RACKMUX® Series

RACKMUX-V15/17

RACKMUX-D15/17

Rackmount Drawer with Keyboard, LCD Monitor and Mouse
Installation and Operation Manual

MAN047   Rev Date 7/2/2008

TRADEMARK

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CHANGES

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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

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INTRODUCTION

The RACKMUX-V15/17 Drawer (RACKMUX) consists of a Keyboard, Touchpad, and LCD monitor integrated into a 1RU rack-mountable drawer with wrist pads. 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 mouse. 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 will switch between USB and PS/2 standards for versatile connection to a CPU. The forward-folding LCD monitor is offered in either 15" or 17" (designated in the product name as -15 or -17) and the video format can be either VGA or single-link DVI (designated by –V or –D: example RACKMUX-V15). For user input, the drawer offers a notebook-style keyboard, wrist-pad, and a three-button touchpad. The keyboard and mouse can be connected using USB and PS/2 cables. USB and PS/2 interfaces will remain active at all times and the keyboard and mouse can be switched, at any time, to use either one. The RACKMUX-V15/-17 also provides a front panel USB 1.1 port for the connection of an external USB device (such as a flash drive).

The keyboard and mouse interface is compatible with Windows platform CPUs. This multiple interface capability reduces equipment costs by ensuring that a single console is compatible with various PC/server input devices.

Installing the RACKMUX into any server environment will offer:
* A space saving 1RU design, easily mountable in any 19" cabinet/rack
* A forward-folding 15" or 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 with wrist pad
* Standard 3-button mouse touchpad
* Support for PS2 and USB connections for the keyboard and mouse.
* 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-V15/17 Drawer with VGA Video support
                              ~or~
✓ NTI RACKMUX-D15/17 Drawer with DVI Video support
✓ 2 Keys for Lock
✓ 2 Rear Mounting Brackets w/nuts
✓ 8 #10-32x3/4" screws and cage nuts for mounting to a rack
✓ IEC Power Cord- country specific
✓ CD with a pdf file of this owner's manual
✓ USB-AB-2M 2 meter USB Type A male-to-USB Type B male cable
✓ VVKINT-6-MM 6 foot PS/2 mouse and keyboard cable
✓ VEXT-THN-6-MM 6 foot VGA video cable (**models with VGA Video support only**)
✓ DVI-DS-2M-MM 2 meter DVI video cable (**models with DVI Video support only**)

Alternative Cables (not supplied): (available in 3,6,10 and 15 foot lengths)

VKMEXT-xx-MM for VGA Monitor and PS2 Keyboard and Mouse input
USBVEXT-xx-MM for VGA Monitor and USB Keyboard/Mouse input and USB device support

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

Cables can be purchased from Network Technologies Inc by calling **(800) 742-8324** *(800-RGB-TECH) in the US and Canada or* **(330) 562-7070** *(worldwide).*

Option:
* **DC Power option**- for use with 36-72VDC input- add "48V" to the part number (i.e. RACKMUX-V17**48V**)
* **Trackball option**- for a RACKMUX with a trackball instead of a touchpad- add "T" to the part number (i.e. RACKMUX-V17-**T**)
* **Numeric keypad option**- for a separate 17-key numeric keypad, add "-N" to the part number (i.e. RACKMUX-V17-**N**)

Combine options for a RACKMUX built the way you want (RACKMUX-V17-**NT** combines the numeric keypad and trackball options).

**Front View
RACKMUX-V17**

21A   - or -   21B

(RACKMUX-V17)   (RACKMUX-D17)

