IB32 Motherboard

3.5” SBC with Intel ® Bay Trail Processors, HDMI, LVDS, VGA, Dual Giga Ethernet, and Mini- PCIe Interface

User Manual / Engineering Spec.

Version 1.3

FCC Statement

This device complies with part 15 FCC rules. Operation is subject to the following two conditions：

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.

Copyright Notice

Trademark Acknowledgement

Disclaimer

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Warranty

We warrant that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, we will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.

If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W13Axxxxxxxx means October of year 2013.

Packing List

Before using this Motherboard, please make sure that all the items listed below are present in your package：

- IB32 Motherboard
- User Manual
- User's Manual & Driver CD
- HDD SATA Cable

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Customer Service

We provide service guide for any problem as follow steps： The first, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call：

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

  In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Safety Precautions

- **Warning!**

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronic personnel should open the PC chassis.

- **Caution!**

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Safety and Warranty

1. Please read these safety instructions carefully.
2. Please keep this user's manual for later reference.
3. Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENING.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any of the following situations arises, get the equipment checked by service personnel:
    A. The power cord or plug is damaged.
    B. Liquid has penetrated into the equipment.
    C. The equipment has been exposed to moisture.
    D. The equipment does not work well, or you cannot get it to work according to the user’s manual.
    E. The equipment has been dropped and damaged.
    F. The equipment has obvious signs of breakage.
15. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4°F) or above 60° C (140° F). It may damage the equipment.

Revision History

Version	Date	Note	Author
1.0	2014.03.06	Initial Draft	Marc Tsai
1.1	2014.08.15	Add Recovery Guide	Jimmy Chen
1.2	2014.09.01	Add OS Selection	Jimmy Chen
1.3	2015.05.08	Add USB 3.0 Driver Installation	Jimmy Chen

Contents

CHAPTER 1

General Information

This chapter includes the IB32 Motherboard background information.

Sections include:

- Introduction
- Feature
- Motherboard Specification
- Function Block
- Board Dimensions

Chapter 1: General Information

1.1 Introduction

The IB32 SBC is integrated with Intel® Bay Trail-M Celeron N2930 which offers a high performance computing platform with low power consumption. The new motherboard supports 204-pin SO-DIMM DDR3L at speeds of 1333/1600 MHz, up to 8GB.

One SATAII interface provides ample capacity. With dual Gigabit Ethernet, four COM ports, one USB 3.0 and five USB 2.0, IB32 SBC meet the requirements of today's various applications.

Display requirements are met with rich interfaces, such as HDMI, LVDS, and CRT. The graphic engine adopts Intel® SoC Integrated offer high definition display function, and it also supports 24-bit Dual-Channel LVDS.

With all of the integrated features, IB32 SBC is designed to satisfy most of the applications in the industrial computer market, such as Gaming, POS, KIOSK, Industrial Automation, and Programmable Control System. It is a compact design to meet the demanding performance requirements of today's business and industrial applications.

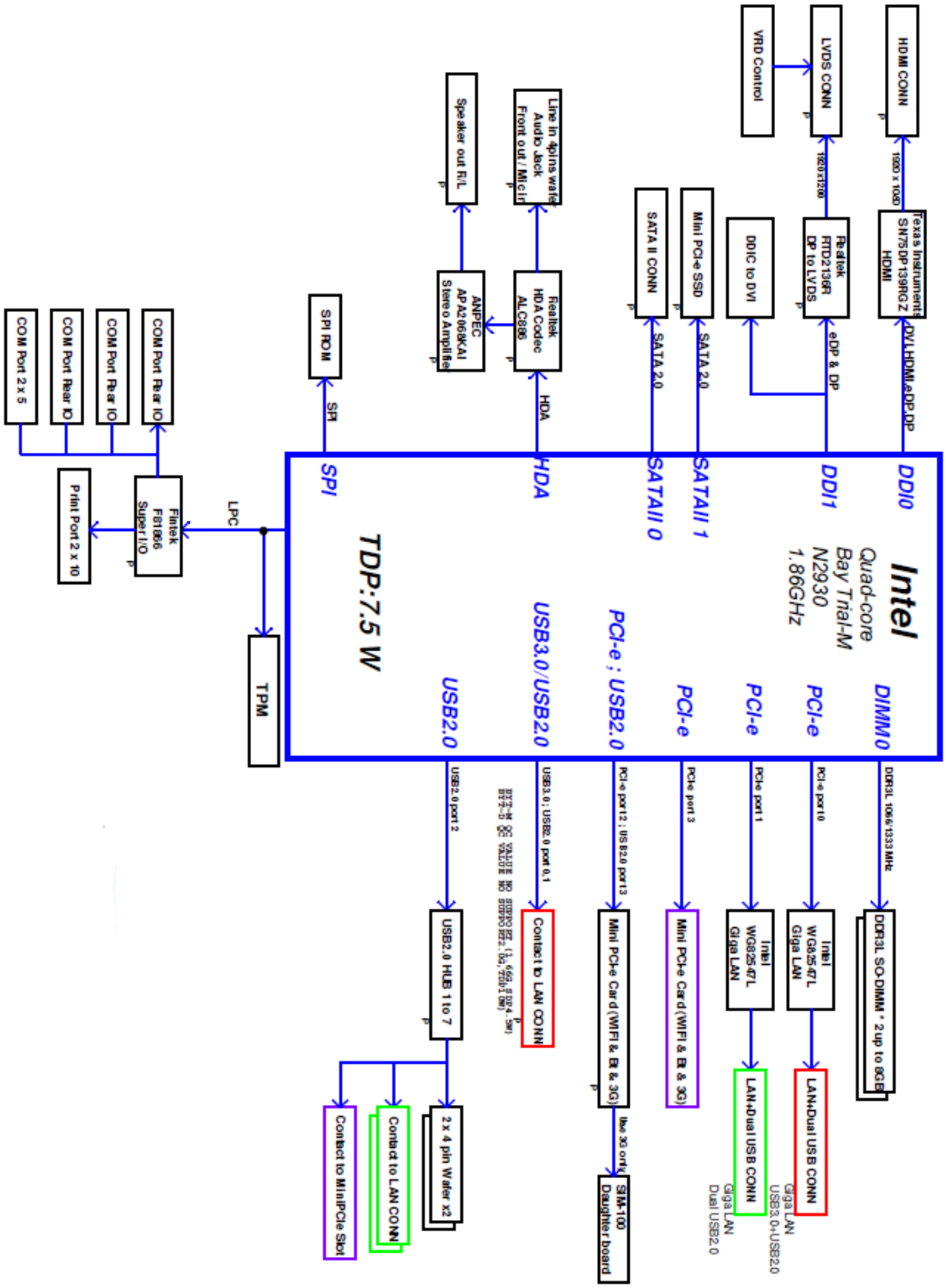
1.2 Feature

- 3.5-inch Form Factor (146mm x 102mm / 5.7 x 4 inches)
- Supports Intel® Bay Trail processors
- Intel® SoC Integrated
- 204-pin SO-DIMM DDR3L 1333/1600 MHz, up to 8GB
- Intel® HD Graphics Engine
- VGA, 18/24-bit Dual-Channel LVDS, 1 x HDMI
- 2 x Intel® WG82574L GbE
- 2 x Mini PCIe (one for wireless, one for mSATA SSD), 4 x COM, 1 x USB 3.0, 5 x USB 2.0, 1 x SATA II, 12-bit GPIO, 1 x 1394b
- DC 12V IN

