

IEI Technology Corp.

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PPC-5350GS

RoHS Compliance, 15" IP65 Panel PC

USER MANUAL



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REVISION HISTORY

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ABOUT THIS MANUAL

This document covers the description and installation instructions for the PPC-5350GS flat panel PC.

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PACKING LIST

Before installing the LCD workstation, please make sure that the following items have been shipped:

- 1 x Carton
- 1 x Power cable
- 1 x IDE cable
- 1 x CPU cooler
- 1 x Driver CD
- 1 x Supplementary screw set

If any of these items are missing or damaged, contact the distributor or sales representative immediately.

PRECAUTIONS

SAFETY PRECAUTIONS

- 1. Prior to installing, moving, and modifying the workstation, make sure that the unit's power is turned off and the power cord is disconnected.
- Do not apply voltage levels that exceed the specified voltage range. Doing so may cause fire or an electrical shock.
- 3. Electric shock can occur if the panel is opened. Do not drop or insert any objects into the ventilation openings of the workstation.
- Only qualified engineers from certified system integrators or VARs are allowed to make necessary functional modifications to the workstation, e.g., adding a touch screen. IEI offers the customization service on a pre-order basis.
- If considerable amount of dust, water, or fluids entered the workstation, turn off the power supply immediately, unplug the power cord, and contact the vendor.
- 6. Explosions may occur with installations in environments where flammable gases are present.
- Fault-tolerant and failsafe designs should be implemented with the use of the series models on transportation vehicles, ships, safety/security devices, or medical devices not related to life-support functionalities.

Users/integrators should take the responsibility for implementations with adequate levels of reliability and safety.

 Preventive designs should be implemented so as to avoid the communications faults between the workstation and the PC/workstation/terminals that controls it.

HANDLING PRECAUTIONS

- 1. Do not drop the workstation against a hard surface. Doing so may damage the display.
- 2. Do not strike or exert excessive force onto the touch panel.
- 3. Touching the touch panel using a sharp object may damage the LCD panel.
- 4. Avoid environments exposed to direct sunlight, dust, or chemical vapors.
- The workstation is actively cooled. In no circumstances should the workstation operate with the openings obstructed by foreign objects. However, the ambient temperature of the installation site should be observed and controlled to avoid overheating the workstation.
- 6. Condensation might form inside the workstation chassis if exposed to sudden changes in temperature.
- Carefully route the power cord so that people cannot step on it. Do not place anything over the power cord.
- If the equipment should be left unused for an extended period of time, disconnect it from the power source to avoid damage by transient over-voltage.
- 9. If any of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work properly, or the user cannot get it to work according to the user manual.
 - The equipment has been dropped and damaged.
 - The equipment shows obvious signs of breakage.



Any changes or modifications made to the equipment that are not expressly approved by the relevant standards could void the authority to operate the equipment.

ADDITIONAL INFORMATION

MAINTENANCE AND CLEANING

Note the following precautions before beginning to clean the LCD workstation.

When cleaning any single part or component of the computer, please read and understand the details below fully.

- Except for the properly installed front LCD panel, never spray or squirt liquids directly onto any computer component. To clean the device, please rub it with a piece of dry and soft cloth or a slightly moistened cloth with the exterior casing.
- The interior of the LCD workstation does not require cleaning. Keep fluids away from the LCD workstation and the interior of it.
- Be cautious of the tiny removable components when using a vacuum cleaner to absorb the dirt on the floor.
- Turn the system off before cleaning up the LCD workstation.
- Never drop any tiny objects through the openings of the LCD workstation or get circuit board damp or wet.
- Be cautious of all kinds of cleaning solvents or chemicals when using it for the sake of cleaning. Some individuals may be allergic to the ingredients.
- Avoid any food, drink or cigarette around the LCD workstation.

CLEANING TOOLS

Although many companies have created products to help improve the process of cleaning the computer and peripherals, users can also use household items to clean their computers and peripherals. Below is a list of items to use while cleaning the computer or computer peripherals.

Please keep in mind that some components in the computer may only be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- Cloth A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, it is I recommended to rub it with a piece of cloth.
- Water or rubbing alcohol Moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer.
- Unknown solvents may be harmful to the plastics parts.
- Vacuum cleaner Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- Cotton swabs Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in the keyboard, mouse, and other locations.
- *Foam swabs* Whenever possible it is better to use lint free swabs such as foam swabs.

ESD PRECAUTIONS

Observe all conventional anti-ESD methods while handling the components contained within the LCD should the need arise for adding a functionality. The use of a grounded wrist strap and an anti-static work pad is recommended. Avoid dust and debris or other static-accumulating materials in the work area.

MANUAL CONVENTIONS



Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The word "warning" is written as "**WARNING**," both capitalized and bold and is followed by text in italics. The italicized text is the warning message.



Cautionary messages should also be heeded to reduce the chance of losing data or damaging the system. Cautions are easy to recognize. The word "caution" is written as "**CAUTION**," both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.



These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can avoid making mistakes. Notes are easy to recognize. The word "note" is written as "**NOTE**," both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

Lists

Bulleted Lists: Bulleted lists are statements of non-sequential facts that can be read in any order. Each statement is preceded by a round black dot "•" or bullets in other shapes.

Numbered Lists: Numbered lists describe sequential steps should be followed in order.

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Introduction

1.1 PPC-5350GS Flat Panel PC Overview

The PPC-5350GS flat panel PC is a flexible, multi-functional flat panel PC that can be applied in diverse operational environments and implemented in multi-faceted applications. The PPC-5350GS comes fully kitted with a high-performance motherboard, CPU, power supply unit and a host of other peripheral interface connectors. The PPC-5350GS is designed for ease of use and easy installation.

1.1.1 PPC-5350GS Model Variation

PPC-5350GS/	СРИ	Socket/	Resistive
		On board	touch screen
A300	Pentium M / Celeron M FSB 400 MHz	Socket 479	No
A300/T-R	Pentium M / Celeron M FSB 400 MHz	Socket 479	Yes
A300-800Z	ULV Celeron M 800 MHz	On board	No
A300-800Z/T-R	ULV Celeron M 800 MHz	On board	Yes

Four IEI PPC-5350GS models are available. The models are listed in Table 1-1.

Table 1-1: PPC-5350GS Model Variation

1.1.2 PPC-5350GS Flat Panel PC Applications

The PPC-5350GS flat panel PC is designed for rigorous industrial environments where it may be exposed to both heat and moisture. Its durability and strength also makes it an ideal choice for public access computers. Some possible applications include:

- Automated manufacturing processes
- Public information gathering point

1.1.3 PPC-5350GS Flat Panel PC Features

Some of the features of the PPC-5350GS flat panel PC include:

- Intel Pentium M / Celeron M mobile CPU support
- Low power consumption and thermal distribution
- Dual DDR memory DIMM support up to 2GB SDRAM

- Aluminum die-casting IP65, high brightness 15" industrial panel
- Serial ATA interface support
- Dual 10/100/Gigabit Ethernet support
- Simplified installation process
- RoHS compliance

1.2 PPC-5350GS External Overview

1.2.1 General Description

The PPC-5350GS flat panel PC is a rectangular cubic structure that comprises of a screen, rear panel, top panel, bottom panel and two side panels (left and right). An aluminum frame surrounds the front screen. The rear panel provides screw holes for a wall-mounting bracket, and an arm mounting interface. The top panel and the side panel provide retention screw holes for panel mounting and rack/cabinet installation. The right panel also provides access to a CD drive. The bottom panel provides access to external interface connectors that include LAN, USB 2.0, audio and serial port connectors.

1.2.2 Front Panel

The front side of the PPC-5350GS is a flat panel 15" TFT LCD screen surrounded by an aluminum frame.



Figure 1-1: PPC-5350GS Front View

1.2.3 Rear Panel

The rear panel provides access to four retention screw holes that support a wall-mounting bracket. The retention screw holes are circled in **Figure 1-2**.



Figure 1-2: PPC-5350GS Rear View

1.2.4 Top Panel

The top panel provides access to two retention screw holes that support to secure the back cover to the chassis. The retention screw holes are circled in **Figure 1-3** below.



Figure 1-3: PPC-5350GS Top View

1.2.5 PPC-5350GS Bottom Panel

The bottom panel shown in Figure 1-4 has the following interfaces:

- 1 x Power supply unit (PSU) plug socket
- 3 x Audio jacks
- 1 x Power switch
- 1 x VGA connector
- 5 x Serial port (COM) connectors
- 4 x USB 2.0 connectors
- 1 x DVI connector
- 2 x PS/2 keyboard/mouse connectors
- 2 x RJ-45 connectors
- 1 x Compact Flash slot





1.2.6 Right Side Panel

The right side panel provides access to the PCMCIA card door and a fan ventilation vent.

(See Figure 1-5)



Figure 1-5: Right View

1.2.7 Left Side Panel

The left side panel provides access to the CD drive. (See Figure 1-6)



Figure 1-6: Left View

1.2.8 Frame

An aluminum frame surrounds the 15" TFT LCD screen. This aluminum frame has 12 small screw holes that are used when the flat panel PC is mounted into a panel. These screws are circled in **Figure 1-7**.



Figure 1-7: Frame Rear View (12 panel mount retention screws)

1.3 PPC-5350GS Internal Overview

The PPC-5350GS internal components are configured in a three level format. An elevated platform on the right side of the chassis supports a HDD and a CD drive. On the second level, below the elevated platform, are a motherboard and a PSU module. The motherboard and the PSU module are installed on a metal sheet that protects the rear of the 15" TFT LCD screen. Below the metal sheet is a circuit board that is connected to the screen and the motherboard. This PCB is found on the right side of the chassis below the elevated platform.

1.4 PPC-5350GS Specifications

1.4.1 Preinstalled Hardware Components

The PPC-5350GS flat panel PC has the following preinstalled components:

- 1 x Motherboard
- 1 x 15" TFT LCD screen
- 1 x Power supply unit (PSU)
- 1 x PCI riser card

The technical specifications for these components and the system are shown in the sections below.

1.4.2 System Specifications

The technical specifications for the PPC-5350GS system are listed in Table 1-2.

SPECIFICATION	DETAIL
Front Panel	Aluminum Front Panel
Chassis	Heavy-duty Steel
LCD Panel	15" TFT LCD
Resolution	1024 x 768 (XGA)
Brightness	350 cd/m ²
LCD MTBF	50,000 hrs
Backlight MTBF	30,000 hrs

Touch Screen	Optional Resistive type touch screen with RS-232 interface
Display	Support Dual Display (CRT, DVI)
Add-On Card (Optional)	Supports PCI, Mini PCI, CFII & PCMCIA
Drive Bay	One slim type CD-ROM bay
Power Supply	150W AT Power
Mounting Feature	Panel, Arm, Wall, or Rack
Color	Silver (PANTONE PMS-8001)
Operating Temperature	0~50°C
Relative Humidity	5 ~ 95%, non-condensing
Vibratian	5 - 17Hz, 0.1" double amplitude displacement.
VIDIALION	17 - 640Hz, 1.5G acceleration, peak to peak.
Shock	10G Acceleration, peak to peak (11ms)
Dimension	410(W) x 309(H) x 110(D) mm
Environment	RoHS Compliant

Table 1-2: PPC-5350GS Specifications

1.4.3 PPC-5350GS Motherboard Specifications

The PPC-5350GS comes with an A300 motherboard. The technical specifications of the motherboard are listed in **Table 1-3**.

