



IEI Technology Corp.



MODEL:

iSignager-1000-Q354

**Intel® Core™2 Duo CPU Based Digital Signage Player with
320 GB HDD, DVD Combo, 2.0 GB DDR2, GbE LAN,
PoweredUSB, 5V/12V RS-232, RoHS Compliant**

User Manual

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Revision

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Chapter

1

Introduction

1.1 iSignager-1000-Q354 Overview



Figure 1-1: iSignager-1000-Q354 Digital Signage Player

The iSignager-1000-Q354 is an Intel® based integrated service solution that can be applied in diverse operational environments and implemented in multi-faceted point-of-sale applications. The iSignager-1000-Q354 comes fully kitted with a high-performance motherboard and a host of other peripheral interface connectors. The two integrated GbE LANs ensure the uninterrupted network connection. The preinstalled 320 GB HDD and 2 GB DDR2 SDRAM make the iSignager-1000-Q354 a ready-to-use system. The flexible PCI/PCIe expansion allows the iSignager-1000-Q354 to meet multiple application requirements. The iSignager-1000-Q354 is designed for ease of use and easy installation.

1.1.1 iSignager-1000-Q354 Benefits

The iSignager-1000-Q354 has the following benefits:

- Easy installation and maintenance
- Complete integration saves solution development time and cost
- A full range of I/O interfaces compatible with most multimedia external devices
- Quick access CF storage card interface
- Powerful preinstalled Intel® Core™2 Duo/Core™2 Quad CPU and motherboard ensures rigorous processing needs can be met

iSignager-1000-Q354 Digital Signage Player

1.1.2 iSignager-1000-Q354 Features

The iSignager-1000-Q354 has the following features

- RoHS compliant design
- CPU preinstalled
 - 3.0 GHz Intel® Core™2 Duo E8400 or
 - 2.66 GHz Intel® Core™2 Quad Q9400
- 2 GB DDR2 SDRAM DIMM preinstalled
- Two GbE RJ-45 connectors supported
- One CompactFlash® Type I or Type II card supported
- Serial port 5 V or 12 V LED indicators on the rear panel
- 802.11b/g wireless LAN module preinstalled on the PCIe riser card
- 3.5" 320 GB HDD and DVD combo drive preinstalled
- PCIe x1 and PCIe x16 expansion cards supported

1.2 Technical Specifications

The specifications for the Intel® based iSignager-1000-Q354 listed below.

	iSignager-1000-Q354
CPU	3.0 GHz Intel® Core™2 Duo E8400 with 6 MB L2 cache or 2.66 GHz Intel® Core™2 Quad Q9400 with 6 MB L2 cache
System Chipset	Northbridge: Intel® Q35 Southbridge: ICH9DO
System Memory	Two 240-pin 1 GB 667 MHz DDR2 SDRAM DIMM preinstalled
Ethernet	Two RJ-45 for GbE
Display	One VGA integrated in Intel® Q35
USB	Seven USB 2.0 supported: 6 x Standard USB 2.0 ports (two on the front, four on the rear) 1 x PoweredUSB port provides 12 V output

Serial Port	<p>Four RS-232 ports:</p> <p>2 x Powered RS-232 ports (COM3 and COM4) providing 5 V or 12 V power output via Pin 9 (indicated by LEDs on the rear panel)</p> <p>2 x RS-232 ports (COM1 and COM2)</p>
Parallel Port	One DB-25 parallel port
Digital I/O	Two RJ-12 connectors for cash drawer
Audio	<p>1 x Line-out</p> <p>1 x Mic-in</p>
Keyboard/Mouse	<p>1 x PS/2 Keyboard connector</p> <p>1 x PS/2 Mouse connector</p>
ODD	One DVD combo drive (supports CD-R/CD-RW/DVD-R)
HDD	<p>One preinstalled 3.5" 320 GB HDD</p> <p>(the system supports two 3.5" HDD drive bays)</p>
SSD	One CompactFlash® Type II slot
Expansion Slot	<p>One preinstalled PCIe riser card including:</p> <p>1 x PCIe mini slot (preinstalled with a wireless LAN module)</p> <p>1 x PCIe x1</p> <p>1 x PCIe x16</p>
Power Supply	<p>270 W ATX power supply preinstalled, input voltage:</p> <p>90 V AC ~ 264 V AC</p>
Operating Temperature	0°C ~ 45°C
Net Weight	5.1 kg
Dimensions (W x D x H)	350 mm x 309 mm x 95 mm
EMC/Safety	CE, FCC class B, UL, CCC

Table 1-1: Technical Specifications

iSignager-1000-Q354 Digital Signage Player

1.3 Power Supply

The iSignager-1000-Q354 models all preinstalled with a 270 W 1U AC input ATX power supply.



Figure 1-2: ACE-A627A Power Supply

The specifications for the ACE-A627A power supply are listed in **Table 1-2:**

Model	ACE-A627A					
Input Type	90–264 V AC full range					
Output Voltage	+3.3 V	+5 V	+12 V	+12 V 2	-12 V	+5 VSB
	16 A (0.5 A min.)	18 A (0.5 A min.)	16 A (1 A min.)	10 A (1 A min.)	0.8 A (0 A min.)	2.5 A (0 A min.)
Efficiency	80%					
Temperature	Operating: 0°C ~ 50°C					
	Storage: -20°C ~ 80°C					
MTBF	100,000 hrs					
Output Connector	1 x 20-pin ATX connector			3 x HDD power connector		
	1 x 4-pin 12 V CPU connector					
Dimensions	150 mm x 81.5 mm x 40.5 mm					

Table 1-2: Power Supply Specifications

1.4 Wireless LAN Module

An Azurewave AW-GE780 wireless 802.11b/g PCIe mini card is installed on the PCIe riser card. The specifications for the wireless LAN module are listed in **Table 1-3**:

	AW-GE780
Standard	IEEE 802.11 b/g
Interface	PCIe mini card
Connectors	2 x U.FL-R-SMT Antenna connectors
Frequency Band	2412 MHz ~ 2472 MHz
Modulation	802.11g: OFDM 802.11b: CCK (11, 5.5 Mbps), DQPSK (2 Mbps), BPSK (1 Mbps)
Output Power	802.11b: typical 16 ± 1.5 dBm 802.11g: typical 13 ± 1.5 dBm
Receive Sensitivity	802.11b: typical -76 dBm at 11 Mbps 802.11g: typical -68 dBm at 54 Mbps
Operating Voltage	3.3 V
Dimensions	30.00 mm x 51 mm x 3.3 mm

Table 1-3: Wireless Module Specifications

Chapter

2

Mechanical Description

2.1 iSignager-1000-Q354 Mechanical Overview

The iSignager-1000-Q354 RoHS compliant, Intel® based digital signage player features industrial grade components that offer longer operating life and endurance over a wide temperature range. A preinstalled 320 GB 3.5" HDD and a DVD combo drive are located in the right side of the iSignager-1000-Q354. The motherboard and the power module are installed inside the bottom of the chassis.

Featuring two GbE, six USB, four serial communication ports, as well as audio, VGA, parallel port and cash drawer connectors, the iSignager-1000-Q354 offers system integrators and developers the best selection of robust and high performance integrated service platforms. A CompactFlash® slot on the rear panel supports one Type I or Type II CF card.

2.2 iSignager-1000-Q354 Physical Dimensions

The dimensions of the iSignager-1000-Q354 are listed below and shown in **Figure 2-1**.

- **Height:** 95.00 mm
- **Width:** 350.00 mm
- **Length:** 309.00 mm

iSignager-1000-Q354 Digital Signage Player

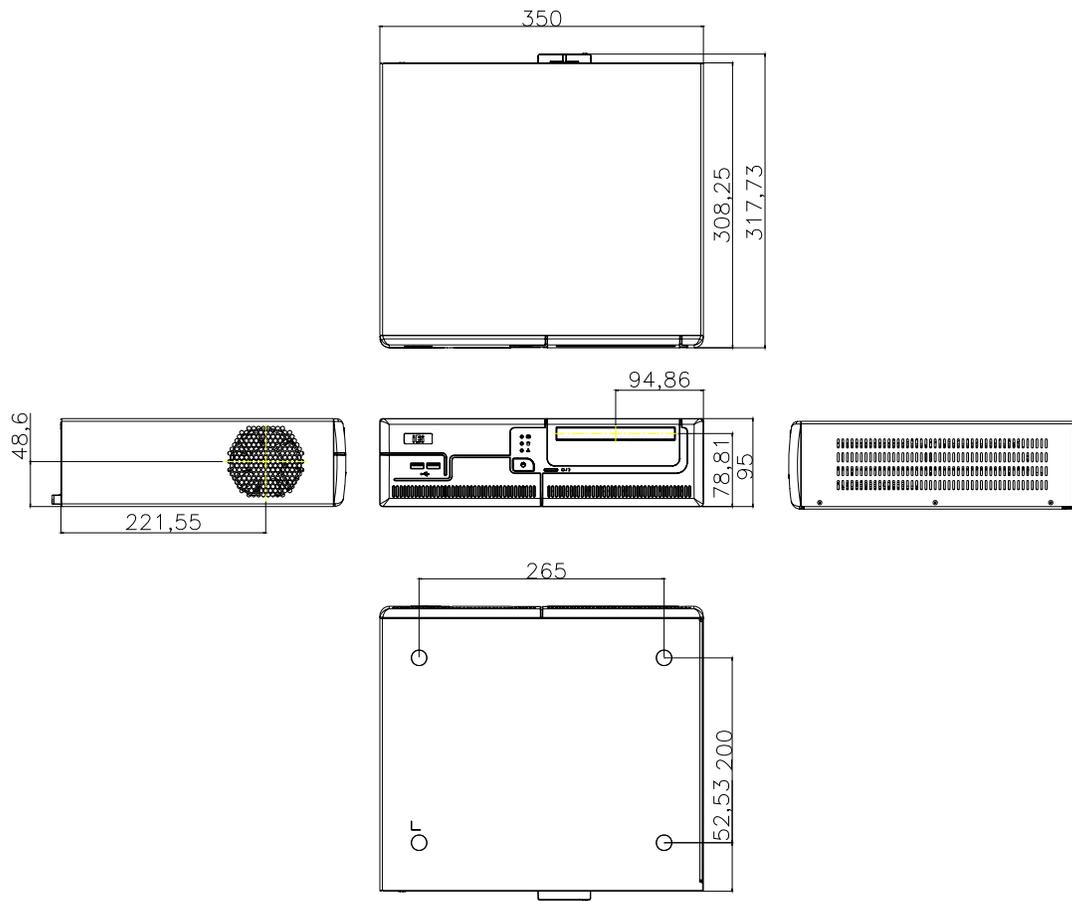


Figure 2-1: iSignager-1000-Q354 Dimensions (mm)

2.3 External Overview

2.3.1 Front Panel

The front panel of the iSignager-1000-Q354 has two USB 2.0 ports, indicators and power button. The DVD combo drive is also accessed from the front panel. An overview of the rear panel is shown in **Figure 2-3** below.



Figure 2-2: iSignager-1000-Q354 Front Panel

2.3.2 Rear Panel Overview

The iSignager-1000-Q354 contains the external I/O interface connectors, power connector, serial port LEDs and a CF slot. An overview of the rear panel is shown in **Figure 2-3** below.

iSignager-1000-Q354 Digital Signage Player

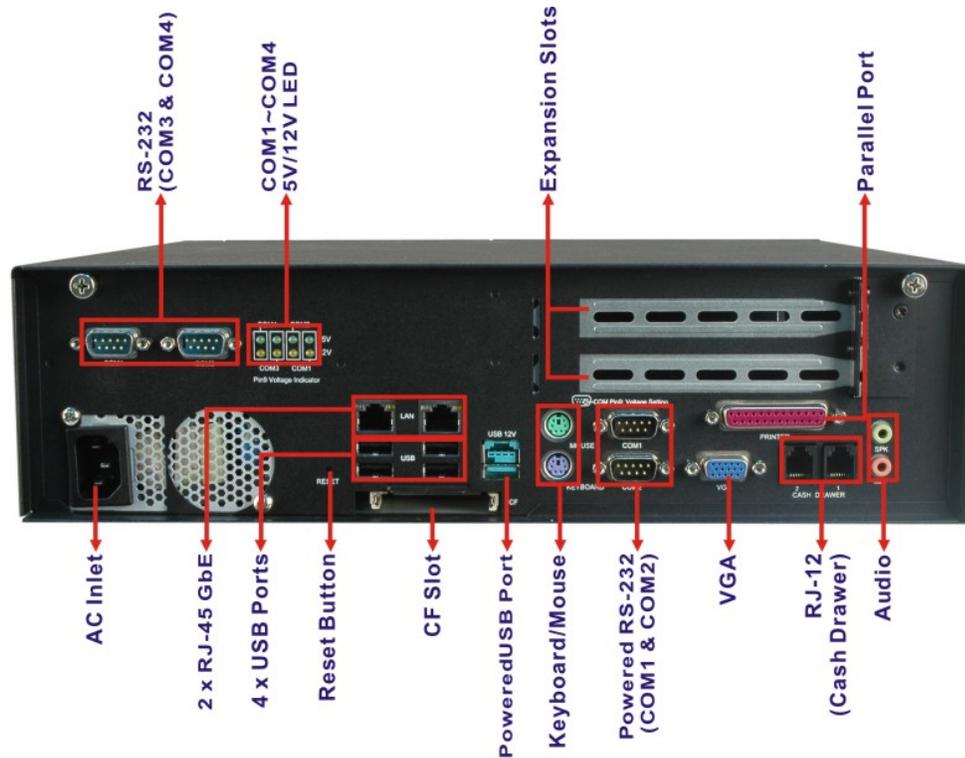


Figure 2-3: iSignager-1000-Q354 Rear Panel

2.3.2.1 Rear Panel Connectors and Indicators

The connectors, indicators and switches listed in this section are shown in **Figure 2-3** above. The rear panel I/O connectors are listed below:

- 1 x 12 V AC inlet
- 4 x RS-232 serial port connectors (COM3 and COM4 with selectable voltage)
- 2 x RJ-45 GbE connectors
- 4 x USB 2.0 ports
- 1 x PoweredUSB port (12 V output supported)
- 1 x CF Type II slot
- 1 x Keyboard connector
- 1 x Mouse connector
- 1 x Parallel port
- 1 x VGA connector
- 2 x RJ-12 connectors
- 1 x Line-out connector

- 1 x Mic-in connector

The rear panel also contains the following button:

- 1 x Reset button

Status indicator LEDs on the rear panel include:

- 2 x COM3 pin-9 voltage LED [5 V (default) or 12 V]
- 2 x COM4 pin-9 voltage LED [5 V (default) or 12 V]

All the rear panel items listed above are shown in **Figure 2-3** above.

2.4 Internal Overview

The iSignager-1000-Q354 preinstalled internal components are listed below:

- 1 x IEI POS-Q354 motherboard
- 1 x IEI ACE-A627A power supply
- 1 x System fan
- 1 x 2.0 GB DDR2 DIMM module
- 1 x 320 GB 3.5" SATA HDD
- 1 x DVD combo drive
- 1 x PCIe riser card
- 1 x Wireless LAN module

All the components are accessed by removing the cover case.

iSignager-1000-Q354 Digital Signage Player



Figure 2-4: Internal Overview



Chapter

3

System Components



NOTE:

The jumpers and connectors shown in the section below are those jumpers and connectors that are relevant to the configuration and installation of the iSignager-1000-Q354. For a complete list of connectors on the POS-Q354 motherboard, please refer to the **Appendix B**.

3.1 iSignager-1000-Q354 Motherboard

The iSignager-1000-Q354 has a POS-Q354 motherboard installed in the system. The following sections describe the relevant connectors and jumpers on the motherboard.

3.1.1 POS Motherboard Overview

The locations of the POS-Q354 jumpers and connectors used on the iSignager-1000-Q354 are shown in **Figure 3-1** below.

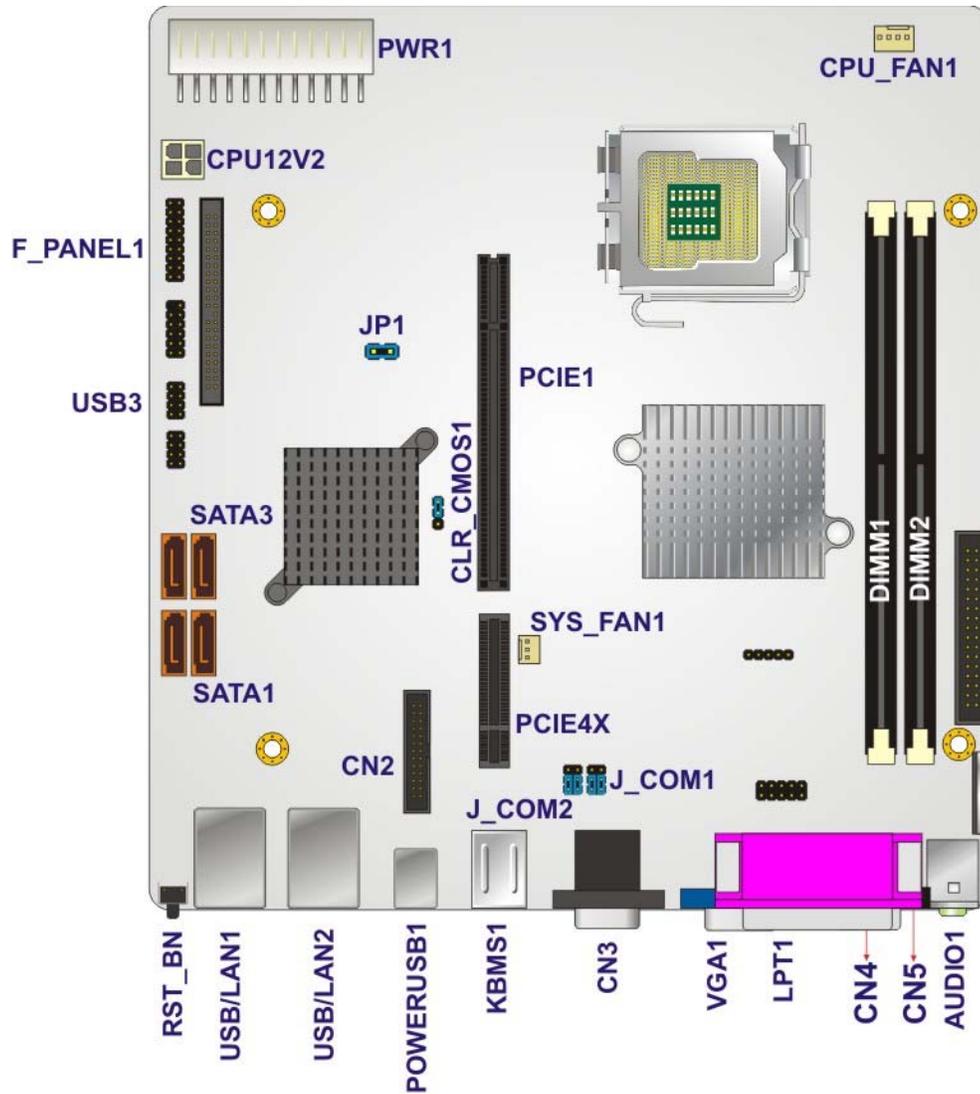


Figure 3-1: POS-Q354 Jumper and Connector Locations

3.1.2 CPU Support

The POS-Q354 motherboard is preinstalled with a CPU.

- 3.0 GHz Intel® Core™2 Duo E8400 CPU with 6.0 MB L2 cache.
- 2.66 GHz Intel® Core™2 Quad Q9400 CPU with 6.0 MB L2 cache.

3.1.3 Onboard Chipsets

3.1.3.1 Northbridge and Southbridge Chipsets

The following chipsets are preinstalled on the board:

- **Northbridge:** Intel® Q35
- **Southbridge:** ICH9DO

The following two sections (**Section 3.1.3.2** and **Section 3.1.3.3**) list some of the features of the Intel® Q35 and the ICH9DO chipsets. For more information on these two chipsets please refer to the Intel website.

3.1.3.2 Intel® Q35 Northbridge Chipset

The Intel Q35 Northbridge chipset comes with the following features:

- System Memory Support
 - DDR2 only
 - Un-buffered only
 - 667 MHz or 800 MHz
 - 2.0 GB maximum capacity per DIMM (8.0 GB supported with four DIMM)
 - Memory bandwidth:
 - 6.4 GBps in single-channel or dual-channel asymmetric mode
 - 12.8 GBps in dual-channel interleaved mode assuming DDR2 800MHz
- Internal Graphics
 - 3D, 2D and video capabilities
 - The Unified Memory Architecture (UMA) uses up to 256 MB of Dynamic Video Memory Technology (DVMT) for graphics memory.
 - External graphics accelerators on the PCIe graphics (PEG) port are supported
- DMI
 - 2.0 GBps point-to-point DMI to ICH9DO (1.0 GBps in each direction)
 - 100 MHz reference clock (shared with PCI Express* Graphics Attach)
 - 32-bit downstream addressing

- APIC and MSI interrupt messaging support
- Message Signaled Interrupt (MSI) messages
- SMI, SCI and SERR error indication

3.1.3.3 ICH9DO Southbridge Chipset

The Intel® ICH9DO Southbridge chipset is connected to the Northbridge GMCH through the chip-to-chip Direct Media Interface (DMI). Some of the features of the Intel® ICH9DO are listed below.

- Complies with PCI Express Base Specification, Revision 1.1
- Complies with PCI Local Bus Specification, Revision 2.3 and supports 33MHz PCI operations
- Supports ACPI Power Management Logic
- Contains:
 - Enhanced DMA controller
 - Interrupt controller
 - Timer functions
- Integrated SATA host controller with DMA operations on ports with data transfer rates up to 3.0 Gbps
- Complies with System Management Bus (SMBus) Specification, Version 2.0
- Supports Intel® High Definition Audio
- Supports Intel® Matrix storage technology
- Contains Low Pin Count (LPC) interface
- Serial Peripheral Interface (SPI) for Serial and Shared Flash

3.1.4 Ethernet Controllers

3.1.4.1 Intel® 82566MM PCIe Gigabit LAN Controller

One of the external RJ-45 Ethernet LAN connectors is interfaced to an Intel® 82566MM Gigabit LAN connect device. The Intel® 82566MM is a compact, single-port integrated physical layer (PHY) device interfaced directly to the Intel® ICH9DO Ethernet controller through the GLCI. The Intel® ICH9DO Ethernet controller has its own Media Access Controller (MAC).

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3.1.5 Intel® 82573L PCIe Gigabit Ethernet (GbE) Controller

There is one Intel® 82573L PCIe GbE controller installed on the iSignager-1000-Q354. The Intel® 82573L is interfaced through a PCIe x1 channel to the Intel® ICH9DO. The Intel® 82573L controller is then connected to an RJ-45 Ethernet connector enabling the iSignager-1000-Q354 to be connected to an external network.

3.2 Peripheral Interface Connectors

Section 3.2.1 lists all the peripheral interface connectors seen in **Section 3.1.1**.

3.2.1 Peripheral Interface Connectors

Table 3-1 shows a list of the peripheral interface connectors on the POS motherboard used for the iSignager-1000-Q354.

Connector	Type	Label
ATX power connector	24-pin connector	PWR1
CPU power connector	4-pin connector	CPU12V1
DIMM socket	240-pin connector	DIMM1
Fan connector (CPU)	4-pin wafer connector	CPU_FAN1
Fan connector (system)	3-pin wafer connector	SYS_FAN1
Front panel connector	18-pin header	F_PANEL2
IDE connector	44-pin box header	IDE1
PCIe x16 socket	164-pin PCIe socket	PCIE1
PCIe x4 socket	64-pin PCIe socket	PCIE4X
Serial ports (COM3, COM4) and indicators (for COM1~COM4) connector	26-pin header	CN9
SATA connector	7-pin connector	SATA4
USB connector	8-pin header	USB3

Table 3-1: Peripheral Interface Connectors

3.2.2 External Interface Panel Connectors

Table 3-2 lists the rear panel connectors on the POS motherboard.

Connector	Type	Label
Audio jacks (line-out, mic-in)	Audio jack	AUDIO1
Cash drawer connectors	RJ-12 connector	CN4, CN5
CompactFlash® slot	50-pin connector	CF1
Ethernet and USB combo connector	RJ-45 connector	LAN/USB1
Ethernet and USB combo connector	RJ-45 connector	LAN/USB2
Keyboard/mouse connector	PS/2 connector	KBMS1
Parallel port	DB-26	LPT1
Reset button	Push-button	RST_BN
RS-232 serial port (COM1, COM2)	DB-9 connector	CN3
USB port (PoweredUSB, 12 V)	USB port	POWERUSB1
VGA connector	DB-15 connector	VGA1

Table 3-2: Rear Panel Connectors

3.3 On-board Jumpers



NOTE:

A jumper is a metal bridge used to close an electrical circuit. It consists of two or three 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.

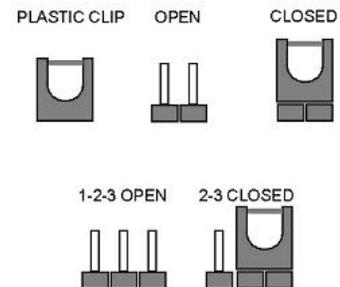


Figure 3-2: Jumpers

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The POS motherboard has several onboard jumpers (**Table 3-3**).

Description	Label	Type
ATX power select	JP1	2-pin header
Clear CMOS	CLR_CMOS1	3-pin header
COM1/COM2 power select	J_COM1	6-pin header
COM3/COM4 power select	J_COM2	6-pin header

Table 3-3: Jumpers

3.3.1 ATX Power Select Jumper Settings

Jumper Label:	JP1
Jumper Type:	2-pin header
Jumper Settings:	See Table 3-4
Jumper Location:	See Figure 3-3

The ATX Power Select jumper specifies the systems power mode as AT or ATX. ATX Power Select jumper settings are shown in **Table 3-4**.

ATX Power Select	Description	
Short	Use ATX power	Default
Open	Use AT power	

Table 3-4: ATX Power Select Jumper Settings

The location of the ATX Power Select jumper is shown in **Figure 3-3** below.

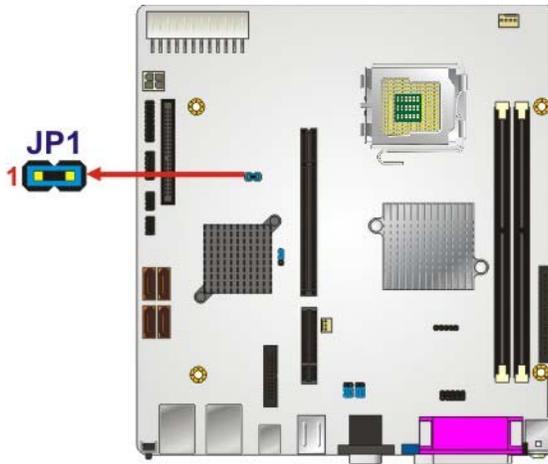


Figure 3-3: ATX Power Select Jumper Location

3.3.2 Clear CMOS Jumper

Jumper Label:	CLR_CMOS1
Jumper Type:	3-pin header
Jumper Settings:	See Table 3-5
Jumper Location:	See Figure 3-4

If the iSignager-1000-Q354 fails to boot due to improper BIOS settings, the clear CMOS jumper clears the CMOS data and resets 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 is displayed during the boot up process, the fault may be corrected by pressing the F1 to enter the CMOS Setup menu. Do one of the following:

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

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

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The clear CMOS jumper settings are shown in **Table 3-5**.

Clear CMOS	Description	
Short 1 - 2	Keep CMOS Setup	Default
Short 2 - 3	Clear CMOS Setup	

Table 3-5: Clear CMOS Jumper Settings

The location of the clear CMOS jumper is shown in **Figure 3-4** below.

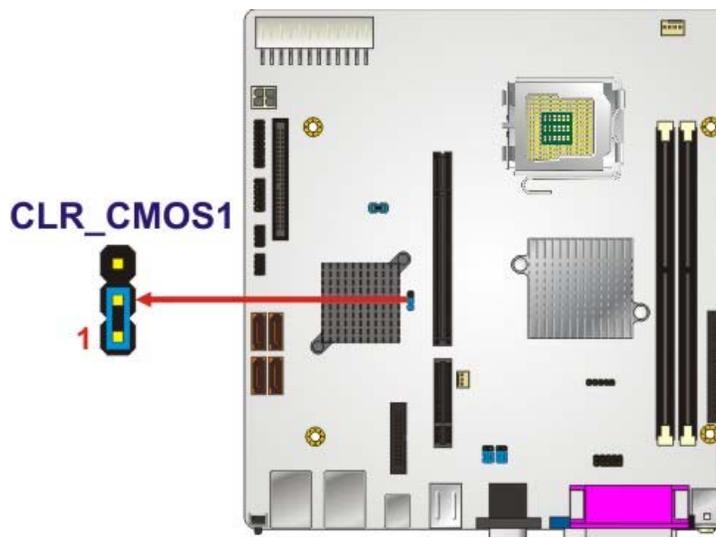


Figure 3-4: Clear CMOS Jumper

3.3.3 COM 1/2 Pin 9 Setting Jumper

Jumper Label:	J_COM1
Jumper Type:	6-pin header
Jumper Settings:	See Table 3-6
Jumper Location:	See Figure 3-5

The COM 1/2 Pin 9 Setting jumper configures pin 9 on COM 1 and COM 2 as either a +5 V, or +12 V power source. The COM 1/2 Pin 9 Setting jumper selection options are shown in **Table 3-6**.

COM 1/2 Voltage	Description	
Short 1 – 3	COM 1 Pin 9 use +5 V	Default
Short 3 – 5	COM 1 Pin 9 use +12 V	
Short 2 – 4	COM 2 Pin 9 use +5 V	Default
Short 4 – 6	COM 2 Pin 9 use +12 V	

Table 3-6: COM 1/2 Pin 9 Setting Jumper Settings

The COM 1/2 Pin 9 Setting jumper location is shown in **Figure 3-5** below.

