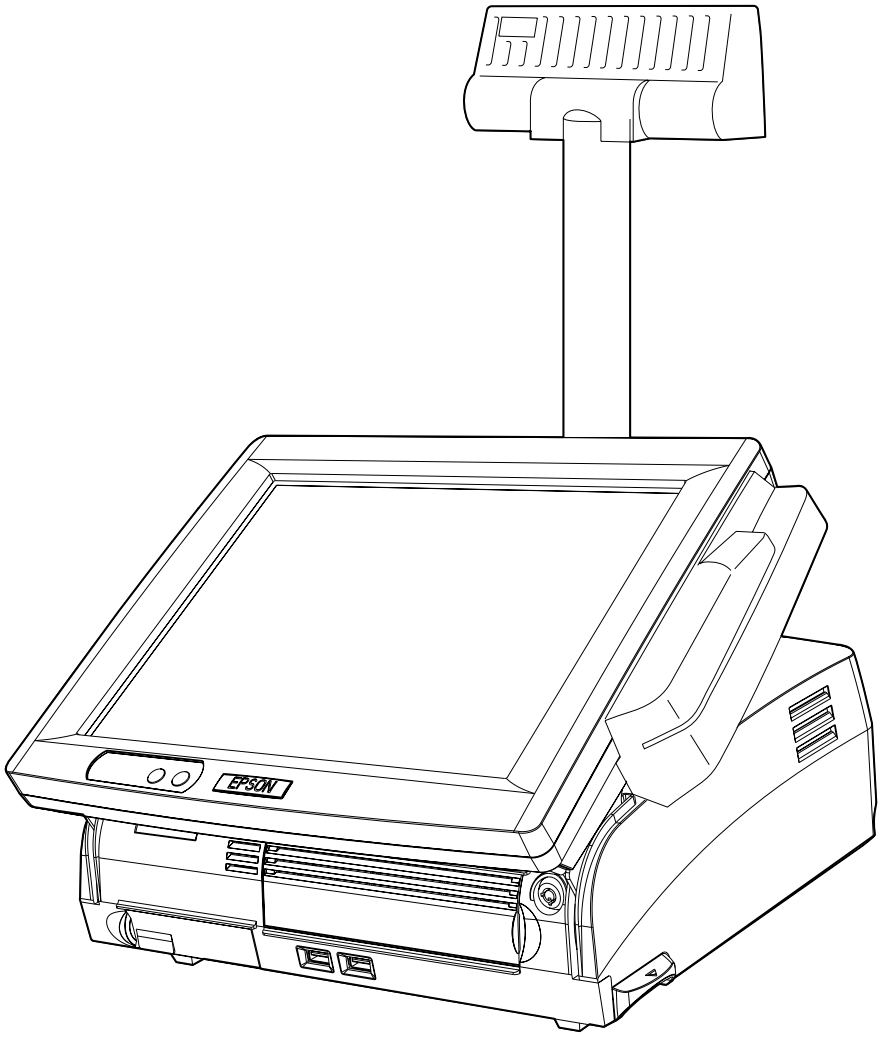
Technical Reference Guide

SR-610



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Revision Information

Revision	Page	Changed item and Contents
Rev. A		Newly established
Rev. B	vii, 1-2,3,1-5 -8,11, 3-1,2, 3-36-39, 5-21,35, 6-2, A-4, C-2 C-4,6	The OI-S05 (CompactFlash Adapter) as option is added.
	2-1, 3-40	Add the note of handling the HDD.
	5-21,35	Add the BIOS Ver.3.05
Rev.C	1-2, 7, 17, 2-1, 32 -35, 66 4-1, 5-13, 15, 7-20, A-5, B-2 -4	Add the Windows Embedded for Point of Service.

Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product..

⚠ WARNING:

Provides information that must be followed carefully to avoid bodily injury.

⚠ CAUTION:

Provides information that must be observed to prevent damage to the equipment or loss of data.

- ❏ Possibility of causing bodily injuries.
- ❏ Possibility of causing physical damage.
- ❏ Possibility of causing information loss.

✎ ***Note:***
Provides important information and useful tips on the operation of the equipment and the necessary limitation matters to maintain the performance of the product,

Precautions

⚠ WARNING:

- ❏ Turn off the main power switch immediately and unplug the power cord if the SR-610 produces smoke, a strange odor, or unusual noise.
  Continued use may lead to fire or electric shock. Contact your dealer or an EPSON service center for advice.
- ❏ Never disassemble or modify this product.
  Tampering with this product may result in injury, fire or electric shock.
- ❏ For your own safety, never attempt to make repairs yourself.
- ❏ Do not disassemble or modify.
- ❏ Injury, fire, or electric shock may result.
- ❏ Do not insert or unplug the power plug with wet hands.
- ❏ Electric shock may result.
- ❏ Do not put foreign objects into or drop the product.
- ❏ Fire or electric shock may result.
- ❏ Turn off the SR-610 main power switch immediately and unplug the power cord if a liquid such as water gets inside, and contact your dealer or EPSON service center for advice.

⚠ WARNING

- ❏ Fire or electric shock may result.
- ❏ Plug it in to a household outlet by itself.
- ❏ Do not put many plugs into one outlet. Fire may result.
- ❏ Ensure easy access to the outlet so that the power plug can be unplugged immediately in an emergency.
- ❏ Handle the power cord with care.
  Fire or electric shock may result if the product is used in an improper manner.
  - Do not tamper with the power cord.
  - Do not put heavy objects on the power cord.
  - Do not bend, wrench, or pull it forcibly
  - Do not wire close to thermal appliances.
  - Do not plug in a power cable with foreign particles such as dust adhered to it.
  - Make sure to insert the power plug as far as it will go.
  - Replace the power cord if it is damaged.
- ❏ Regularly unplug the power plug from the outlet and clean up the ends and between the blades.
  - If the power plug is plugged into the outlet over a long period, it gets dusty, and may lead to fire due to a short.
- ❏ Do not disassemble, charge, deform, heat, or throw the built-in lithium battery into a fire.
  - Injuries due to bursting or chemical reaction may result.
- ❏ Do not obstruct the ventilation of the product.

  If the ventilation is obstructed, heat is accumulated and fire may result.
  - Do not install it in a bookstand or the like which are narrow and poorly ventilated.
  - Do not place it on a carpet or blanket.
  - Do not cover it with a blanket, table cloth, or the like.
- ❏ Do not plug the telephone cable into the drawer kick out connector. Damage to the telephone line or printer may result.

⚠ CAUTION

- ❑ When turning the power of SR-610 off once and turning it on again, wait at least 10 seconds after turning it off before turning it on again.
  - Turning the power on immediately may result in abnormal booting.
- ❑ Handle the package with care during transport, unpacking, and when burning it.
  - Injury from cutting hands, etc. with the edge of the paper may result.
- ❑ Do not wire the various cables in any manner other than that specified in this manual.
  - Incorrect wiring may lead to malfunction or fire.
- ❑ Do not install the product in an unsteady place (unsteady table, tilted place, etc.).
  - Injury from dropping or toppling of the product may result.
- ❑ Do not install the product in a humid or dusty place.
  - A malfunction such as paper jam in the printer, fire, or electric shock may result.
- ❑ Do not use the product in places where flammable substances (gasoline, benzine, or thinner) exist in the air.
  - Explosion or fire may result.
- ❑ Do not stand on this product or put heavy things on it.
  - Injury from toppling or breaking of the product may result.
- ❑ Avoid dropping, bumping, heavy vibration, or physical shock.
  - Injury and damage to the product may result from breaking the glass of the LCD.
- ❑ Do not use alcohol, benzine, thinner, trichloroethylene, or ketone solvent when removing stains.
  - Deterioration or breakage of plastic and rubber parts may result.
- ❑ For safety, be sure to unplug the power plug if the product is not used over a long period.
- ❑ Do not connect to an AC power supply which is close to a device generating a power surge or electrical noise. In particular, keep the product away from any device using a large motor.
  - Malfunction of SR-610 and POS system may result.
- ❑ Be sure to plug the power cable into the AC inlet of the product before plugging the power plug into the outlet.
- ❑ Make sure to insert the power cable into the AC inlet of the product as far as it will go.

⚠CAUTION

- ❑ Be sure to unplug the power cable from the outlet before unplugging it from the AC inlet of the product.
- ❑ Unplug the power cable while holding the connector part. Do not unplug the power cable by pulling the cable.
- ❑ Understand the product specifications (See [Power Specifications]).
- ❑ Do not use the product other than with specified voltage.
  - Fire may result.
- ❑ Do not lift the product by holding the rear cover, the LCD or MSR.
  - Injury from breaking or dropping the product may result.
- ❑ Avoid having the total power capacity of each device receiving power from the product exceed the power capacity of the product.
  - Malfunction may result. See appendix regarding the power capacity.
- ❑ Be sure to use the product with the rear cover attached.
  - Using the product without the rear cover may cause fire or malfunction by allowing foreign particles into the product.
- ❑ Do not forcibly rotate or change the angle of the customer display.
  - Damage to the customer display or column may result.
- ❑ Do not use magnetic cards with the following abnormalities. Malfunction or serious degradation in function may result.
  - Magnetic surface is dirty. Wet with water, etc. Foreign particles are adhered. Has chips or breakage.
- ❑ When using compressed air products; such as air dusters, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.
- ❑ Do not use aerosol sprayers containing flammable gas inside or around this product. Doing so may cause fire.
  - Filled gas may make fire by catching fire.
- ❑ Do not insert or remove the CompactFlash card without turning off the power switch.
- ❑ Use a shielded LAN cable.

Note

- ❑ Be sure to use DIMM, HDD, and CPU that we supplied or specified.
- ❑ Be sure to use an expanded board, the operation of which has been checked by us, to install to the PCI slot. Contact your dealer for the operation check list. If a product other than those on the list is used, it is your responsibility to sufficiently evaluate it.
- ❑ When a commercial application is installed, contact the dealer where you purchased the product.

Regarding this Manual

Purpose of this Manual

This manual intends to provide necessary information for POS system development, design and installation using SR-610 to engineers.

Contents of this Manual

The following list is a summary. All tables of contents are at the end of this section. Refer there for more information and page numbers.

Composition of this manual is as follows.

Chapter 1 [SR-610 System Overview]	Describes features of SR-610, hardware configuration, software configuration, part names, etc.
Chapter 2 [OS Setup]	Describes the preinstalled OS (Windows 2000/ XP) and driver configuration and settings.
Chapter 3 [Hardware Setup]	Describes how to set up SR-610 and options.
Chapter 4 [Utilities]	Describes various utilities and setup procedures.
Chapter 5 [BIOS Functions]	Describes BIOS setup and its settings.
Chapter 6 [DIAG Device Diagnostic Program]	Describes functions and directions of DIAG Device Diagnostic Program.
Chapter 7 [RAID]	Describes functions and directions of the RAID system of SR-610.
Appendix A [Detailed Hardware Specifications]	Describes the hardware specifications of SR-610.
Appendix B [Operating the Product Continuously (24-hours/day)]	Describes the operating the product continuously (24-hours/day) of SR-610.

Related Manuals

Related Manuals

Name	Comments
SR-610 User's Manual	Describes the operation procedure.
SR-610 Service Manual	Describes the maintenance and repair procedure for SR-610 service engineers.

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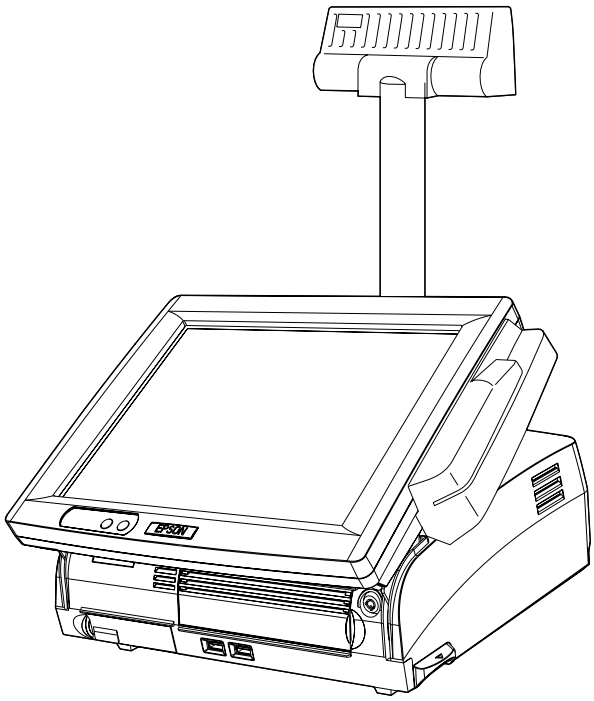
Chapter 1

SR-610 System Overview

SR-610

SR-610 is a PC-based POS equipped with a touch panel LCD. This is an the excellent compact design that will blend into the ambience of your store.



Model configurations

The SR-610 is available in various models, OS, and color. For detailed information, please refer to our catalog, or contact one of our sales offices.

SR-610 Features

- ❑ Compact design
  - The foot print is 310 mm wide and 306mm deep. It can be placed even where there is limited counter space.
  - The simple design allows the cables to be stored compactly. It can successfully be installed even in counter setups where the back of the POS is exposed, such as face-to-face counters, as it will blend into the ambience of the store.
- ❑ Easy to use, reliable hardware
  - The 12.1 SVGA model uses a high luminance level TFT screen. A touch panel that minimizes fingerprints is incorporated. Its angle can be adjusted so that it is easy to read, even in a bright room.
  - Three kinds of customer displays are available for various purposes. By changing the positioning and angle, adjustments can be made so that the customers and the operators can easily view the display.
  - A Magnetic Stripe Reader (MSR) can be attached to the side of the LCD display.
- ❑ Stable operation and downtime reduction
  - RAID1 (mirroring) is supported in models with 2 hard drives installed. Even if one HDD fails, the other HDD will continue to operate.
  - The hard disk can be replaced easily, so maintenance has been improved compared to the SR-610. This contributes to reduced downtime.
  - A CompactFlash (option) is prepared for the data backup.
    (It is not possible to boot up from the CompactFlash. Hot-swap during the power is on is not supported (as before).)
  - The unit can be started up using the CD/DVD-ROM drive or a floppy disc drive connected to the USB port.
  - The manager key is used for the optional 60-key POS keyboard (DM-KX060), and up to 7 access levels can be set up, depending on the type of key. Access levels to the system can be set up by the owner or manager, etc.
- ❑ High-performance
  - The CPU offers power and speed, which is needed for complex programming and data processing, using a Pentium M/Celeron M and a maximum of 1 GB of memory, using a HDD larger then 40GB.
  - The use of an HDD connected by 2.5" serial ATA helps to improve reliability.
  - Windows 2000 Professional SP4, Windows XP Professional SP2 or Windows Embedded for Point of Service (WEPOS) is used as the OS. Based on OLE-POS, it can be flexibly applied to a variety of system configurations.

- Equipped with 3 serial ports, a parallel port, 1 PCI slot, and 4 USB ports, extensibility is assured. Serial ports output +5V (COM 1/2 ports).

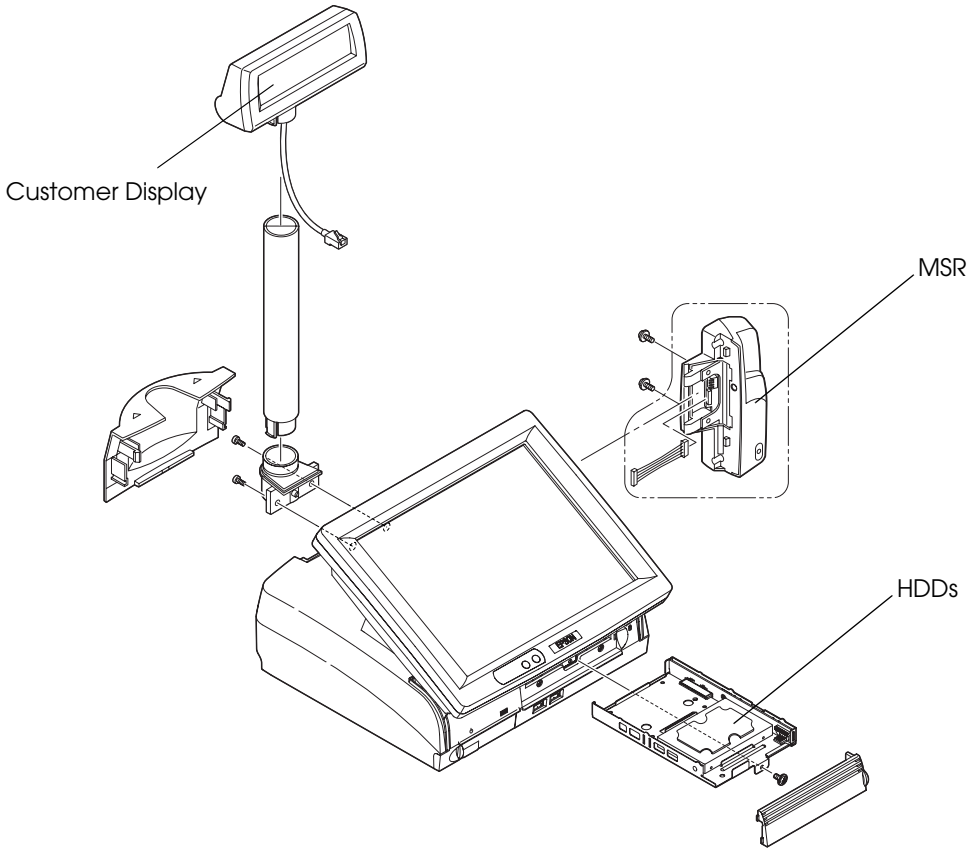
❑ Compatibility with Epson's SR-600 series is assured.

- Windows 2000 Professional SP4 is used as the OS. (Windows NT is not supported)
- OPOS ADK is used. If programs are developed through OPOS ADK, you do not have to make major changes in the whole application, but only the SO part, even if a peripheral device has been changed.
- The DM-MS123 is used for the MSR.
- The DM-D110/210/500 are used for the customer display.
  (DM-D210/500 cannot be used for the SR-610.)
- A CompactFlash adapter (option) is prepared.

Hardware

Hardware configurations

SR-610's hardware can be attached to the options as follows - the configuration makes it easy to replace HDDs.



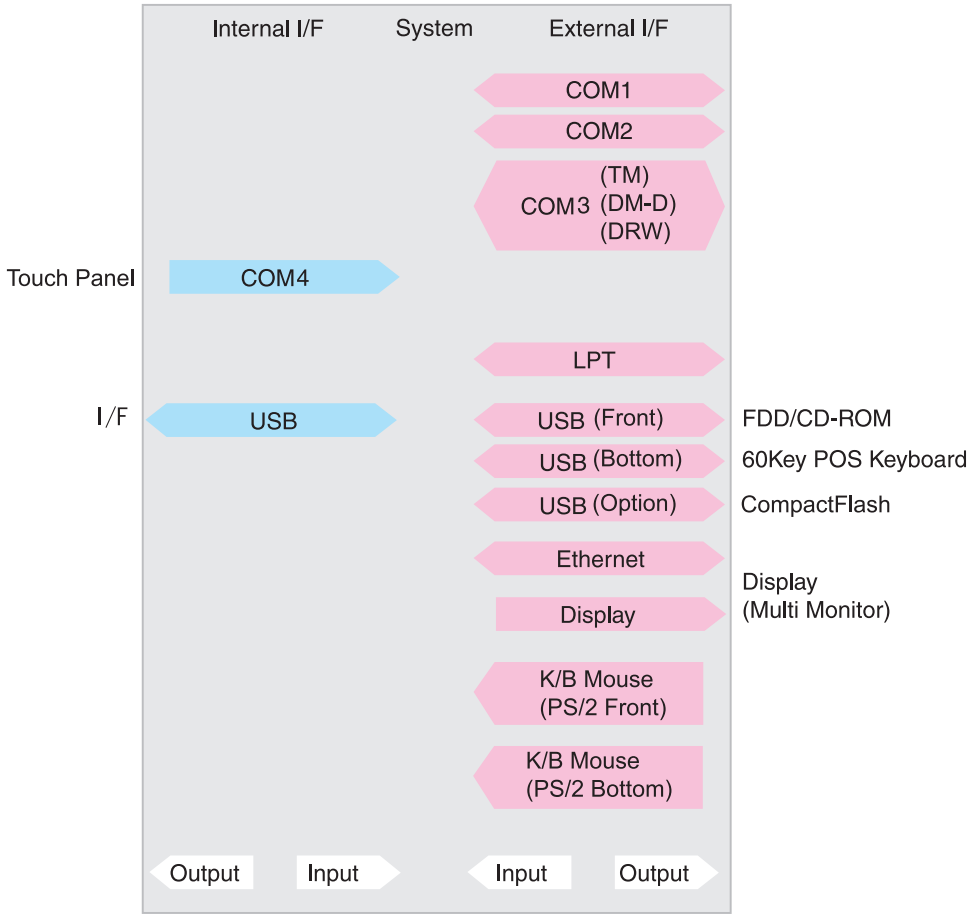
Difference between PC/AT PC and the SR-610

Compared to PC/AT PCs, the following points are different.

- ❑ Customer display, and cash drawer can be attached.
- ❑ LCD unit equipped with a touch panel is integrated.
- ❑ MSR unit can be mounted on the LCD unit.
- ❑ Equipped with 3 serial ports, a parallel port, 2 PCI slot, 4 USB ports, extensibility is assured. Serial ports output +5V(COM 1/2).

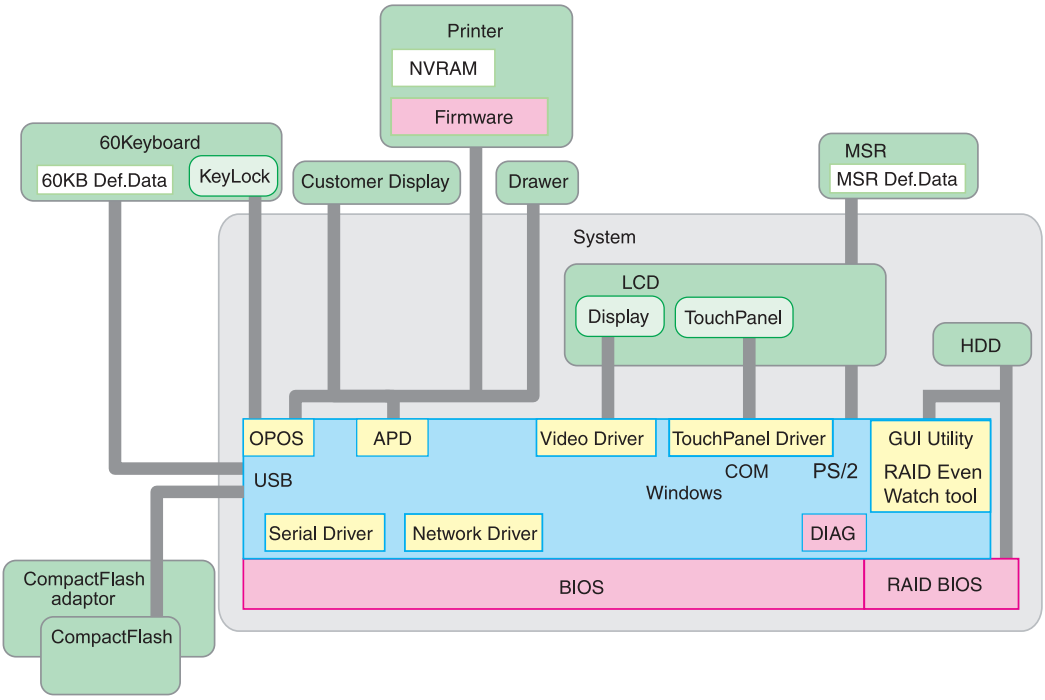
Interface

Interfaces of the SR-610 are as follows:



Software configuration

The configuration of the SR-610's software is as follows:



BIOS

The BIOS uses the AMI BIOS as a Core BIOS and supports the Plug & Play, APM , ACPI 2.0 etc. Setting up the BIOS's settings and changes to the CMOS can be performed using a utility. The default settings can be saved on a floppy disc and loaded on another SR-610 (It is possible only when the version of the BIOS is the same).

The diagnostic functions (Power On Self Test) inspect the system environment and the hardware when the power is on.

Device diagnostic utility (DIAG)

The device diagnostic utility can inspect the communication line between devices connecting to SR-610 and check the setting of main board.

The devices that can be tested are as follows:

- CPU, main board, memory
- HDD
- LCD display and touch panel
- Customer display

The devices that cannot be tested are as follows:

- MSR unit
- PCI card
- USB Access Device (60-key POS keyboard included)
- CompactFlash

Operating system

SR-610 works on the following operating systems.

- Windows 2000 Professional SP4 or later
- Windows XP Professional SP2 or later
- Windows Embedded for Point of Service (WEPOS)

Epson offers HDDs with an OS installed. In addition, a dedicated SR-610 and the utility driver installation CD-ROM are available as well. Therefore, an OS that the customers bring in can be used.

Note:

❏ Be sure to back up your data. When you request the repair of an HDD, please be sure to bring the OS disk.

RAID BIOS/Config utility

Models with 2 HDDs can build RAID1 (mirroring). The RAID BIOS checks the RAID status during startup, and controls the RAID during operation. Even if one HDD fails during startup or operation, another HDD can continue to operate the system.

In addition, basic matters such as starting and stopping RAID are executed.

Watch RAID tool (RAID Utility for Windows)

The Watch RAID tool monitors the RAID status during Windows operation. When RAID events occur, it can notify users by email or buzzer. RAID status can also be confirmed.

RAID Event Watch tool

The RAID Event Watch tool monitors events of the GUI utility. When RAID events occur, it can display popup messages in front of an application and create event logs for Windows.

OLE-POS

The PC/AT architecture allows the use of tools such as Visual BASIC and Visual C++ when developing the SR-610 applications. As the OLE-POS drivers are provided for POS peripheral devices, optimal applications for wide use are easily developed. For the latest OLE-POS, please

contact our sales offices. OPOS drivers vary from the printer driver for general Windows. It is assumed that the programming is executed in a development environment, such as Visual BASIC. This driver is not supposed to print through applications on the market.

Printer driver-APD

Adding control of printer, customer display, cash drawer to the printer driver for general Windows enables the driver to control especially for POS purposes.

Epson Remote Maintenance Software

With the Remote Maintenance Software, you can manage clients by issuing various jobs from a server to clients (SR-610) and obtain the execution results via the internet or LAN system. It enables you to rewrite or obtain definition data of clients in many shops or on many floors all at once. You can also rewrite the printer firmware. Therefore, a maintenance person does not need to go to every client to rewrite data, which makes maintenance more effective.

Options

SR-610 offers the following options.

Hardware		Model number
POS Keyboard Unit	60-KeyPOS Keyboard	DM-KX060
MSR Unit		DM-MS123
Customer display		DM-D110
		DM-D210
		DM-D500
CompactFlash adapter		OI-S05

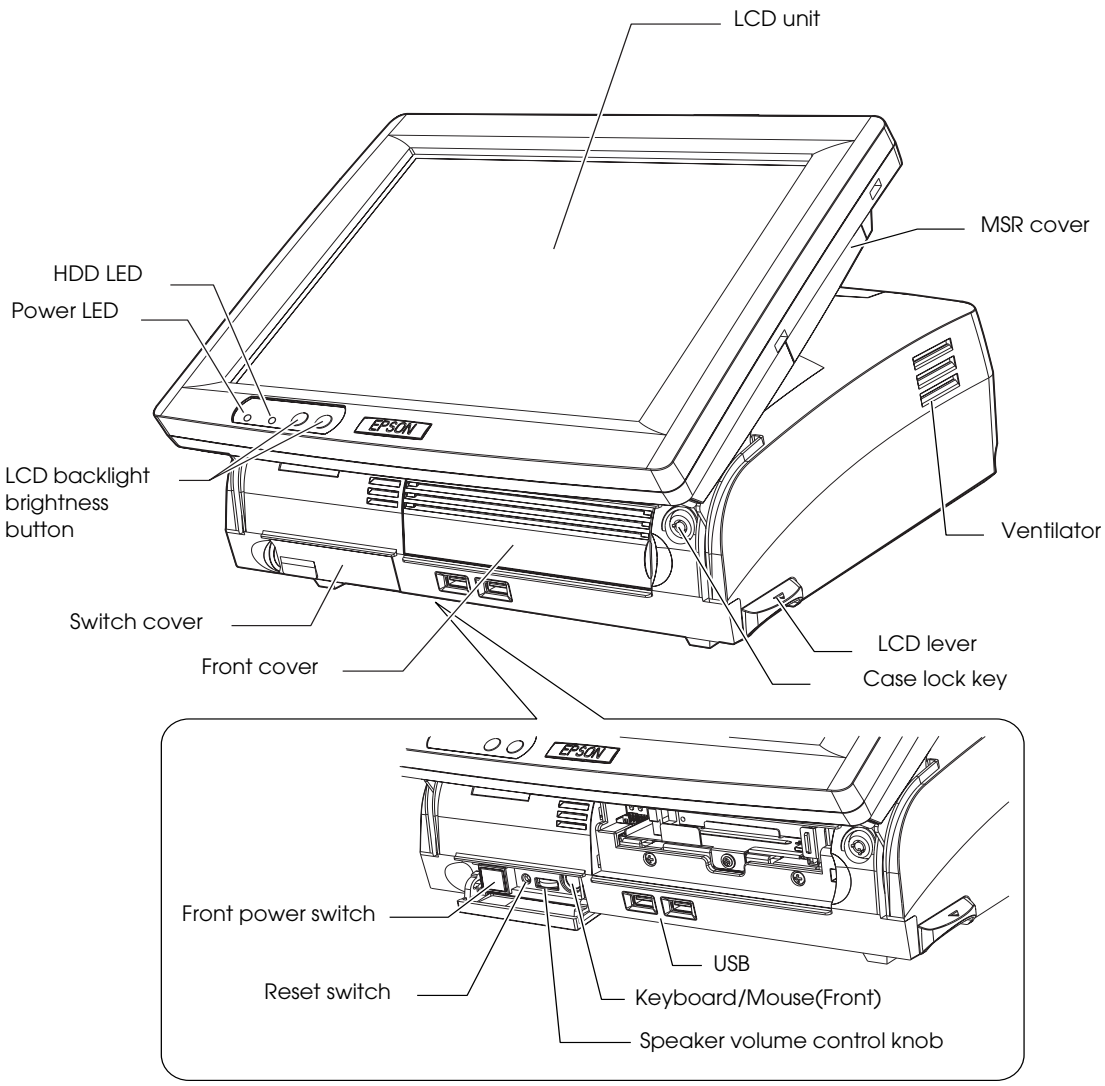
Operation Testing Products for IR

The Operation Confirmed items are marketed by Epson and are built-in, included, or connected to an Epson POS product, and operation by has been confirmed by Epson. Epson can also offer reference information for the selection of peripheral devices to the customer who constructs a system using Epson POS products. Please inquire what kind of device can be used from Epson or the selling agent.

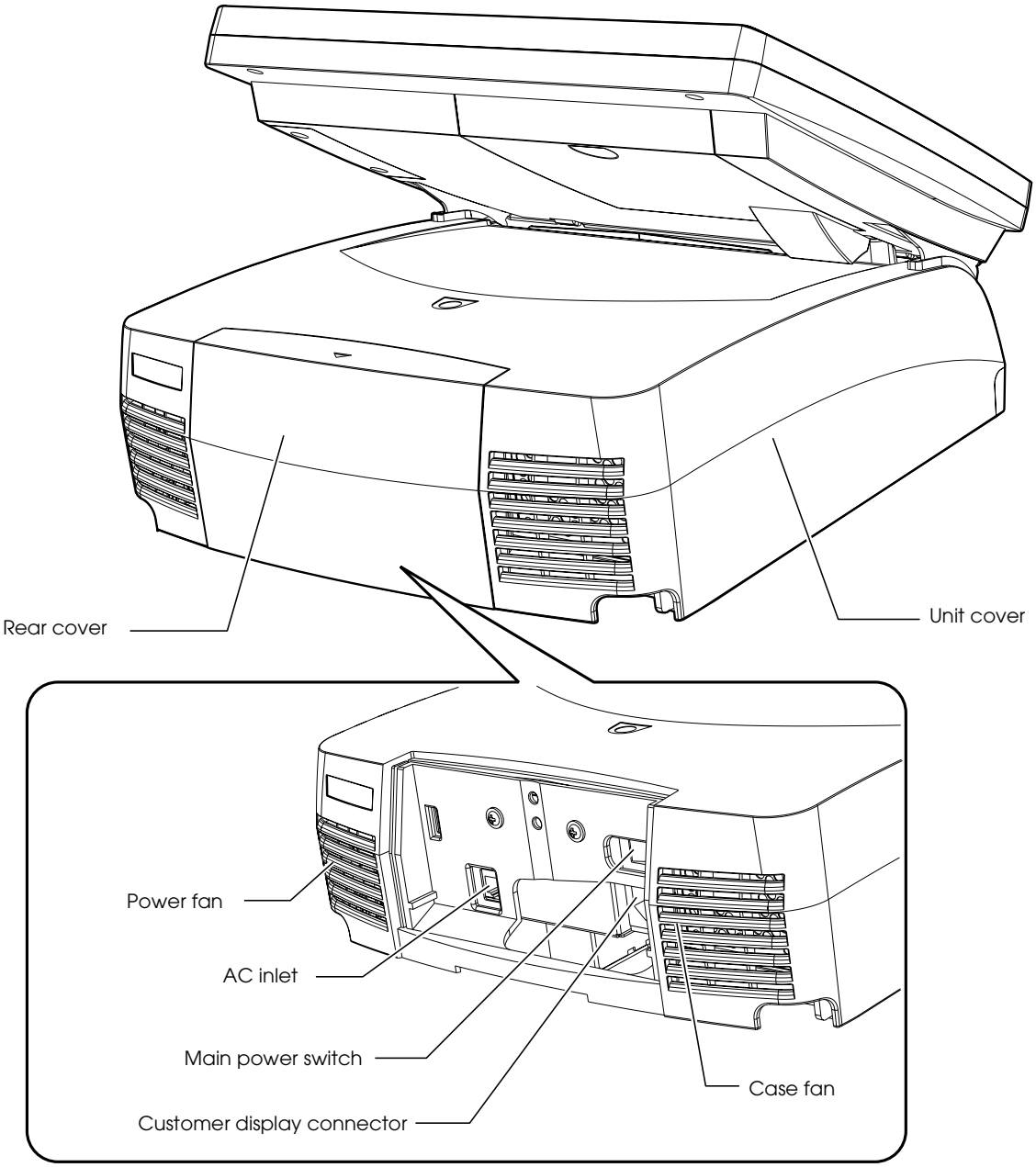
This operation confirmation evaluates the equipment in test environments and conditions, but it does not guarantee the operation. Therefore, procurement and evaluation by the customer are required.

Part Names

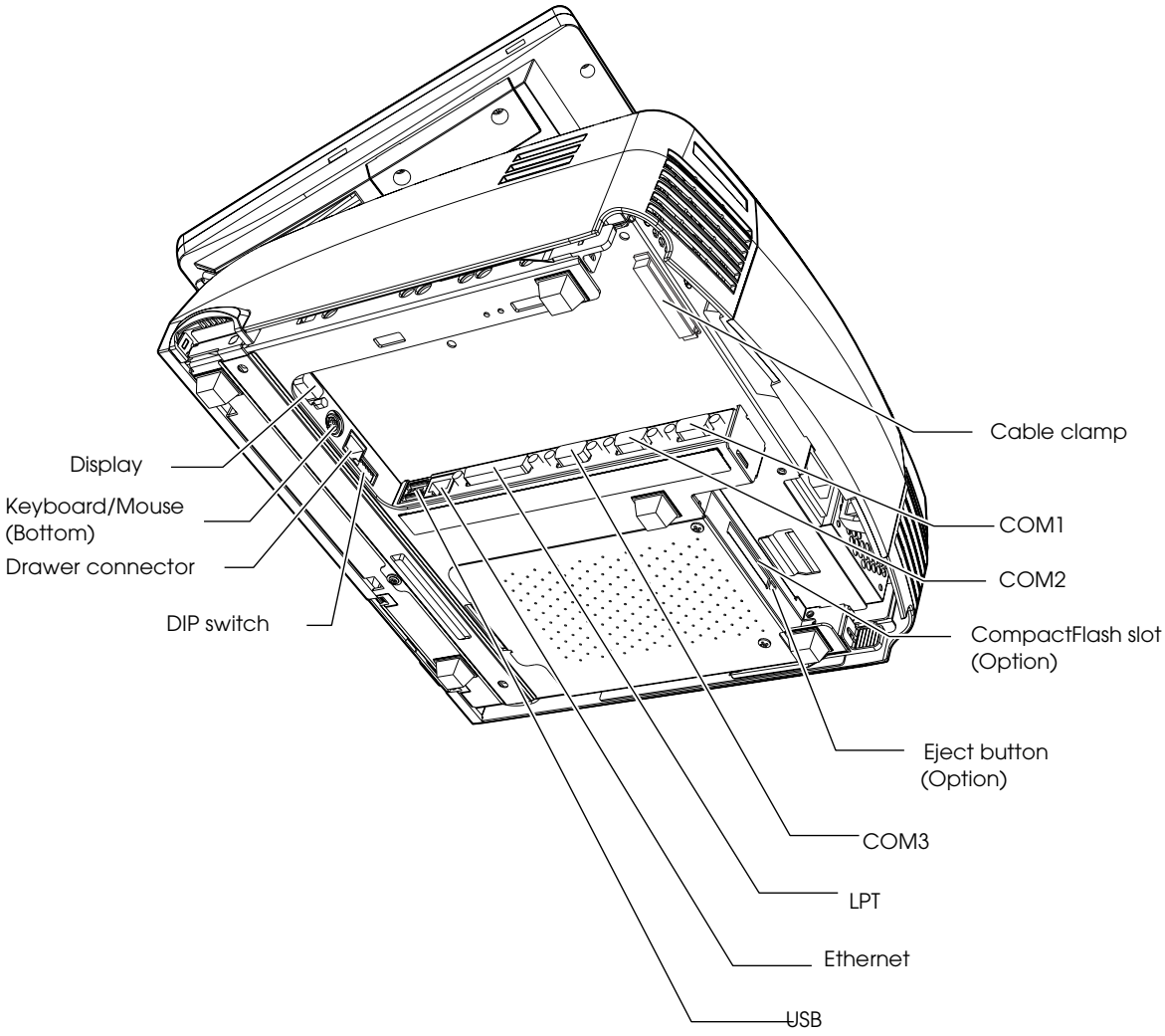
The part names are as follows:



Back


Rear cover
Unit cover
Power fan
AC inlet
Main power switch
Customer display connector
Case fan

Bottom



SR-610 operation

See the SR-610 users manual.

Setting of the DIP Switches and the Jumper

DIP Switches

The DIP Switches are used for the communication with the cash drawer and the for switching between the front side keyboard/mouse connector and the bottom side keyboard/mouse connector. SW1 is inside. SW2 is accessible from the outside on the bottom of the unit.

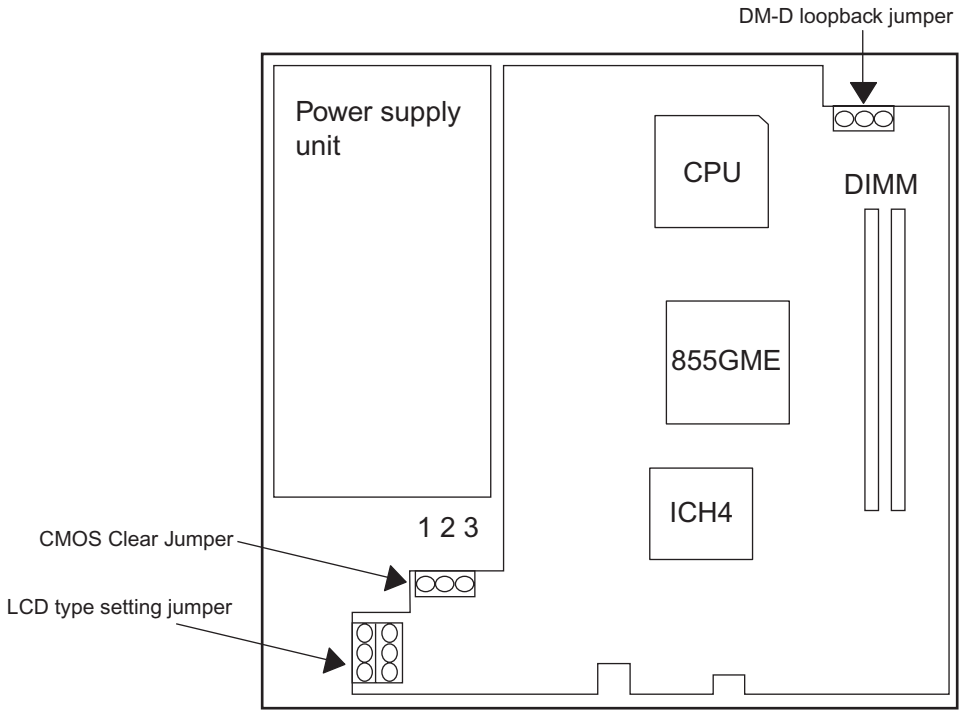
SW1 setting

NO	Function	Setting		Contents
1,2	Operation mode	SW1-1	SW1-2	
		OFF	OFF	Emulation mode 1
		ON	OFF	Emulation mode 2 (default)
		OFF	ON	Native mode
		ON	ON	(Reserved)
3	Parity	OFF (default)		None
		ON		Yes (Even)
4	Data bit length	OFF (default)		8Bit
		ON		7Bit

SW2 setting

NO	機能		設定		設定内容
1	Handshaking		OFF (default)		DTR/DSR
			ON		XON/XOFF
2	Meaning of drawer open signal	Emulation mode 1, 2	OFF (default)		Connects 1 or 2 units of the drawer (drawer open level: L) or 1 unit of the drawer (drawer open level: H)
			ON		Connects 2 units of the drawer (drawer open level: H)
		Native mode	OFF((default)		Connects 1 or 2 units of the drawer (drawer open level: L) or 1 unit of the drawer (drawer open level: H)
			ON		Connects 2 units of the drawer (drawer open level: H)
3,4	Transmission speed		SW2-3	SW2-4	Function
			OFF	OFF	9600bps (default)
			ON	OFF	19200bps
			OFF	ON	38400bps
			ON	ON	115200bps
5	Switching PS/2		OFF		Front PS/2 (on VR board) enabled
			ON (default)		Bottom PS/2 (on DRW board) enabled

Jumper setting



CMOS Clear Jumper

It is the jumper to clear the CMOS RAM.

Jumper Address	Function	
	Initial Setting	CMOS Clean-up
JP1601	1-2	2-3

LCD type setting jumper

It is the jumper to set the type of the LCD.

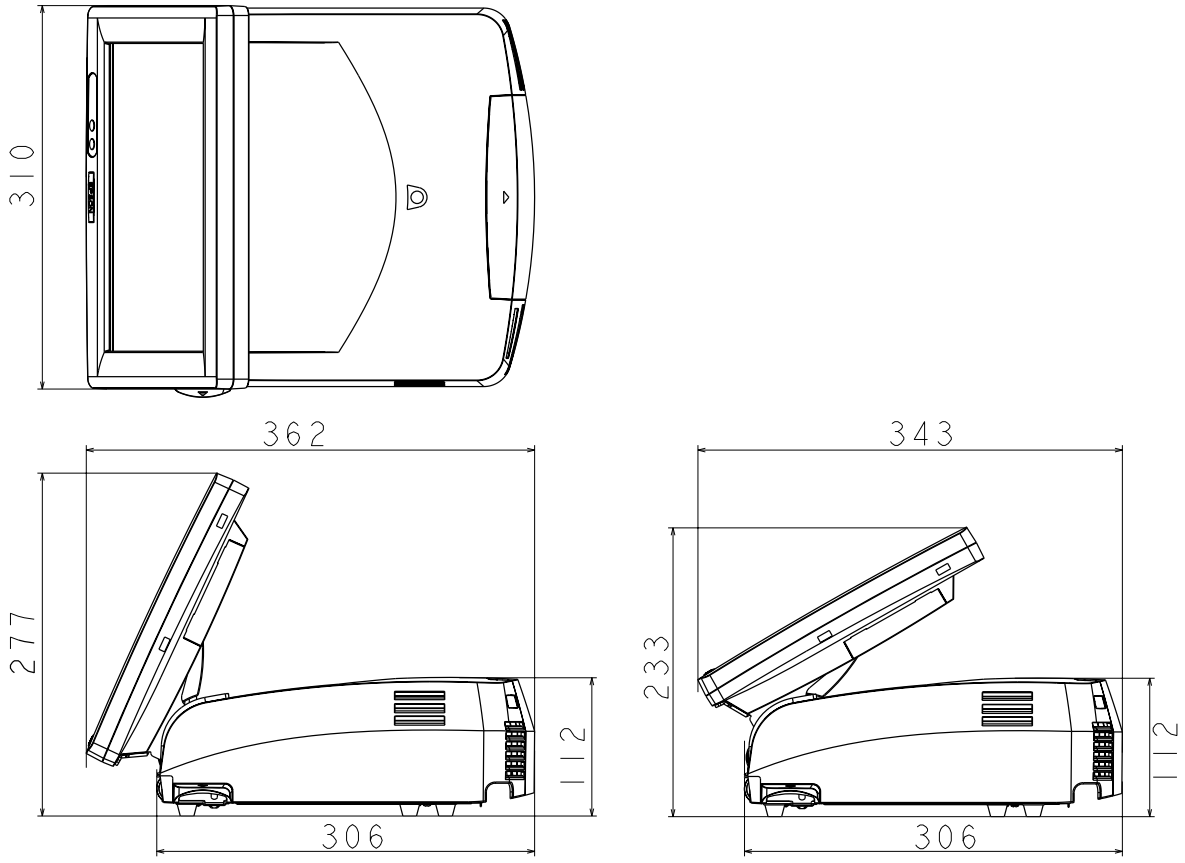
Jumper Address	LCD type			
	(Reserved)	(Reserved)	(Reserved)	(SVGA, TFT)
JP3101	1-2	2-3	1-2	2-3
JP3102	1-2	1-2	2-3	2-3

DM-D loopback jumper

The jumper that loops the RTS and CTS of the DM-D connector on the main board.

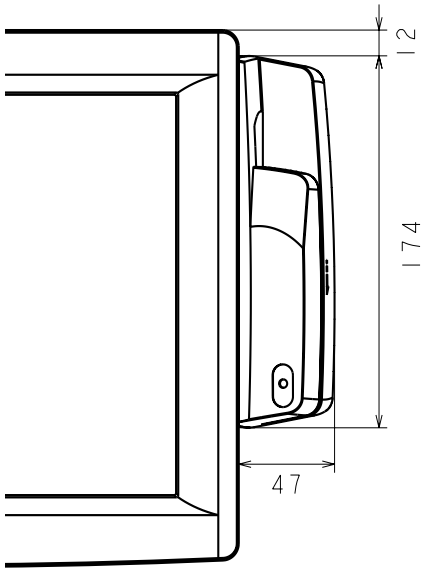
Jumper Address	Function	
	Loop back	No loop back (default)
JP2901	1-2	2-3

Dimensions



The size shown above is for reference and is not guaranteed.

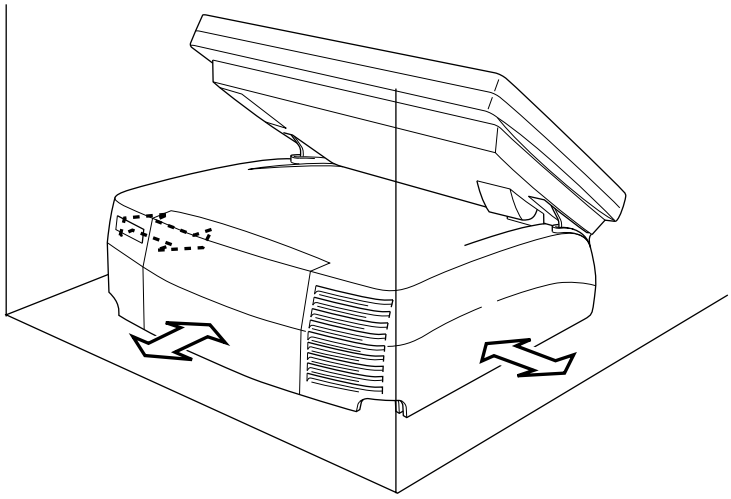
Connected MSR Unit



The size shown above is for reference and is not guaranteed.

Required Clearance

Secure the installation space, and set up on a horizontal area which is wider than the product. Leave a space of 5 cm (2 inches) or more from the wall when setting it up near a wall.



Specifications

❑ SR-610

SR-610

Item		Specification
CPU	Compatible CPU	Intel® Celeron®M (1.3GHz)
	Socket	mPGA479M socket
	Secondary cache memory	512 KB (Built in the CPU.)
Memory	Main memory	184 pin DDR SDRAM DIMM slot x2, Max. 1 GB (Supports up to DDR DIMM PC2700.) Note: Operates as Pc2700 when using a DIMM of PC2700 or faster.
	BIOS ROM	8MBit
Chip set		Intel® 855GME/ICH4 chip set
Video controller		Built-in chip set (Supports dual display.)
LCD	Size	Type 12.1"
	Type	Color TFT
	Resolution	800 ~ 600 dots
	Display color	256K (Approx. 260K)
	Number of backlights	2 lights
	Backlight Brightness	272 cd/m^2 typ. (Touch panel included) Brightness is adjustable with the backlight brightness buttons.
Touch panel	Method	Resistive film (Data can be entered using the touch panel.)
	Surface solidity	3H or more (JIS K-5600, ISO/DIS 15184)
	Positioning accuracy	± 5mm maximum
	Fingerprint resistance	Supported
Sub storage HDD	HDD	Serial ATA interface with 1 or 2 built in-type 2.5" HDD. RAID-ready for 2 built-in-type (mirroring only)

SR-610

Item		**Specification**
Interface	Ethernet*1	10 BASE-T/100 BASE-TX is included as standard. Wake On LAN available
	Shared board for keyboard/mouse	x2 PS/2-compliant (6-pin mini-DIN) Either the front connector or the bottom connector is available. Can be switched with the DIP switch. Both keyboard and moue can be connected using branch cable.
	Serial*2	x3 (D-sub male 9-pin) Can be set in the BIOS settings so that it outputs DC5 V to pin 1 through COM1 and COM2. COM3 can be set in the BIOS settings to be used as Normal, TM/DM-D, DRW, DM-D port.*7 Supports Wake up function (Modem Ring On) of pin 9 (RI).
	Parallel	x1 (D-sub female 25-pin) Supports EPP/ECP.
	Display*3	x1 (D-sub female 15-pin)
	USB*4	External: USB 2.0 x4 (high/full/low speed support) Internal: x1
	Customer display	x1 (RJ-45)
	Drawer (DK)*5	x1
Expansion slot	PCI slot*6	x1 (DC 3.3 V power supply is provided.) (Revision 2.2)
Sound	Beep	Can be output to built-in speaker.
	Speaker	Built-in monaural speaker (with hardware volume control)
BIOS		Supports ACPI 2.0/APM 1.2/Plug & Play/DMI.
Supported OS		Windows®2000 Professional SP4 or later Windows®XP Professional SP2 or later Windows®Embedded for Point of Service
RTC/CMOS backup battery		A lithium non-rechargeable battery supplies the backup voltage to the RTC.
Power supply		AC 100 V ~ 240 V/50 Hz ~ 60 Hz Max. 4.0 A/152 W
Temperature		Operation: 5°C ~ 35°C Storage: -10°C ~ 50°C
Humidity		Operation: 30%RH ~ 80%RH (No condensation) Storage: 30%RH ~ 90%RH (No condensation)
Case color		EPSON cool white (ECW)/EPSON dark gray (EDG)
Overall dimensions		310mm(W) x 363mm(D) x 277mm(H) (Rear cover included, LCD unit excluded)
Mass		8.7kg (LCD unit and Two-hard-disks included)

NOTE*1: Ethernet controller/sound controller are included in the standard package, and are separable in the BIOS settings.

*2: The SR-610 has 4 external ports. However, the customer display uses 1 port, leaving 3 ports available for external interfaces.

*3: Contents can be displayed separately on the display and LCD using the dual display function.

*4: In addition to four external ports, the SR-610 has one other USB port for connecting the CompactFlash adapter of the option.

*5: Two drawers can be controlled by the exclusive cable.

*6: When attaching the CompactFlash adapter of the option, the PCL slot cannot be used.

*7: COM3 can be set in the BIOS as shown in the table below.

BIOS setting	COM3 port		Customer display DM-D	Cash drawer DRW
	Versatile device	TM printer		
Normal	Y(*8)	Y	N	N
TM/DM-D(*9)	N	Y(*10)	Y	N
DRW/DM-D	N	N	Y	Y

Y: Settable, N: Not settable

*8: Can be used in the same manner as COM1 and COM2 are. (However, +5 V cannot be output to pin 1 (DCD terminal).)

*9: In the TM/DM-D mode, use the SR-610 connected with both the TM printer and the customer display.

*10: As COM3 becomes the exclusive port for the TM printer, it cannot be used for the other devices.

❑ 60-key POS Keyboard

DM-KX060

Item		DM-KX060
Key switch	Alignment	6 x 10
	Number of keys	60
Keylock		8 positions
Interface	Connector for connecting to the main unit	USB 1.1 compliant Type A connector
	USB downstream	x2 USB 1.1 compliant
Overall dimensions		250mm(W) x 140mm(D) x 52mm(H)
Cable length		550mm
Mass		Approx. 800 g

❑ MSR Unit

DM-MS123

Item	DM-MS123
Supported card	ISO 7811/JIS X6301 Type I, track 1, 2, 3
Connection	Can be connected to the side of the LCD unit with a dedicated connector.
Power supply	DC 5 V (Supplied from the SR-610.)
Overall dimensions	46mm(W) x 174mm(D) x 56mm(H)
Mass	Approx. 270 g

❑ CompactFlash Adapter

OI-S05

Item	OI-S05
Usable card	CompactFlash Type I(3.3mm thick)/Type II(5mm thick) CF+ Card Type I(3.3mm thick)/Type II(5mm thick) The I/O card of the CF+Card (modem, LAN, etc), the Longer card and the Extended card (the full length exceeds 36.55 mm) are not supported. It is not possible to boot up from the CompactFlash. Hot-swap during the power is on is not supported (as before).
BIOS	BIOS version 3.05 or higher. Set (Boot)-(Onboard CompactFlash) to "Disabled".
Mass	Approx. 75 g

Chapter 2
OS and Drivers

Outline of This Chapter

This chapter tells which Operating Systems and Drivers can be used and how to install and uninstall them.

⚠ CAUTION:

Don't write anything, such as an application to an HDD that is removed from the SR-610.

The vibration and impact can cause trouble and the failure of the HDD.

Operating Systems

The following Operating Systems can be used for the SR-610.

- ❑ Windows 2000 Professional SP4 (There is a version preinstalled by EPSON)
- ❑ Windows XP Professional Edition SP2 (There is a version preinstalled by EPSON)
- ❑ Windows Embedded for Point of Service (WEPOS)
  (There is a version preinstalled by EPSON)

Drivers and Utilities

Drivers for using the SR-610 are on the Driver CD-ROM included with the SR-610. If the operating system is pre-installed on the HDD, the printer driver, the customer display driver, and the ERM are not installed.

Driver CD-ROM for the SR-610

In case you use a locally procured OS on the SR-610, the drivers for using the peripheral devices are on this CD-ROM.

The CD-ROM directory is shown below.

```
Root                          CDVER.TAG
 |--- COMMON                  Common OS utility drivers
 | |--- 60KEYCFG        :        60-key POS keyboard definition utility
 | |--- MSRCFG          :        MSR definition utility
 | |--- APDRV           :        Advanced Printer driver
 | |--- ERM             :        Epson Remote Maintenance Software
 | |--- OPOSADK         :        OPOS ADK(Printer, Customer Display and Drawer)
 |--- DOS62                   Drivers for MS-DOS
 | |--- NETWORK         :        Network drivers
 |--- WIN2K                   Drivers for Windows2000
 | |--- 60KEYCFG        :        60-keyPOSkeyboard driver
 | |--- CHIPSET         :        Chipset drivers
 | |--- DISSW           :        Power button prohibited setting tool
 | |--- EPSERIAL        :        Serial Driver
 | |--- NETWORK         :        Network drivers
 | |--- SATARAID        :        SATA RAID related driver folder
 | | |--- DRIVER        :        SATA-RAID Driver
 | |   |--- TOOL        :        GUI Utility, RAID Event Monitoring Tool
 | |--- TOUCH           :        Touch Panel drivers
 | |--- VIDEO           :        Video drivers
 |--- WINXP                   Drivers for Windows XP
   |--- 60KEY           :        60-key POS Keyboard drivers
   |--- CHIPSET         :        Chipset drivers
   |--- EPSERIAL        :        Serial tool
   |--- NETWORK         :        Network drivers
   |--- SATARAID        :        SATA RAID related driver folder
   | |--- DRIVER        :        SATA-RAID Driver
   | |--- TOOL          :        GUI Utility, RAID Event Monitoring Tool
   |--- TOUCH           :        Touch Panel drivers
   |--- VIDEO           :        Video drivers
```

Readme.txt files are in both the root directory and in subdirectories of the root directory.

1. The Readme.txt file in the root directory contains an overview of this CD-ROM and refers to the Readme.txt files in the various subdirectories.

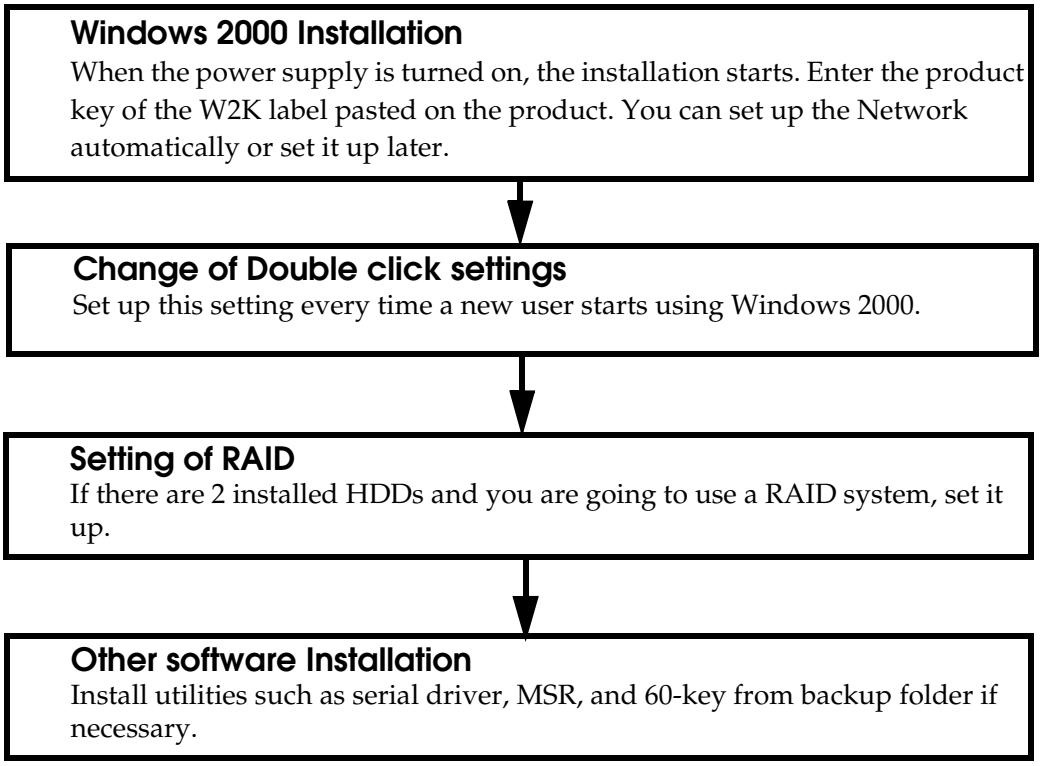
2. The Readme.txt files in the operating system subdirectories explain driver installation/ un-installation for each operating system.

3. Readme.txt files for KEYCFG, OPOS-ADK, and APDRV are included with the software.

Windows 2000 Pre-Installed Model

The exclusive EPSON utility and drivers for using SR-610 are pre-installed in the HDD with the pre-installed Windows 2000 Professional.

Installation Procedure



Formatting the hard disk

The hard disk is composed of one partition of up to 10 GB as a system area. For a hard disk of more than 10 GB, the excess area other than the system area is not yet formatted. This drive can be converted to NTFS using the Convert command. Use the disk administrator when creating a drive in the unused area. The start-up drive has been formatted to the following file system.

- File system: FAT32
- Volume label: Windows 2000

Pre-installed software

- ❑ Microsoft Windows 2000 Professional
- ❑ Microsoft Windows 2000 Service Pack 4
- ❑ Microsoft Windows 2000 Multilingual User Interface Pack
- ❑ Intel Chipset software installation utility
- ❑ Intel Video driver
- ❑ Intel Network driver
- ❑ Silicon Image SATA-RAID driver
- ❑ EPSON Touch Panel driver
- ❑ EPSON Power button prohibited setting tool*1
- ❑ EPSON 60-key POS keyboard definition utility *1
- ❑ EPSON MSR definition utility *1
- ❑ EPSON Serial driver *1

Note:
**1: These are not installed during the auto installation procedure.*

Version of the Pre-installation HDD

To confirm the version of the HDD, see the file HDVER.TAG in the root directory of the boot drive. This file is text-formatted and can be read using Notepad or a similar text editor. The file HDVER.TAG has the following contents:

```
[HD Information]

MODEL=SR-610

OS=Windows2000

LANG=Dutch/English/French/German/Italian/Portuguese/Russian/Spanish

VER=1.**.*
```

Directory Configuration

The root directory of the HDD is structured as follows.

```
|--- Backup
|       |--- 60KEYCFG       :   60-key POS keyboard definition utility
|       |       |--- DRIVER   :   60-key POS keyboard driver
|       |       |--- TOOL     :   Utility
|       |--- CHIPSET        :   Chipset driver backup folder
|       |--- EPSERIAL       :   EPSON Serial driver backup folder
|       |--- DISSW          :   EPSON Power button prohibited setting tool backup folder
|       |--- Msrcfg         :   MSR definition utility backup folder
|       |--- NETWORK        :   Network driver backup folder
|       |--- SATARAID       :   SATA RAID related driver backup folder
|       |       |--- DRIVER   :   SATA-RAID driver
|       |       |--- TOOL     :   GUI Utility,  RAID Event Monitoring Tool
|       |--- TOUCH          :   Touch Panel driver backup folder
|       |--- VIDEO          :   Video driver backup folder
|--- I386                   :   Setup file folder
|--- Mui                    :   Microsoft Windows XP Multilingual User Interface Pack
|--- Program Files          :   Windows utility folders
|--- WINNT                  :   Windows folders
```

The I386 directory may be deleted after the addition of the Windows 2000 application and the addition / change of the driver.

The directories under the Backup directory are the backups for drivers and utilities. Each of these directories can be backed up into CD-R or other media. After being backed up, these directories may be deleted.

If you install the optional CD-R/RW drive, you need to get software for CD-R/RW writing. The software is not supplied by EPSON.

Windows 2000 Setup Procedure

Note

Connect the keyboard before beginning the setup procedure. The keyboard is necessary for inputting the product ID and the password.

Windows 2000 is set up by using the following procedure.

1. Turn on the system, and boot the system from the pre-installation HDD. Windows 2000 setup will start.

2. The License Agreement screen is displayed. Check the contents, then select [I accept this agreement] and click **Next**.

3. The Regional Settings screen is displayed. Make sure the system locale, user locales and keyboard layout are set to United States, then click **Next**.

4. The Personalize Your Software screen is displayed. Input the Name and Organization, then click **Next**.

5. The Your Product Key screen is displayed. Input the product key entered on the cover of the First Step Guide in the COA (Certificate of Authenticity) package included with this product; then click **Next**.

6. The Computer Name and Administrator Password screen is displayed. Input the Computer Name and Administrator Password, then click **Next**.

7. The Date and Time Settings screen is displayed. Set the date and time, then click **Next**.

8. The Networking Settings screen is displayed. Select either Typical Settings or Custom Settings according to the environment, then click **Next**. The Networking Components screen is displayed if Custom Settings is selected. Set the settings in accordance with the environment, then click **Next**.

9. The Workgroup or Computer Domain screen is displayed. Set the settings in accordance with the environment, then click **Next**.

10. The system will start automatically when **Restart** is clicked.

11. The Network Identification Wizard starts. Click **Next**.

12. The Users of this Computer screen is displayed. Set the settings in accordance with the environment, then click **Next**.

13. The Completing the Network Identification Wizard screen is displayed. Click **Finish**.

14. Windows 2000 starts and the setup is completed.

Setting the recognition range of the double click

When Windows 2000 is installed, the permissible double click level is limited and it is difficult to double click with your finger. To change the permissible double click level, start up the EPSON Touch Panel Configuration Tool. It changes the registry key automatically. This setting makes easy to double click with your finger.

However, when a new user first logs on, the permissible level is limited because the default value of Windows is the value of the registry key. So the registry key must be modified for individual users.

When Windows 2000 is set up and a new user is created, the registry key must be modified for individual users by following the steps below.

Note
The administrator modifies the registry key.

Method

Select Programs - Epson Touch Panel Tool - Touch Panel Configuration Tool from the Start menu. Click **OK**. (There is no need to do any other operation.)

Various Configurations (Windows 2000)

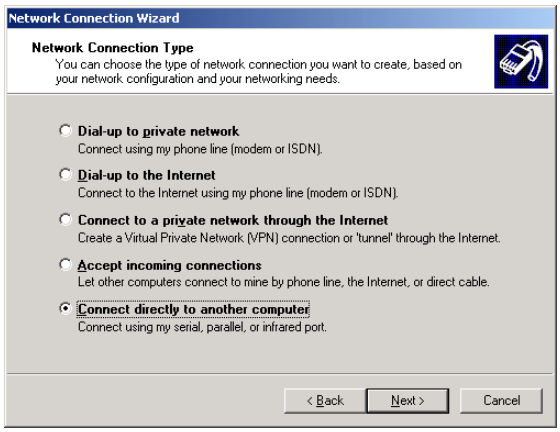
To change their configurations, use the control panel.

Setting the Network

A dialog box prompting the user to manually install the network is displayed. Set the network settings by the following procedure.

1. Open the Control Panel, then select Network and Dial-up Connections.
2. The Network and Dial-up Connections dialog box is displayed. Select Make New Connection.
3. The Network Connection Wizard starts. If the location information setting has not been completed by this time, the Location Information dialog box is displayed at this time. Set the settings in accordance with the environment, then click **OK**. If all the location information has been set, this dialog box is not displayed. Proceed to item (5) and set the settings in subsequent steps.
4. The Telephone and Modem Option dialog box is displayed. Select the location set in the previous item, then click **OK**.
5. The Network Connection Wizard opening dialog box is displayed. Click **Next**.

6. The Network Connection Type dialog box is displayed. Set the settings in accordance with the environment; then click **Next**. The dialog displayed by the following procedure is different depending on the type of the set network connection. The explanation here is for the case in which Connect directly to another computer is selected. Setting of other network connections can be accomplished in the same way by following instructions of the Network Connection Wizard.



7. The Host or Guest dialog box is displayed. Set the settings in accordance with the environment, then click **Next**. The explanation here is for the case in which Host is selected.

8. The Connection Device dialog box is displayed. Set the settings in accordance with the environment, then click **Next**.

9. The Allowed Users dialog box is displayed. Set the settings in accordance with the environment, then click **Next**.

10. The Completing the Network Connection Wizard dialog box is displayed. Input the name to be given to the current settings, then click **Finish**.

11. The newly set connection is added to the Network and Dial-up Connection dialog box. To change the connection method, right click on the newly added icon, and select Properties. The settings can then be changed.

EPSON Serial Driver

When the serial port is transmitting with Windows 2000, this Driver prevents the OS from shifting to the Standby mode, and the operation of the full-on mode can be continued.

When installing the service pack, install the serial driver again.

Install

Note
Be sure an administrator installs the serial driver.

Install the serial driver using the following procedure.

1. Execute C:\backup\epserial\Epserial.exe.
2. Start serial driver Setup. The welcome screen is displayed. Click **Next**.
3. After installation is completed, the InstallShield Wizard Complete dialog box is displayed. Select Yes, I want to restart my computer now, then click **Finish** to restart the system.

Uninstall

Uninstall the serial driver using the following procedure.

1. Open the Control Panel and select Add/Remove Programs.
2. The Add/Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when EPSON Serial Driver is selected. Click Change/Remove.
3. The Confirm File Deletion dialog box is displayed. Click **Yes**.
4. The Remove Programs From Your Computer dialog box is displayed. The uninstall process then begins.
5. A dialog box is displayed when uninstall is completed. Click **OK**.

Power button prohibited setting tool for windows 2000

The Power button prohibited setting tool is the tool setting the registry to prohibit the shift to the shutdown and the stand-by mode even if the front power switch is pressed. It can prevent the shutdown of the system even if the front power switch is pressed by mistake.

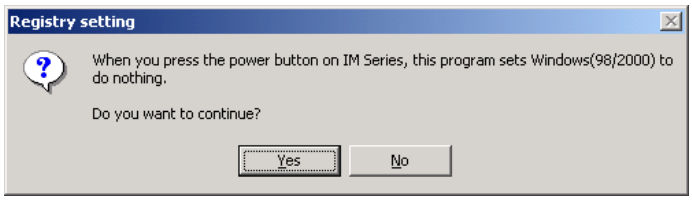
Note for using

When Power Options of Windows are updated, the setting is cleared, so always set after updating the Power Options.

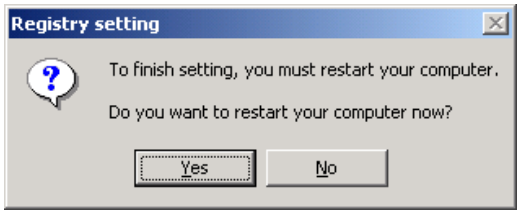
How to use

1. Execute C:\Backup\Dissw\DISSW.EXE.

2. The following message is displayed. Click Yes. If No is clicked, processing stops and you return to Windows.



3. When setting the registry, the following message is displayed. Click Yes, so Windows is restarted and the setting becomes valid.
   If you click No, the setting returns to Windows without becoming valid. In this case, if you then restart Windows, the setting becomes valid.



Dual Display

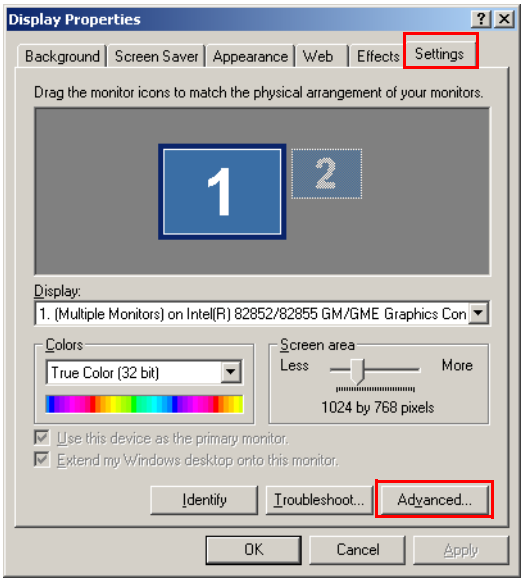
If an external monitor is added, the SR-610 can display the same content on both the LCD display and the external monitor, or each of them can display different content (expansion of the work area).

