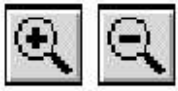
IM-300
User's Manual

Using this online operator's guide

The words on the left side of this screen are bookmarks for all the topics in this guide.

Use the scroll bar next to the bookmarks to find any topic you want. Click a bookmark to instantly jump to its topic. (If you wish, you can increase the size of the bookmark area by dragging the dividing bar to the right.)

Use the scroll bar on the right side of this screen to move through the text.

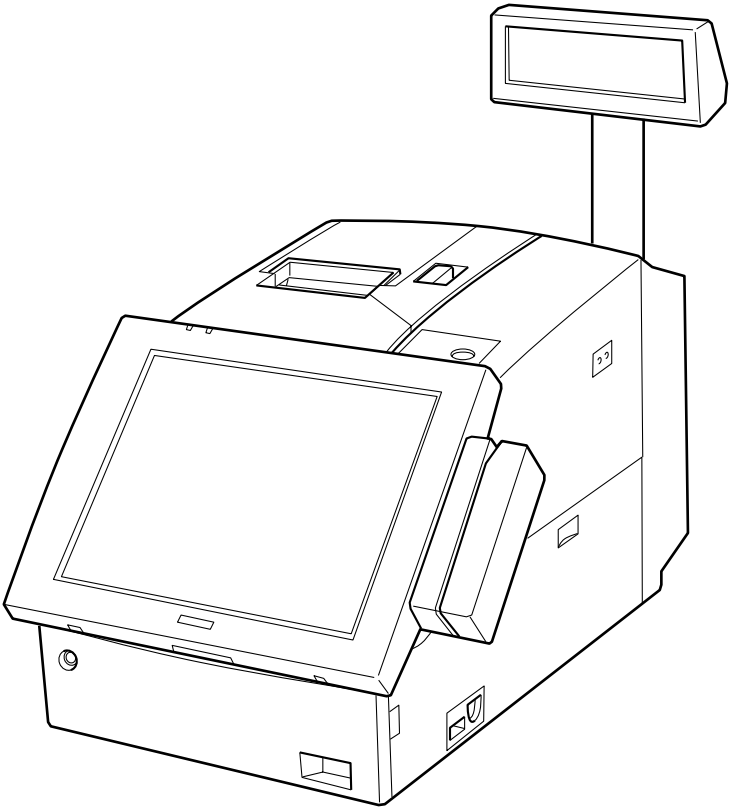


Use the zoom tools to magnify or reduce the page display.

Click the Find button if you want to search for a particular term. (However, using the bookmarks is usually quicker.)

Complete online documentation for Acrobat Reader is located in the Help directory for Acrobat Reader.

Return to main menu



IM-300

User's Manual

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Copyright Information

Notice

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FCC CLASS A

FCC COMPLIANCE STATEMENT FOR AMERICAN USERS

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

WARNING

The connection of a non-shielded interface cable to this product will invalidate the FCC Verification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FOR CANADIAN USERS

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigenves du Règlement sur le matériel brouileur du Canada.

電波障害自主規制について

注意

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

高調波対策ガイドライン

本装置は社団法人日本電子工業振興協会の定めた電子計算機及び関連機器の高調波対策ガイドラインを満足しています。

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Appendix C Memory Specifications

Introduction

The IM-300 is an intelligent terminal developed for the POS environment.

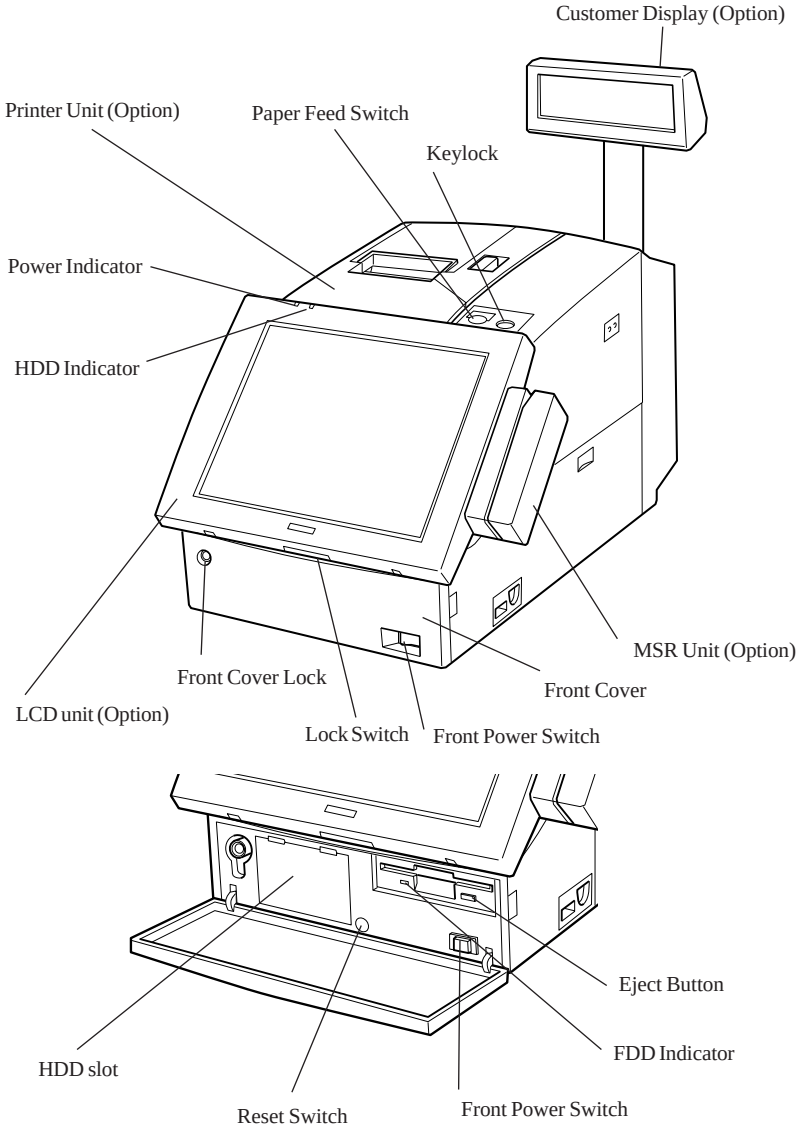
The IM-300 has the following features.

1. An Intel® Pentium® processor or Intel MMX™ technology Pentium processor can be used. This high speed CPU processor provides the power and speed necessary for data processing.
2. Using it in combination with a variety of options and peripheral devices allows you to construct a system that suits your needs best.
3. The security on the front panel allows only the key owner to take out the floppy disk and the hard disk drive.
4. The keylock keys allow setting of the user's authority.
5. The refined power management function supplies power by the amount necessary for data processing, assuring optimum power saving.
6. Use of an updatable 256KB flash ROM for system ROM.
7. Use of PC/AT compatible BIOS. This allows you to execute not only specific application software but also any PC program of your choice.
8. Use of a built-in Device Diagnostics utility allows quick and easy error handling.
9. Support of Plug & Play function
10. Capability of supplying +5V or +12V to all serial ports.
11. Equipped with 32KB NVRAM for POS
12. Uses a PC-based open architecture to increase system expandability, providing one ISA slot, one PCI/ISA slot, and one special extension slot.
13. Input/output units include the keyboard unit, which allows free definition of key functions and the LCD unit. A touch-panel type of LCD unit is also available, which allows you to do the free layout of the screen.
14. The built-in IBM PS/2 keyboard port supports IBM PC/AT compatible keyboards.Therefore, it is possible to connect any commercially available keyboard in accordance with your environment.
15. Use of standard SIMMs allows you to install memory of up to 64MB.
16. Four serial ports and one parallel port allow connection of industry-standard peripheral devices, increasing system expandability.
17. In addition to the standard 3.5-inch floppy disk drive, up to two 2.5-inch hard disk drives can be installed.

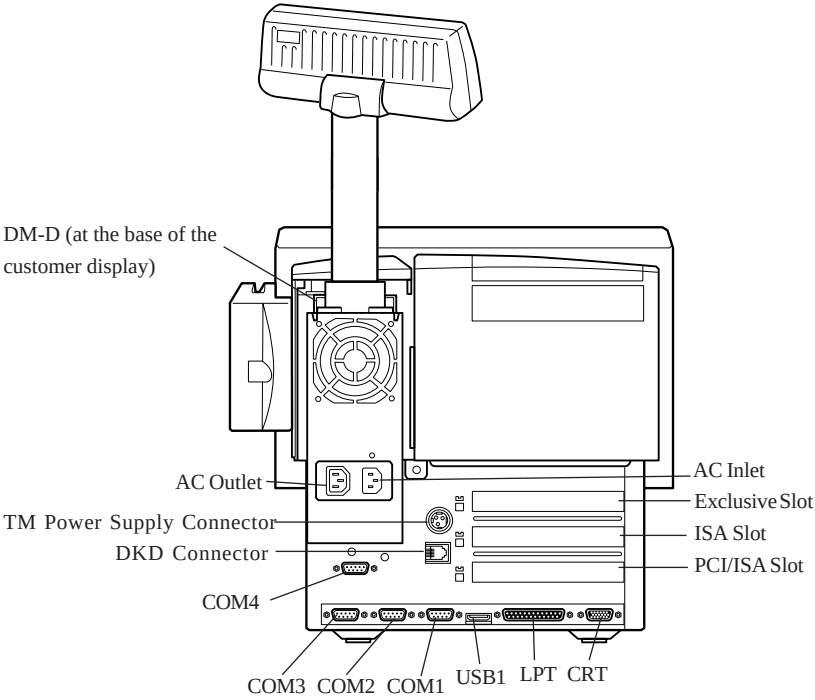
18. The hard disk drive can easily be removed or mounted. In the event of a system failure, the hard disk can be moved immediately to another IM-300 to continue the processing.
19. Use of design consistent with EPSON POS system TM series printers. A TM printer can be mounted on the IM-300, so it does not occupy much space.
20. Connection of the dedicated MSR (magnetic stripe reader) unit (option) makes it possible to read magnetic cards.
21. Mounting of a battery unit (option) provides data backup function (Save To Disk Function) when the power is off accidentally.
22. Capability to mount user ROMs of up to 2MB.

Part Names

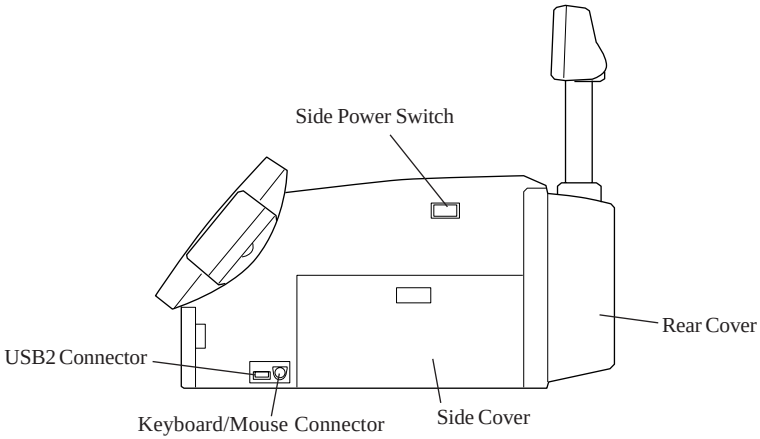
Illustrations below show the part names of this product.



Front View



Rear View



Side View

Handling Guidelines

Warnings, Cautions, and Notes

Notes and precautions in this manual are identified by their level of importance, as defined below.

⚠ *WARNING*

Provides information that must be observed to prevent harm (not life-threatening) to the user.

⚠ *Caution*

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

✎ *Note:*

Provides important information and useful tips on handling the equipment.

⚠ *WARNING*

- Turn off the side power switch immediately if it produces smoke, a strange odor, or unusual noise. Continued use may lead to fire or electric shock.

  Immediately unplug the power cord 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 objects to fall into this product.

  Penetration by foreign objects may lead to fire or shock.

- If water or other liquid spills into the this product, turn off the side power switch, unplug the power cord 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.
- Do not attempt to open or disassemble the internal Vanadium-Lithium battery, which could result in burns or release of hazardous chemicals.
- Do not charge or leave the internal Vanadium-Lithium battery in a hot place, such as near a fire or on a heater, as it could overheat and ignite.
- When you dispose of the internal Vanadium-Lithium battery, insulate it by wrapping the terminals with a tape.

  Mixing the battery with other metals or batteries may lead to fire, heat, or explosion.

⚠ *Caution*

- Be sure your power cable meets the relevant safety standards and includes a power-system ground terminal (PE terminal).
- Be sure to set this equipment on a firm, stable, horizontal surface.

  The 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.

  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.
- Do not drop, bump or otherwise subject this product to strong vibration or impact.
- Be sure to attach the rear cover after setup.

  If the rear cover isn't attached, some foreign matter may enter this product causing trouble.

- Be sure to attach the side covers and the side panels after setup.

Chapter 1

Setup

This chapter explains how to set up your hardware. For configuring your system using the BIOS Setup, see the next chapter.

Precautions on Setting up

This section describes items to observe when setting up the IM-300.
In addition to the above, there are warning instructions and cautions to observe at each work stage. They are given in each explanation.

⚠ *Caution*

- Turn off the power of all equipment including the IM-300 and all the peripherals before setup. Be sure to turn off the side power switch for the IM-300 to turn it off.

  When power is on, the IM-300 or peripherals units may be damaged during setup.

- Before setup, discharge static electricity on your body.

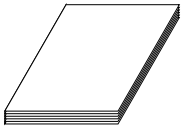
  If you do not allow static electricity to discharge, trouble could result. Touch a grounded metal surface to allow static electricity to discharge.

- Do not touch the connectors.

  Dirt may cause a malfunction.

Unpacking the IM-300

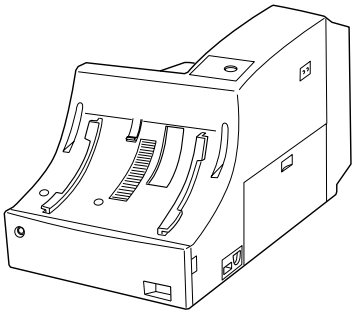
When you unpack the IM-300, make sure you have these itmes:



User's manual

Front keys
(2 pieces)

CPU cooling fan



IM-300

Keylock keys
(5 pieces)

Switch covers (2)

Screws to fix the HDD (4)

Confirm that the package includes the items above. If any of these items are damaged or missing, please contact your dealer for assistance.

Note:

After unpacking, save the packaging materials so that you can reuse them, if necessary.

Setting Up the IM-300

Set up the IM-300 in the following steps. If you don't use the specified options, skip that step.

Removing a Side Cover/Side Panel/Rear Cover

Remove the side covers and the side panels on both sides of the IM-300.

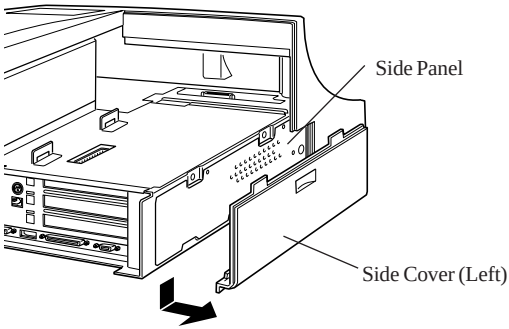
Remove the side covers and the side panels in the following cases:

Right Side (on which the side power switch is located)
- Setting the jumpers and DIP switches
  (For CPU speed setting, CPU voltage, pin 1 function of COM1 to COM4 and COM3 function)
- Installing a CPU, installing SIMMs

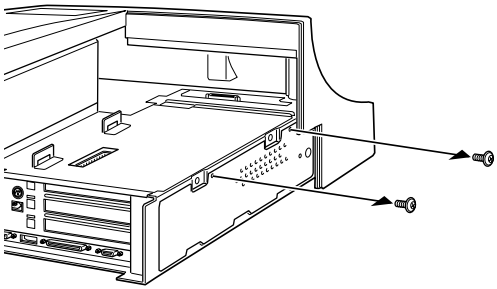
Left Side
- Setting the jumpers
  (For gate array mode and CMOS RAM clear)
- Installing user ROMs
- Installing ISA/PCI cards
- Installing a PCMCIA expansion module

Remove the side covers and side panels using the following procedure:

1. Remove the side cover by sliding downward.



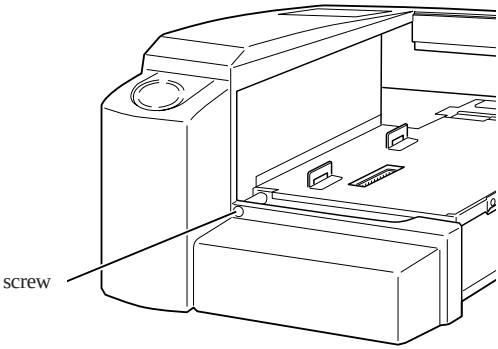
2. Remove two screws, which fix the side panel.



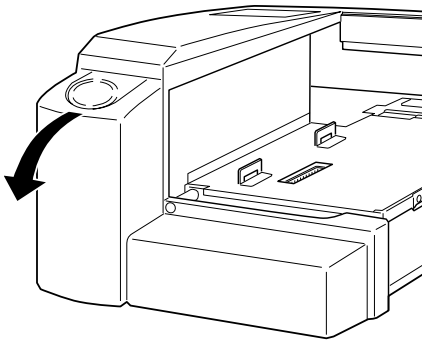
3. Remove the side panel.

If a rear cover is attached to the IM-300, remove it using the following procedure.

