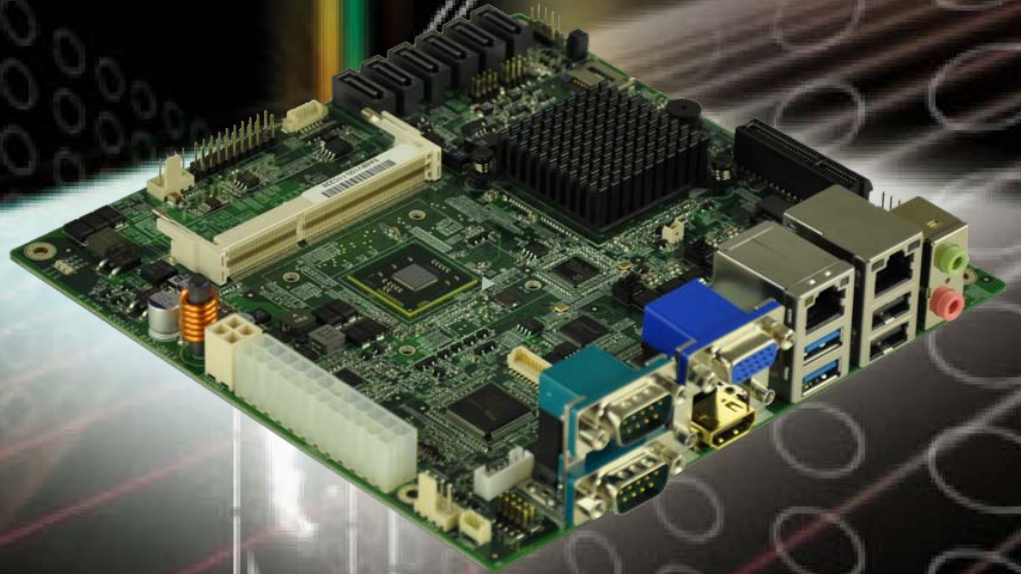




IEI Technology Corp.



MODEL:

**KINO-CVR-D25502/N26002**

Mini ITX SBC with Intel® D2550/N2600 processor,  
DDR3, VGA/HDMI, Dual GbE, Two USB 3.0, Six USB 2.0,  
Two COM, Six SATA 3Gb/s, HD Audio and RoHS

## User Manual

Rev. 1.01 - 13 July, 2012



# Revision

---

Date	Version	Changes
13 July, 2012	1.02	Update the BIOS section (Boot Option Priority)
26 June, 2012	1.01	Update the BIOS section (add micro SD card function)
15 May, 2012	1.00	Initial release

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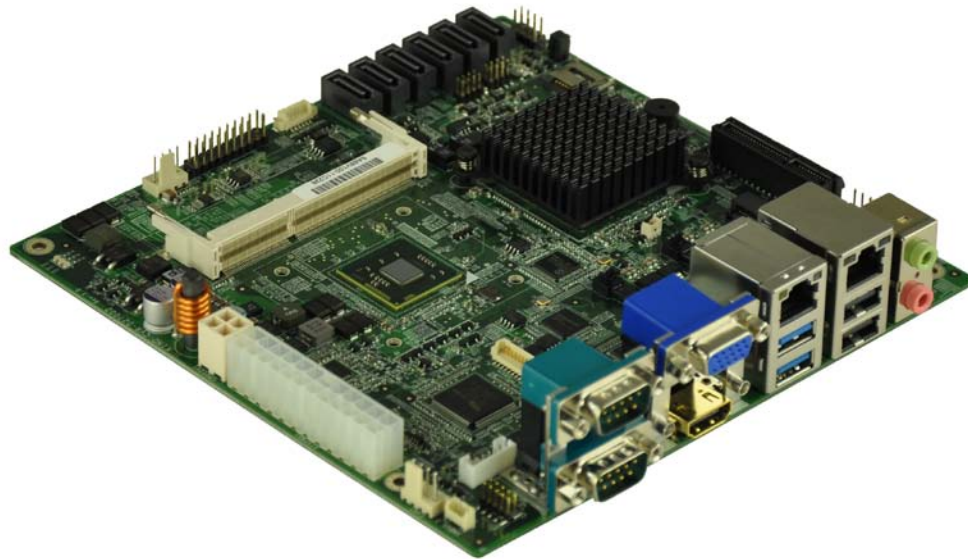
Chapter

1

# Introduction

---

## 1.1 Introduction



**Figure 1-1: KINO-CVR-D25502/N26002**

The KINO-CVR-D25502/N26002 Mini ITX motherboard is an Intel® dual Core processor D2550 or N2600 platform. Up to one 4.0 GB 1066 MHz DDR3 SO-DIMM is supported by D2550. Up to one 2.0 GB 800 MHz DDR3 SO-DIMM is supported by N2600.

The integrated Intel® ICH10R System Chipset supports two LAN ports through dual GbE Intel 82574L controller.

The KINO-CVR-D25502/N26002 includes a VGA connector and a HDMI connector. Expansion and I/O include one PCIe mini card slot, one PCIe x4 slot with x1 signal, two USB 3.0 connectors on the rear panel, two USB 2.0 connectors on the rear panel, four USB 2.0 by pin header, six SATA 3Gb/s connectors and one internal keyboard/mouse connector. Serial device connectivity is provided by two external RS-232 connectors.

## 1.2 Benefits

Some of the KINO-CVR-D25502/N26002 motherboard benefits include:

- Powerful graphics with multiple monitors
- Staying connected with both wired LAN connections
- Speedy running of multiple programs and applications

## KINO-CVR-D25502/N26002

### 1.3 Features

Some of the KINO-CVR-D25502/N26002 motherboard features are listed below:

- Mini ITX form factor with Intel® D2550/N2600 dual core processor support  
DDR3 memory
- Six SATA 3Gb/s with raid 0,1,5,10 support for storage market application
- Flexible VGA and HDMI with dual-display support
- PCIe mini card slot compatible with mSATA SSD storage
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery



### 1.4 Connectors

The connectors on the KINO-CVR-D25502/N26002 are shown in the figure below.

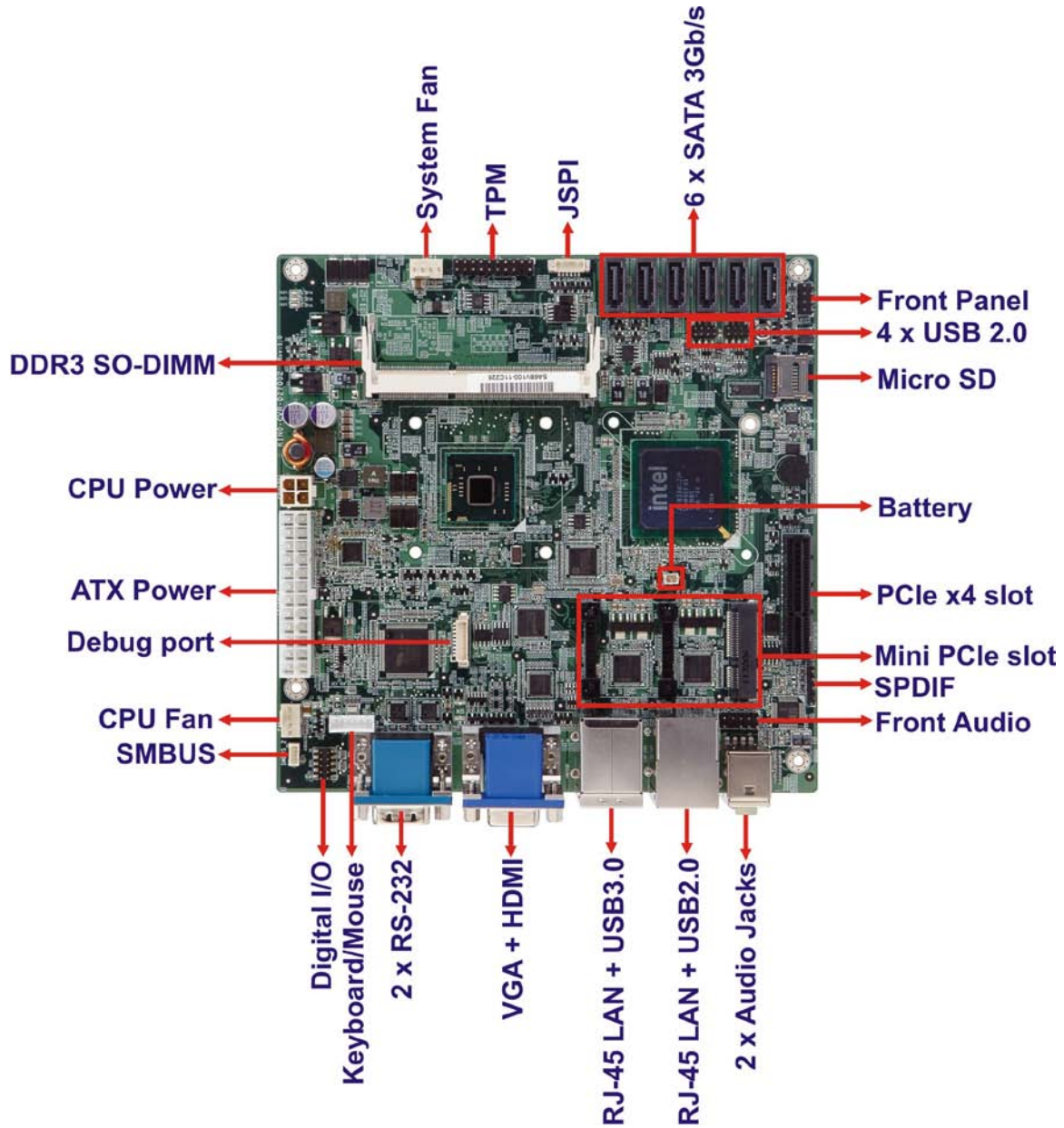


Figure 1-2: Connectors



# KINO-CVR-D25502/N26002

## 1.5 Dimensions

The dimensions of the board are listed below:

- **Length:** 170 mm
- **Width:** 170 mm

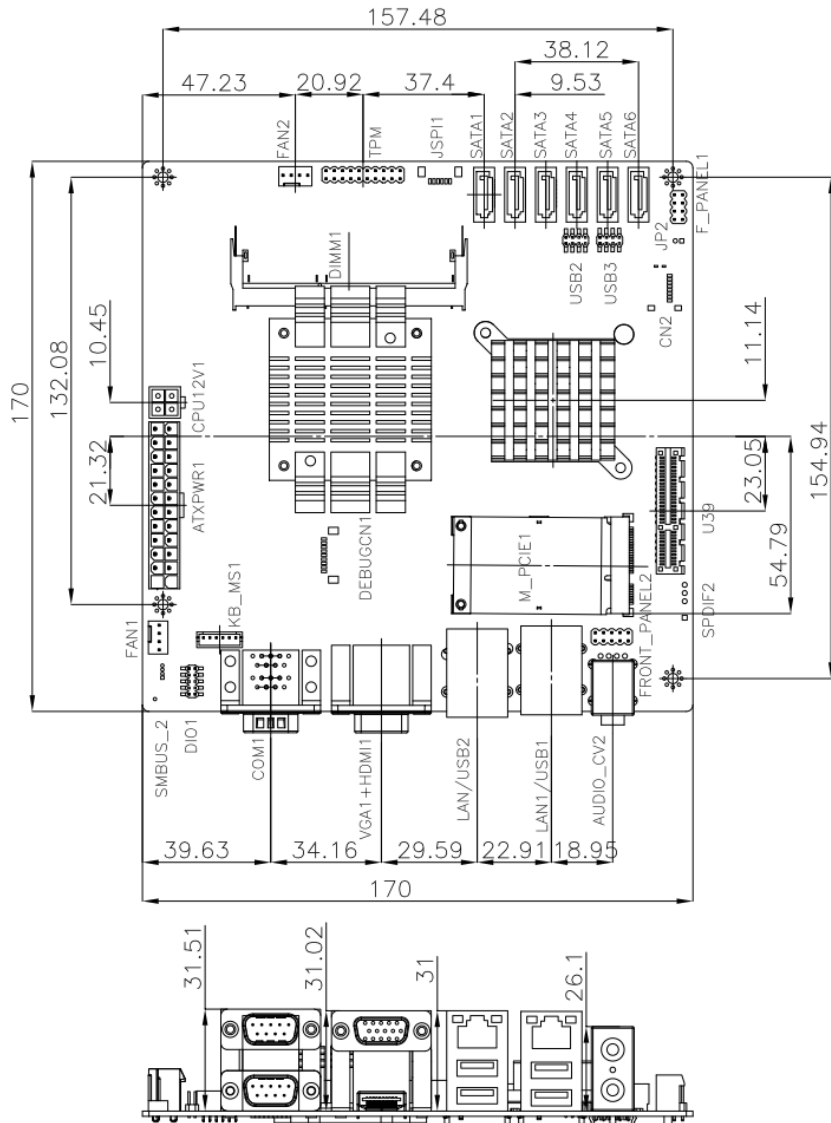


Figure 1-3: KINO-CVR-D25502/N26002 Dimensions (mm)

### 1.6 Data Flow

Figure 1-4 shows the data flow between the system chipset, the CPU and other components installed on the motherboard.

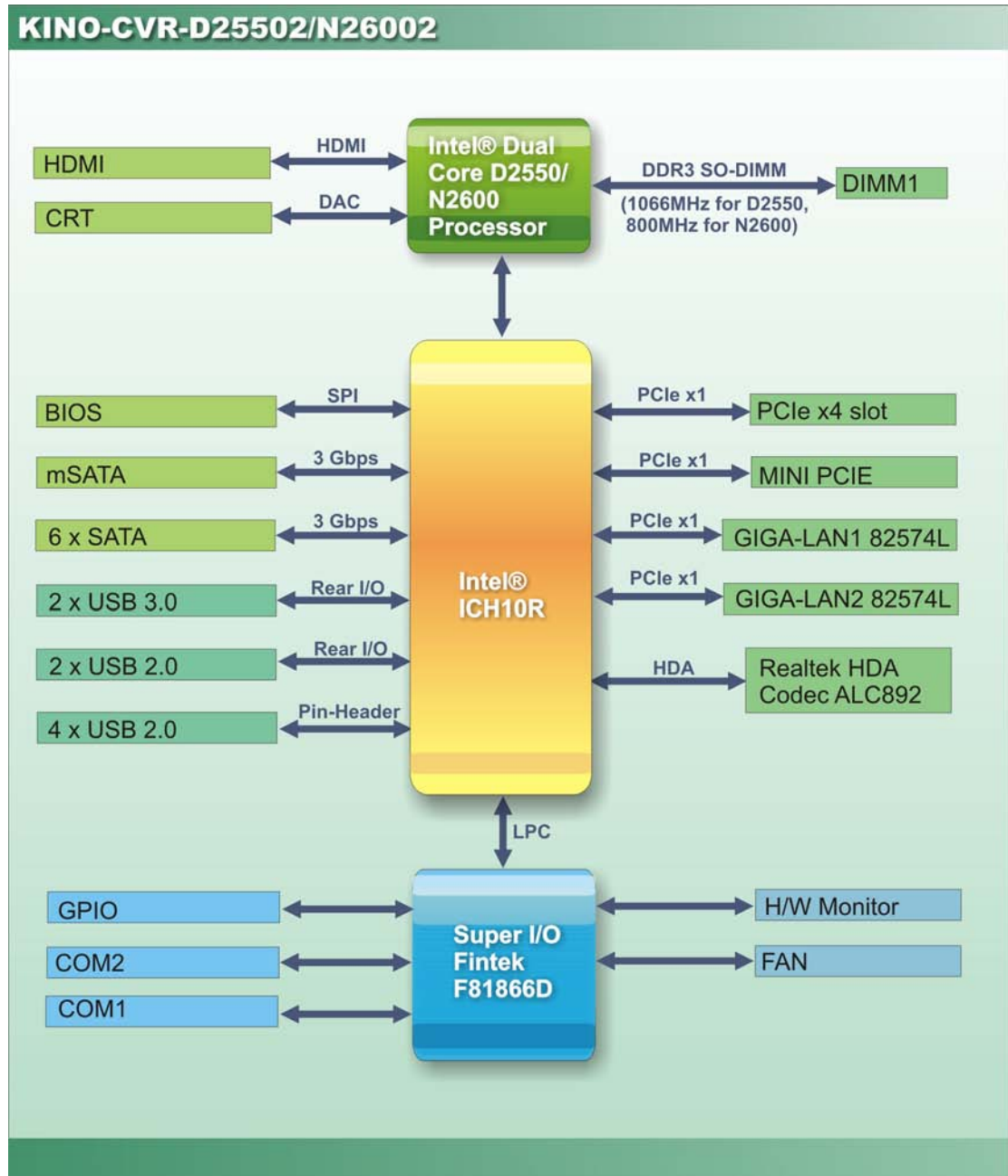


Figure 1-4: Data Flow Diagram

## KINO-CVR-D25502/N26002

### 1.7 Technical Specifications

KINO-CVR-D25502/N26002 technical specifications are listed below.

Specification	KINO-CVR-D25502/N26002
Form Factor	Mini ITX
CPU	1.86GHz Intel® Atom™ D2550 dual-core processor 1.6GHz Intel® Atom™ N2600 dual-core processor 1.86GHz Intel® Atom™ N2800 dual-core processor (Optional)
Chipset	Intel® ICH10R
Memory	1 x 1066MHz DDR3 SO-DIMM up to 4GB for D2550 and N2800 1 x 800MHz DDR3 SO-DIMM up to 2GB for N2600
Graphic	Graphic Core Speed 640MHz For D2550 and N2800 Graphic Core Speed 400MHz For N2600
Display Output	Dual display supported 1 x VGA 1 x HDMI
Audio	Realtek ALC662 HD Audio codec
Ethernet	Dual GbE Intel® 82574L controller
Super I/O	Fintek F81866
Digital I/O	8-bit digital I/O programmable
BIOS	UEFI BIOS
Watchdog Timer	Software programmable supports 1~255 sec. system reset by Super I/O
Expansions	
PCIe	One PCIe mini card compatible with mSATA SSD storage
	One PCIe4 slot (x1 signal)
microSD	One microSD slot
I/O Interface Connectors	
Audio Connector	One external audio jack (Line-out, Mic)

Specification	KINO-CVR-D25502/N26002
Ethernet	Two RJ-45 ports
TPM	One 20-pin header
Fan	One 4-pin CPU fan connector One 4-pin system fan connector
Serial Ports	Two external RS-232 via DB-9 male connectors
USB Ports	Two external USB 3.0 ports on rear IO Two external USB 2.0 ports on rear IO Four internal USB 2.0 ports via two 8-pin headers
Storage	
Serial ATA	Six SATA 3Gb/s with raid 0, 1, 5, 10 support
Environmental and Power Specifications	
Power Supply	ATX power supply, AT/ATX power mode
Power Consumption	5V@4.07A, 12V@0.18A, 3.3V@0.41A, 5VSB@0.05A (1.6GHz Intel® N2600 with 1333MHz 2GB DDR3 DIMM)
Operating Temperature	-20°C ~ 60°C for D2550 -20°C ~ 70°C for N2600 and N2800
Humidity	5% ~ 95% (non-condensing)
Physical Specifications	
Dimensions	170 mm x 170 mm
Weight GW/NW	600 g / 250 g

**Table 1-1: Technical Specifications**



Chapter

2

# Unpacking

---

## 2.1 Anti-static Precautions

---



### WARNING!

Static electricity can destroy certain electronics. Make sure to follow the ESD precautions to prevent damage to the product, and injury to the user.

---

Make sure to adhere to the following guidelines:

- **Wear an anti-static wristband:** Wearing an anti-static wristband can prevent electrostatic discharge.
- **Self-grounding:** Touch a grounded conductor every few minutes to discharge any excess static buildup.
- **Use an anti-static pad:** When configuring any circuit board, place it on an anti-static mat.
- **Only handle the edges of the PCB:** Don't touch the surface of the motherboard. Hold the motherboard by the edges when handling.

## 2.2 Unpacking Precautions

When the KINO-CVR-D25502/N26002 is unpacked, please do the following:

- Follow the antistatic guidelines above.
- Make sure the packing box is facing upwards when opening.
- Make sure all the packing list items are present.

## KINO-CVR-D25502/N26002







### 2.3 Packing List




#### NOTE:

If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor the KINO-CVR-D25502/N26002 was purchased from or contact an IEI sales representative directly by sending an email to [sales@iei.com.tw](mailto:sales@iei.com.tw).




The KINO-CVR-D25502/N26002 is shipped with the following components:

Quantity	Item and Part Number	Image
1	KINO-CVR-D25502/N26002 motherboard	
6	SATA cable (P/N: 32801-000703-200-RS)	
1	I/O shielding (P/N: 45014-0038C0-01-RS)	
1	Mini jumper pack (2.0mm)	
1	Utility CD	
1	One Key Recovery CD	

1	Quick Installation Guide	
---	--------------------------	---

## 2.4 Optional Items

The following are optional components which may be separately purchased:

Item and Part Number	Image
Dual-port USB cable with bracket <b>(P/N: 19800-003100-100-RS)</b>	
SATA power cable <b>(P/N: 32102-000100-200-RS)</b>	
20-pin Infineon TPM module, software management tool, firmware V3.17 <b>(P/N: TPM-IN01-R11)</b>	



Chapter

3

# Connectors

---

### 3.1 Peripheral Interface Connectors

This chapter details all the jumpers and connectors.

#### 3.1.1 KINO-CVR-D25502/N26002 Layout

The figures below show all the connectors and jumpers.

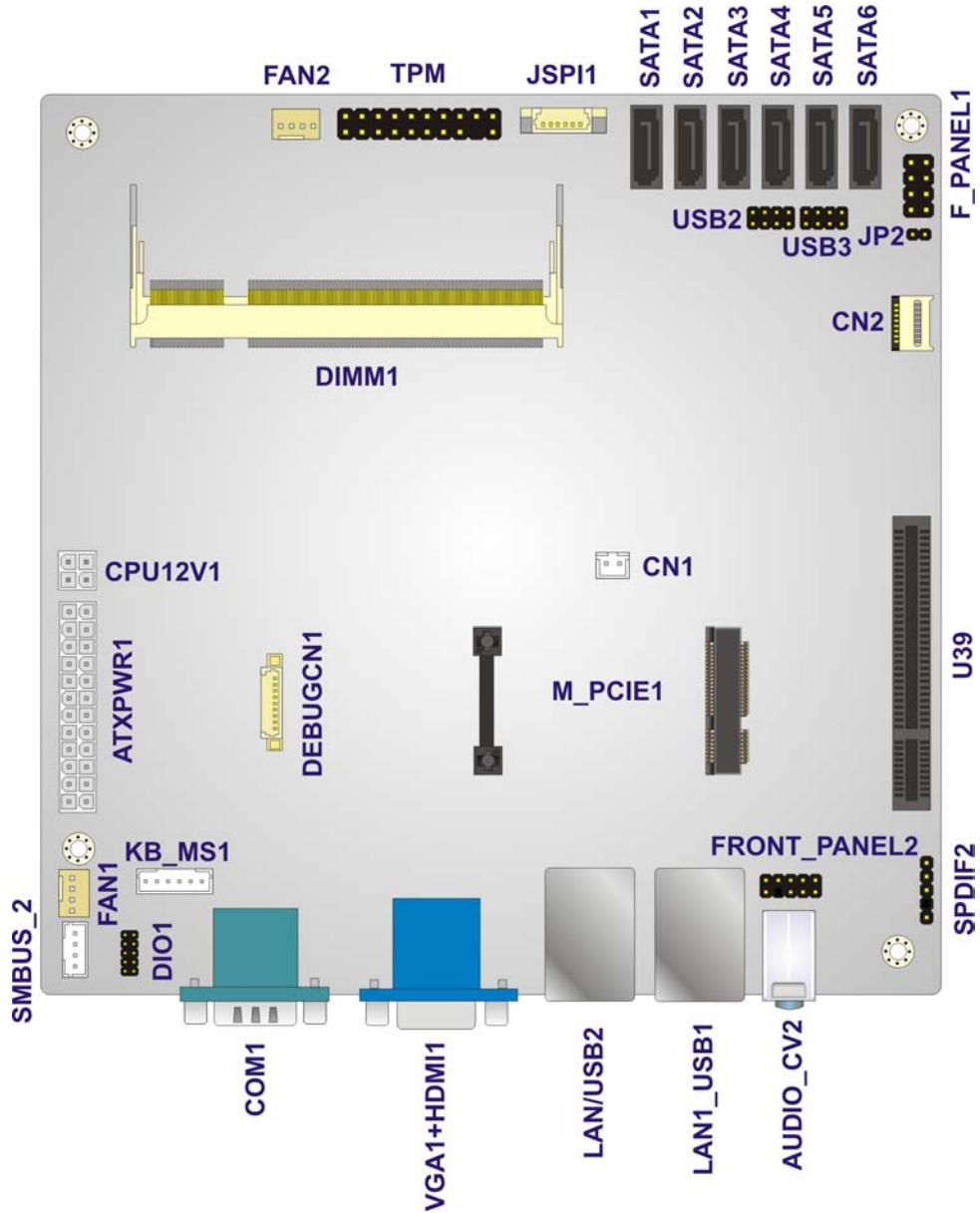


Figure 3-1: Connector and Jumper Locations

### 3.1.2 Peripheral Interface Connectors

The table below lists all the connectors on the board.

Connector	Type	Label
ATX power connector	24-pin ATX	ATXPWR1
Battery connector	2-pin wafer	CN1
BIOS programming connector	6-pin wafer	JSPI1
CPU fan connector	4-pin wafer	FAN1
CPU power connector	4-pin Molex	CPU12V1
DDR3 SO-DIMM slot	DDR3 SO-DIMM slot	DIMM1
Debug port connector	9-pin header	DEBUGCN1
Digital I/O connector	10-pin header	DIO1
Front panel audio connector	10-pin header	FRONT_PANEL2
Front Panel connector	8-pin header	F_PANEL1
Keyboard and mouse connector	6-pin wafer	KB_MS1
Micro SD card connector	Micro SD card slot	CN2
PCIe Mini card slot	PCIe Mini card slot	M_PCIE1
PCIe x4 slot	PCIe x4 slot	U39
SATA 3Gb/s drive connectors	7-pin SATA connector	SATA1, SATA2, SATA3, SATA4, SATA5, SATA6
SMBus connector	4-pin wafer	SMBUS_2
SPDIF connector	5-pin header	SPDIF2
System fan connector	4-pin wafer	FAN2
TPM connector	20-pin connector	TPM

USB connectors	8-pin header	USB2, USB3
----------------	--------------	------------

**Table 3-1: Peripheral Interface Connectors**

### 3.1.3 External Interface Panel Connectors

The table below lists the connectors on the external I/O panel.

Connector	Type	Label
Audio connector	Audio jack	AUDIO_CV2
Ethernet and USB connector	RJ-45, USB2.0, USB3.0	LAN1_USB1, LAN/USB2
RS-232 serial port connectors	DB-9 male	COM1
VGA and HDMI connector	15-pin female, HDMI type A	VGA1+HDMI1

**Table 3-2: Rear Panel Connectors**

## 3.2 Internal Peripheral Connectors

The section describes all of the connectors on the KINO-CVR-D25502/N26002.

### 3.2.1 ATX Power Connector

CN Label:	<b>ATXPWR1</b>
CN Type:	24-pin ATX
CN Location:	See <b>Figure 3-2</b>
CN Pinouts:	See <b>Table 3-3</b>

The ATX power connector connects to an ATX power supply.



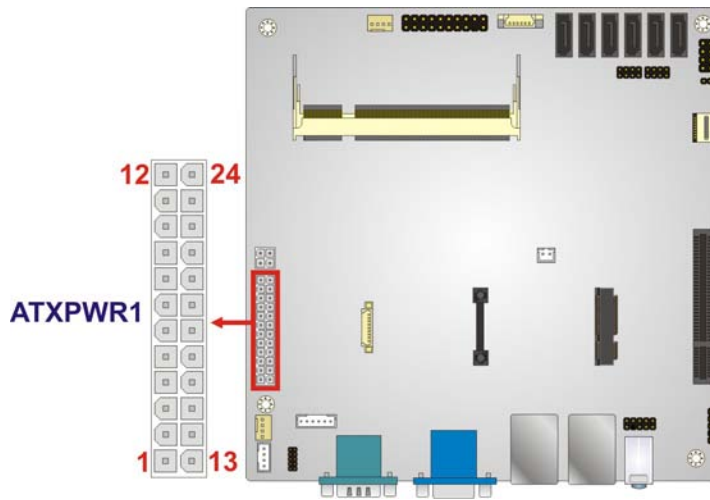


Figure 3-2: ATX Power Connector Location

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3 V	2	+3.3 V
3	GND	4	+5 V
5	GND	6	+5 V
7	GND	8	PWROK
9	5VSB	10	+12 V
11	+12 V	12	+3.3 V
13	+3.3 V	14	-12 V
15	GND	16	PSON
17	GND	18	GND
19	GND	20	N/A
21	+5 V	22	+5 V
23	+5 V	24	GND

Table 3-3: ATX Power Connector Pinouts

### 3.2.2 Battery Connector

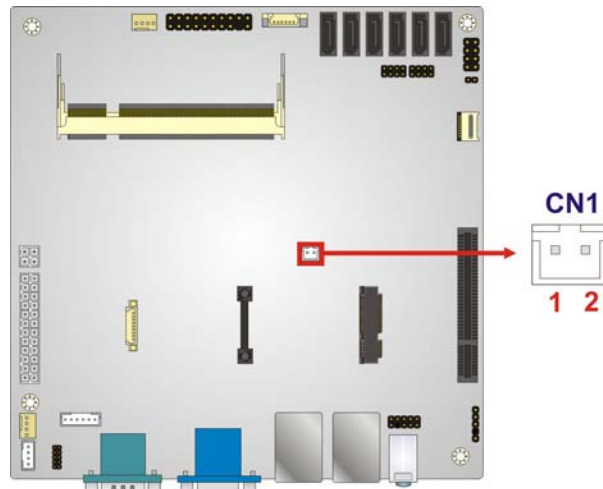
CN Label: **CN1**

CN Type: 2-pin wafer

CN Location: See **Figure 3-3**

CN Pinouts: See **Table 3-4**

The battery connector is connected to the system battery. The battery provides power to the system clock to retain the time when power is turned off.