SPECIFICATION	DETAIL
CPU	Onboard ULV Intel Celeron M 800MHz or
CFU	Socket-479 base Intel Pentium M / Celeron M, FSB 400 MHz
Northbridge	855GME
Southbridge	ICH4
FSB	400 MHz
Memory	2 x DDR 266/333 DIMM sockets, total up to 2GB
BIOS	AMI BIOS Label
Graphics	CRT integrated in Intel 855GME
	DVI integrated in Silicon image SiL164
	LVDS Dual 18-bit TTL LCD integrated in Intel 855GME

SSD	1 x CFII
Audia	AC'97 (ALC655) supports SPK-OUT, MIC-IN, LINE-IN,
	LINE-OUT
Ethernet	2x GbE (Realtek RTL8110S)
COM	1x RS-232/422/485 (detected by jumper)
COM	5x RS-232
	6 x USB 2.0 connects, 4 by external connector and 2 by 2x4
036 2.0	pin header with housing
Drive Interfaces	2 x 44pin IDE
LPT	1 x LPT connector
KB/ MS	2 x PS/2 mini DIMM connector
Super I/O	ITE IT8712F-A/IXS
Extension	1x PCI
Disting 1/0	4 input/ 4 output DIO 2x5 pin header connector without
	housing

Table 1-3: Motherboard Specifications

1.4.4 Flat Panel Screen

The PPC-5350GS comes with a 15" TFT LCD monitor at the front of the flat panel PC (see **Figure 1-1**). The specifications for the LCD monitor are shown in **Table 1-4** below.

SPECIFIATION	DETAILS
Model	AUO-G150XG01
Size	15"
Resolution	XGA (1024 x 768)
Active Area (mm)	304.1 x 228.1
Pixel Pitch (mm)	0.297
Mode	TN
Number of Colors	262K
Color Saturation (%)	60
View Angel (H/V)	130/120

Brightness (cd/m²)	350
Contrast Ratio	500:1
Response Time (ms) (at 25°C)	12
Power Consumption (W)	11.5
Interface	1ch LVDS
Supply Voltage (V)	3.3
Backlight	2 CCFL
Outline Dimensions (mm)	326.5 x 253.5 x 12.0
Weight (g)	1100

Table 1-4: 15" TFT LCD Monitor Specifications

1.4.5 Power Supply Unit (PSU)

The PPC-5350GS flat panel PC comes with a 150W, RoHS compliant PSU. The PSU has an MTBF greater than 100,000 hours. The maximum power output for the PSU is shown below.

- +3.3V and +5V Combined Power 85W MAX
- +3.3V ,+5V and +12V Combined Power 150W MAX



Under no circumstances is the PSU case to be opened. The PSU module is not user serviceable and there are dangerous high-voltages inside the case. If there are any problems with the PSU module, please contact the dealer or reseller immediately.

The specifications for the PSU module are shown in (Table 1-5).

	Voltage	AC90V ~ 265VAC Full Range					
INPUT	Frequency	47 ~ 63Hz					
	Input Current	4A(RMS)@115VAC					
		2A(RMS)@230VAC					
	Inrush Current	50A Max for 115VAC					
		80A Max for 230VAC					
Ουτρυτ	Voltage (V)	+3.3V	+5V	+12V	-12V	5VSB	
	Max. Load (A)	10A	14A	4.2A	0.3A	2A	
	Min. Load (A)	0.3A	1A	0.3A	0A	0A	
	Ripple and Noise (mV)	50mV	50mV	120mV	120mV	50mV	
	+3.3V & +5V≦85W						
	Watt	150W					
	PFC	Active					
GENERAL	Hold-up time	17ms minimum					
	Efficiency	68%					
	MTBF	100,000hrs					
	Temerature	0~35℃ (Operating)					
		-20~80℃ (Storage)					
	Dimension	150mm (W) x 81.5mm(H) x 40mm (D)					

Table 1-5	: Power	· Supply \$	Specifications
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1.5 **OEM** Customizations

There are a number of OEM customizations available to users. These include the following:

- Preinstalled PCMCIA card
- Preinstalled SATA drives
- Memory chips with different sizes
- Different CPU
- Preinstalled HDD
- Preinstalled CD drive

To implement any of the above OEM customizations please contact the PPC-5350GS reseller or vendor. Alternatively, please contact an IEI sales representative directly.

1.6 Dimensions

The dimensions of the PPC-5350GS flat panel PC are shown in **Figure 1-8** below.



Figure 1-8: Dimensions (units in mm)



A300 Motherboard

2.1 Introduction

The PPC-5350GS flat screen PC contains an A300 motherboard. The motherboard is the heart of any computer and is responsible for transmitting, receiving and processing data as well as driving the different onboard devices. This chapter gives a brief introduction to the A300 motherboard. For more complete details on the connectors and the different implementations of the A300, please refer to the A300 user guide.

2.2 CPU Support

The A300 installed in the PPC-5350GS supports socket 479, Intel Pentium M / Celeron M FSB 400 MHz CPU and onboard ULV Intel Celeron M 800MHz CPU.

2.3 Onboard Chipsets

2.3.1 Northbridge and Southbridge Chipsets

The following chipsets are preinstalled on the board:

- Northbridge: Intel 855GME
- Southbridge: ICH4

The following two sections (**Section 2.3.2** and **Section 2.3.3**) list some of the features of the 855GME and the ICH4 chipsets. For more information on these two chipsets please refer to the Intel website.

2.3.2 855GME Northbridge Chipset

The 855GME northbridge chipset comes with the following features:

- 400 MHz system bus delivers a high-bandwidth connection between the processor and the platform
- Integrated graphics utilizing Intel® Extreme Graphics 2 technology
- AGP 4X support
- Three USB host controllers provide high-performance peripherals with 480
 Mbps of bandwidth, while enabling support for up to six USB 2.0 ports.
- The latest AC '97 implementation delivers 20-bit audio for enhanced sound quality and full surround sound capability

- LAN Connect Interface (LCI) provides flexible network solutions such as 10/100 Mbps Ethernet and 10/100 Mbps Ethernet with LAN manageability
- Dual Ultra ATA/100 controllers, coupled with the Intel® Application Accelerator support faster IDE transfers to storage devices
- The Intel Application Accelerator software provides additional performance over native ATA drivers by improving I/O transfer rates and enabling faster O/S load time, resulting in accelerated boot times
- Communication and Network Riser (CNR) offers flexibility in system configuration with a baseline feature set that can be upgraded with an audio card, modem card, or network card
- Error Correcting Code (ECC) support in integrated graphics mode only

2.3.3 ICH4 Southbridge Chipset

The ICH4 southbridge chipset comes with the following features:

- PCI Local Bus Specification, Revision 2.2-compliant with support for 33 MHz PCI operations.
- ACPI Power Management Logic Support
- Enhanced DMA controller, Interrupt controller, and timer functions
- Integrated IDE controller supports Ultra ATA100/66/33
- USB host interface with support for 6 USB ports; 3 UHCI host controllers; 1 EHCI high-speed
- USB 2.0 Host controller
- Integrated LAN controller
- System Management Bus (SMBus) Specification, Version 2.0 with additional support for I₂C devices
- Supports Audio Codec '97, Revision 2.3 specification
- Low Pin Count (LPC) interface
- Firmware Hub (FWH) interface support
- Alert On LAN* (AOL) and Alert On LAN 2* (AOL2)

2.4 Graphics Support

The graphics features listed below are all integrated on the 855GME northbridge chipset.

2.4.1 Display

- Analog display support
- Dual independent pipe support
 - Concurrent: different images and native display timings on each display device
 - Simultaneous: same images and native display timings on each display device
- DVO (DVOB and DVOC) support
 - Digital video out ports DVOB and DVOC with 165 MHz dot clock on each 12-bit interface; two 12-bit channels can be combined to form one dual-channel 24-bit interface with an effective dot clock of 330 MHz
 - O Compliant with DVI Specification 1.0
- Dedicated Local Flat Panel (LFP) LVDS interface

2.4.2 Internal Graphics Features

- Core frequency
 - O Display core frequency of 133 MHz
 - O Render core frequency of 133 MHz

2.4.3 Intel® Embedded Graphics Drivers

- Graphics interface support
 - GDI and DirectX* DirectDraw* with overlay for Windows* XP, Windows* 2000, and Windows* Embedded XP
 - XFree86*, XAA, and Xv for Linux*
- Multi-monitor support
 - Multiple programmable configurations
 - O Dual independent display
 - O DVO device support/TV-Out
- Dynamic display-mode support

- O User definable and extensible
- Embedded video BIOS
 - Common port interface support
 - Full VGA compatibility

2.5 Peripheral Device Interfaces, Connectors, and Slots

The peripheral device connectors, interfaces and slots on the A300 motherboard are listed in the sections below.

2.5.1 OEM Options

Many of the peripheral device connectors listed below are not connected to any devices. These connectors are reserved for OEM customizations. For a customized option, please contact the vendor, reseller or IEI sales representative.

2.5.2 Internal Slots

The slots listed below can all be found on the A300 motherboard.

- 2 x 184 pin DDR-SDRAM sockets
- 1 x PCI slot
- 1 x PCMCIA slot

2.5.3 Internal Peripheral Device Connectors

The peripheral device connectors listed below are located on the A300 motherboard. Pinouts for these connectors can be found in *Appendix A*.

- 1 x Front panel connector
- 1 x Disk LED connector
- 1 x Power button connector
- 1 x System panel connector
- 2 x 44-pin IDE connectors
- 1 x Compact Flash Connector
- 3 x Serial port connectors
- 4 x USB2.0 connectors
- 1 x LCD LVDS connector

- 1 x Power inverter connector
- 1 x ATX power connector
- 3 x Cooling fan connectors
- 1 x 8 bits GPIO connector
- 1 x Audio connector
- 1 x IR interface connector
- 1 x PCMCIA connector

2.5.4 External Peripheral Device Connectors

The peripheral device connectors listed below are located on the rear panel of the A300 motherboard. Pinouts for these connectors can be found in *Appendix A*.

- 1 x Audio connector
- 1 x COM port jumper
- 1 x DVI-I connector
- 3 x Serial port connectors
- 1 x CRT connector
- 1 x PS/2 keyboard connector
- 1 x PS/2 mouse connector
- 2 x USB 2.0 connectors
- 2 x LAN RJ-45 connectors

2.6 PCI Riser Card

A PCI riser card is preinstalled into the PCI slot. The riser card consists of the following components:

- 2 x SATA drive connectors
- 1 x Ali chipset for SATA RAID configuration

These configurations are OEM optimizations. Please contact the reseller, vendor or an IEI sales representative to have these configuration options.



Installation and Configuration

3.1 Installation Precautions

When installing the PPC-5350GS, please follow the precautions listed below:

- Power turned off: When installing the PPC-5350GS make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- Certified Engineers: Only certified engineers should install and modify onboard functionalities.
- Mounting: The PPC-5350GS is a heavy device. When mounting the system onto a rack, panel, wall or arm please make sure that at least two people are assisting with the procedure.
- Anti-static Discharge: If a user open the rear panel of the PPC-5350GS, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear and anti-static wristband.

3.2 Preinstalled Components

The following components are all preinstalled.

- Motherboard
- 15" TFT LCD touch screen
- PSU module (150W, 1U)
- Power switch
- PCI riser card
- Inverter board

Preinstalled OEM customizations may include the following.

- HDD
- CD drive
- PCMCIA card
- SATA drives
- An additional DIMM

Removing and reinstallation of some of the components are described in Chapter 4.

3.3 Installation and Configuration Steps

The following installation steps must be followed.