**Rear View
RACKMUX-V17**
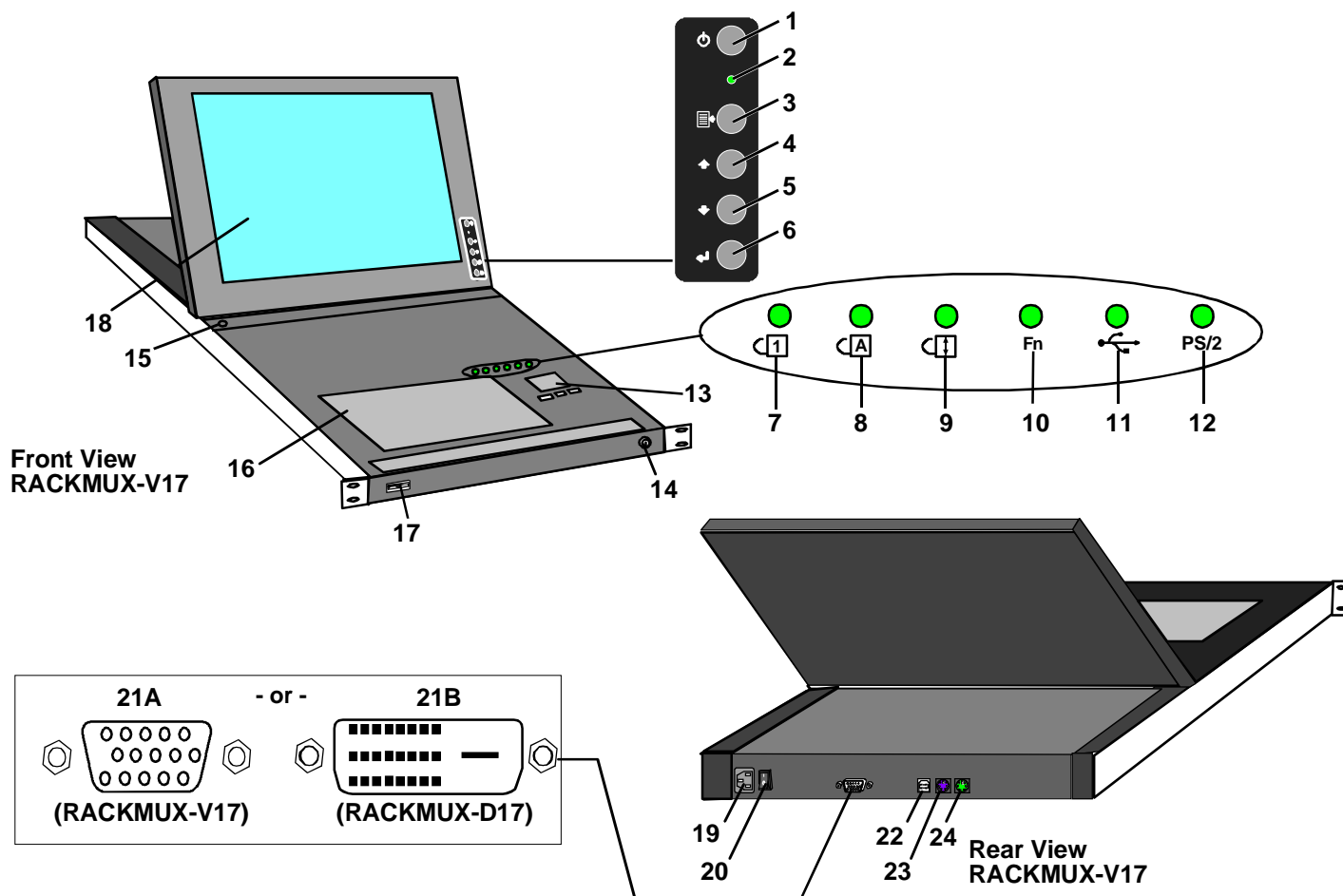
FEATURES AND FUNCTIONS

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 (page 10) are enabled.
11. **USB LED**- illuminates when RACKMUX drawer is in USB mode
12. **PS/2 LED**- illuminates when RACKMUX drawer is in PS/2 mode
13. **3-button mouse**- for controlling mouse movements on the monitor and controlling the computer
14. **Keylock**- to prevent unauthorized use of the RACKMUX
15. **Auto Shut-OFF**- switch automatically shuts OFF the LCD display when the monitor is folded down
16. **keyboard**- for manual data entry and computer control
17. **USB Port-** USB Type A female- for connection of any USB 1.1 compatible device (such as a flashdrive, printer, etc)
18. **LCD Display**- for viewing the video signal from the connected CPU
19. **IEC Connector**- for attachment of the IEC power cord to power the RACKMUX drawer
20. **Switch**- for powering ON and OFF the RACKMUX drawer
21. **Video In-   21A.** 15HD Female- for connection of the VGA video cable from the CPU (only in models that support VGA video)
              21B. DVI-D Female- for connection of a DVI-D video cable from the CPU (only in models that support DVI)
22. **USB**- USB Type B female- for connection of the USB cable from a USB CPU
23. **Keyboard Connector**- purple 6 pin miniDIN female- for connection of the PS/2 keyboard cable from a PS/2 CPU
24. **Mouse Connector**- green 6 pin miniDIN female- for connection of the PS/2 mouse cable from a PS/2 CPU

INSTALLATION

Rack Mounting Instructions

The RACKMUX was designed to be mounted to a rack and includes mounting flanges to make attachment easy.

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.   Apply the top screws (supplied) for each bracket to the holes marked in step 1.

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 4 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 4 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 with two screws per bracket. Be sure to tighten the screws securely. Then tighten the nuts applied in step 3.

5. Apply one more screw to each of the rear brackets to finish.
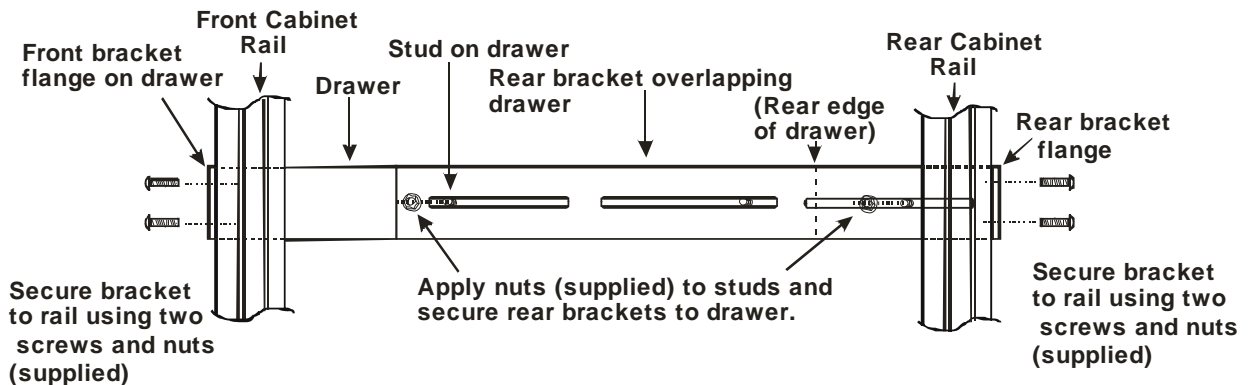
Figure 1- Mount RACKMUX to a standard rack

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 Fig. 2)
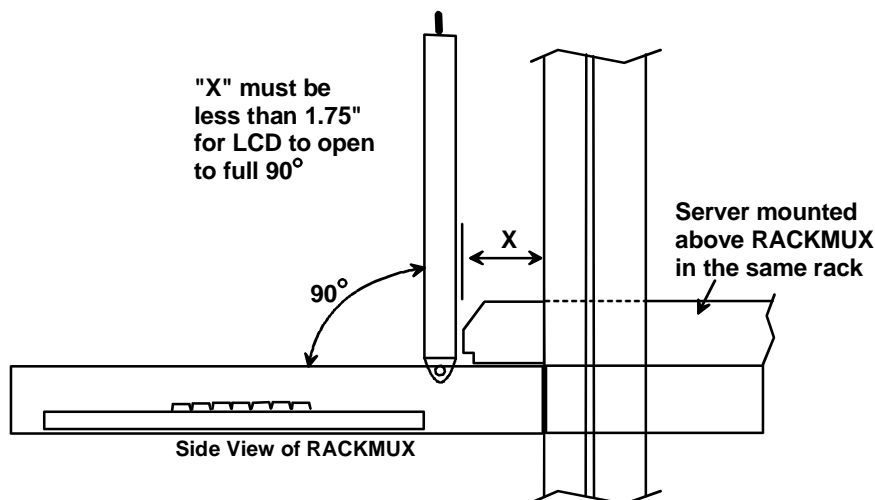
Figure 2- Position RACKMUX with clearance to open

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 Fig. 2.   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.
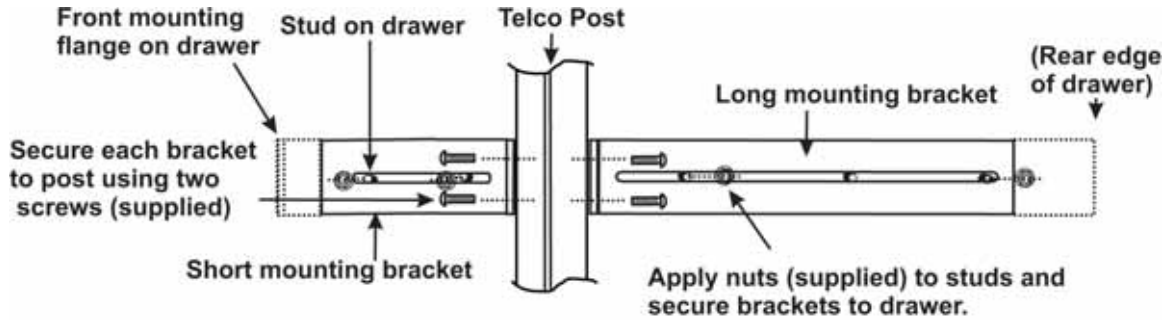
Figure 3- Mount to Telco post with optional mounting brackets

