

SmartRack 116

User Guide



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1. Welcome

Thank you for buying the SmartRack 116 system. This system is produced by Minicom Advanced Systems Limited.

Technical precautions

This equipment generates radio frequency energy and if not installed in accordance with the manufacturer's instructions, may cause radio frequency interference.

This equipment complies with Part 15, Subpart J of the FCC rules for a Class A computing device. This equipment also complies with the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. These above rules are designed to provide reasonable protection against such interference when operating the equipment in a commercial environment. If operation of this equipment in a residential area causes radio frequency interference, the user, and not Minicom Advanced Systems Limited, will be responsible.

Changes or modifications made to this equipment not expressly approved by Minicom Advanced Systems Limited could void the user's authority to operate the equipment.

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2. Introduction

Access and control multiple multi-platform computers from one Keyboard Video Mouse (KVM) console with the SmartRack 116 Switch system. Connect up to 16 computers to the SmartRack 116.

The SmartRack 116 is based on Minicom's innovative ROC technology in which each computer / server is directly connected to the switch via a ROC using standard CAT5 cable at a distance of up to 30m/100ft in a star configuration. No external power is needed at the remote ROCs.

To access servers, just slide out the drawer and flip up its top to display the large, high resolution 17" TFT LCD display.

The display is (VGA/SVGA/XGA/SXGA compatible) with front-panel high-quality controls and Touchpad for easy adjustment.

2.1 Features

- Hot-Swap - disconnect and reconnect computers without rebooting
- Scan-mode operation with variable time interval
- 1U Rack mountable
- Operate the system using an On Screen Display (OSD)
- Create multi-level cascade arrangements. For example by cascading with the Smart 116, connect up to up to 256 computers in the system
- The computers can be placed up to 30m/100ft from the SmartRack 116
- Multi-platform interface— supports PS/2, and USB computers/servers

2.2 Compatibility

The SmartRack 116 is compatible with:

- PS/2, and USB computers/servers
- DOS, Windows, Linux, UNIX, Mac and all other major operating systems

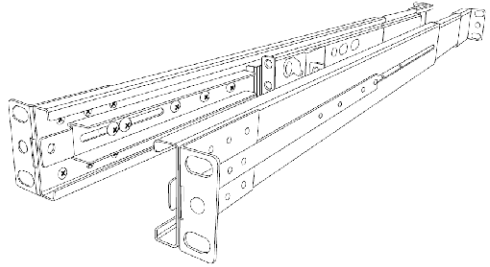
3. System components

The SmartRack 116 system consists of:

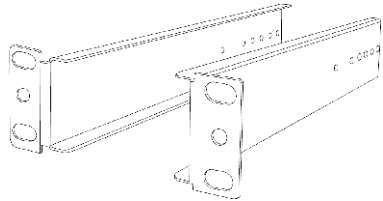
- SmartRack 116: Console + KVM Switch
- ROCs - PS/2, USB
- CAT5 cables (1.5m provided with ROCs)
- RS232 Download cable

3.1 Hardware kit contents

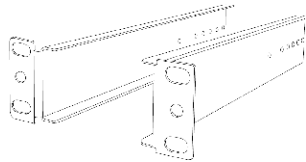
Rail with front and rear bracket x 2,
for rack depth of 614 ~ 800 mm.
Right and left sides are different.



Long bracket x 2. (For increased rack
depth of 905 ~ 990mm)



Medium bracket x 2. (For increased rack
depth of 800 ~ 905mm)




Short bracket x 2



Bracket attachment x 2

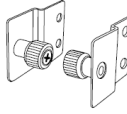



Note! The short bracket and bracket attachment for a rack depth of 504~ 614 mm and without a KVM switch connected to the drawer.

Flat screws x 6 (for rail mount to console body) 

Screws x 6 

Bracket A with thumbscrew x 2



Screws x4 

Keys x 2.



3.2 Pre-installation guidelines

- Switch off all computers
- Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise
- Ensure that the maximum distance between each computer and the SmartRack 116 does not exceed 30m/100ft

3.3 Avoiding general rack mounting problems

Elevated operating ambient temperature

The operating ambient temperature of the rack environment may be greater than the room ambient when installing into a closed or multi-unit rack assembly. So install the equipment in an environment compatible with the maximum rated ambient temperature.

Reduced airflow

Install the equipment in a rack in such a way that the amount of airflow required for safe operation is not compromised.

Mechanical loading

Mount the equipment in the rack in such a way that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit overloading

When connecting the equipment to the supply circuit, consider the effect that overloading of circuits might have on over-current protection and supply wiring.

Reliable earthing of rack-mounted equipment should be maintained. Give attention to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

3.4 Connecting to a rack

Note! For increased rack depth of between 800 ~ 990mm, first change the bracket to the medium or long bracket, see section 3.5 on page 9.

Note! The illustrations below show the connections to one side of the SmartRack 116. The connections are the same for the other side.