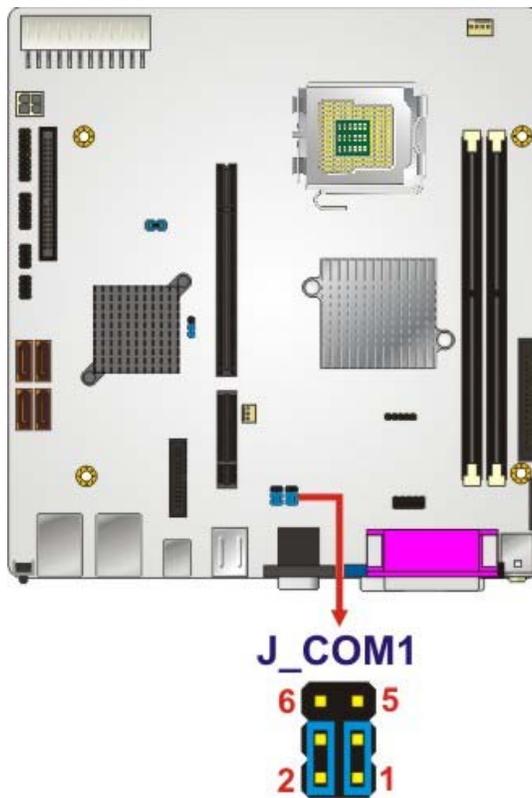


Figure 3-5: COM 1/2 Pin 9 Setting Jumper Location

3.3.4 COM 3/4 Pin 9 Setting Jumper

- Jumper Label:** J_COM2
- Jumper Type:** 6-pin header
- Jumper Settings:** See Table 3-7
- Jumper Location:** See Figure 3-6

The COM 3/4 Pin 9 Setting jumper configures pin 9 on COM 3 and COM 4 as either a +5 V, or +12 V power source. The COM 3/4 Pin 9 Setting jumper selection options are shown in Table 3-7.

COM 3/4 Voltage	Description	
Short 1 – 3	COM 3 Pin 9 use +5 V	Default
Short 3 – 5	COM 3 Pin 9 use +12 V	
Short 2 – 4	COM 4 Pin 9 use +5 V	Default
Short 4 – 6	COM 4 Pin 9 use +12 V	

Table 3-7: COM 3/4 Pin 9 Setting Jumper Settings

The COM 3/4 Pin 9 Setting jumper location is shown in **Figure 3-5** below.



Figure 3-6: COM 3/4 Pin 9 Setting Jumper Location



Chapter

4

Installation

4.1 Anti-static Precautions



WARNING:

If the following anti-static precautions are not followed, a user may be injured and the system irreparably damaged.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the POS motherboard and the power module. (Dry climates are especially susceptible to ESD.) It is therefore critical that whenever the iSignager-1000-Q354 is opened and any electrical component handled, the following anti-static precautions are strictly adhered to.

- **Wear an anti-static wristband:** Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- **Self-grounding:** Before handling the board, touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.

4.2 Installation Procedure

4.2.1 Installation Procedure Overview

To properly install the iSignager-1000-Q354, the following steps must be followed. Detailed descriptions of these instructions are listed in the sections that follow.

Step 1: Unpacking

Step 2: Install the CF card

Step 3: Install the four foot pads

Step 4: Connect the rear panel peripheral connectors

Step 5: Power the system up

4.2.2 Unpacking

After the iSignager-1000-Q354 is received make sure the following components are included in the package. If any of these components are missing, please contact the iSignager-1000-Q354 reseller or vendor where it was purchased or contact an IEI sales representative immediately.

STANDARD		
Quantity	Item	Image
1	iSignager-1000-Q354 digital signage player	
1	Power cord (P/N: 32000-085000-RS for USA) (P/N: 32000-089000-RS for EU)	
1	Screw set (P/N: 19600-000215-RS)	
1	CF card slot cover	
4	Foot pads (P/N: 46007-002200-RS)	
1	Utility CD (manual, drivers and iSMM)	

Table 4-1: Package List Contents

iSignager-1000-Q354 Digital Signage Player

4.2.3 CompactFlash® Card Installation

The iSignager-1000-Q354 has one CF slot on the rear panel. To install the CF card, follow the instructions below.

Step 1: Locate the CF card slot on the rear panel (**Figure 4-1**).



Figure 4-1: CF Card Slot Cover Retention Screw

Step 2: Insert the CF card into the slot.

Step 3: Install the CF card slot plastic cover by fastening the retention screw.

4.2.4 Foot Pad Installation

The iSignager-1000-Q354 is shipped with four foot pads. To install the foot pads, follow the instructions below.

Step 1: Turn the iSignager-1000-Q354 over.

Step 2: Locate the marked locations for the four foot pads on the bottom surface.

Step 3: Glue the foot pads at the marked locations on the bottom surface.

4.2.5 Cable Connections

Once the system has been mounted on the wall, the following connectors can be connected to the system.

- Audio jacks

- Keyboard/Mouse connectors
- VGA cable connector
- Parallel port connector
- Serial port connectors
- RJ-45 connectors
- USB and PoweredUSB™ devices can be connected to the system.

The cable connection locations are shown in **Figure 2-3**.

4.3 Power-On Procedure

4.3.1 Installation Checklist



WARNING:

Make sure a power supply with the correct input voltage is being fed into the system. Incorrect voltages applied to the system may cause damage to the internal electronic components and may also cause injury to the user.

To power on the iSignager-1000-Q354 please make sure of the following:

- The memory module is installed
- The CF module is installed
- The cover case is installed
- All peripheral devices (VGA monitor, serial communications devices etc.) are connected
- The power cables are plugged in

4.3.2 Power-on Procedure

To power-on the iSignager-1000-Q354 please follow the steps below:

Step 1: Push the power button on the front panel.

Step 2: Once turned on, the blue power LED should be turned on. See **Figure 4-2**.

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Figure 4-2: Power Button and Power LED



Chapter

5

AMI BIOS

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 the **DELETE** key is pressed, 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.

Key	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
Page Up key	Increase the numeric value or make changes
Page Dn 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 for 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 3.3.2**.

5.1.5 BIOS Menu Bar

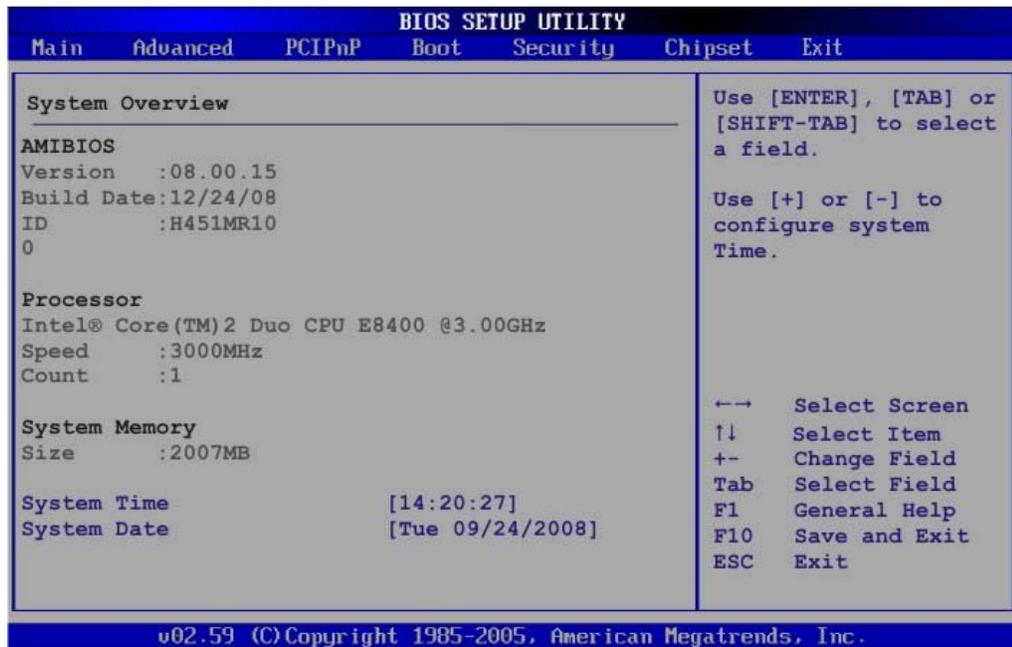
The **menu bar** on top of the BIOS screen has the following main items:

- **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.
- **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

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



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
 - **Version:** Current BIOS version
 - **Build Date:** Date the current BIOS version was made
 - **ID:** Installed BIOS ID
- Processor: Displays auto-detected CPU specifications
 - **Type:** Names the currently installed processor
 - **Speed:** Lists the processor speed
 - **Count:** The number of CPUs on the motherboard
- System Memory: Displays the auto-detected system memory.
 - **Size:** Lists memory size

The System Overview field also has two user configurable fields:

→ **System Time [xx:xx:xx]**

Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

→ **System Date [xx/xx/xx]**

Use the **System Date** option to set the system date. Manually enter the day, month and year.

5.3 Advanced

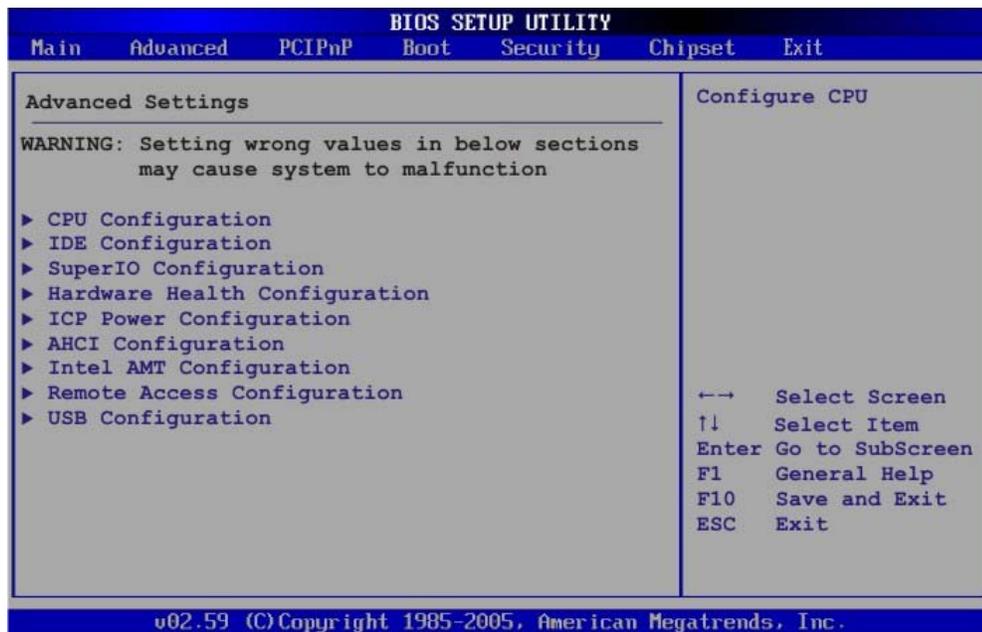
Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices through the following sub-menus:



WARNING!

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.

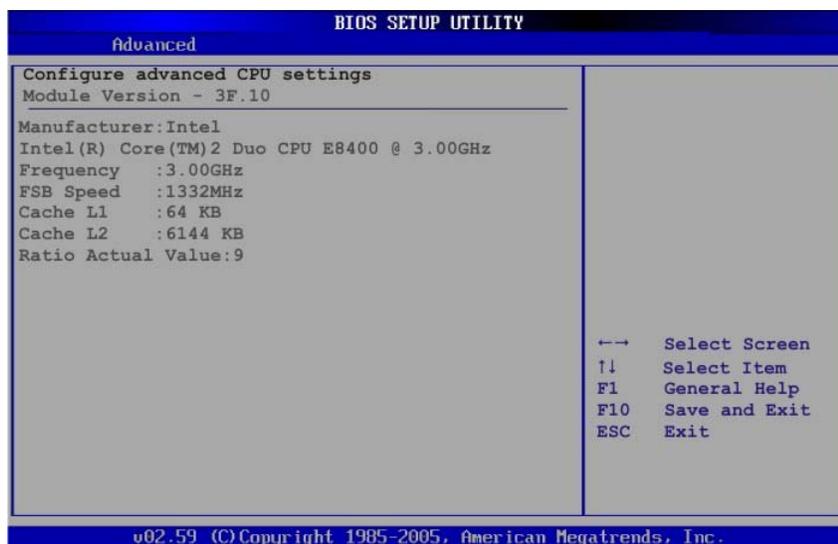
-
- CPU Configuration (see **Section 5.3.1**)
 - IDE Configuration (see **Section 5.3.2**)
 - Super IO Configuration (see **Section 5.3.3**)
 - Hardware Health Configuration (see **Section 5.3.4**)
 - ICP Power Configuration (see **Section 5.3.5**)
 - AHCI Configuration (see **Section 5.3.6**)
 - Intel AMT Configuration (see **Section 5.3.7**)
 - Remote Access Configuration (see **Section 5.3.8**)
 - USB Configuration (see **Section 5.3.9**)



BIOS Menu 2: Advanced

5.3.1 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 3**) to view detailed CPU specifications and configure the CPU.



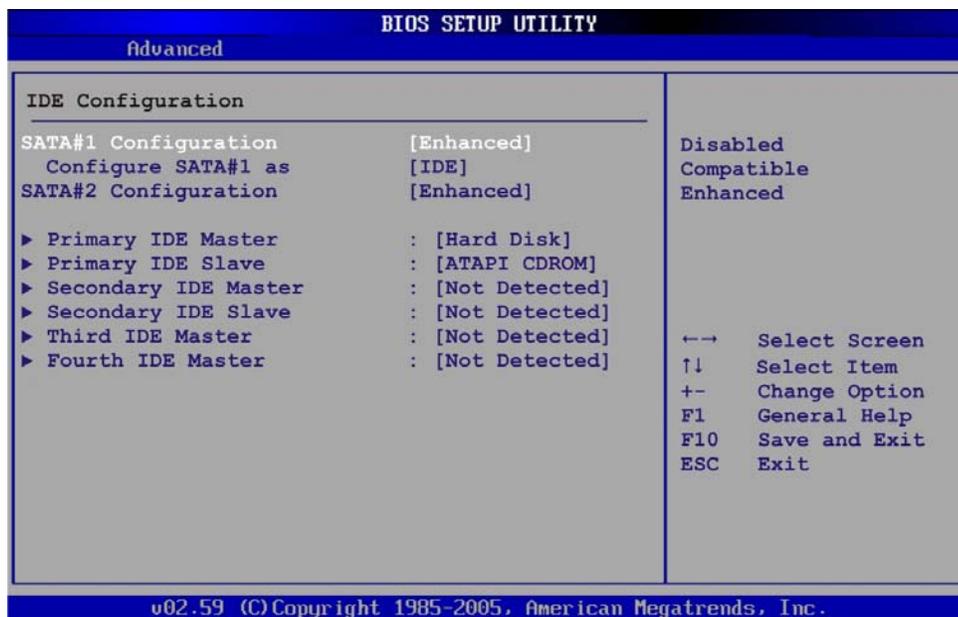
BIOS Menu 3: CPU Configuration

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
- Ratio Actual Value: Lists the ratio actual value

5.3.2 IDE Configuration

Use the **IDE Configuration** menu (**BIOS Menu 4**) to change and/or set the configuration of the IDE devices installed in the system.



BIOS Menu 4: IDE Configuration

→ SATA#1 Configurations [Enhanced]

Use the **SATA#1 Configurations** option to configure the SATA controller.

- **Disabled** Disables the on-board SATA controller.
- **Enhanced** **DEFAULT** Configures the on-board SATA controller to be in

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Enhanced mode. In this mode, IDE channels and SATA channels are separated. This mode supports up to 6 storage devices. Some legacy OS do not support this mode.

→ Configure SATA as [IDE]

Use the **Configure SATA as** option to configure SATA devices as normal IDE devices.

- **IDE** **DEFAULT** Configures SATA devices as normal IDE device.
- **RAID** Configures SATA devices as a RAID device.
- **AHCI** Configures SATA devices as a AHCI device.

→ SATA#2 Configurations [Enhanced]

Use the **SATA#2 Configurations** option to configure the SATA controller.

- **Disabled** Disables the on-board SATA controller.
- **Enhanced** **DEFAULT** Configures the on-board SATA controller to be in Enhanced mode. In this mode, IDE channels and SATA channels are separated. This mode supports up to 6 storage devices. Some legacy OS do not support this mode.

→ IDE Master and IDE Slave

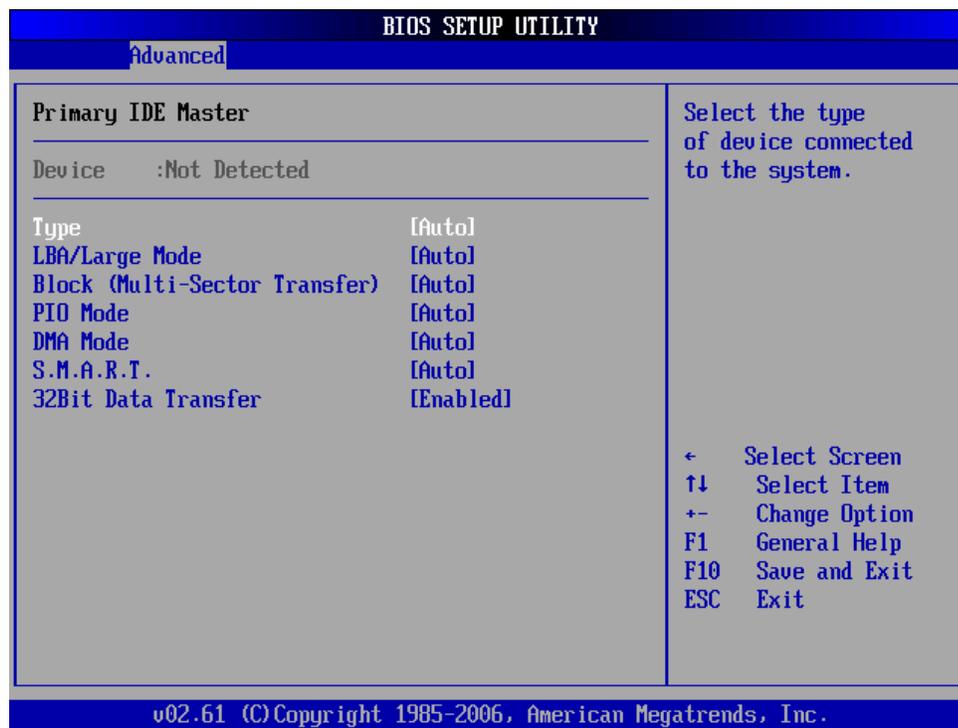
When entering setup, BIOS auto detects the presence of IDE devices. BIOS displays the status of the auto detected IDE devices. The following IDE devices are detected and are shown in the **IDE Configuration** menu:

- Primary IDE Master
- Primary IDE Slave
- Secondary IDE Master
- Secondary IDE Slave
- Third IDE Master
- Fourth IDE Master

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

Use the **IDE Master** and **IDE Slave** configuration menu to view both primary and secondary IDE device details and configure the IDE devices connected to the system.



BIOS Menu 5: IDE Master and IDE Slave 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.)
- Type: Indicates the type of devices a user can manually select

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- Vendor: Lists the device manufacturer
- Size: List the storage capacity 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]

Use the **Type** BIOS option select the type of device the AMIBIOS attempts to boot from after the Power-On Self-Test (POST) is complete.

- | | | | |
|---|----------------------|----------------|---|
| → | Not Installed | | BIOS is prevented from searching for an IDE disk drive on the specified channel. |
| → | Auto | DEFAULT | The BIOS auto detects 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]**

Use the **LBA/Large Mode** option to disable or enable BIOS to 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** BIOS is prevented from using the LBA mode control on the specified channel.
- **Auto** **DEFAULT** BIOS auto detects the LBA mode control on the specified channel.

→ **Block (Multi Sector Transfer) [Auto]**

Use the **Block (Multi Sector Transfer)** to disable or enable BIOS to auto detect if the device supports multi-sector transfers.

- **Disabled** BIOS is prevented from using Multi-Sector Transfer on the specified channel. The data to and from the device occurs one sector at a time.
- **Auto** **DEFAULT** BIOS auto detects Multi-Sector Transfer support on the drive on the specified channel. If supported the data transfer to and from the device occurs multiple sectors at a time.

→ **PIO Mode [Auto]**

Use the **PIO Mode** option to select 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** BIOS auto detects 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

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- 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]

Use the **DMA Mode** BIOS selection to adjust the DMA mode options.

- **Auto** **DEFAULT** BIOS auto detects the DMA mode. Use this value if the IDE disk drive support cannot be determined.

→ S.M.A.R.T [Auto]

Use the **S.M.A.R.T** option to auto-detect, disable or enable Self-Monitoring Analysis and Reporting Technology (SMART) on the drive on the specified channel. **S.M.A.R.T** predicts impending drive failures. The **S.M.A.R.T** BIOS option enables or disables this function.

- **Auto** **DEFAULT** BIOS auto detects HDD SMART support.
- **Disabled** Prevents BIOS from using the HDD SMART feature.
- **Enabled** Allows BIOS to use the HDD SMART feature

→ 32Bit Data Transfer [Enabled]

Use the **32Bit Data Transfer** BIOS option to enables or disable 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 supported hard disk drives.

5.3.3 Super IO Configuration

Use the **Super IO Configuration** menu (**BIOS Menu 6**) to set or change the configurations for the FDD controllers, parallel ports and serial ports.



BIOS Menu 6: Super IO Configuration

→ Serial Port1 Address [3F8/IRQ4]

Use the **Serial Port1 Address** option 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 address is IRQ3

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→ Serial Port1 Mode [Normal]

Use the **Serial Port1 Mode** option to select the transmitting and receiving mode for the first serial port.

- **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 Port2 Address [2F8/IRQ3]

Use the **Serial Port2 Address** option to select the Serial Port 2 base address.

- **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]

Use the **Serial Port2 Mode** option to select the Serial Port2 operational mode.

- **Normal** **DEFAULT** Serial Port 2 mode is normal
- **IrDA** Serial Port 2 mode is IrDA
- **ASK IR** Serial Port 2 mode is ASK IR

→ Parallel Port Address [378]

Use the **Parallel Port Address** option to select the parallel port base address.

- **Disabled** No base address is assigned to the Parallel Port
- **378** **DEFAULT** Parallel Port I/O port address is 378

- 278 Parallel Port I/O port address is 278
- 3BC Parallel Port I/O port address is 3BC

→ **Parallel Port Mode [Normal]**

Use the **Parallel Port Mode** option to select the mode the parallel port operates in.

- **Normal** **DEFAULT** The normal parallel port mode is the standard mode for parallel port operation.
- **EPP** The parallel port operates in the enhanced parallel port mode (EPP). The EPP mode supports bi-directional communication between the system and the parallel port device and the transmission rates between the two are much faster than the Normal mode.
- **ECP+EPP** The parallel port operates in the extended capabilities port (ECP) mode. The ECP mode supports bi-directional communication between the system and the parallel port device and the transmission rates between the two are much faster than the Normal mode

The parallel port is also be compatible with EPP devices described above

→ **Parallel Port IRQ [IRQ7]**

Use the **Parallel Port IRQ** selection to set the parallel port interrupt address.

- **IRQ5** IRQ5 is assigned as the parallel port interrupt address
- **IRQ7** **DEFAULT** IRQ7 is assigned as the parallel port interrupt address

→ **Serial Port3 Address [3E8]**

Use the **Serial Port3 Address** option to select the base addresses for serial port 3

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- **Disabled** No base address is assigned to serial port 3
- **3E8** **DEFAULT** Serial port 3 I/O port address is 3E8
- **2E8** Serial port 3 I/O port address is 2E8
- **2F0** Serial port 3 I/O port address is 2F0
- **2E0** Serial port 3 I/O port address is 2E0

→ **Serial Port3 IRQ [11]**

Use the **Serial Port3 IRQ** option to select 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]**

Use the **Serial Port4 IRQ** option to select the interrupt address for serial port 4.

- **Disabled** No base address is assigned to serial port 3
- **3E8** Serial port 4 I/O port address is 3E8
- **2E8** **DEFAULT** Serial port 4 I/O port address is 2E8
- **2F0** Serial port 3 I/O port address is 2F0
- **2E0** Serial port 3 I/O port address is 2E0

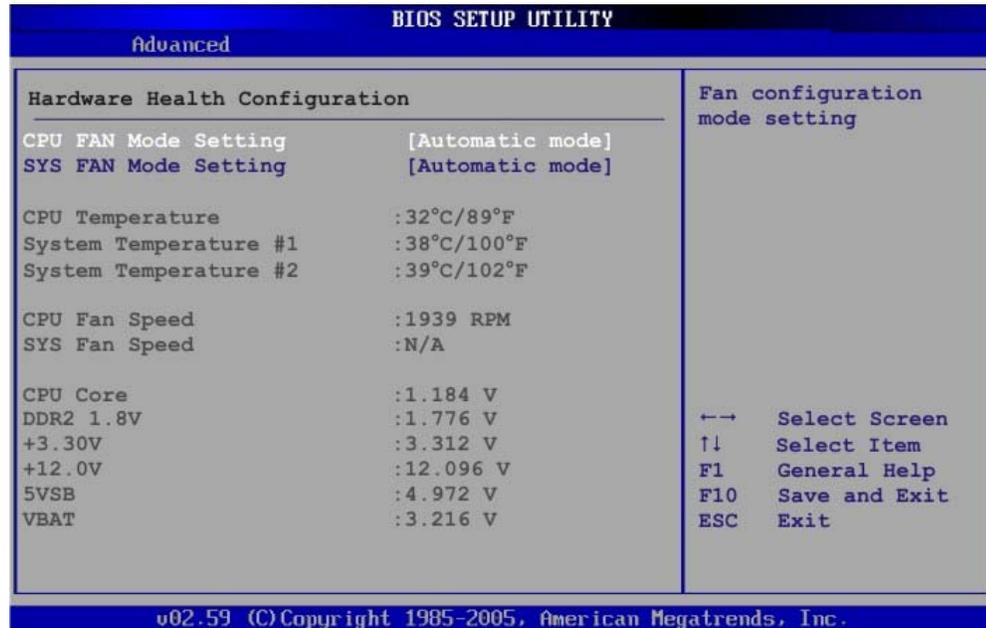
→ **Serial Port4 IRQ [10]**

Use the **Serial Port4 IRQ** option to select the interrupt address for serial port 4.

- **10** **DEFAULT** Serial port 4 IRQ address is 10
- **11** Serial port 4 IRQ address is 11

5.3.4 Hardware Health Configuration

The **Hardware Health Configuration** menu (**BIOS Menu 7**) shows the operating temperature, fan speeds and system voltages.



BIOS Menu 7: Hardware Health Configuration

→ CPU FAN Mode Setting [Automatic Mode]

Use the **CPU FAN Mode Setting** option to configure the second fan.

- **Full On Mode** Fan is on all the time
- **Automatic mode** **DEFAULT** Fan is off when the temperature is low enough. Parameters must be set by the user.
- **PWM Manual mode** Pulse width modulation set manually

When the **CPU FAN Mode Setting** option is in the **PWM Manual Mode**, the following parameters can be set.

- CPU Fan PWM control

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→ CPU Fan PWM Control [100]

The **CPU Fan PWM Control** option can only be set if the **CPU FAN Mode Setting** option is set to **Manual Mode**. Use the **CPU Fan PWM Control** option to select PWM duty cycle control. The PWM duty cycle specifies the width of the modulated pulse. A high value ensures a wide pulse and a low value ensures a narrow pulse. To select a value, select the **CPU Fan PWM Control** option and enter a decimal number between 000 and 127. The PWM Duty Cycle control range is specified below.

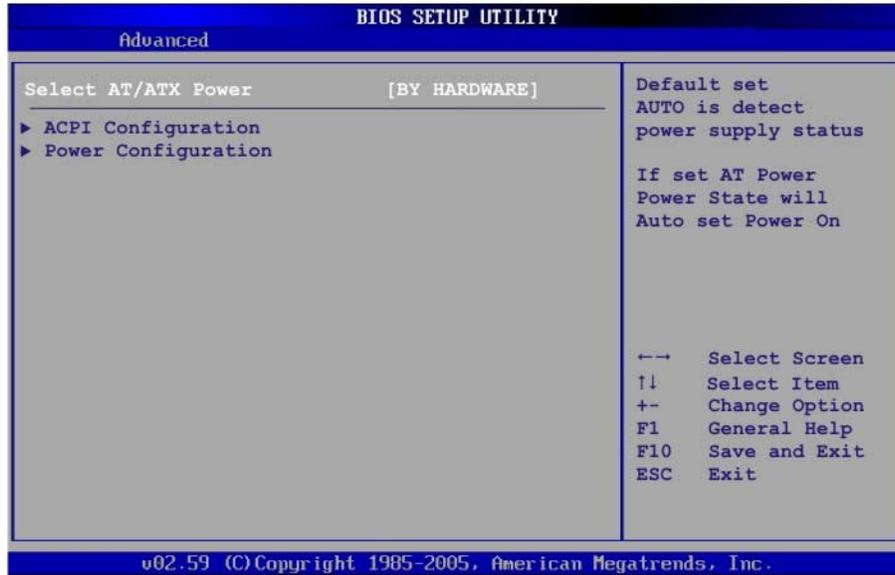
- PWM Minimum Mode: 0
- PWM Maximum Mode: 127

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

- System Temperatures: The following system temperatures are monitored
 - CPU Temperature
 - System Temperature #1
 - System Temperature #2
- Fan Speeds: The CPU cooling fan speed is monitored.
 - CPU Fan
 - SYS Fan
- Voltages: The following system voltages are monitored
 - CPU Core
 - DDR2 1.8V
 - +3.30V
 - +12.0V
 - 5VSB
 - VBAT

5.3.5 ICP Power Configuration

The **ICP Power Configuration** menu (**BIOS Menu 8**) configures the Advanced Configuration and Power Interface (ACPI) and Power Configuration options.