Displaying the same content on both monitors

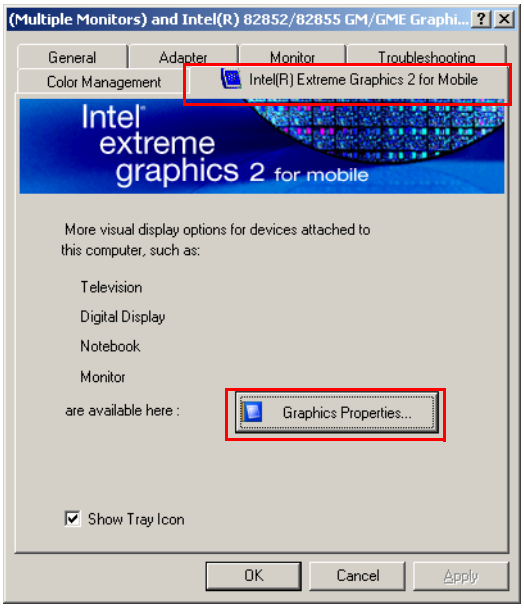
Follow the following procedure.

1. Select [Start]-[Settings]-[Control Panel]-[Display]

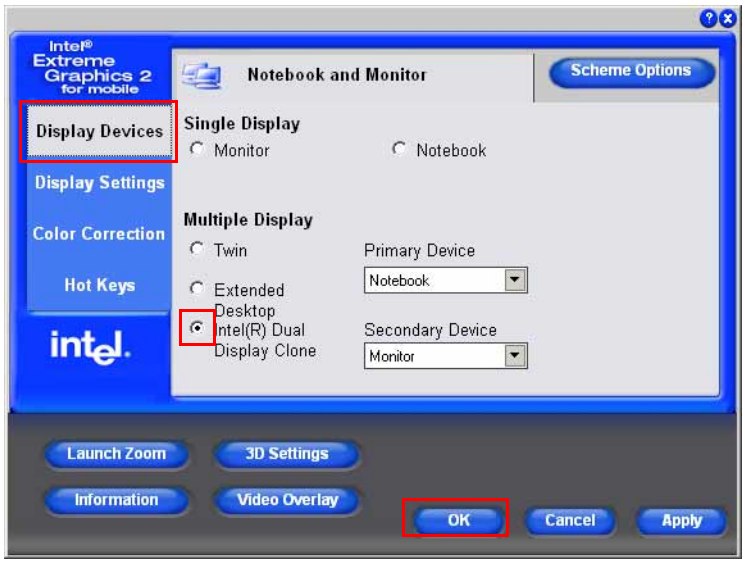
2. The [Display Properties] screen is displayed. Select the [Settings] tab and press the [Advanced] button.



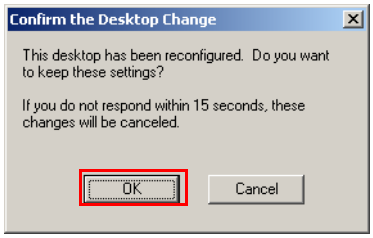
3. The following screen is displayed. Select the [Intel(R) Extreme Graphics 2 for Mobile] tab and press the [Graphics Properties] button.



4. The [Intel(R) Extreme Graphics 2 for mobile] screen is displayed. Select the [Display Devices] button and then check the [Intel(R) Dual Display Clone], and press the [OK] button.



5. The [Confirm the Desktop Change] screen is displayed. Press the [OK] button.



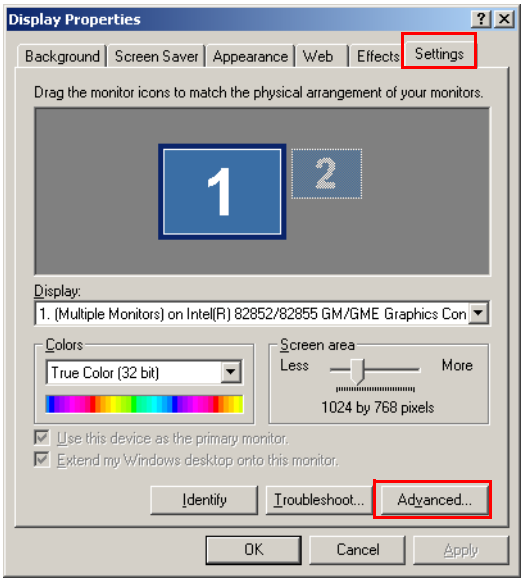
6. Each monitor displays the same content.

Displaying different content on each monitor (expansion of the work area)

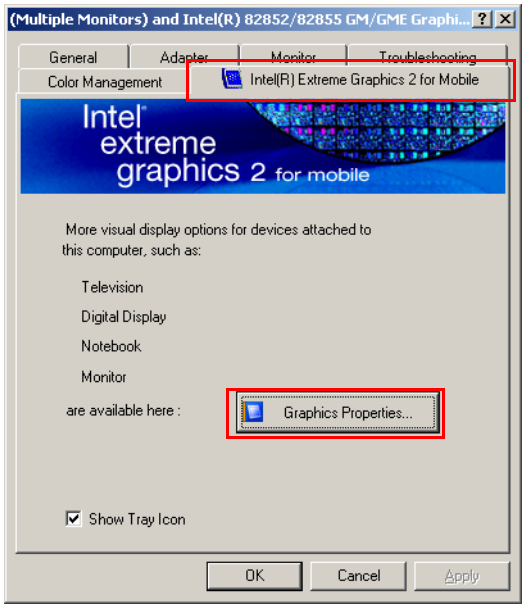
Follow the following procedure.

1. Select [Start]-[Settings]-[Control Panel]-[Display]

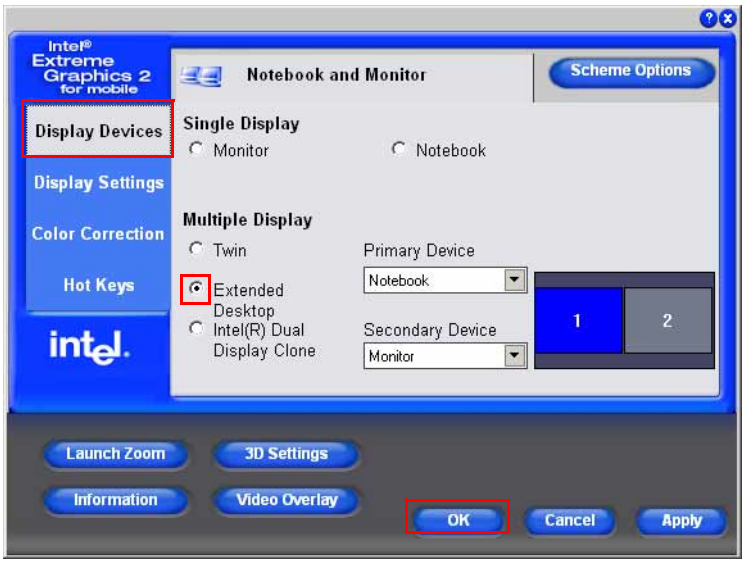
2. The [Display Properties] screen is displayed. Select the [Settings] tab and press the [Advanced] button.



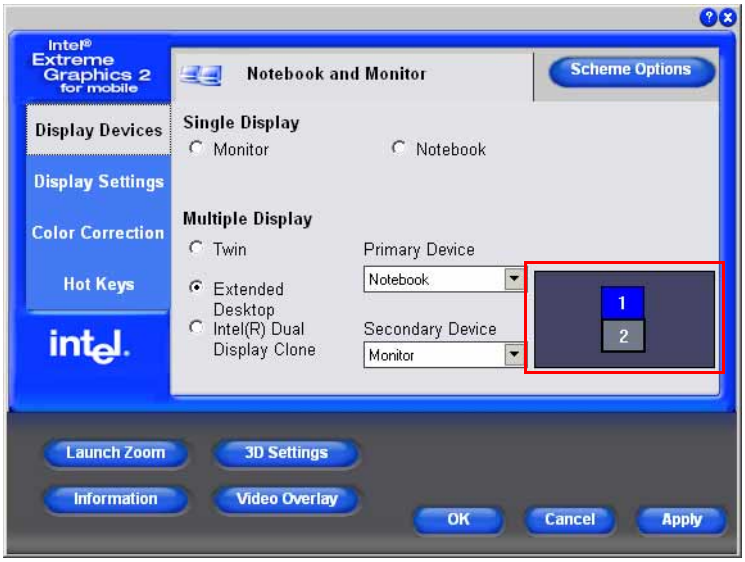
3. The following screen is displayed. Select the [Intel(R) Extreme Graphics 2 for Mobile] tab and press the [Graphics Properties] button.



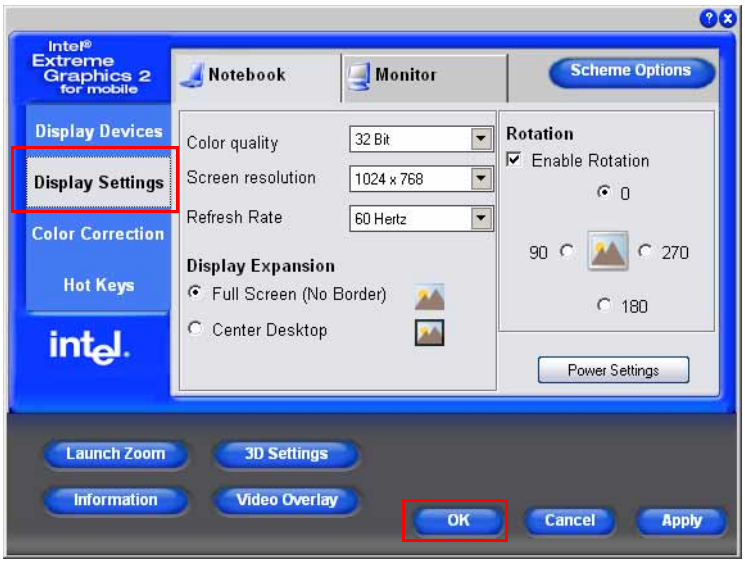
4. The [Intel(R) Extreme Graphics 2 for Mobile] screen is displayed. Select the [Display Devices] button and then check the [Extended Desktop] button, and press the [OK] button.



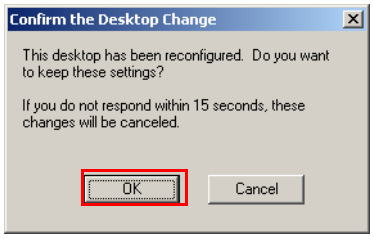
5. Change the method of allocating the work area by dragging and dropping the icons of the monitors.



6. Press the [Display Settings] button. Change the setting of each monitor, and press the [OK] button.



7. The [Confirm Desktop Change] screen is displayed. Press the [OK] button.

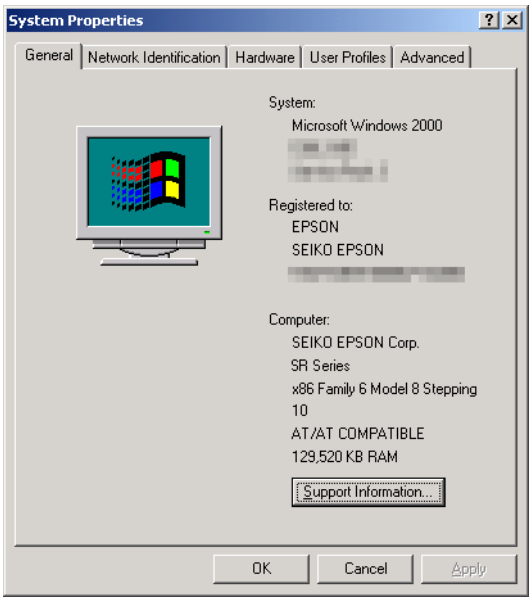


Adding Windows 2000 Applications

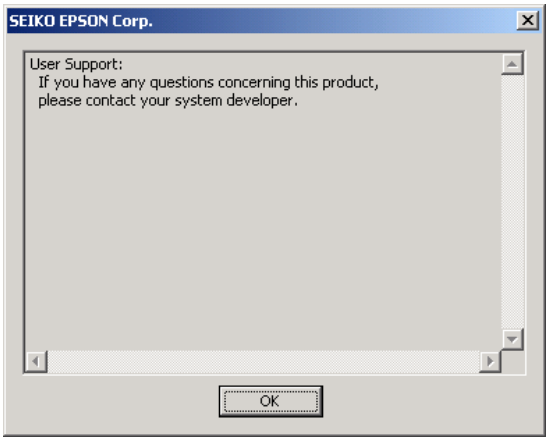
When adding any Windows 2000 application, specify the C:\I386 directory. In this directory, \I386 has been backed up from the Windows 2000 DVD-ROM.

Support Information

Right click the My Computer icon and select Properties from the pull down menu. Then the System properties are displayed.



Click the **Support information** button, so the information on the contact is displayed



Recovering the OS

Preparing confirmation

Confirm the following before OS recovery.

- ❑ DVD-ROM drive is prepared by the user.
- ❑ "The Windows 2000 DVD-ROM" included with the product is used for recovering Windows 2000.
- ❑ In the model installed 2 HDDs, construct RAID first, then perform OS recovery to construct RAID.
- ❑ Use the HDD included in the shipment or an unused HDD for OS recovery.
- ❑ The external keyboard is necessary for the recovery.
- ❑ In the setup of OS after recovering the OS, it is necessary to enter the product ID. In EPSON OS pre-installed model, the product ID is printed on the Windows sticker label on the side of the system.
- ❑ Set the BIOS setting to "Optimal Defaults". When using the customized BIOS setting, note down the BIOS setting value beforehand. After the recovery is done, you must reset it to that value.
- ❑ OS recovery erases all contents of the HDD. Back up the necessary data to a floppy disk or other media.

Recovering method

Follow the steps below to carry out OS recovery.

1. Turn power to the SR-610 off. Pull out the power cord from the SR-610.
2. Remove the peripheral devices such as the CompactFlash card that is not needed in the recovery work.
3. Install the HDD unit for which OS recovery will be done to the SR-610. For single HDD model, install it on the front side.

⚠ CAUTION:

Confirm that the HDD is installed correctly and that the cable are connected properly. It is important to prevent cause a poor connection.

4. Connect the external keyboard to the SR-610 keyboard/mouse connector and connect the DVD-ROM Drive to the USB connector.
5. Connect the power cord to the SR-610 and power switch On.
6. Boot the system, press the Del key during the POST process, and the BIOS setup will start.

7. To set the BIOS to Optimal Defaults, execute Load Optimal Defaults in the Exit menu.

8. Set to the DVD-ROM model number connecting 1st Boot Device of Boot Device Priority in the Boot menu.

9. Set the USB 2.0 ControllerMode to Hispeed in the Advanced menu.

10. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

```
Save configuration changes and exit setup?
        [OK]              [Cancel]
```

11. Select [OK], and press the Enter key.

12. The system will reboot. Insert the "Windows 2000 DVD-ROM" into the DVD-ROM drive.

13. The following message will appear. Select and enter the partition size of the HDD.

```
Please select the system partition size.
  1: 10GB (Default size)
  F: Full size of HD.
Please push a key of 1 or F._
```

14. Select the range to format as the system area on the hard disk. Press the "1" key to select 10GB or press the "F" key to select the full size. After that, the OS recovery starts.

15. When the prompt below is displayed on the screen, OS recovery work is complete.

```
c:\RESTORE>_
```

16. Eject the "Windows 2000 DVD-ROM" from the DVD-ROM drive.

17. Reboot and start the BIOS setup utility.

18. Set USB 2.0 ControllerMode to Full Speed in the Advanced menu.

19. Set to the HDD model number connecting 1st Boot Device of Boot Device Priority in the Boot menu.

20. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

```
Save configuration changes and exit setup?
       [OK]               [Cancel]
```

21. Select [OK], and press the Enter key.

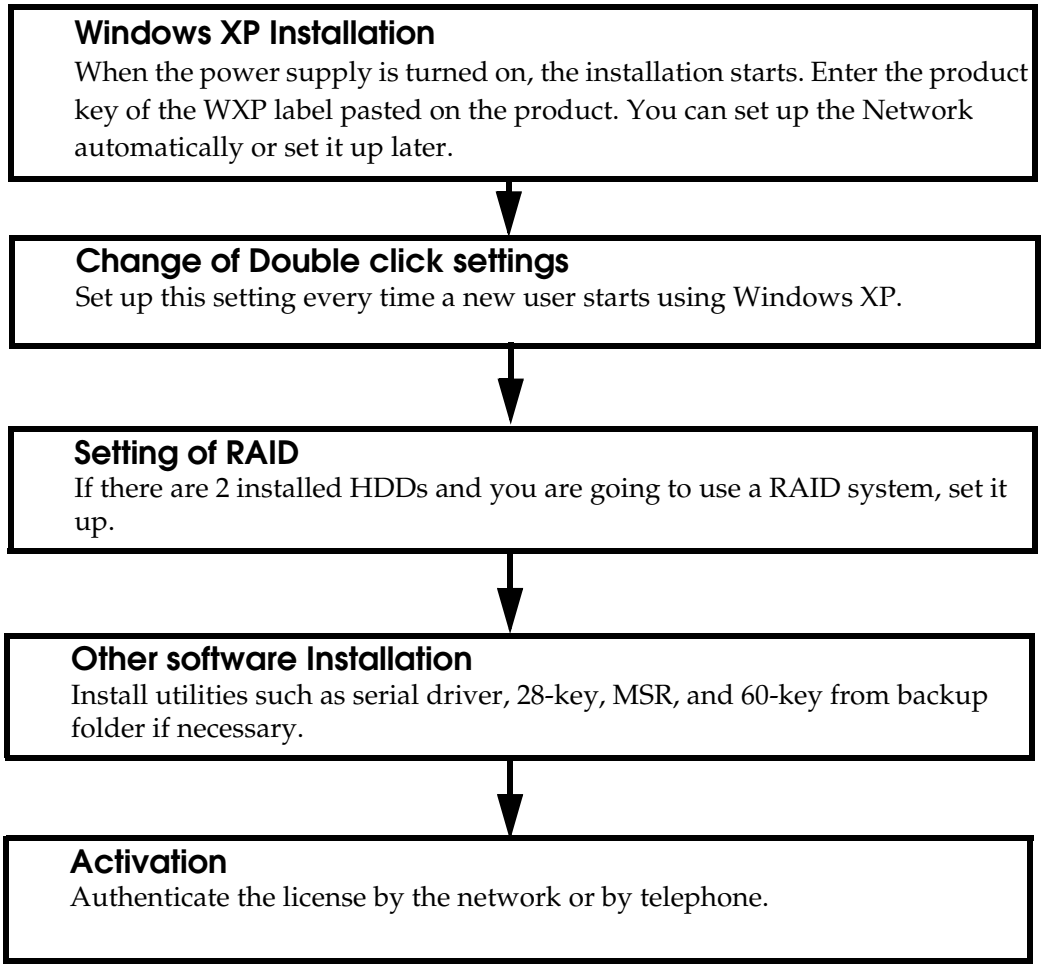
Detach the external keyboard.Limitation

- ❏ Recovery cannot be performed starting from a hard disk. You must perform recovery from a DVD-ROM.

Windows XP Pre-Installed Model

The exclusive EPSON utility and drivers for using SR-610 are pre-installed in the HDD with the pre-installed Windows XP Professional.

Installation Procedure



Formatting the hard disk

The hard disk is composed of one partition of up to 10 GB as a system area. For a hard disk of more than 10 GB, the excess area other than the system area is not yet formatted. This drive can be converted to NTFS using the Convert command. Use the disk administrator when creating a drive in the unused area. The start-up drive has been formatted to the following file system.

- File system: NTFS
- Volume label: Windows XP

Pre-installed software

- ❑ Microsoft Windows XP Professional
- ❑ Microsoft Windows XP Service Pack 2
- ❑ Microsoft Windows XP Multilingual User Interface Pack
- ❑ Intel Chipset software installation utility
- ❑ Intel Video driver
- ❑ Intel Network driver
- ❑ Silicon Image SATA-RAID driver
- ❑ EPSON Touch Panel driver
- ❑ EPSON 60-key POS keyboard definition utility*1
- ❑ EPSON MSR definition utility*1
- ❑ EPSON Serial driver *1

Note:

**1: These are not installed during the auto installation procedure.*

Version of the Pre-installation HDD

To confirm the version of the HDD, see the file HDVER.TAG in the root directory of the boot drive. This file is text-formatted and can be read using Notepad or a similar text editor. The file HDVER.TAG has the following contents:

```
[HD Information]

MODEL=SR-610

OS=WindowsXP OEM

LANG=Dutch/English/French/German/Italian/Portuguese/Russian/Spanish

VER=1.**.*
```

Directory Configuration

The root directory of the HDD is structured as follows.

```
|--- Backup
|       |--- 60KEYCFG       :   60-key POS keyboard definition utility backup folder
|       |       |--- DRIVER  :   60-key POS keyboard driver
|       |       |--- TOOL    :   Utility
|       |--- CHIPSET         :   Chipset driver backup folder
|       |--- EPSERIAL        :   EPSON Serial driver backup folder
|       |--- MSRCFG          :   MSR definition utility backup folder
|       |--- NETWORK         :   Network driver backup folder
|       |--- SATARAID        :   SATA RAID related driver backup folder
|       |       |--- DRIVER  :   SATA-RAID driver
|       |       |--- TOOL    :   GUI Utility,  RAID Event Monitoring Tool
|       |--- TOUCH           :   Touch Panel driver backup folder
|       |--- VIDEO           :   Video driver backup folder
|--- I386                    :   Setup file folder
|--- Mui                     :   Microsoft Windows XP Multilingual User Interface Pack
|--- Program Files           :   Windows utility folders
|--- WINNT                   :   Windows folders
```

The I386 directory may be deleted after the addition of the Windows XP application and the addition / change of the driver.

The directories under the Backup directory are the backups for drivers and utilities. Each of these directories can be backed up into CD-R or other media. After being backed up, these directories may be deleted.

If you install the optional CD-R/RW drive, you need to get software for CD-R/RW writing. The software is not supplied by EPSON.

Windows XP Setup Procedure

Note
After connecting the keyboard, start the setup procedure. The keyboard is necessary for inputting the product ID and the password.

Windows XP is set up by using the following procedure.

1. Turn on the system, and boot the system from the pre-installation HDD. Windows XP setup will start.

2. The [Welcome to the Windows XP Setup Wizard] screen is displayed. Click **Next**.

3. The License Agreement screen is displayed. Check the contents, then select [I accept this agreement] and click **Next**.

4. The [Regional and Language Options] dialog box is displayed. Confirm the setting contents and click **Next**.

5. The [Personalize Your Software] dialog box is displayed. Input your name and your organization, and then click **Next**.

6. The [Your Product key] dialog box is displayed. Input the 25-digit product key shown on the COA (Certificate of Authenticity) and click **Next**.

7. The [Computer Name and Administrator Password] dialog box is displayed. Input the necessary information and click **Next**.

8. The [Date and Time Settings] dialog box is displayed. Confirm the setting and click **Next**.

9. The Networking Settings screen is displayed. Select either Typical Settings or Custom Settings according to the environment, then click **Next**. The Networking Components screen is displayed if Custom Settings is selected. Set the settings in accordance with the environment, then click **Next**.

10. The Workgroup or Computer Domain screen is displayed. Set the settings in accordance with the environment, then click **Next**.

11. The [Completing the Windows XP setup wizard] dialog box is displayed. Click **Finish**.

Setting the recognition range of the double click

When connecting the LCD with the touch panel and making a setup, the touch panel driver is automatically installed and the double click setting registry key of Windows is modified.
But when a new user first logs on, the default value of Windows is applied to the value of the registry key, so the registry key must be modified for individual users.

When you set up Windows XP and create a new user, you have to modify the registry key for individual users by following the steps below.

Note
The administrator modifies the registry key.

EPSON Serial Driver

When the serial port is transmitting with Windows XP, this Driver prevents the OS from shifting to the Standby mode, and the operation of the full-on mode can be continued.

Install

Note
Be sure an administrator installs the serial driver.

Install the serial driver using the following procedure.

1. Execute C:\BACKUP\EPSERIAL\EPSERIAL.exe.
2. Start serial driver Setup. The welcome screen is displayed. Click **Next**.
3. After installation is completed, the InstallShield Wizard Complete dialog box is displayed. Select Yes, I want to restart my computer now, then click **Finish** to restart the system.

Uninstalling the serial port driver

Uninstall the serial port driver using the following procedure.

1. Open the Control Panel, and select Add or Remove Programs.
2. The Add or Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when EPSON Serial Driver is selected. Click Change/Remove.
3. The Confirm File Deletion dialog box is displayed. Click **OK**.

Dual Display

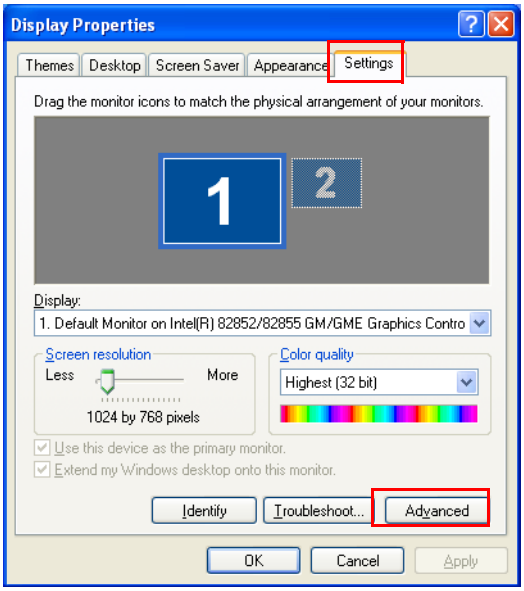
If an external monitor is added, the SR-610 can display the same content on both the LCD display and the external monitor, or each of them can display different content (expansion of the work area).

Displaying the same content on both monitors

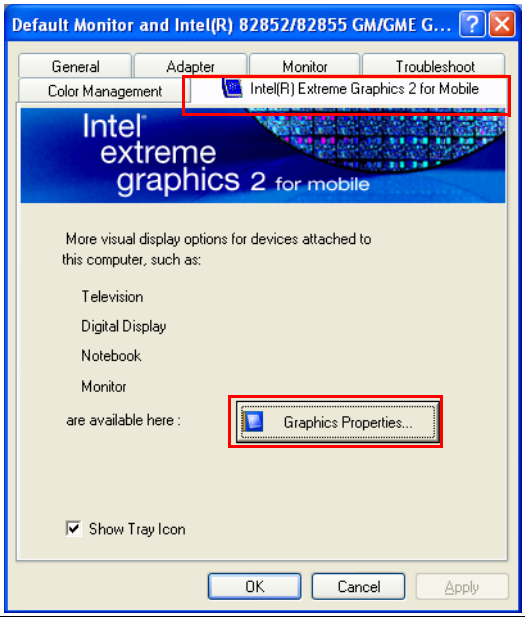
Follow the following procedure.

1. Select [Start]-[Control Panel]-[Appearance and Themes]-[Display]

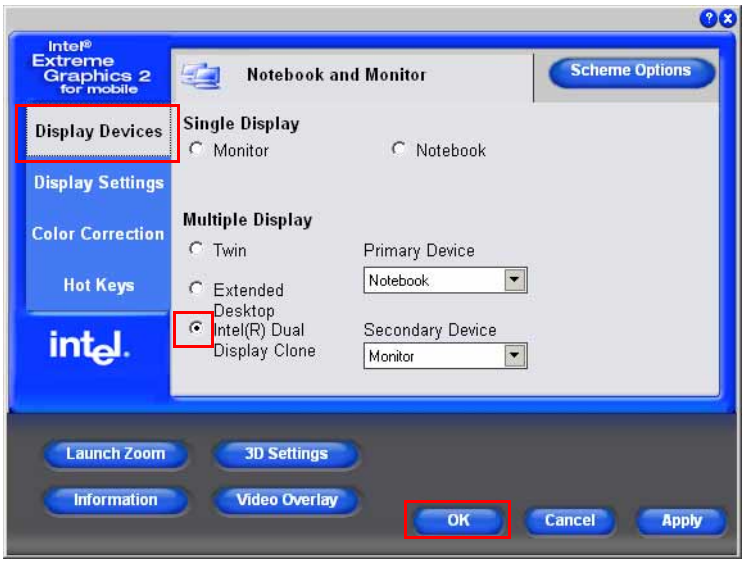
2. The [Display Properties] screen is displayed. Select the [Settings] tab and press the [Advanced] button.



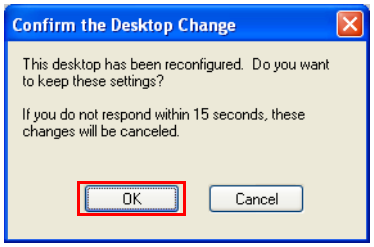
3. The following screen is displayed. Select the [Intel(R) Extreme Graphics 2 for Mobile] tab and press the [Graphics Properties] button.



4. The [Intel(R) Extreme Graphics 2 for mobile] screen is displayed. Select the [Display Devices] button and then check the [Intel(R) Dual Display Clone], and press the [OK] button.



5. The [Confirm the Desktop Change] screen is displayed. Press the [OK] button.



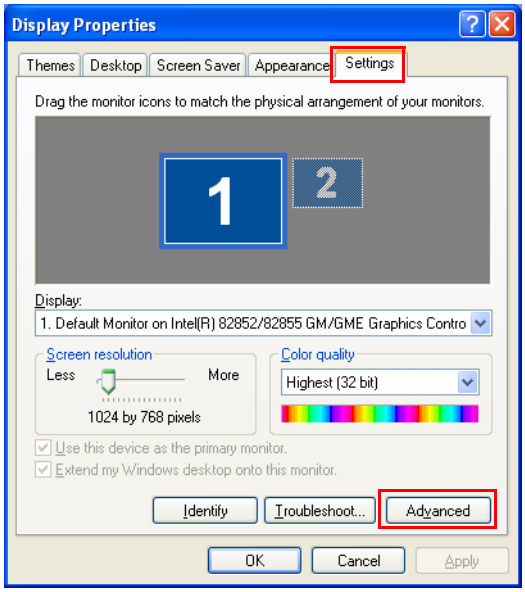
6. Each monitor displays the same content.

Displaying the different content with each monitor (The expansion of the work area)

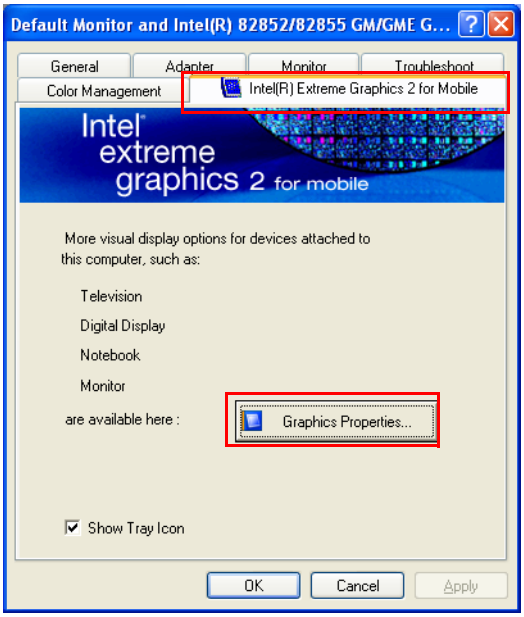
Follow the following procedure.

1. Select [Start]-[Control Panel]-[Appearance and Themes]-[Display].

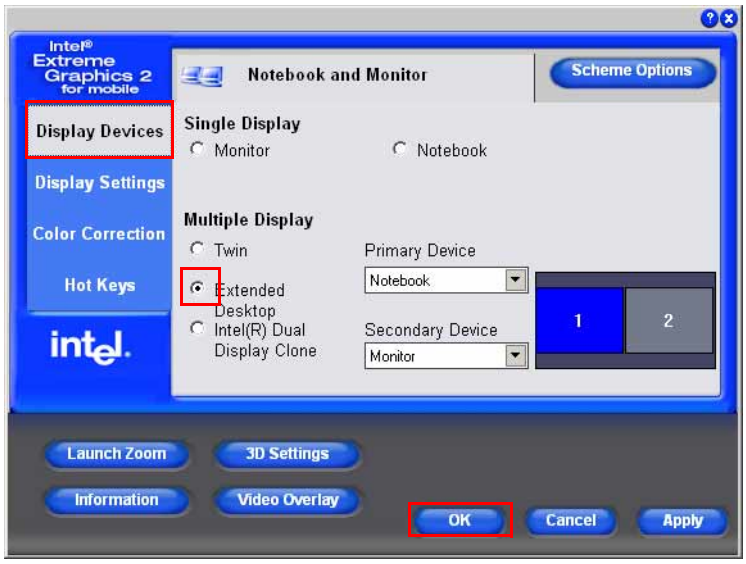
2. The [Display Properties] screen is displayed. Select the [Settings] tab and press the [Advanced] button.



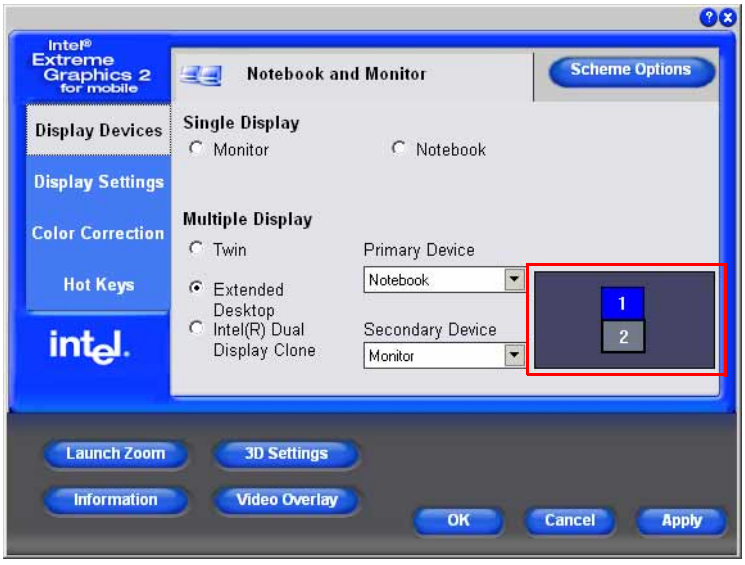
3. The following screen is displayed. Select the [Intel(R) Extreme Graphics 2 for Mobile] tab and press the [Graphics Properties] button.



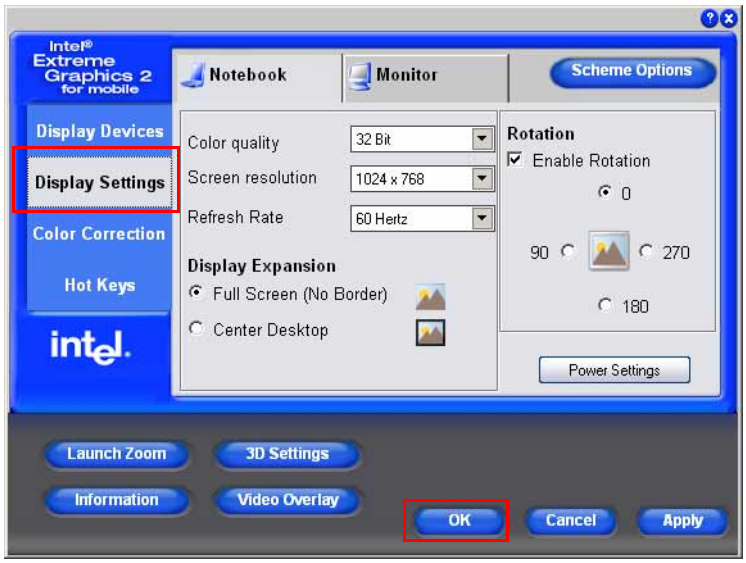
4. The [Intel(R) Extreme Graphics 2 for Mobile] screen is displayed.Select the [Display Devices] button and then check the [Extended Desktop] button, and press the [Apply] button.



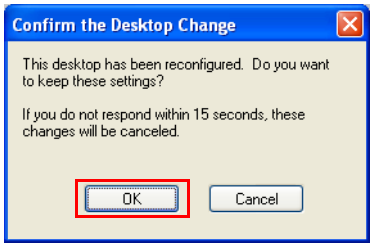
5. Change the method of allocating the work area by dragging and dropping the icons of the monitors.



6. Select the [Display Settings] button. Change the setting of each monitor, and press the [OK] button.



7. The [Confirm the Desktop Change] screen is displayed. Press the [OK] button.



Adding Windows XP Applications

When adding any Windows XP application, specify the C:\I386 directory. In this directory, \I386 has been backed up from the Windows XP DVD-ROM.

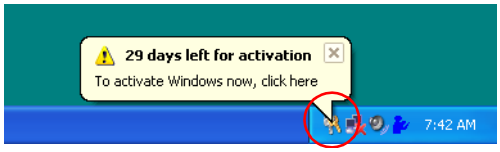
Activation

The copy prevention technology for softwares called Product Activation (hereafter referred to as License authentication) is used in Windows XP. Thus, license authentication is required to reinstall or recover the OS.

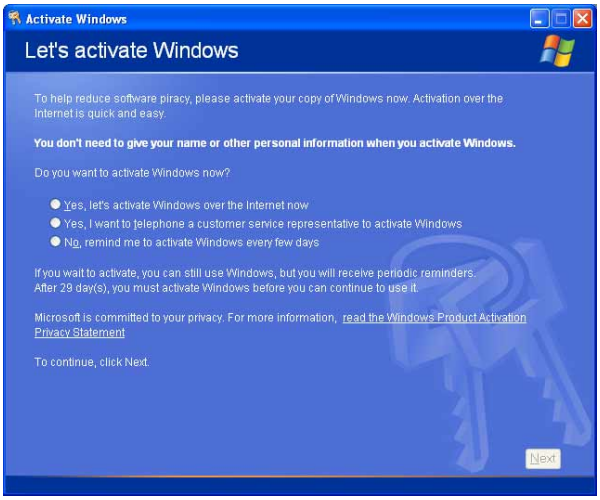
The following is the procedure for the license authentication.

1. Turn on the power of SR-610.

2. The following message is displayed on the lower right of the screen shortly after Windows XP starts up. Click the icon.



3. Windows license authentication screen is displayed."Select Yes, let's activate Windows over the Internet now" or "Yes, I want to telephone a customer service representative to activate Windows", and click the [Next] button.



4. Follow the instructions on the screen, and complete the license authentication procedure.

Note:
If the license authentication is not carried out, you will not be able to use XP after expiration. Thus, be sure to carry it out when the OS is installed.

Recovering the OS

Preparing confirmation

Note:
Disconnect the mouse before recovering the OS. If the mouse is connected, this will not work

Confirm the following before OS recovery.

- ❑ DVD-ROM drive is prepared by the user.
- ❑ "The Windows XP DVD-ROM" included with the product is used for recovering Windows XP.
- ❑ In the model with 2 installed HDDs, construct the RAID first, then perform OS recovery to construct the RAID.
- ❑ Use the HDD included in the shipment or an unused HDD for OS recovery.
- ❑ The external keyboard is necessary for the recovery.
- ❑ In the setup of OS after recovering the OS, it is necessary to enter the product ID. The product ID is printed on the Windows sticker label on the bottom of the system.
- ❑ Set the BIOS setting to "Optimal Defaults." When using the customized BIOS setting, note down the BIOS setting value beforehand. After the recovery is done, you must reset it to that value.
- ❑ OS recovery erases all contents of the HDD. Back up the necessary data to a floppy disk or other media.

Recovering method

Follow the steps below to carry out OS recovery.

1. Turn power to the SR-610 off. Pull out the power cord from the SR-610.
2. Remove the peripheral devices such as the compact flash card that is not need in the recovery work.
3. Install the HDD unit for which OS recovery will be done to the SR-610. For single HDD model, install it on the front side.

⚠ CAUTION

Confirm that the HDD is installed correctly and that the cable are connected properly. It is important to prevent cause a poor connection.

4. Connect the external keyboard to the SR-610 keyboard/mouse connector and connect the DVD-ROM Drive to the USB connector.
5. Connect the power cord to the SR-610 and power switch On.
6. Boot the system, press the Del key during the POST process, and the BIOS setup will start.

7. To set the BIOS to Optimal Defaults, execute Load Optimal Defaults in the Exit menu.

8. Set to the DVD-ROM model number connecting 1st Boot Device of Boot Device Priority in the Boot menu.

9. Set the USB 2.0 ControllerMode to Hispeed in the Advanced menu.

10. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

```
Save configuration changes and exit setup?
       [OK]                [Cancel]
```

11. Select [OK], and press the Enter key.

12. The system will reboot. Insert the "Windows XP DVD-ROM" into the DVD-ROM drive.

13. The following message will appear. Select and enter the partition size of the HDD.

```
Please select the system partition size.
  1: 10GB (Default size)
  F: Full size of HD.
Please push a key of 1 or F._
```

14. Select the range to format as the system area on the hard disk. Press the "1" key to select 10GB or press the "F" key to select the full size. After that, the OS recovery starts.

15. When the prompt below is displayed on the screen, OS recovery work is complete.

```
c:\RESTORE>_
```

16. Eject the "Windows XP DVD-ROM" from the DVD-ROM drive.

17. Reboot and start the BIOS setup utility.

18. Set USB 2.0 ControllerMode to Full Speed in the Advanced menu.

19. Set to the HDD model number connecting the 1st Boot Device of Boot Device Priority in the Boot menu.

20. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

```
Save configuration changes and exit setup?
       [OK]                [Cancel]
```

21. Select [OK], and press the Enter key.

22. Detach the external keyboard.

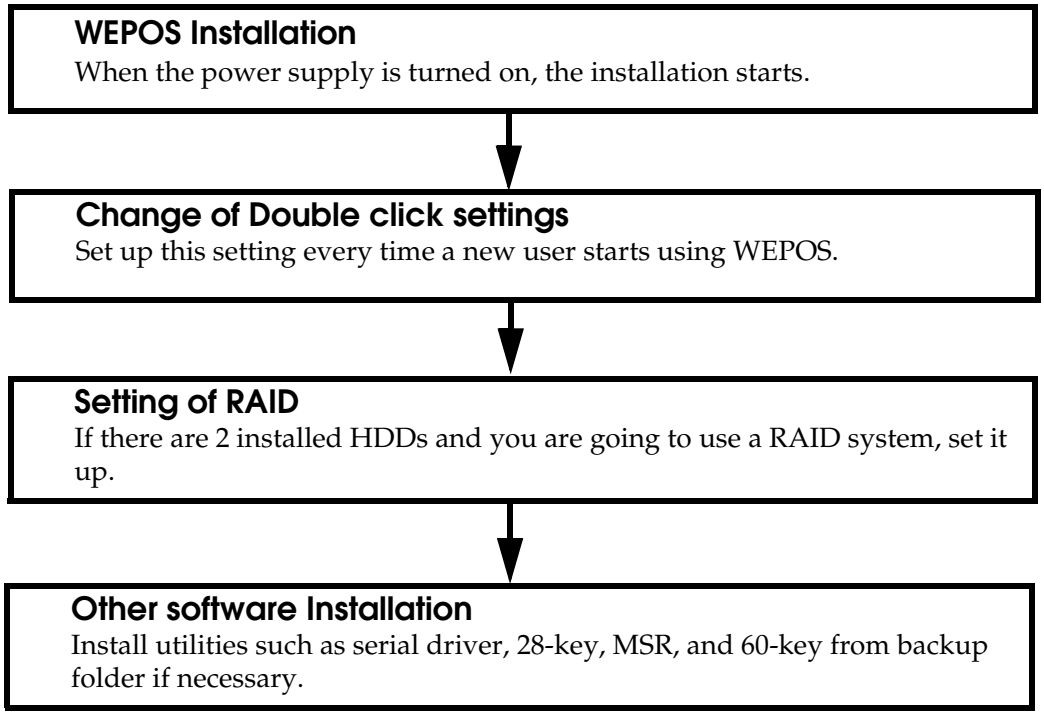
Limitation

Recovery cannot be performed starting from a hard disk. You must perform recovery from a DVD-ROM.

WEPOS Pre-Installed Model

The exclusive EPSON utility and drivers for using SR-610 are pre-installed in the HDD with the pre-installed WEPOS.

Installation Procedure



Formatting the hard disk

The hard disk is composed of one partition of up to 10 GB as a system area. For a hard disk of more than 10 GB, the excess area other than the system area is not yet formatted. This drive can be converted to NTFS using the Convert command. Use the disk administrator when creating a drive in the unused area. The start-up drive has been formatted to the following file system.

- File system: NTFS
- Volume label: WEPOS

Pre-installed software

- ❑ Windows Embedded for Point of Service
- ❑ Intel Chipset software installation utility
- ❑ Intel Video driver
- ❑ Intel Network driver
- ❑ Realtek Sound driver
- ❑ Silicon Image SATA-RAID driver
- ❑ EPSON Touch Panel driver
- ❑ EPSON 60-key POS keyboard definition utility*1
- ❑ EPSON MSR definition utility*1
- ❑ EPSON Serial driver *1

Note:

**1: These are not installed during the auto installation procedure.*

Version of the Pre-installation HDD

To confirm the version of the HDD, see the file HDVER.TAG in the root directory of the boot drive. This file is text-formatted and can be read using Notepad or a similar text editor. The file HDVER.TAG has the following contents:

```
[HD Information]

MODEL=SR-610

OS=WEPOS

LANG=English

VER=1.**.*
```

Directory Configuration

The root directory of the HDD is structured as follows.

```
|--- Backup                 :
|      |--- 60keycfg        :   60-key POS keyboard definition utility
|      |      |--- Driver   :   60-key POS keyboard driver
|      |      |--- Tool     :    Utility
|      |--- Chipset         :    Chipset driver backup folder
|      |--- Epserial        :    EPSON Serial driver backup folder
|      |--- Msrcfg          :    MSR definition utility backup folder
|      |--- Network         :    Network driver backup folder
|      |--- Sataraid        :    SATA RAID related driver backup folder
|      |      |--- Driver   :    SATA-RAID driver
|      |      |--- Tool     :    GUI Utility,  RAID Event Monitoring Tool
|      |--- Touch           :   Touch Panel driver backup folder
|      |--- Video           :   Video driver backup folder
|--- Documents and Settings :
|--- Inetpub                :
|--- Intel                  :
|--- Program Files          :   Windows utility folders
|--- Windows                :   Windows Embedded for Point of Service system
```

The directories under the Backup directory are the backups for drivers and utilities. Each of these directories can be backed up into CD-R or other media. After being backed up, these directories may be deleted.

If you install the optional CD-R/RW drive, you need to get software for CD-R/RW writing. The software is not supplied by EPSON.

WEPOS Setup Procedure

WEPOS is set up automatically when starting up OS the first time. The product key is already subscribed, so the entering of it is not needed.

Note

When starting up OS the first time, access time takes several minutes after the screen is displayed. However, only the first time.

Setting the recognition range of the double click

When Windows WEPOS is installed, the permissible double click level is limited and it is difficult to double click with your finger. To change the permissible double click level, start up the EPSON Touch Panel Configuration Tool. It changes the registry key automatically. This setting makes easy to double click with your finger.

However, when a new user first logs on, the permissible level is limited because the default value of Windows is the value of the registry key. So the registry key must be modified for individual users.

When WEPOS is set up and a new user is created, the registry key must be modified for individual users by following the steps below.

Note

The administrator modifies the registry key.

Various Configurations (WEPOS)

To change their configurations, use the control panel.

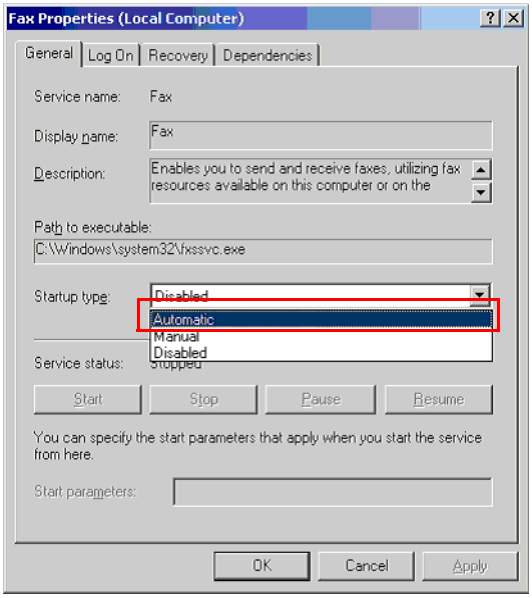
Setting the Network

Select [Network and Internet Connection] in Control panel and Set the network according to the using environment.

Setting the FAX

When using the FAX service, change the Fax service type to Automatic because it is set Disable at the time of setup.

1. Select [Control panel]-[Performance and Maintenance]-[Administrative Tools]-[Services] in the start menu of Windows.
2. The "Services(Local)" screen is displayed. Double click the [Fax] icon.
3. The "Fax properties(Local computer)" screen is displayed. Click the [General] tab.
4. Select [Automatic] in the [Startup type] option.



5. Click the [OK] button.

EPSON Serial Driver

When the serial port is transmitting with WEPOS, this Driver prevents the OS from shifting to the Standby mode, and the operation of the full-on mode can be continued.

Install

Note
Be sure an administrator installs the serial driver.

Install the serial driver using the following procedure.

1. Execute C:\BACKUP\EPSERIAL\EPSERIAL.exe.
2. Start serial driver Setup. The welcome screen is displayed. Click **Next**.
3. After installation is completed, the InstallShield Wizard Complete dialog box is displayed. Select Yes, I want to restart my computer now, then click **Finish** to restart the system.

Uninstalling the serial driver

Uninstall the serial driver using the following procedure.

1. Open the Control Panel, and select Add or Remove Programs.
2. The Add or Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when EPSON Serial Driver is selected. Click Change/Remove.
3. The Confirm File Deletion dialog box is displayed. Click **OK**.

Dual Display

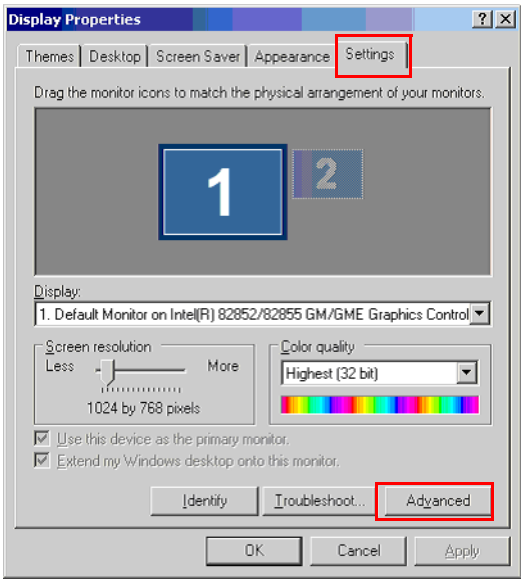
If an external monitor is added, the IR-700 can display the same content on both the LCD display and the external monitor, or each of them can display different content (expansion of the work area).

Displaying the same content on both monitors

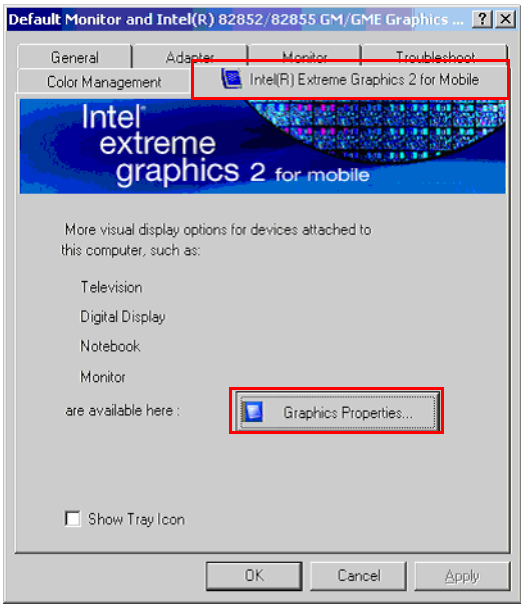
Follow the following procedure.

1. Select [Start]-[Control Panel]-[Appearance and Themes]-[Display]

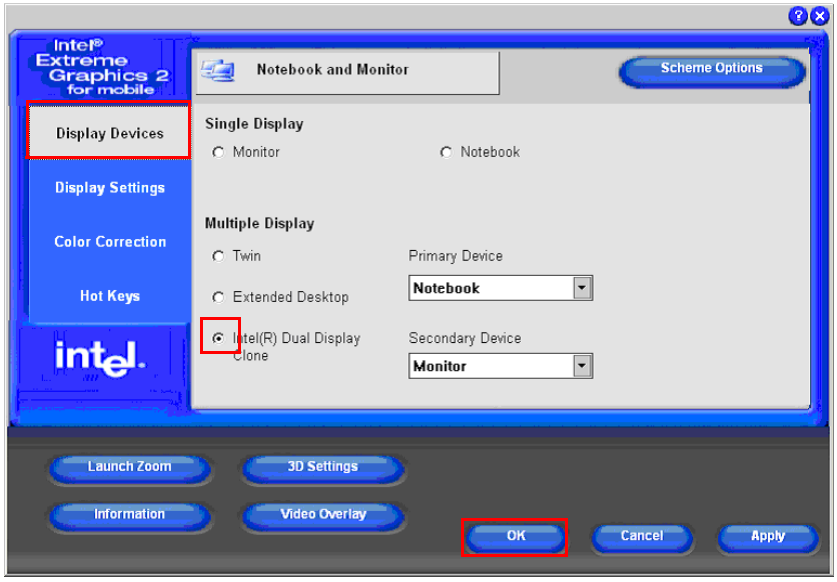
2. The [Display Properties] screen is displayed. Select the [Settings] tab and click the [Advanced] button.



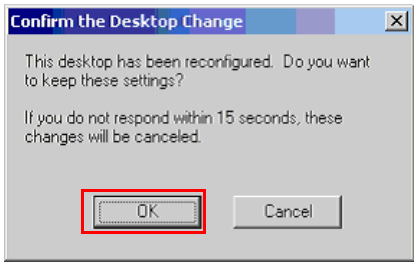
3. The following screen is displayed. Select the [Intel(R) Extreme Graphics 2 for Mobile] tab and click the [Graphics Properties] button.



4. The [Intel(R) Extreme Graphics 2 for mobile] screen is displayed. Select the [Display Devices] button and then check the [Intel(R) Dual Display Clone], and click the [OK] button.



5. The [Confirm the Desktop Change] screen is displayed. Click the [OK] button.



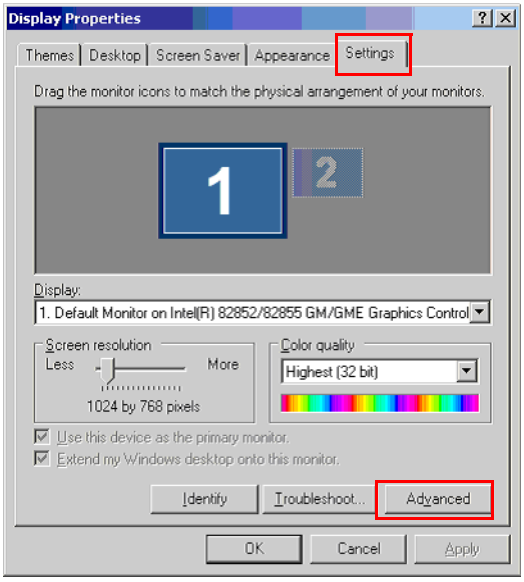
6. Each monitor displays the same content.

Displaying the different content with each monitor (The expansion of the work area)

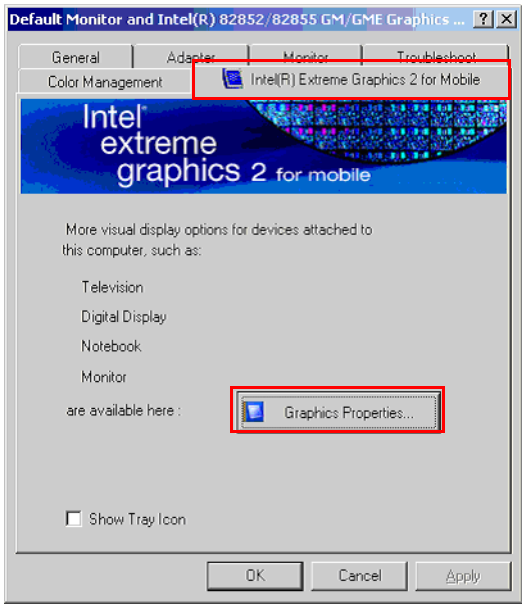
Follow the following procedure.

1. Select [Start]-[Control Panel]-[Appearance and Themes]-[Display].

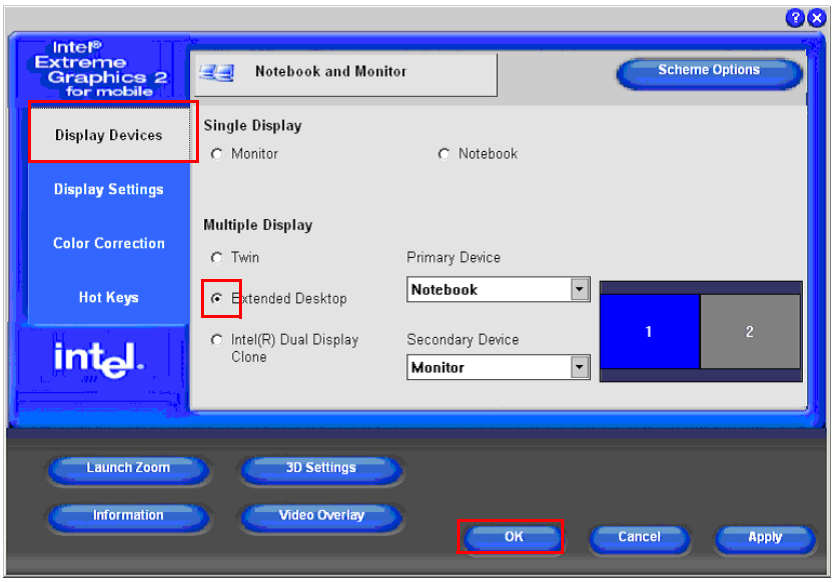
2. The “Display Properties” screen is displayed. Select the [Settings] tab and click the [Advanced] button.



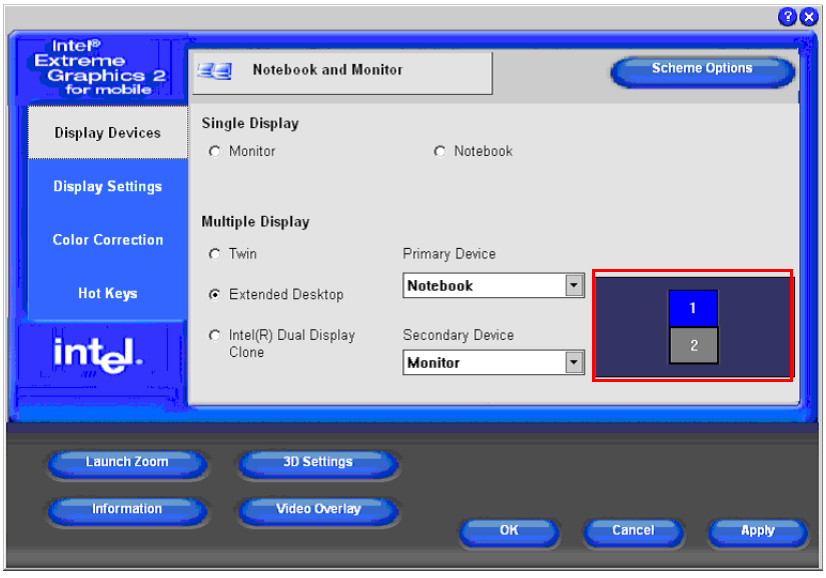
3. The following screen is displayed. Select the [Intel(R) Extreme Graphics 2 for Mobile] tab and click the [Graphics Properties] button.



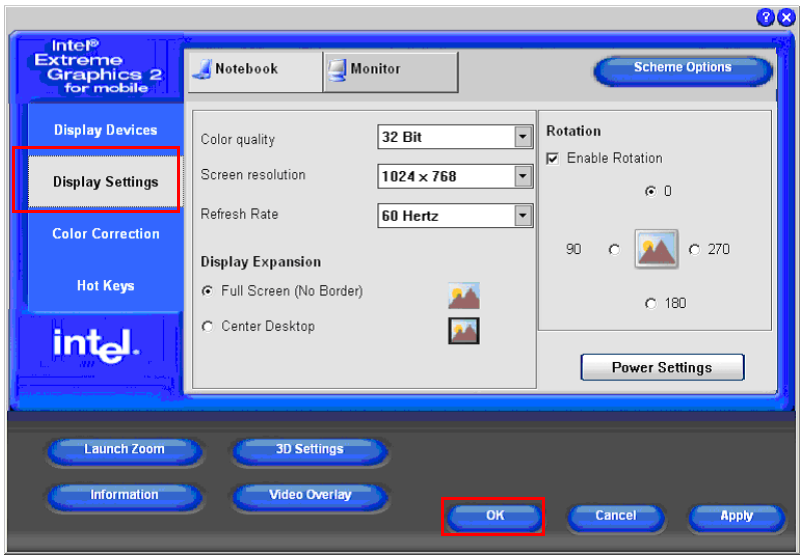
4. The "Intel(R) Extreme Graphics 2 for Mobile" screen is displayed. Select the [Display Devices] button and then check the [Extended Desktop] button, and click the [Apply] button.



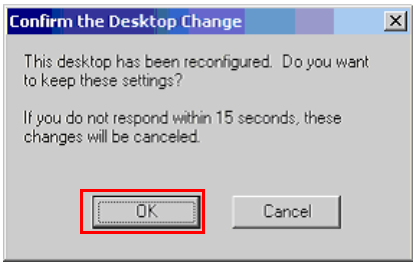
5. Change the method of allocating the work area by dragging and dropping the icons of the monitors.



6. Select the [Display Settings] button. Change the setting of each monitor, and click the [OK] button.



7. The “Confirm the Desktop Change” screen is displayed. Click the [OK] button.

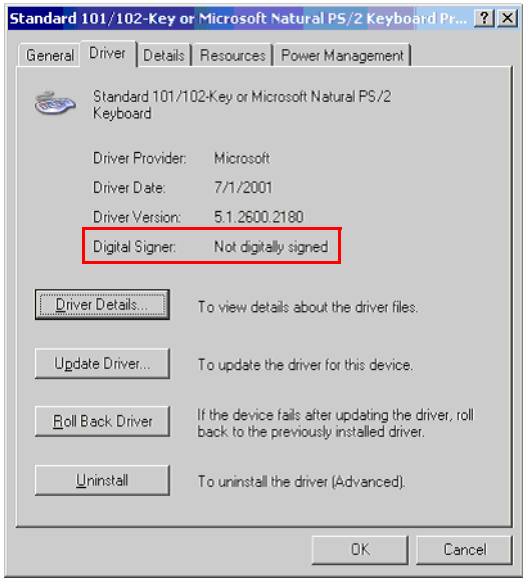


The addition and the deletion of the Windows component

The Windows components cannot be added or deleted for WESPOS. All necessary components are incorporated.

The device manager display

Even if the device is already digitally signed, WEPOS displays “Not digitally signed.”



Recovering the OS

Preparing confirmation

Note:
Disconnect the mouse before recovering the OS. If the mouse is connected, this will not work

Confirm the following before OS recovery.

- ❑ DVD-ROM drive is prepared by the user.
- ❑ "Windows Embedded for Point of Service DVDROM" included with the product is used for recovering WEPOS.
- ❑ In the model with 2 installed HDDs, construct the RAID first, then perform OS recovery to construct the RAID.
- ❑ Use the HDD included in the shipment or an unused HDD for OS recovery.
- ❑ The external keyboard is necessary for the recovery.
- ❑ In the setup of OS after recovering the OS, it is necessary to enter the product ID. The product ID is printed on the Windows sticker label on the side of the system.
- ❑ Set the BIOS setting to "Optimal Defaults." When using the customized BIOS setting, note down the BIOS setting value beforehand. After the recovery is done, you must reset it to that value.
- ❑ OS recovery erases all contents of the HDD. Back up the necessary data to a USB Memory Stick or other media.

Recovering method

Follow the steps below to carry out OS recovery.

1. Turn power to the SR-610 off. Pull out the power cord from the SR-610.
2. Remove the peripheral devices.
3. Install the HDD unit for which OS recovery will be done to the SR-610. For single HDD model, install it on the front side.

CAUTION:

Insert the HDD as far as you can or it may cause a poor connection.

4. Connect the external keyboard to the SR-610 keyboard/mouse connector and connect the DVD-ROM Drive to the USB connector on the side.
5. Connect the power cord to the IR-700.
6. Boot the system, click the Del key during the POST process, and the BIOS setup will start.

7. To set the BIOS to Optimal Defaults, execute Load Optimal Defaults in the Exit menu.

8. Set to the DVD-ROM model number connecting 1st Boot Device of Boot Device Priority in the Boot menu.

9. Set the USB 2.0 ControllerMode to Hispeed in the Advanced menu.

10. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

```
Save configuration changes and exit setup?
       [OK]                [Cancel]
```

11. Select [OK], and press the Enter key.

12. The system will reboot. Insert the "Windows Embedded for Point of Service DVD-ROM" into the DVD-ROM drive.

13. The following message will appear. Select and enter the partition size of the HDD.

```
Please select the system partition size.
  1: 10GB (Default size)
  F: Full size of HD.
Please push a key of 1 or F._
```

14. Select the range to format as the system area on the hard disk. Press the "1" key to select 10GB or press the "F" key to select the full size. After that, the OS recovery starts.

15. When the prompt below is displayed on the screen, OS recovery work is complete.

```
c:\RESTORE>_
```

16. Eject the "Windows Embedded for Point of Service DVD-ROM" from the DVD-ROM drive.

17. Reboot and start the BIOS setup utility.

18. Set USB 2.0 ControllerMode to Full Speed in the Advanced menu.

19. Set to the HDD model number connecting 1st Boot Device of Boot Device Priority in the Boot menu.

20. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

```
Save confiugration changes and exit setup?
       [OK]                [Cancel]
```

21. Select [OK], and press the Enter key.

22. Detach the external keyboard.

Limitation

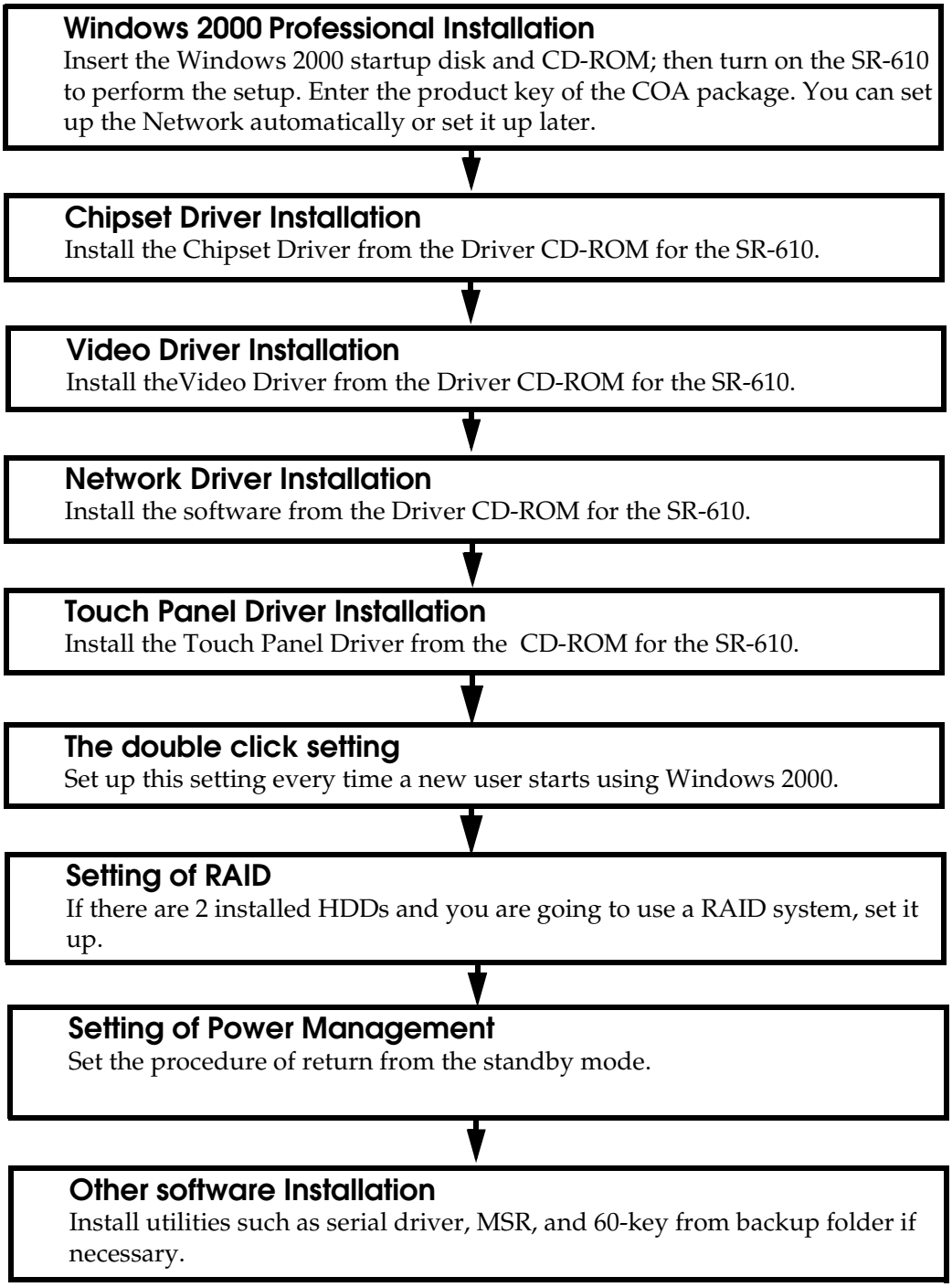
Recovery cannot be performed starting from a hard disk. You must perform recovery from a DVD-ROM.

Installation for Windows 2000 Professional Locally Procured Edition

Note:
Use Windows 2000 Service Pack4 or later. The Operating System cannot be installed with the CD-ROM of Service Pack 2 or earlier

Installation Procedure

If you install Windows 2000 Professional locally procured edition, follow the steps below.



Setup procedure

Prepare the following before starting the setup of Windows 2000.

- ❑ Startup disk

  Create the startup disk using the following procedure.

  1. Prepare a blank floppy disk.
  2. Copy all files in /WIN2K/SATARAID/Driver folder of the driver CD to the floppy disk.

- ❑ CD/DVD-ROM drive
- ❑ FD drive

  - This is necessary for reading the startup disk.

Windows 2000 is set up by using the following procedure:

1. Connect the keyboard and mouse to the SR-610.
2. Connect the CD/DVD-ROM drive and FD drive to the SR-610.
3. Insert the CD-ROM of Windows 2000 in the CD/DVD-ROM drive and boot up the system.
4. Start up the BIOS setup utility. (Refer to Chapter 5 for the operating procedure of the BIOS setup utility.)
5. Select [Boot Device Priority] in the BOOT menu of BIOS setup utility. Set to the CD/DVD-ROM model number connecting 1st Boot Device of Boot Device Priority.
6. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

   ```
   Save configration changes and exit setup?
          [OK]                [Cancel]

   Select [OK], and press the Enter key.
   ```

7. Press the Enter key when the following message is displayed.
   "Press any key to boot from CD. ."
8. Installation is started when the OS setup screen is displayed, and the following message is displayed at the lower left on the screen.
   "Press F6 if you need to install a third party SCSI or RAID driver"
   When this message is displayed, press the F6 key. Since this screen will not stop, watch the screen with care to press theF6 key.
9. The following message is displayed. Press the S key.
   * To specify additional SCSI adapters, CD-ROM drives, or apecial disk controllers for use with Windows, inckuding those for which you have a device support disk from a mass storage device manufacture, press S.

10. Insert the startup disk into the FD drive after the following message is displayed, and press the Enter key.
    Please insert the disk labeled
    Manufacturer-supplied hardware support disk
    into Drive A:
    Press ENTER when ready.

11. When the selection screen of Silicon Image is displayed, select "Silicon Image SiI 3x12 RaidLinl Controller for Windows 2000/NT", and press the Enter key.

12. Confirm that the display of Silicon Image is "Silicon Image SiI 3x12 RaidLinl Controller for Windows 2000/NT", then press the Enter key.

