EX-92653/92654/92655 Box PC
User Manual

Release Date	Revision
Jun 2009	V1.0
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Warning!

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications.
It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

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Chapter 1

1.1 Specifications

- Intel® Core™ 2 Duo Socket P processor with 533/667/800MHz FSB
- Intel®GM965 + Intel®ICH8ME
- Fanless design
- 2 x DDR2 DIMM Socket, Support DDR2 667/533 up to 4GB
- 2 x 10/100 Ethernet LAN, 1 x VGA connector
- 3 x COM ports & 4 x USB ports
- 1 x 2.5” HDD space & 1 x CF Slot
- Support 11~32V/DC Input, support AT/ATX mode

1.2 Specifications

Model No. / Specs	EX-92653	EX-92654	EX-92655
CPU	Socket P Intel® Core™ 2 Duo processor with 533/667/800MHz FSB (Up to T7250 / 2M Cache, 2.0G 800MHz FSB Processor)		
Chipset	Intel®GM965 + Intel®ICH8ME		
System Memory	2 x DDR2 DIMM Socket, Support DDR2 667/533 up to 4GB		
Storage support	1 x 2.5” SATA HDD space and 1 x External CF Slot		
VGA	1x VAG port		
Keyboard & Mouse	2 x PS/2 for Keyboard and Mouse Connectors		
Serial Port	3 x RS-232, 1x RS232/422/485 (optional)		
Ethernet	2 x Gigabit LAN		
USB Port	4 x USB port on the I/O side and 2 x USB on the front side (Optional)		
Audio	1 x Line-out, 1 x MIC in		
Expansion Slots	None	1 x PCI slot	2 x PCI slots
Power Input	DC 11~32V		
Watchdog Timer	Software programmable supported		
OS support	XP Pro, XP Embedded		
Construction	Alumina Molding & Heavy-duty steel chassis		
Color	Blue Heat sink and Black Chassis		
Mounting	Wall mount		
Dimensions (WxHxD)	203.2 x 268 x 73.3 mm	203.2 x 268 x 104 mm	203.2 x 268 x 125mm
Net Weight	4.5kgs	4.85kgs	5kgs
Operating Temperature	0~50℃		
Storage Temperature	-20~60℃		
Relative Humidity	10%~95% (non-condensing)		
Certificate	Meet CE / FCC Class A		

1.3 Dimensions

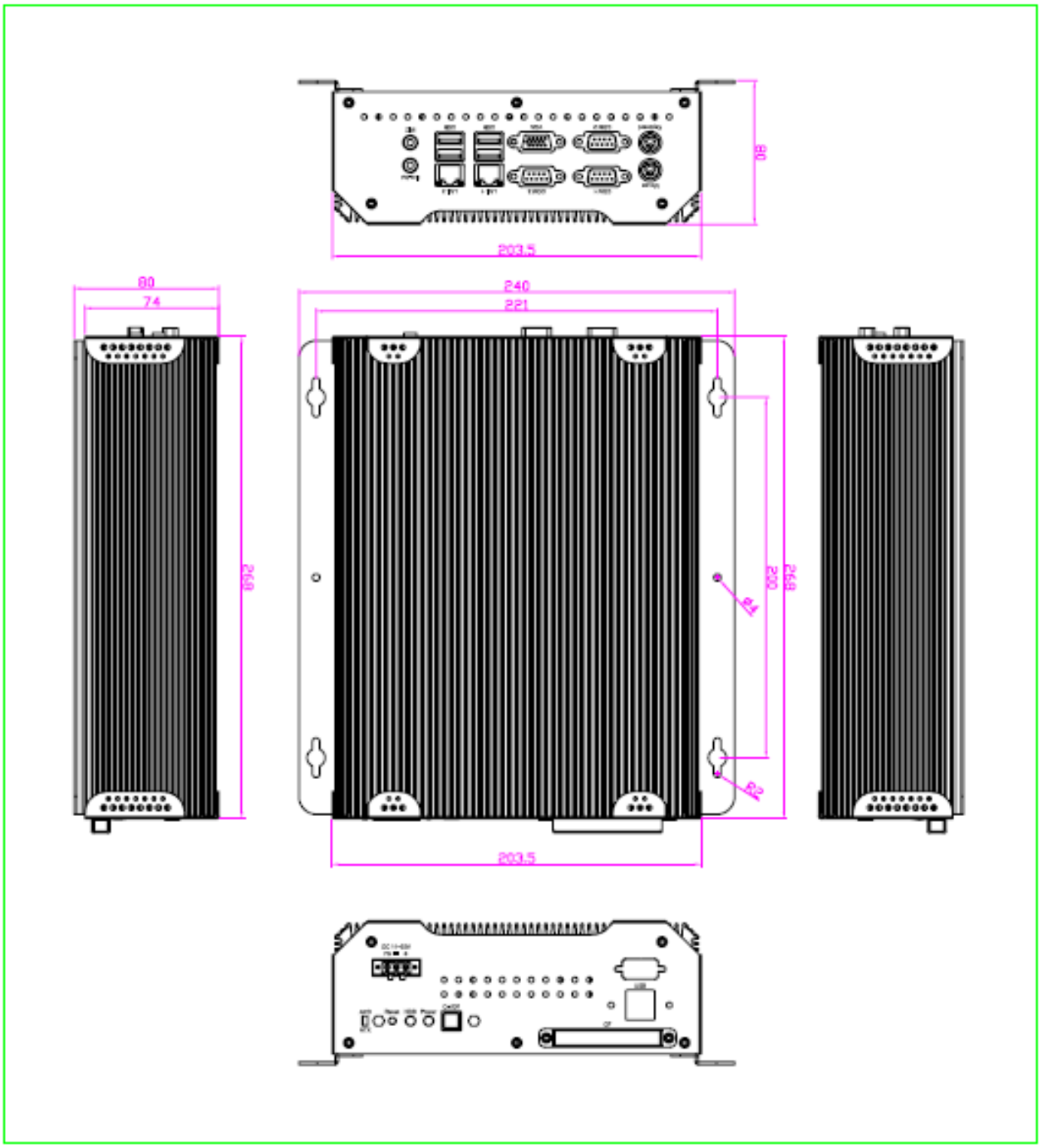

Figure 1.1: Dimensions of the EX-92653

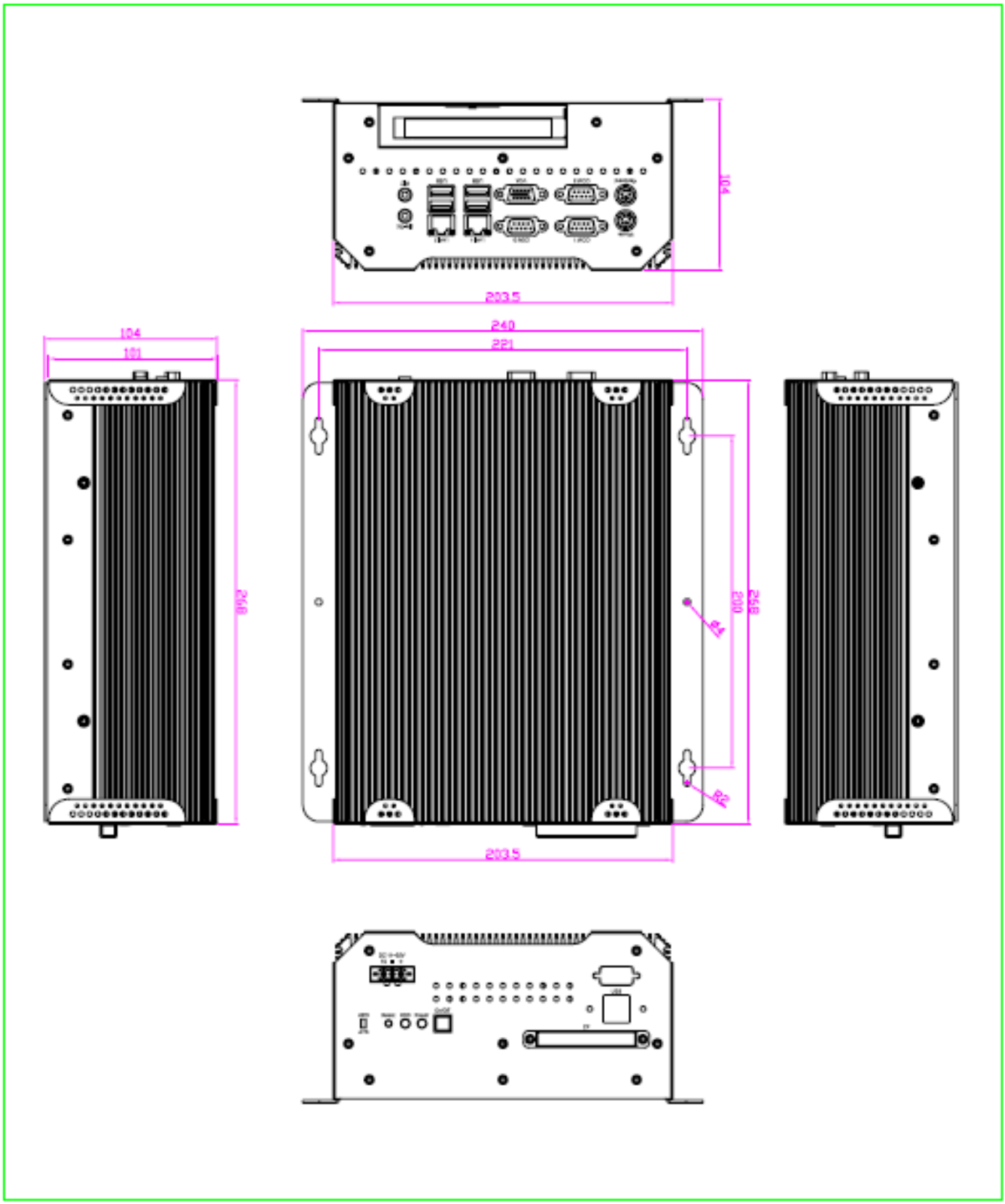

Figure 1.2: Dimensions of the EX-92654

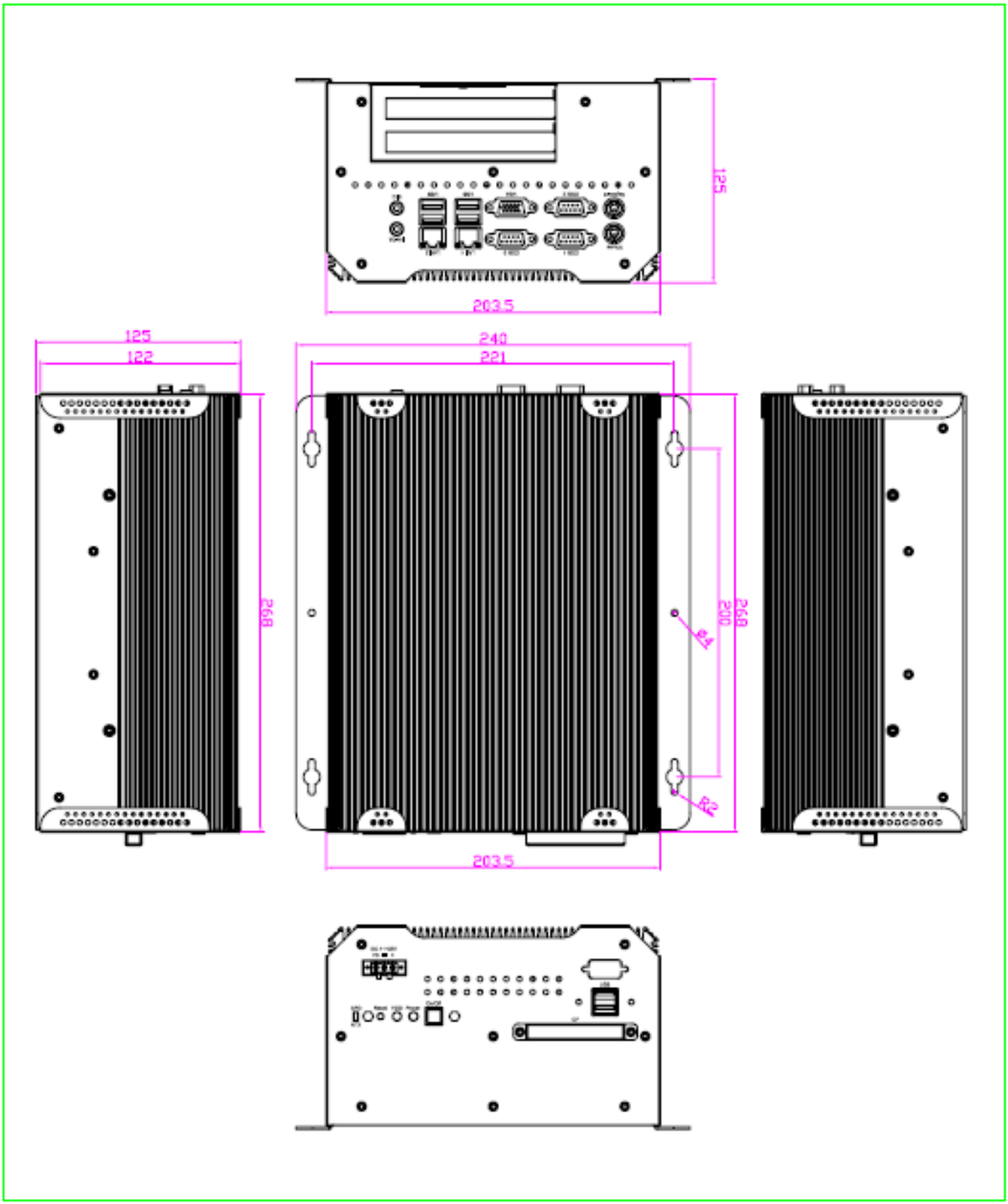

Figure 1.3: Dimensions of the EX-92655

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1.4 Mainboard

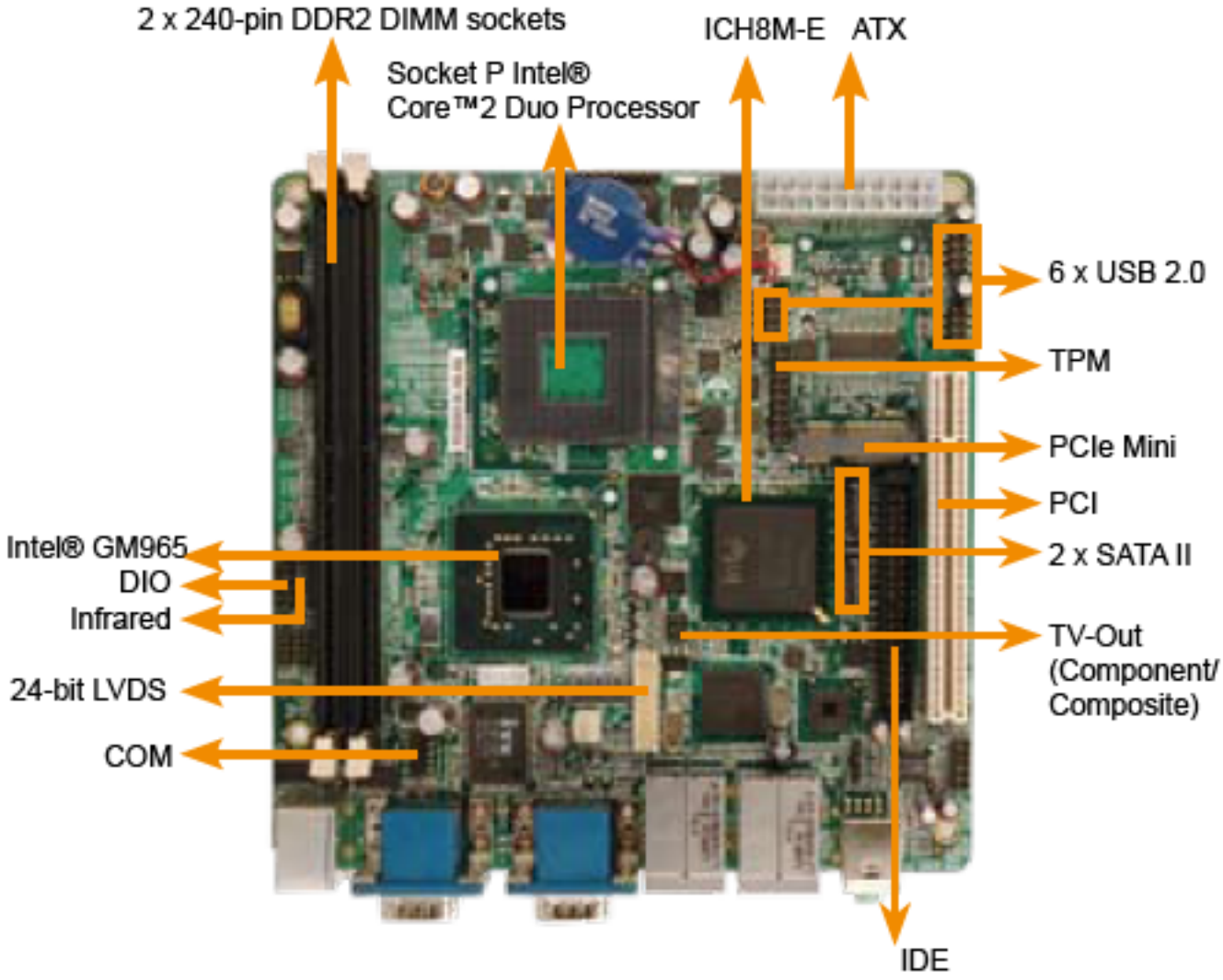


Figure 1.4: Mainboard Overview

1.5 Safety Precautions

Follow the messages below to avoid your systems from damage:

* Avoid your system from static electricity on all occasions.
* Prevent electric shock. Don‘t touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
*Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

1.6 Brief Description of the EX-92653/92654/92655

The EX-92653/92654/92655 is a Fan-less High-efficiency Thermal Solution and ultra-compact standalone Box PC, powered by an Intel Core 2 Duo, up to T7250 2.0GHz, and supporting 4 USB 2.0 ports, 3x COM Ports, 1 x VGA, 1 x PCI slots (EX-92654 only) or 2x PCI slots (EX-92655 only), 1 x SATA HDD, 1 x external CF slot etc. It is ideal for kiosks, POS systems, airport terminal controllers, digital entertainments, etc. and running factory operations from small visual interface and maintenance applications to large control process applications. The EX-9265x works very well along with any of our Display Monitor series. It absolutely can provide an easy way to perform control and field maintenance. It comes with a DC11~32V wide-ranging power input.

Figure 1.5: Front View of EX-9265x (92654)

Figure 1.6: Rear View of EX-9265x (92654)

Chapter 2 Hardware Installation

2.1 Installation of CPU

This section provides information on how to use the jumpers and connectors on the mainboard in order to set up a workable system.

2.1.1 Installing the CPU

The mainboard supports a Socket 478MT (Napa) processor socket for Intel® Core™ 2 Duo , Intel® Core™ Duo and Intel® Core™ Solo mobile processors.
The processor socket comes with a screw to secure the processor. As shown in the left picture below, loosen the screw first before inserting the processor. Place the processor into the socket by making sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket. Once the processor has slide into the socket, fasten the screw. Refer to the figures below.

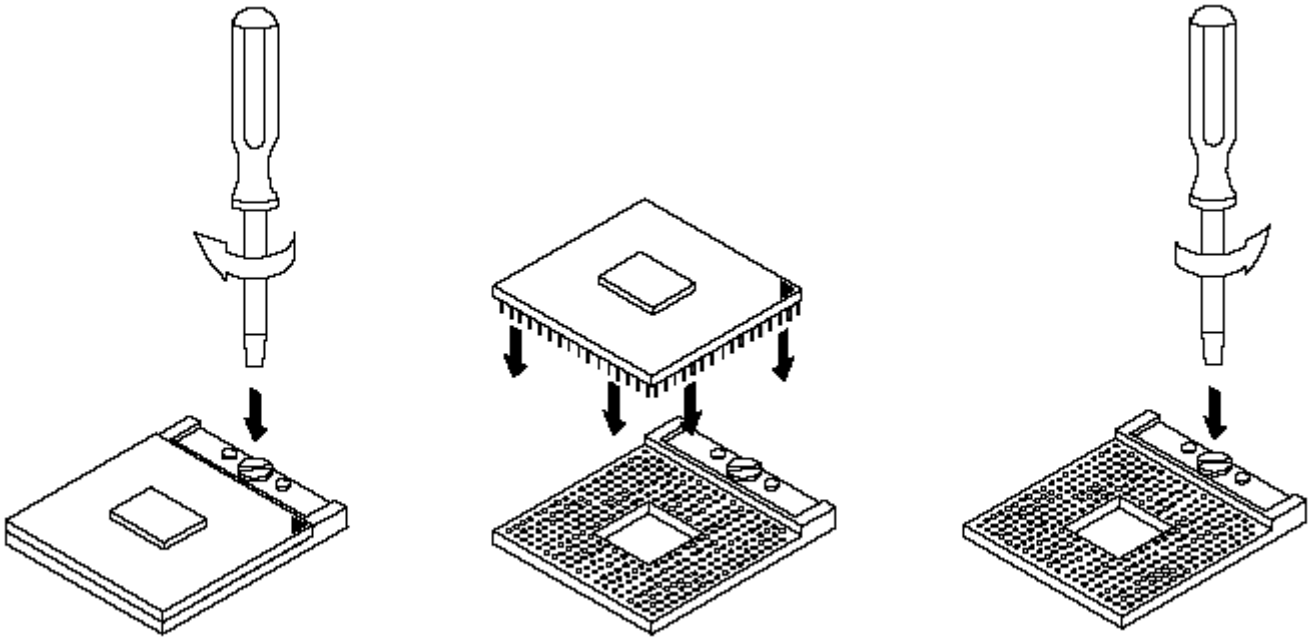


Figure 2.1: Installation of CPU

Note:
Ensure that the CPU heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause your system tohang or be unstable.

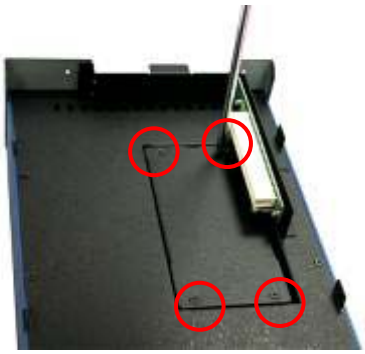
2.2 Installation of HDD

2.2.1 Removing bottom cover

Use screwdriver to remove the bottom cover 27 screws. Keep the safely for later use. As shown.

2.2.2 Removing HDD Bracket

Disengage the housing of Hard disk drive. Just unscrew the 4 screws, you can easily find the HDD. As shown.



2.2.3 Connecting Cable to HDD

Connect the cable to the HDD, making sure that the red stripe of the cable is on the right side (if connected with the top of the HDD facing upward).

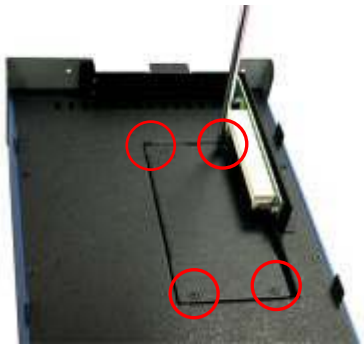
** Onboard one Compact Flash slot as circled in the picture

2.2.4 Tightening HDD

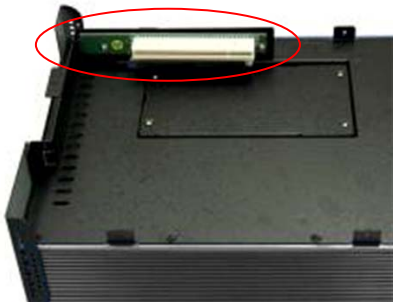
Tightly fasten the four screws as circled to secure the HDD.

2.2.5 Installing HDD

Get the 4 screws tightened onto the chassis as shown in the picture.



2.3 Installation of PCI Expansion Add on Cards

2.3.1 Removing bottom cover Use screwdriver to remove the bottom cover 27 screws. Keep the safely for later use. As shown.	
2.3.2 Support 1 x PCI slot (EX-92654 only) **Support 2 x PCI slots (EX-92655 only)** Shown in the picture are the one PCI expansion slots for addon. The location of the 1 x PCI expansion slot card is found by the side of the rail.	
2.3.3 Insert the PCI Card Now slide an addon into the slot of the PCI as circled in the picture and making sure the golden part of the card is evenly aligned with the slot of the PCI. Then carefully push the card deep into the slot.	
2.3.4 Tightening PCI bracket Now get the addon secured by tightening the screw as circled in the picture. ** Support Card size of PCI : 115 mm x 210mm	
2.2.5 finish the installation To finish the job, get the 27 screws tightened onto the chassis as shown in the picture.	

2.4 Installing the Memory

The mainboard supports two DDR2 memory socket for a maximum total memory of 4GB in DDR2 memory type.

Installing and Removing Memory Modules

To install the DDR2 modules, locate the memory slot on the board and perform the following steps:

1. Hold the DDR2 module so that the key of the DDR2 module align with those on the memory slot.
2. Gently push the DDR2 module in an upright position until the clips of the slot close to hold the DDR2 module in place when the DDR2 module touches the bottom of the slot.
3. To remove the DDR2 module, press the clips with both hands.
4. **CAUTION: The DIMM 1 socket must be installed with one DDR2 DIMM to enable the system to boot-up properly**

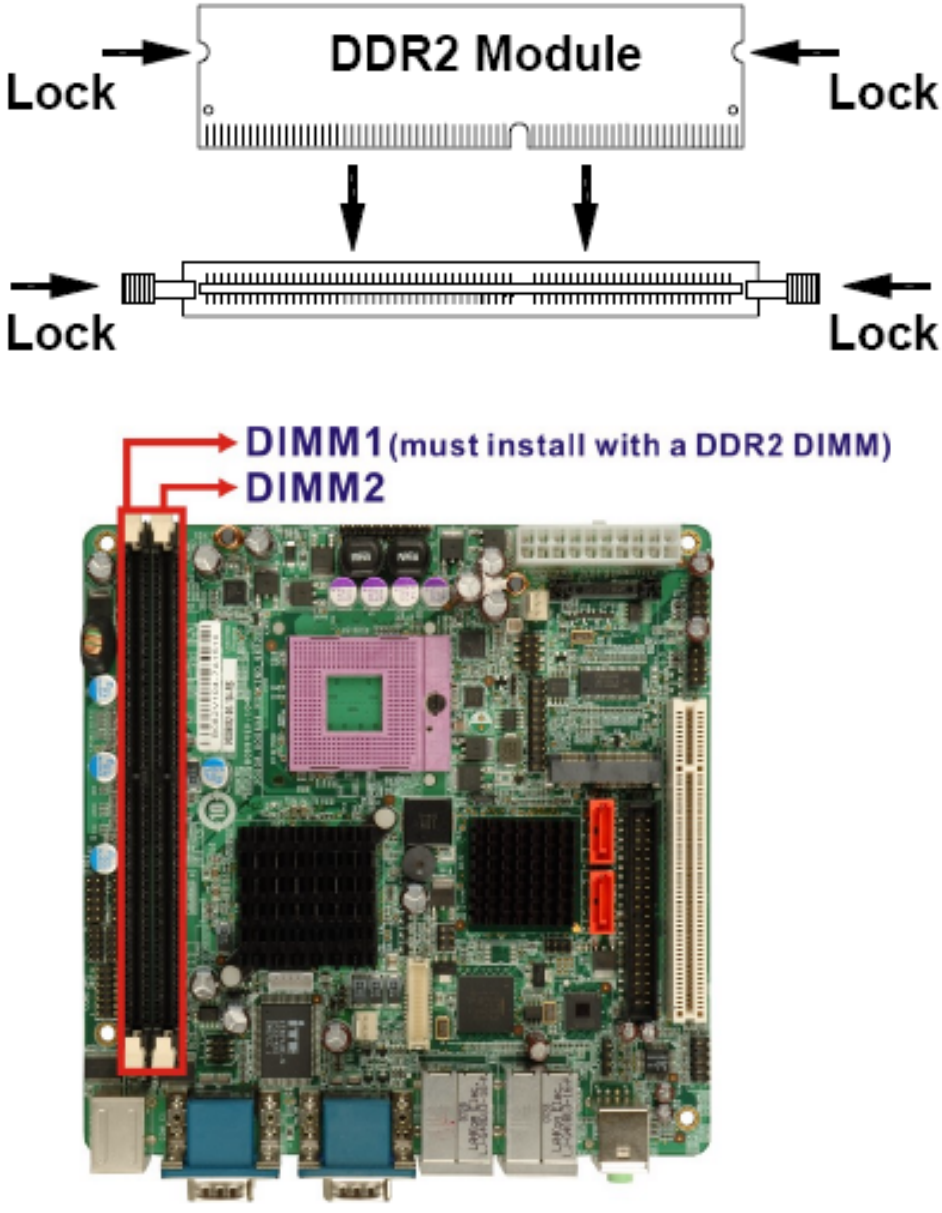


Figure 2.3: Installation of Memory Module

2.5 Installing the Jumpers

Mainboard Layout

Figure 2.4 shows the on-board peripheral connectors, backplane peripheral connectors and on-board jumpers.

