



MODEL:
AFL2-W15A-N270

**Panel PC with Intel® Atom™ N270 CPU, Touchscreen
Gigabit Ethernet, USB, Audio, RS-232/422/485, SATA
RoHS Compliant, IP 64 Protection**

User Manual



Revision

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Chapter

1

Introduction

1.1 Overview



Figure 1-1: AFL2-W15A-N270

The Afolux panel PCs are all-in-one panel PCs with all the elements of a desktop computer contained in a single, slim package, no bigger than a thick monitor. The Afolux panel PCs can be mounted on a desktop monitor stand and save a huge amount of desktop space by including all the computer components behind the screen. All models include a touch screen interface.

The Afolux is a self-contained system, with all parts, excluding the power supply, contained inside the casing allowing a completely interactive panel PC with only a single power cable. External devices are connected wirelessly through an 802.11b/g/n wireless adapter. Wired options are always available on the rear panel, with two serial ports and USB ports for peripherals and a Gigabit Ethernet jack for networking.

The Afolux includes both audio and visual multimedia capabilities. All models have a VGA output for connecting another monitor to the system, and audio outputs for external audio. There is also a built-in 2-megapixel webcam and microphone.

AFL2-W15A-N270 Panel PC

1.2 Model Variations

There are two models of the AFL2-W15A-N270 series. The model variations are listed below.

Model	CPU	Touchscreen
AFL2-W15A-N270/PC/1G-R20	1.6 GHz Intel® Atom processor N270	Projected capacitive type
AFL2-W15A-N270/R/1G-R20	1.6 GHz Intel® Atom processor N270	Resistive type

Table 1-1: Model Variations

1.3 Features

Some of the standard features of the AFL2-W15A-N270 flat panel PC include:

- Flat-bezel LCD with LED backlight
- Projected capacitive type or resistive type touchscreen
- Intel® Atom™ N270 processor
- Pre-installed 1 GB 667 MHz or 800 MHz DDR2 SO-DIMM (system max. 2 GB)
- Fully self-contained, only power from the external power supply required
- 802.11b/g/n wireless LAN
- Gigabit Ethernet
- Built-in two 1.5W speakers
- Built-in 2-megapixel camera and microphone
- IP 64 protection
- RoHS compliant

1.4 External Overview

The AFL2-W15A-N270 consists of a screen and rear panel that covers the back, sides and top. The rear panel contains a smaller access panel, all the cable connections and the mounting holes.

1.4.1 Front Panel

The front side of the AFL2-W15A-N270 is a flat panel LCD screen surrounded by a plastic frame.

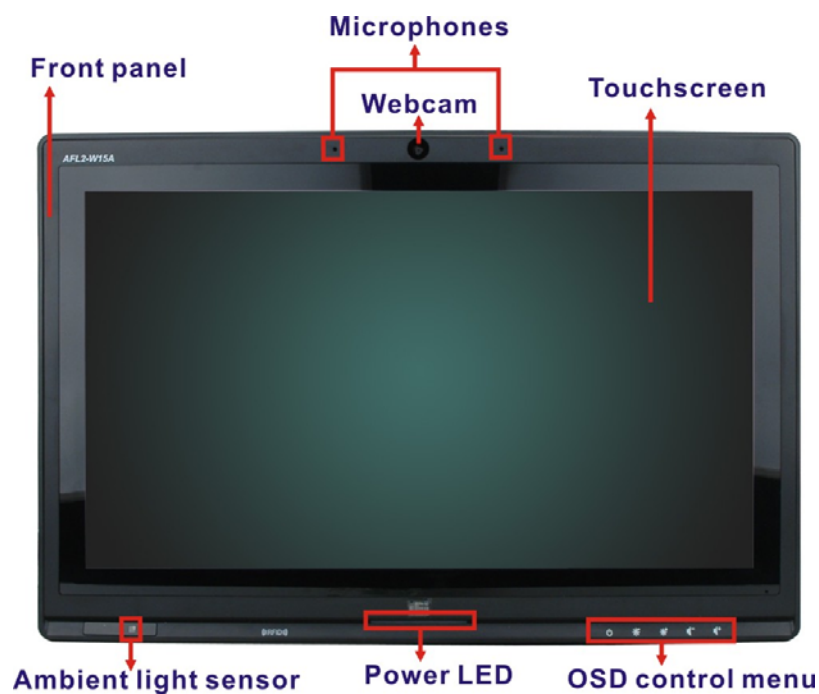


Figure 1-2: Front Panel

1.4.2 Rear Panel

The rear panel provides access to retention screw holes that support the wall mounting. Refer to Figure 1-3.

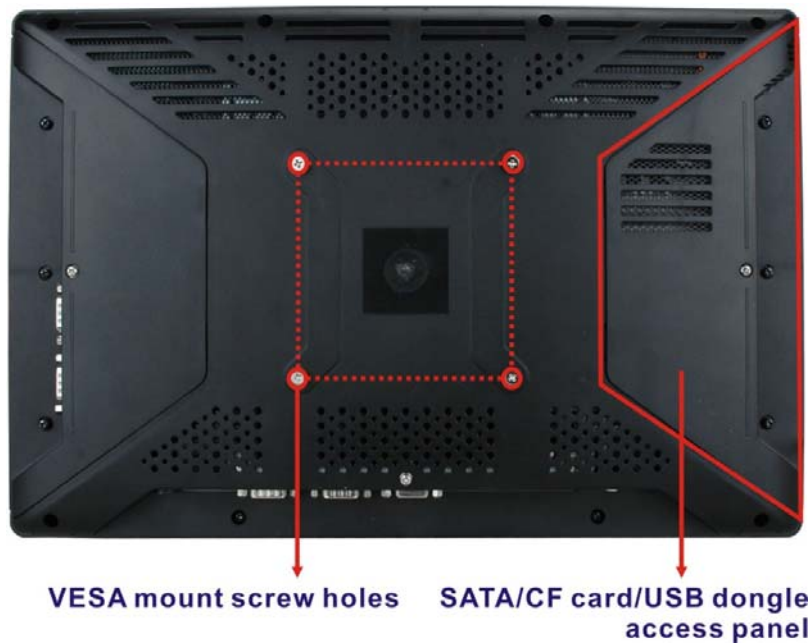
AFL2-W15A-N270 Panel PC

Figure 1-3: Rear Panel

1.4.3 Bottom Panel

The bottom panel has the following slots, buttons and switches:

- 1 x Audio Line-out jack
- 1 x RJ-45 jack for Gigabit LAN
- 2 x USB ports
- 1 x External SATA port
- 1 x VGA port
- 1 x RS-232/422/485 serial port (COM3)
- 1 x RS-232 serial port (COM1)
- 1 x Power button
- 1 x Power input (12 V)
- 1 x Reset button
- 1 x AT/ATX power mode switch
- 1 x OSD keypad

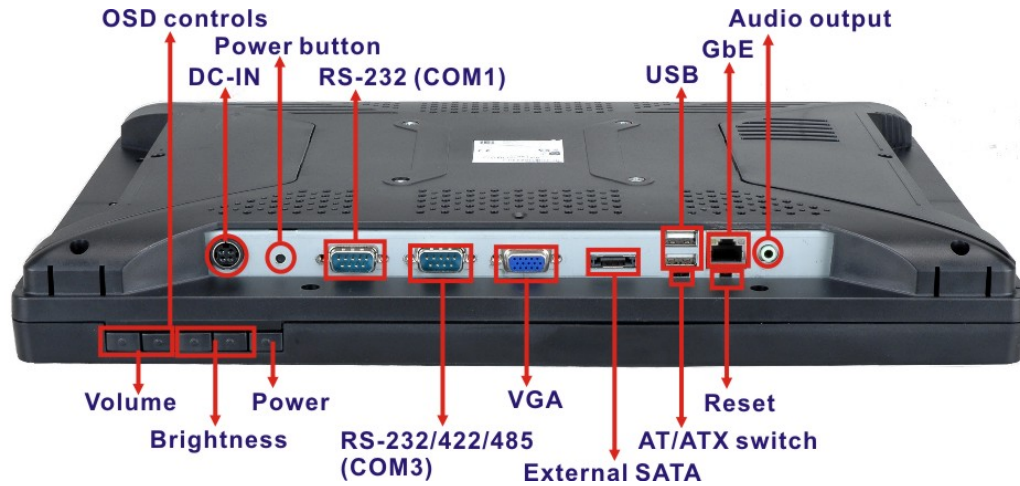


Figure 1-4: AFL2-W15A-N270 Bottom Panel

1.5 Internal Overview

All the components are contained under the rear panel. The internal components include the touch panel module and the motherboard. The motherboard has memory, a wireless module and a SATA hard drive bay.

AFL2-W15A-N270 Panel PC

1.6 Specifications

The technical specifications for the AFL2-W15A-N270 systems are listed in Table 1-2.

SPECIFICATIONS	AFL2-W15A-N270/R/1G-R20	AFL2-W15A-N270/PC/1G-R20
LCD Panel	15.6"	
Resolution	1366 x 768	
Brightness	300	
Contrast Ratio	500:1	
LCD Colors	16.7 million	
Pixel Pitch	0.252 x 0.252	
Viewing Angle (H/V)	170/160	
Backlight MTBF	50000 hrs. (LED backlight)	
Touchscreen	R model: 5-wire resistive type (RS-232 interface) PC model: Projected capacitive type (USB interface)	
Mainboard	AFLMB2-945GSE-N270	
CPU	1.6 GHz Intel® Atom processor N270	
Chipset	Intel® 945GSE + ICH7M	
Memory	One 1 GB 667 MHz or 800 MHz DDR2 SO-DIMM preinstalled (system max. 2 GB)	
Ethernet Controller	Realtek RTL8111CP PCIe GbE controller with ASF 2.0 support	
Watchdog Timer	Software programmable supports 1~255 sec. system reset	
Audio	Realtek ALC888 HD Audio codec Two 1.5 W internal speakers	
Camera	2-megapixel camera with low light function	
Storage	CF Type II One 2.5" SATA HDD bay	
OSD Function	LCD on/off, brightness up/down, volume up/down	
Wireless LAN	802.11b/g/n 2T2R module	
RFID Reader (Optional)	EM 125 KHz card reader or Mifare 13.56 MHz card reader	

SPECIFICATIONS	AFL2-W15A-N270/R/1G-R20	AFL2-W15A-N270/PC/1G-R20
I/O	1 x Gigabit LAN 1 x Audio line-out 1 x Power input (12 V) 1 x RS-232 1 x RS-232/422/485 2 x USB ports 1 x VGA port 1 x External SATA 1 x Power Button 1 x Reset Button	
Expansion Interface	1 x USB dongle	
Power Adapter	60 W 90-246 VAC input 50/60 Hz 12 V DC output	
Power Consumption	12V@4.25A (Intel® Atom™ N270 CPU with 667 MHz 2 GB DDR2 memory)	
Mounting Feature	VESA 100 mm x 100 mm	
Operating Temp.	-10°C ~ 50°C	
Storage Temp.	-20°C ~ 60°C	
Humidity	10% ~ 95% (non-condensing)	
Dimension (WxHxD)	400 mm x 267 mm x 54 mm	
Net/Gross Weight	3.8 kg	
Protection	IP64 compliant front panel	
EMC and Safety	CE, FCC	

Table 1-2: System Specifications

AFL2-W15A-N270 Panel PC

1.7 Dimensions

Width: 400 mm; Height: 267 mm; Depth: 54 mm.

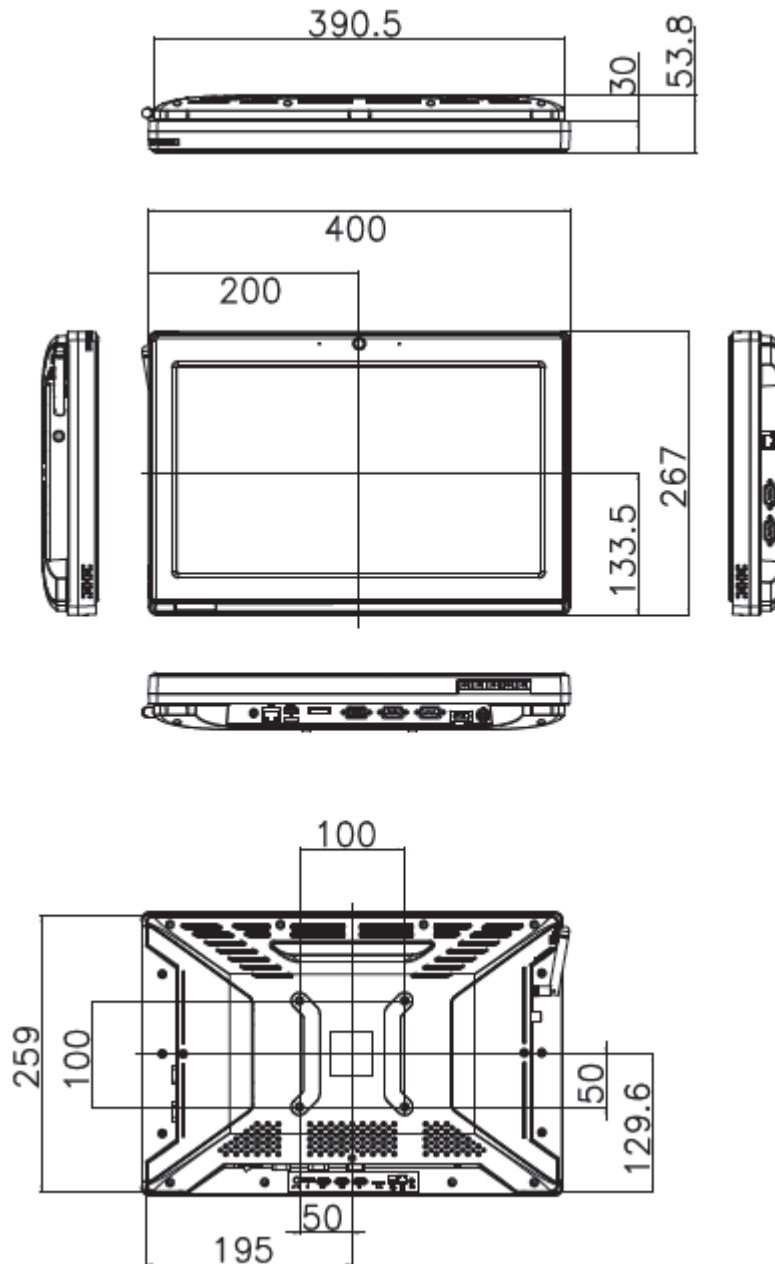


Figure 1-5: Dimensions

Chapter

2

Installation

AFL2-W15A-N270 Panel PC



WARNING:

When installing the AFL2-W15A-N270, make sure to:

- **Turn the power off:** Chance of electrocution. Turn off the monitor and unplug it from the power supply.
- **Only let certified engineers change the hardware settings:** Incorrect settings can cause irreparable damage to the product.
- **Install the monitor with assistance:** The product is very heavy and may be damaged by drops and bumps. Two or more people should install the panel PC.
- **Take anti-static precautions:** Electrostatic discharge can destroy electrical components and injure the user. Users must ground themselves using an anti-static wristband or similar device.

The installation steps below should be followed in order.

Step 1: Unpack the flat panel PC

Step 2: Check all the required parts are included

Step 3: Install the hard drive

Step 4: Install the CompactFlash® card

Step 5: Mount the flat panel PC

Step 6: Connect peripheral devices to the bottom panel of the flat panel PC

Step 7: Connect the power cable

Step 8: Configure the system

2.1 Unpack the Panel PC

To unpack the flat panel PC, follow the steps below:



WARNING!

Only remove the protective plastic cover stuck to the front screen after installation. The plastic layer protects the monitor surface during installation process.

- Step 1:** Carefully cut the tape sealing the box. Only cut deep enough to break the tape.
- Step 2:** Open the outside box.
- Step 3:** Carefully cut the tape sealing the box. Only cut deep enough to break the tape.
- Step 4:** Open the inside box.
- Step 5:** Lift the monitor out of the boxes.
- Step 6:** Remove the peripheral parts box from the main box.

2.2 Packing List

The AFL2-W15A-N270 flat panel PC is shipped with the following components:

Quantity	Item	Image
1	AFL2-W15A-N270	
1	Power adapter	

AFL2-W15A-N270 Panel PC

Quantity	Item	Image
1	Power cord	
4	Screws	
1	HDD bracket	
1	Touch screen pen	
1	Remote Control	
1	Utility CD	

Table 2-1: Packing List

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

2.3 Hard Drive Installation

This section outlines the installation of the hard drive in the AFL2-W15A-N270. To install the hard drive, please follow the steps below:

- Step 1:** Unfasten the right plastic side access panel (SATA/CF card/USB dongle access panel) retention screws and remove the right plastic side access panel (Figure 2-1).



SATA/CF card/USB dongle access panel

Figure 2-1: HDD Access Panel Retention Screws

Step 2: Locate the HDD/CF card brackets. Unfasten screws and removed brackets (Figure 2-2).



Figure 2-2: HDD/CF Card Brackets Retention Screws

Step 3: Attach the HDD brackets to the HDD. To do this, align the two retention screw holes in the both sides of the HDD bracket with the retention screw holes on the sides of the HDD. Insert two retention screws into the HDD bracket (Figure 2-3).

AFL2-W15A-N270 Panel PC



Figure 2-3: HDD Bracket Retention Screws

Step 4: Insert the SATA connector end of the HDD into the bracket to connect the motherboard SATA connector to the hard drive SATA connector.

Step 5: Install the two retention screws (removed in **Step 2**) to secure the HDD.

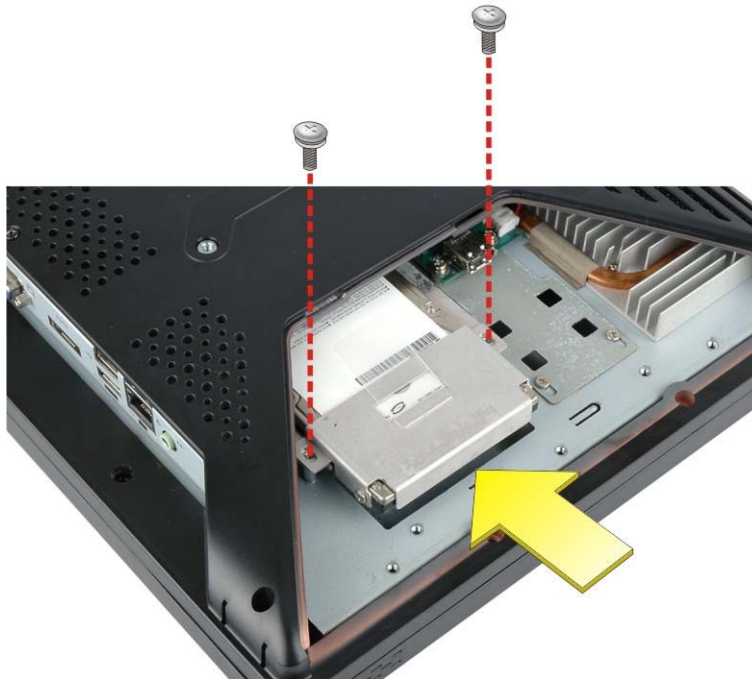


Figure 2-4: HDD Installation

Step 6: Replace the brackets, covers and screws.

2.4 CompactFlash® Installation

The installation for a CompactFlash® card is described in this section.

Step 1: Remove the access panel and brackets as described in the HDD installation instructions.

Step 2: Locate the CompactFlash® slot as shown in **Figure 2-5**.

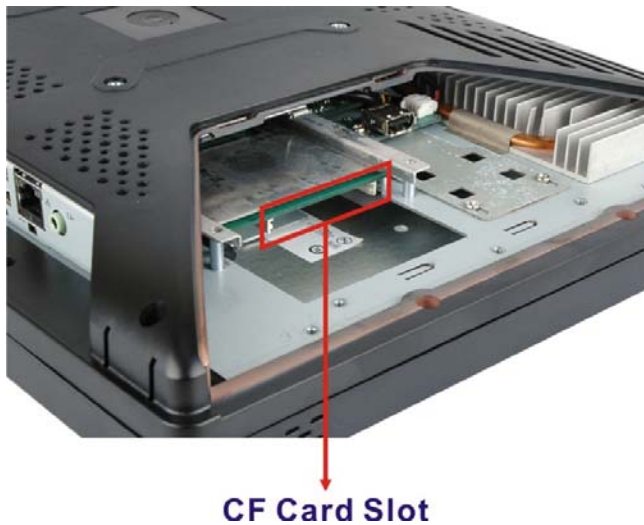


Figure 2-5: CompactFlash® Slot Location

Step 3: Install the CompactFlash® card into the slot (see **Figure 2-6**).



Figure 2-6: CompactFlash® Install

Step 4: Replace the brackets, access panel and screws.

AFL2-W15A-N270 Panel PC

2.5 USB Dongle Installation

The installation for an USB dongle is described in this section.

Step 1: Remove the access panel and brackets as described in the HDD installation instructions.

Step 2: Locate the USB dongle connector and install the USB dongle as shown below.



Figure 2-7: USB Dongle Installation

Step 3: Replace the bracket, access panel and screws.

2.6 Cover Removal



WARNING!

Turn off the power before removing the back cover. Risk of electrocution. Severe damage to the product and injury to the body may occur if internal parts are touched while the power is still on.

**WARNING!**

Take antistatic precautions when working on the internal components. Some internal components are easily damaged or destroyed by electrostatic discharge. Take antistatic precautions to prevent electrostatic discharge.

To access the internal components, the plastic back cover and the internal aluminum cover of the AFL2-W15A-N270 must be removed. To remove the back cover, unfasten the retention screws and then lift the cover to remove.

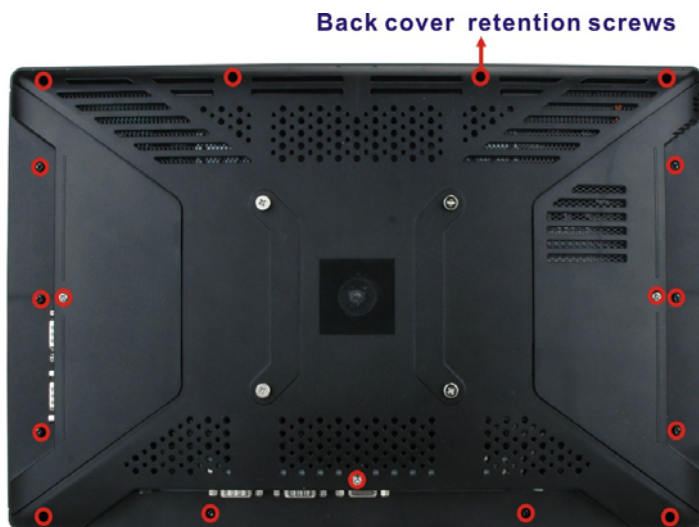


Figure 2-8: Plastic Back Cover Retention Screws

To remove the internal aluminum cover, unfasten the eight retention screws and then lift the cover to remove.