BIOS Menu 8: Power Configuration

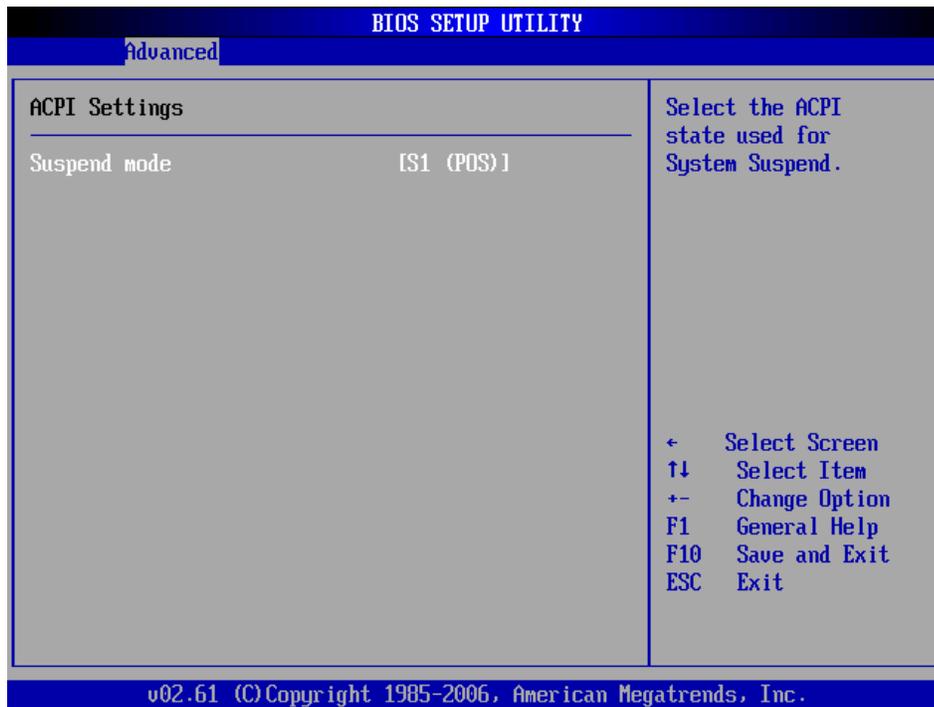
➔ **Select AT/ATX Power [BY HARDWARE]**

Use the **Select AT/ATX Power** BIOS option to select the power supply that is connected to the system.

- | | | |
|---|------------------------|--|
| ➔ | AT power | An AT power supply is connected to the system |
| ➔ | ATX power | An ATX power supply is connected to the system |
| ➔ | BY
HARDWARE | DEFAULT The power mode is selected by the jumper on the motherboard |

5.3.5.1 ACPI Configuration

Use the **ACPI Configuration** menu (**BIOS Menu 9**) to select the ACPI state when the system is suspended.



BIOS Menu 9: ACPI Configuration [Advanced\Power Configuration]

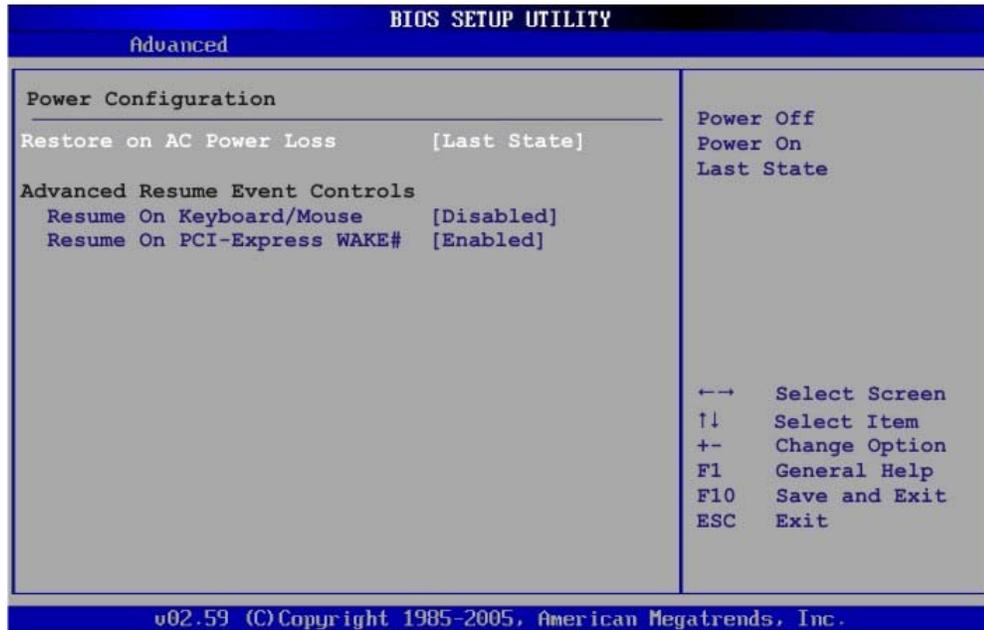
➔ Suspend Mode [S1 (POS)]

Use the **Suspend Mode** option to specify the sleep state the system enters when it is not being used.

- ➔ **S1 (POS) DEFAULT** The system enters S1(POS) sleep state. The system appears off. The CPU is stopped; RAM is refreshed; the system is running in a low power mode.
- ➔ **S3 (STR)** System appears off. The CPU has no power; RAM is in slow refresh; the power supply is in a reduced power mode.

5.3.5.2 Power Configuration

The **Power Configuration** menu (**BIOS Menu 10**) allows the advanced power management options to be configured.



BIOS Menu 10: Power Configuration

→ Restore on AC Power Loss [Last State]

Use the **Restore on AC Power Loss** BIOS option to specify 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 KeyBoard/Mouse [Disabled]

The **Resume On KeyBoard/Mouse** BIOS option specifies if the system will be roused from a suspended or standby state when there is activity on the keyboard or mouse.

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- **Disabled** **DEFAULT** Wake event not generated by keyboard or mouse activity
- **Resume On KeyBoard** Wake event generated by the keyboard activity
- **Resume On Mouse** Wake event generated by the mouse activity
- **Enabled** Wake event generated by keyboard or mouse activity

→ **Resume on PCI-Express WAKE# [Enabled]**

The **Resume on PCI-Express WAKE#** BIOS option specifies if the system is roused from a suspended or standby state when there is activity on the PCI-Express bus.

- **Enabled** **DEFAULT** Wake event generated by PCI-Express activity
- **Disabled** Wake event not generated by PCI-Express activity

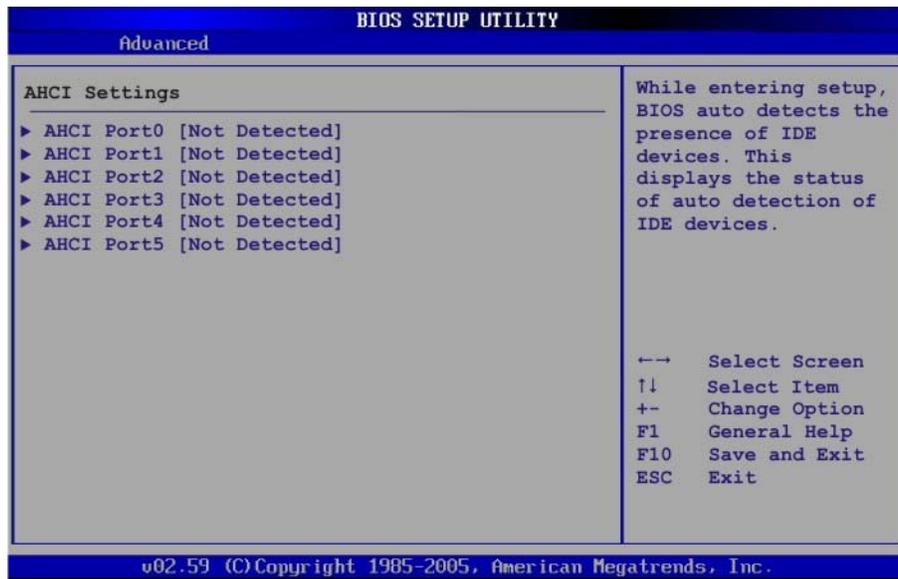
5.3.6 AHCI Configuration



NOTE:

Advanced Host Controller Interface (AHCI) is a new programming interface for SATA host controllers. AHCI systems do not have master/slave designation for SATA devices, each device is treated as a master, and hardware-assisted native command queuing.

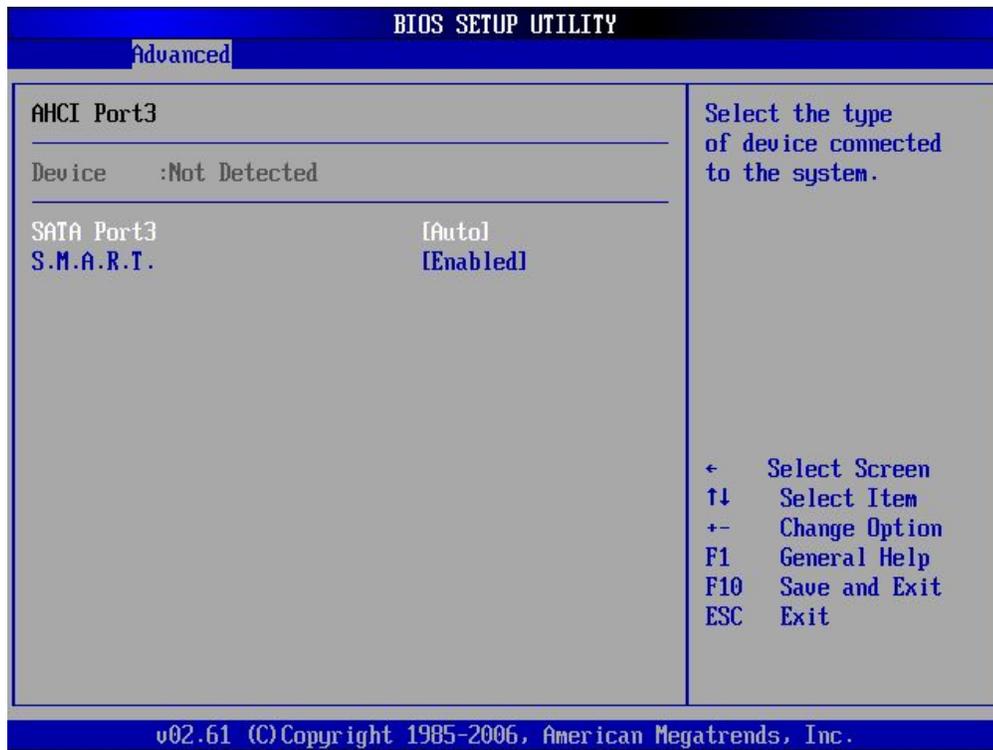
Use the **AHCI Settings** menu (**BIOS Menu 11**) to report on the auto-detection of devices connected to the onboard SATA drive connectors.



BIOS Menu 11: AHCI Configuration

5.3.6.1 AHCI Port n

Use the **AHCI Port n** configuration menu (**BIOS Menu 12**) to configure the drive connected to SATA connector n.



BIOS Menu 12: AHCI Port n Configuration Menu

➔ **SATA Port n [Auto]**

Use the **SATA Port n** option to enable the system to auto-detect the type of drive connected to SATA drive connector n.

➔ **S.M.A.R.T [Enabled]**

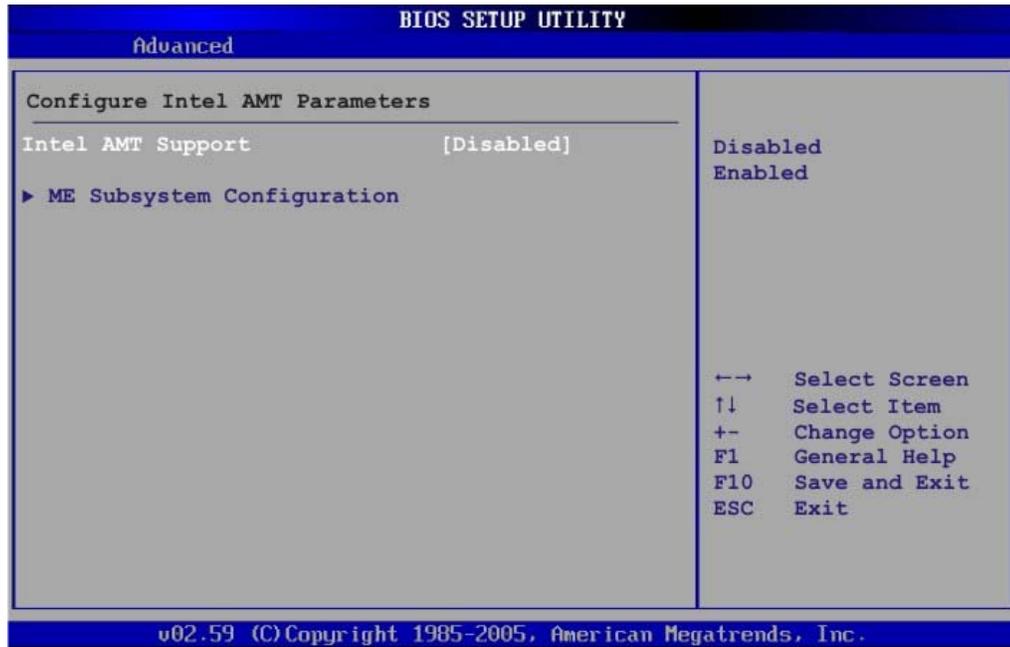
Use the **S.M.A.R.T** option to enable S.M.A.R.T (Self-Monitoring, Analysis, and Reporting Technology) on the drive connected to SATA drive connector n.

➔ **Disabled** S.M.A.R.T is disabled on the drive connected to SATA drive connector n on the system

➔ **Enabled** **DEFAULT** S.M.A.R.T is enabled on the drive connected to SATA drive connector n on the system

5.3.7 Intel AMT Configuration

Use the **Intel AMT** menu (**BIOS Menu 13**) to enable the system to be managed through the Intel® Active Management Technology (AMT) interface.



BIOS Menu 13: Intel AMT Configuration

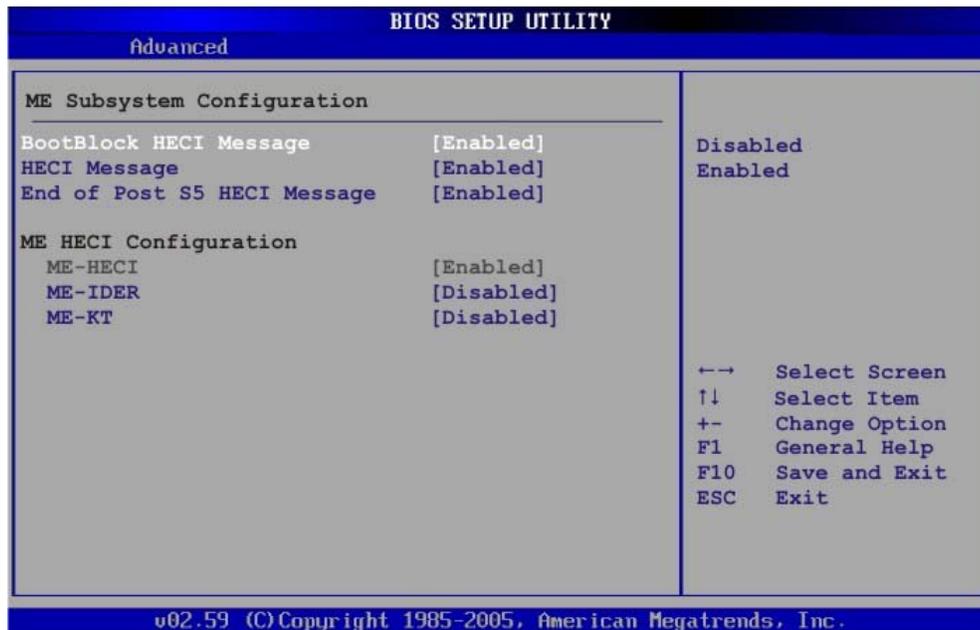
→ Intel AMT Support [Disabled]

Use the **Intel AMT Support** option to enable or disable Intel AMT on the system.

- **Disabled** **DEFAULT** Intel AMT disabled
- **Enabled** Intel AMT enabled

5.3.7.1 ME Subsystem Configuration

Use the **ME Subsystem Configuration** menu (**BIOS Menu 14**) to configure the Intel® Management Engine (ME) configuration options.



BIOS Menu 14: ME Subsystem Configuration

→ BootBlock HECI Message [Enabled]

Use the **BootBlock HECI Message** option to enable or disable boot disk sector that contains the Intel® AMT Host-Embedded Controller Interface (HECI) message.

- Disabled Boot sector disabled
- Enabled DEFAULT Boot sector enabled

→ HECI Message [Enabled]

Use the **HECI Message** option to enable or disable the Intel® AMT Host-Embedded Controller Interface (HECI) message.

- Disabled HECI message disabled

→ Enabled DEFAULT HECI message enabled

→ **End of Post S5 HECI Message [Enabled]**

Use the **End of Post S5 HECI Message** option to enable or disable the Intel® AMT the HECI message to wake the system in an S5 sleep state.

→ Disabled HECI bus cannot rouse system from an S5 state

→ Enabled DEFAULT HECI bus can rouse system from an S5 state

→ **ME-HECI [Enabled]**

This option is not user configurable.

→ **ME-IDER [Disabled]**

Use the **ME-IDER** option to enable or disable the IDE-Redirection (IDER) protocol to enable the Intel® AMT enabled iSignager-1000-Q354 to boot from an OS image, floppy, CD or a DVD device.

→ Disabled DEFAULT The IDER protocol is disabled

→ Enabled The IDER protocol is enabled

→ **ME-KT [Disabled]**

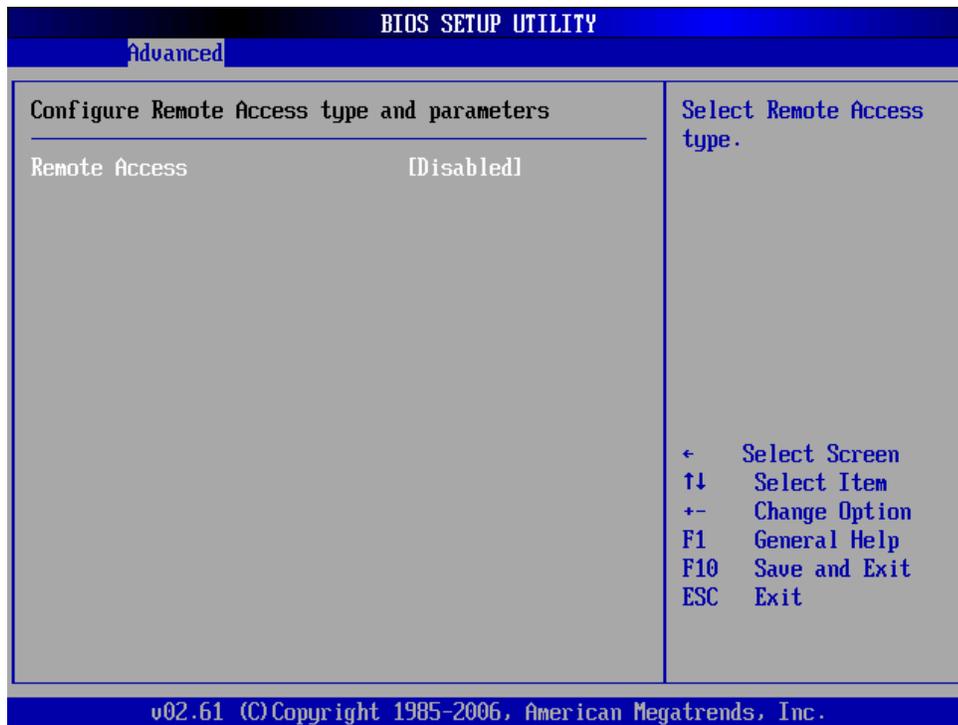
Use the **ME-KT** option to enable or disable the Serial Over LAN (SOL) protocol to enable the Intel® AMT enabled iSignager-1000-Q354 to redirect the keyboard/text from a local host to a remote workstation.

→ Disabled DEFAULT The SOL protocol is disabled

→ Enabled The SOL protocol is enabled

5.3.8 Remote Access Configuration

Use the **Remote Access Configuration** menu (**BIOS Menu 15**) to configure remote access parameters. The **Remote Access Configuration** is an AMIBIOS feature and allows a remote host running a terminal program to display and configure the BIOS settings.



BIOS Menu 15: Remote Access Configuration [Advanced]

→ Remote Access [Disabled]

Use the **Remote Access** option to enable or disable access to the remote functionalities of the system.

- **Disabled** **DEFAULT** Remote access is disabled.
- **Enabled** Remote access configuration options shown below appear:

- **Serial Port Number**
- **Serial Port Mode**
- **Redirection after BIOS POST**
- **Terminal Type**

These configuration options are discussed below.

→ **Serial Port Number [COM1]**

Use the **Serial Port Number** option allows to select the serial port used for remote access.

- **COM1 DEFAULT** System is remotely accessed through COM1
- **COM2** System is remotely accessed through COM2
- **COM3** System is remotely accessed through COM3
- **COM4** System is remotely accessed through COM4

NOTE: Make sure the selected COM port is enabled through the Super I/O configuration menu.

→ **Base Address, IRQ [3F8h, 4]**

The **Base Address, IRQ** option cannot be configured and only shows the interrupt address of the serial port listed above.

→ **Serial Port Mode [115200 8,n,1]**

Use the **Serial Port Mode** option to select baud rate through which the console redirection is made. The following configuration options are available

- 115200 8,n,1 **DEFAULT**
- 57600 8,n,1
- 38400 8,n,1
- 19200 8,n,1
- 09600 8,n,1



NOTE:

Identical baud rate setting must be set on the host (a management computer running a terminal software) and the slave

→ **Redirection After BIOS POST [Always]**

Use the **Redirection After BIOS POST** option to specify when console redirection should occur.

- | | | | |
|---|--------------------|----------------|--|
| → | Disabled | | The console is not redirected after POST |
| → | Boot Loader | | Redirection is active during POST and during Boot Loader |
| → | Always | DEFAULT | Redirection is always active (Some OSes may not work if set to Always) |

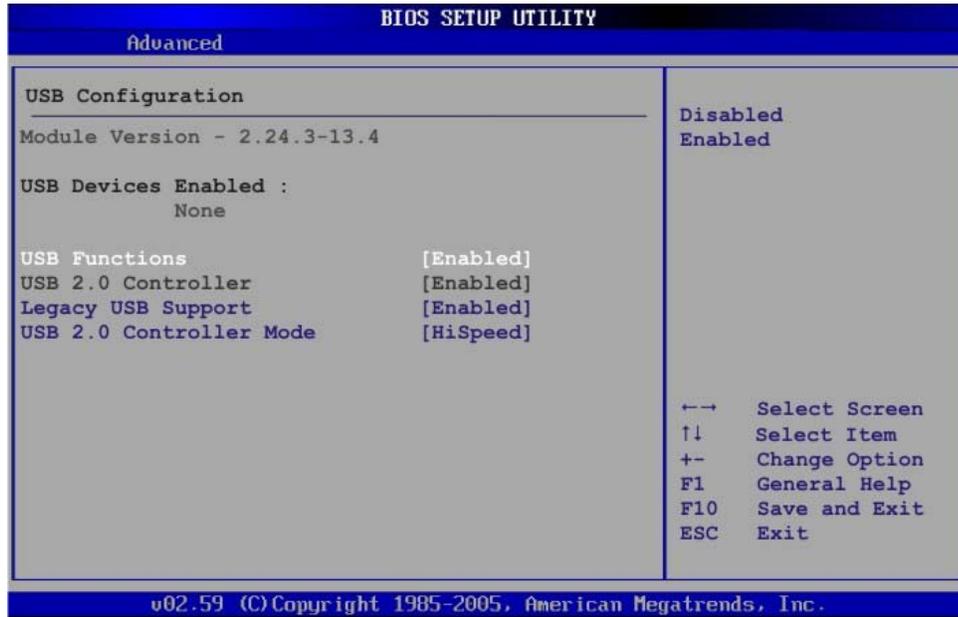
→ **Terminal Type [ANSI]**

Use the **Terminal Type** BIOS option to specify the remote terminal type.

- | | | | |
|---|----------------|----------------|-------------------------------------|
| → | ANSI | DEFAULT | The target terminal type is ANSI |
| → | VT100 | | The target terminal type is VT100 |
| → | VT-UTF8 | | The target terminal type is VT-UTF8 |

5.3.9 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 16**) to read USB configuration information and configure the USB settings.



BIOS Menu 16: USB Configuration

→ USB Configuration

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

- Module Version: x.xxxxx.xxxxx

→ USB Devices Enabled

The **USB Devices Enabled** field lists the USB devices that are enabled on the system

→ USB Function [Enabled]

Use the **USB Function** BIOS option to enable or disable USB function support.

- **Disabled** USB function support disabled
- **Enabled** **DEFAULT** USB function support enabled

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→ USB 2.0 Controller [Enabled]

Use the **USB 2.0 Controller** BIOS option to enable or disable the USB 2.0 controller

- **Enabled** **DEFAULT** USB 2.0 controller enabled
- **Disabled** USB 2.0 controller disabled

→ Legacy USB Support [Enabled]

Use the **Legacy USB Support** BIOS option to enable 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 onto the system.

- **Disabled** Legacy USB support disabled
- **Enabled** **DEFAULT** Legacy USB support enabled
- **Auto** Legacy USB support disabled if no USB devices are connected

→ USB2.0 Controller Mode [HiSpeed]

Use the **USB2.0 Controller Mode** option to set the speed of the USB2.0 controller.

- **FullSpeed** The controller is capable of operating at 12Mb/s
- **HiSpeed** **DEFAULT** The controller is capable of operating at 480Mb/s

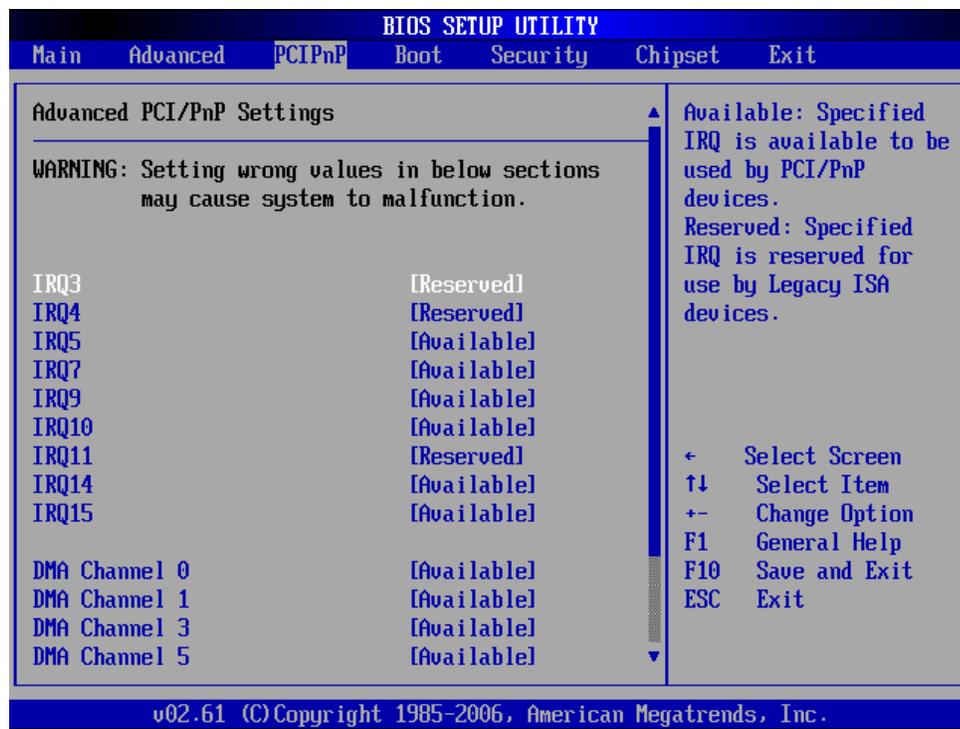
5.4 PCI/PnP

Use the **PCI/PnP** menu (**BIOS Menu 17**) to configure advanced PCI and PnP settings.



WARNING!

Setting wrong values for the BIOS selections in the PCI/PnP BIOS menu may cause the system to malfunction.



BIOS Menu 17: PCI/PnP Configuration

→ IRQ# [Available]

Use the **IRQ#** address to specify what IRQs can be assigned to a particular peripheral device.

Available	DEFAULT	The specified IRQ is available to be used by PCI/PnP devices
------------------	----------------	--

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Reserved

The specified IRQ is reserved for use by Legacy ISA devices

Available IRQ addresses are:

- IRQ3
- IRQ4
- IRQ5
- IRQ7
- IRQ9
- IRQ10
- IRQ 11
- IRQ 14
- IRQ 15

→ **DMA Channel# [Available]**

Use the **DMA Channel#** option to assign a specific DMA channel to a particular PCI/PnP device.

- **Available** **DEFAULT** The specified DMA is available to be used by PCI/PnP devices
- **Reserved** The specified DMA is reserved for use by Legacy ISA devices

Available DMA Channels are:

- DM Channel 0
- DM Channel 1
- DM Channel 3
- DM Channel 5
- DM Channel 6
- DM Channel 7

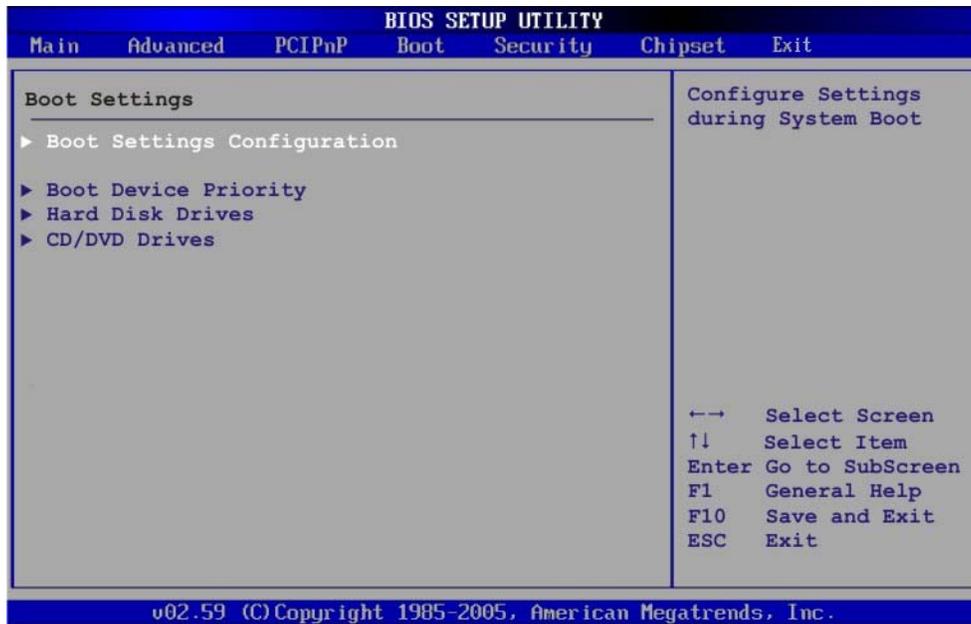
→ Reserved Memory Size [Disabled]

Use the **Reserved Memory Size** BIOS option to specify the amount of memory that should be reserved for legacy ISA devices.