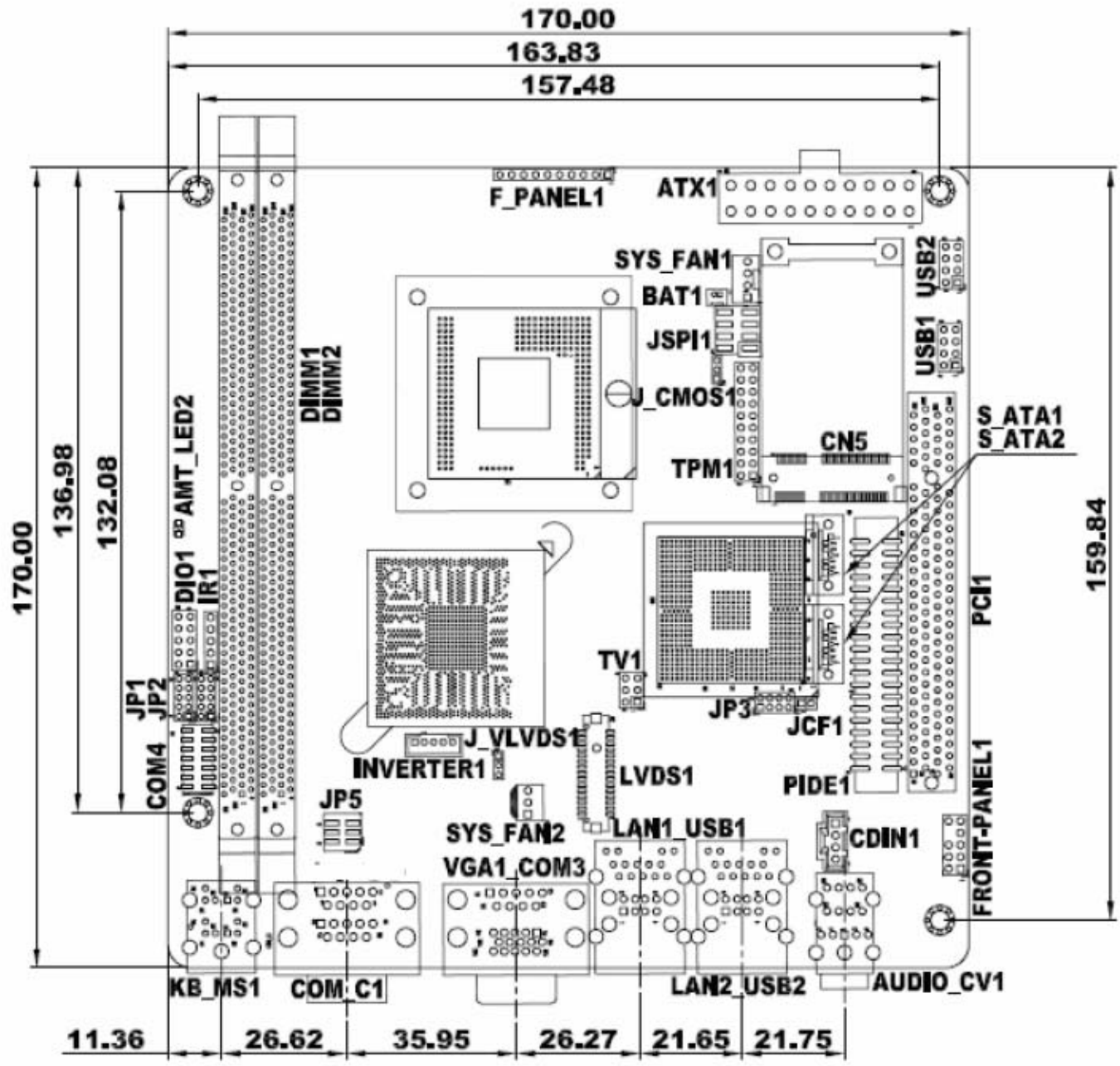


Figure 2.4: Connector and Jumper Locations

Peripheral Interface Connectors

The Table shows a list of the peripheral interface connectors on the mainboard. Detailed descriptions of these connectors can be found in this Section.

Connector	Type	Label
Audio connector	10-pin header	FRONT-PANEL1
Audio CD in connector	4-pin header	CDIN1
ATX power connector	20-pin connector	ATX1
CompactFlash® card slot (optional)	50-pin slot	CF1
DDR2 DIMM socket	240-pin slot	DIMM1
DDR2 DIMM socket	240-pin slot	DIMM2
Fan connector (1)	3-pin wafer connector	SYS_FAN1
Fan connector (2)	3-pin wafer connector	SYS_FAN2
SPI Flash ROM connector	8-pin header	JSPI1
Front panel connector	10-pin header	F_PANEL1
Digital Input/Output connector	10-pin header	DIO1
IDE Interface connector	40-pin box header	PIDE1
Infrared interface connector	5-pin header	IR1
LCD backlight connector	5-pin wafer connector	INVERTER1
LVDS LCD connector	30-pin crimp connector	LVDS1
PCIe mini card slot	52-pin slot	CN5
PCI slot	124-pin PCI slot	PCI1
SATA drive connector (1)	7-pin SATA connector	S_ATA1
SATA drive connector (2)	7-pin SATA connector	S_ATA2

Serial port connector	14-pin header	COM 4
TPM connector	20-pin header	TPM1
TV out connector	6-pin header	TV1
USB connector (1)	8-pin header	USB1
USB connector (2)	8-pin header	USB2

Rear Panel Connectors

Connector	Type	Label
Audio Jacks	Audio connector	AUDIO_CV1
CRT connector	15-pin female connector	VGA1_COM1
Ethernet connector (1)	RJ-45 connector	LAN1_USB1
Ethernet connector (2)	RJ-45 connector	LAN2_USB2
Keyboard/Mouse connector	6-pin mini din connector	KB_MS1
Serial port connector	DB-9 male connector	VGA1_COM1
Serial port connectors	DB-9 male connector	COM_C1
USB 2.0 port (1)	USB port connector	LAN1_USB1
USB 2.0 port (2)	USB port connector	LAN2_USB2

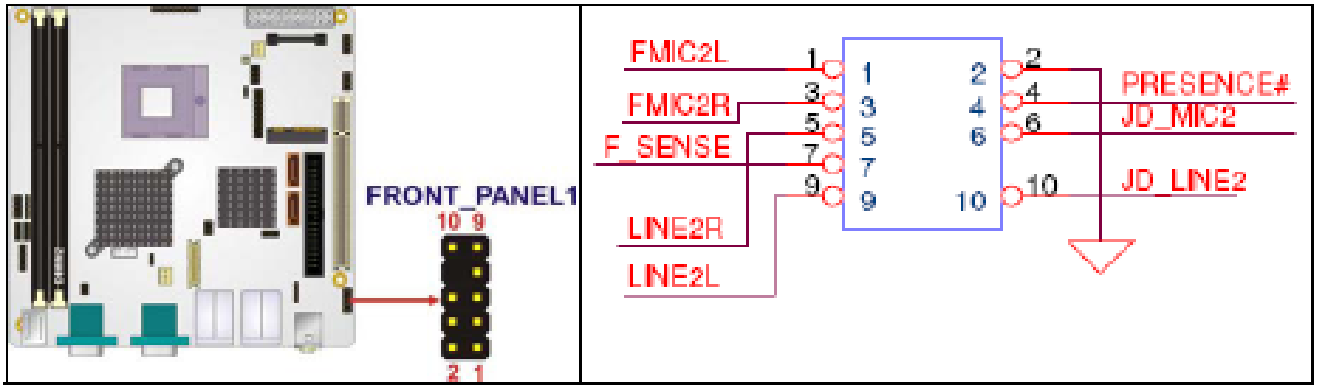
2.6 Internal Peripheral Connectors

Internal peripheral connectors are found on the motherboard and are only accessible when the motherboard is outside of the chassis. This section has complete descriptions of all the internal, peripheral connectors on the Mainboard.

Audio Connector

CN Label: FRONT-PANEL1
CN Type: 10-pin header (2x5)
CN Location: See Table
CN Pinouts: See Table

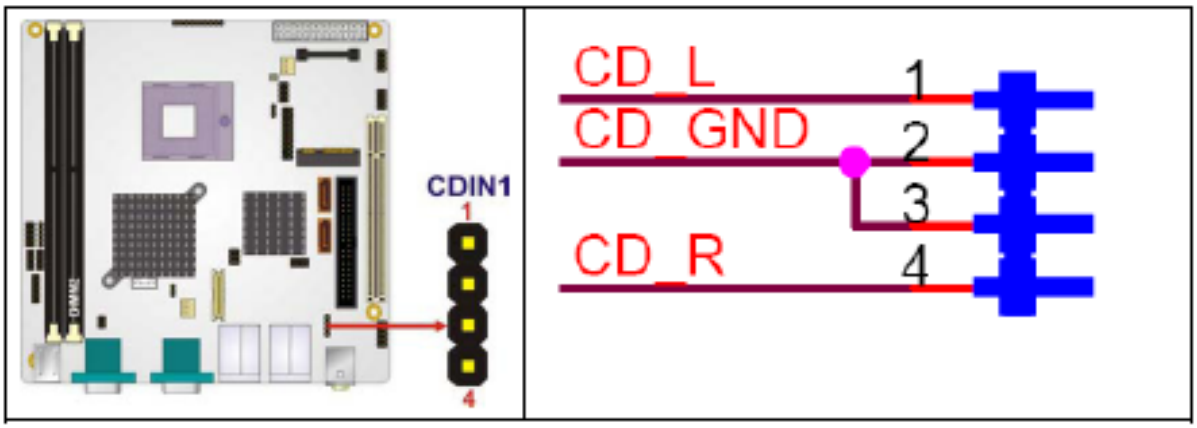
The front panel audio connector connects the on-board sound system of the mainboard to the audio line out and microphone jacks on the front of the computer chassis.



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MIC-L	2	ANALOG GND
3	MIC-R	4	PRESENCE#
5	LINE-R	6	MIC-JD
7	FRONT-IO	8	NC
9	LINE-L	10	INE-JD

Audio CD In Connector

CN Label: CDIN1
CN Type: 4-pin header (1x4)
CN Location: See Table
CN Pinouts: See Table



PIN NO.	DESCRIPTION
1	CD Signal (Left)
2	Ground
3	Ground
4	CD Signal (Right)

ATX Power Connector

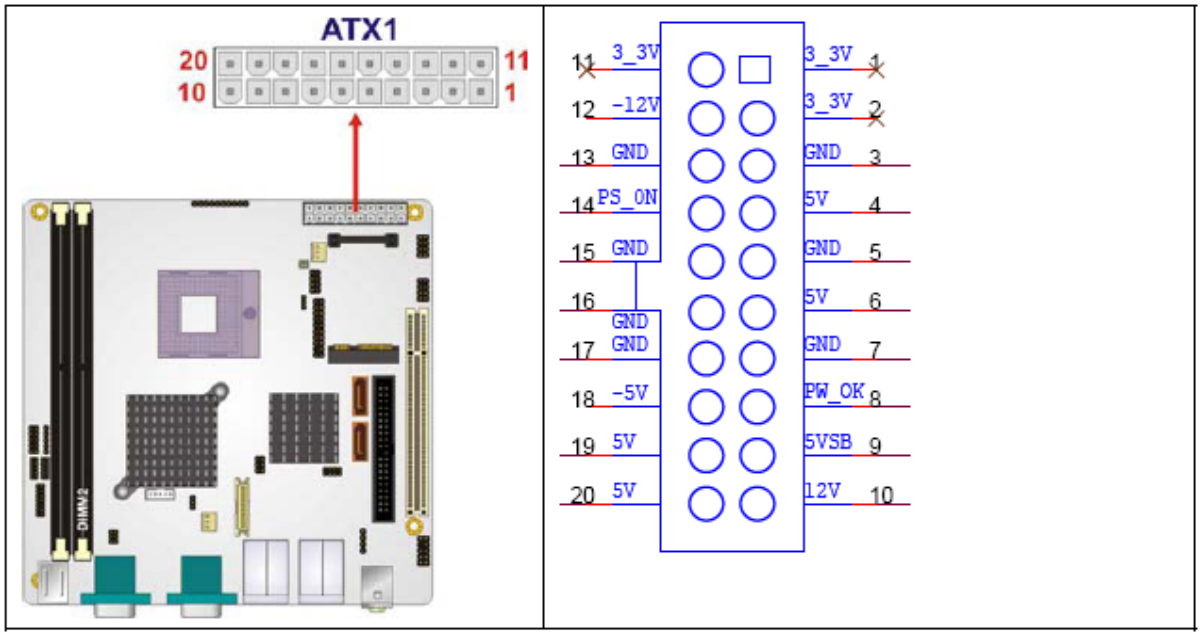
CN Label: ATX1

CN Type: 20-pin ATX (2x10)

CN Location: See Table

CN Pinouts: See Table

The ATX connector is connected to an external ATX power supply. Power is provided to the system, from the power supply through this connector.

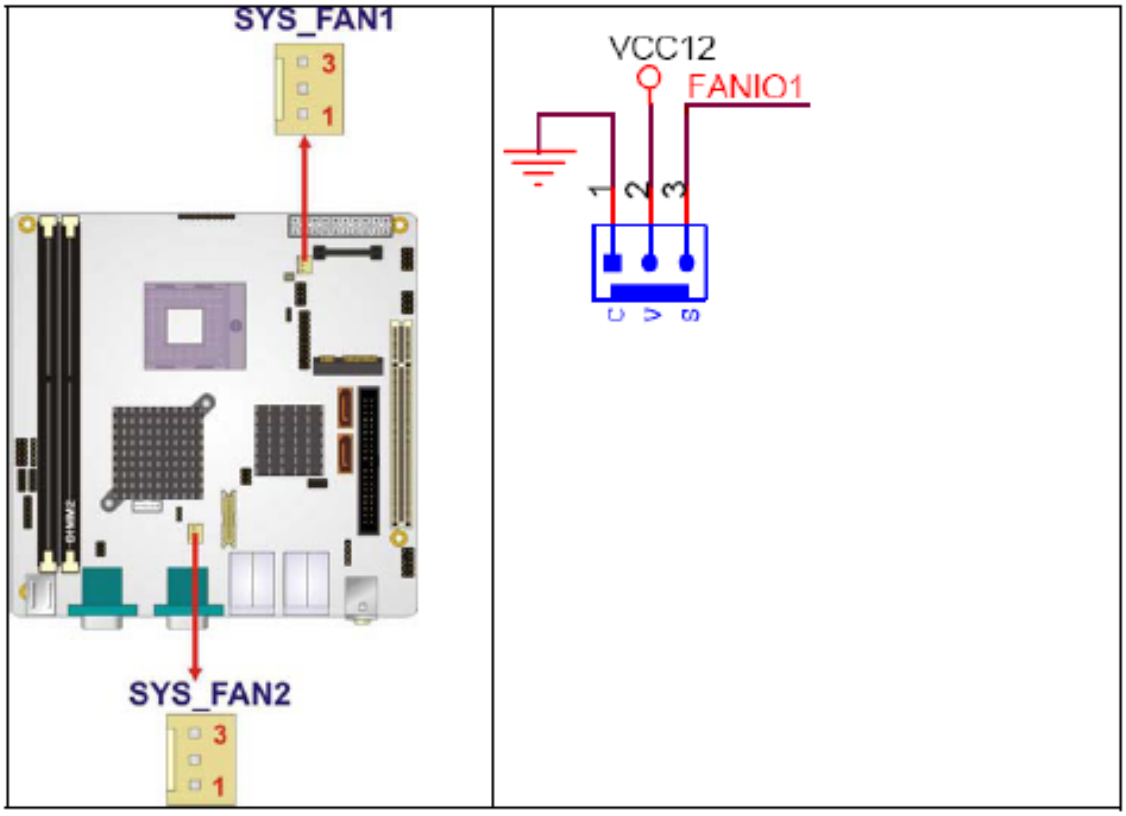


PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS-ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PW-OK	18	-5V
9	+VCC5SB	19	+5V
10	+12V	20	+5V

Fan Connectors

CN Label: SYS_FAN1 and SYS_FAN2
CN Type: 3-pin wafer connector (1x3)
CN Location: See Table
CN Pinouts: See Table

The cooling fan connectors on the Mainboard provide a 12V, 500mA current to one CPU cooling fan and one system cooling fan. There is a “sense” pin in the fan connector, which transfers the fan’s sense signal to the system BIOS in order to recognize the fan speed. Please note that only some specific types of fans offer a rotation signal.



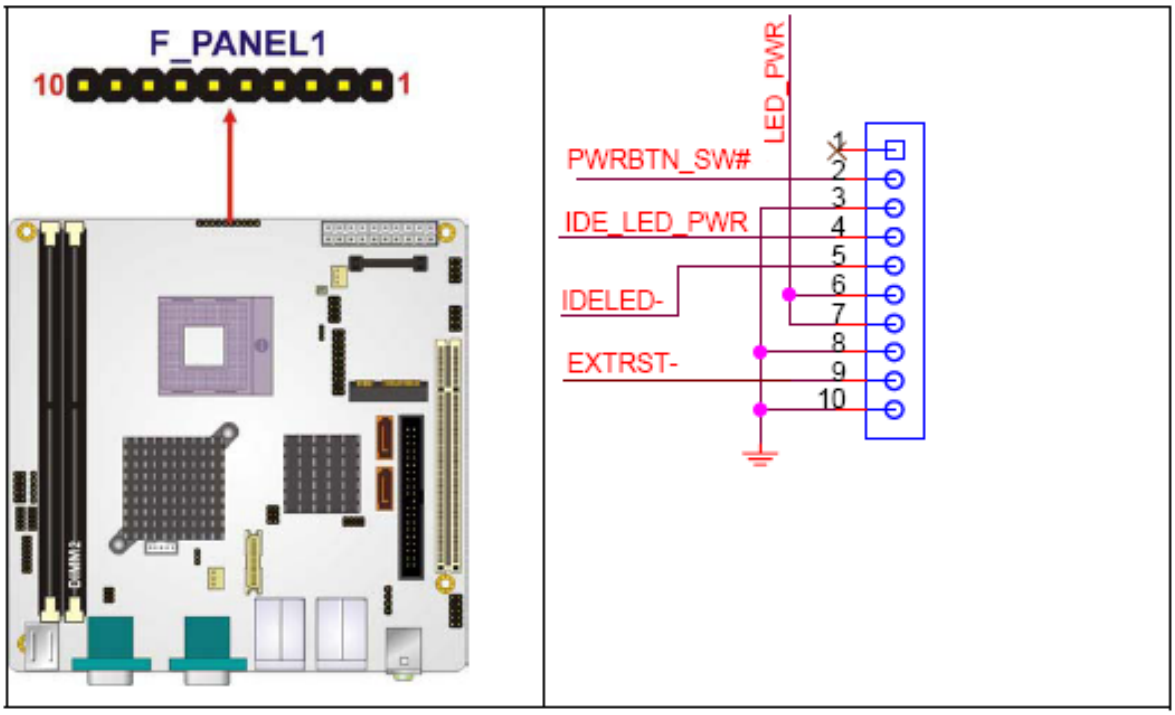
PIN NO.	DESCRIPTION
1	FANIO
2	+12V
3	GND

Front Panel Connector

CN Label: F_PANEL1
CN Type: 10-pin header (1x10)
CN Location: See Table
CN Pinouts: See Table

The front panel connector connects to several external switches and indicators to monitor and control the motherboard. These indicators and switches include:

- Power
- Power button
- Reset button
- Speaker
- HDD

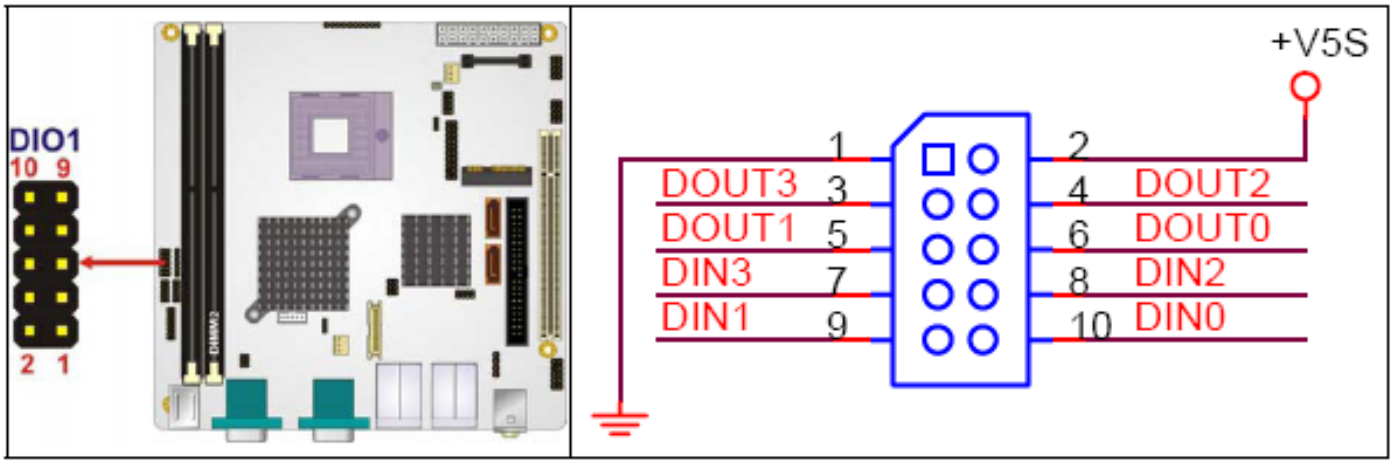


FUNCTION	PIN	DESCRIPTION	FUNCTION	PIN	DESCRIPTION
	1	NC	Power LED	6	PWR_LED+
Power Button	2	PWR_BTN+		7	PWR_LED+
	3	PWR_BTN-		8	PWR_LED-
HDD LED	4	HDD_LED+	Reset	9	RESET+
	5	HDD_LED-		10	RESET-

Digital Input/Output Connector

CN Label: DIO1
CN Type: 10-pin header (2x5)
CN Location: See Table
CN Pinouts: See Table

The DIO connector is managed through a Super I/O chip. The DIO connector pins are user programmable. The digital IO port of Mainboard is 5V CMOS level.



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC
3	OUTPUT 3	4	OUTPUT 2
5	OUTPUT 1	6	OUTPUT 0
7	INPUT 3	8	INPUT 2
9	INPUT 1	10	INPUT 0

IDE Connector

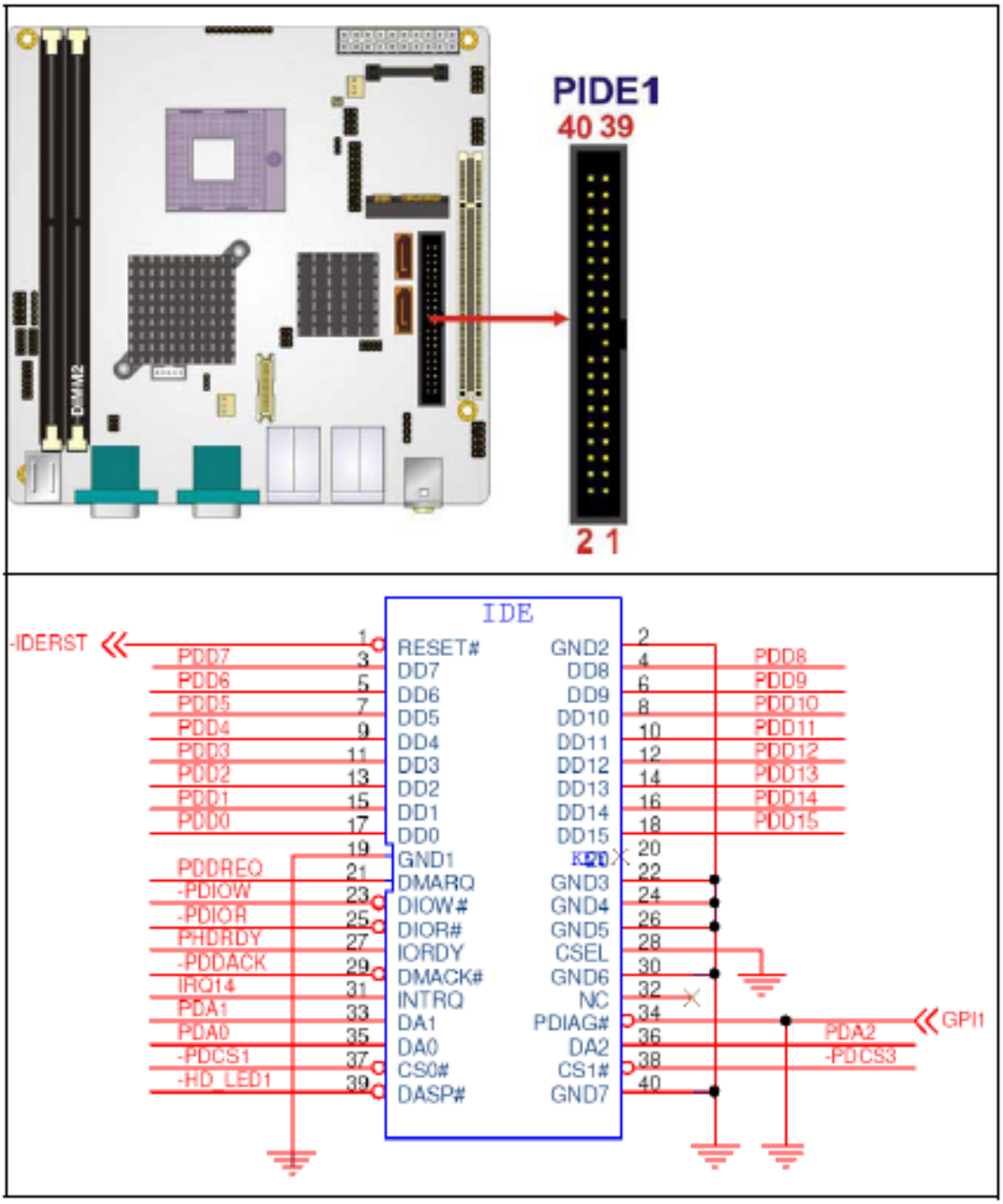
CN Label: PIDE1

CN Type: 40-pin box header (2x20)

CN Location: See Table

CN Pinouts: See Table

One primary 40-pin IDE device connector on the Mainboard motherboard supports connectivity to ATA 100/66/33 IDE devices with data transfer rates up to 100MB/s.