- Step 1: Unpack the PPC-5350GS.
- Step 2: Set the jumper settings
- **Step 3:** Mount the PPC-5350GS flat panel PC.
- Step 4: Connect peripheral devices to the bottom panel of the PPC-5350GS
- Step 5: Configure the system

3.4 Unpacking

When unpacking the PPC-5350GS flat panel PC, please check the following:

Step 1: Make sure the PPC-5350GS is not damaged.

Step 2: Make sure the pre-packed components listed below are present:

- O 1 x Carton
- 0 1 x Power cable
- O 1 x IDE cable
- O 1 x CPU cooler
- O 1 x Driver CD
- 1 x Supplementary screw set (screws can be used for wall-mounting).

3.5 Jumper Settings



These jumper settings and the jumper locations are described in detail in the User Manual that came with the A300 motherboard. Please refer to this manual for a more detailed understanding of the jumper settings



A jumper is a metal bridge that is used to close an electrical circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To CLOSE/SHORT a jumper means connecting the pins of the jumper with the plastic clip and to OPEN a jumper means removing the plastic clip from a jumper.



The A300 comes with four jumpers. They are listed below.

- Clear CMOS
- CD Card Setup
- LCD Voltage Setup
- COM Port Jumper Settings

3.5.1 Remove the Back Cover

The back cover is secured to the chassis with twelve retention screws, eight on the rear panel, two on the bottom panel and two on the top panel. (See **Figure 3-1** and **Figure 3-2**) Remove the twelve retention screws and lift the cover off the PPC-5350GS.


Figure 3-1: Rear Cover Retention Screws (Real Panel)



Figure 3-2: Rear Cover Retention Screws (Top Panel)



Figure 3-3: Rear Cover Retention Screws (Bottom Panel)

3.5.2 JP2: Clear CMOS Setup

If the motherboard fails to boot due to improper BIOS settings, use this jumper to clear the CMOS data and reset the system BIOS information. To do this, use the jumper cap to close pins 2 and 3 for a few seconds then reinstall the jumper clip back to pins 1 and 2.

If the "CMOS Settings Wrong" message displays during the boot up process, try to correct the fault by pressing the F1 to enter the CMOS Setup menu. Then do one of the following:

- Enter the correct CMOS setting
- Load Optimal Defaults
- Load Failsafe Defaults.

After one of the above has been done, save the changes and exit the CMOS Setup menu.

JP2	DESCRIPTION
1 - 2	Normal (Default)
2 – 3	Clear CMOS

Table 3-1: Clear CMOS Jumper Settings

3.5.3 JP4: CF Card Setup

The CF Card Setup jumper configures a CD card as either the slave or the master.

JP4	DESCRIPTION	
Open	Slave(Default)	
Close	Master	

Table 3-2: CF Card Setup Jumper Settings

3.5.4 JP5: LCD Voltage Setup



Do not change this voltage. This voltage has been preset and is compatible with the currently installed 15" TFT LCD screen. Change this jumper setting may cause damage to the system.

The LCD Voltage Setup jumper sets the voltage for the LCD screen. This setting MUST NOT be changed.

JP5	DESCRIPTION	
1-2	3.3V (Default)	
2-3	5V	

Table 3-3: LCD Voltage Setup Jumper Settings

3.5.5 CN13: COM Port Jumper Setting

The COM Port jumper configures the COM1, COM2 and COM3 serial ports.

CN13	DESCRIPTION		DESCRIPTION
1-3	COM1 pin9 has 5V	2-4	COM2 pin9 has 5V
3-5	COM1 pin9 has 12V	4-6	COM2 pin9 has 12V
7-9	COM3 pin9 has 12V	8-10	COM3 as RS-232
9-11	COM3 pin9 has 5V	10-12	COM3 as RS-422/485
			RS-422: Pin 13, 14, 15, 16
			left open
			RS-485: Pin13 (TX3+) and
			Pin14 (RX3+) are shorted;
			Pin15 (TX3-) and Pin16
			(RX3-) are shorted.

Table 3-4: COM Port Jumper Settings

- There are two "COM3" connectors on the A300 motherboard. One is a 14-pin header. The other is a D-SUB 9-pin. Use the D-SUB connector only if the user prefer COM3 to operate in the RS-232 mode.
- To facilitate access to the serial port jumper configuration pins, CN13 is provided as a pin jumper block on the I/O panel. The location of CN13 is diagrammed below:

3.6 Mounting the System

When mounting the PPC-5350GS flat panel PC onto a arm, onto the wall or onto a panel, it is better to have more than one person to help with the installation to make sure the PPC-5350GS does not fall down and get damaged.

The three methods of mounting the PPC-5350GS are listed below.

- Wall mounting
- Panel mounting
- Arm mounting

The three mounting methods are described below.

3.6.1 Wall Mounting

To mount the PPC-5350GS flat panel PC onto the wall, please follow the steps below.

Step 1: Attach the wall-mounting bracket to the wall.

- 1. Select the location on the wall.
- 2. Carefully mark the four locations on the wall where the retention screws for the wall-mounting bracket to be inserted.
- 3. Drill the holes.
- 4. Align the wall-mounting bracket screw holes to those on the wall.
- 5. Insert the screws into the four retention screw holes (see Figure 3-4).



Figure 3-4: Wall-mounting Bracket

Step 2: Insert the four screws into the four screw holes on the real cover of PPC-5350GS (see Figure 3-5). Make sure a part of the screw protrudes out of the flat panel PC rear cover and can be inserted into the bracket.



Figure 3-5: Chassis Support Screws

Step 3: Slide the PPC-5350GS flat panel PC through the top of the wall-mounting

bracket and insert the four screws protruding from the rear panel of the panel PC into the corresponding spaces on elevated part of the wall-mounting bracket (see **Figure 3-6**).



In the diagram below the bracket is already installed on the wall.



Figure 3-6: Mount the Chassis

3.6.2 Panel Mounting

To mount the PPC-5350GS flat panel PC into a panel, please follow the steps below.

- **Step 1:** Select the position in the panel to mount the PPC-5350GS.
- Step 2: Cut out a section from the panel that corresponds to the dimensions of the PPC-5350GS flat panel PC chassis. The panel section that is cut out must be smaller than the size of the aluminum frame that surrounds the 15" TFT LCD panel but just large enough for the chassis to fit through (see Figure 3-7).



Figure 3-7: Cut the Panel

- **Step 3:** Slide the PPC-5350GS flat panel computer through the previously cut hole. The chassis at the rear of the PPC-5350GS flat panel should slide easily through the hole. Only stop sliding the panel through the hole when the back of the front aluminum frame is flush against the panel.
- Step 4: Insert the panel mounting clamps into the pre-formed holes along the edges of the chassis, behind the aluminum frame. There are a total of 12 panel mounting clamps.



Figure 3-8: Panel Mounting Clamp Positions

Step 5: Tighten the screws that pass through the panel mounting clamps until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 3-9**).



Figure 3-9: Tighten the Panel Mounting Clamp Screws

3.6.3 Arm Mounting

The PPC-5350GS is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 100mm interface pad. To mount the PPC-5350GS on an arm, please follow the steps below.

Step 1: The arm is a separately purchased item. Please correctly mount the arm onto the surface it uses as a base. To do this, refer to the installation documentation that came with the mounting arm.



When purchasing the arm please ensure that it is VESA compliant and that the arm has a 100mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the PPC-5350GS flat panel PC.

- **Step 2:** Once the mounting arm has been firmly attached to the surface, lift the PPC-5350GS flat panel PC onto the interface pad of the mounting arm.
- Step 3: Align the retention screw holes on the mounting arm interface with those in the PPC-5350GS flat panel PC. The PPC-5350GS flat panel PC arm mount retention screw holes are shown in Figure 3-10.



Figure 3-10: Arm Mount Retention Screw Holes

Step 4: Secure the PPC-5350GS to the interface pad by inserting four retention screws through the bottom of the mounting arm interface pad and into the PPC-5350GS flat panel PC.

3.7 Rear Panel Connectors

3.7.1 LCD Panel Connection

To connect the PPC-5350GS flat panel PC to a second monitor, a conventional CRT VGA monitor connector is located on the bottom panel. This panel is a 15-pin, female D-SUB connector.



To use the dual screen option, please configure this option in the Intel[®] **Extreme Graphics** configuration program. To do this, after Windows has loaded, open the **Control Panel**, locate the Intel[®] **Extreme Graphics** icon, click on it. Once open, an option for **Multiple Display** is available. Select this option and select notebook as the primary device.

3.7.2 Ethernet Connection

The two rear panel RJ-45 connectors can be connected to an external LAN and provide internet connectivity to the flat panel PC.

3.7.3 USB Connection

The rear panel USB connectors provide easier and quicker access to external USB devices. The rear panel USB connector is a standard connector and can easily be connected to other USB devices.

3.7.4 Keyboard and Mouse Connection

Two PS/2 connectors on the bottom panel facilitate the connection of a mouse and a keyboard. To connect either device, plug the PS/2 connector at the end of the device (keyboard or mouse) cable into the PS/2 connector on the bottom panel.



System Maintenance

4.1 System Maintenance Introduction

The following system components can fail.

- CPU cooling fan
- PSU module
- DIMM module
- Motherboard

If these components fail they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts. Replacement instructions for the above listed components are described below.

4.2 Motherboard Replacement

A user cannot replace a motherboard. If the motherboard fails it must be shipped back to IEI to be replaced. If the system motherboard has failed, please contact the system vendor, reseller or and IEI sales person directly.

4.3 Back Cover Removal and Elevated Platform Detachment

4.3.1 Back Cover Removal



BEFORE REMOVING THE BACK COVER, MAKE SURE THE POWER IS OFF. Failing to do so may lead to severe damage of PPC-5350GS and injury to the body.



PLEASE TAKE ANTISTATIC PRECAUTIONS WHEN WORKING WITH THE INTERNAL COMPONENTS. The interior of the PPC-5350GS contains very sensitive electronic components. These components are easily damaged by electrostatic discharge (ESD). Before working with the internal components make sure all the anti-static precautions described earlier have been observed.

To replace any of the following components,

- CPU cooling fan
- DIMM module
- PSU module

The back cover of the PPC-5350GS must be removed. To remove the back cover, please follow the steps below.

- Step 1: Remove the PPC-5350GS from the wall (if it was mounted on the wall) or the panel (if it was mounted in the panel). If it was mounted on the wall, remove the wall-mounting bracket secured to the back rear previously.
- Step 2: The back cover is secured to the chassis with twelve retention screws, eight on the rear panel, two on the bottom panel and two on the top panel. (See Figure 4-1 and Figure 4-3) Remove the twelve retention screws and lift the cover off the PPC-5350GS.



Figure 4-1: Rear Cover Retention Screws (Real Panel)

·····	
	1

Figure 4-2: Rear Cover Retention Screws (Top Panel)



Figure 4-3: Rear Cover Retention Screws (Bottom Panel)

4.3.2 Detaching the Elevated Platform

To replace PSU module, the back cover of the PPC-5350GS must be removed and the elevated platform must be detached. Back cover removal is discussed above (see *Section 4.3.1*). To detach the elevated platform, please follow the steps below.

- **Step 1:** The elevated platform is located on the left side of the PPC-5350GS and supports the CD drive and the HDD.
- Step 2: The elevated platform is secured to the chassis with five retention screws, two on the top panel (see Figure 4-4), two on the right panel (see Figure 4-5) and one on the bottom panel (see Figure 4-6). Remove these five retention screws.