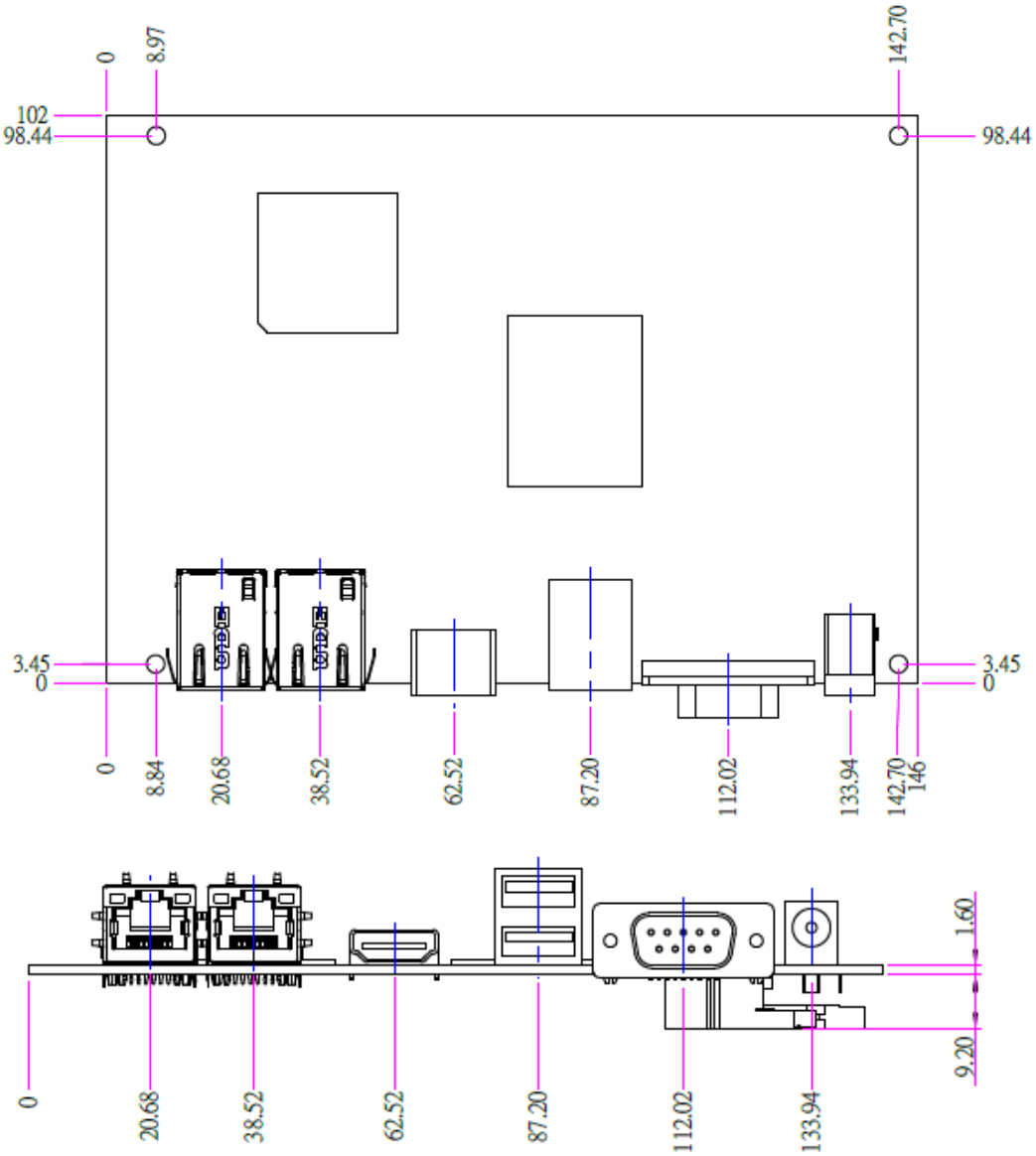
1.3 Motherboard Specifications

Processor	Intel® Celeron® Bay Trail-M N2930 1.83GHz
Chipset	Intel® SoC Integrated
BIOS	AMI 64Mbit Flash
Graphic	Intel® HD Graphics Engine
LCD Interface	Dual-channel 18/24 bit LVDS Up to 1920 x 1080 @ 60Hz
Resolution	VGA Mode : Up to 1600 x 1200 @ 60Hz HDMI : 1920 x 1080 @ 60Hz
LVDS	Dual-channel 18/24-bit LVDS, supports max resolution 1600 x 1200 @60Hz
LAN	2 x Giga LAN (Intel® WG82574L GbE)
System Memory	204-pin SO-DIMM DDR3L 1333/1600 MHz, up to 8GB
Super I/O	Fintek F81866
Sound	Realtek ALC886 HD Audio Codec
USB	1 x USB 3.0, 5 x USB 2.0
COM	4 x COM ports
Edge Connectors	1 x DC-IN Power Jack (12V) 1 x RS232/422/485 1 x USB 3.0, 1 x USB 2.0 1 x HDMI 2 x Gigabit LAN RJ-45
On Board Pin-Header Connectors	3 x RS-232 / 10-pin(2x5) 4 x USB 2.0 / 8-pin(2x4) 1 x LVDS / 40-pin(2x20) DF-13 connector 1 x SATA II 1 x SATA Power 1 x Digital I/O(12-bit GPIO) / 14-pin(2x7) 1 x Power-input / 2-pin 1 x +12V for external power(Yellow) / 2-pin 1 x +5V for external power(Red) / 2-pin 1 x +3.3V for external power(Blue) / 2-pin 1 x Fan / 3-pin 1 x Panel inverter / 7-pin 1 x Front panel / 10-pin(2x5) 1 x Backlight brightness controller / 3-pin 2 x Speaker with Amp. / 2-pin 1 x VGA / 10-pin(2x5) 1 x 1394b / 10-pin(2x5) (optional) 1 x Audio (Mic-in / Line-in / Line-out) / 12-pin(2x6) 1 x Battery / 2-pin
Power Connector	2-pin Power-input connector
Expansion Slots	1 x Mini PCIe for wireless, 1 x Mini PCIe for mSATA SSD
Form Factor	3.5 inch
Dimensions	146mm x 102mm
Environmental	Operating Temperature: -10~70°C (14~158°F) Operating Humidity: 10~90% Relative Humidity, non-condensing Shock: Operating 15G, 11ms duration Vibration: Operating 5 Hz~500Hz / 1Grms / 3 Axis Certification: CE, FCC, RoHS

1.4 Function Block



1.5 Board dimensions



CHAPTER 2

Installations

This chapter provides information on how to use the jumps and connectors on the IB32 Motherboard.

Sections include:

- Memory Module Installation
- I / O Equipment Installation
- Setting the Jumpers
- Connectors on IB32 Motherboard

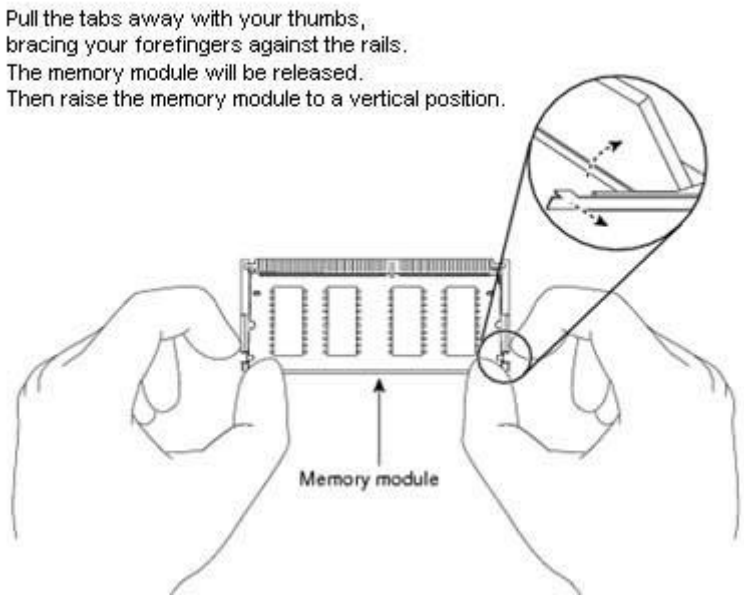
Chapter 2: Installations

2.1 Memory Module (SO-DIMM) Installation

The IB32 Motherboard provides one 204-pin SO-DIMM slot, and it supports up to 8GB DDR3L 1333/1600MHz. When installing the Memory device, please follow the steps below：

Step.1. Firmly inserts the SO-DIMM at an angle into its slot. Align the SO-DIMM on the slot such that the notch on the SO-DIMM matches the break on the slot.

Step.2. Press downwards on SO-DIMM until the retaining clips at both ends fully snap back in place and the SO-DIMM is properly seated.



➢ Caution!

➢ The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the development board and the SO-DIMM if the SO-DIMM is forced into the slot at the incorrect orientation.

2.2 I/O Equipment Installation

2.2.1 12V DC-IN

***Without power/reset OSD, short circuit pin 5 and 6 together to boot up the motherboard.**

The Motherboard allows plugging 12V DC-IN jack on the board without another power module converter under power consumption of Intel® Bay Trail-M Celeron N2930 Processor.

2.2.2 Serial COM ports

One COM port connector which supports RS232/422/485 function by jumper setting has been built-in the rear I/O, and three internal COM ports can be connected to a serial or an optional touch-screen when an optional touch-screen is ordered with Panel PC.

2.2.3 External HDMI

The Motherboard has one HDMI port that can be connected to an external LCD monitor by using HDMI cable, and it also needs to be connected to the outlet by power cable. The HDMI connector is a standard 19-pin Type A connector.

2.2.4 Ethernet interface

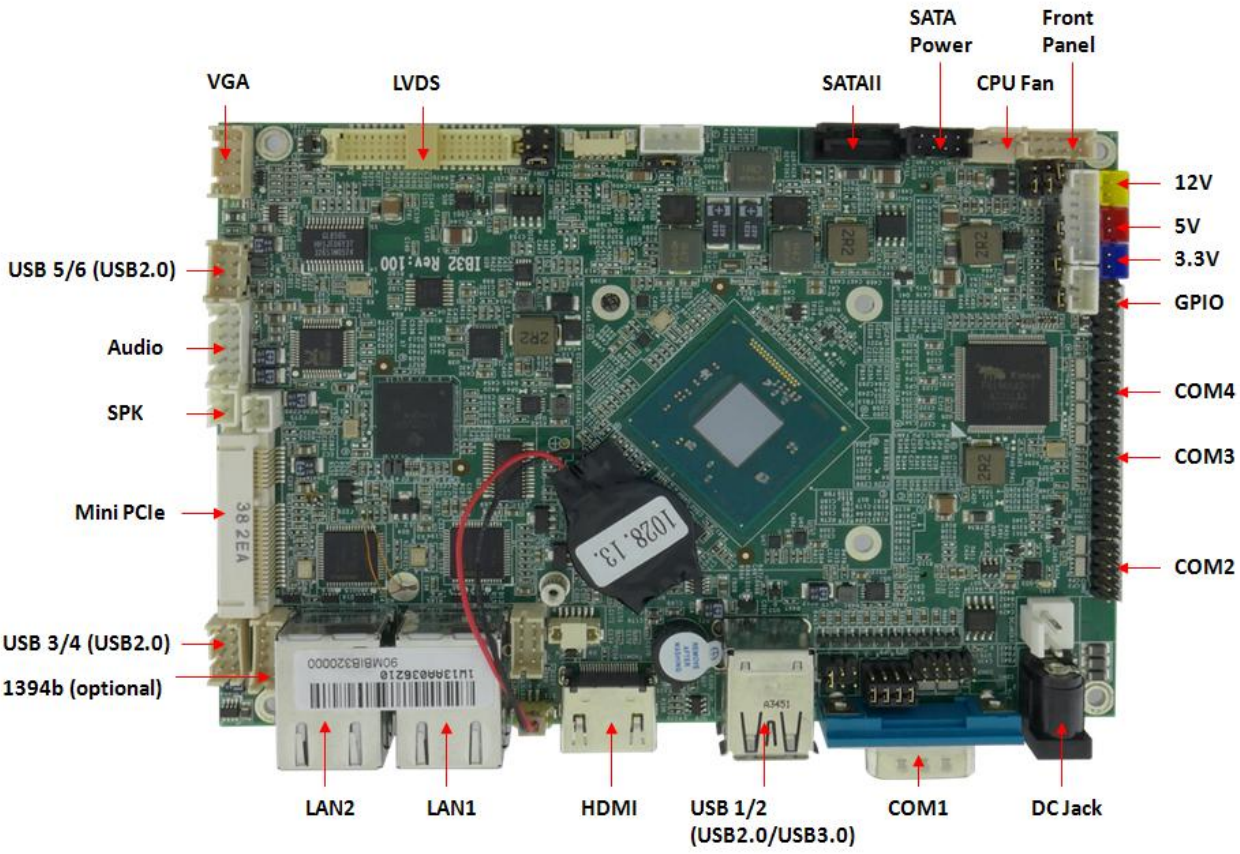
The Motherboard is equipped with Intel® WG82574L GbE chipset which is fully compliant with the PCI 10/100/1000 Mbps Ethernet protocol compatible. It is supported by major network operating systems. The Ethernet ports provide two standard RJ-45 jacks.

2.2.5 USB ports

Six USB devices (Four with pin headers) may be connected to the system though an adapter cable. Various adapters may come with USB ports. USB usually connect the external system to the system. The USB ports support hot plug-in connection. Whatever, you should install the device driver before you use the device.

2.3 Setting the Jumpers

Component Side



Solder Side

2.4 Jumpers

2.4.1 Jumper List

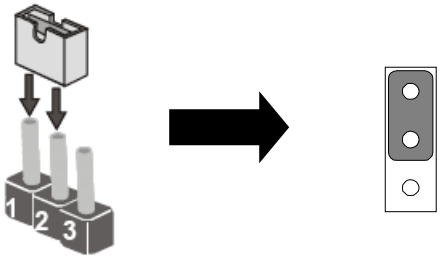
The following table lists the function of each of the board's jumpers.

