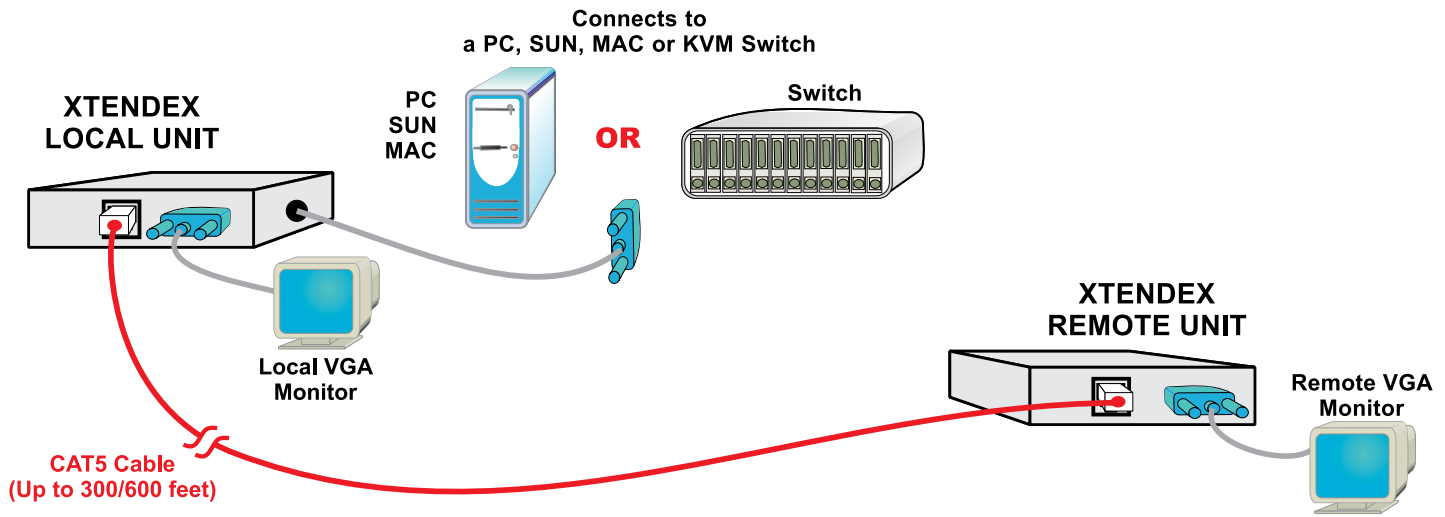
Power

- ST-C5V-600:
 - Local and remote unit: 110 or 220 VAC at 50 or 60 Hz via AC adapter.
- ST-C5V-300:
 - Local unit: 110 or 220 VAC at 50 or 60 Hz via AC adapter
 - Remote unit: powered from local unit via CAT5/5e/6 cable.



Extend a VGA monitor up to 600 feet away from a computer

Configuration and Cable Illustration



Options

- Choose between stereo audio or RS232.

Stereo Audio

- Available on ST-C5V-600 and ST-C5V-300.
- Stereo audio can be heard both locally and remotely.
- Frequency response: 20 Hz to 20 kHz, +/-1 dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%.
- Stereo crosstalk: -70 dB.
- Input impedance: 10k Ohms.
- Maximum I/O levels: 3.1Vp-p (line level).
- Requires powered speakers.

RS232

- Available on ST-C5V-600.
- Supports TXD, RXD, DTR, DSR, CTS and RTS.
- Baud rate up to 56K.
- Support for a touch screen monitor.



Warning!

- These units are not designed to be connected to an ethernet card, ethernet router, hub, switch or any other ethernet RJ45 connector of an ethernet device. Damage to devices connected to the ethernet may result.

Cables

- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors.
- Cables not included.

Resolutions for ST-C5V-600

Cable	Distance (ft)	Resolution
CAT5/CAT5e (UTP)	600	1024x768 at 60Hz
CAT5/CAT5e (UTP)	400	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	300	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	100	1920x1440 at 60Hz
CAT6 (UTP)	300	1024x768 at 60Hz
CAT6 (UTP)	200	1280x1024 at 60Hz
CAT6 (UTP)	100	1920x1440 at 60Hz

Resolutions for ST-C5V-300

Cable	Distance (ft)	Resolution
CAT5/CAT5e (UTP)	300	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	150	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	100	1920x1440 at 60Hz
CAT6 (UTP)	300	1024x768 at 60Hz
CAT6 (UTP)	150	1280x1024 at 60Hz
CAT6 (UTP)	100	1600x1200 at 60Hz

VGA Extender Models

Supported Features	NTI Part #	Maximum Extension (ft)	Local and Remote Unit Sizes WxDxH (in)
VGA only	ST-C5V-600	600	3.5x3.1x1.2
VGA + audio	ST-C5VA-600	600	3.5x3.1x1.2
VGA + RS232	ST-C5VRS-600	600	3.5x3.1x1.2
VGA only	ST-C5V-300	300	3.5x3.1x1.2
VGA + audio	ST-C5VA-300	300	3.5x3.1x1.2



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KVM EXTENDER / VGA EXTENDER

Extend control up to 1,000 feet / Extend a VGA monitor up to 1,000 feet



**ST-C5KVM
Remote Unit
(Front and Back)**



**ST-C5V
Local Unit
(Front and Back)**

Features & Applications

The XTENDEX® ST-C5KVM KVM Extender allows one PS/2 keyboard, PS/2 mouse and VGA monitor to be placed up to 1,000 feet from a computer using CAT5/5e/6 UTP cable. The extender consists of a local unit that connects to a computer or server and also supplies video to a local monitor, and a remote unit that connects to a monitor, keyboard and mouse.

- Provides video output to a local monitor.
- Keep-alive keyboard/mouse emulation for flawless operation.

Specifications

Local Unit

- Supports PS/2 PC and legacy SUN.
- Male 15-pin HD connector for host computer.
- Female RJ45 connector for CAT5/5e/6 cable.
- Female 15-pin HD connector for local VGA monitor.
- Supports Separate and Composite TTL level sync.

Remote Unit

- Female 15-pin HD connector for monitor.
- Female 8-pin miniDIN connector for keyboard and mouse.
- Female RJ45 connector for CAT5/5e/6 cable.
- Crisp and clear 1024x768 resolution at 1,000 feet.
 - See chart on page 17 for resolutions at varying distances.
- Supports PS/2 and SUN devices.
- Keyboard and mouse must be of the same platform.
- Video quality adjustment for different lengths of CAT5/5e/6 cable is done automatically.

Dimensions

- 8x6.2x2.6

Regulatory Approvals

- CE

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Cables

- 3-foot VEXT-3 VGA cable included.
- 3-foot VKTINT-3-MM PS2 mouse keyboard cable included.
- 1-foot VKTINT-1 8-pin miniDIN to dual 6-pin miniDIN adapter cable included.
- 3-foot SKTINT-3-MM SUN mouse keyboard cable included.
- Use CAT5/5e/6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors (not included).

Features & Applications

The XTENDEX® ST-C5V VGA extender transmits VGA video up to 305 meters away from a computer using CAT5 cable. Each video extender consists of a local unit that connects to a computer and also supplies video to a local monitor, and a remote unit that connects to a monitor.

- Supports local video to any VGA monitor.
- Use in-house CAT5/5e/6 wiring to locate a monitor remotely.
- Built-in surge protection.

Specifications

Local Unit

- Supports a PC, SUN or MAC with VGA video.
- Male 15-pin HD connector for computer video.
- Female 15-pin HD connector for local VGA monitor.
- Female RJ45 connector for CAT5/5e/6 cable.
- Input impedance: 75 Ohms.
- Maximum input levels for video: 1.45Vp-p.
- Sync input frequency ranges:
 - Horizontal: 15 kHz to 130 kHz.
 - Vertical: 30 Hz to 150 Hz.

Remote Unit

- Female 15-pin HD connector.
- Female RJ45 connector for CAT5/5e/6 cable.
- Crisp and clear 1024x768 resolution at 1000 feet.
 - Higher resolutions supported at shorter distances (see resolution chart on page 17).
- Output impedance: 75 Ohms.
- Maximum output levels for video: 1.45Vp-p.
- Supports separate and composite TTL level sync.
- Video quality adjustment for different lengths of CAT5/5e/6 cable is done manually.

Dimensions

- 8x6.2x2.6

Regulatory Approvals

- CE

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Cables

- 3-foot male to female VGA cable included.
- Use CAT5, CAT5e, or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors (not included).

S-VIDEO EXTENDER

Extend a S-Video TV/monitor up to 600 feet away from a S-Video device



Built-In Surge Protection

Available option:
• **Audio**

XTENDEX® ST-C5SV-600 (Remote and Local Units)

Features & Applications

The XTENDEX® S-Video Extender transmits S-Video locally and remotely up to 600 feet away from a S-Video device using CAT5/5e/6 cable. Each video extender consists of a local unit connected to a S-Video device and a local monitor, and a remote unit connected to a monitor or TV.

- Supports maximum 800x600 S-Video resolution.
- Built-in surge protection.
- Supports local and remote S-Video monitor/TV.
- Available with optional stereo audio.
- Use in-house CAT5/5e/6 phone wiring to locate a display remotely.

Specifications

Local Unit

Host Connection

- Supports computers and video devices with S-Video output.
- Male 4-pin miniDIN connector.
- Optional stereo audio support - dual RCA audio plugs.

Local Access

- Crisp and clear 800x600 video resolution.
- Female 4-pin miniDIN connector for local monitor/TV.
- Optional stereo audio support - 3.5mm stereo jack.

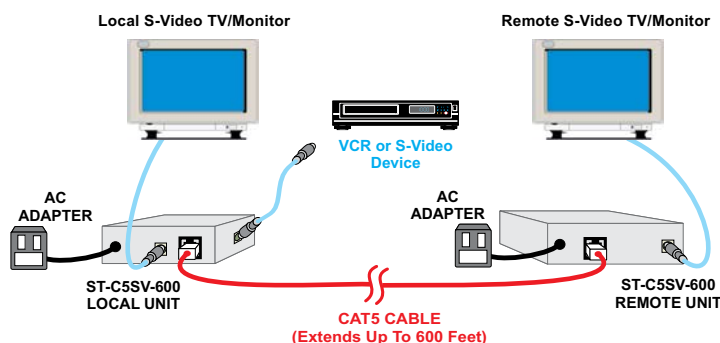
Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Cables

- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors.
- Cables not included.

Configuration and Cable Illustration



Remote Unit

- Crisp and clear 800x600 resolution at 600 feet.
- Female 4-pin miniDIN connector.
- Optional 3.5mm stereo audio connection.

Video Quality Adjustment

- Video quality adjustment for different lengths of CAT5/5e/6 cable is done manually for the video-only extender and automatically for the audio/video.
- Push buttons on the side adjust video quality on the video-only units.
 - The setting is automatically saved to the unit. The next time the unit is powered the adjustment will be recalled.

Regulatory Approvals

- CE

Audio Option

- Stereo audio can be heard both locally and remotely.
- Frequency response: 20 Hz to 20 kHz, +/-1 dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%.
- Stereo crosstalk: -70 dB.
- Input impedance: 10k Ohms.
- Line level output; supports multimedia speakers.
- Maximum I/O levels: 3.1Vp-p (line level).
- Requires powered speakers.

S-Video Extender Models

Supported Features	NTI Part #	Local and Remote Unit Sizes WxDxH (in)
S-Video only	ST-C5SV-600	3.5x3.1x1.2
S-Video + audio	ST-C5SVA-600	3.5x3.1x1.2



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HDTV EXTENDER

Extend a HDTV display and speakers up to 600 feet from a YPbPr component video source

Available Models:

- **Component Video with Digital Audio**
- **Component Video with Stereo Audio**



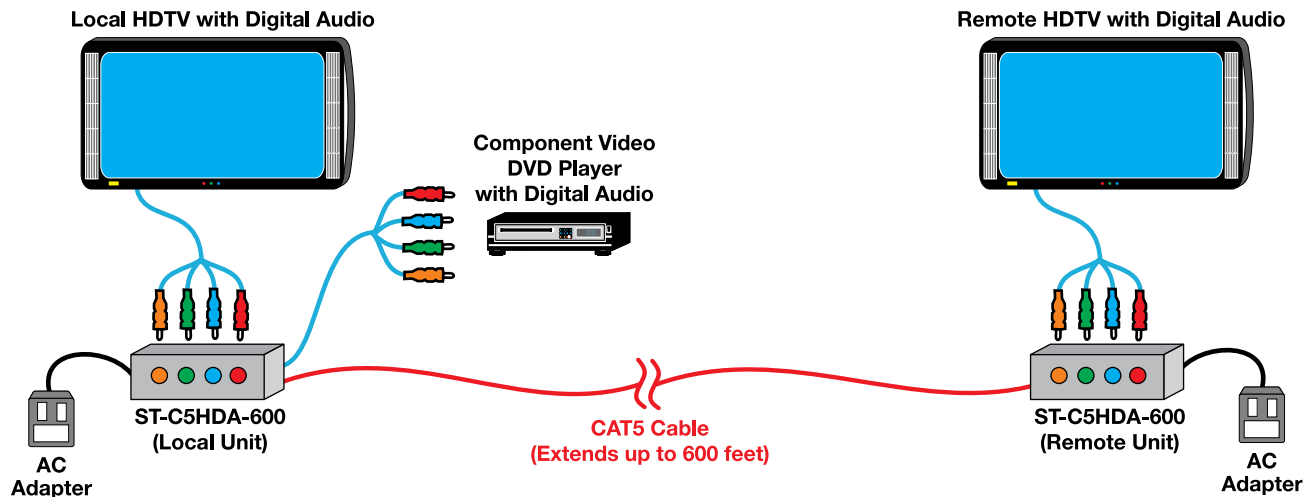
XTENDEX® ST-C5HDA-600 (Remote and Local Unit)

Features & Applications

The XTENDEX® HDTV Extender transmits YPbPr component video and analog or digital audio up to 600 feet away from a component video device (DVD, CD, satellite receiver, etc) using CAT5/5e/6 cable. Each video extender consists of a local unit that connects to a component video device and also supplies audio/video to a local display and speakers, and a remote unit that connects to a TV or monitor and speakers.

- Easily transmit a high-definition component video signal to a projector in the ceiling by using compact CAT5/5e/6 cable instead of bulky cable bundles.
- Send high quality video signals from the DVD player in your basement to the great room upstairs.
- Supports local and remote TVs/monitors/projectors and speakers.
- Supports 480i (interlaced), 480p (progressive), 720i, 720p, 1080i, and 1080p formats.
- Audio can be Left and Right stereo or digital S/PDIF.
 - ST-C5HDA-600 supports coax S/PDIF, DTS Digital Surround™, and Dolby Digital™ 5.1 digital signals.
 - ST-C5HDTV-600 supports analog stereo audio.
- Built-in surge protection.

Configuration and Cable Illustration of ST-C5HDA-600



Extend a HDTV display and speakers up to 600 feet from a YPbPr component video source

Specifications

Local Unit

Source Connection

- ST-C5HDA-600: three RCA plugs for YPbPr component video and one RCA plug for digital audio.
- ST-C5HDTV-600: three RCA plugs for YPbPr component video and two RCA plugs for analog stereo audio.

Local Access

- ST-C5HDA-600: three RCA jacks for YPbPr component video and one RCA jack for digital audio.
- ST-C5HDTV-600: three RCA jacks for YPbPr component video and two RCA jacks for analog stereo audio.

Remote Unit

- ST-C5HDA-600: three RCA jacks for YPbPr component video and one RCA jack for digital audio.
- ST-C5HDTV-600: three RCA jacks for YPbPr component video and two RCA jacks for analog stereo audio.

Video

- Signal type: HDTV YPbPr component.
- Maximum input/output levels: 1.45Vp-p.
- Input/output impedance: 75 Ohms.
- Bandwidth: 90Mhz at 100 feet, 50Mhz at 600 feet.
- Resolutions: HDTV 480i, 480p, 720i, 720p, 1080i, and 1080p.

Video Quality Adjustment

- Automatically adjusts the video quality to compensate for varying lengths of CAT5/5e/6 cable.

Power

- Local and remote units: 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Audio

- Audio can be Left and Right stereo or digital coax S/PDIF.
- Audio can be heard both locally and remotely.

Digital Audio (ST-C5HDA-600)

- Signal type: coax S/PDIF, DTS Digital Surround™, Dolby Digital™ 5.1.
- Input/output levels: 0.5Vp-p.
- Input/output impedance: 75 Ohms.

Stereo Audio (ST-C5HDTV-600)

- Signal type: stereo audio, analog, left/right.
- Maximum input/output levels: 3.1Vp-p.
- Input impedance: 10K Ohms.
- Output impedance: 50 Ohms.
- Frequency Response: +/-0.01 dB, 20 Hz to 20 kHz.
- Total Harmonic Distortion + Noise (THD+N): 0.017%.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Stereo crosstalk: -70 dB.

HDTV Extender Models

Supported Features	NTI Part #	Size WxDxH (in)
HDTV component video + digital audio	ST-C5HDA-600	3.5x3.1x1.2
HDTV component video + stereo audio	ST-C5HDTV-600	3.5x3.1x1.2



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DVI EXTENDER VIA CAT5

Extend a single link digital DVI display up to 150 feet.



XTENDEX® ST-C5DVI-150 (Remote and Local Unit)

Features & Applications

The XTENDEX® DVI Extender transmits digital DVI video up to 150 feet away from a DVI source using two CAT5/5e/6 cables. Each video extender consists of a local unit that connects to a DVI source and also supplies video to a local monitor, and a remote unit that connects to a monitor.

- Transmits single link DVI-D signal over two CAT5/5e/6 cables.
- Extends high digital resolution up to 1920x1200.
- Supports local and remote DVI monitors.
- Compatible with DDWG DVI standard.
- HDCP Compliant
- Supports the DDC2B protocol.
- Built-in surge protection.
- Only one power supply is necessary to power both the local and remote units.

Specifications

Local Unit

- Host Connection
 - Supports computers and video devices with single link digital DVI output.
 - Female DVI-I dual link connector for computer connection.
- Local Access
 - Crisp and clear 1920x1200 video resolution.
 - Single link DVI-D signal.
 - Female DVI-I dual link connector for local monitor.

Remote Unit

- Crisp and clear 1024x768 resolution at 150 feet; higher resolution supported at shorter distances.
- Single link DVI-D signal.
- Female DVI-I dual link connector for remote monitor.

Dimensions

- WxDxH (in): 3.5x3.1x1.1

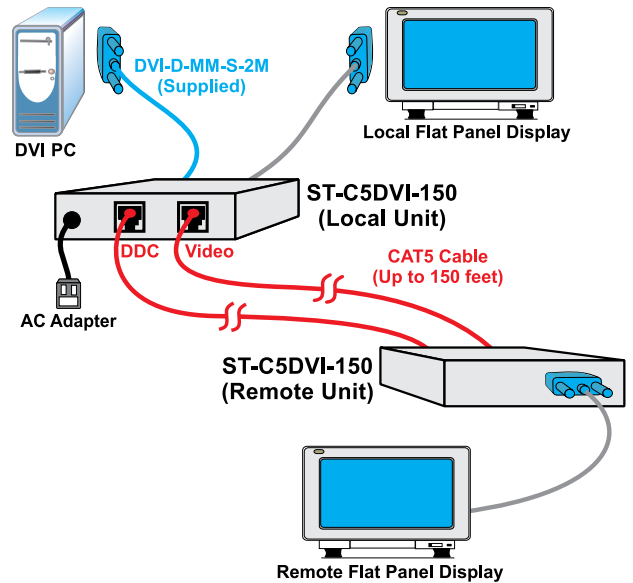
Power

- Local unit: 110 or 220 VAC at 50 or 60 Hz via AC adapter.
- Remote unit: powered from local unit through CAT5/5e/6 cable.

Cables

- 2-meter male-to-male single link DVI-D cable included.
- Use CAT5/5e/6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors (not included).

Configuration and Cable Illustration



Distances and Resolutions for CAT5/Cat5e and CAT6 Cables

Cable	Distance (ft)	Resolution
CAT5/CAT5e	150	1024x768 at 60Hz
CAT5/CAT5e	125	1280x1024 at 60Hz
CAT5/CAT5e	100	1920x1200 at 60 Hz
CAT6	150	1280x1024 at 60Hz
CAT6	125	1600x1200 at 60Hz
CAT6	100	1920x1200 at 60 Hz



DVI EXTENDER

Extend a single link digital DVI display up to 4,900 feet



Extend up to 4,900 feet.

ST-FODVI-LC Receiver* (Front & Back)
*The transmitter looks the same as the receiver

Features & Applications

The XTENDEX® ST-FODVI-LC DVI Extender via Fiber Optic Cable locates a single link digital DVI display up to 4,900 feet away from a computer using fiber optic cable. Each extender consists of a transmitter that connects to a computer, and a receiver that connects to a monitor.

- Signal transmission via four strand multimode LC fiber optic cable — no RF interference.
- Small form factor.
- Cables can be installed in conduit prior to extender installation.
- RGB and Clock signals are transmitted separately by multimode optical fibers.
- Four models available; each model supports a different resolution up to 4,900 feet.
 - 1024x768
 - 1280x1024
 - 1600x1200
 - 1920x1200
- The extenders will support resolutions lower than the specified resolution.

Specifications

- Signal bandwidth: 1.65Gbps (Single Link).
- Resolution: maximum up to 1920x1200.
 - See chart below for maximum resolution for each extender.
- Connectors (for transmitter and receiver): One male DVI-D single link connector and two duplex LC connectors.
- Optical source: 850nm VCSEL.
- PIN photo diode optical receiver.
- Maximum distance: 4,900 feet.
- Compliant with DDWG DVI standard.

Dimensions

- WxDxH (in): 1.5x2.8x0.7

Power

- 110 to 220 VAC at 50 or 60 Hz via AC adapter.

Regulatory Approvals

- CE, FCC, UL

Cables

- Use a FIBER-2D-LCLC-50-xxM (2 duplex LC 50-micron) fiber optic cable to extend the receiver from the transmitter up to 4,900 feet (not included).
 - Available lengths: 20/30/40/50/100/300/500 meters



Extend up to 330 feet.

DVI-FO-66-MM

Features & Applications

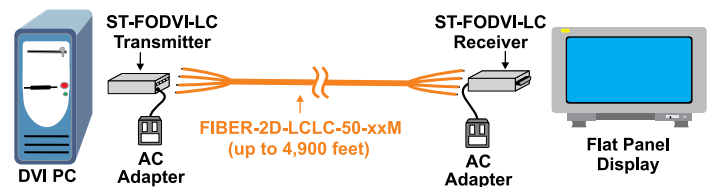
The DVI-FO-xx-MM DVI-D Fiber Optical Extension Cable locates a single link digital DVI display up to 330 feet from a computer with no loss of signal - delivering crystal clear digital images instantly. The cables are an integrated DVI-D cable solution, which includes the fiber optics components and the DDC signals built into the cable and the DVI connectors.

- Supports up to 1920x1440 resolution.
- High speed and long distance transmission by optical system.
- Compliant with DDWG DVI standard.
- Uses standard DVI-D connector.
- RGB and Clock signals are transmitted by optical fiber.
- DDC signal is transmitted by copper line.
- Supports the DDC2B protocol.
- No external power required.
- No software required.

Specifications

- Signal bandwidth: 1.65Gbps (Single Link).
- Connectors: Male DVI-D dual link connectors.
- Resolution: supports up to 1920x1440.
- Optical source: 850nm VCSEL.
- O/E Converter: PIN photo diode.
- Fiber: H-PCF graded index multimode fiber.
- Available lengths (ft): 33/49/66/82/100/165/246/330.

Configuration and Cable Illustrations



DVI Extender via Fiber Optic Cable Models

NTI Part #	Maximum Resolution
ST-FODVI-LC-1024	1024x768
ST-FODVI-LC-1280	1280x1024
ST-FODVI-LC-1600	1600x1200
ST-FODVI-LC-1920	1920x1200



330.562.1999
Worldwide fax



sales@ntigo.com



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Extend one USB device up to 150 feet / Extend four USB devices up to 100 feet



**Extends one
USB device
up to 150 feet.**

**USB-C5-LC
(Local and Remote Unit)**

**Extends four
USB devices
up to 100 feet.**

**USB-C5
(Remote Unit,
Front and Back)**



Features & Applications

The USB-C5-LC extends one USB device up to 150 feet, and the USB-C5(M/-CE) extends four USB-enabled devices up to 100 feet. The USB extenders consist of two units, the local unit and the remote unit, which are interconnected with CAT5/5e/6 cable.

- Extend self-powered and/or bus-powered USB peripheral devices (security cameras, printer, scanner, keyboard, etc.).
- Transparent data extension.
- Compatible with USB PC, SUN and MAC computers.
- Compliant with USB 1.1 specifications.
- Supports Plug-n-Play specification.

Specifications

Local Unit

- USB-C5-LC: one male USB Type A connector.
- USB-C5(M/-CE): one female USB Type B connector.
- Supports SUN Blade™ 100, SUN Blade 1000, SUN Ray™, SUN Fire™ 240, and SUN Fire V20z.
- Supports PCs with USB-enabled OS (Win 98/2000/ME/XP) and USB ports.
- Supports PCs with USB-enabled BIOS (legacy USB support) and USB ports.
- Supports MACs G4, G5 and Xserve (using USB-C5M or USB-C5-LC).

Remote Unit

- USB-C5-LC: one female USB Type A connector.
- USB-C5(M/-CE): four female USB Type A connectors.
- Supports low-speed and full-speed USB devices.
- USB 1.1 compliant.

Power

- USB-C5-LC:
 - Local unit: powered from attached computer.
 - Remote unit: powered from local unit.
- USB-C5(M/-CE):
 - Local unit: powered by CAT5 cable from remote unit.
 - Remote unit: 110 or 220 VAC at 50 or 60 Hz via AC adapter.

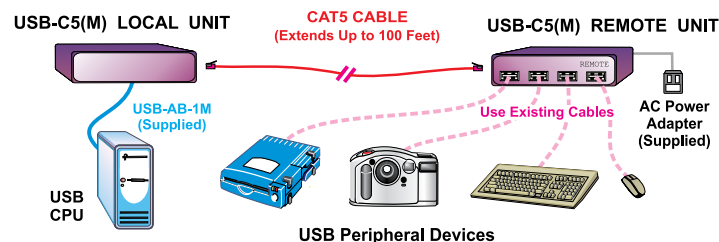
Dimensions WxDxH (in)

- USB-C5-LC: 1.3x2x0.9 (local and remote units).
- USB-C5(M): 5.2x4.3x1.6 (local and remote units).
- USB-C5-CE: 4.9x4.1x1.1 (local and remote units).

Regulatory Approval

- USB-C5-LC: FCC, CE
- USB-C5: optional CE
 - Add "-CE" to the end of the part number to specify this option.

Configuration and Cable Illustrations



USB Extender Models

NTI Part #	CPUs	# of Devices
USB-C5-LC	PC/SUN/MAC	1
USB-C5	PC/SUN	4
USB-C5M	MAC	4
USB-C5-CE	PC/SUN	4

Cables

Interface Cables

- One-meter male USB Type A to male USB Type B interface cable included with USB-C5(M/-CE).
- Existing device cables with male Type A connector required.

Extension Cable

- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors (not included).

Extension Limits

- USB-C5-LC: extend CAT5/5e/6 up to 150 feet.
- USB-C5(M/-CE): extend CAT5/5e/6 up to 100 feet.
- Use of CAT6 cable may decrease maximum length of extension.



Warning!

- The USB-C5(M/-CE) and USB-C5-LC are not designed to be connected to an Ethernet card, Ethernet router, hub or switch or other Ethernet RJ45 connector of an Ethernet device. Damage to devices connected to the Ethernet may result.



USB KVM EXTENDER

Extend USB keyboard, USB mouse and VGA monitor up to 300 feet



XTENDEX® ST-C5USBV-300 (Remote and Local Units)

Features & Applications

This unit extends a USB keyboard/mouse and VGA display up to 300 feet via CAT5/5e/6 cable. Each ST-C5USBV-300 consists of a local unit that connects to a computer and provides local keyboard, monitor and mouse connections, and a remote unit that connects to a remote keyboard, monitor and mouse. The local and remote units are interconnected via CAT5/5e/6 cable.

- Supports local and remote access.
- Maximum 1280x1024 video resolution at 300 feet; higher resolutions are supported at shorter distances up to 1920x1440 (see resolution chart below).
- Keyboard and mouse are hot-pluggable.
- Keep-alive keyboard/mouse emulation for flawless operation.
- Built-in surge protection.
- Available with optional stereo audio.

Specifications

Local Unit

Host Connection

- One male 15-pin HD / one male USB Type A connectors.
- Supports any USB-enabled PC, SUN or MAC computer, or NTI UNIMUX™ KVM switch.
- Optional stereo audio support—3.5mm stereo plug.

Local Access

- Crisp and clear 1920x1440 video resolution.
- One female 15-pin HD connector.
- Two female USB Type A connectors.
- NTI recommends using identical keyboards and mice at local and remote units.
- Optional stereo audio support—3.5mm stereo jack.

Remote Unit

- Supports resolutions up to 1920x1440; refer to the resolution chart below for resolutions at different lengths.
- One female 15-pin HD connector.
- Two female USB Type A connectors.
- The ST-C5USBV-300 will only work with USB keyboards and mice. It is not designed to support other USB devices.
 - Keyboard and mouse must be of the same platform.
- Optional 3.5mm stereo audio connection.
- Video quality adjustment for different lengths of CAT5/5e/6 cable is done manually for the USB KVM extender, and automatically for USB KVM + audio extender.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Stereo Audio Option

- Stereo audio can be heard both locally and remotely.
- Frequency response: 20 Hz to 20 kHz, +/-1 dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%.
- Stereo crosstalk: -70 dB.
- Input impedance: 10k Ohms.
- Line level output; supports multimedia speakers.
- Maximum I/O levels: 3.1Vp-p (line level).

Cables

- CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors (not included).

Distances and Resolutions for CAT5/Cat5e and CAT6 Cables

Cable	Distance (ft)	Resolution
CAT5/CAT5e (UTP)	300	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	150	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	100	1920x1440 at 60 Hz
CAT5/5e (STP), CAT6 (UTP)	300	1024x768 at 60Hz
CAT5/5e (STP), CAT6 (UTP)	150	1280x1024 at 60Hz
CAT5/5e (STP), CAT6 (UTP)	100	1600x1200 at 60 Hz

USB KVM Extender Models

Supported Features	NTI Part #	Local and Remote Size WxDxH (in)
KVM	ST-C5USBV-300	3.5x3.1x1.2
KVM + Audio	ST-C5USBVA-300	3.5x3.1x1.2



330.562.1999
Worldwide fax



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USB KVM EXTENDER

Extend **USB keyboard, USB mouse and VGA monitor up to 1,000 feet**



Local Unit

Remote Unit (Front and Back)

XTENDEX® ST-C5USBV Local and Remote Units

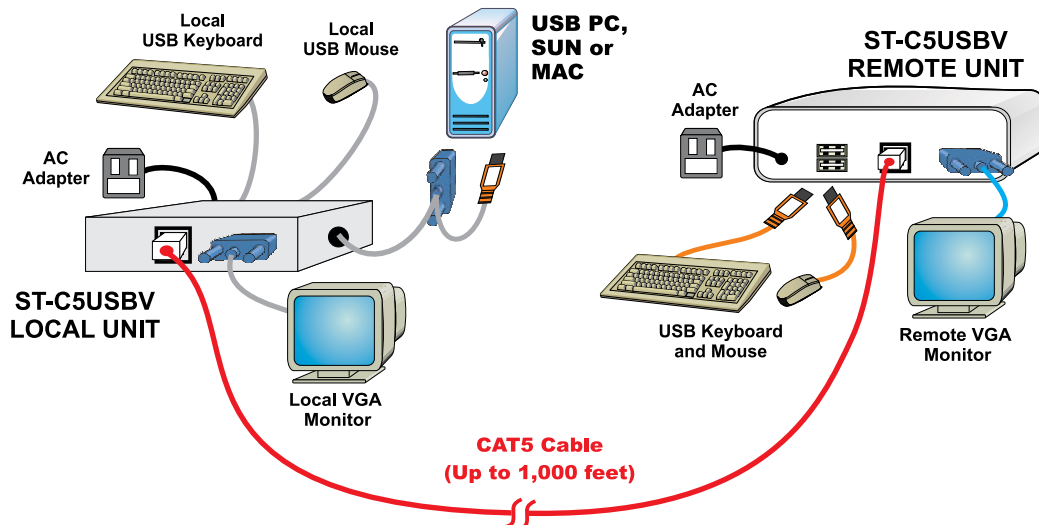
Features & Applications

The XTENDEX® ST-C5USBV USB KVM Extender provides local and remote KVM (USB keyboard, USB mouse and VGA monitor) access to a USB computer or NTI KVM switch up to 1,000 feet using CAT5/5e/6 UTP cable, which overcomes the USB five meter limitation.

