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AHM-6XX6A HMI
User Manual

Release Date	Revision
Nov 2011	V1.0

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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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Packing List

Accessories (as ticked) included in this package are:
☐ AC power cable ☐ Driver & manual CD disc ☐ Other._____(please specify)

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.

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Chapter 1 Getting Started

1.1 Specifications

Model No. / Specs	AHM-6086A	AHM-6126A	AHM-6156A	AHM-6176A	AHM-6196A
System					
Processor	Intel Atom D525 1.8GHz processor FSB 800MHz				
System Chipset	Intel ICH8M Chipset				
System Memory	1 x 204 Pin SO-DIMM DDR3 800GHz, up to 2GB SDRAM				
Storage	1 x 2 .5" SATA HDD Space 1 x CF Internal Slot **(AHM-6086A)** 1 x CF External Slot for option **(AHM-6126A/6156A/6176A/6196A)**				
External I/O Port	**AHM-6086A** 4 x USB ports 2 x LAN ports 1 x DB-15 VGA 1 x DB-9 RS-232 1 x DB-9 RS-422/485 1 x 2 Pin terminal block connector **AHM-6126A/6156A/6176A/6196A** 4 x USB ports 2 x LAN ports 1 x DB-15 VGA 2 x DB-9 RS-232 1 x DB-9 RS-422/485 1 x DC 3 Pin terminal block power input 1 x 8 Pin terminal block 2in/2out GPIO, power switch and VCC 1 x Audio Line-out 3.5mm jack				
Expansion Slots	None				
OS support	Windows CE 6.0, XP Pro, XP Embedded, Windows Embedded Standard 7				
LCD					
Display Type	8” TFT-LCD	12.1” TFT-LCD	15” TFT-LCD	17” TFT-LCD	19” TFT-LCD
Max. Resolution	800x600 **(AHM-6086A/6126A)** 1024x768 **(AHM-6156A)** 1280x1024 **(AHM-6176A/6196A)**				
Max. Color	262K **(AHM-6086A/6126A)** 16.2M **(AHM-6156A/6196A)** 16.7M **(AHM-6176A)**				

Luminance (cd/m2)	350 (cd/m2) **(AHM-6086A/6126A)** 400 (cd/m2) **(AHM-6156A)** 550 (cd/m2) **(AHM-6176A)** 450 (cd/m2) **(AHM-6196A)**
View Angle	H:130° / V:110° **(AHM-6086A)** H:140° / V:110° **(AHM-6126A)** H:160° / V:140° **(AHM-6156A)** H:170° / V:160° **(AHM-6176A/6196A)**
Backlight Lifetime	50,000 hrs
Touch Screen	
Type	Overlay Resistive Touch **(AHM-6086A/6126A)** Resistive Touch **(AHM-6156A/6176A/6196A)**
Light Transmission	80%
Power Supply	
Power Input	DC 12V / DC 11~32V (option)
Mechanical	
Construction	Plastic molding front panel and metal housing **(AHM-6086A/6126A)** Heavy-duty steel front panel and housing **(AHM-6156A/6176A/6196A)**
IP Rating	Front Panel IP65
Mounting	Panel/VESA 75x75 Mount **(AHM-6086A/6126A/6156A/6176A)** Panel/VESA 100x100 Mount **(AHM-6196A)**
Dimensions (WxHxD)	231 (W) x 176 (H) x 76.3 (D) mm **(AHM-6086A)** 317 (W) x 243 (H) x 76.6 (D) mm **(AHM-6126A)** 410 (W) x 310 (H) x 70.6 (D) mm **(AHM-6156A)** 439 (W) x 348 (H) x 71.1 (D) mm **(AHM-6176A)** 484 (W) x 400 (H) x 74.5 (D) mm **(AHM-6196A)**
Environmental	
Operating Temperature	0~50゜C
Storage Temperature	-30~60゜C
Storage Humidity	10~90% @40゜C non-condensing
Certificate	CE/FCC Class A

1.2 Dimensions

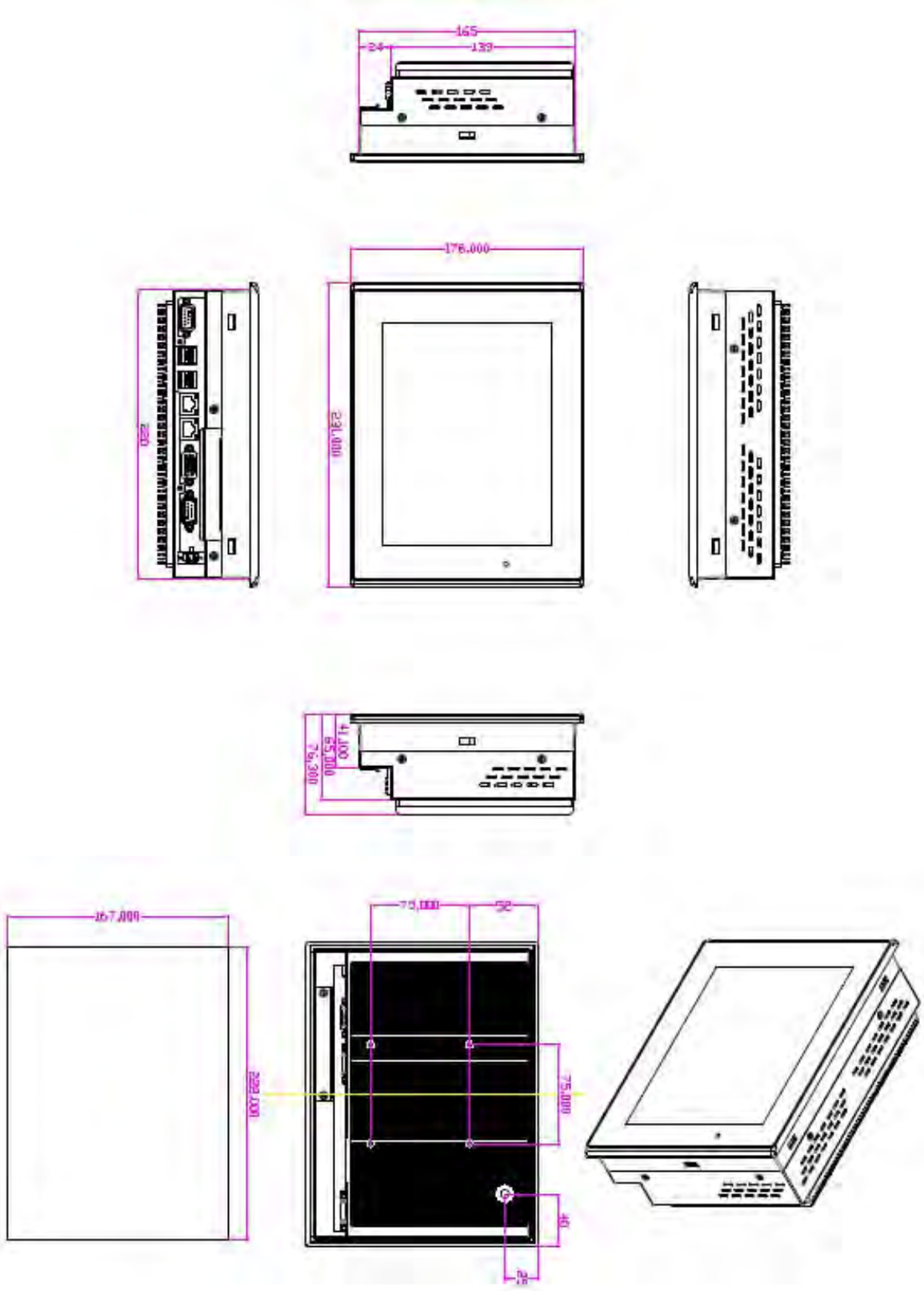


Figure 1.1: Dimensions of the AHM-6086A

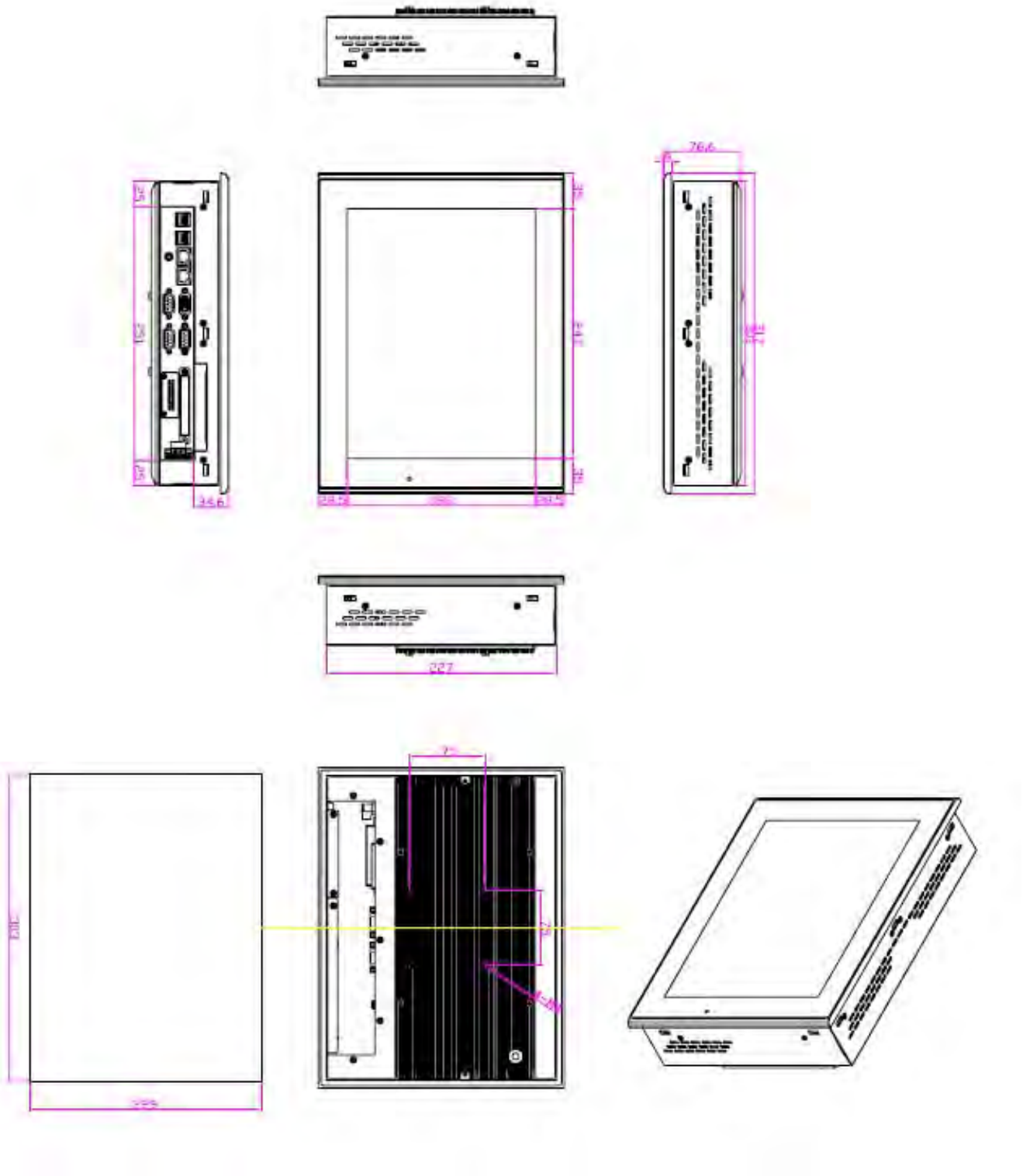


Figure 1.2: Dimensions of the AHM-6126A

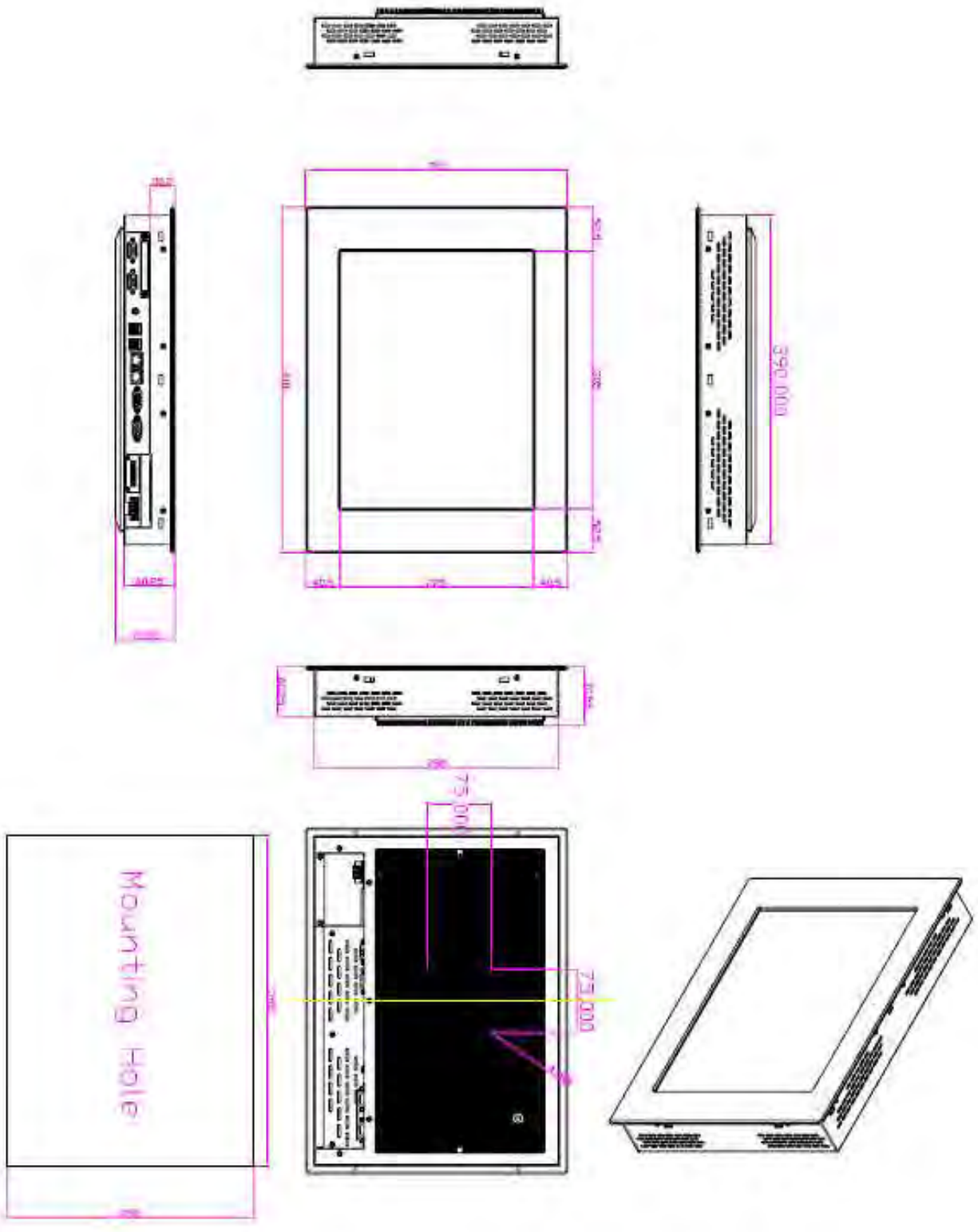


Figure 1.3: Dimensions of the AHM-6156A

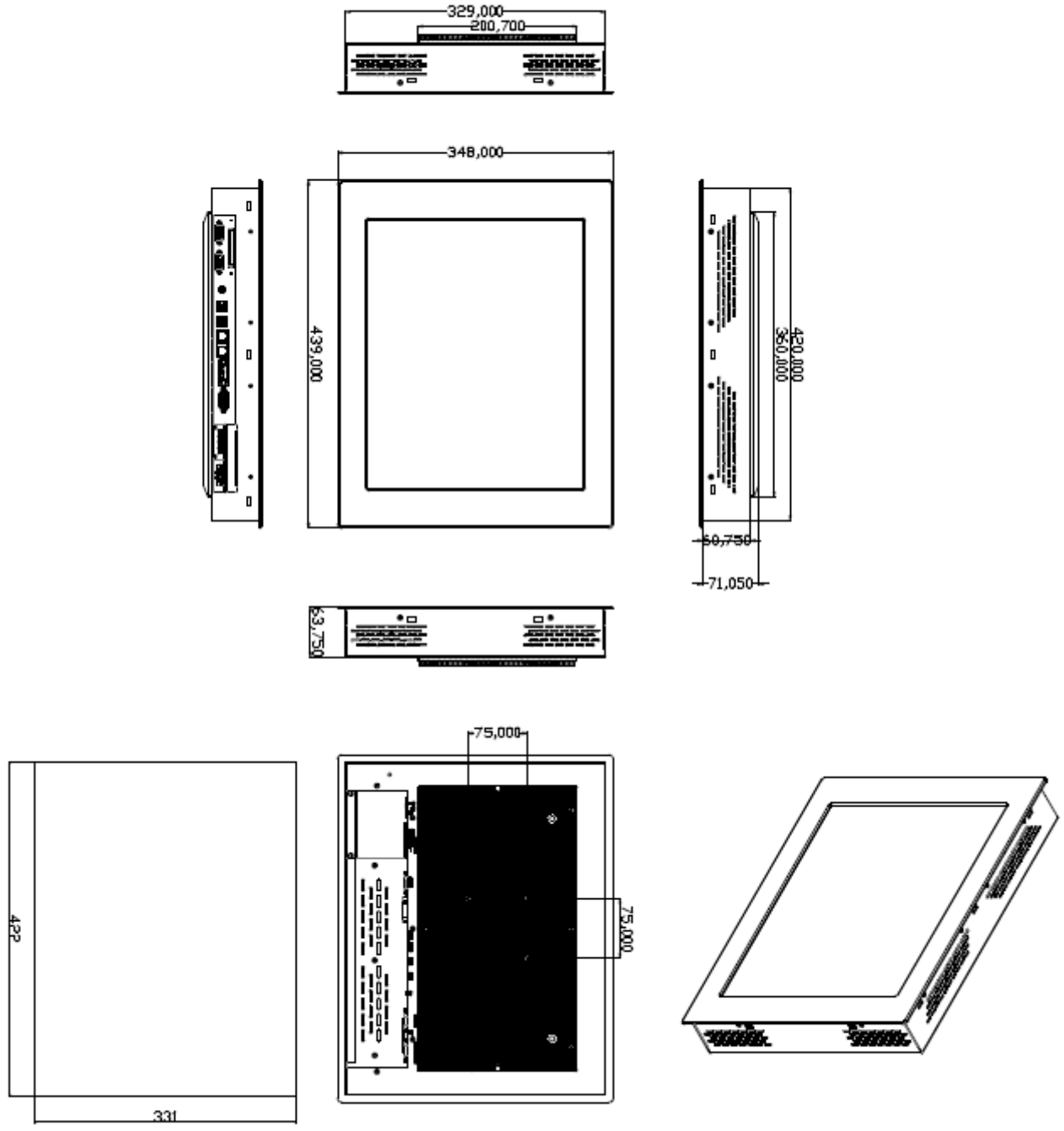


Figure 1.4: Dimensions of the AHM-6176A

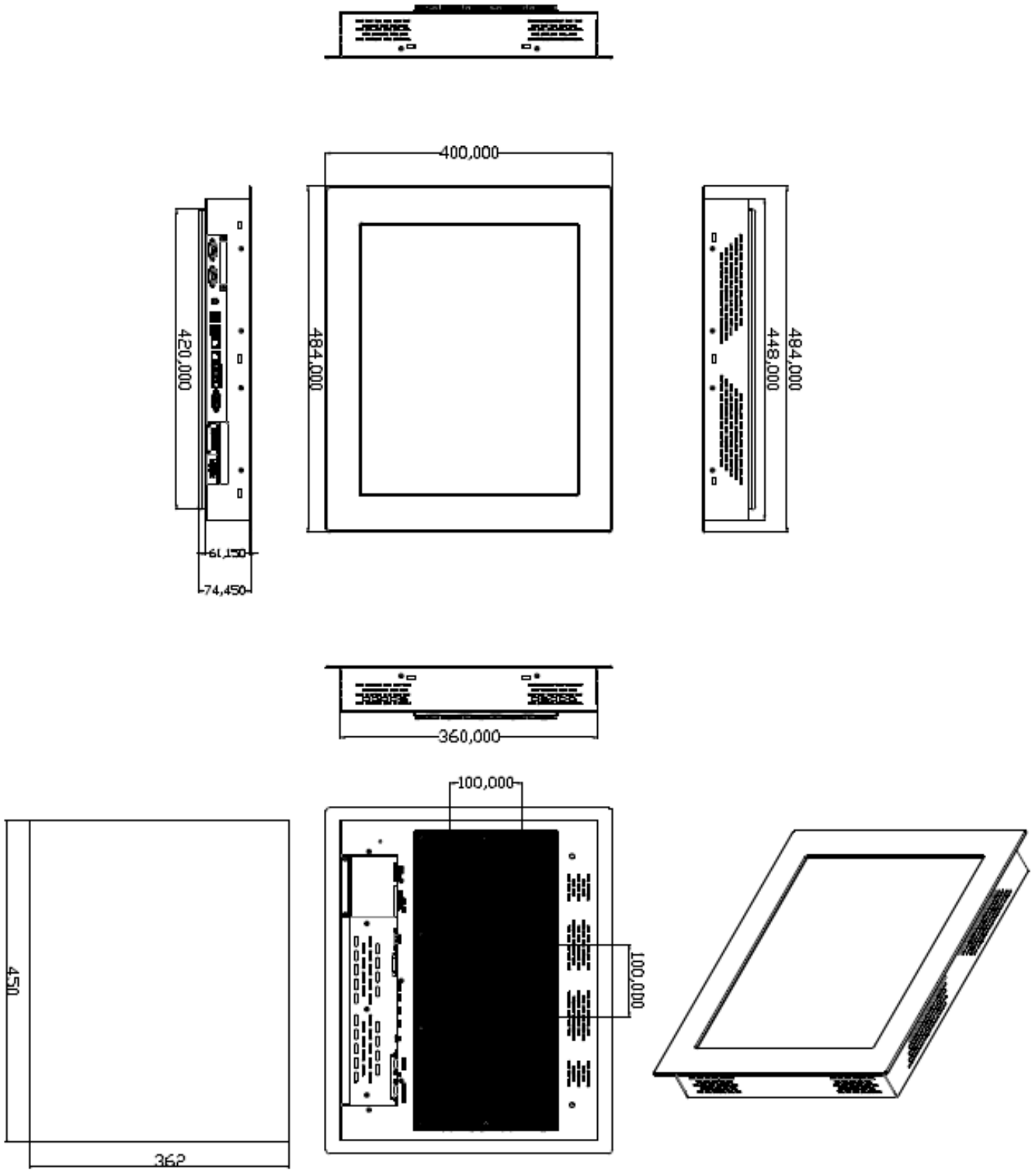


Figure 1.5: Dimensions of the AHM-6196A

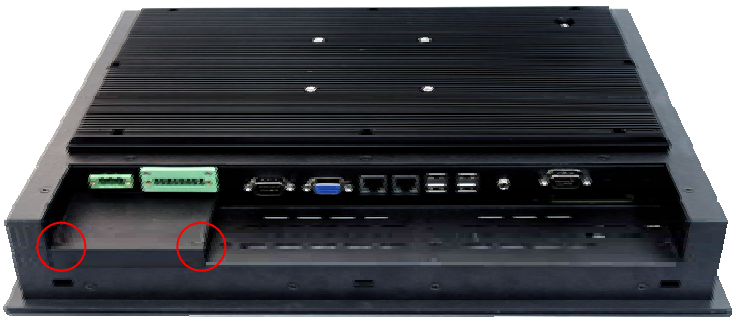
1.3 Brief Description of the AHM-6XX6A

The AHM-6XX6A is a power-optimized and delivers robust performance-per-watt for embedded HMI. The powered by an Atom D525 1.8 GHz processor and offer full sizes:8/12.1/15/17/19-inch. It comes with a compact flash slot, 2.5-inch hard disk drive, DDR3 memory, audio jack (for AHM-6126A~6196A), 2 Ethernet, DC input, and 4 USB ports. The unit supports Windows CE6.0, XP Pro, XP Embedded and Windows Embedded Standard 7. The fanless touch panel computer is ideal for use as Web Browser, Terminal and HMI at all levels of automation control.