Label	Function	Note
JP1	Inverter Voltage Select	3x1 header , pitch 2.0mm
JP2	Inverter Enable Select	3x1 header , pitch 2.0mm
JP4	DC Mode Control	3x1 header , pitch 2.0mm
JP5	From SoC Brightness PWM Voltage Select	3x1 header , pitch 2.0mm
JP6	Brightness Control Select	3x1 header , pitch 2.0mm
JP7	Brightness Control to VRD	3x1 header , pitch 2.0mm
JP8	COM Port Select	2x3 header , pitch 2.0mm
JP9	COM Port Select	3x4 header , pitch 2.0mm
JP10	VRD Brightness Function	3x1 header , pitch 2.0mm

2.4.2 Jumper Settings

A metal-bridge jumper used to close an electric circuit, and it usually consists of two metal pins and one small clip protected by a plastic cover that slides over the pins to connect them. Users can connect the pins with the clip to close a jumper, and remove the clip to open a jumper. Generally, a jumper will have three pins which labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2, or 2 and 3.

The jumper setting diagram is as below. If a jumper shorts pin 1 and pin 2, the setting diagram is shown as the right one.



A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

JP1: Inverter Voltage Select

Location	Header Type	Description	Function
JP1	Header 3*1	Inverter Voltage Select	1-2: 5.0V
			2-3: 12 V

※ Default : 1-2

JP2: Inverter Enable Select

Location	Header Type	Description	Function
JP2	Header 3*1	Inverter Enable Select	1-2: Control to BLON
			2-3: Normal (Always)

※ Default : 1-2

JP4: DC Mode Control

Location	Header Type	Description	Function
JP4	Header 3*1	DC Mode Control (For VR)	1-2: Control to VRD
			2-3: Normal(For DC)

※ Default : 2-3

JP5: From SoC Brightness PWM Voltage Select

Location	Header Type	Description	Function
JP5	Header 3*1	From SoC Brightness PWM Voltage Select	1-2: 3.3V
			2-3: 5.0V

※ Default : 1-2

JP6: Brightness Control Select

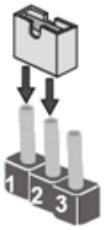
Location	Header Type	Description	Function
JP6	Header 3*1	Brightness Control Select (DC Mode or PWM Mode)	1-2: DC Mode
			2-3: PWM Mode

※ Default : 1-2

JP7: Brightness Control to VRD

Location	Header Type	Description	Function
JP7	Header 3*1	Brightness Control to VRD (VRD PWM)	1-2: Normal Mode
			2-3: VRD Control

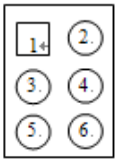
※ Default : 1-2



JP8/JP9: COM Port Select

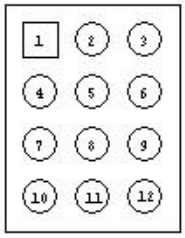
Location	Header Type	Description	Function
JP8	Header 2*3	RS232	1-2
		RS422	3-4
		RS485	5-6

※ Default : 1-2



Location	Header Type	Description	Function
JP9	Header 3*4	RS232	1-2 4-5 7-8 10-11
		RS422	2-3 5-6 8-9 11-12
		RS485	

※ Default : 1-2 4-5 7-8 10-11



JP10: VRD Brightness Function

Location	Header Type	Description	Function
JP10	Header 3*1	VRD Brightness Function	1-2: Analog (VR)
			2-3: Digital (OSD)

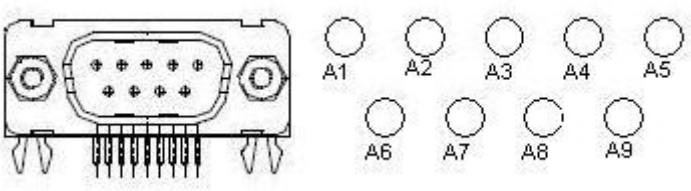
※ Default : 1-2

2.5 Connectors and Pin Assignment

The table below lists the function of each of the board's connectors.

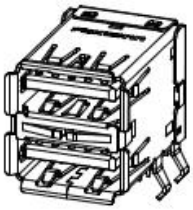
Label	Function
DC Jack	12V Power Input
COM1	RS232/422/485
USB 1/2	USB 3.0/USB2.0 Ports
HDMI 1	HDMI Connector
LAN1 / 2	Intel® LAN Ports
1394b	1394b (optional)
SPK	2W External Speaker
Audio	Line_in / Line_out / Mic_in
VGA	VGA Internal Wafer
LVDS	LVDS Port
SATA II	SATA 2.0 Port
SATA Power	SATA Power
CPU Fan	CPU Fan
Front Panel	System Function (Power / Reset)
3.3V	3.3V Output
5V	5V Output
12V	12V Output
GPIO	General Purpose I/O
12V DC Input	12V DC Power Input Wafer
USB 3/4	USB 2.0 Wafer
USB 5/6	USB 2.0 Wafer
COM2	RS232
COM3	RS232
COM4	RS232
Mini PCIe	Full / Half-Size Mini PCIe
Mini Card Slot	For mSATA SSD Card
DDR3L SO-DIMM	DDR3L SO-DIMM Socket

2.5.1 COM1: RS232/422/485



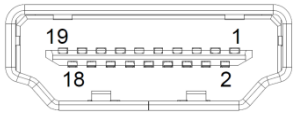
Pin No.	SYMBOL	Pin No.	SYMBOL
1	DCD	2	RxD
3	TxD	4	DTR
5	GND	6	DSR
7	RTX	8	CTS
9	RI		

2.5.2 USB 1/2: USB 3.0 (Lower)/USB2.0 (Upper)Ports



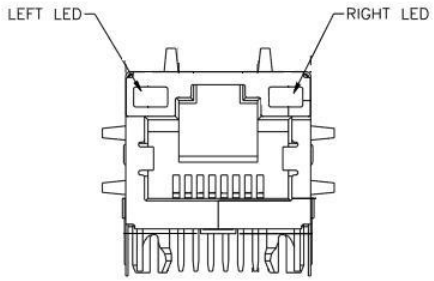
Pin Number	Signal Name	Pin Number	Signal Name
1	+5VUSB3.0	10	+5VUSB2.0
2	U2DN0	11	U2DN1
3	U2DP0	12	U2DP1
4	USB_GND	13	USB_GND
5	U3RXDN1		
6	U3RXDP1		
7	USB_GND		
8	U3TXDN1		
9	U3TXDP1		

2.5.3 HDMI: HDMI Connector



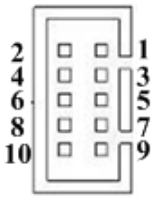
Pin No.	SYMBOL	Pin No.	SYMBOL
1	HDMIB_TMDS0+	2	GND
3	HDMIB_TMDS0-	4	HDMIB_TMDS1+
5	GND	6	HDMIB_TMDS1-
7	HDMIB_TMDS2+	8	GND
9	HDMIB_TMDS2-	10	HDMIB_CLK+
11	GND	12	HDMIB_CLK-
13	GND	14	NC
15	HDMI_DDC_CLK	16	HDMI_DDC_DATA
17	GND	18	+V5S
19	HDMI_HPD1		

2.5.4 LAN1 (LAN2): Intel® LAN Ports (RJ-45)



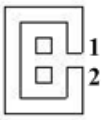
Pin No.	SYMBOL	Pin No.	SYMBOL
1	MDI0_IN+	2	MDI0_IN-
3	MDI1_IN+	4	MDI1_IN-
5	VLAN_12	6	LAN1_DGND
7	MDI2_IN+	8	MDI2_IN-
9	MDI3_IN+	10	MDI3_IN-
11	LAN_VDD	12	LAN_TRAFFICLED#
13	LAN_SPD100LED#	14	LAN_SPD1000LED#
15	UGND	16	UGND

2.5.5 1394b (optional)



Pin No.	SYMBOL	Pin No.	SYMBOL
1	1394b_TPB0+	2	1394b_TPA0+
3	1394b_TPB0-	4	1394b_TPA0-
5	GND	6	GND
7	+V12S	8	N/C
9	N/C	10	N/C

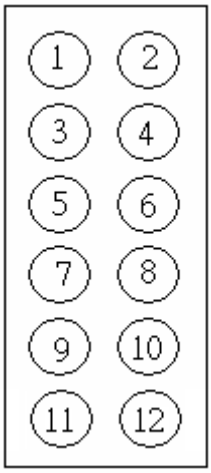
2.5.6 SPK: 2W External Speaker



Pin No.	SYMBOL	Pin No.	SYMBOL
1	LOUT+	2	LOUT-

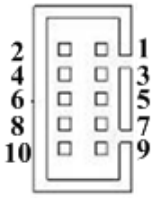
Pin No.	SYMBOL	Pin No.	SYMBOL
1	ROUT+	2	ROUT-

2.5.7 Audio: Line_in / Line_out / Mic_in



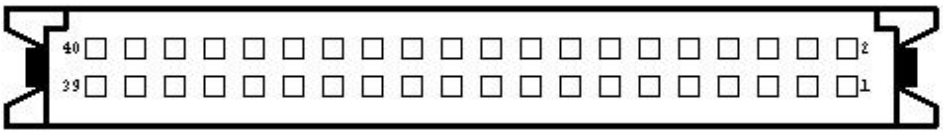
Pin No.	SYMBOL	Pin No.	SYMBOL
1	AZ_FOUT_R	2	AZ_FOUT_L
3	+5VA	4	AUGND
5	LINE1_R	6	LINE1_L
7	MIC1_R	8	MIC1_L
9	AUGND	10	Font_SENSE
11	Mic_SENSE	12	Line_SENSE

2.5.8 VGA: VGA Internal Wafer

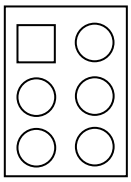


Pin No.	SYMBOL	Pin No.	SYMBOL
1	DAC_SDAT0	2	VGA_5V
3	DAC_SCL0	4	R_FILTER
5	3VHSYNC0	6	G_FILTER
7	3VVSYNC0	8	B_FILTER
9	GND	10	GND

2.5.9 LVDS: LVDS Port

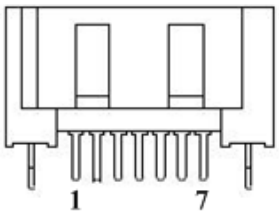


Pin No.	SYMBOL	Pin No.	SYMBOL
1	LCDVDD	2	TXOUT_L0-
3	LCDVDD	4	TXOUT_L0+
5	LCDVDD	6	TXOUT_L1-
7	GND	8	TXOUT_L1+
9	GND	10	TXOUT_L2-
11	GND	12	TXOUT_L2+
13	GND	14	TXCLK_L-
15	GND	16	TXCLK_L+
17	GND	18	TXOUT_L3-
19	GND	20	TXOUT_L3+
21	GND	22	TXOUT_U0-
23	GND	24	TXOUT_U0+
25	GND	26	TXOUT_U1-
27	GND	28	TXOUT_U1+
29	GND	30	TXOUT_U2-
31	GND	32	TXOUT_U2+
33	GND	34	TXCLK_U-
35	GND	36	TXCLK_U+
37	GND	38	TXOUT_U3-
39	GND	40	TXOUT_U3+



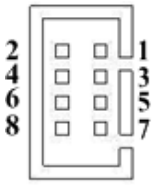
Location	Header Type	Description	Function	
CON5	Header 2*3	LVDS VOLTAGE	3.3V	1-2
			5V	3-4
			12V	5-6