PIDE1
40 39
2 1
DIMM2
IDE
-IDERST
PDD7
PDD6
PDD5
PDD4
PDD3
PDD2
PDD1
PDD0
PDDREQ
-PDIOW
-PDIOR
PHDRDY
-PDDACK
IRQ14
PDA1
PDA0
-PDCS1
-HD_LED1
RESET#
DD7
DD6
DD5
DD4
DD3
DD2
DD1
DD0
GND1
DMARQ
DIOW#
DIOR#
IORDY
DMACK#
INTRQ
DA1
DA0
CS0#
DASP#
GND2
DD8
DD9
DD10
DD11
DD12
DD13
DD14
DD15
GND3
GND4
GND5
CSEL
GND6
NC
PDIAG#
DA2
CS1#
GND7
PDD8
PDD9
PDD10
PDD11
PDD12
PDD13
PDD14
PDD15
PDA2
-PDCS3
GPI1

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	N/C
21	IDE DRQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IDE CHRDY	28	BALE – DEFAULT
29	IDE DACK	30	GND
31	INTERRUPT	32	N/C
33	SA1	34	PDIAG#
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GND

Infrared Interface Connector

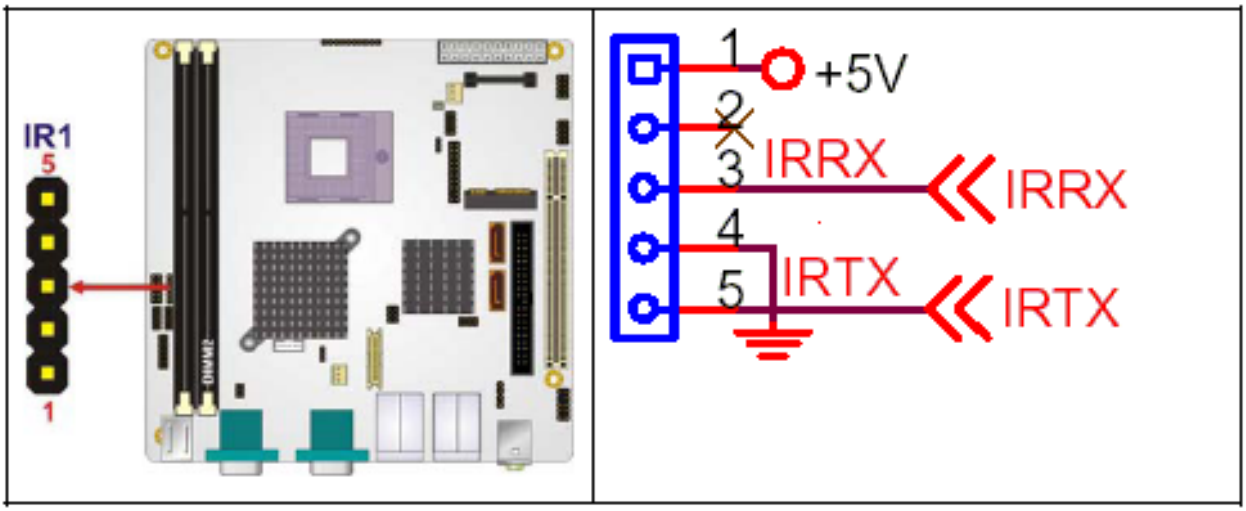
CN Label: IR1

CN Type: 5-pin header (1x5)

CN Location: See Table

CN Pinouts: See Table

The infrared interface connector supports both Serial Infrared (SIR) and Amplitude Shift Key Infrared (ASKIR) interfaces.



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

LCD Backlight Connector

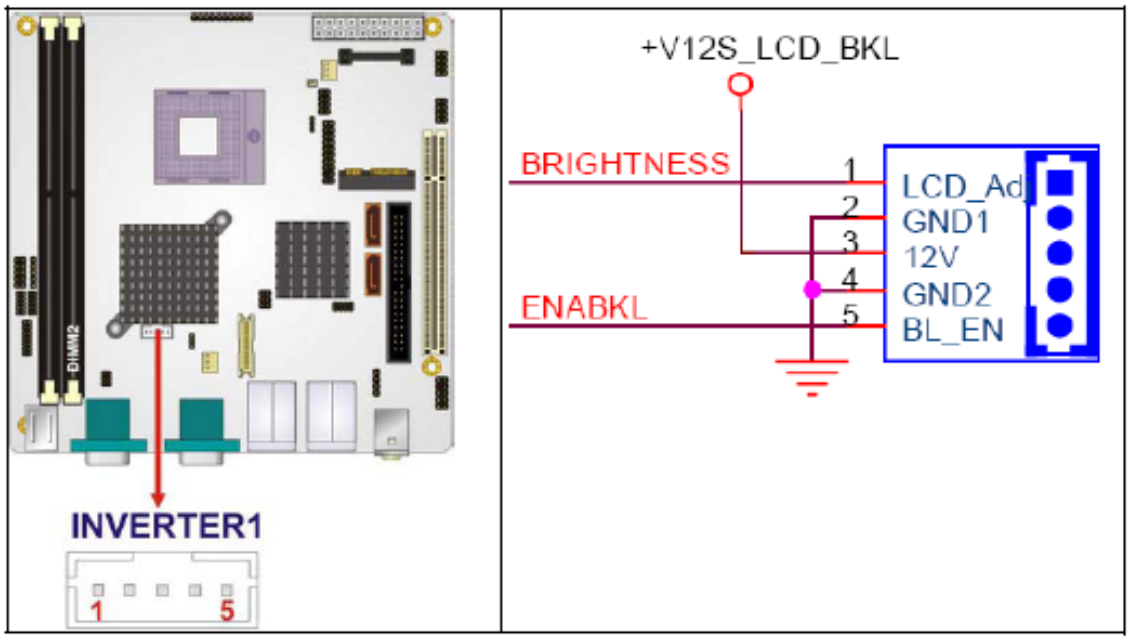
CN Label: INVERTER1

CN Type: 5-pin wafer connector (1x5)

CN Location: See Table

CN Pinouts: See Table

The LCD backlight connector is for the LCD inverter connection.



PIN NO.	DESCRIPTION
1	BRIGHTNESS
2	GND1
3	12V
4	GND2
5	BL_EN

LVDS LCD connector

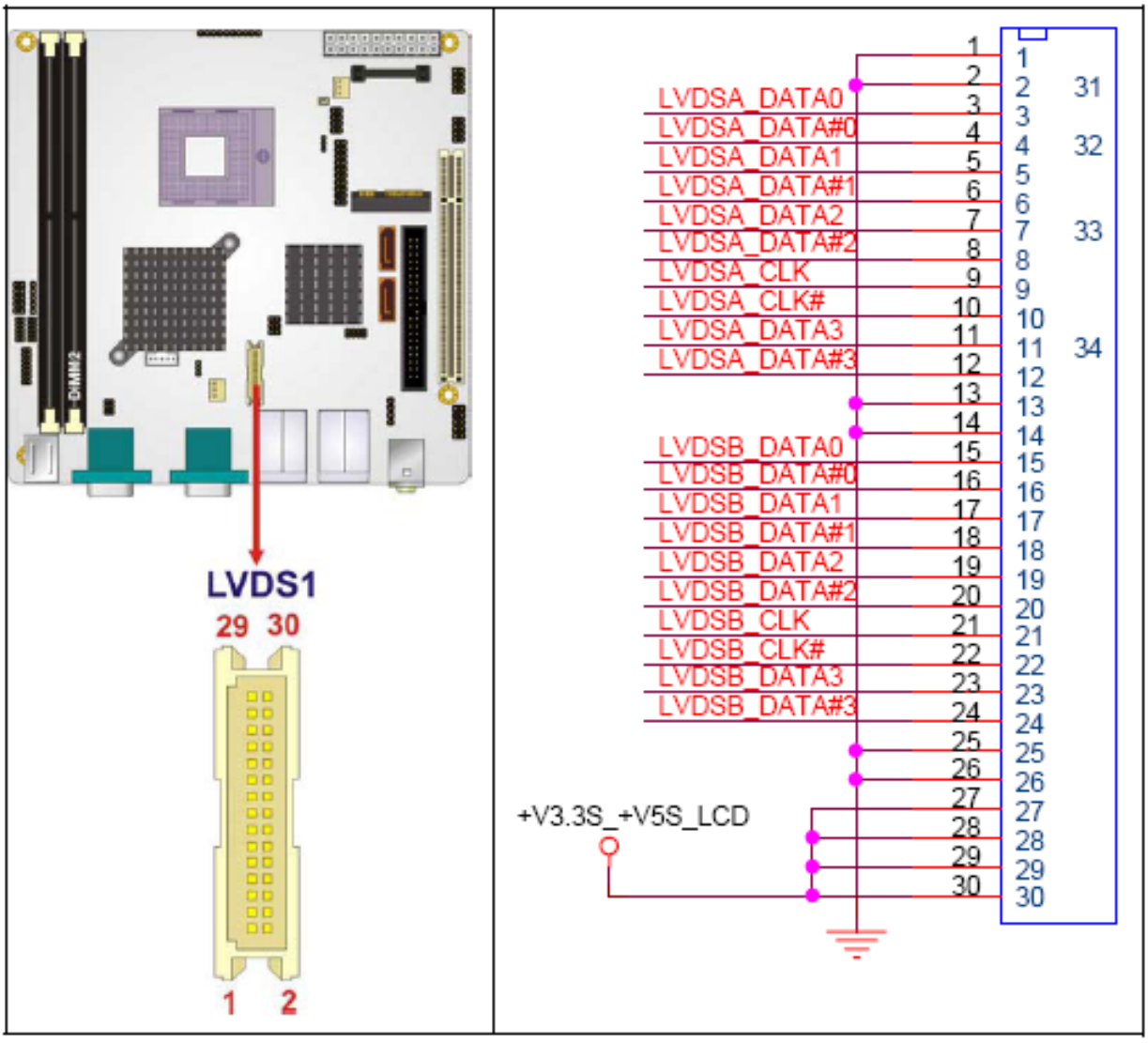
CN Label: LVDS1

CN Type: 30-pin crimp connector (2x15)

CN Location: See Table

CN Pinouts: See Table

The connector supports one or two channel 24-bit LVDS panel.



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	1st LVDS data0 output +	4	1st LVDS data0 output -
5	1st LVDS data1 output +	6	1st LVDS data1 output -
7	1st LVDS data2 output +	8	1st LVDS data2 output -
9	1st LVDS clock output +	10	1st LVDS clock output -
11	1st LVDS data3 output +	12	1st LVDS data3 output -
13	GND	14	GND
15	2nd LVDS data0 output +	16	2nd LVDS data0 output -
17	2nd LVDS data1 output +	18	2nd LVDS data1 output -
19	2nd LVDS data2 output +	20	2nd LVDS data2 output -
21	2nd LVDS clock output +	22	2nd LVDS clock output -

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
23	2nd LVDS data3 output +	24	2nd LVDS data3 output -
25	GND	26	GND
27	+LCD (3.3V or 5V)	28	+LCD (3.3V or 5V)
29	+LCD (3.3V or 5V)	30	+LCD (3.3V or 5V)

SATA Drive Connectors

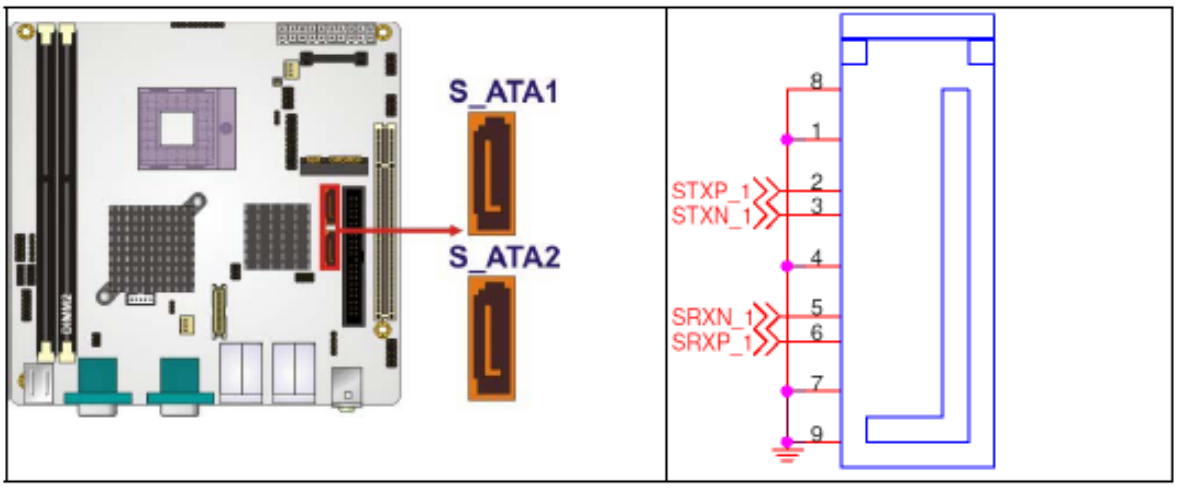
CN Label: S_ATA1 and S_ATA2

CN Type: 7-pin SATA drive connectors (1x7)

CN Location: See Table

CN Pinouts: See Table

The two SATA drive connectors are connected to four SATA II drives. SATA II drives transfer data at speeds as high as 3.0Gbps.



PIN NO.	DESCRIPTION
1	GND
2	TXP
3	TXN

4	GND
5	RXN
6	RXP
7	GND

Serial Port Connector (Optional)

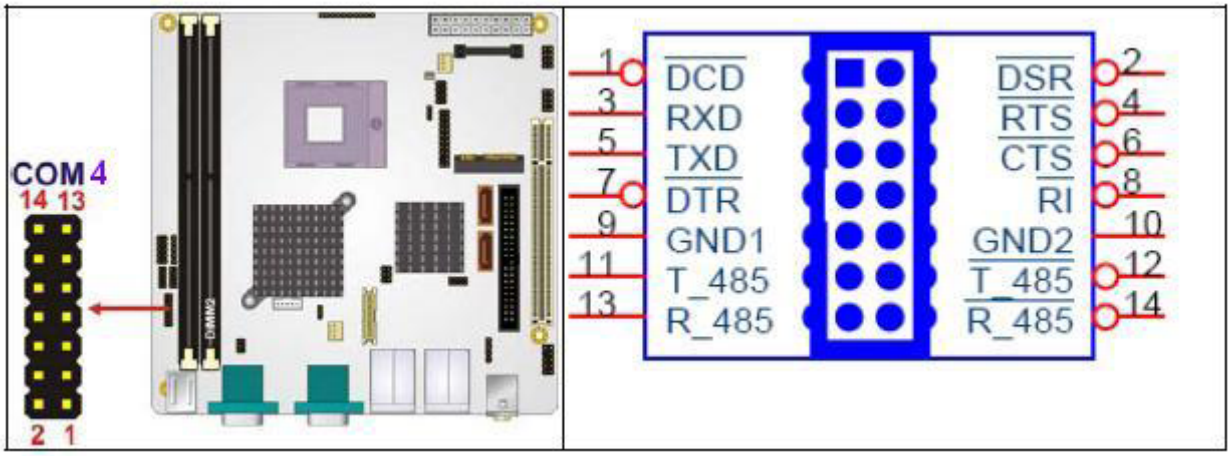
CN Label: COM4

CN Type: 14-pin header (2x7)

CN Location: See Table

CN Pinouts: See Table

The serial ports connectors connect to RS-232/422/485 serial port device.



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	GND	10	GND
11	TXD 485+	12	TXD 485#
13	RXD 485+	14	RXD 485#

Trusted Platform Module (TPM) Connector

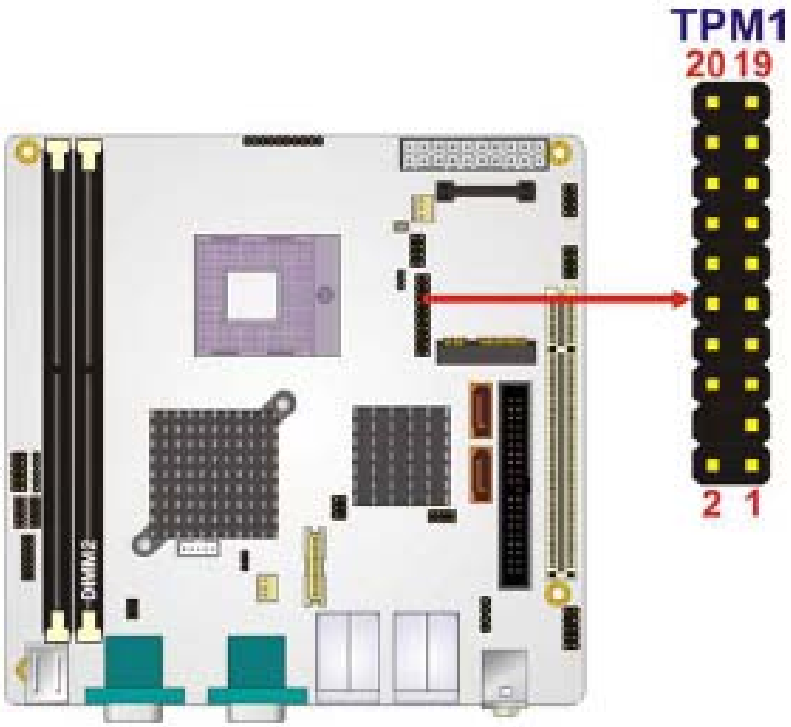
CN Label: TPM1

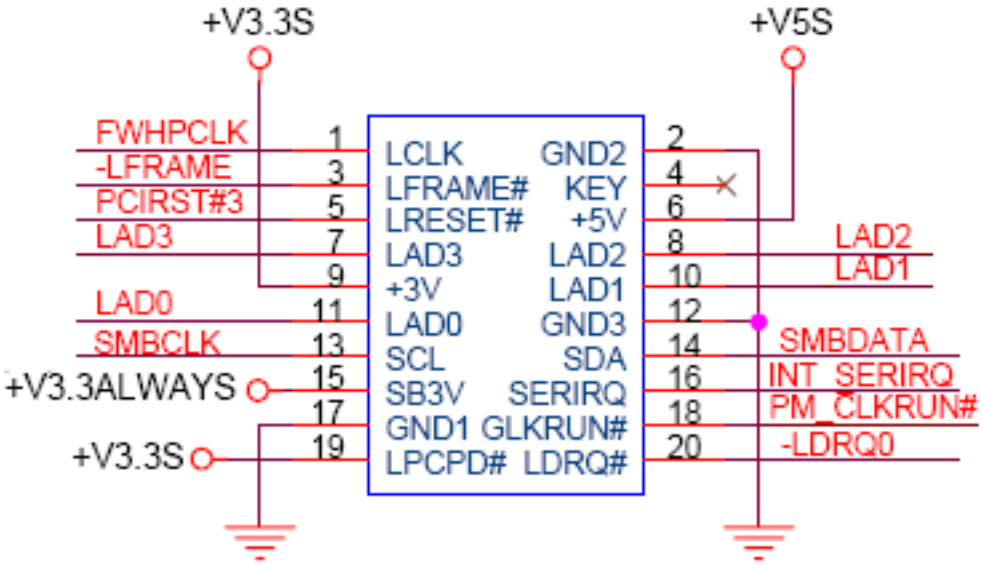
CN Type: 20-pin header (2x10)

CN Location: See Table

CN Pinouts: See Table

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

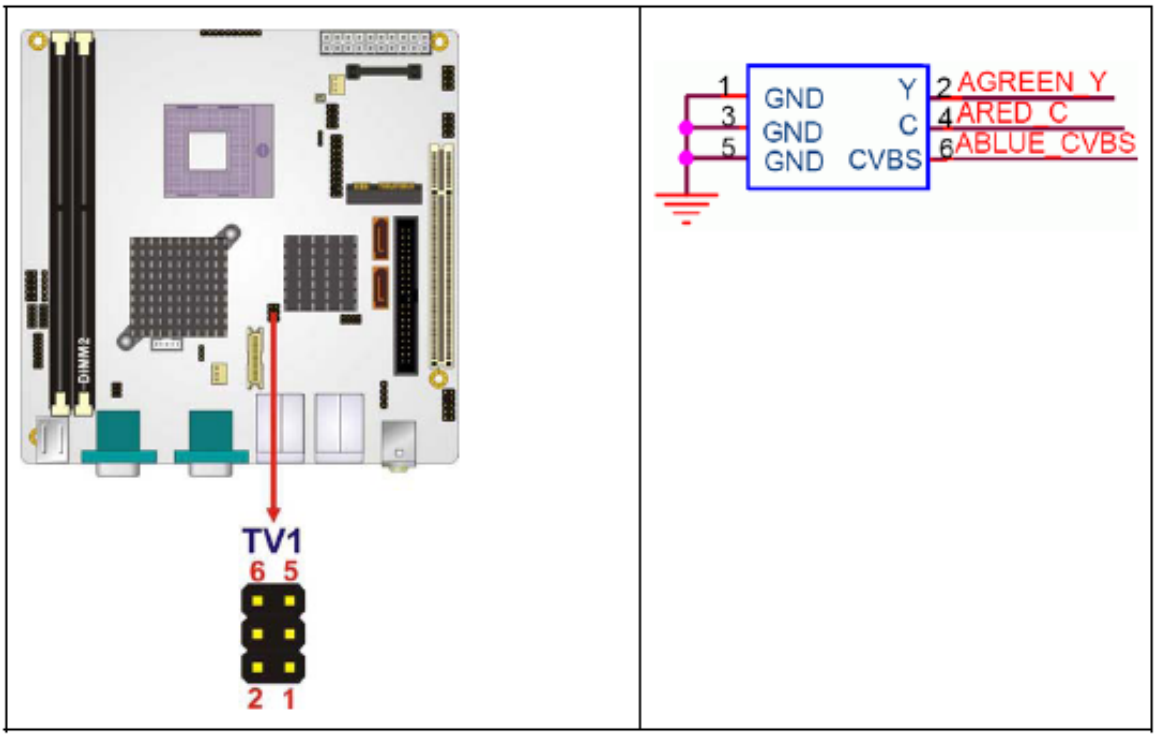




PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	FWHPCLK	2	GND
3	LFRAME#	4	KEY
5	PCIRST#	6	VCC
7	LAD3	8	LAD2
9	VCC3	10	LAD1
11	LAD0	12	GND
13	SMBCLK	14	SMBDATA
15	3VDUAL	16	SERIRQ
17	GND	18	CLKRUN#
19	LPCPD#	20	LDRQ#

TV Out Connector
CN Label: TV1
CN Type: 6-pin header (2x3)
CN Location: See Table
CN Pinouts: See Table

The 2x3 pin TV out connector connects to a TV output by using an S-Video or RCA connector. The TV out connector makes displaying media data on a television easier.



S-Video Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	AGREEN_Y
3	GND	4	ARED_C
RCA Connector (only video signal)			
5	GND	6	ABLUE_CVBS

Internal USB Connectors

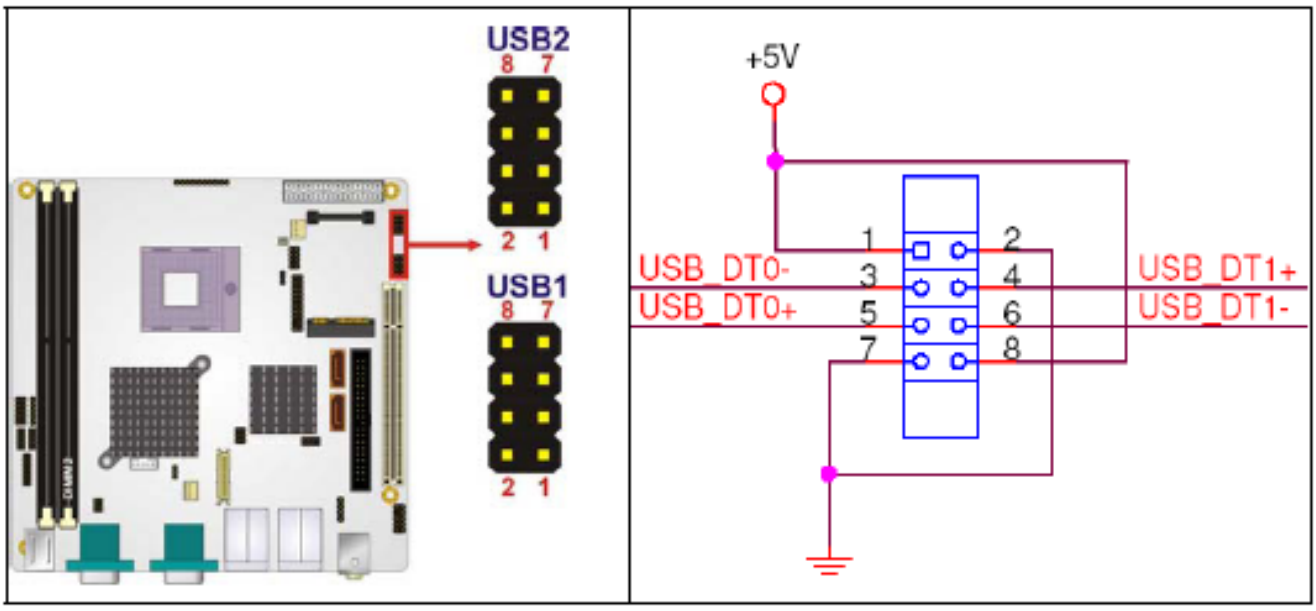
CN Label: USB1 and USB2

CN Type: 8-pin header (2x4)

CN Location: See Table

CN Pinouts: See Table

One 2x4 pin connector provides connectivity to two USB 2.0 ports. The USB ports are used for I/O bus expansion.

