



DigiPoS Millennium

Technical Manual

Socket 370 Series

Manual Version 2.1

May 2004



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For any drivers associated with this DigiPoS, please contact your supplier/distributor or you can find the latest versions available for download on the Internet at <http://www.digipos-systems.com/>

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class A digital device. 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 this own expense.

Notice

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

All brand names and registered trademarks mentioned in this manual are the property of their respective owners and their use here is for reference purposes only.

SAFETY INSTRUCTIONS

- Always read the safety instructions carefully.
- Keep this Manual for future reference.
- Keep this equipment away from humidity and dust.
- Lay the equipment on a reliable flat surface before setting it up.
- The openings on the enclosure are for air convection, hence protecting the equipment from overheating. DO NOT COVER THESE OPENINGS. For a more detailed explanation about ventilation requirements, please check the on-line documentation available at:
<http://www.digipos-systems.com/>
- Make sure the voltage of the power source (mains) conforms within the permitted range before connecting the equipment to the power inlet.
- Place the power cord in such a way that people cannot step on it. Do not place anything over the power cord.
- ALWAYS shut down the operating system and disconnect the unit from any power sources before removing any connections (Keyboard, Mouse, etc..) or opening up the unit to fit additional cards and or devices.
- All cautions and warnings on the equipment should be noted and adhered to.
- Never pour any liquid into the opening that could damage or cause electrical shock.
- If any of the following situations arise, have the equipment checked by qualified service personnel:
 - The power cord or plug is damaged
 - Liquid has penetrated into the DigiPoS
 - The equipment has been exposed to moisture
 - The DigiPoS is not working well or you can not get it to work according to the User's Manual
 - The DigiPoS has been dropped and damaged
 - The DigiPoS has obvious signs of breakage or physical damage
- Do not leave this DigiPoS in a non air-conditioned environment with a storage temperature above 60°C (140°F) as it may damage the equipment.
- For reasons of safety, gloves should be worn when assembling the DigiPoS after any work has been carried out.

NOTE

- The technical descriptions and specifications of the DigiPoS Millennium are subject to change without notice.

ACHTUNG!

- Wir behalten uns Änderungen der technischen Beschreibungen bzw. Spezifikationen vor.

注意事項

- 本說明書所列規格僅供參考, 本公司保留產品修改變更之權利.
- 為了您的安全, 拆裝PC內部組件時請戴白手套以防割傷.

CAUTION

There is a danger of explosion if the CMOS battery is incorrectly replaced. Replace only with the same or equivalent type of battery. Please Contact you're nearest DigiPoS Systems office for further information and or assistance.

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Introduction

Congratulations on the purchase of your DigiPoS Retail System!

You are now the owner of a state-of-the-art DigiPoS Retail System. The DigiPoS Retail System is a solution that offers enhanced features, speed and performance combined with exceptional reliability. It is also a PC that is unrivalled by other conventional Pentium based PCs within the EPoS industry.

Key Features

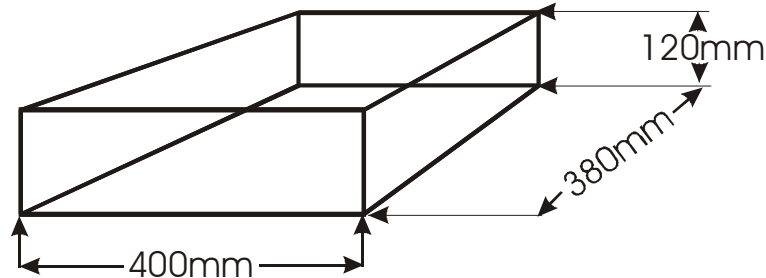
Component	Description
CPU	Supports Socket 370 Intel Celeron / PIII/VIA Cyrix C3 CPUs
CPU CLOCK	266 MHz to 1GHz
MAIN MEMORY	Notebook SO-DIMM X 1 up to 512MB (SDRAM or EDO)
BIOS	Enhanced ACPI 1.0 / PnP / APM / DMI / ESCD / PCI bus 2.1 / OnNow / DRAM ECC Quick Boot / HW Monitor (LDCM) / I-O Pre-set IRQ / Spread Spectrum / PC98 compliant
CACHE MEMORY	512KB P.B. SRAM
EXPANSION SLOTS	Riser Card with 3 FREE Slots: 1 x ISA, 2 x PCI and 1 x IDE2 CD-ROM connector
SERIAL PORTS	COM1, COM2, COM3, COM4 (COM3/4 output on riser card). IRQ & I/O address selection by BIOS (Jumper less).
PARALLEL PORT	One LPT port (SPP / EPP / ECP) IRQ and address selectable by BIOS
USB	TWO USB ports supporting Windows 95/98/Me/2000/Xp
FDD	1.44MB / 3.5" FDD x 1
ENHANCED PCI IDE	On board PCI Bus Master IDE1/2 controller with Windows utility. Supports Ultra DMA/66
AGP GRAPHICS ADAPTER	VIA 8604 AGP with shared memory from 2MB up to 32MB. Features include: Support for 4X AGP VGA controller Support for 3D / 2D Graphics Accelerator Support for DVD Video Accelerator Support for VESA DPMS VGA Monitor for Power Management Direct X, VPE, MPEG2 NT4.0 / 5.0, Windows95/98/Me/2000/Xp utility APM / ACPI 1.0 Supports VESA DPMS VGA monitor for power management PC98 compliant CRT and LCD TMDS output (Optional) Supports dual monitor output (optional) under Windows 98/Me/2000/Xp
ONBOARD LAN (10/100Mbs Auto sensing)	ACPI / NT4.0 / 5.0 (NDIS 5) NT 4.0 / Win95/98 utility Remote boot ROM NT4.0/Win95/98 Utility PC98 compliant Enable or disable by BIOS set-up (<i>Jumper less</i>)
ONBOARD AUDIO	AC97 CODEC on board
DISK ON CHIP	With DigiPoS EPoS Diagnostics Utility

Component	Description
KEYBOARD PORT	PS/2 type
MOUSE PORT	PS/2 type
FRONT PANEL	Front panel features include: AC power on/off button 3 LED indicators: Power On/Off, HDD state & LAN state 1.44MB FDD Door for FDD and Power switch (with key lock) Slim 24X CD-ROM or CD-R/ CD-RW (optional) drive bay
BACK PANEL	Back panel features include: VGA CRT 15-pin DSUB connector COM1/2/3/4 9-pin DSUB output connectors LPT 25-pin DSUB connector PS/2 Keyboard & Mouse connectors LAN RJ-45 output connector USB1 / USB2 connector Audio line in / line out, microphone-in 2nd CRT and LCD TMDS output (optional) TV S-Video and RCA connector output (optional)
THERMAL SOLUTION	One low-noise 50mm fan for power supply and HDD One low-noise 50mm fan for CPU heat-pipe (water cooling system) and air tunnel
AC POWER SUPPLY	300W External Power Supply (UL, CSA, VDE, EMI meets FCC *B*)
AC POWER SOURCE	AC 90V to 264V, 60Hz / 50Hz
CASE DIMENSIONS	11"(W) x 11" (D) x 3" (H) (280 x 280 x 75mm) (Excluding PSU)
S/W COMPATIBILITY	DOS / OS2 V2.1 / SCO XENIX: V2.3.2 / SCO UNIX V3.2 / NOVELL / WIN 3.1/95/98/Me/NT4.0/2000/Xp
EXPORT PACKAGING	Each pack measures 36 x 36 x 19cm and weighs 5.5kg net 6.5kg gross
TEMPERATURE	Operating: 0°C to 40°C (without HDD up to 50°C) Storage: -25°C to 70°C

Ventilation Requirements

Cavity Size

If the DigiPoS is to be located in a cavity, i.e. under the counter, the cavity dimensions must be a minimum of 380mm long by 400mm wide by 120mm deep (excluding the external PSU). A diagrammatic representation is as follows:

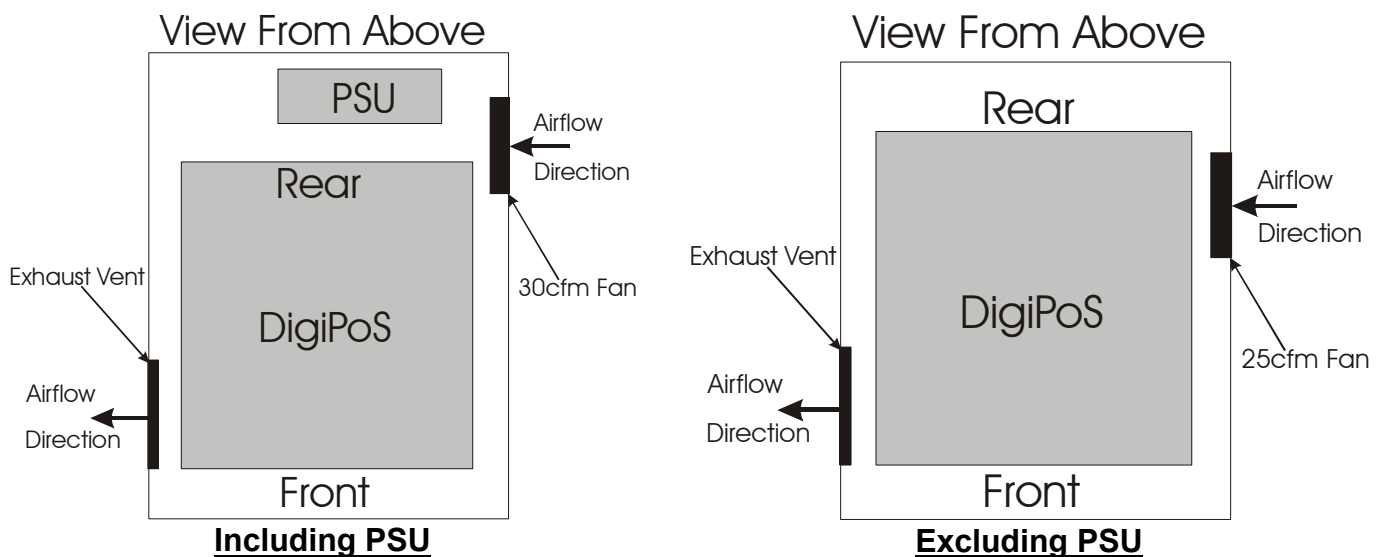


Although this is the required space, the DigiPoS **MUST** be located centrally to prevent the airflow from being disrupted through the ventilation holes in the sides of the case.

Enclosed Spaces

If the DigiPoS is to be located in an enclosed space, i.e. in a closed box or cabinet, there must be sufficient airflow into and out of the enclosed space. Using the above cavity space as an example, forced airflow would have to be fitted to prevent the DigiPoS from overheating. As a general rule, the DigiPoS Millennium requires an airflow exchange rate of a minimum of 25 CFM (Cubic Feet per Minute) excluding PSU or 30 CFM including PSU when in an enclosed space.

The recommended location for these fans is as follows:



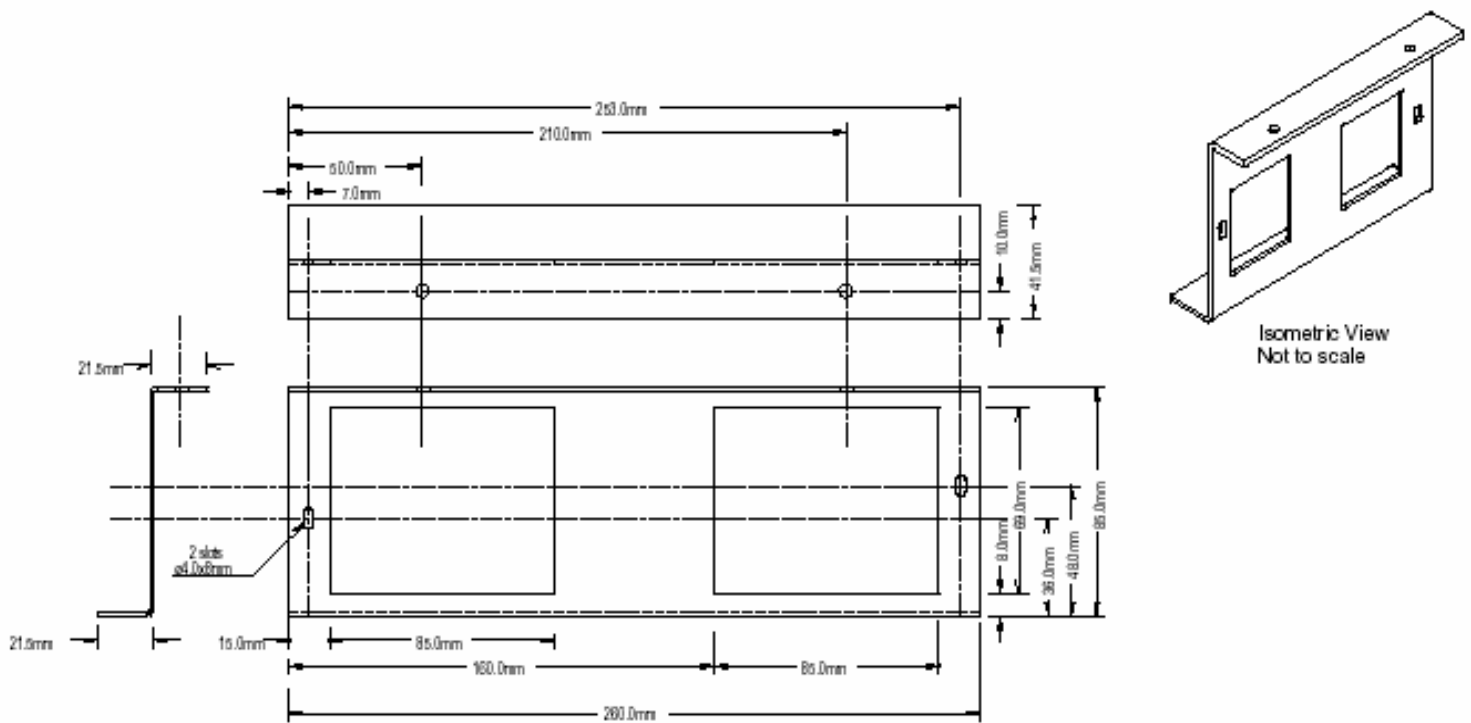
External PSU

DigiPoS Systems recommends that the external PSU for Millennium is not situated in the same space as the DigiPoS to minimise heat build up in enclosed spaces. If this is unavoidable, forced air ventilation **must** be installed to provide adequate ventilation for the DigiPoS & PSU heat dissipation devices.

Under Counter Mounting

The DigiPoS can be mounted under the counter or on a secure vertical surface to maximise the available space at the Point of Sale. In order to do this, a special bracket must be used that has been specifically engineered for the DigiPoS. This bracket does not obstruct the ventilation yet still provides a secure mounting without the need for drilling holes in the case which will void the warranty.

DigiPoS Brackets



To fit the bracket, simply remove the case screw towards the rear of the DigiPoS and offer up the bracket to the DigiPoS. Then, refit the screw and the DigiPoS can now be secured in position.

The External PSU has mounting holes pre-formed in its case and does not require any special brackets.

Please contact your nearest DigiPoS Systems Office for further details and availability on these brackets.

Technical Specifications

CPU & FSB Clock Speeds

The Central Processing Unit or CPU fitted in your DigiPoS will depend greatly on what particular model of DigiPoS you have. The Following is a detailed list of the correct type of CPU fitted to the DigiPoS Millennium and its respective settings:

CPU Type	Intel Celeron
Package Type	FC-PGA (Flip Chip - Pin Grid Array)
Clock Speed	850Mhz
Front Side Bus Speed	100Mhz
L2 Cache Size	128Kb

The thermal transfer pad on CPU heat pipe assembly can be easily damaged if the heat pipe is removed and refitted several times. We therefore recommend that only DigiPoS Systems or authorized agents for DigiPoS Systems attempt to remove the heat pipe. Failure to comply with this notice shall void all warranties.

Memory

Each DigiPoS Millennium is fitted with a single module of memory. Commonly referred to as laptop memory, the correct terminology for it is Small Outline Dual In-line Memory Module or SODIMM for short. The specifications for this memory are as follows:

Pins	144 Pin Gold	
Type	SDRAM	
Sizes	32, 64, 128, 256, 512Mb	
Clock Speeds*	32, 64Mb	100Mhz
	128, 256, 512Mb	100 – 133Mhz

*= Dependant on Front Side Bus setting according to CPU type.