Figure 1.6: Front and Rear View of AHM-6176A

Figure 1.7: Rear View of AHM-6126A and AHM-6156A

1.4 Installation of HDD

Step 1 There are 2 screws to deal with when enclosing or removing the HDD bracket as shown in the picture AHM-6156A.	
Step 2 Loosen screw and draw the HDD bracket out as shown in the picture AHM-6156A.	
Step 3 Push into the HDD bracket as shown in the picture AHM-6156A.	
Step 4 Tighten the 2 screws as shown in the picture. That's how it should look after it has been installed.	

Chapter 2 Hardware Installation

2.1 Mainboard Specifications

Figure 2.1: Mainboard Overview

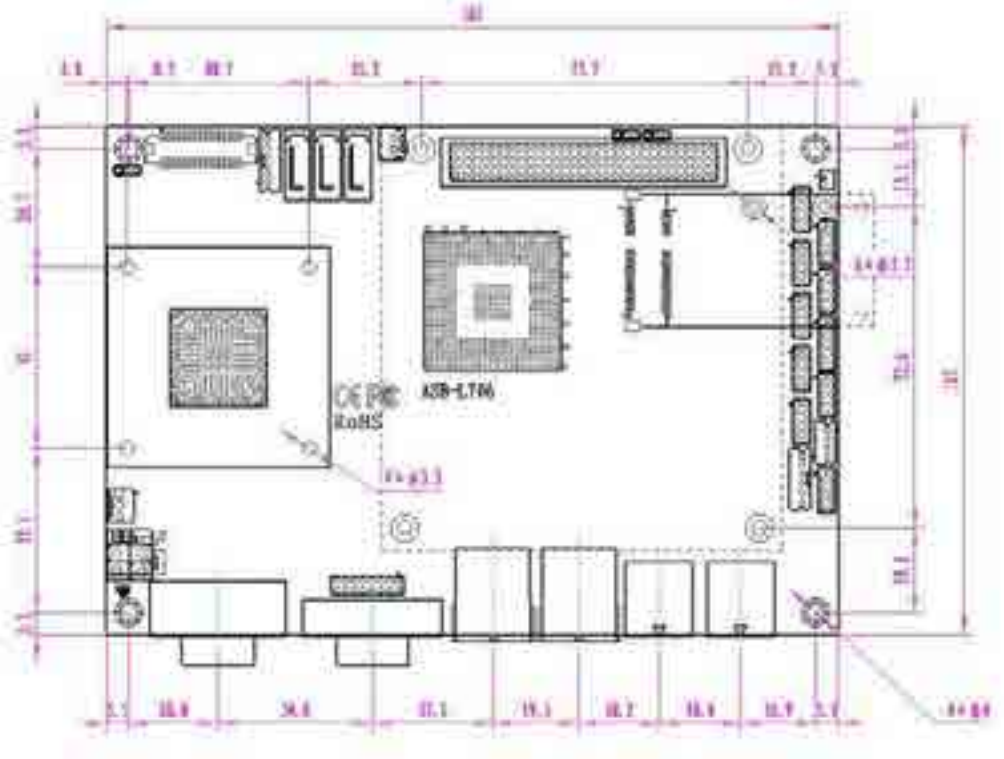


Figure 2.2: Mainboard Dimensions

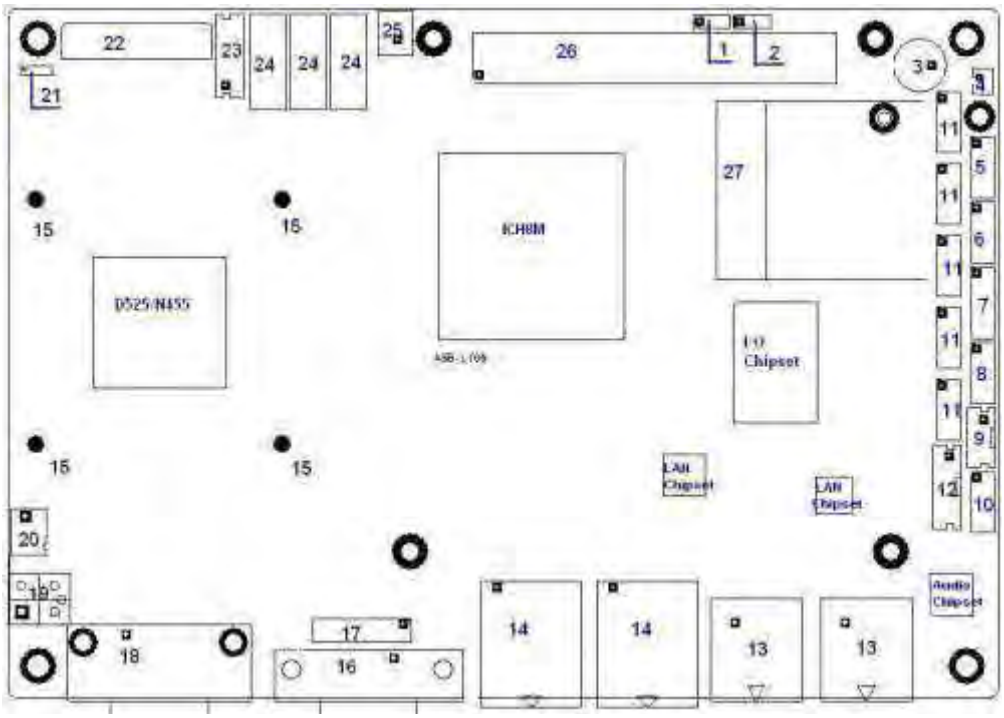


Figure 2.3: Jumpers and Connectors Location-TOP

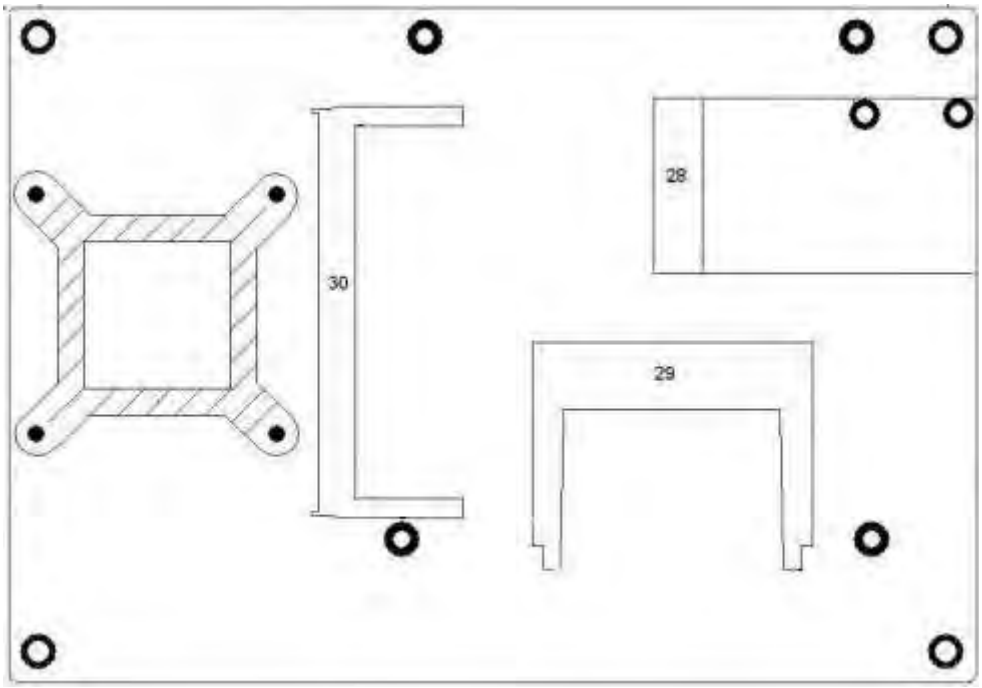


Figure 2.4: Jumpers and Connectors Location- Bottom

Mainboard Specifications	
Board Size	165 x 115mm
CPU Support	Intel Atom D525 /1.8GHz (onboard)
Chipset	Intel ICH8M
Memory Support	1 x 204 Pin SO-DIMM, up to 2GB DDR3 800MHz FSB
Super I/O	Winbond W83627UHG
BIOS	AMIBIOS
Storage	3 x SATA Connector 1 x Compact Flash II Slot
Network	2 x RJ-45 1000Mbps LAN Intel 82574L
USB	4 x USB 2.0 stack port for external 2 x USB 2.0 Pin header for internal
Serial	1 x RS232 port, DB9 connector for external (COM1), pin 9 w/5V/12V/Ring select 1 x RS232/422/485 select header for internal (COM3), default RS232 4 x RS232 header for internal (COM2,COM4,COM5,COM6)
Digital I/O	8-bit digital I/O by Pin header 4-bit digital Input 4-bit digital Output
Battery	Support CR2477 Li battery by 2-pin header
Audio	Support Audio via Realtek ALC662 HD audio decoder Support Line-in, Line-out, MIC by 2x5-pin header
Keyboard /Mouse	1x PS2 keyboard/mouse by 1x6 box pin header
Expansion Bus	1x PC 104+ connector (PCI master 4, jumper for +3.3V & 5V select) 2x mini-PCI-express slot (1x full size, 1x half-size)
Power Management	DC12V input 1 x 2-pin power input connector
Front I/O	by 2x5-pin header Power on/off switch Reset switch Power LED status

	HDD LED status Buzzer
Watchdog Timer	Software programmable 1 – 255 second by Super I/O
External I/O port	1 x COM Port (COM1) 4 x USB 2.0 Ports (stack) 2 x RJ45 GbE Port (10/100/1000Mbps) 1 x VGA Port 1 x VGA 2x8 Pin Header
Temperature	Operating: 0℃ – 60℃ Storage: -20℃ – 70℃
Humidity	5% - 95%, non-condensing, operating
Power Consumption	12V /1.6A (Intel D525 processor with 2GB DDR3 DRAM) 12V /1.3A (Intel N455 processor with 2GB DDR3 DRAM)
EMI/EMS	Meet CE/FCC class A

2.2 Jumpers Setting and Connectors

1. **JCLR_CMOS:** (2.0mm Pitch 1x3 Pin Header)CMOS clear jumper. CMOS clear operation will permanently reset old BIOS settings to factory defaults.

JCLR_CMOS	CMOS
CLOSE 1-2	NORMAL (default)
CLOSE 2-3	Clear CMOS

Procedures of CMOS clear:

5.4.1.1 Turn off the system and unplug the power cord from the power outlet.

5.4.1.2 To clear the CMOS settings, use the jumper cap to close pins 2 and 3 for about 3 seconds then reinstall the jumper clip back to pins 1 and 2.

5.4.1.3 Power on the system again.

5.4.1.4 When entering the POST screen, press the <F1> or <DEL> key to enter CMOS Setup Utility to load optimal defaults.

5.4.1.5 After the above operations, save changes and exit BIOS Setup.

2. **JVCCIO:** (2.0mm Pitch 1x3 Pin Header) PC104+ port voltage selection jumper.select voltage for PCI-104 Plus device.

JVCCIO	PC104+ VCCIO Voltage
CLOSE 1-2	+3.3V (default)
CLOSE 2-3	+5V

3. **BZ:** onboard buzzer.

4. **BAT:** (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

5. **F_PANEL:** (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	PWRBTN
RESET	7	8	Ground
BUZZER+	9	10	BUZZER-

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 disconnected under normal condition. You may short them temporarily to realize system reset.

Pin9-10: **BUZZER**, They are used to connect an external buzzer.

Note:
When connecting LEDs and buzzer, 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.

6. **USB3:** (2.0mm Pitch 2x5 Pin Header) ,Front USB connector, it provides two USB ports via a dedicated USB cable, speed up to 480Mb/s.

Signal Name	Pin#	Pin#	Signal Name
+5V	1	2	+5V
USB_P6_DN	3	4	USB_P7_DN
USB_P6_DP	5	6	USB_P7_DP
Ground	7	8	Ground

NC	9	10	Ground

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

7. JCOM: (2.0mm Pitch 2x6 Pin Header) COM1 and COM3 setting jumper, pin 1~6 are used to select signal out of pin 9 of COM1 port; pin 7~12 are used to select output type for COM3 port (RS232 Type or RS422 Type or RS485 Type)

JCOM Pin#	Function
CLOSE 1-2	**COM1 Pin9=RI (default)**
CLOSE 3-4	COM1 Pin9=+5V (option)
CLOSE 5-6	COM1 Pin9=+12V (option)
CLOSE 7-9	**COM3 FOR RS232 FROM COM3 (default)**
CLOSE 8-10	COM3 FOR RS485 FROM COM33 (option)
CLOSE 10-12	COM3 FOR RS422 FROM COM33 (option)

Note:
Since COM3 and COM33 use the same address, they cannot work at the same time.

8. GPIO: (2.0mm Pitch 2x5 Pin Header),General-purpose input/output port, it provides a group of self-programming interfaces to customers for flexible use.

Signal Name	Pin#	Pin#	Signal Name
GPIO20	1	2	GPIO60
GPIO21	3	4	GPIO61
GPIO22	5	6	GPIO62
GPIO23	7	8	GPIO63
Ground	9	10	+5V

9. COM33: (2.0mm Pitch 1x4 box Pin Header),it provides selectable RS422/RS485 serial signal output.

RS422 Type (option)		RS485 Type (option)	
Signal Name	Pin#	Pin#	Signal Name
422RXD-	1	1	NC
422RXD+	2	2	NC
422TXD-	3	3	485B-
422TXD+	4	4	485A+

Note:
Use COM3 RS232/RS485 Function, please setting JCOM Jumpers and BIOS CMOS Setup

Path:
BIOS Setup Utility \ Advanced Setting \ SuperIO Configuration \ Serial Port3 Type:
[RS232 Type]
[RS485 Type]

10. F_AUDIO: (2.0mm Pitch 2x5 Pin Header), 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.

Signal Name	Pin#	Pin#	Signal Name
FRONT-OUT-L	1	2	LINEIN_R
AUD_AGND	3	4	AUD_AGND
FRONT-OUT-R	5	6	LINEIN_L
AUD_AGND	7	8	AUD_AGND
FRONT-MIC1	9	10	FRONT-MIC2

11. **COM2-COM6:** (2.0mm Pitch 2x5 Pin Header),COM2 COM3 COM4 COM5 COM6 Port, up to 5 standard RS232 ports are provided. They can be used directly via COM cable connection.

COM2,COM3,COM4,COM5 Signal Name:

Signal Name	Pin#	Pin#	Signal Name
DCD	1	2	RXD
TXD	3	4	DTR
Ground	5	6	DSR
RTS	7	8	CTS
RI	9	10	NC

COM6 Signal Name:

Signal Name	Pin#	Pin#	Signal Name
DCD	1	2	RXD
TXD	3	4	DTR
Ground	5	6	DSR
RTS	7	8	CTS
RI	9	**10**	**JCOM6 Setting:** **(NC: default)** Pin1-2 : 5V (option) Pin2-3 :12V (option)

Note

COM3 port is controlled by pins No 7~10 of JCOM. For details, please refer to description of JCOM and COM33 BIOS Setup.

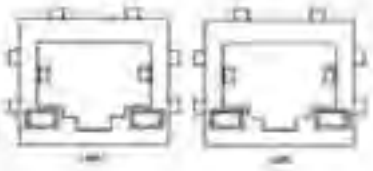
12. **KB/MS:** (2.0mm Pitch 1x6 box Pin Header). PS/2 keyboard and mouse port, the port can be

connected to PS/2 keyboard or mouse via a dedicated cable for direct used.

Pin#	Signal Name
1	KBDATA
2	MSDATA
3	Ground
4	+5V
5	KBCLK
6	MSCLK

13. USB1/2: (Double stack USB type A), Rear USB connector, it provides up to 4 USB2.0 ports speed up to 480Mb/s.

14. LAN1/2: (RJ45 Connector), Rear LAN port,2 standard 10/100/1000M RJ-45 Ethernet ports are provided. Used Intel 82567LM 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.



15. **CPU SCREW HOLES:** Four screw holes for fixed CPU Cooler assemble.

16. **VGA:** (CRT Connector DB15),Video Graphic Array Port, provide high-quality video output **they can not work at the same time for VGA and VGA-PH.**

17. **VGA-PH:** (CRT 2.0mm Pitch 2x8 Pin Header), Video Graphic Array Port, Provide 2x8 Pin cable to VGA Port, **they can not work at the same time for VGA and VGA-PH.**

Signal Name	Pin#	Pin#	Signal Name
CRT_RED	1	2	Ground
CRT_GREEN	3	4	Ground
CRT_BLUE	5	6	NC
CRT_R_HSYNC	7	8	CRT_PU_DDC_DAT
CRT_R_VSYNC	9	10	CRT_PU_DDC_CLK
NC	11	12	NC
+12V	13	14	Ground
+12V	15	16	Ground

18. **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.1~6 of **JCOM**,select output Signal RI or 5V or 12v, For details, please refer to description of JCOM.

19. **AT12V:** (5.0mm 1x2 Pin Connector),DC12V System power input connector.

Pin#	Signal Name
1	+12V
2	Ground

Note:

Make sure that the voltage of power supply is DC(12±5%)V before power on, or it may cause boot up failure and even system damage.

20. FAN: (2.54mm Pitch 1x3 Pin Header) Fan connector, cooling fans can be connected directly for use. You may set the rotation condition of cooling fan in menu of BIOS CMOS Setup.

Pin#	Signal Name
1	Ground
2	VCC
3	Rotation detection

Note

Output power of cooling fan must be limited under 5W.

21. JBGT_CTRL: (2.0mm Pitch 1x3 Pin Header). Backlight Control jumper setting for LVDS I

Signal Name	BKL For LVDS
PWM	Close1-2
LEVEL	Close2-3

Note

Please check first your LVDS panel backlight control by LEVEL or PWM?

Panel backlight control by Level 5V.

22. LVDS: For **18 bit LVDS** output connector, fully supported by Intel Atom D525 chipset, the interface features single channel 18-bit output. Model name of the interface connector is Hirose DF13-30DP-1.25V.

Signal Name	Pin#	Pin#	Signal Name
LVDS1_VDD5	1	2	LVDS1_VDD5
Ground	3	4	Ground
LVDS1_VDD33	5	6	LVDS1_VDD33
LADATAN0	7	8	NC
LADATAP0	9	10	NC
LADATAN1	11	12	NC
LADATAP1	13	14	NC
LADATAN2	15	16	NC
LADATAP2	17	18	NC
LACLKN	19	20	NC
LACLKP	21	22	NC
LDDC_CLK	23	24	NC
LBKLT_EN	25	26	BKLT_CTRL
Ground	27	28	Ground
+V12S	29	30	+V12S

23. **BKL:** (2.0mm Pitch 1x5 box Pin Header), Backlight control connector for LVDS1.

Pin#	Signal Name
1	+DC12V
2	+DC12V
3	Ground
4	Ground
5	BKLT_EN
6	BKLT_CTRL

24. **SATA1/2/3:** (SATA 7P),SATA1,SATA2,SATA3 SATA Connectors,Three SATA connectors are provided, with transfer speed up to 3.0Gb/s.

25. **CN1:** (2.5mm Pitch 1x2 box Pin Header),an onboard 5V output connector is reserved to provide power for IDE/SATA devices.

Pin#	Signal Name
1	+DC5V
2	Ground

Note

Output current of the connector must not be above 1A

26. **PC104+:** (4x30 Pin), PC104 plus connector, it conforms to standard PC104+ specification.

27. **MPCIE2:** (30mmx30mm 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.

28. **MPCIE:** (50.95x30mm socket 52Pin),mini PCIE socket, it is located at the bottom, it supports mini PCI-E devices with USB2.0, SMBUS and PCI-E signal.

29. **CF:** 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.**

30. **DDR3:** (SO DIMM 204Pin socket), DDRIII memory socket, the socket is located at the bottom of the board and supports 204Pin 1.5V DDRIII 800MHz FSB SO-DIMM memory module up to 2G.