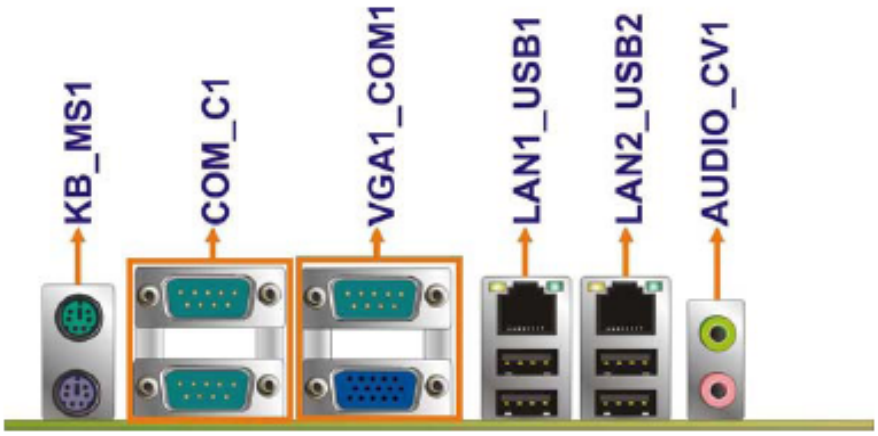


PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC

2.7 External Interface Connectors

The peripheral connectors on the back panel are connected to devices externally when the Mainboard is installed in a chassis. The peripheral connectors on the rear panel are:

2 x Audio jacks
1 x CRT connector
2 x RJ-45 Ethernet connectors
1 x Keyboard connector
1 x Mouse connector
3 x Serial port connectors
4 x USB 2.0 connectors



Audio Connectors

CN Label: AUDIO_CV1
CN Type: Audio jack
CN Location: See Figure 4-18
CN Pinouts: See Figure 4-19

- Line Out port (Lime): Connects a headphone or a speaker. In 4,6,8-channel configuration, the function of this port becomes Front Speaker Out.
- Microphone (Pink): Connects a microphone.

CRT Connector

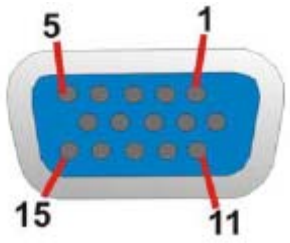
CN Label: VGA1_COM1

CN Type: 15-pin female connector

CN Location: See Figure 4-18

CN Pinouts: See Table 4-19 and Figure 4-20

The standard 15-pin VGA connector connects to a CRT or LCD display monitor.



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	N/C
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND

11	N/C	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDC CLK		

Ethernet Connectors

CN Label: LAN1_USB1 and LAN2_USB2

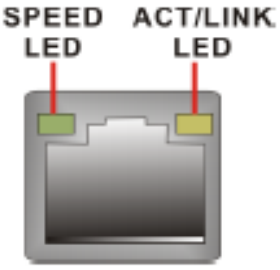
CN Type: RJ-45

CN Location: See Table

CN Pinouts: See Table

The Mainboard is equipped with two built-in GbE Ethernet controllers. The controllers can connect to the LAN through two RJ-45 LAN connectors. There are two LEDs on the connector indicating the status of LAN. The pin assignments are listed in the following table:

PIN	DESCRIPTION	PIN	DESCRIPTION
1	CT1	6	MDX2+
2	MDX0+	7	MDX2-
3	MDX0-	8	MDX3+
4	MDX1+	9	MDX3-
5	MDX1-	10	GND



The RJ-45 Ethernet connector has two status LEDs, one green and one yellow. The green LED indicates activity on the port and the yellow LED indicates the port is linked.

SPEED LED		ACT/LINK LED	
STATUS	DESCRIPTION	STATUS	DESCRIPTION
OFF	10Mbps connection	OFF	No link
ORANGE	100Mbps connection	YELLOW	Linked
GREEN	1Gbps connection	BLINKING	Data Activity

Keyboard/Mouse Connector

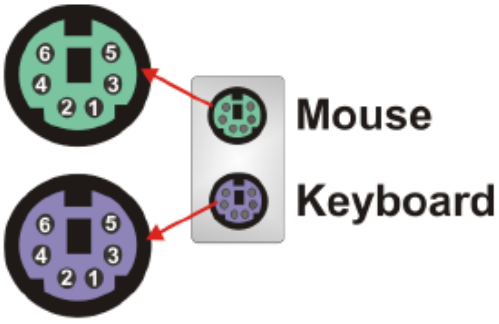
CN Label: KB_MS1

CN Type: PS/2 connector

CN Location: See Figure 4-18

CN Pinouts: See Table 4-22

The Mainboard keyboard and mouse connectors are standard PS/2 connectors.



PIN	DESCRIPTION	PIN	DESCRIPTION
1	L_KDAT	7	L_MDAT
2	NC	8	NC
3	GND	9	GND
4	5V	10	5V
5	L_KCLK	11	L_MCLK
6	NC	12	NC

Serial Port Connectors

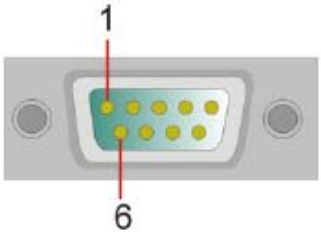
CN Label: VGA1_COM1 and COM_C1

CN Type: DB-9

CN Location: See Table

CN Pinouts: See Table

The serial ports can be connected to a serial communications device directly.



PIN	Description
1	DATA CARRIER DETECT (DCD)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR)
5	GROUND (GND)
6	DATA SET READY (DSR)
7	REQUEST TO SEND (RTS)
8	CLEAR TO SEND (CTS)
9	RING INDICATOR (RI)

USB Connector

CN Label: LAN1_USB1 and LAN2_USB2

CN Type: USB port

CN Location: See Figure 4-18

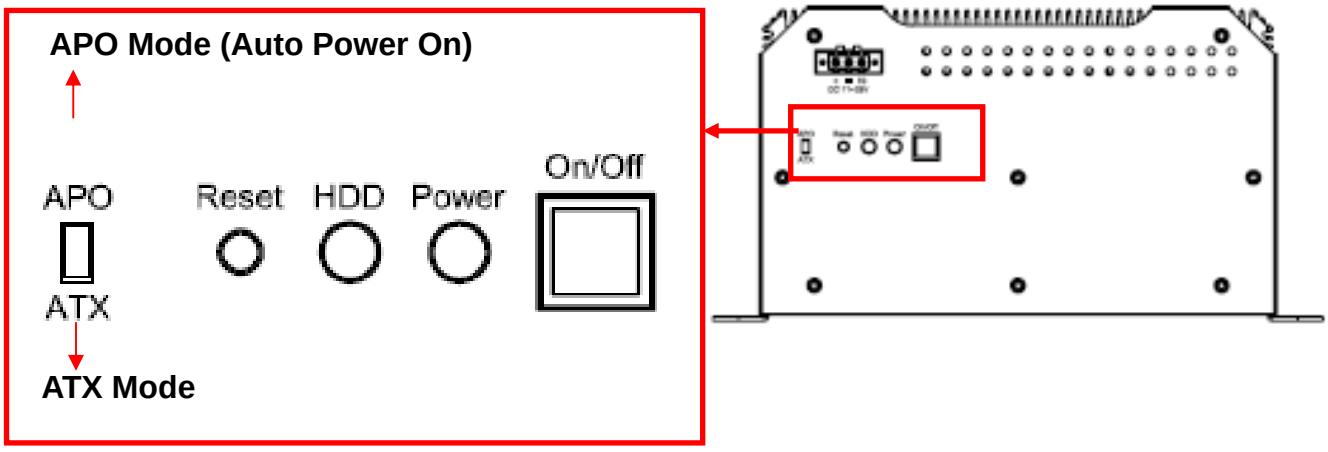
CN Pinouts: See Table 4-24

USB devices can be connected directly to the USB connectors on the rear panel.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	5	VCC
2	USBD0-	6	USBD1-
3	USBD0+	7	USBD1+
4	GND	8	GND

2.8 APO/ATX Power Mode Selection

APO and ATX power modes can use on the Box PC series. Power mode flexibility allows you to select the most suitable power mode for your unique application requirements. (Default: APO)



Chapter 3 BIOS Setup

3.1 Introduction

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

3.1.1 Starting Setup

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

1. Press the DELETE key as soon as the system is turned on or

2. Press the DELETE key when the “Press Del to enter SETUP” message appears on the screen.

If the message disappears before the DELETE key is pressed, restart the computer and try again.

3.1.2 Using Setup

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

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

F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 /F3 key	Change color from total 16 colors. F2 to select color forward.
F10 key	Save all the CMOS changes, only for Main Menu

3.1.3 Getting Help

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

3.1.4 Unable to Reboot After Configuration Changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults. Use the jumper described in Chapter 5.

3.1.5 BIOS Menu Bar

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

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

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

3.2 Main

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

➢ **System Overview**

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

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

The System Overview field also has two user configurable fields:

➢ **System Time [xx:xx:xx]**

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

➢ **System Date [xx/xx/xx]**

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

3.3 Advanced

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

WARNING!

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

- CPU Configuration
- IDE Configuration
- Super IO Configuration
- Hardware Health Configuration
- Intel AMT Configuration
- Intel Robson Configuration
- Remote Access Configuration
- Trusted Computing
- USB Configuration

- Power Configuration

3.3.1 CPU Configuration

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

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

- Manufacturer: Lists the name of the CPU manufacturer
- Brand String: Lists the brand name of the CPU being used
- Frequency: Lists the CPU processing speed

- FSB Speed: Lists the FSB speed
- Cache L1: Lists the CPU L1 cache size
- Cache L2: Lists the CPU L2 cache size

3.3.2 IDE Configuration

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

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

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

- **Disabled**

  Disables the on-board ATA/IDE controller.

- **Compatible DEFAULT**

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

- **Enhanced**

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

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

- SATA Only
- SATA Pri., PATA Sec DEFAULT
- PATA Only

➢ **IDE Master and IDE Slave**

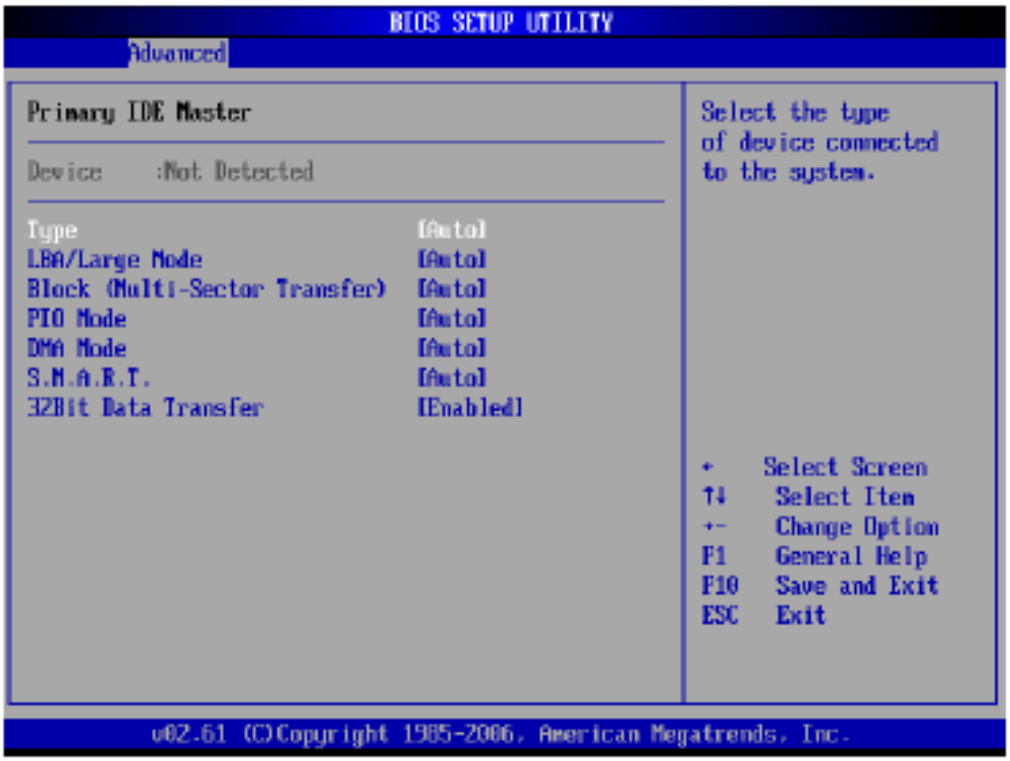
When entering setup, BIOS auto detects the presence of IDE devices. BIOS displays the status of the auto detected IDE devices. The following IDE devices are detected and are shown in the IDE Configuration menu:

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

The IDE Configuration menu (BIOS Menu 4) allows changes to the configurations for the IDE devices installed in the system. If an IDE device is detected, and one of the above listed four BIOS configuration options are selected, the IDE configuration options shown in Section 6.3.2.1 appear.

3.3.2.1 IDE Master, IDE Slave

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



➢ **Type [Auto]**

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

- **Not Installed**

  BIOS is prevented from searching for an IDE disk drive on the specified channel.

- **Auto**

  DEFAULT The BIOS auto detects the IDE disk drive type attached to the specified channel. This setting should be used if an IDE hard disk drive is attached to the specified channel.

- **CD/DVD**

  The CD/DVD option specifies that an IDE CD-ROM drive is attached to the specified IDE channel. The BIOS does not attempt to search for other types of IDE disk drives on the specified channel.

- **ARMD**

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

  ZIP

  LS-120

- **LBA/Large Mode [Auto]**

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

  - Disabled BIOS is prevented from using the LBA mode control on the specified channel.
  - Auto DEFAULT BIOS auto detects the LBA mode control on the specified channel.

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

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

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

- **PIO Mode [Auto]**

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

  - Auto DEFAULT BIOS auto detects the PIO mode. Use this value if the IDE disk drive support cannot be determined.
  - PIO mode 0 selected with a maximum transfer rate of 3.3MBps
  - PIO mode 1 selected with a maximum transfer rate of 5.2MBps
  - PIO mode 2 selected with a maximum transfer rate of 8.3MBps

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

➢ **DMA Mode [Auto]**

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

- Auto DEFAULT BIOS auto detects the DMA mode. Use this value if the IDE disk drive support cannot be determined.
- SWDMA0 Single Word DMA mode 0 selected with a maximum data transfer rate of 2.1MBps
- SWDMA1 Single Word DMA mode 1 selected with a maximum data transfer rate of 4.2MBps
- SWDMA2 Single Word DMA mode 2 selected with a maximum data transfer rate of 8.3MBps

- MWDMA0 Multi Word DMA mode 0 selected with a maximum data transfer rate of 4.2MBps
- MWDMA1 Multi Word DMA mode 1 selected with a maximum data transfer rate of 13.3MBps
- MWDMA2 Multi Word DMA mode 2 selected with a maximum data transfer rate of 16.6MBps
- UDMA1 Ultra DMA mode 0 selected with a maximum data transfer rate of 16.6MBps
- UDMA1 Ultra DMA mode 1 selected with a maximum data transfer rate of 25MBps
- UDMA2 Ultra DMA mode 2 selected with a maximum data transfer rate of 33.3MBps
- UDMA3 Ultra DMA mode 3 selected with a maximum data transfer rate of 44MBps (To use this mode, it is required that an 80-conductor ATA cable is used.)
- UDMA4 Ultra DMA mode 4 selected with a maximum data transfer rate of 66.6MBps (To use this mode, it is required that an 80-conductor ATA cable is used.)
- UDMA5 Ultra DMA mode 5 selected with a maximum data transfer rate of 99.9MBps (To use this mode, it is required that an 80-conductor ATA cable is used.)

➢ **S.M.A.R.T [Auto]**

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

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

➢ **32Bit Data Transfer [Enabled]**

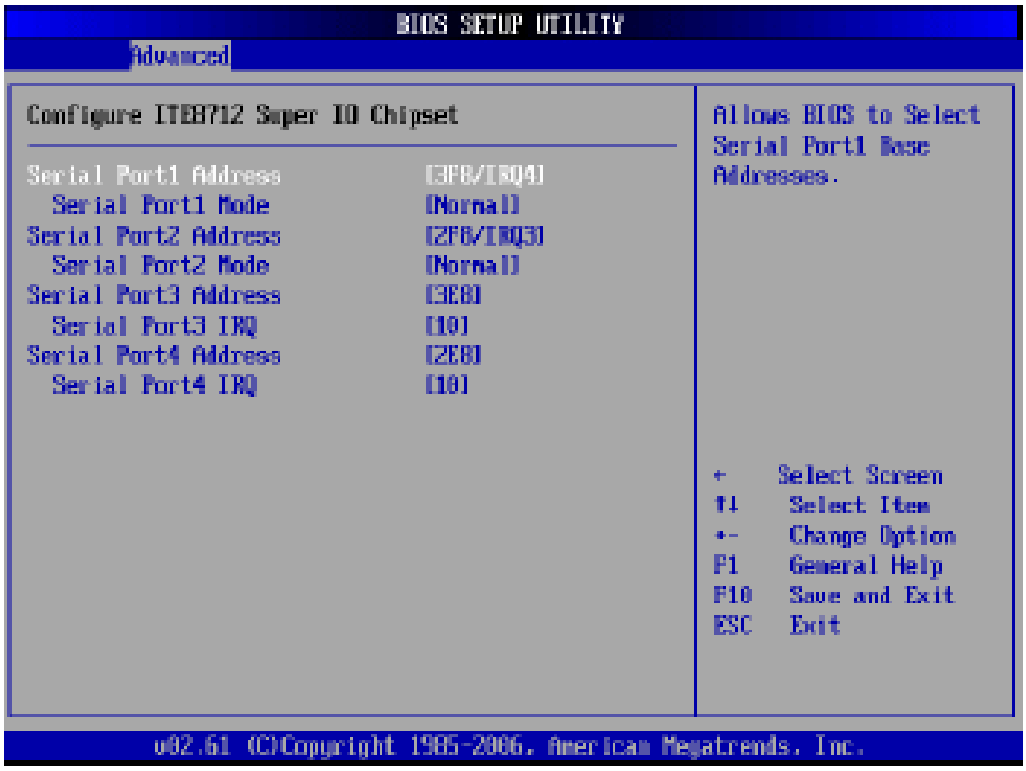
Use the 32Bit Data Transfer BIOS option to enables or disable 32-bit data transfers.

- Disabled Prevents the BIOS from using 32-bit data transfers.

- Enabled DEFAULT Allows BIOS to use 32-bit data transfers on supported hard disk drives.

3.3.3 Super IO Configuration

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



➢ **Serial Port1 Address [3F8/IRQ4]**

Use the Serial Port1 Address option to select the Serial Port 1 base address.

- Disabled No base address is assigned to Serial Port 1
- 3F8/IRQ4 DEFAULT Serial Port 1 I/O port address is 3F8 and the interrupt address is IRQ4
- 3E8/IRQ4 Serial Port 1 I/O port address is 3E8 and the interrupt address is IRQ4
- 2E8/IRQ3 Serial Port 1 I/O port address is 2E8 and the interrupt address is IRQ3

➢ **Serial Port1 Mode [Normal]**

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

- Normal DEFAULT Serial Port 1 mode is normal
- IrDA Serial Port 1 mode is IrDA
- ASK IR Serial Port 1 mode is ASK IR

➢ **Serial Port2 Address [2F8/IRQ3]**

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

- Disabled No base address is assigned to Serial Port 2
- 2F8/IRQ3 DEFAULT Serial Port 2 I/O port address is 3F8 and the interrupt address is IRQ3 3E8/IRQ4 Serial Port 2 I/O port address is 3E8 and the interrupt address is IRQ4
- 2E8/IRQ3 Serial Port 2 I/O port address is 2E8 and the interrupt address is IRQ3

➢ **Serial Port2 Mode [Normal]**

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

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

➢ **Serial Port3 Address [3E8]**

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

- Disabled No base address is assigned to serial port 3
- 3F8 Serial port 3 I/O port address is 3F8
- 2F8 Serial port 3 I/O port address is 2F8
- 3E8 DEFAULT Serial port 3 I/O port address is 3E8
- 2E8 Serial port 3 I/O port address is 2E8

➢ **Serial Port3 IRQ [10]**

Use the Serial Port3 IRQ option to select the interrupt address for serial port 3.

- 10 DEFAULT Serial port 3 IRQ address is 10

➢ **Serial Port4 Address [2E8]**

Use the Serial Port4 IRQ option to select the interrupt address for serial port 4. Disabled No base address is assigned to serial port 3

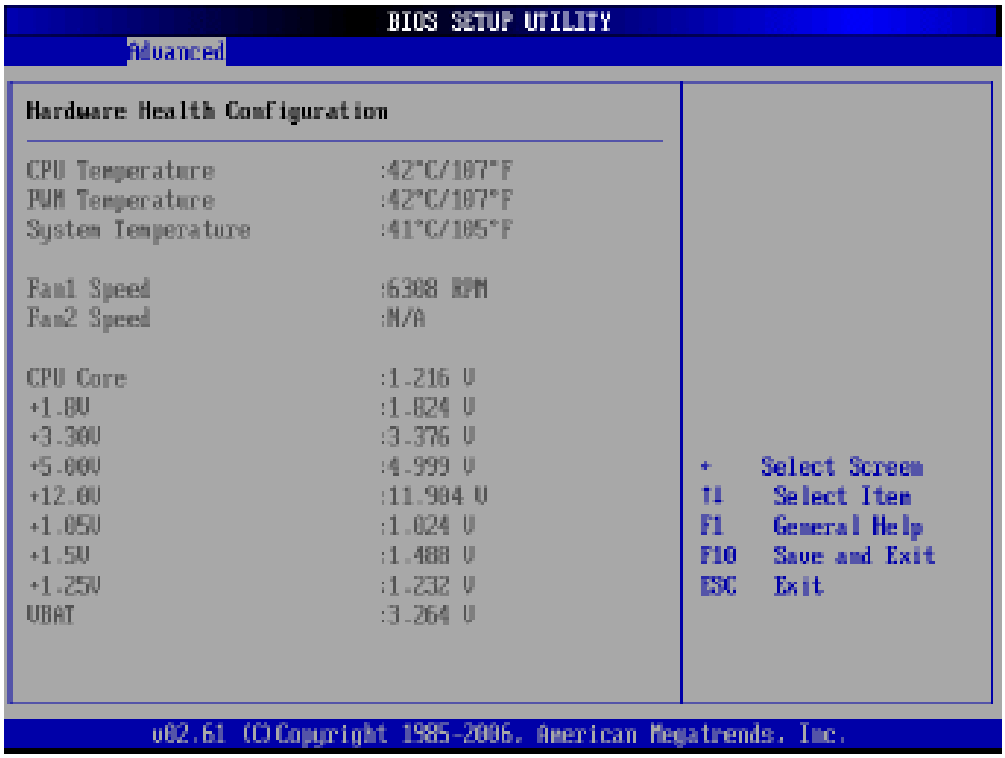
- 3F8 Serial port 4 I/O port address is 3F8
- 2F8 Serial port 4 I/O port address is 2F8
- 3E8 Serial port 4 I/O port address is 3E8
- 2E8 DEFAULT Serial port 4 I/O port address is 2E8

➢ **Serial Port4 IRQ [10]**

Use the Serial Port4 IRQ option to select the interrupt address for serial port 4. 10 DEFAULT Serial port 4 IRQ address is 10

3.3.4 Hardware Health Configuration

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

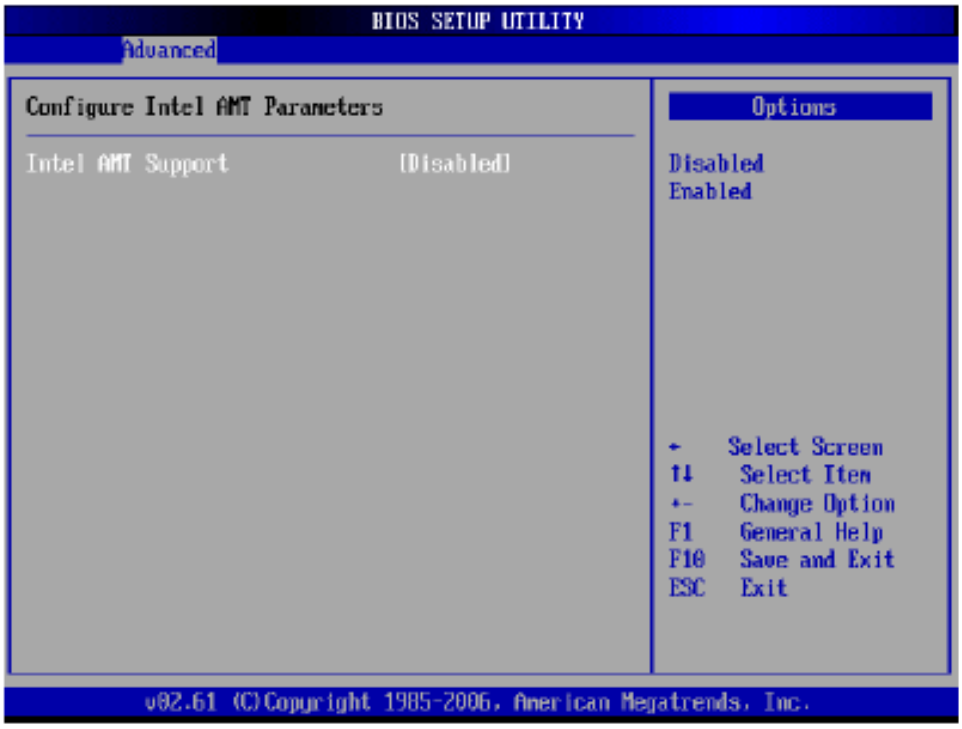


The following system parameters and values are shown. The system parameters that are monitored are:

- **System Temperatures: The following system temperatures are monitored**
  - CPU Temperature
  - PWM Temperature
  - System Temperature
- **Fan Speeds: The CPU cooling fan speed is monitored.**
  - Fan1 Speed
  - Fan2 Speed
- **Voltages: The following system voltages are monitored**
  - CPU Core
  - +1.8V
  - +3.30V
  - +5.00V
  - +12.0V
  - +1.05V
  - +1.5V
  - +1.25V
  - VBAT

3.3.5 Intel AMT Configuration

The Intel AMT Configuration menu (BIOS Menu 8) configures the IntelR Active Management Technology (AMT) options.



- **Intel AMT Support [Disabled]**

  Use the Intel AMT Support option to enable or disable the Intel AMT support.

  - Disabled DEFAULT The IntelR AMT function is disabled.
  - Enabled The IntelR AMT function is enabled.

3.3.6 Intel Robson Configuration

The Intel Robson Configuration menu (BIOS Menu 9) allows the IntelR Robson Technology option to be configured.

- **Intel Robson [Disabled]**

  Use the Intel Robson BIOS option to enable or disable the IntelR Robson Technology feature. IntelR Robson, IntelR Turbo Memory, is a technology introduced by IntelR to boost a computer startup process.

  - Disabled DEFAULT Disables the IntelR Robson feature
  - Enabled Enables the IntelR Robson feature

3.3.7 Remote Access Configuration

Use the Remote Access Configuration menu (BIOS Menu 10) to configure remote access parameters. The Remote Access Configuration is an AMIBIOS feature and allows a remote host running a terminal program to display and configure the BIOS settings.

- **Remote Access [Disabled]**

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

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

    Serial Port Number

    Serial Port Mode

    Redirection after BIOS POST

    Terminal Type

- **Serial Port Number [COM1]**

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

- COM1 DEFAULT System is remotely accessed through COM1
- COM2 System is remotely accessed through COM2
- COM3 System is remotely accessed through COM3
- COM4 System is remotely accessed through COM4
- COM5 System is remotely accessed through COM5

NOTE: Make sure the selected COM port is enabled through the Super I/O configuration menu. Base Address, IRQ [3F8h,4]

- **The Base Address,**

IRQ option cannot be configured and only shows the interrupt address of the serial port listed above.