**Figure 3-3: Battery Connector Location**

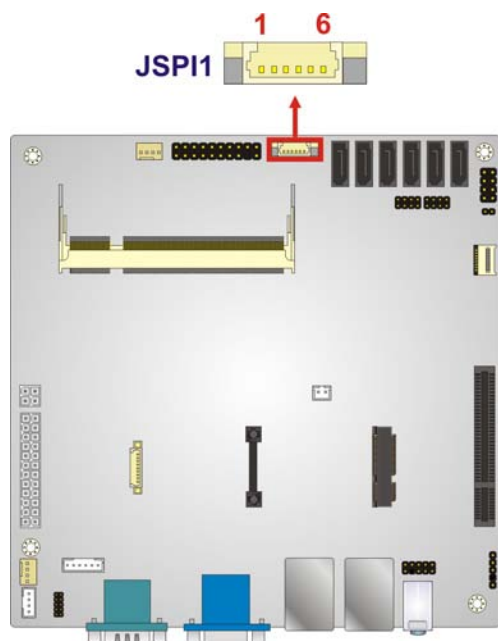
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	BAT	2	GND

**Table 3-4: Battery Connector Pinouts**

### 3.2.3 BIOS Programming Connector

CN Label: JSP11  
 CN Type: 6-pin wafer  
 CN Location: See **Figure 3-4**  
 CN Pinouts: See **Table 3-5**

The connector is for BIOS programming.



**Figure 3-4: BIOS Programming Connector Location**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPI_VCC	2	SPI_2N_CS#
3	SPI_2N_MISO	4	SPI_2N_CLK
5	SPI_2N_MOSI	6	GND

**Table 3-5: BIOS Programming Connector Pinouts**

### 3.2.4 CPU Fan Connector

- CN Label: FAN1
- CN Type: 4-pin wafer
- CN Location: See **Figure 3-5**
- CN Pinouts: See **Table 3-6**

The fan connector attaches to a CPU cooling fan.

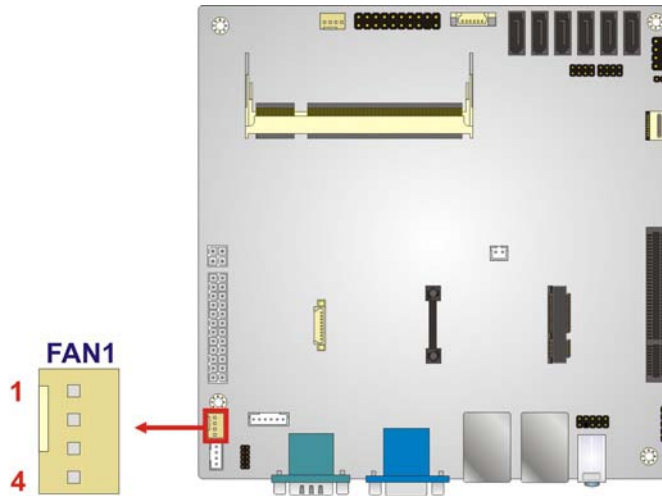


Figure 3-5: CPU Fan Connector Locations

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	FAN1VCC
3	FANIN1	4	FANOUT1

Table 3-6: CPU Fan Connector Pinouts

### 3.2.5 CPU Power Connector

- CN Label: CPU12V1
- CN Type: 4-pin Molex
- CN Location: See **Figure 3-6**
- CN Pinouts: See **Table 3-7**

The CPU power connector provides power to the CPU.



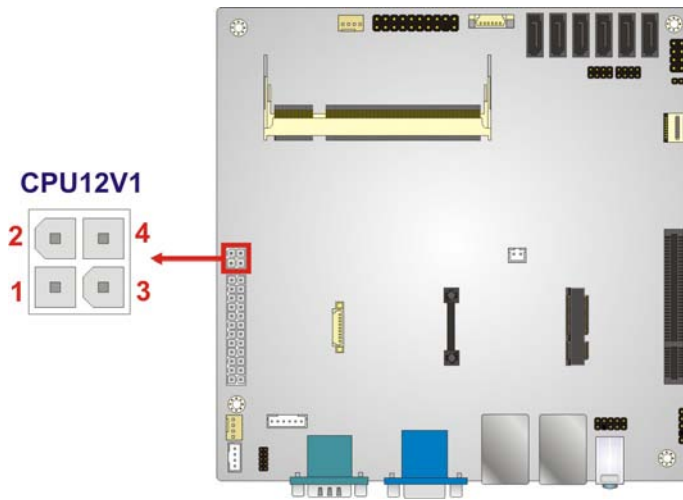


Figure 3-6: CPU Power Connector Location

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

Table 3-7: CPU Power Connector Pinouts

### 3.2.6 DDR3 SO-DIMM Slot

- CN Label: DIMM1
- CN Type: DDR3 SO-DIMM slot
- CN Location: See **Figure 3-7**

The DDR3 SO-DIMM slot is for DDR3 SO-DIMM memory module.

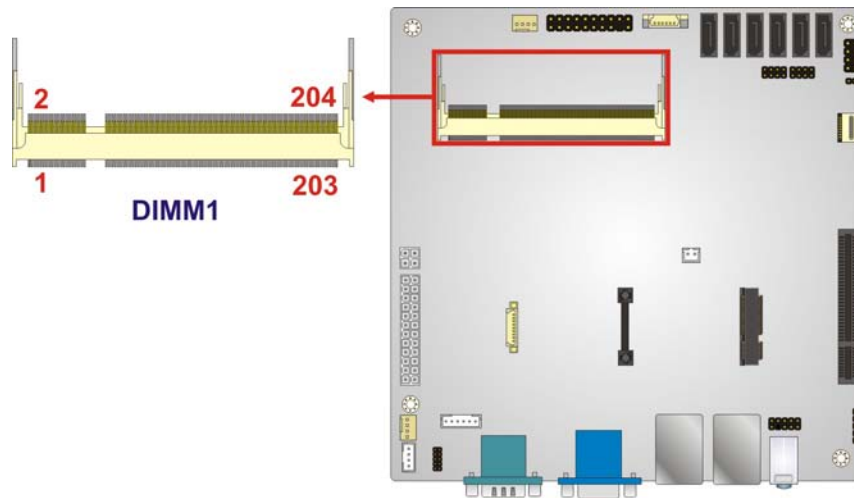


Figure 3-7: DDR3 SO-DIMM Slot Locations

### 3.2.7 Debug Port Connector

- CN Label: **DEBUGCN1**
- CN Type: 9-pin header
- CN Location: See **Figure 3-8**
- CN Pinouts: See **Table 3-8**

The debug port connector is for system debug.

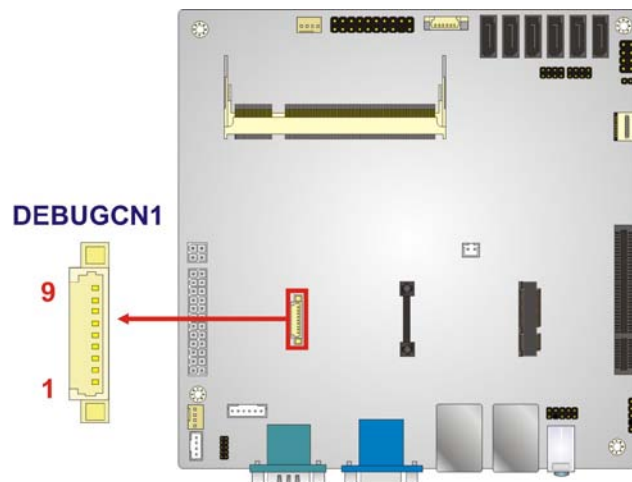


Figure 3-8: Debug Port Connector Location

## KINO-CVR-D25502/N26002

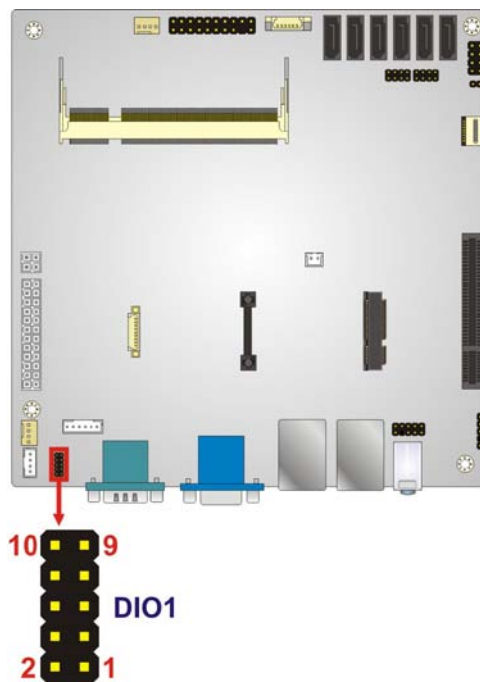
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PLT_RST#	2	FWHPCLK
3	GND	4	LAD3
5	LAD2	6	LAD1
7	LAD0	8	LF_FWH4
9	VCC3		

**Table 3-8: Debug Port Connector Pinouts**

### 3.2.8 Digital I/O Connector

CN Label:	<b>DIO1</b>
CN Type:	10-pin header
CN Location:	See <b>Figure 3-9</b>
CN Pinouts:	See <b>Table 3-9</b>

The digital I/O connector provides programmable input and output for external devices. The digital I/O provides 4-bit output and 4-bit input.



**Figure 3-9: Digital I/O Connector Location**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC5
3	DGPO3	4	DGPO2
5	DGPO1	6	DGPO0
7	DGPI3	8	DGPI2
9	DGPI1	10	DGPI0

**Table 3-9: Digital I/O Connector Pinouts**

### 3.2.9 Front Panel Audio Connector

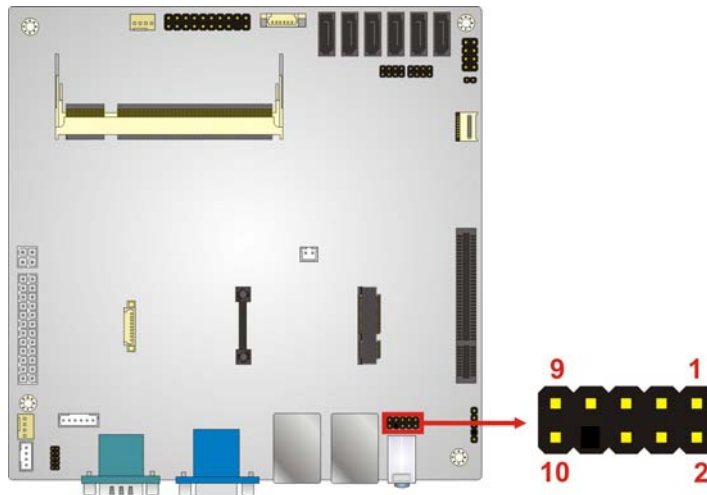
CN Label: FRONT\_PANEL2

CN Type: 10-pin header

CN Location: See **Figure 3-10**

CN Pinouts: See **Table 3-10**

The front panel audio connector connects to speakers, a microphone and an audio input.



**Figure 3-10: Front Panel Audio Connector Location**

Pin	Description	Pin	Description
1	LMIC2-L	2	Analog_GND
3	LMIC2-R	4	PRESENCE#
5	LLINE2-R	6	MIC2-JD



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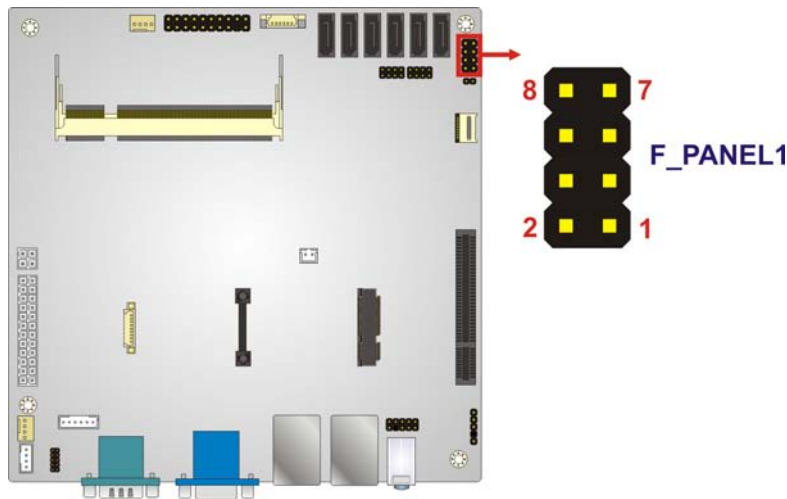
Pin	Description	Pin	Description
7	FRONT-IO	8	NC
9	LLINE2-L	10	LINE2-JD

**Table 3-10: Front Panel Audio Connector Pinouts**

### 3.2.10 Front Panel Connector

CN Label: F\_PANEL1  
 CN Type: 8-pin header  
 CN Location: See **Figure 3-11**  
 CN Pinouts: See **Table 3-11**

The front panel connector connects to the indicator LEDs and buttons on the computer's front panel.



**Figure 3-11: Front Panel Connector Location**

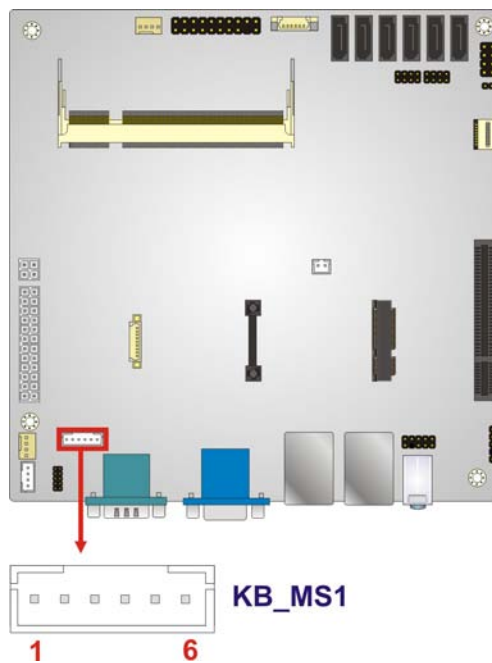
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PWRBTSW#	2	PWRLED
3	GND	4	GND
5	VCC5	6	SYSRST
7	SATA_LED	8	GND

**Table 3-11: Front Panel Connector Pinouts**

### 3.2.11 Keyboard/Mouse Connector

- CN Label: KB\_MS1
- CN Type: 6-pin wafer
- CN Location: See **Figure 3-12**
- CN Pinouts: See **Table 3-12**

The keyboard/mouse connector connects to a PS/2 Y-cable that can be connected to a PS/2 keyboard and mouse.



**Figure 3-12: Keyboard/Mouse Connector Location**

Pin	Description
1	VCC5_KBMS
2	MSDATA
3	MSCLK
4	KBDATA
5	KBCLK
6	GND

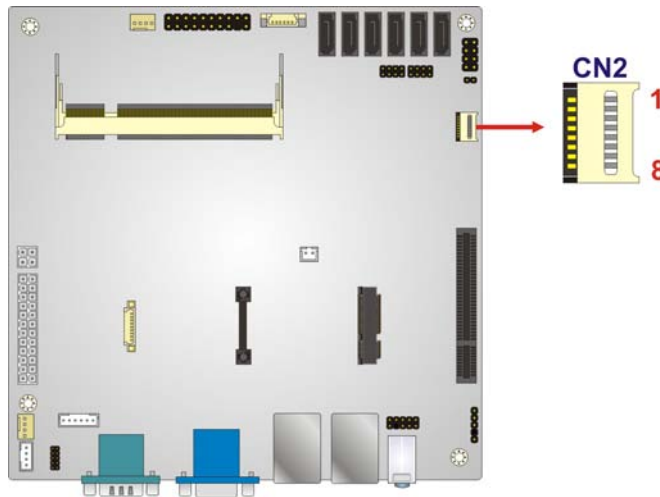
**Table 3-12: Keyboard/Mouse Connector Pinouts**

## KINO-CVR-D25502/N26002

### 3.2.12 Micro SD Card Connector

CN Label:	CN2
CN Type:	Micro SD card slot
CN Location:	See <b>Figure 3-13</b>
CN Pinouts:	See <b>Table 3-13</b>

The Micro SD card slot is for installing Micro SD cards.



**Figure 3-13: Micro SD Card Slot Location**

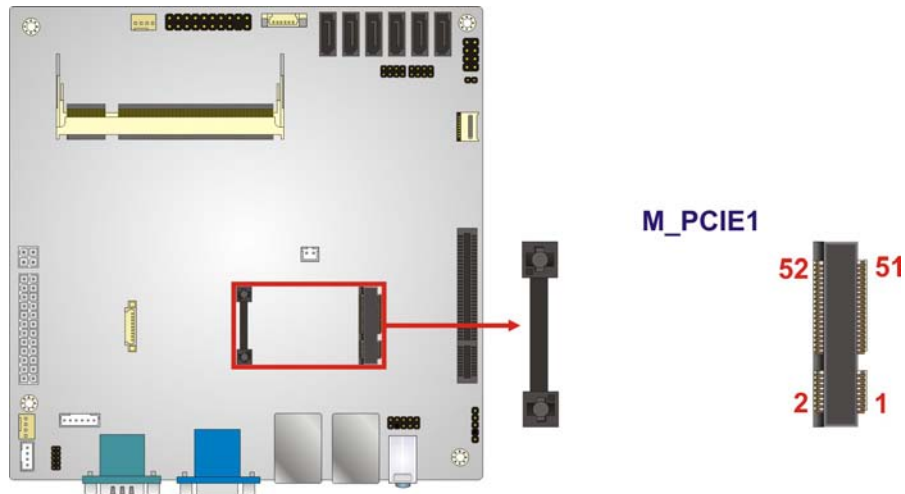
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	D2	2	D3
3	SD_CMD	4	PMOS
5	SD_CLK	6	GND
7	D0	8	D1

**Table 3-13: SMBus Connector Pinouts**

### 3.2.13 PCIe Mini Card Slot

CN Label:	M_PCIE1
CN Type:	PCIe mini card slot
CN Location:	See <b>Figure 3-14</b>

The PCIe mini card slot enables a PCIe mini card expansion module to be connected to the board. Cards supported include wireless LAN (WLAN) cards and mSATA SSD cards.

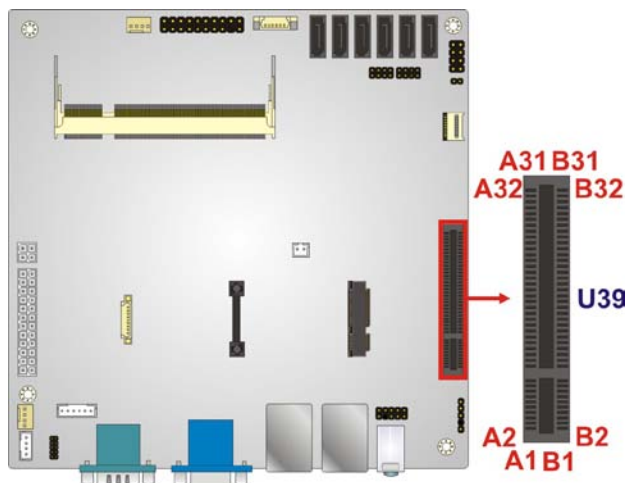


**Figure 3-14: PCIe Mini Card Slot Location**

### 3.2.14 PCIe x4 Slot

CN Label: U39  
 CN Type: PCIe x4 slot  
 CN Location: See **Figure 3-15**

The PCIe x4 slot with PCIe x1 signal is for PCIe x1 expansion cards.



**Figure 3-15: PCIe x4 Slot Location**



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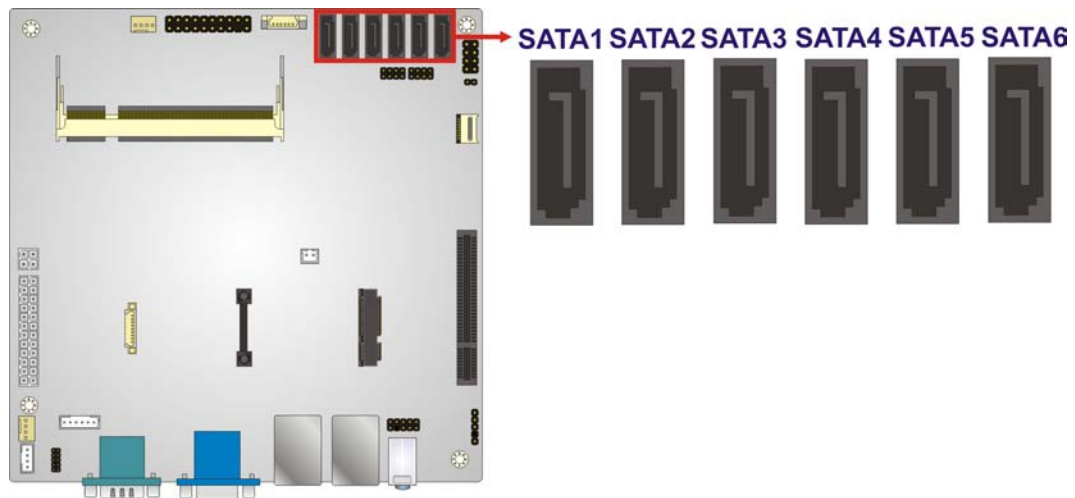
### 3.2.15 SATA 3Gb/s Drive Connectors

CN Label: **SATA1, SATA2, SATA3, SATA4, SATA5, SATA6**

CN Type: 7-pin SATA connector

CN Location: See **Figure 3-16**

The two SATA 3Gb/s drive connectors are each connected to a SATA 3Gb/s drive. The SATA 3Gb/s drives transfer data at speeds as high as 3Gb/s.



**Figure 3-16: SATA 3Gb/s Drive Connector Location**

### 3.2.16 SMBUS Connector

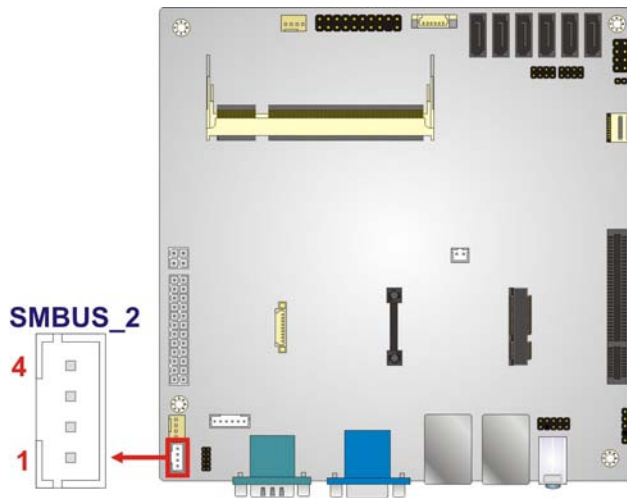
CN Label: SMBUS\_2

CN Type: 4-pin wafer

CN Location: See **Figure 3-17**

CN Pinouts: See **Table 3-14**

The SMBus (System Management Bus) connector provides low-speed system management communications.



**Figure 3-17: SMBus Connector Location**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC5DUAL	2	SMBCLK
3	SMBDATA	4	GND

**Table 3-14: SMBus Connector Pinouts**

### 3.2.17 SPDIF Connector

- CN Label: SPDIF2
- CN Type: 5-pin header
- CN Location: See **Figure 3-18**
- CN Pinouts: See **Table 3-15**

Use the SPDIF connector to connect digital audio devices to the system.

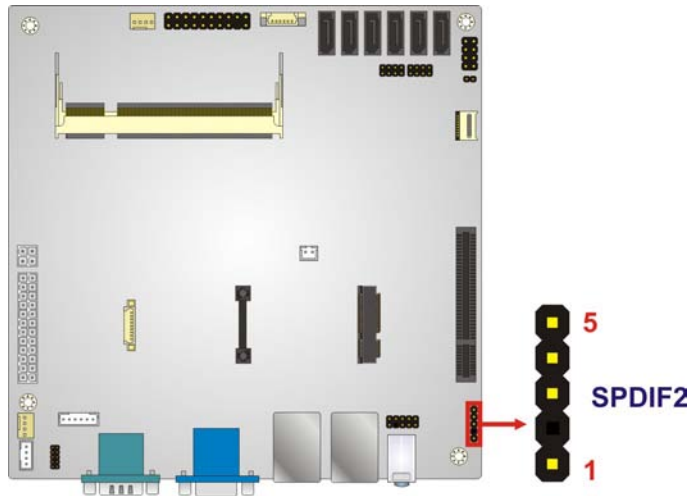


Figure 3-18: SPDIF Connector Location

PIN	DESCRIPTION
1	VCC5
2	NC
3	SPDIFOUT
4	GND
5	NC

Table 3-15: SPDIF Connector Pinouts

### 3.2.18 System Fan Connector

- CN Label: FAN2
- CN Type: 4-pin wafer
- CN Location: See **Figure 3-19**
- CN Pinouts: See **Table 3-16**

The fan connector connects to a system cooling fan.

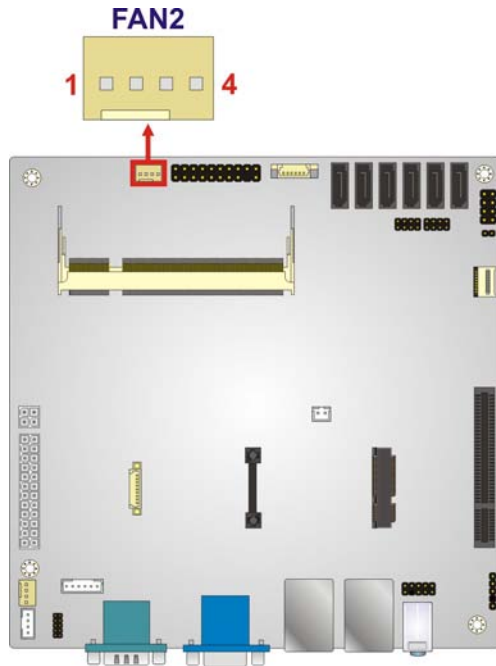


Figure 3-19: System Fan Connector Location

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+V12S_FAN
3	FANIN1	4	FANOUT1

Table 3-16: System Fan Connector Pinouts

### 3.2.19 TPM Connector

- CN Label: TPM
- CN Type: 20-pin connector
- CN Location: See **Figure 3-20**
- CN Pinouts: See **Table 3-17**

The Trusted Platform Module (TPM) connector secures the system on bootup.



