



AXIOMTEK

P1197E-500

All-in-One
19" SXGA TFT Expandable
Panel PC

User's Manual



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CAUTION

Wrong type of batteries may cause explosion. It is recommended that users only replace with the same or equivalent type of batteries as suggested by the manufacturer once properly disposing of any used ones.

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Safety Precautions

Before getting started, please read the following important safety precautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
2. Disconnect the power cord from the P1000 series prior to any installation. Be sure both the system and the external devices are turned off. Sudden surge of power could ruin sensitive components. Make sure the P1000 series is properly grounded.
3. Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
 - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
 - When handling boards and components, wear a grounding wrist strap available from most electronic component stores.

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Section 1

Introduction

This Section contains general information and detailed specifications of the P1197E-500, including the following Subsections:

Figure 1-1 Front View of the P1197E-500



- General Description
- Specification
- Dimensions
- I/O Outlets
- Package List

1.1 General Description

The P1197E-500 adopts a 19-inch SXGA TFT LCD with 250-nits brightness, a high performance LGA1151 socket for 6th generation Intel® Core™ processor, and an Intel® H110 Express chipset to provide excellent computing performance. Furthermore, P1197E-500 adopts a built-in speaker and optional WLAN module for wireless connectivity.

Industrial-grade front bezel

P1197E-500 adopts industrial-grade front bezel which incorporates the advantages of light weight, high degree of hardness, better heat releasing, easy-to-shape and anti-corrosion. Therefore, P1197E-500 is especially suitable for most rugged industrial environments.

Expandable for PCIe (or PCI optional)

P1197E-500 comes with one PCIe x4 (or optionally one PCI) for expansion purpose. User can easily plug in standard half-size PCI or PCIe card as required.

Speaker and WLAN Antenna Supported

P1197E-500 features a built-in speaker for kiosk application to display multimedia contents. It also supports a WLAN module (optional) antenna for wireless network connectivity.

High Performance computing: 6th Generation Intel® Core™ Processors

P1197E-500 is powered by LGA1151 Socket 6th Generation Intel® Core™ i7/i5/i3, Pentium® and Celeron® processors which provide powerful performance and less power consumption. The latest Intel® Skylake-S platform offers reliable and stable performance suitable for rugged environments.

1.2 Specifications

1.2.1 System Specifications

Main CPU Board

- CPU
 - LGA1151 socket 6th generation Intel® Core™ i7/i5/i3, Celeron® and Pentium® processors
- Chipset
 - Intel® H110 PCH chipset
- System Memory
 - 2 x 288-pin DDR4-2133 Long-DIMM socket support dual channels up to 32GB
- BIOS
 - AMI BIOS
- Standard I/O
 - 1 x RS-232/422/485
 - 3 x RS-232
 - 4 x USB 3.0
 - 1 x HDMI
 - 1 x VGA
 - 1 x Display Port
 - 2 x USB2.0 on front bezel
- Ethernet
 - 1 x RJ45 GbE LAN ports (Intel® i219LM)
 - 1 x RJ45 GbE LAN ports (Intel® i211AT)

- **Audio**
 - 1 x Line-out
 - 1 x Mic-in
- **Expansion**
 - 1 x PCIe x4 or 1 x PCI slot.
 - 1 x PCI-Express Mini Card; only WIFI and 3G supported.
 - 1 x SIM card slot.
 - 3 x SMA Type Antenna Hole
- **Storage**
 - 1 x 2.5" or 3.5" SATA HDD
- **Power connector**
 - 1 x AC plug

1.2.2 Mechanical/Environmental Specifications

- **19" SXGA LCD (with resolutions 1280x1024)**
- **5 wired resistive touch**
- **IP65/NEMA4 aluminum front bezel**
- **Net Weight**
 - 8 Kgs (17.64 lbs)
- **Dimensions (Main Body Size)**
 - 482mm x 380.80mm x 94.70mm (18.98" x 14.99" x 3.73") (W x H x D)
- **Operation Temperature**
 - 0°C to 45°C
- **Relative Humidity**
 - 10% to 90% @ 40°C, non-condensing
- **Power Input**
 - 100~240VAC power connector

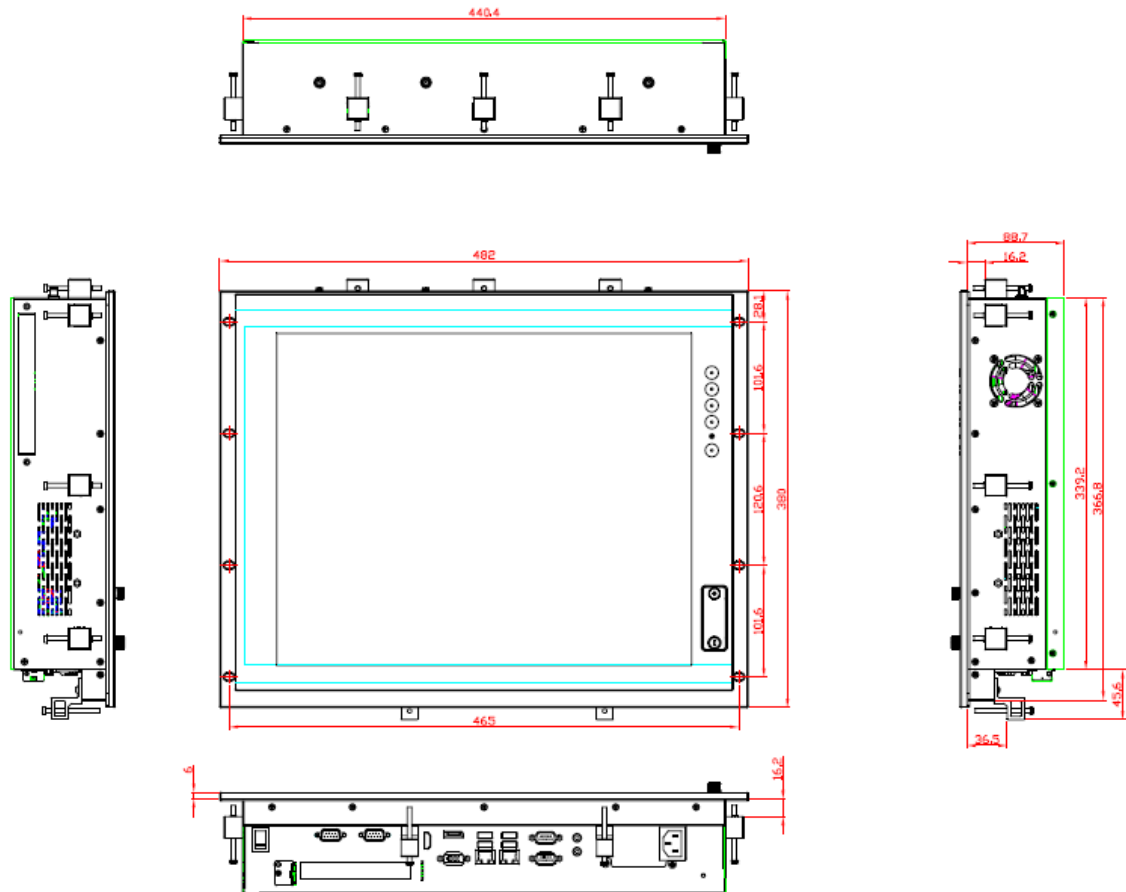


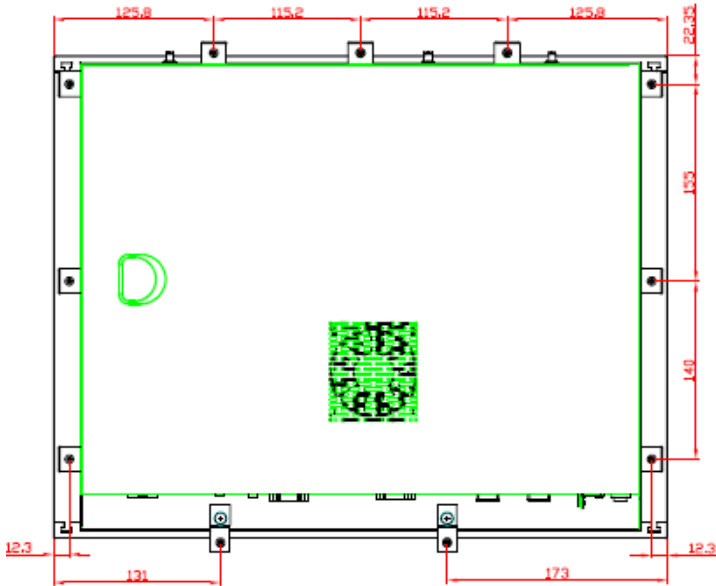
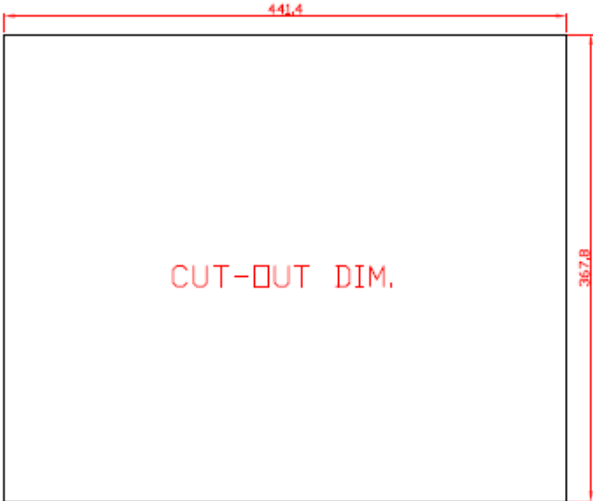
NOTE 1. All specifications and images are subject to change without notice.
2. Long press the button of OSD doesn't have "repeat" function.

1.3 Dimensions and Outlines

Diagram 1-1 and 1-2 show the outlines and dimensions of P1197E-500, respectively.

Diagram 1-1 Outlines of the P1197E-500





1.4 I/O Outlets

Figure 1-1 and Table 1-1 illustrate I/O locations and their functions of the P1197E-500.

Figure 1-2 Side View of the P1197E-500

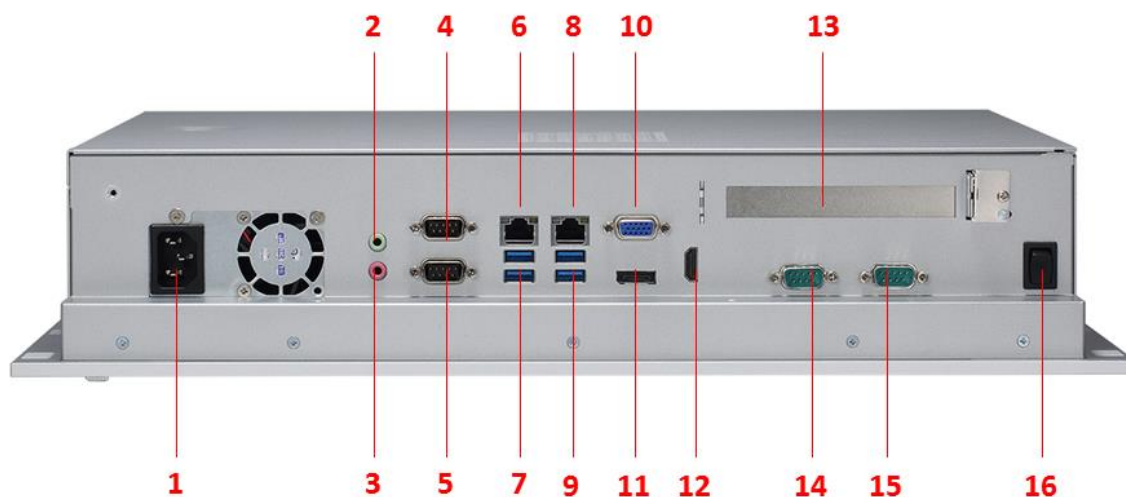


Table 1-1 Functions of the I/O Outlets of the P1197E-500

No	Function
1	1 x AC Plug
2	1 x Line-out
3	1 x Mic-in
4	1 x RS-232/422/485 (COM1)
5	1 x RS-232 (COM2)
6	1 x RJ45 for Gigabit Ethernet
7	2 x USB3.0
8	1 x RJ45 for Gigabit Ethernet
9	2 x USB3.0
10	1 x VGA
11	1 x Display Port
12	1 x HDMI
13	1 x PCI or 1 x PCIe x4 Card expansion slot
14	1 x RS-232 (COM3)
15	1 x RS-232 (COM4)
16	1 x Switch for power on/off

Section 2

Hardware and Installation

The P1197E-500 provides rich I/O ports and flexible expansion to meet different demands. The Section explains how to install the hardware.

- **Packing List**
- **System Layout**
- **Mountings: Panel / Wall / Rack / Desktop / VESA**
- **HDD Installation**
- **DRAM Installation**
- **Wireless LAN Module Installation (optional)**
- **Add-on Card Installation**
- **Board Layout**
- **Rear I/O**
- **Jumper Settings**
- **Connector**

2.1 Packing List

The package bundled with the P1197E-500 should contain the following items:

- P1197E-500 x 1
- Driver CD x 1
- Panel mount kit x 7
- Wall mount / VESA mount bracket x 1 (optional)
- Power cord x 1

If any above-mentioned item is missing, please contact an Axiomtek distributor immediately.

2.2 System Layout

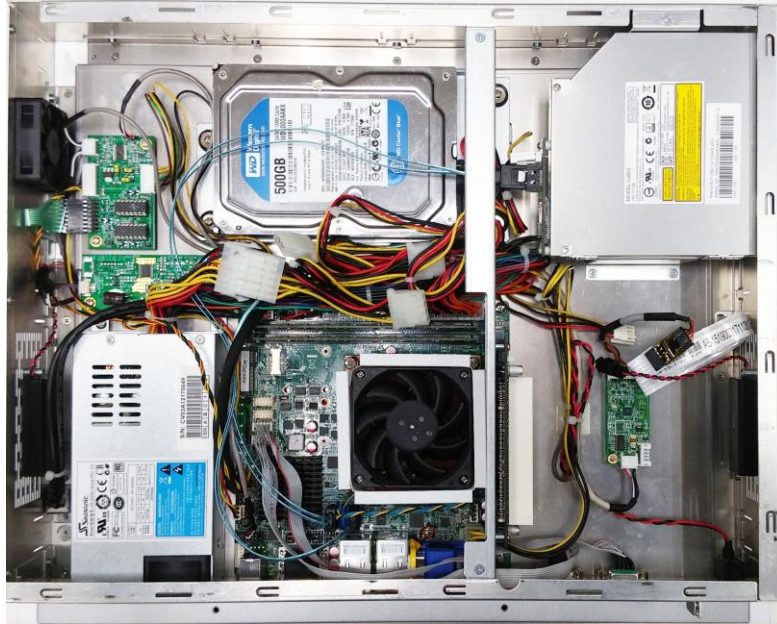
To open the P1197E-500, simply unscrew the 3 screws on the rear cover and push the cover to the right side as shown in Figure 2-1.

Figure 2-1 Remove Back Cover of the P1197E-500



Once the rear cover is removed, the internal system should look like Figure 2-2.

Figure 2-2 After Removing the Rear Cover of the P1197E-500,install memory, storage and any other peripheral.