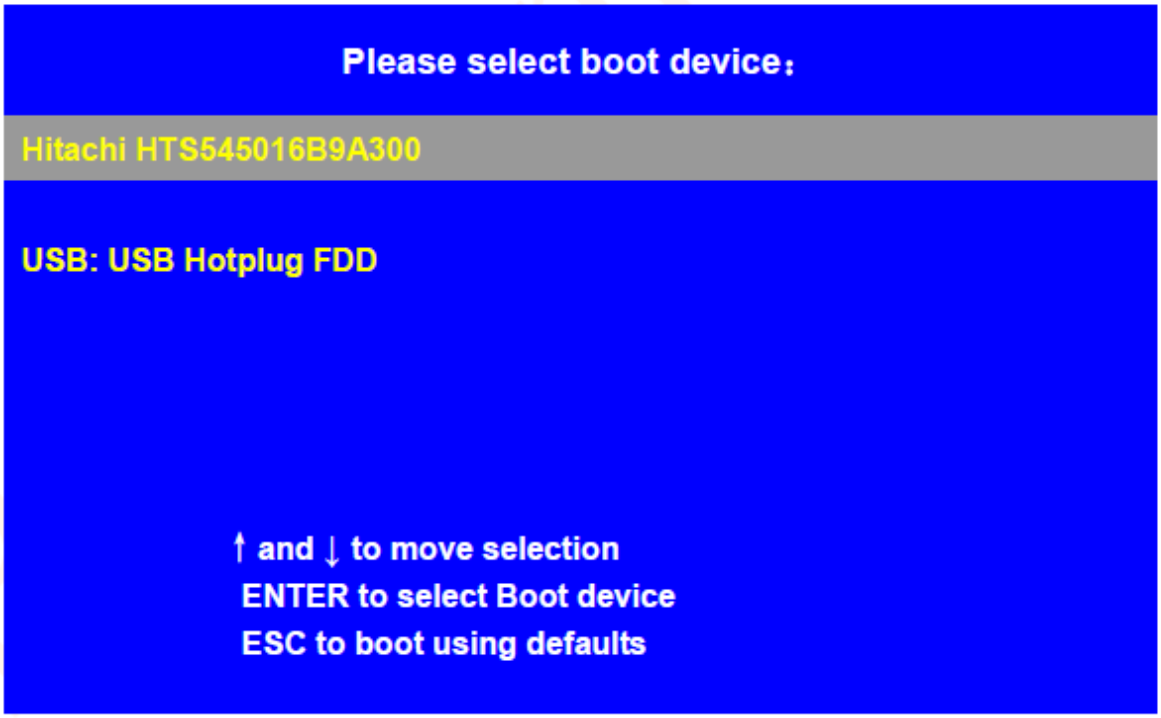
Chapter 3 BIOS Setup

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 F2 key to continue or F1 key to enter CMOS Setup.

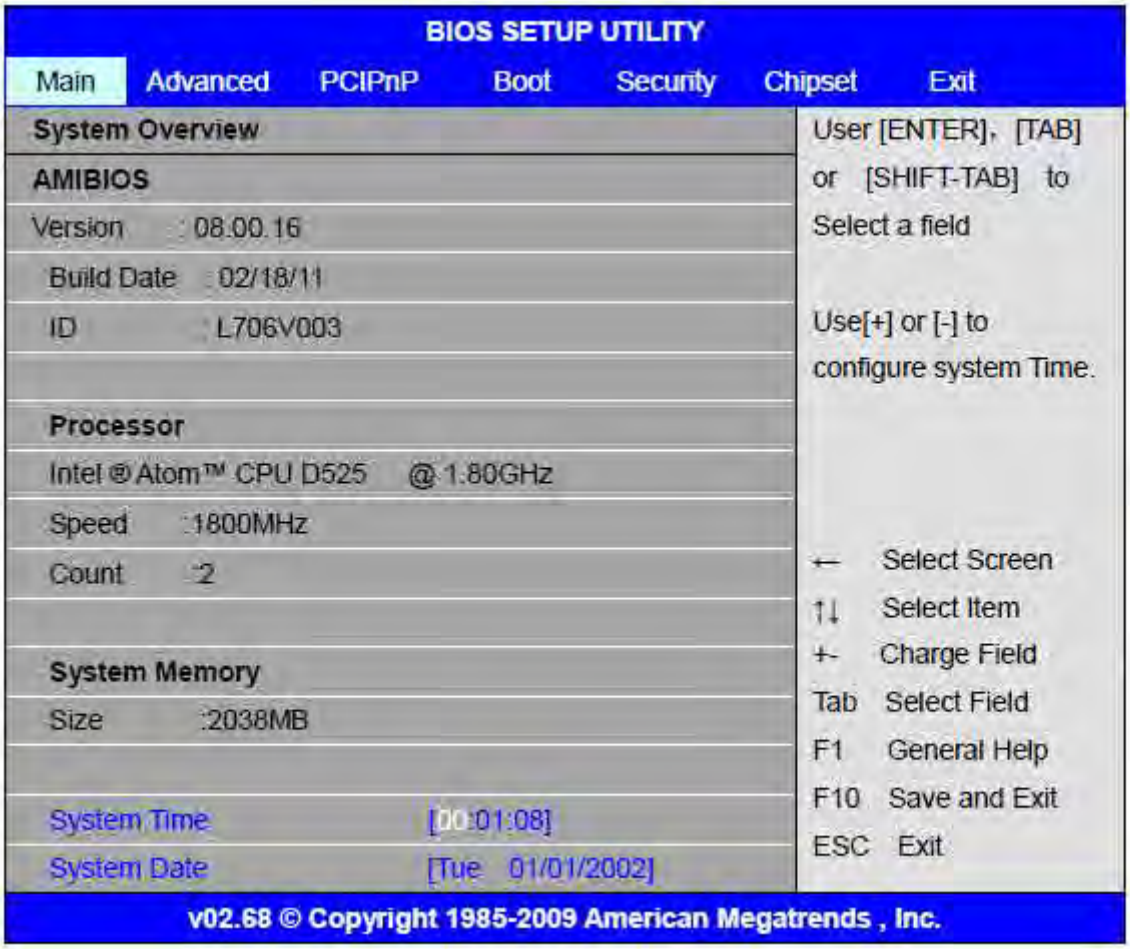
After optimizing and exiting CMOS Setup, the POST screen displayed for the first time is as follows and includes basic information on BIOS, CPU, memory, and storage devices.

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

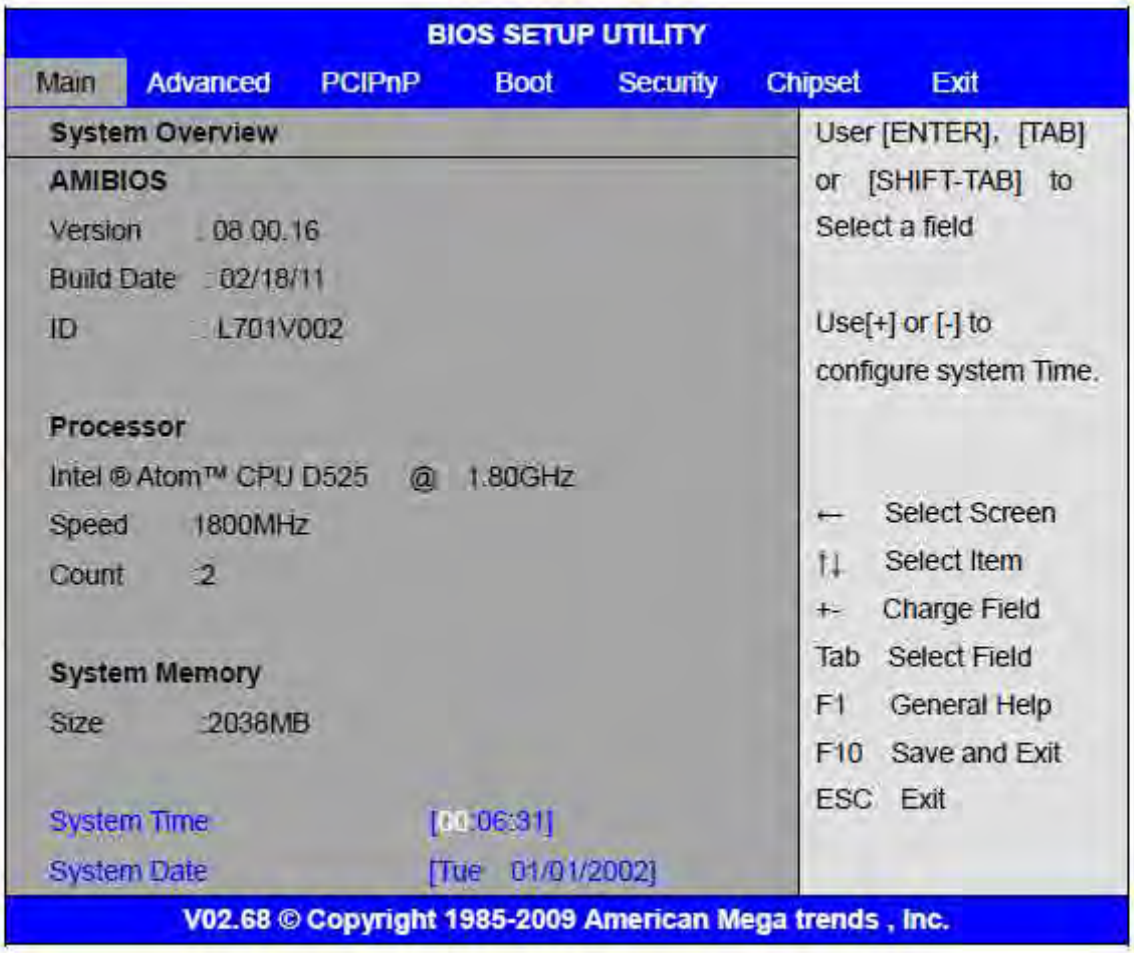


3.2 BIOS SETUP UTILITY

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:

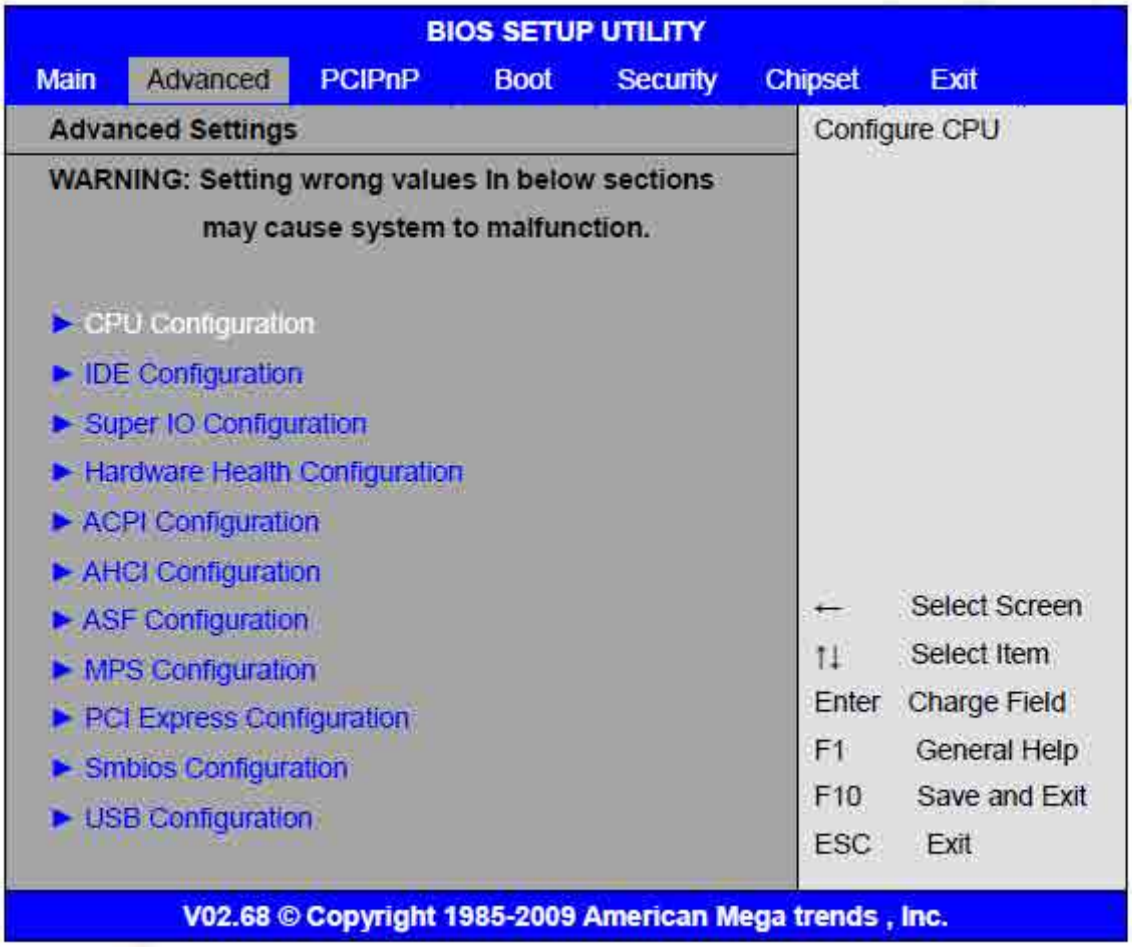
Hour : 0 to 23
Minute : 0 to 59
Second : 0 to 59

System Date:

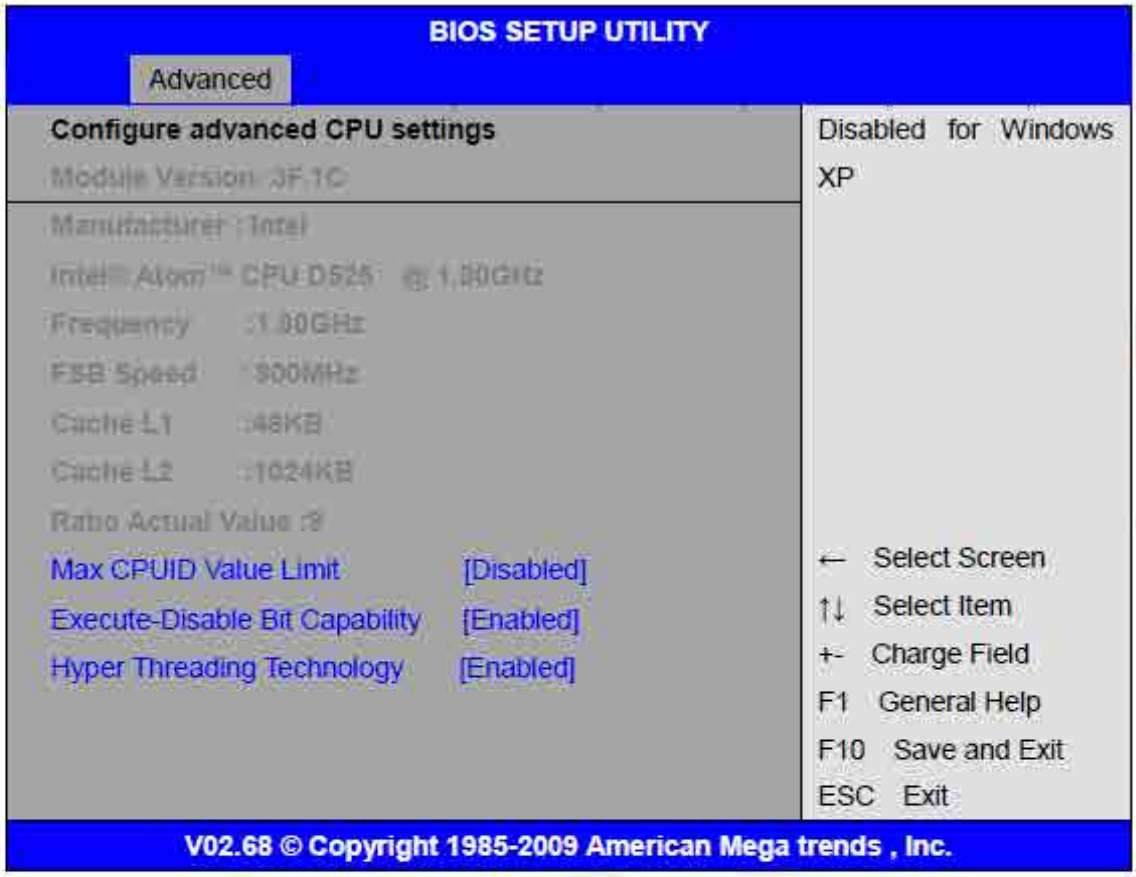
Set the system date, the date format is:

Day: Note that the 'Day' automatically changes when you set the date.
Month: 01 to 12
Date: 01 to 31
Year: 2010 to 2099

3.4 Advanced Settings



3.4.1 CPU Configuration



Max CPUID Value Limit:

[Disabled]

[Enabled]

Execute Disable Bit Capability:

[Enabled]

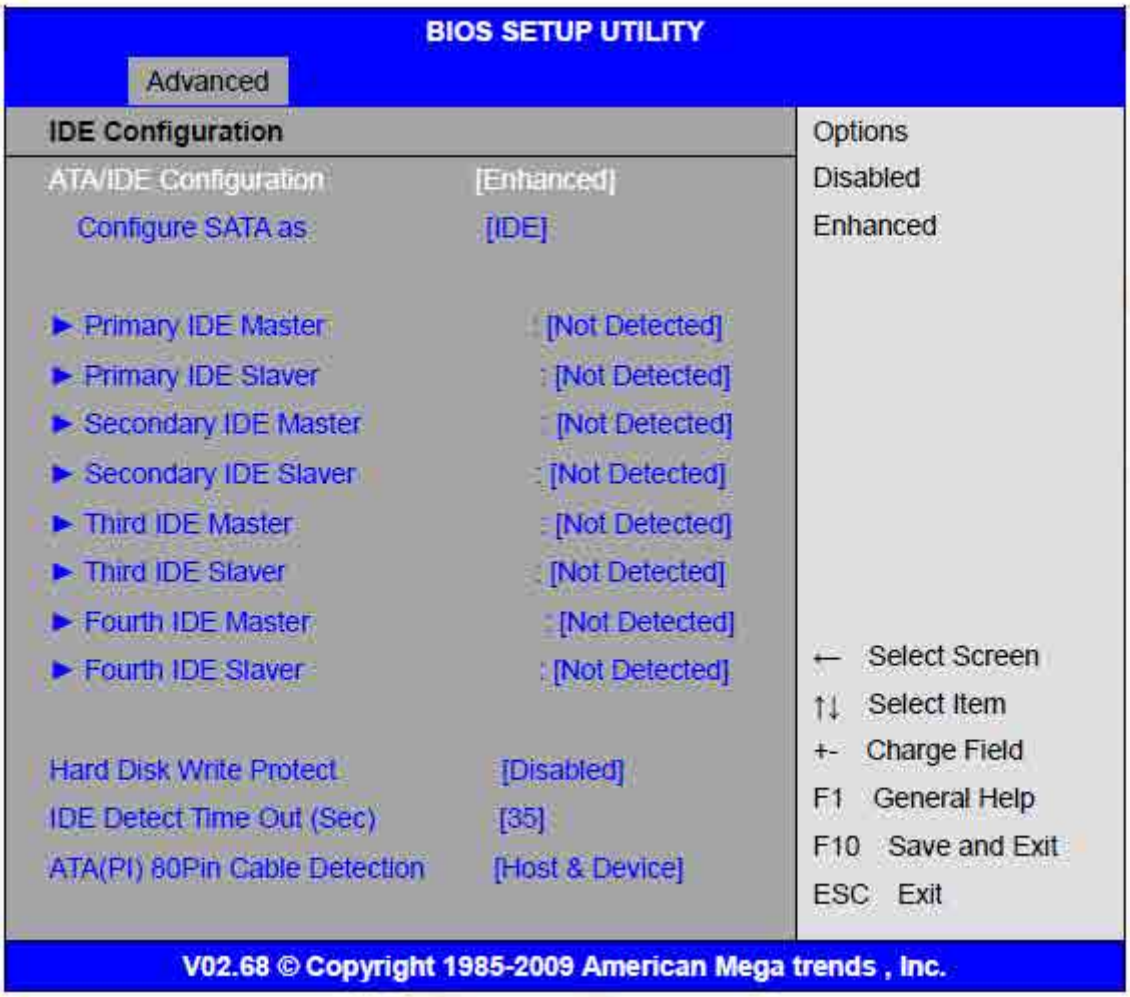
[Disabled]

Hyper Threading Technology:

[Enabled]

[Disabled]

3.4.2 IDE Configuration



ATA/IDE Configuration:

[Enhanced]
[Disabled]

Configure SATA as:

[IDE]
[AHCI]

Hard Disk Write Protect:

[Disabled]
[Enabled]

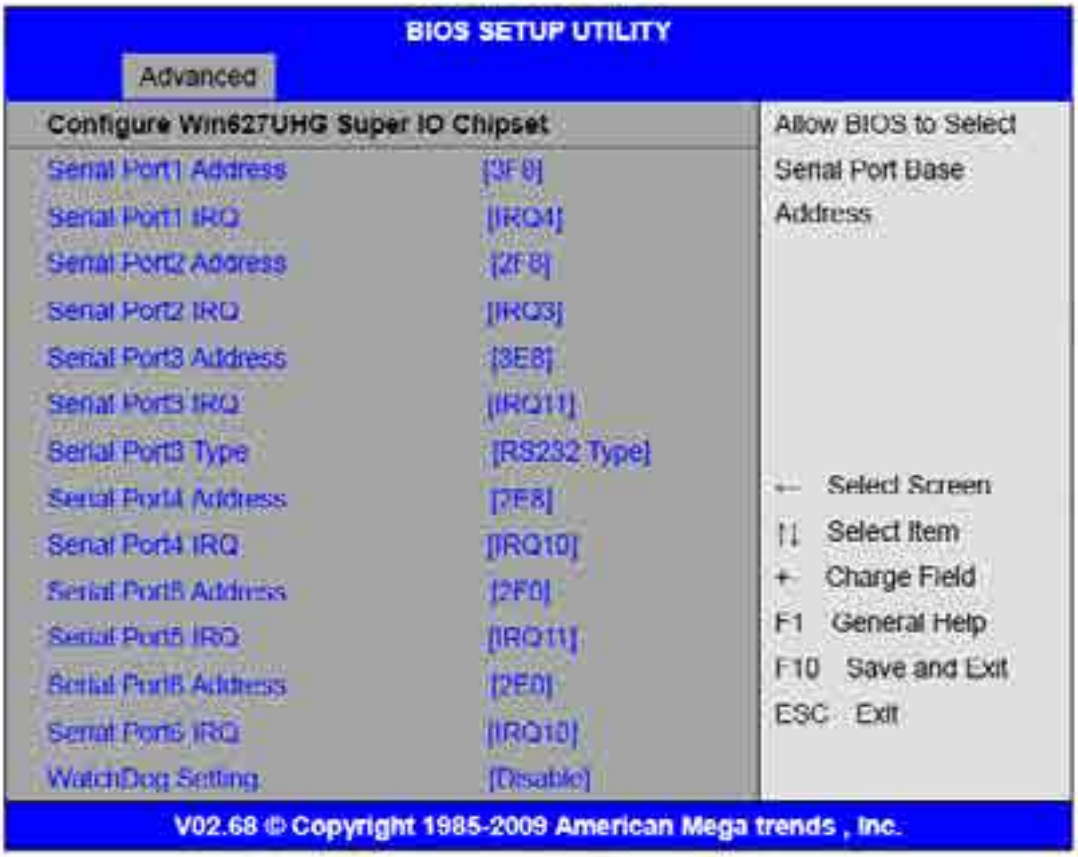
IDE Detect Time Out :

