RACKMUX® Series

RACKMUX-T15-N-Sx
Rack Mount Terminal Drawer with Secure SSH Console Switch

Quick Start Setup Guide

Introduction

The RACKMUX® Terminal Drawer with Secure SSH Console Switch combines a Terminal Drawer and an integrated SSH Console Switch delivering secure management of up to 32 serial devices via the Internet, TCP/IP network, or dial-up modem connections in only 1RU of space.

The main purpose of the Console Switch is to provide secure management of several serial devices from local or remote locations (using Ethernet or external modems). Devices include routers, DSU's, servers, switches or any other equipment allowing serial operation using RS232 interface. Users can work locally using the integrated Terminal Drawer or from remote locations via Ethernet connection (Web Interface, SSH, Telnet).

Each SERIMUX port has to be configured for serial communication (baud rate, parity, etc) within the specifications of the attached serial device, but the configurations of the two devices linked by the SERIMUX do not need to match. Various parameters (communication speed, hardware and/or software flow control, timeout, etc) can be selected for each SERIMUX port. Devices may be either locally connected or connected through attached modems.

Each SERIMUX port can be configured as either a host or user port. Serial hosts (such as servers, switches etc.) are connected to host ports, while serial user devices (such as a terminal or serial console) are connected to user ports.

This guide describes the basic installation and configuration procedure. For further details, please see the SERIMUX-S-x Installation and Operation Manual (go to **http://www.networktechinc.com/pdf/man107.pdf**).

Hardware Installation

Hardware installation consists of the following steps:

1. Determine the mounting height in the rack for the drawer.   It should be a height comfortable to use the keyboard and see the LCD display. Mark holes in each of the 4 corner cabinet rails at points all level with each other.

2. Secure the rear brackets to the rear rack cabinet rails at the holes marked in step 1 using #10-32x3/4" screws and cage nuts (supplied).   Be sure to tighten the screws securely.

3. Lift the keyboard into position and line the studs on the left and right sides up with the slotted openings in the rear bracket. Apply the nuts (supplied) to the studs but do not tighten the nuts yet.

FYI: There are 5 mounting studs provided on each side of the RACKMUX. Depending on the depth of the rack and distance apart of the cabinet rails, the position of the rear bracket may make all 5 studs available for use.   In this case, apply the 2 nuts to the studs furthest apart from each other on each side.

4. Slide the drawer in until the top holes in the front bracket flanges line up with the holes marked in step 1.   Secure the front brackets on the drawer to the front cabinet rails using #10-32x3/4" screws and cage nuts (supplied).   Be sure to tighten the screws securely.   Then tighten the nuts applied in step 3.
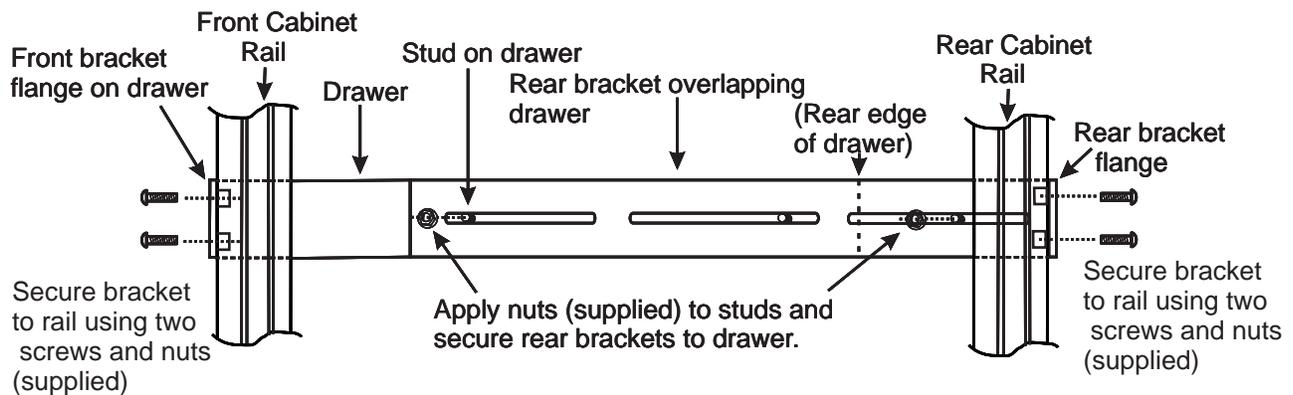
Note: Very deep racks may require the back of the rails to be bolted to an internal mid-rail within the rack, in which case the rear rail extensions should be reversed so as to present the appropriate mounting holes to the rack mid-rails.