Each ST-C5USBV consists of a zero-RU local unit (connects to a computer, and provides local keyboard, monitor and mouse connections) and a desktop remote unit (connects to a keyboard, monitor and mouse). The local and remote units are interconnected via CAT5/5e/6 cable.

- Supports local and remote access.
- Automatically adjusts the video quality to compensate for varying lengths of CAT5/5e/6 cable.
- Simple On Screen Display (OSD) menus allow users to configure the extender, adjust for video skew, and fine-tune video quality for optimal video resolution.
- Maximum 1024x768 video resolution at 1,000 feet; higher resolutions are supported at shorter distances. (See resolution chart on page 17.)
- Keyboard and mouse are hot-pluggable.
- Keep-alive keyboard/mouse emulation for flawless operation.
- Color-coded LEDs on both the local and remote units indicate power status and verify communication is established between the units.
- Built-in surge protection.

Configuration and Cable Illustration



Specifications

Local Unit

Hosts

- Male USB Type A / male 15-pin HD connectors.
- Compatible with any USB-enabled host computer, including:
 - USB-enabled SUN, including SUN Blade 100, SUN Blade 1000, SUN Ray and SUN Fire™ 240.
 - PCs with USB-enabled OS (Win 98/2000/XP) and USB ports.
 - HP J5000.
 - PCs with USB-enabled BIOS (legacy USB support) and USB ports.
 - MAC G4, G5 and Xserve.
- Compatible with NTI UNIMUX™ KVM switch.
- Keyboard and mouse presence are emulated 100% of time so the computer boots error-free.

Local Access

- Crisp and clear 1920x1440 video resolution.
- Female 15-pin HD connector.
- Female USB Type A connectors.
- NTI recommends using identical keyboards and mice at local and remote units.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Regulatory Approvals

- CE

Distances and Resolutions for CAT5/CAT5e and CAT6 Cables

Cable	Distance (ft)	Resolution
CAT5/CAT5e (UTP)	1000	1024x768 at 60Hz
CAT5/CAT5e (UTP)	700	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	500	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	300	1920x1440 at 60Hz
CAT6 (UTP)	800	1024x768 at 60Hz
CAT6 (UTP)	700	1280x1024 at 60Hz
CAT6 (UTP)	600	1600x1200 at 60Hz
CAT6 (UTP)	500	1920x1440 at 60Hz

Cables

- CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors.
- Cables not included.

Remote Unit

Devices

- Female USB Type A connectors.
- Supports most USB keyboards with Windows, SUN or MAC layout, and most USB mice or trackballs, including:
 - USB IntelliMouse (scrollwheel).
 - Microsoft, Logitech or Kensington wheel mice or trackballs on MAC computers (support for all buttons).
 - Logitech Cordless Elite Duo.
 - Crystal Vision keyboard with touchpad.
 - Gyration keyboard/mouse.
- The ST-C5USBV will only work with USB keyboards and mice. It is not designed to support other USB devices.
- Compatible with all NTI UNIMUX KVM Switches.

Monitor

- Female 15-pin HD connector.
- Supports XGA/VGA/SVGA monitors.
- A multiscan VGA monitor is required to display the different video outputs from different platforms.
- Automatic video quality adjustment provides optimum image quality for various lengths of CAT5 cable.
- On Screen Display (OSD) menus provide additional control, allowing users to fine-tune video image quality and adjust for cable skew.
 - Video skew can be adjusted up to 1,000 feet via OSD menus to prevent color separation, allowing the use of CAT6 cable.
- Supports the DDC2B protocol.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Regulatory Approvals

- CE

USB KVM Extender

NTI Part #	Local Unit Size WxDxH (in)	Remote Unit Size WxDxH (in)
ST-C5USBV	3.5x3.1x1.2	8x6.2x2.6



Warning!

- The ST-C5USBV Extender is not designed to be connected to an ethernet card, ethernet router, hub, switch or any other ethernet RJ45 connector of an ethernet device. Damage to devices connected to the ethernet may result.



RACKMOUNT PS/2 AND USB KVM DRAWERS

Provides space-saving, convenient control

Available models:

- **USB or PS/2 Keyboard & Mouse**
- **15" or 17" LCD**
- **Optional Integrated KVM Switch**



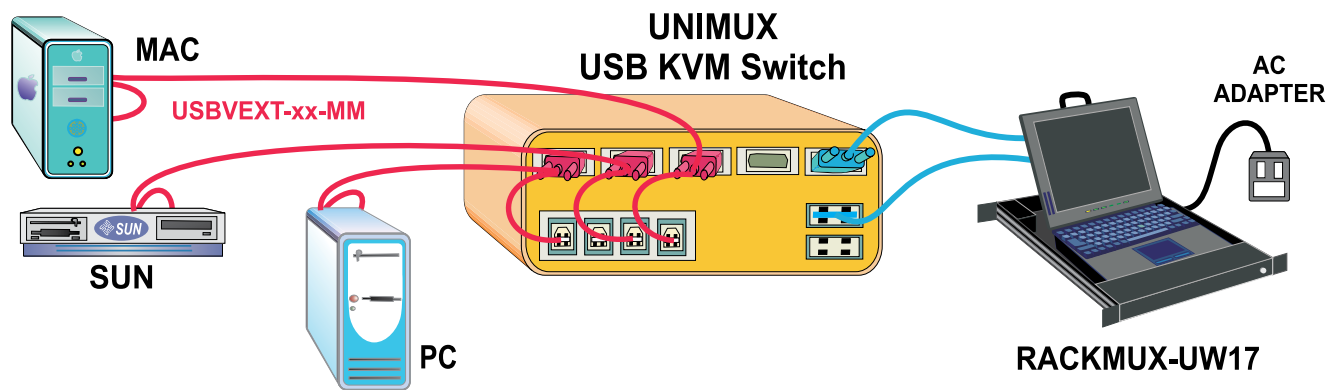
RACKMUX-P15 (Front and Back)

Features & Applications

Put control where you need it - fit a complete KVM workstation in 1RU of rack space. The RACKMUX® KVM Drawer is a compact data entry device. It combines a rack mount LCD monitor, keyboard and touchpad mouse in a space-saving 1RU industrial strength drawer.

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ■ Available in PS/2 and USB models. ■ Available with 15" or 17" Active Matrix LCD flat panel monitor. ■ Equipped with On Screen Display (OSD). ■ Compact, heavy-duty tactile keyboard. | <ul style="list-style-type: none"> ■ Front panel conceals the unit when not in use. ■ Designed to fit in a standard 19" rack/cabinets. ■ Display automatically powers off when in closed position. ■ Drawer locks into place when open to prevent it from sliding in and out of the rack. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Configuration and Cable Illustrations



RACKMOUNT PS/2 AND USB KVM DRAWERS

Provides space-saving, convenient control

Specifications

Hosts

- PS/2 model is compatible with all PS/2 and UNIX computers.
 - Use with NTI Universal KVM Switches to control multiple computers.
 - Use NTI's USB-PS2 adapter to connect the KVM drawer to USB computers or USB KVM Switch.
- USB model is compatible with USB-enabled computers.
 - Use with NTI UNIMUX™ USB KVM Switch to control multiple USB computers.

Monitor

- 15" or 17" Active Matrix LCD flat panel monitor.
- 1024x768 video resolution video for 15" monitor.
- 1280x1024 video resolution for 17" monitor.
- PS/2 and USB 15" drawers support Composite Sync and separate TTL Level Sync. Does not support Sync on Green. Not compatible with all Sun Microsystems.
- PS/2 and USB 17" drawers support Composite Sync and separate TTL Level Sync. Does not support Sync on Green. Not compatible with all Sun Microsystems.
- Frequency:
 - Horizontal: 30 to 64 kHz for 15" drawers, and 30 to 82 kHz for 17" drawers.
 - Vertical: 50 to 75 Hz for both drawers.
- OSD controls for brightness, contrast, phase, pitch, Horiz- and Vert-center alignment, zoom and color adjustment.
- 250 nits brightness and 350:1 contrast ratio typical.
- Supports DDC1 and DDC2B protocols.

Devices

- PS/2 model: two female 6-pin miniDIN (PS/2) connectors.
- USB 15" model: one female USB Type A connector.
- USB 17" model: one female USB Type B connector.
- "Gold Crosspoint" keyboard contacts ensure high reliability.
- 105-key US-layout Windows keyboard.
- Two button touchpad mouse.

Cables

- PS/2 models include:
 - 6-foot 15 HD VGA male to male cable.
 - 6-foot 6-pin miniDIN keyboard/mouse cable.
 - 6-foot DC power supply cable.
- USB models include:
 - 6-foot 15 HD VGA male to male cable.
 - 6.5-foot USB Type A male to male cable for the 15" model.
 - 6-foot male USB Type A to male USB Type B cable for the 17" model.
 - 6-foot DC power supply cable.

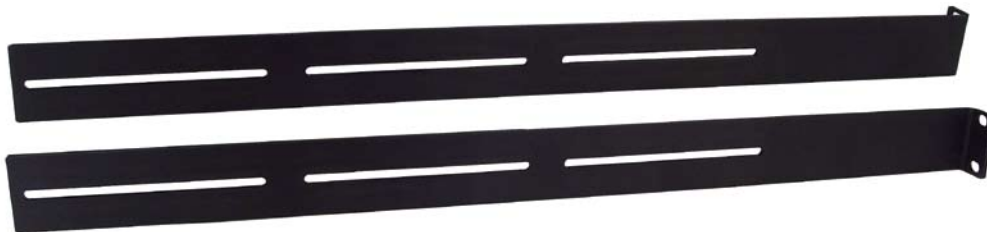
Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Dimensions

- 15" drawer, WxDxH (in): 19x20.1x1.75.
- 15" drawer with switch, WxDxH (in): 19x21.6x1.75.
- 17" drawer, WxDxH (in): 19x20.2x1.75.
- 17" drawer with switch, WxDxH (in): 19x22.2x1.75.
- Drawer is adjustable to various rack depths.
 - 15" drawer ranges from 20.1" to 31.5".
 - 15" drawer with switch ranges from 21.6" to 31.5".
 - 17" drawer ranges from 20.2" to 33.5".
 - 17" drawer with swicht ranges from 22.2" to 33.5"

Extension Rail Option



RACKMUX-EXT-RL

- Compatible with PS/2 and USB drawers.
- Allows adjustments to various rack depths.
 - 15" drawer ranges from 24.1" to 34.8".
 - 17" drawer ranges from 26.1" to 36.8".



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RACKMOUNT PS/2 AND USB KVM DRAWERS

Provides space-saving, convenient control

Optional CAT5 KVM Switch Integrated into USB KVM Drawer



RACKMUX-UW17-PRIMUX (Back)

- Control up to 64 servers from 1,000 feet away through one built-in user console.
 - One platform-specific (PS/2, SUN or USB) HA-x host adapter is required for each computer.
- Interconnect multiple servers at different locations throughout a building. Servers can be of the same or differing platforms (PS/2, SUN or USB).
- Provides a simple daisy-chained wiring configuration.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

On Screen Display (OSD)

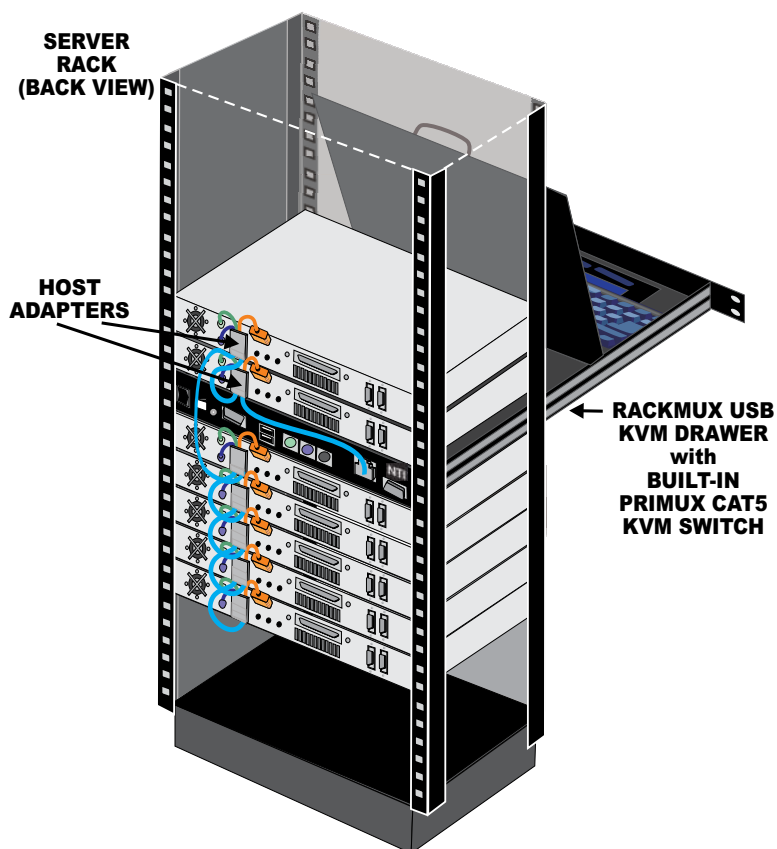
- Locate and select computers by name.
- Displays the platform and power status of each computer.
- OS and software-independent.

Security

- Advanced security included with switch.
- Each user password and name can be up to 15 characters long, and each switch can store up to 63 users.
- Administrator can enable or disable all security features and select which computers each user can access.
- Once security is enabled, a user or administrator must login in order to access any computer connected to the switch.

For more information on the built-in KVM switch via CAT5, see pages 46-47.

Configuration and Cable Illustrations



RACKMOUNT PS/2 AND USB KVM DRAWERS

Provides space-saving, convenient control

Optional USB KVM Switch Integrated into USB KVM Drawer



RACKMUX-UW15-8USB (Back).

- Available with a 4 or 8-port USB KVM Switch.
- Compliant with USB standard (1.0, 1.1).
- Boot all USB computers in one operation with true autoboot.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

On Screen Display (OSD)

- Locate and select computers by name.
- Displays the platform and power status of each computer.
- OS and software-independent.

Security

- Advanced security included with switch.
- Each user password and name can be up to 13 characters long, and each switch can store up to 63 users.
- Administrator can enable or disable all security features and select which computers each user can access.
- Once security is enabled, a user or administrator must login in order to access any computer connected to the switch.

For more information on the built-in USB KVM Switch, see pages 40-42.

Optional Universal KVM Switch Integrated into PS/2 KVM Drawer



RACKMUX-P15-8UNV (Back)

- Available with a 4 or 8-port Universal KVM Switch.
- Compatible with PC, SUN and MAC.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

On Screen Display (OSD)

- Locate and select computers by name.
- Displays the platform and power status of each computer.
- OS and software-independent.

Security

- Advanced security included with switch.
- Each user password and name can be up to 15 characters long, and each switch can store up to 63 users.
- Administrator can enable or disable all security features and select which computers each user can access.
- Once security is enabled, a user or administrator must login in order to access any computer connected to the switch.

USB KVM Drawer Models

NTI Part #	Description	Screen Size	# of CPUs
RACKMUX-UW15	USB KVM drawer	15	NA
RACKMUX-UW17	USB KVM drawer	17	NA
RACKMUX-UW15-4USB	KVM drawer w/ USB switch	15	4
RACKMUX-UW15-8USB	KVM drawer w/ USB switch	15	8
RACKMUX-UW17-4USB	KVM drawer w/ USB switch	17	4
RACKMUX-UW17-8USB	KVM drawer w/ USB switch	17	8
RACKMUX-UW15-PRIMUX	KVM drawer w/ CAT5 KVM switch	15	up to 64
RACKMUX-UW17-PRIMUX	KVM drawer w/ CAT5 KVM switch	17	up to 64

PS/2 KVM Drawer Models

NTI Part #	Description	Screen Size	# of CPUs
RACKMUX-P15	PS/2 KVM drawer	15	NA
RACKMUX-P17	PS/2 KVM drawer	17	NA
RACKMUX-P15-4UNV	KVM drawer w/ universal switch	15	4
RACKMUX-P15-8UNV	KVM drawer w/ universal switch	15	8
RACKMUX-P17-4UNV	KVM drawer w/ universal switch	17	4
RACKMUX-P17-8UNV	KVM drawer w/ universal switch	17	8
RACKMUX-EXT-RL	Extension rails	NA	NA



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RACKMOUNT SUN USB KVM DRAWER

1RU KVM drawer with SUN USB keyboard



RACKMUX-US17 (Front and Back)

Features & Applications

The RACKMUX® SUN USB KVM Drawer combines a rackmount LCD monitor, SUN USB keyboard, and trackball mouse in a space-saving 1RU industrial strength drawer.

- Supports 1280x1024 video resolution.
 - Equipped with On Screen Display (OSD).
 - Front panel conceals the unit when not in use.
- Drawer locks into place when open to prevent it from sliding in and out of the rack.
 - Designed to fit in a standard 19" rack/cabinet.

Specifications

Hosts

- Compatible with USB-enabled SUN, Windows, Linux, Apple, IBM and HP computers.

Monitor

- 17" Active Matrix TFT LCD flat panel monitor.
- 1280x1024 video resolution.
- Supports composite sync, H/V separate (TTL) sync, and Sync on Green.
- Sync Frequency: Horz 30 KHz-82 KHz, Vert 56-75 Hz.
- OSD controls for brightness, contrast, auto adjust, Horz- and Vert-center alignment, clock/phase, color adjustment.
- 250 nits brightness and 350:1 contrast ratio typical.
- Supports DDC1 and DDC2B protocols.

Keyboard/Mouse

- Female USB Type B connector.
- 104-key US layout keyboard.
- Three button trackball mouse.

Cables

- 6-foot 15HD VGA cable included.
- 6-foot USB Type A male to male cable included.
- 6-foot DC power supply cable included.

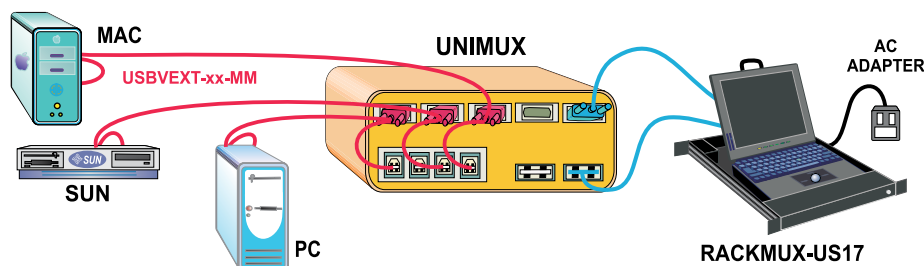
Power

- 110 or 220 VAC at 50 or 60 Hz via AC Adapter.

Dimensions

- WxDxH (in): 19x26.8x1.75
- Fits 26.8" to 36.7" rack depths via adjustable mounting brackets.
 - Compatible with optional extension rails (see page 19).
 - ◆ Allows adjustments to various rack depths from 28.2" to 36.7".

Configuration and Cable Illustrations



RACKMOUNT SUN USB KVM DRAWER

1RU KVM drawer with SUN USB keyboard

Optional USB KVM Switch Integrated into SUN USB KVM Drawer



RACKMUX-US17-8USB (Back)

- Available with a 4 or 8-port USB KVM switch.
- Compatible with USB PC, SUN and MAC.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Dimensions

- WxDxH (in): 19x29.1x1.75
- Fits 29.1" to 36.7" rack depths via adjustable mounting brackets.
 - Compatible with optional extension rails (see page 19).
 - ◆ Allows adjustments to various rack depths from 29.1" to 40".

On Screen Display (OSD)

- Locate and select computers by name.
- Displays the platform and power status of each computer.
- OS and software-independent.

Security

- Advanced security included with switch.
- Each user password and name can be up to 13 characters long, and each switch can store up to 63 users.
- Administrator can enable or disable all security features and select which computers each user can access.
- Once security is enabled, a user or administrator must login in order to access any computers connected to the switch.

For more information on the built-in USB KVM switch, see pages 40-42.

Rackmount SUN USB KVM Drawer Models

NTI Part #	Description	# of CPUs
RACKMUX-US17	SUN USB KVM drawer	NA
RACKMUX-US17-4USB	SUN USB KVM drawer w/ built-in USB KVM switch	4
RACKMUX-US17-8USB	SUN USB KVM drawer w/ built-in USB KVM switch	8



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RACKMOUNT CONSOLE TERMINAL DRAWER

Provides RS232 terminal control of headless servers and IT devices



RACKMUX-T15 (Front and Back)

Features & Applications

The RACKMUX® Terminal Drawer is the ideal solution for communicating with serial devices, such as routers, servers, bridges, firewalls, and hubs. This flexible terminal is easy to install and configure for either RS232 or Telnet communication mode.

- 15" LCD with 800x600 resolution.
- Entire unit is only 1 RU (1.75") high.
- Supports RSC capabilities.
- Serial and parallel slave-printer ports.
- Front panel security lock.
- Emulates many terminal types.
- Select from 16 foreground and 16 background colors.
- Optional anti-glare protective glass for the LCD.
- Optional mounting bracket for two-post style telco rack.

Specifications

Compatibility

- Compatible with any SUN, HP or PC-based headless server.
- Communicates with serial devices, such as routers, bridges, firewalls and hubs.

Monitor

- Active Matrix TFT color 15" LCD flat panel monitor.
- Display resolution: 1024x768
- Viewing angle:
 - Horizontal: 140°
 - Vertical: 125°
- Video auto-adjust for optimum image.
- OSD controls for brightness and contrast.
- 250 nits brightness and 500:1 contrast ratio typical.

Keyboard

- Keyboard available in multiple languages: English (US), English (UK), French, German, Italian, Spanish.
- 83-key (US) or 84-key (Europe) keyboard with wrist-pad.

Communication Ports

- Serial port: one DB9M RS232 port.
 - Serial baud rates: 50 to 115,200bps.
 - Data format: 7 or 8 data bits with or without parity, 1 or 2 stop bits.
 - Serial handshake: XON/XOFF, XPC, and hardware DTR.
 - Communication options: Single RS232 server connection, or up to 12 Ethernet telnet sessions to predefined IP addresses.
- Network port: one RJ45 10BaseT Ethernet port.
- Local printer ports: one DB25F parallel and one DB9M RS232 port.

Terminal Emulation

- Multiple RS232 Emulations.
 - ADDS A2, PC TERM, PCG Alpha, Console ANSI, TVI910+, TV1925, VT52, VT100, VT220, WY-50+, WY-60, WY-100, WY-120, WY-325.
- Character matrix: 7x12 dot matrix in 10x16 cell with 3 dot descenders.
- Screen size: 80 characters wide by 25 lines.
- Page length: 1, 2 or 4 screens (multiple screen page length reduces maximum number of possible telnet sessions).
- Cursor: blink or steady, block or underline.
- Modes: full duplex, half duplex, block, half block.
- 16 foreground and 16 background colors.

Power

- Input Voltage: AC 100 - 240V, 50 - 60Hz

Dimensions

- WxDxH (Inches): 19x21.9x1.75.
- Drawer is adjustable to various rack depths from 22" deep to 36" deep.
- Drawer locks into place when open to prevent it from sliding in and out of the rack.
- Rack ears are available for two post style telco rack mounting, select part number RL-T15-TEL.

RACKMOUNT CONSOLE TERMINAL DRAWER

Provides RS232 terminal control of headless servers and IT devices

Optional Console Serial Switch Integrated into Terminal Drawer

NEW



RACKMUX-T15-RS16 (Back)

RACKMUX-T15-RSx combines a rackmount terminal & a console serial switch into a space-saving 1RU industrial strength drawer.

- Manage up to 16 serial devices, including servers, switches, routers, and telecom gear through a single interface.
- Entire unit is only 1RU (1.75") high.
- Dimensions WxDxH (in): 19x24.8x1.75
- Drawer is adjustable to various rack depths from 22" deep to 36" deep.
- Available with optional anti-glare protective glass for the LCD.
- Available with optional mounting bracket for two-post style telco rack.
- Four cable adapters are included
 - DB-25F to RJ45 console adapter.
 - DB-9F to RJ45 console adapter.
 - DB-25M to RJ45 console adapter.
 - DB-25M to RJ45 modem adapter.

For more info on the built-in console switch, see pages 68-70.

Optional SSH Secure Console Switch Integrated into Terminal Drawer



RACKMUX-T15-SS8 (Back)

The RACKMUX-T15-SS8 combines a rackmount terminal and a 8-port SSH secure console switch into a space-saving 1RU industrial strength drawer.

- Securely and intelligently monitor and control eight RS232 serial devices.
- Provides remote control of servers, switches, routers, LAN/WAN components, power supplies and PBXs through a single interface.
- Entire unit is only 1RU (1.75") high.
- Dimensions WxDxH(in): 19x18.4x1.75.
- Drawer is adjustable to various rack depths from 20.1" deep to 30.4" deep.
 - Compatible with optional extension rails (see page 19).
 - ◆ Allows adjustments to various rack depths from 24" to 34.8".
- Four cable adapters are included
 - DB-25F to RJ45 console adapter.
 - DB-9F to RJ45 console adapter.
 - DB-25M to RJ45 console adapter.
 - DB-25M to RJ45 modem adapter.

Rackmount Console Terminal Drawer Models

NTI Part #	Description	# of ports
RACKMUX-T15	Rackmount console terminal drawer	NA
RACKMUX-T15G	Terminal drawer, anti-glare protective glass	NA
RACKMUX-T15-SS8	Terminal drawer, SSH secure console switch	8
RACKMUX-T15-RS8	Terminal drawer, console switch	8
RACKMUX-T15G-RS8	Terminal drawer, anti-glare protective glass, console switch	8
RACKMUX-T15-RS16	Terminal drawer, console switch	16
RACKMUX-T15G-RS16	Terminal drawer, anti-glare protective glass, console switch	16
RL-T15-TEL	Mounting bracket for two-post style telco rack	NA

Adapters (Compatible with RACKMUX-T15-RSx and RACKMUX-T15-SS8)

NTI Part #	Description
DB25M-RJ45F-C	Adapt a modem to the SERIMUX
DB9F-RJ45F	Adapt DB-9M serial ports to the SERIMUX
DB25M-RJ45F-T	Adapt DB-25F serial ports to the SERIMUX
DB25F-RJ45F	Adapt DB-25M serial ports to the SERIMUX



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RACKMOUNT KVM DRAWER WITH REAL MOUSE

1RU PS/2 and USB KVM drawers provide space-saving, convenient control with a real mouse

Available Models:

- **USB or PS/2 Keyboard & Mouse**
- **15" and 17" LCD**



RACKMUX® 19" Rack Mount KVM Drawer with Real Mouse

Features & Applications

The RACKMUX® USB or PS/2 KVM Drawer with Real Mouse combines an LCD monitor, keyboard, and real mouse with mouse pocket (Microsoft IntelliMouse® Optical Mouse included) in a space-saving 1RU industrial strength drawer. This KVM drawer is ideal for anyone who prefers using a real mouse to touchpads or trackballs. Connect this compact data entry device to a KVM switch for convenient control of all attached computers.

- Available in both PS/2 and USB models.
- Allows users to store and use a real mouse.
- 15" or 17" TFT panel active matrix LCD display monitor.
- Wide 160 degree horizontal and vertical viewing angles.
- Display automatically powers off when placed in the closed position.
- Easy to install.
- Lexan™ shield protects the TFT.
- High-quality metal construction.
- Drawer is adjustable to various rack depths.
 - 15" drawers range from 27.3" to 31".
 - 17" drawers range from 28.8" to 35".
- Features smooth-action ball bearing rackmount slides.
- Drawer locks into place when open to prevent it from sliding in and out of the rack.

Specifications

Hosts

- PS/2 model is compatible with all PS/2 and UNIX computers. Use with a NODEMUX® universal multi-platform KVM switch to control multiple computers.
- USB model is compatible with all USB-enabled PC, SUN or MAC computers. Use with a UNIMUX™ USB KVM switch to control multiple USB computers.

Devices

- Compact, full-function US layout keyboard with 89-key Windows layout.
- PS/2 model keyboard/mouse has 4-foot attached cable with 2 male 6-pin miniDIN connectors for connecting to host.
- USB model keyboard/mouse has 4-foot attached cable with 2 male USB Type A connectors for connecting to host.
- Microsoft IntelliMouse® Optical Mouse included. Compatible with both PS/2 and USB.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Monitor

- 15" or 17" TFT/LCD monitor.
- 1024x768 video resolution for the 15" monitor.
- 1280x1024 video resolution for the 17" monitor.
- On Screen Display (OSD) controls for brightness, contrast and position (vertical and horizontal).
- Frequency:
 - Horizontal: 31.5 to 68 kHz for 15" drawers, and 31.5 to 80 kHz for 17" drawers.
 - Vertical: 60 to 85 Hz for both drawers.
- Sync: H/V Separate (TTL)
- 250 nits brightness and 400:1 contrast ratio typical.
- Supports the DDC1 and DDC2B protocol.
- 5-ft. attached cable w/ male 15-pin HD connector for connecting to host.

KVM Drawer with Real Mouse Models

NTI Part#	Screen Size	Model	Size WxDxH (in)
RACKMUX-P15-MP	15"	PS/2	19x27.3x1.75
RACKMUX-P17-MP	17"	PS/2	19x28.8x1.75
RACKMUX-UW15-MP	15"	USB	19x27.3x1.75
RACKMUX-UW17-MP	17"	USB	19x28.8x1.75

KEYBOARD DRAWER

1RU PS/2 keyboard drawer with trackball mouse

NEW



RACKMUX-KT

Available Models:

- **USB or PS/2 Keyboard & Mouse**

Features & Applications

The RACKMUX® rackmount keyboard drawer combines a PS/2 or USB keyboard and trackball mouse in a space-saving 1RU industrial-strength drawer.

- Available in both PS/2 and USB models.
- Designed to fit in a standard 19" rack/cabinet.
- Front panel security lock.
- Large padded wrist-rest.

Specifications

- PS/2 or USB keyboard integrated with trackball.
- Built-in cursor keys and numeric keys.
- 95-key US layout keyboard.
- Logitech 19mm Optical trackball.

Hosts

- PS/2 model is compatible with PS/2 and UNIX computers.
- USB model is compatible with USB-enabled PC, SUN or MAC computers.

Cables

- Keyboard/mouse proprietary cable included.

Dimensions

- PS/2 drawer, WxDxH (in): 19x14.7x1.75.
- USB drawer, WxDxH (in): 19x21.5x1.75.
- Drawer is adjustable to various rack depths.
 - PS/2 drawer ranges from 14.7" to 25.9".
 - USB drawer ranges from 21.5" to 31.2".

Rackmount Keyboard Drawers

NTI Part #	Description
RACKMUX-KT	PS/2 rackmount keyboard drawer
RACKMUX-UKT	USB rackmount keyboard drawer



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RACKMUX®

www.networktechinc.com/keyboard-drawer.html

VIDEO MATRIX SWITCH

Switch video from many computers among multiple monitors



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

Features and Applications

The VEEMUX® SM-nXm-15V-LCD 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 1900x1200 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.
- 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.
- The smaller models use AC adapters as their power source.

Video Output

- Female 15-pin HD connectors.
- 1900x1200 video resolution with no degradation.
- Impedance: 75 Ohms.
- Bandwidth: 200 Mhz, fully loaded.

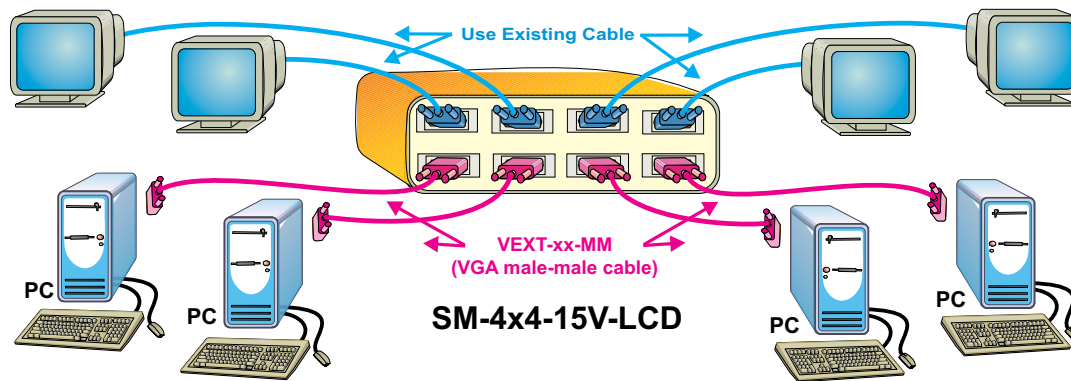
Regulatory Approvals

- CE, FCC
 - Not available on the desktop units.