2.3 Mountings: Panel / Wall / Rack / Desktop / VESA

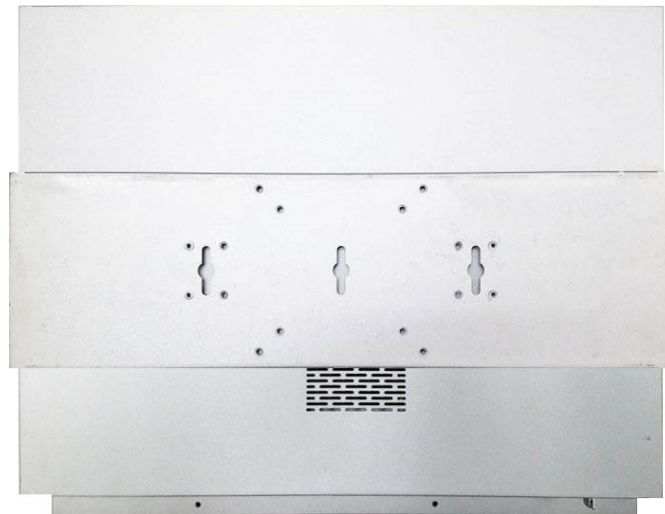
There are 5 application options for the P1197E-500, including Panel/Wall/Rack/ Desktop/VESA mounting ways.

2.3.1 VESA-ARM / Wall-Mount / Desktop-mount

The P1197E-500 provides VESA mount: 75x75 mm or 100x100mm. Screw six screws to fix the kit in the back chassis.



▲VESA/ Wall mount bracket



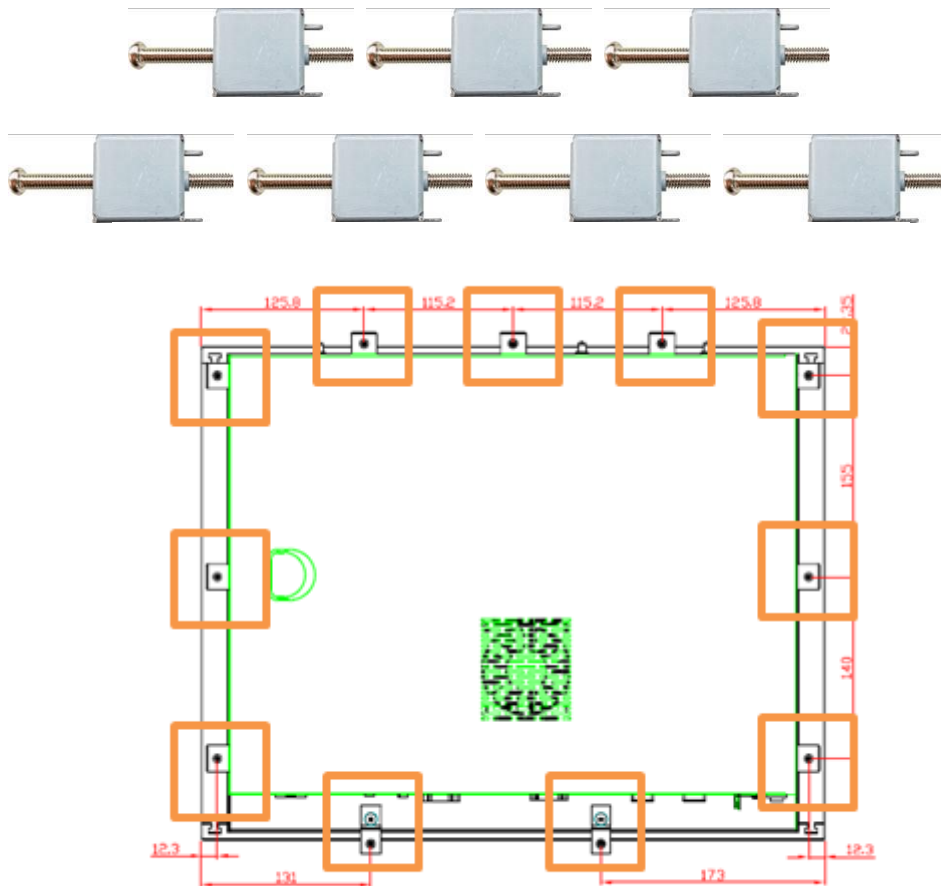
▲ Putting the bracket on the back of system



▲ Fixing the bracket by six screws on the left and right side.

2.3.2 Panel-mount Kit Assembly

The P1197E-500 is designed for panel mount application. To mount the P1197E-500, the standard set of mounting kit (7pcs included in the system packaging) is needed.

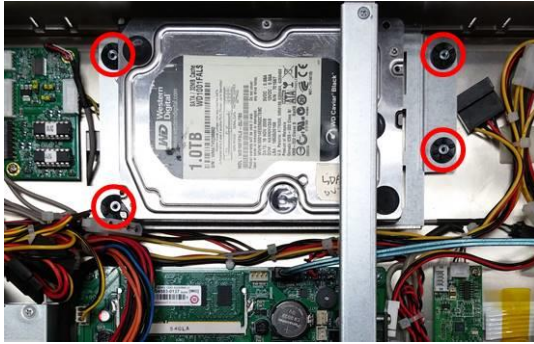


2.4 HDD Installation

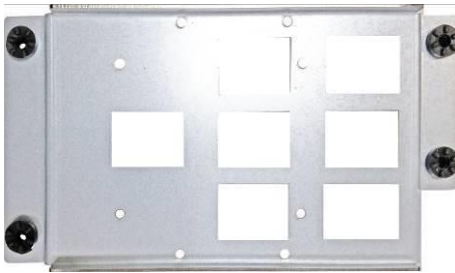
The P1197E-500 provides a convenient Hard Disk Drive (HDD) bracket for users to install 2.5" 1 x 3.5" or 2.5" SATA HDD. Please follow the steps:

Step 1 Refer section 2.1 to open the back cover.

Step 2 Unscrew 4 screws to take off the HDD bracket.



Step 3 Fix the HDD on bracket by the screws.



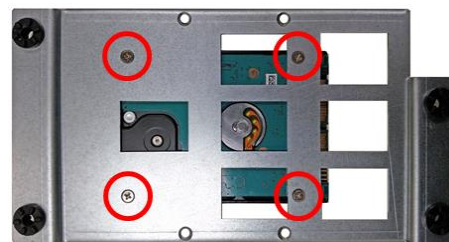
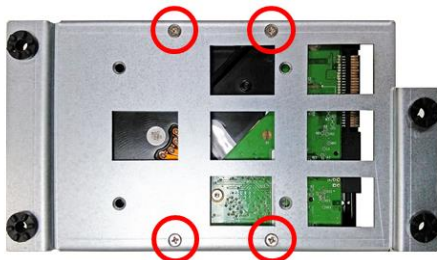
▲ 1 x 3.5" or 2.5" SATA HDD Bracket



▲ Fix 3.5" HDD on the back of bracket



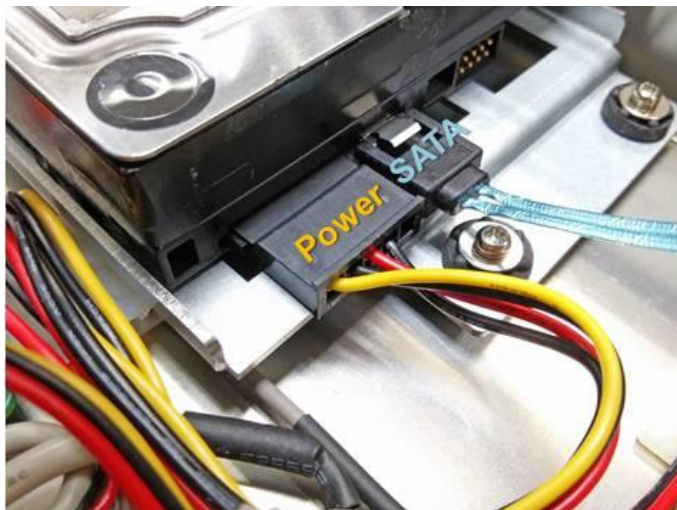
▲ Fix 2.5" HDD on the back of bracket



Step 4 Fix the HDD bracket into the main base.



Step 5 Plug the power and SATA cables to connectors. Installation completes.



2.5 DRAM Installation

The P1197E-500 provides one 288-pin DDR4 Long-DIMM sockets that support system memory up to 8GB. Please follow steps below to install the memory modules:

- Step 1** Refer to section 2.1 to open the back cover and find out DIMM socket on mainboard (MANO500).



- Step 2** Install the Long-DIMM module into the slot and press it firmly down until it seats correctly.



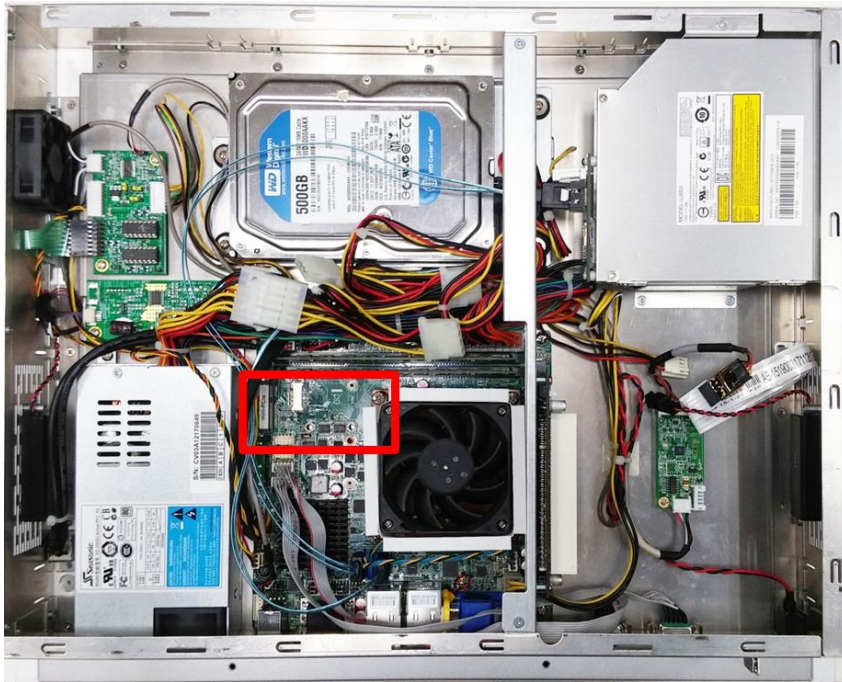
Step 3 The slot latches are levered upwards and latch on to the edges of the Long-DIMM.



2.6 Wireless LAN Module Installation (optional)

The P1197E-500 provides one wireless LAN module to install. When installing the wireless LAN module, refer to the following instructions and illustration:

Step 1 Refer to section 2.1 to open the back cover and find out PCIe Mini-Card slot located.



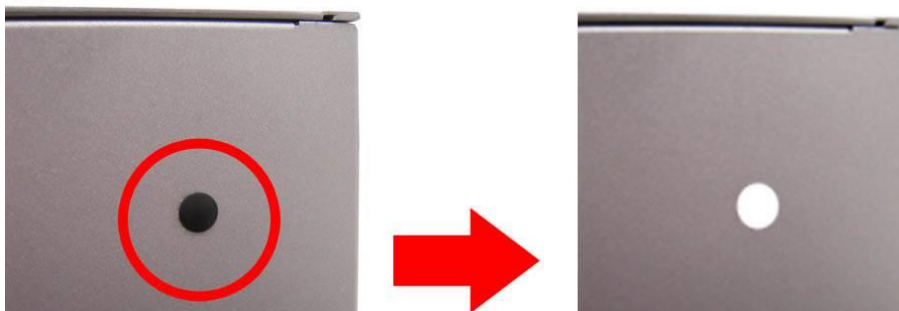
Step 2 Insert wireless LAN module to Mini card slot and fixing it by 1 screw.



Step 3 Find the built-in Antenna cable and connect it wireless LAN card.



Step 4 Lift the rubber stopper from the top of back cover.



Step 5 Install the antenna on the antenna connector.



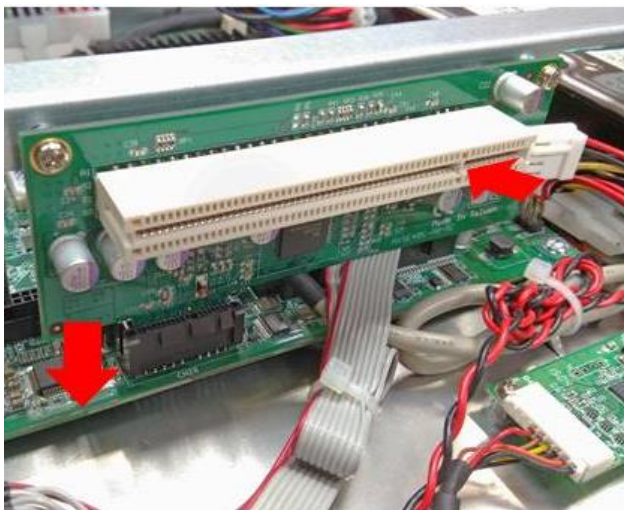
2.7 Add-on Card Installation

The P1197E-500 provides a riser card (PCIe interface) for 1 x PCIe or 1 x PCI slots expansion. The riser card assembly can accommodate both half-size expansion cards. To install the riser card, refer to the following figure and instructions below:

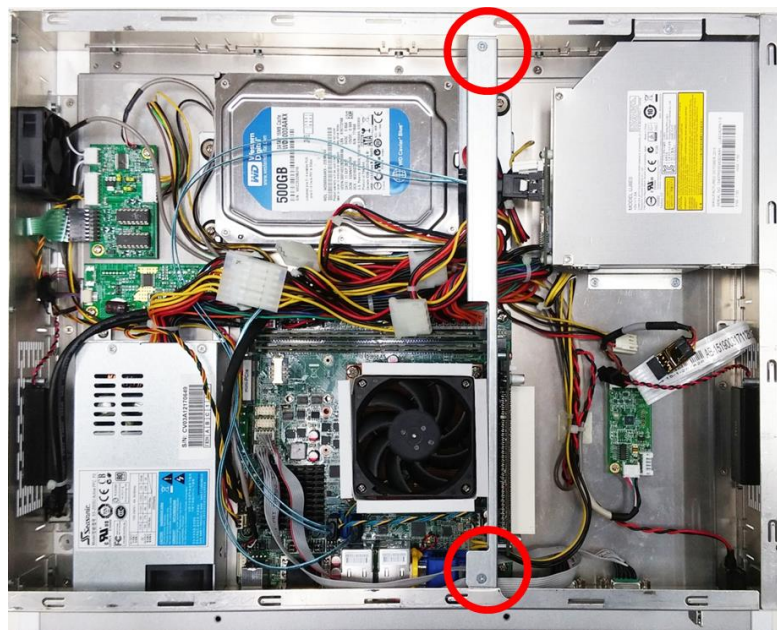
- Step 1** Refer section 2.1 to open the back cover and unscrew 2 screws, and then remove the riser card fix kit and plate.



- Step 2** Insert the riser card in the socket firmly until it is installed completely. Then insert the add-on card to the socket of riser card.