- **Disabled** **DEFAULT** No memory block reserved for legacy ISA devices
- **16K** 16KB reserved for legacy ISA devices
- **32K** 32KB reserved for legacy ISA devices
- **64K** 54KB reserved for legacy ISA devices

5.5 Boot

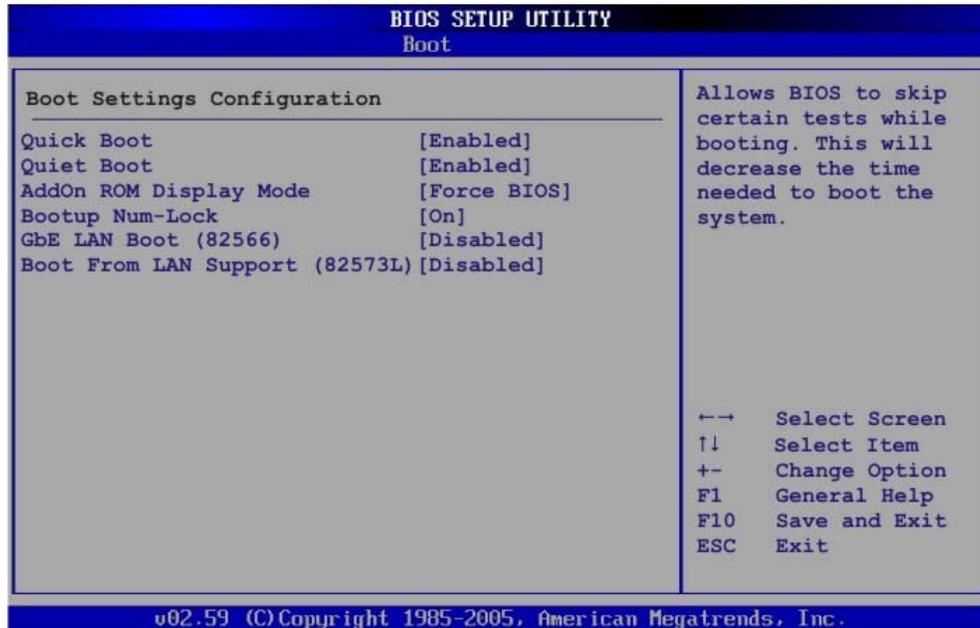
Use the **Boot** menu (**BIOS Menu 18**) to configure system boot options.



BIOS Menu 18: Boot

5.5.1 Boot Settings Configuration

Use the **Boot Settings Configuration** menu (**BIOS Menu 19**) to configure advanced system boot options.



BIOS Menu 19: Boot Settings Configuration

→ Quick Boot [Enabled]

Use the **Quick Boot** BIOS option to make the computer speed up the boot process.

- **Disabled** No POST procedures are skipped
- **Enabled DEFAULT** Some POST procedures are skipped to decrease the system boot time

→ Quiet Boot [Enabled]

Use the **Quiet Boot** BIOS option to select the screen display when the system boots.

- **Disabled** Normal POST messages displayed
- **Enabled DEFAULT** OEM Logo displayed instead of POST messages

→ **AddOn ROM Display Mode [Force BIOS]**

Use the **AddOn ROM Display Mode** option to allow add-on ROM (read-only memory) messages to be displayed.

- **Force BIOS** **DEFAULT** The system forces third party BIOS to display during system boot.
- **Keep Current** The system displays normal information during system boot.

→ **Bootup Num-Lock [On]**

Use the **Bootup Num-Lock** BIOS option to specify if the number lock setting must 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.

→ **GbE LAN Boot (82566) [Disabled]**

Use the **GbE LAN Boot (82566)** option to enable 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

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→ Boot From LAN Support (82573L) [Disabled]

Use the **Boot From LAN Support** option to enable 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

5.5.2 Boot Device Priority

Use the **Boot Device Priority** menu to specify the boot sequence from the available devices. Possible boot devices may include:

- CD/DVD
- HDD

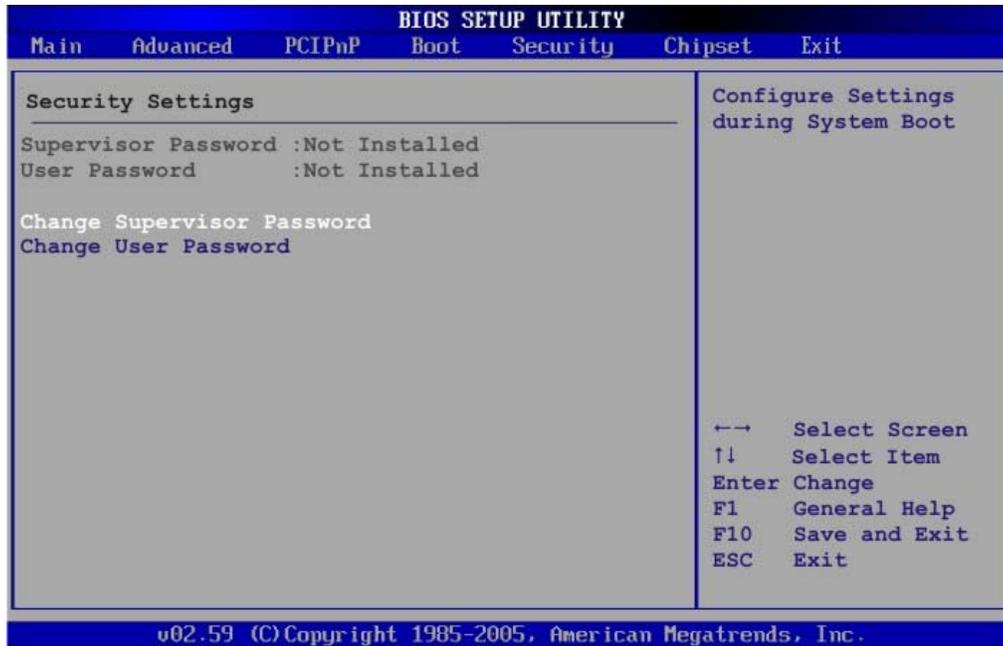
5.5.3 CD/DVD Drives

Use the **CD/DVD Drives** menu to specify 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)]

5.6 Security

Use the **Security** menu (**BIOS Menu 20**) to set system and user passwords.



BIOS Menu 20: Security

→ Change Supervisor Password

Use the **Change Supervisor Password** to set or change a supervisor password. The default for this option 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

Use the **Change User Password** to set or change a user password. The default for this option 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**.

5.7 Chipset

Use the **Chipset** menu (**BIOS Menu 21**) to access the Northbridge and Southbridge configuration menus



WARNING!

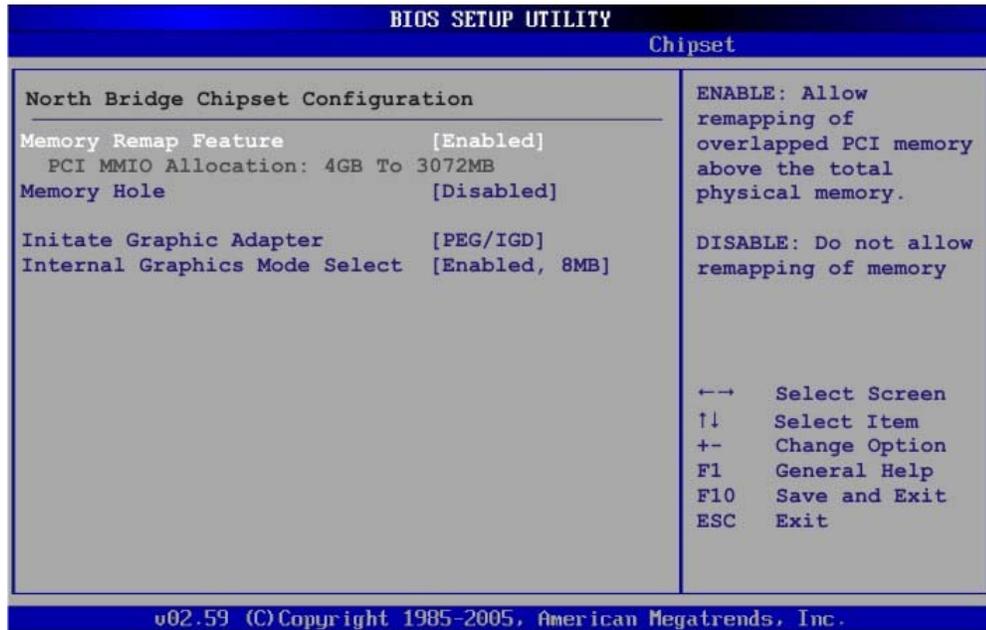
Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.



BIOS Menu 21: Chipset

5.7.1 Northbridge Configuration

Use the **Northbridge Chipset Configuration** menu (**BIOS Menu 22**) to configure the Northbridge chipset.



BIOS Menu 22: Northbridge Chipset Configuration

→ Memory Remap Feature [Enabled]

Use the **Memory Remap Feature** option to allow the overlapped PCI memory above the total physical memory to be remapped.

- **Disabled** Overlapped PCI memory cannot be remapped
- **Enabled** **DEFAULT** Overlapped PCI memory can be remapped

→ Memory Hole [Disabled]

Use the **Memory Hole** option to reserve 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.

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- **Disabled** **DEFAULT** Memory is not reserved for ISA expansion cards
- **15MB – 16MB** Between 15MB and 16MB of memory is reserved for ISA expansion cards

→ **Initiate Graphic Adapter [PEG/IGD]**

Use the **Initiate Graphic Adapter** option to select the graphics controller used as the primary boot device. Select either an integrated graphics controller (IGD) or a combination of PCI graphics controller, a PCI express (PEG) controller or an IGD. Configuration options are listed below:

- IGD
- **PEG/IGD** **DEFAULT**

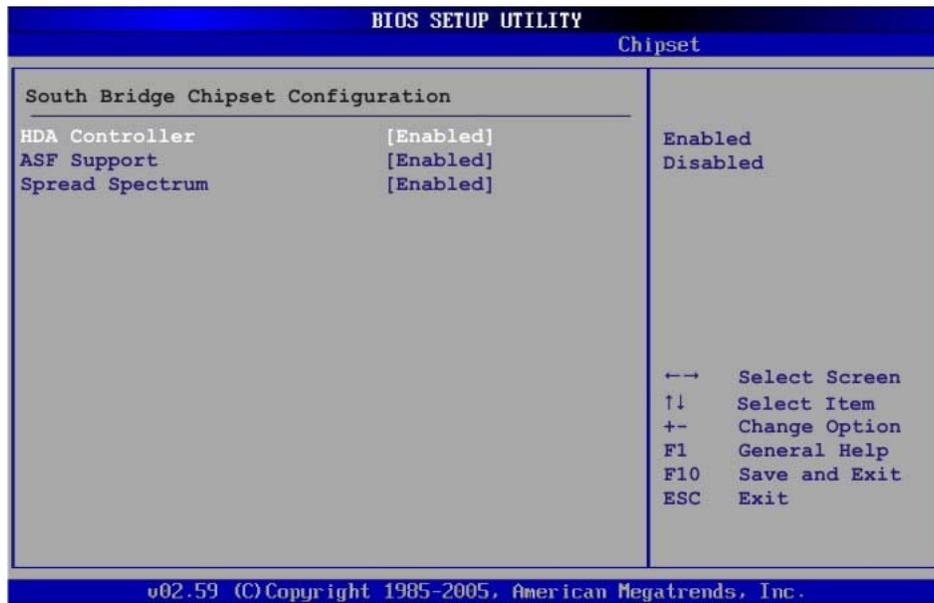
→ **Internal Graphics Mode Select [Enable, 8MB]**

Use the **Internal Graphic Mode Select** option to specify 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, 8MB** **DEFAULT** 8MB of memory used by internal graphics device

5.7.2 Southbridge Configuration

The **Southbridge Configuration** menu (**BIOS Menu 23**) the Southbridge chipset to be configured.



BIOS Menu 23:Southbridge Chipset Configuration

→ HDA Controller [Enabled]

Use the **HDA Controller** option to enable or disable the High Definition Audio (HDA) CODEC.

- **Disabled** The onboard HDA is disabled
- **Enabled** **DEFAULT** The onboard HDA automatically detected and enabled

→ ASF Support [Enabled]

Use the **ASF Support** BIOS option to control the system's ability to connect to a remote management server.

- **Disabled** The system will not communicate with a remote management server.

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- **Enabled** **DEFAULT** The Alert Standard Format (ASF) controller is activated and can communicate with a remote management server.

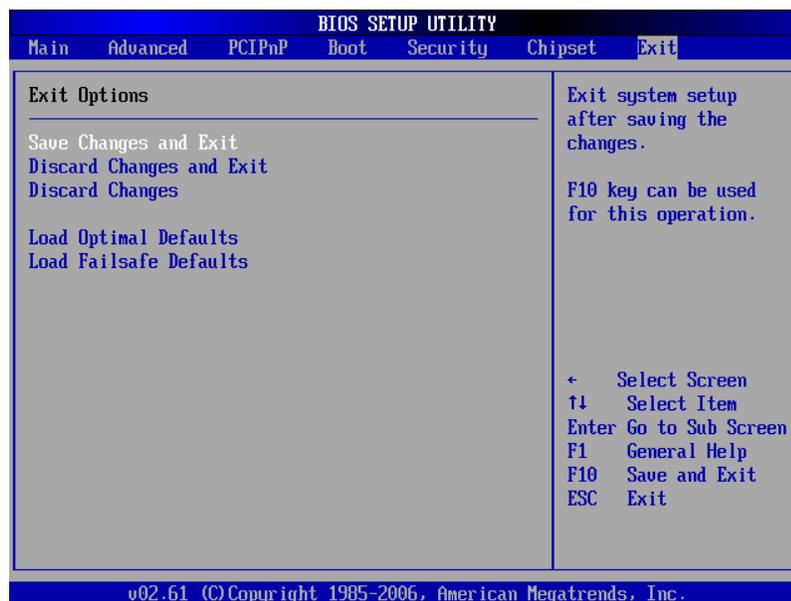
→ **Spread Spectrum [Enabled]**

Use the **Spread Spectrum** option to reduce the EMI. Excess EMI is generated when the system clock generator pulses have extreme values. Spreading the pulse spectrum modulates changes in the extreme values from spikes to flat curves, thus reducing the EMI. This benefit may in some cases be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device.

- **Disabled** EMI not reduced
- **Enabled** **DEFAULT** EMI reduced

5.8 Exit

Use the **Exit** menu (**BIOS Menu 24**) to load default BIOS values, optimal failsafe values and to save configuration changes.



BIOS Menu 24:Exit

→ **Save Changes and Exit**

Use the **Save Changes and Exit** option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.

→ **Discard Changes and Exit**

Use the **Discard Changes and Exit** option to exit the BIOS configuration setup program without saving the changes made to the system.

→ **Discard Changes**

Use the **Discard Changes** option to discard the changes and remain in the BIOS configuration setup program.

→ **Load Optimal Defaults**

Use the **Load Optimal Defaults** option to load the optimal default values for each of the parameters on the Setup menus. **F9 key can be used for this operation.**

→ **Load Failsafe Defaults**

Use the **Load Failsafe Defaults** option to load failsafe default values for each of the parameters on the Setup menus. **F8 key can be used for this operation.**

Chapter

6

Driver Installation

6.1 Available Software Drivers



NOTE:

The content of the CD may vary throughout the life cycle of the product and is subject to change without prior notice. Visit the IEI website or contact technical support for the latest updates.

The following drivers can be installed on the system:

- Intel® Chipset driver
- Audio driver (Realtek HD Audio Driver)
- VGA driver (Intel® Graphics Media Accelerator Driver)
- LAN driver (Broadcom LAN Driver (for GbE LAN))
- Wireless LAN driver (Atheros Wireless LAN Driver)

Installation instructions are given below.

6.2 Driver CD

All the drivers for the iSignager-1000-Q354 are on the CD that came with the system. To install the drivers, please follow the steps below.

Step 1: Insert the CD into a CD drive connected to the system. Locate the CD drive directory.

Step 2: A window with a list of available drivers appears (**Figure 6-1**).

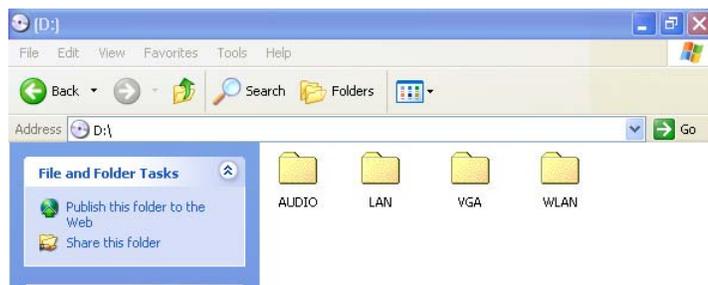


Figure 6-1: Available Drivers

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Step 3: Select the driver to install from the list in Figure 6-1. Detailed driver installation instructions follow below.

6.3 Intel® Chipset Driver Installation

To install the chipset driver, please follow the steps below.

Step 1: Select **Chip** from the list in **Figure 6-1**.

Step 2: A new window opens (**Figure 6-2**).

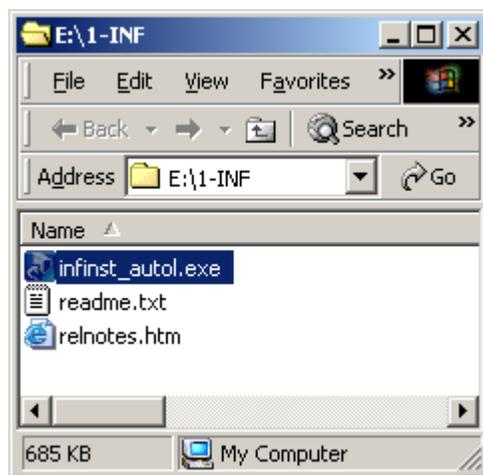


Figure 6-2: Chipset Driver Installation Program

Step 3: Double-click the **infinst_Autol.exe** icon.

Step 4: The welcome screen in **Figure 7-1** appears.

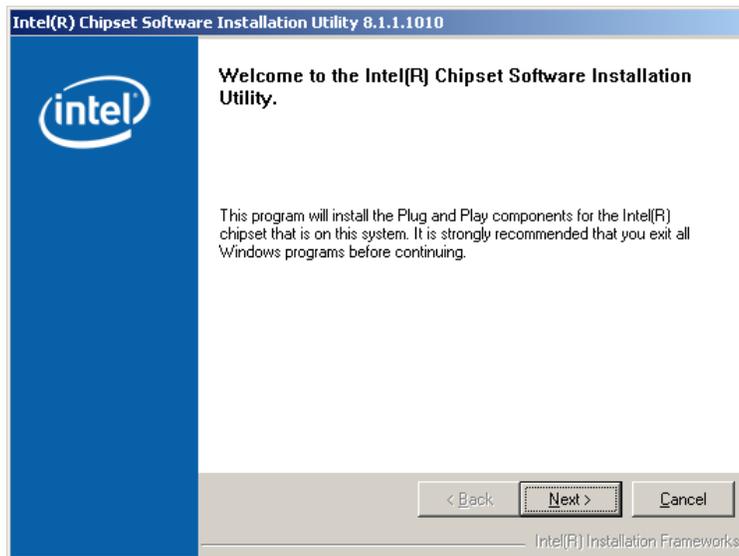


Figure 6-3: Chipset Driver Installation Welcome Screen

Step 5: Click **NEXT** to continue the installation process.

Step 6: The license agreement in **Figure 7-2** appears.

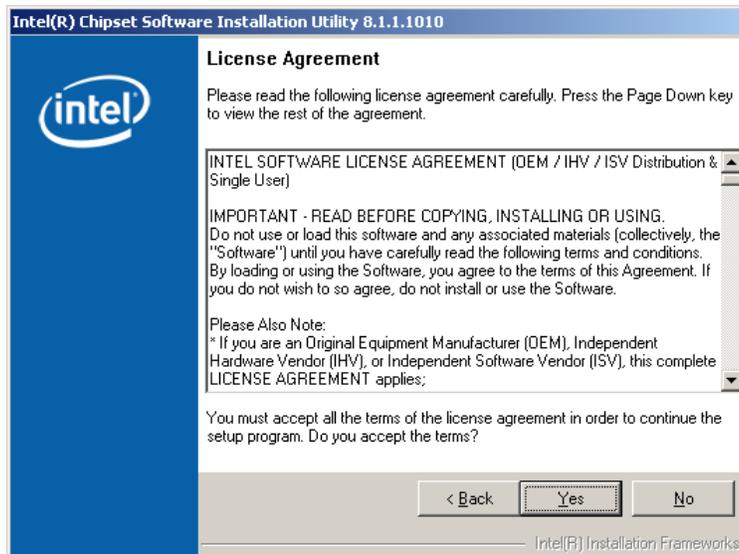


Figure 6-4: Chipset Driver Installation License Agreement

Step 7: Read the license agreement. To accept the terms and conditions stipulated in the agreement, click **YES**.

Step 8: The Readme file in **Figure 7-3** appears.

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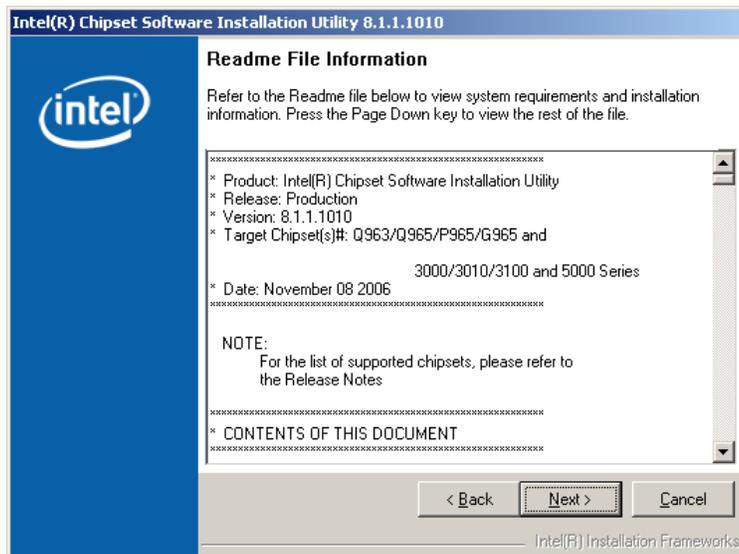


Figure 6-5: Chipset Driver Readme File Information

Step 9: Read the Readme file information and then click **NEXT** to start the driver installation.

Step 10: After the driver installation process is complete, a confirmation screen appears (**Figure 6-6**).

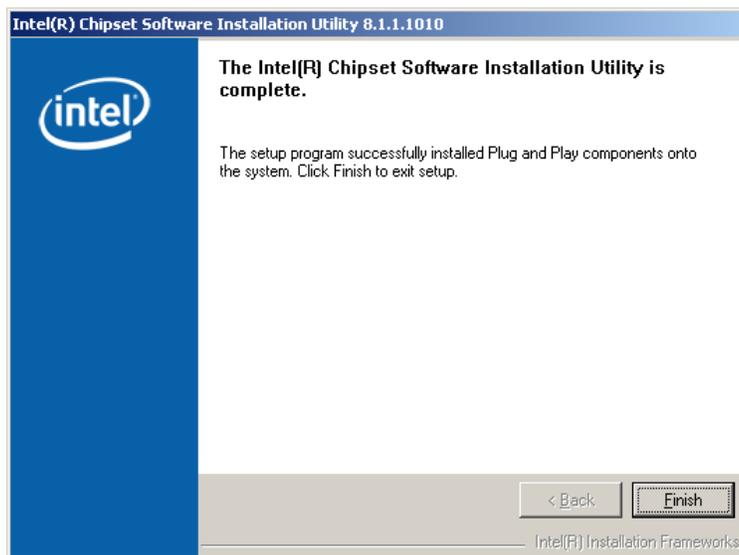


Figure 6-6: Chipset Driver Installation Complete

Step 11: Click **FINISH** to complete the driver installation.

6.4 Realtek HD Audio Driver Installation

To install the Realtek High Definition (HD) Audio driver, please follow the steps below.

6.4.1 BIOS Setup

Step 1: Enter the BIOS setup. To do this, reboot the system and press **DEL** during POST.

Step 2: Go to the Southbridge Configuration menu. Set the **Audio Controller** option to [Azalia].

Step 3: Press **F10** to save the changes and exit the BIOS setup. The system reboots.

6.4.2 Driver Installation

To install the audio driver please follow the steps below.

Step 1: Select **AUDIO** from the list in **Figure 6-1** and locate the **X :\AUDIO\WDM_R191** directory, where “**X:**” is the system CD drive.

Step 2: A new window opens. Double-click the **Setup.exe** icon to continue the installation process.

Step 3: The InstallShield Wizard starts (**Figure 6-7**).

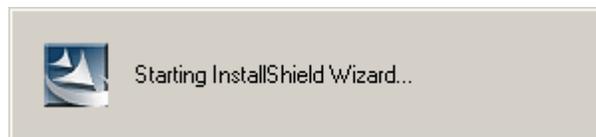


Figure 6-7: The InstallShield Wizard Starts

Step 4: The **InstallShield Wizard** is prepared to guide the user through the rest of the process (**Figure 6-8**).

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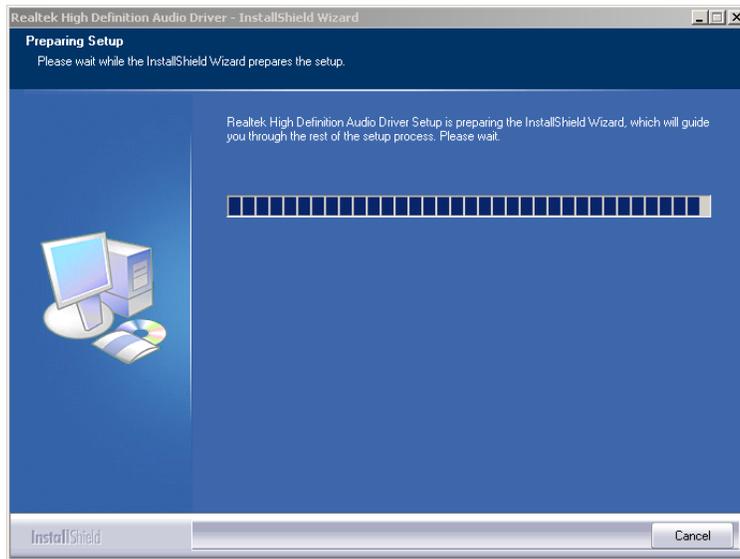


Figure 6-8: Preparing Setup Screen

Step 5: Once initialized, the InstallShield Wizard welcome screen appears (Figure 6-9).

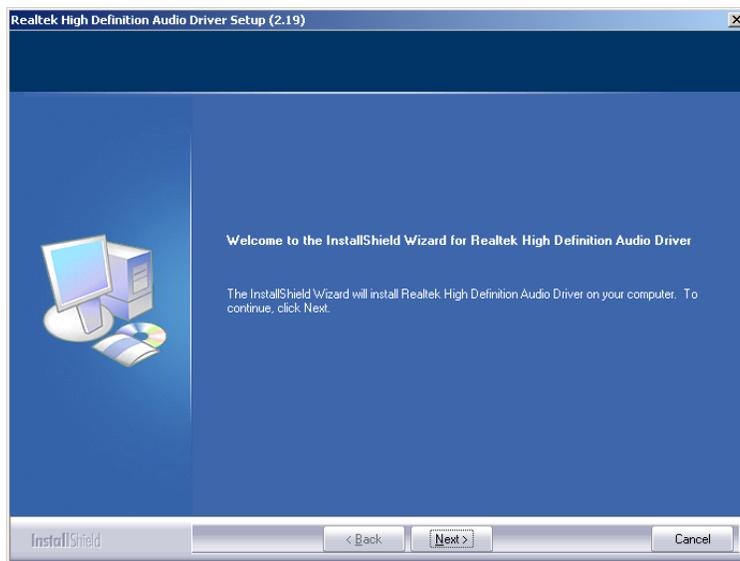


Figure 6-9: InstallShield Wizard Welcome Screen

Step 6: Click **NEXT** to continue the installation.

Step 7: InstallShield starts to install the new software as shown in **Figure 6-10**.

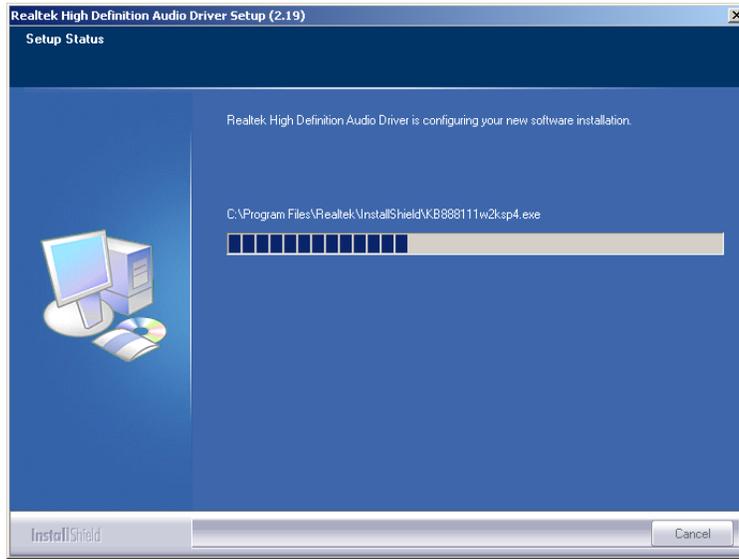


Figure 6-10: Audio Driver Software Configuration

Step 8: The Installation Wizard updates the system as shown in Figure 6-11.