VIDEO MATRIX SWITCH

Switch video from many computers among multiple monitors

Configuration and Cable Illustration of VEEMUX Video Matrix Switch



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 connection 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 (passwords are between 5 and 16 characters long inclusive).
 - ◆ 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 and outputs.
 - ◆ Update Firmware page - load firmware updates to the webmux product.

Telnet

- Security is ensured by the Administrative password.
- Commands are similar to RS232 commands.



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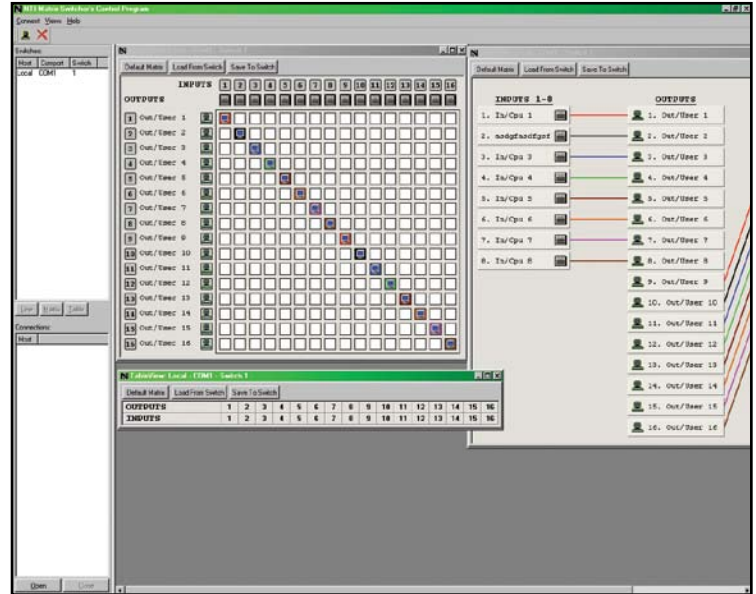
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VIDEO MATRIX SWITCH

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 50 feet 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.



VIDEO MATRIX SWITCH

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 - \overline{n} X \overline{m} - 15V - LCD - \overline{DT} \overline{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 (in)	Rack Units	Rack Size WxDxH (in)
SM-4X2-15V-LCD	4	2	NA	1RU	19x10x1.75
SM-4X2-15V-LCD-DT	4	2	10x7.5x3.3	NA	NA
SM-4X4-15V-LCD	4	4	NA	1RU	19x10x1.75
SM-4X4-15V-LCD-DT	4	4	10x7.5x3.3	NA	NA
SM-8X2-15V-LCD	8	2	NA	1RU	19x10x1.75
SM-8X2-15V-LCD-DT	8	2	10x7.5x3.3	NA	NA
SM-8X4-15V-LCD	8	4	NA	1RU	19x10x1.75
SM-8X4-15V-LCD-DT	8	4	10x7.5x3.3	NA	NA
SM-8X8-15V-LCD	8	8	NA	1RU	19x12x1.75
SM-16X2-15V-LCD	16	2	NA	1RU	19x12x1.75
SM-16X4-15V-LCD	16	4	NA	1RU	19x12x1.75
SM-16X8-15V-LCD	16	8	NA	2RU	19x12x3.5
SM-16X12-15V-LCD	16	12	NA	2RU	19x12x3.5
SM-16X16-15V-LCD	16	16	NA	2RU	19x12x3.5
SM-32X2-15V-LCD	32	2	NA	2RU	19x12x3.5
SM-32X4-15V-LCD	32	4	NA	2RU	19x12x3.5
SM-32X8-15V-LCD	32	8	NA	2RU	19x12x3.5
SM-32X16-15V-LCD	32	16	NA	3RU	19x12x5.25

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.



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AUDIO/VIDEO MATRIX SWITCH

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



VEEMUX® SM-16X16-AV-LCD (Front and Back)

Features and Applications

The VEEMUX® SM-nXm-AV-LCD Audio/Video Matrix Switch routes audio and video 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 be muted on command.

- Control and configure the switch through Ethernet, serial port or front panel buttons.
- Matrix Control Software with Graphical User Interface is included (see page 30).
- Inputs and outputs can be named.
- Switch VGA video directly.
- Each output provides one video signal and one stereo signal.
- Video bandwidth is 200 MHz or greater, fully loaded.
- Each input can be independently connected to any or all outputs.
- Features break-away audio – audio can be switched independent of video.
- Supports 1900x1200 video resolution at a refresh rate of 85 Hz.
- Crestron® compatible.
 - Module controls routing, reset and status RS232 functions.

Specifications

Video Input

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

Video Output

- Female 15-pin HD connectors.
- 1900x1200 video resolution with no degradation.
- Impedance: 75 Ohms.
- Bandwidth: 200 Mhz, fully loaded.

Power

- 110 or 220 VAC at 50 or 60 Hz.

Regulatory Approvals

- CE, FCC

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 jack.
- 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.

Control Methods

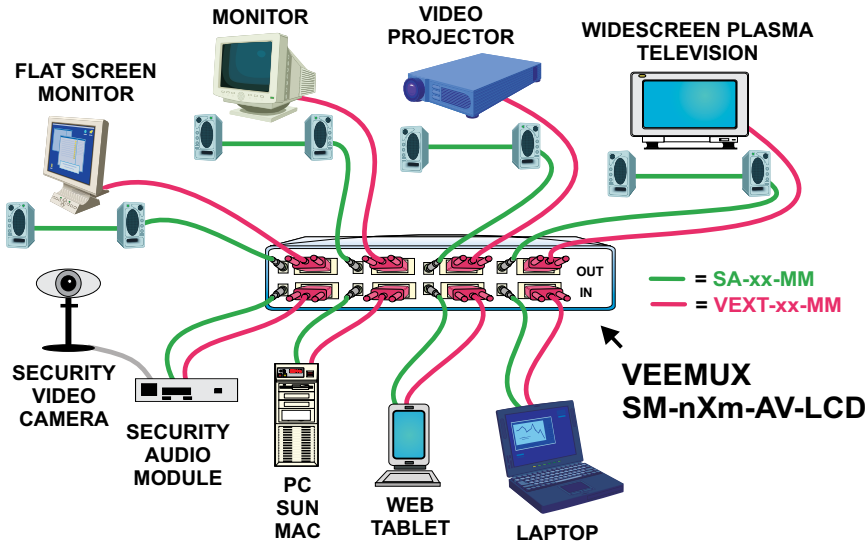
- Front panel interface. See page 29 for specifications.
- RS232 control. See page 29 for specifications.
- Ethernet control. See page 29 for specifications.
- GUI control. See page 30 for specifications.



AUDIO/VIDEO MATRIX SWITCH

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

Configuration and Cable Illustration of VEEMUX Audio/Video Matrix Switch



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 - \boxed{n} X \boxed{m} - AV - LCD - \boxed{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 (in)
SM-8X2-AV-LCD	8	2	2RU	19x10x3.5
SM-8X4-AV-LCD	8	4	2RU	19x10x3.5
SM-8X8-AV-LCD	8	8	2RU	19x12x3.5
SM-16X2-AV-LCD	16	2	2RU	19x10x3.5
SM-16X4-AV-LCD	16	4	2RU	19x10x3.5
SM-16X8-AV-LCD	16	8	3RU	19x12x5.25
SM-16X12-AV-LCD	16	12	3RU	19x12x5.25
SM-16X16-AV-LCD	16	16	3RU	19x12x5.25
SM-32X2-AV-LCD	32	2	4RU	19x12x7
SM-32X4-AV-LCD	32	4	4RU	19x12x7
SM-32X8-AV-LCD	32	8	4RU	19x12x7
SM-32X16-AV-LCD	32	16	4RU	19x12x7

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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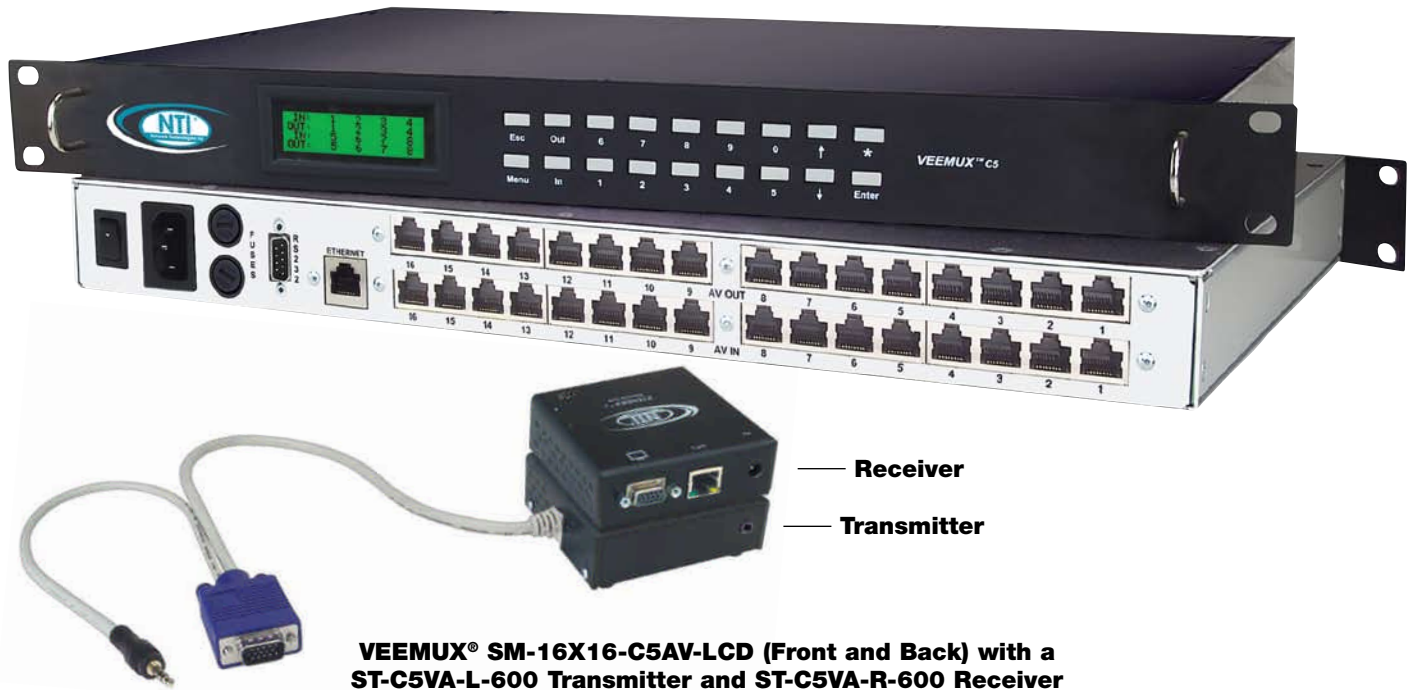


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AUDIO/VIDEO MATRIX SWITCH VIA CAT5

Route and distribute audio/video up to 600 feet using CAT5 cable instead of bulky coax cables



VEEMUX® SM-16X16-C5AV-LCD (Front and Back) with a ST-C5VA-L-600 Transmitter and ST-C5VA-R-600 Receiver

Features and Applications

The VEEMUX® SM-nXm-C5AV-LCD Audio/Video Matrix Switch via CAT5 works with NTI's 600 foot CAT5 transmitters and receivers to create a high performance audio/video signal routing system with a maximum extension of 600 feet between the local and remote units. Crisp and clear 1024x768 video resolution is supported at 600 feet; higher resolutions, up to 1920x1440, are supported at shorter distances (refer to resolution chart on page 37).

The VEEMUX audio/video matrix switch via CAT5 is capable of connecting to as many as 32 video sources and 16 video displays.

A single computer audio/video output can be routed to one or more destinations. Each image will be as crisp and clear as if directly connected to the original source. Buffered video outputs and digital transmission of audio signals ensures integrity is maintained throughout the system.

- Configure and control the switch through Ethernet, serial port or front panel buttons.
- Matrix Control Software with Graphical User Interface is included (see page 30).
- Inputs and outputs can be named.
- Video quality adjustment is done automatically at every connection change, or can be forced via the front panel or web interface.
- Equipped with Liquid Crystal Display (LCD) for front panel operation.
- A digital VU-meter shows the audio levels of the selected output.
- Each output provides one video signal and one stereo audio signal.
- Each input can be independently connected to any or all outputs.
- No loss of audio or video quality between the local and remote units.
- 1RU or 2RU rackmount case is standard.
- VGA and S-Video transmitters and receivers can be supported on the same VEEMUX unit.
 - VGA inputs only work with VGA outputs, and S-Video inputs only work with S-Video outputs.

Specifications

VEEMUX SM-nXm-C5AV-LCD

- Female RJ45 input/output connectors.
- Analog bandwidth is 175 MHz.
- 10/100BaseT ethernet interface.
- Supported protocols: HTTP, HTTPS, Telnet.
- RS232 interface.

Regulatory Approvals

- CE

Power

- 110 or 220 VAC at 50 or 60 Hz via IEC connector.

AUDIO/VIDEO MATRIX SWITCH VIA CAT5

Route and distribute audio/video up to 600 feet using CAT5 cable instead of bulky coax cables

Specifications (Continued)

Local Unit (Transmitter)

Video

- VGA transmitter:
 - Male 15-pin HD connector.
 - Compatible with SVGA, XGA, and VGA.
- S-Video transmitter:
 - Male 4-pin miniDIN connector.
 - Compatible with S-Video.
- Input impedance: 75 Ohms.
- Maximum input levels: 1.45Vp-p.
- Supports Separate and Composite TTL level sync.
- Input Sync frequency ranges:
 - Horizontal: 15 kHz to 130 kHz.
 - Vertical: 30 Hz to 150 Hz.
- Video is DC coupled.

Audio

- VGA video/audio transmitter: 3.5mm stereo audio plug.
- S-Video/audio transmitter: dual RCA plugs.
- Input impedance: 10k Ohms.
- Maximum input levels: 3.1Vp-p (line level).

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Regulatory Approvals

- CE

Remote Unit (Receiver)

Video

- VGA receiver:
 - Female 15-pin HD connector.
 - Supports resolutions up to 1920x1440; refer to the resolution chart on page 41 for resolutions at different lengths.
- S-Video receiver:
 - Female 4-pin miniDIN connector.
 - Supports maximum 800x600 S-Video resolution.
- Video quality adjustment for different lengths of CAT5/5e/6 cable is done manually for video-only units and automatically for audio/video units.
 - When using CAT6, some degradation may be experienced, depending on the length of the cable.
- Output impedance: 75 Ohms.
- Maximum output level: 1.45Vp-p.

Audio

- 3.5mm stereo audio jack.
- Frequency response: 20 Hz to 20 kHz, +/-1dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%.
- Stereo crosstalk: -70 dB.
- Maximum output levels: 3.1Vp-p (line level).
- Line level output; supports multimedia speakers.
- Requires powered speakers.

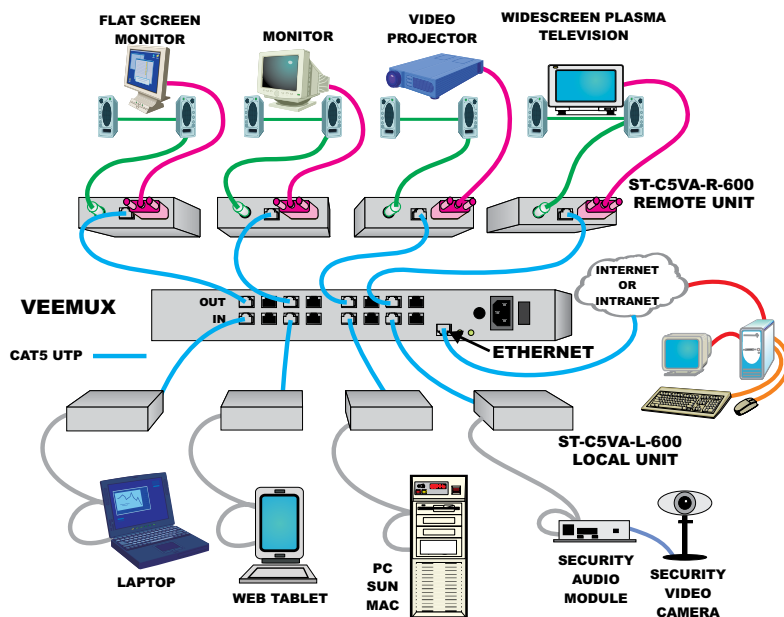
Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter

Regulatory Approvals

- CE.

Configuration and Cable Illustration



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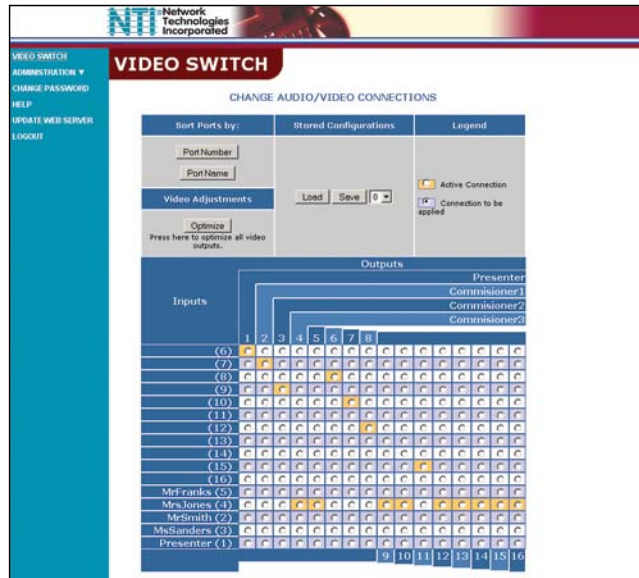


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AUDIO/VIDEO MATRIX SWITCH VIA CAT5

Route and distribute audio/video up to 600 feet using CAT5 cable instead of bulky coax cables



Screenshot of the web server interface

Built-In Control Methods

Front Panel Interface

- Liquid Crystal Display (LCD) can display all current connections.
- Locally change input and output selections with front panel buttons.
- Digital VU-Meter displays the audio levels for the currently selected port.
- Configuration and control can be done using the front panel buttons.
- Main menu allows the user to:
 - Set serial address.
 - Set serial speed.
 - Set IP address.
 - Set Subnet Mask.
 - Adjust contrast.
 - Force compensation.
 - Show size.

Ethernet Control

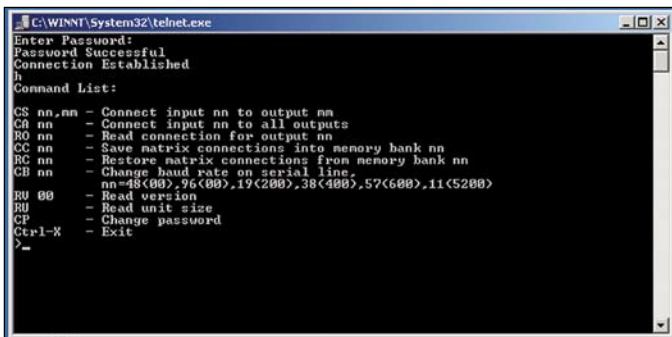
- Configuration and control can be done over the Internet via web page or telnet.

Web Server

- Security is ensured by password and user configurable timeout.
- Up to 25 users can access the web page at one time.
- The user can access the following pages:
 - ♦ **Switch page:** allows the user to connect any input to any output, save and recall up to ten connections.
 - ♦ **Administration pages:** administrator can access setup pages, port setting page and update firmware page. Assign names to video and audio inputs and outputs.
 - ♦ **Password page:** allows the user to change the password for accessing the web interface.
 - ♦ **Help page:** documentation on the usage of the web interface.
 - ♦ **Update Web Server page:** globally update the web server to any settings that have been changed.
 - ♦ **Logout page:** view currently active connections and logout of the web interface.

Telnet

- Security is ensured by password.
- Commands are similar to RS232 commands (see page 37).



Screenshot of the telnet interface



AUDIO/VIDEO MATRIX SWITCH VIA CAT5

Route and distribute audio/video up to 600 feet using CAT5 cable instead of bulky coax cables

Built-In Control Methods (Continued)

RS232 Control

- Configuration and control can be done through the serial port.
- Control the switch using Matrix Control Software with Graphical User Interface (GUI control) via RS232. See page 30 for specifications.
- Selectable baud rate: 1200 through 9600.
 - Baud rate is set via the main menu, serial command, telnet or web page.

Resolutions Using VGA Transmitters and Receivers

Cable	Distance (feet)	Resolution
CAT5/CAT5e (UTP)	600	1024x768 at 60Hz
CAT5/CAT5e (UTP)	400	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	300	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	100	1920x1440 at 60Hz
CAT6 (UTP)	300	1024x768 at 60Hz
CAT6 (UTP)	200	1280x1024 at 60Hz
CAT6 (UTP)	100	1920x1440 at 60Hz

CAT5 A/V Matrix Switch Models

NTI Part #	# of Inputs	# of Outputs	Rack Units	Size WxDxH (in)
SM-8X8-C5AV-LCD	8	8	1RU	19x12x1.75
SM-8X16-C5AV-LCD	8	16	1RU	19x12x1.75
SM-16X8-C5AV-LCD	16	8	1RU	19x12x1.75
SM-16X16-C5AV-LCD	16	16	1RU	19x12x1.75
SM-32X8-C5AV-LCD	32	8	2RU	19x12x3.5
SM-32X16-C5AV-LCD	32	16	2RU	19x12x3.5

Commands

- **CS**—causes INx/OUTx connection to occur.
- **CA**—causes all inputs to connect to specified output.
- **RO**—reads what input is connected to specified output.
- **CC**—save matrix.
- **RC**—recall matrix.
- **CB**—change baud rate.
- **RV**—version information.
- **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.

Cables

- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors. Cables not included.

Transmitter and Receiver Models

Transmitters NTI Part #	Receivers NTI Part #	Supported Features
ST-C5V-L-600	ST-C5V-R-600	VGA
ST-C5VA-L-600	ST-C5VA-R-600	VGA and audio
ST-C5SV-L-600	ST-C5SV-R-600	S-Video
ST-C5SVA-L-600	ST-C5SVA-R-600	S-Video and audio



HDTV AUDIO/VIDEO MATRIX SWITCH

Switch audio and component video from eight sources to four displays



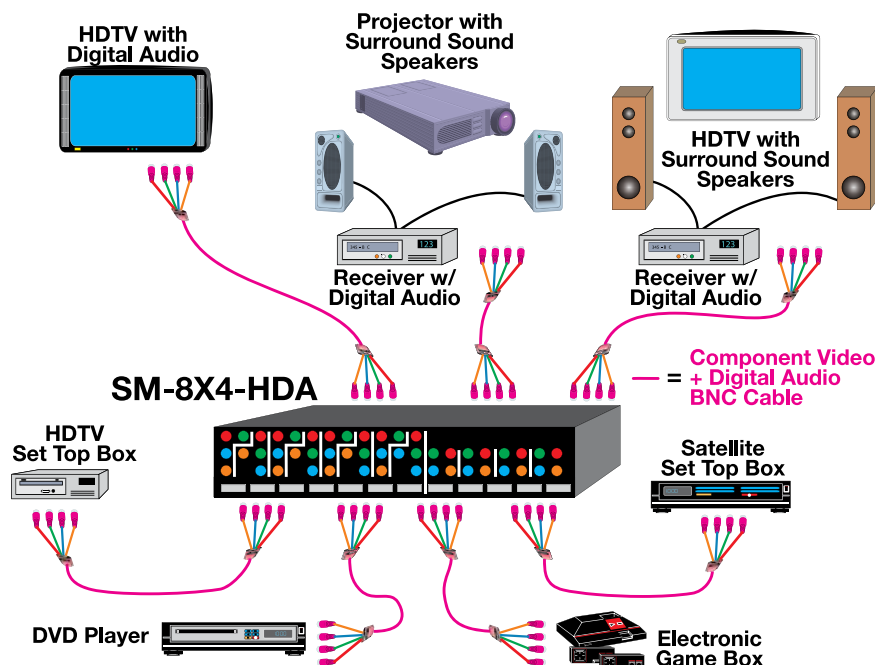
VEEMUX® SM-8X4-HDA (Front & Back)

Features & Applications

The VEEMUX® SM-8X4-HDA HDTV Audio/Video Matrix Switch independently switches eight sets of YPbPr component video and analog/digital audio signals to any or all of the four outputs. Each input and output has YPbPr component video, L/R analog audio (balanced/unbalanced), and digital audio on coax (S/PDIF).

- Supports High Definition and Standard Definition YPbPr component video, S-Video or composite video.
- Audio can be unbalanced analog stereo, balanced analog stereo or digital S/PDIF.
 - Supports S/PDIF, DTS Digital Surround™, and Dolby Digital™ 5.1 digital signals.
- Supports 480i (interlaced), 480p (progressive), 720i, 720p, 1080i, and 1080p formats.
- Features break-away audio—allows audio to be switched independent of video.
- Equipped with volume control: -80dB to 10dB, in 1dB steps.
- Control the switch through Ethernet, RS232, or front panel buttons.
- The SM-8X4-HDA is the ideal solution for many applications, such as mission critical command centers, sports facilities and entertainment venues.

Configuration and Cable Illustration



HDTV AUDIO/VIDEO MATRIX SWITCH

Switch audio and component video from eight sources to four displays

Specifications

Video

- BNC connectors.
- Signal type: HDTV YPbPr component, S-Video, composite.
 - Inputs and outputs must be of the same format.
- Maximum input/output levels: 2Vp-p.
- Input/output impedance: 75 Ohms.
- Video crosstalk: <-60dB.
- Video gain: unity.
- Bandwidth: >150MHz, fully loaded.
- Resolutions: HDTV 480i, 480p, 720i, 720p, 1080i, and 1080p.

Stereo Audio

- Screw terminal connectors.
- Signal type: balanced stereo audio, unbalanced stereo audio, analog, left/right.
 - Inputs and outputs must be of the same format.
- Maximum input/output levels: 2.5Vp-p.
- Input impedance: 10K Ohms.
- Output impedance: 50 Ohms.
- Frequency Response: +/-0.05 dB, 20 Hz to 20 kHz.
- Total Harmonic Distortion + Noise (THD+N): 0.03% at 1kHz.
- Signal-to-Noise Ratio (SNR): >80 dBA.
- Stereo Channel Separation: <-90 dBA.
- Output gain: -80dB to 10dB.

Digital Audio

- BNC connectors.
- Signal type: S/PDIF, DTS Digital Surround™, Dolby Digital™ 5.1.
 - Inputs and outputs must be of the same format.
- Maximum input/output levels: 1Vp-p (unbalanced).
- Input/output impedance: 75 Ohms.

Power

- 110 or 220 at 50 or 60 Hz via IEC connector.

Dimensions

- WxDxH (in): 19x10x3.5

Control Methods

Front Panel Interface

- Configuration and control can be done using the front panel buttons.
- Liquid Crystal Display (LCD) displays all current connections.
- Locally change input and output selections with front panel buttons.

Ethernet Control

- Configuration and control can be done over the Internet via Web Server and Telnet.
- RJ45 connector with LEDs.
- 10/100Base-T Ethernet interface.
- Supported protocols: HTTP, HTTPS, Telnet.

RS232 Control

- Female DB9 connector.
- Configuration and control can be done through the serial port.
- Control the switch using Matrix Control Software with Graphic User Interface via RS232.
(See page 30 for specifications)
- Baud rate selectable from 1200, 2400, 4800, 9600.



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USB KVM SWITCH

Control up to 32 USB computers with one USB keyboard/mouse and VGA monitor



UNIMUX-USBV-8ORS (Front and Back)

Features & Applications

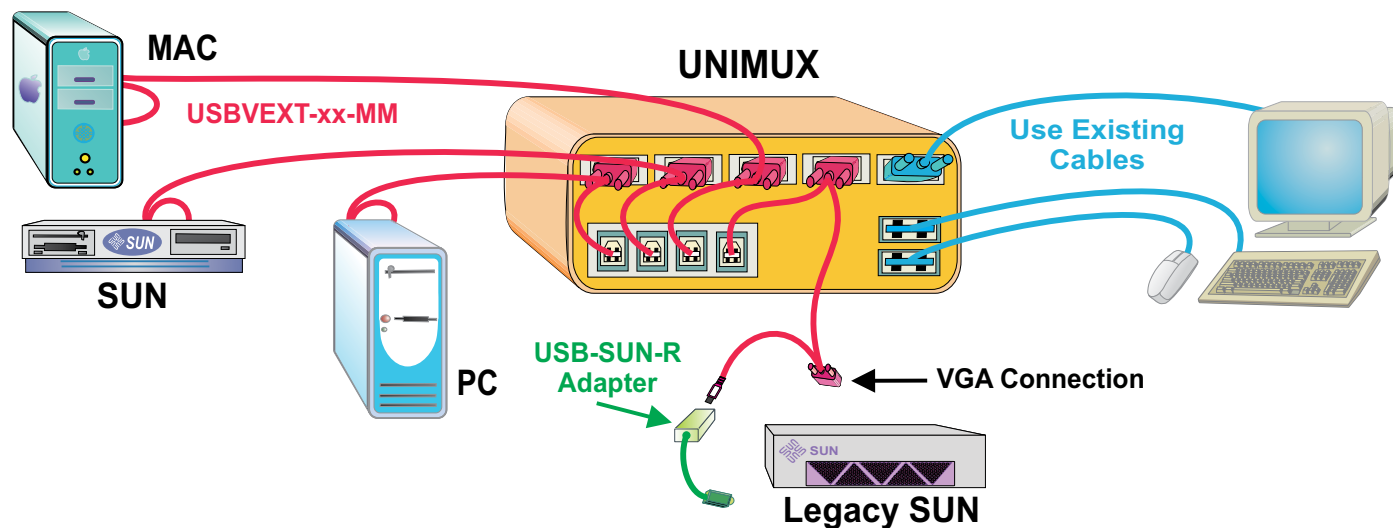
Control up to 32 USB-enabled computers with one USB keyboard, USB mouse and VGA monitor with the UNIMUX™ KVM switch. Dedicated internal microprocessors emulate keyboard and mouse presence to each attached computer 100% of the time so all computers boot error-free.

- Boot all USB computers in ONE operation.
- Supports crisp and clear 1900x1200 video resolution with no degradation.
- Fully compliant with USB standards (1.0, 1.1).
- Compatible with USB-enabled PC, SUN and MAC computers.
- USB SUN start-up keys are supported.
- SUN extra keys are emulated on USB keyboards with Windows keyboard layout.
- USB MAC start-up keys are supported.
- Supports international keyboard layouts in auto-detection mode.
- Available with RS232 control option.

Cascade to add ports to your switch

- Cascade 4, 8 or 16-port UNIMUX switches off a single master switch to control up to 1,024 computers as if from one switch.
- Cascaded switches use computer/video ports and the remote port on the master switch.

Configuration and Cable Illustration



Specifications

Hosts

- Female 15-pin HD and female USB Type B connectors.
- Supports SUN Blade 100, SUN Blade 1000, SUN Ray, SUN Fire™ 240, and SUN Fire™ V20z.
- Supports PCs with USB-enabled OS (Windows 98/ME/2000/XP, Windows Server 2003, Linux) and USB ports.
- Supports PCs with USB-enabled BIOS (legacy USB support) and USB ports.
- Supports MAC G4, G5 and Xserve. Supports MAC soft (keyboard) power-on.
- Any legacy PS/2 or SUN computer can be connected by using a USB-PS2-R or USB-SUN-R.

Monitor

- Crisp and clear 1900x1200 resolution.
- Female 15-pin HD connector.
- A multiscan VGA monitor is required to display the different video outputs from different platforms.
- Bandwidth is 150 MHz.

Devices

- Female USB Type A connectors.
- Compatible with most USB keyboards and mice, including Microsoft USB Intellimouse®, Logitech Cordless Elite Duo keyboard and mouse, Gyration keyboard/mouse and Crystal Vision keyboard with touchpad.
- Keyboard and mouse are hot-pluggable.
- Supports up to eight USB devices (keyboards and mice only) using USB hubs (not included).

