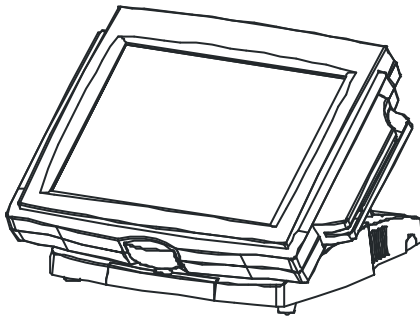


USER' S MANUAL

POS 500

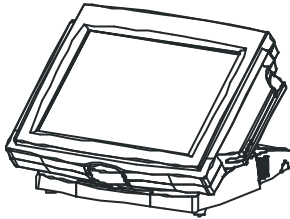


**Point-of-Sale
Hardware System**



POS 500 User' s Manual

This Manual was written for installation purposes. There are basic guidelines for front desk users operating this machine. The POS 500 User' s Manual is also available in the manufacturer website. The user can access this online in the internet.



1. Bookmarks

The words and phrases showing on the left side of this screen are the bookmarks (subject of an operation) covering all topics in this manual.

2. Choosing a topic

Select and find any desired topic by using the **scroll bar** next to the bookmarks. Click a bookmark to jump instantly to its topic that you wish to read. (If you wish, you can also increase the size of the bookmark area by dragging the dividing bar to the right.)


3. Magnifying the Page display

Select and use the **Zoom tools** to magnify or reduce the page display.

4. Finding a term

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.

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MU-POS 500-01S
Printed in Taiwan 2000

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 exigences du Règlement sur le matériel brouilleur du Canada.

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Chapter 1

1.1 Introduction

The perspective of Point-of-Sale in the hospitality market is booming at pace, more and more entrepreneurs seek the need to get business done **quick and easy** for order takers and customers alike in the hospitality business. The name of the business is to offer the best & fast service, as well as precise and concise billings. Point-of-Sale is popularly known as POS.

The role of point-of-sale systems (POS) is now the primary focus for customer interaction which is being usurped by electronically expanded means of customer reach. In today's e-market, a company's point-of-interaction (POI) breadth – involving the blending of physical store formats with consumer-direct media – will be a key determinant of customer loyalty.

The store of the future will treat electronic point-of-sale systems as a component in the store point-of-interaction mix, as opposed to the hub of store processing. Distributed-component processing architectures are key to enable adaptable store business processes. The major objectives of POS is increase customer loyalty, enhance customer satisfaction, reduce interaction time with customer and minimize IT operating costs

Here we are offering the POS 500, which is a versatile terminal developed for the Point-of-Sale application. Directive features are listed below.

1. Combine your POS 500 with a variety of peripheral devices (Magnetic Card Reader, customer pole display, cash drawer, barcode scanner, printer,) that allows you to construct your desired system.
2. The POS 500 is equipped with power management function to ensure power stability for data processing, while offering optimum power saving.
3. The system is capable of supplying +5V or +12V to all serial ports.
4. This machine uses a PC-based open architecture to increase system expandability by providing **one extra PCI/ISA slot**.
5. The POS 500 has a PS/2 keyboard port at the rear of the cabinet, and hidden under the cover of the Customer Pole Display (we call this cover

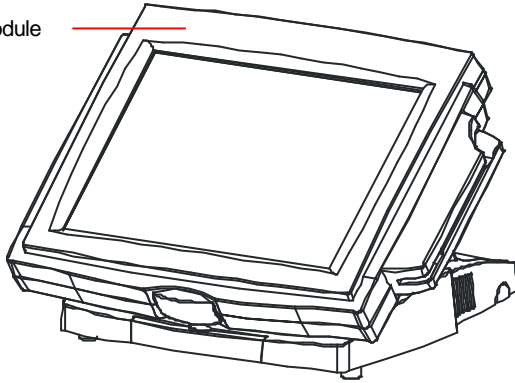
as the **Base-Stand-Back-Cover**, and this term will be mentioned throughout this manual). The cover can be removed by unlocking two screws visible at the lower edges of the cover. Therefore, it is possible to connect any commercially available keyboard in accordance with your environment.

6. **The use of standard DIMMs allows you to install memory of up to 256MB.**
7. The machine has available six serial ports (two standard D-sub male connector and four RJ-45 type connector).
8. One parallel port is available to allow connection of industry standard peripheral devices, increasing system expandability. The printer cable is a 1.0 Ø header type female connector for connection to the system. This cable is included in the accessory bag.
9. One 50-pin male header is available for external connection **to the standard 3.5-inch hard disk drive for data storage and CD-Drive** for OS or Application software installation. This connector is not visible, but can be access by opening the front cover at the base unit of the system (and we called this cover the **Base-Stand-Front-Cover**, the term will also be used throughout this manual). The sesame Power-On switch is also hidden in the Base-Front-Cover.
10. **Assuming that HDD is also in the metal plate beneath the base stand. This metal plate is called “ base plate “ throughout this manual.** The hard disk drive is mounted on the base plate of the unit. It can be easily removed by unlocking four screws at the four edges of the base unit. Carefully taking out the base plate by sliding upward and holding the System Unit parallel to the flat table, then flip back the base plate. With the hard drive facing upward toward you, unlock the four more screws directly underneath the hard drive. In the event of a system failure, the hard disk can be moved immediately to another same POS 500 system to continue the processing.
11. The optional MCR (Magnetic Card Reader) unit is tested and supply to the customer at your request. **This MCR is removed during transportation and can be connected by the user following the direction as indicated in Chapter 2 Setup, section 2.4.11 Installing a MCR Module (option).**

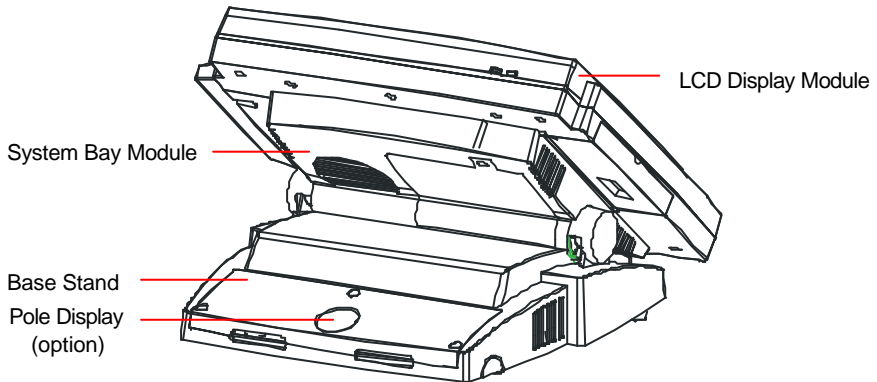
1.2 Hardware System Outlook – Front View

Illustrations shown below define the part names of this product.

LCD Display Module

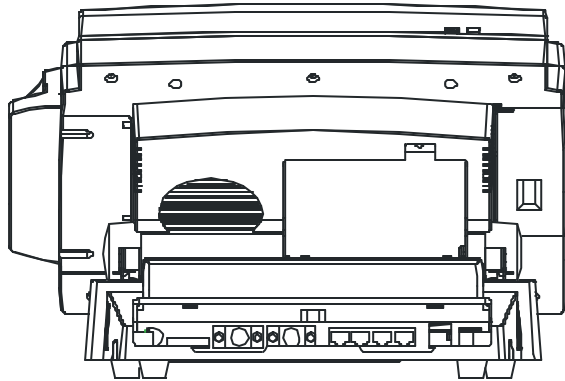


Rotated Front View of System Unit

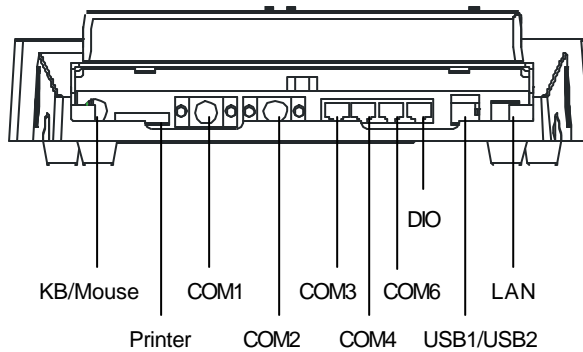


Rotated Rear View of System Unit

1.3 Hardware System Outlook – Rear View



Rear View of System Unit

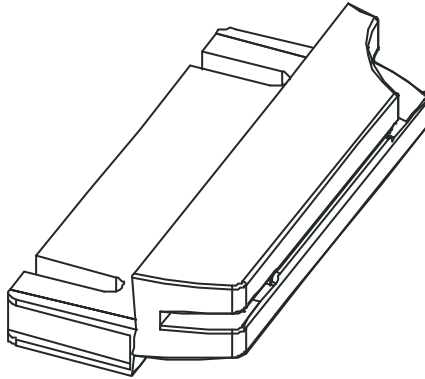


Rear I/O Connector View

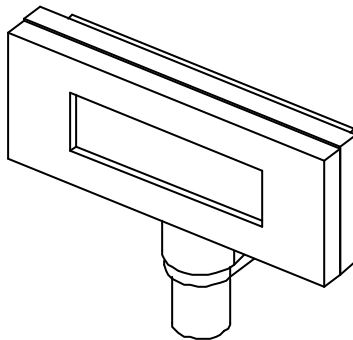
Note : Before turning on the power of the POS system, be sure to connect the Serial Port cable packed in the Customer Display module, connector the cable to COM2.

1.4 Hardware System Outlook—Option Module View

In some cases, user can purchase our barebone hardware system with the exclusion of three (3) options, namely: (1) MCR module (Magnetic Card Reader / Magnetic Card Reader) (2) Customer Pole Display module..



MCR Module (option)



Customer Pole Display (option)

1.5 Handling Guidelines

Warning and Precaution

The notes on the precautions in this manual are identified by the level of their importance. Definitions are listed below.

WARNING

This note provides the information that must be observed to prevent harm to the user (though such harm is not life-threatening).

Caution

This note provides information that must be observed to prevent damage to the equipment or loss of data.

Note:

This note provides an important information and useful tips on handling the equipment.

 **WARNING**

1. Do not attempt to repair this product by yourself.
 - Improper repair can be dangerous.
2. Do not disassemble or modify this product.
 - Tampering with this product may result in injury, fire, or electric shock.
3. Do not insert or disconnect the power cord plug with wet hands.
 - Doing this may result in severe shock.
4. Do not allow foreign objects to fall into this product.
 - Penetration of foreign objects may lead to fire or shock.
5. Do not place multiple loads on the power outlet (wall outlet).
 - Overloading the outlet may lead to fire.
6. Do not spill water or other liquid subject into this product. If this happens, turn off the power switch situated at the Front Cover of the Base-Stand in the System Unit, and unplug the power cable immediately.
 - Continuing usage may lead to fire or shock.
7. Always supply power directly from a standard domestic power outlet.
8. Handle the power cable with care without scratching the outer protective rubber insulation. Do not place the cable under a heavy object.

△ **Caution**

1. Be sure to check that your power cable meets the relevant safety standards and includes a PE terminal (power-system ground terminal).
2. Be sure to check that this equipment is set on a firm flat horizontal surface. Otherwise, the product may break or cause injury when it falls.
3. Be sure to check that the Customer Pole Display is properly attached to the **podium stand?** and in good secure after making the necessary connection.
4. Be sure to check that all the front and back covers is secure properly after installing the peripheral options.
5. Do not attempt to use the product in locations that are subject to high humidity or dust levels. Excessive humidity and dust can cause this product to damage, to cause fire or shock.
6. Do not place heavy objects on top of this product. The product may collapse or slip to the side and fall, causing breakage and possible injury.
7. Do not drop, bump or subject this product to strong vibration or impact.
8. For safety reasons, please unplug this product when you leave it unattended or unused for an extended period of time.

Chapter 2

2.1 Setup

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

2.2 Precautions on Setting up

This section describes items to observe when setting up the POS 500. In addition to the above, observation on the warning instructions and precautions are necessary at each work stage. These instructions are given with an explanation.