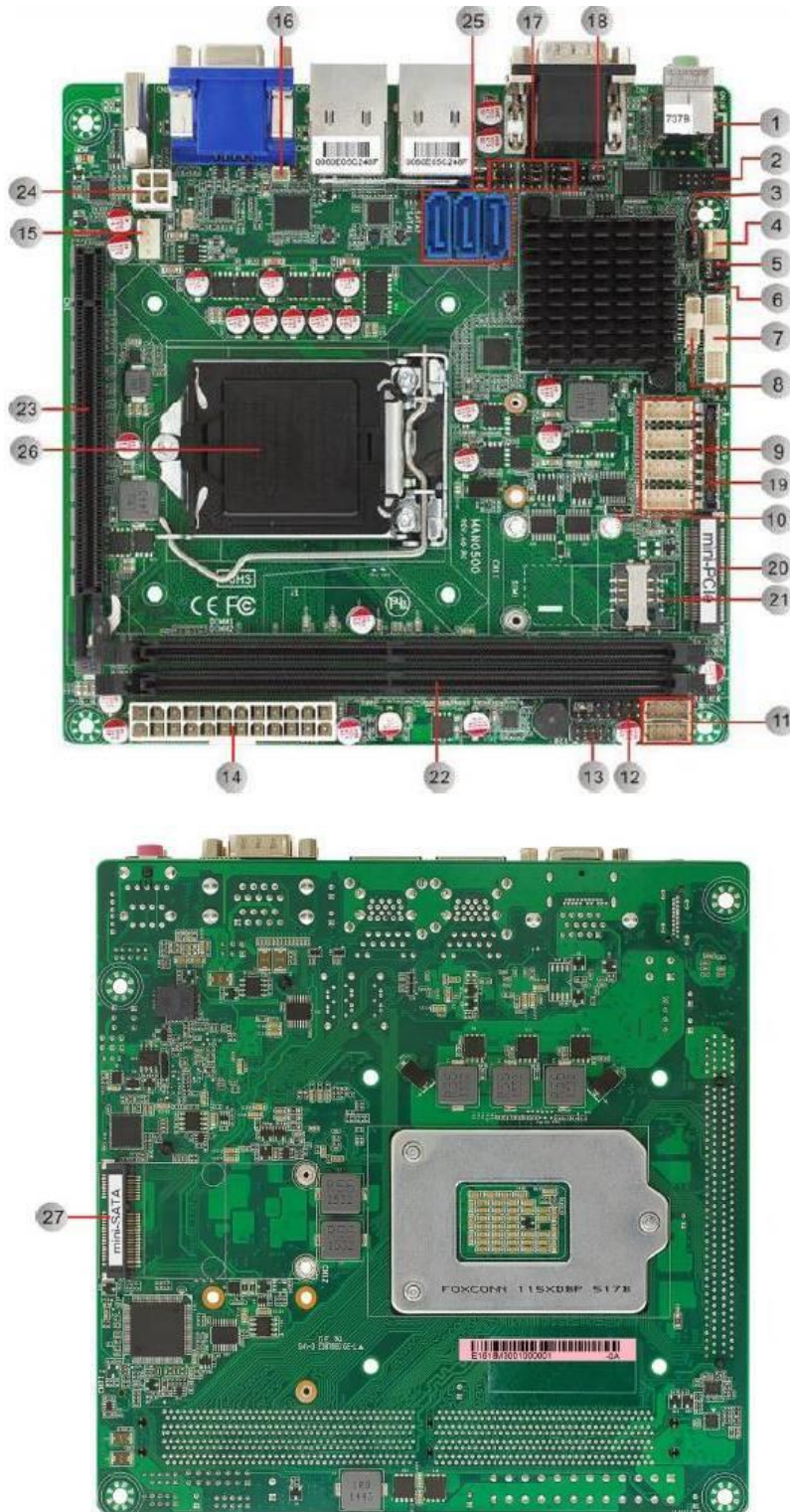


Step 3 Secure the metal bracket of the card to the system case with four screws. Installations complete.



NOTE: Please use the standard size of add-on card to avoid conflict to the mechanism.

2.8 Board Layout



2.9 Rear I/O

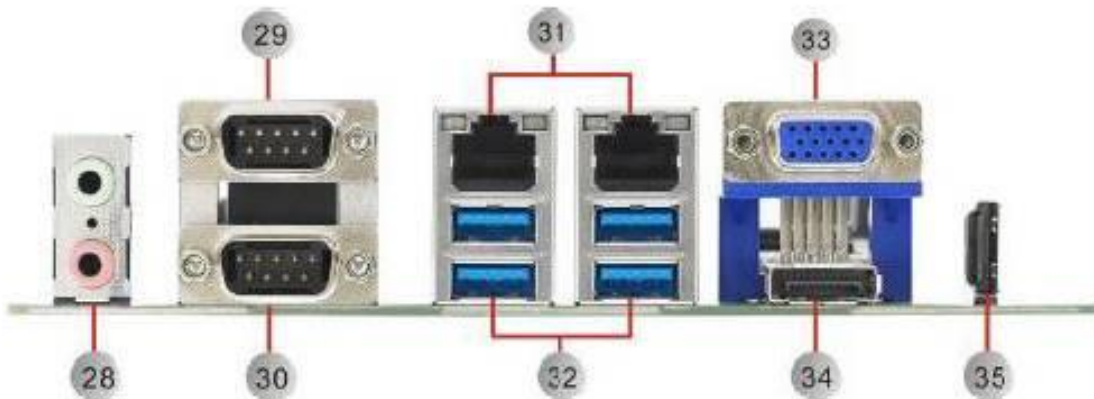
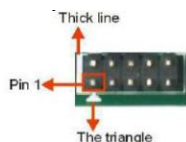


Table 2-1 Jumpers/ Headers/ Connectors associated with each Label

Jumpers/Headers/Connectors			
Label	Function	Label	Function
1	Keyboard and Mouse Header (CN18)	21	SIM Card Slot (SIM1)
2	Front Audio Header (CN16)	22	DDR4 LONG-DIMM Sockets (DIMM1, DIMM2)
3	Clear CMOS Jumper (JP1)	23	PCI-Express x16 Slot (CN1)
4	System Fan Connector (SYS_FAN1)	24	ATX1 Power Input Connector (ATX1)
9	COM3~COM6 Headers (COM3~COM6)	25	SATA 3.0 Connectors (SATA1~SATA3)
10	AT/ATX Power Mode Select Jumper (JP2)	26	CPU Socket
11	USB 2.0 Wafers (CN13, CN14)	27	mSATA Slot (CN12)
13	GPIO Header (CN15)	28	Audio Jack (CN2)
14	ATX2 Power Input Connector (ATX2)	29, 30	COM1 and COM2 Connector (CN7)
15	CPU Fan Connector (CPU_FAN1)	31	LAN Connectors (CN3, CN4)
16	CMOS Battery Connector (BAT1)	32	USB 3.0 Connectors (CN3, CN4)
17	COM1 RS-232/422/485 Mode Select Jumpers (JP3~JP5)	33	VGA Connector (CN6)
18	COM1 Data/Power Select Jumper (JP6)	34	DisplayPort Connector (CN5)
19	eDP Connector (CN19)	35	HDMI Connector (CN8)
20	PCI-Express Mini Card Connector (CN11)		



NOTE:



To identify the first pin of a header or jumper, please refer to the following information:

- Usually, there is a thick line or a triangle near the header or jumper pin 1.

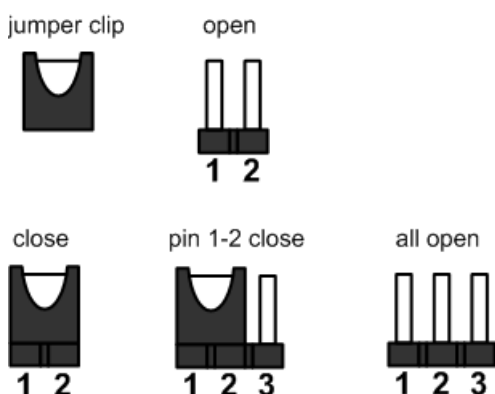


Squared, which you can find on the back of the motherboard, is usually used for pin 1.

2.10 Jumper Settings

Jumper is a small component consisting of jumper clip and jumper pins. Install jumper clip on 2 jumper pins to close. And remove jumper clip from 2 jumper pins to open. The following illustration shows how to set up jumper.

Diagram 2-1 Definitions of Pin Settings



Before applying power to the P1197E-500 series, please make sure the jumpers are in default positions which are defined as follows:



NOTE: *In case that default jumper setting needs to be changed, please make any change under the power-off condition.*

Table 2-2 Jumper Settings

Jumper	Description	Setting	
JP1	Clear CMOS Default: Normal Operation	1-2 Close	
JP2	AT/ATX Power Mode Select Default: ATX Mode	2-3 Close	
JP3	COM1 RS-232/422/485 Mode Select Default: RS-232	1-2 Close	
JP4		3-5, 4-6 Close	
JP5		3-5, 4-6 Close	
JP6	COM3 Data/Power Select Default: RS-232 Data	CN7 Pin 1: DCD	3-5 Close
		CN7 Pin 9: RI	4-6 Close

2.10.1 Clear CMOS Select (JP1)

JP1 is used to clear the Real Time Clock (RTC) RAM in CMOS. Data, time and system setup parameters stored in the CMOS memory can be cleared by erasing the CMOS RTC RAM data. The onboard battery powers the RAM data in CMOS, which includes system setup information such as system passwords.

To erase the RTC RAM:

1. Turn off the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper clip from Pins 1-2 (default) to Pins 2-3. Keep the clip on Pins 2-3 for about 5~10 seconds, then move the clip back to Pins 1-2.
4. Re-install the battery.
5. Plug the power cord and turn on the computer.
6. Hold down the key during the boot process and enter BIOS setup to re-enter data.

Table 2-3 Jumper Settings for JP1

Function	Setting
Normal operation (Default)	1-2 close
Clear CMOS	2-3 close



2.10.2 AT/ATX Power Mode Select (JP2)

JP2, a 3x1-pin p=2.54mm jumper, is used to select AT or ATX power mode.

Table 2-4 Jumper Settings for JP2

Function	Setting
ATX mode (Default)	1-2 close
AT mode	2-3 close

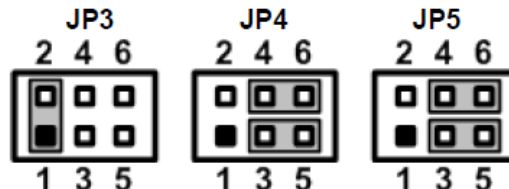


2.10.3 COM1 RS-232/422/485 Mode Select (JP3, JP4, JP5)

Use Jumpers 3, 4 and 5 (3x2-pin p=2.54mm) to set COM1 port to operate as RS-232, RS-422 or RS-485 communication mode.

Table 2-5 Jumper Settings for JP3, JP4 and JP5

Function	Setting
RS-232 mode (Default)	JP5 1-2 close JP6 3-5, 4-6 close JP7 3-5, 4-6 close
RS-422 mode	JP5 3-4 close JP6 1-3, 2-4 close JP7 1-3, 2-4 close
RS-485 mode	JP5 5-6 close JP6 1-3, 2-4 close

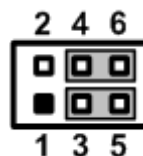


2.10.4 COM3 Data/Power Select (JP6)

The COM3 port has a +5V/+12V power capability on DCD and RI by setting this 5x2-pin p=2.54mm jumper (JP6).

Table 2-6 Jumper Settings for JP6

Function	Setting
Power: Set COM3 Pin 1 to +5V	1-3 close
Data: Set COM3 Pin 1 to DCD (Default)	3-5 close
Power: Set COM3 Pin 9 to +12V	2-4 close
Data: Set COM3 Pin 9 to RI (Default)	4-6 close

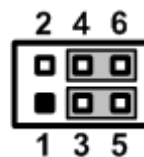


2.10.5 COM1 Data/Power Select (JP6)

The COM1 port has +5V power capability on DCD and +12V on RI by setting this jumper (3x2-pin p=2.54mm).

Table 2-7 Jumper Settings for JP6

Function	Setting
Power: Set COM1 Pin 1 to +5V	1-3 close
Data: Set COM1 Pin 1 to DCD (Default)	3-5 close
Power: Set COM1 Pin 9 to +12V	2-4 close
Data: Set COM1 Pin 9 to RI (Default)	4-6 close



2.11 Connectors

Signals go to other parts of the system through connectors. Loose or improper connection might cause problems, please make sure all connectors are properly and firmly connected. Here is a summary table showing connectors on the hardware.

Table 2-8 A Summary of Connectors

Connector	Description
CN1	PCI-Express x16 Slot
CN2	Audio Jack
CN3, CN4	LAN and USB 3.0 Connectors
CN5	DisplayPort Connector
CN6	VGA Connector
CN7	COM1 and COM2 Connector
CN8	HDMI Connector
CN11	PCI-Express Mini Card Connector
CN12	mSATA Slot
CN13, CN14	USB 2.0 Wafers
CN15	GPIO Header
CN16	Front Audio Header
CN18	Keyboard and Mouse Header
CN19	eDP Connector
BAT1	CMOS Battery Connector
ATX1	ATX1 Power Input Connector
ATX2	ATX2 Power Input Connector
COM3~COM6	COM3~COM6 Headers
CPU_FAN1	CPU Fan Connector
SYS_FAN1	System Fan Connector
SIM1	SIM Card Slot
SATA1~SATA3	SATA 3.0 Connectors
DIMM1~DIMM2	DDR4 LONG-DIMM Sockets

2.11.1 Audio Jack (CN2)

The motherboard provides HD audio jack on the rear I/O. Install audio driver, and then attach audio devices to CN2.

Table 2-9 Color Assignment for CN2

Pin Color	Signal
Green	Line-out
Pink	MIC-in



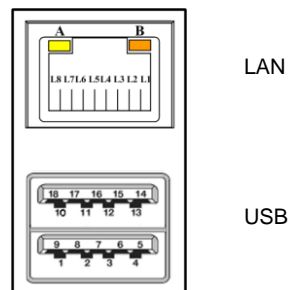
2.11.2 LAN and USB 3.0 Connectors (CN3 and CN4)

The motherboard comes with two high performance plug-and-play Ethernet interfaces (RJ-45) which are fully compliant with IEEE 802.3 standards. Connection can be established by plugging one end of the Ethernet cable into this RJ-45 connector and the other end to a 10/100/1000 Base-T hub.

The Universal Serial Bus (compliant with USB 3.0) connectors CN3 and CN4 on the rear I/O are used to install USB peripherals such as keyboard, mouse, scanner, etc.

Table 2-10 Pin Assignment for CN3 (for LAN Signals)

Pin	LAN Signal	Pin	LAN Signal
L1	Tx+ (Data transmission positive)	L2	Tx- (Data transmission negative)
L3	Rx+ (Data reception positive)	L4	RJ-1 (For 1000 Base-T only)
L5	RJ-1 (For 1000 Base-T only)	L6	Rx- (Data reception negative)
L7	RJ-1 (For 1000 Base-T only)	L8	RJ-1 (For 1000 Base-T only)
A	Active LED	B	Speed LED



NOTE:

- Speed LED turns orange for 1000Mbps or green for 100Mbps.
- CN3 supports AMT when chipset is customized into Intel® Q170 and Wake-on-LAN.

