Rextron

Integra KVM²

for SUN

User's Manual

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Integra Sun KVM Switches

Please read this manual thoroughly and follow the **Installation** procedures to prevent any damage to the Integra system or any connecting device.

FC CE VCI

-------------------- *Introduction*

Overview

One-Console Sun KVM Switch

The combination of Integra Console and a Sun KVM switch offers the latest, most efficient way to control multiple Sun servers. The ISM108 can control from 8 to 64 Sun servers with the Integra Console or another set of console.

Advanced keyboard and mouse emulation technology ensures trouble-free Sun server boot-up and seamless switching. Special function keys of a Sun keyboard are simulated by combo-key operation on the Integra Console keyboard.

Two-Console Matrix Sun KVM Switch

The advanced matrix Sun KVM switch, ISM2208, enables two separate users to manage over eight servers with two sets of keyboards, mice, and monitors simultaneously. When cascaded, it can easily be expanded for dual user access of up to 32 servers with simultaneous access.

High Video Quality & Real DDC2 Compatibility

Integra Console's TFT LCD display supports VGA resolution up to 1024x768 without any degradation. The advanced VGA circuit design guarantees smooth and flicker-free switching from one server to the other.

The switch automatically responds Sun servers with correct DDC2 communication for optimum resolution setting.

Features

- Manage 8 Sun servers with one or two sets of keyboards, mice and monitors
- Two-tier cascade configuration expands system capability
- Auto-scan automatically selects servers sequentially
- Hot-key functions allow easy server access
- Support Keyboard with various language systems
- Keyboard states automatically saved and restored when switching servers
- Hot plug-and-play
- Keyboard and mouse can be hot plugged at any time
- DDC2 communication built-in
- 19" rack-mountable to the rear of a rack cabinet

Features for multi-access Sun KVM Switch Module

- Manage multiple servers from two or more locations simultaneously
- Selectable User Timeout
- Expandable up to 32 servers

Configurations

Integra Sun KVM switches are available in 1-console- and 2-console-to-8-port models to support a variety of requirements. For applications with a large number of servers, Sun KVM switch modules can be cascaded in a master/slave configuration.

Sun KVM Switch Models		
Model	ISM108	ISM2208
No. of console supported	1	2
No. of Sun server supported	8	8

Single Sun KVM Switch Configuration

Combined with an Integra Console, the Sun KVM Switch can be connected to multiple Sun servers with keyboard/mouse and monitor cables as shown in figure 1.
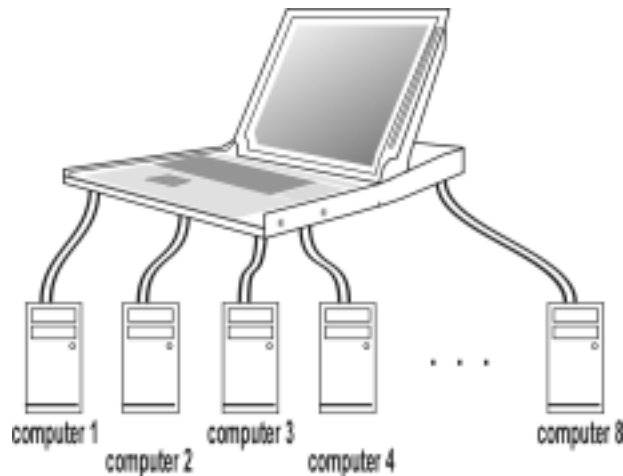

Figure 1: A single Sun KVM Switch configuration

Cascade (Master/Slave) Configuration

You can connect a second level of one or more Sun KVM Switches to **"PC 1"~"PC 8"** ports of a *Master* unit. Cascade configuration expands system ability allowing you to select servers connected to the *Master* or *Slaves*. There is only one *Master* that connects to the Integra Console directly operated by a user.

