Technical Reference Manual
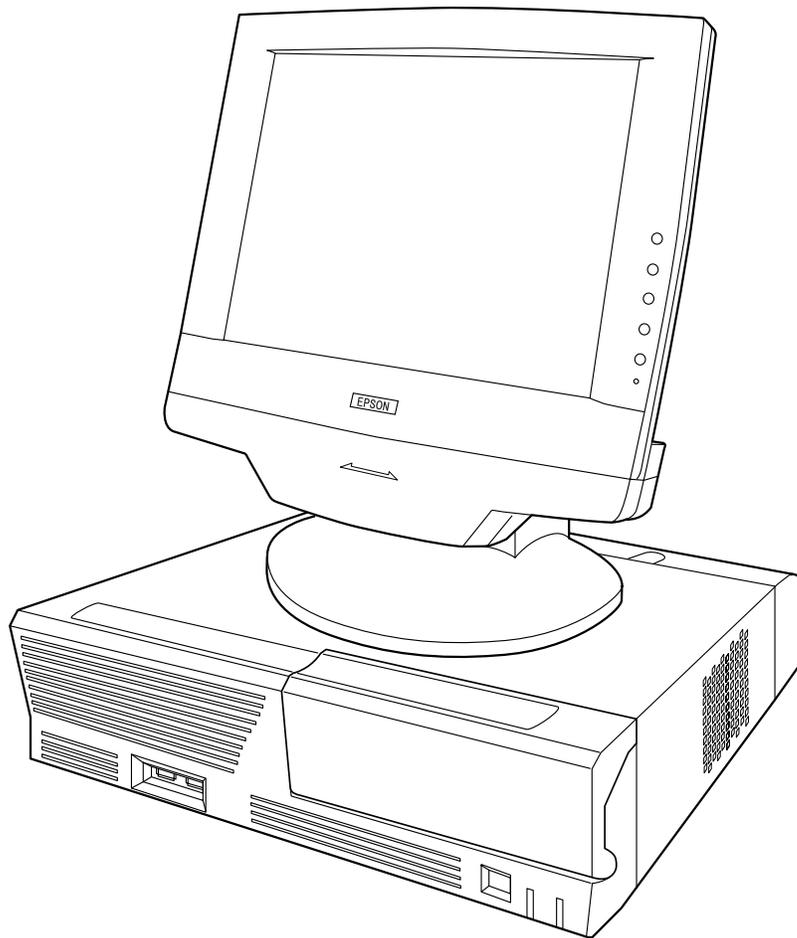
MR Series

English

EPSON

403308709
Rev. I

Revision Table

Rev.	Page	Description
Rev. A	All pages	Newly authorized
Rev. B	Chapter 5	BIOS updated from 2.06 to 2.08
	9-2	Added explanation and listing of "touch panel position adjust jig" in "Required Tools". Reason for change: The tool is now supplied for assembling the touch panel assembly.
	9-18—20	Added new explanation for installation of the touch panel assembly.Reason for change: The touch panel assembly needs to be assembled and attached to the main frame using the ˇtouch panel position adjust jigˇtool.
	9-21	Added the explanation below in the ˇremoving the LCDˇ. Note: When replacing the LCD, you need to change the electric-conductive tape also. Reason for change: This explanation was missing.
	B-7,9,11,13	Added the parts in the Parts List and Exploded Diagram. For DM-M820-014: - upper plate (Ref# 120) - lower plate (Ref# 121) - touch panel assembly (Ref#:1056) Reason for change; The for the touch panel assembly unit was changed. For IM-800: - Ferrite core (Ref#; 220) Reason for change: This explanation was missing.
Rev. C	1-7,9.2-2,4	Add the Indiividual Sales of IM and DM.
	vii,viii,1-1,6,10,2-4,7-4	Add the AC Adapter OI-MR01.
	1-3-6,11,2-1,6-1,2	Revision of the illustration.
	3-1,3	Revision of the Hardware diagram.
	4-1,3,17,19	Add the installation for Windows XP Professional Locally Procured Edition.
	4-2	Add the explanation for Driver CD-ROM.
	4-3	Add the Touch Panel Driver for Asian.
	4-26-27,	Add the uninstaiiing the Serial Port Driver for Windows 2000.
	4-32	Add the Installing the Service Pack 6a for Windows NT.
	5-7	BIOS updated from 2.06 to 2.09.
	5-16-19	Add the supplementary explanation for Power Management.
	Chapter 8	Chanded the explanations for troubleshooting. The changed points; The each explanation for the trouble related to specific models is noted by an icon. Reason for change; The display with the touch panel assembly and without the MSR unit is newly supplied.
	9-3	Addd the explanation for the DM-M820-015 in the work diagram for DM-M820. Reason for change; The display (DM-M820) with the touch panel assembly and without the MSR unit is newly supplied.

Rev.	Page	Description
	9-24,27,28,37	Added the explanation for disassembly and assemblyof the parts below. -PCI card -Switch cable assembly
	9-29	The method of disassembly and assembly the CD/FDD bracket is changed. The changed point. One screw and stopper is added to fix the CD/FDD bracket correctly. Reason for change; The part is changed to prevent the CD/FDD bracket from connection failure.
	B-11—15	Added parts list and block diagram for the model DM-M820-015. Reason for change; The display with the touch panel assembly and without the MSR unit is newly supplied.
Rev.D	9-19	Added the explanation of attaching the touch panel. Reason for change; To be supplied the touch panel unit (115) newly.
	9-30 Appendix B	Changed the explanation of attaching the CD-ROM unit with the screws "C.B.screw. 2x2.5.F/ZN". Reason for change; T wo screws "C.B.screw. 2x2.5.F/ZN" attaching the CD-ROM unit are added.
	9-32 Appendix B	Deleted the explanation of attaching the gasket to the FDD unit. Reason for change; We stop supplying the gasket.
	Appendix B	Changed the partslist and Exploded Diagrams. The added parts in the list is indicated below. Touch panel unit (Reference number: 115) Reason for change; To be changed the composition of the parts. Note; The parts (Touch panel, Upper plate, Lower plate, Touch panel asssembly) will be not supplied. Because the touch panel unit will be supplied instead of them. And the touch panel assembly and the touch panel unit is interchangeality.
Rev.E	1-1,7,9-37	Add the 2.5"HDD.
	1-3	Add the Inside view.
	1-7	Add the Lithium Battery.
	1-8,9,AppB	Add the Gray color Models.
	5-12,27	Add the On board Lan Boot ROM.
	6-2	Add the Adjusting the volume.
	8-8	Add the Unable to Read Data from HDD.
	8-11	Add the Speaker Faults.
	9-29	Add the RAID Card.
	9-31,34	Add the Power cable is differentn for 3.5"HDD or 2.5"HDD.
	9-45	Add the Speaker.
	A-1	Add the 2.5"HDD Jumper Settings.
	B-16	Revision of the Parts list IM-800 for 3.5"HDD Model.
	B-19,20	Add the Parts list IM-800 for 2.5"HDD Model and Speaker Model.
	B-21	Add the IM-800 for 2.5"HDD Model and Speaker Model Component Block.

Rev.	Page	Description
Rev.F	4-73-77 5-1,15,19,20 5-30	Add the HDD Power Down Settings.
	5-1,2,15,19 5-20,30	Add the BIOS Ver.2.13.00.
	3-6	Add the RTC (Real Time Clock).
Rev.G	v,vii 1-1,3,4,, 9,10 2-1,3,5,6 3-1,4,,6 8-3,14,15,18 8-23 9-25,30,31 9-51 -54 B-16 -24	Add the IM-800 with TM Printer Power Supply model.
	1-1,11 B-2 -15	Add the DM-M820 High brightness model.
	9-33,42	Add the notes.
	9-50	Add the Speaker instdliation.
	B-16 -24	Add the COM cable, B.
Rev. H	7-1,4 -6 9-2,4,27 -39 B-11 -15	Add the change of LCD.
Rev.I	9-68,70	Add the Cautions.

Cautions

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Important Safety Information

This section presents important information intended to ensure safe and effective use of this product. Read this section carefully, and store it in an accessible location.

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:*

Warnings must be followed carefully to avoid serious bodily injury.

⚠ *CAUTION:*

Cautions must be observed to avoid minor injury to yourself or damage to your equipment.

Safety Precautions for the IM-800

⚠ *WARNING:*

If you are using 100-127 V power, set the AC voltage select switch to 115.
If you are using 200-240 V power, set the AC voltage select switch to 230. (The factory setting is 230.) If the setting is wrong, the system will be damaged and will not operate. (For the standard model)

Unplug the power cable immediately if the IM-800 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 insert or disconnect the power plug with wet hands. Doing so may result in severe shock.

Do not allow foreign objects to fall into this product. Penetration by foreign objects may lead to fire or shock.

If water or other liquid spills into this product, turn off the front power switch, unplug the power cable immediately, and then contact your dealer or an EPSON service center for advice. Continued usage may lead to fire or shock.

Always supply power directly from a standard domestic power outlet.

Do not place multiple loads on the power outlet (wall outlet). Overloading the outlet may lead to fire.

The equipment must be installed near the electrical outlet, and the outlet must be easily accessible.

Do not attempt to open or disassemble the internal lithium battery. This could result in burns or release of hazardous chemicals.

Do not charge the internal lithium battery or leave it in a hot place such as near a fire or on a heater because it could overheat and ignite.

When you dispose of the internal lithium battery, insulate it by wrapping the terminals with tape. Mixing the battery with other metals or batteries may lead to fire, heat, or explosion.

Be sure your power cable meets the relevant safety standards and includes a power system ground terminal (PE terminal).

There is a ventilation opening on the right side; do not place any object in front of it. If you set this product upright, be sure the ventilation opening is on the top. Do not place any object on top of the ventilation opening.

Handle the power cable with care. Improper handling may lead to fire or shock.

Do not modify or attempt to repair the cable.

Do not place any object on top of the cable.

Avoid excessive bending, twisting, and pulling of the cable.

Do not place the cable near heating equipment.

Check that the plug is clean before plugging it in.

Be sure to push the prongs all the way in.

Do not use a damaged cable.

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.

⚠ *CAUTION:*

When replacing the battery, use only an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

Do not connect cables other than those specified in this manual. Doing so may result in fire or improper operation.

Do not connect the unit to electrical outlets that are close to devices that generate voltage fluctuations or electrical noise. In particular, stay clear of devices that use large electric motors.

Always connect the power cable to the IM-800 before plugging it into the wall outlet.

Be sure to push the plug of the power cable all the way into the AC inlet of this product. The plug should make contact with the back of the inlet.

When disconnecting the power cable, hold the plug firmly. Do not tug on the cord itself.

Be sure to set this product on a firm, stable, horizontal surface. The product may break or cause injury if it falls.

Do not use the unit in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage, fire, or shock.

Do not use the unit in locations subject to liquids, since this product is not waterproof.

Do not use the product where inflammable fumes of gasoline, benzine, thinner or other inflammable liquids may be in the air. Doing so may cause an explosion or fire.

Do not place heavy objects on top of this product. Equipment may fall or collapse, causing breakage and possible injury.

To ensure safety, unplug this product before leaving it unused for an extended period.

Do not drop, bump, or otherwise subject this product to strong vibration or impact.

Do not block the openings on this product. Be sure not to install the product in a narrow place that is not well ventilated, not to place it on any bedding or carpet and not to put any cloth such as a tablecloth or blanket on it. The openings are provided for the ventilation necessary to ensure reliable operation and protection from overheating or fire.

Be sure to attach all covers after setup. If they are not attached, foreign matter may enter this product and it may not operate correctly.

Never clean the product with thinner, benzine, alcohol, or other such solvent.

Do not use aerosol sprayers containing flammable gas inside or around this product. Doing so may cause fire.

Do not use this product with any voltage other than the specified one. Doing so may lead to fire.

When a power cable for the TM printer is connected, do not short-circuit its connector pins. (For the 24V model)

Do not insert fingers or foreign matter into the CD-ROM disk tray or openings. Doing so may lead to fire, shock, or injury.

Never hold this product by the rear cover, the front panel, or the CD-ROM disk tray. They cannot support the weight of the product, so it may fall onto the floor.

Make sure that the total power requirements of all devices receiving power from this product do not exceed the power limitation. See the specifications for more detailed information.

Be careful not to cut your finger on any edge of the unit.

Be sure to use EPSON supplied DIMMs, HDDs, and CPUs.

Before using a PCI card, it is your responsibility to examine it carefully to confirm whether its specifications conform to the specifications described in this manual. To get the latest information about which PCI board can be used with this product, contact your EPSON dealer.

If you turn off the unit, wait at least 10 seconds before you turn it on again.

Safety Precautions for the DM-M820

⚠ WARNING:

Turn off the power switch immediately and unplug the DC plug if the DM-M820 or AC Adapter 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.

The DM-M820 contains a glass panel. If the DM-M820 is dropped or treated roughly, the glass may break.

Do not place your LCD Monitor in direct sunlight or near a heat source.

Do not allow foreign objects to fall into this product. Penetration by foreign objects may lead to fire or shock.

If water or other liquid spills into this product, turn off the power switch, unplug the DC plug immediately, and then contact your dealer or an EPSON service center for advice. Continued usage may lead to fire or shock.

⚠ CAUTION:

Do not connect cables other than those specified in this manual. Doing so may result improper operation.

Be sure to set this product on a firm, stable, horizontal surface. The product may break or cause injury if it falls.

Do not use the unit in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage, fire, or shock.

Do not use the unit in locations subject to liquids, since this product is not waterproof.

Do not use the product where inflammable fumes of gasoline, benzine, thinner or other inflammable liquids may be in the air. Doing so may cause an explosion or fire.

To ensure safety, unplug this product before leaving it unused for an extended period.

Do not drop, bump, or otherwise subject this product to strong vibration or impact.

Never clean the product with thinner, benzine or other such solvent.

Do not use aerosol sprayers containing flammable gas inside or around this product. Doing so may cause fire.

If you want to use a compressed air product, such as an air duster, for cleaning during repair and maintenance, use of products containing flammable gas is prohibited.

Be sure to use this product with all covers attached.

Be careful not to cut your finger on any edge of the unit.

Safety Precautions for the OI-MR01 AC Adapter

⚠ *WARNING:*

Shut down your equipment immediately if it produces smoke, a strange odor, or unusual noise. Continued use may lead to fire or electric shock. Immediately unplug the equipment and contact your dealer or a SEIKO EPSON service center for advice.

Never attempt to repair this product yourself. Improper repair work can be dangerous.

Never disassemble or modify this product. Tampering with this product may result in injury, fire, or electric shock.

Never insert or disconnect the power plug with wet hands. Doing so may result in severe shock.

Do not allow foreign matter to fall into the equipment. Penetration of foreign objects may lead to fire or shock.

If water or other liquid spills into this equipment, unplug the power cable immediately, and then contact your dealer or a SEIKO EPSON service center for advice. Continued usage may lead to fire or shock.

Do not place multiple loads on the power outlet (wall outlet). Overloading the outlet may lead to fire.

Always supply power directly from a standard domestic power outlet.

Handle the power cable with care. Improper handling may lead to fire or shock.

> *Do not modify or attempt to repair the cable.*
> *Do not place any object on top of the cable.*
>
> *Avoid excessive bending, twisting, and pulling of the cable.*
> *Do not place cord near heating equipment.*
>
> *Check that the plug is clean before plugging it in.*
> *Be sure to push the prongs all the way in.*

If the cable becomes damaged, obtain a replacement from your dealer or a SEIKO EPSON service center.

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.

⚠ *CAUTION:*

Be sure your power cable meets the relevant safety standards and includes a power-system ground terminal (PE terminal).

Be sure to use this product only with a DM-M820 LCD unit. Do not connect it to equipment from other manufacturers. Use this product only for its intended application.

Improper usage may lead to equipment damage, fire, or shock.

Be sure to set this unit on a firm, stable, horizontal surface. Product may break or cause injury if it falls.

Do not use in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage, fire, or shock.

Do not place heavy objects on top of this product. Never stand or lean on this product. Equipment may fall or collapse, causing breakage and possible injury.

To ensure safety, please unplug this product prior to leaving it unused for an extended period.

Be sure the product is not covered with any fabric, such as a blanket or tablecloth, during use. This may cause overheating inside the product and lead to fire.

About this Manual

Aim of the Manual

This manual was created to provide all information necessary for system planning, design, installation, application, and service of the MR series for designers and developers of POS systems and for servicers of the products.

Manual Contents

The manual is made up of the following sections:

Chapter 1   Features and Overview

Chapter 2   Setup for the IM-800 and the DM-D820

Chapter 3   Hardware Specifications

Chapter 4   OS and Drivers

Chapter 5   BIOS Functions

Chapter 6   Operation of the IM-800 and the DM-D820

Chapter 7   Maintenance and Adjustment

Chapter 8   Troubleshooting

Chapter 9   Disassembly and Assembly

Appendix A   Jumper Settings

Appendix B   Parts Information

Related Documentation

Documents related to the MR Series are listed below.

Name of document	Description
IM-800 User's Manual	Provides information to enable POS operators to use the IM-800 safely and correctly.
DM-M820 User's Manual	Provides information to enable POS operators to use the DM-M820 safely and correctly.
OI-MR01 User's Manual	Provides information to enable POS operators to use the AC Adapter OI-MR01 safely.

Contents

Chapter 5   *BIOS Functions*

Chapter 1

Features and Overview

Features

The MR is a modular-type POS terminal consisting of a base unit, which is the IM-800, and a display unit, which is the DM-M820. The IM-800 and the DM-M820 are also sold separately.

IM-800 Features

❏ IBM® PC/AT® compatible

❏ Intel® Celeron™ (FC-PGA/FC-PGA2 package) can be used. Either a 733 MHz or a 1.2 GHz Celeron is factory installed.

❏ Two 168-pin DIMM sockets are ready for installation of a maximum 512 MB of memory

❏ An LCD unit (DM-M820) exclusive to the MR can be connected

❏ A 3.5-inch floppy disk drive is available

❏ A 3.5-inch hard disk drive or two 2.5-inch hard disk drive is available

❏ A CD-ROM drive or CD-R/RW drive is available as a factory option

❏ An Ethernet controller for 10Base-T/100Base-TX is installed as standard equipment

❏ Four serial interface ports are provided

❏ One PCI slot is provided

❏ A power supply for a TM printer is provided (For the 24V model)*1

❏ Cables on the rear of the IM-800 can be covered by the included cable cover

❏ A small footprint with maximum dimensions of 315 × 365 × 88 mm (W × D × H) {12.4 × 14.4 × 3.5"} (including rear cover)

   *1 Applies only with the TM Printer Power Supply model.

DM-M820 Features

The DM-M820 is an LCD unit designed to be connected to an EPSON PC-POS system.

❏ 800 × 600 dots resolution using a 12.1 inch color TFT LCD

❏ A tilt mechanism for easy positioning of the screen viewing angle

❏ A cable cover or a unified cable performs cable management effectively

❏ Display settings of the LCD and the brightness of the backlight can be adjusted.

❏ A stain-resistant touch panel is used.*1

❏ Input by finger touch using the resistive film type of touch panel.*2

❏ An MSR unit can read ISO/JIS Track 1, 2, or 3 (only for models with an MSR unit) *3

❏ Power is supplied from the IM-800 or the OI-MR01 AC Adapter. The AC Adapter is used if the DM-M820 is bought by itself instead of with an IM-800.

> *1 Applies only to models with a stain-resistant Touch Panel.
> *2 Applies only to models with a Touch Panel.
> *3 Applies only to models with an MSR, which is sold only with the IM-800.

Model Configurations

The MR is composed of the IM-800 and the DM-M820.

IM-800

CPU	733MHz, 1.2GHz	
HDD	One 3.5" HDD, Two 2.5" HDDs	
CD-ROM drive	CD-ROM drive, CD-R/RW drive, Without	
Power Supply	For the standardmodel	145W ATX Power supply
Power Supply	Withe the TM Printer Power Supply model	180W ATX Power supply with 24V
Speaker	With, Without	
Case Color	Epson cool white, Epson dark glay	

DM-M820

MSR	With, Without
Touch Panel	With, Without
Back light	2 lights*
Case Color	Epson cool white, Epson dark glay
AC Adapter	With sold only the DM-M820 model

> * The OLD model has 1 light.

The IM-800 and the DM-M820 are sold separately, but the DM-820 model with MSR is sold only with the IM-800.

Part Names for IM-800

Front view

USB ports

CD/FDD cover

Power switch

Power LED

HDD LED

Ventilation opening

With CD/FDD cover open

CD-ROM drive(option)

FDD LED

CD-ROM LED

CD-ROM eject button

Eject hole

FDD unit

FDD eject button
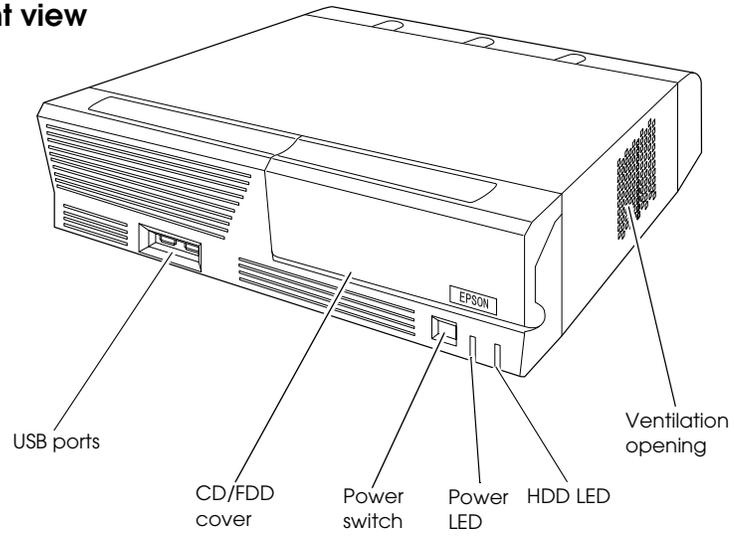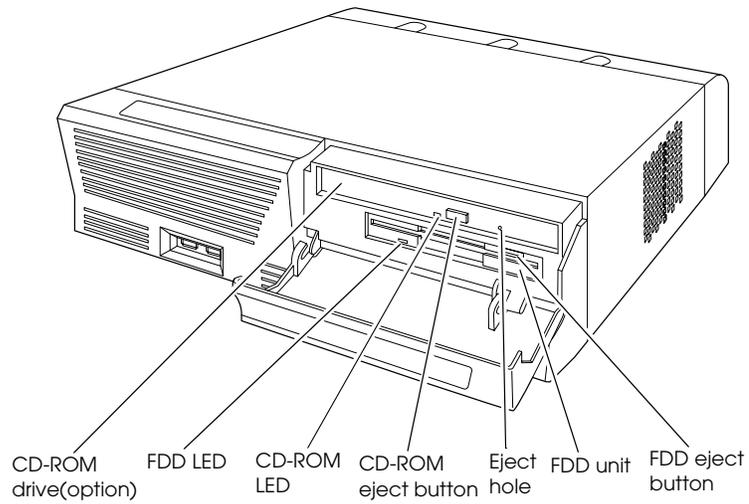
Rear Cover

Rear cover
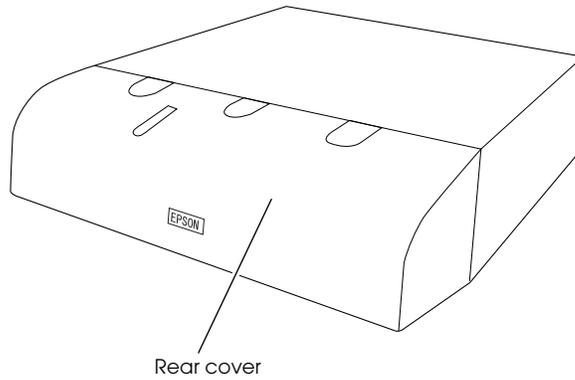
Rear view(Standard model)

COM2 port   PCI slot   COM3 port   DC 12V output   AC voltage
                                      (for DM-M820)   select switch

Mouse   COM1 port   Display   Line-out   Line-in   Mic input   AC Inlet
                      port   output   input
Keyboard   LPT port   Ethernet   COM4 port
                        port
                USB port

Rear view(24V model)

DC 24V output   COM2 port   PCI slot   COM3 port
(for TM printer)   DC 12V output

Mouse   COM1 port   Display   Line-out   Line-in   Mic input   AC Inlet
                      port   output   input
Keyboard   LPT port   Ethernet   COM4 port
                        port
                USB port

.
Inside view(for the Standard model) Rear Side

COM Port Circuit
Board Assembly

PCI card

Power Supply

CPU

DIMM

CD-ROM Drive

HDD

Speaker

FDD

(for the Speaker model)

Front Side
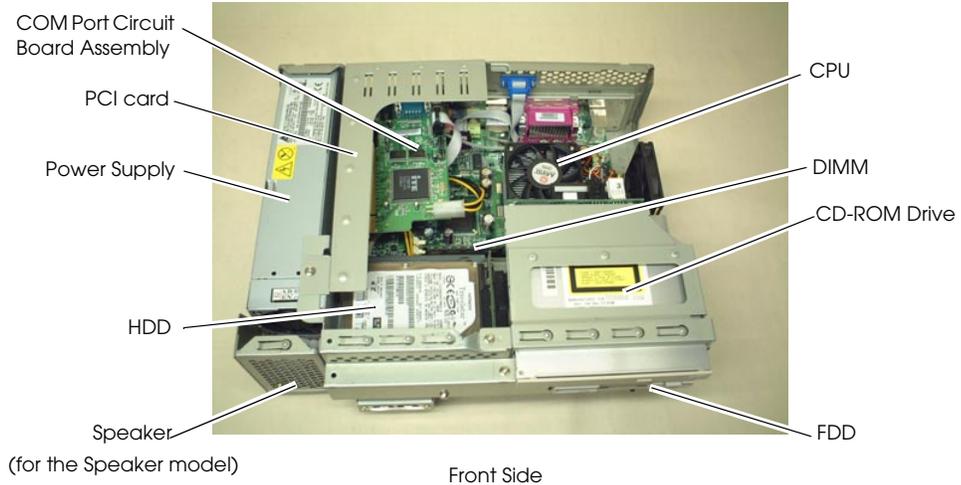
Inside view(for the 24V model)   Rear Side

COM Port Circuit
Board Assembly

DC 24V Board

PCI card

CPU

Power Supply

DIMM

CD-ROM Drive

HDD

Speaker

FDD

(for the Speaker model)

Front Side
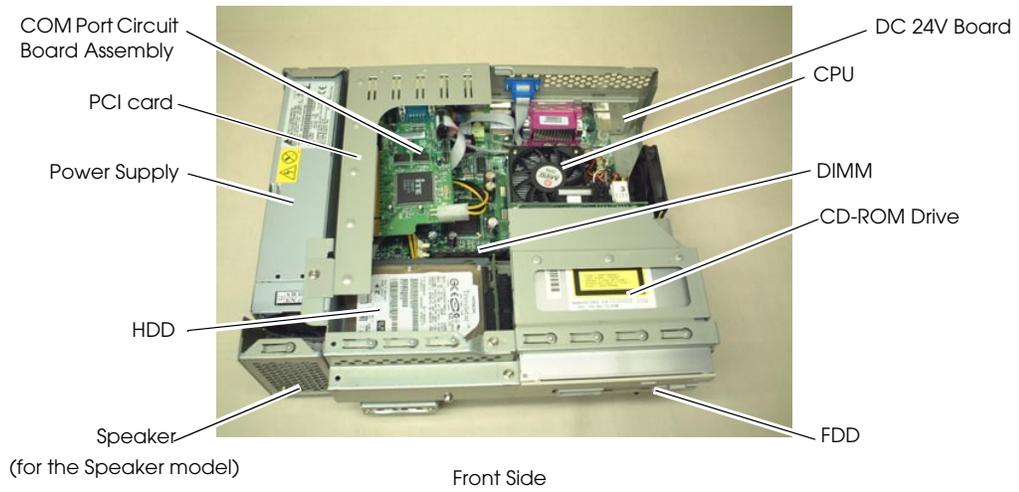
Part Names for DM-M820

Model with MSR

LCD / touch panel*

Function control buttons

Adjustment control

Power switch

Power-On LED

Card Slot**

MSR unit**

LED for MSR**

EPSON

Model without MSR

LCD / touch panel*

Function control buttons

Adjustment control

Power switch

Power-On LED

EPSON

Rear view

LCD stand

Stand tab
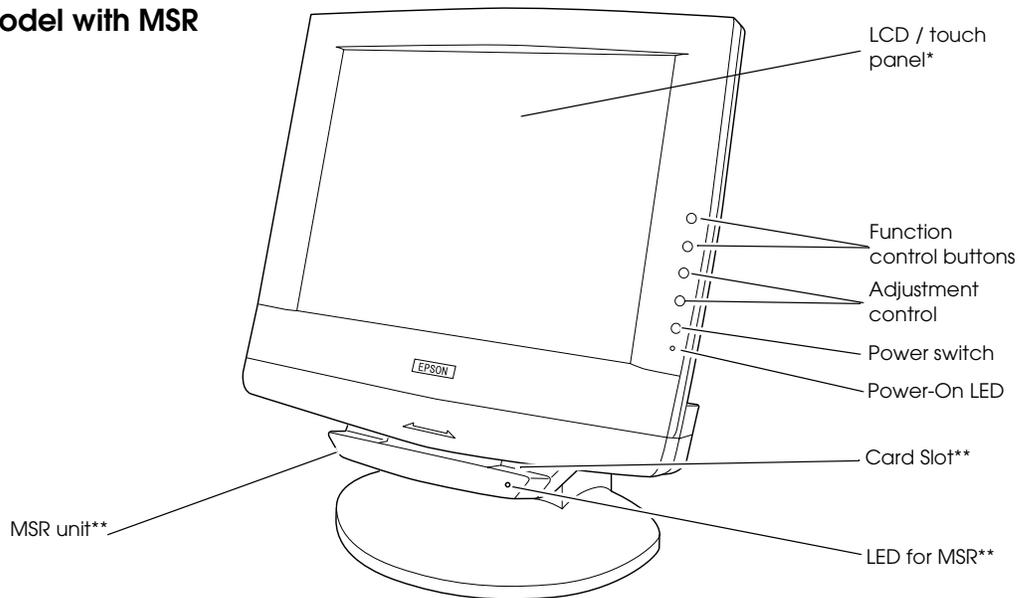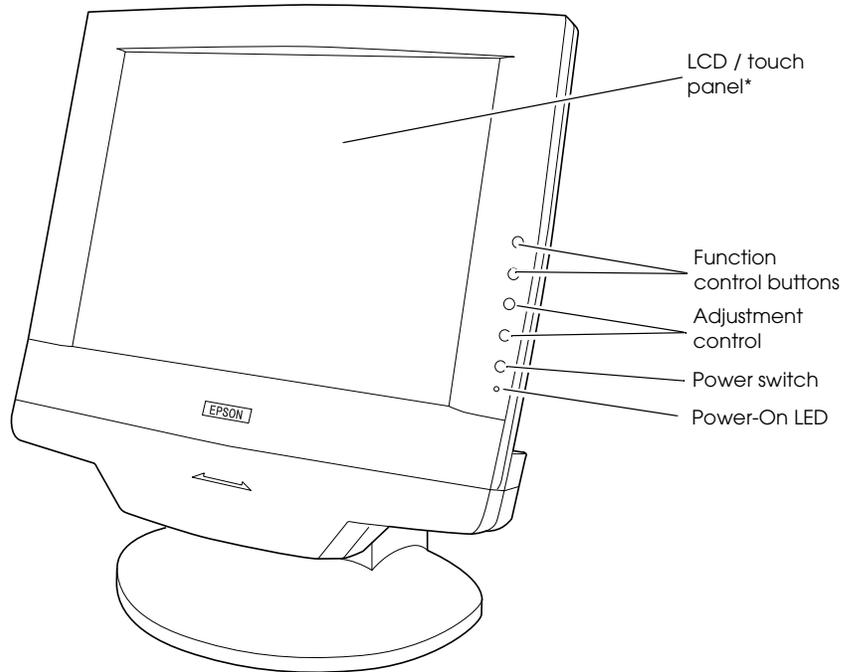
Cable A /
Cable B /
Cable C /
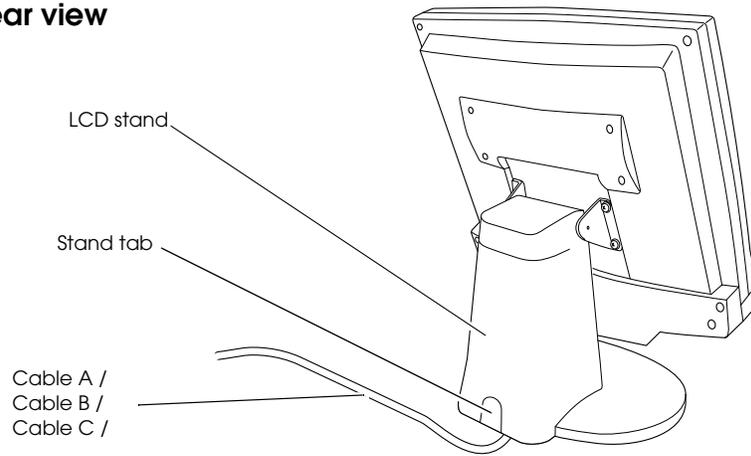
Cable A (with a touch panel and an MSR)

Display
connector

DC plug

Serial port
connector

PS/2 keyboard
connector for IM-800

PS/2 keyboard
connector for keyboard
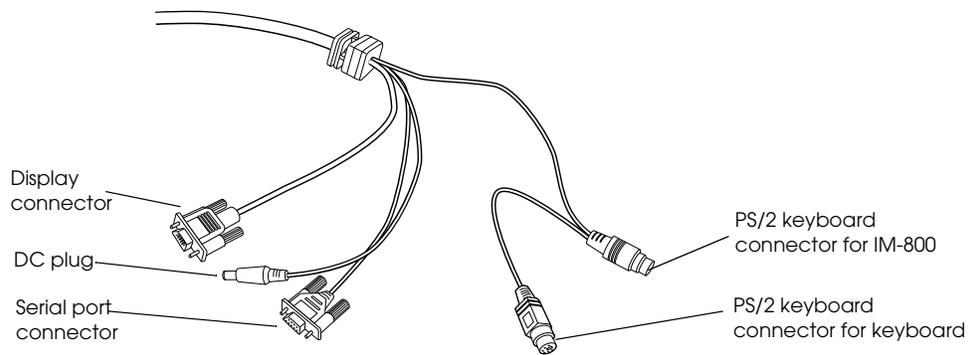
Cable B (without a touch panel and an MSR)

Display connector

DC plug
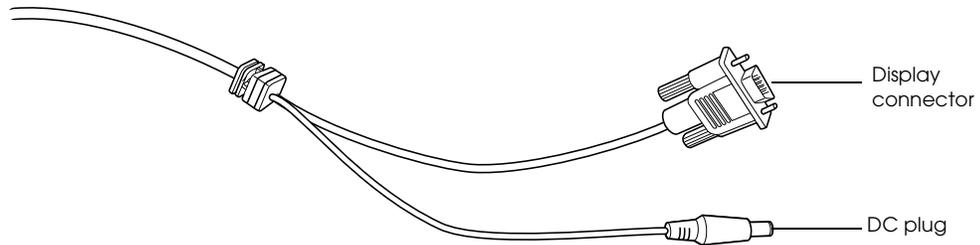
Cable C (with a touch panel, without an MSR)

Serial port connector

DC plug

Display connecter

AC Adapter *(OI-MR01)*

Power LED

AC inlet

DC plug
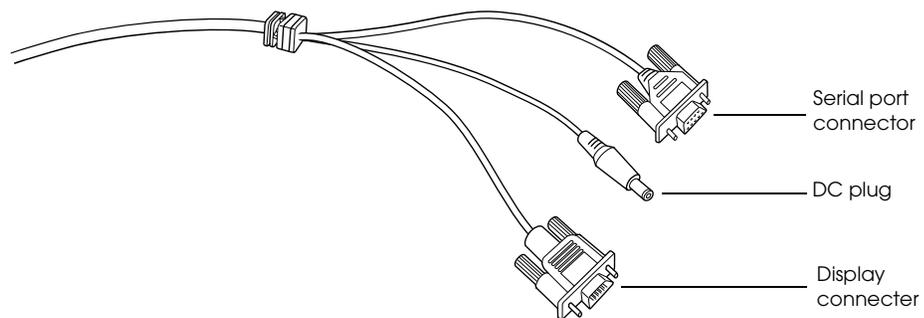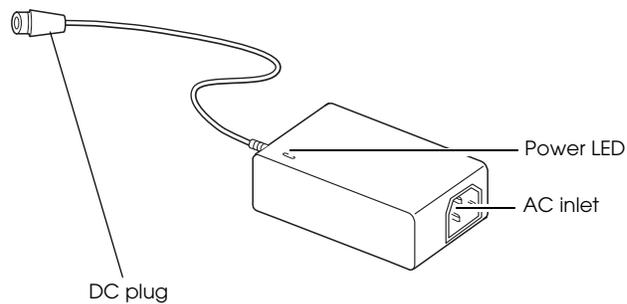
* Applies only to models with a touch panel.
** Applies only to models with an MSR.

Specifications

IM-800

Item		Specifications
CPU	Usable CPU types *1)	Celeron 733 MHz or 1.2 GHz
	Socket	370-pin socket
Memory	Main memory *2)	168-pin DIMM slots × 2 3.3V PC100 SDRAM / Maximum 512MB
	BIOS ROM	512KB
Chipset		Intel 810E2 chipset
Video controller		Built-in chipset
IO controller		Winbond W83627F (controls FDD, COM1/2, PS/2, and parallel interface) ITE IT8872F (controls COM3/4)
Mass storage	FDD	One 3.5" floppy drive (1.44MB / 720KB)
	HDD	One 3.5" HDD or Two 2.5" HDD IDE interface / Ultra DMA/33/66/100
	CD-ROM drive	A CD-ROM or CD-R/RW optionally installed in factory, IDE interface, can be set as boot drive
Interface	LAN (Ethernet)	10BASE-T/100BASE-TX is installed, "Wake On LAN" is supported.
Interface	Keyboard	One PS/2-type (6-pin mini-DIN)
	Mouse	One PS/2-type (6-pin mini-DIN)
	Serial *3)	Four ports (9-pin D-sub male) +5V or +12V can be output to COM3 or COM4.
	Parallel	One port (D-sub 25-pin female) SPP/EPP/ECP supported
	Display	One port (D-sub 15-pin female)
	USB *4)	Two ports on the front and two ports on the rear.
	Audio	LINE IN, LINE OUT, microphone terminals
	DC12V output *5) *8)	One (+12V / 3A) for DM-M820
	DC 24V output*8)	One (+24V / 2A) for EPSON TM Printer
Expansion slot	PCI slot	One slot (PCI version 2.2 compliant)
Internal speaker *6)		Built-in monaural speaker
Audio function *6)		AC'97 audio CODEC supported External line input/output, with a microphone terminal
Backup battery		For the Lithium non-rechargeable battery the RTC and the RTC's built-in CMOS RAM when AC power is not supplied. Battery type: CR2032 Battery life: Approximately 5 years
BIOS		ACPI 1.0b / APM 1.2 / Plug & Play / DMI Diagnostics Utility are supported
OS *7)		MS-DOS, Windows 98, Windows NT, Windows 2000, Windows XP

Item			Specifications
Lithium battery			The IM-800 is internally equipped with a Lithium non-rechargeable battery that supplies the backup voltage to the RTC and the RTC's built-in CMOS RAM when AC power is not supplied. The battery can be exchanged easily because the battery is connected through the socket. Battery type: CR2032 Battery life: Approximately 5 years
Power supply	Standard model		145W ATX power supply is built in
		Input voltage *8)	AC input voltage can be changed with a switch. Low range: 100-127 VAC / 3.5 A (max.) High range: 200-240 VAC / 2 A (max.)
		Frequency	50 / 60 Hz
	24V model		180W ATX power supply is built in
		Input voltage *8)	100-127 VAC / 4 A (max.) 200-240 VAC / 2 A (max.)
		Frequency	50 / 60 Hz
Case	Size		315(W) × 280(D) × 88(H) mm (excluding the rear cover) {12.4 × 11 × 3.5"} 315(W) × 365(D) × 88(H) mm (including the rear cover) {12.4 × 14.4 × 3.5"}
	Color		Epson cool white Epson dark gray
Environmental conditions	Condition: Operating range Storage range Temperature: 5 to 35°C {41 to 95°F} –10 to 50°C {14 to 122°F} Humidity (RH): 30 to 80% non-condensing 30 to 90% non-condensing		

*1: The Celeron (533 MHz or less) with a PPGA package is not supported.

*2: ECC is not supported.

*3: If the COM3/4 is used, you need to install the serial driver from the Driver CD-ROM for the IM-800.

*4: The USB interface is not supported with MS-DOS, or Windows NT. (The keyboard or mouse is supported with the BIOS.)

*5: The LCD outlet must not be connected to a peripheral other than the DM-M820.·

*6: The internal speaker is not supported by the onboard sound controller.(There is a model that can output sound through the internal speaker.)

*7: There are some limitations with each OS. Refer to Chapter 4 "OS and Drivers."

*8: A switch to cut the AC power off is not available.

DM-M820

Item			Specification
LCD	Size		12.1"
	Type		Color TFT
	Resolution		800 × 600 dots
	Color		262,144 colors (Can emulate 16 M color display using the dithering function)
	Input signal		0.7V p-p, 75 ohm
	Scanning frequency		Horizontal 24 to 69KHz, Vertical 50 to 85 Hz
	Dot clock frequency		Max. 80MHz
	View angle	Horizontal direction	From the left 45° (typ.) to the right 45° (typ.)
		Vertical direction	From the top 30° (typ.) to the bottom 10° (typ.)
Backlight	Old Backlight Standard model	Number of lamps	1 lamp
		Brightness	150 cd/m^2 min. (except touch panel) 100 cd/m^2 min. (including touch panel)
		Life	20,000 hours or more (at 25 ± 5°C {77 ± 9°F}) Initial brightness reduced to half
	Backlight Standard model (Old Backlight High brightness model)	Number of lamps	2 lamp
		Brightness	275 cd/m^2 min. (except touch panel)
		Life	50,000 hours or more (at 25 ± 5°C {77 ± 9°F}) Initial brightness reduced to half
Touch panel*1	Method		Resistive film (touch with finger)
	Surface solidity		3H or more (JIS K-5400)
	Positioning accuracy		±1.5 % maximum
MSR*2	Supported cards		ISO 7811, JIS X6301 Type I tracks 1, 2, 3
	Reading direction		Bidirectional
	Supporting MSR firmware		Ver 3.04 or later
External interface			DC Jack, Serial port connector*1, Display connector, PS/2 connectors × 2 (for a PS/2 keyboard and the IM-800)*2
Indicator	With an MSR		POWER LED, LED for MSR
	Without an MSR		POWER LED
	AC Adapter		POWER LED
Power supply			+12V (supplied through the DC cable from the IM-800 or AC Adapter OI-MR01)
Tilting angle			From 0° to 90°
Case color			Epson cool white Epson dark gray
Dimensions			320 × 340 × 200 mm (W × H × D) {12.6 × 13.4 × 7.9"}

Item	Specification
Mass	Approximately 5.0 kg {3.3 lb}
Environmental conditions	Condition: Operating range Storage range Temperature: 5 to 35°C {41 to 95°F} –10 to 50°C {14 to 122°F} Humidity (RH): 30 to 80% non-condensing 30 to 90% non-condensing The unit is not water resistant.
Others	Connection to the IM-800 through an exclusive DC cable. A button on the right side of the panel lets you adjust the backlight brightness.

*1 Applies only to models with a touch panel.

*2 Applies only to models with an MSR unit.

AC Adapter (OI-MR01)*

Item		Specification
Input		90 -264 VAC / 1.5 A (max.)
Frequency		47 -63 Hz
Output		12VDC / 3 A (max.)
Protection function	Over voltage protection function	Built-in
	Circuit breaker	Manual reset
Dimensions		110 × 62 × 33 mm (W × H × D) {4.3× 2.4 × 1.3"}

* The AC Adapter is used if the DM-M820 without MSR model is used without an IM-800.

Dimensions

IM-800

Dimensions: 315 (W) × 280 (D) × 88 (H) mm {12.4 × 11 × 3.5"} (excluding the rear cover)

315 (W) × 365 (D) × 88 (H) mm {12.4 × 14.4 × 3.5"} (including the rear cover)

280   365

88
(excluding the rubber feet)

EPSON

[Units : mm]

315

DM-M820

250 mm

200 mm

305 mm

340 mm

EPSON

320 mm
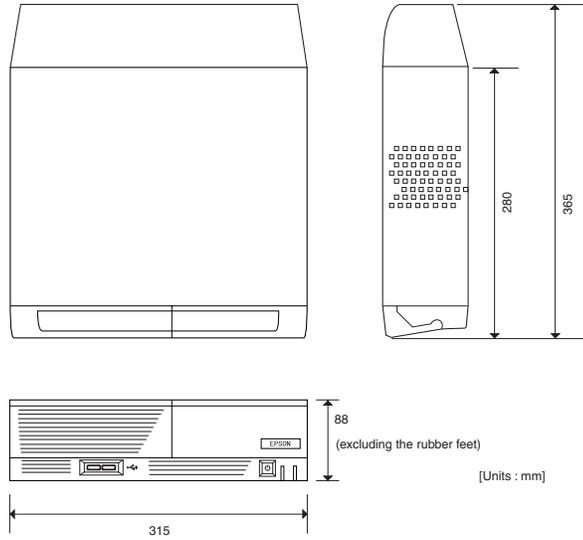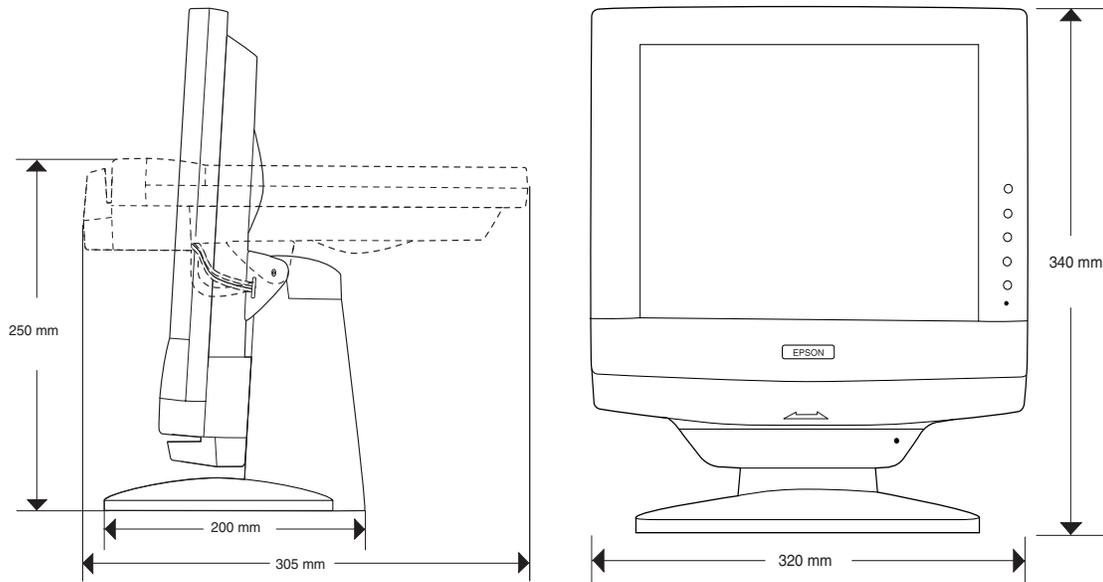
Underside of Base

The dotted circle is the position and size of the hole in the table required if the DM-M820 is mounted on a table with the cable going down rather than out of the back of the LCD stand.
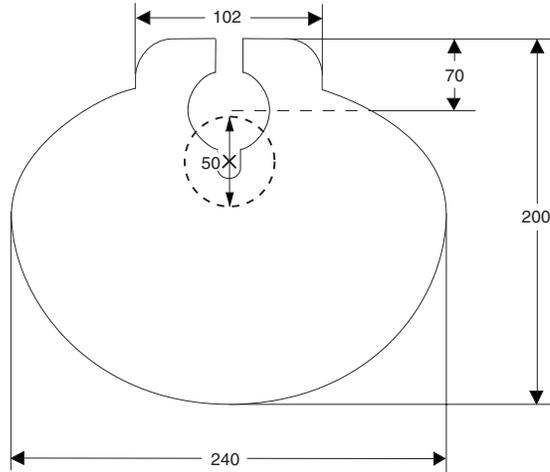
Chapter 2

Setup for the IM-800 and the DM-M820

Setting the AC Voltage for the IM-800 (For the Standard model)

If you are using 100-127 V power, set the AC voltage switch to 115. If you are using 200-240 V power, set the AC voltage switch to 230. (The factory setting is 230.) If the setting is wrong, the system will be damaged and will not operate.

Follow these steps:

1. Remove the warning sheet.

2. Set the AC voltage select switch.
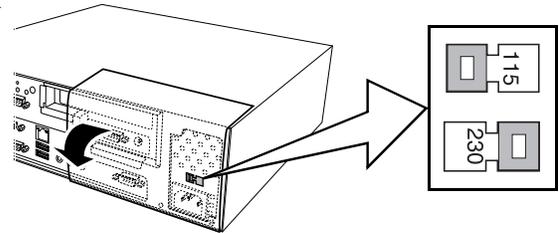
IM-800 Installation Positions

You can install the unit in either of the positions shown. The rubber feet are used only when the unit is installed horizontally. Attach the rubber feet to the indentations on the bottom of the unit.
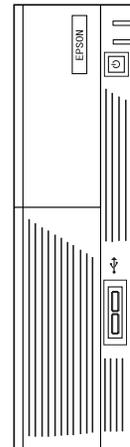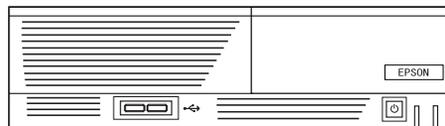
⚠ WARNING:

If you set this product upright, be sure the ventilation opening is on the top. Do not place any object on top of the ventilation opening. If the ventilation opening is blocked, the product can be damaged by overheating.

If you install this product horizontally, never place any object within 3 cm {1.2"} of the ventilation openings on the front, side, and rear. If the ventilation opening is blocked, the product can be damaged by overheating.

If the IM-800 is placed horizontally with the rear cover installed, attach the rubber feet that are included or leave at least 1 cm {0.4"} of space from the bottom of the rear cover.

1cm or more
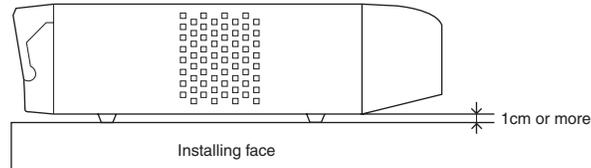
Installing face

Do not put anything that weighs more than 20 kg {44 lb} on the IM-800 when it is installed horizontally.

Installing the DM-M820

Cable Arrangement

When you plan your installation of the DM-M820, consider the cable that comes out of the base. There are two ways you can arrange the cable:

❏ Make a hole in the surface on which you will place the unit and run the cable through the hole (A in the illustration below).

❏ Remove the tab from the back of the LCD stand and run the cable out of the back of the LCD stand (B in the illustration below).
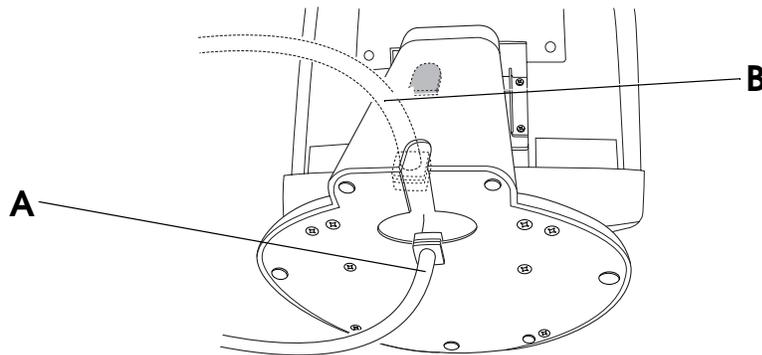
B

A

⚠ *CAUTION:*

If burrs are left after the tabs are removed, they may cause cuts or scratches. Remove the burrs with a nipper or file.

Connecting the DM-M820

Be sure to unplug the power cable for the IM-800 or PC before you connect the cables for the DM-M820.

Connectors on the IM-800   Serial port connectors

DC plug

Keyboard out
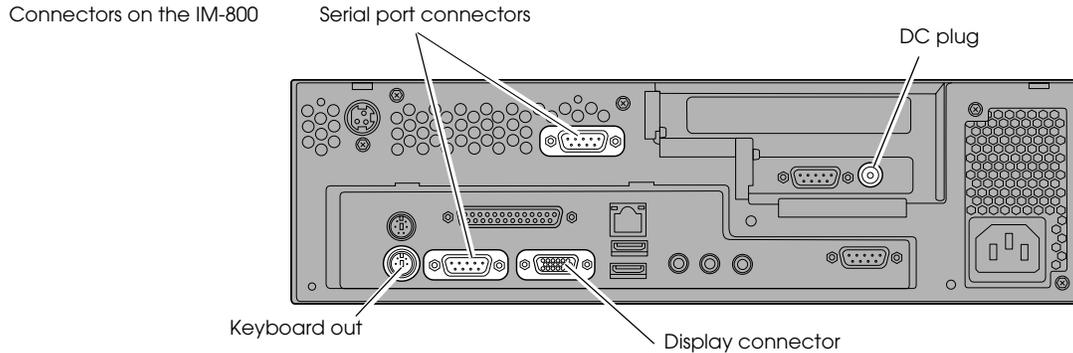
Display connector

Connector Cables for a DM-M820 with a Touch Panel and MSR

❏ DC plug   Connects to the 12 VDC output of the IM-800.

❏ Display connector   Connects to the display port of the IM-800.

❏ Serial port connector Connects to the touch panel COM1 or COM2 port.

> ✎ *Note:*
> *If you are using a DM-M820 with a touch panel, be sure to connect the serial port connector to COM1 or COM2. Do not use COM3 or COM4.*
>
> *Also if you are using a DM-M820 with a touch panel, do not install a mouse driver. Installing a mouse driver can prevent the touch panel from working.*

❏ Keyboard out   Connects the keyboard out to the IM-800 keyboard port.

> ✎ *Note:*
> *Be sure not to connect to the mouse port.*

❏   Keyboard in   If you are using an external PS/2 keyboard, connect it to the keyboard in connector.

Connector Cables for a DM-M820 with a Touch Panel and without an MSR

❏ DC plug   Connect to the 12 VDC output on the IM-800 or the AC adapter (OI-MR01).

❏ Display connector   Connect to the display port on the IM-800 or PC.

❏ Serial port connector Connect to the COM port for the touch panel on the IM-800 or PC.

✎ *Note:*
If you are using a DM-M820 with a touch panel, be sure to connect the serial port connector to COM1 or COM2. Do not use COM3 or COM4.

Also if you are using a DM-M820 with a touch panel, do not install a mouse driver. Installing a mouse driver can prevent the touch panel from working.

Connector Cables for a DM-M820 with No Touch Panel and No MSR

❏ DC plug   Connect to the 12 VDC output of the IM-800 or AC adapter (OI-MR01).
❏ Display connector   Connect to the display port of the IM-800 or PC.

Connecting the Power Cable for AC Adapter

Be sure to push the end of the power cable all the way into the AC inlet. The fitting on the power cable should make contact with the back of the inlet.

⚠ *CAUTION:*
Do not use the DC plug on a system other than the IM-800 or the OI-MR01 (AC adapter). The DC plug on the exclusive cable is designed only for the IM-800 or the OI-MR01 (AC adapter).

IM-800 Connectors

The illustration below shows all the connectors on the back of the IM-800. In addition, there are two USB connectors on the front. (See Chapter 1.)

Be sure to unplug the power cable from the IM-800 before you connect these cables.

Standard model
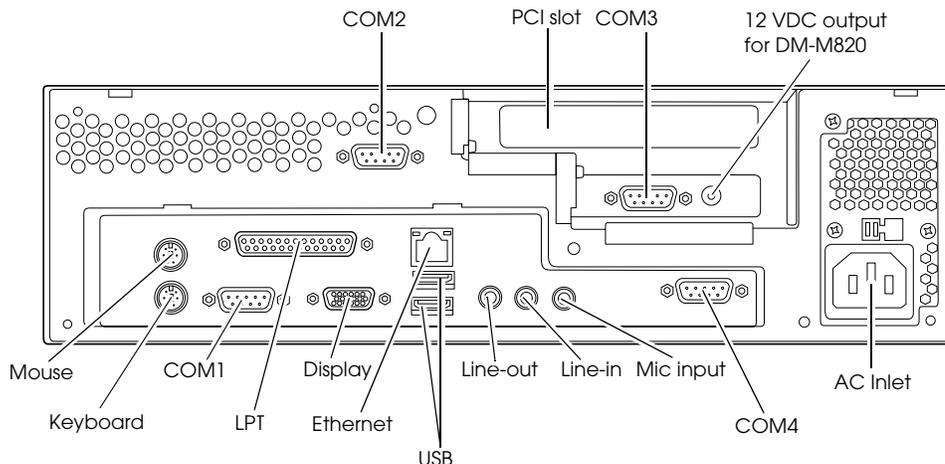
With the TM Printer Power Supply model
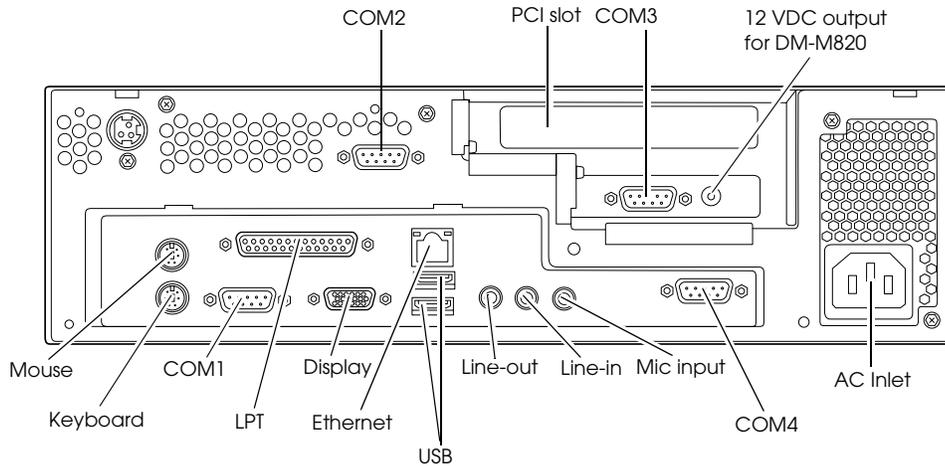
Connecting Other Peripheral Devices to the IM-800

These are general instructions for the types of peripherals you may want to use.

⚠ CAUTION:

The12 VDC output is an exclusive power supply for the DM-M820. Do not use it for other peripheral devices.

Serial Device Information

If you use COM3 or COM4, you must install the serial driver from the driver CD-ROM for the IM-800, included with the IM-800.

Either + 5 V or +12 V can be output to COM3 or COM4. See Appendix A, "Jumper Settings."

Connecting a Serial Modem to the IM-800

If you are using a serial modem with the IM-800, be sure to connect the modem to COM1 or COM2. Do not use COM3 or COM4.

USB Device Information

There are four USB ports, two on the front and two on the back.

You cannot use USB devices if you are using either MS-DOS or Windows NT.

Keyboard and Mouse

To use a USB keyboard or mouse under MS-DOS or Windows NT, set USB keyboard support or USB mouse support in the **Integral Peripheral** section of the BIOS setup.

Using a PS/2 mouse

To use a PS/2 mouse, you must be sure that USB mouse support in the **Integrated Peripheral** section of the BIOS is set to **Disabled** (which is the factory setting).

TM-Printer

Use the dedicated power supply for the power supply of the TM-Printer. (For the standard model)

Connect the power supply of the TM-Printer to the DC24V Output using the DC cable. (For the 24V model)

PCI Cards

See the PCI information in Chapter 3, "Hardware Specifications," and Chapter 9, "Disassembly and Assembly."

Connecting the Power Cable

When AC power is supplied, a minute electric current flows through the IM-800. Therefore, before connecting peripherals and cables to this product, unplug the AC cord.

⚠ WARNING:

Never insert or disconnect the power plug with wet hands. Doing so may result in severe shock.

Always supply power directly from a standard domestic power outlet.

Do not place multiple loads on the power outlet (wall outlet). Overloading the outlet may lead to fire.

The equipment must be installed near the electrical outlet, and the outlet must be easily accessible.

Be sure your power cable meets the relevant safety standards and includes a power system ground terminal (PE terminal).

Attaching the Rear Cover

The rear cover makes the back of the system look neat and protects the cables.

1. When you want the cables to exit the top of the rear cover, use pliers to break out the tabs.

⚠ *CAUTION:*

If burrs are left after the tabs are removed, they may cause cuts or scratches.
Remove the burrs with a cutter or file.

2. Remove the screw from the lower right corner of the back of the unit.
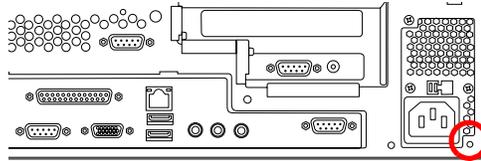
3. Fit the tabs on the rear cover as shown below.

tabs
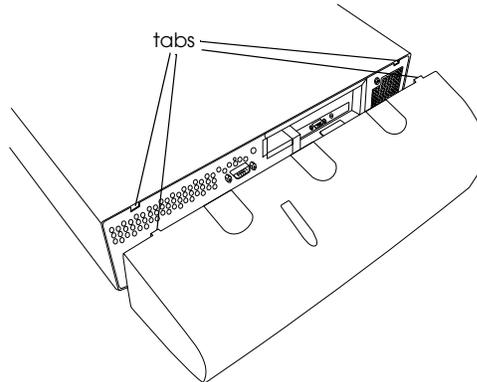
4. Attach with three screws, including the one you removed, in the locations shown below.

EPSON
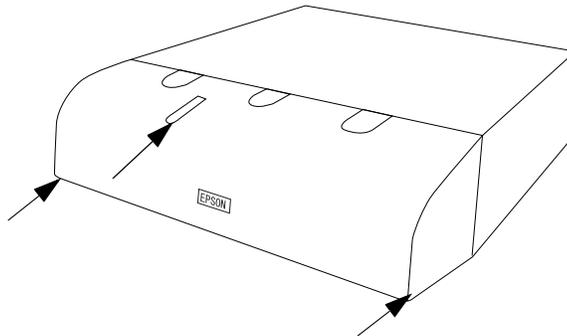
Chapter 3
Hardware Specifications

Hardware Block Diagram for IM-800

Main Board

| I2C Bus | Clock Generator ICS9248-9 | CPU Socket 370 | VRM 8.5 DC/DC ISL6524 | HDD Power FDD Power CD Power DC Jack Power | ATX Power Supply Unit | 24V Output |

66/100/133 MHz

HOST Bus

S-DRAM PC100 DIMM 168 Pins X 2 — 810E GMCH (North Bridge) 82810E — VGA CRT

ATX 20 Pins Power Connector

Power Button Power/HDD LED

BOX Header

Hub Link

I2C Bus

ICH2 (South Bridge) FW82801BA

USB Port 0 — USB
USB Port 1 — USB   Rear

RTC Battery

USB Port 2 — Pin Header — USB
USB Port 3 — Pin Header — USB   Front

RJ-45 & LED — PHY 82562ET — MAC

PCI Bus   PCI Bus

MIC L_Out L_In — CODEC AD1887 — AC Link

Riser Board Slot

ATA-33/66/100 Primary IDE — 1st IDE
Secondary IDE — 2nd IDE

Riser Board

FWH (BIOS) Firmware Hub 512K Byte 49LF004 / 82802AB

Low Profile PCI Slot   Standard PCI Slot

SPKR

FWH

COM Board

LPC Interface

Speaker

Keyboard — PS-2 Keyboard — LPC Super I/O Winbond W83627F QFP-128 — Beep

ITE PCI Bridge IT8872F

+12V +5V — COM 3

Mouse — PS-2 Mouse

COM1 — COM 1 — Floppy — FDD

COM2 — COM 2 — Parallel — LPT

+12V +5V — COM 4

CPU Fan

System Fan

+12V — DC Jack for LCD

DMA

The IM-800 supports seven DMA channels. Channels 0, 1, 2, and 3 provide 8-bit data transfers; channels 4, 5, 6, and 7 provide 16-bit data transfers. The IM-800 uses channel 2 for the floppy disk drive controller and releases the other channels to the other devices. The following table lists the DMA channel allocation.

DMA channels

Controller	Channel	Application
DMA1 8 bits	0	(Spare)
	1	(Spare*)
	2	Floppy disk drive controller
	3	(Spare*)
DMA2 16 bits	4	Controller 1 cascade
	5	(Spare)
	6	(Spare)
	7	(Spare)

* When LPT1 is in ECP mode, use one of these channels.

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.

System interrupts

Controller 1	Controller 2	Application	Changeable?
IRQ0		Timer	NO
IRQ1		Keyboard	NO
IRQ2		Controller 2 cascade	NO
	IRQ8	RTC	NO
	IRQ9	Not used *[1]	OK
	IRQ10	Not used *1	OK
	IRQ11	Not used *[1]	OK
	IRQ12	Mouse	NO
	IRQ13	Numerical operation coprocessor	NO
	IRQ14	IDE controller (primary)	*[2]
	IRQ15	IDE controller (secondary)	*[2]
IRQ3		Serial port 2	OK
IRQ4		Serial port 1	OK
IRQ5		Not used *[1]	OK
IRQ6		Floppy disk controller	NO *[3]
IRQ7		Parallel port 1	OK
NMI		I/O error check	NO

*[1] PCI (for example, network) is automatically set through the detection of the unused interrupt level. If Serial port 3/4 is used with Windows, use an unused interrupt level. If Serial port 3/4 is used with DOS, Serial port 3 is set to IRQ11 and Serial port 4 is set to IRQ10 automatically.
*[2] Changes are not possible when the device is in use, but can be cleared when not in use.
*[3] This can be set to "Not used" in the BIOS setup, but the IRQ is not released.

Configuration of Circuit Boards

Main Board

CPU Fan Connector

System Fan Connector

Power Switch Connector

Mouse Keyboard

ATX Connector

LED Connector

BIOS

Parallel COM1 CRT

CPU Socket (370-pin)

FDD

DIMM Sockets

LAN USB x2

Line-Out

Line-In

COM2 Header

Mic-In

Secondary IDE

Primary IDE

CD Audio Header

Front USB Header

JP15

JP10

Speaker Connector

Riser Card Slot

Speaker

RTC Battery

COMS CLEAR Jumper

Riser Board

```
PCI Slot
COM Board Slot
```

COM Board

```
          DC12V
          Jack
DC12V Input
 Connector
                        COM3
              JP2 JP1
                     COM4
                     Header
```

DC24V Board

```
                  DC24V Jack

DC24V Input
 Connector
```

PCI Slot

⚠ **CAUTION:**

Before using a PCI card, it is your responsibility to examine it carefully to confirm whether its specifications conform to the specifications described in this manual.

To get the latest information about which PCI board can be used with this product, contact your EPSON dealer.

The PCI slot is located on the riser board.

The dimensions of installable PCI cards are shown below:
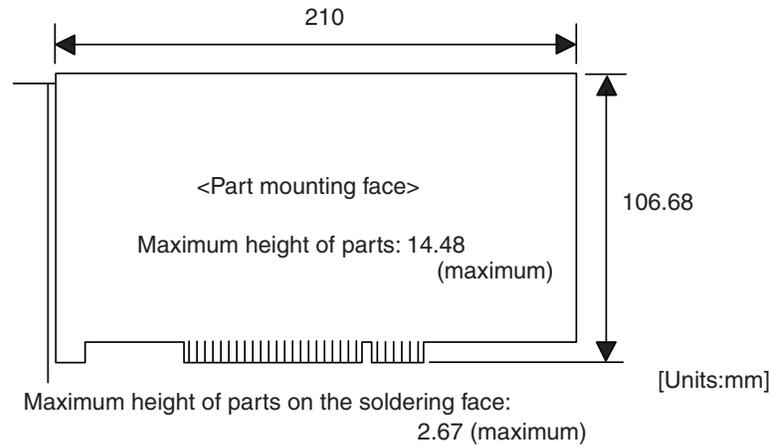
Power Supply

The IM-800 has an ATX power supply that switches the AC input by AC voltage select switch and does not have a switch to cut off the AC input.