[35]
Options: [0,5,10,15,20,25,30,35]

ATA(PI) 80Pin Cable Detection:

[Host & Device]
[Host]
[Device]

3.4.3 Super IO Configuration



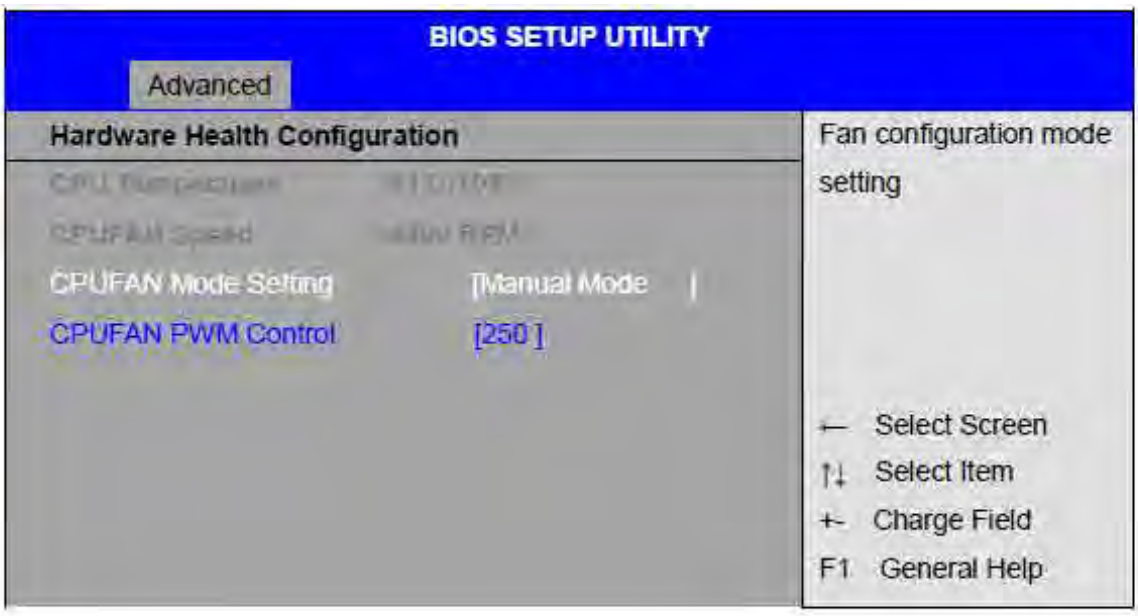
Serial Port3 Type:

COM3 Options: [RS232 Type] or [RS485 Type]
[RS232 Type] for RS232 Mode
[RS485 Type] for RS485 or RS422 Mode

WatchDog Setting:

[Disable]
Options: [10sec,20sec,30sec,40sec,1min,2min,4min]

3.4.4 Hardware Health Configuration



CPU Temperature:

Show you the current CPU temperature.

CPUFAN Speed:

Show you the current CPU Fan operating speed

CPUFAN Mode Setting:

[Manual Mode]
[Thermal Cruise Mode]
[Speed Cruise Mode]
[Smart Fan3 Mode]

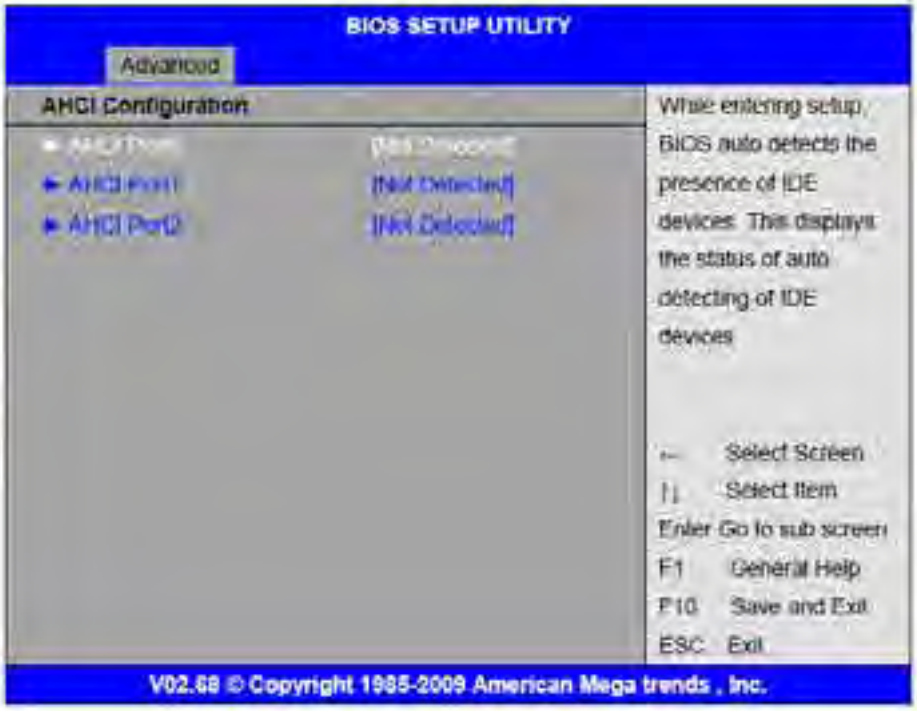
3.4.5 ACPI Configuration

Section for Advanced ACPI Configuration

Options:

[Advanced ACPI Configuration]
[Chipset ACPI Configuration]

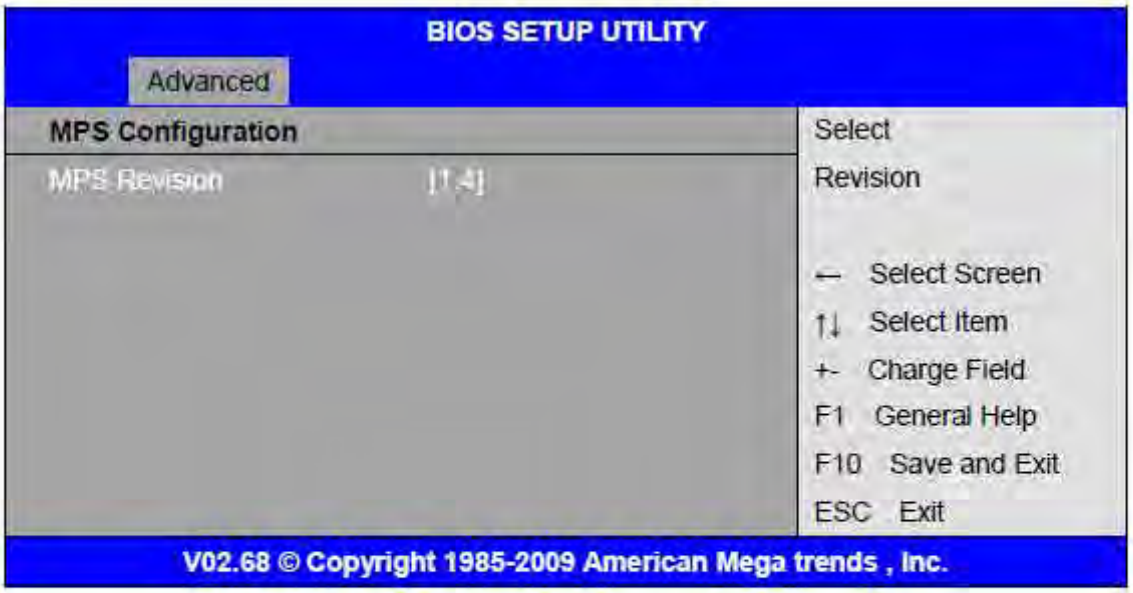
3.4.6 AHCI Configuration



While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detecting of

IDE devices

3.4.7 MPS Configuration



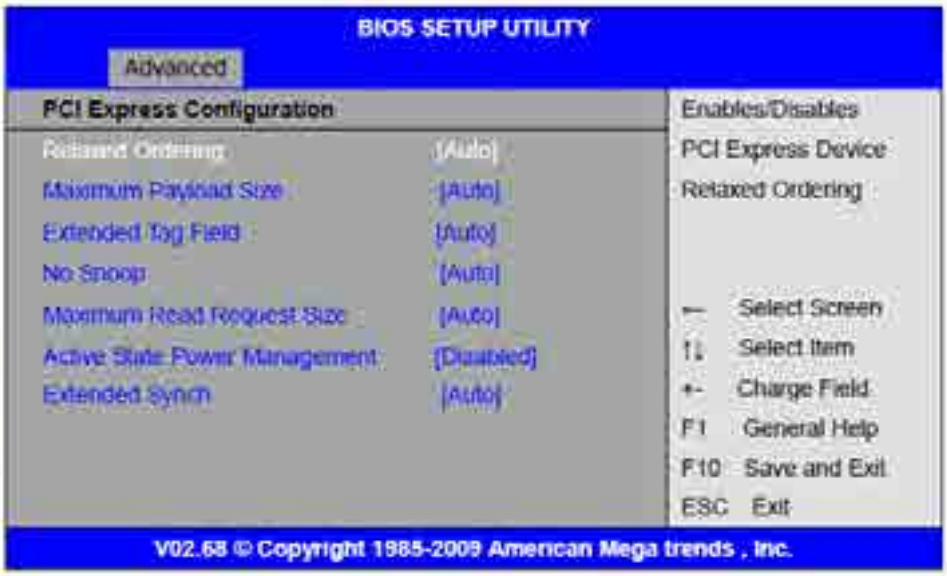
Configure the Multi-Processor Table.

MPS Revision:

[1.4]

[1.1]

3.4.8 PCI Express Configuration



Relaxed Ordering:

[Auto]

[Disabled]

[Enable]

Maximum Payload Size:

[Auto]

[128/256/512/1024/2048/4096 Bytes]

Set Maximum Payload of allow System BIOS select the value.

Extended Tag Field:

[Auto]

[Disabled]

[Enable]

No Snoop:

[Auto]

[Disabled]

[Enable]

Maximum Read Request Size:

[Auto]

[128/256/512/1024/2048/4096 Bytes]

Set Maximum Read Request Size of PCI Express Device or allow System BIOS select the value.

Active State Power Management:

[Disabled]

[Enable]

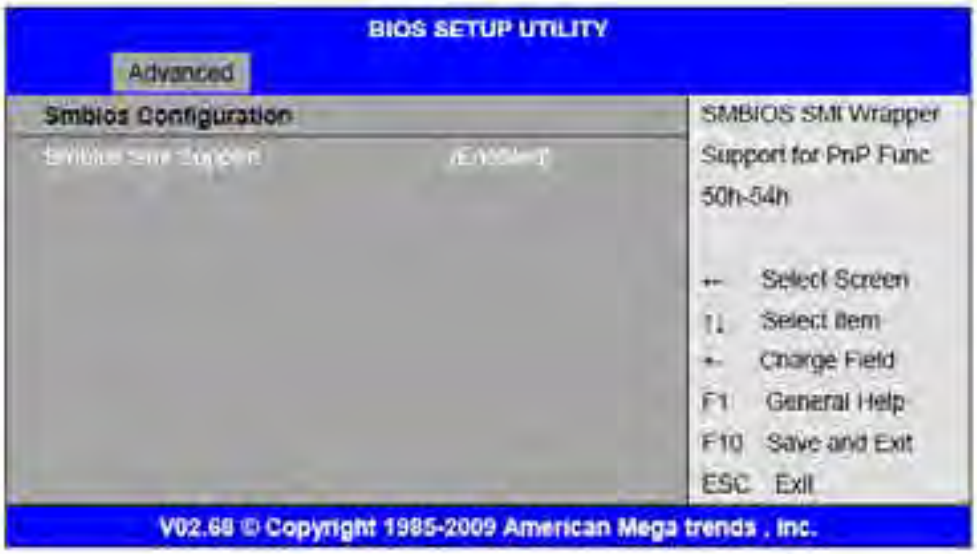
Extended Synch:

[Auto]

[Disabled]

[Enable]

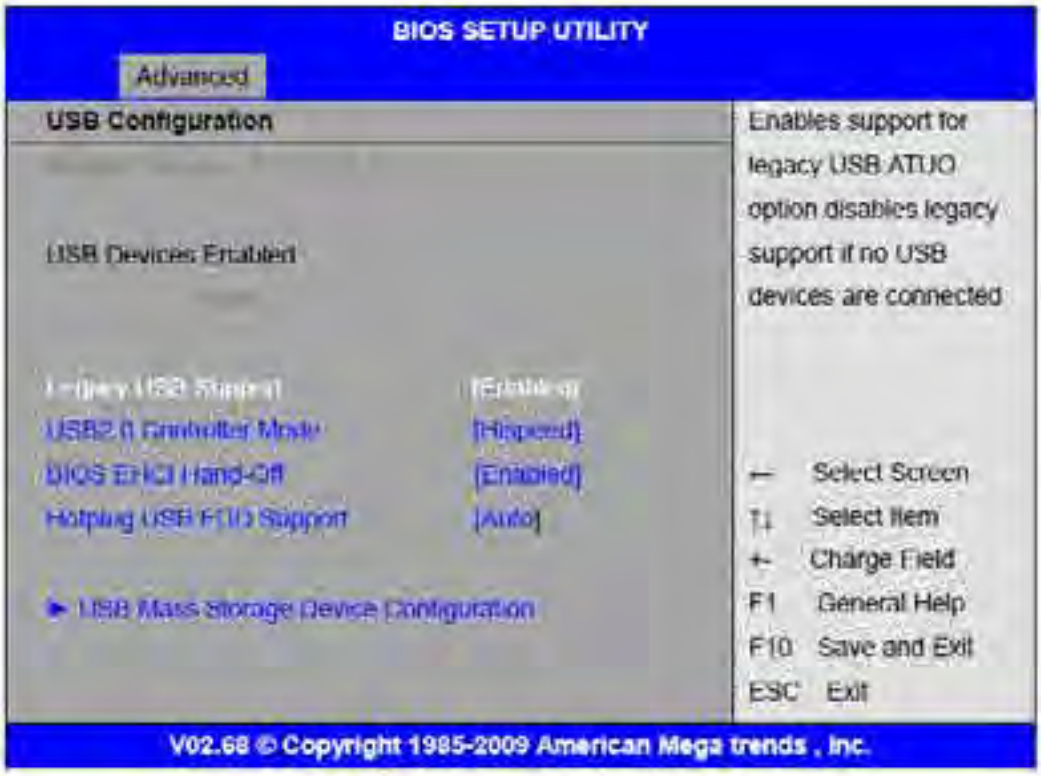
3.4.9 Smbios Configuration



Smbios Smi Support:

[Enable]
[Disabled]

3.4.10 USB Configuration



Legacy USB Support:

[Enable]
[Disabled]

USB2.0 Controller Mode:

[HiSpeed]
[FullSpeed]

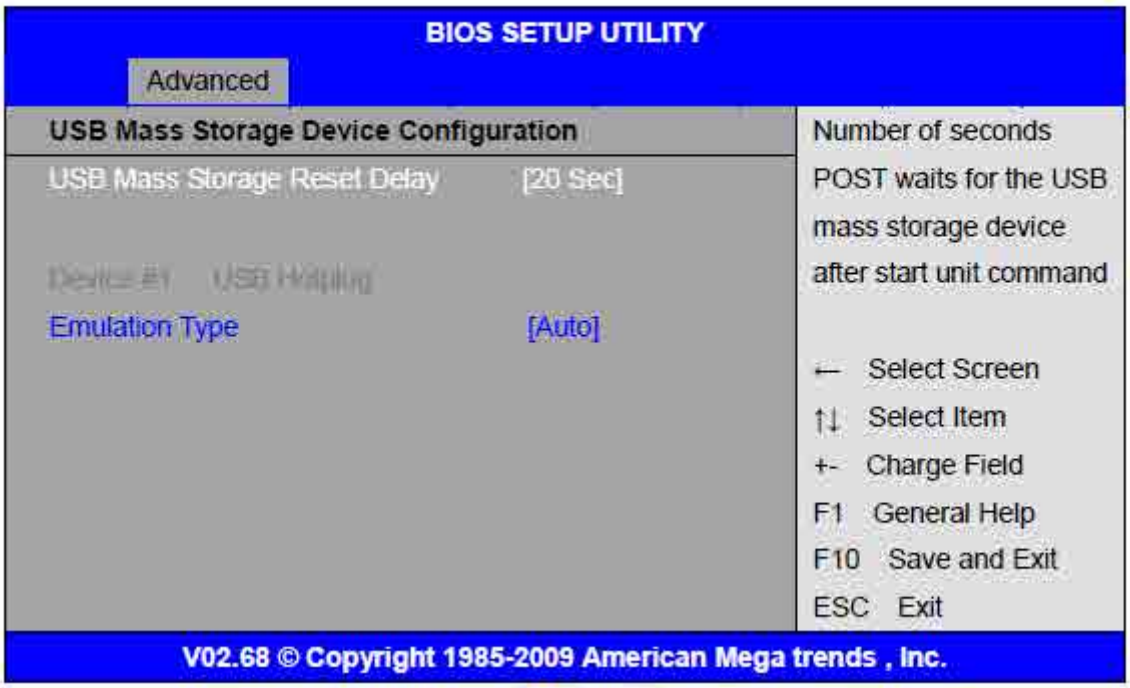
BIOS EHCI Hand-Off:

[Enable]
[Disabled]

Hotplug USB FDD Support:

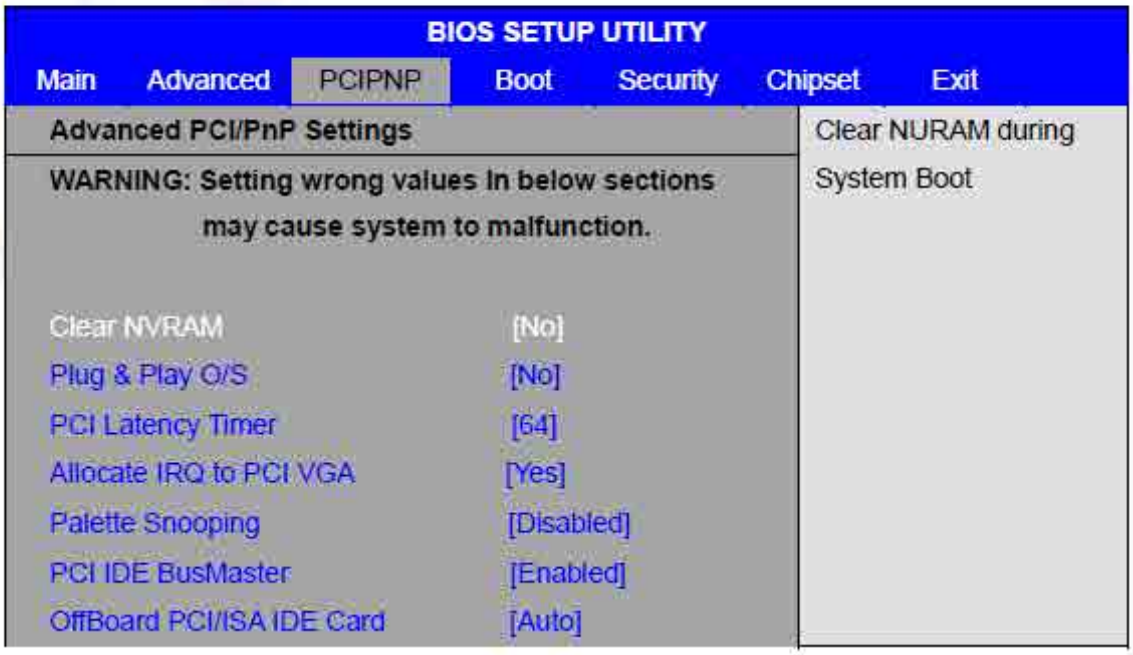
[Auto]
[Disabled]
[Enable]

USB Mass Storage Device Configuration:



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]
[Enable]

PCI IDE BusMaster:

[Disabled]
[Enable]

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.