Connect to a CPU

The RACKMUX may be connected to either a PS/2 or a USB CPU with a VGA video port.   To connect to a PS/2 CPU, use a VEXT-6-MM cable and VVKINT-6-MM cable as shown in Fig. 3.   To connect to a USB CPU, use the VEXT-6-MM and USB-AB-2M cables as shown in Fig. 2.
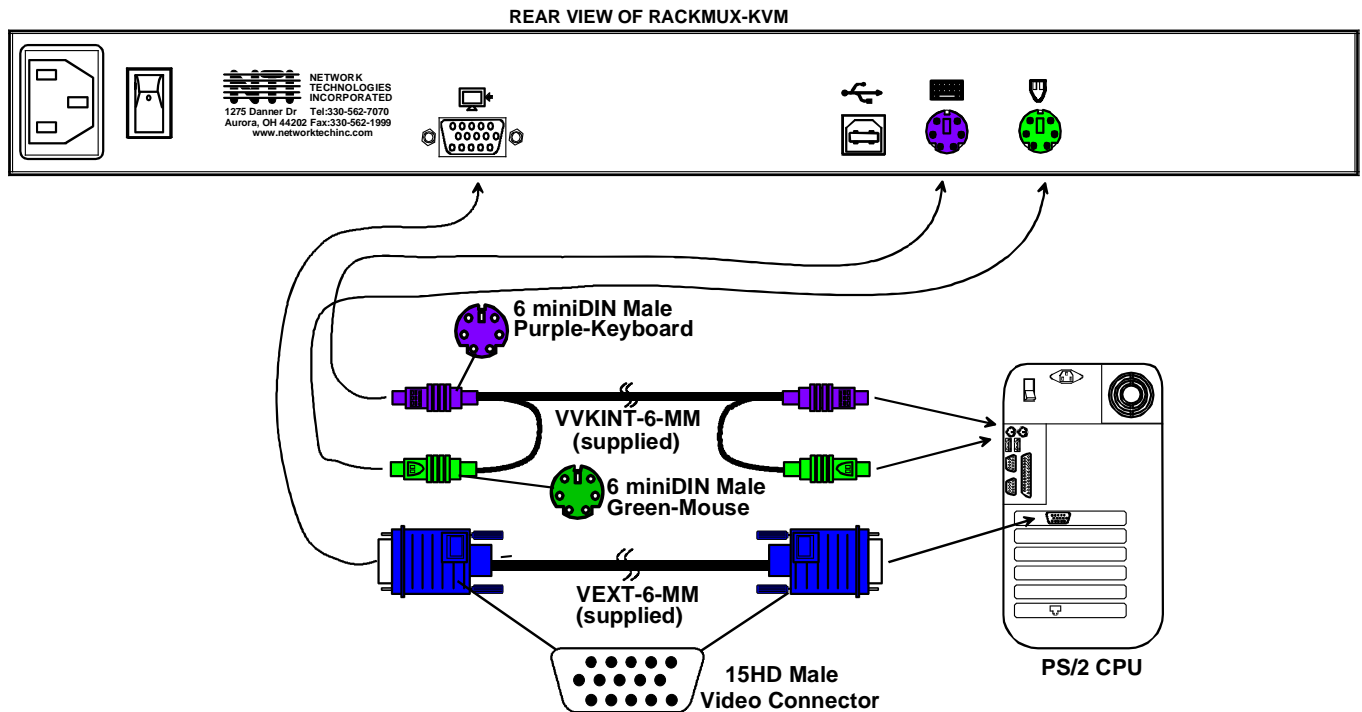
Figure 4- Connect a PS/2 CPU

