APC-3098/3298A/3598A
Panel PC User Manual

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Warning!

Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. All cautions and warnings on the equipment should be noted.
10. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
11. Never pour any liquid into an opening. This could cause fire or electrical shock.
12. NEVER OPEN THE EQUIPMENT. FOR SAFETY REASONS, ONLY QUALIFIED SERVICE PERSONNEL SHOULD OPEN THE EQUIPMENT.
13. If any of the following situations arises, get the equipment checked by service personnel:

☐ The power cord or plug is damaged.

☐Liquid has penetrated into the equipment.

☐The equipment has been exposed to moisture.

☐The equipment does not work well, or you cannot get it to work according to the users manual.

☐The equipment has been dropped and damaged.

☐ The equipment has obvious signs of breakage.

14. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C OR ABOVE 70° C. IT MAY DAMAGE THE EQUIPMENT.

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 System

1.1 Specifications

Specs	APC-3098	APC-3298A	APC-3598A
CPU	Intel Atom Z510p 1.1 GHz FSB 400 MHz, Z530p 1.6 GHz FSB 533 MHz for option		
Chipset	Intel US15WP		
System Memory	On board 1 GB DDR2 400 MHz		
Graphic	Intel integrated Graphics GMA500		
External I/O Port	2 x USB 2.0 ports 2 x RJ-45 LAN ports 1XDB-15, RS-232 COM2 And RS-232/422/485 COM1(default:RS-232) 1 x DC power input	2 x USB 2.0 ports 1 x RJ-45 LAN port 1XDB-9 RS-232 COM2 1XDB-9 232/422/485 COM1 (Selectable, default:RS-232) 1 x DC power input	Standard I/O： 2 x USB 2.0 ports 1 x RJ-45 LAN port 1XDB-9 RS-232 COM2 1XDB-9 232/422/485 COM1 (Selectable, default:RS-232) 1 x DC power input Option： 1 x VGA DB-15 port 1 x Audio Line-out port
Display Type	8” TFT-LCD	12” TFT-LCD	15” TFT-LCD
Max. Resolution	800 x 600	800 x 600	1024 x 768
Maximum Colors	262K	262K	16.2M
Viewing Angle (Degree)	H:130/ V:110	H:140/V:110	H:160/V:130
Luminance (cd/m²)	350		
Backlight Lifetime	50,000 hrs		
Rating	IP65		
Touch Screen Type	Resistive (optional)		
Storage	1 x 2.5” SATA HDD 1 x CF slot (internal)		
Wireless LAN	Wireless LAN Module via mini-PCIe (Optional) Antennas are built-in on the Rear Panel		
Power Supply	DC 9-32V		
Construction and Color	Stainless steel		
Dimensions (WxHxD)	250 x 209 x 65 mm	335 x 269 x 65 mm	399 x 328 x 65 mm
Operating Temperature	0~50℃		
Storage Temperature	-20~60℃		
Relative Humidity	10%~90%@ 40 ° C, (non-condensing)		

Certificate	CE/FCC Class A

1.2 Dimensions

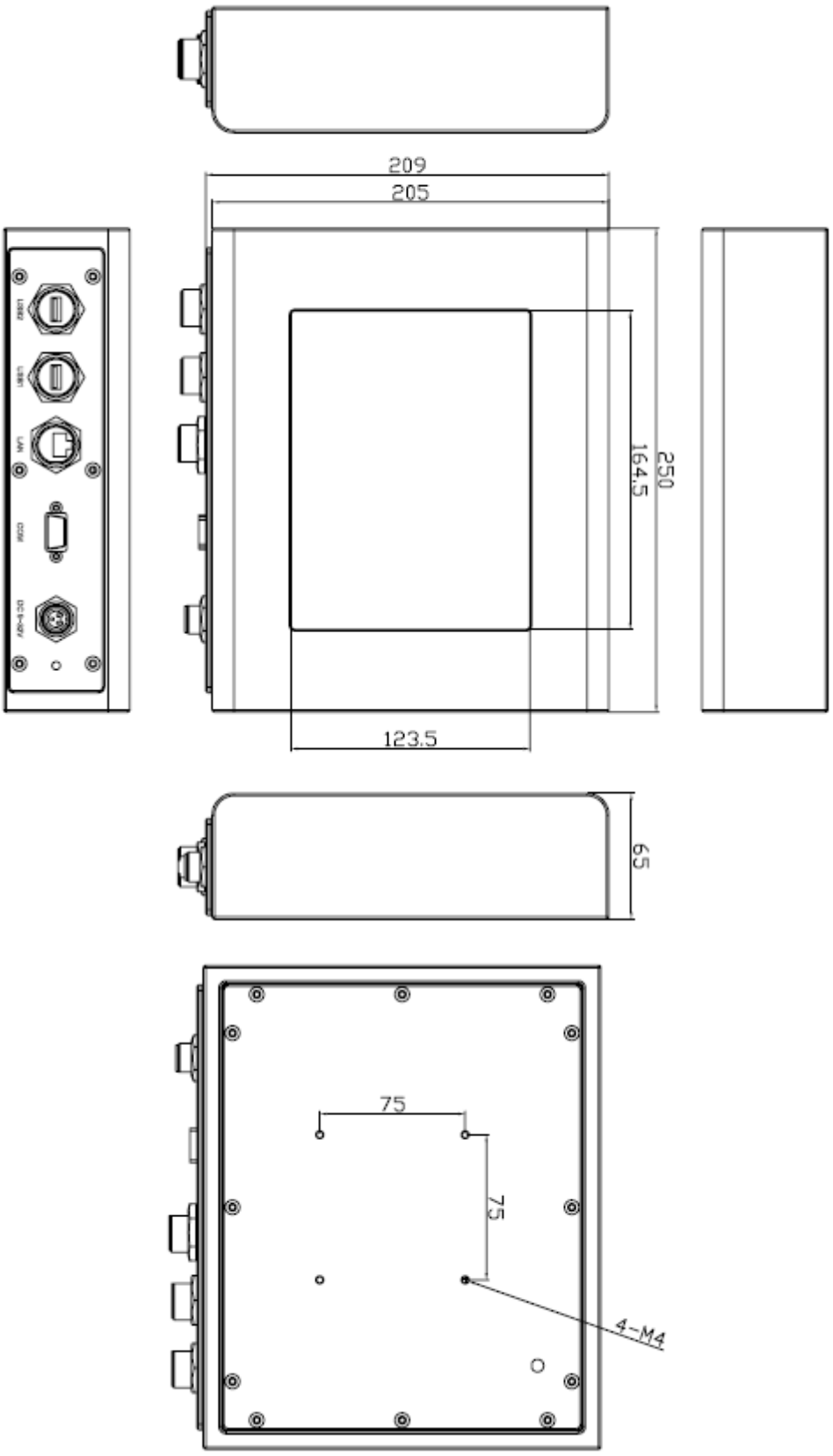


Figure 1.1: Dimensions of the APC-3098

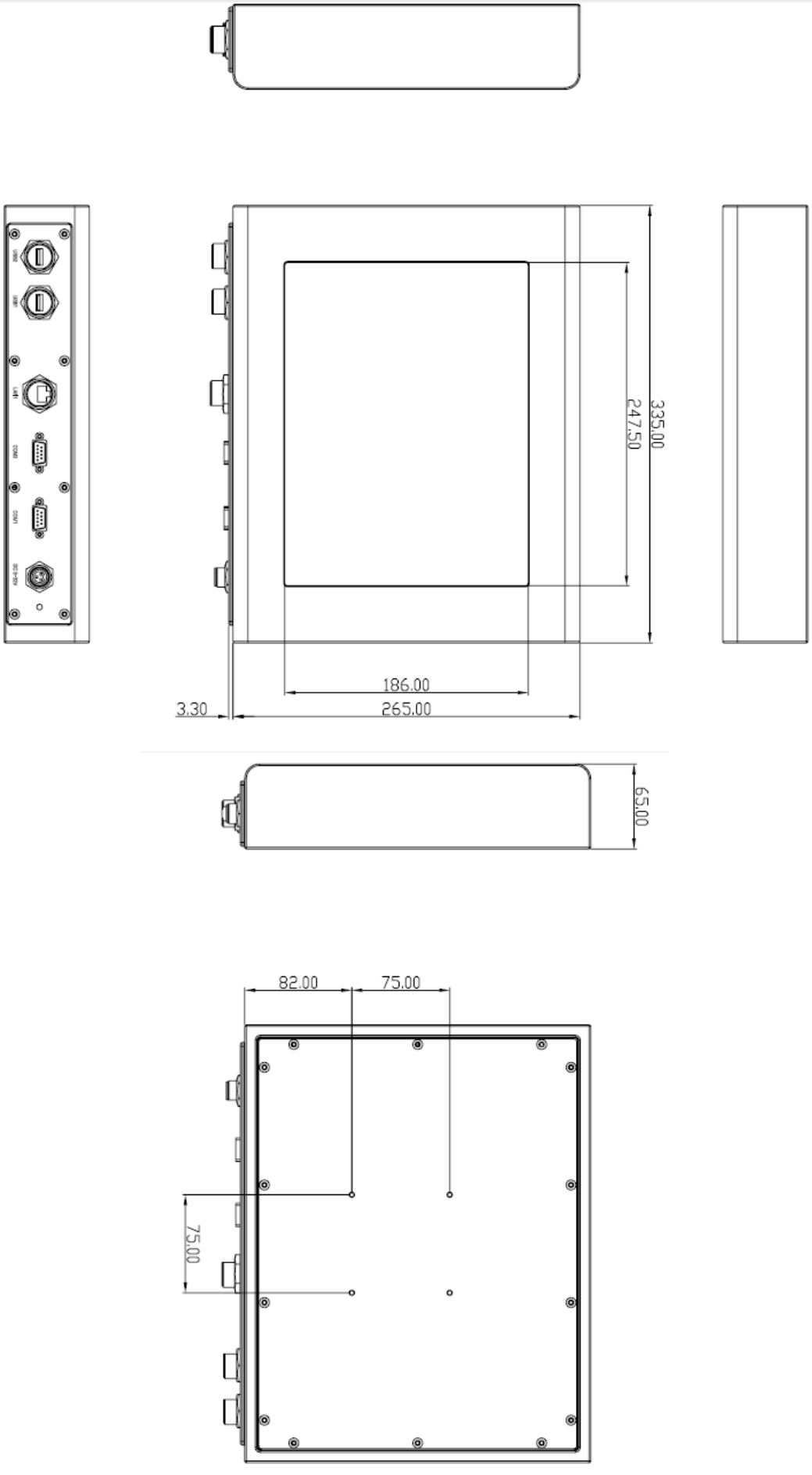


Figure 1.2: Dimensions of the APC-3298A

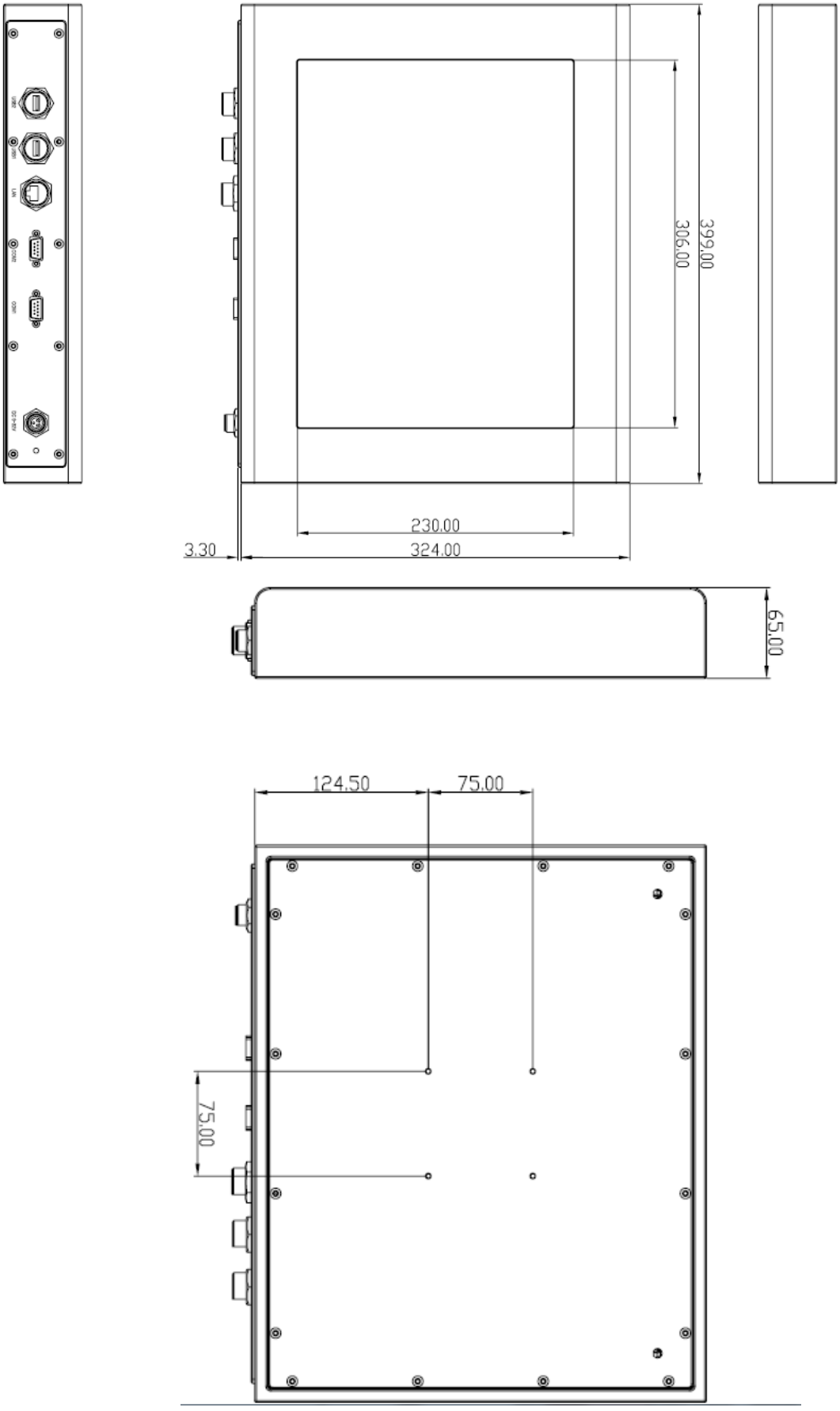


Figure 1.3: Dimensions of the APC-3598A

1.3 Brief Description of the APC-3098/3298A/3598A

The APC-3098/3298A/3598A is a fanless design panel PC, which comes with an 8-inch (luminance of 350 cd/m²)/12-inch (luminance of 350 cd/m²)/15-inch (luminance of 350 cd/m²) TFT LCD. It is powered by an Intel Atom Z510P Processor. The industrial panel PC also features two COM ports, two USB 2.0 ports, one 2.5” HDD, one CF slot, DC power of 9~32V, etc. It is ideal for use as a PC-based controller for Industrial Automation & Factory Automation.

Figure 1.4: Front View of APC-3098

Figure 1.5: Rear View of APC-3098

Chapter 2 Hardware

2.1 Mainboard

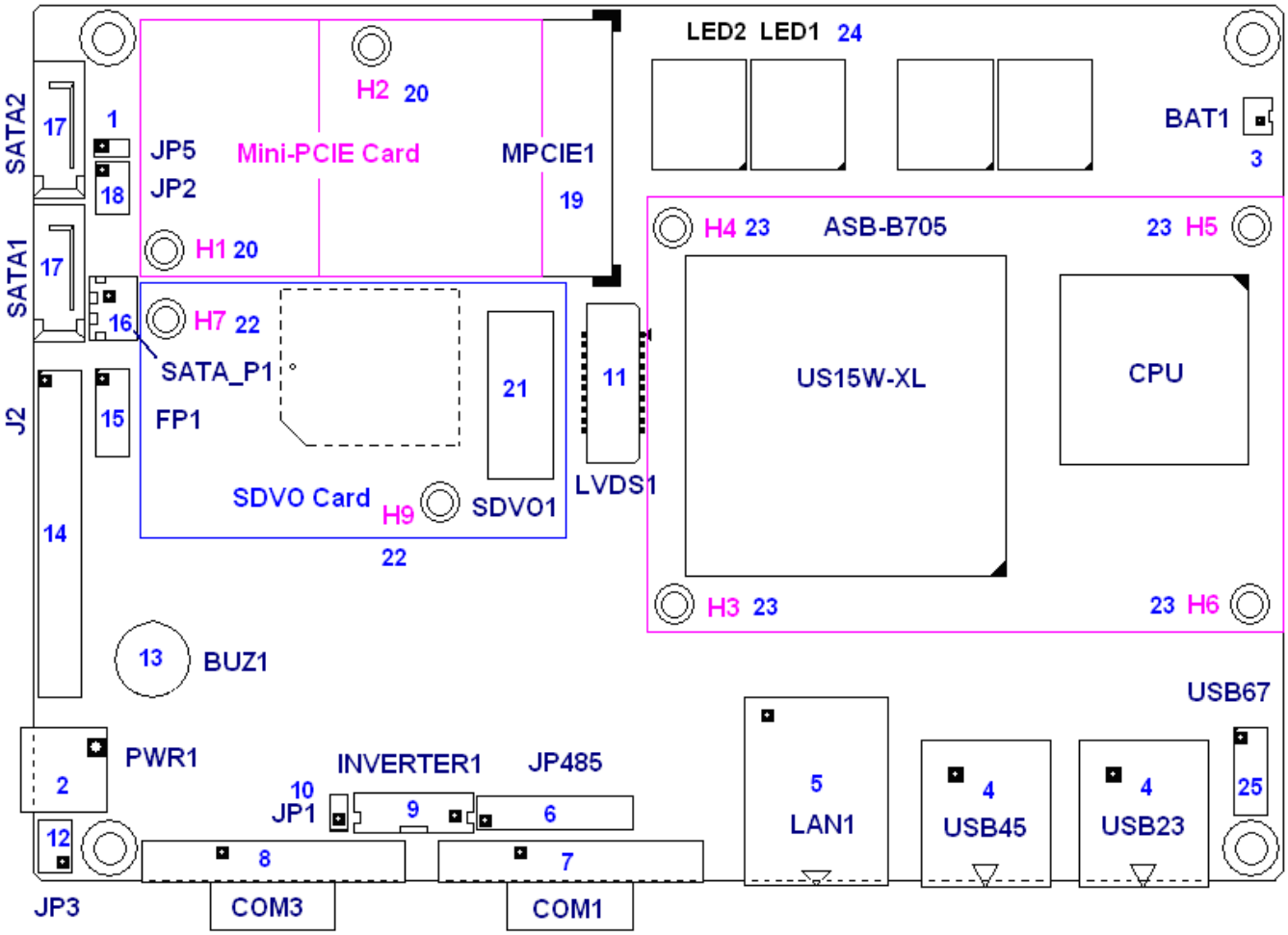
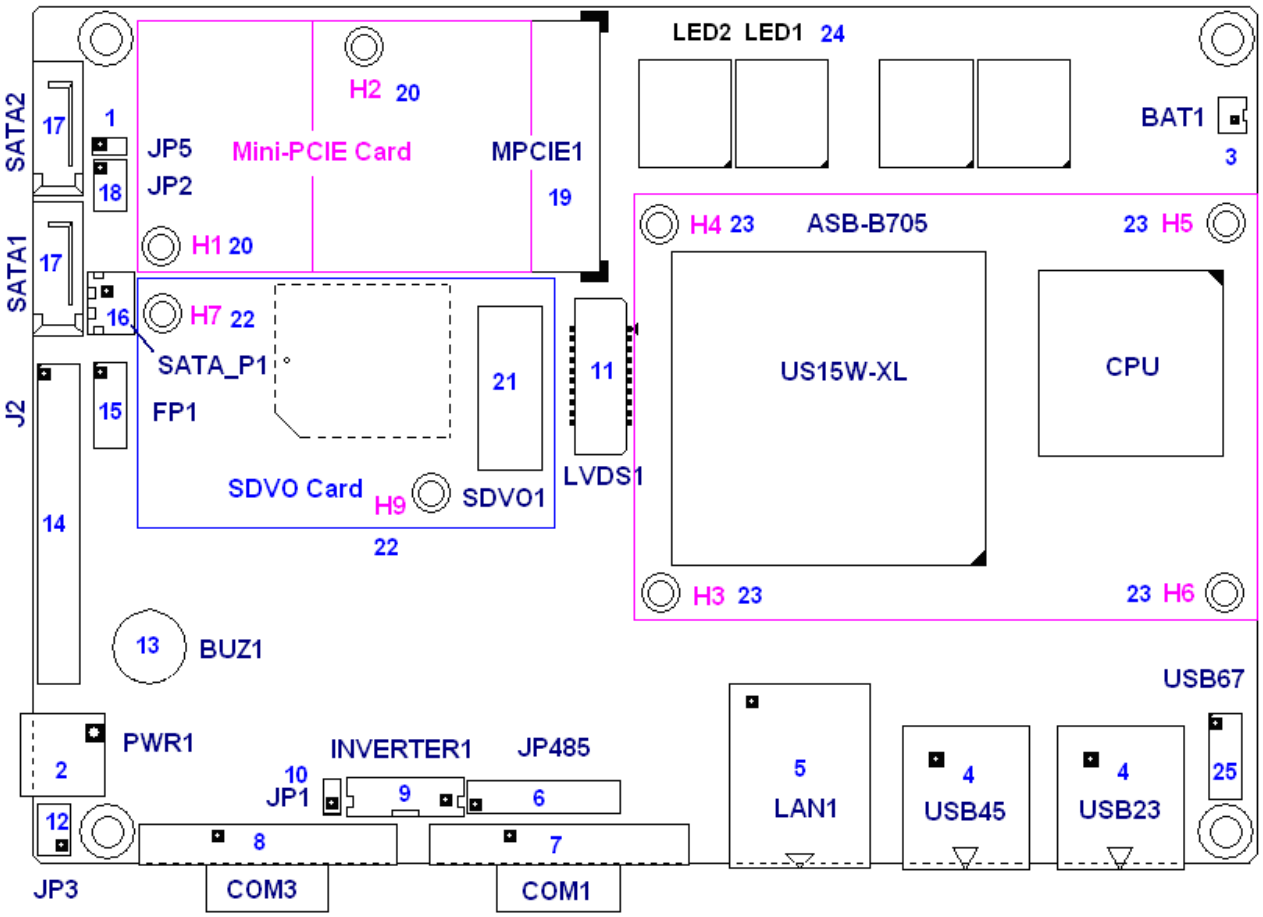


Figure 2.1: Mainboard Overview

2.2 Jumpers and Connectors Location

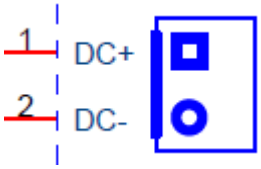


2.3 Jumpers Setting and Connectors

1. **JP5:** (2.0mm Pitch 1X2 Pin Header), ATX Power and AT Power setting jumper**.**

JP5	Mode
Open	ATX Power Mode
Close	**AT Power Mode**

2. **PWR1:** (5.0mm 1x2 Pin Connector),DC9V~30V System power input connector。



Pin#	Signal Name
1	+DC9V~DC30V

2	Ground

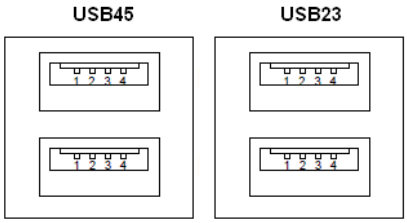
Note:

Make sure that the voltage of power supply is DC9V~30V before power on, or it may cause boot up failure and even system damage.

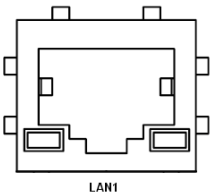
3. **BAT1:** (1.25mm Pitch 1X2 box Pin Header) 3.0V Li battery is embedded to provide power for CMOS.

Pin#	Signal Name
Pin1	VBAT
PIN2	Ground

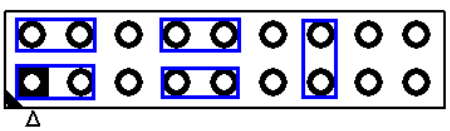
4. **USB23/USB45:** (Double stack USB type A), Rear USB connector, it provides up to 4 USB2.0 ports, speed up to 480Mb/s.