Standard model

Input voltage: Low range 100 - 127 VAC (90 - 137 VAC)
                    High range 200 - 240 VAC (180 - 265 VAC)

Input frequency: 50 ± 3 Hz / 60 ± 3 Hz

Input current: 3.5 A maximum (100 - 127 VAC)
                    2 A maximum (200 - 240 VAC)

Cooling fan: Air intake type, fan rotation speed is automatically changed, depending on the temperature in the power supply unit.

MTBF: 200,000 hours

Precautions:

1) Setting the AC input voltage switch improperly causes the following problems:

If you use 100-127 V power when the switch is set to 230, the IM-800 will not operate, but if you change the setting to 115, the unit will operate.

If you use 200-240 V power when the switch is set to 115, the voltage power unit will be damaged.

2) When the protective circuit of the voltage power unit performs a shutdown, the protective circuit keeps working for a while. When this happens, unplug the power cable and wait for about 15 seconds; then plug the cable back in.

24V model

Input voltage/current:	100 - 127 VAC / 4A
	200 - 240 VAC / 2A
Input frequency:	50 ± 3 Hz / 60 ± 3 Hz
Cooling fan: depending on	Air intake type, fan rotation speed is automatically changed, the temperature in the power supply unit.
MTBF:	200,000 hours
Precautions:	

2) When the protective circuit of the voltage power unit performs a shutdown, the protective circuit keeps working for a while. When this happens, unplug the power cable and wait for about 15 seconds; then plug the cable back in.

Power supply capacity for external devices

Total power available to devices connected to the interface boards in the PCI slot, COM3/4, keyboard/mouse, and USB are as follows. Current drain must not exceed the capacity shown for each supply voltage: +5V, +3.3V, +12V, and -12V.

Power supply	Used for	Capacity
+5 VDC	PCI slot, COM ports, keyboard/mouse, USB	2.0 A
+3.3 VDC	PCI slot	1.0 A
+12 VDC	PCI slot, COM ports	1.0 A
-12 VDC	PCI slot	0.02 A

Each port has the following current limitation:

Power Supply Capacities to Each Port

Port	Voltage	Current supply capacity	Remarks
COM port	+5 VDC	500 mA each (peak 1 A/100 ms)	Total current of +5 VDC and +12 VDC must not exceed the value shown at left.
	+12 VDC	500 mA each (peak 1 A/100 ms)	
USB port	+5 VDC	500 mA each (peak 1 A/100 ms)	--
Keyboard and mouse	+5 VDC	500 mA (peak 1A / 100 ms)	--
Power Supply for 24V model	+24 VDC	2A (peak 1A / 100 ms)	--

Lithium Battery

The IM-800 is internally equipped with a Lithium non-rechargeable battery, which supplies the backup voltage to the RTC and the RTC's built-in CMOS RAM (only when the AC power is not supplied). The battery can be exchanged easily because the battery is connected through the socket.

Battery type: CR2032

Vendor: Sony, Maxell, Toshiba

Battery life: Approximately 5 years

When replacing batteries, be sure to use the types and manufacturers listed above.

MAC Address

The MAC address label is attached on the LPT connector of the main board.

Chapter 4
OS and Drivers

Outline of This Chapter

This chapter tells which Operating Sytems 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 MR.

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

Operating Systems

The following Operating Systems can be used for the IM-800.

❏   Windows 2000 Professional (There is a version preinstalled by EPSON)

❏   Windows XP Professional

❏   Windows 98SE   (There is a version preinstalled by EPSON)

❏   Windows NT Workstation 4.0 SP6a

❏   MS-DOS Ver.6.22

Drivers and Utilities

Drivers for using the IM-800 are on the Driver CD-ROM included with the IM-800. If the operating system is pre-installed, the drivers are also installed.

MSR utilities for the DM-M820 with MSR are on the Driver CD-ROM included with the IM-800, and if the operating system is pre-installed, the utilities are on the HDD. Set up the MSR using the utilities.

Touch panel drivers for the DM-M820 with touch panel are on the touch panel driver CD-ROM for the DM-M820. Even if the operating system is preinstalled, you must install the touch panel drivers.

Driver CD-ROM for the IM-800

The driver for installing a locally procured OS on the IM-800, the MSR utility for using the MSR of the DM-M820, and drivers for using the peripheral devices are on this CD-ROM.

The CD-ROM directory is shown below.

```
Root                        CDVER.TAG
 |--- DOS62                 Drivers for MS-DOS
 |      |--- Cdrom      :        CD-ROM drivers
 |      |--- Network    :        Network drivers
 |      |--- Serial     :        Serial drivers
 |--- WIN98                 Drivers for Windows98
 |      |--- Chipset    :        Chipset drivers
 |      |--- Network    :        Network drivers
 |      |--- Serial     :        Serial drivers
 |      |--- Sound      :        Sound drivers
 |      |---Video       :        Video drivers
 |--- WINNT                 Drivers for Windows NT
 |      |--- Network    :        Network drivers
 |      |--- Serial     :        Serial drivers
 |      |--- Sound      :        Sound drivers
 |      |---Video       :        Video drivers
 |--- WIN2K                 Drivers for Windows2000
 |      |--- Chipset    :        Chipset drivers
 |      |--- Network    :        Network drivers
 |      |--- Serial     :        Serial drivers
 |      |--- Sound      :        Sound drivers
 |      |---Video       :        Video drivers
 |--- WINXP                 Drivers for Windows XP
 |      |--- Serial     :        Serial drivers
 |--- COMMON                Common OS utility drivers
     |--- Apdrv        :        Advanced Printer Drivers
     |--- Oposadk      :        OPOS-ADK
     |--- TmDrv        :        UniMini Drivers
     |--- MSRCFG       :        DM-MS Definition tool
         |--- WIN      :
             |--- DISK1 :
         |--- DOS      :
```

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 MSRCFG, OPOS-ADK, and APDRV are included with the software.

Touch Panel driver CD-ROM for the DM-M820 touch panel model

The CD-ROM directory is shown below.

```
Root                    CDVER.TAG
 |--- DOS               Touch Panel Driver for MS-DOS
 |--- WIN--- European   Touch Panel Driver for Windows98/NT/2000/XP for European
        |--- Asian      Touch Panel Driver for Windows98/NT/2000/XP for Chinese T/
                        C,Korean
```

Readme.txt files are in both the root directory and in subdirectories beneath 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 under the operating system subdirectories explain driver installation/un-installation for each operating system.

Windows 2000 Pre-Installed Model

The exclusive EPSON utility and drivers for using IM-800 are pre-installed in the HDD with the pre-installed Windows 2000 Professional.

Installation Procedure

```
┌─────────────────────────────────────────────────────────────┐
│  Windows 2000 Installation                                   │
│  When turning on the power supply, the installation starts.  │
│  Enter the product key of the W2K label pasted on the        │
│  product. You can set up the Network automatically or set    │
│  it up later.                                                │
└─────────────────────────────────────────────────────────────┘
```

When using the DM-M820 with Touch Panel, follow the steps as below.

```
┌─────────────────────────────────────────────────────────────┐
│  Touch Panel Driver Installation                             │
│  Install the Touch Panel Driver from the CD-ROM for the      │
│  DM-M820. See page 4-45 for the procedure.                   │
└─────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────┐
│  Change of Double click settings                             │
│  Set up this setting every time a new user starts using      │
│  Windows 2000.                                               │
└─────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────┐
│  MSR Utility Installation                                    │
│  When using the DM-M820 with MSR, install the MSR utilities  │
│  from C:\backup\msrcfg folder or the Driver CD-ROM for the   │
│  IM-800.                                                      │
└─────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────┐
│  Other software Installation                                 │
│  When using OPOS-ADK, APD (Windows printer drivers) and      │
│  Unimini, install the software from the Driver CD-ROM for    │
│  the IM-800.                                                 │
└─────────────────────────────────────────────────────────────┘
```

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 2

❏ Multilingual User Interface (French, German, Italian, Spanish, Dutch, Portuguese)

❏ Intel Chipset software installation utility

❏ Intel Video driver

❏ Intel Network driver

❏ Analog Devices Sound driver

❏ ITE COM3/4 Driver

❏ EPSON DM-MS Series setup utility *1

Version of the Pre-installation HDD

To confirm the version of the HDD, see the file HDVER.TAG at 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=IM-800

OS=Windows2000

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

VER=1.**.*
```

Directory Configuration

The root directory of the HDD is structured as follows.

```
|--- Backup
|      |--- Msrcfg         :        Backup of MSR Utility
|      |    |--- Win       :
|      |    |    |--- Disk1 :       Backup of MSR Utility for Windows
|      |    |--- DOS       :        Backup of MSR Utility for MS-DOS
|      |--- Chipset        :        Chipset driver backup folder
|      |    |--- Win2000   :
|      |--- Network        :        Network driver backup folder
|      |--- Recovery       :        Recovery folder
|      |--- Serial         :        Serial port driver backup folder
|      |--- Sound          :        Sound driver backup folder
|      |--- Video          :        Video driver backup folder
|      |--- Win2ksp2       :        Windows 2000 Service Pack 2 backup folder
|--- BOOTDISK             :        Folder for files used to create an ordinary boot floppy disk
|--- Documents and Settings:       Folder for saving text and settings.
|--- I386                 :        Setup file folder
|--- Mui                  :
|--- 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.

Windows 2000 Setup Procedure

⚠ CAUTION

Because the touch panel is not operative during the setup procedure, be sure to keep the keyboard connected. If necessary, start the setup procedure after connecting the mouse.
The keyboard is necessary for inputting the product ID and password. The keyboard is also necessary for user verification during logon to Windows 2000, even if the touch panel is in a usable state.

Windows 2000 is setup 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**.
The Performing Final Tasks screen is displayed, and setup starts.

10. The Completing the Windows 2000 Setup Wizard screen is displayed. The system will start automatically when **Finish** 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.

⚠ CAUTION:

The setup is executed with the VGA display.

Change of double click settings

When you set up Windows 2000 and create a new user, you have to modify the registry key for individual users by following the steps below.

✎ *Note*

The touch panel driver is not installed with the Operating System. After installing it from the touch panel driver CD-ROM for the DM-M820, set it up as follows.

1. Select Programs - Gunze - U-TP - Settings in that order from the Start menu.

2. Pointer Device Properties is displayed. Click the Windows tab.

3. Click the **Defaults** button on the Double Click Settings group box.

4. Click **OK**.

Installing the MSR Utility for Windows

Install the MSR Utility by the following procedure.

1. Start C:\Backup\Msrcfg\ Win\Disk1\SETUP.EXE.

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

3. The Choose Destination Location dialog box is displayed. Specify the directory where the program is to be installed and click **Next**. C:\Program Files\MSR Config is specified as the default.

4. Installing is completed, and the Setup dialog box is displayed. Click **Finish**.

Uninstalling the MSR utility for Windows

Uninstall the MSR Utility by the following procedure.

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Hardware] in the control panel.

3. Select [DM-MS Series Configuration Utilities].

4. Click **Add/Remove**.

5. The confirmation dialog box of the uninstalling is displayed. Select **Yes**.

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

Recovering the OS

Use the OS recovery media (CD-ROM) packed with the IM-800 to recover the OS.

Follow the steps below to carry out OS recovery.

1. Turn power to the IM-800 off. Turn the main power switch off. Unplug the power cable.

2. If a CD-ROM drive is not already installed, attach a drive to the MR series.

3. Attach to the MR series the HDD unit you'd like to recover.

4. Start up the BIOS setup utility and select the First Boot Device from the Advanced BIOS features setup menu.

5. Set the First Boot Device to "CDROM".

6. Insert the "Windows 2000 CD-ROM 1 of 2" into the CD-ROM drive.

7. On the BIOS setup utility main menu, select "Save & Exit Setup" and press the Enter key. The following dialog box appears.

   SAVE to CMOS and EXIT (Y/N)?

8. Press [Y] and [Enter]. The system will restart and after a short time, the License Agreement will appear.

   Strike a key when ready ... _

9. When you press any key, part of the License Agreement will appear. Repeat the same procedure until you get to the end of the License Agreement. The following message will appear.

   Please type following commands to start the OS recovery.
   A:\>_

10. Enter the following from the command prompt.

    A:\>x: [enter]
    X:\>start [enter]

11. 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._

12. EPSON HDD Recovery Utility window will appear. Press Continue to start the OS recovery.

    OS recovery takes 20 to 40 minutes. The time differs depending on the type of OS and CPU speed.

13. The image data exchange dialog will appear. Insert the Windows 2000 CD-ROM 2 of 2 in the CD-ROM drive; then press the OK button.

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

    `X:\>_`

15. Eject the "Windows 2000 CD-ROM" from the CD-ROM drive.

16. Reboot and start the BIOS setup utility.

17. Return the First Boot Device in the Advanced BIOS features setup menu to the "Floppy".

18. On the main menu, select "Save & Exit Setup" and press the Enter key. The following dialog box appears.

    `SAVE to CMOS and EXIT (Y/N) ?`

19. Press [Y] and [Enter]. The system will restart.

20. Make sure the OS restarts. When using Windows, cancel work after the setup screen and end Windows.

21. If a CD-ROM drive unit is attached in step 2., power off and detach the CD-ROM drive.

Limitation

❑ If you are starting from a hard disk, recovery cannot be performed. Be sure to perform recovery from the CD-ROM.

Windows 98 Pre-Installed Model

The HDD pre-installed with Windows 98 Second Edition is also pre-installed with the EPSON utility software and drivers dedicated to the IM-800.

Languages are English, French, German, Spanish, and Italian.

Installation Procedure

Windows 98 Installation
When turning on the power supply, the installation starts. Enter the product key of the W98 label pasted on the product. You can setup the Network automatically or setup it later.

Touch Panel Driver Installation
In the case of the DM-M820 with Touch Panel, install the Touch Panel Driver from the CD-ROM for the DM-M820. See `page 4-45` for the procedure.

MSR Utility Installation
When using the DM-M820 with MSR, install the MSR utilities from C:\backup\msrcfg folder or the Driver CD-ROM for the IM-800

Other software Installation
When using OPOS-ADK, APD (Windows printer drivers) and Unimini, install the software from the Driver CD-ROM for the IM-800.

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. Use the FDISK and FORMAT command 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 98

Pre-installed software

❏ Microsoft Windows 98 Second Edition

❏ Intel Chipset software installation utility

❏ Intel Video driver

❏ Intel Network driver

❏ Analog Devices Sound driver

❏ ITE COM3/4 Driver

❏ EPSON DM-MS Series setup utility *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 HDVER.TAG in the start-up drive root. This file is text-formatted and can be read using Notepad or a similar text editor. The contents of HDVER.TAG are as follows:

```
[HD Information]
MODEL=IM-800
OS= Windows98
LANG=English
VER=1.**.*
```

Directory Configuration

The root directory of the HDD is structured as follows:

```
|--- Program Files      :      Application for the standard installation of Windows 98
|--- Backup             :
|      |--- Msrcfg       :      Backup of MSR Utility
|      |    |--- Win      :
|      |    |    |--- Disk1 :   Backup of MSR Utility for Windows
|      |    |--- DOS      :      Backup of MSR Utility for MS-DOS
|      |--- Chipset      :      Backup of Chipset driver
|      |--- Video        :      Backup of Display Driver
|      |--- Sound        :      Backup of Sound Driver
|      |--- Network      :      Backup of Network Driver
|      |--- Serial       :      Backup of Serial Driver
|      |--- Recovery     :
|           |--- Data     :      Backup of HD (for creating Recovery Media)
|           |    |--- Restore :  EasyRestore
|           |--- Bootfd   :      Start-up FD
|                |--- Data  :     Data of Start-up FD
|--- My Documents       :
|--- Windows            :      Windows 98 Second Edition system
```

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

Windows 98 Set-Up Procedure

Windows 98 is set up by using the following procedure:

1. Connect the keyboard and mouse to the IM-800.

2. Turn on the PC to start Windows 98 SE.

3. The Enter Network Password dialog box is displayed. Input the password and click **OK**.

4. The Welcome screen is displayed. Input the necessary information and click **Next**.

5. The Windows End User license Agreement is displayed. Read it though and confirm your agreement to the terms. And then select [I accept this agreement] and click **Next** to proceed.

6. The Windows Product Key screen is displayed. Input the 25-digit product key shown on the COA (Certificate of Authenticity). Click **Next** to begin setup. If you enter an incorrect key, a message is displayed indicating that. Select [Re-enter valid product key] and then click **Next** to return to the Windows Protect Key screen and input the product key again.

7. When setup is completed, the Congratulations screen is displayed. Click **Finish**.

8. The system asks you to set the Date and Time properties. Check the properties displayed, and change them as needed. Click **Close** to confirm the settings.

9. The system setting is automatically updated, the system is rebooted, and the Windows 98 SE desktop appears.

Installing the MSR Utility for Windows

Install the MSR Utility by the following procedure.

1. Start C:\Backup\Msrcfg\ Win\Disk1\SETUP.EXE.

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

3. The Choose Destination Location dialog box is displayed. Specify the directory where the program is to be installed and click **Next**. C:\Program Files\MSR Config is specified as the default.

4. Installing is completed, and the Setup dialog box is displayed. Click **Finish**.

Uninstalling the MSR Utility for Windows

Uninstall the MSR Utility by the following procedure.

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Programs] in the control panel.

3. Select [DM-MS Series Configuration Utilities].

4. Click **Add/Remove**.

5. The confirmation dialog box of the uninstalling is displayed. Select **Yes**.

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

Support Information

Select the My Computer icon on the desktop, click the right mouse button and select Properties from the pull down menu.

Click the **Support Information** button; the information on the contact is displayed.

Recovering the OS

Preparing recovery media

❑ Preparing a start-up disk

1. Start the command prompt.

2. Go to the C:\backup\recovery\bootfd directory.

3. Execute MKDISK.bat.

4. Insert a floppy disk in the FDD.

5. Press Enter to start formatting.

6. A message asking whether you are going to format another floppy disk is displayed. Press N. Then the necessary files are copied onto the floppy disk.

7. A message that the copying is over is displayed. Then exit MS-DOS.

❑ Saving the HD image data

Save all data under the C:\backup\recovery\data directory onto another medium or drive.

Example:

1. Connect the IM-800 in network to a PC that can write data onto CD-Rs.

2. Save all data under the C:\backup\recovery\data directory of the IM-800 onto the PC.

3. Write all data saved in step 2 onto a CD-R.

4. After saving the data, the directory under the C:\backup\recovery directory may be deleted.

❏ Backing up each driver

Each directory under the C:\backup directory is the backup of each driver, which can be backed up through individual saving.

Recovering method

❏ Editing the start-up disk

Edit CONFIG.SYS and AUTOEXE.BAT created in "Preparing a Recovery Medium" to the device on which the image data has been saved.

❏ Recovering

1. Connect the medium or drive onto which the data has been saved in "Preparing a Recovery Medium" to the IM-800.

2. Start the system by using the start-up floppy disk created in "Preparing a Recovery Medium."

3. Enter "x: [enter]" (x: Drive with the image file).

4. The following message appears. 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._
```

5. Execute Start.bat.

6. Following the title "EasyRestore," the EPSON Logo Startup screen is displayed. Select **Continue**.

7. After the OS is recovered, set up the OS.

8. Return the printer driver for OPOS and Windows saved in "Preparing a Recovery Medium."

Restrictions

❏ The size of the image data to be saved amounts to 500–600 MB. Saving this much data requires a large-capacity device, such as a CD-R, MO, or server.

❏ Because of restrictions by EasyRestore, the HD image data file (HDIMG003.PQI) cannot be divided.

❏ Because EasyRestore runs only on MS-DOS, it is a requirement of "Saving of HD Image Data" that MS-DOS can recognize the saving destination device.

❏ When startup is initiated from the built-in hard disk of the IM-800, recovery is impossible.

Installation for Windows XP Professional Locally Procured Edition

Installation Procedure

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

```
┌─────────────────────────────────────────────────────────────┐
│ Windows XP Professional Installation                         │
│ Insert the Windows XP startup disk and CD-ROM; then turn on  │
│ the IM-800 to perform the setup. Enter the product key of    │
│ the COA package. You can set up the Network automatically    │
│ or set it up later.                                          │
└─────────────────────────────────────────────────────────────┘
                              ▼
┌─────────────────────────────────────────────────────────────┐
│ Serial port Driver Installation                              │
│ Install the software from the Driver CD-ROM for the IM-800.  │
└─────────────────────────────────────────────────────────────┘
                              ▼
┌─────────────────────────────────────────────────────────────┐
│ When using the DM-M820 with Touch Panel, follow the steps    │
│ below.                                                       │
│  ┌────────────────────────────────────────────────────────┐ │
│  │ Touch Panel Driver Installation                        │ │
│  │ Install the Touch Panel Driver from the CD-ROM for the │ │
│  │ DM-M820. See page 4-45 for the procedure.              │ │
│  └────────────────────────────────────────────────────────┘ │
│                            ▼                                 │
│  ┌────────────────────────────────────────────────────────┐ │
│  │ The double click setting                               │ │
│  │ Set up this setting every time a new user starts using │ │
│  │ Windows XP.                                            │ │
│  └────────────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────────┘
                              ▼
┌─────────────────────────────────────────────────────────────┐
│ MSR Utility Installation                                     │
│ When using the DM-M820 with MSR, install the MSR utilities   │
│ from the CD-ROM for the IM-800. See page 4-50 for the        │
│ procedure.                                                   │
└─────────────────────────────────────────────────────────────┘
                              ▼
┌─────────────────────────────────────────────────────────────┐
│ Other software Installation                                  │
│ When using OPOS-ADK, APD (Windows printer drivers) and       │
│ Unimini, install the software from the Driver CD-ROM for     │
│ the IM-800.                                                  │
└─────────────────────────────────────────────────────────────┘
```

Setup procedure

Windows XP is set up by using the following procedure:

1. Connect the keyboard and mouse to the IM-800.

2. Insert the CD-ROM of Windows XP in the CD-ROM drive and boot up the system.

3. The [Welcome to Setup] screen is displayed. Press the **Enter** key.

---

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

5. Select the partition to set up Windows, and press the Enter key. 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.

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

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

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

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

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

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

12. The [Networking Settings] dialog box is displayed. Select the Typical settings or the Custom settings, and click Next.

13. The [Workgroup or Computer Domain] dialog box is displayed. Select the correct item for the environment and click Next.

14. The system reboots automatically.

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

16. Set for Internet access according to the instruction on the screen.

17. Proceed with the activate Windows according to the instruction on the screen.

18. Input the user name according to the instruction on the screen.

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

⚠ *CAUTION:*

Setup is executed with the VGA display.

Installing the Serial Port Driver

✎ *Note*

COM1/COM2 can be used without installing the driver. If you use COM3/COM4, you need to install the driver.

If the standby mode of the Operating System is selected, the current mode automatically changes to the standby mode even if the data is being output to COM ports.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive.

2. Select [Start Menu] and open the control panel.

3. Select [Printers and Other Hardware] in the control panel.

4. Select [System] in the [See Also].

5. The System dialog is displayed. Select the [Hardware] tab.

6. Click **Device Manager**.

7. Select [Other Devices] - [PCI Serial Port] in the list, and click **Properties**.

8. The Properties dialog box is displayed. Click **Reinstall Driver**.

9. The [Welcome to the Hardware Update Wizard] dialog box is displayed. Select the "Install from a list or specific location" checkbox and click Next.

10. The [Hardware Installation] dialog box is displayed. Click Continue Anyway.

11. The [Completing the Hardware Update Wizard] dialog box is displayed. Click Finish.

12. Next the Serial Port 1 is automatically recognized and the [Welcome to the Found New Hardware Wizard] dialog box is displayed. Select the "Install the software automatically" check box and click Next.

13. The [Hardware Installation] dialog box is displayed. Click Continue Anyway.

14. The [Completing the Found New Hardware Wizard] dialog box is displayed. Click Finish.

15. Next the Serial Port 2 is automatically recognized and the [Welcome to the Found New Hardware Wizard] dialog box is displayed. Select the "Install the software automatically" check box and click Next.

16. The [Hardware Installation] dialog box is displayed. Click Continue Anyway.

17. The [Completing the Found New Hardware Wizard] dialog box is displayed. Click Finish.

Uninstalling the serial port driver
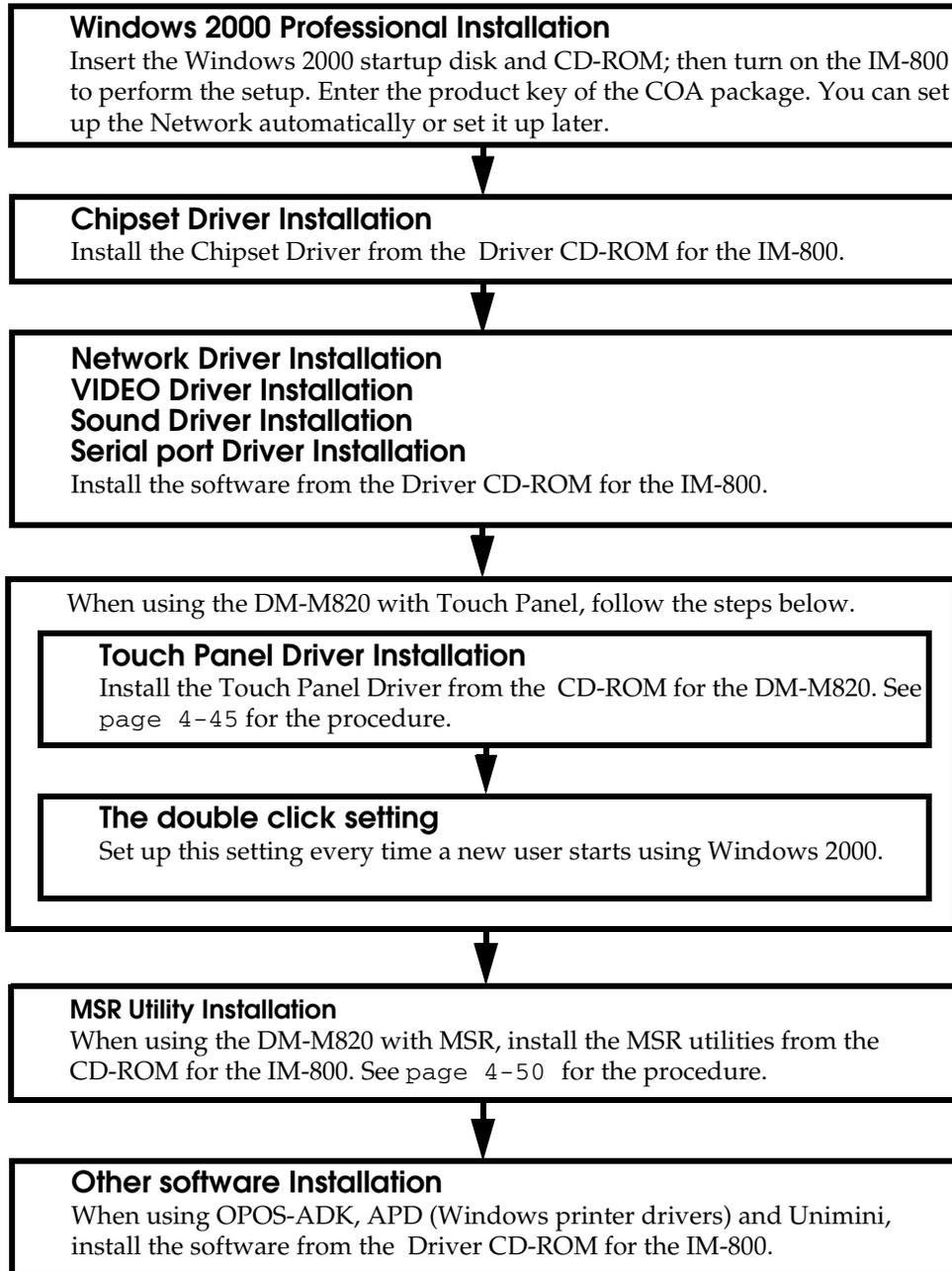
Uninstalling cannot be done.

Installing the Touch Panel Driver, MSR Utility and the Other Devices

See the Installation of Other Drivers section on page 4-45.

Installation for Windows 2000 Professional Locally Procured Edition

Installation Procedure

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

Windows 2000 Professional Installation
Insert the Windows 2000 startup disk and CD-ROM; then turn on the IM-800 to perform the setup. Enter the product key of the COA package. You can set up the Network automatically or set it up later.

Chipset Driver Installation
Install the Chipset Driver from the Driver CD-ROM for the IM-800.

Network Driver Installation
VIDEO Driver Installation
Sound Driver Installation
Serial port Driver Installation
Install the software from the Driver CD-ROM for the IM-800.

When using the DM-M820 with Touch Panel, follow the steps below.

Touch Panel Driver Installation
Install the Touch Panel Driver from the CD-ROM for the DM-M820. See `page 4-45` for the procedure.

The double click setting
Set up this setting every time a new user starts using Windows 2000.

MSR Utility Installation
When using the DM-M820 with MSR, install the MSR utilities from the CD-ROM for the IM-800. See `page 4-50` for the procedure.

Other software Installation
When using OPOS-ADK, APD (Windows printer drivers) and Unimini, install the software from the Driver CD-ROM for the IM-800.

Setup procedure

Windows 2000 is set up by using the following procedure:

1. Connect the keyboard and mouse to the IM-800.

2. Insert the CD-ROM of Windows 2000 in the CD-ROM drive and boot up the system.

3. The Setup Wizard starts, and the Welcome dialog box is displayed. Select [Install a new copy of Windows 2000], and then click **Next**.

4. The License Agreement is displayed. Read it through and confirm your agreement to the terms. And then select [I accept the agreement] and click **Next**.

5. The Your Product Key screen is displayed. Input the 25-digit product key shown on the COA (Certificate of Authenticity). Click **Next** to begin setup.

6. Input the necessary information and continue the installation according to the instruction on the screen.

7. When copy of the file is completed, reboot the system again according to the instruction on the screen.

8. After rebooting the system, continue the installation according to the instruction on the screen.

9. Reboot the system again according to the instruction on the screen.

10. After the system setting is automatically updated, input the necessary information and continue the installation according to the instruction of the screen.

11. The installation is completed, then click **Finish** according to the instruction on the screen.

12. After the system is rebooted, the Network Identification wizard is started. Click **Next**.

13. Set the Password according to the instruction on the screen.

14. The installation is completed, and the desktop screen of Windows 2000 is displayed.

⚠ *CAUTION:*

*Setup is executed with the VGA display.*

✎ *Note*

By default, it is impossible to recover from the standby mode with touch panel, keyboard and PS/2 mouse. Follow the steps below to set the power management.

1. Open **Start**-**Settings**-**Control Panel**.

2. Double-click **System** in the Control Panel.

---

3. The System Properties dialog box appears. Click the **Hardware** tab.

4. Click the **Device Manager** button.
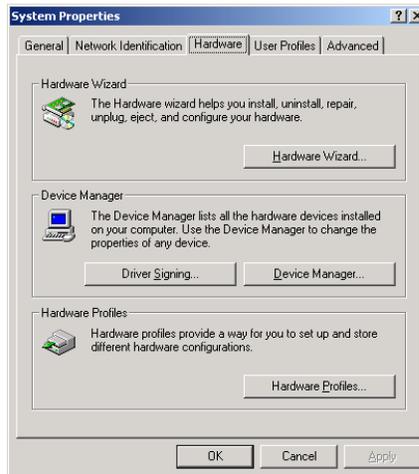
5. The Device Manager dialog box appears. Select the keyboard as shown in the illustration below and click the **Properties** button in the tool bar. Or right click to show the short-cut menu; then select **Properties**.
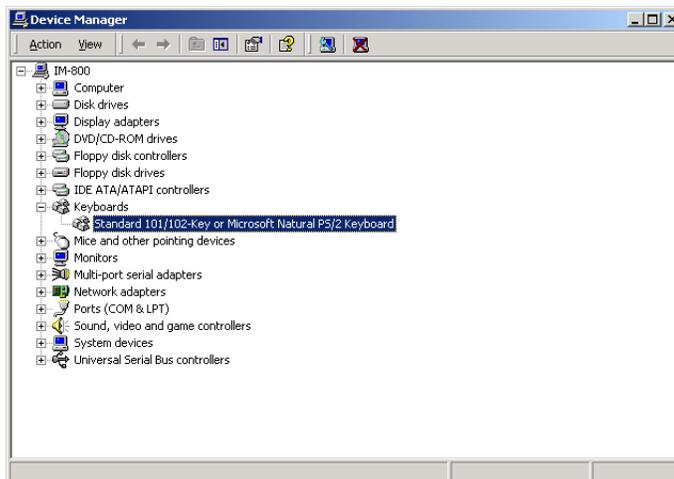
6. The keyboard dialog box appears. Click the **Power Management** tab. Check the **Allow this device to bring the computer out of standby** box and click **OK**.
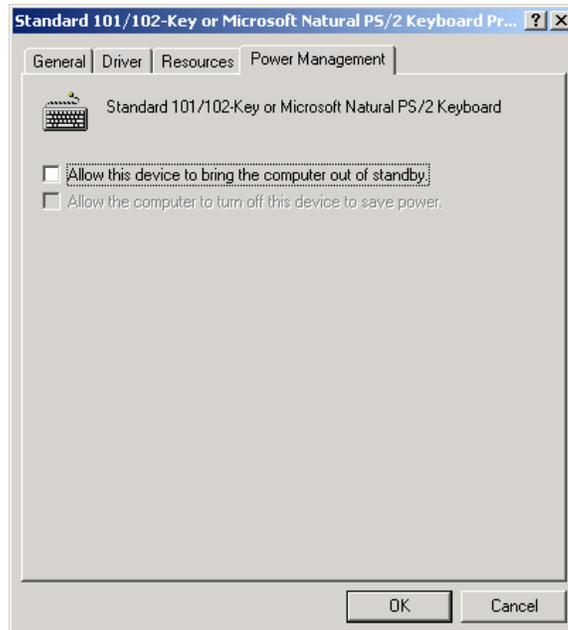
Installing the Intel Chipset Diver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Win2K\Chipset\SETUP.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.txt dialog box is displayed. Click **Next**.

5. Reboot 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 Network Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Win2K\Network\100PDISK.EXE.

---

2. The dialog box to confirm copying the file is displayed. Click **Yes**.

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

4. The dialog box which specifies the place of the copy of the file is displayed. Input the place and click **Next**. The default setting is C:\Intel_32.

5. When copying of the file is completed, the Release note is displayed.

6. Select [Start Menu] - [Settings] and open the control panel.

7. Select [System] in the control panel.

8. The System dialog box is displayed. Select the [Hardware] tab.

9. Click **Device Manager**.

10. Select [Other Device] - [Ethernet Controller] in the list, and click **Properties**.

11. The Properties dialog is displayed. Click **Reinstall Driver**.

12. The Upgrade Device Driver Wizard dialog box is displayed. Click **Next**.

13. The dialog box that specifies the search method of the driver is displayed. Confirm that [Search for a suitable driver for my device] is selected and click **Next**.

14. The dialog box that specifies the place of the search of the driver file is displayed. Check [Specify a location] and click **Next**.

15. The dialog box for the location the driver file is displayed. Input the directory specified by step 4, and click **OK**. The default setting is C:\INTEL_32.

16. The confirmation dialog box of the device is displayed. Confirm that the [Intel(R) PRO/100VE Network Connection] is selected, and click **Next**.

17. Installing of the driver is completed, the dialog box is displayed. Click **Finish**.

18. The Intel(R) PRO/100 VE Network Connection Properties dialog box is displayed. Set up necessary items and click **Close**.

Uninstalling the network driver

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Hardware] in the control panel.

3. Add/Remove Hardware Wizard starts and the Welcome dialog box is displayed. Click **Next**.

4. The Choose a Hardware Task dialog box is displayed. Select Uninstall/Unplug a device, and click **Next**.

5. The Choose a Removal Task dialog box is displayed. Select [Uninstall a device], and click **Next**.

6. Select Intel(R) PRO/100 VE Network Connection in the list and Click **Next**.

7. The confirmation dialog box of the uninstalling is displayed. Select that the [Yes, I want to uninstall this device], and click **Next**.

8. Uninstalling is completed and the dialog box is displayed. Click **Finish**.

Installing the Display Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Win2K\Video\Win2K-XPE66.EXE.

2. The Release note is displayed. Click **Next**.

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

4. The License Agreement dialog box is displayed. Click **Yes**.

5. Installing is completed and the reboot 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 display driver

Uninstalling cannot be done.

Installing the Sound Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Win2K\Sound\SETUP.EXE.

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

3. The reboot 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 sound driver

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Hardware] in the control panel.

3. Add/Remove Hardware Wizard starts and the Welcome dialog box is displayed. Click **Next**.

4. The Choose a Hardware Task dialog box is displayed. Select [Uninstall/Unplug a device], and click **Next**.

5. The Choose a Removal Task dialog box is displayed. Select [Uninstall a device], and click **Next**.

6. Select [SoundMAX Integrated Digital Audio] in the list and Click **Next**.

7. The confirmation dialog box of the uninstalling is displayed. Select [Yes, I want to uninstall this device] and click **Next**.

8.   Uninstalling is completed and the dialog box is displayed. Click **Finish**.

Installing the Serial Port Driver

✎ *Note*

COM1/COM2 can be used without installing the driver. If you use COM3/COM4, you need to install the driver.

If the standby mode of the Operating System is selected, the current mode automatically changes to the standby mode even if the data is being output to COM ports.

1.   Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive.

2.   Select [Start Menu] - [Settings] and open the control panel.

3.   Select [System] in the control panel.

4.   The System dialog is displayed. Select the [Hardware] tab.

5.   Click **Device Manager**.

6.   Select [Other Device] - [PCI Serial Port] in the list, and click **Properties**.

7.   The Properties dialog box is displayed. Click **Reinstall Driver**.

8.   The Upgrade Device Driver Wizard dialog box is displayed. Click **Next**.

9.   The dialog box which specifies the search method of the driver is displayed. Confirm that [Search for a suitable driver for my device] is selected and click **Next**.

10. The dialog box which specifies the place of the search of the driver file is displayed. Check [Specify a location] and click **Next**.

11. The dialog box for the location of the driver file is displayed. Input D:\Win2K\Serial to the directory and click **OK**.

12. The confirmation dialog box of the device is displayed. Confirm that the [PCI Serial Port] is selected and click **Next**.

13. When installation of the driver is completed, a dialog box is displayed. Click **Finish**.

14. The ITE8872 Properties dialog box is displayed. Set up necessary items and click **Close**.

Uninstalling the serial port driver

Uninstalling cannot be done.

Installing the Touch Panel Driver, MSR Utility and the Other Devices

See the Installation of Other Drivers section on page 4-45.

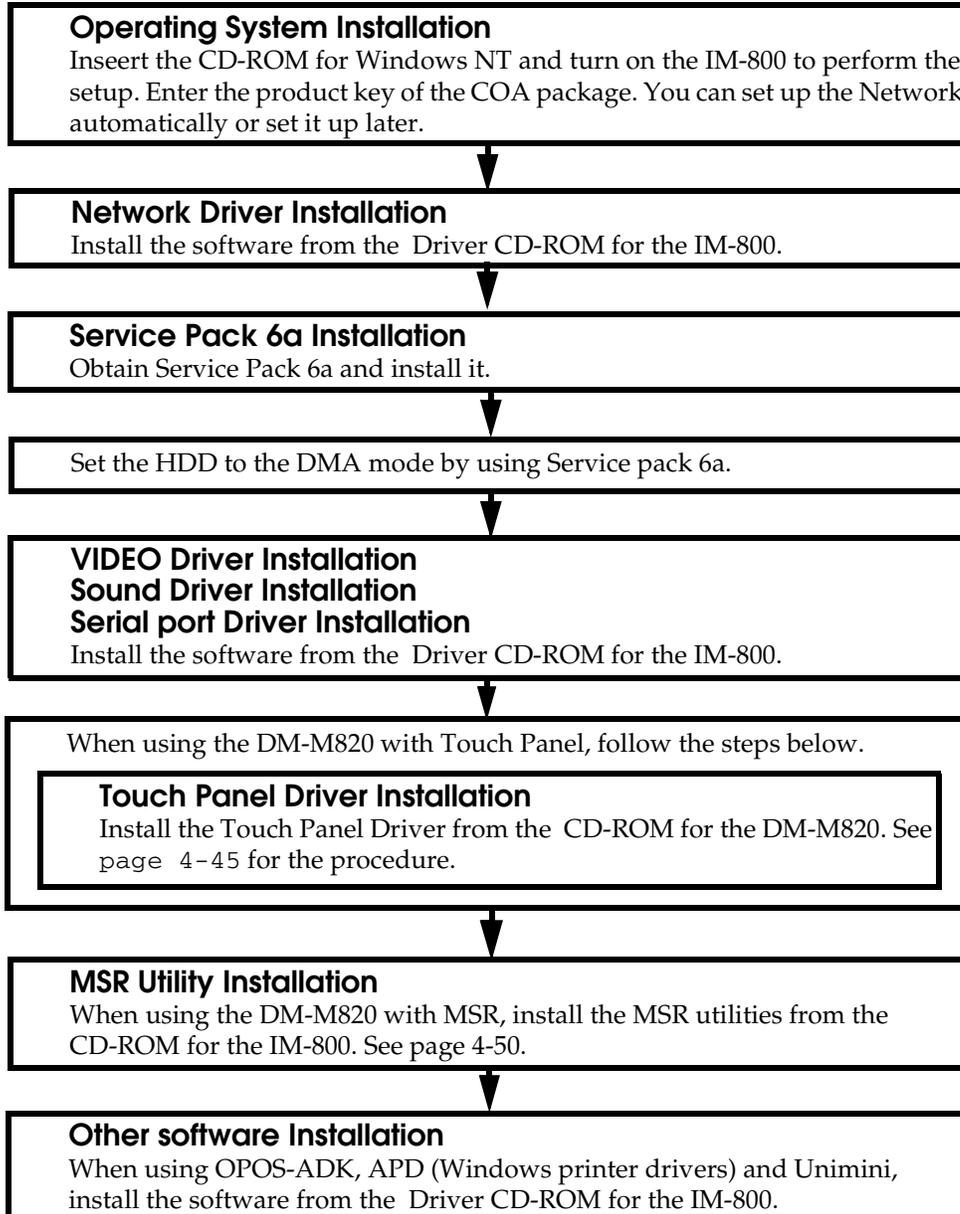## *Installation for Windows NT Locally procured edition*

✎ *Note*

If you use Windows NT, you need to install Service Pack 6a.

Installation Procedure

If you install Windows NT Local procured edition, follow the steps below.

Operating System Installation
Inseert the CD-ROM for Windows NT and turn on the IM-800 to perform the setup. Enter the product key of the COA package. You can set up the Network automatically or set it up later.

⬇

Network Driver Installation
Install the software from the Driver CD-ROM for the IM-800.

⬇

Service Pack 6a Installation
Obtain Service Pack 6a and install it.

⬇

Set the HDD to the DMA mode by using Service pack 6a.

⬇

VIDEO Driver Installation
Sound Driver Installation
Serial port Driver Installation
Install the software from the Driver CD-ROM for the IM-800.

⬇

When using the DM-M820 with Touch Panel, follow the steps below.

Touch Panel Driver Installation
Install the Touch Panel Driver from the CD-ROM for the DM-M820. See `page 4-45` for the procedure.

⬇

MSR Utility Installation
When using the DM-M820 with MSR, install the MSR utilities from the CD-ROM for the IM-800. See page 4-50.

⬇

Other software Installation
When using OPOS-ADK, APD (Windows printer drivers) and Unimini, install the software from the Driver CD-ROM for the IM-800.

Setup procedure

Windows NT is set up by using the following procedure:

1. Connect the keyboard and mouse to the PC.

2. Insert the CD-ROM of Windows NT in the CD-ROM drive and boot up the system.

3. The Welcome to Setup screen dialog box is displayed. Press the **Enter** key.

4. According to the instructions on the screen, input the necessary items and continue installing.

5. The Windows NT Licensing Agreement dialog box is displayed. Press the **PageDown** key and confirm contents to the last page. Press the **F8**(I agree) key.

6. According to the instructions on the screen, input the necessary items and continue installing.

7. When copying of the file is completed, according to the instruction on the screen, take the Windows NT CD-ROM out of the CD-ROM drive, and then boot the system from the HDD.

8. The Windows NT Setup Wizard starts. According to the instruction on the screen, insert the CD-ROM of Windows NT to the CD-ROM drive again and click **OK**.

9. According to the instruction of the screen, input the necessary items and continue installing.

10. The Registration dialog box is displayed. Input the 10-digit CD key shown on the COA (Certificate of Authenticity). Select **Next** to begin setup.

11. According to the instruction of the screen, input the necessary items and continue installing.

12. According to the instruction of the screen, set up the date /time and the display.

13. When installing is completed, according to the instruction of the screen, click **Restart Computer** and the system is rebooted. The desktop screen of Windows NT is displayed.

⚠ CAUTION:

Setup is executed with the VGA display.

Installing the Network Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Winnt\Network\100PDISK.EXE.

2. The dialog box to confirm copy the file is displayed. Click **Yes**.

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

4. The dialog box which specifies the place of the copy of the file is displayed. Input the place and click **Next**. The default setting is C:\Intel_32.

5. When copying of the file is completed, the Release note is displayed.

6. Open the Control Panel, and select Network. A dialog box is displayed. Click **Yes**.

7. The Network Setup Wizard starts. Check the [Wired to the Network] check box, and click **Next**.
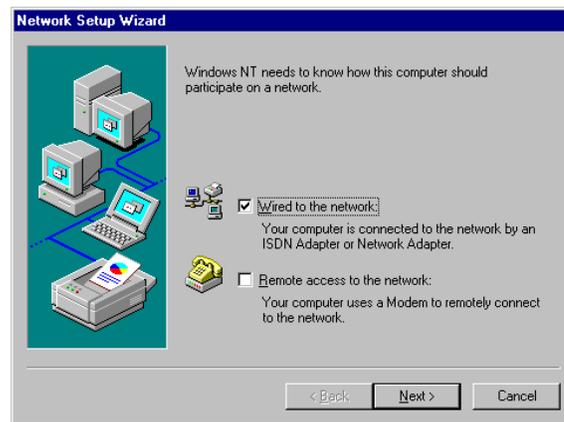

8. Click **Select from list**.
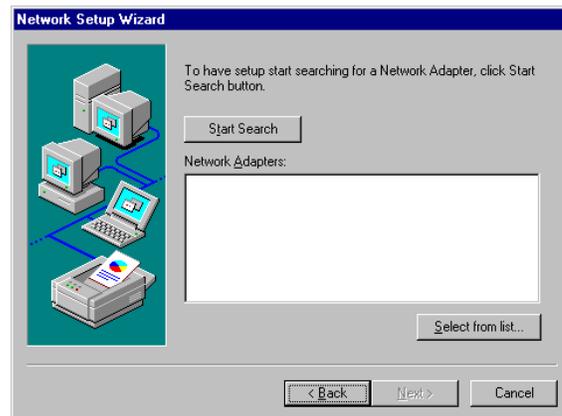
9. Click **Have Disk**.
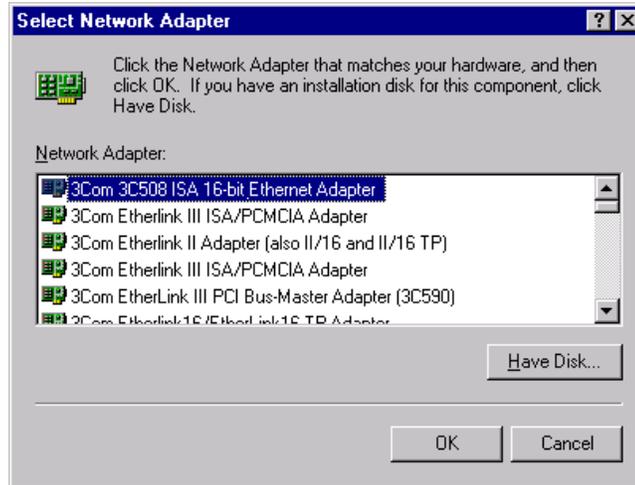
10. The Insert Disk dialog box is displayed. Input the directory specified by step 4, and click **OK**. The default setting is C:\INTEL_32.

11. The Select OEM option dialog box is displayed. Confirm that [Intel(R) PRO Adapter] is selected, and click **OK**.

12. The Intel(R) PRO Adapter is added to the network adapter. Click **Next**.

13. Select the network protocol. Set it to your system. Then click **Next**.
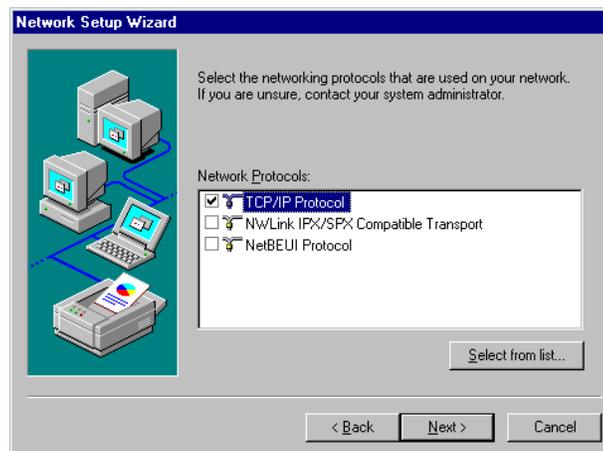
14. Select the network service. Set it to your system. Then click **Next**.
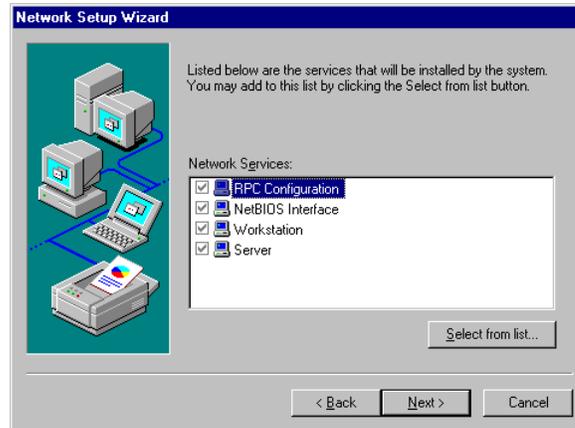
15. The following dialog box is displayed. When **Next** is clicked, installation starts.
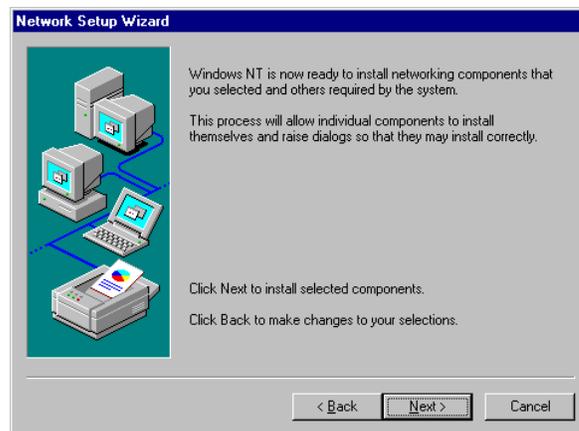
16. The dialog box that specifies the directory of the copy origin is displayed. Insert the CD-ROM of Windows NT in the CD-ROM drive and input D:\ (if the CD-ROM drive is the D drive) and click **OK**.

17. In accordance with the environment used, continue the installation according to the instruction on the screen.

18. When installing is completed, according to the instruction of the screen, reboot the system.

⚠ CAUTION:

If the network is installed after the setup, an error is caused in the logon procedure. After installing the network driver, install the Service Pack 6a.

Uninstalling the network driver

Uninstalling cannot be done.

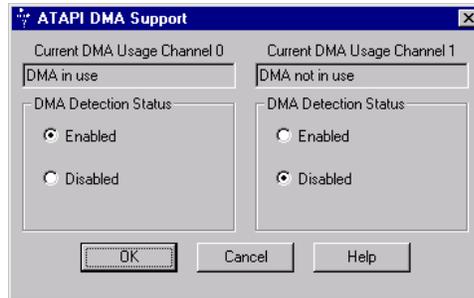### Installing Service Pack 6a

This is installed by the exclusive installation program.

1. Insert the Service Pack 6a CD-ROM in the CD-ROM drive. Execute the "Nt4sp6\Sp6i386.exe" on the Service Pack 6a CD-ROM.

2. The Setup Wizard starts, the License Agreement dialog box is displayed. Select [Accept the license agreement] and click **Install**.

3. Installing is completed; then the dialog box is displayed. Click **Restart.**
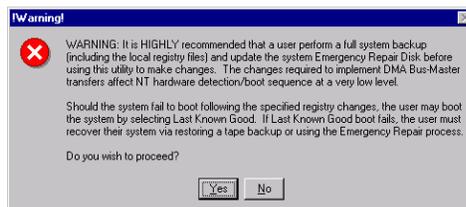
Ultra DMA Setting for the HDD

You can set the HDD to the DMA mode by following the steps below.

1. Set the Service Pack 6a CD-ROM to the CD-ROM drive. Execute the "Nt4sp6\Support\Utils\I386\Dmacheck.exe" in the Service Pack 6a CD-ROM.

2. ATAPI DMA Support dialog box appears. Set the DMA Detection Status of the Current DMA Usage Channel 0 to enabled and click **OK**.

3. A warning dialog box appears. Click Y**es**.

4. A finished dialog box appears. Click **OK**.

5. The system reboots.

Installing the Display Driver

Before installing the display driver, be sure to install Service Pack 6a.

This is installed by the exclusive installation program.

1. Set the Driver CD-ROM for the IM-800 to the CD-ROM drive. Start Winnt\Video\Winnt4E66.EXE.

2. The Release note is displayed. Click **Next**.

3. The Setup Wizard starts. The Welcome dialog box is displayed. Click **Next**.

4. The License Agreement dialog box is displayed. Click **Yes**.

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

Uninstalling the display driver

Uninstalling cannot be done.

Installing the Sound Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Winnt\Sound\SETUP.EXE.

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

3. The About SoundMAX Integrated Digital Audio dialog box is displayed. Click **OK**.

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 sound driver

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Programs] in the control panel.

3. Select [SoundMAX NT].

4. Click **Add/Remove**.

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

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

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

8. Reboot the system.

Installing the Serial Port Driver

This is installed by the exclusive installation program.

✎ *Note*
COM1/COM2 can be used without installing the driver. If you use COM3/COM4, you need to install the driver.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Winnt\Serial\SETUP.EXE.

2. The Setup Wizard starts and the Software License Agreement dialog box is displayed. Click **Yes**.

3. The Information dialog box is displayed. Click **Next**.

4. The Setup Complete dialog box is displayed. Click **Finish**.

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

Uninstalling the serial port driver

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Programs] in the control panel.

3. Select [ITE887X Uninstall].

4. Click **Add/Remove**.

5. The confirmation dialog box of the uninstalling is displayed. Click **OK**.

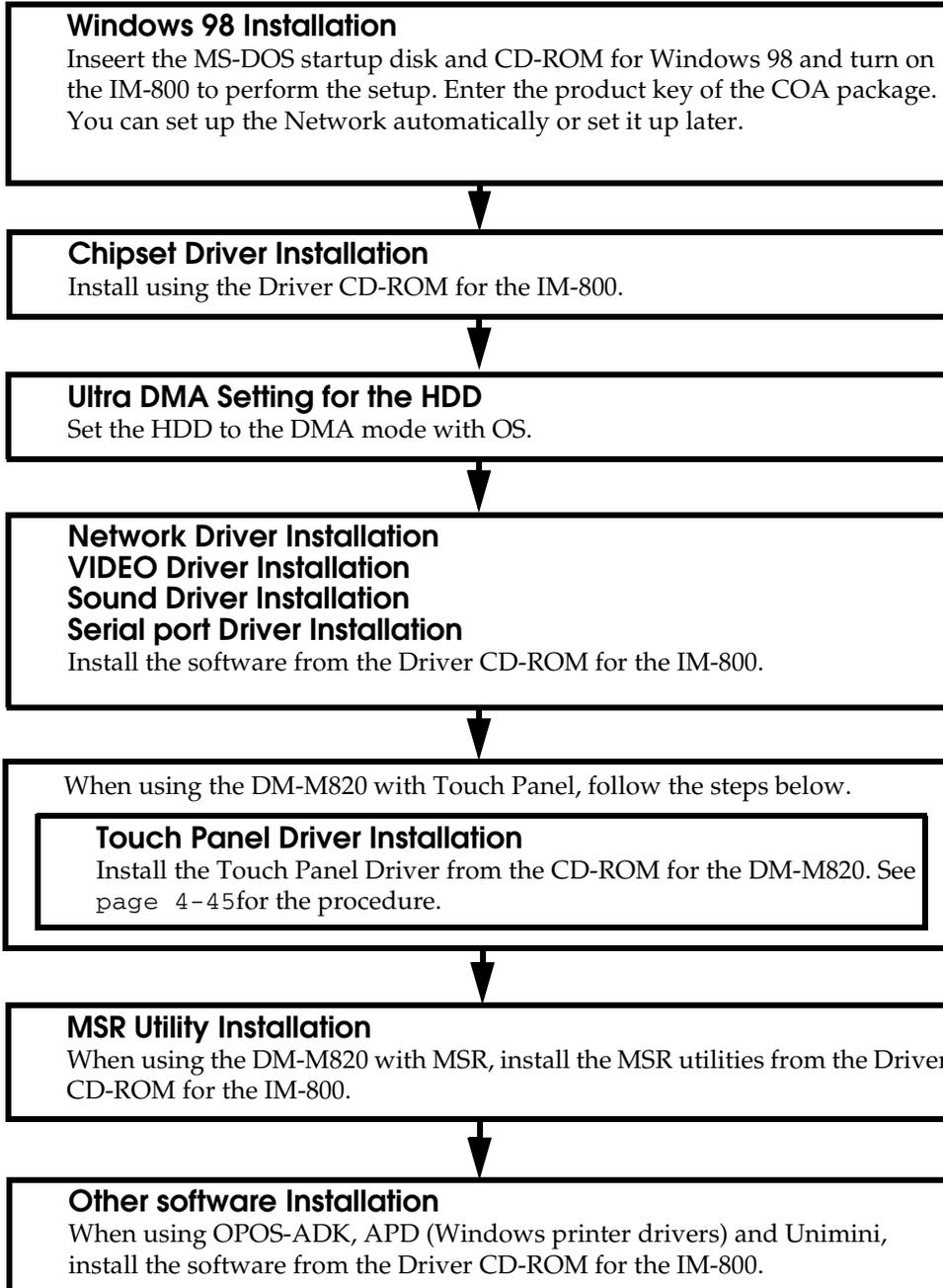6. The Reboot dialog box is displayed. Click **Yes**.

Installing the Touch Panel Driver, MSR Utility and the Other Devices

See the MSR Utility Installation on page 4-50 and the Installation of Other Drivers section on page 4-45.

Installation for Windows 98 Locally Procured Edition

Installation Procedure

If you install Windows 98 Locally procured edition, follow the steps below

Windows 98 Installation
Inseert the MS-DOS startup disk and CD-ROM for Windows 98 and turn on the IM-800 to perform the setup. Enter the product key of the COA package. You can set up the Network automatically or set it up later.

Chipset Driver Installation
Install using the Driver CD-ROM for the IM-800.

Ultra DMA Setting for the HDD
Set the HDD to the DMA mode with OS.

Network Driver Installation
VIDEO Driver Installation
Sound Driver Installation
Serial port Driver Installation
Install the software from the Driver CD-ROM for the IM-800.

When using the DM-M820 with Touch Panel, follow the steps below.

Touch Panel Driver Installation
Install the Touch Panel Driver from the CD-ROM for the DM-M820. See `page 4-45`for the procedure.

MSR Utility Installation
When using the DM-M820 with MSR, install the MSR utilities from the Driver CD-ROM for the IM-800.

Other software Installation
When using OPOS-ADK, APD (Windows printer drivers) and Unimini, install the software from the Driver CD-ROM for the IM-800.

Setup Procedure

Windows 98 is set up by using the following procedure:

1. Connect the keyboard and mouse to the PC.

2. Insert the Startup disk of the MS-DOS to the FDD. Turn on the power supply to the system.

3. Insert the CD-ROM of Windows 98 in the CD-ROM drive and start the SETUP.EXE. The Setup Wizard starts.

4. The License Agreement is displayed. Read it through and confirm your agreement to the terms. And then select [I accept the agreement] and select **Next** to proceed.

5. The Windows Product Key screen is displayed. Input the 25-digit product key shown on the COA (Certificate of Authenticity). Select **Next** to begin setup. If you enter an incorrect key, a message is displayed indicating that. Select Re-enter valid product key and then select **Next** to return to the Windows Protect Key screen ad input the product key again.

6. According to the instruction on the screen, input the necessary items and continue installing.

7. When copying of the file is completed, take the Setup disk of the MS-DOS out of the FDD, and then according to the instruction on the screen, reboot the system.

8. After rebooting the system, according to the instruction of the screen, set up the Network and the Date/Time.

9. According to the instruction on the screen, reboot the system.

10. Drivers for the system are installed by Plug and Play. According to the instruction on the screen, input the necessary items and continue installing.

11. When installing is completed, and according to the instruction on the screen, click **Finish**. The desktop screen is displayed.

⚠ CAUTION:

Setup is executed with the VGA display.

Installing the Chipset Driver for Intel

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive and start \Win98\Cipset\SETUP.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.txt dialog box is displayed. Click **Next**.

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

6. After the system is restarted, the Chipset drivers are installed.

7. After installation, according to the instruction on the screen, reboot the system.

Uninstalling the chipset driver for Intel

Uninstalling cannot be done.

Ultra DMA Setting for the HDD

You can set the HDD to the DMA mode by following the steps below.

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [System] in the control panel.

3. The system Properties dialog box appears. Click the [Device Manager] tab.

4. Select "GENERIC IDE DISK TYPE47" from [Disk drives] and click **Properties**.
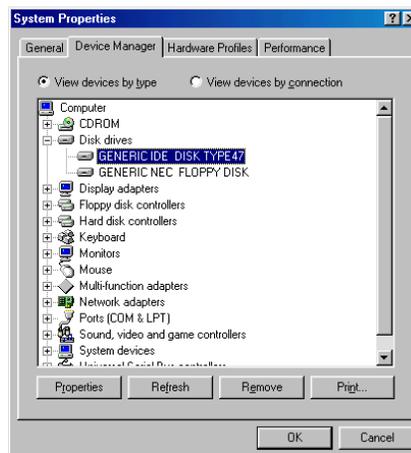
5. The GENERIC IDE DISK TYPE47 Properties dialog box appears. Click the [Settings] tab.

6. Check [DMA] in the [Option] group box.
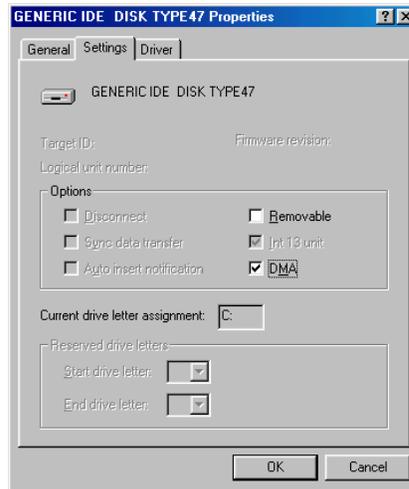
7. The following dialog box appears. Click **OK**.

8. Click **OK** to close the GENERIC IDE DISK TYPE47 Properties dialog box.

9. Click **Close** to close the System Properties dialog box.

10. The following dialog box appears. Click **Yes** to restart the system.
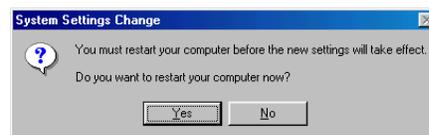
Installing the Network Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Win98\Network\100PDISK.EXE.

2. The dialog box to confirm copy the file is displayed. Click **Yes**.

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

4. The dialog box that specifies the location of the file is displayed. Input the place and click **Next**. The default setting is C:\Intel_32.

5. When copy of the file is completed, the Release note is displayed.

6. Select [Start Menu] - [Settings] and open the Control Panel.

7. Select [System] in the control panel.

8. The System dialog box is displayed. Click [Device Manager].

9. Select [Other Device] - [PCI Ethernet Controller] in the list, and click **Properties**.

10. The Properties dialog box is displayed. Click **Reinstall Driver**.

11. The Update Device Driver Wizard dialog box is displayed. Click **Next**.

12. The dialog box which specifies the search method of the driver is displayed. Confirm that [Search for a better driver than the one your device is using now] and click **Next**.

13. The dialog box which specifies the place of the search of the driver file is displayed. Check [Specify a location] and click **Next**. Input the directory specified by step4, and Click **Next**.

14. The confirmation dialog box of the device is displayed. Confirm that the [The updated driver Intel PRO/100VE Network Connection] is selected, and Click **Next**.

15. The confirmation dialog box of the installation of the driver is displayed. Click **Next**.

16. Another installation message is displayed. Click **OK**.

17. The dialog box that specifies the location of the driver file is displayed. Input the directory specified by step 4 to [Copy files from], and Click **OK**.

18. Installing of the driver is completed; then the dialog box is displayed. Click **Finish**.

19. The dialog box requiring rebooting the system is displayed. Click **Yes** to reboot the system.

Uninstalling the network driver

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Programs] in the control panel.

3. Select [Intel PRO Ethernet Adapter and Software].

4. Click **Add/Remove**.

5. The confirmation dialog box of the uninstalling is displayed. Click **OK**.

6. The dialog box to reboot the system is displayed. Click **Yes** to reboot the system.

Installing the Display Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive and start \Win98\Video\Win9Xe66.EXE.

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

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

4. The License Agreement dialog box is displayed. Click **Yes**.

5. Installing is completed and the Reboot 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 display driver

Uninstalling cannot be done.

Installing the Sound Driver

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Win98\Sound\SETUP.EXE.

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

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

4. The Sound Driver is installed after the system is rebooted.

5. Another message box is displayed. Click **OK**.

6. The dialog box that specifies the lication of the driver file is displayed. Input D:\Win98\Sound\Smax\WDM\SE to [Copy files from] (If the CD-ROM drive is the D drive). Click **OK** and installing is completed.

Uninstalling the sound driver

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Hardware] in the control panel.

3. Select [SoundMAX].

4. Click **Add/Remove**.

5. The confirmation dialog box of the uninstalling is displayed. Select [Remove] and click **Next**.

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

Installing the Serial Port Driver

✎ *Note*

COM1/COM2 can be used without installing the driver. If you use COM3/COM4, you need to install the driver.

If the standby mode of the Operating System is selected, the current mode automatically changes to the standby mode even if the data is being output to COM ports.

1. Insert the Driver CD-ROM for IM-800 in the CD-ROM Drive. Execute \Win98\ serial\setup.exe.

Uninstalling the serial port driver

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Programs] in the control panel.

3. Select [ITE887X].

4. Click **Add/Remove**.

5. The confirmation dialog box of the uninstalling is displayed. Click **OK**.

6. The reboot dialog box is displayed. Click **Yes**.

Installing the Touch Panel Driver, MSR Utility and the Other Devices

See the Installation of Other Drivers section on page 4-45.

Installation for MS-DOS Locally Procured Version

Installation Procedure

If you install MS-DOS Locally procured version, follow the steps below.

Operating System Installation
Insert the MS-DOS startup disk and turn on the IM-800 to perform the Setup. As for the installation procedure, refer to the MS-DOS manual.

CD-ROM Driver Installation
As for installing MS-DOS only, the CD-ROM drive for the IM-800 is not recognized. Therefore, by using other PC to read the CD-ROM, install the CD-ROM driver in the IM-800 after copying the CD-ROM driver on the floppy disk from the Driver CD-ROM for the IM-800.

Network Driver Installation
The Network Driver is provided in the form compressed in the Driver CD-ROM for the IM-800, but MS-DOS cannot extract the compressed file. Therefore, by using other PC to read the CD-ROM, install the Network driver toin the IM-800 after extracting the Network driver in the Driver CD-ROM for the IM-800.

Serial port Driver Installation
Install the file to the IM-800 from the Driver CD-ROM for the IM-800.

When using the DM-M820 with Touch Panel, follow the steps as below.

Touch Panel Driver Installation
Install the Touch Panel Driver from the CD-ROM for the DM-M820. See page 4-49.

MSR Utility Installation
When using the DM-M820 with MSR, install the MSR Utilities from the Driver CD-ROM for the IM-800. See page 4-51.

Installing the CD-ROM Driver

After installing the MS-DOS locally procured edition only, the CD-ROM drive of the IM-800 is not recognized. Therefore, use other PC to read the CD-ROM, and install the CD-ROM driver to the IM-800 after copying the CD-ROM driver to a floppy disk from the Driver CD-ROM for the IM-800.

✎ *Note*
When using the CD-ROM driver, MSCDEX.EXE of MS-DOS is needed.

Install the CD-ROM driver by the following procedure.

1. Start the other PC to read the CD-ROM, and insert the Driver CD-ROM for the IM-800 to the CD-ROM drive. Insert a formatted floppy disk in the FDD.

2. Copy \Dos62\CD-ROM\CDATAPI.SYS in the Driver CD-ROM for the IM-800 to the floppy disk.

3. Turn on the IM-800 to start MS-DOS.

4. Insert the floppy disk copied by step 2 in the FDD of the IM-800.

5. Copy the CDATAPI.SYS on the floppy disk to the optional directory in the hard disk. For example, copy it on C:\DOS\directory.

6. Add the following description to the CONFIG.SYS of MS-DOS with a text editor, and save it. The following example is for copying to the C:\DOS\directory. In case of copying to other directory, describe the directory name with its full path.
   ```
   DEVICE=C:\DOS\CDATAPI.SYS /D:CDROM
   ```

7. Add the following description to the AUTOEXEC.BAT of the MS-DOS with a text editor, and save it. The following example has MSCDEX.EXE in the C:\DOS\directory. If you have it in another directory, describe the directory with its full path. In case of the /L option, specify a drive name. The following is an example specifying the D drive. In case of specifying the other drive name, describe the optional drive name.
   ```
   C:\DOS\MSCDEX.EXE /D:CDROM /L:D
   ```

8. Restart MS-DOS.

Installing the Network Driver

The Network Driver is provided in the form compressed in the Driver CD-ROM for the IM-800. MS-DOS cannot extract the compressed file. Therefore, by using another PC to read the CD-ROM, install the Network driver to the IM-800 after extracting the Network driver in the Driver CD-ROM for the IM-800.

✎ *Note*
Windows 98, NT or 2000 is necessary for extracting the compressed file.

Extracting the network driver

Extract the compressed file of the Network Driver by the following procedure.

1. Start the other PC to read the CD-ROM, and start either Windows 98, NT, or 2000.

2. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive.

3. Start \Dos62\Network\100PDISK.EXE.

4. The dialog box to confirm copying the file is displayed. Click **Yes**.

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

6. The dialog box that specifies the place of the copy of the file is displayed. Input the place and click **Next**. The default setting is C:\Intel_32.

7. When copying of the file is completed, the Release note is displayed.

Installing the network driver

✎ *Note*

Different environments require different ways of setting the Network Driver. For the details of the installation procedure, see the setting manual (HTML style) in the C:\Intel_32\Info\ directory in the file extracted by the preceding procedure.

The following example describes the procedure to install the Netware DOS ODI Client Driver.

1. Copy all files in the C:\Intel_32\DOS\ directory in the file extracted by the preceding procedure on the floppy disk.

2. Turn on the IM-800 to start MS-DOS.

3. Insert the floppy disk copied by step 1 in the FDD of the IM-800.

4. Copy all files in the floppy disk to the optional directory in the hard disk. For example, copy it to the C:\NWCLIENT\ directory.

5. Add the following description to the CONFIG.SYS of the MS-DOS with a text editor, and save it.
   ```
   LASTDRIVE=Z
   ```

6. Edit the following description in C:\NWCLIENT\NET.CFG with a text editor, and save it. The following is the example of the setting for the NET.CFG.
   ```
   LINK DRIVER E100BODI
   FRAME ETHERNET_802.2
   SPEED=100
   PROTOCOL IPX EO Ethernet_802.2