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter for 2-, 4-, 16-, and 32-port models.
- 110 or 220 VAC at 50 or 60 Hz via IEC connector for 4-port with RS232 option and 8-port models.

Regulatory Approvals

- CE
 - Available on all models except UNIMUX-USBV-2.

Built-in Control Methods

Front Panel Interface

- Touch a button and be connected to a computer, or change modes of operation.
- LEDs indicate currently selected port and mode of operation.
- Hold in any button for more than five seconds to go into **Scan, Broadcast** or **Command Mode**.
 - In **Normal Operating Mode**, the user can directly operate the selected computer with transparent presence of the NTI switch.
 - **Scan Mode** automatically and sequentially displays the video from each powered-on computer. Duration of display can be 2-255 seconds.
 - **Broadcast Mode** allows the user's keystrokes to be sent to all powered-on computers. (Broadcast Mode is not available for MACs.)
 - **Command Mode** allows the user to give instructions to the switch through his/her keyboard. Keystrokes are not passed to the computer.

Keyboard

- **Scan, Broadcast** or **Command Modes** are available from the keyboard.
- Use the keyboard to command the switch box to select ports or configure the **SCAN** delay.
- Type <Ctrl> + <`> (or <Compose> + <`>) to go into **Command Mode**. (“`” is the accent mark located on the same key as the tilde “~”).
- Press <Esc> to leave **Command Mode** and return to **Normal** or **Scan Mode**.

On Screen Display (OSD)

- Select computers by name with On Screen Display (OSD). Not available on 2-port switch.
- Use keyboard or mouse to operate the switch from menus superimposed onto the monitor.
- Shows names of computers on cascaded switches up to 152 ports.
- Names can be up to 12 characters long.
- Power status of each computer is displayed.
- Help screens assist users with the OSD.
- Modify the size and position of the OSD.
- OSD is built into the switch—no need to install additional hardware or software.
- OS and software-independent.

Security

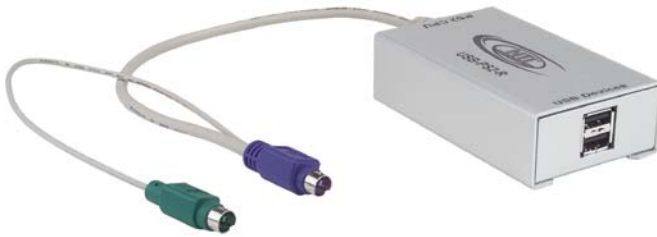
- Advanced security included.
- Each user password and name can be up to 13 characters long, and each switch can store up to 63 users.
- Administrator can enable or disable all security features and select which computers each user can access.
- Once security is enabled, a user or administrator must login in order to access any of the computers connected to the switch.



USB KVM SWITCH

Control up to 32 USB computers with one USB keyboard/mouse and VGA monitor

PS/2 to USB and SUN to USB Adapters



USB-PS2-R

- The USB-PS2-R adapter connects a legacy PS/2 computer to an NTI USB KVM switch.
- Two female USB Type A and two male 6-pin miniDIN connectors.
- One-meter male USB Type A to male USB Type B cable is included.
- Dimensions WxDxH (in): 2.4x4x1.1



USB-SUN-R

- The USB-SUN-R adapter connects a legacy SUN computer to an NTI USB KVM switch.
- Two female USB Type A and one male 8-pin miniDIN connectors.
- One-meter male USB Type A to male USB Type B cable is included.
- Dimensions WxDxH (in): 2x3.7x1.1

RS232 Control Option

- Baud rate 300 through 9600, DIP switch selectable.
- Use DIP switches to address up to eight units, all of which can be daisy-chained and controlled by one serial port.
- Female DB9 connector.
- Add "RS" to the end of the part number to specify this option.

Rackmount Option

- Optional feature. Only available on the 2-port switch.
- Add "R" to the end of the part number for a rackmount in a 19" metal case.

Ordering Specifications

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

Universal Serial Bus Version
Number of Ports
Optional Rack Mount Enclosure
Control Method

UNIMUX - USBV - X R RS

"x" = 2, 4, 8, 16, 32
Only available on 2-port switch

USB KVM Switch Models				
NTI Part #	# of CPUs (x)	Desktop Size WxDxH (in)	Rack Units	Rack Size WxDxH (in)
UNIMUX-USBV-2	2	5.2x4.2x1.6	NA	NA
UNIMUX-USBV-2R	2	NA	1RU	19x10x1.75
UNIMUX-USBV-4O	4	13.3x5.9x1.75 (without supplied rackmount kit)	1RU	19x5.9x1.75 (with supplied rackmount kit)
UNIMUX-USBV-8O	8	13.3x5.9x1.75 (without supplied rackmount kit)	1RU	19x5.9x1.75 (with supplied rackmount kit)
UNIMUX-USBV-16O	16	N/A	2RU	19x10x3.5
UNIMUX-USBV-32O	32	N/A	4RU	19x10x7

Cables

- Interface cables between your computers and the switch are required for proper operation. Use USBVEXT-xx-MM and standard interface cables to connect switches to computers.
- Cables not included.



USB MATRIX KVM SWITCH

Up to eight users can control 32 USB-enabled PC, SUN and MAC computers



UNIMUX-4X16-U (Front and Back)

Features & Applications

The UNIMUX™ USB Matrix KVM Switch allows up to eight users to individually command or simultaneously share up to 32 USB computers. Access USB-enabled PC, SUN and MAC computers using USB keyboards and mice, and VGA multiscan monitors.

USB host computers and USB devices can be hot-plugged or removed at any time. Allows any USB device (keyboard and/or mouse) to control any attached USB host computer. International keyboard layouts are supported in auto-detection mode, or can be manually selected via the On Screen Display (OSD) menu.

- Equipped with OSD, Liquid Crystal Display, and RS232.
- Rackmount is standard on all UNIMUX-nXm-U models. The smaller models are also available in a desktop case (see page 45 for available sizes).
- Dedicated microprocessors prevent computers from locking up, ensuring reliable control.
- Fully compliant with USB standards (1.0, 1.1).
- The advanced OSD user interface with password security makes the UNIMUX USB Matrix KVM Switch simple and reliable to use in Enterprise data centers.
- Computers can be shared or used exclusively.

Specifications

Hosts

- Female 15-pin HD and female USB Type B connectors.
- Supports PCs with USB-enabled OS (Windows 98/ME/2000/XP, Windows Server 2003, Linux) and USB ports.
- Supports PCs with USB-enabled BIOS (legacy USB support) and USB ports.
- Supports SUN Blade 100, SUN Blade 1000, SUN Fire™ 240 and SUN Ray.
- Supports MAC G4, G5 and Xserve.
- Supports MAC soft (keyboard) power-on.
- Any legacy PS/2 or SUN computer can be connected by using a USB-PS2-R or USB-SUN-R adapter (see page 42).

Monitor

- Crisp and clear 1900x1200 resolution.
- Female 15-pin HD connectors.
- A multiscan VGA monitor is required to display the different video outputs from different platforms.
- Bandwidth is 150 MHz.

Devices

- Female USB Type A connectors.
- Compatible with most USB keyboards and mice, including Microsoft USB Intellimouse®, Logitech Cordless Elite Duo keyboard and mouse, Gyration keyboard/mouse and Crystal Vision keyboard with touchpad.
- Keyboard and mouse are hot-pluggable.
- USB MAC and SUN startup keys are supported on all platforms of input devices.
- Keystrokes are translated across platforms.

Power

- 110 or 220 VAC at 50 or 60 Hz.
- The UNIMUX-2X8-U and the UNIMUX-4X8-U (desktop and rackmount) use AC adapters as their power source.

Regulatory Approvals

- CE
 - Available on all models except UNIMUX-2X8-UDT and UNIMUX-4X8-UDT.



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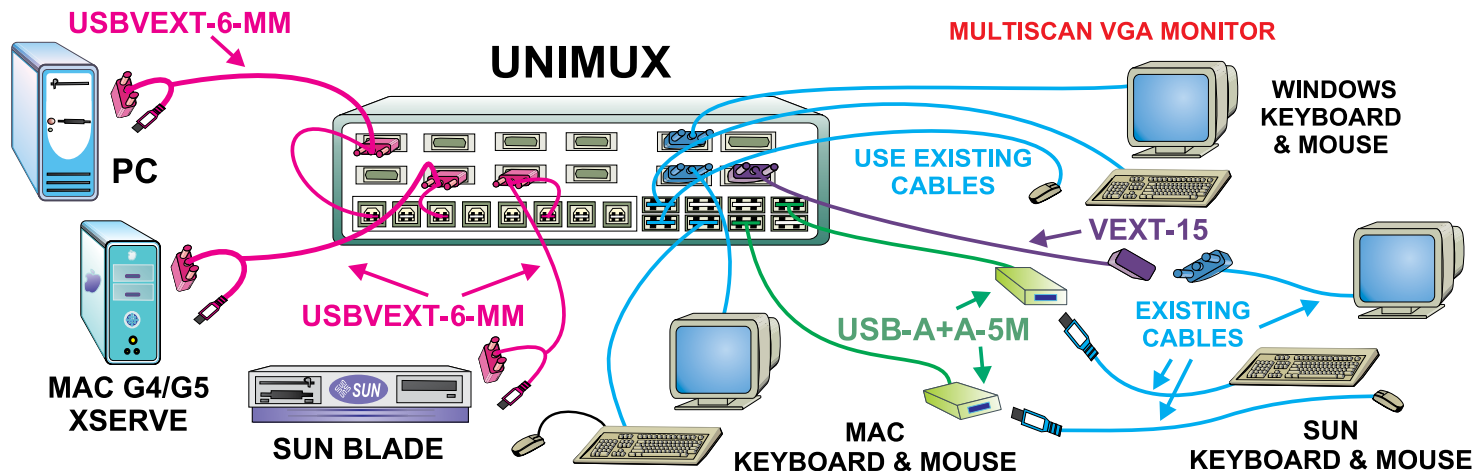
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USB MATRIX KVM SWITCH

Up to eight users can control 32 USB-enabled PC, SUN and MAC computers

Configuration and Cable Illustration



Built-In Control Methods

Front Panel Interface

- Locally change ports with front panel buttons.
- Use front panel buttons to move through LCD screens and execute actions.
- LCD indicates currently selected port for each user.
- Use buttons to configure RS232 control.
 - Change baud rates for RS232.

Keyboard

- Use the keyboard to command the switchbox to select ports or configure the **Scan**, **Sharing** and **Broadcast Modes**.
 - Normal Operating Mode** allows the user to directly operate the selected computer with a transparent presence of the NTI switch.
 - Sharing Mode** allows users to share the same computer.
 - Command Mode** allows the user to give instructions to the switch through his/her keyboard. Keystrokes are not passed to the computer.
 - Scan Mode** feature causes the switch to automatically and sequentially display the video from each selected powered-on computer for a duration of 2-255 seconds (programmable by the user).
 - Broadcast Mode** allows the user's keystrokes to be sent to all selected powered-on computers.
- Type <Ctrl> + < ` > to go into **Command Mode**.
- Press <Esc> to leave **Command Mode** and return to **Normal Mode**.

RS232

- Female DB9 connector.
- Baud rate selectable from 1200, 2400, 4800 and 9600.
- Address up to 15 units, all of which can be daisy-chained and controlled by one serial port.
- Even if some switches are turned off, the others can be controlled via a daisy-chain connection.

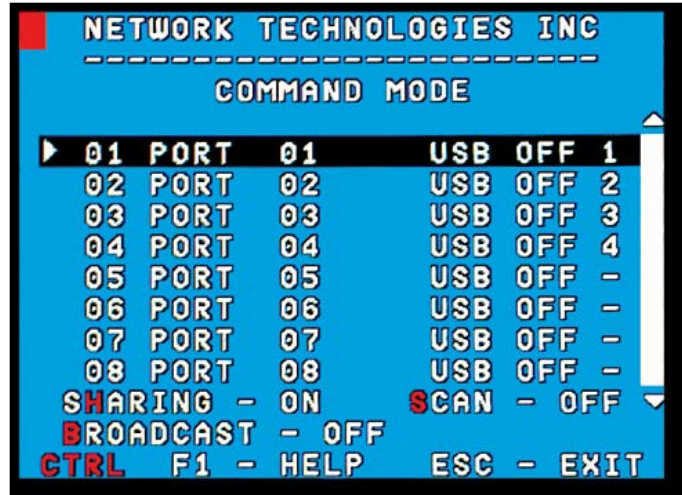
USB MATRIX KVM SWITCH

Up to eight users can control 32 USB-enabled PC, SUN and MAC computers

Built-In Control Methods (Continued)

On Screen Display (OSD)

- Select or list computers by name or port number.
- Port names can be up to 12 characters long.
- OSD is controlled by using the keyboard and mouse.
- Help Screens assist users with the OSD.
- Displays the power status of each computer.
- OS and software-independent.
- OSD comes built into the switch, no need to install additional hardware or software.



Security

- Advanced security included with switch.
- Each user password and name can be up to 13 characters long, and each switch can store up to 63 users.
- Administrator can enable or disable all security features and select which computers each user can access.
- Once security is enabled, a user or administrator must login in order to access any of the computers connected to the switch.

Ordering Specifications for the USB Matrix KVM Switch

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

Number of Users Number of CPUs Universal KVM Switch Optional Desktop Style
UNIMUX - n X m - U DT
 Only Two Units Are Available in a Desktop Case

USB Matrix KVM Switch Models

NTI Part #	# of Users (n)	# of CPUs (m)	Special Options	Desktop Size WxDxH (in)	Rack Units	Rack Size WxDxH (in)
UNIMUX-2X8-U	2	8	Desktop	10x7.5x3.3	1RU	19x10x1.75
UNIMUX-2X16-U	2	16		Not Available	2RU	19x12x3.5
UNIMUX-2X32-U	2	32		Not Available	3RU	19x12x5.25
UNIMUX-4X8-U	4	8	Desktop	10x7.5x3.3	1RU	19x10x1.75
UNIMUX-4X16-U	4	16		Not Available	2RU	19x12x3.5
UNIMUX-4X32-U	4	32		Not Available	3RU	19x12x5.25
UNIMUX-8X8-U	8	8		Not Available	3RU	19x12x5.25
UNIMUX-8X12-U	8	12		Not Available	3RU	19x12x5.25
UNIMUX-8X16-U	8	16		Not Available	3RU	19x12x5.25
UNIMUX-8X24-U	8	24		Not Available	3RU	19x12x5.25
UNIMUX-8X32-U	8	32		Not Available	3RU	19x12x5.25

Cables

- Interface cables between your computers and the switch are required for proper operation. Use USBVEXT-xx-MM and standard interface cables to connect switches to computers.
- Cables not included.



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KVM SWITCH VIA CAT5

Control up to 64 servers in zero rack space



PRIMUX-UZR (Front and Back) and HA-USB Host Adapter

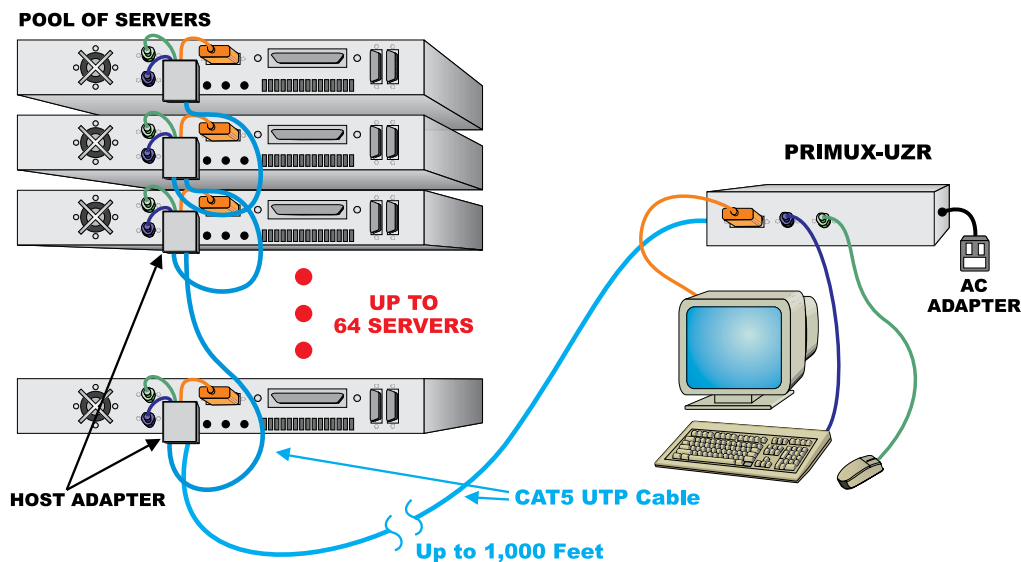
Features & Applications

The PRIMUX® Zero-U KVM Switch System allows you to control up to 64 computers without consuming rack space. The switch frees up valuable space by eliminating large KVM switchboxes and bulky hard-to-manage coax cables.

The PRIMUX system consists of two components: the User Station that connects to a keyboard, monitor and mouse, and Host Adapter that connects to a server. Up to 64 Host Adapters can be daisy-chained together providing user access to up to 64 servers. The User Stations and Host Adapters can be located as far as 1,000 feet from each other via CAT5 UTP cable.

- A single, inexpensive CAT5/5e/6 UTP cable replaces bulky KVM cables.
- Ideal for hazardous/unsecured environments. User station can be located up to 1,000 feet from servers.
- Easy to install and use with plug-and-play functionality.
- Provides a simple daisy-chained wiring configuration.
- Hot-swap components with no disruption of server operation.
- Crisp and clear 1024x768 video resolution at 1,000 feet; higher resolution supported at shorter distances up to 1920x1440 (see resolution chart on page 17).
- Keep-alive keyboard/mouse emulation for flawless operation.
- Interconnect multiple servers at different locations throughout a building. Servers can be the same or different platforms (PS/2, SUN or USB).
- Dedicated microprocessors prevent computers from locking up, ensuring reliable control.
- OSD provides fine tuning for optimal video quality.
- Color-coded LEDs on both the local and remote units indicate power status and verify communication between the units.
- Automatically adjusts the video quality to compensate for varying lengths of CAT5/5e/6 cable.
- Configuration is saved and restored even if unit loses power.

Configuration and Cable Illustration



Specifications

User Station

Monitor

- Female 15-pin HD connector.
- A multiscan VGA monitor is required to display the different video outputs from different platforms.
- Maximum 1024x768 video resolution at 1,000 feet; higher resolutions are supported at shorter distances (see page 17).
- Supports Separate and Composite TTL level sync.
- Supports the DDC2B protocol.

Devices

- Two female USB Type A/two female 6-pin miniDIN connectors.
- Supports all standard PS/2 keyboards and most USB keyboards with Windows or SUN keyboard layout.
- Keyboards and mice are hot-pluggable.
- NTI recommends using a USB SUN keyboard if there are SUN hosts being controlled.
- User keyboard and mouse must be of the same platform.
- Supports standard 2-button PS/2 mice, as well as many other styles.
- USB SUN 3-button mice are supported.
- Most USB mice (up to 3 buttons), including Microsoft USB Intellimouse®.

Regulatory Approvals

- CE

Host Adapters

Hosts

- A maximum of 64 host computers can be daisy-chained together. One platform-specific (PS/2, SUN or USB) HA-x host adapter is required for each computer.

HA-PS2

- Compatible with any OS supporting PS/2, including RS6000, SGI and HP 9000.
- Male 15-pin HD/male 6-pin miniDIN connectors.

HA-SUN

- Compatible with all legacy SUN computers, including Ultras.
- Male 15-pin HD/male 8-pin miniDIN connectors.

HA-USB

- Compatible with USB-enabled PC, SUN and MAC computers.
- Male 15-pin HD/male USB Type A connectors.

Power

- Host adapter: power provided by the host computer.
- User station: 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Built-In Control Methods

On Screen Display (OSD)

- Locate and select computers by name, comment, index or ID.
- Use keyboard or mouse to operate the switch from menus superimposed onto the monitor.
- Displays the platform, name, and power status of the daisy-chained computers.
- Allows color skew compensation and video compensation fine tuning for optimal video quality.
- OS and software-independent.

Security

- Add or remove authorized users.
- Set individual user names and passwords for each user.
- Administrator can enable or disable all security features and select which computers each user can access.

Front Panel Interface of the User Station

- Locally change ports with front panel buttons.
- Provides eight "favorites" buttons allowing the user to program buttons to select frequently used computers for quick access.

Keyboard

- Use the keyboard to command the user station to select ports or configure the Scan delay.
- **Scan** or **Command Modes** are available from the keyboard.
- **Scan Mode** automatically and sequentially displays the video from each powered-on computer. Duration of display can be 2-255 seconds.
- **Command Mode** allows the user to give instructions to the switch through the keyboard. Keystrokes are not passed to the computer.

User Station and Host Adapter Models

NTI Part #	Platform	Function	Size WxDxH (in)
PRIMUMX-UZR	PS/2, SUN or USB	User Station	11x11x1.75
HA-PS2	PS/2	Host Adapter	2.1x3.7x1.0
HA-USB	USB	Host Adapter	2.1x3.7x1.0
HA-SUN	SUN	Host Adapter	2.1x3.7x1.0

Cables

- Use CAT5, CAT5e or CAT6 UTP cable to daisy chain host adapters and user station.
- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors.
- Cables not included.



UNIVERSAL MATRIX KVM SWITCH

Up to eight users can control 32 PC and SUN computers

NODEMUX®



**4 Users
and 16 Computers
in 1 RU**

NODEMUX® ST-4X16-UHD High Density Matrix KVM Switch (Front and Back)

Features & Applications

The NODEMUX® Universal Multi-Platform Matrix KVM Switch enables up to eight users to individually command or simultaneously share up to 32 computers.

This low-cost switch accesses PC and SUN computers (and USB computers with NTI adapters). PC, SUN or MAC keyboards and mice can be connected by using adapter cables.

- Equipped with On Screen Display (OSD), Liquid Crystal Display (LCD) and RS232 control.
- Rackmount is standard on all NODEMUX ST-nXm-U models. The smaller models are also available in a desktop case (denoted by “DT” in part number).
- Users can power-down the switch without rebooting attached computers.
- Dedicated microprocessors prevent computers from locking up, ensuring reliable control.
- The advanced OSD user interface with password security makes the NODEMUX matrix switch simple and reliable to use in Enterprise data centers.
- Use as a single- or multi-platform switch.
- Users can work individually or share one computer.
- The high density switches save you rack space (look for “HD” at the end of the part number). Cabling runs are simplified with NTI's high density KVM switch cables.
 - Includes cable management shelf.

Specifications

Hosts

- Supports PS/2 platform computers, including laptops, HP 9000, Silicon Graphics and IBM RS6000.
- Supports SUN, including ULTRAs, SUN Blade 100, SUN Blade 1000, SUN Fire™ 240 and SUN Ray (using NTI's USB-SUN adapter).
- Supports MACs, including G4, G5 and Xserve.
- Any USB enabled PS2, SUN or MAC computer can be converted by using a USB-PS2, USB-SUN or USB-ADB adapter.

Connectors

- ST-nXm-U: female 15-pin HD and female 8-pin miniDIN connectors.
- ST-nXm-UxHD: female 26-pin SCSI II connectors.

Monitor

- Crisp and clear 1900x1200 video resolution.
- A multiscan VGA monitor is required to display the different video outputs from different platforms.
- Bandwidth is 150 MHz.

Keyboard

- User devices can be PS/2, SUN or MAC.
- MAC and SUN startup keys are supported on all platforms of input devices.
- Keystrokes are translated across platforms.
- Keyboard is hot-pluggable.
- Internet and multimedia Windows key supported.

Supported SUN and MAC Keyboards

- Apple Extended keyboard is the only MAC keyboard supported.
- SUN US/English keyboards are supported across all platforms. Non-US SUN keyboards are supported to SUN only computers.
- NTI recommends using SUN keyboards for multi-platform use because they have additional keys.

www.networktechinc.com/srvsw-st-u.html



UNIVERSAL MATRIX KVM SWITCH

Up to eight users can control 32 PC and SUN computers

Specifications (Continued)

Mouse

- Smooth mouse movement.
- Compatible with all standard 2-button PS/2 mice as well as the following:
 - Microsoft IntelliMouse®.
 - Logitech (and other) 3-button mice.
 - Alps glidepoint touchpad (extended functions—i.e. tapping, etc.—are not supported).
 - Cirque Glidepoint touchpad.
 - IBM Scroll Point mouse (extended stick functions are not supported).
 - Kensington Orbit trackball.
 - Logitech 2-button wheel mouse.
 - Microsoft Ballpoint mouse.
- SUN 3-button mice are supported.
 - Wheel button on IntelliMouse emulates SUN's third mouse button.
- MAC 1-button mice are supported.
 - <COMMAND> + CLICK on the MAC mouse emulates SUN/PC right click.

Power

- 110 or 220 VAC at 50 or 60 Hz via IEC connector.
- The 2x2, 2x4, 2x8 and 4x8 units use AC adapters as their power source.

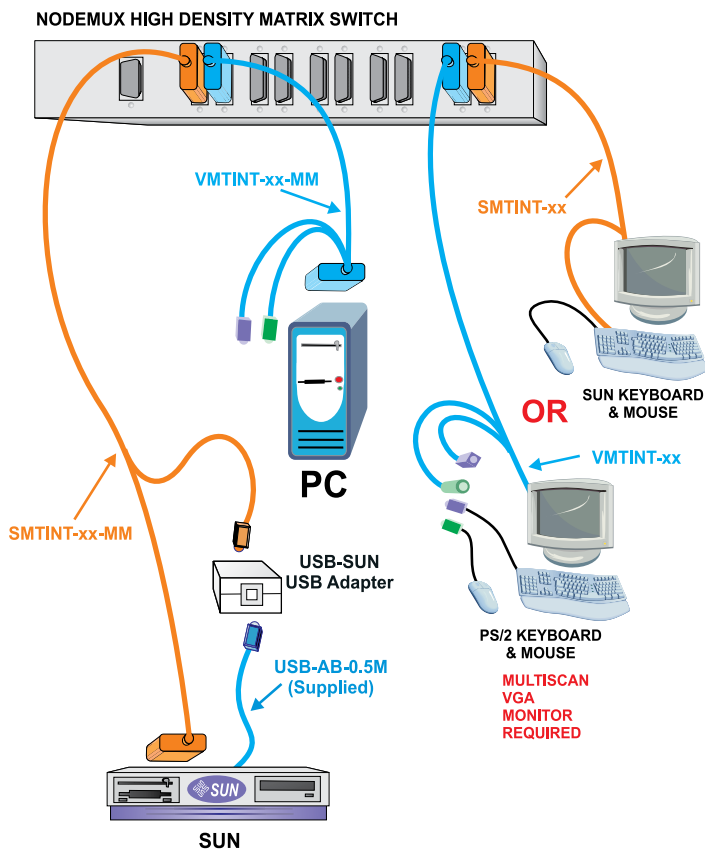
Regulatory Approvals

- CE
 - Not available on ST-2X2-UDT, ST-2X4-UDT, ST-2X8-UDT or ST-4X8-UDT.



**High Density KVM Matrix Switch
with Cable Management Shelf
(Standard feature for -UHD switches)**

Configuration and Cable Illustration



Built-In Control Methods

Front Panel Interface

- Locally change ports with front panel keypad.
- Use front panel keypad to move through LCD screens.
- LCD indicates currently selected port.
- Set baud rate for RS232 control.
- Set unit address for RS232 multi-switch control.
- Set up user-to-computer connections.
- Save and recall up to 10 different user-to-computer configurations.

RS232 Control

- Baud rate 1200 through 9600.
- Address up to 15 units, all of which can be RS232 daisy-chained and controlled by one serial port.

On Screen Display (OSD)

- Locate and select computers by name.
- OS and software-independent.
- OSD is built into the switch—no need to install additional hardware or software.

Security

- Advanced security included with switch.
- Administrator can enable or disable all security features and select which computers each user can access.
- Once security is enabled, a user or administrator must login in order to access any of the computers connected to the switch.
- Each user name and password can be up to 15 characters long, and each switch can store up to 63 users.



330.562.1999
Worldwide fax



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UNIVERSAL MATRIX KVM SWITCH

Up to eight users can control 32 PC and SUN computers

Ordering Specifications

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

Number of Users Number of Computers Universal KVM Switch High Density Optional Desktop Style*
ST - n X m - U HD DT

Universal Matrix KVM Switch Models					
NTI Part #	# of Users (n)	# of CPUs (m)	Desktop Size WxDxH (in)	Rack Units	Rack Size WxDxH (in)
ST-2X2-U	2	2	NA	1RU	19x10x1.75
ST-2X2-UDT	2	2	10x7.5x3.3	NA	NA
ST-2X4-U	2	4	NA	1RU	19x10x1.75
ST-2X4-UDT	2	4	10x7.5x3.3	NA	NA
ST-2X8-UDT	2	8	10x7.5x3.3	NA	NA
ST-2X32-U	2	32	NA	3RU	19x12x5.25
ST-4X8-UDT	4	8	10x7.5x3.3	NA	NA
ST-4X32-U	4	32	NA	3RU	19x12x5.25
ST-8X8-U	8	8	NA	3RU	19x12x5.25
ST-8X16-U	8	16	NA	3RU	19x12x5.25
ST-8X24-U	8	24	NA	3RU	19x12x5.25
ST-8X32-U	8	32	NA	3RU	19x12x5.25

High Density Universal Matrix KVM Switch Models					
NTI Part #	# of Users (n)	# of CPUs (m)	Desktop Size WxDxH (in)	Rack Units	Rack Size WxDxH (in)
ST-2X8-UHD	2	8	NA	1RU	19x12.5x1.75
ST-2X16-UHD	2	16	NA	1RU	19x12.5x1.75
ST-4X8-UHD	4	8	NA	1RU	19x12.5x1.75
ST-4X16-UHD	4	16	NA	1RU	19x12.5x1.75

* Only available on select ST-nXm-U switches.

Cables

- NTI universal cables between user devices and the NODEMUX ST-nXm-U are required for proper operation.
- Cables not included.

Compatible Cables for Universal Matrix KVM Switches

Cable/Length (Ft.)	Description	Type
VKTINT-3/6/10/15/25/35/50-MM	Connects PS/2 Computers to an NTI Universal Switch	PS/2
SKTINT-3/6/10/15/25/35/50-MM	Connects SUN Computers to an NTI Universal Switch	SUN
MKTINT-3/6/10/15/25/35/50-MM	Connects MAC Computers to an NTI Universal Switch	MAC
VEXT-3/6/10/15/25/35/50/75/100-MM	Connects VGA & SVGA video port to an NTI Universal KVM switch Male-Male 15-pin HD, multicoax. Resolution through 1900 x 1200	PS/2 SUN MAC
VKTINT-1	Connects PS/2 Keyboard & Mouse to an NTI Universal Switch (Female 6-pin miniDINs - Male 8-pin miniDIN)	PS/2
MKTINT-1	Connects MAC Keyboard to an NTI Universal KVM Switch (Male - Male)	MAC
13W3M-15HDF	Adapts a 13W3 Sun video port to VGA video port on an NTI Universal KVM switch	SUN
15DM-15HDF	Adapts a MAC video port to VGA video port on an NTI Universal KVM switch	MAC

Compatible Cables for High Density Universal Matrix KVM Switches

Cable/Length (Ft.)	Description	Type
VMTINT-3/6/10/15/25-MM	Connects an NTI High Density Switch to a PS/2 CPU	PS/2
SMTINT-3/6/10/15/25-MM	Connects an NTI High Density Switch to a SUN CPU	SUN
SMTINT-3/6/10/15/25	Connects VGA monitor, SUN keyboard to an NTI High Density Switch	SUN
VMTINT-3/6/10/15/25	Connects VGA monitor, PS/2 keyboard and mouse to an NTI High Density Switch	PS/2



USB DVI KVM SWITCH

Control up to four single link DVI-enabled USB computers



UNIMUX-DVI-4 (Front and Back)

Specifications

Hosts

- Female DVI-I single link connectors.
- Female USB Type B connectors.
- Supports SUN Blade™ 100, SUN Blade 1000, SUN Ray™, SUN Fire™ 280R, and SUN Fire V20z.
- Supports PCs with USB-enabled OS (Windows 98/ME/2000/XP, Windows Server 2003, Linux) and USB ports.
- Supports PCs with USB-enabled BIOS (legacy USB support) and USB ports.
- Supports MAC G4/G5 and Xserve.

Monitor

- Supports crisp and clear video resolution up to 1600x1200.
- Female DVI-I single link connector.

