NETWORK TECHNOLOGIES INCORPORATED

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RACKMUX® Series

RACKMUX-VS17-T

RACKMUX-DS17-T

Rackmount Drawer with SUN Keyboard, LCD Monitor and Trackball

Installation and Operation Manual

CE

CE Statement

We, Network Technologies Inc, declare under our sole responsibility that the RACKMUX-VS17-T, RACKMUX-DS17-T, RACKMUX-VS17-NT, and RACKMUX-DS17-NT are in conformity with European Standard EN55022.

Typographic Conventions

The following table describes the typographic changes used in this instruction.

Typeface	Meaning	Example
AAaaBBaaCCcc123	On-screen computer output	C:>
AAaaBBaaCCcc123	What you type, contrasted with on-screen computer output; keyboard keys to press	C:> **L** Press the **Fn** key

i

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INTRODUCTION

The RACKMUX-VS17-T Drawer consists of a SUN Keyboard, Trackball, and LCD monitor integrated into a 1RU rack mountable drawer. When access to a server rack is needed, the drawer can be pulled out and the display lifted up like a notebook computer, revealing the keyboard and trackball. When the drawer is not in use, the display can be folded forward and down so the 1RU drawer can be pushed into the cabinet easily and smoothly, helping to organize and streamline busy server rooms. The NTI RACKMUX product line offers a range of KVM Drawer solutions ideal for rack and server management applications, which will ensure reliability and serviceability.

The RACKMUX drawer includes an industrial grade 17" LCD monitor, a notebook-style keyboard with SUN extra keys and a three-button trackball. The standard video format is VGA (-VS17-T), but single-link DVI support is optional (-DS17-T).

The keyboard and mouse interface supports SUN USB protocol and is compatible with SUN platform CPUs.

Installing the RACKMUX into any server environment will offer:
- A space saving 1RU design, easily mountable in any 19" cabinet/rack
- A forward-folding 17" TFT LCD with built-in OSD menu for screen adjustments
- Auto shut-OFF switch: Turns OFF the power to the monitor when the LCD is in a folded-closed position.
- Built-in 83-key (US) or 84-key (Europe) keyboard plus 14 SUN extra keys
- Standard 3-button trackball (3-button touchpad mouse optional)
- Support for USB connection of the keyboard and trackball.
- Support for VGA or single-link DVI signals
- Front-access USB port for easy accessory USB 1.1 device connection
- An internal cable arm for proper cable management when sliding the drawer open and closed
- Added security with a drawer lock to prevent unwanted access
- Locking rails to prevent movement of the drawer when fully extended
- Built-in universal (100-240VAC) low power consumption power supply
- Multi-language support including: US(English), UK (English), German, French, Italian, Spanish

Materials Included with this kit:

✓ NTI RACKMUX-VS17-T Drawer
✓ IEC Power Cord- country specific
✓ URL slip with link to this manual
✓ USB2-AB-6-5T 6 Foot USB Type A male-to-USB Type B male cable
✓ 2 Keys for Lock
✓ One-man Slide Rail Kit
✓ 8 #10-32x3/4" screws and cage nuts for mounting to a rack
✓ VEXT-THN-6-MM 6 foot VGA video cable (**models with VGA Video support only**)
✓ DVI-DS-2M-MM (CB4941) 2 meter DVI video cable (**models with DVI Video support only**)

Optional Cable:

USBVEXT-xx-MM for VGA Monitor and USB Keyboard and Mouse input (available in 3,6,10, and 15 foot lengths)

where:
    xx is the length of the cable in feet
    MM indicates male-to-male connector

Options:

- Touchpad mouse- drawer will have a touchpad-style mouse instead of a trackball- remove the "-T" from the part number (i.e. RACKMUX-VS17)
- Rackmounting kit for two-post Telco rack - order RL-T15-TEL
- RACKMUX drawer with DVI support, instead of VGA- order RACKMUX-**DS**17**-**T.
- Numeric keypad option- for a separate 17-key numeric keypad, add "-N" to the part number (i.e. RACKMUX-VS17-**NT**)

Front View
RACKMUX-VS17-T

(RACKMUX-VS17-T)   (RACKMUX-DS17-T)

Rear View
RACKMUX-VS17-T
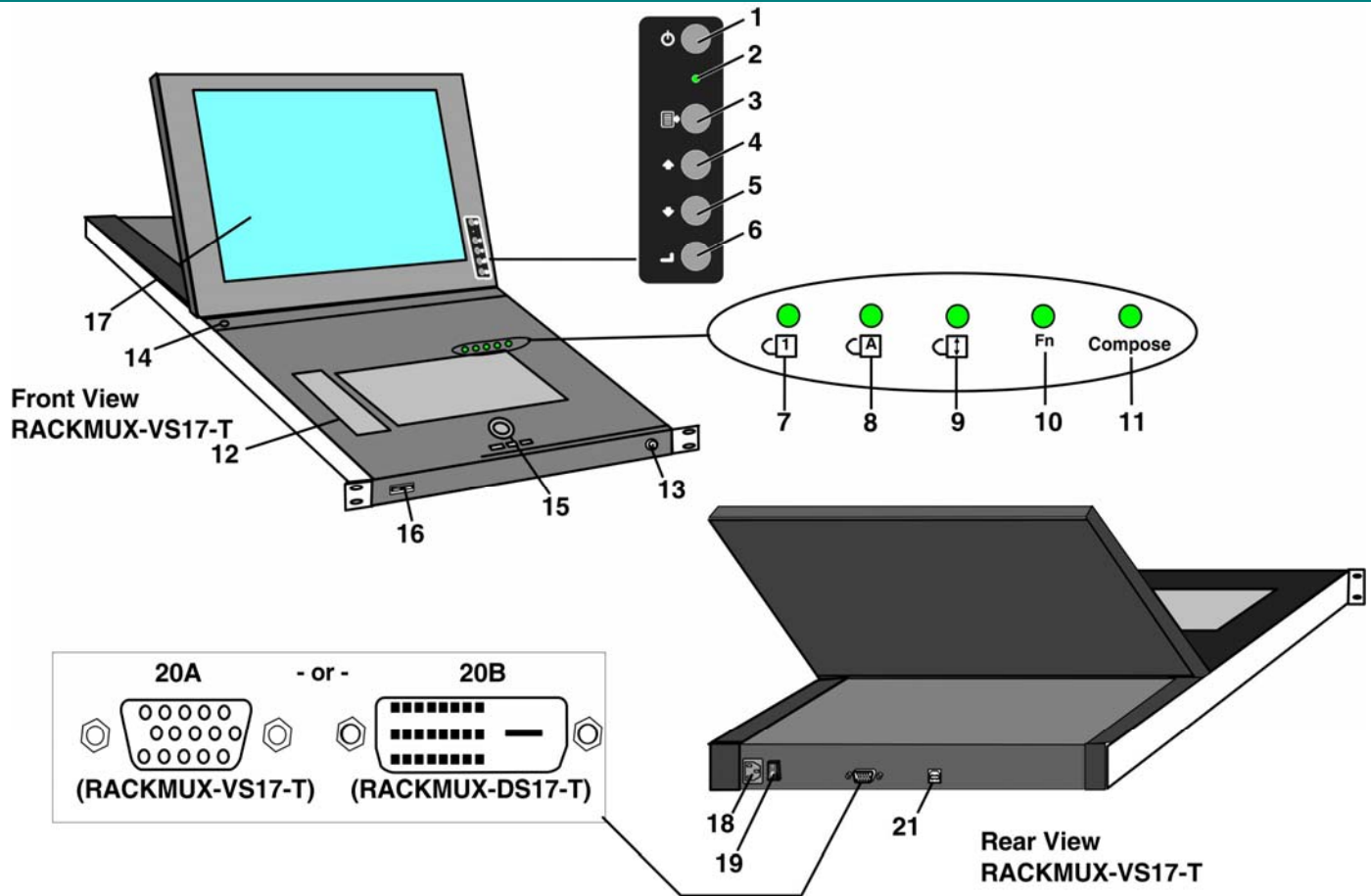
FEATURES AND FUNCTIONS