   NETWARE DOS REQUESTER
   FIRST NETWORK DRIVE = F
   PB BUFFERS = 10
   ```

7. Add the following description to the AUTOEXEC.BAT of MS-DOS with a text editor, and save it. The following is the example of the having the driver file in the C:\NWCLIENT\ directory. In case of having it in the other directory, describe as "CD [the directory name]".

    CD NWCLIENT
    LSL
    E100BODI
    IPXODI
    NETX

8. Turn off the IM-800 and connect it to the network.

9. Turn on the IM-800 and restart MS-DOS.

Installing the Serial Port Driver

✎ *Note*

COM1/COM2 can be used without installing this driver. In case of using COM3/COM4, it is necessary to install this driver.

For installing this driver, it is necessary for the CD-ROM drive to work normally.

Install the serial port driver by the following procedure.

1. Turn on the IM-800 and start MS-DOS.

2. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive.

3. Copy \Dos62\Serial\ITE.COM to the optional directory in the hard disk. For example, copy it to the C:\DOS\ directory.

4. Input the following form the command prompt of the MS-DOS and start it.
    C:\ITE.COM [COM3=xxxx] [COM4=yyyy]

    The parameter means as follows.
    COM3=xxxx   :This specifies the Port address of COM3.
    COM4=yyyy   :This specifies the Port address of COM4.
    The parameter can be omitted. In this case, the following default value is set.
    COM3   :3E8h/IRQ11
    COM4   :2E8h/IRQ10

5. Input the following from the command prompt of the MS-DOS to finish.
    C:\ITE.COM -r

6. Input the following from the command prompt of the MS-DOS to display the Usage.
    C:\ITE.COM /?

Installing the Touch Panel Driver, MSR utility and the Other Devices

See the Installation of Other Drivers section on page 4-45.

Installation of Other Drivers

Installing the Touch Panel Driver for Windows

✎ *Note*

Be sure to set the touch panel driver to COM1 or COM2. COM3/COM4 cannot be used.

This is installed by the exclusive installation program.

1. Insert the touch panel driver CD-ROM for DM-M820 in the CD-ROM drive.
    European: Start \Win\european\SETUP.EXE.
    Chinese T/C,korean :   Start \Win\asian\SETUP.EXE.

2. Start the touch panel driver set up program. The Welcome screen is displayed. Click Next.

3. The License Agreement dialog box is displayed. Confirm the contents, and if you agree, click Accept.

4. The Select folder dialog box is displayed. Specify the installation destination program folder, click Next. Gunze\U-TP is specified as the default.

5. The Select Destination Directory dialog box is displayed. Specify the directory where the program is to be installed, click Next. C:\Program Files\Gunze\U-UP is specified as the default.

6. The Install system tray icons dialog box is displayed. Specify the registration of the utility icon on the Task tray or not. Click Next.

7. The Number of devices dialog box is displayed. Confirm the number 1 is specified. Click Next.

8. The Desktop Segment dialog box is displayed. Specify the Device Segment (the range to allocate the touch panel), enter the optional panel name. Click Next. Whole Desktop is usually the best choice.
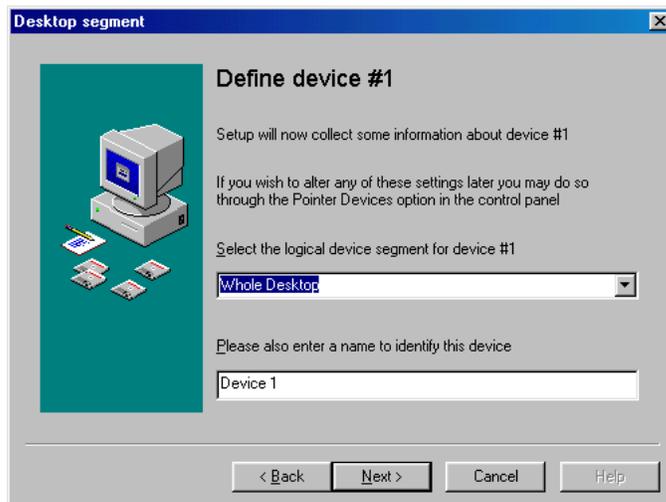
9. The Select Controller dialog box is displayed. Select the [Gunze,AHL,Serial]. Click **Next**.
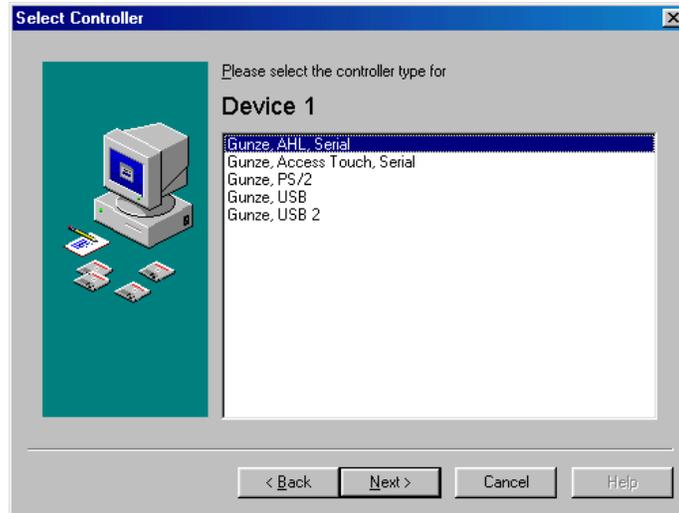
10. The Port dialog box is displayed. Specify the Serial Port. Check the Auto Detect box or enter the number of the COM port that you use. Click Next. Advanced is usually not needed.

⚠ CAUTION:

Be sure not to set the port to COM3/COM4.

11. The Ready to Install dialog box is displayed. Click Next.
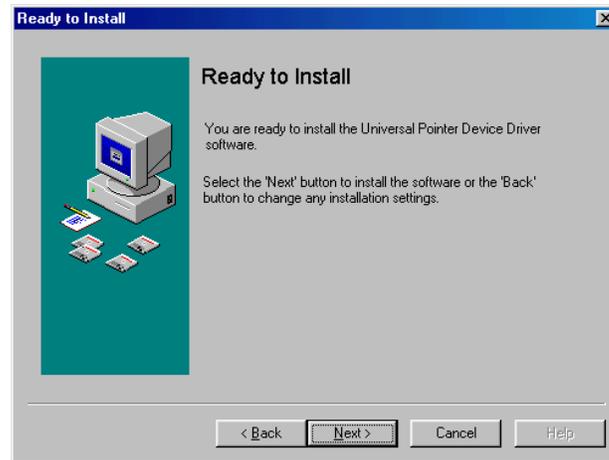
12. Installation ends and the Install Successful dialog box is displayed. Click Finish.
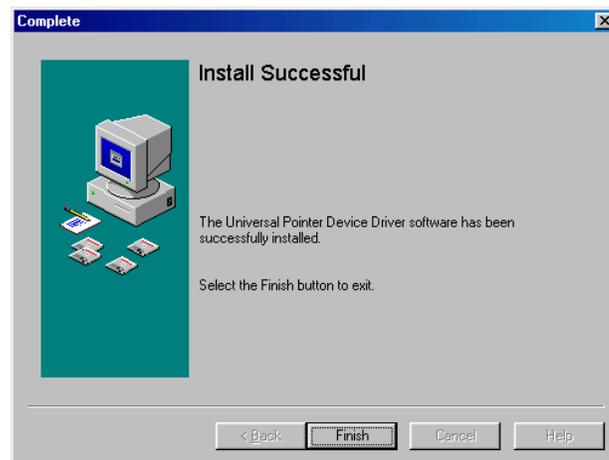
13. After the installation, the dialog box is displayed. Click Yes.

14. After rebooting the system, the calibration of the touch panel is executed automatically. See "Touch Panel Calibration."

Uninstalling the touch panel driver for Windows

Uninstall the touch panel driver by the following procedure.

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Programs] in the control panel.

3. Select [Universal Pointer Device Driver].

4. Click **Add/Remove**.

5. The Uninstall Universal Pointer Device Driver dialog box is displayed. Click **Next**.

6. The Uninstall Completed dialog box is displayed. Click **Finish**.

7. The dialog box to require rebooting the system is displayed. Click **Yes** and reboot the system.

Installing the Touch Panel Driver for MS-DOS

✎ *Note*
Be sure to set the touch panel driver to COM1 or COM2. COM3/COM4 cannot be used.

This is installed by the exclusive installation program.

1. Insert the touch panel driver CD-ROM for the DM-M820 to the CD-ROM drive. Start \Dos\INSTALL.EXE.

2. The touch screen screen is displayed. Select AHL/AR5000 and Digitouch Controllers by using the cursor keys, and press Enter.

3. The Installation Options screen is displayed. Normally, leave the default setting as it is. To change the setting, select the item to be selected by using the cursor keys, and press Enter. The setting contents are changed. Select Start Installation, and press Enter to start copying the file to C:\TOUCH directory.

4. After copying is complete, press any key. The hardware setting is displayed.

5. Press any key. Readme is displayed.

6. Press Esc to terminate installation.

7. Enter the following from the prompt to install the driver:

    For example: Set to COM2

    TTDOS 2 /I:3 Enter

    TBMOUSE 1 Enter

    TT-DOS Command Line

    TTDOS [Port] [/A:address] [/C:bbbb,p,s][/I]

Port:	Specifies the serial port [Default:1]
/A:Address:	Port address [Default: 3F8]
/C:bbbb,p,d,s	Communications parameters
bbbb:	Baudrate [Default: 9600]
p:	Parity (N,O,E) [Default: N]
d:	Data bit (7,8) [Default: 8]
s:	Stop bit (1,2) [Default: 1]
/I:Irq.	Interrupt request number (0 to 15)

TBMOUSE Command Line

TBMOUSE mode

Mode:1
If the screen is touched, the mouse cursor moves to the place that was touched and the left mouse button is pressed. After that, the finger can be slid across the screen with the left button held down. The mouse button is released if the finger is lifted from the screen.

Mode:2
If the screen is touched, the mouse cursor moves to the place that was touched, but the left mouse button is not pressed. Then you can slide your finger across the screen without the left button being pressed. If the finger's motion is stopped for approximately 0.5 seconds, the left mouse button is pressed. At this time, a short warning tone sounds once. Once the left button is pressed, the finger can be slid across the screen with the button pressed. The mouse button is released when the finger is lifted from the screen.

Mode:3
Mode 3 resembles Mode 2, but a double click is enabled. Once the finger's motion is stopped, then, while the mouse button is pressed, the finger is quickly separated from the screen and then immediately brought in contact with the screen again. At this time, a warning tone sounds once, and the button is immediately pressed again in the same position it was in the first time it was pressed.

Mode:4
After the finger is quickly lifted from the screen, touching the screen again causes the mouse button to be pressed.

To display the parameter details, enter the following:

TTDOS /? Enter

TBMOUSE /? Enter

Installing the MSR Utility for Windows

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Common\Msrcfg\Win\Disk1\SETUP.EXE.

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

3. The Choose Destination Location dialog box is displayed. Specify the directory where the program is to be installed and click **Next**. C:\Program Files\MSR Config is specified as the default.

4. Installing is completed, and the Setup dialog box is displayed. Click **Finish**.

Uninstalling the MSR utility for Windows

Uninstall the MSR Utility by the following procedure.

1. Select [Start Menu] - [Settings] and open the control panel.

2. Select [Add/Remove Hardware] in the control panel.

3. Select [DM-MS Series Configuration Utilities].

4. Click **Add/Remove**.

5. The confirmation dialog box of the uninstalling is displayed. Select **Yes**.

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

Installing the MSR Utility for MS-DOS

This is installed by the exclusive installation program.

1. Insert the Driver CD-ROM for the IM-800 in the CD-ROM drive. Start Common\Msrcfg\Dos\INSTALL.BAT.

2. The file is copied on the C:\Msrcfg\ directory.

Setting of Windows and Drivers

Touch Panel Driver for Windows

✎ *Note*
When using the touch panel driver, be sure not to install the mouseware. If you install the mouseware, there is a possibility that you cannot use the touch panel driver correctly.

Calibrating the touch panel

The touch panel calibration refers to the setting for matching the physical position taken when the operator presses the touch panel with the software position recognized by the computer.

The touch panel calibration is executed when the touch point of the touch panel is displayed.

The touch panel calibration on Windows 2000 is executed by using the following procedure:

1. Start Windows.

2. Select Programs - Gunze - U-TP - Calibrate in that order from the Start menu.

3. The calibration screen is displayed and an X mark is displayed in the top left corner of the screen.
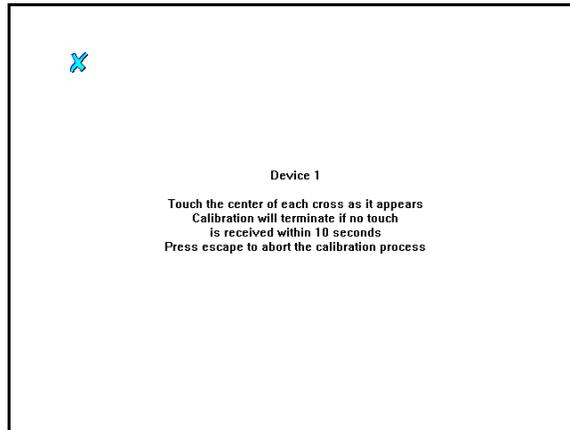
4. Press the X mark's intersection point on the screen. The X mark will then move to the top right of the screen.

5. Then press the X mark's intersection point again. With the default setting, the X mark is displayed in 4 places: top left, bottom left, top right, bottom right. The calibration point is set from 2 to 25. As for the setting method, refer to "Touch Panel Driver setting."

6. The calibration is completed when all the intersection points have been pressed.

Double click tolerance

It is sometimes difficult to perform a double-click with a touch screen because your finger moves slightly between touches. However, if you increase the double-click tolerance, your double-click can be recognized correctly.

✎ *Note*

In Windows NT/2000/XP, only an administrator can change the value. In Windows 2000 /XP, the tolerance needs to be made larger for each registered user account with this tool. Regular users can click [Default].

1. Select Programs - Gunze - U-TP - Settings in that order from the Start menu.

2. Pointer Device Properties is displayed. Click the Windows tab.

3. Slide [Time], [Height], and [Width] of the Double Click Settings group box to appropriate values and click [Apply]. Click [Default] to choose the default value.
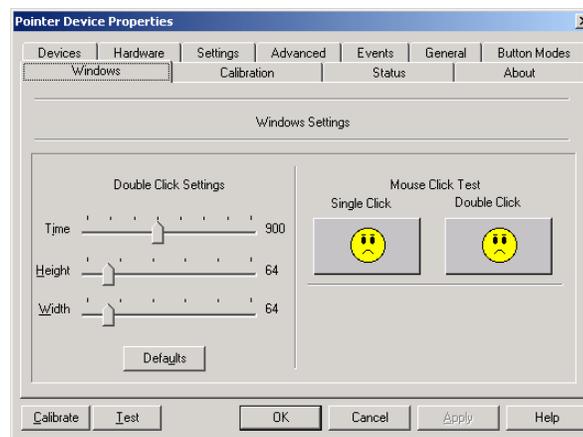
4. Double-click the Double Click button of the Mouse Click Test group box to check if the double-click is recognized correctly. If it is recognized correctly, the icon will be changed.

5. Click **OK**.

Touch panel settings tool

✎ *Note*

In Windows NT/2000/XP, when executing the Touch Panel Settings Tool, only an administrator can change the settings. The values set by the administrator are available for all users. If the user who is not an administrator executes the Touch Panel Settings Tool, the following dialog box appears. If [OK] is clicked, the Touch Panel Settings Tool will be displayed and the settings can be shown but cannot be changed.
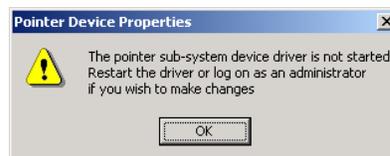
The touch panel settings tool can set detailed items related to touch panel operation. It consists of the following:

❏ Device
   Addition and the deletion of the device and the setting of the communication method.

❏ Hardware
   Setting the connect environment of the touch panel driver.

❏ Settings
   Setting the recognition condition at the touching time.

❏ Advanced
   Management of the touching position data and the setting of the beep.

❏ Events
   Setting of the touching operation and the relation of the mouse button operation.

❏ General
   Display of the confirmation massages and icons.

❏ Button Modes
   Setting of the touching operation (The button mode).

❏ Windows
   Setting of the double-click conditions.

❏ Calibration
   Setting of the calibration conditions.

❏ Status
   Display of the present communication status.

❏ About
   Display of the version information.

Touch Panel Driver setting property

Start the display of the touch panel driver setting property by the following procedure.

1. Start Windows.

2. Select Programs - Gunze - U-TP - Settings in that order from the Start menu.
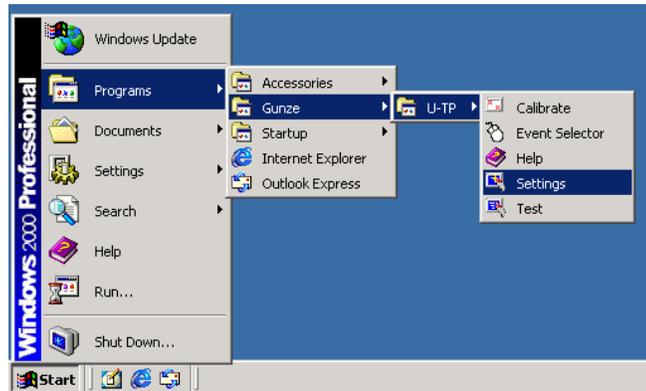
3. The Pointer Device Properties screen is displayed.
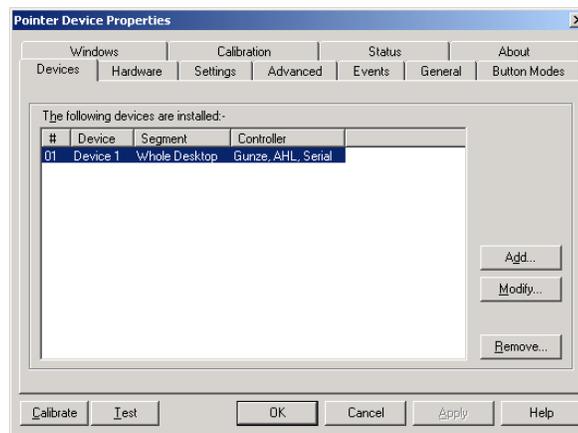
If there is a Device Manager icon in the task tray, the Touch Panel Driver Setting Properties can be displayed by the following procedure.

1. Start Windows.

2. Click the icon on the task tray and select Settings from the Pull up menu.

```
┌─────────────────────────────┐
│      Device Manager         │
├─────────────────────────────┤
│ ✔ Enabled (COM4)            │
├─────────────────────────────┤
│   Calibrate              ▶  │
│   Adjust settings           │
│   Test                   ▶  │
│   Event selector            │
├─────────────────────────────┤
│   Button Modes              │
├─────────────────────────────┤
│   Help                      │
│   About                     │
│   Close                     │
└─────────────────────────────┘
```

3. The Pointer Device Properties screen is displayed.

Devices

The following screen is displayed if the Devices tab is clicked.
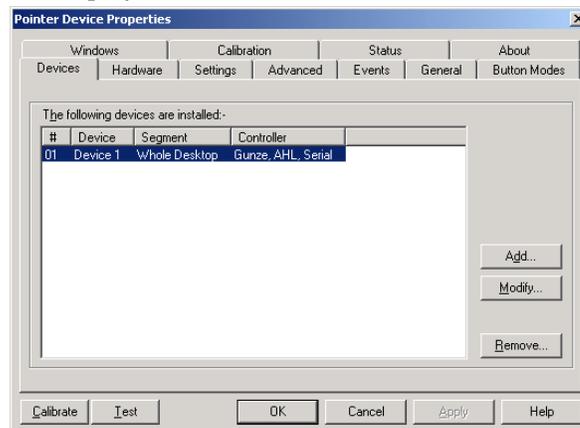
❏ [Add]
The device name can be assigned to the touch panel system connected to the IM-800. There is no need to set it generally.

❏ [Remove]
Delete the assigned touch panel system.

❏ [Modify]
There are settings to allocate the touch panel to a specific area on the screen (such as the left half), but there is no need to use these settings because the whole screen is allocated to the touch panel.

Hardware

The following screen is displayed if the Hardware tab is clicked.
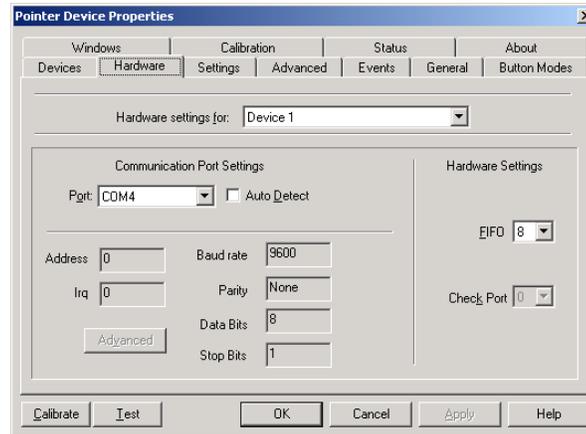
❑ [Hardware settings for]
Select the touch panel device name. Generally "Device 1" is selected.

❑ [Port]
This sets the communication port. There is usually no need to change it.

❑ [Auto Detect]
This detects the Port, the Address and the IRQ for the connected touch panel. There is usually no need to change it.

❑ [Address]
This displays the address used. This item cannot be set here.

❑ [Irq]
This displays the IRQ used. This item cannot be set here.

❑ [Baud rate]
This displays the Baud rate used. This item cannot be set here.

❑ [Parity]
This displays the parity used. This item cannot be set here.

❑ [Data Bits]
This displays the data bit used. This item cannot be set here.

❑ [Stop Bits]
This displays the stop bit used. This item cannot be set here.

❑ [FIFO]
Sets the buffer mode. Data sent from the touch panel to the IM-800 is stored in the buffer and processed but when the performance of the computer is low, an overrun error in which data

is overwritten by new data before it is processed sometimes occurs. When setting the FIFO, the overrun error can be avoided using the inner cache. This item is set to 8 generally, so there is no need to change it.

❏ [Check Port]
This displays the time interval (the second) for checking the COM Port condition for connected the touch panel. This item cannot be set here.

Settings

The following screen is displayed if the Settings tab is clicked.
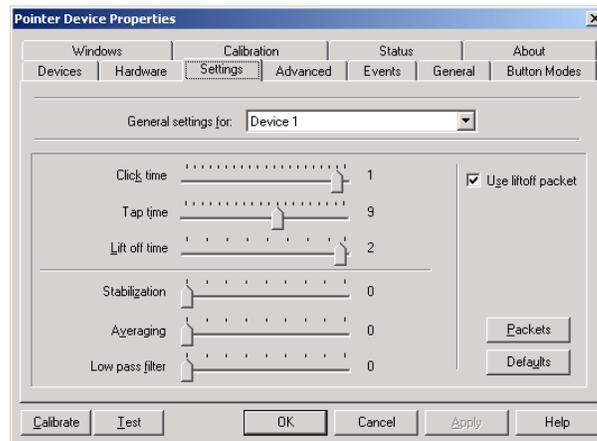
❏ [General settings for]
Select the touch panel device name to set. Generally, "Device 1" is selected.

❏ [Click time]
The click time is the timer set in 55 ms units. The default setting is 1.
If the screen is touched and the finger does not move within the specified time, a click is executed.

❏ [Tap time]
The Tap time is the timer set in 55 ms units. The default setting is 9. If the button mode is set to the "Tap Mode," when the finger is left in one place for the specified time, it is registered as a double click.

❏ [Lift off time]
The Lift off time is set in 55 ms units. The default setting is 2. If Use liftoff packet is selected, the program will ignore any lifting of the finger shorter than the time specified.

❏ [Stabilization]
This ignores the data when the change of the touch position data is smaller than the set value. The default setting is 0. For example, if this is set to 20, no change of position is registered if the change of the touch position is less than 20.

❏ [Averaging]
This samples plural values of touch position data and averages them. The default setting is 0. If it is set higher, the program will ignore minute movements of the finger.

✎ *Note:*
If the Averaging value is too high, the following of the cursor is not good and sometimes the cursor may fly to an unexpected location.

❏ [Low pass filter]
This can filter and ignore the data containing jitters, noise and unusual data. The default setting is 0 and the Low pass filter feature is off.

✎ *Note:*
When making the value of the Low pass filter high, the following of the mouse cursor becomes bad.

❏ [Use liftoff packet]
When the User liftoff packet checkbox is clicked, the touch panel recognizes when the finger leaves the touch panel immediately regardless of the setting value of the Lift off time.

❏ [Packets]
This item is not supported.

❏ [Defaults]
This returns each setting to the default.

Advanced

The following screen is displayed if the Advanced tab is clicked.
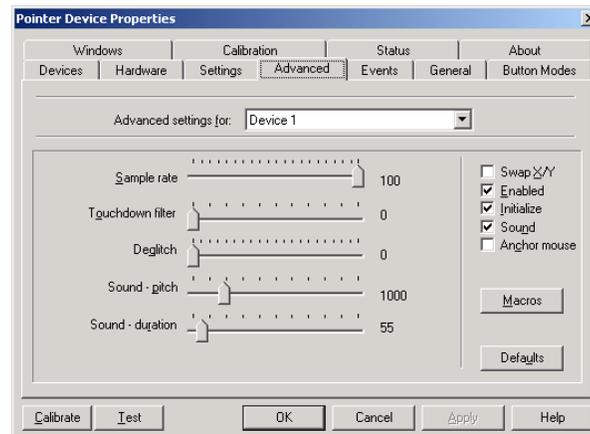
The management of the touching position data and the setting of the beep sounds.

❏ [Advanced settings for]
Select the touch panel device name to set. Generally, the "Device 1" is selected.

❏ [Sample rate]
Set the rate to process the touch position data. The default setting is 100 (%). There is usually no need to change it.

❏ [Touchdown filter]
When some first data of the touch position are unstable these data are ignored and the following data is processed. The default setting is 0.

❏ [Deglitch]
The value of the touch position data is sometimes interfered with in an environment near equipment generating a lot of noise. Deglitch ignores data that varies more than the specified amount. The default setting is 0.

❏ [Sound-pitch]
Set the frequency of the click sound at the time of the touch. The default setting is 1000 Hz.

❏ [Sound-duration]
Set the length of the click sound at the touching. The default setting is 55 ms.

❏ [Swap X/Y]
This swaps a movement of the top and the bottom and the right and the left of the mouse cursor. There is usually no need to use this.

❏ [Enabled]
The touch panel disabled temporarily if this item is checked off.

❏ [Initialize]
This initializes the touch panel system at the start-up. There is usually no need to set this.

❏ [Sound]
This sets the click sound ON or OFF.

❏ [Anchor mouse]
This sets the mouse cursor to return to the fixed position automatically. Check the Anchor mouse checkbox and press the **Apply** button. Then move the mouse cursor to the desired position and click on the left button of the mouse to set the position.

❏ [Macros]
Don't set this item.

❏ [Defaults]
This returns each setting to the default.

Events

The following screen is displayed if the Events tab is clicked.

Set the layout of the operation at the touching and the mouse button operation as a click, a double click and so on.

❏ [Events for]
Select the touch panel device name. Generally, the "Device 1" is selected.

❏ [Primary]
Sets the operation when the left mouse button is chosen in the system tray or the mouse icon of the event selector.

❏ [Secondary]
Sets the operation when the right mouse button is chosen in the system tray or the mouse icon of the event selector.

The button mode can be set is as follows.

❏ [Touchdown Left]
When the panel is touched, the cursor moves to the touched place and a Left button click is executed. It is possible to drag in this condition. A double click can be executed by tapping the same place twice quickly. (Touchdown Right is the same except that it executes a right button click.)

❏ [Time Double Click Left]
If the finger on the touch panel does not move for the amount of time specified, a Left button double click is executed. (Time Double Click Right is the same except a Right button double click is executed.)

❏ [Time Left]
If the screen is touched and the finger does not move within the specified time, a click is executed. After the click, you can drag. The time is set at the Click time in the Settings tab.

❑ [Time/Time Left]
If the screen is touched and the finger does not move within the specified time, a click is executed. The time is set at the Click time in the Settings tab. After the click, you can drag. A double click can be executed by keeping the finger in the same position after the click operation.

❑ [Time/Tap Left]
If the screen is touched and the finger does not move within the specified time, a click is executed. The time is set at the Click time in the Settings tab. After the click, you can drag. A double click can be executed by lifting the finger then tapping the same spot quickly.

❑ [Touchdown Immediate Left]
When touching in the touch panel, the mouse cursor moves to the touched place and the Left button click is executed. The click is cancelled when the finger is moved. Therefore, a drag is not possible. A double click can be executed by touching the same place twice quickly.

❑ [Touchdown Double click Left (Right)]
When touching in the touch panel, the mouse cursor moves to the touched place and the Left button double click is executed. Then the click is cancelled.

❑ [Tap Double click Left]
When touching in the touch panel, the mouse cursor moves to the touched place but a click and a double click are not executed. The Left button double click is executed by lifting the finger quickly in the tap time and retouching at once. The tap time is set at the Tap time in the Settings tab.

❑ [Tap Left]
When touching in the touch panel, the mouse cursor moves to the touched place but a click is not executed. The Left button click is executed by lifting the finger quickly in the tap time and retouching at once. A double click can be executed by doing it twice. The tap time is set at the Tap time in the Settings tab.

❑ [Liftoff Double click Left]
When touching in the touch panel, the mouse cursor moves to the touched place but a click and a double click are not executed. When the finger is lifted, a Left button double click is executed and the click is cancelled.

❑ [Liftoff Left]
When touching in the touch panel, the mouse cursor moves to the touched place but a click is not executed. When the finger is lifted, the Left button double click is executed and the click is cancelled. A double click is executed by touching the touch panel quickly and lifting the finger at once.

❑ [Set Primary]
When touching the touch panel, the mouse icon on the system tray and the mouse icon of the event selector become the left button choice condition.

❑ [Set Secondary]
When touching the touch panel, the mouse icon on the system tray and the mouse icon of the event selector become the right button choice condition.

❑ [None]
When touching in the touch panel, the mouse cursor moves to the touched place but a click is not executed.

General

The following screen is displayed if the General tab is clicked.
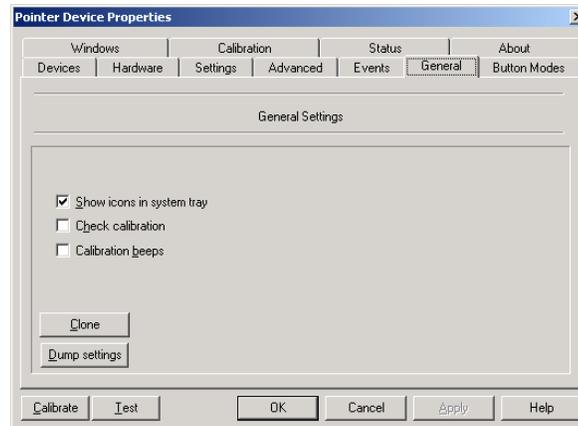
Set the display of the confirmation messages and the icons, beeps and so on.

❑ [Show icons in system tray]
This sets whether to display the touch panel driver setting and the icon of the event selector at the system tray.

Touch panel driver setting icon   Event selector icon

❑ [Check calibration]
When you click the checkbox, whether or not the calibration data has been saved and the calibration date (if the data was saved) are displayed.

❑ [Calibration beeps]
This sets beeps during calibration on or off.

❑ [Clone]
This saves the present touch panel driver setting to the UPDclone.dat file.

❑ [Dump settings]
This saves the present touch panel driver setting to the UPDDset.txt file.

Button Modes

The following screen is displayed for the Button Modes tab.
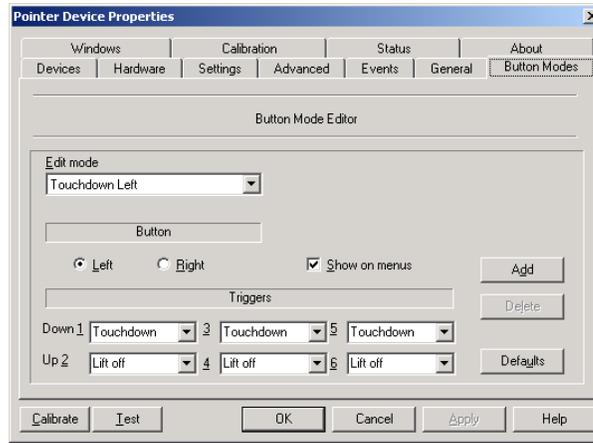
Set the details of the operation of the button mode.

❏ [Edit mode]
Select the button mode name to edit. It is possible to register new button modes. For the operation of each button mode, see the "Events" section.

❏ [Button (Left, Right)]
Clicking the Left radio button selects the left click or the left double click operation to be edited. In the same way, clicking the Right radio button selects the right click or the right double click operation to be edited.

❏ [Show on menus]
Clicking the checkbox causes the button mode edited to be registered and displayed as a menu on the pull up menu displayed when clicking the touch panel driver setting icon in the system tray.

❏ [Triggers]
Set the detailed operation of the button mode. The details of each item are as follows.

• Down 1:
This sets the touch operation recognized as the 1st click.

• Up 2:
This sets the touch operation recognized as the click cancellation.

• Down 3:
This sets the touch operation recognized as the 2nd click.
(Down 3 becomes valid when it executed in the click time.)

• Up 4:
This sets the touch operation recognized as the 2nd click cancellation.

- Down 5:
  This sets the touch operation recognized as the 3rd click.
  (Down 5 becomes valid when it executed in the click time.)

- Up 6:
  This sets the touch operation recognized as the 3rd click
  cancellation.

The following are the choices for the trigger settings

- None:
  Does not assign a touch operation.

- Immediate:
  Executes immediately after a touch operation.

- Touchdown:
  Executes when the panel is touched.

- Liftoff:
  Executes when the finger leaves the touch panel.

- Time:
  Executes when the touching is stationary.

- Tap:
  Executes when the panel is touched two times quickly.

✎ *Note:*

Don't set Down 5 and Down 6 to "Immediate" because the system gets into a loop and has to be reset.

❏ [Add]
  This adds a new button mode.

❏ [Delete]
  This deletes a button mode.

❏ [Defaults]
  This returns the button mode to its original settings.

Windows

The following screen is displayed if the Windows tab is clicked.
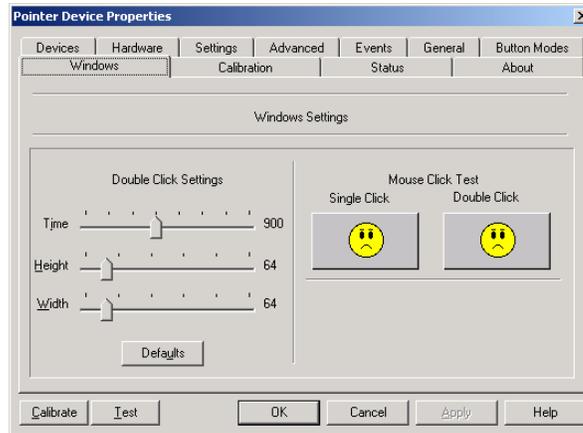
Set the detailed items about the Double Click.

❏ [Time]
This sets the time interval to recognize as a double click. The default is 900 ms.

❏ [Height]
This sets the vertical space between the touch positions that will be recognized as a double click. The default is 64 pixels.

❏ [Width]
This sets the horizontal space between the touch positions that will be recognized as a double click. The default is 64 pixels.

❏ [Defaults]
This returns each setting item to its original value.

❏ [Mouse Click Test]
This tests the single click and the double click. When the click is done correctly, the face on the button changes.

✎ *Note:*
*When Windows 2000 is set up and a new user is entered, set the double click latitude to the Default value (64) for each user. For the details, see the "**The double click setting depends on following the registry key**" section.*

Calibration

The following screen is displayed when the Calibration tab is clicked.
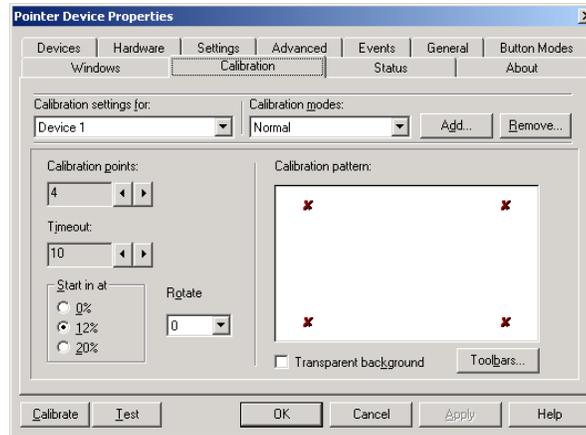
Set the detailed items about the calibration condition.

❏ [Calibration settings for]
Select the touch panel device name to set. "Device 1" is usually selected.

❏ [Calibration modes]
This names the calibration modes including user settings and loads the one selected.

❏ [Add]
This saves a new set calibration mode.

❏ [Remove]
This removes a saved calibration mode.

❏ [Calibration points]
Sets the number of the calibration points between 2-25.

❏ [Timeout]
After the calibration program is executed, if the calibration is not started within the time set by the Timeout, it is cancelled.

❏ [Start in at]
This sets the space (as a percentage) between the outside of the screen and the calibration points.

❏ [Rotate]
This is not supported. This item cannot be set.

❏ [Calibration pattern]
This displays the pattern of the calibration point.

❏ [Transparent background]
With this checkbox checked, the background in calibration execution becomes transparent and only the calibration point "X" is displayed.

❏ [Toolbars]
This sets the area of the touch panel that is reserved for the toolbars.

Status

The following screen is displayed if the Status tab is clicked.
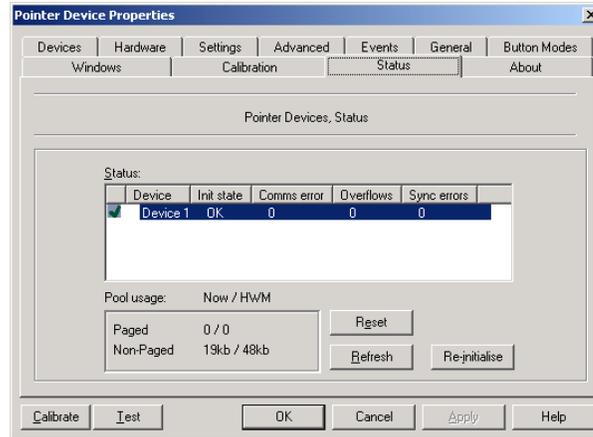
This displays the communication mode of the touch panel device.

About

The following screen is displayed if the About tab is clicked.

This displays the version, support, and licenses of the touch panel program.

Test

When you click the **Test** button, you can test the operation mode of the touch panel.
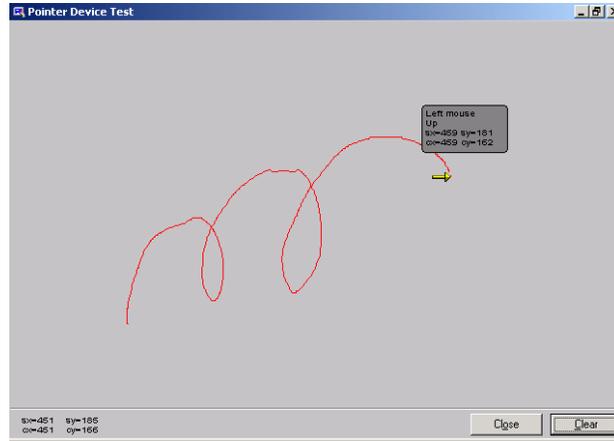
Event Selector

The Event Selector is the tool as switching between the Primary and the Secondary on the touch panel. The Primary and the Secondary are set in the Event tab of the Touch Panel Driver setting property.

Starting the Event Selector

Start the Event Selector by the following procedures.

1. Start Windows.

2. **Select Programs - Gunze - U-TP - Event Selector in that order from the Start menu.**
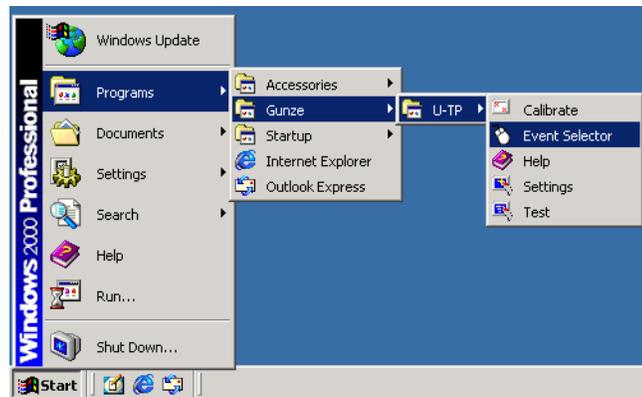
3. The Event Selector starts and the dialog is displayed.

When it has an icon in the task tray, the Event Selector can also be started with the following procedure:

1. Start Windows.

2. Click the icon in the task tray and select the Event Selector from the pull up menu.
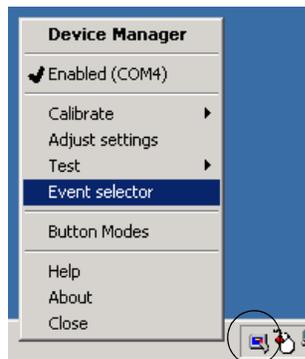
3. The Event Selector starts and the dialog is displayed.

Operation

1. Switching between the Primary and Secondary

The Primary and Secondary can be switched by tapping the mouse icon in the Event Selector. Every time it is tapped, the colors of the right button and the left button of the mouse icon are switched.

This can also be done with Event Selector icon on the task tray. The icons on the dialog and the on the task tray are connected.

When Primary is selected

Selecting the left button of the mouse icon selects Primary for the touch panel.
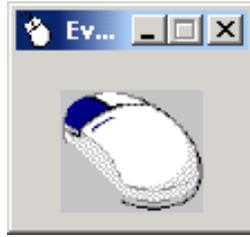
Displayed in Dialog   Displayed in Tasktray

When Secondary is selected

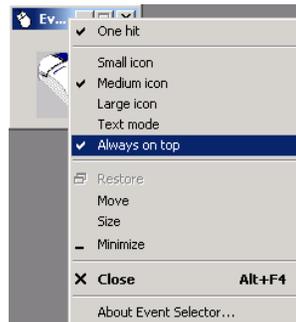Selecting the right button of the mouse icon selects Secondary for the touch panel.
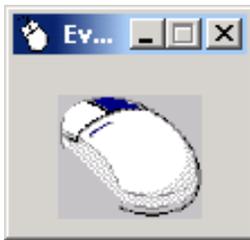
Displayed on Dialog   Displayed on Tasktray

2. Setting the details

Detailed items can be set with the pull down menu of the Event Selector. When the right button on in the title bar is clicked, the pull down menu is displayed. The setting items are as follows.

❏ [One hit]
This selects the right button of the Event Selector and after that returns it to the left button automatically after one click.

❏ [Icon (Small, Medium, Large)]
The size of the mouse icon of the Event Selector can be set here.

❏ [Text mode]
This changes the picture of the mouse icon to the character display.
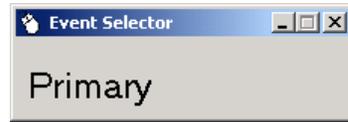
Primary operation   Secondary operation

❏ [Always on top]
When this is selected the Event Selector icon is always displayed on top of other applications.

❏ [About Event Selector]
This displays about the version information of the Event Selector.

Touch Panel Driver for MS-DOS

When the LCD panel is changed or the TTDOS is installed, calibrate the Touch Panel by using the calibration.

✎ *Note:*
TTDOS must load before the calibration.

Follow the procedures below to calibrate.

1. Type the following:

    TBcal Enter

2. The Main Menu appears.

3. Enter "H" to execute the hardware calibration.

4. Follow the onscreen instructions.

5. The message "Calibration successful" appears. Press the option key to return the main menu.

6. Next, execute the software calibration. Select and enter the calibration number of the text mode or graphics mode.
Select one of the modes below:
```
1.40X25 Text
2.80X25 Text
6.640X480 Graphics
```

7. An "X" appears on the screen. Touch the center of the "X."

8. Then an "X" appears in another location on the screen. Touch the center of the "X."

9. The message "Success" appears. Press the option key to return the main menu.

10. Input **X** to end the calibration program.

11. The message "Success" appears. The calibration program has ended.

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

❏ Windows 98 SE   This is set with the OS

❏ Windows NT Workstation 4.0 SP6a This is set with the BIOS

❏ MS-DOS Ver.6.22   This is set with the BIOS

Windows XP

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

2. [Power Options Properties] is displayed. Click the [Power Schemes] tab.
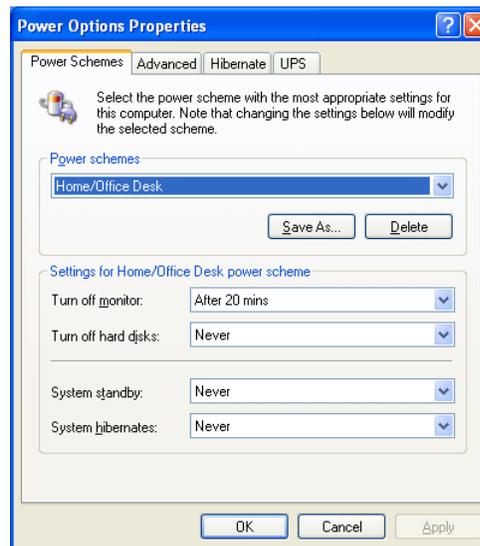
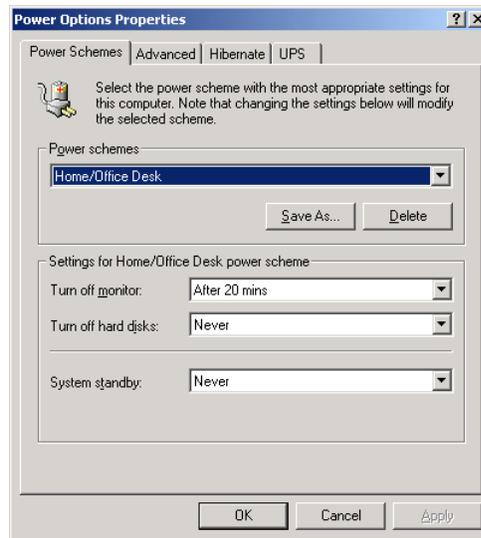3. Select the time in the [Settings for Home/Office Desk power scheme: Turn off hard disks] option.
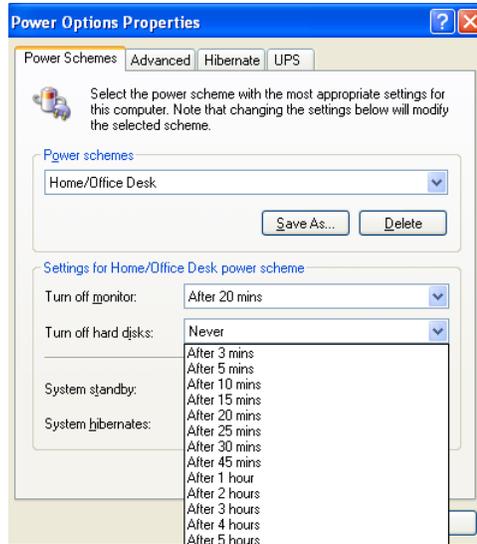
4. Click [OK].

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.
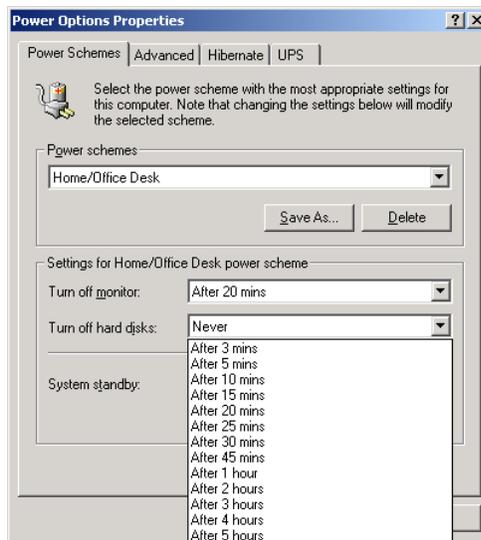
Windows 2000 Professional

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.
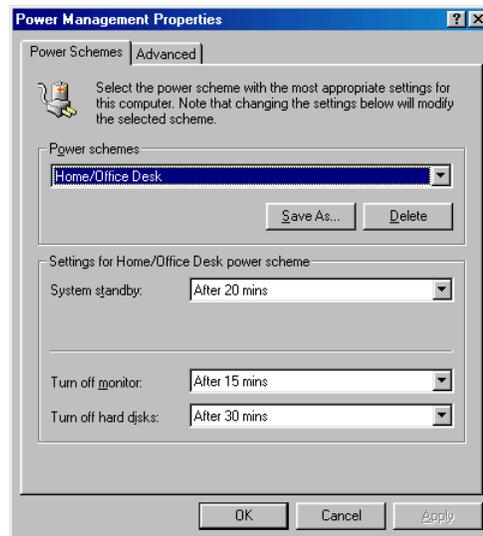

4. Click [OK].

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.

Windows 98SE

1. Select [Settings]-[Control Panel]-[Power Management] in the Start menu of Windows.

---

2. [Power Management 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.
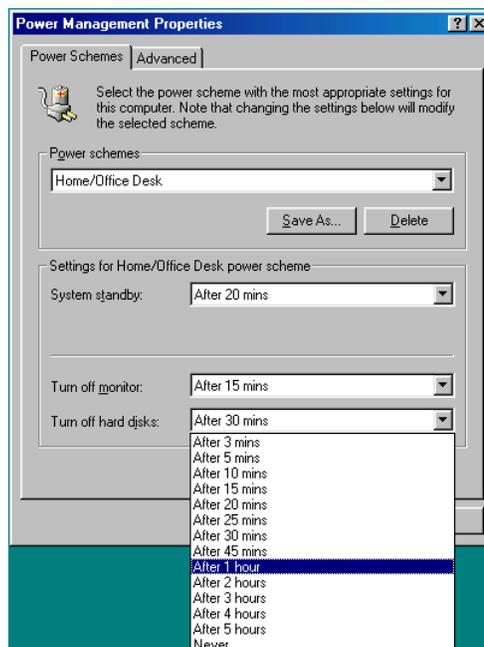
Windows NT Workstation 4.0 SP6a

Controlling the HDD motor is done through the BIOS. For the details, see Chapter 5 "BIOS Function."

MS-DOS Ver.6.22

Controlling the HDD motor is done through the BIOS. For the details, see Chapter 5 "BIOS Function."

Shift to the HDD power ON

When access to HDD occurs, the motor of HDD begins to start and the HDD becomes accessible.

MSR Utility for Windows

This driver is used to change the MSR settings.

Start menu

The MSR Utility (PKMODE32.EXE) is stored in the following directory by default.

```
C:\Program Files\MSR Config\
```

Start the MSR Utility in either of the following ways.

❏ Double-click PKMODE32.EXE from Windows Explorer.

❏ Select DM-MS Series Config Utilities and then MSR & Keyboard Configuration Utility from the Program menu.

When the program starts, the following screen appears.
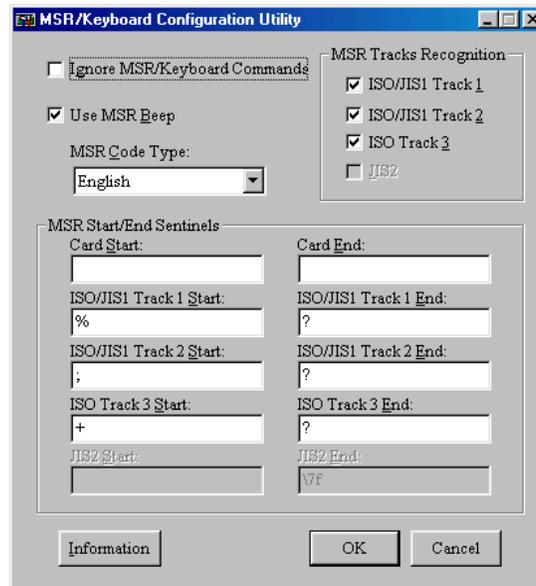
The following paragraphs define each item on the screen:

❏ Ignore MSR/Keyboard Command

If this check box is checked, all commands to the keyboard firm are not accepted. Typically, this check box is checked for use with the external programmable keyboard. It has not been checked in the initial setting.

✎ *Note:*
Be careful that if this check box is checked, this utility cannot be started unless the main body is turned off or reset. To uncheck this check box, reboot the main body, or, alternatively, start this utility with the external keyboard disconnected.

❏ Use MSR Beep

This is used to sound the beep at the time of reading.

❏ MSR Track Recognition (ISO/JIS1 Track 1, ISO/JIS1 Track 2, ISO Track 3)

Check the check box of the track to be read. More than one track may be specified accordingly. Track 1,2 and Track 3 have been selected in the initial setting.

❏ MSR Code Type (English, Japanese, French, German, Spanish)

Selection is made according to the language setting of Windows.

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❏ MSR Start/End Sentinels (Card Start, Card End, ISO/JIS1 Track 1 Start, ..., JIS2 Start, JIS2 End)

The characters to be prefixed and affixed to the data during the MSR reading are specified. It is possible to specify this setting for each card and each track. Leave this field blank if no character is to be added. The default settings are as follows:

Track 1 Start: "%" Track 1 End: "?"
Track 2 Start: ";"   Track 2 End: "?"
Track 3 Start: "+" Track 3 End: "?"

Use any of the following special characters:

Carriage return: "\R" or "\r"
Tab: "\T" or "\t"
"\":   "\\"
Others: "\xx"   Specified directly with xx, representing character codes as hexadecimals.

Automatic Definition Data Setting Utility for Windows

Function

When this utility is started, the firmware setting is converted into the setting described in the file, and this utility is terminated.

Startup

The Automatic Definition Data Setting utility (PKLOAD32.EXE) has been copied in the directory specified in the installation procedure. (If the directory was not specified, this utility has been copied in the c:\Program Files\MSR Config directory.)

This utility can be started by the following method:

❏ Enter as follows from the MS-DOS prompt:

```
[Path]PKLOAD32 filename [/n]
```

File name: This is the pas name of the setting file for specifying the key lock setting file for Windows or the setting file for this utility. ("***.kyl" file)

/n: When the [n] option is specified, the following dialog box is displayed at the time of termination.
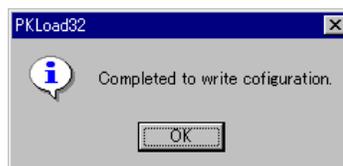
While the setting is being transferred, the dialog box indicating the situation is displayed. While the key lock setting file is being transferred, the following is displayed:

`Writing Configuration #dd-d ...`

where "dd" is the key number, and "d" is the number of retry times up to six.

While the setting file for this utility is being transferred, the following is displayed:

`Writing Configuration 0xhh-d ...`

where "hh" is the character code when the MSR character conversion setting is in transfer or the system conversion area is offset in hexadecimal in any other case, and "d" is the number of retry times up to six.

✎ *Note:*

This utility is available only with an English message.

There is no keyboard or mouse response during reading or writing of settings.

Do not perform any operation that may cause interruption, such as tapping on the touch panel, during reading or writing of settings.

Setting file

An example of the setting file for this utility is shown below.

[General]

    IgnoreCommands=Off
    SystemParam00=49,0
    SystemParam01=&32,&f7

[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, an entry line that may affect the entirety is described, in principle.

IgnoreCommands may be specified to be On. When it is specified to be On, the setting of the keyboard or MSR cannot be read or written.

SystemParamxx is described when the data is written in the system conversion area. The offset and data of the variable are divided with [,] for specification. These two can be specified by the byte width in the form of decimal or hexadecimal or character. For the decimal specification, it is described as it is. For the hexadecimal specification, & should be prefixed. For the character, $ should be prefixed. SystemParamxx may be described in more than one file by describing decimal in xx from 00 in order up to 99.

In the MSR section, an entry that is related to the MSR is described.

Beep may be specified to be On or Off. When it is specified to be On, beep sounds while the MSR is being read. When it is specified to be Off, beep does not sound while the MSR is being read.

CodeType is specified to be US, JP, FR, GR, or SP. The key-in data created while the MSR was being read becomes conformable to the keyboard array of the specified country.

ValidTracks is specified to be 1, 2, 3, or J. When it is specified to be 1, track 1 can be read. When it is specified to be 2, track 2 can be read. When it is specified to be 3, track 3 can be read. When it is specified to be J, the JIS2 track can be read. More than one file may be specified by dividing them with.

CodeDefinitionxx is described to make the character created while the MSR was being read original. The specification is made in order of character code, key number, and concurrent pressing key information by dividing them with ,. If not required, the concurrent pressing key information can be omitted. The character code and the key number are in the same format as that of SystemParamxx. The concurrent pressing key information can be specified to be Shift, Ctrl, and Alt. CodeDefinitionxx may also be described in more than one file. For xx, specify the decimal in order from 00 up to 99.

CardStart, CadEnd, Track1Start, Track1End, Track2Start, Track2End, Track3Start, Track3End, JIS2Start, and JIS2End are SSs/ESs for reading the MSR. Normal characters, including space, can be described as they are. Special characters can be described as \xx, where xx is a two-digit hexadecimal. Specifically, line feed, tab and \ (back slash) may be described as \n, \t, and \\, respectively.

The line beginning with ";" is regarded only as a comment line. No comment may be described at the right end of the entry line. Generally, no unnecessary space or tab may be included.

MSR Utility for MS-DOS

This driver is used to change the MSR settings.

Start

The MSR utility (PKMODE2.EXE) has been registered in the following directory in the initial setting:

```
c:\Msrcfg\Pkmode2.exe
```

Prepare a floppy disk of MS-DOS that can be booted, and copy this utility onto this floppy disk. To start the MSR utility, exit Windows, and reboot the system from MS-DOS. By inputting the command name from the keyboard, the utility starts.

✎ *Note:*
To execute this utility, be sure to exit Windows, and reboot the system from MS-DOS beforehand. This utility cannot be executed from the DOS box.

When using the MSR unit, set the USB Keyboard Support of the Integrated Peripherals of BIOS disabled.

To use the MSR unit, execute this utility or the MSR utility for Windows, and set the track to be read.

Commands

Run the utility by typing the command in the following format:

```
PKMODE2.EXE[MSR] [US|JP|FR|GR|SP] [CMDOFF|CMDON]
[TK0SS=string] [TK0ES=string] [TK1SS=string] [TK1ES=string]
[TK2SS=string] [TK2ES=string] [TK3SS=string] [TK3ES=string]
[TKJSS=string] [TKJES=string] [BEEP=ON|BEEP=OFF] [MSR=m...]
[KEYTBL=pathname] [/TRACE] [/TRON] [/TROFF]
[/VAL=xxh,yyh] [/PARA[zzh]]
```

Description of parameters:

MSR:	Sets the MSR unit decode to enable the 3-track decodes for Track 1, Track 2, and Track 3.
US:	Responds with the MSR data in the scan code of the English 101-key keyboard (default value).
JP:	Responds with the MSR data in the scan decode of the Japanese 106-key keyboard.
FR:	Responds with the MSR data in the scan decode of the French 106-key keyboard.
GR:	Responds with the MSR data in the scan decode of the German 106-key keyboard.
SP:	Responds with the MSR data in the scan decode of the Spanish 106-key keyboard.
CMDOFF:	Outputs all commands to the external K/B, neglecting the K/B interface command. Sets such things as the programming of the POS keyboard connected to the external K/B before executing them. According to this setting, the command cannot be executed until it is reset or the power is turned off. The CMDOFF is cancelled, however, when it is reset or the power to the main body is turned off, and the CMDON status is resumed.
CMDON:	Accepts the command of the K/B interface (default value).
TK0SS=string:	Replaces the start flag in the MSR card unit with the string. The default is " " (none).
TK0ES=string:	Replaces the end flag in the MSR card unit with the string. The default is " " (none).
TK1SS=string:	Replaces the 1track start flag of the MSR with the string. The default is "%."
TK1ES=string:	Replaces the 1track end flag of the MSR with the string. The default is "?."
TK2SS=string:	Replaces the 2track start flag of the MSR with the string. The default is ";."
TK2ES=string:	Replaces the 2track end flag of the MSR with the string. The default is "?."
TK3SS=string:	Replaces the 3track start flag of the MSR with the string. The default is "+."

TK3ES=string:	Replaces the 3track end flag of the MSR with the string. The default is "?."
TKJSS=string:	Replaces the JIS II type start flag of the MSR with the string. The default is " " (20th).
TKJES=string:	Replaces the JIS II type end flag of the MSR with the string. The default is "%" (7th).
BEEP=ON:	Enables the buzzer sound when the magnetic card is read. This is the default setting. When the magnetic card is read in order, the buzzer sounds once. When an error is caused to the magnetic card reading, the buzzer sounds three times. The LED lights up at the same time.
BEEP=OFF:	Invalidates the sound loaded from the card with the MSR123 and only illuminates the LED.
MSR=m...:	Specifies the track that enables the MSR decode. The following four characters can be specified:

        "1": ISO/JIS1 type Track 1
        "2": ISO/JIS1 type Track 2
        "3": ISO/JIS1 type Track 3

When the same character is specified more than once, an error is caused. The default is "123". "MSR1" is "MSR=12," and "MSR3" is "MSR=23."

KEYTBL=pathname:	Sets the scan code conversion table for converting the MSR data into the scan code. This is used for any keyboard other than the U.S. 101-key keyboard and the Japan 106-key keyboard.
/TRACE:	Displays the trace information to the standard output. For example, this can be saved in a file by using the redirect.
/TRON:	Enables the trace function.
/TROFF:	Disables the trace function (default value).
/VAL=xxh, yyh:	Sets variable xxh to the yyh address of the system.
/PARA[zzh]:	Displays the values of the system variables from 00h to FFh. When zzh is specified, the SRAM values from zz00h to zzFFh are displayed.
/CODE[zzh]:	Displays the content of the Flash ROM in which the firmware codes are written. Displays zz00h-zzFFh when [zzh] is indicated, and 4000h-40FFh when it is omitted.
/DATA:	Displays the contents of the firmware's internal RAM.
/KB128=ON:	When used in combination with KB128 (Programmable keyboard by GIGA), this setting is assumed when the LED status display differs from the actual input in simultaneous input with an external keyboard.
/KB128=OFF:	Set when the above is released. This setting is the initial value.

Although there are Other parameters such as "KeyLock", "/KEY=xxh,yyh,zzh", "MSR1", and "MSR3", their use is prohibited in the DM-820 MSR unit.

Processing details

The version is displayed as Firmware Version= V3.00. To obtain detailed version information, execute PKUPDT2.EXE.

✎ *Note:*

This definition utility operates on MS-DOS. It does not operate in a DOS box (in Windows). Be sure to start MS-DOS before Executing.

Because this MSR utility uses a keyboard interface in communication with the firmware, operation of an external keyboard and MSR read operations are strictly prohibited during execution. If such operation is performed, errors may occur in data communication and proper operation may become impossible.

Reset or power OFF are strictly prohibited during operation of this MSR utility. Correct operation will become impossible as it is not possible to conclude processing.

If executed with "CMDOFF" parameters, commands will not be received at all until Reset or Power OFF.

Messages

The following message is displayed when the utility starts.