13. The Setup Wizard starts, and the Welcome dialog box is displayed. Press [Enter].

14. The License Agreement is displayed. Read it through and confirm your agreement to the terms. And then press the [F8] key (I agree).

15. Select the partition to set up Windows, and press [Enter]. When an unformatted partition is selected, a confirmation screen is displayed. Execute the format according to the instructions on the screen. After that, copying of the file starts.

16. Reboot the system again according to the instructions on the screen.

17. The Regional Settings screen is displayed. Make sure the system locale, user locales and keyboard layout are set to United States, then click **Next**.

18. The Personalize Your Software screen is displayed. Input the Name and Organization, then click **Next**.

19. The Your Product Key screen is displayed. Input the product key entered on the cover of the First Step Guide in the COA (Certificate of Authenticity) package included with this product; then click **Next**.

20. The Computer Name and Administrator Password screen is displayed. Input the Computer Name and Administrator Password, then click **Next**.

21. The Date and Time Settings screen is displayed. Set the date and time, then click **Next**.

22. The Completing the Windows 2000 Setup Wizard screen is displayed. Click **Finish**.

23. The Networking Settings screen is displayed. Select either Typical Settings or Custom Settings according to the environment, then click **Next**. The Networking Components screen is displayed if Custom Settings is selected. Set the settings in accordance with the environment, then click **Next**.

24. The Users of this Computer screen is displayed. Set the settings in accordance with the environment, then click **Next**.

25. The Completing the Network Identification Wizard screen is displayed. Click **Finish**.

26. Windows 2000 starts and the setup is completed.

Installing the Intel Chipset Diver

Note
The Chipset Driver must be installed before you install other drivers.

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WIN2K\Chipset\infinst_enu.EXE.
2. The Setup Wizard starts and the Welcome screen is displayed. Click **Next**.
3. The License Agreement screen is displayed. Click **Yes**.
4. The Readme Information dialog box is displayed. Click **Next**.
5. Complete dialog box is displayed. Confirm that [Yes, I want to restart my computer now] is selected, and click **Finish** to reboot the system.

Uninstalling the Intel chipset driver

Uninstalling cannot be done.

Installing the VIDEO Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WIN2K\VIDEO\win2k_xp1413.exe.
2. The Readme Information dialog box is displayed. Click **Next**.
3. The Setup Wizard starts and the Welcome screen is displayed. Click **Next**.
4. The License Agreement screen is displayed. Click **Yes**.
5. Complete dialog box is displayed. Confirm that [Yes, I want to restart my computer now] is selected, and click **Finish** to reboot the system.

Uninstalling the video driver

To uninstall the VIDEO Driver using the following procedure.

1. Open the Control Panel, and select Add/Remove Programs.
2. The Add or Remove Programs dialog box is displayed. Click Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when Intel(R) PRO Extreme Graphics 2 Driver. Click Remove.
3. The System Settings Change dialog box is displayed. Click **YES**.

Installing the Network Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WIN2K\Network\v6.4_pro2kxp_only.exe.

2. The Setup Wizard starts, and the License Agreement dialog box is displayed. Select [I accept the terms in the license agreement] and click **Next**.

3. The Location to Save Files dialog box is displayed. Input the folder and click **Next**. The default setting is c:\IntelPRO.

4. When copying of the file is completed, the following dialog box is displayed. Click **Install now**.

5. The following dialog box is displayed. Click **Finish**.

Uninstalling the network driver

To uninstall the Network Driver use the following procedure:

1. Open the Control Panel, and select Add/Remove Programs.

2. The Add/Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when Intel(R) PRO Network Adapters and Drivers is selected. Click Change/Remove.

3. The Intel(R) PRO Network Adapters and Drivers is selected Uninstaller dialog box is displayed. Click **OK**.

IInstalling the Touch Panel Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WIN2K\Touch\EPsTPWDM.EXE.

2. The Setup Wizard starts and the Welcome dialog box is displayed. Click **Next**.

3. The Choose Destination Location dialog box is displayed. Input the folder and click **Next**. The default setting is C:\Program Files\EPSON\TouchPanel.

4. The Digital Signature Not Found dialog box is displayed. Click **Yes**.

5. The Setup Complete dialog box is displayed. Confirm that [Yes, I want to restart my computer now] is selected, and click **Finish** to reboot the system.

Uninstalling the touch panel driver

Uninstall the Touch Panel Driver using the following procedure.

1. Open the Control Panel, and select Add/Remove Programs.
2. The Add/Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when EPSON Touch Panel Driver is selected. Click Change/Remove.
3. The Confirm File Deletion dialog box is displayed. Click **Yes**.
4. The reboot dialog box is displayed. Click **OK**.
5. Uninstalling is completed and the dialog box is displayed. Click **OK**.

Setting the recognition range of the double click

When Windows 2000 is installed, the permissible double click level is limited and it is difficult to double click with your finger. To change the permissible double click level, start up the EPSON Touch Panel Configuration Tool. It changes the registry key automatically. This setting makes easy to double click with your finger.

However, when a new user first logs on, the permissible level is limited because the default value of Windows is the value of the registry key. So the registry key must be modified for individual users.

When Windows 2000 is set up and a new user is created, the registry key must be modified for individual users by following the steps below.

Note
The administrator does the modification of the registry key.

Method

Select Programs - Epson Touch Panel Tool - Touch Panel Configuration Tool from the Start menu. Click **OK**. (There is no need to do any other operation.)

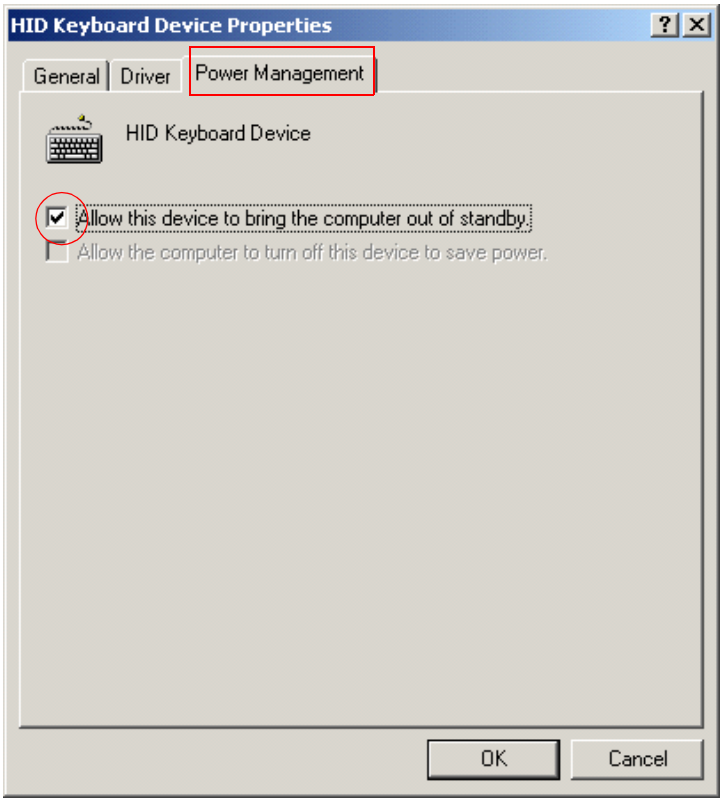
Setting of Power management

The return from the standby mode is set by operating with touchpanel keyboard and mouse.

Note
For the Windows 2000 Professional Locally Edition, the return from the standby mode is operated with the power button.

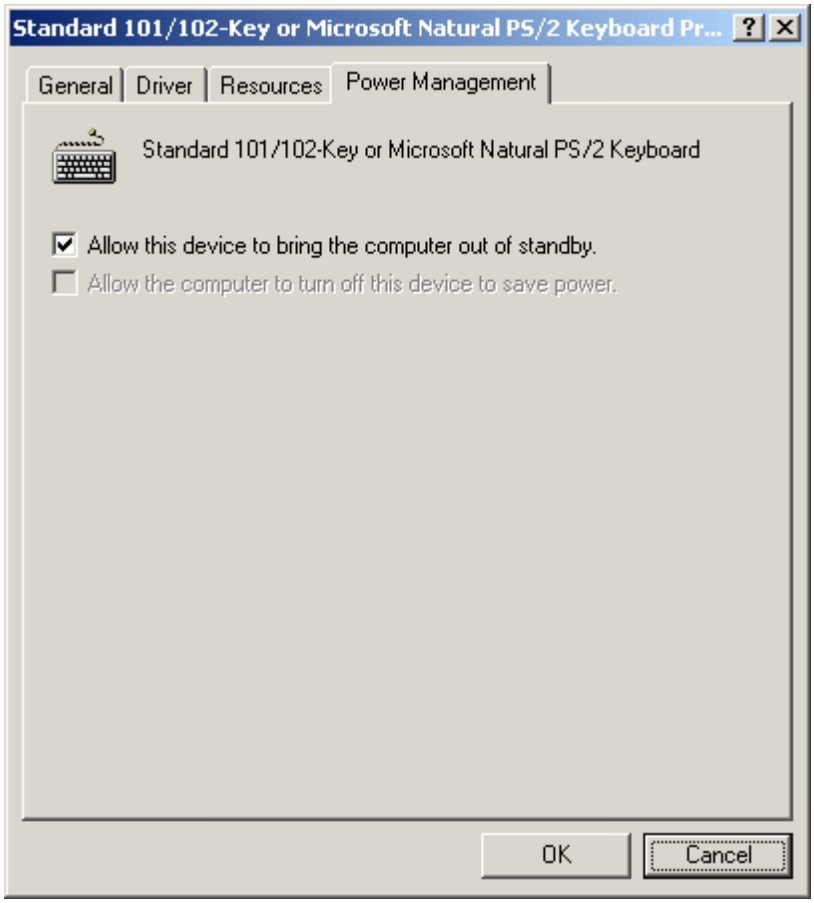
The setting is following.

1. Select [START] - [Settings] - [Control Panel] - [System], and open System Properties.
2. Select the Hardware tab, and press the **Device Manager** button.
3. Device Manager starts up. Select [Keyboard] - [HID Keyboard Device].
4. Select [Power Management]. Check [Allow this device to bring the computer out of standby] and click [OK].



5. Device Manager - Select [Keyboard] - [Standard 101/102-key or Microsoft Natural PS/2 Keyboard].

6. Select [Power Management]. Check [Allow this device to bring the computer out of standby] and click [OK].



Installing the Serial Port Driver

When the serial port is transmitting with Windows 2000, this Driver prevents the OS from shifting to the Standby mode and the operation of the full-on mode is continued.

When installing the service pack, install the serial driver again.

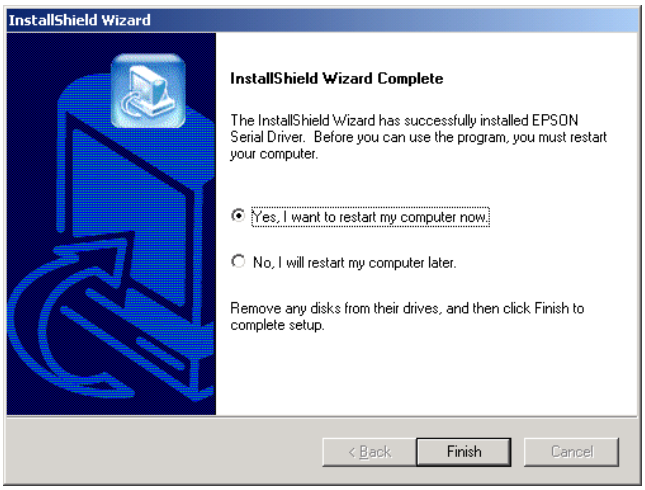
Note
Be sure an administrator installs the serial driver.

Install the serial port driver using the following procedure.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start Win2K\Epserial\EPSERIAL.EXE.

2. Start serial driver Setup. The welcome screen is displayed. Click **Next**.

3. After installation is completed, the InstallShield Wizard Complete dialog box is displayed. Select Yes, I want to restart my computer now; then click **Finish** to restart the system.



Uninstalling the serial port driver

Uninstall the serial port driver using the following procedure.

1. Open the Control Panel, and select Add/Remove Programs.

2. The Add/Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when EPSON Serial Driver is selected. Click Change/Remove.

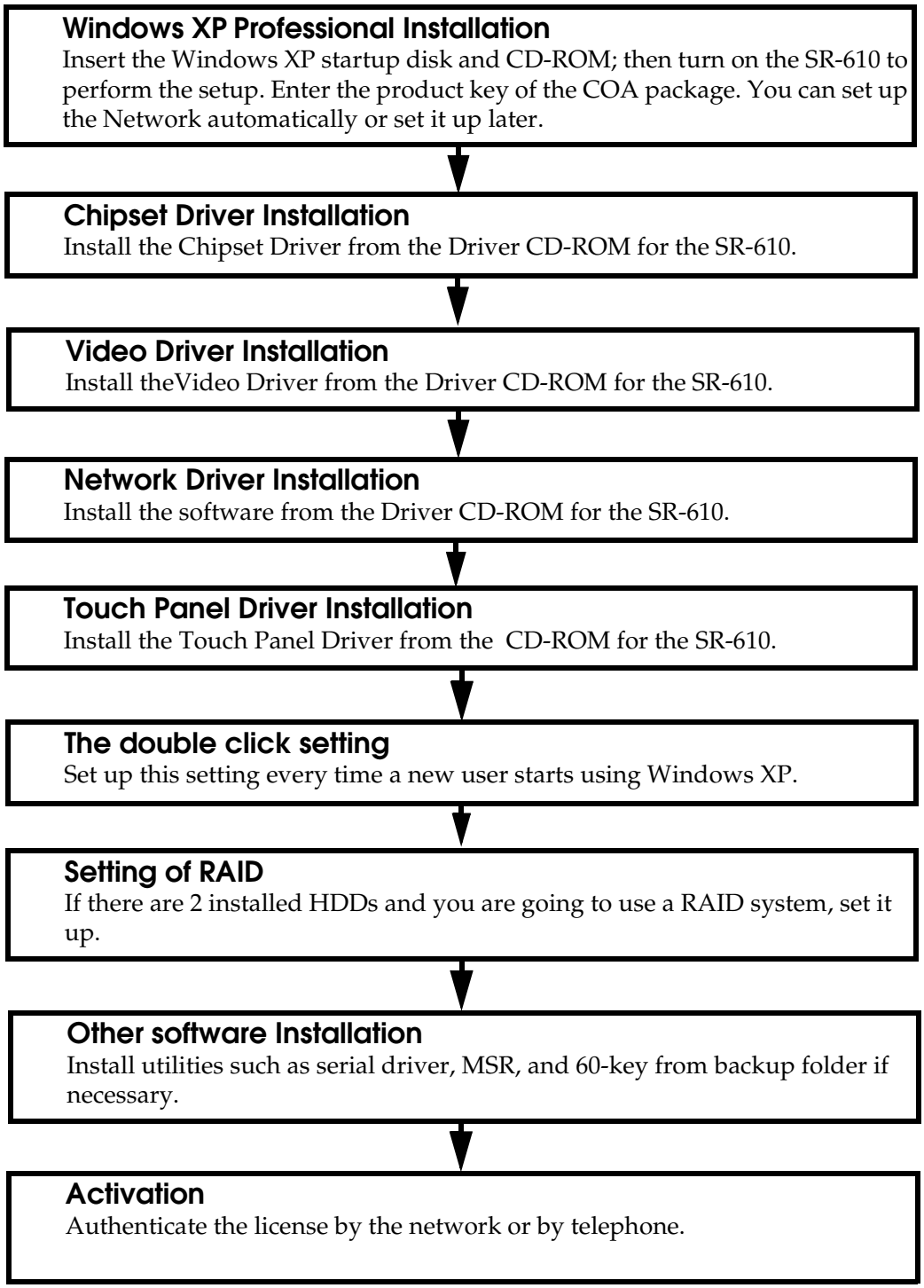
3. The Confirm File Deletion dialog box is displayed. Click **OK**.

Installation for Windows XP Professional Locally Procured Edition

Note:
Use Windows XP Service Pack2 or later. The Operating System cannot be installed with the CD-ROM of Service Pack 2 or earlier

Installation Procedure

If you install Windows XP Professional locally procured edition, follow the steps below.



Setup procedure

Prepare the following before starting the setup of Windows XP.

❑ Startup disk

Create the startup disk using the following procedure.

1. Prepare a blank floppy disk.
2. Copy all files in /WINXP/SATARAID/Driver folder of the driver CD to the floppy disk.

❑ CD/DVD-ROM drive

❑ FD drive

- This is necessary for reading the startup disk.

Windows XP is set up by using the following procedure:

1. Connect the keyboard and mouse to the SR-610.
2. Connect the CD/DVD-ROM drive and FD drive to the SR-610.
3. Insert the CD-ROM of Windows XP in the CD/DVD-ROM drive and boot up the system.
4. Start up the BIOS setup utility. (Refer to Chapter 5 for the operating procedure of the BIOS setup utility.)
5. Set [USB 2.0 (EHCI)] to Disabled in the Chipset menu of the BIOS setup utility.
6. Select [Boot Device Priority] in the BOOT menu of BIOS setup utility. Set to the CD-ROM model number connecting the 1st Boot Device of Boot Device Priority.
7. Select "Save Changes and Exit" in the Exit menu, and press the Enter key. The following dialog box is displayed.

```
Save configration changes and exit setup?
        [OK]              [Cancel]

Select [OK], and press the Enter key.
```

8. Press the Enter key when the following message is displayed.
   "Press any key to boot from CD. ."
9. Installation is started when the OS setup screen is displayed, and the following message is displayed at the lower left on the screen.
   "Press F6 if you need to install a third party SCSI or RAID driver"
   When this message is displayed, press the F6 key. Since this screen will not stop, watch the screen with care to press the F6 key.

10. The following message is displayed. Press the S key.
    * To specify additional SCSI adapters, CD-ROM drives, or apecial disk controllers for use with Windows, inckuding those for which you have a device support disk from a mass storage device manufacture, press S.

11. Insert the startup disk into the FD drive after the following message is displayed, and press the Enter key.
    Please insert the disk labeled
    Manufacturer-supplied hardware support disk
    into Drive A:
    Press ENTER when ready.

12. When the selection screen of Silicon Image is displayed, select "Silicon Image SiI 3x12 RaidLinl Controller for Windows XP/2003", and press the Enter key.

13. Confirm that the display of Silicon Image is "Silicon Image SiI 3x12 RaidLinl Controller for Windows 2003/NT", then press the Enter key.

14. The [Welcome to Setup] screen is displayed. Press [Enter].

15. The [END-USER LICENSE AGREEMENT] screen is displayed. Read it through and confirm contents. If you agree with them, press the [F8] key.

16. Select the partition to set up Windows, and press [Enter]. When an unformatted partition is selected, a confirmation screen is displayed. Execute the format according to the instructions on the screen. After that, copying of the file starts.

17. Reboot the system again according to the instructions on the screen.

18. The [Regional and Language Options] dialog box is displayed. Confirm the setting contents and click **Next**.

19. The [Personalize Your Software] dialog box is displayed. Input your name and your organization, and then click **Next**.

20. The [Your Product key] dialog box is displayed. Input the 25-digit product key shown on the COA (Certificate of Authenticity) and click **Next**.

21. The [Computer Name and Administrator Password] dialog box is displayed. Input the necessary information and click **Next**.

22. The [Date and Time Settings] dialog box is displayed. Confirm the setting and click **Next**.

23. The system reboots automatically.

24. The [Monitor Settings] dialog box is displayed. Click **OK**.

25. The [Welcome to Microsoft Windows] dialog box is displayed. Click **Next**.

26. The [Help protect your PC] dialog box is displayed. Confirm the setting and click **Next**.

27. The [Who will use this computer ?] dialog box is displayed. Input the user name according to the instruction on the screen.

28. The [Thank you!] dialog box is displayed. Click **Finish**; Windows XP will start.

29. Reboot the system again, and start up the BIOS setup utility.

30. Set [USB 2.0 (EHCI)] to Enabled in the Chipset menu of BIOS setup utility.

31. Select "Save Changes and Exit" in the Exit menu, and press the Enter key, and Reboot the system again.

Installing the Intel Chipset Diver

Note

The Chipset Driver must be installed before you install other drivers

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WINXP\CHIPSET\infinst_enu.EXE.

2. The Setup Wizard starts and the Welcome screen is displayed. Click **Next**.

3. The License Agreement screen is displayed. Click **Yes**.

4. The Readme Information dialog box is displayed. Click **Next**.

5. Complete dialog box is displayed. Click **Finish**.

Uninstalling the Intel chipset driver

Uninstalling cannot be done.

Installing the VIDEO Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WINXP\VIDEO\win2k_xp1413.exe.

2. The Readme Information dialog box is displayed. Click **Next**.

3. The Setup Wizard starts and the Welcome screen is displayed. Click **Next**.

4. The License Agreement screen is displayed. Click **Yes**.

5. Complete dialog box is displayed. Click **Finish**.

Uninstalling the video driver

To uninstall the VIDEO Driver using the following procedure.

1. Open the Control Panel, and select Add or Remove Programs.
2. The Add or Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when Intel(R) PRO Extreme Graphics 2 Driver. Click Remove.
3. The System Settings Change dialog box is displayed. Click **YES**.

Installing the Network Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WINXP\NETWORK\v6.4_pro2kxp_only.exe.
2. The Setup Wizard starts, and the License Agreement dialog box is displayed. Select [I accept the terms in the license agreement] and click **Next**.
3. The Location to Save Files dialog box is displayed. Input the folder and click **Next**. The default setting is C:\IntelPRO.
4. When copying of the file is completed, the Complete dialog box is displayed. Click **Install now**.
5. The Complete dialog box is displayed. Click **Finish**.

Uninstalling the network driver

To uninstall the Network Driver using the following procedure.

1. Open the Control Panel, and select Add or Remove Programs.
2. The Add or Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when Intel(R) PRO Network Adapters and Drivers is selected. Click Change/Remove.
3. The Intel(R) PRO Network Adapters and Drivers Uninstaller dialog box is displayed. Click **OK**.

Installing the Touch Panel Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WINXP\TOUCH\EpsTPWDM.EXE.
2. The Setup Wizard starts and the Welcome dialog box is displayed. Click **Next**.

3. The Choose Destination Location dialog box is displayed. Input the folder and click **Next**. The default setting is C:\Program Files\EPSON\TouchPanel.

4. The Setup Complete dialog box is displayed. Confirm that [Yes, I want to restart my computer now] is selected, and click **Finish** to reboot the system.

Uninstalling the touch panel driver

Uninstall the Touch Panel Driver using the following procedure.

1. Open the Control Panel, and select Add or Remove Programs.

2. The Add or Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when EPSON Touch Panel Driver is selected. Click Change/Remove.

3. The Confirm File Deletion dialog box is displayed. Click **Yes**.

4. The reboot dialog box is displayed. Click **OK**.

5. Uninstalling is completed and the dialog box is displayed. Click **OK**.

Setting the recognition range of the double click

When Windows XP is installed, the permissible double click level is limited and it is difficult to double click with your finger. To change the permissible double click level, start up the EPSON Touch Panel Configuration Tool. It changes the registry key automatically. This setting makes easy to double click with your finger.

However, when a new user first logs on, the permissible level is limited because the default value of Windows is the value of the registry key. So the registry key must be modified for individual users.

When Windows XP is set up and a new user is created, the registry key must be modified for individual users by following the steps below.

Note
The administrator modifies the registry key.

Installing the Serial Port Driver

When the serial port is transmitting with Windows XP, this Driver prevents the OS from shifting to the Standby mode and the operation of the full-on mode is continued.

Note
Be sure an administrator installs the serial driver.

Install the serial port driver using the following procedure.

1. Insert the Driver CD-ROM for the SR-610 in the CD-ROM drive. Start WinXP\Epserial\EPSERIAL.EXE.

2. Start serial driver Setup. The welcome screen is displayed. Click **Next**.

3. After installation is completed, the InstallShield Wizard Complete dialog box is displayed. Select Yes, I want to restart my computer now, then click **Finish** to restart the system.

Uninstalling the serial port driver

Uninstall the serial port driver using the following procedure.

1. Open the Control Panel, and select Add or Remove Programs.

2. The Add or Remove Programs dialog box is displayed. Click Change or Remove Programs to display a list of the currently installed programs. Change/Remove will be displayed when EPSON Serial Driver is selected. Click Change/Remove.

3. The Confirm File Deletion dialog box is displayed. Click **OK**.

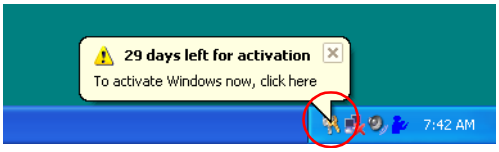
Activation

The copy prevention technology for softwares called Product Activation (hereafter referred to as License authentication) is used in Windows XP. Thus, license authentication is required to reinstall or recover the OS.

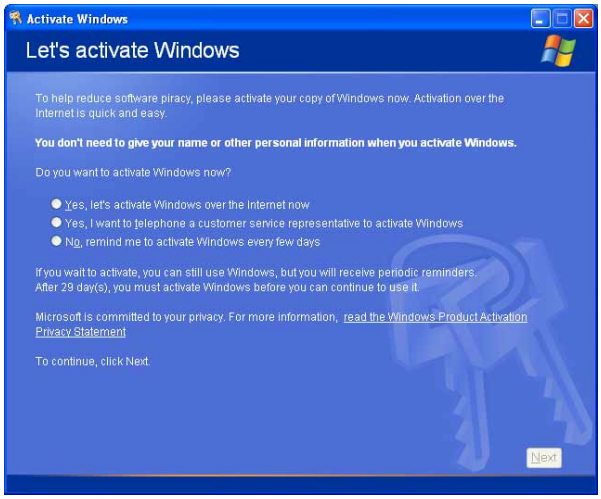
The following is the procedure for the license authentication.

1. Turn on the power of SR-610.

2. The following message is displayed on the lower right of the screen shortly after Windows XP starts up. Click the icon.



3. Windows license authentication screen is displayed."Select Yes, let's activate Windows over the Internet now" or "Yes, I want to telephone a customer service representative to activate Windows", and click the [Next] button.



4. Follow the instructions on the screen, and complete the license authentication procedure.

Note:
If the license authentication is not carried out, you will not be able to use XP after expiration. Thus, be sure to carry it out when the OS is installed.

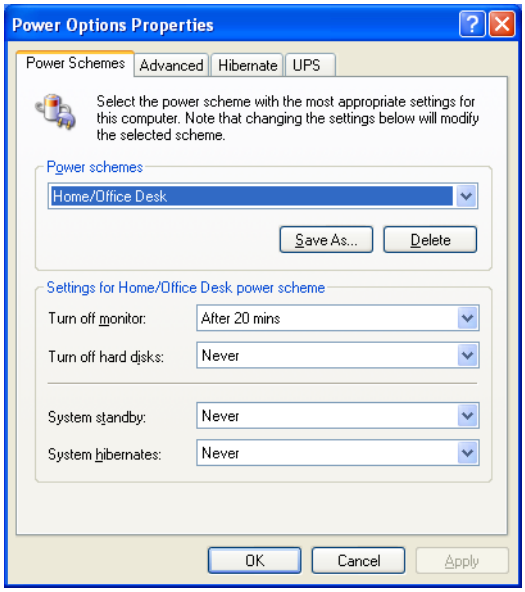
HDD Power Down Timer Setting

When the time the HDD is not accessed exceeds the specified time, the HDD motor can be stopped. The method of setting depends on the OS.

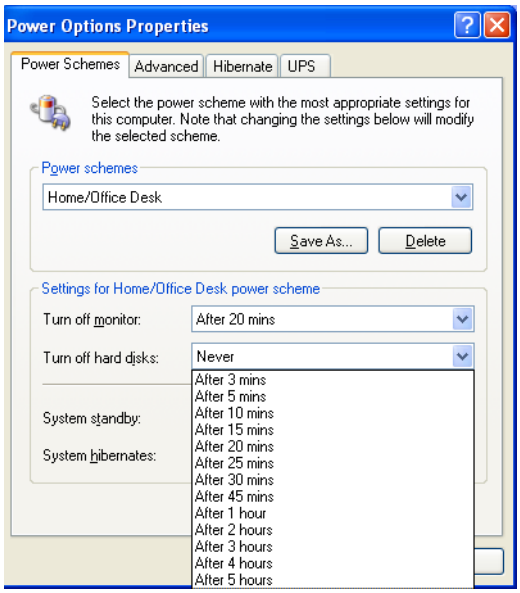
- ❏ Windows XP Professional — This is set with the OS
- ❏ Windows 2000 Professional — This is set with the OS
- ❏ WEPOS — This is set with the OS

Windows XP

1. Select [Control Panel]-[Performance and Maintenance]-[Power Options] in the Start menu of Windows.
2. [Power Options Properties] is displayed. Click the [Power Schemes] tab.



3. Select the time in the [Settings for Home/Office Desk power scheme: Turn off hard disks] option.

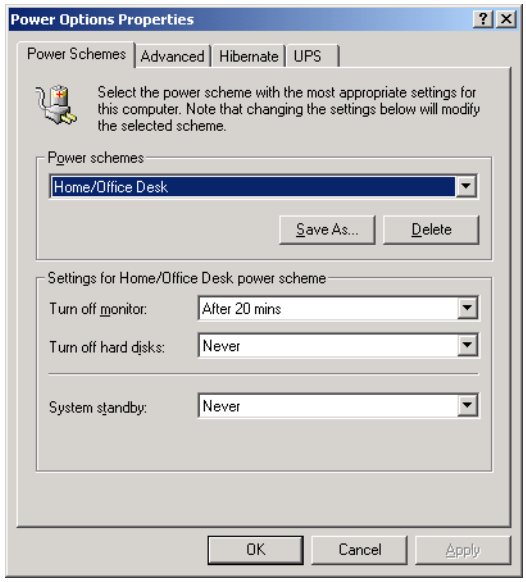


4. Click [OK].

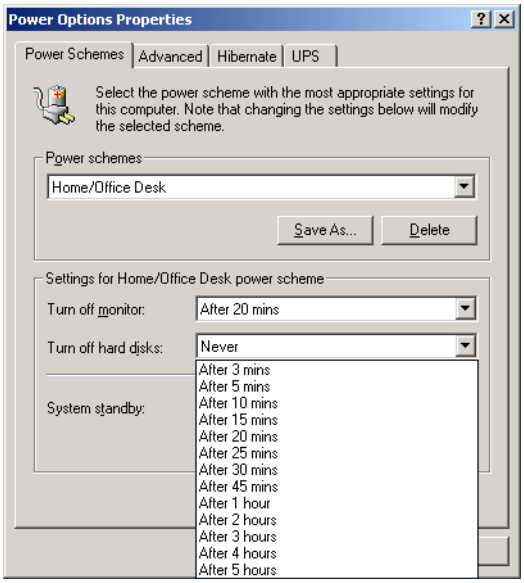
When there is no HDD access for the time set, the HDD Power Down Timer switches over to HDD Power Down and the motor of the HDD stops.

Windows 2000 Professional

1. Select [Settings]-[Control Panel]-[Power Options] in the Start menu of Windows.
2. [Power Options Properties] is displayed. Click the [Power Schemes] tab.



3. Select the time in the [Settings for Home/Office Desk power scheme: Turn off hard disks] option.



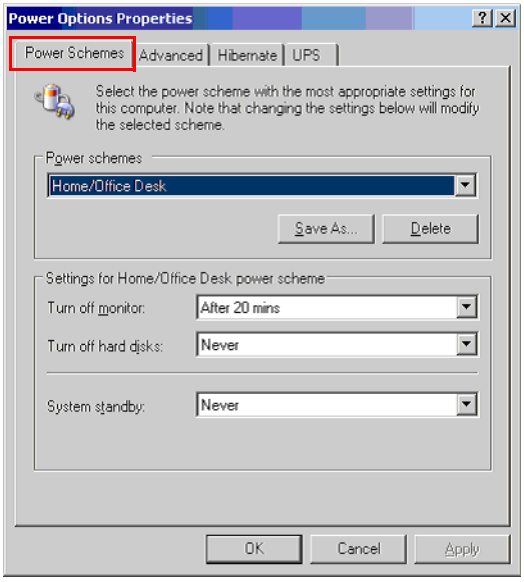
4. Click [OK].

When there is no HDD access for the time set, the HDD Power Down Timer switches over to HDD Power Down and the motor of the HDD stops.

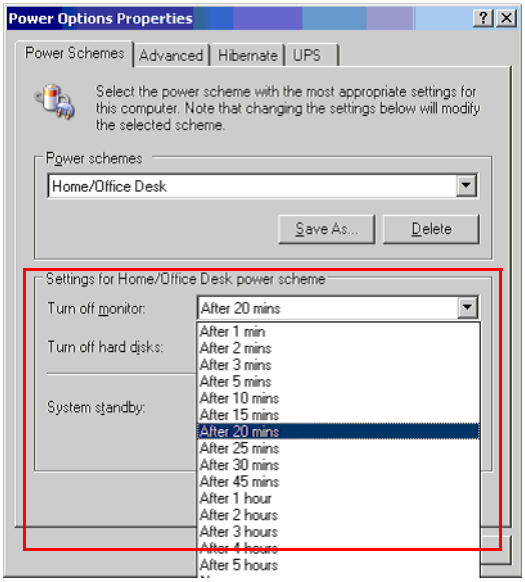
WEPOS

1. Select [Control Panel]-[Performance and Maintenance]-[Power Options] in the Start menu of Windows.

2. [Power Options Properties] is displayed. Click the [Power Schemes] tab.



3. Select the time in the [Settings for Home/Office Desk power scheme: Turn off hard disks] option.



4. Click [OK].

When there is no HDD access for the time set, the HDD Power Down Timer switches over to HDD Power Down and the motor of the HDD stops.

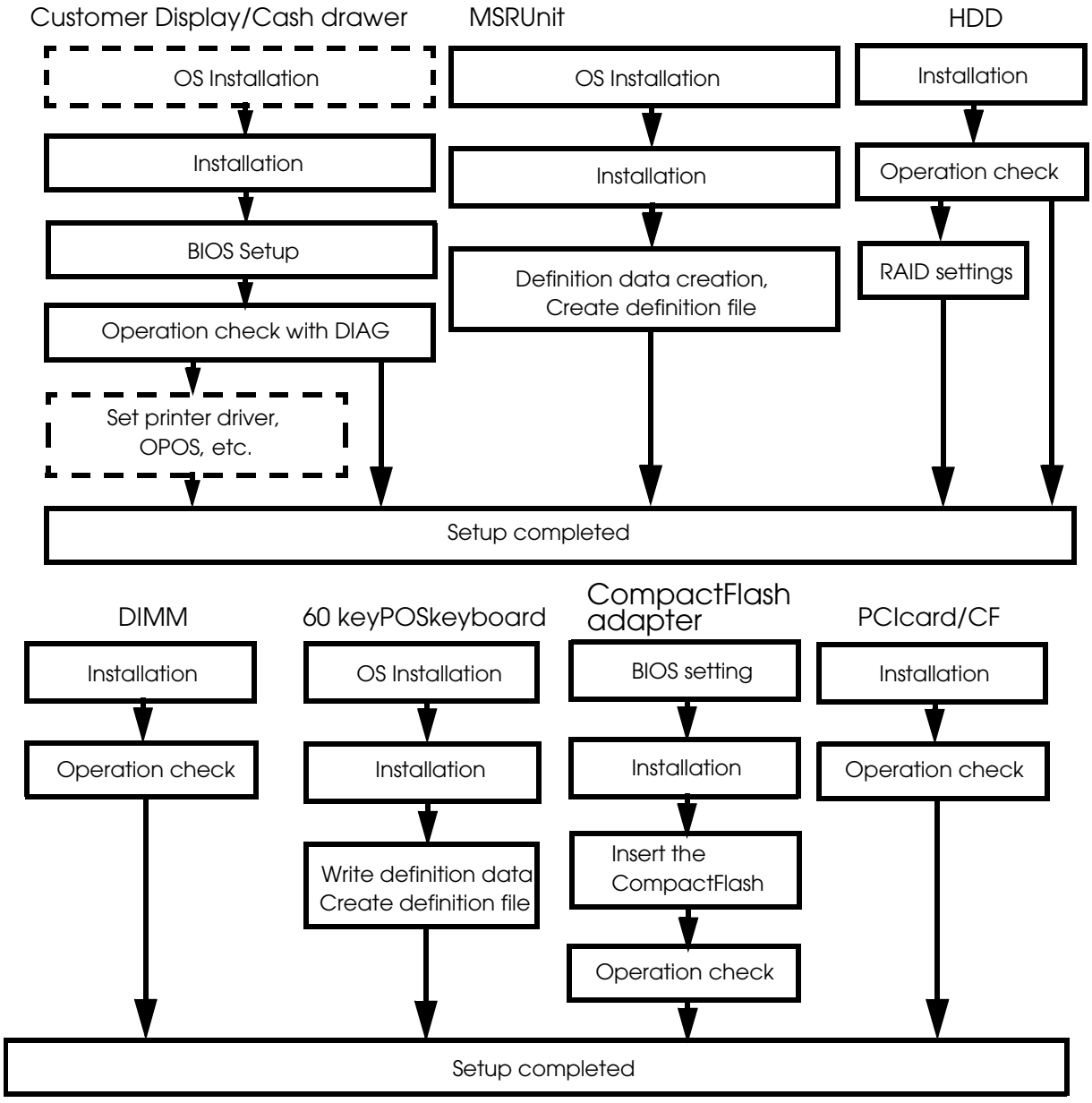
Chapter 3
Hardware Setup

This chapter explains how to set up options and peripheral units of the SR-610.

Overview of the setup

The peripherals of the SR-610 include the ones that are set by a driver or a utility at the time of setup and must confirm in the operation. Peripherals may not operate correctly if the installation order of OS and driver is not correct.

The basic flow of the setup is described below.



Refer to each item about the other peripheral devices and options.

Precautions for Setting Up

In addition to the precautions below, warning instructions and cautions to note are given at each work stage.

⚠ CAUTION:

Turn off the power of all equipment, such as the SR-610 and peripherals, before setup. Also, unplug the power cables of the SR-610 and peripherals.

> *If the power is not turned off, the SR-610 or peripheral units may be damaged during setup.*

Static electricity can damage the components of the SR-610. Before you touch any components, touch a grounded metal surface to discharge the static electricity in your body. It is also recommended that you wear a grounded wristband and work on an antistatic surface.

Do not touch the connectors. Dirt may cause a malfunction.

Do not apply excessive force to connectors, cables, or screws during connection. Excessive force may damage the connectors or the screw threads.

Do not allow cables to be pinched. The cables may be damaged or disconnected.

How to Install Options/Peripheral Units

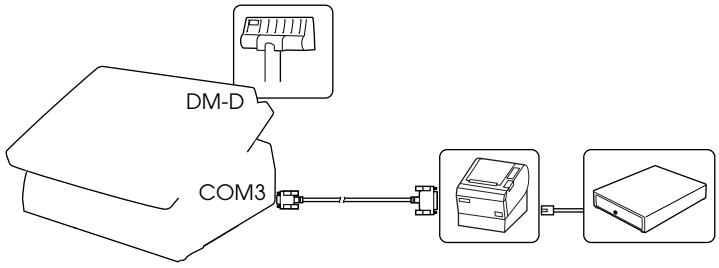
Refer to the relevant page below for how to install options for the SR-610 and peripherals.

Options/Peripheral	Page
Customer display	3-4
Cash drawer	3-9
MSR unit (DM-MS123)	3-12
60 key POS keyboard unit (DM-KX060)	3-18
HDD unit	3-40
DIMM	3-44
CompactFlash adapter (OI-S05)	3-36
PCI Card	3-46
Power cable	3-49

Connecting the customer display, the cash drawer and the TM printer

When connecting the customer display, the cash drawer and the TM printer to the SR-610, there are the following two ways.

Control three peripheral equipments by the COM3 port.

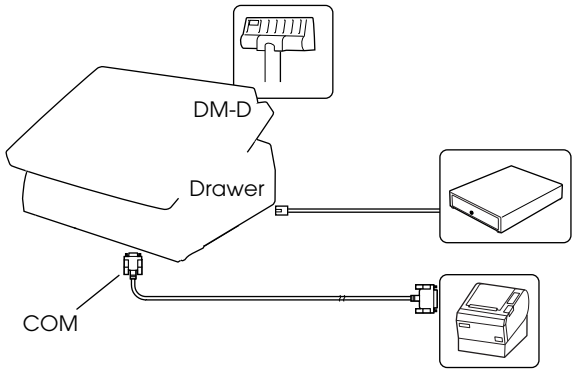


Set [Advanced] ? [Super IO Configuration] ? [Serial Port3 Mode] of the BIOS to [TM/DM-D].

In this case, the cash drawer is not controlled even if connecting to the drawer connector of the SR-610. Connect the cash drawer to the drawer connector of the TM printer. Use the TM printer model which has the drawer connector or the drawer connector included in the I/F unit.

In this mode, three peripheral equipments can be controlled by COM3.

Control the customer display and the cash drawer by COM3, and control the TM printer by other ports.



Set [Advanced] ? [Super IO Configuration] ? [Serial Port3 Mode] of the BIOS to [DRW/DM-D].

In this mode, the customer display and the cash drawer are controlled by COM3, but the TM printer is controlled by other ports.

Note:
In this mode, don't connect peripheral equipments such as the printer to COM3 of the SR-610.

Installing the customer display

The following customer display can be connected to SR-610.

Model name	Specification
DM-D110	20 characters x 2 lines
DM-D210	20 characters x 2 lines
DM-D500	256 X 64 dots (graphic mode) 32 characters x 4 lines (Font A), 42 characters x 8 lines (Font B)

COM3 is allocated as a serial port for the customer display by default. (The cash drawer and the COM3 port are allocated as a same port, too.)

Supplied Items

Check that the items shown in the illustration below are included and none of the supplies are damaged.

- ❑ Customer Display
- ❑ Installation Manual
- ❑ Ferrite core (There is a model which it is not packed. It is not used for the SE-610.)

Flow of setup

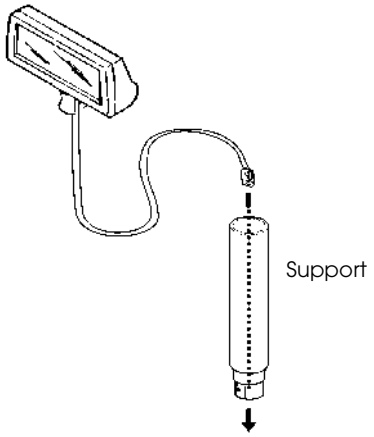
1. Set up the customer display in the SR-610.
2. Turn on the power of the SR-610.
3. Start up BIOS and set "Advanced"-"Super IO Configuration"-"Serial Port3 Mode" to "TM/DM-D" or "DRW/DM-D".
4. Start up DIAG and confirm that the customer display is connected correctly and displayed.
5. Enable the use of the customer display.

Set up the customer display

Attach the support according to need.

Attaching the support

Pass the cable for the Customer Display through support, and attach support to the Customer Display.



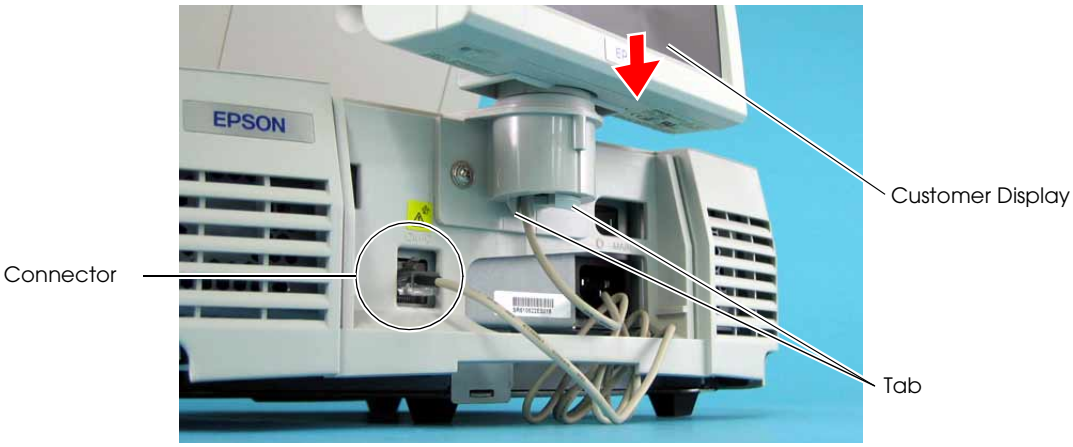
Attaching the customer display

Attach the customer display by the following procedure.

1. Slide the Rear Cover in the direction of the arrow to remove it.

2. Remove two screws and attach the DM Holder using these screws.

3. Pass the cable of the Customer Display through the DM Holder and attach the Customer Display (or the Support) to the DM Holder. At this time, fit tabs of the Customer Display into the DM Holder.

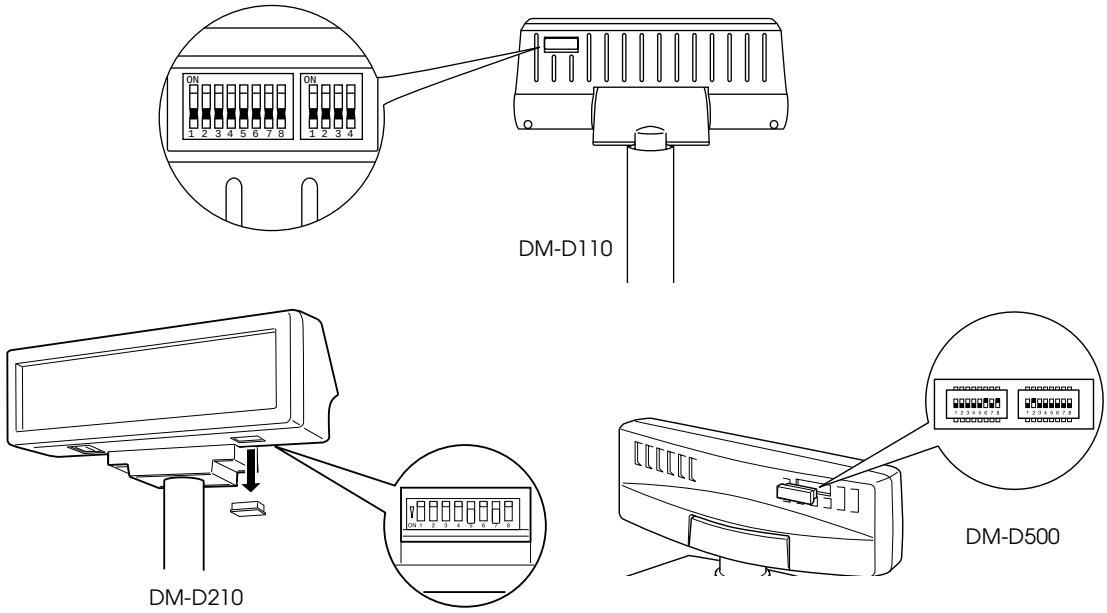


4. Connect the cable of the Customer Display to the Customer Display Connector.

5. When connecting the TM printer to the COM3 port, set the DIP switch that the customer display becomes the same communicative condition as the TM printer.

Customer display DIP switch settings

Position of DIP switches is as follows: Setting



DM-D110/120 and DM-D210 (DSW1)

DSW1 Setting	Function	ON	OFF
1-1	Data receive error	Ignored	Displays "?" (*1)
1-2	Data length	7 bits	8bits (*1)
1-3	Parity on or off	Parity	No parity (*1)
1-4	Parity type	Even	Odd (*1)
1-5	Change Transfer rate Refer to the table below		
1-6			
1-7			
1-8	Self test selection (*2)	Perform self test	Do not perform (*1)

*1 Foctory setting.
*2 This function can select whether or not the self test is performed when you turn on the power. See "Self Test" for details.

Transfer rate(bps)

SW1-5	SW1-6	SW1-7	**Transfer rate**(bps)
ON	ON	ON	2400
OFF	ON	ON	4800
ON	OFF	ON	9600 (*1)
OFF	OFF	ON	19200
ON	ON	OFF	38400
OFF	ON	OFF	57600
ON	OFF	OFF	115200

*1 Foctory setting.

DM-D500(DSW1)

DSW1 Setting	Function	ON	OFF
1-1	Data receive error	Ignored	Displays "?" (*1)
1-2	Hand shaking	XON/XOFF (*2)	DTR/DSR (*1)
1-3	Data length	7 bits	8bits (*1)
1-4	Parity on or off	Parity	No parity (*1)
1-5	Parity type	Even	Odd (*1)
1-6	Change Transfer rate Refer to the table below		
1-7			
1-8			

*1 Foctory setting.
*2 XON/XOFF is valid only at connecting a stand-alone.

Transfer rate(bps)

SW1-6	SW1-7	SW1-8	**Transfer rate**(bps)
ON	ON	ON	2400
OFF	ON	ON	4800
ON	OFF	ON	9600 (*1)
OFF	OFF	ON	19200
ON	ON	OFF	38400
OFF	ON	OFF	57600
ON	OFF	OFF	115200

*1 Foctory setting.

Operation confirmation by DIAG

The set up customer display is conformed as operating normally by DIAG. Refer to Chapter 6 "Device Diagnostics Utility."

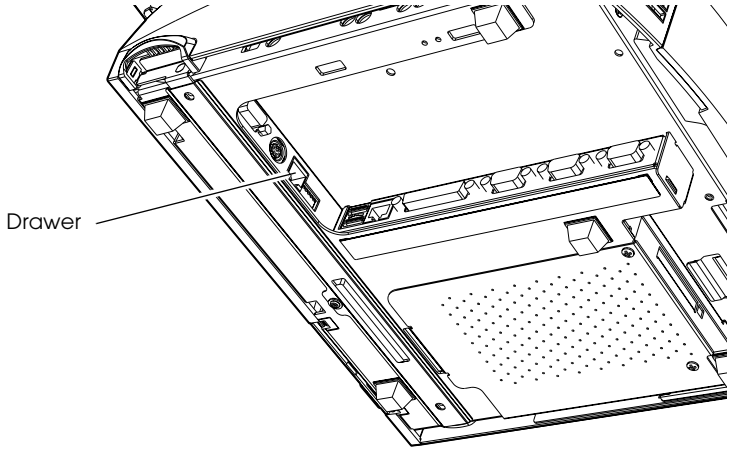
As for operating by DIAD, set the communicative condition to 9600bps/ 8bits/ No parity. (Foctory setting)

Installing a Cash Drawer

COM3 is assigned as the serial port for the cash drawer.
(The customer display and the COM3 port are assigned the same port.)

Flow of setup

1. Set up the customer display to the SR-610.
2. Connect the drawer to the drawer connector of the SR-610. The drawer connector is on the base.



⚠ CAUTION:

Do not connect a telephone line to the Drawer connector.

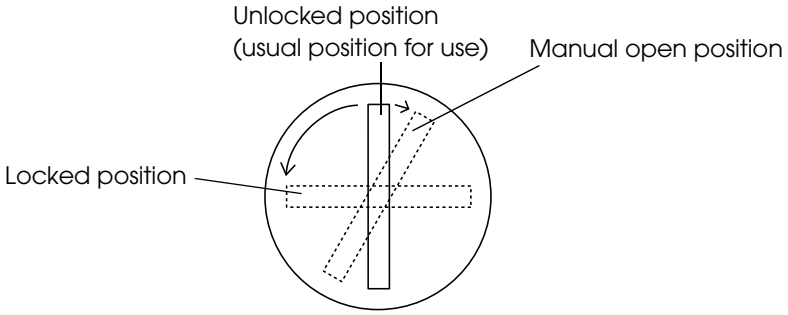
3. Turn the SR-610 on.
4. Start up the BIOS and set [Advanced] - [Super IO Configuration] - [Serial Port3 Mode] to [DRW/DM-D].
5. When performing the drawer kick test (to open the drawer), turn the SR-610 on to boot the BIOS. Check to see that the supervisor password is set.

Note:
Operation check with DIAG cannot be made if the supervisor password has not been set.

6. Turn SR-610 on to boot the DIAG.

7. Test the drawer. When performing the drawer kick test (to open the drawer), the supervisor password of BIOS is required.

   Note:
   At this time, set the key of the cash drawer to an unlocked position.



8. This allows you to use the cash drawer.

When using the external printer

When the printer unit is not connected but the external printer is connected, and if it has a drawer connector, connect the cash drawer connector cable to the drawer connector of the external printer. In this case, you cannot perform operation check with DIAG.

MSR Unit

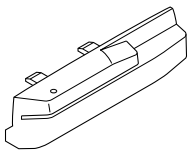
Description

MSR unit is a SR-610 dedicated magnetic card readable unit. Two types of the unit is available with the compliant truck type.
The data read by the MSR is output via keyboard interface within SR-610. Also, start/end character setting is available from the POS Key mode setting utility (PKMODE2.exe).

Model name	DM-MS123
Card	ISO I type track 1, 2, and 3
Keyboard Firm	Ver 3.01 or above

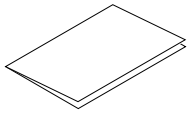
Supplied Items

Check that the items shown in the illustration below are included and none of the supplies are damaged.



MSR Unit

connector



User's Manual

Handling Guidelines

- ❏ Be sure to turn off the SR-610 to remove or attach the MSR unit.
- ❏ Do not insert the magnetic card from the wrong direction. Do not remove the card while the system is reading the magnetic card. It may cause reading errors.
- ❏ If the external keyboard is connected, never use the keyboard while it's reading the card. It may cause reading errors. On the other hand, do not operates the magnetic card reading operation during the keyboard operation.
- ❏ Use the magnetic card that withholding ISO standard.
- ❏ Retentivity of the magnetic card needs to be approximately 24,000A/m.
- ❏ To set the header and the footer for the readable data of the magnetic card, use the" keyboard firm setting utility" attached with this product.
- ❏ Do not place it around the object which generate magnetic or derivation noise such as CRT, switching power supply, compressor etc.
- ❏ Do not use this product in the place where the lots of dusts are found.

Installing a MSR Unit

Follow the steps below to install a MSR unit.

1. Connect the connector on a MSR.

⚠ CAUTION:

Connect the brown line of the connector with no.1 pin in order with the number on the board.
Connector may get damaged if the pin is not connected correctly.

2. Remove two screws which fix the MSR cover, and then remove the MSR cover.

3. Connect the connector on the board of the MSR unit.
   Connect with no. 1 pin following the same procedure as step 1.

4. Attach four tabs on the concave portion of the LCD unit to connect with the MSR unit.

⚠ CAUTION:

Do not short the connector when you attach the MSR unit.

5. Secure the MSR unit using two screws.

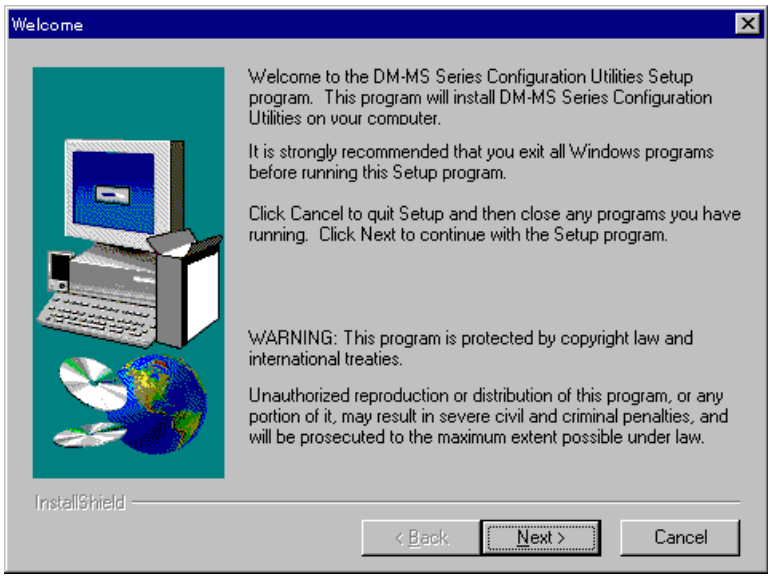
Installation is completed.

Setting Utilities

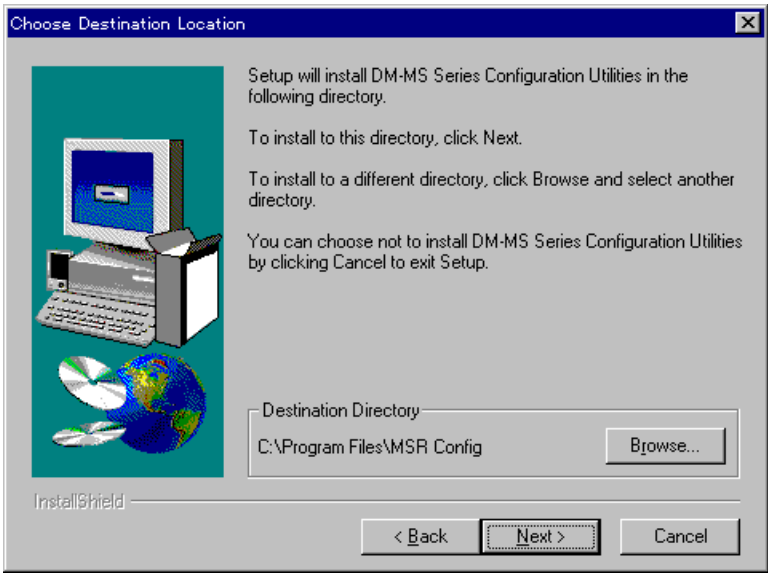
Installation

Follow the steps below to install.

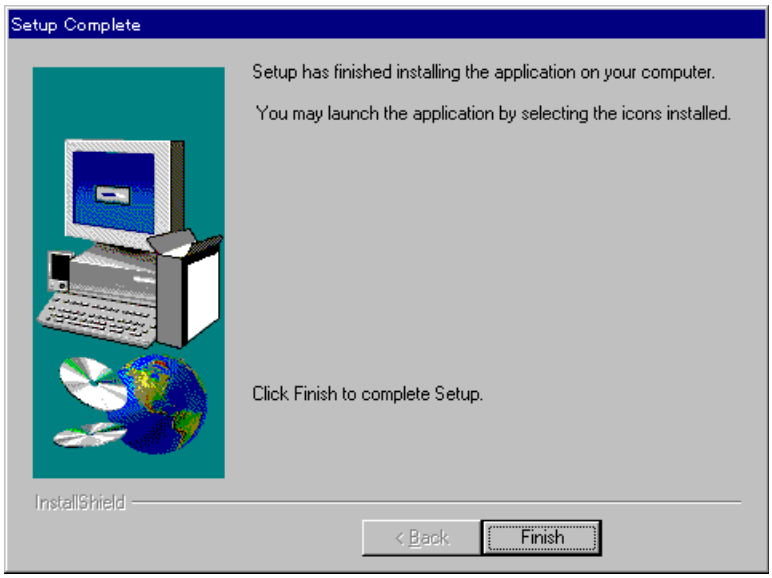
1. Select “C:\BACKUP\MSRCFG" folder.
2. Start “SETUP.EXE".
3. Welcome screen is displayed. Check the contents and cluck [Next] button.



4. Choose Destination Location is displayed. Check the folder installing to, then click [Next] button. Normally install it to “C:\Program Files\MSR Config" as an default, but the folder can be changed if necessary.



5. Copying of file and various settings are executed.
6. Setup Complete screen is displayed. Click [Finish] button.

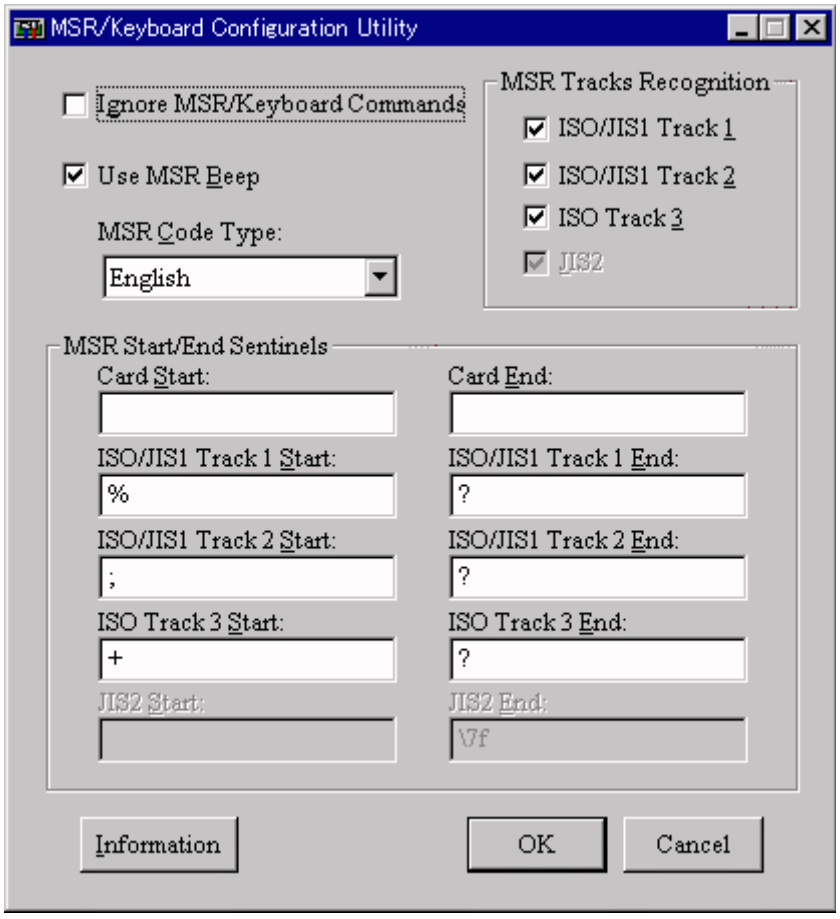


Installation is completed. Utility is activated.

MSR/Keyboard Setup Utility (Windows)

Startup

The screen shown below is a utility setting screen.

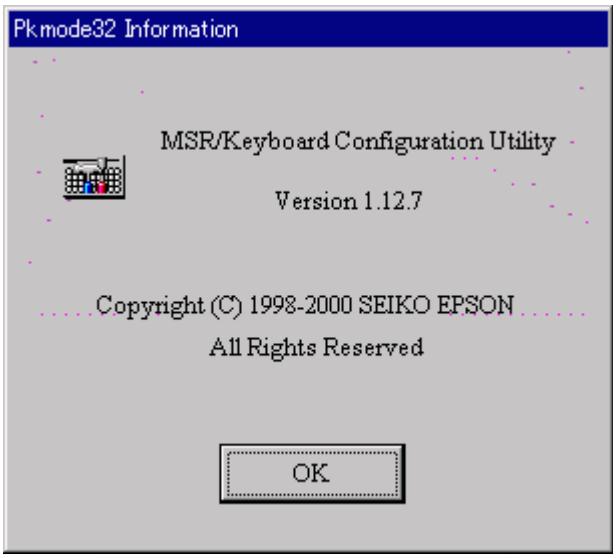


3-1 MSR/Keyboard Setup Utility setting Screen

Normally it is installed in Start menu. Click the menu to start the utility. It also starts by double clicking the file icon in Explorer.

Information

The information dialog screen is displayed by pressing the Information button or Alt + I key (or press Enter key while Information button is selected). Utility name, Version, Copyright is indicated in this dialog. The information dialog is shown below.



3-2 Information Dialog Screen

Exit

Press Cancel button or ESC key to exit the utility. The change in the setup is not updated to the Keyboard Firm in this case. Press OK button to update the new setting and it exits the utility.

Setup

The following Setup is available from this utility.

- Ignore Keyboard/MSR Commands
  When this check box is checked, the system does not accept the command to the Keyboard Firm anymore. This command is used for the external Programmable Keyboard.

- Use MSR Beep
  Check this check box to beep during reading the data.

- MSR Tracks Recognition(ISO Track 1, ISO Track 2, ISO Track 3)
  Check the check box of the truck you want to read. Multiple items can be selected at the same time.

- MSR Code Type
  Select the type according with the Windows Keyboard setting.Select the setting that matches the language version of Windows in use. English, Japanese, French, German, Spanish are selected from the list.

- MSR Start/End Sentinels(Card Start, Card End, ISO/JIS1 Track1 Start, ..., JIS2Start, JIS2End)
  Set the character to be added at the front and end of data during loading. It ispossible to specify this setting for each card and each track. Leave this field blank if no character is to be added. The unique characters can be set ussing the code below:

Carriage return	′\R′ or ′\r'
Tab	′\T′ or '\t'
′\'	′\\'
Others	'\xx′ xx represents 2 digits hexadecimals. Directory specifing the character codes in hexadecimals.

Setup of 60 key POS keyboard (DM-KX060)

60-key POS keyboard unit (DM-KX060) can be used by connecting USB connector of SR-610, which has total 60 keys of 10 lines horizontally and 6 lines vertically, and has a key lock of 8 positions. Also, there are USB connectors in the rear.

By programming definition data into the controller of the 60-key POS keyboard unit, the 60-key POS keyboard unit becomes usable. Set the key lock key to the PRG position to program. This definition data can also be used in another SR-610, by saving it as a file. Also, it can be programmed by reading another definition file.
A keyboard for PCs is required to perform these operations.

The key lock cannot be used for OPOS for Windows 2000.

Definition to the 60-keys POS keyboard unit can also be carried out using a PC on which Windows 2000/XP and USB 2.0 is installed. In this case, installation of a dedicated utility is required.

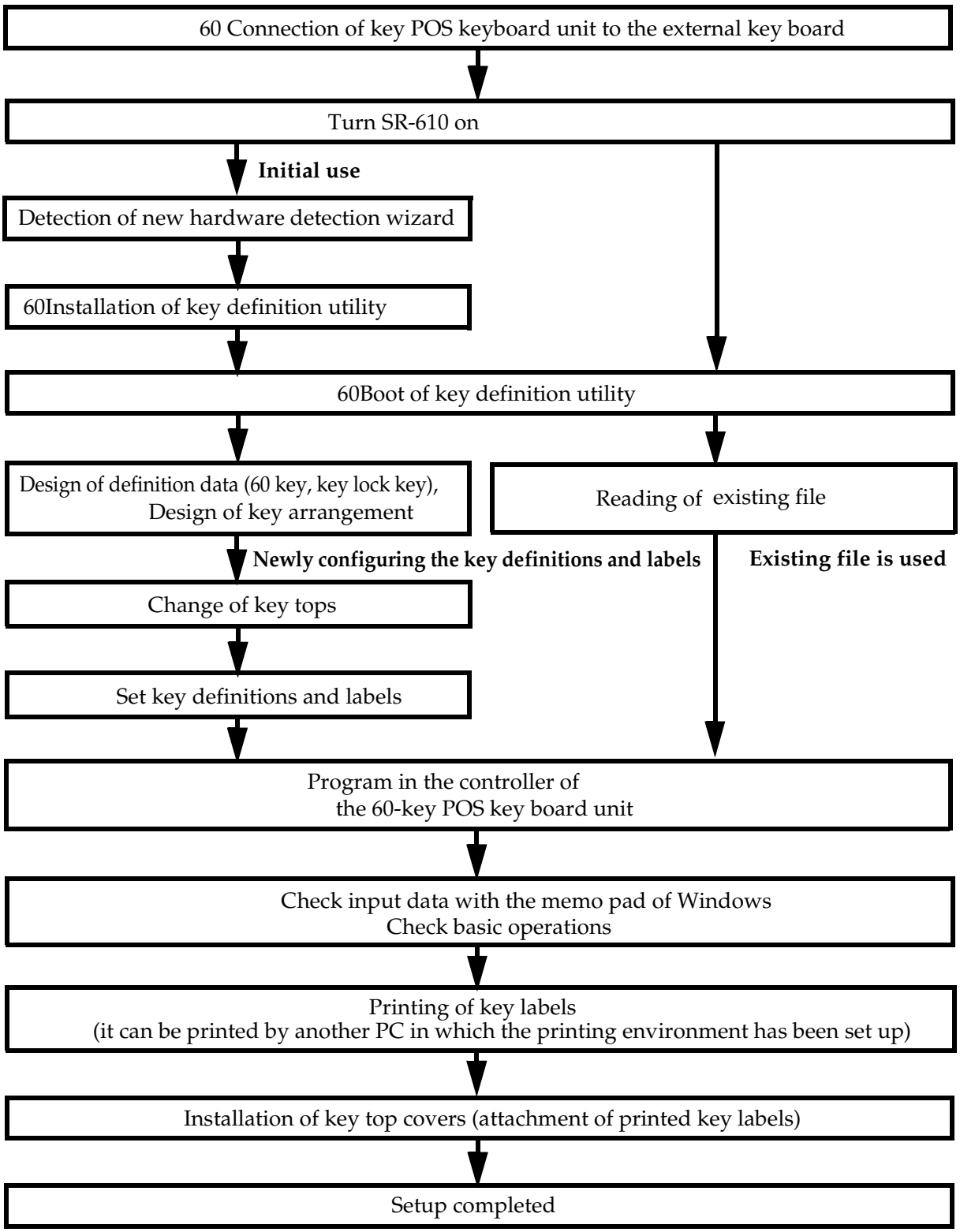
When a keyboard is replaced, because data is saved in the 60-keys POS keyboard unit, definition data needs to be reconfigured in the new keyboard.

Bundled items

The following items are bundled in the 60-key POS keyboard unit (DM-KX060).

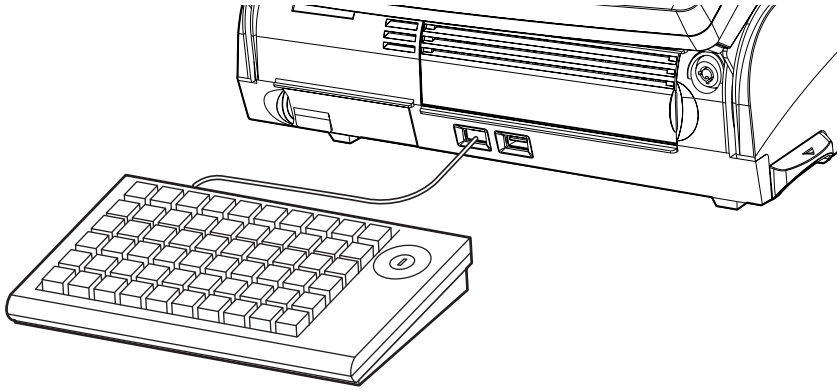
- ❑ 60-key POS keyboard unit main body
- ❑ Key top cover (for single size, for double size, for quad type)
- ❑ Key top (“key single size”, “key double size”, “key,”1”~ “9” key, “double size key”, “quad type key”)
- ❑ Key top remover
- ❑ Key lock key (8 position, 8 keys in total)
- ❑ User’s manual

Flow of setup



Connection of 60-key POS keyboard unit

Connect the 60-key POS keyboard unit to the USB connector of SR-610.
Also connect an external keyboard. Either a PS/2 keyboard or an USB key board can be used
.