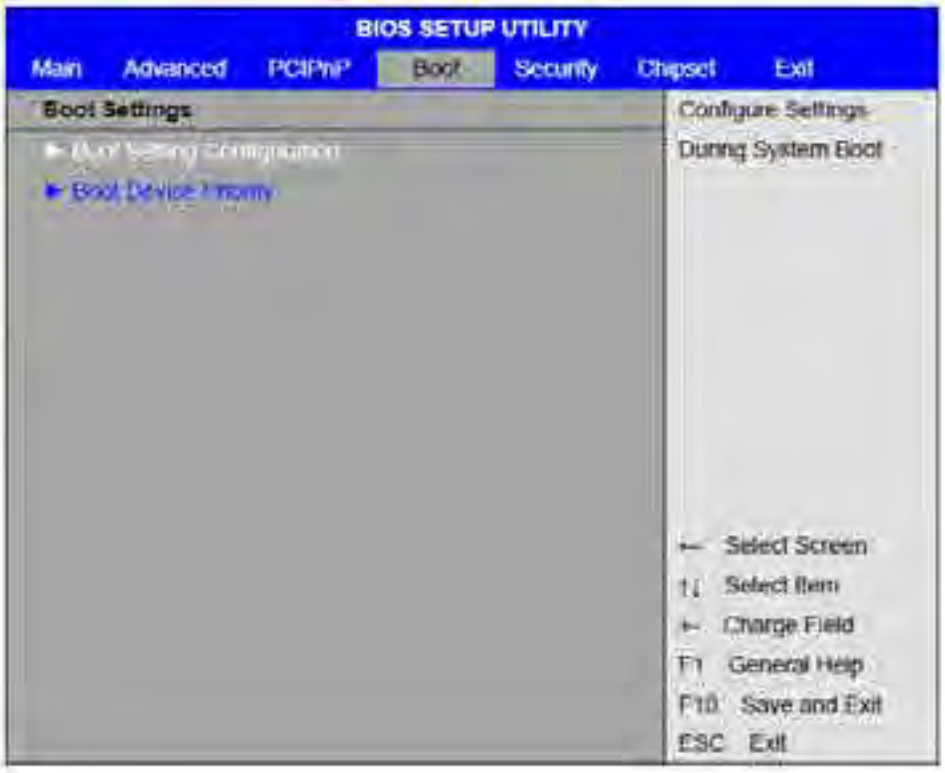
[Disabled]

[16k]

[32k]

[64k]

3.6 Boot Settings



Boot Setting Configuration:

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]

PS/2 Mouse Support:

Select support for PS/2 Mouse

[Auto]

[Enabled]

[Disabled]

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:

[Disabled]

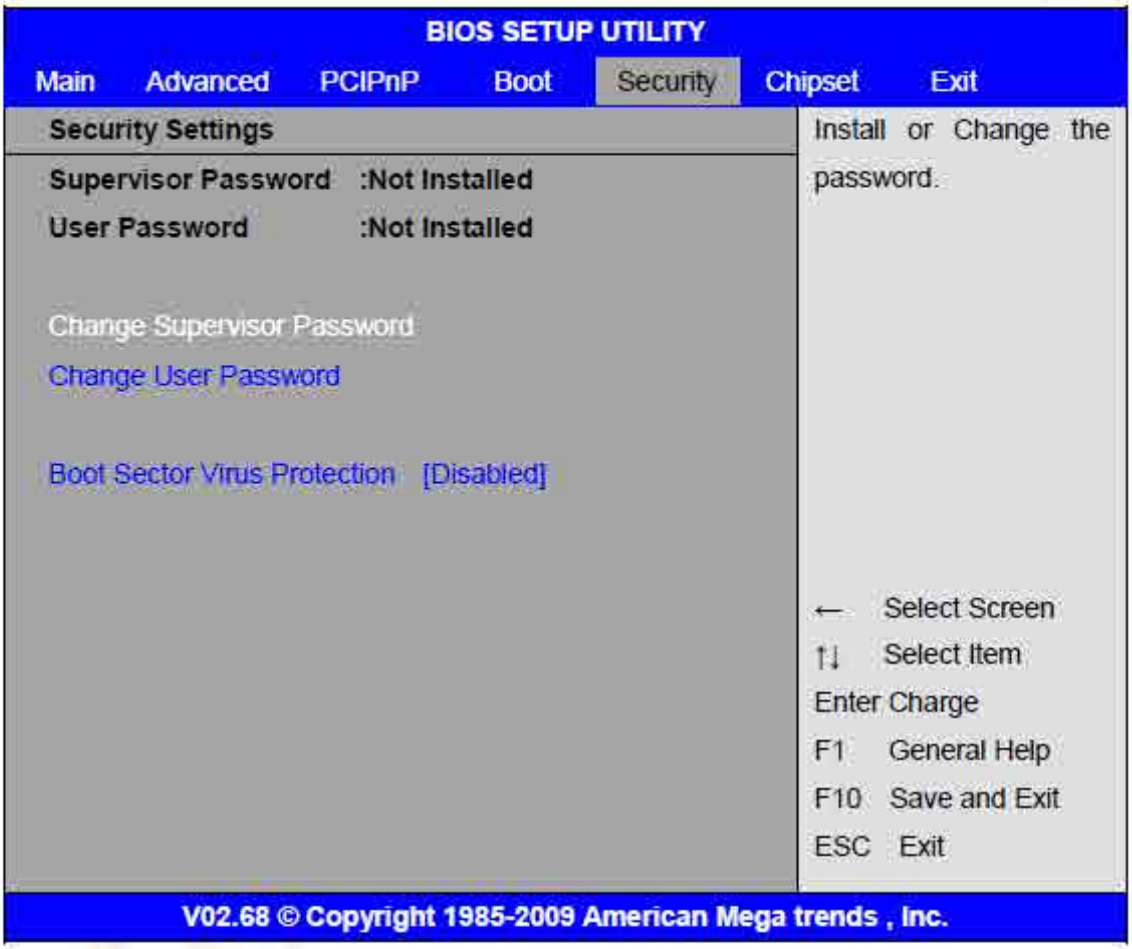
[Enabled]

Enabled: Allows option ROMs to trap interrupt 19

Boot Device Priority:

Specifies the Boot Device Priority sequence.

3.7 Security Settings



Change Supervisor Password:

Install or Change the password.

Change User Password:

Install or Change the password.

Password Check:

[Setup]

[Always]

Setup: Check password while invoking setup.

Always: Check password while invoking setup a well as on each boot.

Boot Sector Virus Protection:

[Disabled]
[Enabled]
Enabled / Disabled Boot Sector Virus Protection

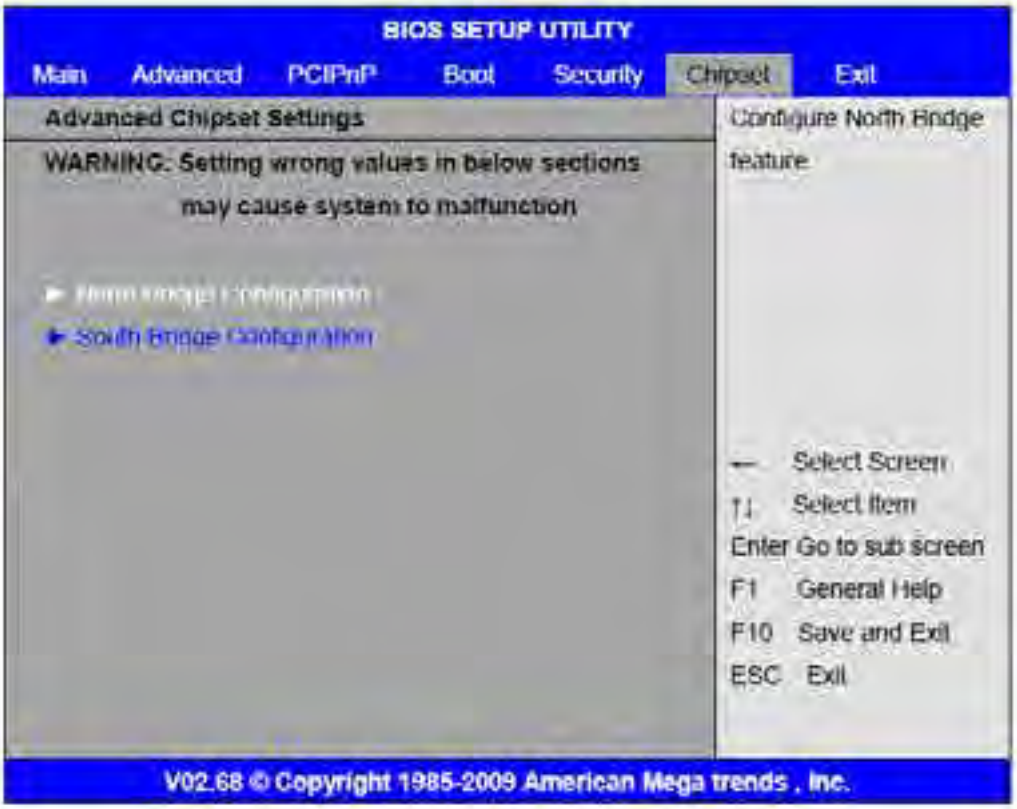
Type the password with up to 6 characters and then press <Enter> key. This will clear all previously typed CMOS passwords. You will be requested to confirm the password. Type the password again and press <Enter> key. You may press <Esc> key to abandon password entry operation.

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.

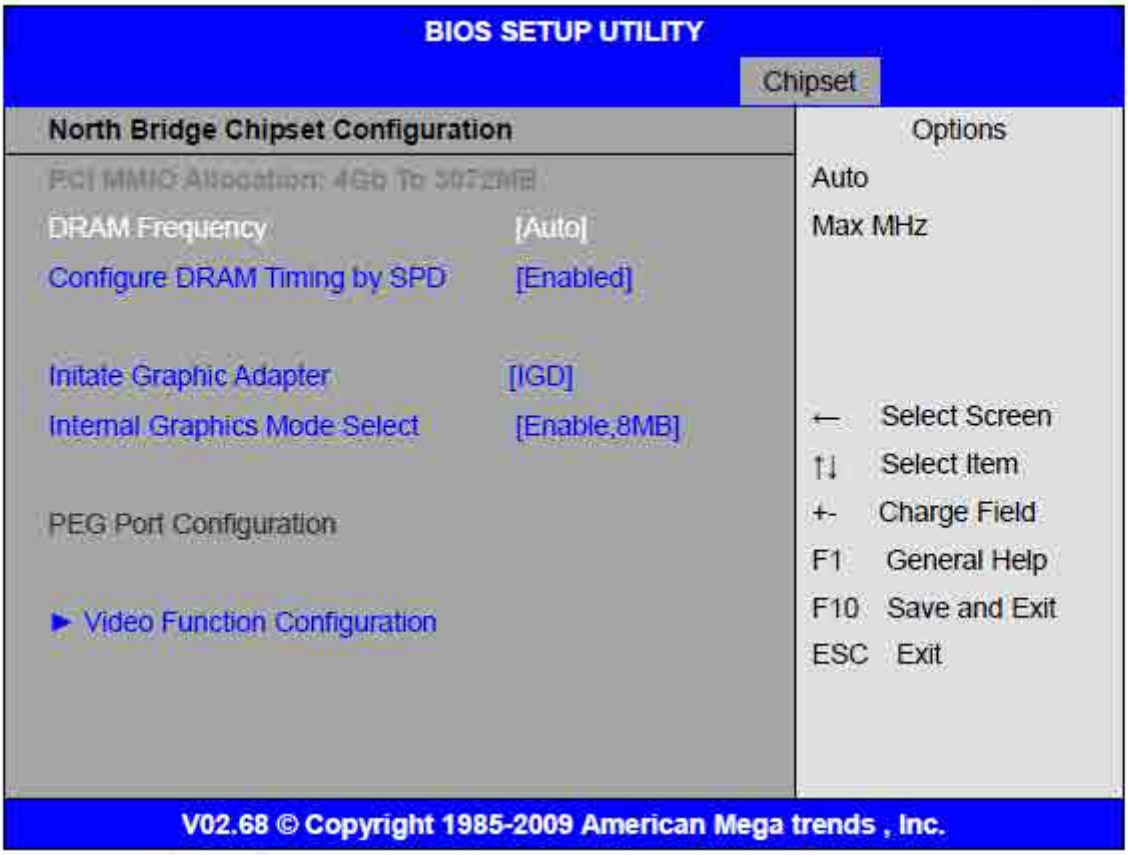
3.8 Advanced Chipset Settings



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



DRAM Frequency:

[Auto]

[Max MHz]

Configure DRAM Timing By SPD:

[Enabled]

[Disabled]

Initate Graphic Adapter:

Select which graphics controller to use as the primary boot device.

[IGD]

[PCI/IGD]

[PCI/PEG]

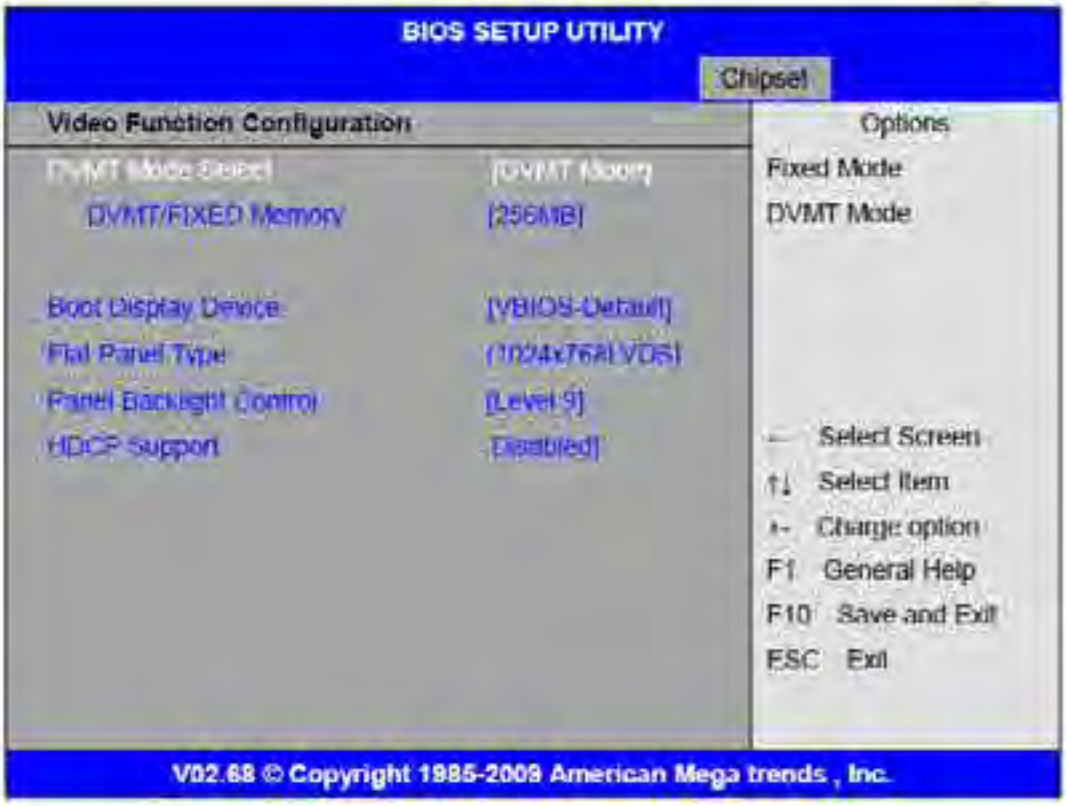
[PEG/IGD]

[PCIE/PCI]

Internal Graphics Mode Select:

[Enabled, 8MB]

Video Function Configuration:



DVMT Mode Select:

[DVMT Mode]

[FIXED Mode]

DVMT/FIXED Memory Size:

[256MB]

[128MB]

[Maximum DVMT]

Boot Display Device:

[BIOS-Default]

[CRT]

[LVDS]

[CRT+LVDS]

Flat Panel Type:

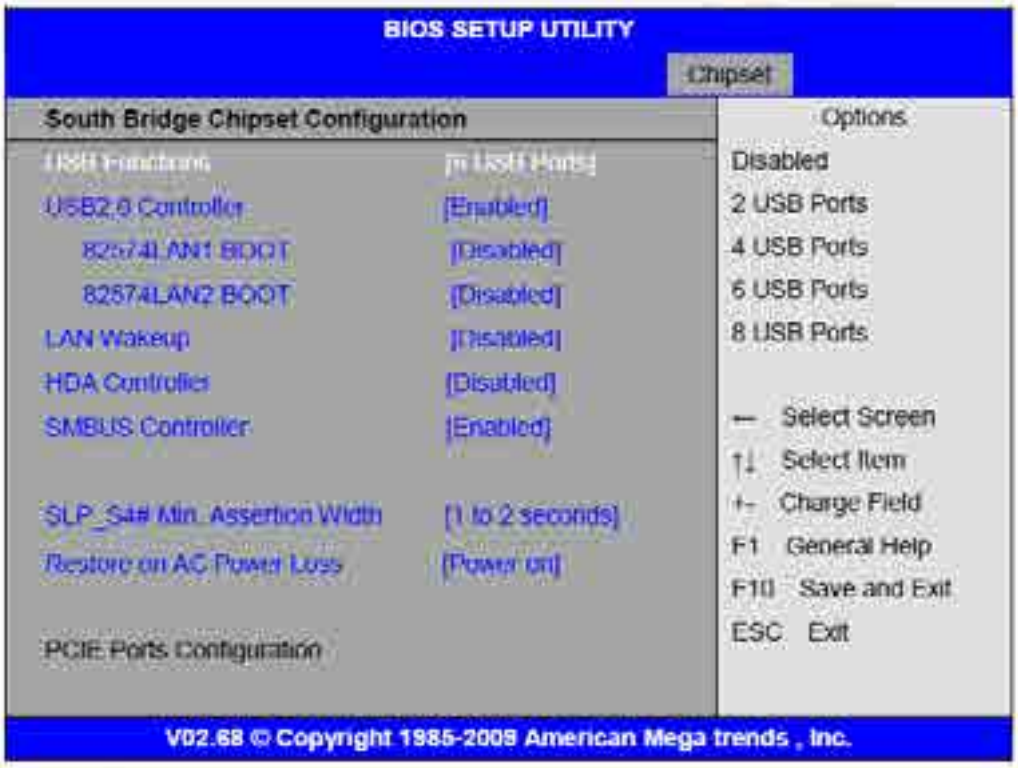
[1024x 768]
[640x480]
[800x600]
[1280x1024]
[1400x1050]
[1600x1200]

Panel Backlight Control:

[Level9]
[Level0- 15]

Note: Panel support PWM Function.

3.8.2 South Bridge Configuration:



USB Functions:

[6 USB Ports]
[Disabled].
[2 USB Ports]
[4 USB Ports]
[6 USB Ports]

USB 2.0 Controller:

[Enabled]
[Disabled]

82574L LAN1 Boot:

[Disabled]

[Enabled]

82574L LAN2 Boot

[Disabled]

[Enabled]

LAN WakeUp:

[Disabled]

[Enabled]

HDA Controller:

[Enabled]

[Disabled]

SMBUS Controller:

[Enabled]

[Disabled]

SLP_S4# Min. Assertion Width:

[1 to 2 Seconds]

[4 to 5 Seconds]

[3 to 4 Seconds]

[2 to 3 Seconds]

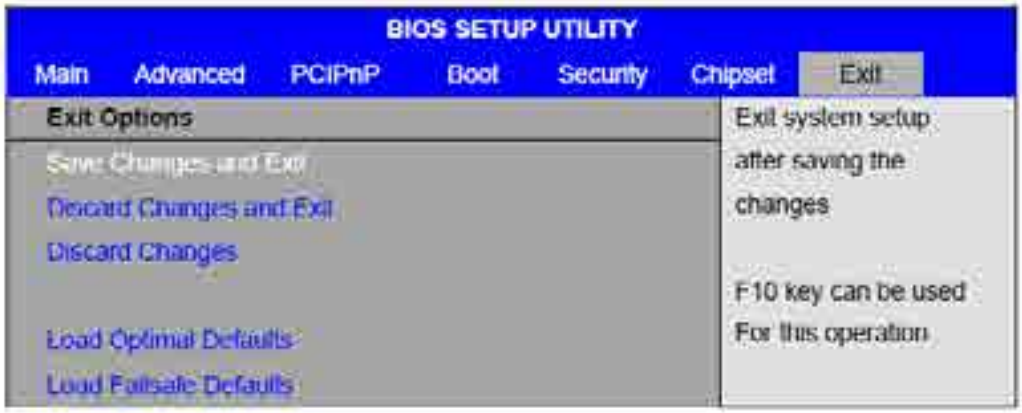
Restore on AC Power Loss:

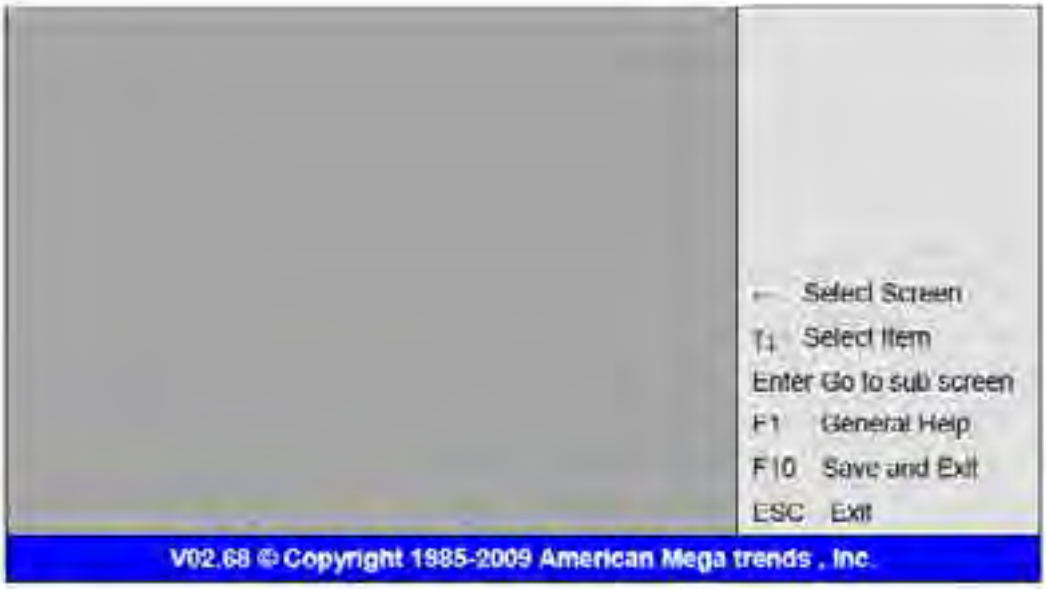
[Turn On]

[Power Off]

[Last Status]

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:

Diacard 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 Fail-Safe Defaults:

Load Fail-Safe 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 driver, Audio driver, Touch Panel 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
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
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

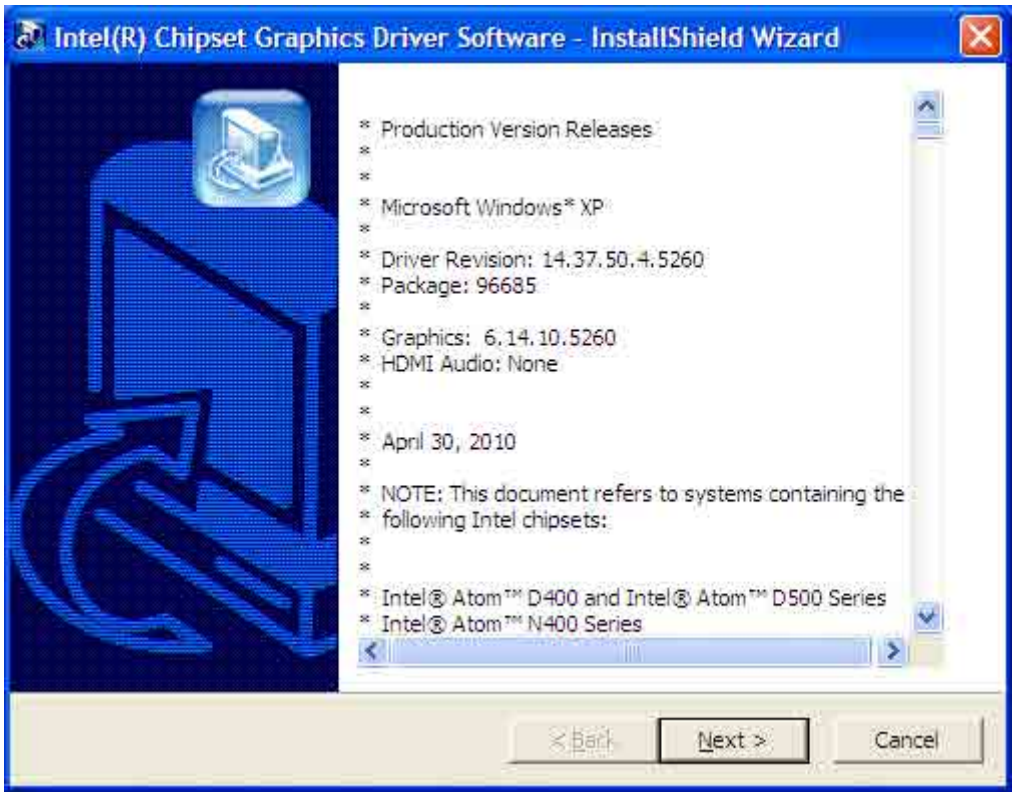
Click Finish, when the installation process is complete, the Setup Complete screen appears. See as picture.