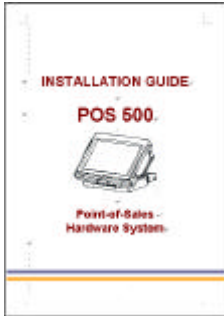
△ Caution

1. Be sure to turn off the power of all equipment including the POS 500 and its peripherals before setup. Otherwise, the peripherals units may be damaged during setup.
2. Before setup, be sure to discharge the static electricity on your body. Defects may result on the product if you do not allow static electricity to discharge. Find and touch your body (hand) to a grounded metal surface to allow static electricity to discharge.
3. Do not touch the connectors with your fingers, to prevent the dirt residue from causing malfunction.

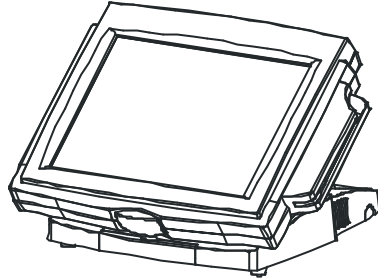
2.3 Unpacking POS 500

1. Take out the POS 500 unit from the carton box, check if the unit is properly secure in the plastic bag and clutch with two PE foam subjects .
2. Check the contents of the carton box:

(1) Accessory Bag



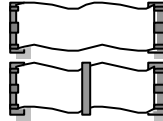
(2) POS 500 Hardware system



(3) CD Driver Bank



(4) FDD / HDD / Power Cable



(5) Customer Pole Display Cover



3. Check the glass surface of the LCD panel display on the POS 500 is sealed with a protective film.

4. Also check the other contents of the accessory bag:

Accessory Bag

Name of Accessory	Q' ty	From	To
1. Installation Guide	1		
2. CD Driver Bank	1		
3. External CDR cable	1	50-pin Header connector Flat cable	40-pin Header connector Flat cable & 4-pin Molex power plug
4. External FDD cable	1	40-pin Flat cable connector	34-pin Flat cable connector & 4-pin FDD power plug
5. Y cable	1	PS2 connector	PS2 keyboard /mouse
6. Printer cable	1	2*10-pin Header connector.	25-Pin D-sub connector Flat cable
7. Serial cable	3	RJ-45 Connector	9-Pin D-sub male connector
8. Digital I/O cable	1	RJ-45 connector	15-Pin D-sub connector (Female)
9. Pole Customer Display Cover	1		

Option Accessory

1. Customer Pole Display & MCR

Name of Accessory	Q' ty	From	To
1. Customer Pole Display	1		
2. Customer Pole Display cable (option)	1	10pin RJ-45 connector	10-pin RJ-45 connector. Flat Cable
3. MCR	1		

2. Option Cables

Name of Accessory	Q' ty	From	To
1. Centronics Printer cable	1	2 *10-Pin Centronics connector.	36-Pin D-sub connector Flat Cable

5. Now you are ready to install your hardware system.

2.4 Setting Up the POS 500

Setup the POS 500 according to the following steps as listed below. If you don't use the specified options, skip that step.

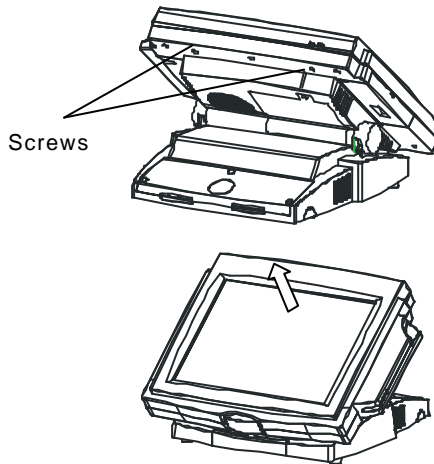
Step
2.4.1 Removing the LCD Display Module
2.4.2 Removing the Base Stand
2.4.3 Setting the Jumpers and DIP Switches
2.4.4 Installing a CPU
2.4.5 Installing the DIMM Module
2.4.6 Installing a new Hard Disk Drive
2.4.7 Installing a LCD Display Module
2.4.8 Installing a Compact Flash Expansion Module
2.4.9 Installing Other Peripherals
2.4.10 Attaching a Power Cable
2.4.11 Installing the MCR Module (option)
2.4.12 Installing Customer Pole Display Module (option)

2.4.1 Removing the LCD Display Module

1. Turn off the power of the System Unit.
2. One person holding the System Unit upright with both hands, the second person must unlock the screws.

Note: It is best to have two authorized technicians to do perform this operation. It is not recommended to turn system Unit upside down with the face of the LCD display lying on an anti-static bubble bag.

3. Remove two screws from the well holes hidden underneath and located at the upper section of the LCD Display Module.

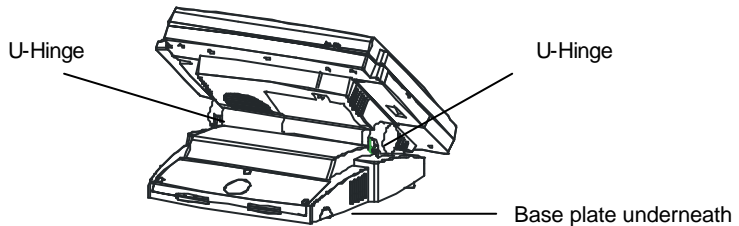


4. Place the System Unit on a flat table, with it's front side facing you, **slide** out the LCD Display Module 20° upwards.
5. When the LCD Module Display is loose, disconnect the 44-pin Header flat cable from the LCD Display Module.
6. The LCD Display Module is now isolated and detached from the System Unit. You may make a replacement.

Note: Do not attempt to do this operation without proper technical training. Please contact your nearest dealer to replace the LCD Display Module by an authorized Technician.

2.4.2 Removing the Base Stand

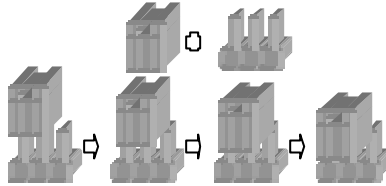
1. Turn off the power of the System Unit.
2. One person holding the System Unit upright with both hands, the second person must unlock the four screws at the edge of the Base Plate. **Note:** It is best to have two authorized technicians to do perform this operation.
3. Disconnect the power cabling of the Power Supply, the IDE cable of the Hard drive and 50-pin I/O flat cable from the I/O board.
4. Place the System Unit on a flat table.
5. Remove and unlock two screws situated at the opposite sides of the U-Hinge Blade (one each at the right and left sides).
6. Pull out the System Bay Module away from the Base Stand. Be sure to hold the cables and releasing it simultaneously as you pull up the System Bay Module.



Note: Do not attempt to do this operation without proper technical training. Please contact your nearest dealer to replace the LCD Display Module by an authorized Technician.

2.4.3 Setting Jumpers and DIP Switches

There are jumpers and DIP switches on the system board of the POS 500. You can set the jumpers to make the necessary operations.



For any 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 and so on. You see a number “ 1 “ and a “ 3 “ printed on the circuit board to identify these pins. And also, there is a second way of indication – one of the lines surrounding jumpers is thick, which indicates pin NO.1.

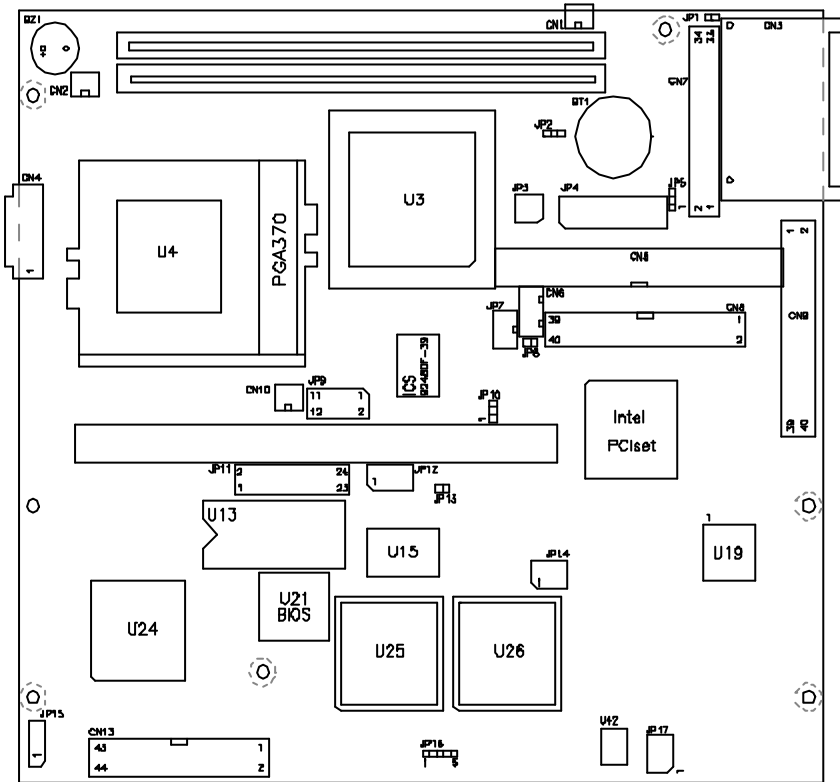
To move a jumper from one position to another, use a needle-nose pliers or tweezers to pull the pin cap off the pins and move it to the desired position.

△ **Caution**

1. Be careful not to bend the jumper pins or damage any components on the board.
2. Do not change the setting of the jumpers and the DIP switches, to the position not covered in this manual.

Jumpers and DIP Switches Locations

The figure below shows the location of jumpers and the DIP switches on the POS 500 main board - B65 version 2.x.



* Jumper and Connector (Black area indicates pin 1).

Table for Jumper Location Description:

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

Jumpers	Functions
JP1	Compact Flash CS Selection
JP2	CMOS Operation Mode
JP3	Card Reader Selection
JP5 / JP8	Power Mode
JP9	System Clock Selection
JP10	PCI VSB Selection
JP11	COM5/COM6 IRQ Selection
JP12	M-Systems DiskOnChip [®] Address
JP14	RAM Backup Address Setting
JP17	Watch Dog Time List

Compact Flash CS Selection: JP1

Function	JP1
Master (Default)	OFF
Slave	ON

CMOS Operation Mode: JP2

Function	JP2
CMOS Normal (Default)	2-3
CMOS Reset	1-2

Card Reader Selection: JP3

Function	JP3
SEARL (Default)	1-2, 3-4 ON
Keyboard	1-2, 3-4 OFF

Power Mode: JP5 / JP8

Function	JP5	JP8
ATX Power (Default)	2-3	OFF
AT Power	1-2	ON

System Clock Selection: JP9

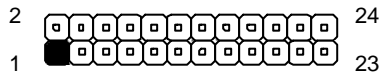
CPU Clock	PCI Clock	JP9			
		FS0	FS1	FS2	FS3
100.3MHz	33.43 (/3) MHz	1-3	7-9	2-4	10-12
66.8MHz (Default)	33.40 (/2) MHz	1-3	7-9	4-6	10-12

PCI VSB Selection: JP10

Function	JP10
USER 5VSB (Default)	2-3
USER 3VSB	1-2

COM5 / COM6 IRQ Selection: JP11

IRQ	5	9	10	11	12	15
COM5 (5)	1-2	3-4	5-6	7-8	9-10	11-12
COM6 (9)	13-14	15-16	17-18	19-20	21-22	23-24



*COM5 IRQ5 for COM5 (Touch Screen) IRQ Select

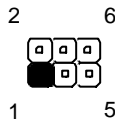
*COM6 IRQ9 for COM6 (Pole Display) IRQ Select

M-Systems DiskOnChip® Address: JP12

Address	JP12	
0C800-0C9FF (Default)	1-2	7-8
0CC00 - 0CDFF	1-2	9-10
0D000 - 0D1FF	3-4	7-8
0D500 - 0D5FF	3-4	9-10
0D800 - 0D9FF	5-6	7-8
0DC00 - 0DDFF	5-6	9-10

RAM Backup Address Setting: JP14

RAM DATA Address	JP14
D800 : 0 (Default)	1-2
D000 : 0	3-4
NC	5-6



Watch Dog Time List: JP17

This jumper is designated to do the setting of the Watch Dog Time.