Cable Connections

1. Connect each serial user device or host device to be connected by the SERIMUX to any serial port (1-4/8/16/24/32) using a serial cable with an RJ45 male connector (image below). It may be necessary to add one of the cable adapters (supplied) detailed in Appendix C of the manual between the device port on the user device or host device and the RJ45 connector.

Rear View of SERIMUX-T15-N-S32
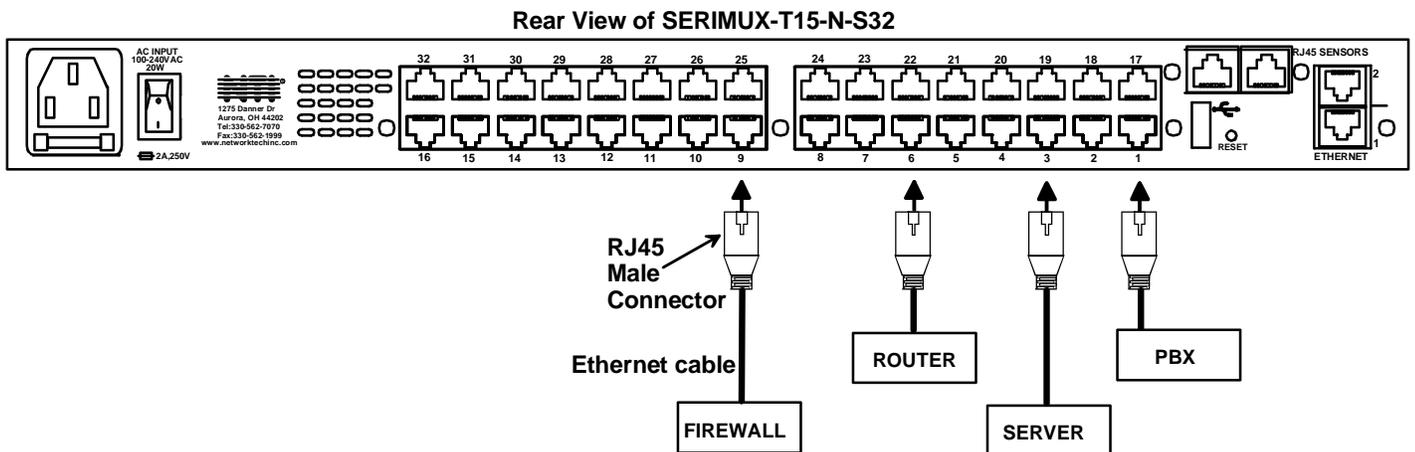
2. Connect the power cord to the IEC connector.

3. Connect the Console Switch to the Ethernet for remote system management using the "ETHERNET1" or "ETHERNET 2" port and CAT5/5e/6 patch cable.

Configuration

The terminal is delivered pre-configured. For your reference, this section describes configuration for connection to the integrated Console Switch.

- · Switch ON the terminal using the power switch located at the rear of the keyboard.
- · Hold down the **<ALT>** key and then depress the **<Esc>** key to enter Setup Mode.
- · Adjust the screen's brightness and image position as described under "Display Functions" on page 5.
- · To navigate the setup menus, use a function key to enter a setup menu, and then use the arrow keys to highlight the field to be changed. Use the space key to change the value of a parameter. Use **<F12>** to return to the top level menu, and **<F12>** again to leave setup mode. The user will be prompted at this point if the setup parameters are to be saved for future sessions. Select Yes by pressing space and then press **<F12>** again to exit setup mode.