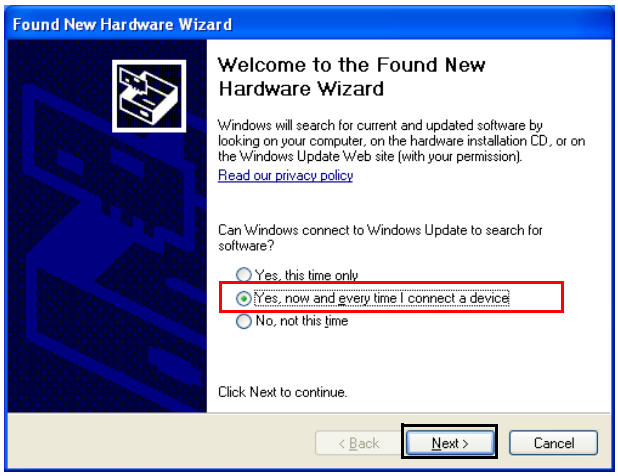


Installation of 60-key POS keyboard unit

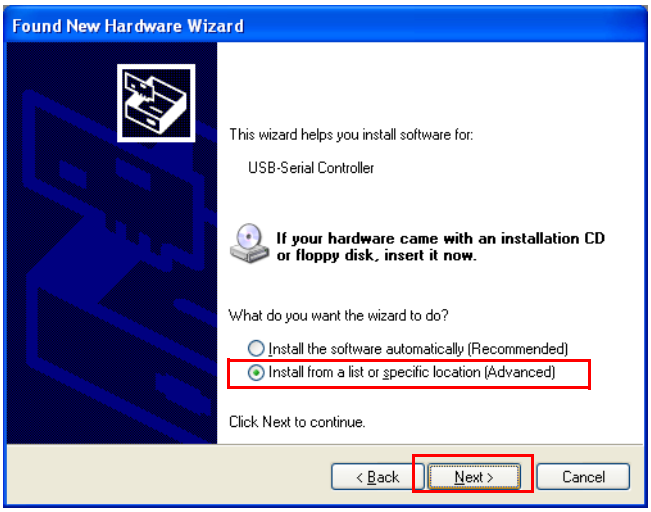
For the first connection of the 60-key POS keyboard unit, the 60-key POS keyboard unit has to be installed according to the following procedure.

1. Check that the 60-key POS keyboard unit is connected to the USB bus before turning the power on.

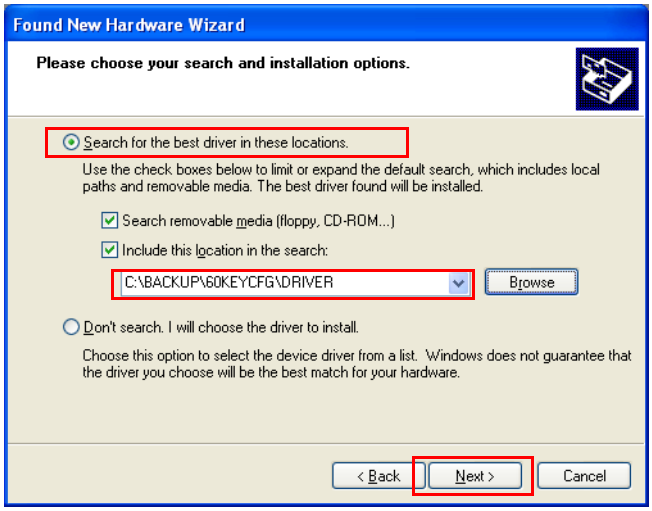
2. "Welcome to the Found New Hardware Wizard" is displayed when Windows is booted after turning the power on. Select "Yes,now and every time I connect a device" and press [Next].



3. Next, select "Install from a list of specific lcation [Advance]" and press [Next].

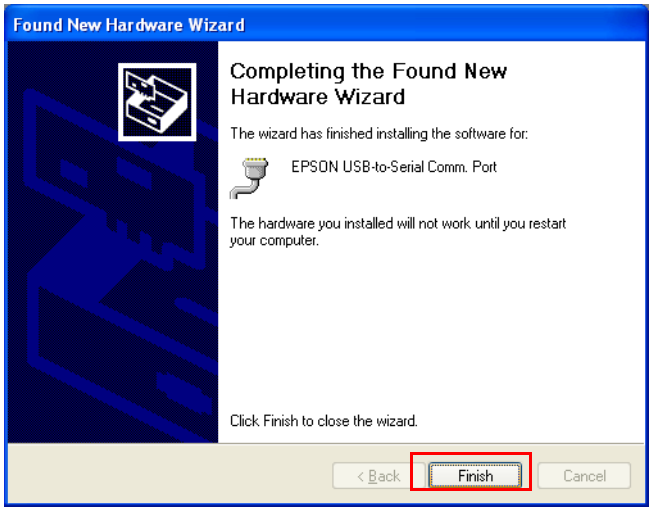


4. Then, select "Ssarch removable media (froppy,CD-ROM...)" and select the folder **BACKUP\60KEYCFG\DRIVER**.Press [Next].



5. Installation begins.

6. Completing the Found New Hardwawe Wizard is displayed. Press [Finish].

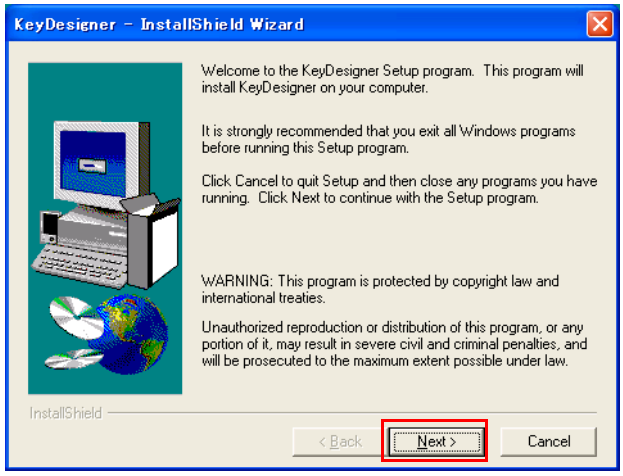


Installation of the 60-key definition utility

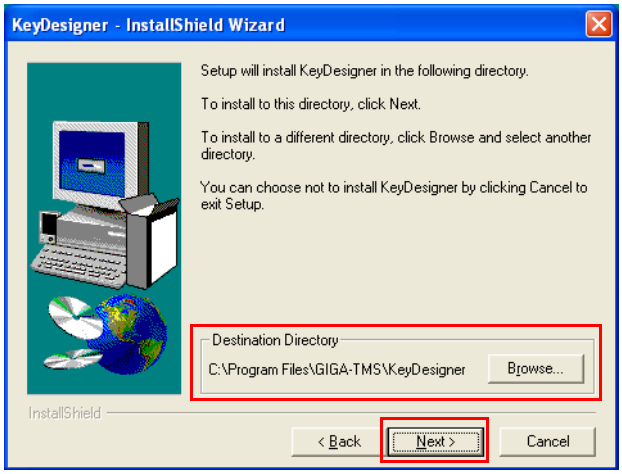
To define data to the 60-key POS keyboard unit, installation of the 60-key definition utility (KeyDesigner) is required. Install it according to the following procedure.

1. Boot KeyDesigner.exe from **BACKUP\60KEYCFG\TOOL**.

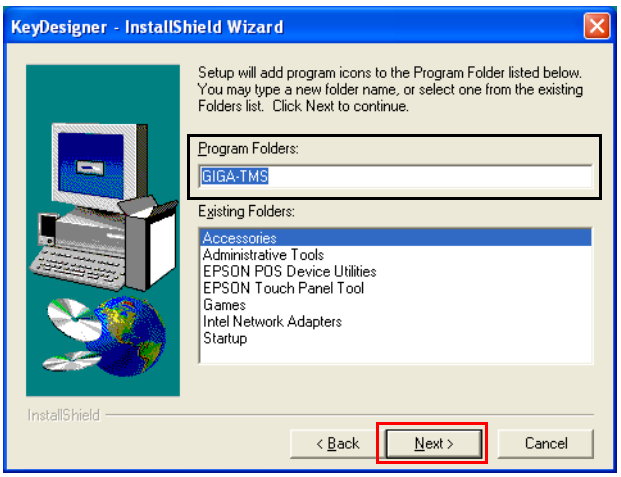
2. "Key Designer-InstallShield Wizard" is displayed. Press [Next].



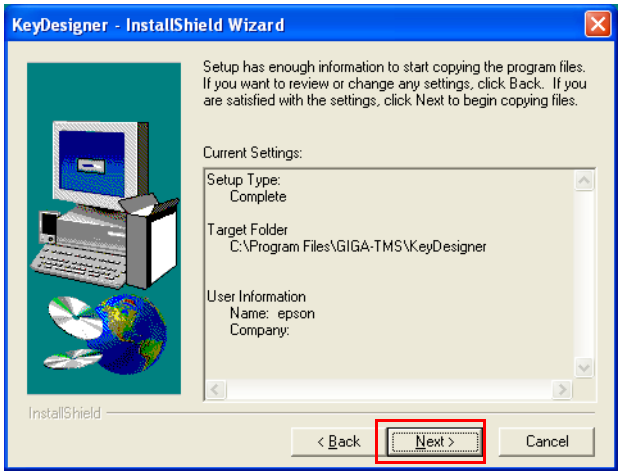
3. Next, select the place to install and press [Next].



4. Next, decide the name of a folder to be created and press [Next].



5. Then, the confirmation screen of the properties is displayed. Press [Next] if the settings on the confirmation screen are satisfactory, or press [Back] to redo the setting.



6. Installation is completed. Press [Finish] button.

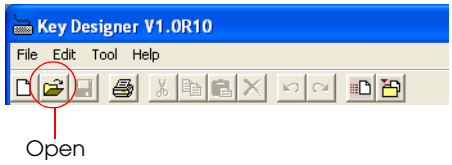
Reading of template file and programming

The following is an explanation of how to program data in a template file ahead of time, and to perform input from the 60-key POS keyboard.

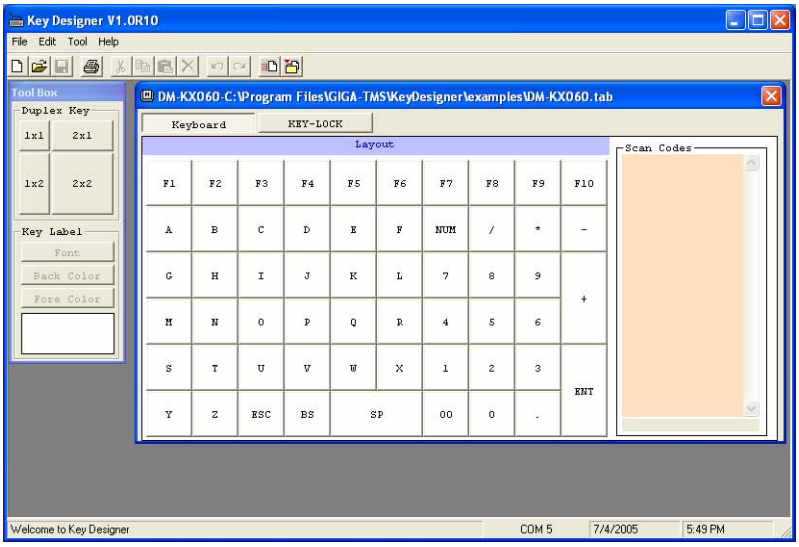
1. Connect the external keyboard to SR-610 and turn the power on.

2. Select [START] - [All Programs] - [GIGA-TMS] - [Key Designer] to boot the 60-key POS keyboard setting utility.

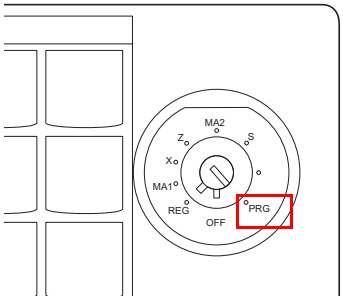
3. Press **Open** button to open "DM-KX060.tab".

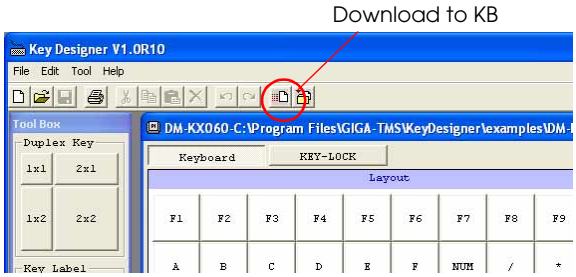


4. The following screen is displayed after opening the file.
   The definition file and the label of the template file have been read into the 60-key POS keyboard setting utility. At this moment, writing to the controller of the 60-key POS keyboard has not been performed.



5. Program the controller of the 60-key POS keyboard.
   Insert the PRG key into the key lock key and turn to the PRG position. Then press the Chapter 3 **Download to KB** button. The set properties are programmed into the controller.





6. Check to see that input is possible from the 60-key POS keyboard.
   Boot the memo pad of Windows.

7. Input using the 60-key POS keyboard, and check to see that it is input in the memo pad, as defined data.
   Now you can use the 60-key POS key board.

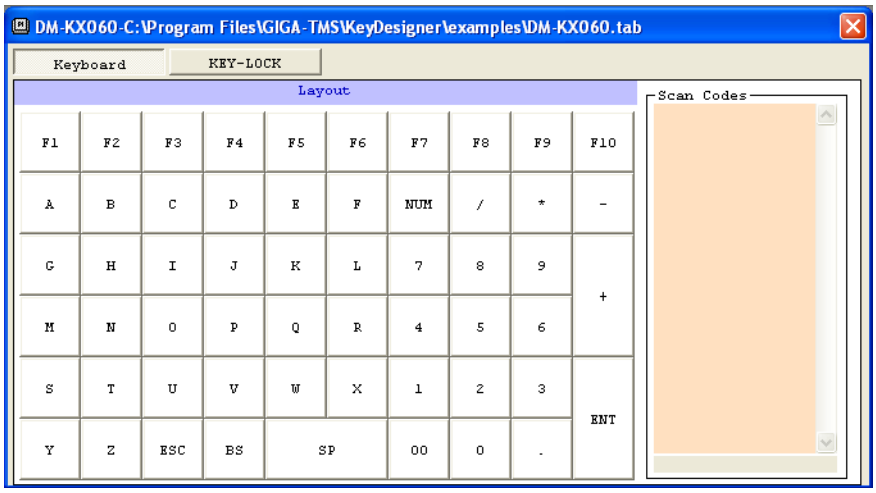
8. The key labels can be printed and displayed on the key top by cutting them out.
   Refer to “Printing key labels” on page 33 for this method.

Design of definition data

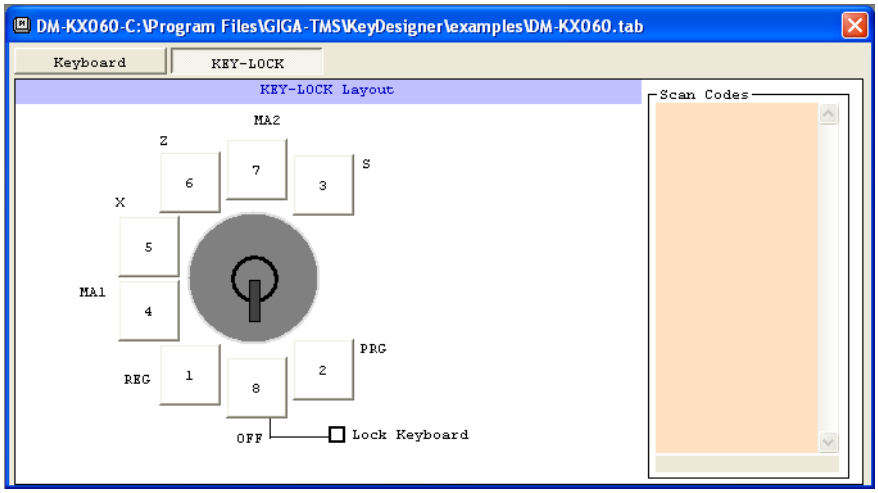
Design the data definitions for each key, and the layout of double size keys and quad size keys, etc. Also, design the settings data for the key lock key.

All the keys which can be input from the keyboard can be defined.Select Ctrl + Alt +Delete from the special keys.

Example: 60-key arrangement of the template file



Example: key lock arrangement of the template file



Note

Use when the setting of the key lock key is template file, in cases where OPOS is used in Windows XP

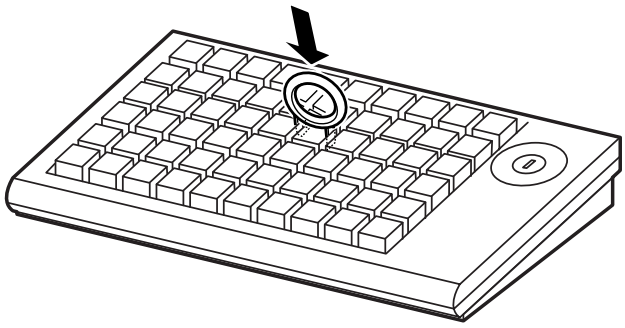
The key lock key cannot be used, when OPOS is used in Windows 2000.

Design the keys referring to these factors.

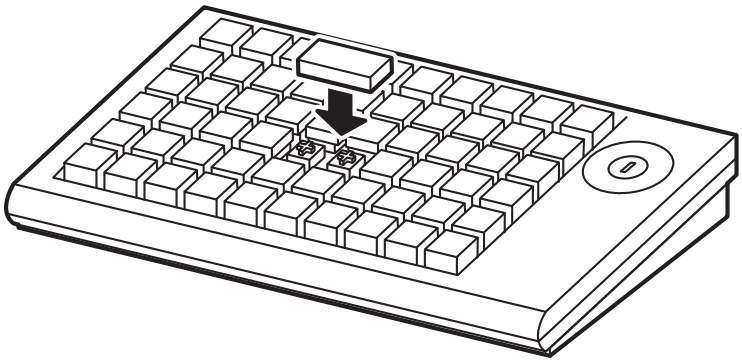
Change of key tops

Change the key tops according to the designed arrangement. Change the key tops according to the following procedure.

1. As the figure bellow illustrates, insert the key top remover bundled with the keyboard unit on to the key top you wish to remove.



2. Pull up the key top remover to remove the key top.
3. Repeat procedures 1 and 2 when removing several key tops.
4. Insert the key top to be changed, directly from above.



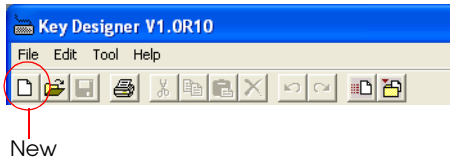
Setting of key definitions and key labels

The method for newly defining the key definitions and the key labels is described here.

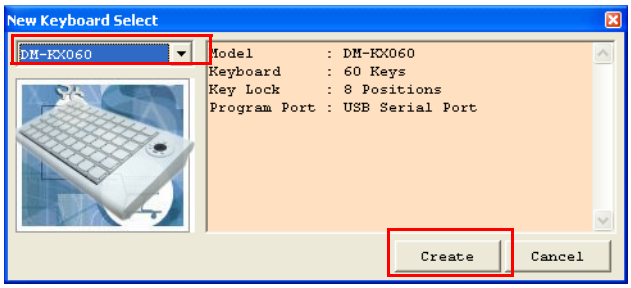
1. Connect the external keyboard and the 60-key POS keyboard to SR-610 and turn the power on.

2. Select [START] - [All Programs] - [GIGA-TMS] - [Key Designer] to boot the 60-key POS keyboard setting utility.

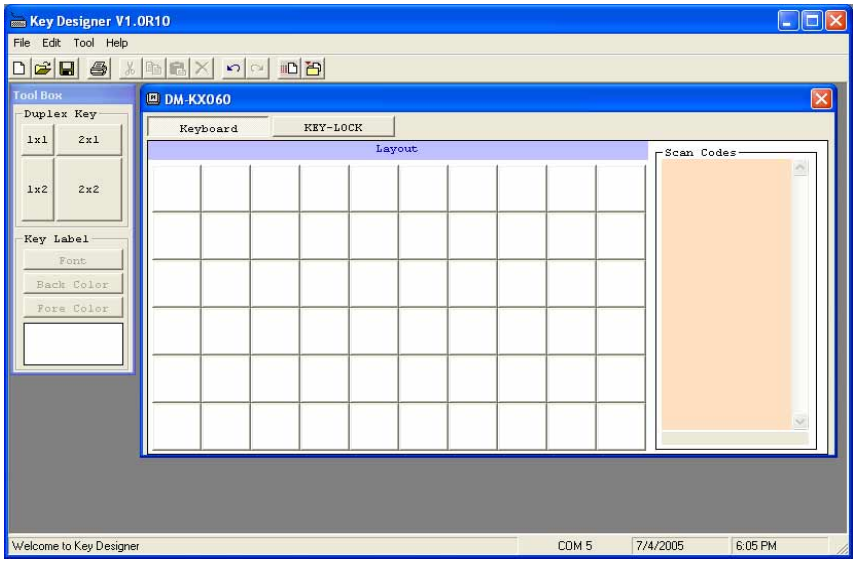
3. Press the **New** button.



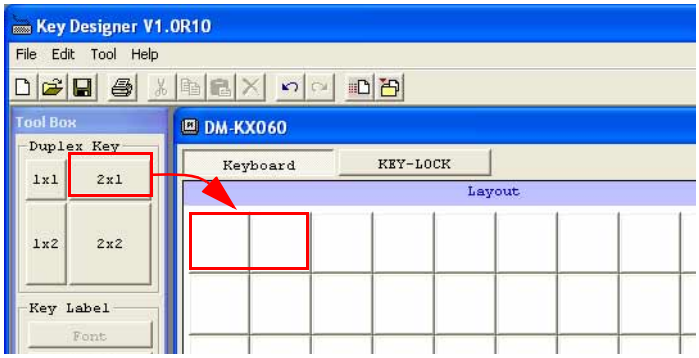
4. "New Keyboard Select" screen is displayed. Select DM-KX060 and press [Create].



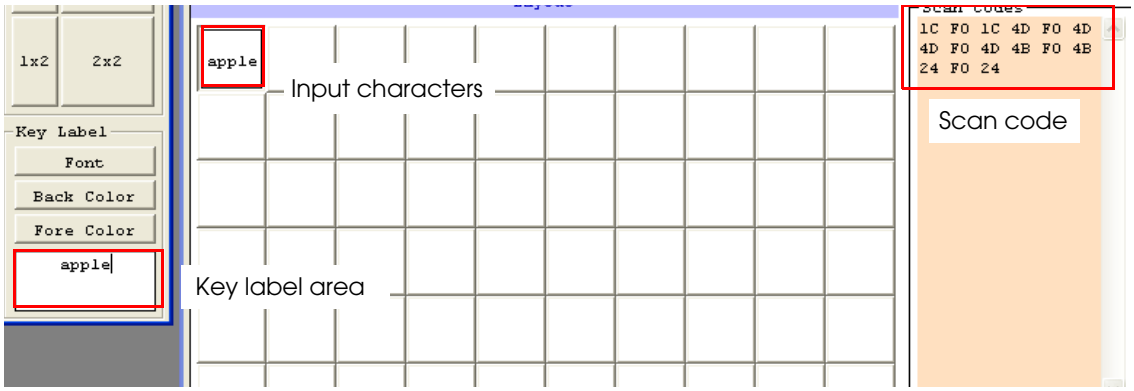
5. The key definition screen which nothing is defined is displayed.



6. Drag the desired key size from the toolbox to the definition of the keyboard when setting the double keys and quad keys.

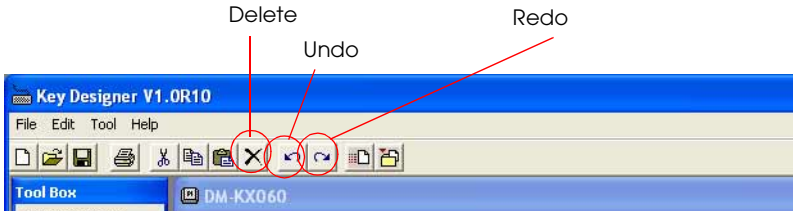


7. Click the key for which the key definitions and the labels are defined and input character strings to be defined. Click the upper left key to input apple here.
The scan code of the input data is input in the scan code and apple is input in the key label area.



Note

When the input is incorrect, press the Undo button to go back to the previous state, and press the Redo button to redo the undone procedure. Press the Delete button to cancel the input characters of the selected key.



Note

Character size, color and background of the defined label can be changed. Refer to Chapter 4 Utilities for more information.

The data for the 60-key POS keyboard is defined, and it is not programmed into the controller of the 60-key POS keyboard.

To change definition data

Re-define the code by the following procedure, in order to change the defined data.

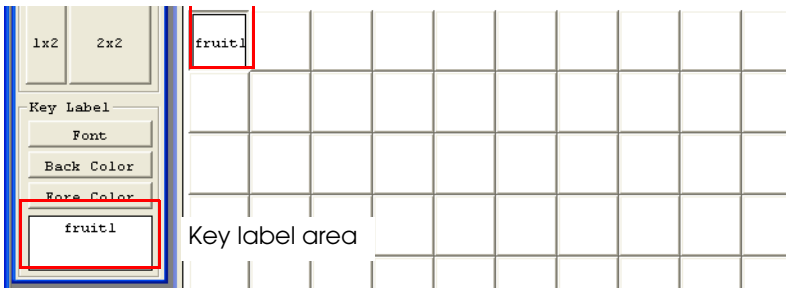
1. Select the key for which you wish to re-define the code.
2. Press the **Delete** button to clear the definition.
3. Re-input the correct value.

Note
To delete the input code, press Delete button. It cannot be deleted by pressing DEL or BACK SPACE because those key codes will be input.

Change the label display

Change the label display from the key defined characters as follows.

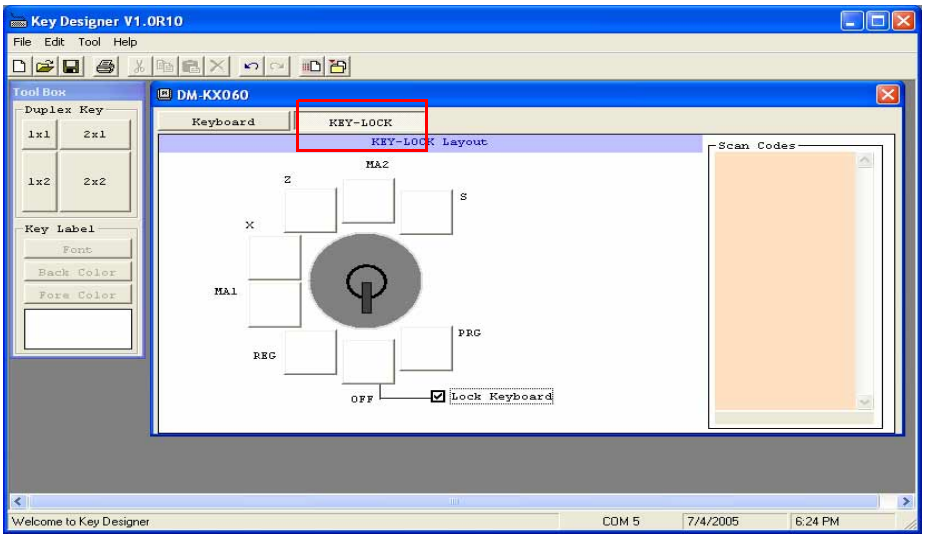
1. Click the key for which the label is to be changed.
2. Click the key label area in the toolbox and change the character strings. (fruit1 is input) in this case, only the key label is changed without changing the scan code.



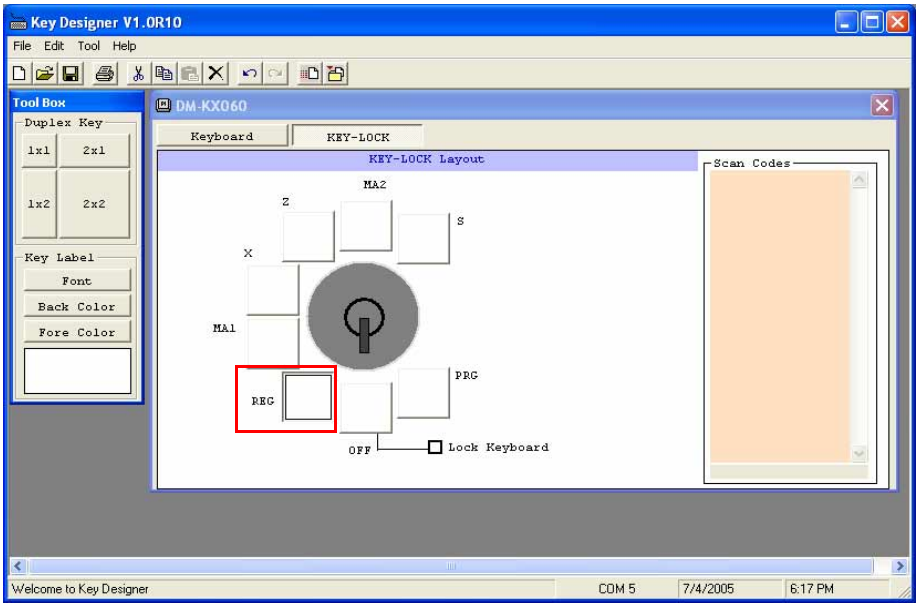
Definition of key lock

Re-define the code by the following procedure, in order to define the key lock.

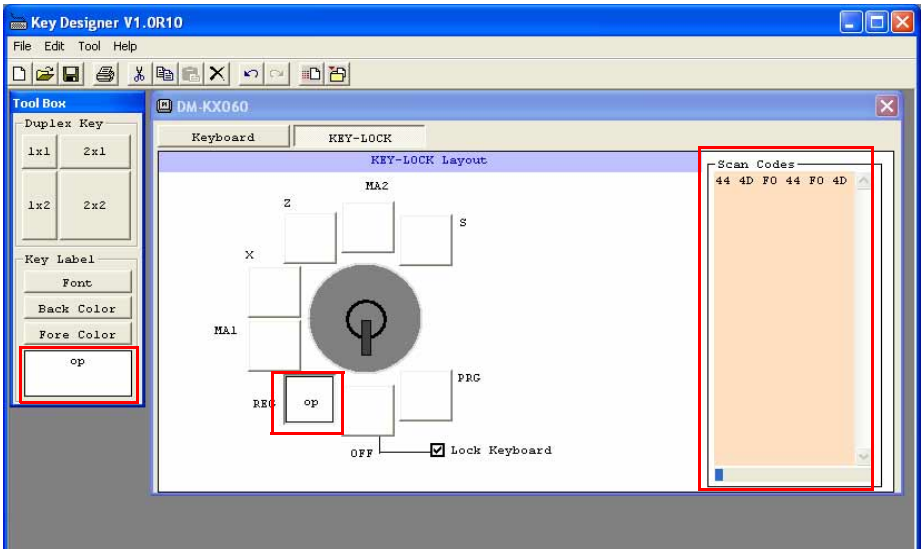
1. Click "KEY-LOCK" to define the key lock. The key definition screen is changed into the key lock setting screen.



2. Select the position of the key lock to be changed to input definition data.



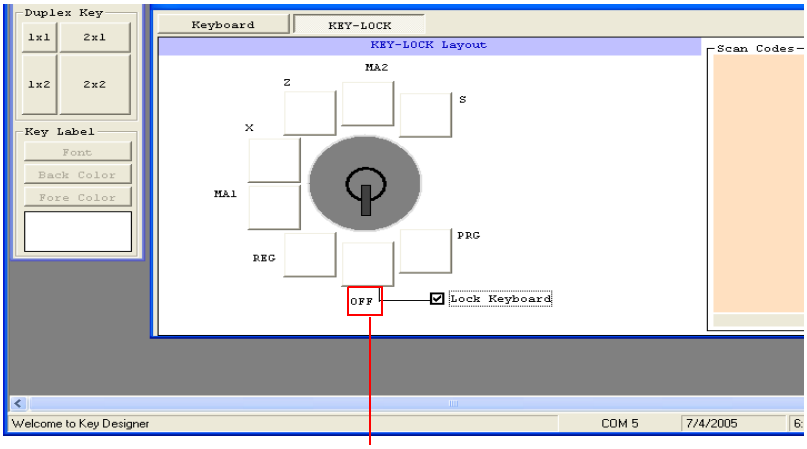
“op”is input to the key and the scan code of the input data is input in the scan code.



Note

When the input is incorrect, press the Undo button to go back to the previous state, and press the Redo button to redo the undone procedure.Press the Delete button to cancel the input characters of the selected key.

If you check the box to disable Key input, you can set is so that you are unable to perform key input when the key lock is at OFF position.

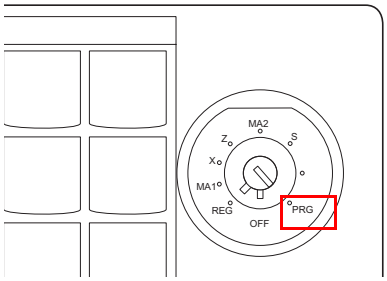


Disable key input

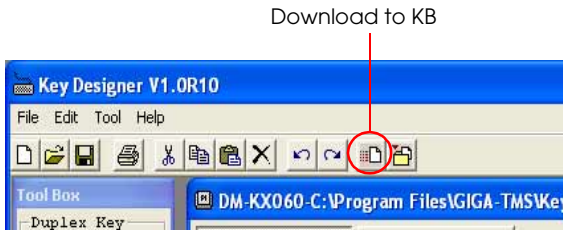
Program into 60-Key POS Keyboard unit controller.

To program the defined data into the 60-Key POS Keyboard unit controller, follow the procedure below.

1. Insert the PRG key in the key lock key and turn it to the PRG position.



2. Press the **Download to KB** button. Program all the key definitions into the controller. Now that the configured definitions are programmed into the controller, you can input data using the 60-Key POS Keyboard.



Input data confirmation

1. Start up the memo pad of Windows.
2. Input using the 60-key POS keyboard, and check to see that it is input in the memo pad, as defined data.

Now you can use the 60-key POS keyboard.

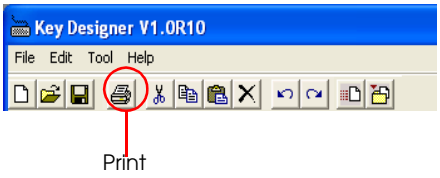
Printing key labels

Connecting a printer to the SR-610 and installing its printer driver are required in order to use this function. Refer to the instruction manual of the printer to be connected for the printing settings.

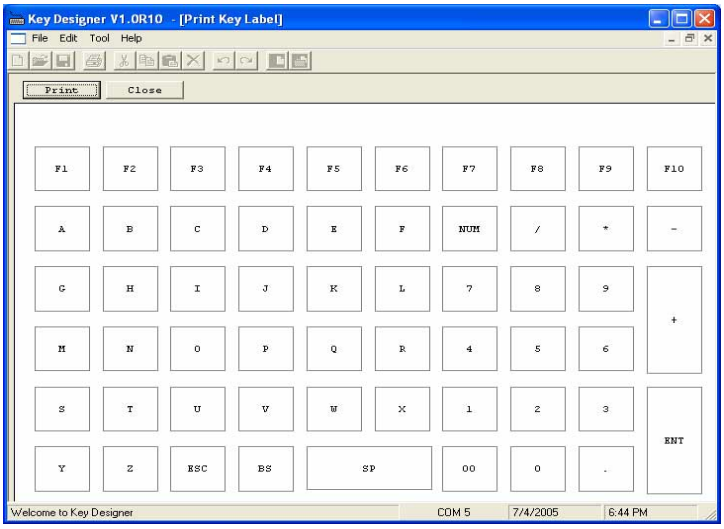
Labels can be printed by installing the 60-key definition utility on another PC and by reading the defined data.

1. Check to see that all labels of the keys are set.

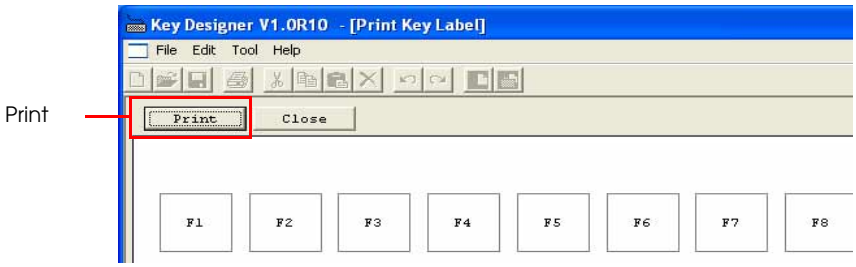
2. Press the **Print** button.



3. The print preview screen will be displayed.



4. If the properties are correct, press the **Print** button.



5. Cut out the printouts in the shapes of the key tops.

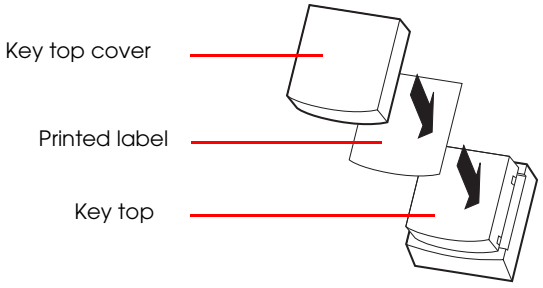
Installation of key top cover

The key top cover is bundled with the keyboard unit. Install the key top cover on the upper surface of the key tops.

Cut out the printed label using the 60-key definition utility.

Place the key top cover in place, according to the following procedure.

1. Set the key label forms on the appropriate keys.
2. Fit the key top cover on to the key top, as in the figure below. When you do this, be sure to fit the key top cover firmly.



Removal of key top cover

Remove the key top cover according to the following procedure.

1. Remove the key top using the key top remover.
2. Remove the key top cover from the key tops.

Installation of CompactFlash adapter

The version of BIOS

When installing the ConpactFlash adapter, confirm that BIOS is newer than the version 3.05. If BIOS is older than the version 3.05, update it.

Changing of BIOS setting

Change the setting of BIOS by the following procedure.

1. When starting up the SR-610, start up the BIOS setting up by pressing the DEL key.

Note:
When the CMOS checksum is not right, the processing is stopped on the setup boot screen. In this case, press the F1 key.

2. Change the Boot Setting with the boot menu.
   Change the setting of [Boot Setting Configuration]-[Onboard CompactFlash] to "Disabled".
   When not using the CompactFlash adapter, use it as the initial value "Enabled".

3. Press the F10 key (Save Changes and Exit) and save the setting. The SR-610 restarts automatically.

Installation of CompactFlash adapter

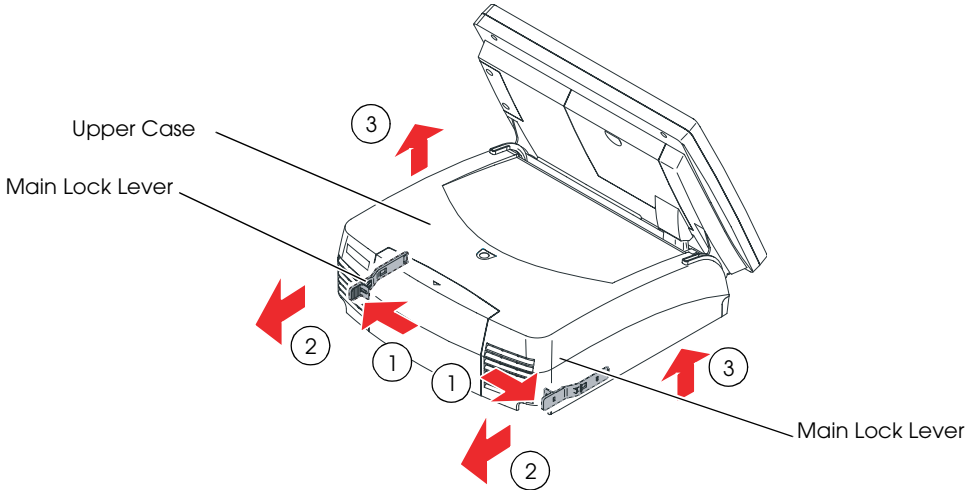
Install an CompactFlash adapter according to the following procedure.

1. Turn off the main power switch of the SR-610, and then pull out the power cable.

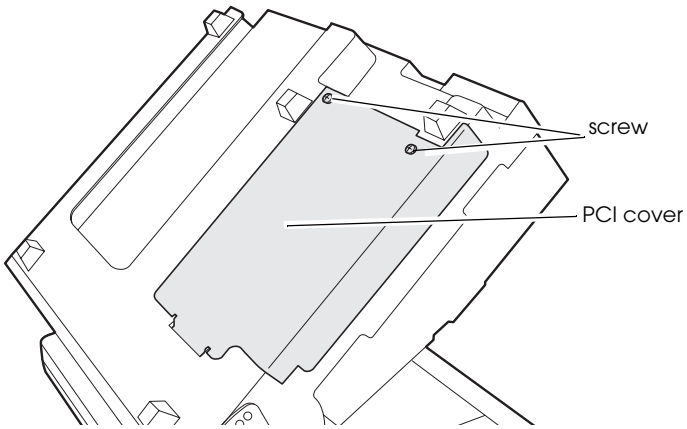
2. Remove two screws.

3. While pushing the Main Lock Levers at left and right of the Upper Case outward as shown by the (1) arrows, pull the Upper Case about 15 mm toward you ((2) arrows) to release the hooks and lift the Upper Case ((3) arrows) to remove it.

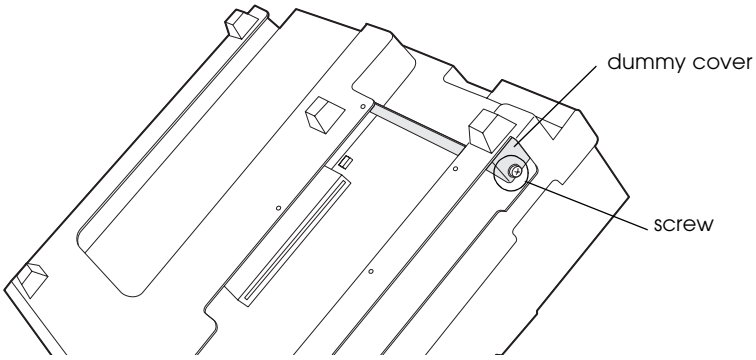
Note:
Adjust the angle of the LCD so that the LCD does not get in the way of the Upper Case removal.



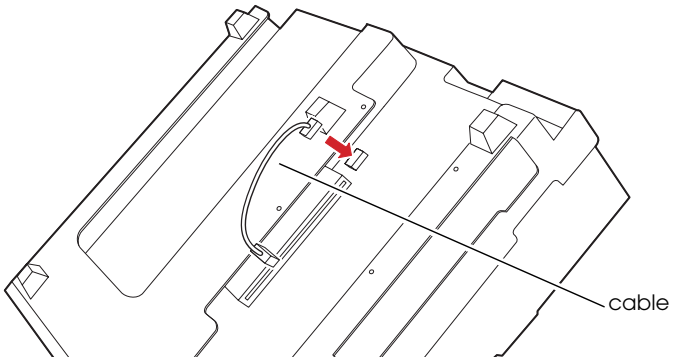
4. Remove two screws and remove the PCI cover.



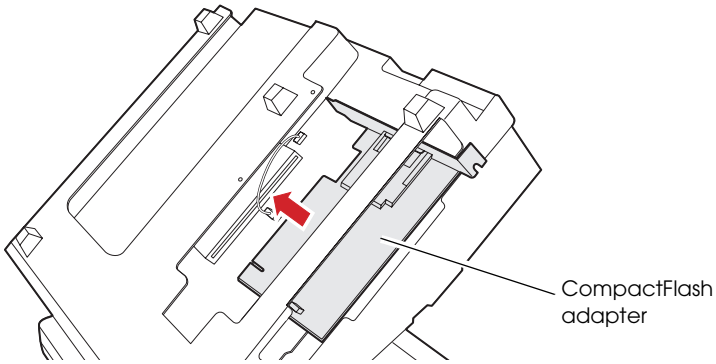
5. Remove one screw and remove the dummy cover. Keep it.



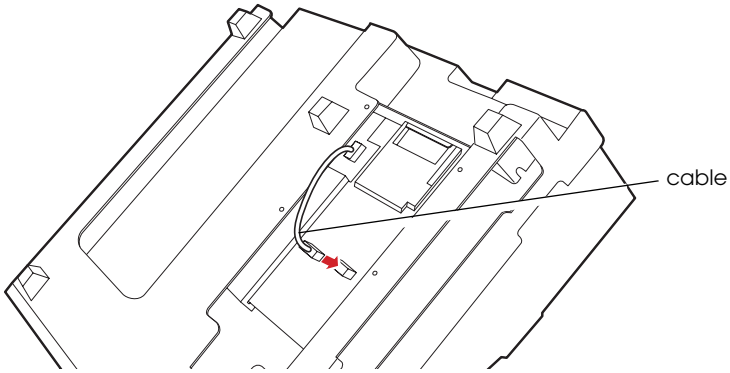
6. Connect the cable to the connector of the SR-610.



7. Connect the CompactFlash adapter to the SR-610.



8. Connect the cable to the CompactFlash adapter.



9. Fix the CompactFlash adapter with the screw which was removed by procedure 4.

10. Install the CompactFlash adapter according to the reversing procedure 1-4.

Note:
When you remove the CompactFlash adapter, make sure to put the dammy cover on the PCI slot.

Installing the CompactFlash and Uninstalling

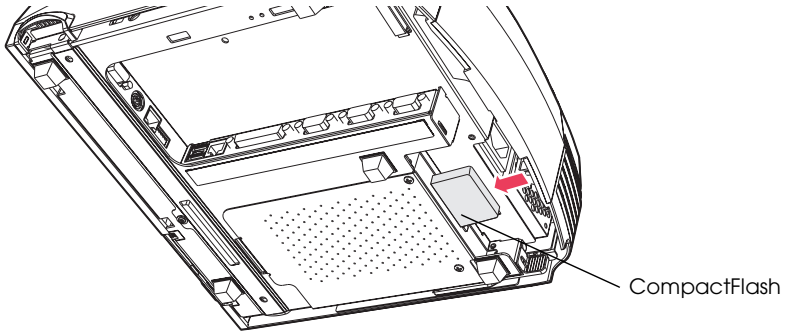
⚠ CAUTION:

Install or uninstall the CompactFlash after turning off the power switch.

Don't install or uninstall with the power on or stand-by mode.

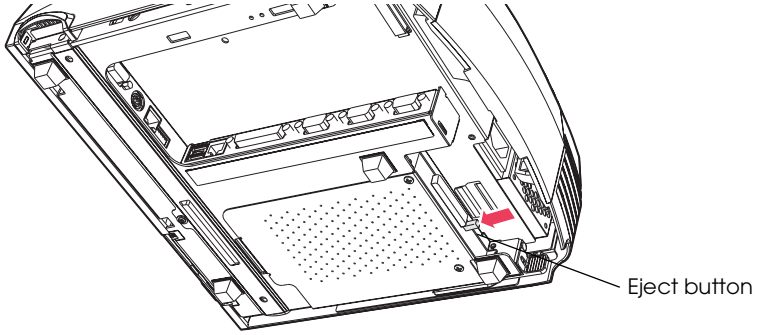
Install the CompactFlash according to the following operation.

1. Lift up the back of the SR-610 a little.
2. Insert the CompactFlash face up into the CompactFlash adapter until it clicks into place.



Uninstall the CompactFlash according to the following operation.

1. Lift up the back of the SR-610 a little.
2. Press the eject button and pull out the CompactFlash.



Installation of HDD

The SR-610 comes already equipped with one or two 2.5 HDDs. Two HDDs, at the most, can be installed.

If only one HDD is installed, another HDD can be added.

When you connect two HDDs, they can be used for RAID. Refer to Chapter 7 "RAID" for more information.

⚠ *CAUTION:*

Don't write anything, such as an application to an HDD that is removed from the SR-610.

The vibration and impact can cause trouble and the failure of the HDD.

Be aware of the following items when you handle HDD units, since they are precision instruments.

Handle HDDs one by one. Do not handle more than one HDD at the same time.
Do not hit HDDs against other HDDs or equipment.
Do not stack HDDs.
Do not place HDDs upright.
When you carry an HDD, carry it by its sides.

When you carry an HDD, use the special box.

When you handle an HDD, take static protection measures. Place a cushion beneath an anti-static mat, at the spot where you place an HDD.

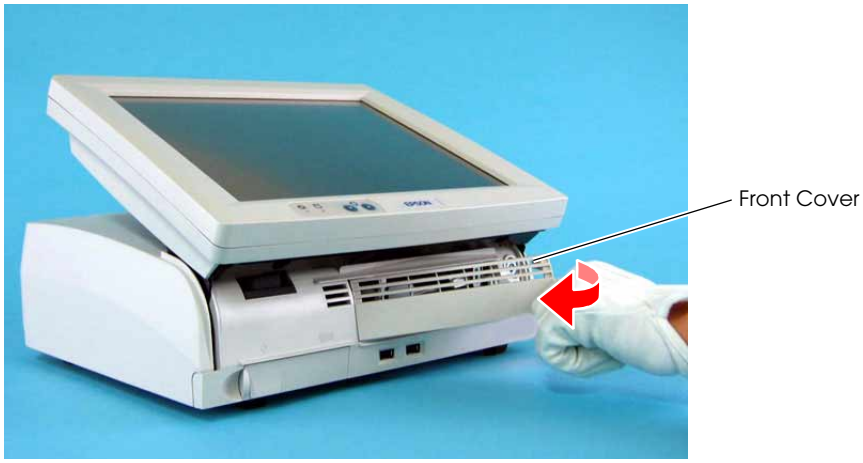
Do not touch the signal pins of an HDD.

Do not bring an HDD close to magnets.

Install an HDD according to the following procedure.

1. Tilt the LCD so that the Front Cover can open.
2. Confirm that the Front Cover lock is to an unlock position (turning to the left).

3. Pull the right side of the Front Cover toward you to remove the cover.



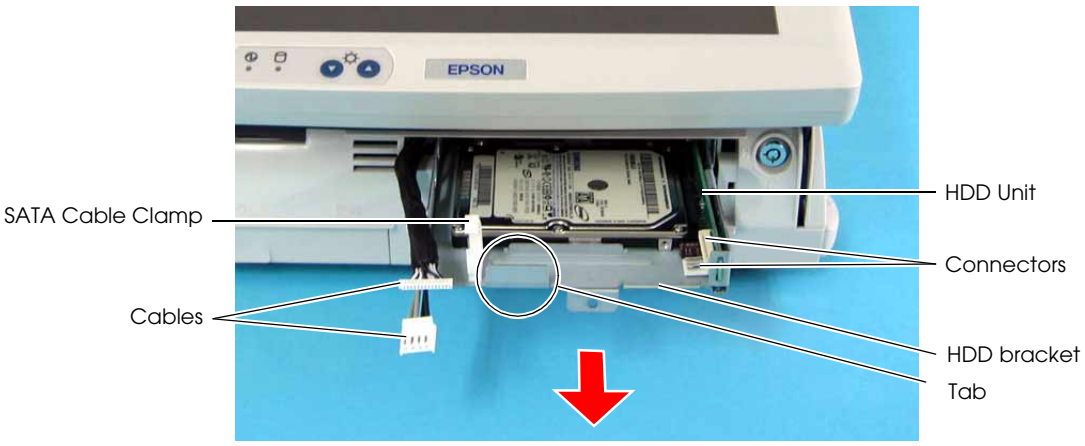
Note:
When reinstalling the Front Cover , the two hooks at the left of the Front Cover should be securely inserted into the Front Case.

4. Remove the screw.

5. Hold the front tab of the HDD Bracket with your fingers and slightly pull out the bracket toward you.
6. Remove the SATA cable clamp (170) and disconnect the two cables.
7. Hold the front tab of the HDD Bracket again to fully pull the bracket out from the main unit.

Note:
When inserting the HDD Bracket, be sure to note the following points.

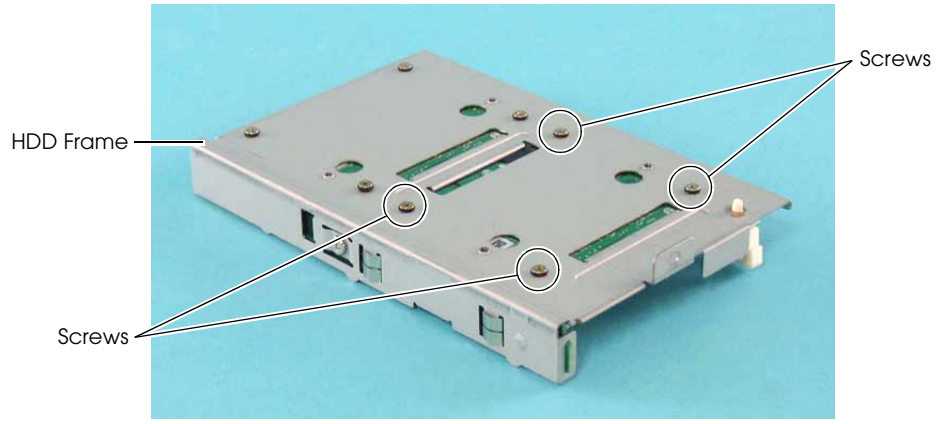
- ❏ *Do not push the cables. Push the tab to insert the bracket.*
  If you push the cables, they may be disconnected from the connectors.
- ❏ *The bracket must be kept as nearly level as possible while it is inserted into the main unit.*
  The bracket may get stuck in the middle of the insertion if it is tilted.



⚠ CAUTION:

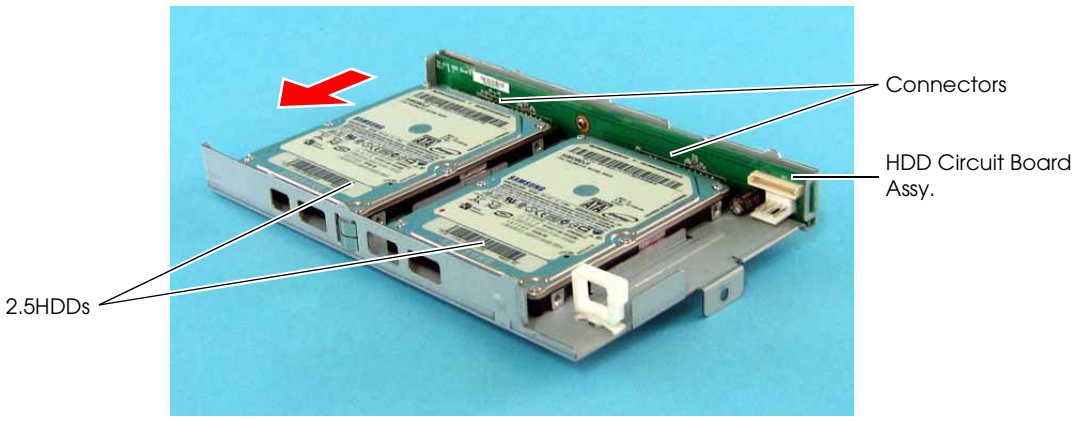
- ❏ *The Upper Case must have been attached when pulling out or inserting the HDD Bracket, or the HDD cables may be damaged.*
- ❏ *Inserting the HDD Bracket can cause loose connections or disconnection of the cables.*
  Make sure the cables are securely connected to the connectors after installing the HDD Bracket.

8. Remove the four screws at the bottom of the HDD Frame.



9. Pull out the HDD from the connectors on the HDD Circuit Board Assy.

Note:
While pulling out the HDD, do not lift its front side. Keep the HDD as nearly level as possible until it is disconnected from the connector, or the connector pins may become deformed disabling the reconnection of the HDD.



Installation of HDD

1. Install the HDD according to the opposite procedure.

Note:
The HDD is recognized automatically, a jumper is not needed.

2. Turn the SR-600 on, and then press the <Ctrl>+<T> keys when a message of [Press <Ctrl><T> to run EPSON DD] is displayed on the start screen of the POST.

3. Test the HDD.

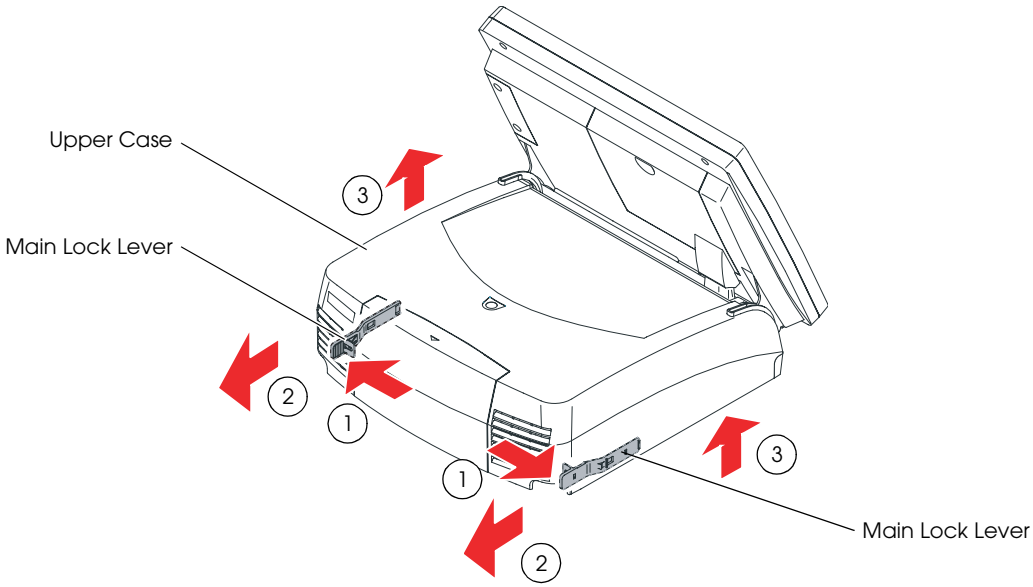
DIMM

Remove it by following the next procedure.

1. Remove the two screws.

2. While pushing the Main Lock Levers at left and right of the Upper Case outward as shown by the (1) arrows, pull the Upper Case about 15 mm toward you ((2) arrows) to release the hooks and lift the Upper Case ((3) arrows) to remove it.

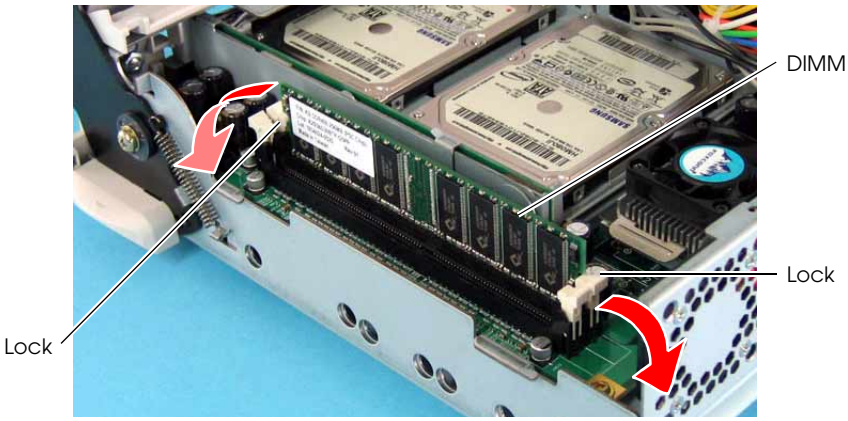
Note:
Adjust the angle of the LCD so that the LCD does not get in the way of the Upper Case removal.



3. Push the two locks at the both ends of the DIMM socket in the direction of the arrows and pull the DIMM straight out.

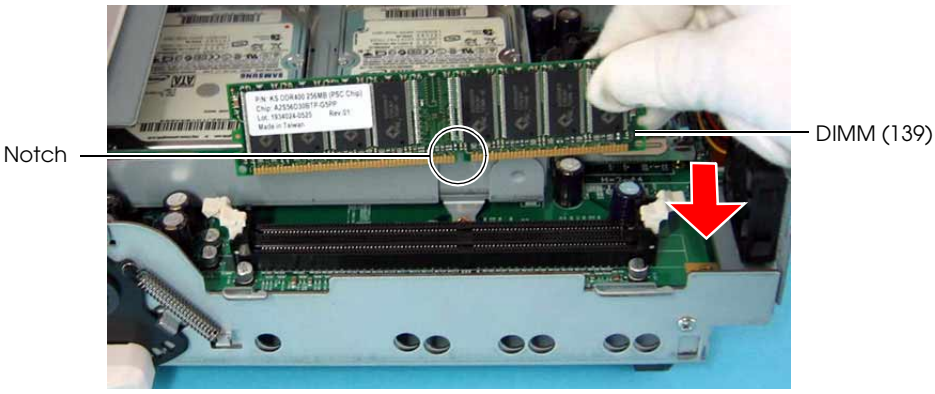
⚠ CAUTION:

To prevent the pins on the DIMM from getting dirt and malfunctioning, never touch the pins with your hand.



Note:

❑ *When installing the DIMM, be sure the notch at the center of the DIMM aligns with the socket.Insert the DIMM perpendicularly until the locks click and turn up.*



❑ *Two DIMMs with different capacities can be installed to the two DIMM Sockets.*

❑ *When installing one DIMM only, either of the two sockets can be used.*

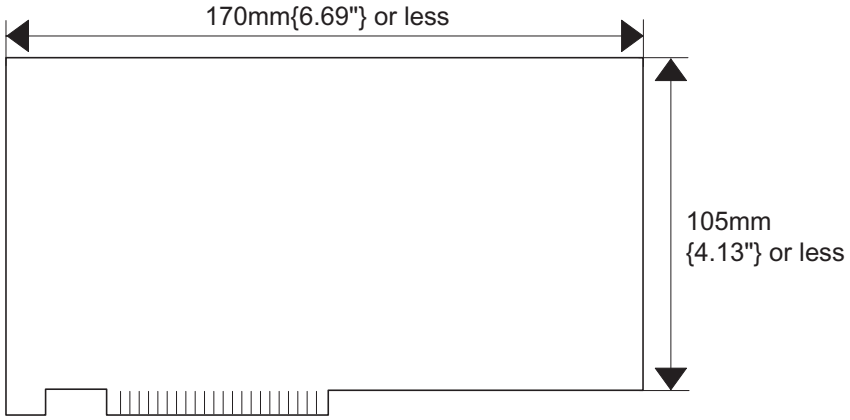
⚠ CAUTION:

Do not touch the DIMM connector with hands to prevent operation defects caused by smudges and static electricity.

Installing a PCI Card

The SR-610 has one PCI expansion slot.

The maximum dimensions of the applicable PCI Cards are as follows:



⚠ *CAUTION:*

Before installing the PCI Card, carefully confirm that it operates normally.

Follow the procedure below to install a PCI Card.

⚠ *CAUTION:*

Before setup, discharge static electricity on your body. If you do not discharge static electricity, trouble could result. Touch a grounded metal surface to allow static electricity to discharge.

Do not touch the connectors. Dirt may cause a malfunction.

Do not apply excessive force to connectors, cables, and screws during connection. Excessive force may damage the connection parts or screw threads.

PCI Card Setup

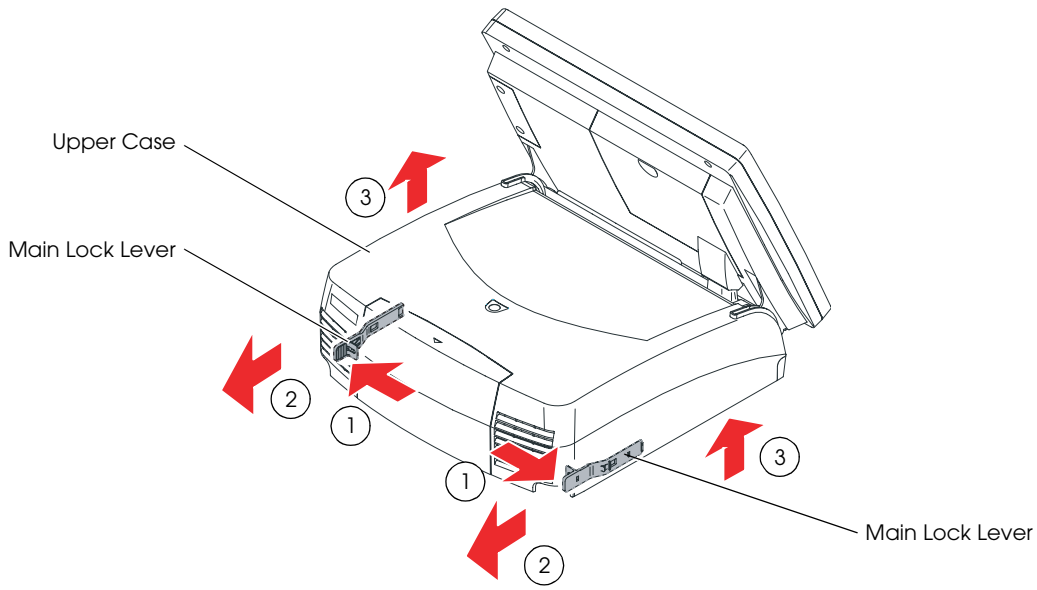
Install the PCI card following the procedure below.

Remove it by following the next procedure.

1. Remove the two screws.

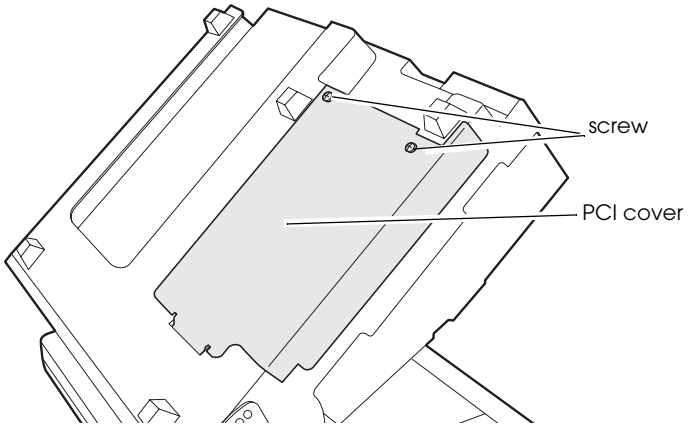
2. While pushing the Main Lock Levers at left and right of the Upper Case outward as shown by the (1) arrows, pull the Upper Case about 15 mm toward you ((2) arrows) to release the hooks and lift the Upper Case ((3) arrows) to remove it.

Note:
Adjust the angle of the LCD so that the LCD does not get in the way of the Upper Case removal.

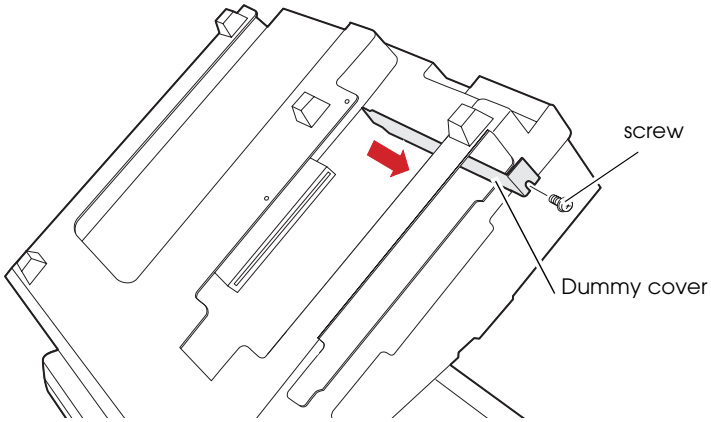


3.

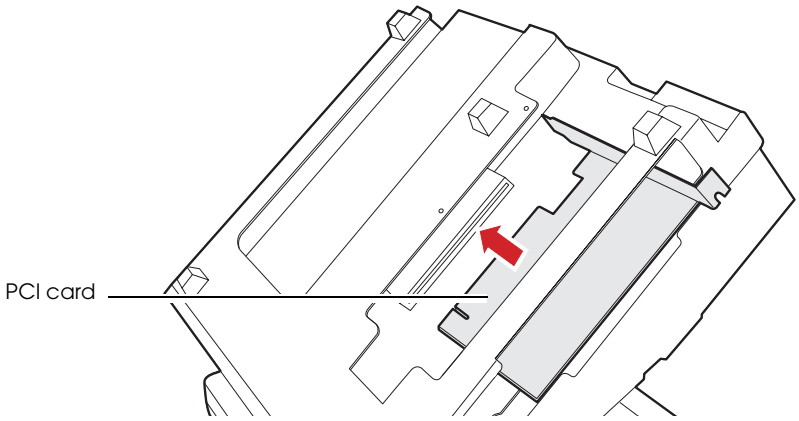
4. Remove the two screws and remove the Frame Cover PCI (121).



5. Remove one screw and remove the Dummy cover. Keep it.



6. Install the PCI card and fix it with the screw kept.



7. Assemble it by the opposite procedure 1 to 4.

Note:
When you remove the PCI card, make sure to put the dammy cover on the PCI slot.

Attaching a Power Cable

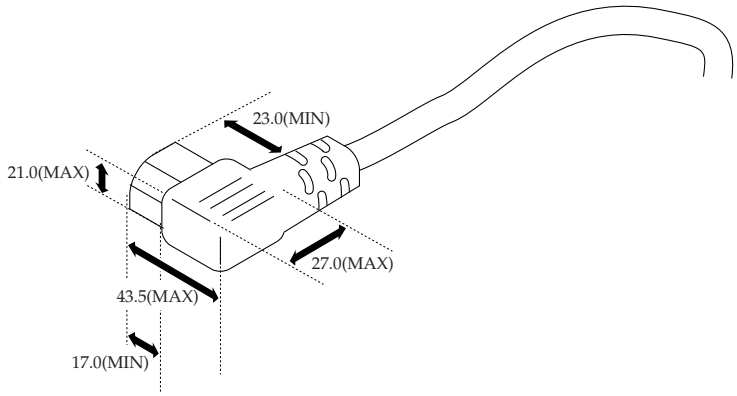
For the power cable to be attached to SR-610, make sure to use the specified power cable.

⚠ WARNING:

- *Never insert or disconnect the power plug with wet hands. This may result in severe shock.*
- *Do not place multiple loads on the power outlet (wall outlet). Overloading the outlet may lead to fire.*
- *Do not plug in the power cable if the power plug is contaminated with dust or other foreign matter. Doing so may cause a fire.*
- *Insert the power plug fully. Failure to do so causes the power plug to heat up and may cause a fire.*
- *Regularly remove the power plug from the outlet and clean the base of the prongs and between the prongs. If you leave the power plug in the outlet for a long time, dust may collect on the base of the prongs, causing a short and fire.*

Power Cable

Always use the power cable that meets the size requirements shown below.



Setup procedure

Attach the power cable following the procedures as below.

1. Slide the Rear Cover in the direction of the arrow to remove it.

2. Connect the power cable.
3. Attach the rear cover.
4. Insert the power plug to the power receptacle.

Chapter 4
Utility

This chapter explains about the utility of the SR-610 and the development software.

Refer to Chapter 7 RAID for RAID setting, RAID BIOS and GUI utilities.

For the Epson Remote Maintenance Software, Please see "Epson Remote Maintenance Software Technical Reference Guide".

Kinds of Utilities

SR-610 utilities and development software include the following.

MSR(DM-MS123) utility

The utility that writes the definition file in the MSR.

Utility	Utility name	OS	Reference page
Definition data automatic setting utility	PKM_LOADER.exe	Windows 2000/XP/WEPOS	page 4-3

60-key keyboard (DM-KX060) utility

The utility that defines60-keyPOSkeyboard unit, writes in the POScontroller, and to creates the definition file.

Utility	Utility name	OS	Reference page
60-key Definition Utility	KeyDesigner.EXE	Windows 2000/XP/WEPOS	page 4-5

Touch panel driver

Carry out the calibration and the operation setting of the touch panel.

Utility	Utility name	OS	Reference page
Touch panel driver	Touch Panel Configuration Tool	Windows 2000/XP/WEPOS	page 4-20

Obtaining Method of Each Utility

The procedure for obtaining each utility is as follows: For more information about the installation procedure of each utility, refer to the item describing each utility.

Utility	Obtaining method
MSR setting utility	It is preinstalled in the BACKUP\MSRCFG folder. It will be available after executing the setup.
Definition data automatic setting utility	
60-key definition utility	It is preinstalled in the BACKUP\60KEYCFG\TOOL folder. It will be available after executing the setup.
Touch panel driver	It is automatically installed during the OS installation.

MSR Auto Setup Utility

When this utility starts, it transfers the settings saved in the file to the MSR. The document formats is listed below.

PKLOAD32 File [/n]

File: Specify the Setup File for this utility with Setup File Pass Name.

/n: The dialog is displayed when the installation is completed.

When the setting file (see the following page) for this utility is being transferred, the following status is displayed. "hh" shows the character code in the case that the MSR character conversion settings are being transferred, and at all other times, it shows the system variable area offset in hexadecimal. "d" shows the number of retries. The maximum number of retries is 6 times.

Writing Configuration 0xhh - d ...