1. Move the rail until two screws appear, see Figure 1.

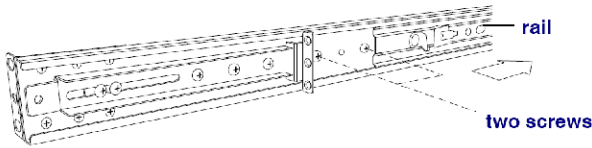


Figure 1 Exposing the 2 screws

2. Loosen slightly the 7 screws as shown below.

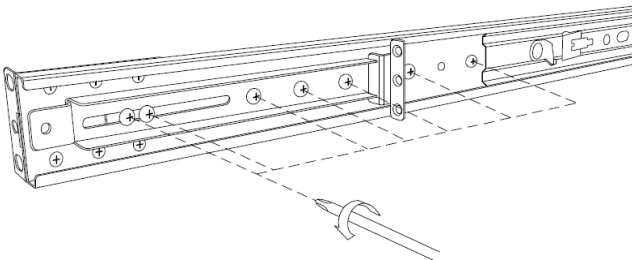


Figure 2 Loosen 7 screws

3. Adjust the rear bracket to fit your cabinet, see below.

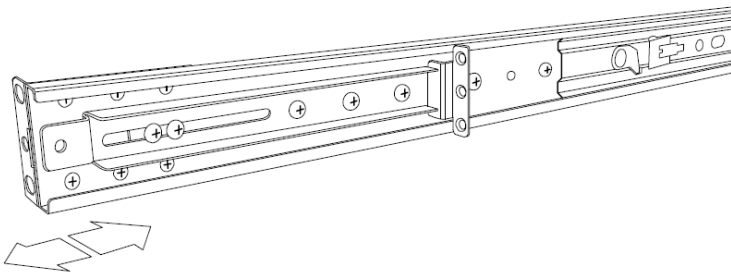


Figure 3 Adjusting the bracket

4. Install the front and rear bracket onto the cabinet, see figure below.

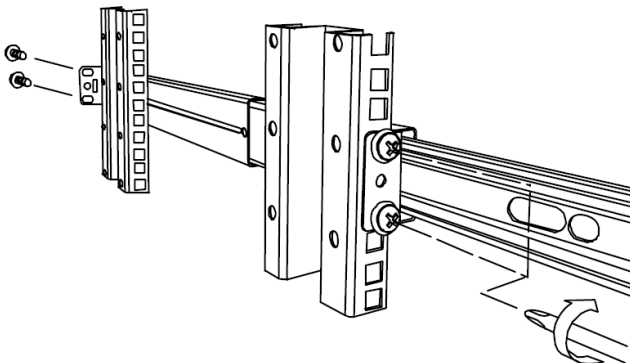


Figure 4 Installing front and rear bracket on cabinet

5. Tighten the 7 screws as shown below.

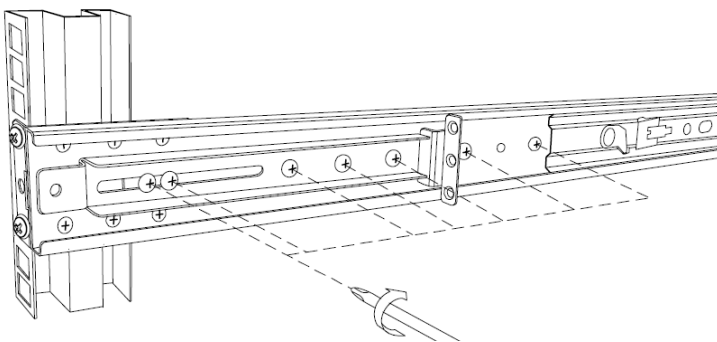


Figure 5 Tightening the 7 screws

6. Repeat the steps above to connect the other rail to the other side of the rack.
7. Slide the SmartRack console between the rails as shown below.

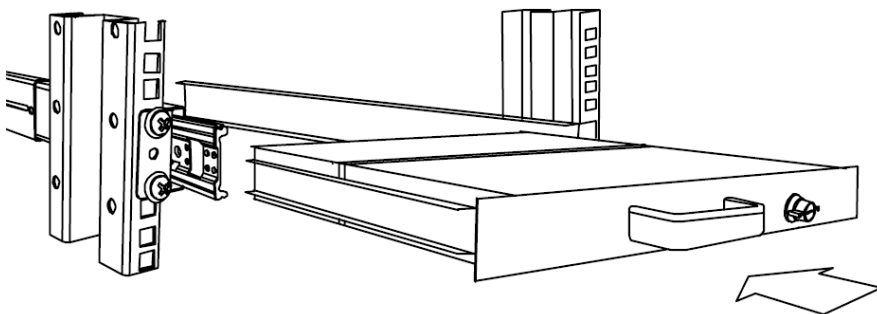


Figure 6 Sliding the SmartRack between the rails

8. Unlock and pull both left and right rail-lock switches together – see below – and push the console all the way into the rack.

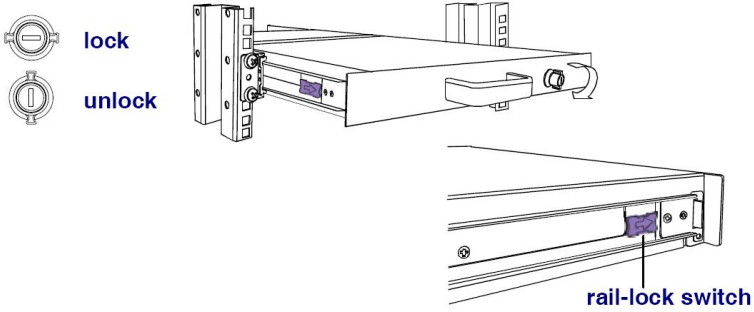


Figure 7 Rail-lock switch

9. Connect three flat screws to the rear of the console on both sides. See figure below.

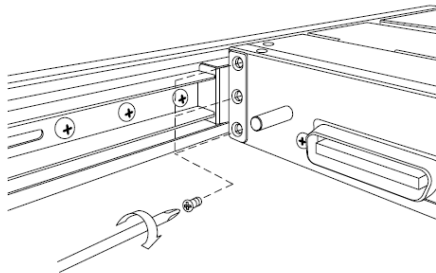


Figure 8 Connecting three flat screws to the rear of the console

The console now sits snugly in the rack, see Figure 9.

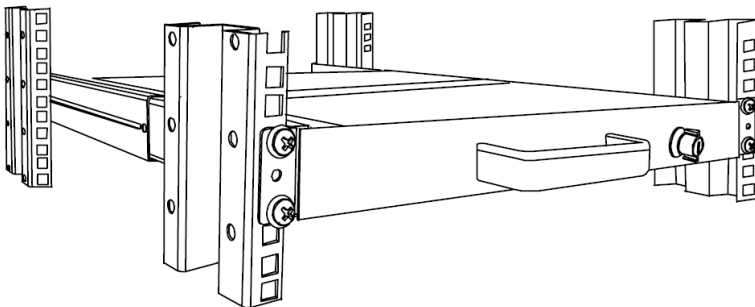


Figure 9 Console in the rack

3.5 Using the medium or longer bracket

For a rack depth of 800 ~ 905mm, use the medium bracket. For a rack depth of 905 ~ 990mm, use the longer bracket.

To replace the bracket with the medium or longer bracket:

1. Loosen the 7 screws as shown below.

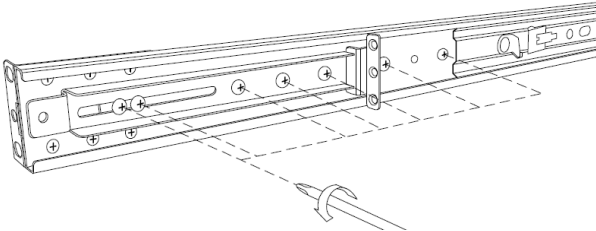


Figure 10 Loosening the 7 screws

Remove the six (different) screws as shown below.