1. **Power Button-** press to turn the LCD monitor ON and OFF
2. **Power LED**- Indicates operation status
   Green = Power-ON, Video Input Signal OK
   Red = Suspend / Stand-by, or no Video Input Signal
3. **Menu Button**- press to turn ON the OSD menu
4. **Up Arrow Button**- press to move the cursor in the OSD menu up
5. **Down Arrow Button**- press to move the cursor in the OSD menu down
6. **Select Button**- press to select a menu item (when OSD menu is ON) or press to auto adjust the video quality (when OSD menu is OFF)
7. **NumLock LED**-   illuminates when the number lock is ON
8. **CapsLock LED**- illuminates when CapsLock Is ON
9. **Scroll Lock LED**- illuminates when the Scroll Lock keyboard feature is ON.
10. **Fn LED**- illuminates when Function Features are enabled (see page 14) .
11. **Compose LED**- illuminates when the SUN compose feature is locked ON
12. **Keyboard**- for manual data entry and computer control
13. **Keylock**- to prevent unauthorized use of the RACKMUX
14. **Auto Shut-OFF**- switch automatically shuts OFF the LCD display when the monitor is folded down
15. **Trackball** - for controlling mouse movements on the monitor and controlling the computer
16. **USB Port-** USB Type A female- for connection of any USB 1.1 compatible device (such as a flashdrive, printer, etc)
17. **LCD Display**- for viewing the video signal from the connected CPU
18. **IEC Connector**- for attachment of the IEC power cord to power the RACKMUX drawer
19. **Switch**- for powering ON and OFF the RACKMUX drawer
20. **Video In-   20A.** 15HD Female- for connection of the DVI video cable from the CPU (only in models that support VGA)
    20B. DVI-D Female- for connection of a DVI-D video cable from the CPU (only in models that support DVI)
21. **USB**- USB Type B female- for connection of the USB devices cable from a USB CPU

INSTALLATION

Rack Mounting Instructions

The RACKMUX was designed to be mounted to a rack and includes mounting flanges to make attachment easy.   The rails that are provided for rack mounting include rail guides for one-man installation to a front and rear bracket set.   Install your RACKMUX according to the instructions below.

Guide for one-man installation method

If you would like to see a video of this installation, see the link on this page: http://www.networktechinc.com/sun-kvm-drawer-dvi.html#tab-4 .

1. Locate and unpack the hardware bag.   Your hardware bag will include all items necessary to install the specific RACKMUX model (see the manual that accompanied your RACKMUX drawer), including the following hardware unique to the Single-Person hardware installation:

- 10- #10-32 cage nut
- 2- #10-32 x 1/2" flat-head machine screw
- 8- #10-32 x 3/4" pan-head machine screw

To install the rails you will need only a tape measure and Phillips screwdriver.

2. Unpack the left and right rail assemblies. Each are labeled "Right Front" and "Left Front" to indicate their intended position and orientation.   Extend each rail assembly to the dimension required for your rack.   Rail assemblies are adjustable to fit within a rack between 24" and 40" in depth.

Rail assemblies are adjustable in length from 24" to 40".

Labeled

xxxxx
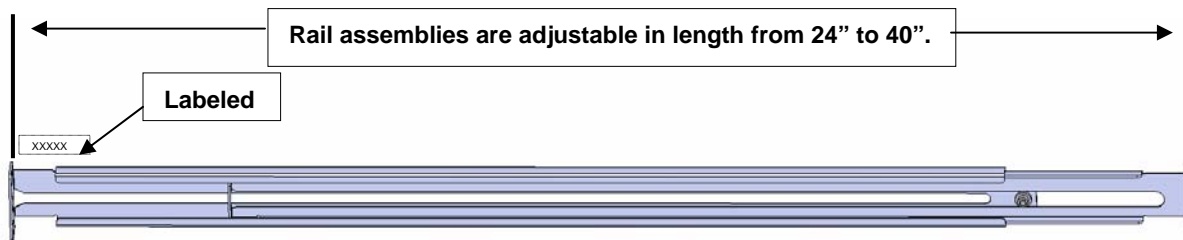
Figure 1- Adjustable rail depth

3. Install six #10-32 cage nuts at the front of the rack in positions where the RACKMUX will be mounted (three in each side). Install four more cage nuts at the rear of the rack in positions straight across from the upper and lower cage nuts installed in front.
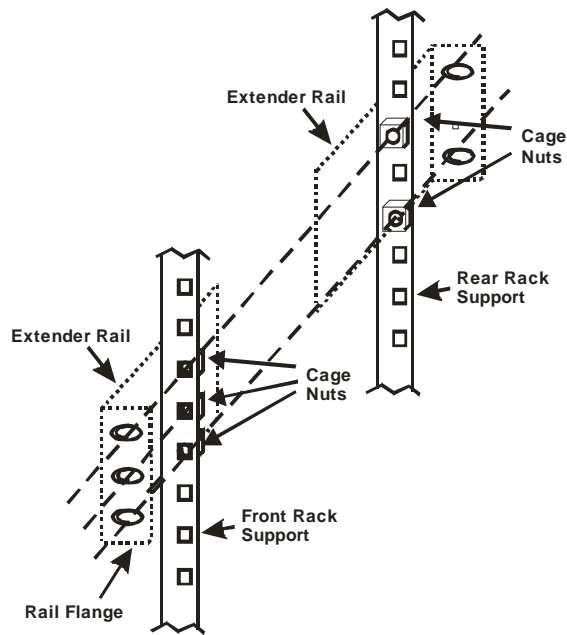
Figure 2- Install cage nuts

4. Install the right rail assembly.   The end with the label "Right Front" mounts to the front rack support. Install only the center screw through the rail flange to the rack support and cage nut using the #10-32 x 1/2" flat head machine screw provided. (See image below.)   Do not tighten at this time.   Install the left rail assembly in the same fashion.   The end with the label "Left Front" mounts to the front rack support.

5. Install two #10-32 x 3/4" pan-head screws in the rear of each rail assembly as shown below.   Do not tighten at the time.
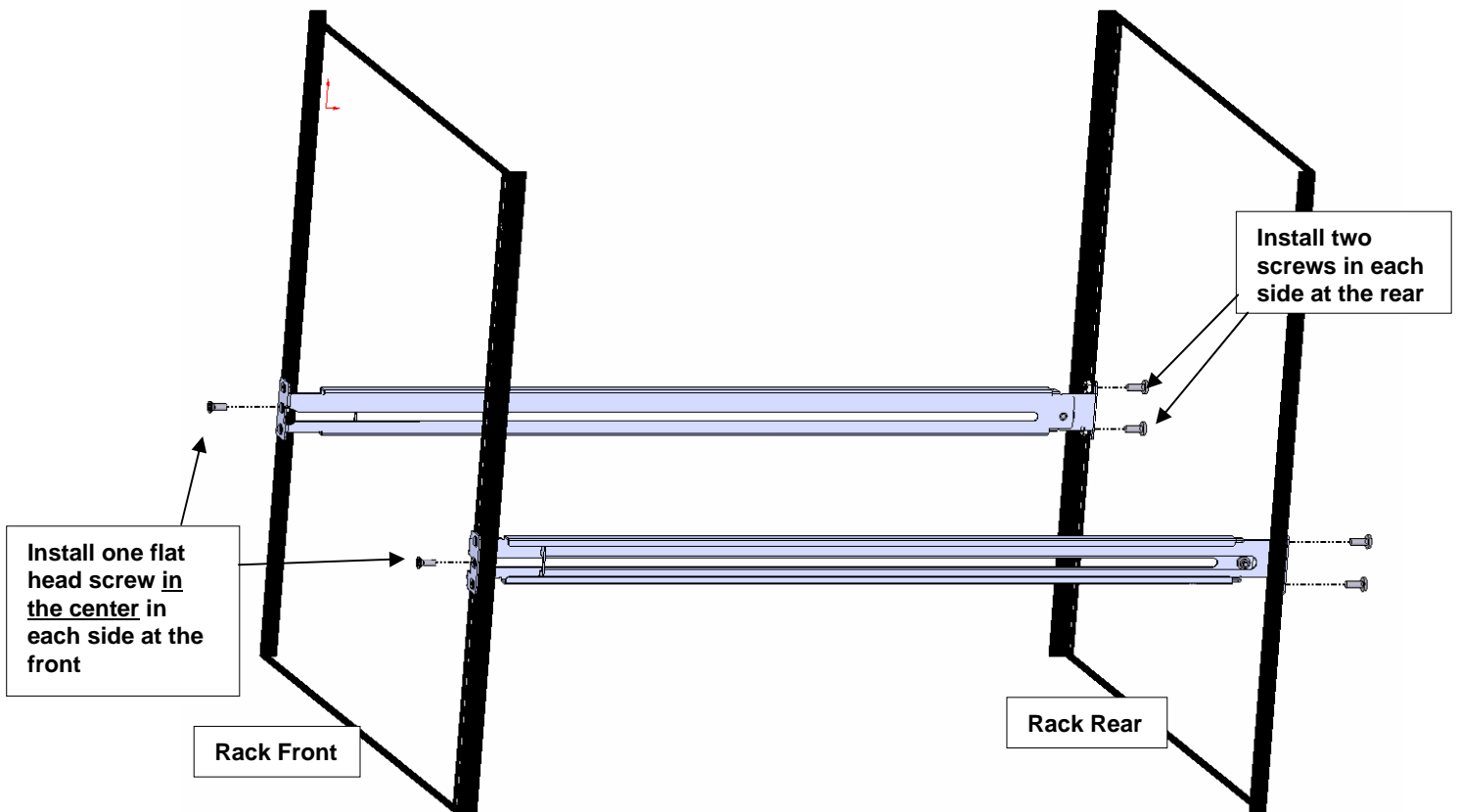
Figure 3- Install rail assemblies