2.5.10 SATA II: SATA 2.0 Port



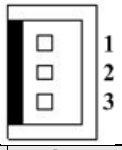
Pin No.	SYMBOL	Pin No.	SYMBOL
1	GND	2	SATA_TXP
3	SATA_TXN	4	GND
5	SATA_RXN	6	SATA_RXP
7	GND		

2.5.11 SATA Power:



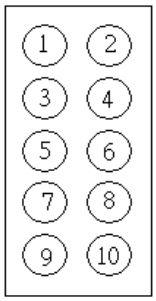
Pin No.	SYMBOL	Pin No.	SYMBOL
1	+12V	2	+12V
3	GND	4	GND
5	GND	6	GND
7	5V	8	5V

2.5.12 CPU Fan:



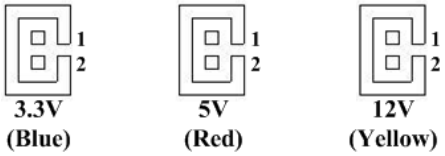
Pin No.	**SYMBOL**	**Pin No.**	**SYMBOL**
1	GND	2	+12V
3	SENSE		

2.5.13 Front Panel: System Function (Power / Reset)



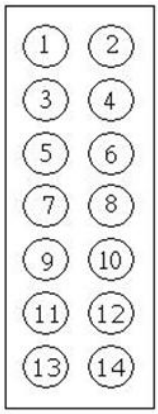
Pin	Signal Name	Pin	Signal Name
1	+V5S	2	+V3.3S
3	GND	4	-HDD_LED
5	PWRBTN#	6	GND
7	GND	8	PWRBTN#
9	N/C	10	+V5A

2.5.14 3.3V (5V / 12V): Power Output



Pin No.	SYMBOL	Pin No.	SYMBOL
1	VCC	2	GND

2.5.15 GPIO: General Purpose I/O

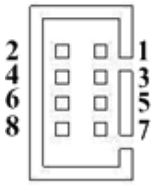


Pin No.	SYMBOL	Pin No.	SYMBOL
1	GND	2	+V5A
3	DOUT3	4	DOUT1
5	DOUT2	6	DOUT0
7	DINT3	8	DINT2
9	DINT1	10	DINT0
11	GPIO53_IN0	12	GPIO56_OUT0
13	GPIO54_IN1	14	GPIO57_OUT1

2.5.16 12V DC Input: 12V DC Power Input Wafer

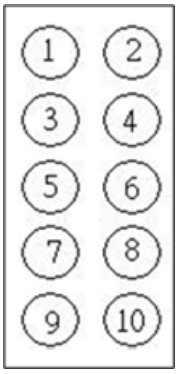
Pin No.	SYMBOL	Pin No.	SYMBOL
1	+12V	2	GND

2.5.17 USB 3/4 (USB 5/6): USB 2.0 Wafer



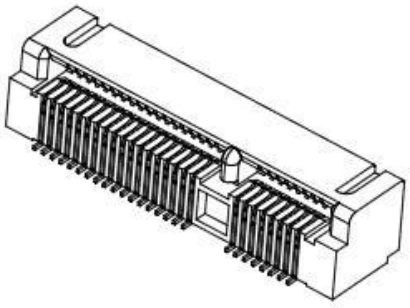
Pin No.	SYMBOL	Pin No.	SYMBOL
1	5V	2	5V
3	DATA0-	4	DATA1-
5	DATA0+	6	DATA1+
7	GND	8	GND

2.5.18 COM2 (COM3 / COM4): RS232



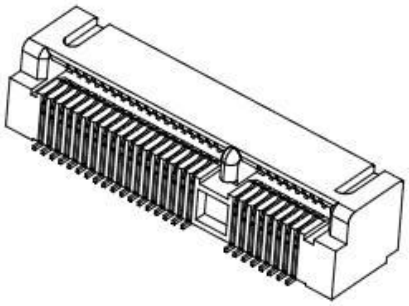
Pin	Signal Name	Pin	Signal Name
1	FK_NDCD[2:4]	2	FK_NDSR[2:4]
3	FK_NSIN[2:4]	4	FK_NRTS[2:4]
5	FK_NSOUT[2:4]	6	FK_NCTS[2:4]
7	FK_NDTR[2:4]	8	FK_NRI[2:4]
9	GND	10	GND

2.5.19 Mini PCIe:



Pin No.	SYMBOL	Pin No.	SYMBOL
2	3.3V_MINIPCIE1	1	PCIE_WAKE#
4	GND	3	NA
6	+V1.5S	5	NA
8	VREG_USIM	7	CLK_SLOT4_OE#
10	NA	9	GND
12	NA	11	CLK_PCIE_SLOT4_N
14	NA	13	CLK_PCIE_SLOT4_P
16	NA	15	GND
18	GND	17	NA
20	WLAN-RFON2	19	NA
22	BUF_PLT_RST2#	21	GND
24	+V3.3A	23	PCIE_RXN3_SLOT4
26	GND	25	PCIE_RXP3_SLOT4
28	+V1.5S	27	GND
30	SMB_CLK	29	GND
32	SMB_DATA	31	PCIE_TXN3_SLOT4
34	GND	33	PCIE_TXP3_SLOT4
36	USB_PN5	35	GND
38	USB_PP5	37	GND
40	GND	39	3.3V_MINIPCIE1
42	NA	41	3.3V_MINIPCIE1
44	NA	43	GND
46	NA	45	NA
48	NA	47	NA
50	GND	49	NA
52	3.3V_MINIPCIE1	51	NA
m2	GND	m1	GND

2.5.20 Mini PCIe for SATA:



Pin No.	SYMBOL	Pin No.	SYMBOL
2	+V3.3DX_SSD	1	NC
4	GND	3	NC
6	+V1.5S_SSD	5	NC
8	NC	7	NC
10	NC	9	GND
12	NC	11	NC
14	NC	13	NC
16	NC	15	GND
18	GND	17	NC
20	NC	19	NC
22	NC	21	GND
24	+V3.3DX_SSD	23	SATA_RXP2
26	GND	25	SATA_RXN2
28	+1.5S_SSD	27	GND
30	NC	29	GND
32	NC	31	SATA_TXN2
34	GND	33	SATA_TXP2
36	NC	35	GND
38	NC	37	GND
40	GND	39	+V3.3DX_SSD
42	NC	41	+V3.3DX_SSD
44	SATA2_DEVSLP	43	GND
46	NC	45	NC
48	+1.5S_SSD	47	NC
50	GND	49	SSD_LED#
52	+V3.3DX_SSD	51	+V3.3DX_SSD
m2	GND	m1	GND

CHAPTER 3

Chipset Driver Installation

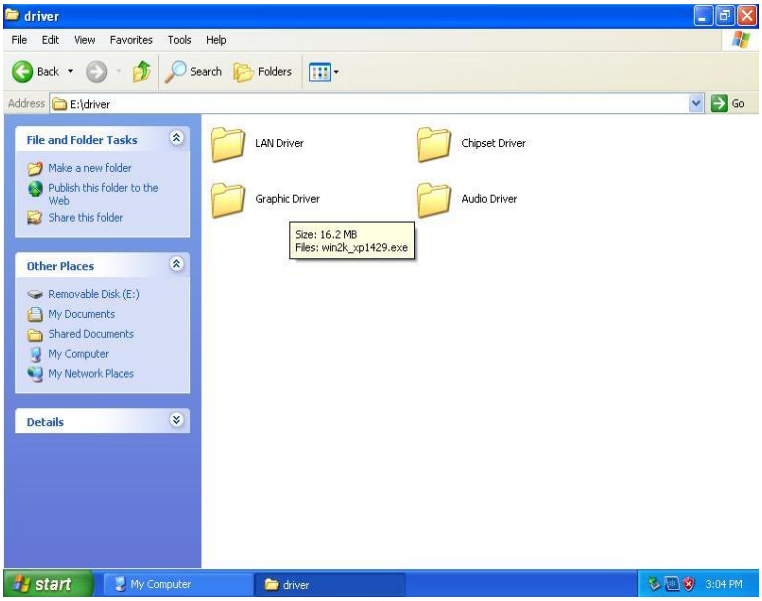
This chapter offers information on the chipset software
Installation utility

- Installation of Chipset Driver

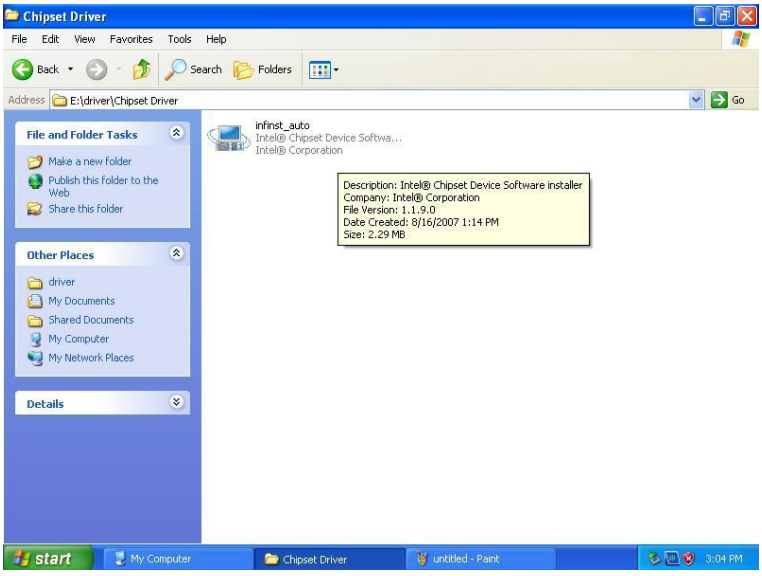
Chapter 3: Chipset Driver Installation

3.1 Intallation of Chipset Driver

Step.1. Insert the CD that comes with the motherboard. Open the file document “Chipset Driver”.

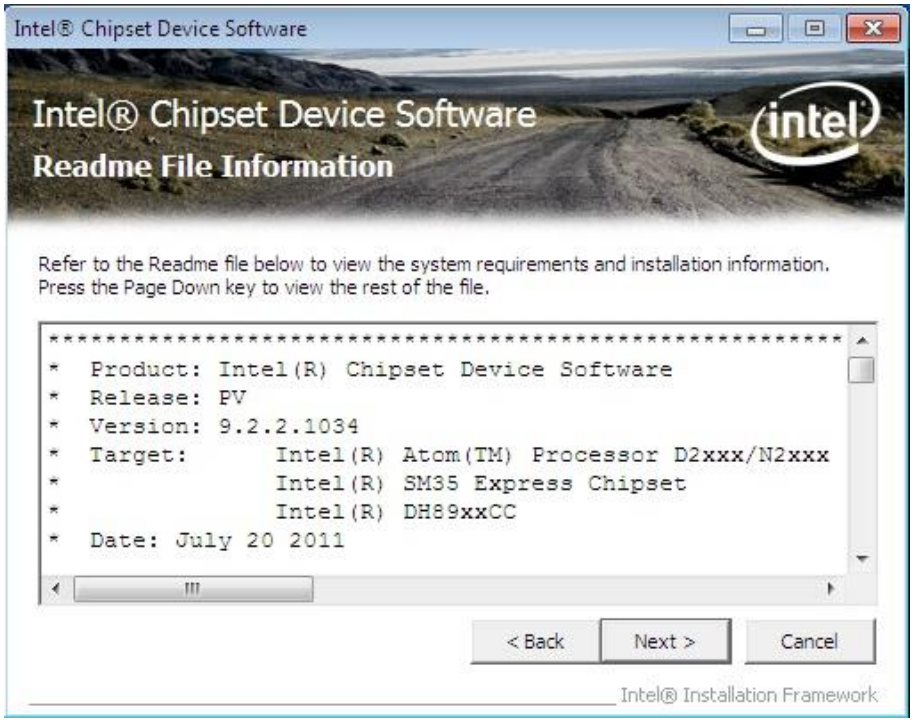


Step.2. Click on “infinst_auto.exe“ to install driver.