The terminal is delivered pre-configured with the following settings suitable for connection to the SERIMUX SECURE Console Switch at 9600 baud using VT-100 emulation.

Disp SETUP Menu	F2 General SETUP Menu	F3 Keybd SETUP Menu
Columns = Econ-80 Cursor = Blink Block Screen Saver = Off Lines = 24 Background = Dark Page Length = 1 x Lines Auto Page = Off Width change clear = Off ANSI Reverse = Off Display= LCD	Personality = VT 100 Enhance = On Status Line = Standard Scroll Speed = Jump Auto Scroll = On End of Line Wrap = On Rcvd CR = CR Monitor = Off Attribute = Char	Keyclick = Off Key Repeat = 5 Xmt Limit = None Margin Bell = Off Language = US Keycode = ASCII NRC = Off Bell Volume = 2 NUM Start = Off DEL Keypad = Dot/Del
F4 Comm SETUP Menu Baud rate = 9600 Data / Stop Bits = 8/1 Parity = None Rcv Hndshake = none Xmt Hndshake = none	**F5 Misc SETUP Menu (not applicable)**	**F9 Lan Setup Menu (not applicable)**

Login and Use the SERIMUX Secure Console Switch

The following instruction will enable the user to quickly make port connections using the integrated terminal.   For instruction to make quick connection using the Ethernet port and Web Interface, see "Web Interface" in the SERIMUX-S-x instruction manual on page 43.

The terminal should already be pre-configured as follows:
- 9600 bps
- 8 bits
- no parity
- 1 stop bit
- no flow control

1. Power ON the RACKMUX-T15-N-S32.   When the terminal bootup is complete (text will stop scrolling and the cursor will stop), press the **<Enter>** key to be provided with a login prompt.
2. At "login " type the user name **<root>** (all lowercase letters) and press **<Enter>**.
3. At "password" type **<nti>** (all lowercase letters) and press **<Enter>**.
4. A shell prompt will be displayed "-sh-2.05b# "

DEFAULT USERNAME = root
DEFAULT PASSWORD = nti
(all lowercase letters)

To access the configuration menu:

Type `<serimuxconfig>` to open Serimux Secure Configuration Menu. Use menu structure to configure SERIMUX.

```
login as: root
Using keyboard-interactive authentication.
Password:
Last login: Thu Mar 19 10:40:44 2009 from 65.243.248.31
-sh-2.05b# serimuxconfig

-----------------------------------------------------------------------
Welcome to NTI Serimux Secure configuration menu
Firmware Revision  :v1.0
MAC Address(eth0)   :00:82:0c:04:00:06
IP Address(eth0)    :98.17.207.203
-----------------------------------------------------------------------
   1. Port Management
   2. Network Management
   3. Administration Settings
   4. User Management
   5. Administrative Info

e[x]it, [s]ave, a[p]ply, [h]elp, [Esc]
INPUT :
```

-OR-

To make a connection with a serial device:

Type `<portmenu>` to open a port connection menu. Then type a port number and press `<Enter>` to make a connection with a serial device.

Note: To connect to a host, the host must first be configured with the same communication settings as the port (default serial settings = 9600 baud, 8 bits, no parity, 1 stop bit, no flow control). If needed, see "Serial Settings" on page 16 of the SERIMUX-S-x manual to change the SERIMUX port serial settings.

For more details, specifications, and troubleshooting tips, see the SERIMUX-S-x Installation and Operation Manual (man107.pdf on this CD)   or go to www.networktechinc.com.