6. Measure the distance between the inside of the rails at the front of the rack.   Adjust the distance to 17-1/4" and tighten the flat-head screws to the rail flanges securely.
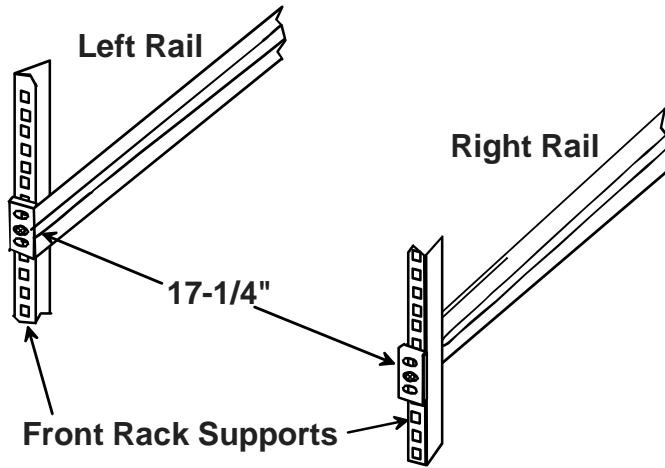
Figure 4- Adjust distance between rails

7. Lineup the rail guides on the RACKMUX drawer with the slots in the front of the left and right rails and slide the drawer into the rack.   The rail guides should be positioned such that the wide lip of the guide is on the backside of the rail. Slide the drawer in completely.
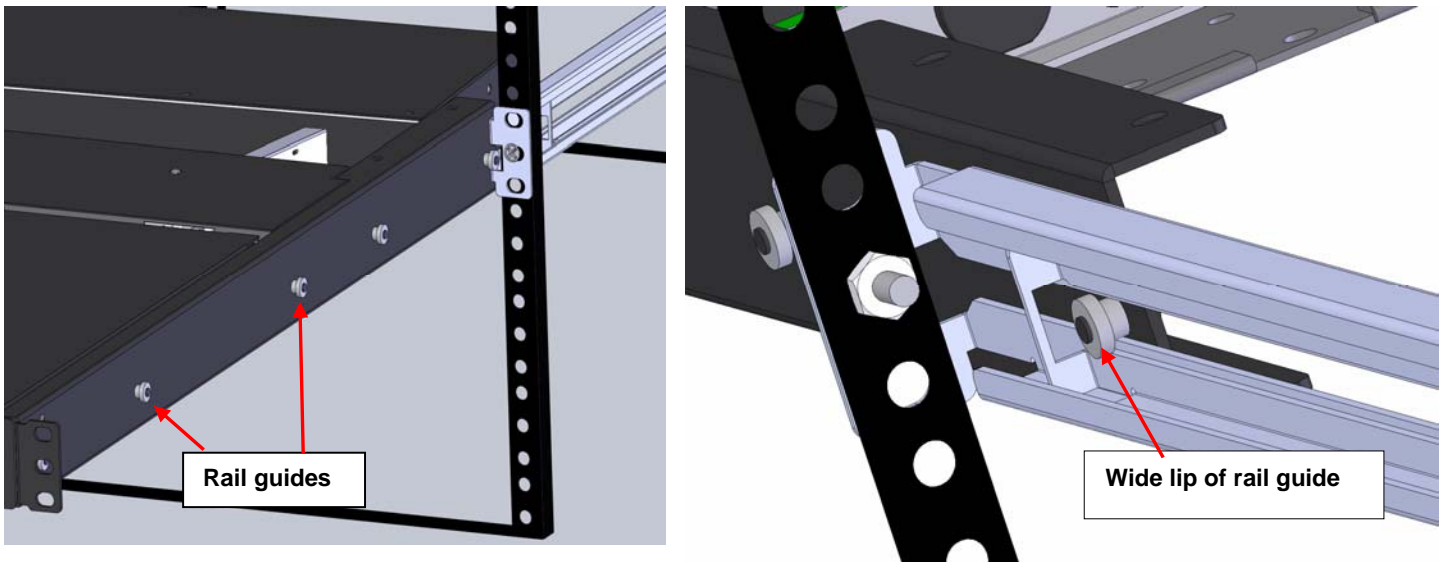
Figure 5- Slide the RACKMUX into the rails

8. Apply four more #10-32 x 3/4" pan-head machine screws (two for each) through the holes in the drawer flanges, through the holes in the left and right rails, into the cage nuts in the rack supports.   Tighten each securely.

Apply two more screws on each side

There should be a total of <u>six screws</u> at the front now.
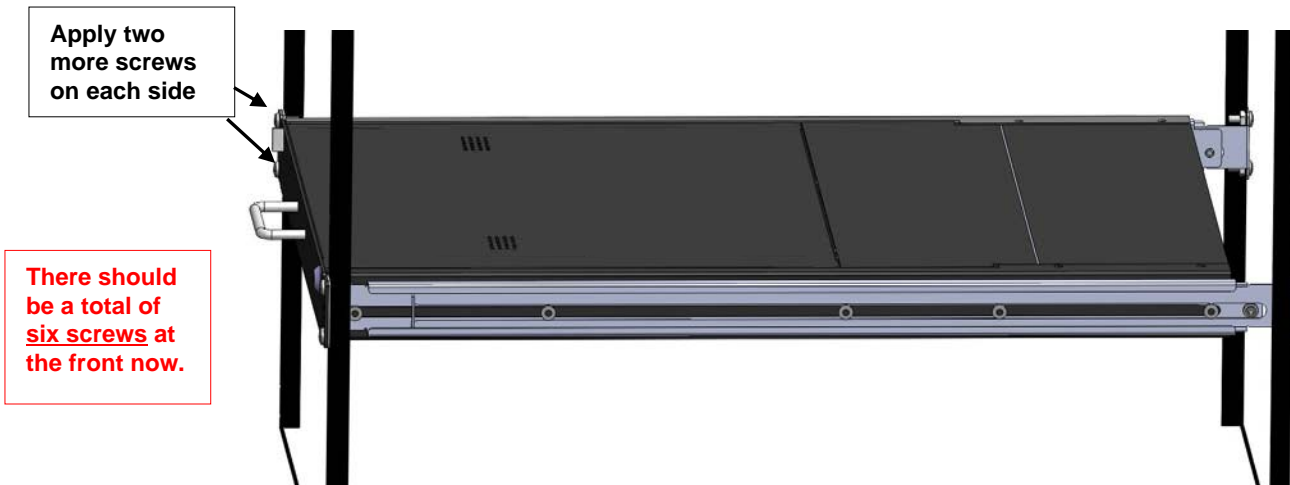
Figure 6- Secure the RACKMUX

9. Tighten securely the four screws applied to the rear rail flanges in step 4.

Note: To provide sufficient room for the LCD monitor to be opened to a proper viewing angle (a minimum 90 degree position from the keyboard), ensure that all devices mounted above the RACKMUX extend no more than 1.75" from the rack frame.   (See Figure 7)

"X" must be less than 1.75" for LCD to open to full 90°

X

90°

Server mounted above RACKMUX in the same rack

Side View of RACKMUX
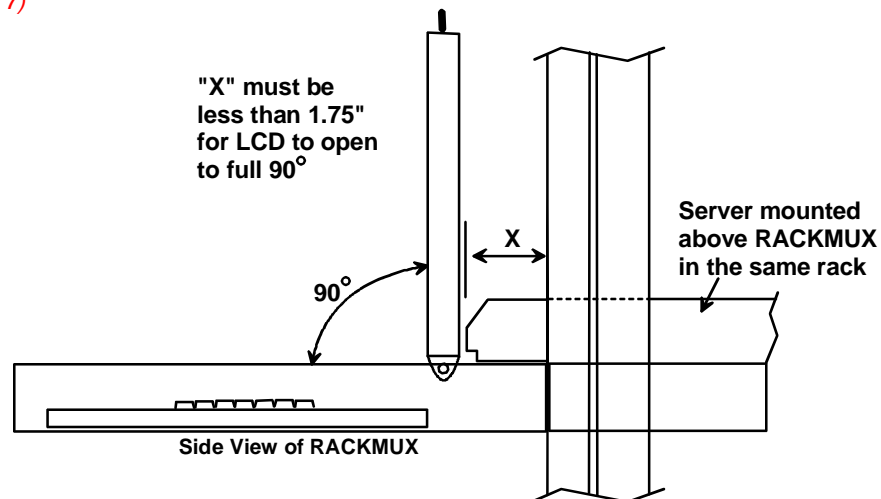
Figure 7- Position RACKMUX with clearance to open