AFL2-W15A-N270 Panel PC

Aluminum cover retention screws

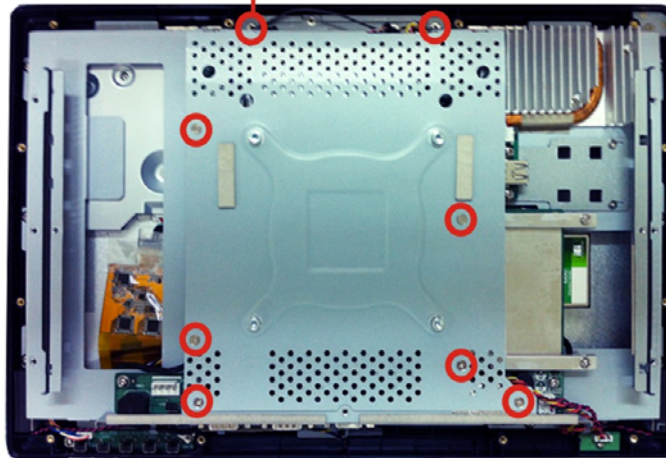


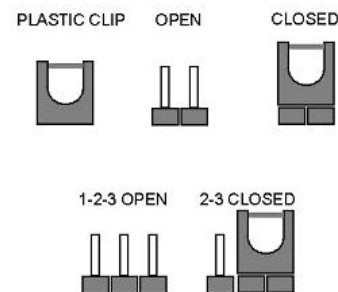
Figure 2-9: Internal Aluminum Cover Retention Screws

2.7 Jumper Settings



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.



The following jumpers can be found on the motherboard installed in the AFL2-W15A-N270. Before the AFL2-W15A-N270 is installed, the jumpers must be set in accordance with the desired configuration. The jumpers on the AFL2-W15A-N270 motherboard are listed in Table 2-2.

Description	Label	Type
CF card setup	JCF1	2-pin header
Clear CMOS	J_CMOS1	3-pin header
COM1 Pin 9 setting	JP5	10-pin header
COM3 Pin 9 setting	JP7	6-pin header
COM3 RX RS-232/422/485 select	JP8	8-pin header
COM3 RS-232/422/485 select	JP10	12-pin header
COM3 TX RS-422/485 select	JP11	6-pin header

Table 2-2: AFL2-W15A-N270 Jumpers

2.7.1 Access the Jumpers

To access the jumpers, please remove the back panel and the internal aluminum chassis.

To remove the back panel, please refer to **Section 2.6**.

2.7.2 CF Card Setup

Jumper Label:	JCF1
Jumper Type:	2-pin header
Jumper Settings:	See Table 2-3
Jumper Location:	See Figure 2-10

The CF Card Setup jumper sets the CF Type I card or CF Type II cards as either the slave device or the master device. CF Card Setup jumper settings are shown in Table 2-3.

CF Setup	Description
Open	Master (Default)
Closed	Slave

Table 2-3: CF Card Setup Jumper Settings

The CF Card Setup jumper location is shown in Figure 2-10.

AFL2-W15A-N270 Panel PC

Figure 2-10: CF Card Setup Jumper Location

2.7.3 Clear CMOS Jumper

Jumper Label:	J_CMOS1
Jumper Type:	3-pin header
Jumper Settings:	See Table 2-4
Jumper Location:	See Figure 2-11

If the AFL2-W15A-N270 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 the pins for a few seconds then remove the jumper clip.

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.

The clear CMOS jumper settings are shown in Table 2-4.

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

Table 2-4: Clear CMOS Jumper Settings

The location of the clear CMOS jumper is shown in Figure 2-11 below.

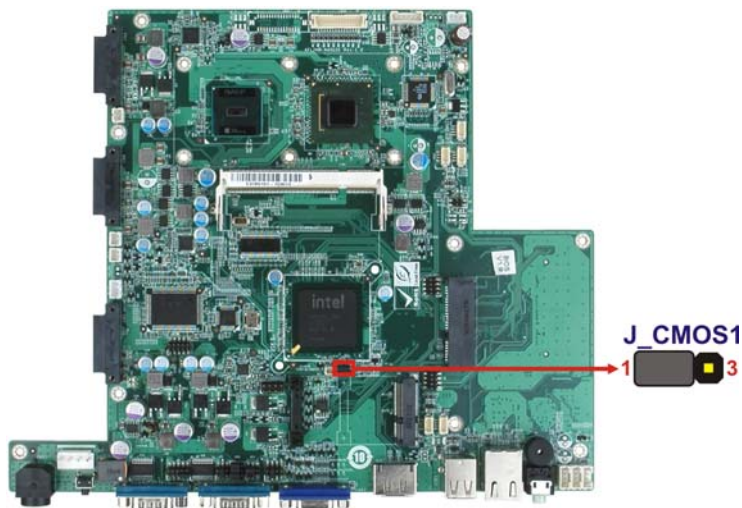


Figure 2-11: Clear CMOS Jumper Location

2.7.4 COM 1 Port Pin 9 Select

Jumper Label:	JP5
Jumper Type:	10-pin header
Jumper Settings:	See Table 2-5
Jumper Location:	See Figure 2-12

The jumper configures pin 9 on COM1 connector. Pin 9 on the COM1 connector can be set as the ring (RI) signal, +5 V or +12 V. The COM1 Pin 9 Setting jumper selection options are shown in Table 2-5.

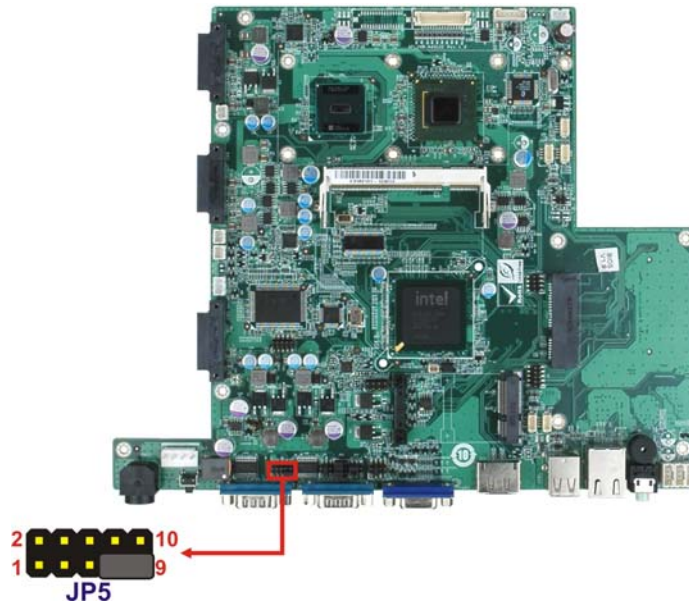
JP5	Description
Short 1-3	COM1 RI Pin use +12 V
Short 5-7	COM1 RI Pin use RI

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Short 7-9	COM1 RI Pin use +5 V (Default)
-----------	--------------------------------

Table 2-5: COM1 Pin 9 Setting Jumper Settings

The COM1 Pin 9 Setting jumper locations are shown in Figure 2-12 below.

**Figure 2-12: COM1 Pin 9 Setting Jumper Location****2.7.5 COM 3 Port Pin 9 Select**

Jumper Label:	JP7
Jumper Type:	6-pin header
Jumper Settings:	See Table 2-6
Jumper Location:	See Figure 2-13

The jumper configures pin 9 on COM3 DB-9 connectors. Pin 9 on the COM3 DB-9 connector can be set as the ring (RI) signal, +5 V or +12 V. The COM3 Pin 9 Setting jumper selection options are shown in Table 2-5.

JP7	Description
Short 1-2	COM3 RI Pin use +12 V
Short 3-4	COM3 RI Pin use RI (Default)

Short 5-6	COM3 RI Pin use +5 V
-----------	----------------------

Table 2-6: COM3 Pin 9 Setting Jumper Settings

The COM3 Pin 9 Setting jumper locations are shown in Figure 2-12 below.

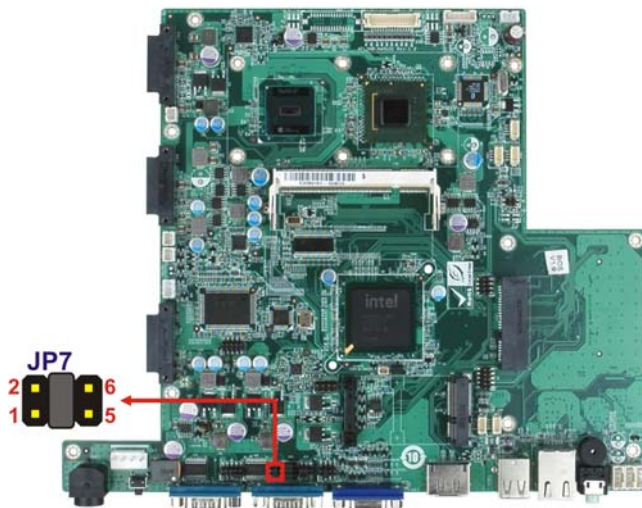


Figure 2-13: COM3 Pin 9 Setting Jumper Location

2.7.6 COM3 RX Function Select Jumper

Jumper Label:	JP8
Jumper Type:	8-pin header
Jumper Settings:	See Table 2-7
Jumper Location:	See Figure 2-14

The COM3 RX Function Select jumper sets the communication protocol used by the RX serial communications port COM3 as RS-232, RS-422 or RS-485. The COM3 RX Function Select jumper settings are shown in Table 2-7.

JP8	Description
Short 1-2	DET BIOS RS-232/422/485
Short 3-4	RS-232 (Default)
Short 5-6	RS-422

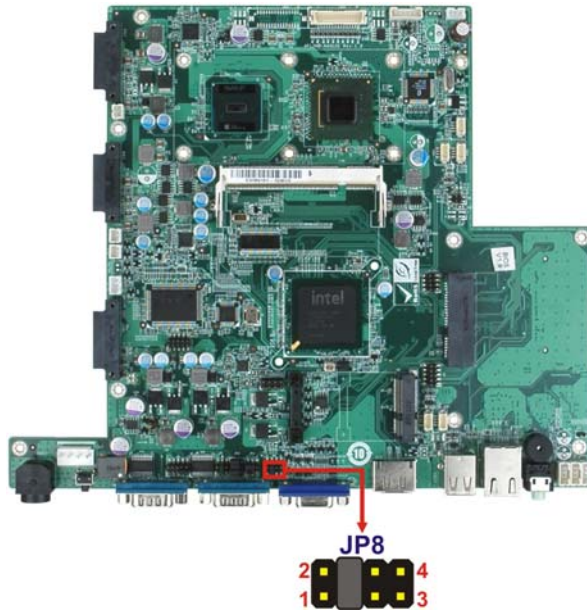
AFL2-W15A-N270 Panel PC

Short 7-8

RS-485

Table 2-7: COM3 RX Function Select Jumper Settings

The COM3 RX Function Select jumper location is shown in Figure 2-14.

**Figure 2-14: COM3 RX Function Select Jumper Location****2.7.7 COM3 RS-232/422/485 Serial Port Select Jumper**

Jumper Label: JP10

Jumper Type: 12-pin header (four 3-pin headers combined)

Jumper Settings: See Table 2-8

Jumper Location: See Figure 2-15

The COM3 RS-232/422/485 Serial Port Select jumper sets the communication protocol used by the second serial communications port (COM3) as RS-232, RS-422 or RS-485. The COM3 RS-232/422/485 Serial Port Select settings are shown in Table 2-8.

JP10	Description
Short 1-2, 4-5, 7-8, 10-11	RS-232 (Default)
Short 2-3, 5-6, 8-9, 11-12	RS-422/485

Table 2-8: COM3 RS-232/422/485 Serial Port Select Jumper Settings

The COM3 RS-232/422/485 Serial Port Select jumper location is shown in Figure 2-15.

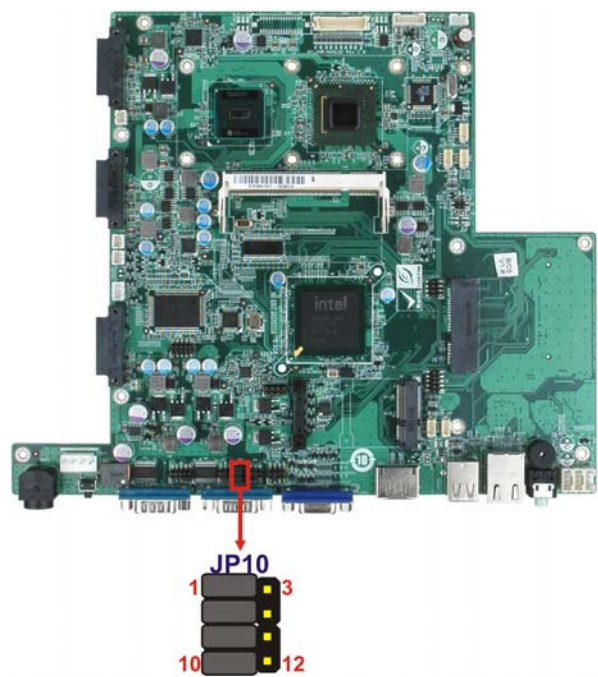


Figure 2-15: COM3 RS-232/422/485 Serial Port Select Jumper Location

2.7.8 COM3 TX Function Select Jumper

- Jumper Label:

JP11
- Jumper Type:

6-pin header
- Jumper Settings:

See Table 2-9
- Jumper Location:

See Figure 2-16

The COM3 TX Function Select jumper configures the TX pin on COM3 serial port connector as RS-422 as an RS-485. The COM3 TX Function Select jumper selection options are shown in Table 2-9.

JP11	Description
Short 1 – 3	RS-422 TX-
Short 2 – 4	RS-422 TX+
Short 3 – 5	RS-485 D-

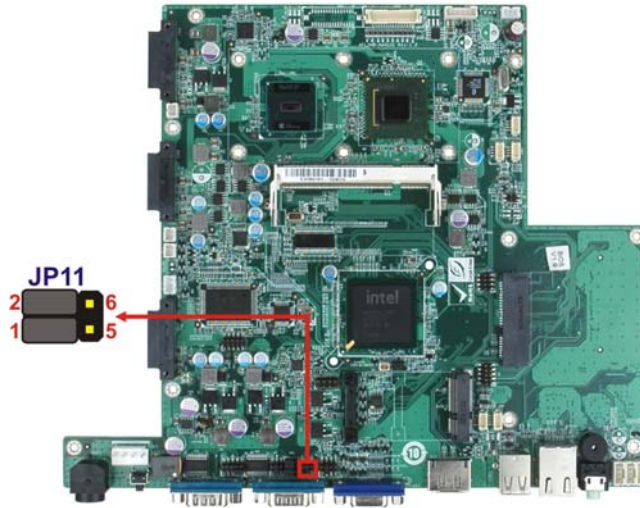
AFL2-W15A-N270 Panel PC

Short 4 – 6

RS-485 D+

Table 2-9: COM3 TX Function Select Jumper Settings

The COM3 TX Function Select jumper location is shown in Figure 2-16 below.

**Figure 2-16: COM3 TX Function Select Jumper Location****2.7.8.1 COM3 RS-422 and RS-485 Pinouts**

The pinouts for RS-422 and RS-485 operation of external serial port COM 3 are detailed below.

COM 3	RS-422 Description
Pin 1	TX-
Pin 2	TX+
Pin 6	RX-
Pin 7	RX+

Table 2-10: RS-422 Pinouts

COM 3	RS-485 Description
Pin 1	Data-
Pin 2	Data+

Table 2-11: RS-485 Pinouts

2.8 Mounting the System



WARNING!

The panel PC is very heavy. Two or more people should mount the panel PC. Dropping or bumping the panel PC during installation can cause serious or irreparable damage to the panel PC.

The following installation options are available:

- Arm mounting
- Panel mounting
- Stand mounting
- Wall mounting

The installation instructions are included with the stand, arm or mount.

2.8.1 Arm Mounting

The AFL2-W15A-N270 is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 100 mm interface pad. To mount the AFL2-W15A-N270 on an arm, please follow the steps below.

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



NOTE:

When purchasing the arm please ensure that it is VESA compliant and that the arm has a 100 mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the AFL2-W15A-N270.

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- Step 2:** Once the mounting arm has been firmly attached to its surface, lift the AFL2-W15A-N270 onto the interface pad of the mounting arm.
- Step 3:** Align the retention screw holes on the mounting arm interface with those in the AFL2-W15A-N270. The AFL2-W15A-N270 arm mount retention screw holes are shown in Figure 2-17.



VESA mount screw holes

Figure 2-17: Arm Mount Retention Screw Holes

- Step 4:** Secure the AFL2-W15A-N270 to the interface pad by inserting four retention screws through the mounting arm interface pad and into the AFL2-W15A-N270.

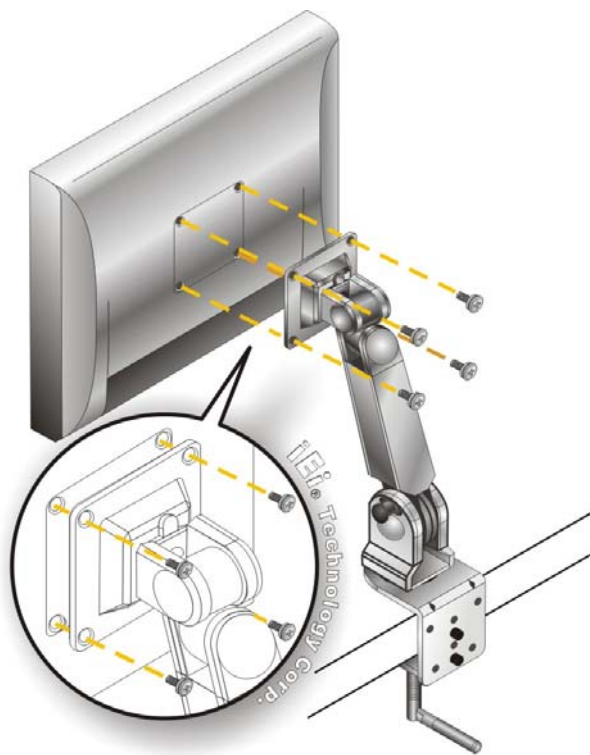


Figure 2-18: Arm Mounting (ARM-11-RS)

2.8.2 Panel Mounting

To mount the panel PC into a panel, please follow the steps below.

- Step 1:** Select the position on the panel to mount the flat panel PC.
- Step 2:** Cut out a section corresponding to the size shown below. The size must be smaller than the outer edge. Recommended cutout sizes are shown below.

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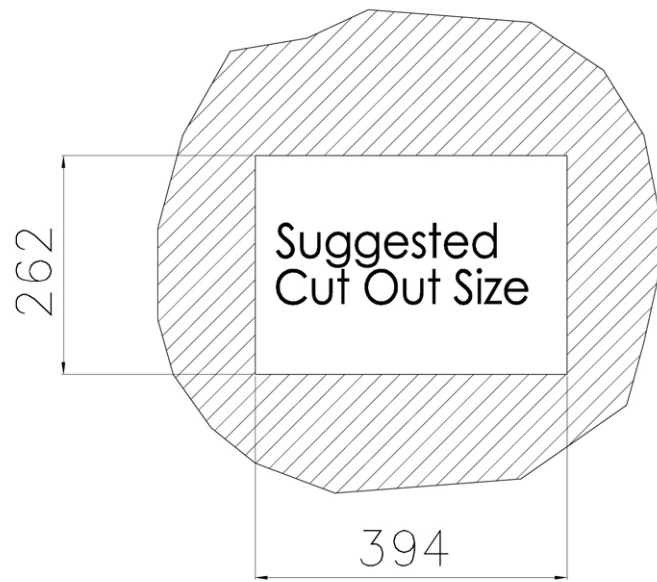


Figure 2-19: Cutout

- Step 3:** Slide the flat panel PC through the hole until the aluminum frame is flush against the panel.
- Step 4:** Align the panel mounting bracket screw holes with the VESA mounting holes on the rear of the panel PC.
- Step 5:** Secure the two panel mounting brackets to the rear of the panel PC by inserting the four retention screws into the VESA mounting holes (**Figure 2-20 ①**).
- Step 6:** Insert the panel mounting clamps into the pre-formed holes along the two edges of the panel mounting brackets (**Figure 2-20 ②**). There are a total of 4 panel mounting clamps for the AFL2-W15A-N270.
- Step 7:** Tighten the screws that pass through the panel mounting clamps until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 2-20 ③**).

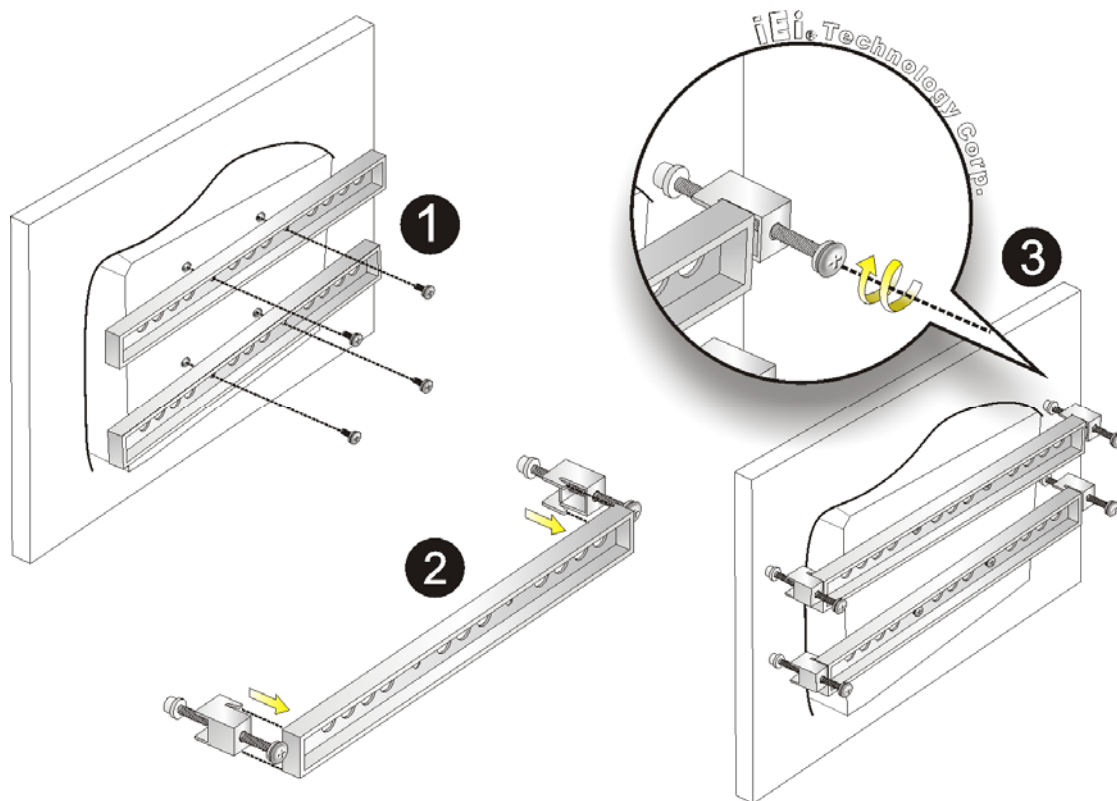


Figure 2-20: Tighten the Panel Mounting Clamp Screws

2.8.3 Stand Mounting

To mount the AFL2-W15A-N270 using the stand mounting kit, please follow the steps below.