Step.3. Click on “Yes “ to agree License

Step.4. Click on “Next“ to install driver.



Step.5. Click on “Next“ to install driver.

Step.7. Click on “Yes, I want to restart this computer now“ to go on.

CHAPTER 4

Graphic Driver Installation

This chapter offers information on the chipset software Installation utility

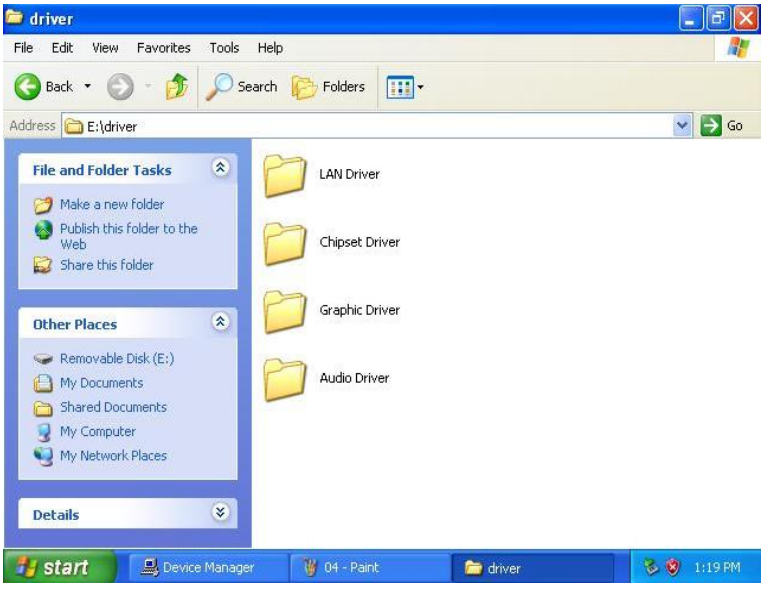
- Installation of Graphic Driver
- Panel Resolution Setting

Chapter 4: Graphic Driver Installation

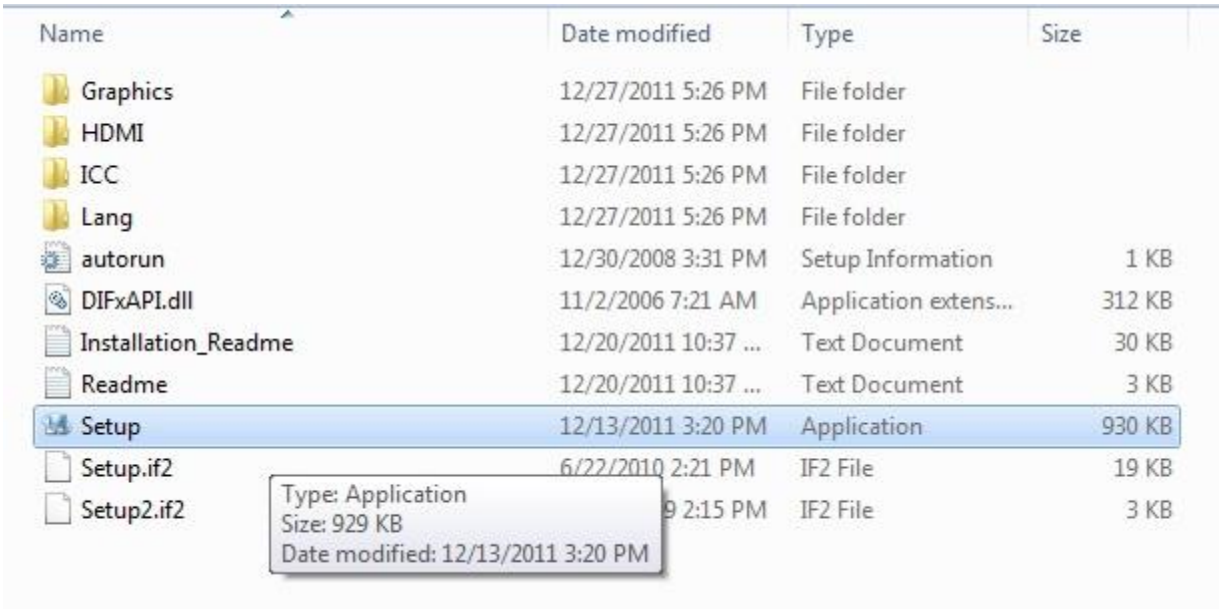
4.1 Installation of Graphic Driver

IB32 Motherboard is equipped with Intel SoC Integrated Device. The Intel Graphic Drivers should be installed first, and it will enable “Video Controller (VGA compatible). Follow the instructions below to complete the installation. You will quickly complete the installation.

Step.1. Insert the CD that comes with the Motherboard. Open the file document “Graphic Driver “.

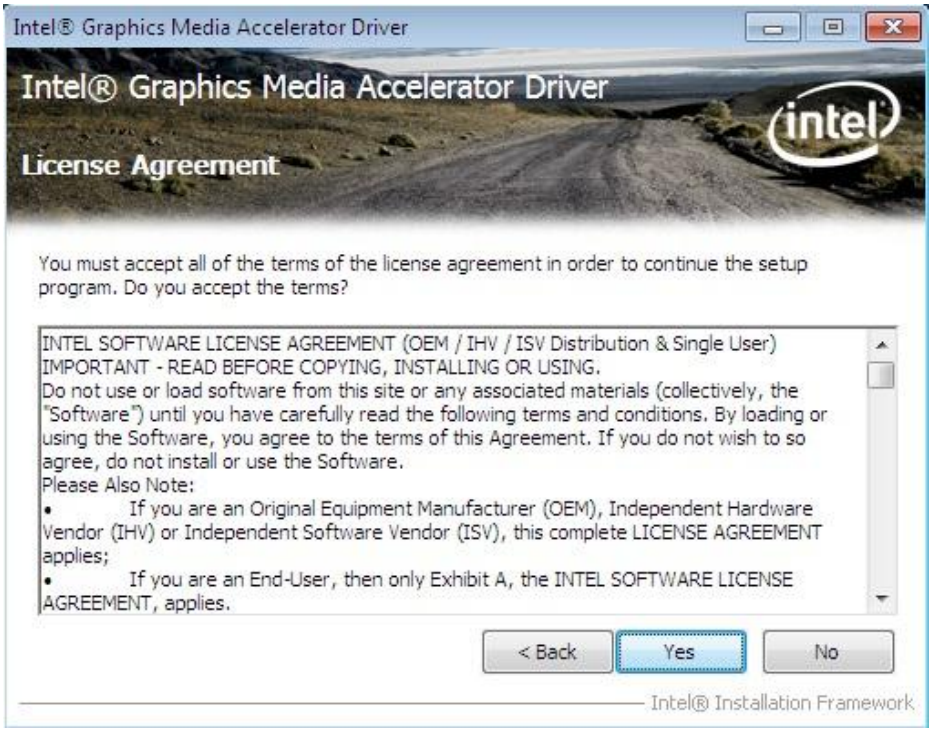


Step.2. Click on “setup” to execute the setup.

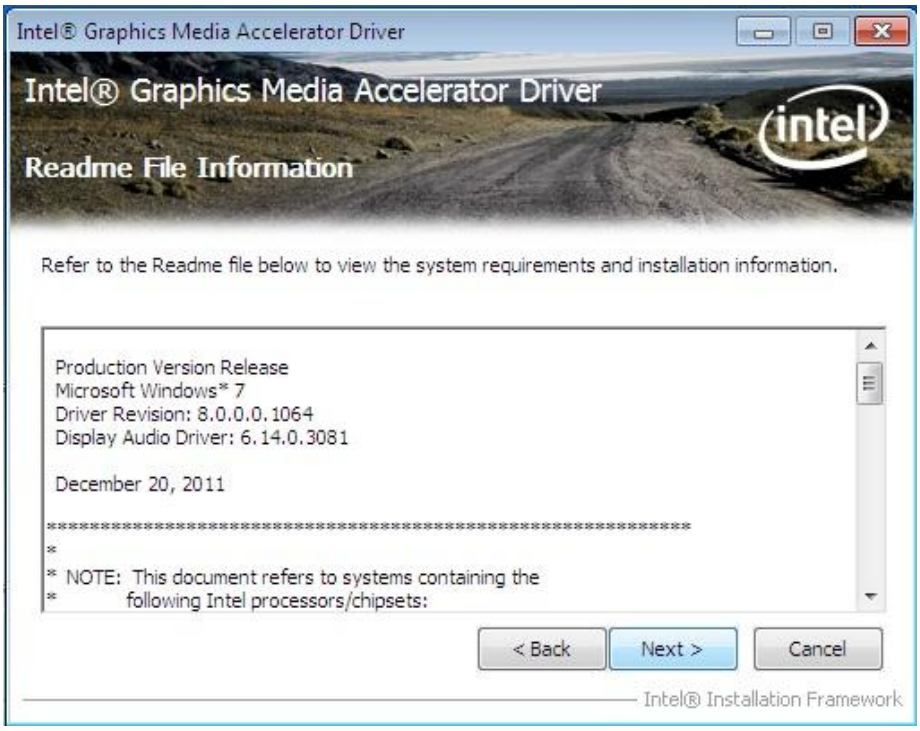


Step.3. Click on “Next “ to install Driver.