Should you wish to upgrade the memory in the DigiPoS, please contact DigiPoS Systems for the specifications on the correct type of memory to be used. Using inappropriate types of memory may significantly degrade the performance of your DigiPoS and also void all warranties.

BIOS

The Phoenix BIOS is discussed in greater detail later on in this manual.

VIA 82C686B 'South Bridge'

Incorporating:

- PCI Expansion Slots
- ISA Expansion Slots
- IDE Ports
- Keyboard & Mouse Ports
- RS232 'Serial' Ports
- Parallel Port
- USB Ports
- Hardware Monitoring
- Motherboard Resources

PCI to ISA Bridge

- Integrated ISA Bus Controller with integrated DMA, timer, and interrupt controller
- Integrated Keyboard Controller with PS2 mouse support
- Integrated DS12885-style Real Time Clock with extended 256byte CMOS RAM and Day/Month Alarm for ACPI
- Integrated USB Controller with root hub for 2 ports
- Integrated UltraDMA-33/66/100 master mode EIDE controller with enhanced PCI bus commands
- PCI-2.2 compliant with delay transaction and remote power management
- Eight double-word line buffer between PCI and ISA bus
- One level of PCI to ISA post-write buffer
- Supports type F DMA transfers
- Distributed DMA support for ISA legacy DMA across the PCI bus
- Serial interrupt for docking and non-docking applications
- Fast reset and Gate A20 operation
- Edge trigger or level sensitive interrupt
- Flash EPROM, 4Mb EPROM and combined BIOS support
- Supports positive and subtractive decoding

UltraDMA-33 / 66 / 100 Master Mode PCI EIDE Controller

- Dual channel master mode PCI supporting multiple Enhanced IDE devices
- Transfer rate up to 33MB/sec to cover PIO mode 4, multi-word DMA mode 2 drives, and UltraDMA-33 interface
- Increased reliability using UltraDMA-66 transfer protocols
- Increased performance using UltraDMA-100 mode 5
- Thirty-two levels (double words) of pre-fetch and write buffers
- Dual DMA engine for concurrent dual channel operation
- Bus master programming interface for SFF-8038I rev.1.0 and Windows-95 compliant
- Full scatter gather capability
- Support ATAPI compliant devices including DVD devices
- Support PCI native and ATA compatibility modes
- Complete software driver support

Integrated Super IO Controller

- Supports 4 serial ports, parallel port, and floppy disk controller functions
- Programmable character lengths (5,6,7,8)
- Even, odd, stick or no parity bit generation and detection
- Programmable baud rate generator
- Independent transmit/receiver FIFOs
- Modem Control
- Plug and play with 96 base IO address and 12 IRQ options
- Multi-mode parallel port
 - Standard mode (SPP), ECP and EPP support
- Floppy Disk Controller
- 16 bytes of FIFO
- Data rates up to 1Mbps
- Perpendicular recording driver support
- Plug and play with 48 base IO address, 12 IRQ and 4 DMA options

Voltage, Temperature, Fan Speed Monitor and Controller

- Monitoring of Five positive voltages (one internal), three temperatures (one internal) and two fan-speed (CPU & PSU)
- Programmable control, status, monitoring and alarm facility for flexible desktop thermal management
- Automatic clock throttling with integrated temperature sensing
- Internal core VCC voltage sensing

Universal Serial Bus Controller

- USB v.1.1 and Intel Universal HCI v.1.1 compatible
- Eighteen level (double words) data FIFO with full scatter and gather capability
- Root hub and 2 functioning ports
- Integrated physical layer transceivers with optional over-current detection status on USB inputs
- Legacy keyboard and PS/2 mouse support

System Management Bus Interface

- Host interface for processor communications
- Slave interface for external SMBus masters

PC99-Compatible Power Management

- CPU clock throttling and clock stop control for complete ACPI C0 to C3 state support
- PCI bus clock run, Power Management Enable (PME) control, and PCI/CPU clock generator stop control
- Supports multiple system suspend types: power-on suspends with flexible CPU/PCI bus reset options,
- suspend to DRAM, and suspend to disk (soft-off), all with hardware automatic wake-up
- Multiple suspend power plane controls and suspend status indicators
- One idle timer, one peripheral timer and one general purpose timer, plus 24/32-bit ACPI compliant timer

PC99-Compatible Power Management Cont.

- Normal, doze, sleep, suspend and conserve modes
- System event monitoring with two event classes
- Primary and secondary interrupt differentiation for individual channels
- Dedicated input pins for power/ sleep buttons and external modem ring indicator
- Up to 12 general purpose input ports and 23 output ports
- Multiple internal and external SMI sources for flexible power management models
- One programmable chip select and one micro controller chip select
- Enhanced integrated real time clock (RTC) with date alarm, month alarm, and century field
- Thermal alarm on either external or any combination of three internal temperature-sensing circuits
- I/O pad leakage control

Plug and Play Controller

- PCI interrupts steerable to any interrupt channel
- Steerable interrupts for integrated peripheral controllers: USB, floppy, serial, parallel, audio, SoundBlaster, MIDI
- Steerable DMA channels for integrated floppy, parallel, and SoundBlaster pro controllers
- One additional steerable interrupt channel for on-board plug and play devices
- Microsoft Windows 95, Windows 98, Windows Me, Windows 2000 and Windows Xp Plug and Play BIOS compliant

VIA VT8604 'North Bridge'

Incorporating:

- CPU Interface
- Memory Controller
- AGP Graphics Controller
- PCI Bus Controller

General

- High performance SMA North Bridge
- Integrated VIA Apollo Pro133A and S3. Savage4. in a single chip
- "P6-bus Desktop PC" member of VIA's Apollo ProSavage integrated graphics product line
- 64-bit Advanced Memory controller supporting PC100/PC133 SDRAM and VCM
- High Performance CPU Interface
- Socket 370 (VIA Technologies VIA-Cyrix-III. and Intel Celeron.)
- 66/100/133 MHz CPU Front Side Bus (FSB)
- Built-in Phase Lock Loop circuitry for optimal skew control within and between clocking regions

General Cont

- Five outstanding transactions (four In-Order Queue (IOQ) plus one output latch)
- Dynamic deferred transaction support

Advanced, High-Performance Memory Controller

- DRAM interface runs synchronous (66/66, 100/100, 133/133) mode or pseudo-synchronous (66/100, 100/66, 100/133, 133/100) mode with FSB (for 66 / 66 operation, only external VGA is supported)
- Concurrent CPU, AGP, and PCI access
- Supports maximum 8-bank interleave (8 pages open simultaneously); banks are allocated based on LRU
- SDRAM X-1-1-1-1-1-1 back-to-back accesses

Accelerated Graphics Port (AGP) Controller

- AGP Specification Rev. 2.0 compliant
- Supports 266 MHz 4x mode for AD and SBA signalling
- Supports Sideband Addressing (SBA) mode (non-multiplexed address/data)
- Pipelined split-transaction long-burst transfers up to 1GB/sec
- Intelligent request reordering for maximum AGP bus utilization

Integrated Savage4 2D/3D/Video Accelerator

- Optimised Shared Memory Architecture (SMA)
- 2 to 32 MB frame buffer using system memory
- Floating-point triangle set-up engine
- Single cycle 128-bit 3D architecture
- 8M-triangles/ second set-up engine
- 140M-pixels/ second tri-linear fill rate
- Full AGP 4x, including sideband addressing and execute mode
- S3 DX7 texture compression (S3TC)
- Next generation, 128-bit 2D graphics engine
- High quality DVD video playback (With DVD Drive)
- Flat panel monitor support
- 2D/3D resolutions up to 1920 x 1440

3D Rendering Features

- Single-pass multiple textures
- Anisotropic filtering
- 8-bit stencil buffer
- 32-bit true colour rendering
- Specular lighting and diffuse shading
- Alpha blending modes
- Massive 2K x 2K textures
- MPEG-2 video textures
- Vertex and table fog
- 16 or 24-bit Z-buffering
- Reflection mapping, texture morphing, shadows, procedural textures and atmospheric effects

2D Hardware Acceleration Features

- ROP3 Ternary Raster Operation BitBLTs
- 8, 16, and 32 bpp mode acceleration

Motion Video Architecture

- High quality up/down adjustment
- Planar to packed format conversion
- Motion compensation for full speed DVD playback
- Hardware sub-picture blending and highlights
- Multiple video windows for video conferencing
- Contrast, hue, saturation, brightness and gamma controls

Flat Panel Monitor Support

- 12-bit digital interface for Flat Panel encoders
- Auto-expansion and centering for VGA modes
- Support for all resolutions up to 1280x1024
- Digital Visual Interface (DVI) 1.0 compliant

Concurrent PCI Bus Controller

- PCI 2.2 compliant, 32-bit 3.3V PCI interface with 5V tolerant inputs
- Supports up to 5 PCI masters
- PCI to system memory data streaming support
- Delay transaction from PCI master accessing DRAM
- Symmetric arbitration between Host/PCI bus for optimised system performance

Full Software Support

- Drivers for major operating systems and APIs including
 - Windows 9x
 - Windows NT 4.0
 - Windows 2000
 - Windows 3.x
 - OS/2 2.1/3.0 (Warp)
 - Linux
- Direct3D, DirectDraw and DirectShow OpenGL ICD for Windows 9x, NT, 2000 and Xp
- North Bridge/Chipset and Video BIOS support

Onboard Audio

- AC'97 2.1 compliant codec
- 18-bit stereo full duplex codec
- VSR (Variable Sampling Rate), 1Hz resolution
- 3D stereo expansion for simulated surround sound
- 1 stereo analog line-level input
- 1 mono analog line-level input
- 1 line-level output with volume control
- Multiple codec mode
- Low Power consumption mode
- Exceeds Microsoft® PC'9x requirements

Onboard LAN Adapter

- Integrated Fast Ethernet MAC, Physical chip and transceiver in one chip
- 10 Mb/s and 100 Mb/s operation
- Supports 10 Mb/s and 100 Mb/s N-way Auto-negotiation operation
- PCI local bus single-chip Fast Ethernet controller
 - Compliant to PCI Revision 2.2
 - Supports PCI target fast back-to-back transaction
 - Provides PCI bus master data transfers and PCI memory space or I/O space mapped data transfers of RTL8139C (L)'s operational registers
 - Supports PCI VPD (Vital Product Data)
 - Supports ACPI, PCI power management
- Supports CardBus. The CIS can be stored in 93C56 or expansion ROM
- Supports up to 128K bytes Boot ROM interface for both EPROM and Flash memory
- Supports 25MHz crystal or **25MHz OSC** as the internal clock source. The frequency deviation of either crystal or OSC must be within 50 PPM.
- Compliant to PC99 standard
- Includes a programmable, PCI burst size and early Tx/ Rx threshold.
- Supports a 32-bit general-purpose timer with the external PCI clock as clock source, to RTL8139C (L) Preliminary generate timer-interrupt
- Contains two large (2Kbyte) independent receive and transmit FIFO's
- Uses 93C46 (64*16-bit EEPROM) or 93C56 (128*16-bit EEPROM) to store resource configuration, ID parameter, and VPD data. The 93C56 can also be used to store the CIS data structure for CardBus application.
- Peer to Peer Support
- Boot Rom Socket for remote boot facility
- Half/ Full duplex capability
- Supports Full Duplex Flow Control (IEEE 802.3x)

Options

PCI Cards

Please contact your EPoS distributor or DigiPoS Systems to discuss the wide range of PCI card add-ons that are available to enhance your solution.

Disk On Module Port

Compact Flash card ATA IDE type I PC card socket

Dual VGA out card

2nd CRT VGA, TV and LCD TMDS add-on card

(Please contact PC-PoS for advice on the appropriate selection of this card)

CD-ROM/ CD-R/ CD-RW

Single IDE 2 Socket for 1 x Internal CD ROM

Digital Flat Panel Output (DVI)

Please contact your EPoS distributor or DigiPoS Systems to discuss your requirements.

Important Notes

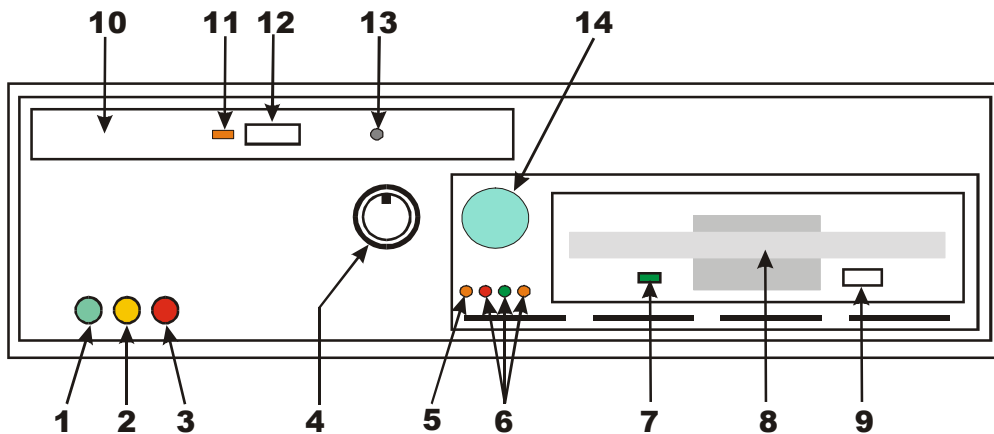
- 1 For maximum performance, the cable used for the hard drive is constructed from a special material and due care must be taken when removing or replacing this item, taking note of the route the cable takes from the hard drive to the motherboard connector.
- 2 As the power supply of this unit is an AT type, it will not support Advanced Power Management (APM) functions. Under Windows 2000, if the APM function is enabled, the system will not shut down correctly.
- 3 If the hard drive has to be replaced, only fit a hard drive that has a maximum speed of 5400rpm. For the correct type and options available, please contact DigiPoS Systems.
- 4 The only connectors that can be unplugged while the DigiPoS is powered are the USB connectors. If any other connector is removed or replaced while the power is on, serious damage can occur to the DigiPoS. This is considered to be outside the scope of the warranty and will attract a charge for the repair of any damage caused by this action.
- 5 The installation of an internal CD-ROM will determine the maximum card length used in the 32-bit PCI SLOTS located in PCI 1/PCI 2 because of the compact nature of the DigiPoS. The length of any PCI add-on card is as follows:
 - 5.1 **190mm long x 110mm** wide without CD-ROM
 - 5.2 **140mm long x 110mm** wide with CD ROM
 - 5.3 The ISA SLOT has a maximum length of any add-on card of **170mm long x 110mm** wide.

The System

The following information will help you to acquaint yourself with the external & internal components of the DigiPoS Retail System.

Front Panel Orientation

(Shown with front panel down)

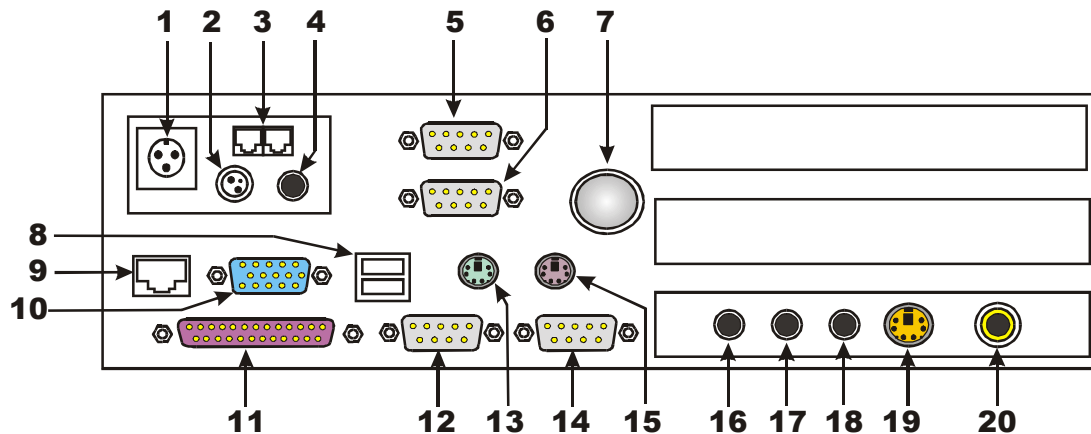


- | | |
|---|------------------------------------|
| 1. LED- Power On Indicator | 8. FDD Drawer |
| 2. LED- LAN Status Indicator | 9. FDD Release Button |
| 3. LED- HDD Activity Indicator | 10. CD ROM (Optional) |
| 4. Front Panel & CD ROM Lock | 11. LED- CD ROM Activity Indicator |
| 5. LED- DigiPoS Diagnostics Disk On Chip Active | 12. CD ROM Drawer Open Button |
| 6. LED- Power Distribution Board Voltages | 13. CD ROM Manual Draw Open Catch |
| 7. LED- FDD Activity Indicator | 14. Power On / Off Switch |

Note

The diagrams shown here are greatly simplified to enable ease of use and there may be slight variations between these diagrams and the model you have.