Figure 4-4: Elevated Platform Retention Screws (Top Panel)



Figure 4-5: Elevated Platform Retention Screws (Right Panel)



Figure 4-6: Elevated Platform Retention Screws (Bottom Panel)

Step 3: A PCI riser card is attached to the side of the elevated platform with two retention screws. Remove the two retention screws and the PCI riser card from the chassis.



Figure 4-7: PCI Riser Card Retention Screws

4.4 **DIMM Replacement**

To install the DIMM please follow the steps below.

- **Step 1:** Remove the back cover. See **Section 4.3.1** above.
- Step 2: Locate the DIMM. It is on the motherboard near the top of the PPC-5350GS flat screen PC. Push the white clips on the side of the DIMM down. The DIMM is dislodged from the DIMM socket. (See Figure 4-8)



Figure 4-8: DIMM Socket Clip Locations

Step 3: Insert the new DIMM. Properly align the DIMM pins with the socket and the gently push the DIMM into the DIMM socket until the white side handles close.

4.5 PSU Module Replacement

If the PSU module has been damaged it must be replaced. To replace the PSU module, please follow the steps below.

- **Step 1:** Remove the back cover. See **Section 4.3.1** above.
- Step 2: Detach the elevated platform. See Section 4.3.2 above.
- Step 3: Remove the elevated platform from the PPC-5350GS.
- Step 4: Disconnect the PSU power cable connectors from the motherboard (Figure 4-9)



Figure 4-9: PSU Motherboard Connector

Step 5: The PSU module is secured to the PPC-5350GS flat panel PC with four retention screws, one connects to the metal sheet at the back of the 15"TFT LCD screen (Figure 4-10) and the other three are inserted through the bottom panel and into the PSU module (Figure 4-11). Remove these four retention screws.



Figure 4-10: PSU Internal Retention Screws



Figure 4-11: PSU External Retention Screws

- Step 6: Remove the PSU module from the PPC-5350GS flat panel PC. The PSU module cables are connected together with ties. This is to help save space in the chassis. Disconnect the plastic tie.
- **Step 7:** Bundle the cables of the new PSU module, and secure them with a plastic tie, in a similar way to the way the ties were bundled on the old PSU module.
- **Step 8:** Reconnect the PSU module connector to the motherboard power connector (PW1). (Do this before inserting the PSU module.)
- Step 9: Place the new PSU module into the PPC-5350GS flat panel PC.
- Step 10: Secure the new PSU module to the PPC-5350GS flat panel PC by reinserting the retention screw into the metal plate behind the 15" TFT LCD screen and the three retention screws through the bottom panel of the PPC-5350GS flat panel PC.
- Step 11: Reattach the elevated platform and reinserting the elevated platform retention screws.
- Step 12: Replace the back cover.

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AMI BIOS Setup

5.1 Introduction

A licensed copy of AMI BIOS is preprogrammed into the ROM BIOS. The BIOS setup program allows users to modify the basic system configuration. This chapter describes how to access the BIOS setup program and the configuration options that may be changed.

5.1.1 Starting Setup

The AMI BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

- 1. Press the DELETE key as soon as the system is turned on or
- 2. Press the **DELETE** key when the "**Press Del to enter SETUP**" message appears on the screen.

If the message disappears before, restart the computer and try again.

5.1.2 Using Setup

Use the arrow keys to highlight items, press **ENTER** to select, use the PageUp and PageDown keys to change entries, press **F1** for help and press **Esc** to quit. Navigation keys are shown in.

Кеу	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side
Esc key	Main Menu – Quit and not save changes into CMOS
	Status Page Setup Menu and Option Page Setup Menu
	Exit current page and return to Main Menu
"+" key	Increase the numeric value or make changes
"-" key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option
	Page Setup Menu

F2 /F3 key	Change color from total 16 colors.	F2 to select color
	forward.	
F10 key	Save all the CMOS changes, only f	or Main Menu

Table 5-1: BIOS Navigation Keys

5.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window press **Esc** or the **F1** key again.

5.1.4 Unable to Reboot After Configuration Changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults. Use the jumper described in **Section 3.5.2.**

5.1.5 BIOS Menu Bar

The menu bar on top of the BIOS screen has the following main items:

- **Main** Changes the basic system configuration.
- Advanced Changes the advanced system settings.
- PCIPnP Changes the advanced PCI/PnP Settings
- **Boot** Changes the system boot configuration.
- Security Sets User and Supervisor Passwords.
- **Chipset** Changes the chipset settings.
- **Power** Changes power management settings.
- Exit Selects exit options and loads default settings

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.

5.2 Main

When the **BIOS Setup** program is entered, the **Main** menu (**BIOS Menu 1**) appears. The **Main** menu gives an overview of the basic system information.

			BIOS SETU	P UTILITY			
Main	Advanced	Boot	Security	Chipset	Po	ower	Exit
System	Overview					Use [ENTER], [TAB]
AMIBIO Versio Build ID	S n :08.00.11 Date:07/05/06 :E003MR08					Use [confi	t a field. (+) or [-] to gure system Time.
Proces Type Speed Count	sor : :255MHz :255						
<mark>System</mark> Size	Memory :480MB					↔ 1↓	Select Screen Select Item Change Field
System System	Time Date		[14:22:2 [Fri 07,	27] /07/2006]		Tab F1 F10 ESC	Select Field General Help Save and Exit Exit
	v02.57 (C) Copyr i	ght 1985-2004	. American	Meg	gatrend	s, Inc.

BIOS Menu 1: Main

→ System Overview

The **System Overview** lists a brief summary of different system components. The fields in **System Overview** cannot be changed. The items shown in the system overview include:

- AMI BIOS: Displays auto-detected BIOS information
 - O Version: Current BIOS version
 - O Build Date: Date the current BIOS version was made
 - O ID: Installed BIOS ID
- Processor: Displays auto-detected CPU specifications

- O Type: Names the currently installed processor
- O Speed: Lists the processor speed
- **Count**: The number of CPUs on the motherboard
- System Memory: Displays the auto-detected system memory.
 - O Size: Lists memory size

The System Overview field also has two user configurable fields:

- System Time [xx:xx:xx]: The system time is set here.
- System Date [Day xx/xx/xxxx]: The system date is set here.

5.3 Advanced

The **Advanced** menu (**BIOS Menu 2**) allows access to the CPU and peripheral device configuration options through the following sub-menus:



Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.

- CPU Configuration (see Section 5.3.1)
- IDE Configuration (see Section 5.3.2)
- SuperIO Configuration (see Section 5.3.3)
- Hardware Health Configuration (see Section 5.3.4)
- ACPI Configuration (see Section 5.3.5)
- MPS Configuration (see Section 5.3.6)
- USB Configuration (see Section 5.3.7)

BIOS SETUP UTILITY	
Main <mark>Advanced Boot Security Chipset Po</mark>	wer Exit
Advanced Settings WARNING: Setting wrong values in below sections may cause system to malfunction. • CPU Configuration • IDE Configuration • SuperID Configuration • Hardware Health Configuration • ACPI Configuration • MPS Configuration • USB Configuration	 ↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit
v02.57 (C)Copyright 1985-2004, American Meg	atrends, Inc.

BIOS Menu 2: Advanced

5.3.1 CPU Configuration

The CPU Configuration menu (**BIOS Menu 3**) shows detailed CPU specifications and CPU configuration options.

BIOS SETUP UTILITY		
Hdvanced		
Configure advanced CPU settings Module Version -13.02	Options Disabled	
Manufacturer:Intel Brand String: Frequency :255MHz FSB Speed :400MHz	Enabled	
Cache L1 :0 KB Cache L2 :0 KB		
CPU TM function: [Enabled] Intel(R) SpeedStep(tm) tech. [Automatic]	 ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit 	
v02.57 (C)Copyright 1985-2004, American Me	gatrends, Inc.	

BIOS Menu 3: CPU Configuration

The CPU Configuration menu (BIOS Menu 3) lists the following CPU details:

- Manufacturer: Lists the name of the CPU manufacturer
- Brand String: Lists the brand name of the CPU being used
- **Frequency:** Lists the CPU processing speed
- FSB Speed: Lists the FSB speed
- Cache L1: Lists the CPU L1 cache size
- Cache L2: Lists the CPU L2 cache size

The following **CPU Configuration** menu items can be configured.

- CPU TM Function

5.3.2 IDE Configuration

The **IDE Configuration** menu (**BIOS Menu 4**) allows changes to the configurations for the IDE devices installed in the system.

	BIOS SETUP UTILITY	
Advanced		
IDE Configuration		DISABLED: disables the
OnBoard PCI IDE Controller	[Both]	Controller. PRIMARY: enables only
Primary IDE Master	: LNot Jetected]	the Primary IDE
Primary IDE Slave	: LHIHPI CUKUMI	
► Secondary IDE Master	: LNOT Detected]	SECUMPHRY: enables
► Secondary IDE Slave	: LNot Vetected)	only the Secondary IDE Controller. BOTH: enables both IDE Controllers.
		↔ Select Screen
		↑↓ Select Item
		+- Change Option
		F1 General Help
		F1U Save and Exit
		LOC EXIT
v02.57 (C) Covur ia	nt 1985-2004, American Me	gatrends, Inc.

BIOS Menu 4: IDE Configuration

→ OnBoard PCI IDE Controller [Both]

The **OnBoard PCI IDE Controller** BIOS option specifies the IDE channels used by the onboard PCI IDE controller. The following configuration options are available.

→	Disabled	Prevents the system from using the onboard IDE
		controller
→	Primary	Only allows the system to detect the Primary IDE
		channel, including both the Primary Master and Primary
		Slave)
→	Secondary	Only allows the system to detect the Secondary IDE

channel, including both the Secondary Master and Secondary Slave)

 Both (Default) Allows the system to detect both the Primary and Secondary IDE channels including the Primary Master, Primary Slave, Secondary Master and Secondary Slave.

→ IDE Master and IDE Slave

When entering setup, BIOS auto detects the presence of IDE devices. This displays the status of the auto detected IDE devices. The following IDE devices are detected and are shown in the **IDE Configuration** menu:

- Primary IDE Master
- Primary IDE Slave
- Secondary IDE Master
- Secondary IDE Slave

The **IDE Configuration** menu (**BIOS Menu 4**) allows changes to the configurations for the IDE devices installed in the system. If an IDE device is detected, and one of the above listed four BIOS configuration options are selected, the IDE configuration options shown in **Section 5.3.2.1** appear.

5.3.2.1 IDE Master, IDE Slave

IDE Master and IDE Slave configuration options for both primary and secondary IDE devices are shown in the BIOS menu below.

B	IOS SETUP UTILITY		
Advanced			
Primary IDE Master		Select the type	
Device :Not Detected		to the system.	
Type LBA/Large Mode	[Auto] [Auto]		
Block (Multi-Sector Transfer)	[Auto]		
DMA Mode	[Auto]		
32Bit Data Transfer	[Enabled]		
		 ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit 	
v02.57 (C) Copyright	1985-2004, American Me	gatrends, Inc.	

BIOS Menu 5: IDE Master Configuration

→ Auto-Detected Drive Parameters

The "grayed-out" items in the left frame are IDE disk drive parameters automatically detected from the firmware of the selected IDE disk drive. The drive parameters are listed as follows:

- **Device**: Lists the device type (e.g. hard disk, CD-ROM etc.)
- Vendor: Lists the device manufacturer
- **Size**: The size of the device.
- LBA Mode: Indicates whether the LBA (Logical Block Addressing) is a method of addressing data on a disk drive is supported or not.
- Block Mode: Block mode boosts IDE drive performance by increasing the amount of data transferred. Only 512 bytes of data can be transferred per

interrupt if block mode is not used. Block mode allows transfers of up to 64 KB per interrupt.