```
EPSON POS Keyboard Configuration Utility Vx.xx.xx
Firmware Version= Vx.xx.xx
```

As parameters execute correctly, the following messages are displayed:

Status messages

Parameter	Message
MSR1	MSR track1
MSR	MSR default
US	US 101 keyboard
JP	JP 106 keyboard
FR	French keyboard
GR	German keyboard
SP	Spanish keyboard
CMDOFF	Command Function OFF
CMDON	Command Function ON
TK0SS	Card Start Sentinel = string
TK0ES	Card End Sentinel = string
TR?SS	Track? Start Sentinel = string
TK?ES	Track? End Sentinel = string
TKJSS	JIS2 Start Sentinel = string
TKJES	JIS2 End Sentinel = string
BEEP=ON	MSR Beep ON
BEEP=OFF	MSR Beep OFF
MSR=m..	MSR track m..
KEYTBL	Set KeyTable
/TRACE, /TRON, /TROFF	See ( )
/VAL=	Set Addr(VAL)=xxh(yyh)
/PARA, /CODE, /DATA	*** Parameter Dump *** ADDR: +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F 0123456789ABCDEF 0000: 00 01 02 03 04 05 06 07 - 08 09 0A 0B 0C 0D 0E 0F .... 0010: 30 31 32 33 34 35 36 37 - 38 39 3A 3B 3C 3D 3E 3F 0123456789:;<=>? .... 00E0: 40 41 42 43 44 45 46 47 - 48 49 4A 4B 4C 4D 4E 4F @ABCDEFGHIJKLMNO 00F0: 50 51 52 53 54 55 56 57 - 58 59 5A 5B 5C 5D 5E 5F PQRSTUVWXYZ(\)^_
KEYL	KeyLock Position
/KEY=	SetKey data=ii ofs=jj num=kk
KB128=ON	KB128 mode ON
KB128=OFF	KB128 mode OFF

* ? is 1, 2, or 3.

Completion messages are shown below:

Completion messages

Message	Description
Firmware old version or invalid...	Firmware version error, etc.
Invalid parameter	Parameter error
Communication error	Communication error
Invalid pathname	File error

Automatic Definition Data Setting Utility For MS-DOS

Outline

This utility automatically sets the definition information of the POS keyboard of the IM-800.

Command

Execute the command in the following format:

```
c:\Msrcfg\PKLOAD.EXE data-file
```

Processing details

This utility automatically sets the following data:

• Setting file for this utility (.PKL)

Be sure to specify the extension of the specified file because the effectiveness of the specified file is checked with its extension. The download function of the upload file is realized by PKUPDT2.EXE.

✎ *Note:*
This utility is started from and executed on MS-DOS. (It cannot be executed from the DOS box.)

This utility uses the K/B interface for communication with the firmware. For this reason, do not operate the MSR, or the external keyboard during the execution or an error is caused during the data communication, and this utility cannot start in order.

Do not reset this utility or turn off the power to the main body during the execution of this utility.

Messages

Messages

Message	Description
EPSON POS Keyboard Auto Definition Utility Vx.xx.xx	During startup
Usage: PKLOAD data-file data-file: definition data file .K84 :84Key definition data .K28 :28Key definition data .KYL :KeyLock definition data .$$$:PKUPLD saved data .FLD :PKUPLD2 saved data .PKL :PKMODE definition data	Usage
EPSON POS Keyboard Auto Definition Utility Vx.xx.xx Now transfer 28Key Definition data	28-key definition data transfer
EPSON POS Keyboard Auto Definition Utility Vx.xx.xx Now transfer 84Key Definition data	84-key definition data transfer
EPSON POS Keyboard Auto Definition Utility Vx.xx.xx Now transfer KeyLock Definition data	Key lock definition data transfer
The message like that of PKMODE.EXE is displayed. For information, see the table "Status messages" on page 4-86.	PKMODE definition data transfer

Error messages

Message	Description
Firmware version error and others	Firmware version error and others
Invalid parameter	Parameter error
Firmware communication error	Firmware communication error
File access error: No such file or directory	File access error

Ending codes

Ending codes

Ending code	Description
0	Normal termination
10	Wrong firm version or execution on other PC (abnormal termination)
11	Parameter error (abnormal termination)
14	Error in communication with the firmware (abnormal termination)
20	Error during file access (abnormal termination)
21	Abnormal file data format (abnormal termination)

File format

The setting file for this utility is created by using a text editor or other device. The extension of

this file should be specified as [.PKL]. The format has the following sections and entries:

File format

Section	Entry	Parameter (underlined parameters are the default values)	Remarks
(General)			Fixed value. Be sure to describe at the start.
	Version	PKL100	Fixed value. Be sure to describe at the start.
	IgnoreCommands	Selected from Off and On	Be careful that if On is selected, the subsequent commands are not accepted.
	SystemParam00		Set in the Offset and Value formats. 00h < Offset ≤ FFh, 00h ≤ Value ≤ FFh
(MSR)			
	ValidTracks	Selected from 1, 2, and 3	Selection of more than one value may be selected.
	Beep	On, Off	
	CodeType	US, JP, FR, GR, SP	
	CardStart		For information on input enabled characters, see SS/ES Code Input Enabled Characters.
	CardEnd		
	Track1Start		(<, >, |) are characters and can be input.
	Track1End		Input the hexadecimal as (\nn) within a range from (01h) to (7Fh).
	Track2Start		
	Track2End		Effective up to 7 characters. The 8th character and those thereafter are neglected.
	Track3Start		
	Track3End		Because even the line-feed character is effective, do not carelessly input a space or a tab.
	JIS2Start		
	JIS2End		
	CodeDefinition00		See "Code Conversion Entry" on page 4-90 for further details.

When nothing is described after the entry, the entry setting is deleted.
For Sysparam00 and CodeDefinition00, set numeric numbers in a range from 00 to 99. Set the numeric values one by one in ascending order. Do not input the same numeric value for more than one.

The default setting (U.S. mode) is described as follows:

```
(General)
Version=PKL100
IgnoreCommands=Off

(MSR)
ValidTracks=1,2,3
Beep=On
CodeType=US
CardStart=
CardEnd=
Track1Start=%
Track1End=?
Track2Start=;
Track2End=?
Track3Start=+
Track3End=?
```

Code Conversion Entry

```
CodeDefinitionNN = Character Code, Key Number, Shift Mode
```

CodeDefinitionNN	:	Specifies the character code to be defined. 'c' defines whether a character or numeral has been specified. Example: 'A' 0x41 65
Character Code	:	Sets values between 01h and 7Fh
Key Number	:	Specifies the key numbers shown in the table below
Shift Mode	:	Concurrent pressing key information
Shift	:	Used for the scan codes with the Shift key
Control	:	Used for the scan codes with the Ctrl key
Alt	:	Used for the scan codes with the Alt key

List of key numbers (keys shaded in gray cannot be set)

Chapter 5

BIOS Functions

The IM-800 system ROM stores the following BIOS-related utilities. This chapter describes these utilities.

❏ BIOS setup

❏ Defaults and selectable options

❏ Power on self-test (POST)

❏ Device diagnostic utility

HDD Power Down Timer Setting

The HDD Power Down Timer settings are made through the OS in Windows XP/2000/98, but in Windows NT/95 and DOS, the settings are made through the BIOS, as detailed below. To have the HDD motor stop when the HDD is not accessed for a certain time, follow the steps below:

1. Start up the BIOS Setup Utility.

2. Select [Power Management Setup].

3. Select [HDD Power Down].

4. Select the time in the option.

5. Save it and restart.

After the restart, 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.

✎ *Note:*
This function can be used only with BIOS version 2.13.00 or higher. If your BIOS version is before 2.12, upgrade the BIOS and then do the above procedure.

When access to HDD occurs, the motor of HDD begins to start and the HDD becomes accessible.

BIOS Setup

The BIOS setup menu utility is used to configure the system's 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.

This section explains BIOS version 2.13.

Operating Procedure

How to use setup

To execute BIOS setup requires a PS/2-compatible keyboard. BIOS setup cannot be run from the touch panel alone.

Start the BIOS setup utility using the following procedure:

1. Connect the keyboard to the keyboard/mouse connector.

2. Turn the power on to start up the MR series.

3. Press **Del** during the POST process, and the BIOS setup utility will start up.

How to exit

Follow the steps below to enable your changes for a new configuration and to exit the BIOS setup utility:

1. Display the BIOS setup main menu.

2. Select **Save & Exit Setup**, and press **Enter**.

3. The message **SAVE to CMOS and EXIT (Y/N)?** is displayed. Press **Y** and **Enter** in this order to exit the BIOS setup utility, validate the changed settings, and reboot the system.

Follow the procedure below to cancel changes and exit the BIOS setup utility.

1. Display the BIOS setup main menu.

2. Select **Exit Without Saving**, and press **Enter**.

3. The message **Quit Without Saving (Y/N)?** is displayed. Press **Y** and **Enter**.

4. The BIOS setup utility finishes, and the system reboots with the new configuration canceled.

⚠ 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 MR series may not operate.

The help display

Press **F1** in each menu to open the Help window for key operations. Press **Esc** to exit from the help window.

Troubleshooting

If the computer fails to boot up after you make a change with the BIOS setup utility, start the BIOS setup utility, and run **Load Optimized Defaults**.

If the system cannot start up, use the jumpers to clear the CMOS. Short pins 2 and 3 of JP10 for main board, and the CMOS will then be cleared (see "Jumper Settings" in Appendix A).

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 + (**PageUp**) or – (**PageDown**). Finally, select the `Save & Exit Setup` command in the main menu, which saves the currently displayed values of all the menus.

BIOS Setup Main Menu

The BIOS setup main menu contains the following items:

Table A-1   BIOS setup main menu

Item	Contents
Standard CMOS Features	Sets the date, time, IDE device items, floppy drive items, video adapter items and startup system stop conditions. As the time and date change, these changes are reflected on the CMOS. When executing the Load Fail-Safe Defaults or the Load Optimized Defaults a prescribed value is preset for items other than the date or time. When the "CMOS checksum error - Defaults Loaded" message is displayed, execute the "Load Optimized Defaults" and at least confirm or change the date and time.
Advanced BIOS Features	These features set fundamental BIOS items, such as the cache, POST conditions, bootup sequence and memory shadowing.
Advanced Chipset Features	These features set items related to memory timing, BIOS code cashing, video memory timing and the chipset control timing. Since these settings are executed via the Load Optimized Defaults, they are the optimum settings for the system and generally **do not need to be changed**. Be aware that because these settings pertain to the control timing, the apparatus may fail to start up if an incompatible setting is executed.
Integrated Peripherals	Sets items for controlling the input and output for the IDE controller, the USB controller, the parallel port, and the serial port.
Power Management Setup	Sets items related to BIOS based power regulation of the power management timer, wake-up event and timer reset event.
PnP/PCI Configurations	Sets items related to system resource allocation of IRQ numbers and DMA channel numbers.
Frequency/Voltage Control	This menu is used to set items related to clock control; however, it only displays items and no selection can be made. The optimum value is set for each item by the BIOS at startup.
Load Fail-Safe Defaults	The load fail/Safe defaults are executed when the minimum preset prescribed values required for the startup are set for each item. This function is only provided for troubleshooting and is normally not used.
Load Optimized Defaults	The load optimized defaults are executed when preset prescribed values are set for each item so that the system operates under optimum conditions. It is also executed when the "CMOS checksum error - Defaults Loaded" message is displayed and each item is restored to its prescribed value.
Set Supervisor Password	This function sets the system protection password. The password can be set for up to 8 characters (case-sensitive). The input demand timing for the password setting differs according to the setting for Advanced BIOS Features: Security Option.
Set User Password	This function sets the system protection password. The password can be set for up to 8 characters (case-sensitive). The input demand timing for the password setting differs according to the setting for Advanced BIOS Features: Security Option.
Save & Exit Setup	This is executed at restart after saving CMOS content changes.
Exit Without Saving	This is executed at restart without saving CMOS changes (cleared).

Standard CMOS Features Menu

In this menu, set the system clock and the calendar, set the disk drive parameters and the type of video subsystem, select among the error types that interrupt the power on self-test (POST), and so on.

Table A-2 Standard CMOS Features menu

Items		Description
Date		Sets the date. (BIOS automatically determines the day of the week.) Press ← or → to move to the desired field (date, month, year). Press **PgUp** or **PgDn** to incrementally move the setting, or type the desired value into the field.
Time		Sets the clock in 24-hour format. For example, 1 p.m. is 13:00:00. Press ← or → to move to the desired field. Press **PgUp** or **PgDn** to incrementally move the setting, or type the desired value into the field.
IDE Primary Master IDE Primary Slave IDE Secondary Master IDE Secondary Slave		When selecting items marked with a ">", such as the IDE device setting (IDE Primary Master), the screen for selecting options is displayed and specifications can be set.
	IDE HDD Auto-Detection	Push the Enter key to execute the auto detection for the device. If the connection is made, information obtained from the device, including the access method, will be applied.
	(IDE Primary Master)	Set the detection method for the connection device. None: The connection detection is not executed. It is treated as disconnected software Auto: Auto detection is executed. The information held by the device is automatically applied. Manual: The information set by the user is applied.
	(IDE Primary Slave)	
	(IDE Secondary Master)	
	(IDE Secondary Slave)	
	Access Mode	Set the access Method to the connected device. Note that when the device detection method is set as "None" it cannot be changed. CHS: Access for the device is shortened with "Cylinder Head Sector (Addressing) "having 1024 cylinders, 16 heads and 63 sectors. LBA: Shortened with the Logical Block Addressing Method, the entire memory area is divided into access units and those serial numbers are used for accessing. Large: This is the access method for extended CHS. When the number of CHS cylinders exceeds the normal amount of 1024 cylinders, the address is not accessible so the CHS is extended. Auto: BIOS determines the optimum method based on the information obtained by the device. The LBA method is normally used.
	Capacity	This item indicates the memory capacity for the connection device. The following differences occur, depending on the device detection method used. Auto: The value calculated according to information obtained by the device is displayed. Manual: The value calculated according to information specified by the user is displayed.
	Cylinder	This item indicates the number of cylinders for the connection device. The following differences occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-65,535 only when the access method is set as "CHS".

Table A-2 Standard CMOS Features menu (continued)

Items		Description
	Head	This item indicates the number of heads for the connection device. The following differences occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-255 only when the access method is set as "CHS".
	Precomp	This item indicates the number of write compensation cylinders for the connection device. The following differences will occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-65,535 only when the access method is set as "CHS". (When connecting a device for which there is no particular value specified, a maximum value of 65,535 is specified)
	Landing Zone	This item indicates the head fixed track number for the connection device. The following differences will occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-65,535 only when the access method is set as "CHS". (When connecting a device for which there is no particular value specified, the number "1" is specified as the maximum number of cylinders).
	Sector	This item indicates the number of sectors for the connection device. The following differences will occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-255 only when the access method is set as "CHS".
Drive A		Drive A type is set. The definition for each setting is as follows. None: This setting is used when the FDD is disconnected or when the FDD is not loaded. Please note that when this setting is used, system resources, such as the IRQ cannot be opened. When you want to open the system resources when using this setting, select "Disabled" under Integrated Peripherals: Onboard FDC Controller, and "Yes" under Advanced BIOS Features: Report No FDD For WIN 95. When using this setting or the "Disabled" setting for the FDC, be sure to change to the Halt On setting. 360K, 5.25 in.:A 5.25 inch drive cannot be loaded on this device so 5.25 cannot be selected as a setting. 1.2M, 5.25 in.:A 5.25 inch drive cannot be loaded on this device so 5.25 cannot be selected as a setting. 720K, 3.5 in.:The fixes the floppy drive Read/Write to 720KB. Please note that since a 720KB Read/Write floppy disk can also be used for a standard equipped Read/Write floppy disk set at 3.5 inch and 1.44M, there is very little value in using this setting. 1.44M, 3.5 in.:This is the normal setting. This is the desired setting for both the default setting and the Fail-Safe/ Optimized. 2.88M, 3.5 in.:The standard FDD is not compatible with 2.88MB, so this setting cannot be used.

Table A-2 Standard CMOS Features menu (continued)

Items		Description
Video		This setting pertains to the type of video adapter being used. Always use the "EGA/VGA" setting. Since this setting automatically selects the type of video adapter during startup (POST startup phase) and will thus change to "EGA/VGA".
Halt On		Sets the system stop conditions for startup (POST). The definitions for each of the settings are as follows. All Errors:Use this setting to stop the system when an error occurs. No Errors:Use this setting to disregard the occurrence of errors and continue the startup process. All, But Keyboard:Use this setting to stop the system when any error occurs, with the exception of keyboard-related errors. This is the default setting for both Fail-Safe/ Optimized. All, But Diskette:Use this setting to stop the system when any error occurs, with the exception of floppy disk-related errors. All, But Disk/Key:Use this setting to stop the system when any error occurs, with the exception of floppy disk or keyboard-related errors.

Notes: When selecting items marked with a ">", such as the IDE device setting (IDE Primary Master), the screen for selecting options is displayed and specifications can be set.

Advanced BIOS Features Menu

In this menu, set the basic BIOS settings, such as cache, boot-up sequence, and memory shadowing.

Table A-3 Advanced BIOS Features menu

Items	Description
Virus Warning	This is the setting for the data write enable/ disable to the boot sector and partition table. For the default setting, Fail-Safe is "Enabled" and Optimized is "Disabled". Enabled:This is the setting used to disable the write function. Although this setting protects the system from viruses, it does not permit execution of FDISK or FORMAT. Disabled:This is the setting used to enable the write function. Although FDISK and FORMAT can be executed using this setting, it does not protect the system from viruses. Always use the default setting.
External Cache	This setting enables/disables the L2 Cache inside the CPU. Enabled:Enables the L2 Cache. This is the normal setting. Disabled:Disables the L2 Cache. This setting may have an adverse effect on the system performance.
CPU L2 Cache ECC Checking	This is the setting that enables/disables the ECC check for the L2 Cache in the CPU. The default setting is "Enabled". Enabled:This setting is used to perform the ECC check. This is the normal setting. Disabled:This setting is used when the ECC check is not performed.
Processor Number Feature (This is displayed only when the CPU is in the Pentium III family.)	This is a function for specifying whether or not to acquire the serial number of a CPU model added from the Pentium III processor. Note that the default setting is "enabled" regardless of the model. The BIOS acquires the family number of the CPU at startup and controls whether or not this item is displayed, as follows: Pentium III:This item is displayed and the setting can be changed. Note that in the case of the Pentium III, changing the setting to "disabled" has no effect. It is treated the same way as if "enabled" were set in processing. Celeron: This item is not displayed and the setting cannot be changed. See Intel Processor Identification and the CPUID Instruction, published by Intel Corporation, for the details of the CPU information.
Quick Post	Sets POST processing conditions. The default setting Quick Post is set as "Disabled" and the Quick Power On Self Test is set as "Enabled". Enabled:This setting is used to perform the memory test when rebooting after resetting the software or when auto detection of the IDE device is omitted. This makes it possible to reduce the time required for rebooting via software reset. Disabled:This setting is used to perform the memory test when rebooting after resetting the software or when auto detection of the IDE device is not omitted.
Quick Power On Self Test	Sets POST processing conditions. The default setting Quick Post is set as "Disabled" and the Quick Power On Self Test is set as "Enabled". Enabled:This setting is used to execute the POST processing (memory self diagnostic test) only once during startup. This setting can be used to reduce the time required for startup. The ESC key may be pressed during POST to skip the processing. Disabled:This setting is used to execute the POST processing (memory self diagnostic test) several times during startup. The ESC key may be pressed during POST to skip the processing.
First Boot Device Second Boot Device Third Boot Device	This setting sets the search order for the startup device. The search is performed in the order of First -> Second -> Third device and starts up from the first device that is capable of performing the startup (one that has a boot sector and that can be loaded with IPL). For both the default setting and Fail-Safe/Optimized, the settings are First ="Floppy", Second ="HDD-0" and Third = "SCSI". Change the setting so that it is compatible with the system configuration.

Table A-3 Advanced BIOS Features menu (continued)

Items	Description
Boot Other Device	Even if a device search is performed in the order of First/Second/Third Boot Devices, and a device that is capable of performing the startup is not found, this setting can be used to execute/not execute the Boot Other Device function. The default setting is set as "Enabled". Change the setting so that it is compatible with the system configuration. Enabled:This setting is used to search for another device that is capable of performing the startup. Disabled:This setting is used to disable the search for another device that is capable of performing the startup. Reference: Information concerning the boot sequence If bootable SCSI drives (e.g., HDD and CD-ROM) are connected, some products give priority to such SCSI Drives regardless of the First Boot Device, Second Boot Device, Third Boot Device, and Boot Other Device settings. This is due to the specifications of the SCSI BIOS (adapters) in question.
Boot Up Floppy Seek	This setting is used to enable/disable the head seek test (either execute or not execute the head seek command) for floppy drive A during the startup. The default setting is "Enabled". Enabled:This setting is used to execute the head seek test. If the Standard CMOS Features: Drive is set as "None" and the Integrated Peripherals: Onboard FDC Controller is changed to "Disabled", then if the Standard CMOS Features: Halt On is set as "All Errors" or the All, But Keyboard setting is used, system errors will halt. Disabled:This setting is used to disable the head seek test. Although this setting will reduce the amount of time required to perform the head seek for the floppy during startup, it does not perform an accurate error detection of FDD errors.
Boot Up NumLock Status	This setting turns the NumLock on the keyboard On or OFF (executes or does not execute the NumLock command). The default setting is "OFF". Off: This setting is used to turn the NumLock Off. On: This setting is used to turn the NumLock On.
Gate A20 Option	This setting is used to set the access method for a memory space of more than 1MB. The default setting should be "Normal" for Fail-Safe and "Fast" for Optimized. Normal: This setting is used only for access methods (real mode access) Pertaining to the conventional AT transposing apparatus which use a keyboard controller. Fast: This setting is used for the Gate A20 function for the chip set. This is the original setting used to perform automatic switching between the real mode and the protect mode.
Typematic Rate Setting	This setting is used to enable/disable changes to the repeat conditions. The default setting is "Disabled". Disabled:This setting is used when the apparatus is to be used at a fixed setting, without changing the number of repetitions or the intervals between repetitions. For the fixed setting, a repetition occurs once every 6 seconds with intervals of 250 msec. This is the normal setting. Enabled:This setting is used when the number of repetitions and the intervals between repetitions is changed. For details, refer to Typematic Rate (Chars/Sec.) and Typematic Delay (Msec).
Typematic Rate (Chars/Sec)	This setting is used by to determine how many times an entry is made in a one-second period when a key is held down. The fixed setting is 6 times per second. Additional settings are 8, 10, 12, 15, 20, 24 and 30.
Typematic Delay (Msec)	This setting is used to set the number of Msec for the intervals between data when a key is held down. The fixed setting is 250 Msec. Additional settings are 500, 750 and 1000.

Table A-3 Advanced BIOS Features menu (continued)

Items	Description
Security Option	Sets the password entry timing. The default setting is "Setup". The password is set in Main Menu: Set Supervisor Password and Main Menu: Set User Password.If a password is not set in these items, this setting will have no significance. The relationships between this setting and the password set are as follows: "Setup" Setting "System" Setting When starting the OS: --- User Password or Supervisor Password When changing BIOS Setup: Supervisor Password Supervisor Password When only displaying BIOS Setup: User Password User Password
OS Select For DRAM > 64MB	This setting is used to specify whether the OS/2 has more than 64MB of memory or not. The default setting is "Non-OS2". Non-OS2:This setting is used when an OS other than an OS2 is used. This is the normal setting. OS2: This setting is used when the OS is an OS2. By using this setting, the method for communicating the mounted memory capacity changes to a method specified by the OS2.
HDD S.M.A.R.T capability	This setting is used to specify whether the S.M.A.R.T (Self-Monitoring, Analysis and Reporting Technology) function is being used or not. If the connection device is not compatible with ATA-3 (Ultra-ATA) standards or above, this means that the device does not support the S.M.A.R.T. function, making this setting invalid. The default setting is "Enabled". Enabled:"Enabled" is used to set the S.M.A.R.T. function. Please note that in order to use this setting a command device is necessary to initiate this function during startup and a separate software package is needed to activate the S.M.A.R.T. function. This is the normal setting. Disabled:This setting is used to disable the S.M.A.R.T function.
Report No FDD For WIN95	This setting is used to communicate to the Microsoft Windows OS whether an FDD is installed or not (more exactly, the IRQ-6 status) The default setting is "No". No: "No" is the setting used when no communication is made to the OS. This is the normal setting. Yes: This setting is used when an FDD is not installed or when the necessary software has not been installed. More exactly, this setting is used to communicate to the OS that the IRQ-6 used by the FDC has been opened. Please refer to the section on floppy disks regarding the use of FDD.
C8000-CBFFF Shadow CC000-CFFFF Shadow D0000-D3FFF Shadow D4000-D7FFF Shadow D8000-DBFFF Shadow DC000-DFFFF Shadow	This setting is used to specify whether shadowing is performed or not for each address space when a PC card with an expanded ROM BIOS is attached to the slot. All default settings are set to "Disabled". Disabled:This setting is used when shadowing of the target address spaces is not performed. More exactly, if no PC card is attached to the slot, then it means that the PC card does not have an expanded ROM BIOS mounted on it. Enabled:This setting is used when shadowing of the target address spaces is performed. More exactly, it means that the PC card attached to the slot has an expanded ROM BIOS, such as an SCIS network card, mounted on it.
Small Logo (EPA) Show	This setting is used to enable/disable display of an energy star logo at the top right of the POST screen. The default setting is set as "Disabled". Disabled:The "Disabled" setting disables the display. Enabled:The "Enabled" setting enables the display.

Advanced Chipset Features Menu

In this menu, set the items that rely on the chipset on the main board, such as the memory, the bus timing, and the system temperature setting. Since these settings are executed via Load Optimized Defaults, they are the optimum settings for the system and generally **do not need to be changed**. Be aware that because these settings pertain to the control timing, the apparatus may fail to start up if an incompatible setting is executed.

Table A-4 Advanced Chipset Features menu

Items	Description
SDRAM CAS Latency Time	This setting sets the number of clocks for the CAS waiting time for the memory (the time required from when the address is specified until the data can be read out). Default setting is "3". The use of the default value of "3" is recommended in order to achieve a stable system operation. Although performance improves with the setting of "2," the system may become unstable. In such a case, change the setting to "3."
System BIOS Cacheable	This setting enables/disables the System BIOS cache. The default setting is "Disabled". Disabled: Set this to disable the system BIOS cache. Enabled: Set this to enable the system BIOS cache.
Video BIOS Cacheable	This setting enables/disables the Video BIOS cache. The default setting is "Disabled". Disabled: Set this to disable the system BIOS cache. Enabled: Set this to enable the system BIOS cache.
CPU Latency Timer	CPU and Chip set (GMCH: this setting pertains to the access timing for the Graphics Memory Control Hub). The default setting is "Disabled". The normal setting is "Disabled".
Delayed Transaction	Always set this to "Enabled".
CAS# Latency	This setting sets the number of clocks for the video cache memory CAS waiting period (the amount of time required after the address is specified until the data can be read out). There are 2 options, a setting of "2" or "3". The default setting is "3". The normal setting is "3" to ensure a more stable system.
Paging Mode Control	This setting controls the page mode for the video cache memory. The options are "Open" and "Close". The default setting is "Open". The normal setting is "Open" because it operates in the page open mode.
RAS-to-CAS Override	This setting determines how much time is required until performing the transfer to CAS following the video cache memory RAS. The options are the "by CAS# LT setting and the "Override(2)" setting. The default setting is the "by CAS# LT setting. Normally, the CAS# Latency setting is used to automatically set the "by CAS# LT" setting.
RAS# Timing	This setting is used to set the RAS access timing for the video cache memory. The two options are "Fast" and "Slow". The default setting is "Fast". Normally, the "Fast" setting is used to ensure better performance.
RAS# Precharge Timing	This setting sets the number of clocks to allocate to RAS in order to accumulate the necessary charge before refresh of the video cache memory is performed. There are two options, "Fast" and "Slow". The default setting is "Fast". Normally, the "Fast" setting is used to ensure better performance.

Integrated Peripherals Menu

This menu sets the items related to I/O ports such as the IDE controller, the transfer mode, the serial ports, and the parallel port.

Table A-7 Integrated Peripherals menu

Items	Description
On-Chip Primary PCI IDE	This setting is to enable/disable the IDE controller housed in the chip set (ICH2). All of the default settings are set as "Enabled". Always use the default "Enabled" setting.
On-Chip Secondary PCI IDE	If the "Disabled" settings are used, the IRQ resources are released and become available for other devices. If the IRQ resources that are released, IRQ-14 is released for the primary and IRQ-15 for the secondary.
IDE Primary Master PIO	This setting sets the transfer mode for the IDE device connected to each interface. All of the default settings are "Auto". The PIO is normally set as "Auto," but due to the auto detection performed during POST, the optimum method used by the connection device is then set as BIOS.
IDE Primary Slave PIO	
IDE Secondary Master PIO	If devices in different modes are connected to the master and the slave, the transfer mode will be fixed at a slow speed; therefore, it is necessary to pay particular attention to the connection to each port. If a setting is made that exceeds the maximum mode supported by the device connected, note that data errors may occur. If On-Chip Primary/Secondary PCI IDE is set to "Disabled," the corresponding items cannot be selected.
IDE Secondary Slave PIO	
IDE Primary Master UDMA	This setting sets the DMA transfer mode for the IDE device connected to each interface. All default settings are set as "Auto". The UDMA is normally set as "Auto, but due to the auto detection performed during the POST, the DMA mode support status for the connection device is determined as BIOS.
IDE Primary Slave UDMA	If any of the devices connected does not support DMA mode, the maximum mode that device supports will be set. If On-Chip Primary/Secondary PCI IDE is set to "Disabled," the corresponding items cannot be changed.
IDE Secondary Master UDMA	When using the UDMA, set as "Auto"
IDE Secondary Slave UDMA	The transfer mode for the DMA mode compatible device connected to the IDE interface in each OS can be changed to the DMA mode using the following methods. For BIOS settings, set IDE ... UDMA to "Auto." This has been supported for the OS for EPSON. 1. MS-DOS) Do not set the DMA mode. 2. Windows NT Using a tool in Service Pack 6a, Refer to "Chapter 4" 3. Windows 98 Setting the OS, Refer to "Chapter 4" 4. Windows 2000 By applying Chip Set Driver, the mode can be automatically changed to the DMA mode. 5. Windows XP The DMA mode is automatically set upon installing the Windows XP operating system.
USB Controller	This setting is used to enable/disable the USB controller housed in the chip set (ICH2). The default setting is set as "Enabled". Perform setting according to your system configuration (whether or not a USB device is connected). If the "Disabled" setting is used, neither USB Keyboard Support or USB Mouse Support can be selected and these functions are not supported. The IRQ resource settings for the USB controller is performed by using PnP/PCI Configurations: Assign IRQ For USB. Therefore, it is not possible to release the IRQ resources by only changing this setting to "Disabled." Also, it is not possible to set Port-0/1 (rear connector) and Port-2/3 (front connector) separately.
USB Keyboard Support	This setting enables/disables each of the emulation functions for the USB keyboard and the USB mouse. The default setting is "Disabled".
USB Mouse Support	If the USB keyboard and the USB mouse are used just like the PS/2 keyboard and the PS/2 mouse because the USB is not supported such as in the case of MS-DOS or Windows NT, set these items to "Enabled." In the case of an OS that supports the USB such as Windows 98 or later version, use the "Disabled" settings. If a PS/2 Mouse is used, Set the USB Mouse Support to "Disabled".

Table A-7 Integrated Peripherals menu (continued)

Items	Description
Init Display First	This setting sets the priority level for the video adapter. The default setting is "Onboard". Since the IM-800 uses the video controller housed in the chip set (GMCH) as the priority level, use the default setting. Onboard: Choose this to give priority to the video controller built in the chip set (GMCH). PCI Slot: Choose this to give priority to the video adapter mounted in the PCI slot. Regardless of this setting, IRQ resources are allocated for the video controller. The IRQ resources for the video controller are set by using PnP/PCI Configurations: Assign IRQ For VGA.
AC97 Audio	This setting enables/disables the audio controller housed in the chip set (ICH2). The default setting is "Auto". Perform setting (using or not using the audio controller) according to your system configuration. Auto: Choose this if the audio controller built in the chip set (ICH2) is used. Disabled: Choose this if the audio controller built in the chip set (ICH2) is not used. The IRQ resources for the audio controller are allocated if the "Auto" setting is selected; they are not allocated if the "Disabled" setting is selected.
Onboard LAN Device	This setting enables/disables the network controller housed in the chip set (ICH2). The default setting is "Enabled".Perform setting (using or not using the network controller) according to your system configuration. Enabled: Choose this if the network controller built in the chip set (ICH2) is used. Disabled: Choose this if the network controller built in the chip set (ICH2) is not used. The IRQ resources for the network controller are allocated as follows: Enabled: PnP BIOS automatically allocates IRQ resources. Disabled: IRQ resources are not allocated.
IDE HDD Block Mode	This setting enables/disables the IDE-HDD multi-sector transfer mode. The default setting is "Enabled". Always use the default setting. Enabled: Choose this to set the multi-sector transfer mode.If data is stored extending over continuous sectors, performance will improve. Disabled: This sets the single sector transfer mode.
Onboard Lan Boot ROM	This setting enables/disables the PXE Boot Agent function. When the Onboard LAN Device is "Disabled," the Onboard Lan Boot ROM setting does not function. The default setting is "Enabled." Enabled: Choose this if the PXE Boot Agent function is used. Disabled: Choose this if the PXE Boot Agent function is not used. If the OS incorrectly identifies the PCI I/F Card, use the "Disabled" setting. When the setting is "Disabled," the PXE Boot Agent function cannot be used.
Onboard FDC Controller	This setting enables/disables the floppy controller inside the S-I/O (W83627). The default setting is "Enabled". Always use the default setting. Enabled: Choose this if the FDD is used. Disabled: Choose this if the FDD is not used.
Onboard Serial Port 1	This setting enables/disables serial controller #1 (combination of the I/O address and IRQ resource for serial port #1) inside the S-I/O (W83627). The default setting is "3F8/IRQ4". There are 2 options, the "3F8/IRQ4" setting and the "2F8/IRQ3" setting. Make the necessary changes in accordance with the system configuration.
Onboard Serial Port 2	This setting enables/disables serial controller #2 (combination of the I/O address and IRQ resource for serial port #2) inside the S-I/O (W83627). The default setting is "2F8/IRQ3". There are 2 options, the "3F8/IRQ4" setting and the "2F8/IRQ3" setting. Make the necessary changes in accordance with the system configuration.

Table A-7 Integrated Peripherals menu (continued)

Items	Description
Onboard Parallel Port	This setting enables/disables the parallel controller (combination of the I/O address and IRQ resource for the parallel port) inside the S-I/O (W83627). The default setting is "278/IRQ7". There are 3 options, the "Disabled" setting, "378/IRQ7" setting and the "278/IRQ5" setting. When using the "Disabled" setting, system resources can be opened and the port can be used with other devices. Make the necessary changes in accordance with the system configuration. Note that since an 8-byte continuous I/O space is needed when setting the parallel port mode to "EPP", the 3BC/IRQ7 setting cannot be used.
Parallel Port Mode	This setting sets the parallel port mode. The default setting is "Normal". There are 3 options, "Normal", "EPP" and "ECP". 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, the 3BC/IRQ7 setting cannot be used. In addition, a DMA channel number is required for the DMA transfer when using the "ECP" setting. The definitions for each mode are listed below. Normal: Also called the SPP (Standard Parallel Port), this mode is for one direction only. EPP: EPP stands for Enhanced Parallel Port and is an improvement for 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.
EPP Mode Select	EPP Mode Select sets the type of EPP mode. The default setting is "EPP1.7". There are 2 options, the EPP1.7 setting and the "EPP1.9 " setting. Make the necessary changes in accordance with the system configuration.
ECP Mode Use DMA	Sets the DMA channel number for the "ECP" and "ECP+EPP" setting. The default setting is "3". There are 2 options, "1" and "3". Make the necessary changes in accordance with the system configuration.

POWER MANAGEMENT SETUP Menu

In this menu, set the items related to power management.

Table A-5 POWER MANAGEMENT SETUP menu

Items	Description
Video Off Method	Sets the method to turn the monitor off for the Video Off Mode. The default setting is DPMS. Change the setting to match the system configuration (type of connected monitor). The settings are explained below. Bland Screen: Use this setting when connecting an earlier version monitor that is compatible with power management terminals that only have a video off function. V/H SYNC+Blank: This stops output of the horizontal sync signal, vertical sync signal, and display signal from the video controller. Use this setting for monitors in which power management is enabled when these signals end. DPMS: This activates BIOS control in accordance with the Display Power Management System (DPMS) function of the video controller. The monitor must be equipped with the DPMS function.
Video off In Suspend	Use this setting to turn off the video when entering Suspend Mode. The default setting is Off. Always use the default setting. Off: Choose this to stop video output in Suspend Mode. On: With this setting video output continues even in Suspend Mode.
MODEM Use IRQ	Use this setting on a system with a modem when access to the modem (IRQ resource trap) is treated as a resume event from Suspend Mode or when the power is turned on by a ring signal (when the Power On by Ring setting is set to Enabled). The default setting is NA. This setting is the IRQ resource number allocated to the modem (serial port).

Table A-5 POWER MANAGEMENT SETUP menu (continued)

Items	Description
Suspend Mode	Select the time it takes for the system to enter Suspend Mode by BIOS from option settings. The default setting is Disabled. Be careful not to set the time value too small as the system may frequently switch between Full-On Mode and Suspend Mode. Setting for OS DOS: Because DOS does not have a suspend timer, use this setting to set the time to enter the Suspend mode. Windows NT: Because entering the Suspend mode on Windows NT creates a delay in the timer of the operating system, be sure that the suspend timer setting is functioning properly. Windows 98/2000/XP: For Windows 98 and later operating systems, set the suspend timer from the system. The BIOS suspend timer is ignored regardless of the setting.
HDD Power Down	To have the HDD enter the Power Down mode after a certain period of inactivity, choose the time of inactivity in the BIOS from the option setting. The default setting is "Disabled". This function was added in Ver.2.13.00. Versions 2.12 and before do not have this function.

Soft-Off by PWR-BTTN	Sets the function of the Power Button (switch) when pressed.
	The default setting is Disabled. The basic operations of BIOS are as follows.
	Instant-Off: The power supply is turned off immediately when the Power button is pressed.
	Delay 4 Sec.: If the Power button is pressed and held for less than 4 seconds:
	  1) Shift to the Suspend mode if this operation is performed in the Full-On mode.
	  2) Shift to the Full-On mode if this operation is performed in the Suspend mode.
	  If the Power button is pressed and held for at least 4 seconds:
	  1) Shift to the Suspend mode once, and the power supply is forcefully turned off after 4 seconds.
	Disabled: 1) Nothing happens when the Power button is pressed in the Full-On mode.
	  2) Recover to the Full-On mode when the Power button is pressed in the Suspend mode.
	  3) If the Power button is pressed and held for at least 4 seconds, the power supply is forcefully turned off.
	If the power is forcibly turned off by continuously pressing the power button for at least four seconds when "Delay 4 Sec." is set, the Wake On LAN (WOL) function cannot be used next time the power is turned on. In this case, restart the system by using the power button and execute normal power off by using the OS. The WOL function can then be used at next startup.

Wake-Up by PCI card	Use this item to have the BIOS perform recovery from the Suspend mode to the Full-On mode using the signal from the PC card mounted in the PCI slot, as well as to use the WOL function. The default setting is "Disabled." Enabled: Choose this to have the BIOS handle as a recovery event or to use the WOL function. Disabled: Choose this not to have the BIOS handle as a recovery event or not to use the WOL function.
Power On by Ring	Use this setting enable/disable turning the power on with the modem ring signal. The default setting is Disabled. Enabled: Choose this if the power is turned on using the ring signal.Also change the setting for Modem Use IRQ. Disabled: Choose this if the power is not turned on using the ring signal.

Table A-5 POWER MANAGEMENT SETUP menu (continued)

Items	Description
Resume by Alarm	Use this setting to turn on the power with the alarm (date and time). Set Resume by Alarm to the desired setting to enable or disable this function.
Date (of Month) Alarm	Enabled: Choose this to enable the alarm function.By selecting this, Date (of Month) Alarm and Time (hh:mm:ss) Alarm can also be set. Disabled: Choose this to disable the alarm function.This is the default setting.
Time (hh:mm:ss) Alarm	Use Date (of Month) Alarm to set the appropriate date. Use 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.
Primary IDE 0	Sets the event to reload (reset) the BIOS power management timer. IDE primary master access (I/O trap) is generated and the power management timer is reloaded. This is treated as a resume event from Suspend Mode. The default setting is Enabled.
Primary IDE 1	Sets the event to reload (reset) the BIOS power management timer. IDE primary slave access (I/O trap) is generated and the power management timer is reloaded. This is treated as a resume event from Suspend Mode. The default setting is Disabled.
Secondary IDE 0	Sets the event to reload (reset) the BIOS power management timer. IDE secondary master access (I/O trap) is generated and the power management timer is reloaded. This is treated as a resume event from Suspend Mode. The default setting is Disabled.
Secondary IDE 1	Sets the event to reload (reset) the BIOS power management timer. IDE secondary slave access (I/O trap) is generated and the power management timer is reloaded. This is treated as a resume event from Suspend Mode. The default setting is Disabled.
FDD, COM, LPT Port	Sets the event to reload (reset) the BIOS power management timer. Access to the floppy disk drive, serial port 1 or 2, or the parallel port is generated and the power management timer is reloaded. This is treated as a resume event from Suspend Mode. The default setting is Enabled. Not compatible with PCI slots COM 3/4 ports.
PCI PIRQ (A-D)	Sets the event to reload (reset) the BIOS power management timer. APCI interrupt request (I/O trap) is generated and the power management timer is reloaded. This is treated as a resume event from Suspend Mode The default setting is Disabled.

Supplementary Explanation for Power Management

Power-Off

The power-off function for each operating system is as follows.

DOS

Since DOS does not have any native power-off function, use one of the following methods.

❏ Set Soft-Off by PWR-BTTN to "Instant-Off" to turn the power supply off by pressing the Power button.

❏ Use the POWER.EXE function to turn the power supply off.

❏ Make the application use the APM BIOS function to turn the power supply off.

Windows NT

With Windows NT, the Restart dialog box is displayed when shutting down the operating system, and the system stops and waits for instructions. Therefore, either one of the following methods should be used.

❏ Set Soft-Off using PWR-BTTN to "Instant-Off" to turn the power supply off when the Power button is pressed.

❏ Change HAL to automatically turn the power supply off when the operating system is shut down.

Windows 98/2000/XP

When shutdown is executed on Windows 98 and later operating systems, the power is turned off using the power-off command from the system.

Therefore, set the Power button setting to "Disabled" or "Delay 4 Sec." to prevent a power-off when the Power button is accidentally pressed and to enable the system to enter the Suspend mode when the Power button is pressed.

Setting of Soft-Off by PWR-BTTN and Power Button Operation

When the power supply is turned off by pressing the Power button for 4 seconds or more, the WOL (Wake On LAN) function cannot be used when the system is started the next time. In order to enable the WOL function from this status, reboot the system once and turn the power supply off normally (shift to the S4 state by soft-off) from the operating system.

The Power button operation in the Suspend mode is treated as an event that causes the system to recover to the Full-On mode. If the Power button is pressed for 4 seconds or more after recovering to the Full-On mode, the power supply is turned off.

Basically, the mode in each operation system changes as follows when the Power button is pressed.

❏ DOS and Windows NT

Same as the basic operations of the BIOS

BIOS setting	Full-On / Video-Off	Suspend
Instant-Off	Shutdown	Full-On
Delay 4 Sec.	Suspend	Full-On
Disabled	No-Operation	Full-On

The power supply is turned off if the Power button is pressed for 4 seconds or more.

❏ Windows 98 and Windows 2000

Since these operation systems support ACPI (PMOS), the settings in the operating system are valid and the settings in the BIOS are invalid.

OS setting	Full-On / Video-Off	Standby
Shutdown	Shutdown	Full-On
Standby	Standby	Full-On

The power supply is turned off if the Power button is pressed for 4 seconds or more.

❏ Windows XP

Since this operation system supports ACPI (PMOS), the settings in the operating system are valid and the settings in the BIOS are invalid.

OS setting	**Full-On / Video-Off**	Standby
Shutdown	Shutdown	Full-On
Standby	Standby	Full-On
Never	No-Operation	Full-On

The power supply is turned off if the Power button is pressed for 4 seconds or more.

Video Off Mode

The BIOS does not have a Video Off function. Therefore, Video Off is directly controlled by the operating system or an application. However, Video Off is in effect during the Suspend mode activated by the BIOS.

❏ DOS

Because DOS does not have a Video Off function, Video Off cannot be generated using normal operations. Video Off in DOS can, however, be executed by having the application directly control the video BIOS and the APM BIOS.

❏ Windows NT

Because Windows NT does not have a Video Off function, Video Off cannot be generated using normal operations. Video Off in Windows NT can, however, be executed by preparing a dedicated driver that expands the screensaver or by expanding Win API and having it directly controlled by the application.

❏ Windows 98/2000/XP

Windows 98 and later operating systems have a Video Off function. Therefore, this function can be used to control Video Off on these operating systems. More specifically, make the following settings:

Windows 98: Set the time for Power Management Properties: Shut Off Monitor.
Windows 2000: Set the time for Power Schemes: Turn Off Monitor.
Windows XP: Set the time for Power Schemes: Turn Off Monitor.

Use these settings to enable the system to enter the Video Off mode after a preset time without generating a timer reset event.

Suspend (Standby) Mode

The BIOS has a suspend function, but its use varies depending on the operating system. The suspend function operates as follows for each operating system. Note that Video Off is executed when the Suspend mode is activated by the BIOS.

❏ DOS

DOS does not have a suspend function. Therefore, suspending is performed either by using the suspend function of the BIOS or by an application that directly controls it using the APM BIOS.

❏ Windows NT

Because a delay with the system timer is generated if Windows NT enters the Suspend mode, the system is not allowed to enter the Suspend mode. Be aware that the suspend timer cannot be set by the BIOS. Also, the Delay 4 Sec. setting cannot be used because pressing the Power button when the Power Button setting is set to Delay 4 Sec. would cause the system to enter the Suspend mode.

❏ Windows 98/2000/XP

Windows 98 and later operating systems have a standby function. Therefore, this function can be used to control suspend on these operating systems. More specifically, make the following settings.

Windows 98: Set the time at Power Management Properties: System Standby.
Windows 2000: Set the time at Power Schemes: System Standby.
Windows XP: Set the time at Power Schemes: System Standby.

Use these settings to enable the system to enter the Suspend mode after a preset time without generating a timer reset event. On these operating systems, the suspend function of the system is enabled and the BIOS suspend function is ignored.

Suspend can also be executed by selecting Shut Down or Turn Off from the Start menu and then selecting Standby from the Shutdown dialog.

Hard Disk Drive Power Down Mode

The HDD Power Down Timer settings are made through the OS in Windows XP/2000/98, but in Windows NT/95 and DOS, the settings are made through the BIOS, as detailed below. To have the HDD motor stop when the HDD is not accessed for a certain time, follow the steps below:

1. Start up the BIOS Setup Utility.

2. Select [Power Management Setup].

3. Select [HDD Power Down].

4. Select the time in the option.

5. Save it and restart.

After the restart, 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.

✎ *Note:*
This function can be used only with BIOS version 2.13.00 or higher. If your BIOS version is before 2.12, upgrade the BIOS and then do the above procedure.

When access to HDD occurs, the motor of HDD begins to start and the HDD becomes accessible.

Windows 98/2000/XP

Windows 98 and later operating systems have a hard disk drive power down function. Therefore, this function can be used to control hard disk drive power down in these operating systems.

PNP/PCI Configurations Menu

In this menu, set the IRQ and DMA assignment methods and other items. Do not change the default settings under normal conditions.

Table A-6 PNP/PCI Configurations menu

Items	Description
PNP OS Installed	Use this setting to select whether the operating system is compatible with Plug and Play (PnP). The default setting is Yes. Always use the default setting.
Reset Configuration Data	Use this setting to reset the PnP information recorded in the Extended System Configuration Data (ESCD) block when restarting the system. The default setting is Disabled. Always use the default setting.
Resource Controlled By	Use this setting to select whether the allocation of the I/O address, IRQ, DMA, and other system resources is to be done by PnP BIOS or by the user. The default setting is Auto (ESCD). Always use the default setting.
IRQ Resources	Sets the handling of IRQ Resources (interrupt number). You can change IRQ Resources 3, 4, 5, 7, 9, 10, 11, 12, 14, and 15. The default setting is PCI/ISA PnP for each resource. PCI/ISA PnP: The target IRQ resources are allocated automatically (dynamic allocation) by PnP BIOS, as is the case when the Resource Controlled By setting is set to Auto (ESCD). Legacy ISA: The target IRQ resources are reserved (static allocation) and are not affected by the PnP BIOS automatic (dynamic) allocation. When making changes, be careful not to create a resource conflict.
DMA Resources	Sets the handling of DMA resources (DMA channels). You can change DMA Resources 0, 1, 3, 5, 6, and 7. The default setting is PCI/ISA PnP for each resource. PCI/ISA PnP: The target DMA resources are allocated automatically (dynamic allocation) by PnP BIOS, as is the case when the Resource Controlled By setting is set to Auto (ESCD). Legacy ISA: The target IRQ resources are reserved (static allocation) and are not affected by the PnP BIOS automatic (dynamic) allocation. When making changes, be careful not to create a resource conflict.

Memory Resources	Use this setting to position the Upper Memory Block (UMB) in the expansion memory range.
	Reserved Memory Base
	  Sets the position address. The default setting is N/A, indicating that no position is selected.
	  The only position address that can be selected is D000.
	Reserved Memory Length
	  If a position address is set, select the memory size for that address.
	  The default setting is 64K. The only memory size that can be selected is 64K, the same as the default setting.

PCI/VGA Palette Snoop	When a video card is added or when using an MPEG playback card at the same time, the on-screen color may not display correctly for a period of time. If this occurs, you may be able to fix the problem by changing the setting to Enabled. The default setting is Disabled.

Defaults and Selectable Options

The BIOS default, setup default, and selectable options of each item are as follows. Some items are not displayed and cannot be changed, depending on the settings of their master items.

Standard CMOS Features

1) Date, time

Item	Options	Notice
Day of the week	—	Day of the week: Automatically determined by the settings of Year, Month, and Day.
Month	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	Year, Month, Day: Selected from the options. Last day of the current month: Either 28, 30, or 31 is automatically determined according to the specified month. When the year is a leap year, the last day of February will automatically be 29. Hour, Minute, Second: Selected from the options.
Day	1- Last day of the current month	
Year	1999 - 2098	
Hour	0 - 23	
Minute	0 - 59	
Second	0 - 59	

2) IDE Primary master, IDE primary slave, IDE secondary master, IDE secondary slave

Item	Options	Notice
IDE HDD Auto-Detection	-----	Push the Enter key to execute the auto detection for the device. If the connection is made, information obtained from the device, including the access method, will be applied.

Item	Options	Notice
IDE Primary Master IDE Primary Slave IDE Secondary Master IDE Secondary Slave	None Auto Manual	Set the detection method for the connection device. None: The connection detection is not executed. It is treated as disconnected software Auto: Auto detection is executed. The information held by the device is automatically applied. Manual: The information set by the user is applied.
Access Mode	CHS LBA Large Auto	Set the access Method to the connected device. Note that when the device detection method is set as "None" it cannot be changed. CHS: Access for the device is shortened with "Cylinder Head Sector (Addressing) "having 1024 cylinders, 16 heads and 63 sectors. LBA: Shortened with the Logical Block Addressing Method, the entire memory area is divided into access units and those serial numbers are used for accessing. Large: This is the access method for extended CHS. When the number of CHS cylinders exceeds the normal amount of 1024 cylinders, the address is not accessible so the CHS is extended. Auto: BIOS determines the optimum method based on the information obtained by the device. The LBA method is normally used.
Capacity	-----	This item indicates the memory capacity for the connection device. The following differences occur, depending on the device detection method used. Auto: The value calculated according to information obtained by the device is displayed. Manual: The value calculated according to information specified by the user is displayed.
Cylinder	-----	This item indicates the number of cylinders for the connection device. The following differences occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-65,535 only when the access method is set as "CHS".
Head	-----	This item indicates the number of heads for the connection device. The following differences occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-255 only when the access method is set as "CHS".
Precomp	-----	This item indicates the number of write compensation cylinders for the connection device. The following differences will occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-65,535 only when the access method is set as "CHS". (When connecting a device for which there is no particular value specified, a maximum value of 65,535 is specified)

Item	Options	Notice
Landing Zone	-----	This item indicates the head fixed track number for the connection device. The following differences will occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-65,535 only when the access method is set as "CHS". (When connecting a device for which there is no particular value specified, the number "1" is specified as the maximum number of cylinders).
Sector	-----	This item indicates the number of sectors for the connection device. The following differences will occur, depending on the device detection method used. Auto: The value obtained by the device is displayed. Manual: The user can set the value within a range of 0-255 only when the access method is set as "CHS".

3) FDD, display

The items related to the FDD, display, and error that halt at boot-up are as follows.

Item	Options	Fail-Safe default	Optimized default
Drive A	None 360KB, 5.25 in. 1.2MB, 5.25 in. 720KB, 3.5 in. 1.44MB, 3.5 in. 2.88MB, 3.5 in.	None	1.44 M, 3.5 in.
Video	EGA/VGA CGA40 CGA80 MONO	EGA/VGA	EGA/VGA
Halt On	All Errors No Errors All,But Keyboard All,But Diskette All,But Disk/Key	All,But Keyboard	All,But Keyboard

Advanced BIOS Features

The basic items related to BIOS boot-up are as follows.

Item	Options	Fail-Safe default	Optimized default
Virus Warning	Disabled Enabled	Enabled	Disabled
External Cache	Disabled Enabled	Enabled	Enabled
CPU L2 Cache ECC Checking	Disabled Enabled	Enabled	Enabled
Processor Number Feature This is a function for specifying whether or not to acquire the serial number of a CPU model added from the Pentium III processor.	Disabled Enabled	Enabled	Enabled
Quick Post	Disabled Enabled	Disabled	Disabled
Quick Power On Self Test	Disabled Enabled	Enabled	Enabled
First Boot Device *1	Floppy LS120 HDD-0 SCSI CD-ROM HDD-1 HDD-2 HDD-3 ZIP100 LAN Disabled	Floppy	Floppy
Second Boot Device *1	Floppy LS120 HDD-0 SCSI CD-ROM HDD-1 HDD-2 HDD-3 ZIP100 LAN Disabled	HDD-0	HDD-0
Third Boot Device *1	Floppy LS120 HDD-0 SCSI CD-ROM HDD-1 HDD-2 HDD-3 ZIP100 LAN Disabled	SCSI	SCSI
Boot Other Device *1	Disabled Enabled	Enabled	Enabled

Item	Options	Fail-Safe default	Optimized default
Boot Up Floppy Seek	Disabled Enabled	Enabled	Enabled
Boot Up NumLock Status	Off On	Off	Off
Gate A20 Option	Normal Fast	Normal	Fast
Typematic Rate Setting	Disabled Enabled	Disabled	Disabled
Typematic Rate (Chars/Sec) *2	6 8 10 12 15 20 24 30	(6)	(6)
Typematic Delay (Msec) *2	250 500 750 1000	(250)	(250)
Security Option	Setup System	Setup	Setup
OS Select For DRAM > 64MB	Non-OS2 OS2	Non-OS2	Non-OS2
HDD S.M.A.R.T capability	Disabled Enabled	Enabled	Enabled
Report No FDD For WIN95	No Yes	No	No
C8000-CBFFF Shadow	Disabled Enabled	Disabled	Disabled
CC000-CFFFF Shadow	Disabled Enabled	Disabled	Disabled
D0000-D3FFF Shadow	Disabled Enabled	Disabled	Disabled
D4000-D7FFF Shadow	Disabled Enabled	Disabled	Disabled
D8000-DBFFF Shadow	Disabled Enabled	Disabled	Disabled
DC000-DFFFF Shadow	Disabled Enabled	Disabled	Disabled
Small Logo (EPA) Show	Disabled Enabled	Disabled	Disabled

Note:

*1 If bootable SCSI drives (e.g., HDD and CD-ROM) are connected, some products may give priority to such SCSI Drives regardless of the First Boot Device, Second Boot Device, Third Boot Device, and Boot Other Device settings. This is due to the specifications of the SCSI BIOS (adapters) in question; it is not a malfunction.

*2. The Typematic Rate (Chars/Sec) and Typematic Delay (Msec) items can only be selected if Typematic Rate Setting is set as Enabled.

Advanced Chipset Features

The setup items related to the chipset are as follows.

Item	Options	Fail-Safe default	Optimized default
SDRAM CAS Latency Time	3 2	3	3
System BIOS Cacheable	Disabled Enabled	Disabled	Disabled
Video BIOS Cacheable	Disabled Enabled	Disabled	Disabled
CPU Latency Timer	Disabled Enabled	Disabled	Disabled
Delayed Transaction	Disabled Enabled	Enabled	Enabled
CAS# Latency	2 3	3	3
Paging Mode Control	Close Open	Open	Open
RAS-to-CAS Override	by CAS# LT Override (2)	by CAS# LT	by CAS# LT
RAS# Timing	Slow Fast	Fast	Fast
RAS# Precharge Timing	Slow Fast	Fast	Fast

Note:
1. Although each of the default values of SDRAM CAS Latency Time is "3," if a message stating that operations can be performed with the setting of "2" appears in POST processing, it is possible to improve performance by changing each of the values to "2."

2. For SDRAM Cycle Time Tras/Trc, SDRAM RAS-to-CAS Delay and SDRAM RAS Precharge Time, the settings of both Fail-Safe and Optimized are fixed as "Auto"; they are display only items and cannot be selected.

Integrated Peripherals

The setup items related to onboard peripherals are as follows.

Item	Options	Fail-Safe default	Optimized default
On-Chip Primary PCI IDE	Disabled Enabled	Enabled	Enabled
On-Chip Secondary PCI IDE	Disabled Enabled	Enabled	Enabled
IDE Primary Master PIO	Auto Mode 0 Mode 1 Mode 2 Mode 3 Mode 4	Auto	Auto
IDE Primary Slave PIO	Auto Mode 0 Mode 1 Mode 2 Mode 3 Mode 4	Auto	Auto
IDE Secondary Master PIO	Auto Mode 0 Mode 1 Mode 2 Mode 3 Mode 4	Auto	Auto
IDE Secondary Slave PIO	Auto Mode 0 Mode 1 Mode 2 Mode 3 Mode 4	Auto	Auto
IDE Primary Master UDMA	Disabled Auto	Auto	Auto
IDE Primary Slave UDMA	Disabled Auto	Auto	Auto
IDE Secondary Master UDMA	Disabled Auto	Auto	Auto
IDE Secondary Slave UDMA	Disabled Auto	Auto	Auto
USB Controller	Disabled Enabled	Enabled	Enabled
USB Keyboard Support	Disabled Enabled	Disabled	Disabled
USB Mouse Support	Disabled Enabled	Disabled	Disabled
Init Display First	PCI Slot Onboard	Onboard	Onboard
AC97 Audio	Auto Disabled	Auto	Auto

Item	Options	Fail-Safe default	Optimized default
Onboard LAN Device	Disabled Enabled	Enabled	Enabled
IDE HDD Block Mode	Disabled Enabled	Disabled	Enabled
Onboard Lan Boot ROM	Disabled Enabled	Enabled	Enabled
Onboard FDC Controller	Disabled Enabled	Enabled	Enabled
Onboard Serial Port 1	3F8/IRQ4 2F8/IRQ3	3F8/IRQ4	3F8/IRQ4
Onboard Serial Port 2	3F8/IRQ4 2F8/IRQ3	2F8/IRQ3	2F8/IRQ3
Onboard Parallel Port	Disabled 378/IRQ7 278/IRQ5 3BC/IRQ7	378/IRQ7	378/IRQ7
Parallel Port Mode	ECP EPP ECP+EPP Normal	Normal	Normal
EPP Mode Select	EPP1.9 EPP1.7	(EPP1.9)	(EPP1.7)
ECP Mode Use DMA	3 1	(3)	(3)

Notes: When the `Parallel Port Mode` for the `EPP Mode Select` is set as **"EPP"** or as **"ECP+EPP"**, the user can then perform the necessary settings.

When the `Parallel Port Mode` for the `ECP Mode Use DMA` is set as **"ECP"** or as **"ECP+EPP"**, the user can then perform the necessary settings.

POWER MANAGEMENT SETUP

The setup items related to power management are as follows.

Item	Options	Fail-Safe default	Optimized default
Video Off Method	Blank Screen V/H SYNC+Blank DPMS	Blank Screen	DPMS
Video off In Suspend	No Yes	Yes	Yes
MODEM Use IRQ	NA 3 4 5 7 9 10 11	3	NA
Suspend Mode	Disabled 1 Min 2 Min 4 Min 8 Min 12 Min 20 Min 30 Min 40 Min 1 Hour	Disabled	Disabled
HDD Power Down	Disabled 1 Min 2 Min 3 Min 4 Min 5 Min 6 Min 7 Min 8 Min 9 Min 10 Min 11 Min 12 Min 13 Min 14 Min 15 Min	Disabled	Disabled
Soft-Off by PWR-BTTN	Instant-Off Delay 4 Sec. Disabled	Instant-Off	Instant-Off
Wake-Up by PCI card	Disabled Enabled	Disabled	Disabled
Power On by Ring	Disabled Enabled	Disabled	Disabled
Resume by Alarm	Disabled Enabled	Disabled	Disabled
Date (of Month) Alarm	1 - 31	(0)	(0)
Time (hh:mm:ss) Alarm	hh: 0-23 mm: 0-59 ss: 0-59	(00:00:00)	(00:00:00)
Primary IDE 0	Disabled Enabled	Enabled	Enabled

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Item	Options	Fail-Safe default	Optimized default
Primary IDE 1	Disabled Enabled	Disabled	Disabled
Secondary IDE 0	Disabled Enabled	Disabled	Disabled
Secondary IDE 1	Disabled Enabled	Disabled	Disabled
FDD, COM, LPT Port	Disabled Enabled	Enabled	Enabled
PCI PIRQ (A-D)	Disabled Enabled	Disabled	Disabled

Notes: If `Resume by Alarm` for the `Date (of Month) Alarm` and `Time (hh:mm:ss) Alarm` is set as "Enabled", the user can specify the selection. Directly enter each setting.

PNP/PCI Configuration

The setup items related to PCI configurations (Plug and Play) are as follows.

Item	Options	Fail-Safe default	Optimized default
PNP OS Installed	No Yes	Yes	Yes
Reset Configuration Data	Disabled Enabled	Disabled	Disabled
Resource Controlled By	Auto (ESCD) Manual	Auto (ESCD)	Auto (ESCD)
IRQ Resources	PCI/ISA PnP Legacy ISA	(PCI/ISA PnP)	(PCI/ISA PnP)
DMA Resources	PCI/ISA PnP Legacy ISA	(PCI/ISA PnP)	(PCI/ISA PnP)
Memory Resources	N/A D000-64K	(N/A)	(N/A)
PCI/VGA Palette Snoop	Disabled Enabled	Disabled	Disabled

Notes: When `Resources Controlled By` is set to Manual, `IRQ Resources`, `DMA Resources`, and `Memory Resources` can be set by the user.

When `IRQ Resources` is selected, resources PCI/ISA PnP and Legacy ISA can then be selected from the advanced settings screen. The IRQ resources that can be set are IRQ-3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

When `DMA Resources` is selected, resources PCI/ISA PnP and Legacy ISA can be set from the advanced settings screen. The DMA resources that can be set are DMA-0, 1, 2, 5, 6, and 7.

When `Memory Resource` is selected, Reserved Memory Base and Reserved Memory Size can be set from the advanced settings screen.

For Reserved Memory Base, N/A and D000 can be selected from the option settings.

For Reserved Memory Size, 64K is the only option setting that can be selected.

Setting a Password

Select the password setting option (`Set Supervisor Password` or `Set User Password`) from the main menu, and the following message is displayed in the center of the screen. Type a password. The password is case sensitive and made up of up to eight alphanumeric characters.

ENTER PASSWORD:

Typing a password clears any previously entered password. After you press **Enter**, the message below is displayed.

CONFIRM PASSWORD:

Retype the password you typed. If you do not want to use any password, simply press **Enter** at both prompts. The password will be cleared, and the password function will be disabled.

If you forget your password, short pins 2 and 3 of jumper JP10 for MR series and turn on the power to clear the contents of the CMOS. After clearing the CMOS, be sure to perform the following:

❏ Remove the jumper cap from pins 2 and 3 of jumper JP10

❏ Execute `LOAD Optimized Defaults` (from the main menu of the BIOS setup utility)

❏ Reset BIOS (necessary items)

To abort the process, press **Esc**.

Device Diagnostics Utility

This program is a utility that enables you to confirm the default operation of the TM printer, DM-D, and other POS devices linked to and provided by the system BIOS.

Startup method

Press **F10** during the POST process, and the message `Diagnostics program will execute after POST` will appear, and the device self-diagnostic utility will start after the POST process.

Initial screen

When the device diagnostic utility starts, the following screen appears.

```
 Setup    Device tests    Initialize    Exit
┌ Device Diagnostics ─────────────────────── Version 1.02.0 ┐
│            (C) 1994-2002 SEIKO EPSON Corp. All Rights Reserved.
│
│ ┌ TM/Drawer ───────────────┐    ┌ COM Ports ────────────────┐
│ │ TM Model       :          │    │          DTR DSR RTS CTS DCD RI
│ │ TM Port        :          │    │  COM1  :
│ │ TM Reset Signal :         │    │  COM2  :
│ │ Baud Rate      :    ┌ Select TM/DM Port ┐
│ │ Word Length    :    │ COM1              │
│ │ Parity         :    │ COM2              │
│ │ Drawer ON Time :    │ COM3              │
│ │                     │ COM4              │  Y -ACK  PE  SLCT -ERR
│ │ TM Status      :    │ LPT1              │
│ │ Drawer Status  :    │ None              │
│ │                     └───────────────────┘
│ ┌ DM ──────────────────────┐    ┌ Messages ─────────────────┐
│ │ DM Port        :          │
│ │ Baud Rate      :          │
│ │ Word Length    :          │
│ │ Parity         :          │
│ │                           │
│ │ DM Status      :          │
└ → Select Menu  ↓↑ Select Item  <Enter> Proceed  <Esc> Cancel
```

Use the cursor keys, [Enter] key and [ESC] key to navigate the menus and make selections.

Cursor keys	Use these keys to select and navigate the menus.
Enter key	Use this key to select an item.
ESC key	Use this key to cancel an operation.
Hot keys	Use the keys displayed on the menu bar or at other locations on the screen in different colors to select the item or function corresponding to those keys.

When the port connected to the TM or DM-D is selected, the connection is confirmed and the results are displayed. If the TM or DM-D are not connected, select None.

Notes:

❏ Because this program obtains the serial and parallel port settings from the PnP BIOS, the BIOS Setup Utility must be correctly set up.

❏ When the TM printer and DM-D are connected to the same serial port, make sure the communication conditions are the same.The communication conditions are recognized automatically when both devices are connected to the same serial port and when the TM printer is used by itself.

❏ If the settings differ from the actual communication conditions of the TM printer and DM-D, garbled characters may be printed or displayed as the devices interface with the system.

❏ The devices can support a communication rate of up to 38,400 bps.

❏ If the TM printer is connected to a serial port different from that of the DM-D, the tests cannot be conducted at the same time.In this situation or when the DM-D is used by itself, set the DM-D communications settings to 9600 bps, 8-bits, and with no parity.

Initialize

Select Initialize from the menu bar to select the serial port connected to the TM printer and DM-D.

Exit

Select Exit from the menu bar to exit the program.

Device Status Display

Screen image

After the connection of the TM printer and DM-D is confirmed, the status of those devices is displayed.