1. Loosen a screw that fastens the rear cover.



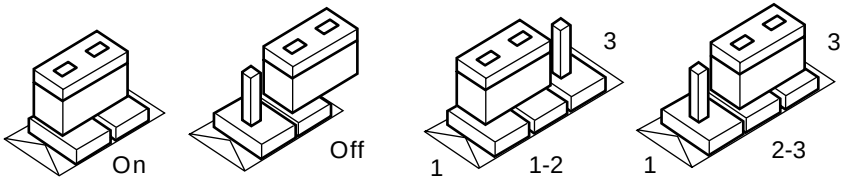
2. Remove the rear cover from the IM-300 by pulling the upper part of the rear cover backward then downward.



Setting Jumpers and DIP Switches

There are jumpers and DIP switches on the board of the IM-300. You can set them to control how the system operates.

There are two types of jumpers - the 2-pin jumper and 3-pin jumper.



2-pin jumper

3-pin jumper

For two-pin jumpers, the jumper is either on (it connects the two pins) or off (it doesn't connect the two pins).

For three-pin jumpers, the jumper setting is 1-2 when the jumper connects pins 1 and 2. The setting is 2-3 when pins 2 and 3 are connected. You see a 1 and a 3 printed on the circuit board to identify these pins. Also, one of the lines surrounding jumpers is thick, which indicates pin NO.1.

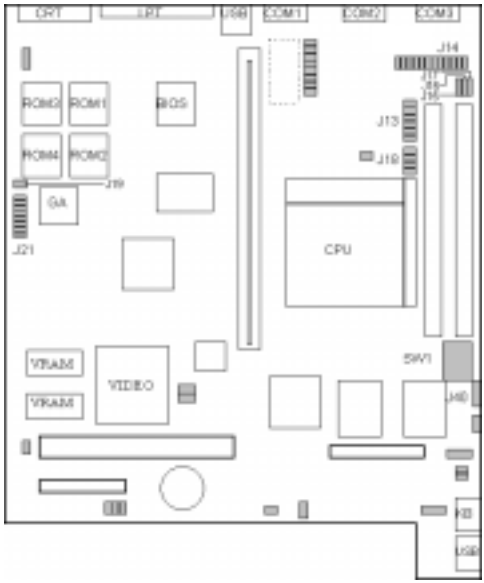
To move a jumper from one position to another, use needle-nose pliers or tweezers to pull it off the pins and move it to the desired position.

⚠ *Caution*

- Be careful not to bend the jumper pins or damage any components on the board.
- Do not change settings for jumpers and DIP switches not covered in this manual.

Jumpers and DIP Switches Locations

The figure below shows the locations of jumpers and the DIP switches on the IM-300 main board.



Use the information in the following table to change the jumpers and the DIP switches.

Jumpers/DIP Switches	Functions
SW1, J40	Selection of CPU operation speed
J13	Selection of CPU power voltage
J14	Serial port pin 1 assignment (DCD, +5V, +12 select)
J18	Selection of CPU power voltage
J21	Selection of gate array operation mode
J15, J16, J17	Selection of COM3
J19	CMOS RAM clear

Settings of SW1 and J40:

These DIP switches determine the CPU operation speed. Change the DIP switch settings for the installed CPU.

Selection of CPU operation speed

CPU	Frequency	J40	SW1 1-2	SW1 1-3	SW1 1-4	SW1 1-5
Pentium	90 MHz	1-2	OFF	OFF	ON	ON
Pentium	100 MHz	1-2	OFF	OFF	OFF	ON
Pentium	120 MHz	2-3	OFF	OFF	ON	ON
Pentium (*)	133 MHz	2-3	OFF	OFF	OFF	ON
Pentium	150 MHz	2-3	ON	OFF	ON	ON
Pentium	166 MHz	2-3	ON	OFF	OFF	ON
Pentium	200 MHz	1-2	ON	OFF	OFF	ON
Pentium MMX	166 MHz	2-3	ON	OFF	OFF	ON
Pentium MMX	200 MHz	1-2	ON	OFF	OFF	ON

* Default settings

Settings of J13/J18:

These jumpers determine the CPU power voltage. Change the jumper settings for the installed CPU.

Selection of CPU power voltage

CPU	Frequency	J13 1-2	J13 3-4	J13 5-6	J13 7-8	J18 1-2	J18 3-4	J18 5-6	J18 7-8
Pentium	90 MHz	ON	OFF	ON	ON	OFF	OFF	ON	ON
Pentium	100 MHz	ON	OFF	ON	ON	OFF	OFF	ON	ON
Pentium	120 MHz	ON	OFF	ON	ON	OFF	OFF	ON	ON
Pentium (*)	133 MHz	ON	OFF	ON	ON	OFF	OFF	ON	ON
Pentium	150 MHz	ON	OFF	ON	ON	OFF	OFF	ON	ON
Pentium	166 MHz	ON	OFF	ON	ON	OFF	OFF	ON	ON
Pentium	200 MHz	ON	OFF	ON	ON	OFF	OFF	ON	ON
Pentium MMX	166 MHz	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
Pentium MMX	200 MHz	ON	OFF	OFF	OFF	ON	ON	OFF	OFF

* Default settings

Settings of J14:

This jumper determines the pin 1 function of COM1 to COM4 serial port.

Selection of the serial port pin 1 assignment

COM1			COM2			Pin 1 Function
1-2	3-4	5-6	7-8	9-10	11-12	
ON	OFF	OFF	ON	OFF	OFF	DCD (*)
OFF	ON	OFF	OFF	ON	OFF	+5V
OFF	OFF	ON	OFF	OFF	ON	+12V

COM3			COM4			Pin 1 function
13-14	15-16	17-18	19-20	21-22	23-24	
ON	OFF	OFF	ON	OFF	OFF	DCD (*)
OFF	ON	OFF	OFF	ON	OFF	+5V
OFF	OFF	ON	OFF	OFF	ON	+12V

* Default settings

Settings of J21:

This jumper sets gate array operations, such as user ROM control, use of NVRAM for POS, and so on.

Settings of Gate Array

Switch	Function	Setting	Description
1 to 6	User ROM control		Refer to next table
7-8 (SW4)	Use of NVRAM for POS	OFF (*)	Not used.
		ON	Used.
9-10 (SW5)	Use of user ROM for POS	OFF (*)	Not used.
		ON	Used.
11-12 (SW6)	Selection of gate array mode	OFF	Reserved.
		ON (*)	Fixed to ON.

* Default settings

User ROM Control Settings

SW1 (1-2)	SW2 (3-4)	SW3 (5-6)	Description
ON(*)	ON(*)	ON(*)	Normal ROM mode
ON	OFF	ON	Extended ROM mode, starting address D0000h
ON	OFF	OFF	Extended ROM mode, starting address D8000h
OFF	-	-	Bootstrap ROM mode (BIOS ROM mode)

- Do not care

* Default settings

Settings of J15, J16 and J17:

Jumper	Function	Settings	Description
J15	COM3 RXD	1-2	Use RXD of the external COM3 connector on the motherboard
		2-3	Use RXD of the internal connectors (*)
J16	COM3 DSR Selection	1-2	Use DSR of the external COM3 connector on the motherboard
		2-3	Use DSR of the internal connectors (*)
J17	COM3 CTS Selection	1-2	Use CTS of the external COM3 connector on the motherboard
		2-3	Use DSR of the internal connectors (*)

* Default settings

Settings of J19:

Jumper	Function	Settings	Description
J19	CMOS Clear	OFF (*)	CMOS RAM data remains.
		ON	Clears CMOS RAM data.

* Default settings

Installing a CPU

IM-300 contains a Socket 7, which can accept the following CPU types:.

- Intel Pentium 100 MHz to 200 MHz
- Intel MMX technology Pentium 166/200 MHz

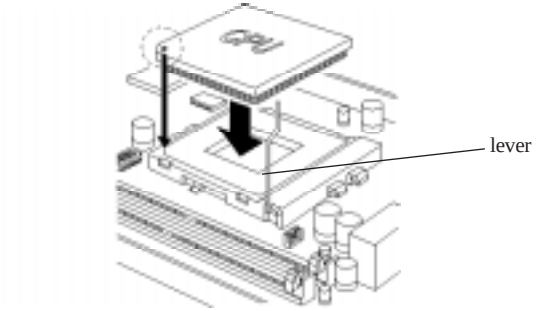
Be sure to attach a CPU cooling fan to the CPU included in the package after you install the CPU. It prevents the CPU from overheating.

⚠ *Caution*

- To avoid generating static electricity and damaging the CPU, ground yourself by touching a grounded metal surface before you touch the CPU.
- Do not remove the rubber under the CPU cooling fan.
- Do not touch the pins of the CPU.
  Dirt may cause a malfunction.

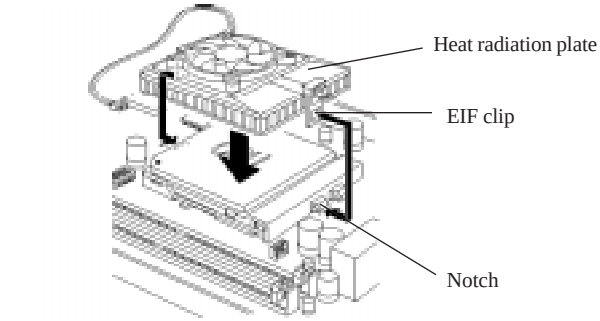
Follow these steps to install the CPU:

1. Confirm that the DIP switches are correctly set for the CPU you are going to install.
2. Lift the release lever of the Socket 7.
3. Align the pins of the CPU to the pin holes of the Socket 7. Be sure to pay attention to the direction of the CPU.

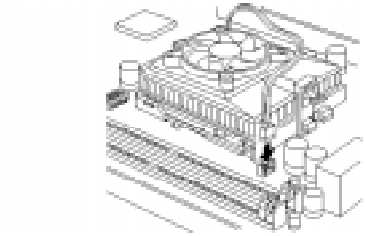


4. Push down the CPU into the Socket 7.
5. Push down the release lever and lock it.

6. Hook the hole in EIF clip for the CPU cooling fan onto the notch on the Socket 7.
7. Place the CPU cooling fan on the CPU surface.



8. Push down the opposite side of the EIF clip and hook it.
9. Slide the head of the clip to left and lock it.
10. Connect the cooling fan cable to the socket as shown below. Be careful not to place the cable on the CPU cooling fan.



Removing a CPU:

⚠ *Caution*

Before removing the CPU, turn off the IM-300 power; then wait for about 20 minutes until the heat radiation plate of the cooling fan and the CPU cool down.

The CPU and the heat radiation plate are hot. They may cause burns.

To remove the CPU, reverse the installation steps.

Installing a SIMM

The main board contains two SIMM sockets. You can insert one SIMM or two SIMMs. However, it is recommended that you use two SIMMs of the same type and access speed.
The SIMMs must meet the specifications in Appendix C.

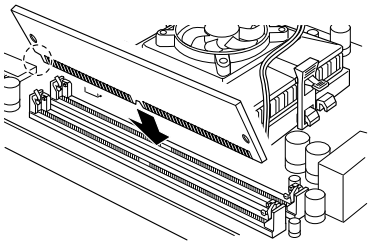
⚠ *Caution*

- To avoid generating static electricity and damaging the SIMM, ground yourself by touching a grounded metal surface before you touch the SIMM.
- Do not touch the connector of the SIMM.

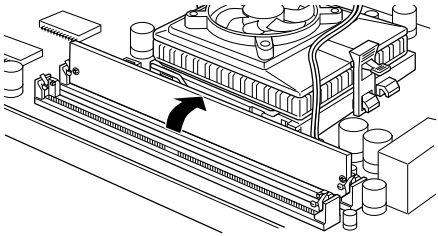
  Dirt may cause a malfunction.

Follow these steps to install the SIMMs:

1. Hold the SIMM with its notch to the front side of the IM-300 and insert it completely into the socket at an angle of about 45 degrees. A SIMM should be inserted into the inner socket first.



2. Tilt the SIMM until it is upright, guiding the hole at each end of the SIMM over the retaining post at each end of the SIMM socket.



Note:

If SIMM does not go in smoothly, do not force it. Pull it all the way out and try again.

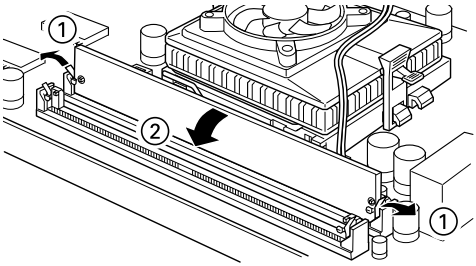
Caution

Make sure the SIMM is properly installed and locked by the tabs on both sides of the socket.

3. If you install two SIMMs, install the second SIMM using the same procedure as above.

Removing a SIMM:

To remove the SIMM, use your fingers or a small screwdriver to carefully pull away the metal tabs that secure the SIMM at each end. The SIMM falls to the side. Lift it out of the socket.



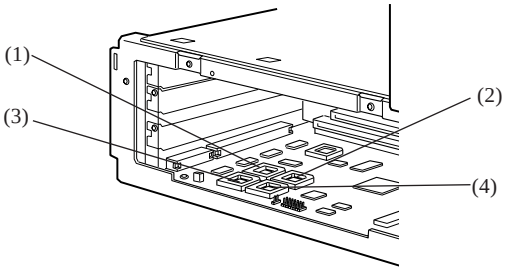
Make sure you store the SIMM in an anti-static bag.

Installing a User ROM

On the IM-300, up to four user ROMs storing independent user programs can be installed. Using the special driver, they can be used as virtual memories with a capacity of 2MB max.

The user ROMs must meet the specifications in Appendix C.

User ROMs should be installed in the sockets in order as shown below.

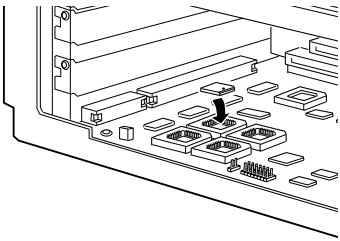


⚠ *Caution*

- To avoid generating static electricity and damaging the ROM, ground yourself by touching a grounded metal surface before you touch the user ROM.
- Do not touch the connectors of the user ROM.
  Dirt may cause a malfunction.

Follow these steps to install the user ROM:

1. Confirm that the jumpers are correctly set for the user ROMs you are going to install.
2. Confirm the direction of the user ROM. A mark on the user ROM should be located as shown below.



3. Push down the user ROM into the socket.

Installing a Battery Unit

The battery unit is the Ni-Cd battery that backs up operations during data saves to the hard disk drive by the STD (Suspend To Disk) function, which happens automatically if the power turns off abruptly, such as in case of a power interruption.

The specifications for the battery unit are as follows:

Type:	Ni-Cd 8-cell, 600 mAh
Charging time:	About 32 hours
Charging method:	Trickle

The charging time and backup time change according to the environmental conditions.

✎ *Note: (Users in the USA)*

The product you have purchased is powered by a nickel cadmium battery which is recyclable. At the end of its useful life, under various state and local laws, it is illegal to dispose of this battery into your municipal waste stream.

Please call 1-800-8-BATTERY for information on how to recycle this battery.

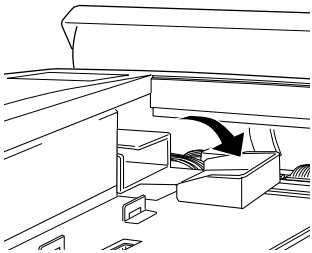
✎ *Note:*

The nickel cadmium battery must be recycled or disposed of properly.

The battery unit begins to be charged when the IM-300 power is turned on.

Install the battery unit by following the procedure below.

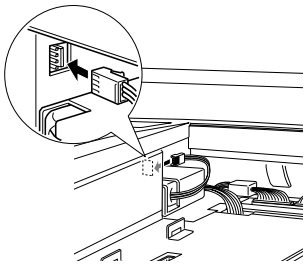
1. Open the battery unit box.



2. Insert a battery unit into the battery unit box.

3. Close the battery unit box.

4. Connect the cable of the battery unit as shown below.



Note:

To enable the battery unit, change the "System Battery" setting in the Power Management menu of the BIOS setup to "Equipped." See to Chapter 4 for details.

Removing a Battery Unit:

To remove the battery unit, reverse the installation steps.

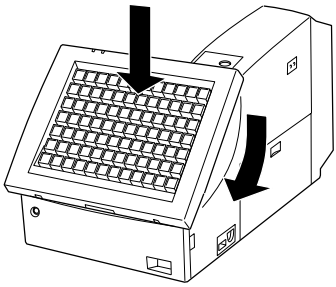
Installing a Keyboard Unit

The keyboard unit is an option for data entry. It has a total of 84 keys, in 12 rows by 7 columns. A function can be freely assigned to each key. By assigning the same function to two or more keys, you can also handle the multiple keys as one large key. For this purpose, the keyboard unit box also contains keytops measuring 1 by 2 and 2 by 2.

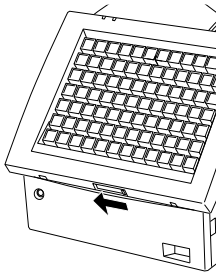
The slide mechanism allows the keyboard surface inclination to slide vertically for setting the optimum angle.

Follow these steps to install a keyboard unit:

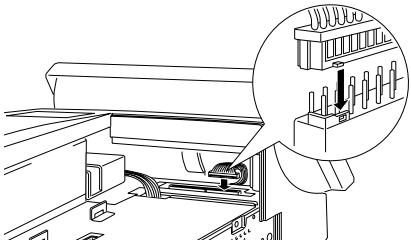
1. Check that the lock switch in the lower part of the keyboard unit is set in the release position.
2. Place the keyboard unit on the IM-300 and slide it downward. At this time, the keyboard unit and IM-300 should be aligned with each other.



3. Incline the keyboard unit to the desired angle.
4. Set the keyboard unit lock switch to the lock position, and secure the keyboard.



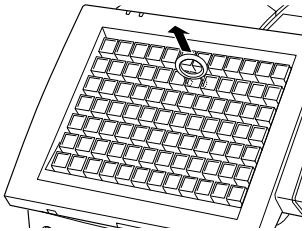
5. Connect the cable of the keyboard unit as shown below. At this time, do not bend the connector pins.