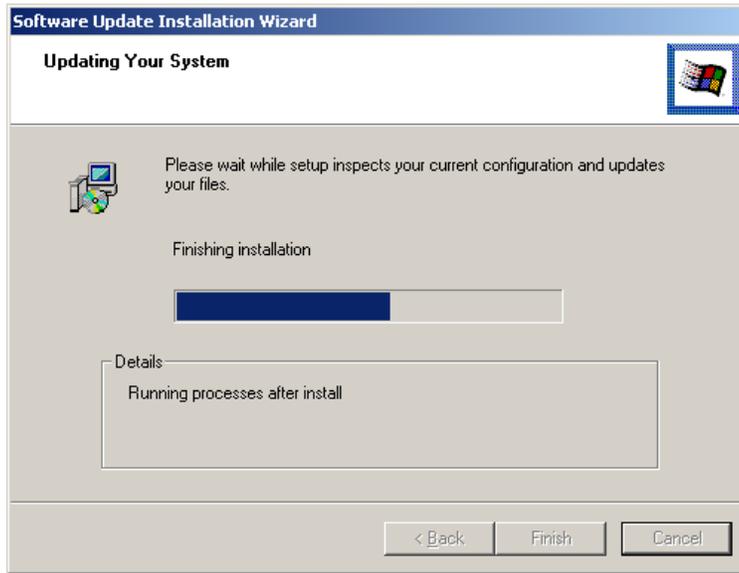


Figure 6-11: Installation Wizard Updates the System

Step 9: After the driver installation process is complete, a confirmation screen appears (Figure 6-12).

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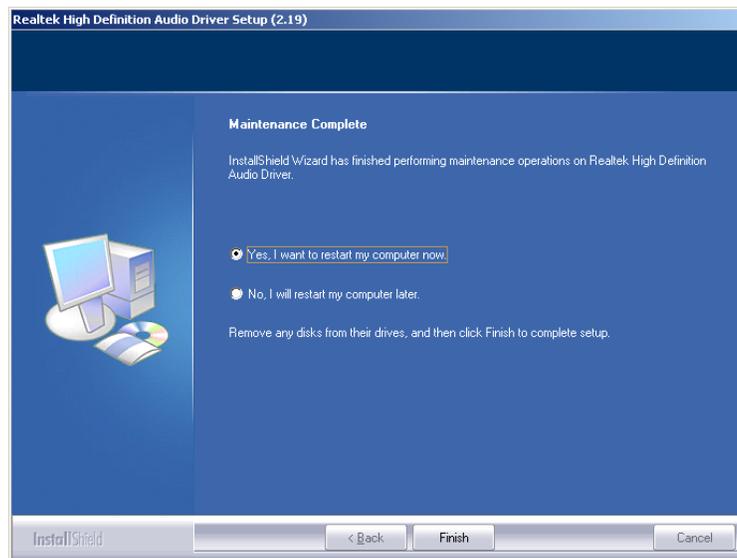


Figure 6-12: Restart the Computer

Step 10: The confirmation screen offers the option of restarting the computer now or later.

For the settings to take effect, the computer must be restarted. Click **FINISH** to restart the computer.

6.5 Intel® Graphics Media Accelerator Driver Installation

To install the VGA driver, please follow the steps below.

Step 1: Select the **VGA** driver from the list in **Figure 6-1**.

Step 2: Double click the **winxp_14331.exe** icon.

Step 3: The Readme information file shown in **Figure 6-13** appears.

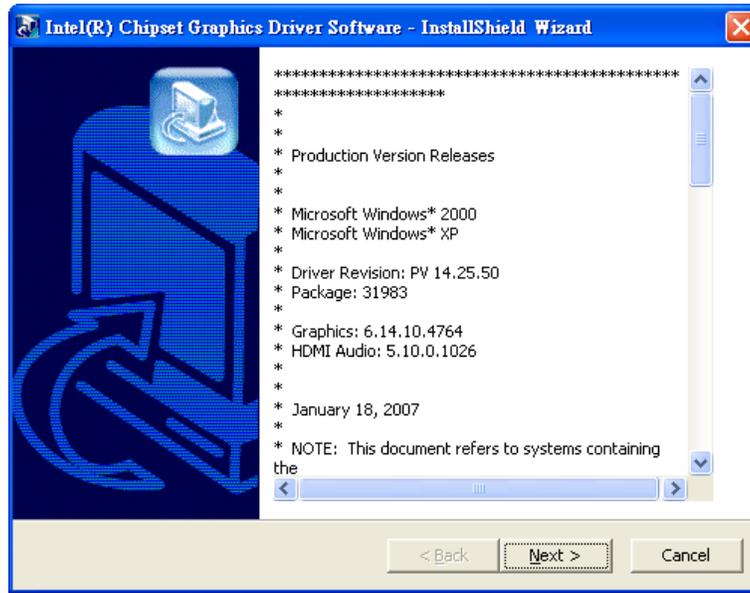


Figure 6-13: Intel® Graphics Media Accelerator InstallShield Wizard

Step 4: Read the Readme file information and click **NEXT** to begin extracting files (Figure 6-14).

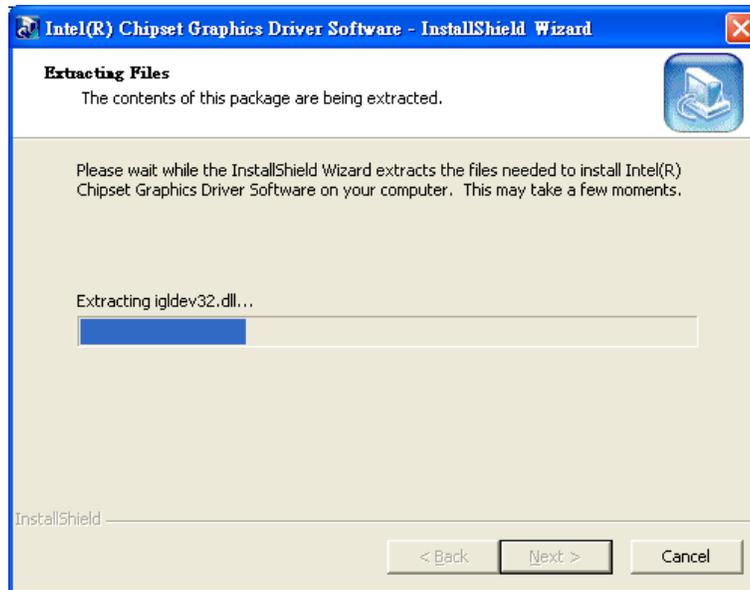


Figure 6-14: InstallShield Wizard Extracting Files

Step 5: The Graphics Media Accelerator Driver Welcome screen appears (Figure 6-15).

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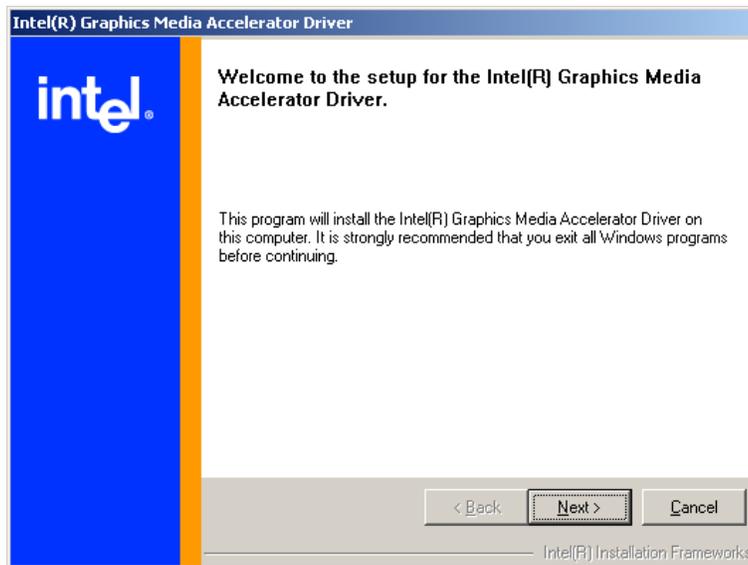


Figure 6-15: Intel® Graphics Media Accelerator Driver Welcome Screen

Step 6: Click **NEXT** and a license agreement appears (**Figure 6-16**).

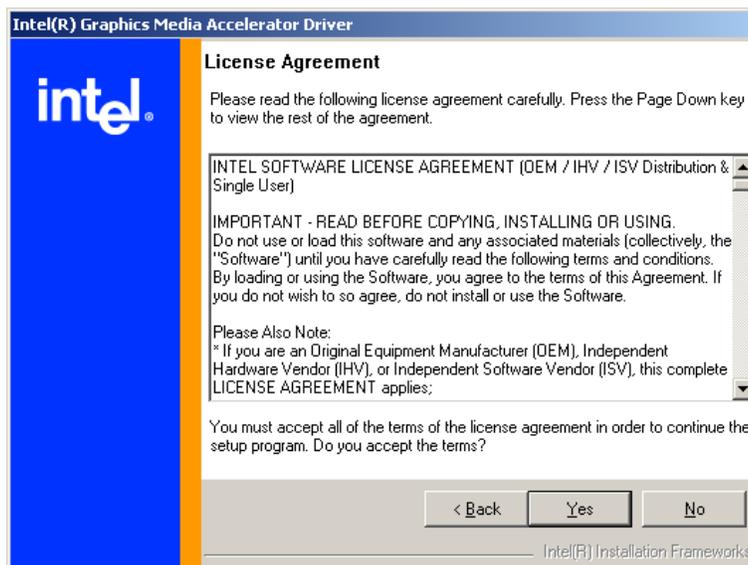


Figure 6-16: Intel® Graphics Media Accelerator Driver License Agreement

Step 7: Read the license agreement. To accept the terms and conditions stipulated in the license agreement shown, click **YES** and the installation notice appears (**Figure 6-17**) as the driver is installed.



Installing version 6.14.10.4421....

Figure 6-17: Intel® Graphics Media Accelerator Driver Installing Notice

Step 8: After the driver installation process is complete, a confirmation screen appears (Figure 6-18).



Figure 6-18: Intel® Graphics Media Accelerator Installation Complete

Step 9: The confirmation screen offers the option of restarting the computer now or later. For the settings to take effect, the computer must be restarted. Click **FINISH** to restart the computer.

6.6 LAN Driver (for GbE LAN) Installation

To install the LAN driver, please follow the steps below.

Step 1: Open Windows Control Panel (Figure 6-19).

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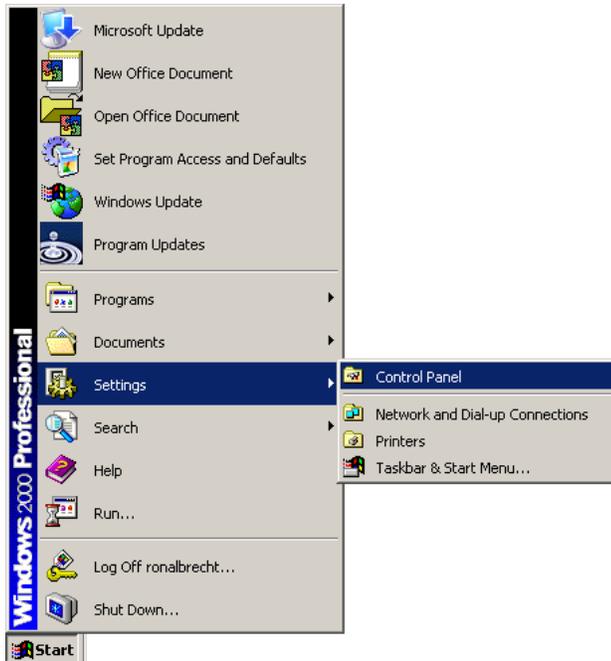


Figure 6-19: Windows Control Panel

Step 2: Double-click the System icon (Figure 6-20).

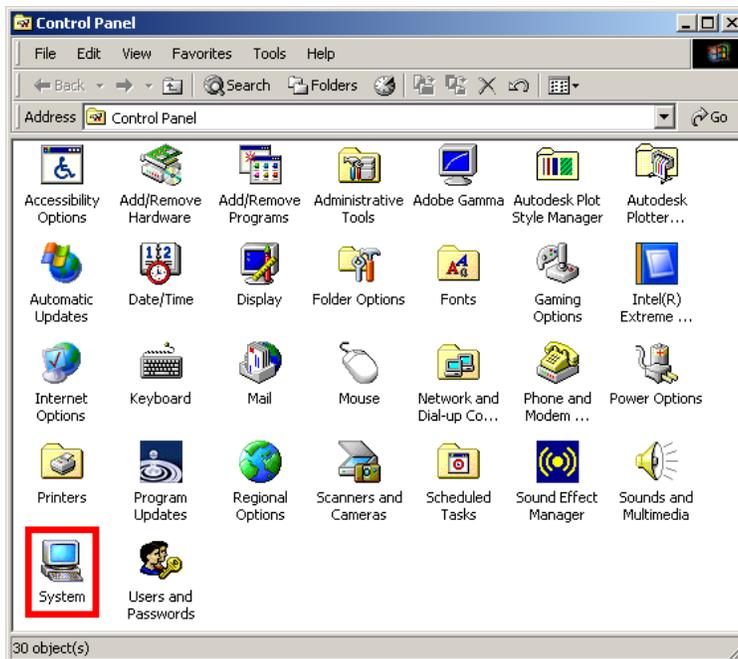


Figure 6-20: System Icon

Step 3: Click the Device Manager tab (Figure 6-21).

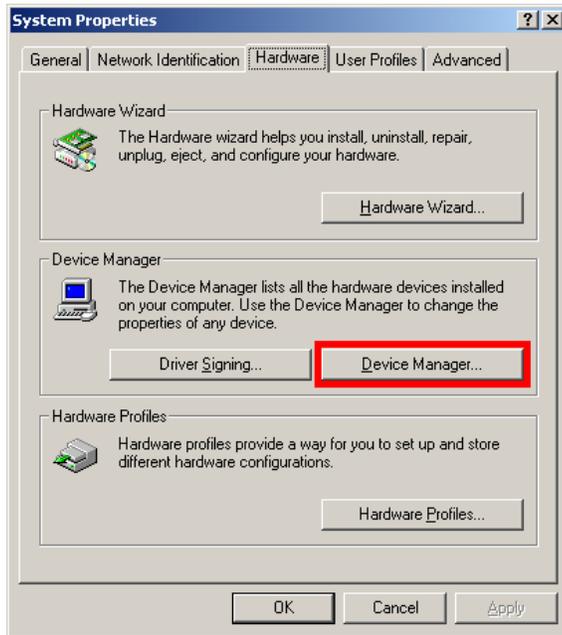


Figure 6-21: Device Manager Tab

Step 4: A list of system hardware devices appears (Figure 6-22).

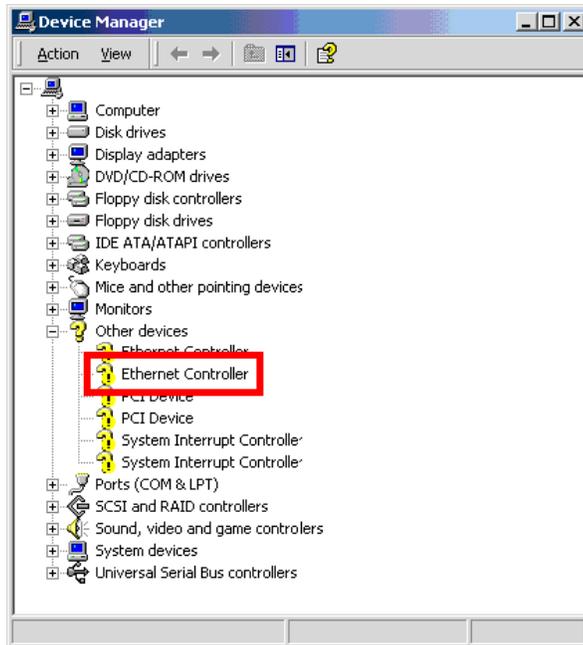


Figure 6-22: Device Manager List

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Step 5: Double-click the listed device that has question marks next to it (this means Windows does not recognize the device).

Step 6: The Device Driver Wizard appears (**Figure 6-23**).



Figure 6-23: Search for Suitable Driver

Step 7: Select “Search for a suitable driver for my device (recommended),” and click **NEXT** to continue.

Step 8: Select “Specify a Location” in the Locate Driver Files window (**Figure 6-24**).

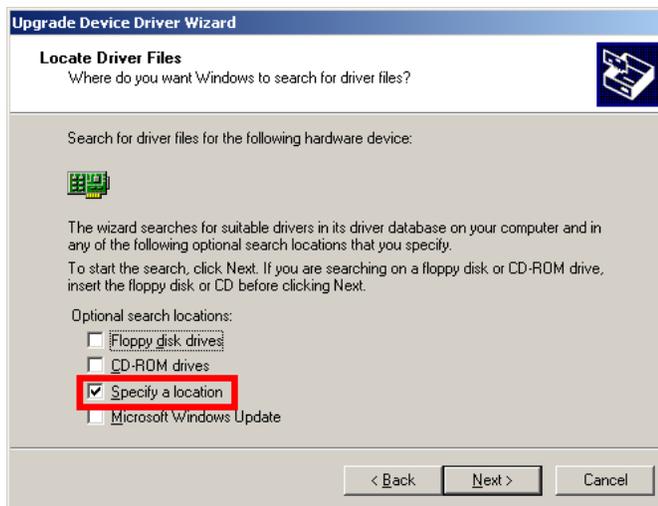


Figure 6-24: Locate Driver Files

Step 9: Click **NEXT** to continue.

Step 10: The Locate File window appears (**Figure 6-25**).

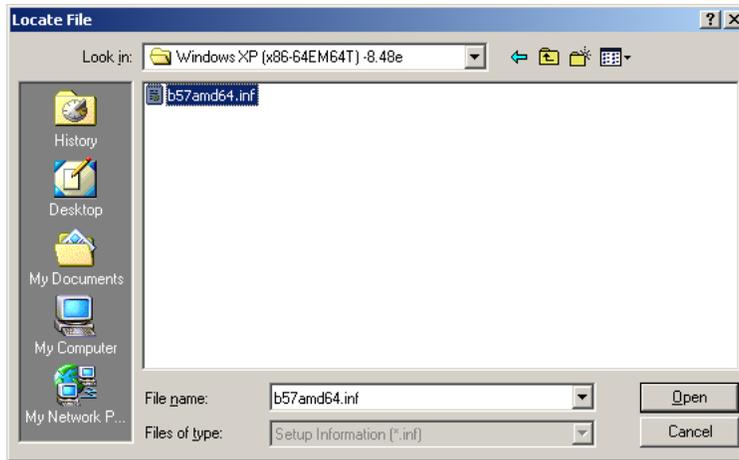


Figure 6-25: Location Browsing Window

Step 11: Select the **PRO2KXP.exe** file under the “**X:\3-LAN**” directory in the **Locate File** window, where “**X:**” is the system CD drive.

Step 12: Click **OPEN** and the driver is installed.

6.7 Atheros Wireless LAN Driver Installation

To install the Atheros wireless LAN driver, please follow the steps below.

Step 1: Select the WLAN driver from the list in **Figure 6-1** and locate the **X:\WLAN\AW-GE780_D5.3.0.45_WHQL\Install_CD** directory.

Step 2: Double click the **setup.exe** icon.

Step 3: The Atheros Client Installation Program screen appears. See **Figure 6-26**.

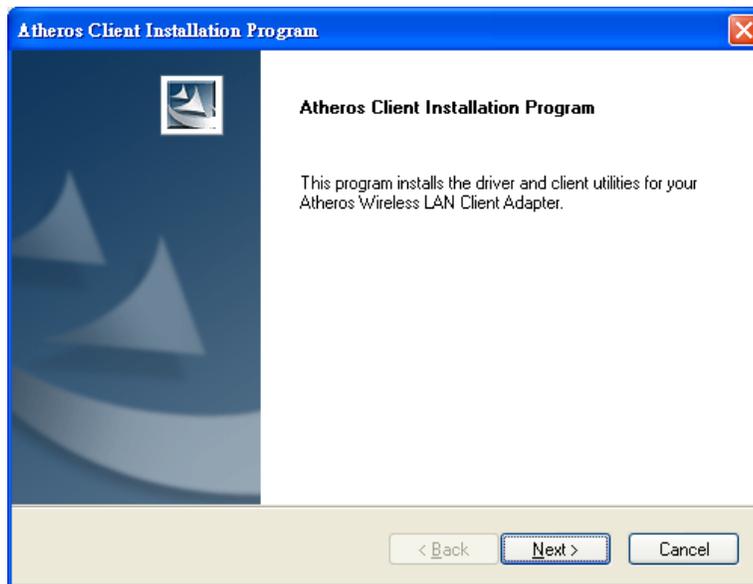


Figure 6-26: Atheros Client Installation Program Screen

Step 4: Click **NEXT** to continue.

Step 5: The License agreement in **Figure 6-27** appears.

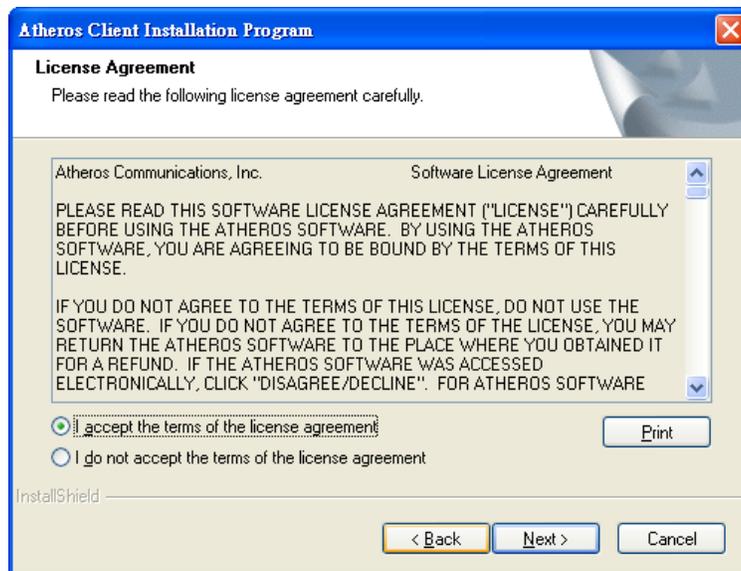


Figure 6-27: Atheros Wireless LAN Driver License Agreement

Step 6: Read the license agreement. To accept the terms and conditions stipulated in the agreement, select **I Agree** and click **NEXT**.

Step 7: The Setup Type screen in Figure 6-28 appears. Select the setup type to install and then click **NEXT** to continue.

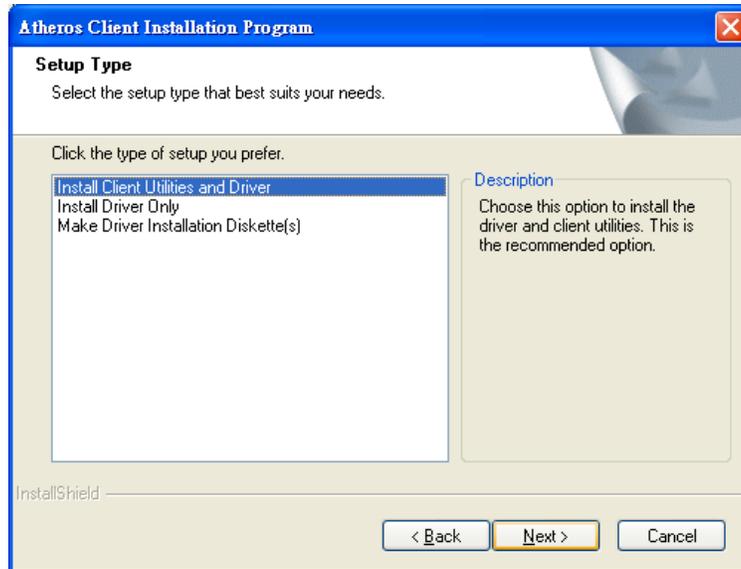


Figure 6-28: Wireless LAN Driver Setup Type

Step 8: Confirm or choose the destination location to install the driver then click **NEXT** to continue (**Figure 6-29**).

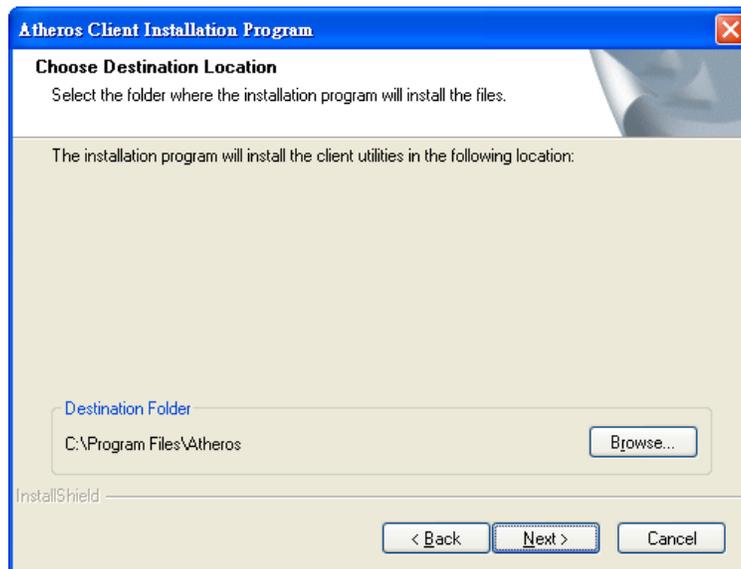


Figure 6-29: Driver Destination Location

Step 9: Read the important notice and click **NEXT** to continue (**Figure 6-30**).

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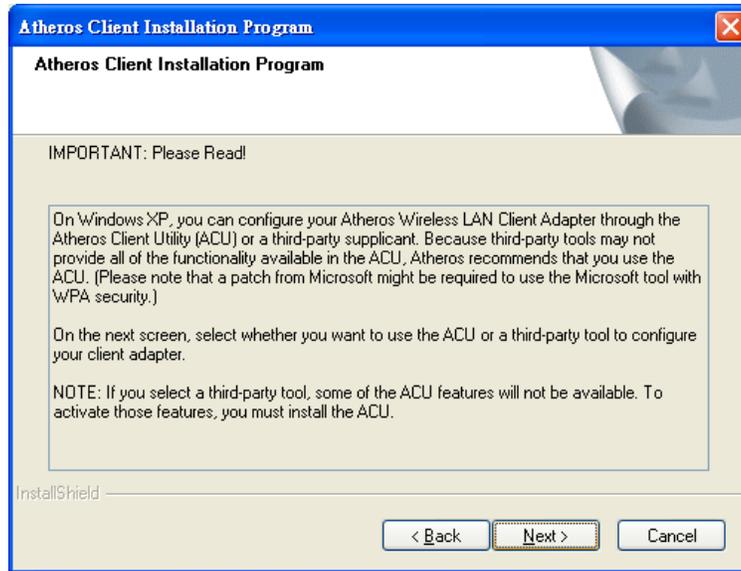


Figure 6-30: Wireless LAN Driver Important Notice

Step 10: Choose a configuration tool and click **NEXT** to continue (Figure 6-31).

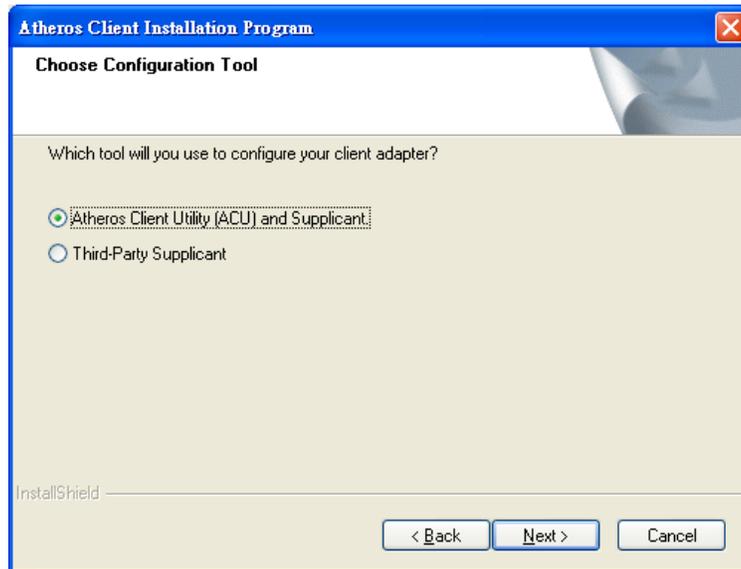


Figure 6-31: Wireless LAN Configuration Tool Selection

Step 11: Choose whether to install the Single Sign On feature (Figure 6-32).

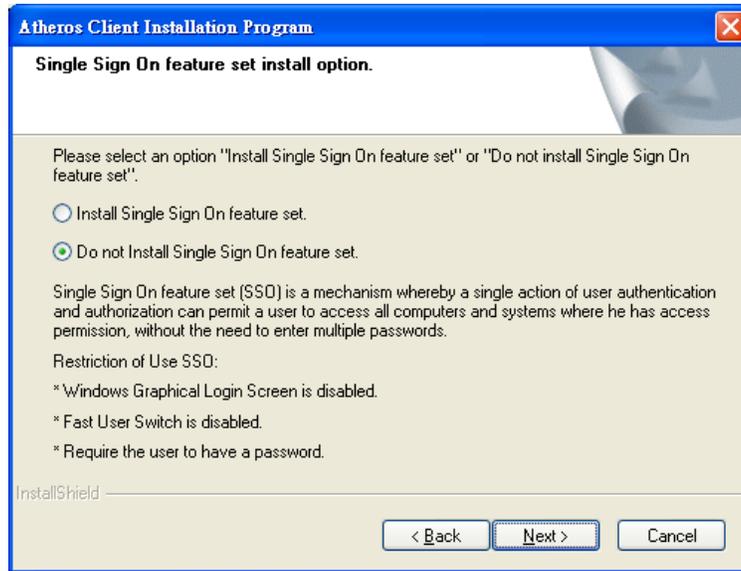


Figure 6-32: Single Sign On Feature Selection

Step 12: Click **NEXT** to start the driver installation (Figure 6-33).