Time	JP17		
	1-2	3-4	5-6
0.1 sec	Close	Close	Close
0.5 sec	Close	Close	Open
1.0 sec	Close	Open	Close
1.6 sec (Default)	Close	Open	Open
10 sec	Open	Close	Close
1 min	Open	Close	Open
10 min	Open	Open	Close
1hr	Open	Open	Open

Watch Dog Time Programming:

Input / Output	Address	
Output	205W	Watch Dog ON
Input	205R	Watch Dog WDI
Input	204R	Watch Dog OFF

Example : If Output 205W, Watch Dog ON

If Input 205R, Watch Dog WDI

If Input 204R, Watch Dog OFF

:

User DOS SYSTEM for Test

C:\DEBUG

- O 205 00 --- Watch ON

- I 205 --- Watch WDI

- I 204 --- Watch OFF

2.4.4 Installing a CPU

The POS 500 contains a Socket 370, which can accept the following CPU types.

- Intel® PPGA / FC-PGA processor.

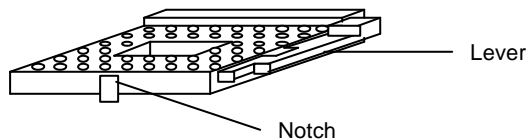
Note : Be sure to attach a CPU cooling fan on top of the CPU as included in the package after you have installed the CPU. This is to prevent the CPU from overheating during operation.

△ Caution

1. To avoid static electricity that may damaged the CPU, ground yourself by touching a grounded metal surface before you touch the CPU.
2. Do not remove the heat dissipation mylar under the CPU cooling fan.
3. Do not touch the pins of the CPU. Dirt residue may cause malfunction.

Carefully follow the steps below in order to install the CPU:

1. Check and confirm that the jumpers are correctly set for the CPU you are going to install.
2. Lift the releasing lever of the Socket 370.
3. Align the pins of the CPU against the pin holes of the Socket 370. Be sure to pay attention to the orientation of the CPU.



4. Push down the CPU into the Socket 370.
5. Push down the release lever and lock it against the key hook.
6. Hook the hole in ZIF clip for the CPU cooling fan onto the notch on the socket 370.
7. Place the CPU cooling fan atop the CPU surface.

8. Push down the opposite side of the ZIF 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

1. Before removing the CPU, turn off the POS 500 power; then wait for about 20 minutes until the heat radiation plate of the cooling fan and the CPU cools down.
2. To remove the CPU, lift the releasing lever of the Socket 370.

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

To remove the CPU, reverse the installation steps.

2.4.5 Installing the DIMMs

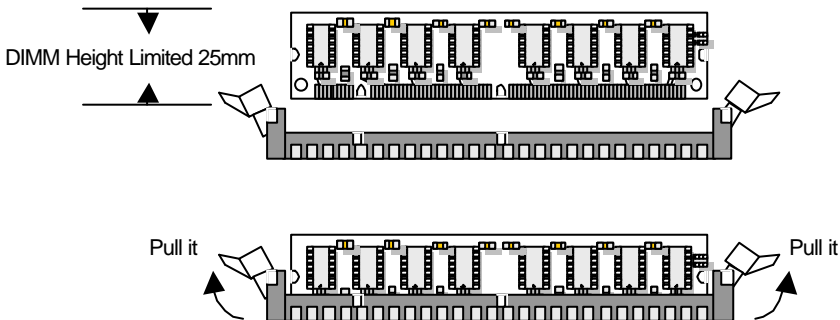
The main board contains **two DIMM sockets**. You can insert one DIMM or two DIMMs. However, it is recommended that you use two DIMMs of the same type and same access speed.

△ Caution

1. To avoid generating static electricity and damaging the DIMM, ground yourself by touching a grounded metal surface or using a ground scrap before you touch the DIMM.
2. Do not touch the connector of the DIMM. Dirt residue may cause a malfunction.

Carefully follow the steps below in order to install the DIMMs:

1. Hold the DIMM with its notch to the front side of the POS 500 and insert it completely into the socket. A DIMM should be inserted into the inner socket first. Guiding the hole at each end of the DIMM over the retaining post at each end of the DIMM socket.



2. If you install two DIMMs, install the second DIMM using the same procedure as above.

**Note:**

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

△ Caution

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

Removing a DIMM:

To remove the DIMM, use your fingers or a small screwdriver to carefully push away the plastic tabs that secure the DIMM at each end. Lift it out of the socket.

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

2.4.6 Installing a new Hard Disk Drive

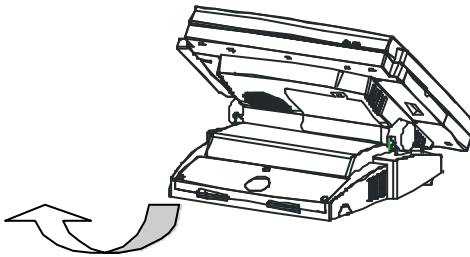
You can install a 3.5 inches hard disk drive in the POS 500.

△ 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 a new hard disk drive.

1. One person holding the System Unit upright with both hands, the second person must unlock the four screws at the edge of the Base Plate. **Note:** It is best to have two authorized technicians to do perform this operation
2. Remove the cover of the Base plate.
3. Disconnect the power supply cabling as well as the 50-pin I/O cable.
4. On the surface where the power supply unit is lying, mount the hard drive on the base plate by locking three screw on the back side of the cover.



5. Connect the loose Manufacturer's IDE flat cable to the hard drive (also be sure to connect the 4Tpower cable).
6. Attach the power supply cabling back to the Power supply unit.
7. Check and see if the power supply unit and the hard drive are secured tightly on the Base plate.
8. Put the base plate cover back to it's position, then lock the four screws at the edge.of the plate.
9. Turn the system unit back to it's upright position. Now you may start to

configure and use your hard drive.

Note: Do not attempt to do this operation without proper technical training. Please contact your nearest dealer to replace the LCD Display Module by an authorized Technician.

2.4.7 Installing a LCD Display Module

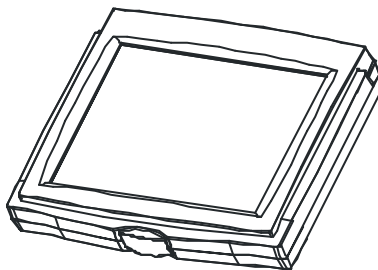
The specifications for the LCD Display are as follows:

LCD panel:	12.1-inches, color TFT type 800 x 600
Back light life:	25,000 hours until brightness is reduced to half.
Touch panel:	Resistor film type
Serial communication: (Touch panel)	COM5

A designated bay surface in the System Bay Module lets the LCD Display slide up 20° vertically upward.

Follow these steps to install a LCD Display Module:

1. Look for a 44-pin LCD cable protruding from an opening of the System Bay Module.
2. Take the 44-pin LCD cable AND connect it to the designated connector of the LCD Display Module.
3. Dress the 44-pin LCD cable properly by sliding it into the opening of System Bay Module.



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

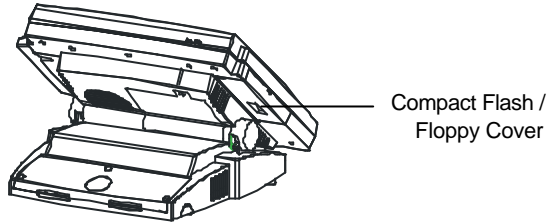
4. Holding the LCD Display Module against the System Bay Module, and slowly slide the LCD Display Module to the designated bay in the System Bay Module.

5. Lock the two screws in the Screw Wells to prevent the LCD Display Module from dropping off the bay.

To remove the LCD Display Module, reverse the installation steps.

2.4.8 Installing a Compact Flash Expansion Module

You can install a Compact Flash expansion module in the Slot cover hidden behind the left flank of the System Bay Module on the POS 500.



Install the Compact Flash expansion module using the procedure below.

1. Remove the cover of Compact Flash.
2. Insert the Compact Flash.
3. Push the cover back to its place.

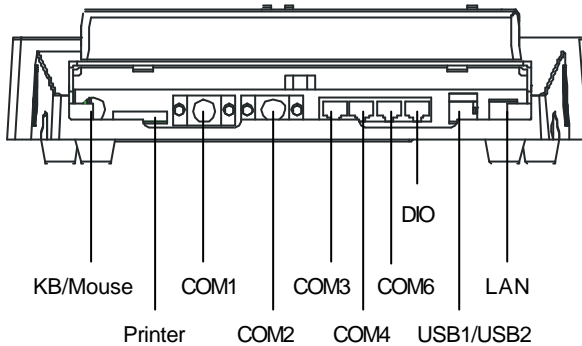
Removing a Compact Flash Module:

To remove the Compact Flash expansion module, reverse the installation steps.

2.4.9 Installing Other Peripherals

The following options can be attached to the POS 500. Refer to the manual for each peripheral for the installation procedure.

1. Mouse (connected to the PS/2 mouse connector via a Y-cable)
2. Keyboard (connected to the PS/2 keyboard connector via a Y-cable)



SERIAL PORT ASSIGNMENT

Connector's Name	Definition	Connector Type
COM1	User's define	25-pin DB-Sub female connector
COM2	User's define	25-pin DB-Sub female connector
COM3	User's define	10-pin RJ-45 male connector
COM4	MCR	10-pin RJ-45 male connector
COM5	Touchscreen	Built-in connection
COM6	Pole Display	10-pin RJ-45 male connector

2.4.10 Attaching a Power Cable

Take the power cable from the accessory Bag. Always 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



△ **Caution**

1. Never insert or disconnect the power plug with wet hands. Doing so may result in severe shock.
2. Do not place multiple loads on the power outlet (wall outlet). Overloading the outlet may lead to fire. Always supply the power directly from a power outlet.

Follow these steps to attach the power cable:

1. Connect the power cable to the POS 500.
2. Connect the power plug to the power outlet.

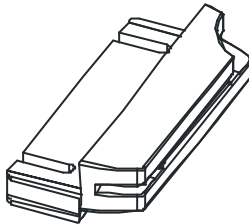
2.4.11 Installing the MCR Module (option)

The manufacturer offers two type of MCR Module, either by the COM port or Printer port.

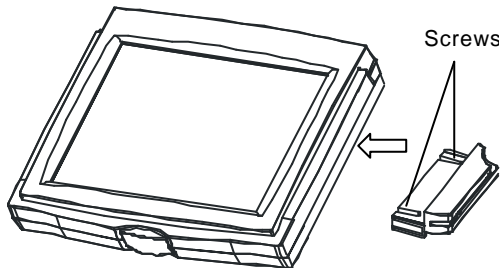
Note: The COM port. is using the 9-pin D-sub connector, while the Printer port is using the 1Ø 20-pin Header connector.

Mount the MCR module by following the procedure described below.

1. Open the MCR module on the package and check it.



2. One person holding the System Unit upright with both hands, the second person must connect the MCR module to the right side of System Bay Module and lock it with two screws. **Note:** It is best to have two authorized technicians to do perform this operation.



Removing an MCR module:

To remove the MCR module, reverse the installation steps.

Note:

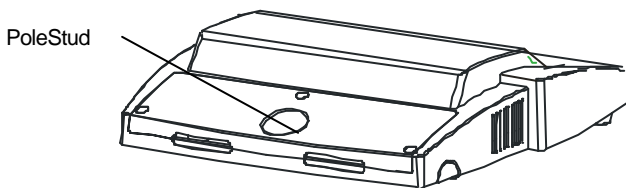
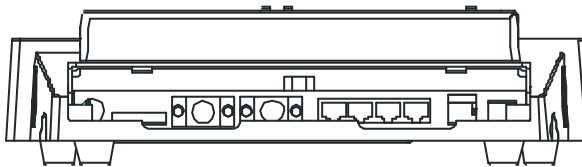
1. When you remove the screws and then want to fix them again, first turn off the power.

2.4.12 Installing Customer Pole Display Module (option)

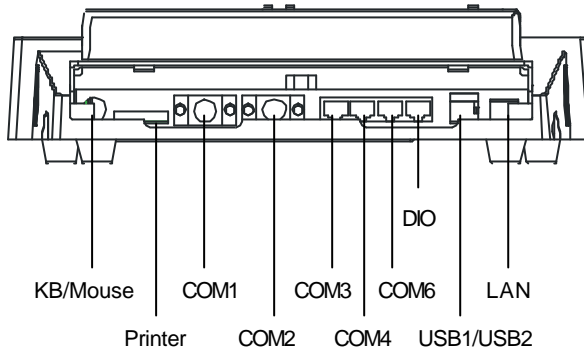
The POS 500 is equipped with an interface for a connection to a Customer Pole Display Module.