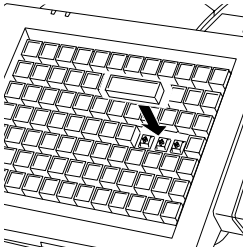
Changing a Keytop:

To change a keytop on the keyboard unit, follow the procedure below.

1. Fit the keytop remover (contained in the keyboard unit package) over the desired keytop, as shown below.
2. Lift the keytop remover to detach the keytop.



3. To detach more than one keytop, repeat steps 1 and 2.
4. Fit the new keytop straight from above.

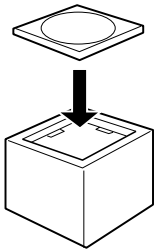


Mounting a Keytop Cover:

The keyboard unit package also contains keytop covers. A keytop is indented on top. Mount the keytop cover over the indent. Then, you can see the function of the key with ease.

Place the keytop cover in position with the procedure below.

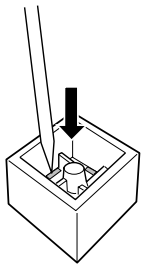
1. Insert a label for the key function on the keytop.
2. Fit the keytop cover, with its concave side up, over the keytop. Then, fit the cover securely, until you hear a snap.



Removing a Keytop Cover:

To remove the keytop cover, follow the procedure below.

1. Remove the keytop using the keytop remover.
2. Remove the keytop, turn it over, and push the keytop cover out with a pointed object such as a pin.



Removing a Keyboard Unit:

To remove the keyboard unit, follow the procedure below.

1. Detach the keyboard unit cable from the connector.

⚠ *Caution*

Be careful not to injure yourself on the edges of the case when you detach the keyboard unit cable.

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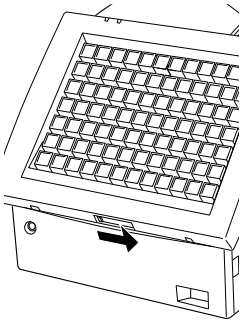
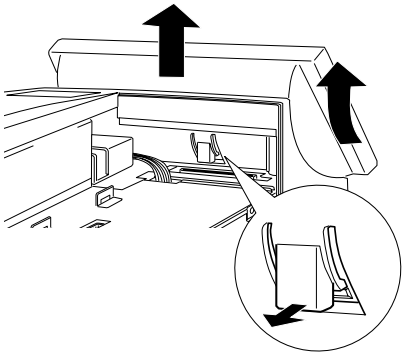
2. Slide the lock switch of the keyboard unit to the release position.



3. As shown below, slide the lock of the keyboard unit while pulling it up with your fingers and lift it up as shown.



Installing an LCD Unit

There are two types of LCD unit: with touch panel or without touch panel.

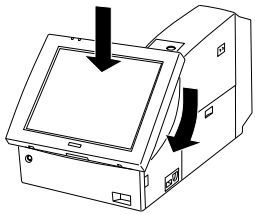
The specifications for the LCD unit are as follows:

LCD panel:	10.4-inches, color DSTN type 640 x 480, 256 colors
Back light life:	25,000 hours until brightness is reduced to half.
Touch panel:	Resistor film type
Serial communication (Touch panel)	COM4, 9600 bps

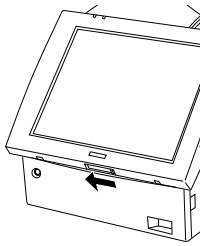
A slide mechanism lets the LCD surface inclination slide vertically for setting the optimum angle.

Follow these steps to install an LCD unit:

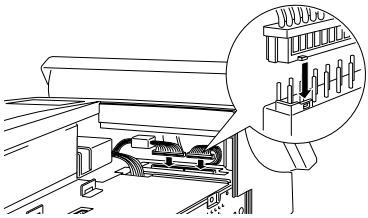
1. Check that the lock switch in the lower part of the LCD unit is set in the release position.
2. Set the LCD unit on the IM-300 and slide it downward. At this time, the LCD unit and IM-300 should be aligned with each other, as shown below.



3. Incline the LCD unit to the desired angle.
4. Set the LCD unit lock switch to the lock position, and secure the LCD.



5. Connect the two cables for the LCD unit to the connectors. At this time, do not bend the connector pins.



Removing an LCD Unit:

To remove the LCD unit, follow the procedure below.

1. Detach the LCD unit cables from the connector.

⚠ *Caution*

Be careful not to injure yourself on the edges of the case when you detach the LCD unit cable.

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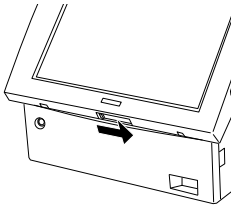
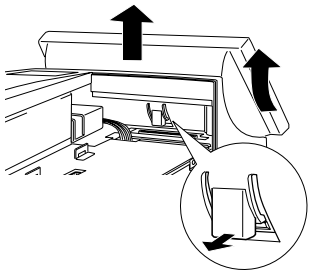
2. Slide the lock switch of the LCD unit to the release position.



3. As shown below, slide the lock of the LCD unit while pulling it up with your fingers and lift it up as shown.



Installing an MSR Unit

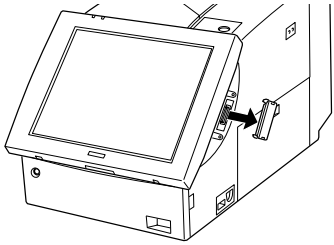
The LCD unit and keyboard unit are equipped with an interface for a connection to a magnetic stripe reader (MSR).

Two types of MSR units can be connected to the IM-300. They differ in specification of readable magnetic card.

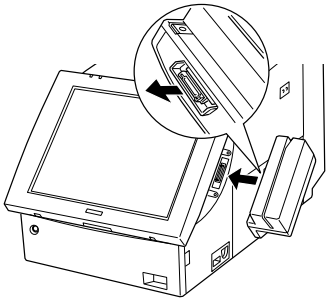
Model Name	Specification of readable magnetic card
DM-MR111-012	ISO conforming to JIS1, track 1+2
DM-MR111-013	ISO conforming to JIS1, track 2+3

Mount the MSR unit by following the procedure described below.

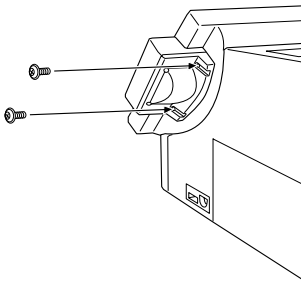
1. Open the connector cover on the right side of the LCD unit or keyboard unit.



2. Connect the MSR unit to the MSR interface.



3. Secure the MSR unit using the two screws in the package for the MSR unit.



Removing an MSR Unit:

To remove the MSR unit, reverse the installation steps.

Note:

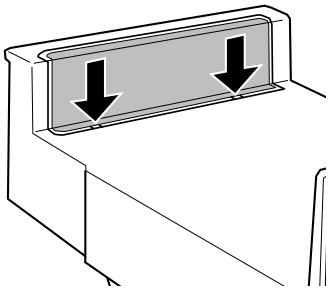
When you remove the screws and then want to fix them again, first turn them counterclockwise slightly, and then fix them.

Mounting a Printer Tray

When using the IM-300 either with or without an EPSON TM printer, mount the printer tray as a top cover for the IM-300. The TM printer can be set on the printer tray.

Mount the printer tray by following the procedure below. If you are not using a TM printer, begin with step 3.

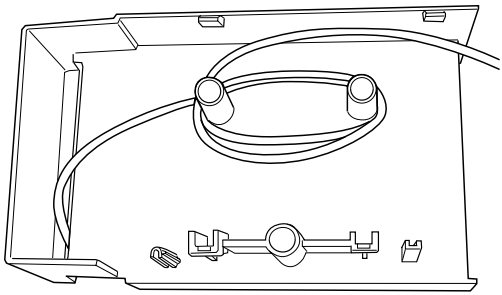
1. Separate the hatched part of the printer tray from the rest of the printer tray. Then cut off the two plastic connecting pieces (burrs) with a cutter and pull the piece down toward you. Bend the part back and forth two or three times, so that you can cut the part off. You can now pass the cable through the new opening.



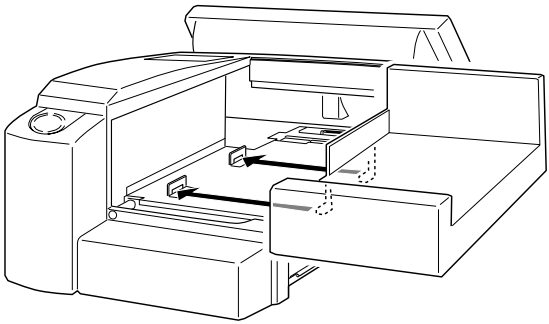
⚠ *Caution*

- If burrs are left after the hatched part is removed, you may cut or scratch your fingers, etc. Remove the burrs left on the printer tray with a cutter or file them down.

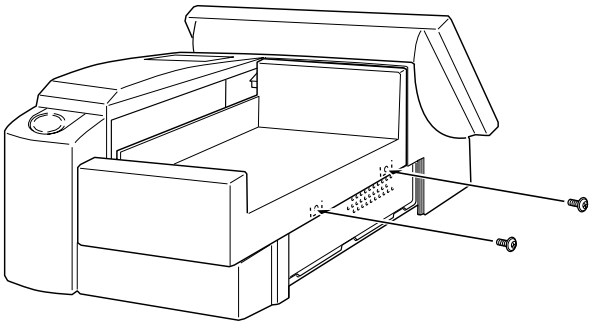
2. When setting up the TM printer on the printer tray, wrap the cable around the poles on the other side of the tray, as shown below, to keep it out of the way.



3. Slide the printer tray in the direction of the arrow and fit the hooks on the printer tray into the slots in the IM-300 base unit.



4. Secure the printer tray with two screws.



5. To set up the TM printer, it should be inserted on the printer tray.

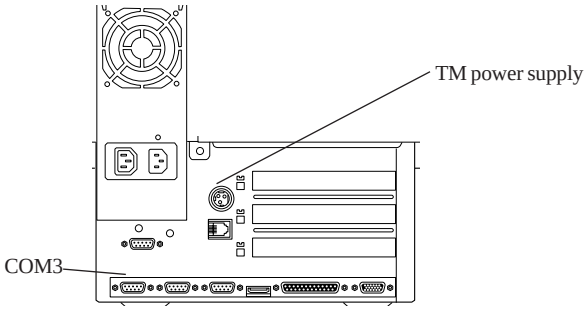
Removing a Printer Tray:

To remove the printer tray, reverse the installation steps.

Installing a Printer

EPSON TM series printers and the printer unit for the IM-300 can be connected to the IM-300. For how to connect the printer unit, please refer to the printer unit installation manual.

The IM-300 assigns the COM3 serial port to printer by default. So, connect the serial communication cable to the COM3 port of the IM-300 and change jumpers J15 through J17 to 1-2 (to use the external COM3). Also, if you want to get printer power from the IM-300, connect the printer power cable (After service part: DC cable set: 201809900) to TM power supply on the IM-300.



⚠ *Caution*

- Never connect a printer to the TM printer power supply port that is not listed below:
  * TM-U200 series * TM-T85 series *TM-U300 series
  * TM-U210 series * TM-U325 series
- If you connect one of the printer models especially designed for the IM-300 (such as TM-T88R or TM-U210R), never attach the printer to the TM power supply.

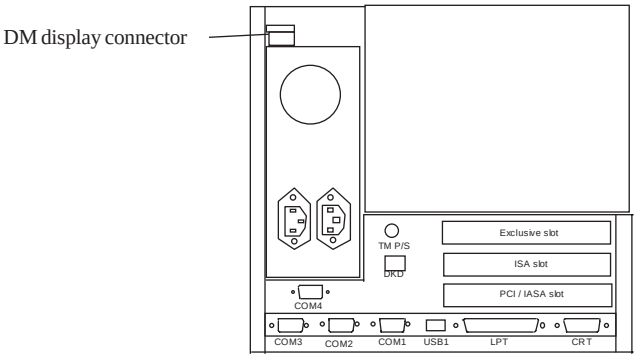
Refer to the respective printer manual for the installation procedure.

Installing a DM Display

The EPSON DM-D102 customer display can be connected to the IM-300.

The DM-D102 customer display uses the COM3 serial port by default.

Be sure to connect the DM display cable to the DM display port on the IM-300. See the DM display manual for installation procedure details.

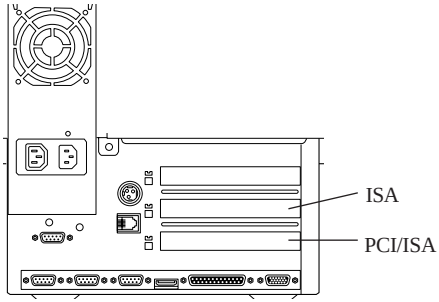


⚠ *Caution*

Never plug a telephone line into the DM display port.

Installing an ISA/PCI Board

The IM-300 has one ISA expansion slot and one ISA/PCI expansion slot. You can insert one ISA board into the ISA expansion slot, and either one ISA or one PCI board into the ISA/PCI expansion slot.

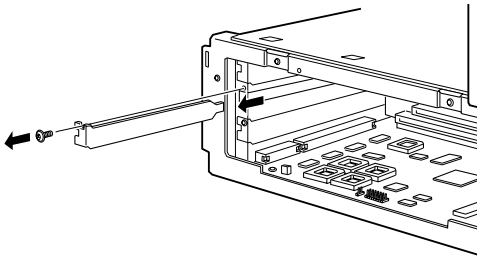


The mamimum size of the ISA/PCI boards are as follows:

Length	Width	Height (Parts side)	Height (Solder side)
195 mm (7.7")	107 mm (4.2")	12 mm (0.5")	10 mm (0.4")

Install the ISA/PCI board by following the procedure below.

1. Remove the retaining screw securing the slot cover. Keep the screw to secure the ISA/PCI board.
2. Slide the slot cover out and set it aside. Store the slot cover in case you remove the ISA/PCI board later.



3. Gently guide the board into the connector.
   Push the board in firmly (but carefully) to insert it fully. You should feel the connectors fit into place. If the board does not go in smoothly, do not force it; pull it all the way out and try again.
4. Secure the end of the ISA/PCI board to the IM-300 with the retaining screw.

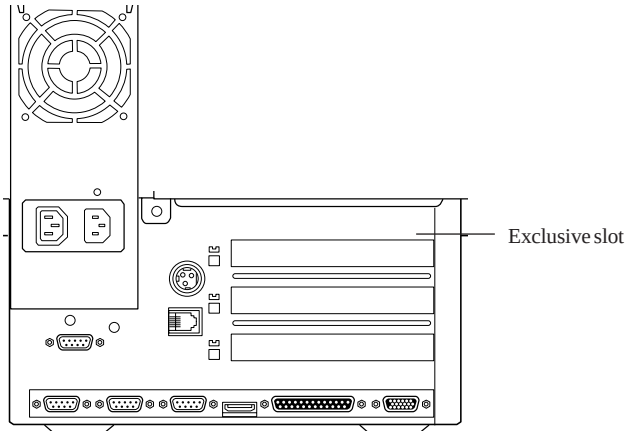
Removing an ISA/PCI Board:

To remove the ISA/PCI board, remove the retaining screw securing the board. Pull the board straight out of the slot, then replace the slot cover.

After removing the ISA/PCI board, attach a slot cover.

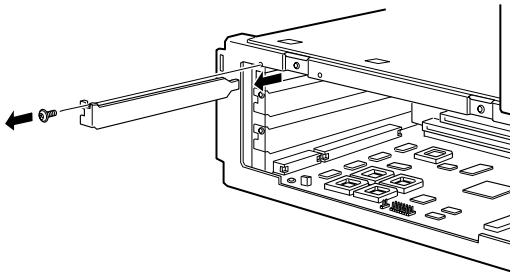
Installing a PCMCIA Expansion Module

You can install an optional PCMCIA expansion module (OI-B06) in the exclusive slot (top slot). The PCMCIA expansion module can support two Type I or Type II cards or a single Type III card.

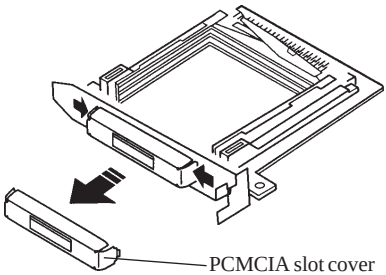


Install the PCMCIA expansion module using the procedure below.

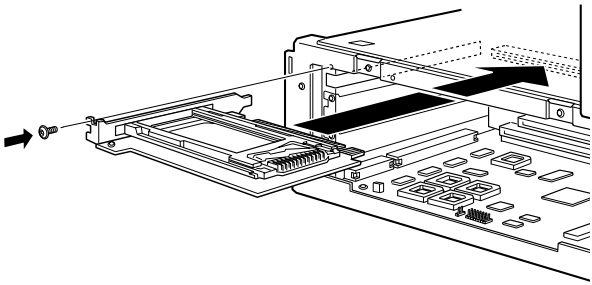
1. Remove the retaining screw securing the cover for the exclusive slot to the IM-300, as shown below. Keep the screw to secure the PCMCIA expansion module to the IM-300.
2. Slide the slot cover out and set it aside. Store the slot cover in case you remove the PCMCIA expansion module later.



3. Push both sides of the PCMCIA slot cover inward and remove it from the PCMCIA expansion module.



4. Gently guide the PCMCIA expansion module into the top connector.



Push the module in firmly (but carefully) to insert it fully. You should feel the connectors fit into place. If the module does not go in smoothly, do not force it; pull it all the way out and try again.

✎ *Note:*

Remove the PCMCIA slot cover before you install or remove the PC cards.

Removing a PCMCIA Expansion Module:

To remove the PCMCIA expansion module, reverse the installation steps.