- **Serial Port Mode [115200 8,n,1]**

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

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

NOTE:

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

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

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

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

- **Terminal Type [ANSI]**

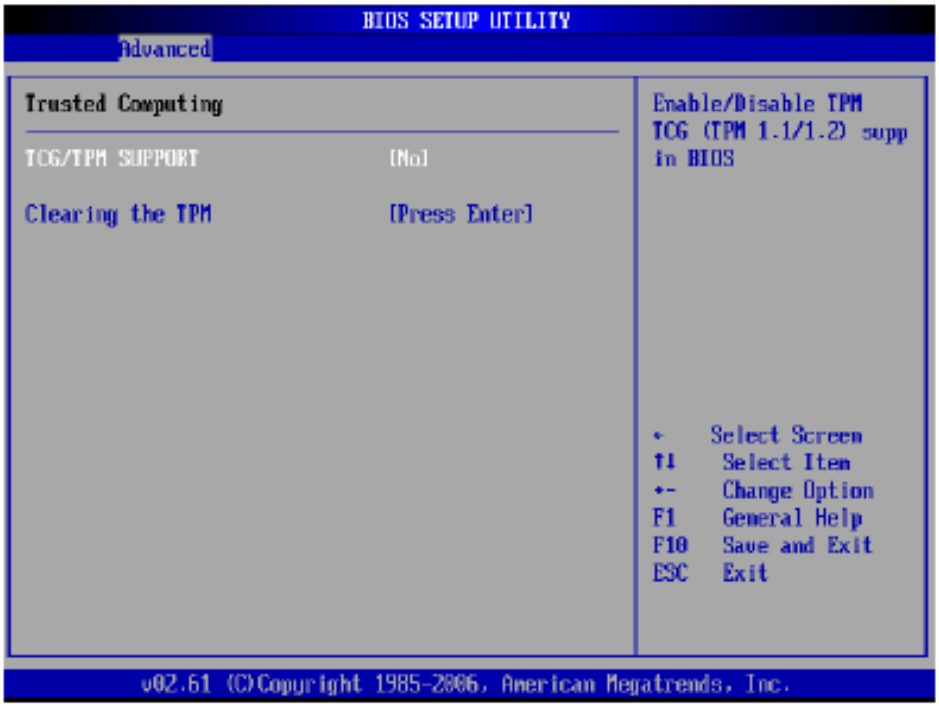
Use the Terminal Type BIOS option to specify the remote terminal type.

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

3.3.8 Trusted Computing

Use the Trusted Computing menu (BIOS Menu 11) to configure settings related to the Trusted

Computing Group (TCG) Trusted Platform Module (TPM).



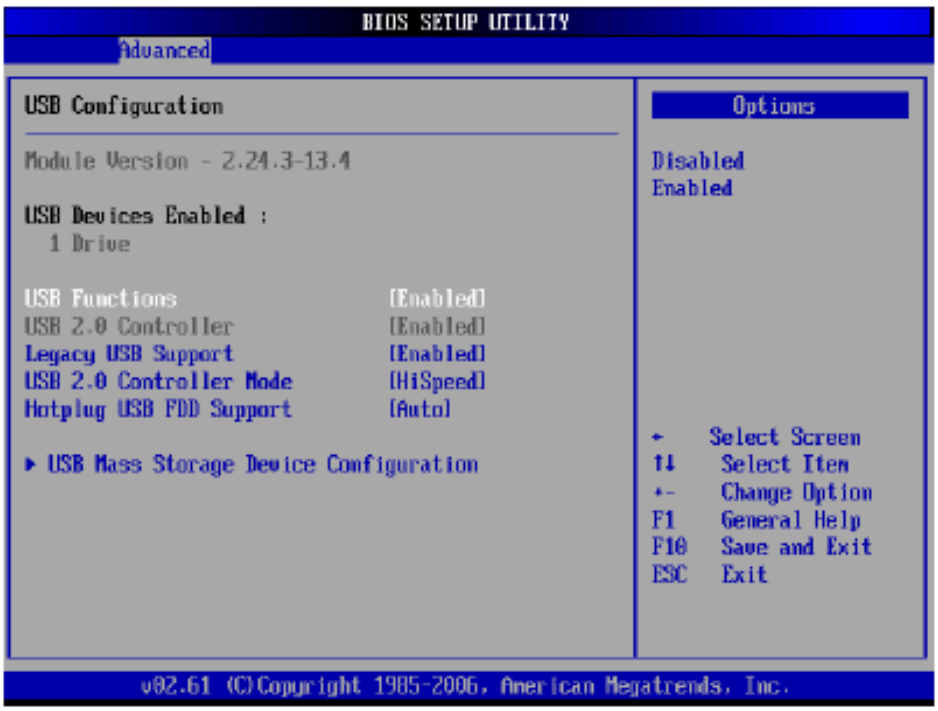
- **TCG/TPM Support [No]**

  Use the TCG/TPM Support option to configure support for the TPM.
  - No DEFAULT TPM support is disabled.
  - Yes TPM support is enabled.
- **Clearing the TPM [Press Enter]**

  Use the Clearing the TPM option to clear the information stored in the TPM.

3.3.9 USB Configuration

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



- **USB Configuration**

  The USB Configuration field shows the system USB configuration. The items listed are: Module Version: x.xxxxx.xxxxx
- **USB Devices Enabled**

  The USB Devices Enabled field lists the USB devices that are enabled on the system
- **USB Function [Enabled]**

  Use the USB Function BIOS option to enable or disable the USB function.
  - Disabled USB function support disabled
  - Enabled DEFAULT USB function support enabled

- **Legacy USB Support [Enabled]**

  Use the Legacy USB Support BIOS option to enable USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.
  - Disabled Legacy USB support disabled
  - Enabled DEFAULT Legacy USB support enabled
  - Auto Legacy USB support disabled if no USB devices are connected

- **USB2.0 Controller Mode [HiSpeed]**

  Use the USB2.0 Controller Mode option to set the speed of the USB2.0 controller.
  - FullSpeed The controller is capable of operating at 12Mb/s
  - HiSpeed DEFAULT The controller is capable of operating at 480Mb/s
  -
- **Hotplug USB FDD Support [Auto]**

  Use the Hotplug USB FDD Support option to enable or disable USB FDD support.
  - Disabled Hot-plug USB FDD support disabled.
  - Enabled DEFAULT A virtual FDD drive is created and will be associated with the hotplugged FDD later.
  - Auto A virtual FDD drive is created only if there is no USB FDD present.

3.3.9.1 USB Mass Storage Device Configuration

Use the USB Mass Storage Device Configuration menu (BIOS Menu 13) to configure USB mass storage class devices.

➢ **USB Mass Storage Reset Delay [20 Sec]**

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

■ 10 Sec POST waits 10 seconds for the USB mass storage device after the start unit command.

■ 20 Sec DEFAULT POST waits 20 seconds for the USB mass storage device after the start unit command.

■ 30 Sec POST waits 30 seconds for the USB mass storage

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

■ Device ##

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

■ Emulation Type [Auto]

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

NOTE:

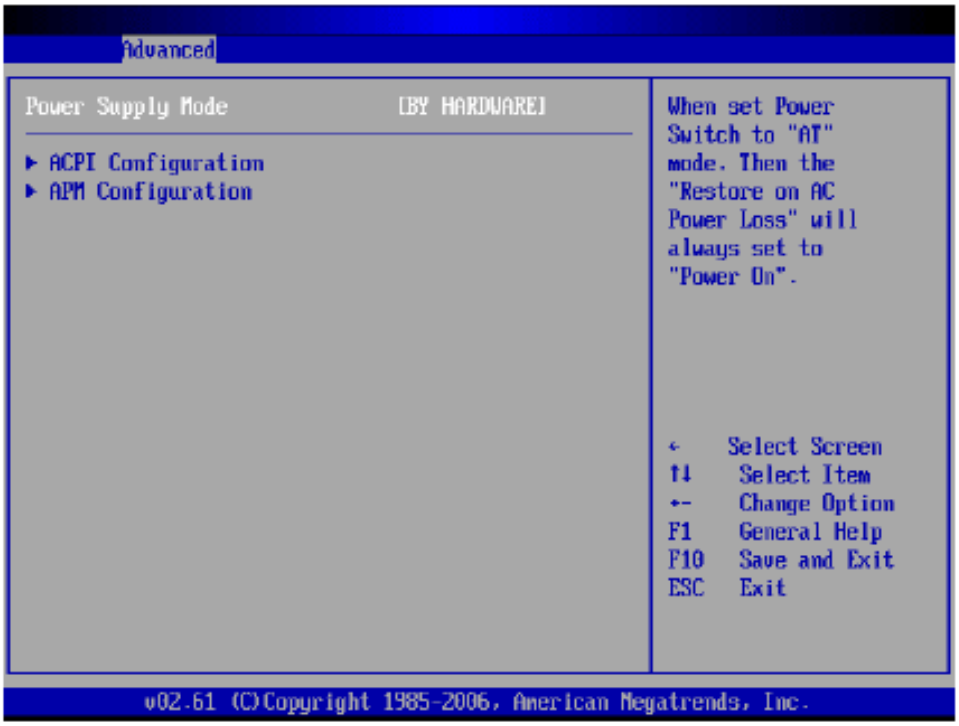
Please note that the device's formatted type and the emulation type provided by the BIOS must match for a device to boot properly. If both types do not match then device's behavior is undefined. To make sure both types match, format the device using BIOS INT13h calls after selecting the proper emulation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

■ Auto DEFAULT BIOS auto-detects the current USB.

- Floppy The USB device will be emulated as a floppy drive. The device can be either A: or B: esponding 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
- Hard Disk Allows the USB device to be emulated as hard disk responding to INT13h calls that return DL values of 80h or above.
- CDROM Assumes the CD-ROM is formatted as bootable
- media. All the devices that support block sizes greater than 512 bytes can only be booted using this option.

3.3.10 Power Configuration

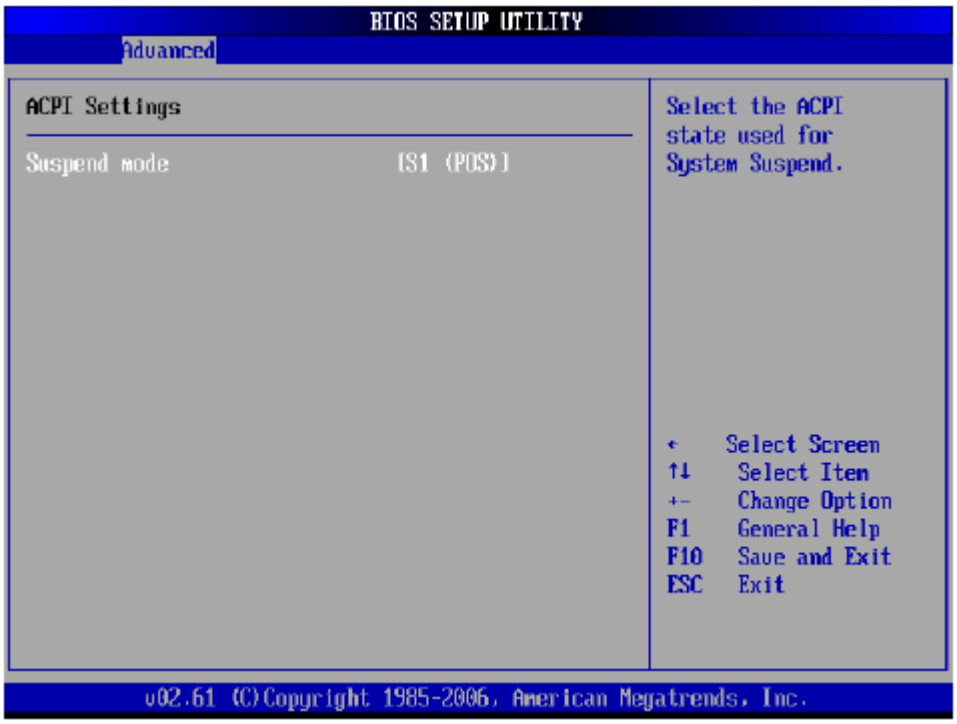
Use the Power Configuration menu (BIOS Menu 14) configures the Advanced Configuration and Power Interface (ACPI) and Power Management (APM) options.



BIOS Menu 14: Power Configuration

➢ 3.3.10.1 ACPI Configuration

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



BIOS Menu 15: ACPI Configuration [Advanced\ Power Configuration]

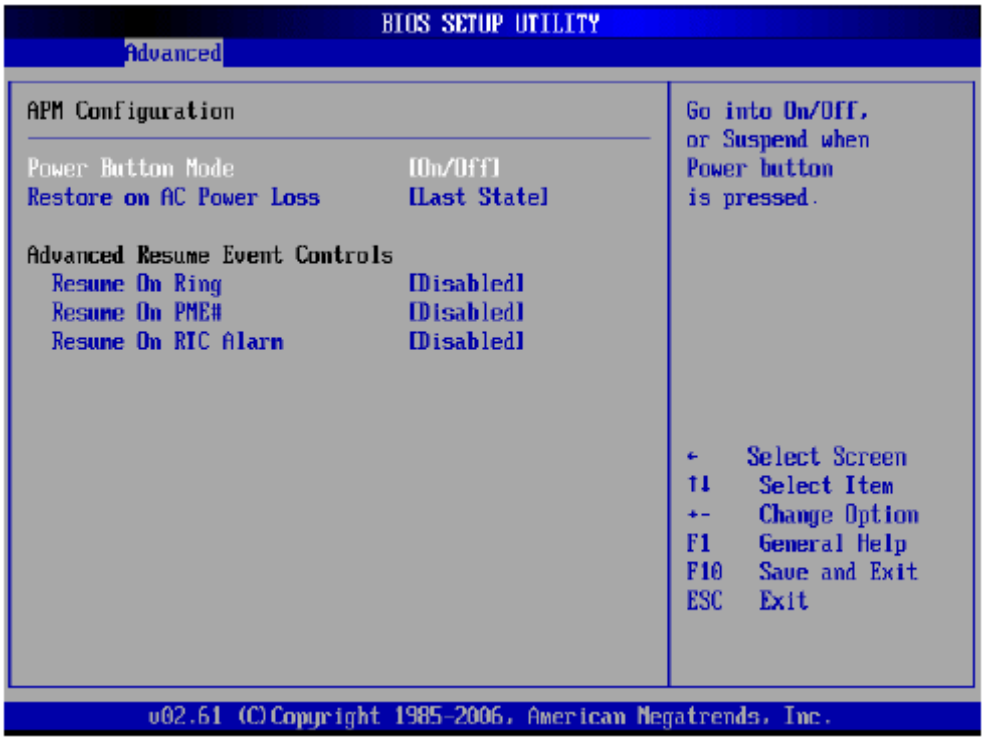
- Suspend Mode [S1(POS)]

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

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

3.3.11 APM Configuration

The APM Configuration menu (BIOS Menu 9) allows the advanced power management options to be configured.



BIOS Menu 16:Advanced Power Management Configuration

- Power Button Mode [On/Off]
  Use the Power Button Mode BIOS to specify how the power button functions.
- On/Off DEFAULT When the power button is pressed the system is either turned on or off
- Suspend When the power button is pressed the system goes into suspend mode
- Restore on AC Power Loss [Last State]

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

- Power Off The system remains turned off
- Power On The system turns on
- Last State DEFAULT The system returns to its previous state. If it was on, it turns itself on. If it was off, it remains off.

- Resume on Ring [Disabled]
  Use the Resume on Ring BIOS option to enable activity on the RI (ring in) modem line to rouse the system from a suspend or standby state. That is, the system will be roused by an incoming call on a modem.
- Disabled DEFAULT Wake event not generated by an incoming call
- Enabled Wake event generated by an incoming call

- Resume on PME# [Disabled]
  Use the Resume on PME# BIOS option to enable activity on the PCI PME (power management event) controller to rouse the system from a suspend or standby state.
- Disabled DEFAULT Wake event not generated by PCI PME controller activity

- Enabled Wake event generated by PCI PME controller activity

- Resume On RTC Alarm [Disabled]
  Use the Resume On RTC Alarm option to specify the time the system should be roused from a suspended state.

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

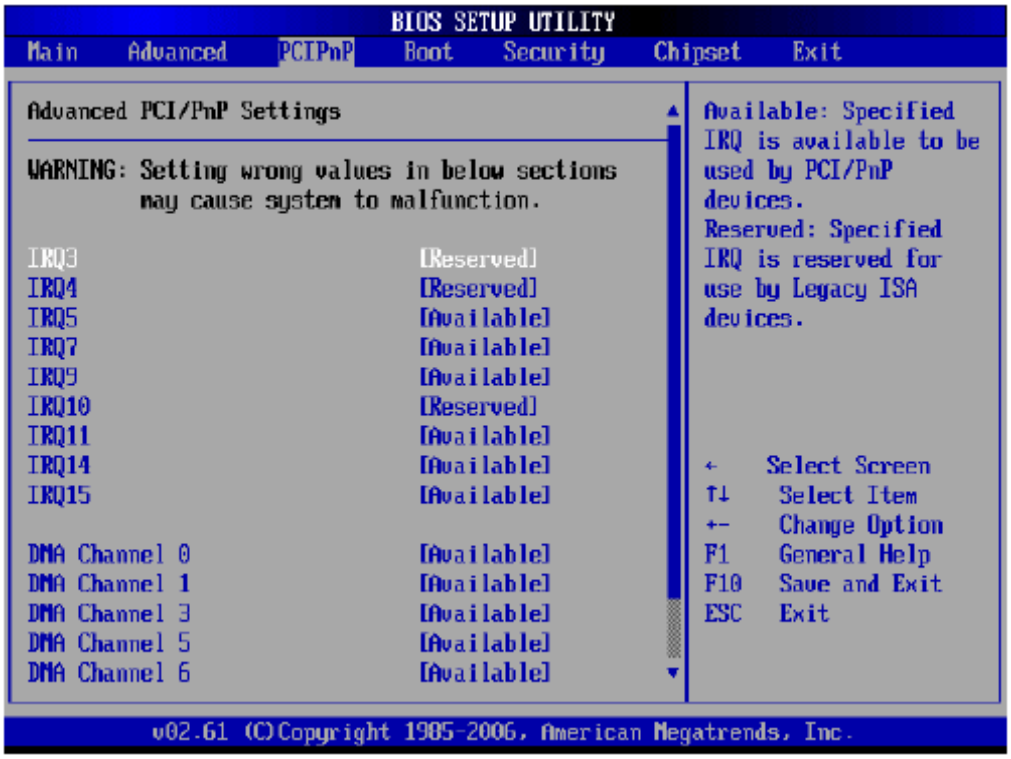
  RTC Alarm Date (Days)
  RTC Alarm Time

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

3.4 PCI/PnP

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

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



BIOS Menu 17: PCI/PnP Configuration

- IRQ#
  Use the IRQ# address to specify what IRQs can be assigned to a particular peripheral device.
- Available The specified IRQ is available to be used by PCI/PnP devices
- Reserved The specified IRQ is reserved for use by Legacy ISA devices

Available IRQ addresses options are:

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

- DMA Channel# [Available]
  Use the DMA Channel# option to assign a specific DMA channel to a particular PCI/PnP device.
- Available DEFAULT The specified DMA is available to be used by PCI/PnP devices
- Reserved The specified DMA is reserved for use by Legacy ISA devices

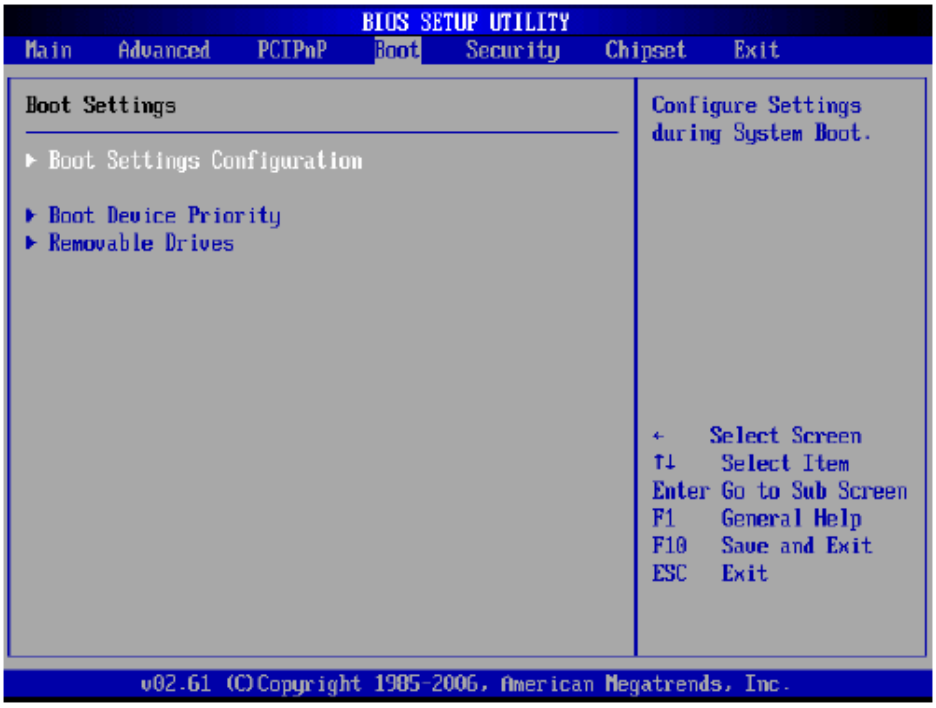
Available DMA Channels are:

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

- Reserved Memory Size [Disabled]
  Use the Reserved Memory Size BIOS option to specify the amount of memory that should be reserved for legacy ISA devices.
- Disabled DEFAULT No memory block reserved for legacy ISA devices
- 16K 16KB reserved for legacy ISA devices
- 32K 32KB reserved for legacy ISA devices
- 64K 54KB reserved for legacy ISA devices

3.5 Boot

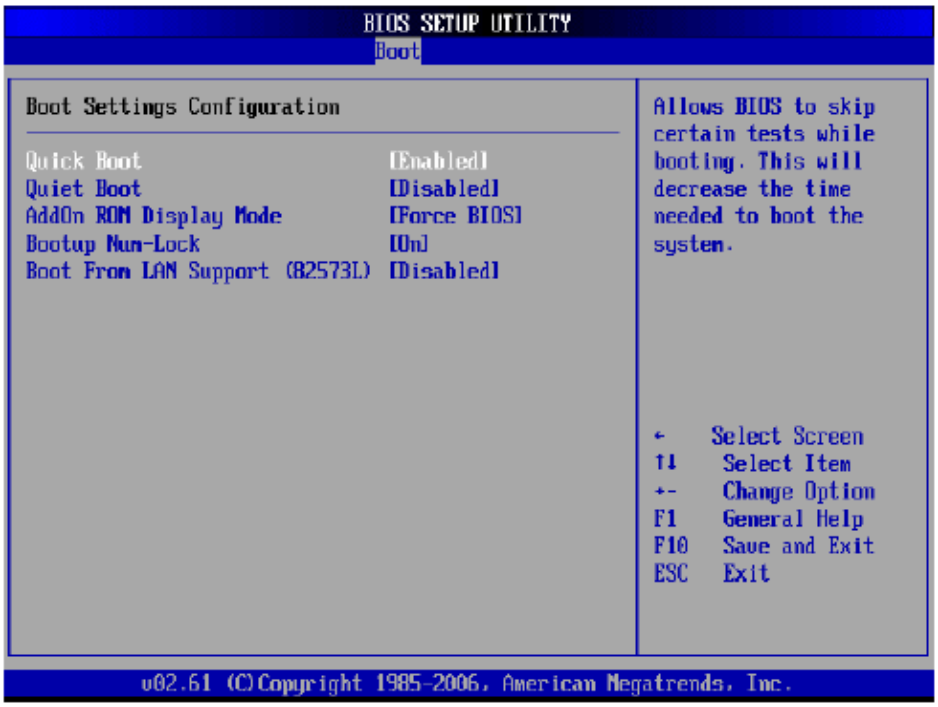
Use the Boot menu (BIOS Menu 18) to configure system boot options.



BIOS Menu 18: Boot

3.5.1 Boot Settings Configuration

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



BIOS Menu 19: Boot Settings Configuration

- Quick Boot [Enabled]

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

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

- Quiet Boot [Disabled]
  Use the Quiet Boot BIOS option to select the screen display when the system boots.
  - Disabled DEFAULT Normal POST messages displayed
  - Enabled OEM Logo displayed instead of POST messages

- AddOn ROM Display Mode [Force BIOS]
  Use the AddOn ROM Display Mode option to allow add-on ROM (read-only memory) messages to be displayed.
  - Force BIOS DEFAULT The system forces third party BIOS to display during system boot.
  - Keep Current The system displays normal information during system boot.

- Bootup Num-Lock [On]
  Use the Bootup Num-Lock BIOS option to specify if the number lock setting must be modified during boot up.
  - Off Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.
  - On DEFAULT Allows the Number Lock on the keyboard to be enabled automatically when the computer system boots up. This allows the immediate use of the 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard is lit.

- Boot From LAN Support (82573L) [Disabled]
  Use the BOOT From LAN Support (82573L) option to enable the IntelR 82573L PCIe GbE controller to boot the system.
  - Disabled DEFAULT Cannot be booted from a remote system through the IntelR 82573L PCIe GbE controller
  - Enabled Can be booted from a remote system through the IntelR 82573L PCIe GbE controller

3.5.2 Boot Device Priority

Use the Boot Device Priority menu (BIOS Menu 20) to specify the boot sequence from the available devices. Possible boot devices may include:

- USB
- HDD
- CD/DVD

BIOS Menu 20: Boot Device Priority Settings

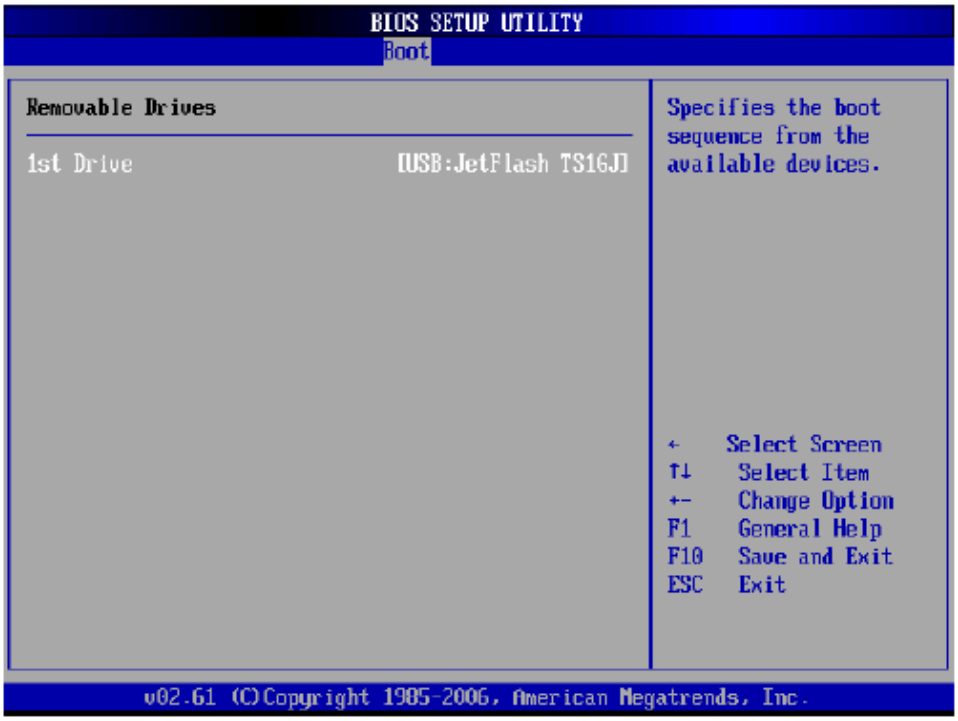
3.5.3 Removable Drives

Use the Removable Drives menu (BIOS Menu 21) to specify the boot sequence of the available USB devices. When the menu is opened, the USB devices connected to the system are listed as shown below:

- 1st Drive [1st USB]
- 2nd Drive [2nd USB]

NOTE:
Only the drives connected to the system are shown. For example, if only one USB device is connected only “1st Drive” is listed.