REAR VIEW OF RACKMUX-V17

Figure 5- Connect a USB CPU
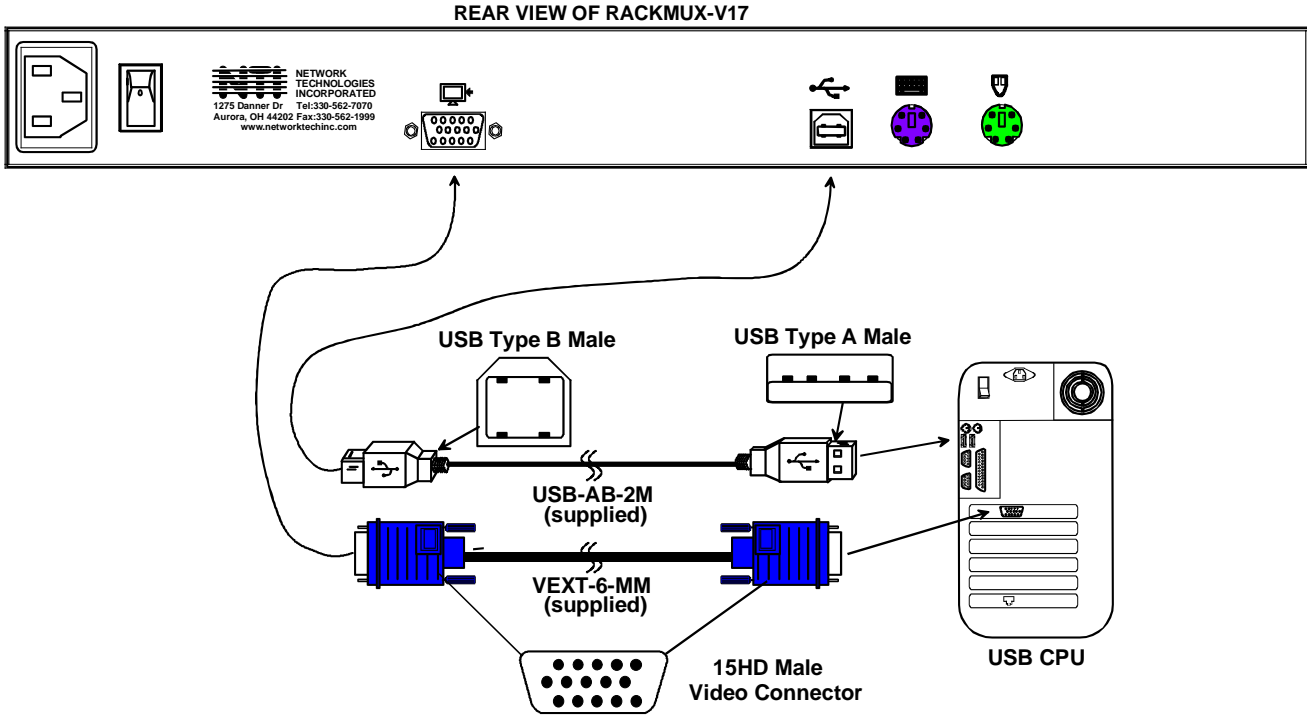
When connecting a CPU with DVI support to the single-link DVI port of the RACKMUX, use a DVI-DS-2M-MM (supplied) for the DVI video signal, a USB-AB-2M (supplied) for the USB connection, and if using PS/2 keyboard and mouse connections, connect a VVKINT-6-MM cable (supplied) between the CPU and RACKMUX.
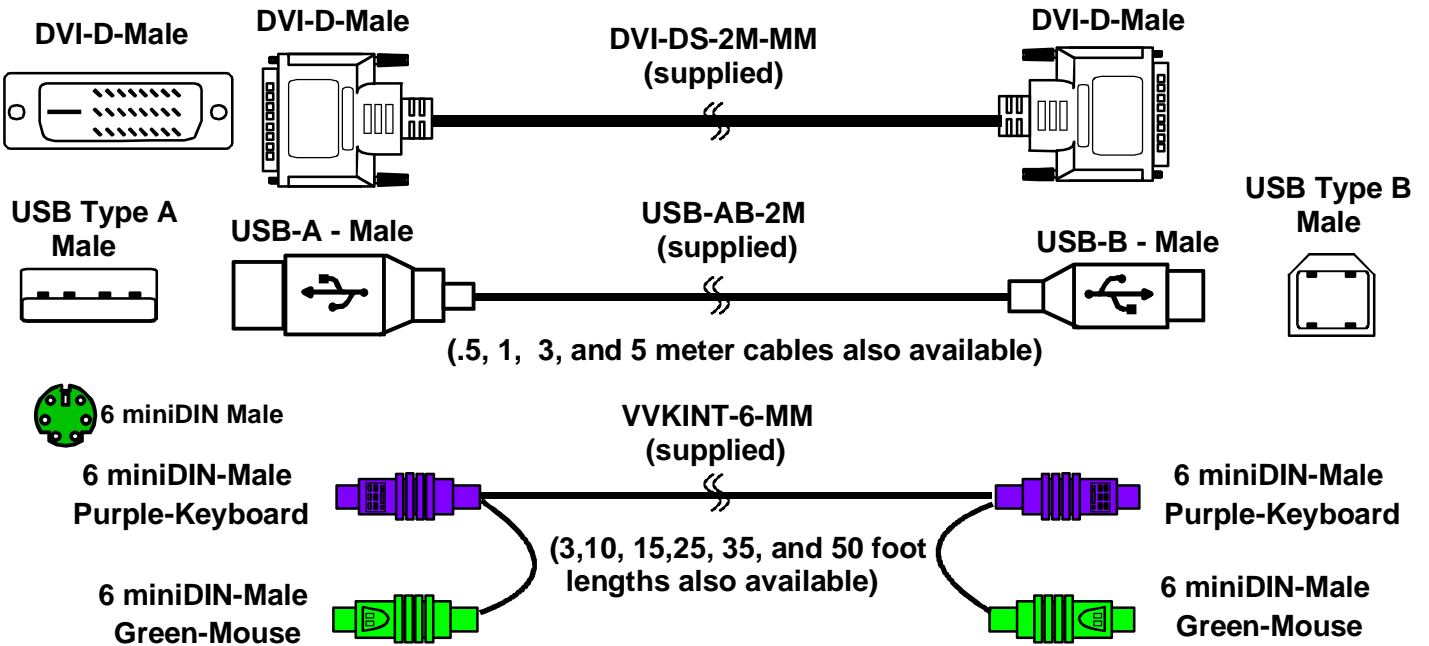
Figure 6- Cables used for RACKMUX with DVI video support

Connect Extra Device

On the front of the RACKMUX 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 standard 1.1.

Note: In order for the optional USB device port to be usable, the USB port on the rear of the RACKMUX must be connected to a USB enabled CPU (a 2 meter USB cable is supplied).

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

FRONT VIEW OF RACKMUX-V17

Connect optional USB 1.1 or 2.0 device

CAMERA

PRINTER

SCANNER   **FLASH DRIVE**
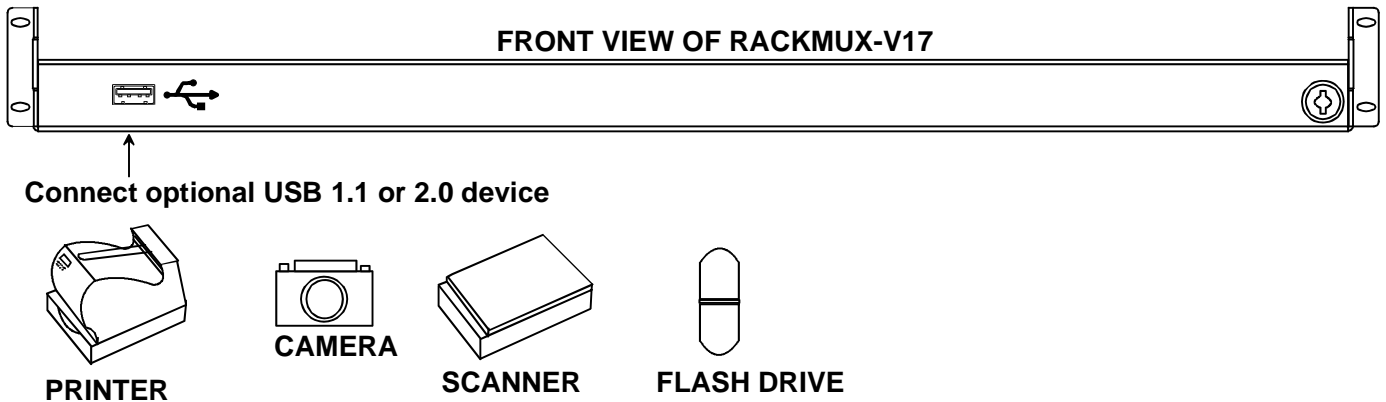
Figure 7- Connect a USB 1.1 device to the front (optional)