Customer Pole Display Module is mounted by following the procedure described below.

1. Turn the System Unit around with its back facing you, unlock three screws from the Pole Display Stand Cover.
2. Pull upward the Pole Display Stand Cover using the fingers of your two hands. Let it flip over.
3. Using two fingers, pop out a cap type cover situated in the lower center of Pole Display Stand Cover.
4. Obtain a PoleStud from the accessory bag of your Customer Pole Display Module Kit, lock the PoleStud into the hole of the Pole Display Stand Cover.
5. Place the Pole of Customer Pole Display Module onto the extending Pipe of the PoleStud.



6. Connect the cable extending out from Customer Pole Display Module to the **designated COM6 port I/O connector** of POS 500 base.



Rear I/O Connector View

Note : Before turning on the power of the POS system, be sure to connect the Serial Port cable packed in the Customer Display module, connector the cable to COM6.

Chapter 3

3.1 Operation

This chapter explains the operations described below.

Section 3.2: Power on and off

Section 3.3: Indicators

Section 3.4: Inserting and removing a floppy disk

Section 3.5: Inserting and removing a second HDD or CD-ROM

Section 3.6: Reset

Section 3.7: LCD contrast adjustment

Section 3.8: LCD panel angle adjustment

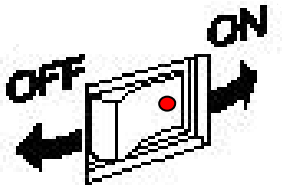
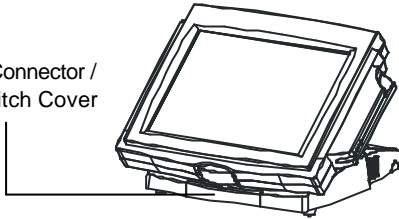
Section 3.9: How to Install the Touch Screen driver

Section 3.10: How to read a magnetic stripe card

3.2 Power On and Off

1. When you use this the Product (refer to as "System Unit" throughout this manual) for the first time, open the front cover of the Base Stand and turn on the power switch situated at the left side of the System Bay Module (this is done with the LCD Display Module facing you). A "●" red mark inscribed on the case indicates power on and no mark indicates power off.

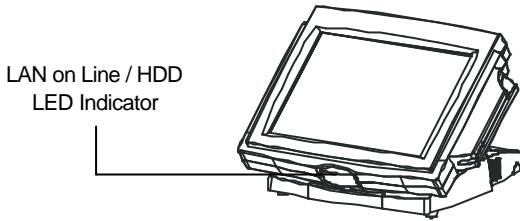
CD-ROM Connector /
Power Switch Cover



2. The power switch should usually be kept on during operation. Turn off the side power switch only when attaching peripherals, or transporting this Product, and when not using it for an extended period of time.

3.3 Indicators

There are indicators at the front of the System Bay Module. The POS 500 base have two indicators.



These indicators have the following meaning:

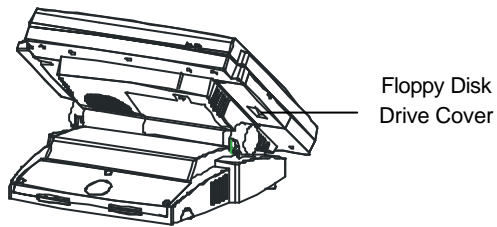
LED	Color	Meaning
LAN on Line	Green	LAN Cable active.
HDD	Green	HDD is being accessed. (If no HDD is attached, this indicator has no meaning.)

3.4 Inserting and Removing a Floppy Disk

Use the floppy cable of accessory bag to connect the floppy disk drive at the System Bay Module (there is a cover at the left side of the LCD Display bay). Follow the procedure below.

1. Connect the floppy cable from the 40-pin Header connector that is hidden in the Side Cover of the System Bay Module to the external floppy disk drive

When the floppy disk is connected correctly, the lamp of the floppy disk drive will be turn on.



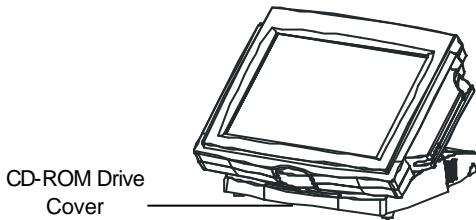
To remove the floppy disk, follow the procedure below.

1. Check that the access lamp of the floppy disk drive is off.
2. When you detach the floppy cable, the floppy disk will come out.
3. Take out the floppy disk carefully.

3.5 Inserting and removing a second HDD or CD-ROM

Take out the manufacturer's IDE cable provided in the accessory bag, connect the second HDD or CD-ROM drive to the 50-pin Header as hidden in the Front Cover of the Base Stand.

1. Connect the IDE cable from either the second HDD or CD-ROM drive to the 50 pin Header as hidden in the Front Cover of the Base Stand.
2. When the second HDD or CD-ROM is connected correctly, the lamp of the CD-ROM drive will be turn on.
3. If it's not working, check the cable connection again or replace a new cable.



To remove the second HDD or CD-ROM, follow the procedure below.

1. Check that the access lamp of the second HDD or CD-ROM drive is off.
4. When you detach the IDE cable, the second HDD or CD-ROM drive will come out.
5. Take out the second HDD or CD-ROM carefully.

3.6 Reset

This restarts the POS 500 while power is on. Reset is necessary in the following cases:

- When a reset instruction has been issued by the operating software.
- To restart the POS 500.
- 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 is only one type of reset: a soft reset is performed by pressing the Ctrl, Alt, and Delete keys at the same time.

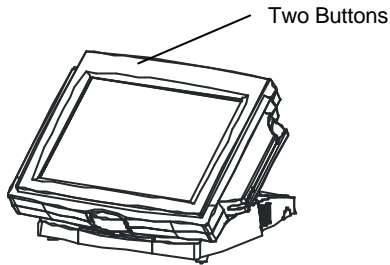
Perform a soft reset by following the procedure below.

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.

Under windows mode, a message showing “ The system is ready to be shut down “, it will last for a second or two – then proceed directly to the DOS mode, showing the POST test.

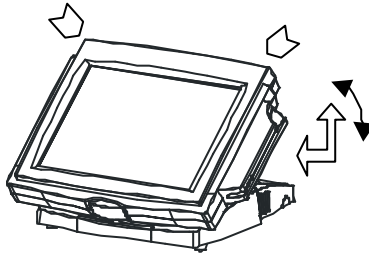
3.7 Contrast Adjustment for LCD Display

When you are using the System Unit, you can adjust contrast of the LCD Display by depressing the contrast dial situated at the upper left side of the LCD Display Module.



3.8 Angle Adjustment for LCD Display

To view the desired angle of the LCD Display, it is adjustable by pressing downward with your two hands holding the upper edge sides of the LCD Display Module, or pulling upward with two hands on the same position and location. Follow these steps to change it:



1. The angle is adjustable from 5° backward and 45° upwards.
2. In a flat 0°, you can have the System Unit hanged on the wall. This can save space along the alley of your working room.
3. Aside from the desk top application, the POS 500 can be wall-mount too.

3.9 How to Install the Touch Screen driver

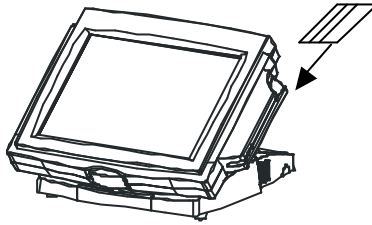
1. Shutdown Windows 95/98/2000 and turn off your computer.
2. Start your computer.
3. After Windows is loaded, insert the Driver Bank CD for Windows 95/98/2000 disk into CD-ROM.
4. Click the Start button, and then click Run.
5. Type "D:\POS 500\ELO\setup" in the space provided and press Enter. If you downloaded the driver, Browse for setup.exe in the directory to which you extracted the driver files.
6. Follow the directions on the screen.
7. Choose your Elo touchscreen controller from the list (Default COM5).
8. If you have a serial touchscreen, select the serial port you connected the touchscreen cable to in step 2 above. All serial ports reported by Windows are displayed.
9. Complete the Setup program.
10. Restart Windows 95 when prompted. The touchscreen calibration program will automatically run when Windows starts up. Touch each of the three targets as they appear on the screen. Click "Yes" when the cursor lines up correctly with your finger.

Note: For more info about Elo Touchscreen, please refer to Elo website, <http://www.elotouch.com/>.

3.10 How to Read a Magnetic Stripe Card

When you attach a MCR module, you can read magnetic stripe cards.

Hold the card as shown below, and pass it through the MCR track following the indication as printed on the MCR module.



Chapter 4

4.1 System Utilities

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

1. BIOS setup, for defining the configuration of the system
2. Device diagnostics, for troubleshooting devices attached to this product
Hard disk
3. Touch screen configuration utility
4. Card reader configuration utility
5. Customer pole display configuration utility

4.2 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**

1. Do not change the settings for features not described here.
2. 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.

4.2.1 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.

4.2.2 Help Window

1. 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.

4.2.3 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


4.2.4 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:

Keys Legend

Control Keys	Description
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item to the left side
Right arrow	Move to the item to the right side
Esc key	Main Menu: Quit and do not save changes to CMOS. Except Main Menu: Exit current BIOS screen and return to Main Menu.
PgUp / “+” key	Increase the numeric value or make changes
PgDn / “-“ key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2, (Shift+F2) key	Change color from total 16 colors. F2 to select color forward, (Shift + F2) to select color backward
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the Setup default, only for Option Page Setup Menu
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS value changes, only for Main Menu

 **Note:**

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

4.2.5 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.

**ROM PCIBIOS (2A69KF1E)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.**

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PNP/PCI CONFIGURATION LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	INTEGRATED PERIPHERALS SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item (Shift) F2 : Change Color
Time, Date, Hard Disk Type...	

Standard CMOS setup

This setup page includes all the items in standard compatible BIOS.

BIOS features setup

This setup page includes all the items of AWARD special enhanced features.

Chipset features setup

This setup page includes all the items of chipset special features.

Power Management setup

This category determines how much power consumption for system after selecting below items. Default value is Disable.

PNP/PCI Configuration

This category specifies the value (in units of PCI bus clocks) of the latency timer for this PCI bus master and the IRQ level for PCI device.

Load BIOS defaults

BIOS defaults indicates the most appropriate value of the system parameter which the system would be in minimum performance.

Load setup defaults

Setup defaults indicates the values required by the system for the maximum performance.

Integrated Peripherals

Change, set, or disable on board supers I/O function.

Supervisor password & Password setting

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

IDE HDD auto detection

Automatically configure hard disk parameters.

Save & exit setup

Save CMOS value changes to CMOS and exit setup.

Exit without save

Abandon all CMOS value changes and exit setup.

4.2.6 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).

**ROM ISA BIOS (2A69KF1E)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.**

Date (mm : dd : yy) : Mon, Jul 05 2000								
Time(hh : mm : ss) : 08 : 30 : 23								
HARD DISK	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0 M	0	0	0	0	0	AUTO
Primary Slave	: Auto	0 M	0	0	0	0	0	AUTO
Secondary Master	: Auto	0 M	0	0	0	0	0	AUTO
Secondary Master	: Auto	0 M	0	0	0	0	0	AUTO
Drive A	:	1.44M, 3.5 in.						
Drive B	:	None						
Video	:	EGA / VGA						
Halt On	:	All Errors						
						Base Memory : 640K		
						Extended Memory : 64512K		
						Other Memory : 384K		
						Total Memory : 65530K		
ESC : Quit			↑ ↓ → ← : Select Item			PU / PD / + / - : Modify		
F1 : Help			(Shift) F2 : Change Color					

Date

The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

Item	Description
Day	The day of week, from Sun to Sat, determined by the BIOS is read only
Date	The date, from 1 to 31 (or the maximum allowed in the month), can key in the numerical / function key
Month	The month, Jan. through Dec.
Year	The year, depend on the year of BIOS

Time

The time format is <hour> <minute> <second>. Which accepts both function keys or numerical keys The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

Primary master / Primary slave / Secondary master / Secondary slave

The categories identify the types of hard disk drive C or drive D that has been installed in the computer. There are 45 predefined types and 1 user definable types and 1 automatic type for Normal BIOS. Type 1 to Type 45 are predefined. Type User is user-definable. Type Auto is auto-definition by your computer.