Installing a Hard Disk Drive

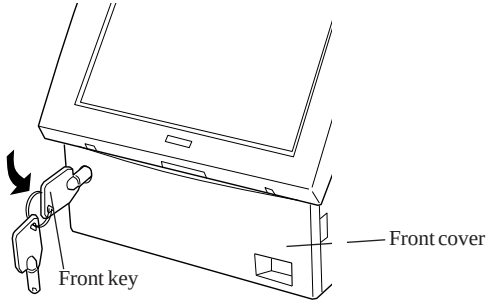
You can install a 2.5 inch hard disk drive (0.74 inch high maximum) in the IM-300. A mounting bracket and an adapter board must be attached to the hard disk drive.

⚠ *Caution*

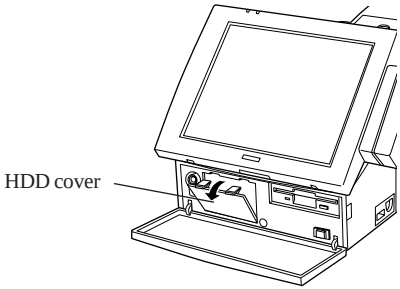
Handle the hard disk drive gently. Do not bump or drop the hard disk drive.
Small shocks or vibrations could damage the drive.

Follow these steps to install the hard disk drive.

1. Open the front panel of the IM-300. If the front panel is locked, unlock it with the front key. To unlock the front panel, insert the front key into the front keylock and turn it down pushing slightly.

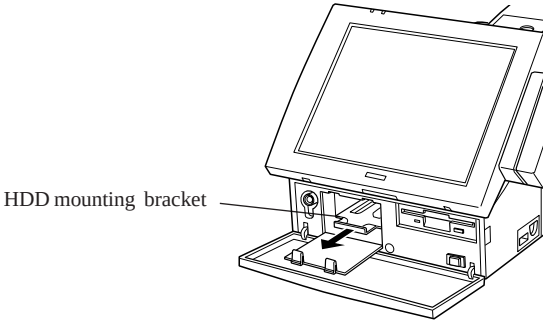


2. Open the HDD cover. Open it while lightly pushing down the two tabs.

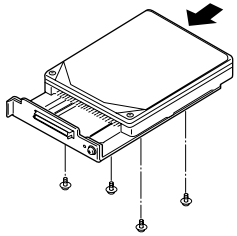


3. Loosen the screw fixing the HDD mounting bracket.

4. Pull out the HDD mounting bracket as shown below.



5. Attach the hard disk drive onto it, by sliding the hard disk drive as shown below and fixing it with four screws.



⚠ *Caution*

The tighting torque for all four screws must not exceed 29.4cN·m{3kgf·cm}.

If the tighting torque exceeds this value, some problems may occur.

6. Slide the HDD mounting bracket into the slot so that the notches along the bottom are under the tabs of the hard disk slot.
7. Push the HDD mounting bracket in gently until you feel the connector fit into place.
8. Attach the HDD mounting bracket to the IM-300 with a screw.
9. Close HDD cover.
10. Close the front panel.

Removing a Hard Disk Drive:

To remove the hard disk drive, reverse the installation steps.

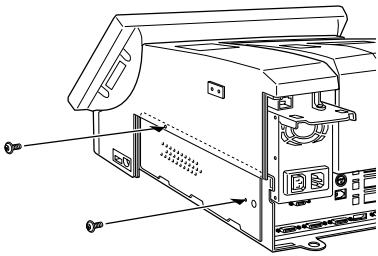
Attaching Side Covers/Side Panels

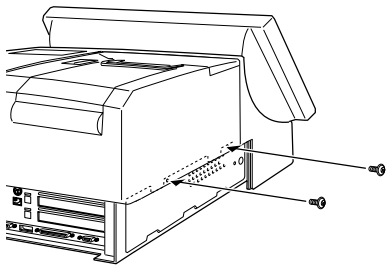
⚠ *Caution*

- Be sure to attach the side covers and the side panels after setup.

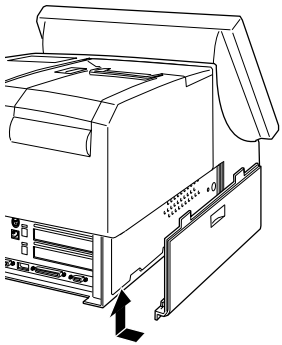
Follow these steps to attach the side panels and the side covers:

1. Attach the side panel and secure it with two screws. Each side panel has different positions for the screws.





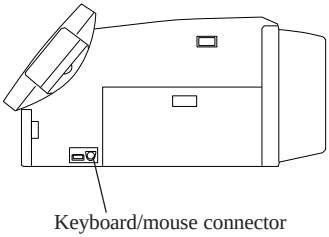
2. Attach the side covers.



Installing Other Peripherals

The following options can be attached to the IM-300. Refer to the manual for each peripheral for the installation procedure.

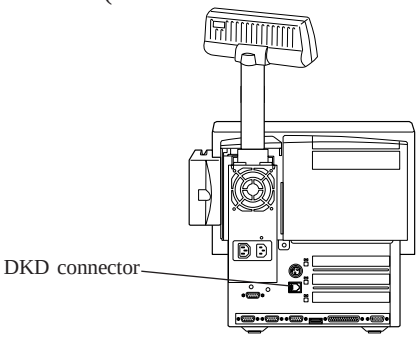
- Mouse (connected to the keyboard/mouse connector through a branch cable)
- Keyboard (connected to the keyboard/mouse connector)



Note:

- To connect a mouse, a commercially available branch cable is required. Attach the branch cable to the keyboard/mouse connector and connect the mouse to the cable.
- With some cables, you need to attach the mouse to the keyboard connector and the keyboard to the mouse connector.

- Cash drawer (connected to the DKD connector)



Caution

- Never plug a telephone line into the DKD connector.
- When the TM power supply is used, the DKD connector can't be used.

Attaching a Power Cable

The power cable is an option. Select a power cable that meets the specifications below.

Input voltage (rating)	90 (100-10%) VAC to 264 (240+10%) VAC
Frequency (rating)	50/60 Hz ± 2 Hz
Input power (rating)	180 VA or less

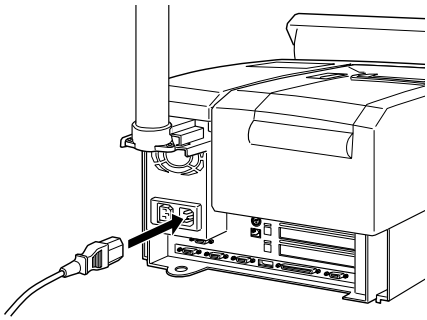
⚠ *Caution*

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

Follow these steps to attach the power cable:

1. Connect the power cable to the IM-300.



2. Connect the power plug to the power outlet.

Attaching the Rear Cover

The IM-300 comes with a rear cover that provides a protective covering for your cables. After you have connected all the peripherals to the IM-300, attach the rear cover.

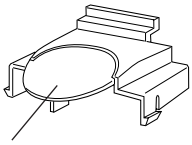
⚠ *Caution*

- Be sure to attach the rear cover after setup.

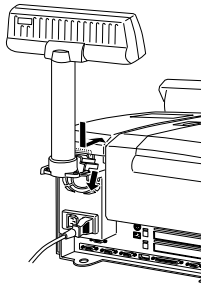
  If the rear cover isn't attached, foreign objects may enter this product causing problems.

Follow these steps to attach the rear cover.

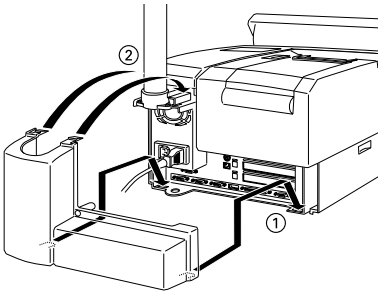
1. Attach the DM display cover.
   If the DM display is installed on the IM-300, cut off the portion of the DM display cover shown below. Cut off the three connecting pieces with a cutter.



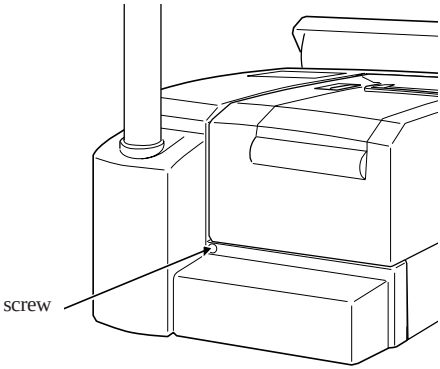
Cut off this



2. Attach the rear cover as shown below.



3. Secure the rear cover with a screw.



Charging Lithium Batteries

This product contains rechargeable lithium batteries that back up the real-time clock, the CMOS RAM data, and the NVRAM data. The lithium batteries are not charged fully at the factory. You need to charge the batteries before you use this product for the first time. If you have not used this product for a long time, you need to charge them. If the lithium batteries are not fully charged, your system configuration settings may be incorrect when you start this product.

Follow these steps to charge the battery:

1. Connect the power cable to the IM-300 and connect the power cable to a wall outlet.
2. Turn on the IM-300.
3. Leave the IM-300 for about 40 hours.

The lithium batteries are being charged when the IM-300 is turned on. Use the following table for time of charging.

Time for full charge	40 hours or more (from factory condition)
Backup time	30 days or more (with full charge)

Chapter 2

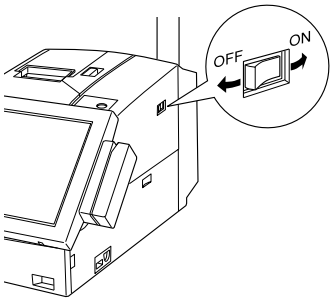
Operation

This chapter explains the operations described below.

- Power on and off
- Indicators
- Security key
- Key lock keys
- Inserting and removing a floppy disk
- Reset
- Paper feed switch
- LCD contrast adjustment
- LCD/keyboard angle adjustment
- How to read a magnetic stripe card

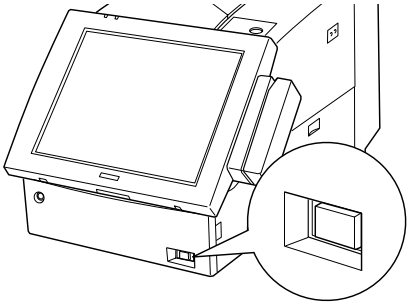
Power On and Off

When you use this product for the first time, turn on the side power switch. A "O" mark inscribed on the case indicates power off and a "|" mark indicates power on.



The side power switch should usually be kept on. Turn off the side power switch only when attaching pheripherals, transporting this product, and when not using it for an extended period of time.

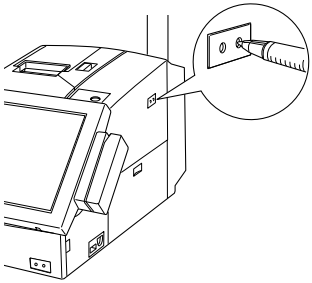
The side power switch turns off the IM-300 completely. On the other hand, if the front power switch is pressed, either the system shuts off or the IM-300 is put into the standby. This depends on the BIOS setting. However, a small amount of current is flowing. When the switch is pressed again, the IM-300 is turned on.



This product package contains two switch covers. When you attach the switch cover in front of the switch, it prevents the switch from turning off by accident.

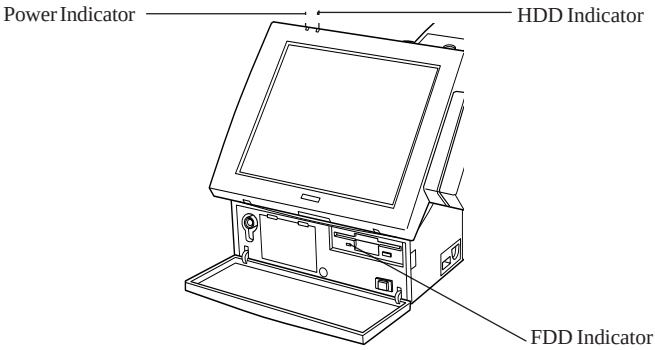
To attach the switch cover, place the switch cover in front of the switch, then push it into the hole.

When you attach the switch cover, push the power switch through the holes in the switch cover.



Indicators

Both the LCD unit and the keyboard unit have two indicators and the FDD has one indicator.

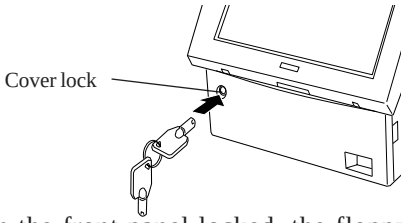


These indicators have the following meaning:

LED	Color	Meaning
Power	Green	Power is turned on.
	Orange	Save to Disk function occurred.
HDD	Green	HDD is being accessed. If no HDD is attached, this indicator has no meaning.
FDD	Green	FDD is being accessed.

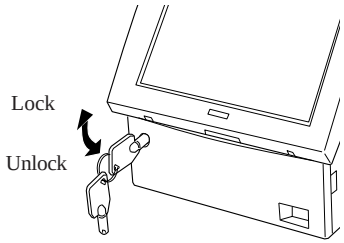
Security Key

The security key is for use with the cover lock on the front panel.



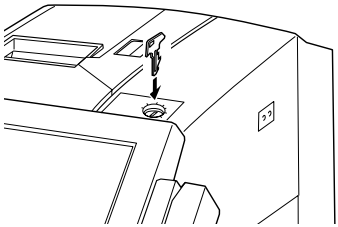
With the front panel locked, the floppy disk and hard disk drive can be removed only by a person with a front key.

Insert the security key into the cover lock hole and turn it while slightly pushing it.



Key Lock Keys

A set of five access keys is provided. Each key allows the user to access the function level you define for that key position. The key lock keys are used by inserting them into the key lock on top of the IM-300.



The key lock keys place restrictions on the functions that can be used by the operator. The key lock key can be turned to six positions (from 1 to 6). Each key can be given a different access range to prevent use of higher functions by an unauthorized users. These restrictions are controlled by softwae..

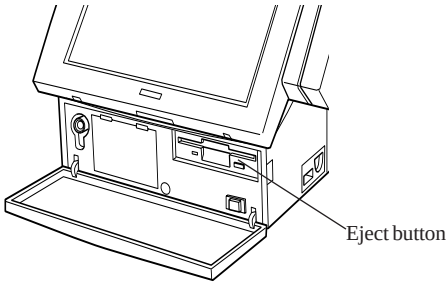
Inserting and Removing a Floppy Disk

To insert the floppy disk in the floppy disk drive, follow the procedure below.

1. Insert the floppy disk with the label side up in the floppy disk drive. When the floppy disk is inserted correctly, the eject button will pop out.

To remove the floppy disk, follow the procedure below.

1. Check that the access lamp of the floppy disk drive is off.
2. When you press the eject button, the floppy disk will come out.



3. Take out the floppy disk carefully.

Reset

This restarts the computer while power in on.

Reset is necessary in the following cases:

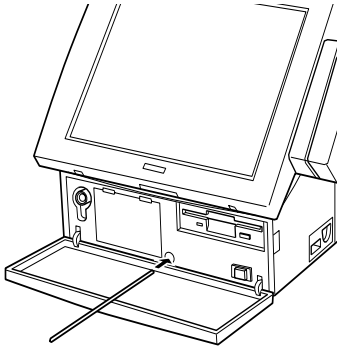
- When a reset instruction has been issued by the operating software.
- To restart the computer.
- When software has entered an endless loop.

When the system is reset, all data in memory will be lost. Unless software has entered a loop, save the required data on an external storage medium such as hard disk before resetting the system.

There are two types of reset: a hard reset done by pressing the reset switch and a soft reset performed by pressing the Ctrl, Alt, and Delete keys at the same time.

Perform a hard reset by following the procedure below.

1. Open the front panel. If the front panel is locked, unlock the front panel using the front key.
2. Push the reset switch with a pointed object such as a pen.

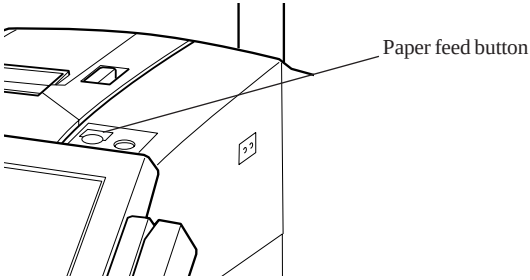


Perform a soft reset by following the procedure below.

1. Press the Ctrl, Alt, and Delete keys at the same time.
2. Messages for confirmation appear on the screen. Proceed by following the messages.

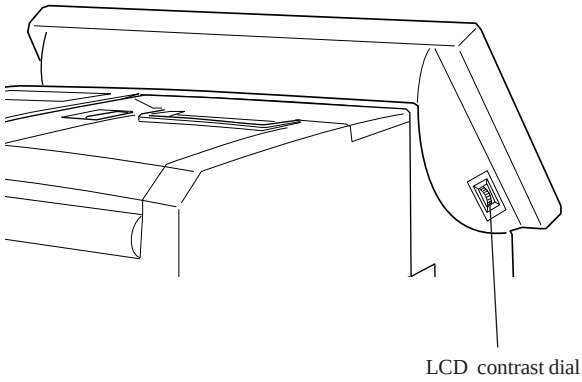
Paper Feed Button

Press the paper feed button when the printer unit for the IM-300 is connected to feed paper.



LCD Contrast Adjustment

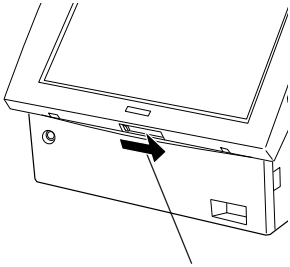
When you use the LCD unit, you can adjust LCD contrast by turning the contrast dial.