Setup File

The setup file for this utility is listed below.

```
[General]
IgnoreCommands=Off

[MSR]
Beep=On
CodeType=US
ValidTracks=1,2,3,J
CodeDefinition00=48,10
CodeDefinition01=&31,11,Shift
CodeDefinition02=&32,&0A,Ctrl
CardStart=CS
CardEnd=CE
Track1Start=1S
Track1End=1E
Track2Start=2S
Track2End=2E
Track3Start=3S
Track3End=3E
JIS2Start=JS
JIS2End=JE
```

In the [General] section, entry lines which basically have an influence on the utility as a whole are described.

“On” can be selected for the IgnoreCommands so that reading or writing to the Keyboard and MSR setting is disabled.

System Param xx is described in the case where data are written to the system variable area. Variable offset and data are separated by a ",". These two are byte widths, and they can be specified in the form of decimal numbers, hexadecimal numbers and characters. In the case of decimal numbers, they are described as is, but in the case of hexadecimal numbers, it is

necessary to add a "&" at the top of the number while in the case of characters, it is necessary to add a "$" at the top of the number. Multiple System Param xx items can be declared. Each of these parameters is described in order with xx being a decimal number identifying each parameter, beginning with 00. The maximum number of parameters that can be described is 99.

In the [MSR] section, entry lines related to the MSR are described.

"On" or "Off" can be specified for Beep. If "On" is specified, it beeps during MSR reading, and when "Off" is specified, it does not beep.

Selecting US, JP, FR, GR or SP can be specified in Code Type. The key input data generated during MSR reading complies with the keyboard arrangement of the country specified.

"1," "2" or "3" can be specified in Valid Tracks. If "1" is specified, Track 1 is read, if "2" is specified, Track 2 is read and if "3" is specified, Track 3 is read. Multiple tracks can be specified, in which case they are separated by a ",".

Code Definition xx is described in the case that a unique character is generated during MSR reading. Information is input in the order of character code, then key No., then information on the keys which are pressed simultaneously, with each of the items separated by a ",". If it is not necessary, the information on the keys which are pressed simultaneously can be omitted. The character code and key No. are in the same format as in System Param xx. Simultaneously pressed key information can be specified with the Shift, Ctrl, Alt or AltGr keys. It is also possible to describe multiple Code Definition xx items. In such a case, each code definition is described in order with xx being the decimal number identifying each code, beginning with 00. The maximum number of code definitions that can be described is 99.

CardStart, CardEnd, Track1Start, Track1End, Track2Start, Track2End, Track3Start, Track3End, JIS2Start and JIS2End are SS/ES during MSR reading. Including spaces, ordinary characters can be described as is. In the case of special characters, they are described as \xx. xx is a 2-digit hexadecimal number. Specially, a carriage return, tab and can be described as \n, \t and \\, respectively.

Lines which start with a ";" are regarded as comment lines and are ignored. A comment cannot be described at the right end of an entry line. Also, overall, unnecessary space and tab characters cannot be included.

60-key Definition Utility

The 60-key definition utility is a Windows utility, and has the following functions for the 60-key POS keyboard unit connected to the SR-610.

- ❏ Key label setting (font, font size, color)
- ❏ Background color setting of the label
- ❏ Definition of the key function
- ❏ Writes defined data in the controller
- ❏ Saves defined data in the definition file
- ❏ Reads data from the definition file
- ❏ Reads data from the controller

It can define the same contents to several 60-key POS keyboard units using the definition file.

Note

Please note the following when you use this utility.

Programming cannot be carried out with other key definition utilities simultaneously.

Start

60-key definition utility (POS KeyDesigner) is registered in the directory specified during the installation. It is registered in the following directory by default.

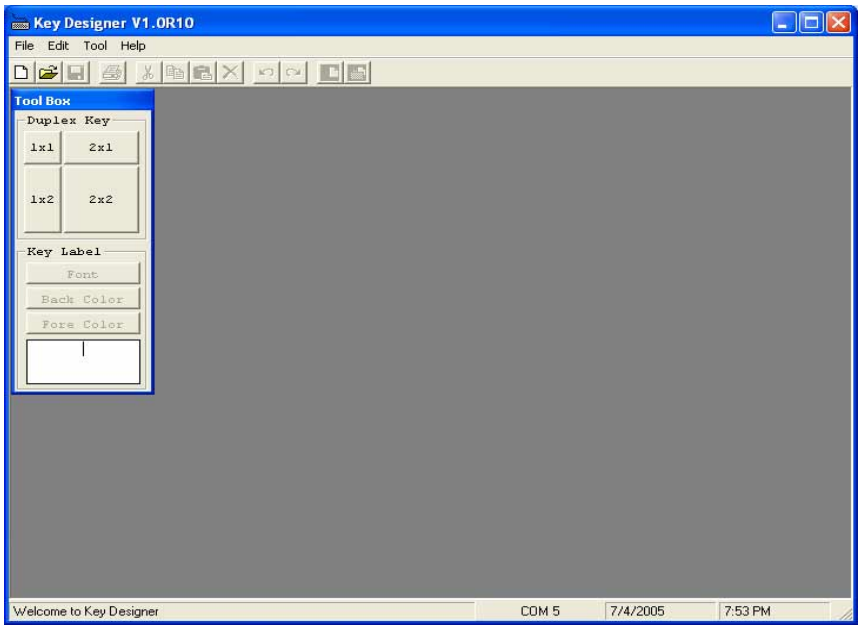
```
C:\Program Files\GIGA-TMS\KeyDesigner
```

This utility can be started by the any of the following methods.

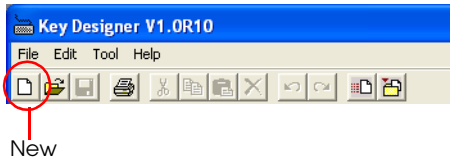
- ❏ Select KeyDesigner.EXE with Explorer to execute.

❑ Select [START] - [All Programs] - [GIGA-TMS] - [KeyDesigner].

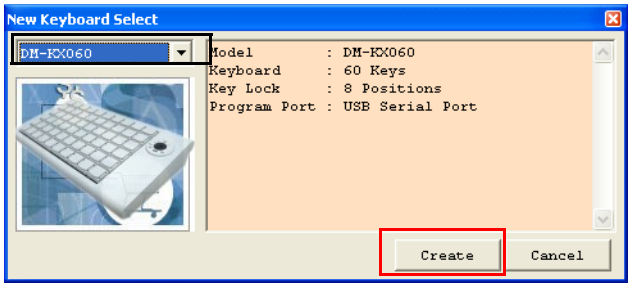
1. When the program is executed, the following screen is displayed after searching the USB keyboard which is currently connected.



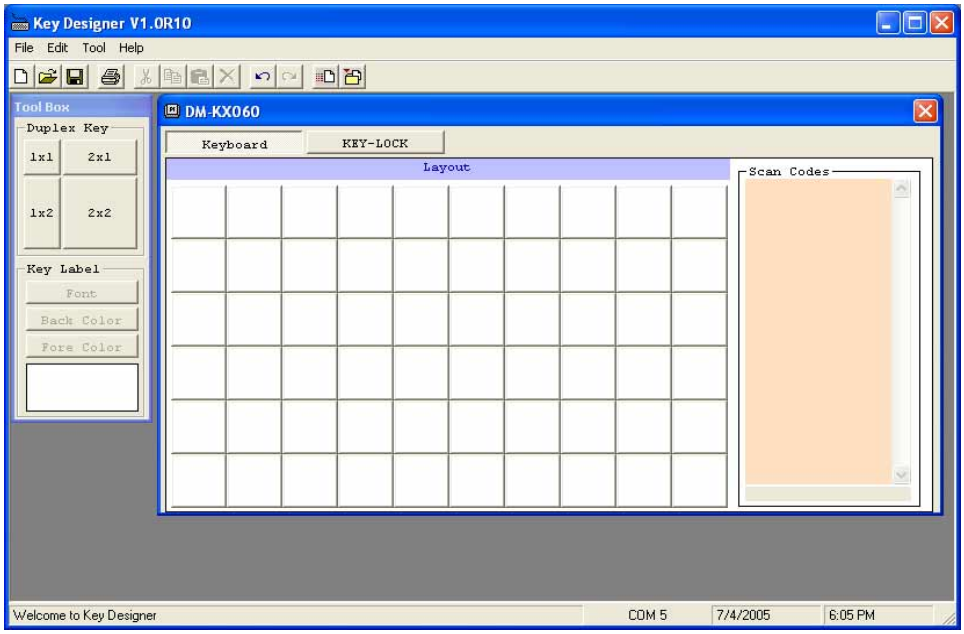
2. Press the **New** button.



3. [New Keyboard Select] screen is displayed.Select DM-KX060 and press [Create].

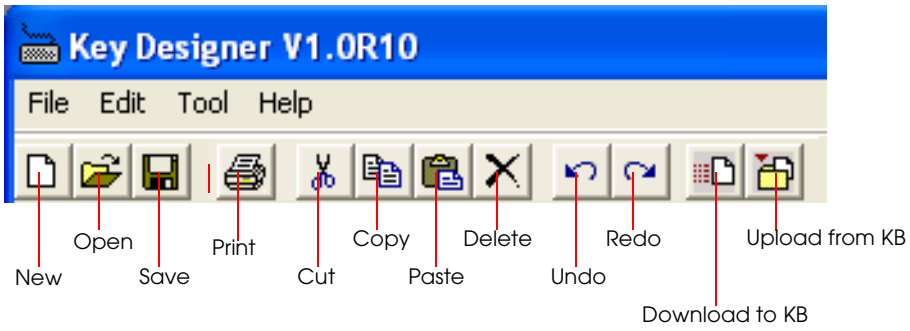


4. The following screen will appear.



Button

12 buttons are displayed under the title bar of the 60-key definition utility. The function which you want to execute can quickly be called by pressing these buttons.



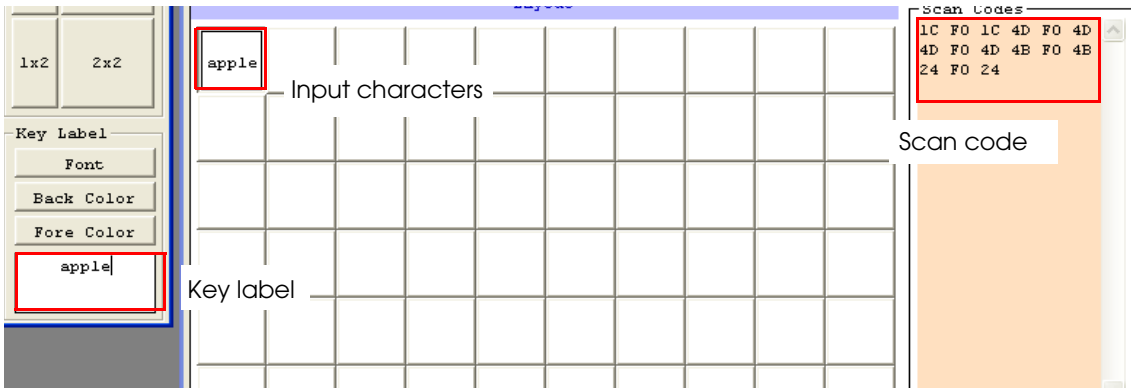
New	Clears the definition of the key to create a new document.
Open	Reads data from the definition file.
Save	Saves the current definition data to the definition file.
Print	Displays the print preview and prints.
Cut	Cuts the definition data.
Copy	Copies the definition data.
Paste	Pastes the cut or copied key definition data.
Delete	Deletes the definition data of the selected key.
Undo	Undone to the previous state.
Redo	Redoes the undone operation.
Download to KB	Programs all the definition contents of the buttons to the controller.
Upload from KB	Reads the definition contents programmed in the controller.

Key Definition

Define the key according to the following procedure.

1. Select the key which you want to define.

2. Input characters which are to be defined. Apple is input here, and the scan code of the input data is input in the scan code and apple is input in the key label.



The data input from the keyboard is defined, and displayed as a key label.
To cancel the definition, select the key and press the Delete button.
The key label can be input up to 16 characters per key in half the size, and the scan code can be input up to 255byte.

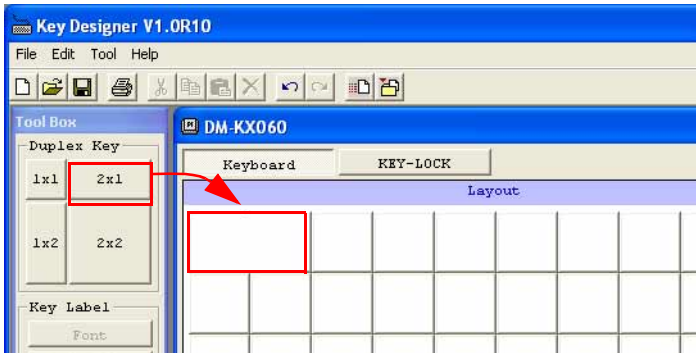
Note

To delete the input data, press the Delete button.The Delete key and Backspace key are not available. It cannot be deleted because its key code is input.

All the keys on the keyboard can be defined. However, since the Ctrl + Alt + Delete key cannot be defined, Select from Special Keys. If you know the scan code, the scan code can be input directly. To input the key label of Kanji, input from the key label area.

Setting of Double Key and Quad Key

drag the key size you want to the definition of the key board in the toolbox .



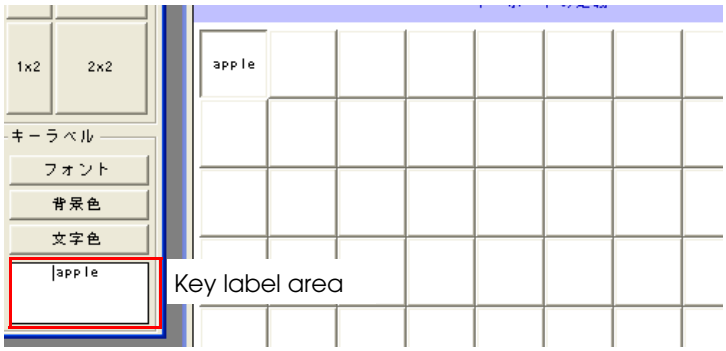
Cancellation of the Double Key and Quad Key

Drag the 1x1 key from the toolbox to the defined double key or quad key when canceling the double key and quad key

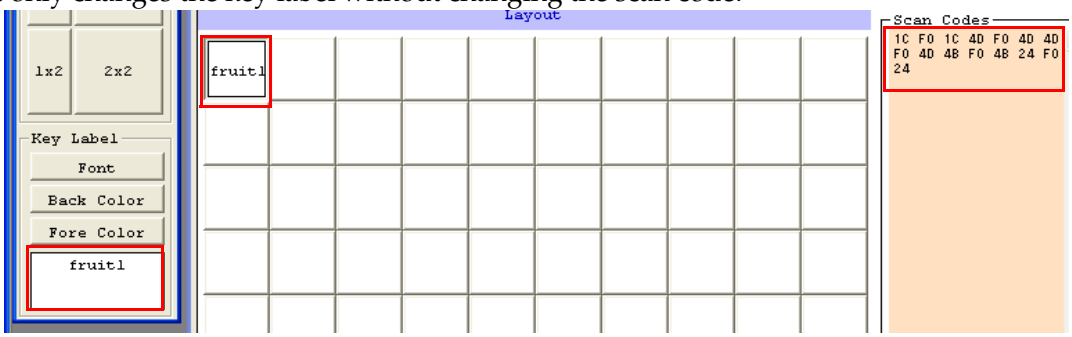
Setting the Label Exclusively

If you want to set only the label, following procedure should be taken.

1. Select the key of which you want to change the label.
2. The label can be set in the key label area in the tool box.



It only changes the key label without changing the scan code.

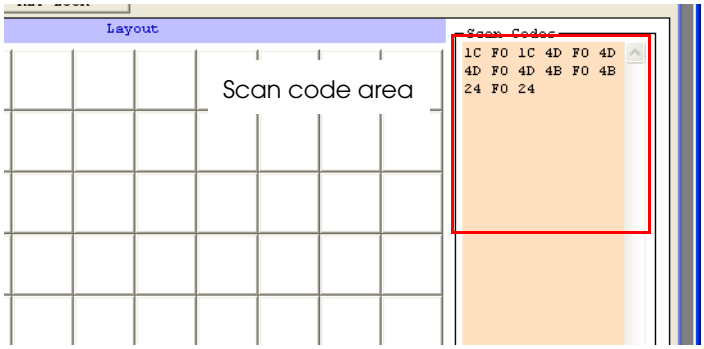


Setting the Scan Code Exclusively

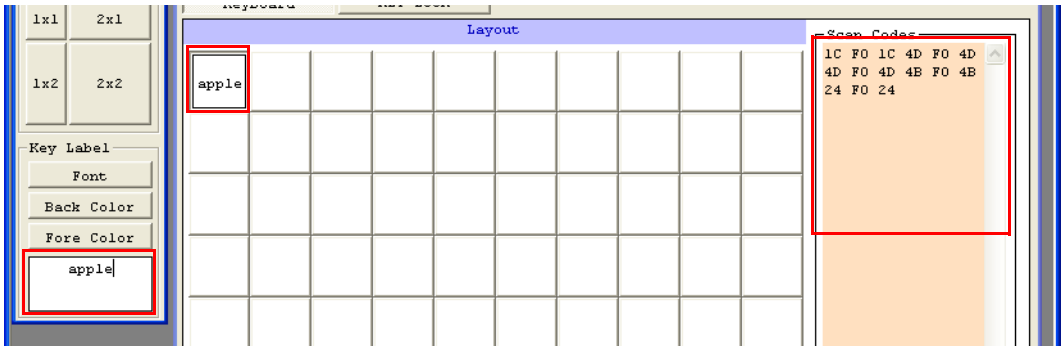
If you want to set only the label, following procedure should be taken.

1. Select the key of which you want to change the label.

2. Left click the code which you want to change in the scan code area, and input a new code.



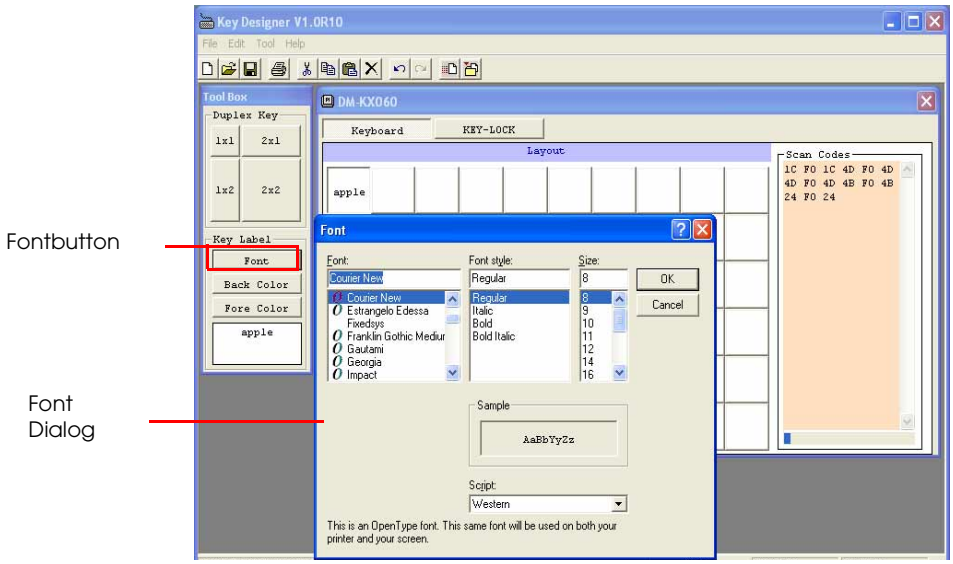
It only changes the scan code without changing the label.



Setting the font of the label

Set the font of the label according to the following procedure.

1. Select the key which you want to set and make it a selective state.
2. Press the **Font** button, and the "font dialog" is displayed.



3. Set the font of the label. The following can be set.

   Font type, style, and size.

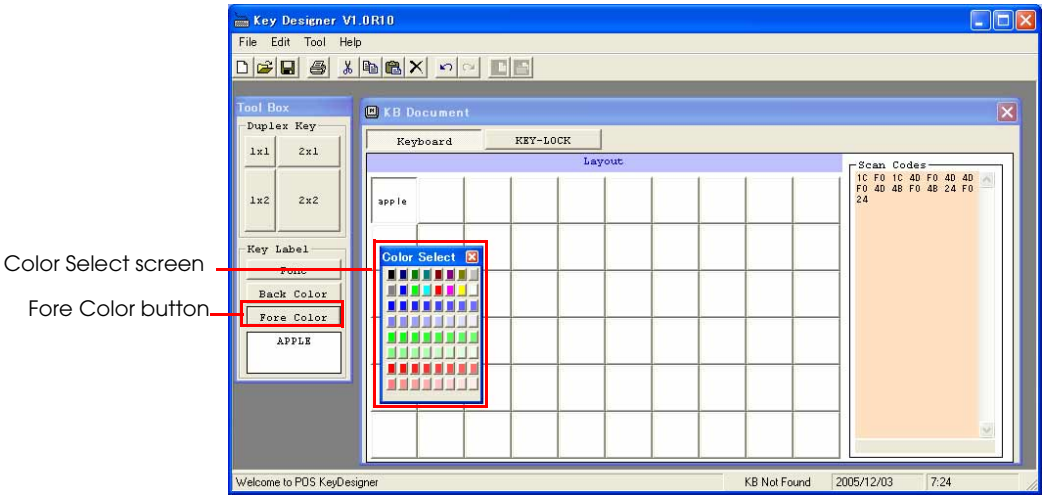
4. Press the **OK** button, and the key is redrawn with the defined font, and the font dialog is closed. Press the **Cance** button, and the defined font is canceled.l

Character color Setup of the label

Set up the character color of the label according to the following procedure.

1. Select the key which you want to set up to the character color of the label and create a selective state.

2. Press the **Fore Color** button, so the "Color Select" screen is displayed. Click the Fore Color which you want to set up from the Color Select screen.



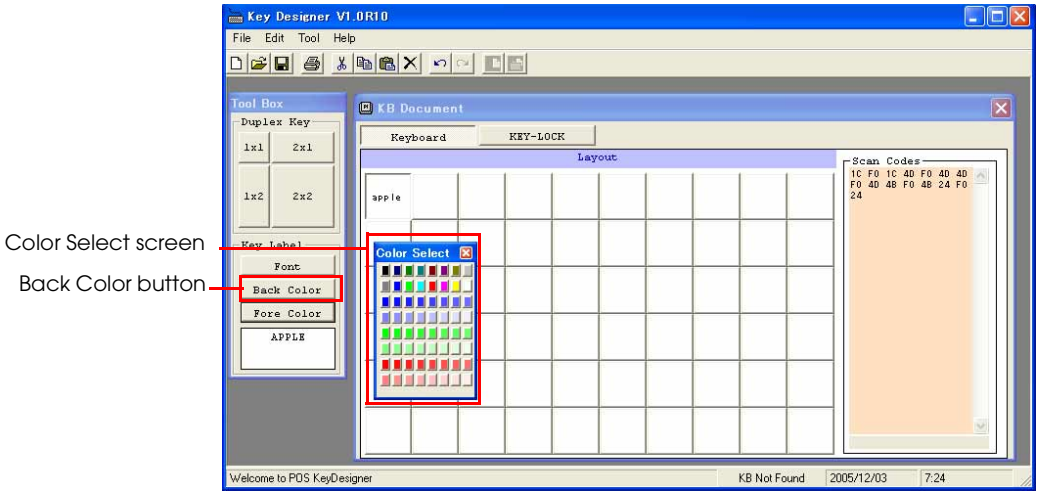
3. The clicked color is reflected, and the Fore Color is changed.

Setting the Background Color of the Label

Set up the background color of the label according to the following procedure.

1. Select the key which you want the background color to be and select the Back Color of the label to create a selective state.

2. Press the **Back Color** button, and the "Color Select" screen is displayed.Click the Back Color which you want to set up from the Color Select screen.



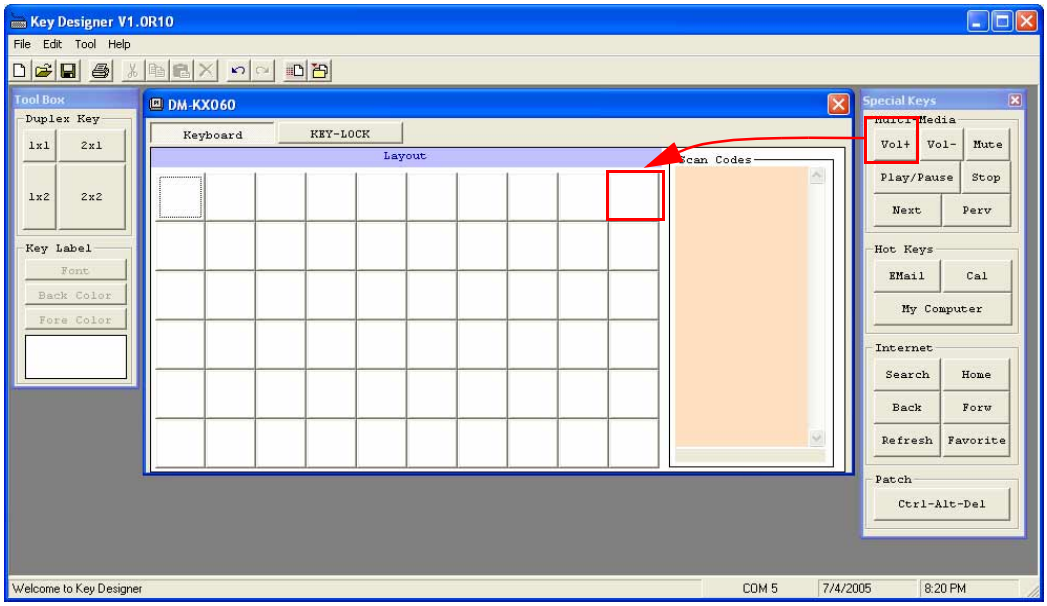
3. The clicked color is reflected, and Back Color is changed.

Setting the Special Keys

60 key definition utility includes Special Keys to set up special keys that cannot be defined by the keyboard.How to use the Spesial Keys is as follows.

1. Select [Menu] - [Tool] - [Special Keys], and the following Spesial Keys is displayed.

2. Click Special Keys which you want to define to the key board, drag it from the Special Keys, and position it so it can be defined as follows.

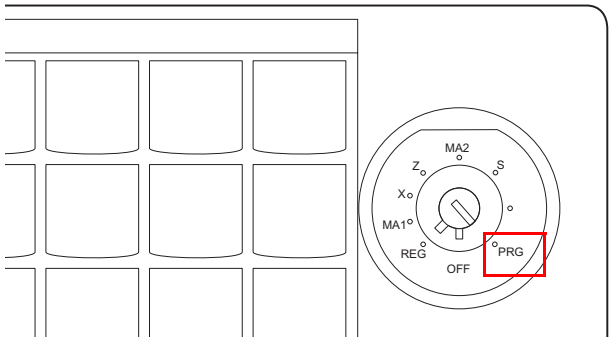


Note

*When the OS is Windows 2000, special keys of the **Cal** key and the **My Computer** key are not available because the OS does not support them.*

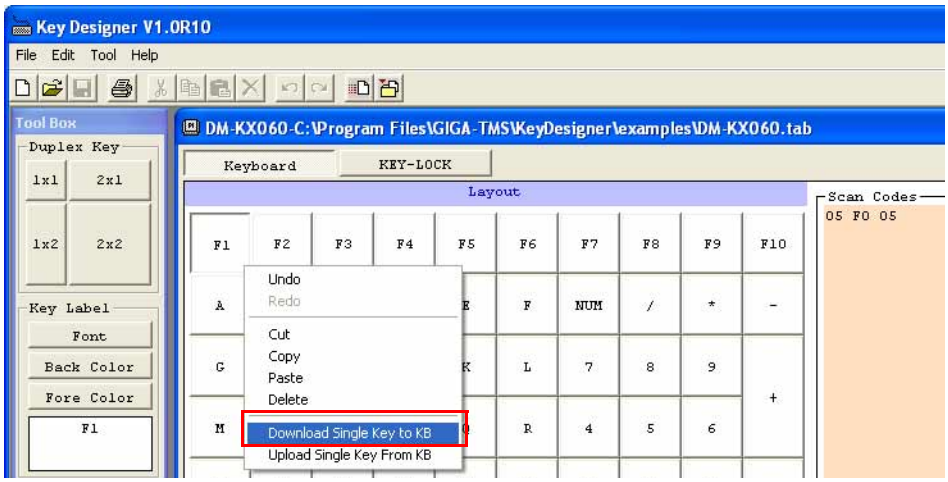
Programming of the Key

To program the key definition, the key lock has to be at the PRG position. Insert the PRG key of the key lock key into the key lock, and put it into the PRG position.



To program the definition contents in the controller, carry out one of the following method.

- Press the Download to KB button. All definitions of the keys are written in the controller.
- Right click the key which you want to program, and select **Download Single Key to KB** from the menu. Only definition contents of the selected key is written in the controller.



If an error occurs, the error message is displayed.

To read the definition contents written in the controller, carry out the following method.

- Press the Upload from KB button. All definition contents of the key written in the controller are read.
- Right click the key which you want to read, and select Upload Single Key from KB from the menu. Only the definition contents of the selected key is read.

Saving the Definition File

Current definition data can be saved as a definition file. Save the definition file according to the following procedure.

1. Press the **Save As** button, and the [Save As] Dialog is displayed.
2. Input the file name and press the [Save] button, so it is saved in the definition file. "tab" is specified as the extension of the file.

In the case of programming the same data in another 60-key POS keyboard

1. Unplug the connected 60 -key POS keyboard.
2. Connect a new 60 -key POS keyboard to the same USB port.
3. The keyboard is automatically detected.
4. Press the **Upload from KB** button of the keyboard.

Reading of Definition File

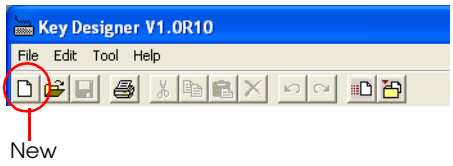
To read the definition file, carry out the following procedure.

1. Press the **Open** button, and the [Open] dialog is displayed.
2. Select the file name and press the [Open] button, and the selected definition file is read.

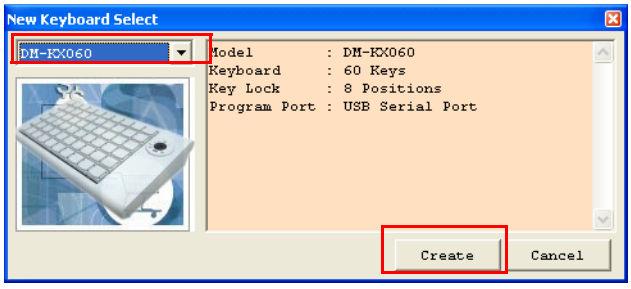
Creating a New Document

In the case of a new definition, carry out the following procedure.

1. Press the **New** button.



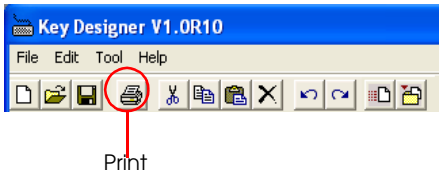
2. "New Keyboard Select" screen is displayed. Select the keyboard and press [Create].



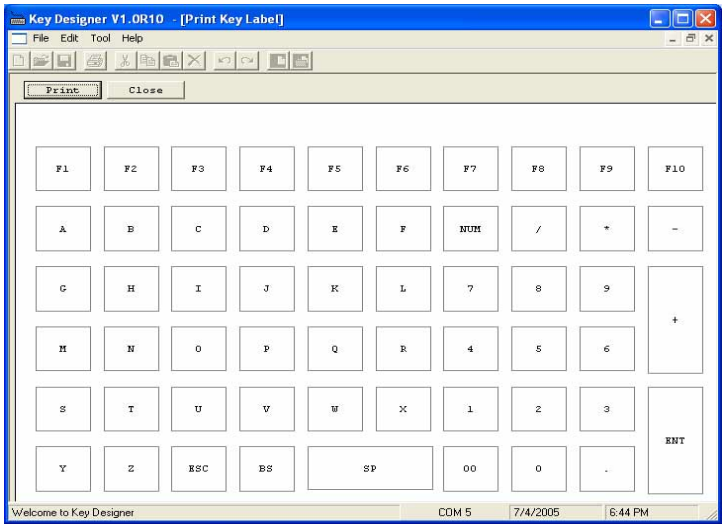
Printing the Key Label

To print the key label using a printer, carry out the following procedure.

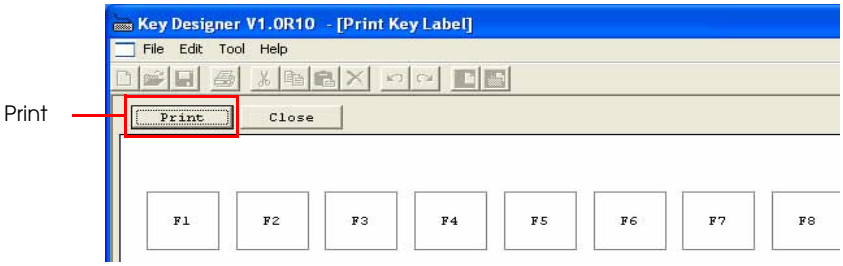
3. Press the **Print** button.



4. The print preview screen is displayed.



5. Press the **Print** button when the set up contents are correct.



6. Cut the printed document to the shape of the key top.

It can be cut and pasted on the keyboard.

Definition of the Key Lock

It is able to define the Scan Code of the key lock. The definition method is as follows.

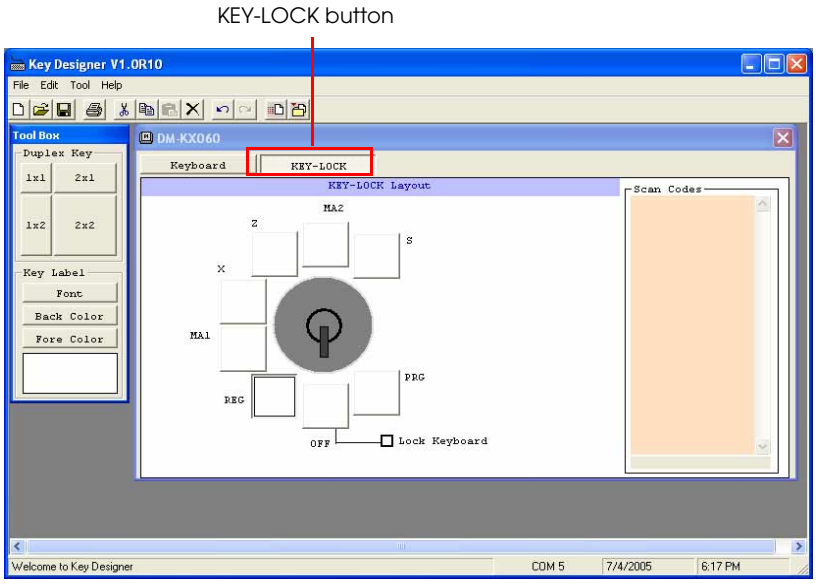
Note

Do not change the scan code with the default setting when it is used in OPOS. If it is changed, the key position cannot be obtained with OPOS.

If it was changed, define the following scan code again.

Display of keyboard	Position	Scan code
PRG	2	08 F0 08
OFF	8	40 F0 40
REG	1	10 F0 10
MA1	4	18 F0 18
X	5	20 F0 20
Z	6	28 F0 28
MA2	7	30 F0 30
S	3	38 F0 38

1. Press the **KEY-LOCK** button, and the following screen is displayed.

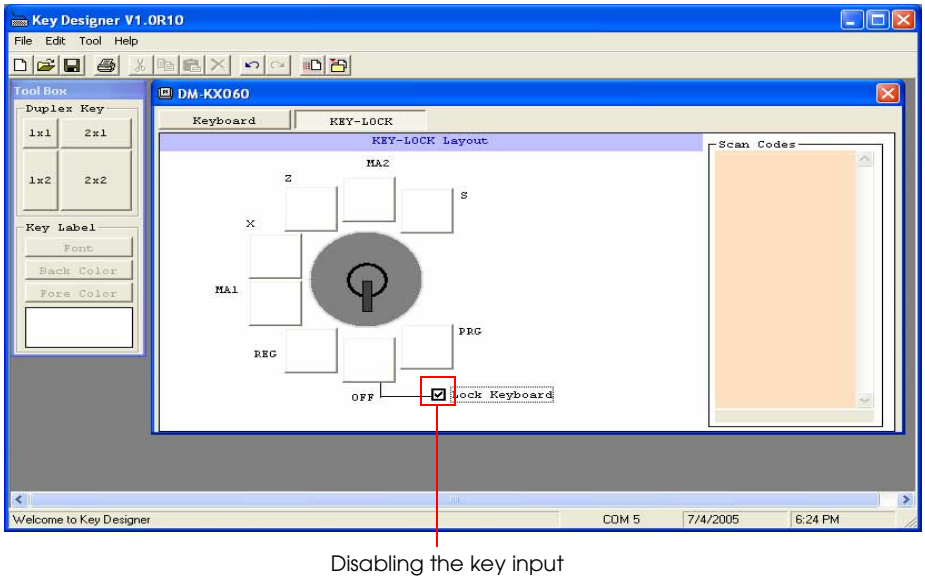


2. It is able to select the position which you want to define and define it similarly to that of a keyboard.

The key label of the key lock definition can not be printed.

Set up of Disabling the Key Input

If you check the box to disable Key input, you can set not to be able to perform key input when the key lock is at OFF position.

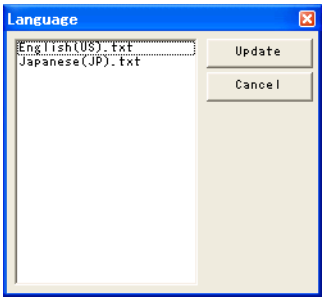


Disabling the key input

Language Selection

The 60-key keyboard setting utility can change the language. Change the language according to the following procedure.

1. Start the 60-key POS keyboard set up utility.
2. Select [Menu]-[Tool]-[Language], and the following screen is displayed.



3. Select the language which you want to use, then press the **Update** button. If the change is not necessary, press the **Cancel** button.

Exit

Press the [x] button on the right. By pressing the button, you can exit the 60-key setting utility.

Set up of the Touch Panel Driver, Install and Uninstall

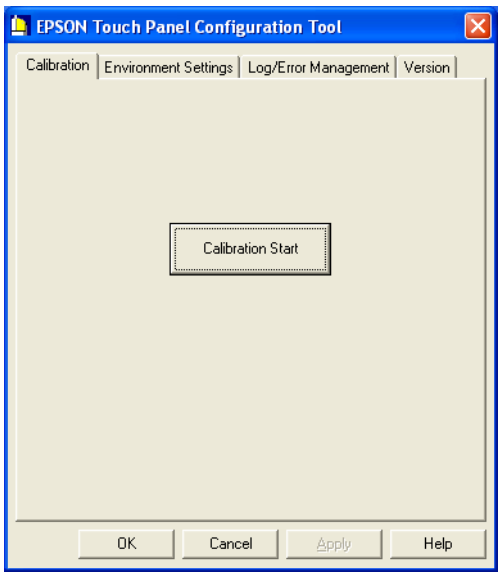
Touch Panel Calibration

Touch panel calibration means the set up operation which conforms the physical position when an operator presses the touch panel, and the position of the software that the computer recognizes.

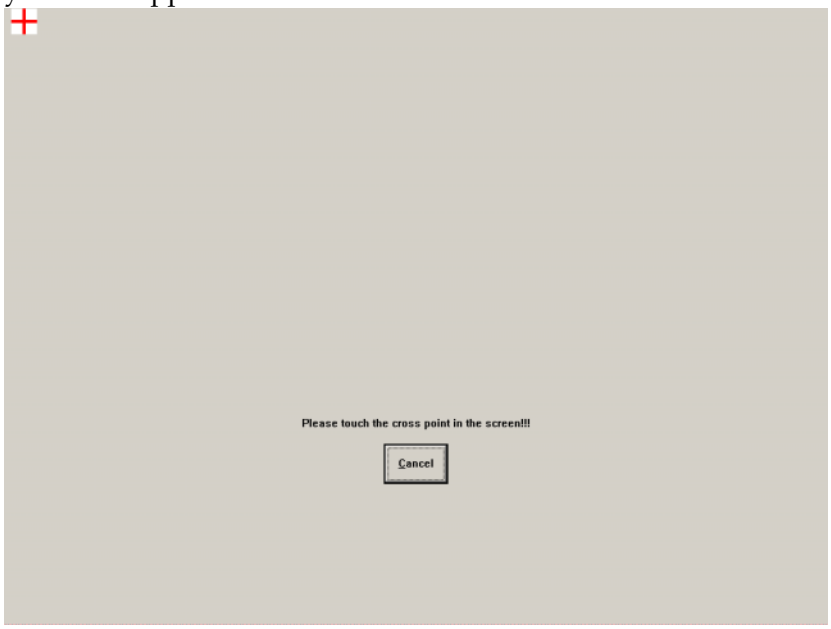
The touch panel calibration is executed when the system is installed and the position of the touch point is misaligned.

The touch panel calibration is executed by the following procedure.

1. Start Windows
2. Select in order of [START] - [All Programs] - [EPSON Touch Panel Tool] - [Touch Panel Configuration Tool] .
3. [EPSON Touch Panel Configuration Tool] is started. Press [Calibration] tab.



4. Press the [Calibration Start] button. The calibration screen is displayed, and the [+] mark is displayed at the upper left of the screen.



5. Press the intersection of the [+] mark on the screen. The [+] mark will move to the top center of the screen.

6. Hereafter, press the intersection of the [+] mark in the same way. The [+] mark will be displayed, at 9 position, in the order of upper left, upper center, upper right, center left, center, center right, lower left, center bottom, and lower right.
   To cancel the calibration, press the [Cancel] button.

7. When all the 9 intersections are pressed, the calibration is completed. Press the [OK] button to exit the [EPSON Touch Panel Configuration Tool].

Touch Panel Environment Set Up Tool

The touch panel environment set up tool can set up the detailed items related to the operation of the touch panel. It has the following 5 functions.

- ❏ Calibration function
- ❏ Operation set up function
- ❏ Log management function
- ❏ Version displaying function
- ❏ Double-click tolerance set up function

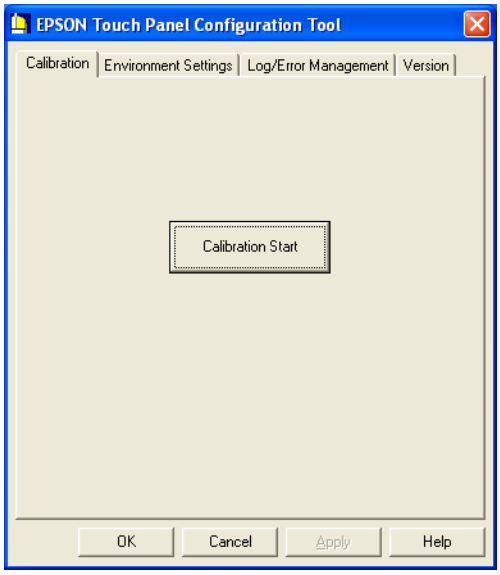
Note

The calibration function and the operation set up function are available only for a user having administrative rights. If a general user attempts to use this, each item is displayed in gray, and it cannot set up.

Start of the Touch Panel Environment Set Up Tool

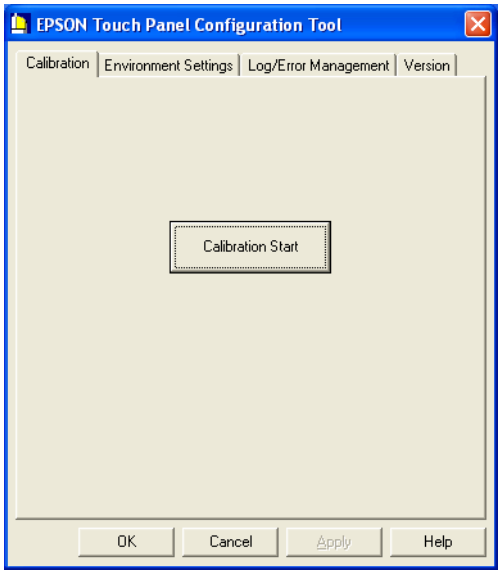
Start the touch panel environment set up tool according to the following procedure.

1. Start Windows
2. Select in order of [START] - [All Programs] - [EPSON Touch Panel Tool] - [Touch Panel Configuration Tool] .
3. [EPSON Touch Panel Configuration Tool] is started.



Calibration Function

Press the [Calibration] tab, and the following screen is displayed.



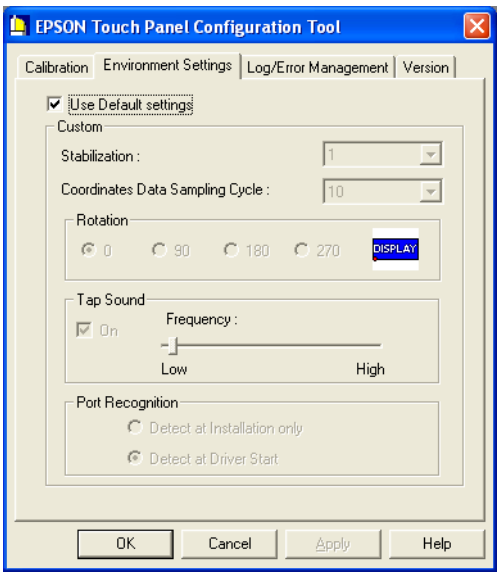
Note

The calibration function is available only for a user having administrative rights. If a general user attempts to use this, each item is displayed in gray, and it cannot set up.

Press the [Calibration] button, and the calibration is started. Refer to the previous [Touch panel calibration] for more information and the procedures of the calibration.

Operation Set up Function

Press the [Environment Settings] tab, and the following screen is displayed.

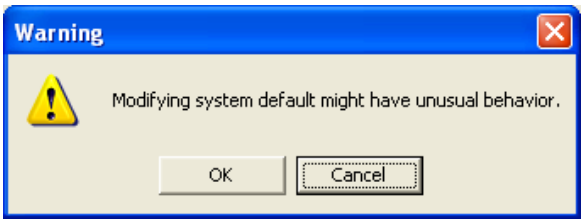


Note

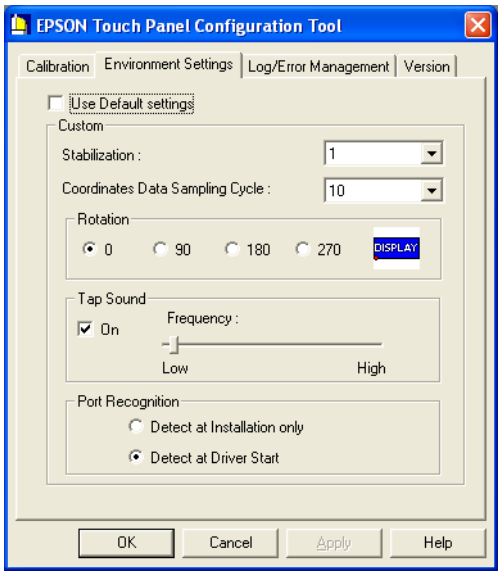
The operation set up function is available only for a user having administrative rights. If a general user attempts to use this, each item is displayed in gray, and it cannot set up.

[[Use Default settings]

Check when the setting value is set to the default value.When the [Use Default settings] is checked, each setting item in the [Custom] is displayed in gray, and cannot be changed.
To change the setting, remove the check of the [Use Default settings], and set up each item.[Remove the check of the [Use Default settings], and the following dialog is displayed.



If you press the [OK] button, each item can be set as follows.



[Stabilization] Set the jitter correction value within 1~20.
The default setting is 1.
The jitter correction is to coordinate the data of the touch panel device which has been obtained more than once and to carry out the equation by calculating the average for stabilizing the touch position. In [Stabilization], the number of the times the coordinate data is obtained is set up.

[Coordinates Data Sampling Cycle]
Set up the interval of the coordinate data sampling within 10~155 ms.
The default setting is 10. For the interval of the coordinate data sampling, set the time to send the coordinate data from the touch panel device to the system.

Since the tap position is not conformed to the position of the mouse cursor when it is ordered to move by the system and rotated by the display setting of cursor when it [Rotation] Windows, setting is 0.Windows, set to change and follow the setting at the start. The default setting is 0.

[On] Set up the ON/OFF of the beep. When it is checked, the beep is heard. The default setting is ON.

[Frequency] Set the frequency of the beep within 37~16383 Hz. The setting value can be changed by moving the slider to the right and left. The default setting is 600 Hz.

[[Port Recognition]

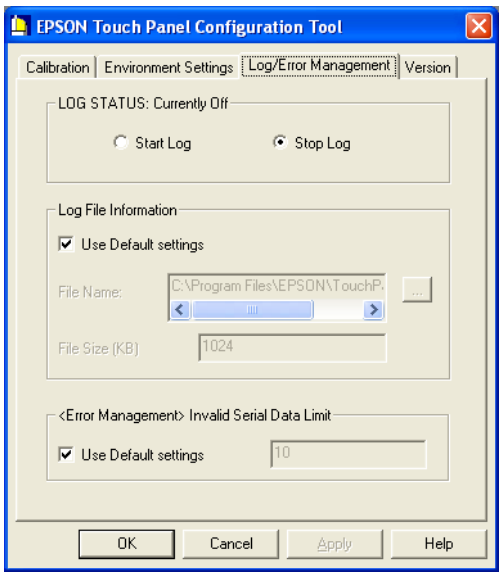
Set the connecting destination of the touch panel to the port which is set up during the installation or to the port which the touch panel controller can recognize at the start of the driver. The setting contents are as follows. The default setting is Detect at Driver Start.

- Detect at Installation only --- Connect to the port which is set up during the installation.
- Detect at Driver Start ---Connect to the port which is automatically recognized in the starting of the driver.

Log Management Function

This sets the functions to promote efficiency of maintenance by logging the operation of touch panel in the case of trouble.

Press the [Log/Error Management] tab, and the following screen is displayed.



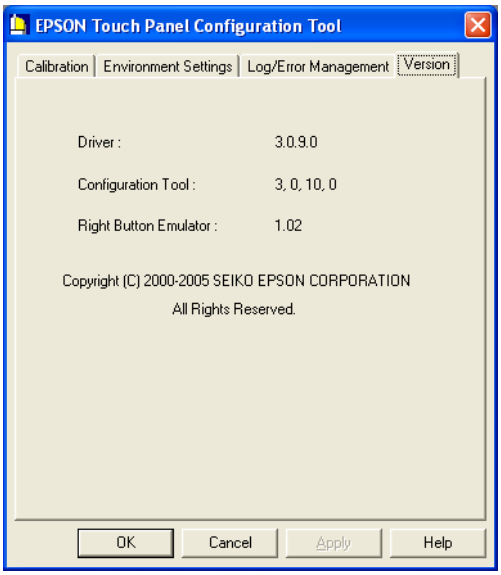
[[LOG STATUS] Display the status of the log function.Select [Start Log], and the log function is started.If you select [Stop Log], the log function is stopped.

[Log File Information] Specify the folder where the log is stored. The default setting is the installation destination of the touch panel driver.In [File Size (KB)], specify the maximum size of the log file.

[<Error Management> Invalid Serial Data Limit]
If a communication error occurs and the number of the communication error exceeds this value, an error information is sent to the event log.

Version Displaying Function

Press the [Version] tab, and the following screen is displayed.



It displays each version information of the [Driver], [Configuration Tool], [Right Button Emulator].

Double-click Tolerance Setting Function

The double-click tolerance setting function sets the tolerance that Windows recognizes as the double-click.

There is a case that it cannot be recognized as a double-click because the default setting of Windows has narrow tolerance and the first tap position of the double-click and that of the second are misaligned.

This function facilitates the recognition of the double-click by broadening the tolerance that is recognized.

Set the double-click tolerance to the following procedure.

Method

[Execute START]-[All Programs]-[EPSON Touch Panel Tool], and press the [OK] button of the Dialog. (Other operations are not required.)

Note

When Windows 2000 or Windows XP is setup and a new user is created, set the double-click tolerance setting again for each user because the contents of the double-click tolerance setting is set up to the default.

Touch Panel Right Button Emulator

The touch panel right button emulator is a tool that it switches the right button/left button for tapping operation in order to operate the right button of the mouse with the touch panel.

The touch panel right button emulator is always displayed in forefront, and the right button/left button is always switchable.

Start of Touch Panel Right Button Emulator

Start the touch panel right button emulator according to the following procedure.

1. Start Windows
2. Select in order of [START] - [All Programs] - [EPSON Touch Panel Tool] - [Right Button Emulator] .
3. The touch panel right button emulator is started, and the dialog is displayed.

Operating Procedure

1.*Mode Setting*

The touch panel right button emulator has the following two modes.

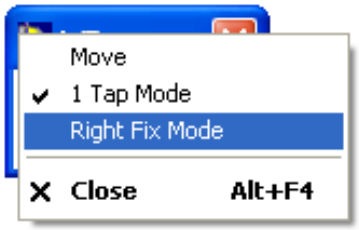
(1) 1 Tap Mode

Only one tap is recognized as a right-click after specifying this mode.
The default setting is this mode.

(2) Right Fix Mode

It is recognized as a right-click after specifying this mode.

To switch the mode, use the menu in the right button emulator. Tap the title bar, the menu is displayed, and select the mode you want. The mode set up is displayed under the mouse icon.



2.*Switching of the Right button/Left button*

The right button/left button can be switched by tapping the mouse icon. Since the color of the right button/left button in the mouse icon is switched in every tapping, you are able to confirm which button is being selected.

<The right button operation>

The coordinate data of the touch panel is sent to the system as the right button data of the mouse.

1 tap mode

Right fix mode

<The left button operation (normal operation)>

The coordinate data of the touch panel is sent to the system as the left button data of the mouse.

1 tap mode

Right fix mode

Installation and Uninstallation

Installation of the touch panel driver is executed in the setup of the OS, but if installing it manually, carry out the following procedure.

Installation

Installation is carried out using a specialized installation program.

(1)Execute C:\backup\touch\EPSTPWDM.exe.

(2) [EPSON Touch Panel Driver Setup] is started, and [Welcome] screen is displayed.Press the [Next] button.

(3)[Choose Destination] screen is displayed. Select the folder of installation destination, and press the [Next] button. The default setting is “C:\Program Files\EPSON\TouchPanel”.

(4)Installation is completed, [Setup Complete] Dialog is displayed.Select [Yes,I want to restart my computer now.] , and press the [Finish] button to reboot the system.

(5) Execute the touch panel calibration. Refer to the [Touch panel calibration] for the procedures of the calibration.

Uninstallation

Uninstallation of the touch panel driver is executed by the following procedures.

Open (1) Control Panel, and select [Add and Remove Programs].

(2) [Add and Remove Programs] Dialog is displayed.Press the [Change or Remove Programs] button, and the list of currently installed programs is displayed. Select [EPSON Touch Panel Driver], and the [Change/Remove] button is displayed.Press the [Change/Remove] button.

(3) [Confirm File Deletion] Dialog is displayed.Press the [Yes] button.

(4) [Remove Programs From Your Computer] Dialog is displayed. Uninstallation is started.

(5) When uninstallation is completed, [EPSON TouchPanel Driver Uninstaller] Dialog is displayed. Press the [OK] button.

(6) Return to [Remove Programs From Your Computer] Dialog. Press the [OK] button.

(7) Select [START]-[Turn Off], and press [Restart] to reboot the system.

EPSON OPOS ADK

OLE (Object Linkage and Embedding) is component software that runs on the OS of Win 32-bit style, such as Microsoft Windows 2000. Depending on how the software components have been created, the software may be reusable or reversely compatible.

The objective of the OLE POS ("OPOS") is to use the OLE to standardize the control system (API) for the peripheral units of the POS. By this standardization, the application and peripheral unit control software become open and generic. The OPOS standardizes the interface between the POS application and the device control object, which depends on the device or the manufacturer. The OPOS also facilitates the transplant of the application and the reconfiguration of the peripheral devices.

Because of standardization of the peripheral devices, a large part of the work required for the development of software can be eliminated, and the system can become fully open. As a result, comparatively small-sized shops that plan to introduce the POS can easily configure an intelligent, flexible POS system.

OPOS makes it easy to build POS applications that take advantage of the functionality that Windows has to offer, such as graphics, video, and sound; a user-friendly GUI; and multitasking.

For information on the installation procedure for the OPOS ADK, see the userﾕs guide registered in the \C:\Backup\Oposadk directory.

Creating the Component Software

The POS device needs a control program. The device control object once existed as a part of monolithic POS application software. Because of this monolithic structure, POS system designers had to replace or change the entire POS application software to change the device control object alone when a peripheral device was replaced. This work claimed a lot of time and money. POS application software developers had to become experts about each manufacturer's devices, including functions and command systems, to create a device control object.

With the advent of the PC-POS, however, any external device is now connectable to a PC as long as the interface (serial, parallel, or whatever) is supported. While the problem with the compatibility of the hardware was solved in this way, a problem with the software still existed. The software was not applicable, and the POS application software itself had to be replaced. For this reason, it was impossible to make the PC-POS fully open in terms of both the hardware and software.

To solve this problem, the device control object was modularized and made to be independent of the POS application software. Because only the device control object needs replacement at this time, the work to replace the POS application software itself when the device was replaced is simplified. Also, because the original device control object is supplied, the POS application software developers no longer need the detailed expertise of each manufacturer's device or the standardization of the entire system and the hardware as well as the software. This reduces the load of developing work.

Software Standardization

When a device control object is created, it is necessary to choose the interface (API) between the POS application software and the device control module. EPSON has joined an industrywide and worldwide effort to standardize and spread the use of APIs. The standardized software uses an OCX driver, which is modularized software divided into two levels: the Control Object (CO) and the Service Object (SO). the Control Object (CO) and the Service Object (SO).

A separate CO exists for each class of device, while a separate SO exists for each individual device; for example, software that uses a TM-U950 needs a general POS printer CO and a specific TM-U950 SO. If the TM-U950 printer were replaced by a TM-U375 printer, the TM-U950 SO would have to be replaced by a TM-U375 SO, but the rest of the software, including the POS printer CO, would remain the same. In other words, a switch from one printer to another requires only a change in the SO.

EPSON Software

The software products (OCX drivers) that EPSON offers to enable such an OPOS system are called the EPSON OPOS ADK. The EPSON OPOS ADK provides the OCX driver and much more. EPSON also provides custom tools to support the construction and development of an OPOS application software development environment.

Chapter 5
BIOS Functions

The system ROM stores the following BIOS related utilities. This Chapter explains the BIOS setup

- ❑ BIOS Setup
- ❑ Power ON Self Test (POST)
- ❑ Device diagnostic utility (See Chapter 6)

BIOS Setup

The BIOS setup utility is used to configure the systemís operating environment. When setting up this product for the first time, be sure to run this program. If you change the operating environment, run this program again.

Operating Procedures

How to use setup

Executing BIOS setup requires a PS/2-compatible keyboard. BIOS setup cannot be run from the touch panel alone.

Start the BIOS setup utility according to the following procedures:

1. Connect the PS/2 keyboard to the keyboard connector. A USB keyboard can also be used except when USB Legacy Support is Disabled and USB Controller is Disabled.
2. Turn the power switch of the system on to boot.
3. Press Del during the POST process, and the BIOS setup utility will boot.

⚠ CAUTION

Do not change the settings of any items other than those specified in this manual. Do not change the settings of any items for which "Do not change" is specified in this manual.If an incorrect setting is made, the system may not operate.

How to exit

Enable the Configuration

Follow the steps below to enable the new configuration and exit the BIOS setup utility:

1. Press the F10 key. Or select "Save Changes and Exit" in the Exit menu.
2. "Save configuration changes and exit setup?" is displayed.Select OK and press the Enter key. The BIOS setup finishes, and the system reboots with the new configuration enabled.

Disable the Configuration

Follow the steps below to discard the new configuration and exit the BIOS setup utility:

1. Press the Esc key. Or select "Discard Changes and Exit" in the Exit menu.
2. Discard Changes and Exit Setup? Setup?"is displayed. Select OK and press the Enter key. The BIOS setup finishes, and the system reboots with the new configuration discarded.

Troubleshooting

After the BIOS Setup utility has been used, the computer may be not able to be started up normally because of changes made.

When the BIOS Setup utility can be started up, execute the L oad Optimal Defaults from the BIOS setup utility, save & exit, and then restart the system.

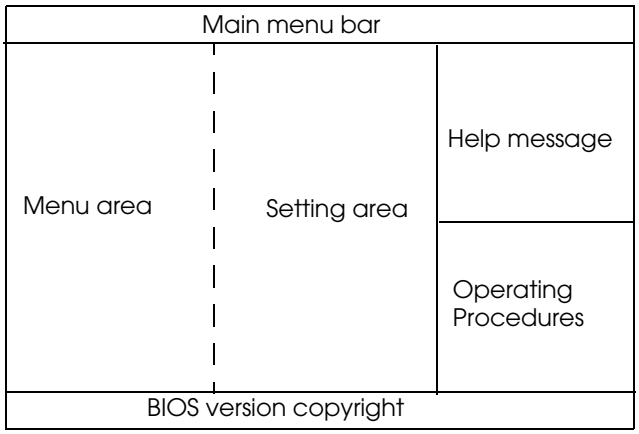
When the BIOS Setup utility cannot be started up, clear the CMOS with the jumper. Clear the CMOS by shorting 2-3 of JP1601 on the main board.

Changing settings

To choose an item, first move the cursor onto a desired field with the arrow keys. Next, select a value in the field with the + key or - key. Last, execute "Save Changes and Exit" in the Exit menu. Now, all of the setting values of the menu are saved.

Screen Configuration of BIOS Setup Utility

The screen of the BIOS setup utility is as follows.



Saving settings

The BIOS setting can be saved on a floppy disk. It can also be read with other SR-610. Refer to page 5-25 for details.

Note
It is limited to the same version of the BIOS.

Boot Device Setting

To set the boot device, use the Boot Device Priority in the Boot menu.

To change the boot device temporarily, press the F11 key during POST processing. The boot device can be changed with the BBS(BIOS Boot Specification)Boot. By selecting the device to be booted and pressing the Enter key, it can be booted from the specified device.

BIOS Setup Main Menu

From the BIOS setup main menu, you can select the following items:

Table 5-1 BIOS main menu

Item	Details
Main	The time and date are set. See (page 5-5)
Advanced	Extended BIOS setup menu See (page 5-6)
PCIPnP	The settings related to system resources on Plug and Play are set. By executing (Load Optimal Defaults), settings will be optimized. Normally, do not change the settings. See (page 5-15)
Chipset	The video controller, USB, and LAN are set. See (page 5-17)
Power	The settings related to power management are executed. See (page 5-19)
Boot	Booting sequence of the device, etc. are set. See (page 5-21)
Security	The Supervisor Password and User Password are set. See (page 5-23)
Exit	The BIOS setup utility is exited. Also, saves and reads the settings on and from a floppy disk or FD emulation USB memory. See (page 5-25)

Main menu

The system clock and the calendar are set. Also, the system overview can be confirmed.

Table 5-2 Main menu

Item		Details
System Overview	UUID	UUID (Universally Unique Identifier) is displayed.
	On Chip MAC Address	The MAC Address of the main board is displayed.
AMI BIOS	Build Date	The build date of the BIOS is set.
	ID/Version	The version of the BIOS is displayed.
Processor	Type	The type of CPU is displayed.
	Speed	The speed of CPU is displayed.
System Memory	Size	The memory capacity is displayed. Displays the value when VRAM capacity is subtracted from the installed memory capacity.
System Date		The date is set. (BIOS automatically determines the day of the week.) Press the Tab or Tab + Shift key to move to the desired field (date, month, year).+Press + or - to incrementally move the setting, or type the desired value into the field.
System Time		The time is set. Press the Tab or Tab + Shift key to move to the desired field.+Press + or - to incrementally move the setting, or type the desired value into the field.

Advanced menu

The BIOS extension items such as CPU, IDE devices, serial/parallel, hardware monitors, ACPI, and USB are set.

Table 5-3 Advanced menu

Item		Details
CPU Configuration		
Ratio Status		Item displayed automatically by the BIOS.
Ratio Actual Value		Item displayed automatically by the BIOS.
IDE Configuration		It is displayed only for Primary IDE Master.
Primary IDE Master/Slave	Device	Displays the device connected to the Primary IDE Master. When the CF is not connected, Not Detected is displayed.
	Type	Set the detection method for the connection device. The default setting is "Auto". Auto: Auto detection is executed. The information held by the device is automatically applied. This is the normal setting. Disabled The connection detection is not executed. It is treated as disconnected software Reference: The Primary Master of this system is only CF(Compact Flash).
	LBA/Large Mode	Auto/disable of the LBA (Logical Block Addressing) mode is set. The default setting is "Auto". Auto: BIOSsets the optimum access method. This is the normal setting. Disabled It is not set as LBA mode, but CHS mode. Reference: The BIOS of this system supports 48-bit LBA mode to access data of more than 137GB.
	Block (Multi-sector Transfer)	Enabled / Disabled of Multi-sector Transfer mode of data is set. The default setting is "Auto". Auto: BIOSsets the optimum access method. This is the normal setting. Disabled Multi-sector Transfer mode is disabled. (It is set to single-sector transfer mode.) Reference: If the connected CF does not support the Multi-sector Transfer mode, this function cannot be used.

Table 5-3 Advanced menu

Item		Details
Primary IDE Master/Slave	PIO Mode	PIO mode is set. The default setting is "Auto". Auto: BIOSsets the optimum PIO mode. This is the normal setting. 0: PIOmode0(Transfer speed3.3MB/sec) 1: PIOmode1(Transfer speed5.2MB/sec) 2: PIOmode2(Transfer speed8.3MB/sec) 3: PIOmode3(Transfer speed11.1MB/sec) 4: PIOmode4(Transfer speed16.6MB/sec)
	DMA Mode	DMA mode is set. The setting is always "Auto" because the only device involved in this setting is CF (Compact Flash).
	SMART Monitoring	SMART(Self-Monitoring, Analysis and Reporting Technology) function is set. The default setting is "Auto". Auto: The BIOS determines Enabled / Disabled from the information of the connected device. Enabled: SMART function is enabled. Disabled: SMART function is disabled.
	32Bit Data Transfer	Enabled / Disabled of the 32Bit Data Transfer is set. The default setting is "Auto". Enabled: 32Bit Data Transfer is enabled. This is the normal setting. Disabled: 32Bit Data Transfer is disabled.
IDE Detect Time Out (Sec)		The standby time for detecting IDE devices is set. The default setting is "35". 0: 0second 5: 5seconds 10: 10seconds 15: 15seconds 20: 20seconds 25: 25seconds 30: 30seconds 35: 35seconds

Table 5-3 Advanced menu

	Item	Details
Super IO Configuration		
	Parallel Port Address	The address of the parallel port is set. The default setting is "378". Disabled: Parallel port is disabled. 378: The address is set to 378h. 278: The address is set to 278h. The address is set to 3BCh. Reference: 1ÅjDo not set to "3BC" in EPP mode. 2) When this setting is Disabled, items of Parallel Port Mode,Bi-Directional, EPP Version, EPP Version, DMA Channel in ECP Mode, and Parallel Port IRQ are not displayed.
	Parallel Port Mode	The parallel port mode is set. The default setting is "Normal". There are 4 options, the "Normal" setting, the "Bi-Directional" setting, the "EPP" setting, and the "ECP+EPP" setting. Make the necessary changes in accordance with the system configuration. Note that since an 8-byte continuous I/O space is needed when using the "EPP" setting and "ECP+EPP" setting, the "3BC/IRQ7" setting cannot be used. In addition, a DMA channel number is required for DMA transfer when using the "ECP" setting and "ECP+EPP" setting. Normal: Also called the SPP (Standard Parallel Port), this mode is for one direction only. Bi-Directional: Bi-Directional mode is set. EPP: EPP stands for Enhanced Parallel Port and is an improvement of the Normal mode I/O throughput. EPP allows for faster data transfer than Normal mode. ECP: ECP stands for Extended Capabilities Port, and it is a mode that supports DMA transfer and Run Length Enhanced. ECP allows for faster data transfer than EPP mode.
	EPP Version	EPP mode is set. The default setting is "EPP1.9". There are 2 options, the "EPP1.7" setting and the "EPP1.9 " setting. Make the necessary changes in accordance with the system configuration. Reference: If the Parallel Port Address setting is "Disabled" or the Parallel Port Mode setting is not "EPP", this item is not displayed.
	ECP Mode DMA Channel	DMA channel in ECP mode is set. The default setting is "DMA3". There are 3 options, the "DMA0" setting, the "DMA1" setting, and the "DMA3 " setting. Reference: If the Parallel Port Address setting is "Disabled" or the Parallel Port Mode setting is not "EPP", this item is not displayed.
	Parallel Port IRQ	The Parallel Port IRQ is set. The default setting is "IRQ7". There are 2 options, the "IRQ5" setting and the "IRQ7" setting. Reference: If the Parallel Port Address setting is "Disabled", this item is not displayed.

Table 5-3 Advanced menu

	Item	Details
	Serial Port 1 Address	The I/O Base address of Serial Port 1 and IRQ number are set. The default setting is "3F8/IRQ4". Setting I/O Base address IRQ number 3F8/IRQ4: 3F8 IRQ4 2F8/IRQ3: 2F8 IRQ3 3E8/IRQ4: 3E8 IRQ4 2E8/IRQ3: 2E8 IRQ3 3F8/IRQ11: 3F8 IRQ11 2F8/IRQ10: 2F8 IRQ10 3E8/IRQ11: 3E8 IRQ11 2E8/IRQ10: 2E8 IRQ10 338/IRQ11: 338 IRQ11 238/IRQ10: 238 IRQ10 Disabled: Serial Port 1 is disabled.
	Serial Port 1 Outlet 5V	Enabled/Disabled of the 5V outlet of the serial port 1 are set. The default setting is "Disabled". Enabled: The 5V outlet is enabled. Disabled: The 5V outlet is disabled. Reference: When the Serial Port1 Address is set Disabled, this item is not displayed.
	Serial Port 2 Address	The I/O Base address of Serial Port 2 and IRQ number are set. The default setting is "2F8/IRQ3". Setting I/O Base address IRQ number 3F8/IRQ4: 3F8 IRQ4 2F8/IRQ3: 2F8 IRQ3 3E8/IRQ4: 3E8 IRQ4 2E8/IRQ3: 2E8 IRQ3 3F8/IRQ11: 3F8 IRQ11 2F8/IRQ10: 2F8 IRQ10 3E8/IRQ11: 3E8 IRQ11 2E8/IRQ10: 2E8 IRQ10 338/IRQ11: 338 IRQ11 238/IRQ10: 238 IRQ10 Disabled: Serial Port 2 is disabled.
	Serial Port 2 Outlet 5V	Enabled/Disabled of the 5V outlet of the serial port 2 are set. The default setting is "Disabled". Enabled: The 5V outlet is enabled. Disabled: The 5V outlet is disabled. Reference: When the Serial Port2 Address is set Disabled, this item is not displayed.
	Serial Port 3 Address	The I/O Base address of Serial Port 3 is set. The default setting is "3E8". Setting I/O Base address 3F8: 3F8h 2F8: 2F8h 3E8: 3E8h 2E8: 2E8h 338: 338h 238: 238h Disabled: Serial Port 3 is disabled.