Devices

- Female USB Type A connectors.
- Compatible with most USB keyboards and mice, including USB IntelliMouse®.
- Keyboard and mouse are hot-pluggable.
- Supports SUN and MAC extra keys.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Cables

- Interface cables between your computers and the switch are required for proper operation. Use DVI-IS-xx-MM and USB-AB-xM to connect computers to the switch. (Cables not included.)

Regulatory Approvals

- CE

Features & Applications

The UNIMUX™ USB DVI KVM switch allows you to control up to four single link DVI-enabled USB computers with one DVI monitor, USB keyboard and USB mouse.

- Boot all USB computers in ONE operation.
- Up to 1600x1200 video resolution.
- Fully compliant with USB (1.0, 1.1) standards.
- Compatible with USB-enabled PC, SUN and MAC computers.
- USB SUN start-up keys are supported.
- Supports MAC soft (keyboard) power-on.
- SUN extra keys are emulated on USB keyboards with Windows keyboard layouts.
- Supports DVI interface for crisp and clear video quality on flat panel display.
- Front-panel push buttons and hotkeys for channel selection.
- LED indicators on switch show which port is active.
- Auto Scan computers to catch system failures early.
- Rugged metal enclosure.

Built-In Control Methods

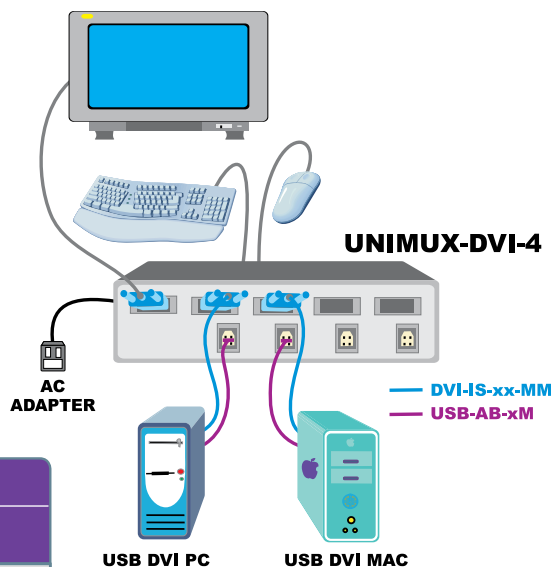
Front Panel Interface

- LEDs indicate currently selected port and mode of operation.
- Hold in any button for more than five seconds to go into Scan, Broadcast or Command Mode.

Keyboard

- Scan or Command Modes are available from the keyboard using hot keys.

Configuration and Cable Illustration



USB DVI KVM Switch Models

NTI Part #	# of CPUs (x)	Desktop Size WxDxH (in)	Rack Units	Rack Size WxDxH (in)
UNIMUX-DVI-2	2	5.5x4.3x1.6	NA	NA
UNIMUX-DVI-4	4	13.3x5.9x1.75 (without supplied rackmount kit)	1RU	19x5.9x1.75 (with supplied rackmount kit)



330.562.1999
Worldwide fax



sales@ntigo.com



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VGA VIDEO SPLITTER / EXTENDER VIA CAT5

Drive up to 16 monitors 600 feet away from one computer



Built-In Surge Protection



VOPEX-C5VA-16 Local Unit (Front and Back) and ST-C5VA-R-600 Remote Unit

Features & Applications

The VOPEX® VGA Video Splitter/Extender broadcasts high-resolution video from one computer to 4, 8 or 16 remote monitors located up to 600 feet away using CAT5 cable. This is the ideal solution for digital signage in a retail establishment. Optional audio functionality using self-powered stereo speakers enhances presentations.

The VOPEX VGA video splitter/extender system has two components: the VOPEX-C5V-x VGA broadcast unit, which connects to the host computer and also supplies video to a local monitor, and an XTENDEX® ST-C5V-R-600 remote unit for each remote monitor. The units are interconnected by CAT5/5e/6 cable.

- Sharpest and clearest VGA of any manufacturer.
- Broadcast real-time VGA video or audio/video to multiple display locations.
- Optional audio can be broadcast to self-powered stereo speakers at the local unit and each remote location.
- Easily expandable. Add remote units as you add monitors.
- A pure hardware solution—no software conflicts.
- Compatible with all NTI A/V switches and splitters, which enables the joining of products to create a system that satisfies all of your networking needs.
- Supports high-resolution video (1024x768 at 60 Hz) at distances up to 600 feet. Higher resolutions can be achieved at shorter distances (refer to resolution chart on page 53).
- Ideal for movie theater lobbies, point of purchase displays, conference centers, airports, and other applications that require multiple displays.

Specifications

Local Unit

Video Input

- Supports a PC, SUN or MAC with VGA video.
- Male 15-pin HD connector.
- Input frequency ranges:
 - Horizontal: 15 kHz to 130 kHz.
 - Vertical: 30 Hz to 150 Hz
- Supports Separate and Composite TTL level sync and Sync on Green.
- Input impedance: 75 Ohms.
- Maximum input levels for video: 1.45 p-p.
- Video is DC coupled.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Regulatory Approvals

- CE

Video Output

- Female RJ45 connectors for CAT5/5e/6 cable to remote units.
- Female 15-pin HD connector for local monitor.
- Compatible with SVGA, XGA, and VGA.
- 1920x1440 video resolution.
- Output impedance: 75 Ohms.
- Maximum output level for S-Video: 1.45Vp-p

Optional Audio

- 3.5mm female stereo audio jacks.
- Frequency response: 20 Hz to 20 kHz, +/- 1 dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%
- Stereo Crosstalk: -70 dB.
- Input impedance: 10k Ohms.
- Line level output; supports multimedia speakers.
- Maximum I/O levels for audio: 3.1 Vp-p (line level).

VGA VIDEO SPLITTER / EXTENDER VIA CAT5

Drive up to 16 monitors 600 feet away from one computer

Specifications (Continued)

Remote Unit

Video Output

- Crisp and clear 1024x768 resolution at 600 feet; higher resolution supported at shorter distances.
 - When using CAT6 cable, some degradation may be experienced, depending on the construction of the cable.
- Female 15-pin HD connector.
- Output impedance: 75 Ohms.
- Maximum output level for video: 1.45Vp-p.
- Video quality is automatically adjusted for distances up to 600 feet of CAT5 cable with the video/audio splitter extender (VOPEX-C5VA-x).
- Video quality is manually adjusted at the remote unit with the video-only splitter/extender (VOPEX-C5V-x).

Optional Audio

- 3.5mm female stereo audio jack.
- Frequency response: 20 Hz to 20 kHz, +/-1dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%.
- Stereo crosstalk: -70 dB.
- Line level output; supports multimedia speakers.
- Maximum output levels: 3.1Vp-p (line level).

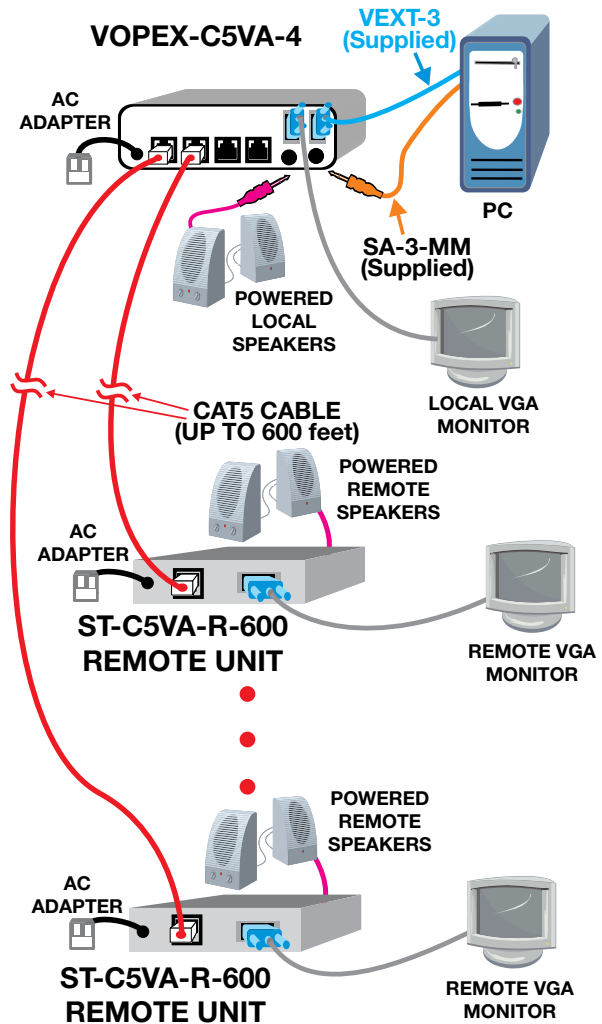
Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Regulatory Approvals

- CE

Configuration and Cable Illustration



Cables

- 3-foot VGA cable and 3-foot audio cables included.
- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors (not included).

Distances and Resolutions for CAT5/CAT5e and CAT6 Cables

Cable	Distance (feet)	Resolution
CAT5/CAT5e (UTP)	600	1024x768 at 60Hz
CAT5/CAT5e (UTP)	400	1280x1024 at 60Hz
CAT5/CAT5e (UTP)	300	1600x1200 at 60Hz
CAT5/CAT5e (UTP)	100	1920x1440 at 60Hz
CAT6 (UTP)	300	1024x768 at 60Hz
CAT6 (UTP)	200	1280x1024 at 60Hz
CAT6 (UTP)	100	1920x1440 at 60Hz

VGA Splitter / Extender via CAT5 Models

Supported Features	Local or Remote	NTI Part #	# of ports	Local Unit Size WxDxH (in)
VGA Video	Local	VOPEX-C5V-4	4	8.5x6.0x2.6
VGA Video	Local	VOPEX-C5V-8	8	8.5x6.0x2.6
VGA Video	Local	VOPEX-C5V-16	16	8.5x6.0x2.6
Video + Audio	Local	VOPEX-C5VA-4	4	8.5x6.0x2.6
Video + Audio	Local	VOPEX-C5VA-8	8	8.5x6.0x2.6
Video + Audio	Local	VOPEX-C5VA-16	16	8.5x6.0x2.6
VGA Video	Remote	ST-C5V-R-600	NA	3.5x3.1x1.2
Video + Audio	Remote	ST-C5VA-R-600	NA	3.5x3.1x1.2



Warning!

- ▶ Never connect the VOPEX-C5V-x or ST-C5Vx-600 Extender to an ethernet card, ethernet router, hub or switch or other ethernet RJ45 connector of an ethernet device. Damage to devices connected to the ethernet may result.



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sales@ntigo.com



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S-VIDEO SPLITTER / EXTENDER VIA CAT5

Drive up to 16 remote S-Video TVs/monitors from one S-Video device



Built-In Surge Protection



VOPEX-C5SV-16 Local Unit (Front and Back) and ST-C5SV-R-600 Remote Unit

Features & Applications

The VOPEX® S-Video Splitter/Extender via CAT5 broadcasts high-resolution video from one S-Video source to 4, 8 or 16 remote locations using CAT5/5e/6 UTP cable. This real-time system supports remote S-Video displays up to 600 feet from the computer, VCR or DVD player, as well as a local display.

The VOPEX S-Video splitter/extender system has two components: the VOPEX-C5SV-x S-Video broadcast unit, which connects to the host computer and also supplies video to a local monitor, and an XTENDEX® ST-C5SV-R-600 remote unit for each remote monitor. The units are interconnected by CAT5/5e/6 cable.

- Broadcast real-time S-Video or audio/video to multiple display locations.
- Optional audio can be broadcast to self-powered stereo speakers at the local unit and each remote location.
- Supports maximum S-Video resolution (800x600) at distances up to 600 feet.
- Easily expandable. Add remote units as you add monitors.
- Inexpensive CAT5/5e/6 UTP cable replaces bulky video cables.
- A pure hardware solution—no software conflicts.

The VOPEX S-Video splitter/extender is the ideal solution for a wide range of multi-screen applications. Examples include:

- Real-time arrival/departure updates to passengers at airports, train stations and bus stations.
- Stock and exchange rate updates at stock exchanges and banks.
- Broadcast entertainment or news in stores, restaurants, trains, and planes.
- A great alternative to expensive projectors in the classroom.
- Send a teacher's screen to all remote monitors.

Specifications

Local Unit

Video Input

- Supports computers and video devices with s-video output.
- Female 4-pin miniDIN connector.
- Input impedance: 75 Ohms.
- Maximum input levels for S-Video: 1.45 Vp-p.
- Video is DC coupled.

Video Output

- Female RJ45 connectors for CAT5/5e/6 cable to remote units.
- Female 4-pin miniDIN connector.
- Compatible with S-Video.
- 800x600 video resolution.
- Output impedance: 75 Ohms.
- Maximum output level for S-Video: 1.45Vp-p.

Optional Audio

- Stereo audio can be heard both locally and remotely.
- 3.5mm female stereo audio jack.
- Frequency response: 20 Hz to 20 kHz, +/- 1 dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%
- Stereo crosstalk: -70 dB.
- Input impedance: 10k Ohms.
- Line level output; supports multimedia speakers.
- Maximum I/O levels for audio: 3.1 Vp-p (line level).

Power

- 110 or 220 VAC at 50 or 60Hz via AC adapter.

Regulatory Approvals

- CE



S-VIDEO SPLITTER / EXTENDER VIA CAT5

Drive up to 16 remote S-Video TVs/monitors from one S-Video device

Specifications (Continued)

Remote Unit

Video Output

- Crisp and clear 800x600 resolution at 600 feet.
 - When using CAT6 cable, some degradation may be experienced, depending on the construction of the cable.
- Female 4-pin miniDIN connector.
- Output impedance: 75 Ohms.
- Maximum output level for video: 1.45Vp-p.
- Video quality is automatically adjusted for distances up to 600 feet of CAT5/5e/6 cable with the S-Video/audio splitter extender (VOPEX-C5SVA-x).
- Video quality is manually adjusted at the remote unit with the S-Video splitter/extender (VOPEX-C5SV-x).

Optional Audio

- 3.5mm female stereo audio jack.
- Frequency response: 20 Hz to 20 kHz, +/-1dB.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Total Harmonic Distortion and Noise (THD+N): 0.017%.
- Stereo crosstalk: -70 dB.
- Line level output; supports multimedia speakers.
- Maximum output levels: 3.1Vp-p (line level).

Power

- 110 or 220 VAC at 50 or 60Hz via AC adapter.

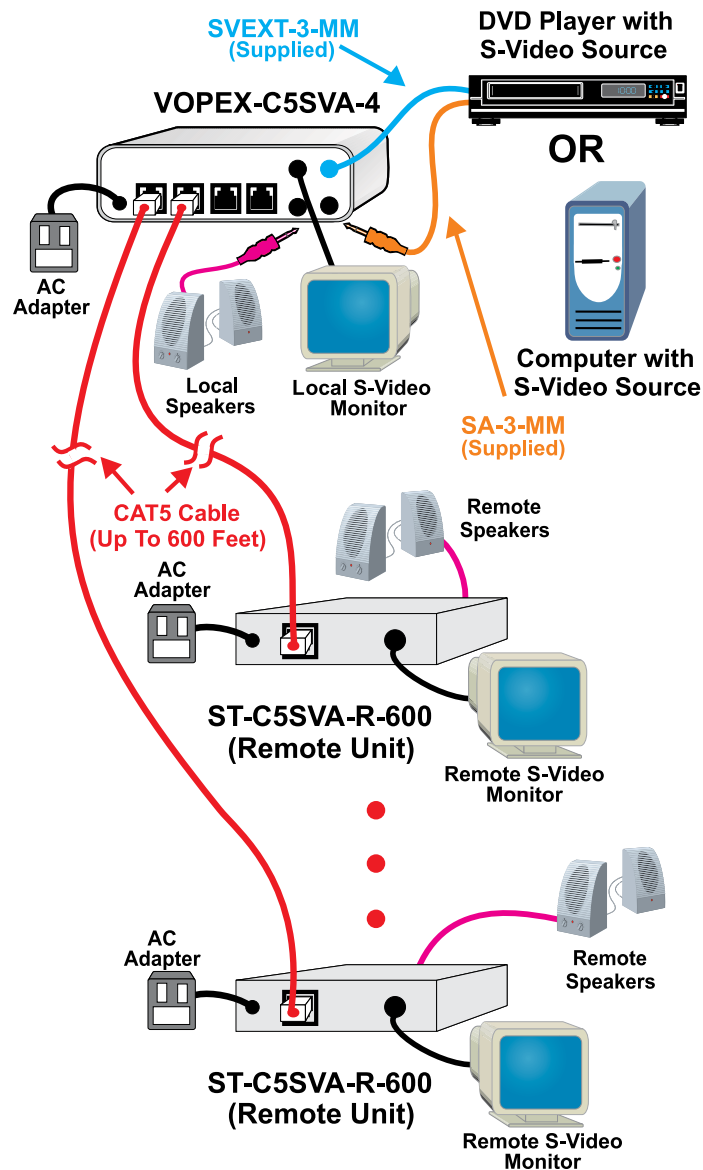
Regulatory Approvals

- CE

Cables

- 3-foot S-Video cable included.
- 3-foot audio cable included (with VOPEX-C5SVA-x).
- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors (not included).

Configuration and Cable Illustration



S-Video Splitter / Extender via CAT5 Models

Supported Features	Local or Remote	NTI Part #	# of ports	Size WxDxH (in)
S-Video	Local	VOPEX-C5SV-4	4	8.5x6.0x2.6
S-Video	Local	VOPEX-C5SV-8	8	8.5x6.0x2.6
S-Video	Local	VOPEX-C5SV-16	16	8.5x6.0x2.6
S-Video + Audio	Local	VOPEX-C5SVA-4	4	8.5x6.0x2.6
S-Video + Audio	Local	VOPEX-C5SVA-8	8	8.5x6.0x2.6
S-Video + Audio	Local	VOPEX-C5SVA-16	16	8.5x6.0x2.6
S-Video	Remote	ST-C5SV-R-600	NA	3.5x3.1x1.2
S-Video + Audio	Remote	ST-C5SVA-R-600	NA	3.5x3.1x1.2



Warning!

Never connect the VOPEX-C5SV-x or ST-C5SV-x Extender to an ethernet card, ethernet router, hub or switch or other ethernet RJ45 connector of an ethernet device. Damage to devices connected to the ethernet may result.



330.562.1999
Worldwide fax



sales@ntigo.com



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HDTV AUDIO/VIDEO SPLITTER/EXTENDER VIA CAT5

Play the same image and audio on multiple HDTV displays and speakers up to 600 feet away



VOPEX-C5HDTV-16 (Front & Back) and ST-C5HDTV-R-600 Remote Unit

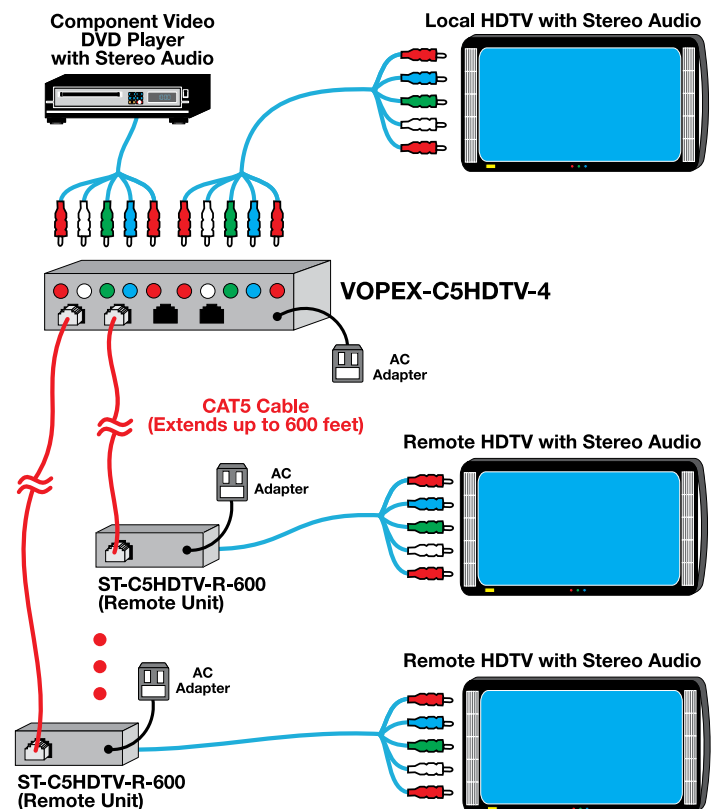
Features & Applications

The VOPEX® HDTV Audio/Video Splitter/Extender is ideal for systems where high resolution YPbPr component video signals along with analog or digital audio signals must be transmitted long distances to multiple displays and speakers via CAT5 cable.

The VOPEX system has two components: the local broadcast unit, which connects to the YPbPr component video device and also supplies audio/video to a local display and speakers, and a remote unit for each remote display and speakers. The units are interconnected by CAT5/5e/6 cable up to 600 feet.

- Easily transmit high-definition component video signals to projectors in the ceiling by using compact CAT5 cable instead of bulky cable bundles.
- Broadcast real-time HDTV YPbPr component video and analog stereo audio or digital audio to multiple locations.
- Supports High Definition and Standard Definition YPbPr component video, S-Video or composite video.
- Audio can be left and right analog stereo or digital S/PDIF.
 - VOPEX-C5HDA-x supports S/PDIF, DTS Digital Surround™, and Dolby Digital™ 5.1 digital signals.
 - VOPEX-C5HDTV-x supports analog stereo audio.
- Supports 480i (interlaced), 480p (progressive), 720i, 720p, 1080i, and 1080p formats.
- All audio/video inputs and outputs have RCA cable connectors.
- Ideal for movie theater lobbies, point of purchase displays, conference centers, airports, and other applications that require multiple displays.
- Easily expandable. Add remote units as you add displays.
- A pure hardware solution – no software conflicts.

Configuration and Cable Illustration



HDTV AUDIO/VIDEO SPLITTER/EXTENDER VIA CAT5

Play the same image and audio on multiple HDTV displays and speakers up to 600 feet away

Specifications

Local Unit

Video

- Female RCA input and output connectors.
- Female RJ45 connectors for CAT5/5e/6 cable to remote units.
- Signal type: HDTV YPbPr component.
 - Inputs and outputs must be of the same format.
- Maximum input/output levels: 2Vp-p.
- Input/output impedance: 75 Ohms.
- Video crosstalk: <-60dB.
- Video gain: unity.
- Bandwidth: 90Mhz at 100 feet, 50Mhz at 600 feet.
- Resolutions: HDTV 480i, 480p, 720i, 720p, 1080i, and 1080p.

Audio

- Audio can be Left and Right stereo (RCA) or digital S/PDIF (coax).
- Audio can be heard both locally and remotely.

Digital Audio (VOPEX-C5HDA-x)

- Signal type: coax S/PDIF, DTS Digital Surround™, Dolby Digital™ 5.1.
- Maximum input/output levels: 1Vp-p.
- Input/output impedance: 75 Ohms.

Stereo Audio (VOPEX-C5HDTV-x)

- Signal type: stereo audio, analog, left/right.
- Maximum input/output levels: 2.5Vp-p.
- Input impedance: 10K Ohms.
- Output impedance: 50 Ohms.
- Frequency Response: +/-0.03 dB, 20 Hz to 20 kHz.
- Total Harmonic Distortion + Noise (THD+N): 0.03% at 1kHz.
- Signal-to-Noise Ratio (SNR): 76 dBA.
- Stereo crosstalk: -70 dB.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Dimensions

- WxDxH (in): 8.5x6.0x2.6

Remote Unit

Video

- Signal type: HDTV YPbPr component.
- Maximum output level: 1.45Vp-p.
- Output impedance: 75 Ohms.
- Resolutions: HDTV 480i, 480p, 720i, 720p, 1080i, and 1080p.

Audio

- Audio can be Left and Right stereo or digital S/PDIF.
- Audio can be heard both locally and remotely.
- Female RCA connectors.

Digital Audio (ST-C5HDA-R-600)

- Use ST-C5HDA-R-600 with VOPEX-C5HDA-x.
- Signal type: coax S/PDIF, DTS Digital Surround™, Dolby Digital™ 5.1.
- Output levels: 0.5Vp-p.
- Output impedance: 75 Ohms.

Stereo Audio (ST-C5HDTV-600)

- Use ST-C5HDTV-600 with VOPEX-C5HDTV-x.
- Signal type: stereo audio, analog, left/right.
- Maximum input/output levels: 3.1Vp-p.
- Input impedance: 10K Ohms.
- Output impedance: 50 Ohms.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Dimensions

- WxDxH (in): 3.5x3.1x1.2

HDTV Audio/Video Splitter/Extender with Digital Audio Models

NTI Part #	Local or Remote	# of ports
VOPEX-C5HDA-4	Local	4
VOPEX-C5HDA-8	Local	8
VOPEX-C5HDA-16	Local	16
ST-C5HDA-R-600	Remote	NA

HDTV Audio/Video Splitter/Extender with Stereo Audio Models

NTI Part #	Local or Remote	# of ports
VOPEX-C5HDTV-4	Local	4
VOPEX-C5HDTV-8	Local	8
VOPEX-C5HDTV-16	Local	16
ST-C5HDTV-R-600	Remote	NA



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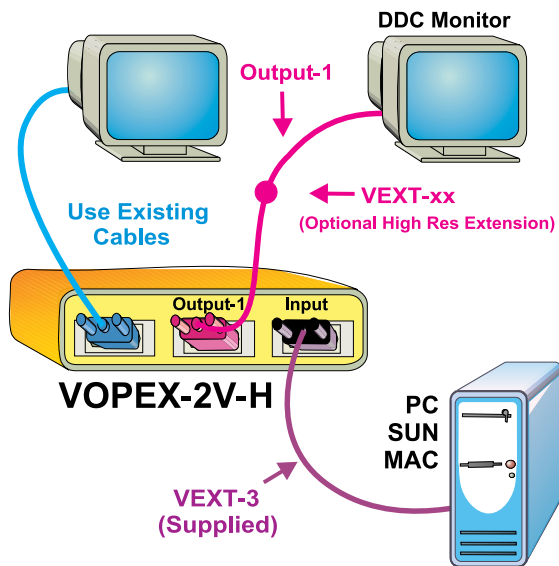
VGA VIDEO SPLITTER

Use one computer to display the same high-resolution image on up to 16 monitors



VOPEX-8V-H VGA Video Splitter (Front and Back)

Configuration and Cable Illustration



Cables

- Extend 1900x1200 resolution to 50 feet, and 1600x1200 to 100 feet with no degradation using NTI's VEXT-xx cables.
- A three-foot multicoax interface cable is included with each splitter.

Features & Applications

VOPEX® VGA Video Splitters (video port expanders) enable 2, 4, 8 or 16 VGA or SVGA monitors to be driven by a single PC, SUN or MAC. The same image can be displayed on up to 256 monitors by cascading. The DDC2B protocol is supported from Output-1.

- Supports VGA/SVGA monitors, including LCD flat panel monitors.
- 1900x1200 resolution with no degradation.
- Supports the DDC2B protocol.
- Ideal for classrooms, tradeshow, or in-store displays where high quality video on multiple monitors is needed.
- Perfect solution for digital signage applications.

Specifications

Video Input

- Male 15-pin HD input connector.
- Maximum input levels for video: 1.45Vp-p.
- Input impedance: 75 Ohms.
- Supports Separate and Composite TTL level sync and Sync On Green.
- Sync input frequency ranges:
 - Horizontal: 15 kHz to 130 kHz.
 - Vertical: 30 Hz to 150 Hz.

Video Output

- Female 15-pin HD output connectors.
- Bandwidth is 150 MHz.
- Maximum output levels for video: 1.45Vp-p.
- Output impedance: 75 Ohms.
- All outputs are individually buffered.
- All monitors must be able to support the highest resolution of the DDC monitor connected to Output-1.

Power

- 110 or 220 VAC at 50 or 60 Hz.

VGA Video Splitter Models

NTI Part #	# of Ports	Size WxDxH (in.)
VOPEX-2V-H	2	4.9x5.2x1.7
VOPEX-4V-H	4	8x6.2x2.6
VOPEX-8V-H	8	8x6.2x2.6
VOPEX-16V-H	16	10x7.5x3.3



BNC VIDEO SPLITTER / BNC VIDEO SWITCH

Drive many monitors from one workstation / Share one monitor among multiple workstations



VOPEX-4A2H
(Front and Back)

Features & Applications

The VOPEX-3A2H through VOPEX-5A8H allows you to display video from one Workstation on multiple monitors.

- Ideal for presentations or classrooms.
- 1900x1200 resolution with no degradation.
- Drive up to 64 monitors by cascading.
- Splitters with RGB, RGBS and RGBHV signal formats are all available.
- A 6-foot multicoax cable is included with each unit.
- Adapter cables can convert to VGA or SUN video connectors.

Specifications

Input Signals

- Female BNC connectors.
- RGB input/impedance: 75 Ohms for RGB.
- Supports separate and composite TTL level sync and Sync on Green.
- Sync input impedance: 2k Ohms.

Power

- 110 or 220 VAC at 50 or 60 Hz.

Output Signals

- Female BNC connectors.
- One volt into 75 Ohms for RGB.
- Impedance of 75 Ohms (back terminated) for RGB.
- Sync is TTL-compatible.
- Bandwidth is 500 MHz.

BNC Video Splitter Models

NTI Part #	# of Ports	Signal Format	Size WxDxH (in)
VOPEX-3A2H	2	RGB	8x6.2x2.6
VOPEX-3A4H	4	RGB	8x6.2x2.6
VOPEX-3A8H	8	RGB	8x6.2x2.6
VOPEX-4A2H	2	RGBS	8x6.2x4
VOPEX-4A4H	4	RGBS	8x6.2x4
VOPEX-4A8H	8	RGBS	8x6.2x4
VOPEX-5A2H	2	RGBHV	8x6.2x4
VOPEX-5A4H	4	RGBHV	8x6.2x4
VOPEX-5A8H	8	RGBHV	8x6.2x4



SE-5C-2-TTL
(Front and Back)

Features & Applications

The VIDMUX® BNC Video-Only Switch allows you to share one monitor among multiple Workstations.

- Rackmount available for 4-ports and larger.
- 110 or 220 VAC at 50 or 60 Hz.
- A 6-foot multicoax cable included with 2 port units.

Specifications

For 2-port Models

Monitor

- Crisp and clear 1900x1200 resolution.
- Bandwidth is 300 MHz.
- Touch buttons on front with LED indication of port selection.

For 2-port-TTL Models

Monitor

- Crisp and clear 1900x1200 resolution.
- Bandwidth is 300 MHz.

Control

- Female 9-pin D connector for remote control.
 - Pin 1=Ground.
 - Pin 2=TTL or contact closure signal.
- LED indication of port selection.

For 4-8 Port Models

Monitor

- Crisp and clear 1900x1200 resolution.
- Bandwidth is 150 MHz.

Options

- RS232 control.
- Rackmount.
- External UL Transformer.

BNC Video Switch Models

Connectors	NTI Part#	# of ports	Size WxDxH (in)	Rack Units	Rack Size WxDxH (in.)
Female RGB	SE-3C-2	2	6x6.2x2.5	NA	NA
	SE-3C-2-TTL	2	6x6.2x2.5	NA	NA
Female RGBHV	SE-5C-2	2	6x6.2x4	NA	NA
	SE-5C-2-TTL	2	6x6.2x4	NA	NA
Female RGB	SE-3C-4-L	4	8x6.2x2.5	2RU	19x10x3.5
	SE-3C-8-L	8	8x6.2x2.5	2RU	19x10x3.5
Female RGBHV	SE-5C-4-L	4	8x6.2x4	3RU	19x10x5.25
	SE-5C-8-L	8	8x6.2x4	3RU	19x10x5.25



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Worldwide fax



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PS/2 KVM SPLITTER

Up to four keyboards, monitors and mice can control one PS/2 computer



VOPEX-2KVM-A (Front & Back)

Features & Applications

The VOPEX® KVM Splitter allows up to four users to share the use of one PS/2 computer.

- Access one computer from multiple locations.
- Multiple users can enter data into the same program.
- Compatible with all PS/2-style PCs, RS6000, SGI and HP9000.
- Interconnect NTI switches and splitters for complex applications.
- Allows access to a PC from inside and outside of a clean room.

Specifications

Monitor

- Female 15-pin HD connectors for VGA monitor.
- Bandwidth is 150 MHz.
- Supports 1900x1200 resolution.

Devices

- Female 6-pin miniDIN connectors.
- Keyboards and mice are hot-pluggable.