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-V17
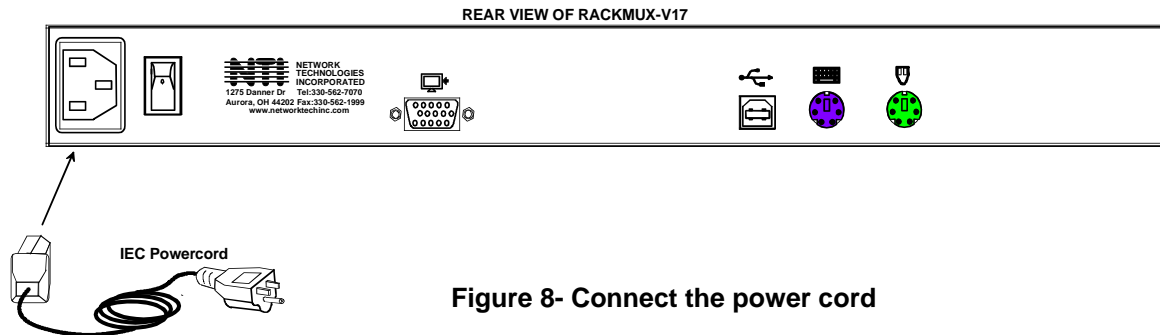
IEC Powercord

Figure 8- Connect the power cord

Power Up

Power up the RACKMUX and connected computer in this order.

1.   Power On the RACKMUX

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: During power-up, do not attempt to type or otherwise use the keyboard.   Doing so may result in boot errors and loss of keyboard and mouse.

DISPLAY FUNCTIONS

An NTI RACKMUX with a 17" monitor supports resolutions up to SXGA (1280 x 1024) with a refresh rate at between 55 and 76Hz. When a 15" monitor is present, support for resolutions up to XGA (1024 x 768) apply 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. 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.
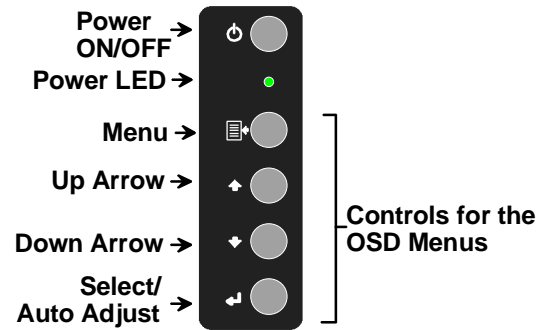
Figure 9- OSD Controls

• 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- VGA models

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

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.
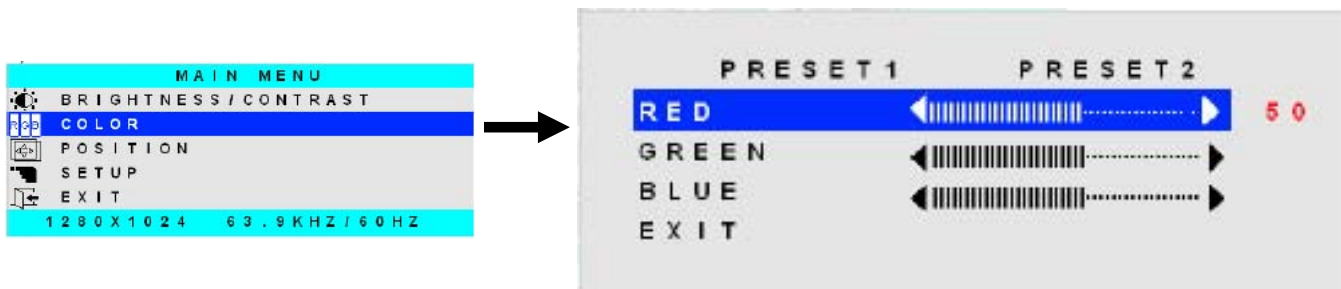
Position Menu

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.
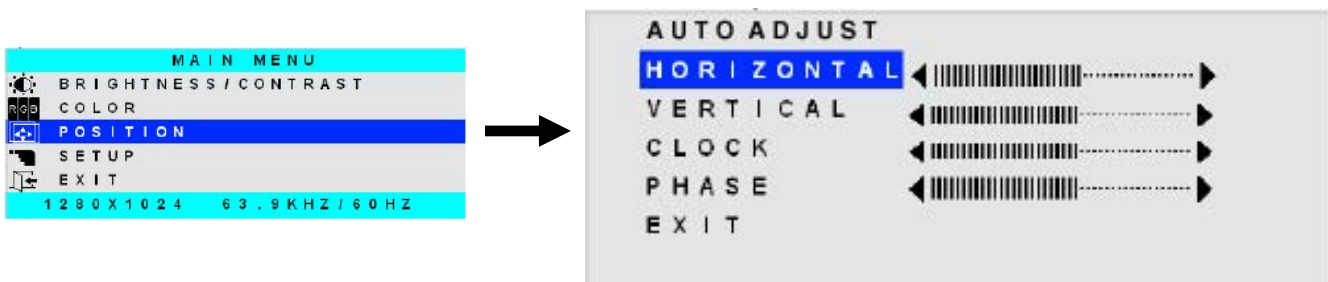
Setup Menu

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.


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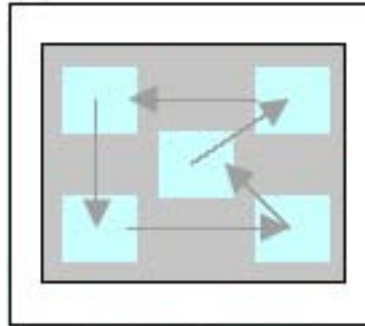
KEYBOARD FUNCTIONS

RACKMUX-V15

The keyboard on the RACKMUX-V15 (and RACKMUX–V17) 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 "**T**" key to act as a mode key to toggle between USB and PS/2 keyboard/mouse mode

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.
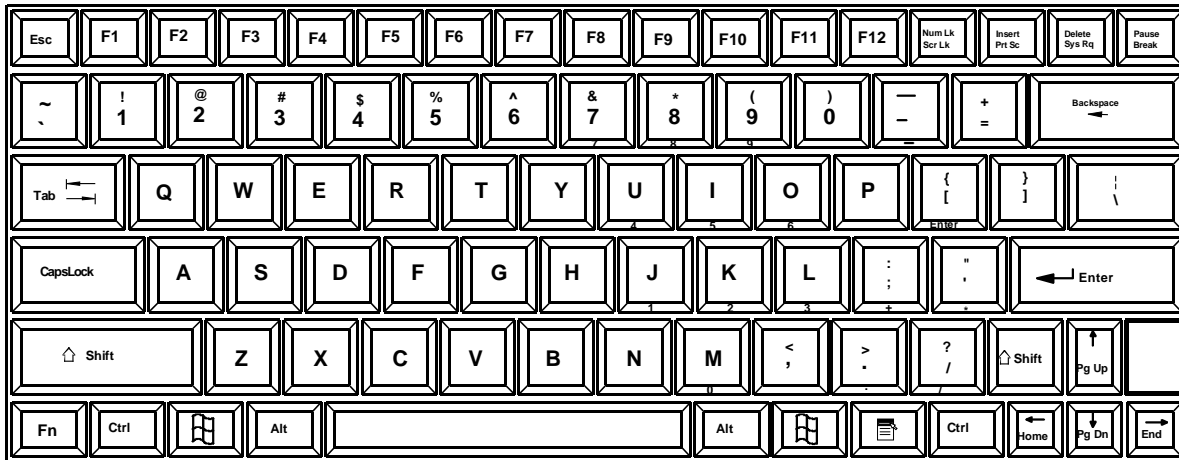
Function Key to enable additional key functions