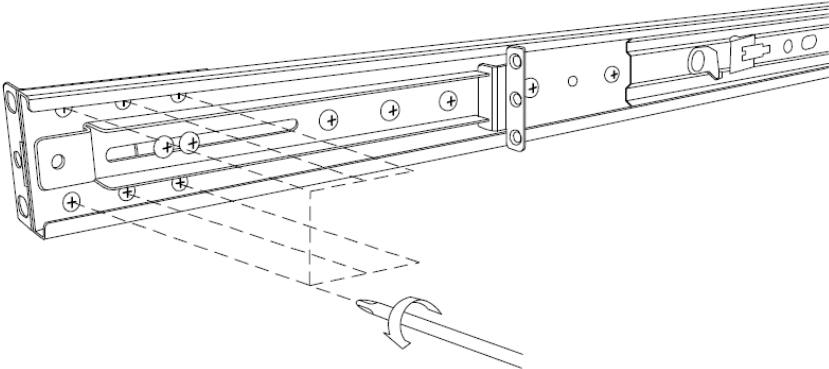
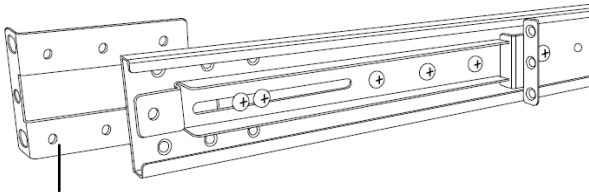




Figure 11 Removing the six screws

2. Take the rear bracket out, see below.



original bracket

Figure 12 Taking the rear bracket out

3. Insert the medium/long bracket into the rail then adjust the bracket to fit your cabinet.
4. Tighten at least 2~3 screws along the length you need. **Note!** For medium bracket use the round screws , and for the long bracket use the flat screws . See Figure 13.

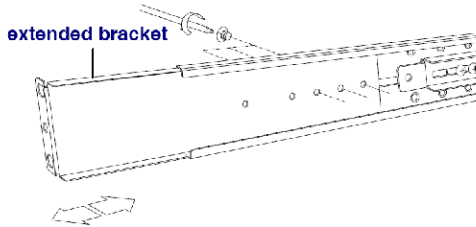


Figure 13 Inserting and tightening the medium/long bracket

5. Repeat the above steps for the other side.
6. Go to section 3.4 Connecting to a rack.

3.6 Connecting the KVM Switch 116

1. Connect the bracket A to the sides of the Switch using the two 6mm screws provided see figure below.

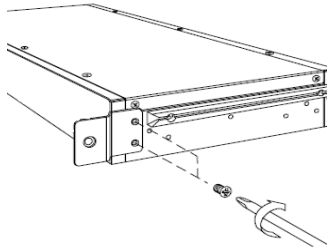


Figure 14 Connecting the bracket A to the sides of the Switch

2. Slide the Switch 116 into the rail and into the back of the SmartRack console until you hear a click. See the figure below.

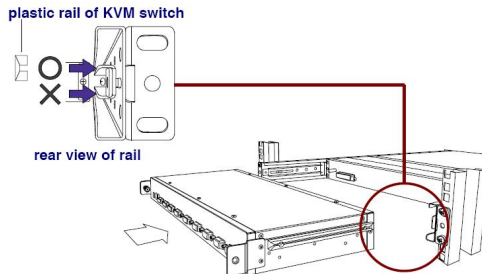


Figure 15 Slide switch into back of SmartRack

3. Secure the Switch 116 to the rail by inserting the thumbscrews through the bracket and into the rail and tightening them, see Figure 16.

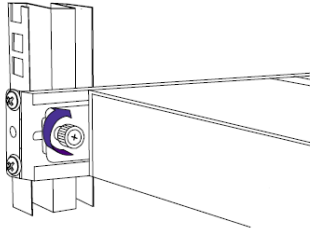


Figure 16 Tightening the thumbscrews

4. The SmartRack 116 system configuration

You connect servers to the SmartRack 116 via ROCs. Figure 17 illustrates the basic configuration of the 116 Switch.

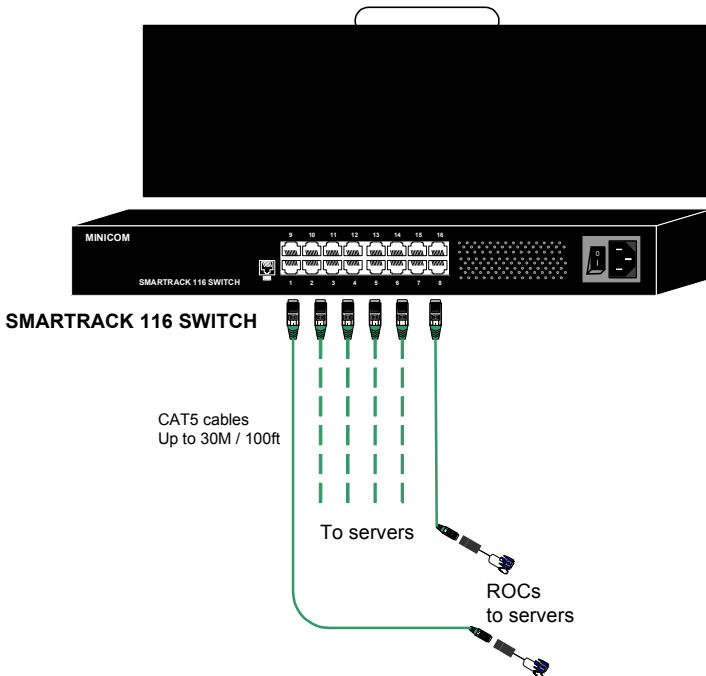


Figure 17 SmartRack 116 Switch system configuration

4.1 The KVM Switch 116

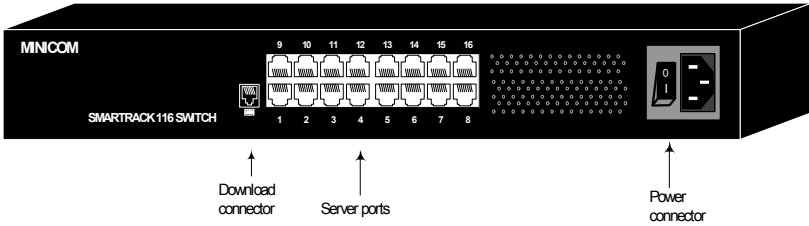


Figure 18 116 Switch ports

4.1.1.1 Connector table

Connector	Function
Download	To update firmware of the OSD, Switch and ROCS.
Server ports	Connect to servers via ROCS

4.2 Connecting ROCS to servers

Each computer/server is directly connected to the Switch 116 via the appropriate ROC using CAT5 cable in a star configuration. No external power is needed at the remote ROCS. The ROCS draw their power from the computer's keyboard port (ROC PS/2) or from the USB port (ROC USB). The figures below illustrate the ROC PS/2 and ROC USB.

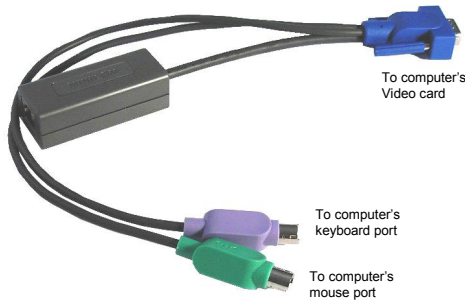


Figure 19 ROC PS/2

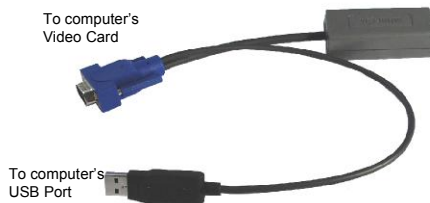


Figure 20 ROC USB

4.2.1 Connecting a ROC PS/2

Figure 21 illustrates the ROC PS/2 connections.