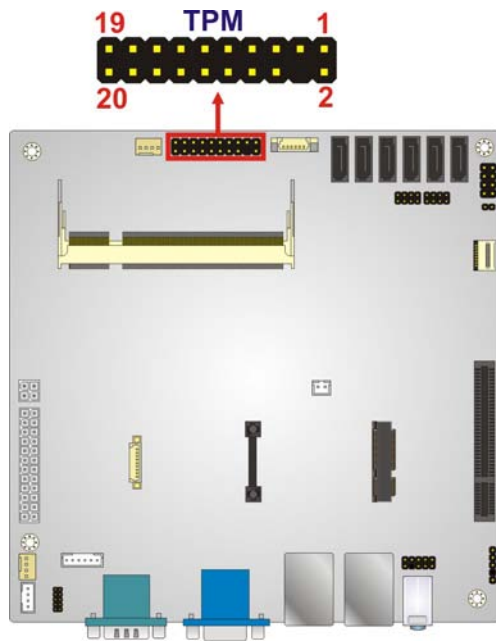


Figure 3-20: TPM Connector Location

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TPMPCLK	2	GND
3	LF_FWH4	4	NC
5	PLT_RST#	6	VCC5
7	LAD3	8	LAD2
9	VCC3	10	LAD1
11	LAD0	12	GND
13	DDR_SMBCLK	14	DDR_SMBDATA
15	VCC3SBY	16	SERIRQ
17	NC	18	VCC3
19	LPCPD_N	20	LDRO#0

Table 3-17: TPM Connector Pinouts

### 3.2.20 USB Connectors

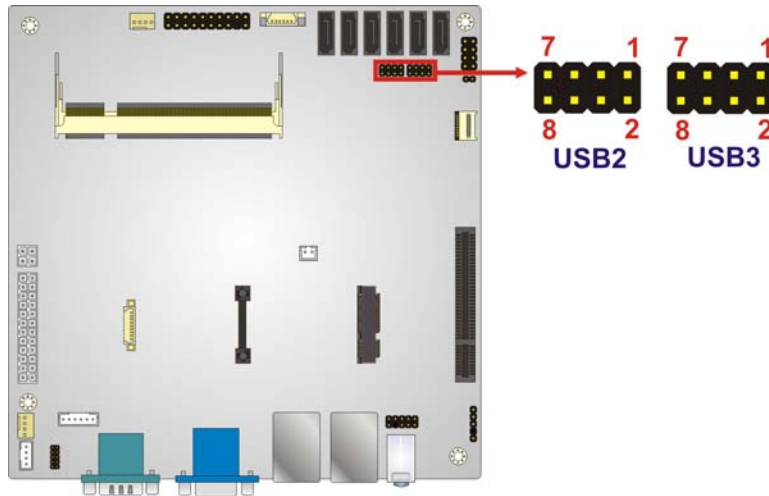
CN Label: **USB2, USB3**

CN Type: 8-pin header

CN Location: See **Figure 3-21**

CN Pinouts: See **Table 3-18**

The USB connectors connect to USB devices. Each pin header provides two USB ports.



**Figure 3-21: USB Connector Locations**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	DATA2/4N	4	DATA3/5P
5	DATA2/4P	6	DATA3/5N
7	GND	8	VCC

**Table 3-18: USB Connector Pinouts**

### 3.3 External Peripheral Interface Connector Panel

**Figure 3-22** shows the KINO-CVR-D25502/N26002 external peripheral interface connector (EPIC) panel. The EPIC panel consists of the following:

- 2 x Audio jacks
- 2 x Ethernet connectors
- 1 x HDMI connector
- 2 x RS-232 serial port connectors
- 2 x USB 2.0 connectors

## KINO-CVR-D25502/N26002

- 2 x USB 3.0 connectors
- 1 x VGA connector

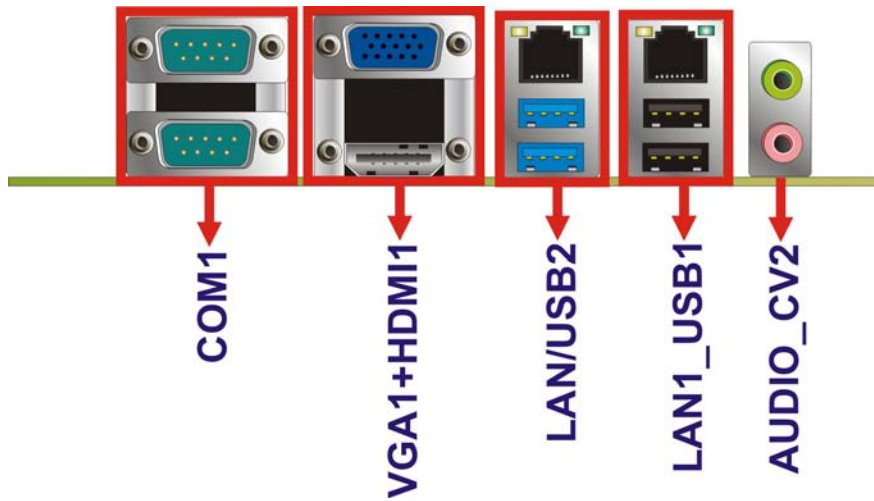


Figure 3-22: KINO-CVR-D25502/N26002 External Peripheral Interface Connector

### 3.3.1 Audio Connector

CN Label: AUDIO\_CV2  
 CN Type: Audio jack  
 CN Location: See **Figure 3-22**

The audio jacks connect to external audio devices.

- **Line-out port (Lime):** Connects to a headphone or a speaker. With multi-channel configurations, this port can also connect to front speakers.
- **Microphone (Pink):** Connects a microphone.

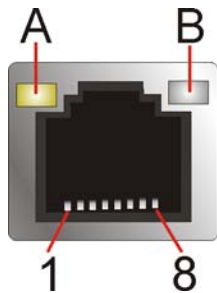


Figure 3-23: Audio Connector

### 3.3.2 Ethernet and USB Connectors

- CN Label:           **LAN1\_USB1, LAN/USB2**
- CN Type:            RJ-45 , USB 2.0 and USB 3.0 ports
- CN Location:        See **Figure 3-22**
- CN Pinouts:         See **Figure 3-24 , Table 3-19 and Table 3-20**

The LAN connector connects to a local network.



**Figure 3-24: LAN Connector**

The USB 2.0 ports are for attaching USB 2.0 peripheral devices to the system. The pinouts of LAN1 and USB 2.0 connectors are shown below.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
R1	1_9VLAN4	R2	LAN2_MDIO+
R3	LAN2_MDIO-	R4	LAN2_MDI1+
R5	LAN2_MDI1-	R6	LAN2_MDI2+
R7	LAN2_MDI2-	R8	LAN2_MDI3+
R9	LAN2_MDI3-	R10	GND
P11	LAN11	P12	LAN12
P13	LAN13	P14	LAN14
G1	GND	G2	GND
G3	GND	G4	GND
G5	GND	G5	GND
G7	GND	G8	GND
1	VCC	2	DATA0_N



3	DATA0_P	4	GND
5	VCC	6	DATA1_N
7	DATA1_P	8	GND

**Table 3-19: LAN1\_USB1 Connector Pinouts**

The USB 3.0 ports are for attaching USB 3.0 peripheral devices to the system. To be able to use the USB 3.0 ports, please make sure the USB 3.0 function is enabled in BIOS (see **Section 5.3.5**). The pinouts of LAN2 and USB 3.0 connectors are shown below.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
P1	1_9VLAN3	P2	LAN1_MDIO+
P3	LAN1_MDIO-	P4	LAN1_MDI1+
P5	LAN1_MDI1-	P6	LAN1_MDI2+
P7	LAN1_MDI2-	P8	LAN1_MDI3+
P9	LAN1_MDI3-	P10	GND
L1	L1	L2	L2
L3	L3	L4	L4
P15	GND	P16	GND
9	GND	10	GND
11	GND	12	GND
13	GND	14	GND
15	GND	16	GND
U1	VCC	U2	USB2.0A-
U3	USB2.0A+	U4	GND
U5	USB3.0ARX-	U6	USB3.0ARX+
U7	GND	U8	USB3.0ATX-
U9	USB3.0ATX+	U10	VCC
U11	USB2.0A-	U12	USB2.0A+
U13	GND	U14	USB3.0ARX-
U15	USB3.0ARX+	U16	GND
U17	USB3.0ATX-	U18	USB3.0ATX+

**Table 3-20: LAN/USB2 Connector Pinouts**

### 3.3.3 HDMI Connector

- CN Label:** HDMI1
- CN Type:** HDMI type A connector
- CN Location:** See **Figure 3-22**
- CN Pinouts:** See **Table 3-21**

The HDMI (High-Definition Multimedia Interface) connector connects to digital audio or video sources.

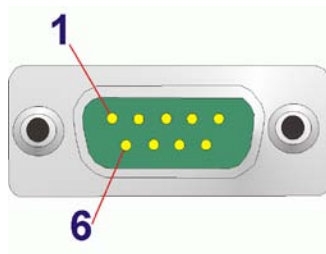
PIN	DESCRIPTION	PIN	DESCRIPTION
1	HDMI_DATA2-1_L	2	GND
3	HDMI_DATA2#-1_L	4	HDMI_DATA1-1_L
5	GND	6	HDMI_DATA1#-1_L
7	HDMI_DATA0-1_L	8	GND
9	HDMI_DATA0#-1_L	10	HDMI_CLK-1_L
11	GND	12	HDMI_CLK#-1_L
13	NC	14	NC
15	HDMI_SCL-1	16	HDMI_SDA-1
17	GND	18	VCC5
19	HDMI_HPD-1		

**Table 3-21: HDMI Connector Pinouts**

### 3.3.4 RS-232 Serial Port Connectors

- CN Label:** COM1
- CN Type:** DB-9 Male
- CN Location:** See **Figure 3-22**
- CN Pinouts:** See **Figure 3-25** and **Table 3-22**

The serial port connects to a RS-232 serial communications device.



**Figure 3-25: RS-232 Serial Port Connector**

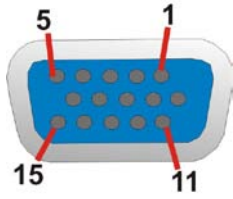
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD1	2	NRX1
3	NTX1	4	NDTR1
5	GND	6	NDSR1
7	NRTS1	8	NCTS1
9	NRI1	10	NDCD2
11	NRX2	12	NTX2
13	NDTR2	14	GND
15	NDSR2	16	NRTS2
17	NCTS2	18	NRI2

**Table 3-22: RS-232 Serial Port Connector Pinouts**

### 3.3.5 VGA Connector

- CN Label: VGA1
- CN Type: 15-pin female
- CN Location: See **Figure 3-22**
- CN Pinouts: See **Figure 3-26** and **Table 3-23**

The VGA port connects to a monitor that accepts a standard VGA input.



**Figure 3-26: VGA Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	VGAVCC	10	HOTPLUG
11	NC	12	DCCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

**Table 3-23: VGA Connector Pinouts**



Chapter

4

# Installation

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## 4.1 Anti-static Precautions

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### **WARNING:**

Failure to take ESD precautions during the installation of the KINO-CVR-D25502/N26002 may result in permanent damage to the KINO-CVR-D25502/N26002 and severe injury to the user.

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Electrostatic discharge (ESD) can cause serious damage to electronic components, including the KINO-CVR-D25502/N26002. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the KINO-CVR-D25502/N26002 or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- ***Self-grounding:*** Before handling the board, touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** When configuring the KINO-CVR-D25502/N26002, place it on an anti-static pad. This reduces the possibility of ESD damaging the KINO-CVR-D25502/N26002.
- ***Only handle the edges of the PCB:*** When handling the PCB, hold the PCB by the edges.

## KINO-CVR-D25502/N26002

### 4.2 Installation Considerations

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#### NOTE:

The following installation notices and installation considerations should be read and understood before the KINO-CVR-D25502/N26002 is installed. All installation notices pertaining to the installation of the KINO-CVR-D25502/N26002 should be strictly adhered to. Failing to adhere to these precautions may lead to severe damage of the KINO-CVR-D25502/N26002 and injury to the person installing the motherboard.

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#### WARNING:

The installation instructions described in this manual should be carefully followed in order to prevent damage to the KINO-CVR-D25502/N26002, KINO-CVR-D25502/N26002 components and injury to the user.

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Before and during the installation please **DO** the following:

- Read the user manual:
  - The user manual provides a complete description of the KINO-CVR-D25502/N26002 installation instructions and configuration options.
- Wear an electrostatic discharge cuff (ESD):
  - Electronic components are easily damaged by ESD. Wearing an ESD cuff removes ESD from the body and helps prevent ESD damage.
- Place the KINO-CVR-D25502/N26002 on an antistatic pad:
  - When installing or configuring the motherboard, place it on an antistatic pad. This helps to prevent potential ESD damage.
- Turn all power to the KINO-CVR-D25502/N26002 off:

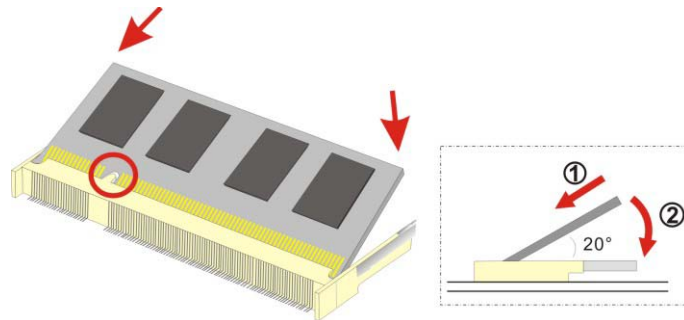
- When working with the KINO-CVR-D25502/N26002, make sure that it is disconnected from all power supplies and that no electricity is being fed into the system.

Before and during the installation of the KINO-CVR-D25502/N26002 **DO NOT:**

- Remove any of the stickers on the PCB board. These stickers are required for warranty validation.
- Use the product before verifying all the cables and power connectors are properly connected.
- Allow screws to come in contact with the PCB circuit, connector pins, or its components.

### 4.3 SO-DIMM Installation

To install a SO-DIMM into a SO-DIMM socket, please follow the steps below and refer to **Figure 4-1**.



**Figure 4-1: SO-DIMM Installation**

- Step 1:** **Locate the SO-DIMM socket.** Place the KINO-CVR-D25502/N26002 on an anti-static pad with the solder side facing up.
- Step 2:** **Align the SO-DIMM with the socket.** The SO-DIMM must be oriented in such a way that the notch in the middle of the SO-DIMM must be aligned with the plastic bridge in the socket.
- Step 3:** **Insert the SO-DIMM.** Push the SO-DIMM chip into the socket at an angle. (See **Figure 4-1**)



## KINO-CVR-D25502/N26002

**Step 4:** **Open the SO-DIMM socket arms.** Gently pull the arms of the SO-DIMM socket out and push the rear of the SO-DIMM down. (See **Figure 4-1**)

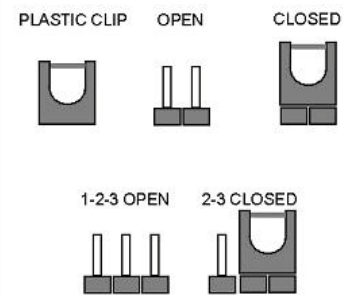
**Step 5:** **Secure the SO-DIMM.** Release the arms on the SO-DIMM socket. They clip into place and secure the SO-DIMM in the socket.

### 4.4 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.



**Figure 4-2: Jumper Locations**

Before the KINO-CVR-D25502/N26002 is installed in the system, the jumpers must be set in accordance with the desired configuration. The jumpers on the KINO-CVR-D25502/N26002 are listed in **Table 4-1**.

Description	Type	Label
AT/ATX mode select	2-pin header	JP2

**Table 4-1: Jumpers**

#### 4.4.1 AT/ATX Mode Select Jumper

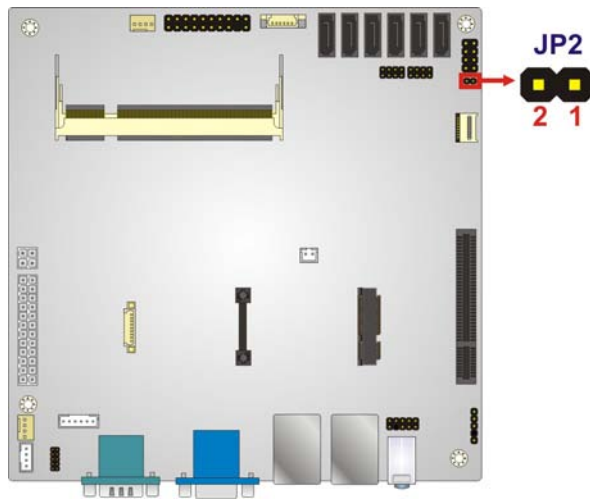
Jumper Label:	<b>JP2</b>
Jumper Type:	2-pin header
Jumper Settings:	See <b>Table 4-2</b>
Jumper Location:	See <b>Figure 4-3</b>

The AT/ATX mode select jumper specifies the systems power mode as AT or ATX. AT/ATX mode select jumper settings are shown in **Table 4-2**.

Setting	Description	
Open	AT Mode	
Short	ATX Mode	Default

**Table 4-2: AT/ATX Mode Select Jumper Settings**

The location of the AT/ATX mode select jumper is shown in **Figure 4-3** below.



**Figure 4-3: AT/ATX Mode Select Jumper Location**

## 4.5 Internal Peripheral Device Connections

This section outlines the installation of peripheral devices to the on-board connectors

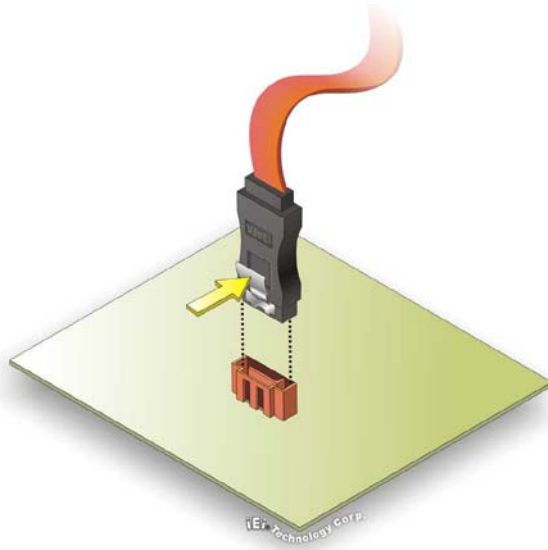
### 4.5.1 SATA Drive Connection

The KINO-CVR-D25502/N26002 is shipped with two SATA drive cables and one SATA drive power cable. To connect the SATA drives to the connectors, please follow the steps below.

**Step 1: Locate the connectors.** The locations of the SATA drive connectors are shown in **Chapter 3**.

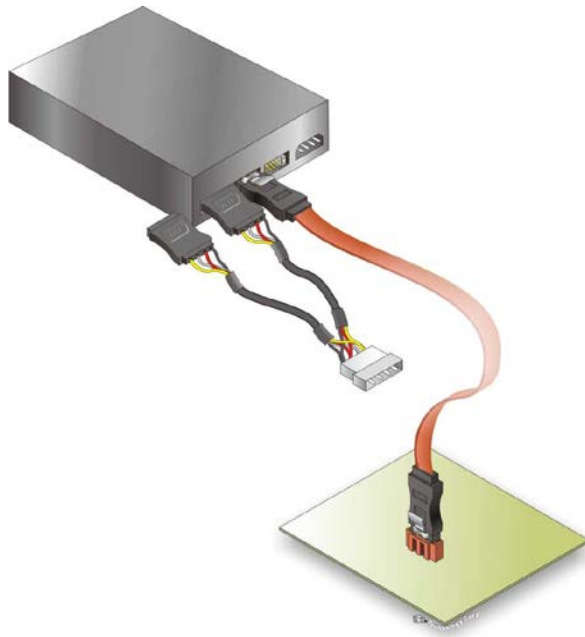
**KINO-CVR-D25502/N26002**

- Step 2: Insert the cable connector.** Press the clip on the connector at the end of the SATA cable and insert the cable connector into the on-board SATA drive connector. See **Figure 4-4**.



**Figure 4-4: SATA Drive Cable Connection**

- Step 3: Connect the cable to the SATA disk.** Connect the connector on the other end of the cable to the connector at the back of the SATA drive. See **Figure 4-5**.
- Step 4: Connect the SATA power cable.** Connect the SATA power connector to the back of the SATA drive. See **Figure 4-5**.



**Figure 4-5: SATA Power Drive Connection**

## 4.6 External Peripheral Interface Connection

The following external peripheral devices can be connected to the external peripheral interface connectors.

- Audio devices
- HDMI devices
- RJ-45 Ethernet cable connector
- Serial port devices
- USB devices
- VGA monitor

To install these devices, connect the corresponding cable connector from the actual device to the corresponding KINO-CVR-D25502/N26002 external peripheral interface connector making sure the pins are properly aligned.

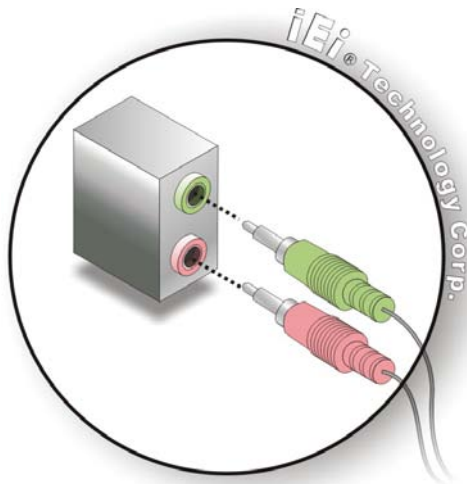


## KINO-CVR-D25502/N26002

### 4.6.1 Audio Connection

The audio jacks on the external audio connector enable the KINO-CVR-D25502/N26002 to be connected to a stereo sound setup. To install the audio devices, follow the steps below.

- Step 1: Identify the audio plugs.** The plugs on your home theater system or speakers may not match the colors on the rear panel. If audio plugs are plugged into the wrong jacks, sound quality will be very bad.
- Step 2: Plug the audio plugs into the audio jacks.** Plug the audio plugs into the audio jacks. If the plugs on your speakers are different, an adapter will need to be used to plug them into the audio jacks.
- **Line Out port (Lime):** Connects to a headphone or a speaker.
  - **Microphone (Pink):** Connects to a microphone.



**Figure 4-6: Audio Connector**

- Step 3: Check audio clarity.** Check that the sound is coming through the right speakers by adjusting the balance front to rear and left to right.

### 4.6.2 HDMI Display Device Connection

The KINO-CVR-D25502/N26002 has one female HDMI connector on the external peripheral interface panel. The HDMI connectors are connected to digital display devices.

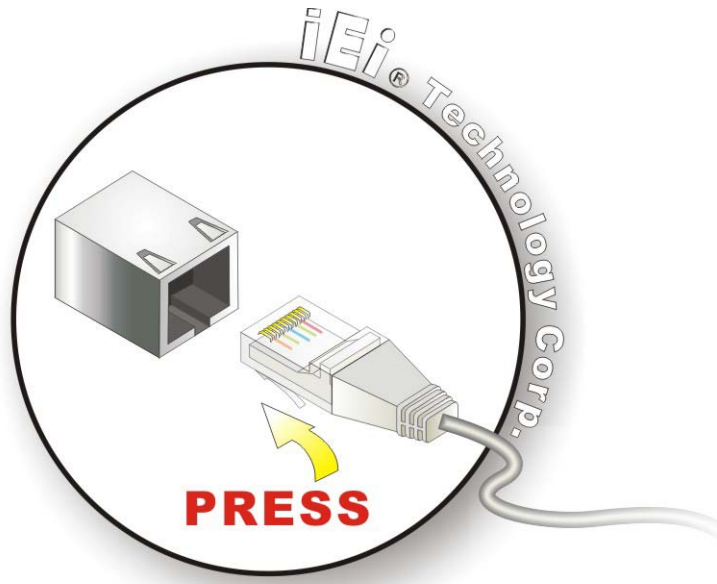
To connect a digital display device to the KINO-CVR-D25502/N26002, please follow the instructions below.

- Step 1: Locate the HDMI connector.** The location of the HDMI connector is shown in another chapter.
- Step 2: Align the HDMI connector.** Align the male HDMI connector on the digital display device cable with the female HDMI connector on the external peripheral interface.
- Step 3: Insert the HDMI connector** Once the connectors are properly aligned with the male connector, insert the male connector from the digital display device into the female connector on the KINO-CVR-D25502/N26002.
- Step 4: Secure the connector.** Secure the HDMI connector from the digital display device to the external interface by tightening the two retention screws on either side of the connector.

#### 4.6.3 LAN Connection

There are two external RJ-45 LAN connectors. 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 connectors.** The location of the LAN connectors is shown in **Chapter 3**.
- Step 2: Align the connectors.** Align the RJ-45 connector on the LAN cable with one of the RJ-45 connectors on the KINO-CVR-D25502/N26002. See **Figure 4-7**.



**Figure 4-7: LAN Connection**

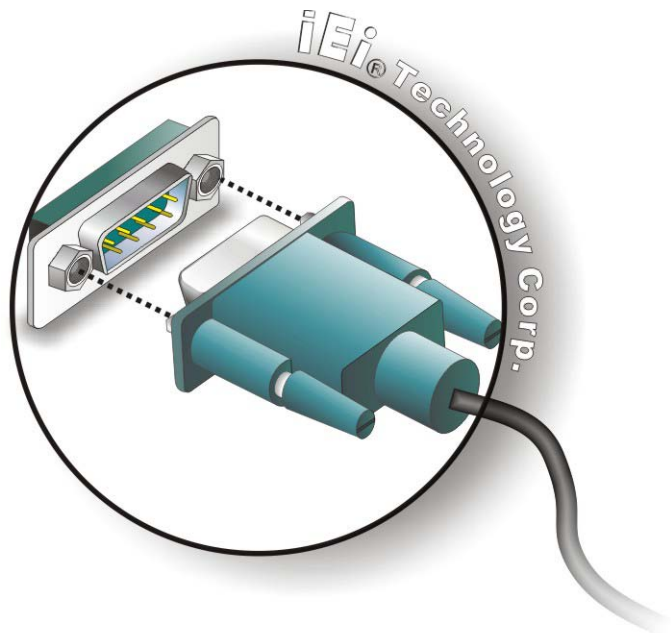
**Step 3:** Insert the LAN cable RJ-45 connector. Once aligned, gently insert the LAN cable RJ-45 connector into the on-board RJ-45 connector.

#### 4.6.4 Serial Device Connection

The KINO-CVR-D25502/N26002 has a single female DB-9 connector on the external peripheral interface panel for a serial device. Follow the steps below to connect a serial device to the KINO-CVR-D25502/N26002.

**Step 1:** Locate the DB-9 connector. The location of the DB-9 connector is shown in Chapter 3.

**Step 2:** Insert the serial connector. Insert the DB-9 connector of a serial device into the DB-9 connector on the external peripheral interface. See Figure 4-8.



**Figure 4-8: 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

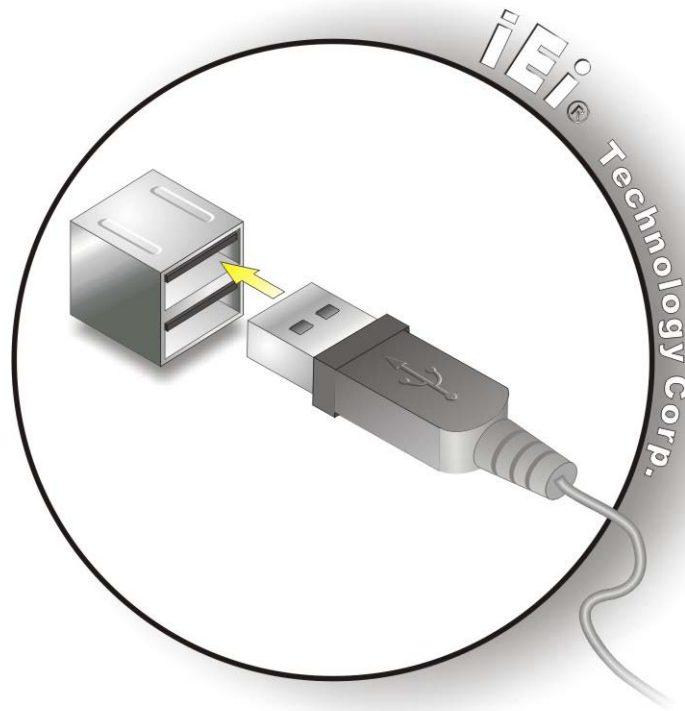
#### 4.6.5 USB Connection

The external USB Series "A" receptacle connectors provide easier and quicker access to external USB devices. Follow the steps below to connect USB devices to the KINO-CVR-D25502/N26002.

**Step 1: Locate the USB Series "A" receptacle connectors.** The location of the USB Series "A" receptacle connectors are shown in **Chapter 3**.

**Step 2: Insert a USB Series "A" plug.** Insert the USB Series "A" plug of a device into the USB Series "A" receptacle on the external peripheral interface. See **Figure 4-9**.



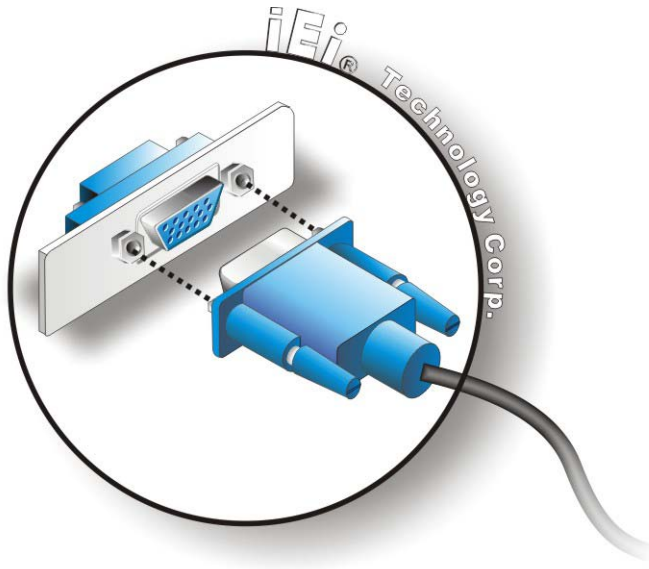


**Figure 4-9: USB Connector**

#### 4.6.6 VGA Monitor Connection

The KINO-CVR-D25502/N26002 has a single female DB-15 connector on the external peripheral interface panel. The DB-15 connector is connected to a CRT or VGA monitor. To connect a monitor to the KINO-CVR-D25502/N26002, please follow the instructions below.