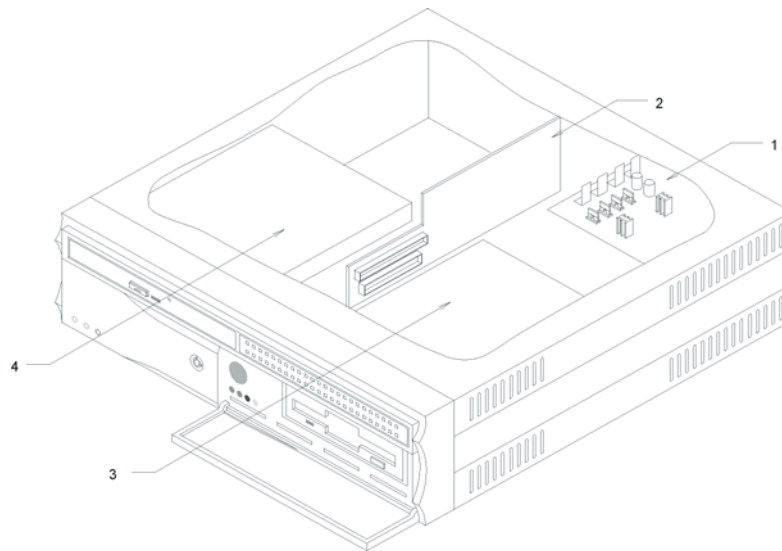
Rear Panel Orientation



- | | |
|--|----------------------------|
| 1) DC Power Input From PSU | 11) Parallel Port |
| 2) 24V Hosiden Connector | 12) COM3 Port |
| 3) Cash Drawer Loop Through Connectors | 13) PS/2 Mouse Port |
| 4) 2.5mm Barrel Connector | 14) COM4 Port |
| 5) COM1 Port | 15) PS/2 Keyboard Port |
| 6) COM2 Port | 16) Microphone In Socket |
| 7) Pulling Knob | 17) Line In Socket |
| 8) Two USB Ports | 18) Line Out Socket |
| 9) LAN Port | 19) S-Video Out (Optional) |
| 10) Parallel Port | 20) TV Out (Optional) |

If your DigiPoS Millennium does not have the TV-OUT Module installed (which is an optional feature), the S-terminal and RCA TV output will not function.

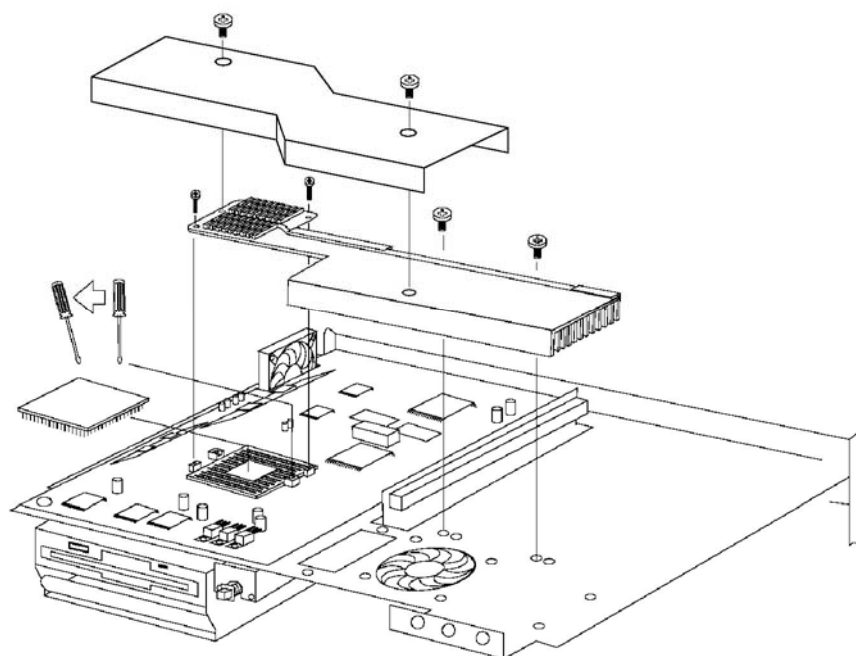
Internal System Orientation



1) Power distribution board	3) HDD/FDD sub chassis
2) Riser Card	4) CD-ROM

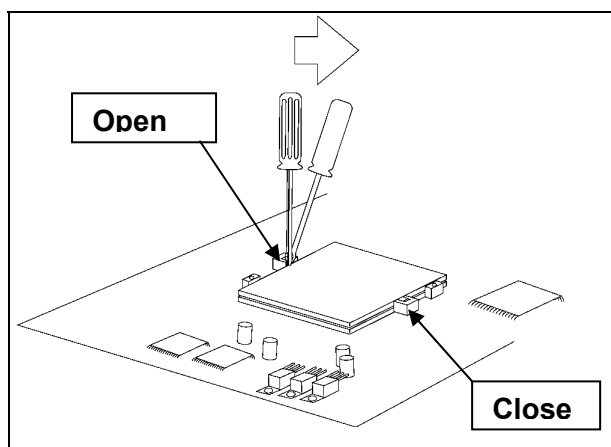
The Heat Pipe, Air Tunnel & CPU

The thermal transfer pad on CPU heat pipe assembly can be easily damaged if the heat pipe is removed and refitted several times. We therefore recommend that only DigiPoS Systems or authorized agents for DigiPoS Systems attempt to remove the heat pipe. Failure to comply with this notice shall void all warranties.



Shown above is an exploded diagram of how access is gained to the CPU via the air tunnel. It is very important that extreme care is taken when removing this item not to damage or deform the blue, liquid-cooling assembly in any way. Also please take note of the screw types and their locations when removing them so that when re-assembly is undertaken, the correct screws go back into the correct location. Once the air tunnel assembly has been removed, the CPU should now be visible.

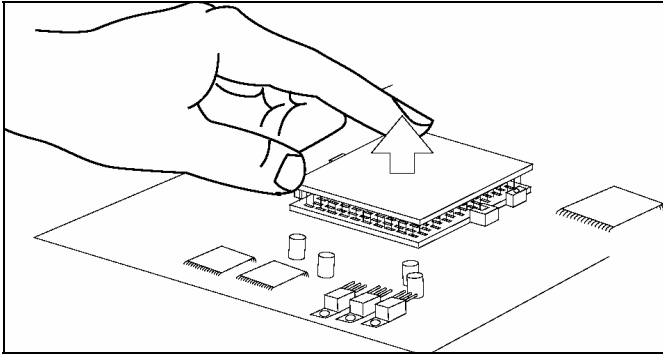
The following steps will take you through how to remove the Socket 370 FC-PGA CPU.



Step 1

Use a screwdriver to carefully lever the processor from the plastic cavity engraved with "Open" to the "Close" end. This will unlock your processor and render it free to be extracted.

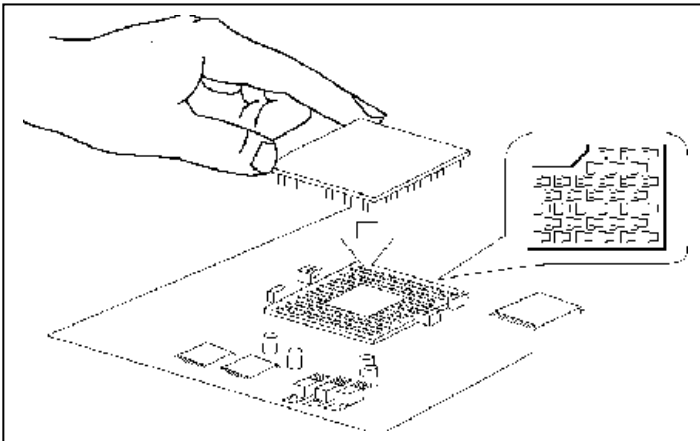
The Heat Pipe, Air Tunnel & CPU Cont.



Step 2

The CPU can now be gently removed.

Since there are extra precautions when re-fitting the CPU, the following steps will take you through how to correctly fit the Socket 370 FC-PGA CPU.

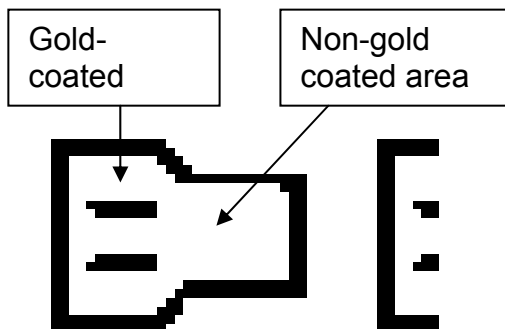


Step 1

Align your CPU by matching the blunt corner of the processor with the corresponding distinctive pinhole arrangement in the socket.

Step 2

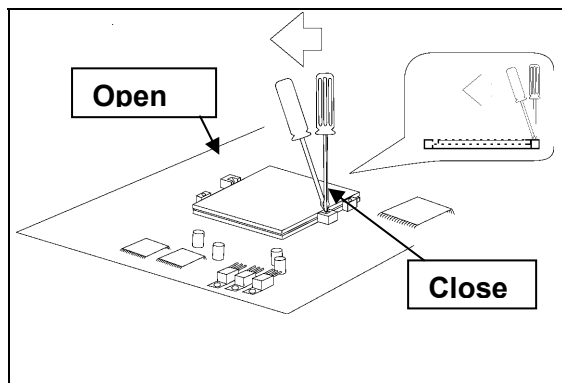
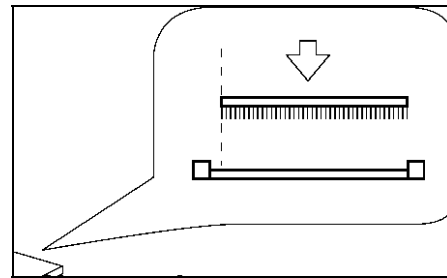
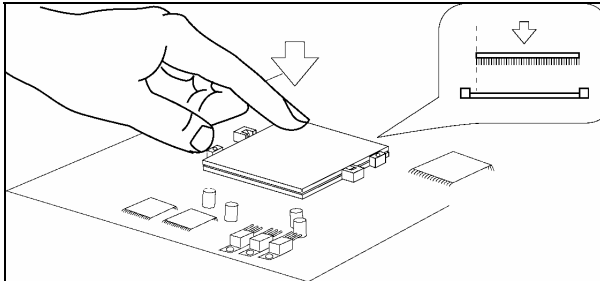
After aligning the CPU, **make certain** the pins on your Pentium processor match up with the non-gold coated pinhole area as shown on the enlarged detail below.



The Heat Pipe, Air Tunnel & CPU Cont.

Step 3

The CPU should be plugged into the socket firmly, but there is no need to use excessive force.



Step 4

Use a screwdriver to push the processor from the plastic cavity engraved with "Close" to the "Open" end. This will push your processor into the gold-coated pinhole area. You can now proceed to the heat pipe installation.

Jumper Settings and Connections

Jumpers

J7

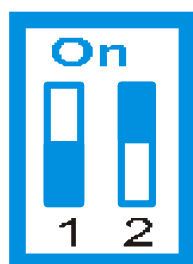
1-2	NORMAL	DEFAULT
2-3	CLEAR CMOS	

JP1 DISK ON CHIP ADDRESS SELECT

JP1	1-2,7-8	0C800H-0C9FFH
	1-2,9-10	0CC00H-0CDFFH
	3-4,7-8	0D000H-0D1FFH DEFAULT
	3-4,9-10	0D400H-0D5FFH
	5-6,7-8	0D800H-0D9FFH
	5-6,9-10	0DC00H-0DDFFH

SW2 ON BOARD VGA & PCI

SW2-1	OFF	ENABLE ON BOARD VGA	DEFAULT
	ON	DISABLE ON BOARD VGA	
SW2-2	OFF	ENABLE PCI INTERRUPT	DEFAULT
	ON	DISABLE PCI INTERRUPT	



Example of a Switch

The configuration for this switch is:
SW1-1 OFF, SW1-2 ON

CPU Switch Settings

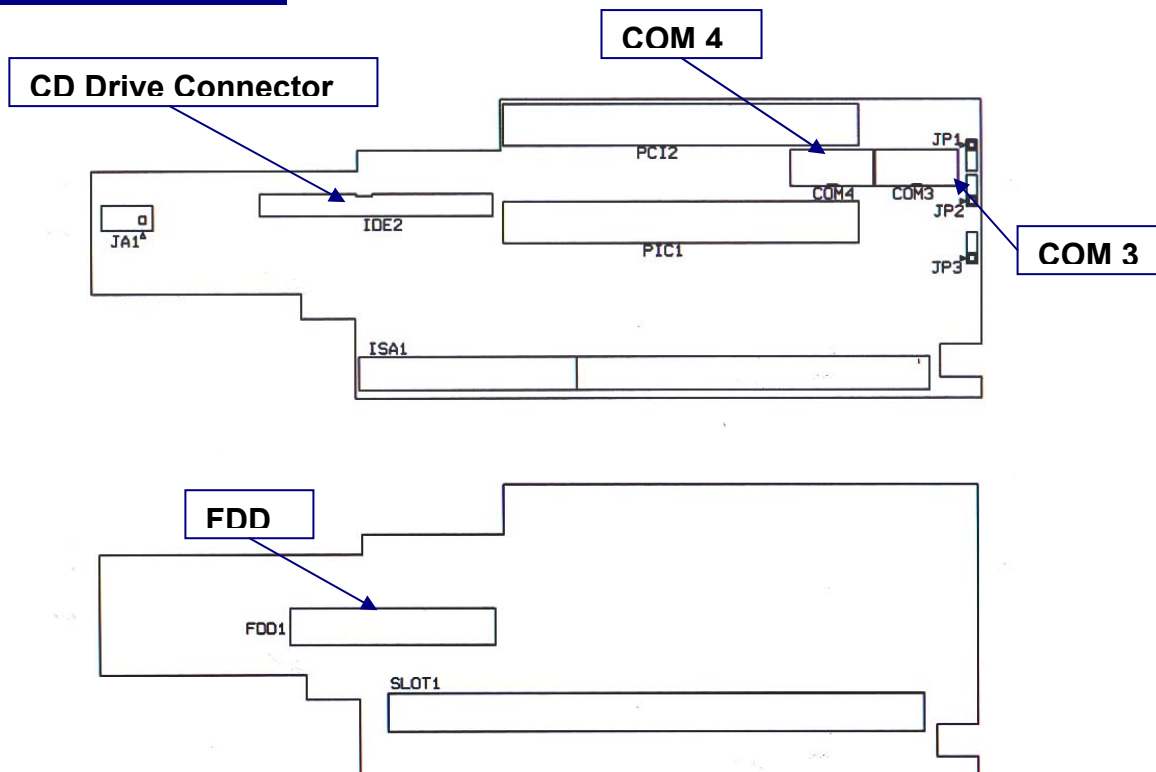
	SW1-1	SW1-2	FSB	PCI	
SW1	OFF	OFF	133	33.3	
	OFF	ON	100	33.3	Millennium Default
	ON	ON	66	33	

All other jumpers or switches not mentioned here are either not applicable or have a reserved use. Do not alter these settings unless you have been instructed to do so by DigiPoS Systems or an authorised DigiPoS Systems representative. Failure to comply with this notice shall void all warranties.