Once connected, Sun KVM Switches automatically configure themselves to either *Master* or *Slave*. *Slaves* of different Sun KVM Switch models can be mixed in cascade configuration as shown in figure 2.
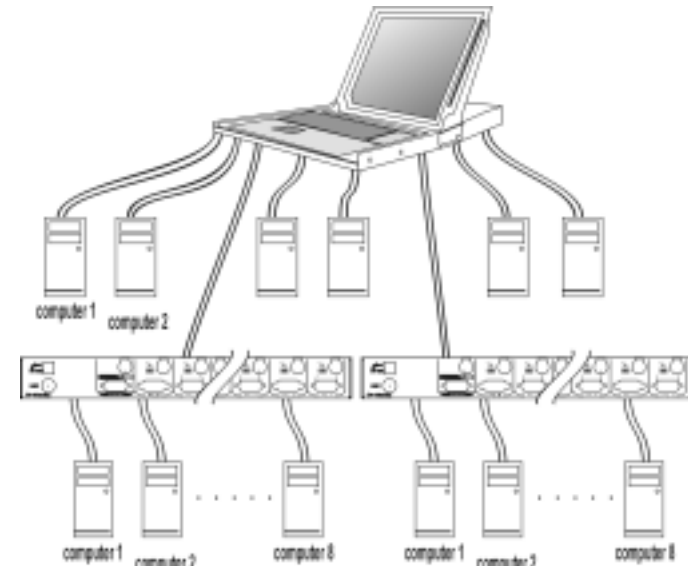

Figure 2: A cascade Integra configuration

Throughout this manual, *Master* is the Sun KVM Switch having its C-36 connector connected to an Integra Console or having its **LOCAL** port connected to a set of Sun keyboard, mouse and monitor. *Slave* is a Sun KVM Switch with its **CONSOLE** port connected to "**PC** x" port of a *Master*. *Slave* only exists in cascade configuration.

------------------Installation

Make sure all servers and the KVM switch modules are powered down during installation.

Console Connection

To a KVM drawer: Just connect the C-36 connector from a TFT LCD KVM drawer to the Sun KVM switch module.

To use the Sun KVM module as a standard KVM switch or to connect a second console to an ISM2208:

Monitor:● A Sun monitor with 13W3 connector can be connected to the **CONSOLE** as shown in figure 3.

● A regular VGA monitor with HDB15 connector may be connected to the **CONSOLE** as shown in figure 4.

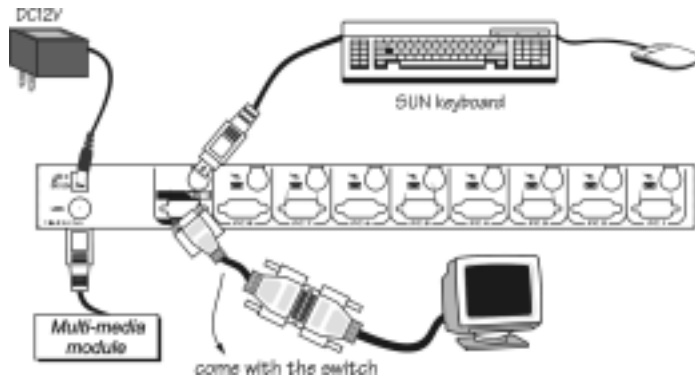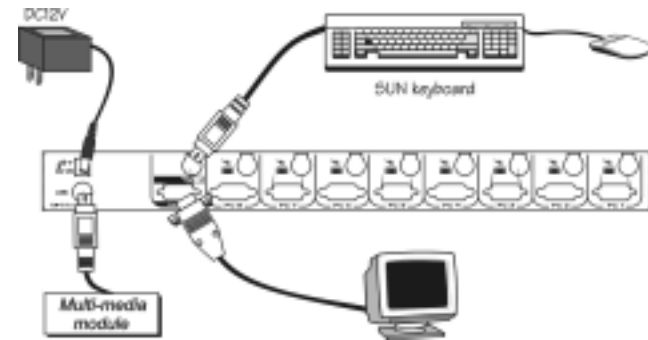**Keyboard and mouse**: A Sun keyboard and a mouse should be connected to the **CONSOLE** as shown in figure 3 and 4.

Figure 3: Master console connection
For monitor with 13W3 connector

Figure 4: Master console connection For monitor with HDB15 connector

Server Connection

Each Sun server is connected to the KVM module with one straight-through (1-1, 2-2, 3-3…, 8-8) mini-DIN8 cable (as shown in figure 5) and one male-to-male HDB15 VGA cable.