- Step 1:** Locate the screw holes on the rear of the AFL2-W15A-N270. This is where the bracket will be attached.
- Step 2:** Align the bracket with the screw holes.
- Step 3:** To secure the bracket to the AFL2-W15A-N270 insert the retention screws into the screw holes and tighten them.

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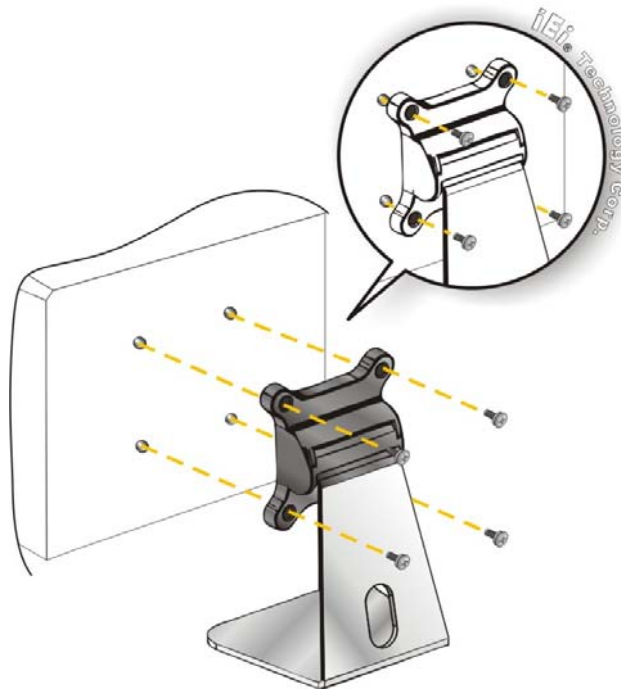


Figure 2-21: Stand Mounting (Stand-A19)

2.8.4 Wall Mounting

To mount the flat panel PC onto the wall, please follow the steps below.

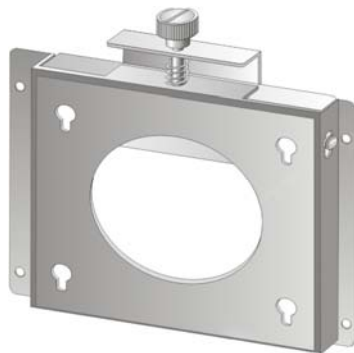


Figure 2-22: Wall Mount

Step 1: Select the location on the wall for the wall-mounting bracket.

Step 2: Carefully mark the locations of the four brackets screw holes on the wall.

Step 3: Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them (Figure 2-23).

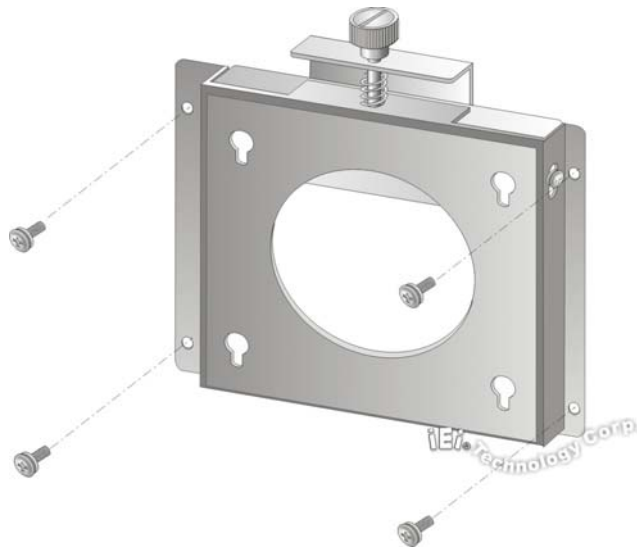


Figure 2-23: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws provided in the wall mounting kit into the four screw holes on the rear panel of the flat panel PC and tighten until the screw shank is secured against the rear panel (Figure 2-24).

Step 7: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (Figure 2-24). Ensure that all four of the mounting screws fit snugly into their respective slotted holes.

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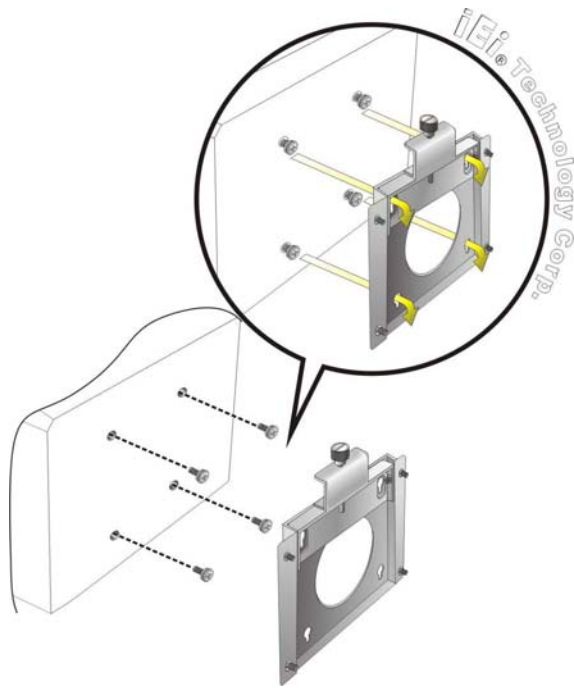


Figure 2-24: Chassis Support Screws



NOTE:

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

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket. (Figure 2-25).

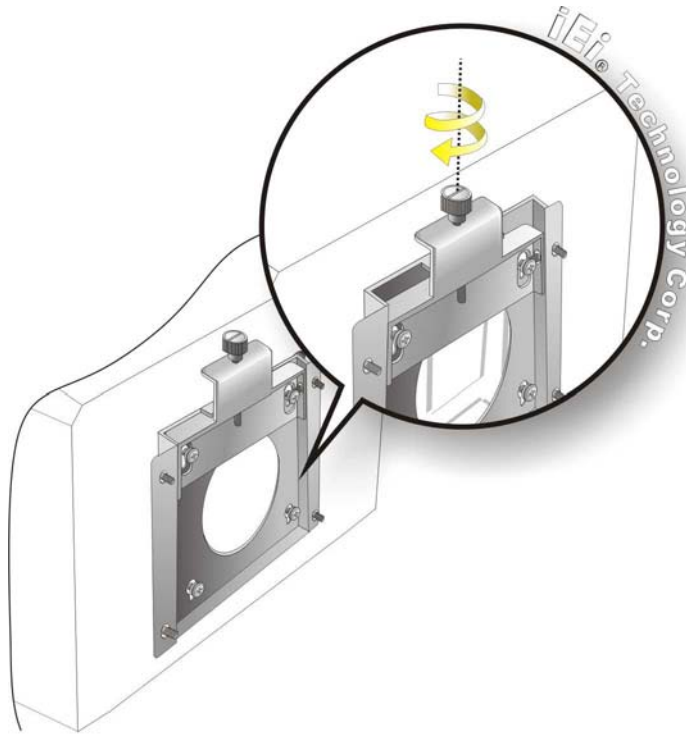


Figure 2-25: Secure the Panel PC

2.9 Bottom Panel Connectors

The bottom panel connectors extend the capabilities of the panel PC but are not essential for operation (except power).

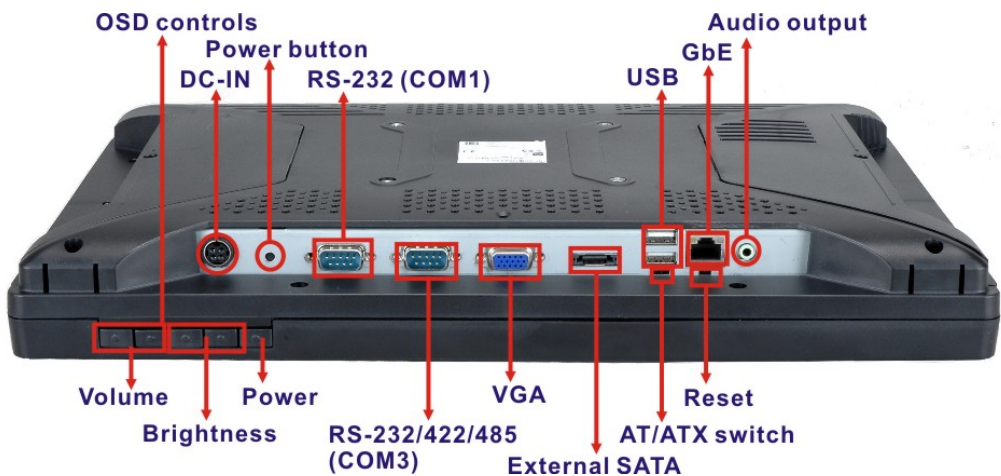


Figure 2-26: AFL2-W15A-N270 Bottom Panel

AFL2-W15A-N270 Panel PC

2.9.1 LAN Connection

The RJ-45 connector enables connection to an external network. To connect a LAN cable with an RJ-45 connector, please follow the instructions below.

Step 1: Locate the RJ-45 connector on the bottom panel of the AFL2-W15A-N270.

Step 2: Align the connectors. Align the RJ-45 connector on the LAN cable with the RJ-45 connector on the bottom panel of the AFL2-W15A-N270. See Figure 2-27.

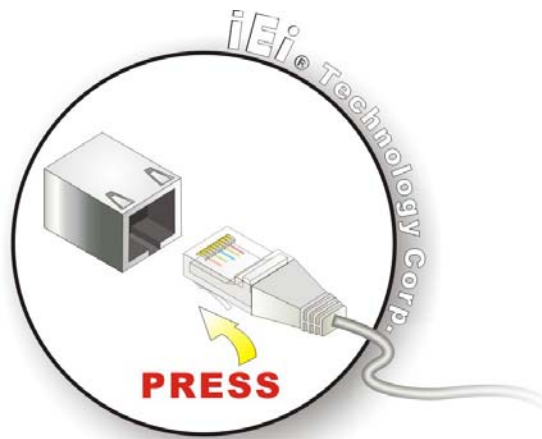


Figure 2-27: LAN Connection

Step 3: Insert the LAN cable RJ-45 connector. Once aligned, gently insert the LAN cable RJ-45 connector into the onboard RJ-45 port.

2.9.2 Serial Device Connection

The serial device connectors are for connecting serial devices to the AFL2-W15A-N270. Follow the steps below to connect a serial device to the AFL2-W15A-N270 panel PC.

Step 1: Locate the DB-9 connector. The location of the DB-9 connector is shown in Figure 2-26.

Step 2: Insert the serial connector. Insert the DB-9 connector of a serial device into the DB-9 connector on the bottom panel. See Figure 2-28.

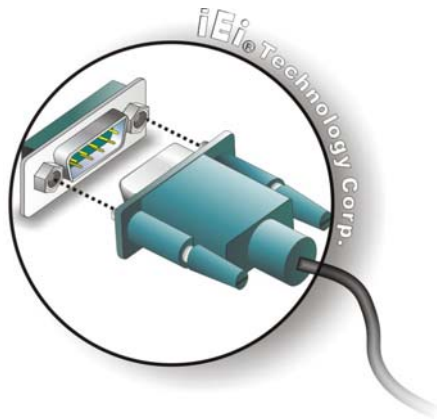


Figure 2-28: Serial Device Connector

Step 3: Secure the connector. Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.

2.9.3 USB Device Connection

To connect USB devices to the AFL2-W15A-N270, please follow the instructions below.

Step 1: Located the USB connectors. The locations of the USB connectors are shown in **Figure 2-26**.

Step 2: Align the connectors. Align the USB device connector with one of the connectors on the bottom panel. See **Figure 2-29**.

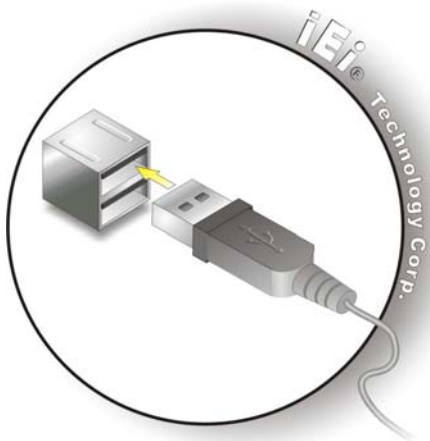


Figure 2-29: USB Device Connection

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Step 3: **Insert the device connector.** Once aligned, gently insert the USB device connector into the onboard connector.

2.9.4 VGA Monitor Connection

The VGA output can be connected to an external VGA monitor. To connect the VGA monitor to the AFL2-W15A-N270, please follow the instructions below.

- Step 1:** **Locate the female DB-15 connector.** The location of the female DB-15 connector is shown in **Figure 2-26**.
- Step 2:** **Align the VGA connector.** Align the male DB-15 connector on the VGA screen cable with the female DB-15 connector on the external peripheral interface.
- Step 3:** **Insert the VGA connector** Once the connectors are properly aligned with the insert the male connector from the VGA screen into the female connector on the AFL2-W15A-N270. See Figure 2-30.

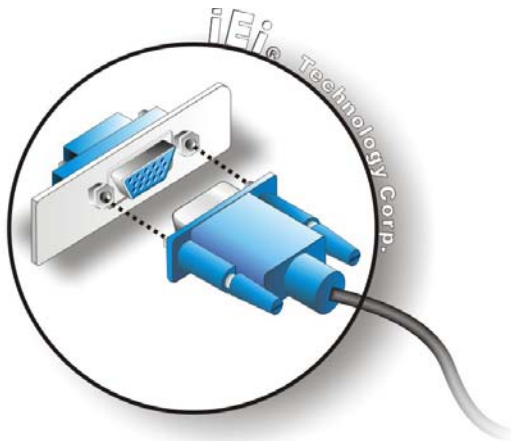


Figure 2-30: VGA Connector

- Step 4:** **Secure the connector.** Secure the DB-15 VGA connector from the VGA monitor to the external interface by tightening the two retention screws on either side of the connector.

2.10 Power Connection

The power cable connects the panel PC to the power supply. The power cable is required for operation of the panel PC.

Step 1: Connect one end to the panel PC.

Step 2: Connect the other end to the included power supply

2.11 Driver Installation



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. Each driver is in its own directory on the driver CD:

- Chipset driver
- Graphics driver
- LAN driver
- Audio driver
- Touchscreen driver
- Keypad utility driver
- Wireless LAN card driver



NOTE:

There are two kinds of touchscreen driver in the driver CD. Please follow the guideline below to install the correct driver for the system:

- **Multi Touch** for the AFL2-W15A-N270/PC/1G-R20
- **Single Touch** for the AFL2-W15A-N270/R/1G-R20

Chapter

3

BIOS Setup

3.1 Introduction

The BIOS is programmed onto the BIOS chip. The BIOS setup program allows changes to certain system settings. This chapter outlines the options that can be changed.

3.1.1 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.

3.1.2 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

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Key	Function
F2 /F3 key	Change color from total three colors. F2 to select color forward.
F10 key	Save all the CMOS changes, only for Main Menu

Table 3-1: BIOS Navigation Keys**3.1.3 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.

3.1.4 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 2.7.3.

3.1.5 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.

3.2 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 SETUP UTILITY	
Main	Advanced PCIPNP Boot Security Chipset Power Exit
System Overview	Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
AMIBIOS	Use [+] or [-] to configure system time.
Version :08.00.15	
Build Date :04/15/13	
ID: :H754MR11	
Processor	
Genuine Intel(R) CPU N270 @ 1.60GHz	
Speed :1600 MHz	
Count :1	
System Memory	←→ Select Screen
Size :1016MB	↑↓ Select Item
	Tab Go to SubScreen
	F1 General Help
	F10 Save and Exit
	ESC Exit
System Time [14:20:27]	
System Time [Tue 08/28/2013]	
v02.61 ©Copyright 1985-2006, American Megatrends, Inc.	

BIOS Menu 1: Main

→ System Overview

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

- AMI BIOS: Displays auto-detected BIOS information
 - **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

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The System Overview field also has two user configurable fields:

→ System Time [xx:xx:xx]

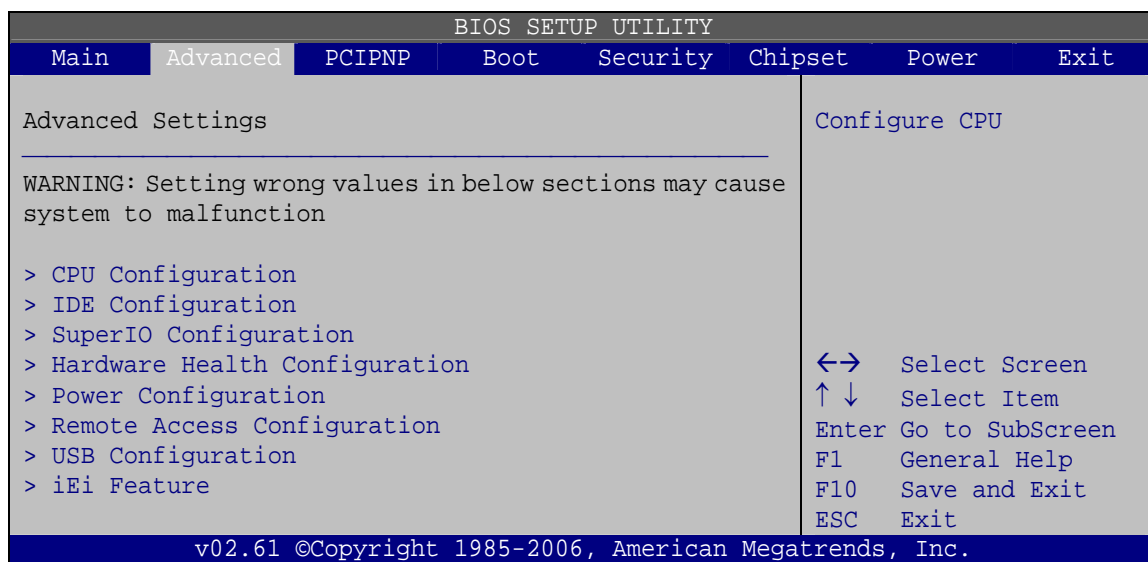
Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

→ System Date [xx/xx/xx]

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

3.3 Advanced

Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices



BIOS Menu 2: Advanced

3.3.1 CPU Configuration

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

BIOS SETUP UTILITY	
Main	Advanced
Configure advanced CPU settings Module Version: 3F.10 <hr/> Manufacturer :Intel Genuine Intel(R) CPU N270 @ 1.60GHz Frequency :1.60GHz FSB Speed :533MHz Cache L1 : 24KB Cache L2 : 512KB Ratio Actual Value:12 Hyper Threading Technology [Enabled]	Options Disabled Enabled ←→ Select Screen ↑↓ Select Item Enter Go to SubScreen F1 General Help F10 Save and Exit ESC Exit
v02.61 ©Copyright 1985-2006, American Megatrends, Inc.	

BIOS Menu 3: CPU Configuration

The CPU Configuration menu lists the following CPU details:

- Manufacturer: Lists the name of the CPU manufacturer
- 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

➔ Hyper Threading Technology [Enabled]

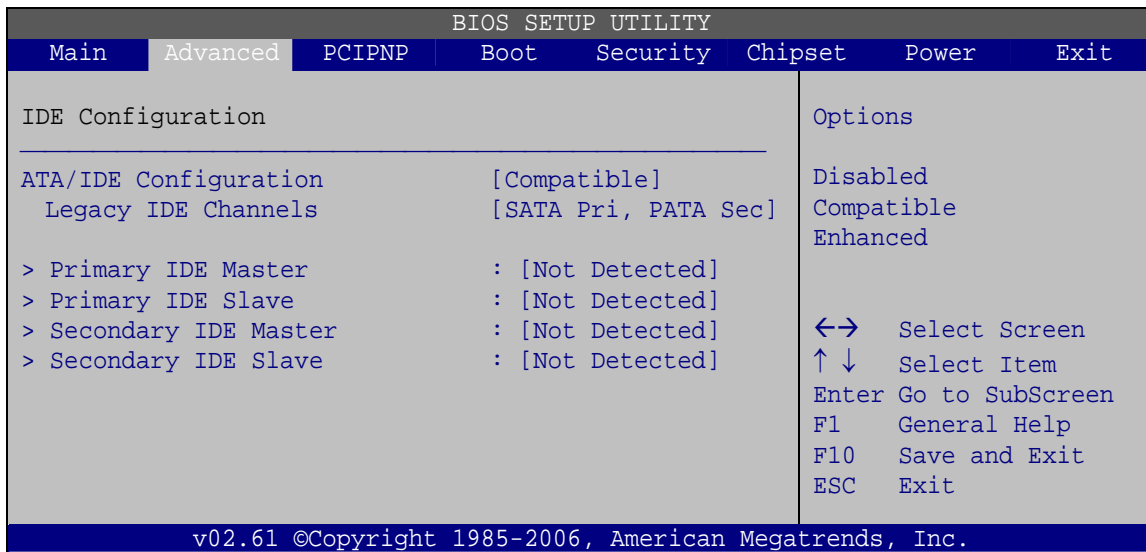
Use the Hyper Threading Technology to enable or disable the CPU hyper threading function.

- ➔ **Disabled** Disables the use of hyper threading technology
- ➔ **Enabled** **DEFAULT** Enables the use of hyper threading technology

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3.3.2 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

➔ **ATA/IDE Configurations [Compatible]**

Use the **ATA/IDE Configurations** option to configure the ATA/IDE controller.