You can connect the ROC PS/2 to a powered on computer, but it must be in the following order:

1. Connect the Mouse connector to the computer's Mouse port.
2. Connect the Keyboard connector to the computer's Keyboard port.
3. Connect the Screen connector to the computer's Video port.

Failure to connect in the above order while the server is running, may lead to the mouse malfunctioning until the server is rebooted.

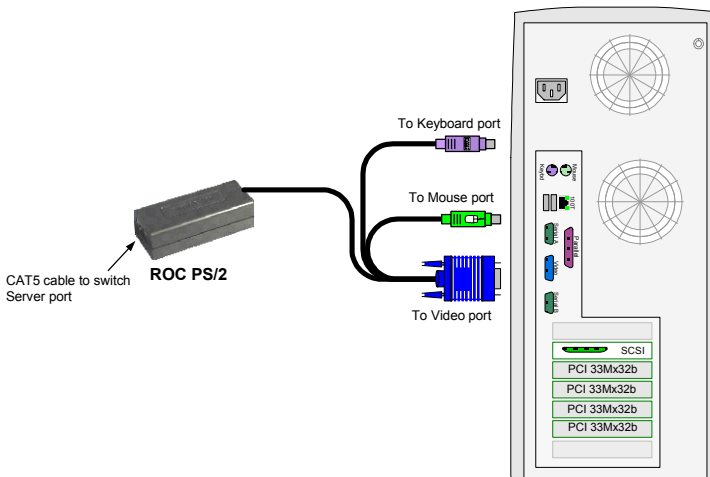


Figure 21 ROC PS/2 connections

4.2.2 Connecting a ROC USB

The ROC USB supports Windows 98 SE and later, MAC, SUN, SGI and all modern Linux distributions. Figure 22 illustrates the ROC USB and its connections.

To connect the ROC USB:

1. Connect the Screen connector to the computer's Video port.
2. Connect the USB connector to the computer's USB port.

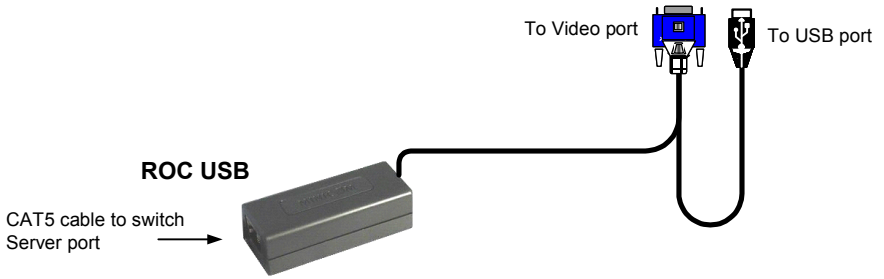
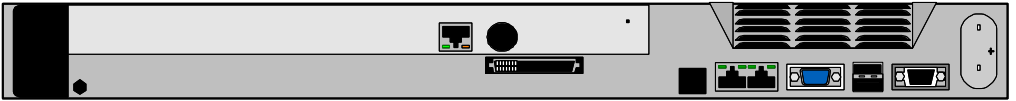


Figure 22 ROC USB

4.3 Connecting the CAT5 cables

1. Connect one connector to the ROC's RJ45 port.
2. Connect the other connector to one of the SmartRack Switch Server ports.
3. Follow the above 2 steps for each computer.

4.4 Connecting the power supply

1. Connect the Switch to the power supply using the Power cord provided. Only use the Power cord supplied with the unit.
2. Power on the Switch.

4.5 Cascading the SmartRack 116

You can cascade the SmartRack 116 Switch to Smart CAT5 switches. You do so by connecting the Smart CAT5 Switches to ROCs. Follow the connections as illustrated in the figure below.

With cascading you can connect up to up to 256 computers.

A lower level Switch must have a different hotkey to display its OSD than a higher level switch. Changing the OSD display hotkey is explained on page 20 below.

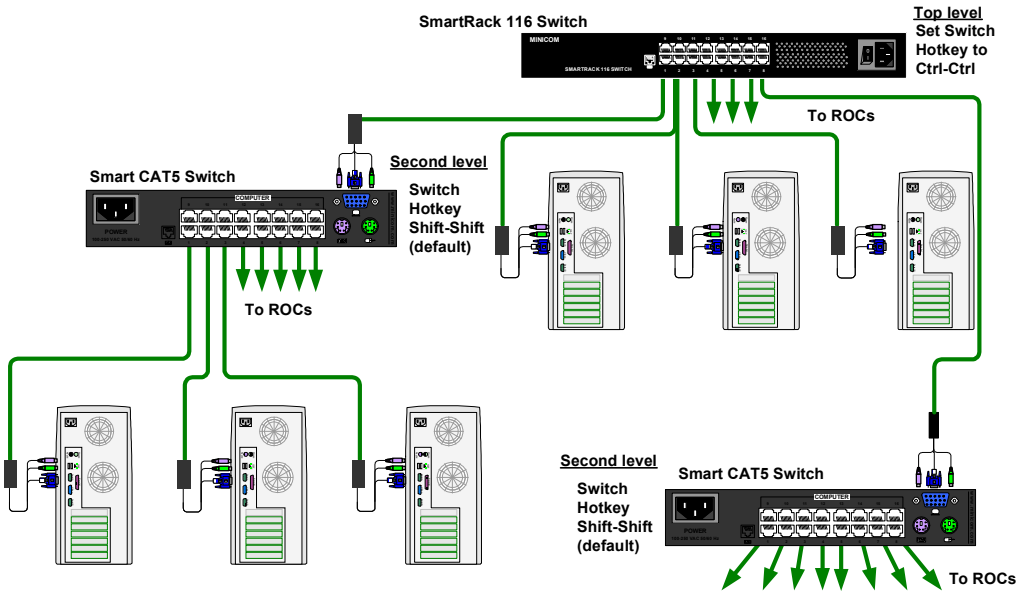


Figure 23 Cascading SmartRack 116 Switches

5. Operating the SmartRack 116 system

Switch between the connected computers by either

- Keyboard hotkeys
- The OSD (On Screen Display)

The OSD is also the place to adjust various settings as explained below.

When switching computers the illuminated LED of the top bank indicates which computer is currently selected.

5.1 The keyboard hotkeys

To switch to the next computer forwards press **Shift** then, +. Release **Shift**, before pressing +.

To switch to the next computer backwards press **Shift** then, -. Release **Shift**, before pressing -.