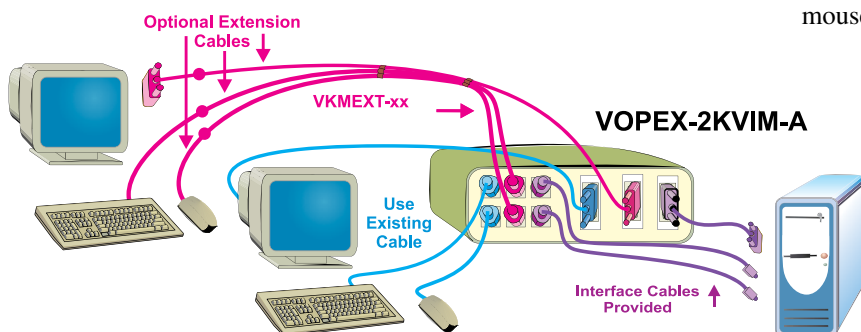
Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Regulatory Approvals

- CE
- UL
- FCC

Configuration and Cable Illustration



Control Modes

- Press **Mode** button to cycle through all six modes. LEDs indicate which mode is selected.
- **User 1 Mode**—only User 1 can type or move mouse.
- **User 2 Mode**—only User 2 can type or move mouse.
- **User 3 Mode**—only User 3 can type or move mouse.
- **User 4 Mode**—only User 4 can type or move mouse.
- **Inst Mode**—All user(s) have immediate access after last keystroke or mouse movement occurs on active user.
- **Delay Mode**—Locked out user(s) must wait five seconds after last keystroke or mouse movement occurs on active user.
- In **Inst** or **Delay Mode**, typing or mouse movement activates user control.

Cables

- Three-foot interface cables are provided to connect your PS/2 keyboard, mouse and video ports.
- Use VKMEXT 3-in-1 cable to extend keyboard, monitor and mouse to 100 feet.

PS/2 KVM Splitter Models

NTI Part #	# of Ports	Size WxDxH(in)
VOPEX-2KVM-A	2	8.5x6.0x2.6
VOPEX-4KVM-A	4	8.5x6.0x2.6

USB KVM SPLITTER

Allows two users to control one USB computer and connect three USB devices



VOPEX-USBV-2 (Front & Back)

Features & Applications

The VOPEX® USB KVM Splitter with built-in USB hub allows two users (two USB keyboards, USB mice and VGA monitors) to access one USB-enabled computer and up to three USB devices (printers, scanners, security cameras, etc.).

- Compatible with USB PC, SUN and MAC computers.
- Built-in hub for multiple USB devices.
- Access one computer from multiple locations.
- Multiple users can enter data into the same program.
- Both low speed and full speed USB devices are supported.
- USB 1.1 compliant.
- Supports Plug-n-Play specifications.
- Supports international keyboard layouts in auto-detection mode.

Specifications

Hosts

- Male 15-pin HD connector.
- Female USB Type B connector.
- Supports SUN Blade™ 100, SUN Blade 1000, SUN Ray™, SUN Fire™ 240, and SUN Fire V20z.
- Supports PCs with USB-enabled OS (Win 98/2000/XP) and USB ports.
- Supports PCs with USB-enabled BIOS (legacy USB support) and USB ports.
- Supports MAC G4, G5 and Xserve.

Monitor

- Female 15-pin HD connectors.
- Crisp and clear 1900x1200 resolution.
- Bandwidth is 150 MHz.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Devices

- Female USB Type A connectors for connection of keyboard and mouse.
 - Compatible with most USB keyboards and mice, including Microsoft USB Intellimouse®, Logitech Cordless Elite Duo keyboard and mouse, Gyration keyboard/mouse and Crystal Vision keyboard with touchpad.
 - Keyboard and mouse are hot-pluggable.
- Three female USB Type A connectors for connection of USB peripheral devices (printers, scanners, security cameras, etc.)
- Compliant with USB 1.1 specifications.

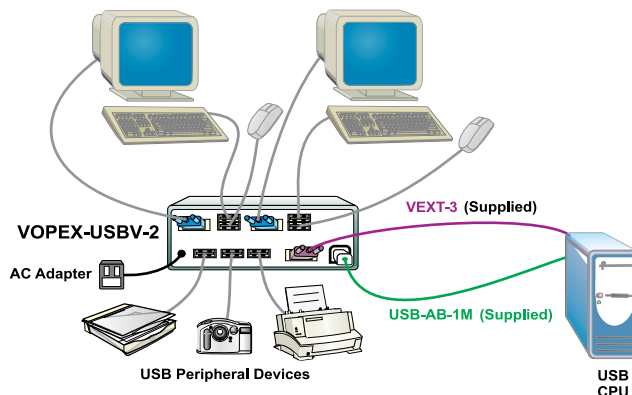
Dimensions

- WxDxH (in): 8.5x6.0x2.6

Regulatory Approvals

- CE, UL, FCC

Configuration and Cable Illustration



Control Modes

- Press **Mode** button to cycle through all four modes. LEDs indicate which mode is selected.
- **User 1 Mode**—only User 1 can type or move mouse.
- **User 2 Mode**—only User 2 can type or move mouse.
- **Inst Mode**—keyboard or mouse activates immediately
- **Delay Mode**—locked out user must wait five seconds after last keystroke or mouse movement occurs on active user.

Cables

- Three-foot female 15HD, male USB Type B to male 15HD, male USB Type A cable included.



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SERVER ENVIRONMENT MONITORING SYSTEM

SNMP and Web monitoring / management of server room environments

Monitors Threats:

- **Temperature**
- **Humidity**
- **Intrusion**
- **Water Leakage**
- **Vibration**
- **Smoke**



ENVIROMUX-SEMS-16 (Front and Back)

Features & Applications

The ENVIROMUX® Server Environment Monitoring System monitors critical environmental conditions, such as temperature, humidity, liquid water presence, motion, intrusion, and vibration. When a sensor goes out of range of a configurable threshold, the system will notify you via email, LEDs, alarm beacon, web page, network management (SNMP), and SMS messages (via external GSM modem).

The system includes three internal sensors: temperature, humidity and power. It also supports 16 external configurable sensors and eight digital input sensors.

- Monitor and manage server room environmental and security conditions over IP.
- Create alarm signals with customized input parameters.
- Four output relays for control of external devices.
 - Relays activate upon alarm or via the user interface.
- Supports up to eight IP network video cameras.
 - Live view of a facility from anywhere, anytime.
 - One integrated view - see different Web cameras side-by-side with physical and environmental parameters.
- Monitor (ping) up to 64 IP network devices.
 - Alerts are sent if devices are not responding.
- Provides power supply for all sensors.
- Internal battery backup.
 - Alerts are sent when there is a power outage and when power returns.
- IRU rack mount case is standard.
- Up to four units can be used together to increase the number of sensors connected.
 - Connect the units using CAT5 expansion cables or via Ethernet interface by assigning an IP address for each system.
 - Uses a single Web interface for all systems connected.
- Use in data centers, co-lo sites, web hosting facilities, telecom switching sites, POP sites, server closets, or any unmanned area that needs to be monitored.

Specifications

Protocols

- HTTP, SNMP V1/V2c, SMTP, TCP/IP, Syslog, SNTTP
- Supports local authentication, SSL.
- Operates and configures via HTTP/HTTPS web page, Telnet or RS232 interface.
- Alerts are sent using email, SMS messages and/or SNMP traps when any monitored environmental condition exceeds a user-specified range.
 - Alerts are posted in message log, which is accessible through Web user interface. The log can be downloaded as a tab delimited plain text file.
 - Sends notifications of alerts to a maximum of 17 email addresses, SNMP addresses and/or cell phone numbers.

Internal Temperature Sensor

- Applications from 32°F to 104°F (0°C to 40°C).
- Accurate to within ±2°F (±1°C).

Internal Humidity Sensor

- Applications from 20% to 80% relative humidity at temperatures between 32°F to 104°F (0°C to 40°C).
- Accurate to within ±5% relative humidity.

Internal Power Sensor

- Measures mains voltage: 0 to 255 VAC.
- Measures battery voltage: 0 to 20 VDC

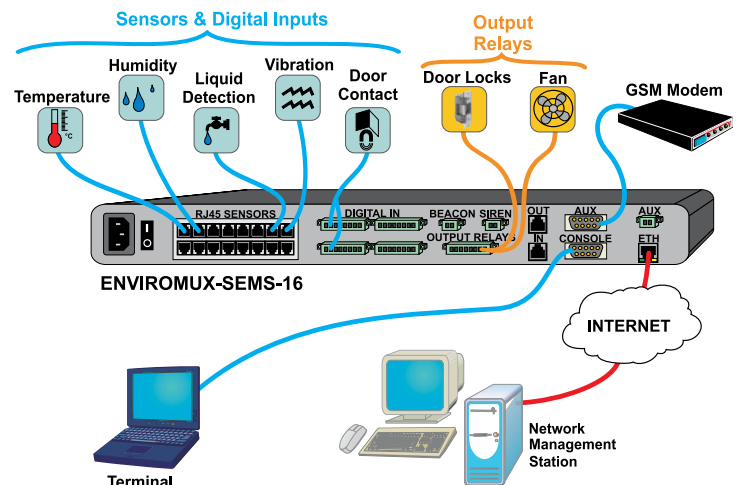
Back-up Battery

- Rechargeable sealed lead-acid battery.
- Provides back-up for one hour.

Dimensions

- WxDxH (in.): 19x9.5x1.75

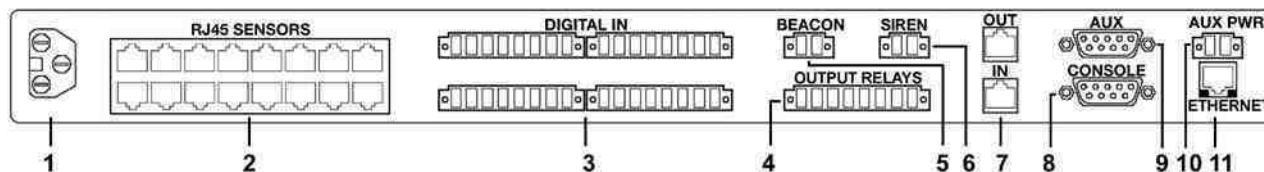
Configuration and Cable Illustration



SERVER ENVIRONMENT MONITORING SYSTEM

SNMP and Web monitoring / management of server room environments

Specifications (Continued)



1. Power Port

- 110 or 220 VAC at 50 or 60 Hz via IEC connector.
- Connection for Earth Ground.
- Fuse protection.

2. RJ45 Sensor Ports

- Sixteen RJ45 modular jacks for connecting NTI temperature, humidity, temperature/humidity, liquid detection, smoke detection, glassbreak, vibration and motion sensors.

3. Digital Inputs

- Screw terminals.
- Input voltage: 0VDC to +25VDC.
- Provides +12VDC, 50mA.
- Fuse protection.

4. Output Relays

- Screw terminals.
- Potential-free relay switch contacts.
- Maximum switching load: 0.5A at 100VAC, 1A at 30VDC

5. Beacon Port

- Screw terminals.
- Provides +12VDC, 180mA to supply an alarm beacon.
- Fuse protection.

6. Siren Port

- Screw terminals.
- Provides +12 VDC, 130 mA to supply a siren.
- Fuse protection

7. Expansion Ports

- RJ45 connectors.
- A maximum of 4 systems can be cascaded to increase the number of sensor ports.
- Uses a single Web interface for all systems connected.

8. Console Port

- One female DB9 RS232 serial port for terminal access.

9. AUX Port

- One male DB9 RS232 serial port for controlling and monitoring external equipment, such as a GSM modem.

10. AUX Power Port

- Provides +12VDC, 150mA.
- Fuse protection

11. Ethernet Port

- One 10/100 Base-T Ethernet port with RJ45 Ethernet connector.

Control Methods

Web Interface

- Full configuration via Web-page
- Configure sensor thresholds and timing, alarm methods, alert formats and system data log.
- View current sensor values and alert status.
- View entries stored in the system data log.
- Configure IP information (address, subnet mask, default gateway, DNS, etc.) and user administrative settings.
- Administrate up to 16 users plus a root administrator.
- Permissions, schedule and alert methods are configurable for each user.
- Up to 8 users can access the web page at one time.

Telnet

- Similar functions as RS232 Control.
- Security is ensured by password.

Network Operation

- SNMP support; allows integration into network management platforms.
- Update system firmware.

RS232 Control

- Display and configure network settings (IP address, subnet mask, default gateway, DNS, SMTP, etc.), Enterprise settings, and time settings.
- View current values and alert statuses for sensors/digital inputs/IP devices.
- Configure SNMP
- Serial baud rate: 9,600 to 115,200bps.
- Data format: 1 start bit, 8 data bits, no parity, 1 stop bit.

Front Panel LED Indicators

- "INT ALERT" – internal sensor exceeds a configurable threshold.
- "EXT ALERT" – external sensor exceeds a configurable threshold.
- "LOW BAT" – backup battery is low.
- "CHECK LOG" – message is posted to the log.
- "PWR" – indicates device is powered.



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SERVER ENVIRONMENT MONITORING SYSTEM

SNMP and Web monitoring / management of server room environments

Sensors

Temperature Humidity & Combination Sensor



**ENVIROMUX-STS
ENVIROMUX-SHS
ENVIROMUX-STHS**

- Temperature Sensor (ENVIROMUX-STS)
 - Applications from 32°F to 122°F (0° to 50°C).
 - Accurate to within ±2°F (±1°C).
- Humidity Sensor (ENVIROMUX-SHS)
 - Applications from 20% to 80% relative humidity at temperatures between 32°F and 104°F (0°C to 40°C).
 - Accurate to within ±5% relative humidity.
- Temperature/Humidity Sensor (ENVIROMUX-STHS)
 - Applications from 32°F to 122°F (0° to 50°C) and 20% to 80% relative humidity.
 - Accurate to within ±2°F (±1°C) and ±5% relative humidity.
- Re-calibration is not necessary after initial set-up.
- Includes mounting hardware.
- RJ45 connector.
- Supports CAT5/5e/6 cable up to 1,000 ft (not included).

Liquid Water Detection Sensor



ENVIROMUX-LDS-xx

- For warning of flooding.
- Detects liquid depth >0.1".
- Minimum puddle: 0.6" diameter.
- 100% waterproof electronics.
- Detects any liquid, except deionized water.
- RJ45 connector.
- Supports CAT5/5e/6 cable up to 1,000 ft (not included).
- Available sensor cable lengths: 3/7/10/25 feet.

Smoke Detection Sensor



ENVIROMUX-SDS

- Photoelectric smoke detector.
- Built-in heat element: rated for 135°F.
- Includes mounting hardware.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft

Infrared Motion Sensor



ENVIROMUX-IMD

- Registers movement in the area covered.
- Condition display via LED.
- Immunity to false alarms caused by environmental disturbances.
- 24 dual-element detection zones for long, mid and short range protection.
- Surface or corner mounting
- Pulse count or single shot triggering.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft

Mini Infrared Motion Detector



ENVIROMUX-IMD-MW

- Detects movement across the detection field.
- Immunity to false alarms caused by environmental disturbances.
- Pulse count or single shot triggering.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft

Ceiling Mount Motion Detector



ENVIROMUX-IMD-CM

- Detects movement across the detection field.
- 360° detection pattern.
- 113° conical detection angle from ceiling.
- 36' diameter protection when mounted 12' high.
- Immunity to false alarms caused by environmental disturbances.
- Pulse count or single shot triggering.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft

Mounting Bracket for IR Motion Detector



ENVIROMUX-MB-IMD

- Mounting bracket for installing the infrared motion sensors to a ceiling or wall.
- 360° angle adjustment

SERVER ENVIRONMENT MONITORING SYSTEM

SNMP and Web monitoring / management of server room environments

Sensors (Continued)

Vibration Sensor



ENVIROMUX-VSS

- For registering movement / shocks.
- Adjustable sensitivity.
- Includes mounting hardware.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft

Glassbreak Detection Sensor



ENVIROMUX-GBS

- Acoustically detects cracking glass.
- Adjustable sensitivity.
- Includes mounting hardware.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft

Electric Strike



ENVIROMUX-EDR-SF
ENVIROMUX-EDR-SCR

- Fail-Safe Electric Strike (ENVIROMUX-EDR-SF)
 - The door is locked with power ON, unlocked with power OFF.
 - For Fire/Emergency door or Escape door installations.
- Fail-Secure Electric Strike (ENVIROMUX-EDR-SCR)
 - The door is locked with power OFF, unlocked with power ON.
 - For Entrance door installation.

Access Control Digital Keypad



ENVIROMUX-ACK

- Two relay outputs controlled by two groups of independent user codes.
- Normally closed and normally open dry contacts for both output relays.
- Terminal block for external connections.
- Single lock or inter-lock operation.
- Operate with fail-safe or fail-secure locking device.
- Non-volatile memory
- Duress output.

Key Station



ENVIROMUX-RKS

- Remote key station designed for security system ON-OFF control applications.
- Provides momentary contact with spring return.
- Standard single gang mounting box.
- Built-in tamper switch.
- Built-in connection terminals.
- For security system and door strike applications.

Emergency / Panic Button



ENVIROMUX-EBS

- Sends activation signal when button is pressed.
- For normally closed or normally open circuit connections.
- 2-wire interface.
- Screw terminal.
- Maximum cable length: 1,000 ft

Door Contact Sensor



ENVIROMUX-M-DCS

- Monitors access with a magnetic bridge sensor, which responds to any magnetic material (no special inserts necessary).
- Can also be used for monitoring side wall and covers.
- For normally closed circuit connection.
- 2-wire interface.
- Screw terminal.
- Maximum cable length: 1,000 ft

Siren



ENVIROMUX-SRN-M

- Emits ear-piercing sound to deter intruders
- Output Level: 108 dB
- Screw terminal.
- 2-wire interface.
- Maximum cable length: 100 ft

Alarm Beacon



ENVIROMUX-BCN-R

- Emits flashing red light when activated.
- Flash Rate: 80 to 120 per minute at 6VDC; 60 to 80 per minute at 12VDC.
- Screw terminal.
- 2-wire interface.
- Maximum cable length: 100 ft

Sensor Cables



ENVIROMUX-2W-xx

- 2-wire sensor cable.
- Use to connect dry contact sensors to the ENVIROMUX-SEMS-16.
- Available lengths (ft): 3/6/10/25/50/100



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MINI SERVER ENVIRONMENT MONITORING SYSTEM

SNMP and Web monitoring/management of server room environments



Monitors Threats:

- **Temperature**
- **Humidity**
- **Water Leakage**
- **Intrusion**

ENVIROMUX-MINI with ENVIROMUX-T-3 Temperature Sensor

Features & Applications

The Enviromux® Mini Server Environment Monitoring System monitors critical environmental conditions (such as temperature, humidity, and water leakage) that could destroy network components in your server room. When a sensor goes out of range of a configurable threshold, the system will notify you via email, SNMP traps, web-page alerts and a visual indicator (red LED).

- Monitor and manage server room environmental conditions over IP.
- Sensors supported:
 - 2 temperature/humidity sensors
 - 1 liquid detection sensor
 - 4 open-collector input devices
- Flexible Zero-RU mounting.
 - Mounting tabs included.
- Alerts are posted in message log, which is accessible through Web user interface.
 - The log can be downloaded as a tab-delimited plain text file.
- Use in data centers, co-lo sites, web hosting facilities, telecom switching sites, POP sites, server closets, or any unmanned area that needs to be monitored.

Specifications

Temperature/Humidity Inputs

- Two female RJ45 connectors for connecting temperature sensors, humidity sensors and/or combined temperature/humidity sensors.

Water Detection Cable Input

- One screw terminal pair for connecting liquid detection sensor.
- Output voltage: +5VDC.
- Current limited to 10mA
- Maximum contact resistance: 500K Ohm.

Dry Contact Closures

- Four screw terminal pairs for connecting dry contact devices.
- Potential-free.
- Output voltage: +5VDC
- Current limited to 10mA
- Maximum contact resistance: 10K Ohm

RS232 Port

- One female RJ45 connector.
- Supports 3-wire interface (Tx, Rx and GND)
- Used for flash upgrades (includes DB9F-RJ45F adapter).

Ethernet Port

- One female RJ45 connector with LEDs.
- 10 BaseT Ethernet interface.

Protocols

- HTTP, SNMP V1, SMTP, TCP/IP, UDP
- Operates and configures via SNMP or HTTP web page.
- Email alerts can be sent to three addresses.
- Generates SNMP, email log, and syslog messages.
- Four users can access the Web interface simultaneously.

Dimensions

- WxDxH (in.): 5.6x2x2

Regulatory Approvals

- CE, FCC, UL

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.



MINI SERVER ENVIRONMENT MONITORING SYSTEM

SNMP and Web monitoring/management of server room environments

Control Methods

- Configuration can be done over the Internet/LAN via Web page.

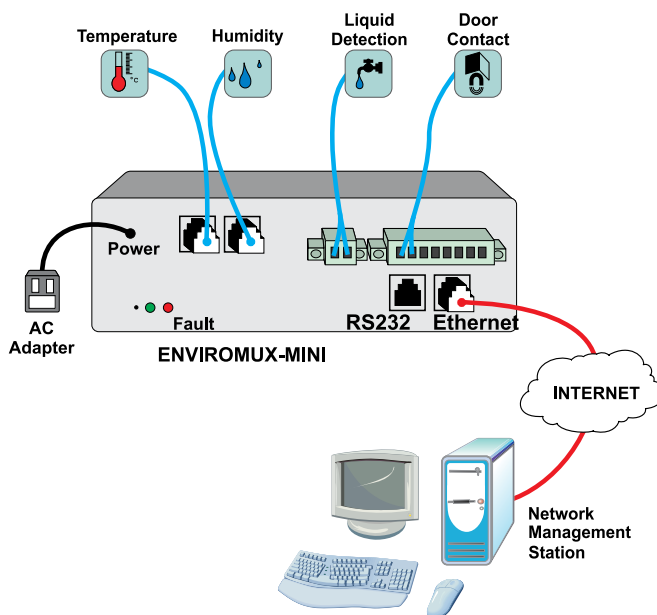
Front Panel Interface

- LEDs indicate the following:
 - “Fault” (red) lights up if a sensor exceeds a configurable threshold
 - “Power” (green) lights up when the device is powered/all clear.

Web Interface

- Configure sensor’s thresholds, alarm methods, formats of alerts, and system data log.
- View/edit sensors’ current values, thresholds and alert statuses.
- View/edit entries stored in the system data log.
- Configure IP information (address, subnet mask, default gateway, DNS, etc.), user administrative settings, and data logging settings.
- Up to four users can access the web page at one time.

Configuration and Cable Illustration



Sensors

Temperature, Humidity, Temperature/Humidity

- Temperature Sensor:
 - Applications from 32°F to 104°F (0°C to 40°C).
 - Accurate to within $\pm 1.35^\circ\text{F}$ ($\pm 0.75^\circ\text{C}$).
- Humidity Sensor:
 - Applications from 20% to 80% relative humidity at temperatures between 32°F to 104°F.
 - Accurate to within $\pm 5\%$ relative humidity.
- Temperature/Humidity Sensor:
 - Applications from 32°F to 104°F (0°C and 40°C) and 20% to 80% relative humidity.
 - Accurate to within $\pm 1.35^\circ\text{F}$ ($\pm 0.75^\circ\text{C}$) and $\pm 5\%$ relative humidity.
- High resistance to external influences on the cable due to digital output signal.
- Re-calibration is not necessary after initial set-up.
- Available lengths: 3/7/10/25 feet.
- Includes mounting hardware.

Liquid Detection

- For warning of flooding.
- 100% waterproof electronics.
- Detects any liquid, except deionized water..
- Minimum puddle: 0.6" diameter.
- Detects liquid depth > 0.1 ".
- Thermally bonded polymer coated carrier.
- Highly flexible so it lies flat after installation.
- Strong, durable and abrasion resistant.
- Available lengths: 3/7/10/25 feet.



ENVIROMUX-T-xx
ENVIROMUX-RH-xx
ENVIROMUX-TRH-xx



ENVIROMUX-LD-xx

Mini Server Environment Monitoring System

NTI Part #	Description
ENVIROMUX-MINI	Server Environment Monitoring System

Sensors

Sensor/Length (ft)	Description
ENVIROMUX-T-3/7/10/25	Temperature Sensor
ENVIROMUX-RH-3/7/10/25	Humidity Sensor
ENVIROMUX-TRH-3/7/10/25	Temperaure/Humidity Sensor
ENVIROMUX-LD-3/7/10/25	Liquid Detection Sensor

Additional sensors available.

Visit www.networktechinc.com/enviro-mini.html for the most up-to-date information.



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CONSOLE SERIAL PORT SWITCH

Manage up to 32 IT devices – routers, switches, hubs, etc.



SERIMUX® SE-RS-16 (Front and Back)

Features & Applications

The SERIMUX® SE-RS-xx Console Switch gives IT managers the ability to cost effectively manage serial devices, including servers, switches, routers, and telecom gear. The switch is controlled via an ASCII terminal with menu-driven integrated software, or by the front panel keypad.

- Eliminates the need to connect each device to an ASCII terminal or PC.
- Connect up to 32 devices with different baud rates, parity, and character length. Each switch also has one RJ45 connector for the local terminal.
- Provides out-of-band access to network devices (servers, routers, network switches, and any other network devices allowing console operation using RS232).
- No inadvertent “break” signals are generated to cause unintentional rebooting of SUN computers.
- Two operator levels (administrator and user).
- Switching is simplified with programmable device names and menu-driven device selection.
- Local commands can be directed via VT52, VT100, ANSI serial console, a PC with a terminal emulation program, or any compliant terminal.
- Built-in data buffers save the most recent RS232 console output from each connected device, which simplifies troubleshooting failures.
- The switch can be power cycled without halting SUN host computer.
- Gain access to servers without interrupting service to end-users; maintain optimal up-time.
- Manage server farms or data centers via serial ports and standard external modems.
- 1RU or 2RU rackmount case is standard.

Flash Upgrade

- Upgrading to the latest firmware is quick and simple with the In-System Programmability of the SERIMUX console switch.
- To upgrade the switch, a computer running terminal emulation software should be connected to the console port.

Specifications

Compatibility

- Serial device connection: RJ45 male connectors to serial controlled device.
- Control console connection: RJ45 male connector to dumb terminal.

Connectors

- RJ45 connectors, DTE configuration via RS232.

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Serial Interface

- Up to 32 RS232 ports, plus console port.
- Flow control: Hardware (RTS/CTS), Software (XON, XOFF), both or none.
- Data transfer rate: 50 baud to 128K baud.
 - Effective transfer rate > 10K baud.

Regulatory Approvals

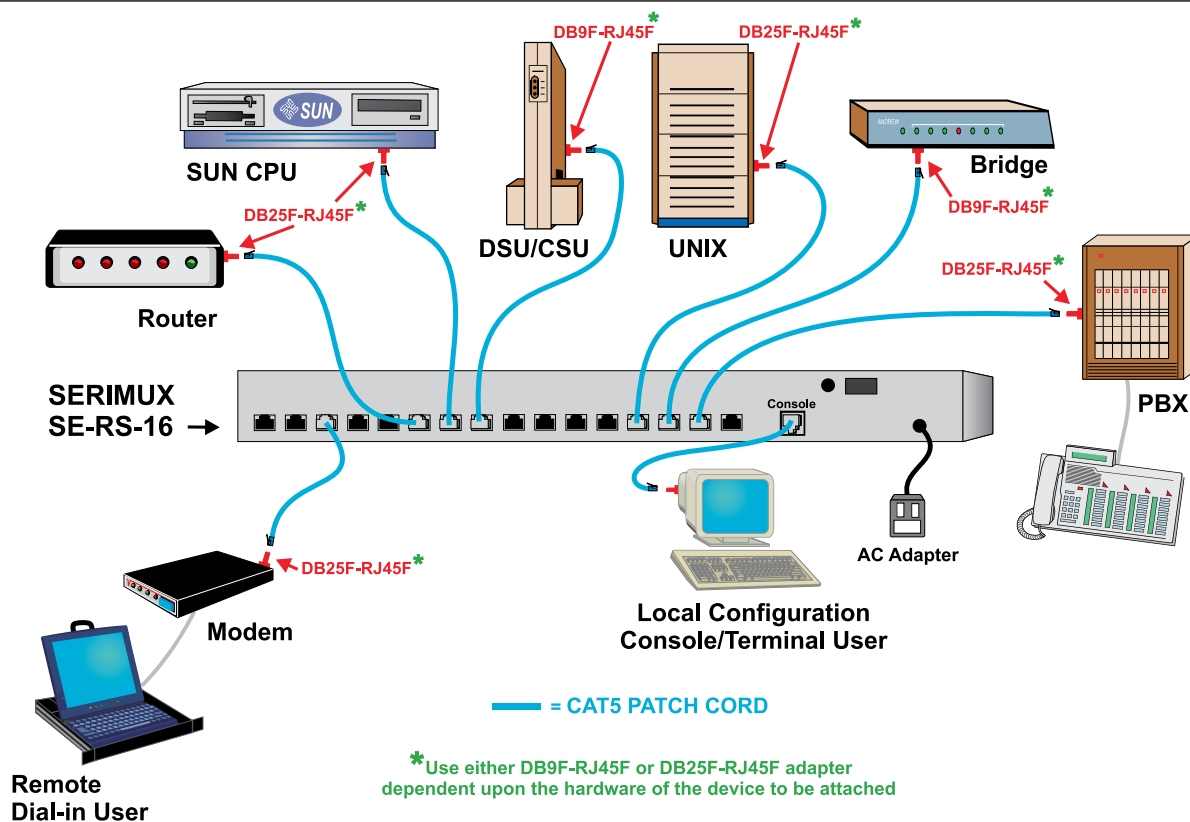
- CE



CONSOLE SERIAL PORT SWITCH

Manage up to 32 IT devices – routers, switches, hubs, etc.

Configuration and Cable Illustration



NTI's SERIMUX SE-RS-x console serial switch allows you to control up to 32 RS232 devices via local or dial-up access from one ASCII terminal.

Adapters



DB9F-RJ45F

- Adapter to connect DB-9M serial ports to the SERIMUX.



DB25F-RJ45F

- Adapter to connect DB-25M serial ports to the SERIMUX.



DB25M-RJ45F-T

- Adapter to connect DB-25F serial ports to the SERIMUX.



DB25M-RJ45F-C

- Adapter to connect a modem to the SERIMUX.



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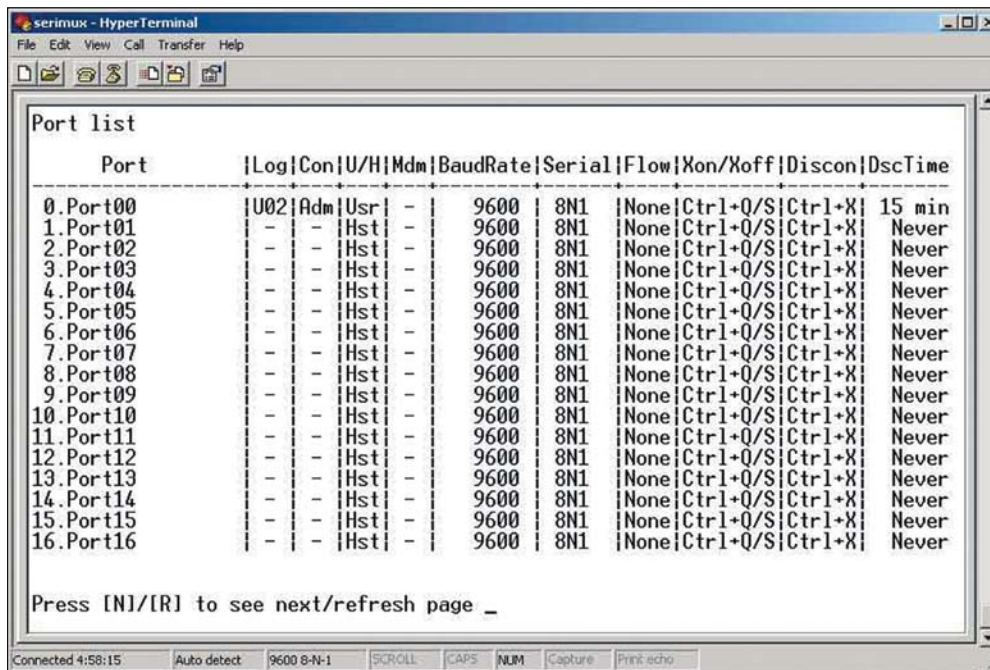


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CONSOLE SERIAL PORT SWITCH

Manage up to 32 IT devices – routers, switches, hubs, etc.