- PIO Mode: Indicates the PIO mode of the installed device.
- Async DMA: Indicates the highest Asynchronous DMA Mode that is supported.
- **Ultra DMA**: Indicates the highest Synchronous DMA Mode that is supported.
- S.M.A.R.T.: Indicates whether or not the Self-Monitoring Analysis and Reporting Technology protocol is supported.

→ Type [Auto]

The **Type** BIOS option determines the type of device that the AMIBIOS attempts to boot from after the Power-On Self-Test (POST) has completed.

→	Not Installed		Selecting this value prevents the BIOS from searching
			for an IDE disk drive on the specified channel.
→	Auto	(Default)	This selection enables the BIOS to auto detect the IDE
			disk drive type attached to the specified channel. This
			setting should be used if an IDE hard disk drive is
			attached to the specified channel.
→	CD/DVD		The CD/DVD option specifies that an IDE CD-ROM
			drive is attached to the specified IDE channel. The
			BIOS does not attempt to search for other types of IDE
			disk drives on the specified channel.
→	ARMD		This option specifies an ATAPI Removable Media
			Device. These include, but are not limited to:
			→ ZIP
			→ LS-120

→ LBA/Large Mode [Auto]

The **LBA/Large Mode** BIOS option disables or auto detects LBA (Logical Block Addressing). LBA is a method of addressing data on a disk drive. In LBA mode, the maximum drive capacity is 137 GB.

→	Disabled		This selection prevents the BIOS from using the LBA
			mode control on the specified channel.
→	Auto	(Default)	This option allows the BIOS to auto detect the LBA mode
			control on the specified channel.

→ Block (Multi Sector Transfer) [Auto]

→	Disabled		Selecting this option prevents the BIOS from using
			Multi-Sector Transfer on the specified channel. The data to
			and from the device occurs one sector at a time.
→	Auto	(Default)	Selecting this value to allows the BIOS to auto detect the
			device support for Multi-Sector Transfers on the specified
			channel. If supported. Select this value to allow the BIOS
			to auto detect the number of sectors per block for transfer
			from the hard disk drive to the memory. The data transfer
			to and from the device occurs multiple sectors at a time.

→ PIO Mode [Auto]

The **PIO Mode** option selects the IDE PIO (Programmable I/O) mode program timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.

Auto (Default) This setting allows the BIOS to auto detect the PIO mode. Use this value if the IDE disk drive support cannot be determined.
 O PIO mode 0 selected with a maximum transfer rate of 3.3MBps

→	1	PIO mode 1 selected with a maximum transfer rate of 5.2MBps
→	2	PIO mode 2 selected with a maximum transfer rate of 8.3MBps
→	3	PIO mode 3 selected with a maximum transfer rate of 11.1MBps
→	4	PIO mode 4 selected with a maximum transfer rate of 16.6MBps
		(This setting generally works with all hard disk drives
		manufactured after 1999. For other disk drives, such as IDE
		CD-ROM drives, check the specifications of the drive.)

→ DMA Mode [Auto] NO?!

The **DMA Mode** BIOS selection adjusts the DMA mode options.

 Auto
 (Default)
 The BIOS auto detects the DMA mode. Use this value if the

 IDE disk drive support cannot be determined.

→ S.M.A.R.T [Auto]

→

Self-Monitoring Analysis and Reporting Technology (SMART) feature can help predict impending drive failures. The **S.M.A.R.T** BIOS option enables or disables this function.

→	Auto	(Default)	BIOS to auto detects if the hard disk drive supports
			S.M.A.R.T. Use this setting if the IDE disk drive support
			cannot be determined.
→	Disabled		Select this value to prevent the BIOS from using the SMART feature.
→	Enabled		Select this value to allow the BIOS to use the SMART
			feature on support hard disk drives.

→ 32Bit Data Transfer [Disabled]

The 32Bit Data Transfer BIOS option enables or disables 32-bit data transfers.

Disabled Prevents the BIOS from using 32-bit data transfers.
 Enabled (Default) Allows BIOS to use 32-bit data transfers on support hard disk drives.

BIOS SETUP UTILITY Advanced	
Primary IDE Master Device :Not Detected Type [Auto] LBA/Large Mode [Auto] Block (Multi-Sector Transfer) [Auto] PIO Mode [Auto] DMA Mode [Auto] S.M.A.R.I. [Auto]	Select the type of device connected to the system.
	 ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit

BIOS Menu 6: IDE Slave Configuration

→ Type [Auto]

The **Type** BIOS option determines the type of device that the AMIBIOS attempts to boot from after the Power-On Self-Test (POST) has completed.

→ Not Installed

Selecting this value prevents the BIOS from searching for an IDE disk drive on the specified channel.

Auto (Default) This selection enables the BIOS to auto detect the IDE disk drive type attached to the specified channel. This setting should be used if an IDE hard disk drive is attached to the specified channel.
 CD/DVD The CD/DVD option specifies that an IDE CD-ROM drive is attached to the specified IDE channel. The BIOS does not attempt to search for other types of IDE

ARMD
 This option specifies an ATAPI Removable Media
 Device. These include, but are not limited to:

disk drives on the specified channel.

→ ZIP

→ LS-120

→ PIO Mode [Auto]

The **PIO Mode** option selects the IDE PIO (Programmable I/O) mode program timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.

→	Auto	(Default)	This setting allows the BIOS to auto detect the PIO mode. Use
			this value if the IDE disk drive support cannot be determined.
→	0		PIO mode 0 selected with a maximum transfer rate of 3.3MBps
→	1		PIO mode 1 selected with a maximum transfer rate of 5.2MBps
→	2		PIO mode 2 selected with a maximum transfer rate of 8.3MBps
→	3		PIO mode 3 selected with a maximum transfer rate of 11.1MBps
→	4		PIO mode 4 selected with a maximum transfer rate of 16.6MBps
			(This setting generally works with all hard disk drives

manufactured after 1999. For other disk drives, such as IDE CD-ROM drives, check the specifications of the drive.)

→ DMA Mode [Auto]

The **DMA Mode** BIOS selection adjusts the DMA mode options.

→	Auto	(Default)	The BIOS auto detects the DMA mode. Use this value if the
			IDE disk drive support cannot be determined.
→	SWDMA0		Single Word DMA mode 0 selected with a maximum data
			transfer rate of 2.1MBps
→	SWDMA1		Single Word DMA mode 1 selected with a maximum data
			transfer rate of 4.2MBps
→	SWDMA2		Single Word DMA mode 2 selected with a maximum data
			transfer rate of 8.3MBps
→	MWDMA0		Multi Word DMA mode 0 selected with a maximum data
			transfer rate of 4.2MBps
→	MWDMA1		Multi Word DMA mode 1 selected with a maximum data
_			transfer rate of 13.3MBps
→	MWDMA2		Multi Word DMA mode 2 selected with a maximum data
_			transfer rate of 16.6MBps
→	UDMA0		Ultra DMA mode 0 selected with a maximum data transfer
•			rate of 16.6MBps
7	UDMA1		Ultra DMA mode 1 selected with a maximum data transfer
_			rate of 25MBps
7	UDMA2		Ultra DMA mode 2 selected with a maximum data transfer
			rate of 33.3MBps
5.3.3 Super IO Configuration

The **Super IO Configuration** menu (**BIOS Menu 7**) sets or changes the configurations for the serial ports.

	BIOS SETUP UTILITY	
Advanced		
Configure ITE8712 Super	IO Chipset	Allows BIOS to Select - Serial Port1 Base
Serial Port1 Address Serial Port2 Address Serial Port2 Mode Serial Port3 Address Serial Port3 IRQ Serial Port4 Address Serial Port4 IRQ Serial Port5 Address Serial Port5 IRQ Serial Port6 Address Serial Port6 IRQ	[3F8/IRQ4] [2F8/IRQ3] [Norma]] [3E8] [11] [2E8] [10] [2E0] [11] [2D8] [10]	 ↔ Select Screen ↑↓ Select Item ↑− Change Option F1 General Help F10 Save and Exit ESC Exit
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BIOS Menu 7: Super IO Configuration

→ Serial Port1 Address [3F8/IRQ4]

The Serial Port1 Address option allows BIOS to select the Serial Port 1 base address.

→	Disabled		No base address is assigned to Serial Port 1
→	3F8/IRQ4	(Default)	Serial Port 1 I/O port address is 3F8 and the interrupt
			address is IRQ4

→ 3E8/IRQ4 Serial Port 1 I/O port address is 3E8 and the interrupt address is IRQ4
 → 2E8/IRQ3 Serial Port 1 I/O port address is 2E8 and the interrupt

→ Serial Port2 Address [2F8/IRQ3]

The Serial Port2 Address option allows BIOS to select the Serial Port 2 base address.

address is IRQ3

→	Disabled		No base address is assigned to Serial Port 2
→	2F8/IRQ3	(Default)	Serial Port 2 I/O port address is 3F8 and the interrupt address is IRQ3
→	3E8/IRQ4		Serial Port 2 I/O port address is 3E8 and the interrupt address is IRQ4
→	2E8/IRQ3		Serial Port 2 I/O port address is 2E8 and the interrupt address is IRQ3

→ Serial Port2 Mode [Normal]

Allows BIOS to select the mode for Serial Port 2

→	Normal	(Default)	Serial Port 1 mode is normal
→	IrDA		Serial Port 1 mode is IrDA
→	ASK IR		Serial Port 1 mode is ASK IR

→ Serial Port3 Address [3E8]

This option allows BIOS to select the base addresses for serial port 3

→	Disabled		No base address is assigned to serial port 3
→	3E8	(Default)	Serial port 3 I/O port address is 3E8

7	2E8	Serial port 3 I/O port address is 2E8
→	2E0	Serial port 3 I/O port address is 2E0

→ Serial Port3 IRQ [11]

The Serial Port3 IRQ selection sets the interrupt address for serial port 3.

→	10		Serial port 3 IRQ address is 10
→	11	(Default)	Serial port 3 IRQ address is 11

→ Serial Port4 Address [2E8]

This option allows BIOS to select the base addresses for serial port 4.

→	Disabled		No base address is assigned to serial port 4
→	3E8		Serial port 4 I/O port address is 3E8
→	2E8	(Default)	Serial port 4 I/O port address is 2E8
→	2E0		Serial port 4 I/O port address is 2E0

→ Serial Port4 IRQ [10]

The Serial Port4 IRQ selection sets the interrupt address for serial port 4.

→	10	(Default)	Serial port 4 IRQ address is 10
→	11		Serial port 4 IRQ address is 11

→ Serial Port5 Address [2E0]

This option allows BIOS to select the base addresses for serial port 5.

→	Disabled	No base address is assigned to serial port 5
→	3E8	Serial port 5 I/O port address is 3E8

→	2E8		Serial port 5 I/O port address is 2E8
→	2E0	(Default)	Serial port 5 I/O port address is 2E0
→	2D8		Serial port 5 I/O port address is 2D8
→	2D0		Serial port 5 I/O port address is 2D0

→ Serial Port5 IRQ [11]

The Serial Port5 IRQ selection sets the interrupt address for serial port 5.



→ Serial Port6 Address [2D8]

This option allows BIOS to select the base addresses for serial port 6.