4.2 Intel GMA 3150 VGA Chipset Driver

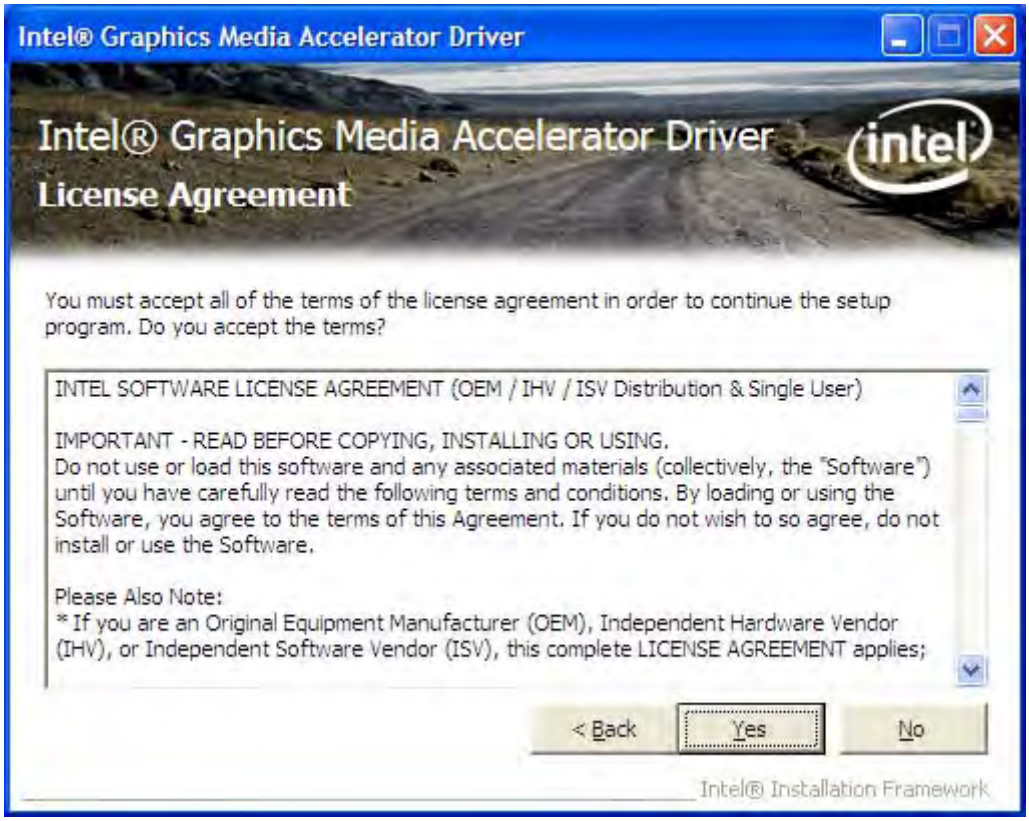
To install the VGA drivers, follow the steps below to proceed with the installation.

1. Click Intel GMA 3150 VGA Chipset Driver.

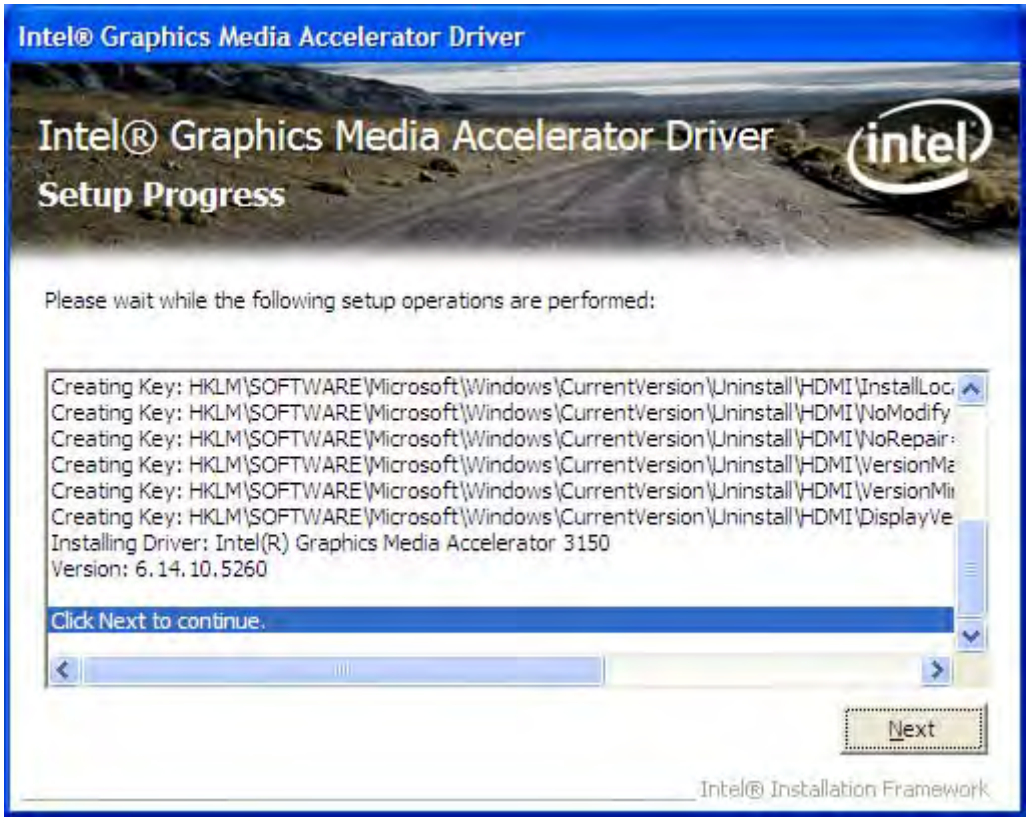
Follow the step-by-step installation process to install the Graphics Media Accelerator driver.




Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Welcome to the Setup Program
This setup program will install the Intel® Graphics Media Accelerator Driver 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® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
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 (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® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Readme File Information
Refer to the Readme file below to view the system requirements and installation information.
* Production Version Releases
*
*
* Microsoft Windows* XP
*
* Driver Revision: 14.37.50.4.5260
* Package: 96685
*
< Back
Next >
Cancel
Intel® Installation Framework

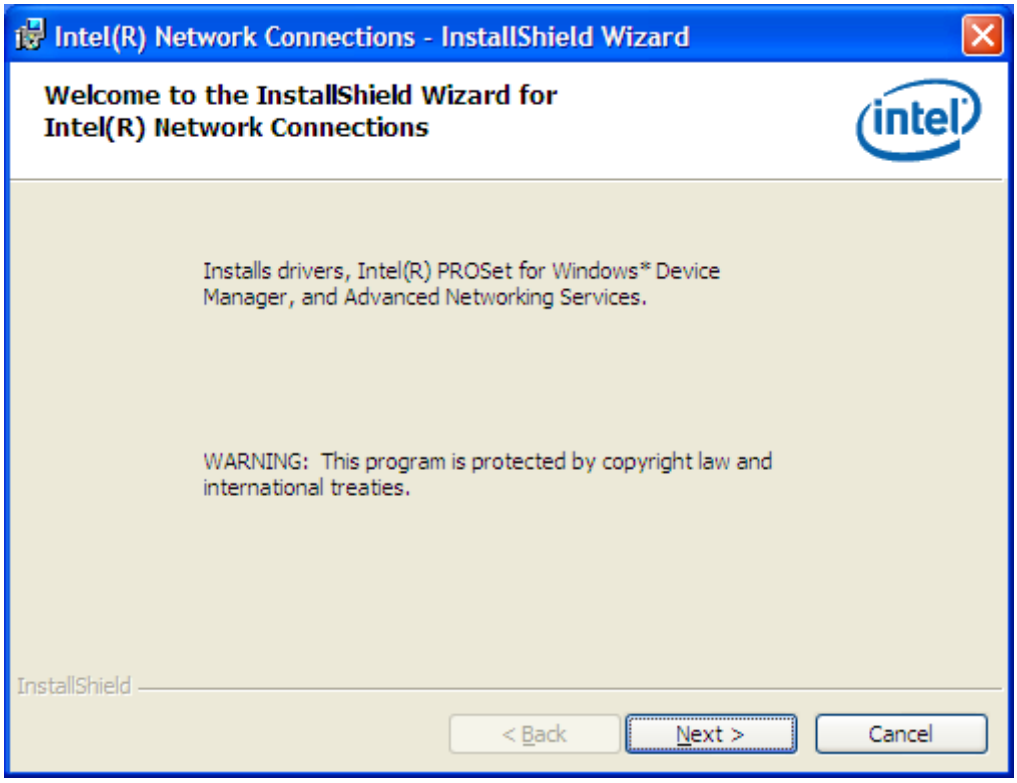

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Setup Progress
Please wait while the following setup operations are performed:
Creating Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\HDMI\InstallLoc
Creating Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\HDMI\NoModify
Creating Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\HDMI\NoRepair
Creating Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\HDMI\VersionMa
Creating Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\HDMI\VersionMi
Creating Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\HDMI\DisplayVe
Installing Driver: Intel(R) Graphics Media Accelerator 3150
Version: 6.14.10.5260
Click Next to continue.
Next
Intel® Installation Framework

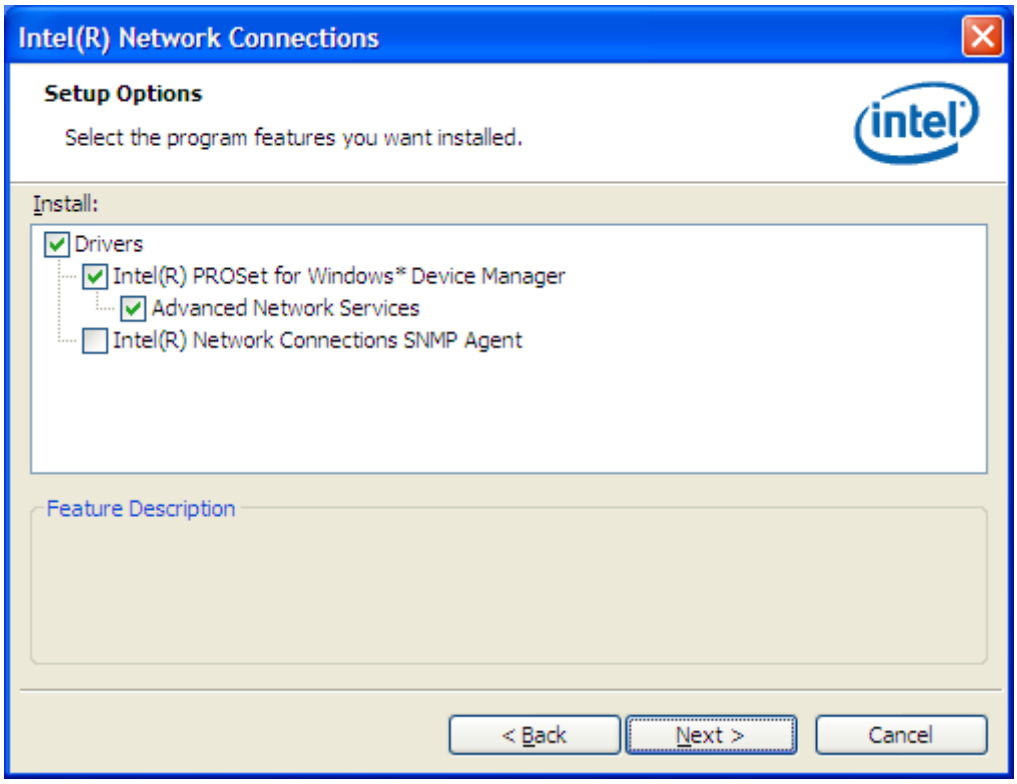
Click FINISH; A Driver Installation Complete.

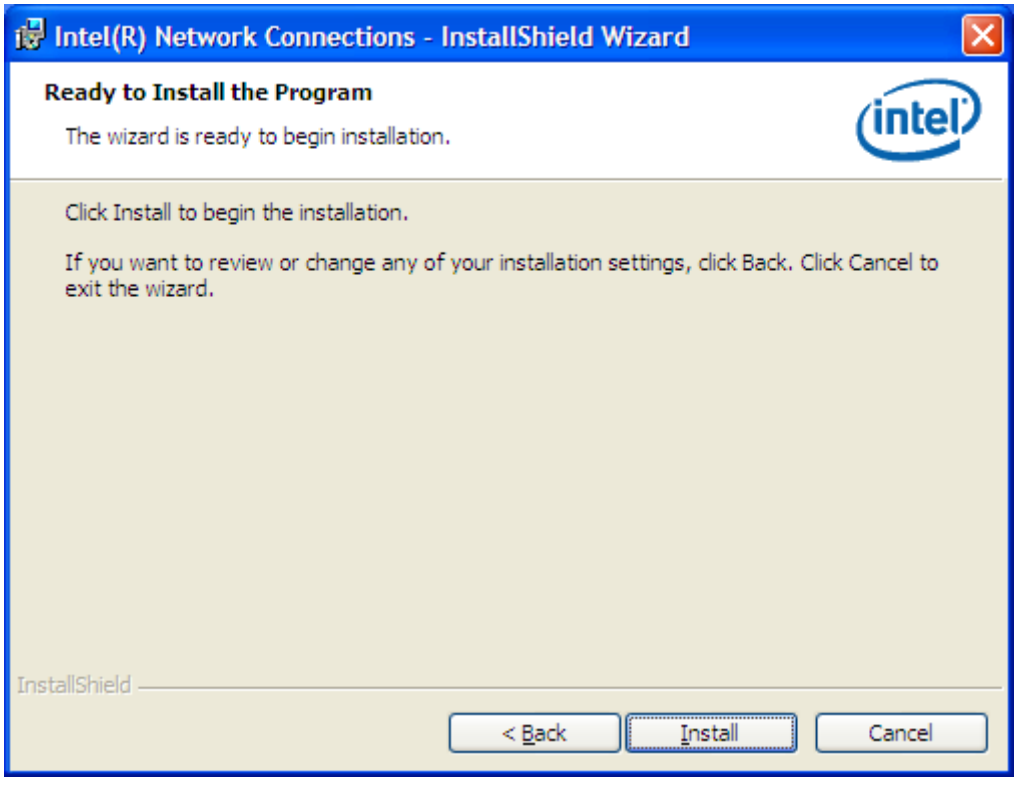
4.3 Intel 82574L Network adapter Driver

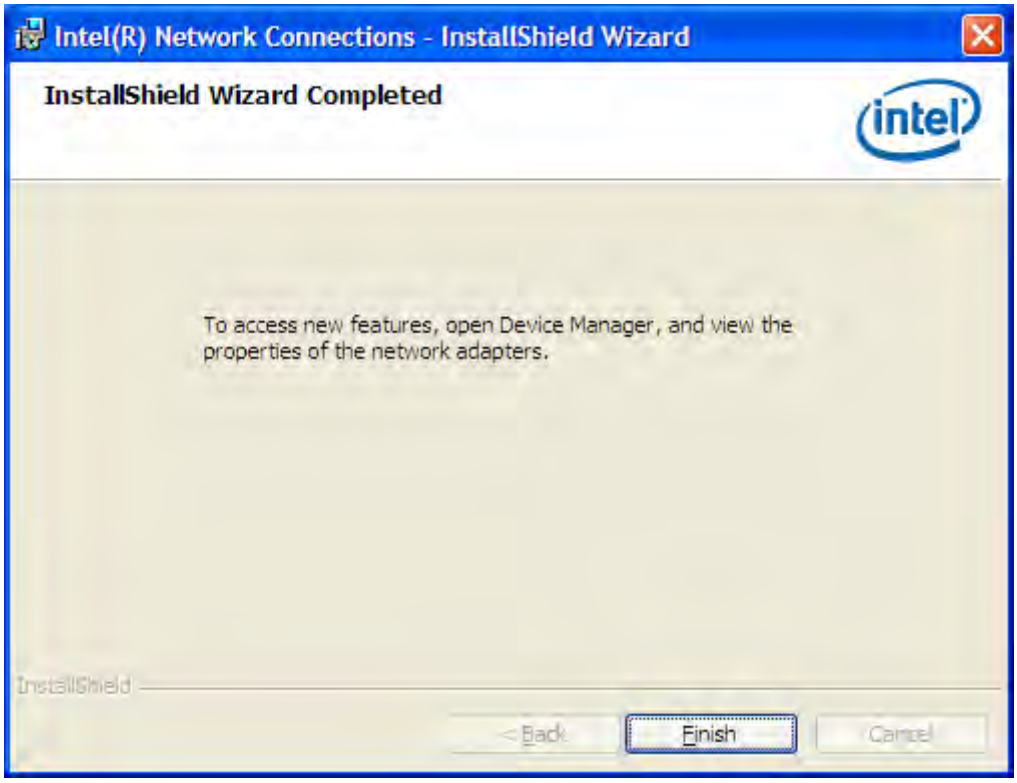
To install the Intel 82574L Network adapter Driver, please follow the steps below.
Select LAN from the list

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




Intel(R) Network Connections
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


Intel(R) 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

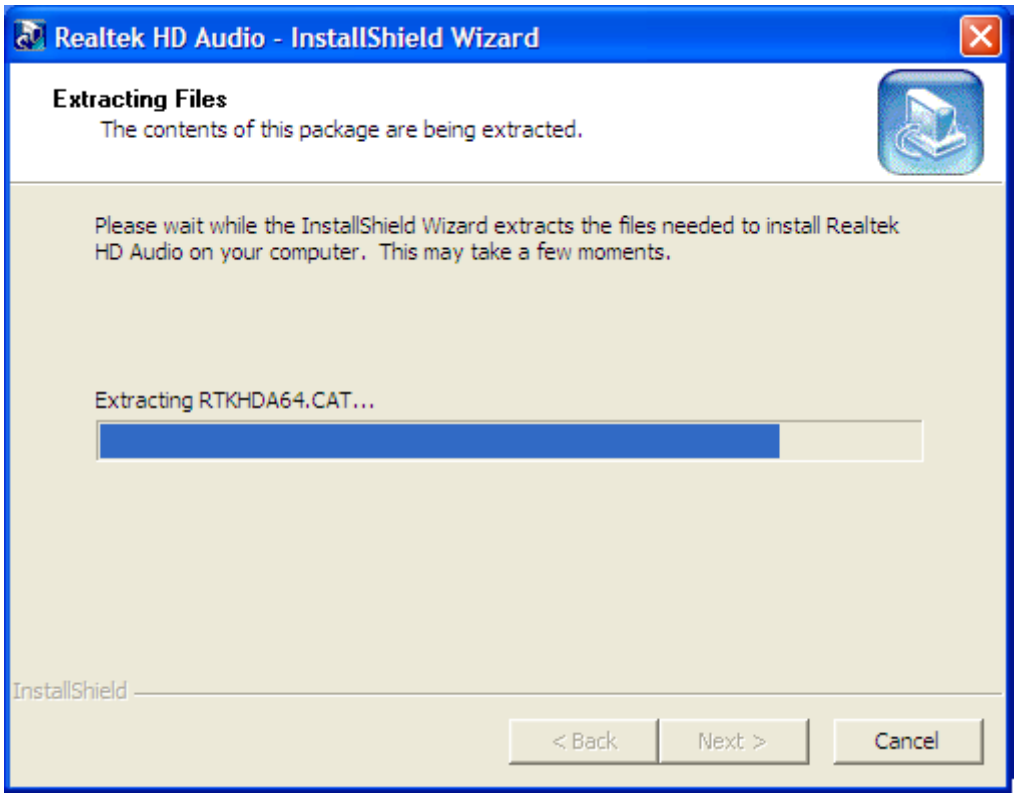


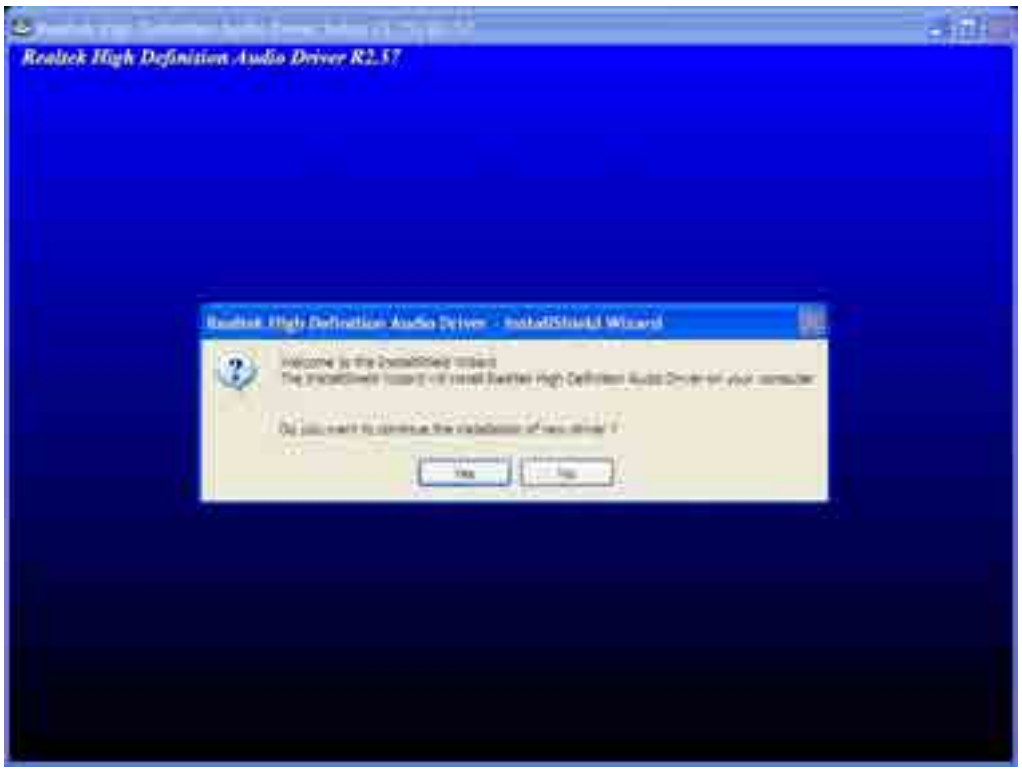
Click FINISH; A Driver Installation Complete.