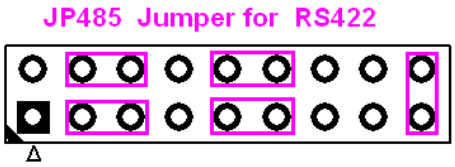
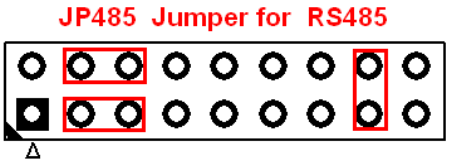


5. **LAN1:** (RJ45 Connector), Rear LAN port, 1 standard 10/100/1000M RJ-45 Ethernet ports are provided. Used Intel 82574L chipset ,LINK LED (green) and ACTIVE LED (yellow) respectively located at the left-hand and right-hand side of the Ethernet port indicate the activity and transmission state of LAN.

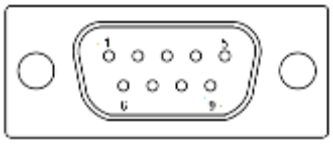


6. **JP485:** (2.0mm Pitch 2x9 Pin Header), COM1 setting jumper, pin 1~18 are used to select signal out of COM1 port of RS232 or RS422 or RS485 mode.

COM1 Mode	JP485 Setting	
RS232 (default)	1-3 (Close) 2-4 (Close) 7-9 (Close) 8-10 (Close) 13-14 (Close)	JP485 Jumper for RS232 

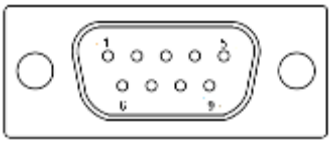
RS422	3-5 (Close) 4-6 (Close) 9-11 (Close) 10-12 (Close) 17-18 (Close)	
RS485	3-5 (Close) 4-6 (Close) 15-16 (Close)	

7. **COM1: (Type DB9),** Rear serial port, standard DB9 serial port is provided to make a direct connection to serial devices. COM1 port is controlled by pins No.1~18 of **JP485**, select output Signal RS232 or RS422 or RS485, for details, please refer to description of JP485.



Pin#	Signal Name		
	RS232	RS422	RS485
1	DCD# (Data Carrier Detect)	422_TX-	485_D-
2	RXD (Received Data)	422_RX-	NC
3	TXD (Transmit Data)	422_RX+	NC
4	DTR (Data Terminal Ready)	422_TX+	485_D+
5	Ground	Ground	Ground
6	DSR (Data Set Ready)	NC	NC
7	RTS (Request To Send)	NC	NC
8	CTS (Clear To Send)	NC	NC
9	RI (Ring Indicator)	NC	NC
please refer to description of JP485			

8. **COM3: (Type DB9),** Rear serial port, standard DB9 serial port is provided to make a direct connection to serial devices. COM1 port is controlled by pins No.1~6 of **JP3** select output Signal RI or 5V or 12v, for details, please refer to description of JP3.



Pin#	Signal Name
1	DCD# (Data Carrier Detect)

2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	Ground
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	JP3 Setting: **Pin1-2 : RI (**Ring Indicator**)** **(default)** Pin3-4 : 5V Standby power **(**option**)** Pin5-6: 12V Standby power (option)

9. JP3: (2.0mm Pitch 2x3 Pin Header), COM1 setting jumper, pin 1~6 are used to select signal out of pin 9 of COM3 port.

JP3 Pin#	Function
Close 1-2	**RI (Ring Indicator) (default)**
Close 3-4	COM1 Pin9=+5V (option)
Close 5-6	COM1 Pin9=+12V (option)

10. JP1: (2.0mm Pitch 1x2 Pin Header), Backlight Control jumper setting for LVDS1.

Signal Name	JP1
PWM	Open
DC voltage Mode	Close

Note:

Please check first your LVDS panel backlight control by DC voltage Mode or PWM?

Panel backlight control by Level 5V.

11. INVERTER1: (2.0mm Pitch 1x6 box Pin Header), Backlight control connector for LVDS1.

Pin#	Signal Name
1	DC+12V
2	DC+12V
3	Ground
4	Ground
5	BKLT_EN
6	BKLT_CTRL

Note:

Pin6 is backlight control signal, support DC or PWM mode, mode select at BIOS CMOS menu.

12. LVDS1: For 18/24 bit LVDS output connector, fully supported by Intel US15W chipset, the interface features dual channel 18/24-bit output. Model name of the interface connector is Hirose DF13-40DP-1.25V.

Signal Name	Pin#	Pin#	Signal Name
VCC	2	1	VCC
Ground	4	3	Ground
LA_DATAP0	6	5	LA_DATAN0
LA_DATAP1	8	7	LA_DATAN1
LA_DATAP2	10	9	LA_DATAN2
LA_DATAP3	12	11	LA_DATAN3
LA_CLKP	14	13	LA_CLKN
Ground	16	15	Ground
BKLT_EN_OUT	18	17	BKLT_CTRL
12V	20	19	12V

13. BUZ1: onboard buzzer.

14. J2: (1.27 x 2.54mm Pitch 2x30 Pin Header), Can be connected to one USB 2.0 Port and one PS/2 Keyboard port and one Mouse port and one Audio port and one SD bus and five GPIO and one SMB bus and two RS232 Ports.

- **USB1:**

  Expansion USB connector, it provides two USB ports via a dedicated USB cable, Speed up to 480Mb/s.

- **AUDIO:**

  Front Audio, An onboard Realtek ALC662 codec is used to provide high-quality audio I/O ports. Line Out can be connected to a headphone or amplifier. Line In is used for the connection of external audio source via a Line in cable. MIC is the port for microphone input audio.

- **PS/2:**

  Expansion PS/2 keyboard and mouse, the port can be connected to PS/2 keyboard and mouse via a dedicated cable for direct used.

- **SD BUS:**

  Expansion SD bus.

- **GPIO:**

  Five GPIO, General-purpose input/output port, it provides a group of self-programming interfaces to customers for flexible use.

- **SMB BUS:**

Expansion SMB bus.

- **RS232(COM2,COM4):**

Expansion serial ports are provided to make a direct connection to serial devices.

Function	Signal Name	Pin#	Pin#	Signal Name	Function
USB1	5V_USB	1	2	5V_USB	USB1
	USB1_N	3	4	USB1_P	
	Ground	5	6	Ground	
PS/2 MS	MS_CLK	7	8	MS_CLK	PS/2 KB
	MS_DATA	9	10	KB_DATA	
	5V_F_AUDIO	11	12	GND_AUD	
Audio	LINE_OUT_L	13	14	LINE_OUT_R	Audio
	LINE_IN_L	15	16	LINE_IN_R	
	MIC_IN_L	17	18	MIC_IN_R	
	Ground	19	20	Ground	
SD bus	SD0_D2	21	22	SD0_D3	SD bus
	SD0_CMD	23	24	SD0_D1	
	SD0_D0	25	26	D0_CLK	
	SD0_CD-	27	28	SD0_WP	
	3P3V_SDISK	29	30	3P3V_SDISK	
GPIO	EXT_GPIO6	31	32	EXT_GPIO9	GPIO
	EXT_GPIO2	33	34	EXT_GPIOSUS0	
	EXT_GPIO3	35	36	EXT_GPIO8	
	EXT_GPIO1	37	38	EXT_GPIO4	
RS232 (COM2)	Ground	39	40	Ground	RS232 (COM2)
	DSR2-	41	42	DCD2-	
	RTS2-	43	44	RXD2	
	CTS2-	45	46	TXD2	
	RI2-	47	48	DTR2-	
	5V_S0	49	50	5V_S0	RS232 (COM4)
RS232 (COM4)	DSR4-	51	52	DCD4-	
	RTS4-	53	54	RXD4	
	CTS4-	55	56	TXD4	
	RI4-	57	58	DTR4-	
	Ground	59	60	Ground	

15. FP1: (2.0mm Pitch 2X5 Pin Header), Front panel connector.

Signal Name	Pin#	Pin#	Signal Name

HD LED+	1	2	POWER LED+
HD LED-	3	4	POWER LED-
Ground	5	6	PWR_ON
RESET+	7	8	Ground
WAN LED-	9	10	WAN LED+

Pin1-3:

HDD LED, They are used to connect hard disk activity LED. The LED blinks when the hard disk is reading or writing data.

Pin2-4:

POWER LED, They are used to connect power LED. When the system is powered on or under S0/S1 state, the LED is normally on; when the system is under S4/S5 state, the LED is off.

Pin5-6:

POWER on/off Button, They are used to connect power switch button. The two pins are disconnected under normal condition. You may short them temporarily to realize system startup & shutdown or awaken the system from sleep state.

Pin7-8:

RESET Button, They are used to connect reset button. The two pins are dis-connected under normal condition. You may short them temporarily to realize system reset.

Pin9-10:

WAN LED, They are used to connect WAN LED.

Note:

When connecting LEDs, pay special attention to the signal polarity. Make sure that the connector pins have a one-to-one correspondence with chassis wiring, or it may cause boot up failure.

16. SATA_P1: (2.5mm Pitch 1x2 box Pin Header), an onboard 5V output connector is reserved to provide power for SATA devices.

Pin#	Signal Name
1	+DC5V
2	Ground

Note:

Output current of the connector must not be above 1A.

17. SATA1/2: (SATA 7P),SATA1,SATA2 SATA Connectors, Two SATA connectors are provided, with transfer speed up to 3.0Gb/s.

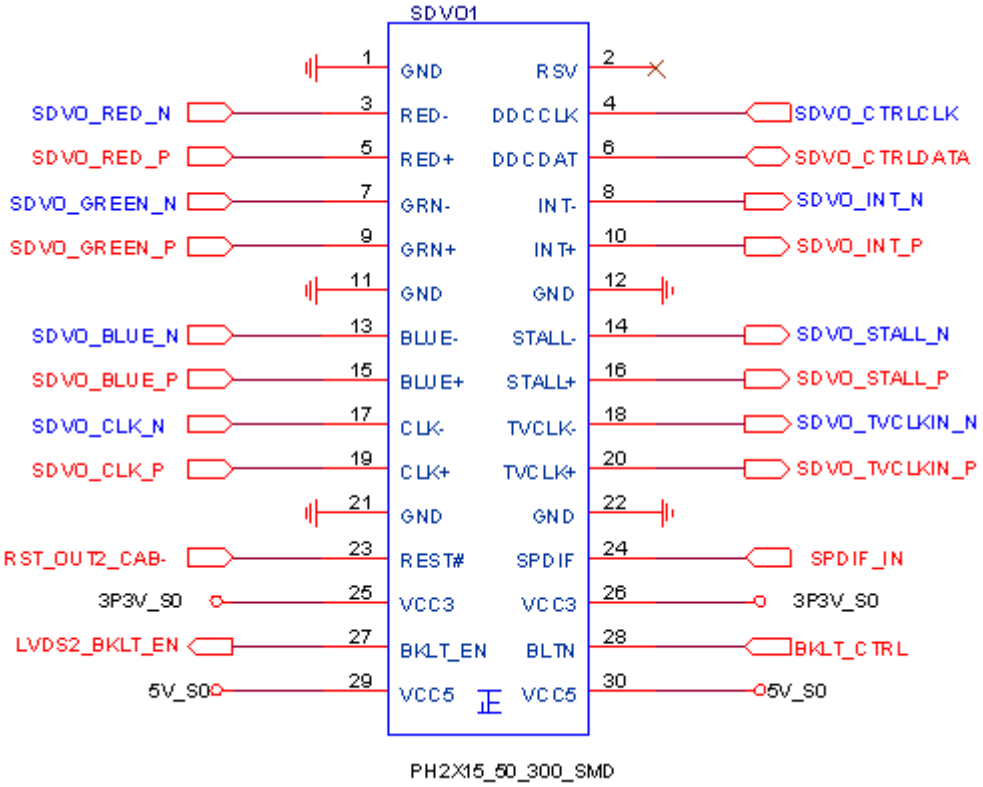
18. JP2: (2.0mm Pitch 2x3 Pin Header), SATA1/SATA2/CF Devices Master or slave jumper setting. SATA1/ SATA2/ CF devices can only be used two at the same time, and the Master device can be set one only. While using SATA1/SATA2 devices at the same time, one of the devices must be set as Master.

JP2	Devices Master
1~2 on 3~4 off 5~6 off	CF Master
1~2 off **3~4 on** 5~6 off	SATA1 Master
1~2 off 3~4 off **5~6 on**	SATA2 Master

19. MPCIE1: (50.95mmx30mm Socket 52Pin), mini PCIE socket, it is located at the top, it supports mini PCI-E devices with USB2.0, SMBUS and PCI-E signal.

20. H1/H2: MPCIE1 SCREW HOLES, H1 for mini PCIE card (50.95mmx30mm Socket 52 Pin) assemble. H2 Reserve**.**

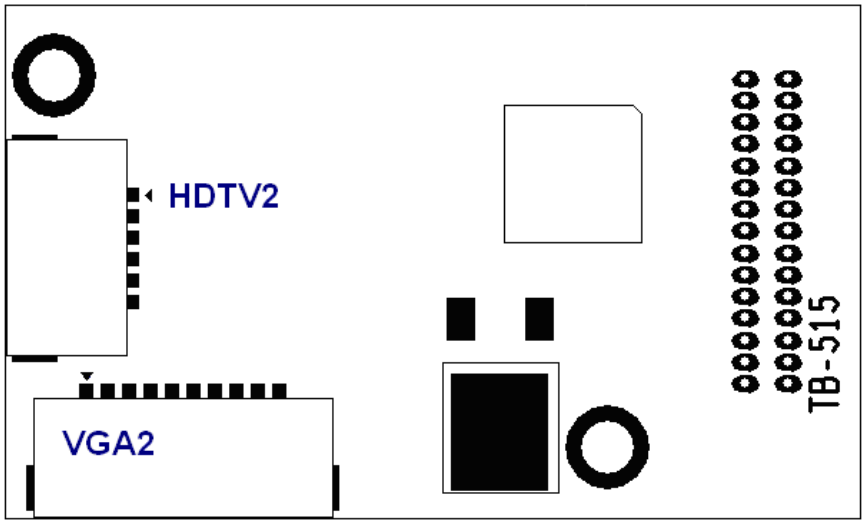
21. SDVO1: (1.27 x 2.54mm Pitch 2x15 Pin Header), SDVO bus, connect SDVO to VGA card or SDVO to LVDS card or SDVO to HDMI card or SDVO to DVI Card。



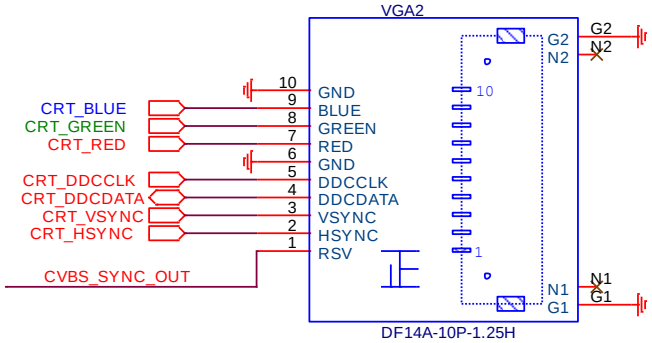
☐ **TB515 (option):**

ASB-B705 SDVO1 connected Card, Support SDVO to CRT display and HDMI TV display

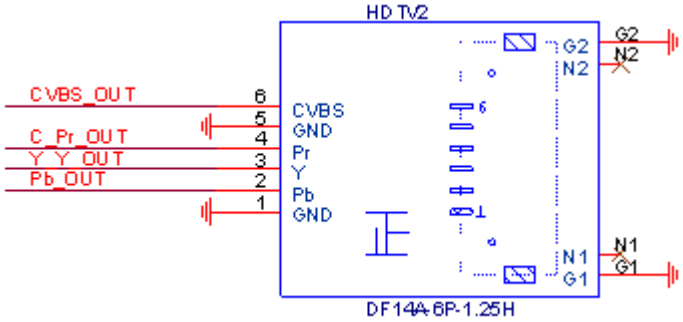
TB515 Location



VGA2 Port Signal Name:

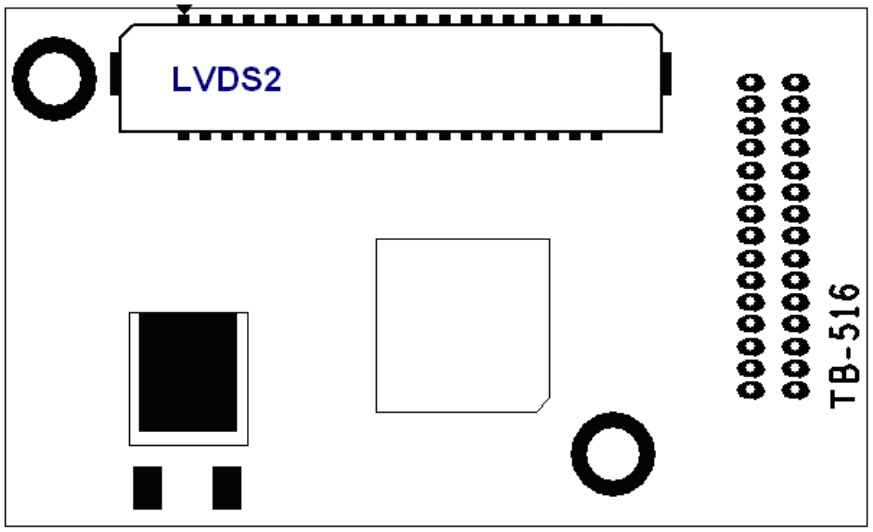


HDTV2 Port Signal Name:

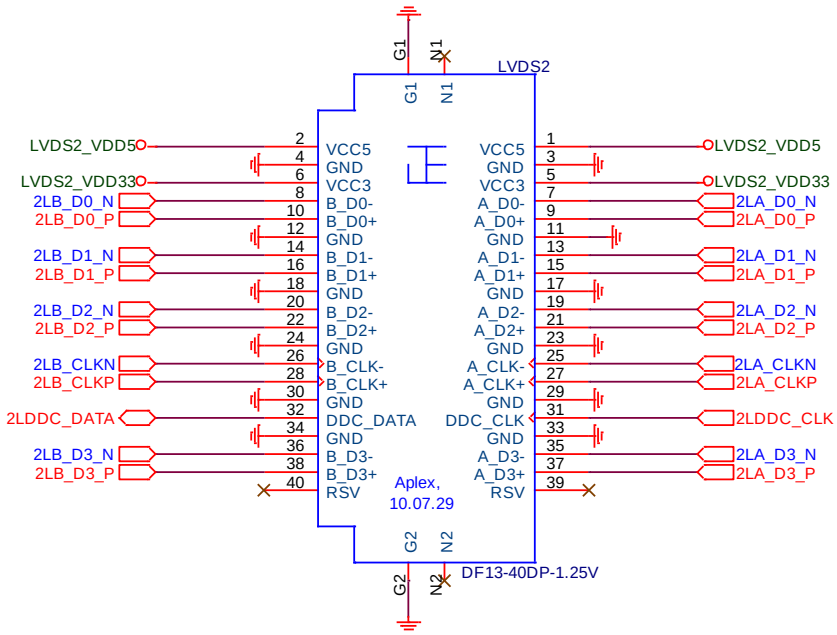


☐ **TB516(option):**

ASB-B705 SDVO1 connected Card, Support dual channel 18/24 bit LVDS output connector.



LVDS2 Port Signal Name:



LVDS2 Backlight control connector for INVERTER1.

22. **H7/H9**: SDVO CARD SCREW HOLES, two screw holes for SDVO card assemble.

23. **H3/H4/H5/H6:** Intel Atom Z530P(or Z510P) CPU+ US15W Heat Sink SCREW HOLES, Four screw holes for Intel CPU and US15W Heat Sink assemble.

24. **LED1/LED2**: LED STATUS. LED1:Motherboard Standby Power Good status。LED2: Motherboard CPU Power Good status.

25. **USB67:** (2.0mm Pitch 2x5 Pin Header),Front USB connector, it provides two USB ports via a dedicated USB cable, speed up to 480Mb/s.

USB6 and USB7 can only be used for internal device attachment as USB 2.0 Specifi-cation, Can not support USB1.1 and USB 1.0 Specification.

Signal Name	Pin#	Pin#	Signal Name
+5V	1	2	+5V
USB6_N	3	4	USB7_N
USB6_P	5	6	USB7_P
Ground	7	8	Ground
NC	9	10	Ground

Note:

Before connection, make sure that pin out of the USB Cable is in accordance with that of the said tables. Any inconformity may cause system down and even hardware damages.

26. **IDE_CF1:** (CF Card socket), it is located at the bottom of the board and serves as an insert interface for Type I and Type II Compact Flash card. The operating voltage of CF card can be set as 3.3V or 5V. **The default setting of the product is 3.3V.**

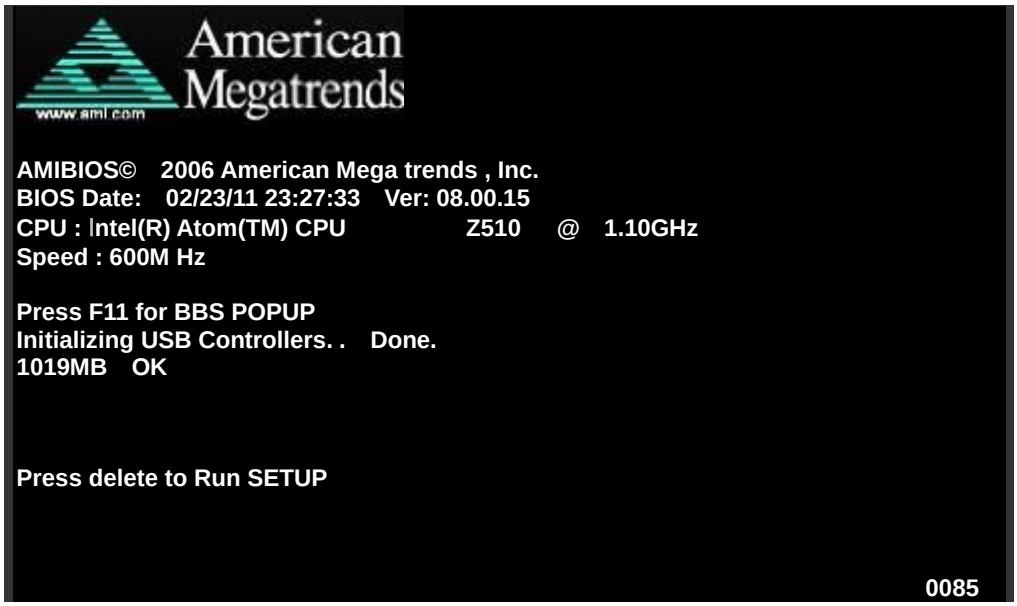
27. **JTAG1:** Reserve.

Chapter 3 BIOS Setup

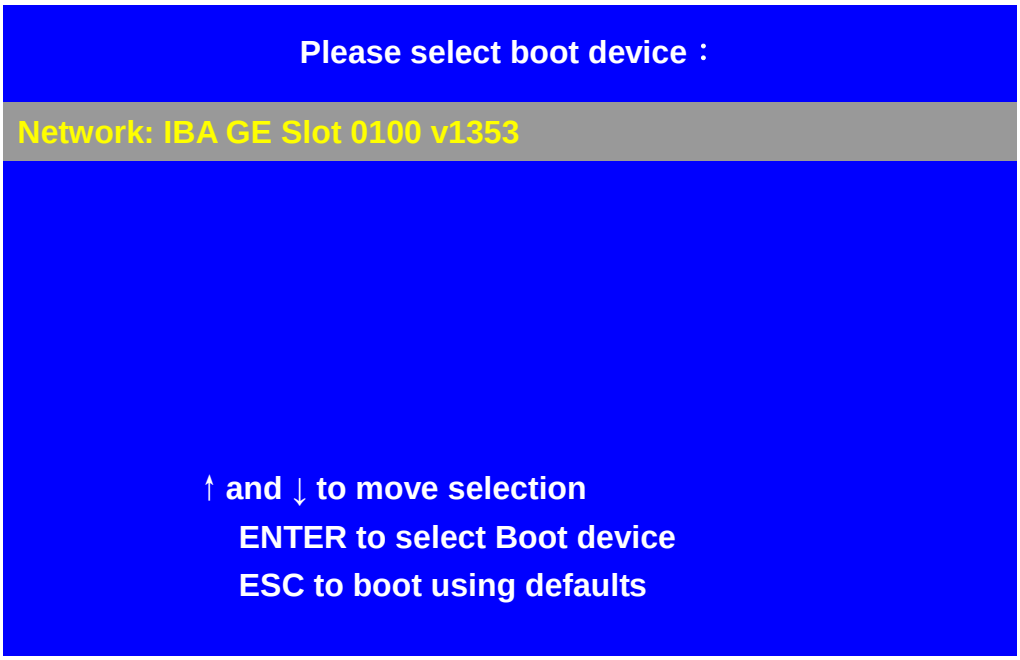
3.1 Operations after POST Screen

After CMOS discharge or BIOS flashing operation, the system will display the following screen for your further operation. Press Delete key to enter CMOS Setup.