Optional Telco 2-Post Mounting

If the Telco 2-post mounting bracket kit (NTI# RL-T15-TEL) is to be used, secure the short and long brackets to each side of the drawer as shown in Figure 8.   Apply 2 nuts (supplied) per bracket to secure the brackets to the drawer.   Apply two #10-32x3/4" screws (supplied) per bracket to the post at the desired height.   Slots are provided in the brackets to make minor depth adjustments easy.   Be sure to properly tighten all nuts and screws before using the drawer.
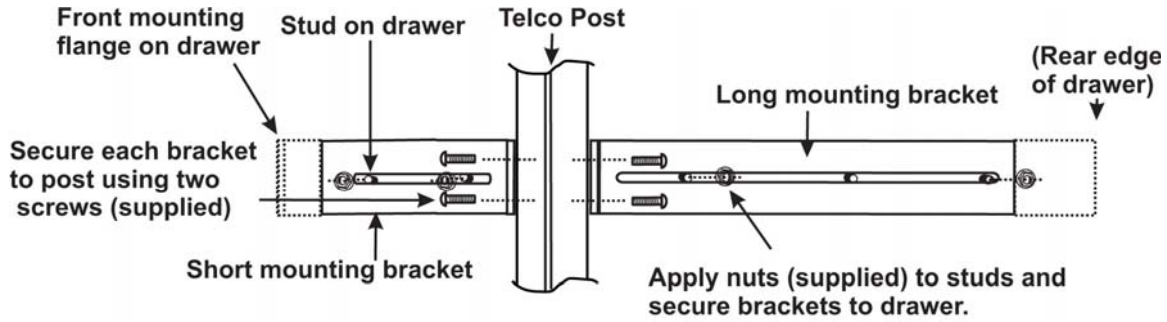
Figure 8- Mount to Telco post with optional mounting brackets

Connect to a CPU

The RACKMUX-VS17-T may be connected to a USB CPU with a VGA video port using the USB-AB-2M and VEXT-6-MM cables provided as shown in Fig. 4.

REAR VIEW OF RACKMUX-VS17-T
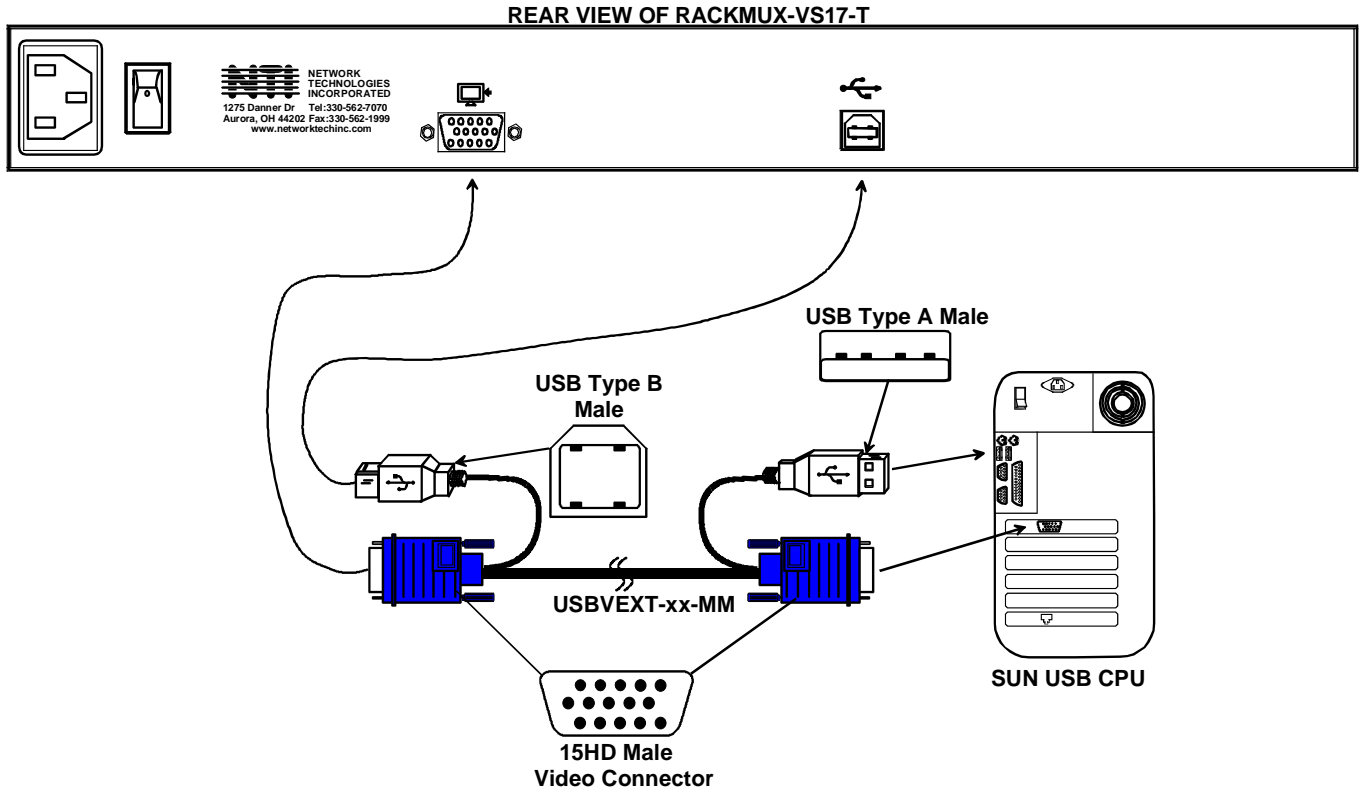
Figure 9- Connect a SUN USB CPU

When connecting a CPU with DVI support (RACKMUX-DS17-T) to the single-link DVI port of the RACKMUX, use the DVI-DS-2M-MM (supplied with DS17 models) for the DVI video signal and the USB-AB-2M (supplied) for the USB connection between the CPU and RACKMUX.
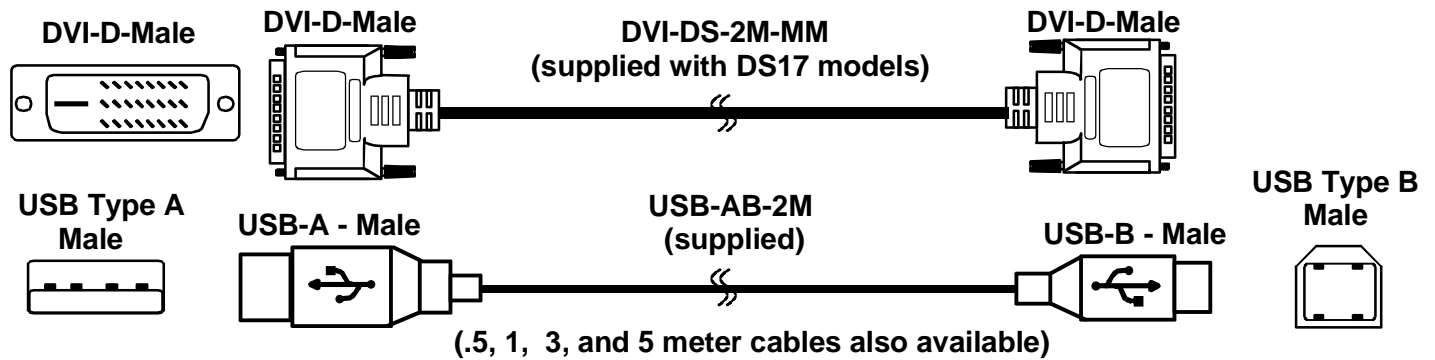
Figure 10- Cables for DVI video application

Connect Extra Device

On the front of the RACKMUX-VS17-T is an additional USB Type A port to be used, if desired, for an extra accessory.   Any low or full speed USB device may be connected to this port to be used.   This port is fully compliant with USB 1.1 standard.

Note: If a USB keyboard or mouse is connected, operation of the RACKMUX-VS17-T keyboard or trackball may cause unpredictable results.   Do not try to use both mice or both keyboards at the same time.