Table 5-3 Advanced menu

	Item	Details
	Serial Port 3 IRQ	The IRQ number of Serial Port 3 is set. The default setting is "IRQ11". IRQ3: 3 IRQ4: 4 IRQ5: 5 IRQ7: 7 IRQ10: 10 IRQ11: 11 Reference: If the Serial Port3 Address setting is "Disabled", this item is not displayed.
	Serial Port 3 Mode	The mode of the serial port 3 is set. The default setting is "Normal". Normal: Normal: When connecting the peripheral of the modem and so on with the serial port 3. The DRW port cannot be used. The DM-D port is usable only when the peripheral is not connected with the serial port 3. DRW/DM-D:When using the DRW port and the DM-D port, this is set. The serial port 3 cannot be used. TM/DM-D: When using the EPSON TM printer and the DM-D port. Serial port 3 sometimes cannot be used for the peripheral except the printer. ReferenceÅF When the Serial Port3 Address is set "Disabled", this item is not displayed.
	Serial Port 4 Address	The I/O Base address of Serial Port 4 is set. The default setting is "3E8". 3F8: 3F8h 2F8: 2F8h 3E8: 3E8h 2E8: 2E8h 338: 338h 238: 238h Disabled: Serial Port 4 is disabled. Reference: Serial Port 4 is only used for the Touch Panel.
	Serial Port 4 IRQ	The IRQ number of Serial Port 4 is set. The default setting is "IRQ10". IRQ3: 3 IRQ4: 4 IRQ5: 5 IRQ7: 7 IRQ10: 10 IRQ11: 11 Reference: If the Serial Port4 Address setting is "Disabled", this item is not displayed.
Hardware Health Configuration		

Table 5-3 Advanced menu

	Item		Details
	Hardware Health Event Monitoring	CPU Fan Speed	The current CPU fan speed is displayed. The fan speed is displayed in RPM.
		System Fan Speed	The current System fan speed is displayed. The fan speed is displayed in RPM.
		System Temperature	The current main board temperature is displayed.
		Vcore	The current Vcore voltage is displayed.
		AVCC	The current AVCC voltage is displayed.
		+5VSB	The current +5VSB voltage is displayed.
		VBAT	The current VBAT voltage is displayed.
		+3.3V	The current +3.3V voltage is displayed.
		VCCP	The current VCCP voltage is displayed.
		+12V	The current +12V voltage is displayed.
	Hardware Health Function		Disabled / Enabled of the Hardware Health Function is set. The default setting is "Enabled". Enabled: Hardware Health Function is enabled. This is the normal setting. Disabled: Hardware Health Function is disabled. Reference: When the Hardware Health Function is "Disabled", the items of "Hardware Health Event Monitoring", "CPU Fan Control", "CPU Temperature Alarm", and "System Temperature Alarm" are not displayed.

Table 5-3 Advanced menu

	Item	Details
	CPU Fan Control	CPU Fan Control is set. The default setting is "Enabled". Enabled: CPU Fan Control is enabled. This is the normal setting. Disabled: CPU Fan Control is disabled. In this case, the CPU Fan will be at Full Speed. Reference: 1) hardware monitoring chip has SmartFan Control function. The revolution of the fan is automatically controlled according to changes in the temperature. 2)If the Hardware Health Function is Disabled, this item is not displayed and is not performed.
	System Fan Control	System Fan Control is set. The default setting is "Enabled". Enabled: System Fan Control is enabled. This is the normal setting. Disabled: System Fan Control is disabled. In this case, the System Fan will be at Full Speed. Reference: 1) When the setting is Enabled, System Fan is controlled to the regularly rotation numbers. 2) If the Hardware Health Function is Disabled, this item is not displayed and is not performed.
	CPU Temperature Alarm	CPU Temperature Alarm is set. If the CPU exceeds the set temperature, an alarm notification is executed. The default setting is "Disabled". Disabled: This function is disabled. 70° / 158° F 75° / 167° F 80° / 176° F 85° / 185° F 90° / 194° F 95° / 203° F 100° / 212° F Reference: 1)If the CPU Fan Control setting is Disabled, this item is not displayed and is not performed. 2)If the Hardware Health Function is Disabled, this item is not displayed and is not performed.
	System Temperature Alarm	System Temperature Alarm is set. If the CPU exceeds the set temperature, an alarm notification is executed. The default setting is "Disabled". Disabled: This function is disabled. 45° / 113°F 50° / 122°F 55° / 131°F 60° / 140°F 65° / 149°F Reference: 1) If the Hardware Health Function setting is Disabled, this item is not displayed and is not performed.

Table 5-3 Advanced menu

Item	Details
ACPI Configuration	
ACPI Aware O/S	The type of OS (Operating System) is set. The default setting is "Yes". Yes: It is set when the OS is PMOS(Windows 2000/ Windows XP/ WEPOS). No: It is set when the OS is non-PMOS.
ACPI 2.0 Features	ACPI 2.0 function is set. The default setting is "Yes". Yes: ACPI 2.0 function is enabled. This is the normal setting. No: ACPI 2.0 function is disabled. Reference: The ACPI 2.0 function means the RSPD pointer for the fixed 64 bit System Description Tables.
ACPI Power Recovery	Operations after recovering from the cutting of AC power is set. The default setting is "Power Off". Power Off: After recovery, turn the power off. Power On: After recovery, turn the power on. Last State: Return to the last state.
USB Configuration	
Legacy USB Support	Enabled / Disabled of Legacy USB Support of USB devices such as the keyboard and mouse is set. (Enabled / Disabled of the emulation function) The default setting is "Auto". Auto: BIOS sets the optimum setting. Enabled: Legacy USB Support is enabled. Enabled: Legacy USB Support is disabled.
USB 2.0 Controller Mode	USB 2.0 Controller Mode is set. The default setting is "FullSpeed". HiSpeed: Set it to Hi Speed mode. FullSpeed: Set it to Full Speed mode.
USB Beep Message	Enabled / Disabled of beep in emulation of the USB device is set. The default setting is "Disabled". Enabled: Beep is on. Disabled: Beep is off.

Table 5-3 Advanced menu

	Item		Details
	USB Mass Storage Device Configuration	It is displayed only when a device such as USB memory is connected.	
		USB Mass Storage Reset Delay	The waiting time after Start Unit Command is set. The default setting is "20sec". To be determined is the normal setting. 10sec: The waiting time is set at 10 seconds. 20sec: The waiting time is set at 20 seconds. 30sec: The waiting time is set at 30 seconds. 40sec: The waiting time is set at 40 seconds.
		Emulation Type	The Emulation function of the USB mass storage device is set. This item is only displayed to the number of connected bootable USB devices. The default setting is "Auto". Auto: BIOS automatically sets the optimum Emulation function. Floppy: The Emulation function is fixed as floppy disk.. Forced FDD: The Emulation function is set as either hard disk or floppy disk by the BIOS. Hard Disk: The Emulation function is fixed as hard disk. CDROM: The Emulation function is fixed as CD-ROM (El Trito Format). Reference: When the connected device type is CBI and HDD boot type, the setting of this item should be ìHard Diskî.

PnP/PCI Configurations Menu

Table 5-4 PnP/PCI Configurations menu

Item	Details
Plug & Play O/S	Installed OS is selected. Yes: This is selected when the installed OS is the PnP OS such as Windows 2000, Windows XP or WEPOS. The OS assigns all PnP devices in the system. No: This is selected when the installed OS is not PnP OS.
Clear NVRAM	Whether or not to reset data related to PnP when rebooting the system is set. The default setting is "No". Yes: Reset the data. No: Do not reset the data. This is the normal setting. Reference: Even when this setting is changed to ìYesî and the system is rebooted, it is automatically changed to ìNoî.
PCI Latency Timer	Latency Timer of the PCI bus is set. The default setting is "64". 32: 32 PCI clocks 64: 64 PCI clocks 96: 96 PCI clocks 128: 128 PCI clocks 160: 160 PCI clocks 192: 192 PCI clocks 224: 224 PCI clocks 248: 248 PCI clocks

Table 5-4 PnP/PCI Configurations menu

Item	Details
Allocate IRQ to PCI VGA	Assigning of VGA Interrupt to the IRQ is set. The default setting is "Yes". Yes: The IRQ is assigned to VGA Controller. This is the normal setting. No: The IRQ is not assigned to VGA Controller.
Palette Snooping	Enabled / Disabled of Palette Snooping is set. The default setting is "Disabled". Enabled: Palette Snooping is enabled. Disabled: Palette Snooping is disabled. This is the normal setting.
PCI IDE BusMaster	Enabled / Disabled of PCI Bus Mastering is set. The default setting is "Enabled". Enabled: PCI Bus Mastering is enabled. Disabled: PCI Bus Mastering is disabled. This is the normal setting.
IRQ Resources	Sets the handling of IRQ Resources (interrupt number). Available IRQ resources are, 3, 4, 5, 7, 9, 10, 11, 14, and 15. The default setting is "Available". Available: PCI/PnP device uses IRQ Resource. Reserved: Legacy device uses IRQ Resource.
DMA Resources	DMA resources (DMA channels)is set. Available DMAresources are, 0, 1, 3, 5, 6, and 7. The default setting is "Available" for each resource. Available: PCI/PnP device uses DMA Resource. Reserved: Legacy device uses DMA Resource.

Chipset menu

The items that rely on the chipset on the main board, such as USB and LAN settings are set. Since these settings are executed via [Load Optimal Defaults], they are the optimum settings for the system and generally do not need to be changed.

Table 5-5 Chipset menu

Item		Details
NorthBridge Configuration		
	Graphics Mode Select	The size of Video memory is set. The default setting is "Enabled", 32MB". Disabled: System memory is set to be disabled. Enabled ,1MB: System memory is set at 1MB. Enabled ,4MB: System memory is set at 4MB. Enabled ,8MB: System memory is set at 8MB. Enabled ,16MB:System memory is set at 16MB. Enabled ,32MB:System memory is set at 32MB. This is the normal setting.
	Memory ECC Mode	Enabled / Disabled of Memory ECC Mode is set. The default setting is "Disabled". Enabled: Memory ECC Mode is enabled. Disabled: Memory ECC Mode is disabled. This is the normal setting.
	Boot Display Device	Video output is set. The default setting is "Auto". Auto: BIOS sets the optimum conditions. This is the normal setting. LCD: Set to output to the LCD. VGA: Set to output to the VGA connector. Both: Set to output to both the LCD and the VGA connector.

Table 5-5 Chipset menu

Item		Details
SouthBridge Configuration		
	OnBoard IDE	Enabled / Disabled of IDE Controller is set. The default setting is "Enabled". Disabled: Onboard IDE Controller is set to be disabled. Enabled: Onboard IDE Controller is set to be enabled.
	USB Controller	USB Controller is set. The default setting is "Enabled". Do not change the default setting.
	USB 2.0 (EHCI)	Enabled / Disabled of USB 2.0 function is set. The default setting is "Enabled". Disabled:USB 2.0 function is disabled. Enabled:USB 2.0 function is enabled.
	OnBoard LAN	Enabled / Disabled of LAN Controller is set. The default setting is "Enabled". Disabled:Onboard LAN Controller is disabled. Enabled:Onboard LAN Controller is enabled. Reference: If this item is "Disabled", the items of "On Board LAN BOOT PXE ROM" and "Maintenance Boot" are not displayed.
	OnBoard LAN BOOT PXE ROM	Enabled / Disabled of Onboard LAN Boot ROM (PXE boot agent) is set. The default setting is "Disabled". Disabled:Onboard LAN Boot ROM is disabled. Enabled:Onboard LAN Boot ROM is enabled. Reference: If the item of ìOnboard LANî is "Disabled", this item is not displayed.
	Maintenance Boot	Enabled / Disabled of Maintenance Boot is set. The default setting is "Disabled". Disabled: Maintenance Boot is disabled. Enabled:Maintenance Boot is enabled. Reference: If the items of ìOnboard LANî and ìOnboard LAN BOOT PXE ROMî are "Disabled", this item is not displayed.
	Spread Spectrum	Enabled / Disabled of Spread Spectrum is set. The default setting is "Enabled". Do not change the default setting.

Power menu

The items related to Power Management are set. Power Management controls the operational state of the limited-life devices such as the HDD.

Table 5-6 Power menu

Item	Details
Power Management/ APM	Enabled / Disabled of APM BIOS is set. The default setting is "Enabled". Enabled:APM is enabled. Disabled:APM is disabled.
Suspend Time Out	The time before shifting to the Suspend mode is set. The default setting is "Disabled". Disabled:There is no shift to the Suspend mode. 1 Min: The Suspend mode is shifted to after 1 minute. 2 Min: The Suspend mode is shifted to after 2 minutes. 4 Min: The Suspend mode is shifted to after 4 minutes. 8 Min: The Suspend mode is shifted to after 8 minutes. 10 Min: The Suspend mode is shifted to after 10 minutes. 20 Min: The Suspend mode is shifted to after 20 minutes. 30 Min: The Suspend mode is shifted to after 30 minutes. 40 Min: The Suspend mode is shifted to after 40 minutes. 50 Min: The Suspend mode is shifted to after 50 minutes. 60 Min: The Suspend mode is shifted to after 60 minutes.
Power Button Mode	Power button function is set. The default setting is "On/Off". Disabled: When the Power button is pressed in the Full-On mode, the operation of the system is not changed. It is shifted to the Full-On mode when the Power button is pressed in the Suspend mode. If the Power button is pressed and held for at least 4 seconds, the system is forcibly terminated. On/Off: Turning ON/OFF of the power when the Power button is pressed is set. Suspend: If the Power button is pressed and held for less than 4 seconds: Shifts to the Suspend mode when in the Full-On mode. Shifts to the Full-On mode when in the Suspend mode. If the Power button is pressed and held for at least 4 seconds: Shifts to the Suspend mode and then the system is forcibly terminated in the Full-On mode. Shifts to the Full-On mode and then the system is forcibly terminated in the Suspend mode.
Hard Disk Drive Time Out	HDD Power Down Timer is set. The HDD motor stops when the HDD is not accessed for a certain time. The default setting is "15 minutes". Disabled:The HDD motor will not be stopped. 1 - 15: The HDD motor stops in 1 minute to 15 minutes (by the minute).
CPU Fan Off In Suspend	CPU Fan Off function in the Suspend mode is set. The default setting is "Disabled". Disabled: The CPU fan rotates even in the Suspend mode. This is the normal setting. Enabled: The CPU fan does not rotate in the Suspend mode.
Resume by PME	Enabled / Disabled of the wake-up function with PME(Power Management Enable) is set. The default setting is "Enabled". Disabled:The wake-up function with PME is disabled. Enabled:The wake-up function with PME is enabled.

Table 5-6 Power menu

Item	Details
Resume by RI	Enabled / Disabled of the wake-up function with RI (Modem Ring In) is set. The default setting is "Disabled". Disabled:The wake-up function with RI is disabled. Enabled:The wake-up function with RI is enabled.
Resume by Alarm	Enabled / Disabled of the wake-up function with the alarm is set. The default setting is "Disabled". Disabled:The wake-up function with the alarm is disabled. Enabled:The wake-up function with the alarm is enabled. In this case,Date of Month / Time (hh : mm : ss) are displayed.
In this case,Date of Month / Time (hh : mm : ss)	Date / Time of the wake-up function with the alarm is set. Use (Date (of Month) Alarm) to set the appropriate "date". (Time (hh:mm:ss) Alarm) to set the appropriate time. Once the setting is made, the power turns on or the system resumes to Full-On Mode on the selected day and time each month. Reference: 1) There are items to set "Every Day" and date within "1-3" for the date setting. 2) Use "HH:MM:SS" format for setting the time item.
Resume by OnBoard LAN	Enabled / Disabled of WOL (Wake On LAN) is set. The default setting is "Enabled". Disabled:WOL function is disabled. Enabled:WOL function is enabled.

Boot menu

The device booting sequence, etc. are set.

Table 5-7 Boot menu

Item		Details
Boot Setting Configuration		
	Quick Boot	The type of POST (Power On Self Test) is set. The default setting is "Enabled". Disabled: All tests of POST are executed. Enabled: A number of tests are omitted to reduce the time required for startup. This is the normal setting.
	Silent Boot	The type of POST screen is set. The default setting is "Enabled". Disabled: POST message screen is displayed. Enabled: EPSON logo screen is displayed. This is the normal setting. Reference: By pressing the DEL key, POST screen message is displayed even when the setting is "Enabled".
	Halt On	Conditions to stop the system during POST are set. The default setting is "All, But Diskette". No Errors: Disregard the occurrence of errors and continue the startup process. All, But Diskette: Stop the system when errors occur, with the exception of floppy disk-related errors. This is the normal setting. All, But Diskette: Stop the system when errors occur, with the exception of floppy disk or keyboard-related errors.
	Boot Up Num-Lock	Enabled / Disabled of Num Lock after POST is set. The default setting is "Off". Off: Num Lock on the keyboard after POST is disabled. This is the normal setting. On: Num Lock on the keyboard after POST is enabled.
	PS/2 Mouse Support	PS/2 Mouse support in BIOS level is set. The default setting is "Auto". Disabled: P/S2 Mouse support function is disabled. (It prevents the port from being activated by preventing the use of system resources with P/S2 Mouse port.) This setting is used when a serial mouse is installed. Enabled: P/S2 Mouse support function is enabled. Auto: BIOS automatically sets the function.
	Wait for "F1" If Error	The function of F1 key when POST errors occur is set. The default setting is "Enabled". Disabled: The wait function of the F1 key is disabled. (The system will not be stopped even when errors occur.) Enabled: The wait function of the F1 key is enabled. (The system will be stopped when errors occur, and it is connected by the F1 key.) This is the normal setting.
	Hit "DEL" Message Display	Displaying message "Hit DEL to enter Setup" during POST is set. The default setting is "Enabled". Disabled: The message is not displayed. Enabled: The message is displayed. This is the normal setting.
	Onboard CompactFlash BIOS Ver3.05 or higher.	Connect/Unconnected of the OI-S05 (Option) is set. The default setting is "Enabled". Disabled: Set when the OI-S05 is connected. Enabled: Set when the OI-S05 is unconnected. This is the normal setting.

Table 5-7 Boot menu

Item	Details
Boot Device Priority	Detects the connected devices, and the order of the startup devices in the following categories is set. The device is detected in the order of 1st > 2nd >3rd, and boot the system from the first bootable device (with boot sector / IPL readable). To change the order of the startup devices, select the device, press the Enter key, and select the order with the arrow keys. (Device name : Model name, etc.) is displayed for the detected device. When any devices are not connected, except the HDD, the HDD is displayed at 1st Boot Device, and 2nd Boot Device or later are not displayed. The boot devices by category are detected from the following devices. SCSI device SCSI CD/DVD, SCSI HDD USB device USB Floppy, USB CD/DVD, USB memory(FD emulation),USB memory(HD emulation) SATA device HDD-0, HDD-1 IDE device Device-0,Device-1 Other device Network
Hard Disk Drives	Connected HDD devices are detected and displayed in the search order. Nothing is displayed if there is no HDD device.
Removable Drives	Connected Removable devices are detected and displayed in the search order. Nothing is displayed if there is no Removable device.
CD/DVD Drives	Connected CD/DVD devices are detected and displayed in the search order. Nothing is displayed if there is no CD/DVD device.

Security menu

The items related to Password are set.

Table 5-8 Security menu

Item		Details
Security Setting		
	Supervisor Password	Whether the Supervisor Password is set or not is displayed. Display if the password is set: Installed Display if the password is not set: Not Installed
	User Password	Whether the User Password is set or not is displayed. Display if the password is set: Installed Display if the password is not set: Not Installed
Change Supervisor Password		Supervisor Password is set. ìUser Access Levelî, ìChange User Passwordî, and ìPassword Checkî are displayed and can be set when setting the Supervisor Password. Supervisor Password is set as follows: 1) Select Supervisor Password, and press the (Enter) key. 2) The input screen is displayed. 3) Input a password, and press the (Enter) key. 4) The confirmation screen is displayed. 5) Input the same password as 3)again, and press the (Enter) key. 6) The Password Install screen is displayed. 7) Press the (Enter) key. When the setting is completed, the display of "Supervisor Password" in "Security Setting" is changed to "Installed". Also, "User Access Level", "Change User Password", and "Password Check" will be items which can be set. To clear the password, press the (Enter) key without inputting the Password in the above procedure. The Supervisor Password is also used for Drawer Kickout test in DIAG and R/W test of HDD.
User Access Level		Access Level is set. The default setting is "Full Access". No Access BIOS settings cannot be viewed. View Only: BIOS settings can be viewed, but they cannot be changed. Limited Limited BIOS settings such as date and time can be changed. Full Access All BIOS settings can be changed. Reference: When the Supervisor Password is set, this item will be able to be set.

Table 5-8 Security menu

Item	Details
Change User Password	User Password is set. To set the User Password and clear the User Password, carry out the same procedures as for setting and clearing the Supervisor Password.
Password Check	Sets the password entry timing. The default setting is "Setup". Setup: The password is entered at the time of starting the BIOS setup. Always: The password is entered at the time of booting the system or starting the BIOS setup. Reference: When the Supervisor Password is set, this item will be able to be set.
Boot Sector Virus Protection	Boot Sector Virus Protection function is set. The default setting is "Disabled". Disabled: Virus Protection is disabled. Enabled: Virus Protection is enabled.

Exit Menu

Saving the BIOS settings and exiting the Setup utility are executed.

Table 5-9 Exit menu

Item	Details
Save Changes and Exit	Save the setting, exit the BIOS Setup utility, and reboot the system.
Discard Changes and Exit	Discard the setting, exit the BIOS Setup utility, and reboot the system.
Discard Changes	Discard the settings of changed items.
Load Failsafe Defaults	All the settings are returned to the Core BIOS default.
Load Optimal Defaults	All the settings are reset to the system-dedicated default.
Save Changes to USB Floppy	The settings of the BIOS Setup utility are saved onto a USB floppy disk. This file can be saved only onto the USB floppy disk. Save the settings according to the following procedures. 1) Select this item. 2) Set a DOS formatted floppy disk into the USB FDD. 3) Press the (Enter) key. 4) The setting data is saved on the floppy disk. Reference: 1) Make sure that a DOS formatted floppy disk is used. 2) The file is always saved under the name "SETUP000.BIN". (If a file is already saved, it is overwritten.) 3) If an error occurs, no error message is displayed. 4) If the USB FDD is not connected, this item becomes display only and is not performed. 5)The file can be loaded from only same version of BIOS.
Load from USB Floppy	The settings of the BIOS Setup utility are loaded from the setting data. This cannot be loaded from the setting file of the different version of BIOS. Load the settings according to the following procedures. 1) Select this item. 2) Set a floppy disk including the file "SETUP000.BIN" into the USB FDD. 3) Press the (Enter) key. 4) The setting data is loaded from the floppy disk. Reference: 1) Make sure that a DOS formatted floppy disk is used. 2) Make sure that the floppy is created with "Save Changes to USB Floppy function", and the file name is ìSETUP000.BINî. 3) If an error occurs, no error message is displayed. 4) If the USB FDD is not connected, this item is display only and is not performed.
BIOS Flash	The BIOS is updated. Update the settings according to the following procedures. 1) Select this item. 2) Set the BIOS Image Data floppy disk into the USB FDD. 3) Press the (Enter) key. 4) The BIOS is updated. Reference: 1) Make sure that a DOS formatted floppy disk is used. 2) Make sure that the file name of the BIOS Image Data is "AMIBOOT.ROM". 3) If the USB FDD is not connected, this item is display only and is not performed.

Defaults and Selectable Options

FailSafe Defaults and Optimal Defaults for each item and selectable options are as follows. Some items are not displayed and cannot be changed, depending on the settings of their master items.

Main menu

System Information

Item	Options	FailSafe Defaults	Optimal Defaults
System Overview UUID On Chip MAC Address AMI BIOS Build Date ID/Version Processor Type Speed Memory Size Size	Display only		

System Date / Time

Item	Options	Details
System Date	-	-
System Time	-	-

Advanced menu

CPU Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
CPU Configuration Ratio Status Ratio Actual Value	Display only		

IDE Configuration

Primary IDE Master/Slave

Item	Options	FailSafe Defaults	Optimal Defaults
Primary IDE Master/Slave Device Vendor Size LBA Mode Block Mode PIO Mode Async DMA Ultra DMA SMART Monitoring	Display only		
Type	Auto Not Installed	Auto	Auto
LBA/Large Mode	Auto Disabled	Auto	Auto
Block (Multi-sector Transfer)	Auto Disabled	Auto	Auto
PIO Mode	Auto 0 1 2 3 4	Auto	Auto
DMA Mode	Auto SWDMA0 SWDMA1 SWDMA2 MWDMA0 MWDMA1 MWDMA2 UDMA0 UDMA1 UDMA2	Auto	Auto
SMART Monitoring	Auto Enabled Disabled	Auto	Auto
32Bit Data Transfer	Enabled Disabled	Disabled	Enabled

IDE Detect Time Out

Item	Options	FailSafe Defaults	Optimal Defaults
IDE Detect Time Out (Sec)	0 5 10 15 20 25 30 35	35	35

Super IO Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
Onboard Floppy Controller	-	Disabled	Disabled
Parallel Port Address	Disabled 378 278 3BC	Disabled	378
Parallel Port Mode	Normal Bi-Directional EPP ECP & EPP	(Normal)	Normal
EPP Version	1.7 1.9	(1.9)	(1.9)
ECP Mode DMA Channel	DMA0 DMA1 DMA3	(DMA3)	(DMA3)
Parallel Port IRQ	IRQ5 IRQ7	(IRQ7)	IRQ7
Serial Port 1 Address	Disabled 3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3 3F8/IRQ11 2F8/IRQ10 3E8/IRQ11 2E8/IRQ10 338/IRQ11 238/IRQ10	3F8/IRQ4	3F8/IRQ4
Serial Port 1 Outlet 5V	Enabled Disabled	Disabled	Disabled
Serial Port 2 Address	Disabled 3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3 3F8/IRQ11 2F8/IRQ10 3E8/IRQ11 2E8/IRQ10 338/IRQ11 238/IRQ10	2F8/IRQ3	2F8/IRQ3
Serial Port 2 Outlet 5V	Enabled Disabled	Disabled	Disabled
Serial Port 3 Address	Disabled 3F8 2F8 3E8 2E8 338 238	3E8	3E8
Serial Port 3 Mode	DRW/DM-D TM/DM-D Normal	Normal	Normal

Serial Port 3 IRQ	IRQ3 IRQ4 IRQ5 IRQ7 IRQ10 IRQ11	IRQ11	IRQ11
Serial Port 4 Address	Disabled 3F8 2F8 3E8 2E8 338 238	2E8	2E8
Serial Port 4 IRQ	IRQ3 IRQ4 IRQ5 IRQ7 IRQ10 IRQ11	IRQ10	IRQ10

Hardware Health Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
Hardware Monitoring CPU Fan Speed System Fan Speed CPU Current Temperature System Current Temperature Vcore AVCC +5VSB VBAT +3.3V VCCP +12V	Display only		
Hardware Health Function	Enabled Disabled	Enabled	Enabled
CPU Fan Control	Enabled Disabled	Enabled	Enabled
System Fan Control	Enabled Disabled	Enabled	Enabled
CPU Temperature Alarm	Disabled 70C/158F 75C/167F 80C/176F 85C/185F 90C/194F 95C/205F 75C/167F	Disabled	Disabled
System Temperature Alarm	Disabled 45C/113F 50C/122F 55C/131F 60C/140F 65C/149F	Disabled	Disabled

ACPI Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
ACPI Aware O/S	Yes No	Yes	Yes
ACPI 2.0 Features	Yes No	Yes	Yes
AC Power Recovery	Power Off Power On Last State	Power Off	Power Off

USB Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
Legacy USB Support	Auto Enabled Disabled	Auto	Auto
USB 2.0 Controller Mode	Hi Speed Full Speed	Full Speed	Full Speed
USB Beep Message	Enabled Disabled	Disabled	Disabled

USB Mass Storage Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
USB Mass Storage Reset Delay	10sec 20sec 30sec 40sec	20sec	20sec
Emulation Type	Auto Floppy Forced FDD Hard Disk CDROM	Auto	Auto

PCI/PnP Menu

Item	Options	FailSafe Defaults	Optimal Defaults
Plug & Play OS	Yes No	Yes	Yes
Clear NVRAM	Yes No	No	No
PCI Latency Timer	32 64 96 128 160 192 224 248	64	64
Allocate IRQ to PCI VGA	Yes No	Yes	Yes
Palette Snooping	Enabled Disabled	Disabled	Disabled
PCI IDE BusMaster	Enabled Disabled	Enabled	Enabled
IRQ3	Available Reserved	Available	Available
IRQ4	Available Reserved	Available	Available
IRQ5	Available Reserved	Available	Available

IRQ7	Available Reserved	Available	Available
IRQ9	Available Reserved	Available	Available
IRQ10	Available Reserved	Available	Available
IRQ11	Available Reserved	Available	Available
IRQ14	Available Reserved	Available	Available
IRQ15	Available Reserved	Available	Available
DMA Channel 0	Available Reserved	Available	Available
DMA Channel 1	Available Reserved	Available	Available
DMA Channel 3	Available Reserved	Available	Available
DMA Channel 5	Available Reserved	Available	Available
DMA Channel 6	Available Reserved	Available	Available
DMA Channel 7	Available Reserved	Available	Available

Chipset Menu

NorthBridge Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
Graphics Mode Select	Enabled, 1MB Enabled, 4MB Enabled, 8MB Enabled, 16MB Enabled, 32MB	Enabled, 32MB	Enabled, 32MB
Memory ECC Mode	Enabled Disabled	Disabled	Disabled
Boot Display Device	Auto LCD VGA Both	Auto	Auto

SouthBridge Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
Onboard IDE	Enabled Disabled	Enabled	Enabled
USB Controller	Enabled Disabled	Enabled	Enabled
USB 2.0 (EHCI)	Enabled Disabled	Enabled	Enabled
Onboard LAN	Enabled Disabled	Enabled	Enabled
Onboard LAN Boot PXE ROM	Enabled Disabled	Disabled	Disabled
Maintenance Boot	Enabled Disabled	Disabled	Disabled
Spread Spectrum	Enabled Disabled	Enabled	Enabled

Power Menu

Item	Options	FailSafe Defaults	Optimal Defaults
Power Management/APM	Enabled Disabled	Disabled	Enabled
Suspend Time Out	Disabled 1 Min 2 Min 4 Min 8 Min 10 Min 20 Min 30 Min 40 Min 50 Min 60 Min	Disabled	Disabled
Power Button Mode	On/Off Suspend Disabled	On/Off	On/Off
Hard Disk Drive Time Out	Disabled 1 Min | 15 Min	Disabled	15min
CPU Fan Off In Suspend	Enabled Disabled	Disabled	Disabled
Resume by PME	Enabled Disabled	Enabled	Enabled
Resume by RI	Enabled Disabled	Disabled	Disabled
Resume by Alarm	Enabled Disabled	Disabled	Disabled
Date of Month	Every Day 1 - 31	(15)	(15)
Time (hh : mm : ss)	00:00:00 | 23:59:59	(12:30:30)	(12:30:30)
Resume by Onboard LAN	Enabled Disabled	Enabled	Enabled

Boot menu

Boot Setting Configuration

Item	Options	FailSafe Defaults	Optimal Defaults
Quick Boot	Enabled Disabled	Enabled	Enabled
Silent Boot	Enabled Disabled	Disabled	Enabled
Halt On	All, But Diskette All, But Disk/Key No Errors	All, But Diskette	All, But Diskette
Boot Up Num-Lock	On Off	Off	Off
PS/2 Mouse Support	Auto Enabled Disabled	Auto	Auto
Wait for "F1" If Error	Enabled Disabled	Enabled	Enabled
Hit "DEL" Message Display	Enabled Disabled	Enabled	Enabled
Onboard CompactFlash	Enabled Disabled	Enabled	Enabled

Boot Device Priority

The basic boot priority of the BIOS is as follows.

Priority	Device category
1st Boot Device	Removable Drives
2nd Boot Device	Hard Disk Drives
3rd Boot Device	CD/DVD Drives
4th Boot Device	Other Drives

Details for each category are as follows.

Category	Representative device example
Removable Drives	USB-FDD USB-Memory (FD emulation)
Hard Disk Drives	USB-HDD USB-Memory (HD emulation) SATA-HDD #0 SATA-HDD #1 SCSI-HDD IDE-Device #0 IDE-Device #1
CD/DVD Drives	SCSI-CDROM/DVD USB-CDROM/DVD
Other Drives	Network
Removable Drives	USB-FDD USB-Memory (FD emulation)

Security Menu

Item	Options	FailSafe Defaults	Optimal Defaults
Supervisor Password	Display only		
User Password			
Change Supervisor Password	-----	-----	-----
User Access Level	No Access View Only Limited Full Access	(Full Access)	(Full Access)
Change User Password	-----	-----	-----
Password Check	Setup Always	(Setup)	(Setup)
Boot Sector Virus Protection	Enabled Disabled	Disabled	Disabled

Exit Menu

Item	Options	FailSafe Defaults	Optimal Defaults
Save Changes and Exit	-----	-----	-----
Discard Changes and Exit	-----	-----	-----
Discard Changes	-----	-----	-----
Load Failsafe Defaults	-----	-----	-----
Load Optimal Defaults	-----	-----	-----
Save Changes to USB Floppy	-----	-----	-----
Load from USB Floppy	-----	-----	-----
BIOS Flash	-----	-----	-----

Chapter 6
Device Diagnostics Utility

This chapter explains the function of the Device Diagnostics Utility and describes how to use it.

Function

The Device Diagnostics Utility (DIAG) allows you to run functional tests on the SR-610. You can check on the whole system or individual unit (the main board and the peripheral devices) with the DIAG.

To start the DIAG, press the hot key while the Power On Self Test (POST) is running.

It cannot be started from Windows.

Devices Available for the DIAG

Test Item	Device
CPU	CPU, Main board and CPU
System Board	Main board and controllers
RAM	DIMM, Main board and memory
COM1	Main board and COM1
COM2	Main board and COM2
Drawer (COM3)	Cash Drawer, Main board
DM-D (COM3)	Customer Display, Main board
Touch Panel (COM4)	Touch Panel, LCD and Main board
LPT	Main board and LPT
HDD	HDD, Main board and SATA
RAID	HDD, Main board and RAID
Video	LCD, CRT(RGB) Main board, Video and Memory
LAN	Main board and LAN
USB	Main board and USB0, 1, 2, 3, 4, 5
Operating the DIAG	Keyboard/Mouse, Main board and PS/2

Devices Not Available for the DIAG

Device	Test Methods
MSR unit	Windows use
60-key POS Keyboard	USB devices cannot be tested.
PCI card	---
USB-FDD	USB devices cannot be tested.
USB-CDROM	USB devices cannot be tested.
CompactFlash	Because the CompactFlash card is connected to the USB, it cannot be tested

Preparation

Before executing a device test, set the VIOS and connect each connector.

Refer to the following.

- Connect the PS/2 keyboard and the mouse.
- When executing the enhanced test of the HDD and the Drawer, confirm that a Password is set by the Security Menu the BIOS.
- When testing the COM1/2/4(Touch Panel) and the LPT, confirm that each port of the Super IO Configuration is an enable setting (initial value).
- When executing the enhanced test of the COM1 and the LPT, connect the exclusive loop back connector to each connector.
- When executing the standard test of the DM-D (COM3) and the Drawer (COM3), confirm that the Serial Port3 of the Super IO Configuration is an enable setting (initial value). And when executing each enhanced test, confirm that the Serial Port3 Mode is set the DRW/DM-D setting.
- When executing the enhanced test of the DM-D, connect the DM-D with the DM-D port. At this time, confirm that a communicate condition of the DM-D is specified correctly.
- When executing the enhanced test of the Drawer, connect the Drawer cable to the exclusive connector.
- When executing the enhanced test of the Fast Ethernet, connect a exclusive loop back connector or connect a cable with a Network Hub and so on.
- When executing the standard test of the USB, confirm that the port setting is an enable setting by the South Bridge Configuration at the Chipset Menu of the BIOS. Also, confirm that the USB 2.0 (EHCI) setting is an enable setting (initial value).
- When executing the enhanced test of the BIOS, connect the exclusive loop back connector or the USB equipment with each USB port.
- When printing the test result, connect the TM Printer with the COM2.
- It is possible to output the test result to the printer which connected with the LPT, too.

How to Do the DIAG Test

How to Start the DIAG

1. Connect the PS/2 keyboard and mouse to the SR-610.

   Note:
   A USB keyboard and a USB mouse cannot be used.

2. Turn on the SR-610.

3. A message "Press Ctrl T to run EPSON DD" is displayed when the POST starts. Hold down the Ctrl key and press the T key.

4. The DIAG will start.

   Note:
   Every time the DIAG is started up, all devices (test items) are selected for the standard test by default.

5. After the test has completed, the result is displayed on the lower right of the screen.

How to Exit the DIAG

Click on the EXIT button with the PS/2 mouse, or press the F10 key on the PS/2 keyboard. The SR-610 will exit the DIAG and reboot.

Using the Keyboard

Both the PS/2 mouse and the PS/2 keyboard can be used to operate the DIAG. When using the keyboard, refer to the table below to know what kind of functions are available with the keys.

Key	Description
↑,↓,→,←	Selects the test icon. Refer to the NOTE given below.
Tab	
Shift +Tab	
Space	Selects or deselects the standard test or the enhanced test of each device.
Enter	Finalize the input of the Password, the test counter, the character and the number.
+	Selects the test items to be executed collectively
-	Deselects the test items to be executed collectively
Esc	Cancels the test
F1	Starts the test
F10	Exits the DIAG and reboots the SR-610

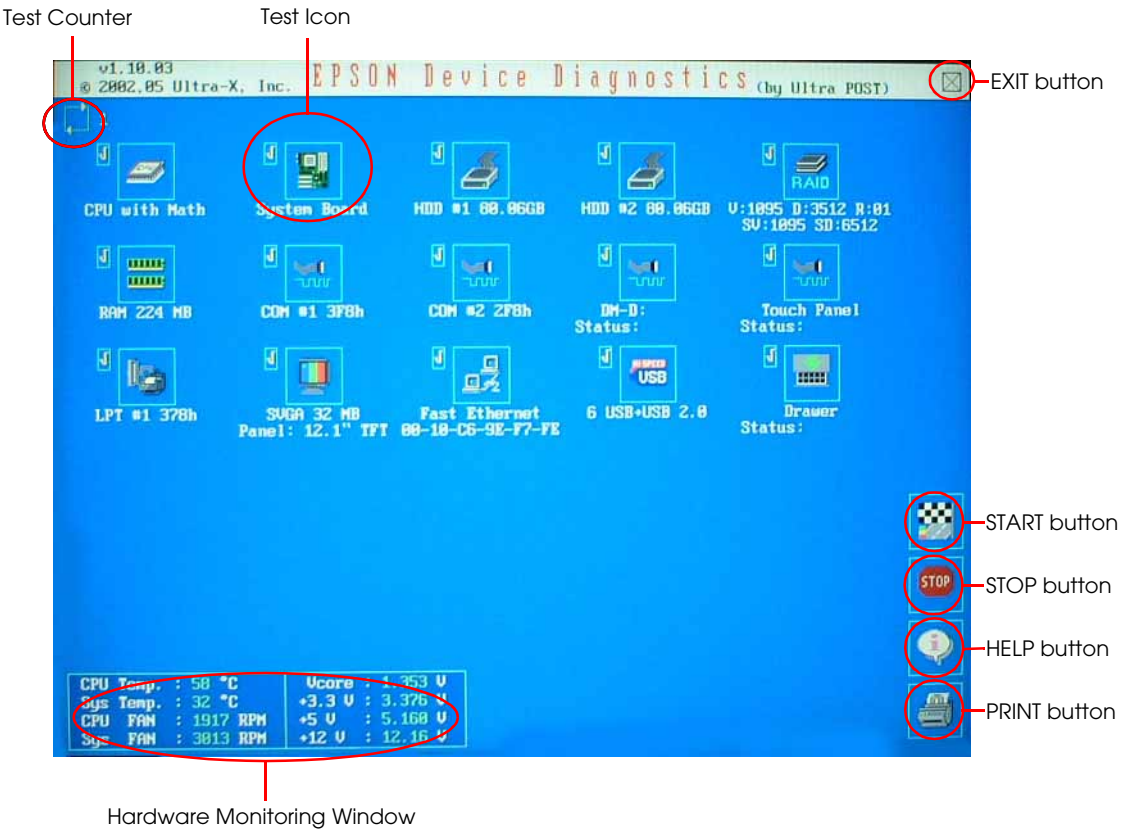
Note
A USB keyboard and a USB mouse cannot be used.

When operating the keyboard, press the Space key before pressing the arrow keys to select the test icon. Without pressing the Space key, you cannot use the arrow keys for the selection.

The PS/2 mouse is needed to set the test counter.

Explanation of the Screen

The section provides explanation of the icons, buttons, and windows displayed on the DIAG screen and describes their functions.



❑ Test Counter

Sets the number of executions of the selected test. Follow the procedure below to set the number.

1. Click on the Test Counter icon.

2. Test Counter setting window will appear on the lower right of the screen.

3. Enter your desired number of executions with the numeric keypad.
4. Press the Enter on the keyboard to set the number.

Note:

- Available number of executions is 1 through 100 times. If numbers greater than 100 are entered, the number of executions is set to 100 times.
- If you enter 0 (zero), the selected test is repeated until you click on the STOP button or press the Esc key.
  The number of times of the test is not displayed at the test counter icon.

❑ Hardware Monitoring Window

Displays statuses of the CPU and the SR-610 system. CPU and Internal temperature, power supply voltages, CPU fan and Systemfan rotation speed are checked at regular intervals and the results are displayed. The following are explanations of the items on the window.

CPU Temp	Displays the temperature of the CPU.	Vcore	Displays the actual power supply voltages.
Sys Temp	Displays the temperature of the SR-610 main board.	+3.3V	
CPU Fan	Displays the rotation speed of the CPU fan.	+5V	
		+12V	

Note:
If it cannot be monitored, "-"is displayed.

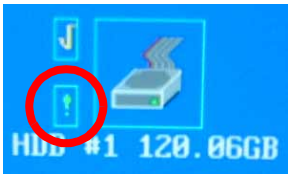
❑ Test Icon

Represent the components or devices to be selected for the test. After selecting the icon, selecting the test type (standard or enhanced) can be made on the icon box. The test results are also displayed on the icon box.

- Selecting the icon — Click on the icon with the mouse or select the icon using the arrow keys on the keyboard and press the Space key.
- Selecting the test type — If the device can execute both the standard test and the enhanced test, the test type can be switched by clicking the icon or press the Space key after selecting the icon.

[√] Standard test
[!] Enhanced test

(Selecting Standard Test)



(Selecting Enhanced Test)

- Deselecting the Test Icon

When the icon is deselected, it is displayed in gray and the check mark disappears.

- Test Result

  The test result is displayed on the right side of the icon box.“Pass” is displayed when the component or device is diagnosed as normal, and “Fail” is displayed if it is detected as abnormal.

(Normal)

(Abnormal)

Note:
See page 6-13 for more information on the test result .

If you have set number of executions for the test by the Test Counter, number of normal results and abnormal results are displayed on the icon box.

(Normal)

(Abnormal)

Test Icons to be Displayed

The test icons displayed on the DIAG screen differ according to the setting condition such as BIOS setting or number of installed hard disk drives.

Test Item	Condition to be Displayed
CPU	Always displayed
SystemBoard	Always displayed
RAM	Always displayed
COM1	Not displayed if COM1 is disabled
COM2	Not displayed if COM2 is disabled
Printer (COM3)	Always displayed
DM-D (COM4)	Always displayed
COM5	Always displayed
COM6	Always displayed
LPT	Not displayed if the LPT is disabled
HDD	Number of the icons corresponds to the number of installed hard disk drives and CompactFlash cards. Not displayed when they are not connected.
RAID	Always displayed
Video	Always displayed
LAN	Not displayed if Ethernet is disabled
Sound (AC97)	Not displayed if the Sound is disabled
USB	Not displayed if USB is disabled
Drawer	Always displayed

❑ Operation Buttons

The following operation buttons are displayed on the DIAG screen.

Operation Button	Description
START	Executes the selected test.
STOP	Cancels the test during execution of the test.
HELP	Displays the operating instructions.
PRINT	Prints out the test result by the printer.
EXIT	Exits the DIAG and reboots the SR-610.

Note:
The PRINT button tries printing to the external printer (LPT) first. When the external printer is not connected or when printing fails due to an error, the test result is printed out from the TM printer connected to COM2.

❑ Executing the Password-Protected Tests

The Write test of the hard disk drive (RAID) and the Drawer Kick Out test are password-protected. You need to set the password in the Supervisor Password of the BIOS Setup to perform those tests.

Follow the procedure below to execute the tests.

1. After selecting the HDD or Drawer test icon, select the enhanced test.

Note

See page 6-13 for information on what kind of tests are available by the standard and enhanced test.

2. A dialogue box asking for your password will appear on the lower right of the screen.

3. Type in your password in the box and press the Enter key. The password should be the same as the Supervisor Password set in the BIOS Setup.

Note

- If the Supervisor Password has not been set, the HDD Write test and the Drawer Kick Out test cannot be performed.
- No password is set at the factory, so you have to set the Supervisor Password in advance.
- See Chapter 5 “BIOS” section for the information on how to set the Supervisor Password.

4. The password dialog box will disappear and a "!" mark (the enhanced test is chosen) is displayed on the left side of the test icon.

Device Diagnostic Test

The Device Diagnostic Utility provides the following two test methods.

- Standard test of the whole system (all devices)
- Standard/Enhanced test of individual device

Whole System Test

Perform the test following the procedure below.

1. Confirm that check marks are displayed on all of the test icon boxes.

   Note
   Every time the DIAG is started up, all devices (test items) are selected for the standard test by default.

2. Click on the START button or press the F1 key to execute the test.
   To cancel the test, click on the STOP button or press the Esc key.

   After the test has completed, the result is displayed on the lower right of the screen.

(Normal)

(Abnormal)

Individual Test

Perform the test following the procedure below.

1. Cancel the device for executing the chosen test

   Note:
   See page 6-3 for the Cancellation method.

2. Select the test icon of the device to be tested. And then select the test type between the standard and the enhanced.

3. Click on the START button or press the F1 key to execute the test.
   To cancel the test, click on the STOP button or press the Esc key.

4. After the test has completed, the result is displayed on the selected icon box.

   Note:
   See page 6-7 for the information on how to select and deselect the device and the test type.

Printing the Test Result

Click on the PRINT button to print out the result.

Note:
The test result data is first sent to an external printer (LPT) to be printed out. When no external printer is detected or when printing fails due to an error, the test result is printed out from the TM printer connected to COM2 port.

The unclear printout is printed at first, but it prints out when the communication condition is detected automatically. It is not the error of the printer.

The output descriptions are as follows.

Item	Description
Title	<Example> ********** EPSON Device Diagnostics System Test Result **********
Date	<Example> Date: 2005/01/01 01:23:45
MAC Address	Prints the peculiarly MAC address of the SR-610Example of output MAC:01-23-45-67-89-AB
The test result of each item	Output the executed test item and the test result. As for the test item name, the name of the displayed test icon is displayed. The test result is as follows. Pass: NO problemFail Fail: Error is occurred. "-": The test is not executed.
Example of output	xxxxxxxxxx ********** EPSON Device Diagnostics System Test Result ********** Date: 2005/01/01 01:23:45 MAC: 01-23-45-67-89-AB CPU with Math : Pass System Board : Pass | | | COM #1 3F8h : Fail | | | Drawer : -

Details of the Device Test

The following are details of the device test.

❑ CPU with Math

Executes a test of the CPU.

Standard Test	Enhanced Test
Protect mode test	---
Numeric processor abbreviated test	

The test result is displayed as "Pass" or "Fail" on the right side of the icon box.

❑ System Board

Executes a functional test of the main board.Tests of the interfaces are not included. The interfaces can be checked individually by selecting the corresponding test icons.

Standard Test	Enhanced Test
DMA controller test	---
Interrupt controller test	
Timer test	
RTC (CMOS) test	
Legacy Beep test	

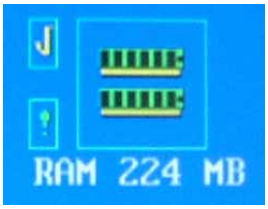
The test result is displayed as "Pass" or "Fail" on the right side of the icon box.

❑ RAM

Execute a test of memory-related items. The standard test executes the test for the Base Memory but the enhanced test executes the test for the Extended Memory except items shared to the VRAM.

Standard Test (Base Memory 1 MB only)	Enhanced Test (All areas of the memory)
Read/Write test	←
Stuck Fault test	←
Data Bus test	←

The test result is displayed as “Pass” or “Fail” on the right side of the icon box.The amount of memory from which the Video RAM is subtracted is displayed under the test icon.



Note

The VRAM is tested by the SVGA (Video).
Canceling the RAM test is not possible since the test is performed in interrupt prohibit mode.
The test can be stopped but the reaction becomes dull for the squeeze ban mode.

❑ COM1

Executes a test of the COM 1 port. The standard test checks from the port to the controller. The enhanced test allows you to perform a communication test with a loopback connector.

Standard Test	Enhanced Test
Type Detection test	Loopback test Connect a loopback connector and perform a communication test.
Register test	

The test result is displayed as “Pass” or “Fail” on the right side of the icon box. The COM port number and the system address are displayed.

note

- Fixed addresses (COM1 3F8h) are used to assign the system resources.
- COM1 test icons are not displayed if they are disabled in the BIOS setting.

The pin layout for the external loopback connection is shown below.

Signal Name	Pin No.	Description
RxD <--> TxD	2 <--> 3	
DTR <--> DSR	4 <--> 6 <--> 9	
RTS <--> CTS <--> RI	7 <--> 8	
DCD <--> GND	1 <--> 5	Make this connection when using the LED to check the +5 and +12 V. The polarity is as shown below. Be sure to insert a resistance. Pin 1: Positive Pin 5: Negative

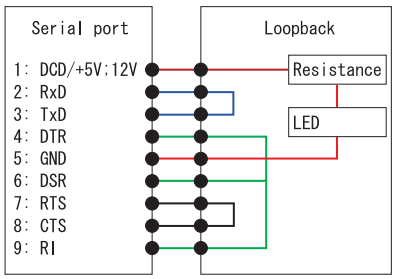
GPI038(COM1) of the BIOS Adbance :The D5V output can be controlled by the High Active.

The DC5V output is set by the Serial Port1 Outlet 5V of the BIOS. When the connection loop back connector is equipped with the LED for the power output confirmation, it is possible to test all together.

Note:
When the Serial Port1 Outlet 5V of the BIOS is Enable, 5V is output at taking power on. Be careful not to make a terminal-circuit.

The pin layout for the external loopback connection is shown below.

Signal Name	Pin No.	Description
RxD <--> TxD	2 <--> 3	
DTR <--> DSR	4 <--> 6 <--> 9	
RTS <--> CTS <--> RI	7 <--> 8	
DCD <--> GND	1 <--> 5	Make this connection when using the LED to check the +5 and +12 V. The polarity is as shown below. Be sure to insert a resistance. Pin 1: Positive Pin 5: Negative



❑ COM2

Executes a test of the COM 2 port. The standard test checks from the port to the controller. The COM Port2 does not correspond to the enhanced test to use as the test result output place.

Standard Test	Enhanced Test
Type Detection test	–
Register test	

The test result is displayed as “Pass” or “Fail” on the right side of the icon box. The COM port number and the system address are displayed.

Note

- Fixed addresses (COM2 2F8h) are used to assign the system resources.
- COM2 test icons are not displayed if they are disabled in the BIOS setting.

❑ DM-D (COM3)

Executes a test of the Customer Display.The standard test checks the controller of the COM 3 port used for the display. The enhanced test allows you to perform a actual display test.

Standard Test	Enhanced Test
Type Detection test	DM-D display test
Register test	

The test result is displayed as “Pass” or “Fail” on the right side of the icon box. And the DM-D status is displayed below the test icon.

Note:

- Fixed addresses (COM2 2F8h) are used to assign the system resources.
- Even if the Serial Port3 Address of the BIOS is Disabled, the test icon is displayed.

The descriptions displayed on the customer display by the enhanced test are as follows.

```
Display Module Test
*************Device Diagnastics*************
```

The descriptions displayed on the customer display by the enhanced test are as follows.

Test result (Condition)	**Status**
Serial Port3 is Disabled	Non-displayed
Serial Port3 mode is except the DRW/DM-D setting	Disabled
Un connecting the customer display	Disabled
Off the power of the customer display	Disabled
Normal operation	Ready

Note:

The enhanced test is executed on condition that the Serial Port3 Mode is set the DRW/DM-D by the BIOS.

Communication conditions : 9600bps,8-Bit, None-Parity

❑ Drawer

Executes a test of the Drawer.The standard test checks the controller of the COM 3 port on the main board. The enhanced test allows you to perform a Drawer Kick Out test.

Standard Test	Enhanced Test
Type Detection test	Kick Out testt
Register test	

The test result is displayed as “Pass” or “Fail” on the right side of the icon box.

Note:

- Fixed addresses (COM2 2F8h) are used to assign the system resources.
- Even if the Serial Port3 Address of the BIOS is Disabled, the test icon is displayed.

The result of the enhanced test is displayed under the icon box. The contents are as follows.

Test result (Condition)	Status
Drawer open	Low
Drawer close	High
Error occurred	Non-displayed

Note:
The enhanced test is executed on condition that the Serial Port3 Mode is set the DRW/DM-D by the BIOS.

- The enhanced test requires your password to be entered. See page 6-10.

❑ Touch Panel(COM4)

Execute the test of the touch panel. The standard test executes the test to the COM4 port controller of the main board. The enhanced test executes the input test of the Touch Panel.

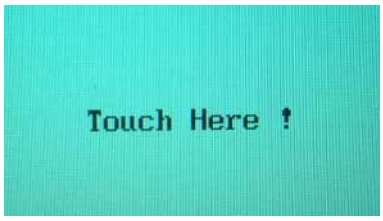
Standard Test	Enhanced Test
Type Detection test	Touch Panel input test
Register test	

The test result is displayed "Pass"/"Fail" on the test icon box.

Note:
The address (2E8h) is used for the system resource assignment.
Even if the Serial Port4 Address of the BIOS is Disabled, the test icon is displayed.

The procedure of the enhanced test is as follows.

1. The window which requires a screen touch is displayed in the lower right of the screen.



2. Input (touch) the entry window.

3. When regulation time (about 10 seconds) pass after the entry window is displayed. when there is not replaying even if it waits, when input (touch) is not done, when there is no replaying even if input is done, in these case become a time-out error. When the return value (the coordinates value which the screen is inputted (touched)) is get, it become moral ending

The enhanced test result (the display status) is displayed under the icon box. The contents are as follows.

Test Result	Status
T-OutErr	Reset timeout error
ResetErr	Reset error
Diag Err	DIAG timeout error
Self Err	Self test error
ROM Err	RAM error
RAM Err	RAM error
HW Err	Hardware error
No touch	Time-out error (When regulation time (about 10 seconds) pass after the entry window is displayed.)
O.K.	
Unknown	Unknown error

Note:
Communication conditions : IO Address- 2E8h, IRQ11, 9600bps,8-Bit, None-Parity, 1 Bit, None-flow.
Make the communication conditions as follows.

Communication condition	Setting
I/O address	2E8h
IRQ	IRQ11
Transfer rate	9600bps
Data bit length	8-bits
Parity	None
Stop bit	1-bits
Following control	None

❑ LPT

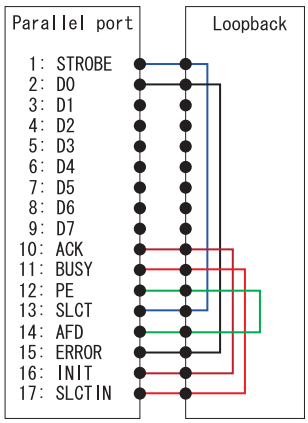
Executes a test of the LPT port. The standard test checks the LPT port controller. The enhanced test allows you to perform a communication test with a loopback connector.

Standard Test	**Enhanced Test**
Type Detection test	Loopback test Connect a loopback connector and perform a communication test.
Register test	

The test result is displayed as “Pass” or “Fail” on the right side of the icon box. And the LPT port number and the system address are displayed.

The pin layout for the external loopback connection is shown below.

Signal Name	**Pin No.**
STROBE<--> SLCT	1 <--> 13
D0 <--> ERROR	2 <--> 15
ACK <--> INIT	10 <--> 16
BUSY <--> SLCTIN	11 <--> 17
PE <--> AF	12 <--> 14



Check the D1 through the D7 by connecting an external printer to the LPT port and making a test print.

❑ HDD (CF)

Executes a test of the hard disk drive and the CompactFlash. The number of HDD icons is the same as the number of installed hard disk drives and each drive can be checked individually.
The standard test checks the controller on the main board and performs a Read test. The enhanced test allows you to perform both Read and Write tests.

Standard Test	Enhanced Test
IDE Controller test (Access test to the Status Register)	Read and Write tests of the hard disk drive
Ready test from the hard disk drive	

The test result is displayed as "Pass" or "Fail" on the right side of the icon box. And the LPT port number and the system address are displayed.

⚠WARNING

When executing a enhanced test, HDD data is deleted.

HDD Number and Connection Drives

Connected Drive	Test Icon
No connection	Not displayed
SATA-0 only	HDD #1 :SATA-0
SATA-1 only	HDD #1 :SATA-1
CompactFlash only	HDD #1 :CF
SATA-0 and CompactFlash	HDD #1 :SATA-0 HDD #2 :CF
SATA-1 and CompactFlash	HDD #1 :SATA-1 HDD #2 :CF
SATA-0 and SATA-1	HDD #1 :SATA-0 HDD #2 :SATA-1
SATA-0 , SATA-1 and CompactFlash	HDD #1 :SATA-0 HDD #2 :SATA-1 HDD #3 :CF

Note:

- IDE interface performs a test of Primary IDE Master. The CompactFlash operates in True IDE Mode.
- The enhanced test requires your password to be entered. See page 6-10.
- The enhanced test takes a lot of time. It will take several hours to test a 120 GB hard disk drive.

❑ RAID

The standard test checks the RAID controller on the main board and acquires data from the RAID controller.

Standard Test	Enhanced Test
Data acquisition from the RAID controller	---
Controller test (Access test to the Status Register)	
Ready test from the hard disk drive	

The following data can be acquired from the RAID controller.

Note:
The enhanced test requires your password to be entered. See page 6-10.

❑ Video

Executes a test of video-related items. Checks the controller on the main board and the display port, and performs a LCD displaying test.

Standard Test	Enhanced Test
Controller test	---
VRAM test	
Display test (Displayed color, text, and graphics)	

During the test, texts and graphics are displayed on the LCD.The test result is displayed as “Pass” or “Fail” on the right side of the icon box.And the size of the VRAM and the type of the connected LCD unit are displayed as shown below.

Note:
The texts and graphics are displayed on the LCD with changing contents and color. This is intended for your visual check and not reflected in the test result. The displaying test for an external display is performed if the display is detected during the POST.

❑ LAN

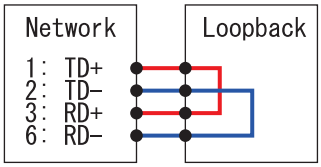
Executes a test of the LAN port. The standard test checks the LAN port controller on the main board. The enhanced test allows you to perform a communication test with a loopback connector.

Standard Test	Enhanced Test
Controller test	Loopback test Connect a loopback connector and perform a communication test.
Network Detection	

The test result is displayed as “Pass” or “Fail” on the right side of the icon box.And the Mac address is displayed as shown below.

The pin layout for the external loopback connection is shown below.

Signal Name	Pin No.
TD+<--> RD+	1 <--> 3
TD- <--> RD-	2 <--> 6



❑ USB

Executes a test of the USB port and the controller.The standard test checks the USB port controller on the main board. The enhanced test allows you to perform a communication test by connecting a USB device to the USB port on the side of the IM-700.

Standard Test	Enhanced Test
Register test	Loopback test Connect a USB device and perform a communication test.

The test result is displayed as "Pass" or "Fail" on the right side of the icon box.And the USB setting information is displayed as shown below in the standard test.

Note:
The USB test icon is not displayed if USB is disabled in the BIOS setting. And when EHCI setting is enabled, USB 2.0 is not displayed.

After the enhanced test has completed, the port numbers are displayed as shown below.

The colors of the displayed port numbers represent the test result.

Normal	Green
Error	Red
Not detected	Gray

The loopback test can be performed by connecting a USB device.The USB ports that can be used for the test are shown in the table below.

Port No.	Location	Availability for the Test
USB-1	Connector on the rear of the side surface of the IM-700	O
USB-2	Connector on the rear of the IM-700. A USB hub is used.	X
USB-3	Connector on the front of the side surface of the IM-700.	O
USB-4	For a powered USB board. When it is not connected, the number is displayed in gray.	---
USB-5	POS controller in the LCD unit	---
USB-6	For the exclusive TM printer. When it is not connected, the number is displayed in gray.	---

- PS/2

  The DIAG does not support the PS/2. Checking of the PS/2 can be made by checking the operating performance of the connected PS/2 keyboard or mouse.

Chapter 7
How to Use RAID

The SR-610 has a RAID controller on the main circuit board. The RAID system on the model with 2 hard disk drives enables the system to operate continuously and avoid loss of data, which improves the security.

This chapter has the following contents:

- ❑ What is RAID? — Describes the basics of RAID.
- ❑ SR-610 RAID System — Describes detailed information about the SR-610 RAID system.
- ❑ Settings before Use — Describes the settings before you use RAID.
- ❑ Using the RAID system — Describes how to use RAID.
- ❑ Failures and determining the failed HDD — Describes corrective actions when an error occurs due to hard disk failure.
- ❑ Building RAID — Describes the procedure of rebuilding RAID in cases such as HDD replacement.
- ❑ RAID BIOS — Describes the basics of RAID BIOS.
- ❑ GUI utility — Describes how to install the GUI utility and basic functions of the GUI utility.
- ❑ RAID Event Watch tool — Describes the functions and settings of the RAID Event Watch tool.

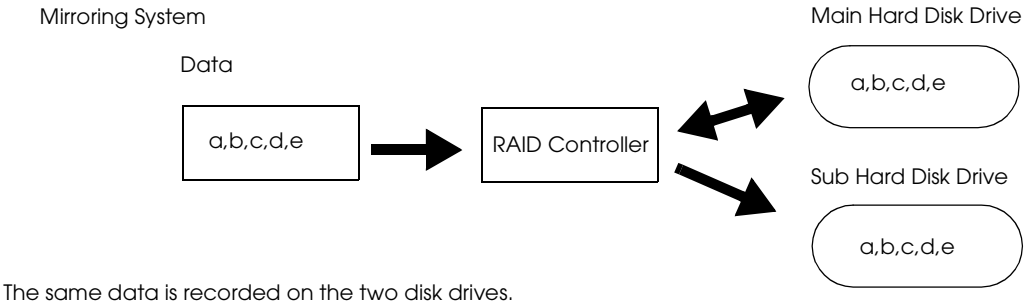
What is RAID?

RAID is a disk subsystem that employs two or more ordinary hard disk drives in combination for fault tolerance and performance. The SR-610 supports RAID 1 which provides for disk mirroring. In a RAID system using mirroring, all data in the system is written simultaneously to two separate hard disks within the same system. Since all the data is on the second drive, it is ready to use if the first one fails. This ensures stability of computer operations, decreasing the likelihood of data loss due to hard disk failure.

Note

The disk mirroring is intended only for backup purposes. It cannot be used for restoring lost data or recovering from errors.

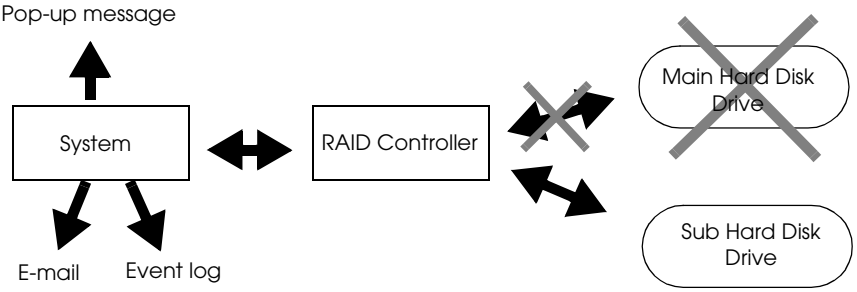
If both of the two hard disk drives fail, or the system fails, the backup function is disabled.



The same data is recorded on the two disk drives.
When reading data, the data comes from the main disk drive.

The SR-610 RAID system records the same data on the main and sub hard disk drives, and reads the data from the main drive. In the event a failure occurs in the main drive, the sub drive automatically takes over. In that case, the sub drive can duplicate error messages if automatic e-mail alerts, pop-up message boxes, or the recording event log function has been enabled.

When the Main Hard Disk Drive Fails



The controller stops accessing the main drive and starts to use the sub drive as the main immediately after the main drive fails.

When one of the two disk drives is replaced, the system restructures RAID in the background. The system can run applications while performing the background task.

There is no difference in user operations between using two hard disk drives and using one drive.

To use the system with RAID1, two hard disk drives must be configured for mirroring in the RAID BIOS.

Note

The two hard disk drives to be used for the mirroring must be the same model and have the same capacity.

Array Build

To use RAID, RAID arrays for the two hard disk drives must be configured. The configuration can be made by the RAID BIOS. The array setup for the SR-610 RAID system is not done at the factory, and it must be done by the customers.

The synchronization of writing on two disks is automatically checked at regular time intervals.When an out-of-sync status is detected, rebuilding the array is performed by making a duplicate copy of the logical master drive as the logical second drive. All of the operation is carried out automatically without interrupting user operations. The status can be checked by the RAID BIOS or GUI utility.

If one of the two hard disk drives fails, the system can continue to operate using the second one. Error messages for the first drive failure can be displayed if the corresponding setup is made by GUI utility (Critical/Dropped). When the system is turned ON for the first time after the main disk is switched, the RAID BIOS detects the status and the start-up sequence is stopped for a brief period of time before running Windows.

RAID Status and Error Detection

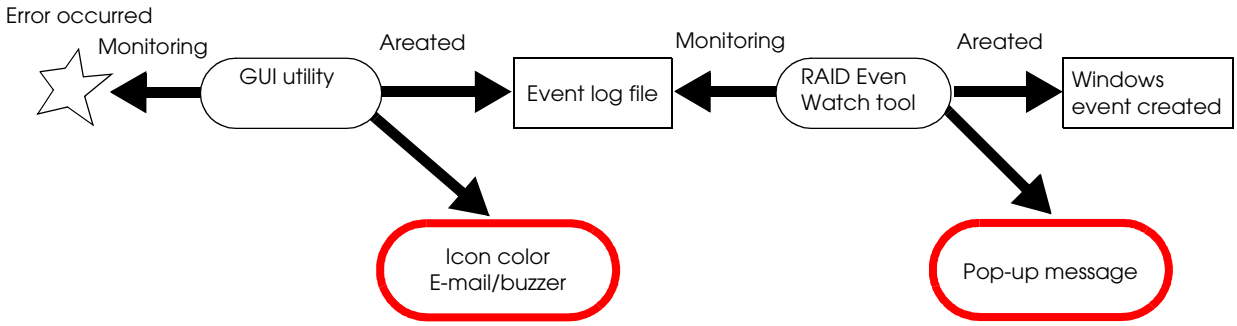
- ❑ Critical/Dropped — The hard disk drive is at fault
- ❑ Rebuild — Rebuilding the arrays
- ❑ Sync — Checking the synchronization of the two disks
- ❑ Current — The system is operating normally

Detecting RAID errors are made by the following methods.

- ❑ During system startup — Errors can be detected by the RAID BIOS
- ❑ During Windows runs
  Various real-time alerts are available by GUI utility. The GUI utility also allows you to check the operational status.
  Available alerts and error checking settings: E-mail, Coloring of tray icon, Sound, Event log recording
  Use the RAID Event Watch tool to display popup messages in front of an application.

Although the system can operate normally with one hard disk after the other one fails, note that there is no more protection against another hard disk failure. It is recommended to recover the mirroring function as soon as possible by repairing or replacing the failed hard disk drive.

Detecting errors after Windows starts up is performed as shown below.



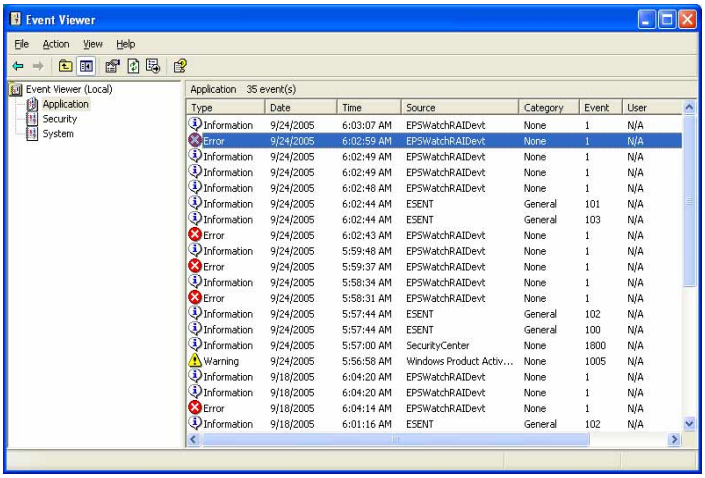
Error Detection Functions of Utility

The following error detection functions are available through the GUI utility and the RAID Event Watch tool.

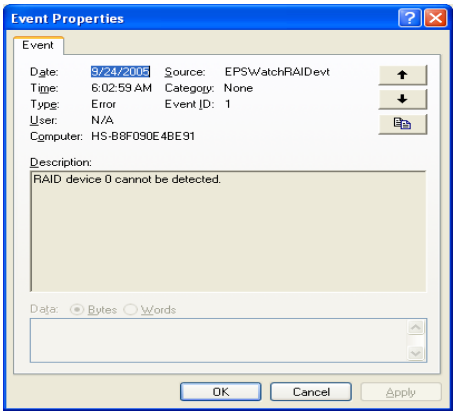
Alerting Method	Description	Default	Remarks	Tool	Refer to Page
Color of the task tray icon	The color of SATARaid icon on the task tray changes when an error occurs during operation under Windows.	Information Level	Windows task tray is used. So, this cannot be seen when making the window go full-screen.	GUI utility	page 7-42
Pop-up message box	A pop-up message box is displayed when an error occurs during operation under Windows.	Information Level	This cannot be seen when making the window go full-screen.	GUI utility RAID Event Watch tool	page 7-17
E-mail	An e-mail message to announce the occurrence of an error is automatically sent to a specified address during operation under Windows.	Information Level	Can be directed to a particular administrator in a different place.	GUI utility	page 7-13
Sound	Occurrence of an error is indicated by a sound (beep or any other sound) during operation under Windows.	Warning Level	The sound comes from the speaker.	GUI utility	page 7-16

Notification of Event

When the GUI utility and the RAID Event Watch tool are running, information is sent to the Event viewer of Windows.

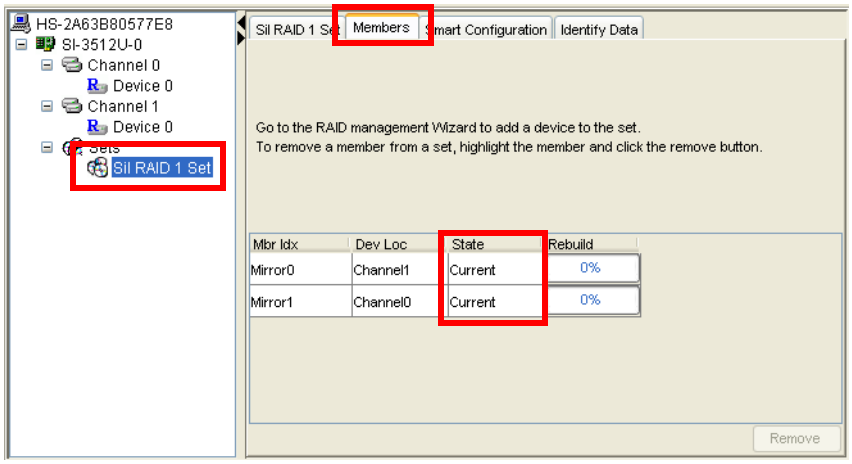


Click on the **Event** tab to display the detailed information on each event.



Checking the RAID Status

The GUI utility allows you to check whether the hard disk drives are operating normally under the RAID system.
Start up the GUI utility and click on **Sets and Sil RAID 1** Set in the device screen. And click on the **Member** tab on the information screen.