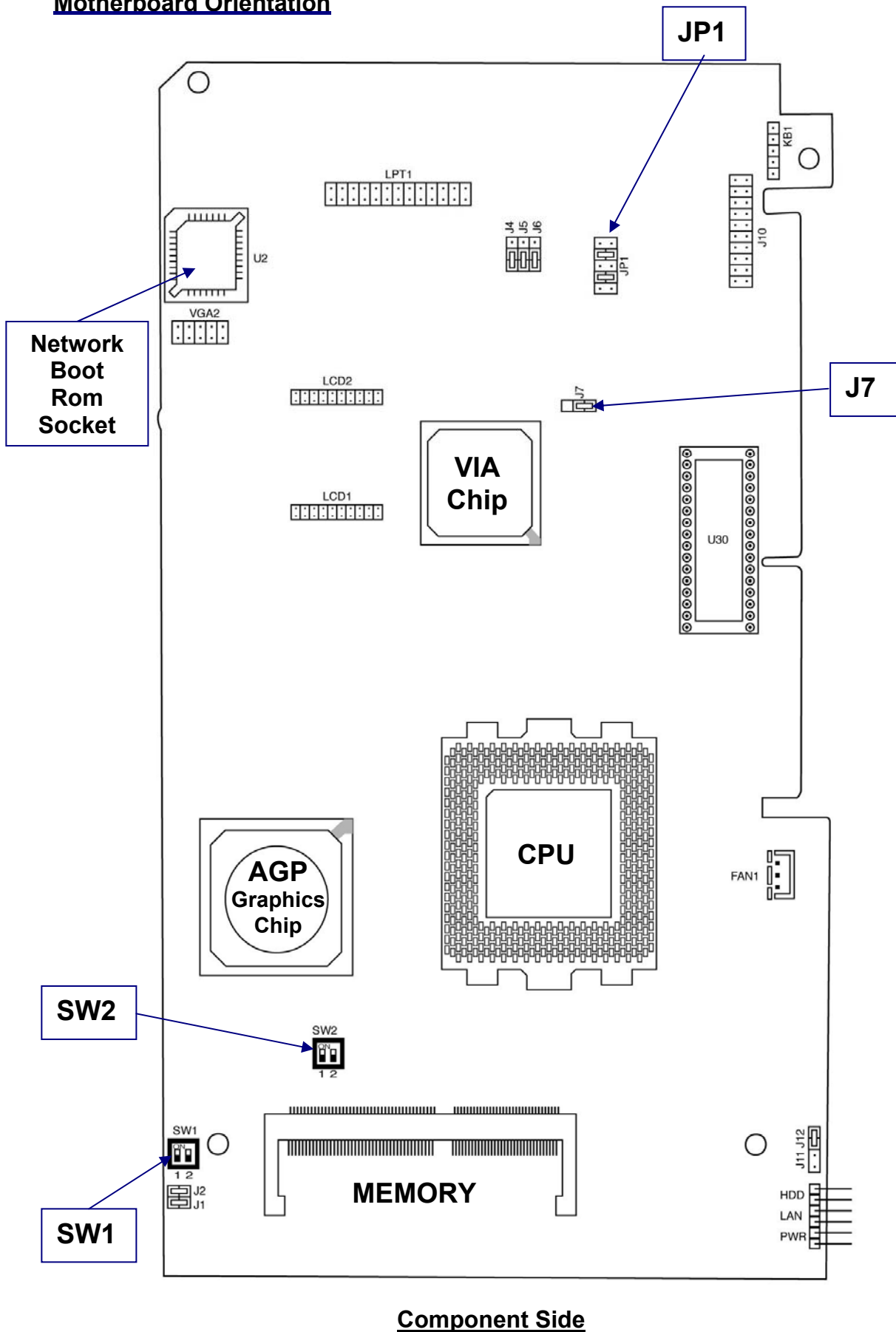
Connections

Name	Function
J8	RESET JUMPER
J10	AUDIO & TV-OUT 20 PIN CONNECTOR
VGA1	VGA DSUB 15PIN CONNECTOR
VGA2	VGA 10 PIN (2 rows X 5 pins) CONNECTOR
USB1	USB1 & USB2 CONNECTOR
IDE1	HDD 40 PIN CONNECTOR
COM1	COM1 10 PIN (2 rows x 5 pins) CONNECTOR
COM2	COM2 10 PIN (2 rows x 5 pins) CONNECTOR
LPT1	LPT1 26 PIN (2 rows X 13 pins) CONNECTOR
PS2_MS	PS2 6 PIN MOUSE CONNECTOR
PS2_KB	PS2 6 PIN KEYBOARD CONNECTOR
KB1	EXT KEYBOARD 1X5 PIN CONNECTOR
PWR1	POWER 8 PIN INPUT CONNECTOR
PWR	POWER LED CONNECTOR
LAN	LAN LED CONNECTOR
HDD	IDE1 LED CONNECTOR
J11	DISK ON CHIP LED CONNECTOR
FAN1	FAN 3 PIN CONNECTOR
FAN2	FAN 3 PIN CONNECTOR
U2	LAN BOOT ROM PLCC 32 PIN SOCKET
U30	DISK ON CHIP DIP 32 PIN SOCKET
U37	LAN RJ45 8 PIN CONNECTOR
LCD1 & LCD2	TV-OUT or TMDS PIGGY BACK BOARD CONNECTOR

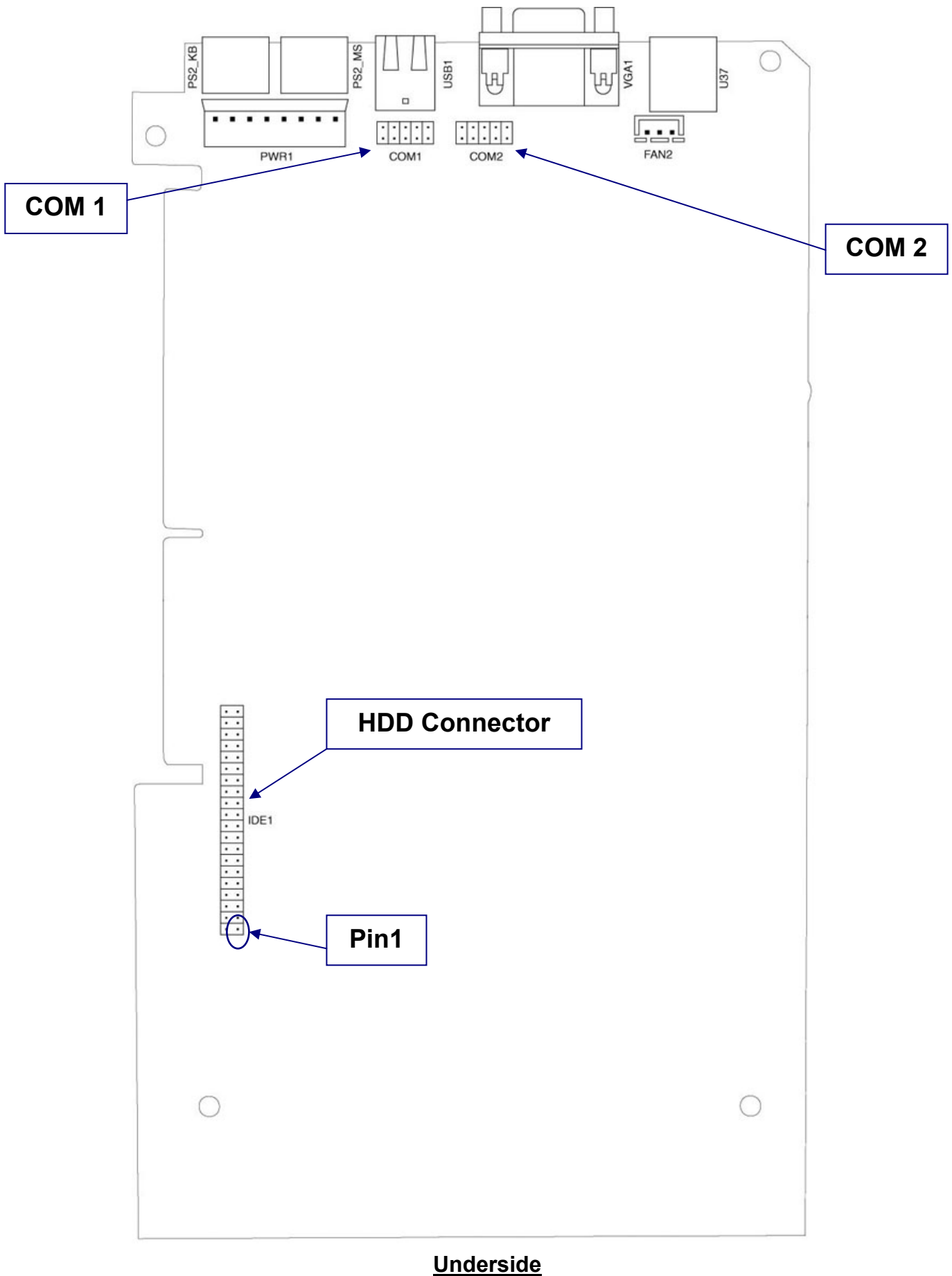
Riser Card Orientation



Motherboard Orientation

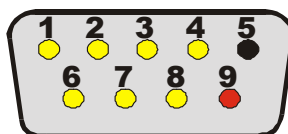


Component Side



I/O Interfaces & Power Connectors

RS232 Standard Serial Ports

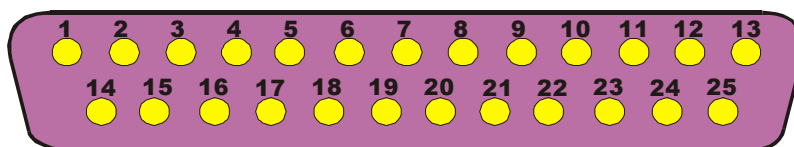


Pin	Signal	Function	Pin	Signal	Function
1	CD	Carrier Detect (IN)	6	DSR	Data Set Ready (In)
2	RD	Receive Data (IN)	7	RTS	Request To Send (OUT)
3	TD	Transmit Data (OUT)	8	CTS	Clear To Send (IN)
4	DTR	Data Terminal Ready (OUT)	9	-	+VDC Supply From Power Distribution Board
5	SG	Signal & -VDC Supply ground			

Specifications

Speeds (In Bits per Second)	75, 110, 134, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 14400, 19200, 38400, 57600, 115200 & 128000
--------------------------------	--

Parallel Port



Pin	I / O	Function	Pin	I / O	Function
1	Out	-Strobe	14	Out	-Auto Feed
2	Out	+Data Bit 0	15	In	-Error
3	Out	+Data Bit 1	16	Out	-Initialise Printer
4	Out	+Data Bit 2	17	Out	-Select Input
5	Out	+Data Bit 3	18	In	Data Bit 0 Return (GND)
6	Out	+Data Bit 4	19	In	Data Bit 1 Return (GND)
7	Out	+Data Bit 5	20	In	Data Bit 2 Return (GND)
8	Out	+Data Bit 6	21	In	Data Bit 3 Return (GND)
9	Out	+Data Bit 7	22	In	Data Bit 4 Return (GND)
10	In	+Acknowledge	23	In	Data Bit 5 Return (GND)
11	In	+Busy	24	In	Data Bit 6 Return (GND)
12	In	+Paper End	25	In	Data Bit 7 Return (GND)
13	In	+Select			

Specifications

Parallel Port Type	Input Mode	Output Mode	Comments
SPP (Standard Parallel Port)	Nibble	Compatible	4-Bit Input, 8-Bit Output.
Bidirectional	Byte	Compatible	8-Bit I/O
EPP (Enhanced Parallel Port)	EPP	EPP	8-Bit I/O
ECP (Enhanced Capabilities Port)	ECP	ECP	8-Bit I/O, Uses DMA

Parallel Port Mode	Direction	Transfer Rate
Nibble (4-Bit)	Input Only	50Kb / Sec
Byte (8-Bit)	Input Only	150Kb / Sec
Compatible	Output Only	150Kb / Sec
EPP	Input / Output	500Kb – 2Mb / Sec
ECP	Input / Output	500Kb – 2Mb / Sec

USB Ports

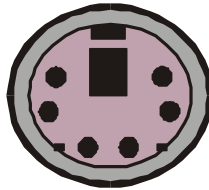
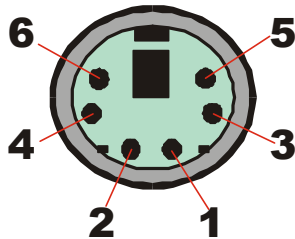
Pin	Signal Name	Wire Colour	Comment
1	VCC	Red	Cable Power
2	- Data	White	Data Transfer
3	+ Data	Green	Data Transfer
4	Ground	Black	Cable Ground
Shell	Shield	-	Drain Wire

USB Data Rates

USB 1.1 Low Speed	1.5Mbits / Sec	0.1875Mbytes / Sec
USB 1.1 High Speed	12Mbits / Sec	1.5Mbytes / Sec

PS / 2 Keyboard & Mouse Ports

Mouse Keyboard



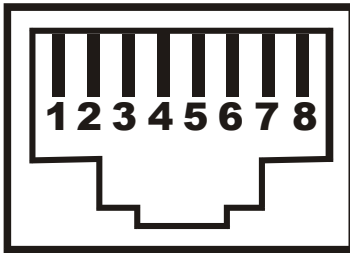
Pin	Signal Name
1	Data from Device
2	Not Connected
3	Ground
4	+5V DC
5	Clock
6	Not Connected

Windows Shortcut Keys

(For a standard 104 key keyboard)

Key Combination	Resulting Action
WIN + R	Run Dialog Box
WIN + M	Minimise All Open Windows
Shift + WIN + M	Undo Minimise All Open Windows
WIN + D	Minimise All or Undo Minimise All
WIN + F1	Help
WIN + E	Start Windows Explorer
WIN + F	Find Files or Folders
Ctrl + WIN + F	Find Computer on a Network (LAN or WAN)
WIN + Tab	Cycle Through Taskbar Buttons
WIN + Break	System Properties Dialog Box
WIN + L	Log Off Windows

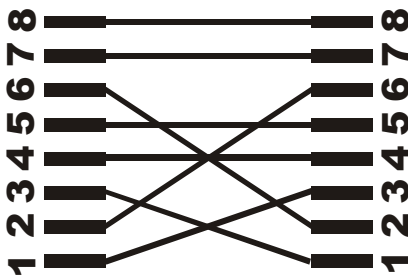
LAN Connector



Pin	Wire Colour	Description
1	White / Orange	Transmit
2	Orange	Transmit
3	White / Green	Receive
4	Blue	Not Used⊗
5	White / Blue	Not Used⊗
6	Green	Receive
7	White / Brown	Not Used⊗
8	Brown	Not Used⊗

⊗ = These Pairs are not used with 10BaseT or Fast Ethernet 100BaseTX. These pairs are only required for 100BaseT4 and Gigabit Ethernet 1000BaseTX Standards.

Crossover Cable Pin Out



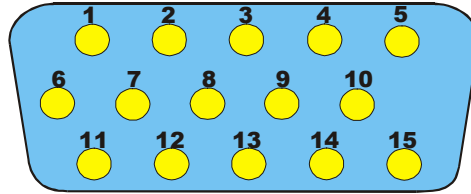
Pin	Wire Colour	To	Pin	Wire Colour
1	White / Orange	-	3	White / Green
2	Orange	-	6	Green
3	White / Green	-	1	White / Orange
4	Blue	-	4	Blue
5	White / Blue	-	5	White / Blue
6	Green	-	2	Orange
7	White / Brown	-	7	White / Brown
8	Brown	-	8	Brown

Network Distance Limitations

100BaseTx (utilizing standard UTP CAT5 Cable) = 328 Feet (100 Meters)

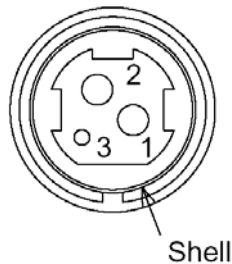
This distance represents an expected maximum not a guaranteed standard since there are many external considerations that will limit this distance.