- Step 1:** **Locate the female DB-15 connector.** The location of the female DB-15 connector is shown in **Chapter 3**.
- 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 KINO-CVR-D25502/N26002. See **Figure 4-10**.



**Figure 4-10: 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.

Chapter

5

# BIOS Screens

---

## 5.1 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.

### 5.1.1 Starting Setup

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

1. Press the **DEL** or **F2** key as soon as the system is turned on or
2. Press the **DEL** or **F2** key when the “**Press DEL or F2 to enter SETUP**” message appears on the screen.

If the message disappears before the **DEL** or **F2** key is pressed, restart the computer and try again.

### 5.1.2 Using Setup

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

Key	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side
+	Increase the numeric value or make changes
-	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Load previous values.
F3 key	Load optimized defaults



Key	Function
F4 key	Save changes and Exit BIOS
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

**Table 5-1: BIOS Navigation Keys**

### 5.1.3 Getting Help

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

### 5.1.4 Unable to Reboot after Configuration Changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults.

### 5.1.5 BIOS Menu Bar

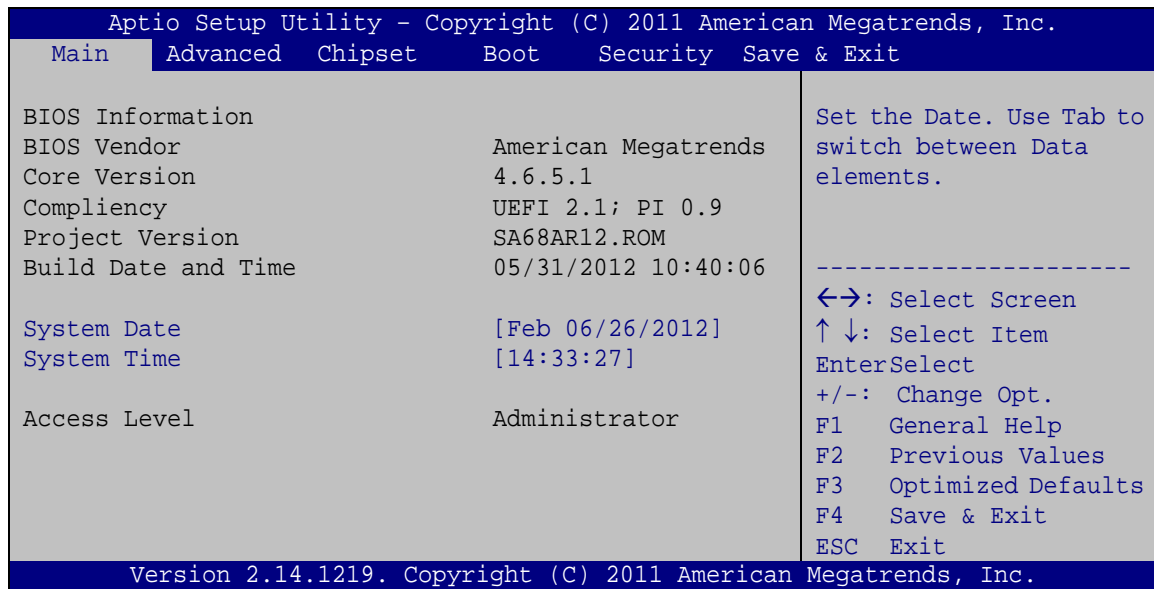
The **menu bar** on top of the BIOS screen has the following main items:

- Main – Changes the basic system configuration.
- Advanced – Changes the advanced system settings.
- Chipset – Changes the chipset settings.
- Boot – Changes the system boot configuration.
- Security – Sets User and Supervisor Passwords.
- Save & Exit – Selects exit options and loads default settings

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

## 5.2 Main

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



### BIOS Menu 1: Main

#### → BIOS Information

The **BIOS Information** lists a brief summary of the BIOS. The fields in **BIOS Information** cannot be changed. The items shown in the system overview include:

- **BIOS Vendor:** Installed BIOS vendor
- **Core Version:** Current BIOS version
- **Compliency:** Current compliant version
- **Project Version:** the board version
- **Build Date and Time:** Date the current BIOS version was made

The System Overview field also has two user configurable fields:

#### → System Date [xx/xx/xx]

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

## KINO-CVR-D25502/N26002

→ System Time [xx:xx:xx]

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

### 5.3 Advanced

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



#### WARNING!

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

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Main  Advanced  Chipset  Boot  Security  Save & Exit

> ACPI Settings
> RTC Wake Settings
> Trusted Computing
> CPU Configuration
> SATA Configuration
> USB Configuration
> F81866 Super IO Configuration
> F81866 H/W Monitor
> Serial Port Console Redirection
> iEi Feature

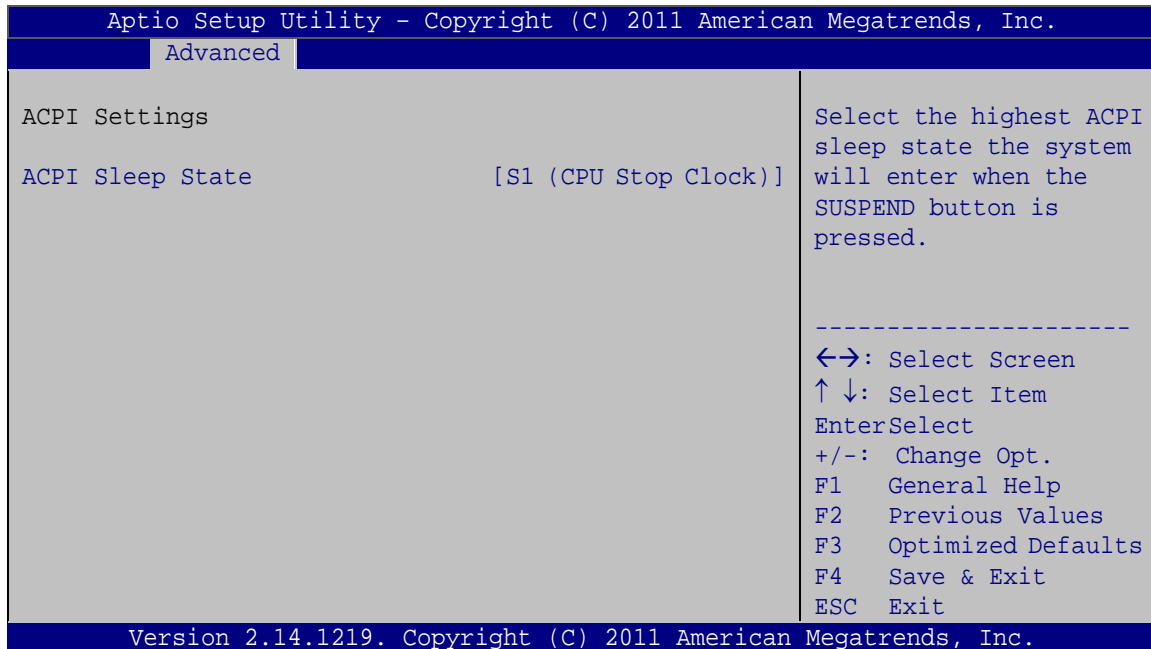
System ACPI Parameters
-----
<->: Select Screen
↑ ↓: Select Item
Enter>Select
+/-: Change Opt.
F1  General Help
F2  Previous Values
F3  Optimized Defaults
F4  Save and Exit
ESC Exit

Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
    
```

#### BIOS Menu 2: Advanced

##### 5.3.1 ACPI Configuration

The **ACPI Configuration** menu (**BIOS Menu 3**) configures the Advanced Configuration and Power Interface (ACPI) options.



### BIOS Menu 3: ACPI Configuration

#### → ACPI Sleep State [S1 (CPU Stop Clock)]

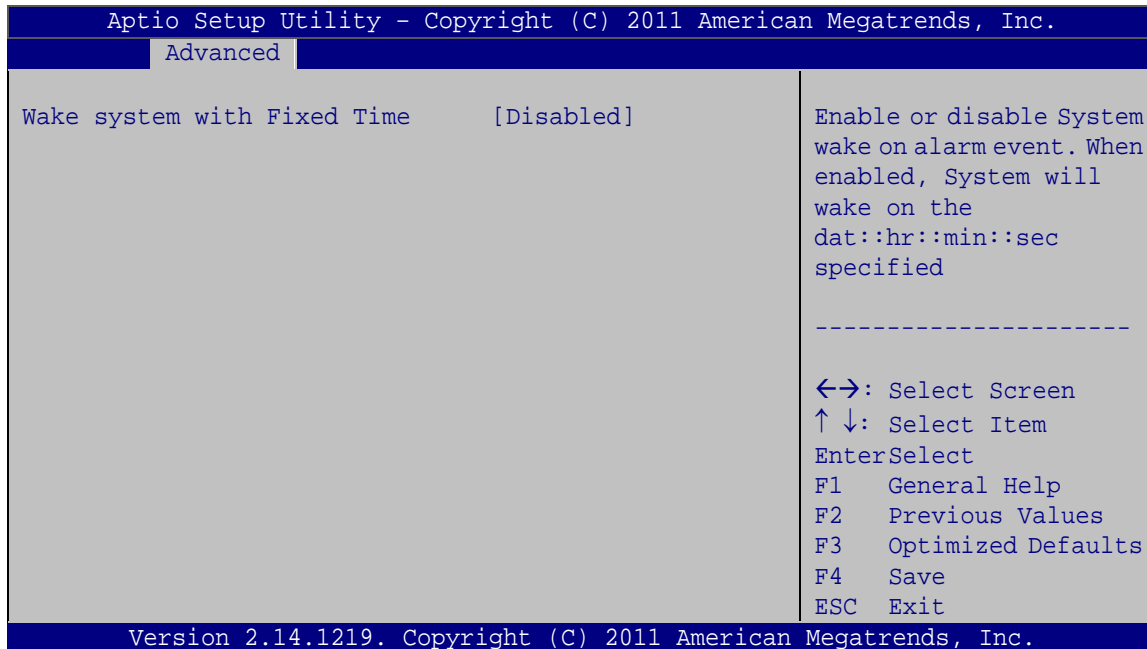
Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

- **S1 (CPU Stop Clock)** **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 (Suspend to RAM)** The caches are flushed and the CPU is powered off. Power to the RAM is maintained. The computer returns slower to a working state, but more power is saved.

### 5.3.2 RTC Wake Settings

The **RTC Wake Settings** menu (**BIOS Menu 4**) configures RTC wake event.





**BIOS Menu 4: RTC Wake Settings**

→ Wake system with Fixed Time [Disabled]

Use the **Wake system with Fixed Time** option to enable or disable the system wake on alarm event.

→ **Disabled**      **DEFAULT**      The real time clock (RTC) cannot generate a wake event

→ **Enabled**      If selected, the **Wake up every day** option appears allowing you to enable to disable the system to wake every day at the specified time. Besides, the following options appear with values that can be selected:

Wake up date

Wake up hour

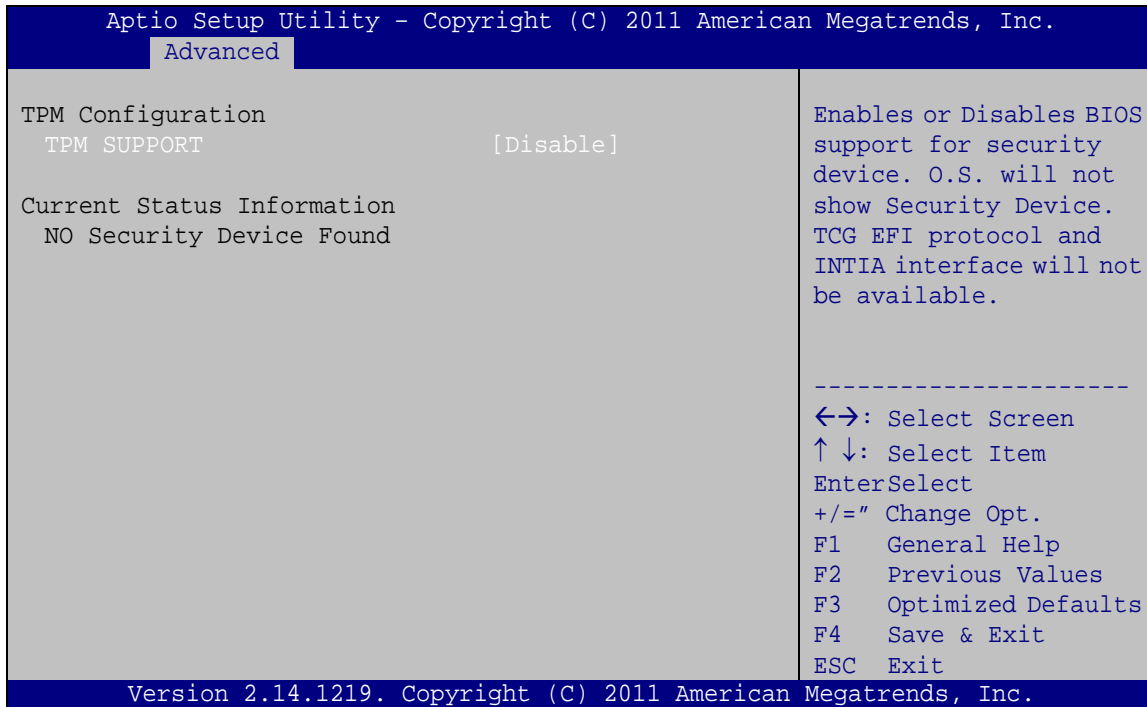
Wake up minute

Wake up second

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

### 5.3.3 Trusted Computing

Use the **Trusted Computing** menu (**BIOS Menu 5**) to configure settings related to the Trusted Computing Group (TCG) Trusted Platform Module (TPM).



#### BIOS Menu 5: TPM Configuration

→ TPM Support [Disable]

Use the **TPM Support** option to configure support for the TPM.

→ **Disable** **DEFAULT** TPM support is disabled.

→ **Enable** TPM support is enabled.

### 5.3.4 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 6**) to view detailed CPU specifications and configure the hyper-threading function.

## KINO-CVR-D25502/N26002

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

CPU Configuration		Enable for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).
Intel(R) Atom(TM) CPU D2700 @ 2.13GHz		
Processor Type	Intel(R) Atom(TM) CPU	Supported
EMT64		Supported
Processor Speed		2132 MHz
System Bus Speed		533 MHz
Ratio Status		16
Actual Ratio		16
Processor Stepping		30661
Microcode Revision		266
L1 Cache RAM		2x56 k
L2 Cache RAM		2x512 k
Processor Core		Dual
Hyper-Threading		Supported
Hyper-Threading	[Enabled]	

←→: Select Screen  
 ↑ ↓: Select Item  
 Enter>Select  
 +/-: Change Opt.  
 F1: General Help  
 F2: Previous Values  
 F3: Optimized Defaults  
 F4: Save & Exit  
 ESC: Exit

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### BIOS Menu 6: CPU Configuration

The CPU Configuration menu (**BIOS Menu 6**) lists the following CPU details:

- Processor Type: Lists the CPU processing type.
- EMT64: Indicates if EMT64 is supported by the CPU.
- Processor Speed: Lists the CPU processing speed.
- System Bus Speed: Lists the system bus speed.
- Ratio Status: Lists the ratio status.
- Actual Ratio: Lists the actual ratio.
- Processor Stepping: Lists the CPU processing stepping.
- Microcode Revision: Lists the microcode revision.
- L1 Cache RAM: Lists the L1 cache RAM size.
- L2 Cache RAM: Lists the L2 cache RAM size.
- Processor Core: Lists the number of the processor cores.
- Hyper-Threading: Indicates if hyper-threading is supported by the CPU.

➔ Hyper-Threading [Dis abled]

Use the **Hyper-Threading** function 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

### 5.3.5 SATA Configuration

Use the **SATA Configuration** menu (**BIOS Menu 7**) to change and/or set the configuration of the SATA devices installed in the system.

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
  Advanced
SATA Configuration
SATA Port1          Not Present
SATA Port2          Not Present
SATA Port3          Not Present
SATA Port4          Not Present
SATA Port5          Not Present
SATA Port6          Not Present

SATA Mode           [IDE Mode]
Serial-ATA Controller 0 [Compatible]
Serial-ATA Controller 1 [Enhanced]

(1) IDE Mode. (2) AHCI
Mode. (3) RAID Mode.

-----
<->: Select Screen
↑ ↓: Select Item
Enter>Select
+/-: Change Opt.
F1  General Help
F2  Previous Values
F3  Optimized Defaults
F4  Save & Exit
ESC Exit

Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
  
```

#### BIOS Menu 7: IDE Configuration

- ➔ SATA Mode [IDE Mode]

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

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

- ➔ Serial-ATA Controller 0 [Compatible]

Use the **Serial-ATA Controller 0** option to configure the Serial-ATA controller mode when the SATA mode is set to IDE Mode.



## KINO-CVR-D25502/N26002

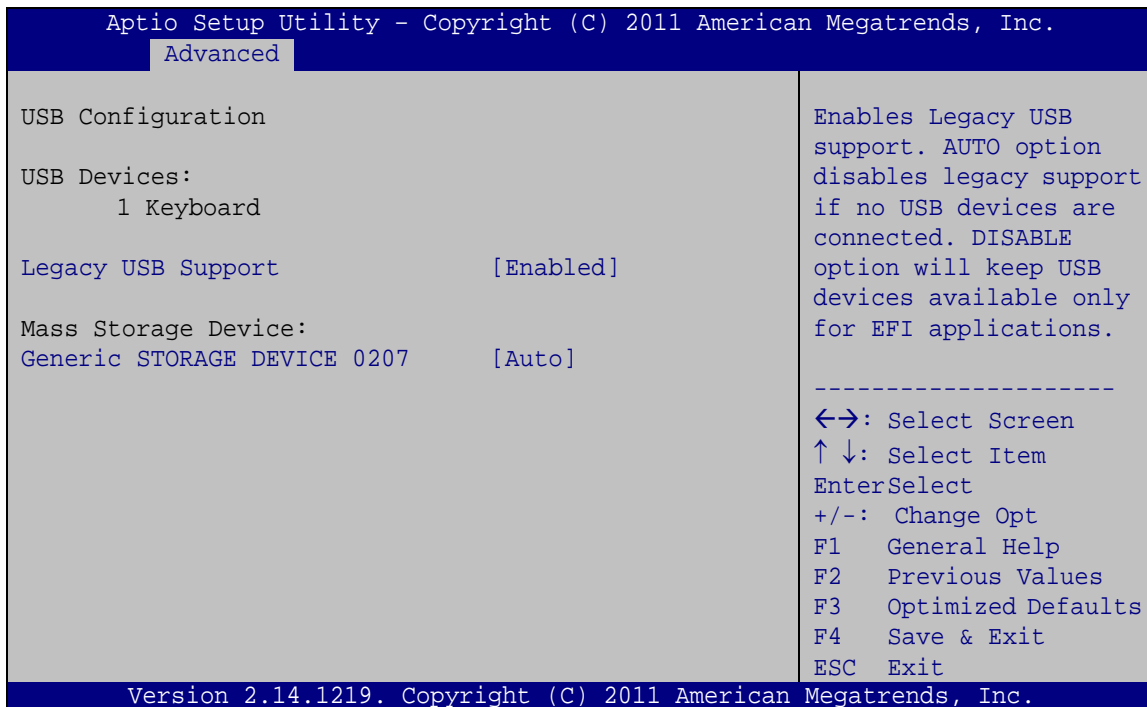
- ➔ **Enhanced** Configures the Serial-ATA controller to be in enhanced mode. In this mode, IDE channels and SATA channels are separated. Some legacy OS do not support this mode.
  - ➔ **Compatible** **DEFAULT** Configures the Serial-ATA controller to be in compatible mode. In this mode, a SATA channel will replace one of the IDE channels.
- ➔ Serial-ATA Controller 1 [Enhanced]

Use the **Serial-ATA Controller 1** option to configure the Serial-ATA controller mode when the SATA mode is set to IDE Mode.

- ➔ **Disable** Disables Serial-ATA controller.
- ➔ **Enhanced** **DEFAULT** Configures the Serial-ATA controller to be in enhanced mode. In this mode, IDE channels and SATA channels are separated. Some legacy OS do not support this mode.

### 5.3.6 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 8**) to read USB configuration information and configure the USB settings.



#### BIOS Menu 8: USB Configuration

##### ➔ USB Devices

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

##### ➔ 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.

➔ **Enabled**      **DEFAULT**      Legacy USB support enabled

## KINO-CVR-D25502/N26002

- ➔ **Disabled** Legacy USB support disabled
- ➔ **Auto** Legacy USB support auto

### ➔ Generic STORAGE DEVICE 0207 [Auto]

Use the **Generic STORAGE DEVICE 0207** BIOS option to specify the type of emulation BIOS has to provide for the USB device.

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

### 5.3.7 F81866 Super IO Configuration

Use the **F81866 Super IO Configuration** menu (**BIOS Menu 9**) to set or change the configurations for the FDD controllers, parallel ports and serial ports.

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
  Advanced
F81866 Super IO Configuration                               Set Parameters of Serial
                                                           Port 1 (COMA)
F81866 Super IO Chip                                     F81866
> Serial Port 1 Configuration
> Serial Port 2 Configuration
-----
<->: Select Screen
↑ ↓: Select Item
EnterSelect
+/-: Change Opt.
F1  General Help
F2  Previous Values
F3  Optimized Defaults
F4  Save & Exit
ESC Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

```

#### **BIOS Menu 9: Super IO Configuration**

#### 5.3.7.1 Serial Port n Configuration

Use the **Serial Port n Configuration** menu (**BIOS Menu 12**) to configure the serial port n.

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
  Advanced
Serial Port n Configuration                               Enable or Disable Serial
                                                           Port (COM)
Serial Port                                             [Enabled]
Device Settings                                       IO=3F8h; IRQ=4
Change Settings                                       [Auto]
-----
<->: Select Screen
↑ ↓: Select Item
EnterSelect
+/-: Change Opt.
F1:  General Help
F2:  Previous Values
F3:  Optimized Defaults
F4:  Save & Exit
ESC: Exit
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```

#### **BIOS Menu 10: Serial Port n Configuration Menu**



## KINO-CVR-D25502/N26002

### 5.3.7.1.1 Serial Port 1 Configuration

#### → Serial Port [Enabled]

Use the **Serial Port** option to enable or disable the serial port.

- **Disabled**                      Disable the serial port
- **Enabled**      **DEFAULT**      Enable the serial port

#### → Change Settings [Auto]

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

- **Auto**              **DEFAULT**      The serial port IO port address and interrupt address are automatically detected.
- **IO=3F8h;**  
**IRQ=4**                      Serial Port I/O port address is 3F8h and the interrupt address is IRQ4
- **IO=3F8h;**  
**IRQ=3, 4**                      Serial Port I/O port address is 3F8h and the interrupt address is IRQ3, 4
- **IO=2F8h;**  
**IRQ=3, 4**                      Serial Port I/O port address is 2F8h and the interrupt address is IRQ3, 4

### 5.3.7.1.2 Serial Port 2 Configuration

#### → Serial Port [Enabled]

Use the **Serial Port** option to enable or disable the serial port.

- **Disabled**                      Disable the serial port
- **Enabled**      **DEFAULT**      Enable the serial port

#### → Change Settings [Auto]

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

- ➔ **Auto**      **DEFAULT**      The serial port IO port address and interrupt address are automatically detected.
- ➔ **IO=2F8h;**  
**IRQ=3**      Serial Port I/O port address is 2F8h and the interrupt address is IRQ3
- ➔ **IO=3F8h;**  
**IRQ=3, 4**      Serial Port I/O port address is 3F8h and the interrupt address is IRQ3, 4
- ➔ **IO=2F8h;**  
**IRQ=3, 4**      Serial Port I/O port address is 2F8h and the interrupt address is IRQ3, 4

### 5.3.8 F81866 H/W Monitor

The H/W Monitor menu (**BIOS Menu 11**) shows the operating temperature, fan speeds and system voltages.

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
-----
Advanced
-----
PC Health Status

System Temperature1      :+45 C
System Temperature2     :+35 C
Fan1 Speed               :2209 RPM
Fan2 Speed               :N/A
V_CORE                   :+1.072 V
VCC3                     :+3.392 V
+1.05V                   :+1.064 V
VCCSM                    :+1.408 V
VSB5V                    :+5.616 V
VCC3V                    :+3.408 V
VSB3V                    :+3.816 V
VBAT                     :+3.088 V

-----
<->: Select Screen
↑ ↓: Select Item
Enter>Select
+/-: Change Opt.
F1  General Help
F2  Previous Values
F3  Optimized Defaults
F4  Save & Exit
ESC Exit
-----
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

```

#### **BIOS Menu 11: Hardware Health Configuration**

- ➔ PC Health Status

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

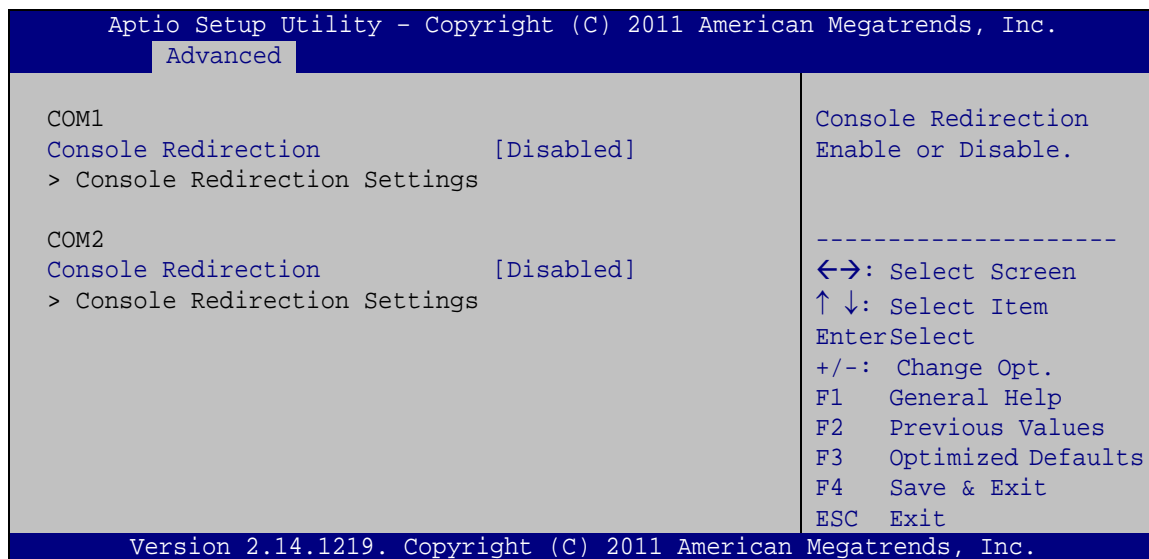
- System Temperatures:
  - System Temperature1

## KINO-CVR-D25502/N26002

- System Temperature2
- Fan Speeds:
  - Fan1 Speed
  - Fan2 Speed
- Voltages:
  - V\_CORE
  - VCC3
  - +1.05V
  - VCCSM
  - VSB5V
  - VCC3V
  - VSB3V
  - VBAT

### 5.3.9 Serial Port Console Redirection

The **Serial Port Console Redirection** menu (**BIOS Menu 12**) allows the console redirection options to be configured. Console redirection allows users to maintain a system remotely by re-directing keyboard input and text output through the serial port.



#### BIOS Menu 12: Serial Port Console Redirection Menu

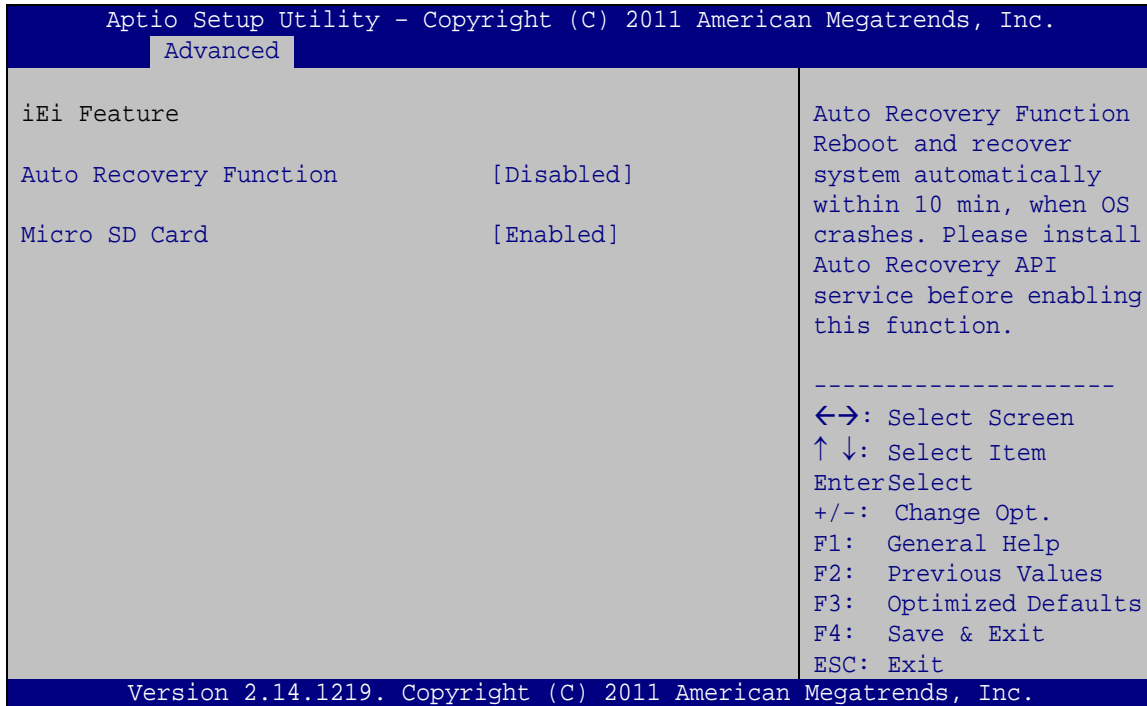
➔ Console Redirection [Disabled]

Use **Console Redirection** option to enable or disable the console redirection function.