Press PgUp/<+> or PgDn/<-> to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed in 1 to 45, you can use Type User or **Auto** to define your own drive type manually or **automatically**.

If you select Type User, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is ESDI, the selection shall be "Type 1".

If the controller of HDD interface is SCSI, the selection shall be "None".

If the controller of HDD interface is CD-ROM, the selection shall be "None".

Item	Description
CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precom
LANDZONE	landing zone
SECTORS	number of sectors
MODE	HDD access mode

If a hard disk has not been installed select NONE or **Auto** and press <Enter>.

Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

Item	Description
None	No floppy drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

Video

The category selects the type of adapter used for the primary system monitor that must match your video display interface and monitor.

Item	Description
EGA/VGA	Enhanced Graphics Adapter/video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

Halt on

The category determines whether the computer will stop if an error is detected during power up.

Item	Description
No errors	Whenever the BIOS detects a non-fatal error the system will stop and you will be prompted.
All errors	The system boot will stop for any error that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

Other Memory

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

Total Memory

System total memory is the sum of basic memory, extended memory, and other memory.

4.2.7 BIOS Features Setup

This menu sets up the BIOS feature.

ROM PCI/ISA BIOS (2A69KF1E) BIOS FEATURES SETUP AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS	Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF	Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF	Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF	Shadow	: Disabled
Quick Power On Self Test	: Disabled	D5000- D7FFF	Shadow	: Disabled
Boot Sequence	: A ,C,SCSI	D8000-DBFFF	Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000- DFFFF	Shadow	: Disabled
Boot Up Floppy Seek	: Enabled			
Boot Up NumLock Status	: On			
Gate A20 Option	: Normal			
Typematic Rate Setting	: Disable			
Typematic Rate(Chars/Sec)	: 6			
Typematic Delay (Msec)	: 250			
Security Option	: Setup			
PCI/VGA Palette Snoop	: Disabled			
Assign IRQ For VGA	: Disabled			
OS Select For DRAM>64MB	: None-OS2			
HDD S.M.A.R.T. capability	: Disabled	ESC	: Quit	↑ ↓ → ← : Select Item
Report No FDD For WIN 95	: No	F1	: Help	PU/PD/+/- : Modify
		F5	: Old Values	(Shift) F2 : Color
		F6	: Load BIOS Defaults	
		F7	: Load Setup Defaults	

Virus Warning

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you can run an anti-virus program to locate the problem.

WARNING !

Disk boot sector is to be modified

Type "Y" to accept write or "N" to abort write AWARD Software, Inc.

Item	Description
Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Note:

1. This function is available only for DOS and other OSES that do not trap INT13.

CPU Internal Cache / External Cache

These two categories speed up memory access. However, it depends on CPU/chipset design. The default value is Enable. If your CPU is without Internal Cache then this item "CPU Internal Cache" will not appear.

Item	Description
Enabled	Enable cache
Disabled	Disable cache

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Item	Description
Enabled	Enable quick POST
Disabled	Normal POST

Boot Sequence

This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A, C.

Item	Description
A, C, SCSI	System will first search the floppy disk drive then hard disk drive for booting purpose
C, A, SCSI	System will first search the hard disk drive then floppy disk drive for booting purpose
C, CDROM, A	System will first search the harddisk drive then CDROM drive and the next is floppy disk drive for booting purpose
CDROM, C, A	System will first search the CDROM drive then harddisk drive and the next is floppy disk drive for booting purpose
D, A, SCSI	System will first search the hard disk D drive then floppy disk drive for booting purpose
E, A, SCSI	System will first search the hard disk E drive then floppy disk drive for booting purpose
F, A, SCSI	System will first search the hard disk F drive then floppy disk drive for booting purpose
SCSI, A, C	System will first search the SCSI hard disk drive then floppy disk drive for booting purpose
SCSI, C, A	System will first search the SCSI hard disk drive then hard disk drive for booting purpose
C only	System only search the harddisk drive for booting purpose
LS/ZIP, C	System will first search the LS120 drive then hard disk drive for booting purpose

Swap Floppy Drive

Item	Description
Enabled	Enable Floppy Drives A and B Swap function
Disabled	Disable Floppy Drives A and B Swap function

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 720K, 1.2M and 1.44M are all 80 tracks.

Item	Description
Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will be no warning message if the drive installed is 360K.

Boot Up NumLock Status

The default value is On.

Item	Description
On	Keypad is number keys after boot-up
Off	Keypad is arrow keys after boot-up

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 Mbytes. Initially, the gate A20 was support, it is more common, and much faster, for the chipset to provide support for A20.

Item	Description
Normal	Handling gate A20 by keyboard
Fast	Handling gate A20 by chipset

Typematic Rate Setting

This determines the typematic rate.

Item	Description
Enabled	Enable typematic rate and typematic delay programming
Disabled	Disable typematic rate and typematic delay programming. The system BIOS will use default value of this 2 items and the default is controlled by keyboard.

Typematic Rate (Chars/Sec)

When the typematic rate setting is enabled, this selection allows you select the rate at which the key is accelerated.

Item	Description
6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

Typematic Delay (Msec)

When the typematic rate setting is enabled, this selection allows you to select the delay between when the key was first depressed and when the acceleration begins.

Item	Description
250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

Item	Description
System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note:

1. To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

PCI/VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

Item	Description
Enable	When PCI/GA works with MPEG ISA/VESA VGA card
Disable	When PCI/VGA doesn' t work with MPEG ISA/VESA card

Assign IRQ For VGA

This item allows you to assign an IRQ for VGA use.

Item	Description
Enabled	Allowed
Disabled	Restricited

OS Select For DRAM > 64MB

This item allows you to access the memory that over 64MB in OS2.

Item	Description
Non-OS2	OS2 cannot access the memory address over 64MB
OS2	OS2 can access the memory address over 64MB

HDD S.M.A.R.T. Capability

Enable, support hard disk drive quick start up function when re-boot system.

The Choice: Enable, Disable

Report No FDD for WIN 95

Item	Description
Yes	Release IRQ channel for system after disable FDD function
No	Without release IRQ channel for system after disable FDD function

Video BIOS Shadow
BIOS Shadow

It determines whether system BIOS will be copied to RAM or the system BIOS is always shadow to support LBA HDD.

Item	Description
Enabled	System shadow is enabled
Disabled	System shadow is disabled

Video ROM Shadow

It determines whether video ROM will be copied to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

Item	Description
Enabled	Video shadow is enabled
Disabled	Video shadow is disabled

C8000 - CBFFF Shadow / CC000 - CFFFF Shadow / D0000 - D3FFF Shadow / D5000 - D7FF Shadow / D8000 - DBFFF Shadow / DC000 - DFFFF Shadow

These categories determine whether optional ROMs will be copied to RAM. An example of such option ROM would be support of SCSI add-on card.

Item	Description
Enabled	Optional shadow is enabled
Disabled	Optional shadow is disabled

4.2.8 Chipset Feature Setup

In the chipset feature setup menu, you can set the following items for chipset feature.

**ROM PCI/ISA BIOS (2A69KF1E)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.**

Auto Configuration	: Enabled		
EDO DRAM Speed Selection	: 60ns		
EDO CAS# MA Wait State	: 2		
EDO RAS# Wait State	: 2		
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge	: 3		
Time			
SDRAM CAS latency Time	: 3		
SDRAM Precharge Control	: Disabled		
DRAM Data Integrity Mode	: Non-ECC		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 3		
16 Bit I/O Recovery Time	: 2		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	ESC	: Quit
Delay Transaction	: Disabled	F1	: Help
AGP Aperture Size (MB)	: 64	F5	: Old Values
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults
		↑ ↓ → ←	: Select Item
		PU/PD/+/-	: Modify
		(Shift) F2	: Color

The parameters in this screen are to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. Do not reset these values unless you understand the consequences of your changes.

Auto Configuration

Auto Configuration selects predetermined optimal values of chipset parameters.

When Disabled, chipset parameters revert to setup information stored in CMOS.

Many fields in this screen are not available when Auto Configuration is Enabled.

The Choice: Enabled, Disabled.

EDO DRAM Speed Selection

Item	Description
50ns	DRAM Timing Type.
60ns	DRAM Timing Type.

EDO CASx# MA Wait State

You could select the wait state timing control type of EDO DRAM CAS MA (memory address bus).

The choice: 1, 2.

EDO RASx# Wait State

You could select the wait state timing control type of EDO DRAM CAS MA (memory address bus).

The choice: 1, 2.

SDRAM RAS-to-CAS Delay

You can select RAS to CAS Delay time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the SDRAM installed. Do not change the values in this field unless you change specifications of the installed SDRAM or the installed CPU.

The Choice: 2, 3.

SDRAM RAS Precharge Time

Defines the length of time for SDRAM Row Address Strobe is allowed to precharge.

The Choice: 2, 3.

SDRAM CAS latency Time

Define the length of time for SDRAM CAS latency time.

The Choice: 2, 3.

SDRAM Precharge Control

Defines the length of time for Row Address Strobe is allowed to precharge.

The Choice: Disable, Enable.

DRAM Data Integrity Mode

Select Parity or ECC (error-correcting code), according to the type of installed DRAM.

The Choice: Non-ECC, ECC.

System BIOS Cacheable

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Item	Description
Enabled	BIOS access cached
Disabled	BIOS access not cached

Video BIOS Cacheable

Select Enabled allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

Item	Description
Enabled	Video BIOS access cached
Disabled	Video BIOS access not cached

Video RAM Cacheable

Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

8 Bit I/O Recovery Time

The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O.

This item allows you to determine the recovery time allowed for 8 bit I/O. Choices are from NA, 1 to 8 CPU clocks.

16 Bit I/O Recovery Time

This item allows you to determine the recovery time allowed for 16 bit I/O. Choices are from NA, 1 to 4 CPU clocks.

Memory Hole At 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space location 15-16MB.

Item	Description
Enabled	Memory hole supported.
Disabled	Memory hole not supported.

Passive Release

When Enabled, CPU to PCI bus accesses is allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

The Choice: Enabled, Disabled.

Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

The Choice: Enabled, Disabled.

AGP Aperture Size (MB)

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for AGP information.

The Choice: 4, 8, 16, 32, 64, 128, 256

4.2.9 Power Management Setup

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

**ROM PCI/ISA BIOS (2A69KF1E)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.**

ACPI function	: Disable	** Reload Global Timer Events **	
Power Management	: User Define	IRQ[3-7,9-15],NMI	: Disabled
PM Control by APM	: Yes	Primary IDE 0	: Disabled
Video Off Method	: V/H SYNC + Blank	Primary IDE 1	: Disabled
Video Off After	: Standby	Secondary IDE 0	: Disabled
MODEM Use IRQ	: 3	Secondary IDE 1	: Disabled
Doze Mode	: Disable	Floppy Disk	: Disabled
Standby Mode	: Disable	Serial Port	: Enabled
Suspend Mode	: Disable	Parallel Port	: Disabled
HDD Power Down	: Disable		
Throttle Duty Cycle	: 62.5%		
PCI/VGA Act-Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Instant-Off		
PowerOn by Ring	: Disabled		
Resume by Alarm	: Disabled		
		ESC	: Quit ↑ ↓ → ← : Select Item
		F1	: Help PU/PD/+/- : Modify
Wake Up On LAN	: Enabled	F5	: Old Values (Shift) F2 : Color
IRQ 8 Break Suspend	: Disabled	F6	: Load BIOS Defaults
		F7	: Load Setup Defaults

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Doze Mode
2. Standby Mode
3. Suspend Mode
4. HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings.

Item	Description
Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU'S . Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control By APM

The option of power management is subject to the operation system which supports APM (Advanced Power Management) function; e.g. WIN 95 /WIN 98.

When enabled, an Advanced Power Management device will be activated To enhance the Max. Power Saving mode and stop the CPU internal clock. If the Max. Power Saving is not enabled, this will be preset to No.

Video Off Method

This determines the manner in which the monitor is blanked.

Item	Description
V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

Video Off After

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Item	Description
N/A	Monitor will remain on during power saving modes.
Suspend	Monitor blanked when the system enters the Suspend mode.
Standby	Monitor blanked when the system enters Standby mode.
Doze	Monitor blanked when the system enters any power saving mode.