Display Functions

An NTI RACKMUX with a 15" monitor supports resolutions up to XGA (1024 x 768) with a refresh rate at between 55 and 76Hz. The quality of the image on the LCD monitor is adjustable using an On Screen Display (OSD) menu using the control buttons on the RACKMUX.

Standard Controls

The RACKMUX has 5 standard control buttons and a power LED. The 5 standard control buttons operate as follows:

- The **Power** button turns the RACKMUX LCD and backlight ON and OFF as desired.

- The **Power LED** located immediately below the Power button is a dual color LED. It will illuminate with a green color when the RACKMUX is powered ON and working properly. It will illuminate with a red color if the RACKMUX is powered ON but there is no input signal detected.

- The **Menu** button is used to bring up the OSD menu where the various settings of the LCD display can be adjusted. See "OSD Control Menu" (below) for more on LCD display settings.

- The **Up and Down Arrow** buttons are used to navigate through the menus. Move the cursor up or down as desired to highlight an item for selection. Once an item is highlighted, pressing the Menu button will select it.

Power ON/OFF →
Power LED →
Menu →
Up Arrow →
Down Arrow →
Select/ Auto Adjust →

Controls for the OSD Menus
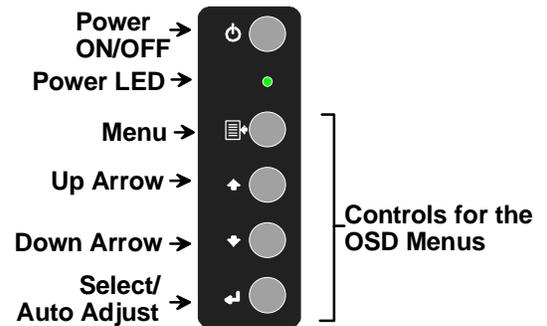
OSD Controls

- The **Select** button is used to make selections within the OSD menus when the OSD menu is ON. When the OSD menu is OFF, the Select button will act as an **Auto Adjust** button to keep the user from having to use the menus to adjust the quality of the image on the monitor.

OSD Control Menu-

The OSD (On Screen Display) Menu enables the user to select the desired characteristics of the LCD display. To activate the OSD Menu, press the Menu button (above). To turn the Menu back OFF, either select "EXIT" from the main menu or just wait 10-60 seconds and it will automatically be cleared from the screen.

OSD Main Menu

```
                    MAIN  MENU
   ☼   BRIGHTNESS / CONTRAST
  RGB  COLOR
  ⊡    POSITION
  ⬛    SETUP
  ⏎    EXIT
       1280X1024    63.9KHZ / 60HZ
```

Selection	Purpose	Range
Brightness/Contrast	Increase/decrease panel brightness/contrast level	1-100
Color	R,G,B color temperature control	1-100
Position	• Video Image horizontal and vertical position control • Clock setting • Phase control	1-100
Setup	• Control OSD Image position on screen • Set time OSD will stay on screen before auto shutoff • Select the language of the OSD menu	-- 10 to 60 seconds Several languages (see page 8)
Exit	Exit from the OSD control menu	

Brightness/Contrast Menu

Selecting the Brightness/Contrast menu will bring up a screen in which the user can adjust the brightness and contrast levels of the LCD display.   Using the Up or Down arrows to navigate the menu, highlight either the BRIGHTNESS or CONTRAST sections and press the Select button to choose the option to adjust. Then use the Up or Down Arrow to adjust the setting.
Select EXIT when finished to return to the Main Menu.
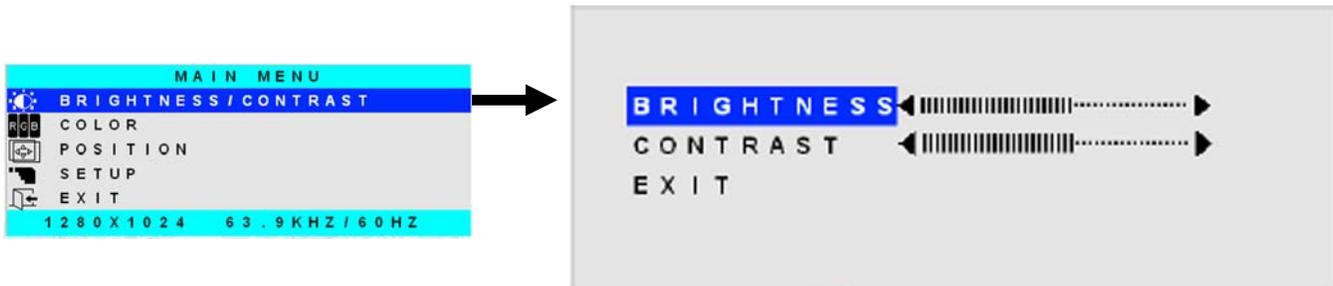
Color Menu