- ➔ **Disabled**     **DEFAULT**     Disabled the console redirection function
- ➔ **Enabled**                     Enabled the console redirection function

### 5.3.10 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

- ➔ Micro SD Card [Enabled]

Use the **Micro SD Card** BIOS option to enable or disable the micro SD card. Once to run One Key Recovery function, disable the micro SD card firstly.



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- ➔ **Disabled**                      micro SD card disabled
- ➔ **Enabled**        **DEFAULT**      micro SD card enabled

### 5.4 Chipset

Use the **Chipset** menu (**BIOS Menu 14**) 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.

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Main   Advanced  Chipset  Boot   Security  Save & Exit
-----
> Host Bridge
> South Bridge

Host Bridge Parameters
-----
<=>: Select Screen
↑ ↓: Select Item
Enter>Select
+/-: Change Opt.
F1   General Help
F2   Previous Values
F3   Optimized Defaults
F4   Save & Exit
ESC  Exit

Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
  
```

**BIOS Menu 14: Chipset**

### 5.4.1 Host Bridge Configuration

Use the **Host Bridge Configuration** menu (**BIOS Menu 15**) to configure the Intel IGD settings.

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
  Chipset
> Intel IGD Configuration
*****Memory Information*****
Memory Frequency          1067 MHz(DDR3)
Total Memory              1024 MB
DIMM1                     1024 MB

-----
<=>: Select Screen
↑ ↓: Select Item
EnterSelect
+/-: Change Opt.
F1:  General Help
F2:  Previous Values
F3:  Optimized Defaults
F4:  Save & Exit
ESC: Exit

Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
  
```

#### **BIOS Menu 15: Northbridge Chipset Configuration**

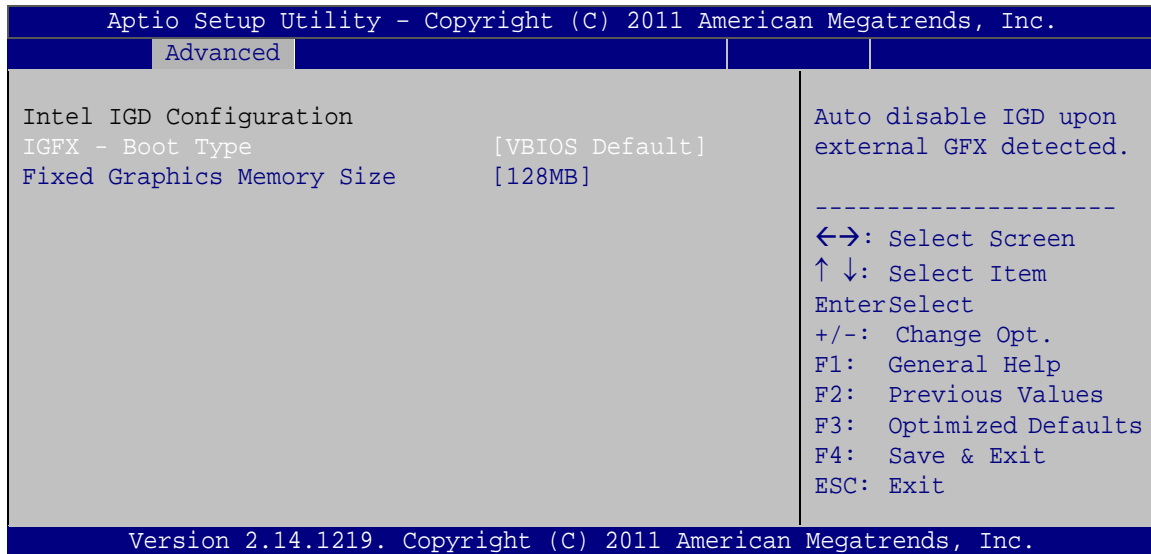
##### ➔ Memory Information

The **Memory Information** lists a brief summary of the on-board memory. The fields in **Memory Information** cannot be changed.

#### 5.4.1.1 Intel IGD Configuration

Use the **Intel IGD Configuration** menu (**BIOS Menu 16**) to configure the video device connected to the system.

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### BIOS Menu 16: Integrated Graphics

#### → IGFX - Boot Type [VBIOS Default]

Use the **IGFX - Boot Type** option to select the display device used by the system when it boots. For dual display support, select “VBIOS Deafult.” Configuration options are listed below.

- VBIOS Default **DEFAULT**
- CRT
- HDMI
- CRT + HDMI

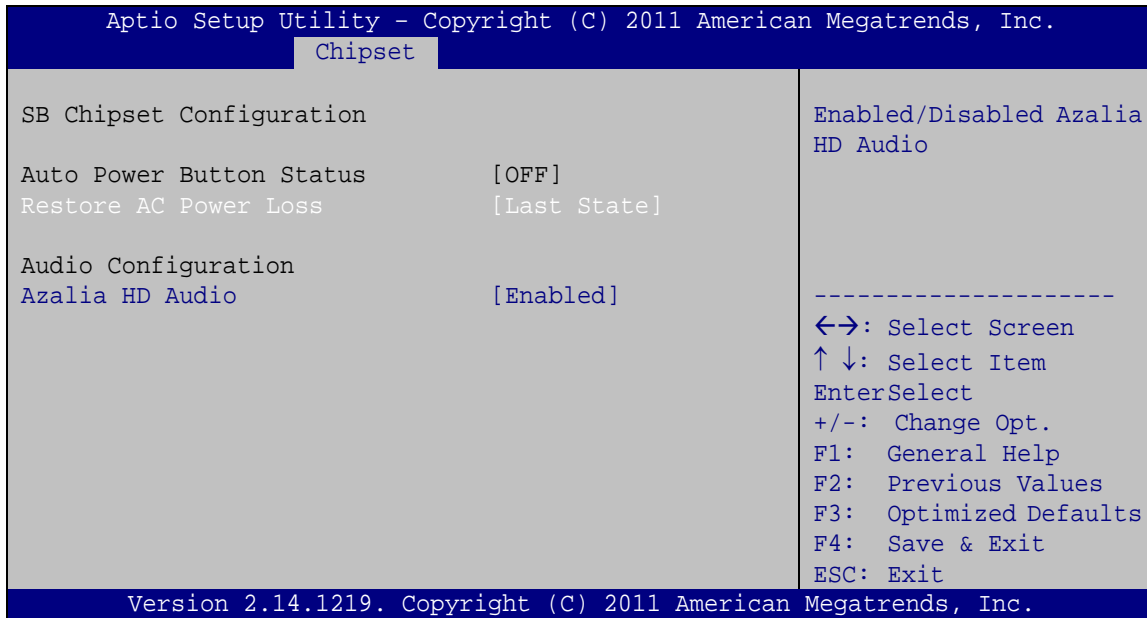
#### → Fixed Graphics Memory Size [128 MB]

Use the **Fixed Graphics Memory Size** option to specify the amount of memory that can be allocated as graphics memory. Configuration options are listed below.

- 128 MB **DEFAULT**
- 256 MB

### 5.4.2 Southbridge Configuration

Use the **Southbridge Configuration** menu (**BIOS Menu 17**) to configure the Southbridge chipset.



### BIOS Menu 17: Southbridge Chipset Configuration

#### → Restore AC Power Loss [Last State]

Use the **Restore on AC Power Loss** 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.

#### → Azalia HD Audio [Enabled]

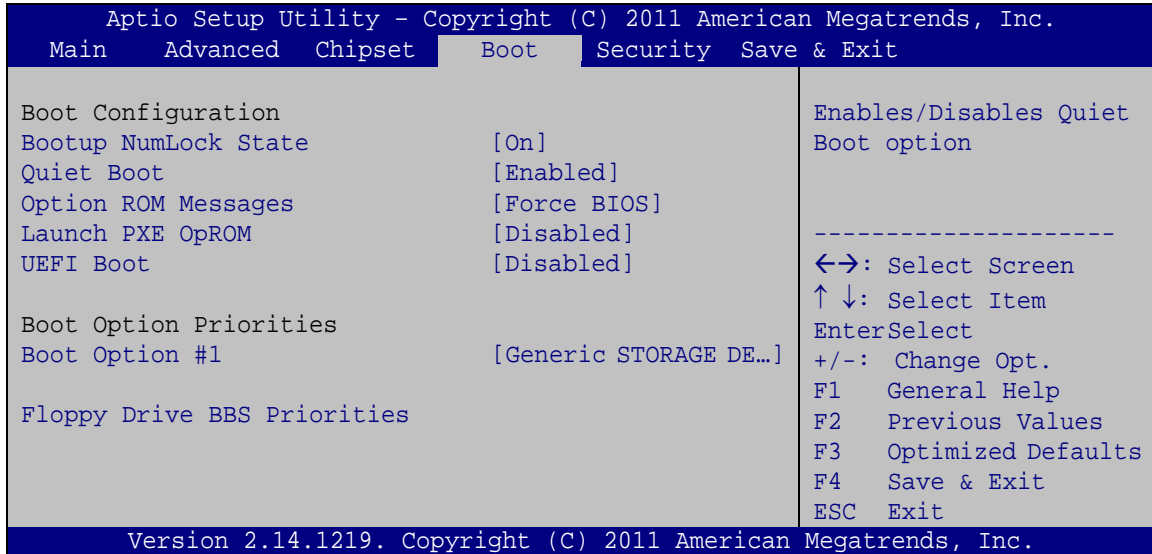
Use the **Azalia HD Audio** option to enable or disable the High Definition Audio controller.

- **Disabled**                        The onboard High Definition Audio controller is disabled
- **Enabled**    **DEFAULT**        The onboard High Definition Audio controller is detected automatically and enabled



## 5.5 Boot

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



### BIOS Menu 18: Boot

#### → Bootup NumLock State [On]

Use the **Bootup NumLock State** BIOS option to specify if the number lock setting must be modified during boot up.

→ **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.

→ **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.

→ Quiet Boot [Enabled]

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

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

→ Option ROM Messages [Force BIOS]

Use the **Option ROM Messages** option to set the Option ROM display mode.

- **Force BIOS** **DEFAULT** Sets display mode to force BIOS.
- **Keep Current** Sets display mode to current.

→ Launch PXE OpROM [Disabled]

Use the **Launch PXE OpROM** BIOS option to enable or disable boot option for legacy network devices.

- **Disabled** **DEFAULT** Cannot be booted from the legacy network devices.
- **Enabled** Can be booted from the legacy network devices.

→ UEFI Boot [Disabled]

Use the **UEFI Boot** option to enable or disable to boot from the UEFI devices.

- **Enabled** Boot from UEFI devices is enabled.
- **Disabled** **DEFAULT** Boot from UEFI devices is disabled.

→ Boot Option Priority

Use the **Boot Option Priority** function to set the system boot sequence from the available devices. The drive sequence also depends on the boot sequence in the individual device section.

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### → Floppy Drive BBS Priorities

Use the **Floppy Drive BBS Priorities** option to set the order of the legacy devices in this group.

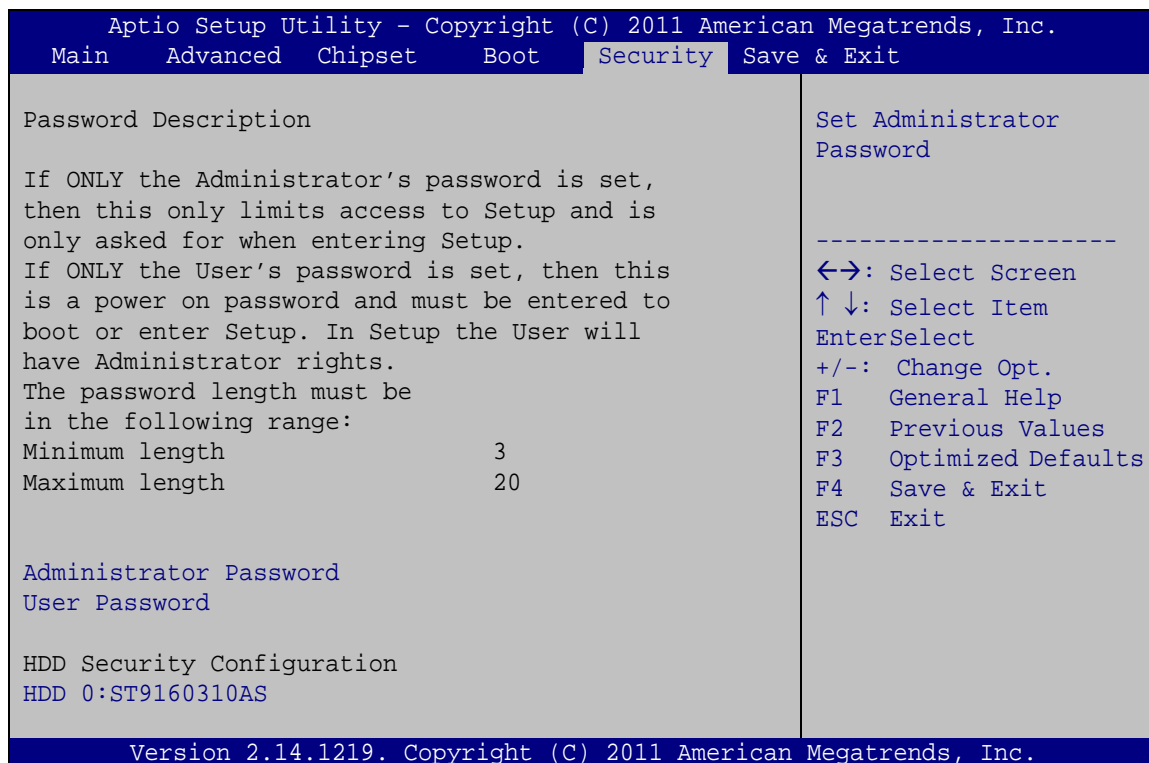


#### NOTE:

Once to install window XP SP3 under AHCI mode, please select the USB floppy as the first boot option.

## 5.6 Security

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



### BIOS Menu 19: Security

### → Administrator Password

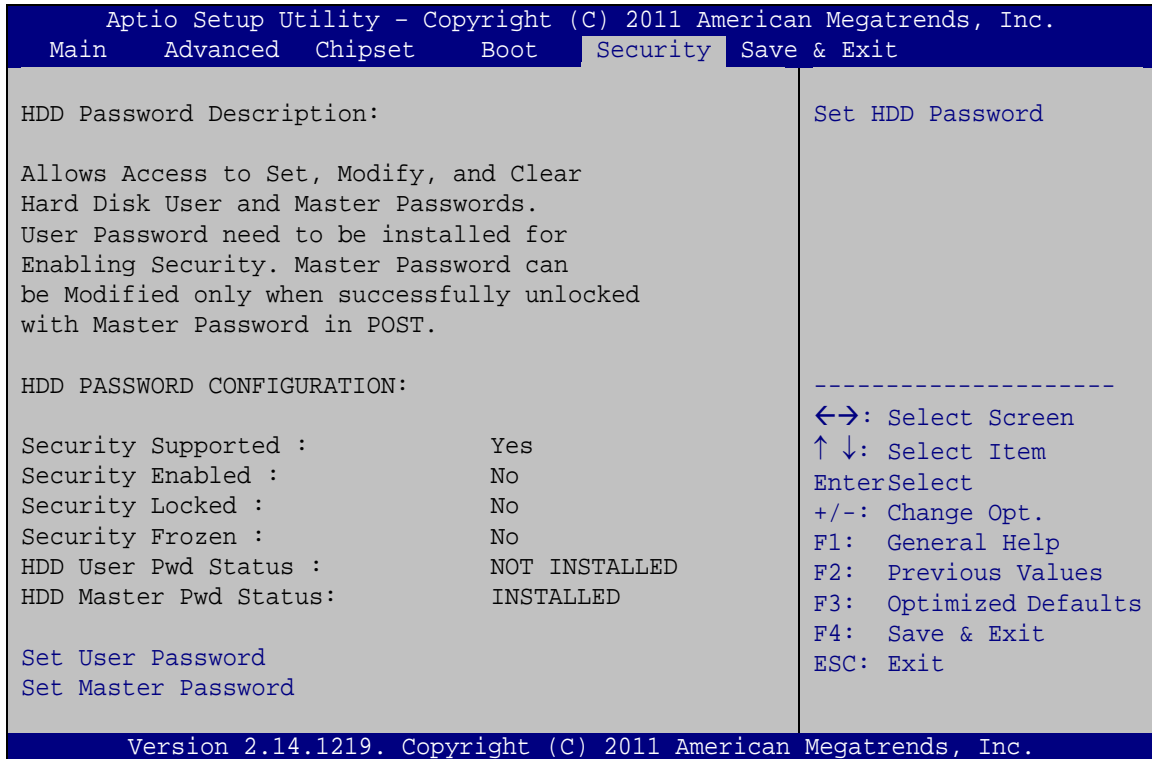
Use the **Administrator Password** to set or change an administrator password.

➔ User Password

Use the **User Password** to set or change a user password.

### 5.6.1 HDD Security Configuration

Use the **HDD Security Configuration** submenu (**BIOS Menu 19**) to set HDD password.



#### **BIOS Menu 20: Security**

➔ Set User Password

Use the **Set User Password** field to set or change an HDD user password.

➔ Set Master Password

Use the **Set Master Password** field to set or change an HDD master password.





**NOTE:**

It is recommended that the system be reset after setting a new HDD password.

## 5.7 Save & Exit

Use the **Save & Exit** menu (**BIOS Menu 21**) to load default BIOS values, optimal failsafe values and to save configuration changes.

```

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Main   Advanced  Chipset  Boot   Security  Save & Exit

Save Changes and Reset
Discard Changes and Reset

Restore Defaults
Save as User Defaults
Restore User Defaults

Reset the system after
saving the changes.

-----
<->: Select Screen
↑ ↓: Select Item
Enter>Select
+/-: Change Opt.
F1   General Help
F2   Previous Values
F3   Optimized Defaults
F4   Save & Exit
ESC  Exit

Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
    
```

### BIOS Menu 21:Exit

➔ Save Changes and Reset

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

➔ Discard Changes and Reset

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

→ Restore Defaults

Use the **Restore Defaults** option to load the optimal default values for each of the parameters on the Setup menus. **F3 key can be used for this operation.**

→ Save as User Defaults

Use the **Save as User Defaults** option to save the changes done so far as user defaults.

→ Restore User Defaults

Use the **Restore User Defaults** option to restore the user defaults to all the setup options.

Chapter

6

# Software Drivers

---

## 6.1 Available Software Drivers

---



### NOTE:

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

---

The following drivers can be installed on the system:

- Chipset
- VGA
- LAN
- Audio

Installation instructions are given below.

## 6.2 Starting the Driver Program

To access the driver installation programs, please do the following.

**Step 1:** Insert the CD that came with the system into a CD drive connected to the system.

---



### NOTE:

If the installation program doesn't start automatically:  
Click "Start->Computer->CD Drive->autorun.exe"

---

**Step 2:** The driver main menu appears (**Figure 6-1**).



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Figure 6-1: Start Up Screen

Step 3: Click KINO-CVR-D25502/N26002.

Step 4: The list of drivers in **Figure 6-2** appears.



Figure 6-2: Drivers

### 6.3 Chipset Driver Installation

To install the chipset driver, please do the following.

**Step 1:** Access the driver list. (See **Section 6.2**)

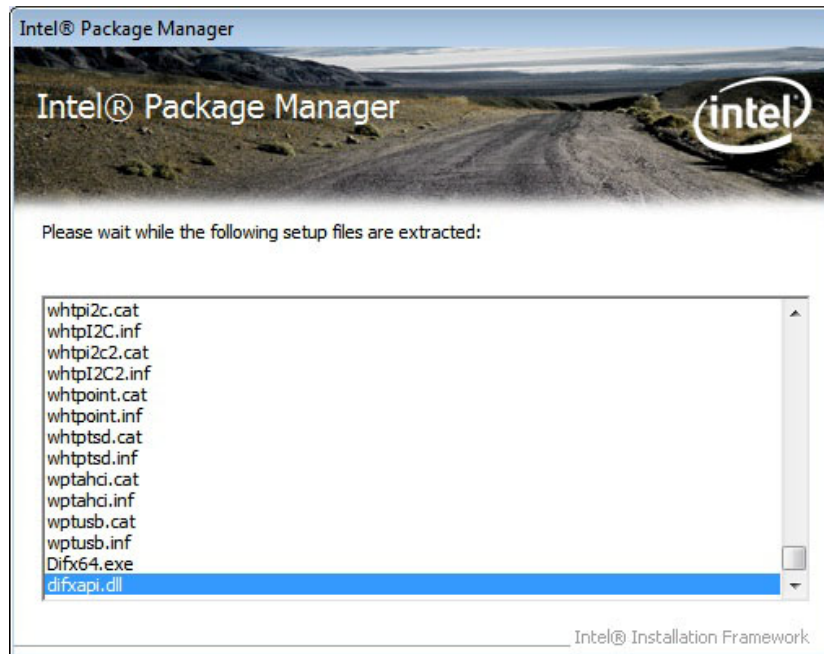
**Step 2:** Click “**1-Chipset**”

**Step 3:** Go to the 32-bit or 64-bit folder that corresponds to your OS version.

**Step 4:** Open the **Intel Chipset Software Installation Utility** folder.

**Step 5:** Double click the **infinst\_autol** icon.

**Step 6:** The setup files are extracted as shown in **Figure 6-3**.



**Figure 6-3: Chipset Driver Screen**

**Step 7:** When the setup files are completely extracted, the **Welcome Screen** in **Figure 6-4** appears.



**Figure 6-4: Chipset Driver Welcome Screen**

**Step 8:** Click **Next** to continue.

**Step 9:** The license agreement in **Figure 6-5** appears.

**Step 10:** Read the **License Agreement**.

**Step 11:** Click **Yes** to continue.





Figure 6-5: Chipset Driver License Agreement

Step 12: The Read Me file in **Figure 6-6** appears.

Step 13: Click **Next** to continue.

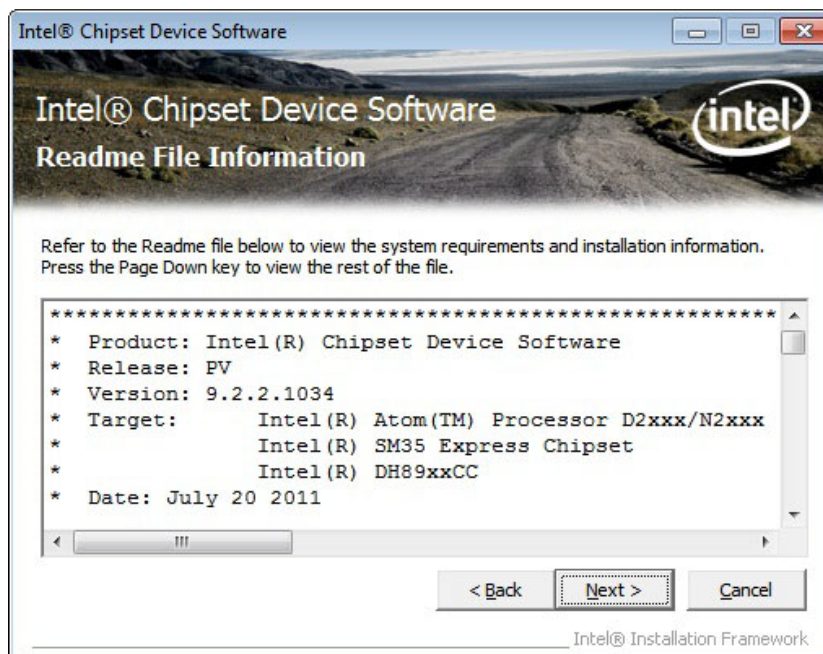
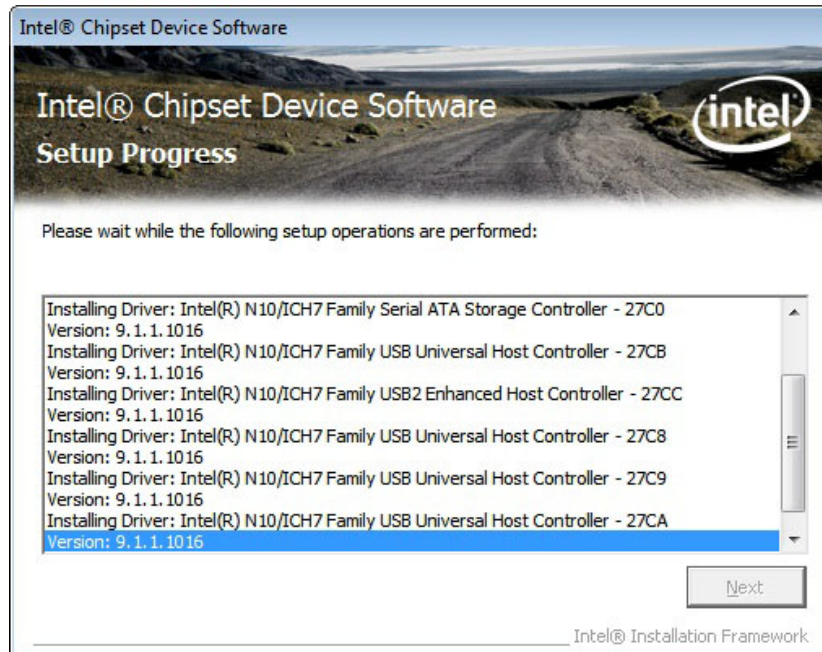


Figure 6-6: Chipset Driver Read Me File



## KINO-CVR-D25502/N26002

Step 14: **Setup Operations** are performed as shown in **Figure 6-7**.



**Figure 6-7: Chipset Driver Setup Operations**

Step 15: Once the **Setup Operations** are complete, click **Next** to continue.

Step 16: The **Finish** screen appears.

Step 17: Select “**Yes, I want to restart the computer now**” and click the **Finish** icon.

See **Figure 6-8**.

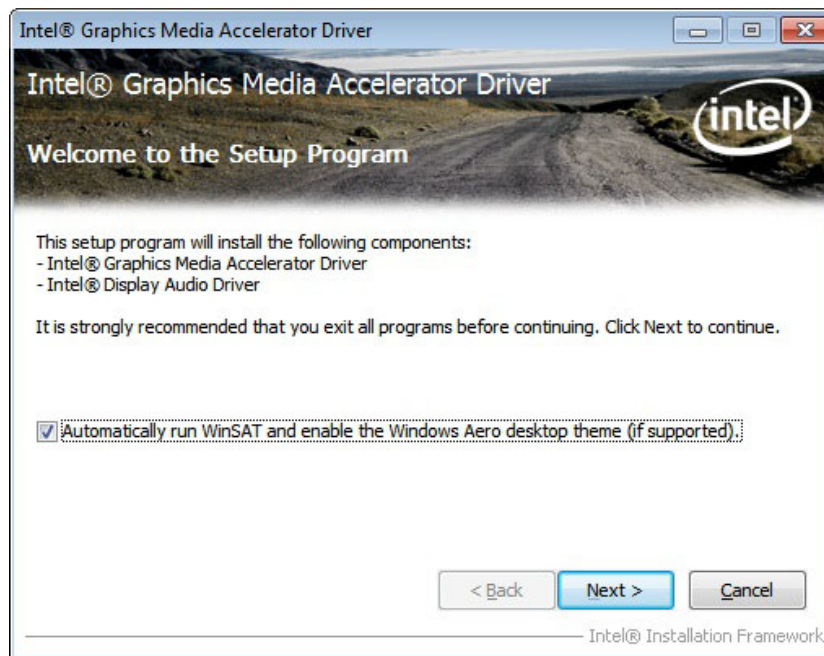


Figure 6-8: Chipset Driver Installation Finish Screen

## 6.4 VGA Driver Installation

To install the VGA driver, please do the following.

- Step 1: Access the driver list. (See **Section 6.2**)
- Step 2: Click "**2-Graphics**"
- Step 3: Open the 32-bit or 64-bit folder that corresponds to your OS version.
- Step 4: Double click the **Setup** icon.
- Step 5: The **Welcome Screen** in **Figure 6-9** appears.