```
 Setup   Device tests  Initialize  Exit
┌ Device Diagnostics ─────────────────────── Version 1.02.0 ┐
│        (C) 1994-2002 SEIKO EPSON Corp. All Rights Reserved.   │
│                                                              │
│ ┌ TM/Drawer ──────────┐  ┌ COM Ports ──────────────────┐   │
│ │ TM Model      :       │  │        DTR DSR RTS CTS DCD RI │   │
│ │ TM Port       : COM1  │  │ COM1 :  1   0   1   0   0   0 │   │
│ │ TM Reset Signal :     │  │ COM2 :  1   0   1   0   0   0 │   │
│ │ Baud Rate     : 9600 baud │ COM3 :  1   0   1   0   0   0 │   │
│ │ Word Length   : 8 bit │  │ COM4 :  1   0   1   0   0   0 │   │
│ │ Parity        : None  │  └──────────────────────────────┘   │
│ │ Drawer ON Time : 100 ms │ ┌ LPT1 ───────────────────────┐  │
│ │                       │  │        -BSY -ACK  PE  SLCT -ERR │  │
│ │ TM Status     : No communication │ LPT1 :  1   1   0   1   1 │  │
│ │ Drawer Status :       │  └──────────────────────────────┘  │
│ └───────────────────────┘                                   │
│ ┌ DM ─────────────────┐  ┌ Messages ───────────────────┐   │
│ │ DM Port       : COM1  │  │ -                            │   │
│ │ Baud Rate     : 9600 baud │                             │   │
│ │ Word Length   : 8 bit │  │                              │   │
│ │ Parity        : None  │  │                              │   │
│ │                       │  │                              │   │
│ │ DM Status     : No communication │                      │   │
│ └───────────────────────┘  └──────────────────────────────┘  │
│ ← → Select Menu  ↓ ↑ Select Item  <Enter> Proceed  <Esc> Cancel │
└──────────────────────────────────────────────────────────────┘
```

TM Status

The status displayed for TM Status is as shown below. The priority status items are displayed from high to low priority. If the device is not recognized, Disable or No communication is displayed.

Displayed Status	Status	Priority
Hardware Error	A hardware error occurred.	High
Paper feeding	The paper is feeding.	
Receipt end	There is no more receipt paper	
Journal end	There is no more journal paper	
Paper near-end	The paper is nearing its end	
Receipt near-end	The receipt paper is nearing its end	
Journal near-end	The journal paper is nearing its end	
Cover end	The cover is open	
Off-line	On-line status	
On-line	Off-line status	Low

DM Status

The DM Status is displayed as either Ready or Busy. If the device is not recognized, Disable or No communication is displayed.

Drawer Status

Drawer Status is displayed as either High or Low.

COM Ports

COM Ports displays the status of the modem signals for each serial port (COM1 to COM4). If not allowed, Disable is displayed.

LPT1

LPT1 displays the status of the status signal for parallel port LPT1. If not allowed, Disable is displayed.

Setup

Select Setup from the menu bar to display a pull-down menu from which the settings can be selected.

Drawer Password

Select Drawer Password to display the password setting screen.
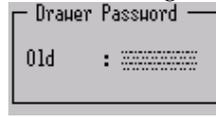
Creating a password   Changing a password

Enter a case-sensitive password of 4 to 8 English alphanumeric characters.

You will be asked to enter your password two times when creating a password and three times when changing a password.

Creating a Password	Enter a password in the Enter and Re-Enter fields.
Changing a Password	Enter the current password in the Old field, and then enter the new password in the New and Re-Enter fields.

If nothing is entered in the New field for Changing a Password and the Enter key is then pressed, the information is cleared (the setting is canceled).

If an incorrect password is entered when changing a password, the screen below is displayed and the setting becomes invalid.

```
Invalid Password

Press any key to continue
```
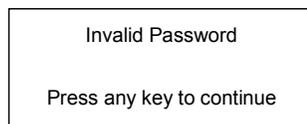
Drawer ON time

Select Drawer ON time from the pull-down menu to display the settings screen.

Sets the Drawer ON time in milliseconds as three digits in base 10 numbers.

The on time can be set from 0 to 500 milliseconds.

The set time, however, will be rounded to the smallest unit that can be set for the connected TM.

The TM-930, for example, will be rounded to 10 milliseconds, and other TM printers will be rounded to 2 milliseconds.

The off time is automatically set to four times that of the on time.

M/B Information

Select M/B Information from the pull-down menu to display the main board information.

```
┌─ Mainboard Information ─────┐
│                             │
│  CPU   : Intel Celeron(TM)  │
│    Speed : 733    MHz       │
│                             │
│  Memory : 128    MB         │
│  Video  : Enable            │
│  Sound  : Enable            │
│  Ethernet: Enable           │
│    ROM  : Disable           │
│    ID   : FF-FF-FF-FF-FF-FF │
│                             │
│  BIOS Version    : 2.08.00  │
│                             │
│     Press any key to continue │
│                             │
└─────────────────────────────┘
```

The displayed items are as follows.

CPU	This displays the CPU name.Example: Intel Celeron (TM)
Speed	This displays the CPU clock.Example: 733
Memory	This displays the system's memory size.Example: 256
Video	This displays the recognition status of the video controller in the chipset.Recognized: Enable Not recognized: Disable
Sound	This displays the recognition status of the sound (audio) controller in the chipset.Recognized: Enable Not recognized: Disable
Ethernet	This displays the recognition status of the network controller in the chipset.Recognized: Enable Not recognized: Disable
ROM	This displays the presence of a network boot ROM
ID	This displays the network controller ID (MAC address)
BIOS Version	This displays the version of the installed BIOS

Device Test

Select Setup from the menu bar to display the pull-down menu from which you can select a variety of tests

```
Setup  Device tests  Initialize  Exit
┌─ Devic                          
│      ┌───────────────┐ SEIKO EPSON Corp. All R
│      │ TM print test │
│      │ DM display test│            ┌─ COM Por
│ ┌─TM/Dr│ Drawer kick-out│           │
│ │TM Mod│ COM1 loop-back │           │ COM1  :
│ │TM Por│ COM2 loop-back │           │ COM2  :
│ │TM Res│ COM3 loop-back │           │ COM3  :
│ │Baud R│ COM4 loop-back │ud         │ COM4  :
│ │Word L│ LPT1 loop-back │           │
│ │Parity│ LPT1 print test│           └─ LPT1 ─
│ │Drawer└───────────────┘           │
│ │                                   │ LPT1 :
│ │TM Status     : No communication  │
```
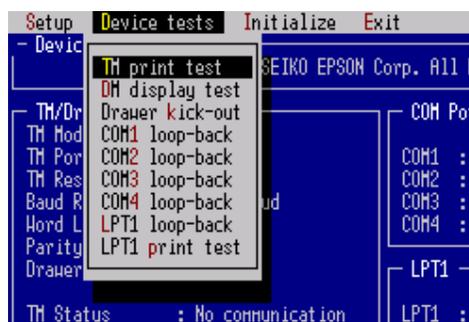
TM print test

> Select TM print test from the pull-down menu to conduct a print test of the TM printer.

> When the test is successfully completed, "TM print test: done" message appears.

> This test is performed regardless of the status of the modem signal.

> The status of the modem signal is displayed in COM Ports.

DM display test

> Select DM display test from the pull-down menu to conduct a DM display test.

> When the test is successfully completed, "DM display test: done" message appears.

> This test is performed regardless of the status of the modem signal.

> The status of the modem signal is displayed in COM Ports.

> This test is only performed for the DM-D connected to the serial port.

Drawer kick-out

> Select Drawer kick-out from the pull-down menu to conduct an open test of the drawer.

> ✎ *Note:*
> *Be sure to connect a drawer through a TM or DM.*

> *This test cannot be performed when the TM Status is displayed as Disable or No connection. This test cannot be performed on multiple drawers.*

COM# loop-back

> Select COM# loop-back from the pull-down menu to conduct a communications test using the loop-back connector of the serial port. The test results are displayed in the following manner.

COM# port is disabled	The designated port is disabled.
COM# loop-back test:OK	The test was completed successfully
COM# loop-back test:Error	An error occurred

> The status of the modem signal is displayed in COM Ports.

COM port   loop-back connector

```
1 DCD/power
2 RxD
3 TxD
4 DTR
5 GND
6 DSR
7 RTS
8 CTS
9 RI
```
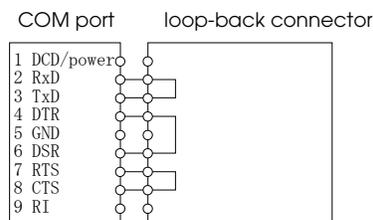
LPT1 loop-back

Select LPT1 loop-back from the pull-down menu to conduct a signal wire test using the loop-back connector of the parallel port. Please note that a test cannot be performed for the data wire. The test results are displayed in the following manner.

LPT1 port is disabled	The designated port is disabled.
LPT1 loop-back test:OK	The test was completed successfully
LPT1 loop-back test:Error	An error occurred

```
           LPT            loop-back connector
        1 -STROBE
        2 D0
        3 D1
        4 D2
        5 D3
        6 D4
        7 D5
        8 D6
        9 D7
        10 -ACK
        11 BUSY
        12 PE
        13 SLCT
        14 -AFD
        15 -ERR
        16 -INIT
        17 -SLCTIN
        18 GND
        19 GND
        20 GND
        21 GND
        22 GND
        23 GND
        24 GND
        25 GND
```
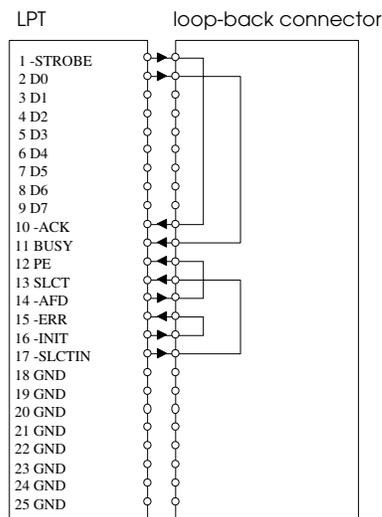
LPT1 print test

Select LPT1 print test from the pull-down menu to conduct a print test of the serial port. The test results are displayed in the following manner.

LPT1 port is disabled	The designated port is disabled.
LPT1 print test:OK	The test was completed successfully
LPT1 print test:Error	An error occurred

Chapter 6
Operation of the IM-800 and the DM-M820

IM-800 Power

The IM-800 does not have a power switch to shut down the power. When AC power is supplied, even if the power is off, a minute electric current flows through the system. The power switch on the front turns the system power on or off.

Force Power Off

When you want to quit an application and the operating system forcibly, press the power switch for more than 4 seconds. Then unplug the power cable.

LEDs for IM-800

There are LEDs for POWER, the HDD, the FDD, and the CD-ROM.
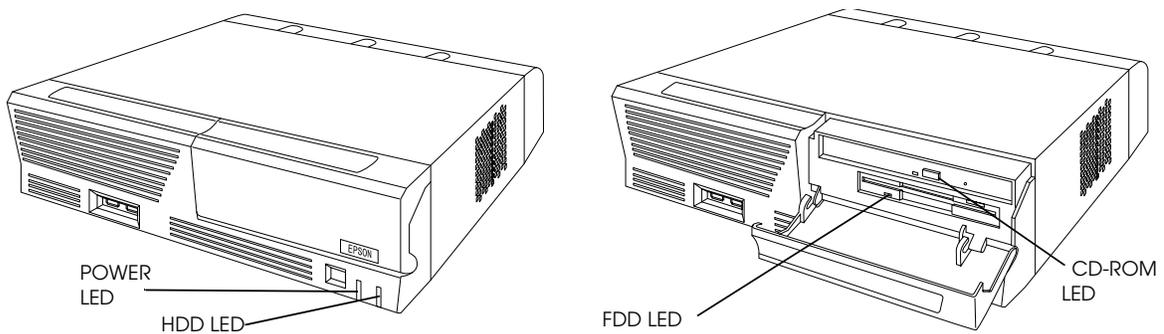
These LEDs have the following meanings:

LED	Color	Meaning
POWER	Green	Power is turned on (during normal operation)
	Flashing green	Standby mode
	Off	Power is off
HDD	Green	HDD is being accessed
CD-ROM	Orange	CD-ROM is being accessed (No LED if CD-ROM drive is not installed)
FDD	Green	FDD is being accessed

LEDs on Back

There are 2 LEDs on the back of the unit showing the access state to the network using the LAN. They are on only when the LAN is being accessed. These LEDs have the following meanings:

LED	Color	Meaning
ACT	Yellow	Accessing the network (Transmitting and receiving)
100	Green	Connected to 100Base-TX

Opening and Closing of the CD/FDD Cover

When opening the CD/FDD cover, push down the top of the CD/FDD cover as shown below.
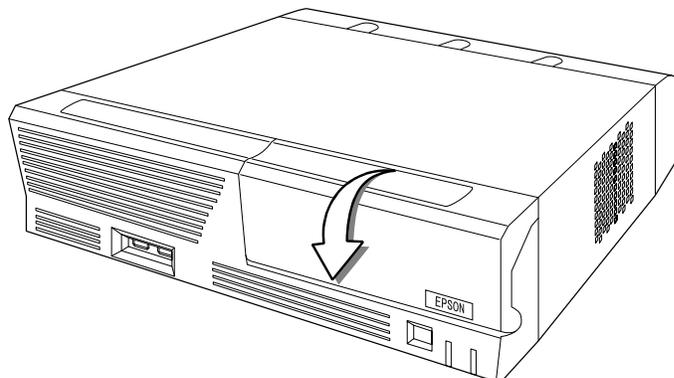
CD-ROM Emergency Ejection

When the CD-ROM drive does not function properly, you can remove the CD-ROM by following the steps below:

1. Turn off the IM-800.

2. Insert a small, thin object, such as an extended paper clip, in the CD-ROM eject hole.
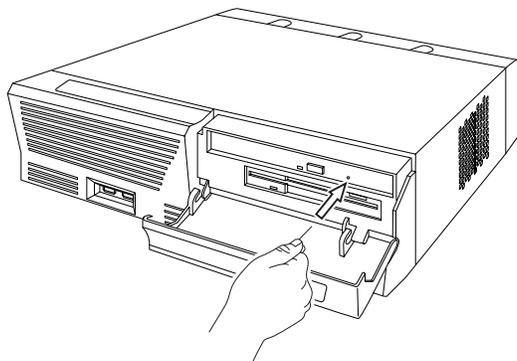
3. The disk tray pops out slightly; then pull it out gently.

Adjusting the volume

Use the sound function adjusting the volume of the speaker by Operation System.

DM-M820 Power

The power of the DM-M820 is supplied from the DC12V of the IM-800 or OI-MR01(AC Adapter).

Press the power switch to turn the power on or off.

Indicators for DM-M820

LEDs

There are two LEDs: the power LED for the LCD unit and the LED for the MSR.

POWER LED

MSR LED
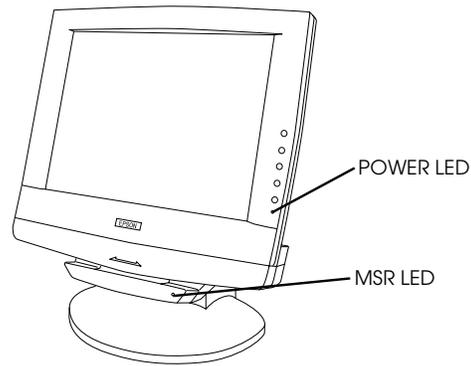
These LEDs have the following meaning:

LED	Color	Meaning
Power LED	Green	Power is on (during normal operation).
	Flashing green	No video input signal detected.
	Off	Power is off.
MSR*	Green	Card reading is successful.
	Orange	Card reading has failed.
	Off	Waiting for card reading or power is off.

* Applies only to models with an MSR unit.

Beep (only for models with an MSR)

The beeper can be enabled or disabled with the MSR utility. If enabled, the beeper sounds once for a successful card reading and three times for an unsuccessful card reading.

DM-M820 Operation

Adjusting the View Angle

The tilt mechanism of the LCD monitor allows you to adjust it to a comfortable viewing angle.

Hold both sides of the display and adjust the angle as shown below.
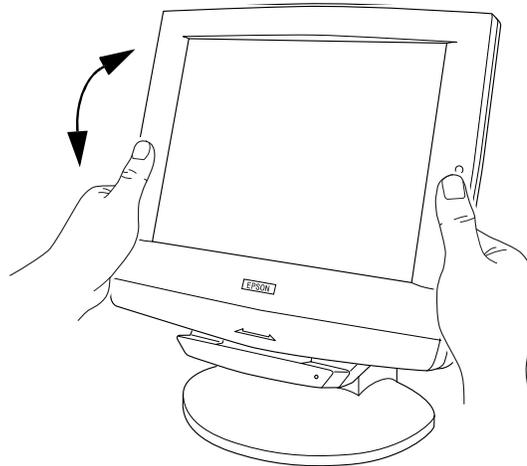
How to Use a Touch Panel (for the Touch Panel Model)

Be sure to use your finger or a polyacetal pen to input data to the touch panel.

When the touch panel becomes dirty, wipe its surface lightly with a soft cloth or a cloth moistened with ethyl alcohol.

⚠ CAUTION:

Do not use the unit in locations subject to liquids, since this product is not water resistant.

How to Read a Magnetic Stripe Card (for the Model with an MSR)

Slide the card through the slot with the magnetic stripe facing down.

The MSR can read the data whether the user slides the card from left to right or right to left, as shown below.
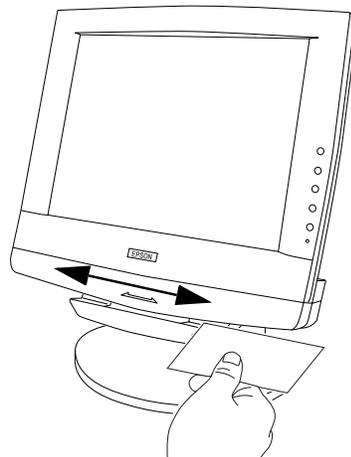
Do not stop sliding the card during the reading of data. This may cause a read error.

Do not use the keyboard while the MSR is reading a card.

When magnetic card data has a header or footer, make the proper settings with the MSR utility.

Chapter 7
Maintenance and Adjustment

Cleaning the IM-800 Front Panel Ventilation Opening

There are many small holes in the left of the front panel. Air enters here and goes out the ventilation openings on the rear side and right side. If these holes become clogged with dust, remove the dust with a small vacuum cleaner or other appropriate cleaning device.

Display Adjustment for DM-M820

The display adjustment procedure for the DM-M820 depends on when the unit was manufactured.

Determining which procedure to use

Check the label on the manufacture's plate at the base of the DM-M820.

SERIAL NO. *xxxx00xxxx*   : Display Adjustment (See page 7-2)

Later SERIAL NO. *xxxx01xxxx*   : Display Adjustment (See page 7-4)

Display Adjustment (SERIAL NO. *xxxx00xxxx*)

To adjust the LCD display, use the Function and Adjustment control buttons on the right side of the LCD unit.

When you press the top Function control button (↑) once, the On-Screen Display appears in the lower right-hand corner of the screen.

Function control buttons
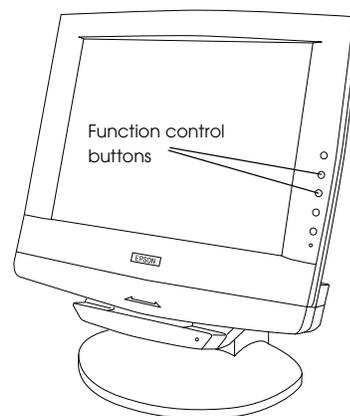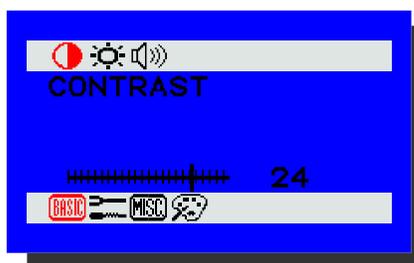
To select a function in the On-Screen Display, use the ↑ and ↓ Function control buttons, as shown in the table below. To adjust the selected function, press the + or – Adjustment control buttons. For example, to adjust the horizontal position of the display image, press the ↑ button twice and the ↓ button 3 times. Then adjust the image using the + and – buttons.

All settings made using the On-Screen Display are maintained even if the LCD is turned off.

Number of times to press the Function buttons		Setting items		Function
↑ button	↓ button			
1 Basic Setting	0		CONTRAST	To adjust the contrast level of the display.
	1		BRIGHTNESS	To adjust the brightness level of the backlight.
2 POSITION	0		AUTO ADJUST	To automatically adjust the picture quality and alignment.
	1		PHASE	To adjust the screen display for focus and clarity.
	2		CLOCK	To adjust the display pixel alignment.
	3		H-POSITION	To adjust the display position horizontally.
	4		V-POSITION	To adjust the display position vertically.
	5		GRAPH/TEXT	To select either Graphics or Text.
	6		RESET	To set the function parameters in the position menu to the default values.

Number of times to press the Function buttons		Setting items	Function
↑ button	↓ button		
3 Miscellaneous Menu	0	On-Screen Display H-POSITION	To adjust the horizontal position of the On-Screen Display menu.
	1	On-Screen Display V-POSITION	To adjust the vertical position of the On-Screen Display menu.
	2	MENU TIMER	To select the On-Screen Display menu display time.
	3	INFORMATION	To display the information for the LCD.
	4	LANGUAGE	To set different languages for the On-Screen Display menu.
	5	RESET	To set the function parameters in the miscellaneous menu to the default values.
4 COLOR TEMP. Menu	0	COLOR USER (PALETTE)	To select the color palette.
	1	COLOR USER (GREEN)	To adjust the density level of GREEN.
	2	COLOR USER (RED)	To adjust the density level of RED.
	3	COLOR USER (BLUE)	To adjust the density level of BLUE.

When the monitor is on and no video signal is received, this message is displayed.

Display Adjustment (SERIAL NO. *xxxx01xxxx*)

To adjust the LCD display, use the On-Screen Display (OSD) menu. To adjust the OSD menu with the Function buttons, use the Adjustment buttons and Power button.

FUNCTION button

ADJUSTMENT button
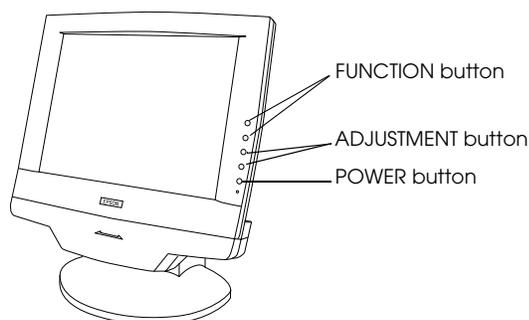
POWER button

❏   Displaying and closing the OSD menu

To display the On-Screen Display menu, press the (↑) Function button once.
To close the OSD menu, press the POWER button once.

Main menu

Sub menu

MONITOR–CONTROL
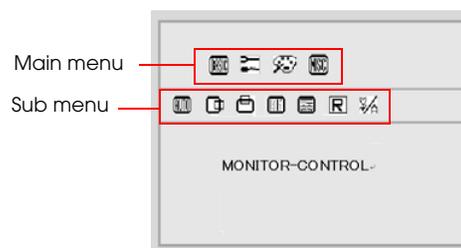
❏   Changing the language

To select "Misc-Control" in the Main menu, press the (↑) or (↓) FUNCTION button. To select the Sub menu, press the (+) ADJUSTMENT button once. To select Language, press the (↑) or (↓) FUNCTION button in the Sub menu. To select the language you want, press the (+) or (-) ADJUSTMENT button. The available languages are English, German, French, Spanish, Italian and Japanese. To close the OSD menu, press the POWER button twice.

❏   Selecting the main menu

To select a function in the Main menu, press the (↑) or (↓) Function button.

❏   Selecting a function in the Sub menu

To select a function in the Sub menu, press the + Adjustment button once. To adjust the selected function in the Sub menu, press the (↑) or (↓) Function button.To return from the Sub menu to the Main menu, press the Power button once.

❏   Setting

To make settings of a function in the Sub menu, press the (+) or (-) ADJUSTMENT button. All settings made using the OSD are maintained even if the LCD is turned off. The table below shows each adjustment item.

If you press the (↓) Function button once when the OSD menu is not displayed, the message shown on the right appears and the LCD is adjusted automatically.

AUTO   ADJUST

When the power of the DM-M820 is on and there is no video signal, the message shown on the right appears for a few seconds, and then the Power LED flashes.

NO   VIDEO

When signals that the DM-M820 cannot display are received, the message shown on the right appears.

OVER   RANGE

All settings made using the On-Screen Display are maintained even if the LCD is turned off

Main menu	Sub manu		Function
Basic Setting	AUTO ADJUST		To automatically adjust the picture quality and alignment.
	H-POSITION		To adjust the display position horizontally.
	V-POSITION		To adjust the display position vertically.
	PHASE		To adjust the screen display for focus and clarity.
	CLOCK		To adjust the display pixel alignment.
	RESET		To set the function parameters in the miscellaneous menu to the default values.
	GRAPH/TEXT		To select either Graphics or Text.

Main menu	Sub manu	Function
OSD Menu Setting	OSD Display H-POSITION	To adjust the horizontal position of the OSD menu.
	OSD V-POSITION	To adjust the vertical position of the OSD menu.
	OSD MENU TIMER	To select the OSD menu display time.
COLOR TEMP. Menu	CONTRAST	To adjust the contrast level of the display.
	BRIGHTNESS	To adjust the brightness level of the backlight.
	COLOR USER	To select the color palette.
	ADJUST COLOR GREEN	To adjust the density level of GREEN.
	ADJUST COLOR RED	To adjust the density level of RED.
	ADJUST COLOR BLUE	To adjust the density level of BLUE.
	AUTO ADJUST COLOR	To auto adjust color
Miscellaneous Menu	OSD LANGUAGE	To set different languages for the OSD menu.
	INFORMATION	To display the information for the LCD.

Touch Panel Calibration

Touch panel calibration adjusts settings to make the position the operator touches on the touch panel match the computer-recognized software position.

Calibrate the touch panel in the following situations.

❏ When the LCD unit is replaced.

❏ When you want to fine-tune the touch points on the touch panel.

❏ When the touch point positions on the touch panel are not accurate.

The procedure for calibrating the touch panel differs according to the Operating System you are using. Follow the appropriate procedure for your system below.

Windows

1. Start Windows.

2. Select in order: **Start - Programs - Touch - Touchscreen Control**. The touch screen control window is displayed.

3. Touch the **Calibrate** button to display the calibration screen.

4. Follow the messages on the screen, which will instruct you to touch points on the **x** character.

5. After the test finishes, a dialog box appears. Touch the **OK** button. The touch screen control window reappears.

6. Touch the **Exit** button. Calibration is complete.

MS-DOS

Make sure the touch panel driver is installed. The touch panel driver is on the Driver CD-ROM included with the DM-M820.

1. Type **TBCAL** and press **Enter** on the keyboard. The calibration utility starts, and the main menu is displayed.

2. On the main menu screen, type **H** on the keyboard. The calibration screen appears. The letter **L** is displayed from the bottom left to the upper right of the screen. Touch points on the two edges of the letter **L**.

3. When the test is finished, a message is displayed. Press the option key on the keyboard.

You return to the main menu of the calibration screen. Type the letter **x** on the keyboard to exit the calibration utility. Calibration is complete.

Maintenance for AC Adapter

❏   To clean the unit, wipe with a dry or slightly moistened (and firmly wrung out) cloth.

❏   Never clean the unit while it is plugged into the wall outlet.

❏   Do not clean the unit with thinner, benzine, or alcohol.

Chapter 8

Troubleshooting

Flow of Troubleshooting Procedures

```
┌────────────────────────────────┐
│ Confirm and prepare in advance │  ─ ─ ─ ─ ─  Check these standard items prior to
│                                │             beginning troubleshooting. (See page 8-2.)
│                                │
└────────────────────────────────┘
                │
                ▼
┌────────────────────────────────┐
│ Breakdown of likely locations  │             Check the detailed breakdown of causes of
│ for each type of fault         │             faults for individual units and components.
│                                │  ─ ─ ─ ─ ─  (See page 8-2.)
│                                │
└────────────────────────────────┘
```
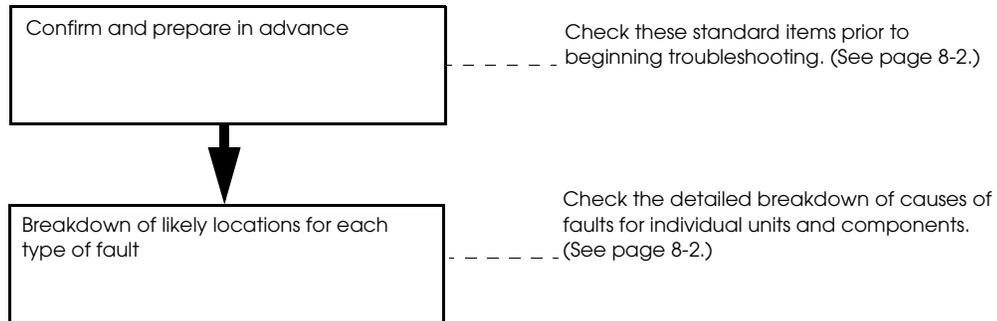
In addition to the flowchart shown above, you can use the Power On Self-Test (POST) messages to identify the causes of faults. For a description of the POST messages, refer to page 8-20.

This chapter uses icons to represent the system configuration patterns below.

- IM-800 + DM-M820
- IM-800 + CRT
- PC + DM-M820

The explanation in this chapter beside either of the icons shown below relates to that hardware. Whenever the icon shown indicates the hardware in your system, check the accompanying explanation for solutions to your problem first. If the icon is located above the problem description, see the entire explanation for the problem. If the icon is located inside the explanation, you need not to read the explanation before the portion indicated with the icon.

IM-800   DM-M820

Preparations for Troubleshooting

Before troubleshooting, check and, if necessary, correct the following points.

❏ When the IM-800 is used in your system, you can check for the causes of faults is in the IM-800 or peripherals by using the device diagnostics.

❏ Is the power voltage in the AC outlet normal?

❏ Are the peripherals turned on? (The EPSON customer display has its own power switch.)

❏ Are the CPU, DIMM(s), and HDD EPSON-approved products? (EPSON guarantees the operation of the CPU, DIMM(s), and HDD(s) assembled in the IM-800 prior to shipment to the customer. For warranty-exchange purposes, EPSON guarantees only CPU, DIMM(s), and HDDs purchased from EPSON.)

❏ The customer is responsible for products connected to the interfaces below. Confirm that the products fit the specifications and functions that EPSON recommends.
  • Keyboard/mouse port
  • Serial port
  • Parallel port
  • Ethernet port
  • USB port
  • PCI slot

❏ Are the OS and drivers installed correctly? (For installation methods, refer to Chapter 4.)

Problems and Possible Causes

The problems are indicated below.

System unable to start

Power management faults

System clock faults

Memory faults

Floppy disk drive unit faults

HDD faults

CD-ROM faults

Network faults

LCD display faults

Touch panel faults

MSR faults *1)

Printer unit faults

Serial port, parallel port, USB port, and keyboard / mouse port faults

Power supply faults

Faults that are difficult to diagnose

System Unable to Start

Power Supply Remains Off (Green Indicator Off (*)) and Display Screen is Blank

❏ Follow the procedures below.

1. Unplug the power cable. Leave it unplugged for about fifteen minutes; then plug it back in and try to start it again.

2. Confirm whether the problem solves when replacing peripheral devices and turning on the power supply.

3. If this does not solve the problem, there may be a faulty connection or malfunction in one of the system's units.

4. Test the power supply. (Refer to page 8-23.)

5. Replace the power switch assembly.

6. If the power supply is normal, refer to the section, "Possible Short in System," on page 8-17.

7. If the preceding steps fail to reveal the source of the problem, replace the main circuit board and test if it is the solution.

(*): Note: The green indicator is a feature of the IM-800.

Error Beep Indicating a Fault Sounds During Start-up

❏ If an error beep indicating a fault sounds during start-up, follow the procedures below.

1. When you hear one long beep (*), the cause may be a memory problem. See "Memory Error," on page 8-7.

2. One long beep followed by two short beeps indicates a video error. Refer to the "Beep" column in the section "POST Messages" on page 8-20.

(*): Note that a short beep sounds during normal system start up; this does not indicate an error.

Power Supply Indicator Comes on but the Display Screen Remains Blank

❏ If the short beep indicating normal start-up does not sound, follow the procedures below.

1. Check the video cable connections. (Check the cable for the DC outlet and video outlet.)

2. Confirm whether the power for the display is ON.

DM-M820 3. Replace the display unit.

DM-M820 4. If the problem is solved in step 3, the display unit has failed. See the problems described under "LCD Display Faults" on page 8-11 to troubleshoot the display itself.

5. Confirm whether replacing the main circuit board solves the problem.

IM-800 **Display Indicator Comes On, POST Ends Normally, but System Does Not Boot from Hard Disk Drive**

❏ Follow the procedures below.

1. Confirm that any floppy disk is pulled out of the FDD drive.

2. Check whether the problem is solved by replacing the HDD with another HDD that has an operating system installed.
   - If the replacement drive starts up normally, it indicates that there is a problem with the customer's HDD itself or the data configuration of the HDD.
   - If the system fails to start from the replacement HDD, use the following checks and recovery measures.

3. Use the BIOS setup utility to check the customer's BIOS settings. (Refer to Chapter 5.)
   - Confirm whether the HDD is selected as the boot device in the setting for **Advanced BIOS Features**.

4. Run the **Load Optimized Defaults** command in the BIOS setup utility. (Refer to Chapter 5.)

5. Set the **IDE Primary Master** option in the **Standard CMOS Feathers** menu of the BIOS setup utility to **Auto**.

❏ Check to see if the system can now start from the replacement HDD. If the system starts, check the customer's BIOS settings for any errors. If the system doesn't start, the cause may be a faulty connection or a problem with an individual unit or the connector itself. Follow the procedures below.

1. Confirm whether replacing the HDD cable solves the problem.

2. Confirm whether replacing the power supply solves the problem.

3. Confirm whether replacing the main circuit board solves the problem.

IM-800 **Computer does not Boot the Operating System (OS).**

❏ Follow the procedures below.

1. Are the OS and driver installed correctly? (For installation method, refer to Chapter 4.)

2. If using the DM-M820 with Windows 2000, the MSR must not connect to the mouse port.

❏ Check whether the system can now start from the replacement HDD. If the system starts, check the customer's BIOS settings for any errors. If the system doesn't start, the cause may be a faulty connection or a problem with an individual unit or the connector itself. Follow the procedures below.

1. Confirm whether replacing the HDD cable solves the problem.

2. Confirm whether replacing the power supply solves the problem.

3. Confirm whether replacing the main circuit board solves the problem.

IM-800 **Display Indicator Comes On, POST Ends Normally, but System Does Not Start from Floppy Disk Drive**

❏ Follow the procedures below.

1. Confirm that the system start-up files are installed onto the floppy disk to boot.

2. Confirm that the **Advanced BIOS Features / First Boot Device** item in the BIOS setup utility is set to **Floppy**.

3. Enter the BIOS setup utility and display the customer's BIOS settings. (See Chapter 5.)

4. Set the **Drive A** option in the **Standard CMOS Features** menu of the BIOS setup utility to **1.44 M, 3.5 in**.

5. Run the **Load Optimized Defaults** command in the BIOS setup utility. (Refer to Chapter 5.)

❏ Check whether the system can now start from the floppy disk drive. If the system starts, check the customer's BIOS settings for any errors. If the system doesn't start, the cause may be a faulty connection or a problem with an individual unit and connector itself. Follow the procedures below.

1. Check the connectors.

2. Confirm whether replacing the FDD cable or FFC cable solves the problem.

3. Confirm whether replacing the FDD circuit board solves the problem.

4. Confirm whether replacing the FDD solves the problem.

5. Confirm whether replacing the main circuit board solves the problem.

Power Management Faults

`IM-800` **Unable to Turn On System from USB Device**

Note that system power supply control using USB devices is not supported.

`IM-800` **Unable to Turn On System from Network**

❏ Confirm that **Wakeup by PCI card** in the **Power Management Setup** is set to **Enabled**.

- • The measures described below assume there are no problems with customer network settings and the programs that control this function.

- • Note that power cannot be turned on from the network if the system has previously been turned off by pressing the power switch for a period of 4 or more seconds. In this case, restart the system using the power switch; then turn the power supply off from a software application or from Windows.

- • The **Onboard LAN Device** setting in the **Integrated Peripherals** menu in the BIOS setup utility must be set to **Enabled**. Note that the factory default for this setting is **Enabled**. When you use not only the power management but also access the network, it must be set to **Enabled**.

`IM-800` **System Does Not Wake Up from Standby Mode When Touch Panel is Pressed**

❏ The system is designed to wake up from the standby mode in response to keyboard and PS/2 operation, regardless of BIOS settings. (This does not apply in the case of the **USB Keyboard** configuration.)

`IM-800` **Operating System Standby Mode Does Not Function**

❏ Confirm whether the customer is using the Windows NT operating system.

- • The standby mode is not supported under Windows NT.

`IM-800` **PS/2 mouse does not work after resuming from Suspend Mode.**

❏ Confirm whether the customer is using the correct Windows 98 BIOS (version 2.08 or later).

- • The customer must use Windows 98 BIOS version 2.06 or later.

System Clock Faults

`IM-800` **System Time Deviates, Even After Being Set Correctly**

❏ If using Windows NT, the **Suspend mode** setting must not have been set. A design characteristic of Windows NT is that the time deviates when the system enters the standby mode.

❏ Confirm whether replacing the main circuit board solves the problem.

`IM-800` **Time Setting is Not Possible or Time Setting Disappears**

❏ Follow the procedures below.

1. Confirm whether replacing the lithium battery on the main circuit board solves the problem.

2. Confirm whether replacing the main circuit board solves the problem.

`IM-800` **"CMOS Checksum Error" occurs frequently during the POST**

❏ When the lithium battery is depleted, this error occurs. If the battery is not changed, CMOS RAM may be cleared or the RTC is cleared every time the power of IM-800 is turned off. Replace the battery with the commercially sold lithium battery type CR2032.

Memory Faults

`IM-800` **Memory Count Displayed by POST Differs from Actual Memory Size**

❏ Follow the procedures below.

1. Replace the DIMM(s).

2. Confirm whether replacing the DIMM(s) solves the problem.
   • Note that EPSON guarantees only DIMM products that EPSON recommends.

3. Confirm whether replacing main circuit board solves the problem.

`IM-800` **Memory Error**

❏ Follow the procedures below.

1. Check DIMM installation.

2. Replace the DIMM(s).

3. Confirm whether replacing the DIMM(s) solves the problem.
   • Note that EPSON guarantees only DIMM products that EPSON recommends.

4. Check CPU installation.

5. Confirm whether replacing the CPU solves the problem.

6. Confirm whether replacing the main circuit board solves the problem.

Floppy Disk Drive Unit Faults

IM-800 **Unable to Read from or Write to Floppy Disk**

❏ Follow the procedures below.

1. Confirm whether using another floppy disk solves the problem.

2. Confirm that the setting of **Drive A** in **Standard CMOS Features** of BIOS is set to **1.44MB, 3.5 in**. (Refer to Chapter 5.)

❏ Check whether the floppy drive is able to read or write. If the floppy disk drive is still unable to read or write, the cause may be a faulty connection or a problem with an individual unit or the connector itself. Follow the procedures below.

1. Confirm that the FDD connections are secure.

2. Confirm whether replacing the FDD cable or FFC cable solves the problem.

3. Confirm whether replacing the FDD circuit board solves the problem.

4. Confirm whether replacing the FDD solves the problem.

5. Confirm whether replacing the main circuit board solves the problem.

HDD Faults

IM-800 **Unable to Read Data from HDD**

❏ Follow the procedures below.

1. Confirm the setting of the First/Second/Third Boot Device option in the Advanced BIOS Features item in the BIOS setup utility. (Refer to Chapter 5.)

2. Confirm the setting of the IDE Primary/Secondaly Master/Slave option in the Standard CMOS Features item in the BIOS setup utility. (Refer to Chapter 5.)

3. Check the connection of the HDD cable.

4. In case of the 2HDD model, confirm the setting of the jumper. Confirm one is set the Master, and another is set the Slave. (Refer to Appendix-A)

5. When there is the other HDD which can do Boot, attempt exchanging.

6. Confirm whether replacing the main circuit board solves the problem.

IM-800 **Can Boot from Hard Disk Drive but Read/Write Errors Occur**

❏ Follow the procedures below.

1. Check the connection of the HDD cable.

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2. Confirm whether replacing the HDD solves the problem.

3. Confirm whether replacing the main circuit board solves the problem.

CD-ROM Faults

IM-800 **Unable to Read Data from CD-ROM**

❏ Follow the procedures below.

1. Check the surface of the disk for foreign matter, marks, and scratches.

2. Note that labels applied to the CD-ROM can cause data read errors.

3. If using DOS for the system, you need to use the specified driver. (For installation the driver, refer to "Installing the CD-ROM driver" in Chapter 4.)

4. Use the BIOS setup utility to check the customer's BIOS settings. (Refer to Chapter 5.)

5. Run the **Load Optimized Defaults** command in the BIOS setup utility. (Refer to Chapter 5.)

6. A CD-ROM is attached to the HDD connector. Confirm the setting of the **IDE Primary, Secondary** option in the **Standard CMOS Features** menu of the BIOS setup utility.

❏ Check whether the system can now read data from the CD-ROM drive. If data can be read, check the customer's BIOS settings for any errors. If the data cannot be read, the cause may be a faulty connection or a problem with the individual unit or the connector itself. Follow the procedures below.

1. Confirm whether replacing the CD-ROM cable solves the problem.

2. Confirm whether replacing the CD-ROM solves the problem.

3. Confirm whether replacing the main circuit board solves the problem.

IM-800 **Can Read But Unable to Boot from CD-ROM**

❏ Follow the procedures below.

1. Confirm that the CD-ROM disc contains the system files.

2. Confirm the setting of the **First/Second/Third Boot Device** option in the **Advanced BIOS Features** item in the BIOS setup utility. (Refer to Chapter 5.)

IM-800 **CD-ROM Drive Tray Doesn't Open**

❏ Follow the procedures below.

1. Make sure the power supply for the IM-800 is turned on. Pressing the EJECT button will not open the CD-ROM drive tray when the power is turned off.

- The CD-ROM drive tray can be opened by inserting the designated tool in the EJECT hole.

2. If using DOS for the system, use the specified driver. (To install the driver, refer to "Installing the CD-ROM driver" in Chapter 4.)

3. Confirm whether replacing the CD-ROM solves the problem.

Network Faults

Unable to Connect to Network

❏ Follow the procedures below.

1. Check the network cable connections.

2. Confirm that network settings like protocol, IP address, communication speed, and so on have been selected correctly.

3. Confirm that the correct network driver has been selected. (If the network driver is not installed on the system, install the network driver.)

4. The **Onboard LAN Device** setting in the **Integrated Peripherals** menu in the BIOS setup utility must be set to **Enabled**.

❏ If the network is still not able to connect, the cause may be a faulty connection or a problem with an individual unit or the connector itself. Follow the procedures below.

1. Confirm whether replacing the main circuit board solves the problem.

Unable to Switch Transmission Speed

❏ Follow the procedures below.

1. Confirm that network settings like protocol, IP address, communication speed, and so on are specified correctly.

2. Confirm that the correct network driver has been selected. (If the network driver is not installed the system, install the network driver.)

❏ If the transmission speed still cannot be switched, the cause may be a faulty connection or a problem with an individual unit and the connector itself. Follow the procedures below.

1. Confirm whether replacing the main circuit board solves the problem.

Speaker Faults

IM-800   **Sound does not sound**

Adjust the sound in OS. First, confirm the setting of OS.

❏   Follow the procedures below.

1.   In case of the Speaker model, exchange the speaker.

2.   Confirm whether replacing the main circuit board solves the problem.

LCD Display Faults

DM-M820   **LCD Display Screen Either Blank or Unstable**

❏   Follow the procedures below.

1.   Check the connection of the video connector.

2.   Check the display setting of the display. (Refer to Chapter 7.)

3.   Replace the display and cable (Reference No. 119).

4.   Confirm whether replacing the LCD circuit board solves the problem.

5.   Confirm whether replacing the LCD solves the problem.

6.   Confirm whether replacing the AC adapter solves the problem.

IM-800   7.   Check the power supply. (Refer to page 8-23.)

IM-800   8.   Confirm whether replacing the main circuit board solves the problem.

DM-M820   **Backlight of LCD Does Not Function**

❏   Follow the procedures below.

1.   Check the connection of the inverter board.

2.   Confirm whether replacing the inverter board solves the problem.

3.   Confirm whether replacing the LCD circuit board solves the problem.

4.   Confirm whether replacing the LCD solves the problem.

DM-M820 | **LCD Display Screen Too Dark, Too Bright or Cannot Be Adjusted**

❏ Follow the procedures below.

1. Confirm whether adjusting the brightness level on the LCD solves the problem.

2. Confirm whether replacing the switch cable assembly solves the problem.

3. Confirm whether replacing the LCD circuit board solves the problem.

4. Confirm whether replacing the inverter board solves the problem.

5. Confirm whether replacing the LCD solves the problem.

DM-M820 | **Other Display Problems**

❏ If any of the following problems occur, check the monitor signal connection/cable, monitor, and system board.

- Incorrect colors.
- No high intensity.
- Missing, broken, or incorrect characters.
- Destroyed image.
- Unreadable monitor.

Touch Panel Faults

✎ *Note:*
If the keyboard or mouse does not function, refer to the problems described in the section titled "System Unable to Start" on page 8-3.

DM-M820 | **Touch Panel Does Not Function**

❏ Follow the procedures below.

1. Confirm whether the touch panel is connected to the COM1 or COM2.
   - You must confirm whether to use the COM1 or COM2 for the touch panel.

2. Check the external connectors.

3. Check the touch panel driver settings. For example, check the IRQ and I/O address for each port.

4. Confirm whether calibrating the touch panel solves the problem. (Refer to Chapter 7.)

5. Reinstall the touch panel driver after uninstalling it.

❏ Check whether the touch panel can now function. If the touch panel can function, check the customer's touch panel settings for any errors. If the touch panel cannot function, the cause may be a faulty connection or a problem with the individual unit or the connector itself. Follow the procedures below.

1. Confirm whether replacing the touch panel unit circuit board solves the problem.

2. Confirm whether replacing the touch panel unit solves the problem.

3. Confirm whether replacing the main circuit board solves the problem.

✎ *Note:*
You can confirm whether the touch panel circuit board operates correctly by checking the LEDs (red and green) on the touch panel circuit board.

Red LED	Green LED	Possible cause
On	Flashing	Operating normally.
On	Off	Possible failure of touch panel controller.
Off	On	—
Off	Off	Power is not supplied to the DM-M820. If the power is supplied to the DM-M820, the fuse on the touch panel circuit board or LCD circuit board may burned out.

Touch Panel Unable to Respond Correctly to Commands

❏ Follow the procedures below.

1. Check the touch panel driver settings. (Refer to Chapter 4.)

✎ *Note:*
When you set up Windows 2000 / XP, perform the double-click settings during installation of the driver. Refer to Chapter 4.)

2. Confirm whether calibrating the touch panel solves the problem. (Refer to Chapter 7.)

3. Reinstall the touch panel driver after uninstalling it.

❏ Check whether the touch panel can now function. If the touch panel can function, check the customer's touch panel settings for any errors. If the touch panel cannot function, the cause may be a faulty connection or a problem with the individual unit or the connector itself. Follow the procedures below.

1. Confirm whether replacing the touch panel unit circuit board solves the problem.

2. Confirm whether replacing the touch panel unit (1057) solves the problem.

3. Confirm whether replacing the main circuit board solves the problem.

Printer Unit Faults

The power supply of the printer isn't turned on

❏ Follow the procedures below.

1. Check the power switch of the TM printer is turned on.

2. Check the power cable of the TM printer is connected with the TM printer.

3. Check the TM printer is connected to the power supply of the TM-800 or the outlet.When supplying the power from the IM-800 TM printer power supply built-in model, check the power cable connections.

4. When supplying the power from the IM-800 TM printer power supply built-in model, confirm whether supplying the other power supply such as the AC adapter solves the problem.

5. Confirm whether replacing the TM printer solves the problem.

6. When supplying the power from the IM-800 TM printer power supply built-in model, confirm whether replacing the power supply unit solves the problem. (See page 3-44)

IM-800 Abnormal Operation

❏ Follow the procedures below.

1. Check the TM printer unit connections.

2. Confirm whether replacing the printer unit solves the problem.
   • Check the communication using the device diagnostics utility. (Refer to Chapter 5.)

3. Confirm whether replacing the main circuit board solves the problem.

IM-800 Printer Unit Does Not Print Normally

❏ Follow the procedures below.

1. Confirm whether the power supply of the printer is connected.

2. Check the printer unit connections.

3. Confirm that the correct data transmission parameters have been entered.
   • Check the communication with the device diagnostics utility. (Refer to Chapter 5.)

4. The data control flow procedures differs according to the type of software program being used. (For example, Windows UniMini and Advanced Printer Driver only support XON/XOFF control, while OPOS supports DTR/DSR control.)

❏ If the printer unit is still not able to print, the cause may be a faulty connection or a problem with an individual unit or the connector itself. Follow the procedures below.

1. Confirm whether replacing the printer unit solves the problem.

2. Refer to the relevant technical manuals and service manuals for the printer in question.

Deterioration in Print Quality

❏ Refer to the relevant technical manuals and service manuals for the printer in question.

Serial Port, Parallel Port, USB Port, and Keyboard/Mouse Port Faults

Connected Device Fails to Operate

❏ Follow the procedures below.

1. Confirm that the peripheral device connections are correct.

2. Confirm whether the power for the peripheral devices is on.
   - The power for the USB bus can supply 500mA per port. Confirm how much current should be necessary for each USB device.

3. Confirm the BIOS setting.

4. For problems with the USB device, confirm that the setting of the **USB Controller** in the **Integrated Peripherals Menu** is set to **Enabled**.
   - USB devices are supported only in Windows 98/2000/XP. The USB keyboard and USB mouse are also supported in Windows NT and DOS.
   - You need to confirm whether the **USB Keyboard/Mouse Support** in the BIOS is set to **Disabled**, because there is a possibility for the system to cause a keyboard fault if the system includes a DM-M820 with a MSR.

5. Confirm that the driver for COM3 or 4 is installed. (If the driver is not installed, install the driver.)

❏ Check whether the device is able to operate. If the device still fails to operate, the cause may be a faulty connection or a problem with an individual unit or the connector itself. Follow the procedures below.

1. Replace the various devices one at a time and operate the system to determine the source of the fault.
   - Perform an operational check for the devices connected to the IM-800 by using the device diagnostics utility. (Refer to Chapter 5.)

2. For problems with the front USB port, confirm whether replacing the USB cable solves the problem.

3. Replace the cable (Reference No. 119) for the DM-M820.

4. For problems with the keyboard, replace the DM-M820.

DM-M820 5. For problems with the keyboard, confirm whether replacing the MSR assembly solves the problem.

6. For problems with the COM3 port, confirm whether replacing the COM cable solves the problem.

7. For problems with the COM3 or COM4 port, confirm whether replacing the COM port circuit board solves the problem.

8. For problems with the COM3 or COM4 port, confirm whether replacing the riser circuit board solves the problem.

9. Confirm whether replacing the main circuit board solves the problem.

Faults that are Difficult to Diagnose

IM-800 **System Halts on an Intermittent Basis**

❏ Follow the procedures below.

1. Visually confirm that the CPU cooling fan is functioning properly at normal speed. If it stops, confirm whether replacing the CPU fan solves the problem.

2. Visually confirm that the system fan is functioning properly at normal speed. If it stops, confirm whether replacing the system fan solves the problem.

3. Visually confirm that the power supply fan is functioning properly at normal speed. If it stops, confirm whether replacing the power supply unit solves the problem.

4. Check whether the CPU and DIMM(s) are properly installed.

5. Check the connectors for the HDD, CD-ROM, and FDD.

6. Check the other internal connectors for the IM-800.

7. Confirm whether replacing the main circuit board solves the problem.

`IM-800` **Possible Short in System**

❏ Follow the procedures below.

✎ *Note:*

In cases where the power supply short circuit protection shuts the power supply down, power will not come back on if the power is turned on immediately after being turned off. It is necessary to wait for a period of at least fifteen seconds before turning the power back on.

Step	Corrective Procedure
1	Remove all the devices listed below. • All peripheral devices connected to IM-800 interface board. • PCI card inserted in PCI slot.
2	Turn on the IM-800 and confirm power is being supplied. If it is, reinstall the removed devices one at a time, while confirming power supply status.
3	If the power described in step 2 is not being supplied, remove the following devices (while step 1 devices are still detached). • HDD • CD-ROM • FDD
4	Turn on the IM-800 and confirm power is being supplied. If it is, reinstall the removed devices one at a time while confirming power supply status.
5	If no power is supplied in step 4, replace all circuit boards and cable assemblies one by one with items that are known to operate normally from the state when all devices are removed in step 3, and check whether power is supplied.

Power Supply Faults

`DM-M820` **Power Supply Fails**

❏ Follow the procedures below.

1. Visually check that the power supply fan is functioning at normal speed.

2. Check cable connectors of the power supply, and the internal connectors of the IM-800.

3. Proceed to the section, "Procedures for Testing the Power Supply," on page 8-23, and test the power supply.

4. Confirm that the power consumption for the PCI slots, COM ports, keyboard/mouse port, and USB port conform to the specifications in the table below.

Power supply	Application	Capacity
+ 5 VDC	PCI slot, COM ports, keyboard/mouse, USB	2.0 A
+ 3.3 VDC	PCI slot	1.0 A
+ 12 VDC	PCI slot, COM ports	1.0 A
– 12 VDC	PCI slot	0.02 A
+24 VDC	TM printer	2 A

The individual ports possess the capacity limits in the table below.

Port	Power supply	Supply capacity	Stipulations
COM port	+ 5 VDC	500 mA each (peak 1A/100 ms)	Total current and + 5 VDC and + 12 VDC must not exceed the value shown at left.
	+ 12 VDC	500 mA each (peak 1A/100 ms)	
USB port	+ 5 VDC	500 mA each (peak 1A/100ms)	—
Keyboard and mouse	+ 5 VDC	500 mA each (peak 1A/100ms)	—

5. Test using the procedures described in the section, "Possible Short in System," on page 8-17.

6. Test using the procedures described in the section, "System Halts on Intermittent Basis," on page 8-16.

Unable to Switch Off Power Supply

❏ Follow the procedures below.

1. Confirm whether the power supply switches off after the power switch is pressed for a period of 4 or more seconds.

2. Confirm whether replacing the switch cable assembly solves the problem.

3. Proceed to section, "Procedures for Testing the Power Supply," on page 8-23, and test the power supply.

4. Confirm whether replacing the main circuit board solves the problem.

MSR Faults

DM-M820

Unable to Read Cards

❏ Follow the procedures below.

1. Check whether an incompatible card type (track type) is used.

2. Check the reading face of the card.

✎ *Note:*
Confirm whether the problem is resolved by removing the external connectors. The MSR and keyboard can not be used at the same time.

3. Confirm whether moving the display away from such noise sources as CRT displays and power supplies solves the problem.

4. Confirm the cable (Reference No. 119) connection at the divided side.

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5. Confirm that the correct settings have been entered in the MSR setup utility. (Refer to Chapter 4.)

6. Check the cable (Reference No. 119) connection at the side that is connected to the DM-M820.

7. Confirm whether replacing the MSR assembly solves the problem.

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8. Confirm whether replacing the main circuit board solves the problem.

POST Messages

The Power On Self-Test (POST) checks the system configuration and hardware when power is turned on. If it detects any errors, it issues error messages and emits audible beeps. The following section explains the error messages.

POST Messages

During the POST, the BIOS either sounds a beep code or displays a message when it detects a correctable error. The following is a list of POST messages. An error message may be followed by a prompt to press F1 to continue or press DEL to enter setup.

POST messages

Message	Description
BEEP	There are two kinds of beep in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps. The other code indicates that memory error has occurred. This beep code consists of a single long beep repeatedly.
BIOS ROM CHECKSUM ERROR — SYSTEM HALTED.	This message is displayed when the checksums of the BIOS ROM (F0000h to FFFFFh) do not match. Update the BIOS. If the same error still occurs after updating the BIOS, there may be a malfunction of the system ROM or main board. Try replacing these parts in turn to see if this solves the problem.
CMOS BATTERY HAS FAILED	This message is displayed when a problem occurs with the CMOS backup battery. Replace the backup battery. If the error message is still displayed after replacing the battery, there may be a malfunction of the CMOS peripheral circuitry (including the chipset). Try replacing the main board to see if this solves the problem.
CMOS CHECKSUM ERROR	This message is displayed when the CMOS checksum and values do not match, such as during a CMOS error when rewriting the BIOS or after long-term storage. Execute Load Optimized Defaults in the BIOS setup utility to set the default settings and make any necessary changes to the settings to see if this solves the problem.
DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER	This message is displayed when a start-up drive cannot be found after attempting a start-up in the order of First Boot Device, Second Boot Device, Third Boot Device, and Boot Other Device. Try inserting a floppy disk, CD-ROM, or other removable disk into the corresponding drive, or try reconnecting a start-up device and then restart the system. If, after implementing these solutions, the system still does not start up, there may be a malfunction of the main board, interface cable, or the drive itself. Try replacing these parts in turn to see if this solves the problem.
DISKETTE DRIVES OR TYPES MISMATCH ERROR — RUN SETUP	This message is displayed when the BIOS drive settings differ from the actual installed devices. Check to see if there is an error in the settings of the BIOS setup utility or an error in the device connected. If no problems were found, try replacing the main board or the drive in question to see if this solves the problem.
DISPLAY SWITCH IS SET INCORRECTLY	DISPLAY TYPE HAS CHANGED SINCE LAST BOOT These messages are not displayed on standard models. If these messages are displayed, the system BIOS may be damaged or a function may be extended by an application or other program. Rewrite the BIOS or check to see if there is an extension from an application or other program.

POST messages (Continued)

Message	Description
ERROR INITIALIZING HARD DISK CONTROLLER	This message is displayed when initialization of the hard disk drive controller fails. Check to see if there is an error in the hard disk drive (IDE) settings via the BIOS setup utility or if there is a malfunction in the hard disk or the connection. If no problem was found, replace the main board.
FLOPPY DISK CONTROLLER ERROR OR NO CONTROLLER PRESENT	This message is displayed when initialization of the floppy disk drive controller fails. Check to see if there is an error in the floppy disk drive settings of the BIOS setup utility or if there is a malfunction of the floppy disk drive or the connection. If no problems were found, try replacing the main board to see if this solves the problem.
FLOPPY DISK(S) FAIL (40)	This message is displayed when the floppy disk drive type does not match with the settings in the BIOS setup utility. Check to see if there is an error in the settings of the BIOS setup utility. Note that this error message will never be displayed if the floppy disk drive is being used with the recommended settings.
FLOPPY DISK(S) FAIL (80)	This message is displayed when initialization of the floppy disk drive fails. Check to see if there is an error in the floppy disk drive settings of the BIOS setup utility or if there is a malfunction of the floppy disk drive or the connection. If no problems were found, try replacing the main board to see if this solves the problem.
HARD DISK(S) FAIL (08)	This message is displayed when a sector verify error occurs while accessing the hard disk. If the same error still occurs or this error occurs frequently after rebooting the system, the connection may be bad or there may be a malfunction of the hard disk or main board. Check the connection again and try replacing these parts in turn to see if this solves the problem.
HARD DISK(S) FAIL (10)	This message is displayed when a seek error occurs while accessing the hard disk head. If the same error still occurs or this error occurs frequently after rebooting the system, the connection may be bad or there may be a malfunction of the hard disk or main board. Check the connection again and try replacing these parts in turn to see if this solves the problem.
HARD DISK(S) FAIL (20)	This message is displayed when initialization of the hard disk controller fails. If the same error still occurs or this error occurs frequently after rebooting the system, the connection may be bad or there may be a malfunction of the hard disk or main board. Check the connection again and try replacing these parts in turn to see if this solves the problem.
HARD DISK(S) FAIL (40)	This message is displayed when a self-test of the hard disk controller fails. If the same error still occurs or this error occurs frequently after rebooting the system, the connection may be bad or there may be a malfunction of the hard disk or main board. Check the connection again and try replacing these parts in turn to see if this solves the problem.
HARD DISK(S) FAIL (80)	This message is displayed when resetting of the hard disk controller fails. If the same error still occurs or this error occurs frequently after rebooting the system, the connection may be bad or there may be a malfunction of the hard disk or main board. Check the connection again and try replacing these parts in turn to see if this solves the problem.
KEYBOARD ERROR OR NO KEYBOARD PRESENT	This message is displayed when initialization of the keyboard controller fails. Check to see if there is an error in the keyboard settings of the BIOS setup utility. If no problems were found, try replacing the main board to see if this solves the problem.
KEYBOARD IS LOCKED OUT — UNLOCK THE KEY.	This message is displayed when there is no response from the keyboard at the initialization. If this message is displayed, try replacing the main board to see if this solves the problem.

Message	Description
MEMORY ADDRESS ERROR AT ...	If an address error occurs during a memory test, that address is displayed. This error may be caused by a malfunction of the memory (DIMM) or the main board (including the memory controller). Try replacing these parts in turn to see if this solves the problem. If the memory has not been installed, this is indicated by an error beep at the early POST stage.
MEMORY PARITY ERROR AT ...	If a data parity error occurs during a memory test, that address is displayed. This error may be caused by a malfunction of the memory (DIMM) or the main board (including the memory controller). Try replacing these parts in turn to see if this solves the problem. If the memory has not been installed, This is indicated by an error beep at the early POST stage.
MEMORY VERIFY ERROR AT ...	If a data verify error occurs during a memory test, that address is displayed. This error may be caused by a malfunction of the memory (DIMM) or the main board (including the memory controller). Try replacing these parts in turn to see if this solves the problem. If the memory has not been installed, This is indicated by an error beep at the early POST stage.
MEMORY TEST FAIL	This error is displayed when an unexpected memory error other than above occurs during a memory test. This error may be caused by a malfunction of the memory (DIMM) or the main board (including the memory controller). Try replacing these parts in turn to see if this solves the problem. If no memory has been installed, this is indicated by an error beep in the early POST stage.
MANUFACTURING POST LOOP	This message is displayed when POST processing cannot be completed for some reason (most likely due to errors related to the keyboard). If no errors were found in the keyboard, hard disk, and floppy disk drive, try replacing the main board.
PRESS A KEY TO REBOOT	This message is displayed when an error that can be fixed by rebooting by a method other than software reset (**CTRL+ALT+DEL**) is found. Press a key to reboot the system. If this error occurs frequently, there may be a malfunction of the main board or problems in the system configuration. Try replacing the main board or check to see if there are any problems in the system configuration.
PRESS F1 TO DISABLE NMI, F2 TO REBOOT	This message is displayed when a Non-Maskable Interrupt (NMI) occurs during POST. Press F1 to clear the NMI and then continue with POST. Press F2 to reboot. If this error occurs frequently, there may be a malfunction of the main board or problems in the system configuration. Try replacing the main board or check to see if there are any problems in the system configuration.
SYSTEM HALTED, (**CTRL-ALT-DEL**) TO REBOOT ...	This message is displayed when an error that can be fixed only by rebooting using software reset (**CTRL+ALT+DEL**) is found. Reboot the BIOS by using the software reset (**CTRL+ALT+DEL**). If this error occurs frequently, there may be a malfunction of the main board or problems in the system configuration. Try replacing the main board to see if this solves the problem.

Procedures for Testing the Power Supply

⚠ *CAUTION:*

In the interests of safety be sure to conduct checks with the power supply disconnected from the main circuit board.

Setup

❏   Tester

❏   Wire × 1 (for On signal input)

❏   Use the following procedures to test the power supply.

✎ *Note:*
Protective circuits that protect against shorts, over current, and overheating are installed in the power supply. In cases where these circuits shut down the power supply, power will not come back on if the power supply is turned on immediately after being turned off. It is necessary to wait for a period of at least fifteen seconds before turning the power back on.

1.   Disconnect connectors of the power supply from each board.

2.   Using a wire, short pins 14 and 15 on the power supply's 20-pin connector.

3.   Connect the power cable.

4.   If the power supply fan isn't revolving, spin the power supply fan.

5. Measure the voltage between each terminal on the 20-pin connector and the voltage of all drive connectors. If the voltage differs from that shown on the chart below, replace the power supply.

20-pin connector

HDD End of Power Cable

FDD and CD-ROM End of Power Cable

COM Port Circuit Board End of Power Cable
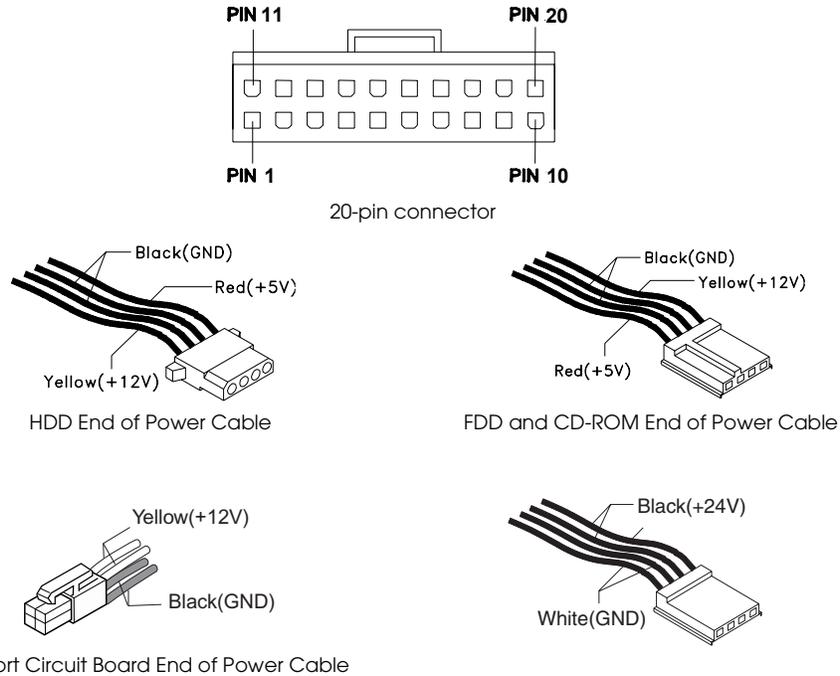
Power supply voltage check

Voltage system	Measurement terminals	Normal voltage
+3.3 V system	Pin 1 – pin 15	+ 3.14 ~ + 3.47 V
	Pin 2 – pin 15	
	Pin 11 – pin 15	
+5 V system	Pin 4 – pin 15	+ 4.75 ~ + 5.25 V*
	Pin 6 – pin 15	
	Pin 19 – pin 15	
	Pin 20 – pin 15	
+5 VSB system	Pin 9 – pin 15	+ 4.75 ~ + 5.25 V
+12 V system	Pin 10 – pin 15	+ 11.4 ~ + 12.6 V
–12 V system	Pin 12 – pin 15	– 10.8 ~ – 13.2 V
+24 V system		

* Voltage range when electric current of 1A and more is consumed.

6. Disconnect the wire shorting pins 14 and 15 on the power supply's 20-pin connector. Check that the power is off. If the voltages are not normal, replace the power supply.

Power Supply Cable's Voltage Check (*)

Measurement terminals	Signal name
1	+12 VDC
Shell	Frame GND

top of the connector

Shell

Power supply connector
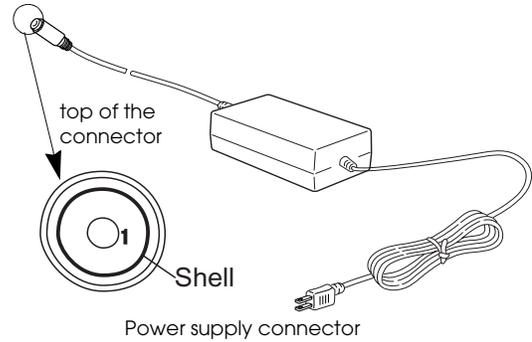
This connector is used to connect the display (DM-M820) to an external power source. The above illustration indicates the connector connected to the display directly.

Chapter 9

Disassembly and Assembly

This portion of the chapter provides instructions for disassembling the DM-M820. To reassemble the DM-M820, reverse the steps in this chapter, except where special instructions are given.

Directions for each procedure in this chapter, such as up and down, right and left, or top and bottom, are as seen from the front of this product.

Required Tools

The tools required for servicing and maintaining the MR series are listed in the table below.

Table 9-1 Required tools

Tools	Size/Spec.	Application	Source
Tester	—	For inspecting the power supply (power supply unit)	Use commercially available product.
Crosshead screwdrivers	No. 1, No. 2	Disassembly and assembly	Use commercially available product.
Flathead screwdriver	—	Disassembly and assembly	Use commercially available product.
Wristbands (static electricity protection)	—	Disassembly and assembly	Use commercially available product.
Hexagonal screwdriver or radial pliers	5 mm, 6 mm (hexagonal screwdriver)	Disassembly and assembly	Use commercially available product.
Touch panel position adjust jig	—	Disassembly and assembly	Use the product supplied by EPSON.

When assembling and disassembling the various MR modules, it may be necessary to use tools other than those listed in table above.

You can use cotton gloves instead of the wristbands.

Disassembly and Assembly of the DM-M820

There are three models of the DM-M820. The DM-M820-013/023 is the model without a touch panel and without an MSR. The DM-M820-014/024 is the model with a touch panel and with an MSR. The DM-M820-015/025 is the model with a touch panel and without an MSR.

The method of dissassembly of the inside components depends on when the unit was manufactured.

Determining which procedure to use

Check the label on the manufacture's plate at the base of the DM-M820.

❏ SERIAL NO. *xxxx00xxxx*   :Removing the component (See page 9-10)

  • The attaching method of the touch panel of DM-M820 models shown in the following table is different from other models. (See page 9-22)

Model	Serial No
DM-M820-014	Later than EFZV002077
DM-M820-024	Later than E6UV000379
DM-M820-015	Later than EWSV001364
DM-M820-025	Later than E6VV000057

❏ Later the SERIAL NO. *xxxx01xxxx*:
                                   :Removing the component (See page 9-27)

Precautions Before Assembly and Disassembly

⚠ *WARNING:*

Wait several minutes after turning off the power and disconnecting the AC before starting disassembly work.

This precaution is necessary because as long as this product's power supply is on, portions of the internal circuits are charged with extremely high voltages.

⚠ *CAUTION:*

Most of the components used in the manufacture of the circuit boards, LCD, and touch panel are static-sensitive devices. To prevent damage from static electricity, always wear a grounded wrist strap when handling any circuit boards or cables inside the DM-M820.

While the power is on, some parts inside this product reach high temperatures. Since there is a danger of burns or other injuries, be sure to wait several minutes after turning the power off before starting disassembly work.

Be careful not to injure yourself with the sharp edges of the metal parts of the DM-M820.

The LCD panel surface is easy to scratch, so use sufficient caution when handling it.

The cold-cathode tube of the backlight is made of glass. Impact or abnormal stress can damage it, so use sufficient caution when handling it.

If dirt or dust collects on the fluorescent tube during work, it may cause the brightness to be irregular. Dirt or dust on the LCD panel or touch panel can reduce the display quality. So, use sufficient caution when handling the DM-M820.

To avoid damage during reassembly, do not apply pressure to any circuit boards when you fasten them in place.

When reattaching the rear plate to the front panel unit, fasten the 10 screws (S05) for the connectors first. Then secure the 4 hex screws (S07). Otherwise, the connectors may be broken.

✎ *Note:*

All the outside screws are covered by caps. Carefully remove these caps when you need to remove the screws. Be sure to save the caps and replace them after reassembly.

When you attach the rear panel, be careful not to catch the cables connected to the switch circuit board between the unit and case.

Conceptual Work Diagram for DM-M820