Figure 5: Straight-through 1-to-1 mini-DIN8 cable

For Sun servers with 13W3 video output, a **13W3-to-HDB15** adapter is required for such server's video port as shown in figure 6.
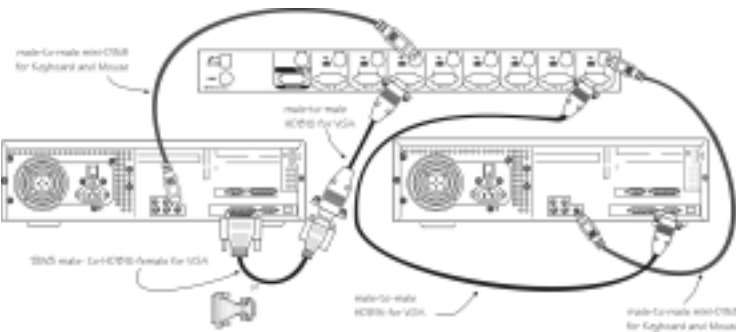

Figure 6: Adapter and monitor connection

A Sun KVM Switch may be mounted to the rear vertical poles inside a rack cabinet by the rear brackets with keyboard, mouse, monitor connectors facing out, as figure 7.
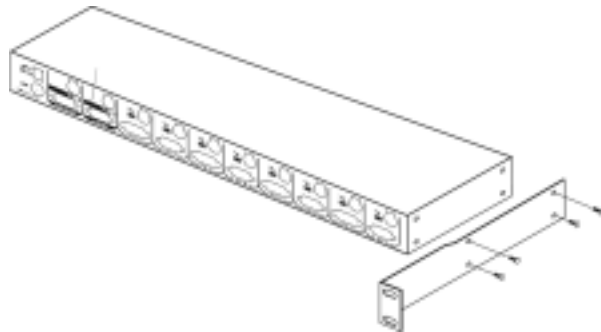

Figure 7: Rear-mount bracket attachment

*The keyboard/mouse connector at the **Local** port on the rear of the KVM module is not applicable when the module is connected to the drawer by the C-36 connector. When its C-36 connector is not connected to the drawer, the KVM module acts as a rear-mount stand-alone KVM switch. The VGA signal at the **Local** port is the same as the LCD panel.*

Initial Power-Up

Make sure all servers and the Integra Sun KVM module are powered down during installation. You must power up the

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Master Integra system before turning on any other devices.

- *For single Integra Sun KVM Switch:*
    1) Apply a power adapter to the *Master*.
    2) Turn on servers.
- *For cascaded Sun KVM Switches:*
    1) Apply a power adapter to the *Master*.
    2) Apply power adapters to all *Slaves*.
    3) Turn on servers.

Note: *You may hot plug additional powered-down server or a slave Sun KVM Switch without turning any existing Sun KVM Switch or server off after initial power up.*

-----------------*Operation*

Hot-Key Commands

Hot-key commands are short keyboard sequences to select a server, to activate server scan, etc. A Sun KVM switch interprets keystrokes for hot-keys all the time. A hot-key sequence starts with two left <CTRL> keystrokes followed by one or two more keystrokes. *A short beep indicates a correct hot-key command, or a long beep followed by a short one indicates an error (the bad key sequence will not be forwarded to the selected server).*

■ To select a server, you must know which port it is connected to. For a server connected to a *Master*, its port number is represented by the PC port label (1~8). For a server connected to a *Slave*, two digits represent its port number. The first digit is the port number of the *Master* unit (1~8) and the second one is the port number of the *Slave* (1~8).

> left ***Ctrl*** + left ***Ctrl*** + ***7***

Selects a server connected to port 7 of the *Master*.

> left ***Ctrl*** + left ***Ctrl*** + ***3*** + ***6***

Selects a server connected to port 6 of the *Slave* connected to port 3 of the *Master*.

■ To start *Auto Scan*, automatically scan <u>powered-on</u> servers one by one at a fixed interval:

> left ***Ctrl*** + left ***Ctrl*** + ***F 1***

When *Auto Scan* detects any keyboard or mouse activity, it suspends the scanning and resets the count down timer until activity stops; it then resumes with the next server in sequence. The length of the *Auto Scan* interval (*Scan Rate)* is adjustable, see below. To abort the *Auto Scan* mode, press the left ***Ctrl*** key twice.

■ To adjust *Scan Rate* which sets the duration before switching to the next server in *Auto Scan*:

> left ***Ctrl*** + left ***Ctrl*** + ***F3***

The Sun KVM switch beeps one to four times indicating scan interval of ***3***, ***8***, ***15*** and ***30*** seconds respectively.

■ *Audio Stick*
An optional multimedia module can be LINKed to the back of each Sun KVM switch for selecting microphone and stereo speaker signals. There are two options for *Audio Stick*: **On** and **Off**. When set to **'On'**, audio selection follows server selection. When set to **'Off'**, audio

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selection stops following server selection. It is useful if you want to listen to a particular server's audio signal while operating other servers.