Table 2-11 Pin Assignment for CN4 (for USB Signals)

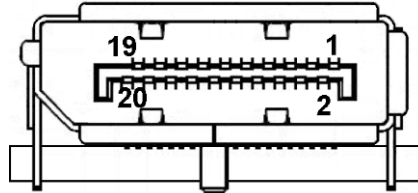
Pin	USB Signal	Pin	USB Signal
1	USB3_POWER	2	USB -
3	USB +	4	GND
5	USB3_SSRX	6	USB3_SSRX+
7	GND	8	USB3_SSTX
9	USB3_SSTX+		

2.11.3 DisplayPort Connector (CN5)

The DisplayPort interface is available through CN5.

Table 2-12 Pin Assignment for CN5

Pin	Signal
1	DP_TX0_P
2	GND
3	DP_TX0_N
4	DP_TX1_P
5	GND
6	DP_TX1_N
7	DP_TX2_P
8	GND
9	DP_TX2_N
10	DP_TX3_P
11	GND
12	DP_TX3_N
13	GND
14	GND
15	DP_AUXP
16	GND
17	DP_AUXN
18	DP_HPD
19	GND
20	+3.3V

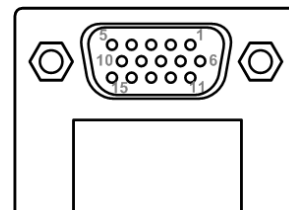


2.11.4 VGA Connector (CN6)

The CN6 is a high-rise 15-pin D-Sub connector which is commonly used for VGA display. This VGA interface can be configured via software utility

Table 2-13 Pin Assignment for CN6

Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	NC
5	GND	6	DETECT
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDC DATA
13	Horizontal Sync	14	Vertical Sync
15	DDC CLK		



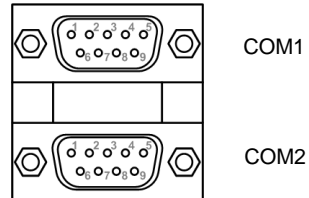
2.11.5 COM Connector (CN7)

The CN7 is a double-deck DB-9 connector for interfaces of COM1 and COM2 serial ports where only COM1 is selectable for RS-232/422/485 mode by jumper settings (see Section 2.3.3). The pin assignments of RS-232/422/485 are listed in Table 2-18 below.

Table 2-14 Pin Assignment for CN7 (for COM1)

COM1

Pin	RS-232	RS-422	RS-485
1	DCD# [*]	TX-	485-
2	RXD	TX+	485+
3	TXD	RX+	N/C
4	DTR#	RX-	N/C
5	GND	GND	GND
6	DSR#	N/C	N/C
7	RTS#	N/C	N/C
8	CTS#	N/C	N/C
9	RI# [*]	N/C	N/C



NOTE: [*]: Pin 1 of COM1 can be DCD/+5V and pin 9 of COM1 can be RI/+12V by selecting JP6 (see section 2.9.5).

Table 2-15 Pin Assignment for CN7 (for COM2)

COM2

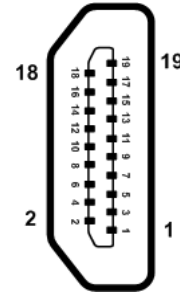
Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

2.11.6 HDMI Connector (CN8)

The HDMI (High-Definition Multimedia Interface) is a compact digital interface which is capable of transmitting high-definition video and high-resolution audio over a single cable.

Table 2-16 Pin Assignment for CN8

Pin	Signal	Pin	Signal
1	HDMI OUT_DATA2+	2	GND
3	HDMI OUT_DATA2-	4	HDMI OUT_DATA1+
5	GND	6	HDMI OUT_DATA1-
7	HDMI OUT_DATA0+	8	GND
9	HDMI OUT_DATA0-	10	HDMI OUT_Clock+
11	GND	12	HDMI OUT_Clock-
13	N/C	14	GND
15	HDMI OUT_SCL	16	HDMI OUT_SDA
17	GND	18	+5V
19	HDMI_HTPLG		

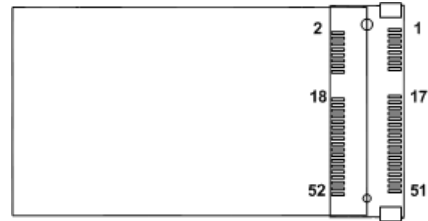


2.11.7 PCI-Express Mini Card Connector (CN11)

The CN11 connector complies with the specifications V 1.2 of the PCI-Express Mini Card..

Table 2-17 Pin Assignment for CN11

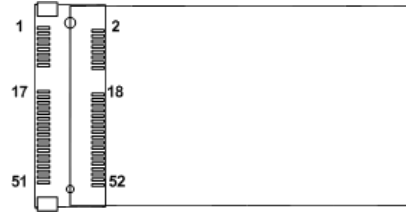
Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VAUX
3	N/C	4	GND
5	N/C	6	+1.5V
7	+3.3VAUX	8	UIM_PWR
9	GND	10	UIM_DAT
11	REFCLK-	12	UIM_CLK
13	REFCLK+	14	UIM_REST
15	GND	16	UIM_VPP
17	N/C	18	GND
19	N/C	20	W_DISABLE#
21	GND	22	PERST#
23	PERN0	24	+3.3VAUX
25	PERP0	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PETN0	32	SMB_DATA
33	PETP0	34	GND
35	GND	36	USB_10-
37	GND	38	USB_10+
39	+3.3VAUX	40	GND
41	+3.3VAUX	42	N/C
43	GND	44	N/C
45	CL_CLK	46	N/C
47	CL_DATA	48	+1.5V
49	CL_RST_N	50	GND
51	N/C	52	+3.3VAUX



2.11.8 mSATA Slot (CN12)

Table 2-18 Pin Assignment for CN12

Pin	Signal	Pin	Signal
1	N/C	2	+3.3VAUX
3	N/C	4	GND
5	N/C	6	+1.5V
7	N/C	8	N/C
9	GND	10	N/C
11	N/C	12	N/C
13	N/C	14	N/C
15	GND	16	N/C
17	N/C	18	GND
19	N/C	20	N/C
21	GND	22	PERST#
23	SATA0_RX_DP	24	+3.3VAUX
25	SATA0_RX_DN	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	SATA0_TX_DN	32	SMB_DATA
33	SATA0_TX_DP	34	GND
35	GND	36	USB_9-
37	GND	38	USB_9+
39	+3.3VAUX	40	GND
41	+3.3VAUX	42	N/C
43	GND	44	N/C
45	N/C	46	N/C
47	N/C	48	+1.5V
49	N/C	50	GND
51	N/C	52	+3.3VAUX



2.11.9 USB 2.0 Wafers (CN13 and CN14)

CN13 and CN14 are 5x2-pin p=2.00mm headers for USB 2.0 interface

Table 2-18 Pin Assignment for CN13

Pin	CN13 Signal	Pin	CN13 Signal
1	+5V	2	+5V
3	USB5-	4	USB6-
5	USB5+	6	USB6+
7	GND	8	GND
9	N/C		

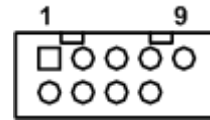


Table 2-19 Pin Assignment for CN14

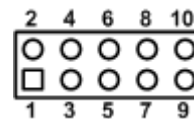
Pin	CN14 Signal	Pin	CN14 Signal
1	+5V	2	+5V
3	USB7-	4	USB8-
5	USB7+	6	USB8+
7	GND	8	GND
9	N/C		

2.11.10 GPIO Header (CN15)

This header CN15 (5x2-pin p=2.54mm) is used for digital I/O interface

Table 2-20 Pin Assignment for CN15

Pin	Signal	Pin	Signal
1	SIO_GPO74 (0xA06 Bit4, H) ^[*]	2	SIO_GPI70 (0xA06 Bit0, H)
3	SIO_GPO75 (0xA06 Bit5, H)	4	SIO_GPI71 (0xA06 Bit1, H)
5	SIO_GPO76 (0xA06 Bit6, H)	6	SIO_GPI72 (0xA06 Bit2, H)
7	SIO_GPO77 (0xA06 Bit7, H)	8	SIO_GPI73 (0xA06 Bit3, H)
9	GND	10	GND



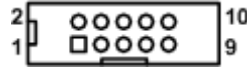
NOTE: [*]: “H” or “L” means the default voltage is High or Low level, and GPIO output is 5V.

2.11.11 Front Audio Header (CN16)

CN16 is a front audio header (5x2-pin p=2.00mm) for convenient connection and control of audio devices.

Table 2-21 Pin Assignment for CN16

Pin	Signal	Pin	Signal
1	MIC_IN	2	GND
3	LINE_IN_L	4	GND
5	LINE_IN_R	6	GND
7	AUD_OUT_L	8	GND
9	AUD_OUT_R	10	GND



2.11.12 Keyboard and Mouse Header (CN18)

CN18 is a 6x1-pin p=2.00mm header for keyboard and mouse interface.

Table 2-22 Pin Assignment for CN18

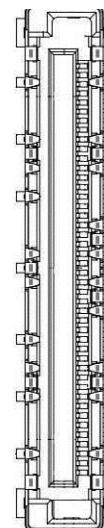
Pin	Signal	Pin	Signal
1	KB_CLK	2	KB_DATA
3	MS_CLK	4	GND
5	+5V	6	MS_DATA



2.11.13 eDP Connector (CN19)

Table 2-23 Pin Assignment for CN19

Pin	Signal	Pin	Signal
1	VDD ^[1]	2	VDD ^[1]
3	VDD ^[1]	4	VDD ^[1]
5	VDD ^[1]	6	GND
7	GND	8	GND
9	GND	10	EMB_HPDP
11	N/C	12	N/C
13	GND	14	EDP_TXN3C
15	EDP_TXP3_C	16	GND
17	EDP_TXN2_C	18	EDP_TXP2_C
19	GND	20	EDP_TXN1_C
21	EDP_TXP1_C	22	GND
23	EDP_TXN0_C	24	EDP_TXP0_C
25	GND	26	EMB_AUXP
27	EMB_AUXN	28	VSS_EDP_AMOLED
29	+3.3V	30	N/C
31	VCC_EDP_BKLT	32	VSS_EDP_AMOLED
33	GND	34	+5V
35	N/C	36	EDP_BKLTCTL
37	EDP_BKLTEN	38	VCC_EDP_BKLT
39	+3.3V	40	GND
41	ISH_I2C0_SCL_R	42	ISH_I2C0_SDA_R
43	+3.3V	44	N/C



NOTE:

- CN19 is co-layout with LVDS signal header (CN9); they can't be accessed simultaneously.
- eDP connector P/N: Aces Electronics 50203-40.

^[1]: Panel power VDD is 3.3V by default, 5V or 12V is selectable by jumper JP7, see section 2.3.5.

2.11.14 CMOS Battery Connector (BAT1)

Connector BAT1 is used for CMOS battery interface

Table 2-24 Pin Assignment for BAT1

Pin	Signal
1	GND
2	+3.3V



2.11.15 Power Input Connectors (ATX1 and ATX2)

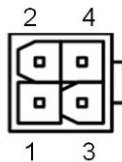
Steady and sufficient power can be supplied to all components on the board by connecting the power connector. Please make sure all components and devices are properly installed before connecting the power connector.

External power supply plug fits into this connector in only one orientation. Properly press down the power supply plug until it completely and firmly fits into this connector. Loose connection may cause system instability.

ATX1 is a 4-pin connector for DC +12V power input.

Table 2-25 Pin Assignment for ATX1

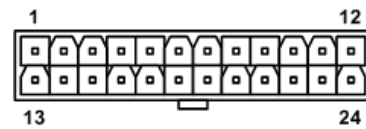
Pin	Signal
1	GND
2	GND
3	+ 12V IN
4	+ 12V IN



ATX2 is a 24-pin connector for DC power input.

Table 2-26 Pin Assignment for ATX2

Pin	Signal	Pin	Signal
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWR OK	20	-5V
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	3.3V	24	GND

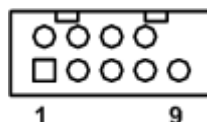


2.11.16 COM Headers (COM3~COM6)

The motherboard comes with 5x2-pin p=2.00mm headers for COM3~COM6 serial port interfaces.

Table 2-27 Pin Assignment for COM3 ~ COM6

Pin	Signal	Pin	Signal
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	GND	10	N/C



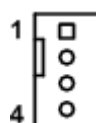
2.11.17 Fan Connectors (CPU_FAN1 and SYS_FAN1)

This motherboard comes with two fan connectors. Fan speed option(s) can be found at BIOS Setup Utility through the path Advanced\HW Monitor\PC Health Status.

The CPU_FAN1 is a 4x1-pin p=2.54mm connector

Table 2-28 Pin Assignment for CPU_FAN1

Pin	Signal
1	GND
2	+12V
3	FAN Speed Detection
4	FAN Speed Control



The SYS_FAN1 is a 3x1-pin p=2.54mm connector.

Table 2-29 Pin Assignment for SYS_FAN1

Pin	Signal
1	GND
2	+12V
3	FAN Speed Detection

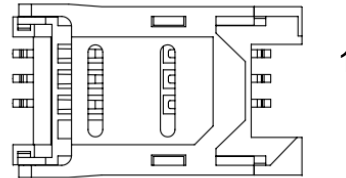


2.11.18 SIM Card Slot (SIM1)

The SIM1 is used when an SIM card is inserted. It is mainly used in 3G wireless network application. In order to work properly, the SIM card must be used together with 3G module which is inserted to CN11

Table 2-30 Pin Assignment for SIM1

Pin	Signal	Pin	Signal
1	UIM_PWR	7	UIM_VPP
2	UIM_REST	8	GND
3	UIM_CLK	9	GND
4	N/C	10	GND
5	N/C	11	GND
6	UIM_DAT	12	GND

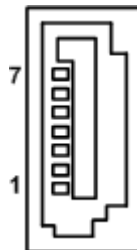


2.11.19 SATA 3.0 Connectors (SATA1~SATA3)

This Serial Advanced Technology Attachment (Serial ATA or SATA) connector is used for SATA 3.0 interface allowing up to 6.0Gb/s data transfer rate. It is a computer bus interface for connecting to devices such as hard disk drive.

Table 2-31 Pin Assignment for SATA1 ~ SATA3

Pin	Signal
1	GND
2	SATA_TX+
3	SATA_TX-
4	GND
5	SATA_RX-
6	SATA_RX+
7	GND



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Section 3

AMI BIOS Setup Utility

The AMI UEFI BIOS provides users with a built-in setup program to modify basic system configuration. All configured parameters are stored in a flash chip to save the setup information whenever the power is turned off. This Section provides users with detailed description about how to set up basic system configuration through the AMI BIOS setup utility.

3.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press during the Power On Self Test (POST) to enter BIOS setup, otherwise, POST will continue with its test routines.
2. Once you enter the BIOS, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Advanced and Chipset menus. It is strongly recommended that you should avoid changing the chipset's defaults. Both AMI and your system manufacturer have carefully set up these defaults that provide the best performance and reliability.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F2>, <Enter>, <ESC>, <Arrow> keys, and so on.