After optimizing and exiting CMOS Setup, the POST screen displayed for the first time is as follows and includes basic information on BIOS, CPU, memory, and storage devices.

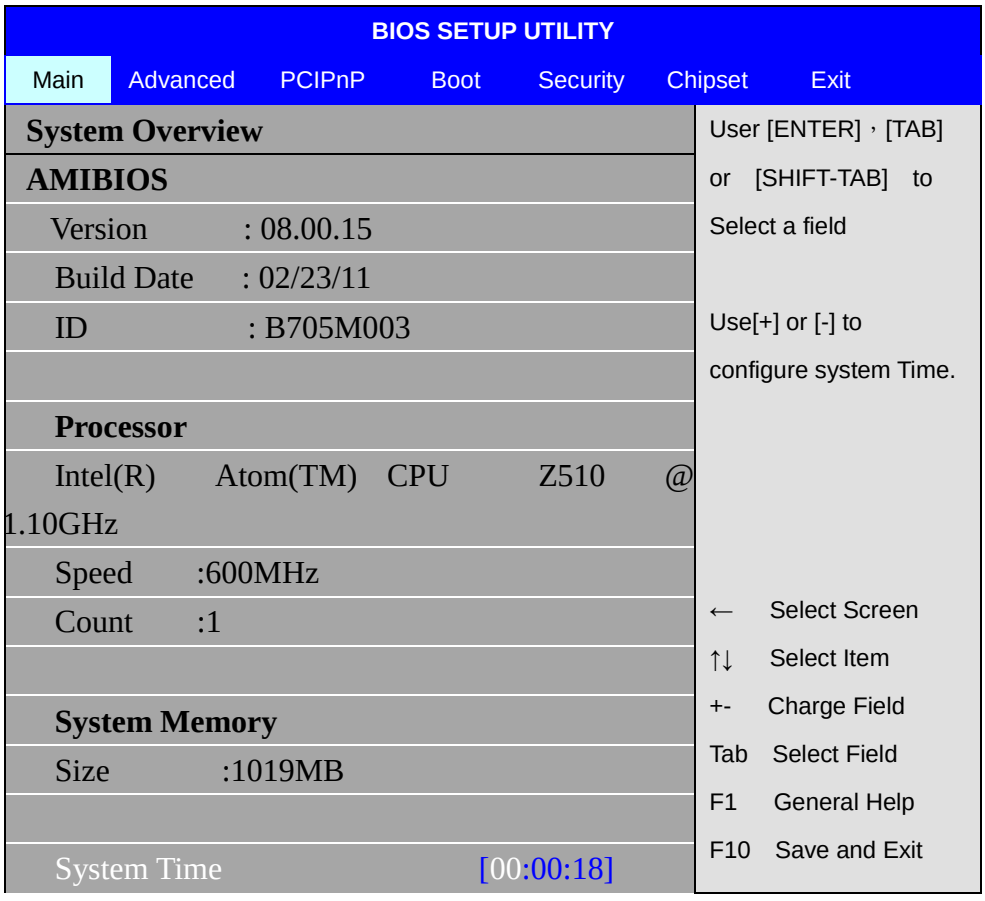


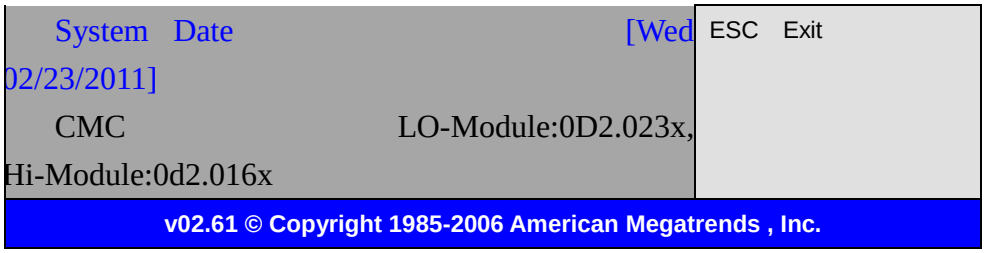
Press **F11** key to enter Boot Menu during POST, as shown by the following figure.



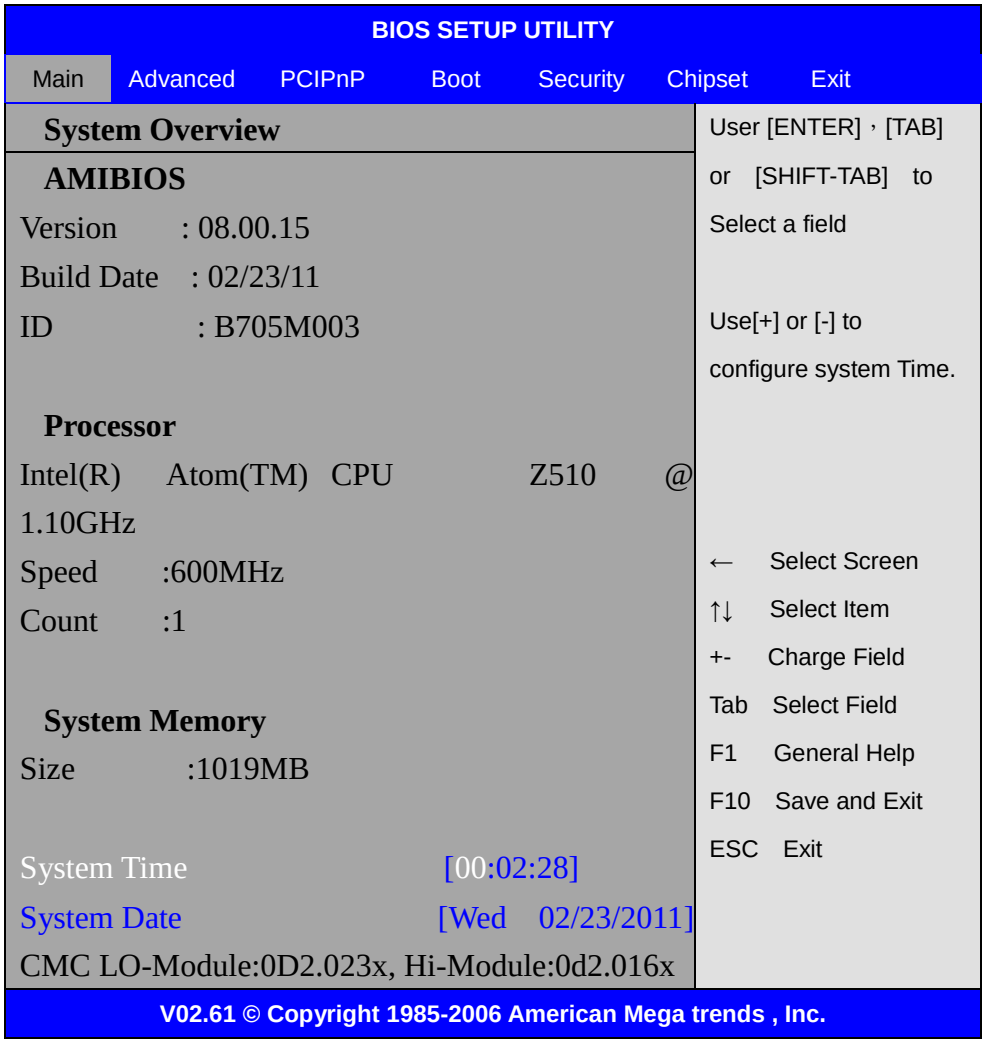
3.2 BIOS SETUP UTILITY

Press [Del] key to enter BIOS Setup utility during POST, and then a main menu containing system summary information will appear.





3.3 System Overview



System Time:

Set the system time, the time format is:

Hour : 0 to 23

Minute : 0 to 59

Second : 0 to 59

System Date:

Set the system date, the date format is:

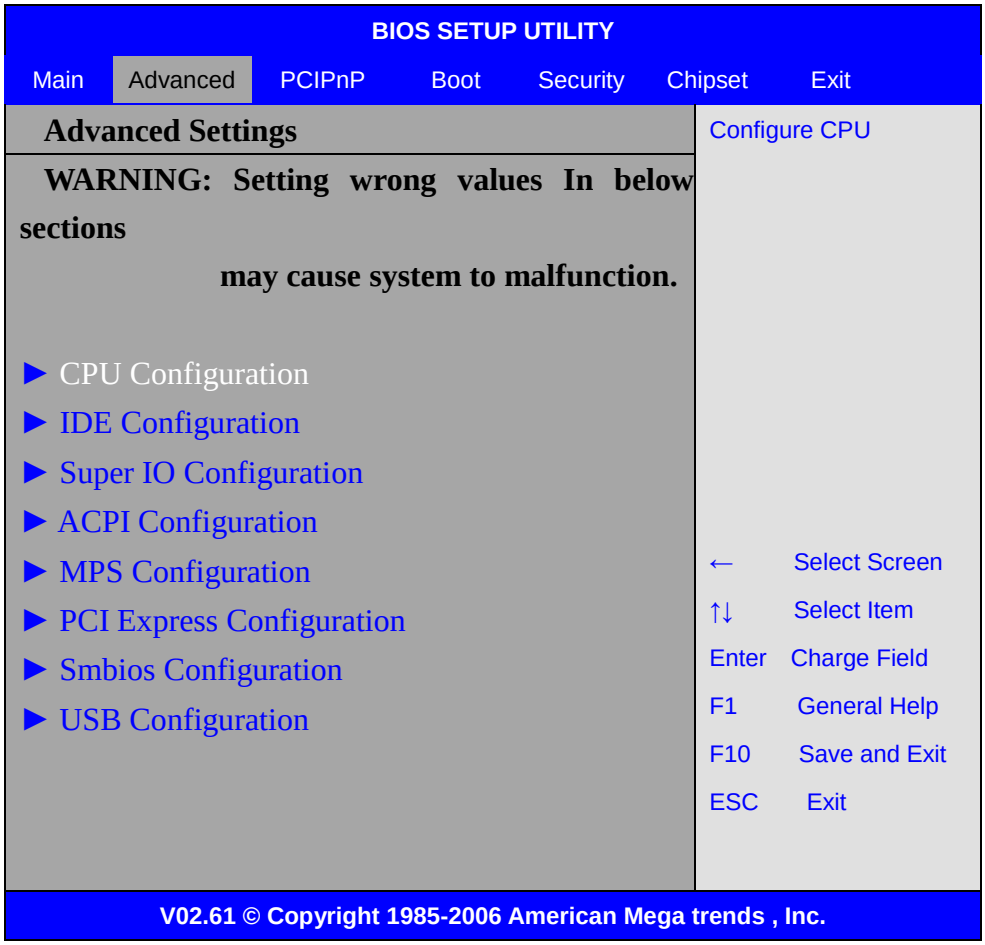
Day: Note that the 'Day' automatically changes when you set the date.

Month: 01 to 12

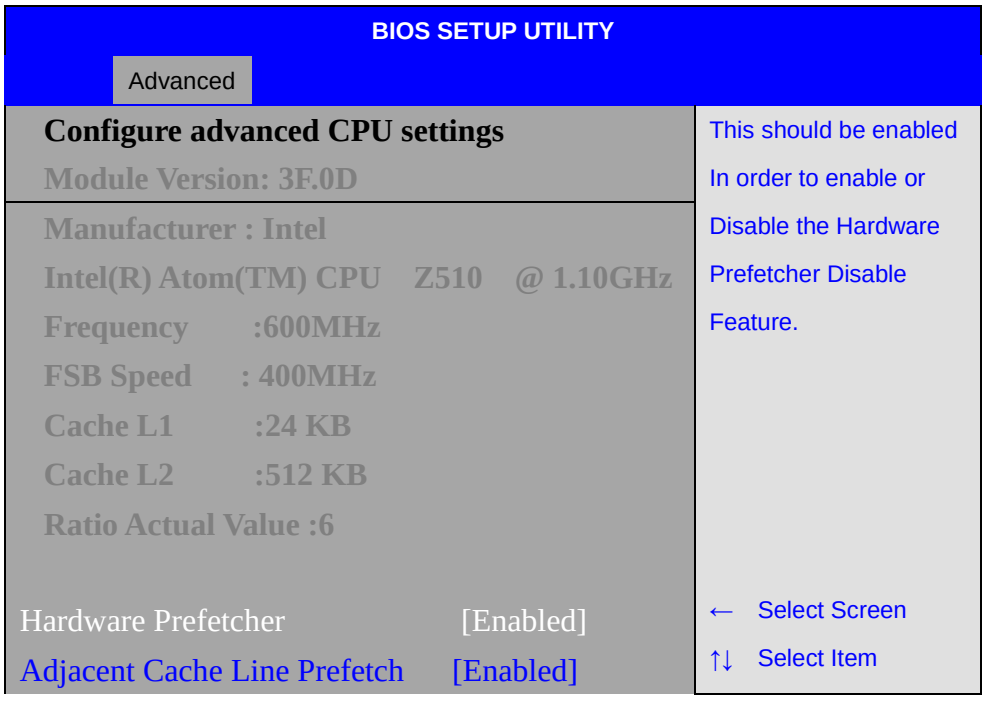
Date: 01 to 31

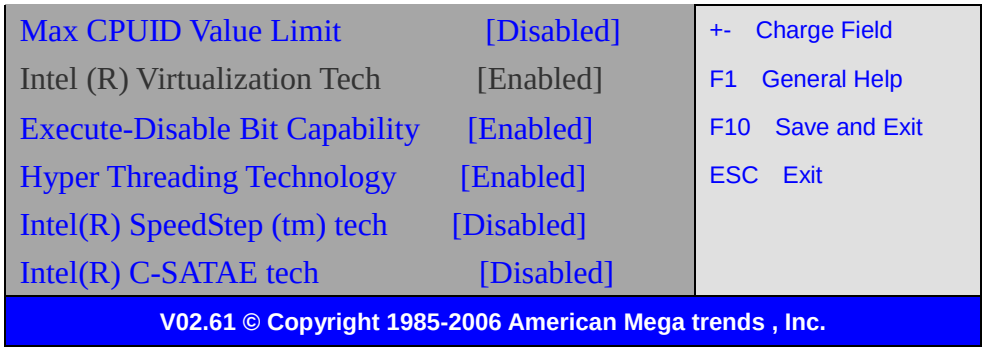
Year: 2009 to 2099

3.4 Advanced Settings



3.4.1 CPU Configuration





Hardware Prefetcher:

[Enabled]

[Disabled]

Adjacent Cache Line Prefetch:

[Enabled]

[Disabled]

Max CPUID Value Limit:

[Disabled**]**

[Enabled]

Execute-Disable Bit Capability:

[Enabled]

[Disabled]

Hyper Threading Technology:

[Enabled]

[Disabled]

Intel(R) SpeedStep (tm) tech:

[Disabled]

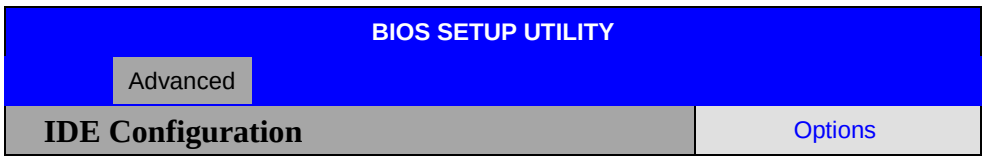
[Enabled]

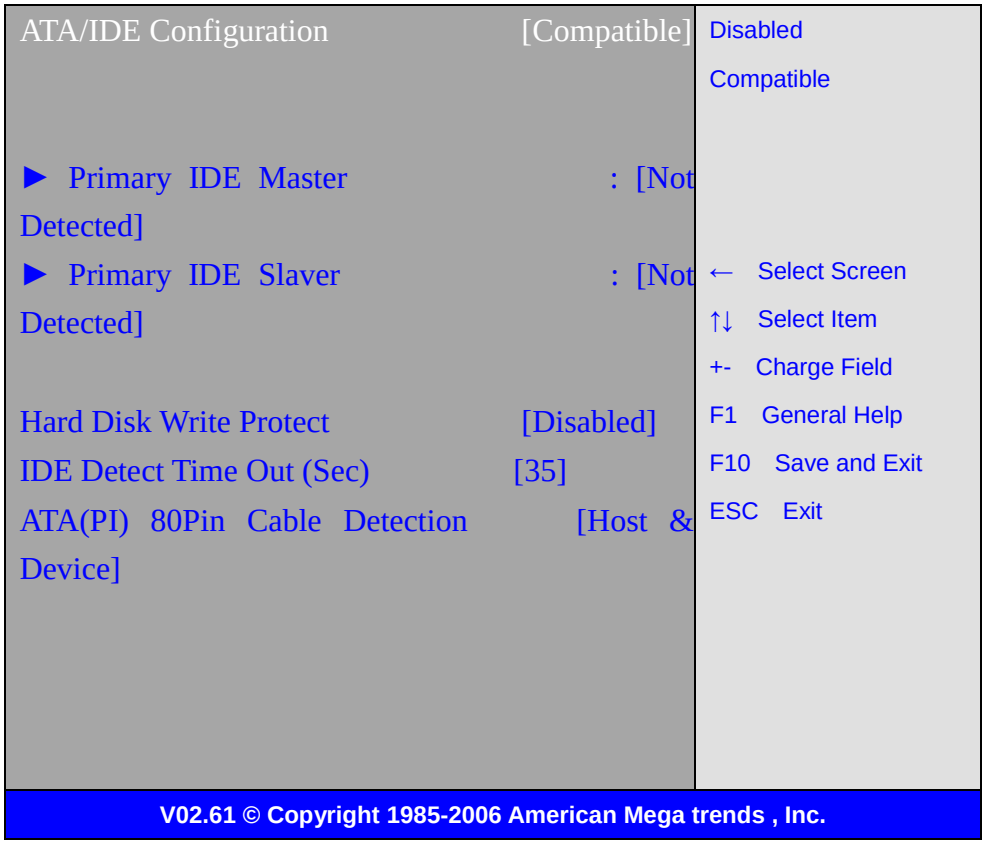
Intel(R) C-SATAE tech:

[Disabled]

[Enabled]

3.4.2 IDE Configuration





ATA/IDE Configuration:

[Compatible]

[Disabled]

Hard Disk Write Protect:

[Disabled]

[Enabled]

IDE Detect Time Out :

[35]

[0]

[5,10,15,20,25,30]

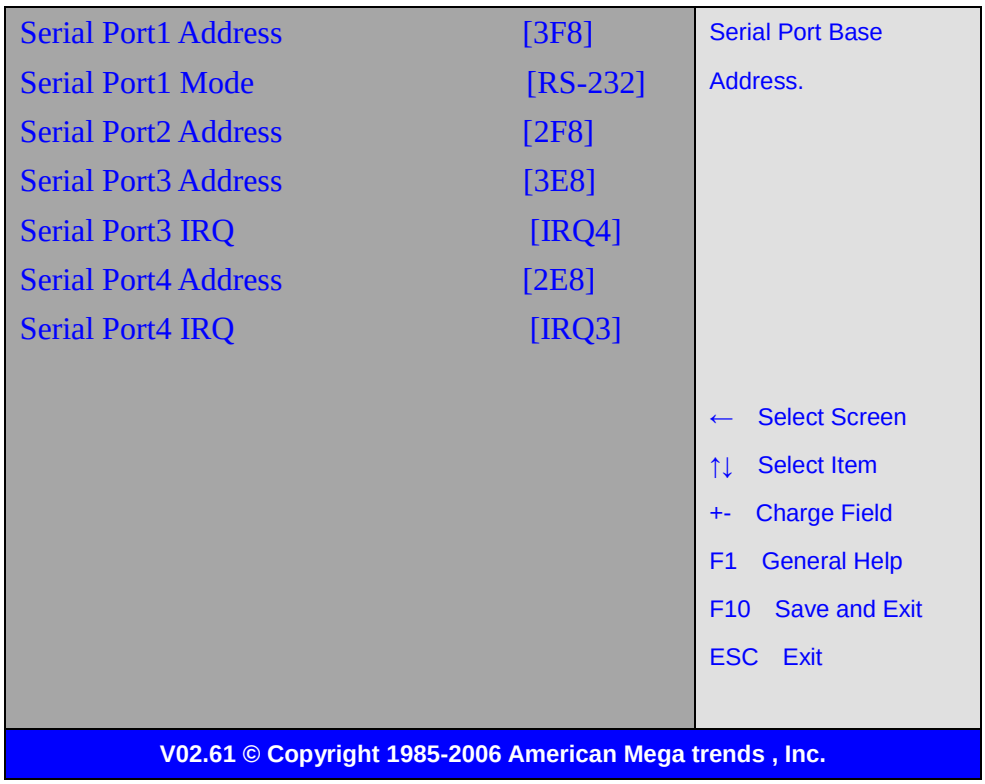
ATA(PI) 80Pin Cable Detection:

[Host & Device]

[Host]

[Device]

3.4.3 Super IO Configuration



Serial Port1 Mode:

COM1 Options: **[RS232]**
[RS485]
[RS232] for RS232 Mode
[RS485] for RS485/RS422 Mode

3.4.4 ACPI Configuration

ACPI Setting:

[Advanced ACPI Configuration]

ACPI Version Features:

[ACPI V3.0]
[ACPI V2.0]
[ACPI V1.0]

ACPI APIC support:

[Enabled]
[Disabled]

AMI OEMB table:

[Enabled]
[Disabled]

Headless mode:

[Disabled]
[Enabled]

[Chipset ACPI Configuration]:

APIC ACPI SCI IRQ:

[Disabled]

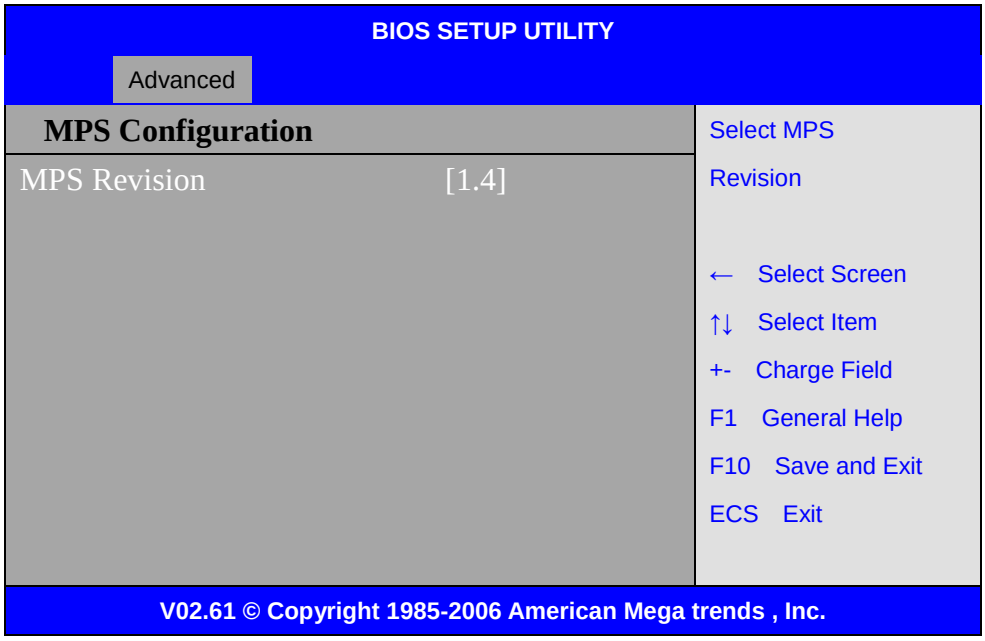
[Enabled]