> left ***Ctrl*** + left ***Ctrl*** + ***F5***

It beeps once or twice corresponding to **On** and **Off** respectively.

■ User Timeout (ISM2208 only)
When both users select the same server, both can view the server. When either user starts to operate the server by keyboard or mouse activity, the other user is denied for any access till the first user stops keyboard or mouse activity for a period of time (i.e. User Timeout). Available selections are **5**, **10**, **20** and **40** seconds indicated by 1 to 4 beeps respectively when the following command is executed.

> left ***Ctrl*** + left ***Ctrl*** + ***F6***

■ Return to the previously selected server
It is used to toggle back and forth between the currently selected server and the previously selected one. It is handy if there are two servers of great interest requiring your attention.

> left ***Ctrl*** + left ***Ctrl*** + ***F7***

Note: If you issue an incorrect hot-key command, the Sun KVM switch warns you by one long beep followed by a short one.

PS/2 to Sun Keyboard Mapping

The keyboard and mouse pad on the KVM Console drawer emulates a Sun keyboard and mouse. Since a Sun keyboard has more keys than a standard PS/2 one. The extra keys are simulated by pressing

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the lower-right **CTRL** followed by one of the function keys (i.e. *Combo Key*). Refer to the following table for the mapping. For instance, strike the **CTRL** then **F7** to activate *Open* for a Sun server.
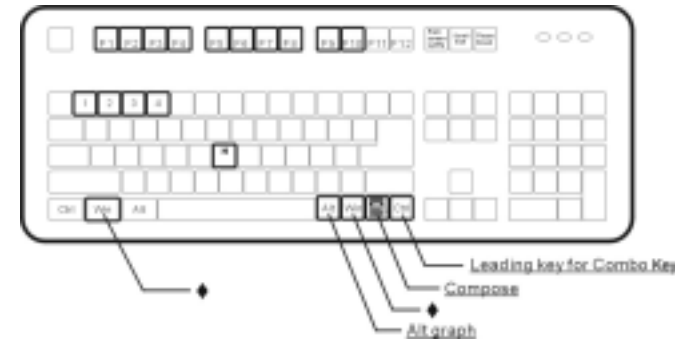
Note: The second *Combo Key* must be entered in 3 seconds after the **CTRL** is pressed.

Keyboard Mapping

PS/2 keyboard	Sun keyboard
Ctrl F1	Stop
Ctrl F2	Again
Ctrl F3	Props
Ctrl F4	Undo
Ctrl F5	Front
Ctrl F6	Copy
Ctrl F7	Open
Ctrl F8	Paste
Ctrl F9	Find
Ctrl F10	Cut
Ctrl 1	
Ctrl 2	
Ctrl 3	
Ctrl 4	
Ctrl H	Help
Right **Window**	Right ♦
Left **Window**	Left ♦
Context key	Compose
Right **Alt**	Alt Graph

Sun Keyboard

PS/2 Keyboard

Leading key for Combo Key
Compose
Alt graph

For Japanese keyboard:

1. The leading key for the Combo Key is replaced by 半角／全角.
2. The right **ALT** is simulated by tapping 半角／全角 followed by the left **ALT**.
3. The right **Windows** is replaced by tapping 半角／全角 followed by the left **Windows**.

----------------- ***Cascade Configuration***

Connection

Before connecting a device (a server or a Slave KVM switch) to the Master Sun KVM Switch under power, you must turn off the device.

The ports "**PC 1**"~"**PC 8**" can be connected to either a server or a *Slave*'s **CONSOLE** port, as shown in figure 8.
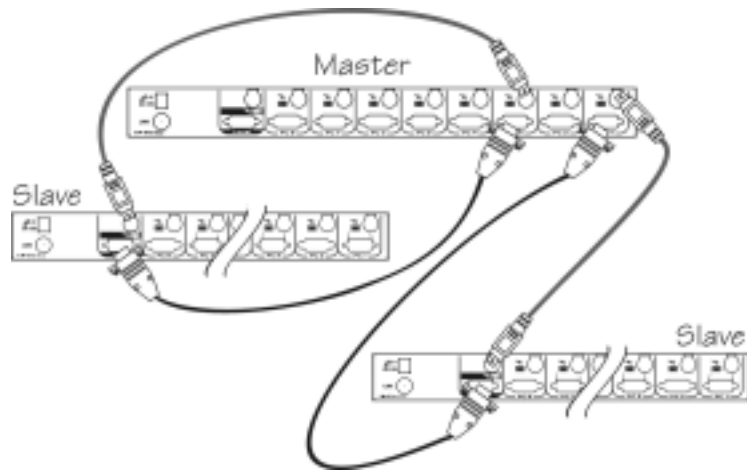

