

RLK150-8KVM

**1U Monitor Keyboard Unit
With KVM Switch**

Quick Start Guide

Revision 1.0

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Table Of Contents	Page
Before You Begin	3
Check the box contents!	3
Hardware Requirements	3
Product Specification	5
Understanding Your RLK150-8KVM	6
Button and Features	7
KVM Ports & Cables	7
“L” Mounting Brackets	8
RLK LCD Monitor Maintenance Tips	8
Rack Installation	9
Quick Start-Up	12
Monitor OSD Features	14
Instant Brightness Control	14
Instant Contrast Control	14
OSD Main Menu	15
Phase Adjustment	15
Pitch Adjustment	16
H-Center Adjustment	16
V-Center Adjustment	17
Zoom Function	18
Color Function	18
Language Selection	19
Optional Function	20
KVM OSD Features	23
Port LEDs	23
Port Selection Switches	23
Rear View	23
Simple Installation	24
KVM Cables Hot Plugging	24
Restarting RLK150	24
Port Selection	25
Port ID Numbering	25
Hot Key	25
OSD Operation	26
OSD Navigation	26
OSD Keywords	27
OSD Function Keys	28
KVM OSD Security	32
Troubleshooting Guide	33
RLK150 LCD Display Specifications	34

Before You Begin

Check the box contents!

RLK150-8KVM package should contain the following:

- RLK150-8KVM 1U Rack Mount KVM Console Unit.
- One RLK150BLK-KVMC3 6 ft Cable. (Optional KVM cables can be purchase from www.rackmount.com)
- One 110V or 220V power cord.
- One RLK150-8KVM Quick Start Guide

If any of the above items are missing, please contact PCW Microsystems, Inc. (www.rackmount.com) for replacements before continuing with the installation process.

Hardware Requirements

Single Computer Connection - RLK150-8KVM requires a computer with following ports to operate:

- A VGA, SVGA Video Port (75hz Refresh Rate Recommended)
- A 6-pin mini-DIN PS/2 Keyboard Port
- A 6-pin mini-DIN PS/2 Mouse Port

Multiple Computers Connections – RLK150-8KVM requires each computer with following ports and an extra KVM cable for each computer.

- A VGA, SVGA Video Port (75Hz Refresh Rate Recommended)
- A 6-pin mini-DIN PS/2 Keyboard Port
- A 6-pin mini-DIN PS2 Mouse Port
- A RLK150BK-KVMC3 (3 ft) KVM Cable or a RLK150BLK-KVMC6 (6 ft) Cable for each computer. (KVM cable can be order on-line via URL link <http://www.rackmount.com/Rackacc/RLK150.htm>)



WARNING:

Do not turn on the power to RLK150, if the unit shows signs of crack or damage to the LCD display screen. Some circuitry in the RLK150 may continue to operate even though the front panel power switch is off. For your safety, never open the RLK150. Repair service should be performed by qualified service personnel.

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with this unit. If the instructions for the RLK150-8KVM are inconsistent with these instructions or the instructions for accessory modules, contact PCW Microsystems, Inc (www.rackmount.com) to find out how you can ensure that your RLK150 unit meets safety and regulatory requirements.

Product Specification

RLK150-8KVM

Standard	Meets EIA RS-310C 1U 19" rackmount standard
Dimension (H x W x D)	44 x 440 x 492 (mm) 1.732" x 17.32" x 19.37"
LCD Panel	15" Active-Matrix TFT LCD
Tempered Glass	2 x 249 x 333 (mm) 0.078" x 9.80" x 13.11"
Maximum Display Resolution	1024 x 768 (V. Freq 85Hz)
Input Signal	RGB Analog Video (15 pins DB15 connector)
Power Supply Wattage	30 Watts Auto-switching
Input Voltage	AC 88V – 264V Auto-Detect
KVM Switch Control	Front panel switch, Hot-Key & OSD control
KVM Support	Up to 8 Systems per RLK150; Cascade to 3 levels, up to 512 systems
Display Control	OSD, Power On/Off, Brightness, Contrast, Auto-Sync, Scale
Plug & Play	DB25 system port
Keyboard	PS/2, 83 key (US vers) or 84 keys (international vers.)
Trackball	PS/2, heavy duty 16mm trackball
Gross Weight	17 Kg, 37.48Lbs.
Warranty	One Year Parts & Labor (Return to service depot)

Understanding Your RLK150-8KVM

Congratulations on the purchase of your new RLK150 1U rackmount LCD Monitor with keyboard unit and KVM function. This Quick Start introduces you to your new rackmount LCD monitor unit, guides you through rack kit installation, and helps you get the unit started.



Opening and Closing RLK150-8KVM

Place an RLK150-8KVM unit on a flat surface of a table. Please do not power on the unit yet.