Figure 10- US(English) Keyboard Layout
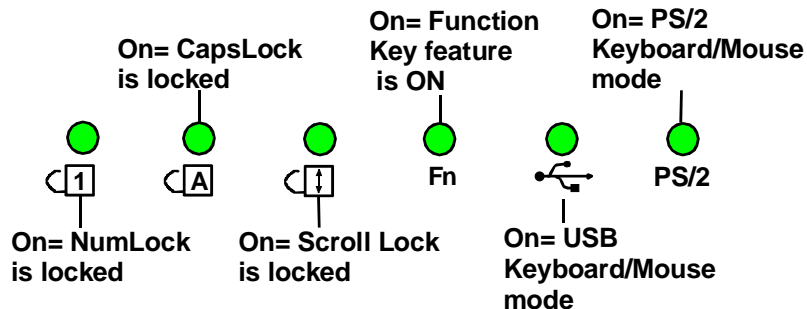
Figure 11- Keyboard LED Indications

Number Pad

The functionality of a Number Pad on a standard Windows keyboard has been incorporated into the keyboard of the RACKMUX-V15 (see Fig. 12, page 12).

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	
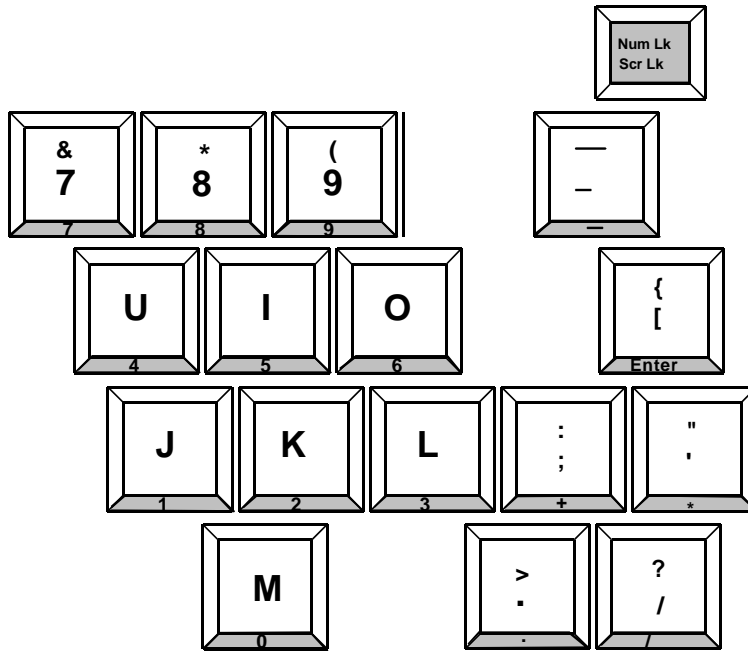
Figure 12- Keys of the Number Pad

Other Uses of the Function Key

The Function ("**Fn**") key (page10) will enable other standard keyboard features in addition to the Number Pad keys (page 11) .

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
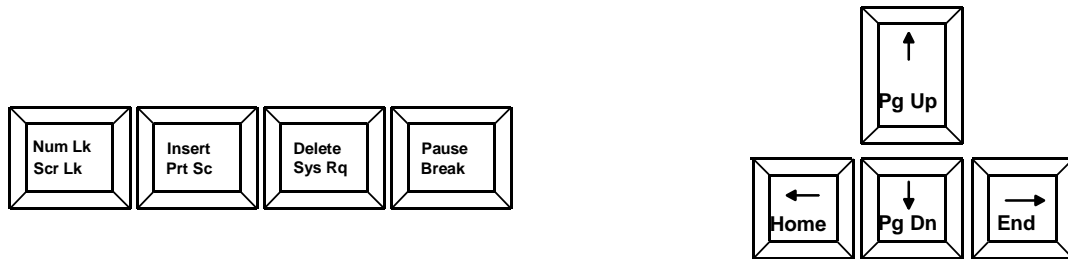
Figure 13- Additional multi-function keys

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

Numeric Keypad Option

Models with the Numeric Keypad option (**-N**) (i.e. RACKMUX-V15**-N**) have a standard Windows keyboard with 17-key numeric keypad.

When the Numeric Keypad option is present, the Function ("**Fn**") key, (page 10) is only used to toggle between PS/2 and USB keyboard/mouse mode (page 14).

Note: When the Numeric Keypad option is present, the "Fn" key does not lock.   Instead, the "Fn" key operates similar to the shift key (with only momentary effect).