Note! With a US English keyboard you can use the + key of the alphanumeric section or of the numeric keypad. With a Non-US English keyboard only use the + key of the numeric keypad.

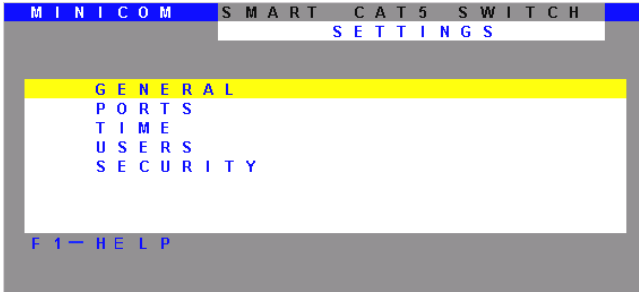


Figure 25 Settings window

Note! When the OSD is password protected (explained below) only the Administrator has access to the **F2** settings window.

5.2.4 The General settings

With the GENERAL line highlighted, press **Enter**. The General settings window appears see Figure 26.

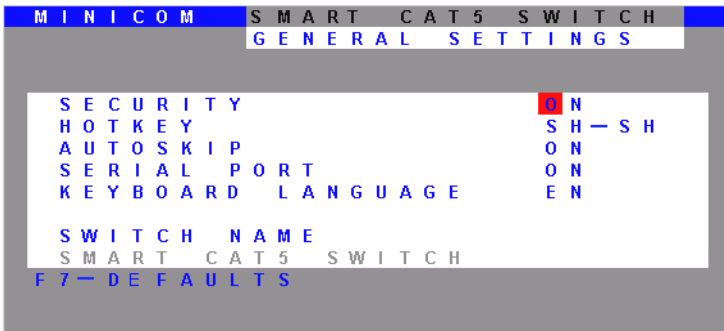


Figure 26 General Settings window

From this window you can do the following:

5.2.4.1 Security

The OSD comes with an advanced password security system that contains 3 different security levels. Each security level has different access rights to the system.

These levels are as follows:

5.2.4.2 Administrator (Status A)

The Administrator can:

- Set and modify all Passwords and security profiles
- Fully access any computer
- Use all OSD functions

5.2.4.3 Supervisor (Status S)

The Supervisor can:

- Fully access any computer
- Access the following OSD functions only –**F4** Scan, **F5** Tune and **F6** Moving the Confirmation label.

5.2.4.4 User (Status U)

There are 6 different Users in the SmartRack 116 system. Each User has a Profile set by the Administrator that defines the access level to different computers. There are 3 different access levels; these are explained on page 23.

5.2.4.5 Activating password protection

By default OSD access is not password protected. Only the Administrator can password-protect the OSD or disable password protection.

To do so:

1. In the General settings window navigate to the Security line.
2. Press the Spacebar to toggle between Security On and Off. The password box appears.
3. Type the Administrator's password (default is "admin").
4. Press **Enter**. The new security status is set.

If you forget the Administrator's password, go to www.minicom.com. From the Support menu select Smart Switches. There you will find information that explains how to restore a lost password or reset the switch to its default settings including the default password.

5.2.4.6 Displaying the OSD of cascaded switches

When you have cascaded Smart CAT5 Switches, a lower level Switch must have a different OSD display hotkey than a higher level switch. (See page 15.)

The hotkeys can be any of the following:

- Shift, Shift (default)
- Ctrl, Ctrl
- Ctrl, F11
- Print Screen

To change the top level hotkey:

1. Navigate to the HOTKEY line.
2. Choose a different hotkey than the **Shift, Shift** hotkey of the lower level Switches. Toggle between the options using the Spacebar.

To change a lower level hotkey:

1. Connect a keyboard and monitor to the lower level Switch and press **Shift, Shift**. Its OSD appears.
2. Press **F2** and select GENERAL. The General settings window appears.
3. Navigate to the HOTKEY line.
4. Choose a different hotkey than the hotkey of the of the top layer switch. Toggle between the options using the Spacebar.

Note! When a lower level Switch hotkey is changed, there is an adjustment to be made in the higher level Switch's OSD: This is explained on page 22-(HKEY) hotkey - Cascading.

5.2.4.7 Autoskip

When Autoskip is on, you can only access the active computers. When Autoskip is off, you can access active and inactive computers. (This includes operating the Switch via the OSD, front panel buttons or hotkeys).

To change the Autoskip setting:

1. Navigate to the Autoskip line.
2. Toggle between the options using the Spacebar.

5.2.4.8 Serial port

The Serial port is used for the Control Management program. Serial port On means the program can be used.

To change the Serial port setting:

1. Navigate to the Serial port line.
2. Toggle between the options using the Spacebar.

5.2.4.9 Changing the Keyboard language

In the OSD the names of the computers can be written in 3 different languages – English (EN), German (DE), and French (FR). The keyboard is preset to English; this can be changed as follows:

1. Navigate to the Keyboard language line.
2. Toggle between the options using the Spacebar.

5.2.4.10 Editing the Switch name

You can substitute up to 18 characters in the line. A space constitutes a character. When there is more than one switch in the system give each Switch's OSD a different name.

5.2.5 F7 Defaults

Press F7 to return the OSD to the factory default settings. Note! All changes made will be removed.

5.2.6 The Ports settings

From the General Settings, return to the Settings window by pressing **Esc**. Navigate to the Ports line and press **Enter**. The Ports settings window appears see Figure 27.

MINICOM SMART CAT5 SWITCH			
PORTS SETTINGS			
	NAME		KB HKEY
0 1	COMPUTER	0 1	PS NO
0 2	COMPUTER	0 2	U 1 NO
0 3	SWITCH	0 3	PS CL F 1 1
0 4	COMPUTER	0 4	PS NO
0 5	COMPUTER	0 5	U 2 NO
0 6	COMPUTER	0 6	U 3 NO
0 7	COMPUTER	0 7	PS NO
0 8	COMPUTER	0 8	PS NO

Figure 27 Ports Settings window

5.2.6.1 Editing the computer name

In this window you can edit the computer names with up to 15 characters. When you have a cascaded CAT5 KVM Switch connected to a Computer port give the switch a distinct name. See Figure 27.

To erase a character:

Select it and press the Spacebar. Blank spaces remain in place of the erased character.

To erase an entire line:

Place the cursor at the beginning of the line. Keep the Spacebar depressed until the line is erased.

5.2.6.2 Keyboard (KB)

By default the Keyboard mode is set to PS, which is suitable for Windows, Linux, Mac OS, SUN Solaris and most other operating systems.

Only if you are using a ROC PS/2 change the KB column as follows for the following UNIX operating systems:

- U1 for HP UX
- U2 for Alpha UNIX, SGI, Open VMS
- U3 for IBM AIX

5.2.6.3 (HKEY) hotkey - Cascading

When there are cascaded switches, and the lower level Switch has had its OSD display hotkey changed, you must do the following:

Adjust the HKEY setting in the Ports Settings window of the higher level switch to reflect the lower level switch's new hotkey.