Figure 8: Slave console connection

The maximum number of servers controlled by a master/slave configuration with all 8-port units is 64 -- with 8 *Slaves* and each *Slave* connects to 8 servers, see figure 9.
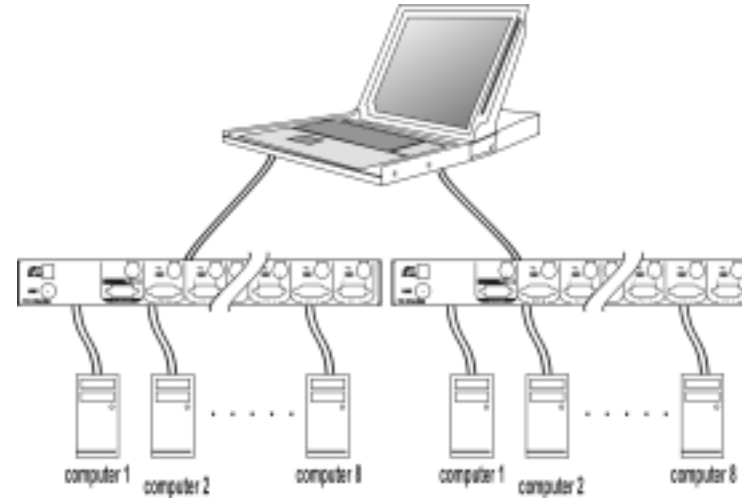
Figure 9: Cascaded 8-port Integra Sun KVM Switches

Change Configuration while Running

A device (a computers or a Sun KVM switches) at any '**PC** x' port can be changed at any time after initial power-up. If you change any one of the "**PC 1**" to "**PC 8**" ports connection from a computer to a *Slave* or vice versa, or replace the devices of a port; *the new Slave must be turned off before it is connected to the Master. Before unplugging the cables from a computer, you should issue a STOP-A command to that computer, unplug the cables, re-arrange connection, plug the cables back to the computer, issue a GO command for that computer and resume normal operation.*

Note: *Any new device must be turned off before it is connected to the Master.*

————————— *Appendices*

Specifications:

Specification:		
	ISM108	ISM2208
# of Console ports	1	2

# of ports Sun server	8	8
Max capacity for Sun servers	64	
Keyboard/mouse emulation	Sun(type 5, 6)	
Resolution	1024 x 768, DDC2B	
Server power status LED	8	
Server selected LED	8	
Front pushbuttons	8	
Scan interval	3, 8, 15, 30 seconds	
Connectors for Sun VGA	HDB15 x 8	
KVM drawer connector	C-36	
Connectors for Sun Keyboard/mouse	mini-DIN8 x 8	
Connector for console VGA	HDB15 x 1 Female	HDB15 x 2 Female
Connector for console keyboard/mouse	mini-DIN8 x 1	mini-DIN8 x 2
User Timeout	N/A	5, 10, 20,40 Sec
Multimedia module	MAV108	
Rear-mount brackets	1U-height, included	
Height	1U	
Power supply	12V DC, with Console drawer 9V DC, stand-alone KVM switch	
Dimension(mm) (in)	40 x 404 x 114 1.6 x 15.9 x 4.5	

Troubleshooting:

Ensure that all cables are well seated. Check that keyboard/mouse cables are not swapped. Label and bundle the cables for each server to avoid confusion when connected to the Integra system.

Symptom	Causes	Solutions
Nothing on the screen	• No video signal • Incorrect video	• Make sure the C-36 connectors are well mated.