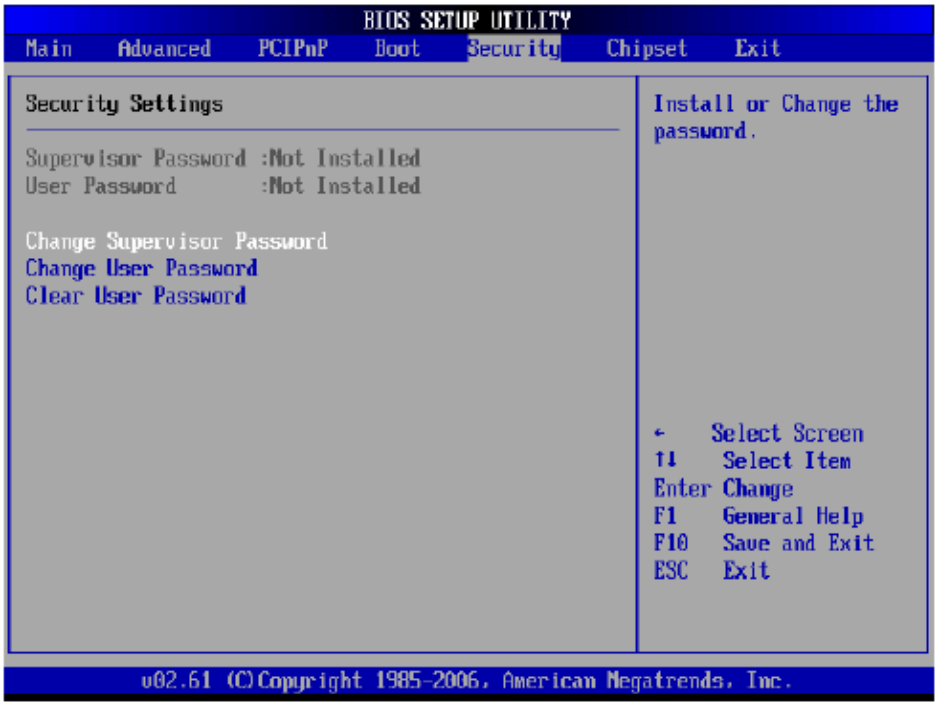
The boot sequence from the available devices is selected. If the “1st Drive” option is selected a list of available USB devices is shown. Select the first USB device the system boots from. If the “1st Drive” is not used for booting this option may be disabled.



BIOS Menu 21: Removable Drives

3.6 Security

Use the Security menu (BIOS Menu 22) to set system and user passwords.



- Change Supervisor Password

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

- Change User Password

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

- Clear User Password

Use the Clear User Password to clear a user's password. The default for this option is Not Installed. If a user password must be cleared, use this option.

3.7 Chipset

Use the Chipset menu to access the NorthBridge, SouthBridge and ME Subsystem configuration menus.

WARNING!

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

3.7.1 NorthBridge Configuration

Use the Northbridge Chipset Configuration menu (BIOS Menu 23) to configure the Northbridge chipset.

BIOS Menu 23:Northbridge Chipset Configuration

- Memory Remap Feature [Enabled]

  Use the Memory Remap Feature option to allow the overlapped PCI memory above the total physical memory to be remapped.
  - Enabled DEFAULT Overlapped PCI memory can be remapped
  - Disabled Overlapped PCI memory cannot be remapped

- Memory Hole [Disabled]

  Use the Memory Hole option to reserve memory space between 15MB and 16MB for ISA expansion cards that require a specified area of memory to work properly. If an older ISA expansion card is used, please refer to the documentation that came with the card to see if it is necessary to reserve the space.
  - Disabled DEFAULT Memory is not reserved for ISA expansion cards
  - 15MB – 16MB Between 15MB and 16MB of memory is reserved for ISA expansion cards

- Boots Graphics Adapter Priority [IGD]

  Use the Boots Graphics Adapter Priority option to select the graphics controller used as the primary boot device. Select either an integrated graphics controller (IGD) or a combination of PCI graphics controller, a PCI express (PEG) controller or an IGD. Configuration options are listed below:
  - IGD DEFAULT
  - PCI/IGD
  -
- Internal Graphics Mode Select [Enable, 8MB]

Use the Internal Graphic Mode Select option to specify the amount of system memory that can be used by the Internal graphics device.

- Disable
- Enable, 1MB 1MB of memory used by internal graphics device
- Enable, 8MB DEFAULT 8MB of memory used by internal graphics device

3.7.1 Video Function Configuration

Use the Video Function Configuration menu to configure the video device connected to the system.

- Boot Display Device [Auto]

  Use the Boot Display Device option to select the display device used by the system when it boots. Configuration options are listed below.
  - Auto DEFAULT
  - CRT
  - TV
  - LFP

- Flat Panel Type [1024x768 18b]

  Use the Flat Panel Type option to select the type of flat panel connected to the system. Configuration options are listed below.
  - 640x480 18b
  - 800x600 18b
  - 1024x768 18b
  - 1024x768 24b
  - 1280x1024 48b
  - 1600x1200 48b

- TV Standard [VBIOS-Default]

  Use the TV Standard option to select the standard of the television connected to the system. The configuration options are listed below.
  - VBIOS-Default DEFAULT
  - NTSC
  - PAL
  - SECAM
  - SMPTE240M
  - ITU-R television
  - SMPTE295M
  - SMPTE296M
  - EIA-770.2
  - EIA-770.3

3.7.2 Southbridge Configuration

The Southbridge Configuration menu (BIOS Menu 24) allows the Southbridge chipset to be configured.

BIOS Menu 24:Southbridge Chipset Configuration

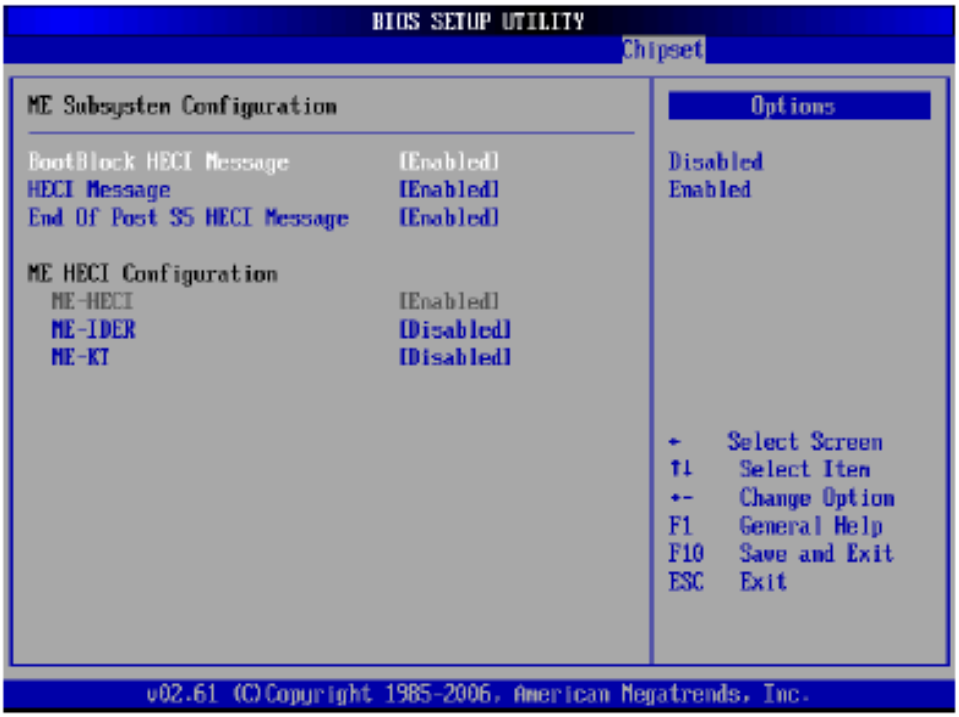
- HDA Controller [Enabled] Use the HDA Controller option to enable the Southbridge high definition audio controller. If the HDA device has been connected to the system, this option should be enabled.
  - Disabled Southbridge HDA controller is disabled
  - Enabled DEFAULT Southbridge HDA controller is enabled

- ASF Support [Enabled]

  Use the ASF Support BIOS option to control the system's ability to connect to a remote management server.
  - Disabled The system will not communicate with a remote management server.
  - Enabled DEFAULT The Alert Standard Format (ASF) controller is activated and can communicate with a remote management server.

3.7.3 ME Subsystem Configuration

The ME Subsystem Configuration menu (BIOS Menu 24) allows the AMT subsystem (Management Engine, ME) and Host Embedded Controller Interface (HECI) driver options to be configured.



BIOS Menu 25: Me Subsystem Configuration

- BootBlock HECI Message [Enabled]

  Use the BootBlock HECI Message option to enable or disable HECI message when booting up the system.

  - Disabled The HECI message is disabled when booting up the system.
  - Enabled DEFAULT The HECI message is enabled when booting up the system.

- HECI Message [Enabled] Use the HECI Message BIOS option to enable or disable HECI message.

  - Disabled The HECI message disabled.
  - Enabled DEFAULT The HECI message enabled.

- End Of Post S5 HECI Message [Enabled]

  Use the End Of Post S5 HECI Message option to enable or disable HECI message when the system is in the off (S5) state.

  - Disabled The HECI message is disabled when the system is off.
  - Enabled DEFAULT The HECI message enabled when the system is off.

- ME-HECI [Enabled]

  The ME-HECI option is enabled by default and can not be changed.

- ME-IDER [Disabled]

  Use the ME-IDER option to enable or disable the IDE-Redirection (IDE-R) function on an AMT-capable system.

  - Disabled DEFAULT The IDE-R function is disabled.
  - Enabled The IDE-R function allows an AMT-capable client system to access IDE

devices and load OS from a management system. When an IDE-R session is established, the virtual drives are shown in the system.

- ME-KT [Disabled]
  Use the ME-KT option to enable or disable the Keyboard and Text redirection (KT) function on an AMT-capable system. KT is also known as Serial-Over-Lan (SOL).
  - Disabled DEFAULT The KT function of the ME is disabled.
  - Enabled The KT function allows a management system to control an IntelR AMT client system remotely. The keyboard interface of a managed client system, such as BIOS menu, is displayed through the management system.

3.8 Exit

Use the Exit menu (BIOS Menu 26) to load default BIOS values, optimal failsafe values and to save configuration changes.

BIOS Menu 26: Exit

- Save Changes and Exit
  Use the Save Changes and Exit option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.
- Discard Changes and Exit
  Use the Discard Changes and Exit option to exit the BIOS configuration setup program without saving the changes made to the system.
- Discard Changes
  Use the Discard Changes option to discard the changes and remain in the BIOS configuration setup program.
- Load Optimal Defaults

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

- Load Failsafe Defaults

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

Chapter 4 Installation of Drivers

This chapter describes the installation procedures for software and drivers under the windows XP. The software and drivers are included with the motherboard. The contents include **Intel chipset driver VGA driver LAN drivers Audio driver iAMT Drvier**
Installation instructions are given below.

> **Important Note:**
> After installing your Windows operating system (Windows XP), you must install first the Intel Chipset Software Installation Utility before proceeding with the installation of drivers.

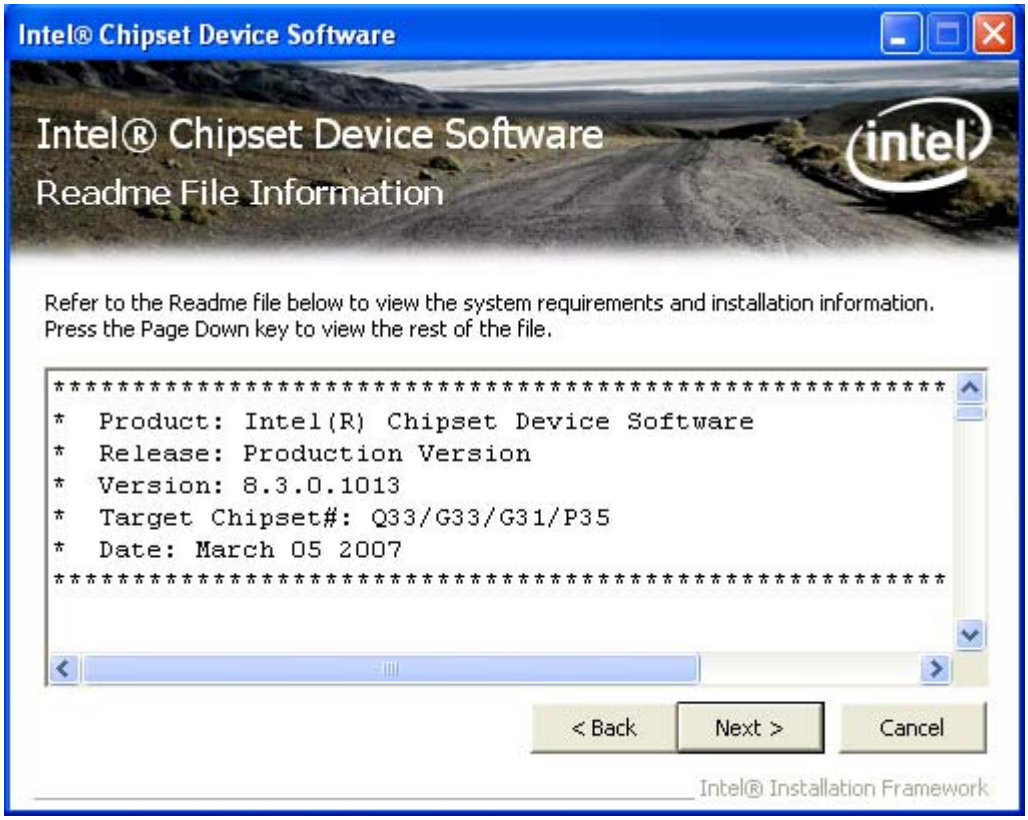
4.1 Intel Chipset Driver

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

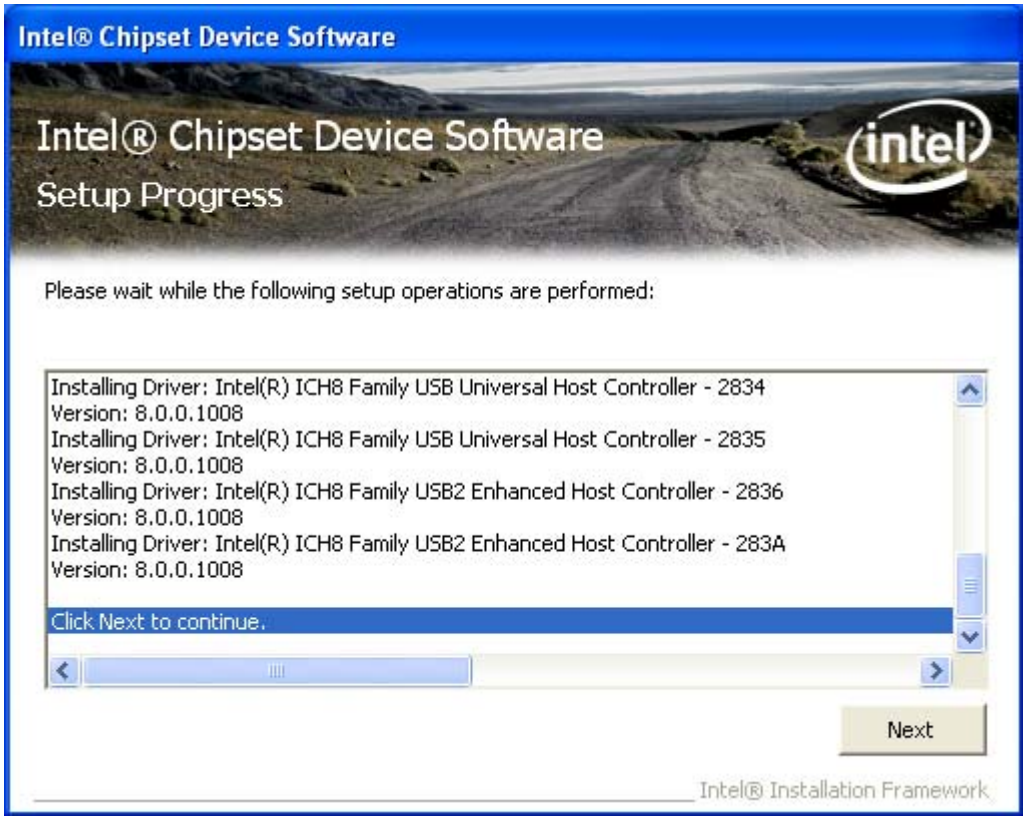
Step 1: Select Chipset from the list

Follow the step-by-step installation process to install the LMS_SQL driver.

Intel® Chipset Device Software
Intel® Chipset Device Software
License Agreement
intel
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework


Intel® Chipset Device Software
Intel® Chipset Device Software
Readme File Information
intel
Refer to the Readme file below to view the system requirements and installation information.
Press the Page Down key to view the rest of the file.
****
* Product: Intel(R) Chipset Device Software
* Release: Production Version
* Version: 8.3.0.1013
* Target Chipset#: Q33/G33/G31/P35
* Date: March 05 2007
****
< Back
Next >
Cancel
Intel® Installation Framework

Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Progress
Please wait while the following setup operations are performed:
Installing Driver: Mobile Intel(R) PM965/GM965/GL960 Express Processor to DRAM Controller -
Version: 8.2.0.1002
Installing Driver: Intel(R) ICH8M-E LPC Interface Controller - 2811
Version: 8.3.0.1013
Installing Driver: Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
Version: 8.3.0.1013
Installing Driver: Intel(R) ICH8 Family PCI Express Root Port 2 - 2841
Version: 8.3.0.1013
Installing Driver: Intel(R) ICH8 Family Thermal Reporting Device - 284F
Version: 8.3.0.1013
Next
Intel® Installation Framework


Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Progress
Please wait while the following setup operations are performed:
Installing Driver: Intel(R) ICH8 Family USB Universal Host Controller - 2834
Version: 8.0.0.1008
Installing Driver: Intel(R) ICH8 Family USB Universal Host Controller - 2835
Version: 8.0.0.1008
Installing Driver: Intel(R) ICH8 Family USB2 Enhanced Host Controller - 2836
Version: 8.0.0.1008
Installing Driver: Intel(R) ICH8 Family USB2 Enhanced Host Controller - 283A
Version: 8.0.0.1008
Click Next to continue.
Next
Intel® Installation Framework

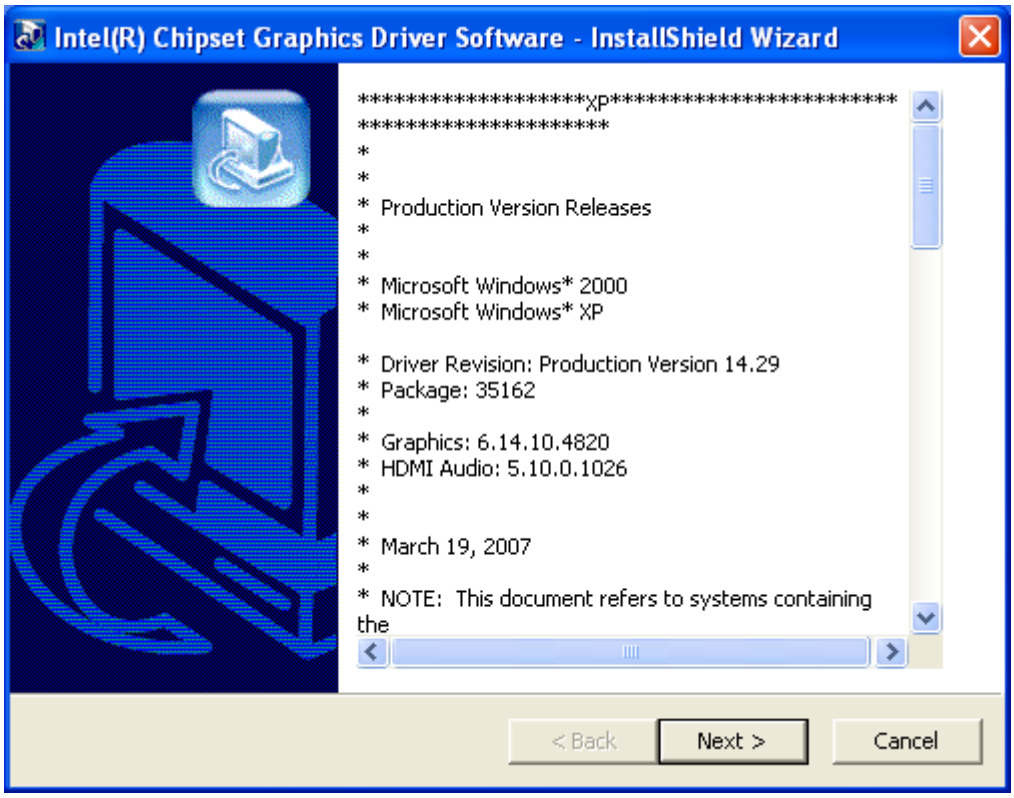
Click Finish, When the installation process is complete, the Setup Complete screen appears. See as picture.

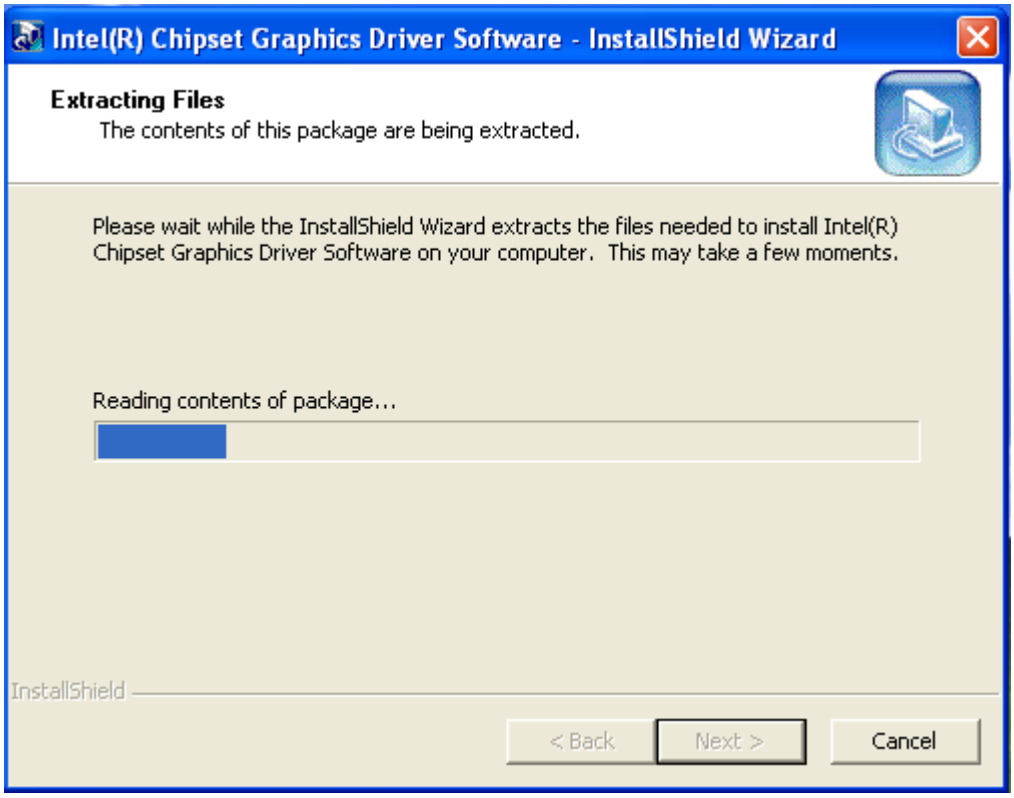
4.2 Intel Graphics Media Accelerator Driver

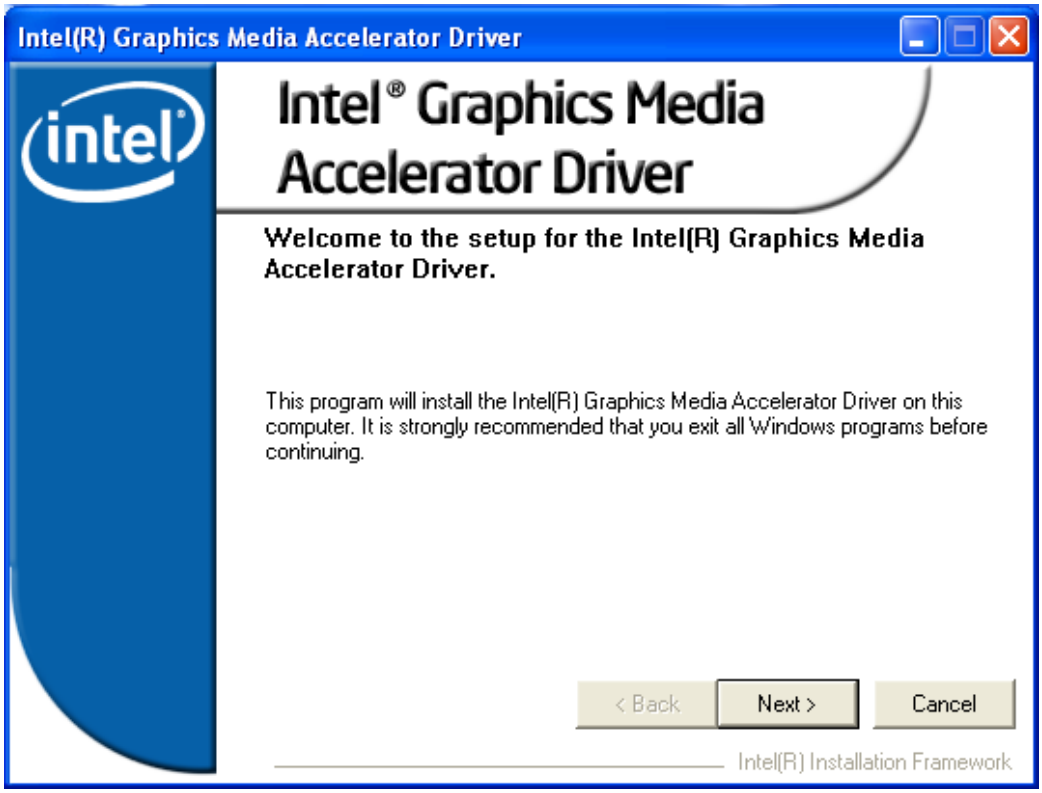
To install the VGA drivers, follow the steps below to proceed with the installation.