Screenshot of SERIMUX Console Serial Switch control.

Built-In Control Methods

- Front panel keypad.
- Menu-driven integrated software via dumb terminal control.

Control Modes

- **Buffer Mode**—Read incoming data, wait for special string in-band command, including administrator/user password.
- **Link Mode**—Connect to another port, data flow between ports.
- **Command Mode**—Two levels: administrator and user. Port parameters can be viewed/modified, ports may be connected and disconnected. Users can be changed or disconnected, and passwords can be changed.

Administrative Controls

- View any port mode.
- View and/or modify port passwords and parameters.
- Connect or disconnect port connections.
- Change/disconnect users, administrators, passwords, etc.
- Initiate modem connection to local ports.
- Inspect buffered data.

Console Serial Port Switch Models

NTI Part#	# of Ports	Rack Units	Rack Size WxDxH (in)
SE-RS-8	8	1RU	19x10x1.75
SE-RS-16	16	1RU	19x10x1.75
SE-RS-24	24	2RU	19x10x3.5
SE-RS-32	32	2RU	19x10x3.5

Adapters

NTI Part#	Description
DB9F-RJ45F	Adapter to connect DB-9M serial ports to the SERIMUX
DB25F-RJ45F	Adapter to connect DB-25M serial ports to the SERIMUX
DB25M-RJ45F-T	Adapter to connect DB-25F serial ports to the SERIMUX
DB25M-RJ45F-C	Adapter to connect a modem to the SERIMUX

Cables

- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors.
- Cables not included.

Adapters

- Four cable adapters are included with the SERIMUX.
 - DB-25 Male Console Adapter.
 - DB-25 Male Modem Adapter.
 - DB-9 Female Console Adapter.
 - DB-25 Female Console Adapter.
- Additional adapters available.



SSH CONSOLE SWITCH

Securely control up to 32 RS232 devices via the Internet

NEW



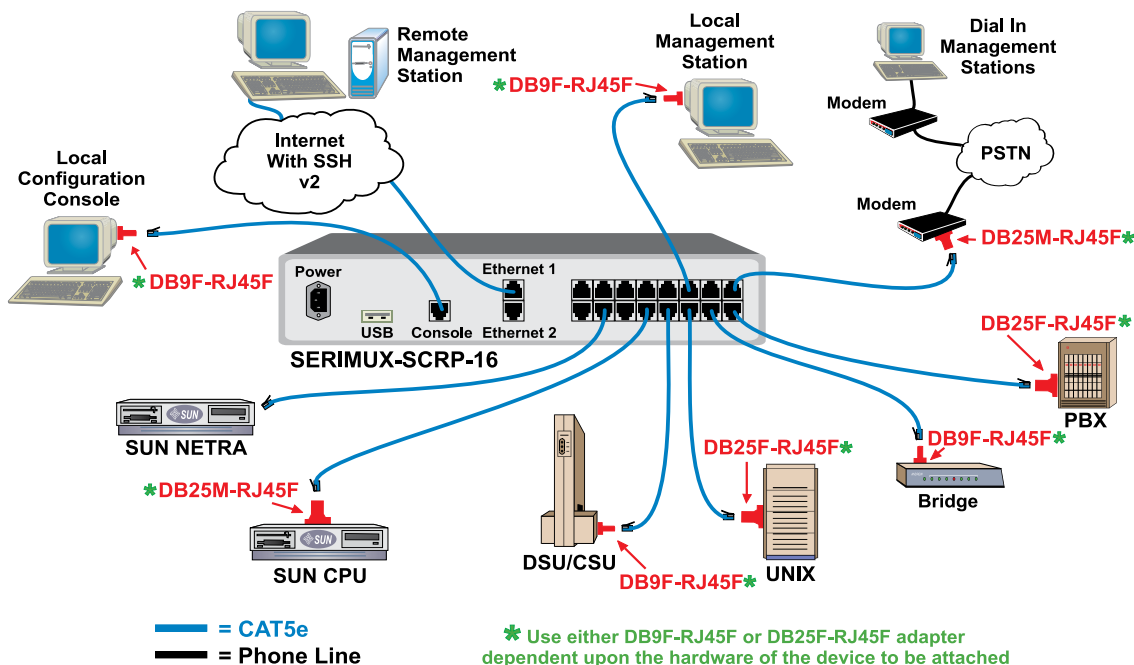
SERIMUX-SCRP-16 (Front and Back)

Features & Applications

The SERIMUX® Secure SSH Console Serial Switch delivers secure management of up to 32 serial devices via the internet, TCP/IP network, or dial-up modem connections. It combines the advanced security of Secure Shell v2 with unlimited access to remote network management.

- IPv4/IPv6 dual protocol stack provides flexible networking support for devices operating in today's IPv4 based networks and compatibility with future upgrades to IPv6 environments.
- Supports Perl language for customizable log searching and event notification.
- IPMI (Intelligent Platform Management Interface) support for consolidated management of servers with IPMI capability via Serial over LAN.
- Dual Ethernet and optional dual power provide redundant connectivity and power.
- USB port and PC Card slot provide expanded logging storage, automatic configuration and additional functionality.
- Enhanced WebUI (User Interface) provides visibility to all ports on one screen, with point and click capability.
- Powerful diagnostic and event management features (data capture, notification and scripting) assist in the quick location of the source of equipment failures and minimize downtime.
- Supports Windows Server 2003 Emergency Management Services — helps IT/Telco administrators perform emergency recovery tasks when the server is not accessible through the network.
- Enhanced security features to protect the system—Secure Shell (SSH v2), individual port authentication, IP filtering, HTTPS.
- Supports secure clustering of up to 16 slave units. Allows encrypted access of up to 512 devices connected to multiple master or slave switches.
- Sun Solaris ready for easy installation, use and interoperability with a Sun network computing environment.
- 1RU rackmount case is standard.

Configuration and Cable Illustration



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SERIMUX®

www.networktechinc.com/srvsw-term-ssh.html

SSH CONSOLE SWITCH

Securely control up to 32 RS232 devices via the Internet

Specifications

Compatibility

- Supports most devices with an RS232 serial port.

Serial Interface

- 8, 16 or 32 RJ45 EIA-232 serial port connectors.
- One RJ45 EIA-232 console port connector.
- Use straight-through CAT5 cable for console access to Sun Netra/Cisco equipment.
- Flow Control:
 - Hardware RTS/CTS
 - Software XON/XOFF
- Signals: RS232 Rx, Tx, RTS, CTS, DTR, DSR, GND.
- Modem controls: DTR/DSR and RTS/CTS.

Network Interface

- Two 10/100 Base-T Ethernet ports with RJ45 Ethernet connector.
- Supports static and dynamic IP address.

PC Card

- One PCMCIA interface slot supports any of the following:
 - Compact-Flash storage card.
 - Wireless LAN adapter (802.11b).
 - Ethernet LAN adapter.
 - PSTN/CDMA modem card.

Clustering

- Supports NAT-based efficient and secure clustering.
- Access up to 16 slave units.

Power

- Input Voltage: AC 100 - 240V, 50 - 60Hz
- Optional dual power available on 16- and 32-port models.

Regulatory Approvals

- CE, UL, FCC, RoHS

Protocols

- ARP, IP/ICMP.
- TCP, Telnet, SSH v2.
- DNS, Dynamic DNS.
- HTTP, HTTPS, SMTP, DHCP.
- PPPoE.
- SNMP v3 (MIB II).
- RIP, Static routing.
- IPMI v2
- Ipv4/Ipv6 dual stack
- Perl

Memory

- 64MB SDRAM.
- 8MB Flash.
- Female USB Type A connector for expanded logging storage

Logging & Buffering

- Deliver system log messages to NFS, syslog server or ATA Flash memory.
- Store port buffer data to NFS, syslog server or ATA Flash memory.
- Supports flexible buffer size management according to the media and the application.
- Email alarm notification from the port alarm messages.

Control Methods

- Web, Telnet/SSH, System console port.
- Supports Linux command line interface for power users.
- Full-featured system status display via LED indicators:
 - CPU - Power.
 - Ethernet: In-Use/ PCMCIA/ Link/ Act/ 100BaseT
 - Each Serial Port - Serial Ready/RX/TX.

Security

- User access control to the system and the ports.
- User Level Management: Root, System Admin, Port Admin, User.
- SSH v2 server and client.
- TLS/SSL
- RADIUS, LDAP, TACACS+, Active Directory and Kerberos authentication protocols.
- IP filtering for the system and ports.



SSH CONSOLE SWITCH

Securely control up to 32 RS232 devices via the Internet

SSH Console Switch Models

NTI Part#	# of Ports	Rack Units	Size WxDxH(in)
SERIMUX-SCRP-8	8	NA	17.5x8x1.75
SERIMUX-SCRP-16	16	1RU	17.5x10x1.75
SERIMUX-SCRP-16-DP	16	1RU	17.5x10x1.75
SERIMUX-SCRP-32	32	1RU	17.5x10x1.75
SERIMUX-SCRP-32-DP	32	1RU	17.5x10x1.75

Adapters

NTI Part#	Description
DB9F-RJ45F	Adapter to connect DB-9M serial ports to the SERIMUX
DB25F-RJ45F	Adapter to connect DB-25M serial ports to the SERIMUX
DB25M-RJ45F-T	Adapter to connect DB-25F serial ports to the SERIMUX
DB25M-RJ45F-C	Adapter to connect a modem to the SERIMUX

Cables

- Use CAT5, CAT5e or CAT6 UTP straight through cable for TIA/EIA-568B wiring terminated with standard RJ45 connectors.
- One 6-foot CAT5 cable included.

Adapters

- Four cable adapters are included with the SERIMUX-SCRP-x.
 - Male DB-25 console adapter.
 - Male DB-25 modem adapter.
 - Female DB-9 console adapter.
 - Female DB-25 console adapter.
- Additional adapters can be purchased.



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VGA VIDEO SWITCH

Share one monitor among multiple computers



VIDMUX® SE-15V-2C1U-2 (Front & Back)

Features & Applications

The VIDMUX® VGA Video Switch enables up to 16 computers to be connected to a single video monitor, projector or plasma screen.

- Compatible with PCs, SUNs and MACs with VGA video.
- Ideal for classrooms and boardrooms.
- Eliminate redundant monitors.
- Interconnect NTI switches and splitters for complex applications.
- Available with RS232 option.

Specifications

For 2-port Models

Monitor

- Crisp and clear 1900x1200 resolution.
- Bandwidth is 150 MHz.
- 15-pin HD connectors. (See ordering specifications for gender)

Power

- 110 to 220 VAC at 50 or 60 Hz via AC adapter.

Control

- Touch button on front with LED indication of port selection.

For 2-port-TTL Model

Monitor

- Crisp and clear 1900x1200 resolution.
- Bandwidth is 150 MHz.
- 15-pin HD connectors. (See ordering specifications for gender)

Power

- 110 to 220 VAC at 50 or 60 Hz via AC adapter.

Control

- Female 9-pin D connector for remote control.
 - Pin 1=Ground.
 - Pin 2=TTL or contact closure signal.

For 4-16 Port Models

Monitor

- Crisp and clear 1900x1200 resolution.
- Bandwidth is 150 MHz.
- Female 15-pin HD connectors.

Power

- 110 or 220 VAC at 50 or 60 Hz.

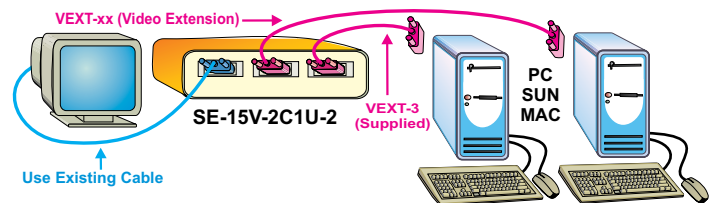
Control

- Touch buttons on front with LED indication of port selection.
- Scan Mode automatically and sequentially displays the video from each powered-on computer. (Available on 4, 8 and 16 port models).

Options

- RS232 control.
- Rackmount.

Configuration and Cable Illustration



Share one monitor among multiple computers

Audio Option

- Frequency Response: 20 Hz-20 kHz, +/-0.2 dB.
- Total Harmonic Distortion + Noise(THD+N): 0.05% at 1 kHz.
- 300mW of continuous power.
- 3.5mm stereo audio jacks for output and input.
- Input impedance: 10k Ohms.
- Maximum input level: 2.5 Vp-p.
- Capable of driving 8 Ohm speakers.
- Add "A" to the part number for audio support.
- Available on 2-port models only.

Ordering Specifications

This example explains the VIDMUX (2-port) switch part number by breaking it down into the available options. When ordering, choose the options that you require.

Number of Computers and Monitors
Optional Control Method

SE - 15V - 2 - 2C1U - TTL

2C1U = 2 Computers, 1 Monitor
 2U1C = 2 Monitors, 1 Computer

VGA Video Switch Models (2 Ports)

NTI Part#	Description	15 HD Connectors	# of Ports	Size WxDxH (in.)
SE-15V-2-2C1U	2 Computers, 1 Monitor	2 Male, 1 Female	2	8x6.2x2.6
SE-15V-2-2U1C	2 Monitors, 1 Computer	2 Female, 1 Male	2	8x6.2x2.6
SE-15V-2-2C1U-TTL	2 Computers, 1 Monitor	2 Male, 1 Female	2	8x6.2x2.6
SE-15V-2-2U1C-TTL	2 Monitors, 1 Computer	2 Female, 1 Male	2	8x6.2x2.6

This example explains the VIDMUX (4-, 8-, 12- or 16-port) switch part number by breaking it down into the available options. When ordering, choose the options that you require.

Number of Outputs
Local Control Method
Optional Rackmount Enclosure
Optional Control Method

SE - 15V - x - L - R IR

"x" = 4, 8, 16
 IR = Infrared
 RS = RS232

- Delete the "L" from the NTI part number for remote push button control for 4 to 16-port units.
- Rack Unit (RU) sizes may vary from table based on additional features, RS232 control and external UL.

VGA Video Switch Models (4, 8, 12 or 16 Ports)

NTI Part#	Description	15 HD Connectors	# of Ports	Size WxDxH (in.)	Rack Units	Rack Size WxDxH (in.)
SE-15V-4-L	1 Monitor, 4 Computers	All Female	4	8x6.2x2.6	1RU	19x10x1.75
SE-15V-8-L	1 Monitor, 8 Computers	All Female	8	8x6.2x2.6	1RU	19x10x1.75
SE-15V-16-L	1 Monitor, 16 Computers	All Female	16	10x7.5x3.3	2RU	19x10x3.5

Cables

Cables for 2-port and -TTL Models

- A three-foot multicoax cable is provided for connecting your computer to the 2-port switch.
- Interface cables between additional computers and the switch are required for proper operation. (Cables not included.)
- Audio cables required for audio option: SA-xx-MM.

Cables for 4-16 Port Models

- Interface cables between computers and the switch are required for proper operation.
- Cables not included.



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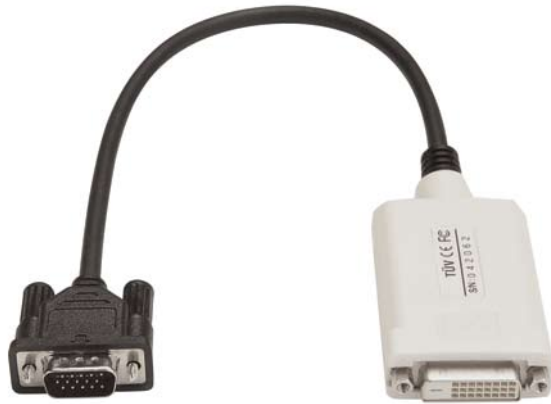


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DVI TO VGA / VGA TO DVI CONVERTER

Convert digital DVI to analog VGA / Convert analog VGA to digital DVI



DVI-VGA

Features & Applications

The DVI to VGA Converter changes your computer's digital DVI signal to analog VGA video. The converter generates all the compatible digital to analog conversion signals to make the connection between the DVI-D input and the VGA output work.

- Connects computers with DVI-D connectors to analog VGA monitors or projectors.
- Compatible with DDWG DVI standard.
- Supports up to 1280x1024 video resolution.
- No external power supply.

Specifications

Connectors

- One female DVI single link connector.
- One male 15-pin HD connector.

Video

- Maximum resolution: 1280x1024.
- DVI bandwidth: 1.6 GHz.
- VGA bandwidth: 165 MHz.

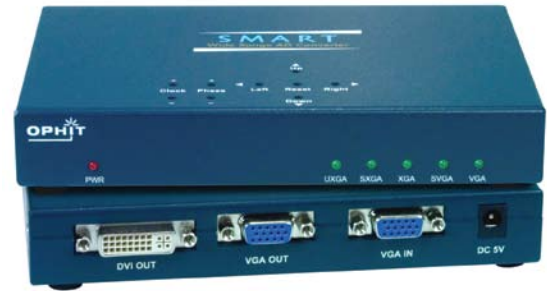
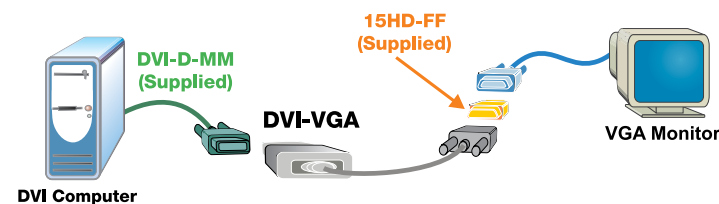
Dimensions

- WxDxH (in): 1.5x3x0.6 with 10" attached VGA cable.

Cables

- Includes 6-foot DVI-D single link male to male cable.
- Includes VGA female to female gender changer.

Configuration and Cable Illustration



VGA-DVI (Front and Back)

Features & Applications

The VGA to DVI Converter changes your computer's analog VGA signal to digital DVI video. The converter generates the compatible analog to digital conversion signals to make the connection between the VGA input and the DVI-D output work.

- Connects computers with analog VGA connectors to DVI-D monitors or projectors
- Compatible with DDWG DVI standard.
- Supports up to 1600x1200 video resolution.
- Supports VGA/SVGA and DVI-D monitors, including LCD flat panel monitors.

Specifications

Connectors

- One female 15-pin HD input connector.
- One female 15-pin HD output connector.
- One female DVI-D single link output connector.

Video

- Maximum resolution: 1600x1200

Power

- 110 or 220 VAC at 50 or 60 Hz via AC adapter.

Dimensions

- WxDxH (in): 6.4x4.1x1.1

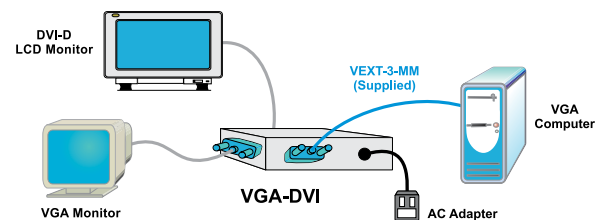
Regulatory Approvals

- CE, FCC

Cables

- Includes 3-foot VGA male to male cable.

Configuration and Cable Illustration



CABLE TERMINATOR WALLPLATE

Field terminate audio video cables for TV/monitor and audio speaker cable extension



Available models:

- **VGA**
- **VGA + Audio**
- **S-Video + Composite Video + Audio**
- **VGA + Composite Video**



WP-CSA (Front)



WP-AV (Front)



WP-VGA (Front)



WP-CV (Front)

Features & Applications

The Cable Terminator Wallplate connects a television/monitor and stereo speakers to video and audio distribution wiring within a wall. It can be used to connect VGA video, composite video or S-Video televisions/monitors to home entertainment systems, cable television boxes, DVD players, etc. The cable terminator wallplate features set-screw terminal slots that accommodate straight routing of the wires for easy, clean connections.

- No special tools needed. Terminal block design with set screws provides reliable electrical connections.
- The wallplate is available in four models:
 - VGA
 - VGA and Stereo Audio
 - VGA and Composite Video
 - S-Video, Composite Video and Stereo Audio
- Connectors on the back of the wallplate are specially oriented to permit an almost straight routing of the wires.
- Proper installation is practically foolproof. The terminal block area is clearly marked, and a wiring diagram is included.
- Eliminates cable clutter.

Specifications

Compatibility

- WP-VGA: supports any VGA monitor
- WP-AV: supports any VGA monitor and unbalanced stereo audio.
- WP-CV: supports any VGA or composite video TV/monitor
- WP-CSA: supports any S-Video or composite video TV/monitor and unbalanced stereo audio.

Connectors

- WP-VGA: one female 15-pin HD connector.
- WP-AV: one female 15-pin HD connector, one 3.5mm stereo audio jack.
- WP-CV: one female 15-pin HD connector, one RCA composite video jack.
- WP-CSA: one female 4-pin miniDIN connector, one RCA composite video jack, one set (right and left) of RCA audio jacks.

- Internal cable connectors:
 - WP-VGA and WP-AV: terminal block, 2x12 positions.
 - WP-CSA: terminal block, 1x12 positions.
- Cable routing: straight.

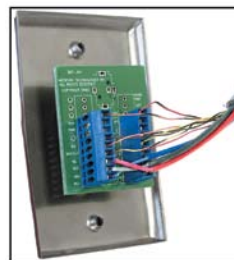
Wallplate

- Standard single-wide wallplate.
- Size (WxDxH): 2.8x1.1x4.5 inches
- The terminal block extends 0.65 inches for WP-AV, WP-VGA and WP-CV, and one inch for WP-CSA from the back of wallplate.
- The connectors protrude less than 1/2 inch from front of wallplate.
- 3.25 inches between two mounting holes.

Electrical Box

- Single gang, standard US.

Cable Terminator Wallplate Models	
NTI Part #	Description
WP-AV	VGA & Stereo Audio Cable Terminator
WP-VGA	VGA only Cable Terminator
WP-CSA	S-Video, Composite Video and Stereo Audio Cable Terminator Wallplate
WP-CV	VGA & Composite Video Cable Terminator



WP-AV (Back)



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PC CABLES

High quality NTI cables



Male 15HD

Female 15HD

VEXT-3/6/10/15/25/35/50/75/100

VGA male to female cable.
3 to 100 feet.



Male 15HD

Male 15HD

VEXT-1,5/3/6/10/15/25/35/50/75/100-MM

VGA male to male cable.
1.5 to 100 feet.



Male 15HD

Five Male BNC

VINT-5B-6

Male VGA to BNC cable.
6 feet.



Male 15HD
Two Male 6-pin
miniDIN

Female 15HD
Two Female 6-pin
miniDIN

VKMEXT-3/6/10/15/25/35/50/75/100

VGA, PS2 keyboard and mouse
male to female cable.
3 to 100 feet.



Male 15HD
Two Male 6-pin
miniDIN

Male 15HD
Two Male 6-pin
miniDIN

VKMEXT-3/6/10/15/25/35/50/75/100-MM

VGA, PS2 keyboard and mouse
male to male cable.
3 to 100 feet.



Male 15HD
Male USB A

Female 15HD
Female USB A

USBVEXT-3/6/10

VGA and USB male to female cable.
3 to 10 feet.



Two Male 6-pin
miniDIN

Two Female 6-pin
miniDIN

VVKINT-3/6/10/15/25
VVKEXT-35/50/75/100

PS2 keyboard and mouse male to female cable.
3 to 100 feet.



Two Male 6-pin
miniDIN

Two Male 6-pin
miniDIN

VVKINT-3/6/10/15/25/35/50-MM
VVKEXT-75/100-MM

PS2 keyboard and mouse male to male cable.
3 to 100 feet.



Male 15HD
Male USB A

Male 15HD
Male USB B

USBVEXT-3/6/10/15-MM

VGA and USB male to male cable.
3 to 15 feet.



USB ADAPTERS

Connect **USB** computers to universal **KVM** switches / Connect legacy computers to **USB KVM** switches



USB-PS2

Connect USB PC computer to NTI universal switch, or connect PS2 keyboard and mouse to USB PC computer.



USB-PS2-R

Connect legacy PS2 computer to NTI USB switch, or connect USB keyboard and mouse to legacy PS2 computer.



USB-SUN

Connect SUN USB computer to NTI universal switch, or connect legacy SUN keyboard to SUN USB computer.



USB-SUN-R

Connect legacy SUN computer to NTI USB switch, or connect SUN USB keyboard and mouse to legacy SUN computer.



USB-ADB

Connect USB MAC computer to NTI universal switch.



USB-A+A-5M

Extend a USB 1.1 device by an additional 5 meters; use 2 cables in series for up to 10 meters; PC, SUN & MAC fully supported.



USB2-AA-5M

Extend a USB 2.0 device by an additional 5 meters; supports PC; transfer rates: high-speed (480 Mbps), full-speed (12 Mbps).



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UNIVERSAL CABLES

High quality NTI cables

High Density Cables



Male 26-pin SCSI-2 Two Female 6-pin miniDIN Female 15HD

VMTINT-3/6/10/15/25

VGA monitor, PS/2 keyboard and mouse to an NTI high density switch.
3 to 25 feet.



Male 26-pin SCSI-2 Two Male 6-pin miniDIN Male 15HD

VMTINT-3/6/10/15/25-MM

NTI high density switch to PS/2 CPU.
3 to 25 feet.



Male 26-pin SCSI-2 Female 8-pin miniDIN Female 15HD

SMTINT-3/6/10/15/25

VGA monitor, SUN keyboard to an NTI high density switch.
3 to 25 feet.



Male 26-pin SCSI-2 Male 8-pin miniDIN Male 15HD

SMTINT-3/6/10/15/25-MM

NTI high density switch to SUN CPU.
3 to 25 feet.

Legacy Cables



Male 8-pin miniDIN Two Female 6-pin miniDIN

VKTINT-1

Interface PS/2 keyboard and mouse
to NTI universal KVM switch.
1 foot.



Two Male 6-pin miniDIN Male 8-pin miniDIN

VKTINT-3/6/10/15/25/35/50-MM

Interface PS/2 keyboard and mouse ports
to NTI universal KVM switch.
3 to 50 feet.



Male 8-pin miniDIN Male 8-pin miniDIN

SKTINT-3/6/10/15/25/35/50-MM

Interface SUN keyboard port
to NTI universal KVM switch.
3 to 50 feet.



BNC CABLES AND CONSTRUCTION

High quality NTI cables

BNC Cables



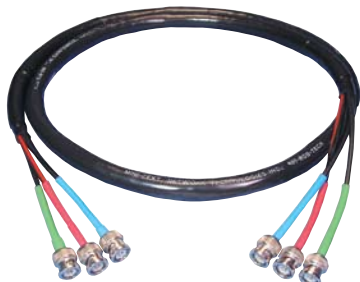
Three Male BNC Three Male BNC
3CINT-6
6 foot RGB video, mini coax



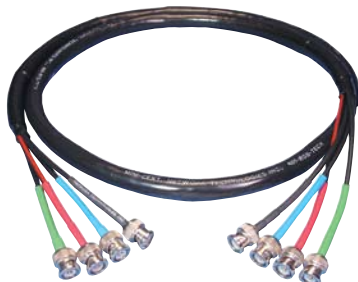
Four Male BNC Four Male BNC
4CINT-6
6 foot RGBS video, mini coax



Five Male BNC Five Male BNC
5CINT-6
6 foot RGBHV video, mini coax



Three Male BNC Three Male BNC
3CEXT-xx
RGB video through 250 feet, RG59



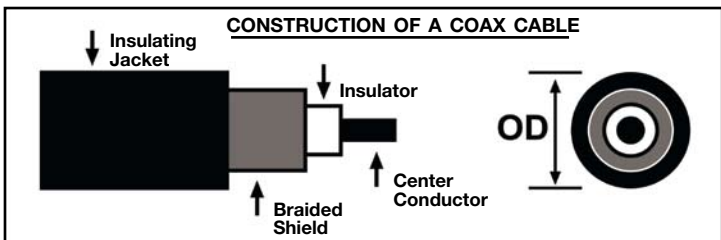
Four Male BNC Four Male BNC
4CEXT-xx
RGBS video through 250 feet, RG59



Five Male BNC Five Male BNC
5CEXT-xx
RGBHV video through 250 feet, RG59

Coax Cable Construction & Specifications

NTI's video cables extend your display possibilities with guaranteed 1900x1200 resolution through 250 feet. Their superior construction allows these cables to deliver crisp and clear high-resolution video without booster boxes. To help customers find the perfect solution to meet their application and budget needs, NTI offers three varieties of cables: **Multi-Minicoax Cable**, **Multi-RG59 Cable**, and **Discreet-Coax Cable**.



Multi-Minicoax Cables are made with three mini coax cables and nine wires molded under one jacket. Available as fully molded cables from 3 through 100 feet. Supports 1900x1200 resolution through 50 feet.

Attenuation—Multi-Minicoax Cable		
Freq. MHz	Nom. Attenuation (dB/100ft)	Nom. Attenuation (dB/100m)
1.0	0.66	2.16
5.0	1.72	5.64
10.0	2.49	8.17
30.0	4.13	13.55
50.0	5.24	17.19
100.0	7.78	25.52
130.0	8.99	29.49
150.0	9.75	31.98
200.0	11.76	38.57
230.0	12.82	42.05
250.0	13.64	44.74
300.0	15.07	49.43

Coax Type	Outside Diameter (OD in Inches)
Multi-Minicoax	0.35
Multi-RG59	0.65

Multi-RG59 Cables are made with three RG59 coax and four pairs under one jacket with hand assembled ends. Custom made up to 250 feet for standard VGA*. Supports 1900x1200 resolution through 125 feet.

Attenuation—Multi-RG59 Cable		
Freq. MHz	Nom. Attenuation (dB/100ft)	Nom. Attenuation (dB/100m)
1.0	0.36	1.18
5.0	0.96	3.15
10.0	1.24	4.07
30.0	1.96	6.43
50.0	2.43	7.97
100.0	3.27	10.73
130.0	3.68	12.07
150.0	4.02	13.19
200.0	4.45	14.60
230.0	4.79	15.71
250.0	5.16	16.92
300.0	5.77	18.93

* Standard VGA video is 640x350, 640x400 or 640x480 resolution.



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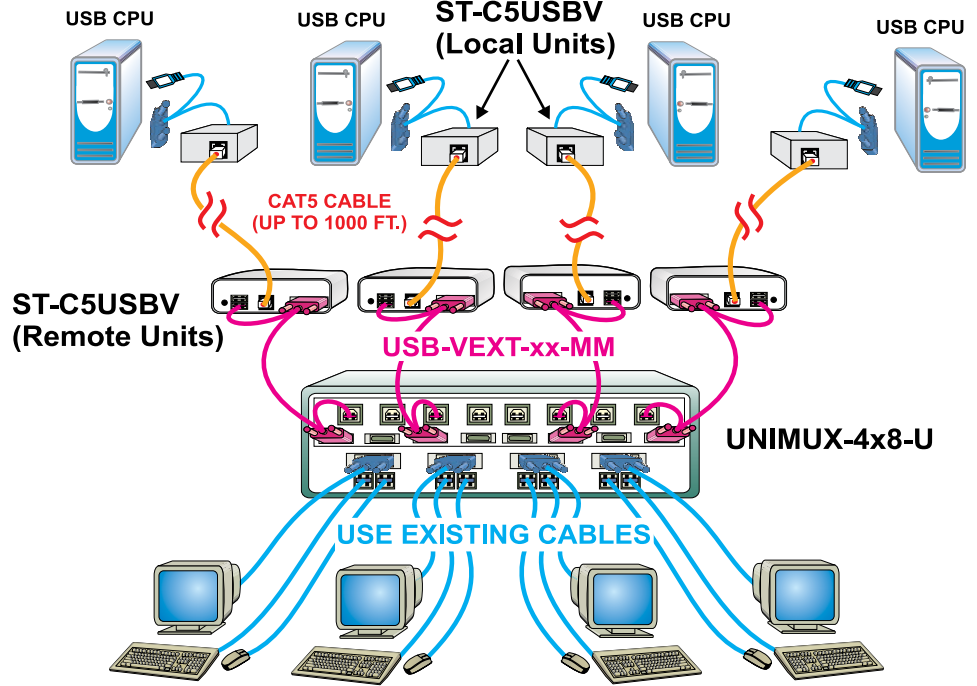
APPLICATION NOTES

Combine NTI's switches and splitters for complex applications

Multiple Users Control Multiple USB Computers Located 1,000 ft. Away Using CAT5 Cable

Interconnect the UNIMUX™ USB Matrix KVM Switch with XTENDEX® USB KVM Extenders to allow up to eight users to individually command or simultaneously share 32 USB computers located up to 1,000 feet away using CAT5 UTP cable.