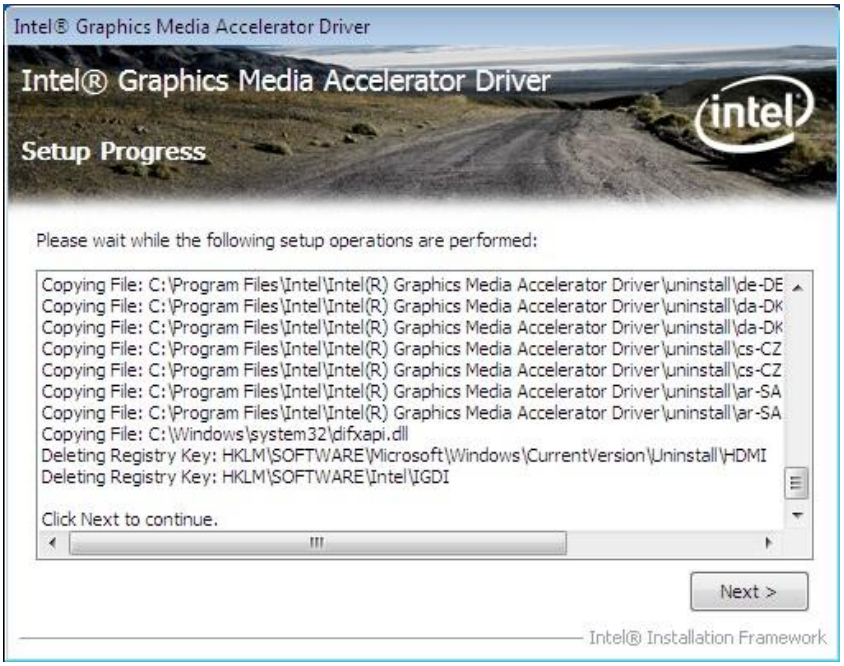
Step.4. Click on “Yes “ to agree License.



Step.5. Click on “Next “ to install Driver.



Step.6. Click on “Next “ to install Driver.

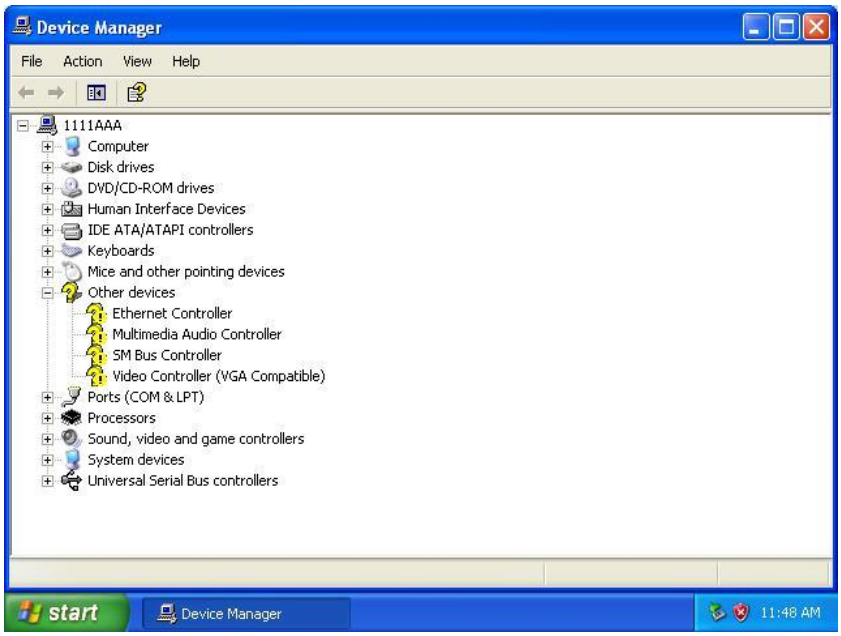


Step.7. Click on “Yes, I want to restart this computer now“ to go on.

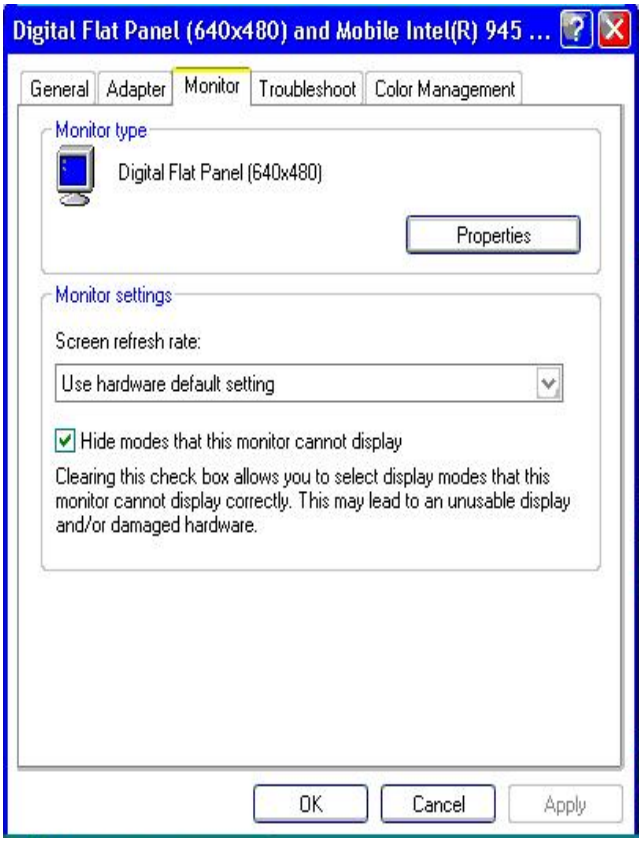
4.2 Panel Resolution Setting

Step.1. Right-click the desktop, and then click Properties.

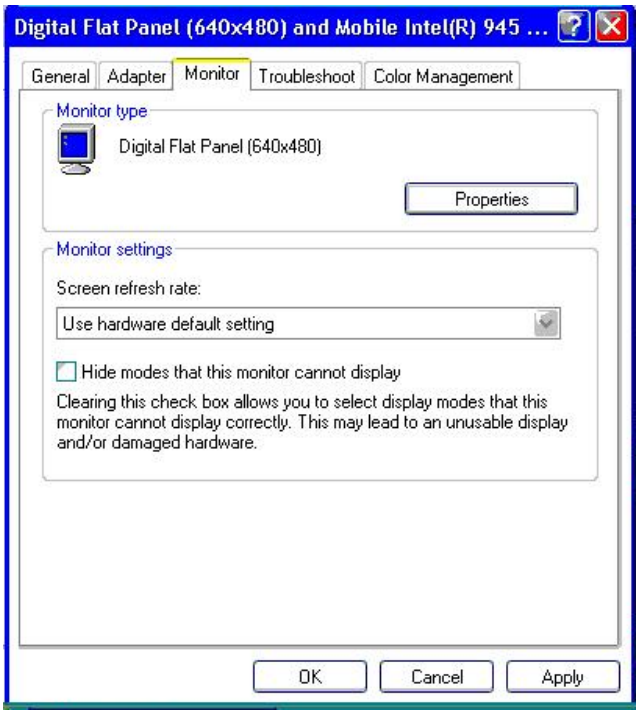
Step.2. In the Display Properties dialog box, click the Settings tab.



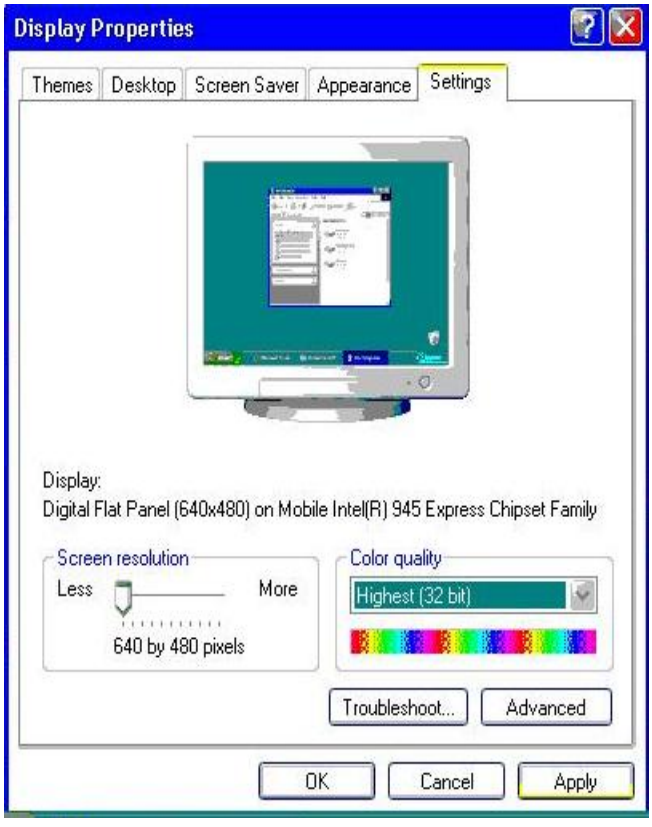
Step.3. Click on “Monitor”.



Step.4. Click on “Hide modes that this monitor cannot display” to remove this option.



Step.5. Click on “Setting”, then could choose 32bit color qualify.



CHAPTER 5

Ethernet Driver Installation

This chapter offers information on the Ethernet software installation utility. Sections include:

- Introduction
- Installation of Ethernet Driver

Chapter 5: Ethernet Driver Installation

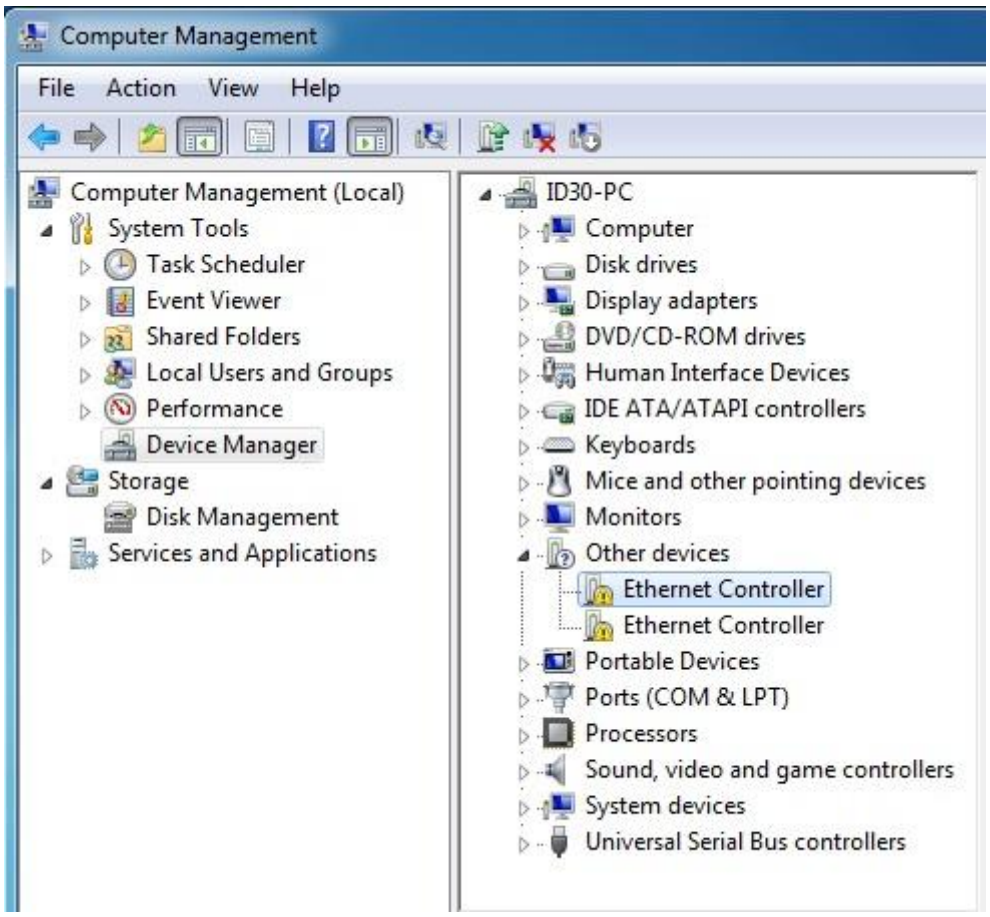
5.1 Instroduction

The Users must make sure which operating system you are using in the IB32 Motherboard before installing the Ethernet drivers. Follow the steps below to complete the installation of the Intel WG82574L Gigabit Ethernet controller LAN drivers. You will quickly complete the installation.