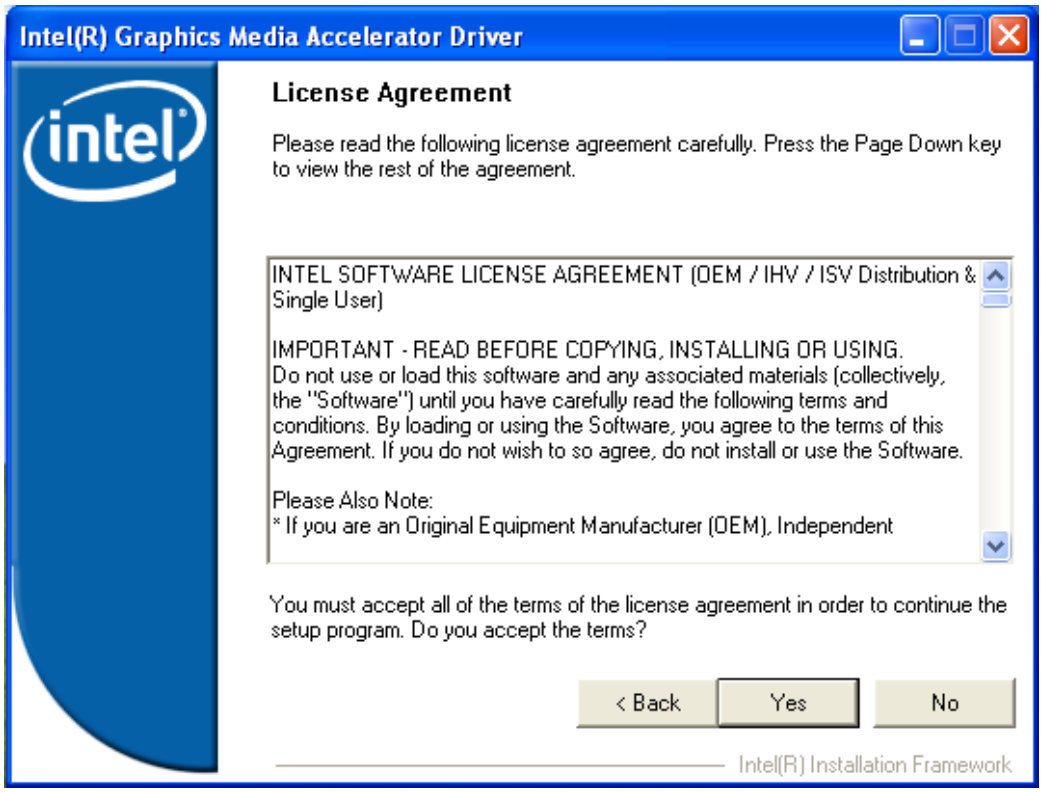
1. Click Intel(R) GM965 Chipset Family Graphics Driver.

Follow the step-by-step installation process to install the Graphics Media Accelerator driver.






Intel(R) Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Welcome to the setup for the Intel(R) Graphics Media Accelerator Driver.
This program will install the Intel(R) Graphics Media Accelerator Driver on this computer. It is strongly recommended that you exit all Windows programs before continuing.
< Back
Next >
Cancel
Intel(R) Installation Framework


Intel(R) Graphics Media Accelerator Driver
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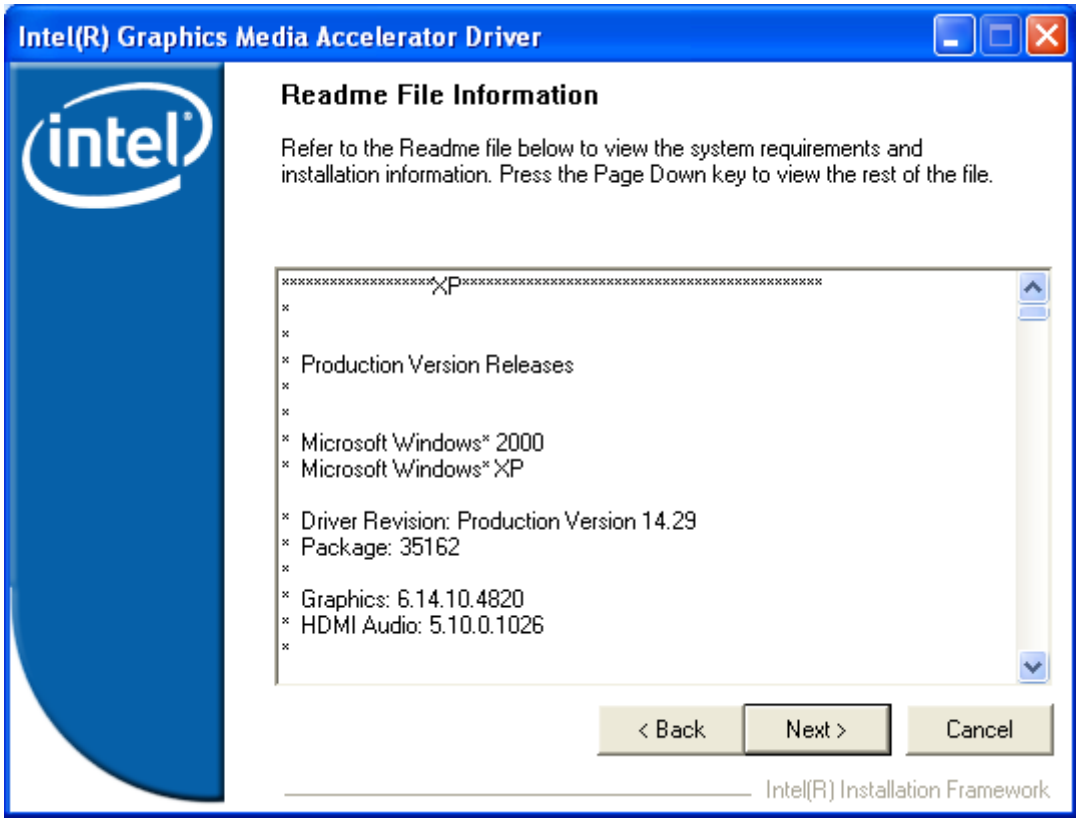
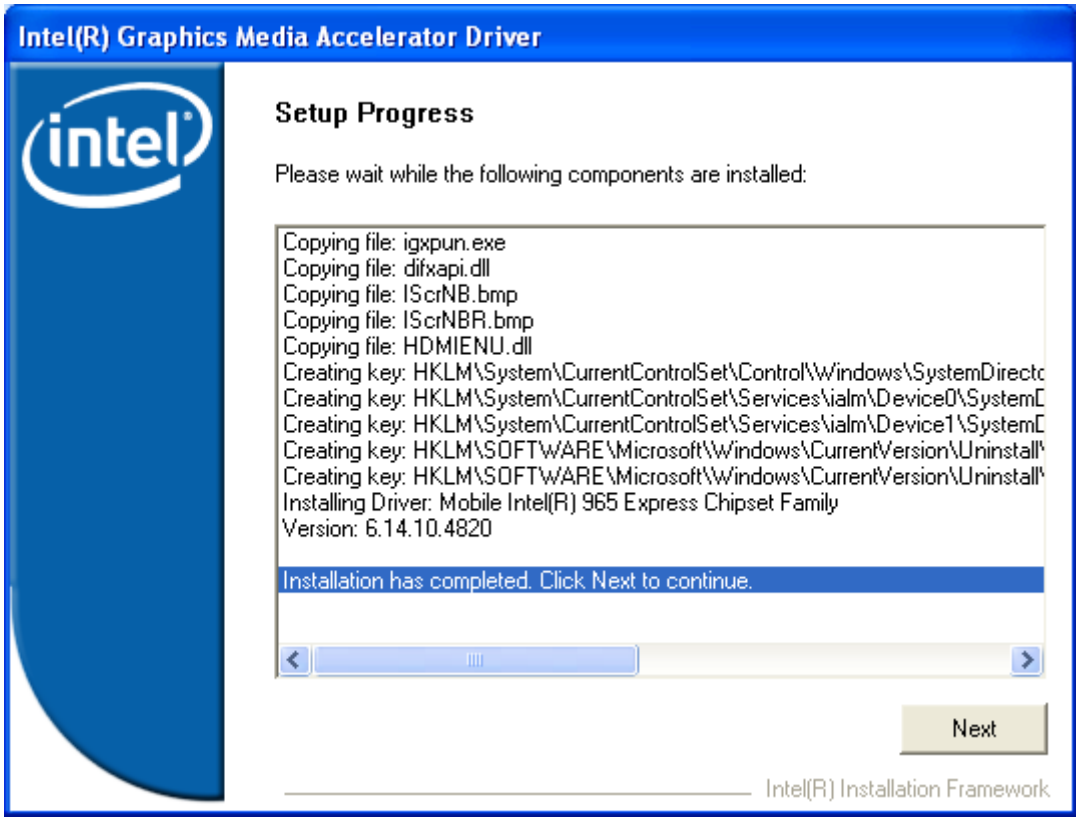
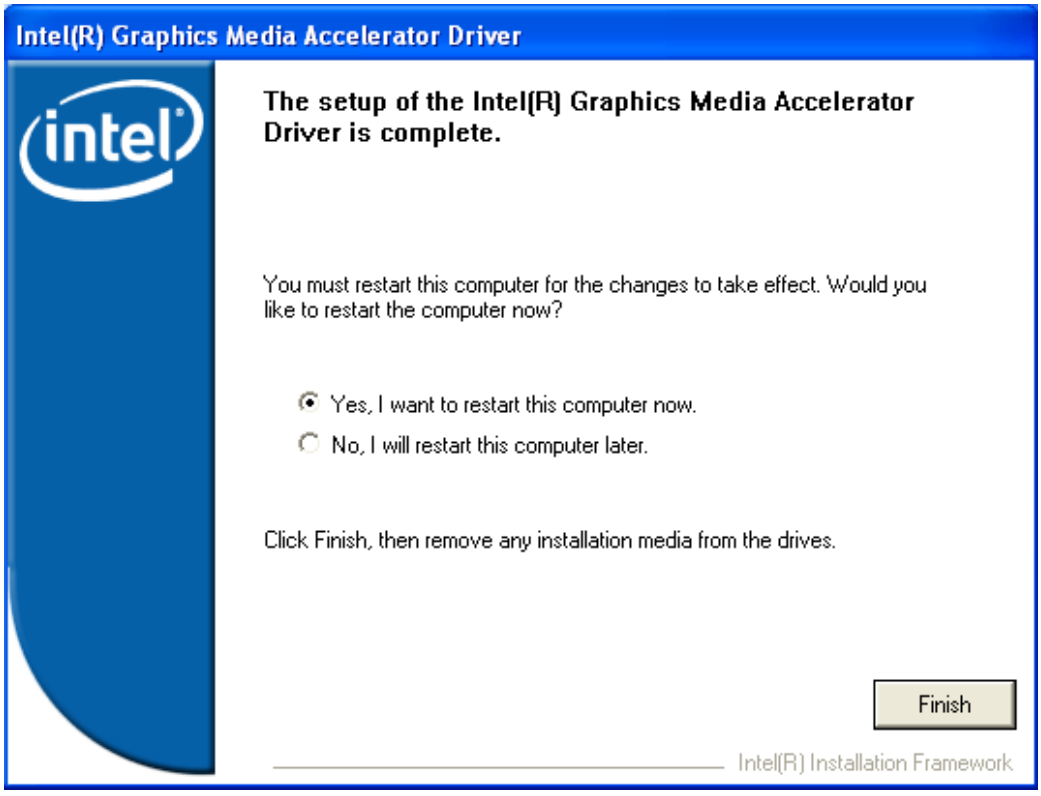
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
< Back
Yes
No
Intel(R) Installation Framework


Intel(R) Graphics Media Accelerator Driver
Readme File Information
Refer to the Readme file below to view the system requirements and installation information. Press the Page Down key to view the rest of the file.
**********XP**********
* Production Version Releases
* Microsoft Windows* 2000
* Microsoft Windows* XP
* Driver Revision: Production Version 14.29
* Package: 35162
* Graphics: 6.14.10.4820
* HDMI Audio: 5.10.0.1026
< Back
Next >
Cancel
Intel(R) Installation Framework


Intel(R) Graphics Media Accelerator Driver
Setup Progress
Please wait while the following components are installed:
Copying file: igxpun.exe
Copying file: difxapi.dll
Copying file: IScrNB.bmp
Copying file: IScrNBR.bmp
Copying file: HDMIENU.dll
Creating key: HKLM\System\CurrentControlSet\Control\Windows\SystemDirecto
Creating key: HKLM\System\CurrentControlSet\Services\ialm\Device0\SystemD
Creating key: HKLM\System\CurrentControlSet\Services\ialm\Device1\SystemD
Creating key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\
Creating key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\
Installing Driver: Mobile Intel(R) 965 Express Chipset Family
Version: 6.14.10.4820
Installation has completed. Click Next to continue.
Next
Intel(R) Installation Framework



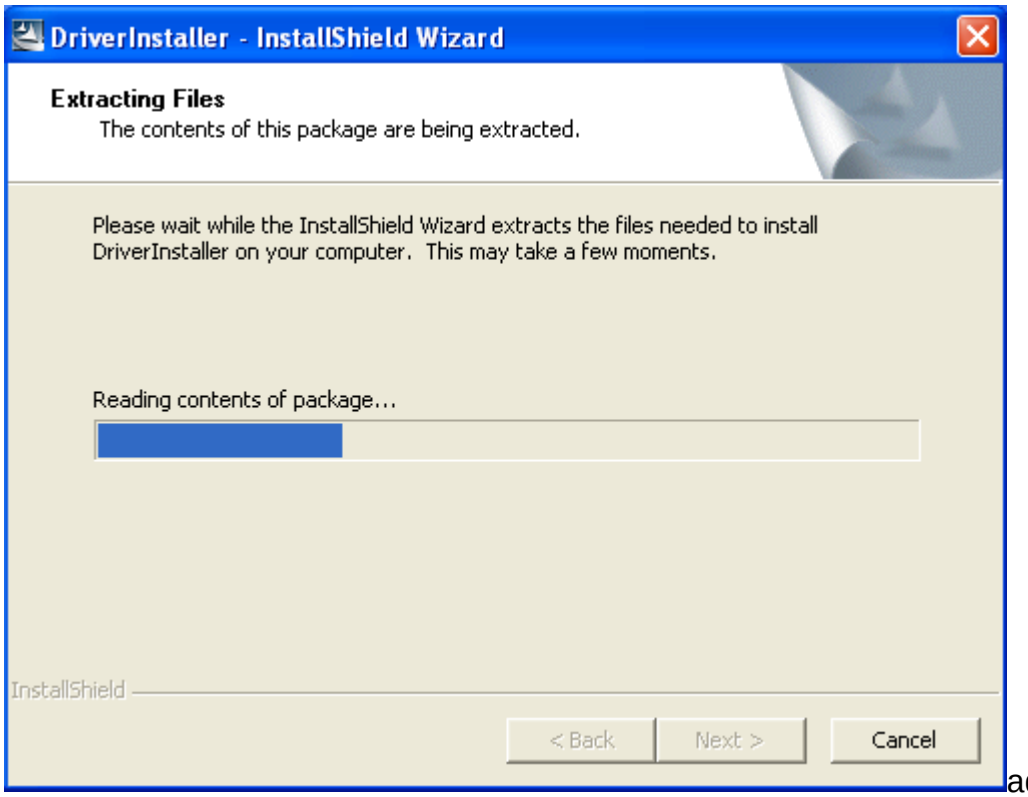
Click FINISH; A Driver Installation Complete.

4.3 Intel 82573L & 82566DM LAN Device Driver

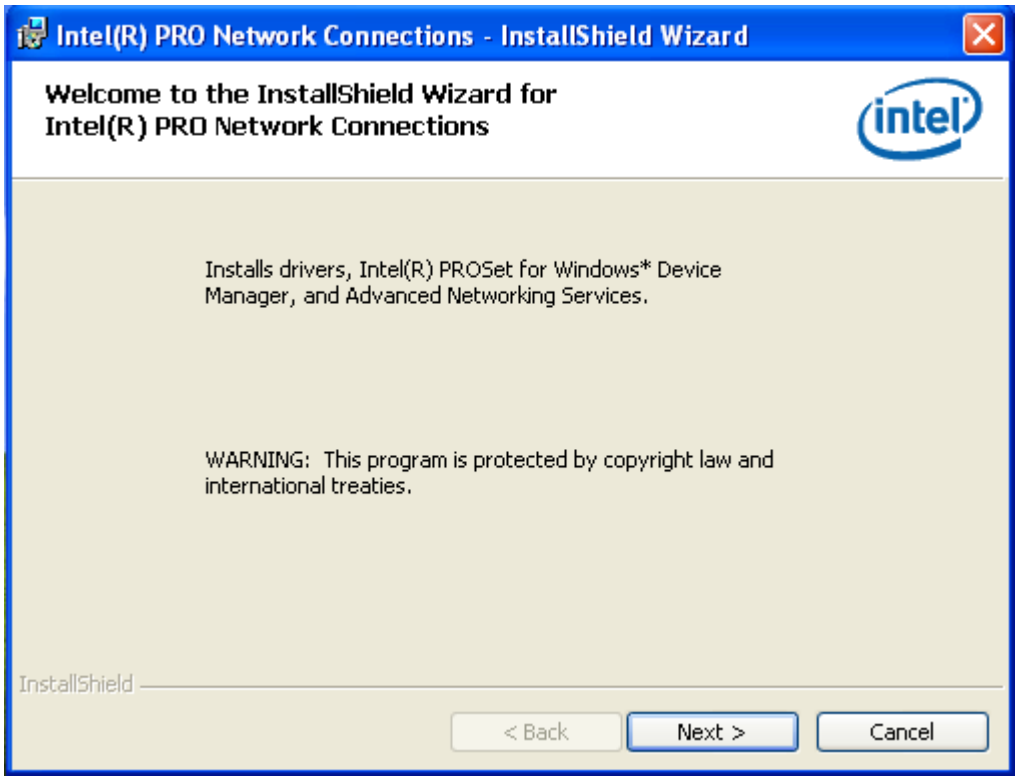
To install the Intel R 82573L & 82566DM Gigabit LAN connect device driver, please follow the steps below.

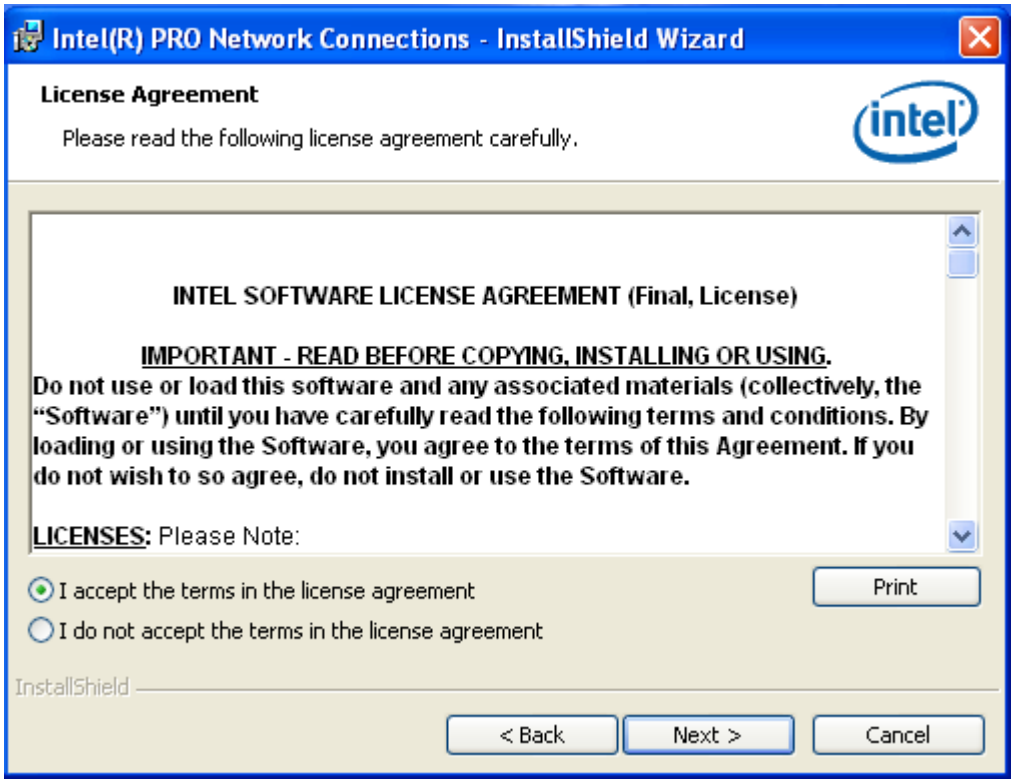
Select LAN from the list

Follow the step-by-step installation process to install the LAN driver.



aqhm




Intel(R) PRO Network Connections - InstallShield Wizard
License Agreement
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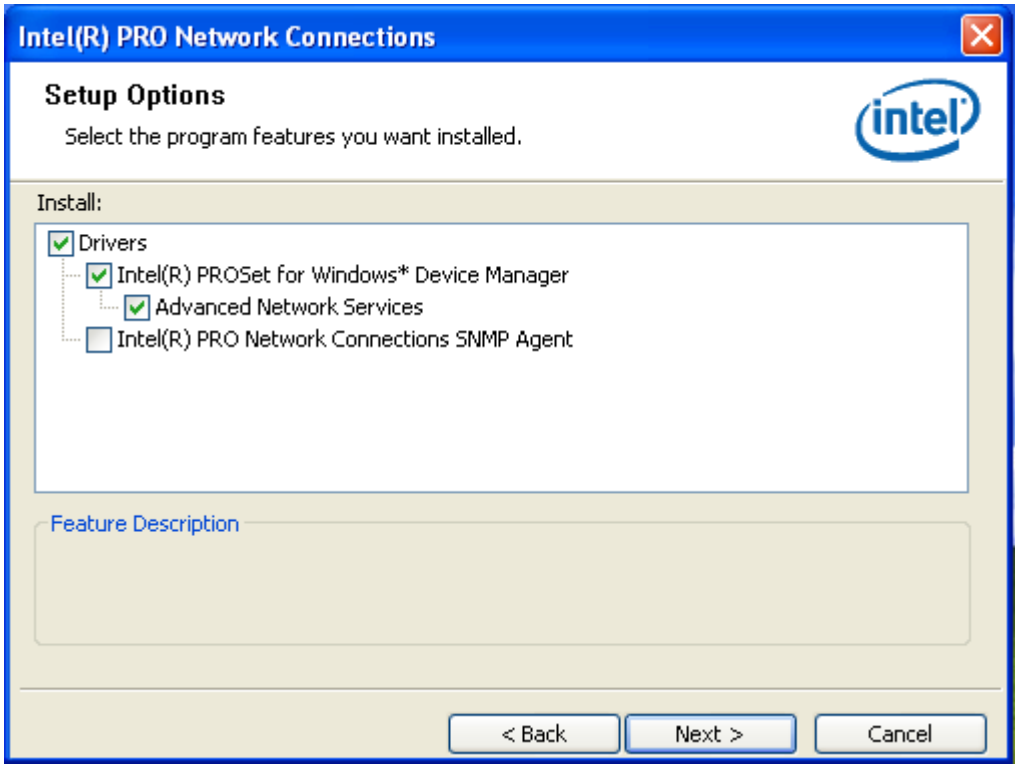
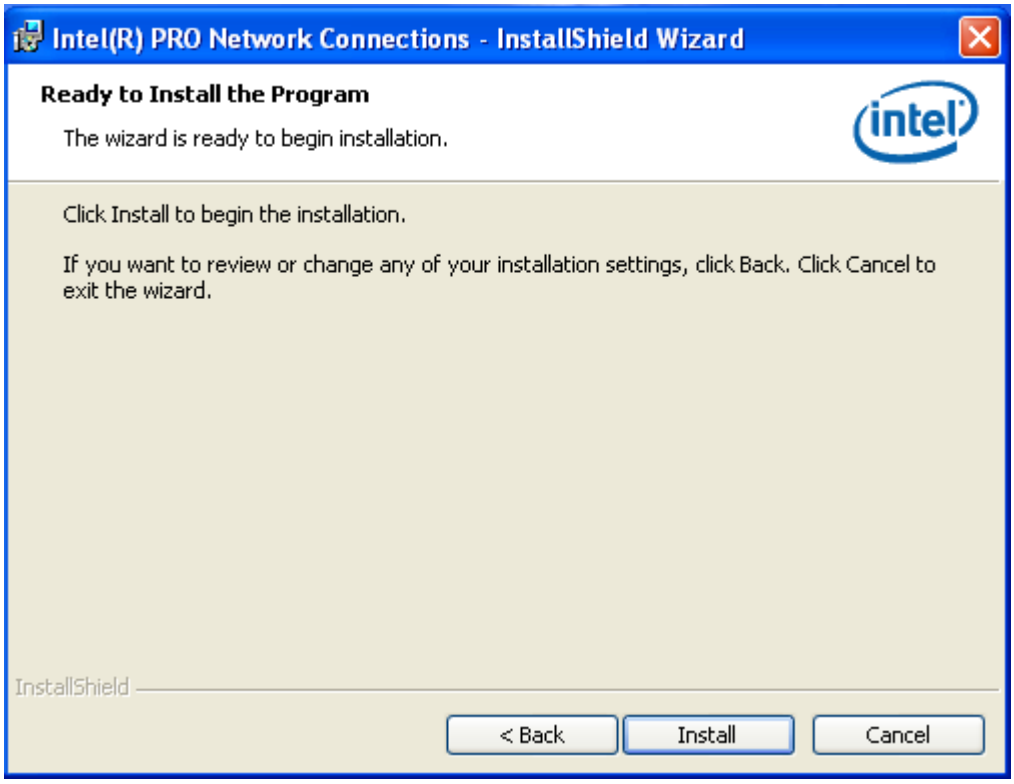
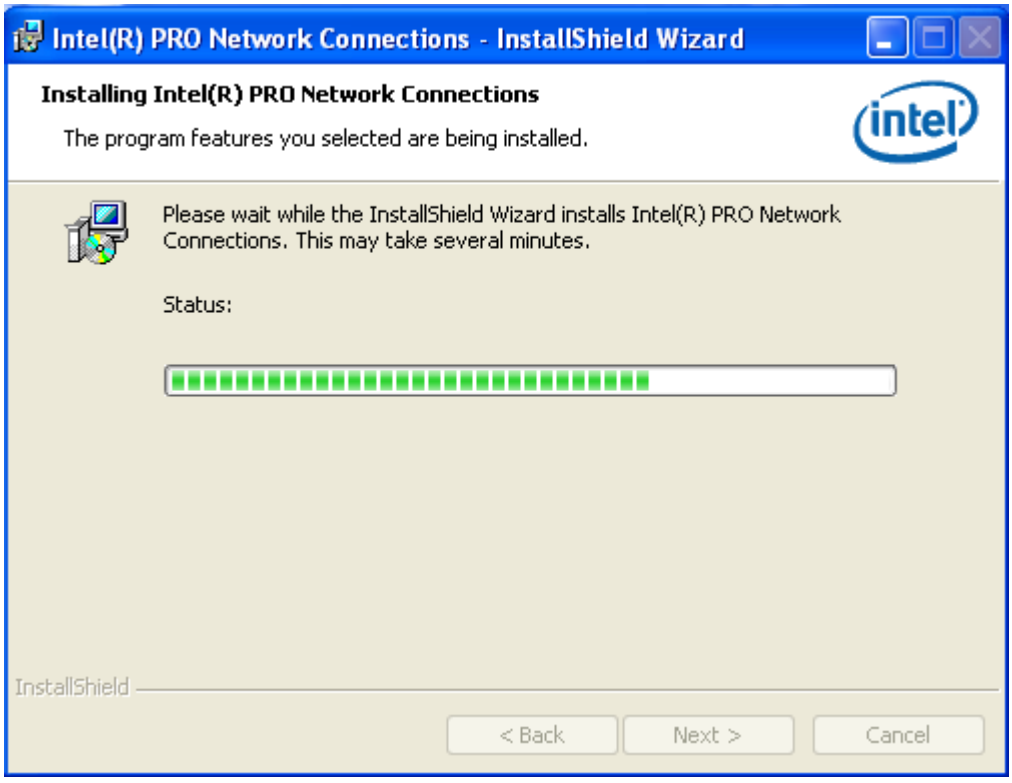
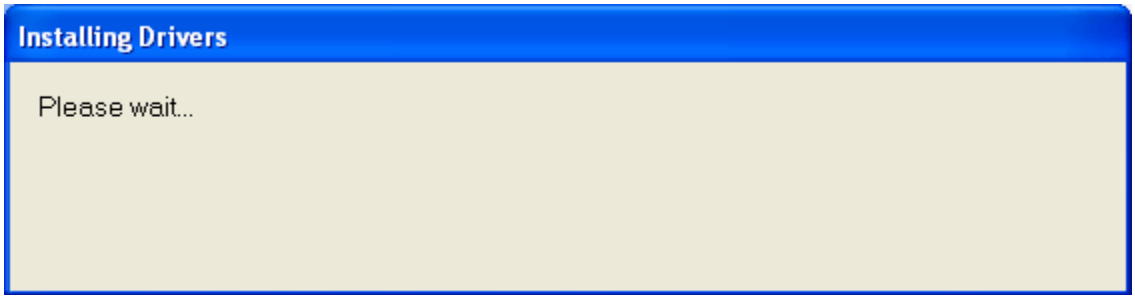
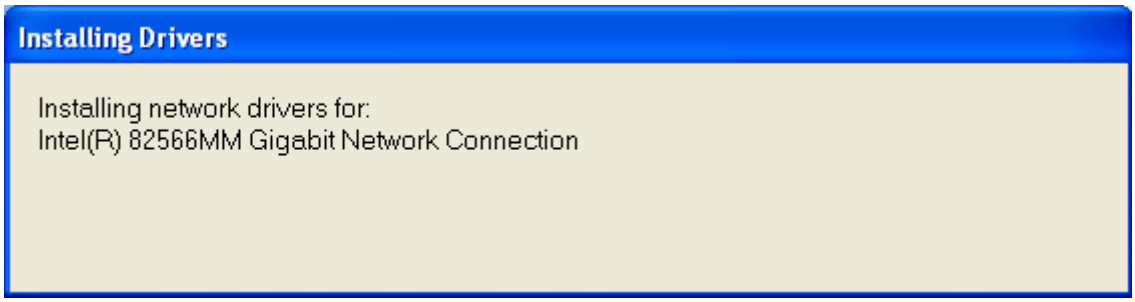
INTEL SOFTWARE LICENSE AGREEMENT (Final, License)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
LICENSES: Please Note:
I accept the terms in the license agreement
I do not accept the terms in the license agreement
Print
InstallShield
< Back
Next >
Cancel