When Current is displayed on the State column for both the Mirror 0 and 1, it indicates the hard disks are operating normally.

Indications on State column

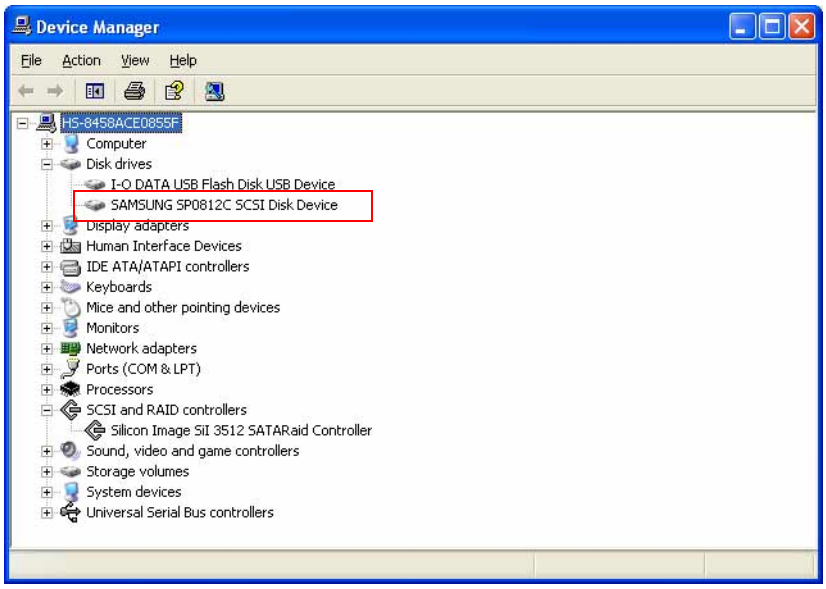
Current	The system is operating normally
Rebuild	Rebuilding the arrays
Dropped	The hard disk drive is at fault

Note
Do not use the RAID Manager in the GUI utility to build or delete RAID because it is made by the RAID BIOS.

Windows Recognition

Even if two hard disk drives are installed, Windows recognizes them as one when RAID is established.

When RAID is established, the following device is displayed in the Windows 2000 Device Manager.



SR-610 RAID System

The SR-610 RAID system is configured with the following devices, system and utility.

❑ RAID controller	Sil3512 (Silicon Image) is contained on the main board.
❑ Two hard disk drives	SerialATA with 80 GB or more (The two disks are exactly the same.)
❑ RAID BIOS	Builds and deactivates RAID. Performs operational checks at power-on. When setting up RAID using the RAID BIOS, a PS/2 keyboard is required.
❑ GUI utility	Operates under Windows. Checks the RAID operating status, detects a malfunction of hard disk drive, and performs error notifications by event log, e-mail and etc. The detecting level can be specified. The SR-610 RAID system does not come installed with the GUI utility. It must be installed by the user as necessary.
❑ RAID Event Watch tool	Operates under Windows. Monitors events of the GUI utility and displays popup messages. Also notifies events of the GUI utility as event logs for Windows.

Settings before Use

The array setup for the SR-610 RAID system is not done at the factory, so it must be done by customers.

You need to install the GUI utility and RAID Event Watch tool if you want to let it detect errors and confirm the status.

Array Build

Build the array. (See page 7-29.)

Installation

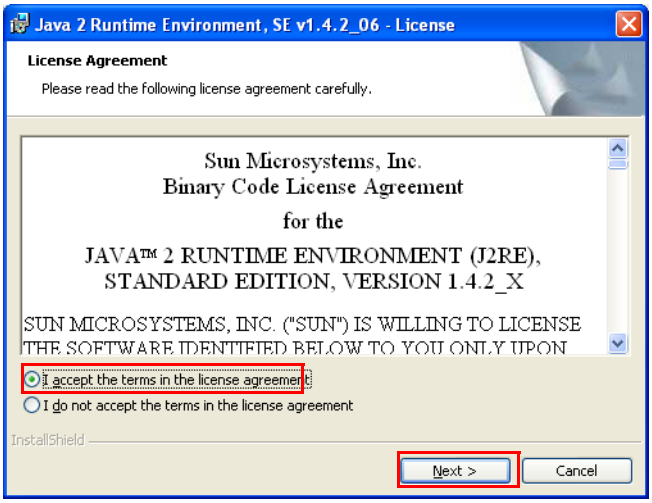
Install the J2RE and the GUI utility that are copied in the hard disk drive to use the GUI utility.

Installing J2RE

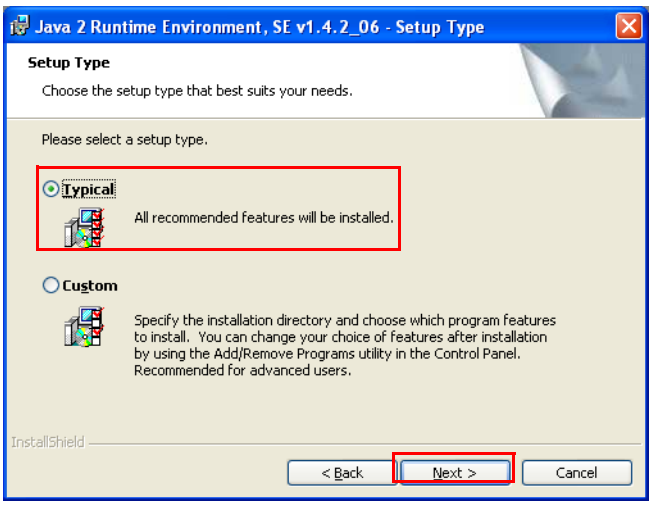
To use the GUI utility, you need to install J2RE first. Follow the steps below to install J2RE.

1. Execute Backup\SATARAID\Tool\J2RE-1_4_2_06-windows_i586-p.

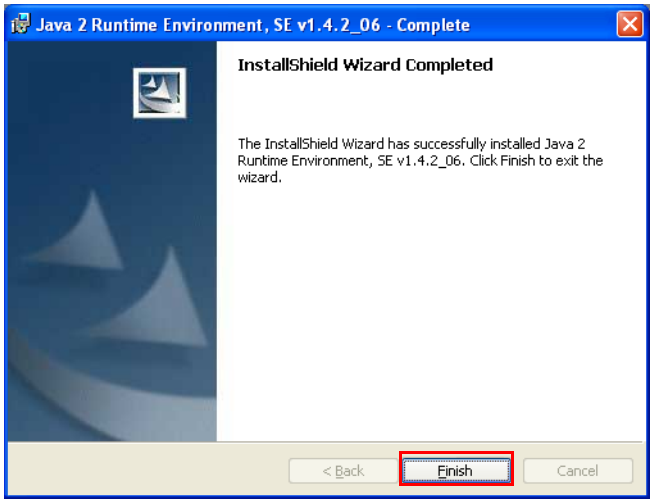
2. The “License Agreement” screen appears. Select “I accept the terms in the license agreement,” and click **Next**.



3. The “Setup Type” screen appears. Select “Typical,” and click **Next**.



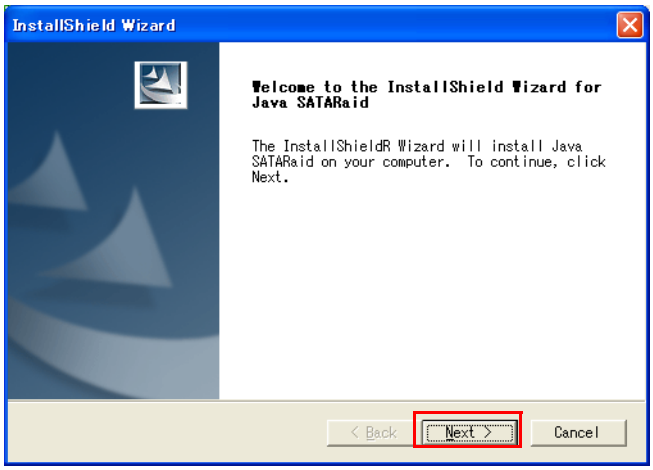
4. The “InstallShield Wizard Completed” screen appears. Click **Finish**.



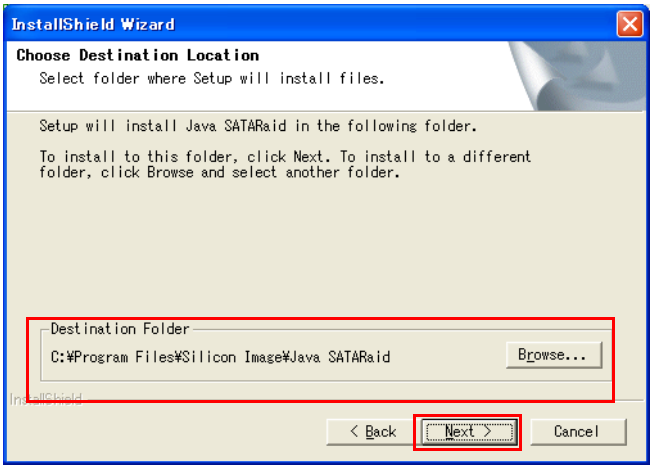
Installing the GUI utility

Follow the steps below to install the GUI utility.

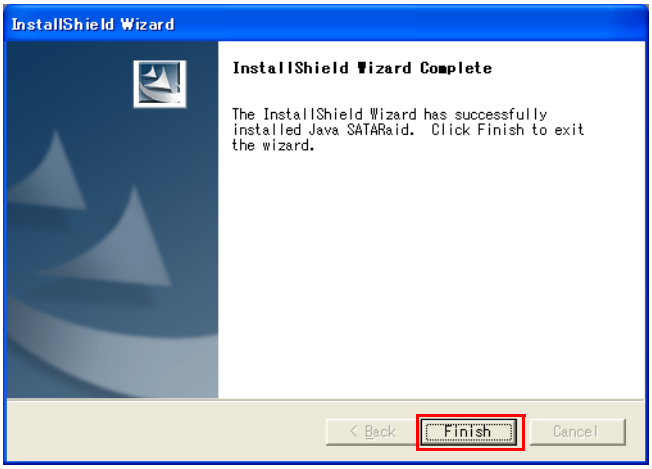
1. Execute Backup\SATARAID\Tool\Java SATARaid._GUI-v113.
2. "Welcome to the InstallShield Wizard for Java SATARaid" screen appears. Click **Next**.



3. The "Choose Destination Location" screen appears. Specify a place to save the files, and click **Next**.



4. The “InstallShield Wizard Completed” screen appears. Click **Finish**.



5. Reboot the SR-610.

E-mail Setting

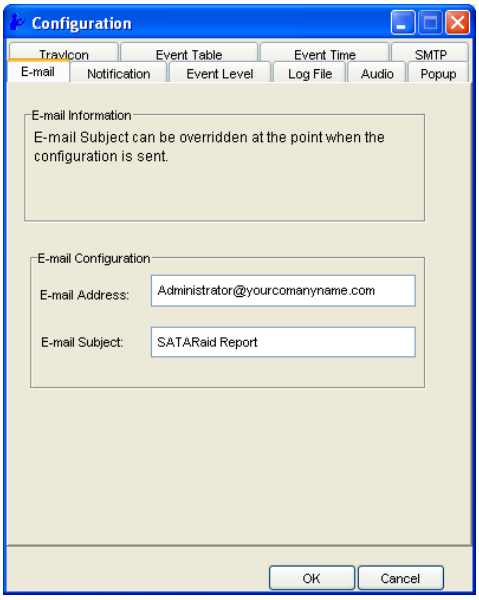
You can use the GUI utility to have e-mails sent when an HDD failure occurs during use after Windows starts up.

E-mails can be sent to a system administrator and/or other specified addresses.

Follow the steps below for setting.

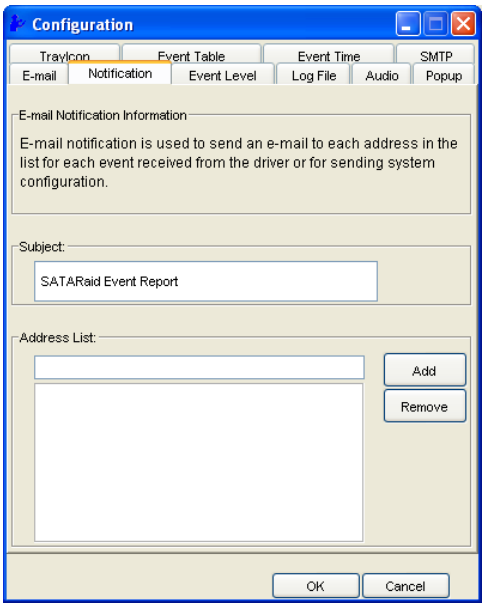
1. Start up the GUI utility.
2. Click **SATARaid Configuration** to display the Configuration screen.
3. Click the **SMTP** tab on the Configuration screen to display the following screen. Set the SMTP server to send e-mails.

4. If you want e-mails sent to a system administrator, click the **E-mail** tab. (If you do not want e-mails sent to the system administrator, skip steps 4 and 5.)



5. Specify the e-mail address of the system administrator and subject; then click **OK**.

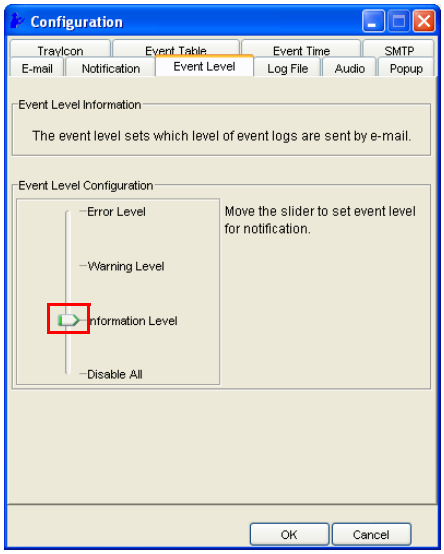
6. If you want to have e-mails sent to other addresses, click the **Notification** tab. (If you do not want e-mails sent to other addresses, skip steps 6, 7, and 8.)



7. Specify e-mail addresses in the Address List, and click **Add**. When you want to delete an address, specify it and click **Remove**.

8. When the setting is completed, click **OK**.

9. Click the **Event Level** tab. Slide the bar to set the Event Level for sending e-mails, and click **OK**.



Event Level settings are as follows:

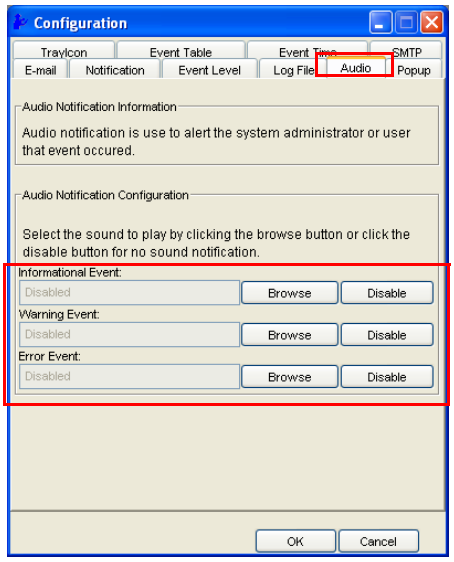
Setting	Description
Error Level	Sends e-mails when a critical error is caused by HDD failure.
Warning Level	Sends e-mails when an event such as HDD removal occurs.
Information Level	Sends e-mails when an event such as HDD rebuilding occurs.
Disable All	Does not send e-mails.

E-mails are sent to the addresses set on the **E-mail** or **Notification** tabs, depending on the Event Level setting.

Buzzer/Sound Setting

When an event such as an HDD failure occurs after Windows starts up, a buzzer or sound notification is possible.

1. Start up the GUI utility.
2. Click **SATARaid Configuration** to display the Configuration screen.
3. Click the **Audio** tab. Configure the sound setting when an event occurs.



On the **Audio** tab, you can configure on/off and tone setting of sound for each event. Click **Browse** to specify sound source files. Click **Disable** to disable sounds.

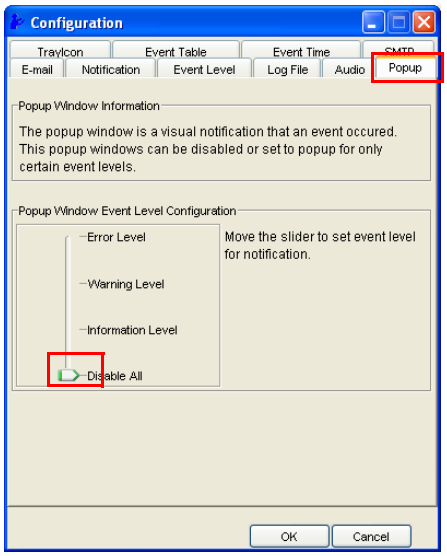
Setting	Description
Information Event	Sounds when an event such as HDD rebuilding occurs.
Warning Event	Sounds when an event such as HDD removal occurs.
Error Event	Sounds when a critical error is caused by HDD failure.

Display of Popup Message

When an event such as an HDD failure occurs after Windows starts up, a popup message can be displayed. A buzzer notification is also possible.
Even when an application is in full-screen mode, the popup menu is displayed in front of the application.
With this setting, RAID events can be created as event logs for Windows.

GUI utility setting

1. Start up the GUI utility.
2. Click SATARaid Configuration to display the Configuration screen.
3. Click the Popup tab.
4. Slide the bar to set the Popup, and click OK.



EPSWatchRAIDevt.reg setting

1. Select **EPSWatchRAIDevt.reg**. It is registered in the following directory by default.

   `C:\Backup\SATARAID\Tool`

2. Right-click **EPSWatchRAIDevt.reg**, and select **Edit** to open EPSWatchRAIDevt.reg.

3. Enter the path name before EPSWatchRAIDevt.exe after ""CategoryMessageFile"=" and ""EventMessageFile"=."

```
Windows Registry Editor Version 5.00


[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog
\Application\EPSWatchRAIDevt]

"TypesSupported"=dword:00000007

"CategoryCount"=dword:00000001

"CategoryMessageFile"="Path name"

"EventMessageFile"="Path name"
```

Example:)
"CategoryMessageFile"="c:\\backup\\sataraid\\tool\\epswatchraidevt.exe"
"EventMessageFile"="c:\\backup\\sataraid\\tool\\epswatchraidevt.exe"

4. Save the setting and close the text.

5. Execute EPSWatchRAIDevt.reg to rewrite the registry.

EPSWatchRAIDevt.ini file setting

1. Rewrite necessary settings in EPSWatchRAIDevt.ini file.
   The file is registered in the following directory by default.

   `C:\Backup\SATARAID\Tool`

The initial values of EPSWatchRAIDevt.ini are as follows.

```
[General]
TrayIcon=Enable
BackTrace=Disable
NoDisk="Please contact system administrator."
CheckDiskTIimer=5
CheckGUICount=5
CheckGUIInterval=10

[Error]
Message ="Please contact system administrator."
Beep = 0

[Warning]
Message=
Beep = 0

[Information]
Message=
Beep = 0

[Description]
Description0=
Message0=
Beep0=

[Launcher]
Launch="None"
ErrorLaunch="None"
InterruptMessage1=
InterruptMessage2=
InterruptMessage3=
InterruptMessage4="Please contact system administrator."
```

Setting when an error event is detected.

Setting when a warning event is detected.

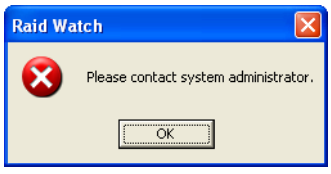
Setting when an information event is detected.

❑ Settings when an event is detected

Set the content of popup messages and buzzer when an event such as HDD rebuild occurs.

- Content of popup message
  Enter the message you want to display after "Message =." Put the message between "".
- When you want to sound a buzzer
  Set to "Beep = -1."

When the error level is detected or when only one of the two HDDs is detected and started up, the following popup message is displayed by default.

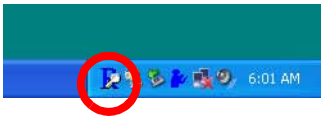


Starting up EPSWatchRAIDevt.exe

1. When you startup EPSWatchRAIDevt.exe, the RAID Event Watch tool starts up. It is registered in the following directory by default.

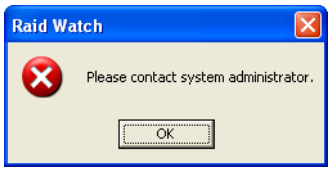
   `C:\Backup\SATARAID\Tool`

2. When the RAID Event Watch tool starts up, an icon appears in the task tray.



> ✎ ***Note***
> *If you create a shortcut to EPSWatchRAIDevt.exe and register it for the startup, the RAID Event Watch tool automatically starts up when Windows starts up.*

3. When an event such as an error occurs in the RAID system, a popup message is displayed and event for Windows is created, following the setting with EPSWatchRAIDevt.ini.



Events for Windows can be confirmed with the Event Viewer.

Event Viewer can be displayed by selecting;

For Windows 2000: **Start-Settings-Control Panel-Administrative Tool-Event Viewer**

For Windows XP and WEPOS: **Start-Control Panel--Performance and Maintenance-Administrative Tool-Event Viewer**

Using the RAID system

Once the array of the hard disk drives is configured, RAID1 is activated whenever the system operates. The hard disks are always controlled by RAID BIOS. Other than that, there is no operational difference from normal operation with one hard disk drive.

OS Startup Operations

The RAID BIOS checks the hard disk drives during the system's start-up process.

When the Hard Disks are found to be Normal.

```
Sil 3512A SATARaid BIOS Version 4.3.47
Copyright (C) 1997-2004 Silicon Image, IncÅD

Press <Ctrl+S> or F4 to enter RAID utility
0 SAMSUNG HM041HI                38204MB
1 SAMSUNG HM041HI                38204MB
```

As soon as the check is completed, it starts Windows.

OS Termination Operations

The operation to quit the OS is exactly the same as that performed under normal one-disk condition.

Checking of RAID operations

You can confirm the RAID status of hard disk drives during system operation by the following method.

Double-click the GUI utility icon on the task bar to start the GUI utility.

Failures and Determining the Failed HDD

This section describes corrective actions when an error occurs due to hard disk failure.

Errors that can be Detected During the System's Start-up Process

The RAID BIOS checks the hard disk drives during the system's start-up process.And the check result appears on the screen as shown below.

When the Hard Disks are found to be Normal

```
Sil 3512A SATARaid BIOS Version 4.3.47
Copyright (C) 1997-2004 Silicon Image, IncÅD

Press <Ctrl+S> or F4 to enter RAID utility
0 SAMSUNG HM041HI                38204MB
1 SAMSUNG HM041HI                38204MB
```

When a RAID Error is Detected

```
Sil 3512A SATARaid BIOS Version 4.3.47
Copyright (C) 1997-2004 Silicon Image, IncÅD

Press <Ctrl+S> or F4 to enter RAID utility

0 SAMSUNG HM041HI                38204MB

Sil Mirrored set SAMSUNG HM041HI
RAID1 set is in Critical Status.
Press any key to enter Configuration Utility.
```

The above check result indicates that one of the two hard disk drives is at fault.
In such case, press Ctrl+S, or F4 key to start RAID BIOS.

The error condition is displayed on the information field of RAID BIOS as follows.

Pattern 1

The lack of information on (rear side disk) shows that the disk is at fault. If there is no problem in its connection status, replace the hard disk drive.

The lack of information on (front side disk) shows that the disk is at fault. If there is no problem in its connection status, replace the hard disk drive.

Pattern 2

This shows that both the two hard disk drives cannot be detected.If there is no problem in their connection status, replace both the two disks.

Pattern 3

This indicates that the main board than the hard disks is at fault..

Pattern 4

Nothing appears on the test result screen.

This indicates that the main board or any other part or component other than the hard disks is at fault.

Errors that can be Detected During Operation

When one of the two hard disk drives fails during operation, the operation is continued with the other normal disk. Mirroring function becomes disabled from then.

The following methods are available to know the error condition during operation.

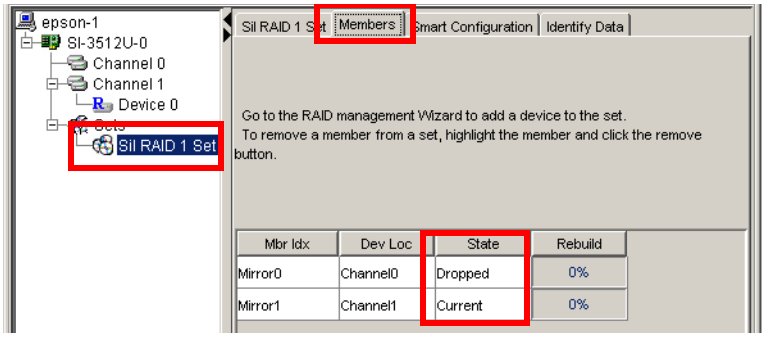
- ❏ Pop-up message box
- ❏ E-mail
- ❏ Event log in the Event Viewer of the GUI utility

When the error condition is found by any of the above methods, first determine which hard disk drive is faulty using the GUI utility.

Determining the Failed Hard Disk Drive

The GUI utility allows you to find out which one of the two hard disks is at fault.

1. Start the OS and start up the GUI utility.
2. Click on Sets and Sil RAID 1 Set in the device screen. And click on the **Member** tab on the information screen.



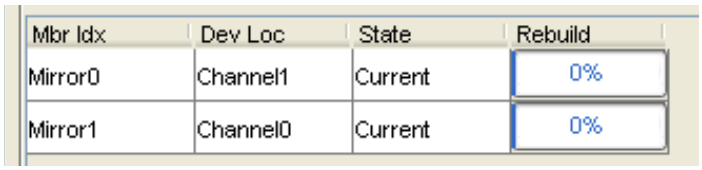
"Dropped" appears in the "State" column for the failed hard disk drive.

- Dev Loc: Channel0 Hard disk drive on the front side
- Channel1 Hard disk drive on the rear side

3. In this case, the failed hard disk is the one on the front side. Check its connection status and if there is no problem in the connection, replace the front side hard disk.

Note
A hard disk drive which is not connected to the system, or not configured to be used for RAID is not displayed on the screen.

The meanings of the items displayed on the screen are as follows:



❑ Mbrldx	Logical device	Mirror0: Mirror1;	Primary device Secondary device
❑ Dev Loc	Physical device	Channel0: Channel1;	Front side hard disk drive Rear side hard disk drive
❑ State	RAID status	Current: Rebuild; Dropped;	Normal Rebuilding the array Hard disk drive failure

❑ Current The system is operating normally

❑ Rebuild The RAID array is now being rebuilt

❑ Dropped The hard disk drive is at fault

❑ The rebuilding status is displayed as shown below.

Building RAID

This section explains how to build a RAID system in the following cases:

- ❑ Establishing RAID system by adding one more hard disk to the normal one-drive system
- ❑ Newly building RAID system
- ❑ Rebuilding RAID after replacing one of the two hard disks

Establishing RAID system by adding one more hard disk to the normal one-drive system

Follow the procedure below to establish RAID by adding one more hard disk to the normal one-drive system.

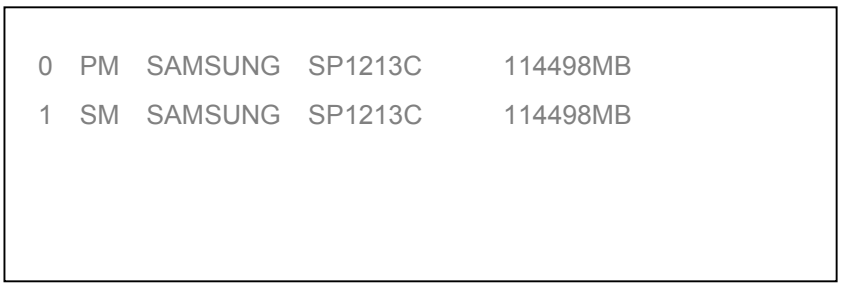
Establishing RAID system is impossible if the all area of the current hard disk drive is used.In such case, make a backup copy of the important data, and then build RAID in the same way as newly building it.

The hard disk drive of the normal one-drive system is connected to the front side (Primary).

1. Make a backup copy of important data stored on the hard disk drive.

Note
Be sure to make the backup copy as a protection against loss of data due to an operating error.

2. Connect another hard disk drive, whose model number is exactly the same with that of the one in current use, to the rear side(Secondary). See page 3-40 for information on how to connect it.
3. Reboot the system.
4. Press Ctrl+S or F4 key while POST is running to start RAID BIOS.
5. The RAID BIOS screen will appear. Information of the connected hard disk drives is displayed in the information field.Verify that there is no difference in the displayed information (model number and capacity) between the two hard disks (0 and 1). RAID status will be displayed below the information after it is configured.

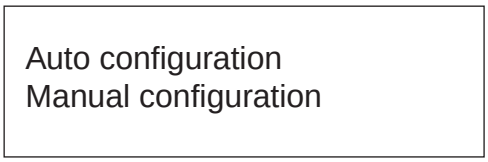


6. Select “Create RAID set” from the menu field.

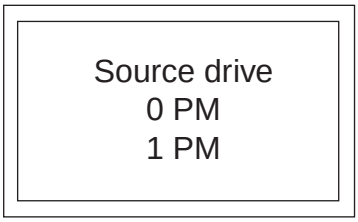
7. The following pop-up box will appear. Select “Mirrored”.

Note
The SR-610 system does not support “Striped” (RAID0). Make sure to select the “Mirrored”.

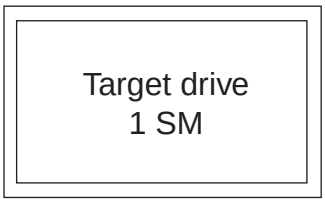
8. The following items will appear in the menu field. Select the “Manual configuration”.



9. The following pop-up box will appear. Select the “0 PM” as the source hard disk if the source hard disk is connected to the front side(Primary).

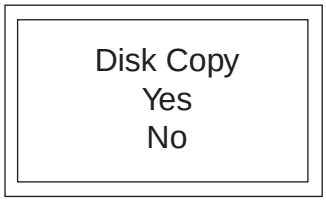


10. The following pop-up box will appear. Select the “1 SM”.



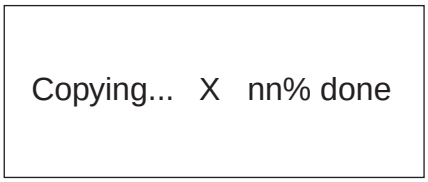
Note
If you have selected “1 PM” at Step 9, “0 SM” will appear as the target drive.

11. The following pop-up box will appear. Select “Yes”.

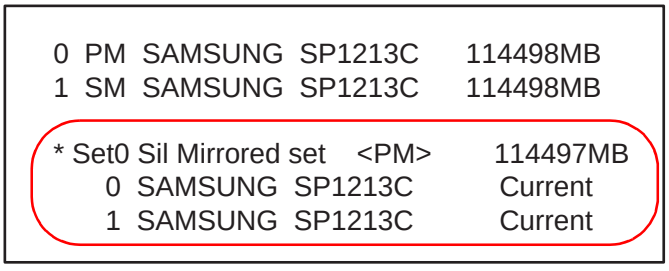


12. The following pop-up box will appear. Select “offlinecopy”.

13. “Are you sure (Y/N)?” message will appear in the operation guide field. Press Y key.
14. RAID building will start. The mirroring advance ratio will be displayed in the guide field.



15. When the mirroring is completed, built RAID information appears in the information field.



16. Press Ctrl+E. A confirmation message; "Are you sure to Exit? (Y/N)" will appear. Press Y key to exit from the "Create RAID set".
    Exit the RAID BIOS and reboot the system.

17. When Windows starts, "New hardware detected." screen will appear. Reboot the system to enable the newly detected hardware.

18. Return the backup files to the hard disk drive if necessary.

Newly Building RAID System

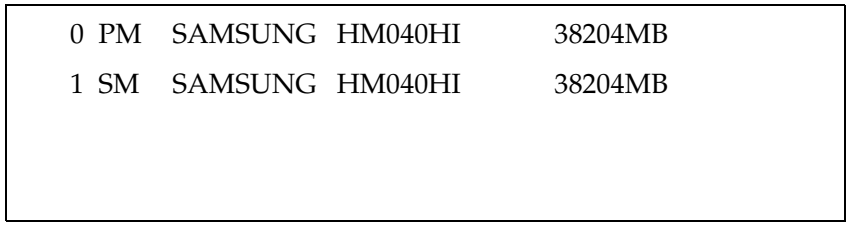
When you need to replace both the hard disks, the RAID must be built before installing the OS. If you do that in reverse order, Windows may not be able to start.

Follow the procedure below to newly build RAID system.

1. Install two new hard disk drives to the SR-610. See page 3-40 for information on how to install them.

2. Press Ctrl+S or F4 key while POST is running to start RAID BIOS.

3. The RAID BIOS screen will appear. Information of the connected hard disk drives is displayed in the information field. Verify that there is no difference in the displayed information (model number and capacity) between the two hard disks (0 and 1). RAID status will be displayed below the information after it is configured.

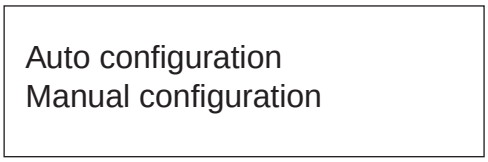


4. Select "Create RAID set" from the menu field.

5. The following pop-up box will appear. Select "Mirrored".

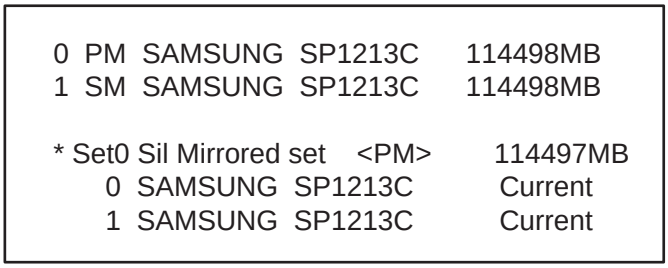
Note
The SR-610 system does not support "Striped" (RAID0). Make sure to select the "Mirrored".

6. The following items will appear in the menu field. Select the "Auto configuration".



7. "Are you sure (Y/N)?" message will appear in the operation guide field. Press Y key to automatically build RAID.

8. When the mirroring is completed, built RAID information appears in the information field.



9. Press Ctrl+E. A confirmation message; "Are you sure to Exit? (Y/N)" will appear. Press Y key to exit from the "Create RAID set".
   Exit the RAID BIOS and reboot the system.

10. Install the OS.See Chapter 2 for information on the OS installation.

Rebuilding RAID after Replacing One of the Two Hard Disks

You need to rebuild the RAID when one of the two hard disks is replaced. Follow the procedure below to accomplish it.

1. Install a new hard disk drive to the SR-610.
   (Replace a hard disk that is indicated as faulty by RAID BIOS. See page 7-22.)

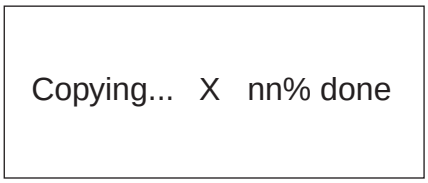
2. Press Ctrl+S or F4 key while POST is running to start RAID BIOS.

3. Select "Rebuild Mirrored set" from the menu field.

4. The following pop-up box will appear. Select "offlinecopy".

5. "Are you sure (Y/N)?" message will appear in the operation guide field. Press Y key.

6. Mirroring of the hard disk will start. The mirroring advance ratio will be displayed in the guide field.



7. Press Ctrl+E after the mirroring is completed. A confirmation message; "Are you sure to Exit? (Y/N)" will appear. Press Y key to exit from the "Rebuild Mirrored set".
   Exit the RAID BIOS and reboot the system.

Canceling the RAID System

Canceling the RAID system also can be made by RAID BIOS.

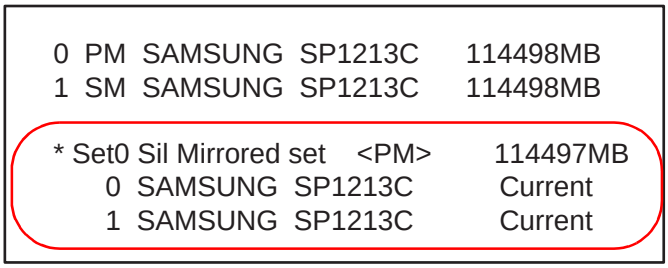
⚠ CAUTION

Be sure to use the RAID BIOS to cancel the RAID. Do not perform that using the GUI utility.

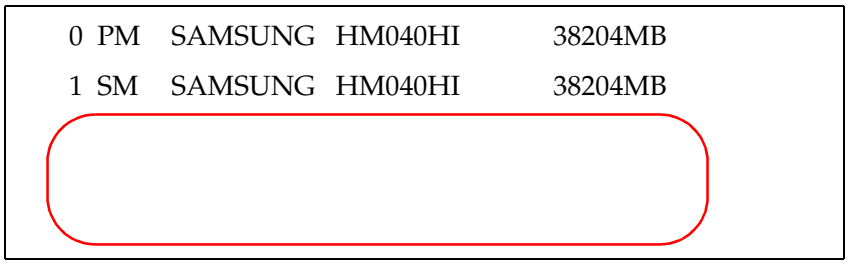
Doing so may damage the hard disk drives and cause a malfunction of them.

Follow the procedure below to cancel the RAID.

1. Press Ctrl+S or F4 key while POST is running to start RAID BIOS.
2. Confirm that the RAID information appears in the information field.



3. Select "Delete RAID set" from the menu field.
4. When "Set0" is displayed, press the Enter key.
5. "Are you sure (Y/N)?" message will appear in the operation guide field. Press Y key.
6. The RAID will be canceled.When the canceling operation is completed, the RAID information disappears from the information field.



RAID BIOS

This section provides instructions on how to operate the RAID BIOS.

How to Start and Exit the RAID BIOS

Starting the RAID BIOS

Follow the procedure below to start the RAID BIOS.

1. Connect a PS/2 keyboard to the keyboard connector on the SR-610.
2. Turn the SR-610 ON.
3. When "Press Ctrl+S or F4 key to enter RAID utility" appears on the screen, press Ctrl+S or F4 key.
4. RAID BIOS will start.

Exiting the RAID BIOS

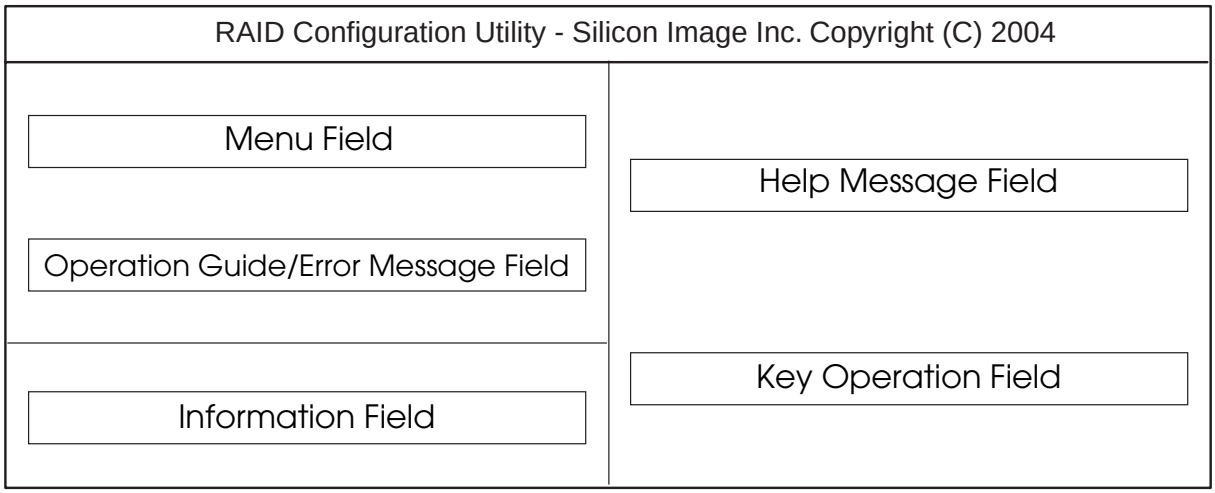
Press Ctrl+E. The following message will be displayed.

"Are you sure to Exit (Y/N) ?"

Press Y key to exit the RAID BIOS. The SR-610 will automatically reboot.

RAID BIOS Screen Configuration

The diagram below shows the screen layout of the RAID BIOS.



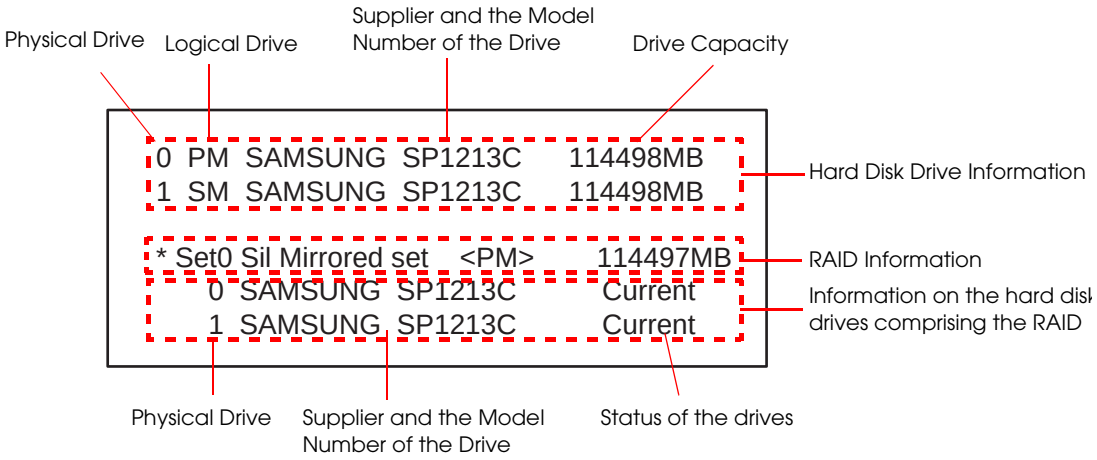
Menu Items

The following menu items are provided in the menu field.

Item	Description
Create RAID set	Creates a mirroring system.
Delete RAID set	Cancels a mirroring setting.
Rebuild Mirrored set	Rebuild a mirroring system.
Resolve Conflicts	Solves RAID errors.
Low Level Format	Formats the hard disk drives.

Information Field

Information on the installed hard disk drives and mirroring status is displayed in the information field.
Example



Physical Drive

0	Drive on the Front side
1	Drive on the Rear side

Logical Drive

0	The primary side. Both reading and writing are performed.
1	The slave side. Writing only.
*	Indicates the master side.

Note

If the RAID has not been established using the installed hard disk drives, nothing appears in this area.

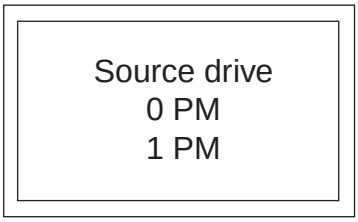
Status of the drives

Current	The drive is working normally.Both of the two drives are "Current" when they are performing the mirroring operation normally.
Rebuild	The system is rebuilding the RAID. All data in the primary drive is being copied to the secondary drive.
SYNC	The system is checking the synchronization between the two drives.

Formatting the Hard Disk Drives

Follow the procedure below to format the hard disk drives.

1. Connect the target hard disk drive to the SR-610 system.
2. Turn the SR-610 ON and press Ctrl+S or F4 key to start the RAID BIOS.
3. Select "Delete RAID set" from the menu field.
4. The following pop-up box will appear. Select one of the two options and press the Enter key.



Note

When the target hard disk is connected to the front side, only "0 PM" is displayed.And when it is connected to the rear side, only "1 SM" is displayed.
The screen shown above appears when two hard disks are connected to front side and rear side respectively.

5. "The Data will be lost! Are You Sure? (Y/N)" will be displayed. Press Y key.
6. While formatting the hard disk, "Formatting ... X 88% done" is displayed.
7. The system automatically returns to the RAID BIOS menu screen after finishing the formatting job.

Using the Keyboard

The following keys are used to operate the RAID BIOS

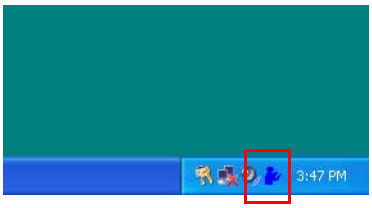
Up-arrow key	Selects the menu item.
Down-arrow key	
Esc key	Returns to the previous menu screen.
Enter key	Executes the selected menu item.
Ctrl+E key	Exits the RAID BIOS and reboots the system.

GUI utility

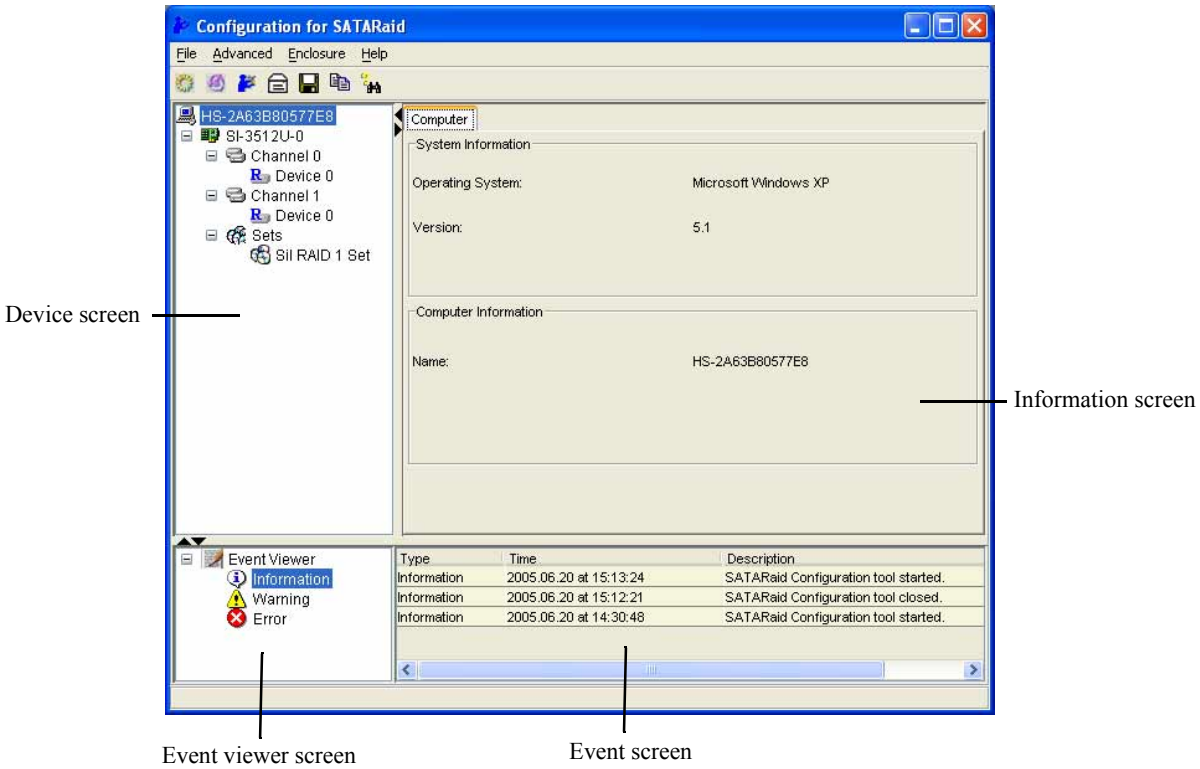
You can configure settings on RAID with the GUI utility.

Staring up the GUI utility

The GUI utility automatically starts up when the SR-610 starts up. Click the tray icon on the lower right screen.



The GUI utility screen appears.

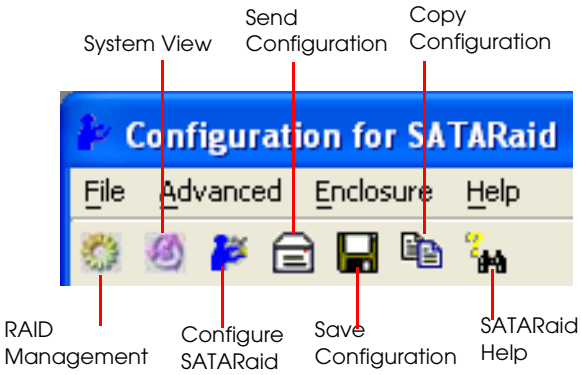


When you exit the GUI utility and then start up again, select [Start], [All Programs], and then [Java SATARaid]. Then, click the tray icon on the lower right screen.

How to Operate the GUI utility

Toolbar

The GUI utility menu bar has the following 7 icons:



RAID Management : Not used.

System View : Displays detailed information on Host Adapter and RAID set.

Configure SATARaid : Configures settings for event notification, e-mail notification, log file, audio, and popup message.

Send Configuration : E-mails configuration information.

Save Configuration : Saves configuration.

Copy Configuration : Not used.

SATARaid Help : Displays a help screen.

On e-mail function

When any event occurs, e-mails containing the event log and with a title to identify the event are sent.

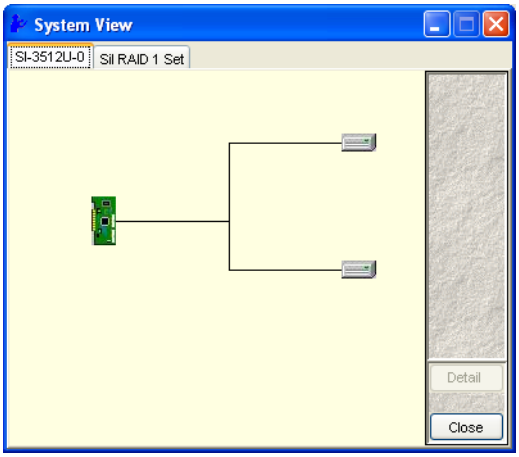
E-mails of Send Configuration are sent with a mail header and all data that can be viewed by System View.

RAID Management

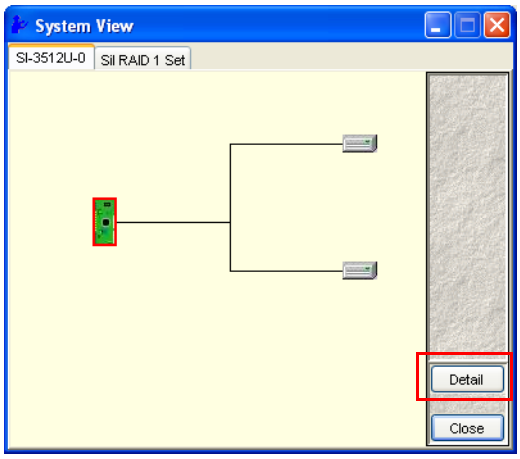
Establishment or deletion of RAID is performed with BIOS. Do not use this icon.

System View

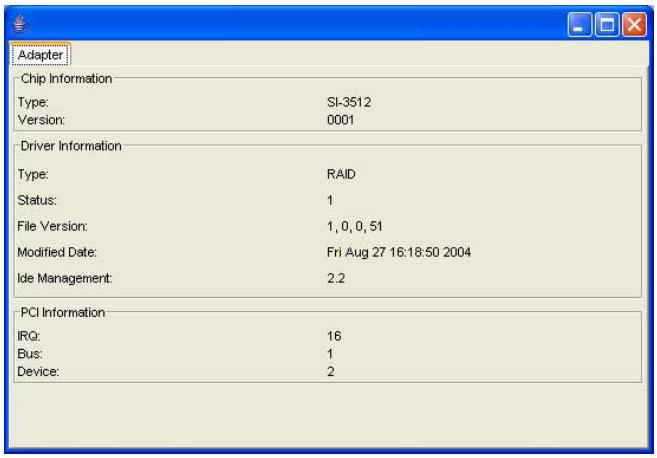
Information on Host Adapter and RAID Set can be displayed. In the menu bar, click **System view** to display the System view screen.



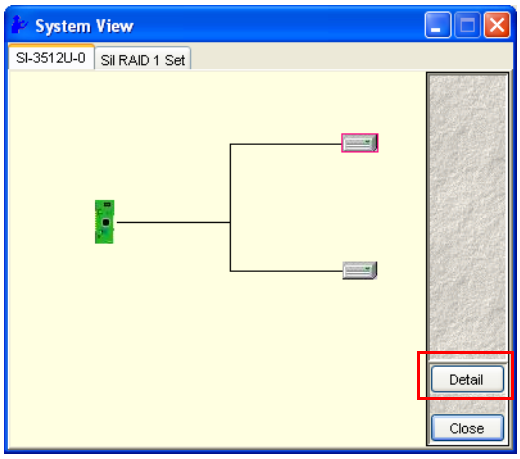
When you need Adapter information, click the Adapter, and then click **Detail**.



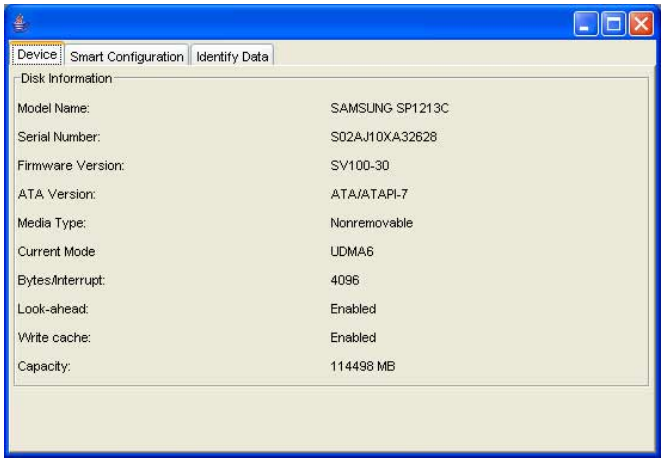
The following screen appears. The Adapter information is displayed.



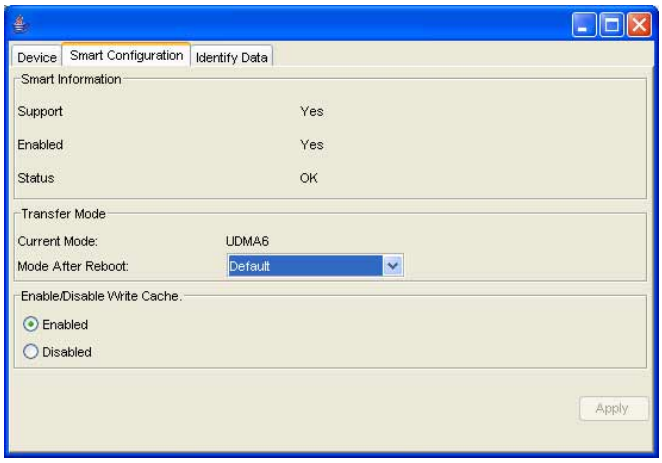
When you need Device information, select the Device, and then click **Detail**.



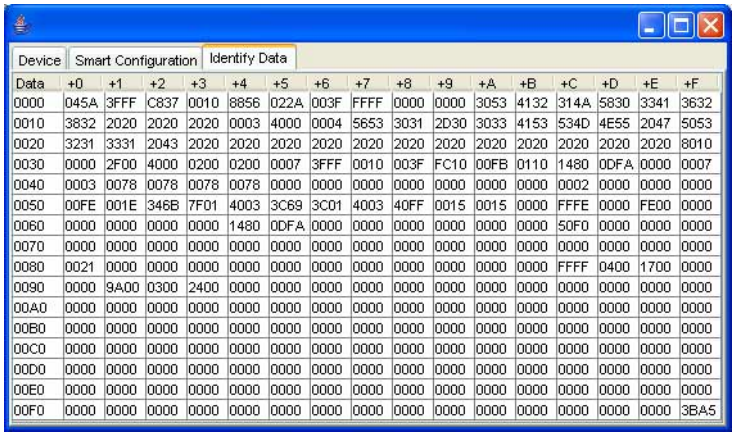
The device screen appears. The Device information is displayed.



On the device screen, click the **Smart Configuration** tab to display the S.M.A.R.T information. On this screen, you can configure settings for Transfer Mode and Write Cache.



On the device screen, click the **Identify Data** tab to display the identify information.

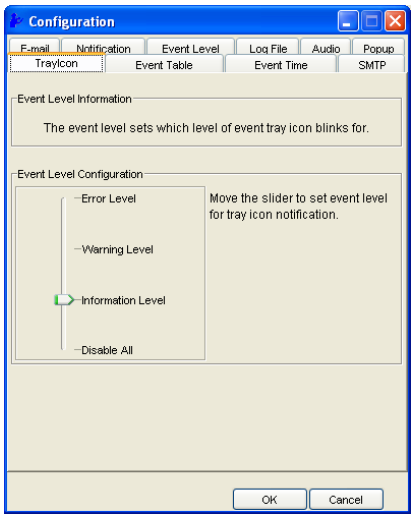


Data	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
0000	045A	3FFF	C837	0010	8856	022A	003F	FFFF	0000	0000	3053	4132	314A	5830	3341	3632
0010	3832	2020	2020	2020	0003	4000	0004	5653	3031	2D30	3033	4153	534D	4E55	2047	5053
0020	3231	3331	2043	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	8010
0030	0000	2F00	4000	0200	0200	0007	3FFF	0010	003F	FC10	00FB	0110	1480	0DFA	0000	0007
0040	0003	0078	0078	0078	0078	0000	0000	0000	0000	0000	0000	0000	0002	0000	0000	0000
0050	00FE	001E	346B	7F01	4003	3C69	3C01	4003	40FF	0015	0015	0000	FFFE	0000	FE00	0000
0060	0000	0000	0000	0000	1480	0DFA	0000	0000	0000	0000	0000	0000	50F0	0000	0000	0000
0070	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
0080	0021	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	FFFF	0400	1700	0000
0090	0000	9A00	0300	2400	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
00A0	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
00B0	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
00C0	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
00D0	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
00E0	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
00F0	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	3BA5

Configure SATARaid

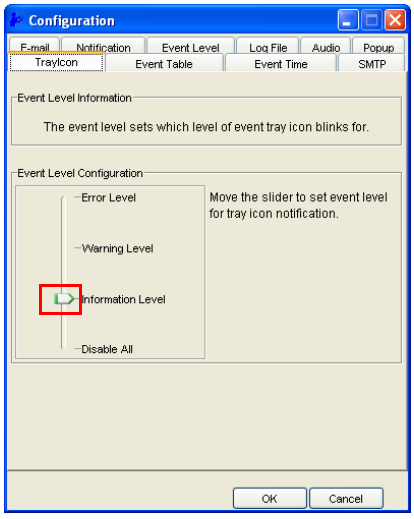
You can configure settings for event notification, e-mail notification, log file, audio, and popup message.

In the menu bar, click **SATARaid Configuration** to display the Configuration screen.



❑ TrayIcon

You can set the SATARaid icon in the task tray to flash when an event occurs. Click **TrayIcon** on the Configuration screen to display the following screen. Slide the bar to set the Event Level.



Event Level settings are as follows:

Setting	Description
Error Level	Flashes the tray icon when a critical error is caused by HDD failure.
Warning Level	Flashes the tray icon when an event such as HDD removal occurs.
Information Level	Flashes the tray icon when an event such as HDD rebuilding occurs.
Disable All	Does not flash the tray icon.

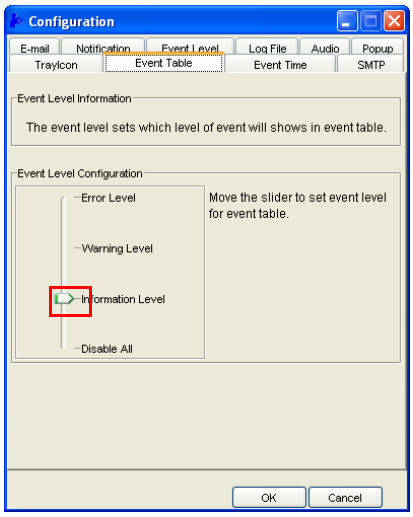
The tray icon flashes, depending on the Event Level setting.

Normal status

When an event occurs

❑ Event Table

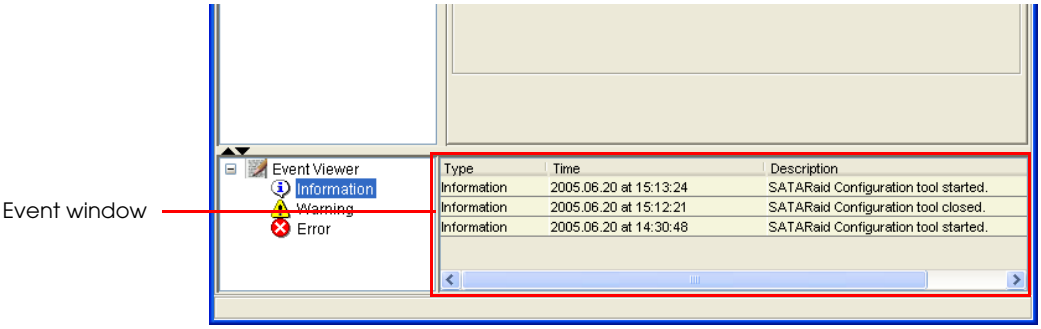
Click the **Event Table** tab on the Configuration screen to display the following screen. Slide the bar to set the Event Level.



Event Level settings are as follows:

Setting	Description
Error Level	Creates an event log when a critical error is caused by HDD failure.
Warning Level	Creates an event log when an event such as HDD removal occurs.
Information Level	Creates an event log when an event such as HDD rebuilding occurs.
Disable All	Does not create event logs.

Event logs are created, depending on the Event Level setting, and they are displayed in the event window.



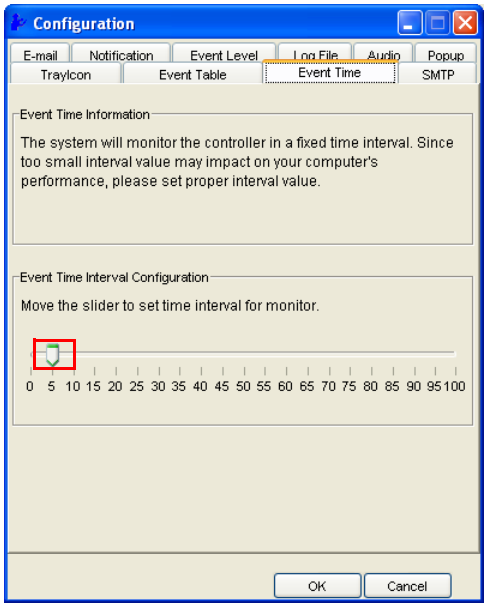
Note

The event logs created here are for events in the GUI utility, and event logs for Windows are not created.

❑ Event Time

Sets the timing to monitor the RAID status by the GUI utility.

Click the **Event Time** tab on the Configuration screen to display the following screen.



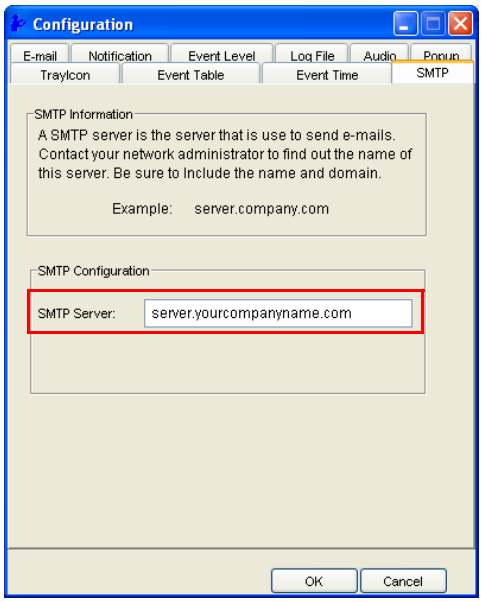
Note

The number of the "Event Time Interval Configuration" indicates the number of seconds.

The default setting is "5."

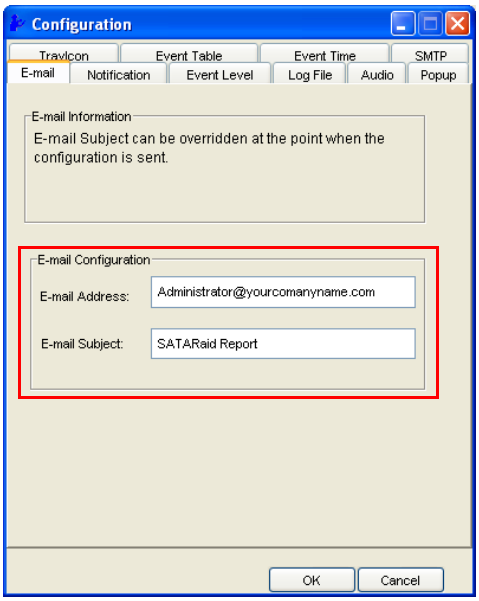
❑ SMTP

Click the **SMTP** tab on the Configuration screen to display the following screen. Set the SMTP server to send e-mails.



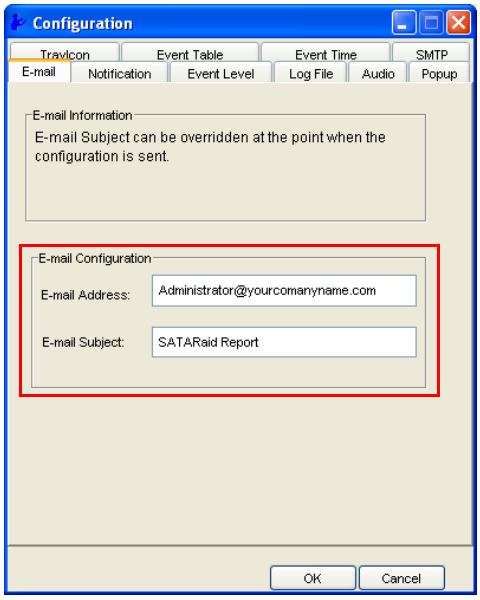
❑ E-mail

Click the **E-mail** tab on the Configuration screen to display the following screen. Specify the e-mail address of the system administrator and subject to send e-mails when events occur.



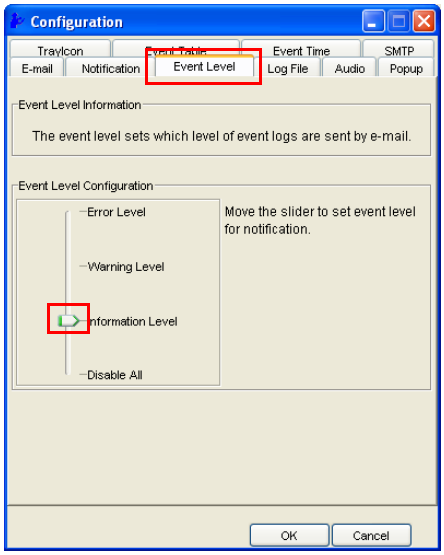
❑ Notification

Click the **Notification** tab on the Configuration screen to display the following screen. Specify the e-mail addresses and subject to send e-mails when events occur.



❑ Event Level

Click the **Event Level** tab on the Configuration screen to display the following screen. Slide the bar to set the Event Level.



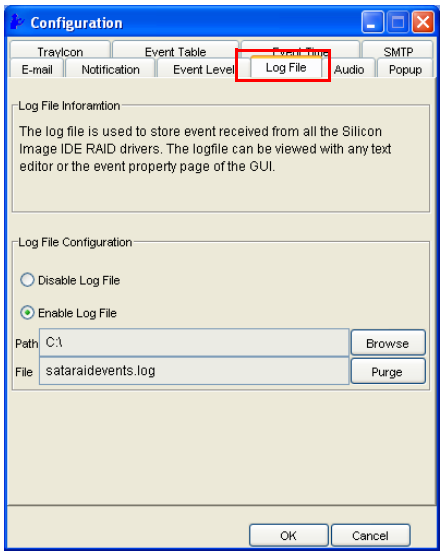
Event Levels are set as follows:

Setting	Description
Error Level	Sends e-mail when a critical error is caused by HDD failure.
Warning Level	Sends e-mail when an event such as HDD removal occurs.
Information Level	Sends e-mail when an event such as HDD rebuilding occurs.
Disable All	Does not send e-mails.

E-mails are sent to the addresses set on the **Notification** tab, depending on the Event Level setting.

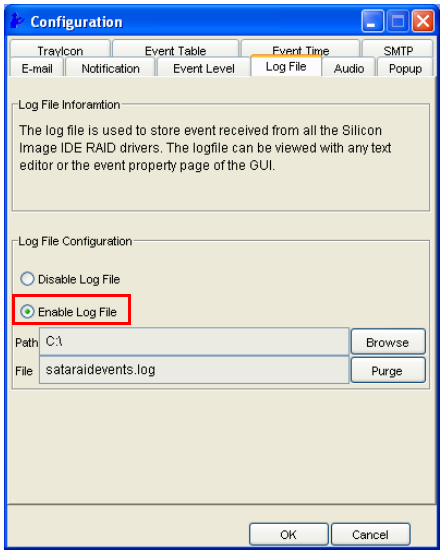
❑ Log File

Click the **Log File** tab on the Configuration screen to display the following screen. The log file is used to store events received from all the Silicon Image IDE RAID drivers.

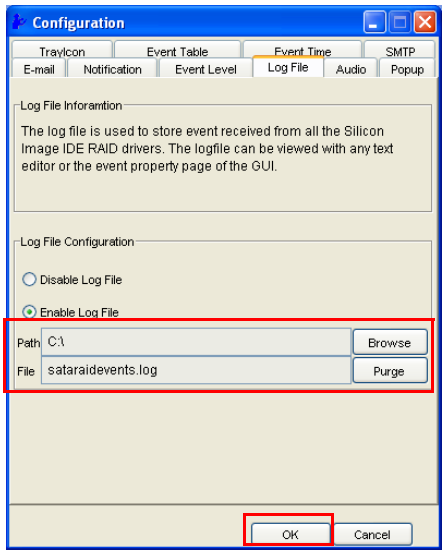


Follow the steps below to store event logs.

1. Set the Log File Configuration to Enable Log File.

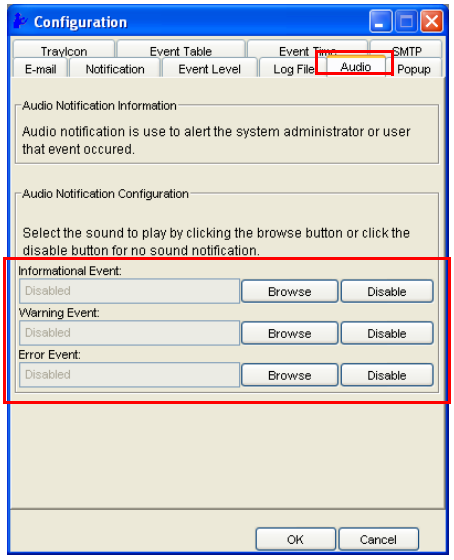


2. Specify the location to store the file and file name, and click **OK**.



❑ Audio

Click the **Audio** tab on the Configuration screen to display the following screen. Set the sound when events occur.

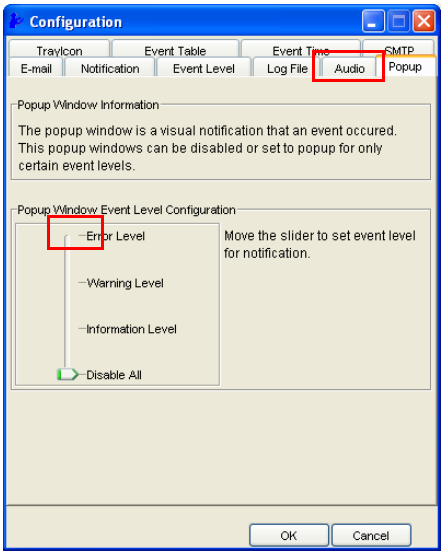


On the **Audio** tab, you can configure on/off and tone setting of sound for each event.
Click **Browse** to specify sound source files.
Click **Disable** to disable sounds.

Setting	Description
Information Event	Sounds when an event such as HDD rebuilding occurs.
Warning Event	Sounds when an event such as HDD removal occurs.
Error Event	Sounds when a critical error is caused by HDD failure.

❑ Popup

Click the **Popup** tab on the Configuration screen to display the following screen. Slide the bar to set the Event Level. Use the RAID Event Watch tool to display the popup menu.