Selecting the Color menu will bring up a screen in which the user can adjust the Red, Green, and Blue color levels (values from 1-100) of the LCD display. With the RED, GREEN, or BLUE sections highlighted, (use the Up or Down arrow to move between them), press the Select button to choose the option to adjust. Then use the Up or Down Arrow to adjust the setting.
Select EXIT when finished to return to the Main Menu.
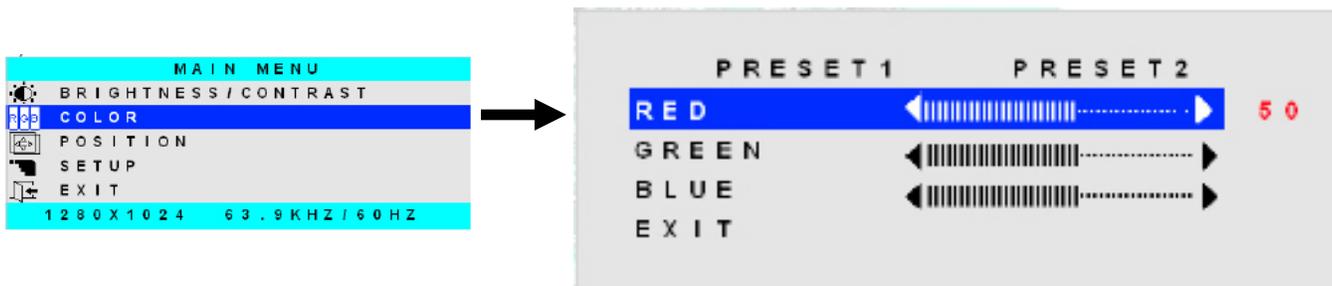
Position Menu

Selecting the Position menu will bring up a screen in which the user can select AUTO ADJUST to automatically adjust the horizontal and vertical position of the displayed image on the monitor, as well as adjust the clock and phase settings if they are not correct. The user can also individually adjust these settings if so desired. With any of the sections highlighted,   (use the Up or Down arrow to move between them),   press the Select button to choose the option to adjust. Then use the Up or Down Arrow to adjust the setting as needed. Select EXIT when finished to return to the Main Menu.
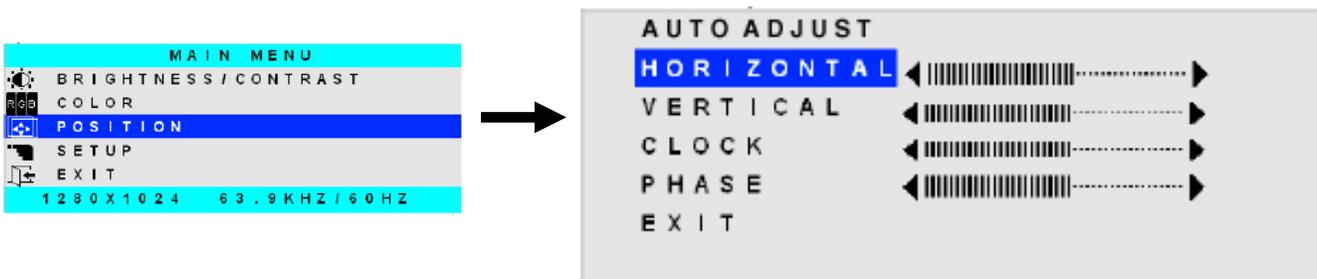
Setup Menu