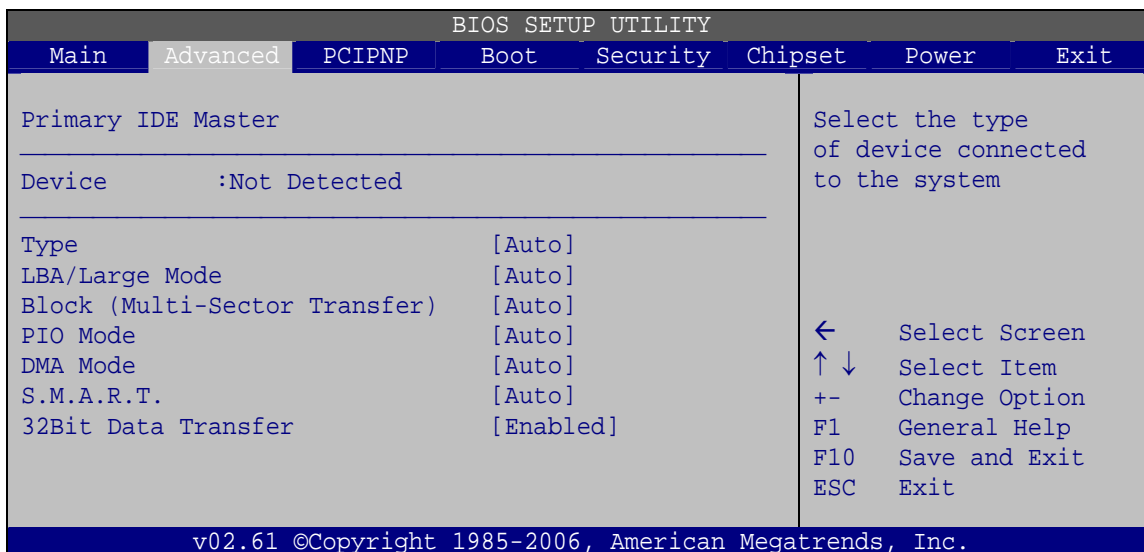
- ➔ **Disabled** Disables the on-board ATA/IDE controller.
- ➔ **Compatible** **DEFAULT** Configures the on-board ATA/IDE controller to be in compatible mode. In this mode, a SATA channel will replace one of the IDE channels. This mode supports up to 4 storage devices.
- ➔ **Enhanced** Configures the on-board ATA/IDE 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.

➔ **Legacy IDE Channels [SATA Pri, PATA Sec]**

- ➔ **SATA Only** Only the SATA drives are enabled.
- ➔ **SATA Pri, PATA Sec** **DEFAULT** The IDE drives are enabled on the SATA channel. The IDE drives are enabled on the Secondary IDE channel.
- ➔ **PATA Only** Only the IDE drives are enabled.

3.3.2.1 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
- **Vendor:** Lists the device manufacturer
- **Size:** List the storage capacity of the device.

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- 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.
- 32Bit Data Transfer: Enables 32-bit data transfer.

→ **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 | <p>This option specifies an ATAPI Removable Media Device. These include, but are not limited to:</p> <p>ZIP</p> <p>LS-120</p> |

→ 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 3.3 MB/s
- **1** PIO mode 1 selected with a maximum transfer rate of 5.2 MB/s
- **2** PIO mode 2 selected with a maximum transfer rate of 8.3 MB/s

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- ➔ 3 PIO mode 3 selected with a maximum transfer rate of 11.1 MB/s
- ➔ 4 PIO mode 4 selected with a maximum transfer rate of 16.6 MB/s
(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

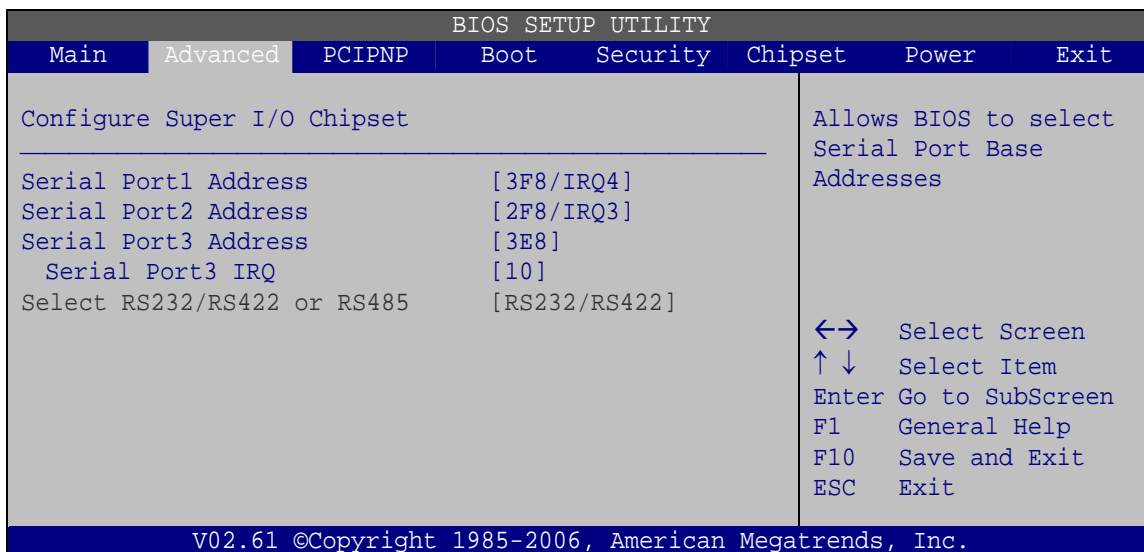
➔ **32Bit Data Transfer [Enabled]**

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.

3.3.3 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]

Selects the serial port base address.

- ➔ **Disabled** No base address
- ➔ **3F8/IRQ4** **DEFAULT** I/O address 3F8 and interrupt address IRQ4
- ➔ **3E8/IRQ4** I/O address 3E8 and interrupt address IRQ4
- ➔ **2E8/IRQ3** I/O address 2E8 and interrupt address IRQ3

➔ Serial Port2 Address [2F8/IRQ3]

Selects the serial port base address.

- ➔ **Disabled** No base address
- ➔ **2F8/IRQ3** **DEFAULT** I/O address 2F8 and interrupt address IRQ3
- ➔ **3E8/IRQ4** I/O address 3E8 and interrupt address IRQ4

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➔ **2E8/IRQ3** I/O address 2E8 and interrupt address IRQ3

➔ **Serial Port3 Address [3E8]**

Selects the serial port base address.

➔ **Disabled** No base address

➔ **3E8** **DEFAULT** I/O address 3E8

➔ **2D8** I/O address 2D8

➔ **2D0** I/O address 2D0

➔ **Serial Port3 IRQ [10]**

Selects the serial port interrupt address.

➔ **10** **DEFAULT** IRQ address 10

➔ **11** IRQ address 11

3.3.4 Hardware Health Configuration

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

BIOS SETUP UTILITY			
Main	Advanced	PCIPNP	Boot Security Chipset Power Exit
Hardware Health Configuration			
<hr/>			
CPU Temperature	:66°C/152°F		
System Temperature	:51°C/123°F		
CPU Core	:1.152 V		
+1.05V	:1.040 V		
+3.30V	:3.408 V		
+5.00V	:5.214 V		
+12.0V	:12.032 V		
+1.5V	:1.488 V		
+1.8V	:1.792 V		
5VSB	:5.241 V		
VBAT	:3.312 V		
			←→ Select Screen ↑ ↓ Select Item Enter Go to SubScreen F1 General Help F10 Save and Exit ESC Exit
v02.61 ©Copyright 1985-2006, American Megatrends, Inc.			

BIOS Menu 7: Hardware Health Configuration

→ Monitored Values

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

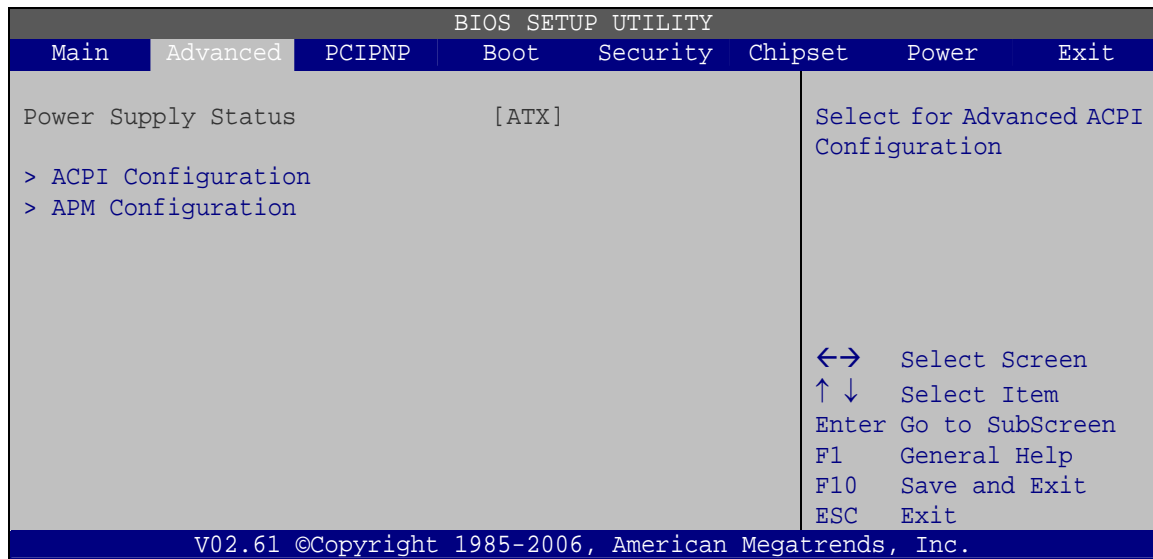
- The following system temperatures are monitored:
 - CPU temperature
 - System temperature
- The following core voltages are monitored:
 - CPU Core
 - +1.05V
 - +3.30V
 - +5.00V
 - +12.0V
 - +1.5V
 - +1.8V
 - 5VSB

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- VBAT

3.3.5 Power Configuration

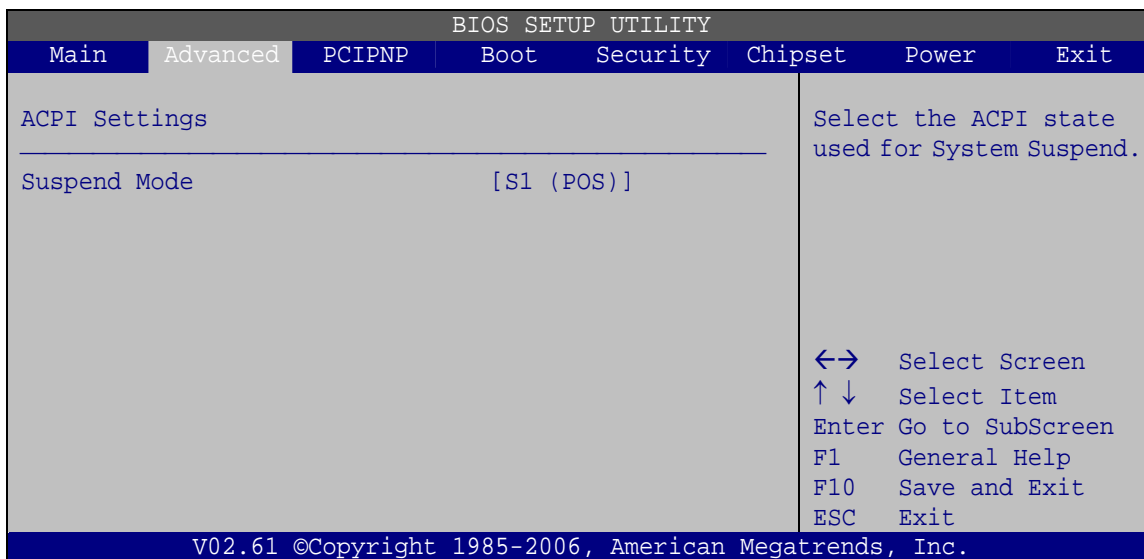
The **Power Configuration** menu (**BIOS Menu 8**) allows the advanced power management options to be configured.



BIOS Menu 8: Power Configuration

3.3.5.1 ACPI Settings

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



BIOS Menu 9: ACPI Settings

→ Suspend Mode [S1(POS)]

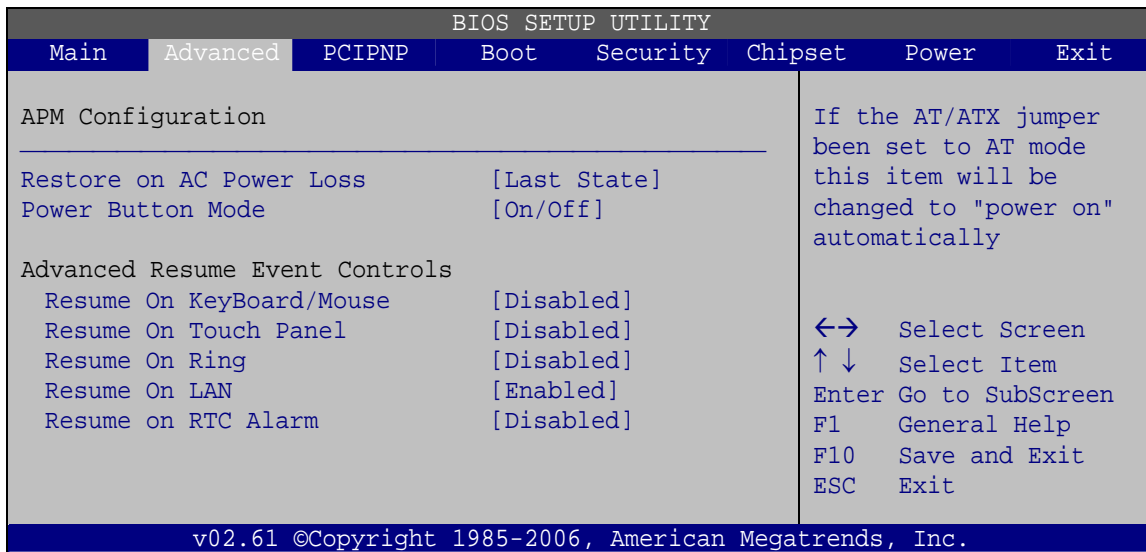
Use the **Suspend Mode** option to specify the sleep state the system enters when it is not being used.

- **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)** The system enters S3(STR) sleep state.

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3.3.5.2 APM Configuration

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

**BIOS Menu 10: APM 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.

➔ **Power Button Mode [On/Off]**

Use the **Power Button Mode** BIOS to specify how the power button functions.

- ➔ **On/Off DEFAULT** When the power button is pressed the system is either turned on or off

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

➔ **Resume on Keyboard/Mouse [Disabled]**

Use the **Resume on Keyboard/Mouse** BIOS option to enable activity on either the keyboard or mouse to rouse the system from a suspend or standby state. That is, the system is roused when the mouse is moved or a button on the keyboard is pressed.

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

➔ **Resume on Touch Panel [Disabled]**

Use the **Resume Touch Panel** BIOS option to enable activity on the touch panel to rouse the system from a suspend or standby state. That is, the system will be roused by touching the touch panel.

- ➔ **Disabled** **DEFAULT** Wake event not generated by touch panel activity
- ➔ **Enabled** Wake event generated by touch panel activity

➔ **Resume on Ring [Disabled]**

Use the **Resume on Ring** BIOS option to enable activity on the RI (ring in) modem line to rouse the system from a suspend or standby state. That is, the system will be roused by an incoming call on a modem.

- ➔ **Disabled** **DEFAULT** Wake event not generated by an incoming call
- ➔ **Enabled** Wake event generated by an incoming call

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→ Resume on LAN [Enabled]

The **Resume on LAN** BIOS option specifies if the system is roused from a suspended or standby state when there is activity on the LAN.

- **Enabled** **DEFAULT** Wake event generated by LAN activity
- **Disabled** Wake event not generated by LAN activity

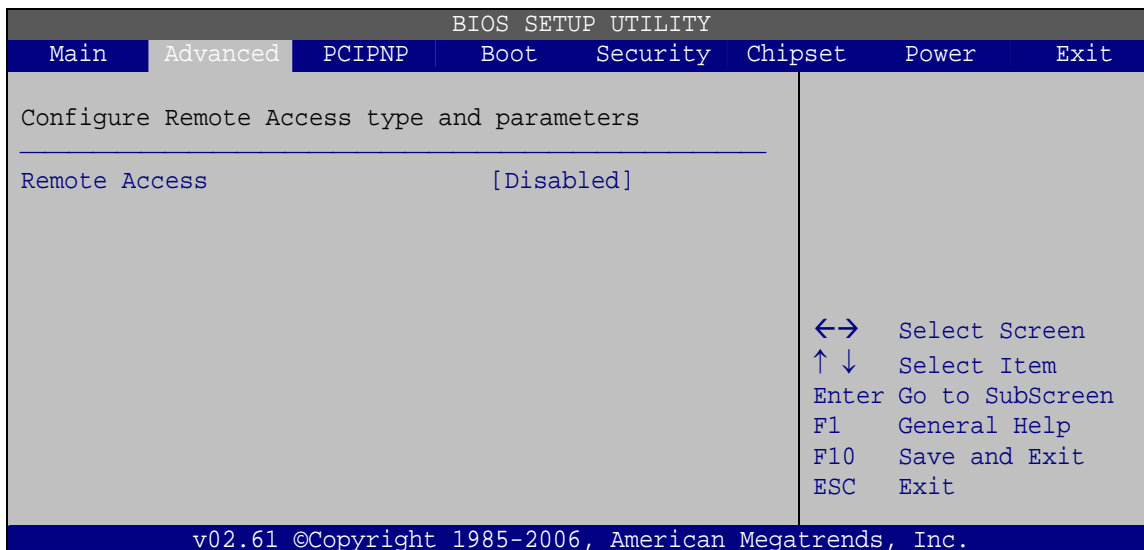
→ Resume On RTC Alarm [Disabled]

Use the **Resume On RTC Alarm** option to specify the time the system should be roused from a suspended state.

- **Disabled** **DEFAULT** The real time clock (RTC) cannot generate a wake event
- **Enabled** If selected, the following appears with values that can be selected:
 RTC Alarm Date (Days)
 RTC Alarm Time
 After setting the alarm, the computer turns itself on from a suspend state when the alarm goes off.

3.3.6 Remote Access Configuration

Use the **Remote Access Configuration** menu (**BIOS Menu 11**) 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 11: Remote Access Configuration

➔ 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
- ➔ **COM3** System is remotely accessed through COM3

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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) |

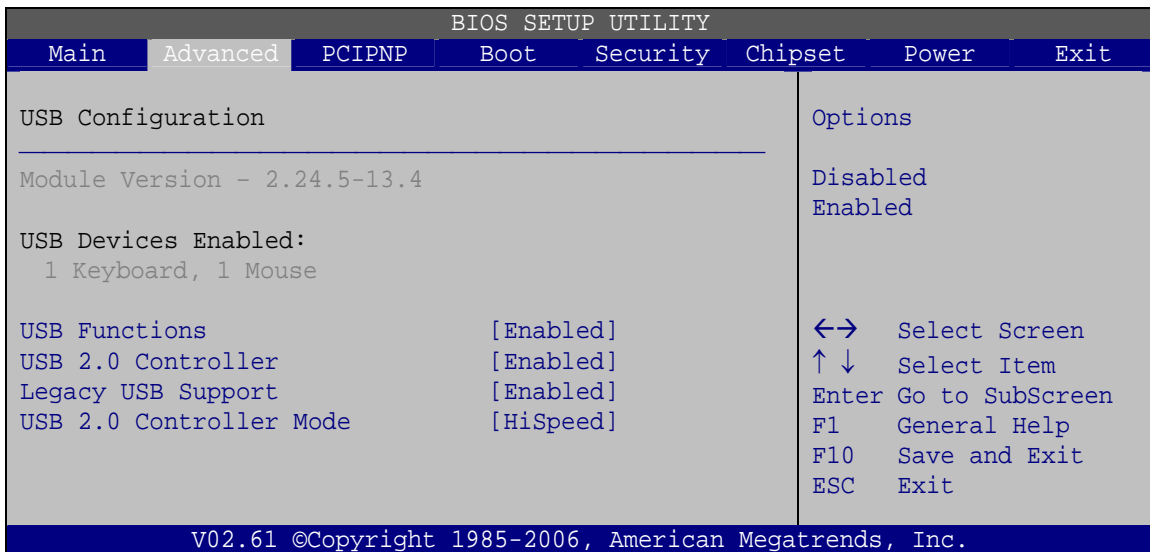
→ Terminal Type [ANSI]

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

3.3.7 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 12**) to read USB configuration information and configure the USB settings.



BIOS Menu 12: 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

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→ **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 |

→ **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]**

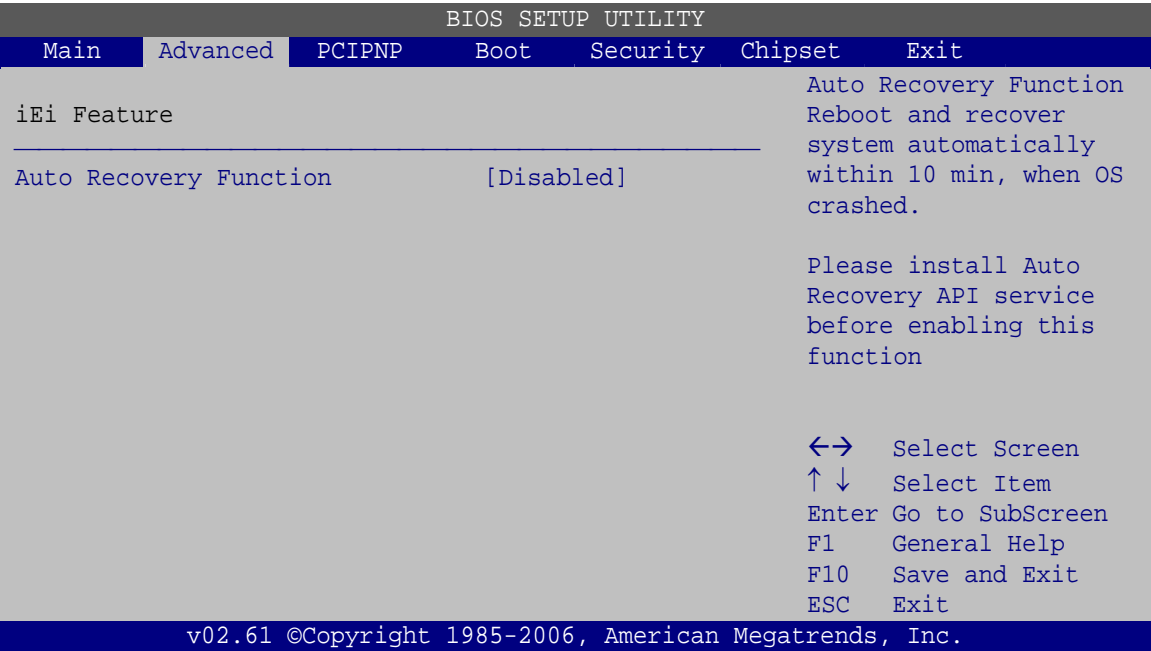
Use the **USB2.0 Controller Mode** option to set the speed of the USB2.0 controller.

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



3.3.8 IEI Feature

Use the **IEI Feature** menu (**BIOS Menu 13**) to configure One Key Recovery function.



BIOS Menu 13: IEI Feature

➔ Auto Recovery Function [Disabled]

Use the **Auto Recovery Function** BIOS option to enable or disable the auto recovery function of the IEI One Key Recovery.

