

SSH CONSOLE SWITCH WITH ENVIRONMENTAL MONITORING

Securely control up to 32 RS232 devices via the Internet



- Linux Inside
- IPV6 Compatible

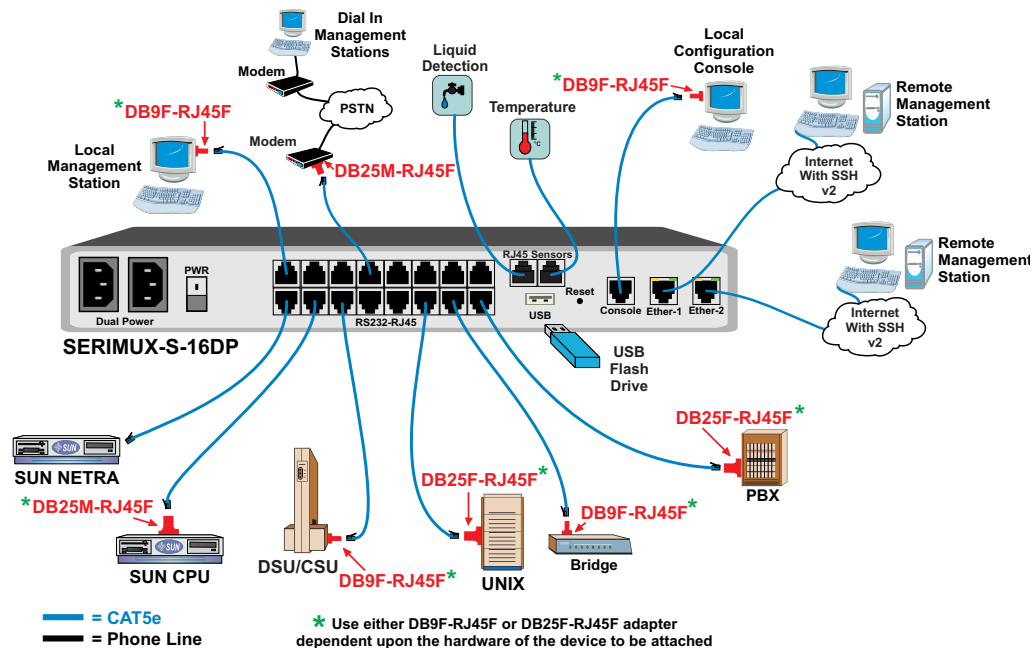
SERIMUX-S-16DP (Front and Back)

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.

- Operates on an hardened Linux system.
- Connect up to 32 devices with different baud rates, parity, and character length. Each switch also has one RJ45 connector for a local terminal.
- Eliminates the need to connect each device to an ASCII terminal or PC.
- Provides out-of-band access to network devices (servers, routers, network switches, and any other network devices allowing console operation using RS232).
- Connects to console serial ports using standard CAT5/5e/6 cables and cable adapters.
 - Maximum cable length is 1,000 feet.
- Enhanced security features to protect the system – Secure Shell (SSH v2), individual port authentication, HTTPS.
- Dual Ethernet and optional dual power provide redundant connectivity and power.
- High quality, rugged steel construction with durable powder coat finish.
- Gain access to servers without interrupting service to end-users; maintain optimal up-time.
- Monitor environmental conditions.
 - Supports two sensors, including: temperature, humidity, and water detection.
 - When a sensor goes out of range of a configurable threshold, the system will notify you via email, LEDs, web page, and network management (SNMP).
- Power cycle without halting SUN host computer.
 - No inadvertent "break" signals are generated to cause unintentional rebooting of SUN computers.
- 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.
- USB port provides expanded logging storage, configuration export and additional functionality.
- Switching is simplified with programmable device names and menu-driven device selection.
 - All configuration parameters are stored in non-volatile memory.
 - Import configuration parameters from USB Flash drive.
- Firmware upgradeable "in-field" through console port, Ethernet, or an attached USB Flash drive.

Configuration and Cable Illustration



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Specifications

Compatibility

- Supports most devices with an RS232 serial port.
- Supports any VT type terminal.

Serial Interface

- Female RJ45 EIA-232 serial port connectors.
- One female RJ45 EIA-232 console port connector.
- Each individual serial port is fully configurable.
- Data transfer rate: industry-standard baud rates ranging from 50 up to 115.2kbps.
 - Two ports can be at different baud rates.
- Flow control: Hardware (RTS/CTS), Software (XON, XOFF), both or none.
- Data format: 5, 6, 7 or 8 data bits with or without parity, 1 or 2 stop bits.
- Signals: RS232 CTS, DSR, RXD, GND, DCD, TXD, DTR, RTS
- Modem control: DTR/DSR and RTS/CTS

Network Interface

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

Power

- Input Voltage: AC 100 to 240 V, 50 to 60 Hz
- Optional 48 VDC power
- Optional dual AC power or dual DC power available on all models

RJ45 Sensor Ports

- Two RJ45 modular jacks for connecting NTI temperature, humidity, temperature/humidity, and liquid detection sensors.

Internal Temperature Sensor

- Applications from 32°F to 104°F (0°C to 40°C).
- Accurate to within $\pm 1.35^\circ\text{F}$ ($\pm 0.75^\circ\text{C}$).

Control Methods

- HTTP/HTTPS Web Interface, Telnet/SSH, System console.
- Supports up to 32 users.
- Two user levels: User and Administrator.