Symptom	Causes	Solutions
	resolution from the Sun server	• Set the video resolution of the Sun server to 1024 x 768
Special function keys of a Sun server can not be entered.	• Check the section "*PS/2 to Sun Keyboard Mapping*"	• Do not hold down the **CTRL** key while pressing the second combo key.
Keyboard and mouse do not work	• Incorrect mini-DIN 8 cables	• Use only straight-though, 1-to-1, 2-to-2,.. 8-to-8 mini-DIN 8 cables
VGA image is fuzzy or not very clear.	• Poor quality VGA cables	• Most VGA problem comes from poor-quality VGA cables. Please use UL-2919 rated VGA cables for video connection, because those cables use coaxial wires for R/G/B signals.
A LCD monitor is connected to the Console port, but nothing is on the monitor when certain Sun server is selected.	• When Sun server powers up, it communicates with the VGA device, and LCD is not available on power-up sequence; therefore, the Sun sets its VGA resolution to a default which is not in applicable for some LCD monitors.	• When booting up a Sun server, wait till the boot-up process is finished before selecting a different server.
Keyboard or mouse does not work from time to time.	• The switch is low on operating power.	• Be sure the power adapter is properly connected.
Hotkey command is not effective.	• Incorrect hotkey sequence.	• To select a server connected to the Master: three keystrokes are necessary. • To select a server connected to a Slave: four keystrokes are necessary.

There is no VGA output after connecting a 13w3-to-HDB15 adapter to a server.	● Incorrect 13W3-to-HDB15 pin assignment.	● Use only the adapter specifically designed for Sun server.
Cascaded unit does not work.	● Incorrect power up sequence.	● Turn on the Master then the Slave switches.
Nothing works	● Bad connection at the C-36 connectors	● Push the assembled drawer and the KVM module box firmly together leaving only 8mm (5/16 inch) space in between. Be sure they are secured by two screws.
VGA monitor works fine but keyboard and touch pad does not work.	● Connection inside the KVM drawer becomes loose due to vibration.	● Verify if the KVM drawer is bad by disconnecting it from the KVM module box (the C-36 connector is not connected). Connect a keyboard, mouse and monitor to the **Local** port on the KVM module box and another server to any of the **PC** ports and use the KVM module box as a stand-alone KVM switch.
Keyboard error on boot	● Loose keyboard connection	● Make sure keyboard cables are ● Well seated
Alphabets on the TFT LCD display are blur or have shadows.	● Improper resolution settings	● Set the VGA resolution of the servers to 1024 x 768 with "Large Font" for the best performance.
Left buttons on the drawer for the "KVM Switch" do not work.	● The rear KVM module box does not have a KVM switch built-in.	● The buttons are effective only if the arketing on the lower left corner (see from the connectors side) of the KVM module box shows 1▸8 for Sun,2▸8 for Sun
Master/slave does not work	● Improper installation procedures	● Make sure slave's CONSOLE is connected to *Master's* PC 1~PC 8 port ● Remove any possible power supply to the slave (unplug all cables), before connecting it to the *Master*
Keyboard strokes shifted	● The server was in shifted state when last switched	● Press both SHIFT keys

The ↑ and ↓ keys do not work in *Manual Scan*	● All PCs are off or only one PC is turned on. Scan mode works for power-on servers only	● Turn servers on. ● Press any other key to abort *Manual Scan* mode.
Auto Scan does not switch PC and Integra beeps from time to time and red indicator flashes	● All PCs are off or only one PC is turned on. Scan mode works for power-on servers only ● *Scan type* is eye mark selected but no power-up PC is eye mark selected in OSD.	● Turn on servers ● Press left CTRL key twice to abort *Auto Scan* mode. ● Press any front button to select a PC, and *Auto Scan* stops
Can not select a server connected to a slave	● Improper *Master* unit connection ● Improper slave unit connection ● Too many levels of slaves	● Only *Master* ports PC1~PC8 can be connected to slaves. ● Connect slave CONSOLE port to PC1~PC8 ports of the *Master* ● Only one level of slave units is allowed.
The Integra fails to function occasionally.	● Servers do not supply enough power.	● Make sure a power adapter with minimum of 12V, 3.0A output rating is firmly connected to the power jack.

Keyboard Mapping

PS/2 keyboard	Sun keyboard
Ctrl F1	Stop
Ctrl F2	Again
Ctrl F3	Props
Ctrl F4	Undo
Ctrl F5	Front
Ctrl F6	Copy
Ctrl F7	Open
Ctrl F8	Paste
Ctrl F9	Find
Ctrl F10	Cut
Ctrl 1	
Ctrl 2	
Ctrl 3	
Ctrl 4	
Ctrl H	Help
Right **Window**	Right ♦
Left **Window**	Left ♦
Context key	Compose
Right **Alt**	Alt Graph

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PP5-S1600-000

Printed in Taiwan