- ➔ **Disabled** **DEFAULT** Auto recovery function disabled
- ➔ **Enabled** Auto recovery function enabled



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3.4 PCI/PnP

Use the **PCI/PnP** menu (**BIOS Menu 14**) to configure advanced PCI and PnP settings.

**WARNING!**

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

BIOS SETUP UTILITY			
Main	Advanced	PCIPNP	Boot Security Chipset Power Exit
Advanced PCI/PnP Settings			Available: Specified IRQ is available to be use the PCI/PnP devices Reserved: Specified IRQ is reserved for use by legacy ISA devices
IRQ3		[Reserved]	
IRQ4		[Reserved]	
IRQ5		[Available]	
IRQ7		[Available]	
IRQ9		[Available]	
IRQ10		[Reserved]	
IRQ11		[Reserved]	
IRQ14		[Available]	
IRQ15		[Available]	
DMA Channel 0		[Available]	
DMA Channel 1		[Available]	
DMA Channel 3		[Available]	←→ Select Screen
DMA Channel 5		[Available]	↑ ↓ Select Item
DMA Channel 6		[Available]	Enter Go to SubScreen
DMA Channel 7		[Available]	F1 General Help
Reserved Memory Size		[Disabled]	F10 Save and Exit
			ESC Exit
v02.61 ©Copyright 1985-2006, American Megatrends, Inc.			

BIOS Menu 14: 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

➔ **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

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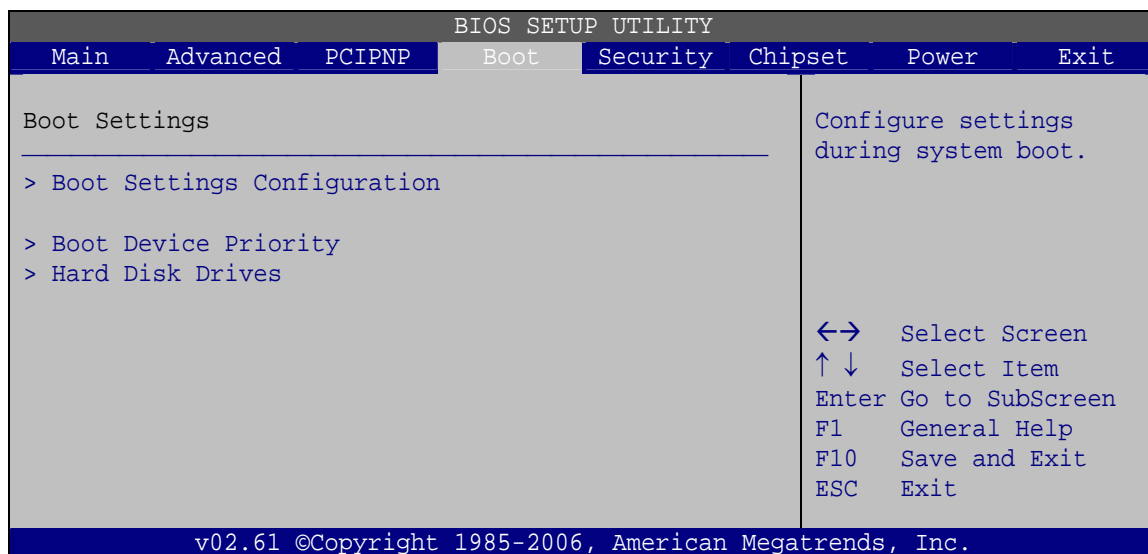
➔ **Reserved Memory Size [Disabled]**

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		16 KB reserved for legacy ISA devices
➔	32K		32 KB reserved for legacy ISA devices
➔	64K		54 KB reserved for legacy ISA devices

3.5 Boot

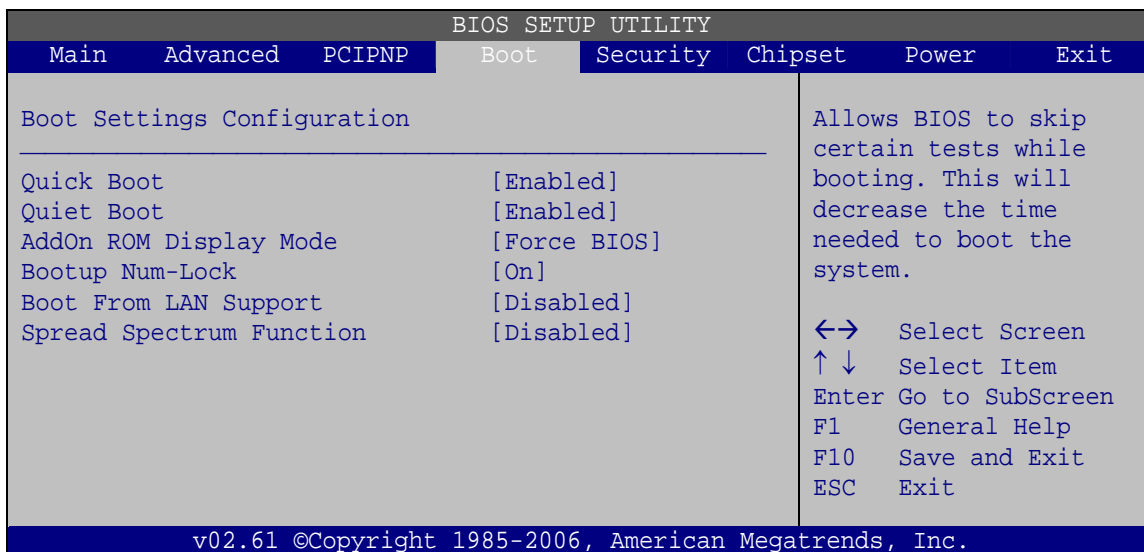
Use the **Boot** menu (**BIOS Menu 15**) to configure system boot options.



BIOS Menu 15: Boot

3.5.1 Boot Settings Configuration

Use the **Boot Settings Configuration** menu (**BIOS Menu 16**) to configure advanced system boot options.



BIOS Menu 16: 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** **DEFAULT** Normal POST messages displayed
- ➔ **Enabled** OEM Logo displayed instead of POST messages

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➔ **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.

➔ **Boot From LAN Support [Disabled]**

Use the **BOOT From LAN Support** option to enable the system to be booted from a remote system.

- ➔ **Enabled** Can be booted from a remote system through the LAN
- ➔ **Disabled** **DEFAULT** Cannot be booted from a remote system through the LAN

➔ Spread Spectrum Mode [Disabled]

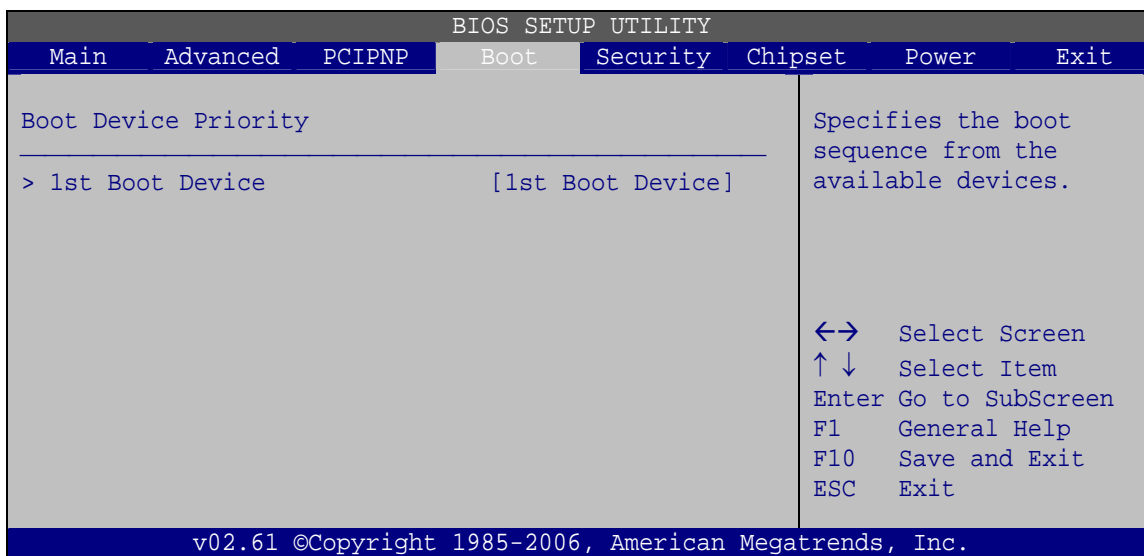
The **Spread Spectrum Mode** option can help to improve CPU EMI issues.

➔ **Disabled** **DEFAULT** The spread spectrum mode is disabled

➔ **Enabled** The spread spectrum mode is enabled

3.5.2 Boot Device Priority

Use the **Boot Device Priority** menu (**BIOS Menu 17**) to specify the boot sequence from the available devices. The drive sequence also depends on the boot sequence in the individual device section.

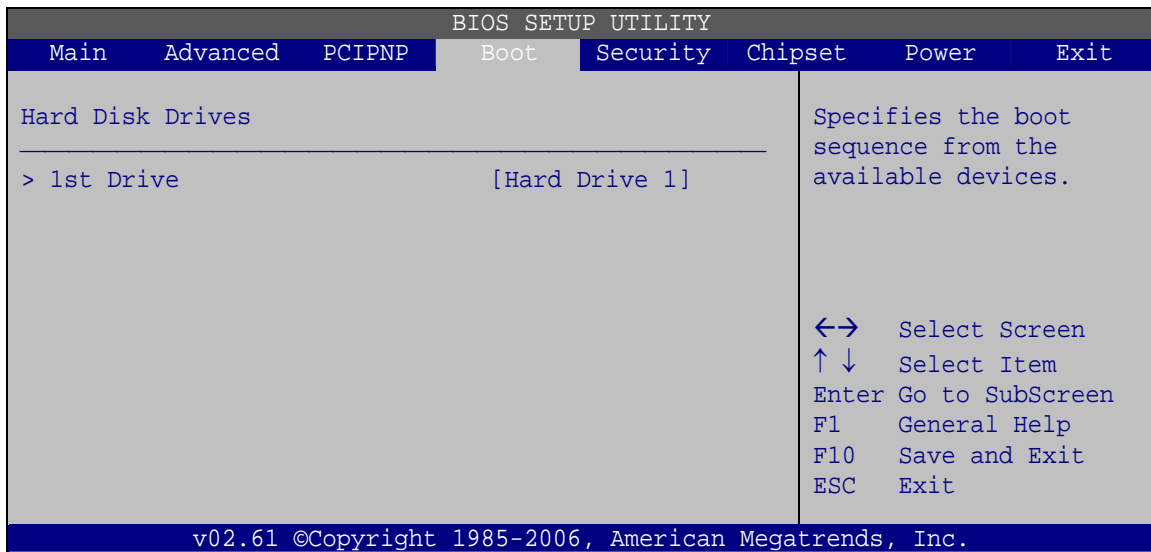


BIOS Menu 17: Boot Device Priority Settings

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3.5.3 Hard Disk Drives

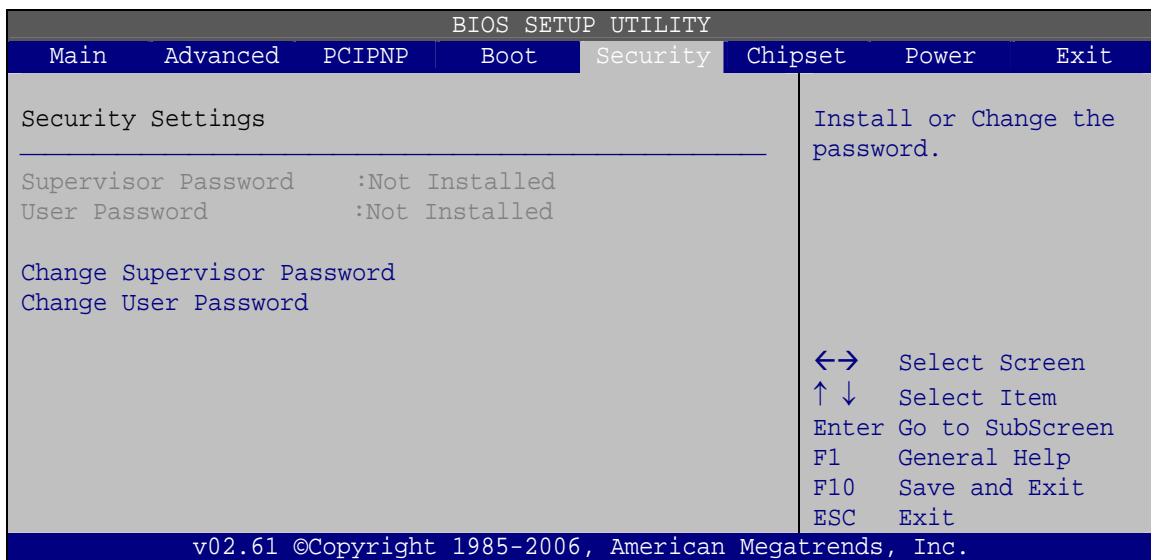
Use the **Hard Disk Drives** menu to specify the boot sequence of the available HDDs.
Only installed hard drives are shown.



BIOS Menu 18: Hard Disk Drives

3.6 Security

Use the **Security** menu (**BIOS Menu 19**) to set system and user passwords.



BIOS Menu 19: 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**.

3.7 Advanced Chipset Settings

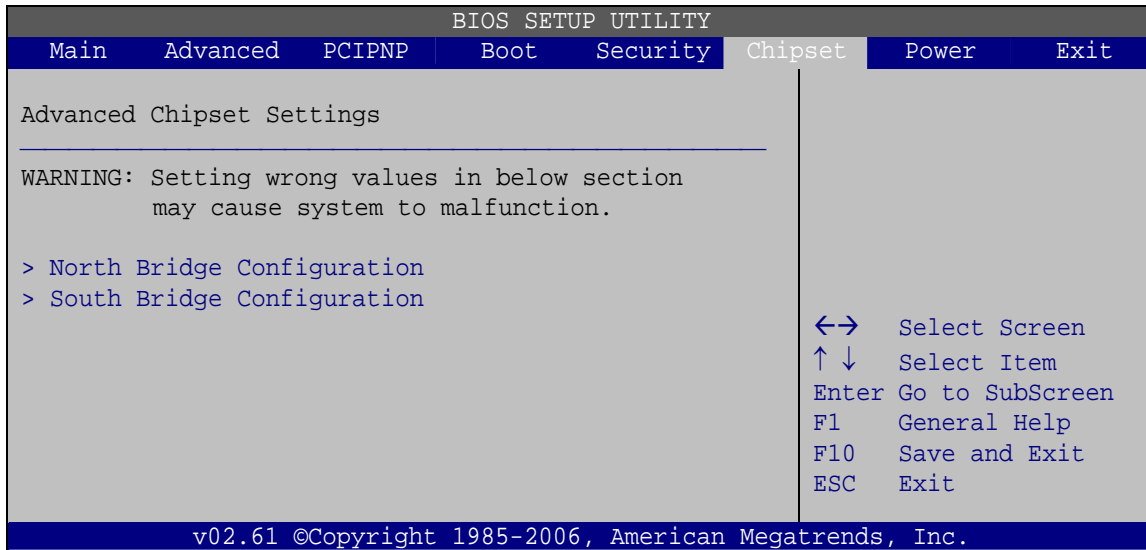
Use the **Advanced Chipset Settings** menu (**BIOS Menu 20**) to access the Northbridge and Southbridge configuration menus



WARNING!

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

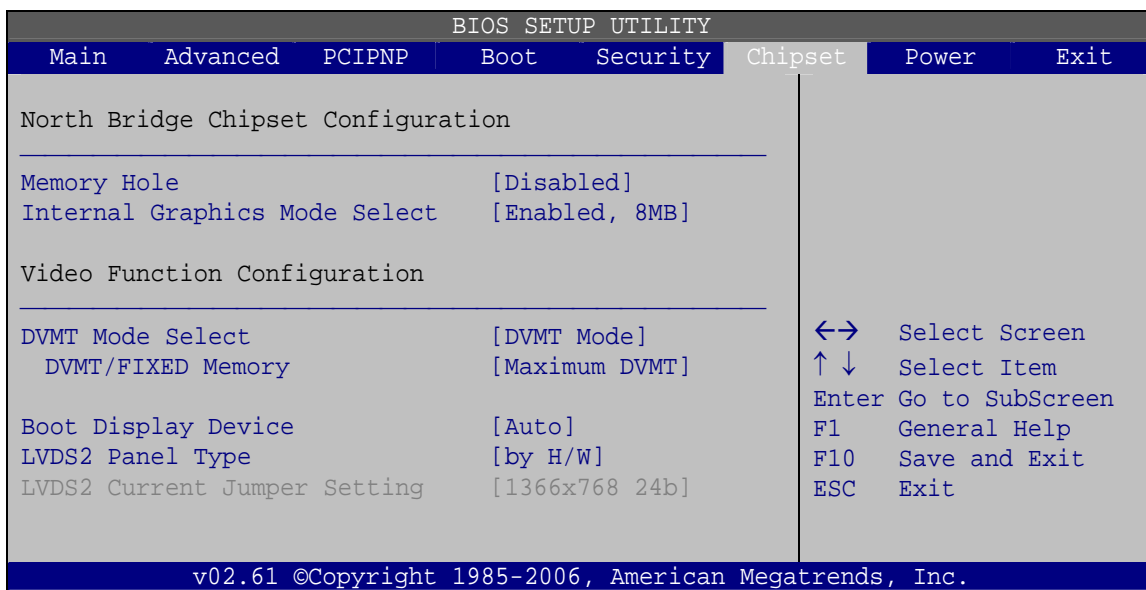
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BIOS Menu 20: Advanced Chipset Settings

3.7.1 North Bridge Configuration

Use the **North Bridge Configuration** menu (**BIOS Menu 21**) to configure the Northbridge chipset.



BIOS Menu 21: North Bridge Configuration

→ Memory Hole [Disabled]

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

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

→ Internal Graphics Mode Select [Enable, 8 MB]

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, 1 MB | | 1 MB of memory used by internal graphics device |
| → | Enable, 8 MB | DEFAULT | 8 MB of memory used by internal graphics device |

→ DVMT Mode Select [DVMT Mode]

Use the **DVMT Mode Select** option to select the Intel Dynamic Video Memory Technology (DVMT) operating mode.

- | | | | |
|---|-------------------|----------------|---|
| → | Fixed Mode | | A fixed portion of graphics memory is reserved as graphics memory. |
| → | DVMT Mode | DEFAULT | Graphics memory is dynamically allocated according to the system and graphics needs. |
| → | Combo Mode | | A fixed portion of graphics memory is reserved as graphics memory. If more memory is needed, graphics memory is dynamically allocated according to the system and graphics needs. |

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→ DVMT/FIXED Memory [Maximum DVMT]

Use the **DVMT/FIXED Memory** option to specify the maximum amount of memory that can be allocated as graphics memory. Configuration options are listed below.

- 64MB
- 128MB
- Maximum DVMT **Default**

→ Boot Display Device [Auto]

Use the **Boot Display Device** option to select the display device used by the system when it boots. Configuration options are listed below.

- Auto **Default**
- CRT
- LVDS

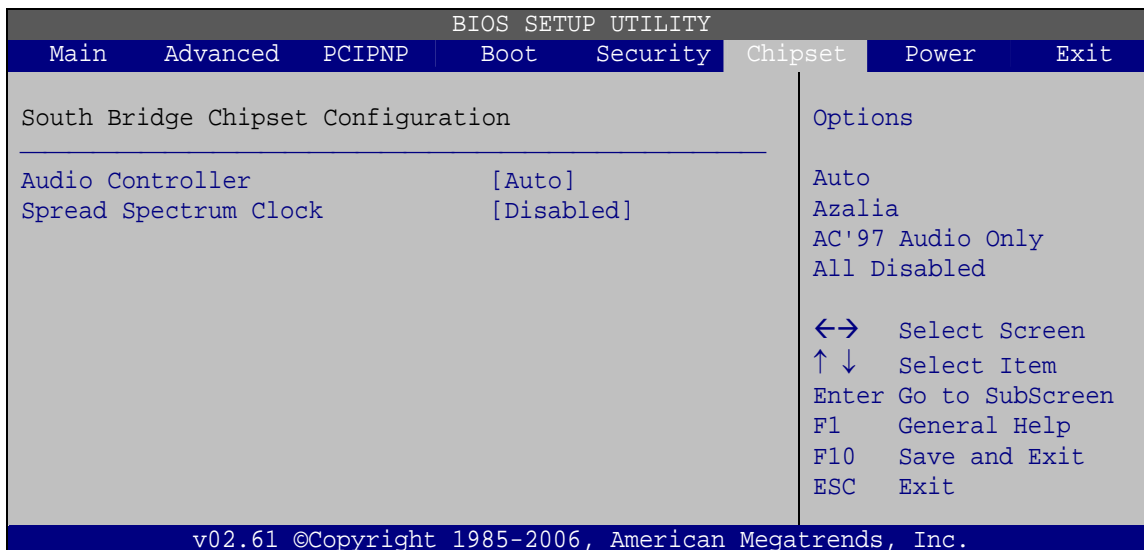
→ LVDS Panel Type [by H/W]

Use the **LVDS Panel Type** option to select the type of flat panel connected to the system. Configuration options are listed below.

- 1440x900 48b
- 1024x768 24b
- 1366x768 24b
- 1280x1024 48b
- By H/W **DEFAULT**

3.7.2 South Bridge Configuration

Use the **South Bbridge Configuration** menu (**BIOS Menu 22**) to configure the Southbridge chipset.



BIOS Menu 22:South Bridge Configuration

→ Audio Controller [Auto]

Use the **Audio Controller** option to enable or disable audio controller.

- **Auto** **DEFAULT** Enabled audio controller automatically
- **All Disabled** The on-board audio controller is disabled.