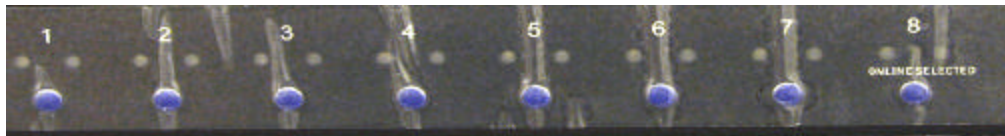


With the front security key insert into the lock, slowly turn the key to the unlock position. Now, you have the access to all RLK150's display control buttons. Next, remove the LCD display screen plastic protector from the LCD display. Also, remove the plastic laminated protector taped on to the control buttons.

Button and Features

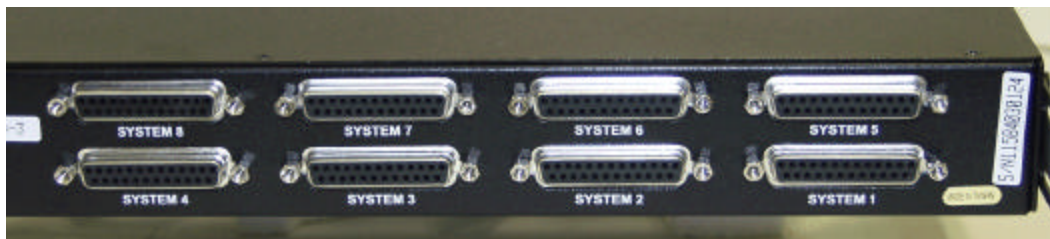


The above is the display control buttons.



The KVM switch buttons

KVM Ports & Cables



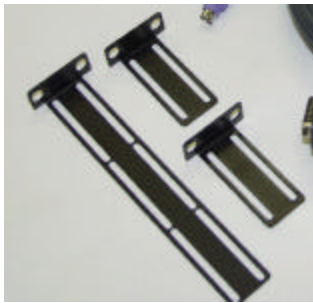
RLK150-8KVM supports 8 KVM (Keyboard, Video, and Monitor) Ports. The unit can be cascade to 3 levels and up to 512 systems using an optional RLK150 KVM 8 Ports Expansion Unit (Model#RLK150-EXP-8).

RLK150 KVM ports are labeled with “System 1”, “System 2” and so on.



RLK150 KVM cable is a special molded 25-pins cable with DB25 connector at one end and PS/2 mouse/keyboard/Video connectors on the other end. The KVM cables are available at following URL: (<http://www.rackmount.com/Rackacc/RLK150.htm>).

“L” Mounting Brackets



RLK150 supports standard rack cabinet mounting with cabinet depth up to 24”. Two sets of “L” mounting brackets are provided for rear mounting support. Due to heavy weight of a RLK150 unit, the “L” mounting brackets must be installed for proper operation.

RLK150 LCD Monitor Maintenance Tips

- Keep RLK150 away from heat and humidity environment.
- Do not use chemical liquid or sprayed cleaning detergent on the surface of the LCD display screen. Doing so might damage the unit. Apply moisture sheet or clothe gently on to the LCD display screen when cleaning the unit.
- Turn off the RLK150 LCD Monitor when not use. This extends the life of the unit.

Rack Installation

The RLK150 Rackmount monitor unit comes with mounting bracket hardware that allows you to install it into a rack cabinet. The following procedures describe how to mount the RLK150 unit in to a rack cabinet.



CAUTION:

Some racks and cabinets may not support the installation of a RLK150 unit. Before installing the unit, be sure to refer to the specifications provided by the rack cabinet manufacturer to insure proper mounting configurations and maximum specified loads are not exceeded. Currently, RLK150 does not support a center-mount relay rack.



WARNING:

RLK150 Rear support “L” mounting bracket must be installed before mounting the unit to a rack cabinet. Failure to do so will damage the RLK150’s front mounting ears.

1. Make sure the RLK150’s front key lock is turn to locked position.



2. Attach the left and right rear support “L” brackets to each side of the RLK150 unit.



3. Mount two screws to each side of the RLK150 and secure the “L” brackets.
4. Install the RLK150 unit at the upper-middle position of a rack cabinet.
5. Secure the front of RLK150 unit with two 10-32 rack screws. One on each of the RLK150's rack mount ear.
6. Secure the rear of the RLK150 unit with two 10-32 rack screws. One on each of the RLK150 rear support “L” mounting bracket.
7. Connecting the first RLK150 KVM cable to the unit's “System 1” KVM port.