→	Disabled		No base address is assigned to serial port 6
→	3E8		Serial port 6 I/O port address is 3E8
→	2E8		Serial port 6 I/O port address is 2E8
→	2E0		Serial port 6 I/O port address is 2E0
→	2D8	(Default)	Serial port 6 I/O port address is 2D8
→	2D0		Serial port 6 I/O port address is 2D0

→ Serial Port6 IRQ [10]

The Serial Port6 IRQ selection sets the interrupt address for serial port 6.

→	10	(Default)	Serial port 6 IRQ address is 10
→	11		Serial port 6 IRQ address is 11

5.3.4 Hardware Health Configuration

The **Hardware Health Configuration** menu (**BIOS Menu 8**) shows the operating temperature, fan speeds and system voltages.

Advanced	BIOS SETUP UTILITY			
Hardware Health Configuration			Fan c	confiruration
FAN 1 Mode Setting FAN 2 Mode Setting	[Full On mode] [Full On mode]		Mode	setting
CPU Temperature System Temperature 1 Sustem Temperature 2	:27°C/80°F :44°C/111°F :43°C/109°F			
CPU FAN Speed Sustem Fan 1 Speed	:5818 RPM :N/A			
System Fan 2 Speed	:N/A :1.280 U		↔ 11	Select Screen Select Item
Vcc +3.30V +5.00U	:2.496 V :3.376 V :5.056 U		+- F1 F10	Change Option General Help Saue and Exit
+12.0V GMCH Core +1.5V	:12.160 V :1.200 V :1.504 V	Ţ	ESC	Exit
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BIOS Menu 8: Hardware Health Configuration

→ FAN 1 Mode Setting: [Full On]

The FAN 1 Mode Setting has the following options:

- → Full On (Default) If selected, there are no additional configurable options.
- Automatic
 Mode
 If selected, the following options will appear with values
 that can be configured:
 - → Temperature 1 Limit of OFF
 - → Temperature 1 Limit of Start

- → Temperature 1 Limit of Full
- → Fan 1 Start PWM
- → Slop PWM 1: 0 PWM , 2 PWM (Default), 4 PWM or 8 PWM, 16 PWM, 32 PWM, 64 PWM

→ FAN 2 Mode Setting: [Full On]

The FAN 2 Mode Setting has the following options:

→ **Full On** (Default) If selected, there are no additional configurable options.

→	Automatic	If selected, the following options will appear with values
	Mode	that can be configured:

- → Temperature 2 Limit of OFF
- → Temperature 2 Limit of Start
- → Temperature 2 Limit of Full
- → Fan 2 Start PWM
- → Slop PWM 1: 0 PWM , 2 PWM (Default), 4 PWM or 8 PWM, 16 PWM, 32 PWM, 64 PWM

The following system parameters and values are shown. The system parameters that are monitored are:

- System Temperatures: The following system temperatures are monitored
 - Temperature Sensor #1
 - O System Temperature
- **Fan Speeds**: The CPU cooling fan speed is monitored.
 - Fan1 Speed
- Voltages: The following system voltages are monitored
 - O Vcore
 - +3.30Vin
 - O +5.00Vin

○ +12Vin

5.3.5 ACPI Configuration

The **ACPI Configuration** menu (**BIOS Menu 9**) configures the Advanced Configuration and Power Interface (ACPI) and Power Management (APM) options.

Advanced	BUCKER BIOS SETUP UTILITY	
ACPI Settings		Enable / Disable
ACPI Aware O/S	[Yes]	ENABLE: If OS supports ACPI. DISABLE: If OS does not support
		ACPI. ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit
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BIOS Menu 9: ACPI Configuration

→ ACPI Aware O/S [Yes]

ACPI Aware O/S can only be configured if the OS complies with the ACPI standard. Windows 98, Windows 2000, and Windows XP all comply with ACPI.



Disables the ACPI support for the OS. This selection should be

disabled if the OS does not support ACPI

➔ Yes (Default) Enables the ACPI support for the operating system. This selection should be enabled if the OS does support ACPI

5.3.6 MPS Configuration

The MPS Configuration menu (BIOS Menu 10) configures the multi-processor table.

Advanced	BIOS SETUP UTILITY	
MPS Configuration		Select MPS
MPS Revision	[1.4]	 Keulsion. ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit
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BIOS Menu 10: MPS Configuration

→ MPS Revision [1.4]

The Multiprocessor Specification (MPS) for OS specifies the MPS version to be used.

→ 1.1 MPS version 1.1 is used

→ 1.4 (Default) MPS version 1.4 is used

5.3.7 USB Configuration

The **USB Configuration** menu (**BIOS Menu 11**) gives USB configuration information and configures some USB features.

BIOS SETUP UTILITY	
Advanced	
USB Configuration	Enables USB host
Module Version - 2.24.0-10.4	Control of ters.
USB Devices Enabled : 2 Drives	
USB Function [Enabled]	
Legacy USB Support [Enabled]	
USB 2.0 Controller [Enabled]	
USB 2.0 Controller Mode [HiSpeed]	
▶ USB Mass Storage Device Configuration	 ↔ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit
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BIOS Menu 11: USB Configuration

➔ USB Configuration

The USB Configuration field shows the system USB configuration. The items listed are:

Module Version: 2.24.0-10.4

→ USB Devices Enabled:

Lists the USB devices that are enabled on the system

→ USB Function [Enabled]

The USB Function BIOS option enables or disables the USB function

→	Disabled		USB function disabled
→	Enabled	(Default)	USB function enabled

→ Legacy USB Support [Enabled]

The **Legacy USB Support** BIOS option refers to USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded on the system.

→	Disabled		Legacy USB support disabled
→	Enabled	(Default)	Legacy USB support enabled
→	Auto		Legacy USB support is automatically detected

→ USB 2.0 Controller [Enabled]

The USB 2.0 Controller BIOS option enables or disables the USB 2.0 controller

→	Enabled	(Default)	USB function enabled
→	Disabled		USB function disabled

USB2.0 Controller Mode [HiSpeed]

→

The USB2.0 Controller Mode BIOS option sets the speed of the USB2.0 controller.

FullSpeed The controller is capable of operating at full speed

			(12Mbits/second)
→	HiSpeed	(Default)	The controller is capable of operating at high speed
			(480Mbits/second)

5.3.7.1 USB Mass Storage Device Configuration

Use the **USB Mass Storage Device Configuration** menu (**BIOS Menu 12**) to configure USB mass storage class devices.

BIOS SETUP UTILITY		
Advanced		
USB Mass Storage Device Configuration	Number of seconds POST waits for the	
USB Mass Storage Reset Delay [20 Sec]	USB mass storage device after start	
Device #1 USBest USB2FlashStorage0.00	unit command.	
Emulation Type [Auto]		
Device #2 USBest USB2FlashStorage0.00		
Emulation Type [Auto]		
	 ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit 	
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BIOS Menu 12: USB Mass Storage Device Configuration

→ USB Mass Storage Reset Delay [20 Sec]

Use the **USB Mass Storage Reset Delay** option to set the number of seconds POST waits for the USB mass storage device after the start unit command.

→	10 Sec		POST waits 10 seconds for the USB mass storage
			device after the start unit command.
→	20 Sec	(Default)	POST waits 20 seconds for the USB mass storage

device after the start unit command.

→	30 Sec	POST waits 30 seconds for the USB mass storage
		device after the start unit command.
→	40 Sec	POST waits 40 seconds for the USB mass storage
		device after the start unit command.

→ Device

The **Device##** field lists the USB devices that are connected to the system.

➔ Emulation Type [Auto]

Use the **Emulation Type** BIOS option to specify the type of emulation BIOS has to provide for the USB device.



Please note that the device's formatted type and the emulation type provided by the BIOS must match for a device to boot properly. If both types do not match then device's behavior is undefined. To make sure both types match, format the device using BIOS INT13h calls after selecting the proper emulation option in BIOS setup. The FORMAT utility provided by Microsoft® MS-DOS®, Microsoft® Windows® 95, and Microsoft® Windows® 98 can be used for this purpose.

Auto (Default)

BIOS auto-detects the current USB.

Floppy

The USB device will be emulated as a floppy drive. The device can be either A: or B: responding to INT13h calls that return DL = 0 or DL = 1respectively. → Forced FDD Allows a hard disk image to be connected as a floppy image. This option works only for drives formatted with FAT12, FAT16 or FAT32. → Hard Disk Allows the USB device to be emulated as hard disk responding to INT13h calls that return DL values of 80h or above. → CDROM Assumes the CD-ROM is formatted as bootable media. All the devices that support block sizes greater than 512 bytes can only be booted using this option.

5.4 Boot

The Boot menu (BIOS Menu 13) configures system boot options.

BIOS SETUP UTILITY					
Main Advanc	ed Boot	Security	Chipset	Power	Exit
Boot Settings Boot Setting Boot Device Removable Dr CD/DVD Drive	s Configura Priority ives s	tion		- Config during ti ti Enter F1 F10 ESC	pure Settings pure Settings pure Settings pure Settings pure Settings pure Settings Select Screen Select Item Go to Sub Screen General Help Save and Exit Exit
v02.	57 (C) Copyr:	ight 1985-200	4, American	Megatrends	5. Inc.

BIOS Menu 13: Boot

5.4.1 Boot Settings Configuration

The Boot Settings Configuration menu (**BIOS Menu 14**) configures advanced system boot options.

	BIOS SETUP UTILITY		
Boot			
Boot Settings Configuration		Allo	ws BIOS to skip
Quick Boot Quiet Boot Bootup Num-Lock PS/2 Mouse Support Wait For 'F1' If Error Hit 'DEL' Message Display Boot From LAN Support	[Enabled] [Disabled] [On] [Auto] [Enabled] [Enabled] [Disabled]	cert boot decru needu systi	Select Screen
		†4 +- F1 F10 ESC	Select Item Change Option General Help Save and Exit Exit
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→ Quick Boot [Enabled]

The Quick Boot BIOS option makes the computer speed up the boot process.

→	Disabled		System does not skip any POST procedures		
→	Enabled	(Default)	Allows system to skip some POST procedures to		
			decrease the system boot time		

→ Quiet Boot [Disabled]

The **Quiet Boot** BIOS option allows the boot up screen options to be modified between POST messages or an OEM logo.

→	Disabled	(Default)	Displays normal POST messages
→	Enabled		Displays OEM Logo instead of POST messages

➔ Bootup Num-Lock [On]

The **Bootup Num-Lock** BIOS option allows the Number Lock setting to be modified during boot up.

➤ Off Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.

On (Default) Allows the Number Lock on the keyboard to be enabled automatically when the computer system boots up. This allows the immediate use of the 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard is lit.

→ PS/2 Mouse Support [Auto]

The PS/2 Mouse Support BIOS option allows the PS/2 mouse support to be adjusted.

→	Disabled		Disables PS/2 mouse support and prevents the PS/2
			mouse port from using system resources.
→	Enabled		Allows the system to use a PS/2 mouse.
→	Auto	(Default)	Allows the system to automatically detect if a PS/2
			mouse is being used.

→ Wait For 'F1' If Error [Enabled]

The **Wait For 'F1' if Error** option specifies how the system responds when the system detects an error on boot up.

- Disabled If there is an error when booting up, the system does not wait for user intervention but continues to boot up in the operating system. Only use this setting if there is a known reason for a BIOS error to appear. An example would be a system administrator must remote boot the system. The computer system does not have a keyboard currently attached.
- Enabled (Default) If there is an error during boot up, the system waits for a user to press "F1" and enter the BIOS to rectify the problem. The BIOS can then be adjusted to the correct settings.