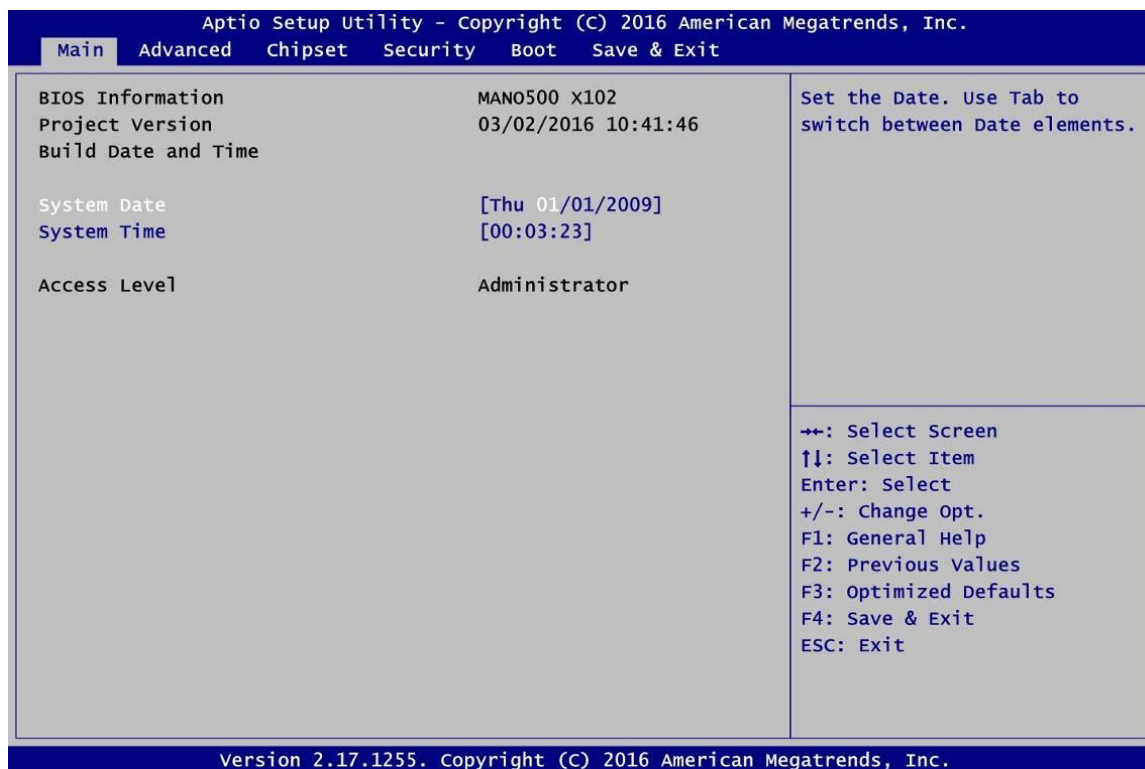


NOTE: Some of the navigation keys differ from one screen to another.

Hot Keys	Description
→← Left/Right	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ Up/Down	The Up and Down <Arrow> keys allow you to select a setup screen or sub screen.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub screens.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
F1	The <F1> key allows you to display the General Help screen.
F2	The <F2> key allows you to Load Previous Values.
F3	The <F3> key allows you to Load Optimized Defaults.
F4	The <F4> key allows you to save any changes you have made and exit Setup. Press the <F4> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.

3.3 Main Menu

When you first enter the setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. System Time/Date can be set up as described below. The Main BIOS setup screen is shown below.



BIOS Information

Display the BIOS information.

System Date/Time

Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

Access Level

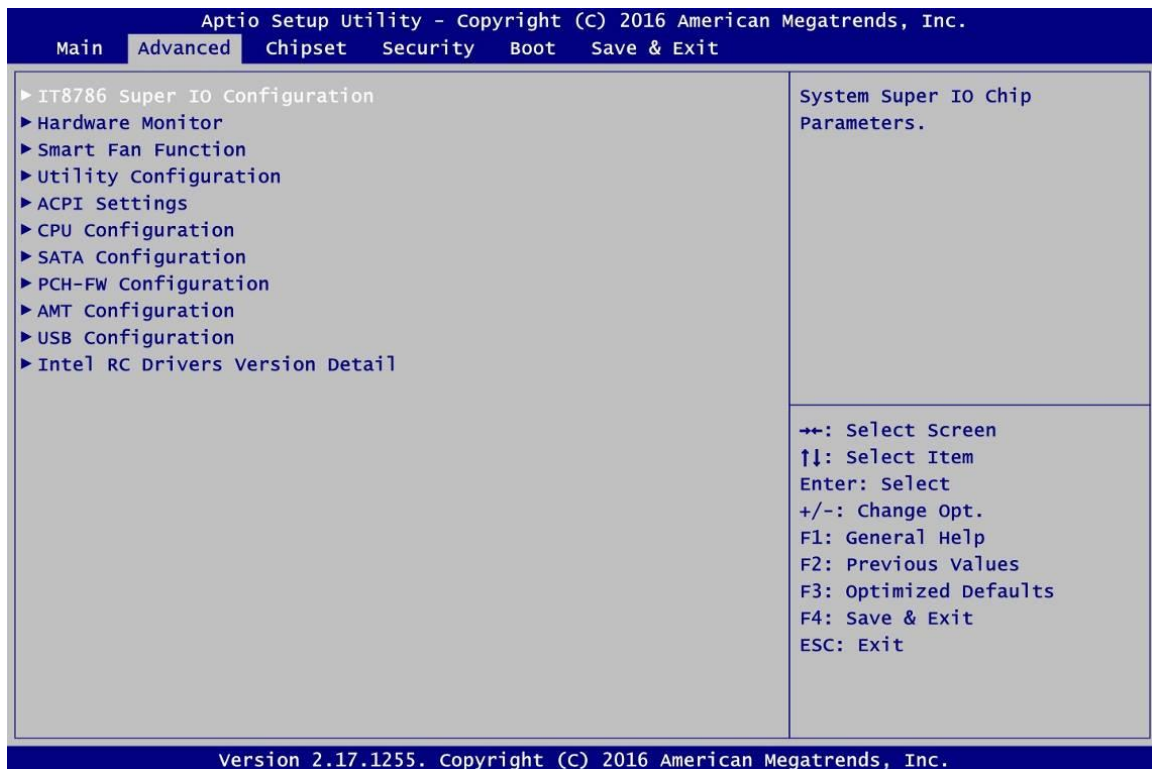
Display the access level of current user.

3.4 Advanced Menu

The Advanced menu also allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

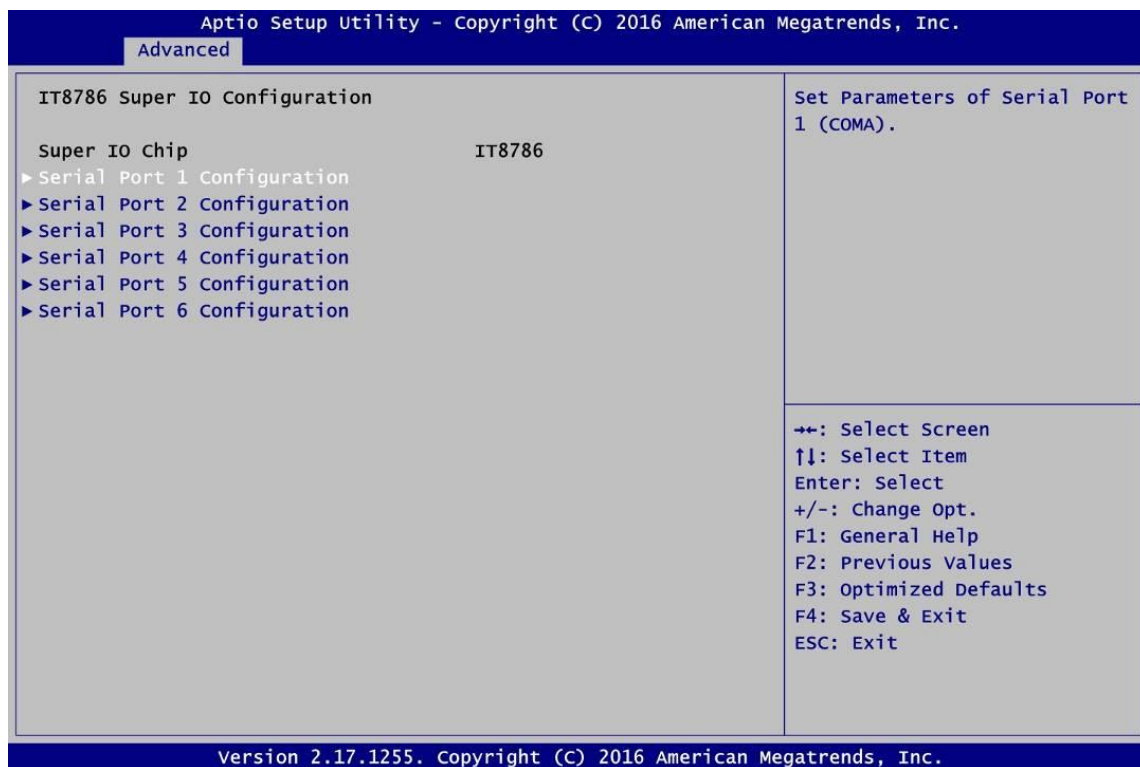
- ▶ IT8786 Super IO Configuration
- ▶ Hardware Monitor
- ▶ Smart Fan Function
- ▶ Utility Configuration
- ▶ ACPI Settings
- ▶ CPU Configuration
- ▶ SATA Configuration
- ▶ PCH-FW Configuration
- ▶ AMT Configuration
- ▶ USB Configuration
- ▶ Intel RC Drivers Version Detail

For items marked with “ ”, please press <Enter> for more options.



● **IT8786 Super IO Configuration**

You can use this screen to select options for the Super IO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with “▶”, please press <Enter> for more options.



Serial Port 1~6 Configuration

Use these items to set parameters related to serial port 1~6.

- **Hardware Monitor**

This screen monitors hardware health status.

```
Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
  Advanced

Pc Health Status

System Temperature1      : +47 °C
System Temperature2     : +44 °C
Fan1 Speed              : 3728 RPM
Fan2 Speed              : N/A
VCC_CPU                 : +1.080 V
VIN1                    : +1.200 V
VIN2                    : +11.952 V
VIN3                    : +5.040 V
VIN4                    : +3.528 V
VBAT                    : +3.096 V

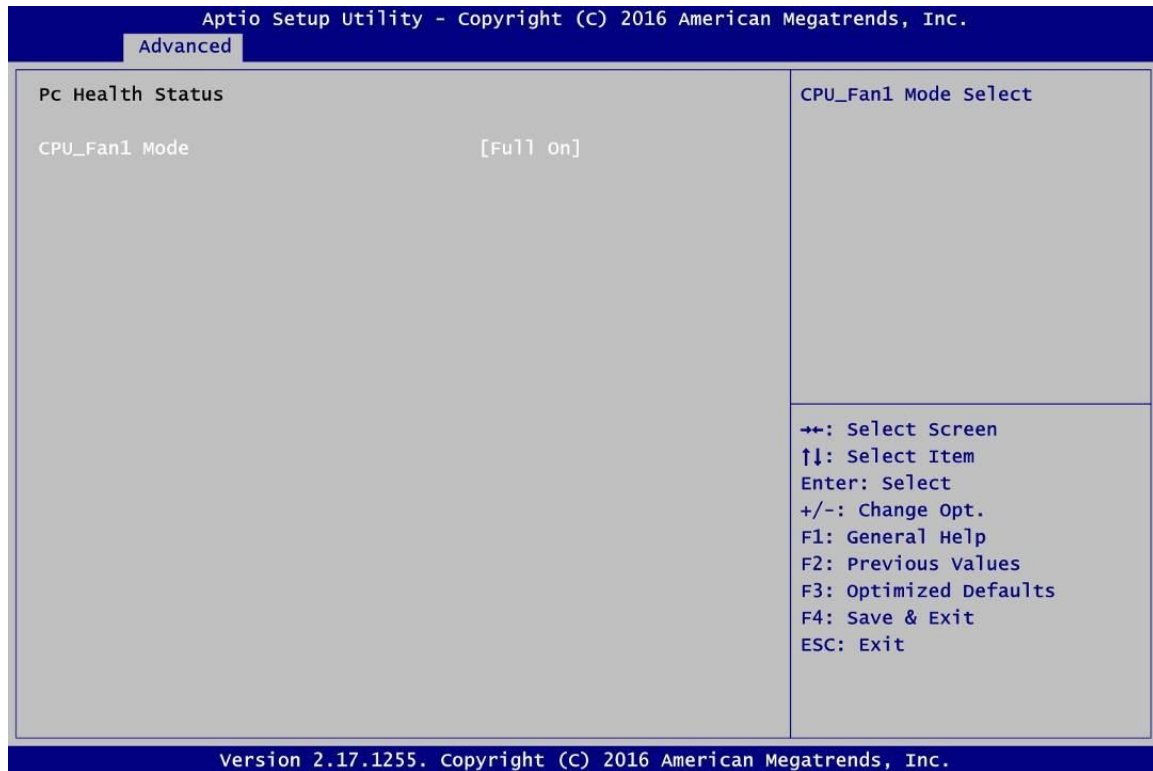
--+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.
```

This screen displays the temperature of system and CPU, cooling fans speed in RPM and system voltages (VCC_CPU, VIN1~VIN4 and VBAT).

- **Smart Fan Function**

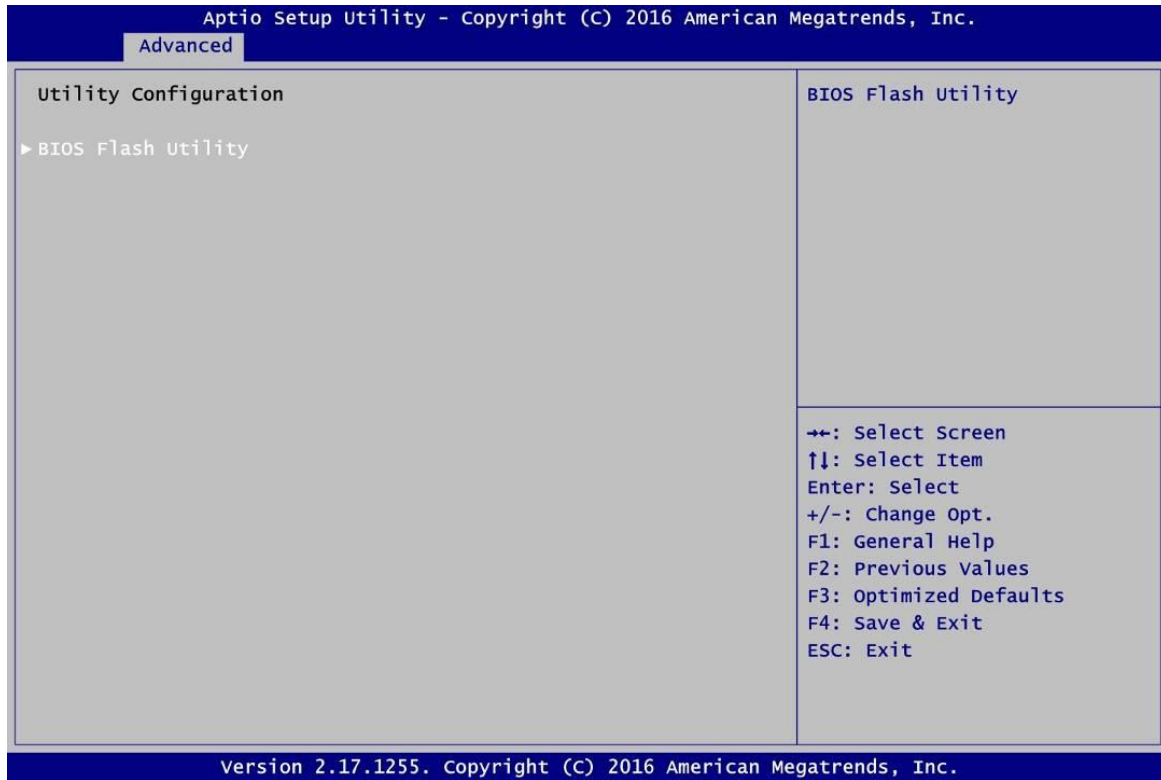
This screen allows you to select CPU fan mode.