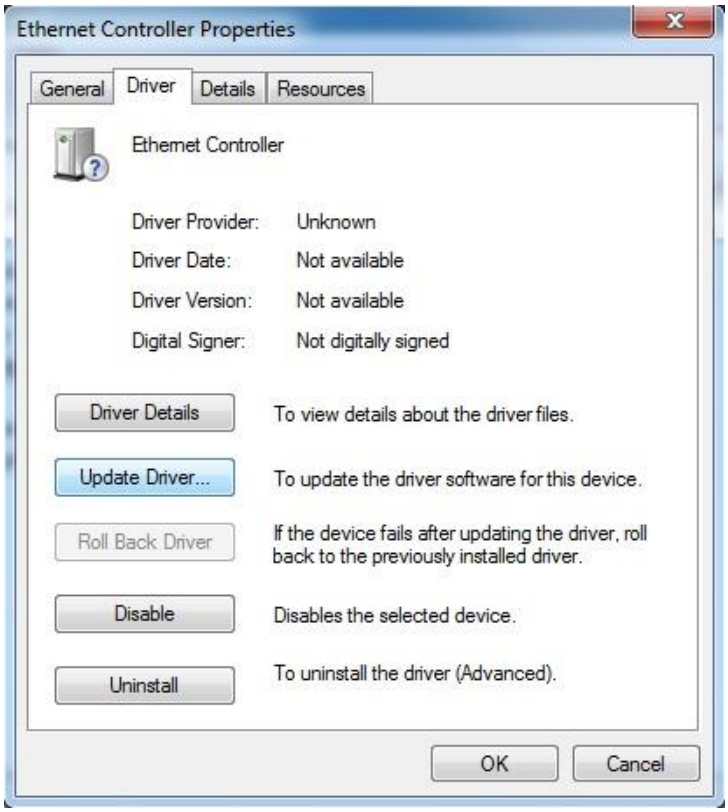
5.2 Installation of Ethernet Driver

Step.1. Right-click the desktop, and then click Properties.

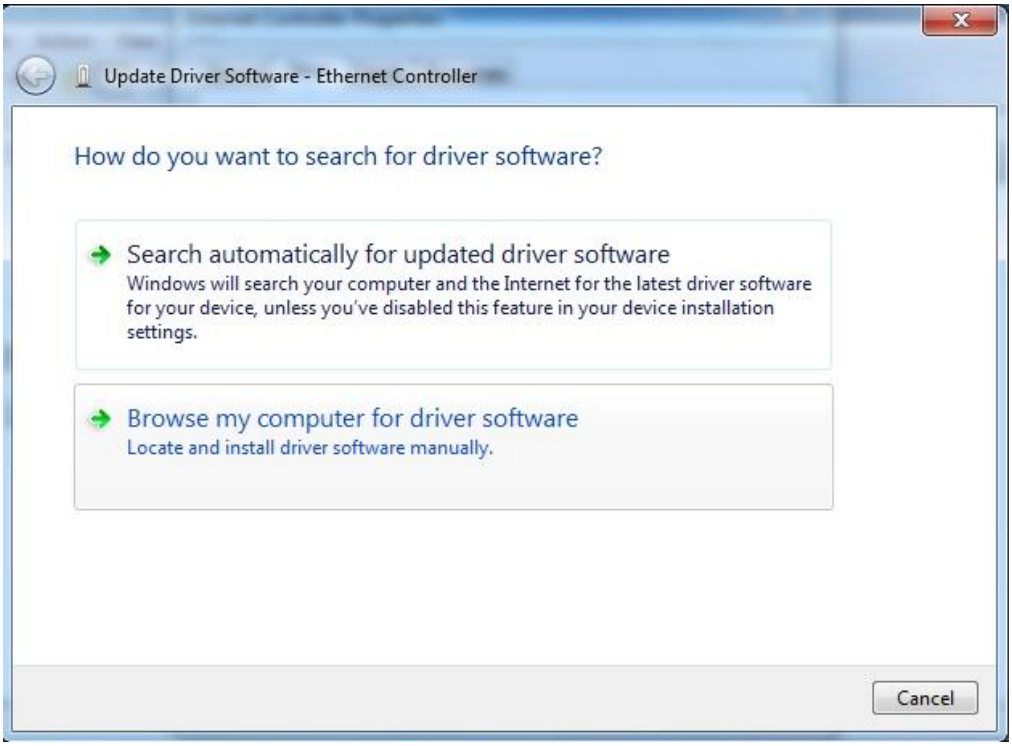
Step.2. In the Other device dialog box, click the Settings tab.



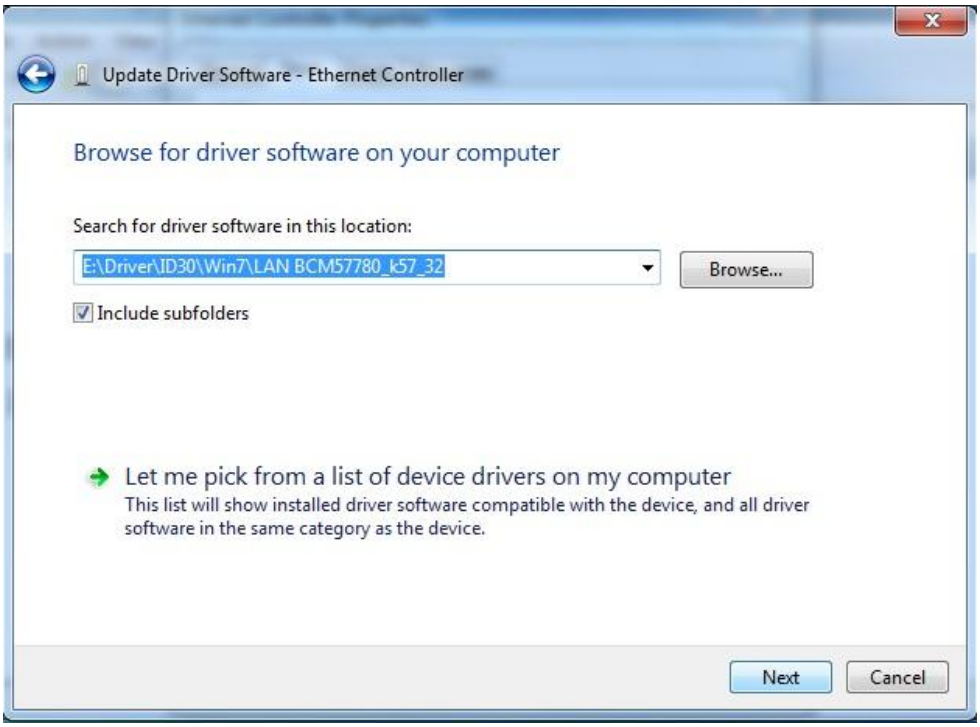
Step.3. Click on “Update Driver” to execute the setup.



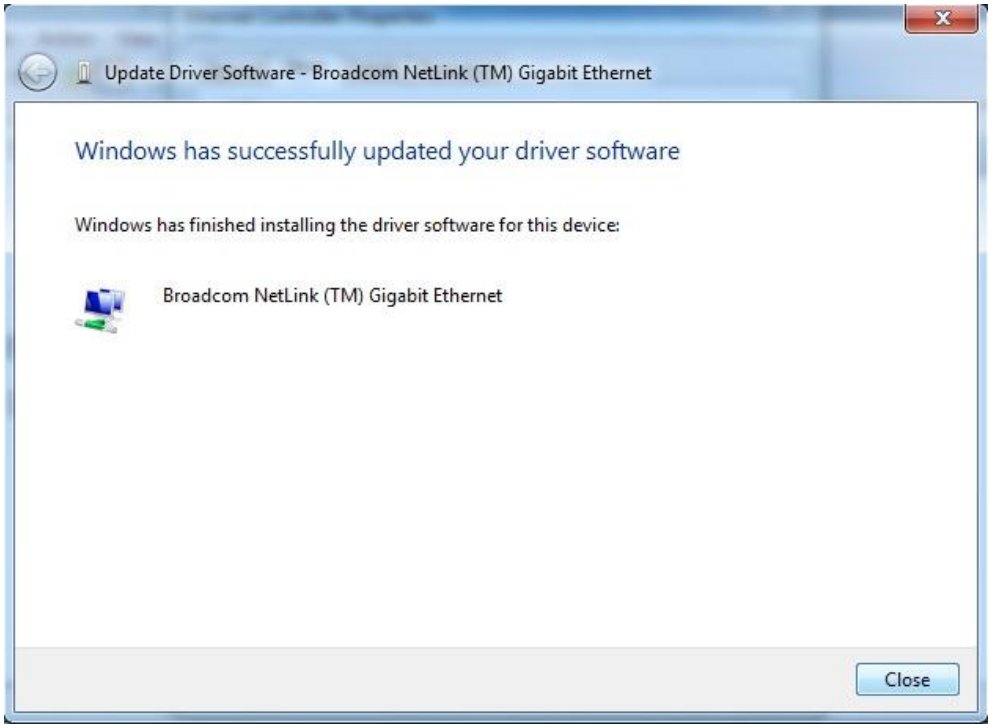
Step.4. Click on “Browse my computer for driver software“ to install driver.



Step.5. Choose the path to install driver.



Step.6. Click on “Close“ and go on.



CHAPTER 6

Audio Driver Installation

This chapter offers information on the Audio software installation utility. Sections include:

- Introduction
- Installation of Audio Driver

Chapter 6: Audio Driver Installation

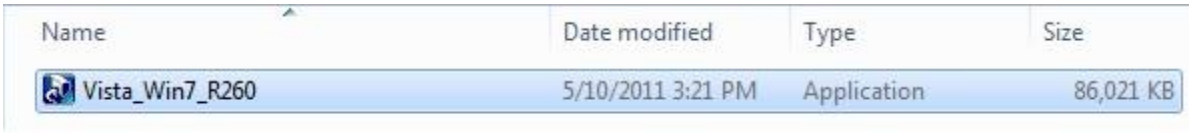
6.1 Introduction

The ALC886 series are high-performance 7.1+2 Channel High Definition Audio Codecs providing ten DAC channels that simultaneously support 7.1 sound playback, plus 2 channels of independent stereo sound output (multiple streaming) through the front panel stereo outputs. The series integrates two stereo ADCs that can support a stereo microphone, and feature Acoustic Echo Cancellation (AEC), Beam Forming (BF), and Noise Suppression (NS) technology.