VGA Connector



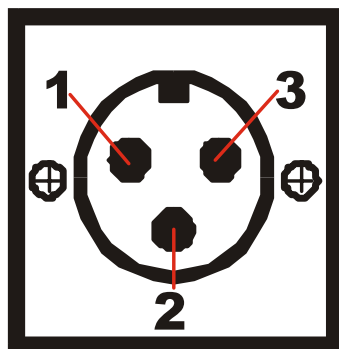
Pin	I / O	Function	Pin	I / O	Function
1	Out	Red Video	9	-	Key (Plugged Hole)
2	Out	Green Video	10	-	Sync Ground
3	Out	Blue Video	11	In	Monitor ID 0
4	In	Monitor ID 2	12	In	Monitor ID 1
5	-	TTL Ground (Monitor Self Test)	13	Out	Horizontal Sync
6	-	Red Analogue Ground	14	Out	Vertical Sync
7	-	Green Analogue Ground	15	In	Monitor ID 3
8	-	Blue Analogue Ground			

Hosiden Connector



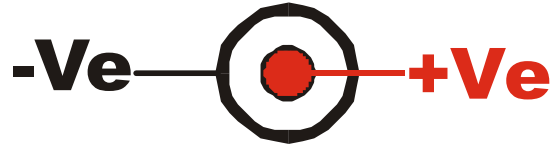
Pin	Description
1	+24V DC
2	Ground
3	Not Connected
Shell	Frame Ground

Power Supply Connector



Pin	Wire Colour	Description
1	White	+24V DC
2	Green	Remote Power Supply Switching
3	Black	Ground
Shell	-	Not Connected

2.5mm Barrel Connector



The Voltage for the 2.5mm Barrel is selected via J5 on the Power Distribution board outlined in the next section.

NOTE

If the 2.5mm barrel is being used to power an LCD, extra caution is to be taken in the event that the cable becomes loose. If the cable becomes detached, either from the DigiPoS end or the LCD end, first switch off the monitor using the power button on the front of the LCD and then re-attach the cable. If this is not carried out correctly, you risk blowing the fuse or even damaging the DigiPoS if the LCD is left on while trying to re-connect the cable.

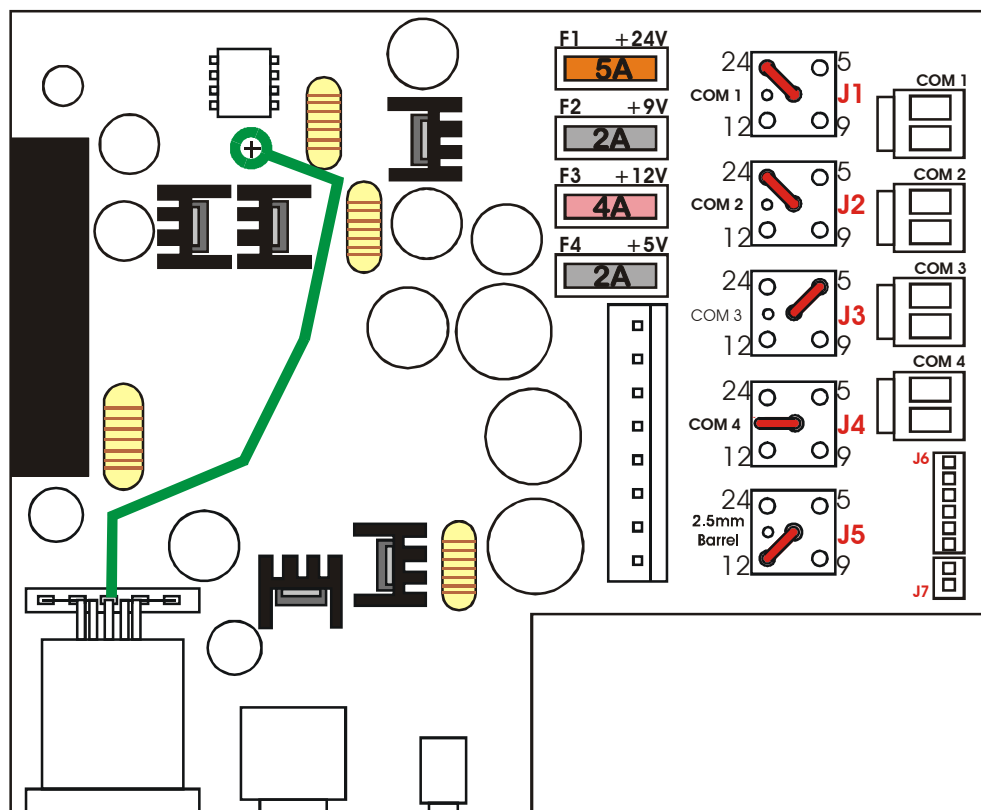
Power Distribution on the DigiPoS Millennium

WARNING

Any or all of the serial ports may be configured for 5, 9, 12 or 24 volt on pin 9 of their respective D-type connector. This can result in damage to peripheral equipment if the incorrect voltage is selected. For example if a modem is connected to a port configured for 24 volts the modem will almost certainly be destroyed. It is therefore imperative that the voltage selected is suitable for the device attached. It is also important to remember that the industry standard connector for a RS232 serial port is a 9 pin D-type plug, and as pin 9 can be powered it is physically possible to short out pin 9 to either pin 5, 8 or the chassis. This will almost certainly result in serious damage to the motherboard and possibly to the peripheral as well. If either selecting the wrong voltage or removing the connectors while the devices are powered damages ANY peripheral device or the DigiPoS, a charge may be applied by DigiPoS Systems for any repairs necessary.

Configuration

The diagram below shows the power distribution board and the jumper arrangement. The diagram shows an example set-up with the following voltages set: Com1 = 24V, Com2 = 24V, Com3 = 5V, Com4 = Not Set and the 2.5mm Barrel = 12V.



Power Distribution Board Layout

Correct Fuse Ratings

5V	9V	12V	24V
2A	2A	4A	5A

The Fuse ratings must never be exceeded.

If a fuse blows, it is either an indication of a problem with a powered peripheral or that voltage is drawing too much current. If you have to replace the same fuse more than once in any 24-hour period, please contact DigiPoS Systems or your DigiPoS Systems representative. The fuse type is a mini-blade automotive fuse. Please contact your nearest DigiPoS Systems office or representative if you require replacements or spares.

Power Board Configuration

Jumper	Port	Setting	Default Setting
J1	COM1	0, 5, 9, 12, 24, Modem	Not set
J2	COM2	0, 5, 9, 12, 24, Modem	Not set
J3	COM3	0, 5, 9, 12, 24, Modem	Not set
J4	COM4	0, 5, 9, 12, 24, Modem	Not set
J5	Barrel	0, 5, 9, 12, 24, Modem	Not set

	COM 1	COM 2	COM 3	COM 4	DC Conn.
Receipt Printer	☒	☐	☐	☐	☐ 0V
Customer Display	☐	☒	☐	☐	☐ 5V
Bar Code Scanner	☐	☐	☒	☐	☐ 9V
Touch Screen	☐	☐	☐	☐	☒ 12V
EFTPoS	☐	☐	☐	☐	☐ 24V
Standard RS232	☐	☐	☐	☒	
Other Device	☐	☐	☐	☐	

A typical configuration sticker giving details on what voltage has been set with regard to which port. This sticker can usually be found on the inside of the front flap. Please note the Modem position (standard RS232) if required.

Application

Unless specified at time of order, the DigiPoS will be shipped with the default jumper settings of 0 Volts. If you wish to have a particular set-up, including the Modem option, then please contact your PC-PoS representative.

The modem option will permit the connection of an external modem to the DigiPoS and allows the use of the ring indicator (RI) signal. The Ring Indicator is the signal the modem gives to the DigiPoS to tell the software that someone is trying to connect to it. The RI signal is normally found on pin 9 of the d-type connectors and as this is the pin that is used to supply power to the peripherals it is necessary to replace the internal cable connection to the selected port. For example if a modem option is selected for COM port 3, then the powered cable assembly would be removed for COM port 3 and be replaced with a non powered version. This would not affect the other 3 ports, they would remain powered or as per requested configuration.

Typical Voltage Requirements

Device	0	5	9	12	24	Modem
Epson PoS Printer	-	-	-	-	Y	-
Epson PoS Display	-	-	-	-	Y	-
MSR-512 swipe reader	-	Y	-	-	-	-
MS-9540 Voyager	-	Y	-	-	-	-
DigiPoS Customer Display	-	-	-	-	Y	-
LCD Monitor	-	-	-	Y	-	-
External Modem	-	N	N	N	N	Y

Continuous and Peak Current Capacity

Voltage	Actual (Default)	VMin – Vmax (Open Circuit)	Current (A)	
			Continuous	Peak
5	5.01	4.85 – 5.15	2	3
9	9.02	8.82 – 9.18	0.8	1.5
12	11.88	11.40 – 12.60	3	4
24	24.00	23.52 – 24.48	3	5

Continuous current is the current drawn by a device during normal operation. An example of continuous current is a receipt printer printing a receipt or docket. Peak current is defined as the maximum current drawn for a finite period of time. An example of peak current is when a printer is initially powered on.

Under no circumstances is the peak current to be exceeded or drawn for an extended period of time. Overloading of the voltages is not recommended and can render the DigiPoS inoperable or may even permanently damage circuitry within the DigiPoS. Overloading of any of the Voltages will void all warranties, either on the DigiPoS or any connected peripherals. If any permanent damage occurs, charges will apply for any repairs necessary.

Onboard Diagnostics for the DigiPoS Millennium

Diagnostic Overview

The DigiPoS Millennium has built onto the motherboard an area of memory specifically for diagnostic purposes. This memory area and the program stored in it have been designed so that system tests can be run without interfering in any way with the operating system or user applications. The diagnostic tests are designed to cope with the majority of configurations. To access the diagnostics utility and run the tests it is necessary to follow the procedure laid out below.

Diagnostic Procedure

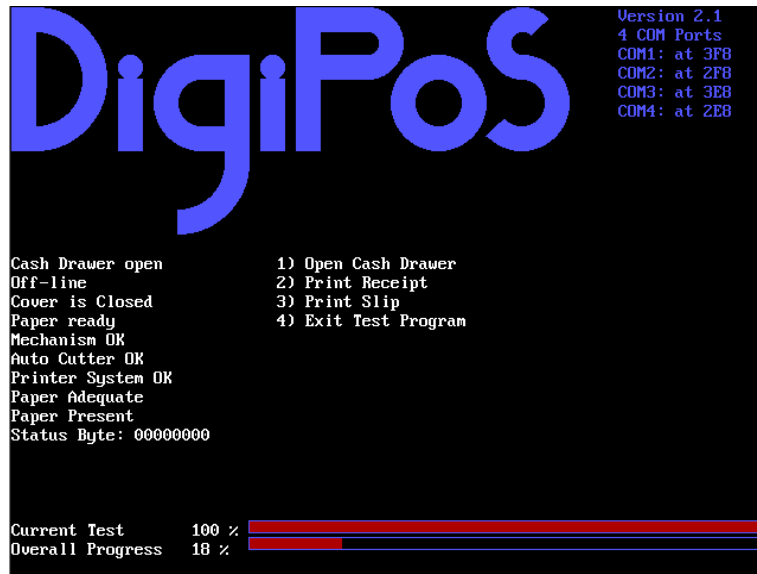
1. Close down any applications that are running within your operating system and double click the DigiPoS Diagnostics Icon. The program will shut down software that is running and then re-starts the system automatically.
2. When the DigiPoS restarts, the orange diagnostic LED, the LED at the left hand end of the group of four small LED's below the power switch, should illuminate to indicate that the DigiPoS is in diagnostic mode.
3. After the initial BIOS screens have cleared a splash screen should be displayed, this will clear after a second or two.
4. The main diagnostic screen will now appear and the system will start searching for connected serial devices. When the search has finished a menu will appear below the logo and show the serial devices found, as per the diagram below. Check that the devices found match the devices attached and that the serial parameters match those defined for the peripherals.
5. Exercise each of the test procedures as described in the following sections.
6. After each test has been completed exit the diagnostic program using the appropriate menu selection and the DigiPoS will automatically re-boot back into your operating system.
7. The results of the diagnostic tests can be found in a file called "DIAGRSLT.TXT" stored in a drive called "Diagnostics" which can be accessed by explorer or my computer.



An Example of a Diagnostic Test Screen

Printer Test

Please note that the Printer test will only work with printers that are Epson ESC/PoS compliant. The serial scanning software will not reliably detect printers that are not ESC/PoS compliant and therefore the tests cannot be relied upon.



An Example of a Printer Test

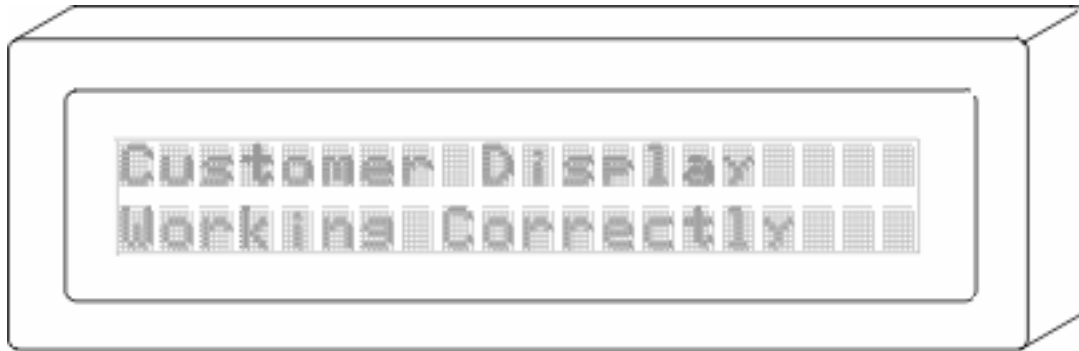
Customer Display Test

Please note that the Customer Display test will only work with displays that are Epson ESC/PoS compliant, these include all of the Epson displays, the DigiPoS CD-5220 and the DigiPoS WD-202 (when set up for ESC/PoS emulation). Start the test by pressing the numbered key next to the menu entry; this will either be menu item 1 or menu item 2.



An Example of a Customer Display Test

The display should now start to perform a variety of tests culminating with the following picture.

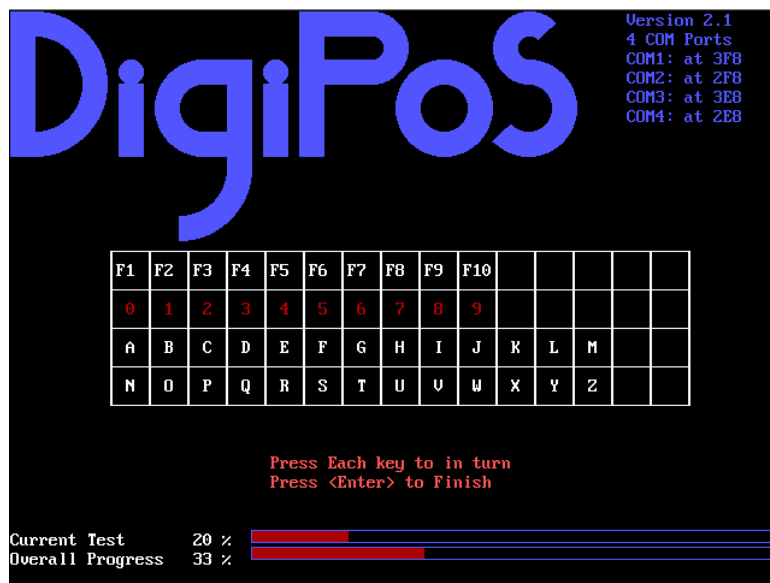


An Example of a Customer Display

If this picture fails to appear then there is probably something wrong with the display and should be investigated further by a qualified technician.

Keyboard Test

Due to the almost infinite variations of keyboard layout and key code assignment this facility can only perform the most basic of tests. The test only allows standard keys, i.e. 0-9 a-z and F1-F10 to be tested.



An Example of a Keyboard Test

On any given PoS keyboard these keys may or may not be present and even if they are present they may be labelled as stock items or type of transaction, for example the key producing the letter “a” may be labelled as “Cheque”. The result of this is that pressing any key on the keyboard may well produce unexpected, but not necessarily incorrect results. Pressing any key 3 times terminates this test.

Magnetic Card Test

The diagnostic software is unable to detect the presence or absence of a magnetic card reader due to the fact that the majority of card readers only transmit data and do not receive data. Because of this the test menu will always show a magnetic card reader test even if there is no reader attached. To test a card reader, select the appropriate menu entry and pass a card through the reader. If the reader is working then the contents of the data tracks will be displayed on the screen along with a question asking if the displayed data is correct. The data displayed should be the same as that embossed or printed on the card. Please note that this test only works with keyboard wedge devices and not serial.