USB Device Wakeup From S3/s4:

[Disabled]

[Enabled]

3.4.5 MPS Configuration

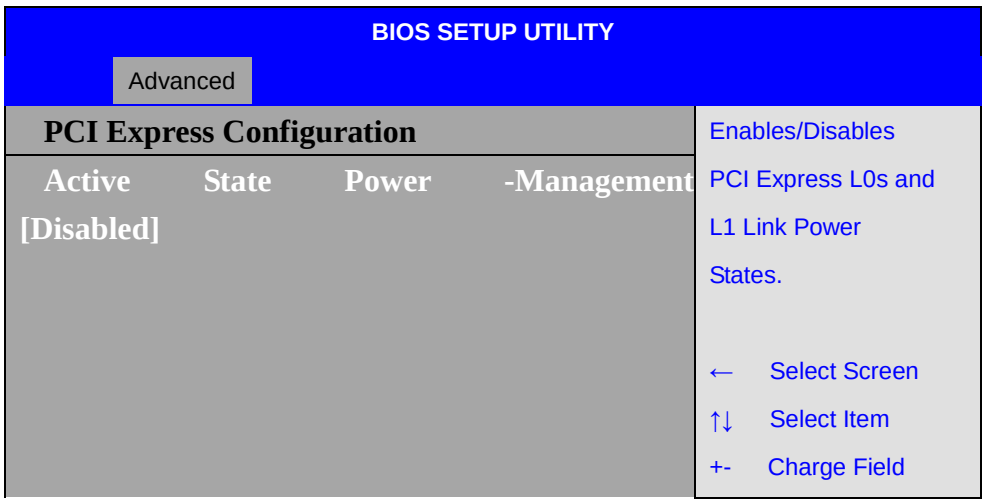


MPS Revision:

[1.4]

[1.1]

3.4.6 PCI Express Configuration

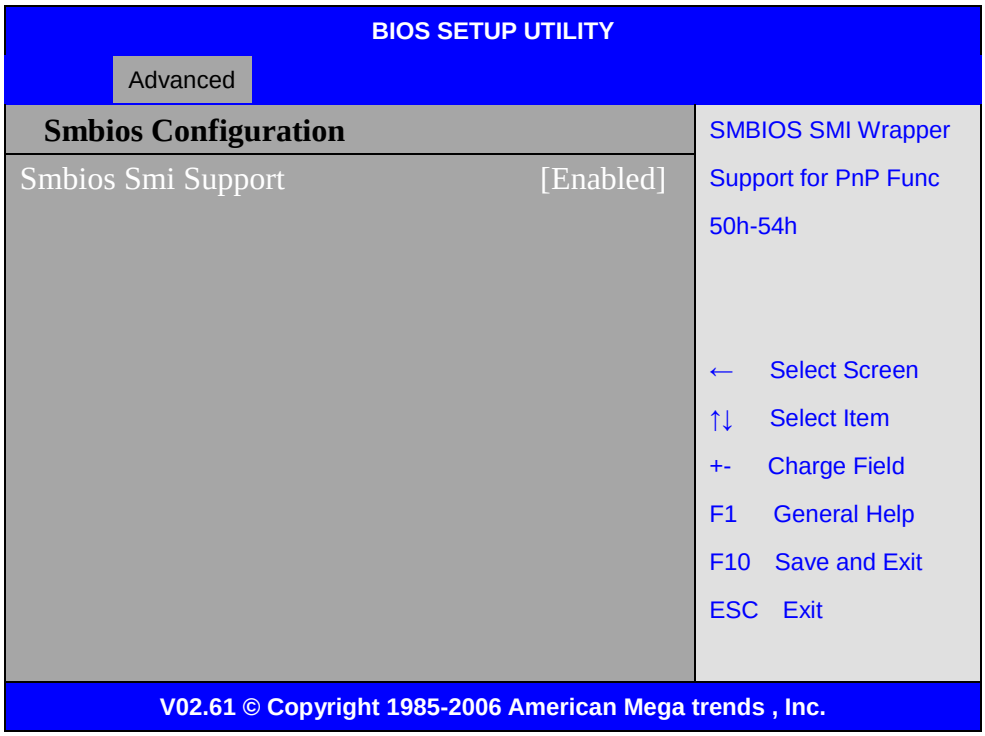


Active State Power Management:

[Disabled]

[Enabled]

3.4.7 Smbios Configuration

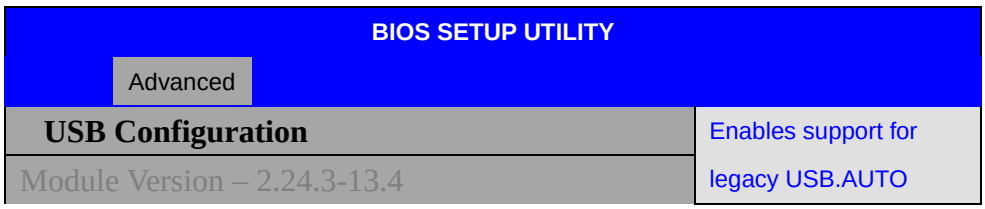


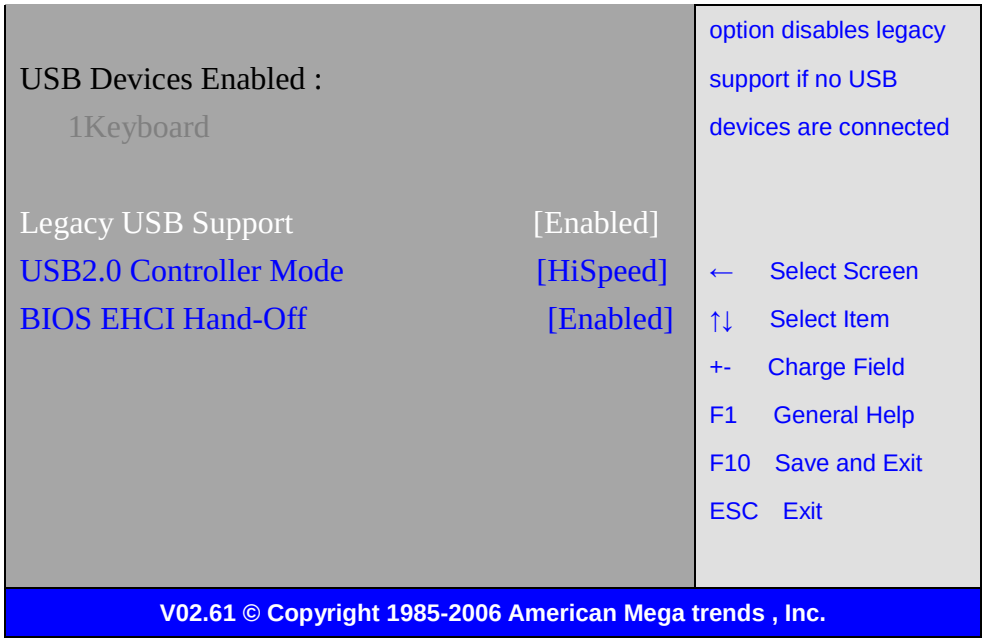
Smbios Smi Support:

[Enabled]

[Disabled]

3.4.8 USB Configuration





Legacy USB Support:

[Enabled]

[Disabled]

USB2.0 Controller Mode:

[HiSpeed]

[FullSpeed]

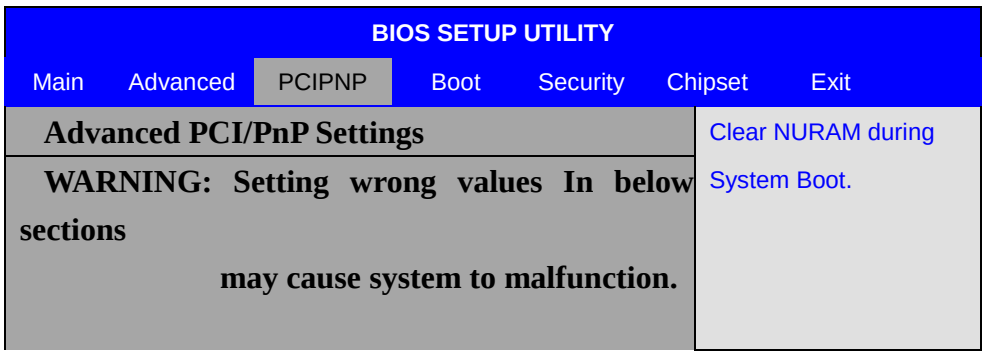
BIOS EHCI Hand-Off:

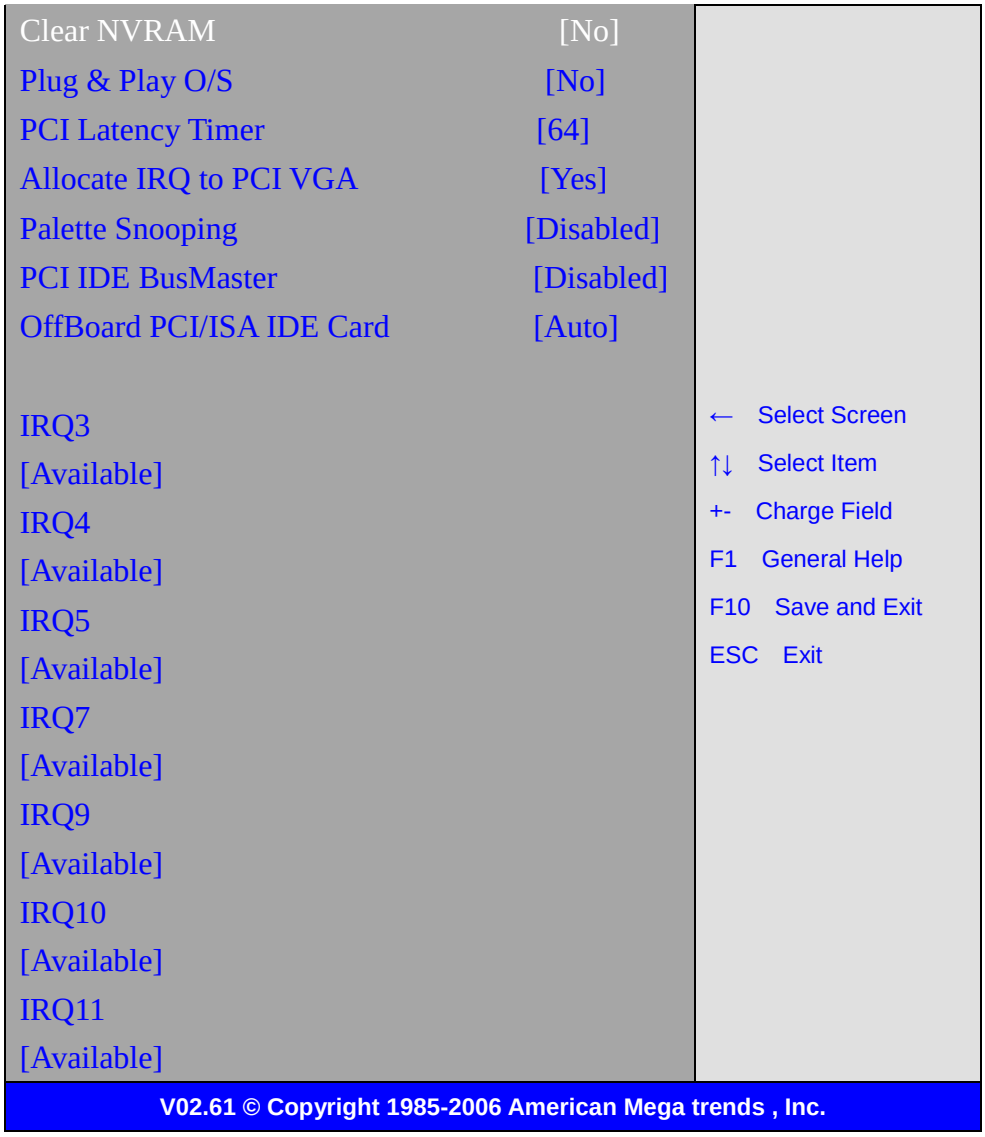
[Enabled]

[Disabled]

3.5 Advanced PCI/PnP Settings

This part describes configurations to be made on PCI bus system. PCI, namely Personal Computer Interconnect, is a computer bus that allows I/O device to operate nearly as fast as CPU in its own way. Some technical terms will be mentioned here. **We recommend that non-professional users not make changes from factory default settings.**





Clear NVRAM:

[**No**]

[Yes]

Plug & Play OS:

[**No**]

[Yes]

PCI Latency Timer:

[**64**]

[32]

[96]

[128]

[160]

[192]

[224]

[248]

Allocate IRQ to PCI VGA:

[Yes]

[No]

Palette Snooping:

[Disabled]

[Enabled]

PCI IDE BusMaster:

[Disabled]

[Enabled]

OffBoard PCI/ISA IDE Card:

Some PCI IDE cards may require this to be set to the PCI slot number that is holding the card. Auto:Works for most PCI IDE Cards.

[Auto]

[PCI Slot1]

[PCI Slot2]

[PCI Slot3]

[PCI Slot4]

[PCI Slot5]

[PCI Slot6]

IRQ3/4/5/7/9/10/11/14/15:

[Available]

[Reserved]

Available: Specified IRQ is available to be used by PCI/PnP devices.

Reserved: Specified IRQ is reserved for use by legacy ISA devices.

DMA Channel 0/1/3/5/6/7:

[Available]

[Reserved]

Available: Specified DMA is available to be used by PCI/PnP devices.

Reserved: Specified DMA is reserved for use by legacy ISA devices.

Reserved Memory Size:

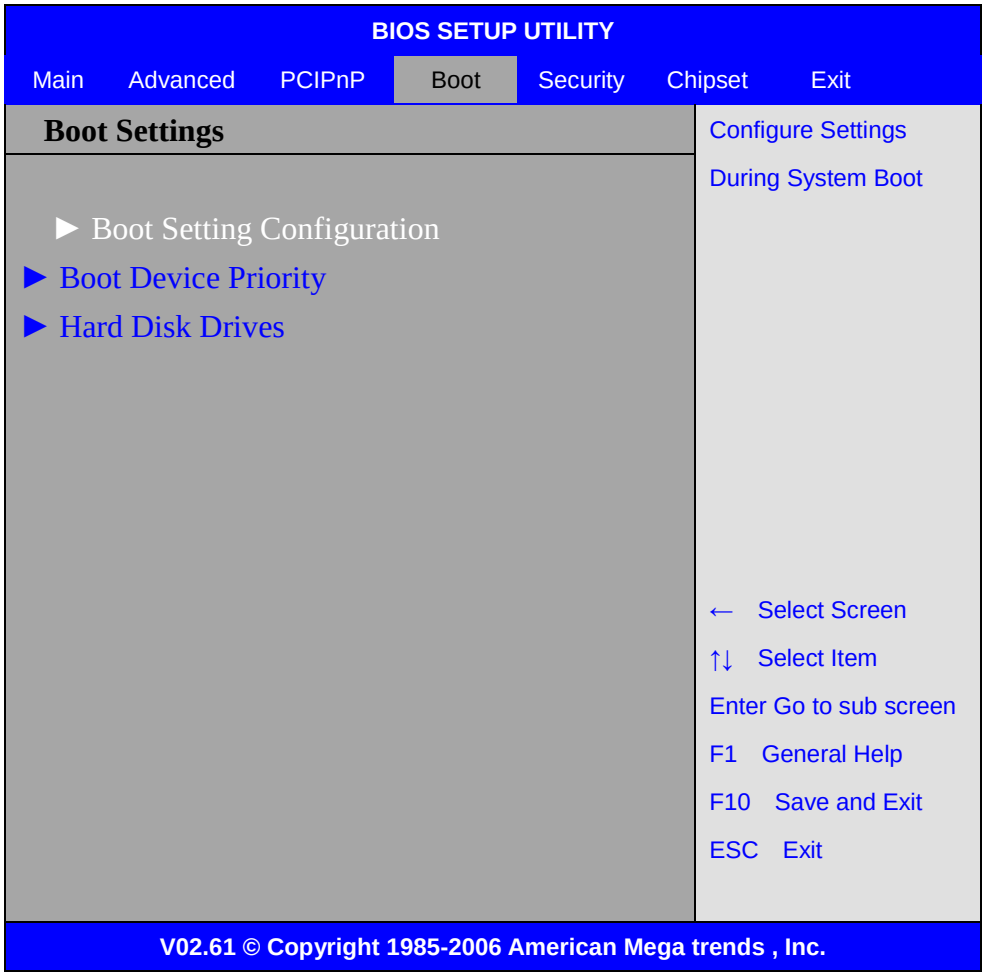
Size of memory block to reserve for legacy ISA devices.

[Disabled]

[16k]

[32k]
[64k]

3.6 Boot Settings



Boot Setting Configuration：

Configure Settings during System Boot.

Quick Boot:

[**Enabled**]

[Disabled]

Allows BIOS to skip certain tests while booting .This will decrease the time needed to boot the system.

Quiet Boot:

[Disabled]

[Enabled]

Disabled: Displays normal POST messages.

Enabled: Displays OEM logo instead of POST messages.

AddOn ROM Display Mode:

Set display mode for Option ROM.

[**Force BIOS**]

[Keep Current]

Bootup Num-Lock:

Select Power-on state for Numlock.

[**On]**

[Off]

Wait For ‘F1’ If Error:

Wait for F1 key to be pressed if error occurs.

[**Enabled**]

[Disabled]

Hit ‘DEL’Messgae Display :

Displays “press” DEL to run Setup in POST.

[**Enabled**]

[Disabled]

Interrupt 19 Capture:

Enabled: Allows option ROMs to trap interrupt 19.

[Disabled]

[Enabled]

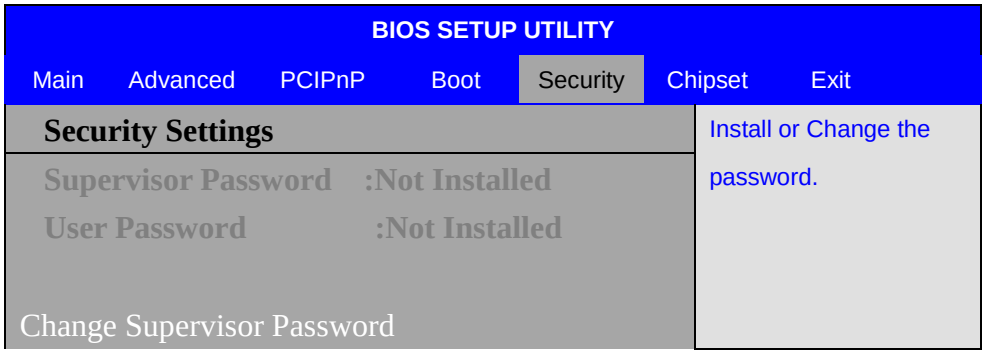
Boot Device Priority:

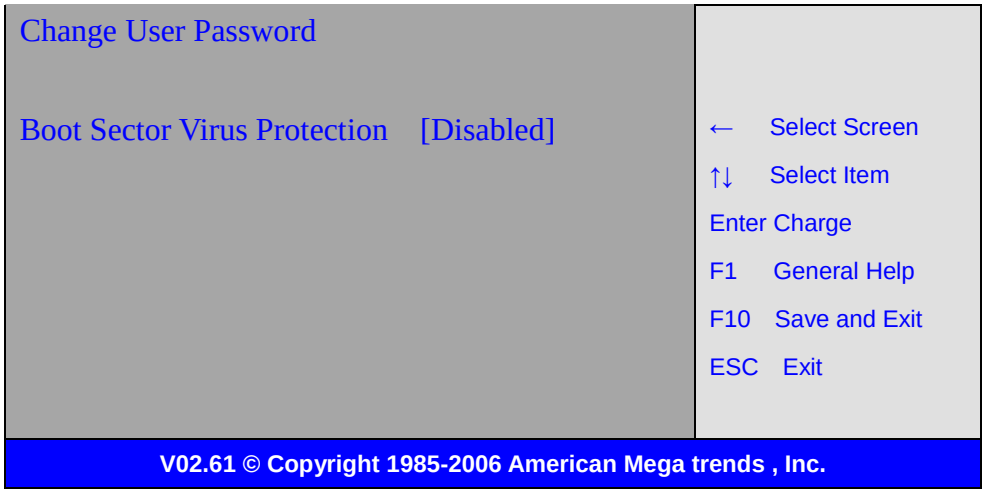
Specifies the Boot Device Priority sequence.

Hard Disk Devices :

Specifies the Boot Device Priority sequence from available Hard Drives.

3.7 Security Settings





Change Supervisor Password:

Install or Change the password.

Change User Password:

Install or Change the password.

Boot Sector Virus Protection:

[Disabled]

[Enabled]

Enabled / Disabled Boot Sector Virus Protection.

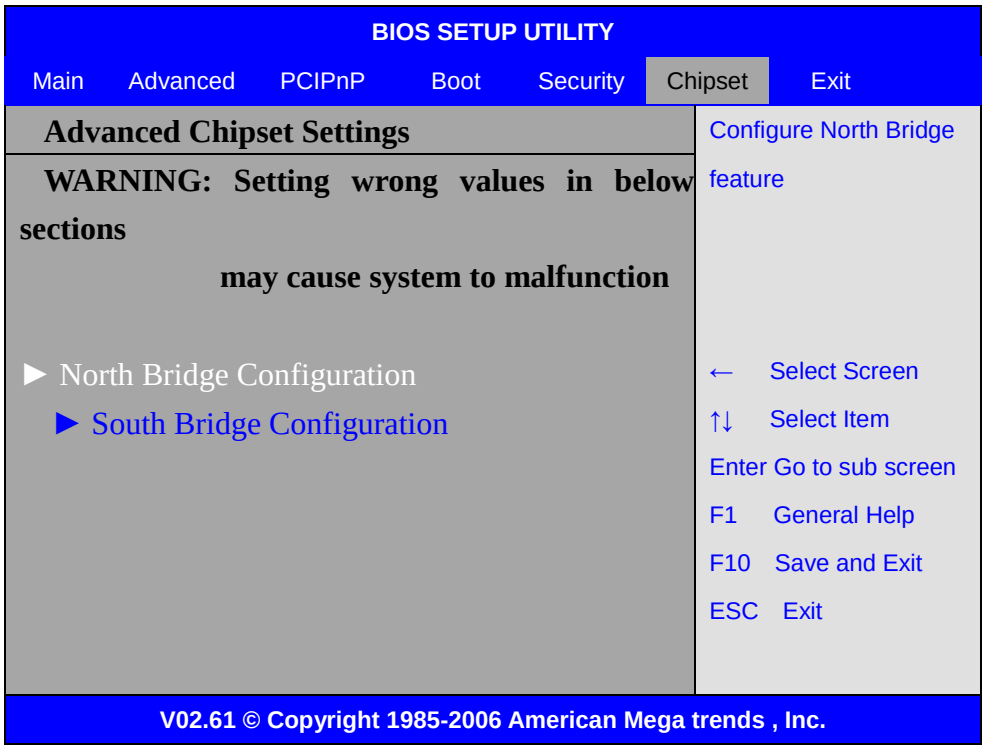
Type the password with up to 6 characters and then press ≺Enter≻ key. This will clear all previously typed CMOS passwords. You will be requested to confirm the password. Type the password again and press ≺Enter≻ key. You may press ≺Esc≻ key to abandon password entry operation.

To clear the password, just press ≺Enter≻ key when password input window pops up. A confirmation message will be shown on the screen as to whether the password will be disabled. You will have direct access to BIOS setup without typing any password after system reboot once the password is disabled.

Once the password feature is used, you will be requested to type the password each time you enter BIOS setup. This will prevent unauthorized persons from changing your system configurations.