```
                    ┌─────────┐
                    │  START  │
                    └────┬────┘
         ┌───────────────┴──────────────────────┐
  ┌──────┴──────────┐                   ┌────────┴────────┐
  │ Rear cover (103)│                   │  Top cover of   │
  └──┬────────────┬─┘                   │  Base assembly  │
     │            │                     └────────┬────────┘
┌────┴──────────┐ │  (*)┌────────────────┐       │
│Front cover(102)│ └────┤ MSR assembly(106)│      │
└────┬──────────┘       └─────────┬──────┘   ┌────┴──────┐
     │              (*)┌──────────┴────────┐ │           │
┌────┴──────────┐     │LED circuit board   │ │Base       │ Hinge
│Rear case attached│  │(1045)              │ │assembly   │ Assemblies
│with Base assembly│  └────────────────────┘ │(117)      │ (118)
└────┬──────────┘
┌────┴──────────┐
│Rear case (108)│
└────┬──────────┘
     ├──────────────────────┐
┌────┴──────────┐   ┌────────┴────────┐
│Rear panel(1042)│  │ Front case (109)│
└────┬──────────┘   └─────────────────┘
```

(*) MSR assembly (106)
(*) LED circuit board (1045)   Base assembly (117)   Hinge Assemblies (118)

Rear case attached with Base assembly

Rear case (108)

Rear panel (1042)   Front case (109)

LCD circuit board (111)   (*) Touch panel circuit board (116)   Inverter circuit board (112)   DC Jack board (122)

Front case (109)

(*) Touch panel assembly (1056) or Touch panel unit (115)

LCD (110)

Switch circuit board (113)

✎ *Note:*

The above diagram is based on the DM-M820-014/024 model.

(*1) It is necessary for DM-M820-013/023 to do the procedures marked by an asterisk (*) in the diagram above.

(*2) It is necessary for DM-M820-015/025 to do without the procedures marked by an asterisk (*) in the diagram above. So to disassemble and assemble the this model, read the explanation without an MSR in this chapter.

How to use this diagram:

1. Search for the target part enclosed in a solid line (not parts enclosed in a dotted line).

2. Trace the line from the target part to **START**.

3. You must remove all the parts or units shown on the route that you have traced.

Note that the steps of disconnecting cables and removing plates on the units are not described in this key map.

Disassembling the Base Assembly

Base Assembly(117)

Follow the steps below to disassemble the unit.

1. Disconnect the **cables** from the IM-800 connectors and the DC12V outlet.

2. Remove 1 screw (1049) securing the top cover of the **base assembly**.

3. Remove the top cover of the **base assembly**.

screw (1049)

top cover of the base assembly
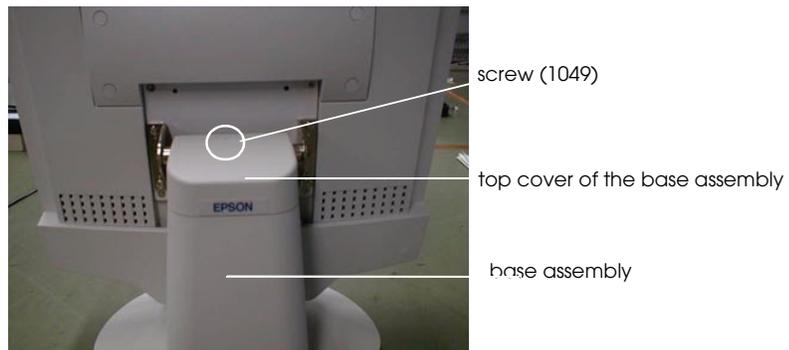
base assembly

4. Remove 8 screws securing the **bottom plate**. Remove the **bottom plate**.

screw (1047)

screw (1047)

screw (1046)

screw (1046)

bottom plate
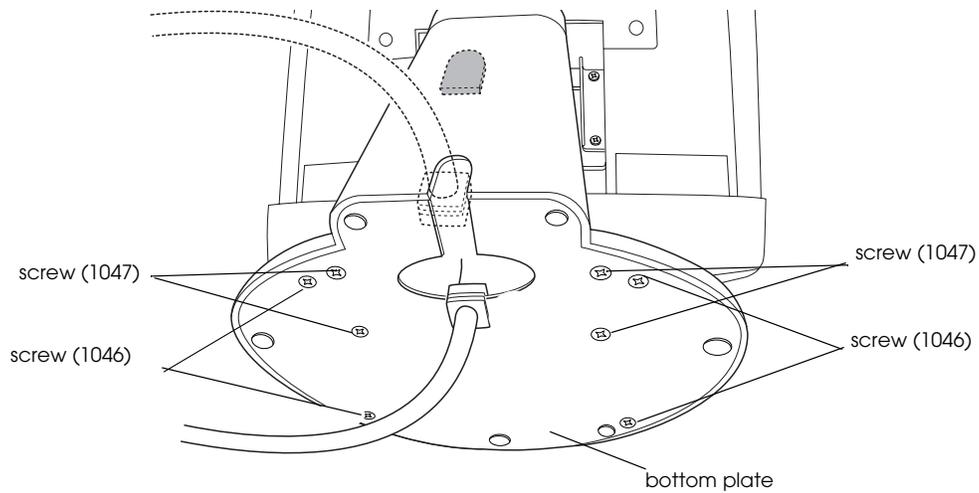
5. Remove 4 screws (1048) securing the **base assembly** to the display hinges. Then, remove the **base assembly**.
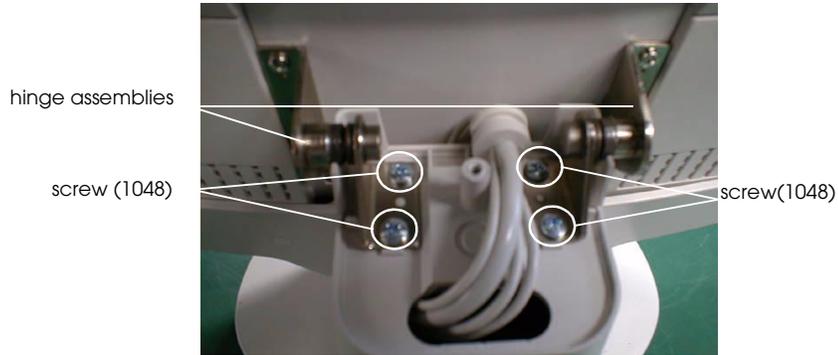
6. Pull the cables out from the base assembly as shown below. (The model with an MSR unit is used in the illustration below.)
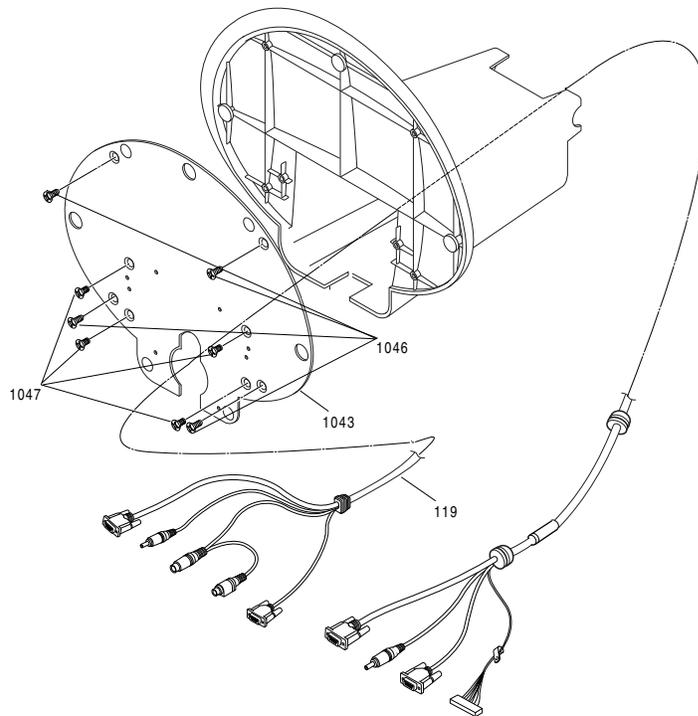
To install, reverse the removal procedure.

Hinge Assemblies

Follow the steps below for disassembly.

✎ *Note:*

The hinges on your display may not look exactly like those below.

1. Remove 4 screws (S01) securing the hinges to the **rear case**, and remove the display.
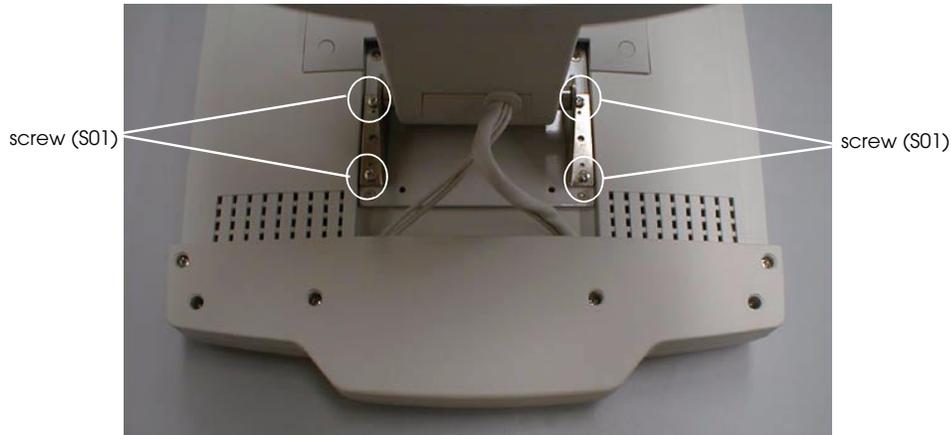
2. Remove 1 screw (1049) securing the top cover of the **base assembly**. Remove the cover. (See page 9-8)

3. Remove 4 screws (1048) securing the **base assembly** to the hinge assemblies. Remove the **hinge assemblies**. (See page 9-5.)

To install, reverse the removal procedure.

Removing the Covers

Rear Cover

The instructions below describe the all models of the DM-M820.

1. Remove 6 screw caps and screws securing the **rear cover**. Then, remove the **rear cover**.
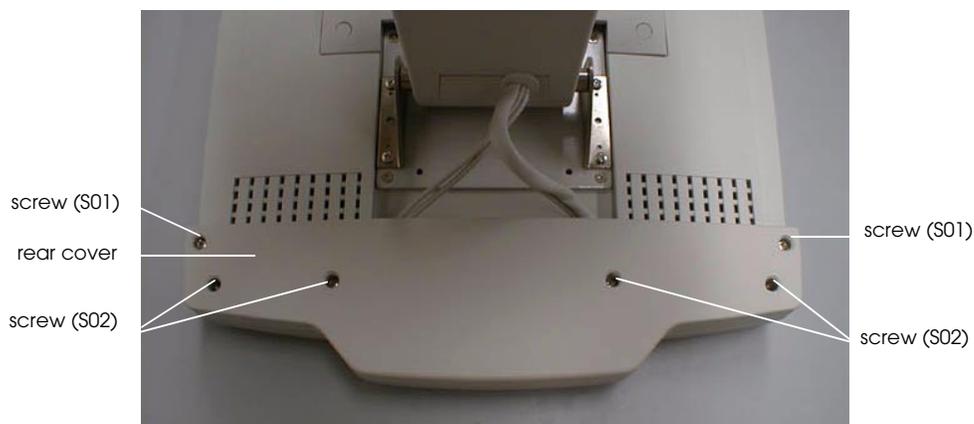
Follow the steps below to assemble the unit.

1. Confirm the cables's connection to the rear case. And when reattaching the covers, be careful not to catch the cables in the covers. (Wrap tape around the cables to hold them together for easier replacement beneath the cover.) (The model with an MSR is used in the illustration below.)

✎ *Note:*
Be careful not to catch the cables between the unit and cover.

2. Attach the rear cover.

Front Cover

1. Remove the **rear cover**. (See page 9-8.)

2. Remove 2 screw caps and screws (S09) securing the **front cover.** Then, remove the **front cover**.

screw (S09)
front cover
screw (S09)
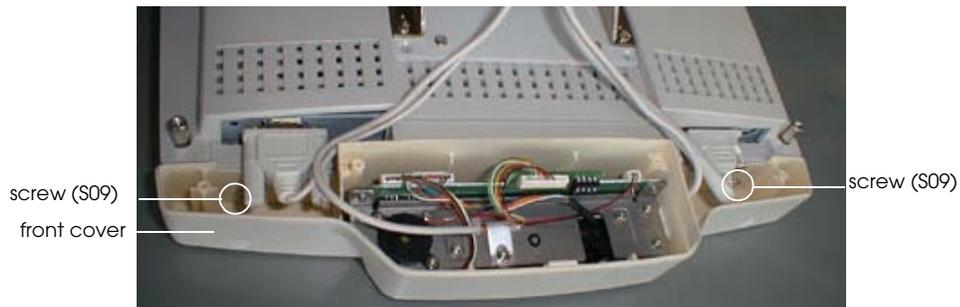
To install, reverse the removal procedure.

Removing the Components (SERIAL NO. *xxxx00xxxx*)

When removing the components for which the SERIAL NO is *xxxx01xxxx*, see page 9-27.

MSR Assembly or LED Circuit Board

1. Remove the **rear cover**. (See page 9-8.)

2. Disconnect 1 screw (S01) and remove the front cable clamp.

3. Remove 3 screws (S01) securing the MSR assembly to the front cover. And disconnect the connector of the LED cable from the MSR assembly.

LED cable

screw (S10)

cable clamp

screw (S01)

MSR

screw (S10)

Follow the steps below to assemble the unit.

1. Confirm the connection of the cables, following the figure above.

2. Install the **rear cover**. (See page 9-8.)

To replace the LED circuit board, follow the steps below..

1. Remove the **rear cover**. (See page 9-8.)

2. Remove 3 screws securing (S01) the MSR assembly to the front cover. And disconnect the connector of the LED cable from the MSR assembly. (See the illustration above.)

3. Remove 1 screw (S03) securing the LED circuit board.

screw (S03)

LED circuit board

Rear Case

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the cables.

DM-M820-013 DM-M820-014
/015

4. Remove the hinge assemblies from the rear case. (See page 9-10.)

5. Remove 2 screws (S04) and 2 hex screws (S06) securing the **rear case**. And remove the rear case. (The model with an MSR is used in the illustration below.)

✎ *Note:*
You need to attach the plate to the rear case you ordered. Because the part is not supplied with the case unit.

Removing the Front Case

1. Remove the **rear case.**(See page 9-11.)

2. Remove 2 screws (S15) securing the LCD assembly to the front case. After then remove 2 screws (S05) holding 2 ground wires (one on each side) and lift up the ground wires. (The model with a touch panel is used in the illustration below.)

screw (S05) and ground wire

screw (S15)

screw (S15)

front panel unit holding LCD assembly

front case

screw (S05) and ground wire

cable shown in top photo

screw (S05)
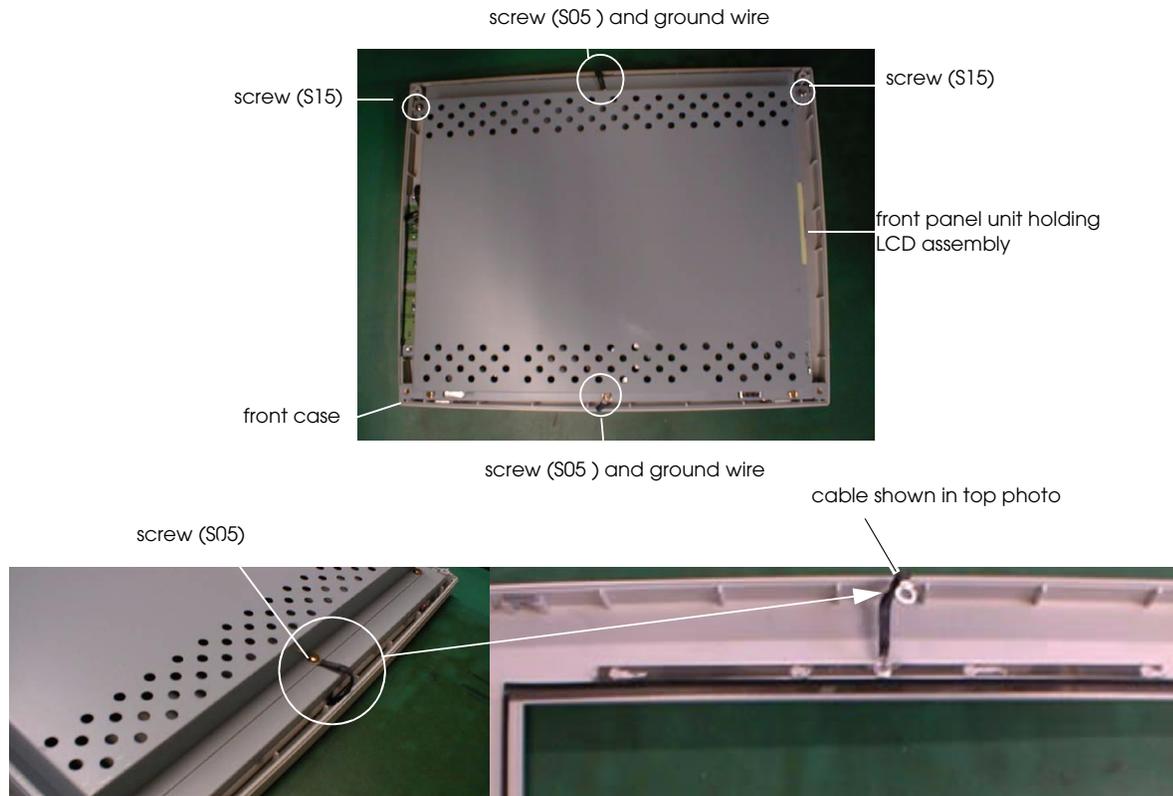
✎ *Note:*
The ground wires are not attached to the model without a touch panel.

3. Remove the front panel unit holding LCD assembly from the **front case**. (See the illustration above.)

To install, reverse the removal procedure.

⚠ *CAUTION:*

To avoid damage during reassembly, do not apply pressure to any circuit boards when you fasten them in place.

Rear panel

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove hex screws (S07).

DM-M820-014/024/015/025   DM-M820-013/023

5. Remove 8 screws (S05) securing the rear panel to the LCD assembly. Then remove 2 screws (S05) holding 2 ground wires (one on each side) and lift up the ground wires. After that remove the rear panel.
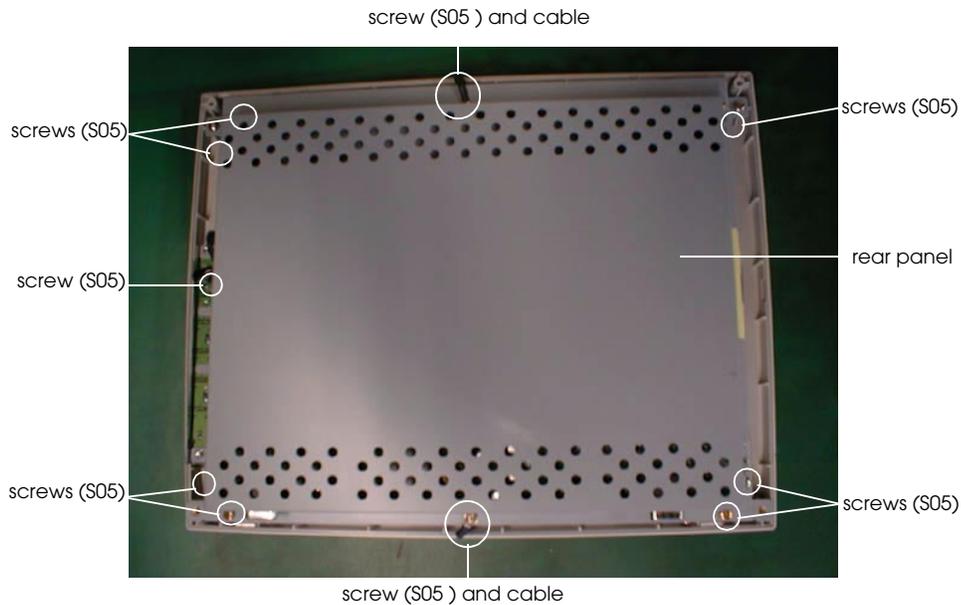
✎ *Note:*
The ground wires are not attached to the model without a touch panel.

Touch Panel Circuit Board

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove the **rear panel**. (See page 9-13.)

5. Remove 4 screws (1051), and remove the touch panel circuit board.
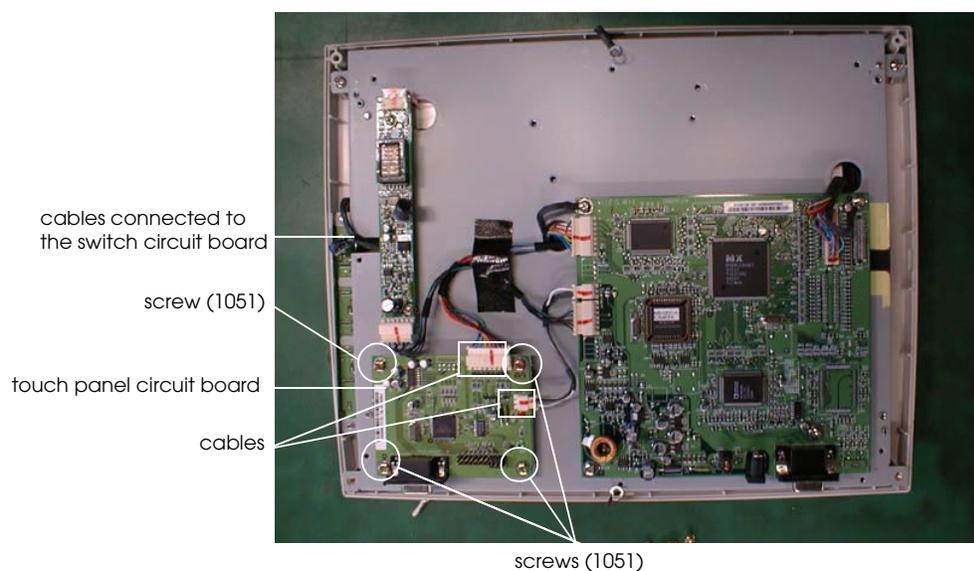
cables connected to the switch circuit board

screw (1051)

touch panel circuit board

cables

screws (1051)

To install, reverse the removal procedure.

LCD Circuit Board

Follow the steps below for disassembly for the model DM-M820-014/024 and DM-M820-015/025.

1. Remove the **rear case**. (See page 9-11.)

2. Remove 4 hex screws (S07) (two each for the two connectors). (See page 9-13.)

3. Remove 10 screws (S05) securing the rear panel to the LCD assembly. After that remove the rear panel. (See page 9-13.)

4. Disconnect the 4 cables shown below. Remove 2 screws (1050) holding 2 ground wires and lift up the ground wires, then remove 2 screws (1050) securing the plate.
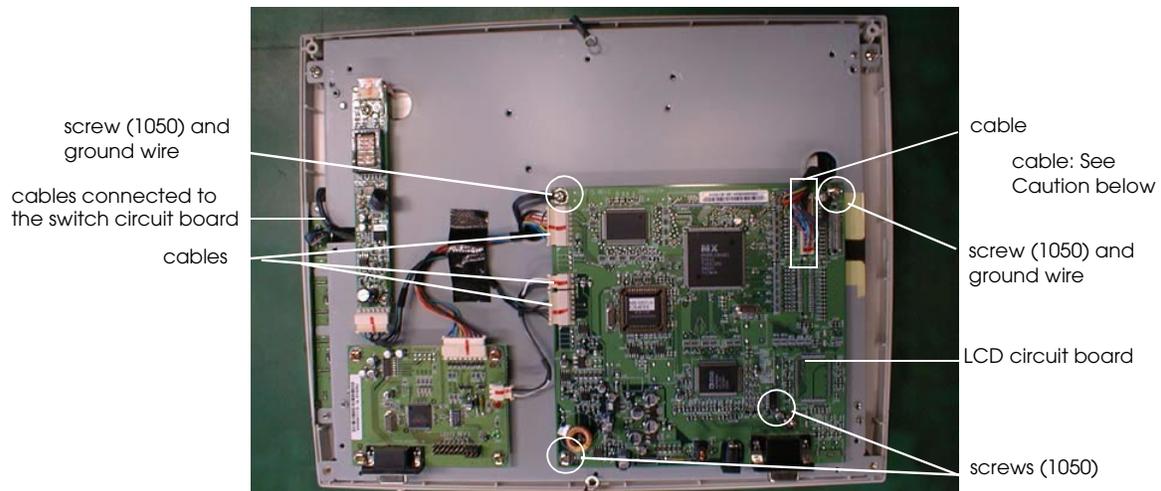
screw (1050) and ground wire

cables connected to the switch circuit board

cables

cable

cable: See Caution below

screw (1050) and ground wire

LCD circuit board

screws (1050)

⚠ CAUTION:

Remove the cable on the right side very carefully because its connection is not strong.

5. Remove the **LCD circuit board**.

To install, reverse the removal procedure.

Follow the steps below for disassembly for the model DM-M820-013/023 (without a touch panel and an MSR).

1. Remove the **rear case**. (See page 9-11.)

2. Remove 2 hex screws (S07). (See page 9-13.)

3. Remove 10 screws (S05) securing the rear panel to the LCD assembly. After that remove the rear panel. (See page 9-13.)

4. Disconnect the 3 cables from the LCD circuit board, and remove 2 screws (1050) holding 2 ground wires and lift up the ground wires. After that remove the 2 screws (1050) securing the plate.
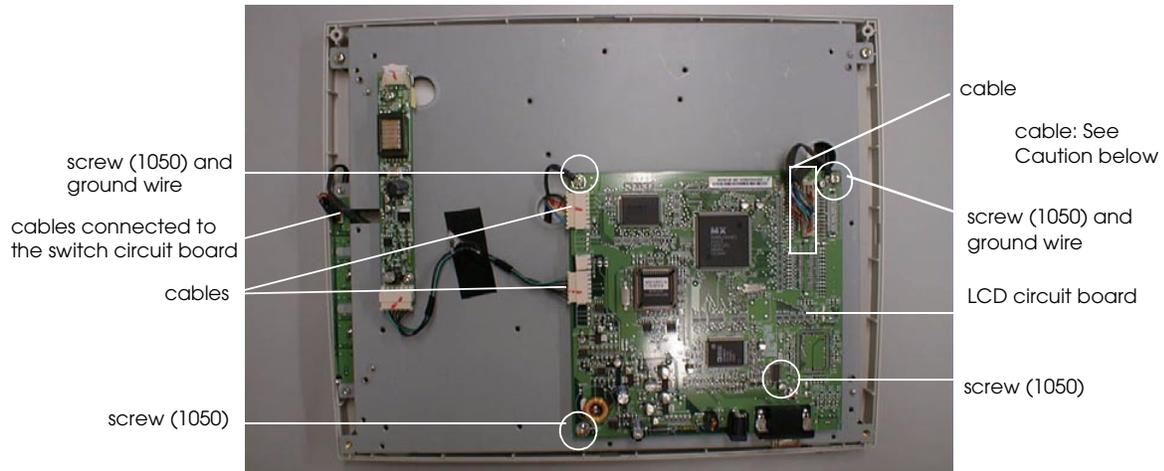
screw (1050) and ground wire

cables connected to the switch circuit board

cables

screw (1050)

cable

cable: See Caution below

screw (1050) and ground wire

LCD circuit board

screw (1050)

⚠ CAUTION:

Remove the cable on the right side very carefully because its connection is not strong.

5. Remove the **LCD circuit board**.

To install, reverse the removal procedure.

Inverter Circuit Board

Follow the steps below for disassembly for the model DM-M820-014 and DM-M820-015/025.

1. Remove the **rear case**. (See page 9-11.)

2. Remove 4 hex screws (S07) (two each for the two connectors). (See page 9-13.)

3. Remove 10 screws (S05) securing the rear panel to the LCD assembly. After that remove the rear panel. (See page 9-13.)

4. Disconnect 2 cables and remove 2 screws (1052). Remove the inverter circuit board.
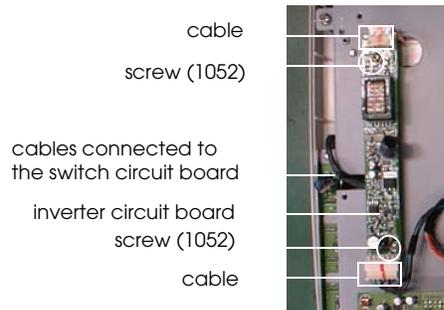
To install, reverse the removal procedure.

Follow the steps below for disassembly for the model DM-M820-013/023 (without a touch panel and an MSR).

1. Remove the **rear case**. (See page 9-11.)

2. Remove 2 hex screws (S07). (See page 9-13.)

3. Remove 10 screws (S05) securing the rear panel to the LCD assembly. (See page 9-13.)

4. Disconnect 2 cables and remove 2 screws (1052). Remove the inverter circuit board.
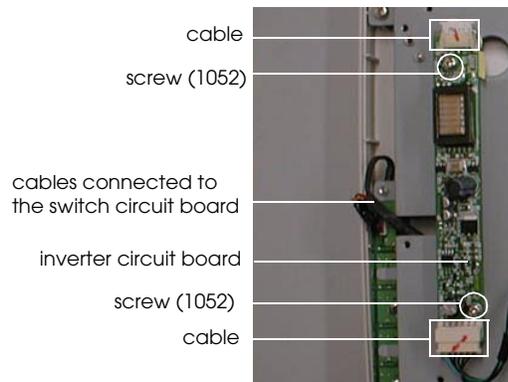
To install, reverse the removal procedure.

Removing the Touch Panel Assembly

Follow the steps below to disassemble the touch panel assembly (1056).

1. Remove the **rear case.** (See page 9-11.)

2. Remove the **front case** from the front panel unit. (See page 9-13.)

3. Remove the rear panel. (See page 9-13.)

4. Remove the LCD circuit board. (See page 9-15.)

5. Disconnect the touch panel cable from the cable for the circuit board, as shown below, by releasing the patch, and remove the touch panel cable.

cable connection
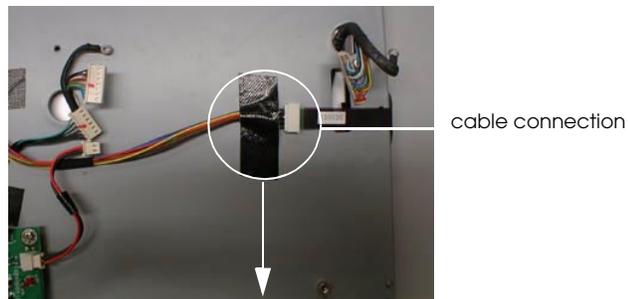
cable for the circuit board   patch   touch panel cable
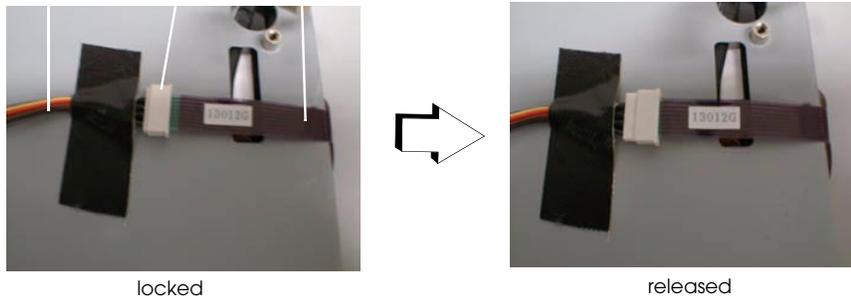
locked   released

✎ *Note:*
Be careful not to get any foreign material between the LCD and the touch panel.

6. Remove the screws (S05) securing the touch panel assembly to the front panel unit. Then remove the **touch panel assembly** by lifting up it.
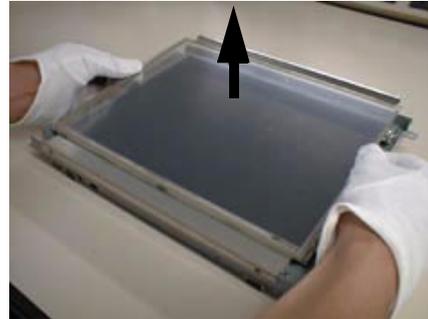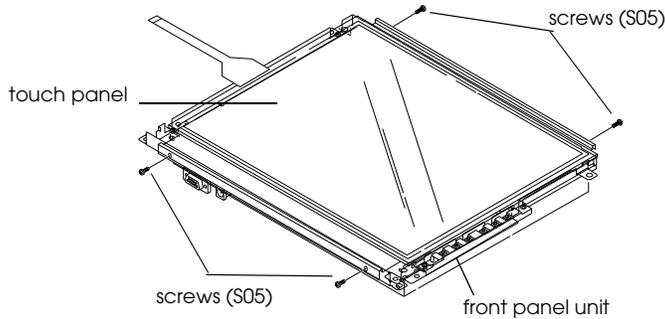
✎ *Note:*

Lift up the touch panel assembly carefully. Otherwise, the double-coated electric-conductive tape attached to each plate and the LCD unit will come off incorrectly.

When reattaching the touch panel assembly, align the position of the holes in the touch panel assembly and the front panel unit. Otherwise, the plates may be attached to the front panel unit incorrectly with the double-coated electric-conductive tape. Then you cannot reuse the same tape after you realign the screw holes.

To install, reverse the removal procedure.

If you reattach the touch panel assembly (1056), follow the steps below.

1. Place the touch panel assembly on the front panel unit to align the position of the each screw holes.

2. Then attach the touch panel assembly to the front panel unit with the 4 screws (S05).
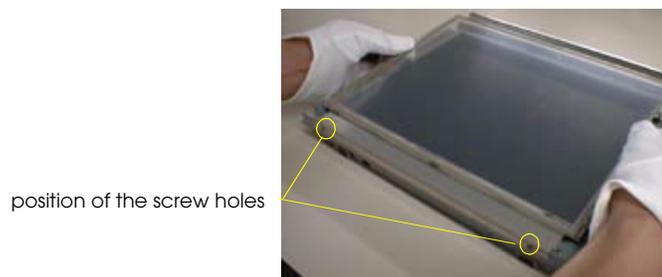
When you replace the touch panel assembly itself, follow the steps below for reassembly:

1. Remove the exfoliation paper attached with double-coated electric-conductive tape on the upper plate and lower plates. The illustration below shows the position of the exfoliation paper.
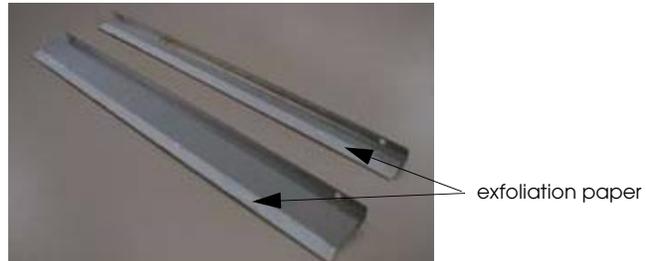
exfoliation paper

2. Place the upper plate and the lower plate on the front panel unit, moving them to the center to align the position of the screw holes.

front panel unit

lower plate (121)

upper plate (120)
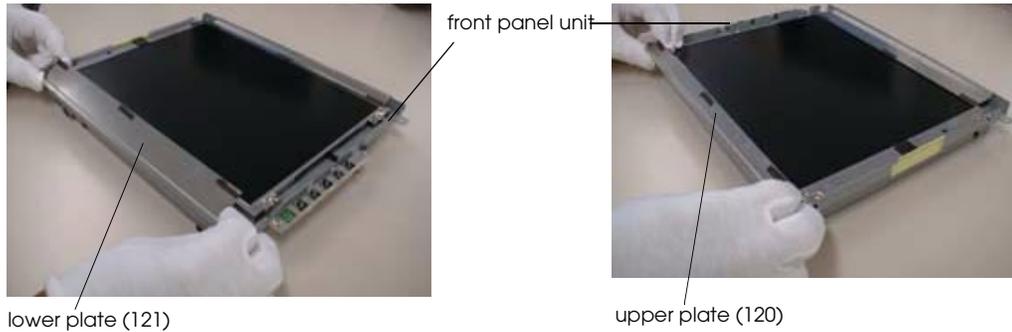
3. Attach the plates to the front panel unit with the 4 screws (S05).)

screw (S05)

screw (S05)
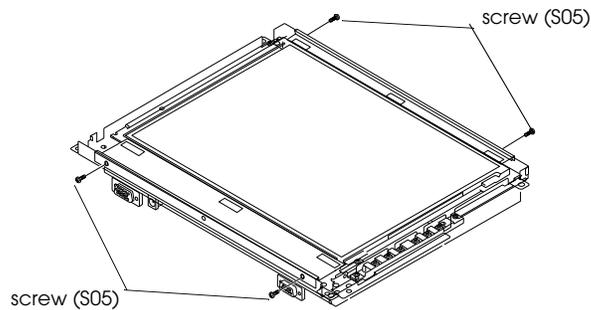
4. Remove the 6 pieces of exfoliation paper attached to the plates.

upper plate (120)

exfoliation paper

lower plate (121)
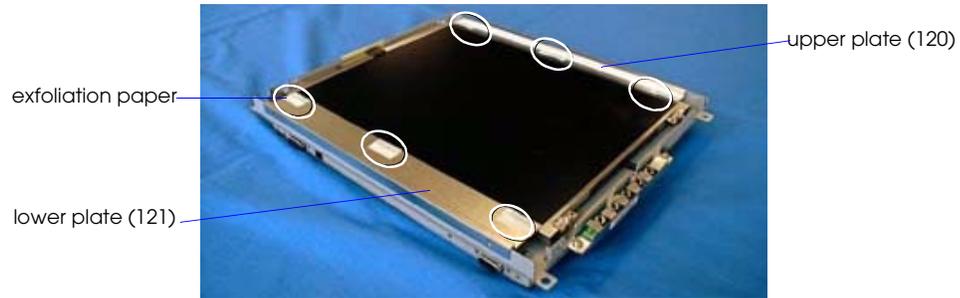
5. Use the touch panel position adjust jig to adjust the position of the touch panel.

touch panel
position adjust jig
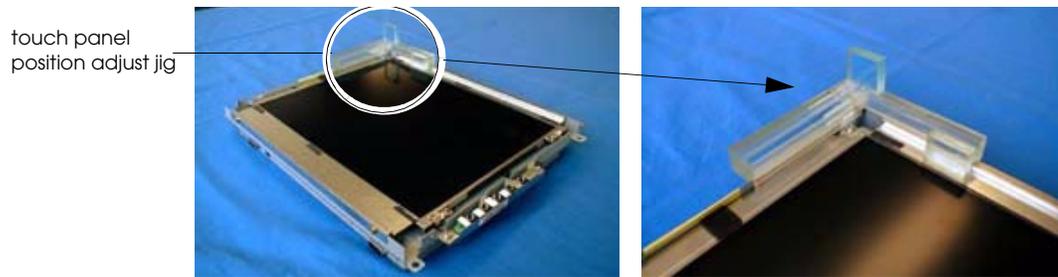
6. Attach the touch panel, being careful to align the corners.

position of the characters
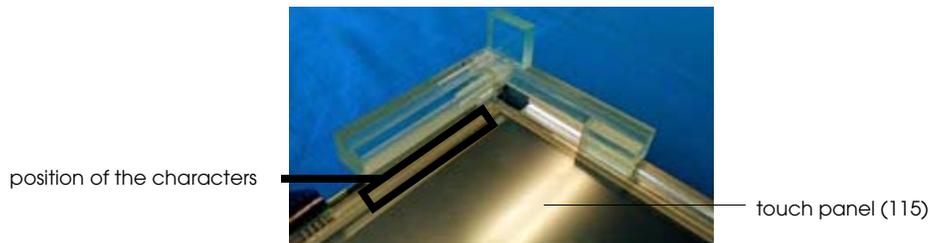
touch panel (115)

✎ *Note:*
Be sure to attach the touch panel with the character side up.

7. Press the touch panel down so that the double-coated tape is bonded to the touch panel.

⚠ *CAUTION:*

To remove the **touch panel position adjust jig,** *lift it up straight. Otherwise it may be damaged.*
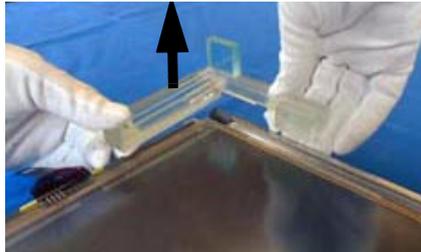
Follow the steps below to attach the touch panel unit (115).

Removing the Touch Panel Unit

The first step is same to some steps (from 1 to 5) for removing the touch panel assembly(it is indicated in the explainment above).

✎ *Note:*

In the product made at first, a spacer is attched on LCD. When replacing the touch panel unit, remove the spacer before attaching the touch panel unit.

6. Unit the position of the hole of the touch panel unit and front panel unit.

7. Fix the touch panel unit with 2 screws (S05) at the 2 holes (E,F). After that, attach it with 2 screws (S05) at the 2 holes (G,H). (Refer to the below figure.)

✎ *Note:*

The front panel unit of the OLD model has only two screw holes. Therefore, when replacing it with new one, attach the new touch panel using two-sided tape instead of screws at two places (G ,H)

When the front panel unit is a new frame, screw four places (E,F,G,H)

E   F

G   H
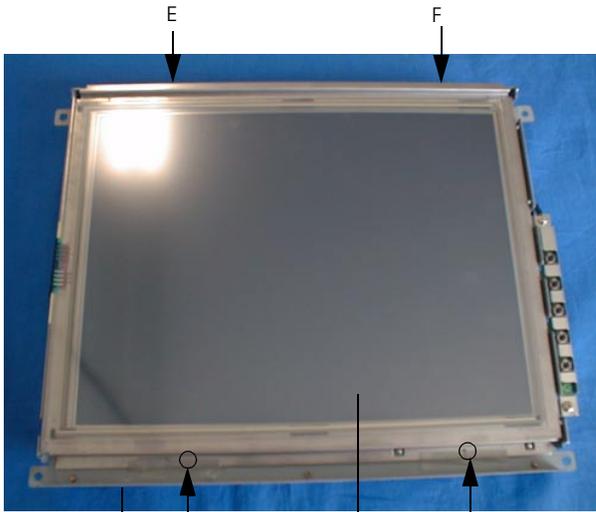
front panel unit   touch panel unit

Two holes for installing the screw exist on the back frame (new type).

back frame
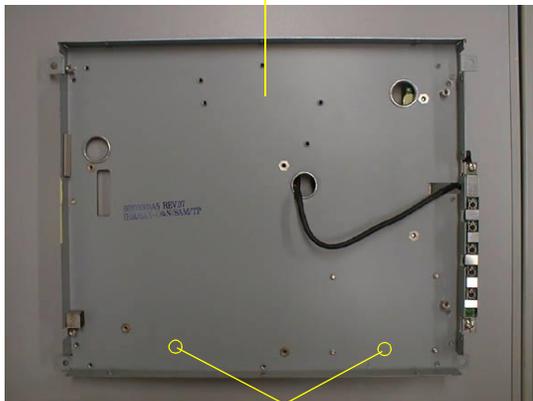
hole for installing the screw

When the front panel unit is an old frame, two places (G,H) cannot be screwed.
Therefore, attach the touch panel unit to the rear panel using the two-sided tape at two places.
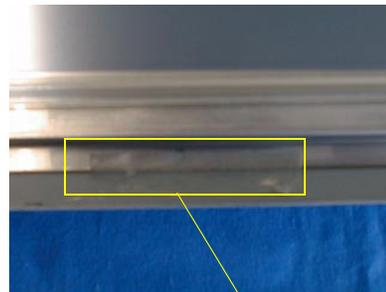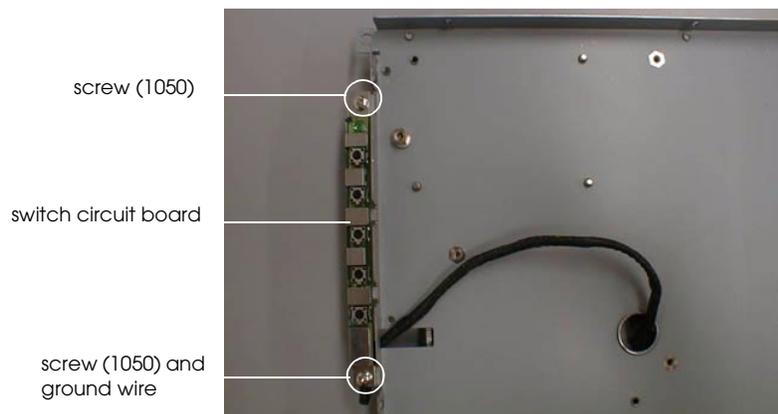

tape
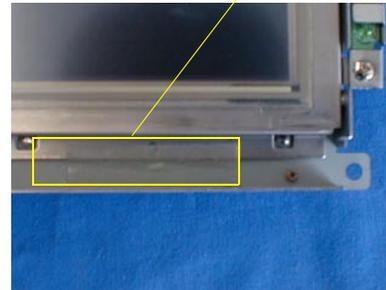
LCD

Follow the steps below for disassembly for the model DM-M820-014/024 and DM-M820-015/025.

✎ *Note:*
If you remove the LCD for the model DM-M820-013/023, follow the steps below except step 5.

1. Remove the **rear case**. (See page 9-11.)

2. Remove the **front case**. (See page 9-13.)

3. Remove the rear panel. (See page 9-13.)

4. Remove the **LCD Circuit Board**. (See page 9-15.)

5. Remove the **touch panel unit** or **touch panel assembly**. (See page 9-18 or page 9-22.)

6. Disconnect 1 cable from the **inverter circuit board**.

cable

inverter circuit board
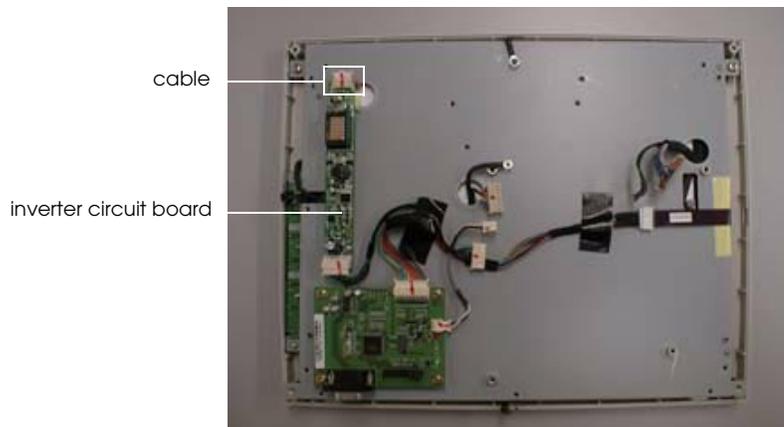
7. Remove 4 screws (S16) securing the **LCD**.

screw (S16)

screw (S16)

LCD

screw (S16)

screw (S16)

8.   Remove the **LCD** while pulling the cable from the hole.

To install, reverse the removal procedure.

Switch Circuit Board

Follow the steps below for disassembly for the model DM-M820-014/024 and DM-M820-015/025.

✎ *Note:*

If you remove the LCD for the model DM-M820-013/023, follow the steps below except step 5.

1.   Remove the **rear case.** (See page 9-11.)

2.   Remove the **front case**. (See page 9-13.)

3.   Remove the rear panel. (See page 9-13.)

4.   Remove the **LCD Circuit Board**. (See page 9-15.)

5.   Remove the **touch panel**. (See page 9-18.)

6.   Remove the **LCD**. (See page 9-24.)

7. Remove 1 screw (1050) holding 1 ground wire and lift up the ground wire. After that remove 1 screw (1050) securing the switch circuit board.

screw (1050)

switch circuit board

screw (1050) and
ground wire

8. Remove the **switch circuit board** while pulling the cable from the hole.

hole

To install, reverse the removal procedure.

Removing the Components (Later the SERIAL NO. *xxxx01xxxx*)

If removing components with SERIAL NO *xxxx00xxxx*, see page 9-10.

MSR Assembly or LED Circuit Board

1. Remove the **rear cover**. (See page 9-8.)

2. Disconnect 1 screw (S01) and remove the front cable clamp.

3. Remove 3 screws (S01) securing the MSR assembly to the front cover. And disconnect the connector of the LED cable from the MSR assembly.

Follow the steps below to assemble the unit.

1. Confirm the connection of the cables, following the figure above.

2. Install the **rear cover**. (See page 9-8.)

To replace the LED circuit board, follow the steps below..

1. Remove the **rear cover**. (See page 9-8.)

2. Remove 3 screws securing (S01) the MSR assembly to the front cover. And disconnect the connector of the LED cable from the MSR assembly. (See the illustration above.)

3. Remove 1 screw (S03) securing the LED circuit board.

Rear Case

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the cables.

4. Remove the hinge assemblies from the rear case. (See page 9-10.)

5. Remove 2 screws (S04) and 2 hex screws (S06) securing the **rear case**. And remove the rear case. (The model with an MSR is used in the illustration below.)

✎ *Note:*
You need to attach the plate to the rear case you ordered. Because the part is not supplied with the case unit.

Removing the Front Case

1. Remove the **rear case.**(See page 9-11.)

2. Remove 2 screws (S15) securing the LCD assembly to the front case.

screw (S15)

screw (S15)

front panel unit holding
LCD assembly
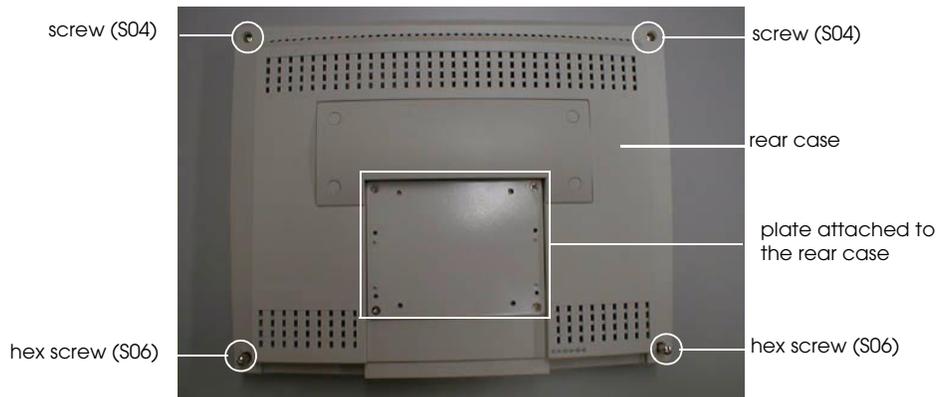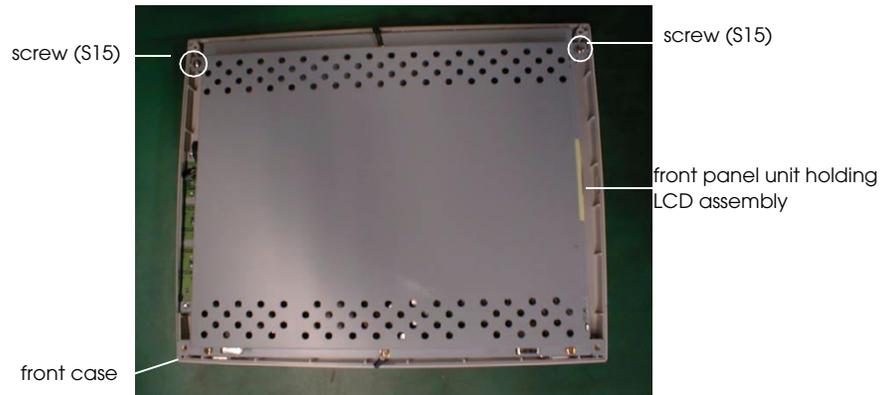
front case

3. Remove the **front case**.

To install, reverse the removal procedure.

⚠ CAUTION:

To avoid damage during reassembly, do not apply pressure to any circuit boards when you fasten them in place.

Rear panel

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove 4 hex screws (S07).

DM-M820-014/024/015/025

5. Remove 8 screws (S05) securing the rear panel to the LCD assembly. After that remove the rear panel.
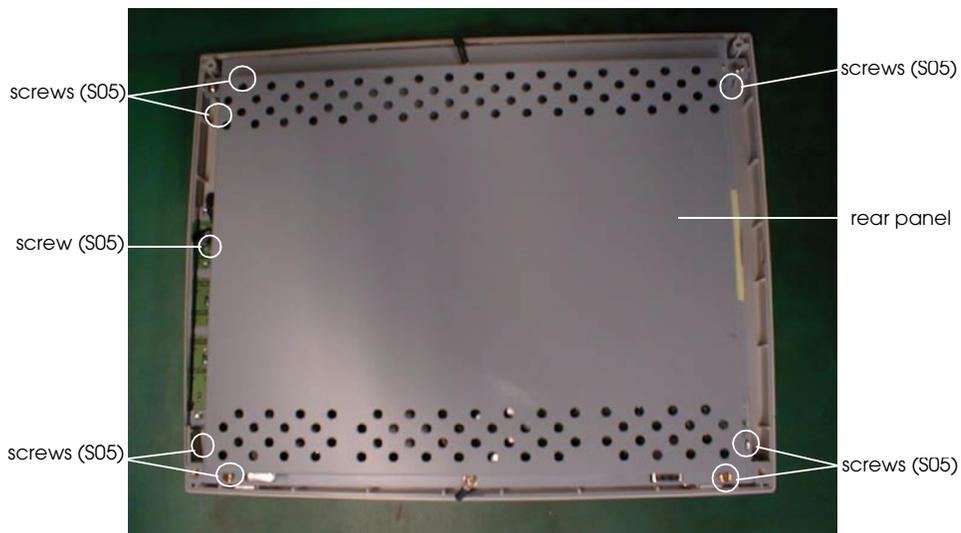
✎ *Note:*
The ground wires are not attached to the model without a touch panel.

Touch Panel Circuit Board

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove the **rear panel**. (See page 9-13.)

5. Remove 4 hex screws (S07) and remove the cable.

touch panel circuit board(116)

hex screw(S07)

cable

6. Disconnect the 2 cables shown below. Remove 2 screws (1051), and remove the touch panel circuit board.
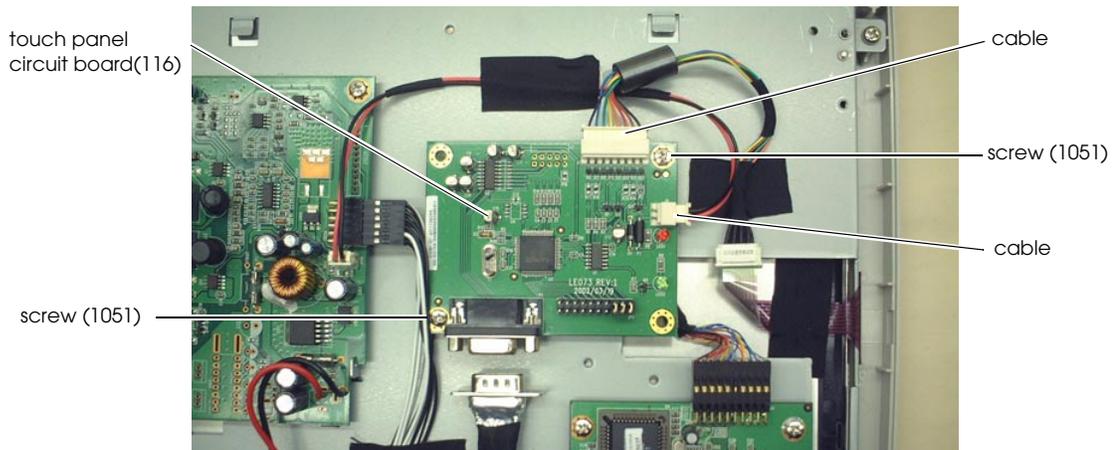
touch panel circuit board(116)

cable

screw (1051)

cable

screw (1051)

To install, reverse the removal procedure.

LCD Circuit Board

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove the **rear panel**. (See page 9-13.)

5. Disconnect the 3 cables shown below. Remove 3 screws (1050).
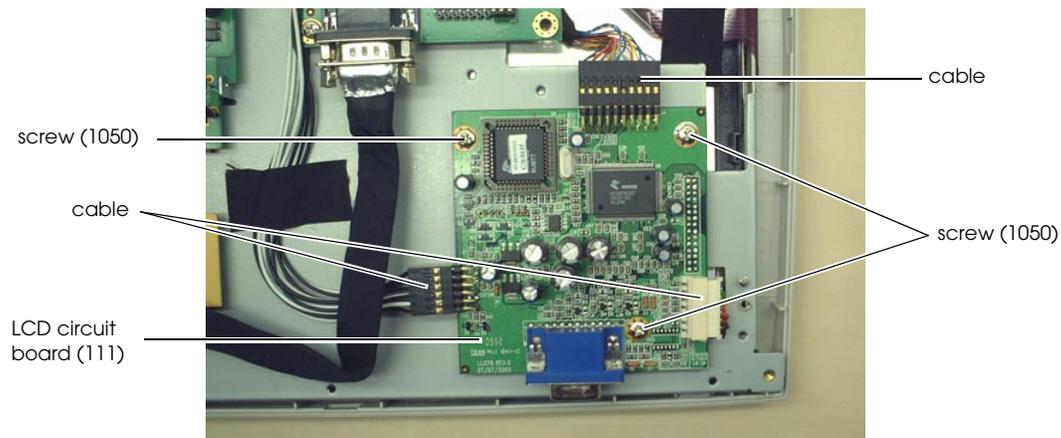
⚠ *CAUTION:*

Remove the cable on the right side very carefully because its connection is not strong.

6. Remove the **LCD circuit board**.

To install, reverse the removal procedure.

Inverter Circuit Board

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove the **rear panel**. (See page 9-13.)

5. Disconnect the 5 cables shown below. Remove 3 screws (1052).
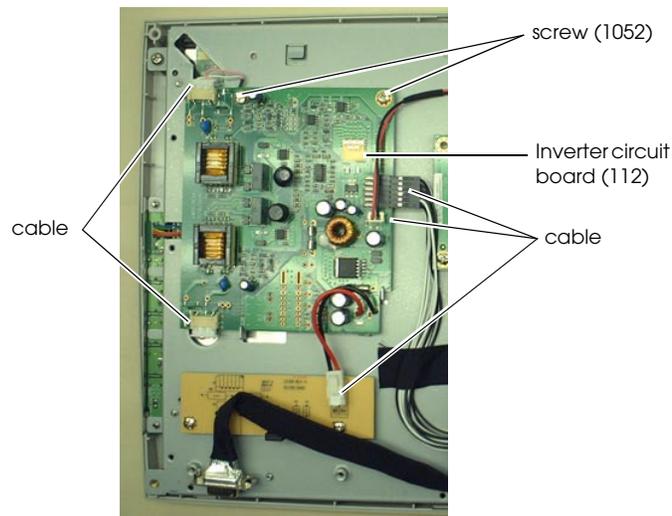
6. Remove the **Inverter circuit board**.

To install, reverse the removal procedure.

DC Jack Board

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove the **rear panel**. (See page 9-13.)

5. Disconnect the 1 cable shown below. Remove 2 screws (1052).

cable

DC Jack board(122)

screw (1052)
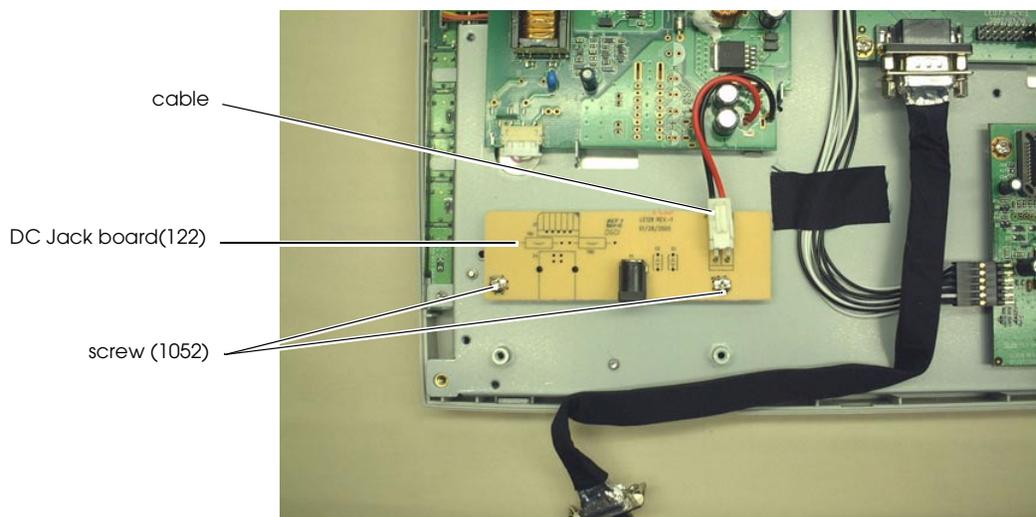
6. Remove the **DC Jack board**.

To install, reverse the removal procedure.

Removing the Touch Panel Assembly

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove the **front case**. (See page 9-12.)

5. Remove the **rear panel**. (See page 9-13.)

6. Release the lock of the connector at the cable connection part. Unplug the touch panel cable out from the cable of the touch panel board.

Cable of the touch panel board

Touch panel cable

Cable connection part
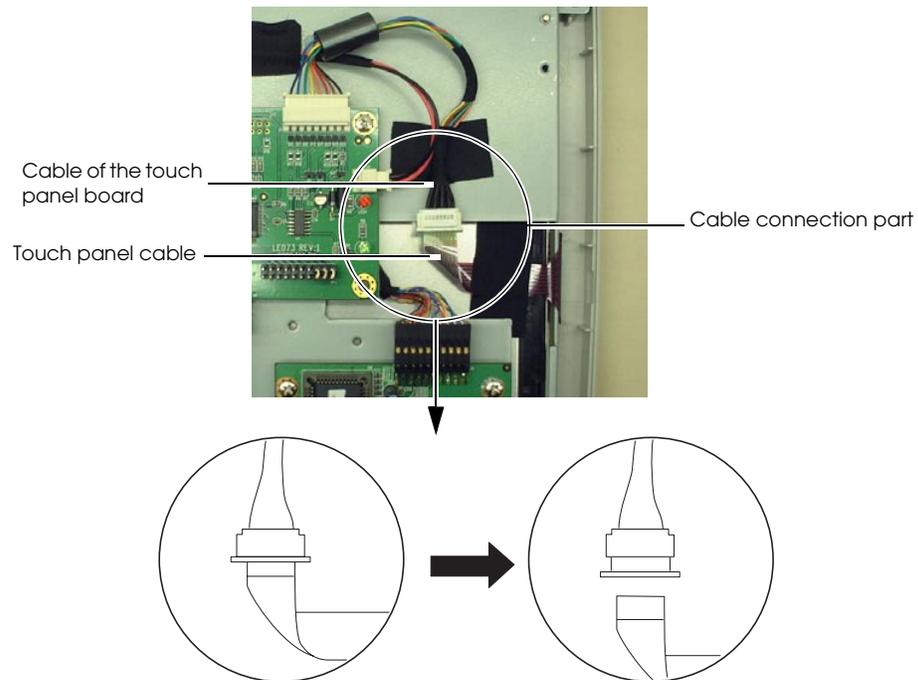
✎ *Note:*
Be careful not to get any foreign material between the LCD and the touch panel.

7. Remove four screws (S05) securing the touch panel set to the front panel unit while lifting the touch panel set.

screw (S05)

screw (S05)

Touch panel set (1056)
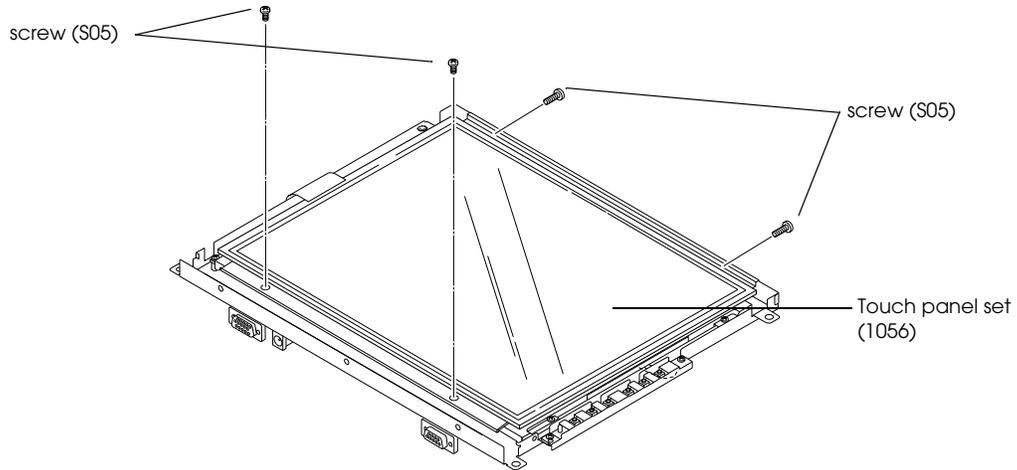
To install, reverse the removal procedure.

✎ *Note:*

Attach the touch panel set (1056) after removing dust from the touch panel set and the surface of the LCD with an air sprayer.

When reattaching the touch panel assembly, align the position of the holes in the touch panel assembly and the front panel unit.

LCD

Follow the steps below for disassembly.

1. Remove the **rear cover**. (See page 9-8.)

2. Remove the **front cover**. (See page 9-9.)

3. Remove the **rear case**. (See page 9-11.)

4. Remove the **front case**. (See page 9-12.)

5. Remove the **rear panel**. (See page 9-13.)

6. Remove the **touch panel assembly**. (See page 9-14.)

7. Disconnect 2 cables from the **inverter circuit board** and disconnect 1 cable from the **LCD circuit board**.

cable

cable

LCD circuit
board (111)

Inverter circuit
board (112)

8. Remove 4 screws (S16) and remove the **LCD**.

screw (S16)

LCD (110)

screw (S16)
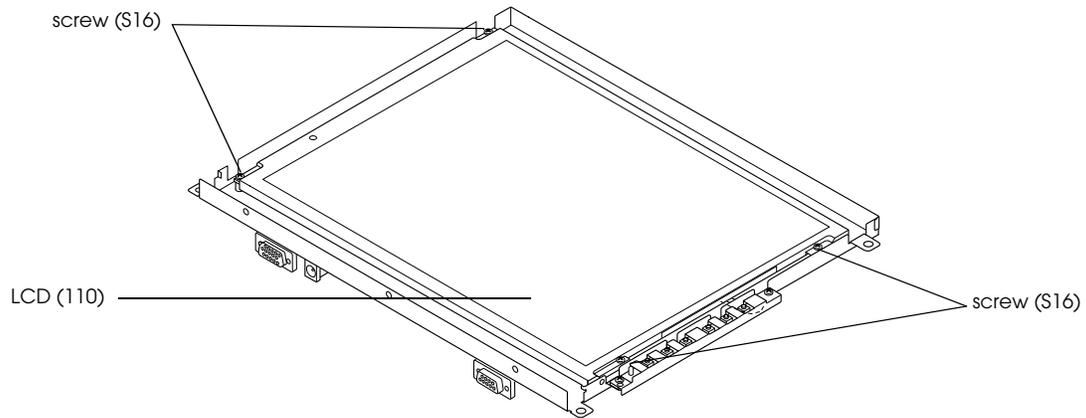
✎ *Note:*
When attaching the LCD set, be careful not to insert the cable between the LCD and the frame.

To install, reverse the removal procedure.

Switch Circuit Board

Follow the steps below for disassembly for the model DM-M820-014/024 and DM-M820-015/025.

✎ *Note:*
If you remove the LCD for the model DM-M820-013/023, follow the steps below except step 5.

1. Remove the **rear case.** (See page 9-11.)

2. Remove the **front case**. (See page 9-13.)

3. Remove the rear panel. (See page 9-13.)

4. Remove the **LCD Circuit Board**. (See page 9-15.)

5. Remove the **touch panel**. (See page 9-18.)

6. Remove the **LCD**. (See page 9-24.)

7. Remove 1 screw (1050) holding 1 ground wire and lift up the ground wire. After that remove 1 screw (1050) securing the switch circuit board.

8. Remove the **switch circuit board** while pulling the cable from the hole.
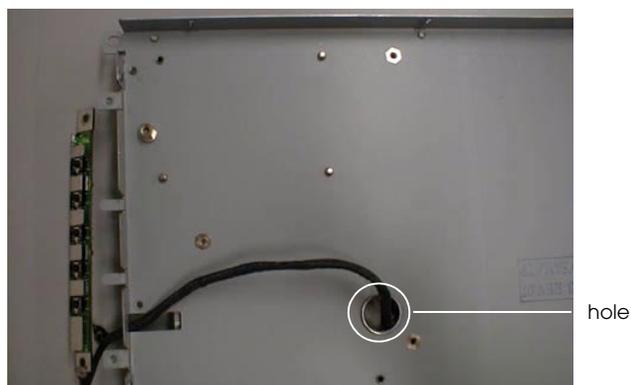
To install, reverse the removal procedure.

Disassembly and Assembly of the IM-800

This portion of the chapter provides instructions for disassembling the IM-800.

⚠ WARNING:

Wait several minutes after turning off the power and disconnecting the AC before starting disassembly work.

This precaution is necessary because as long as this product's power supply is on, portions of the internal circuits are charged with extremely high voltages.

⚠ CAUTION:

While the power is on, some parts inside this product reach high temperatures. Since there is a danger of burns or other injuries, be sure to wait several minutes after turning the power off before starting disassembly work.

Be careful not to injure yourself with the sharp edges of the metal parts of the IM-800.

✎ *Note:*

There is a label with the MAC address on it on the main circuit board. (See the illustration of the main circuit board below for the location of the label.)
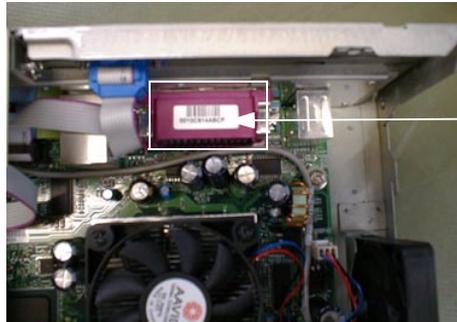
label with the MAC address

Conceptual Work Diagram for IM-800