MODEM Use IRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

The choices: NA, 3, 4, 5, 7, 9, 10, 11

Doze Mode

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Standby Mode

When enabled and after the set time of system inactivity, the CPU clock will run at lower speed and the video would be shut off while all other devices still operate at full speed.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Throttle Duty Cycle

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

The Choice: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%

PCI/VGA Act Monitor

When Enabled, any video activity restarts the global timer for Standby mode.

The Choice: Enabled, Disabled.

Soft-Off by PWR-BTTN

When Enabled, turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

The Choice: Instant-Off, Delay 4 Sec.

PowerOn by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from power off state.

The Choice: Enabled, Disabled.

Resume by Alarm

To set Date and Time to resume the system.

Wake Up On LAN

An input signal on the mainboard control by LAN chip awakens the system from power off state. The W-O-L will function when this system connected to ATX power supply.

The Choice: Enabled, Disabled.

IRQ 8 Break Suspend

You can Enable or Disable monitoring of IRQ8 so it does not awaken the system from Suspend mode.

The Choice: Enabled, Disabled.

Reload Global Timer Events

When Enabled, an event occurring on each device listed below restarts the global time for Standby mode.

- IRQ[3 -7, 9-15], NMI
- Primary IDE 0
- Primary IDE 1
- Secondary IDE 0
- Secondary IDE 1
- Floppy Disk
- Serial Port
- Parallel Port

4.2.10 PnP/PCI Configuration

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speed nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

ROM PCI/ISA BIOS (2A69KF1E) PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.

PNP OS Installed : No	
Resources Controlled By : Auto	
Reset Configuration Data : Disabled	Assign IRQ For USB : Disabled
ESC : Quit ↑ ↓ → ← : Select Item	
F1 : Help PU/PD/+/- : Modify	
F5 : Old Values (Shift) F2 : Color	
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

PnP OS Installed

Select "Yes" if the system-operating environment is Plug-and-Play aware (e.g., Windows 95).

The Choice: Yes and No.

Resource Controlled by

The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assign them.

The choice: Auto and Manual.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

The choice: Enabled and Disabled.

IRQ n Assigned to

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

DMA n Assigned to

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture. When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel.

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

Used MEM base addr

Select a base address for the memory area used by any peripheral that requires high memory.

The Choice: C800, CC00, D000, D500, D800, DC00, N/A.

Assign IRQ for USB

Enable / Disable system to assign IRQ channel to USB devices.

4.2.11 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 POS 500 uses COM3 and is assigned to 3E8h/IRQ 11.

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

**ROM PCI/ISA BIOS (2A69KF1E)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.**

IDE HDD Block Mode	: Disabled	Onboard Parallel Port	: 378 / IRQ7
IDE Primary Master PIO	: Auto	Parallel Port Mode	: ECP+EPP1.9
IDE Primary Slave PIO	: Auto	ECP Mode Use DMA	: 3
IDE Secondary Master PIO	: Auto	Onboard Serial Port 3	: 3E8
IDE Secondary Slave PIO	: Auto	Serial Port 3 Use IRQ	: IRQ 10
IDE Primary Master UDMA	: Disabled	Onboard Serial Port 4	: 2E8
IDE Primary Slave UDMA	: Disabled	Serial Port 4 Use IRQ	: IRQ11
IDE Secondary Master UDMA	: Disabled	Serial Port 5 Use IRQ	: IRQ5
IDE Secondary Slave UDMA	: Disabled	Serial Port 6 Use IRQ	: IRQ9
On-Chip Primary PCI IDE	: Enabled		:
On-Chip Secondary PCI IDE	: Enabled		:
USB Keyboard Support	: Disabled		
Init Display First	: PCI Slot		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: Auto	ESC	: Quit
Onboard Serial Port 2	: Auto	↑ ↓ → ←	: Select Item
UART2 Mode	: Standard	F1	: Help
		F5	: Old Values
		(Shift) F2	: Color
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults

IDE HDD Block Mode

This allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

Item	Description
Enabled	IDE controller uses block mode.
Disabled	IDE controller uses standard mode.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the four 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 Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

The Choice: Auto, Disabled

On-Chip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

USB Keyboard support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

The Choice: Enabled, Disabled.

Onboard FDD Controller

This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

The Choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

This item allows you to determine access onboard serial port 1/port 2 controller with which I/O addresses.

The Choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

Onboard Parallel Port

Select a logical LPT port name and matching address for the physical parallel (printer) port.

The choice: 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled.

Parallel Port Mode

Select an operating mode for the onboard parallel port. Select Compatible or Extended unless you are certain both your hardware and software support EPP or ECP mode.

The choice: SPP, ECP + EPP1.7, EPP1.7 + SPP, EPP1.9 + SPP, ECP, ECP + EPP1.9, and Normal.

ECP Mode Use DMA

Select a DMA channel for the port. Choices are 3, 1.

4.2.12 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:

Item	Description
System	Enter a password each time the system boots and whenever you enter setup.
Setup	IDE controller uses standard mode.

Chapter 5

5.1 Troubleshooting your POS 500

The POS 500 is designed with the sense of quality for all users. You are advised to read this chapter when you encounter any difficulties using this product (System Unit). In the first section, shows the error messages for diagnostics when running the System Unit during the Power-On Self Test (POST). There are also other troubleshooting guidelines for the System Unit.

5.2 Messages

System failure showing error messages ...

1. **BIOS RAM checksum error--- System halted**
When the checksum of the BIOS code is incorrect, this is an indication that the BIOS code may have become corrupt.
Contact your dealer to replace the BIOS.
2. **CMOS battery failed**
This is an indication that the CMOS battery is no longer functioning.
Contact your dealer to replace the battery.
3. **CMOS checksum error--- Default loaded**
When the checksum of the CMOS is incorrect, the system loads the default product configuration. A checksum error may be displayed to indicate the CMOS has become corrupt. This is also an indication of a weak battery that may have caused this error.
Contact your dealer to replace the battery.
4. **CPU at nnnn**
This display indicates the running speed of the CPU.
5. **Press ESC to skip memory test**
The user may press Esc to skip the full memory test.
6. **Floppy disk(s) fail**
This is an indication that the system cannot initialize the floppy drive controller or find the drive. Check and make sure that the floppy drive is installed correctly.

7. **HARD DISK initializing please wait a moment...**
This is an indication that some hard drives require extra time to initialize.
8. **HARD DISK INSTALL FAILURE**
This is an indication that the system cannot initialize the floppy drive controller or find the drive. If no hard drives are installed, be sure that the Hard Drive selection in Setup is set to NONE. Also check and make sure that the hard drive is installed correctly.
9. **Hard disk(s) diagnosis fail**
There is a possibility that the system may run specific disk diagnostic routines. When this message appears, this is an indication that one or more hard disks did return an error when the diagnostics run.
10. **Keyboard error or no keyboard present**
This is an indication that the system cannot initialize the keyboard. Check and make sure that the keyboard is attached correctly and no keys are pressed or locked in place during POST.
11. **Memory test**
This message will appear in the display during a full memory test, indicating the count down of the memory areas being tested.
12. **Memory test fail**
If POST detects an error during memory testing, there is an additional information appearing on the display, giving the type and location of the memory error.
13. **Primary master hard disk fail.**
This is an indication that the POST detects an error in the primary master IDE hard drive.
14. **Primary slave hard disk fail.**
This is an indication that the POST detects an error in the primary slave IDE hard drive.
15. **The screen displays a keyboard error message when you turn on or reset the POS 500.**
Make sure to check the keyboard is securely connected to the keyboard port, and that no pins in the connector are missing or bend.

16. The items that appear on the screen do not correspond to the keyboard options.
This is an indication that your keyboard may not be mapped properly for the system. Check and see if a standard PC/AT keyboard connected to your PS/2 connector is working properly.
17. There is no display on the screen.
Make sure to check that the monitor is turned on and plugged in.
18. The power switch is on, but the power light is not on.
Make sure to check the electrical outlet for power.
19. You see a floppy disk error message.
Make sure to check the floppy disk connectors are properly connected.
20. A newly installed hard disk drive is not working properly.
 - Make sure that you have installed the drive correctly. Check that the cable has been fully inserted into the connector.
 - Run the BIOS setup again and make sure the system is auto-sensing the correct drive type.
21. A device attached to a serial port is not working.
 - Make sure that the cable is securely connected. Also be sure that the COM ports are set properly in the BIOS setup utility.
 - Check and make sure that the jumper or connector on the device are set correctly.
22. A device attached to the LPT1 port is not working properly.
Check and make sure that the device has power and is properly connected to the POS 500.
23. An expansion slot card installed in the expansion module is not working.
Unlock the bracket screw and pull it out, try reinserting the card again. Check and make sure that the expansion module is installed correctly. Also, be sure that the card and socket services software is installed correctly. At the same time, check that the correct card drivers and utilities are installed. The supplied card and socket services software supports most PC cards, but some do require special drivers or software. Read the documentation that came with the card for more information.

Appendix A

A.1 Specifications

The above model was installed with a "B65" Pentium[→] !!! all-in-one as system main board. Following is the technical detail of the "B65" main board.

Technical Specification for "B65" Main Board

Main Board	: "B65" all-in-one M/B
CPU	: Intel PPGA / FC-PGA Processor
Co-processor	: Built-in CPU
Internal Cache	: Built-in CPU
External Cache	: Built-in CPU
System RAM	: 2 x 168pin DIMM sockets, support up to 512 MB
BIOS	: AWARD PnP BIOS
Core Logic	: Intel FW82443BX
Video Display	: On Board C&T69000 Chip
Video RAM	: 2MB on Chip
Video Display port	: One 10-pin 2.54 pitch pin-header for test
HDD Controller	: Support one 40-pin 2.54 pitch IDE pin-header
FDD Controller	: SMSC37C602 support one 40-pin 2.54mm pitch pin-header with power
I/O Port	: Three 10-pin RJ-45 RS232 FIFO Serial Ports connector Two 9-pin D-SUB support COM1/COM2 port
Keyboard & Mouse	: 1 x PS2 Keyboard / Mouse connector, used Y type cable
LAN port	: On Board Intel [→] 82559 LAN Chip
USB port	: 2 x USB ports
ROM disk	: DiskOnChip [→] Socket supported
Compact Flash	: Compact Flash Socket Supported
Expansion Slot on board	: For test
Mainboard Dimension	: W x D = 23.2 x 20.8cm
POS 500 System Dimension	: W x D x H1(H2) 36 x 33 x 11 (25.5) cm or 14 ¹ / ₈ x 13 x 4 ⁵ / ₁₆ (10 ¹ / ₁₆) inches; Highest tilting height H3: 30.5cm (12 inches)
POS 500 Weight (Net)	: 7.5 Kgs. (16.5 Lbs.)

The content of this specification is subject to change without notice.

A.2 Connector Pin Assignments

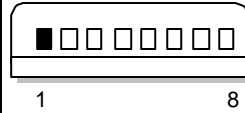
Use the information in the following table to change the connector.