Function Key
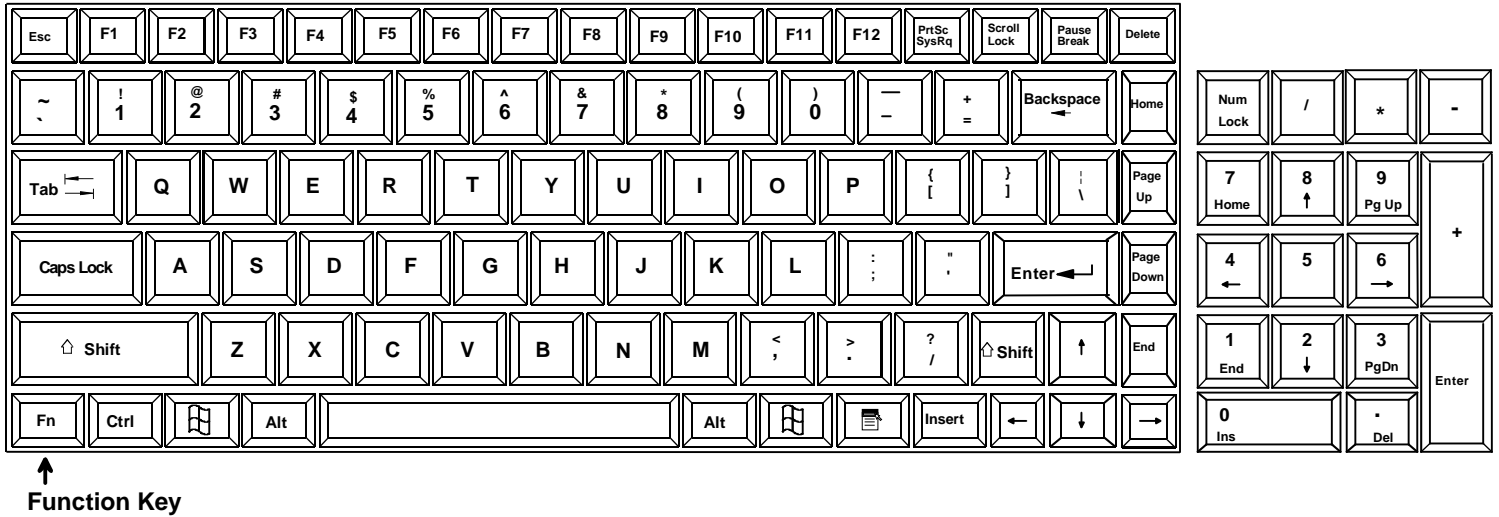
Figure 14- U.S. (English) keyboard with numeric keypad
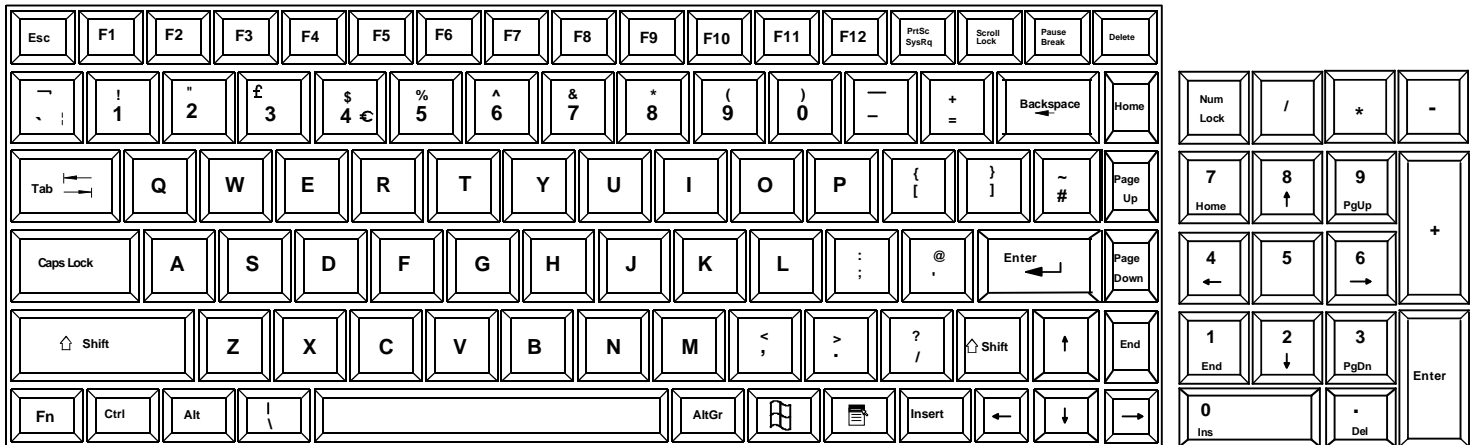
Figure 15- U.K. (English) keyboard with numeric keypad
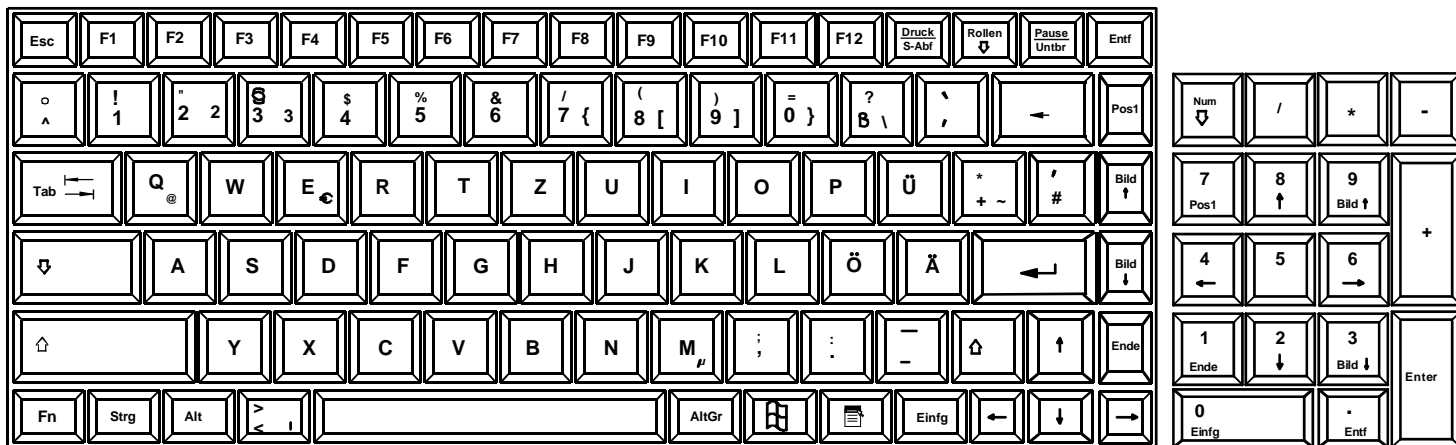
Figure 16- German keyboard with numeric keypad

PS/2-USB Keyboard/Mouse Mode

The RACKMUX keyboard and mouse can be configured to connect to either a PS/2 or USB enabled CPU.   At initial power ON from the factory, the keyboard will be in PS/2 mode.

To toggle keyboard mouse mode when standard condensed keyboard is present

1. Press the "**Fn**" key twice quickly (double-click).   The "Fn" LED will illuminate.
2. To toggle the keyboard to USB mode, depress and hold the "**T**" key for at least 7 seconds.   The "USB" LED will illuminate.   Release the "**T**" key.
3. To toggle the keyboard back to PS/2 mode, press and hold the "**T**" key again for at least 7 seconds.   The "PS/2" LED will illuminate. (See Fig. 11 on page 10.)   Release the "**T**" key.

To toggle keyboard mouse mode when Numeric Keypad is present

1. To toggle the keyboard to USB mode, depress and hold the "**Fn**" key ("Fn" LED will illuminate) and the "**T**" key for at least 7 seconds.   The "USB" LED will illuminate.   Release both keys.
2. To toggle the keyboard back to PS/2 mode, press and hold the "**Fn**" and "**T**" keys again for at least 7 seconds.   The "PS/2" LED will illuminate. (See Fig. 11 on page 10.)   Release both keys.