FRONT VIEW OF RACKMUX-VS17-T

Connect optional USB 1.1 or 2.0 device

PRINTER

CAMERA

SCANNER

FLASH DRIVE
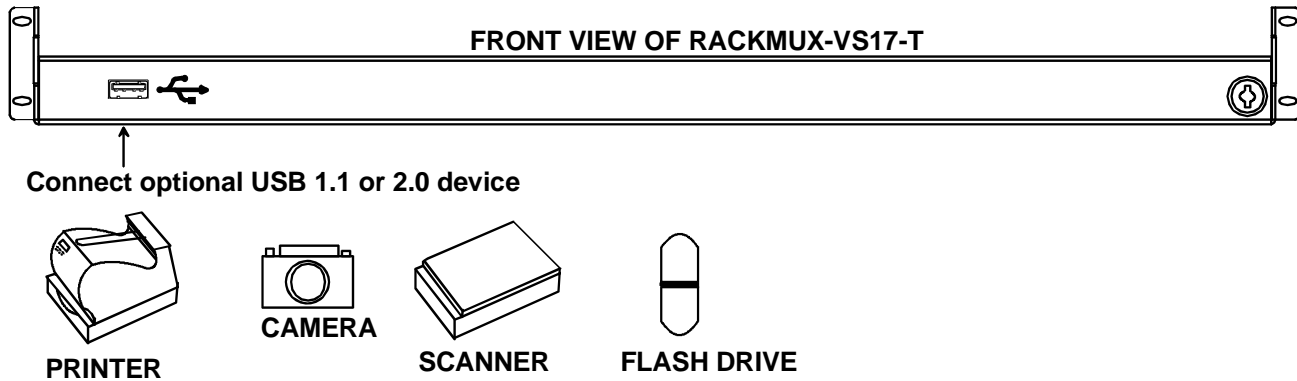
Figure 11- Connect a USB device to the front (optional)

Note: If a USB 2.0 device is connected to the optional USB device port, it will operate at USB 1.1 speed.

Connect Power

Connect the IEC power cord to the power port as shown below.

REAR VIEW OF RACKMUX-VS17-T

NETWORK
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INCORPORATED
1275 Danner Dr   Tel:330-562-7070
Aurora, OH 44202 Fax:330-562-1999
www.networktechinc.com
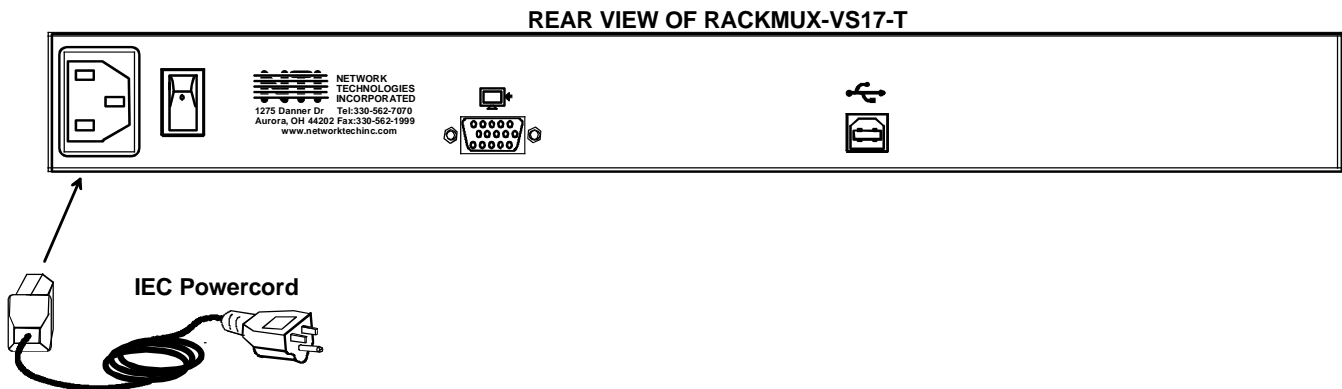
IEC Powercord

Figure 12- Connect the power cord

Power Up

Power up the RACKMUX-VS17-T and connected computer in this order.

1.   Power On the RACKMUX-VS17-T
2.   Power ON the attached CPU.

If a device is plugged into the USB port on the front of the RACKMUX, it can powered-ON at any time.

Note for DVI monitors only: If the message "NO SIGNAL" appears when the monitor is powered-ON, the monitor may be set for a "PC" (VGA) input source.   Press the Up Arrow button on the monitor to toggle the monitor input source setting to "Digital" (DVI).   (See also page 10)

DISPLAY FUNCTIONS

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. Once the OSD screen is displayed, the Menu button is used to make selections within the menus. 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.

Note: On DVI monitors, when the OSD Menu is OFF, the Up Arrow is used to toggle between a "PC" (VGA) and "Digital" (DVI) input source.

Figure 13- 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.

Note: In order to display the OSD Menu, the RACKMUX must first be connected to a video source (see "Connect to a CPU" – page 8).
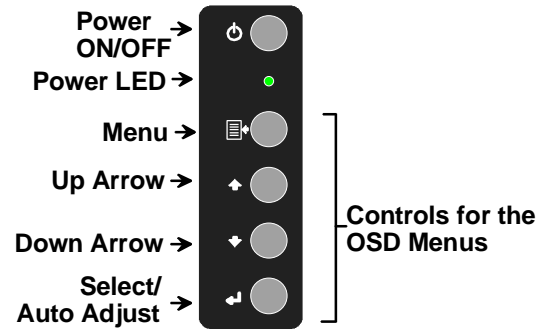
Note for DVI monitors only: If the message "NO SIGNAL" appears when the monitor is powered-ON, the monitor may be set for a "PC" (VGA) input source.   Press the Up Arrow button on the monitor to toggle the monitor input source setting to "Digital" (DVI).

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- VGA Monitor

| 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

Selection	Purpose	Range
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.   With either the BRIGHTNESS or CONTRAST 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.
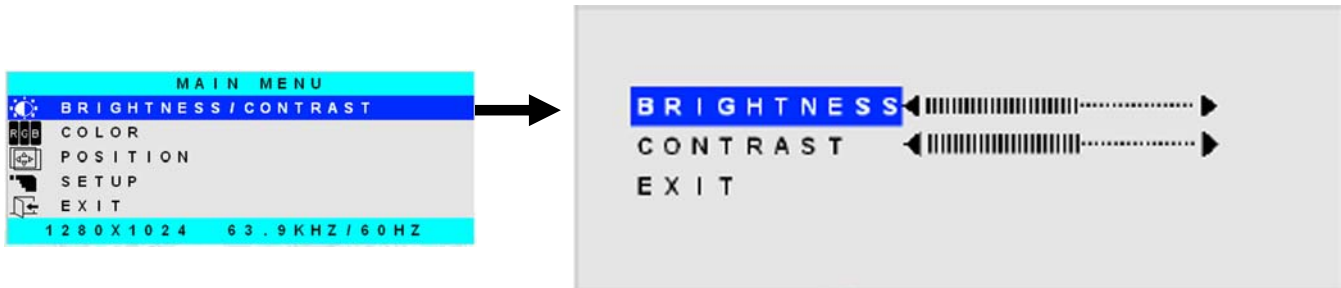
Color Menu

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.
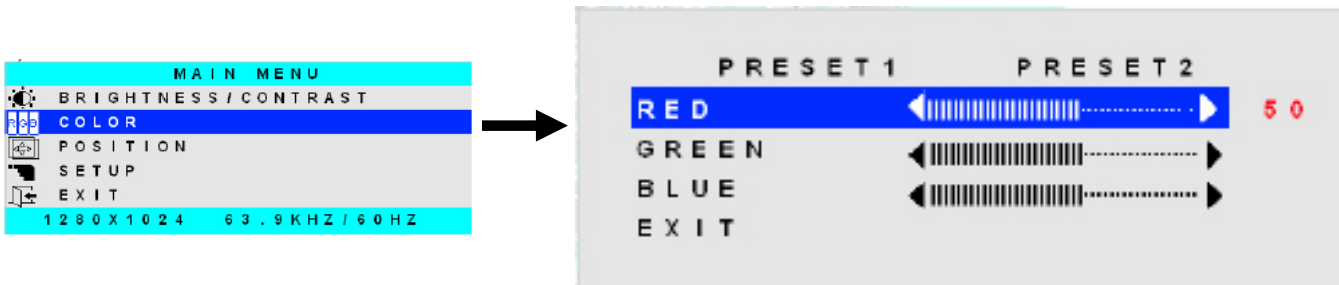
Position Menu