8. Turn the rear on/off switch to OFF position.



9. Connecting the power cord to RLK150's rear power socket.
10. Connecting the first RLK150 KVM cable to a computer's PS2 keyboard, PS2 mouse and Video port.
11. Connecting the power cord to an electrical outlet.
12. Turn the RLK150 rear on/off switch to ON position.
13. Unlock the front key-lock and slowly slide out the RLK150 unit from the cabinet.
14. Press the (I) ON button from the RLK150 console display. Powering up the RLK150 unit.



15. Press the “blue” button on the System “1” KVM Switch.



16. At this point you should see the display screen from your first computer unit. If you do not see a screen, please check “**Troubleshooting Guide**” Section for help.
17. Repeating step 7 to 16 for additional KVM port installation.

Quick Start-Up

1. Unlock the RKL150-8KVM front security lock.
2. Slowly pull and slide out the RLK150 from the rack cabinet.
3. Flip open the LCD display panel.
4. Power on the RLK150-8KVM unit by turn on the master power switch located at the back of the RLK150 unit.



5. Press the (I) ON/OFF button located at the front console to power on the LCD display monitor.

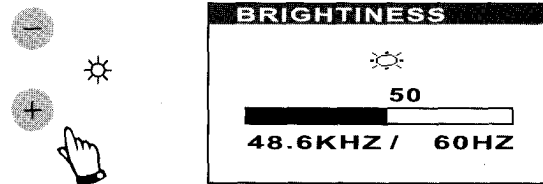


6. Press the (A) AUTO button to automatically calibrate the TFT Screen to your computer's video frequency.

7. Press the button “1”, “2”, “3” to switch between computer display screens.
8. Press the [CTRL] key Once. Press the [CTRL] Key second time. This allows you to access the KVM OSD (On Screen Display) features. See “KVM OSD Features” section for more information
9. Press [ESC] key to exit the KVM OSD Menu
10. Press (I) ON/OFF button to power off the LCD monitor display
11. Fold the LCD display and push the unit back to the rack cabinet

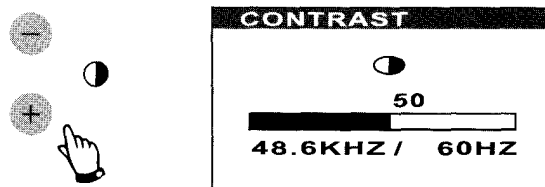
Monitor OSD Features

Instant Brightness Control



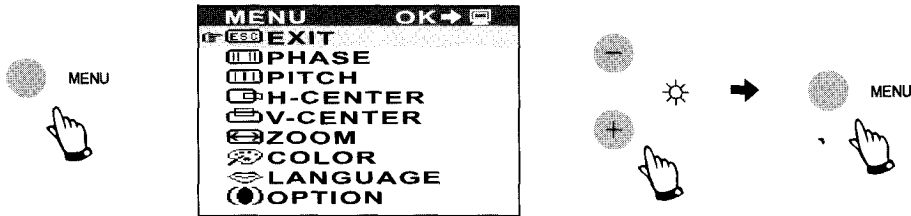
1. Press "+" or "-" button will display the "Brightness" icon.
2. Press either "+" or "-" button again will either increase or decrease the video raster luminance, respectively.

Instant Contrast Control



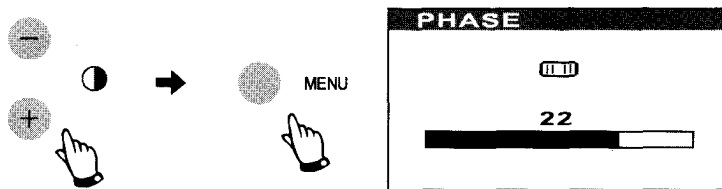
1. Press "+" or "-" button will display the "Contrast" icon.
2. Press "+" or "-" button again will either increase or decrease the back light luminance, respectively.

OSD Main Menu



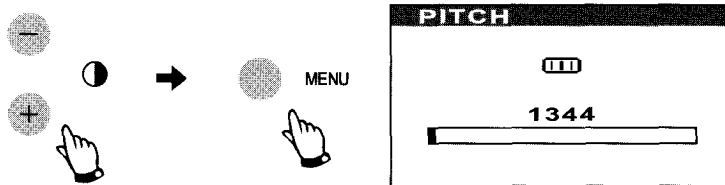
1. Press Menu icon button will display the OSD menu icons.
2. Press "+" or "-" button to select a desire function from the menu, then press Menu button again to activate the selected function.
3. OSD menu will disappear after 20 seconds if no activity has been detected. To manually close the OSD menu, select "Exit" from the menu, and then press Menu button again. Or press OSD button twice while in any sub menu.
4. The OSD main menu includes functions as Exit, Phase, Pitch, H-Center, V-Center, Zoom, Color, Language, and Option.