CPU_Fan1 Mode

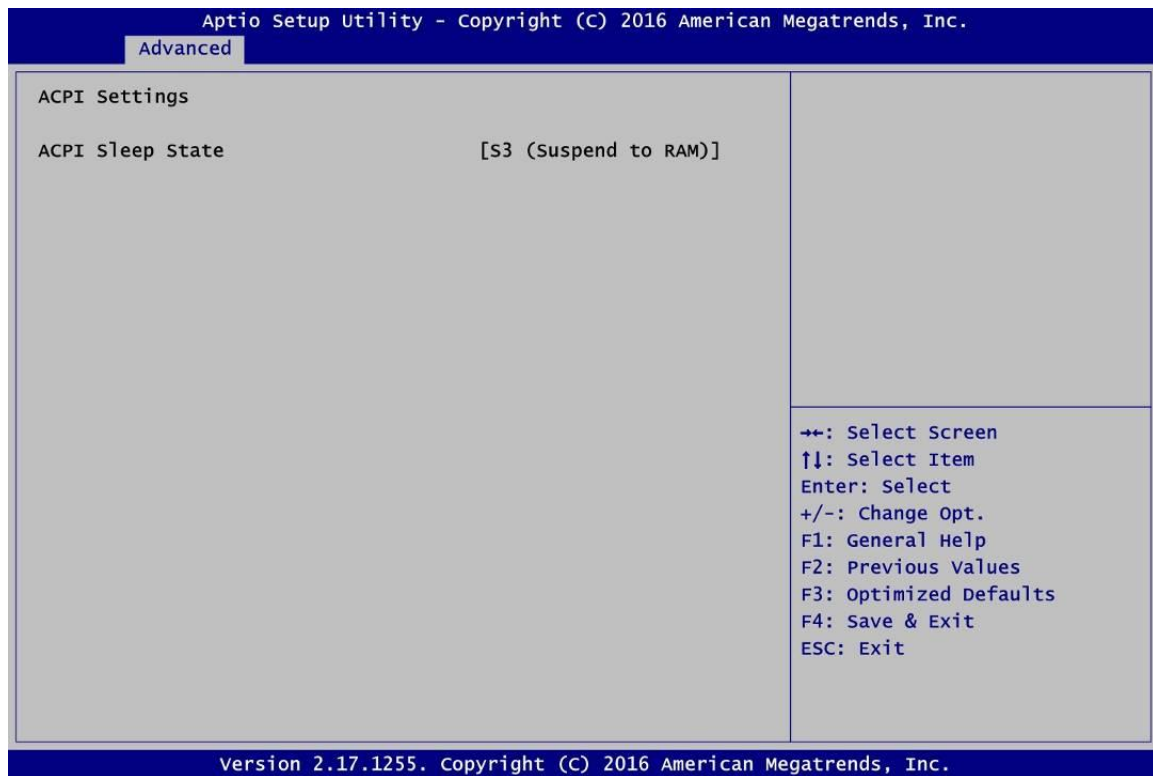
This item allows you to select CPU fan mode, which can be set to Full on, Manual and Auto Mode.

- **Utility Configuration**

**BIOS Flash Utility**

BIOS flash utility configuration. For more detailed information, please refer to Appendix B.

- **ACPI Settings**



ACPI Sleep State

When the suspend button is pressed, the ACPI (Advanced Configuration and Power Interface) sleep state is S3 (Suspend to RAM).

● CPU Configuration

This screen shows the CPU information, and you can change the value of the selected option.

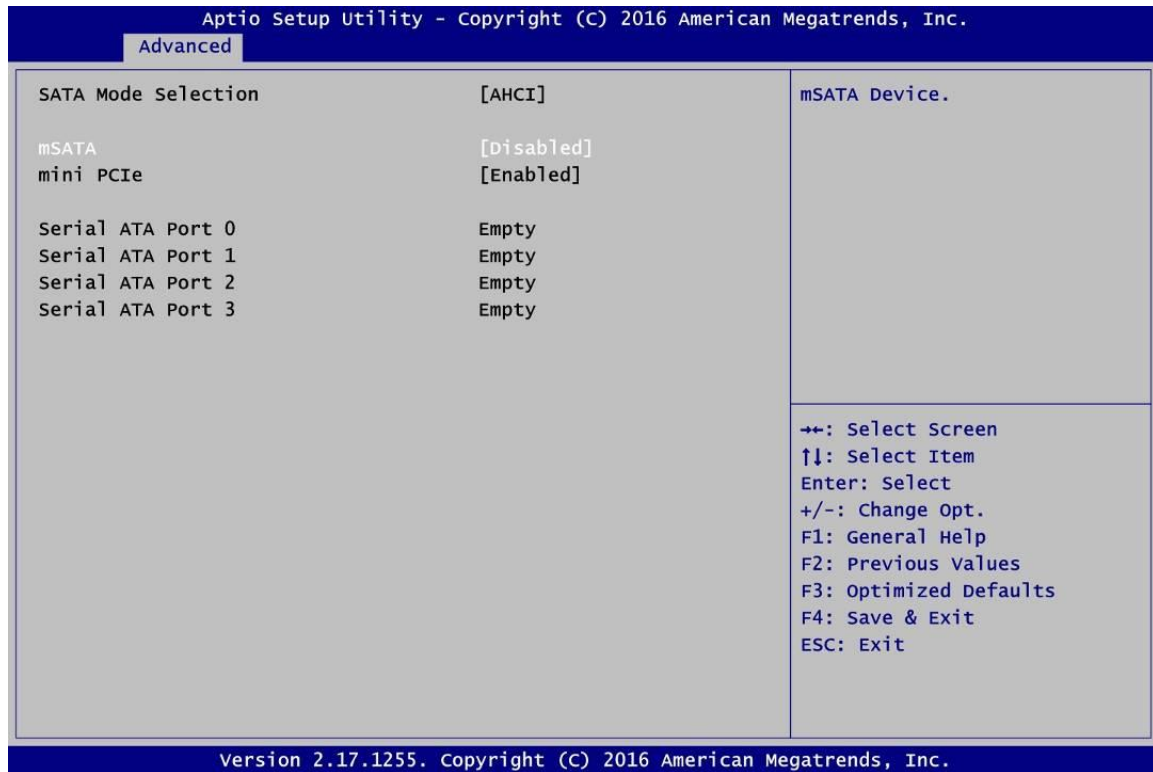
Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.	
Advanced	
<p>CPU Configuration</p> <p>Intel(R) Core(TM) i5-6500 CPU @ 3.20GHz</p> <p>CPU Signature 506E3</p> <p>Microcode Patch 55</p> <p>Max CPU Speed 3200 MHz</p> <p>Min CPU Speed 800 MHz</p> <p>CPU Speed 3200 MHz</p> <p>Processor Cores 4</p> <p>Hyper Threading Technology Not Supported</p> <p>Intel VT-x Technology Supported</p> <p>Intel SMX Technology Supported</p> <p>64-bit Supported</p> <p>EIST Technology Supported</p> <p>CPU C3 state Supported</p> <p>CPU C6 state Supported</p> <p>CPU C7 state Supported</p> <p>L1 Data Cache 32 kB x 4</p> <p>L1 Code Cache 32 kB x 4</p> <p>L2 Cache 256 kB x 4</p> <p>L3 Cache 6 MB</p> <p>Intel Virtualization Technology [Enabled]</p>	<p>When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.</p> <p>←→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</p>
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Intel Virtualization Technology

Enable or disable Intel Virtualization Technology. When enabled, a VMM (Virtual Machine Mode) can utilize the additional hardware capabilities. It allows a platform to run multiple operating systems and applications independently, hence enabling a single computer system to work as several virtual systems.

● **SATA Configuration**

During system boot up, the BIOS automatically detects the presence of SATA devices. In the SATA Configuration menu, you can see the currently installed hardware in the SATA ports.



SATA Mode Selection

AHCI (Advanced Host Controller Interface) mode is how SATA controller(s) operate.

● **PCH-FW Configuration**

This screen displays ME Firmware information.

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
ME FW Version	11.0.0.1205	
ME Firmware Mode	Normal Mode	
ME Firmware Type	Full Sku Firmware	
ME Firmware SKU	Consumer SKU	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.		

● **AMT Configuration**

Use this screen to configure AMT parameters.

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
Intel AMT	[Enabled]	Enable/Disable Intel (R) Active Management Technology BIOS Extension. Note : iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.		

Intel AMT

Enable or disable Intel® Active Management Technology BIOS Extension. The default is Enabled.

● **USB Configuration**

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.

Advanced

USB Configuration USB Module Version 13 USB Devices: 1 Keyboard	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
---	--

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USB Devices

Display all detected USB devices.

● **Intel RC Drivers Version Detail**

This screen displays Intel® RC drivers version information.

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Advanced

Intel CPU RC Version N/A Intel SA RC Version N/A Intel PCH RC Version N/A Intel ACPI RC Version N/A Intel ME RC Version N/A	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
---	--

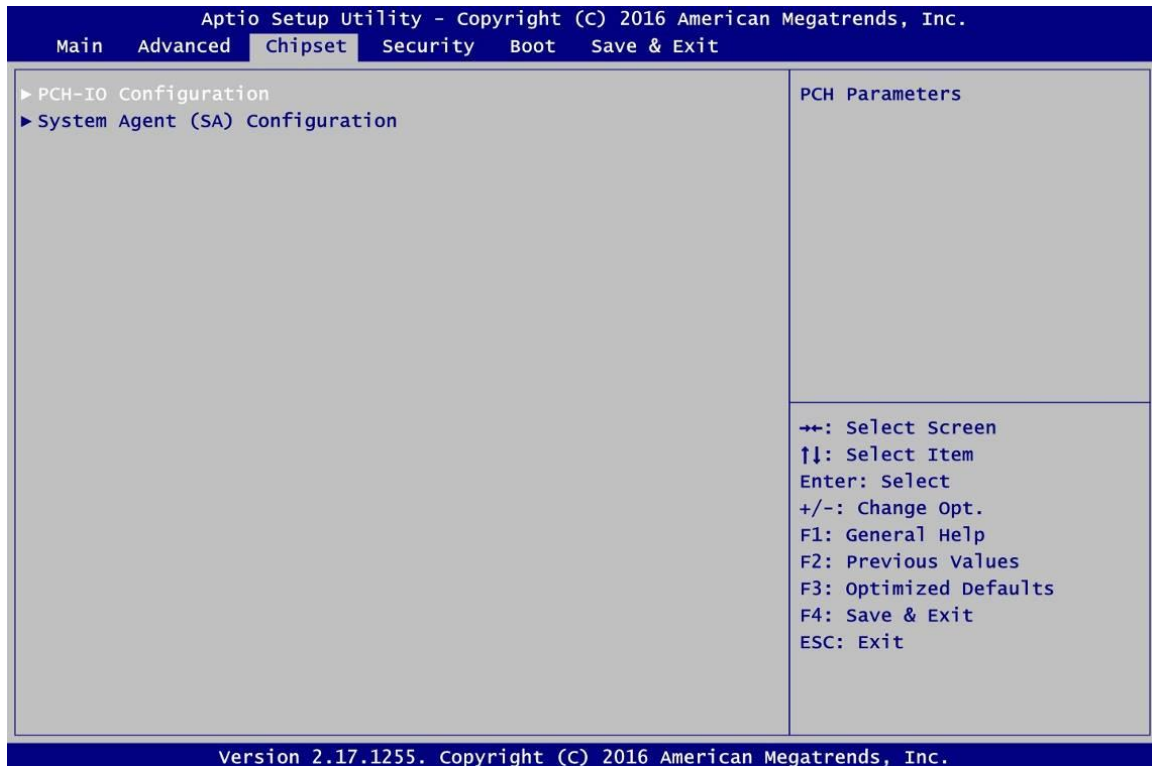
Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.

3.5 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

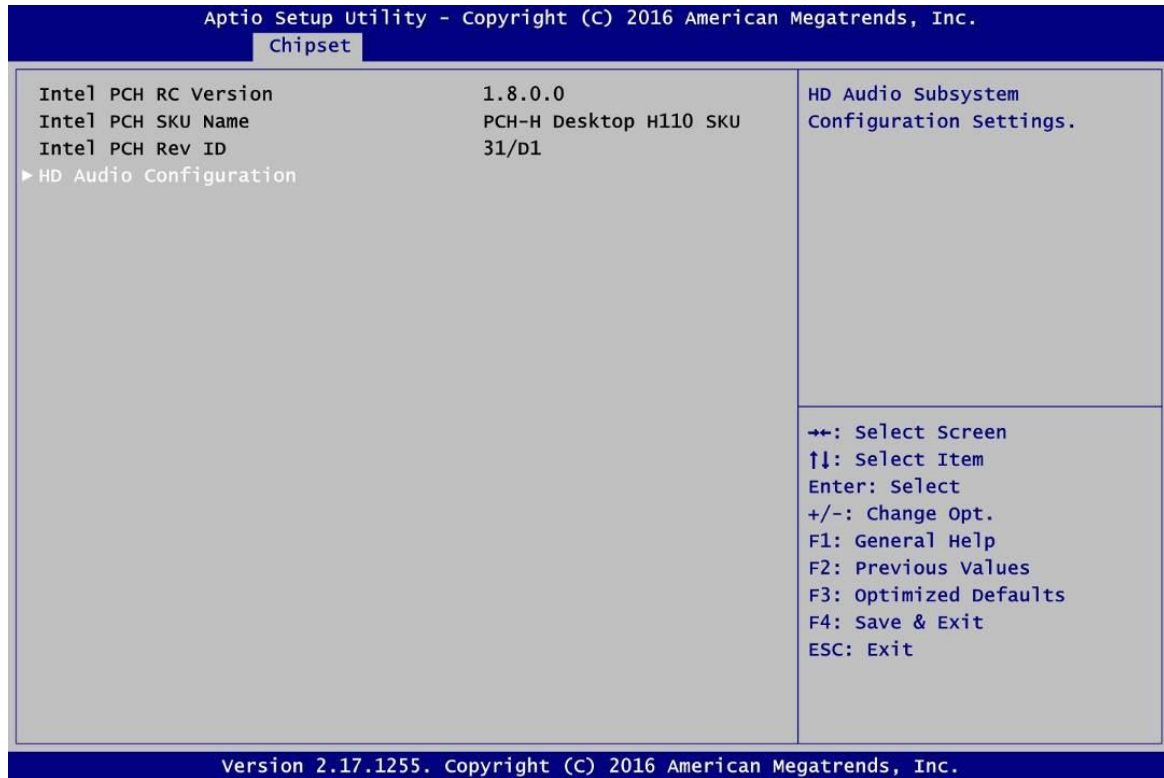
- ▶ PCH-IO Configuration
- ▶ System Agent (SA) Configuration

For items marked with “ ”, please press <Enter> for more options.



- **PCH-IO Configuration**

This screen allows you to set PCH parameters.