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 the following:
- 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.
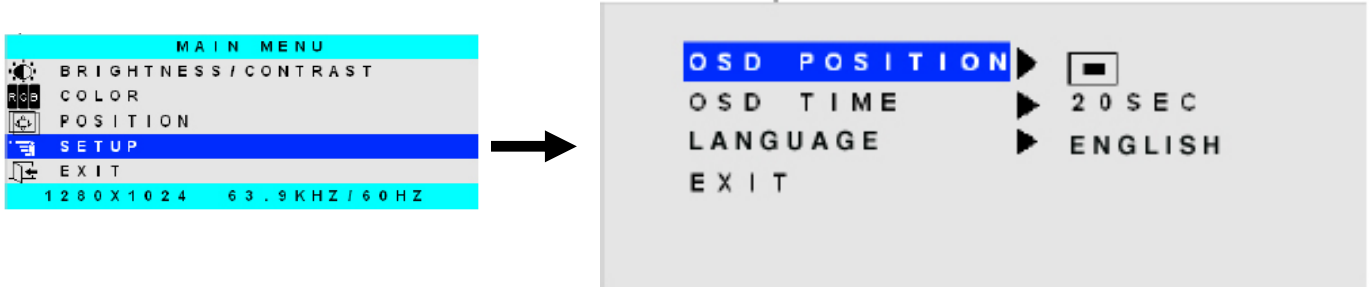
OSD Image can be moved to different points on the display
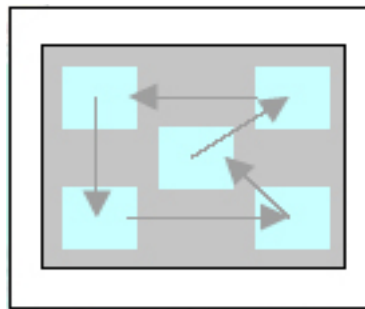
OSD Main Menu- DVI Monitor

Note: In order to display the OSD Menu, the RACKMUX must first be connected to a video source (see "Connect to a CPU" – page 8).

Note: If menu does not appear when the Menu button is pressed, the monitor may be set for a "PC" (VGA) input source. Press the Up Arrow button on the monitor to switch it to a "Digital" (DVI) input source.

| Selection	Purpose	Range
Brightness/Contrast	Increase/decrease panel brightness/contrast level	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 • Select Input Source to display	• 0-4 • 10 to 60 seconds • English, Spanish, Deutsch, Italian, or French • Digital or PC (must be set to Digital)
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.
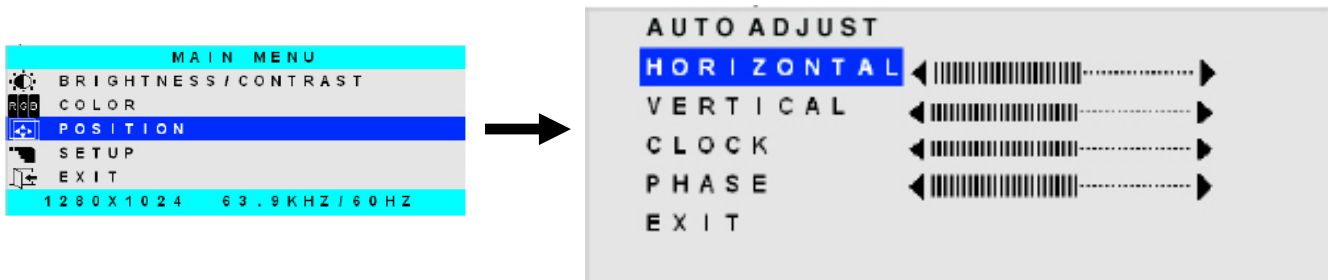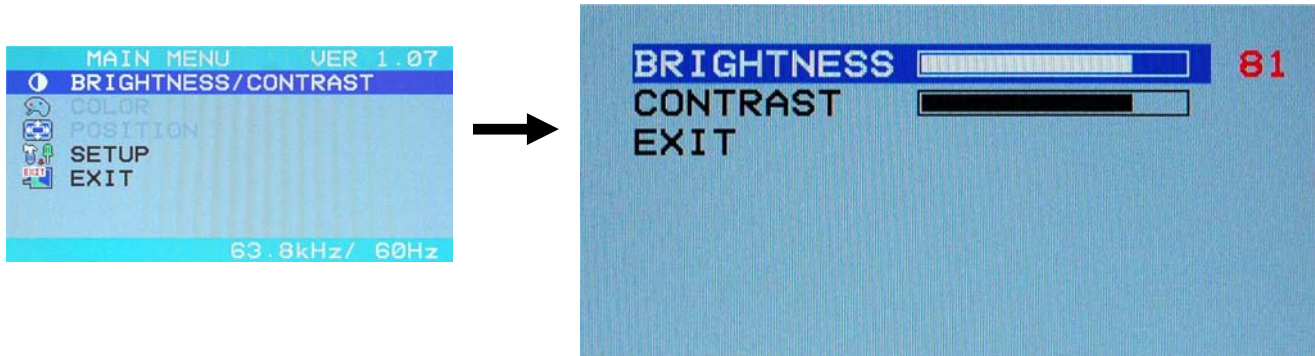

Setup Menu

Selecting the Setup menu will bring up a screen in which the user can adjust the following:

- OSD POSITION - the position of the OSD menus on the LCD display (positions 0-4)
- 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
- INPUT SOURCE - the type of signal that is coming from the CPU,   either Digital (DVI) or PC (VGA)
  NOTE: As used on RACKMUX with DVI option, the INPUT SOURCE must be set to "Digital".

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.
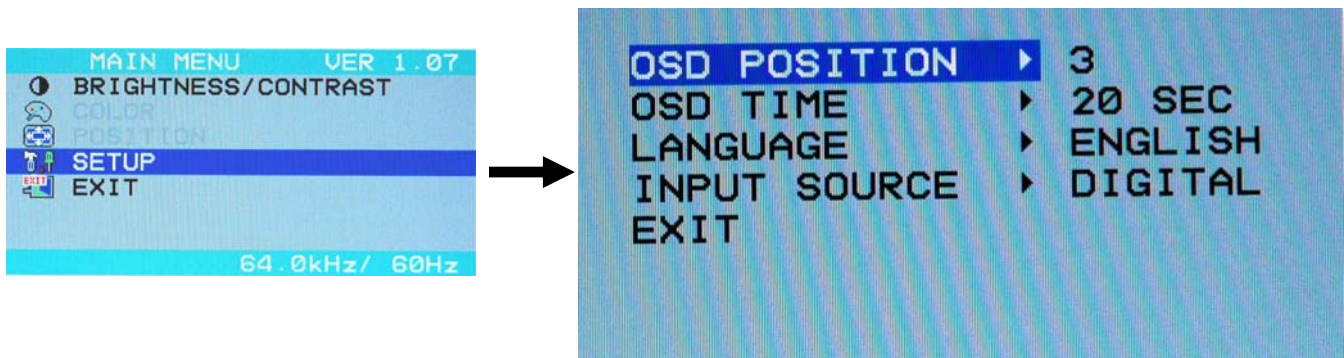
OSD Image can be moved to different points on the display
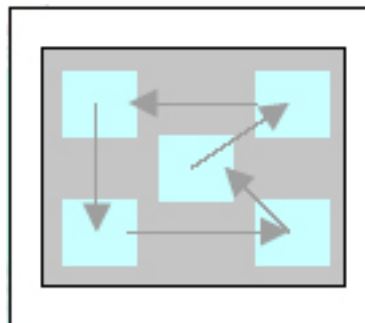
KEYBOARD FUNCTIONS

The main keyboard on the RACKMUX-VS17-T is a standard condensed Windows format.   To reduce the keyboard size, some keys have been assigned multiple functions, accessible via the "**Fn**" key.   This section will describe which keys have multiple functions and how to enable them.   Use the LEDs to know what special features are enabled.

Function Key Operation

The Function ("**Fn**") key provides several special functions on the RACKMUX keyboard, including:

- enabling otherwise standard keyboard keys to be used as the keys of a numeric keypad
- enabling multi-function keys to change operation
- enabling the "**P**" key to perform the function of the SUN Power key

To turn ON (lock) the Function key, press the "**Fn**" key twice quickly (double-click).   The "Fn" LED will illuminate.

To turn OFF (unlock) the Function key, press the "**Fn**" key twice quickly again. The "Fn" LED will turn OFF.

Note: The "Fn" key will also operate similar to the shift key (with only momentary effect). Press and hold the "Fn" key prior to pressing the special function key.   The "Fn" key will remain active as long as it is depressed.