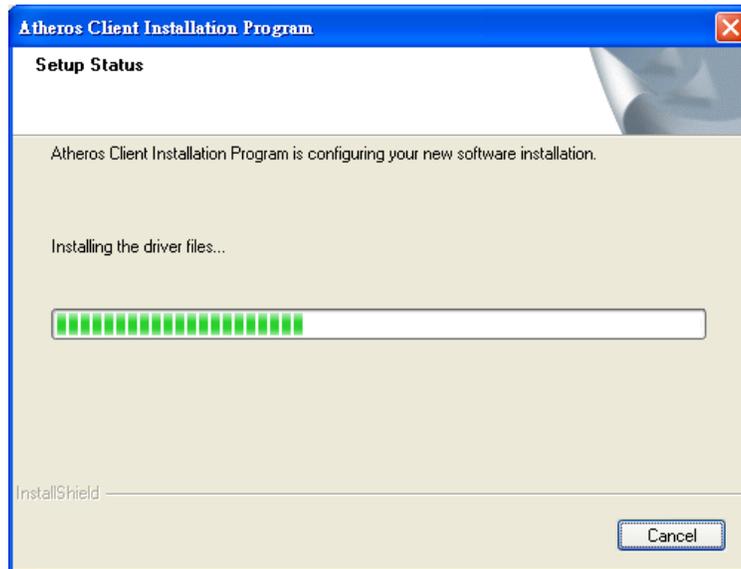


Figure 6-33: Wireless LAN Driver Installation

Step 13: When the installation is complete the Install Wizard Completed screen in **Figure 6-34** appears.

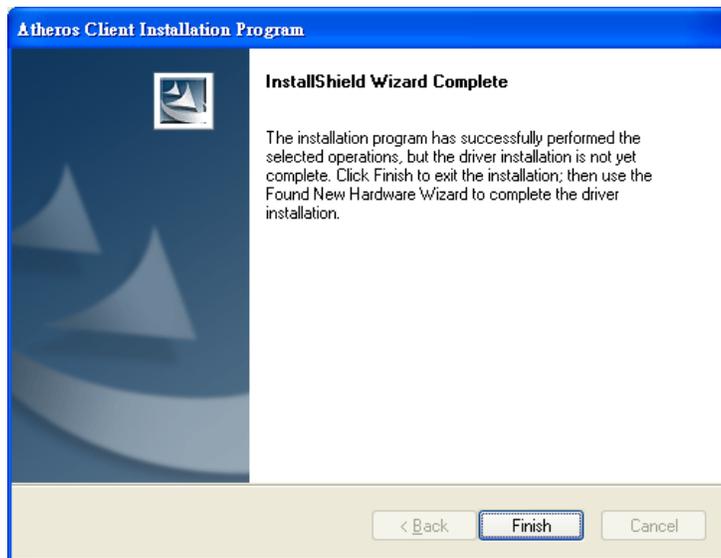


Figure 6-34: Wireless LAN Driver Install Wizard Completed

Step 14: To complete the installation, click **Finish**.

6.8 Intel® Active Management Technology Driver Installation

To install the Intel® Active Management Technology (Intel® AMT) driver, please follow the steps below:

Step 1: Select **AMT** from the list in **Figure 6-1**.

Step 2: The screen in **Figure 6-35** appears.

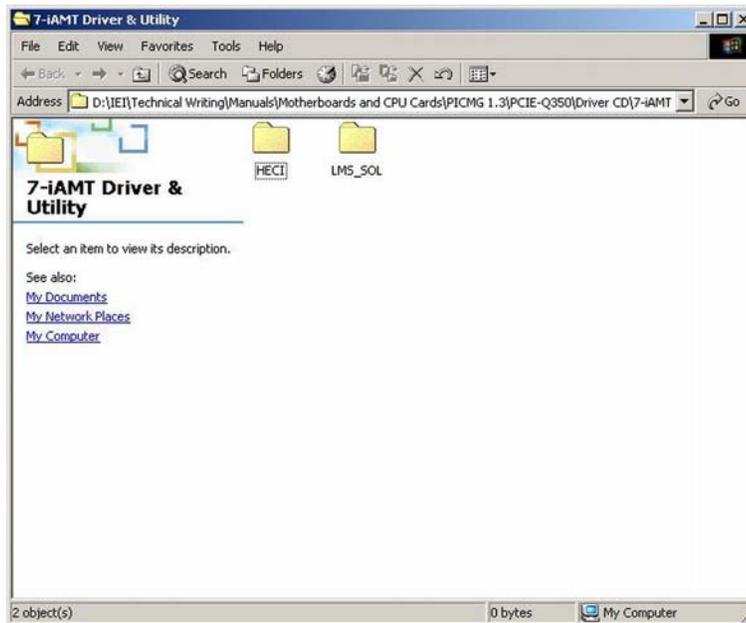


Figure 6-35: Intel® AMT Driver Directory

Step 3: Click on the LMS_SOL directory icon. The window in **Figure 6-36** appears.

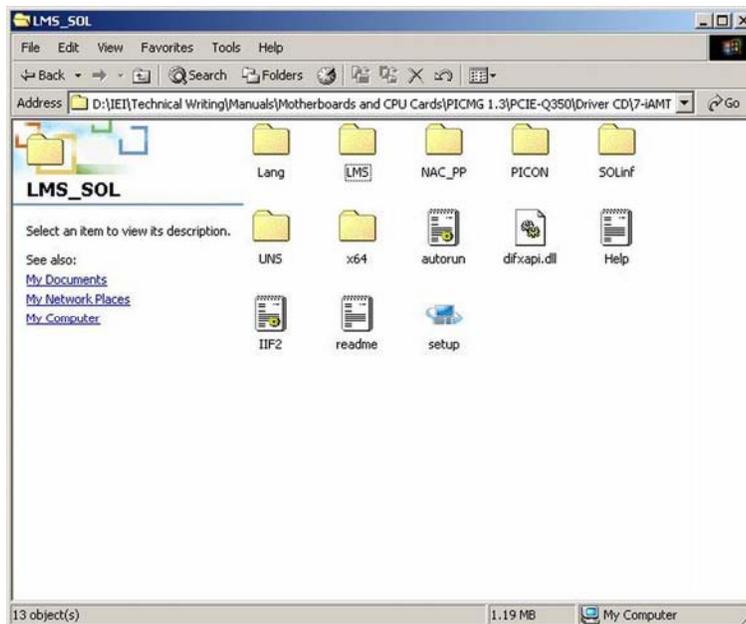


Figure 6-36: Intel® AMT Driver Installation Icon

Step 4: Double click the setup icon in **Figure 6-36**.

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Step 5: The window in **Figure 6-37** appears.



Figure 6-37: Intel® AMT Welcome Screen

Step 6: Click **NEXT** to continue. The **License Agreement** in **Figure 6-38** appears.



Figure 6-38: Intel® AMT License Agreement

Step 7: Agree to the terms and conditions in the license agreement by clicking **Yes**.

Step 8: The IAMT Readme file in Figure 6-39 appears



Figure 6-39: Intel® AMT Readme File

Step 9: Click **NEXT** to continue.

Step 10: Setup operations are performed. See Figure 6-40.

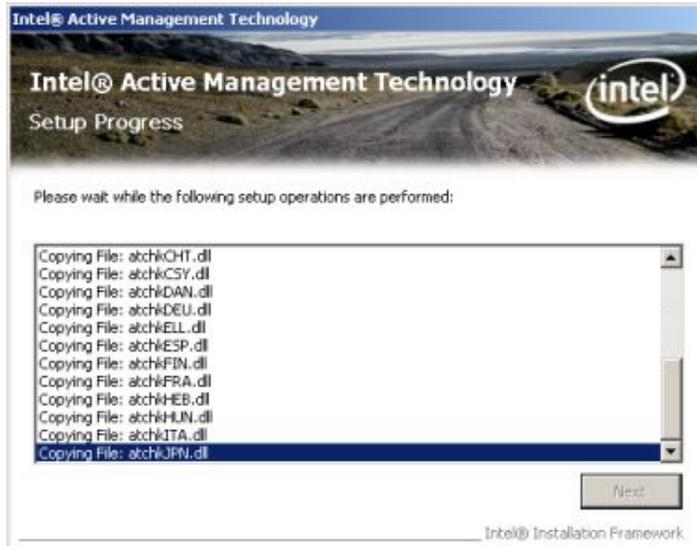


Figure 6-40: Intel® AMT Setup Operations

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Step 11: When the Setup Operations in **Figure 6-40** are complete, the window in **Figure 6-41** appears.



Figure 6-41: Completed Installation

Step 12: Click **FINISH** to complete the Intel® AMT installation.

Step 13: Go back to **AMT** directory (**Figure 6-42**).

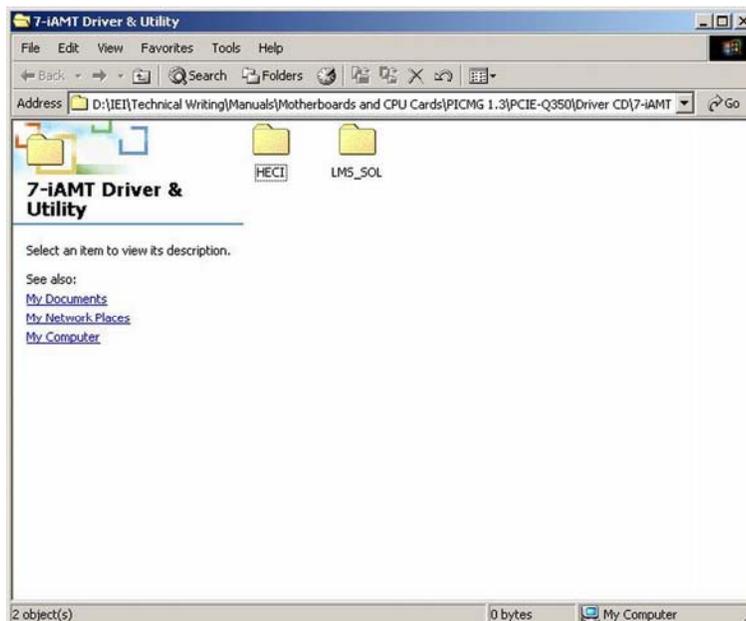


Figure 6-42: Intel® AMT Driver Directory

Step 14: Click on the HECI directory icon. The window in **Figure 6-43** appears.

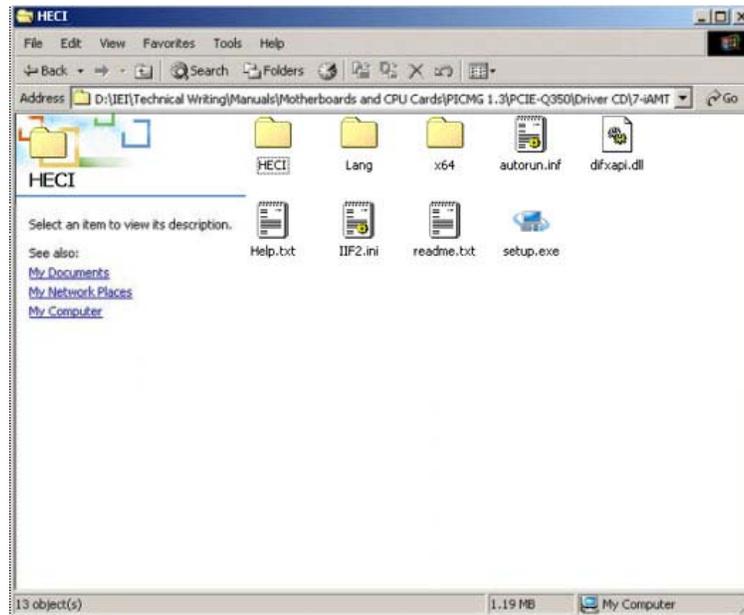


Figure 6-43: HECI Driver Installation Icon

Step 15: Double click the setup icon in **Figure 6-43**.

Step 16: Follow the step-by-step installation process to install the HECI driver.

Chapter

7

Software Application (iSMM)

7.1 iSMM Introduction

The IEI Intelligent System Management Module (iSMM) application monitors and shows the voltage, fan speed, temperature, and watchdog time, DIO and cash drawer information of the system. The users can control the setting in the following pages:

- Voltage Page
- Fan Page
- Temperature Page
- DIO Page
- WDT Page
- Cashdrawer Page

7.2 iSMM Installation

Follow the steps below to install the iSMM application.

Step 1: Insert the utility CD that came with the iSignager-1000-Q354 into a CD drive connected to the system.

Step 2: Click the **setup.exe** in the IEI iSMM folder.

Step 3: The welcome screen in **Figure 7-1** appears.

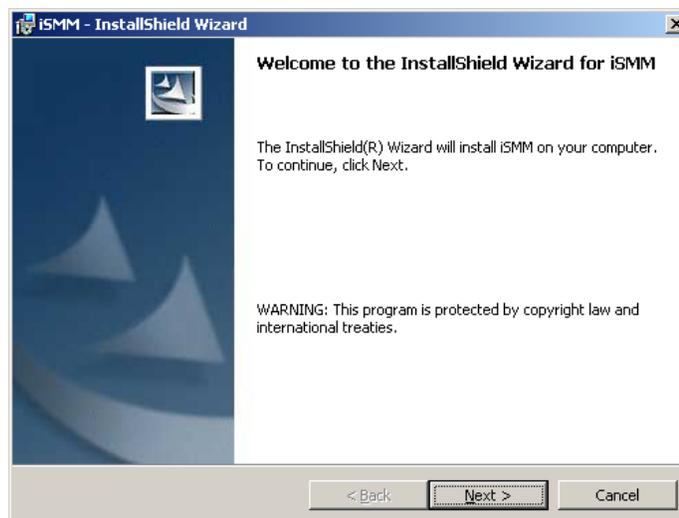


Figure 7-1: iSMM Installation Welcome Screen

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Step 4: Click **NEXT** to continue the installation process.

Step 5: The customer information in **Figure 7-2** appears.

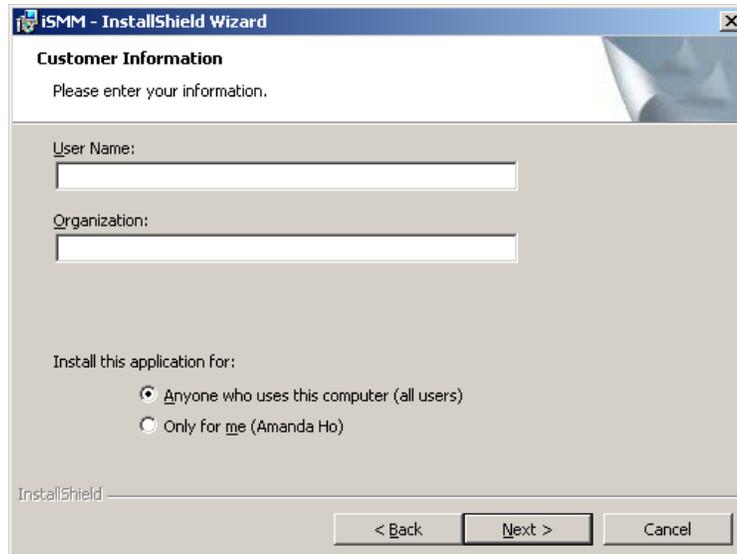


Figure 7-2: iSMM Installation Customer Information

Step 6: Fill out the information and click **NEXT**.

Step 7: The Ready to Install the Program in **Figure 7-3** appears.

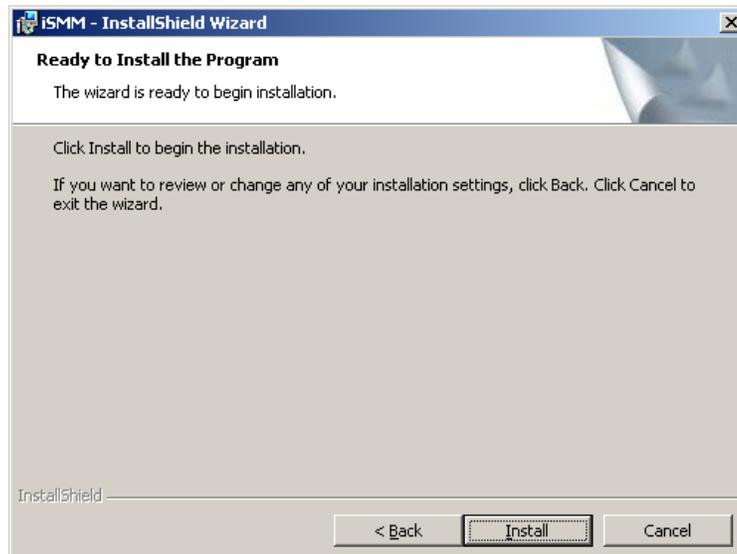


Figure 7-3: Ready to Install the Program Window

Step 8: Click **NEXT** to start the software installation.

Step 9: After the driver installation process is complete, a confirmation screen appears.

Step 10: Click **FINISH** to complete the software installation.

7.3 Voltage Page

The IEI iSMM application monitors and shows the current system voltages on the Voltage Page (**Figure 7-4**). The following sections describe the Voltage Page in details.



Figure 7-4: Voltage Page

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7.3.1 Refresh Time Setting

The iSMM refreshes the voltage values according to the refresh time period set by the user. Follow the steps below to set the refresh time:

Step 1: Click on the Voltage Page tab.

Step 2: Entering a value beside the **Refresh time (Sec)** (Figure 7-5).

Step 3: Click **apply** (Figure 7-5).



Figure 7-5: Voltage Refresh Time Setting

7.3.2 High Limit Value and Low Limit Value Setting

The high limit value and low limit value of each voltage can be set by the user. When the voltage is greater than the high limit value or smaller than the low limit value, the voltage value shows in red. For example, the VBAT voltage (3.22V) shows in red in **Figure 7-4** since the current VBAT voltage is greater than the high limit value (3.2V).

To set the high limit value or low limit value, follow the steps below.

Step 1: Double click a high limit value or a low limit value to enter the new value (Figure 7-6).

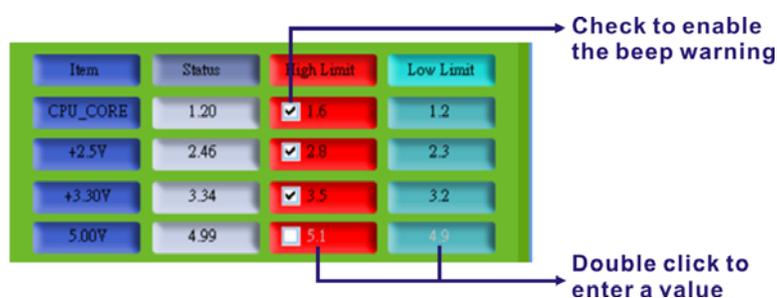


Figure 7-6: Voltage Page – High Limit and Low Limit

Step 2: Check the high or low limit value to have the system use the beep warning when the specified system voltage is greater or smaller than the high limit or low limit (Figure 7-6). (Make sure to enable beep/audio alarm on the Load/Save Page. Refer to **Section 7.8**)

7.4 Fan Page

The IEI iSMM application monitors and shows the fan speeds on the Fan Page (Figure 7-7). The following sections describe the Fan Page in details.

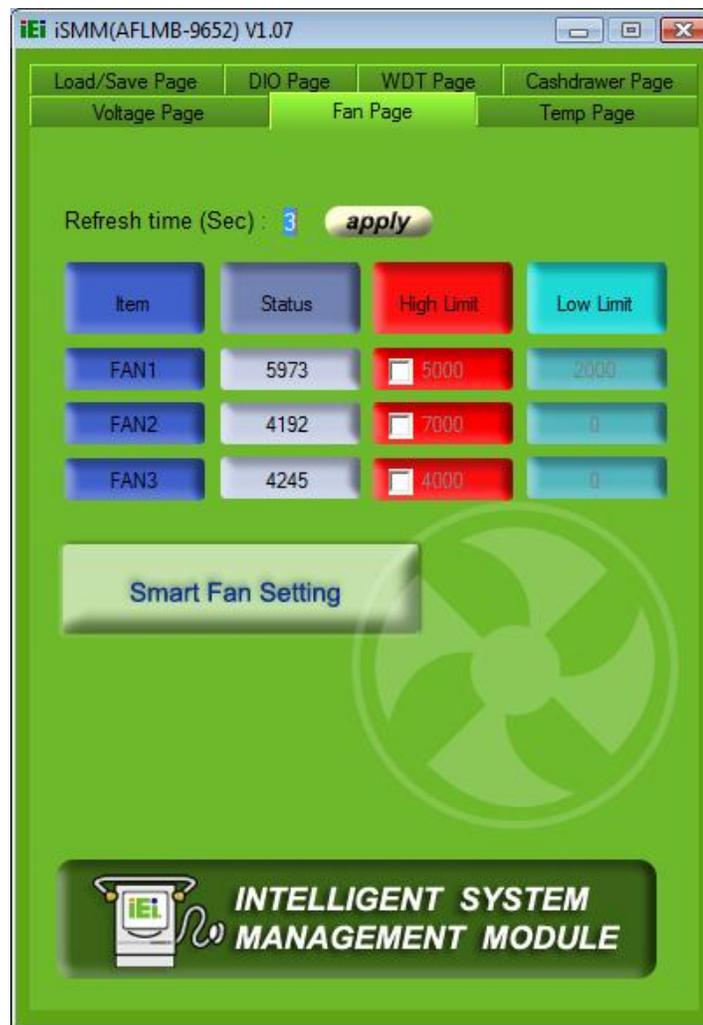


Figure 7-7: Fan Page

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7.4.1 Refresh Time Setting

The iSMM refreshes the fan speed values according to the refresh time period set by the user. Follow the steps below to set the refresh time:

Step 1: Click on the Fan Page tab.

Step 2: Entering a value beside the **Refresh time (Sec)** (Figure 7-8).

Step 3: Click **apply** (Figure 7-8).



Figure 7-8: Fan Speed Refresh Time Setting

7.4.2 High Limit Value and Low Limit Value Setting

The high limit value and low limit value of each fan speed can be set by the user. When the fan speed is greater than the high limit value or smaller than the low limit value, the fan speed value shows in red. For example, the CPU fan speed (1920) shows in red in **Figure 7-7** since the current CPU speed is lower than the low limit value (2000).

To set the high limit value or low limit value, follow the steps below.

Step 1: Double click a high limit value or a low limit value to enter the new value (**Figure 7-9**).

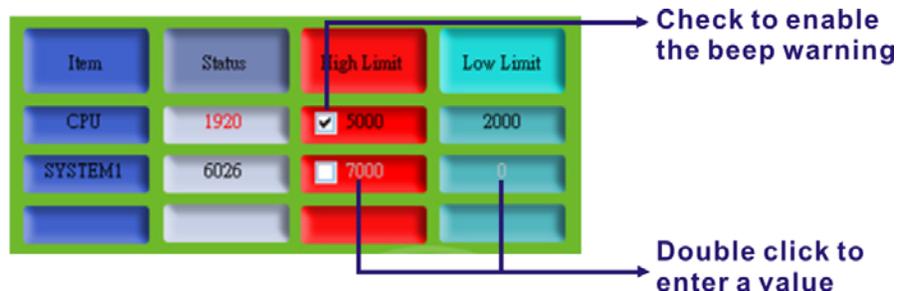


Figure 7-9: Fan Page – High Limit and Low Limit

Step 2: Check the high or low limit value to have the system use the beep warning when the specified fan speed is greater or smaller than the high limit or low limit (Figure 7-9). (Make sure to enable beep/audio alarm on the Load/Save Page. Refer to **Section 7.8**)

7.4.3 Smart Fan Setting

The Smart Fan Setting page is for advanced fan setting. The user can enable or disable the specific fan. When the fan is enabled, the user can control the fan in three different modes (On/Off Mode, PWM Mode and Automatic Mode).

7.4.3.1 On/Off Mode

In the On/Off Mode, choose **Off** or **On** to turn off or turn on the fan. Click **apply** or **ok** when finish.



Figure 7-10: Smart Fan Setting – On/Off Mode

7.4.3.2 PWM Mode

In the PWM Mode, the user can set the PWM value from 0 to 127 by entering a value (Figure 7-11). To set the value, double click the number and enter a new value. Click **apply** or **ok** when finish.



Figure 7-11: Smart Fan Setting – PWM Mode

7.4.3.3 Automatic Mode

In the Automatic Mode, the user can set the temperature that decides the fan activity. The following value can be set (**Figure 7-12**):

- Fan Start (°C): the fan starts when the temperature reaches the set value
- Fan Off (°C): the fan turns off when the temperature reaches the set value
- Full Speed (°C): the fan runs at full speed when the temperature reaches the set value
- Start PWM Value (0~127): the initial PWM value when the fan starts
- Slope (PWM Value (add/°C)): the PWM value added per degree Celsius (°C) of temperature increase when the fan start running

To set the value, double click the number and enter a new value. Click **apply** or **ok** when finish.

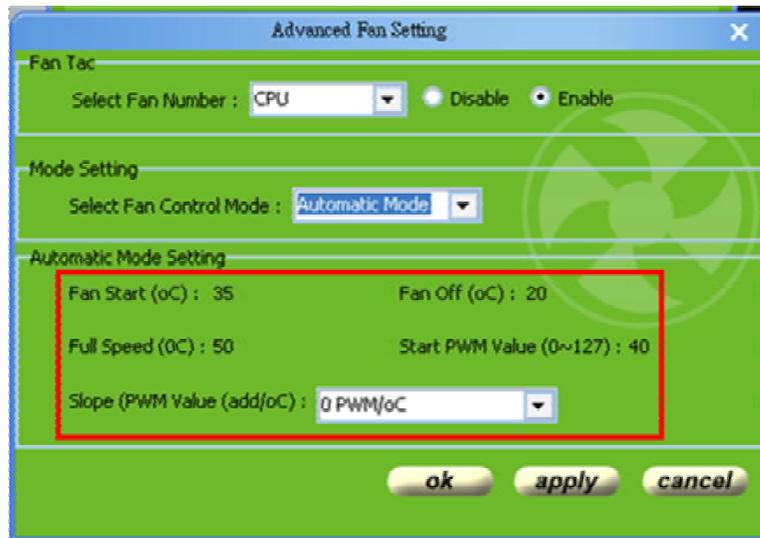


Figure 7-12: Smart Fan Setting – Automatic Mode

7.5 Temperature Page

The IEI iSMM application monitors the current CPU temperature and system temperature and shows the temperature on the Temperature Page (**Figure 7-13**). The following sections describe the Temperature Page in details.

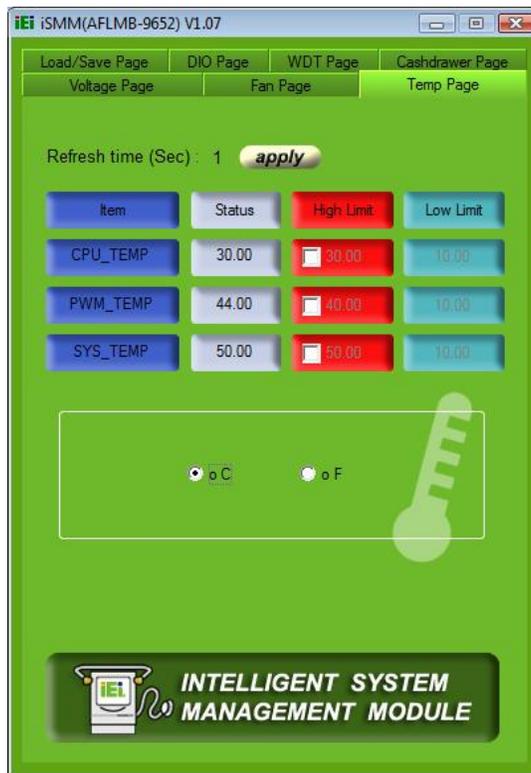


Figure 7-13: Temperature Page

7.5.1 Refresh Time Setting

The iSMM refreshes the CPU and system temperature according to the refresh time period set by the user. Follow the steps below to set the refresh time:

- Step 1:** Click on the Temperature Page tab.
- Step 2:** Entering a value beside the **Refresh time (Sec)** (Figure 7-14).
- Step 3:** Click apply (Figure 7-14).

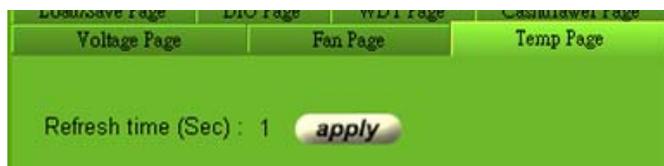


Figure 7-14: Temperature Refresh Time Setting

7.5.2 High Limit Value and Low Limit Value Setting

The high limit value and low limit value of each temperature can be set by the user. When the temperature is greater than the high limit value or lower than the low limit value, the temperature value shows in red. For example, the SYSTEM1 temperature (48) shows in red in **Figure 7-13** since the current system temperature is greater than the high limit value (40). The temperature scale can be changed from Celsius scale (°C) to Fahrenheit scale (°F).

To set the high limit value or low limit value, follow the steps below.

Step 1: Double click a high limit value or a low limit value to enter the new value (Figure 7-15).

Item	Status	High Limit	Low Limit
CPU	29.00	<input checked="" type="checkbox"/> 30	10
SYSTEM1	48.00	<input type="checkbox"/> 40	10
SYSTEM2	35.00	<input type="checkbox"/> 50	10

Check to enable the beep warning

Double click to enter a value

Figure 7-15: Temperature Page – High Limit and Low Limit

Step 2: Check the high or low limit value to have the system use the beep warning when the specified temperature is greater or lower than the high limit or low limit (Figure 7-15). (Make sure to enable beep/audio alarm on the Load/Save Page. Refer to **Section 7.8**). (Make sure to enable beep/audio alarm on the Load/Save Page.)