→ Spread Spectrum Clock [Disabled]

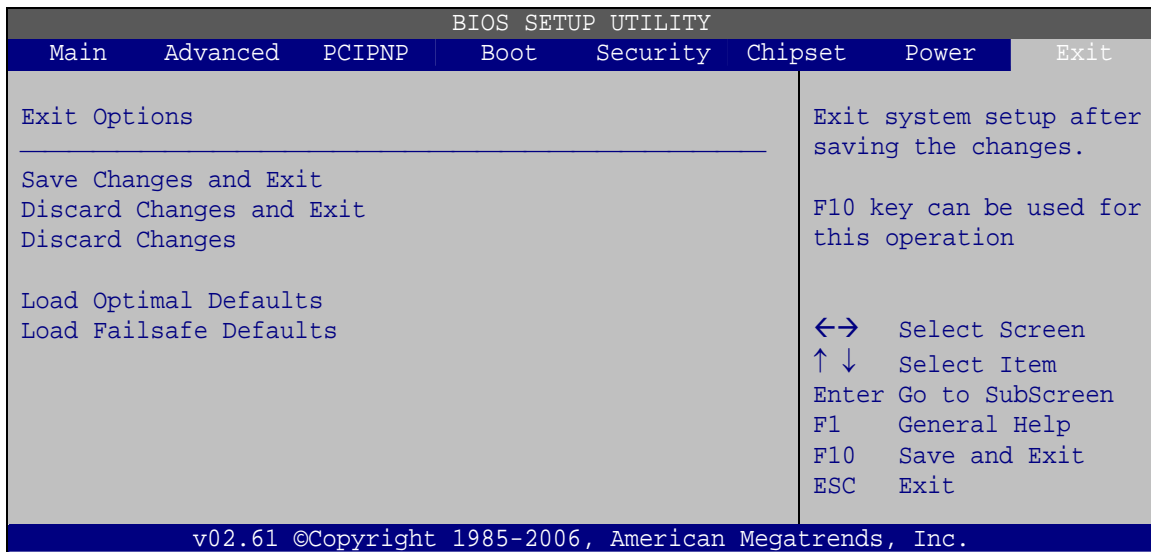
The **Spread Spectrum Clock** option can help to improve CPU EMI issues.

- **Disabled** **DEFAULT** The spread spectrum clock is disabled
- **Enabled** The spread spectrum clock is enabled

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3.8 Exit

Use the **Exit** menu (**BIOS Menu 23**) to load default BIOS values, optimal failsafe values and to save configuration changes.

**BIOS Menu 23: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

4

System Maintenance

4.1 System Maintenance Introduction

If the components of the AFL2-W15A-N270 fail they must be replaced, such as the wireless LAN module or the motherboard. Please contact the system reseller or vendor to purchase the replacement parts. Memory module replacement instruction for the AFL2-W15A-N270 is described below.

4.2 Motherboard Replacement

In the case of motherboard failure, please contact an IEI sales representative, reseller or system vendor. The motherboard is accessible after opening the rear cover.

4.3 Memory Module Replacement

The flat panel PC has a preinstalled memory module. If the memory module fails, take the steps below to replace it.

- Step 1:** Remove the back cover. See **Section 2.6**.
- Step 2:** Locate the memory module on the motherboard of the flat panel PC
- Step 3:** Remove the memory module by pulling both the spring retainer clips outward from the socket.
- Step 4:** Grasp the memory module by the edges and carefully pull it out of the socket.
- Step 5:** Install the new memory module by inserting it at an angle, then pushing down until the clips snap into place (Figure 4-1).

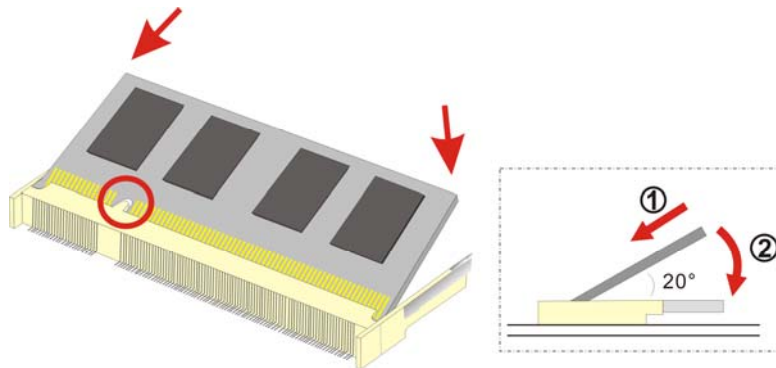


Figure 4-1: SO-DIMM Module Installation

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 AFL2-W15A-N270.

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 AFL2-W15A-N270 is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the AFL2-W15A-N270 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 AFL2-W15A-N270 chassis is opened when the AFL2-W15A-N270 is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the AFL2-W15A-N270.
- ***If considerable amounts of dust, water, or fluids enter the AFL2-W15A-N270***, turn off the power supply immediately, unplug the power cord, and contact the AFL2-W15A-N270 vendor.
- **DO NOT** do the following:
 - **DO NOT** drop the AFL2-W15A-N270 against a hard surface.
 - **DO NOT** strike or exert excessive force onto the LCD panel.
 - **DO NOT** touch any of the LCD panels with a sharp object
 - **DO NOT** use the AFL2-W15A-N270 in a site where the ambient temperature exceeds the rated temperature

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A.1.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the installation of the AFL2-W15A-N270 may result in permanent damage to the AFL2-W15A-N270 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL2-W15A-N270. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL2-W15A-N270 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.1.3 Product Disposal

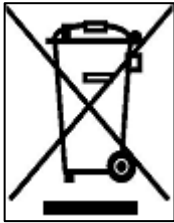


CAUTION:

Risk of explosion if battery is replaced by and incorrect type. Only certified engineers should replace the on-board battery.

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union:



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords.

When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the AFL2-W15A-N270, please follow the guidelines below.

A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the AFL2-W15A-N270, 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 does not require cleaning. Keep fluids away from the interior.
- Be careful not to damage the small, removable components inside.
- Turn off before cleaning.
- Never drop any objects or liquids through the openings.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning.
- Avoid eating, drinking and smoking nearby.

A.2.2 Cleaning Tools

Some components 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 for cleaning.

- ***Cloth*** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended.
- ***Water or rubbing alcohol*** – A cloth moistened with water or rubbing alcohol should be used.
- ***Using solvents*** – The use of solvents is not recommended as they may damage the plastic parts.
- ***Vacuum cleaner*** – Using a vacuum specifically designed for computers is one of the best methods of cleaning. Dust and dirt can restrict the airflow and cause 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

One Key Recovery

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B.1 One Key Recovery Introduction

The IEI one key recovery is an easy-to-use front end for the Norton Ghost system backup and recovery tool. The one key recovery provides quick and easy shortcuts for creating a backup and reverting to that backup or for reverting to the factory default settings.

The IEI One Key Recovery tool menu is shown below.

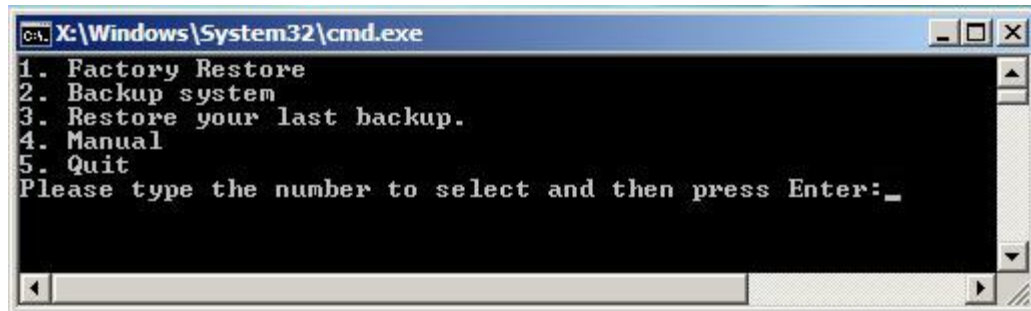


Figure B-1: IEI One Key Recovery Tool Menu

Prior to using the IEI One Key Recovery tool (as shown in **Figure B-1**) to backup or restore Windows system, five setup procedures are required.

1. Hardware and BIOS setup (see **Section B.2.1**)
2. Create partitions (see **Section B.2.2**)
3. Install operating system, drivers and system applications (see **Section B.2.3**)
4. Build-up recovery partition (see **Section B.2.4**)
5. Create factory default image (see **Section B.2.5**)

After completing the five initial setup procedures as described above, users can access the recovery tool by pressing <F3> while booting up the system. The detailed information of each function is described in **Section B.4**.



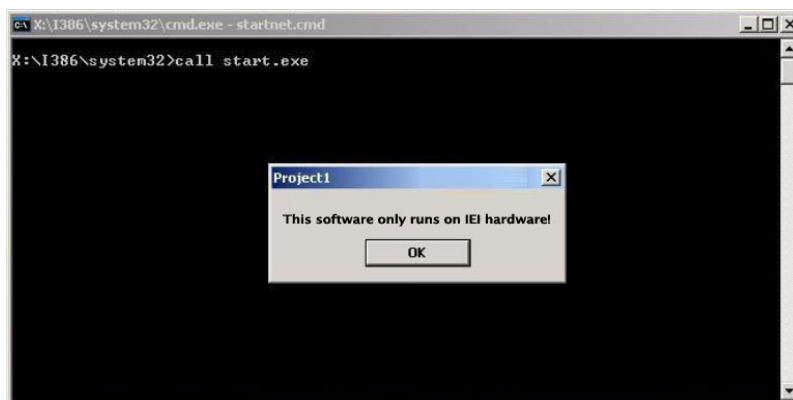
NOTE:

The initial setup procedures for Linux system are described in **Section B.3**.

B.1.1 System Requirement

**NOTE:**

The recovery CD can only be used with IEI products. The software will fail to run and a warning message will appear when used on non-IEI hardware.



To create the system backup, the main storage device must be split into two partitions (three partitions for Linux). The first partition will be for the operating system, while the second partition will be invisible to the operating system and contain the backup made by the one key recovery software.

The partition created for recovery images must be big enough to contain both the factory default image and the user backup image. The size must be calculated before creating the partitions. Please take the following table as a reference when calculating the size of the partition.

	OS	OS Image after Ghost	Compression Ratio
Windows® 7	7 GB	5 GB	70%
Windows® XPE	776 MB	560 MB	70%
Windows® CE 6.0	36 MB	28 MB	77%

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NOTE:

Specialized tools are required to change the partition size if the operating system is already installed.

B.1.2 Supported Operating System

The recovery CD is compatible with both Microsoft Windows and Linux operating system (OS). The supported OS versions are listed below.

- Microsoft Windows
 - Windows XP (Service Pack 2 or 3 required)
 - Windows Vista
 - Windows 7
 - Windows CE 5.0
 - Windows CE 6.0
 - Windows XP Embedded
- Linux
 - Fedora Core 12 (Constantine)
 - Fedora Core 11 (Leonidas)
 - Fedora Core 10 (Cambridge)
 - Fedora Core 8 (Werewolf)
 - Fedora Core 7 (Moonshine)
 - RedHat RHEL-5.4
 - RedHat 9 (Ghirke)
 - Ubuntu 8.10 (Intrepid)
 - Ubuntu 7.10 (Gutsy)
 - Ubuntu 6.10 (Edgy)
 - Debian 5.0 (Lenny)
 - Debian 4.0 (Etch)
 - SuSe 11.2
 - SuSe 10.3

**NOTE:**

Installing unsupported OS versions may cause the recovery tool to fail.

B.2 Setup Procedure for Windows

Prior to using the recovery tool to backup or restore Windows system, a few setup procedures are required.

Step 1: Hardware and BIOS setup (see **Section B.2.1**)

Step 2: Create partitions (see **Section B.2.2**)

Step 3: Install operating system, drivers and system applications (see **Section B.2.3**)

Step 4: Build-up recovery partition (see **Section B.2.4**)

Step 5: Create factory default image (see **Section B.2.5**)

The detailed descriptions are described in the following sections.

**NOTE:**

The setup procedures described below are for Microsoft Windows operating system users. For Linux system, most setup procedures are the same with Microsoft Windows except for several steps which is described in **Section B.3**.

B.2.1 Hardware and BIOS Setup

Step 1: Make sure the system is powered off and unplugged.

Step 2: Install a hard drive or SSD in the system. An unformatted and unpartitioned disk is recommended.

Step 3: Connect an optical disk drive to the system and insert the recovery CD.

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- Step 4:** Turn on the system.
- Step 5:** Press the <DELETE> key as soon as the system is turned on to enter the BIOS.
- Step 6:** Select the connected optical disk drive as the 1st boot device. (**Boot → Boot Device Priority → 1st Boot Device**).
- Step 7:** Save changes and restart the computer. Continue to the next section for instructions on partitioning the internal storage.

B.2.2 Create Partitions

To create the system backup, the main storage device must be split into two partitions (three partitions for Linux). The first partition will be for the operating system, while the second partition will be invisible to the operating system and contain the backup made by the one key recovery software.

- Step 1:** Put the recovery CD in the optical drive of the system.
- Step 2:** **Boot the system from recovery CD.** When prompted, press any key to boot from the recovery CD. It will take a while to launch the recovery tool. Please be patient!

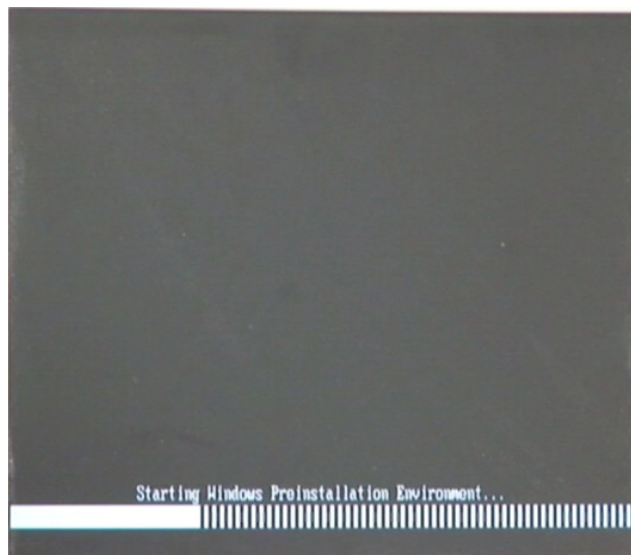
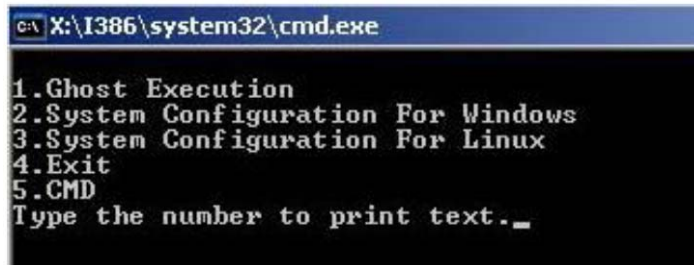


Figure B-2: Launching the Recovery Tool

Step 3: The recovery tool setup menu is shown as below.

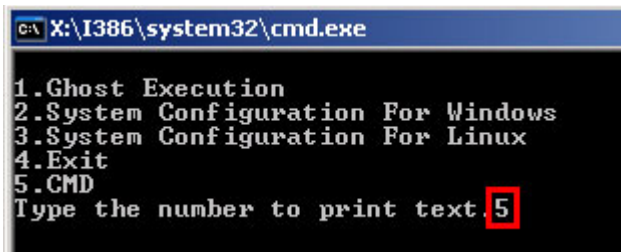
A screenshot of a command prompt window titled 'C:\X:\I386\system32\cmd.exe'. The window displays a menu with five options: 1. Ghost Execution, 2. System Configuration For Windows, 3. System Configuration For Linux, 4. Exit, and 5. CMD. Below the menu, it says 'Type the number to print text._' with a cursor at the end.

```
C:\X:\I386\system32\cmd.exe

1. Ghost Execution
2. System Configuration For Windows
3. System Configuration For Linux
4. Exit
5. CMD
Type the number to print text._
```

Figure B-3: Recovery Tool Setup Menu

Step 4: Press <5> then <Enter>.

A screenshot of a command prompt window titled 'C:\X:\I386\system32\cmd.exe'. The window displays the same menu as Figure B-3. The number '5' is highlighted in a red box at the end of the line 'Type the number to print text.5', indicating that the user has selected option 5.

```
C:\X:\I386\system32\cmd.exe

1. Ghost Execution
2. System Configuration For Windows
3. System Configuration For Linux
4. Exit
5. CMD
Type the number to print text.5
```

Figure B-4: Command Mode

Step 5: The command prompt window appears. Type the following commands (marked in red) to create two partitions. One is for the OS installation; the other is for saving recovery files and images which will be an invisible partition.
(Press <Enter> after entering each line below)

```
system32>diskpart
DISKPART>list vol
DISKPART>sel disk 0
DISKPART>create part pri size= ____
DISKPART>assign letter=N
DISKPART>create part pri size= ____
DISKPART>assign letter=F
DISKPART>exit
system32>format N: /fs:ntfs /q /y
```


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system32>format F: /fs:ntfs /q /v:Recovery /y

system32>exit

```

X:\I386\SYSTEM32\CMD.EXE
X:\I386\SYSTEM32>diskpart → Starts the Microsoft disk partitioning tool.

Microsoft DiskPart version 5.2.3790.1830
Copyright (C) 1999-2001 Microsoft Corporation.
On computer: MININT-JUC

DISKPART>list vol → Show partition information

   Volume ###  Ltr  Label        Fs      Type          Size      Status       Info
   -----
   Volume 0          X  CD_ROM        CDFS    DVD-ROM       405 MB    Healthy      Boot
   Volume 1          D                FAT32    Removeable   3854 MB    Healthy

DISKPART>sel disk 0 → Select a disk
Disk 0 is now the selected disk.

DISKPART>create part pri size=2000 → Create partition 1 and assign a size.
                                     This partition is for OS installation.
DiskPart succeeded in creating the specified partition.

DISKPART>assign letter=N → Assign partition 1 a code name (N).
DiskPart successfully assigned the drive letter or mount point.

DISKPART>create part pri size=1800 → Create partition 2 and assign a size.
                                     This partition is for recovery images.
DiskPart succeeded in creating the specified partition.

DISKPART>assign letter=F → Assign partition 2 a code name (F).
DiskPart successfully assigned the drive letter or mount point.

DISKPART>exit → Exit diskpart

X:\I386\SYSTEM32>format n: /fs:ntfs /q /y → Format partition 1 (N) as NTFS format.
The type of the file system is ntfs.
The new file system is NTFS.
QuickFormatting 2000M
Creating file system structures.
Format complete.
2048254 KB total disk space.
2035620 KB are available.

X:\I386\SYSTEM32>format f: /fs:ntfs /q /v:Recovery /y
The type of the file system is ntfs.
The new file system is NTFS.
QuickFormatting 1804M
Creating file system structures.
Format complete.
1847474 KB total disk space.
1835860 KB are available.

X:\I386\SYSTEM32>exit → Exit Windows PE
  
```

Figure B-5: Partition Creation Commands

**NOTE:**

Use the following commands to check if the partitions were created successfully.

```
X:\I386\SYSTEM32>diskpart
Microsoft DiskPart version 5.2.3790.1830
Copyright (C) 1999-2001 Microsoft Corporation.
On computer: MININT-JUC

DISKPART> sel disk 0
Disk 0 is now the selected disk.

DISKPART> list part

   Partition ###   Type              Size          Offset
-----
Partition 1       Primary           2000 MB         32 KB
Partition 2       Primary          1804 MB       2000 MB

DISKPART> exit
```

Step 6: Press any key to exit the recovery tool and automatically reboot the system.

Please continue to the following procedure: Build-up Recovery Partition.

B.2.3 Install Operating System, Drivers and Applications

Install the operating system onto the unlabelled partition. The partition labeled as "Recovery" is for use by the system recovery tool and should not be used for installing the operating system or any applications.

**NOTE:**

The operating system installation program may offer to reformat the chosen partition. DO NOT format the partition again. The partition has already been formatted and is ready for installing the new operating system.

To install the operating system, insert the operating system installation CD into the optical drive. Restart the computer and follow the installation instructions.

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B.2.4 Build-up Recovery Partition

- Step 1:** Put the recover CD in the optical drive.
- Step 2:** Start the system.
- Step 3:** **Boot the system from recovery CD.** When prompted, press any key to boot from the recovery CD. It will take a while to launch the recovery tool. Please be patient!

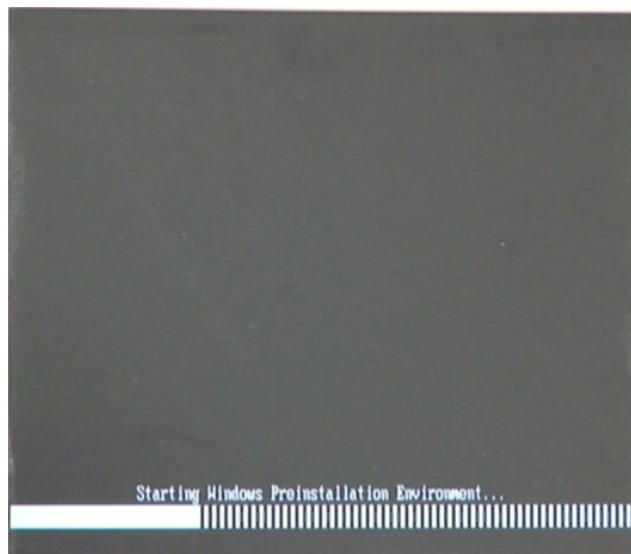


Figure B-6: Launching the Recovery Tool

- Step 4:** When the recovery tool setup menu appears, press <2> then <Enter>.

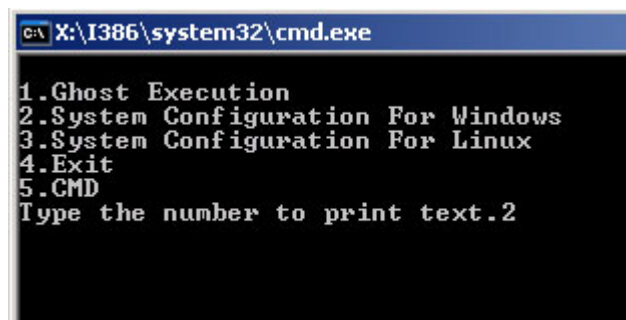


Figure B-7: System Configuration for Windows

- Step 5:** The Symantec Ghost window appears and starts configuring the system to build-up a recovery partition. In this process, the partition which is created for

recovery files in **Section B.2.2** is hidden and the recovery tool is saved in this partition.

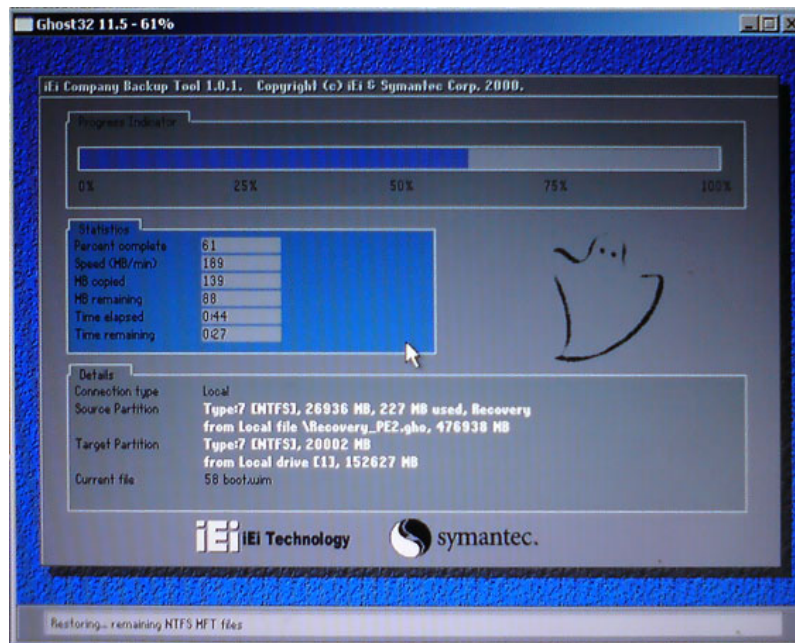


Figure B-8: Build-up Recovery Partition

Step 6: After completing the system configuration, press any key in the following window to reboot the system.