An Example of an MSR Test

The majority of cards will store more data than is visible on the card, this is normal and as long as the display includes the information on the card then it is relatively safe to assume that the card reader is ok. If the card fails to read then try another card or a card from a different supplier. If no data has been received after 10 seconds then the menu will revert to the main test menu. DO NOT swipe cards outside of the magnetic card test. Swiping cards outside of this area will produce unpredictable results.

Bar Code Scanner Test

The diagnostic software is unable to detect the presence or absence of a bar code scanner due to the fact that the majority of bar code scanners only transmit data and do not receive data. Because of this the test menu will always show a bar code scanner test even if there is no reader attached. To test a bar code scanner select the appropriate entry in the main test menu and within 10 seconds scan a bar code. Please note that this test only works with key board wedge scanners and will not work with serial scanners.



An Example of a Bar Code Test

BIOS Set-up Overview

The DigiPoS Retail System contains its own permanently programmed SETUP routine, which allows it to recognize and utilize the system's hardware. For example, one can set the system to identify hard disk and floppy disk drive capacity, the type of video being used, and the amount of memory installed. The BIOS (BASIC Input / Output System) will read this information each time the system boots up.

As setting up the BIOS can be complicated, PC-PoS advises that if any changes to the BIOS are to be made, only competent qualified computer technicians undertake them. There are settings within the BIOS that are operating system dependant and have been set up in accordance to your systems configuration. Altering any of these settings is not advised under any circumstances as any one setting incorrectly set can drastically alter the performance of your DigiPoS and could invalidate the warranty.

The following screenshots are a guide through the CMOS set-up utility for the DigiPoS Millennium. If you need help at any time during this process, press F1 and a small window will pop up describing the appropriate keys to use and the possible selections for the highlighted item. To exit the help window press <Esc> or F1.

Please note that the default settings, (regardless of operating system installation which will be covered later in this section) are shown in **BOLD** where appropriate.

Main BIOS Screen



Details

Standard CMOS Features

Standard settings like date, time, HDD, FDD etc.

Advanced CMOS Features

Advanced settings

Advanced Chipset Features

Advanced settings for the VIA chipset

Integrated Peripherals

Settings for the onboard devices

Power Management Setup

Controls what devices remain active when a computer has been left on with no activity for a set period of time.

PnP/PCI Configurations

Allows you to set IRQ's to a specific configuration such as Plug and Play or Legacy ISA.

PC Health Status

Gives current voltage and temperature measurements inside the DigiPoS

Frequency/Voltage Control

Advanced Settings

Load Fail-Safe Defaults

Loads the Fail Safe default settings that were programmed in at time of manufacture (Not Generally Used as the settings are not OS specific and are only to be used as a last resort)

Load Optimized Defaults

Loads the optimised default settings that were programmed in at time of manufacture (Not Generally Used as the settings are not OS specific and are only to be used as a last resort)

Set Supervisor Password

Allows for the option of a password to be set so that a user is prompted for a password when the computer is switched on or rebooted

Set User Password

As above with the exception that access is restricted to some of the BIOS settings.

Save & Exit Setup

Saves the changes you have made.

Exit Without Saving

Exits the BIOS without saving any changes.

Standard CMOS Features

Phoenix - AwardBIOS CMOS Setup Utility		
Standard CMOS Features		
Date (mm:dd:yy) :	Sun, Apr 28 2002	Item Help Menu Level ► Change the day, Month, year and century
Time (hh:mm:ss) :	13 : 42 : 39	
►IDE Primary Master	[ST320410A]	
►IDE Primary Slave	[None]	
►IDE Secondary Master	[QSI CD-ROM SCR-2421]	
►IDE Secondary Slave	[NONE]	
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Video	[EGA / VGA]	
Halt On	[All, But Keyboard]	
Select Display Device	[CRT]	
Base Memory	640K	
Extended Memory	113664K	
Total Memory	114688K	

↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help
 F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults

General Details

Feature	Options	Description
System Time	HH:MM:SS	Set the system time.
System Date	MM/DD/YYYY	Set the system date.
Diskette 1 Diskette 2	360 kB, 5 ¼" 1.2 MB, 5 ¼" 720 kB, 3 ½" 1.44/1.25 MB, 3 ½" 2.88 MB, 3 ½" Not installed Disabled	Select the type of floppy-disk drive installed in your system. 1.25 MB is a Japanese media format that requires a 3½" 3- Mode Diskette drive.
Video	EGA/VGA CGA 40 CGA 80 Mono	Select EGA/VGA by default or Mono Only if you are using a Mono Monitor
Halt On	All Errors No Errors All, But Keyboard All, But Diskette All, But Disk/Key	All Errors = The system will halt on any error No Errors = The system will halt when there are no errors. All, But Keyboard = The system will halt on any error except a keyboard error All, But Diskette = The system will halt on any error except a diskette error All, But Disk/Key = The system will halt on any error except a diskette error or a Keyboard error

General Details Cont.

Feature	Options	Description
Select Display Device	Auto CRT LCD CRT+LCD TV CRT+TV	Auto = Auto detects Display Type CRT = Cathode Ray Tube (Default Setting) LCD = Liquid Crystal Display CRT+LCD = Dual Output TV = Output to a Television (Optional) CRT+TV = Dual Output (Optional)
System Memory	N/A	Displays amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the amount of memory detected during boot up.

IDE Options Sub Menus

The **Master** and **Slave** sub-menus accessed from the Main Menu control these types of devices:

- Hard disk drives
- Removable-disk drives such as Zip drives
- CD-ROM drives

The DigiPoS BIOS supports up to two **IDE disk adapters**, called **primary** and **secondary** adapters. Each adapter supports one **master drive** and one optional **slave drive** in these possible combinations:

- 1 Master (3.5" HDD without CD ROM)
- 1 Master, 1 Slave (3.5" HDD and CD ROM)
- 2 Masters (2 x 2.5" HDD)
- 2 Masters, 1 Slave (2 x 2.5" HDD and CD ROM)

If you need to change your drive settings, selecting one of the Master or Slave drives on the Main Menu displays a sub-menu like this:

Phoenix - AwardBIOS CMOS Setup Utility		
IDE Primary Master		
IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Primary Master	[Auto]	Menu Level ►► To auto-detect the HDD's size, head... On this channel
Access Mode	[Auto]	
Capacity	20021 MB	
Cylinder	38792	
Head	16	
Precomp	0	
Landing Zone	38791	
Sector	63	

↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help
 F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults

Details

Feature	Options	Description
IDE Primary Master/ Slave/ Secondary Master/ Slave	None Auto Manual	None = Either NO drive is installed or you can disable any drive that may be installed. Manual = Non-Functional in this BIOS. Auto = Auto detect. The drive itself supplies the correct information (Default)

Details Cont.

Feature	Options	Description
Access Mode	CHS LBA Large Auto	CHS = Cylinder, Head, Sector LBA = Logical Block Addressing Large = Large Disk Access Mode Auto = Auto Detect correct mode for HDD in use.
Capacity	N/A	HDD size in Mb
Cylinder	1 to 65,536	Number of cylinders.
Head	1 to 16	Number of read/write heads.
Precomp	1 to 2048 None	Number of the cylinder at which to change the write timing.
Landing Zone	N/A	2048 Number of the cylinder specified as the landing zone for the read/write heads
Sector	N/A	Number of Sectors per track

Advanced BIOS Features

Phoenix - AwardBIOS CMOS Setup Utility Advanced CMOS Features		
Virus Warning	[Disabled]	Item Help
CPU Internal Cache	[Enabled]	
External Cache	[Enabled]	Menu Level ►
CPU L2 Cache ECC Checking	[Enabled]	
Quick Power On Self Test	[Disabled]	Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.
First Boot Device	[Floppy]	
Second Boot Device	[CDROM]	
Third Boot Device	[HDD-1]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot up NumLock Status	[Enabled]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
xTypematic Rate (Chars/Sec)	6	
xTypematic Delay (Msec)	250	
Security Option	[Setup]	
OS Select For DRAM > 64Mb	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
C8000-CBFFF Shadow	[Disabled]	
CC000-CFFFF Shadow	[Disabled]	
D0000-D3FFF Shadow	[Disabled]	
D4000-D7FFF Shadow	[Disabled]	
D8000-DBFFF Shadow	[Disabled]	
DC000-DFFFF Shadow	[Disabled]	
Small Logo (EPA) Show	[Disabled]	

↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help
 F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults

Details

Feature	Options	Description
Virus Warning	Enabled Disabled	This feature warns the user if a program, such as a virus, tries to write to the boot sector of the hard drive. Please note that this does not protect the entire hard drive and if the drive is ever re-formatted or re-partitioned, a warning can be triggered.
CPU Internal Cache	Enabled Disabled	This disables the CPU's internal cache memory. This can be useful when testing memory installed in the computer.
External Cache	Enabled Disabled	Enables or Disables the motherboards Cache Memory. This can be useful for testing if a problem is suspected with the CPU Cache memory.
CPU L2 Cache ECC Checking	Enabled Disabled	Error Correction Checking of the L2 CPU Cache Memory
Quick Power On Self Test	Enabled Disabled	Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system. This is not recommended for system stability

Details Cont.

Feature	Options	Description
First Boot Device Second Boot Device Third Boot Device	Floppy LS120 HDD-0 SCSI CDROM HDD-1 HDD-2 HDD-3 ZIP100 LAN Disabled	Determines which order the computer tries to boot into an operating system from a certain device. Default is as follows: First Boot Device: Floppy Second Boot Device: CDROM Third Boot Device: HDD-1
Boot Other Device	Enabled Disabled	For devices installed that can act as a bootable device.
Swap Floppy Drive	Enabled Disabled	Only valid in systems with two floppy drives. This allows the system to swap drive A to Drive B and vice versa.
Boot Up Floppy Seek	Enabled Disabled	This tests to see if the floppy drive has 40 or 80 tracks. 40 Track drives are only 360Kb where 80 track drives can be 720Kb, 1.2Mb or 1.44Mb, which is the standard today. Because only the 1.44Mb is used in the DigiPoS, this function can be disabled to save time during the POST (Power On Self Test).
Boot Up NumLock Status	Enabled Disabled	Sets the number lock to on or off after boot up.
Gate A20 Option	Fast Normal	Gate A20 refers to the way the system addresses memory above 1Mb (Extended Memory). When this is set to fast, the VIA chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system performance.
Typematic Rate Setting	Enabled Disabled	When enabled, you can specify the parameters for the typematic settings. Usually this is disabled which renders the next two settings irrelevant.
Typematic Rate (Chars/Sec)	6 8 10 12 15 20 24 30	This is the rate at which a character is repeated when you hold down a key on the keyboard.
Typematic Delay (Msec)	250 500 750 1000	When the typematic rate setting is enabled, you can use this setting to determine how long a delay will occur before the character is repeated at the typematic rate.
Security Option	Setup System	If the password option is selected, you can use this setting to determine if the password is required every time the computer boots or only when some one tries to gain access to the BIOS settings.

Details Cont.

Feature	Options	Description
OS Select for DRAM > 64Mb	Non-OS2 OS2	This allows you to access memory over 64MB in OS/2.
Video BIOS Shadow	Enabled	This enables you to move programs from 16 bit ROM to 32 bit RAM since RAM is faster than ROM. This can speed up video and other operations significantly but only in DOS applications since windows 9x, 2K & Xp then load 32 bit replacement programs into the main memory.
C8000-CBFFF Shadow	Disabled	
CC000-CFFFF Shadow	Disabled	
D0000-D3FFF Shadow	Disabled	
D4000-D7FFF Shadow	Disabled	
D8000-DBFFF Shadow	Disabled	
DC000-DFFFF Shadow	Disabled	
Small Logo(EPA) Show	Enabled Disabled	Displays the Yellow EPA Logo during boot up.

Advanced Chipset Features

Phoenix - AwardBIOS CMOS Setup Utility Advanced Chipset Features		
DRAM Clock	[Host CLK]	Item Help Menu Level ►
SDRAM Cycle Length	[3]	
Bank Interleave	[Disabled]	
Memory Hole	[Disabled]	
P2C/C2P Concurrency	[Enabled]	
System BIOS Cacheable	[Disabled]	
Video RAM Cacheable	[Enabled]	
Frame Buffer Size	[8M]	
AGP Aperture Size	[8M]	
AGP-4X Mode	[Enabled]	
AGP Driving Control	[Auto]	
XAGP Driving Value	DA	
Disk on Chip Control	[Disabled]	
Onboard LAN Control	[Enabled]	
Power Supply Type	[AT]	
OnChip USB	[Enabled]	
USB Keyboard Support	[Disabled]	
OnChip Sound	[Auto]	
CPU to PCI Write Buffer	[Enabled]	
PCI Dynamic Bursting	[Enabled]	
PCI Master 0 WS Write	[Enabled]	
PCI Delay Transaction	[Disabled]	
PCI#2 Access #1 Retry	[Enabled]	
AGP Master 1 WS Write	[Disabled]	
AGP Master 1 WS Read	[Disabled]	

↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help
 F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults

Details

Feature	Options	Description
DRAM Clock	Host CLK HCLK-33M HCLK+33M	Host CLK = Front Side Bus Speed (FSB) HCLK-33M = FSB – 33Mhz HCLK+33M = FSB + 33Mhz
SDRAM Cycle Length	3 2	When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do Not Alter this Setting.
Bank Interleave	Disabled 2 Bank 4 Bank	Set as Disabled Other options Non-Functional in this BIOS.
Memory Hole	Disabled 15M – 16M	You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.
P2C/C2P Concurrency	Enabled Disabled	Set as Enabled

Details Cont.

Feature	Options	Description
System BIOS Cacheable	Disabled Enabled	Selecting <i>Enabled</i> allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.
Video RAM Cacheable	Enabled Disabled	Selecting <i>Enabled</i> allows caching of the system BIOS ROM at C0000h-F7FFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.
Frame Buffer Size	2M 4M 8M 16M 32M	This setting dictates how much memory the onboard AGP video controller will use. This is not additional memory but is instead 'shared' from the main memory.
AGP Aperture Size	128M 64M 32M 16M 8M 4M	The AGP Aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Cycles that hit the aperture range are sent to the AGP without translation. See http://www.agpforum.org/ for APG information.
AGP-4X Mode	Enabled Disabled	AGP Accelerated Mode Set as Enabled
AGP Driving Mode	Auto Manual	Set as Auto
Disk On Chip Control	Enabled Disabled	Reserved Function Do Not Alter
Onboard LAN Control	Enabled Disabled	Enables or Disables the onboard network card.
Power Supply Type	AT ATX	Always set to AT
OnChip USB	Enabled Disabled	Select <i>Enabled</i> if you have USB peripherals.
USB Keyboard Support	Enabled Disabled	Enables the use of a USB Keyboard (Standard functions only) outside of an operating system.
OnChip Sound	Auto Disabled	Reserved Function Do Not Alter
CPU to PCI Write Buffer	Enabled Disabled	Enable/ disable PCI post write buffer.
PCI Dynamic Bursting	Enabled Disabled	Enable/ disable PCI Dynamic Bursting
PCI Master 0 WS Write	Enabled Disabled	Set as Enabled
PCI Delay Transaction	Enabled Disabled	Set as Disabled
PCI#2 Access #1 Retry	Enabled Disabled	Set as Enabled
AGP Master 1 WS Write	Enabled	Set as Disabled
AGP Master 1 WS Read	Disabled	

Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility		
Integrated Peripherals		
OnChip IDE Channel 0	[Enabled]	Item Help
OnChip IDE Channel 1	[Enabled]	
IDE Prefetch Mode	[Enabled]	Menu Level ►
Primary Master PIO	[Auto]	
Primary Slave PIO	[Auto]	
Secondary Master PIO	[Auto]	
Secondary Slave PIO	[Auto]	
Primary Master UDMA	[Auto]	
Primary Slave UDMA	[Auto]	
Secondary Master UDMA	[Auto]	
Secondary Slave UDMA	[Auto]	
Init Display First	[AGP]	
IDE HDD Block Mode	[Enabled]	
Onboard FDD Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART 2 Mode	[Standard]	
xIR Function Duplex	Half	
xTX,RX inverting enable	No, Yes	
Onboard Parallel Port	[378/IRQ7]	
Onboard Parallel Mode	[Normal]	
UART 2 Mode	[Standard]	
xECP Mode Use DMA	3	
xParallel Port EPP Type	EPP1.9	
Onboard Serial Port 3	[3E8H]	
Serial Port 3 Use IRQ	[IRQ5]	
Onboard Serial Port 4	[2E8H]	
Serial Port 4 Use IRQ	[IRQ10]	
Onboard Legacy Audio	[Enabled]	
Sound Blaster	[Disabled]	
SB I/O Base Address	[220H]	
SB IRQ Select	[IRQ 5]	
SB DMA Select	[DMA 1]	
MPU-401	[Disabled]	
MPU-401 I/O Address	[330-333H]	
↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults		

Details

Feature	Options	Description
OnChip IDE Channel0	Enabled Disabled	Enables or Disables the Primary IDE channels.
OnChip IDE Channel1	Enabled Disabled	Enables or Disables the Secondary IDE channels.
IDE Prefetch Mode	Enabled Disabled	Set as Enabled

Details Cont.