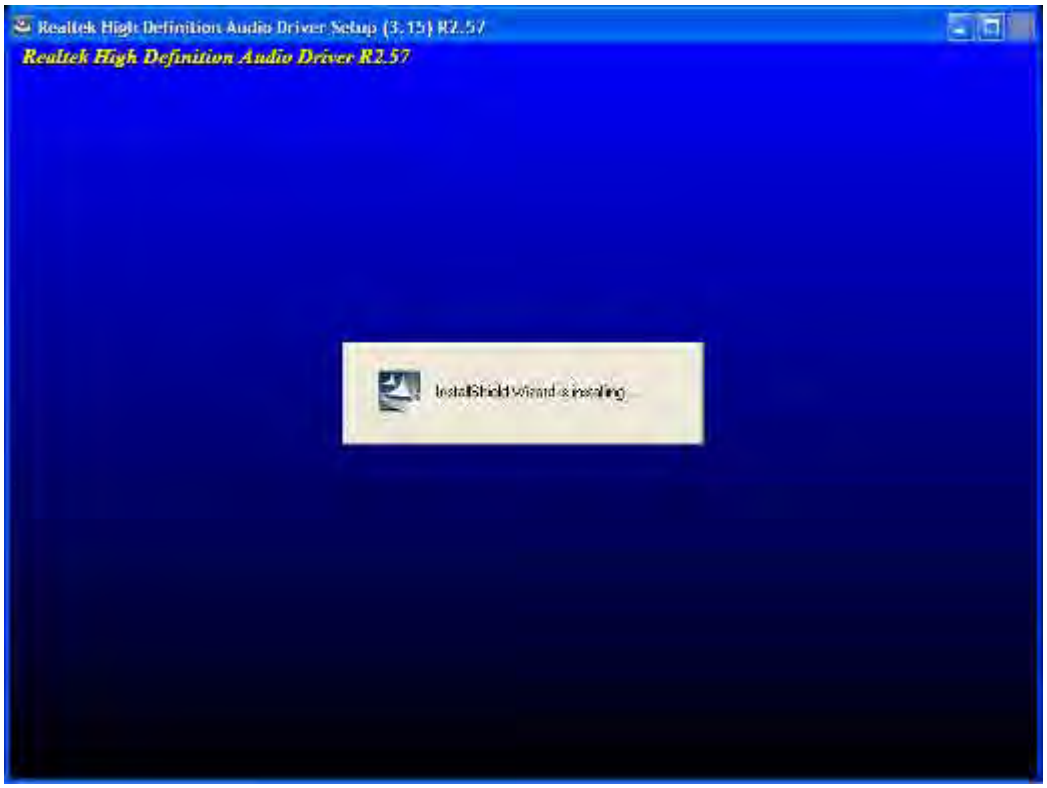
4.4 Realtek HD Audio Driver Installation

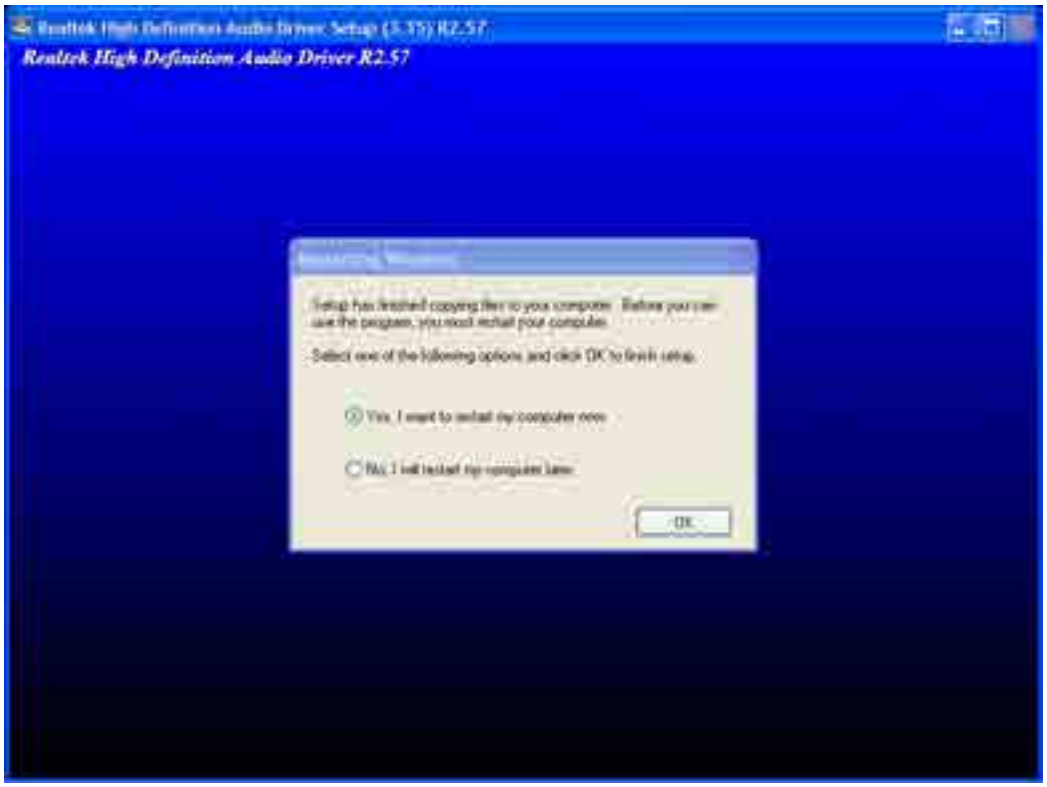
To install the Realtek High Definition (HD) Audio driver, please follow the steps below.
Select Audio from the list

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

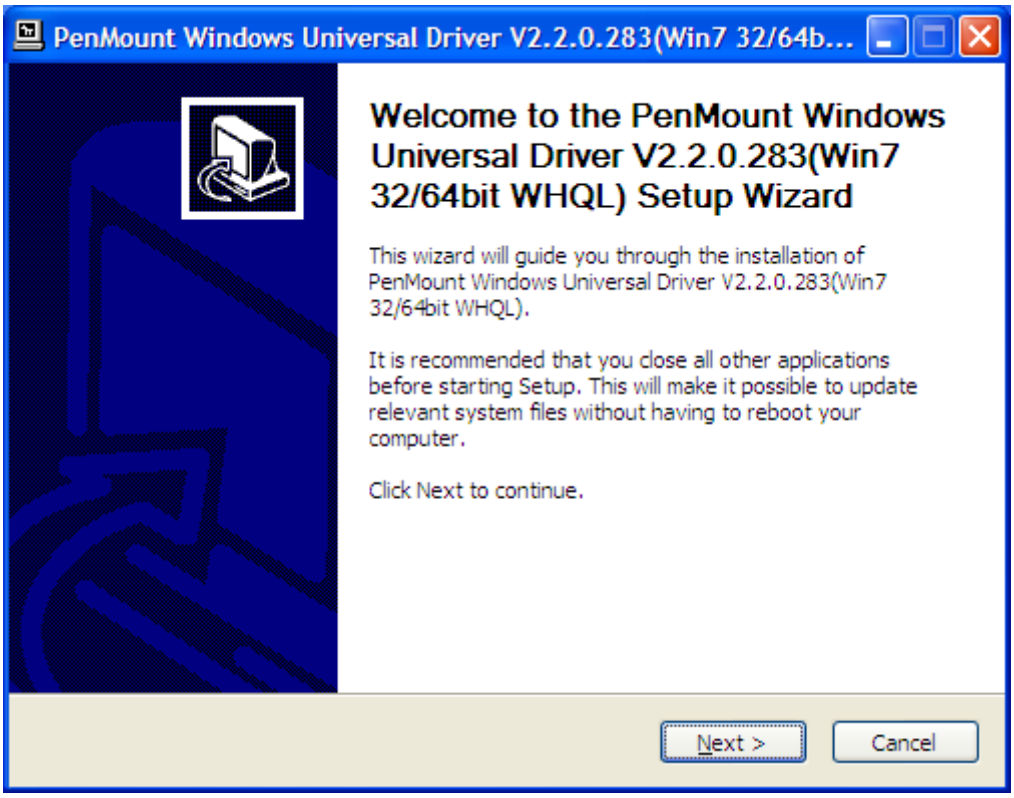
Before installing the Windows 2000/XP driver software, you must have the Windows 2000/XP system installed and running on your computer. You must also have one of the following PenMount 6000 series controller or control boards installed: PM6500, PM6300.

5.2.1 Installing Software

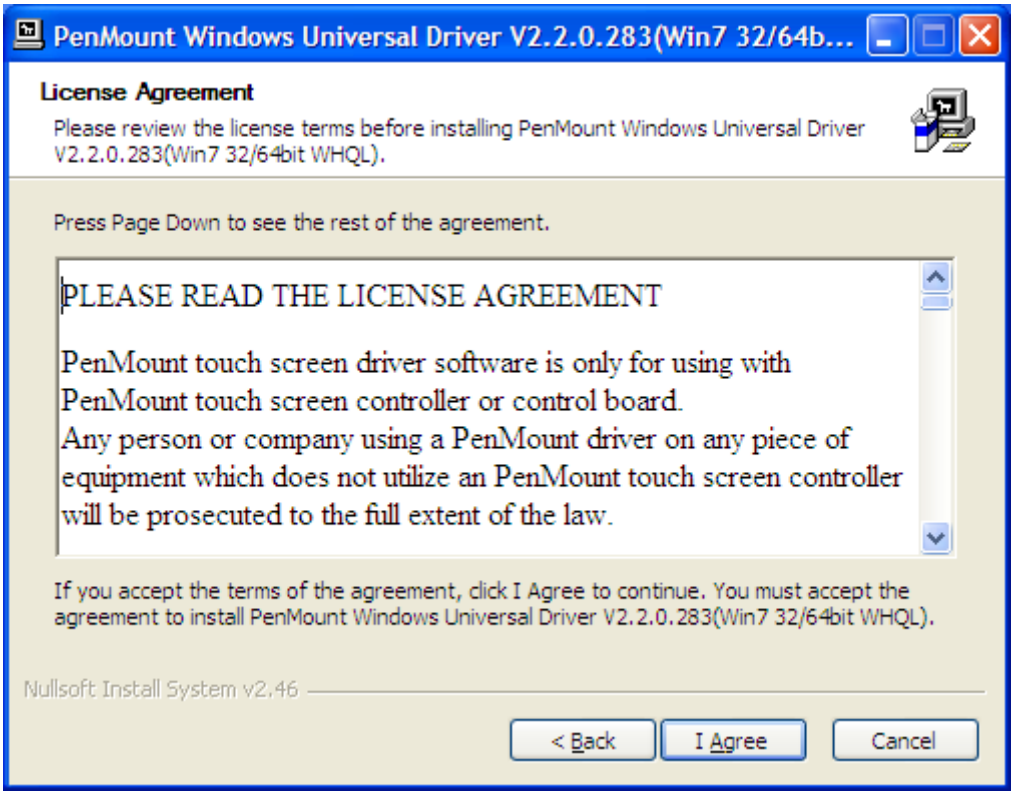
If you have an older version of the PenMount Windows 2000/XP driver installed in your system, please remove it first. Follow the steps below to install the PenMount DMC6000 Windows 2000/XP driver.

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.

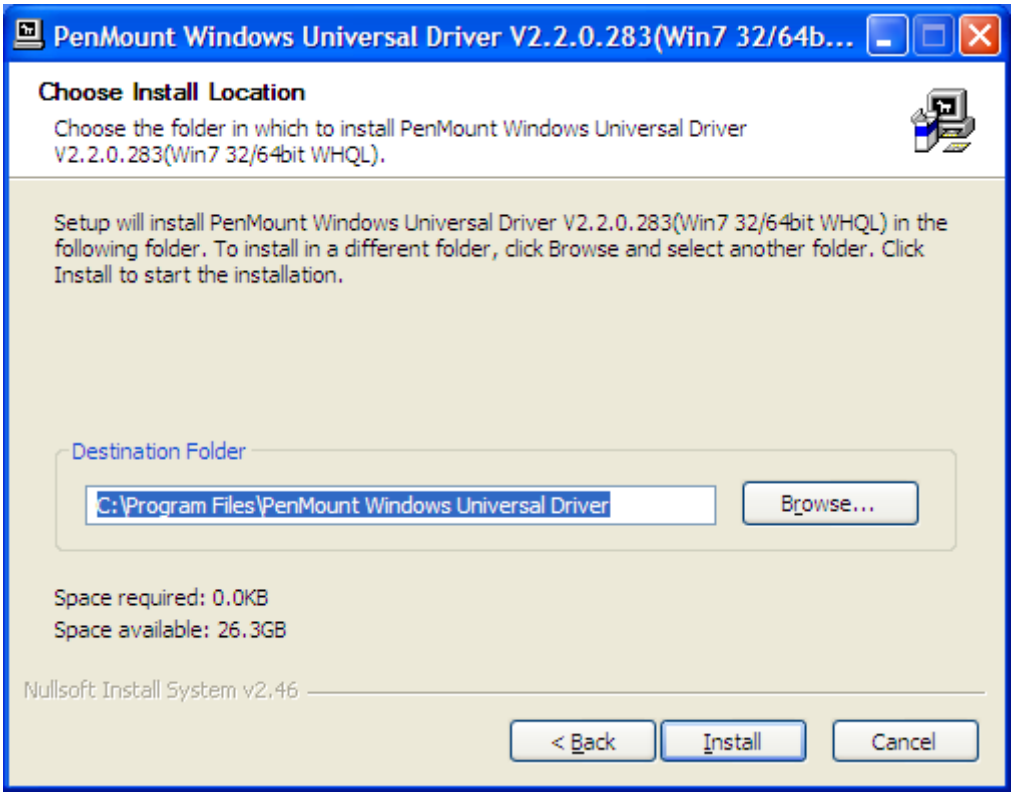
2. Insert the Aplex product CD install **setup.exe.** the screen below would appear. Click touch panel driver

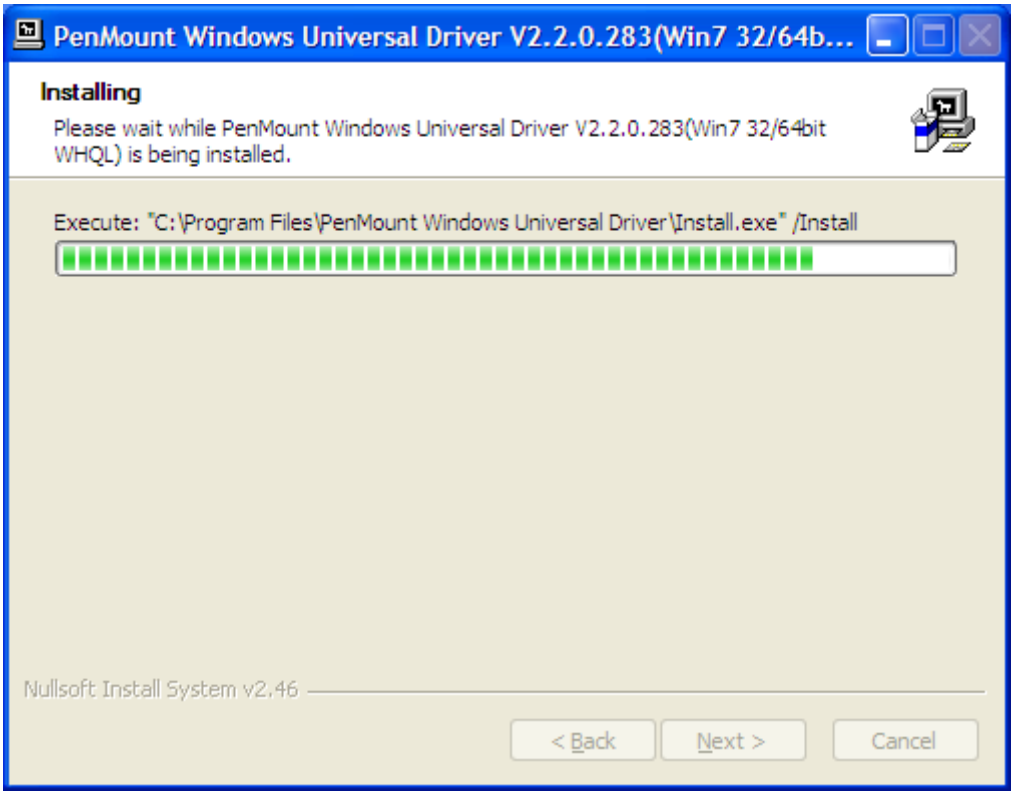


3. A License Agreement appears. Click "**I Agree…**" and "**Next**"

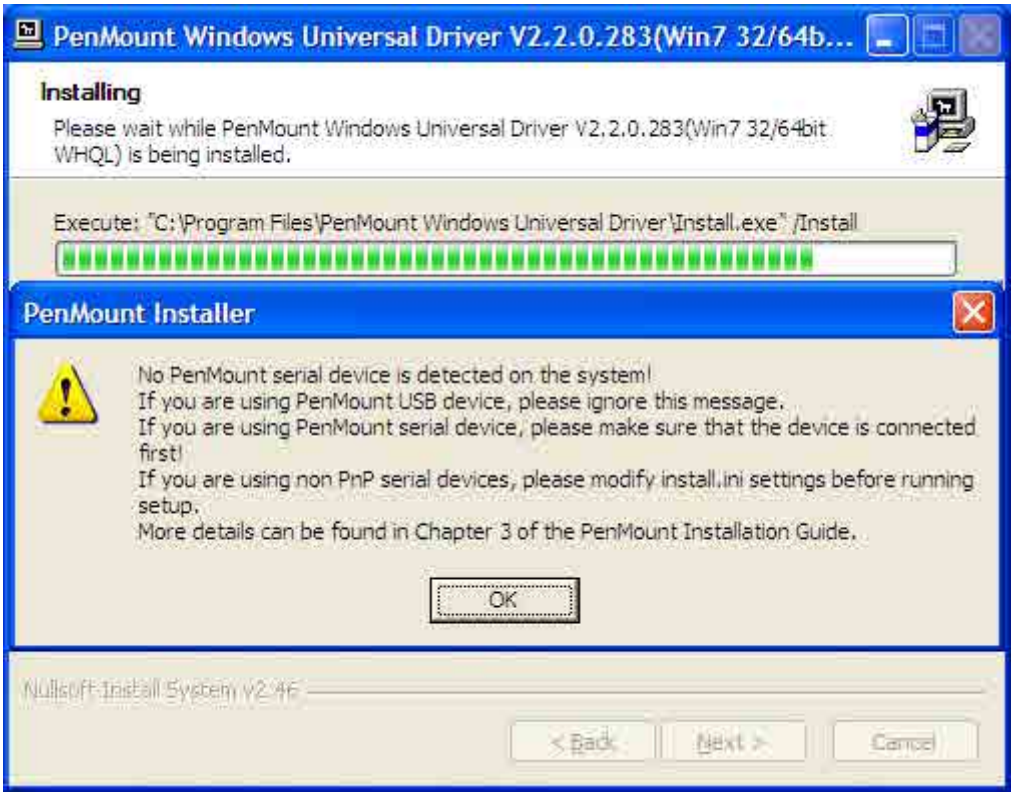


4. Ready to Install the Program. Click “**Install**”

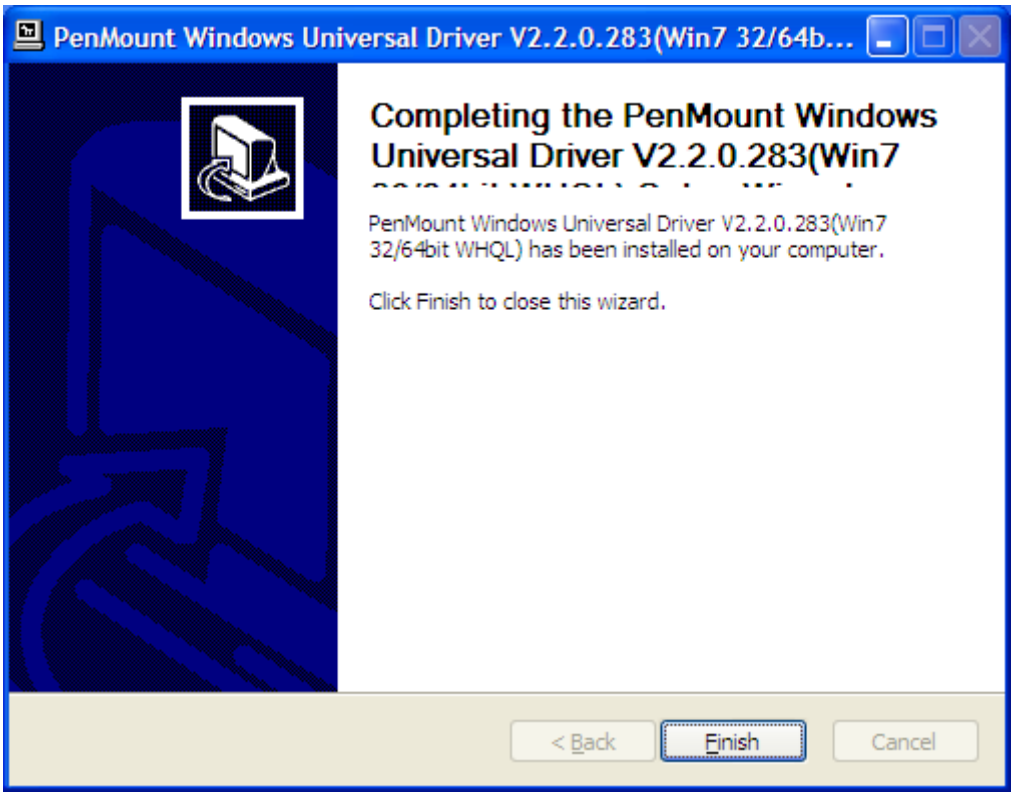




5. Installing



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.