To reflect the new hotkey:

1. On the line to which the Switch is connected, press Tab to jump to the HKEY column.
2. Toggle between the options using the Spacebar.
3. Return to the Settings window by pressing **Esc**.

5.2.7 The Time settings

In the Settings window navigate to the Time line and press **Enter**. The Time settings window appears see Figure 28.

M I N I C O M			S M A R T C A T 5 S W I T C H		
T I M E S E T T I N G S					
	N A M E		S C N	L B L	T / O
0 1	C O M P U T E R	0 1	0 3 0	0 3 0	0 3 0
0 2	C O M P U T E R	0 2	0 3 0	0 3 0	0 3 0
0 3	C O M P U T E R	0 3	0 3 0	0 3 0	0 3 0
0 4	C O M P U T E R	0 4	0 3 0	0 3 0	0 3 0
0 5	C O M P U T E R	0 5	0 3 0	0 3 0	0 3 0
0 6	C O M P U T E R	0 6	0 3 0	0 3 0	0 3 0
0 7	C O M P U T E R	0 7	0 3 0	0 3 0	0 3 0
0 8	C O M P U T E R	0 8	0 3 0	0 3 0	0 3 0

Figure 28 Time settings window

5.2.7.1 Scan (SCN) - Label (LBL) - Time out (T/O)

SCN - In the **SCN** column, change the scan period.

LBL - In the **LBL** column, change the display period of the OSD label showing which computer is currently accessed.

T/O - When password protection is activated you can automatically disable the Management keyboard, mouse and screen after a preset time of non-use. Set this Timeout period in the **T/O** column.

To set the above periods:

1. On the desired line press Tab to jump to the desired column.
2. Place the cursor over one of the 3 digits and type a new number. Enter a leading zero where necessary. For example, type 040 for 40 seconds.

Typing 999 in the **LBL** column displays the label continuously. Typing 000 – the label will not appear.

Typing 999 in the **T/O** column disables the Timeout function. Warning! Typing 000 causes the Timeout function to work immediately. Minimum time should be not less than 005 seconds.

Typing 999 in the **SCN** column displays the screen for 999 seconds. Typing 000 – the computer screen is skipped.

5.2.8 Users

In the Settings window navigate to the Users line and press **Enter**. (Note! Users is only enabled if the security status is set to On, see page 19). The Users settings window appears see Figure 29.

MINICOM		SMART CAT5 SWITCH		USERS SETTINGS					
NAME				USER					
				1	2	3	4	5	6
01	COMPUTER	01		Y	Y	V	N	V	
02	COMPUTER	02		V	V	V	Y	Y	N
03	COMPUTER	03		V	V	V	V	V	V
04	COMPUTER	04		N	N	N	V	Y	Y
05	COMPUTER	05		V	V	N	N	N	V
06	COMPUTER	06		Y	Y	Y	Y	Y	Y
07	COMPUTER	07		Y	Y	Y	Y	Y	Y
08	COMPUTER	08		Y	Y	Y	Y	Y	Y

Figure 29 Users settings window

There are 3 different access levels. These are:

- Y – Full access to a particular computer. Plus access to the F4, F5 and F6 OSD functions
- V – Viewing access only, to a particular computer (No keyboard/mouse functionality)
- N – No access to a particular computer – A TIMEOUT label appears if access is attempted

To give each user the desired access level:

1. Navigate to the desired computer line and User.
2. Toggle between the options using the Spacebar.

5.2.9 Security

In the Settings window navigate to the Security line and press **Enter**. The Security settings window appears see Figure 30.

MINICOM		SMART CAT5 SWITCH		SECURITY SETTINGS					
NAME				PASSWORD T					
A	ADMINISTRATOR			A	D	M	I	N	A
	SUPERVISOR			S					S
	USER			1					U
	USER			2					U
	USER			3					U
	USER			4					U
	USER			5					U
	USER			6					U

Figure 30 Security settings window

The ‘T’ column on the right hand side stands for Type of password.

There can only be 1 Administrator password, 1 Supervisor password, and 6 User passwords.

To change a user name or password:

1. Navigate to the desired line and column.
2. Type a new user name / password. User authentication is done solely via the password there is no security significance to the names.

By default the User Profile settings are full access.

5.2.10 The OSD HELP window – F1

To access the HELP window press **F1**. The HELP window appears see Figure 31.

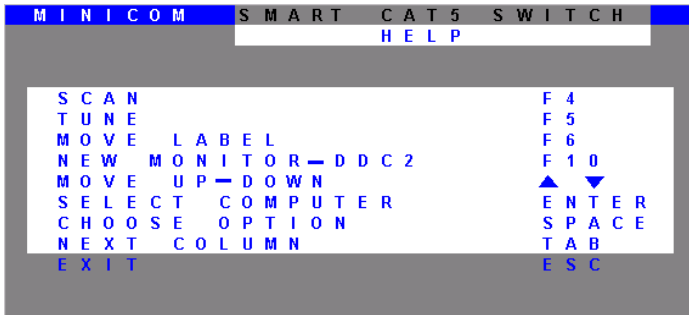


Figure 31 HELP window

Please note! All the functions set out in the Help window are performed from the Main window. The Help window is merely a reminder of the hotkeys and their functions.

5.2.11 Scanning computers– F4

Where necessary adjust the scan time in the Time Settings window, see above.

To activate scanning:

1. Press **Shift** twice to open the OSD.
2. Press **F4**. Your screen displays each active computer sequentially, with the Scan label appearing in the top left corner.

To deactivate scanning:

Press **F4**.

5.2.12 Tuning – F5

You can tune the image of any remote computer screen from the Select Computer window.

To adjust the screen image:

1. Navigate to the remote computer you wish to adjust.
2. Press **F5**. The screen image of the selected computer appears, together with the Image Tuning label.
3. Adjust the image by using the **Right** and **Left** Arrow keys.
4. When the image is satisfactory, press **Esc**.

Note! Picture quality is relative to distance. The further away a remote computer is from the SmartRack 116, the lower the image quality, and the more tuning needed. So place the higher resolution computers closer to the manager unit.

5.2.13 Moving the label – F6

Position the OSD label anywhere on the screen.

To position the label from the Main window:

1. Navigate to the desired computer using the **Up** and **Down** arrow keys.
2. Press **F6**. The selected screen image and Identification label appears.
3. Use the arrow keys to move the label to the desired position.
4. Press **Esc** to save and exit.

5.2.14 DDC – F10

Display Data Channel (DDC) is a VESA standard for communication between a monitor and a video adapter.

Input the DDC information of the monitor into the memories of all connected ROCs when first installing system.