LCD/Keyboard Angle Adjustment

The angle of the LCD/keyboard unit is adjustable. Follow these steps to change it:

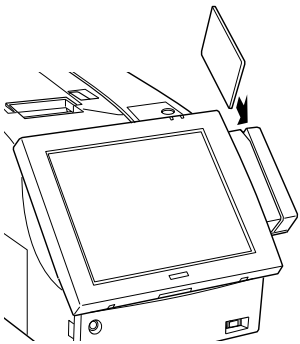
1. Slide the LCD/keyboard unit lock switch to the unlock position.



2. Adjust the angle any way you like.
3. Set the lock switch to the lock position again.

How to Read a Magnetic Stripe Card

When you attach a MSR unit, you can read magnetic stripe cards. Hold the card as shown below, and pass it through the MSR unit.



Chapter 3

System Utilities

This product comes with the following utility programs in System ROM and on the hard disk drive:

System ROM

- BIOS setup, for defining the configuration of the system
- Device diagnostics, for troubleshooting devices attached to this product

Hard disk

- An 84-key keyboard configuration utility
- A key lock configuration utility
- A POS key mode setting utility
- Key definition utility (For MS-DOS)

BIOS Setup Utility

The BIOS setup defines how the system is configured. You need to run this program the first time you configure this product. You may need to run it again if you change the configuration.

You need to connect a PC keyboard to the keyboard connector to run the BIOS setup utility.

⚠ *Caution*

Do not change the settings for features not described here.

If you change them, it is possible that this product will not work. If this happens, refer to "When a Problem Occurs" in this chapter.

Starting the BIOS Setup

To start the BIOS setup:

1. Turn on or reboot this product.
2. Press the DEL key immediately after the product is turned on, or press the DEL key when the following message is displayed during POST (the Power On Self Test).

   Press DEL to enter SETUP.

3. The main menu of the BIOS setup is displayed. If the supervisor password is set, you must enter it here.

Help Window

Pressing the F1 key on any menu brings up a display area that describes the legend keys and the selectable items.

Press the ESC key to exit the help window.

When a Problem Occurs

If, after making and saving system changes with the Setup utility, you find that this product no longer boots, start the BIOS setup and execute either one of the following.

- Load Setup Default or
- BIOS Setup Default

Legend Keys

Use the keys displayed on the bottom of the screen to make your selections, exit the current menu, and so on.

The table below shows the available keys:

Legend Keys

Key	Function
Arrow keys	Move the cursor.
Esc	Main Menu: Quit and do not save changes to CMOS. Except Main Menu: Exit current BIOS screen and return to Main Menu.
Page Up, +	Increase the numeric value or make changes.
Page Down, -	Decrease the numeric value or make changes.
F1	Display the help window.
F2, Shift + F2	Change color from a total 16 colors. Press F2 to select color forward, Shift + F2 to select backward.
F3	Calendar, only for Status Page Setup Menu.
F5	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu.
F6	Load the default CMOS value from the BIOS default table, only for Option Page Setup Menu.
F7	Load the default.
F10	Save all the CMOS changes, only for Main Menu.

Note:

Shift+F2 means that the Shift key and F2 key are pressed at the same time.

Main Menu

When the Main Menu is displayed, the following items can be selected. Use arrow keys to select items and the Enter key to accept and enter the sub-menu.

Items	Description
STANDARD CMOS SETUP	Basic BIOS setup.
BIOS FEATURES SETUP	Enchanced BIOS setup.
CHIPSET FEATURE	Advanced Power Management (APM) option.
POWER MANAGEMENT SETUP	I/O subsystems that depend on the integrated peripherals controller in this product.
PnP/PCI CONFIGURATION	Plug and play setup.
INTEGRATED PERIPHERALS	I/O subsystems that depend on the integrated peripherals controller.
SUPERVISOR/USER PASSWORD	Change, set, or disable a password. Only the supervisor password permits access to Setup. The user password generally allows only power-on access.
IDE HDD AUTO DETECTION	Automatically detect and configure IDE hard disk parameters.
HDD LOW LEVEL FORMAT	Format HDD. (Caution: Contact system administrator.)
LOAD SETUP DEFAULTS	Setup defaults are factory settings for optimal performance of system operations.
SAVE & EXIT SETUP	Save settings in nonvolatile CMOS and exit setup.
EXIT WITHOUT SAVING	Abandon all changes and exit setup.

Standard CMOS Setup

In the standard CMOS menu, you can set the system clock and calendar, record disk drive parameters and the video subsystem type, and select the type of errors that stop the POST (Power On Self Test).

Items	Description
Date	Set the date. The BIOS determines the day of the week from the other information. This field is for information only. Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.
Time	Set the time. The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or the right arrow key to move to the desired field. Press the PgUp and PgDn keys to increment the setting, or type the desired value into the field.
HARD DISKS	The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications during POST. Set this item to AUTO.
LCD & CRT	Select the video display device. LCD LCD display. CRT Auxiliary monitor AUTO The BIOS autosenses the device in use. Both Displays on both devices.

Items	Description
Halt On	During POST, the system stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections: No Errors POST does not stop for any errors. All Errors If the BIOS detects any non-fatal error, it stops. All, But Keyboard POST does not stop for a keyboard error, but does for all other errors. All, But Diskette POST does not stop for diskette drive errors, but stops for all other errors. All, But Disk/Key POST does not stop for a keyboard or disk error, but stops for all other errors.

BIOS Features Setup

This menu sets up the security.

Items	Description
Security	If you have set a password, select whether the password is required every time the system boots, or only when you enter setup. System Enter the password when the system boots and when you enter setup. Setup Enter the password to run BIOS setup.
Virus Warning	When "Enabled" is selected, an error is displayed when an application tries to write data to the partition table of HDD.
Quick Power On Self Test	When "Enabled" is selected, certain steps of the POST are skipped.
Boot Sequence	Select the boot drive order.
Boot Up NumLock Status	Select the Num Lock status when the IM-300 is turned on.
Memory Parity/ECC Check	Enable or disable the memory parity check.
Typematic Rate Setting	Enable or disable the Typematic Rate and Delay.
Typematic Rate (Chars/Sec)	Select typematic rate (the rate at which character repeats when you hold down a key).
Typematic Delay	Select the delay before key strokes begin to repeat (milliseconds).

Power Management

In the power management menu, you can set the following items for power management.

Items	Description
APM BIOS	Select "Enabled" to turn on the BIOS power-management features.
BIOS PM on AC	If you want the BIOS power-management features to remain active when the system is connected to an external power source, set to ON.
BIOS PM Timers	After the selected period of inactivity for the subsystems below (video, hard disk drive, suspend), the subsystem enters standby mode. Max Timeouts Maximum inactivity period before entering standby mode. User Define Select inactivity period for each sub system. Min Saving Minimum inactivity period before entering standby mode.
Video Standby Timer	Select time until video subsystem transits to the standby mode.
Suspend Timer	Select time until the system transits to the standby mode.
APM/Timer Suspend Mode	Select the suspend mode for APM and global timer. POS Suspend Power on suspend mode. Power is on while some subsystems are turned off. STD Suspend Save to disk suspend mode. Data is stored to the HDD and power is off.
System Battery	When you attach a battery unit to back up the operation of the devices using a 5V power supply, change this setting from "Not Equipped" to "Equipped." If you don't set this setting, the save to disk function won't work.

Items	Description
Front Switch Function	Select the functions of the front power switch. Power OFF — System shuts off. STD Suspend — Saves the data to the hard disk and power is turned off. Next time you turn it on, it'll start where you leave off. It is necessary to secure an STD area on the disk beforehand if you want to use the STD Suspend.
16/32-bit OS	Select the OS type when Save to disk function is enabled.

PnP/PCI Configuration

In the PnP/PCI configuration menu, you can set the plug & play standard and PCI Local Bus configuration.

Items	Description
PNP OS Installed	Plug & Play support.
Resource Controlled by	If you select AUTO, BIOS automatically assigns settings, such as DMA and interrupt.
Reset Configuration Data	If you select Enabled, ESC data is reset.
IRQ n assigned to	Assign each IRQ type.
PCI IRQ Activated by	Select IRQ trigger level.
PCI IDE IRQ Map to	IDE IRQ mapping.
Primary IDE INT #	Primary IDE interrupt.

Integrated Peripherals

The menu sets up the connections between the CPU and the I/O ports and the hard disk controllers.

The printer unit specialized for the IM-300 uses COM3 and is assigned to 3E8h/IRQ 11.

The touch panel uses COM4 and is assigned to 2E8h/IRQ 10.

Items	Description
IDE Primary Master PIO	The IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In *Auto* mode, the system automatically determines the best mode for each device.
IDE HDD Block Mode	Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.
On-Chip USB Controller	Your system chipset contains a Universal Serial Bus (USB) controller. Select Enabled if you use USB peripherals.
Onboard Serial Port 1/2/3/4	Select an address and corresponding interrupt for the serial ports 1 through 4. Consult your peripheral documentation to select the correct setting of the TxD and RxD signals on Serial Port 2.
Onboard Parallel Port	Select an address and corresponding interrupt for the physical parallel (printer) port.
Parallel Port Mode	Select the parallel port.
ECP Mode Use DMA	Select a DMA channel.

Password Setting

When you select this function, a message appears at the center of the screen:

ENTER PASSWORD:

Type a password, up to eight characters, and press the Enter key. Typing a password clears any previously entered password from CMOS. Now the message changes:

CONFIRM PASSWORD:

Again, type the password and press the Enter key.

To clear the password, simply press the Enter key when asked to enter a password. Then the password function is disabled.

To abort the process at any time, press the Esc key.

In the Security Option item in the BIOS Features Setup screen, select System or Setup:

System	Enter a password each time the system boots and whenever you enter setup.
Setup	Enter a password whenever you enter setup.

Device Diagnostics Utility

The device diagnostics utility included in the system ROM lets you isolate problems this product or connected devices may be having. You can use these diagnostics to test the following:

- TM printer operation
- DM display indication
- Cash drawer operation
- Serial port loop-back
- LPT1 port loop-back
- Printing test of printer connected to LPT1

Device Diagnostics Utility Requirements

Run the device diagnostics utility under the following conditions:

Device Diagnostics Utility Requirements

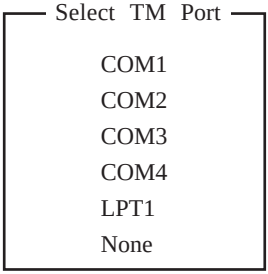
Items	Conditions
Connection to TM printer	• The TM printer needs to be connected to this product. Connect the printer to COM1 to COM4, or to LPT1, even if you will not test the TM printer.
Setting of the TM printer DIP switches	• Set the receiving buffer to the maximum. • Set selection switch (the customer display connection/non-connection switch) to non-connection, if it has a selection switch. • Set the communications settings to the following for a TM printer, without the ID function (ESC/POS GS I): · Baud rate : 9600 bps · Word Length : 8 bits · Parity : None Refer to the TM printer manual for the setup procedure.
COM, LPT port setting	• Set the COM, LPT port to the default.

Starting Device Diagnostics

Press the F10 key during the POST, and the following messages will be displayed:

Diagnostics Program will execute after POST.

When the POST finishes, the diagnostics program will be started and you see the following dialog box.



Select the port connected to the TM printer, using the up arrow or down arrow keys; then press Enter.

Device diagnostics uses a series of menu bars, pull-down menus, and dialog boxes that allow you to select options or perform diagnostic tests. Follow these guidelines for using device diagnostics:

- To display a pull-down menu, use the left or right arrow key to highlight the option; then press Enter (if necessary). You can also see the pull-down menu if you press the key that corresponds to the initial letter of the option. (The initialize option does not have a pull-down menu.)
- To select an option from the pull-down menu, use the up or down arrow key to highlight the option; then press Enter. If the option has a dialog box, you see it when you press Enter.
- Press Esc to close a pull-down menu or a dialog box.
- Press the backspace key to correct typing.

Device Diagnostics Utility Screen

The Device Diagnostics Utility screen in divided into the following areas:

- TM/Drawer
- DM
- COM Ports
- LPT1
- Messages

TM/Drawer

The TM/Drawer area of the Device Diagnostics screen displays the communication settings, cash drawer driving pulse signal width, and the status for the TM printer and cash drawer.

TM/DM information

Setting	Description
TM Model	Displays the model name depending on the type of TM printer attached to this product.
TM Port	Displays the TM printer connection support that was selected when you started the device diagnostics utility.
TM Reset Signal	Indicates the signal and signal definition this product is using to reset the TM printer. You see None here because this product does not have a reset signal.
Baud Rate	Indicates the baud rate device diagnostics is using to communicate with the TM printer and DM display.
Word Length	Indicates the word length device diagnostics is using to communicate with the TM printer.
Parity	Indicates whether device diagnostics is using parity to communicate with the TM printer.
Drawer ON Time	Displays the pulse width of the signal to open the cash drawer.
TM Status	Indicates the status of the TM printer. See the table called "TM status messages" for a description of these messages.
Drawer Status	Displays the status of the cash drawer.

TM status messages

Message	Priority	Description
Disabled	-	The port connected to the TM printer is disabled. Set to Enabled using the BIOS setup.
No communications	-	• Displays this message when a TM printer that does not have an ID function (ESC/POSGS I command) is connected. Check whether DIP switches of the TM printer are set to the following. Baud Rate : 9600 bps Word Length : 8 bits Parity : None Although the screen indicates "No communication," the device diagnostics utility can communicate with the TM printer if the DIP switches are set up correctly. If something is wrong, check the TM status messages. • Device diagnostics utility cannot communicate with a TM printer with the ID function (ESC/POS GS I command) connected. Check the following items: · The interface cable and power cable are connected properly to the TM printer. · Make sure you turn off this product before you connect the cable. · The TM printer power switch is on. · The TM printer selected when device diagnostics started is connected to the port. · The TM printer is not performing a self-test when device diagnostics starts · The paper feed button is not pressed when device diagnostics starts. If the TM printer does not meet these conditions, correct the problem and select the Initialize option from the menu bar. If the printer meets all the above conditions, one of the following may have occurred: · The print head has overheated. · The TM printer is not working.

TM status messages (Continued)

Message	Priority	Description
Hardware error	1	The print head is overheated, or the printer is not working.
Paper Feeding	2	The TM printer is feeding paper.
Receipt end	3	The receipt paper path contains no paper.
Journal end	4	The journal paper path contains no paper.
Paper near-end	5	The paper roll diameter is too small or is not installed.
Receipt near-end	6	The receipt paper roll diameter is too small or is not installed.
Journal near-end	7	The journal paper roll diameter is too small or is not installed.
Cover open	8	The printer cover is open.
On-line	9	The printer is on-line. The TM print test is possible.

* If device diagnostics detects more than one TM status, it displays the highest priority message. (Priority code 1 is higher than priority code 3.)

DM

The DM area on the screen indicates the communication settings and the status of the DM display.

DM Information

Setting	Description
DM Port	Indicates the port that the device diagnostics utility uses to transmit data.
Baud Rate	Indicates the baud rate that the device diagnostics utility uses to communicate with the DM display.
Word Length	Indicates the word length that the device diagnostics utility uses to communicate with the DM display.
Parity	Indicates whether the device diagnostics utility uses parity to communicate with DM display.
DM Status	Indicates DM status. Refer to the "DM status messages," table on the next page, which explains these messages.

DM status messages

Message	Description
Disable	COM port A is not set to 3F8h. Set COM port A to 3F8h in the System Configuration Utility.
No communication	Device diagnostics is not able to communicate with the DM display. Check the TM printer and DM display for the following: • The DM display is properly connected. Make sure you turn off this product before you connect the cable. • The data communications DIP switch is the same for the DM display and the TM printer. Make sure you turn off this product before you change the settings. • DM display power switch is on. • DM display is not executing a self test. If the DM display doesn't meet these conditions, correct the problem and select the Initialize option from the menu bar. If the TM printer and DM display meet the conditions above, one of the following may have occurred: • DM display interface circuit on this product is not working. • DM display is not working.
Busy	The DM display's condition is busy, possibly caused by the following: • DM display is running a self test. • After the device diagnostics utility started, the DM display power was turned off.
Ready	The DM display is ready to receive data. The DM display test is possible.

COM Port Information

The COM ports area of the screen lists the DTR, DSR, RTS, CTS, DCD, and RI status for each of the available COM ports. When the port is disabled, you see a message to that effect.

LPT1 Information

The LPT1 area of the screen lists the -BSY, -ACK, PE, SLCT, and -ERR status for the LPT1 port. When the port is disabled, you see a message to that effect. (Minus in front of a signal indicates active LOW.)

Messages

The message portion of the screen displays the result of tests.

Message area

Test category	Message	Description
TM printer	Disabled	This port is disabled.
	Done	The TM printer test is completed. Check the printing motion and auto cutter motion.
DM display	Disabled	This port is disabled.
	Done	The DM display test is completed. Check the display.
Drawer kick-out	Disabled	This port is disabled.
	Done	The drawer kick-out test is completed. Check the motion of the cash drawer.
Loop-back	Error	The diagnostics test failed. This message also appears when a loop-back connector is not connected or the wrong loop-back connector is connected.
	Disabled	This port is disabled.
	Ok	The test completed successfully.
LPT1 print	Time out	The printer connected to the LPT1 port did not enter a ready state after 2 seconds.
	Disabled	This port is disabled.
	Ok	The print data was sent successfully.

Using the Setup Menu

The Setup menu allows you to set the length of time for the voltage signal supplied to the solenoid of the cash drawer to open it.

Drawer On Time

The drawer on time option sets the length of time required for the voltage signal to pass through the solenoid to open the cash drawer.

To set the time, select the drawer on time option from the Setup pull-down menu. You see a dialog box allowing you to enter the ON time your cash drawer requires. You can enter a value up to 500 (ms). For the appropriate value, see your cash drawer manual.