LED Indicators

- Full featured status display via LED indicators:
 - CPU – power.
 - Console – device activity.
 - Ethernet – connection/speed/activity.
 - Each Serial Port – device activity.
 - "INT ALERT" – internal sensor goes out of range of a configurable threshold.
 - "EXT ALERT" – external sensor goes out of range of a configurable threshold.

Protocols

- SSH V2, Telnet
- IPV4, IPV6
- TCP/IP, TFTP, DHCP, ICMP, UDP, ARP
- HTTP, HTTPS, SMTP, SNMP V1/V2c, Syslog, SNTp
- IPMI v2, RMCP

Alerts

- Alerts are sent using email 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.
 - Sends notifications of alerts to a maximum of 17 email addresses and/or SNMP addresses. The users can configure the schedule when they will be alerted.

Memory

- 32MB Flash memory.
- Female USB 2.0 Type A connector for storage devices.

Logging & Buffering

- System log, event-log of user activity and on-line data buffering.
- Data-logging with date and time-stamp, locally.
- The log can be downloaded as a tab-delimited plain text file and/or sent to an external syslog server.

Regulatory Approvals

- CE, RoHS

Environmental

- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Storage temperature: -20°F to 140°F (-30°C to 60°C)
- Operating and Storage Relative Humidity: 17 to 90% non-condensing RH

MTBF

NTI Part #	Hours	NTI Part #	Hours
SERIMUX-4	46,899	SERIMUX-16-48V	33,524
SERIMUX-4DP	111,676	SERIMUX-16-48VDP	100,385
SERIMUX-4-48V	34,695	SERIMUX-24	42,980
SERIMUX-4-48VDP	111,677	SERIMUX-24DP	91,754
SERIMUX-8	43,306	SERIMUX-24-48V	32,503
SERIMUX-8DP	108,371	SERIMUX-24-48VDP	91,755
SERIMUX-8-48V	34,370	SERIMUX-32	42,004
SERIMUX-8-48VDP	108,372	SERIMUX-32DP	87,420
SERIMUX-16	44,783	SERIMUX-32-48V	31,942
SERIMUX-16DP	100,384	SERIMUX-32-48VDP	87,421

Security

- Local DB authentication.
- Remote authentication using RADIUS, LDAP, TACACS+, Active Directory and Kerberos protocols.
- TLS/SSL secure communications.
- SSH v1, SSH v2, SSL.
- AES, 3DES/DES, Blowfish, Twofish, RSA, EDH-RSA, Arcfour Encryptions.



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SERIMUX®

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

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Sensors

Temperature, Humidity & Combination Sensor



ENVIROMUX-STHS
ENVIROMUX-SHS
ENVIROMUX-STHS

- Temperature Sensor (ENVIROMUX-STHS)
 - Applications from 32°F to 122°F (0° to 50°C).
 - Accurate to within $\pm 0.9^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$).
- Humidity Sensor (ENVIROMUX-SHS)
 - 20% to 80% relative humidity, $\pm 5\%$
 - ◆ For applications from 32°F to 104°F (0°C to 40°C)
- Temperature/Humidity Sensor (ENVIROMUX-STHS)
 - Applications from 32°F to 122°F (0°C to 50°C)
 - Accurate to within $\pm 0.9^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$)
 - ◆ 20% to 80% relative humidity, $\pm 5\%$
- RJ45 connector
- Supports CAT5/5e/6 cable up to 1,000 ft (not included).
- Regulatory approvals: CE, RoHS

Liquid Detection Sensor



ENVIROMUX-LDSx-y

- For warning of flooding.
- Detects liquid depth $>0.1"$.
- Minimum puddle: 0.6" diameter.
- 100% waterproof electronics.
- Detects any liquid, except deionized water.
- Supports CAT5/5e/6 cable up to 1,000 ft. (not included).
- Available water sensor cable (x) lengths: 1/10/50/100/200/400/600/800/1000 feet.
- Available 2-wire cable (y) lengths: 5/10/20/50/100 feet.
- Regulatory approvals: CE, RoHS

Ordering Specifications

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

Secure Number of Ports Power Optional Dual Power
SERIMUX - S - X - 48V DP

Blank = AC power
48V = 48VDC power

Secure SSH Console Switch with Environment Monitoring Models

NTI Part#	# of Ports	Desktop Size (WxDxH)	Rack Units	Rack Size (WxDxH)
SERIMUX-S-4	4	16.2x9x1.75 (without supplied rackmount kit)	1RU	19x9x1.75 (with supplied rackmount kit)
SERIMUX-S-8	8	16.2x9x1.75 (without supplied rackmount kit)	1RU	19x9x1.75 (with supplied rackmount kit)
SERIMUX-S-16	16	16.2x9x1.75 (without supplied rackmount kit)	1RU	19x9x1.75 (with supplied rackmount kit)
SERIMUX-S-24	24	17x10.1x1.75 (without supplied rackmount kit)	1RU	19x10.1x1.75 (with supplied rackmount kit)
SERIMUX-S-32	32	17x10.1x1.75 (without supplied rackmount kit)	1RU	19x10.1x1.75 (with supplied rackmount kit)

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-S-x.
 - Male DB-25 to female RJ45 console adapter.
 - Male DB-25 to female RJ45 modem adapter.
 - Female DB-9 to female RJ45 console adapter.
 - Female DB-25 to female RJ45 console adapter.
- Additional adapters can be purchased.