Selecting the Setup menu will bring up a screen in which the user can adjust
- OSD POSITION-the position of the OSD menus on the LCD display
- OSD TIME-the length of time the user can be idle before the OSD menu automatically exits (adjustable from 10 to 60 seconds)
- LANGUAGE-the language that the OSD menus will be presented in

With the item highlighted,   (use the Up or Down arrow to move between them), press the Select button to choose the option to adjust. Then use the Up or Down Arrow to adjust the setting as needed. Select EXIT when finished to return to the Main Menu.

```
            MAIN  MENU
    BRIGHTNESS / CONTRAST
RGB COLOR
    POSITION
    SETUP
    EXIT
    1280X1024    63.9KHZ/60HZ
```

```
OSD  POSITION ▶   ▬
OSD  TIME        ▶  20SEC
LANGUAGE         ▶  ENGLISH
EXIT
```
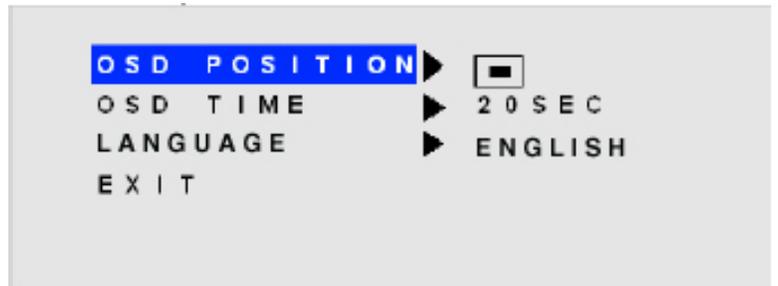
OSD Image can be moved to different points on the display
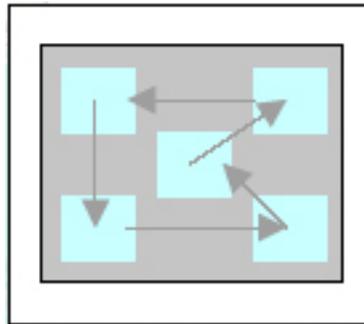
Keyboard Drawer and Monitor Technical Specifications

Physical	
Size (In.) WxDxH	19x28.4x1.75
Weight	26 lbs.
OperatingTemperature	32°F - 100°F (0°C - 38°C)
Storage Temperature	-20°F -140°F (-30°C - 60°C)
Humidity	17-90% non-condensing RH
Power Supply (Standard)	110/220VAC, 50-60Hz
Power Consumption	60W (max), <25W (standby)
Cables Included	IEC Power cord (country specific)
LCD Panel Specifications	
Screen size	15.1" visible diagonal
Resolution	800x600
Controls	contrast, brightness, auto-adjust, color temperature
Brightness	250cd/m² (Nits)
Contrast	500:1 (typical)
Viewing Angle	140° H / 125° V
Keyboard Specifications	
Type	104 key
Terminal Emulation	
Emulations	VT52, VT100, VT220, Console ANSI, PC TERM, TVI910+/925, WY-50+, WY-60, WY-100, WY-120, WY-325, PCG Alpha
Character matrix	7x12 dot matrix in 10x16 cell with 3 dot descenders
Screen size	80x25
Page length	1, 2, or 4 screens
Cursor	Blink or steady, block or underline
Modes	Full duplex, half duplex, block mode, half block mode
Color modes	16 foreground and 16 background colors
Console Switch	
Connectors	RJ45 Female DTE configuration via RS232
Regulatory Approvals	CE, RoHS