**Figure 6-9: VGA Driver Welcome Screen**

- Step 6:** Click **Next** to continue.
- Step 7:** The license agreement in **Figure 6-10** appears.
- Step 8:** Read the **License Agreement**.
- Step 9:** Click **Yes** to continue.





Figure 6-10: VGA Driver License Agreement

Step 10: The Read Me file in Figure 6-11 appears.

Step 11: Click **Next** to continue.

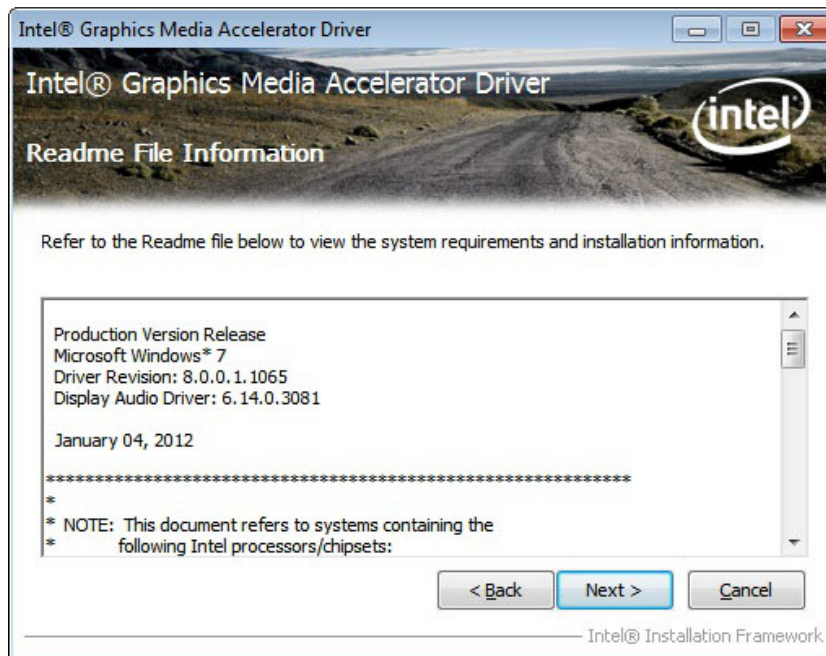
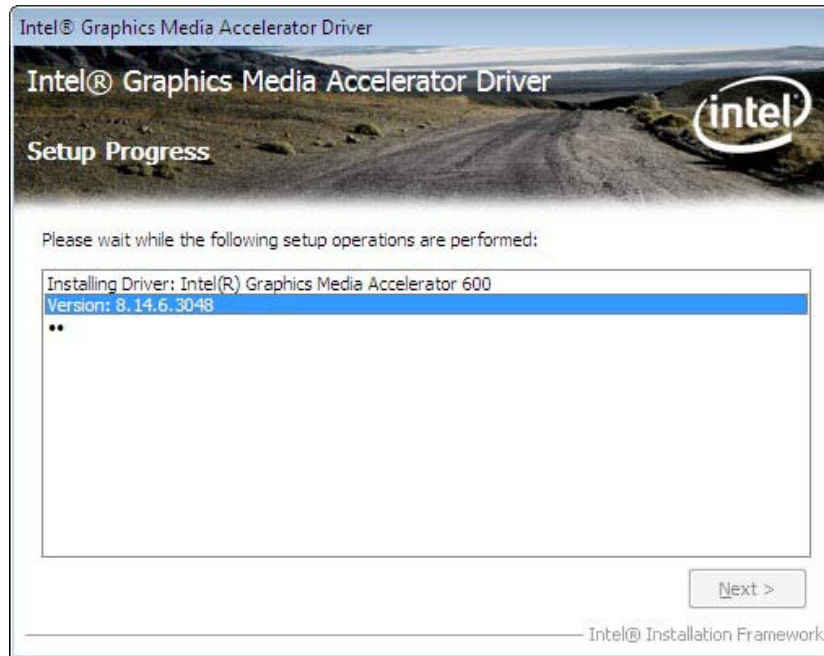


Figure 6-11: VGA Driver Read Me File



**Step 12:** Setup Operations are performed as shown in **Figure 6-12**.



**Figure 6-12: VGA Driver Setup Operations**

**Step 13:** Once the **Setup Operations** are complete, click the **Next** icon to continue.

**Step 14:** The **Finish** screen appears.

**Step 15:** Select "**Yes, I want to restart the computer now**" and click the **Finish** icon.

See **Figure 6-13**.

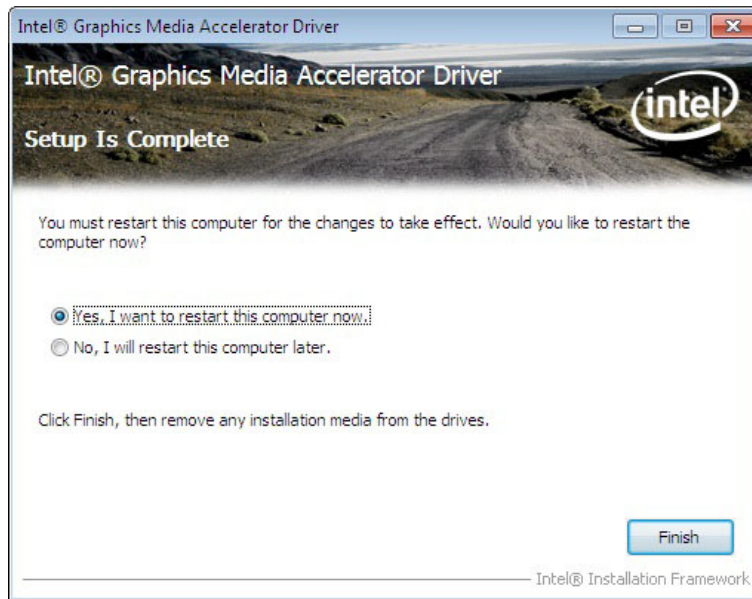
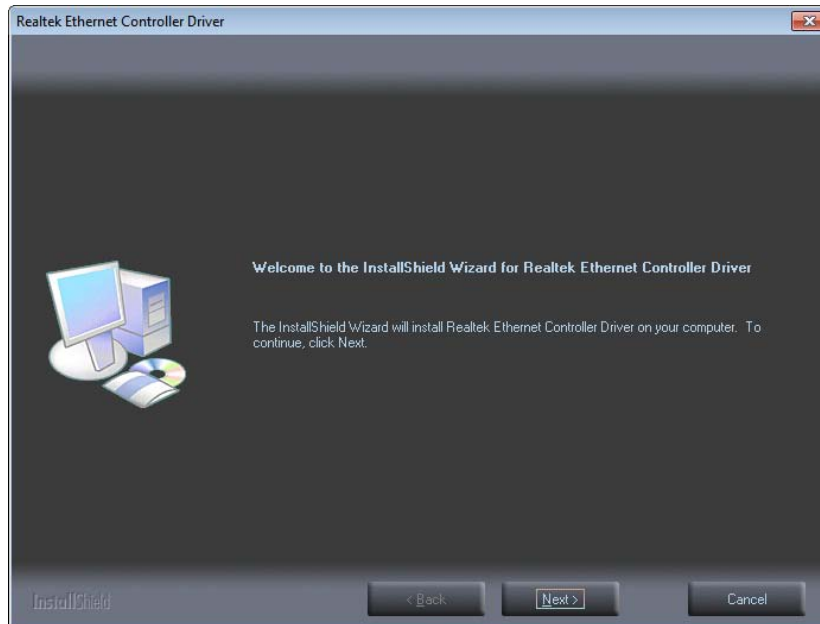


Figure 6-13: VGA Driver Installation Finish Screen

## 6.5 LAN Driver Installation

To install the LAN driver, please do the following.

- Step 1: Access the driver list shown in Figure 6-2. (See **Section 6.2**)
- Step 2: Click “**3-LAN**”.
- Step 3: Go to the **Win7 > Install\_Win7\_7048\_09162011** folder.
- Step 4: Double click the **setup** icon.
- Step 5: The **Welcome** screen in **Figure 6-14** appears.

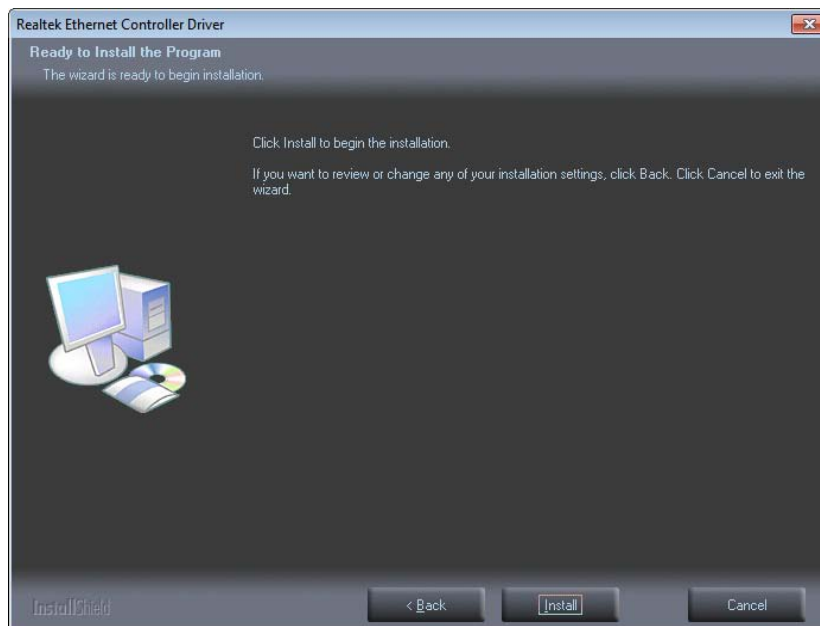


**Figure 6-14: LAN Driver Welcome Screen**

**Step 6:** Click **Next** to continue.

**Step 7:** The **Ready to Install** screen in **Figure 6-15** appears.

**Step 8:** Click **Install** to proceed with the installation.

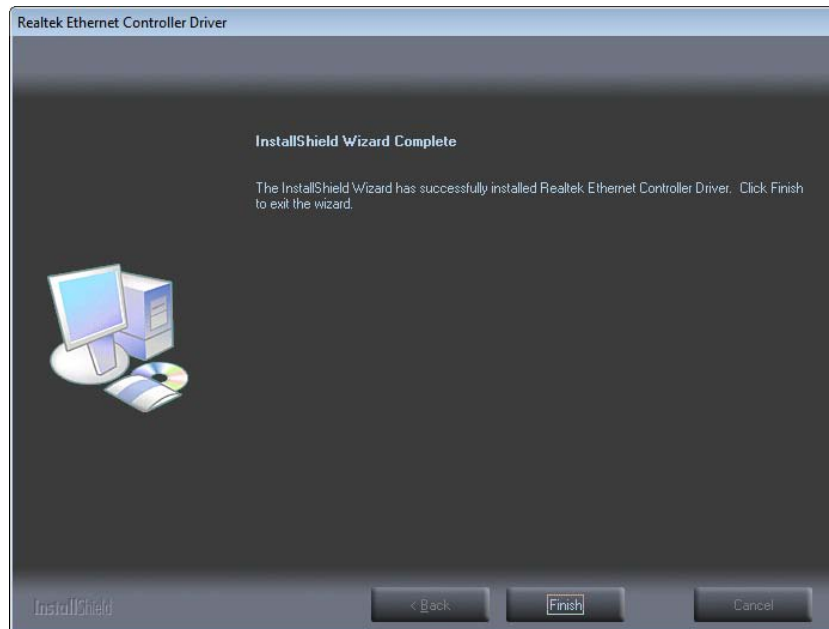


**Figure 6-15: LAN Driver Installation**

**Step 9:** The program begins to install.

**Step 10:** When the driver installation is complete, the screen in **Figure 6-16** appears.

**Step 11:** Click **Finish** to exit.



**Figure 6-16: LAN Driver Installation Complete**

## 6.6 Audio Driver Installation

To install the Audio driver, please do the following.

**Step 1:** Access the driver list. (See **Section 6.2**)

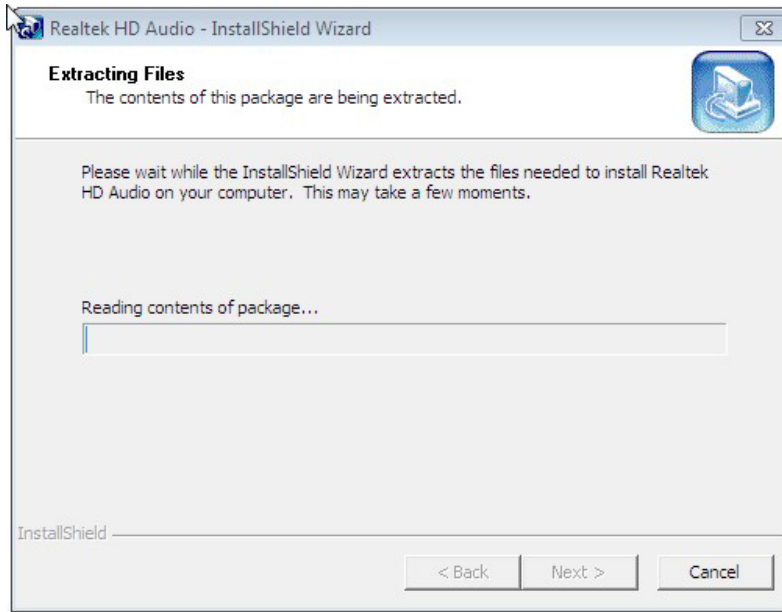
**Step 2:** Click “**4-Audio**”.

**Step 3:** Open the **Win7** folder.

**Step 4:** Double click the **Vista\_Win7\_R263** icon.

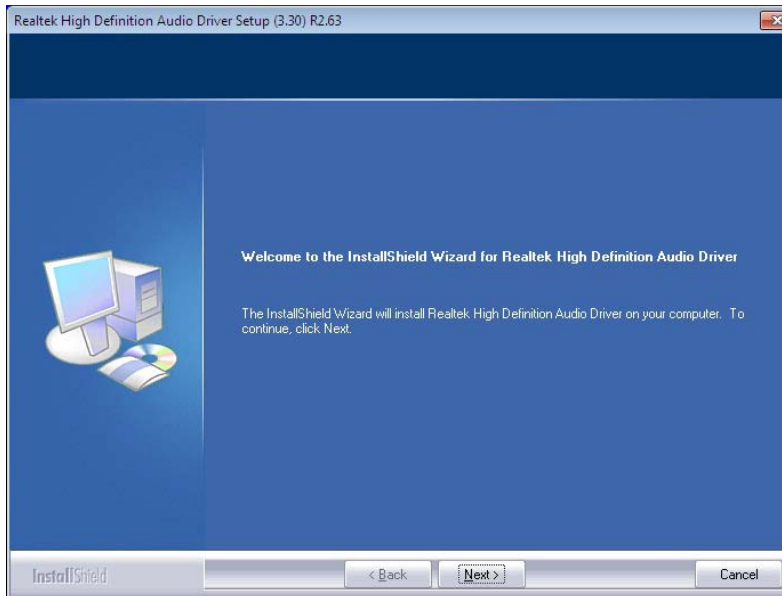
**Step 5:** The installation files are extracted as shown in **Figure 6-17**.





**Figure 6-17: Audio Driver Installation File Extraction**

**Step 6:** The **Welcome** screen in **Figure 6-18** appears.

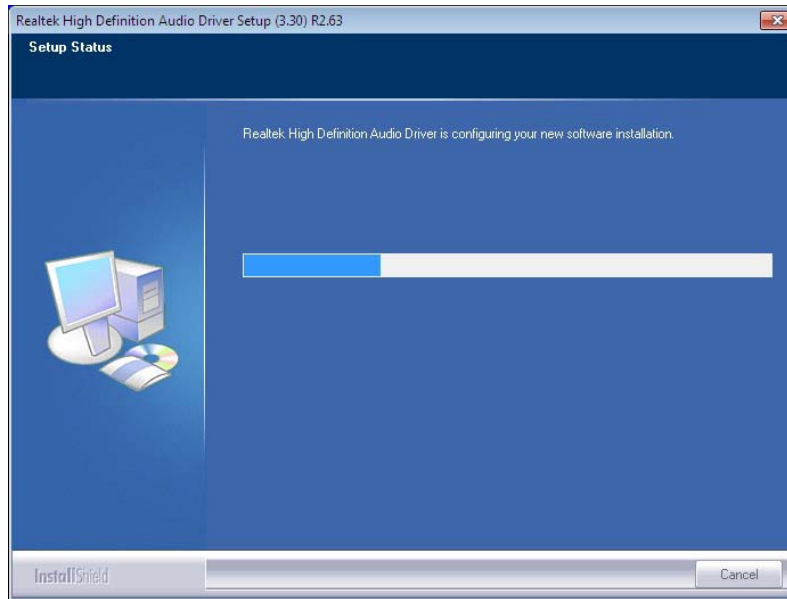


**Figure 6-18: Audio Driver Welcome Screen**

**Step 7:** Click **Next** to continue.

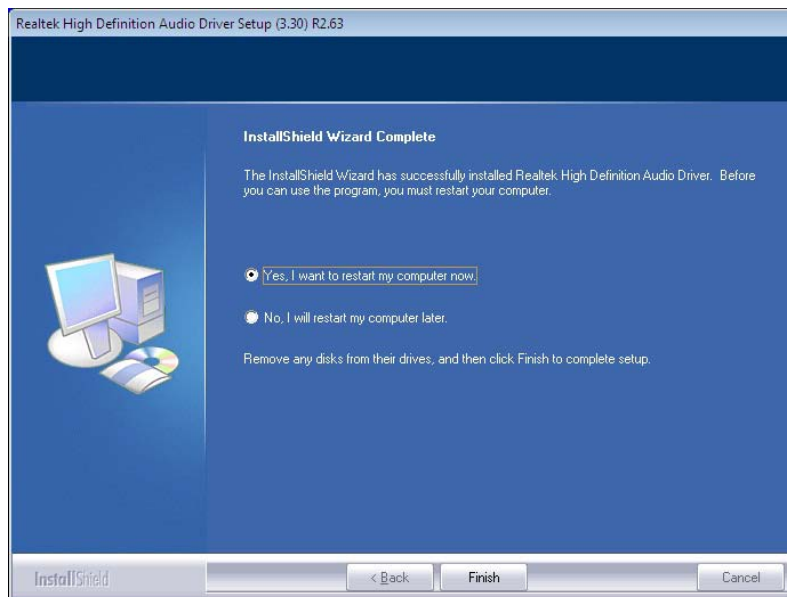
**Step 8:** The program begins to install.

Step 9: The installation progress can be monitored in the progress bar shown in **Figure 6-19**.



**Figure 6-19: Audio Driver Installation**

Step 10: When the driver installation is complete, the screen in **Figure 6-20** appears.



**Figure 6-20: Audio Driver Installation Complete**

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Step 11: Select “**Yes, I want to restart my computer now**” and click **Finish**.

Step 12: The system reboots.



Appendix

A

# BIOS Menu Options

---



- ➔ BIOS Information .....58
- ➔ System Date [xx/xx/xx] .....58
- ➔ System Time [xx:xx:xx] .....59
- ➔ ACPI Sleep State [S1 (CPU Stop Clock)] .....60
- ➔ Wake system with Fixed Time [Disabled].....61
- ➔ TPM Support [Disable] .....62
- ➔ Hyper-Threading [Disabled].....63
- ➔ SATA Mode [IDE Mode] .....64
- ➔ Serial-ATA Controller 0 [Compatible] .....64
- ➔ Serial-ATA Controller 1 [Enhanced].....65
- ➔ USB Devices .....66
- ➔ Legacy USB Support [Enabled].....66
- ➔ Generic STORAGE DEVICE 0207 [Auto].....67
- ➔ Serial Port [Enabled].....69
- ➔ Change Settings [Auto] .....69
- ➔ Serial Port [Enabled].....69
- ➔ Change Settings [Auto] .....69
- ➔ PC Health Status .....70
- ➔ Console Redirection [Disabled].....71
- ➔ Auto Recovery Function [Disabled] .....72
- ➔ Micro SD Card [Enabled].....72
- ➔ Memory Information .....74
- ➔ Auto Disable IGD [Enabled] ..... 错误！未定义书签。
- ➔ IGFX - Boot Type [VBIOS Default] .....75
- ➔ Fixed Graphics Memory Size [128 MB].....75
- ➔ Azalia HD Audio [Enabled].....76
- ➔ Bootup NumLock State [On].....77
- ➔ Quiet Boot [Enabled] .....78
- ➔ Option ROM Messages [Force BIOS].....78
- ➔ Launch PXE OpROM [Disabled] .....78
- ➔ UEFI Boot [Disabled] .....78
- ➔ Boot Option Priorities.....78
- ➔ Administrator Password .....79
- ➔ User Password .....80

➔	Set User Password .....	80
➔	Set Master Password.....	80
➔	Save Changes and Reset .....	81
➔	Discard Changes and Reset .....	81
➔	Restore Defaults .....	82
➔	Save as User Defaults .....	82
➔	Restore User Defaults .....	82

Appendix

B

# One Key Recovery

---

## 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. This tool provides quick and easy shortcuts for creating a backup and reverting to that backup or reverting to the factory default settings.

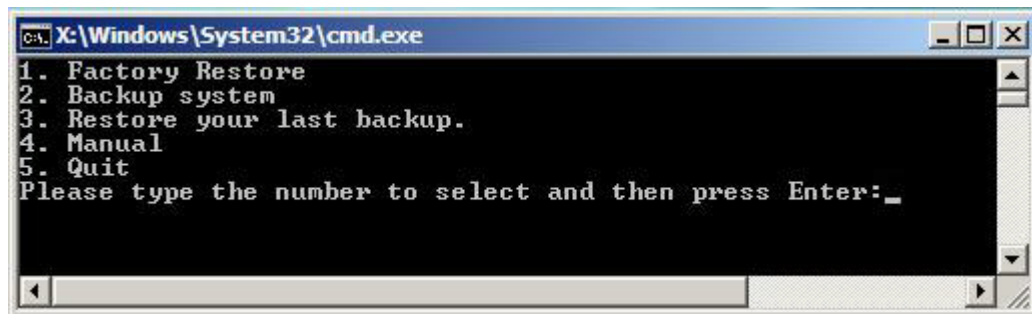


### NOTE:

Once to run One Key Recovery function, disable the micro SD card in BIOS firstly. See Section 5.3.10

The latest One Key Recovery software provides an auto recovery function that allows a system running Microsoft Windows OS to automatically restore from the factory default image after encountering a Blue Screen of Death (BSoD) or a hang for around 10 minutes. Please refer to Section B.3 for the detailed setup procedure.

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 the recovery partition (see **Section B.2.4**)



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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.5**.



### 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
<b>Windows® 7</b>	7 GB	5 GB	70%
<b>Windows® XPE</b>	776 MB	560 MB	70%
<b>Windows® CE 6.0</b>	36 MB	28 MB	77%


**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 systems (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)

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- 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, 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 the recovery partition (see **Section B.2.4**) or build the auto recovery partition (see **Section B.3**)

**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, most of the setup procedures are the same except for several steps described in **Section B.3**.

### B.2.1 Hardware and BIOS Setup

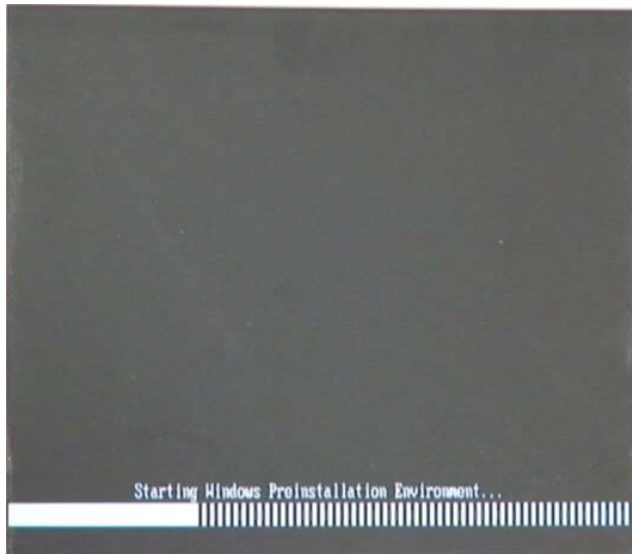
- Step 1:** Make sure the system is powered off and unplugged.
- Step 2:** Install a hard drive or SSD in the system. An unformatted and unpartitioned disk is recommended.
- Step 3:** Connect an optical disk drive to the system and insert the recovery CD.
- Step 4:** Turn on the system.
- Step 5:** Press 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 1<sup>st</sup> boot device. (**Boot** → **Boot Device Priority** → **1<sup>st</sup> 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.

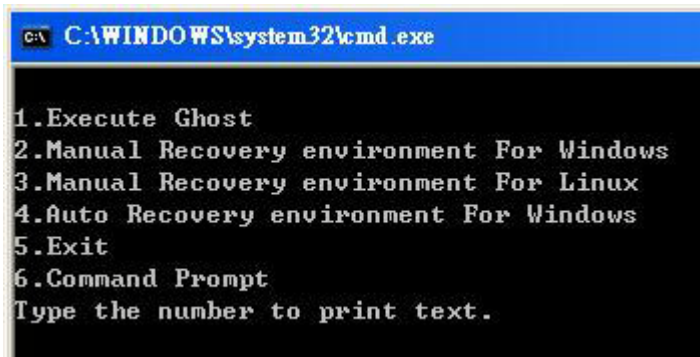
- Step 1:** Put the recovery CD in the optical drive of the system.
- Step 2:** **Boot the system from recovery CD.** When prompted, press any key to boot from the recovery CD. It will take a while to launch the recovery tool. Please be patient!





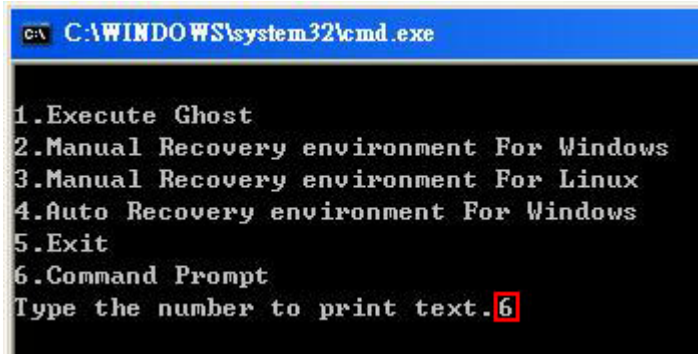
**Figure B-2: Launching the Recovery Tool**

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



**Figure B-3: Recovery Tool Setup Menu**

**Step 4:** Press <6> then <Enter>.



```
C:\WINDOWS\system32\cmd.exe

1.Execute Ghost
2.Manual Recovery environment For Windows
3.Manual Recovery environment For Linux
4.Auto Recovery environment For Windows
5.Exit
6.Command Prompt
Type the number to print text.6
```

Figure B-4: Command Prompt

**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
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 DUD-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 RAW.
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 → Formate partition 2 (F) as NTFS formate and
name it as "Recovery".
The type of the file system is RAW.
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 the Recovery Partition.

### B.2.3 Install Operating System, Drivers and Applications

Install the operating system onto the unlabelled partition. The partition labeled "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 Building the Recovery Partition

- Step 1:** Put the recover CD in the optical drive.
- Step 2:** Start the system.
- Step 3:** **Boot the system from the 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!