Running Device Tests

The Device-Tests option on the menu bar allows you to run the following tests:

- TM print
- DM display
- Drawer kick-out
- COM1 loop-back
- COM2 loop-back
- COM3 loop-back
- COM4 loop-back
- LPT1 loop-back
- LPT1 print

✎ *Note*

Before you perform the loop-back tests, you need to connect an appropriate loop-back connector to the port. See Appendix B for the loop-back connector configurations.

TM print test

The following tests are executed during the TM print test:

- Receipt print test, which prints a standard print pattern
- Auto cutter test (for a printer equipped with an auto cutter only)

✎ *Note*

Before you run the test, make sure the TM status message says "on-line." If it doesn't, see "TM Status Message" in this chapter.

When the test is complete, make sure the standard print pattern printed. For a printer with an auto cutter, make sure that the auto cutter cuts the receipt.

DM display test

The DM display test sends the following message to the DM display:

```
Display Module Test

**** Device Diagnostics ****
```

Note

Before you run the DM display test, make sure the DM status message says "Ready." If it doesn't, see "DM Status Message" in this chapter.

Check the DM display screen to see if the test has been performed.

Drawer kick-out test

The drawer kick-out test opens the cash drawer. If the cash drawer opens, the test was successful. The TM printer has two drawer kick-out drive signals: signal 1 (pin 2) and signal 2 (pin 5). However, this test checks only for the drawer kick-out drive signal 1.

If you set a password for the drawer kick-out test, you see the following prompt when you select the drawer kick-out test from the menu bar:

```
Enter
```

Type your password and press Enter. Device diagnostics tries to open the cash drawer.

Note

Before you run the test, make sure the TM status message says "on-line." If it doesn't, see "TM Status Message" in this chapter.

COM port and LPT1 loop-back test

The following loop-back tests are available:

- The COM port test checks the DTR, DSR, CTS, RTS, TXD, and RXD signals.
- The LPT1 port test checks the -STROBE, -ACK, DATA0, BUSY, -AUTO FEED, PAPER EMPTY, -ERR, -INIT, -SELECT IN, and SELECT signals. (A minus sign in front of a signal indicates active LOW.)

✎ *Note*

Before you run these tests, make sure that the port you want to test is enabled and that the appropriate loop-back connector is attached to the port. If you want to check the external COM3, the jumper must be adjusted. If an LCD unit is attached, you can't perform the loop back test of the external COM4.

When the test completes successfully, you see "ok" in the message area of the screen. If the test failed, you see an error message.

LPT1 print test

The LPT1 print test prints a standard print pattern on the printer connected to LPT1. If the printer is busy, you see a time-out message in the message area of the screen.

✎ *Note*

- Before you run the LPT1 print test, make sure the LPT1 port is enabled. Also make sure that an appropriate printer is connected to the LPT1 port.
- To check the external COM3 connector, set the jumpers J15, J16, and J17 correctly.
- If you use the LCD unit with the touch panel, you cannot check the external COM4.

Initializing Device Diagnostics

When you select "Initialize" from the menu bar, device diagnostics restarts the program. If device diagnostics displays "no communication" for the TM status of TM/Drawer area or DM status of DM area, fix the problem. Then select this option to reset the program. See "TM status messages" or "DM status messages" in this chapter.

Exiting Device Diagnostics

When you select "Exit" from the menu bar, the system quits device diagnostics and restarts the system.

84-Key Configuration Utility

This utility defines the keys on the keyboard unit attached connected to IM-300.

✎ *Note*

These definitions apply only to the special keyboard attached to the front of the unit, not to the standard QWERTY keyboard connected to the PS/2 keyboard connector.

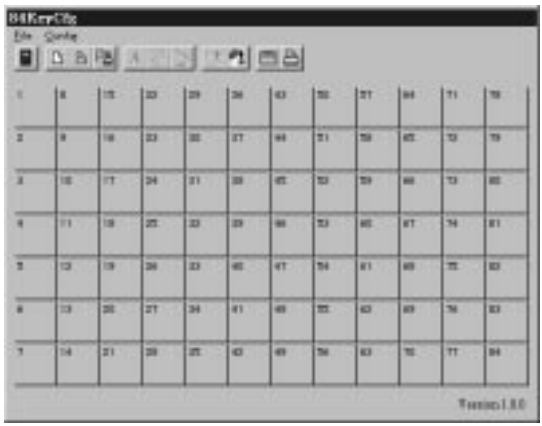
Start

The 84-key configuration utility is stored in the following directory by default:

C:\Program Files\Key Config\84keycfg.exe

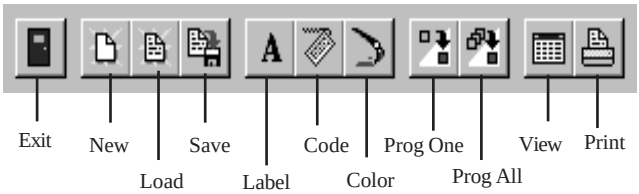
We can start the 84-key configuration utility by double clicking this file with the Explorer or by selecting "program\Key Configuration Utilities\Configure 84 Keyboard" from the menu.

When the program is run, the following screen is displayed.



Speed Buttons

11 speed buttons are displayed below the keytop setting program title bar. By clicking these speed buttons, you can select the desired function quickly.



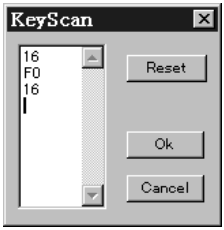
Exit	Exits the 84-key keyboard configuration utility.
New	Clears the button's function and creates a new setting.
Load	Loads a saved setting.
Save	Saves the current setting.
Label	Opens the Key Label dialog box.
Code	Opens the Key Code dialog box.
Color	Opens the Color dialog.
Prog One	If this button is clicked while a button is selected, only the key of the selected button is programmed.
Prog All	The settings of all the buttons are programmed.
View	Opens the Key View window and displays the keytops.
Print	Prints the current settings.

Defining Keys

The keys on the screen correspond to the actual keytops on the keyboard unit. The keytops are defined with the following procedure.

1. Click the key you want to define, and it becomes selected. (Clicking it again cancels the selection.)

2. Click the code button and open the Key Code dialog box.



3. Using the touch panel or standard keyboard connected to the PS/2 connector, input the code to set for the selected key. The code can be up to a maximum of 64 bytes.

   To connect more than one key together, select a key while holding down the shift key, and then select the key immediately below or to the right of the currently selected key. By repeating this procedure, you can connect a number of keys to create a large key. Holding down the shift key and selecting a connected key cancels the connection.

4. If you click the Ok button, the setting is made and the Key Code dialog is closed. If you click the Cancel button, the setting is canceled. Click the Reset button to clear the code.

Setting a Key Label

The following procedure sets the key label displayed on the keytop.

1. Click the key you want to label, and it becomes selected.
2. Click the label button, and the key label dialog opens.

3. Input any characters as the label.
4. Click the Ok button, the characters you input are displayed on the button, and the Key Label dialog closes. If you click the Cancel button, the input characters are canceled. You can input up 20 characters. "|" is regarded as new line.

Setting Keytop Colors

The following procedure sets the color of the keytop.

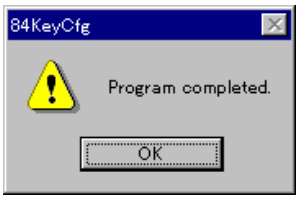
1. Click the key you want to set, and it becomes selected.
2. Click the Color button; the Color Setting dialog is displayed.
3. Set the color of the keytop. The standard OS function is used for the Color Setting dialog Windows, DOS, OS/2, etc.). For details, refer to the OS instruction manual.
4. Click the Ok button, the key is redrawn in the selected color, and the Color Setting dialog closes. Click the Cancel button to cancel the selected color.

Running the Key Program

To assign a setting to an actual key, you must run the key program. You can run the program using either of the following methods.

- Click the Prog One button while a button is selected. Only the selected key is programmed.
- Click the Prog All button. All the keys are programmed.

If the program ends correctly, the following dialog is displayed.



Saving the Settings

The current settings can be saved as a file. The settings are saved using the following procedure.

1. Click the Save button to display the Save As dialog. You can use the standard OS function for the Save As dialog (Windows, DOS, OS/2, etc.). For details, refer to the OS instruction manual.
2. If you input a file name and click the Save button, the setting is saved in a file. Use the file extension ".K84".

Loading the Settings

Settings are loaded with the following procedure.

1. Click the Load button to display the Open dialog. The standard OS function (Windows, DOS, OS/2, etc.) is used for the Open dialog.
2. Select a file name and click Load to load the selected setting.

New

When clearing the current settings and creating new settings, click the New button. All the key settings are cleared.

Viewing Keytops

Click the View button to open the Key View window to confirm the labels and colors of the keytops. You can change the size of the Key View window by dragging one of its corners. You can close the window by clicking the [x] button at the right-hand end of the title bar.

Printing the Settings

You can print the current settings on the printer. Use the following procedure.

1. Click the Print button to display the Print dialog. The standard OS function is used for the Print dialog (Windows, DOS, OS/2, etc.). For details, refer to the OS instruction manual.
2. Click the Ok button to print the settings.

Exit

Click the Exit button to quit the 84-key keyboard configuration utility.

Key Lock Configuration Utility

This utility defines key lock settings.

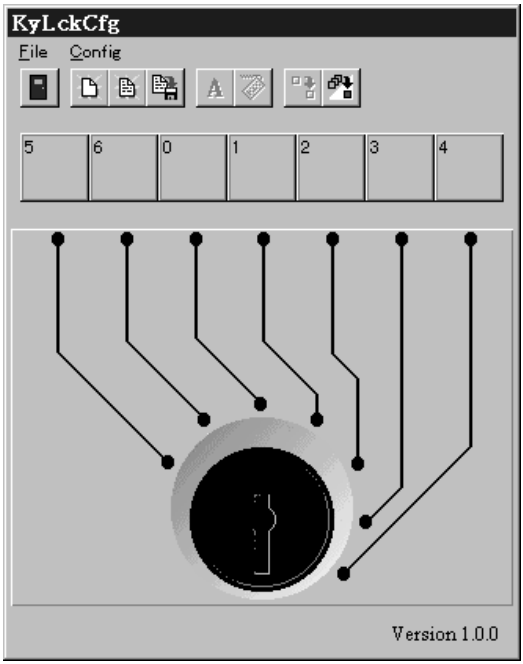
Start

The key lock configuration utility is stored in the following directory by default:

C:\ProgramFiles\KeyConfig\Kylckcfg.exe

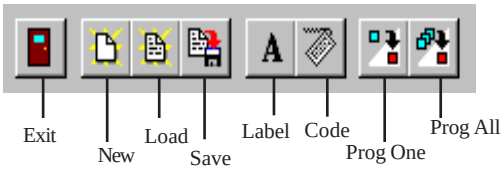
You can start the Key lock configuration utility by double clicking this file with the Explorer or by selecting "program\Key Configuration Utilities\Configure Key lock" from the menu.

When the program is run, the following screen is displayed.



Speed Buttons

8 speed buttons are displayed below the keytop setting program title bar. By clicking these speed buttons, you can access the desired function quickly.

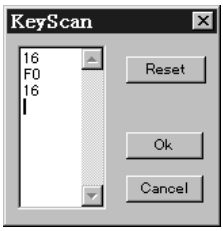


Exit	Exits the Key Lock Configuration utility.
New	Clears the button's function and creates a new setting.
Load	Loads a saved setting.
Save	Saves the current setting.
Label	Opens the Key Label dialog box.
Code	Opens the Key Code dialog box.
Prog One	If this button is clicked while a button is selected, only the key of the selected button is programmed.
Prog All	The settings of all the buttons are programmed.

Defining Keys

The key positions on the screen correspond to the actual key positions of the keys. Define key position functions with the following procedure.

1. Click the key for which you want to set a code, and it becomes selected. (Clicking it again cancels the selection.)
2. Click the Key Code button and open the Key Code dialog box.



3. Input the code from the keyboard to set the selected key. The code can be a maximum of 64 bytes.
4. Click the Ok button to make the setting, and the Keyscan dialog is closed. Click the Cancel button to cancel the setting. Click the Reset button to clear the code.

Setting a Key Label

The following procedure sets the key label displayed on the keytop.

1. Click the key you want to label, and it becomes selected.
2. Click the label button, and the key label dialog opens.

3. Input any characters as the label.

4. Click the Ok button. The characters you input are displayed on the button, and the Key Label dialog closes. If you click the Cancel button, the input characters are canceled. You can input up 20 characters. "|" is regarded as new line.

Running the Key Program

To assign a setting to a key, you must run the program. You run the program using either of the following methods.

- Click the Prog One button while the key is selected. Only the selected key is programmed.
- Click the Prog All button. All the keys are programmed.

If the program ends correctly, the following dialog is displayed.

Saving the Settings

You can save the current settings as a file with the following procedure.

1. Click the Save button and the Save As dialog is displayed. The standard OS function is used for the Save As dialog (Windows, DOS, OS/2, etc.) . For details, refer to the OS instruction manual.

2. Input a file name and click the Save button to save the settings in a file. Use the file extension ".KYL."

Loading the Settings

Load the settings with the following procedure.

1.Click the Load button to display the Open dialog. The standard OS function is used for the Open dialog (Windows, DOS, OS/2, etc). For details, refer to the OS instruction manual.

2.Select a file name and click the Load button. The selected setting is loaded.

New

To clear the current settings and create new settings, click the New button. All the key settings are cleared.

Exit

Click the Exit button, the Key lock configuration utility is exited.

POS Key Mode Setting Utility

This utility sets environmental variables for the POS card.

Start

The POS key mode setting utility is stored in the following default directory:

C:\Program Files\KeyConfig\Pkmode.exe
(In DOS mode, the directory is changed to
C:\progra~1\keycon~1\Pkmode.exe)

To start this program, exit Windows and restart the system in DOS mode. Then execute it by typing the command name from the keyboard.

Note

This utility cannot be run when the COM4 port is being used. The system uses the COM4 for the touch panel. So, be sure to exit Windows and run the utility in DOS mode. This program cannot be executed in a DOS box.

Commands

Execute commands in the following format:

PKMODE.EXE [MSR1|MSR3|MSR] [US|JP] [CMDOFF|CMDON]
[TK1SS=string][TK1ES=string][TK2SS=string]
[TK2ES=string][TK3SS=string][TK3ES=string]

MSR1: Disables Track3 decoding. Set this when the track1/track2 MSR unit is mounted.

MSR3: Disables Track1 decoding. Set this when the track3/track2 MSR unit is mounted.

MSR: Sets decoding of the MSR unit to the default. Enables decoding for track1 and track3, enabling decoding of the above two types of the MSR unit.

US: Returns the data read by the MSR unit in scan codes for an English 101-keyboard. This is the default setting.
This setting is also valid as the keyboard unit default setting.

JP: Returns data read by the MSR unit in scan codes for a Japanese 106-keyboard. This setting is also valid as the keyboard unit default setting.

CMDOFF: Outputs all commands to the keyboard interface without accepting the 84-key definition command. This is set when a key-definable keyboard is connected, but the key definition was not performed correctly.

CMDON: Accepts the 84-key definition command (default value).

TK1SS=string:	Changes the start flag of the MSR 1track to the string specified by "string". Default is "%".
TK1ES=string	Changes the end flag of the MSR 1track to the string specified by "string". Default is "?".
TK2SS=string:	Changes the start flag of the MSR 2track to the string specified by "string". Default is ";".
TK2ES=string	Changes the end flag of the MSR 2track to the string specified by "string". Default is "?".
TK3SS=string:	Changes the start flag of the MSR 3track to the string specified by "string". Default is "+".
TK3ES=string	Changes the end flag of the MSR 3track to the string specified by "string". Default is "?".

"string" can contain up to 7 characters specified by double quotation marks. The following special characters are supported.

Carrige return = \r
TAB = \t
Back slash = \\
Character code = \0Xnn ; nn = hexadecimal

More than one parameter can be set at a time. Parameters are analyzed and executed one after another, and when an invalid parameter is specified, an error is indicated, but processing continues with the analysis of the next parameter without stopping at the error.

As in the case of the key definition for the 84 keys, the values set by this command are stored in the backed-up RAM for POS Keys and do not disappear when power is turned off.

Messages

The following message is displayed when the utility is started.

EPSON POS Keyboard Mode Setting Utility Vx.xx

When parameters are executed correctly, the following messages are displayed.

Parameter	Message
MSR1	MSR track1
MSR3	MSR track3
MSR	MSR default
US	US 101 keyboard
JP	JP 106 keyboard
CMDOFF	Command Function OFF
CMDON	Command Function ON
TK?SS*	Track? Start Sentinel = string
TK?ES*	Track? End Sentinel =string

* ? is 1, 2 or 3.

The error messages shown below may be displayed if there is a problem.

Parameter	Message
Invalid parameter	Invalid parameter was specified.
RS232 Port Initial Fail!!!	Failed in RS-232 initialization.
Communication error	Failed in serial communication.

Key Definition Utility (For MS-DOS)

The Key Definition Utility for MS-DOS (POSKB.EXE) runs under MS-DOS to edit and set the the matrix keys and keylock keys for the IM-300.

Definitions:	84 keys and 7-position keylock keys
Number of definitions :	16 bytes max. per key (Shift/Ctrl/Alt/Gray are each handled as one character).
Operation :	Keyboard (mouse not available).
Functions:	This utility permits the following functions. (1) Designating a key-definition file (File). (2) Reading data from a key-definition file (Load). (3) Writing data to a key-definition file. (Save). (4) Editing a key-definition file (Edit). (5) Writing defined keys to the keyboard (Download).

Start

The key definition utility for MS-DOS is stored in the following directory by default:

C:\Program Files\Key Config\poskb.exe

(At the DOS mode, the directory is changed to
C:\progra~1\keycon~1\poskb.exe)

To start this program, exit Windows and restart the system in the DOS mode. Then execute it by typing the command name from the keyboard. When this program is executed, the following screen is displayed.

The Key Definition Utility for MS-DOS has the following six commands.