Phase Adjustment



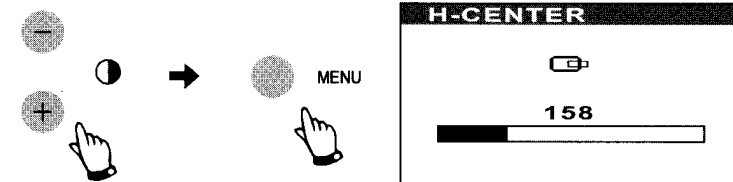
1. Adjust "Pitch" function first, before adjust "phase" function.
2. Select "phase" function from the OSD main menu.
3. Press "+" or "-" button to reach a best possible display performance by eliminating noise and jitter from the display.

Pitch Adjustment



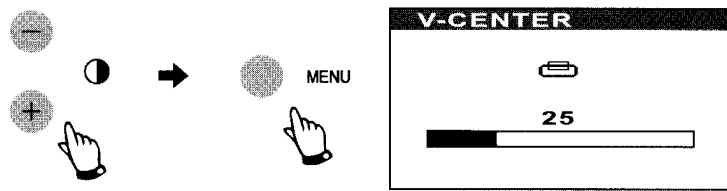
1. Select "Pitch" function from the OSD main menu.
2. Go to computer "Shut Down Windows". Please refer to computer user manual.
3. Press "+" or "-" button to remove a moving vertical black bar.
4. Return to normal computer operation by selecting "Cancel" from the "Shut Down Windows".

H-Center Adjustment



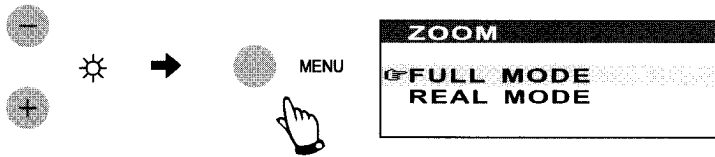
1. Select "H-Center" function from the OSD main menu.
2. Press "+" or "-" button to move the display in horizontal direction

V-Center Adjustment



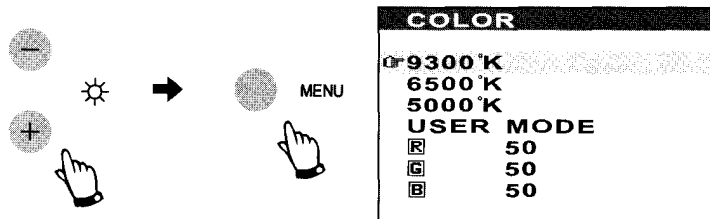
1. Select "V-Center" function from the OSD main menu.
2. Press "+" or "-" button to move the display in vertical direction.

Zoom Function



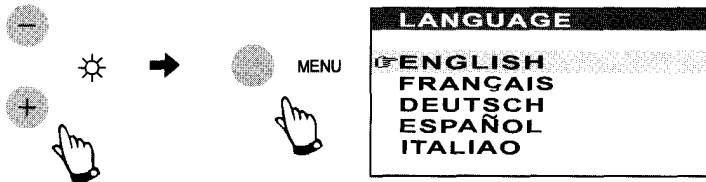
1. Select "Zoom" function from the OSD main menu.
2. Select "+" or "-" button to highlight either "real" or "full" mode.
3. Press "OSD" button to activate the highlighted mode.

Color Function



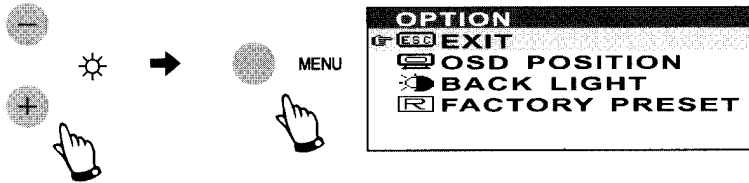
1. Select "Color" function from the OSD main menu.
2. Press "+" or "-" button to select a desire color temperature for the display, automatically.
3. Select "User Mode" from the color menu will allow individual color R, G, B, to be set to create a desire color coordinate.

Language Selection

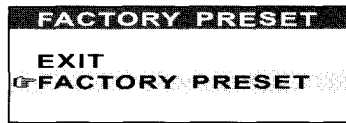
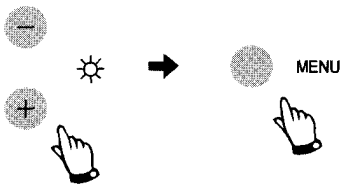
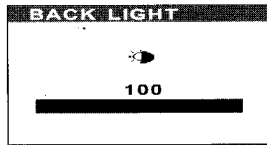
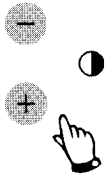
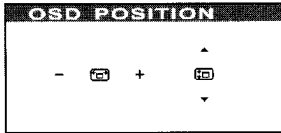
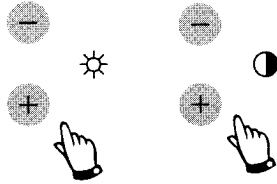