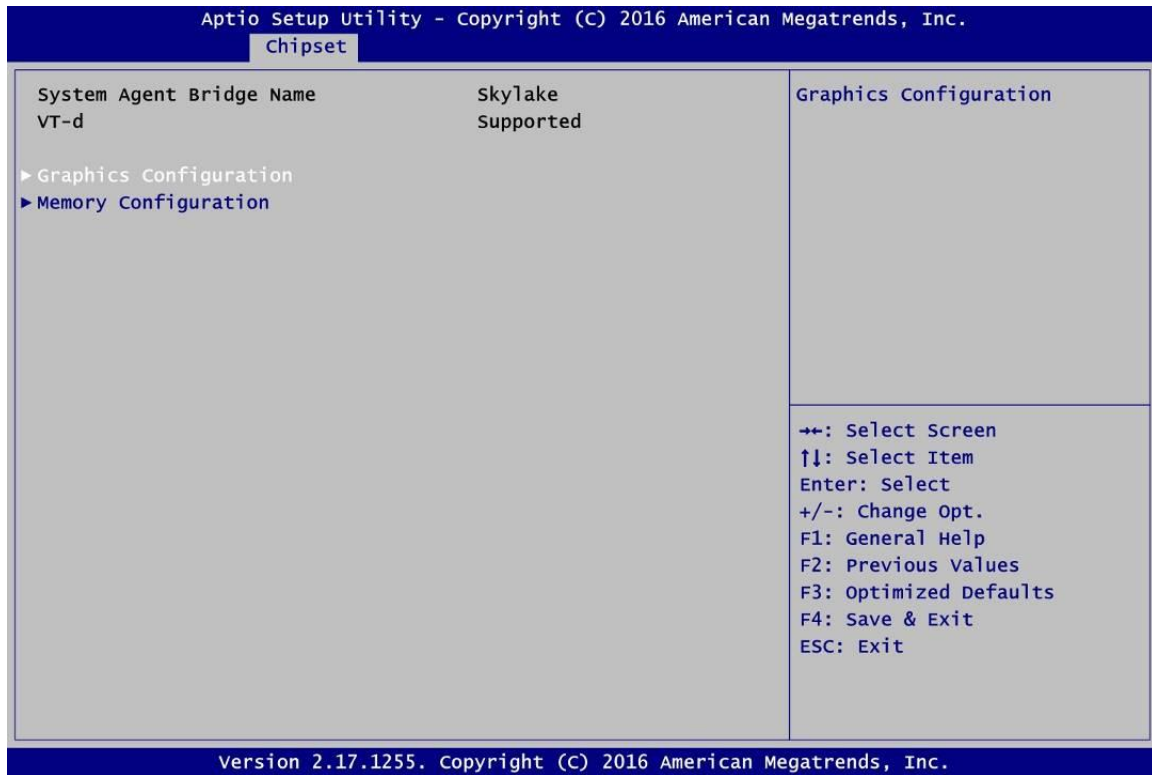


HD Audio Configuration

Use this item for HD Audio configuration settings.

- **System Agent (SA) Configuration**

This screen shows System Agent version information and provides function for specifying related parameters.



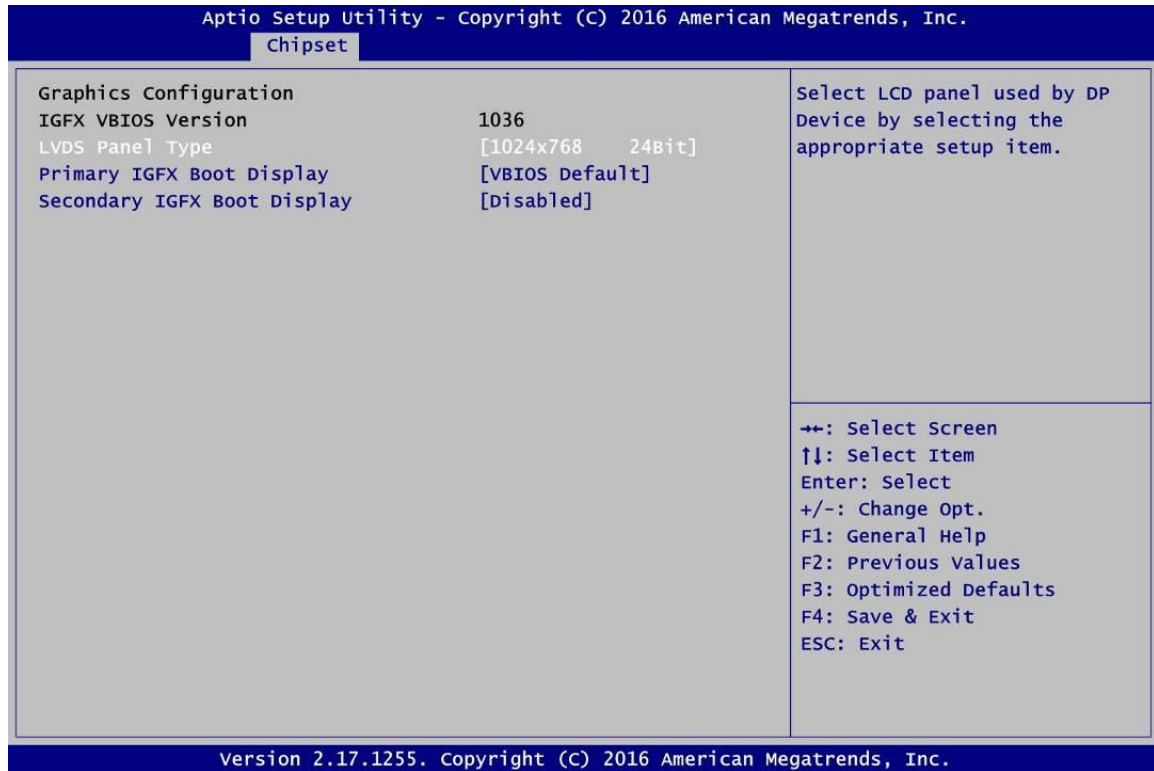
Graphics Configuration

Use this item to configure internal graphics controller.

Memory Configuration

Use this item to refer to the information related to system memory.

● **Graphics Configuration**



LVDS Panel Type

Select LVDS panel resolution.

Primary IGFX Boot Display

Select the video device which will be activated during POST (Power-On Self Test). The default is VBIOS Default.

Secondary IGFX Boot Display

Select secondary display device. The default is Disabled.

- **Memory Configuration**

This screen shows the system memory information.

The screenshot displays the 'Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.' interface. The 'Chipset' menu is selected, and the 'Memory Configuration' screen is active. The screen is divided into two main sections: a table of memory specifications on the left and a list of navigation instructions on the right. The table lists various memory parameters such as RC Version, Frequency, Total Memory, VDD, and DIMM configurations. The navigation instructions include keys for selecting screens, items, and options, as well as function keys for help, previous values, defaults, save, and exit.

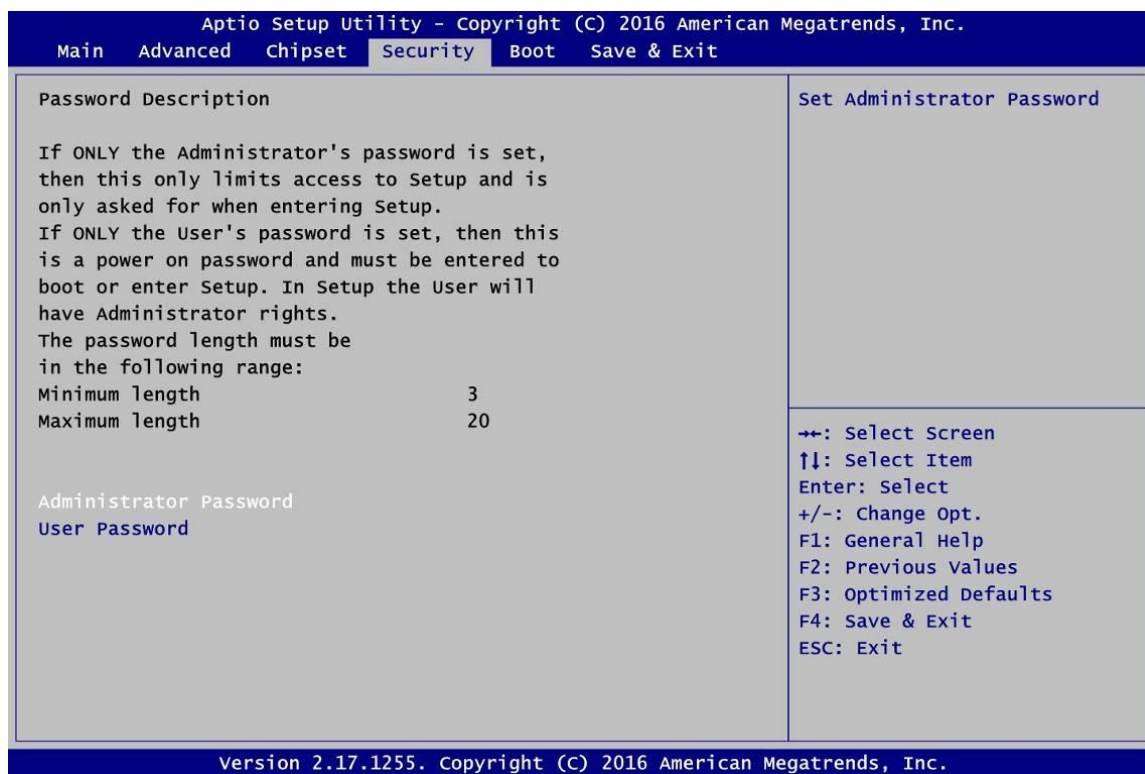
Memory Configuration	
Memory RC Version	1.8.0.1
Memory Frequency	2133 MHz
Total Memory	8192 MB
VDD	1200
DIMM#0(On Board)	8192 MB
DIMM#1	Not Present
DIMM#3	Not Present
Memory Timings (tCL-tRCD-tRP-tRAS)	15-36

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

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3.6 Security Menu

The Security menu allows users to change the security settings for the system.



Administrator Password

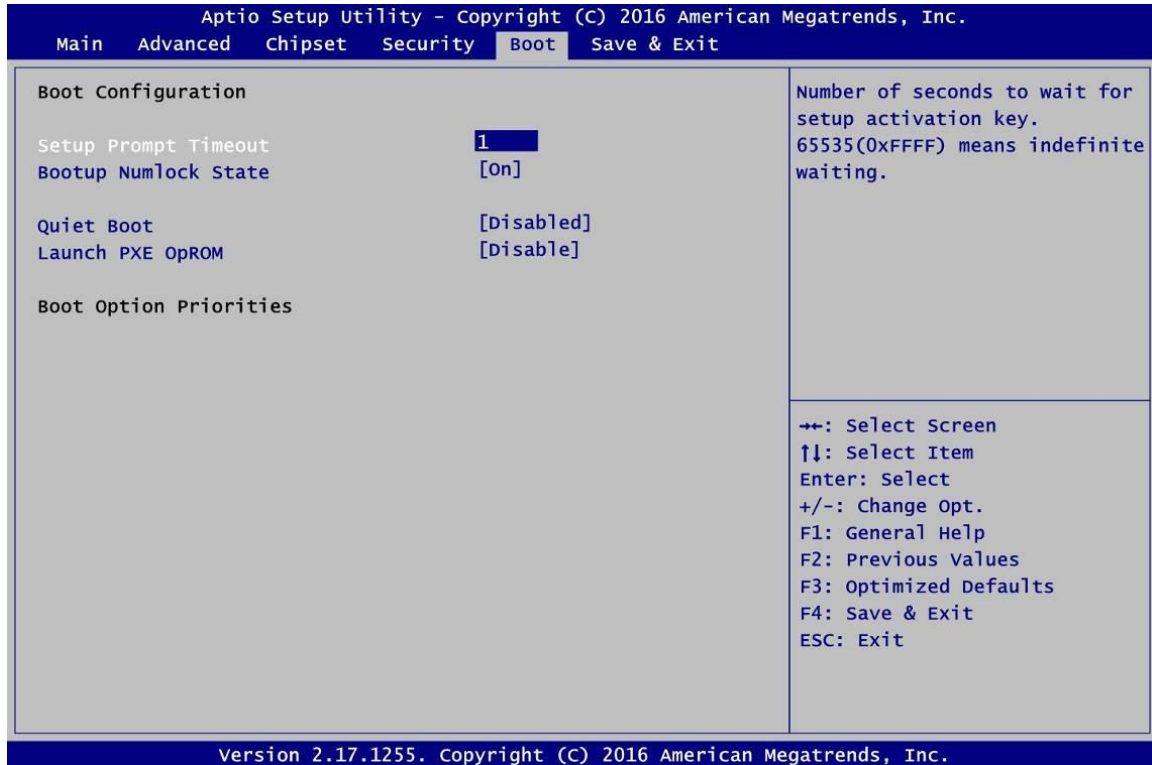
This item indicates whether an administrator password has been set (installed or uninstalled).

User Password

This item indicates whether a user password has been set (installed or uninstalled).

3.7 Boot Menu

The Boot menu allows users to change boot options of the system.



Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Use this item to select the power-on state for the keyboard NumLock.

Quiet Boot

Select to display either POST output messages or a splash screen during boot-up.

Legacy PXE OpROM

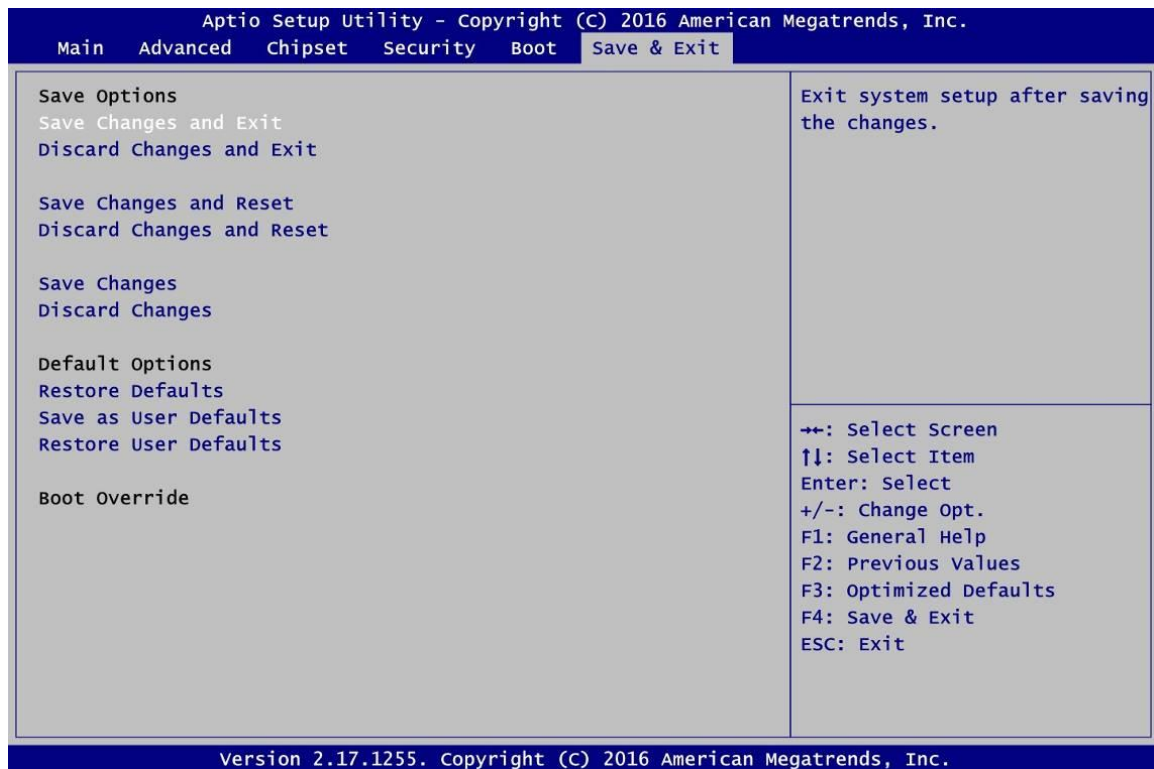
Use this item to enable or disable the boot ROM function of the onboard LAN chip when the system boots up.