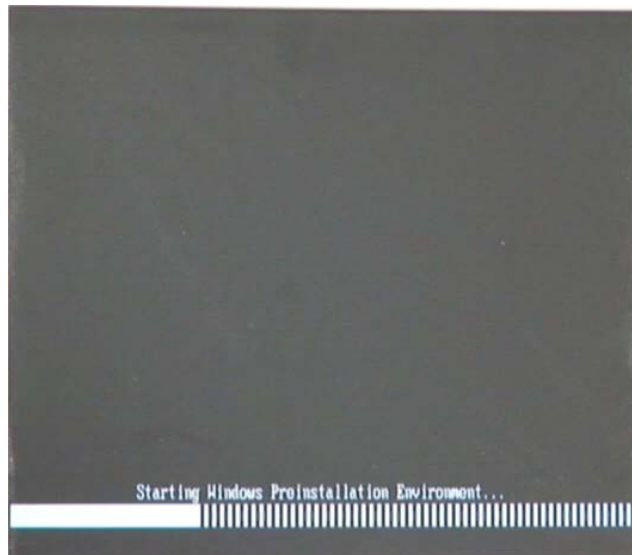


Figure B-6: Launching the Recovery Tool

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

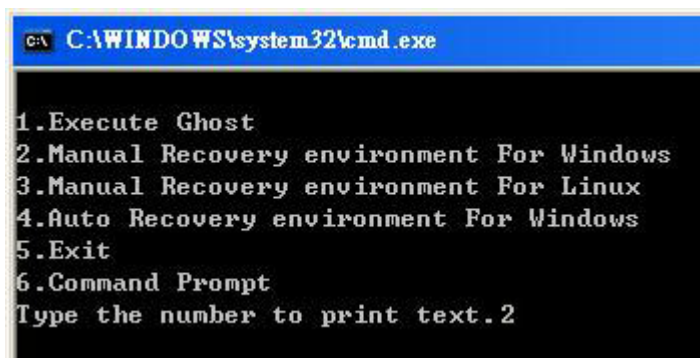
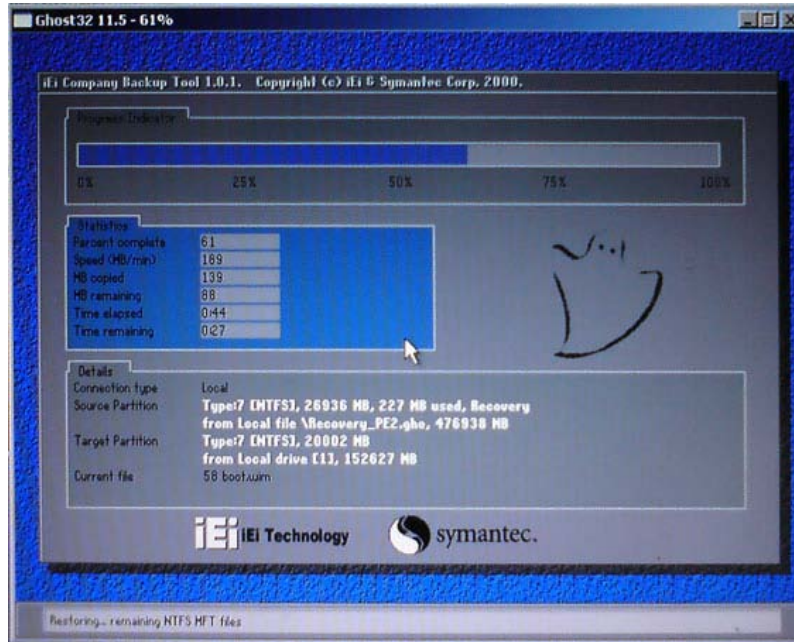


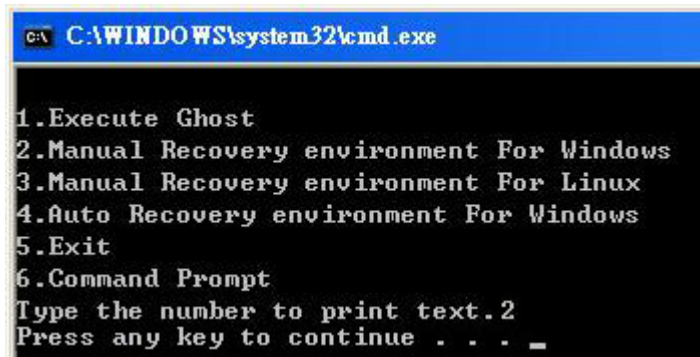
Figure B-7: Manual Recovery Environment for Windows

**Step 5:** The Symantec Ghost window appears and starts configuring the system to build a recovery partition. In this process the partition created for recovery files in **Section B.2.2** is hidden and the recovery tool is saved in this partition.



**Figure B-8: Building the 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

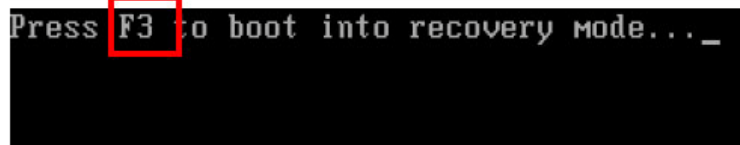


## NOTE:

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

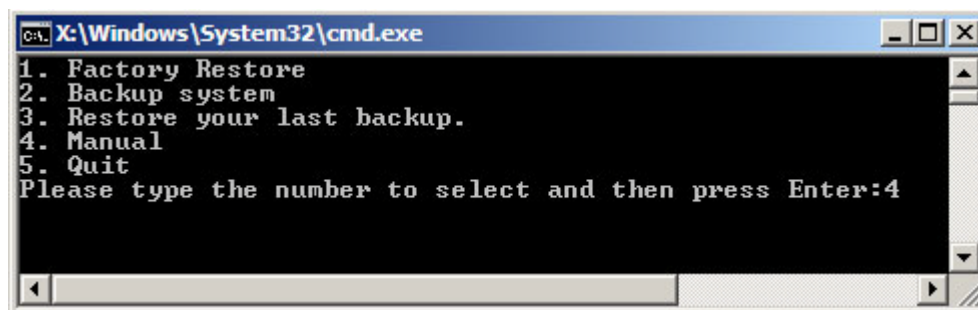
To create a factory default image, please follow the steps below.

**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.



**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.



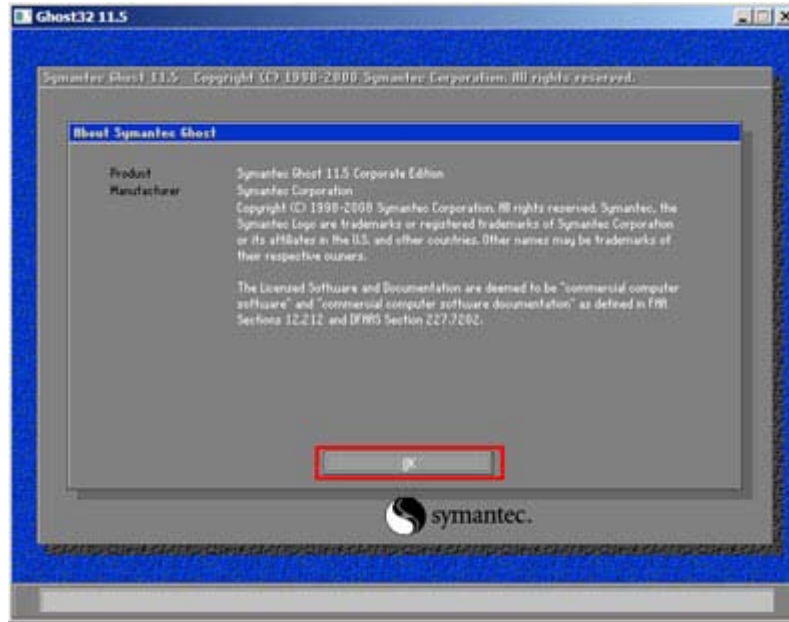


Figure B-12: About Symantec Ghost Window

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

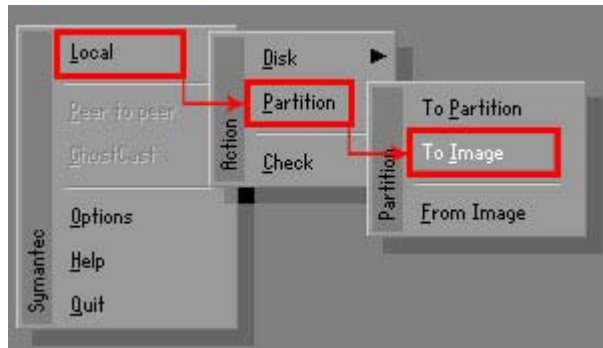


Figure B-13: Symantec Ghost Path

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



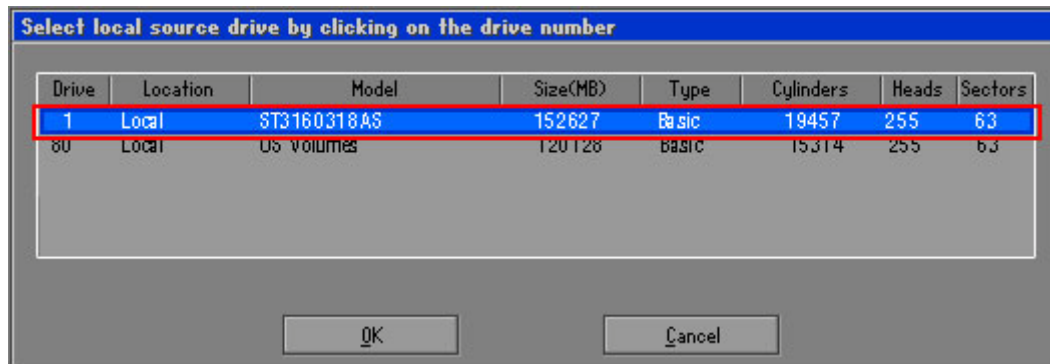


Figure B-14: Select a Local Source Drive

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

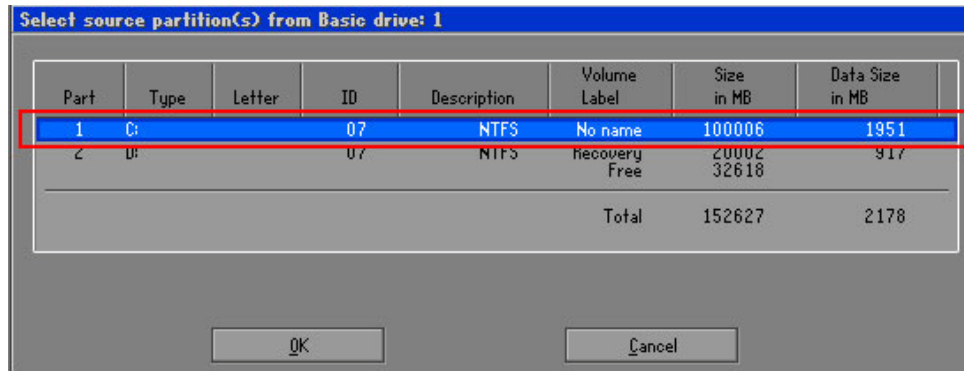


Figure B-15: Select a Source Partition from Basic Drive

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**.

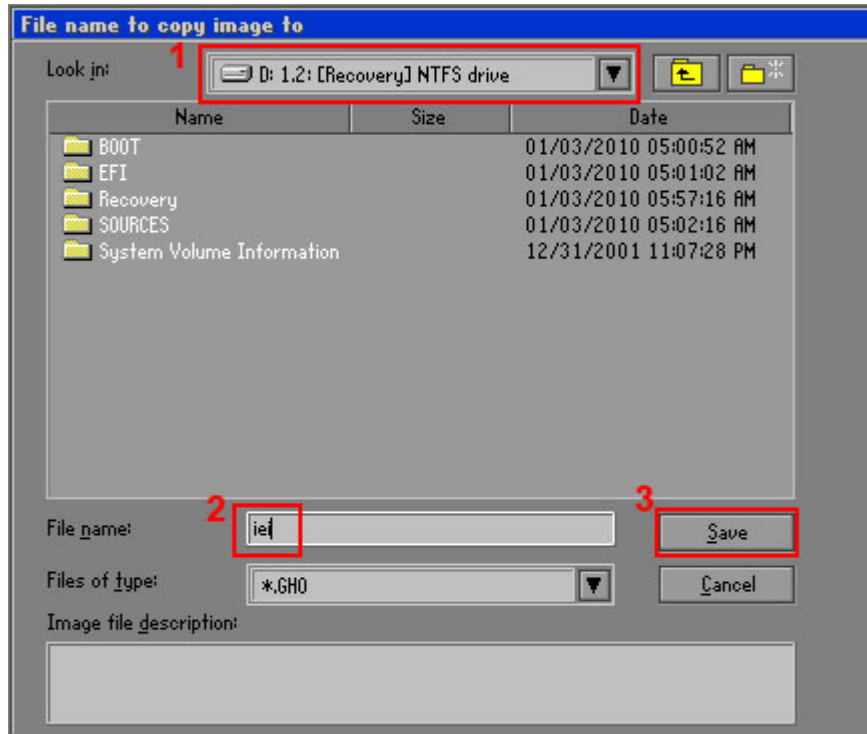


Figure B-16: File Name to Copy Image to

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

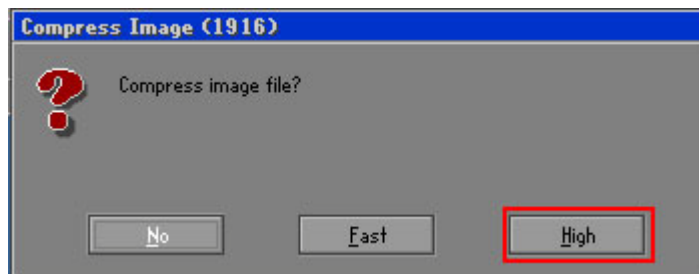
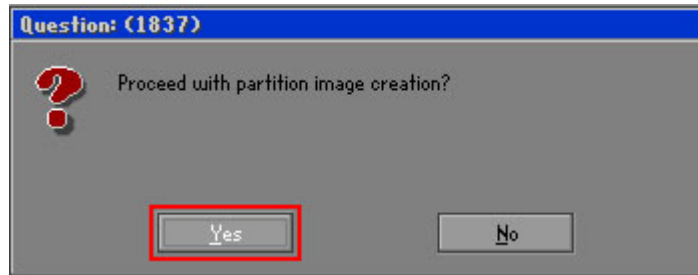


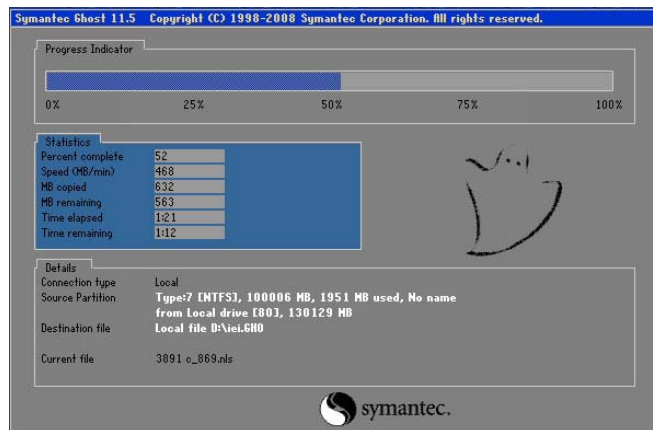
Figure B-17: Compress Image

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



**Figure B-18: Image Creation Confirmation**

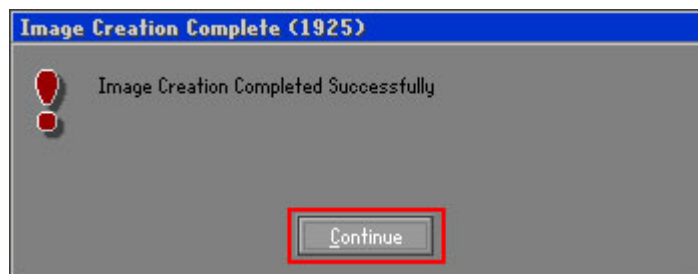
**Step 10:** The Symantec Ghost starts to create the factory default image (**Figure B-19**).



**Figure B-19: Image Creation Complete**

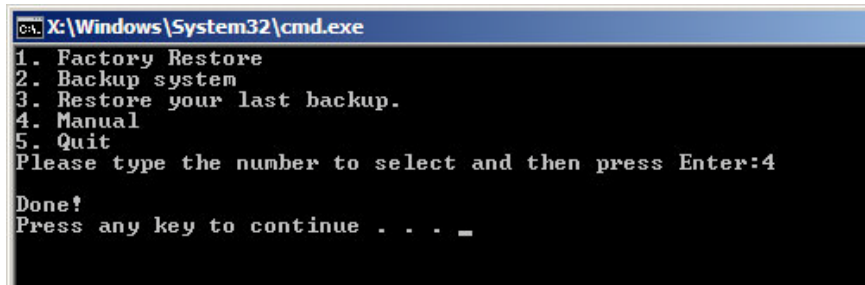
**Step 11:** When the image creation completes, a screen prompts as shown in **Figure B-20**.

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 Auto Recovery Setup Procedure

The auto recovery function allows a system to automatically restore from the factory default image after encountering a Blue Screen of Death (BSoD) or a hang for around 10 minutes. To use the auto recovery function, follow the steps described in the following sections.



#### **CAUTION:**

The setup procedure may include a step to create a factory default image. It is suggested to configure the system to a factory default environment before the configuration, including driver and application installations.

**Step 1:** Follow the steps described in **Section B.2.1 ~ Section B.2.3** to setup BIOS, create partitions and install operating system.

**Step 2:** Install the auto recovery utility into the system by double clicking the **Utility/AUTORECOVERY-SETUP.exe** in the One Key Recovery CD. This utility **MUST** be installed in the system, otherwise, the system will automatically restore from the factory default image every ten (10) minutes.





Figure B-22: Auto Recovery Utility

**Step 3:** Reboot the system from the 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-23: Launching the Recovery Tool

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

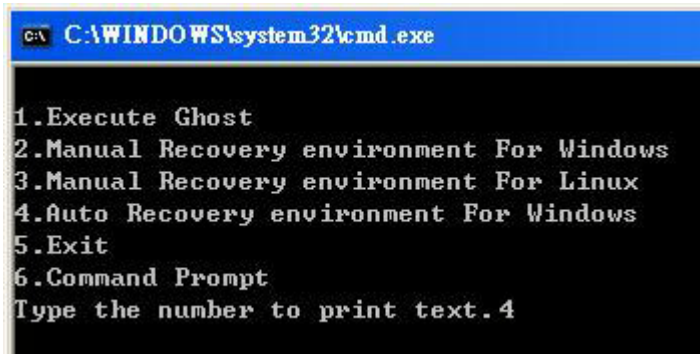
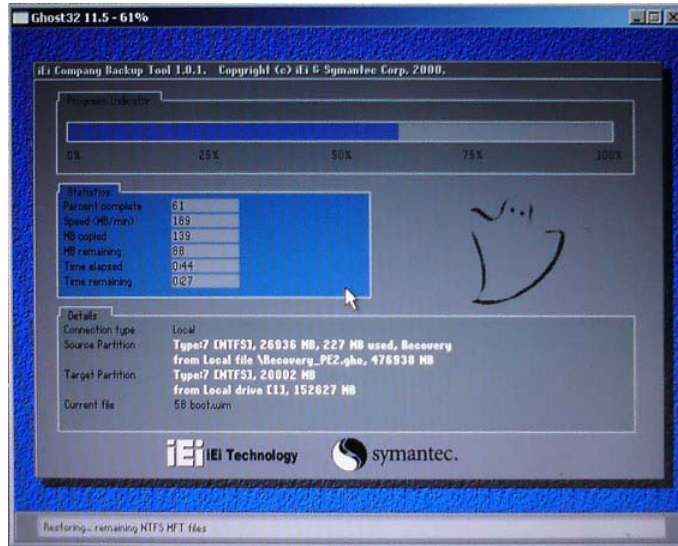


Figure B-24: Auto Recovery Environment for Windows

**Step 5:** The Symantec Ghost window appears and starts configuring the system to build an auto recovery partition. In this process the partition created for recovery files in **Section B.2.2** is hidden and the auto recovery tool is saved in this partition.



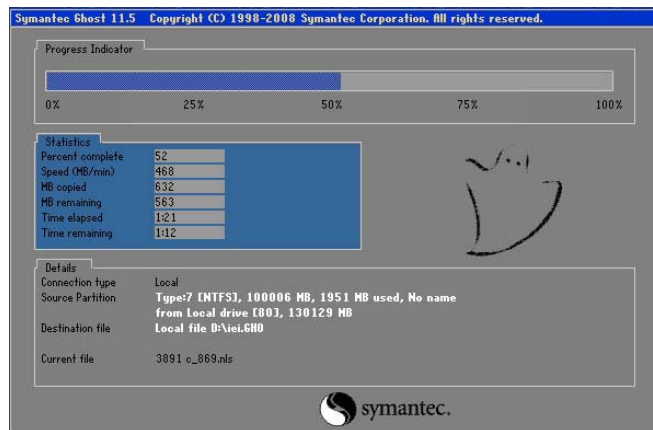
**Figure B-25: Building the Auto Recovery Partition**

**Step 6:** After completing the system configuration, the following message prompts to confirm whether to create a factory default image. Type **Y** to have the system create a factory default image automatically. Type **N** within 6 seconds to skip this process (The default option is YES). It is suggested to choose YES for this option.



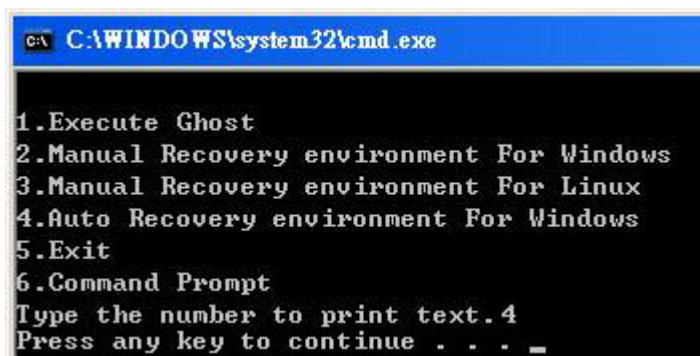
**Figure B-26: Factory Default Image Confirmation**

**Step 7:** The Symantec Ghost starts to create the factory default image (**Figure B-27**).



**Figure B-27: Image Creation Complete**

**Step 8:** After completing the system configuration, press any key in the following window to restart the system.



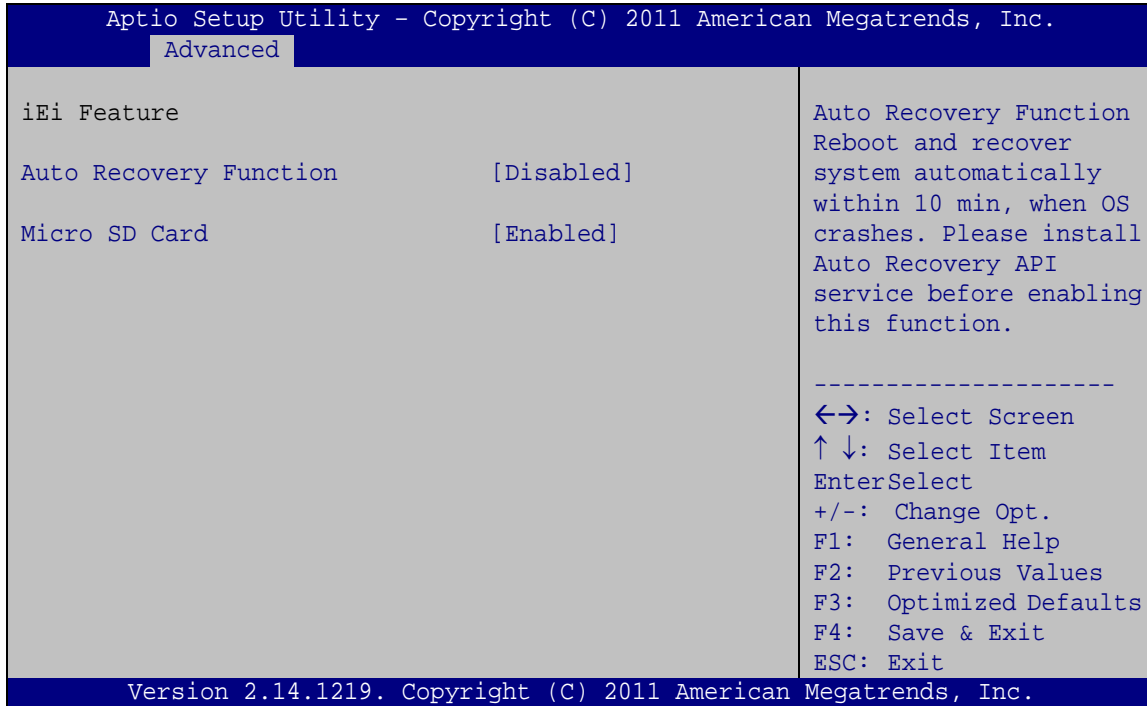
**Figure B-28: Press any key to continue**

**Step 9:** Eject the One Key Recovery CD and restart the system.

**Step 10:** Press the <DELETE> key as soon as the system is turned on to enter the BIOS.

**Step 11:** Enable the Auto Recovery Function option (**Advanced** → **iEi Feature** → **Auto Recovery Function**).





### BIOS Menu 22: IEI Feature

**Step 12:** Save changes and restart the system. If the system encounters a Blue Screen of Death (BSoD) or a hang for around 10 minutes, it will automatically restore from the factory default image.



### CAUTION:

The auto recovery function can only apply on a Microsoft Windows system running the following OS versions:

- Windows XP
- Windows Vista
- Windows 7

## B.4 Setup Procedure for Linux

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



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**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.

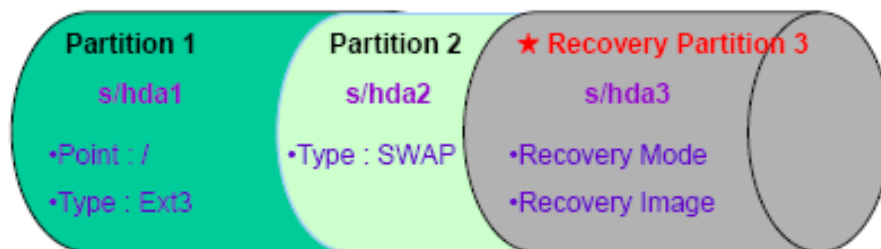
While installing Linux OS, please create two partitions:

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



### NOTE:

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



**Figure B-29: Partitions for Linux**

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

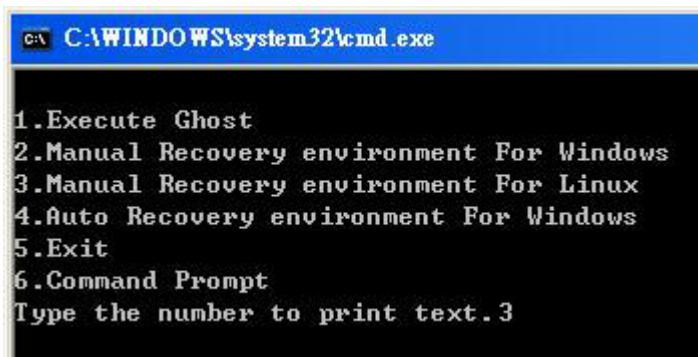
Follow **Step 1 ~ Step 3** described in **Section B.2.2**. Then type the following commands (marked in red) to create a partition for recovery images.

```
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 the 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-30**). The Symantec Ghost window appears and starts configuring the system to build a recovery partition. After completing the system configuration, press any key to reboot the system. Eject the recovery CD.