1. Select "Language" function from the OSD main menu.
2. Select "+" or "-" keys to activate a desire language.

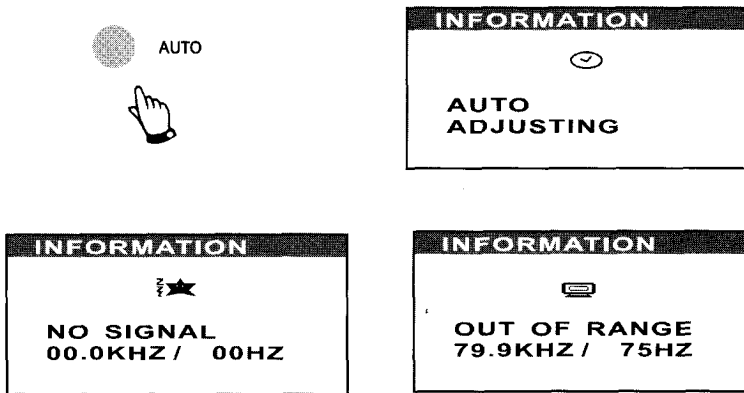
Optional Function



1. Select "Option" function from the OSD main menu.
2. Press "+" or "-" button, select a desire function from the option menu, then press Menu button again to activate the selected function.
3. To manually close the option menu, select "Exit" from the menu, and then press Menu button again. While "OSD-Position" icon on the menu is selected, press Menu button again to activate OSD position sub menu
4. Press "+" or "-" button, will move the OSD menu position in horizontal direction, and press "+" or "-" button will move the OSD menu position in vertical direction.
5. Press "+" or "-" button, while select the "Backlight" to press Menu button will control the back light
6. of the LCD module.
7. Highlight "preset" and press "Menu" button to recall factory default parameters. While the OSD screen displays the information "FACTORY PRESET" few seconds and disappears, all user settings will be replaced by factory default value.



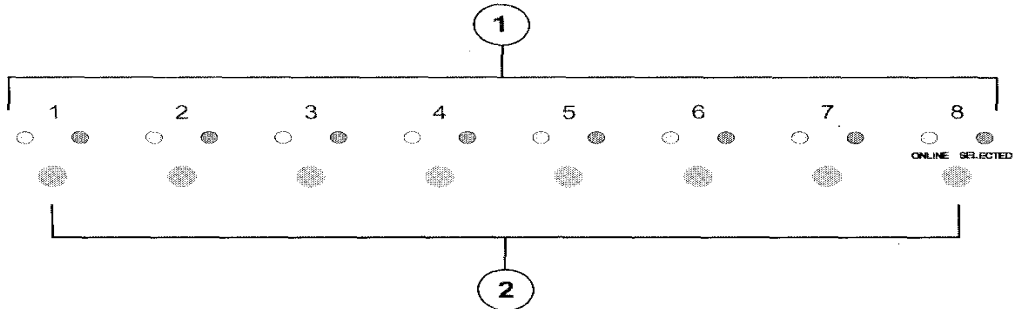
OSD Information



- **Auto Adjusting** - Press "Auto" button, the information icon will pop up while the present timing is auto processing.
- **No Signal** - "No Signal" information icon comes when PC stops horizontal or vertical synchronization signals, and this monitor is going to power saving state.
- **Out Of Range** - "Out Of Range" information icon comes when the wrong range signal is detected.

KVM OSD Features

KVM Switch Console Front View



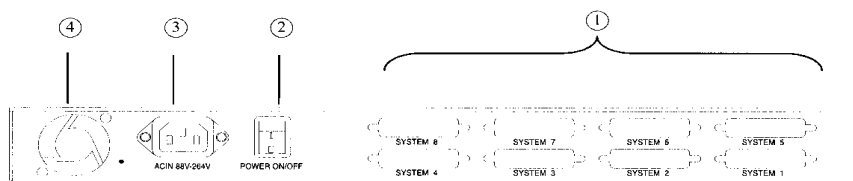
Port LEDs

- ORANGE light indicates a computer is attached to the corresponding KVM port. If the LED is blinking, it is being accessed by a cascading Master View Switch.
- GREEN light indicates the currently selected KVM port. When Auto Scan mode is on, the LED shows GREEN blinking light.

Port Selection Switches

- Press the “Blue” button on the console display to access the computer attached to the corresponding KVM port.
- Press the “Blue” buttons 1 and 2 simultaneously for 3 seconds to perform Keyboard/Mouse Reset.
- Press the “Blue” buttons 7 and 8 simultaneously to start the Auto Scan Mode.