"Fn" Key to enable additional key functions
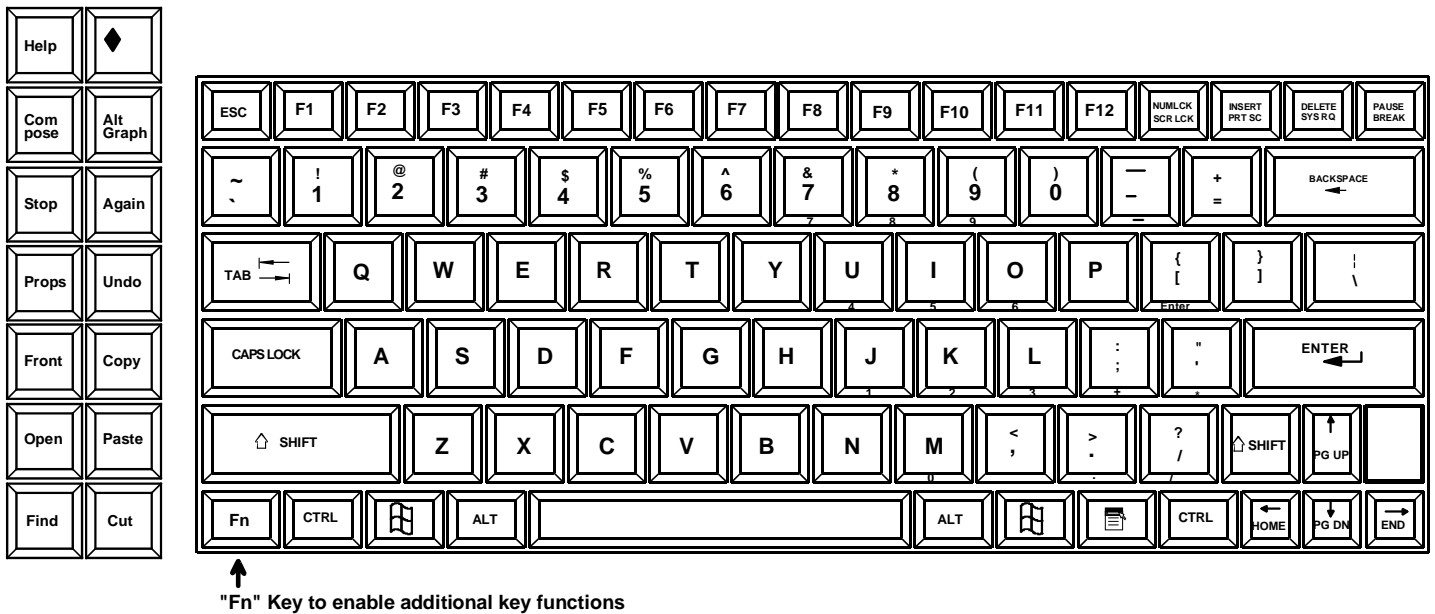
Figure 14- US (English) Keyboard Layout

On= CapsLock is locked

On= Function Key is locked

On= NumLock is locked

On= Scroll Lock is locked

On= Compose is locked
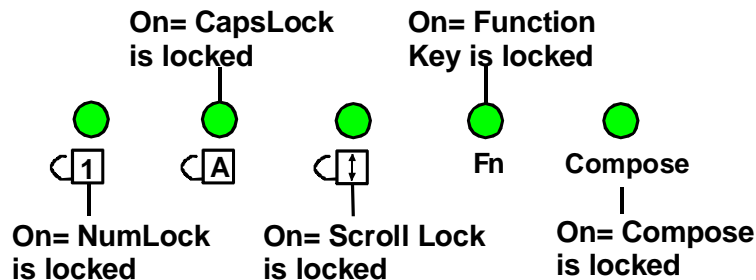
Figure 15- Keyboard LED Indications

Number Pad

The functionality of a Number Pad on a standard Windows keyboard has been incorporated into the keyboard of the RACKMUX-VS17-T (see Fig. 9, page 14).

To substitute the keys of the Number Pad:

1.   Press the "**NumLock**" key.   The NumLock LED （ ⟲ 1 ） will illuminate.
2.   Press the "**Fn**" key twice quickly (double-click).   The "Fn" LED will illuminate.

To turn OFF Number Pad functions:

1.   Press the "**Fn**" key twice quickly (double-click).   The "Fn" LED will turn OFF.
2.   Press the "**NumLock**" key.   The NumLock LED （ ⟲ 1 ） will turn OFF.

With the Fn and NumLock LEDs illuminated, pressing some standard keys will result in displaying characters as indicated in the chart below.

Standard Key	Displayed when NumLock is ON	Function when NumLock is OFF
j	1	End
k	2	Down Arrow
l	3	Page Down
u	4	Left Arrow
j	5	---
o	6	Right Arrow
7	7	Home
8	8	Up Arrow
9	9	Page Up
m	0	Insert
. (period)	**.** (period)	Delete
/ (forward slash)	**/** (forward slash)	
; (semicolon)	**+** (plus sign)	
' (apostrophe)	***** (asterisk)	
- (hyphen)	**-** (minus sign)	
[(left bracket)	ENTER	
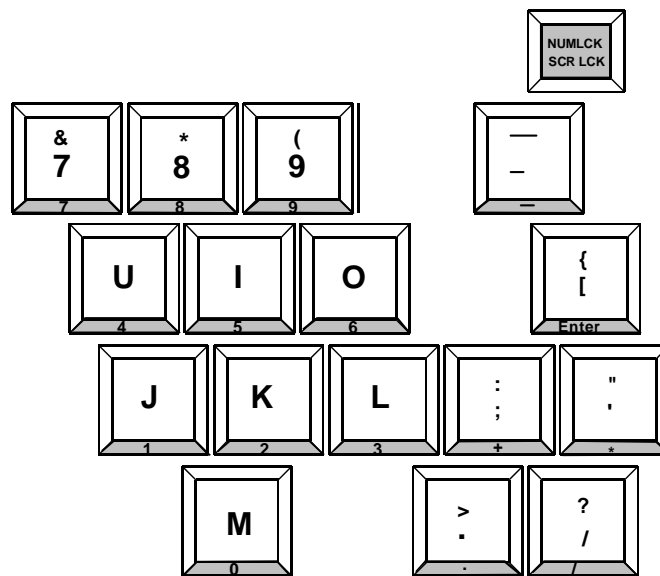
Figure 16- Keys of the Number Pad

Other Functions of the "Fn" Key

The Function ("**Fn**") key (page14) will enable other standard keyboard features in addition to the Number Pad keys (page 15) .

Key Function when Fn key is not locked ("Fn" LED is OFF)	Key Function when Fn key is Locked ("Fn" LED is ON)
Numlck (Number lock)	Scr Lck (Scroll Lock)
Insert	Prt Sc (Print Screen)
Delete	Sys Rq (System Requirements)
Pause	Break
Up Arrow	Page Up
Down Arrow	Page Down
Left Arrow	Home
Right Arrow	End
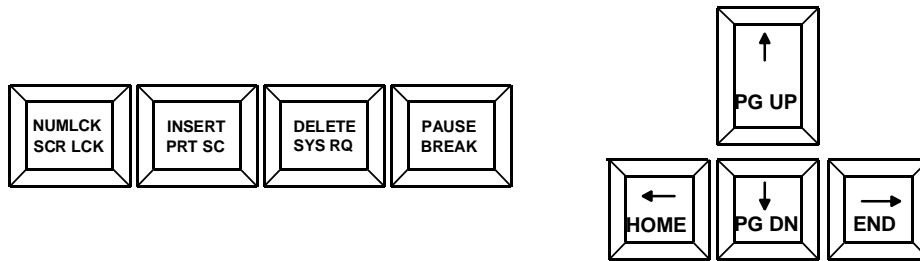
Figure 17- Additional multi-function keys

Note: The "Fn" key will also operate similar to the shift key (with only momentary effect).

Power Key

To perform the function of the SUN **Power key**,   press the "**P**" while the "Fn" key is pressed or locked.

Numeric Keypad Option

Models with the Numeric Keypad option (**-N**) (i.e. RACKMUX-VS17-TN) have a standard Windows keyboard with 17-key numeric keypad.

Note: The "Fn" key is not an active key on this keyboard.
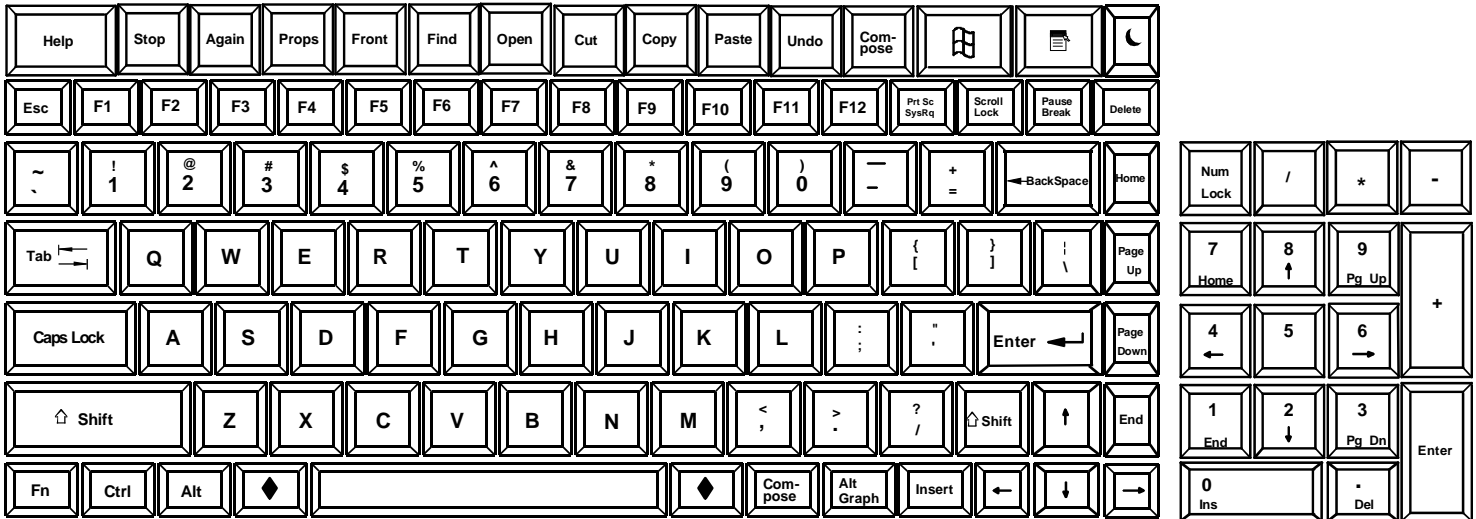
Figure 18- U.S. SUN Keyboard with numeric keypad