To input the DDC information:

1. Press **Shift** twice to open the OSD.
2. Press **F10**. “Please wait” flashes a few times and disappears. The monitor’s DDC information is sent to all ROCs.

5.2.14.1 Updating the DDC information

Update the DDC information in any of the following circumstances:

- When adding a new ROC to the system
- When reconnecting an existing ROC that was temporarily used in a different system

To update the DDC information, repeat the steps as set out above.

6. Upgrading the SmartRack 116 firmware

With the Update software program you can upgrade the firmware for the:

- OSD
- Manager
- ROCs

Update enables you to add new features and fix bugs in a quick and efficient manner. Install the Update software on any computer, even one not part of the SmartRack 116 system.

The Update software and the latest firmware for your system are located on our website www.minicom.com in the Support section on the Smart CAT5 Switch Upgrades page.

6.1 System requirements for the SmartRack 116 Update software

- Pentium 166 or higher with 16 MB RAM and 10 MB free Hard Drive space.
- Free Serial port.
- Windows 98 and later.

6.2 Connecting the SmartRack 116 system

To update the firmware, the SmartRack 116 system must be connected and switched on.

6.3 Installing the software

Download the Update software from www.minicom.com and install it on your computer.

6.3.1 Connecting the RS232 Download cable

To run the software, connect the RS232 Download cable to the computer containing the Update software, and to the SmartRack 116 Switch. See Figure 32.

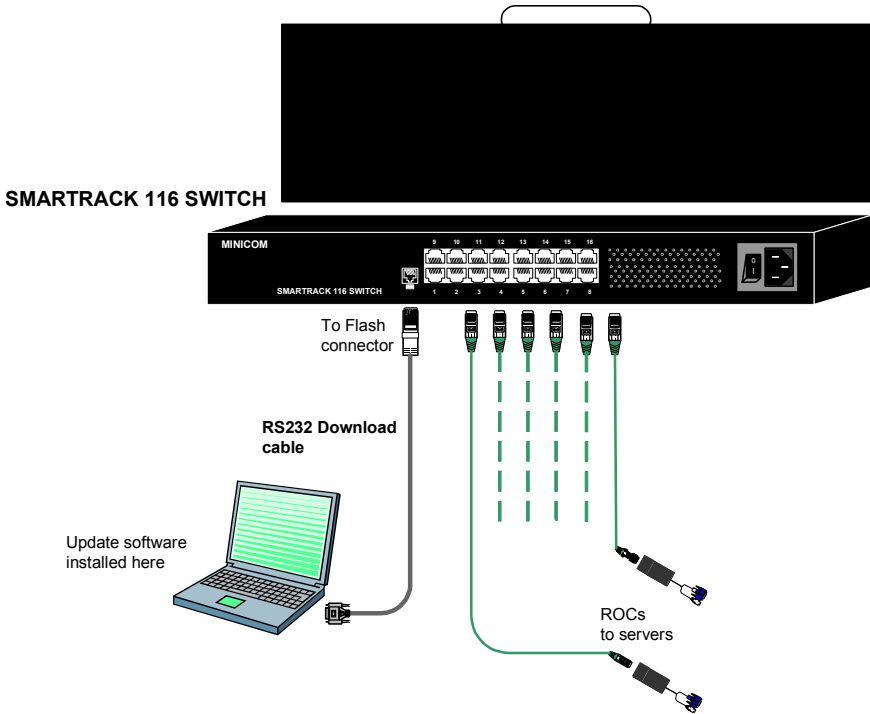



Figure 32 RS232 Download cable

6.4 Starting and configuring the SmartRack 116 Update

1. Start the Update software by double-clicking the icon on your desktop , or choose Start/Programs/Smart CAT5 Switch Update/ Smart CAT5 Switch Update. The Smart CAT5 Switch Update window appears. See Figure 33. Where the ROCs do not appear, select Options/Get RICCs.

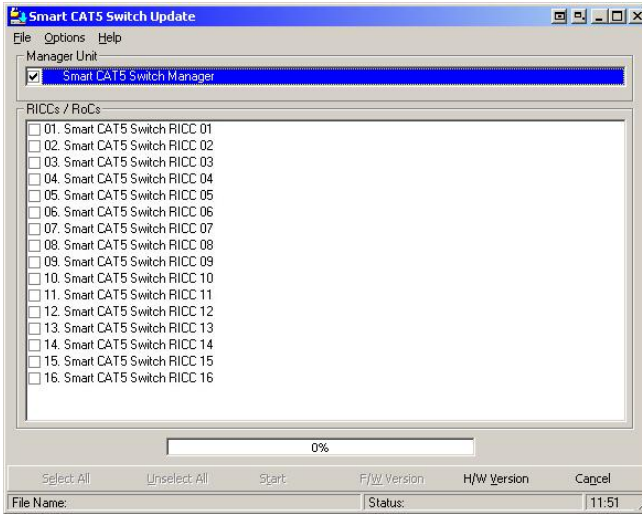


Figure 33 Update window

The table below explains the functions of the buttons and boxes in the SmartRack 116 Switch Update window.

Button or Box	Function
Select All	Selects all ROCs
Unselect All	Unselects selected ROCs
Start	Starts firmware download
F/W Version	Displays the firmware version number
H/W Version	Displays the hardware version number
Cancel	Cancel selected function
10:06	System time
Status:	Displays communication status between the upgrade software and the Smart CAT5 Switch. Choose Options/Get Status to refresh the status
File Name:	Name of Update file

- To change the Com Port from the Options menu choose Com Port. The Com Port Dialog box appears. See Figure 34.

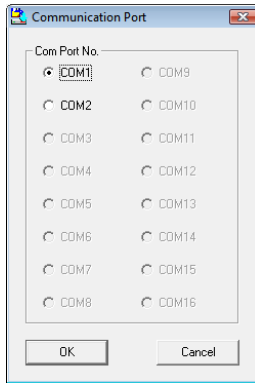


Figure 34 Com Option box

3. Choose the Com Port the RS232 Download cable is connected to and click OK.

6.4.1 Verifying the version numbers

Before upgrading the firmware, you must first verify which firmware and hardware versions you have.

6.4.1.1 OSD version number

To verify the OSD or Switch version number:

1. In the Update window, check the Manager Unit. See Figure 33.
2. Click **F/W Version**. The version numbers appear in the **Switch** box.
3. Click **H/W Version**. The switch hardware version number appears in the **Switch** box.

6.4.1.2 ROC version number

To verify the ROC version number:

1. Before you can check a ROC, you must uncheck the Switch Unit box options.
2. Check one or more or all of the ROCs.
3. Click **F/W Version**. The firmware version number appears after the ROC number.
4. Click **H/W Version**. The hardware version number appears after the ROC number.

When “**Not responding**” appears, there is no computer connected, or it is switched off.

6.4.2 Obtaining new firmware

Download the latest firmware for your system from www.minicom.com.