Rear View



1. DB 25 Pin connectors to connect 8 systems
2. Power switch
3. Power Inlet
4. Fan

Simple Installation

1. Use KVM and power cord provided with the RLK150-8KVM unit to connect your computer to the RLK150 unit
2. Turn on the computer
3. Turn on the RLK150-8KVM unit

KVM Cables Hot Plugging

The RLK150-8KVM supports hot plugging of KVM cables. In some rare case, the computer's keyboard and mouse freeze when hot-plugging a KVM cable, a keyboard and mouse reset may be necessary. Press the "Blue" buttons 1 and 2 simultaneously for 3 seconds to perform Keyboard/Mouse Reset.

Restarting RLK150

In some unlikely event that RLK150's keyboard and mouse is not responding to Hot-key or Port Selection, a restarting of the RLK150 is necessary to correct the problem. Following is a procedure for restarting a RLK150-8KVM unit.

1. Shut down all the computers that are attached to the RLK150 unit. In case you can not shut-down the computers, you must unplug all KVM cables that connect to the RLK150's KVM system port. This will stop the computers' from supplying the necessary power to the RLK150 KVM unit. Note: RLK150 KVM unit receives power from the computer's keyboard port.
2. Turn off the master power switch located at the back of RLK150 unit.
3. Wait for 10 seconds then powering up the computers or re-connect the KVM cables.
4. Now, the RLK150 unit should operate normally.

Port Selection

The RLK150-8KVM provides three methods of accessing KVM ports.

Manual Port Selection – Press the “Blue” KVM button to access the appropriate KVM port on the RLK150. After pressed the “Blue” button, the selection LED would light up to indicate the selected port.

Hotkey – Press combinations of hot key from the RLK150 keyboard unit. Press the **[Ctrl]** key follows by a **[Alt]** key, a **[Shift]** key, a **[1 – 8]** number key then by a **[Enter]** key to access the selected KVM port. Note: Do not press **[Ctrl]** and **[Alt]** keys at same time. Please press one key at a time for proper operation.

OSD – On Screen Display port selection. (Please see OSD Operation Section)

Note: Simultaneously pressing Port Selection buttons 7 and 8 to initiate the Quick View Scan feature. In the Quick View Scan mode, every KVM ports are scanned for activity.

Port ID Numbering

Each KVM Port on a RLK150-8KVM has a uniquely assigned Port ID Number. You can directly access the assigned KVM port by pressing a sequence of hot-keys.

Examples:

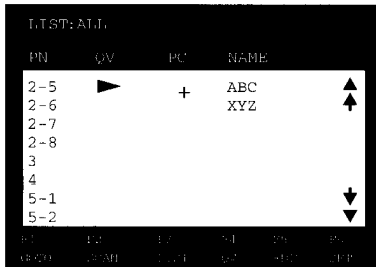
Access a computer attached to Port 3, key in 3 for the Port ID, as follows:
[Ctrl] -> **[Alt]** -> **[Shift]** -> **3** -> **[Enter]**

Hotkey

Hot-Key Sequence	Features
[Ctrl] [Ctrl]	Invokes the OSD (Default)
[Scroll Lock] [Scroll Lock]	Invokes the OSD (Alternate Method)
[Ctrl] [Alt] [Shift] [Port ID Number] [Enter]	Switches access to the computer that corresponds to the Port ID number (see Port Key In Examples, above).
[Ctrl] [Alt] [Shift] [0] [Enter]	To invoke Auto Scan mode.

OSD Operation

On Screen Display (OSD), provides a menu driven interface for accessing KVM features. To access OSD Main Menu, press the **[Ctrl]** key twice. Alternatively you can press the **[Scroll Lock]** key twice.



Press the **[ESC]** key to exit the OSD Main Menu.

Note: The keys must be on the same side (both left, or both right) of the keyboard.

OSD Navigation

[Esc] cancels the current selection, or dismisses the current menu and moves back to the menu one level above. If you are at the highest menu level, it deactivates OSD.

Use the Up and Down Arrow Keys or click on the Up and Down Triangle symbols

(▲ ▼) to move up or down through the list one line at a time.

Use [Pg Up] and [Pg Down] or click on the Up and Down Arrow symbols (Up 40) to move up or down through the list one screen at a time

To activate a port, move the Highlight Bar to it then press the [Enter] key.

OSD Keywords

Keywords	Meaning
PN	This column lists the Port ID numbers (Station Number - Port Number) for all the CPU Ports on the installation. The simplest method to access a particular computer is move the Highlight Bar to it, then press [Enter].
QV	If a port has been selected for Quick View scanning (see F2 and F4, below), an arrowhead displays in this column to indicate so.
PC	Lists all the computers that are Powered On and are On Line.
NAME	If a port has been given a name (see F5, below), its name appears in this column.