"File"	Designates the file name. Key definitions are saved to or loaded from the file name designated with this function.
"Load"	Loads the key-definition data from the file designated by the File function.
"Save"	Writes the key-definition data onto disk to the file designated by the File function.
"Edit"	Edits the key-definition for one key at a time.
"Download"	Writes the key-definition data to the keyboard memory. The keyboard data does not change until the key-definition data is downloaded.

Select the Command with the right or left arrow key.

Press Enter to execute the command.

File Command

When the "File" command is selected, following screen will be displayed.

The file command defines the file name on disk for the key-definition data Load and Save operations. The input file name must correspond to the MS-DOS file name format (8-character name + 3-character extention). The Backspace, Delete, and arrow keys are available to edit a file name.

Press Enter to confirm the file name or ESC to cancel.

When this utility is quit, the file name designated by the File command is saved in KBD_DL.CFG. When the utility is next booted up, the name of the file containing the key-definition data is read from KBD_DL.CFG.

Load Command

When the "Load" command is selected, the following screen will be displayed.

Press Enter to read the key-definition data from the key-definition data file designated by the File command.

Save Command

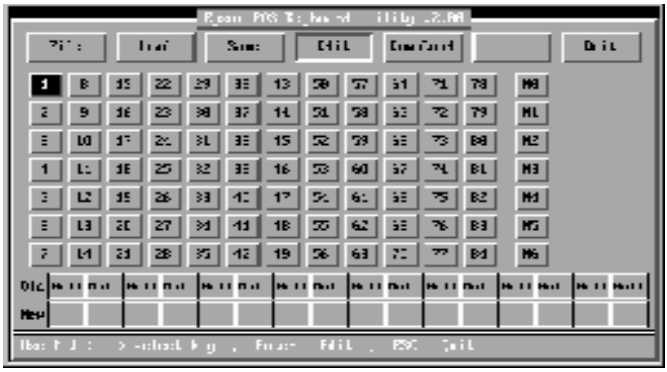
When the "Load" command is selected, the following screen will be displayed.

Press Enter to write the key-definition data to the key-definition data file designated by the File command.

Edit Command

When the "Edit" command is selected, the following screen will be displayed.

Press Enter to switch to the screen below.



The highlighted key on the screen indicates the key being edited and the current definition of the key is displayed below in the "Old" position. Press arrow keys to select the key to be edited, then press Enter to switch to the next screen.

M0 to M6 indicate the keylock keys.

Enter the required definition for the selected key. This key definition is displayed below in the "New" field.

Use the definition keys below to edit the key definition.

"Alt + Ctrl"	Delete the previous key definition.
"Shift + Shift"	Delete the input data and revert to the status before the key is selected.
"Ctrl + Shift"	Save the input data. The keytop changes to show that the key is defined.

Press the ESC key to quit the Edit command.

Download Command

Press Enter when the Download command is selected to transmit the key-definition data to the keyboard.

When data is being transmitted, the following message will be displayed at the bottom of the screen.

Download keyboard map, wait please....

✎ *Note*

Do not enter data from the keyboard during data communication for a download.

Quit Command

Press Enter when the Quit command is selected to quit this program.

This program can also be quit by pressing the ESC key. However, when ESC is pressed, the file name designated with the File command is not saved.

Key Table

The key table is a file defined by KEYTABLE.DEF. It defines the conversion codes for the key-definition data.

The conversion codes are loaded when this utility is booted up. If no file exists, the default data in the program is used.

The standard keyboard setup is the US keyboard. Data can be edited to create the keyboard used in any other country.

Each line is one definition. Use a slash "/" to indicate a comment. Press the Tab or Space key to delimit the items.

Five items are designated per line:

Scan code:	Designates the code input from the keyboard as a 4-digit hexadecimal.
Make code:	Designates the code defined for the keyboard as a 4-digit hexadecimal. (The most-significant 16 bits are the valid defined data.) (The least-significant 16 bits are used for internal identification.)
String data:	Data displayed for the definition (max. 4 characters).
Status 1:	Keyboard status, designates Normal, Shift, Ctrl, or Alt.
Status 2:	Keyboard status, designates Normal or Gray.

An example is shown below.

```
// 1
    0231        1600        1          Normal     Normal
    0221        1601        1(!)       Shift      Normal
    7800        1600        1          Alt        Normal
    4F00        1600        1          Normal     Normal
    4F31        1600        1          Normal     Normal
// a
    1E61        1C00        a          Normal     Normal
    1E41        1C00        a(A)       Shift      Normal
    1E01        1C00        a          Ctrl       Normal
    1E00        1C00        a          Alt        Normal
// Delete
    9300        7100        Del        Ctrl       Normal
    53E0        7100        Del        Normal     Gray
    93E0        7100        Del        Ctrl       Gray
    A300        7100        Del        Alt        Gray
```

The file data consistency is checked by the parameter number for each line. The following message is displayed if an error in the file data is found:

Invalid key configuration format - Press any key to continue...

Key Data File

This utility allows key-definition data to be saved to and read from a file designated by the file command. The default file is EPSONKB.MAP.

The configuration of this file is as follows:

+00 to +0F	File identification headers (Epson POSKBV2.x)
+10 to +1F	Not used
+20 to +3F	Key-definition data for Key #1 (2 bytes per make data item, up to 16 data items can be registered)
:	
+A80 to +A9F	Key-definition data for Key #84 (2 bytes per make data item, up to 16 data items can be registered)
+AA0 to +ABF	Key-definition data for Keylock key #0 (2 bytes per make data item, up to 16 data items can be registered)
:	
+B60 to +B7F	Key-definition data for Keylock key #6 (2 bytes per make data item, up to 16 data items can be registered)

When the Load command is executed, the file data consistency is checked using the file size and file identification header. The following message is displayed if an abnormal file size is detected:

File format error. Press any key to end...

No action is taken if an abnormal file identification header is detected.

Error Messages

This program displays the following error messages.

During Boot-up

Invalid key configuration format - Press any key to continue...
: A data inconsistency exists in the key conversion file (KEYTABLE.DEF). Check the data.

Scan code table overflow - Press any key to continue...
: Too much key-definition data exists in the key conversion file (KEYTABLE.DEF). Limit the data to the required items.

Load Command

File not exist, Press any key to end...
: The file designated by the File command does not exist. Chec k the file name.

File format error, Press any key to end...
: Abnormal key-definition data. Check the file name.

Save Command

File create error, Press any key to end...
: Could not save the key-definition data. Check the free capacity on the hard disk drive.

Download Command

Key map download Fail - Time Out, Press any key to continue...
: Could not write the key-definition data to the keyboard.

Chapter 4

Troubleshooting

This product has been designed with reliability in mind. If, however, you encounter any difficulties using this product, read this chapter. The first section provides error messages for diagnostics the system runs during the power-on self test (POST). This section is followed by some general troubleshooting guidelines for the system.

Messages

Message	Description
BIOS RAM checksum error - System halted	The checksum of the BIOS code is incorrect, indicating BIOS code may have become corrupt. Contact your system dealer to replace the BIOS.
CMOS battery failed	CMOS battery is no longer functional. Contact your system dealer for a replacement battery.
CMOS checksum error - Default loaded	Checksum of CMOS is incorrect, so the system loads the default equipment configuration. A checksum error may indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Recharge the battery.
CPU at nnnn	Displays the running speed of the CPU.
Press ESC to skip memory test	The user may press Esc to skip the full memory test.
Floppy disk(s) fail	Cannot find or initialize the floppy drive controller or the drive. Make sure the controller is installed correctly.
HARD DISK initializing Please wait a moment...	Some hard drives require extra time to initialize.
HARD DISK INSTALL FAILURE	Cannot find or initialize the hard drive controller or the drive. Make sure the controller is installed correctly. If no hard drives are installed, be sure the Hard Drive selection in Setup is set to NONE.
Hard disk(s) diagnosis fail	The system may run specific disk diagnostic routines. This message appears if one or more hard disks return an error when the diagnostics run.

Message	Description
Keyboard error or no keyboard present	Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are pressed during POST.
Keyboard is locked out - Unlock the key	This message usually indicates that one or more keys have been pressed during the keyboard tests. Be sure no objects are resting on the keyboard.
Memory test	This message displays during a full memory test, counting down the memory areas being tested.
Memory test fail	If POST detects an error during memory testing, additional information appears giving specifics about the type and location of the memory error.
Override enabled - Defaults loaded	If the system cannot boot using the current CMOS configuration, the BIOS can override the current configuration with a set of BIOS defaults designed for the most stable, minimal-performance system operations.

Message	Description
Primary master hard disk fail	POST detects an error in the primary master IDE hard drive.
Primary slave hard disk fail.	POST detects an error in the primary slave IDE hard drive.
Resuming from disk, Press TAB to show POST screen.	This message may appear when the operator restarts the system after a save-to-disk shut-down. See the Press TAB ... message above for a description of this feature.

Troubleshooting

The IM-300 Will Not Start

The power indicator is on, but the IM-300 does not start.

Check monitor problems in this chapter. Also, start the system from a bootable floppy disk. Make sure the hard disk drive type is set correctly in the BIOS setup. Also make sure the hard disk drive is correctly formatted and contains an operating system.

The IM-300 does not start and the power indicator is not lit.

Make sure all cables are securely connected to the IM-300. Also check that the power cord is completely plugged into the electrical outlet. Test the outlet to see if it is supplying power.

You have installed or removed components and now the IM-300 does not start.

Check to make sure you have reconnected all the internal and external cables correctly.

Also, make sure that any device connected to the AC outlet of the power supply does not consume more than 200 VA or that the total power requirements of all the devices getting their power from the IM-300 do not exceed the systems power limitations. See Appendix A for the power limitations.

You may have incorrectly installed the SIMM. If the system does not detect memory, it does not start. Check that the SIMM is securely installed in the socket.

The IM-300 Always Stops at Bootup

If the IM-300 always shows "Invalid System Configuration Data" at bootup, run BIOS Setup and execute "Load Setup Default." Then reboot.

The IM-300 Does Not Respond

The IM-300 locks up.

Wait a few minutes; if the IM-300 still doesn't respond after a reasonable length of time, press Ctrl + Alt + Del keys. If that doesn't work, press the RESET switch.

You reset the IM-300, but it still does not respond.

Try turning the IM-300 off and on again.

The IM-300 Shuts Down

You may be drawing more power than the IM-300 can provide. Make sure the combined power requirements for all the devices drawing power from the IM-300 does not exceed the power limits listed on Appendix A.

Also, the temperature inside the IM-300 may be too hot.

The IM-300 Can't Be Tunred Off

If you can't turn off the IM-300, press the RESET switch and reboot the system.

Keyboard Problems

The screen displays a keyboard error message when you turn on or reset the IM-300.

Make sure the keyboard is securely connected to the keyboard port, and that no pins in the connector are bent or missing.

The items that appear on the screen do not correspond to the keyboard options.

Your keyboard may not be mapped properly for the system. See if a standard PC/AT keyboard connected to your PS/2 connector works.

Monitor Problems

There is no display on the screen.

Check that the monitor is turned on and plugged in.

Also, the IM-300 may be in a power management standby or suspend mode. Press a key on the keyboard to see if anything appears on the display.

The power switch is on, but the power light is not on.

Check the electrical outlet for power.

The monitor power indicator is on, but nothing appears on the screen.

Check the contrast controls on the monitor.

Make sure the monitor is securely connected to the IM-300.

If you are running an application program, see if you need to set up the program for the type of display you are using.

EPSON DM-D Display Problems

The display is not working.

Make sure the display is the correct type (DM-D102 015) and that it is plugged into the DM display port or the IM-300 DMD connector.

Check that the DM display power switch is turned on and that its data communications DIP switch settings are properly set. Also, perform a self test on the DM display to ensure that it is working correctly.

Check that the COM port setting for the IM-300 is correct in the BIOS Setup.

Floppy Disk Problems

You see a floppy disk error message.

Reinsert the floppy disk, making sure to insert it all the way. If that doesn't solve the problem, insert it in a floppy disk drive on another machine to see if the drive is faulty.

Check that the floppy disk is properly formatted and is not write-protected. Also, try copying the files to a new floppy disk or running CHKDSK or a similar utility to repair the files.

Hard Disk Problems

A newly installed hard disk drive is not working properly.

Make sure you have installed the drive correctly. Also check that the drive has been fully inserted into the connector.

Run the BIOS setup and make sure the system is auto-sensing the correct drive type.

You are unable to store data on the hard disk drive.

Make sure the drive is partitioned and formatted correctly for the operating system.

You notice a reduction in drive performance.

The data on the disk may have become fragmented. Back up all your data and use a disk optimization utility to reorganize the files on the disk.

If you are seeing read/write errors, the drive may have a physical problem. Replace the drive.

TM Printer Problems

The TM printer isn't working.

Make sure the TM printer interface cable and power cable are properly connected to both the printer and the connector on the IM-300.

Check that the TM printer power switch is on.

Make sure the paper roll is installed properly in the printer.

Perform a self test on the printer to ensure that it is working correctly.

Serial Port Problems

A device attached to a serial port is not working.

Make sure the cable is connected securely. Make sure the COM ports are set properly in the BIOS setup utility.

If the device is powered externally, make sure the outlet is providing the appropriate power. If the device is powered from the IM-300, make sure it is not overloading the power supply. Also, make sure the voltage jumpers for the port are set correctly.

Check any DIP switches or control panel settings on the device to ensure they are set correctly.

Parallel Port Problems

A device attached to the LPT1 port is not working properly.

Make sure the device has power and is properly connected to the IM-300.

Cash Drawer Problems

The cash drawer isn't opening correctly.

Make sure the drawer is properly connected to the drawer kick (DKD) connector on the TM printer or the IM-300.

Check the connection of the interface cable and power cable of the TM printer.

Check that the TM printer power switch is on.

PC Card Problems

A PC card installed in the PCMCIA expansion module is not working.

Try reinserting the card. Then make sure the PCMCIA expansion module is installed correctly. Also, make sure the card and socket services software is installed correctly. Check that the correct PCMCIA drivers and utilities are installed. The supplied card and socket services software supports most PC cards, but some do require special drivers or software. See the documentation that came with the card for more information.

Appendix A

Specifications

CPU and Memory

CPU	Socket 7 is installed. The following CPUs are available: Intel: Pentium 100 MHz to 200 MHz Intel: Pentium MMX technology 166 MHz to 200 MHz
Power Management	Advanced Power Management BIOS controls power management functions for the CPU and hard disk drive; functions controlled through the BIOS setup.
Onboard Memory	None
Secondary Cache Memory	256KB pipelined burst
SIMM Sockets	Two 72-pin SIMM sockets are provided on the main board. The SIMMs must meet the specifications in Appendix C.
System ROM	System BIOS and video BIOS are located in 256KB flash ROM on the main board.
User ROM	Four 32-pin PLCC sockets are provided (for flash memory, 2MB maximum). The user ROM must meet the specifications in Appendix C.
ROM for POS Keys	128KB flash ROM is used.
NVRAM for POS Keyboard	Battery-backed 32KB SRAM.
NVRAM for POS	Battery-backed 32KB SRAM.
Clock/Calendar	Real-time clock, calendar, and CMOS RAM contained in the RTC chip; backed up by a vanadium-lithium battery.
Chipset	ALi M1531B/M1543

Controllers

Keyboard Controller	80C42 (included in M1543) Keyboard controller supports any IBM/PC-AT compatible mini-DIN keyboard.
I/O Controller	ALi M5113 Super I/O controller on the main board supports up to two serial ports with FIFO.
Video Controller	C&T65550 VRAM 1MB 1024 x 768 (256 colors), 800 x 600 (64K colors), 640 x 480 (16M colors)
POS Keyboard Controller	8031 When the keyboard unit is attached, this controller controls it.
Custom Gate Array	Controls user ROMs and NVRAM for POS.

Interfaces

Parallel	25-pin D-Sub female connector. The parallel port can be defined as an ECP or EPP.
Serial	9-pin D-sub male connector x 2. Four serial ports are supported. Two ports are used for the internal printer/DM display and the touch panel.The printer unit and DM display use COM3 by default. The touch panel uses COM4 by default.
Keyboard/Mouse	6-pin miniature-DIN female connector (PS/2 type). A keyboard and a mouse can be connected using a branch cable. (Y cable)
Analog RGB	15-pin SD-Sub female connector. An analog RGB display can be connected.

USB	Type A 4-pin x 2. There is one USB at the rear side and another on the right side.
Drawer	6-pin. A cash drawer can be connected.

Expansion Slots

ISA Slot	Standard 16-bit, half-size [length 195 mm (7.7"), width 107 mm (4.2"), parts side height 12 mm (0.48"), solder side height 10 mm (0.39")] I/O expansion slot, ISA AT-compatible, 7.2 MHz bus speed with a card-edge connector.
ISA/PCI Slot	32-bit, half-size [length 195 mm (7.7"), width 107 mm (4.2"), parts side height 12 mm (0.48"), solder side height 10 mm (0.39")] I/O expansion slot. This slot can be used either as an ISA slot or a PCI slot with a card-edge connector.
PCMCIA Expansion Slot	One expansion slot for a PCMCIA expansion module (OI-B06) supporting two Type I or Type II PC cards or one Type III PC card; half-pitch card edge connector.

Disk Drives

Floppy Disk Drive	3.5-inch floppy disk drive with a 720KB or 1.44MB storage capacity.
Hard Disk Drive	One slot available for a 2.5-inch hard disk drive [19 mm maximum] with IDE/EIDE controller conforming to MCC standards with the stardard HDD bracket. Two hard disk drives [12.7 mm maximum] can be attached with an optional 2 HDD bracket.