Feature	Options	Description
Primary Master PIO Primary Slave PIO Secondary Master PIO Secondary Slave PIO	Auto Mode 0 Mode 1 Mode 2 Mode 3 Mode 4	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 <i>Auto</i> mode, the system automatically determines the best mode for each device.
Primary Master UDMA Primary Slave UDMA Secondary Master UDMA Secondary Slave UDMA	Auto Disabled	UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select <i>Auto</i> in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.
Init Display First	AGP PCI Slot	This tells the BIOS where to look first for the display adaptor. This should be set by default to AGP unless you fit a secondary PCI card or completely disable the onboard video adapter.
IDE HDD Block Mode	Enabled Disabled	If your IDE HDD supports block mode, select Enabled for automatic selection of the optimal number of block read/writes per sector the drive can support.
Onboard FDD Controller	Enabled Disabled	This should be enabled if your system has a floppy disk drive (FDD) installed. If the floppy drive is removed, you will need to disable this feature.
Onboard Serial Port 1	Disabled 3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3 AUTO	This item allows you to determine the access onboard serial port 1/port 2 controllers have with which IRQ and I/O address.
Onboard Serial Port 2	Disabled 3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3 AUTO	This item allows you to determine the access onboard serial port 1/port 2 controllers have with which IRQ and I/O address.
UART 2 Mode	Standard HPSIR ASKIR	Reserved Function Do Not Alter
Onboard Parallel Port	Disabled 3BC/IRQ7 378/IRQ7 278/IRQ5	This item allows you to determine access to the onboard parallel port controller with which IRQ and I/O address.
Onboard Parallel Mode	Normal EPP ECP ECP/EPP	Selects the mode for the onboard parallel port. Standard Parallel Port (SPP), Normal EPP (Extended Parallel Port), and ECP (Extended Capabilities Port) ECP+EPP. Select Normal unless you are certain your hardware and software both support EPP or ECP mode.

Details Cont.

Feature	Options	Description
ECP Mode Use DMA (If ECP Mode Selected)	1 3	Select a DMA channel for the parallel port for use during ECP mode.
Parallel Port EPP Type (If EPP Mode Selected)	EPP1.9 EPP1.7	You may have a device that requires an EPP parallel port. When it does it will also state the EPP port standard. Select it here as required.
Onboard Serial Port 3	Disabled 3F8H 2F8H 3E8H 2E8H	This item allows you to determine the access onboard serial port 1/port 2 controllers have with which IRQ and I/O address.
Serial Port 3 Use IRQ	IRQ3 IRQ4 IRQ5 IRQ7 IRQ9 IRQ10 IRQ11	This item allows you to determine the access onboard serial port 1/port 2 controllers have with which IRQ and I/O address.
Onboard Serial Port 4	Disabled 3F8H 2F8H 3E8H 2E8H	This item allows you to determine the access onboard serial port 1/port 2 controllers have with which IRQ and I/O address.
Serial Port 4 Use IRQ	IRQ3 IRQ4 IRQ5 IRQ7 IRQ9 IRQ10 IRQ11	This item allows you to determine the access onboard serial port 1/port 2 controllers have with which IRQ and I/O address.
Onboard Legacy Audio	Disabled Enabled	Enables or Disables the onboard Multimedia device
Sound Blaster	Disabled Enabled	Allows the multimedia device to run in a sound blaster compatible mode. This may be necessary with some software programs.
SB I/O Base Address	220H 240H 260H 280H	Selection for the Input/ Output base address of the onboard multimedia.
SB IRQ Select	IRQ 5 IRQ 7 IRQ 9 IRQ 10	Selection for the IRQ address of the onboard multimedia.
SB DMA Select	DMA 0 DMA 1 DMA 2 DMA 3	Select a DMA channel for the onboard multimedia to use.
MPU-401	Disabled Enabled	Select Enabled to configure the MPU-401 interface.

Details Cont.

Feature	Options	Description
MPU-401	300-303H 310-313H 320-323H 330-333H	Select a base I/O address for the MPU-401 interface

Power Management Setup

Phoenix - AwardBIOS CMOS Setup Utility		Power Management Setup
▶ Power Management [Press Enter] PM Control by APM [No] Video Off Option [Always On] Video Off Method [V/H SYNC+Blank] Soft-Off by PWRBTN [Instant-Off] ▶ Wake Up Events [Press Enter]	Item Help	
	Menu Level ▶	
↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults		

Details

Feature	Options	Description
PM Control by APM	No Yes	If Advanced Power Management (APM) is installed on your system, selecting Yes gives better power savings.
Video Off Option	Always On Suspend -> Off All Modes-> Off	Defines what state your monitor will go into when in power saving mode.
Video Off Method	Blank Screen	This option only writes blanks to the video buffer.
	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.
	DPMS Support	Select this option if your monitor supports the Display Power Management Signalling (DPMS) standard of the Video Electronics Standards to select video power management values.
Soft-Off by PWRBTN	Instant-Off Delay 4 Sec	Reserved Function Do Not Alter

Power Management Sub Menu

Phoenix - AwardBIOS CMOS Setup Utility	
Power Management	
Power Management	[User Define]
HDD Power Down	[Disable]
Doze Mode	[Disable]
Suspend Mode	[Disable]

Item Help

Menu Level >>

↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help
 F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults

Details

Feature	Options	Description
Power Management	User Define Min Saving Max Saving	This option allows you to select the type (or degree) of power saving for Doze, Standby and Suspend modes.
	This table describes each power management mode:	<u>Minimum power management:</u> Doze Mode = 1 hr Suspend Mode = 1 hr <u>Maximum power management:</u> Doze Mode = 1 min Suspend Mode = 1 min
		<u>User Define:</u> Allows you to set each mode individually.
HDD Power Down	Disable	By default, this item is disabled, meaning that no matter the mode of the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes.
	From 1 min to 15 min Max	

Wake Up Events Sub Menu

Phoenix - AwardBIOS CMOS Setup Utility	
Wake Up Events	
VGA	[OFF]
LPT & COM	[LPT/COM]
HDD & FDD	[ON]
PCI Master	[OFF]
Modem Ring Resume	[Disabled]
RTC Alarm Resume	[Disabled]
xDate (of Month)	0
xResume Time (hh:mm:ss)	0 : 0 : 0
Primary INTR	[ON]
►IRQ's Activity Monitoring	[Press Enter]

Item Help

Menu Level ►►

↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help
 F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults

Details

Feature	Options	Description
VGA	OFF ON	Only valid if your monitor supports DPMS
LPT & COM	None LPT COM LPT/COM	This setting allows you to bring the DigiPoS out of Doze or suspend mode if there is activity on either the LPT port, Com Ports or Both.
HDD & FDD	On Off	This setting allows you to bring the DigiPoS out of Doze or suspend mode if there is activity on either the HDD, FDD or Both.
PCI Master	On Off	This setting allows you to bring the DigiPoS out of Doze or suspend mode if there is activity on the PCI Bus from any devices such as the network.
Modem Ring Resume	Disabled Enabled	Reserved Function Do Not Alter
RTC Alarm Resume	Enabled Disabled	This setting allows you to bring the DigiPoS out of Doze or suspend mode at a specific time.
Primary INTR	ON OFF	Selects the Primary Interrupt to either on or off.
IRQ's Activity Monitoring	-	Allows you to manually set which IRQ's when activated can bring the DigiPoS out of Doze or Suspend Mode.

PnP/PCI Configurations

Phoenix - AwardBIOS CMOS Setup Utility PnP/PCI Configurations		Item Help
PNP OS Installed	[Yes]	Menu Level ►► Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure non-boot devices
Reset Configuration Data	[Disabled]	
Resources Controlled By	[Auto (ESCD)]	
x IRQ Resources	Press Enter	
x DMA Resources	Press Enter	
PCI/VGA Palette Snoop	[Disabled]	
Assign IRQ For VGA	[Disabled]	
Assign IRQ For USB	[Enabled]	

↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help
 F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults

Details

Feature	Options	Description
PNP OS Installed	Yes No	Select Yes if the operating system environment is Plug-and-Play compatible (e.g., Windows 9x).
Reset Configuration Data	Disabled Enabled	Normally, this field is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Set-up if you have installed a new add-on device and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.
Resources Controlled By	Auto(ESCD) Manual	The Plug and Play Award BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select Auto, all the interrupt requests (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.
IRQ Resources	Legacy ISA PCI/ISA PnP	When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt: <u>Legacy ISA</u> Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). <u>PCI/ISA PnP</u> Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

Detail Cont.

Feature	Options	Description
DMA Resources	Legacy ISA PCI/ISA PnP	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: <u>Legacy ISA</u> Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). <u>PCI/ISA PnP</u> Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.
PCI/VGA Palette Snoop	Disabled Enabled	Reserved Function Do Not Alter
Assign IRQ For VGA	Disabled Enabled	Reserved Function Do Not Alter
Assign IRQ For USB	Disabled Enabled	If the USB ports are not being used, this function allows you to release the IRQ that was being used for the USB root hub.

PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility		
PC Health Status		
Current CPU Temp. 36°C/96°F Current System Temp. 39°C/102°F Current CPUFAN1 Speed 6553 RPM Current CPUFAN2 Speed 5041 RPM VCore 1.77 V 2.5V 2.52 V 3.3V 3.31 V 5V 5.15 V 12V 11.88 V 2.5V 2.52 V CPU Fan Warning Speed [Disabled]		Item Help Menu Level ►
↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults		

Details

Feature	Options	Description
Current CPU Temp	-	This gives the current temperature of the CPU case.
Current System Temp.	-	This gives the temperature of the temp junction inside the CPU and NOT the DigiPoS system temperature.
Current CPUFAN1 Speed	-	This is the current speed of the CPU fan located opposite the HDD (underneath the CD ROM if you have one fitted) and is used for the air tunnel cooling system.
Current CPUFAN2 Speed	-	This is the current speed of the PSU fan located behind the HDD.
Voltage Measurements	-	These are real time voltage measurements from the motherboard.
CPU Fan Warning Speed	Disabled 4000 RPM 5000 RPM 6000 RPM	Select the lower limit for the CPU Fan speed. If the CPU fan drops beyond the limit, a warning mechanism programmed into your system will be activated.

Frequency/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility	
Frequency/Voltage Control	
Auto Detect DIMM/PCI Clk	[Enabled]
Spread Spectrum	[Disabled]
CPU Host/PCI Clock	[Disabled]
	Item Help
	Menu Level ►
↑ ↓ → ← : Move +/-/PU/PD: Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6: Fail-Safe Defaults F7 : Optimised Defaults	

Details

Feature	Options	Description
Auto Detect DIMM/PCI Clk	Enabled Disabled	To reduce the occurrence of electromagnetic interference (EMI), the BIOS detects the presence or absence of components in the ISA and PCI slots and turns off system clock generator pulses to empty slots.
Spread Spectrum	Enabled Disabled	When the system clock generator pulses, the extreme values of the pulses generates excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device and is therefore not recommended.
CPU Host/PCI Clock	Default 66/33Mhz 68/34Mhz 75/37Mhz 83/41Mhz 95/31Mhz 100/33Mhz 103/34Mhz 112/37Mhz 124/31Mhz 133/33Mhz 138/34Mhz 140/35Mhz 150/37Mhz	Select Default or select a timing combination for the CPU and the PCI bus. When set to Default, the BIOS uses the actual CPU and PCI bus clock values which is the recommended setting.

Operating System Dependant Settings

The defaults that were covered above are generalised and some settings need to be altered in order to gain the maximum performance from your DigiPoS when using certain operating systems. The following list describes the operating system dependant settings and their reasons.

DOS

Advanced Bios Features

Feature	Options	Reason
Video BIOS Shadow	Enabled	This enables you to move programs from 16 bit ROM to 32 bit RAM since RAM is faster than ROM. This can speed up video and other operations significantly but only in DOS
C8000-CBFFF Shadow	Enabled	
CC000-CFFFF Shadow	Enabled	
D0000-D3FFF Shadow	Enabled	
D4000-D7FFF Shadow	Enabled	
D8000-DBFFF Shadow	Enabled	
DC000-DFFFF Shadow	Enabled	

Advanced Chipset Features

OnChip USB	Enabled Disabled	Select <i>Enabled only</i> if you have USB peripherals such as a keyboard or mouse.
USB Keyboard Support	Enabled Disabled	Enables the use of a USB Keyboard (Standard functions only)

Integrated Peripherals

Sound Blaster	Disabled Enabled	Allows the multimedia device to run in a sound blaster compatible mode. This may be necessary with some DOS software programs.
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PnP/PCI Configurations

PNP OS Installed	Yes No	DOS is not Plug and Play Compatible.
Assign IRQ For USB	Disabled Enabled	If the USB ports are not being used, this function allows you to release the IRQ that was being used for the USB root hub.

Windows 95 & NT

The USB Support in Windows 95 (even OSR2) has never been 'outstanding' and we therefore advise that this function is disabled if you are not using USB devices.

Advanced Chipset Features

OnChip USB	Enabled Disabled	Select <i>Enabled only</i> if you have USB peripherals such as a keyboard or mouse.
USB Keyboard Support	Enabled Disabled	Enables the use of a USB Keyboard (Standard functions only)

PnP/PCI Configurations

Assign IRQ For USB	Disabled Enabled	If the USB ports are not being used, this function allows you to release the IRQ that was being used for the USB root hub.
--------------------	----------------------------	--

Power Management

Please note that the Power Management settings should be left in their default state and not activated under Windows NT as it is not supported and may cause system instability.

Windows 98, Me, 2000 & Xp

Please note that the Power Management settings should be left in their default state and not activated

One reason is that Customers have stated that they do not want the system going into standby as the system could be used at any moment and they do not want to wait while the system recovers from either a doze or standby mode.

Windows Xp Special Notes

When installing Windows Xp from scratch, you must disable COM 3 & 4 in the Integrated Peripherals section of the BIOS (First taking note of the settings) before installation has commenced. Once the installation is complete, these ports can be re-activated. This is a quirk between the VIA chipset and Windows XP's plug and play hardware detection routine.

Fault Diagnosis

When a problem occurs with your DigiPoS, it is too easy to suspect complicated electronics or to 'suspect the worst'. This can lead an individual to become blinkered to obvious solutions that will instantly rectify the fault.

Of the technical calls we receive from people having difficulties, simple issues that can easily be resolved by the user attribute 90%. Before proceeding further into this guide, please use the following checklist to eliminate a simple answer to your problem.

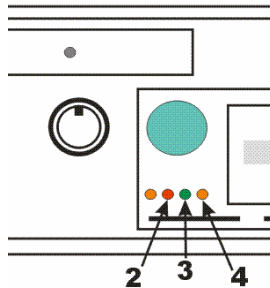
- Check the power cable is securely attached to the external power supply unit and plugged into a 'live' socket supplying the correct voltage.
- The power switch on the power supply is on. When switched on the switch should illuminate but the fan inside the power supply will not rotate until the DigiPoS is switched on using the switch inside the front panel of the DigiPoS.
- The Plug from the power supply is firmly plugged into the DigiPoS and latched.
- None of the cables, power or otherwise are damaged or severed.
- Any peripheral devices (including Modem & Network Cables) are attached to the DigiPoS are connected via the correct port and is orientated correctly.
- The VGA Cable is plugged in securely (using the screws) to the DigiPoS. The DigiPoS will not boot and emit a beep error code if there is no VGA display connected when the unit is powered up.
- There are no floppy disks or CD-ROM's in the drives that would cause the DigiPoS to boot from a device other than the master hard drive.
- Check the brightness and or contrast on the screen have not been turned down or even that the screen has not been turned off. Although this sounds too obvious, we still receive a number of calls where this is the cause of the problem.
- The communication speed of the device is set the same as the DigiPoS. This can cause the device not to work or display/ print ASCII characters randomly.