→ Hit 'DEL' Message Display [Enabled]

The **Hit "DEL" Message Display** option allows specifies whether the instruction to hit the delete button to enter BIOS during POST appears or not.

→	Disabled		No message displayed during POST		
→	Enabled	(Default)	Displays "Press DEL to run Setup" message in POST		

→ Boot From LAN Support [Disabled]

The **BOOT From LAN Support** option enables the system to be booted from a remote system.

→	Disabled	(Default)	Cannot be booted from a remote system through the
			LAN
→	Enabled		Can be booted from a remote system through the
			LAN

5.4.2 Boot Device Priority

The **Boot Device Priority** menu (**BIOS Menu 15**) specifies the boot sequence from the available devices. Possible boot devices may include:

- 1st FLOPPY DRIVE
- HDD
- CD/DVD

Boot	BIOS SETUP UTILITY	
Boot Device Priority 1st Boot Device 2nd Boot Device	[USB:USBest USB2F1a] [CD/DVD:PS-QSI CD-R]	Specifies the boot sequence from the available devices. A device enclosed in parenthesis has been disabled in the corresponding type menu. ↔ Select Screen 14 Select Item +- Change Option F1 General Help F10 Saue and Exit
u02.57 (C)Conurs	ight 1985-2004, American Me	ESC Exit

BIOS Menu 15: Boot Device Priority Settings

5.4.3 Removable Drives

The **Removable Drives** menu (**BIOS Menu 16**) specifies the boot sequence of the available USB drives.



Only the drives connected to the system are shown. For example, if only one USB is connected only "**1st Drive**" is listed.

The boot sequence from the available devices is selected. If the "**1st Drive**" option is selected a list of available USB drives is shown. Select the first USB drive system boots from. If the "**1st Drive**" is not used for booting this option may be disabled.

	BOOT BIOS SETUP UTILITY Boot	
Removable Drives		Specifies the boot
1st Drive 2nd Drive	[USB:USBest USB2F1a] [USB:USBest USB2F1a]	sequence from the available devices.
		 ↔ Select Screen ↑↓ Select Item ← Change Option F1 General Help F10 Save and Exit ESC Exit
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BIOS Menu 16: Removable Drives

5.4.4 CD/DVD Drives

The **CD/DVD Drives** menu is similar to the **Removable Drives BIOS Menu 16** and it specifies the boot sequence of the available CD/DVD drives. When the menu is opened, the CD drives and DVD drives connected to the system are listed as shown below:

1st Drive [CD/DVD: PM-(part ID)]



Only the drives connected to the system are shown. For example, if only two CDs or DVDs are connected only "**1st Drive**" and "**2nd Drive**" are listed.

The boot sequence from the available devices is selected. If the "**1st Drive**" option is selected a list of available CD/DVD drives is shown. Select the first CD/DVD drive the system boots from. If the "**1st Drive**" is not used for booting this option may be disabled.

5.5 Security

The **Security** menu (**BIOS Menu 17**) allows system security settings including passwords to be configured.

	BIOS SETUP UTILITY						
Main	Advanced	Boot	Security	Chipset	Power	Exit	
Main Securi Superu User I Change Change Clear	Advanced ity Settings visor Password Password e Supervisor i e User Password User Password	Boot d :Not I :Not I Password rd d	BIUS SETU Security nstalled nstalled	P UTILITY Chipset	Power Inst pass t t Ente F1 F10 F10 F10 F10 F10 F10 F10	Exit tall or Change the sword. Select Screen Select Item er Change General Help Saue and Exit	
	02 E2 (C) Conumi	~L4 1995 200	u Ononican	ESU		
	002.57 (cropyri	ynt 1565-200	4, Hmerican	negatrei	IQS; 111C;	

BIOS Menu 17: Security

→ Change Supervisor Password

The default setting for the **Change Supervisor Password** is **Not Installed**. If a supervisor password must be installed, select this field and enter the password. After the password has been added, **Install** appears next to **Change Supervisor Password**.

→ Change User Password

The default setting for the **Change User Password** is **Not Installed**. If a user password must be installed, select this field and enter the password. After the password has been added, **Install** appears next to **Change User Password**.

5.6 Chipset

The Chipset menu (**BIOS Menu 18**) has two sub-menus, NorthBridge Configuration and SouthBridge Configuration. The NorthBridge Configuration menu configures the northbridge chipset and the SouthBridge Configuration menu configures the southbridge chipset.



Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.

BIOS SETUP UTILITY					
Main Advanced Boot Security <mark>Chipset</mark>	Power Exit				
Advanced Chipset Settings	Options for NB				
WARNING: Setting wrong values in below sections may cause system to malfunction.					
 NorthBridge Configuration SouthBridge Configuration 					
	to Salact Screen				
	14 Select Item				
	Enter Go to Sub Screen F1 General Help				
	F10 Save and Exit ESC Exit				
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BIOS Menu 18: Chipset

5.6.1 NorthBridge Configuration

The NorthBridge Configuration menu (**BIOS Menu 19**) allows the northbridge chipset to be configured.

NorthBridg	e Chipset Configuratio	m	
	Luibser		
DRAM Frequency	[Auto]		Options
Configure DRAM Timing by SPD	[Enabled]		
Manager Up 1a	(D):1-1-11	200 M	hz
Inemory noie Init Granhic Adapter Prioritu	IDISADICAL IPCT/Tut-UGAL	200 M	INZ Ihz
Internal Graphics Mode Select	[Enabled, 32MB]	Auto	
Graphics Aperture Size	[64MB]		
Boot Display Device	LUKT+LFPJ [1280x1024_48b;tc]		
riat ranei iype	11200/1024 4001(5)		
		↔	Select Screen
		_T↓	Select Item
		F1	General Heln
		F10	Save and Exit
		ESC	Exit
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BIOS Menu 19: NorthBridge Chipset Configuration

→ DRAM Frequency [Auto]

The **DRAM Frequency** option allows specifies the DRAM frequency or allow the system to automatically detect the DRAM frequency.

→	200MHz	Sets the DRAM frequency to 200MHz
→	266MHz	Sets the DRAM frequency to 266MHz

→	333MHz		Sets the DRAM frequency to 333MHz		
→	Auto	(Default)	Automatically selects the DRAM frequency		

→ Configure DRAM Timing by SPD [Enabled]

The **Configure DRAM Timing by SPD** option determines if the system uses the SPD (Serial Presence Detect) EEPROM to configure the DRAM timing. The SPD EEPROM contains all necessary DIMM specifications the including speed of the individual components such as CAS and bank cycle time as well as valid settings for the module and the manufacturer's code. The SPD enables the BIOS to read the spec sheet of the DIMMs on boot-up and then adjust the memory timing parameters accordingly.

→	Disabled		DRAM timing parameters can be manually set using		
			the DRAM sub-items		
→	Enabled	(Default)	DRAM timing parameter are set according to the		
			DRAM Serial Presence Detect (SPD)		

The **Configure DRAM Timing by SPD** option is disabled, the following configuration options appear.

- DRAM CAS# Latency [2.5]
- DRAM RAS# Precharge [3 clocks]
- DRAM RAS# to CAS# Delay [3 clocks]
- DRAM Precharge Delay [7 clocks]
- DRAM Burst Length [8]

➔ Memory Hole [Disabled]

The **Memory Hole** reserves the memory space between 15MB and 16MB for ISA expansion cards that require a specified area of memory to work properly. If an older ISA expansion card is used, please refer to the documentation that came with the card to see if it is necessary to reserve the space.

-Disabled (Default) Memory is not reserved for ISA expansion cards 15M- 16M

Init. Graphic Adapter Priority [PCI/Int-VGA] →

The Init. Graphic Adapter Priority option selects the graphics controller the system uses as a primary boot device. The options are:

Memory is reserved for ISA expansion cards

- Internal VGA
- PCI/Int-VGA

Internal Graphics Mode Select [Enable, 32MB]

The Internal Graphic Mode Select option determines the amount of system memory that can be used by the Internal graphics device.

→	Disable		
→	Enable, 1MB		1MB of memory used by internal graphics device
→	Enable, 4MB		4MB of memory used by internal graphics device
→	Enable, 8MB		8MB of memory used by internal graphics device
→	Enable, 16MB		16MB of memory used by internal graphics device
→	Enable, 32MB	(Default)	32MB of memory used by internal graphics device

Graphics Aperture Size [64MB] →

The Graphics Aperture Size option selects the size of the AGP aperture. The aperture is a portion of the PCI memory address range dedicated as graphics memory address space.

→	64MB	(Default)	Graphics aperture size set as 64MB
→	128MB		Graphics aperture size set as 128MB
→	256MB		Graphics aperture size set as 256MB

→ Boot Display Device [CRT+LEP]

The **Boot Display Device** BIOS option selects the display device the system uses when it boots. The available options are listed below:

- CRT
- EFP
- LFP
- CRT + EFP
- CRT + LFP (Default)

→ Flat Panel Type [1280x1024 48bits]

The Flat Panel Type BIOS option specifies the flat panel PC type being used.



Please refer to the technical documents that came with the flat panel PC to ensure the correct settings are selected.

The following options are available:

- 640x480 LVDS (Default)
- 800x600 LVDS
- 1024x768 LVDS 24bits
- 1280x1024 LVDS
- 1400x1050 LVDS
- 1024x768 LVDS 18bits
- 1600x1200 LVDS
- 1280x1024 48bits
- 800x600 24bits
- 800x600 18bits
- 1024x768 36bits

5.6.2 SouthBridge Configuration

The SouthBridge Configuration menu (**BIOS Menu 20**) the southbridge chipset to be configured.

	South Bridge Chipset Configurat: Chipset	ion
OnBoard AC'97 Audio Spread Spectrum Mode OnBoard LAN1 OnBoard LAN2	[Auto] [Disabled] [Enabled] [Enabled]	Enable/Disable OnBoard AC'97 Audio.
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BIOS Menu 20: SouthBridge Chipset Configuration

➔ OnBoard AC'97 Audio [Auto]

The **OnBoard AC'97 Audio** option enables or disables the AC'97 CODEC.

→	Disabled		The onboard AC'97 is disabled			
→	Auto	(Default)	The onboard AC'97 automatically detected and enabled			

→ Spread Spectrum Mode [Disabled]

The Spread Spectrum Mode option enables or disables the spread spectrum mode.

Disabled (Default) The spread spectrum mode is disable	→	Disabled	(Default)	The spread spectrum mode is disabled
--	---	----------	-----------	--------------------------------------

→ Enabled The spread spectrum mode is enabled

→ OnBoard LAN1 [Enabled]

The **OnBoard LAN1** option enables or disables the onboard LAN1.

→	Disabled		Onboard LAN1 device manually disabled			
→	Enabled (Default)		The onboard LAN1 device automatically detected and			
			enabled			

→ OnBoard LAN2 [Enabled]

The **OnBoard LAN2** option enables or disables the onboard LAN2.

→	Disabled		Onboard LAN2 device manually disabled		
→	Enabled (Default)		The onboard LAN2 device automatically detected and		
			enabled		

5.7 Power

The **Power** menu (**BIOS Menu 21**) allows the advanced power management options to be configured.

			BIOS SETU	P UTILITY		
Main	Advanced	Boot	Security	Chipset	Power	Exit
APM Co	nfiguration				Enab	le or disable
Power	Management/A	PM	[Enable	d]		
Power	Button Mode		[On/Off	1		
Restor	e on AC Powe	r Loss	ELast S	tate]		
Resume Resume Resume	On Ring On PME#/OnB On RTC Alar	oard LAN m	[Disab] [Disab] [Disab]	ed] ed] ed]		
Power	Switch Mode		[ATX]		<pre>+→ t↓ +- F1 F10 ESC</pre>	Select Screen Select Item Change Option General Help Save and Exit Exit
	u02.57 (C) Conur in	rht 1985-200	4. American	Megatren	ds. Inc.