Popup windows are displayed, depending on the Event Level setting.

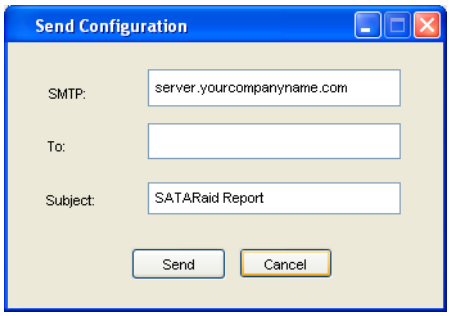
Event Levels are set as follows:

Setting	Description
Error Level	Displays a popup message when a critical error is caused by HDD failure.
Warning Level	Displays a popup message when an event such as HDD removal occurs.
Information Level	Displays a popup message when an event such as HDD rebuilding occurs.
Disable All	Does not display popup messages.

Send Configuration

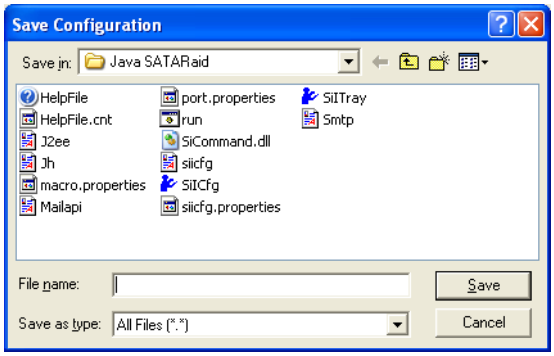
You can send the SATARaid setting to the other e-mail address.

In the menu bar, click **Send Configuration** to display the Send Configuration screen. Specify the e-mail server to SMTP and e-mail address to To.



Save Configuration

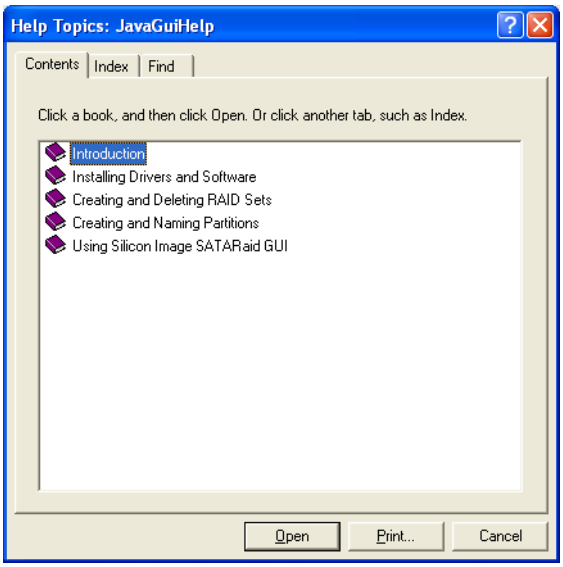
Saves the contents of "SATARaid Configuration." In the menu bar, click **Save Configuration** to display the Save Configuration screen.



Specify the file name, and click **Save**.

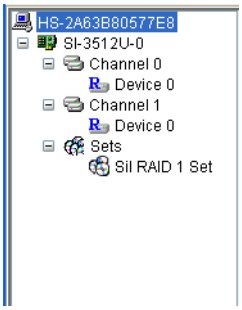
SATARaid Help

You can display the help screen to use the help function. In the menu bar, click **SATARaid Help** to display the Help Topics screen.



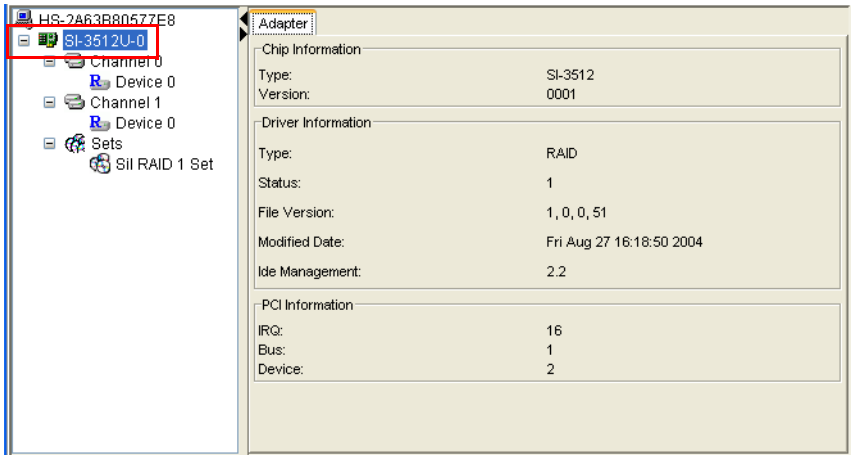
Device/Information window

Devices are displayed in a tree view. Select a component displayed in the tree to display information on it.



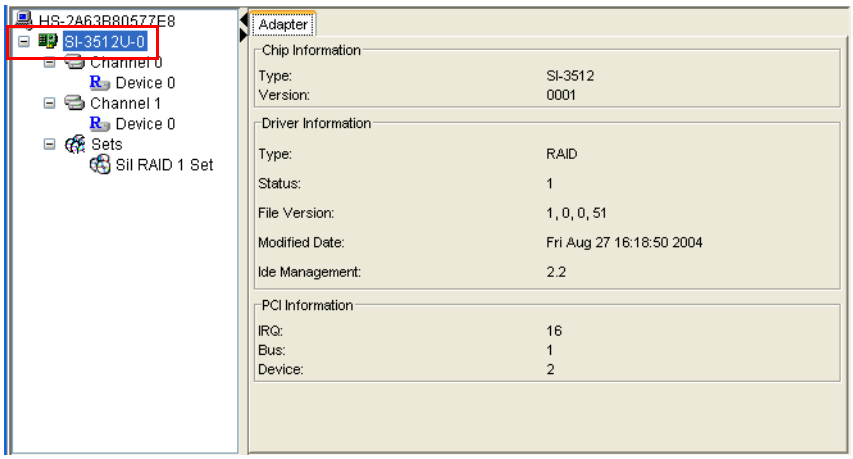
System (Computer) information

When you select a system, the system information of the SR-610 is displayed.



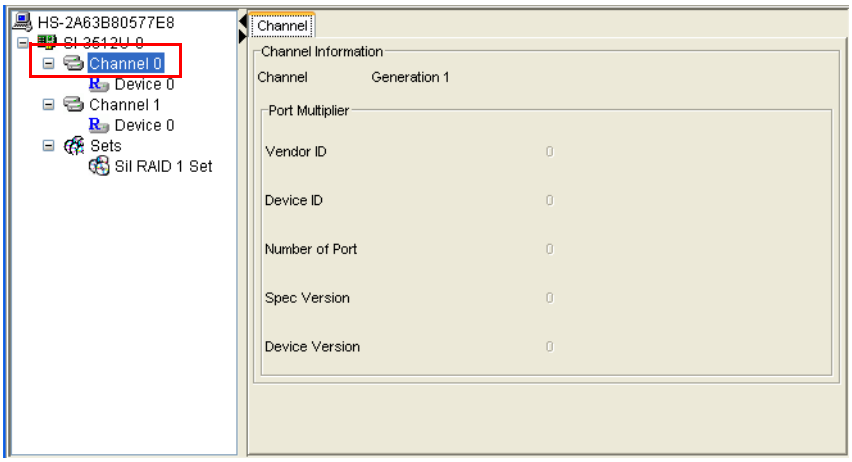
Adapter information

When you select an Adapter, the adapter information is displayed. You can obtain the same information with the System view. (See page page 7-39.)



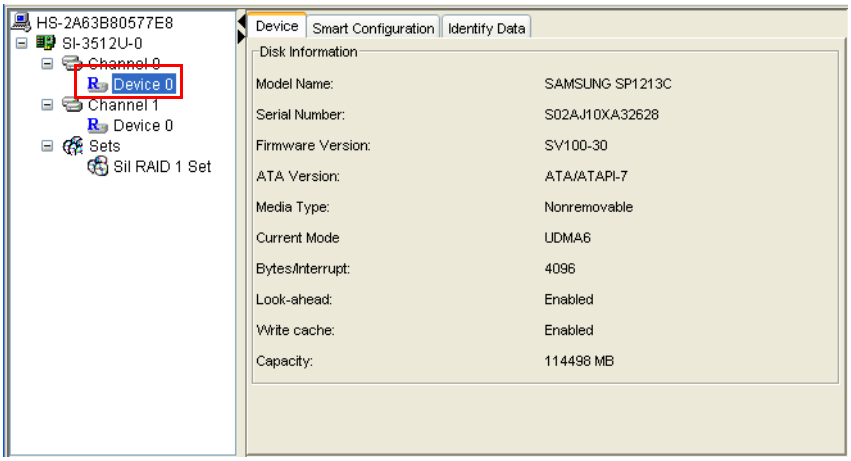
Channel information

When you select a channel, the information on the channels 0 or 1 is displayed.



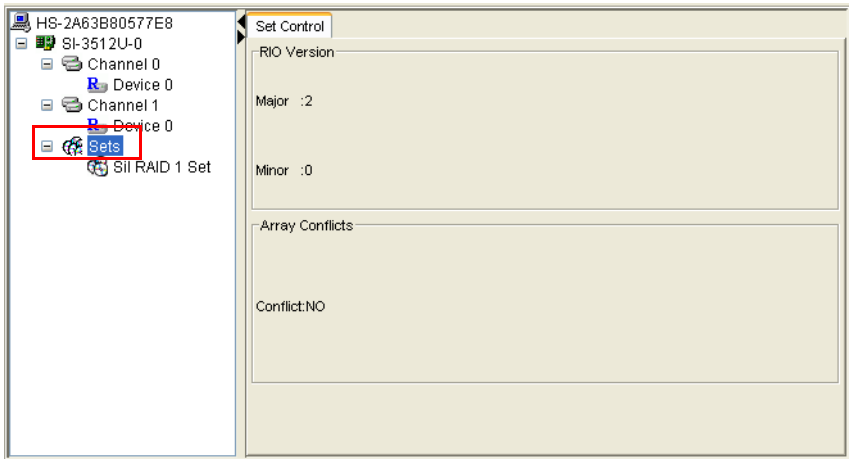
Device Information

When you select a device, the device information is displayed. You can obtain the same information with the System view. (See page page 7-39.)



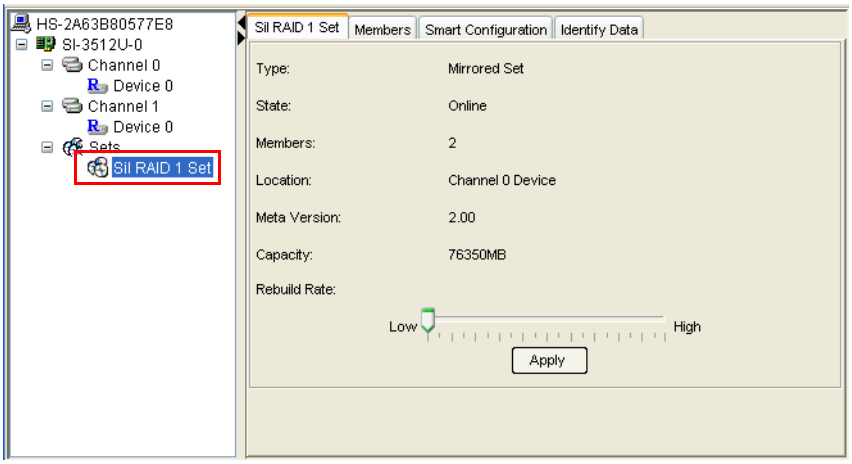
Sets (RAID Set Control) Information

When you select a RAID set control, the RAID set control information is displayed.



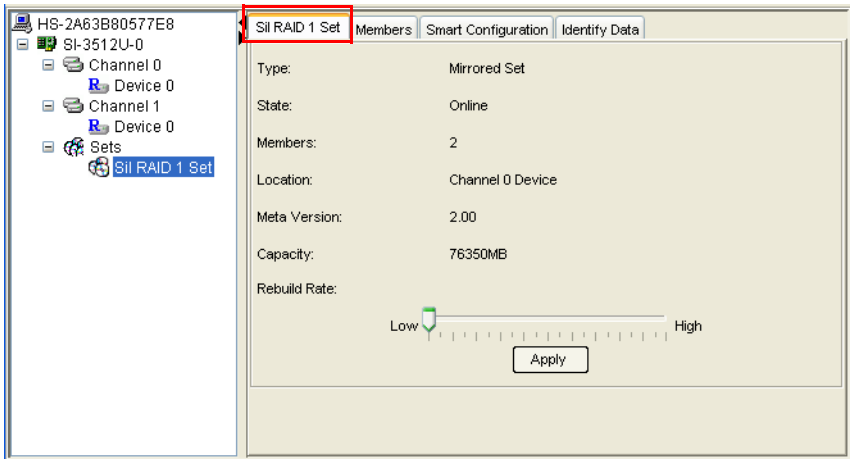
RAID Set Information

When you select a RAID set, the RAID set information is displayed.



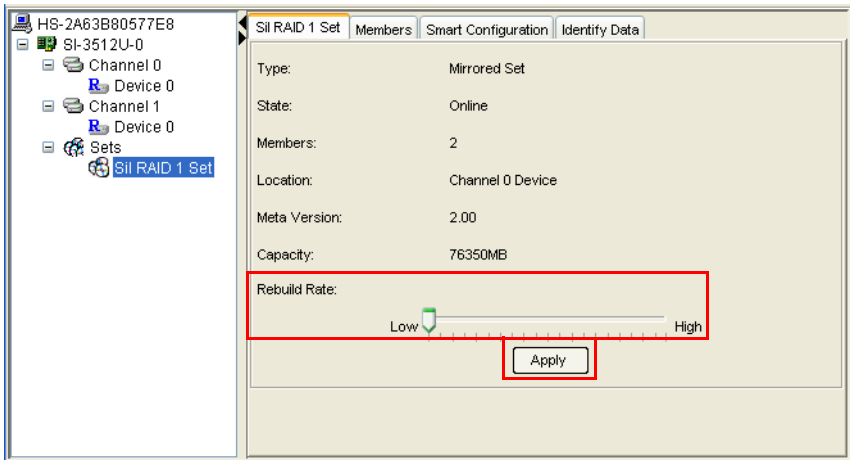
❑ Sil RAID 1 Set tab

Displays the type and capacity of the RAID. Also, you can change the RAID rebuild rate.



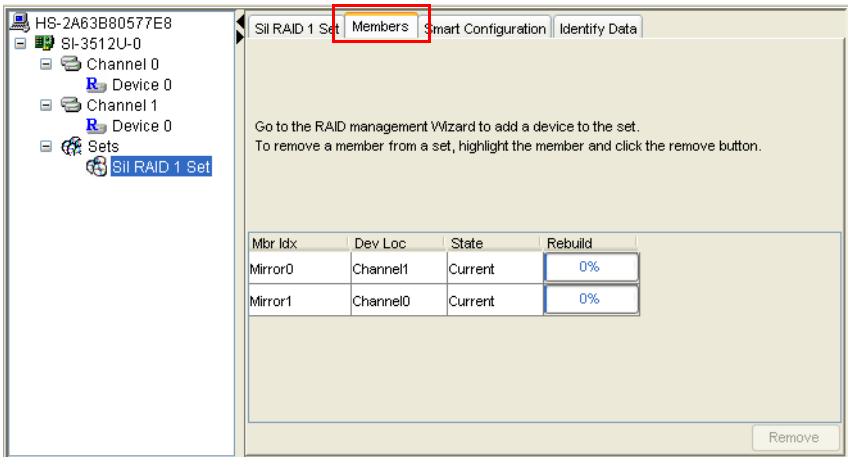
Follow the steps below to change the RAID rebuild rate.

Slide the rebuild rate bar to change the RAID rebuild rate, and click **Apply**.



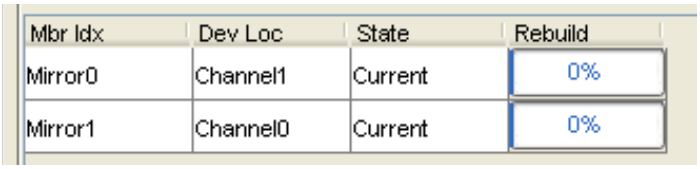
❑ Members tab

Displays the RAID status of the hard disk drives.



Hard disk drives that are not connected or not RAID established are not displayed.

The meanings of the items displayed on the screen are as follows:

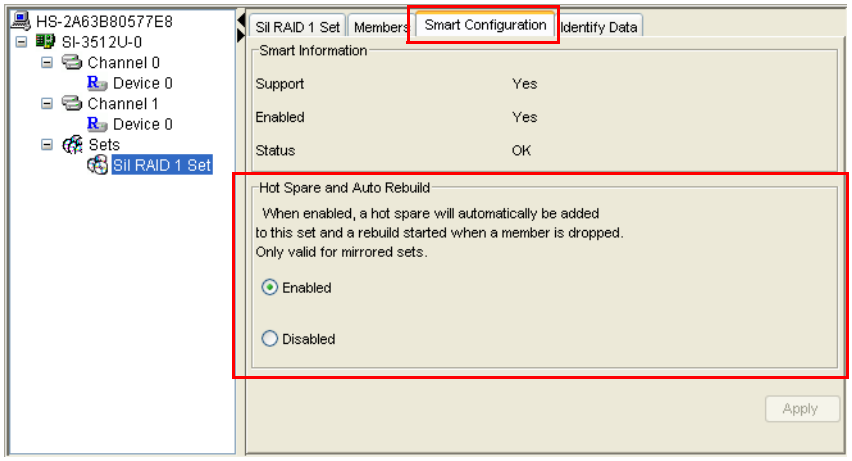


❑ *MbrIdx*	*Logical device Mirror0:* *Mirror1;*	*Primary device* *Secondary device*
❑ *Dev Loc*	*Physical device Channel0:* *Channel;*	*Front side hard disk drive* *Rear side hard disk drive*
❑ *State*	*RAID statusCurrent:* *Rebuild;* *Dropped;*	*Normal* *Rebuilding the array* *Hard disk drive failure*
❑ *Current*	*The system is operating normally*	
❑ *Rebuild*	*The RAID array is now being built*	
❑ *Dropped*	*The hard disk drive is at fault*	

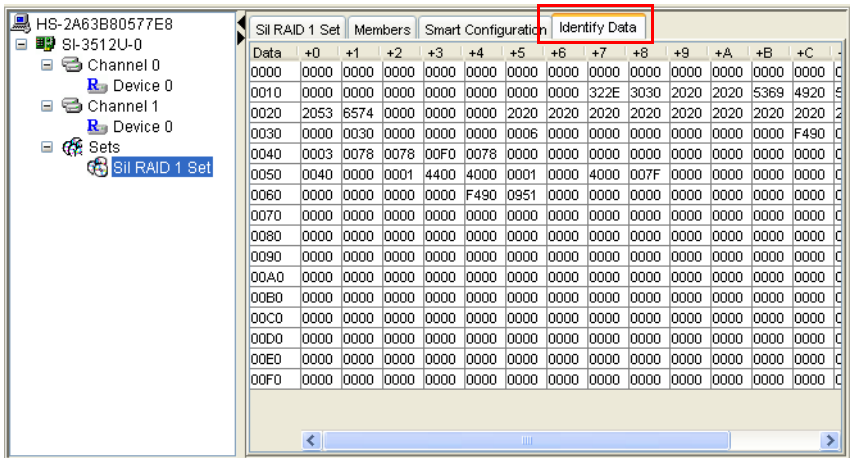
❑ *The rebuilding status is displayed as shown below.*

Mbr Idx	Dev Loc	State	Rebuild
Mirror0	Channel1	Rebuild	43%
Mirror1	Channel0	Current	0%

You can configure settings for Smart information and automatic rebuild. Enable HotSpare Auto Rebuild setting for automatic rebuild.

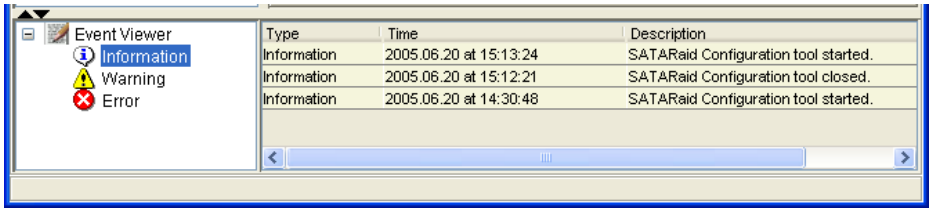


❑ **Identify Data tab**



Event viewer

Displays events that have occurred.



RAID Event Watch Tool

The RAID Event Watch tool detects events of the GUI utility, displays a popup menu in front of an application, and creates event logs for Windows.

Monitors events of the GUI utility and displays popup messages. Also notifies events of the GUI utility as event logs for Windows.

Note:
Set the popup setting for the GUI utility to "Disable ALL."
The tool does not operate when the GUI utility is not running.

Setting and rewriting registry for EPSWatchRAIDevt.reg

The RAID Event Watch tool has a function to create event logs for Windows. To use this function, it is required to set a path with EPSWatchRAIDevt.reg and rewrite the registry.

Follow the steps below to perform the setting.

1. Select **EPSWatchRAIDevt.reg**. It is registered in the following directory by default.

   `C:\Backup\SATARAID\Tool`

2. Right-click **EPSWatchRAIDevt.reg**, and select **Edit** to open EPSWatchRAIDevt.reg.

3. Enter the path name before EPSWatchRAIDevt.exe after ""CategoryMessageFile"=" and ""EventMessageFile"=."

```
Windows Registry Editor Version 5.00


[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog
\Application\EPSWatchRAIDevt]

"TypesSupported"=dword:00000007

"CategoryCount"=dword:00000001

"CategoryMessageFile"="Path name"

"EventMessageFile"="Path name"
```

   Example:)
   "CategoryMessageFile"="c:\\backup\\sataraid\\tool\\epswatchraidevt.exe"
   "EventMessageFile"="c:\\backup\\sataraid\\tool\\epswatchraidevt.exe"

4. Save the change and close the text.

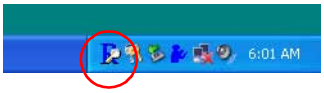
5. Execute EPSWatchRAIDevt.reg to rewrite the registry.

Startup

The RAID Event Watch tool is registered in the directory that is specified when installed. It is registered in the following directory by default.

```
C:\Backup\SATARAID\Tool
```

Double-click **EPSWatchRAIDevt.exe** to start it. When the RAID Event Watch tool starts up, an icon appears in the task tray.



Note:
If you create a shortcut to EPSWatchRAIDevt.exe and register it for the startup, the RAID Event Watch tool automatically starts up when Windows starts up.

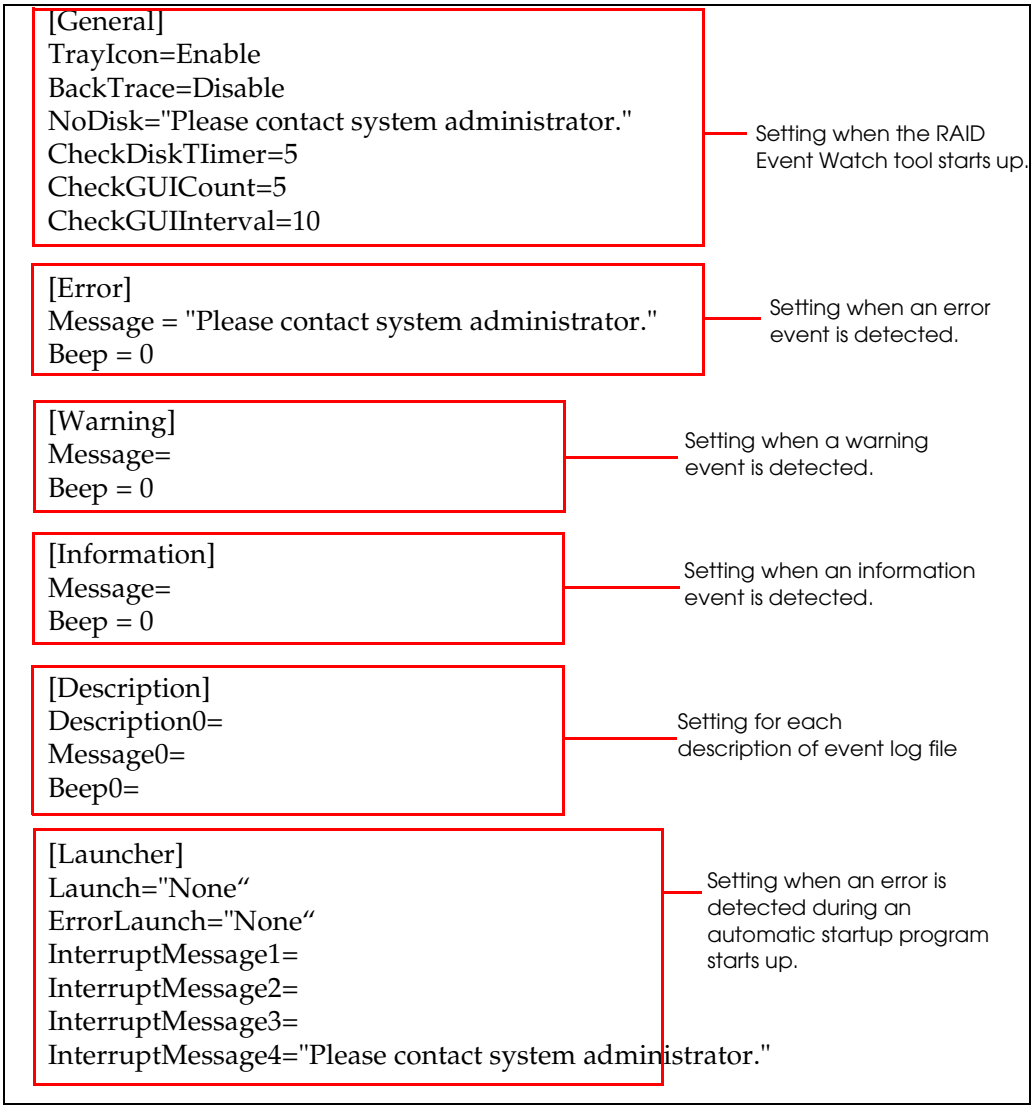
Setting

Set the operation conditions for the RAID Event Watch tool with EPSWatchRAIDevt.ini file. It is registered in the following directory by default.

```
C:\Backup\SATARAID\Tool
```

Open the EPSWatchRAIDevt.ini file and perform the setting.

The initial values of EPSWatchRAIDevt.ini are as follows.



❑ Overall setting

Specify the operation conditions for the RAID Event Watch tool. This section can specify the following parameters.

Command	Default value	Value	Function
TrayIcon	Enabled	Enabled	Displays the icon of the RAID Event Watch tool in the task tray.
		Disabled	Does not display the icon in the task tray.
BackTrace	Disabled	Enabled	Traces back event log files of the GUI utility and detects unsolved errors when an program starts up.
		Disabled	Does not trace back event log files when an program starts up, but detects from newly created events.
NoDisk	"Please contact system administrator."	"Message"	Specifies the message displayed when only one of two HDDs can be detected and started up.
CheckDiskTimer	5	0	Does not check connected drives periodically.
		1-24	Checks connected drives every specified hours. (Specify by hour.)
CheckGUICount	5	0	Does not check whether the GUI utility is running.
		1-20	Specifies the number of times to check whether the GUI utility is running. (Specify the monitoring interval with CheckGUI Interval.)
CheckGUIInterval	10	10-30	Checks whether the GUI utility is running at the specified intervals. (Specify by second. Specify the monitoring time with CheckGUICount.)

❑ Setting when an error event is detected

Perform the setting for the case when an error event is recorded for GUI utility event log. This section can specify the following parameters.。

Command	Default value	Value	Function
Message	"Please contact system administrator."	Message	Specifies the text for the popup message.
		Original	Displays the description of an event log file.
Beep	0	0	No beep
		-1	Standard beep from a computer speaker
		MB_ICONASTERISK	Message (Information)
		MB_ICONEXCLAMATION	Message (Warning)
		MB_ICONHAND	System error
		MB_ICONQUESTION	Message (Inquiry)
		MB_OK	Standard warning beep

❑ Setting when a warning event is detected

Perform the setting for the case when a warning event is recorded for the GUI utility event log.
This section can specify the following parameters.

Command	Default value	Value	Function
Message	Blank	"Message"	Specifies the text for the popup message.
		Original	Displays the description of an event log file.
Beep	0	0	No beep
		-1	Standard beep from a computer speaker
		MB_ICONASTERISK	Message (Information)
		MB_ICONEXCLAMATION	Message (Warning)
		MB_ICONHAND	System error
		MB_ICONQUESTION	Message (Inquiry)
		MB_OK	Standard warning beep

❑ Setting when an information event is detected

Perform the setting for the case when an information event is recorded for the GUI utility event log.
This section can specify the following parameters.

Command	Default value	Value	Function
Message	Blank	Message	Specifies the text for the popup message.
		Original	Displays the description of an event log file.
Beep	0	0	No beep
		-1	Standard beep from a computer speaker
		MB_ICONASTERISK	Message (Information)
		MB_ICONEXCLAMATION	Message (Warning)
		MB_ICONHAND	System error
		MB_ICONQUESTION	Message (Inquiry)
		MB_OK	Standard warning beep

❑ Setting for each description

Specify the operation when a specified description is recorded for the GUI utility event log. Different operations are possible for each specified description.

The event log file of the GUI utility is C:\sataraidevents.log. The event log file name and folder can be changed with the GUI utility. (See.)

The event specified by this section is executed in priority to the specifications of error/warning/information described above, and they are ignored.

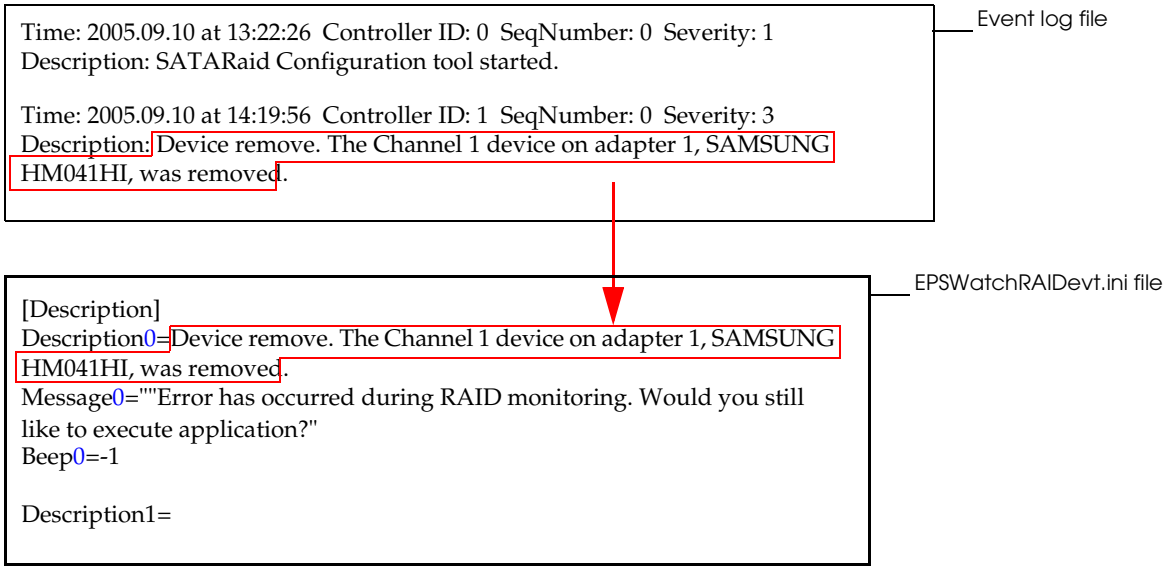
Up to 256 types of setting are possible for this section.

This section can specify the following parameters.

Command	Default value	Value	Function
DescriptionN*	Blank	"Message"	Specifies the message displayed when the GUI utility records an event for event logs.(Description of Sataridevents.log: contents described for the rest)
MessageN*	Blank	"Message"	Specifies the message displayed when the GUI utility records an event specified with DescriptionN for event logs.
BeepN*	0	0	No beep
		-1	Standard beep from a computer speaker
		MB_ICONASTERISK	Message (Information)
		MB_ICONEXCLAMATION	Message (Warning)
		MB_ICONHAND	System error
		MB_ICONQUESTION	Message (Inquiry)
		MB_OK	Standard warning beep

* Use DescriptionN, MessageN, BeepN in a set. The N must be the same number.
The N can be any number between 0 and 255.

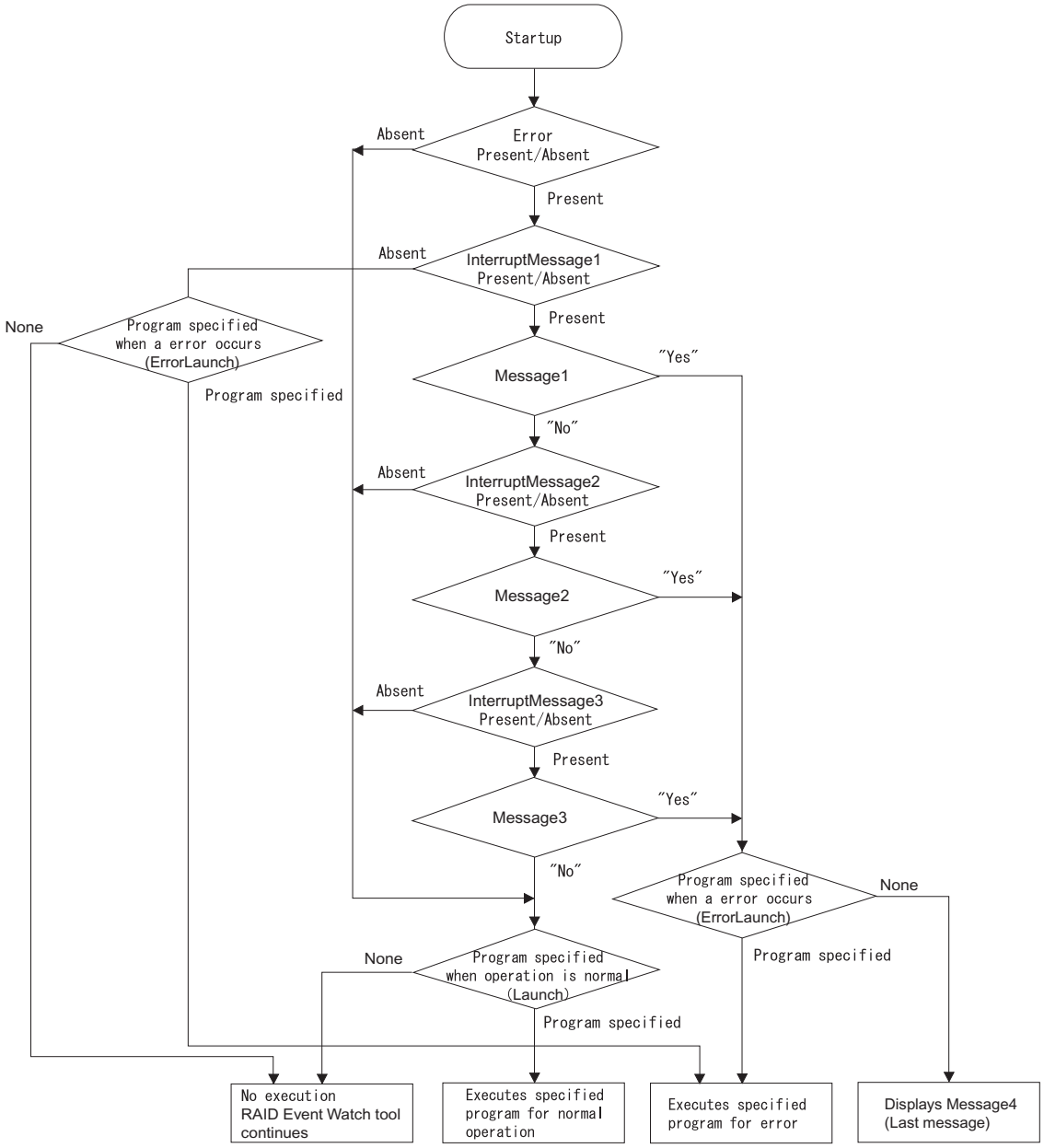
Setting example



❑ Setting for message displayed when an error is detected while an automatic startup program is running.

Confirms whether an error is recorded for the GUI utility event log file when the RAID Event Watch tool starts up, and set the later operation.

The flowchart of startup is as follows.



Selection results for the Messages 1, 2, and 3 are recorded for Windows event logs.
If Message 4 is not defined, the default message, “Please contact system administrator.” is displayed.

This section can specify the following parameters.

Command	Default value	Value	Function
Launch	None	None	No execution
		Execution file name	Specifies the application to be executed next with a full path when no error occurs while this program is starting up.
ErrorLaunch	None	None	No execution
		Execution file name	Specifies the application to be executed next with a full path when an error occurs while this program is starting up.
InterruptMessage1	Blank	"Message"	Specifies the message to be displayed when an error occurs while this program is starting up. (No execution, if no message is specified.)
InterruptMessage2	Blank	"Message"	Specifies the message to be displayed after the InterruptMessage1. (No execution, if no message is specified.)
InterruptMessage3	Blank	"Message"	Specifies the message to be displayed after the InterruptMessage2. (No execution, if no message is specified.)
InterruptMessage4	"Please contact system administrator."	"Message"	Specifies the last message to be displayed after the InterruptMessage1, 2, and 3. (No execution, if no message is specified.)

The following usages are possible.

- When no error occurs, a normal program automatically starts up. When an error occurs, a special program for error occurrence automatically starts up. No message is displayed.

  The InterruptMessage1 is blank. The normal program is written for the Launch. The special program for error occurrence is written for the ErrorLaunch.

- When an error occurs, a message is displayed and a special program for error occurrence starts up. When no error occurs, a normal program automatically starts up.

  Message A is written for the InterruptMessage1. The normal program is written for the Launch. The special program for error occurrence is written for the ErrorLaunch.

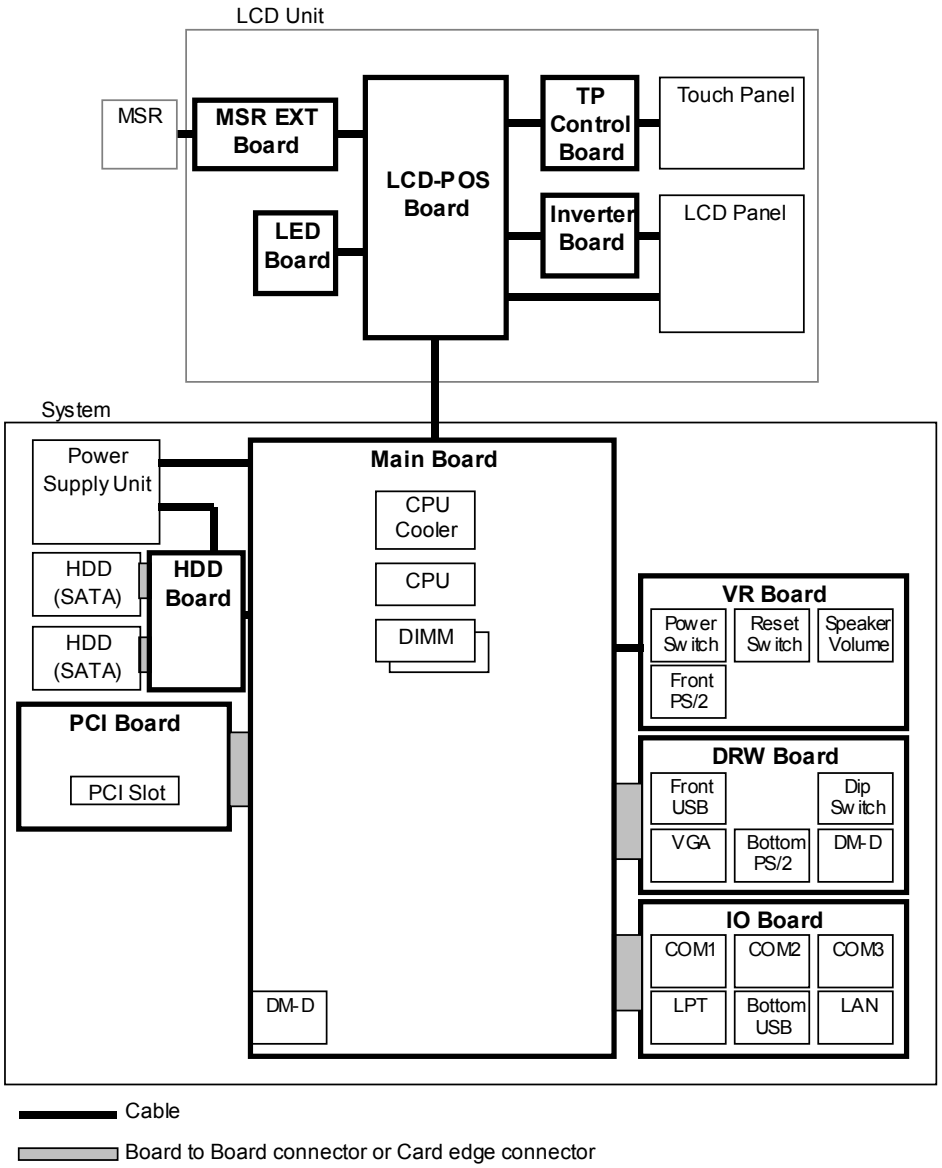
- When an error occurs, a message is displayed and a program is stopped.
- Message A is written for the InterruptMessage1. Message B is written for the InterruptMessage4.
  When an error occurs a popup message, the “Message A” is displayed. If you select “Yes,” a popup message, the “Message B” is displayed and the program is stopped. If you select “No,” the normal operation starts up. When the RAID Event Watch tool is rebooted, this message disappears.

Appendix-A
Hardware Specifications

This chapter explains the hardware specifications of the SR-610.

System Diagram

The block diagram of the SR-610 is as follows.



System Interrupts

The system connects 2 8259A-equivalent interrupt controllers in cascade and has 15 levels of interrupts, besides NMIs. The following table shows the application for each interrupt. Change the system interrupts with the BIOS setup program or Plug & Play function.

Assign COM5 and COM6 to interrupts not in use.

Table 5-3 System interrupts

Controller 1	Controller 2	Application	Changeable
IRQ0		Timer	NO
IRQ1		Keyboard	NO
IRQ2		Controller 2 cascade	NO
	IRQ8	RTC	NO
	IRQ9	ACPI	NO
	IRQ10	Serial port 4	OK
	IRQ11	Serial port 3	OK
	IRQ12	Mouse	*1
	IRQ13	Numerical operation coprocessor	NO
	IRQ14	IDE controller (primary)	*1
	IRQ15	IDE controller (secondary)	*1
IRQ3		Serial port 2	OK
IRQ4		Serial port 1	OK
IRQ5		Not used *2	OK
IRQ6		Not used *2	OK
IRQ7		Parallel port 1	OK
NMI		I/O error check	NO

*1 Changes are not possible when the device is in use, but can be cleared when not in use.

*2 PCI (for example, network) is automatically set through the detection of the unused interrupt level.

Hardware Specifications

CPU

Intel Celeron M (478pin socket) is used as the CPU. FSB is 400MHz.Be sure to use the CPU that we supplied or specified.

Memory (184pin DDR DIMM)

Two 184-pin DIMM sockets are available, and a maximum of 1 GB of memory can be mounted. Only DDR DRAM is supported. DIMM can be used by one unit. Two memories having different capacities can be used as well.

Be sure to use the DIMM that we supplied or specified.

SDRAM specification: Supports up to PC2700(DDR333).

Real-time Clock

The real-time clock (RTC) is built in the chipset (Intel ICH4). The RTC has a clock function and CMOS RAM function, and is backed up by the built-in lithium primary battery even when the system is turned off.

CMOS RAM stores the system setting information such as the clock and power management settings. To clear CMOS RAM, turn the power off and short 2-3 of JP1601 on the main board.

To set the clock, use the BIOS Standard CMOS Features menu.

Clock precision: ±100 seconds per month.

Video Controller

The video controller in the chipset

The video memory uses the part of the main memory, and the color count settings shown below are possible for each resolution.

Dual display is available with Windows function. Another screen can be displayed on an external display as well as the LCD.

It has a screen stretching function. When the VGA screen is displayed on the LCD with SVGA, the screen in expanded to display without reducing the size.

HDD

Up to two Serial ATA 2.5" HDDs can be installed. The rear structure of the system enables you to replace them easily.

The model with two HDDs can establish a RAID system to operate the system continuously and to improve security by preventing a data loss.

HDD capacity	40 GB or more
24 hour-continuous operation	Continuous operation cannot be recommended because it shortens the life of the product. When you must operate it continuously, stop the turning of the motor during the idle time by referring to “Appendix-B Operating the Product Continuously (24-hours/day).”

Serial Device

The SR-610 has three serial ports (COM1, COM2, COM3). Also, +5V can be output at the 1st pin by the BIOS setting. COM3 cannot output +5V. The system can be started up by the ring signal from the 9th pin.

Note:
COM4 (customer display) cannot be used because they are internally dedicated for SR-610.

CompactFlash adapter

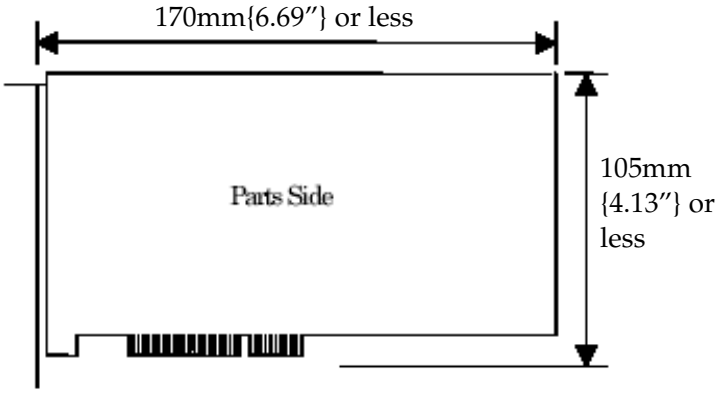
A CompactFlash adapter is the PCI card to install the CompactFlash to the SR-610. Power supply (3.3V) is supplied from the PCI slot and connected to the USB port with the exclusive cable. The CompactFlash is recognized as the USB device. The CompactFlash can be installed and uninstalled at the back of the system. One of the CompactFlashes of TypeI or TypeII can be installed. The CompactFlash cannot be used as the boot drive.

PCI Slots

The PCI of the SR-610 has the following features:

- ❑ Two PCI cards can be mounted.
  - +3.3 V power supply
  - Mountable PCI card size

The PCI cards within the dimensional range as shown in the following figure can be mounted.



Drawer

When using the drawer connector, [Advanced] - [Super IO Configuration] - [SerialPort3 Mode] of the BIOS is set the DRW/DM-D mode, and then connect the customer display to the drawer connector.

Ethernet Controller

The Ethernet controller is built in the Chipset (Intel ICH4). This enables operation at 10 Mbps and 100 Mbps and wakeup from the LAN.

To enable the wakeup, set Resume by OnBoard LAN to Enable with the BIOS Power menu.

The operating status of LAN can be confirmed by the LED of the Ethernet connector.

The controller can be disabled by setting OnBoard LAN of the Chipset menu in the BIOS to Disabled. (Refer to Chapter [BIOS] for more information.)

The MAC address specific to each controller is described on the seal attached to the main board (remove the side panel which is on the left side of the unit). For Windows 2000/XP/WEPOS, the MAC address can be obtained by using the following command:

```
ipconfig/all
```

⚠ CAUTION:

If connection is made directly from an outdoor, overhead LAN cable, the connected equipment may be damaged by lightning. When connecting to such a cable, the connection should be routed through a device to counter the surge; otherwise, do not use the connection.

Dual Display

On the SR-610, you can add an additional external monitor, besides the LCD, to display the same or different contents (such as an enlargement of the work area).

When a monitor is added, the same content is usually displayed on both monitors.

Electrical Specifications

Input Specification

Input voltage	AC 100 - 240 V(+-10%)
Frequency (rating)	50-60 Hz
Input current	5A

Protection Circuit/Unit

When the protection circuit is activated, it automatically shuts off the power. If recovery is possible, turn off the main power switch, wait for more than 2 minutes, and then turn on the main power switch.

- ❏ Short-circuit protection:
  Shuts down the system when the output terminal (output power supply) is short-circuited. Recovery is possible.

- ❏ Over-voltage protection:
  Protection circuit to prevent the output terminals from exceeding the rated voltage. Recovery is possible.

- ❏ Overheating protection:
  Shuts down the system when excessive heat is detected in some element within the power supply unit. Recovery is possible.

- ❏ Input power fuse:
  Shuts down the system when the input current exceeds the specified value. Trouble within the power supply unit is possible. If the fuse has blown, the whole power supply unit should be replaced. Recovery is impossible.

Electrical Capacity to External Devices

The total power capacities available to the devices that receive power supply from the board inserted into the PCI slot; the serial ports COM1, COM2 and COM3, DM-D,Drawer; the PS/2; and the USB port are shown below. Be sure the current consumptions do not exceed the total power capacities listed below as to the voltages 5 V, +3.3 V, +12 V, -12 V, and +24 V.

Table 5-6 External power capacity

Power supply	Use	Total capacity
DC+5V	PCI slot, COM port, PS/2, USB	2.5A
DC+3.3V	PCI slot	0.5A
DC+12V	PCI slot, Customer display	0.7A
DC-12V	PCI slot	0.25A
DC+24V	Drawer	0.5A; Peak 2.0A

Also, each port has the following capacity limit.

Table 5-7 Power capacity of each port

Port	Power supply	Supply capacity	Remarks
COM port	+5V(DC)	500mA each (peak 1A/100ms)	Do not exceed the value on the left column even with a total of the four ports.
USB port	+5V(DC)	500mA each (peak 1A/100ms)	--
PS/2(Keyboard/ Mous)	+5V(DC)	500mA (peak 1A/100ms)	--
Drawer	+24V(DC)	1A	--

Lithium Battery

The SR-610 is internally equipped with a non-rechargeable Lithium Battery. This battery is used for backing up the RTC and the CMOS RAM built in the RTC.

Battery type	CR-2032
Backup time	5 years

If the message "`cmos check sum error`" appears every time the system is started up, replace the battery.

⚠ *CAUTION*

Be sure to use the SR-610 within the specification temperature range. In particular, do not use the battery in high heat and moisture, and never allow dew formation.

Do not disassemble, charge, deform, heat, or throw the lithium battery into the fire.

Injuries due to bursting or chemical reaction may result.

Do not remove or replace the lithium battery around fire or a heater.
Overheating or fire may result.

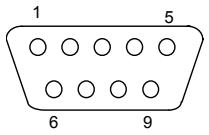
To dispose of the lithium battery, cover the terminals with tape or the like, and separate each battery. Do not put the battery together with metallic parts or other batteries.

Overheating, fire, or explosion may result.

Interface

Serial Connectors

The SR-610 has four NS16550-compatible serial ports (COM1, COM2, COM3). Com3 is common port to the drawer and the DM-D, and it switches the port to use at the BIOS.



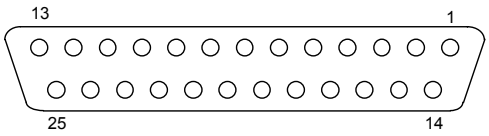
Assignment of serial connector signals

No.	Signal name	I/O	Description
1	DCD/power supply (*)	I/ -	Carrier detection signal or power supply output
2	RXD	I	Received data signal
3	TXD	O	Transmission data signal
4	DTR	O	Terminal ready signal
5	GND	-	Ground
6	DSR	I	Data set ready signal
7	RTS	O	Transmission request signal
8	CTS	I	Transmission data cleared signal
9	RI	I	Ring signal

(*) Pin 1 can be set for +5 V output with the BIOS settings (Serial Port 1/2 Outlet 5V to Enabled). COM3 cannot output +5V

Parallel Connector (LPT Connector)

The LPT connector is a 25-pin D-Sub female connector. Set the LPT port to bidirectional or EPP/ ECP mode in BIOS setup. The SR-610 does not support an OCIA interface.



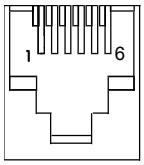
Assignment of parallel connector signals

No.	Signal name	I/O	Description
1	STROBE#	O	Strobe signal
2	PD0	I/O	Data signals
3	PD1	I/O	
4	PD2	I/O	
5	PD3	I/O	
6	PD4	I/O	
7	PD5	I/O	
8	PD6	I/O	
9	PD7	I/O	
10	ACK#	I	Acknowledge (receiving complete) signal. LOW: Receiving enabled
11	BUSY#	I	Busy signal. LOW: Busy
12	PE	I	Paper error signal. HIGH: Error
13	SLCT	I	Selection signal. HIGH: select
14	ATFD#	O	Auto-feed signal. LOW: Paper feed
15	ERR#	I	Error signal. LOW: Error
16	INIT#	O	Initialization signal. LOW: initialize
17	SLIN#	O	Printer selection signal. HIGH: Select
18 to 25	GND	-	Ground

following a signal name indicates active LOW.
See the IEEE 1284 Specification

DKD Connector

The DKD connector, which is located on the rear panel, is a connector for the cash drawer. The connector is a 6-pin, modular connector. When using the drawer connector, [Advanced] - [Super IO Configuration] - [Serial Port3 Mode] of the BIOS is set the DRW/DM-D mode.



DKD connector pin assignments

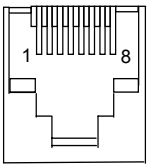
No.	Signal name	I/O	Description
1	FG	-	Frame ground
2	DKD1	O	Drawer 1 kick-out signal; LOW: Open
3	DK Status	I	Drawer status signal; Low/High is different with the specification of the Drawer.
4	+24 V	-	+24 V (DC) of electrical power
5	DKD2	O	Drawer 2 kick-out signal; LOW: Open
6	SG	-	Signal ground

* Low/High differs depends on the specification of the Drawer.

Customer Display Connector

Connect a DM-D series customer display to the customer display connector. The connector is an 8-pin modular connector.

When using the DM-D connector, [Advanced] - [Super IO Configuration] - [Serial Port3 Mode] of the BIOS is set the DRW/DM-D mode or the DRW/IM-D mode



DM-D connector pin assignments

No.	Signal name	I/O	Description
1	FG (frame GND)	-	Frame ground
2	RXD (not used)	I	Received data (not used with this unit)
3	TXD	O	Transmission data
4	DTR (not used)	O	Unit ready signal (always at ready)
5	DSR/CTS	I	Customer display ready signal
6	SG (signal GND)	-	Signal ground
7	+24 V DC	-	+24 V of electrical power
8	PGND (power GND)	-	Power supply ground

Appendix-B

Operating the Product Continuously (24-hours/day)

Continuous operation cannot be recommended because it shortens the life of the product. When you must operate it continuously, stop the turning of the motor during the idle time by referring to the following procedures.

Note:
Even if the motor is stopped, continuous operation is not guaranteed.

HDD Motor Stop Setting

To stop the HDD motor, set the HDD Power Down Timer and the Windows Update.

In case of the following condition, even if you set the HDD motor to stop, the HDD motor cannot be stopped.

- When the application is set not to enter the standby (idle) condition for the HDD.
- When the HDD Power Down Timer is set to more than an hour, Windows accesses the HDD regularly to synchronize the timer, so the HDD motor does not stop.

Note:
When using the RAID system, the GUI utility accesses the HDD regularly, so the HDD motor does not stop.

HDD Power Down Timer Setting

The HDD Power Down Timer checks the access to the HDD.

With the HDD Power Down Timer, the access condition to the HDD is checked. When the time that the HDD is not accessed passes the specified time, the HDD motor is stopped.

If the OS of Epson is installed, the HDD Power Down Timer is set to “Never.”

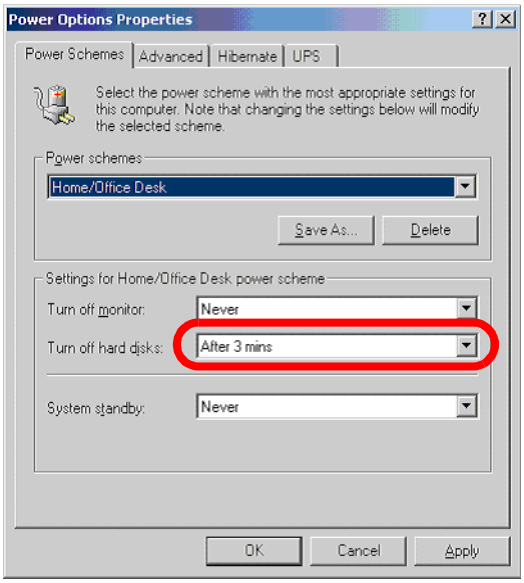
Do the following setting because the HDD motor cannot be stopped by “Never.”

The procedure of the setting is as follows.

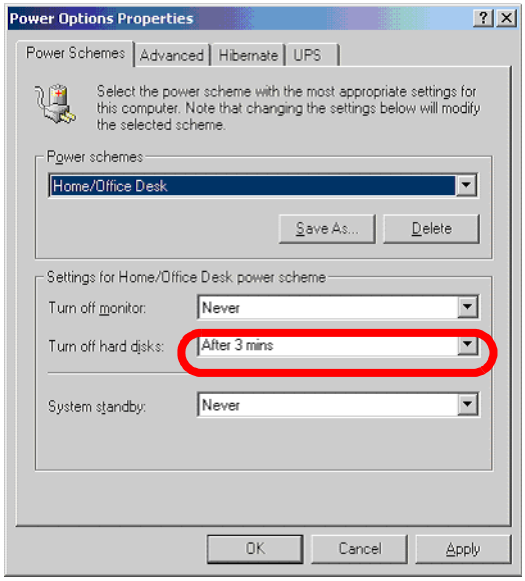
1. Click [Control Panel] in the start menu of Windows.
2. Select [Power Option Properties].
3. Click the [Power Schemes] tab.

4. Select the time in the [Turn off hard disks] option.

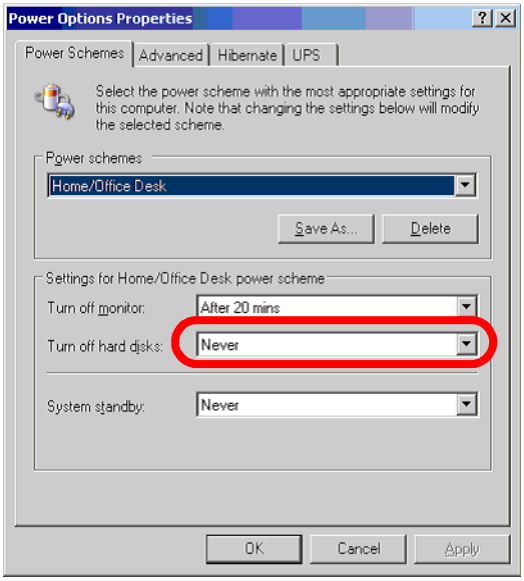
Windows 2000



Windows XP



WEPOS



5. Click [OK].

Note:

When there is access to the HDD within the set interval, the motor does not stop.

Windows Update Setting

If it is set, the HDD is accessed regularly and the HDD does not become idle. Set the Windows Update to be disabled.

After the OS of Epson is installed,set the HDD is as follows.

- Windows 2000 [Automatic Updates] is set [recommended]. Do the setting described below.
- Windows XP [Automatic Updates] is not set. When adding a log-on user, the setting is accessed in Administrator.
- WEPOS [Automatic Updates] is not set. When adding a log-on user, the setting is accessed in Administrator.

When installing the OS of users, it is as follows.

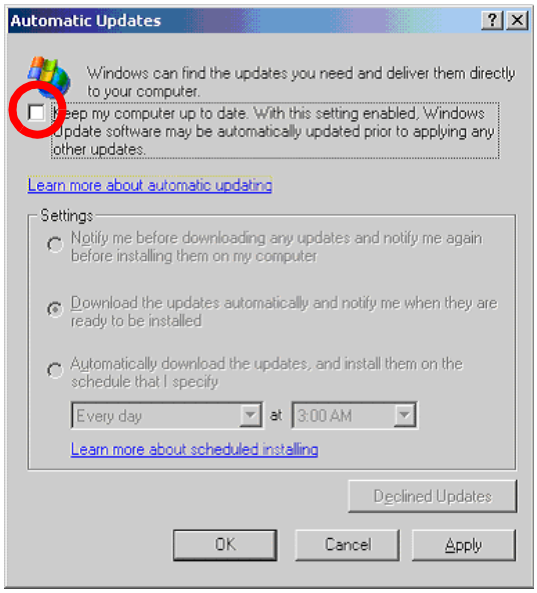
- Windows 2000 [Automatic Updates] is set [recommended]. Do the setting described below.
- Windows XP Recommended can be set while installing the OS. When adding a log-on user, the setting is accessed in Administrator.

The procedure of the setting is as follows.

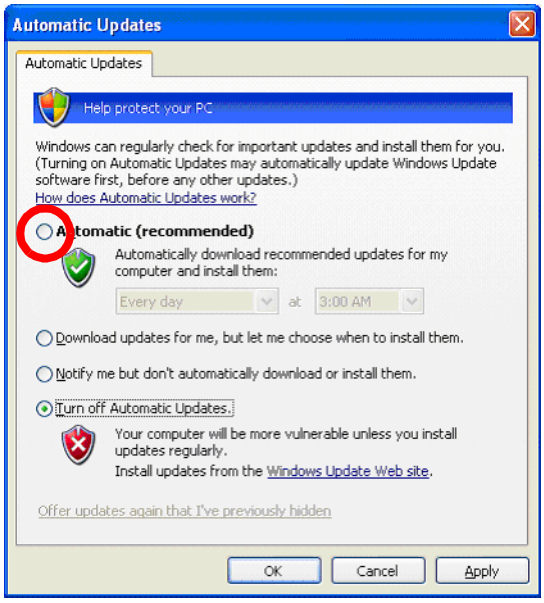
1. Click [Control Panel] in the start menu of Windows
2. Select [Automatic Updates].

3. Uncheck the checkbox [Keep my computer up to ...] (Windows 2000), [Automatic] (Windows XP), [Automatic] (WEPOS).

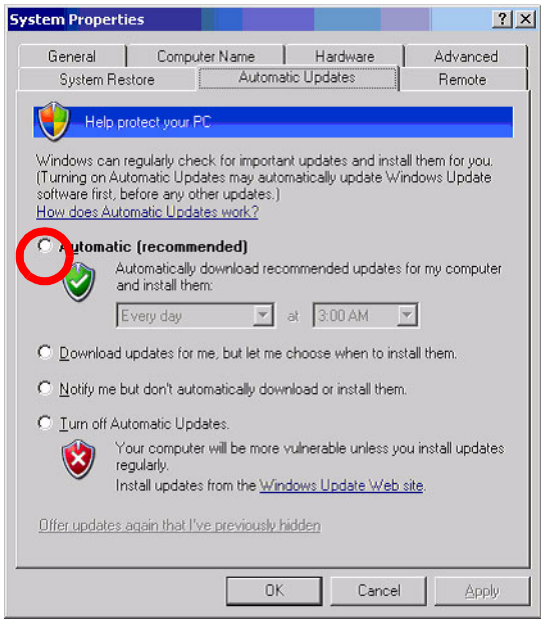
Windows 2000



Windows XP



WEPOS



4. Click [OK].

Appendix-C

Replacement of SR-600 with SR-610

When you replace the SR-600 with the SR-610, pay attention to the following:

- ❏ OS type
- ❏ Compatibility
- ❏ Specification

OS Type

Follow the instructions below, depending on the OS you use.

For Windows 95/98 and MS-DOS

The SR-610 does not support Windows 95/98 and MS-DOS. You need to modify the application to use Windows 2000 Professional or Windows XP Professional to use the SR-610.

For Windows NT

The SR-610 does not support Windows NT. You need to modify the application to use Windows 2000 Professional or Windows XP Professional to use the SR-610.

For Windows 2000 Professional

You need to reinstall the application used for the SR-600.

For OPOS and APD, only the latest versions are supported. If you are using an old version, you need to use the latest one. The versions are basically upward compatible, but be sure to check the operation carefully. Repasting OCX may be required depending on the version you use.

Compatibility

For compatibility, refer to the instructions below.

CD/DVD Drive

The SR-610 does not support the built-in CD drive (OI-S02). When you want to use a CD drive, use the external CD/DVD drive (OI-X04) optionally supplied. The drive number is automatically assigned by the PnP function of the OS.

FDD

The external FDD drive (OI-X05) for the SR-610 uses a USB interface. "A:" is assigned by the BIOS. The external FDD drive (OI-S01) for the SR-600 cannot be used. Booting from an FDD is possible as well as from the SR-610.

Drawer/CRT Board

The optional drawer/CRT board (OI-B08) for the SR-600 cannot be used, but drawer ports and external CRT ports are supported as standard. However, only one port is supported for the drawer interface. Use emulation mode 2.

Support for CompactFlash Cards

The CompactFlash Adapter (OI-S05) to connect to an internal USB interface is optionally provided. The options for the SR-600 (OI-S03 012/022) cannot be used.

The OI-S05 cannot be used along with a PCI card, because it connects to a PCI interface connector to connect to the internal USB interface with a cable. Hold up the body to replace the cards on the bottom.

Hot-swap during the power is on is not supported (as before).

Logon Tool (for Win2000)

The logon tool is not supported.

PS/2 Keyboard/Mouse

The SR-610 has two PS2 ports on front and bottom. You can use only one of them. The front port is enabled by default, and the bottom one can be enabled with DIP switch SW2-5.

The optional branch cable (DM-A100) is required to use both keyboard and mouse.

Shutdown with Power Switch

For the SR-600, when the power switch of the BIOS is set to "APM Power OFF," pushing the power switch does not have any effect.

The operation of the SR-610 when the power switch is pushed is different from that of the SR-600, because the SR-610 supports ACPI. Processing differs depending on the OS, so execute different processes for applications, depending on the OS.

For Windows 2000

For Windows 2000, pushing the power switch causes "power off" or "standby state," depending on the OS setting. However, if "power off" is selected without appropriate application process, forced shutdown will be caused and unsaved data will be lost.

When you shut down the system with the power switch, follow the steps below. When you want to disable the power switch, follow step 1 only.

1. When the application receives WM_POWERBROARDCAST, it returns BROADCAST_QUERY_DENY at once. This process refuses Windows shutdown process.

2. Close the application.

3. Shut down Windows.

For Windows XP

For Windows XP, if "power off" is selected for the setting when the power switch is pushed, WM_QUERYENDSESSION will be sent to the application. This message is sent when you select shutdown from the start menu. When the application receives a WM_QUERYENDSESSION message, unsaved data will be written, end processing will be performed, and then Windows will shut down.

Difference Between Models

Differences between the SR-610 and the SR-600 are shown below. See the specification section in Chapter 1 for the other items.

Item		SR-610	SR-600
CPU	Available CPU	Intel® Celeron ®M 1.3GHz	Intel® Celeron ® 366Mhz/ 733MHz
	Socket	mPGA479M socket	Socket 370
	Two-dimensional cash memory	512KB	128KB/ 256KB
Chipset		Intel® 855GME/ICH4 chipset	Intel® 440BX chipset
Memory	Main memory	256MB 184pin DDR SDRAM DIMM slot x2 1GB at max. (up to DDR DIMM PC2700 supported)	128MB 168pin DDR SDRAM DIMM slot x2
	Video memory	Main memory shared	Built-in video chip
	BIOS ROM	1MB flash memory	512MB flash memory
Video controller		Built-in chipset	SM712 / CT69000
Dual display		Equipped as standard	Not supported
LCD	LCD size and type	12.1 LCD, color TFT	12.1 LCD, color TFT
	Resolution	800 x 600 dots	800 x 600 dots
	Number of display colors	256K color (Approx. 260000 colors)	256K color (Approx. 260000 colors)
	Backlight	2 lights	2 lights
Touch panel	Type	Resistive film type（input by finger is available）	Resistive film type（input by finger is available）
	Fingerprint registance	Supported	Not supported
HDD	Type, number	Serial ATA2.5 type HDD One or two SATA I/II supported	E-IDE 2.5type One UDMA33 supported
	Capacity	40GB or above	8GB or above
	RAID	RAID (mirroring only) is equipped as standard when 2 HDD are built in.	Not supported
FDD		Optional, USB interface	Optional, Dedicated interface
CD-ROM		CD-R/RW/ DVD-ROM drive Optional USB interface	CD-ROM Factory built-in option IDE interface
CompactFlash		Factory option PCI slot, USB interface	Factory built-in option IDE interface

Interface	Ethernet	10 BASE-T / 100 BASE-TX equipped as standard Wake On LAN not supported	10 BASE-T / 100 BASE-TX equipped as standard Wake On LAN not supported
	Keyboard/mouse commonly used	x2 （IBM PS/2 keyboard compatible, 6pin mini-DIN） Connection of both keyboard and mouse is possible with a branch cable.)	x1 （IBM PS/2 keyboard compatible, 6pin mini-DIN） Connection of both keyboard and mouse is possible with a branch cable.)
	Serial	External x3（D-sub 9 pin male） DC5V can be output to 1 pin of COM1 and COM2 by BIOS setting.	External x3（D-sub 9 pin male） DC5V can be output to 1 pin of COM1 and COM2 by BIOS setting.
	Parallel	x1（D-sub 25pin female）EPP/ EC Psupported	x1（D-sub 25pin female）EPP/ EC Psupported
	Display	x1 equipped as standard（D-sub 15pin female）	x1 Factory option
	USB	x4 USB2.0 supported (High/Full/Low speed)	x2 USB1.1 supported
	Customer display	x1 (RJ-45)	x1 (RJ-45)
	Drawer	x1 equipped as standard	x2 Factory option
	MSR	x1 DM-MS112 only	x1 DM-MS112 only
Extended slot	PCI slot	x1 (Version2.2 compliant)	x1 (Version2.1 compliant)
BIOS		ACPI 2.0/APM 1.2 / Plug&Play / DMI supported	APM / Plug & Play / DMI supported
Support OS		Windows®2000 Professional SP4 or later Windows®XP Professional SP2 or later	WindowsNT™ Workstation4.0 Windows™2000 Professional Windows™XP Professional
Power supply		AC100V-240 V / 50Hz-60Hz 152W	AC100V-240 V / 50Hz-60Hz 130W
Temperature		Operating:5°C to 35°C Storage:-10°C to 50°C	Operating:5°C to 35°C Storage:-10°C to 50°C
Humidity		Operating: relative temperature 30%RH to 80%RH without condensation Storage:relative temperature 30%RH to 90%RH without condensation	Operating: relative temperature 30%RH to 80%RH without condensation Storage:relative temperature 30%RH to 90%RH without condensation
Case color		Epson Cool White (ECW) Epson Dark Gray (EDG)	Epson Cool White (ECW) Epson Dark Gray (EDG)
Dimensional size		310 mm(W) x 306 mm(D) x 277 mm(H) Foot space and rear cover is included in (W) and (D). (H) shows the size when the LCD is straight upward.	310 mm(W) x 306 mm(D) x 277 mm(H) Foot space and rear cover is included in (W) and (D). (H) shows the size when the LCD is straight upward.

Options

Item		SR-610	SR-600
Keyboard	60 key unit	DM-KX060	Not supported
	84 key unit	DM-K840-101	DM-K840-011 DM-K845
	128 key unit	Not supported	DM-K128
MSR		DM-MS112	DM-MS112
Customer display	DM-D110	Connectable	Connectable
	DM-D210	Connectable	Not connectable
	DM-D500	Connectable	Not connectable
CD drive unit		OI-X04 (USB I/F) External option	OI-S02 Factory built-in option
FDD drive unit		OI-X05 (USB I/F) External option	OI-S01 (SR-600 only) External option
CompactFlash		OI-S05	OI-S03-012 OI-S03-022 Factory built-in option
APM driver for Windows NT		Not required	OI-S04

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