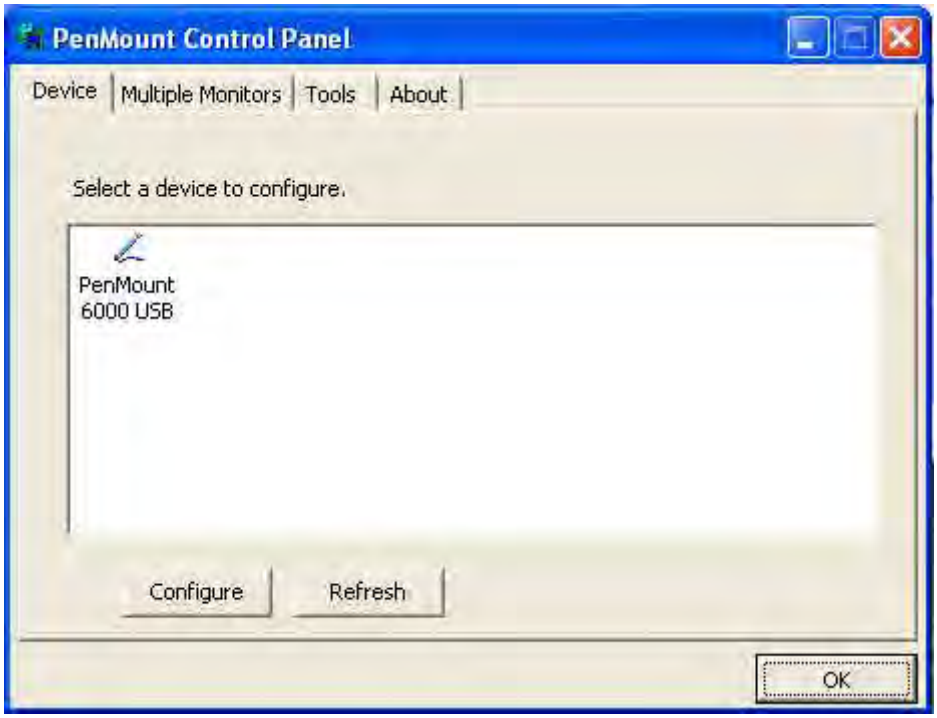
1. After installation, click the PenMount Monitor icon “PM” in the menu bar.
2. When the PenMount Control Panel appears, select a device to “Calibrate.”

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 are detected on your system.



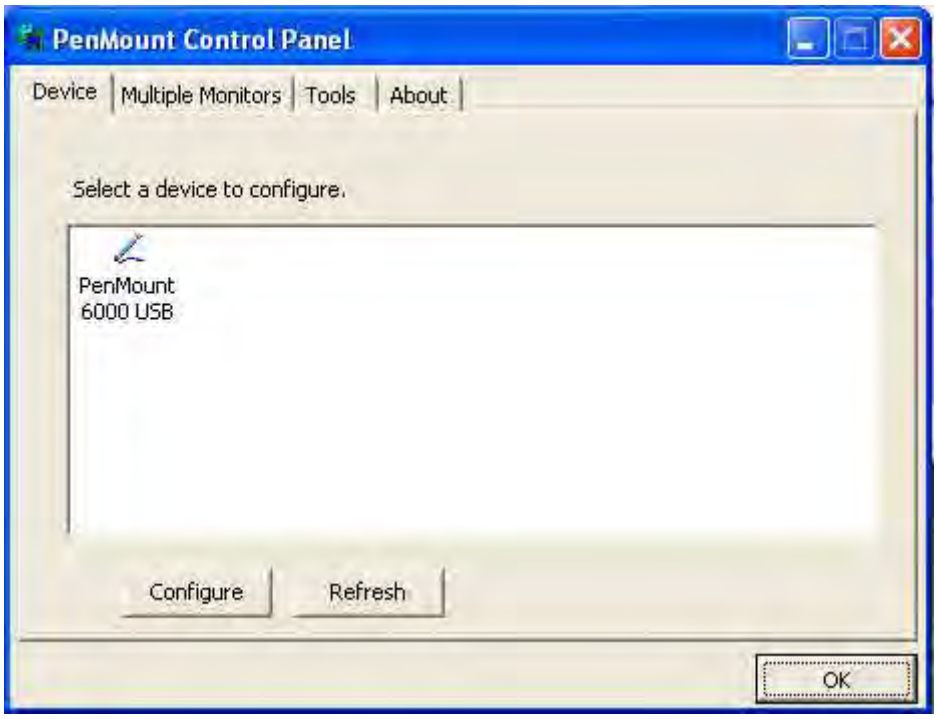
Calibrate

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

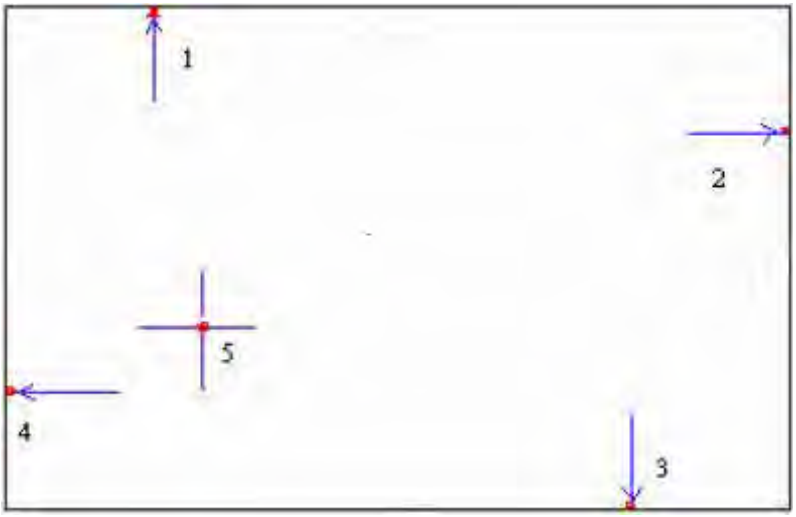
Standard Calibration	**Click this button and arrows appear pointing to red squares. Use your finger or stylus to touch the red squares in sequence. After the fifth red point calibration is complete. To skip, press ‘ESC’.**

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.

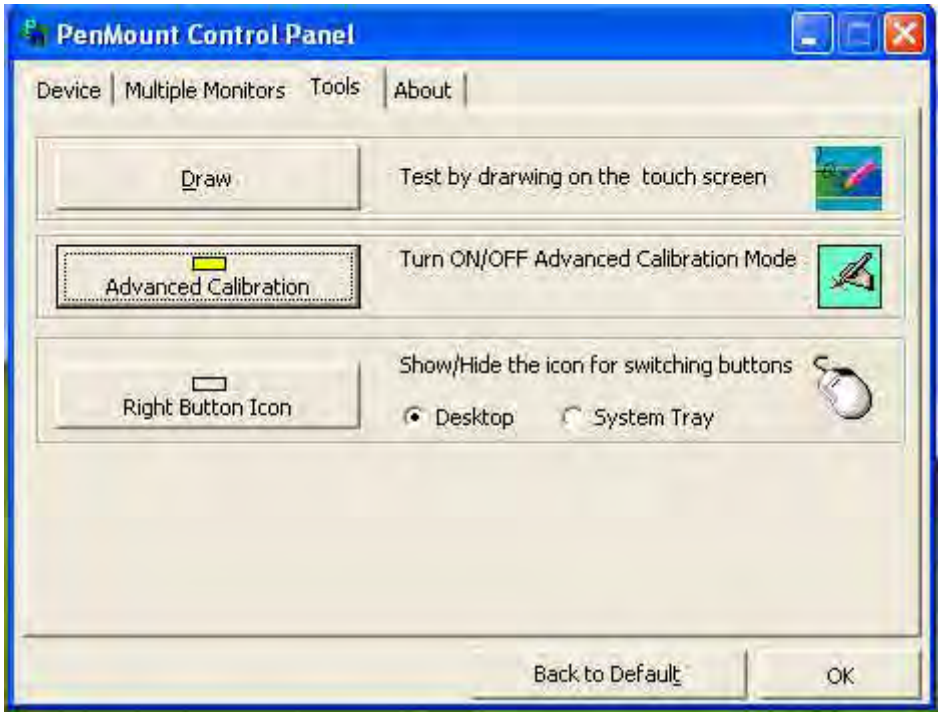


2.Click "Standard Calibration" to start calibration procedure



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**”.



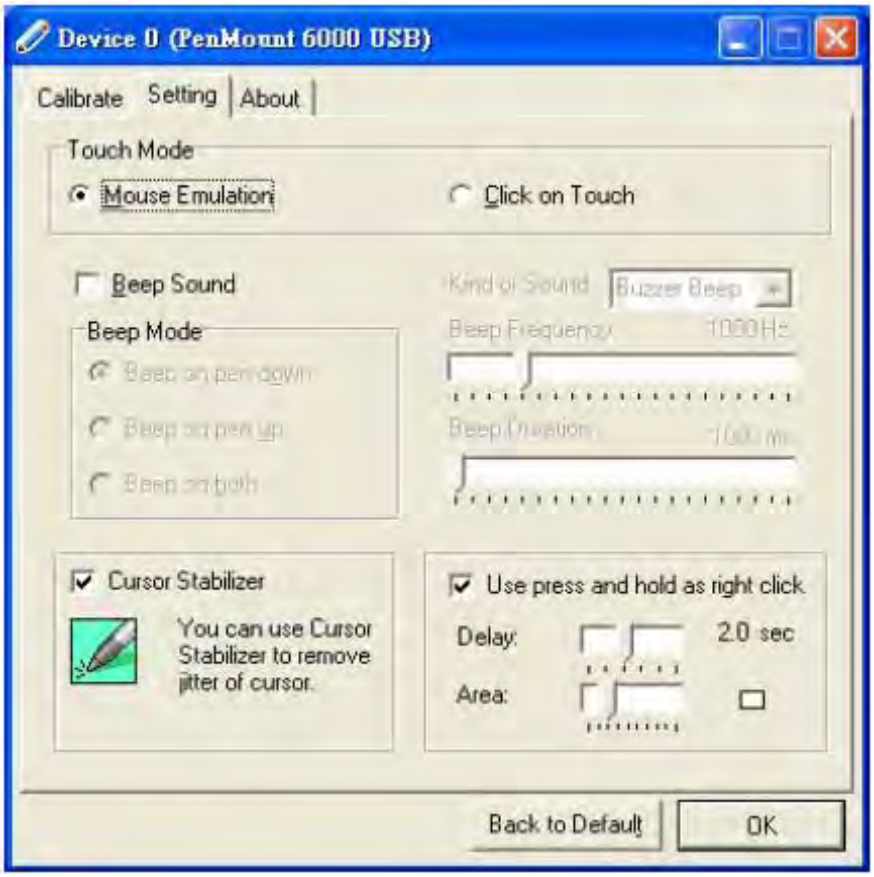
Select “**Device**” to calibrate, then you can start to do “Advanced Calibration”.

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**

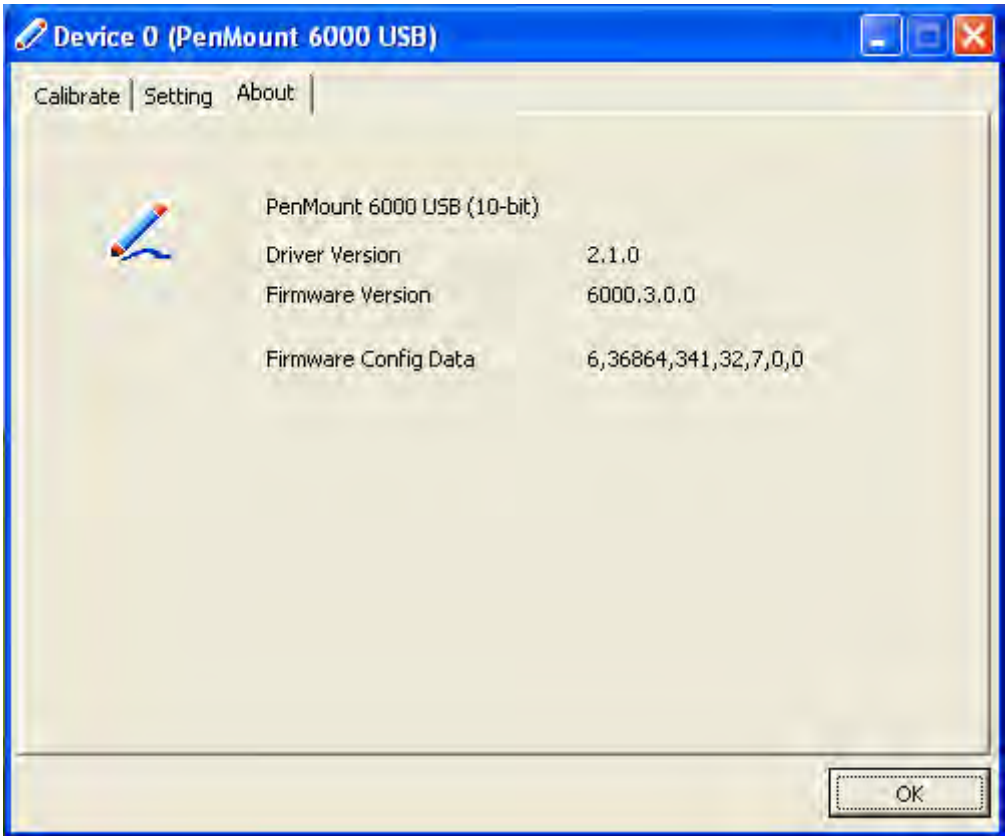
Setting

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

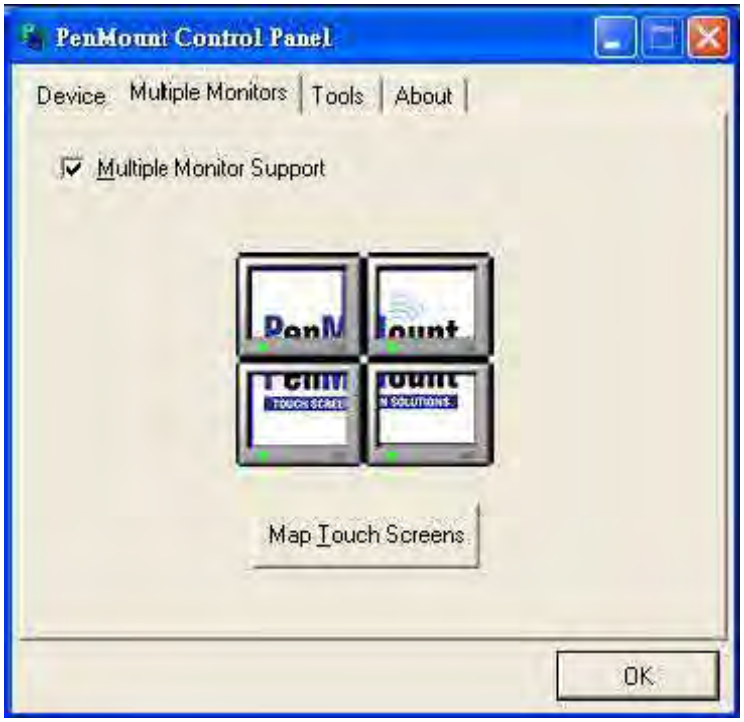
Multiple Monitors supports from two to six touch screen displays for one system. The PenMount drivers for Windows 2000/XP support Multiple Monitors. This function supports from two to six touch screen displays for one system. Each monitor requires its own PenMount touch screen control board, either installed 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

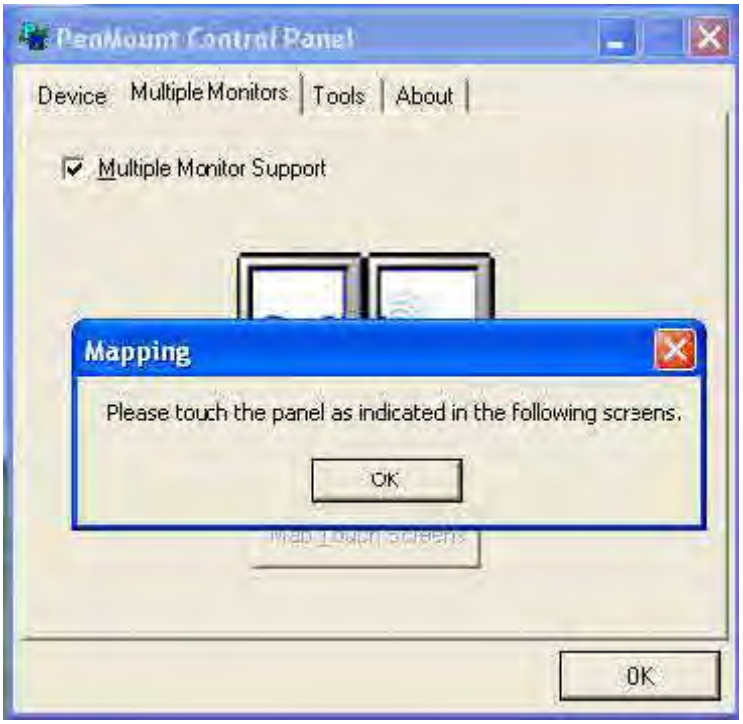
NOTE: The Multiple Monitors function is for use with multiple displays only. Do not use this function if you have only one touch screen display. Please note once you turn on this function the Rotating function is disabled.

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.

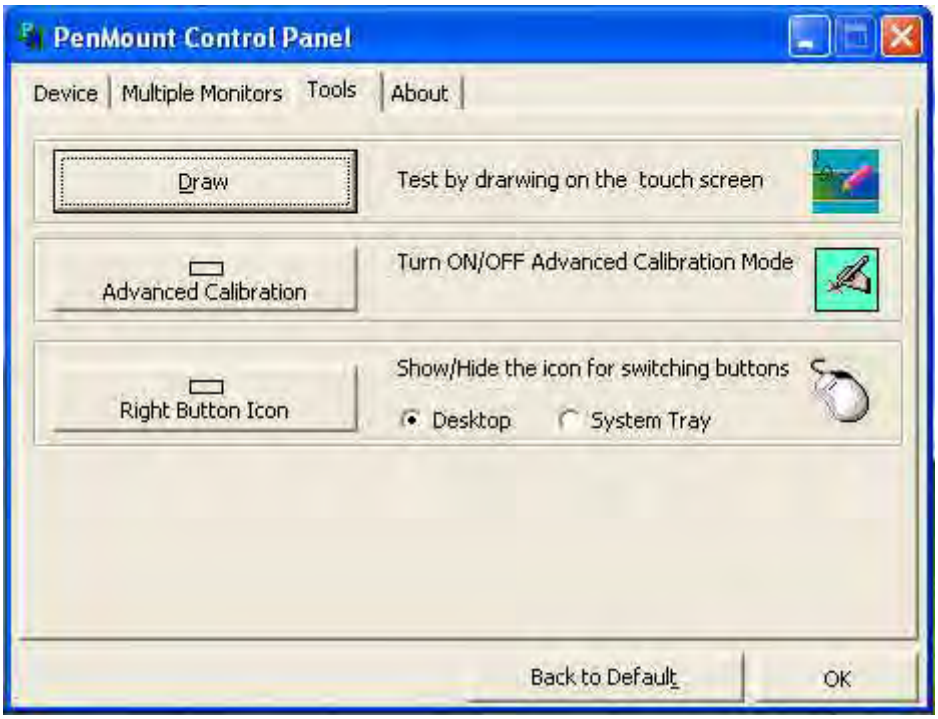
2. The Rotating function is disabled if you use the Multiple Monitors function.

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.**

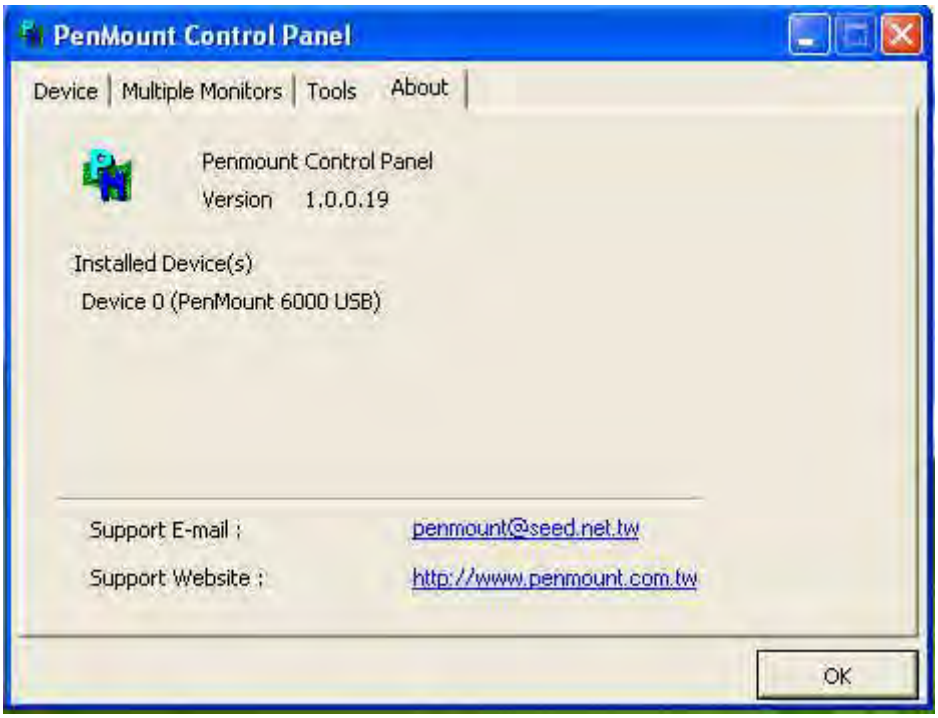
Tools

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