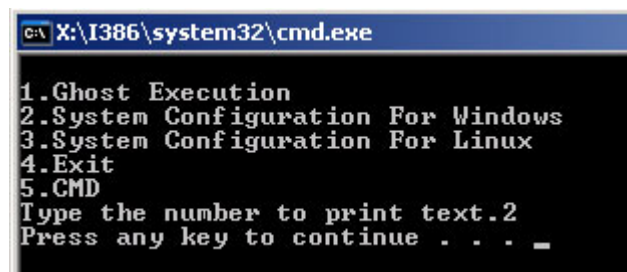


Figure B-9: Press any key to continue

Step 7: Eject the recovery CD.

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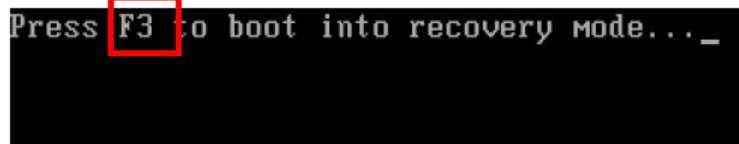
B.2.5 Create Factory Default Image

**NOTE:**

Before creating the factory default image, please configure the system to a factory default environment, including driver and application installations.

To create a factory default image, please follow the steps below.

Step 1: Turn on the system. When the following screen displays (**Figure B-10**), press the <F3> key to access the recovery tool. The message will display for 10 seconds, please press F3 before the system boots into the operating system.



```
Press F3 to boot into recovery mode..._
```

Figure B-10: Press F3 to Boot into Recovery Mode

Step 2: The recovery tool menu appears. Type <4> and press <Enter>. (**Figure B-11**)

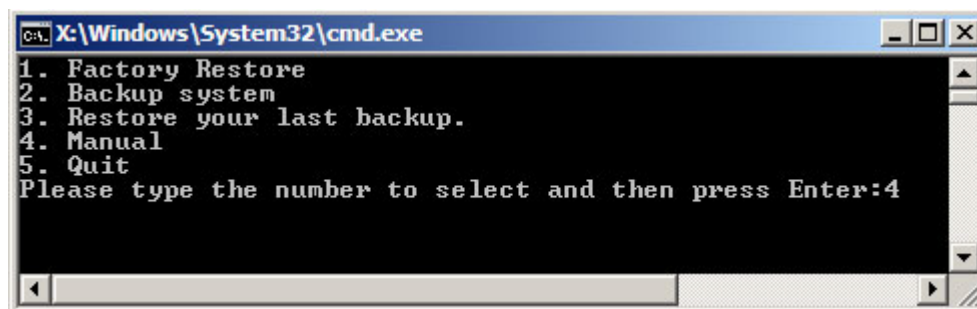


Figure B-11: Recovery Tool Menu

Step 3: The About Symantec Ghost window appears. Click **OK** button to continue.

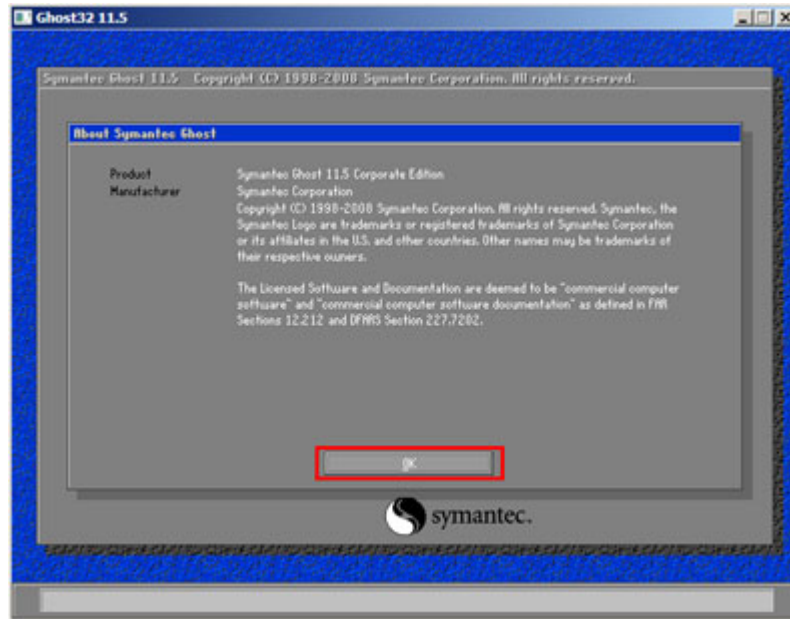


Figure B-12: About Symantec Ghost Window

Step 4: Use mouse to navigate to the option shown below (**Figure B-13**).

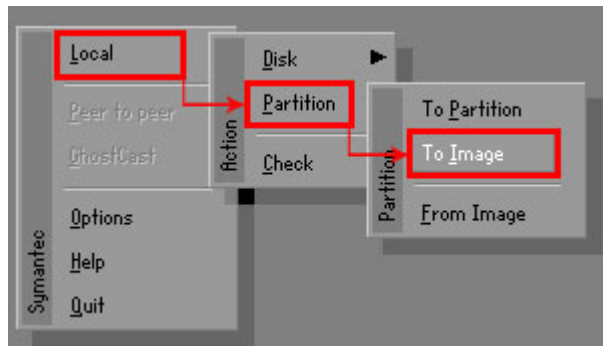


Figure B-13: Symantec Ghost Path

Step 5: Select the local source drive (Drive 1) as shown in **Figure B-14**. Then click OK.

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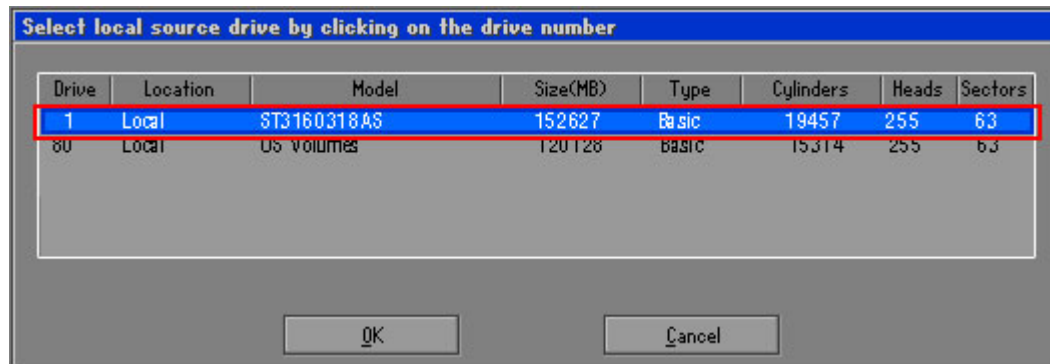


Figure B-14: Select a Local Source Drive

Step 6: Select a source partition (Part 1) from basic drive as shown in **Figure B-15**. Then click OK.

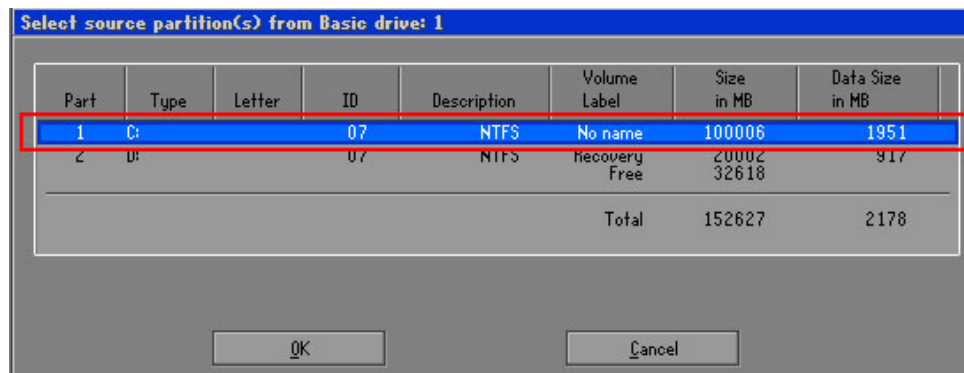


Figure B-15: Select a Source Partition from Basic Drive

Step 7: Select **1.2: [Recovery] NTFS drive** and enter a file name called **iei** (Figure B-16). Click **Save**. The factory default image will then be saved in the selected recovery drive and named **IEI.GHO**.



WARNING:

The file name of the factory default image must be **iei.GHO**.

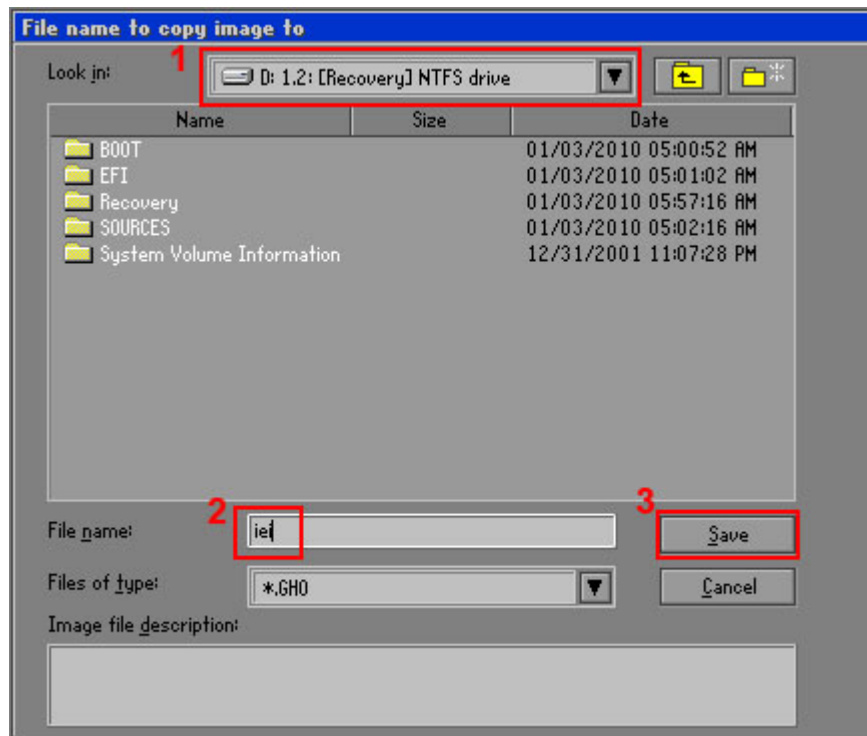


Figure B-16: File Name to Copy Image to

Step 8: When the Compress Image screen in **Figure B-17** prompts, click **High** to make the image file smaller.

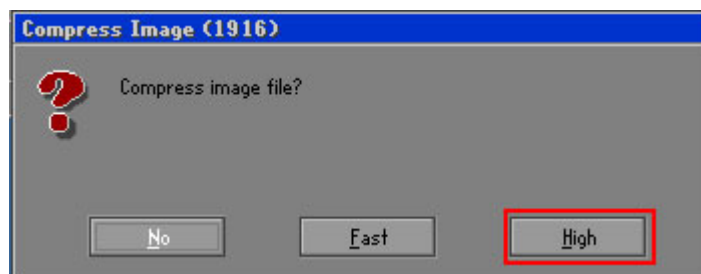


Figure B-17: Compress Image

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Step 9: The Proceed with partition image creation window appears, click **Yes** to continue.

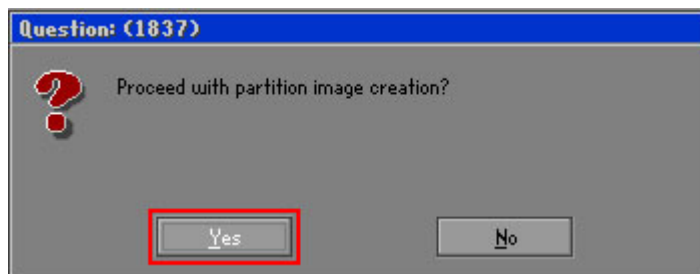


Figure B-18: Image Creation Confirmation

Step 10: The Symantec Ghost starts to create the factory default image (Figure B-19).

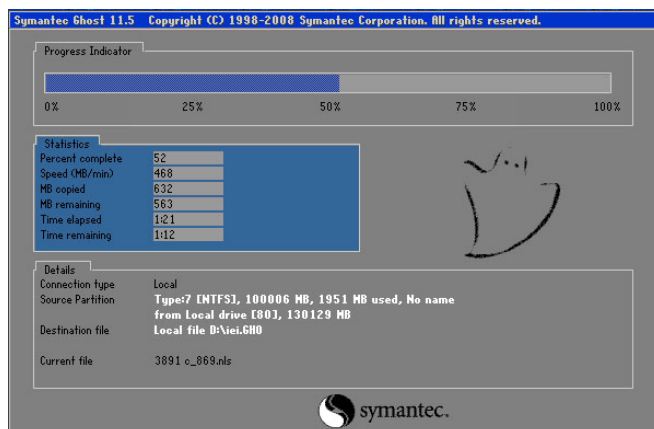


Figure B-19: Image Creation Process

Step 11: When the image creation completes, a screen prompts as shown in Figure B-20.

Click **Continue** and close the Ghost window to exit the program.

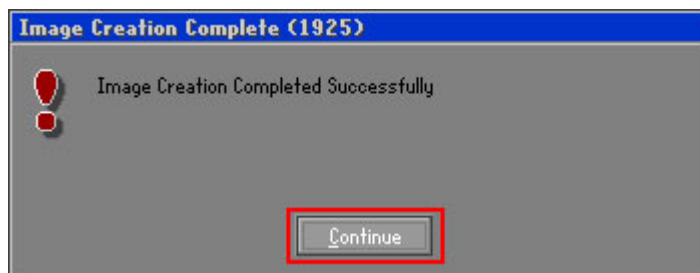
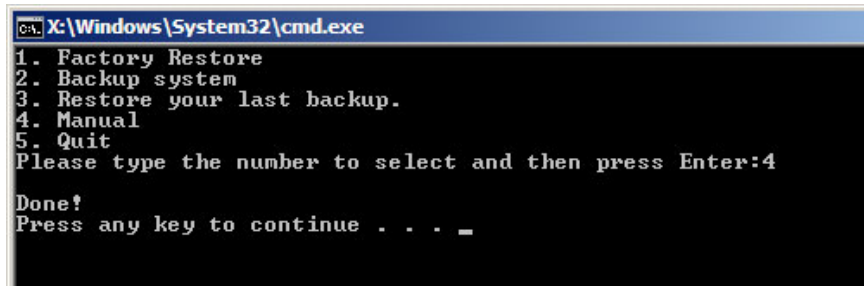


Figure B-20: Image Creation Complete

Step 12: The recovery tool main menu window is shown as below. Press any key to reboot the system.



```
C:\Windows\System32\cmd.exe
1. Factory Restore
2. Backup system
3. Restore your last backup.
4. Manual
5. Quit
Please type the number to select and then press Enter:4
Done!
Press any key to continue . . . _
```

Figure B-21: Press Any Key to Continue

B.3 Setup Procedure for Linux

The initial setup procedures for Linux system are mostly the same with the procedure for Microsoft Windows. Please follow the steps below to setup recovery tool for Linux OS.

Step 1: **Hardware and BIOS setup.** Refer to **Section B.2.1**.

Step 2: **Install Linux operating system.** Make sure to install GRUB (v0.97 or earlier) MBR type and Ext3 partition type. Leave enough space on the hard drive to create the recover partition later.



NOTE:

If the Linux OS is not installed with GRUB (v0.97 or earlier) and Ext3, the Symantec Ghost may not function properly.

While installing Linux OS, please create two partitions:

- Partition 1: /
- Partition 2: **SWAP**

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**NOTE:**

Please reserve enough space for partition 3 for saving recovery images.

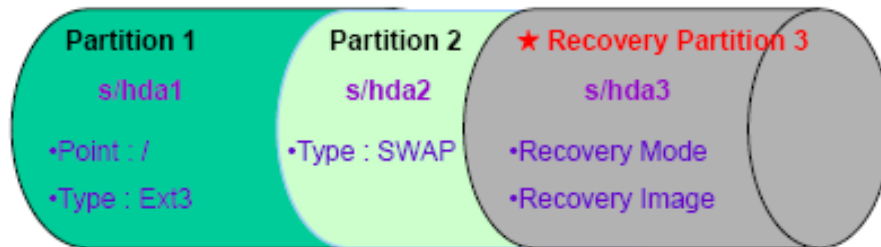


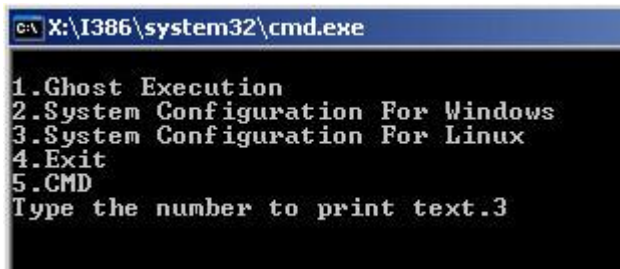
Figure B-22: Partitions for Linux

Step 3: Create a recovery partition. Insert the recovery CD into the optical disk drive.

Follow **Step 1 ~ Step 3** described in **Section B.2.2**. Then type the following commands (marked in red) to create a partition for recovery images.

```
system32>diskpart
DISKPART>list vol
DISKPART>sel disk 0
DISKPART>create part pri size= ____
DISKPART>assign letter=N
DISKPART>exit
system32>format N: /fs:ntfs /q /v:Recovery /y
system32>exit
```

Step 4: Build-up recovery partition. Press any key to boot from the recovery CD. It will take a while to launch the recovery tool. Please be patient. When the recovery tool setup menu appears, type <3> and press <Enter> (**Figure B-23**). The Symantec Ghost window appears and starts configuring the system to build-up a recovery partition. After completing the system configuration, press any key to reboot the system. Eject the recovery CD.



```
C:\X:\I386\system32\cmd.exe

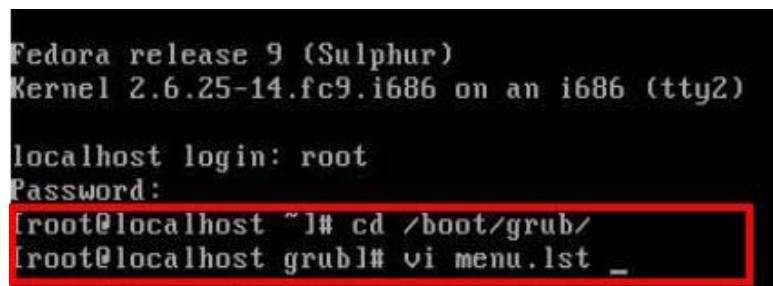
1.Ghost Execution
2.System Configuration For Windows
3.System Configuration For Linux
4.Exit
5.CMD
Type the number to print text.3
```

Figure B-23: System Configuration for Linux

Step 5: Access the recovery tool main menu by modifying the “menu.lst”. To first access the recovery tool main menu, the menu.lst must be modified. In Linux system, enter Administrator (root). When prompt appears, type:

cd /boot/grub

vi menu.lst



```
Fedora release 9 (Sulphur)
Kernel 2.6.25-14.fc9.i686 on an i686 (tty2)

localhost login: root
Password:
[root@localhost ~]# cd /boot/grub/
[root@localhost grub]# vi menu.lst _
```

Figure B-24: Access menu.lst in Linux (Text Mode)

Step 6: Modify the menu.lst as shown below.