OSD Function Keys

Pressing a Function Key brings up a OSD submenu. For example, you can rapidly switch between ports, scan selected ports or limit the view list, designate a Quick View scanning and making OSD setting adjustments.

F1 Go To

This feature allows user to switch between KVM ports directly.

1. Move the Highlight Bar to the port you want then press **[Enter]** key
2. Key in the Port ID or Port Name then press **[Enter]** key
3. Return to the OSD Main Menu, press **[Esc]** key

F2 Scan

This feature initiates a *Quick View Scanning*, in which the OSD cycles through all ports that are selected in the List view (see F3, below). Press the **[Spacebar]** key to stop scanning.

F3 List

This function lets user broaden or narrow the viewing scope of KVM ports on the OSD lists.

Feature	Meaning
ALL	Lists the Port ID numbers and Names (if names have been specified - see F5), of all the ports on the installation.
QVIEW	Lists only the ports that have been selected for Quick View scanning (see F4, below).
POWERED ON + QVIEW	Lists only the ports that have been selected for Quick View scanning (see F4, below), and that have their attached computers Powered On.
QVIEW + NAME	Lists only the ports that have been selected for Quick View scanning (see F4, below), <i>and</i> have been assigned names(see F5, below).
NAME	Lists only the ports that have been assigned names (see F5, below).
POWERED ON	Lists only the ports that have their attached computers Powered On.

To make a choice, move the Highlight Bar to the desired item and press [Enter]. An icon appears before the selected item.

F5 Edit

This feature helps user to remember the name of the computer attached to a specific KVM port. The Edit feature allows create, modify, or delete port names.

1. Move the highlight bar to edit the port name
2. Press **[F5]** key
3. Key in the new Port Name, or modify/delete the old one
4. When finish editing, press **[Enter]** to exit the edit mode. Press **[ESC]** key to exit the OSD menu.

Note: The maximum number of characters allowed for the Port Name is 15. Legal characters include:

- All alpha characters: a - z; A - Z
- All numeric characters: 0 - 9 * +, -, /, :, ., and Space

F6 Set

This feature brings up an OSD configuration menu.

1. Move the highlight bar to a desired item, press **[Enter]** key.
2. On the submenu that appears next, move the highlight bar to the selection you want and press **[Enter]** key.

Setting	Function
CHANNEL DISPLAY MODE	Selects how the Port ID is displayed: the Number plus the Name (PN + NAME) ; the Number alone (PN); or the Name alone (NAME).
CHANNEL DISPLAY DURATION	Determines how long a Port ID displays on the monitor after a port change has taken place: 3 Seconds; or Always On.
CHANNEL DISPLAY POSITION	Allows you to position where the Port ID appears on the screen. Use the Arrow Keys, Pg Up, Pg Dn, Home, End, and 5 (on the numeric keypad with Num Lock off), to position the Port ID display, then press [Enter] to lock the position and return to the Set submenu.

Setting	Function
SCAN DURATION	Determines how long the display dwells on each port as it cycles through the selected ports in Quick View Scan Mode. The available options are: 3, 5, 10, 15, 20, 30, 40, and 60 seconds.
OSD ACTIVATING HOTKEY	Selects which Hotkey activates the OSD function: [Ctrl] [Ctrl] or [Scroll Lock] [Scroll Lock] . The default is the Ctrl key combination, but this may conflict with programs running on the computers, in which case, the Scroll Lock option should be used.
SET PASSWORD	Allows you to set a password in order to control access to: Locking/Unlocking the Console; Clearing the Name List; and Restoring Default Values. See <i>OSD Security Features</i> , below, for password setting details.
CLEAR THE NAME LIST*	Clears all Port Names from the Name List. You are asked to confirm before the procedure goes on. Key in Y, then press [Enter] to confirm. While the names are being cleared, a message appears on the display to indicate so. After the names have been cleared, another message appears to indicate that the procedure completed successfully
RESTORE DEFAULT VALUES*	Clears all settings from memory, and returns the unit to the factory defaults. You are asked to confirm before the procedure continues on. Key in Y, then press [Enter] to confirm. While the settings are being cleared, a message appears on the display to indicate so. After the settings have been cleared, another message appears to indicate that the procedure completed successfully
LOCK CONSOLE*	Locks / Unlocks the Console. When the Console is locked, only the current monitor screen displays. Attempts to input information from the console have no effect; attempts to switch to a different port, either from the Console or by pressing the manual switches, have no effect either. The only way to regain access to the computers is by Unlocking the Console. If a password has been set, you must provide the password in order to Lock / Unlock the Console. If no password has been set, pressing [Enter] will Lock / Unlock the Console.

If a password has been set, change OSD settings would require user to supply a proper password in order to access the settings.