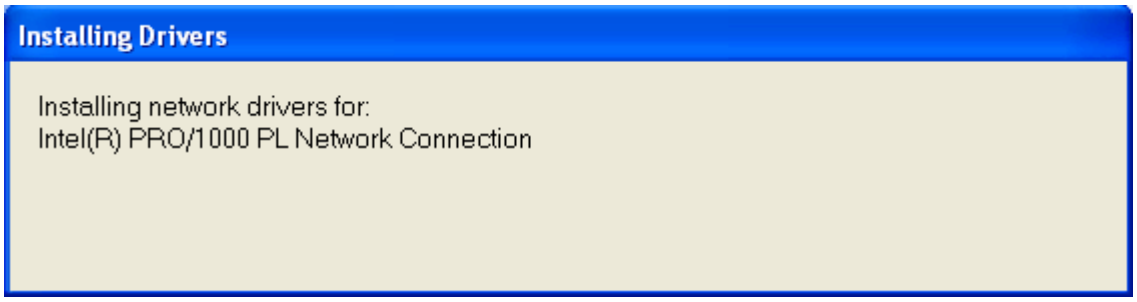

Intel(R) PRO Network Connections
Setup Options
Select the program features you want installed.
Install:
Drivers
Intel(R) PROSet for Windows* Device Manager
Advanced Network Services
Intel(R) PRO Network Connections SNMP Agent
Feature Description
< Back
Next >
Cancel


Intel(R) PRO Network Connections - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel


Intel(R) PRO Network Connections - InstallShield Wizard
Installing Intel(R) PRO Network Connections
The program features you selected are being installed.
Please wait while the InstallShield Wizard installs Intel(R) PRO Network Connections. This may take several minutes.
Status:
InstallShield
< Back
Next >
Cancel







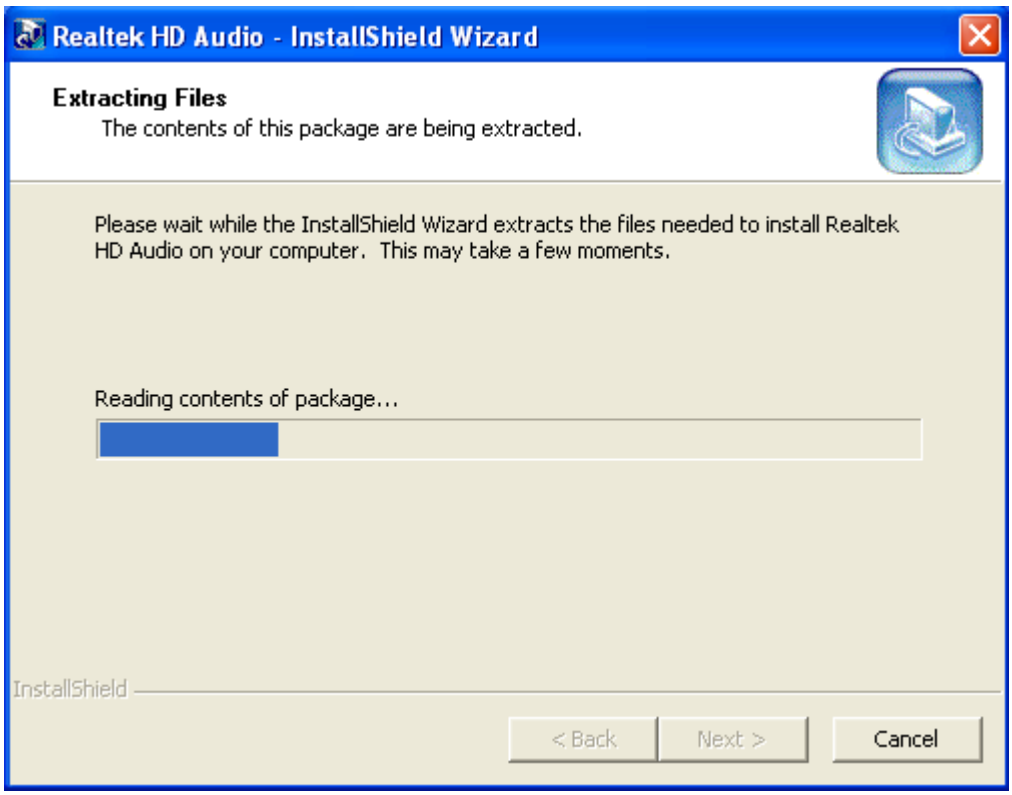
Click FINISH; A Driver Installation Complete.

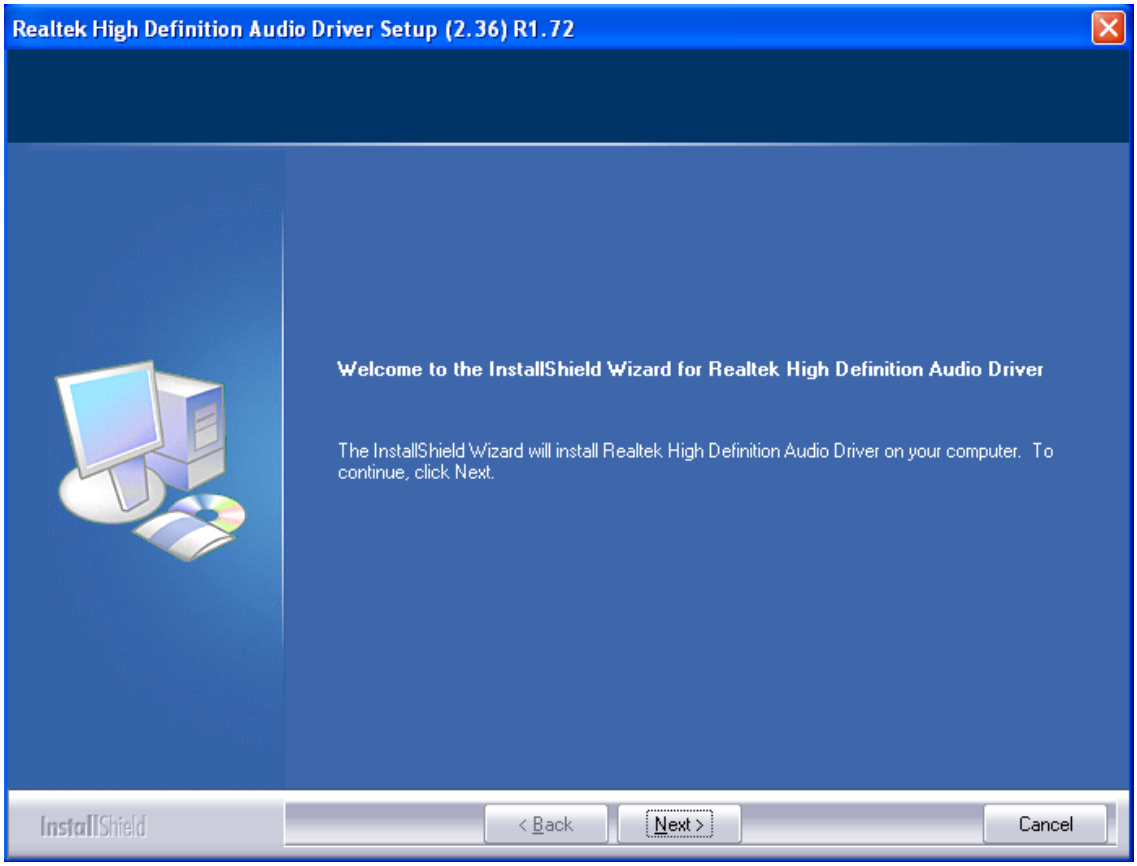
4.4 Realtek HD Audio Driver Installation

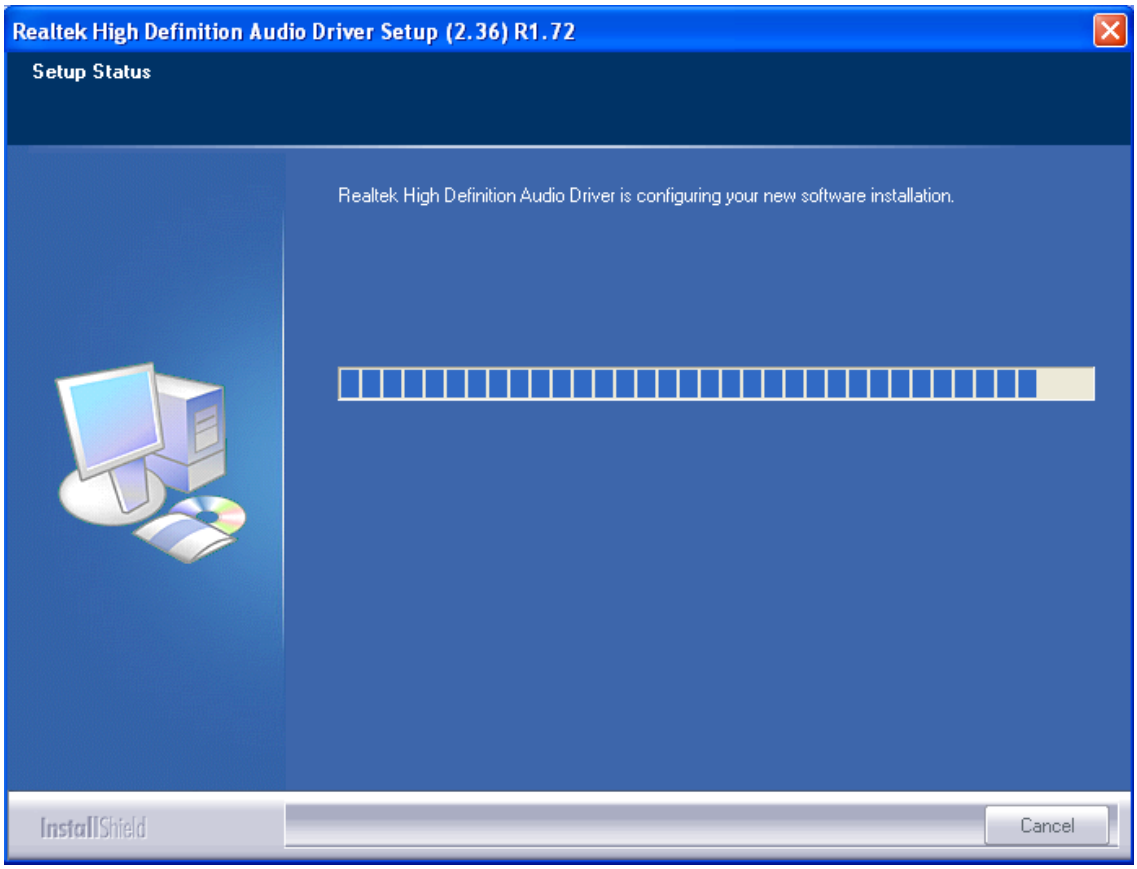
To install the Realtek High Definition (HD) Audio driver, please follow the steps below.

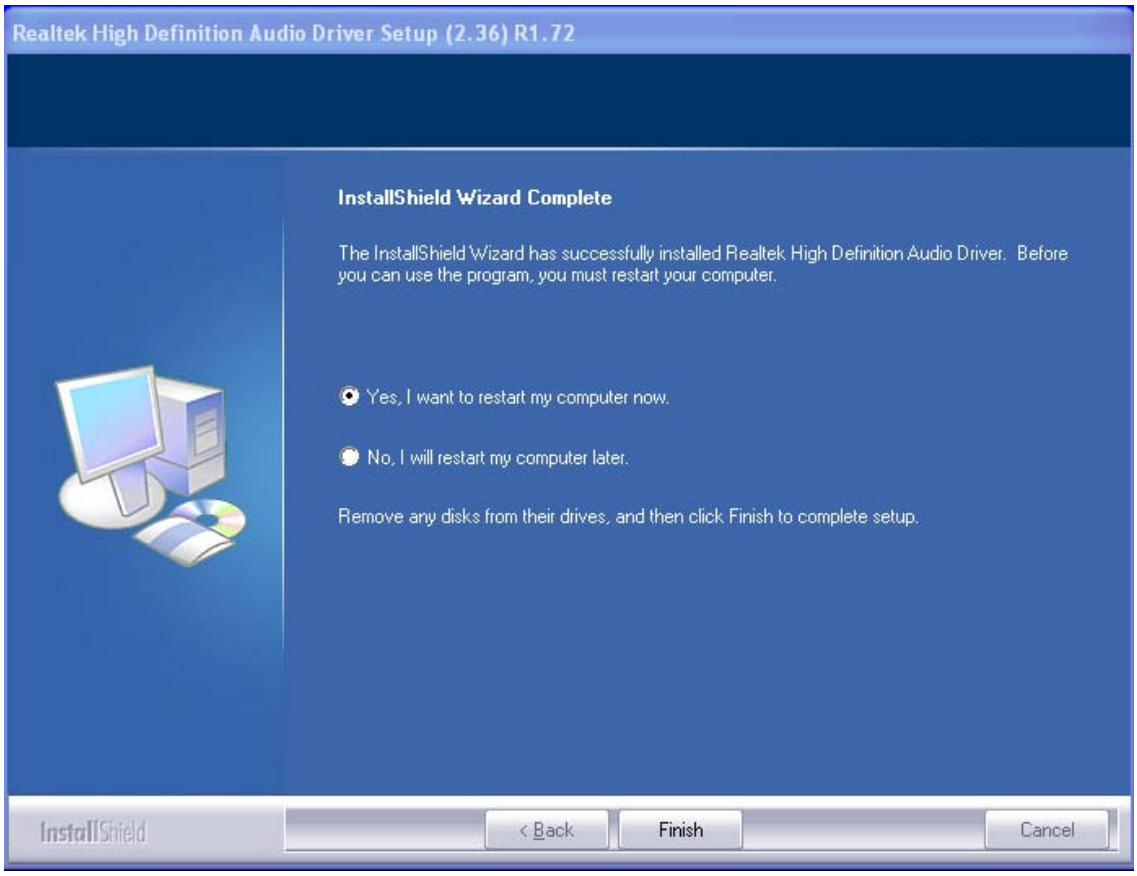
Select Audio from the list

Follow the step-by-step installation process to install the Realtek HD Audio driver.




Realtek High Definition Audio Driver Setup (2.36) R1.72
Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver
The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel


Realtek High Definition Audio Driver Setup (2.36) R1.72
Setup Status
Realtek High Definition Audio Driver is configuring your new software installation.
InstallShield
Cancel



Click FINISH; A Driver Installation Complete.

4.5 Intel Active Management Technology Driver Installation

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

4.5.1 Select iAMTand Utilities (LMS_SQL) from the list

Follow the step-by-step installation process to install the LMS_SQL driver.

EX-9265x
DRIVERS
Intel(R) Chipset Software Installation Utility
Intel(R) VGA Chipset Driver
Intel LAN 82573L & 82566DM
Intel AC'97 Sound System Software
iAMT Driver & Utility 02 HECI
OTHERS
User Manual
View
EXIT

Intel® Active Management Technology
Intel® Active Management Technology
Welcome to the Setup Program
This setup program will install Intel® Active Management Technology onto this computer. It is strongly recommended that you exit all programs before continuing.
Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

Intel® Active Management Technology
Intel® Active Management Technology
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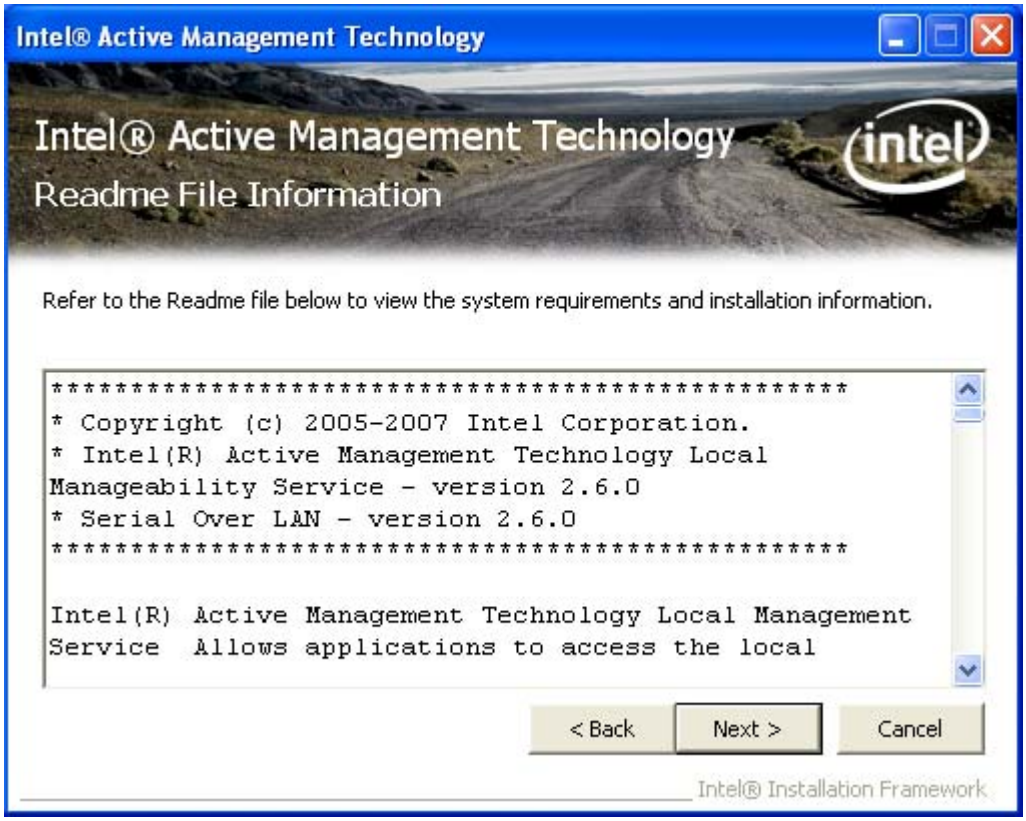
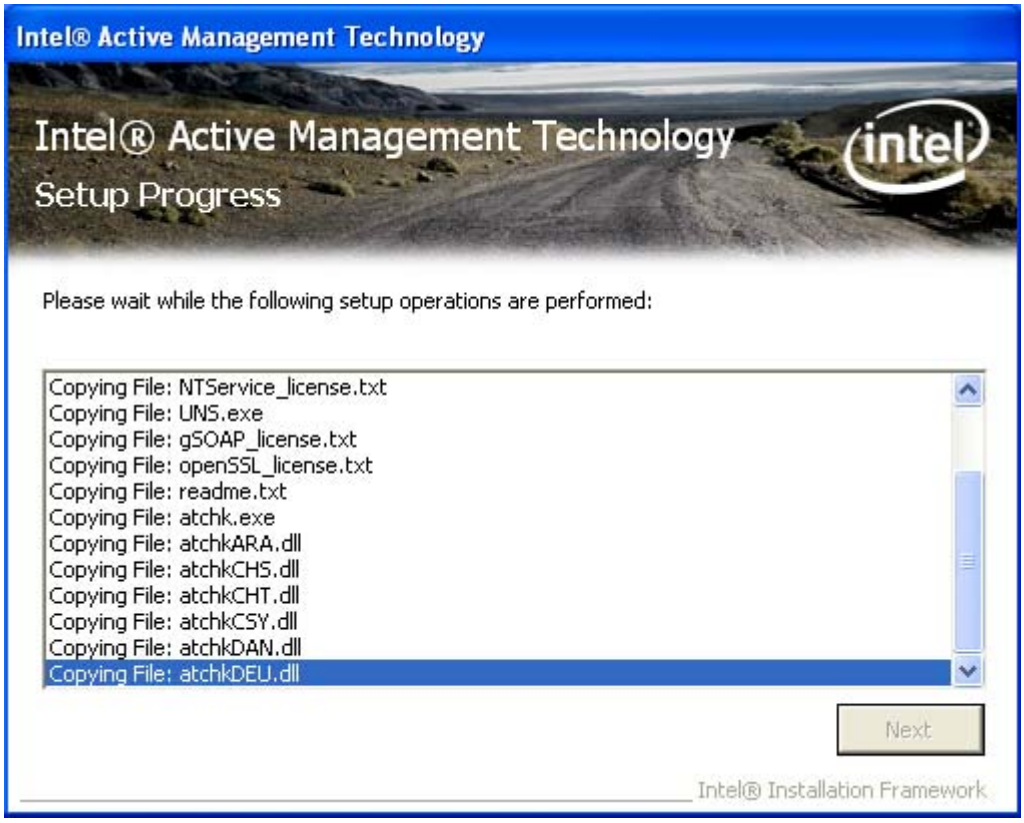
< Back
Yes
No
Intel® Installation Framework


Intel® Active Management Technology
Intel® Active Management Technology
Readme File Information
Refer to the Readme file below to view the system requirements and installation information.
****
* Copyright (c) 2005-2007 Intel Corporation.
* Intel(R) Active Management Technology Local Manageability Service - version 2.6.0
* Serial Over LAN - version 2.6.0
****
Intel(R) Active Management Technology Local Management Service Allows applications to access the local
< Back
Next >
Cancel
Intel® Installation Framework



Click Finish to complete the setup process.

4.5.2 Select iAMTand Utilities (HECI) from the list

Follow the step-by-step installation process to install the LMS_SQL driver.

Intel® Management Engine Interface
Intel® Management Engine Interface
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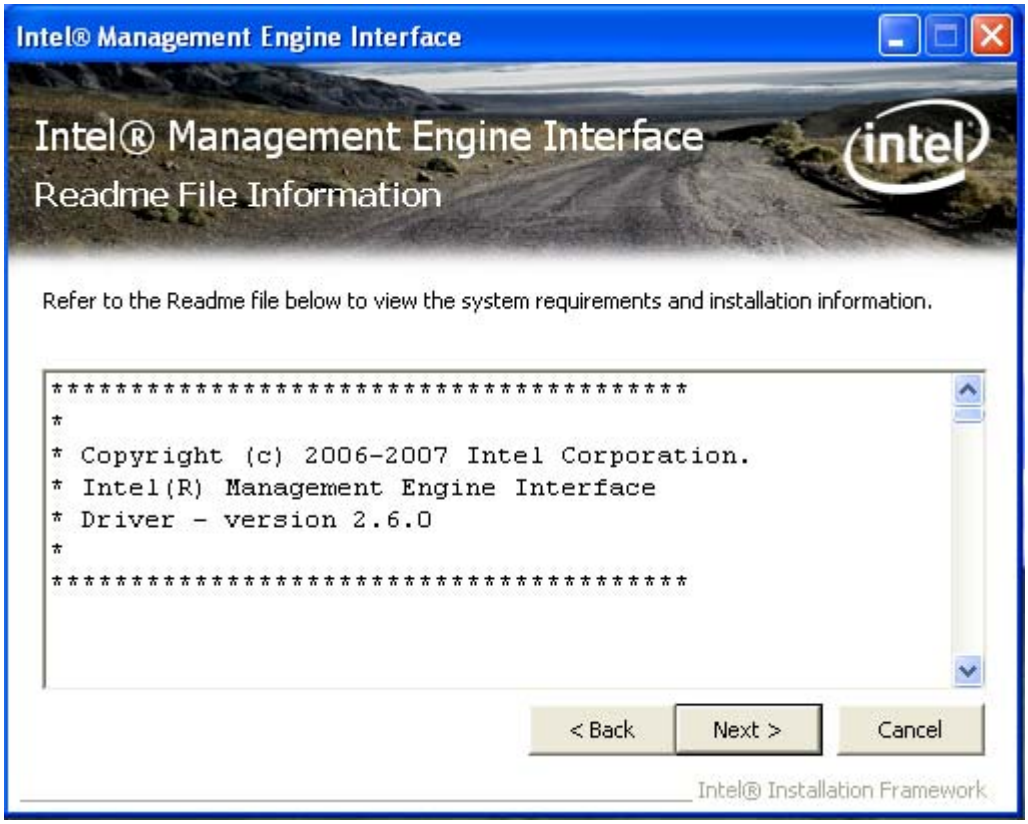
< Back
Yes
No
Intel® Installation Framework


Intel® Management Engine Interface
Intel® Management Engine Interface
Readme File Information
Refer to the Readme file below to view the system requirements and installation information.
****
*
* Copyright (c) 2006-2007 Intel Corporation.
* Intel(R) Management Engine Interface
* Driver - version 2.6.0
*
****
< Back
Next >
Cancel
Intel® Installation Framework

Click Finish to complete the setup process.