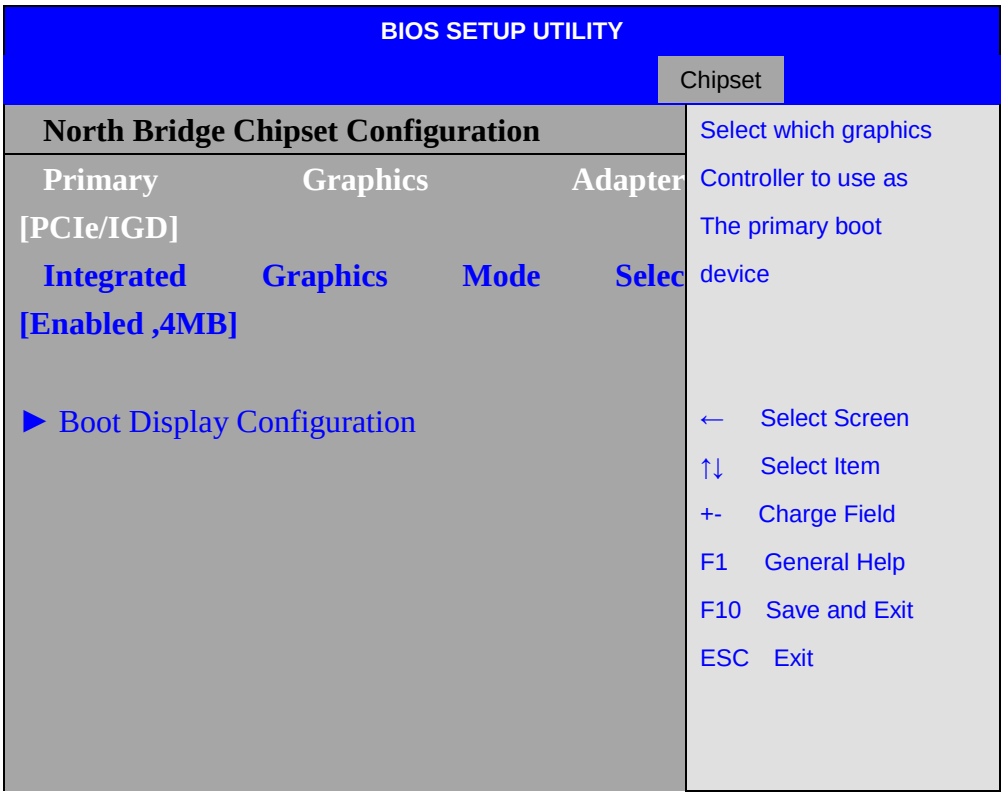
Also, the feature is capable of requesting users to enter the password prior to system boot to control unauthorized access to your computer. Users may enable the feature in Security Option of Advanced BIOS Features. If Security Option is set to System, you will be requested to enter the password before system boot and when entering BIOS setup; if Security Option is set to Setup, you will be requested for password for entering BIOS setup.

3.8 Advanced Chipset Settings



Note: Due to limited address length of BIOS, only a portion of panel parameters are listed in BIOS Setup. If the connected panel is not included in the parameter list, display problem will occur. In this case, Please do not change BIOS setup.

3.8.1 North Bridge Configuration



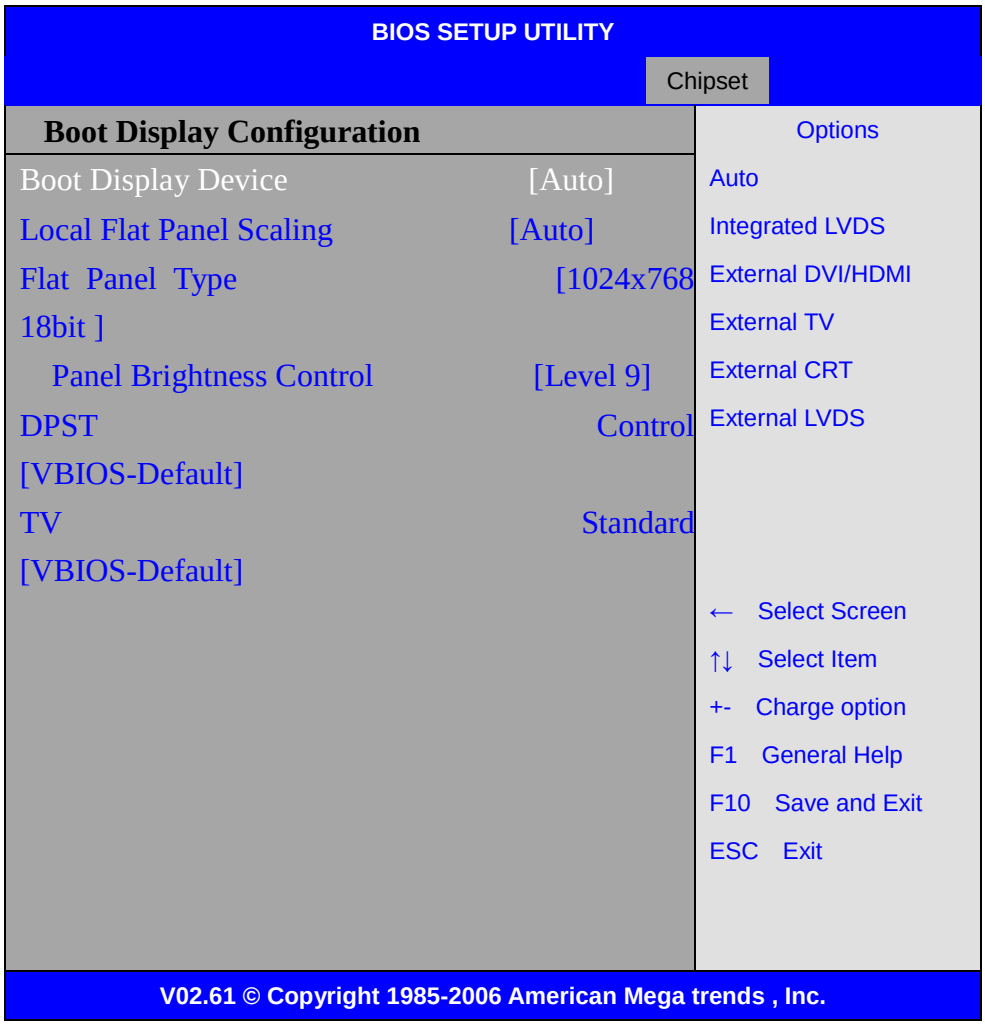
Primary Graphics Adapter:

[**PCIe/IGD**]
[IGD]

Integrated Graphics Mode Selec:

[Enabled ,4MB]
[Enabled ,1MB]
[Enabled ,8MB]
[Disabled]

Boot Display Configuration:



Boot Display Device:

[**Auto**]
[Integrated LVDS]
[External DVI/HDMI]
[External TV]

[External CRT]

[External LVDS]

Flat Panel Type:

[1024x 768 18bit]

[640x480 18bit]

[800x600 18bit]

[1280x768 18bit]

[1280x800 18bit]

[1024x 768 24bit]

Backlight Control Support

[VBIOS-Default]

[Both BLC & BIA Disabled]

[BLC Enabled]

Panel Backlight Control:

[Level9]

[Level0]

[Level1]

[Level2]

[Level3]

[Level4]

[Level6]

[Level7]

[Level8]

[Level9]

[Level10]

[Level11]

[Level12]

[Level13]

[Level14]

[Level15]

[Level16]

Note: Panel support PWM Function.

DPST Control:

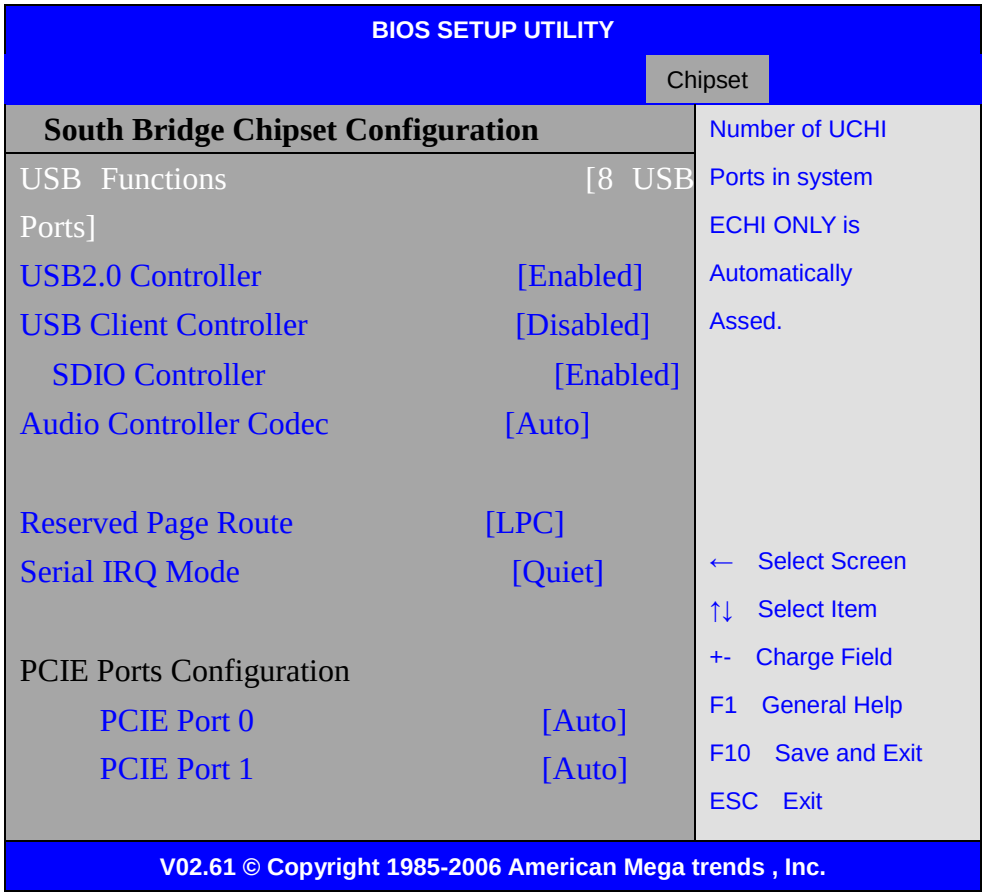
[VBIOS-Default]

[DPST Disabled]
[DPST Enabled at Level]
[DPST Enabled at Leve2]
[DPST Enabled at Leve3
[DPST Enabled at Leve4]
[DPST Enabled at Leve5]

TV Standard:

[VBIOS-Default]
[NTSC]
[PAL]
[SECAM]
[SMPTE240M]
[ITU-R television]
[SMPTE296M]
[CEA 7702]
[CEA 7703]

3.8.2 South Bridge Configuration:



USB Functions:

[8 USB Ports]
[Disabled]，
[2 USB Ports]
[4 USB Ports]
[6 USB Ports]

USB 2.0 Controller:

[**Enabled**]
[Disabled]

USB Client Controller:

[Disabled]
[Enabled]

SDIO Controller:

[**Enabled**]
[Disabled]

Audio Controller Codec:

[**Auto**]
[Azalia]
[Disabled]

Reserved Page Route:

[**LPC**]
[PCI]

PCIE Ports Configuration:

PCIE Port 0:

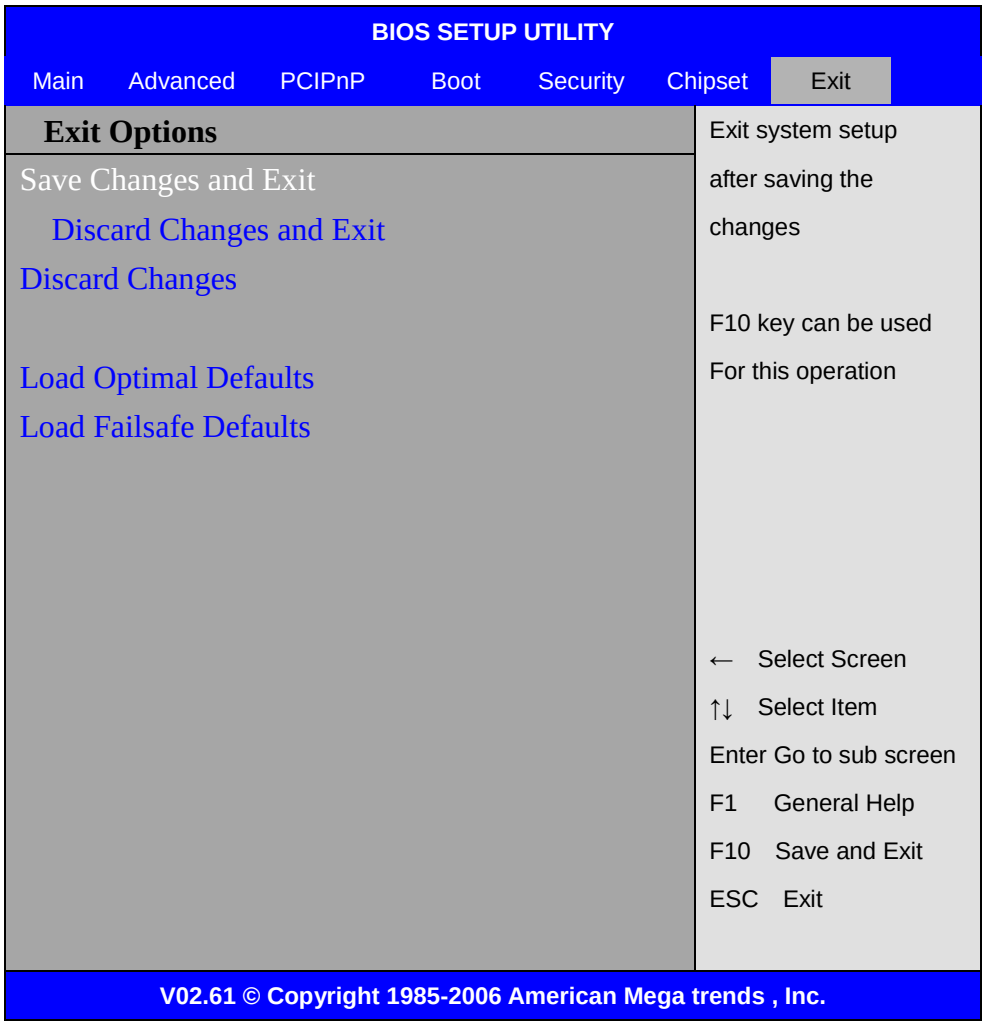
[Auto]
[Enabled]
[Disabled]

PCIE Port 1:

[Auto]
[Enabled]
[Disabled]

[Enabled]
[Disabled]

3.9 Exit Options



Save Changes and Exit:

Save configuration changes and exit setup?

(F10 key can be used for this operation)

[OK]

[Cancel]

Discard Changes and Exit:

Discard Changes and Exit setup?

(ESC key can be used for this operation)

[OK]

[Cancel]

Discard Changes:

Discard changes?

(F7 key can be used for this operation)

[OK]

[Cancel]

Load Optimized Defaults:

Load Optimized Defaults?

(F9 key can be used for this operation)

[OK]

[Cancel]

Load FailSafe Defaults:

Load FailSafe Defaults?

(F9 key can be used for this operation)

[OK]

[Cancel]

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**
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: 8.8.0.1011
* Target Chipset#: Intel(R) SCH Family
* Date: April 02 2008
****
< Back
Next >
Cancel
Intel® Installation Framework

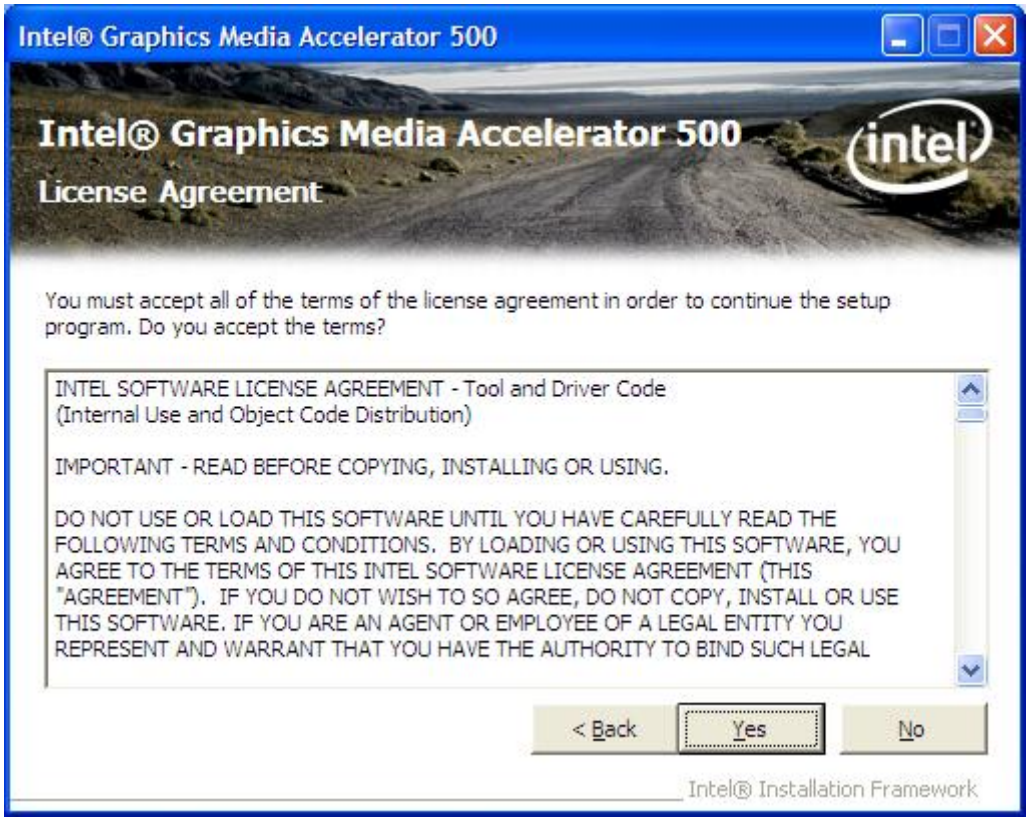
Click Finish, When the installation process is complete, the Setup Complete screen appears. See as picture.

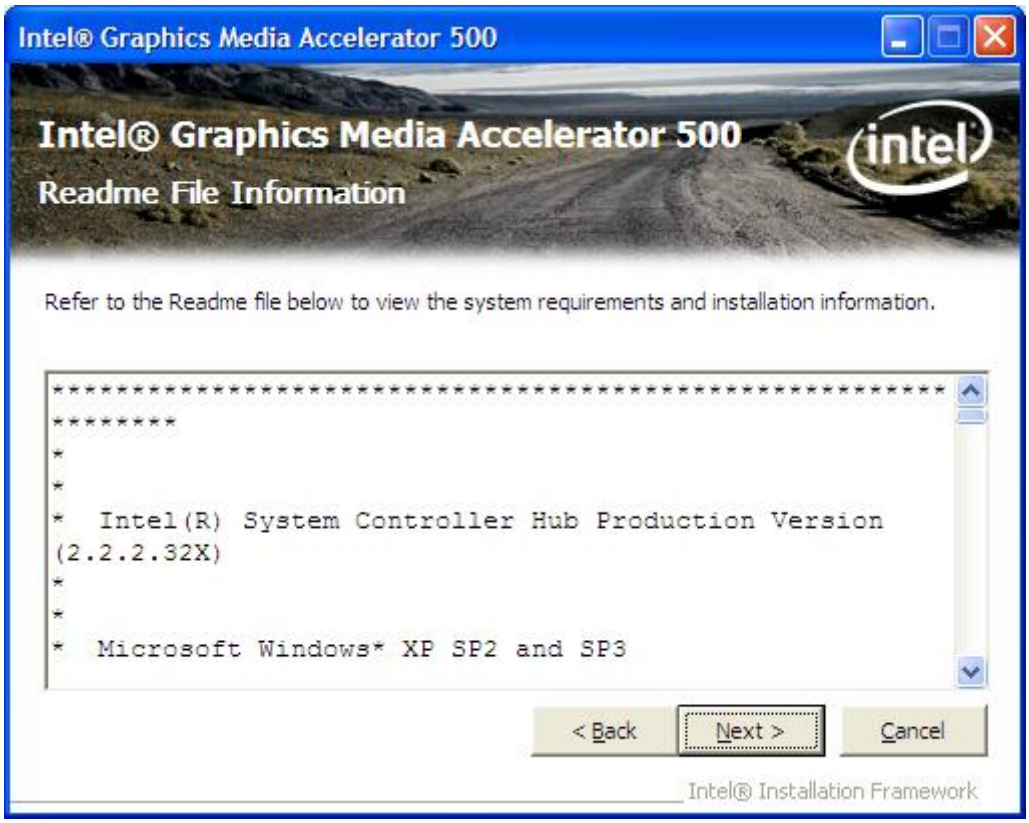
4.2 Intel Graphics Media Accelerator Driver

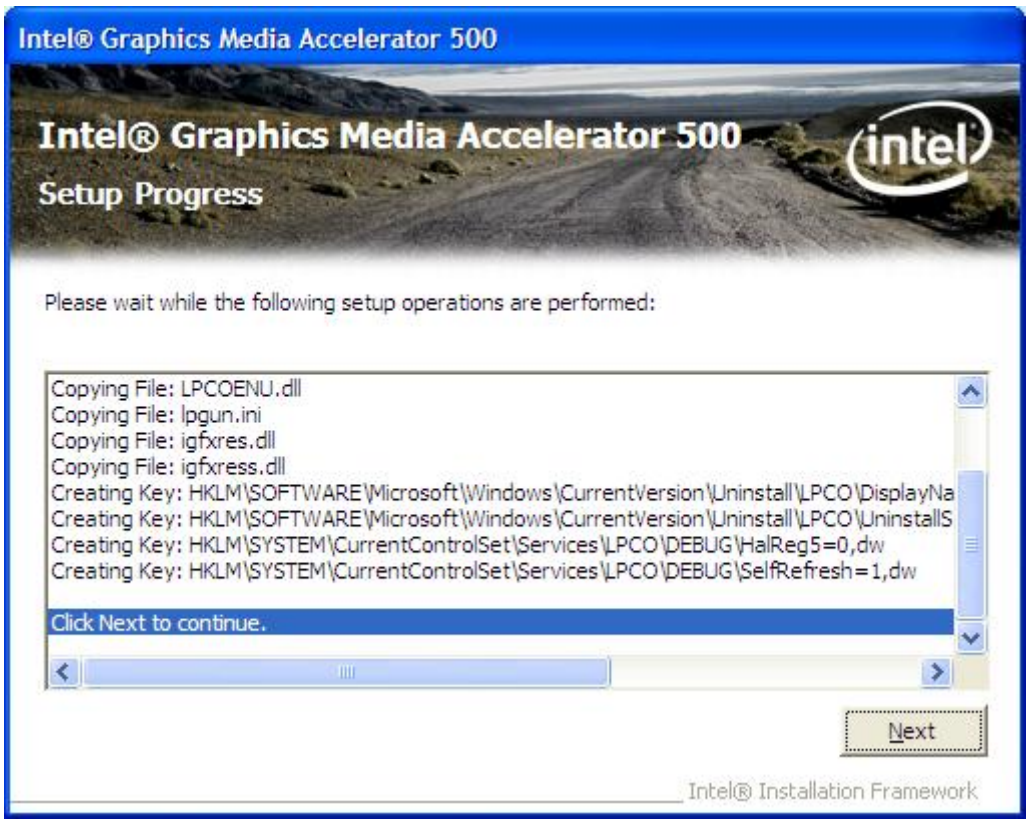
To install the VGA drivers, follow the steps below to proceed with the installation.