```
                    ┌─────────┐
                    │  START  │
                    └────┬────┘
                         │
              ┌──────────┴──────────┐
              │ IM-800 rear case    │
              │      (203)          │
              └──────────┬──────────┘
                         │
              ┌──────────┴──────────┐
              │ IM-800 upper case   │
              │      (1009)         │
              └──────────┬──────────┘
```

	(*)	(*)		(*)
CD/FDD bracket (1008)	GASKET, B (226)	SPRING, A (227)	Riser frame (1006)	DC 24V board (225)
			CD/FDD bracket (1008)	COM port circuit board (209)
CD-ROM (219)	System fan (214)	DIMM (204)	HDD bracket (1007)	Riser circuit board (208)
FDD (211)				

2.5"HDD (206)	3.5"HDD (206)	DIMM (204)	Power supply (213)
		CPU cooler (215)	Speaker (223)
		CPU (205)	
		Main circuit board (207)	
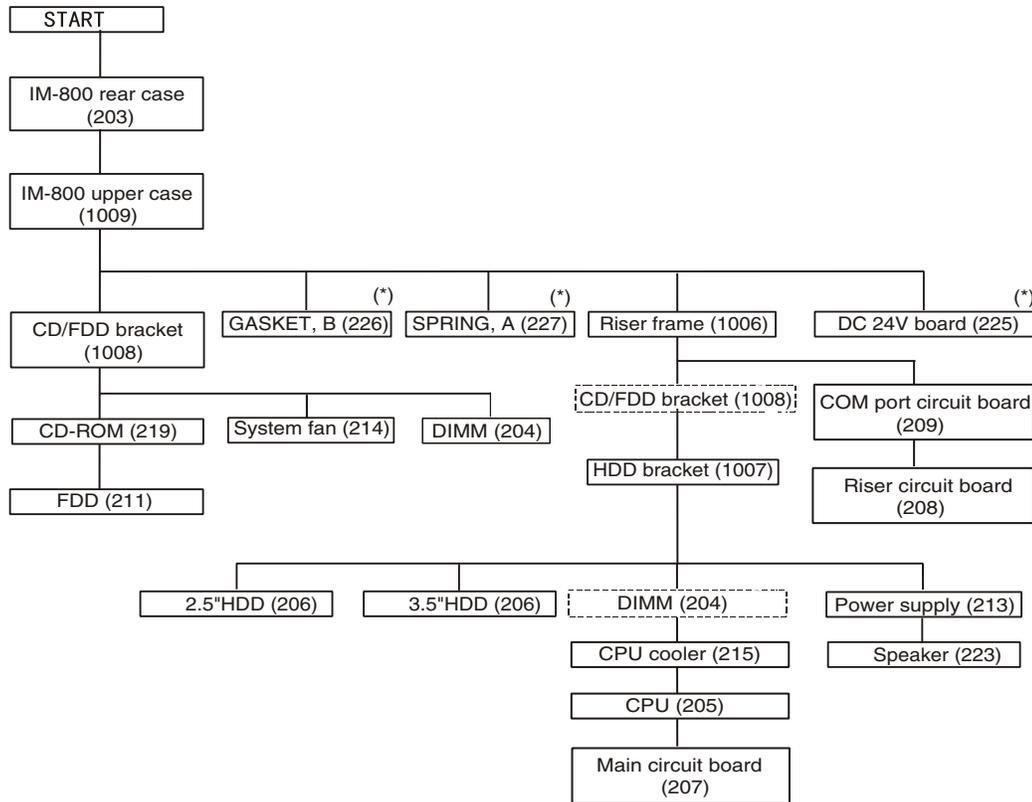
(*)With the TM Printer Power Supply model

How to use this diagram:

1. Search for the target part enclosed in a solid line (not parts enclosed in a dotted line).

2. Trace the line from the target part to **START**.

3. You must remove all the parts or units shown on the route that you have traced.

Note that the steps of disconnecting cables and removing plates on the units are not described in this key map.

Removing the IM-800 Rear Case

To remove the IM-800 rear case, follow these steps:

1. Remove 3 screws indicated by the arrows below.
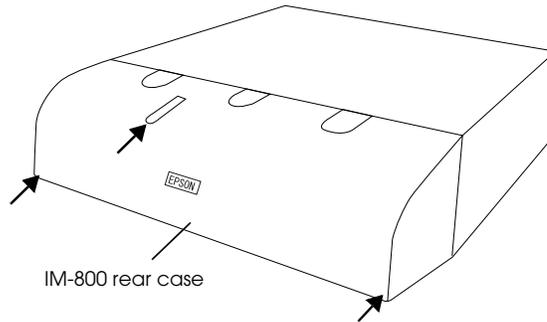
IM-800 rear case

2. Remove the IM-800 rear case.

To install, reverse the removal procedure.

Removing the Covers

IM-800 Upper Case

1. Remove the two screws (S13) indicated below:

screw (S13)

2. Push the IM-800 rear case toward the front of the unit and then lift it off as shown below.

IM-800 upper case

9-42 Disassembly and Assembly   *Rev. I*
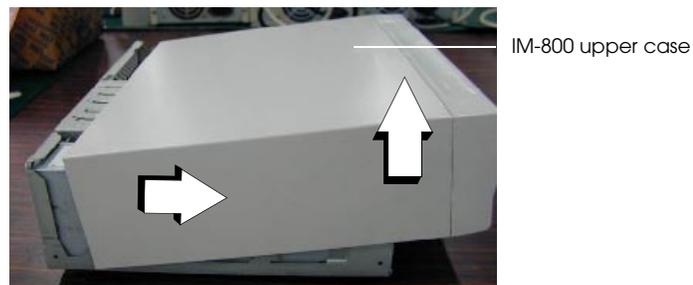
3. If it is necessary to remove the IM-800 front case assembly (usually it is not necessary to remove it), remove the 5 screws (S11) shown below and remove the IM-800 front case assembly.

screw (S11)

screw (S11)

IM-800 front case assembly
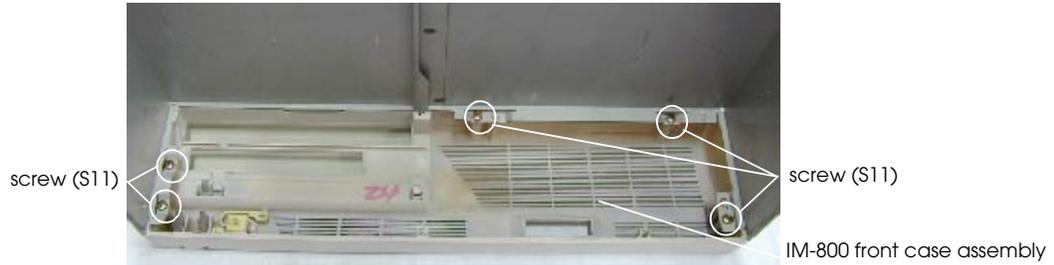
To install, reverse the removal procedure.

Removing the Compornents

Riser Frame

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the screw (S13) indicated below.

riser frame

COM port circuit board

screw (S13)

COM cable

P2 cable

3. Remove the P2 cable and COM cable. Then lift the riser frame out of the IM-800.

COM Port Circuit Board Assembly
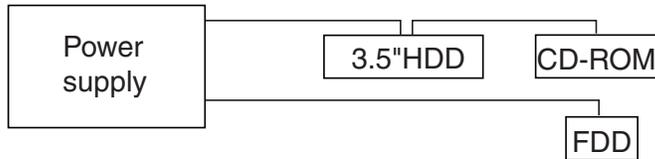
1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the screw (S13) securing the COM port circuit board (indicated below) to remove the COM port circuit board.

screw (S13)
COM port circuit board

PCI Card

A PCI card can be inserted into the upper slot on the riser frame.

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the screw (S13) securing the PCI board (indicated below) to remove the PCI card.
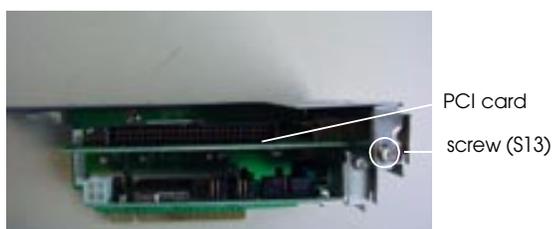
PCI card

screw (S13)

When replacing the PCI card, remove the dummy plate, if it is installed.

⚠ CAUTION:

Do not touch the connectors on the card to avoid failure due to contamination.

RAID Card

A RAID card can be inserted into the upper slot on the riser frame.

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the HDD cable from the RAID card.

HDD cable   RAID card

4. Remove the screw (S13) securing the PCI board (indicated below) to remove the RAID card.
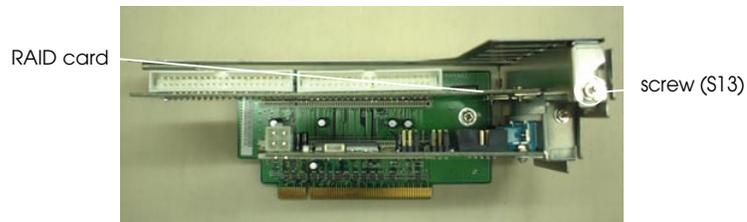
RAID card   screw (S13)

When replacing the PCI card, remove the dummy plate, if it is installed.

⚠ *CAUTION:*

Do not touch the connectors on the card to avoid failure due to contamination.

Riser Circuit Board

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the screw (S13) securing the COM port circuit board (indicated below) to remove the COM port circuit board.

screw (S13)

COM port circuit board
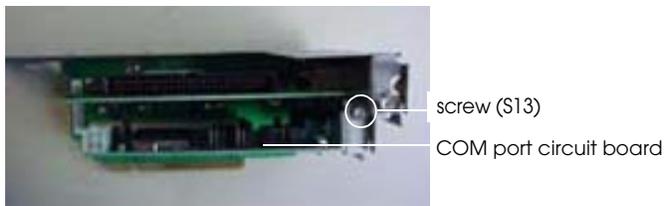
4. Remove the two screws (S13) securing the riser circuit board indicated in the illustration below to remove the riser circuit board.

screw (S13)

riser circuit board
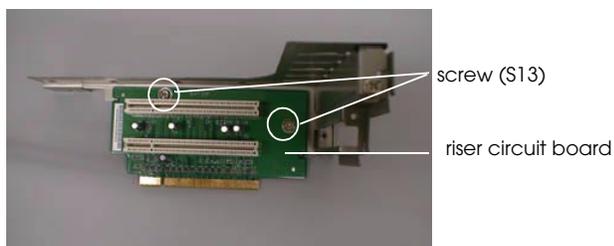
To install, reverse the removal procedure.

DC24V board

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove two screws (S17) fixing the DC24V board.

DC24V board

screw (S13)
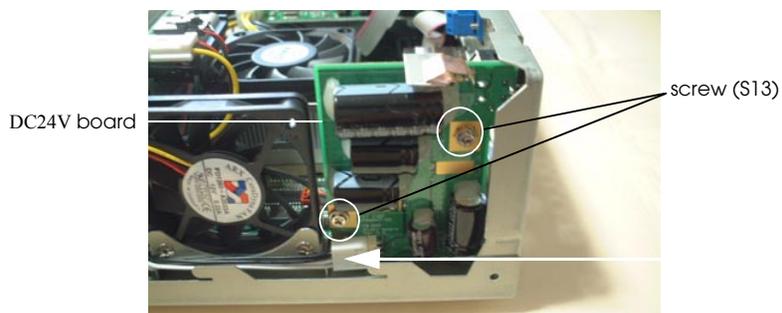
3. Remove the DC24V board by the procedures of 1 - 3.
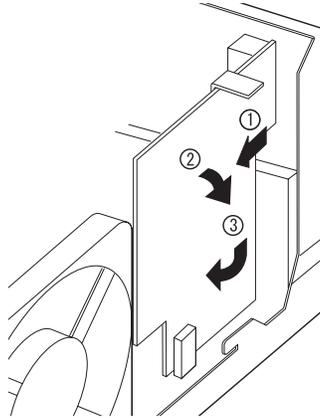
4. Remove the cable of the power supply unit.

To install, reverse the removal procedure.

✎ *Note:*
Install the Power supply connecter for the DC 24V board just level with the rear case surface.
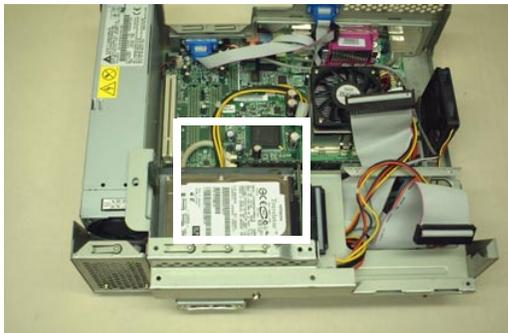
NG	OK
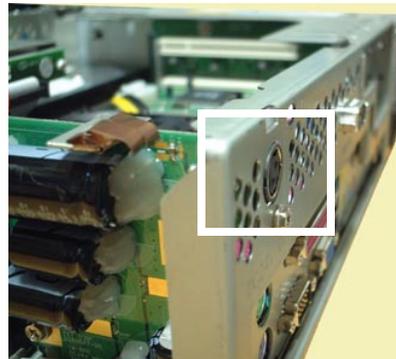
SPRING, A

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the SPRING ,A from the frame as the figure.

DC24V board
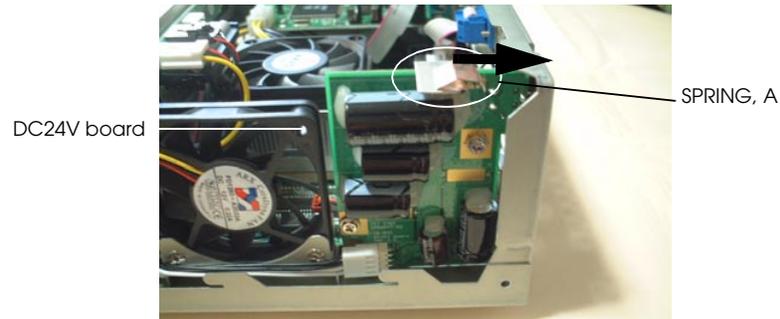
SPRING, A

Install by the following procedure

1. Remove the double-sides tape under the frame.

2. Paste a new double-sides tape ,A under the frame.

Frame
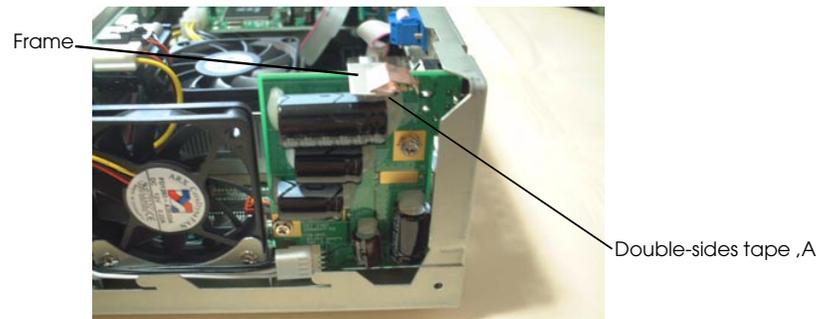
Double-sides tape ,A

3. Insert the SPRING ,A

4. Pinch the flame and the SPRING ,A with fingers to bond with the double-side tape.

CD/FDD Bracket

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the CD-ROM cable (A), the audio cable (B), and the CD-ROM power cable (C) indicated below. Then remove the screws (S13) from locations D, E and F, also indicated below.
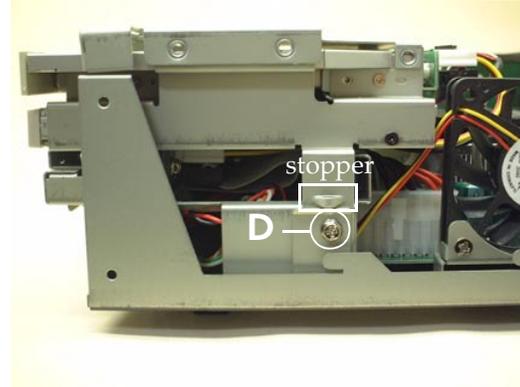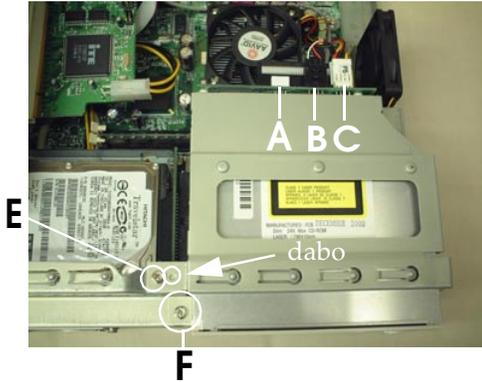
✎ *Note:*
When you install the CD/FDD bracket, be certain that the stopper attached to the frame securely and attached the screw to the locations D. (See the illustration above.)

3. Lift the CD/FDD bracket in the direction indicated by the arrow in the illustration below.
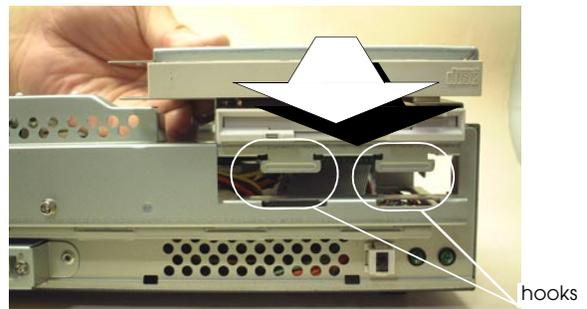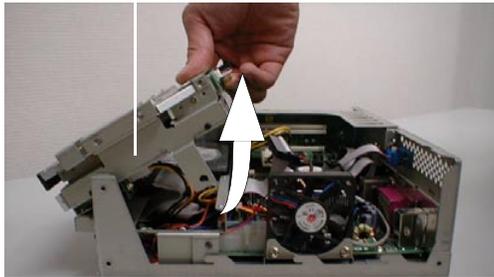
✎ *Note:*
When you install the CD/FDD bracket, be certain that the 2 hooks lock securely. (See the illustration above.)

Be careful not to pinch the cable when installing the CD/FDD bracket.

✎ *Note:*
The position of the power supply cable is different for 3.5″HDD or 2.5″HDD.

3.5″HDD Model

```
┌──────────┐        ┌──────────┐  ┌──────────┐
│  Power   │────────│ 3.5"HDD  │──│ CD-ROM   │
│  supply  │        └──────────┘  └──────────┘
│          │────────────┐         ┌──────────┐
└──────────┘            └─────────│  FDD     │
                                  └──────────┘
```


2.5″HDD Model