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```
#boot=/dev/sda
default=0
timeout=10 ← Modify timeout=10
splashimage=(hd0,0)/grub/splash.xpm.gz
hiddenmenu
title Fedora (2.6.25-14.fc9.i686)
    root (hd0,0)
    kernel /vmlinuz-2.6.25-14.fc9.i686 ro root=UUID=10f1acd
    ac38b5c78910 rhgb quiet
    initrd /initrd-2.6.25-14.fc9.i686.img

title Recovery Partition
root (hd0,2)
makeactive ← Type command
chainloader +1
```

- Type command:
title Recovery Partition
root (hd0,2)
makeactive
chainloader +1

Step 7: The recovery tool menu appears. (Figure B-25)

```
1. Factory Restore
2. Backup system
3. Restore your last backup.
4. Manual
5. Quit
Please type the number to select and then press Enter:
```

Figure B-25: Recovery Tool Menu

Step 8: Create a factory default image. Follow **Step 2 ~ Step 12** described in **Section B.2.5** to create a factory default image.

B.4 Recovery Tool Functions

After completing the initial setup procedures as described above, users can access the recovery tool by pressing **<F3>** while booting up the system. The main menu of the recovery tool is shown below.

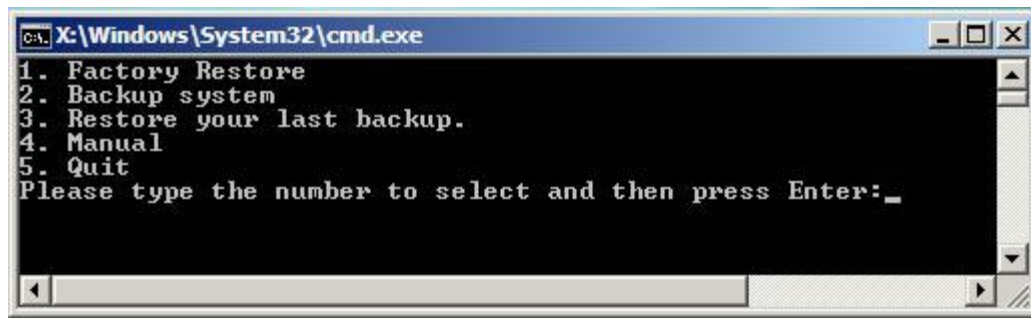


Figure B-26: Recovery Tool Main Menu

The recovery tool has several functions including:

1. **Factory Restore:** Restore the factory default image (iei.GHO) created in Section B.2.5.
2. **Backup system:** Create a system backup image (iei_user.GHO) which will be saved in the hidden partition.
3. **Restore your last backup:** Restore the last system backup image
4. **Manual:** Enter the Symantec Ghost window to configure manually.
5. **Quit:** Exit the recovery tool and restart the system.



WARNING:

Please do not turn off the system power during the process of system recovery or backup.



WARNING:

All data in the system will be deleted during the system recovery. Please backup the system files before restoring the system (either Factory Restore or Restore Backup).

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B.4.1 Factory Restore

To restore the factory default image, please follow the steps below.

Step 1: Type <1> and press <Enter> in the main menu.

Step 2: The Symantec Ghost window appears and starts to restore the factory default. A factory default image called **iei.GHO** is created in the hidden Recovery partition.

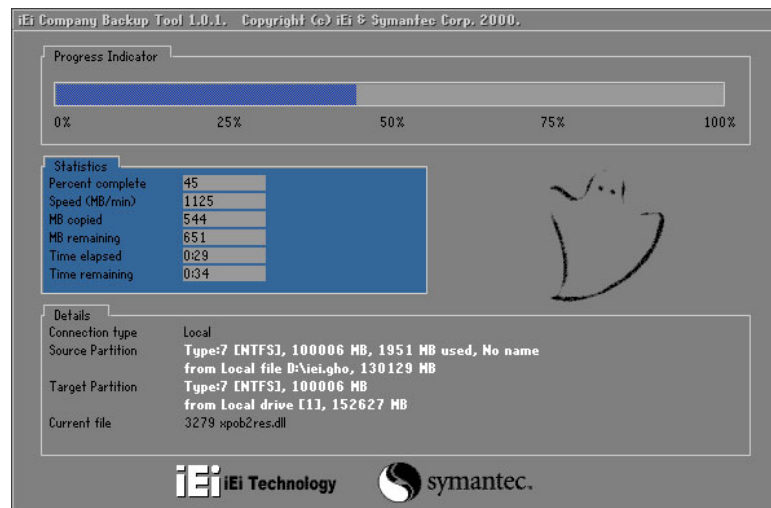


Figure B-27: Restore Factory Default

Step 3: The screen is shown as in **Figure B-28** when completed. Press any key to reboot the system.

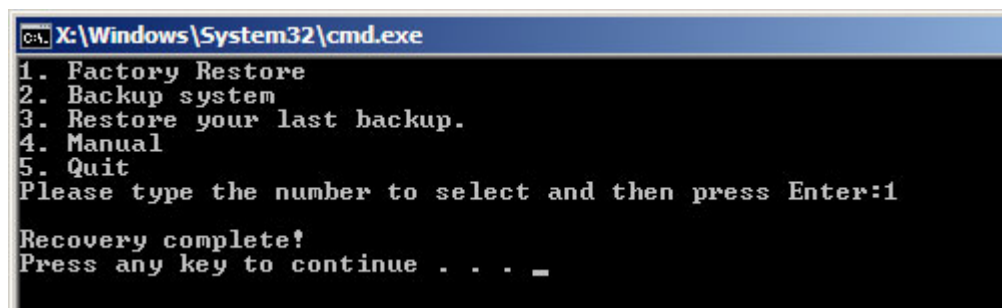


Figure B-28: Recovery Complete Window

B.4.2 Backup System

To backup the system, please follow the steps below.

Step 1: Type <2> and press <Enter> in the main menu.

Step 2: The Symantec Ghost window appears and starts to backup the system. A backup image called **iei_user.GHO** is created in the hidden Recovery partition.

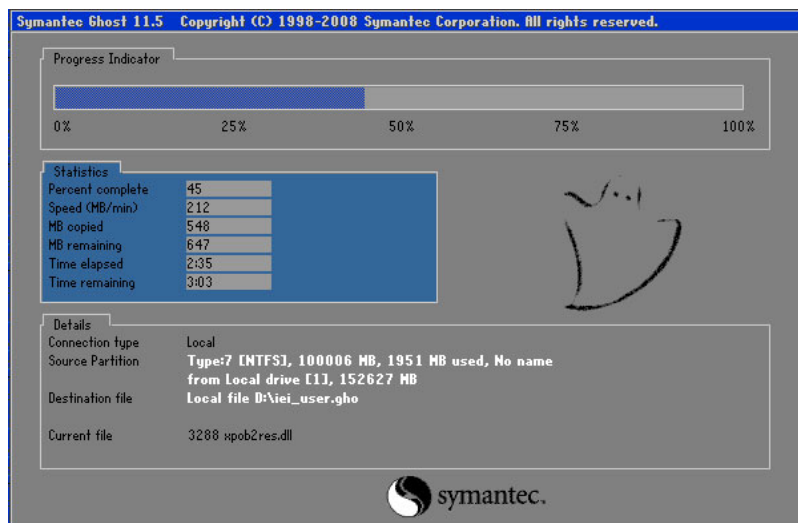


Figure B-29: Backup System

Step 3: The screen is shown as in **Figure B-30** when system backup is completed.

Press any key to reboot the system.

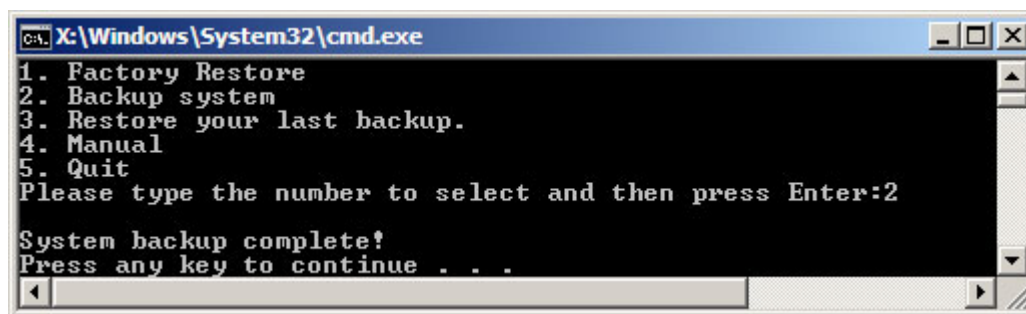


Figure B-30: System Backup Complete Window

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B.4.3 Restore Your Last Backup

To restore the last system backup, please follow the steps below.

Step 1: Type <3> and press <Enter> in the main menu.

Step 2: The Symantec Ghost window appears and starts to restore the last backup image (iei_user.GHO).

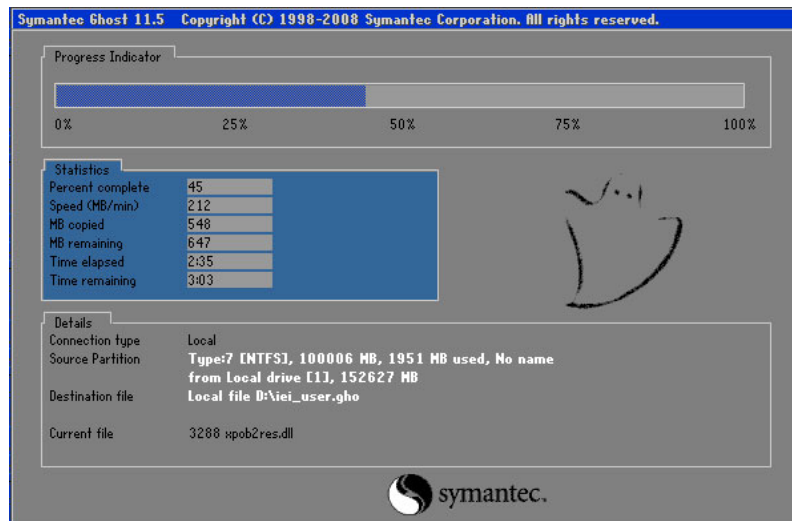


Figure B-31: Restore Backup

Step 3: The screen is shown as in **Figure B-32** when backup recovery is completed. Press any key to reboot the system.

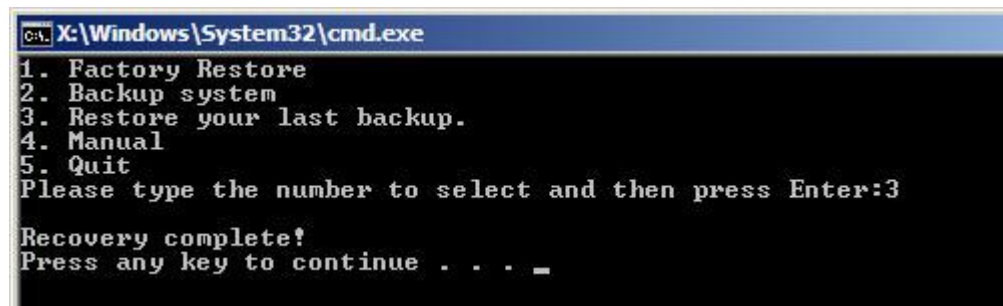


Figure B-32: Restore System Backup Complete Window

B.4.4 Manual

To restore the last system backup, please follow the steps below.

Step 1: Type <4> and press <Enter> in the main menu.

Step 2: The Symantec Ghost window appears. Use the Ghost program to backup or recover the system manually.

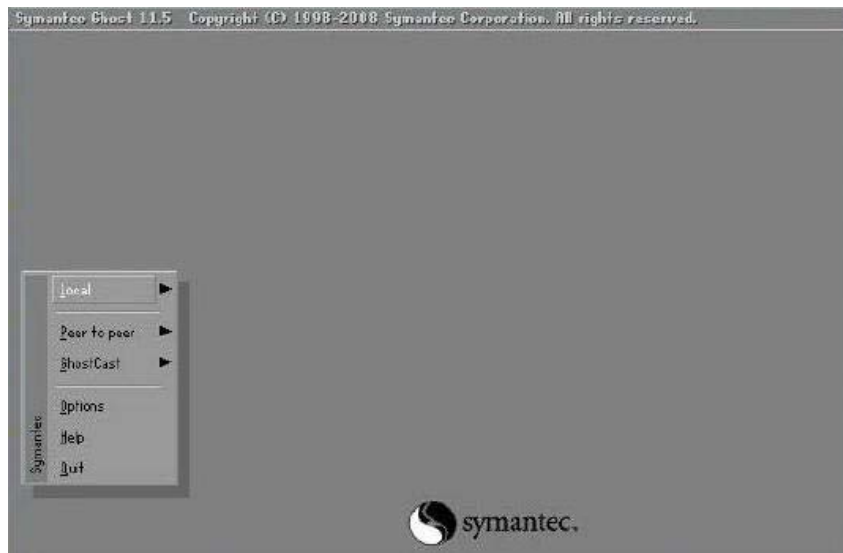


Figure B-33: Symantec Ghost Window

Step 3: When backup or recovery is completed, press any key to reboot the system.

B.5 Other Information

B.5.1 Using AHCI Mode or ALi M5283 / VIA VT6421A Controller

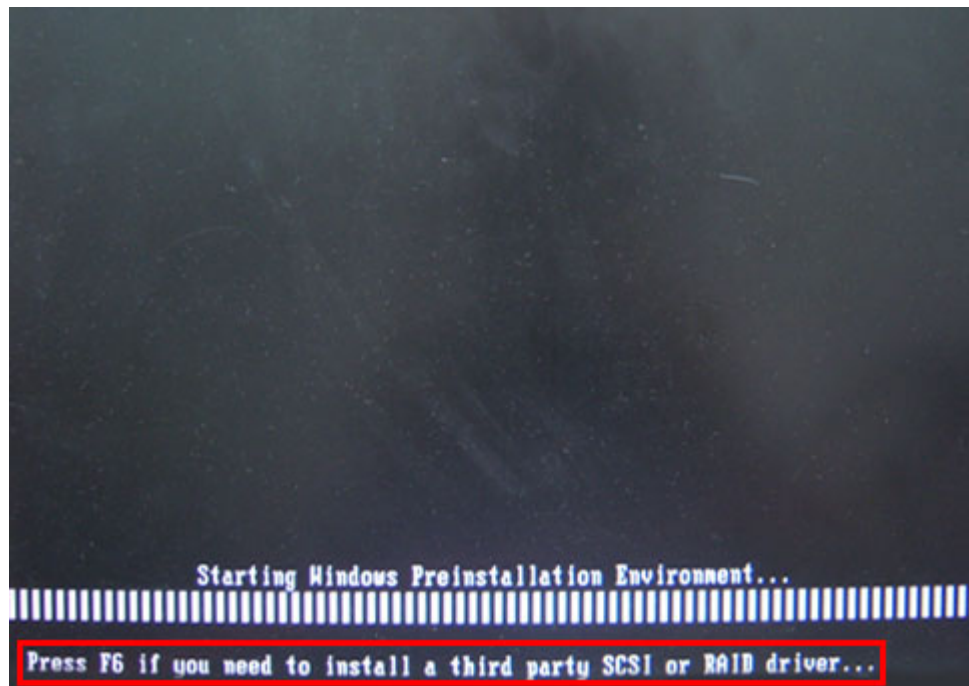
When the system uses AHCI mode or some specific SATA controllers such as ALi M5283 or VIA VT6421A, the SATA RAID/AHCI driver must be installed before using one key recovery. Please follow the steps below to install the SATA RAID/AHCI driver.

Step 1: Copy the SATA RAID/AHCI driver to a floppy disk and insert the floppy disk into a USB floppy disk drive. The SATA RAID/AHCI driver must be especially designed for the on-board SATA controller.

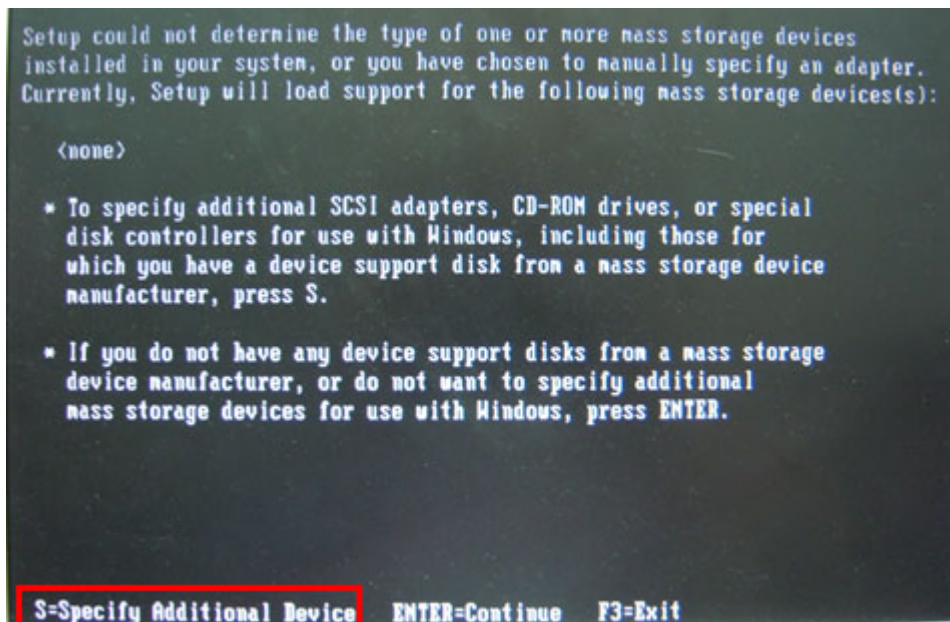
Step 2: Connect the USB floppy disk drive to the system.

Step 3: Insert the One Key Recovery CD into the system and boot the system from the CD.

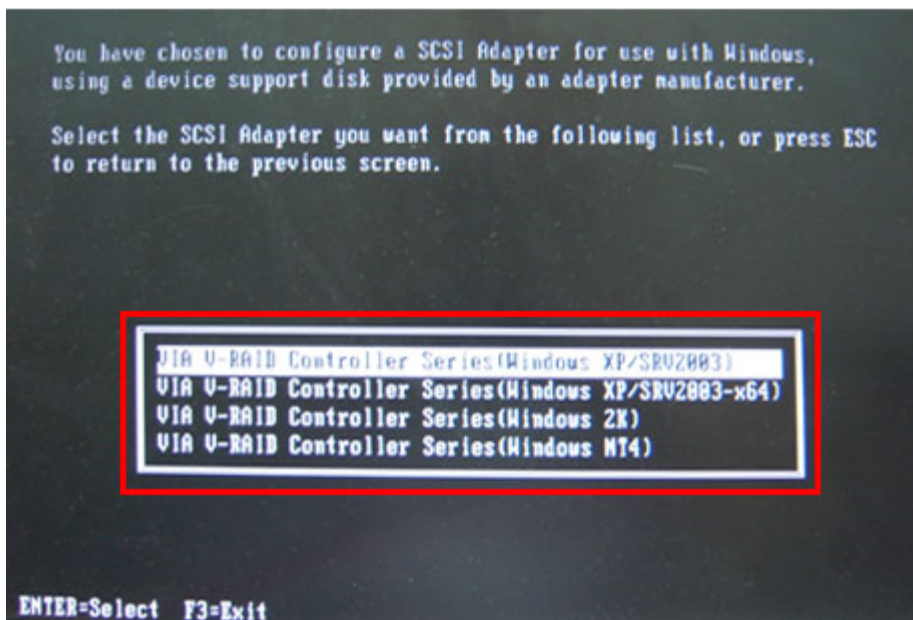
Step 4: When launching the recovery tool, press <F6>.



Step 5: When the following window appears, press <S> to select “Specify Additional Device”.



Step 6: In the following window, select a SATA controller mode used in the system. Then press <Enter>. The user can now start using the SATA HDD.



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Step 7: After pressing <Enter>, the system will get into the recovery tool setup menu.

Continue to follow the setup procedure from **Step 4** in **Section B.2.2 Create Partitions** to finish the whole setup process.

B.5.2 System Memory Requirement

To be able to access the recovery tool by pressing <F3> while booting up the system, please make sure to have enough system memory. The minimum memory requirement is listed below.

- **Using Award BIOS:** 128 MB system memory
- **Using AMI BIOS:** 512 MB system memory.

Appendix

C

BIOS Options

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Below is a list of BIOS configuration options in the BIOS chapter.

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Appendix

D

Terminology

AC '97	Audio Codec 97 (AC'97) refers to a codec standard developed by Intel® in 1997.
ACPI	Advanced Configuration and Power Interface (ACPI) is an OS-directed configuration, power management, and thermal management interface.
AHCI	Advanced Host Controller Interface (AHCI) is a SATA Host controller register-level interface.
ATA	The Advanced Technology Attachment (ATA) interface connects storage devices including hard disks and CD-ROM drives to a computer.
ARMD	An ATAPI Removable Media Device (ARMD) is any ATAPI device that supports removable media, besides CD and DVD drives.
ASKIR	Amplitude Shift Keyed Infrared (ASKIR) is a form of modulation that represents a digital signal by varying the amplitude ("volume") of the signal. A low amplitude signal represents a binary 0, while a high amplitude signal represents a binary 1.
BIOS	The Basic Input/Output System (BIOS) is firmware that is first run when the computer is turned on and can be configured by the end user
CODEC	The Compressor-Decompressor (CODEC) encodes and decodes digital audio data on the system.
CompactFlash®	CompactFlash® is a solid-state storage device. CompactFlash® devices use flash memory in a standard size enclosure. Type II is thicker than Type I, but a Type II slot can support both types.
CMOS	Complimentary metal-oxide-conductor is an integrated circuit used in chips like static RAM and microprocessors.
COM	COM refers to serial ports. Serial ports offer serial communication to expansion devices. The serial port on a personal computer is usually a male DB-9 connector.
DAC	The Digital-to-Analog Converter (DAC) converts digital signals to analog signals.
DDR	Double Data Rate refers to a data bus transferring data on both the rising and falling edges of the clock signal.

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DMA	Direct Memory Access (DMA) enables some peripheral devices to bypass the system processor and communicate directly with the system memory.
DIMM	Dual Inline Memory Modules are a type of RAM that offer a 64-bit data bus and have separate electrical contacts on each side of the module.
DIO	The digital inputs and digital outputs are general control signals that control the on/off circuit of external devices or TTL devices. Data can be read or written to the selected address to enable the DIO functions.
EHCI	The Enhanced Host Controller Interface (EHCI) specification is a register-level interface description for USB 2.0 Host Controllers.
EIDE	Enhanced IDE (EIDE) is a newer IDE interface standard that has data transfer rates between 4.0 MBps and 16.6 MBps.
EIST	Enhanced Intel® SpeedStep Technology (EIST) allows users to modify the power consumption levels and processor performance through application software. The application software changes the bus-to-core frequency ratio and the processor core voltage.
FSB	The Front Side Bus (FSB) is the bi-directional communication channel between the processor and the Northbridge chipset.
GbE	Gigabit Ethernet (GbE) is an Ethernet version that transfers data at 1.0 Gbps and complies with the IEEE 802.3-2005 standard.
GPIO	General purpose input
HDD	Hard disk drive (HDD) is a type of magnetic, non-volatile computer storage device that stores digitally encoded data.
ICH	The Input/Output Control Hub (ICH) is an Intel® Southbridge chipset.
IrDA	Infrared Data Association (IrDA) specify infrared data transmission protocols used to enable electronic devices to wirelessly communicate with each other.
L1 Cache	The Level 1 Cache (L1 Cache) is a small memory cache built into the system processor.
L2 Cache	The Level 2 Cache (L2 Cache) is an external processor memory cache.

LCD	Liquid crystal display (LCD) is a flat, low-power display device that consists of two polarizing plates with a liquid crystal panel in between.
LVDS	Low-voltage differential signaling (LVDS) is a dual-wire, high-speed differential electrical signaling system commonly used to connect LCD displays to a computer.
POST	The Power-on Self Test (POST) is the pre-boot actions the system performs when the system is turned-on.
RAM	Random Access Memory (RAM) is volatile memory that loses data when power is lost. RAM has very fast data transfer rates compared to other storage like hard drives.
SATA	Serial ATA (SATA) is a serial communications bus designed for data transfers between storage devices and the computer chipsets. The SATA bus has transfer speeds up to 1.5 Gbps and the SATA II bus has data transfer speeds of up to 3.0 Gbps.
S.M.A.R.T	Self Monitoring Analysis and Reporting Technology (S.M.A.R.T) refers to automatic status checking technology implemented on hard disk drives.
UART	Universal Asynchronous Receiver-transmitter (UART) is responsible for asynchronous communications on the system and manages the system's serial communication (COM) ports.
UHCI	The Universal Host Controller Interface (UHCI) specification is a register-level interface description for USB 1.1 Host Controllers.
USB	The Universal Serial Bus (USB) is an external bus standard for interfacing devices. USB 1.1 supports 12Mbps data transfer rates and USB 2.0 supports 480Mbps data transfer rates.
VGA	The Video Graphics Array (VGA) is a graphics display system developed by IBM.

Appendix

E

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 EMIs 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 E-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. When 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.

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**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

F

Hazardous Materials Disclosure

F.1 Hazardous Materials 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.

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
<p>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</p> <p>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</p>						

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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
<p>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。</p> <p>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。</p>						

Appendix

G

International Standards Compliance

AFL2-W15A-N270 Panel PC

G.1 EN 60601-1, EN 60601-2



The LCD monitor complies with the EN 60601-1 and EN 60601-2 of related European standards.

G.2 FCC



We hereby declare that the equipment specified above conforms to the technical standards as specified in the FCC Rules.

G.3 CCC



声 明

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰，在这种情况下，可能需要用户对其干扰采取切实可行的措施。