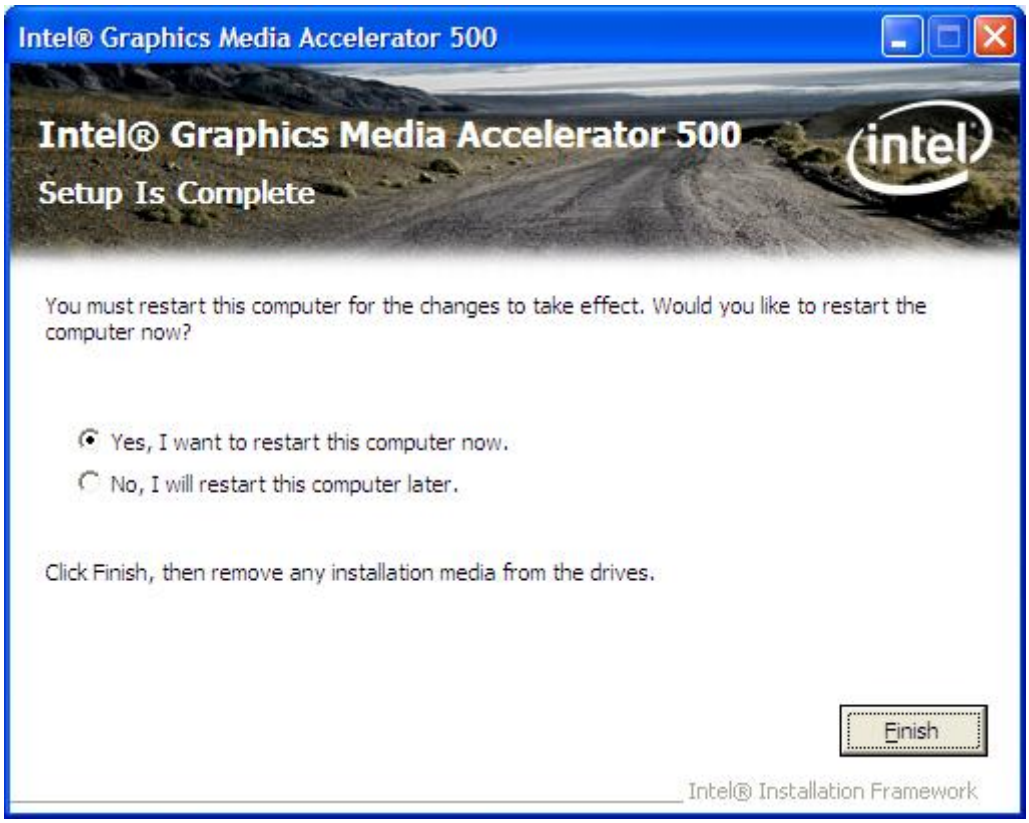
1. Click Intel(R) US15W Chipset Family Graphics Driver.

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


Intel® Graphics Media Accelerator 500
Intel® Graphics Media Accelerator 500
License Agreement
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 - Tool and Driver Code
(Internal Use and Object Code Distribution)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
DO NOT USE OR LOAD THIS SOFTWARE UNTIL YOU HAVE CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS. BY LOADING OR USING THIS SOFTWARE, YOU AGREE TO THE TERMS OF THIS INTEL SOFTWARE LICENSE AGREEMENT (THIS "AGREEMENT"). IF YOU DO NOT WISH TO SO AGREE, DO NOT COPY, INSTALL OR USE THIS SOFTWARE. IF YOU ARE AN AGENT OR EMPLOYEE OF A LEGAL ENTITY YOU REPRESENT AND WARRANT THAT YOU HAVE THE AUTHORITY TO BIND SUCH LEGAL
< Back
Yes
No
Intel® Installation Framework


Intel® Graphics Media Accelerator 500
Intel® Graphics Media Accelerator 500
Readme File Information
Refer to the Readme file below to view the system requirements and installation information.
****
****
*
*
* Intel(R) System Controller Hub Production Version
(2.2.2.32X)
*
*
* Microsoft Windows* XP SP2 and SP3
< Back
Next >
Cancel
Intel® Installation Framework



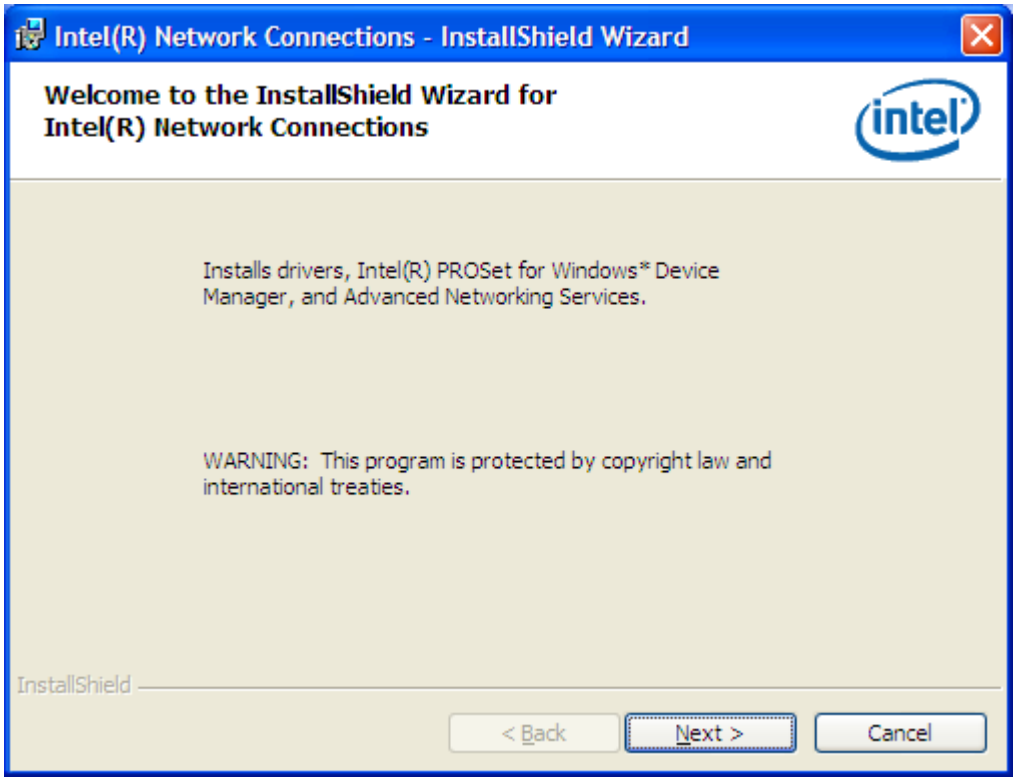


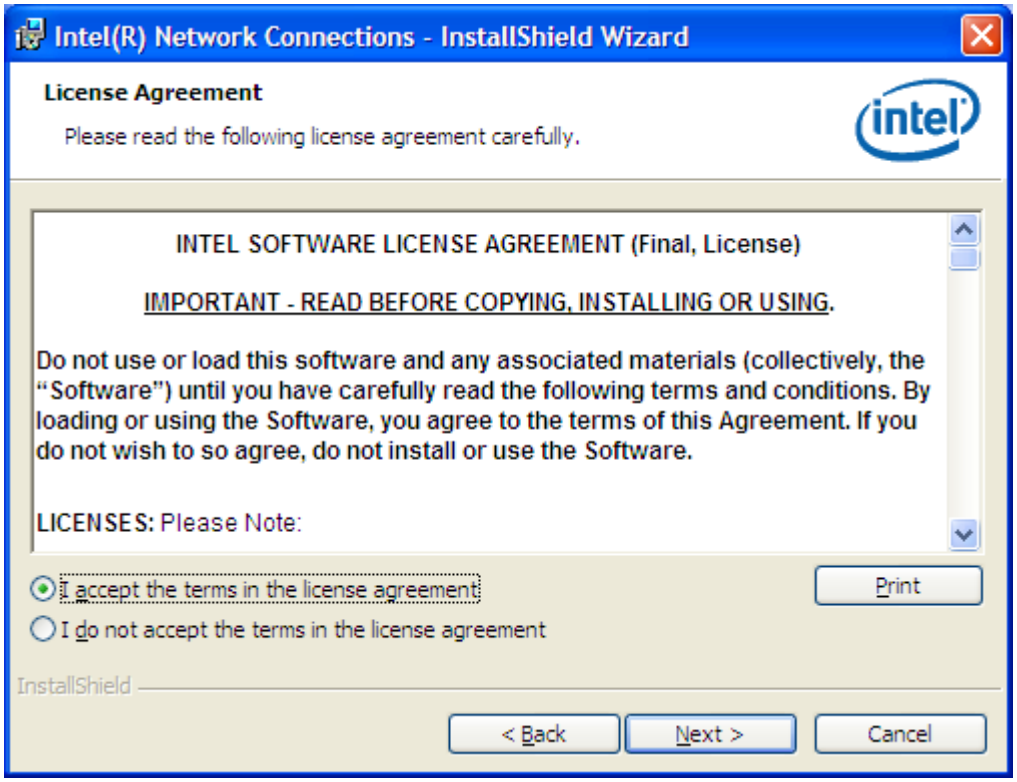
Click FINISH; A Driver Installation Complete.

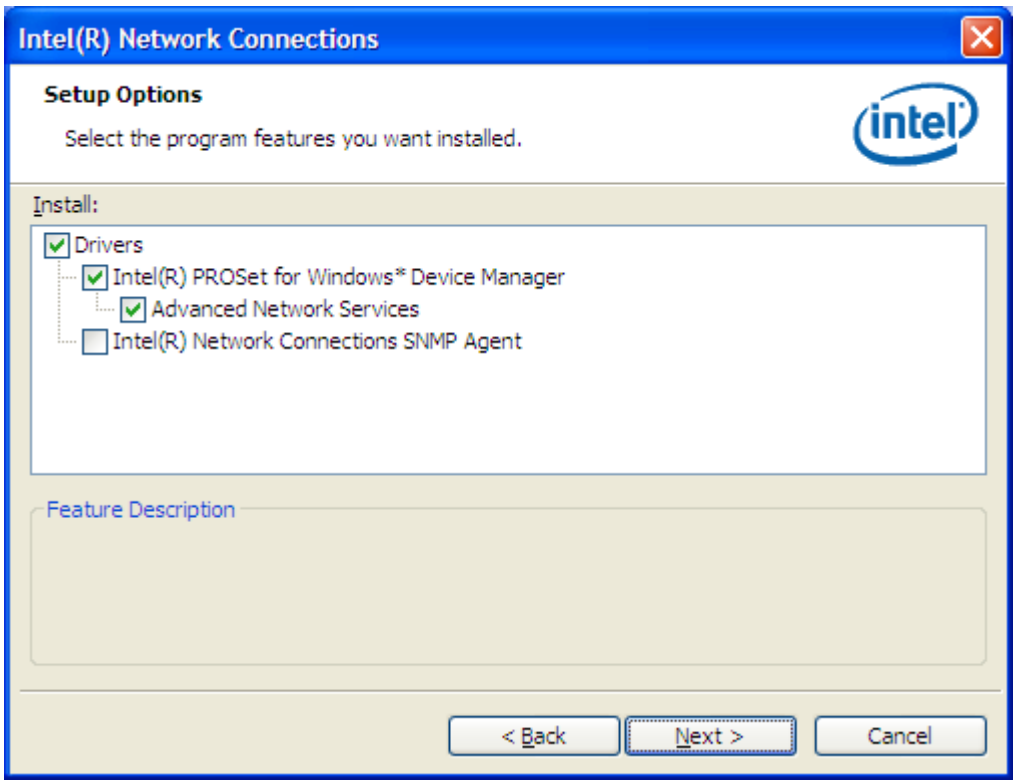
4.3 Intel 8257L Gbe LAN Device Driver

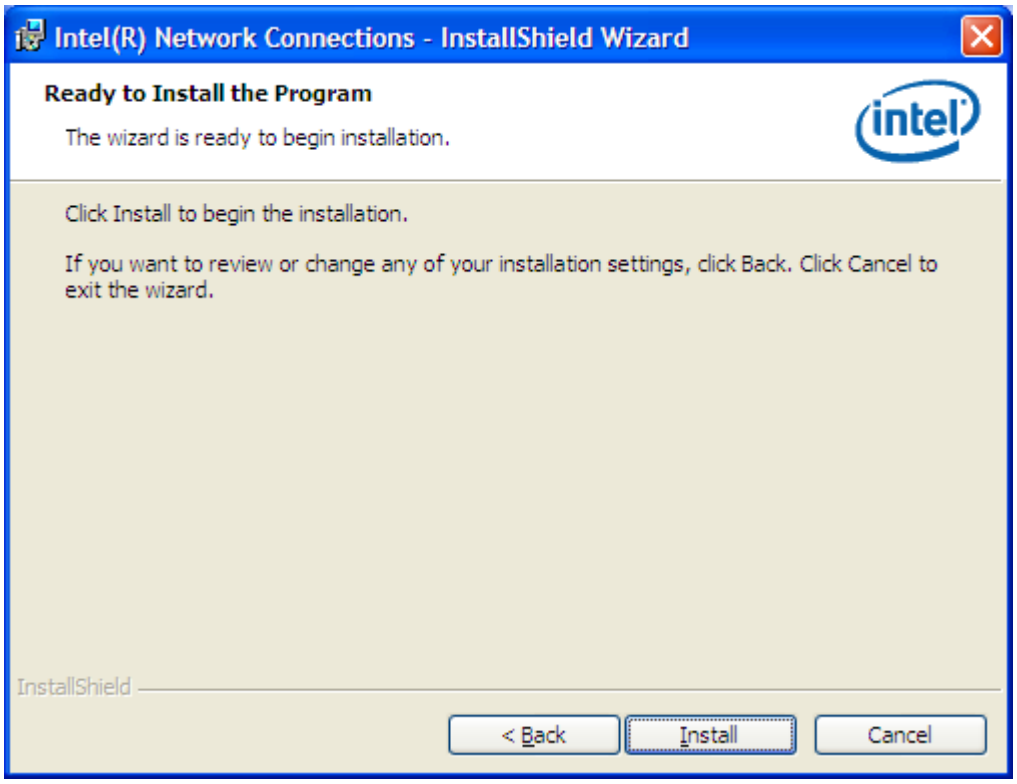
To install the Intel R 8257L Gbe Gigabit LAN connect device driver, please follow the steps below.
Select LAN from the list

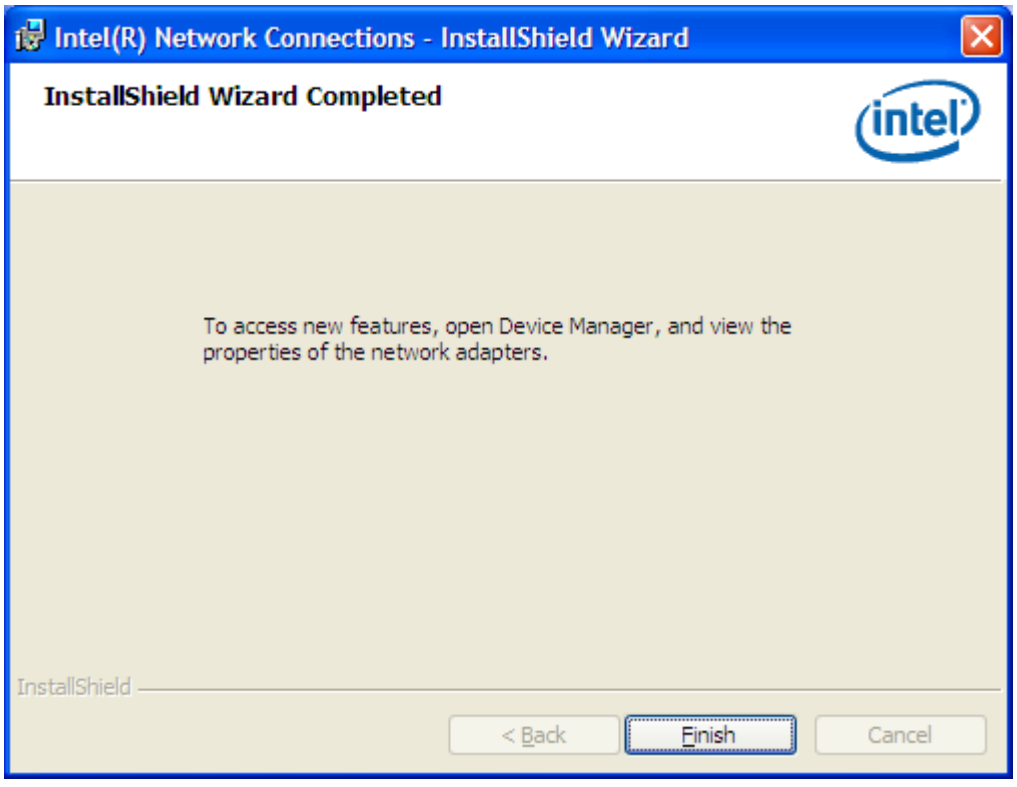
Follow the step-by-step installation process to install the LAN driver.




Intel(R) Network Connections - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
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) 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) Network Connections SNMP Agent
Feature Description
< Back
Next >
Cancel





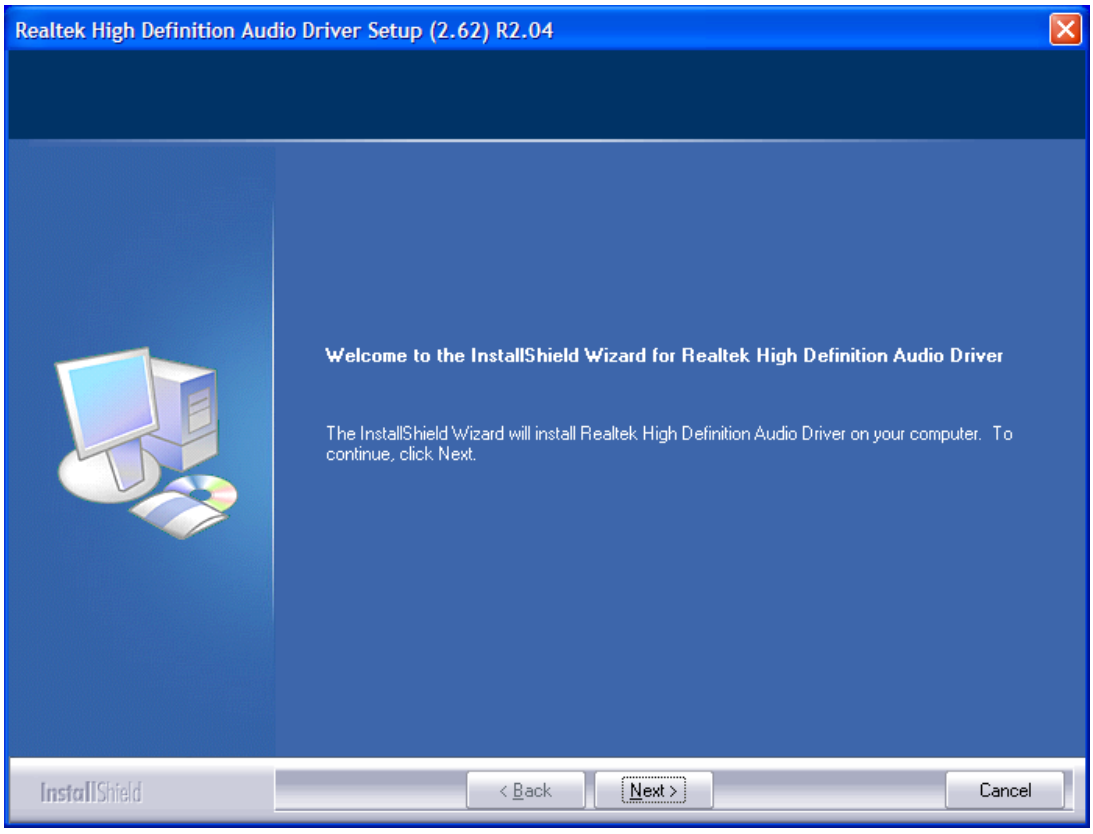
Click FINISH; A Driver Installation Complete.

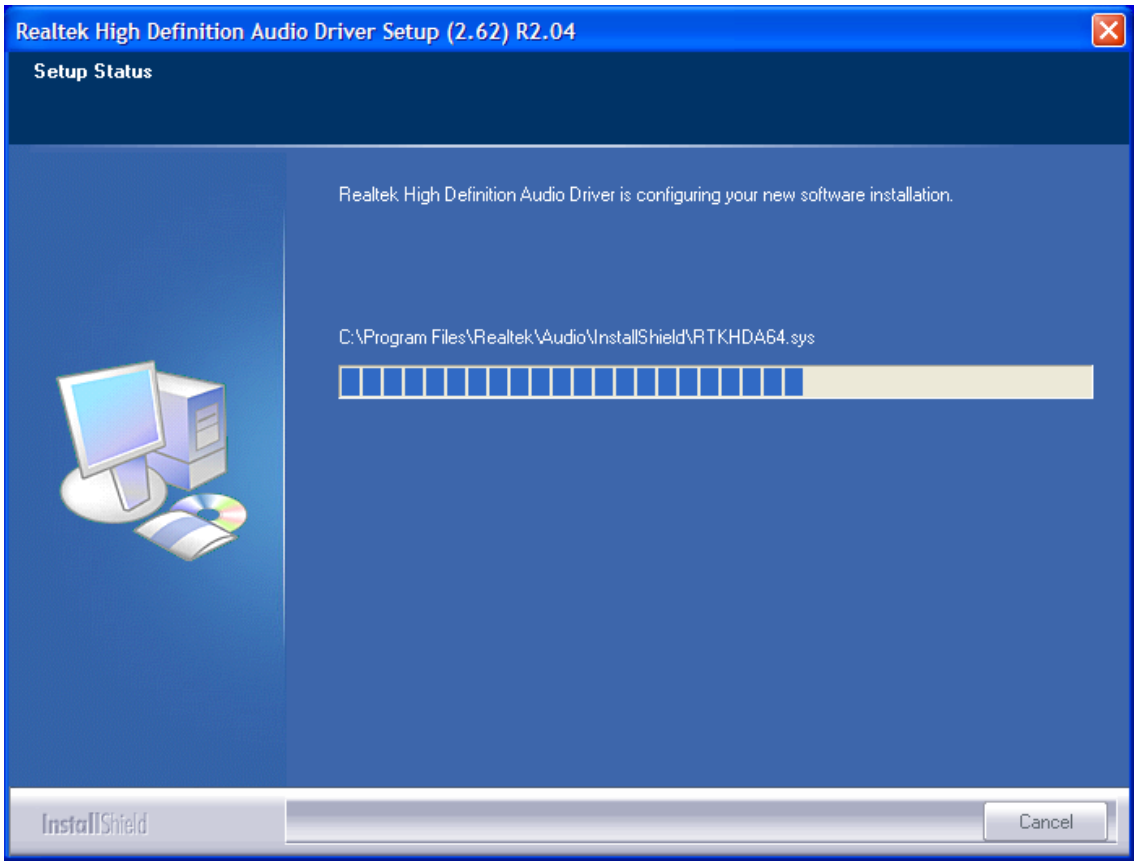
4.4 Realtek HD Audio Driver Installation

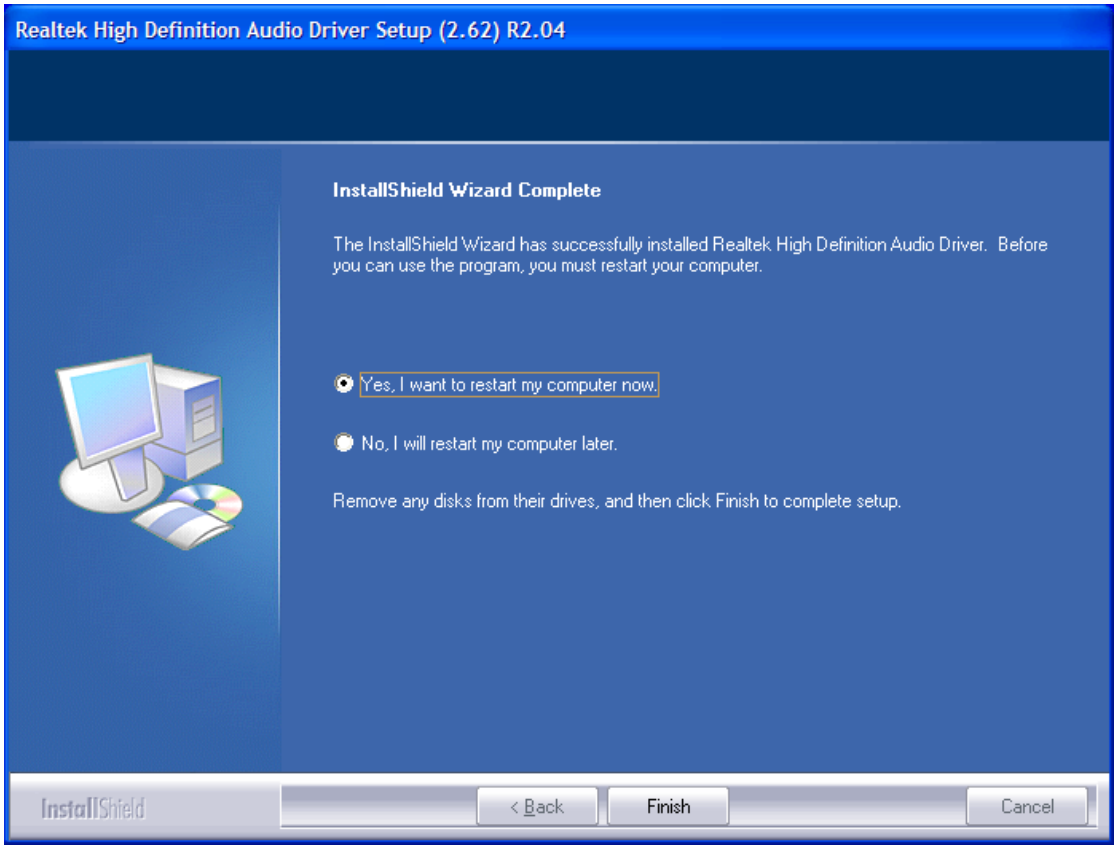
To install the Realtek High Definition (HD) Audio driver, please follow the steps below.