6.4.3 Updating the firmware

Warning!

Never switch off any computer connected to the SmartRack 116 system during the updating process.

To update the firmware:

1. In the Update window, check the appropriate option in the **Switch Unit** box or the desired ROC.
2. From the **File** menu, choose **Open**. The **Open** box appears. See Figure 35.
3. Navigate to the folder that contains the .hex firmware update file. You may only see the files that match the file selection mask.

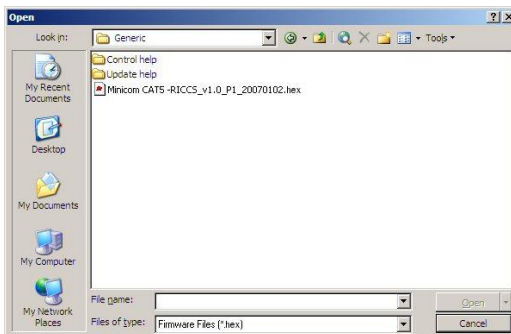


Figure 35 Open box

4. Open the file.
5. Click **Start**. The Update flashes the firmware. On completion the firmware version number appears.

Note! If the status of the device is busy - see the bottom of Figure 33 - the system cannot be upgraded. To free the device choose Options/Advanced/Reset. The device resets and the status is now free. Click **Start**.

6. Check that the updated version number is correct by pressing

F/WVersion

7. Troubleshooting the Update software

This section covers:

- Returning the OSD to the factory default settings
- Communication Error message
- Electricity failure

7.1.1 Setting default values for the OSD

To return the OSD to the factory default settings:

Select Options/Advanced/Set Default. A warning appears, click OK. The OSD returns to the factory default settings.

7.1.2 Communication Error message

When using Firmware Update software you may sometimes get a Communication Error message.

When updating a unit and a Communication Error message appears, do the following:

1. Check that the RS232 Download cable's RS232 connector is connected to the Switch's Communication port.
2. Check that the RS232 Download cable's DB9F connector is connected to the DB9M Serial port on the CPU's rear panel.
3. Restart the download process.

7.1.3 Electricity failure

When the electricity fails while updating the SmartRack 116 firmware, do the following:

If the electricity fails during the firmware update of the Switch, a **Communication Error** message appears. Simply resume the firmware update by opening the folder that contains the firmware update file and continue from there.

If the electricity fails during the firmware update of the ROCs a **Not Responding or Upgrade Error** message appears. Restart the upgrade from the beginning.

8. USB / SUN Combo keys

The SmartRack 116 keyboard does not have a special SUN keypad to perform special functions in the SUN Operating System environment. So when a ROC USB or SUN is connected to a SUN computer, the ROC emulates these SUN keys using a set of key combinations called Combo keys. See the table below.

SUN key	Combo key
Stop	Left Ctrl + Left Alt + F1
Props	Left Ctrl + Left Alt + F3
Front	Left Ctrl + Left Alt + F5
Open	Left Ctrl + Left Alt + F7
Find	Left Ctrl + Left Alt + F9
Again	Left Ctrl + Left Alt + F2
Undo	Left Ctrl + Left Alt + F4
Copy	Left Ctrl + Left Alt + F6
Paste	Left Ctrl + Left Alt + F8
Cut	Left Ctrl + Left Alt + F10
Help	Left Ctrl + Left Alt + F11
Compose	Application key or Left Ctrl + Left Alt + Keypad *
Crescent	Scroll Lock
Volume Up	Left Ctrl + Left Alt + Keypad –
Volume Down	Left Ctrl + Left Alt + Keypad +
Mute	Left Ctrl + Left Alt + F12
Sun Left ◊ key	Left Windows key
Sun Right ◊ key	Right Windows key
Alt-Graph	Right Alt or Alt Gr
Stop A	Left Ctrl + Left Alt +1

9. Technical specifications

Operating systems and Platforms	DOS, Windows, Linux, UNIX, Mac and all other major operating systems
Multi-platform interface	PS/2, and USB
Resolution	1280x1024@75Hz
System cable	CAT5 cables. FTP or UTP 2x4x24 AWG solid wire
Computer to switch Distance	Up to 30m/100ft.
Console display	17"
Panel type	Active Matrix TFT LCD
Pixel pitch	Supports 0.264mm
Viewing angle	Right-Left view 60° -70 °. Up-Down View 45 ° - 60
Contrast ratio	450:01:00
Brightness	White 250cd/m2
Back light	Four lamps
Supported colors	16.7M
Keyboard / mouse	106 key PS/2 keyboard with touchpad
Sync	45~80HZ
Power source	100-240 VAC input
Response time	Rising time 2-6ms Delay time 14-24ms
Rack depth support	468.9 to 814mm/18.46x32.047
Chassis construction	Heavy duty steel
Weight (Switch + console)	11.8kg / 26.01lbs
Shipping Weight	17kg / 37.47lbs
Dimensions (Switch + console)	470.1 x 447.5 x 44mm / 18.5 x 17.6 x 1.7in
Power supply	Internal switching 85-260 VAC 50 / 60 Hz
Connections	
System	RJ45 x 16
Serial	RJ11
Local KVM	HDD15/MinDin6/MiniDin6
Operating / Recommended ambient temperature	0°C to 40°C/32°F to 104°F
Storage temperature	- 20° - 40° C/-4° - 104°F
Humidity	10%~90%RH

SMARTRACK 116 SWITCH

ROCs	ROC PS/2	ROC USB
Connections		
VGA	HDD15	HDD15
Keyboard/Mouse	MiniDin6	USB
System	RJ45	RJ45
Power	From computer's Keyboard port	From USB port
Product weight	All ROCs 100g / 0.20lb	
Shipping weight	All ROCs 172g / 0.38lb	
Dimensions	All ROCs 65 x 25 x 25mm / 2.55 x 0.98 x 0.98"	

9.1 Video resolution and refresh rates

Hz →	56	60	65	66	70	72	73	75
640x480		x		x	x	x		x
720x400					x			
800x600	x	x				x		x
1024x768		x			x	x	x	x
1152x864								x
1152x900				x				
1280x720		x						
1280x768		x						x
1280x960		x						
1280x1024		x				x		x

9.2 Safety

The device must only be opened by an authorized Minicom technician. Disconnect device from AC mains before service operation!

9.3 User guide feedback

Your feedback is very important to help us improve our documentation. Please email any comments to: ug.comments@minicom.com

Please include the following information: Guide name, part number and version number (as appears on the front cover).

9.4 WEEE compliance

WEEE Information for Minicom Customers and Recyclers

Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Minicom they are entitled to:

- Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)
- Send the new equipment back for recycling when this ultimately becomes waste

Instructions to both customers and recyclers/treatment facilities wishing to obtain disassembly information are provided in our website www.minicom.com.