```
┌──────────┐        ┌──────────┐  ┌──────────┐
│  Power   │────────│ 2.5"HDD  │──│ CD-ROM   │
│  supply  │        └──────────┘  └──────────┘
│          │────────────┐         ┌──────────┐
└──────────┘            └─────────│  FDD     │
                                  └──────────┘
```
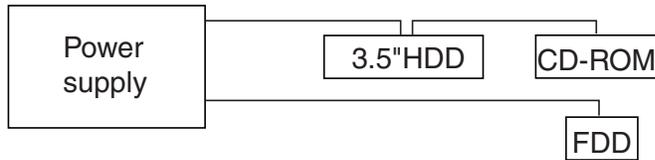

4. Remove the FDD cable from the FDD circuit board.
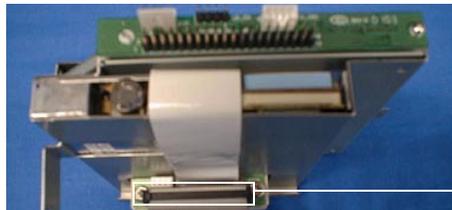
FDD circuit board

CD-ROM

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the CD/FDD bracket. (See page 9-49.)

3. Remove the four screws (1020) indicated in the below illustration.

    ✎ *Note:*
    Rest two screws (1020) is attached to the side of opposite plate.
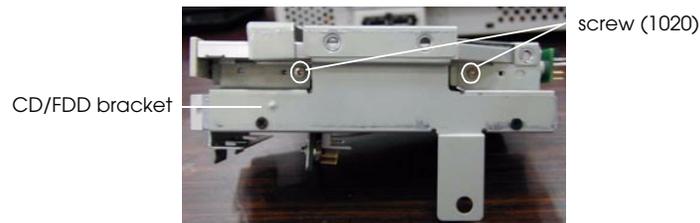
4. Remove the CD-ROM in the direction of the arrow.
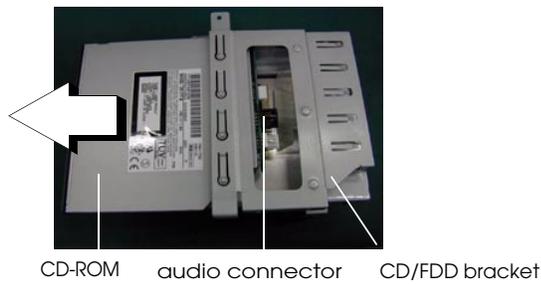
    ✎ *Note:*
    Be careful not to break the audio connector inside the CD/FDD bracket. (See the illustration above.)

FDD

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the CD/FDD bracket. (See page 9-49.)

3. Remove the CD-ROM from the CD/FDD bracket. (See page 9-51.)

4. Remove the two screws (S12) indicated in the below illustration.
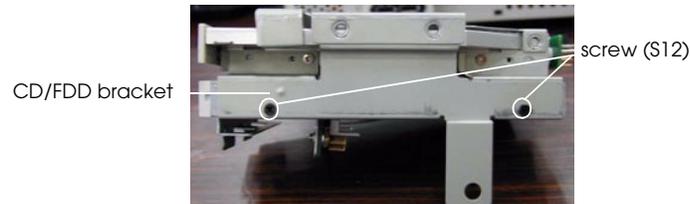
5. Remove the FFC cable from the FDD by releasing the patch.
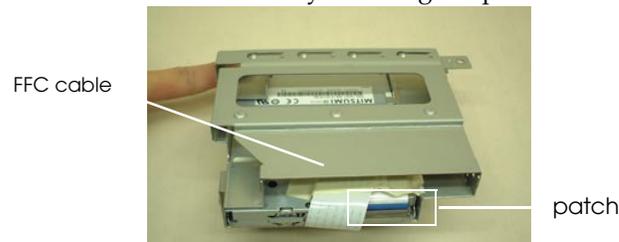
6. Remove the FDD in the direction of the arrow.

To install, reverse the removal procedure.

✎ *Note:*
When you replace the FDD, attach the FFC with the tape. When reattaching the FDD, attach the tape. (See the illustration below).
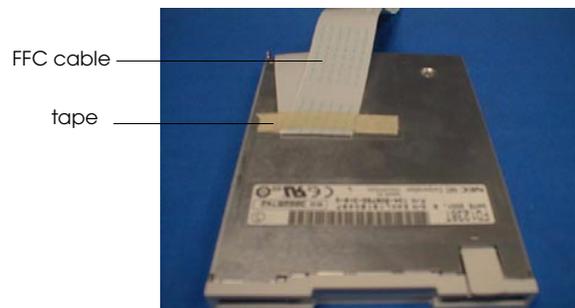
HDD bracket

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the CD/FDD bracket. (See page 9-49.)

4. Remove the HDD power cable (P3) from the HDD.

✏ *Note:*
The position of the power supply cable is different for 3.5″HDD or 2.5″HDD.

3.5″HDD Model

2.5″HDD Model
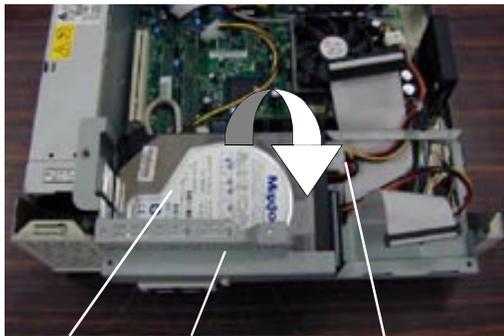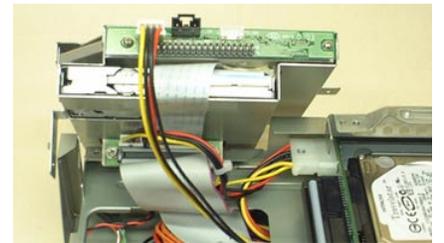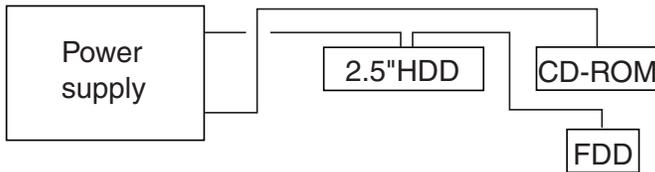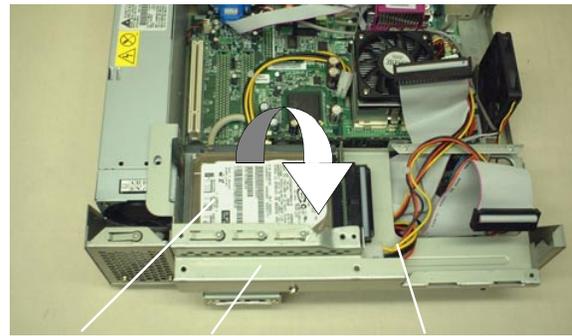
3.5″HDD   HDD bracket   HDD power cable (P3)   2.5″HDD   HDD bracket   HDD power cable (P3)

⚠ **CAUTION:**

Be careful not to injure yourself with the sharp edges of the metal parts of the IM-800.

5. Lift the HDD bracket in the direction of the arrow. (See the illustration above.)

---

6.   Remove the HDD cable(216) from the Main circuit board.

HDD cable

3.5"HDD

The IM-800 has 3.5"HDD type and 2.5"HDD type.

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the CD/FDD bracket. (See page 9-49.)

4. Remove the HDD bracket, HDD power cable and HDD cable. (See page 9-53.)

5. Remove the HDD assembly in the direction of the arrow.

✎ *Note:*
When you install the HDD assembly, the 4 clips must be hooked completely.

clips | clips

HDD assembly

6. Remove the 3 screws (S13) shown below.

HDD bracket

screw (S13)

screws (S13)

L

L

⚠ *CAUTION:*

Be careful not to drop the HDD when you remove it from the HDD bracket.

7. Pull out the 3.5″HDD from the HDD bracket while lifting up the 3.5″HDD in the direction of the arrow. Then disconnect the HDD cable and remove the 3.5″HDD.

3.5″HDD

HDD cable
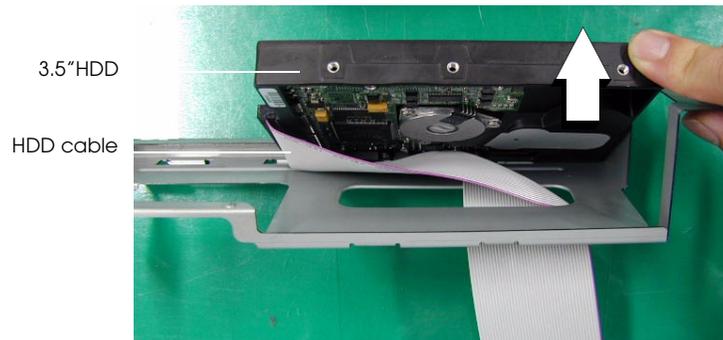
To install, reverse the removal procedure.

⚠ *CAUTION:*

Be careful not to injure yourself on the sharp edges of the metal parts of the IM-800.

2.5"HDD

The IM-800 has 3.5"HDD type and 2.5"HDD type.

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the CD/FDD bracket. (See page 9-49.)

4. Remove the HDD bracket, HDD power cable and HDD cable. (See page 9-53.)

5. Remove the HDD assembly in the direction of the arrow.

✎ *Note:*
When you install the HDD assembly, the 4 clips must be hooked completely.
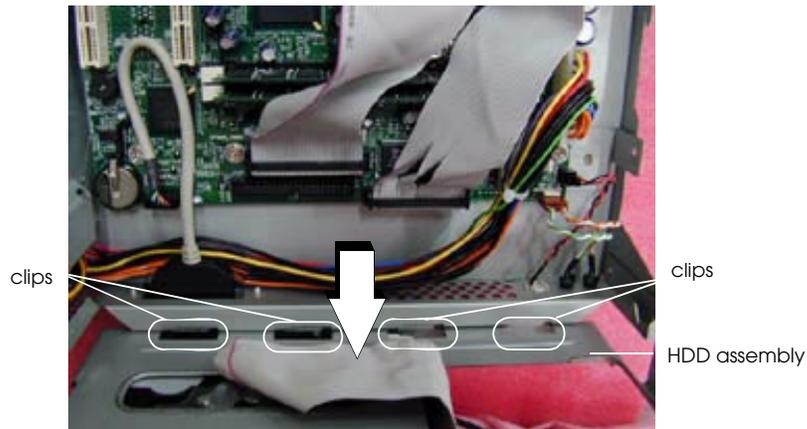
6. Remove the 3 screws (S13) shown below.
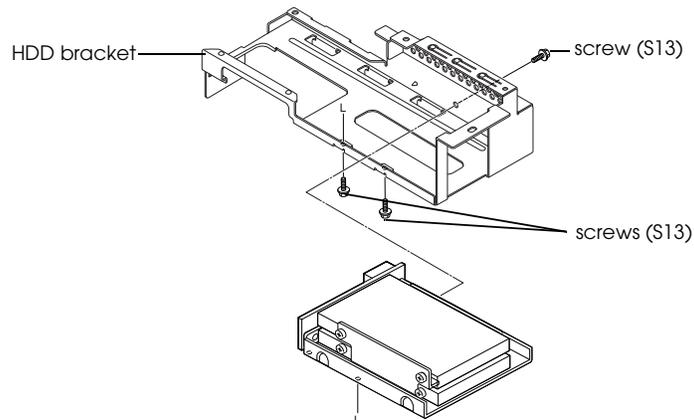
⚠ *CAUTION:*

Be careful not to drop the HDD when you remove it from the HDD bracket.

Be careful not to pinch the HDD cable when screwing.

7. Pull out the 2.5″HDD from the HDD bracket while lifting up the 2.5″HDD in the direction of the arrow. Then disconnect the HDD cable and remove the 2.5″HDD.
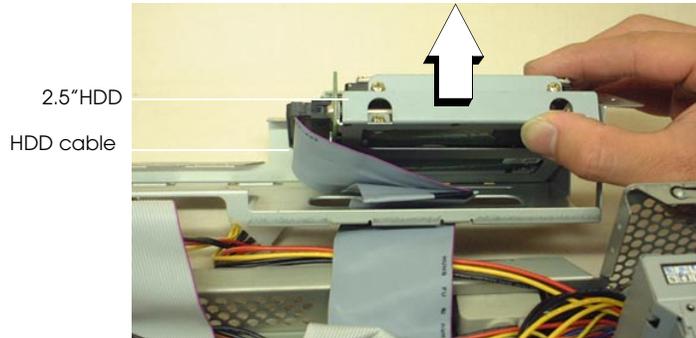
⚠ *CAUTION:*

Be careful not to injure yourself on the sharp edges of the metal parts of the IM-800.

8. Remove two screws securing the 2HDD circuit board and remove the 2HDD circuit board.
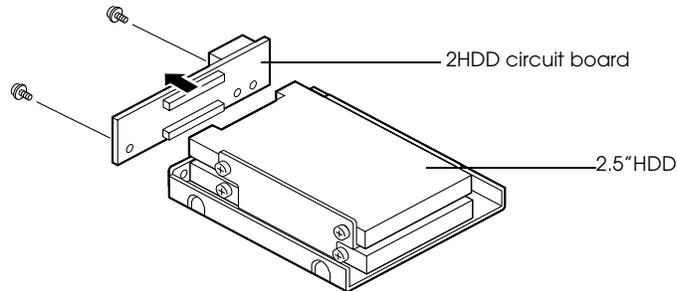
9. When two HDDs are installed, remove the four screws shown in the figure below securing the 2.5″HDD and remove the HDD.
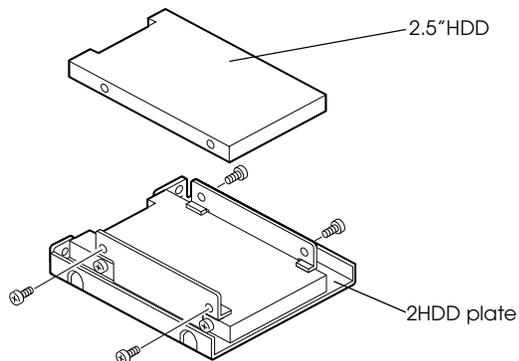
10. To remove the second 2.5″HDD remove the four screws shown in the figure below securing the HDD and remove the SHORTPLUG for the 2.5″HDD.
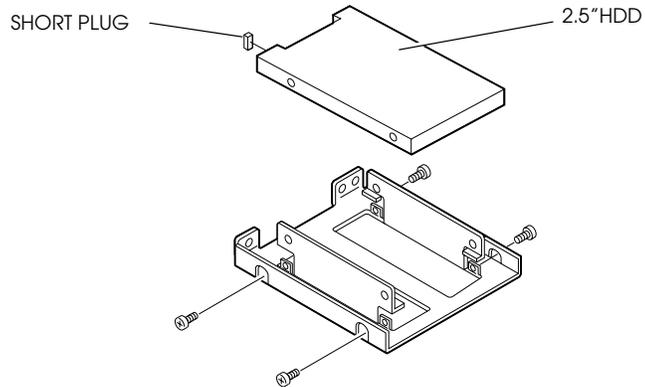
When you install two 2.5″HDD, the master or slave can be installed on the top or bottom.

When you install the 2.5″HDD, you need to set the HDD jumpers properly.

When connecting two 2.5″HDDs, one is Master and the other is Slave.

Set Master/Slave by the jumper of the HDD.
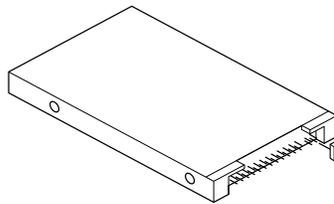
As for the procedure, see "HDD".

Example: For the Hitach Travelstar

To install, reverse the removal procedure.

DIMM

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the CD/FDD bracket. (See page 9-49.)

3. Open the tabs securing the DIMM at each end, as shown below. Then lift the DIMM out of the socket.
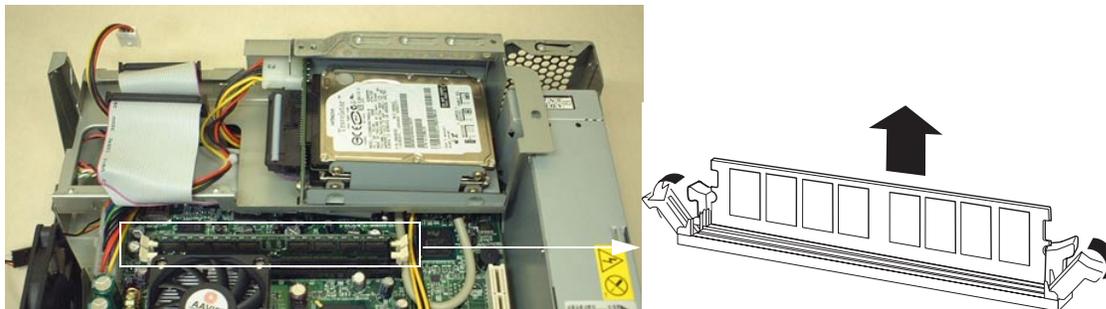
To install, reverse the removal procedure.

System Fan

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the CD/FDD bracket. (See page 9-49.)

3. Disconnect the system fan cable from the connector indicated below.

system fan cable
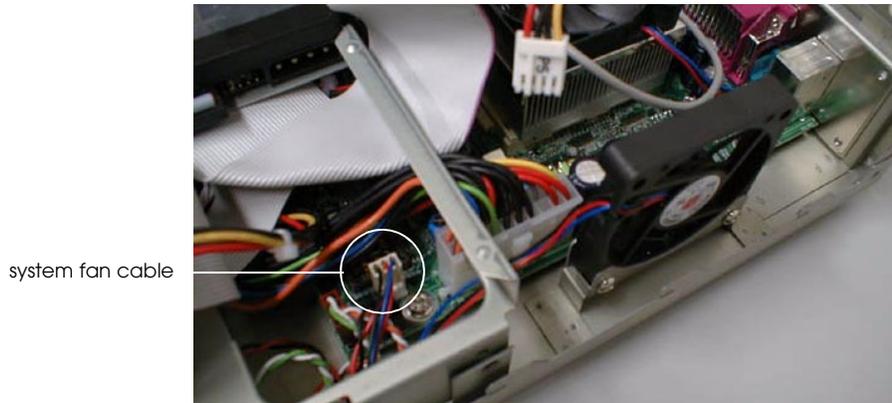
4. Remove the two screws (1015) securing the system fan to the frame.

⚠ CAUTION:

When you remove or install the system fan, be sure to press the top of the system fan as indicated by the arrow while you remove or insert the screws. Otherwise you may bend the frame. And confirm the direction of installing the system fan. (See the illustration below.)
Also, do not tighten the screws too tightly or the unit may be damaged. (The maximum torque is 9 kgf•cm.)

screws (1015)
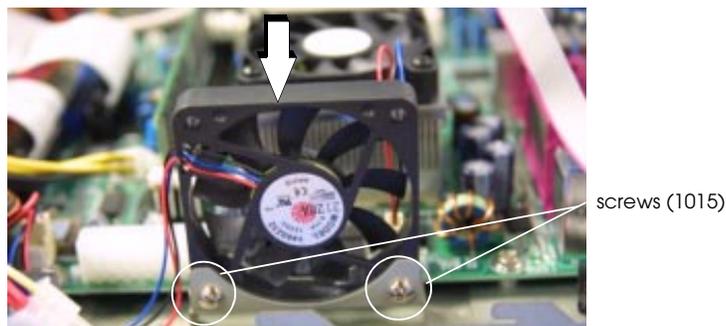
5. Remove the system fan from the frame.

To install, reverse the removal procedure.

Switch cable assembly (218)

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the CD/FDD bracket. (See page 9-49.)

3. Disconnect switch cable assembly (218) from the connector indicated below.
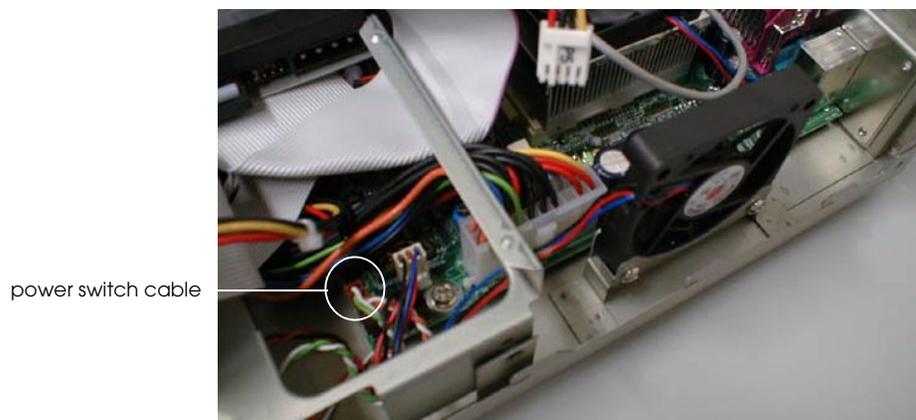
power switch cable

4. Disattach the hooks of the power switch from the frame back side. (The illustration below shows the front side of the frame.)

power switch

hooks

Front side

Back side
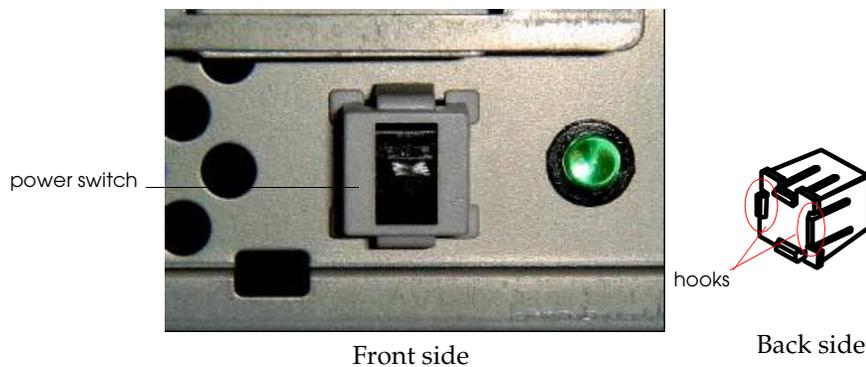
✎ *Note:*
When you attach a power switch to the frame, be careful that it is not inside out. (The direction of the switch is indicated in the illustration above.)

CPU Cooler and CPU

Follow the steps below for removal.

⚠ CAUTION:

The CPU cooler on the CPU may be hot after you turn off the power. Wait until it cools before you remove it.

✎ *Note:*

When you replace a CPU, you must replace the CPU cooler too because the silicone that attaches the cooler to the CPU will come off when you take the CPU cooler off of the CPU.

When you replace a CPU cooler without replacing the CPU, confirm that the silicone comes completely off of the CPU. If any silicone is left on the CPU carefully remove it by using a kind of scraper. To avoid damage, do not use any metal scraper to remove the silicone.

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the CD/FDD bracket. (See page 9-49.)

3. Remove the DIMM. (See page 9-60.)

4. Disconnect the CPU cooler cable from connector J13.

CPU cooler cable
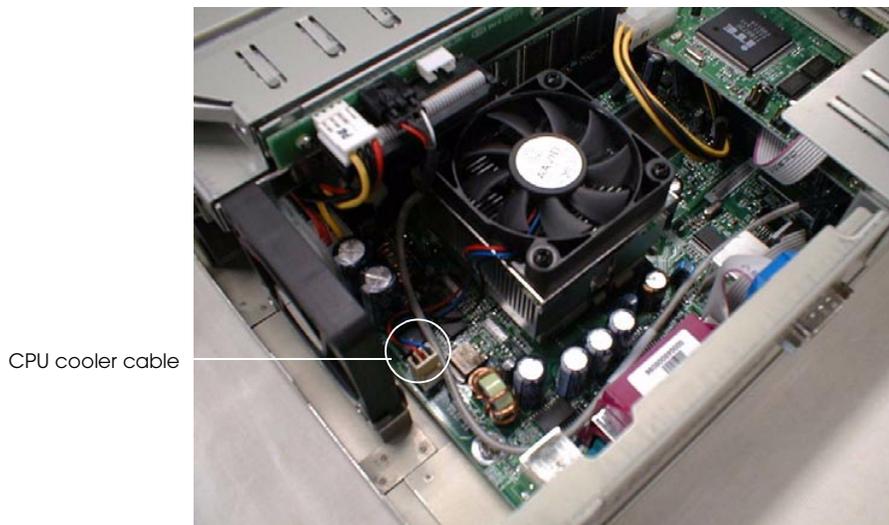
5. Then detach the metal hook from the tab, which is shown in the circle in the illustration below. Use radial pliers for the unhooking. Press downward on the projection and move it away from the cooler.

⚠ CAUTION:

Remove the clip very carefully to avoid damaging any main circuit board components.

6. After you have unhooked one side of the CPU cooler, you can easily remove the CPU cooler by tilting it toward the other side and lifting it off.

7. Lift the CPU release lever in the direction of the arrow in the illustration until it is upright, and then pull the CPU straight up.

lever
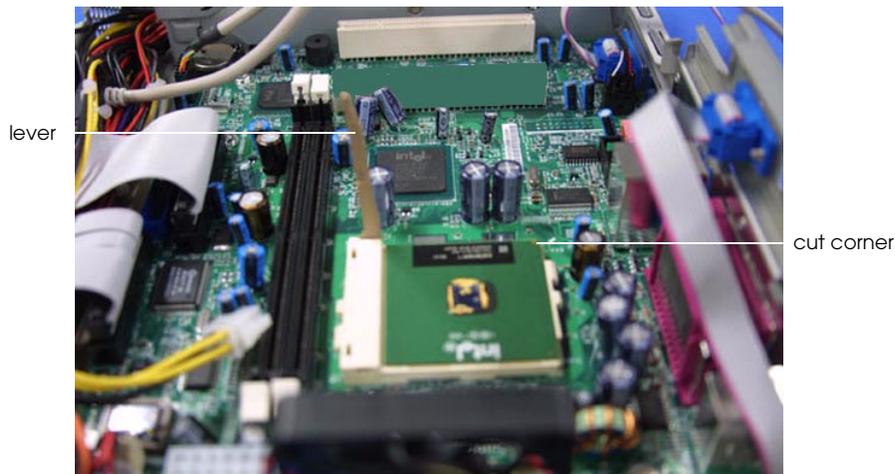
cut corner

⚠ CAUTION:

To avoid any damage from contamination or static electricity, do not touch the pin terminals of the CPU with your fingers.

To install, reverse the removal procedure.

✎ *Note:*
When you install a CPU, be sure that the cut corner is in the position indicated in the illustration above.

Speaker

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the CD/FDD bracket. (See page 9-49.)

4. Remove the HDD bracket. (See page 9-53.)

5. Remove the Power Supply. (See page 9-67.)

6. Pull out the cable connecting the speaker from the main board.

Speaker cable
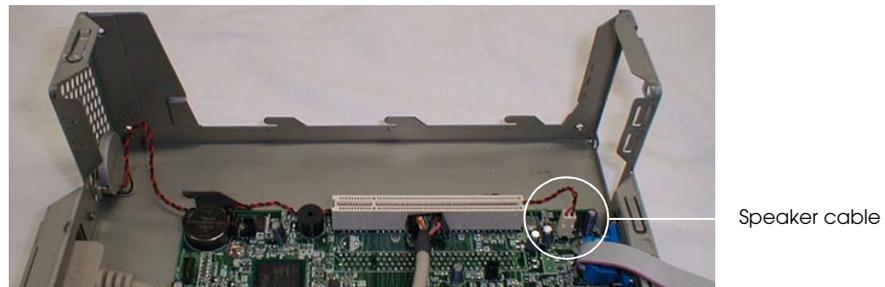
7. Remove two screws fixing the speaker.

screw
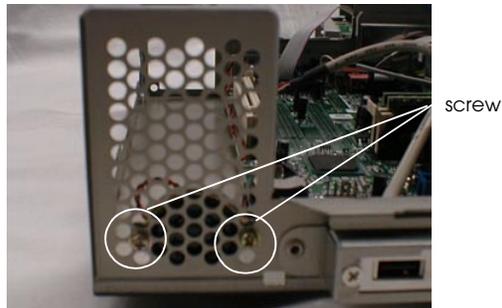
✎ *Note:*
There is the main board which cannot connect the speaker. The way of discerning is as follows.

Main board which is able to attach the speaker

Main board which is not able to attach the speaker

Speaker Connector

Install the Speaker by the following procedure

1. Peel off the tape of the Speaker Spacer and paste it on the speaker.

2. Adjust the Speaker cable to the lack of the Speaker holder and put the Speaker holder on the speaker.

3. Attach the speaker with two screws. Attach screws in the position of the following figure.
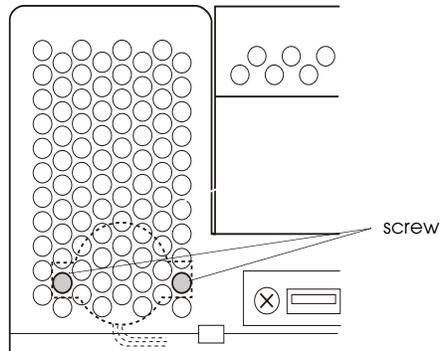
✎ *Note:*

Install the cable of the speaker to become an underside.

Install the speaker so as not to touch the frame of the IM-800.

When installing the Power Supply, form the speaker cable so as not to be pinched.

Power Supply

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the CD/FDD bracket. (See page 9-49.)

4. Remove the HDD bracket. (See page 9-53.)

5. Remove the two screws (S13) securing the power supply.

screw (S13)
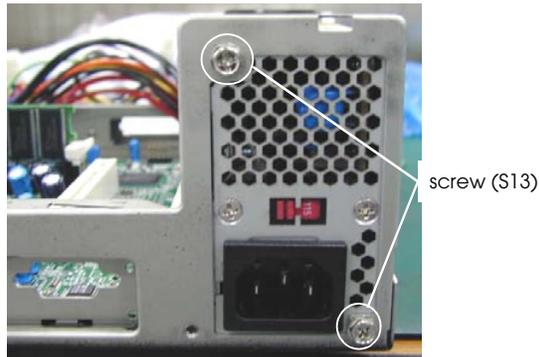
6. Remove the power cables connected to the main circuit board.

7. Cut the cable tie and remove the DC24V cable from the DC24V board. (24V model)

DC 24V cable
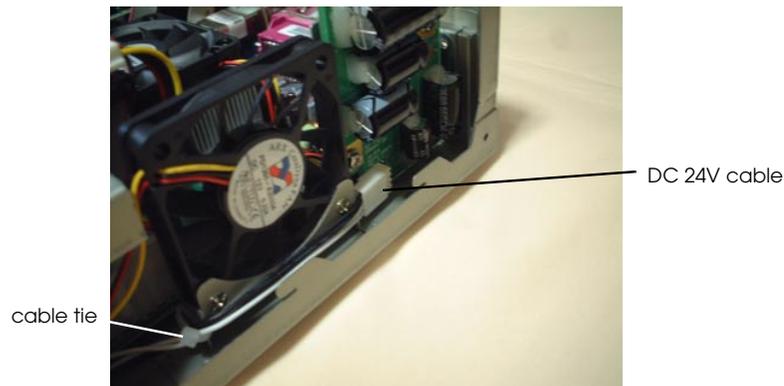
cable tie

✎ *Note:*
When installing the DC24V cable, use a new cable tie.

8. Remove the power supply from the lower frame by first moving it in the direction of arrow 1, then in the direction of arrow 2.
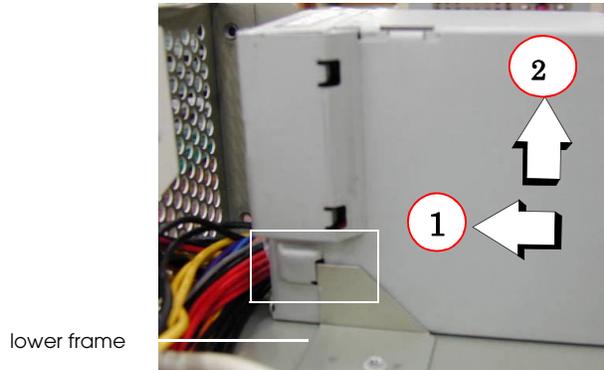
lower frame

To install, reverse the removal procedure.

✎ *Note:*
During reassembly confirm that the power supply is attached to the lower frame as shown in the illustration above.

⚠ CAUTION:

Also, when you place the cable of power supply, put it under the USB cable.

Do not arrange the cable of the power supply near the end of the case. Otherwise, it may be damaged when you install the IM-800 upper case or the CD/FDD bracket.

Do not arrange the cable of the power supply under the main circuit board. Otherwise, it may be damaged when you connect the other cables to the main circuit board.

USB cable

Main Circuit Board

1. Remove the IM-800 upper case. (See page 9-42.)

2. Remove the riser frame. (See page 9-43.)

3. Remove the CD/FDD bracket. (See page 9-49.)

4. Remove the HDD bracket. (See page 9-53.)

5. Remove the DIMM. (See page 9-60.)

6. Remove the CPU cooler and CPU. (See page 9-63.)

7. Remove the cables on the main circuit board.
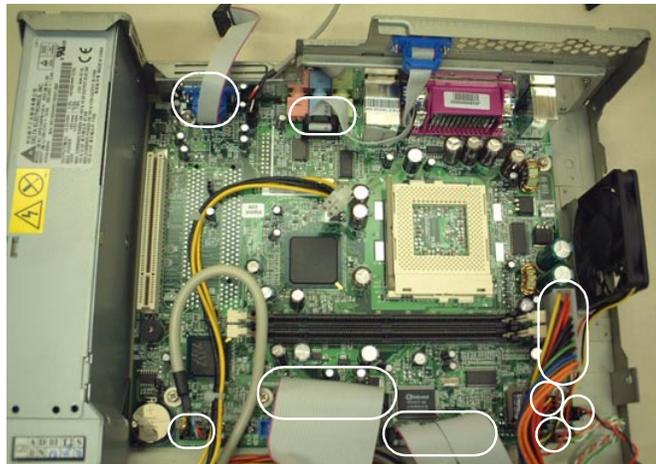
8. Remove the 5 screws (S13) shown in the figure below and remove the main circuit board.
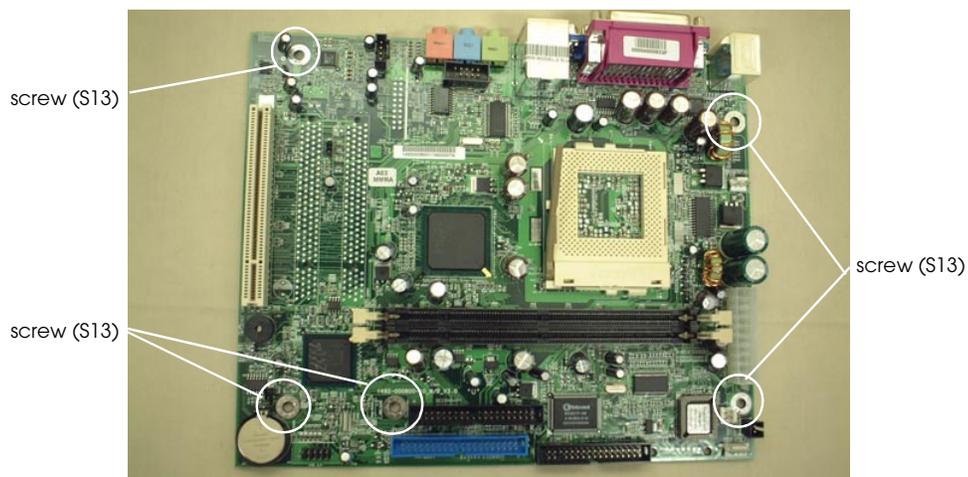
To install, reverse the removal procedure.

✎ *Note:*

When you change the main circuit board, you can use both the CPU and the CPU cooler attached to the old board. You need not to replace the CPU or the CPU cooler.

⚠ *CAUTION:*

Also, when you place the cable of power supply, put it under the USB cable.

Do not arrange the cable of the power supply near the end of the case. Otherwise, it may be damaged when you install the IM-800 upper case or the CD/FDD bracket.

Do not arrange the cable of the power supply under the main circuit board. Otherwise, it may be damaged when you connect the other cables to the main circuit board.

USB cable
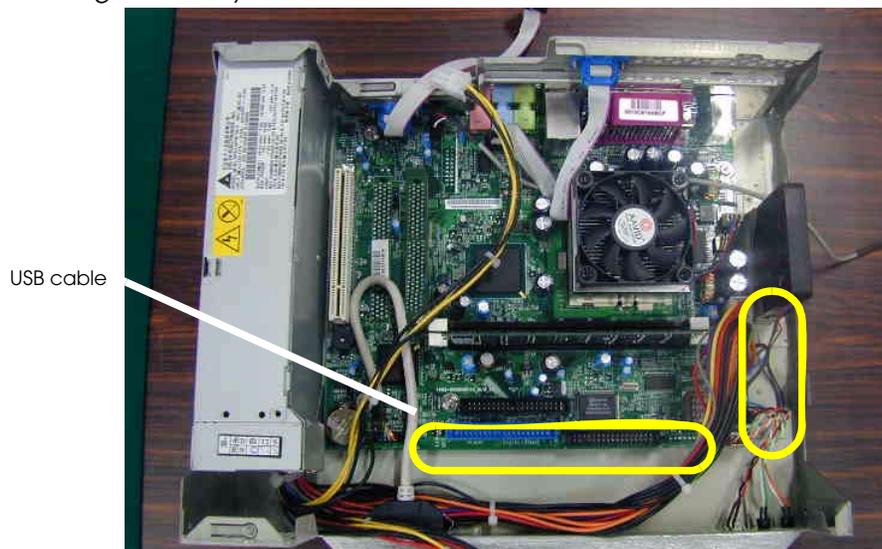
✎ *Note:*

Be sure to connect the cable with blue connector to the blue socket.

One edge of each cable is colored red to help you see the proper orientation of the cables. Please note the correct orientation in the illustration below.

CD-ROM cable

FDD cable

HDD cable (Blue)
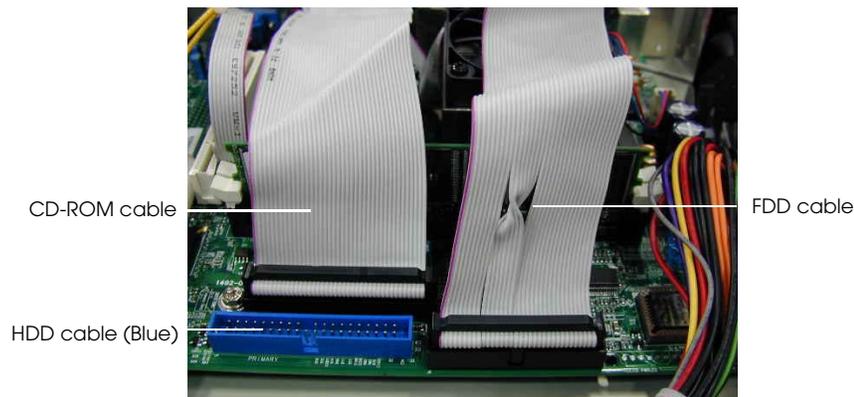
Appendix A
Jumper Settings

IM-800 Jumper Settings

The jumper settings for the IM-800 are as follows:

PCB	Jumper	Function	Setting
Main control board	JP10	Clearing the CMOS RAM	1-2: Normal (default) 2-3: Clear the CMOS RAM *1
	JP15	Setting the serial IRQ for the PCI slot	1-2: Does not connect the serial IRQ to PCI slot 2-3: Connects the serial IRQ to PCI slot (default)
COM board	JP1	Setting pin 1 of the COM4 port	1-2: DCD signal (default) 3-4: +5V power supply 5-6: +12V power supply
	JP2	Setting pin 1 of the COM3 port	1-2: DCD signal (default) 3-4: +5V power supply 5-6: +12V power supply

*1 To clear the CMOS RAM, short 2-3 more than 5 seconds with the power turned off and then return the jumper to the default setting.

2.5"HDD Jumper Settings

When connecting two 2.5"HDDs, one is Master and the other is Slave.

Set Master/Slave by the jumper of the HDD.
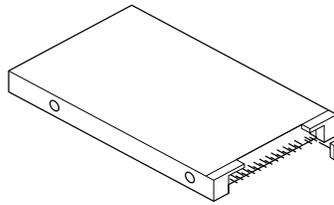
As for the procedure, see "HDD".

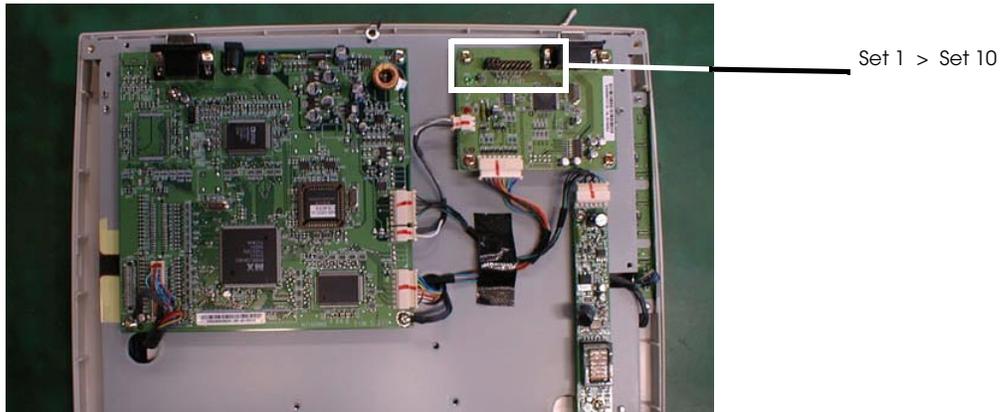Example: For the Hitach Travelstar
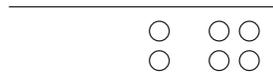
Master   Slave
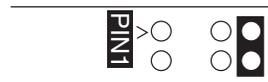
DM-M820 Jumper Settings

Jumper settings for the touch panel board

Jumper Location

Set 1 > Set 10

SET 1, 2, and 3 are shorted. The others are open.

LED of DM-M820 T/P board

When power is supplied, the red LED lights.

During data communication the green LED blinks.

Appendix B
Parts Information

Part Life

The following table shows the life of IM-800 parts.

Table B-1 IM-800 part life

Ref.#	Part name	Life	
215	CPU cooler	Approximately 80,000 hours.	45°C
-	Power supply fan (*)	Approximately 70.000 hours.	45°C
214	System fan	Approximately 80.000 hours.	45°C

(*) Power supply fan is not supplied for an after service parts.

The following table shows the life of DM-M820 parts.

Table B-2 DM-M820 part life

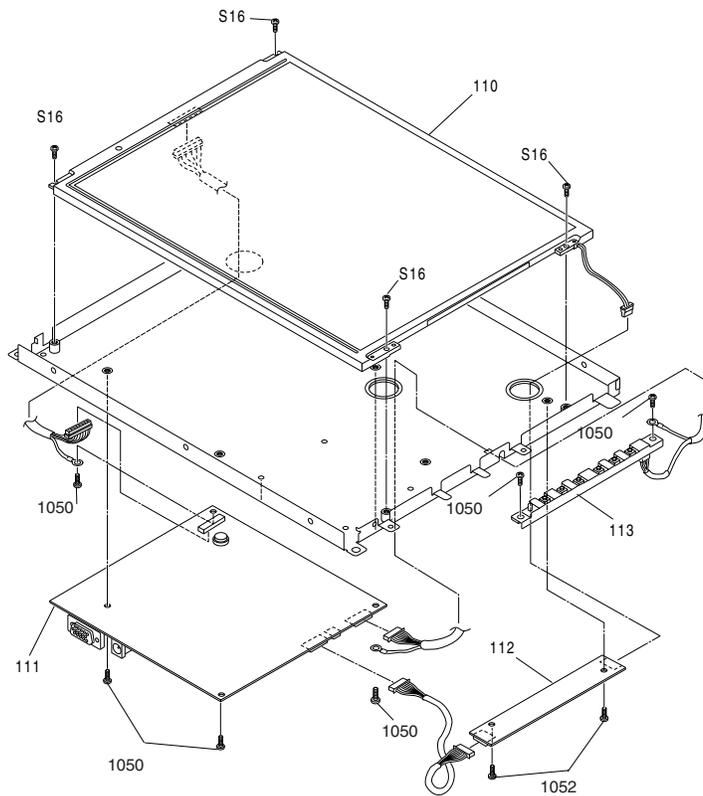| Ref.#	Part name	Life	Condition
115	Touch panel	Finger touch durability: 1,000,000 times or more	With the material polyacetal, with a load of 2.45 N (250 gf), at three times per second or with the material silicon rubber, with a load of 2.94 N (300 gf), at three times per second
		Writing durability: 100,000 characters or more	With the material polyacetal, with a load of 2.45 N (250 gf), 5,000 characters/hour (mean) with Japanese font in the range of 10x10 mm
-	Backlight	20,000 hours or more	25°C ± 5°C {77°F ± 9°F}
-	MSR unit magnetic head	300,000 times for reading magnetic cards	-

Part List DM-M820-013/023/113/123

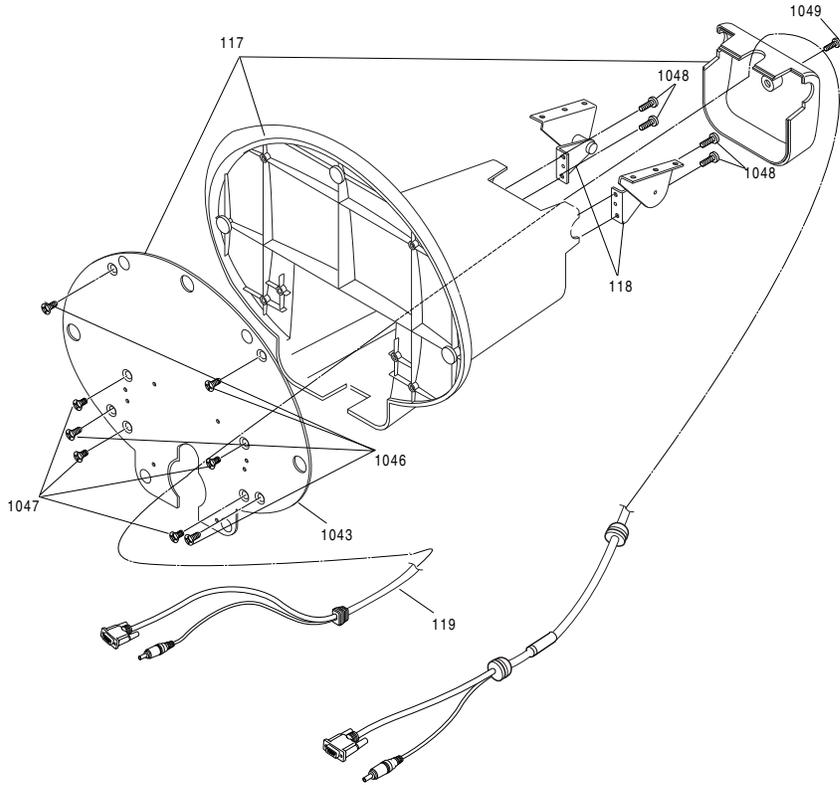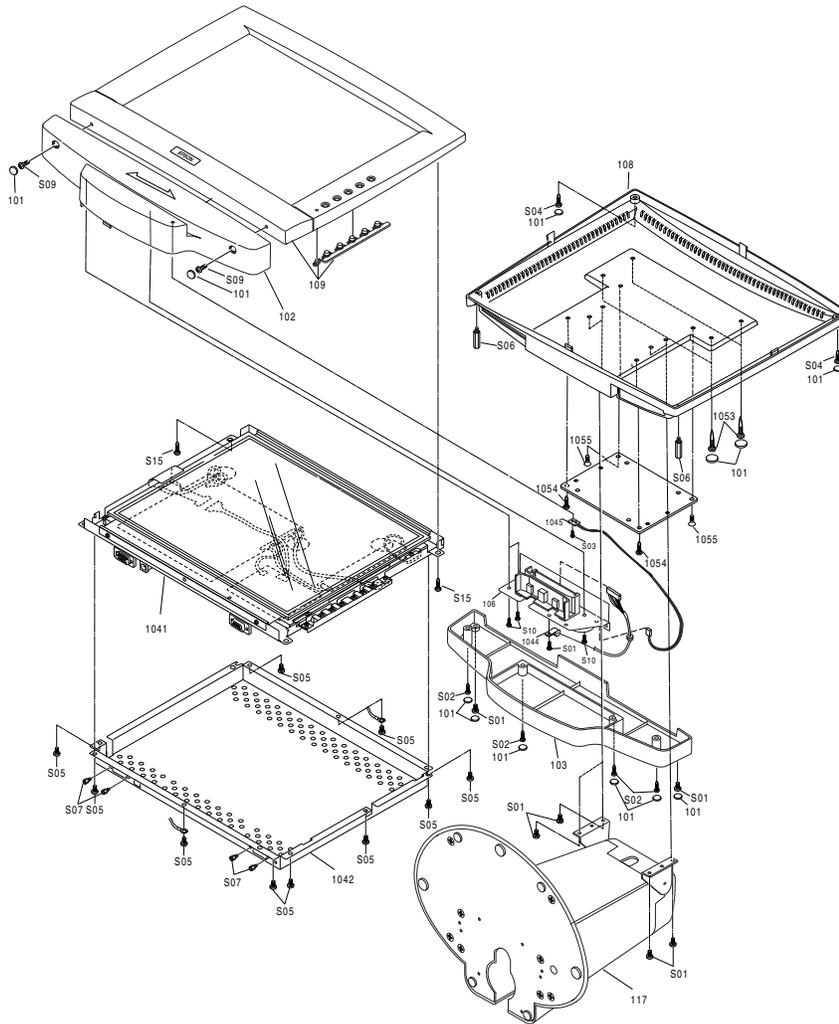*Table B-1 DM-M820-013/023 /113/123*

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit
101	Cap, A	Cap, A	Yes	15
102	Front cover	Cable, cover, front	Yes	1
103	Rear cover	Cable, cover, rear	Yes	1
108	Rear case	LCD, rear assembly	Yes	1
109	Front case	LCD, front case	Yes	1
110	LCD	LCD	Yes	1
111	LCD circuit board	LCD circuit board	Yes	1
112	Inverter circuit board	Inverter circuit board	Yes	1
113	Switch circuit board	Switch circuit board	Yes	1
117	Base assembly	Base, assembly	Yes	1
118	Hinge assembly	Hinge assembly	Yes	1
119	Cable, B	Cable, B	Yes	1
S01	Screw, A (CBM 3x6 NI)	Screw, A	Yes	6
S02	Screw, B (CBTE 3x8 NI)	Screw, B	Yes	4
S04	Screw, D (CPTE 4x12 NI)	Screw, D	Yes	2
S05	Screw, E (CBTC 3x4 ZN)	Screw, E	Yes	10
S06	Hexagon screw, A	Hexagon screw, A	Yes	2
S07	Hexagon screw, B	Hexagon screw, B	Yes	4
S09	Screw, F (CBM 3x8 NI)	Screw, F	Yes	2
S15	Screw, H (CPTE 4x10NI)	Screw, H	Yes	2
1041	Front panel unit	-	No	1
1042	Rear panel	-	No	1
1043	Bottom plate	-	No	1
1046	Screw, J	-	No	4
1047	Screw, K	-	No	4
1048	Screw, L	-	No	4
1049	Screw, M	-	No	1
1050	Screw, N	-	No	6
1052	Screw, P	-	No	2
1053	Screw, Q	-	No	4
1054	Scrwe, R	-	No	2
1055	Screw, S	-	No	2

DM-M820-013/023/113/123 Case Block

DM-M820-013/023/113/123 Component Block

S16

110

S16

S16

S16

1050

1050

1050

113

111

112

1050

1050

1052

DM-M820-013/023/113/123 Base Unit Block

117

1049

1048

1048

118

1046

1047

1043

119

| Confidential |

*Parts list DM-M820-014/024/114/124 (SERIAL NO. *xxxx00xxxx*)*

Table B-2 DM-M820-014/024 /114/124

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	
101	Cap, A	Cap, A	Yes	15	
102	Front cover	Cable, cover, front	Yes	1	
103	Rear cover	Cable, cover, rear	Yes	1	
106	MSR assembly	MSR, assembly	Yes	1	
108	Rear case	LCD, rear assembly	Yes	1	
109	Front case	LCD, front case	Yes	1	
110	LCD	LCD	Yes	1	
111	LCD circuit board	LCD circuit board	Yes	1	
112	Inverter circuit board	Inverter circuit board	Yes	1	
113	Switch circuit board	Switch circuit board	Yes	1	
114	Electric conductive tape	Electric conductive both sides tape	Yes	2	This tape is used to the old touch panel assembly type.
115	Touch panel unit	Touch panel, unit	Yes	1	Changed from touch panel assembly to touch panel unit.
116	Touch panel circuit board	Touch panel circuit board	Yes	1	
117	Base assembly	Base, assembly	Yes	1	
118	Hinge assemblies	Hinge assembly	Yes	1	
119	Cable, A	Cable, A	Yes	1	
120	Upper plate	Fixing plate, upper	Yes	1	This plate is used to the old touch panel assembly type.(Consolidated this part to the touch panel unit.)
121	Lower plate	Fixing plate, lower	Yes	1	This plate is used to the old touch panel assembly type.(Consolidated this part to the touch panel unit.)
S01	Screw, A (CBM 3x6 NI)	Screw, A	Yes	7	
S02	Screw, B (CBTE 3x8 NI)	Screw, B	Yes	4	
S03	Screw, C (CPTE 2x5 NI)	Screw, C	Yes	1	
S04	Screw, D (CPTE 4x12 NI)	Screw, D	Yes	2	
S05	Screw, E (CBTC 3x4 ZN)	Screw, E	Yes	14	
S06	Hexagon screw, A	Hexagon screw, A	Yes	2	
S07	Hexagon screw, B	Hexagon screw, B	Yes	4	
S09	Screw, F (CBM 3x8 NI)	Screw, F	Yes	2	
S10	Screw, G (CPTE 3x8 NI)	Screw, G	Yes	3	
S15	Screw, H (CPTE 4x10NI)	Screw, H	Yes	2	
S16	Screw, I (CBM 3x5NI)	Screw, I	Yes	4	

Table B-2 DM-M820-014/024 /114/124

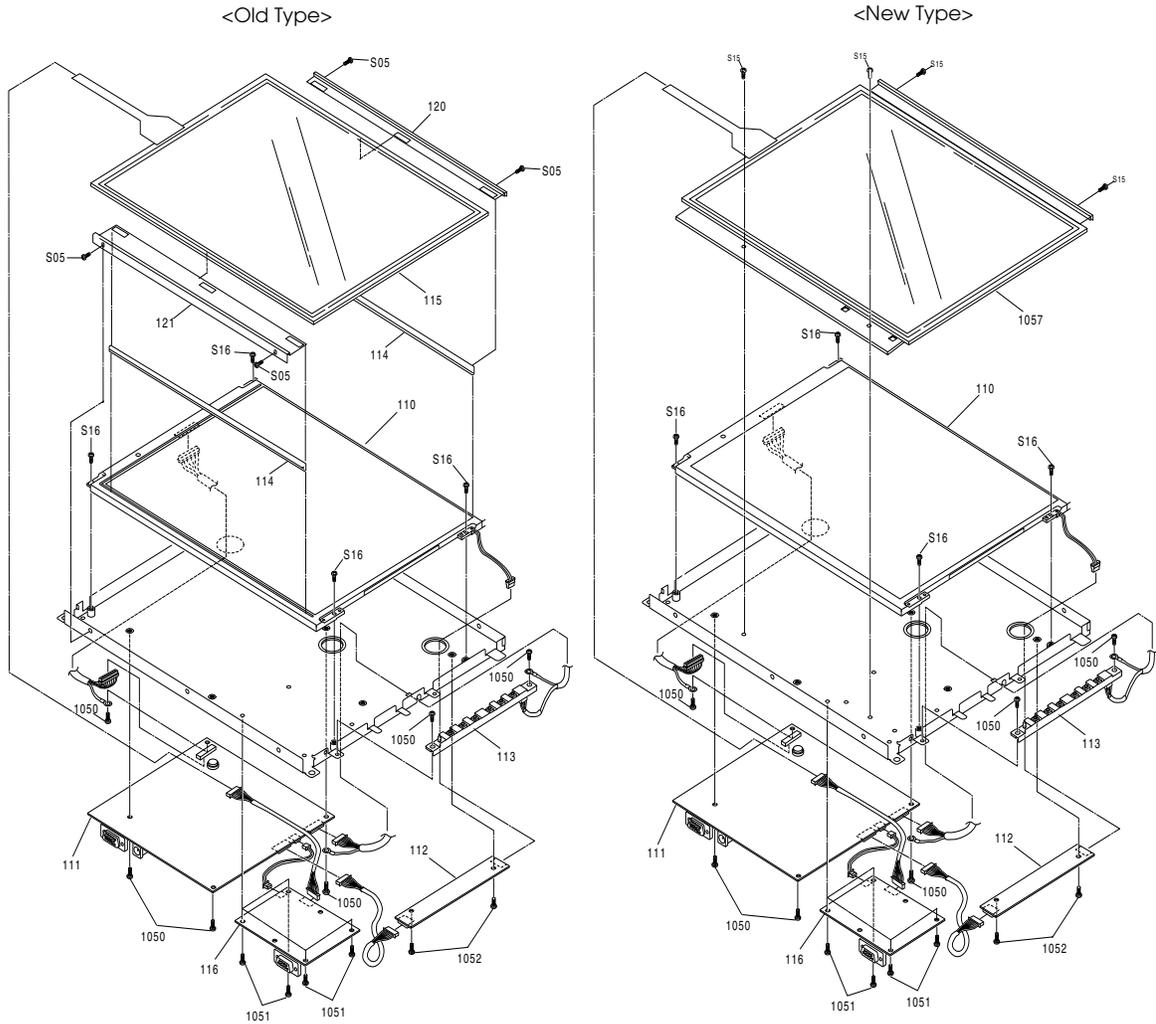| Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	
1041	Front panel unit	-	No	1	
1042	Rear panel	-	No	1	
1043	Bottom plate	-	No	1	
1044	Clamps	-	No	1	
1045	LED circuit board	-	No	1	
1046	Screw, J	-	No	4	
1047	Screw, K	-	No	4	
1048	Screw, L	-	No	4	
1049	Screw, M	-	No	1	
1050	Screw, N	-	No	6	
1051	Screw, O	-	No	4	
1052	Screw, P	-	No	2	
1053	Screw, Q	-	No	4	
1054	Scrwe, R	-	No	2	
1055	Screw, S	-	No	2	

DM-M820-014/024/114/124 (SERIAL NO. *xxxx00xxxx*) Case Block

Appendix B-8 Parts Information

Rev. I

DM-M820-014/024/114/124 (SERIAL NO. *xxxx00xxxx*) Component Block

<DM-M820-014/024 Old type>

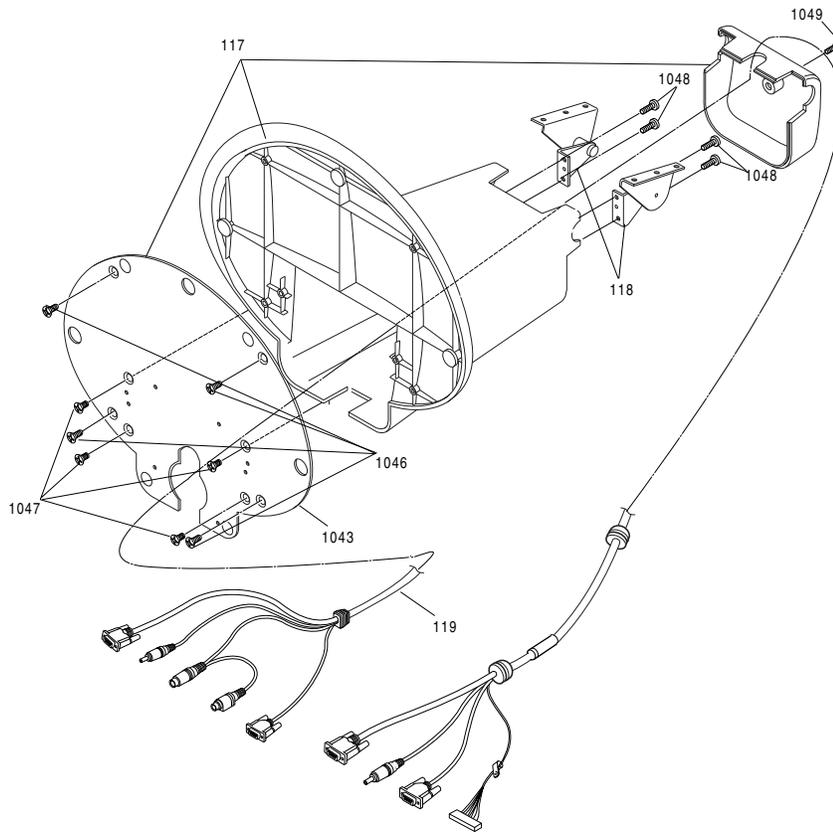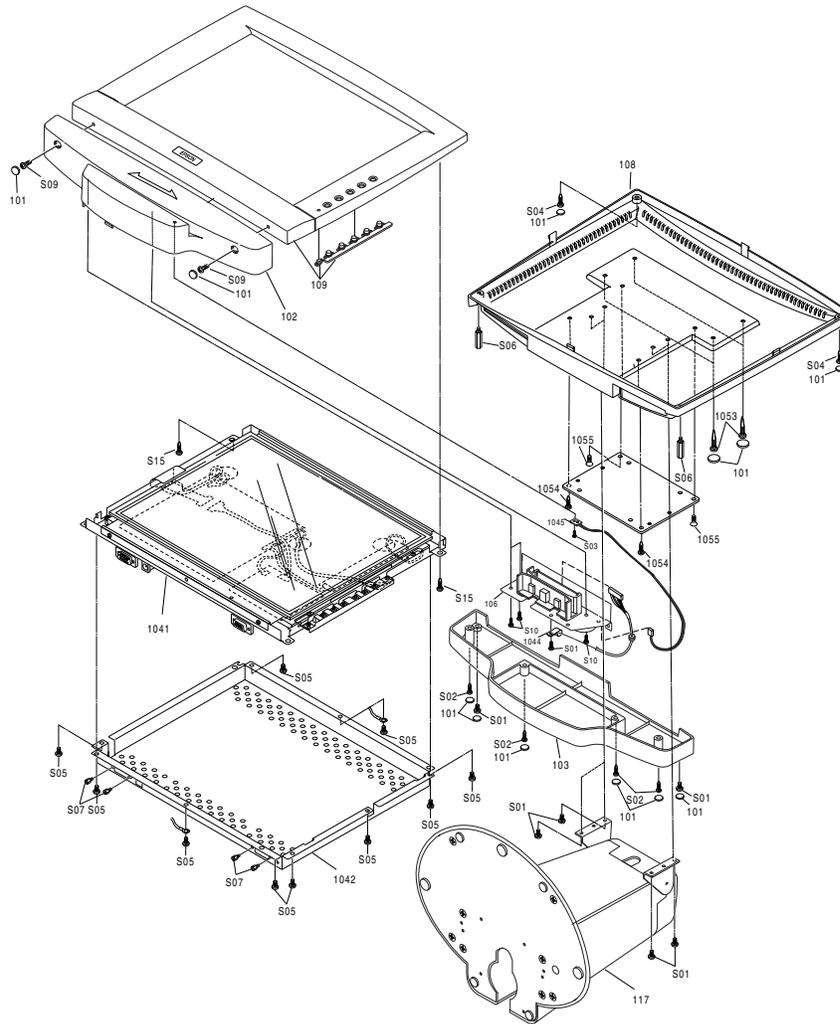**<DM-M820-114/124>**
<DM-M820-014/024 New type>

<Old Type>

<New Type>

DM-M820-014/024/114/124 (SERIAL NO. *xxxx00xxxx*) Base unit Block

*Parts list DM-M820-014/024/114/124 (Later the SERIAL NO. *xxxx01xxxx*)*

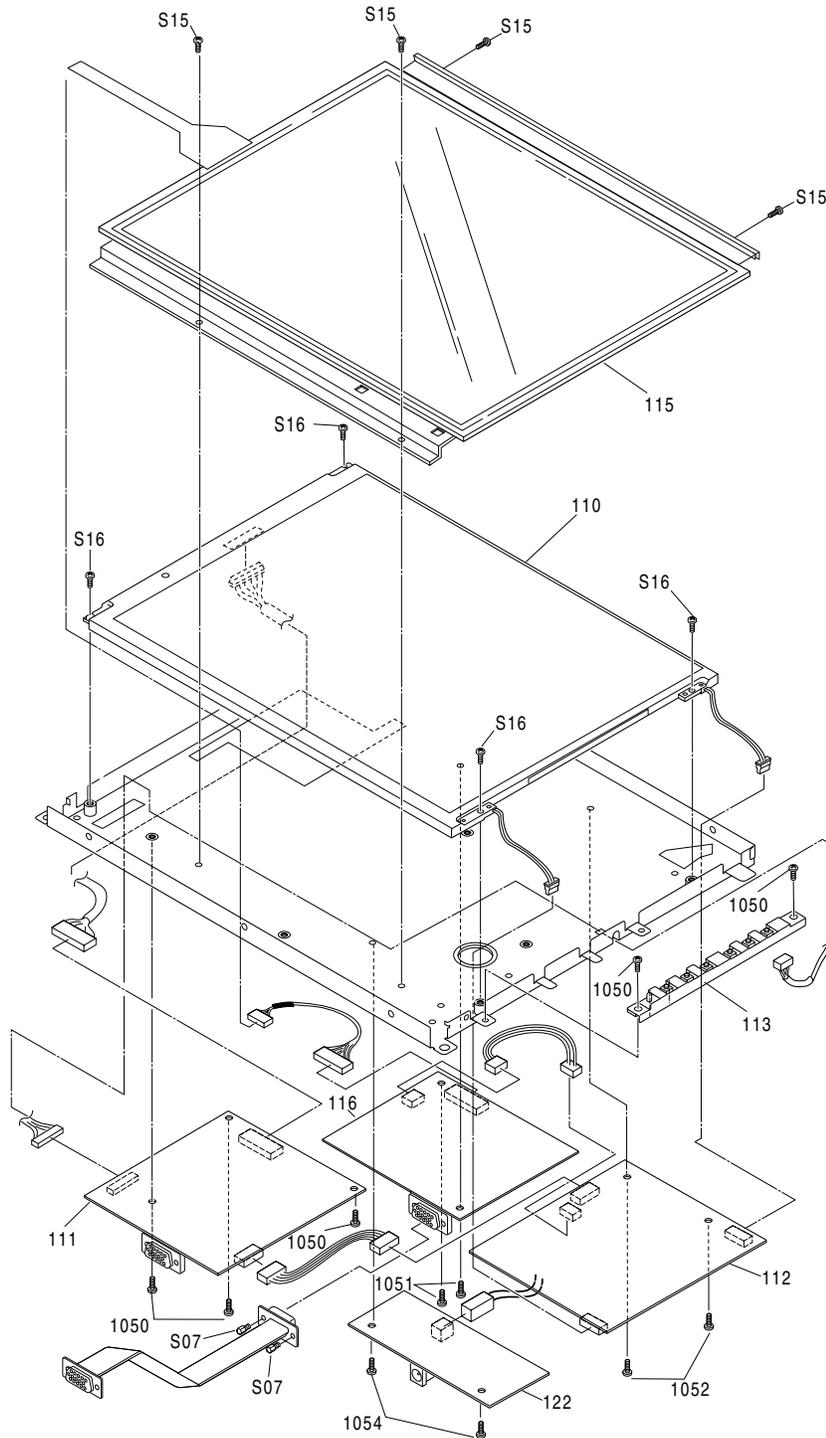*Table B-3 DM-M820-014/024 /114/124*

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	
101	Cap, A	Cap, A	Yes	14	
102	Front cover	Cable, cover, front	Yes	1	
103	Rear cover	Cable, cover, rear	Yes	1	
106	MSR assembly	MSR, assembly	Yes	1	
108	Rear case	LCD, rear assembly	Yes	1	
109	Front case	LCD, front case	Yes	1	
110	LCD	LCD	Yes	1	
111	LCD circuit board	LCD circuit board	Yes	1	
112	Inverter circuit board	Inverter circuit board	Yes	1	
113	Switch circuit board	Switch circuit board	Yes	1	
115	Touch panel unit	Touch panel, unit	Yes	1	
116	Touch panel circuit board	Touch panel circuit board	Yes	1	
117	Base assembly	Base, assembly	Yes	1	
118	Hinge assemblies	Hinge assembly	Yes	1	
119	Cable, A	Cable, A	Yes	1	
122	DC Jack board	DC Jack board	Yes	1	
S01	Screw, A (CBM 3x6 NI)	Screw, A	Yes	7	
S02	Screw, B (CBTE 3x8 NI)	Screw, B	Yes	4	
S03	Screw, C (CPTE 2x5 NI)	Screw, C	Yes	1	
S04	Screw, D (CPTE 4x12 NI)	Screw, D	Yes	2	
S05	Screw, E (CBTC 3x4 ZN)	Screw, E	Yes	14	
S06	Hexagon screw, A	Hexagon screw, A	Yes	2	
S07	Hexagon screw, B	Hexagon screw, B	Yes	6	
S09	Screw, F (CBM 3x8 NI)	Screw, F	Yes	2	
S10	Screw, G (CPTE 3x8 NI)	Screw, G	Yes	3	
S15	Screw, H (CPTE 4x10NI)	Screw, H	Yes	2	
S16	Screw, I (CBM 3x5NI)	Screw, I	Yes	4	
1041	Front panel unit	-	No	1	
1042	Rear panel	-	No	1	
1043	Bottom plate	-	No	1	
1044	Clamps	-	No	1	
1046	Screw, J	-	No	4	
1047	Screw, K	-	No	4	
1048	Screw, L	-	No	4	

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Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	
1049	Screw, M	-	No	1	
1050	Screw, N	-	No	6	
1051	Screw, O	-	No	4	
1052	Screw, P	-	No	2	
1053	Screw, Q	-	No	4	
1054	Scrwe, R	-	No	2	
1055	Screw, S	-	No	2	
1056	Screw, T	-	No	2	

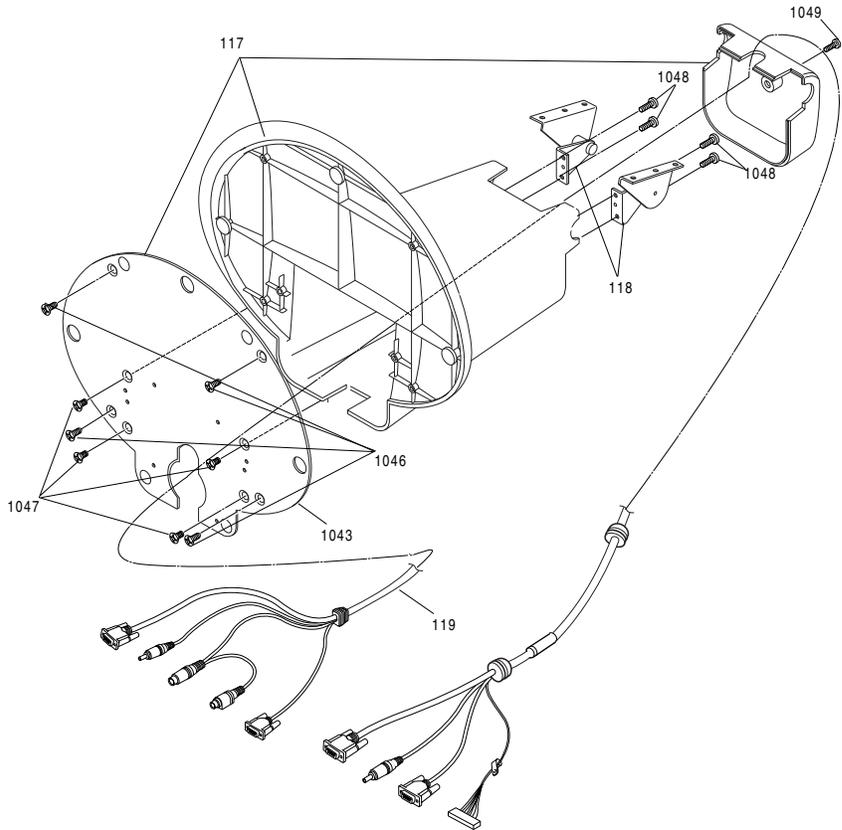## DM-M820-014/024/114/124 (Later the SERIAL NO. *xxxx01xxxx*) Case Block

Confidential

DM-M820-014/024/114/124 (Later the SERIAL NO. *xxxx01xxxx*) Component Block

DM-M820-014/024/114/124 (Later the SERIAL NO. *xxxx01xxxx*) Base unit Block

*Parts list DM-M820-015/025/115/125 (SERIAL NO. *xxxx00xxxx*)*

Table B-4 DM-M820-015/025/115/125

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	Note
101	Cap, A	Cap, A	Yes	15	
102	Front cover	Cable, cover, front	Yes	1	
103	Rear cover	Cable, cover, rear	Yes	1	
108	Rear case	LCD, rear assembly	Yes	1	
109	Front case	LCD, front case	Yes	1	
110	LCD	LCD	Yes	1	
111	LCD circuit board	LCD circuit board	Yes	1	
112	Inverter circuit board	Inverter circuit board	Yes	1	
113	Switch circuit board	Switch circuit board	Yes	1	
114	Electric conductive tape	Electric conductive both sides tape	Yes	2	This tape is used to the old touch panel assembly type.
115	Touch panel unit	Touch panel, unit	Yes	1	Changed from touch panel assembly to touch panel unit.
116	Touch panel circuit board	Touch panel circuit board	Yes	1	
117	Base assembly	Base, assembly	Yes	1	
118	Hinge assemblies	Hinge assembly	Yes	1	
119	Cable	Cable, C	Yes	1	
120	Upper plate	Fixing plate, upper	Yes	1	This plate is used to the old touch panel assembly type.(Consolidated this part to the touch panel unit.)
121	Lower plate	Fixing plate, lower	Yes	1	This plate is used to the old touch panel assembly type.(Consolidated this part to the touch panel unit.)
S01	Screw, A (CBM 3x6 NI)	Screw, A	Yes	6	
S02	Screw, B (CBM 3x8 NI)	Screw, B	Yes	4	
S04	Screw, D (CPTE 4x12 NI)	Screw, D	Yes	2	
S05	Screw, E (CBTC 3x4 ZN)	Screw, E	Yes	14	
S06	Hexagon screw, A	Hexagon screw, A	Yes	2	
S07	Hexagon screw, B	Hexagon screw, B	Yes	4	
S09	Screw, F (CBM 3x8 NI)	Screw, F	Yes	2	
S15	Screw, H (CPTE 4x10NI)	Screw, H	Yes	2	
S16	Screw, I (CBM 3x5NI)	Screw, I	Yes	4	
1041	Front panel unit	-	No	1	
1042	Rear panel	-	No	1	
1043	Bottom plate	-	No	1	

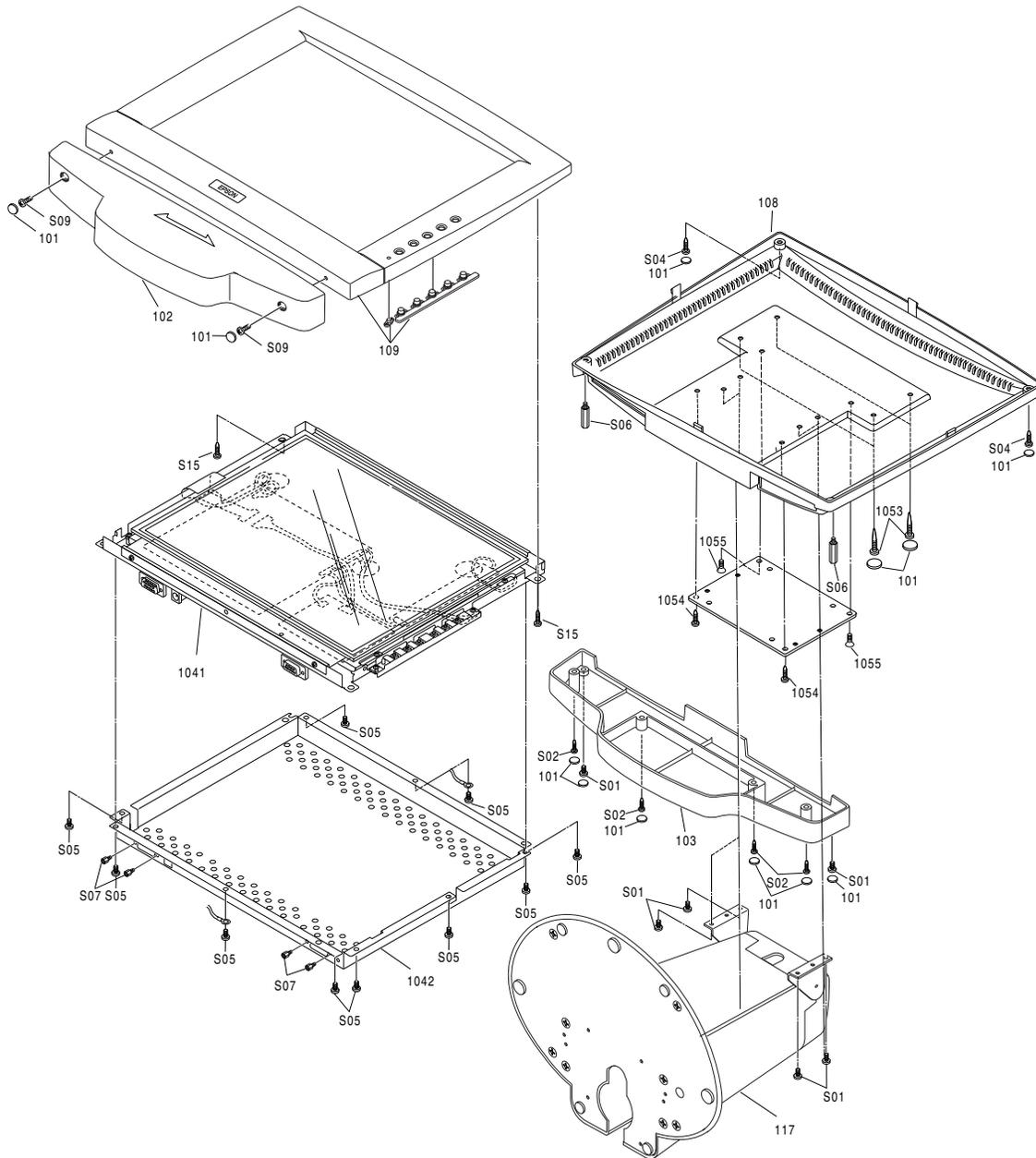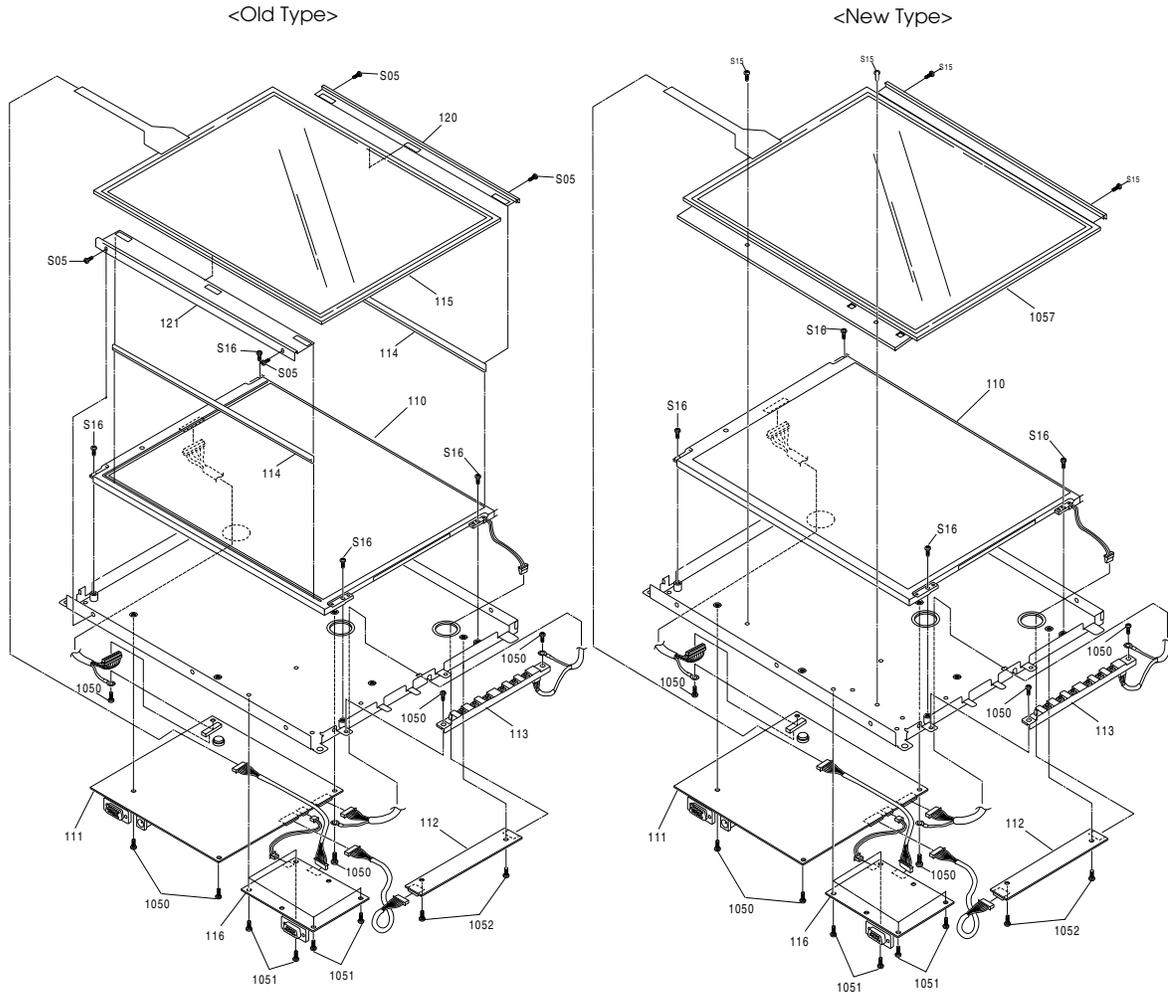*Table B-4 DM-M820-015/025/115/125*

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	Note
1046	Screw, J	-	No	4	
1047	Screw, K	-	No	4	
1048	Screw, L	-	No	4	
1049	Screw, M	-	No	1	
1050	Screw, N	-	No	6	
1051	Screw, O	-	No	4	
1052	Screw, P	-	No	2	
1053	Screw, Q	-	No	4	
1054	Scrwe, R	-	No	2	
1055	Screw, S	-	No	2	

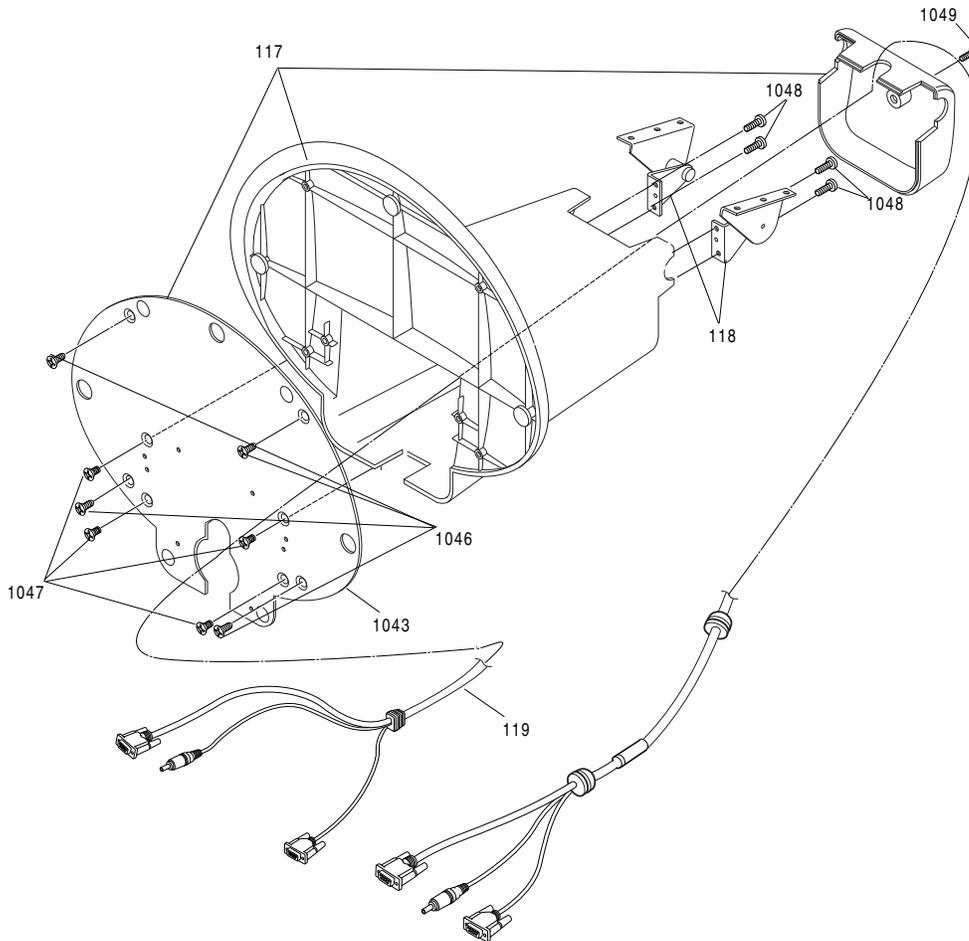**DM-M820-015/025/115/125 (SERIAL NO. *xxxx00xxxx*) Case Block**

DM-M820-015/025/115/125 (SERIAL NO. *xxxx00xxxx*) Component Block

<New Type>

<Old Type>

DM-M820-015/025/115/125 (SERIAL NO. *xxxx00xxxx*) Base unit Block

Parts list DM-M820-015/025/115/125 (Later the SERIAL NO. *xxxx01xxxx*)

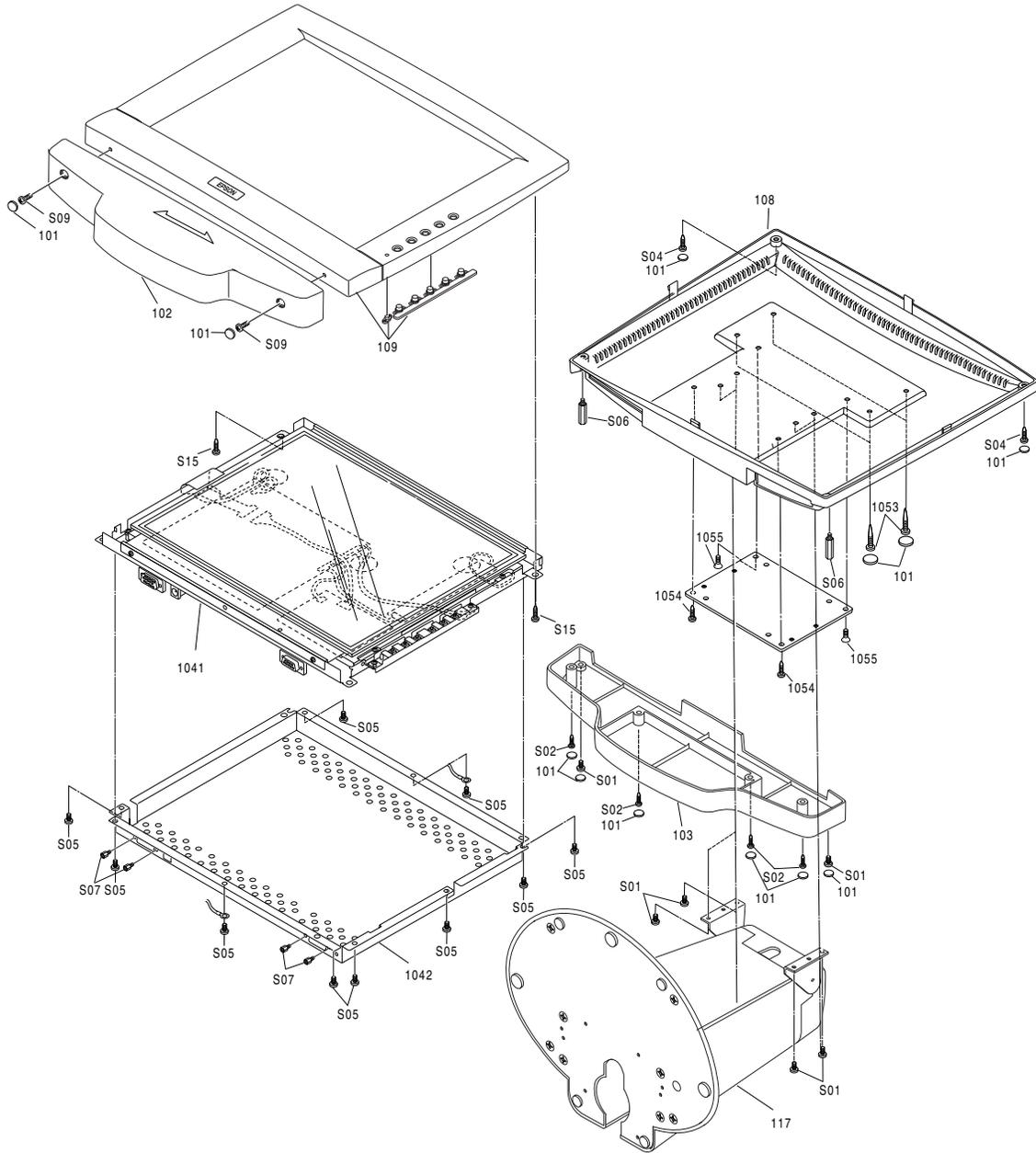*Table B-5 DM-M820-015/025 /115/125*

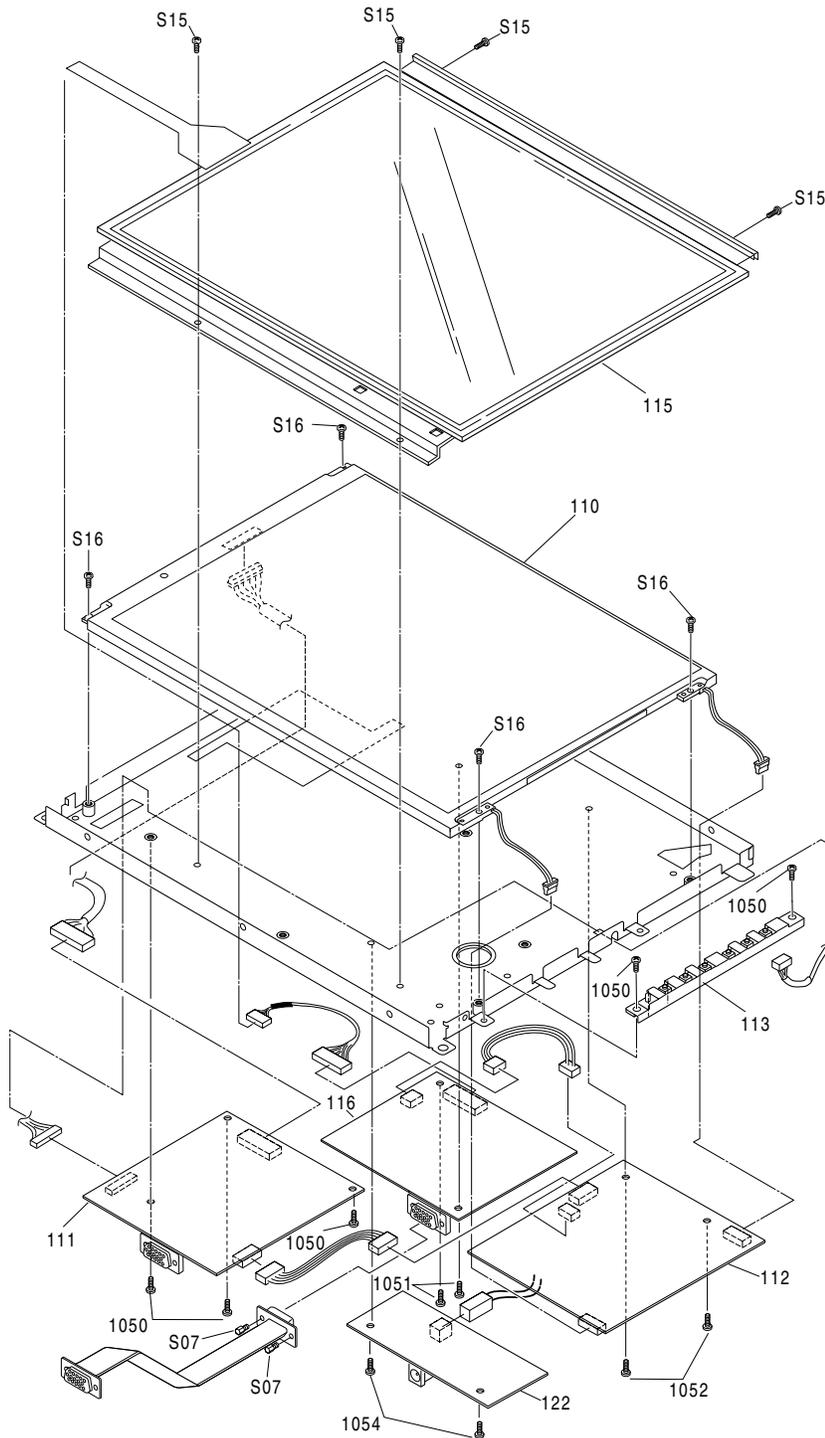| Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	
101	Cap, A	Cap, A	Yes	14	
102	Front cover	Cable, cover, front	Yes	1	
103	Rear cover	Cable, cover, rear	Yes	1	
108	Rear case	LCD, rear assembly	Yes	1	
109	Front case	LCD, front case	Yes	1	
110	LCD	LCD	Yes	1	
111	LCD circuit board	LCD circuit board	Yes	1	
112	Inverter circuit board	Inverter circuit board	Yes	1	
113	Switch circuit board	Switch circuit board	Yes	1	
115	Touch panel unit	Touch panel, unit	Yes	1	
116	Touch panel circuit board	Touch panel circuit board	Yes	1	
117	Base assembly	Base, assembly	Yes	1	
118	Hinge assemblies	Hinge assembly	Yes	1	
119	Cable, A	Cable, A	Yes	1	
122	DC Jack board	DC Jack board	Yes	1	
S01	Screw, A (CBM 3x6 NI)	Screw, A	Yes	7	
S02	Screw, B (CBTE 3x8 NI)	Screw, B	Yes	4	
S04	Screw, D (CPTE 4x12 NI)	Screw, D	Yes	2	
S05	Screw, E (CBTC 3x4 ZN)	Screw, E	Yes	14	
S06	Hexagon screw, A	Hexagon screw, A	Yes	2	
S07	Hexagon screw, B	Hexagon screw, B	Yes	6	
S09	Screw, F (CBM 3x8 NI)	Screw, F	Yes	2	
S10	Screw, G (CPTE 3x8 NI)	Screw, G	Yes	3	
S15	Screw, H (CPTE 4x10NI)	Screw, H	Yes	2	
S16	Screw, I (CBM 3x5NI)	Screw, I	Yes	4	
1041	Front panel unit	-	No	1	
1042	Rear panel	-	No	1	
1043	Bottom plate	-	No	1	
1044	Clamps	-	No	1	
1046	Screw, J	-	No	4	
1047	Screw, K	-	No	4	
1048	Screw, L	-	No	4	
1049	Screw, M	-	No	1	
1050	Screw, N	-	No	6	
1051	Screw, O	-	No	4	
1052	Screw, P	-	No	2	

Table B-5 DM-M820-015/025 /115/125

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit	
1053	Screw, Q	-	No	4	
1054	Scrwe, R	-	No	2	
1055	Screw, S	-	No	2	
1056	Screw, T	-	No	2	

DM-M820-015/025/115/125 (Later the SERIAL NO. *xxxx01xxxx*) Case Block

S09
101

102

101

S09

109

108

S04
101

S06

S04
101

1053

1055

S06

101

1054

1055

S15

S15

1041

1054

S05

S05

S02
101

S01

S05

S02
101

103

S05

S01

S07 S05

S02
101

S01
101

S05

S05

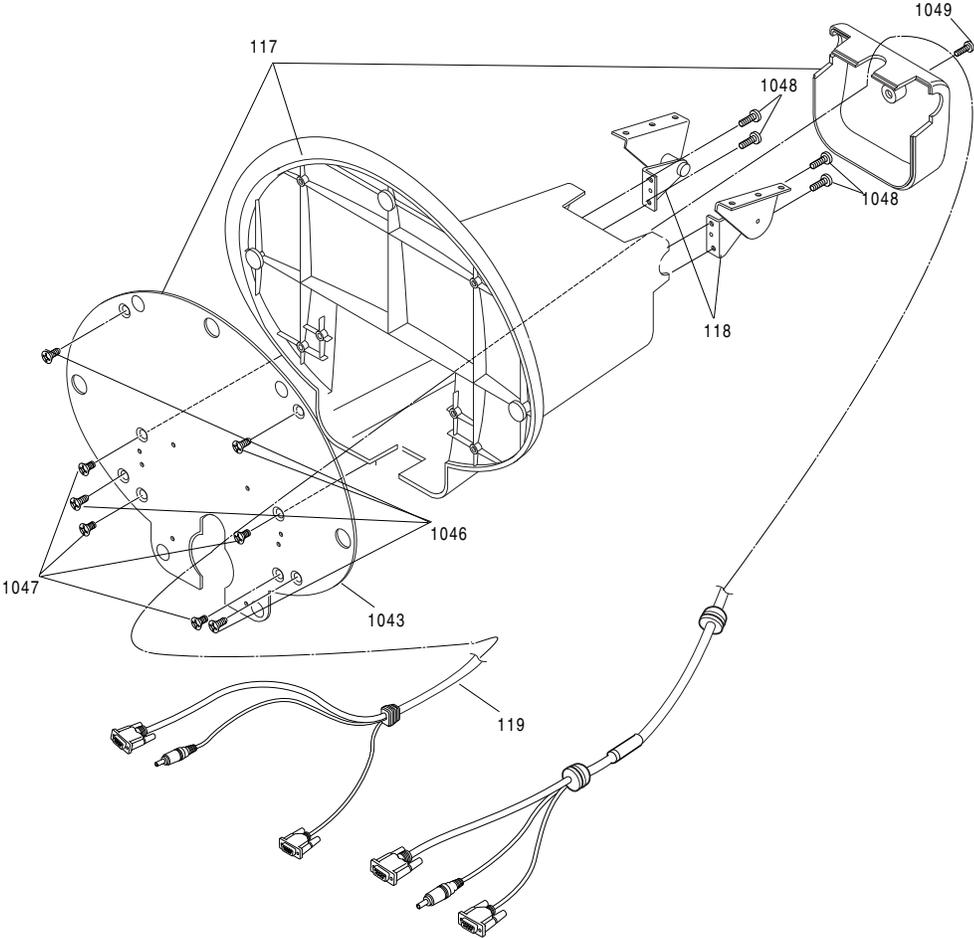S01
101

S05

S07

1042

S01

S05

117

Confidential

DM-M820-015/025/115/125 (Later the SERIAL NO. *xxxx01xxxx*) Component Block

DM-M820-015/025/115/125 (Later the SERIAL NO. *xxxx01xxxx*) Base unit Block

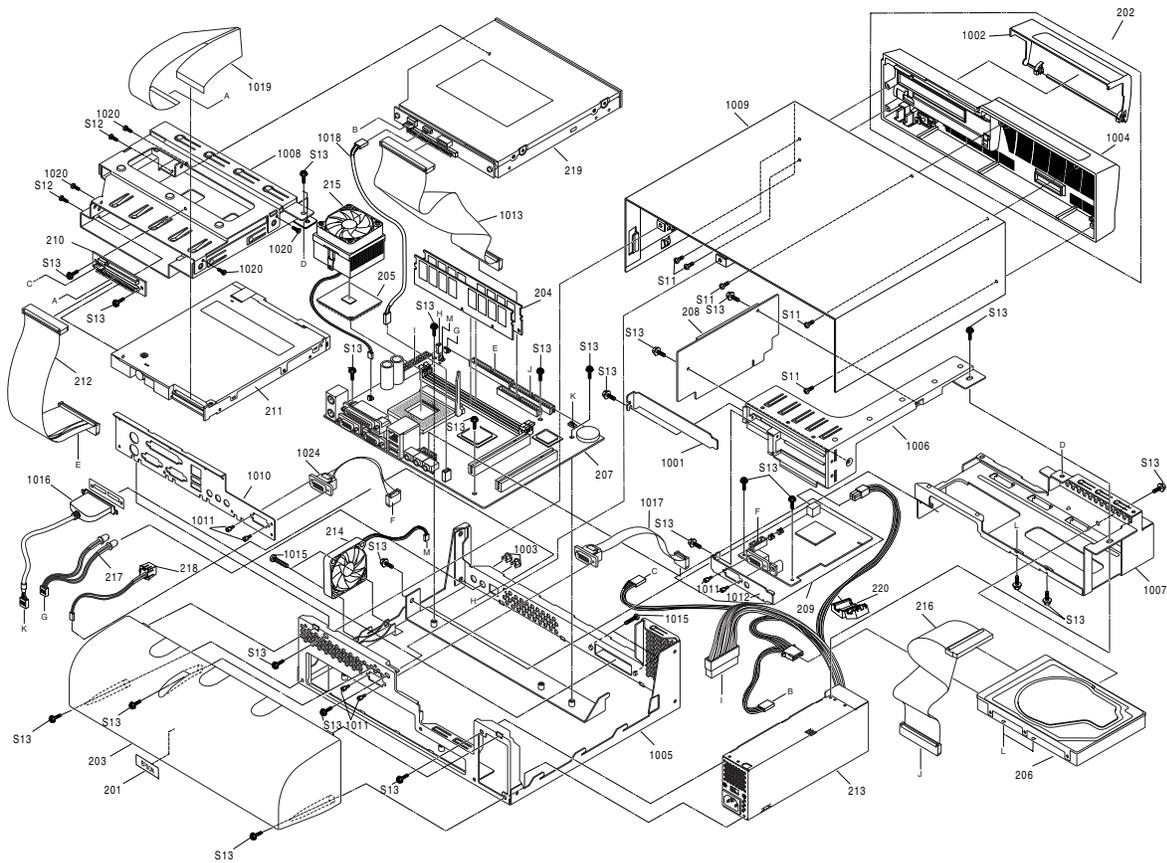## Parts list (IM-800 for 3.5"HDD Model)

Table B-6 IM-800 for 3.5"HDD Model

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit
201	Label	LABEL,EPSON LOGOTYPE,ECW4010	Yes	1
202	IM-800 front case assembly	CASE,FRONT,ASS'Y	Yes	1
203	IM-800 rear case	CASE,REAR	Yes	1
204	DIMM	DIMM	Yes	1
205	CPU	CPU, Celeron	Yes	1
206	3.5"HDD	3.5HDD	Yes	1
207	Main circuit board	MAIN CIRCUIT BOARD UNIT	Yes	1
208	Riser circuit board	RAISER CIRCUIT BOARD ASS'Y	Yes	1
209	COM port circuit board	COM PORT CIRCUIT BOARD ASS'Y	Yes	1
210	FDD circuit board	FDD CIRCUIT BOARD ASS'Y	Yes	1
211	FDD	FDD UNIT	Yes	1
212	FDD cable	FDD CABLE ASS'Y	Yes	1
213	Power supply	POWER SUPPLY	Yes	1
214	System fan	FAN SET	Yes	1
215	CPU cooler	CPU COOLER	Yes	1
216	HDD cable	HDD CABLE ASS'Y	Yes	1
217	LED cable	LED CABLE ASS'Y	Yes	1
218	switch cable assembly	POWER CABLE ASS'Y	Yes	1
219	CD-ROM	CD-ROM UNIT	Yes	1
220	Ferrite core	Ferrite core	Yes	1
S11	Screw, A,IM-800	SCREW,A,IM-800	Yes	5
S12	Screw, C,IM-800	SCREW,C,IM-800	Yes	2
S13	Screw, F,IM-800	SCREW,F,IM-800	Yes	26
S15	Screw, B,IM-800	-	Yes	4
1001	Connector plate	-	No	1
1002	CD cover	-	No	1
1003	LED holder	-	No	1
1004	Front case	-	No	1
1005	Lower frame	-	No	1
1006	Riser frame	-	No	1
1007	HDD bracket	-	No	1
1008	CD/FDD bracket	-	No	1
1009	IM-800 upper case	-	No	1
1010	IO shield	-	No	1

Table B-6 IM-800 for 3.5"HDD Model

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit
1011	Screw, E,IM-800	-	No	6
1013	CD-ROM cable	-	No	1
1014	power supply FANP	-	No	1
1015	Screw for FAN, Screw for USB interface	-	No	4
1016	USB cable	-	No	1
1017	COM cable	-	No	1
1018	Audio cable	-	No	1
1019	FFC cable	-	No	1
1020	Screw, G,IM-800	-	No	4
1024	COM cable, B	-	No	1

IM-800 for 3.5"HDD Model Component Block

Parts list (IM-800 24V model)

Table B-7 IM-800 3.5"HDD with TM Printer Power Supply and Speaker Model

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit
201	Label	LABEL,EPSON LOGOTYPE,ECW4010	Yes	1
202	IM-800 front case assembly	CASE,FRONT,ASS'Y	Yes	1
203	IM-800 rear case	CASE,REAR	Yes	1
204	DIMM	DIMM	Yes	1
205	CPU	CPU, Celeron	Yes	1
206	3.5"HDD	3.5HDD	Yes	1
207	Main circuit board	MAIN CIRCUIT BOARD UNIT	Yes	1
208	Riser circuit board	RAISER CIRCUIT BOARD ASS'Y	Yes	1
209	COM port circuit board	COM PORT CIRCUIT BOARD ASS'Y	Yes	1
210	FDD circuit board	FDD CIRCUIT BOARD ASS'Y	Yes	1
211	FDD	FDD UNIT	Yes	1
212	FDD cable	FDD CABLE ASS'Y	Yes	1
213	Power supply	POWER SUPPLY	Yes	1
214	System fan	FAN SET	Yes	1
215	CPU cooler	CPU COOLER	Yes	1
216	HDD cable	HDD CABLE ASS'Y	Yes	1
217	LED cable	LED CABLE ASS'Y	Yes	1
218	switch cable assembly	POWER CABLE ASS'Y	Yes	1
219	CD-ROM	CD-ROM UNIT	Yes	1
220	Ferrite core	Ferrite core	Yes	1
221	SHORT PLUG	SHORT PLUG, LPC-SPG	Yes	2
222	2HDD circuit board	2HDD 310 CIRCUIT BOARDASS'Y	Yes	1
223	Speaker	SPEAKER, ASS'Y, IM-800	Yes	1
224	DC cable	DC cable	Yes	1
225	DC 24 board	DC24V BOARD, ASS'Y ,A	Yes	1
226	Gasket ,B	Gasket ,B, IM-800	Yes	1
227	SPRING ,A	SPRING ,A ,IM-800	Yes	1
228	Double-sides tape	DOUBLE - SIDES TAPE ,IM-800 ,A	Yes	1
S11	Screw, A,IM-800	SCREW,A,IM-800	Yes	5
S12	Screw, C,IM-800	SCREW,C,IM-800	Yes	2
S13	Screw, F,IM-800	SCREW,D,IM-800	Yes	26
S15	Screw, B,IM-800	SCREW,B,IM-800	Yes	8
S16	Screw, 2HDD	C,C,S-TITE SCREW 3 x 6	Yes	2
S17	Screw, H,IM-800	SCREW,H,IM-800	Yes	2

Table B-7 IM-800 3.5"HDD with TM Printer Power Supply and Speaker Model

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit
1001	Connector plate	-	No	1
1002	CD cover	-	No	1
1003	LED holder	-	No	1
1004	Front case	-	No	1
1005	Lower frame	-	No	1
1006	Riser frame	-	No	1
1007	HDD bracket	-	No	1
1008	CD/FDD bracket	-	No	1
1009	IM-800 upper case	-	No	1
1010	IO shield	-	No	1
1011	Screw, E,IM-800	-	No	6
1013	CD-ROM cable	-	No	1
1014	power supply FANP	-	No	1
1015	Screw for FAN, Screw for USB interface	-	No	4
1016	USB cable	-	No	1
1017	COM cable	-	No	1
1018	Audio cable	-	No	1
1019	FFC cable	-	No	1
1020	Screw, G,IM-800	-	No	4
1021	Bracket, 2.5HDD	-	No	1
1022	Speaker, Holder	-	No	1
1023	Speaker, Spacer	-	No	2
1024	COM cable, B	-	No	1
1025	Cable tie	-	No	1

IM-800 24V for 3.5"HDD Model and Speaker Model Component Block

Parts list (IM-800 for 2.5"HDD Model and Speaker Model)

Table B-8 IM-800 for 2.5"HDD Model and Speaker Model

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit
201	Label	LABEL,EPSON LOGOTYPE,ECW4010	Yes	1
202	IM-800 front case assembly	CASE,FRONT,ASS'Y	Yes	1
203	IM-800 rear case	CASE,REAR	Yes	1
204	DIMM	DIMM	Yes	1
205	CPU	CPU, Celeron	Yes	1
206	2.5"HDD	2.5HDD	Yes	2
207	Main circuit board	MAIN CIRCUIT BOARD UNIT	Yes	1
208	Riser circuit board	RAISER CIRCUIT BOARD ASS'Y	Yes	1
209	COM port circuit board	COM PORT CIRCUIT BOARD ASS'Y	Yes	1
210	FDD circuit board	FDD CIRCUIT BOARD ASS'Y	Yes	1
211	FDD	FDD UNIT	Yes	1
212	FDD cable	FDD CABLE ASS'Y	Yes	1
213	Power supply	POWER SUPPLY	Yes	1
214	System fan	FAN SET	Yes	1
215	CPU cooler	CPU COOLER	Yes	1
216	HDD cable	HDD CABLE ASS'Y	Yes	1
217	LED cable	LED CABLE ASS'Y	Yes	1
218	switch cable assembly	POWER CABLE ASS'Y	Yes	1
219	CD-ROM	CD-ROM UNIT	Yes	1
220	Ferrite core	Ferrite core	Yes	1
221	SHORT PLUG	SHORT PLUG, LPC-SPG	Yes	2
222	2HDD circuit board	2HDD 310 CIRCUIT BOARDASS'Y	Yes	1
223	Speaker	SPEAKER, ASS'Y, IM-800	Yes	1
S11	Screw, A,IM-800	SCREW,A,IM-800	Yes	5
S12	Screw, C,IM-800	SCREW,C,IM-800	Yes	2
S13	Screw, F,IM-800	SCREW,D,IM-800	Yes	26
S15	Screw, B,IM-800	SCREW,B,IM-800	Yes	8
S16	Screw, 2HDD	C,C,S-TITE SCREW 3 x 6	Yes	2
S17	Screw, H,IM-800	SCREW,H,IM-800	Yes	2
1001	Connector plate	-	No	1
1002	CD cover	-	No	1
1003	LED holder	-	No	1
1004	Front case	-	No	1
1005	Lower frame	-	No	1

Table B-8 IM-800 for 2.5″HDD Model and Speaker Model

Ref. #	Name for technical reference manual	Name for spare parts price list	Part supply	Unit
1006	Riser frame	-	No	1
1007	HDD bracket	-	No	1
1008	CD/FDD bracket	-	No	1
1009	IM-800 upper case	-	No	1
1010	IO shield	-	No	1
1011	Screw, E,IM-800	-	No	6
1013	CD-ROM cable	-	No	1
1014	power supply FANP	-	No	1
1015	Screw for FAN, Screw for USB interface	-	No	4
1016	USB cable	-	No	1
1017	COM cable	-	No	1
1018	Audio cable	-	No	1
1019	FFC cable	-	No	1
1020	Screw, G,IM-800	-	No	4
1021	Bracket, 2.5HDD	-	No	1
1022	Speaker, Holder	-	No	1
1023	Speaker, Spacer	-	No	2
1024	COM cable, B	-	No	1

IM-800 for 2.5"HDD Model and Speaker Model Component Block

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