Connectors	Functions
JP4	DC Power Connector
JP7	HDD Power Connector
JP15	CRT Connector (for test)
CN1	Power Push Button
CN2	CPU Fan Connector
CN3	Compact Flash Socket
CN4	Card Reader Connector
CN5	KB/MS/Print/COM1~6/USB/LAN/DIO
CN6	Print Connector
CN7	COM Port Power 5V/12V Selection (pin1)
CN8	IDE Connector
CN9	Floppy Disk Connector
CN10	System Fan Connector
CN13	LCD Connector

DC Power Connector: JP4

Pin	Assignment
1	+5V
2	+5V
3	+12V
4	Ground
5	-12V
6	Power ON
7	5VSB
8	Ground

Figure



HDD Power Connector: JP7

Pin	Assignment
1	VCC
2	+12V
3	Ground

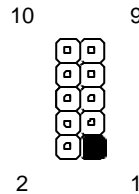
Figure



CRT Connector (for test): JP15

Pin	Assignment
1	Red Signal
2	VCC
3	Green Signal
4	DDC Data
5	Blue Signal
6	DDC Clock
7	H Sync.
8	Ground
9	V Sync.
10	Ground

Figure



Power Push Button: CN1

Pin	Assignment
1	Ground
2	Soft_Switch

Figure



CPU Fan Connector: CN2

Pin	Assignment
1	Ground
2	+12V

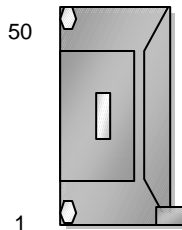
Figure



Compact Flash Socket: CN3

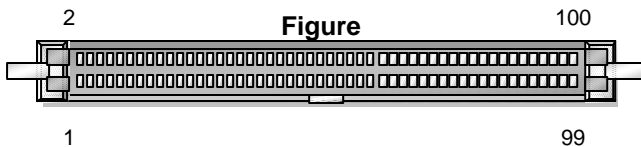
Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Ground	18	SDA2	35	SDIOW#
2	SDD3	19	SDA1	36	VCC
3	SDD4	20	SDA0	37	IRQ15_R
4	SDD5	21	SDD0	38	VCC
5	SDD6	22	SDD1	39	CSEL
6	SDD7	23	SDD2	40	NC
7	SCS1	24	IOCS16#	41	IDE_RST1
8	Ground	25	Ground	42	NC
9	Ground	26	Ground	43	NC
10	Ground	27	SDD11	44	VCC
11	Ground	28	SDD12	45	IDEACTS#
12	Ground	29	SDD13	46	NC
13	VCC	30	SDD14	47	SDD8
14	Ground	31	SDD15	48	SDD9
15	Ground	32	SCS3#	49	SDD10
16	Ground	33	Ground	50	Ground
17	Ground	34	SDIOR#		

Figure



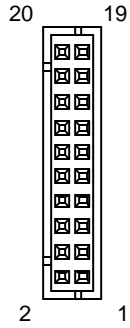
KB / MS / Print / COM1~COM6 / USB / LAN / DIO Connector: CN5

Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment
1	KB Clock	26	COM1 DCCD1	51	COM3 RI1	76	DOUT0
2	KB Data	27	COM1 CTS1	52	COM3 RTS1	77	DIN1
3	Mouse Clock	28	COM1 DSR1	53	Ground	78	DOUT1
4	Mouse Data	29	COM1 DTR1	54	Ground	79	DIN2
5	PD1	30	COM1 RXD1	55	COM4 TXD2	80	DOUT2
6	PD0	31	COM1 RI1	56	COM4 DCCD4	81	DIN3
7	PD3	32	COM1 RTS1	57	COM4 CTS2	82	DOUT3
8	PD2	33	Ground	58	COM4 DSR2	83	Ground
9	PD5	34	Ground	59	COM4 DTR2	84	Ground
10	PD4	35	COM2 TXD2	60	COM4 RXD2	85	USB P0+R
11	PD7	36	COM2 DCCD2	61	COM4 RI2	86	USB P0-R
12	PD6	37	COM2 CTS2	62	COM4 RTS2	87	USB P1+R
13	ACK	38	COM2 DSR2	63	Ground	88	USB P1-R
14	SLIN	39	COM2 DTR2	64	Ground	89	OC-0B
15	PE	40	COM2 RXD2	65	COM6 TXD2	90	OC-1B
16	INIT	41	COM2 RI2	66	COM6 DCCD6	91	Ground
17	SLCT	42	COM2 RTS2	67	COM6 CTS2	92	Ground
18	AFD	43	Ground	68	COM6 DSR2	93	TLRX-
19	ERR	44	Ground	69	COM6 DTR2	94	TLRX+
20	STB	45	COM3 TXD1	70	COM6 RXD2	95	Ground
21	VCC	46	COM3 DCCD3	71	COM6 RI2	96	Ground
22	BUSY	47	COM3 CTS1	72	COM6 RTS2	97	TLTX-
23	VCC	48	COM3 DSR1	73	Ground	98	TLTX+
24	Ground	49	COM3 DTR1	74	Ground	99	Ground
25	COM1 TXD1	50	COM3 RXD1	75	DIN0	100	VCC



Print Connector: CN6

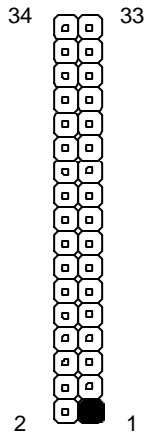
Pin	Assignment	Pin	Assignment
1	GND	11	PD4
2	GND	12	PD3
3	GND	13	SUN-
4	SLCT	14	PD2
5	PE	15	INT-
6	BUSY	16	PD1
7	ACK-	17	ERR-
8	PD7	18	PD1
9	PD6	19	AFD-
10	PD5	20	STB-



COM Port Power 5V / 12V Selection: CN7

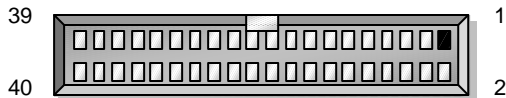
Pin	Assignment	Pin	Assignment	Pin	Assignment
1	COM1 DCCD1 Select	13	COM3 DCCD3 Select	25	COM6 DCCD6 Select
2	COM1 DCCD1	14	COM3 DCCD3	26	COM6 DCCD6
3	VCC	15	VCC	27	VCC
4	COM1 DCCD1	16	COM3 DCCD3	28	COM6 DCCD6
5	+12V	17	+12V	29	+12V
6	COM1 DCCD1	18	COM3 DCCD3	30	COM6 DCCD6
7	COM2 DCCD2 Select	19	COM4 DCCD4 Select	31	NC
8	COM2 DCCD2	20	COM4 DCCD4	32	NC
9	VCC	21	VCC	33	NC
10	COM2 DCCD2	22	COM4 DCCD4	34	NC
11	+12V	23	+12V		
12	COM2 DCCD2	24	COM4 DCCD4		

Figure



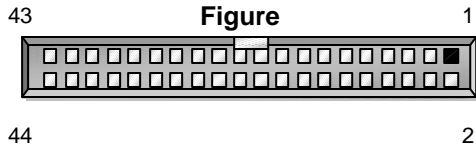
IDE Connector: CN8 (40pin 2.54mm)

Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Reset	16	Data bit 14	31	IRQ 14
2	Ground	17	Data bit 0	32	NC
3	Data bit 7	18	Data bit 15	33	Disk Address 1
4	Data bit 8	19	Ground	34	NC
5	Data bit 6	20	NC	35	Disk Address 0
6	Data bit 9	21	IDE DRQ	36	Disk Address 2
7	Data bit 5	22	Ground	37	Disk Chip Select 0
8	Data bit 10	23	Disk Write	38	Disk Chip Select 1
9	Data bit 4	24	Ground	39	Disk LED
10	Data bit 11	25	Disk Read	40	Ground
11	Data bit 3	26	Ground		
12	Data bit 12	27	Disk Ready		
13	Data bit 2	28	NC		
14	Data bit 13	29	IDE DACK		
15	Data bit 1	30	Ground		



LCD Connector: CN13

Pin	Assignment	Pin	Assignment	Pin	Assignment
1	CP2	16	V Sync.	31	VCC
2	CP18	17	CP10	32	VCC
3	CP3	18	CDE	33	T_P1
4	CP19	19	CP11	34	COM4_RXD2
5	Ground	20	CSHF Clock	35	T_P2
6	CP20	21	12V	36	COM4_TXD2
7	CP4	22	Ground	37	T_P3
8	CP21	23	CP12	38	KB Clock
9	CP5	24	12V	39	T_P4
10	CP22	25	CP13	40	KB Data
11	CP6	26	ENABKLR	41	T_P5
12	CP23	27	CP14	42	PC Clock
13	CP7	28	3OR5 SAFE	43	Ground
14	H Sync.	29	CP15	44	PC Data
15	Ground	30	Ground		



A.3 Function I/O Board

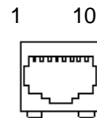
Serial Port Assignment

Connector' s Name	Definition	Connector Type
COM1	User' s define	9-pin DB-Sub male connector
COM2	User' s define	9-pin DB-Sub male connector
COM3	User' s define	10-pin RJ-45 connector
COM4	MCR	10-pin RJ-45 connector
COM5	Touchscreen	Built-in connection
COM6	Pole Display	10-pin RJ-45 connector

COM3 Connector (RJ-45): I/O Board

Pin	Assignment
1	NC
2	COM3_DCCD3/+12V/+5V
3	COM3_DSR1
4	COM3_RXD1
5	COM3_RTS1
6	COM3_TXD1
7	COM3_CTS1
8	COM3_DTR1
9	GND
10	COM3_RI1

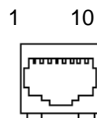
Figure



COM4 Connector (RJ-45): I/O Board

Pin	Assignment
1	NC
2	COM4_DCCD4/+12V/+5V
3	COM4_DSR2
4	COM4_RXD2
5	COM4_RTS2
6	COM4_TXD2
7	COM4_CTS2
8	COM4_DTR2
9	GND
10	COM4_RI2

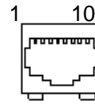
Figure



COM6 Connector (RJ-45): I/O Board

Pin	Assignment
1	NC
2	COM6_DCCD5/+12V/+5V
3	COM6_DSR2
4	COM6_RXD2
5	COM6_RTS2
6	COM6_TXD2
7	COM6_CTS2
8	COM6_DTR2
9	GND
10	COM6_RI2

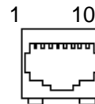
Figure



DIO Connector (RJ-45): I/O Board

Pin	Assignment
1	DIN0
2	DIN1
3	DIN2
4	DIN3
5	GND
6	DOUT3
7	DOUT2
8	DOUT1
9	DOUT0
10	+12V

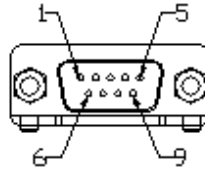
Figure



COM1 Connector (D-SUB): I/O Board

Pin	Assignment
1	COM1_DCCD1 Select/+12V/+5V
2	COM1_RXD1
3	COM1_TXD1
4	COM1_DTR1
5	GND
6	COM1_DSR1
7	COM1_RTS1
8	COM1_CTS1
9	COM1_RI1

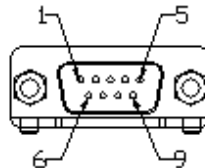
Figure



COM2 Connector (D-SUB): I/O Board

Pin	Assignment
1	COM2_DCCD2 Select/ +12V/+5V
2	COM2_RXD2
3	COM2_TXD2
4	COM2_DTR2
5	GND
6	COM2_DSR2
7	COM2_RTS2
8	COM2_CTS2
9	COM2_RI2

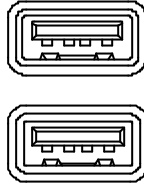
Figure



USB Port Connector (Pin-Header 8 Pin): I/O Board CN2

Pin	Assignment	Pin	Assignment
1a	Vcc via Ploy-fuse	1b	Vcc via Poly-fuse
2a	USBP0-	2b	USBP1
3a	USBP0 +	3b	USBP1 +
4a	Signal ground	4b	Signal ground

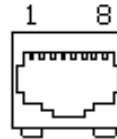
Figure



LAN Connector (10 / 100Base-T RJ-45): I/O Board CN1

Pin	Assignment
1	Transmit output (+)
2	Transmit output (-)
3	Receive input (+)
4	NC
5	NC
6	Receive input (-)
7	NC
8	NC

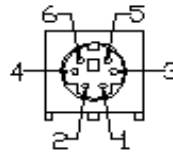
Figure



PS2 Keyboard & Mouse (Mini Din 6 Pin): I/O Board CN7
(used Y Type Cable for Keyboard & Mouse)

Pin	Assignment
1	Keyboard data
2	Mouse data
3	GND
4	+5V via Poly-fuse
5	Keyboard clock
6	Mouse clock

Figure
PS2 Keyboard/
Mouse



Appendix B

Glossary

In this section, you may find the terms that are often used retail P.O.S. market.

Automatic data collection (ADC) - A general term for using technology to gather information without human data entry. BCR and MCR are examples of ADC.

Bar Code Reader (BCR) - a laser scanner capable of reading bar codes (see UPC, EAN, etc.) There are a wide variety of these , some of which do their own decoding, and some that rely upon software or other devices to do their decoding. BCR are usually attached to a POS system either through a keyboard wedge or a serial connection. Not every BCR reads every bar code symbology. Some read only UPC, other only Code 3 of 9, etc. Also, some BCR are more sensitive to density, size, angle, etc. than others.