7.6 Cash Drawer Page

The Cashdrawer Page of the IEI iSMM application allows users to view and control the cash drawers connected to the iSignager-1000-Q354. **Figure 7-17** shows an example of the status of the cash drawers:

- No. 1 cash drawer: open
- No. 2 cash drawer: closed

The user can change the status of the cash drawer by clicking the image.

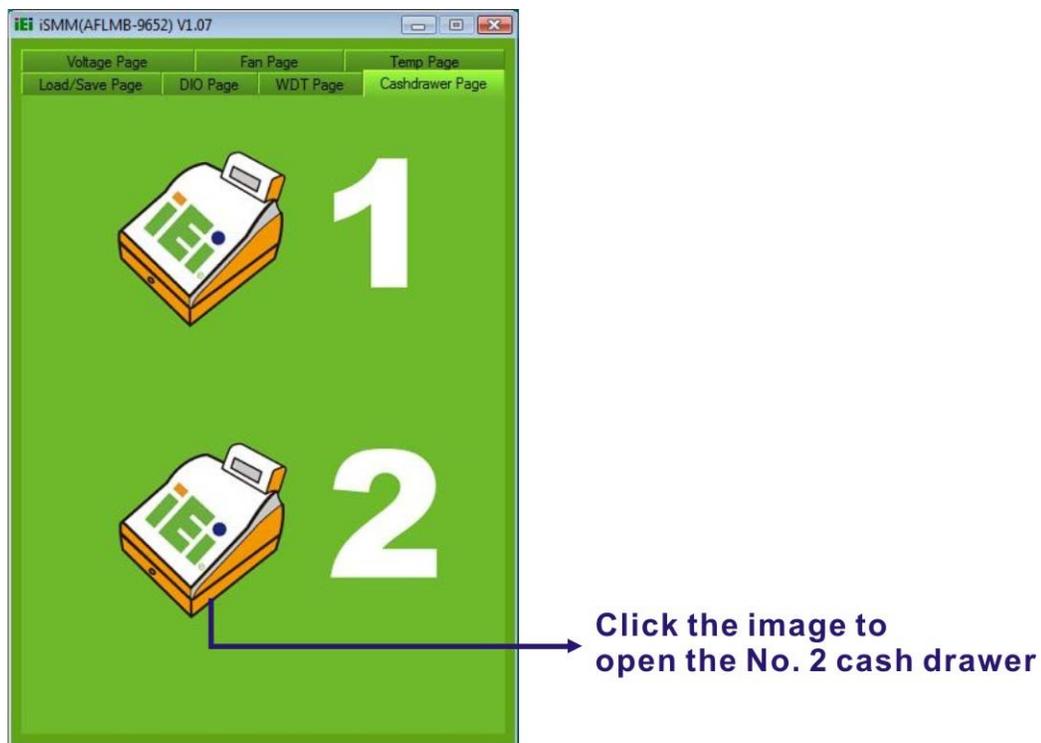


Figure 7-16: Cash Drawer Page

7.7 Watchdog Timer Page

The IEI iSMM application allows users to set watchdog timer on the WDT Page (**Figure 7-17**).

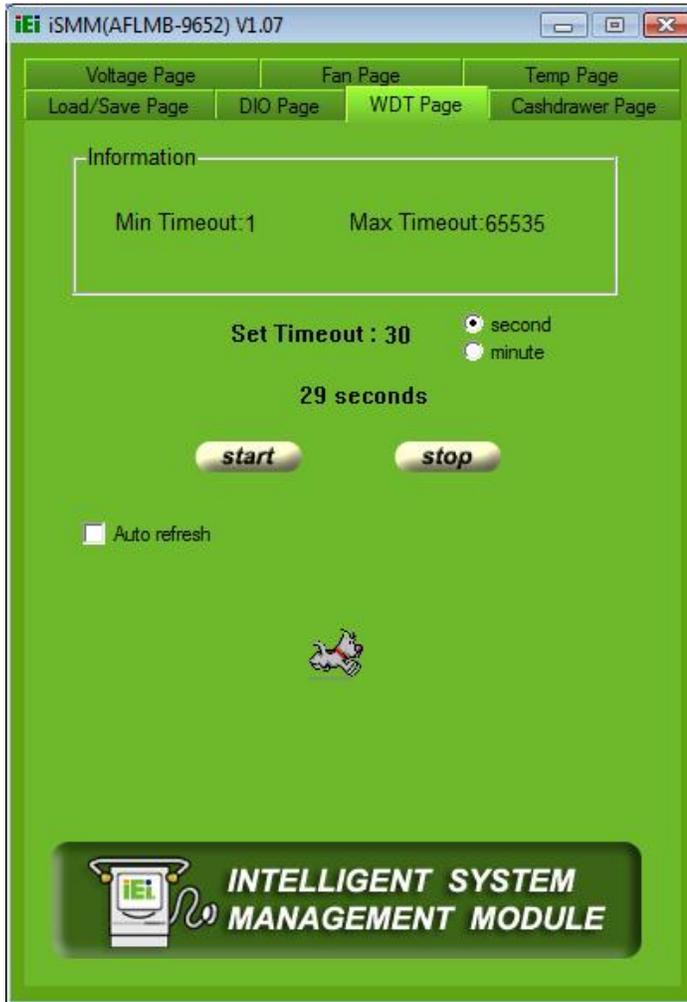


Figure 7-17: WDT Page

Set Timeout	Set the watchdog timer value. The value is a period of time that the system will shut down if the timer is not reset in that period of time.
Start	Click to start the watchdog timer
stop	Click to stop the watchdog timer
Auto refresh	The watchdog timer auto resets before timeout.

7.8 DIO Page

The IEI iSMM application monitors the current voltage of the digital input and digital output and shows the information on the DIO Page (**Figure 7-18**). The digital output information can be set and written to an internal register to control the state driven on the output pin.



Figure 7-18: DIO Page

7.8.1 GPO Information Setting

Follow the steps below to set the GPO.

Step 1: Click the DIO Page.

Step 2: Click the icon in the GPO Information section to change the output pin state.

( : voltage pull high)

( : voltage pull low)

Step 3: Click **Write** to write to an internal register to control the state after finish setting the output pin.

7.9 Load/Save Page

The IEI iSMM application allows the user to save the settings of all the high limit/low limit values and smart fan setting as an *.ini file. Thus, the user can load the setting easily to the iSMM if necessary. The saving and loading action is done from the Load/Save Page of the iSMM (**Figure 7-19**). This page can also enable the beep/audio alarm.



Figure 7-19: Load/Save Page



Chapter

8

Troubleshooting and Maintenance

**WARNING:**

Only certified engineers should modify on-board functions and install the internal components described in the following Sections.

**WARNING:**

Take Anti-Static precautions whenever maintenance is being carried out on the system components. Failure to take anti-static precautions can cause permanent system damage. For more details on anti-static precautions, please refer to **Section 4.1**.

8.1 iSignager-1000-Q354 System Maintenance Overview

**NOTE:**

When doing maintenance operations on the system, please follow the instructions in this chapter. Failure to follow these instructions may lead to personal injury and system damage.

To preserve the working integrity of the iSignager-1000-Q354, the system must be properly maintained. If embedded system components need replacement, the proper maintenance procedures must be followed to ensure the system can continue to operate normally.

8.2 System Troubleshooting

This section provides some simple troubleshooting suggestions.

8.2.1 The System Doesn't Turn On

If after turning the system on, there is no power (indicated by the power LED on the front panel not turning on) please do the following:

- Step 1:** Check that the power cable connector on the rear panel is properly plugged into the power source.
- Step 2:** Make sure the power button is turned on.
- Step 3:** Plug the system into a monitor and check to see if anything appears on the screen. If the boot-up screen appears it means the power LED has become disconnected. To fix this problem, remove the cover case and reconnect the power LED to the motherboard.

If the above steps have been completed and the system still doesn't turn on, please do the following.

- Step 1:** Remove the cover case (**Section 8.3.1**)
- Step 2:** Check that the power connector on the motherboard is properly connected to the power supply.
- Step 3:** Check that the power button cable connector is properly connected to the motherboard.
- Step 4:** Make sure the cable connecting to the power supply are properly attached and have not become separated.
- Step 5:** Make sure the cable connecting the power button to the motherboard is still properly attached to the power button and has not been separated.

8.2.2 The System Doesn't Boot Up

If the system doesn't boot up please do the following:

- Step 1:** Check the power is turned on. See **Section 8.2.1** above.
- Step 2:** Make sure the DIMM module is properly installed.
- Step 3:** Reset the system using the reset CMOS jumper.

8.3 Jumper Setting and Expansion Card Installation

8.3.1 Cover Case Removal

Before the jumper settings can be configured and an expansion card can be installed, the cover case must be removed. To remove the cover case, please follow the steps below:

Step 1: Remove the two cover case thumb screws on the rear panel (**Figure 8-1**).



Figure 8-1: Cover Case Thumb Screws

Step 2: Push the rear panel of the iSignager-1000-Q354 to make the cover case apart from the chassis. Draw out the front panel like pulling out a drawer until the cover case can be fully removed from the iSignager-1000-Q354 (**Figure 8-2**).



Figure 8-2: Cover Case Removal

8.3.2 Configure the Jumper Settings

To configure the jumper settings, please follow the steps below.

- Step 1:** Remove the cover case. See **Section 8.3.1**.
- Step 2:** Locate the jumper settings on the embedded motherboard. See **Section 3.3**.
- Step 3:** Make the jumper settings in accordance with the settings described and defined in **Section 3.3**.

8.3.3 Expansion Card Installation (Optional)

Some iSignager-1000-Q354 models are preinstalled with a PCIe riser card for an expansion card. To install an expansion card, please follow the steps below.

- Step 1: Remove the slot cover.** The expansion card slot on the rear panel of the iSignager-1000-Q354 is covered with a cover. To remove the cover, remove the retention screw on the slot cover (**Figure 8-4**) and the retention screw on the rear panel (**Figure 8-4**).

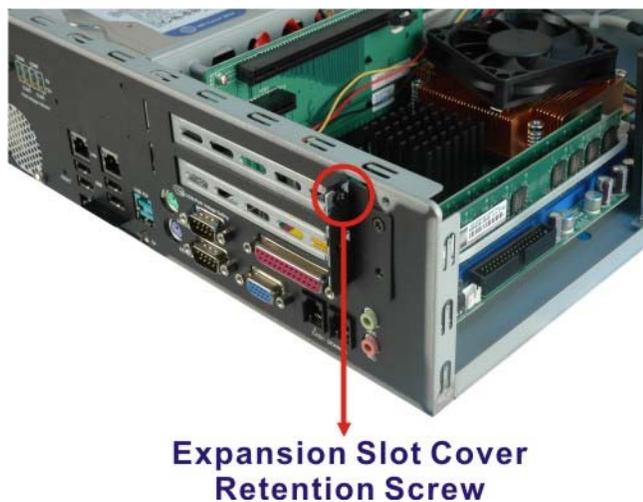


Figure 8-3: Expansion Slot Cover Retention Screw

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Figure 8-4: Expansion Slot Cover Retention Screw (Rear Panel)

Step 2: Install the expansion card. Connect the expansion card connectors to the respective connector on the PCIe riser card.

Step 3: Secure the expansion card. Secure the expansion card by reinserting the previously removed retention screw.

8.4 Component Replacement Procedure



WARNING:

Take Anti-Static precautions whenever maintenance is being carried out on the system components. Failure to take anti-static precautions can cause permanent system damage. For more details on anti-static precautions, please refer to **Section 4.1**.

The embedded system components listed below can all be replaced if they fail:

- System fan
- HDD
- POS motherboard
- Power supply
- DIMM module
- DVD drive (optional)
- PCIe riser card (optional)
- CPU and CPU cooling fan

8.4.1 System Fan Replacement

To replace the system fan please follow the steps below.

Step 1: Remove the cover case. See **Section 8.3.1**.

Step 2: Disconnect the system fan cable from the motherboard.

Step 3: Remove the system fan from the chassis by removing the two retention screws
(**Figure 8-5**).



Figure 8-5: System Fan Bracket Retention Screws

Step 4: Remove the four retention screws that secure the system fan to the bracket
(**Figure 8-6**).



Figure 8-6: System Fan Retention Screws

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Step 5: Install the new system fan with the system bracket with four, previously removed retention screws.

Step 6: Reinsert the two, previously removed retention screws to secure the system fan to the chassis.

Step 7: Reconnect the system fan cable connector.

8.4.2 HDD Replacement

HDD replacement includes the following two procedures:

Step 1: Removing the malfunction HDD

Step 2: Installing the replacement HDD

8.4.2.1 HDD Removal

To remove the HDD, please follow the steps below.

Step 1: Power down the system.

Step 2: Remove the cover case. See **Section 8.3.1**.

Step 3: The HDD bracket is attached to the chassis by five retention screws (**Figure 8-7**). Remove the five retention screws from the chassis.



Figure 8-7: HDD Bracket Retention Screws

- Step 4:** Disconnect the SATA cable from the rear of the HDD.
- Step 5:** Remove the HDD bracket from the side of the iSignager-1000-Q354 chassis.
- Step 6:** Remove the HDD from the HDD bracket by removing the four retention screws on the bottom of the HDD (**Figure 8-8**).



Figure 8-8: HDD Retention Screws

8.4.2.2 HDD Installation

To install the new HDD, please follow the steps below.

- Step 1:** Attach the new HDD to the HDD bracket. To do this, slide the HDD into the HDD bracket to connect the rear of HDD with the cable connector.
- Step 2:** Align the four retention screw holes in the bottom of the HDD with the retention screw holes on the bottom of the HDD bracket. Insert four previously removed retention screws into the bracket on the bottom of the HDD (**Figure 8-8**).
- Step 3:** Reinstall the HDD into the iSignager-1000-Q354 by aligning the retention screw holes in the top of the HDD bracket with the retention screw holes on the chassis. Insert the four previously removed retention screws into the top of the HDD bracket (**Figure 8-7**).
- Step 4:** Reconnect the SATA and power cable connector.

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8.4.3 Motherboard Replacement

POS motherboard replacement includes the following two procedures:

- Step 1:** Removing the malfunction motherboard
- Step 2:** Installing the replacement motherboard

8.4.3.1 Motherboard Removal

To remove the POS motherboard, please follow the steps below.

- Step 1:** Power down the system.
- Step 2:** Disconnect all rear panel peripheral device connectors.
- Step 3:** Remove the CF module (if installed) from the rear panel of the iSignager-1000-Q354.
- Step 4:** Remove the two VGA connector retention screws, two parallel connector retention screws and the four serial port retention screws on the rear panel.

(Figure 8-9)

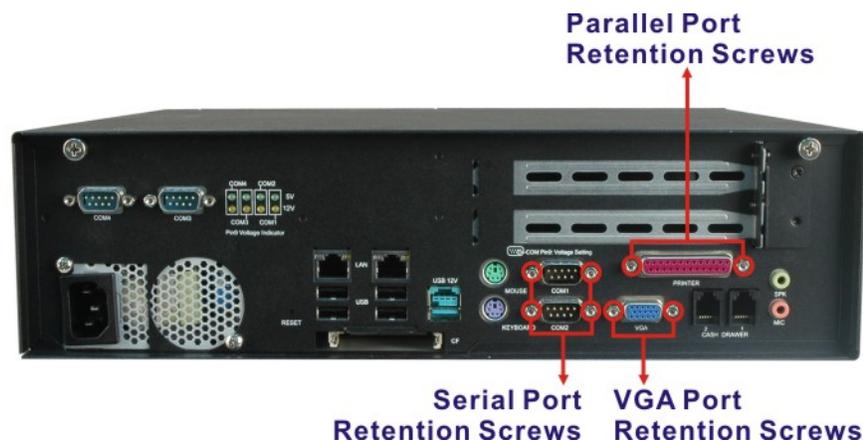


Figure 8-9: Rear Panel Connector Retention Screws

- Step 5:** Remove the cover case. See **Section 8.3.1**.
- Step 6:** Remove the HDD. See **Section 8.4.2.1**
- Step 7:** Remove the ODD. See **Section 8.4.6.1**

Step 8: Remove the system fan. See **Section 8.4.1**.

Step 9: Remove the following connector cables (See **Figure 8-10**):

- Power connector
- Front panel connector
- USB connector
- Serial port and LED connector
- System fan connector

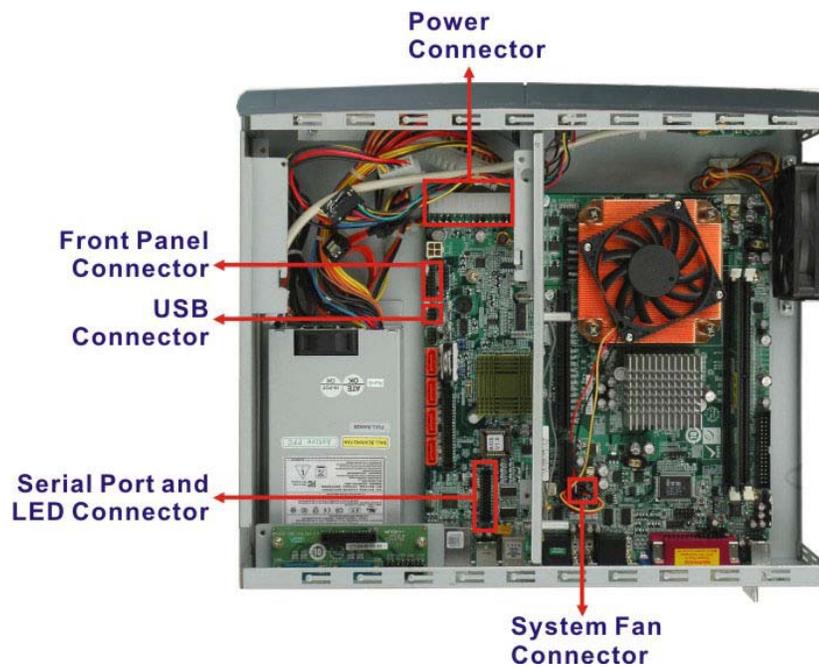


Figure 8-10: Motherboard Connectors

Step 10: Remove the three retention screws that secure the POS motherboard to the iSignager-1000-Q354. (See **Figure 8-11**)

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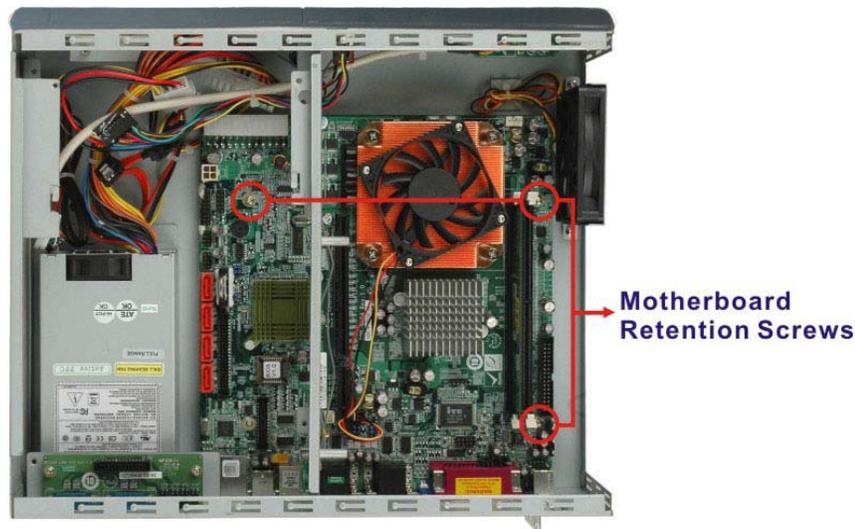


Figure 8-11: Motherboard Retention Screws

Step 11: Remove the POS motherboard.

Step 12: Remove the DIMM.

Step 13: Remove the CPU and CPU fan.

8.4.3.2 Motherboard Installation

To install the new motherboard, please follow the steps below.

Step 1: Install the previously removed CPU and CPU fan.

Step 2: Install the previously removed DIMM.

Step 3: Install the new motherboard into the system. When installing the new motherboard make sure the external peripheral device connectors are properly aligned with the preformed holes in the system rear panel.

Step 4: Reinsert the three previously removed motherboard retention screws and the 12 previously removed rear panel retention screws. (See **Figure 8-11** and **Figure 8-9**)

Step 5: Install the previously removed system fan

Step 6: Reconnect the following cable connectors (See **Figure 8-10**):

- Power connector
- Front panel connector
- USB connector
- Serial port and LED connector
- System fan connector

Step 7: Install the previously removed DVD.

Step 8: Install the previously removed HDD.

Step 9: Replace the cover case. Once replaced reinsert the two previously removed thumb screws.

Step 10: Reconnect the peripheral devices to the peripheral device connectors on the rear panel.

Step 11: Install the previously removed CF card.

Step 12: Power up the system.

8.4.4 Power Supply Replacement

Power supply replacement includes the following two procedures:

Step 1: Removing the power supply

Step 2: Installing the replacement power supply

8.4.4.1 Power Supply Removal

To remove the power supply, please follow the steps below.

Step 1: Turn off the system.

Step 2: Disconnect the rear panel power cable from the +12 V socket.

Step 3: Remove the cover case. See **Section 8.3.1**.

Step 4: Remove the HDD. See **Section 8.4.2.1**

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Step 5: Remove the ODD. See **Section 8.4.6.1**

Step 6: Remove the following connector cables:

- Motherboard ATX connector
- HDD power connector
- ODD power connector

Step 7: Remove the two retention screws that secure the power supply to the system rear panel. (**Figure 8-12**)



Figure 8-12: Power Supply Retention Screws

Step 8: Slide the power supply toward the front panel of the iSignager-1000-Q354 and take out the power supply with bracket (**Figure 8-13**).



Figure 8-13: Power Supply Removal

Step 9: Remove the two retention screws that secure the power supply to the power supply bracket (**Figure 8-14**).



Figure 8-14: Power Supply Bracket Retention Screws

Step 10: Remove the power supply.

8.4.4.2 Power Supply Installation

To install the new power supply, please follow the steps below.

Step 1: Install the new power supply with the power supply bracket with two, previously removed retention screws (**Figure 8-14**).

Step 2: Slide the power supply into the chassis and reinsert the two, previously removed power supply retention screws into the rear of the iSignager-1000-Q354.

Step 3: Reconnect the following cable connectors:

- Motherboard ATX connector
- HDD power connector
- ODD power connector

Step 4: Install the ODD and HDD.

Step 5: Replace the cover case. Once replaced reinsert the two previously removed thumb screws (**Figure 8-12**).

Step 6: Reconnect the power cable to the +12 V socket.

Step 7: Power up the system.

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8.4.5 DIMM Replacement

To replace the DIMM please follow the steps below.

Step 1: Remove the cover case. See **Section 8.3.1**.

Step 2: Locate the DIMM. Push the white clips on the side of the DIMM down. The DIMM is dislodged from the DIMM socket.

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 (**Figure 8-15**).

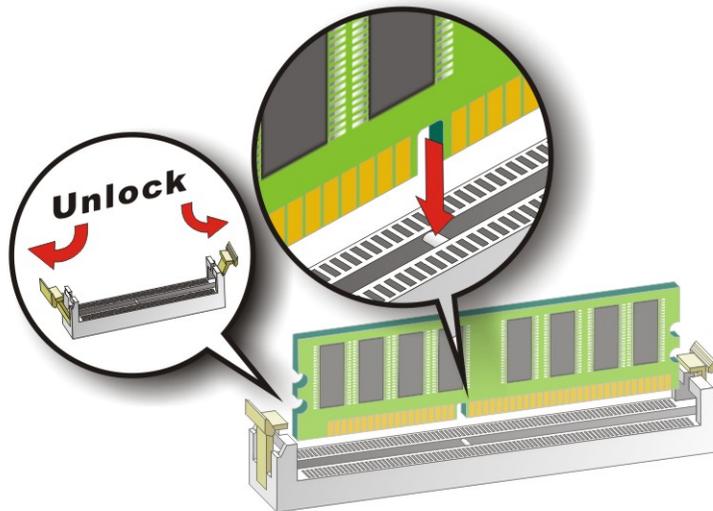


Figure 8-15: DIMM Installation

8.4.6 ODD Replacement (Optional)

ODD replacement includes the following two procedures:

Step 1: Removing the malfunction ODD.

Step 2: Installing the replacement ODD.

8.4.6.1 ODD Removal

To remove the ODD, please follow the steps below.

- Step 1:** Power down the system.
- Step 2:** Remove the cover case. See **Section 8.3.1**.
- Step 3:** Disconnect the SATA cable from the rear of the ODD.
- Step 4:** The ODD bracket is attached to the chassis by two retention screws. Remove the two retention screws from the chassis (**Figure 8-16**).
- Step 5:** Slide the ODD bracket toward the rear panel of the iSignager-1000-Q354 and take out the ODD with bracket (**Figure 8-16**).



Figure 8-16: ODD Bracket Retention Screws

- Step 6:** Remove the SATA cable from the rear of ODD by removing the two retention screws (**Figure 8-17**).

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Figure 8-17: SATA Cable Retention Screws

Step 7: Remove the ODD from the ODD bracket by removing the four retention screws on both sides of the ODD (**Figure 8-18**).



Figure 8-18: ODD Retention Screws

8.4.6.2 ODD Installation

To install the new ODD, please follow the steps below.

Step 1: Attach the new ODD to the ODD bracket. Align the four retention screw holes in both side of ODD with the retention screw holes on the side of the ODD bracket. Insert the four previously removed retention screws into the bracket on both sides of the ODD (**Figure 8-18**).

Step 2: Attach the SATA cable to the ODD by aligning the two retention screw holes in the SATA cable with the retention screw holes on the rear of the ODD. Insert two retention screws into the SATA cable (**Figure 8-17**).

Step 3: Reinstall the ODD into the iSignager-1000-Q354 by aligning the retention screw holes in the top of the ODD bracket with the retention screw holes on the chassis. Reinsert the two previously removed retention screws into the ODD bracket (**Figure 8-16**).

Step 4: Reconnect the SATA and power cable connectors from the rear of ODD to the motherboard and the power module.

8.4.7 PCIe Riser Card Replacement (Optional)

Step 1: Remove the cover case. See **Section 8.3.1**.

Step 2: Remove the expansion card installed on the PCIe riser card.

Step 3: Remove the two retention screws on the PCIe riser card (**Figure 8-19**).

PCIe Riser Card Retention Screws

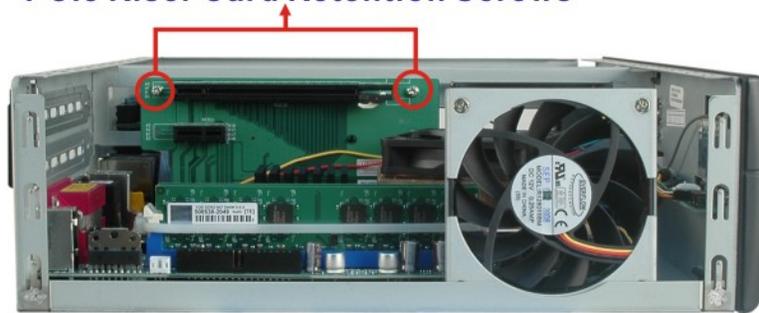


Figure 8-19: PCIe Riser Card Retention Screws

Step 4: Pull the PCIe riser card out of the PCIe x4 and PCIe x16 sockets on the motherboard.

Step 5: Remove the wireless LAN module on the PCIe riser card.

Step 6: Reinstall the wireless LAN module to the new PCIe riser card.

Step 7: Insert the new PCIe riser card. Properly align the PCIe riser card pins with the PCIe x4 and PCIe x16 sockets. Gently push the PCIe riser card into the two PCIe sockets.

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Step 8: Reinsert the two, previously removed PCIe riser card retention screws.



Appendix

A

Safety Precautions

**WARNING:**

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the iSignager-1000-Q354.

A.1 Safety Precautions

Please follow the safety precautions outlined in the sections that follow:

A.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- **Follow the electrostatic precautions** outlined below whenever the iSignager-1000-Q354 is opened.
- **Make sure the power is turned off and the power cord is disconnected** whenever the iSignager-1000-Q354 is being installed, moved or modified.
- **Do not apply voltage levels that exceed the specified voltage range.** Doing so may cause fire and/or an electrical shock.
- **Electric shocks can occur** if the iSignager-1000-Q354 chassis is opened when the iSignager-1000-Q354 is running.
- **Do not drop or insert any objects** into the ventilation openings of the iSignager-1000-Q354.
- **If considerable amounts of dust, water, or fluids enter the iSignager-1000-Q354**, turn off the power supply immediately, unplug the power cord, and contact the iSignager-1000-Q354 vendor.
- **DO NOT:**
 - Drop the iSignager-1000-Q354 against a hard surface.
 - Strike or exert excessive force onto the LCD panel.
 - Touch any of the LCD panels with a sharp object
 - In a site where the ambient temperature exceeds the rated temperature

A.1.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the installation of the iSignager-1000-Q354 may result in permanent damage to the iSignager-1000-Q354 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the iSignager-1000-Q354. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the iSignager-1000-Q354 is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding:*** Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component:*** When handling the electrical component, hold the electrical component by its edges.

A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the iSignager-1000-Q354, please follow the guidelines below.

A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the iSignager-1000-Q354, please read the details below.

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- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.
- The interior of the iSignager-1000-Q354 does not require cleaning. Keep fluids away from the iSignager-1000-Q354 interior.
- Be cautious of all small removable components when vacuuming the iSignager-1000-Q354.
- Turn the iSignager-1000-Q354 off before cleaning the iSignager-1000-Q354.
- Never drop any objects or liquids through the openings of the iSignager-1000-Q354.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the iSignager-1000-Q354.
- Avoid eating, drinking and smoking within vicinity of the iSignager-1000-Q354.