```
C:\WINDOWS\system32\cmd.exe
1. Execute Ghost
2. Manual Recovery environment For Windows
3. Manual Recovery environment For Linux
4. Auto Recovery environment For Windows
5. Exit
6. Command Prompt
Type the number to print text.3
```

**Figure B-30:** Manual Recovery Environment 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, 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-31: Access menu.lst in Linux (Text Mode)

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

```
#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=10f1acda
    ac38b5c78910 rhgb quiet
    initrd /initrd-2.6.25-14.fc9.i686.img

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

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

Step 7: The recovery tool menu appears. (Figure B-32)

```
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-32: 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.5 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. However, if the setup procedure in Section B.3 has been completed and the auto recovery function is enabled, the system will automatically restore from the factory default image without pressing the F3 key. The recovery tool main menu is shown below.

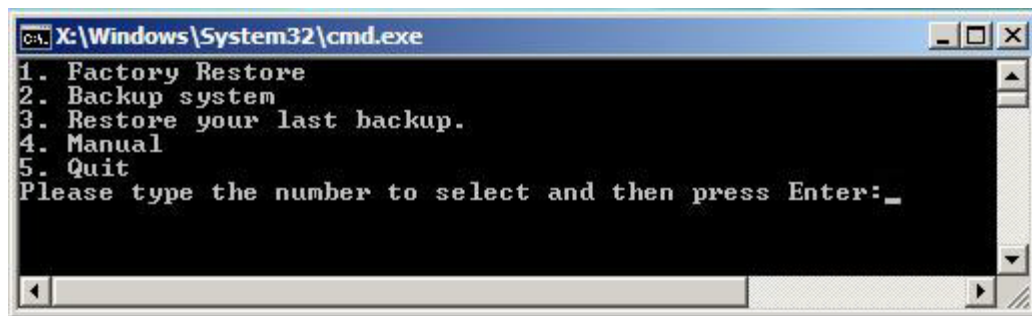


Figure B-33: Recovery Tool Main Menu

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:**

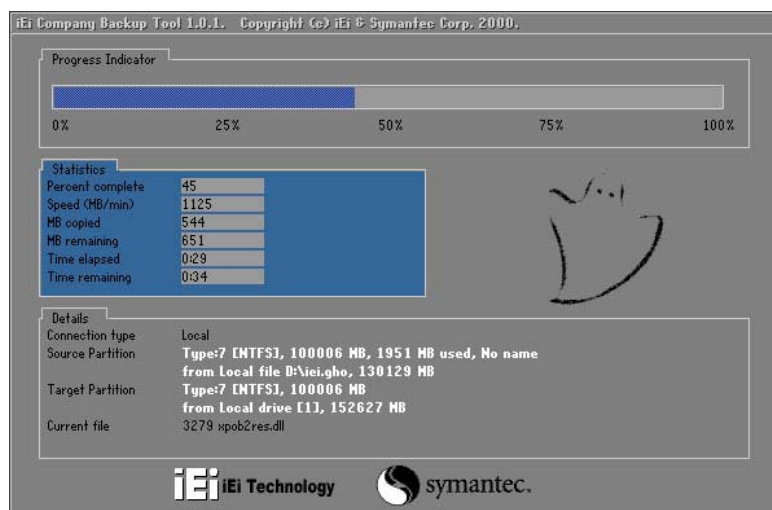
All data in the system will be deleted during the system recovery. Please backup the system files before restoring the system (either Factory Restore or Restore Backup).

### B.5.1 Factory Restore

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

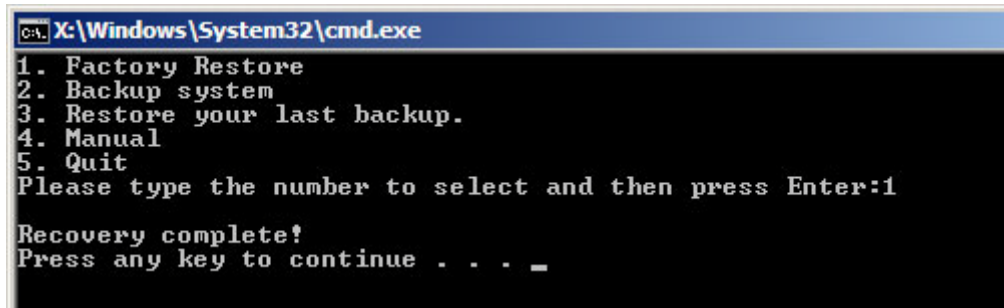
**Step 1:** Type <1> and press <Enter> in the main menu.

**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-34: Restore Factory Default**

**Step 3:** The screen shown in **Figure B-35** appears when completed. Press any key to reboot the system.



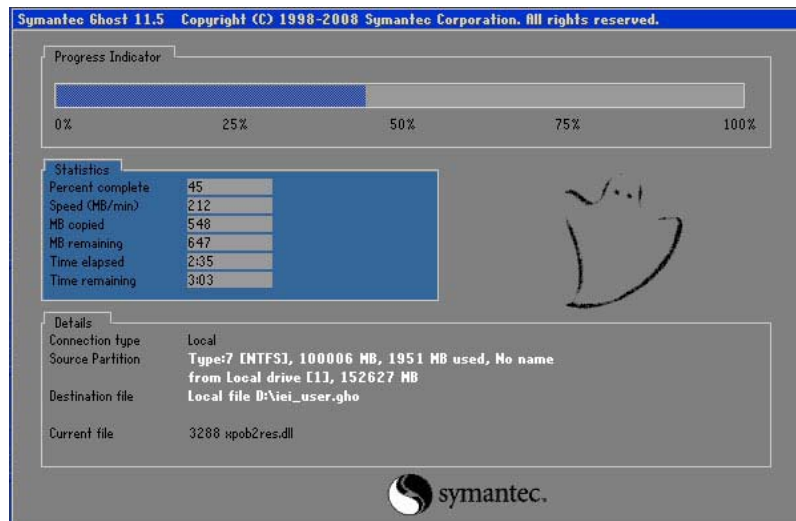
**Figure B-35: Recovery Complete Window**

## B.5.2 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-36: Backup System**

**Step 3:** The screen shown in **Figure B-37** appears when system backup is complete. Press any key to reboot the system.

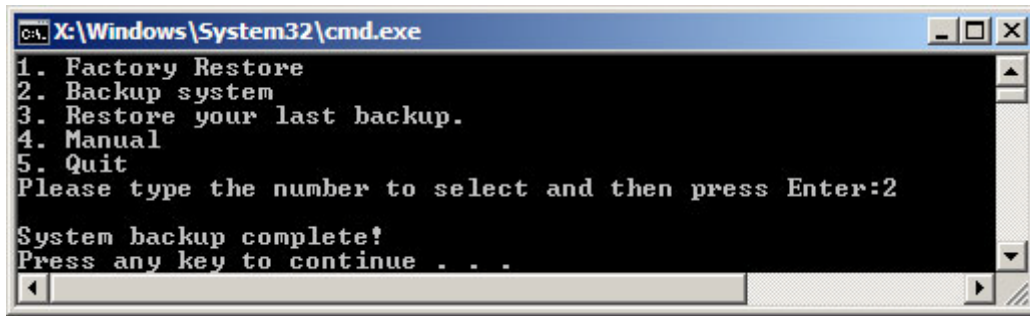


Figure B-37: System Backup Complete Window

### B.5.3 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).

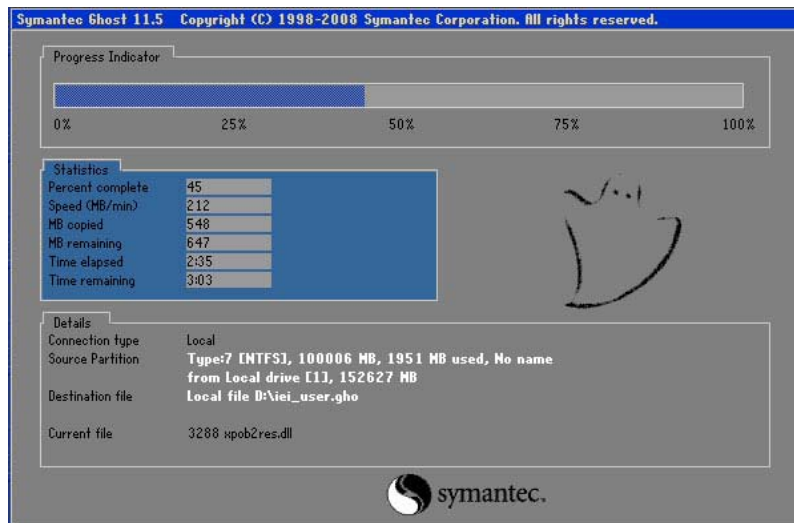


Figure B-38: Restore Backup

**Step 3:** The screen shown in **Figure B-39** appears when backup recovery is complete. Press any key to reboot the system.

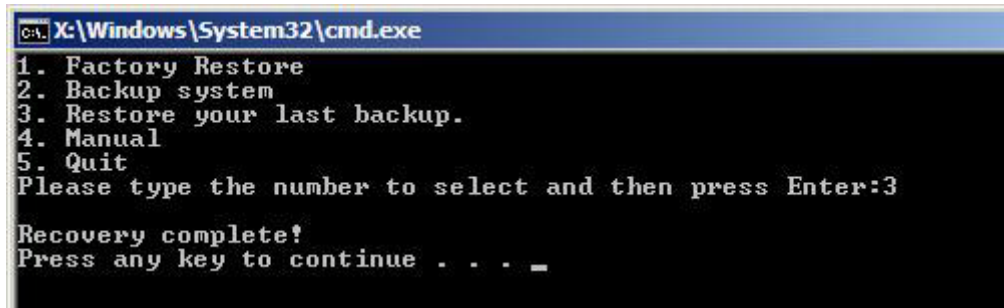


Figure B-39: Restore System Backup Complete Window

#### B.5.4 Manual

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

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

**Step 5:** The Symantec Ghost window appears. Use the Ghost program to backup or recover the system manually.

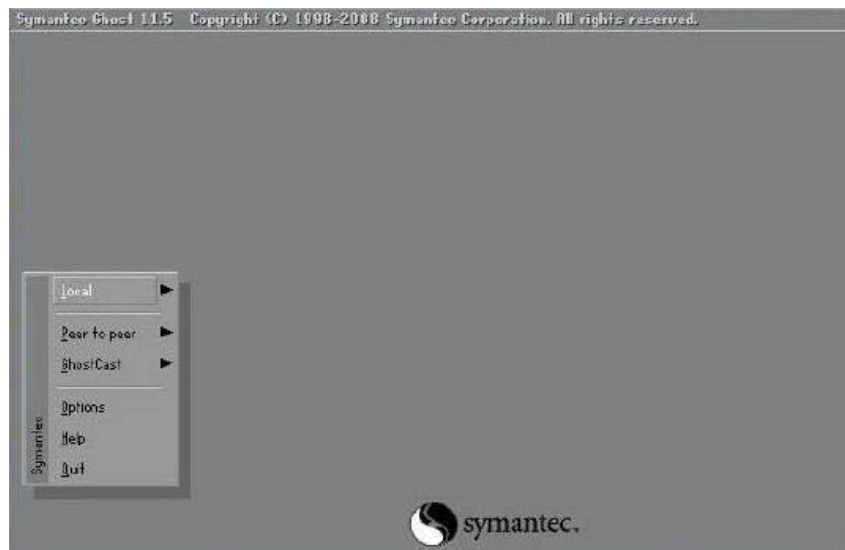


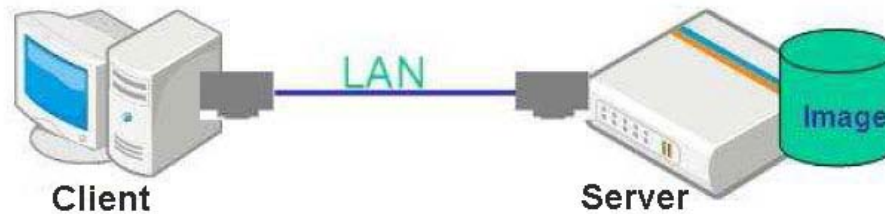
Figure B-40: Symantec Ghost Window

**Step 6:** When backup or recovery is completed, press any key to reboot the system.



## B.6 Restore Systems from a Linux Server through LAN

The One Key Recovery allows a client system to automatically restore to a factory default image saved in a Linux system (the server) through LAN connectivity after encountering a Blue Screen of Death (BSoD) or a hang for around 10 minutes. To be able to use this function, the client system and the Linux system MUST reside in the same domain.



### NOTE:

The supported client OS includes:

- Windows 2000
- Windows XP
- Windows Vista
- Windows 7
- Windows CE
- Windows XP Embedded

Prior to restoring client systems from a Linux server, a few setup procedures are required.

**Step 1:** Configure DHCP server settings

**Step 2:** Configure TFTP settings

**Step 3:** Configure One Key Recovery server settings

**Step 4:** Start DHCP, TFTP and HTTP

**Step 5:** Create a shared directory

**Step 6:** Setup a client system for auto recovery

The detailed descriptions are described in the following sections. In this document, two types of Linux OS are used as examples to explain the configuration process – CentOS 5.5 (Kernel 2.6.18) and Debian 5.0.7 (Kernel 2.6.26).

## B.6.1 Configure DHCP Server Settings

**Step 1:** Install the DHCP

`#yum install dhcp` (CentOS, commands marked in red)

`#apt-get install dhcp3-server` (Debian, commands marked in blue)

**Step 2:** Confirm the operating system default settings: dhcpd.conf.

### CentOS

Use the following command to show the DHCP server sample location:

`#vi /etc/dhcpd.conf`

The DHCP server sample location is shown as below:

```
# DHCP Server Configuration file.
# see /usr/share/doc/dhcp*/dhcpd.conf.sample
#
```

Use the following command to copy the DHCP server sample to etc/dhcpd.conf:

`#cp /usr/share/doc/dhcp-3.0.5/dhcpd.conf.sample /etc/dhcpd.conf`

`#vi /etc/dhcpd.conf`

```
ddns-update-style interim;
ignore client-updates;

subnet 192.168.0.0 netmask 255.255.255.0 {
# --- default gateway
    option routers          192.168.0.2;
    option subnet-mask     255.255.255.0;

    option nis-domain      "domain.org";
    option domain-name     "domain.org";
    option domain-name-servers 192.168.0.1;
    next-server 192.168.0.6;
    filename "pxelinux.0";
    option time-offset     -18000; # Eastern Standard Time
    option ntp-servers     192.168.1.1;
}
```

### Debian

`#vi /etc/dhcpd.conf`

Edit “/etc/dhcpd.conf” for your environment. For example, add

`next-server PXE server IP address;`

filename "pxelinux.0";

```
ddns-update-style interim;
ignore client-updates;

subnet 192.168.0.0 netmask 255.255.255.0 {
# --- default gateway
option routers 192.168.0.2;
option subnet-mask 255.255.255.0;

option nis-domain "domain.org";
option domain-name "domain.org";
option domain-name-servers 192.168.0.1;
next-server 192.168.0.6;
filename "pxelinux.0";
option time-offset -18000; # Eastern Standard Time
option ntp-servers 192.168.1.1;
}
```

### B.6.2 Configure TFTP Settings

**Step 1:** Install the tftp, httpd and syslinux.

`#yum install tftp-server httpd syslinux` (CentOS)

`#apt-get install tftpd-hpa xinetd syslinux` (Debian)

**Step 2:** Enable the TFTP server by editing the "/etc/xinetd.d/tftp" file and make it use the remap file. The "-vvv" is optional but it could definitely help on getting more information while running the remap file. For example:

#### CentOS

`#vi /etc/xinetd.d/tftp`

Modify:

`disable = no`

`server_args = -s /tftpboot -m /tftpboot/tftpd.remap -vvv_`

```
socket_type = dgram
protocol = udp
wait = yes
user = root
server = /usr/sbin/in.tftpd
server_args = -s /tftpboot -m /tftpboot/tftpd.remap -vvv
disable = no
per_source = 11
cps = 100 2
flags = IPv4
```



### Debian

Replace the TFTP settings from “inetd” to “xinetd” and annotate the “inetd” by adding “#”.

`#vi /etc/inetd.conf`

Modify: `#tftp dgram udp wait root /usr/sbin.....` (as shown below)

```
#:BOOT: TFTP service is provided primarily for booting. Most sites
# run this only on machines acting as "boot servers."
#tftp dgram udp wait root /usr/sbin/in.tftpd /usr/sbin/in.tftpd -s
/var/lib/tftpboot
```

`#vi /etc/xinetd.d/tftp`

```
socket_type      = dgram
protocol        = udp
wait            = yes
user            = root
server          = /usr/sbin/in.tftpd
server_args     = -s /tftpboot -m /tftpboot/tftpd.remap -vvv
disable         = no
per_source      = 11
cps             = 100 2
flags           = IPv4
```

## B.6.3 Configure One Key Recovery Server Settings

**Step 1:** Copy the **Utility/RECOVERYR10.TAR.BZ2** package from the One Key Recovery CD to the system (server side).



**Step 2:** Extract the recovery package to /.

```
#cp RecoveryR10.tar.bz2 /
#cd /
#tar -xvjf RecoveryR10.tar.bz2
```

**Step 3:** Copy “pxelinux.0” from “syslinux” and install to “tftpboot”.

```
#cp /usr/lib/syslinux/pxelinux.0 /tftpboot/
```



### B.6.4 Start the DHCP, TFTP and HTTP

Start the DHCP, TFTP and HTTP. For example:

#### CentOS

```
#service xinetd restart
```

```
#service httpd restart
```

```
#service dhcpd restart
```

#### Debian

```
#/etc/init.d/xinetd reload
```

```
#/etc/init.d/xinetd restart
```

```
#/etc/init.d/dhcp3-server restart
```

### B.6.5 Create Shared Directory

**Step 1:** Install the samba.

```
#yum install samba
```

**Step 2:** Create a shared directory for the factory default image.

```
#mkdir /share
```

```
#cd /share
```

```
#mkdir /image
```

```
#cp iei.gho /image
```



#### **WARNING:**

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

---

**Step 3:** Confirm the operating system default settings: smb.conf.

```
#vi /etc/samba/smb.conf
```

Modify:

[image]

```
comment = One Key Recovery
```

```
path = /share/image
```

```
browseable = yes
```

```
writable = yes
```

```
public = yes
```

```
create mask = 0644
```

```
directory mask = 0755
```

**Step 4:** Edit “/etc/samba/smb.conf” for your environment. For example:

```
# "security = user" is always a good idea. This will require a Unix account
# in this server for every user accessing the server. See
# /usr/share/doc/samba-doc/htmldocs/Samba3-HOWTO/ServerType.html
# in the samba-doc package for details.
security = share
```

```
[image]
comment = One Key Recovery
path = /share/image
browseable = yes
writable = yes
public = yes
create mask = 0644
directory mask = 0755
```

**Step 5:** Modify the hostname

```
#vi /etc/hostname
```

Modify: RecoveryServer

```
RecoveryServer
```

## B.6.6 Setup a Client System for Auto Recovery

**Step 1:** Configure the following BIOS options of the client system.

Advanced → iEi Feature → Auto Recovery Function → **Enabled**

Advanced → iEi Feature → Recover from PXE → **Enabled**

Boot → Launch PXE OpROM → **Enabled**

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**Step 2:** Continue to configure the **Boot Option Priorities** BIOS option of the client system:

Boot Option #1 → remain the default setting to boot from the original OS.

Boot Option #2 → select the boot from LAN option.

**Step 3:** Save changes and exit BIOS menu.

Exit → **Save Changes and Exit**

**Step 4:** Install the auto recovery utility into the system by double clicking the **Utility/AUTORECOVERY-SETUP.exe** in the One Key Recovery CD. This utility **MUST** be installed in the system, otherwise, the system will automatically restore from the factory default image every ten (10) minutes.



**Step 5:** Restart the client system from LAN. If the system encounters a Blue Screen of Death (BSoD) or a hang for around 10 minutes, it will automatically restore from the factory default image. The following screens will show when the system starts auto recovering.

```
Realtek PCIe GBE Family Controller Series v2.35 (06/14/10)
CLIENT MAC ADDR: 00 18 7D 13 E6 89  GUID: 00020003-0004-0005-0006-0007000000
DHCP . ./
```

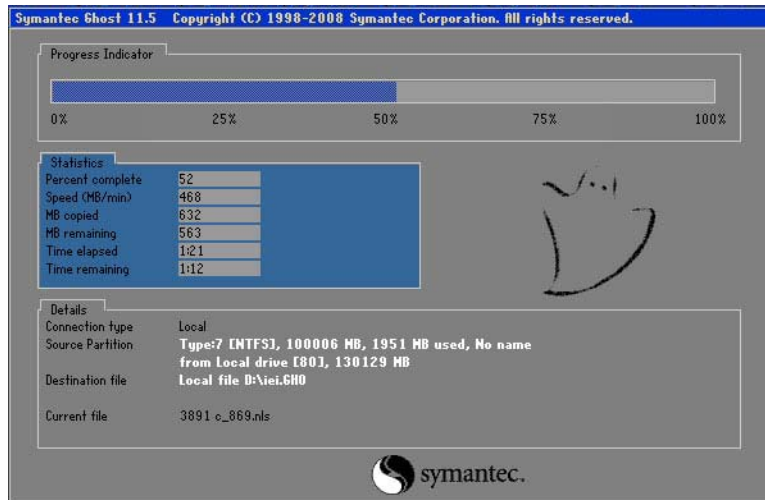
```

My IP address seems to be C0A80009 192.168.0.9
ip=192.168.0.9:192.168.0.8:192.168.0.2:255.255.255.0
TFTP prefix:
Trying to load: pxelinux.cfg/00020003-0004-0005-0006-000700080009
Trying to load: pxelinux.cfg/01-00-18-7d-13-e6-89
Trying to load: pxelinux.cfg/C0A80009
Trying to load: pxelinux.cfg/C0A8000
Trying to load: pxelinux.cfg/C0A800
Trying to load: pxelinux.cfg/C0A80
Trying to load: pxelinux.cfg/C0A8
Trying to load: pxelinux.cfg/C0A
Trying to load: pxelinux.cfg/C0
Trying to load: pxelinux.cfg/C
Trying to load: pxelinux.cfg/default
boot:
    
```

```

Windows is loading files...

IP: 192.168.0.8, File: \Boot\WinPE.wim
    
```



Symantec Ghost 11.5 Copyright (C) 1998-2008 Symantec Corporation. All rights reserved.

Progress Indicator: 50%

Statistics	
Percent complete	52
Speed (MB/min)	468
MB copied	632
MB remaining	563
Time elapsed	1:21
Time remaining	1:12

Handwritten mark: 201

Details	
Connection type	Local
Source Partition	Type:7 [NTFS], 100006 MB, 1951 MB used, No name from Local drive [80], 130129 MB
Destination file	Local file D:\iei.GHO
Current file	3891 e_869.nls

symantec.

 **NOTE:**

A firewall or a SELinux is not in use in the whole setup process. If there is a firewall or a SELinux protecting the system, modify the configuration information to accommodate them.



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### B.7 Other Information

#### B.7.1 Using AHCI Mode or ALi M5283 / VIA VT6421A Controller

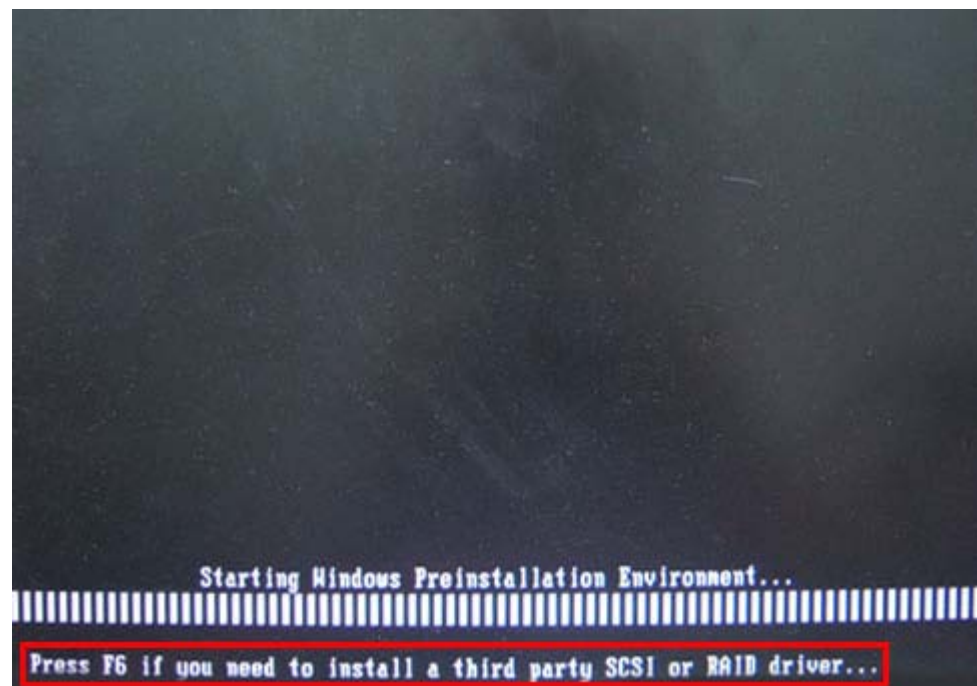
When the system uses AHCI mode or some specific SATA controllers such as ALi M5283 or VIA VT6421A, the SATA RAID/AHCI driver must be installed before using one key recovery. Please follow the steps below to install the SATA RAID/AHCI driver.

**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.

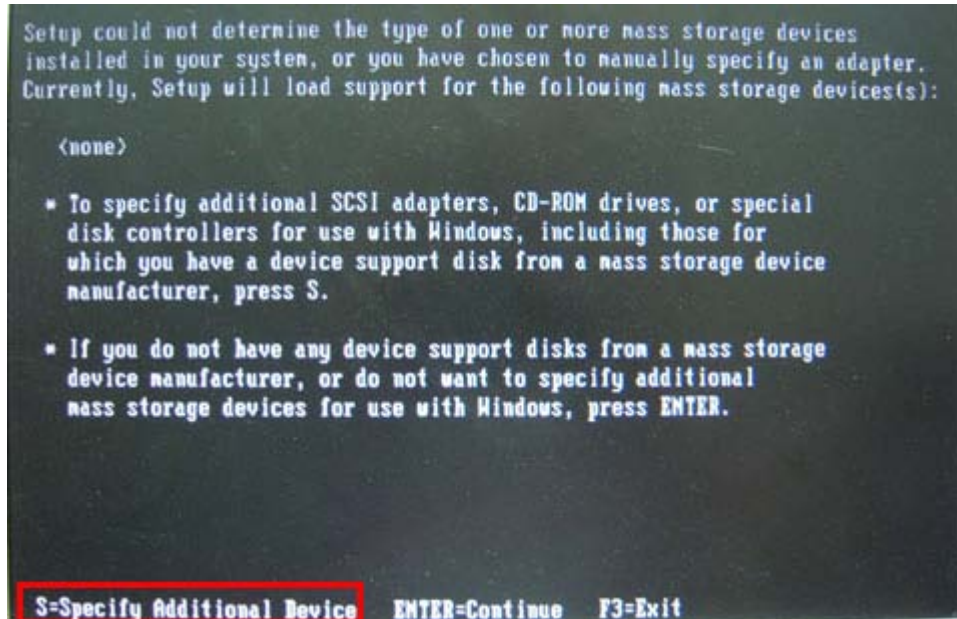
**Step 2:** Connect the USB floppy disk drive to the system.

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

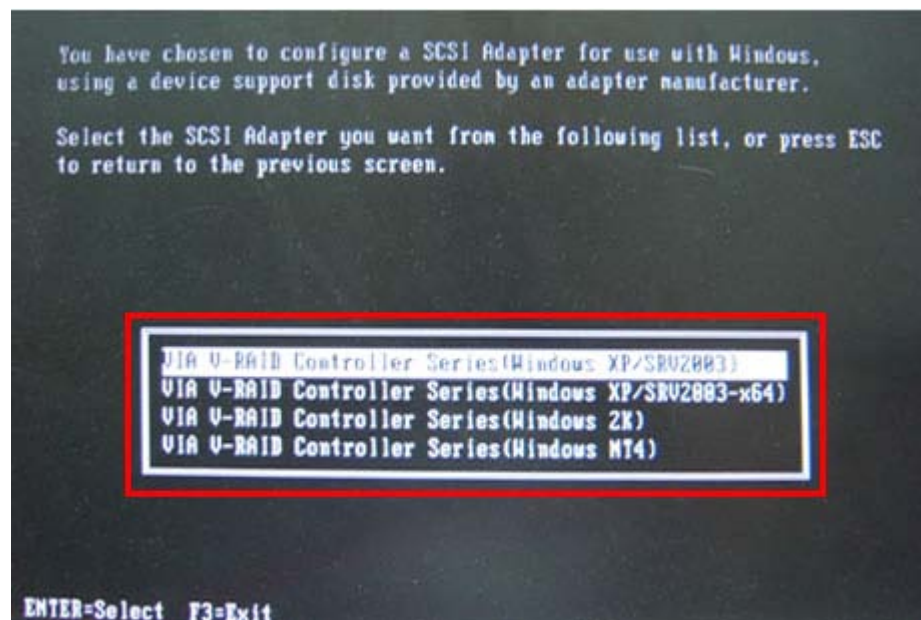
**Step 4:** When launching the recovery tool, press <F6>.



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.7.2 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

# 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.
APM	The Advanced Power Management (APM) application program interface (API) enables the inclusion of power management in the BIOS.
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.
CMOS	Complimentary metal-oxide-conductor is a type of integrated circuit used in chips like static RAM and microprocessors.
COM	COM is used to refer to serial ports. Serial ports offer serial communication to expansion devices. The serial port on a personal

	computer is usually a male DE-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.
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.
EHCI	The Enhanced Host Controller Interface (EHCI) specification is a register-level interface description for USB 2.0 Host Controllers.
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
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.
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.
MAC	The Media Access Control (MAC) protocol enables several terminals or network nodes to communicate in a LAN, or other multipoint networks.

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PCIe	PCI Express (PCIe) is a communications bus that uses dual data lines for full-duplex (two-way) serial (point-to-point) communications between the SBC components and/or expansion cards and the SBC chipsets. Each line has a 2.5 Gbps data transmission rate and a 250 MBps sustained data transfer rate.
POST	The Power-on Self Test (POST) is the pre-boot actions the system performs when the system is turned-on.
QVGA	Quarter Video Graphics Array (QVGA) refers to a display with a resolution of 320 x 240 pixels.
RAM	Random Access Memory (RAM) is a form of storage used in computer. RAM is volatile memory, so it loses its 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 3Gb/s 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, while

USB 2.0 supports 480Mbps data transfer rates.

VGA

The Video Graphics Array (VGA) is a graphics display system developed by IBM.



Appendix

D

# Watchdog Timer

---


**NOTE:**

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

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

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

**INT 15H:**

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

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

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

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

**NOTE:**

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

**Example program:**

```
; INITIAL TIMER PERIOD COUNTER
```

```
;
```

```
W_LOOP:
```

```
    MOV    AX, 6F02H    ;setting the time-out value
```

```
    MOV    BL, 30H      ;time-out value is 48 seconds
```

```
    INT    15H
```

```
;
```

```
; ADD THE APPLICATION PROGRAM HERE
```

```
;
```

```
    CMP    EXIT_AP, 1    ;is the application over?
```

```
    JNE    W_LOOP       ;No, restart the application
```

```
    MOV    AX, 6F02H     ;disable Watchdog Timer
```

```
    MOV    BL, 0        ;
```

```
    INT    15H
```

```
;
```

```
; EXIT ;
```



Appendix

E

# Hazardous Materials Disclosure

---



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

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

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

Please refer to the table on the next page.

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

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

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

## KINO-CVR-D25502/N26002

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

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

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

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

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