SAFETY

This NTI product has been designed and fully tested with user safety of the utmost importance.   As with all electronic devices, this NTI product should be handled and operated with care. In order to avoid possible injury and to reduce any risk of damage to this product, please read and follow each of these safety instructions.

- Follow all instructions found in this manual.

- Follow all instructions found on the product.

- Do not attempt to perform any service on this product unless specifically instructed to in this manual.

- Objects that can damage or be spilled on this product should be kept away from this product.   Liquids, if spilled, could come into contact with voltage points causing a risk of fire or electrical shock.

- Always unplug this product before cleaning it.   Do not use any liquid or aerosol cleaners to clean it.

- Do not install or use this product near water

- Be sure to mount this product on a solid, stable surface or in a rack (if applicable)

- Route all cables and the power cord away from sharp edges or objects that could cause damage to them

- Use only the power cord or AC adapter that came with this unit or one that meets the requirements specified in this manual

- Use only a properly grounded 3-wire electrical outlet for power connection

- Unplug this product and contact NTI should any of the following conditions occur:

    - The power cord or connection cables have been damaged

    - The product has come into contact with any liquids

    - The product does not operate properly despite having followed all of the instructions

    - The product has been dropped or the case has been damaged in any way

    - The product performs distinctly different than it did when first put into service

RACKMUX-VS17 DRAWER STANDARD SPECIFICATIONS

General Specs

Case Material...Electro-galvanized steel black powdercoated
Dimensions WxDxH (in.)...............................19 x 21.9 x 1.75
Supported Rack Depths………………………..Adjustable 22" – 39"
Weight…………………………………………….26 lbs.
Input Power...AC 100-240V, 50 or 60 Hz
LCD (plus controller) Current Draw…………..12V Supply: 3.75A
Operating Temperature..................................0-40˚C
Storage Temperature…………………………..-20-60˚C
Relative Humidity……………………………….. 20-90%, non-condensing
Approvals……… .... All parts comply with RoHS, CE

LCD

Display area…………………………………….337.92mm (W) x 270.336 (H) (17 inch diagonal)
Panel Type………………………………………TFT Active
Number of Pixels ....1280 (H) x 1024 (V)
Number of Colors..16.2 Million (6 bits + FRC)
Pixel Pitch ....0.264(H) x 0.264(V)
Color Pixel Arrangement...............................RGB Vertical Stripe
Brightness...300cd/m^2 (Nits)
Response Time..5.5ms
Viewing Angle ....Horizontal: 140º; Vertical: 130º (Typ.)
Optimum Viewing Direction...........................6 o'clock
Backlight Unit…………………………………….CCFL, 4 Tables, Edge-Light (2 Top/2 Bottom)
Operating Lamp Life ....40,000 – 50,000 hrs
Contrast Ratio…………………………………..500:1

Display Controller: VGA

Connector………………………………………15HD, female
Video Format ....VGA,SVGA, XGA, SXGA
Signal Input (from Video Source…………….Analog RGB
Sync Range ....H: 31 ~ 80KHz, V: 55 ~ 76Hz
OSD Control………………………………………Menu, Up, Down, Select, Power (5 keys)
Plug and Play..VESA DDC 2B Ver1.3

Display Controller: DVI

Connector………………………………………DVI-D, female
Video Format ....VGA,SVGA, XGA, SXGA
Signal Input (from Video Source…………….Digital TMDS
Sync Range ....H: 31 ~ 80KHz, V: 55 ~ 76Hz
OSD Control………………………………………Menu, Up, Down, Select, Power (5 keys)
Plug and Play..VESA DDC 2B Ver1.3

OSD Control Board

OSD Control ....5 Keys
Power Key ....Power ON/OFF
Menu Key...Activates Menu
Up, Down Keys ....Navigation Control
Select Key..Select (when in Menu); Auto Adjust (not in menu)
LED...Indicates Operation Status
          ....Green = Power-ON, Video Input OK
          ....Red = Suspend / Stand-by, or Input Out of Range

Keyboard

No. Of Keys ....83 Keys (US), 84 keys (UK,German, French, Italian, Spanish)+ 14 Sun keys
Key Switch Type ....Membrane switch
Keytop Style..Rectangular Cylindrical
Operating Force...50gf +/- 25gf
Stroke ....3.0mm +/- .5mm
Tactile ....20 gf typ.
Height ....8.5 mm
Operating Life ....10M operations, minimum
Key Switch Bounce.......................................10 ms, maximum
Supported Platforms ....USB
CPU Connectors...USB Type B (USB);

Trackball

Casing Material...ABS
Ball Material ....Phenolic (metal core)
Ball color ....Black
Ball diameter...16mm
Tracking force ....10 grams nominal
Resolution...117 pulse per ball revolution
Mounting Angle...Max. 30' to horizontal plane
Lifetime-Ball revolutions.................................>= 1 million
Mechanical Buttons ....3 Mechanical switches are supported

Touchpad (option)

Motion Detection Method................................capacitance sensing
X/Y Position Sensing Resolution ....40 counts/mm
X/Y Position Reporting...................................Relative (Similar to mouse)
Tracking Speed...Up to 1016 mm/sec
Touch Force..No Contact pressure required
Lifetime (Plastic Overlay)..............................Minimum 10,000,000 strokes
Sample Rate ....Up to 100 samples/sec

TROUBLESHOOTING

Each and every piece of every product produced by Network Technologies Inc is 100% tested to exacting specifications.   We make every effort to insure trouble-free installation and operation of our products. If problems are experienced while installing this product, please look over the troubleshooting chart below to see if perhaps we can answer any questions that arise.   If the answer is not found in the chart, please check the FAQs (Frequently Asked Questions) at our website at http://www.networktechinc.com or contact us directly for help at 1-800-742-8324 (800-RGB-TECH) in US & Canada or 1-330-562-7070 worldwide.   We will be happy to assist in any way we can.

Problem/Message	Cause	Solution
"OUT OF FREQUENCY"	Input signal is outside the supported range	Lower video frequency to be within specified range
"POWER SAVER MODE"	The input signal is not present. This message will disappear after 5 seconds.	Check all cable connections- verify that they are secure
"NO SIGNAL"	• The input signal is not present immediately after power ON. • (DVI monitors only) monitor is in wrong mode	• Check all cable connections- verify that they are secure • If monitor is DVI- input source may be set to "PC" (VGA) mode. Press Up Arrow on monitor to toggle mode to "Digital" (DVI) input source. (see also page 10)
"AUTO CONFIGURATION"	The LCD monitor is configuring itself for proper communication with the CPU.	No action is necessary.
Keyboard/trackball not functioning	USB cable is not properly connected	Check USB cable connection between the RACKMUX and the computer. Make sure it is connected to a working USB port at the CPU.
Front panel USB port is not working	USB cable is not properly connected	Check USB cable connection between the RACKMUX and the computer. Make sure it is connected to a working USB port at the CPU.
Keys pressed on the keyboard do not yield the expected result	"Fn" function is locked ON.	Check to see if the Fn LED is illuminated. If so, press the "Fn" key twice quickly to unlock the function.
LCD is not displaying image	• Image out of range • LCD Auto-Shut OFF button is depressed • LCD is powered OFF	• Lower the resolution • Make sure nothing is resting on the button • Turn power to LCD ON

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WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from the date of purchase. Please contact Network Technologies Inc at **(800) 742-8324** (800-RGB-TECH) or **(330) 562-7070** or visit our website at http://www.networktechinc.com for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

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