KVM OSD Security

To prevent unauthorized access to the computers, the OSD provides a password security feature. If a password has been set, the OSD will request the user to supply a previously entered password.

To set up security password:

1. Press [F6] key to access the Setup configuration menu.
 2. Move the highlight bar to Set Password, then press the [Enter] key.
 3. Key in the new password then press the [Enter] key. The password may contain up to 8 characters. (A - Z, 0 - 9).
 4. Key in the new password again to confirm the entry then press the [Enter] key.
- If the two entries match, the new password is accepted and the screen displays the following message: SET PASSWORD OK
 - If the entries do not match, the screen displays the message: PASSWORD NOT MATCH

Note: To modify or delete a previously entered password, access the Password function as in Step 1, then use the backspace to delete the password

Troubleshooting Guide

The following guide is for reference purpose only. Contact a PCW Technical Support representative for additional help.

Symptoms	Possible Cause(s)	Solution
Text characters under Windows O.S. are fuzzy.	There is a mismatch between the computer's video output signal and RLK150 monitor.	Press AUTO button to recalibrate the LCD monitor to your computer video output frequency. This should greatly improve the text quality.
Pressing Hot Keys and no response	The computer is turned off. The connection between the computer and RLK150 is broken.	Check the KVM cable connections.
Mouse is not responding	Improper mouse reset	Reset the mouse and keyboard by simultaneously pressing Buttons 1 and 2 for 3-4 seconds. This should reset the mouse.
Keyboard is not responding	Improper keyboard reset	Reset the keyboard by simultaneously pressing Button 1 and Button 2 for 3-4 seconds. This should reset the keyboard.
Keyboard and mouse are not responding after pressing Button 1 and Button 2 for keyboard and mouse reset.	One of the KVM port might be locked up.	Physically reset the keyboard and mouse port by unplug the KVM cables from the RLK150's System Ports. Turn off the master power switch from the back of the RLK150. Reconnect the KVM cables to the RLK150's system ports. Power on the master power switch.
RLK150 unit is fully functional. But when connect to certain computer, there is no screen.	The video port of the computer might be output video signal out of the RLK150's LCD display specification. See "RLK150 LCD Display Specification" section for more information. This is a video card compatibility issue.	Replace the computer's video card that supports the display mode listed on the "RLK150 LCD Display Specification"
RLK150 unit was fully functional after the initial installation. But after few hours, I can no longer see some of the computers' screen when switching between video ports.	Some of the computers might be in the Green Energy Saving Mode or "Sleeping Mode". The computers had stopped sending video signals to RLK150.	Pressing the computers' power ON/OFF button or the special "Sleep" button to wake up the units.

RLK150 LCD Display Specifications

Specification:

- Active Matrix TFT LCD Panel
- Accepts RGB analog Input Video Signal
- Horizontal Frequency: 30Khz-70khz
- Vertical Frequency :50Hz- 85Hz
- Maximum Display Resolution: 1024 (H) x 768 (V)
- Power Input : 88VAC – 264 VAC @ 50 – 60Hz Auto Sensing
- Output 12 VDC @ 3A
- Output Power 2.5 Watts Per Channel.
- Frequency Response : 40 – 20KHz
- Input Impedance: 10K Ohm

Factory Preset LCD Timing Reference:

Resolution	H. Freq (KHz)	V. Freq (Hz)	Scan Type	Pixel Freq. (Mhz)
640 x 350	31.469	70	Non-Interlaced	25.175
640 x 350	37.861	85	Non-Interlaced	31.50
640 x 400	37.861	85	Non-Interlaced	28.32
720 x 400	31.469	70	Non-Interlaced	28.32
720 x 400	37.927	85	Non-Interlaced	35.50
640 x 400	24.83	56	Non-Interlaced	21.053
640 x 480	31.469	60	Non-Interlaced	25.175
640 x 480	35.000	66.67	Non-Interlaced	30.24
640 x 480	37.861	72	Non-Interlaced	31.50
640 x 480	37.500	75	Non-Interlaced	31.50
640 x 480	43.269	85	Non-Interlaced	36.00
800 x 600	37.879	60	Non-Interlaced	40.00
800 x 600	48.077	72	Non-Interlaced	50.00
800 x 600	46.875	75	Non-Interlaced	49.50
800 x 600	53.674	85	Non-Interlaced	56.25
836 x 624	49.715	74.536	Non-Interlaced	57.272
960 x 720	44.80	60	Non-Interlaced	56.00
1024 x 768*	48.363	60	Non-Interlaced	65.00
1024 x 768	56.476	70	Non-Interlaced	75.00
1024 x 768	60.023	75	Non-Interlaced	78.75
1024 x 768 **	35.522	86.959	Interlaced	44.90
1024 x 768	68.677	85	Non-Interlaced	94.50

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