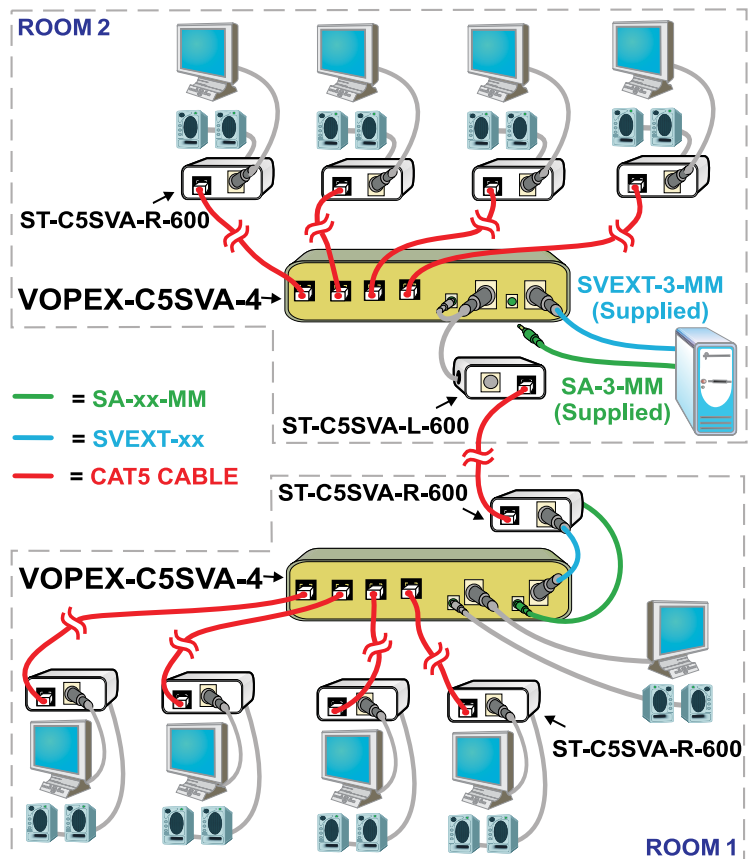
- USB Matrix KVM Switches
 - pages 43 to 45.
- USB KVM Extenders
 - pages 16 to 17.



Drive Multiple TVs and Speakers Located in 2 Rooms from 1 S-Video Device

Drive multiple TVs and speakers located in two rooms from one S-Video device, using a single CAT5 cable between the rooms. The distance between the TVs and speakers in the two rooms can not exceed 600 feet.

- S-Video Splitter/Extender via CAT5
 - pages 54 to 55.

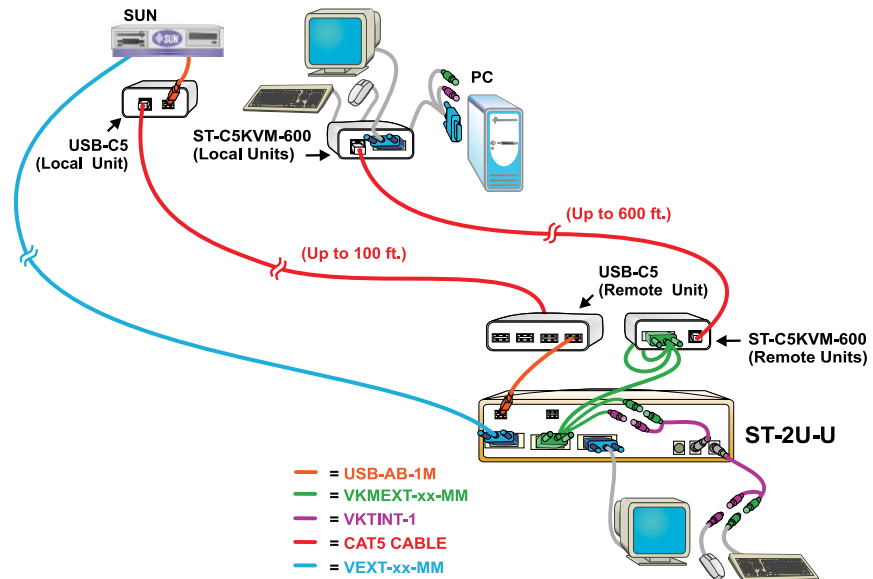


Combine NTI's switches and splitters for complex applications

Control Multiple Computers Located up to 600 Feet Away Using CAT5 Cable

Interconnect the NODEMUX® KVM Switch with XTENDEX® KVM Extenders and USB Extenders to allow remote access to multiple computers or allow individual access to local computer.

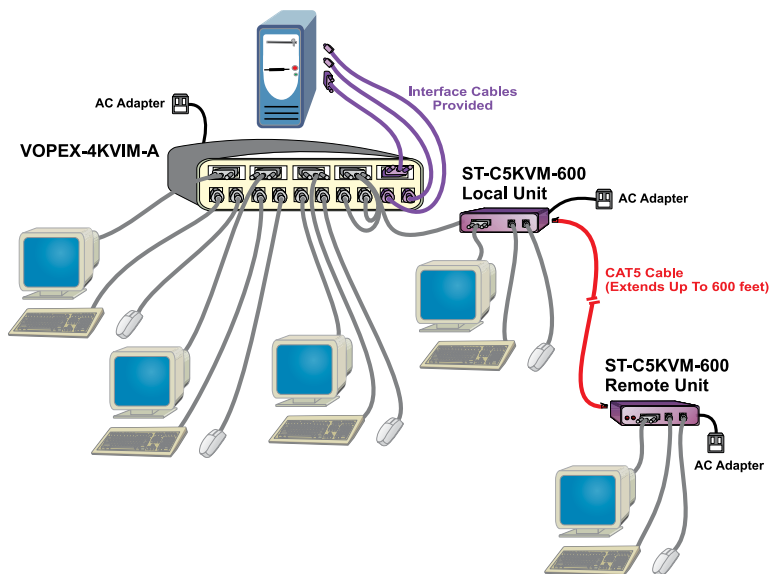
- Universal KVM Switches
- KVM Extenders
 - pages 4 to 5.
- USB Extenders
 - page 14



Access 1 PC from Multiple Control Locations up to 600 Feet Away Using CAT5 Cable

Interconnect the VOPEX® KVM Splitter with XTENDEX® KVM Extenders via CAT5 to access one PC from multiple control locations located up to 600 feet away using CAT5 UTP cable.

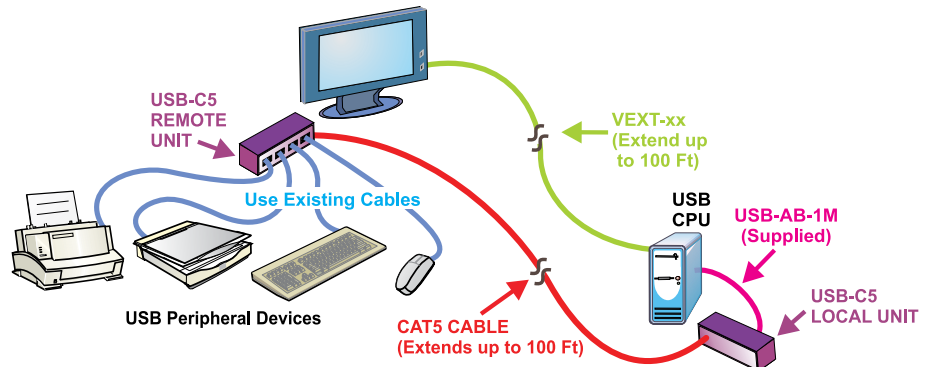
- PS/2 KVM Splitters
 - page 60.
- KVM Extenders
 - pages 4 to 5.



Extend USB Keyboard, USB Mouse, VGA Monitor, and USB Device

Use NTI's USB-C5 USB extender and VEXT-xx VGA cable to extend your USB keyboard, USB mouse and VGA monitor up to 100 feet away from your computer.

- USB Extender
 - page 14.
- VGA Cables
 - page 78.



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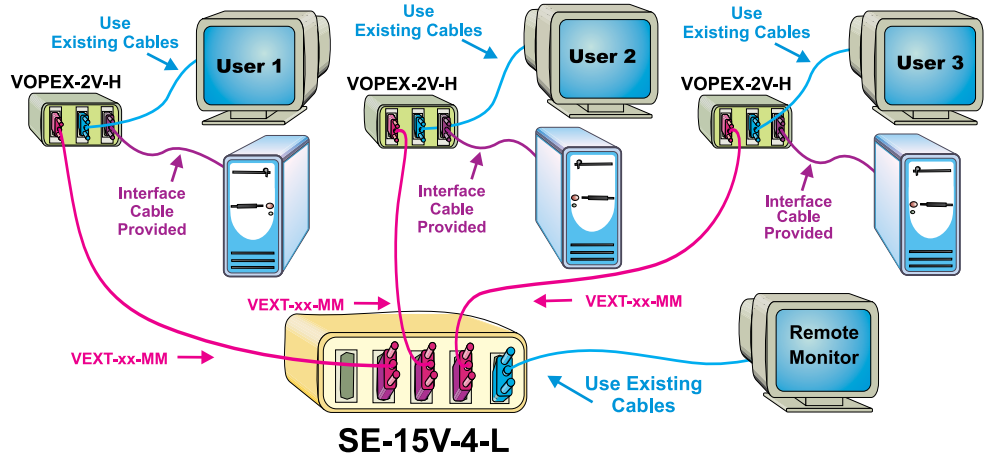
APPLICATION NOTES

Combine NTI's switches and splitters for complex applications

Switched and Local Display of 3 Computers

Users can locally view their own computer video, while any computer video can be viewed remotely.

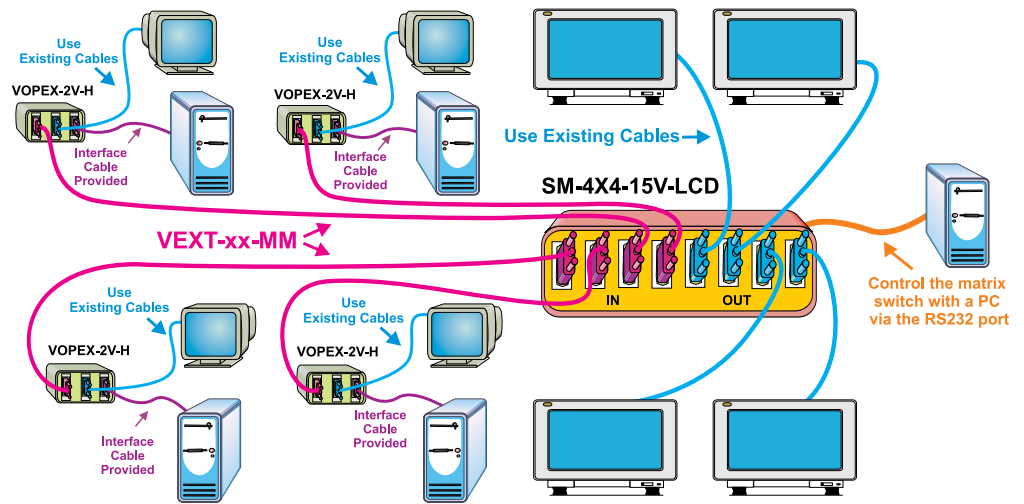
- VGA Video Switch
 - pages 74 to 75.
- VGA Video Splitters
 - page 58.



Local and Remote Video Presentation Display

Four behind-the-scenes technicians can create and update information with a local display, while a presenter can display any computer's output to any large screen monitor. Switching is controlled from a PC via the RS232 port.

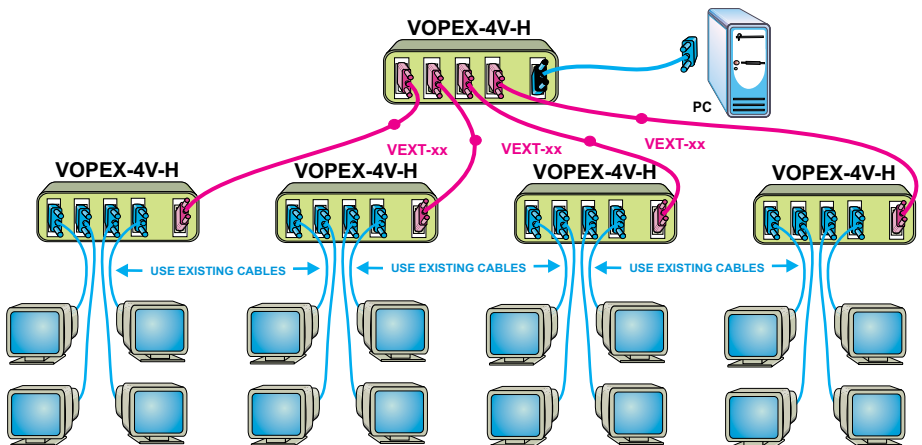
- Video Matrix Switches
 - pages 28 to 31.
- VGA Video Splitters
 - page 58.



Drive up to 256 Monitors with 1 Computer

Cascade video splitters to display the same crisp and clear high-resolution image on a maximum of 256 monitors.

- VGA Video Splitters
 - page 58.

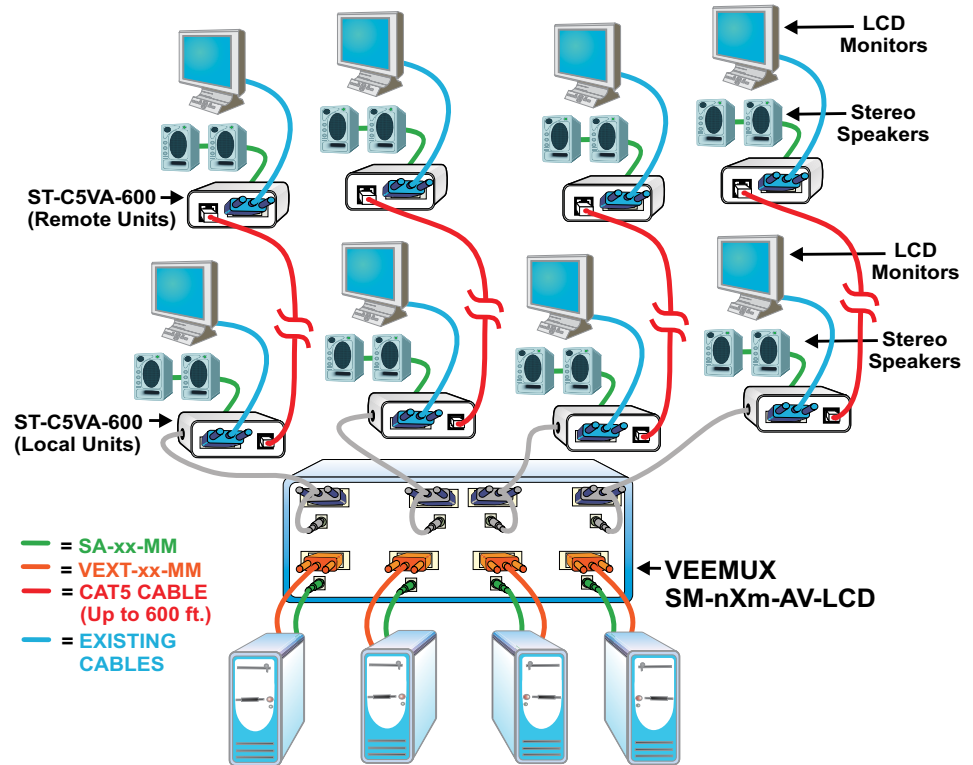


Combine NTI's switches and splitters for complex applications

Local and Remote Audio/Video Presentation Display

Interconnect the VEEMUX® Audio/Video Matrix Switch with XTENDEX® VGA Extenders via CAT5 to switch audio and video from many computers among multiple monitors and speakers located up to 600 feet away using CAT5 UTP cable.

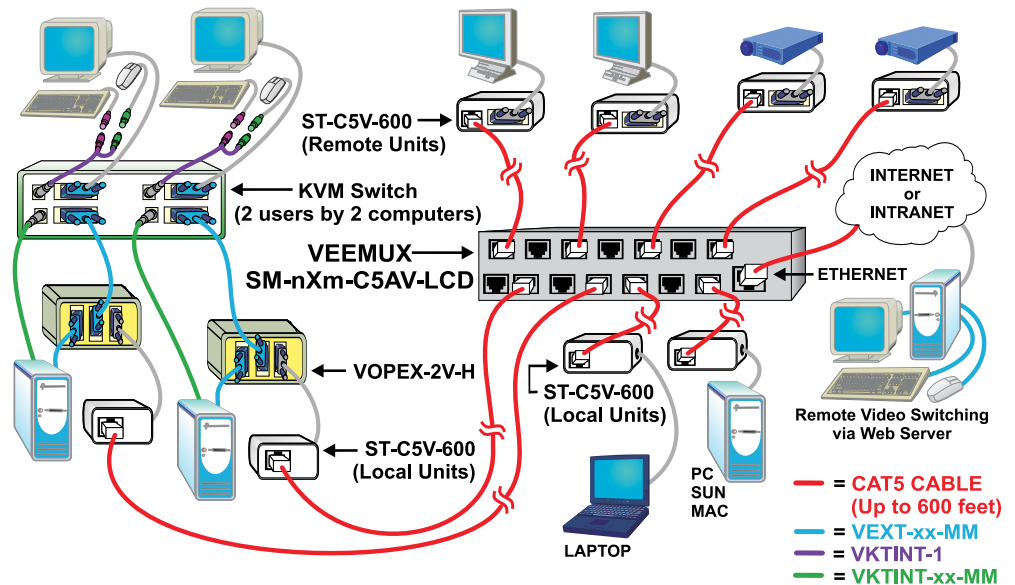
- Audio/Video Matrix Switches
 - pages 32 to 33.
- VGA Extenders
 - pages 6 to 7.



Local KVM Switching and Remote Video Presentation Display

Two behind the scenes technicians can create and update information from two shared computers connected to an NTI KVM Switch with a local keyboard, monitor and mouse, while a presenter can display any computer's output to any monitor/projector. Video switching is controlled from a PC connected remotely via the Web server.

- CAT5 Video Matrix Switches
 - pages 34 to 37.
- VGA Extenders
 - pages 6 to 7.
- VGA Video Splitters
 - page 58.
- PS/2 KVM Switches.



TECHNICAL REFERENCE

Keyboard command charts

These charts apply to the **ST-nXm-U Universal Matrix KVM Switch** (see pages 48 through 50).

Using the chart below, find the character you want to type, then follow the row across for the equivalent on the keyboard you are using.
 <Command> + Click on the MAC mouse emulates a **RIGHT CLICK** on a PC 2-button mouse.

SUN	PS/2 101	Win95	AppleExt
L-Control	L-Control	L-Control	L-Control
L-Alt	L-Alt	L-Alt	L-Opt
Compose	R-Control	R-Control	R-Control
Alt-Graph	R-Alt	R-Alt/Aplcn	R-Opt
Meta	Spacebar+Alt	Logo	Cmnd
Power	Spacebar+R Arrow		Power

L and R = Left and Right keys when two keys are marked the same on a keyboard

Keystroke Translation for Multi-Platform Switches

SUN's 14 Extra Keys

Use the chart below to type SUN's additional 14 keys with PS/2 101, Win95 and Apple Extended keyboards.

PS/2, Win, MAC Keyboards	SUN Extras
Spacebar + F1	Stop(L1)
Spacebar + F2	Again(L2)
Spacebar + F3	Props(L3)
Spacebar + F4	Undo(L4)
Spacebar + F5	Front(L5)
Spacebar + F6	Copy(L6)
Spacebar + F7	Open(L7)
Spacebar + F8	Paste(L8)
Spacebar + F9	Find(L9)
Spacebar + F10	Cut(L10)
Spacebar + F11	Help
Spacebar + Up Arrow	Vol +
Spacebar + Down Arrow	Vol -
Spacebar + Left Arrow	Mute

SUN Startup Keys

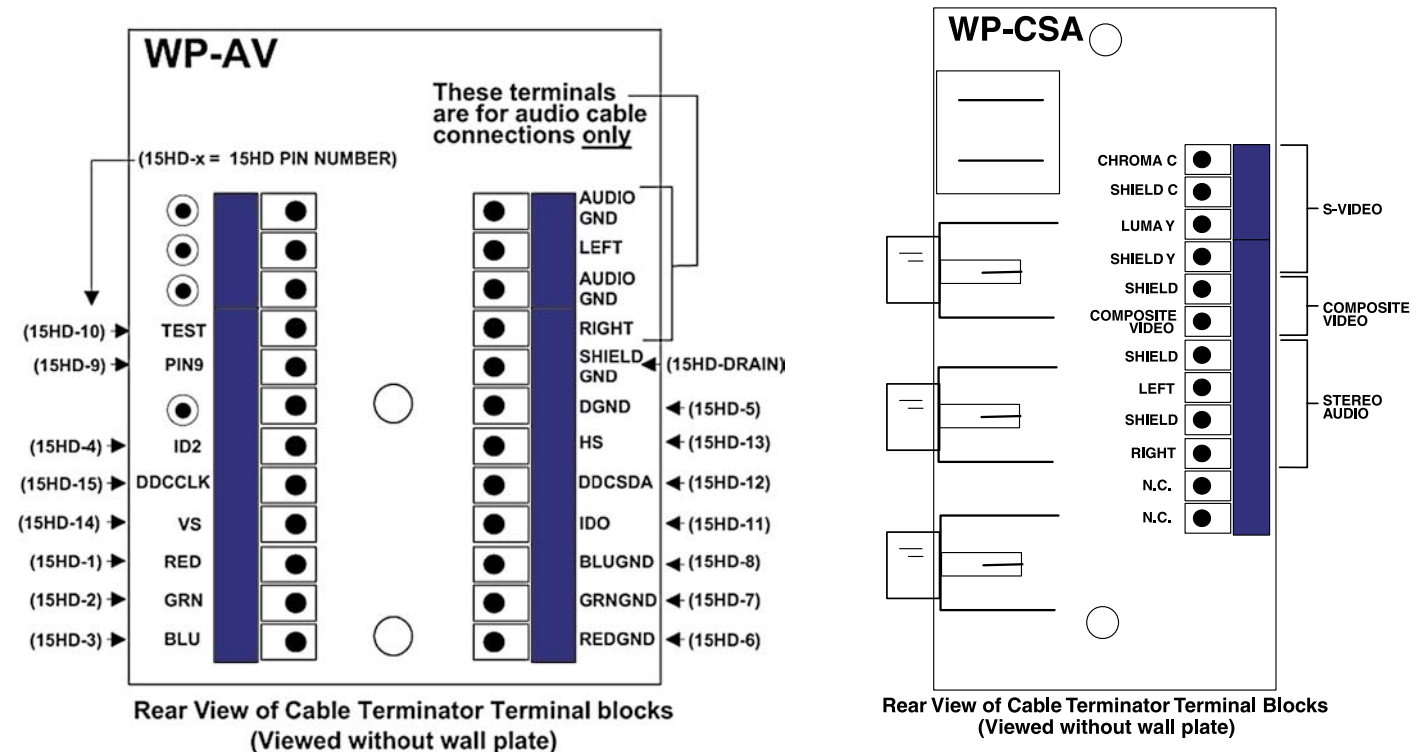
With a SUN keyboard attached to the switch, the following emergency startup keys are supported:

Key	Function
Stop	Bypass POST
Stop-A	Abort
Stop-D	Enter diagnostic mode
Stop-F	Enter Forth on TTYA instead of probing
Stop-N	Reset NVRAM contents to default values


This switch also supports startup commands not listed above.

PS/2, Win, MAC Keyboards	SUN Extras
Spacebar + F1	Stop(L1)
Spacebar + F2	Again(L2)
Spacebar + F3	Props(L3)
Spacebar + F4	Undo(L4)
Spacebar + F5	Front(L5)
Spacebar + F6	Copy(L6)
Spacebar + F7	Open(L7)
Spacebar + F8	Paste(L8)
Spacebar + F9	Find(L9)
Spacebar + F10	Cut(L10)
Spacebar + F11	Help
Spacebar + Up Arrow	Vol +
Spacebar + Down Arrow	Vol -
Spacebar + Left Arrow	Mute

Cable Terminator Wallplate Pinout Specifications



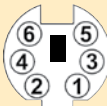
SUN KEYBOARD & MOUSE



Mating face of 8-pin miniDIN female

PIN#	SIGNAL
1	GND
2	GND
3	+5
4	MOUSE
5	KYBD RCV
6	KYBD XMT
7	PWRN
8	+5

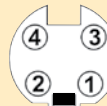
PS/2 KEYBOARD OR MOUSE



Mating face of 6-pin miniDIN female

PIN#	SIGNAL
1	DATA
2	NC
3	GND
4	+5
5	CLOCK
6	NC


MAC KEYBOARD OR MOUSE



Mating face of 4-pin miniDIN female

PIN#	SIGNAL
1	DATA
2	PWRN
3	+5
4	GND

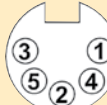
SUN & SGI VIDEO



Mating face 13W3 female

PIN#	SIGNAL	PIN#	SIGNAL	PIN#	SIGNAL
1	GND	6	HSYNC	A1	RED
2	VSYNC	7	GND	A2	GREEN
3	ID2	8	ID1	A3	BLUE
4	GND	9	ID0		
5	CSYNC	10	GND		

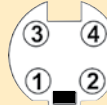
PC/AT KEYBOARD



Mating face of 5-pin DIN female

PIN#	SIGNAL
1	CLOCK
2	DATA
3	NC
4	GND
5	+5

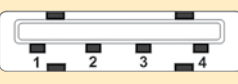
S-VIDEO



Mating face of 4-pin miniDIN male

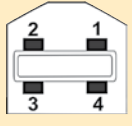
PIN#	SIGNAL
1	GND_Y
2	GND_C
3	LUMINANCE_Y
4	CHROMINANCE_C

UNIVERSAL SERIAL BUS



Type A

Mating face of USB Type A female

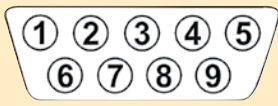


Type B

Mating face of USB Type B female

PIN#	SIGNAL
1	+5
2	-DATA
3	+DATA
4	GND


SERIAL MOUSE



Mating face of 9-pin D male

PIN#	SIGNAL
1	NC
2	RX
3	TX
4	DTR
5	GND
6	NC
7	RTS
8	NC
9	NC

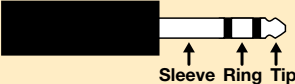
VGA VIDEO WITH DDC



Mating face of 15-pin HD male

PIN#	SIGNAL	PIN#	SIGNAL
1	RED	9	NC
2	GREEN	10	SYNC RTN
3	BLUE	11	ID0
4	ID2	12	ID1 or DDC DATA
5	GND	13	HSYNC
6	RED SHLD	14	VSYNC
7	GREEN SHLD	15	ID3 or DDC CLOCK
8	BLUE SHLD		

3.5mm PLUG



3.5mm stereo audio pinout

NAME	SIGNAL
Sleeve	GROUND
Ring	RIGHT AUDIO
Tip	LEFT AUDIO



TECHNICAL NOTES

Cable pinout and distance guides

RS232 DB25 INTERFACE

Mating face of male RS232 DB25

PIN#	SIGNAL	PIN#	SIGNAL
1	N/A	14	N/A
2	TXD	15	N/A
3	RXD	16	N/A
4	RTS	17	N/A
5	CTS	18	N/A
6	DSR	19	N/A
7	GND	20	DTR
8	DCD	21	N/A
9	N/A	22	RI
10	N/A	23	N/A
11	N/A	24	N/A
12	N/A	25	N/A
13	N/A		

RS232 DB9 INTERFACE

Mating face of male RS232 DB9 (9-pin D)

PIN#	SIGNAL
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

RS232 RJ45 INTERFACE

(Used on NTI's SE-RS-x, SERIMUX-SECURE-x, ENVIROMUX-MINI, and RACKMUX-T15-SS8)

Mating face of female RS232 RJ45

PIN#	SIGNAL	PIN#	SIGNAL
1	RTS	5	GND
2	DTS	6	RXD
3	TXD	7	DSR
4	GND	8	CTS

DVI

Mating face of DVI female

PIN#	SIGNAL	PIN#	SIGNAL
1	TMDS DATA 2 -	16	HOT PLUG DETECT
2	TMDS DATA 2 +	17	TMDS DATA 0 -
3	TMDS DATA 2/4 SHIELD	18	TMDS DATA 0 +
4	TMDS DATA 4 -	19	TMDS DATA 0/5 SHIELD
5	TMDS DATA 4 +	20	TMDS DATA 5 -
6	DDC CLOCK	21	TMDS DATA 5 +
7	DDC DATA	22	TMDS CLOCK SHIELD
8	ANALOG VERT. SYNC	23	TMDS CLOCK +
9	TMDS DATA 1 -	24	TMDS CLOCK -
10	TMDS DATA 1 +		
11	TMDS DATA 1/3 SHIELD		C1 ANALOG RED
12	TMDS DATA3-		C2 ANALOG GREEN
13	TMDS DATA3+		C3 ANALOG BLUE
14	+5V POWER		C4 ANALOG HORZ SYNC
15	GND		C5 ANALOG GROUND

IEEE 1394 A

Mating face of 4-pin firewire socket

PIN#	SIGNAL
1	TPB-
2	TPB+
3	TPA-
4	TPA+

RCA

Male RCA

NAME	SIGNAL
Tip	Signal
Shield	GND

IEEE 1394

Mating face of 6-pin firewire socket

PIN#	SIGNAL
1	POWER
2	GND
3	TPB-
4	TPB+
5	TPA-
6	TPA+

DIGITAL AUDIO

Female RCA

NAME	SIGNAL
Tip	S/PDIF
Shield	GND

CABLE DISTANCE GUIDE

Cable Type	Bandwidth Megahertz	Distance (Feet)	Cable OD (In.)
miniRG59	25	250	.15
miniRG59	50	150	.15
miniRG59	100	100	.15
RG59	25	250	.242
RG59	50	150	.242
RG59	100	100	.242
RG6	25	300	.3
RG6	50	200	.3
RG6	100	150	.3
RG11	25	500	.405
RG11	50	300	.405
RG11	100	200	.405

CEXT VIDEO CABLE

- OD .7 inches
- 4 RG59 coax
- 4 twisted lo-cap pairs
- PVC jacket

COMPONENT VIDEO (Y Pb Pr)

Female RCA

Y	Pb (B-Y)	Pr (R-Y)
Tip=Y	Tip=Pb	Tip=Pr
Shield=GND	Shield=GND	Shield=GND



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Australia



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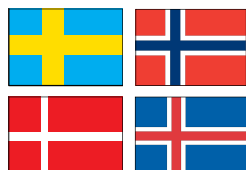
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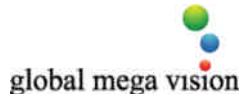
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www.pictrol.se
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Sweden, Norway, Denmark, Iceland



PT. Global Mega Vision

Jl, Pancoran Buntu I No. 30
Jakarta Selatan 12780, Indonesia
Tel: +6221 79198759
Fax: +6221 79193056

parbitto@indosat.net.id
www.gmv.co.id



Indonesia



SupraVision AG

Neue Winterthurerstrasse 30
CH-8304 Wallisellen, Switzerland
Tel: (41-1) 878-1078
Fax: (41-1) 878-1079

info@supravisio.ch
jan.kunz@supravisio.ch
www.supravisio.ch
www.serverswitch.ch
www.nti1.ch



Switzerland



Techorium Inc.

30 West Beaver Creek Rd. Unit 11
Richmond Hill, ON L4B 3K1
Canada
Tel: (905) 224-0070
Fax: (416) 907-6982

info@techorium.com
www.nti1.ca
www.techorium.com



Canada



U.T.E. Electronic GmbH & Co. KG

Friedrich-Ebert-Str. 112A
58454 Witten, Germany
Tel: (49-0) 2302-982035
Fax: (49-0) 2302-982036

info@nti1.de
info@kvm-switch.de
www.kvm-switch.de
www.ntikvm.de



Germany, Austria



Wire & Wireless Pte Ltd.

809 French Road
Kitchener Complex #02-162
Singapore 200809
Tel: (65) 6294-2072
Fax: (65) 6512-1495

sales@wire-wireless.com
www.wire-wireless.com
www.ntikvm.com.sg



**Singapore, Malaysia, Philippines, India,
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1275 Danner Drive • Aurora, OH 44202-8054

Ph: 330-562-7070 • 800-742-8324 • Fax: 330-562-1999

Email: sales@ntigo.com • www.networktechinc.com

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