BIOS Menu 21: Power

→ Power Management/APM [Enabled]

The **Power Management/APM** BIOS option allows access to the advanced power management features. If this option is disabled, the only other option on the screen is the "**Resume On RTC Alarm**."

→	Disabled		Disables	the	Advanced	Power	Management	(APM)
			feature					
→	Enabled	(Default)	Enables t	he A	PM feature			

➔ Power Button Mode [On/Off]

The **Power Button Mode** BIOS specifies how the power button functions.

On/Off (Default) When the power button is pressed the system is either turned on or off

 Suspend
 When the power button is pressed the system goes into suspend mode

➔ Restore on AC Power Loss [Last State]

The Restore on AC Power Loss BIOS option specifies what state the system returns to if there is a sudden loss of power to the system.

→	Power Off		The system remains turned off
→	Power On		The system turns on
→	Last State	(Default)	The system returns to its previous state. If it was on, it
			turns itself on. If it was off, it remains off.

➔ Resume on Ring [Disabled]

The **Resume on Ring** BIOS option specifies if the system will be roused from a suspended or standby state when there is activity on the RI (ring in) modem line. That is, the system will be roused by an incoming call on a modem.

→	Disabled	(Default)	Wake event not generated by an incoming call
→	Enabled		Wake event generated by an incoming call

→ Resume on PME#/Onboard LAN [Disabled]

The **Resume on PME#** BIOS option specifies if the system will be roused from a suspended or standby state when there is activity on the PCI PME (power management event) controller or onboard LAN controller.

 Disabled (Default) Wake event not generated by PCI PME controller or onboard LAN controller activity → Enabled

Wake event generated by PCI PME controller or onboard LAN controller activity

→ Resume On RTC Alarm [Disabled]

The **Resume On RTC Alarm** determines when the computer is roused from a suspended state.

7	Enabled		If selected, the following appears with values that can be selected:
→	Enabled		event If selected, the following appears with values that can
→	Disabled	(Default)	The real time clock (RTC) cannot generate a wake

→ System Time

After setting the alarm, the computer turns itself on from a suspend state when the alarm goes off.

→ Power Switch Mode [ATX]

The **Power Switch Mode** option specifies the power switch mode.

→	ΑΤΧ	(Default)	specifies the power switch mode as ATX
→	AT		specifies the power switch mode as AT

5.8 Exit

The **Exit** menu (**BIOS Menu 22**) loads default BIOS values, optimal failsafe values and to save configuration changes.

BIOS SETUP UTILITY	
Main Advanced Boot Security Chipset Pow	wer <mark>Exit</mark>
Harm Havanced Boot Security Chipset Pot Exit Options	Mer Exit Exit system setup after saving the changes. F10 key can be used for this operation. ↔ Select Screen this operation. ★→ Select Item Enter Go to Sub Screen F1 F10 Save and Exit ESC Exit
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BIOS Menu 22: Exit

→ Save Changes and Exit

If configuration changes are complete, select this option to save them and exit the BIOS menus.

➔ Discard Changes and Exit

If configuration changes are complete but do need to be saved, select this option to exit the BIOS menus.

➔ Discard Changes

If configuration changes are complete but do need to be saved but BIOS still needs to be run , select this option.

→ Load Optimal Defaults

This option loads optimal default values for each of the parameters on the Setup menus. **F9** key can be used for this operation.

→ Load Failsafe Defaults

This option loads failsafe default values for each of the parameters on the Setup menus. **F8** key can be used for this operation.



Interface Connectors

A.1 Peripheral Interface Connectors

The PPC-5350GS flat panel PC motherboard, the A300 comes with a number of peripheral interface connectors and configuration jumpers listed in **Chapter 2**. The pinouts for these connectors are listed below:

→ CN5: Front Panel Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPEAKER_UP	2	LCD On/Off
3	SPEAKER_DOWN	4	5V Power
5	GND	6	PWRBTN
7	BKLT_UP	8	Standby Power
9	BKLT_DOWN	10	GND

→ CN9: CD/DVD-ROM LED Indicator

PIN NO.	DESCRIPTION	
1	+LED	
2	-LED	

→ CN12 : System Panel Connectors

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1-3	Power LED	2-8	Speaker
5-7	Power button	10-12	Reset
9-11	HDD LED		

→ IDE1: Primary IDE Interface Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12

13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	IDE DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	IDE CHRDY	28	GROUND
29	IDE DACK	30	GROUND-DEFAULT
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND
41	VCC	42	VCC
43	GROUND	44	N/C

→ IDE2: Secondary IDE Interface Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	IDE DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	IDE CHRDY	28	GROUND

29	IDE DACK	30	GROUND-DEFAULT
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND
41	VCC	42	VCC
43	GROUND	44	N/C

→ CN7: Compact Flash Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	26	VCC-IN CHECK1
2	DATA 3	27	DATA 11
3	DATA 4	28	DATA 12
4	DATA 5	29	DATA 13
5	DATA 6	30	DATA 14
6	DATA 7	31	DATA 15
7	HDC_CS0#	32	HDC_CS1
8	N/C	33	N/C
9	GROUND	34	IOR#
10	N/C	35	IOW#
11	N/C	36	VCC_COM
12	N/C	37	IRQ15
13	VCC_COM	38	VCC_COM
14	N/C	39	CSEL
15	N/C	40	N/C
16	N/C	41	HDD_RESET
17	N/C	42	IORDY
18	SA2	43	SDREQ
19	SA1	44	SDACK#
20	SA0	45	HDD_ACTIVE#
21	DATA 0	46	66DET
22	DATA 1	47	DATA 8
23	DATA 2	48	DATA 9
24	N/C	49	DATA 10
----	---------------	----	---------
25	VCC-IN CHECK2	50	GROUND

→ CN1.A : CRT Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	9	N/C
2	GREEN	10	GROUND
3	BLUE	11	N/C
4	N/C	12	DDCDAT
5	GROUND	13	HSYNC
6	GROUND	14	VSYNC
7	GROUND	15	DDCCLK
8	GROUND		

→ CN1.B : COM1 Connector(RS-232)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD1	2	DSR1
3	RX1	4	RTS1
5	TX1	6	CTS1
7	DTR1	8	RI1
9	5V/12V	10	GND

→ J5 (Dual DB-9 CONNECTOR): COM2,COM3(RS-232)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD3	2	DSR3
3	RX3	4	RTS3
5	TX3	6	CTS3
7	DTR3	8	RI3
9	5V/12V	10	GND

→ COM3 : COM3(RS-422/485) (14-pin Pin Header, Shared with J5-B connector)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD3	2	DSR3
3	RX3	4	RTS3

5	TX3	6	CTS3
7	DTR3	8	RI3
9	GND	10	GND
11	TX3+	12	TX3-
13	RX3+	14	RX3-

→ COM4 : COM4(10-pin Pin Header)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD3	2	DSR3
3	RX3	4	RTS3
5	TX3	6	CTS3
7	DTR3	8	RI3
9	5V	10	GND

→ COM5 and COM6 : COM5 & COM6(10-pin Pin Header)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD3	2	DSR3
3	RX3	4	RTS3
5	TX3	6	CTS3
7	DTR3	8	RI3
9	GND	10	GND

→ KB_MS1 : PS/2 Keyboard & Mouse Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	KB DATA	7	MS DATA
2	NC	8	NC
3	GND	9	GND
4	5V	10	5V
5	KB CLK	11	MS CLK
6	N/C	12	N/C

→ USB1: USB(0~1) Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USBVCC0	2	USBVCC1

3	D0-	4	D1-
5	D0+	6	D1+
7	USBGND0	8	USBGND1

→ USB2: USB(2~3) Connector(2*4 Pin header)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USBVCC2	2	USBGND3
3	D2-	4	D3+
5	D2+	6	D3-
7	USBGND2	8	USBVCC3

→ USB3, USB4: USB(4~5) Connector(1*5 Pin header)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	USBVCC4
3	GND	4	D4+
5	D4-		

→ LAN1: DUAL RJ45 Connector

PIN NO.	Description	PIN NO.	Description
A1	MDIOA0+	B1	MDIOB0+
A2	MDIOA0-	B2	MDIOB0-
A3	MDIOA1+	B3	MDIOB1+-
A4	MDIOA1-	B4	MDIOB1-
A5	MDIOA2+	B5	MDIOB2+-
A6	MDIOA2-	B6	MDIOB2-
A7	MDIOA3+	B7	MDIOB3+-
A8	MDIOA3-	B8	MDIOB3-
A9	N/C	B9	N/C
A10	N/C	B10	N/C
A11	LINK1000	B11	VCC
A12	LINK100	B12	LINK100
A13	ACT	B13	ACT
A14	LINK	B14	LINK
A15-17	GND	B15-17	GND

PIN NO.	Description	PIN NO.	Description
1	GND	2	GND
3	LVDS_Y3+	4	LVDS_Y3-
5	LVDS_CLK+	6	LVDS_CLK-
7	LVDS_Y2+	8	LVDS_Y2-
9	LVDS_Y1+	10	LVDS_Y1-
11	LVDS_Y0+	12	LVDS_Y0-
13	GND	14	GND
15	LVDSB_Y3+	16	LVDSB_Y3-
17	LVDSBCLK+	18	LVDSBCLK-
19	LVDSB_Y2+	20	LVDSB_Y2-
21	LVDSB_Y1+	22	LVDSB_Y1-
23	LVDSB_Y0+	24	LVDSB_Y0-
25	GND	26	GND
27	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

→ CN8: LCD LVDS Interface Connector

→ CN3: Inverter Power Connector – JST/2.0mm G

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC12	2	VCC12
3	BKLT_EN	4	BKLT_ADJ
5	GND	6	GND

→ PW1: ATX Power Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PSON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PWR OK	18	-5V

9	5VSB	19	5V
10	12V	20	5V

→ DIO1: 8 Bits GPIO Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC5
3	GPIO0	4	GPIO1
5	GPIO2	6	GPIO3
7	GPIO4	8	GPIO5
9	GPIO6	10	GPIO7

→ CPU_FAN1, SYS_FAN1, SYS_FAN2: Fan Connectors

PIN NO.	DESCRIPTION
1	Fan Speed Detect
2	+12V
3	GND

→ AUDIO1: Audio Connector (1*3 pin header)

PIN NO.	DESCRIPTION
1	Speaker Out R
2	GND
3	Speaker Out L

→ CN11: Audio Connector (Shared With AUDIO1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Speaker out R	2	GND
3	Speaker out L	4	GND
5	Line out R	6	Line out L
7	GND	8	GND
9	Line in R	10	Line in L
11	GND	12	GND
13	N/C	14	N/C

15	MIC1/CEN OUT	16	LFE OUT	
----	--------------	----	---------	--

→ CN15: Power button connector

PIN NO.	DESCRIPTION
1	PWR BTN
2	GND

→ CN16: LCD rotate

PIN NO.	DESCRIPTION	
1	LCD Rotate	
2	GND	

→ IR1: IR Interface

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC5	2	N/C
3	IRRX	4	GND
5	IRTX	6	



BIOS Configuration Options

B.1 BIOS Configuration Options

Below is a list of BIOS configuration options described in Chapter 5.

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