Select Audio from the list

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







Click FINISH; A Driver Installation Complete.

Chapter 5 Touch Screen Installation

This chapter describes how to install drivers and other software that will allow your PenMount 6000 Controller Board to work with different operating systems.

NOTE: PenMount USB drivers support up to 15 USB controllers.

5.1 Introduction to Touch Screen Controller Board

PenMount 6300 USB control board is a touch screen control board designed for USB interface and specific for 4, 5, 8-wire touch screens. It is designed with USB interface features with multiple devices supporting function. PenMount 6300 control board using PenMount 6000 controller that has been designed for those who may like and all-in-one solution with 10-bit A/D converter built-in to make the total printed circuit board denser, circuit diagram also designed for 12-bit ADC for optional. There are two connectors on this board, one connector is for 4, 5, 8-wire touch screen cable (optional), and another is for 4-pin USB A type cable (optional).

Figure 5.1: Bird's Eye View of Control Board

5.2 Windows 2000/XP/2003/Vista Universal Driver Installation for PenMount 6000 Series

Before installing the Windows 2000/XP driver software, you must have the Windows 2000/XP system installed and running on your computer. You must also have one of the following PenMount 6000 series controller or control boards installed: PM6500, PM6300.

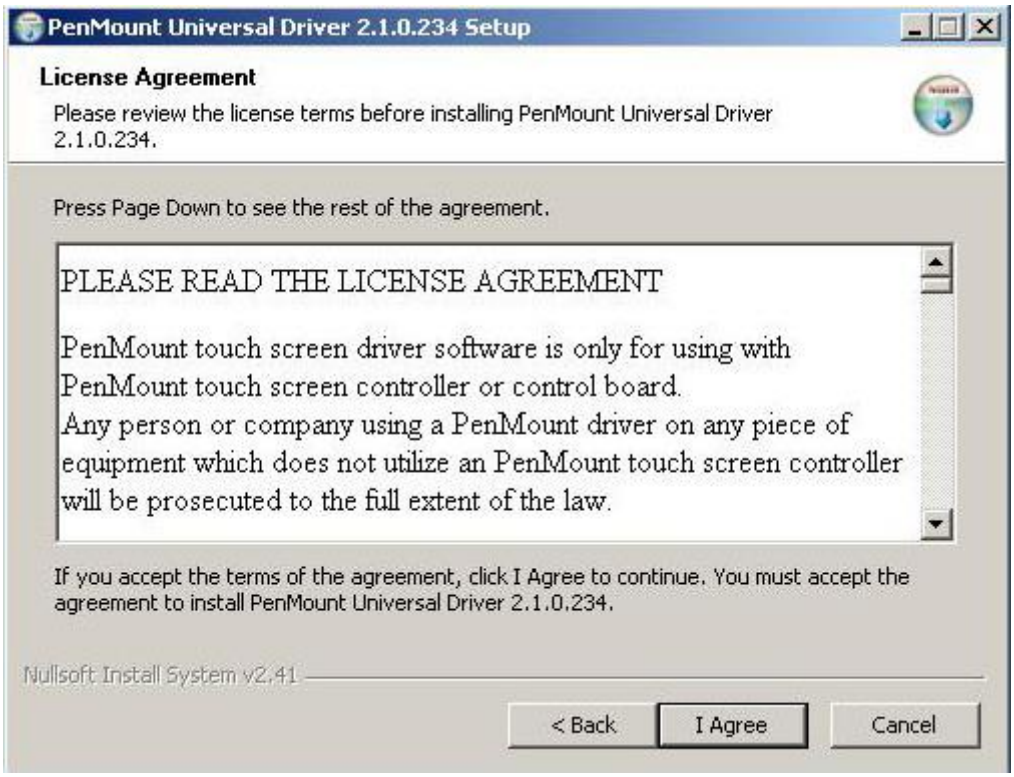
5.2.1 Installing Software

If you have an older version of the PenMount Windows 2000/XP driver installed in your system, please remove it first. Follow the steps below to install the PenMount DMC6000 Windows 2000/XP driver.

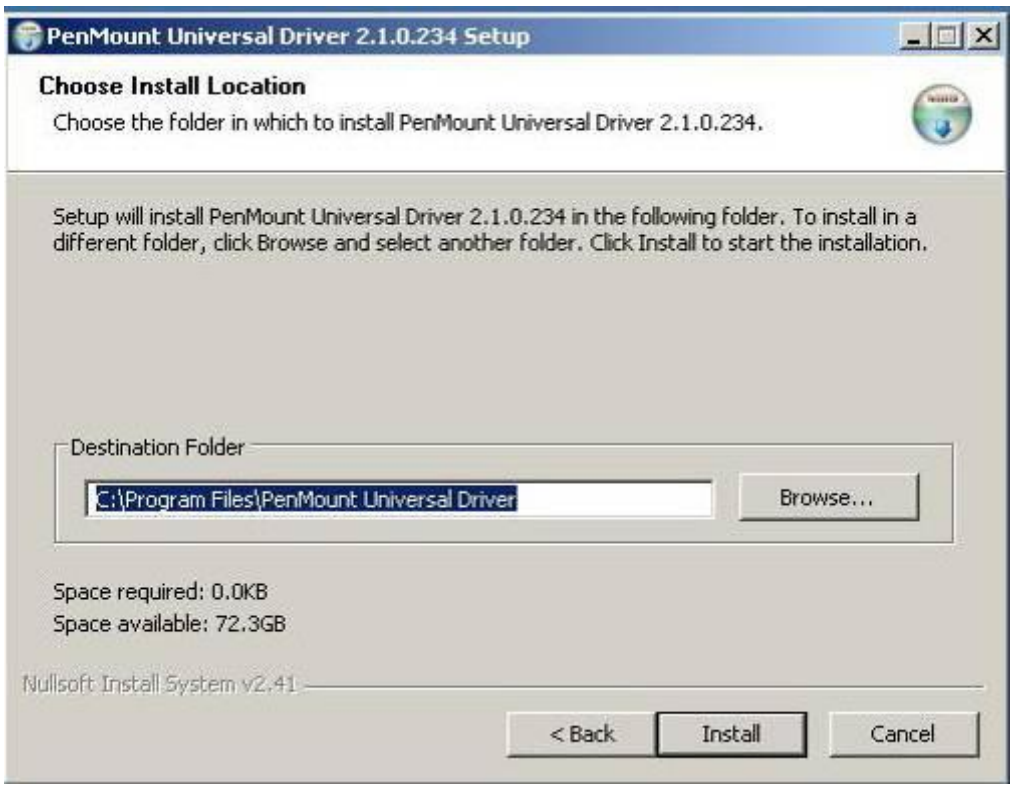
1. Please make sure your PenMount 6000 device had plugged in advance. If your device uses RS232 interface, please plugged in before the machine is turned on. When the system first detects the controller board, a screen appears that shows “Unknown Device”. Do not use this hardware wizard. Press Cancel.

2. Insert the Aplex product CD install **setup.exe.** the screen below would appear. Click touch panel driver

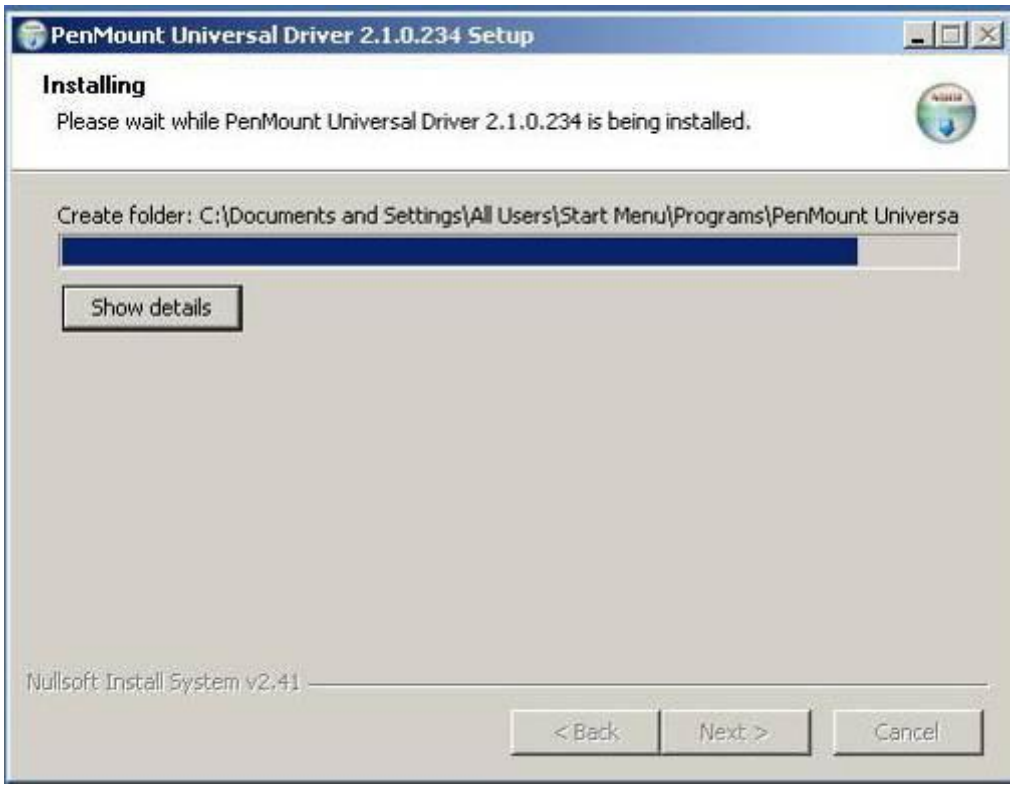
3. A License Agreement appears. Click "**I Agree…**" and "**Next**"

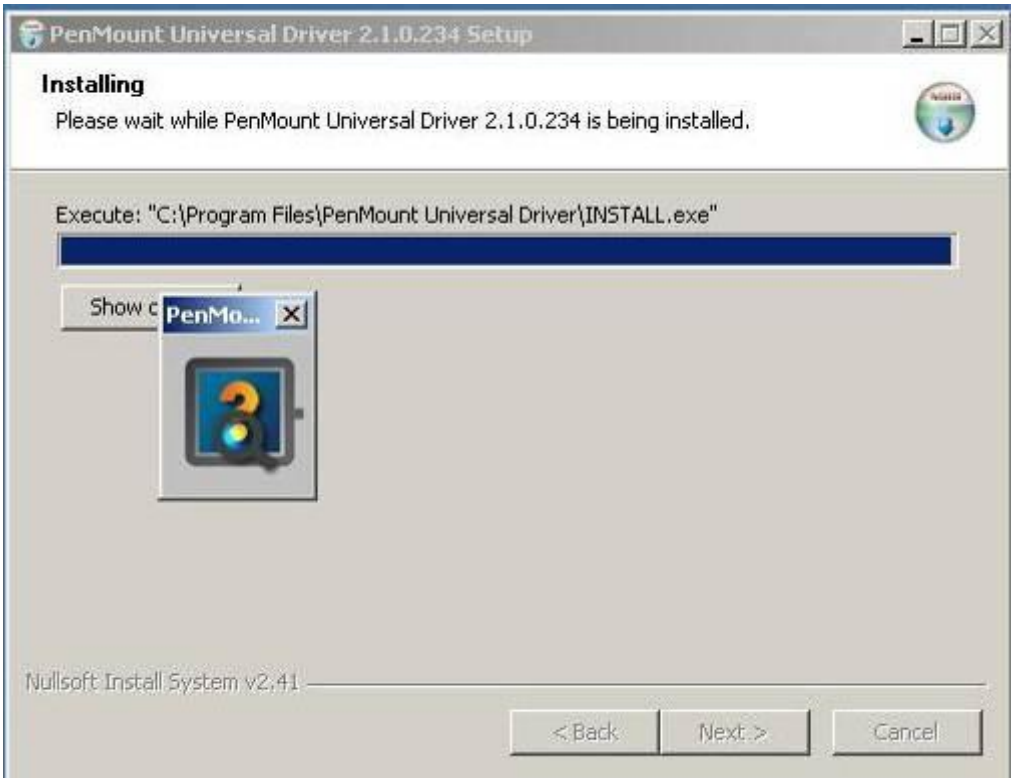


4. Ready to Install the Program. Click "**Install**"



5. Installing





6. The “Install Shield Wizard Completed” appears. Click “**Finish**”.

5.2.2 Software Functions

Upon rebooting, the computer automatically finds the new 6000 controller board. The touch screen is connected but not calibrated. Follow the procedures below to carry out calibration.

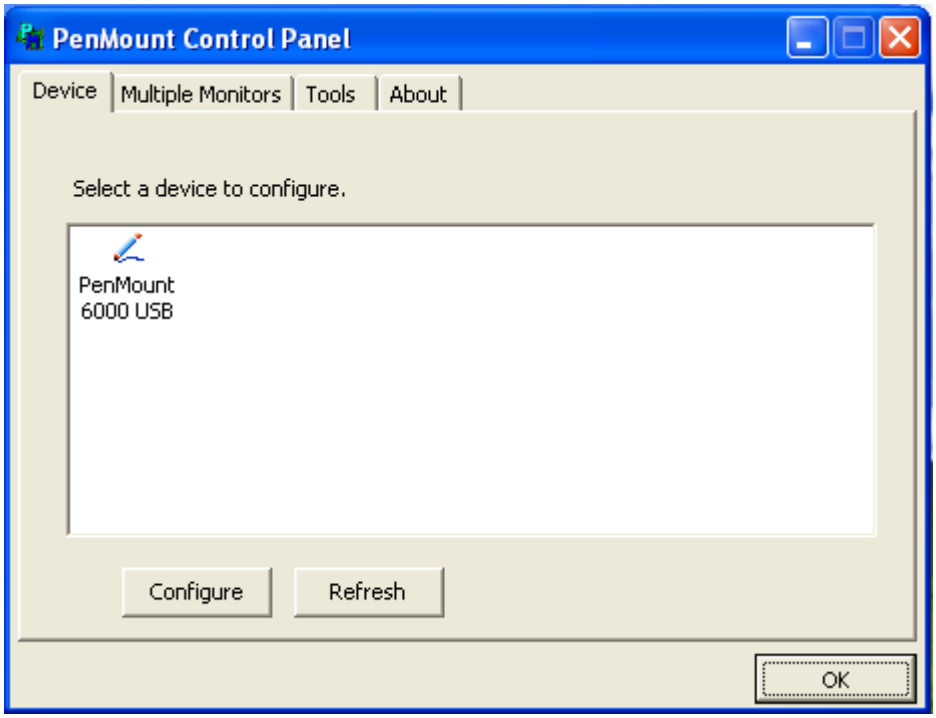
1. After installation, click the PenMount Monitor icon “PM” in the menu bar.
2. When the PenMount Control Panel appears, select a device to “Calibrate.”

PenMount Control Panel

The functions of the PenMount Control Panel are **Device, Multiple Monitors** ,**Tools** and **About**, which are explained in the following sections.

Device

In this window, you can find out that how many devices be detected on your system.



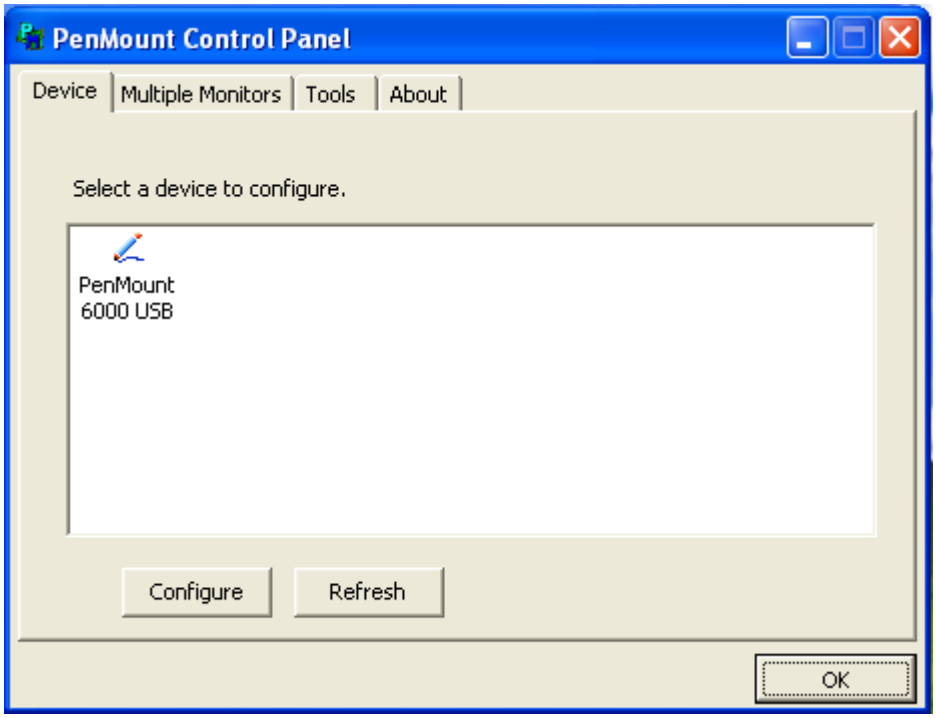
Calibrate

This function offers two ways to calibrate your touch screen. ‘Standard Calibration’ adjusts most touch screens. ‘Advanced Calibration’ adjusts aging touch screens.

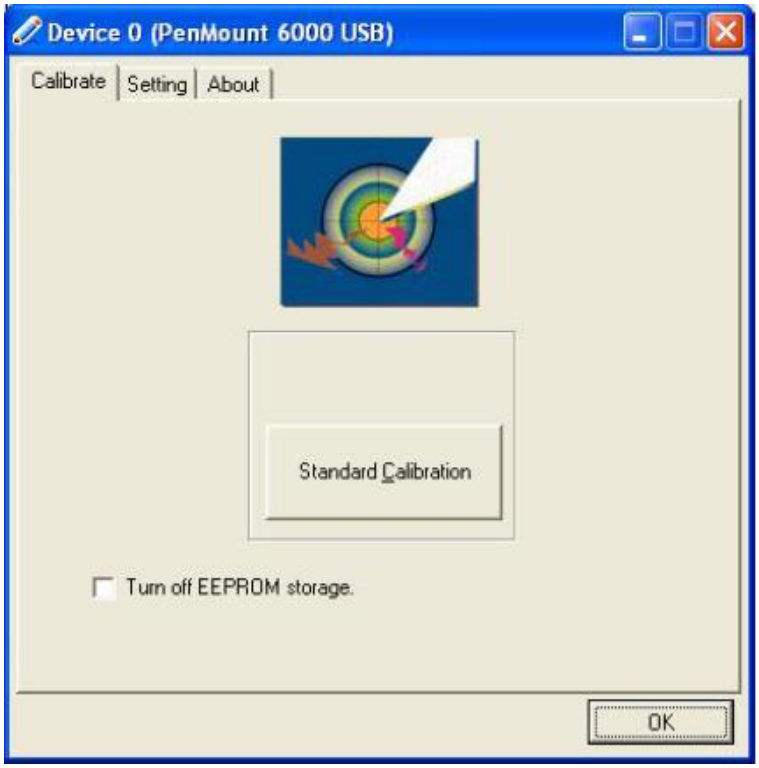
Standard Calibration	**Click this button and arrows appear pointing to red squares. Use your finger or stylus to touch the red squares in sequence. After the fifth red point calibration is complete. To skip, press ‘ESC’.**

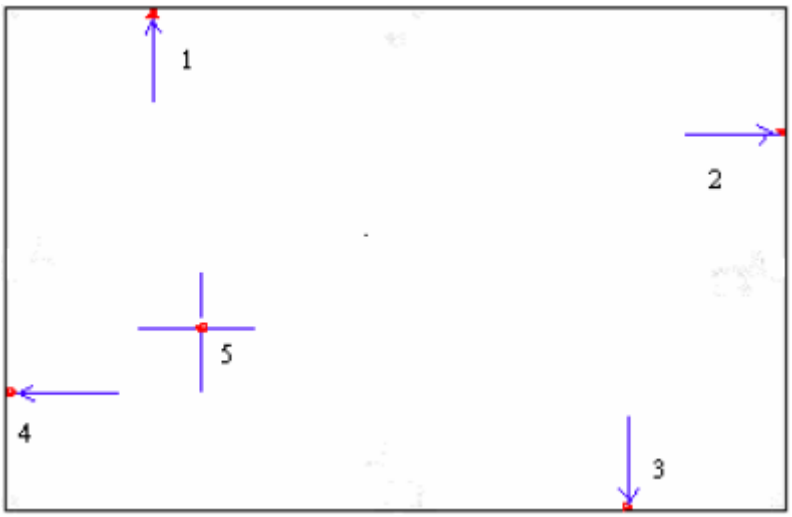
Advanced Calibration	**Advanced Calibration uses 4, 9, 16 or 25 points to effectively calibrate touch panel linearity of aged touch screens. Click this button and touch the red squares in sequence with a stylus. To skip, press ESC'.**
Command Calibration	**Command call calibration function. Use command mode call calibration function, this can uses Standard, 4, 9, 16 or 25 points to calibrate** E.g. Please run ms-dos prompt or command prompt c:\Program Files\PenMount Universa Driver\Dmcctrl.exe -calibration 0 (Standard Calibration) Dmcctrl.exe - calibration ($) 0= Standard Calibration 4=Advanced Calibration 4 9=Advanced Calibration 9 16=Advanced Calibration 16 25=Advanced Calibration 25

1. Please select a device then click "Configure". You can also double click the device too.



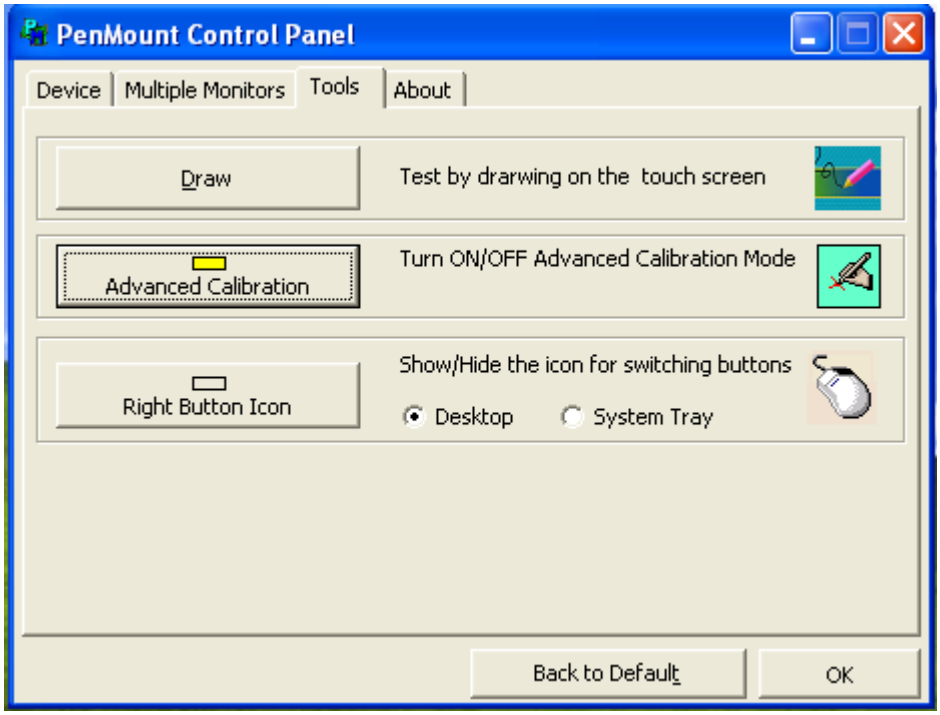
2.Click "Standard Calibration" to start calibration procedure