Cash Drawer - a solid metal box attached to a POS system that opens when directed to do so by POS software (i.e. at the completion of a sale) Cash drawers are either "smart" or "dumb", depending upon how they accept the commands from the POS system. "Dumb" cash drawers are a solenoid circuit that will open whenever the circuit is completed. These are usually attached to a printer (using a peripheral drive circuit) or custom built device attached to a serial port. "Smart" cash drawers have a logic board capable of communicating digitally with the POS system. These are either attached to a serial port (COM port) on the POS system or daisy chained with a printer (in this scenario, the cash drawer monitors the printer output and opens when it receives an appropriate control code. The "dumb" cash drawers are less expensive. Cash drawers come in a variety of sizes, some with slots in the front for credit card slips or checks (obviating the need to open the drawer to deposit these)

Check Digit - check digits are used in credit cards numbers, bar codes, etc. A check digit is a digit added to a number (either at the end or the beginning) that validates the authenticity of the number. A simple algorithm is applied to the other digits of the number which yields the check digit. By

running the algorithm, and comparing the check digit you get with the check digit encoded with it, you can verify that you have correctly read all of the digits and that they make a valid combination. Here is the check digit scheme for Visa/MasterCard/Amex/Discover. Here is the check digit scheme for UPC/EAN.

Code 3 of 9 (CODE39) - A bar code symbology that allows for both Text and Numeric information to be encoded. Next to UPC/EAN, probably the most common bar code symbology. Check digits are not used in CODE39 but an * is placed at the beginning and the end of each bar code to allow the BCR to check that it has accurately scanned the bar code. Also, code 39 bar codes are variable length.

Daisy Chained - a term used when one device is connected through another device. I.E. the cash drawer is daisy chained with the printer means that the printer is attached to the computer, and the cash drawer is attached to the printer.

Dot Matrix - in POS, most receipt printers are dot matrix printer.

Electronic Data Interchange (EDI) - a set of standards used by many companies to automate transactions between those companies. Electronic Purchase Orders, Invoices, etc. are generally formatted according to EDI specification and wrapped in an "EDI electronic envelope" when exchanged. This allows suppliers and retailers to write a single common interface rather than have a custom interface with every customer or supplier they do business with.

European Article Number (EAN) - the European equivalent to our UPC here in the U.S. The **EAN** is a standard bar code symbology used to label products. It is numeric only and is of fixed length (there are a couple of different lengths, depending upon use). Check digits are used in EAN decoding.

Graphical User Interface (GUI) - generally, any user interface that relies on picture or graphical representations, rather than text and numbers. A pointing device is usually needed to use a GUI.

Keyboard Wedge - most BCR or MCR attach to POS systems as a wedge to the keyboard. This means that the device sits between the keyboard and the POS system and when a product is scanned or a card is swiped, the device sends signals to the POS system that the POS system interprets as keystrokes on the keyboard. The advantage to this arrangement is that it

requires no special software on the POS system end.

Label Printer - Many application in Retail require high speed label printing - direct mail, bar code labels, shipping labels, etc. There is a label printer for just about every application imaginable.

Laser Printer - Laser printers are used in POS systems for Client Preference, reporting, gift certificates, etc.

Magnetic Card Reader (MCR) - a device that can read and decode the magnetic stripes on the backs of credit cards, etc. There are a wide variety of these , some of which do their own decoding, and some that rely upon software or other devices to do their decoding. MCR are usually attached to a POS system either through a keyboard wedge or a serial connection. Not every MCR reads every magnetic coding scheme. Some can only read 1 track, some are 2 track, etc.

OPOS –OLE for point of sale (OPOS) was the first standard programming interface specification of its kind for point-of-sale peripheral devices. OPOS provides scalability, flexibility and interoperability for customers seeking to implement point-of-sale technologies, which directly reduces costs and the chance of being locked into proprietary systems. With OPOS, retailers can choose best-of-breed solutions with the reliance that they will integrate well with existing and future store systems. This standard was Initiated in 1994 by Microsoft, Epson America Inc., ICL Retail Systems/Fujitsu and NCR Corp., and now supported by more than 160 companies. Microsoft along with numerous developers and customers have developed a solution - an industry standard that enables various retail technologies to "plug-and-play" together.

Personal Digital Assistant (PDA) - A hand held device (like an Apple Newton) that can run specialized software. There have been several attempts to use PDAs in POS applications, usually involving wireless LAN technology, and pen based PDAs. Tandy, at their Incredible Universe stores, had an application running at one point.

Point of Sale (POS) - Can mean the physical location of a transaction, but usually refers to any device or system that is used to record the transaction for the retailer. Also, sometimes used to classify all of these together - i.e. the POS industry.

Pole display - For sales audit and customer service reasons, some POS systems display information on a pole display where the customer can see

it. This allows the customer to see the price on each item for example.

Portable Data Terminal - Used to describe a variety of devices that are 1)portable, handheld 2)collect data, usually with a bar code scanner; and 3) relay that information to a central system - either through a serial cable, an acoustic coupler, IR, or RF. Telxon and MSI portable inventory takers are a few examples. These are use primary for inventory counts, inventory control, warehousing, etc.

POS keyboards - There are a variety of special keyboards used in POS. They are usually "membrane" style (which survive better in tough environments) and they usually don't have the QWERTY keys, like a normal keyboard, but a set of programmable keys that are programmed to represent the various goods, services, departments, etc. A programmed POS keyboard carries forward the "cash register" paradigm.

Receipt Printer - A class of POS printer used for printing sales receipts, credit card receipts, "kitchen" work orders, etc. Typically these feature 40 columns, dot matrix (although some are thermal), small footprint, serial interface (although parallel versions are also available). They print on blank rolls of paper. Some have 2 color ribbons, check imprinting (ability to print on the back of customer checks), etc. There are a variety of options tailored for various applications. See also: Slip Printers.

Slip Printer - A class of POS printer used for printing sales receipts, imprinting checks. Typically these feature 40 columns, dot matrix, small footprint, serial interface (although parallel versions are also available). They print on preprinted stock slips (sales slips, return slips, etc.) Some have 2 color ribbons, check imprinting (ability to print on the back of customer checks), etc. There are a variety of options tailored for various applications. See also: Receipt Printers.

Touch screen - A video display terminal that also acts as an input device. You touch a portion of the screen and it relays that on the POS system. Several POS systems have been built around "touch screen technology". Most touch screen applications have to be written specifically for touch screen technology.

Value Added Reseller (VAR) - A VAR is an organization that resells POS equipment or software and adds some value to the sale, either in training, support, integration services, etc. Generally, it is a loose term for the distribution channel for POS specific hardware and some general purpose POS software.

Some related terms used in PC connection to complete a POS system.

Adapter – The term used to describe expansion cards that are inserted into the bus expansion slots.

Adapter Card – A flat rectangular fiberglass board with electronic circuitry. Inserted in an expansion slot on the computer main bus, it provides additional system functions, such as device controllers or video adapters. Also called an Add-on card.

AGP (Accelerated Graphic Port) – is a 32-bit data bus that transmit a maximum of 528MB of data at the speed of 66-MHz. An interface specification that enables graphics to display quickly on ordinary personal computers. AGP is an interface designed to convey 3-D images (for example, from Web sites or CD-ROMs) much more quickly and smoothly than is possible today on any computer other than inexpensive graphics workstation. The interface uses your computer's main storage (RAM) for refreshing the monitor image and to support the texture mapping, z-buffering and alpha blending required for 3D image display. The AGP main memory use is dynamics, meaning that when not being used for accelerated graphics, main memory is restored for use by the operating system and other applications.

BIOS – The whole term is Basic Input/Output System. This is a chip on the motherboard that contains the instructions for starting up, or booting, the computer, and more.

Compact Flash – Compact Flash™ is the world's smallest removable mass storage device. First introduced in 1994 by SanDisk Corporation, CF™ cards weigh a half ounce and are the size of a matchbook. They provide complete PCMCIA-ATA functionality and compatibility. At 43mm (1.7") x 36mm (1.4") x 3.3mm (0.13"), the device's thickness is less than one-half of a current PCMCIA Type II card. It is actually one-fourth the volume of a PCMCIA card. Compared to a 68-pin PCMCIA card, a CF card has 50 pins but still conforms to ATA specs. It can be easily slipped into a passive 68-pin Type II adapter card that fully meets PCMCIA electrical and mechanical interface specifications. It is popularly used in Digital Camera, a PCMCIA memory card and sometimes as a console key to turn on a computer. Available capacities comes in 2, 4, 6, 8, 10, 12, 15, 16, 20, 24, 30, 32, 40, 45, 48, 64 and 80 MB capacities (96 MB is available first quarter of 1999, 128 MB and 192 MB were introduced later in 1999, and a 256 MB version is available first quarter 2000 !). The connector used with

Compact Flash is similar to the PCMCIA Card connector, but with 50 pins.

DiskOnChip: Popularly known as Solid State Disk. It is a product of M-Systems. It functions like a Hard disk drive, but smaller in storage capacity. It is designed in a IC type package that is surface-mount on the circuitry PCB, so it does not need IDE cable or 4T power cable. It is widely used for application that needed constant updating of information and replacement of new Application Software by replacing it from a socket. The DiskOnChip- product are optimized for use in Information Appliances, Set Top Boxes, Thin client or Network Computers, Thin Server, Embedded and portable PC-compatible computers that require minimal weight, space and power consumption, providing a very attractive alternative to conventional hard and floppy disk drives.

D-SUB Connector – A widely used family of connectors probably deriving its name from its “D” shape. Specific connectors are denoted by a letter for its size and a number for its pin configuration. For example, a DB-15 connector is a D-sub connector of size B, with pin configuration number 15.

IEEE –The acronym name of Institute of Electrical and Electronic Engineers. An international professional society that issues its own standard, and is a

LAN – The acronym word of Local Area Network. A data communications network spanning a limited area. It provides communications between three or more coputers and peripherals, in most cases using a high-speed media as it' s backbone.

Mouse –The concept was a pointing device, something a computer user could move with his or her hand, causing a corresponding move on screen. Because of its size and tail-like cable, the device was named for the mouse. Apple Computer made the mouse a standard feature of its Macintosh computers, and with the popularity of Windows, a mouse is becoming standard equipment on all PCs, as well. The “ **Trackball** ” have survived more awkward methods of navigating with the keyboard. “ **Digitizing tablets** ” are popular with architects and engineers who must translate precise movements of a pen into lines on the screen. “ **Touch screens** “, on which you press either your finger and a special light pen to control the software, are too tiring to use for any length of time.

Parallel port – Parallel ports (labeled **LPT1**, **LPT2**, and so on) are usually for plugging in printers. It is also often called a **Centronics port** – has been almost synonymous with **printer port**. Although a serial port can

also be used to send data from a PC to some models of printers, the parallel port is faster.

POST (Power-On Self-Test) – is the first thing your PC does when you turn it on, and it's your first warning of trouble with any of the components. When the POST detects an error from the display, memory, keyboard, or other basic components, it produces an error warning in the form of a message on your display and — in case your display is part of the problem —in the form of a series of beeps.

Processor type Speed ratings (MHz)

Serial port – Serial ports connect a mouse (if a dedicated mouse port doesn't exist), an external modem, or a printer. Serial ports are also sometimes called **COM** (short for COMMunications) ports, and are labeled **COM1, COM2, ...** up to **COM6**. The serial port is simple in concept: one line to send data, another line to receive data, and a few other lines to regulate how data is sent over the other two lines. Because of its simplicity, the serial port has been used at one time or another to make a PC communicate with just about any device imaginable – from commonplace modems and printers to plotters and burglar alarms. The serial port is often referred to as an RS-232 port.

USB – Universal Serial Bus (USB) consolidates serial, parallel, keyboard, mouse, and game ports into one asynchronous and isochronous communications port with bandwidth for data transfer speeds up to 12 Mbs/sec without termination. By daisy-chaining USB hubs, up to 127 I/O devices can be connected to one USB port on the PC. USB is completely plug-and play meaning peripherals can be correctly detected and configured automatically as soon as they are connected.

Disclaimer:

This information serves for reading reference purpose only. Some of it may be incomplete or erroneous. Use it at your own risk.