Note: In the event of a power failure, the RACKMUX will power up the keyboard in the mode it was last configured for.

DC POWER OPTION

If the RACKMUX has been ordered with the DC Power option ("48V" at the end of the model number), a 3-terminal block has been provided for connection to a 36-72VDC 2A power source.   The terminal block can be easily removed from under the protective bracket to make connections. Proper connections are indicated.

Note: Be sure to properly secure the terminal block to the RACKMUX after wire insertion.

An earth ground terminal has been provided for optional use.

protective bracket

REAR VIEW OF RACKMUX-V1748V

36-72VDC

Earth ground connection

Remove screws to remove terminal block

⚠ **CAUTION: RISK OF ELECTRIC SHOCK**
36-72VDC PRESENT ON DC POWER INPUT
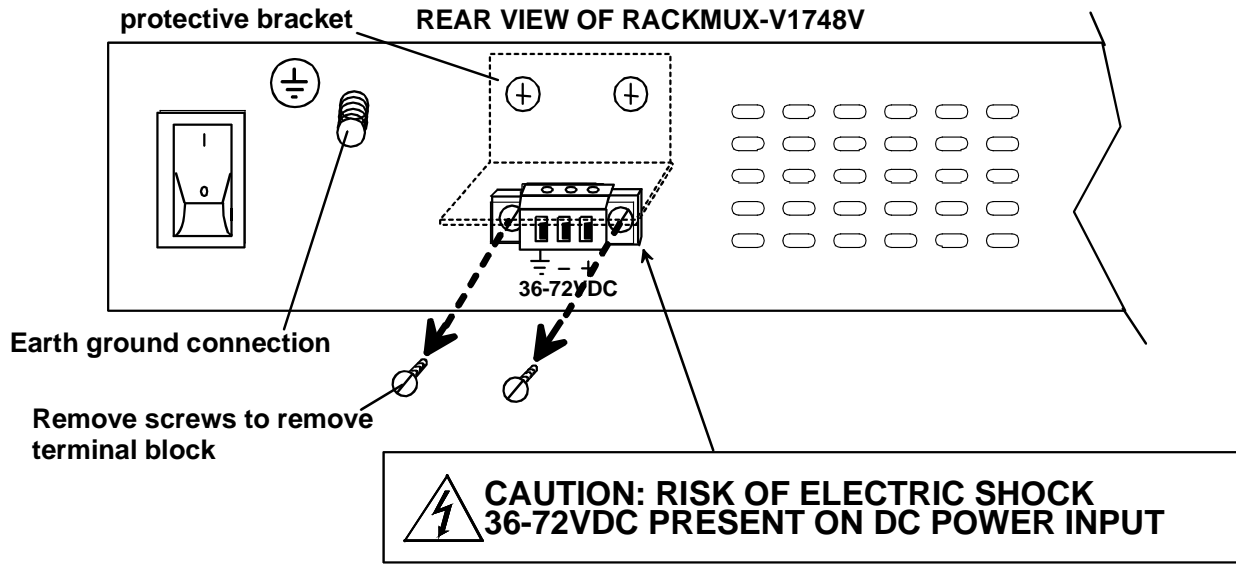
Figure 17- RACKMUX with DC Power option

Phillips screwdriver

Remove screws to remove terminal block

terminal block

Power supply ground
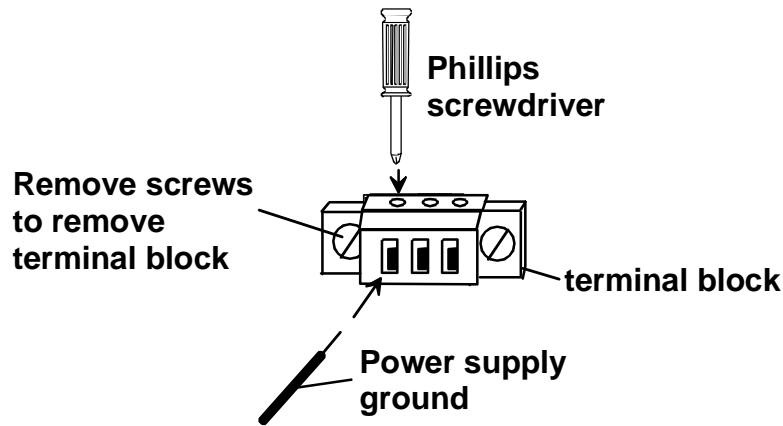
Figure 18- Apply wires to terminal block

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-KVM 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 – 60 Hz
Operating Temperature.................................0-40˚C
Storage Temperature…………………………..-20-60˚C
Relative Humidity………………………………. 20-90%, non-condensing
Approvals..All parts comply with RoHS

LCD – 15"

Display area…………………………………….304.1mm (W) x 228.1 (H) (15 inch diagonal)
Panel Type……………………………………….TFT Active
Number of Pixels ....1024 (H) x 768 (V)
Number of Colors...16.2 Million
Pixel Pitch ....0.297(H) x 0.297(V)
Color Pixel Arrangement................................RGB Vertical Stripe
Brightness...250cd/m^2 (Nits)
Response Time...16ms
Viewing Angle ....Horizontal: 140º; Vertical: 125º (Typ.)
Optimum Viewing Direction...........................6 o'clock
Backlight Unit………………………………….2x CCFLs (Top & Bottom, edge-light)
Operating Lamp Life ....30,000 – 40,000 hrs
Contrast Ratio……………………………………..500:1

LCD – 17"

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 (-15 & -17)

Connector……………………………………….15HD, female
Video Format ....VGA,SVGA, XGA, SXGA (17" only)
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 (-15 & -17)

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 (German, French, Italian, Spanish)
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
Interface ....Row and column matrix
Key Switch Bounce.......................................10 ms, maximum
Supported Platforms ....USB, PS/2
CPU Connectors...USB Type B (USB);
　　　...6-pin miniDIN, female, Purple & Green (PS/2)

Touchpad

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

DC Power (option)

Input Power (DC) ....36 – 72V

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.	Check all cable connections- verify that they are secure
"AUTO CONFIGURATION"	The LCD monitor is configuring itself for proper communication with the CPU.	No action necessary

Keyboard/touchpad not functioning	• Keyboard is in the incorrect mode
	
	• Cables are not properly connected
		• Toggle the keyboard mode from PS/2 (default) to USB.
		  A. If keyboard works in PS/2 mode and not USB, USB cable is incorrectly connected.
		  B. If keyboard works in USB mode and not PS/2, PS/2 cable is incorrectly installed
		• Check all cable connections between the RACKMUX and the computer.

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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