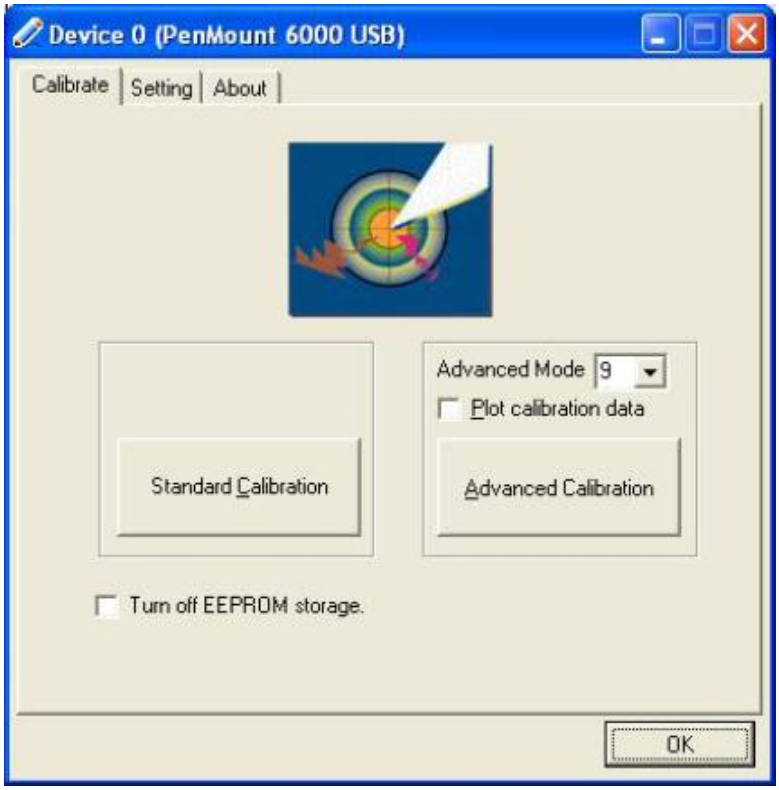


NOTE: The older the touch screen, the more Advanced Mode calibration points you need for an accurate calibration. Use a stylus during Advanced Calibration for greater accuracy. Please follow the step as below:

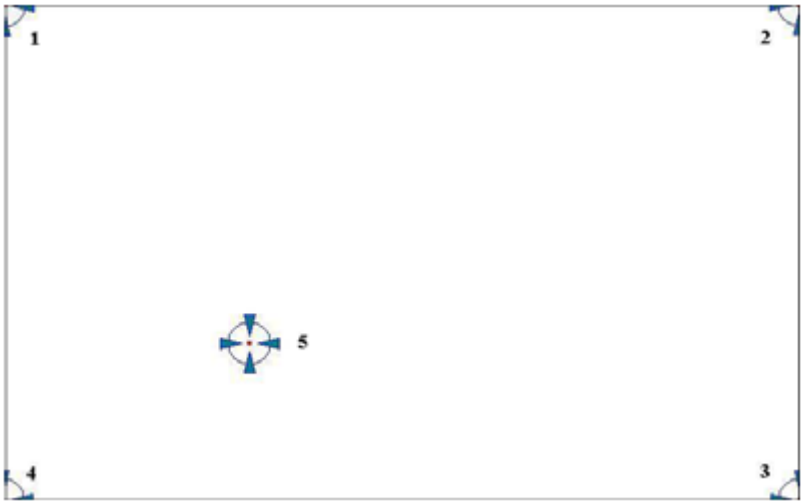
3.Come back to “PenMount Control Panel” and select “**Tools**” then Click “**Advanced Calibration**”.



Select “**Device**” to calibrate, then you can start to do “Advanced Calibration”.



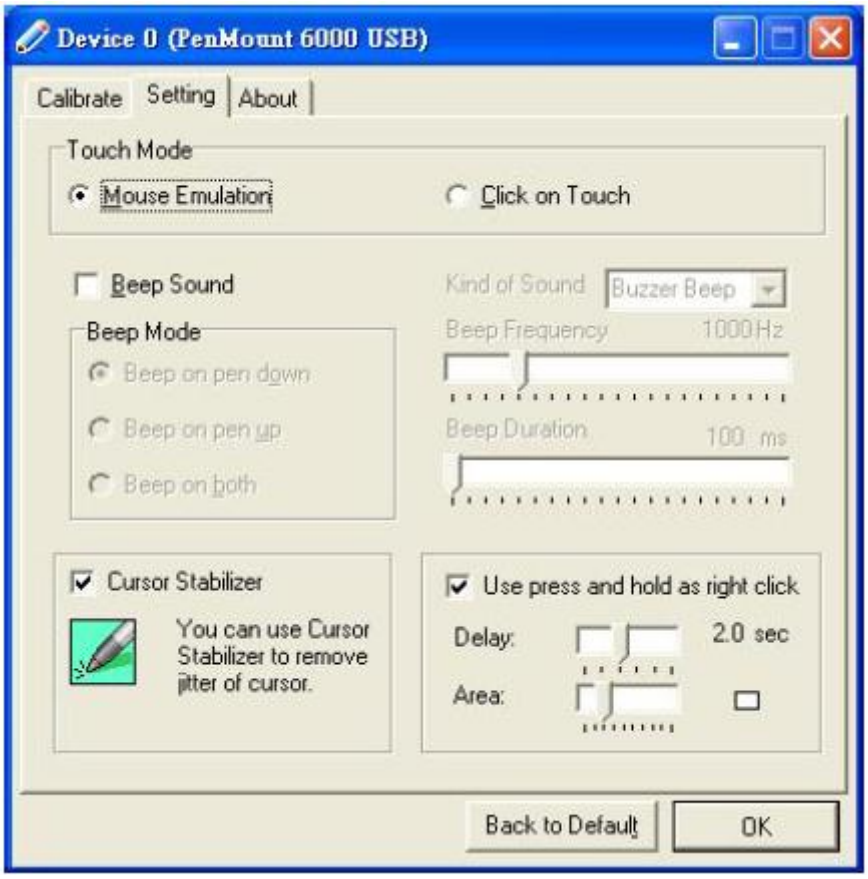
NOTE: Recommend to use a stylus during Advanced Calibration for greater accuracy.



Plot Calibration Data	**Check this function and a touch panel linearity comparison graph appears when you have finished Advanced Calibration. The blue lines show linearity before calibration and black lines show linearity after calibration.**
Turn off EEPROM storage	**The function disable for calibration data to write in Controller. The default setting is Enable**

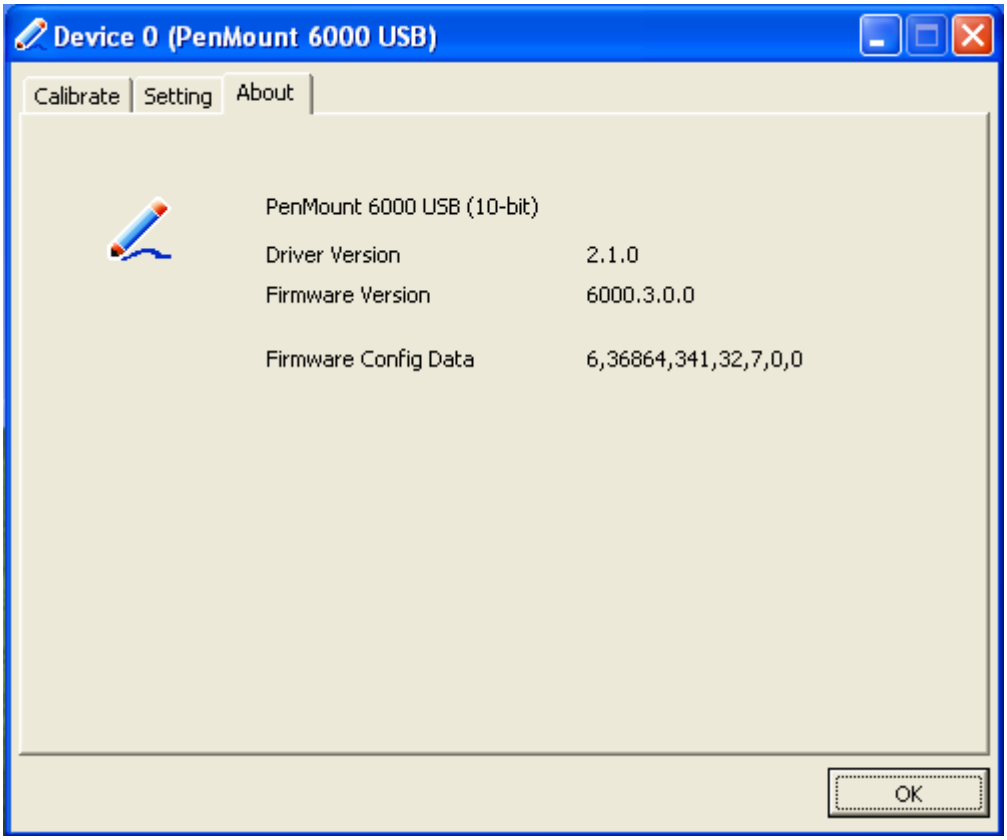
Setting

Touch Mode	**This mode enables and disables the mouse's ability to drag on-screen icons—useful for configuring POS terminals.** **Mouse Emulation – Select this mode and the mouse functions as normal and allows dragging of icons.** **Click on Touch – Select this mode and the mouse only provides a click function, and dragging is disabled**
Beep Sound	**Enable Beep Sound – turns beep function on and off** **Beep on Pen Down – beep occurs when pen comes down** **Beep on Pen Up – beep occurs when pen is lifted up** **Beep on both – beep occurs when comes down and lifted up** **Beep Frequency – modifies sound frequency** **Beep Duration – modifies sound duration**
Cursor Stabilizer	**Enable the function support to prevent cursor shake.**
Use press and hold as right click	**You can set the time out and area for you need**



About

This panel displays information about the PenMount controller and driver version.



Multiple Monitors

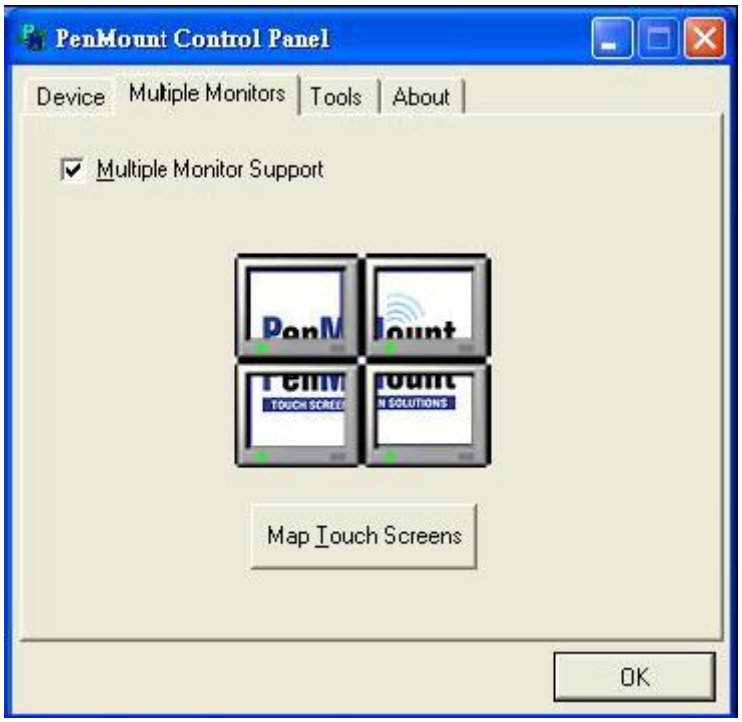
Multiple Monitors supports from two to six touch screen displays for one system. The PenMount drivers for Windows 2000/XP support Multiple Monitors. This function supports from two to six touch screen displays for one system. Each monitor requires its own PenMount touch screen control board, either installed inside the display or in a central unit. The PenMount control boards must be connected to the computer COM ports via the RS-232 interface. Driver installation procedures are the same as for a single monitor. Multiple Monitors supports the following modes:

Windows Extend Monitor Function
Matrox DualHead Multi-Screen Function
nVidia nView Function

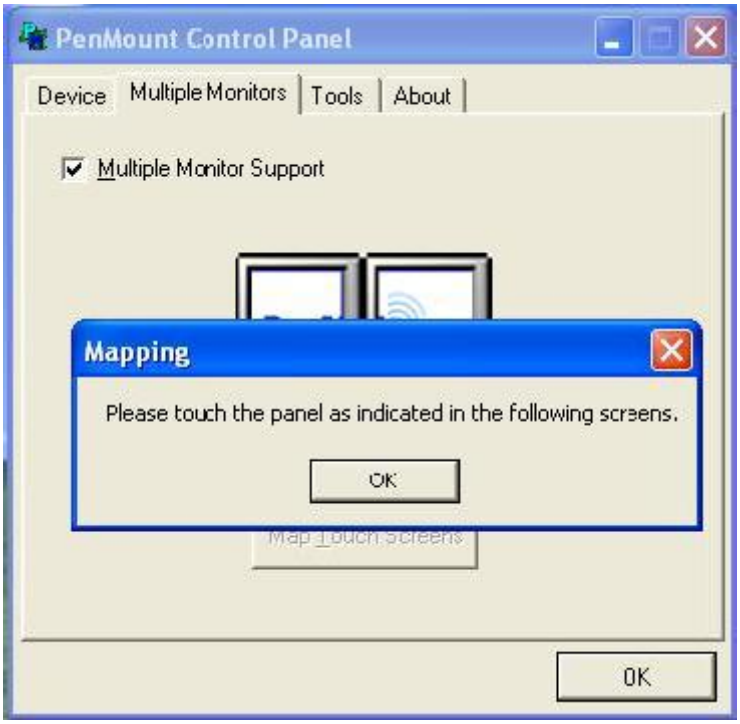
NOTE: The Multiple Monitors function is for use with multiple displays only. Do not use this function if you have only one touch screen display. Please note once you turn on this function the Rotating function is disabled.

Enable the multiple display function as follows:

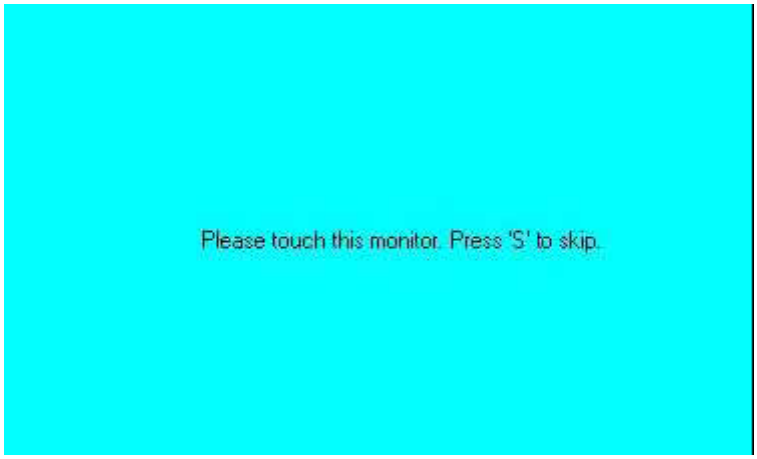
1. Check the "**Multiple Monitor Support"** box; then click "**Map Touch Screens"** to assign touch controllers to displays.



2. When the mapping screen message appears, click "**OK"**



3. Touch each screen as it displays **“Please touch this monitor. Press ‘S’ to skip”** Following this sequence and touching each screen is called **mapping the touch screens**.



4. After the setting procedure is finished, maybe you need to calibrate for each panel and controller

NOTES:

1. If you used a single VGA output for multiple monitors, please do not use the **Multiple Monitors** function. Just follow the regular procedure for calibration on each of your desktop monitors.

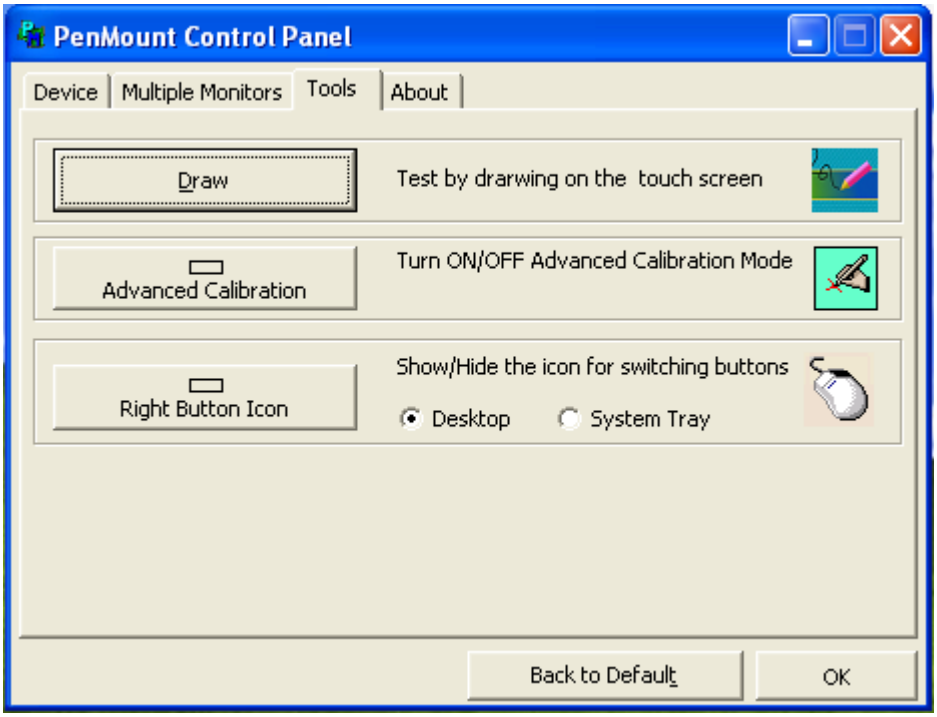
2. The Rotating function is disabled if you use the Multiple Monitors function.

3. If you change the resolution of display or screen address, you have to redo **Map Touch Screens** so the system understands where the displays are.

4. If you more monitor mapping one touch screen, **Please press ‘S’ to skip mapping step.**

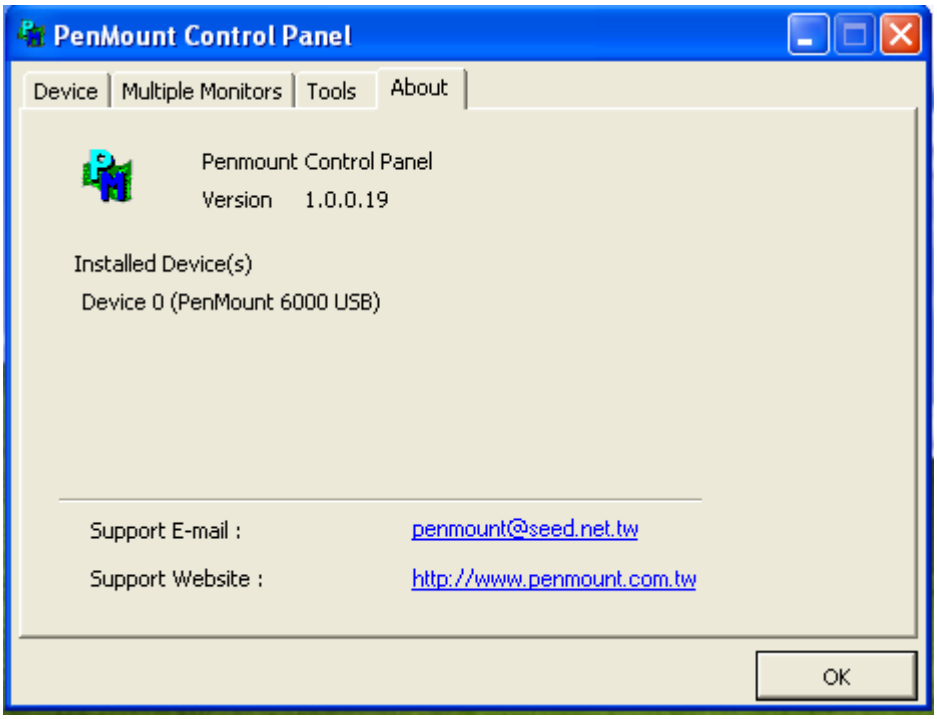
Tools

Draw	**Tests or demonstrates the PenMount touch screen operation.**
Advanced Calibration	**Enable Advanced Calibration function**
Right Button Icon	**Enable right button function. The icon can show on Desktop or System Tray (menu bar).**



About

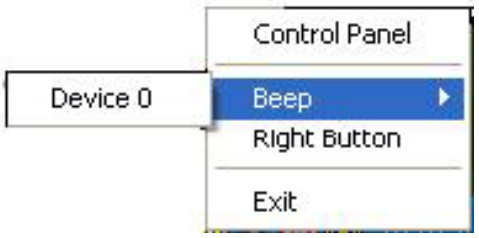
You can see how many devices of PenMount controller that are plugged to your system



PenMount Monitor Menu Icon

The PenMount monitor icon (PM) appears in the menu bar of Windows 2000/XP system when you turn on PenMount Monitor in PenMount Utilities.

PenMount Monitor has the following function



Control Panel	**Open Control Panel Windows**
Beep	**Setting Beep function for each device**
Right Button	**When you select this function, a mouse icon appears in the right-bottom of the screen. Click this icon to switch between Right and Left Button functions.**
Exit	**Exits the PenMount Monitor function.**

PenMount Rotating Functions

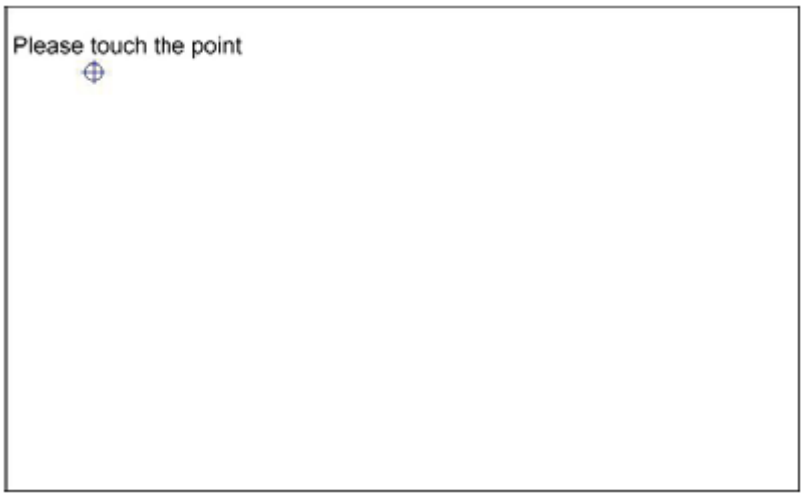
The PenMount driver for Windows 2000/XP supports several display rotating software packages.

Windows Me/2000/XP support display rotating software packages such as:

- Portrait's Pivot Screen Rotation Software
- ATI Display Driver Rotate Function
- nVidia Display Driver Rotate Function
- SMI Display Driver Rotate Function
- Intel 845G/GE Display Driver Rotate Function

Configuring the Rotate Function

1. Install the rotation software package.
2. Choose the rotate function (0°, 90°, 180°, 270°) in the 3rd party software. The calibration screen appears automatically. Touch this point and rotation is mapped.



NOTE: The Rotate function is disabled if you use Monitor Mapping