If any of the cables have come away from their respective connector on the rear of the DigiPoS, DO NOT re-attach them (especially the Keyboard or any powered peripherals) while the system is powered. The correct procedure is to power down the system, re-attach the connector and then re-apply the power. If this is not done, significant damage can result which is outside the terms and conditions of the warranty.

Power Up Test Sequence

During the initial power up phase, the system board checks the internal operating voltages. By observing certain conditions, it is possible to gain an initial indication of the power status of the system. By following the observations below, initial fault diagnosis may be undertaken.

- **Check audible power up beep from system.**
Caution is to be taken here as many people mistake the beep emitted by bar code scanners to be the system beep. To be 100% certain, power down the system, remove the bar code scanner and then re-test.
- **Check the two cooling fans in system are working correctly.**
This can be done without removing the case as the airflow can be felt by putting your hand near the ventilation ports.
- **Check external power supply fan is operative.**
As stated before, the fan will only rotate when the DigiPoS is also switched on.
- **Check HDD spins up to constant RPM.**
- **On the front panel, check the green LED is lit.**
- **On the front panel, check red LED is flashing as the HDD is accessed.**
- **On the internal front panel of DigiPoS Millennium check LED 2 3 & 4 are lit.**
Please note that the fourth LED will be lit if you are in Diagnostic mode.



- **On the external PSU of DigiPoS, the power switch is illuminated.**
- **The memory check completes, without error before the operating system call is initiated.**

At this point the system should exit the primary boot stage and allow the system to be controlled by the user software such as Windows or Linux.

If this does not occur, record at which point the power up sequence fails and proceed to the next section.

Input / Output Port Testing

Before removing or re-inserting any of the connectors on the rear of the DigiPoS, the system must be powered down (with the exception of the USB ports). Failure to do this may result in severe damage not only to the equipment, but also to the individual undertaking the work. Significant electrical voltages can be exposed when a connector is removed and the system powered up.

Please use extreme caution

PS/2 Keyboard Port

If a fault is suspected with the keyboard port, first remove all devices connected to this port including barcode scanners and programmable keyboards. Also remove any adapters, gender changers or extension cables. Once this is done, attach a standard PS/2 keyboard that is a known good unit directly into the DigiPoS and boot the system into the DigiPoS diagnostics program.

If the keyboard works correctly, the problem may be with one of the devices disconnected in order to run this test effectively. Add each of the devices one at a time until the fault re-occurs which will indicate where the problem is.

If the keyboard port does not work correctly, the unit will have to be returned to DigiPoS Systems for further fault analysis.

PS/2 Mouse Port

The only diagnosis available with this port is to try another mouse with a known good unit. If this proves unsuccessful, the DigiPoS unit will have to be returned to DigiPoS Systems for further investigation.

COM Ports

Should a loop back test be run on a DigiPoS Millennium, failure of this test does not indicate a failure with the COM port. As the DigiPoS Millennium is able to supply power, via the 9th pin, to peripheral devices, normal loop back testing will fail. This is because standard loop back testing utilises Pin 9 in its standard form as the ring indicator in part of the test.

The most appropriate way of testing a COM port is with a peripheral PoS device and utilizing the DigiPoS diagnostics. As an example, when using an Epson TM-T88III, the diagnostics will detect the presence of the COM port (as indicated in the top right hand corner) and also the presence of the printer if it has been connected correctly. Once the diagnostics has completed its initial search for devices, you can go into the printer sub menu and test other functions. This proves the COM port and the associated cabling is working correctly. It should also help to diagnose any orientation problems such as COM 1 & 2 being reversed, as the diagnostics will state where it has found the device.

VGA Port

Unless you have specialist equipment, the only way to test the output of the VGA port is to connect a different monitor to the DigiPoS to see if it rectifies the problem. If it does not, please go to the next chapter in this guide.

LAN Port

Testing of a LAN connector and its output requires specialist equipment. If you suspect a problem with the LAN socket of your DigiPoS, please try the following first before contacting DigiPoS Systems:

- Check to see if the connector is firmly inserted into the socket and latched.
- Check to see that the connector is free from damage or dirt.
- Make certain that the cable is in good condition (Please note that any bends smaller than 10 times the diameter of the cable can cause internal damage to the cable not easily seen from the exterior)
- Check the Hub or Switch port where the cable is connected to see if there is any indication of a 'link' light or any other problem.

Parallel Port

An incorrect setting in the BIOS causes most parallel port problems. Before you connect the device, please check the device manual and see if the device requires an SPP, EPP or an ECP port.

If the port is set correctly, the next option is to try another device through the diagnostics similar to the procedures described above for COM port testing.

Should the parallel port fail this test, please contact DigiPoS Systems to have a full diagnostic workup on the DigiPoS to find the cause of the problem.

RJ12 Cash Drawer Loop Through

If there is a problem suspected with these connectors, connect the cash drawer directly into the base of the printer and conduct a cash drawer fire test (either through the Diagnostics or via other software). If this resolves the problem, please contact DigiPoS Systems. If it does not, there is either a problem with the cash drawer or the PoS printer.

Sound Connectors

The only diagnosis available with these connectors is to try another output device such as headphones that is known good. If this proves unsuccessful, please contact DigiPoS Systems for further instructions.

USB Connectors

The only diagnosis available with this port is to try another device with a known good unit. If this proves unsuccessful, the DigiPoS unit will have to be returned to DigiPoS Systems for further investigation.

Powered Port Testing

Before removing or re-inserting any of the connectors on the rear of the DigiPoS, the system must be powered down (with the exception of the USB ports). Failure to do this may result in severe damage not only to the equipment, but also to the individual undertaking the work. Significant electrical voltages can be exposed when a connector is removed and the system powered up.

Please use extreme caution

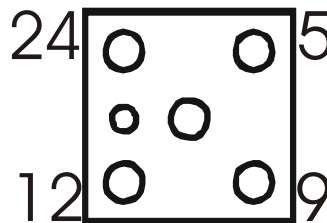
As each of the COM ports, the 2.5mm Barrel and the Hosiden connector are capable of supplying power to peripherals, should a peripheral fail to power correctly or show an error relating to power supply, the voltages supplied to these ports will have to be checked. Before any in depth testing is carried out, please first check the condition of the relevant fuse by removing it and testing it out of circuit as this is the first component designed to fail in the event of a fault. **DO NOT** replace the fuse with another of higher rating other than specified in this manual. Failure to do this will void the warranty and may also create a fire hazard.

Voltage Level Checking

If you do not have access to a Multi-meter or you are uncertain how to measure DC voltages, please contact DigiPoS Systems and DO NOT proceed with the following section.

Firstly, measure the voltages available on the Power Distribution Board (PDB) and note these down on the test sheet.

The voltages can be measured by removing a jumper (first noting its initial position) and then probing the connections as follows:



Please check the test sheet for tolerance values.

Next, we need to check the voltages being distributed to the motherboard. These are checked as follows:



And also on the motherboard side to confirm the cable is not damaged or incorrectly connected:



If any of the voltages are missing or are outside of the tolerance values stated on the test sheet, please contact DigiPoS Systems to arrange to have the DigiPoS serviced.

Peripheral Component Check

Once all diagnostic tests and voltage tests have been completed, it is necessary to establish that the peripheral components of the system are not faulty and causing apparent motherboard failures or preventing the DigiPoS from completing a successful boot. Replace each key component using the following the procedure.

- Power down the system.
- Using full Electrostatic discharge (ESD) precautions remove the memory, hard drive, floppy drive, CD ROM and any expansion cards installed.
- Re-Install each component individually, re-booting the DigiPoS each time until all components have been refitted or until the suspect device has been identified.

If none of the devices are found to be suspect, power down and replace the standard peripheral devices and move to 1st level fault finding in the next chapter.

1st Level Fault Finding

The objective of the 1st level test is to identify the possible area of failure and if a local repair can be achieved or if the unit needs to be returned to DigiPoS Systems for further testing and or repair.

System Does Not Boot

(Monitor is blank and there is no start-up sound from the system)

- Remove any installed PCI & ISA cards from the expansion slots and re-test.
- Make sure the RAM is installed correctly by removing it and re-installing it correctly.
- Check to see if there is any problem with the power (+5V, 12V & -12V).

No VGA Output

- Remove any installed PCI & ISA cards from the expansion slots.
- Reset the CMOS by installing a jumper on J7, switching on the DigiPoS briefly, then switch off the DigiPoS and remove the jumper. Once this is done you will have to into the BIOS and re-set all the parameters according to the technical manual for correct operation of the DigiPoS.
- Check the state of SW 2-1 to see if the onboard VGA adapter has been disabled.

Floppy disk failure

- Has the FDD drive been disabled in the BIOS?
- Does the Floppy disk cable show any signs of damage?
- Is the cable plugged in correctly taking note of the correct orientation for pin 1?
- Change the FDD drive with a known working unit and re-test.
- Are the connectors on the motherboard or the FDD in good condition with no bent or misaligned pins?
- Is the POWER (+5V & +12V) within specified tolerances?

Hard disk failure

- Has the Hard drive been disabled in the BIOS?
- Does the Hard Drive disk cable show any signs of damage?
- Is the cable plugged in correctly taking note of the correct orientation for pin 1?
- Change the Hard Drive with a known working unit and re-test.
- Are the connectors on the motherboard or the HDD in good condition with no bent or misaligned pins?
- Is the POWER (+5V & +12V) within specified tolerances?
- Has the Hard Drive jumpers been set correctly for either Master or Slave configuration?

(Please check the individual drive type and contact DigiPoS Systems for the appropriate setting)

CD ROM Failure

- Has the CD ROM been disabled in the BIOS?
- Does the CD ROM cable show any signs of damage?
- Is the cable plugged in correctly taking note of the correct orientation for pin 1?
- Change the CD ROM with a known working unit and re-test.
- Are the connectors on the Riser Card or the CD ROM in good condition with no bent or misaligned pins?
- Is the POWER (+5V & +12V) within specified tolerances?

COM port failure

- Remove any installed PCI & ISA cards from the expansion slots.
- Enter BIOS and make certain that the COM ports are active and set correctly.
- Check to see if the COM port cable (and DC power cables) inside the DigiPoS does not show any signs of damage and are inserted into the correct sockets.
- Is there any problems with the -12V?

Parallel Port Failure

- Remove any installed PCI & ISA cards from the expansion slots.
- Enter BIOS and make certain that the LPT port is active and set correctly.
- Check to see if the LPT cable inside the DigiPoS is damaged and also is inserted correctly into the motherboard.

Disk On Chip Failure

- Check that the jumper settings are correct.
- Check the orientation of the Disk on Chip is correct.
- Check to see if there is any external damage showing to the device and that all pins are located in the socket correctly.

Onboard LAN Failure

- Check that the cable is inserted correctly and that it is the correct type of cable (Not a cross over cable when connected to a hub etc).
- Check the BIOS to see if the onboard LAN is active and set correctly.
- Inspect the connectors inside the LAN socket on the rear of the DigiPoS for damage or foreign objects.
- Use the RSET8139.EXE program to run further tests and diagnostics.

System Hold or Freeze

- Remove any installed PCI & ISA cards from the expansion slots.
- Enter the BIOS and check the settings are correct according to the type of operating system used and the type of DigiPoS configuration.
- Make sure the RAM is installed correctly by removing it and re-installing it correctly.
- Run a full system diagnosis of all peripheral components including CPU, RAM, HDD, FDD, Riser Card and CD ROM if fitted.
- A system freeze or hold can also be caused by a multitude of reasons within any operating system or software. If you continue to experience problems with the DigiPoS it is recommended that you re-install the operating system and or software.

Test Sheet Completion

The following test result sheet should be used throughout the testing procedure to record the failure condition of the DigiPoS. If after completing the procedure the DigiPoS cannot be repaired locally, please contact your nearest DigiPoS Systems office and speak to a technical representative to discuss the problems you are having. If you are asked to return the DigiPoS, a copy of the test sheet must be forwarded to your local DigiPoS Systems office observing any local RA procedures as this will help expedite the repair procedure.

After the repair process has been undertaken, the DigiPoS will be returned with a failure notification attached. If no fault can be found then the technicians at the local DigiPoS Systems office as well as the technical manager will undertake a training/diagnostic investigation to prevent any equipment being returned with no fault found and to minimise future disruptions to your operation.

Test Sheet

System S/No:	M/Board S/No:
Date of Test:	Company Name:
Engineer:	DigiPoS Systems Office:

Test	Result		
	Comments	Check List	
Jumper Setting Check 850Mhz – Millennium 1Ghz - PowerPoS		OK ☐ OK ☐	Failed ☐ Failed ☐
Power Up Sequence:			
Audible System Bleep		OK ☐	Failed ☐
Power ON LED		OK ☐	Failed ☐
HDD Constant RPM		OK ☐	Failed ☐
HDD Access LED Activates		OK ☐	Failed ☐
Video Enabled		OK ☐	Failed ☐
Memory Check		OK ☐	Failed ☐
Ext PSU Fan (When Power Applied)		OK ☐	Failed ☐
Ext PSU Switch Illumination		OK ☐	Failed ☐
BIOS Diagnostic Pass		OK ☐	Failed ☐

Voltage Check	Comments	Result	OK	Fail
+24V PDB $\pm 5\% = 22.8 - 25.2$		Actual V	☐	☐
+12V PDB $\pm 5\% = 11.4 - 12.6$		Actual V	☐	☐
+9V PDB $\pm 5\% = 8.55 - 9.45$		Actual V	☐	☐
+5V PDB $\pm 5\% = 4.75 - 5.25$		Actual V	☐	☐
+5V Main $\pm 5\% = 4.75 - 5.25$		Actual V	☐	☐
+12V Main $\pm 5\% = 11.4 - 12.6$		Actual V	☐	☐
-12V Main $\pm 10\% = 10.8 - 13.2$		Actual V	☐	☐

Peripheral Component Changes	Comments		
CPU		OK ☐	Failed ☐
RAM		OK ☐	Failed ☐
HDD		OK ☐	Failed ☐
FDD		OK ☐	Failed ☐
CD ROM		OK ☐	Failed ☐

Notes

Signed:	Print:

WARRANTY POLICY

Limited Warranty

This product is warranted to be free of defects in materials and workings. This warranty period shall begin from the date of the accompanying invoice and will be in effect for a period of 3 Years.

Warranty Return Procedures

The customer must call the DigiPoS Systems representative's technical support department or DigiPoS Systems directly first so that any primary fault diagnosis can be carried out. If the fault remains, DigiPoS Systems will issue a Return Authorization form, which must be filled out and returned with the following information:

- 1) *Contact Name and Physical Address.***
- 2) *Phone Number including any area or country codes.***
- 3) *Model Number.***
- 4) *Serial Number.***
- 5) *Invoice Number.***
- 6) *Date of Purchase.***
- 7) *Detailed description of the fault.***

Failure to provide complete and correct information will result in significant delays in processing your application for a returns authorization. Once your request has been processed, a Returns Authorization number will be issued and this must be attached to the goods being returned. Only at this stage can the goods now be returned. Any merchandise sent for repair without a valid Returns Authorization number correctly displayed on the packaging will not be accepted and might incur additional costs. All freight costs to return the DigiPoS back to DigiPoS Systems are the responsibility of the customer except where special authorization for freight exemption has been granted by a DigiPoS Systems management representative.

THE FOLLOWING SHALL VOID WARRANTY

Any unauthorized service, modification, tampering, any damages due to accident, misuse, abuse and or operation outside of electrical specifications shall void the warranty. This also includes modification of the specification of the DigiPoS as it was originally supplied including hard drive, memory, CPU, floppy disk drives, expansion cards and any other additional equipment not mentioned here specifically.

There will be charges for labour and/or materials for repairs carried out after the warranty period has expired. Please call your nearest DigiPoS Systems office for a quotation on post warranty service.

DigiPoS Systems Global Office Locations

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