Security

Front Cover Lock	The front cover lock secures the front panel to this product making the floppy disk drive and the hard disk drive inaccessible.
Key Lock Keys	The key lock keys that are used to place restrictions on the functions that the user can access. Each key is keyed to access a different range of positions between 0 and 6. Higher access ranges of the key let you use higher functions, so that unauthorized users can be inhibited by software.
Passwords	Two types of passwords can be defined within the BIOS setup -- one for booting the system and the other for accessing the BIOS setup.

Switches

Side Power Switch	Turns on and off the primary power for this product. Basically leave this switch ON.
Front Power Switch	Can be defined in setup. Can turn power on/off or start/end stand by mode. Also controls any device (such as a monitor) connected to the AC outlet on the power supply.
RESET Switch	Push-type switch to reset this product; accessible using a pointed object like a ball-point pen. Devices attached to COM ports are not reset when you reset this product.

Indicators

Both the LCD unit and the keyboard unit contain Power and HDD indicators and the FDD unit has an FDD indicator.

Power Indicator	Power indicator lights when this product is turned on.
HDD Indicator	The HDD indicator lights during accessing of the hard disk drive (when a hard disk drive is installed).
FDD Indicator	The FDD indicator lights during accessing of the floppy disk drive.

System Utilities

BIOS Setup	Configures this product, saving settings to CMOS; accessible by pressing the Delete key when you turn on this product.
Device Diagnostics	Helps you to isolate communication problems this product or connected devices may be having. You can start the device diagnostics by pressing the F10 key during the POST.

Power

The power unit included in this product supplies power, which normally can be used, regardless of the input voltage. AC output (for the CRT) is also supplied. The AC output isn't produced when the system is off.

The internal power unit has a connector which supplies power to an optional battery unit.

The electrical characteristics of the power are as follows:

Electrical Characteristics of the IM-300

Input Conditions	Input Voltage (Rating)	90 (100-10%) VAC to 264 (240 + 10%) VAC
	Frequency (Rating)	50/60 Hz± 2 Hz
	Input Power (Rating)	180 VA or less
DC Output Condition s	6-pin plug	
	Output voltage (Rating)	+24 VDC + 7%, -3%
	Output current (Rating)	2.0 A
	Output power (Rating)	48 W
	Output peak current	4.5A (300 msec, duty 1/4)
	Output voltage (Rating)	+5 VDC± 5%
	Output current (Rating)	8.0 A *1
	Output power (Rating)	40 W
	12-pin connector	
	Output voltage (Rating)	+12VDC± 5%
	Output current (Rating)	2.3A *2
	Output power (Rating)	27.6W
	Output voltage (Rating)	-5 VDC± 10%
	Output current (Rating)	0.5 A
	Output power (Rating)	2.5 W
	Output voltage (Rating)	-12 VDC± 10%
	Output current (Rating)	0.5 A
	Output power (Rating)	6 W
AC output for a monitor	Inpu t voltage (Rating)	90 (100-10%) VAC to 264 (230+15%) VAC
	Frequency (Rating)	50/60 Hz± 3 Hz
	Output power (Rating)	300 VA or less (Rating 3 A)

*1 The total maximum current a user can use for the expansion slots, the USB, COM1 to COM4, and the PC keyboard is 3.0A.

*2 The maximum current a user can use for the expansion slots and COM1 to COM4 is 1.5A.

AC Cable	The AC cable is not attached.
AC Outlet	The AC outlet is a three-pin (female) socket that supplies power to a device like a CRT. The power switch of this product controls this AC outlet.

Power Limits

The total power supply capacity available for boards inserted in the PCI slot, ISA slot, expansion slot, and devices that use the power supply output from COM1 to COM4 are as follows. The total must not exceed the capacity shown below for each voltage +5 V, -5 V, +12 V, -12 V and +24 V.

Total Power Supply Capacity

Power supply	Device	Capacity
+5 VDC	For expansion, ISA, COM1 to COM4, Keyboard, USB and PCI slots	3.0 A
-5 VDC	For expansion, ISA and PCI slots	0.3 A
+12 VDC	For expansion, ISA ,PCI slots and COM1 to COM4	1.5 A
-12 VDC	For expansion, ISA and PCI slots	0.3 A
+24 VDC	For internal printer unit and power supply for TM , DMD, and DKD	2.0 A

Lithium Batteries

The system is internally equipped with two vanadium-lithium rechargeable batteries. One is for the real time clock along with CMOS and NVRAM for POS backup. The other is for the NVRAM for the KB unit backup. The specifications for both of these batteries are the same.

Chargin g method	Constant-voltage charge 3.4 V± 0.15 V (during system operations)
Charging time	40 hours minimum
Backup time	30 days minimum (full charge)

Dimensions

IM-300 Dimensions

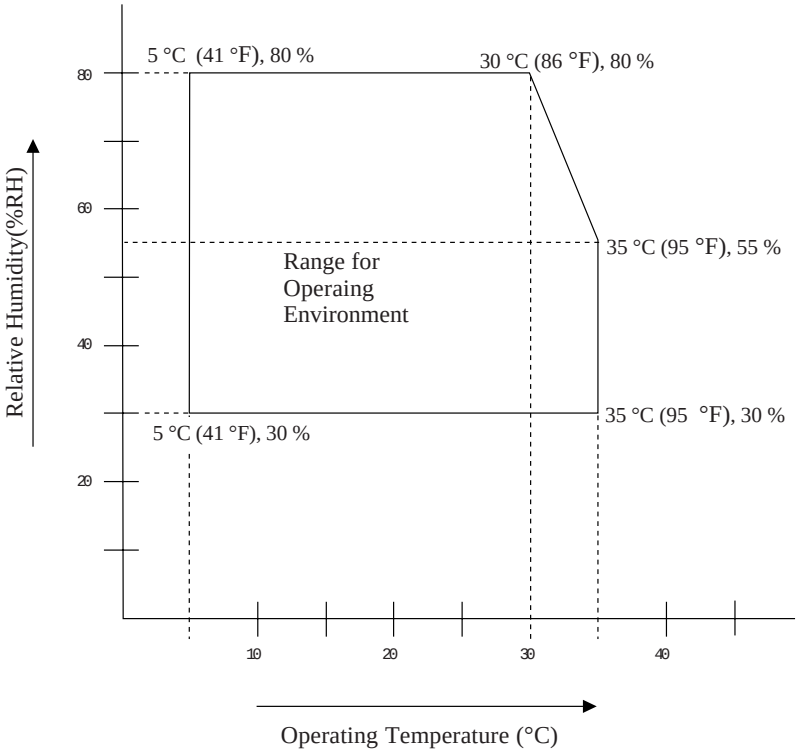
	Size		
	Width	**Length**	**Height**
With a rear cover	252 mm (9.9")	454.5 mm (17.9")	250 mm (9.8")
Without a rear cover	252 mm (9.9")	386 mm (15.2")	250 mm (9.8")

Environmental Requirements

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 %*	30 to 90 %*

* Non-condensing (See illustration below).



DMA Assignments

DMA Assignment

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

* When the LPT1 is used as the ECP mode, one of them is used.

Hardware Interrupts

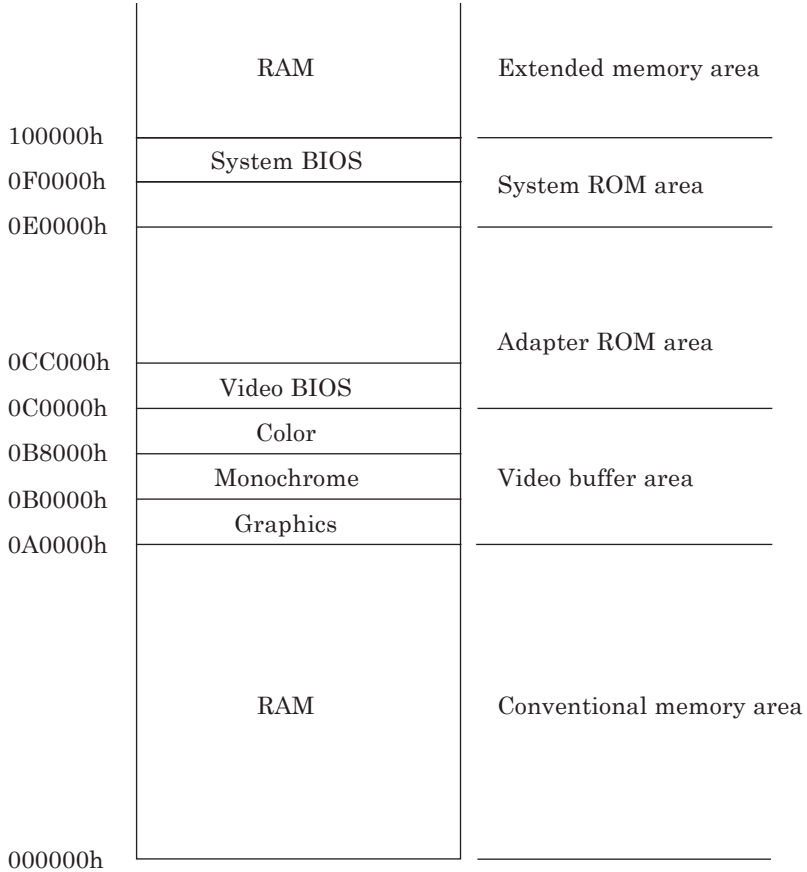
Hardware Interrupt

Controller 1	Controller 2	Application
IRQ0		Timer
IRQ1		Keyboard
IRQ2		Contoller 2 cascade
	IRQ8	Real time clock
	IRQ9	Unused / USB *
	IRQ10	Serial port (COM4)
	IRQ11	Serial port (COM3)
	IRQ12	Mouse
	IRQ13	Math coprocessor
	IRQ14	Hard disk controller
	IRQ15	Unused
IRQ3		Serial port (COM2)
IRQ4		Serial port (COM1)
IRQ5		Spare
IRQ6		Floppy disk controller
IRQ7		LPT1
NMI		I/O parity error check

*Initial setting is unused.

System Memory Map

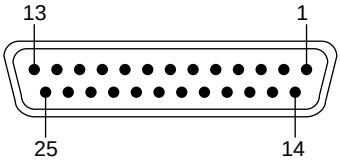
The figure below shows the system memory map.



I/O Addresses

I/O Address	Contents
00h to 1Fh	DMA controller 1 (8237A)
20h to 3Fh	Interrupt controller 1 (8259A)
40h to 5Fh	Timer/counter (8254)
60h to 6Fh	Keyboard controller (8042)
70h to 7Fh	Real time clock, NMI mask
80h to 9Fh	DMA page register, FAST RC, Gate A20
A0h to BFh	Interrupt controller 2 (8259A)
C0h to DFh	DMA controller 2 (8237A)
1F0h to 1FFh	Hard disk controller
280h to 281h	Custom gate array control
2E8h to 2EFh	Serial port 4
2F8h to 2FFh	Serial port 2
378h to 37Fh	Parallel port (EPC mode + 400h also available)
3C0h to 3DFh	VGA register
3E8h to 3EFh	Serial port 3
3F0h to 3F7h	Floppy disk drive controller
3F8h to 3FFh	Serial port 1
40Bh	DMA1 extended mode
481h to 48Fh	DMA page register
4D0h to 4D1h	Interrupt edge / level control
4D6h	DMA2 extended mode
CF8h to CFFh	PCI configuration register
62D0h to 62D8h	Custom gate array control

Connector Pin Assignments



Parallel port connector

Parallel Port (LPT1) connector pin assignments

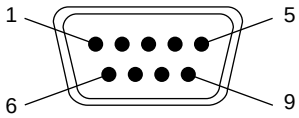
Pin	I/O	Signal
1	O	STROBE#
2	I/O	DATA BIT0
3	I/O	DATA BIT1
4	I/O	DATA BIT2
5	I/O	DATA BIT3
6	I/O	DATA BIT4
7	I/O	DATA BIT5
8	I/O	DATA BIT6
9	I/O	DATA BIT7
10	I	ACK#
11	I	BUSY
12	I	PE
13	I	SLCT
14	O	AUTO FD XT#
15	I	ERROR#
16	O	INIT#
17	O	SLCT IN#
18	-	GND
19	O	GND

Active low logic

Parallel Port (LPT1) connector pin assignments

Pin	I/O	Signal
20	-	GND
21	-	GND
22	-	GND
23	-	GND
24	-	GND
25	-	GND

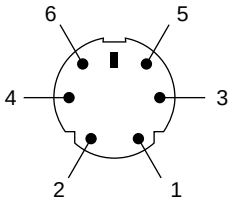
Active low logic



Serial port

Serial port (COM1 to COM4) connecter pin assignments

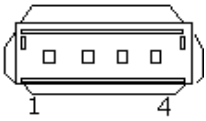
Pin	I/O	Signal
1	I/-	DCD/+5V/+12V
2	I	RxD
3	O	TxD
4	O	DTR
5	-	GND
6	I	DSR
7	O	RTS
8	I	CTS
9	I	RI



Keyboard/PS2 mouse connector

Keyboard/PS2 mouse connector pin assignments

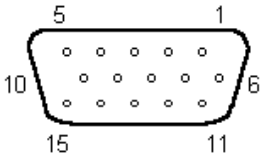
Pin	I/O	Signal
1	I/O	KBDATA
2	I/O	MSDATA
3	-	GND
4	-	+5V
5	I/O	KBCLK
6	I/O	MSCLK



USB connector

USB connecotor pin assignments

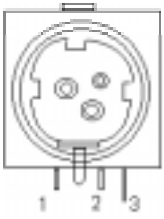
Pin	I/O	Signal
1	-	VCC
2		USBPx0 (-Data)
3		USBPx1 (+Data)
4	-	GND



CRT connector

CRT connector pin assignments

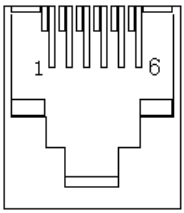
Pin	I/O	Signal
1	O	Red video
2	O	Green video
3	O	Blue video
4	-	(Reserved)
5	-	GND
6	-	Red GND
7	-	Green GND
8	-	Blue GND
9	-	(Not Connected)
10	-	GND
11	-	(Reserved)
12	-	(Reserved)
13	O	H. SYNC
14	O	V. SYNC
15	-	(Reserved)



Power supply connector for TM

Power supply connector for TM pin assignments

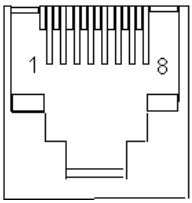
Pin	I/O	Signal
1	-	24 VDC
2	-	GND
3	-	NC



DKD connector

DKD connector pin assignments

Pin	I/O	Signal
1	-	Frame GND
2	O	DKD1
3	I	DK status
4	-	24 VDC
5	O	DKD2
6	-	Signal GND



DMD connector

DMD connector pin assignments

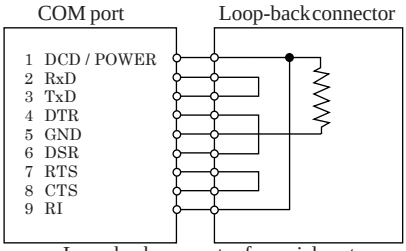
Pin	I/O	Signal
1	-	FG
2	O	TXD
3	I	RXD
4	I	DSR
5	O	DTR
6	-	SG
7	-	24 VDC
8	-	PGND

Appendix B

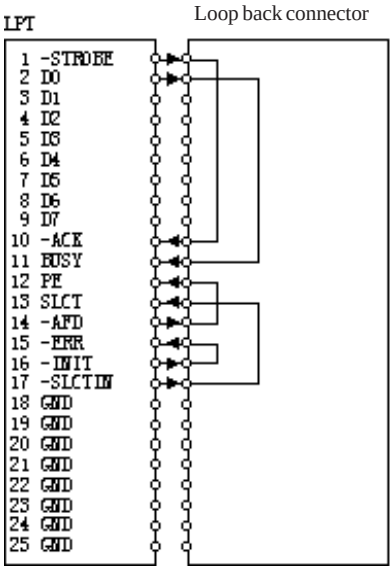
Loop-Back Connector

You need to connect a loop-back connector to the serial ports or the LPT1 port to test these ports using the device diagnostics.

The first illustration below shows the loop-back configuration used to test the serial port. The second illustration shows the configuration used to test the LPT1 port.



Loop-back connector for serial ports



Loop-back connector for the LPT1 port

Appendix C

Memory Specifications

SIMM Specifications

You can install two SIMMs in the sockets on this product. When you purchase SIMMs, make sure they conform to the following specifications.

General specifications

Function	**Description**
Number of pins	72
Terminal	
Pitch	1.27 mm (0.05 inch)
Terminal plating	Tin-plated
Access speed	70ns or less (60ns or less recommended)
Type	Fast Page Mode or EDO type
Parity	Enabled/Disabled (can be selected by BIOS)
Dimensions	Width: 107.95 mm (4.25 inches) or less Height: 25.4 mm (1 inch) or less
Thickness	
Including parts	9.40 mm (0.37 inch) or less
Widhtout parts (just board)	1.27 mm (0.05 inch) $\pm$ 0.1 mm (0.004 inch) or less
Input voltage	+5 V $\pm$ 5%
Capacity	4MB/8MB/16MB/32MB

User ROM Specifications

You can install up to four user ROMs in the sockets on this product. When you purchase user ROMs, make sure they conform to the following specifications.

User ROM Specifications

Function	Description
Package	32-pin PLCC
Capacity	128K x 8-bit (128KB), 5 V type 256K x 8-bit (256KB), 5 V type 512K x 8-bit (512KB), 5 V type
Access Speed	150ns or less

DECLARATION of CONFORMITY for CE MARKING

Product Name : POS. COMPUTER

Type Name : M137A

Conform to the following Directive(s) and Norm(s)

Directive 89/336/EEC

EN 55022(1986/1994 2nd) class A

EN 50082-1(1992)

IEC 801-2 level 2

IEC 801-3 level 2

IEC 801-4 level 2

EN61000-3-2(1995)

EN61000-3-3(1995)

Directive 73/23/EEC

Safety: EN60959 Rev. 3

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.