A.2.2 Cleaning Tools

Some components in the iSignager-1000-Q354 may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the iSignager-1000-Q354.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the iSignager-1000-Q354.
- **Water or rubbing alcohol** – A cloth moistened with water or rubbing alcohol can be used to clean the iSignager-1000-Q354.
- **Using solvents** – The use of solvents is not recommended when cleaning the iSignager-1000-Q354 as they may damage the plastic parts.
- **Vacuum cleaner** – Using a vacuum specifically designed for computers is one of the best methods of cleaning the iSignager-1000-Q354. Dust and dirt can restrict the airflow in the iSignager-1000-Q354 and cause its circuitry to corrode.
- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- **Foam swabs** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

B

Interface Connectors

B.1 Peripheral Interface Connectors

The iSignager-1000-Q354 motherboard, the POS-Q354 comes with a number of peripheral interface connectors and configuration jumpers listed in **Section 3.2.1**. The pinouts for these connectors are listed below:

→ **CF1: CompactFlash® Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	26	PULL DOWN
2	D3	27	D11
3	D4	28	D12
4	D5	29	D13
5	D6	30	D14
6	D7	31	D15
7	CS1#	32	CS3#
8	N/C	33	N/C
9	GROUND	34	IOR#
10	N/C	35	IOW#
11	N/C	36	VCC
12	N/C	37	IRQ15
13	VCC	38	VCC
14	N/C	39	MASTER/SLAVE
15	N/C	40	N/C
16	N/C	41	RESET#
17	N/C	42	IRDY
18	A2	43	N/C
19	A1	44	VCC
20	A0	45	ACTIVE#
21	D0	46	PDIAG#
22	D1	47	D8
23	D2	48	D9
24	N/C	49	D10
25	PULL DOWN	50	GROUND

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→ CPU12V1: CPU Power Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

→ DIO2: Digital I/O Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+5V
3	INPUT0	4	OUTPUT0
5	INPUT1	6	OUTPUT1
7	INPUT2	8	OUTPUT2
9	INPUT3	10	OUTPUT3

→ SYS_FAN2: Fan Connectors

PIN NO.	DESCRIPTION
1	GND
2	+12V
3	Sense

→ CPU_FAN1: Fan Connector

PIN NO.	DESCRIPTION
1	GND
2	+12V
3	Sense
4	Speed control

→ FDC1: FDD Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	RWCO-
3	GND	4	NC
5	NC	6	NC
7	GND	8	INDEX-

9	GND	10	MO-A
11	GND	12	DS-B
13	GND	14	DS-A
15	GND	16	MO-B
17	GND	18	DIR-
19	GND	20	STEP-
21	GND	22	WD-
23	GND	24	WGATE-
25	GND	26	TRK0-
27	GND	28	WP-
29	GND	30	RDATA-
31	GND	32	HEAD-
33	GND	34	DSKCHG-

→ **F_PANEL2: Front Panel Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Power LED+	2	Speaker+
3	NC	4	NC
5	Power LED-	6	NC
7	Power Button-	8	Speaker-
9	Power Button+	10	NC
11	IDE LED+	12	Reset Button+
13	IDE LED-	14	Reset Button-
15	CF LED+	16	LAN_ACT LED+
17	CF LED-	18	LAN_ACT LED-

→ **IDE1: IDE Interface Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11

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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	GND	20	(KEY)
21	DRQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	CHRDY	28	GND
29	DACK	30	GND
31	INTERRUPT	32	N/C
33	SA1	34	P66DET
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GND
41	+5V	42	+5V
43	GND	44	NC

→ IR1: Infrared Interface Connector

PIN NO.	DESCRIPTION
1	VCC
2	NC
3	IR-RX
4	GND
5	IR-TX

→ PWR1: ATX Power Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	5V	16	PS_ON
5	GND	17	GND

6	5V	18	GND
7	GND	19	GND
8	NC	20	NC
9	5VSB	21	5V
10	12V	22	5V
11	12V	23	5V
12	3.3V	24	GND

→ **SATA1, SATA2, SATA3, SATA4, SATA5, SATA6: SATA Connectors**

PIN NO.	DESCRIPTION
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

→ **CN1: SDSM Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC3	2	GND
3	3V_DUAL	4	SDSMIO1
5	VCC5	6	SDSMIO0
7	PCIRST#	8	SDSMI1
9	SMBCLK	10	SDSMIO
11	SMBDATA	12	NC

→ **CN9 : Serial port (COM3 and COM4) and Indicators (for COM1-COM4) Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD3	14	DSR3
2	RXD3	15	RTS3
3	TXD3	16	CTS3

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4	DTR3	17	COM3_Voltage Output
5	GND	18	GND
6	DCD4	19	DSR4
7	RXD4	20	RTS4
8	TXD4	21	CTS4
9	DTR4	22	COM4_Voltage Output
10	COM1_RI_LED12	23	COM2_RI_LED12
11	COM1_RI_LED5	24	COM2_RI_LED5
12	COM3_RI_LED12	25	COM4_IR_LED12
13	COM3_RI_LED5	26	COM4_RI_LED5

→ USB3 and USB4: USB Connectors

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	DATA0-	4	DATA1+
5	DATA0+	6	DATA1-
7	GND	8	VCC



Appendix

C

BIOS Menu Options

C.1 BIOS Configuration Options

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

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Appendix

D

Watchdog Timer

**NOTE:**

The following discussion applies to DOS environment. IEI support is contacted or the IEI website visited for specific drivers for more sophisticated operating systems, e.g., Windows and Linux.

The Watchdog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMI or a software bug. When the CPU stops working correctly, Watchdog Timer either performs a hardware reset (cold boot) or a Non-Maskable Interrupt (NMI) to bring the system back to a known state.

A BIOS function call (INT 15H) is used to control the Watchdog Timer:

INT 15H:

AH – 6FH Sub-function:	
AL – 2:	Sets the Watchdog Timer's period.
BL:	Time-out value (Its unit-second is dependent on the item "Watchdog Timer unit select" in CMOS setup).

Table D-1: AH-6FH Sub-function

Call sub-function 2 to set the time-out period of Watchdog Timer first. If the time-out value is not zero, the Watchdog Timer starts counting down. While the timer value reaches zero, the system resets. To ensure that this reset condition does not occur, calling sub-function 2 must periodically refresh the Watchdog Timer. However, the Watchdog timer is disabled if the time-out value is set to zero.

A tolerance of at least 10% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time-consuming.



NOTE:

When exiting a program it is necessary to disable the Watchdog Timer, otherwise the system resets.

Example program:

```

; INITIAL TIMER PERIOD COUNTER
;
W_LOOP:

    MOV     AX, 6F02H      ;setting the time-out value
    MOV     BL, 30        ;time-out value is 48 seconds
    INT     15H

;
; ADD THE APPLICATION PROGRAM HERE
;
    CMP     EXIT_AP, 1    ;is the application over?
    JNE     W_LOOP       ;No, restart the application

    MOV     AX, 6F02H     ;disable Watchdog Timer
    MOV     BL, 0        ;
    INT     15H

;
; EXIT ;
    
```

Appendix

E

Hazardous Materials Disclosure

E.1 Hazardous Material Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

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Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	X	O	O	O	O	X
Display	X	O	O	O	O	X
Printed Circuit Board	X	O	O	O	O	X
Metal Fasteners	X	O	O	O	O	O
Cable Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Power Supply Assemblies	X	O	O	O	O	X
Battery	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有“环境友好使用期限”的标签，此期限是估算这些物质“不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	X	O	O	O	O	X
显示	X	O	O	O	O	X
印刷电路板	X	O	O	O	O	X
金属螺帽	X	O	O	O	O	O
电缆组装	X	O	O	O	O	X
风扇组装	X	O	O	O	O	X
电力供应组装	X	O	O	O	O	X
电池	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

Appendix

F

Intel[®] Matrix Storage Manager

F.1 Introduction

The Intel® ICH9DO chipset can provide data protection for serial ATA (SATA) disks via the Intel® Matrix Storage Manager using one of three fault-tolerant RAID levels: RAID 1, 5 or 10. When using two hard drives, matrix RAID allows RAID 0 and RAID 1 functions to be combined, where critical files can be stored on RAID 1, and RAID 0 can be used for non-critical items such as software. RAID 5 and RAID 0 can be combined to provide higher performance, capacity, and fault tolerance.



CAUTION!

A configured RAID volume (which may consist of multiple hard drives) appears to an operating system as a contingent storage space. The operating system will not be able to distinguish the physical disk drives contained in a RAID configuration.

F.1.1 Precautions

One key benefit a RAID configuration brings is that a single hard drive can fail within a RAID array without damaging data. With RAID1 array, a failed drive can be replaced and the RAID configuration restored.



WARNING!

Irrecoverable data loss occurs if a working drive is removed when trying to remove a failed drive. It is strongly recommended to mark the physical connections of all SATA disk drives. Drive locations can be identified by attaching stickers to the drive bays. If a drive member of a RAID array should fail, the failed drive can then be correctly identified.



CAUTION!

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Do not accidentally disconnect the SATA drive cables. Carefully route the cables within the chassis to avoid system down time.

F.2 Features and Benefits

- Supports RAID levels 0, 1, 5 and 10
- Supports connectivity to two or more disk drives
- Supported Operating Systems include: Windows XP, Windows Server 2003 and Windows Vista

F.3 Accessing the Intel[®] Matrix Storage Manager

To access the Intel[®] Matrix Storage Manager, please follow the steps below.

Step 1: Connect SATA drives to the system. Connect two or more SATA drives to the system. Make sure the drives have the same capacity, are the same type and have the same speed.



NOTE:

Make sure the SATA drives are EXACTLY the same when they are configured in a RAID configuration. If they are not the same size, disk drive capacity is sacrificed and overall performance affected.

Step 2: Enable SATA drives in BIOS. Start the computer and access the BIOS setup program. Enable SATA support for all IDE devices. Refer to the applicable BIOS configuration section in this user manual.

- Step 3: Save and Exit BIOS.** After the **SATA** support option is enabled, save and exit the **BIOS**.
- Step 4: Reboot the system.** Reboot the system after saving and exiting the **BIOS**.
- Step 5: Press Ctrl+I.** During the system boot process, press **Ctrl+I** when prompted to enter the RAID configuration software.
- Step 6: Configure the RAID settings.** Use the Intel[®] Matrix Storage Manager to configure the RAID array. Brief descriptions of configuration options are given below.
- Step 7: Install the OS.** After the RAID array has been configured, install the OS. To do this, please refer to the documentation that came with the OS.

F.4 RAID Configuration

F.4.1 Creating a RAID Volume



WARNING!

All data previously stored on the member drives of a RAID configuration are destroyed during the RAID initialization process. If “used” drives are used to create a RAID array, make sure the data has been moved or backed up before creating a RAID array out of the disk drives.

- Step 1: Select “Create RAID Volume.”** Use the arrow keys to highlight **Create RAID Volume** and press **ENTER**. See **Figure F-1**.

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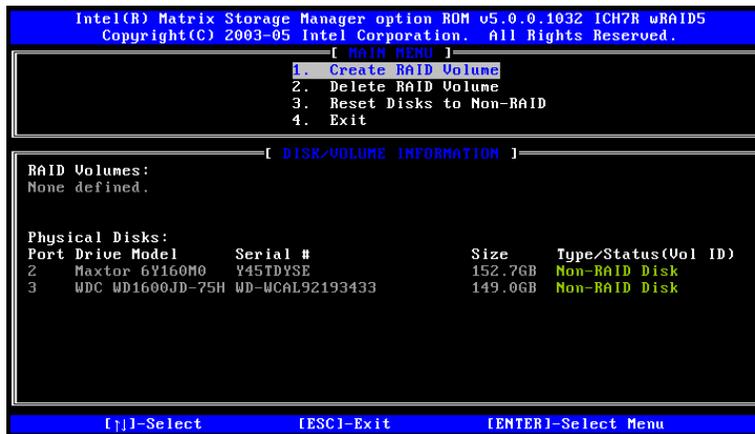


Figure F-1: Matrix Storage Manager Main Menu

Step 2: Name the RAID volume. Enter a name for the RAID volume, or press **ENTER** to accept the default volume name. Upper and lower case alphabetic, numeric, space, and underscore characters are all applicable for naming an array. See **Figure F-2**.

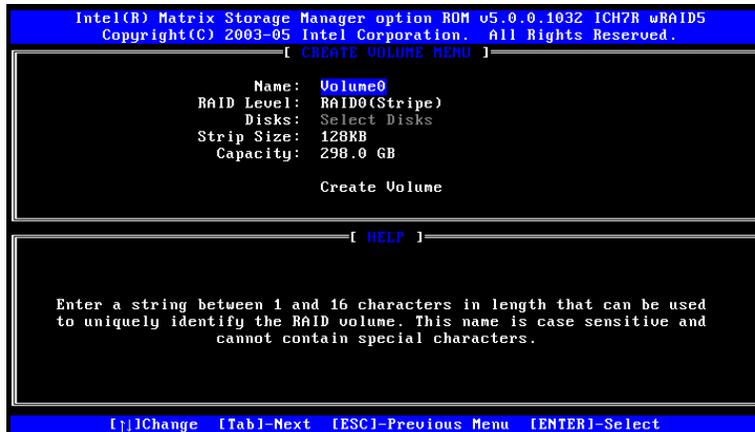


Figure F-2: Create RAID Volume Name

Step 3: Choose the RAID level. Select a RAID level from the list. RAID levels include RAID 0, 1, 5 and 10. See **Figure F-3**.


NOTE:

RAID 0 and RAID1 levels require a minimum of two hard drives.

RAID 10 level requires a minimum of four hard drives.

RAID5 level requires a minimum of three hard drives.

```

Intel(R) Matrix Storage Manager option ROM v5.0.0.1032 ICH7R wRAID5
Copyright(C) 2003-05 Intel Corporation. All Rights Reserved.
-----[ CREATE VOLUME MENU ]-----
      Name: Volume0
  RAID Level: RAID0(Stripe)
        Disks: Select Disks
  Strip Size: 128KB
    Capacity: 298.0 GB

      Create Volume

-----[ HELP ]-----
Choose the RAID level best suited to your usage model.

RAID0 - Data striped across multiple physical drives for performance.
RAID1 - Data mirrored across multiple physical drives for redundancy.
RAID10 - Striped volume whose segments are RAID 1 volumes. Requires
         four hard drives. Functionally equivalent to RAID0+1.
RAID5 - Data and parity striped across three or more physical drives
        for performance and redundancy.

[Left]Change [Tab]Next [ESC]Previous Menu [ENTER]Select
    
```

Figure F-3: Choose the Raid Level

Step 4: Select the Stripe Size. Select a stripe size from the list. See Figure F-4.

```

Intel(R) Matrix Storage Manager option ROM v5.0.0.1032 ICH7R wRAID5
Copyright(C) 2003-05 Intel Corporation. All Rights Reserved.
-----[ CREATE VOLUME MENU ]-----
      Name: Volume0
  RAID Level: RAID0(Stripe)
        Disks: Select Disks
  Strip Size: 128KB
    Capacity: 298.0 GB

      Create Volume

-----[ HELP ]-----

The following are typical values:

      RAID0 - 128KB
      RAID10 - 64KB
      RAID5 - 64KB

[Left]Change [Tab]Next [ESC]Previous Menu [ENTER]Select
    
```

Figure F-4: Select the Stripe Size

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Step 5: Enter the Volume Capacity. Enter the volume capacity, or press **ENTER** to accept the default capacity. See **Figure F-5**.

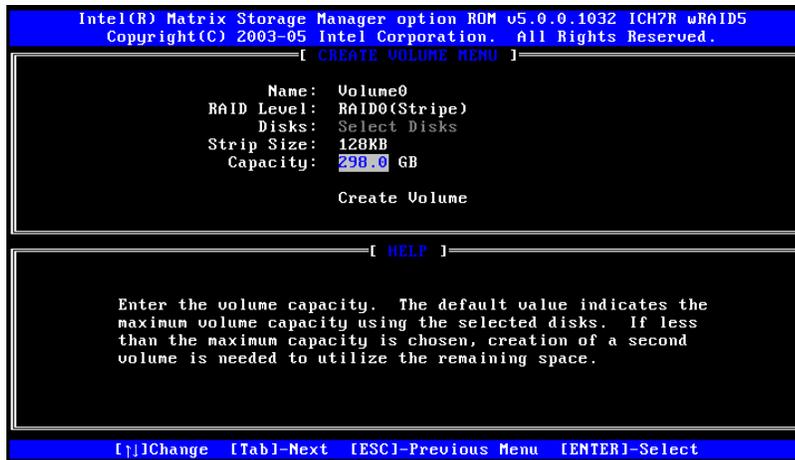


Figure F-5: Enter the Volume Capacity

Step 6: Create the RAID Volume. Press **ENTER** to create the RAID volume as specified. See **Figure F-6**.



Figure F-6: Create the RAID Volume

Step 7: Create RAID Volume Verification. After reading the warning, press **Y** to create the RAID volume as specified, or **N** to return to the **Create RAID Volume** menu. See **Figure F-7**.

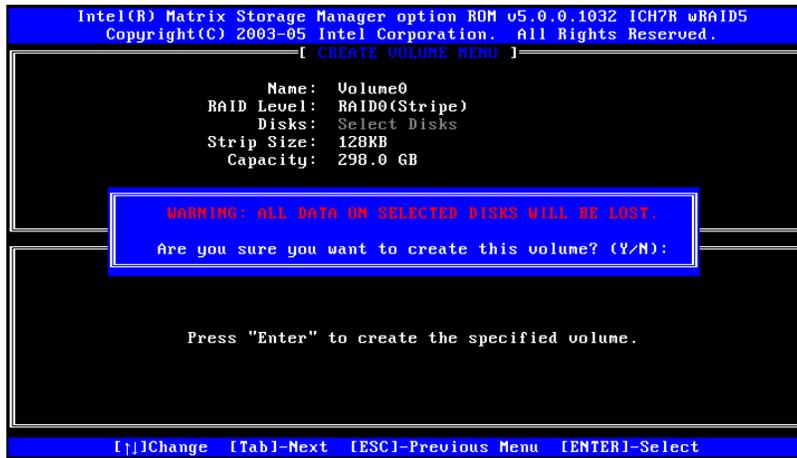


Figure F-7: Create RAID Volume Verification

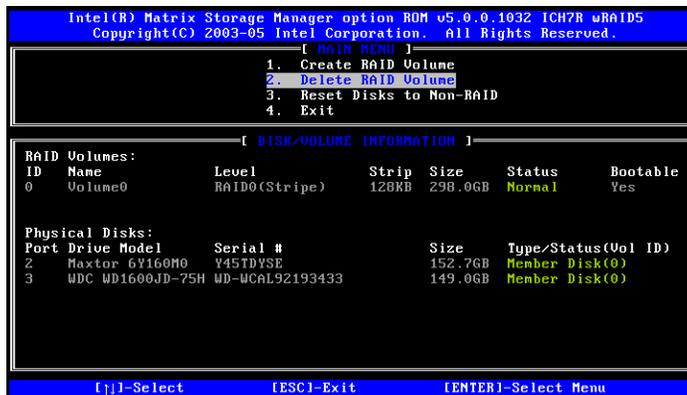
F.4.2 Deleting a RAID Volume



WARNING!

All data stored on the member drives of a RAID volume are destroyed during the RAID deletion process. Make sure any data to be saved has been moved or backed up before deleting a RAID volume.

Step 1: Select “Delete RAID Volume.” Use the arrow keys to highlight **Delete RAID Volume** and press **ENTER**. See Figure F-8.



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Figure F-8: Delete RAID Volume Menu

Step 2: Select RAID Volume to be Deleted. Use the arrow keys to highlight the RAID volume to be deleted and press **ENTER**. See **Figure F-9**.

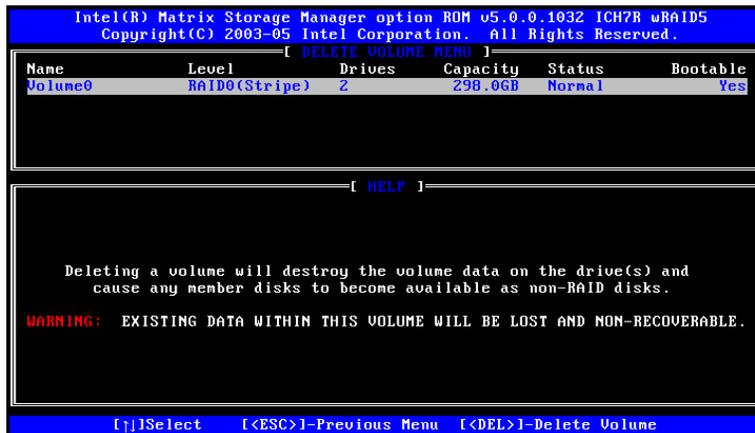


Figure F-9: Select RAID Volume to be Deleted

Step 3: Delete Volume Verification. After reading the warning, press **Y** to delete the specified RAID volume, or **N** to return to the **Delete Volume** menu.

See **Figure F-10**.

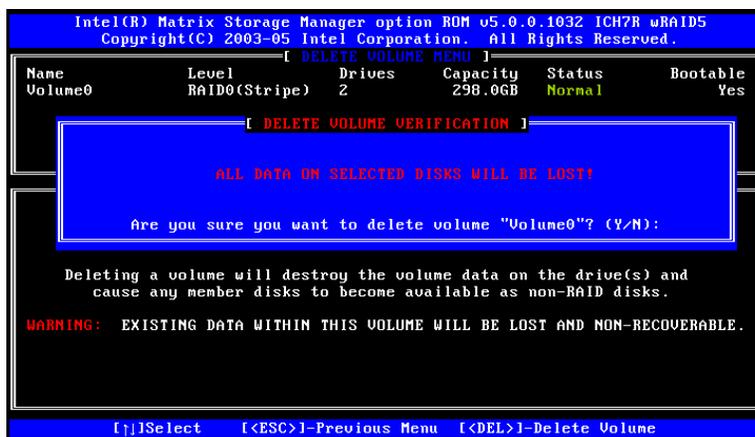


Figure F-10: Delete Volume Verification

Step 4: Non-RAID Disks. After deleting the RAID volume, the disks belonging to the volume will be shown as non-RAID disks. See **Figure F-11**.



Figure F-11: Non-RAID Disks

F.4.3 Resetting a Disk to Non-RAID



WARNING!

All data stored on the disk drive of a RAID volume is destroyed when resetting it to non-RAID. Make sure any data to be saved has been moved or backed up before resetting a disk to non-RAID.

Step 1: Select “Reset Disk to Non-RAID.” Use the arrow keys to highlight **Reset Disk to Non-RAID** and press **ENTER**. See **Figure F-12**.

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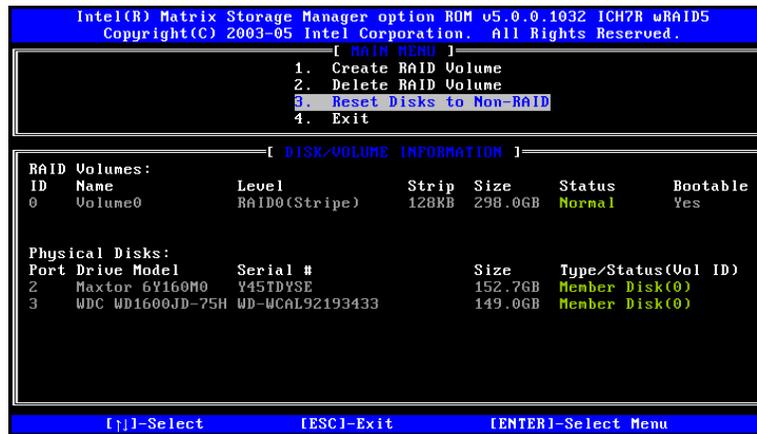


Figure F-12: Reset Disk to Non-RAID Menu

Step 2: Select Disks to Reset. Use the arrow keys to scroll through the disk drives and press **SPACE** to select which drives are to be reset as non-RAID. After all the disks to be reset have been chosen, press **ENTER**. See Figure F-13.

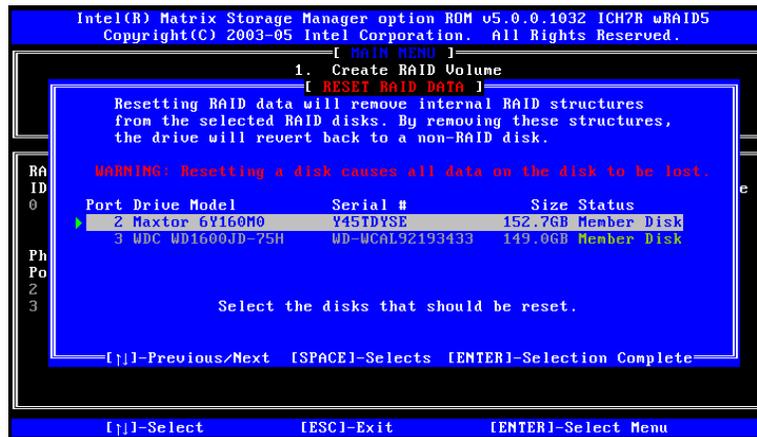


Figure F-13: Select Disk to Reset

Step 3: Reset Disk Verification. After reading the warning, press **Y** to reset the selected disks as non-RAID, or **N** to return to the **Reset RAID Data** menu. See Figure F-14.

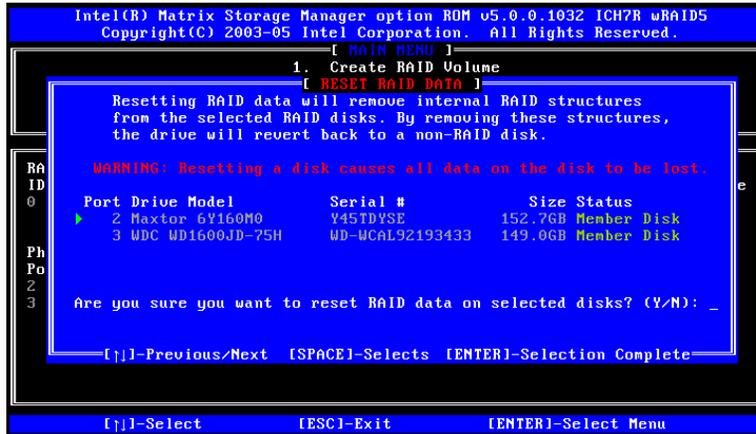


Figure F-14: Reset Disk Verification

Step 4: **Disk Drive and RAID Volume Status.** After the disk drives have been reset, the **Matrix Storage Manager Main** menu is shown indicating the status of the RAID volumes and disk drives. See **Figure F-15**.

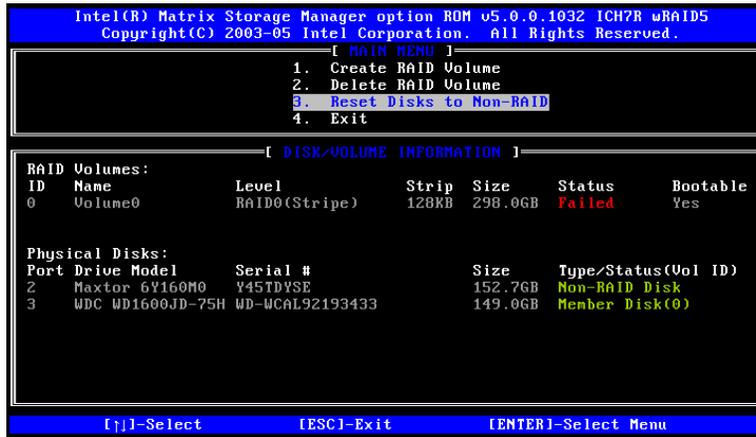


Figure F-15: Disk Drive and RAID Volume Status

F.4.4 Exiting the Matrix Storage Manager

Step 1: **Select “Exit.”** Use the arrow keys to highlight **Exit** and press **ENTER**.

See **Figure F-16**.

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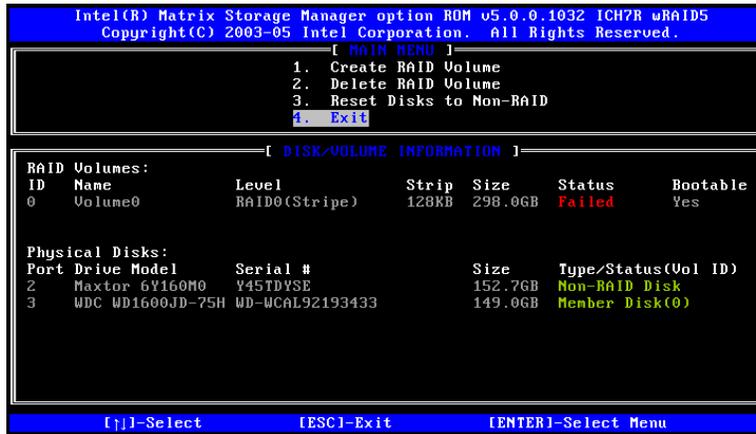


Figure F-16: Exit Menu

Step 2: Exit Verification. Press Y to exit the Matrix Storage Manager, or N to return to the Main menu. See Figure F-17.

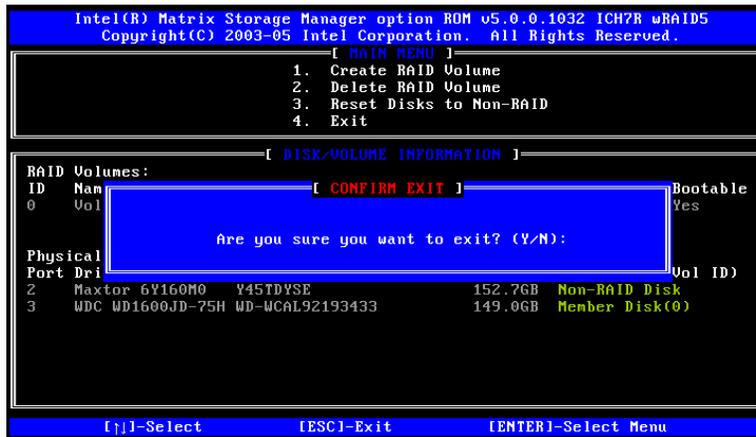


Figure F-17: Exit Verification