Boot Option Priorities

These are settings for boot priority. Specify the boot device priority sequence from the available devices.

3.8 Save & Exit Menu

The Save & Exit menu allows users to load your system configuration with optimal or fail-safe default values.



Save Changes and Exit

When you have completed the system configuration changes, select this option to leave Setup and return to Main Menu. Select Save Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to save changes and exit.

Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration and return to Main Menu. Select Discard Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to discard changes and exit.

Save Changes and Reset

When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to save changes and reset.

Discard Changes and Reset

Select this option to quit Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to discard changes and reset.

Save Changes

When you have completed the system configuration changes, select this option to save changes. Select Save Changes from the Save & Exit menu and press <Enter>. Select Yes to save changes.

Discard Changes

Select this option to quit Setup without making any permanent changes to the system configuration. Select Discard Changes from the Save & Exit menu and press <Enter>. Select Yes to discard changes.

Restore Defaults

It automatically sets all Setup options to a complete set of default settings when you select this option. Select Restore Defaults from the Save & Exit menu and press <Enter>.

Save as User Defaults

Select this option to save system configuration changes done so far as User Defaults. Select Save as User Defaults from the Save & Exit menu and press <Enter>.

Restore User Defaults

It automatically sets all Setup options to a complete set of User Defaults when you select this option. Select Restore User Defaults from the Save & Exit menu and press <Enter>.

Boot Override

Select a drive to immediately boot that device regardless of the current boot order.

This page is intentionally left blank.

Section 4

Drivers Installation

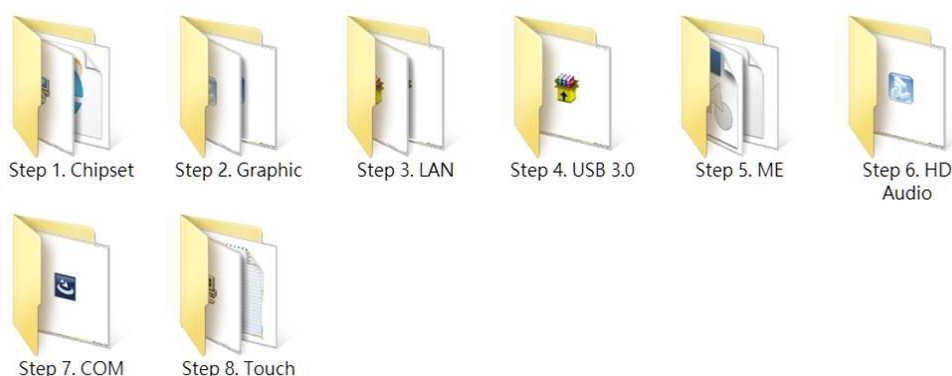
4.1 System

P1197E-500 supports Windows 7 / Windows 8.1 / WES7 / WE8S / Windows 10 / Windows 10 IoT Enterprise. To facilitate the installation of system driver, please carefully read the instructions in this Section before start installing.

Win 7

1. Insert Driver CD and select the “\Drivers”.

Step 1 Insert Driver CD and select the “\Drivers”.



Step 2 Select all files and follow the installing procedure.

CAUTION : Running the USB3.0 Utility before WIN 7 installation.

1. Download and unzip the Windows 7 USB 3.0 Creator utility to a temporary folder on the Admin system.
2. Connect the USB device containing the Windows 7 image to the Admin system.
3. Right-click the file **Installer_Creator.exe** and select **Run as administrator**.
4. Browse to the root of the USB drive.
5. Click **Create Image** to begin the creation process.
6. Wait for the process to finish. It can take up to 15 minutes.

CAUTION : WIN 10 Display Resolution setting

1. The resolution major setting must use the maximum resolution of P1197E-500 LCD panel (1280x1024)
2. Due to the resolution of external display might be higher than P1197E-500 LCD panel and cause display function fail, setting with maximum resolution of external display is not allowed.

4.2 Touch Screen

The P1197E-500 uses the 5-wire analog resistive. There are the specification and driver installation which are listed below.

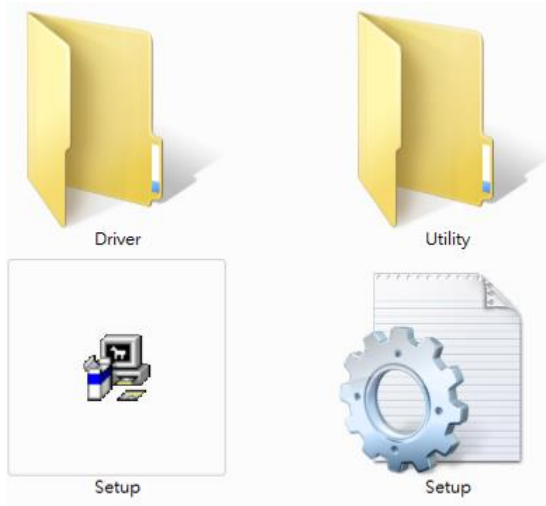
- **Specification**

Touch Screen	5-wire Analog Resistive type
Touch Screen Controller	PenMount 6500 USB Touch Screen Controller IC
Communications	USB interface
Baud Rate	19200 baud rate fixed
Resolution	1280 X 1024

- **Driver Installation- Windows 7 / 8.1 /10**

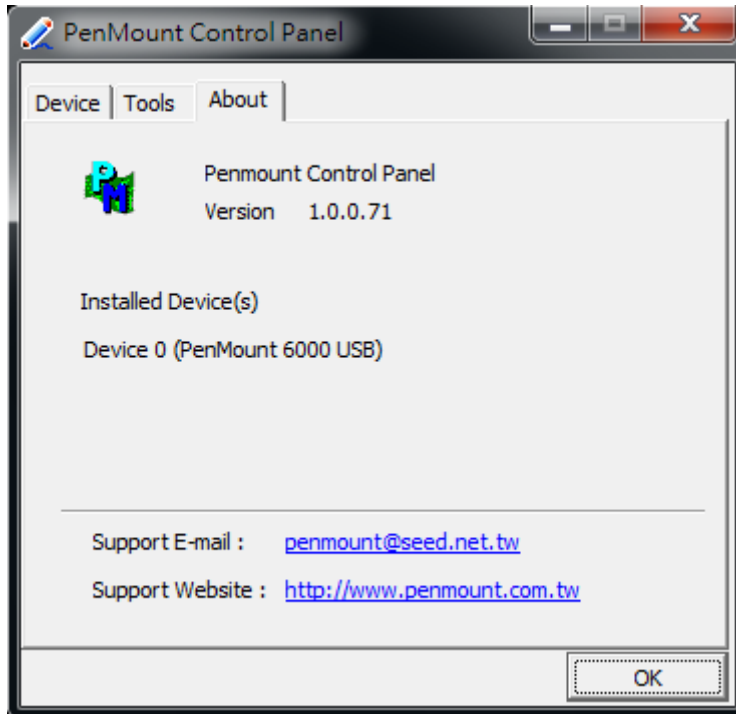
The P1197E-500 provides a touch screen driver that users can install it under the operating system Windows 7. To facilitate installation of the touch screen driver, you should read the instructions in this Section carefully before you attempt installation.

Step 1 Insert Driver CD and follow the path to select the “\Drivers\Step 7. Touch”.

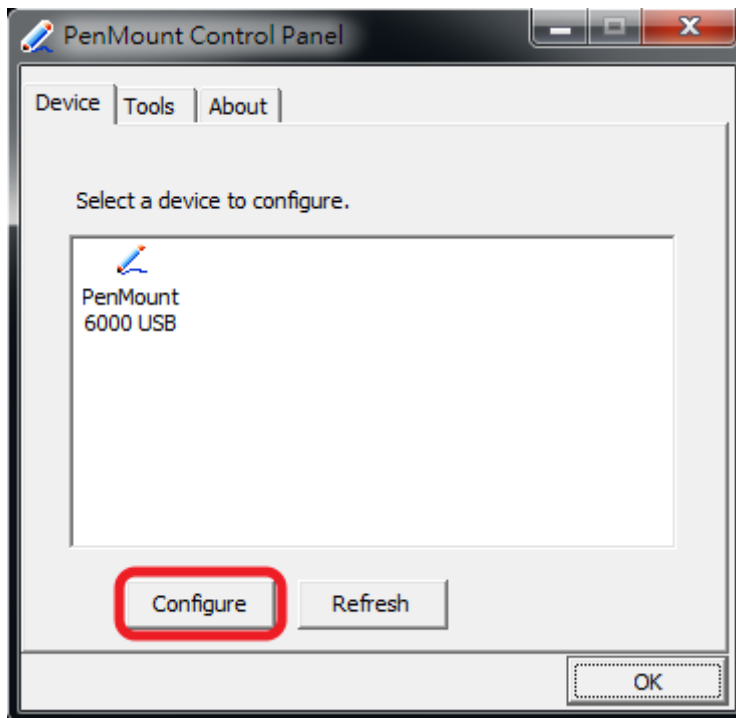


Step 2 Follow the installing procedure and press OK.

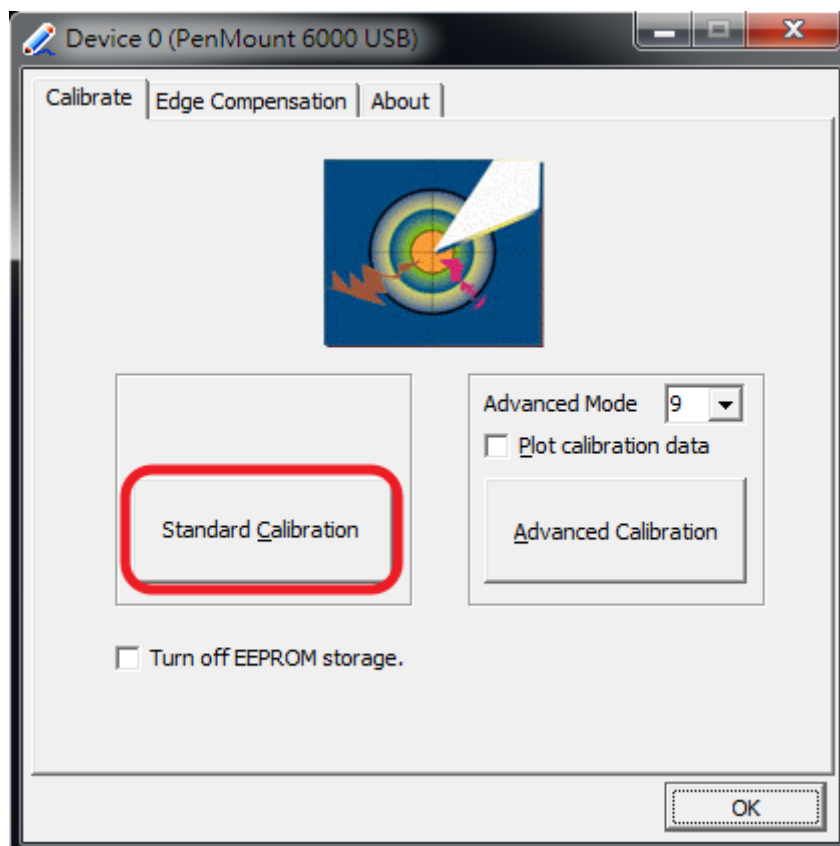
Step 3 Click Start menu and select “PenMount Utilities”; and then, a “PenMount Control Panel” pops out.



Step 4 Click “Configure”

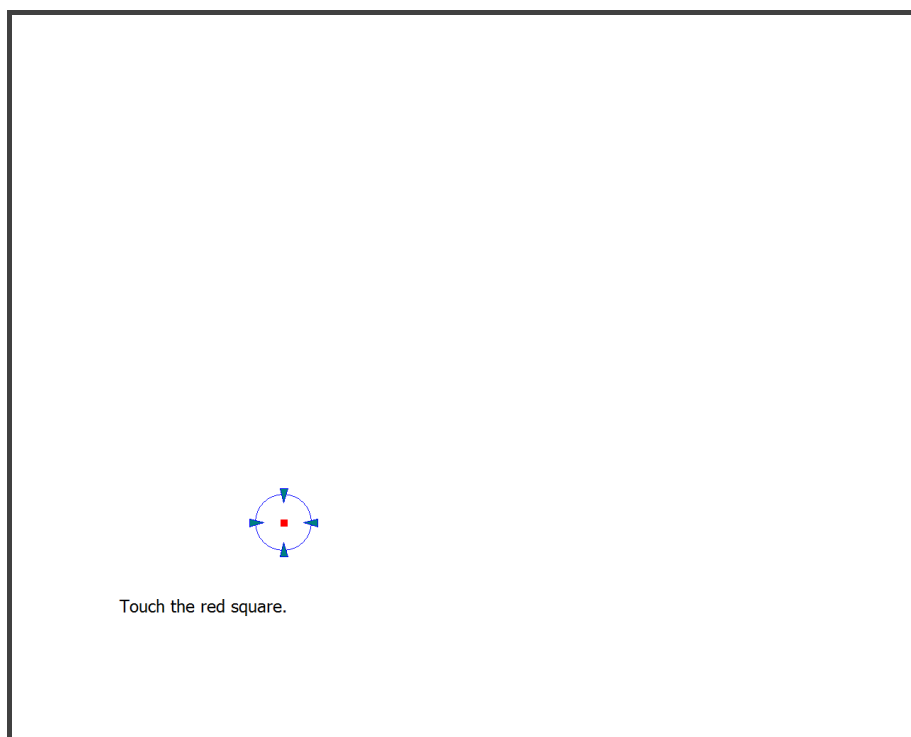


Step 5 Select the “Standard Calibrate” tab.



Step 6 Calibrations:

To adjust the display with touch panel, click "Calibration" and follow the calibrate point to do calibration; there are five points on screen for calibration.



Step 7 Press OK.

4.3 Embedded O.S.

The P1197E-500 provides the Windows 7 Embedded and Windows Embedded 8 Standard. The O.S. is supported devices which are listed below.

- **WES7 / WE8S**

Here are supported onboard devices:

- Onboard Multi I/O
- SATA HDD
- USB
- PS2 Keyboard and mouse
- CRT/LCD display
- 10/100/1000 base-T Ethernet
- Onboard Audio
- Touch Screen

PenMount Touch screen

Before you can use and calibrate it, here is what you should do:

1. Set up Penmount touch device driver by executing C:\Penmount\ Windows 2000-XP V5.0\setup.exe. When the installation is finished, an icon "PM" appears on the Taskbar.
2. Calibrate Penmount touch by clicking on the "PM" icon, and the go on the calibration.
3. Restart the computer.