6.2 Installation of Audio Driver

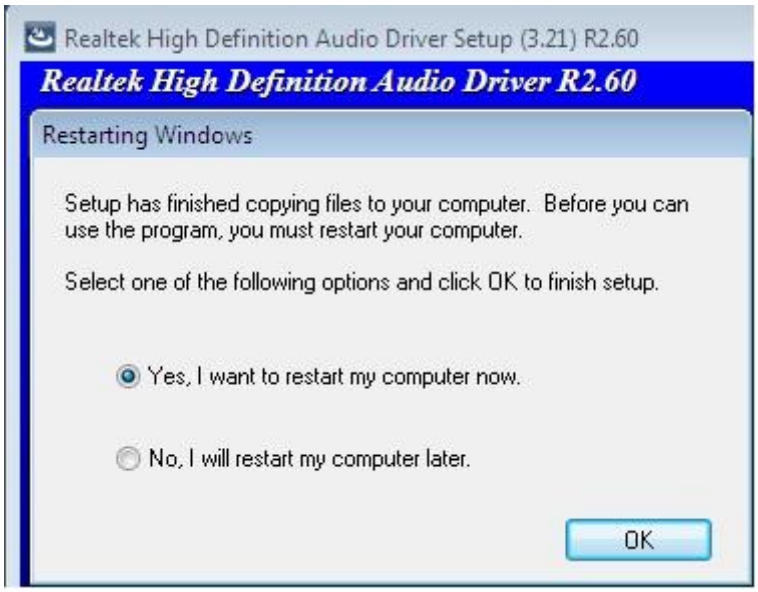
The users must make sure which operating system you are using in the IB32 Motherboard before installing the Audio drivers. Follow the steps below to complete the installation of the Realtek ALC886 Audio drivers. You will quickly complete the installation.

Step.1. Insert the CD that comes with the motherboard. Open the file document “alc655_driver” and click on “Vista_Win7_R260.exe” to execute the setup.



Step.2. Click on “Yes“ to install driver.

Step.3. Click on “Yes, I want to restart my computer now” to finish installation.



CHAPTER 7

USB 3.0 Installation

This chapter offers information on the USB 3.0 driver installation utility.

- Installation

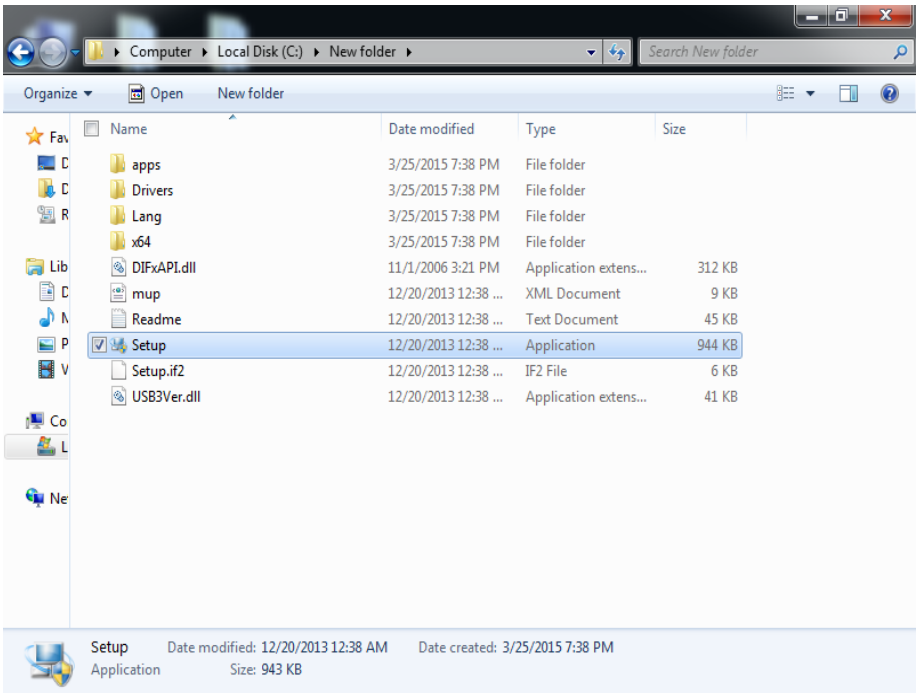
Chapter 7: USB 3.0 Installation

7.1 Installation

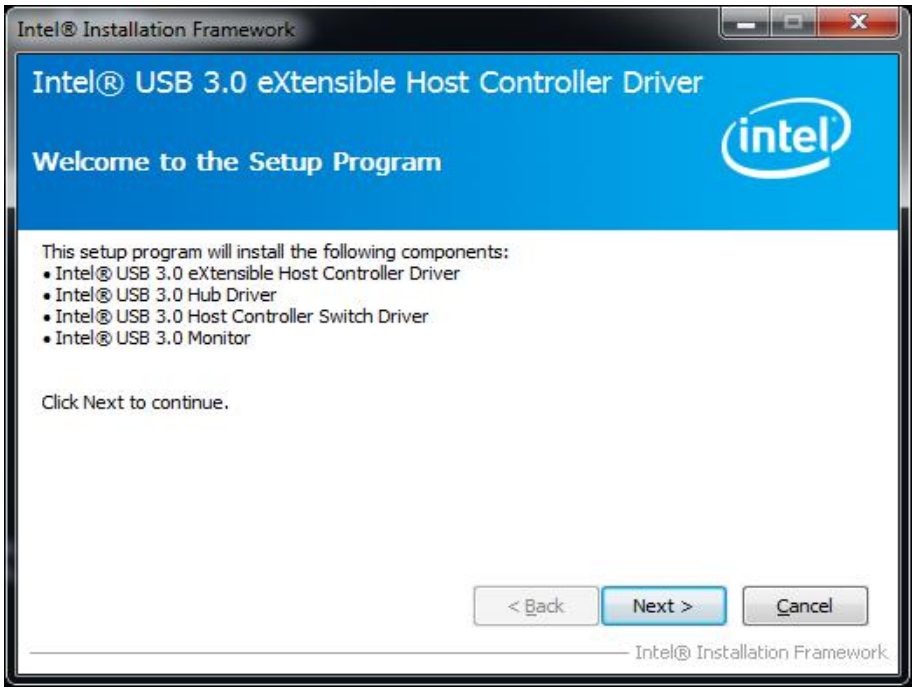
IH32 Motherboard is designed with Intel mobile Core i5 dual core CPU with the Intel®
USB 3.0 eXtensible Host Controller.
You need to install the Intel® USB 3.0 eXtensible Host Controller driver to enable the function.

Step.1. Locate the hard drive directory where the driver files are stored with the browser or the explore feature of Windows*.

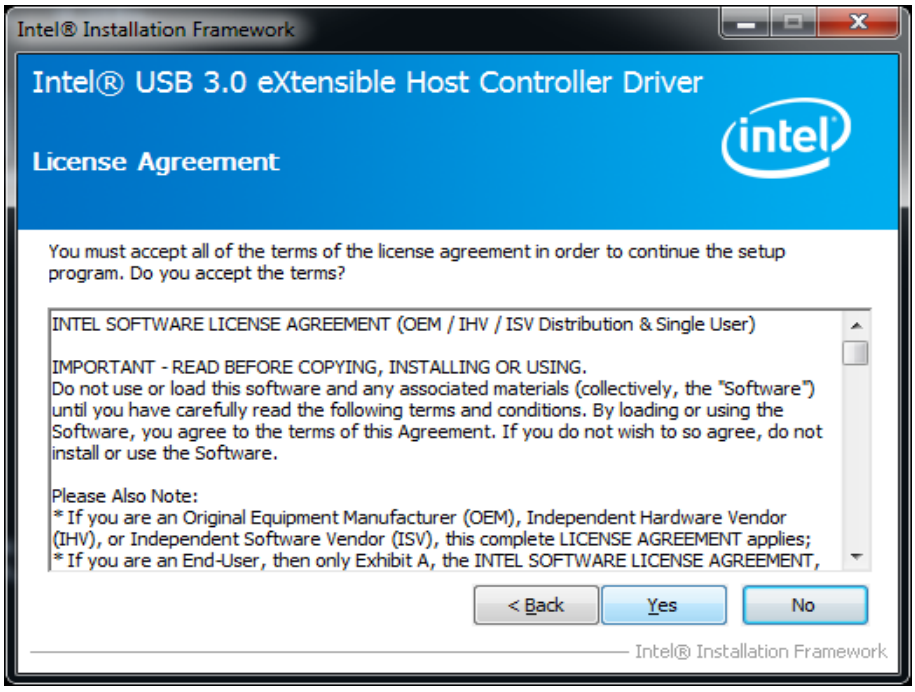
Step.2. Double click the “Setup.exe” from this directory.



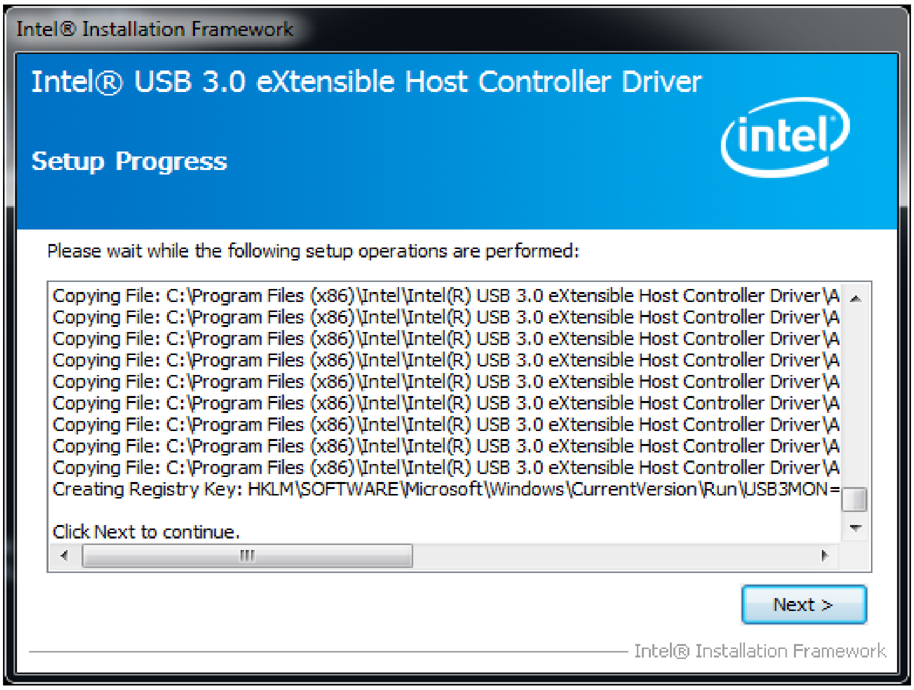
Step.3. Click “Next” to continue.



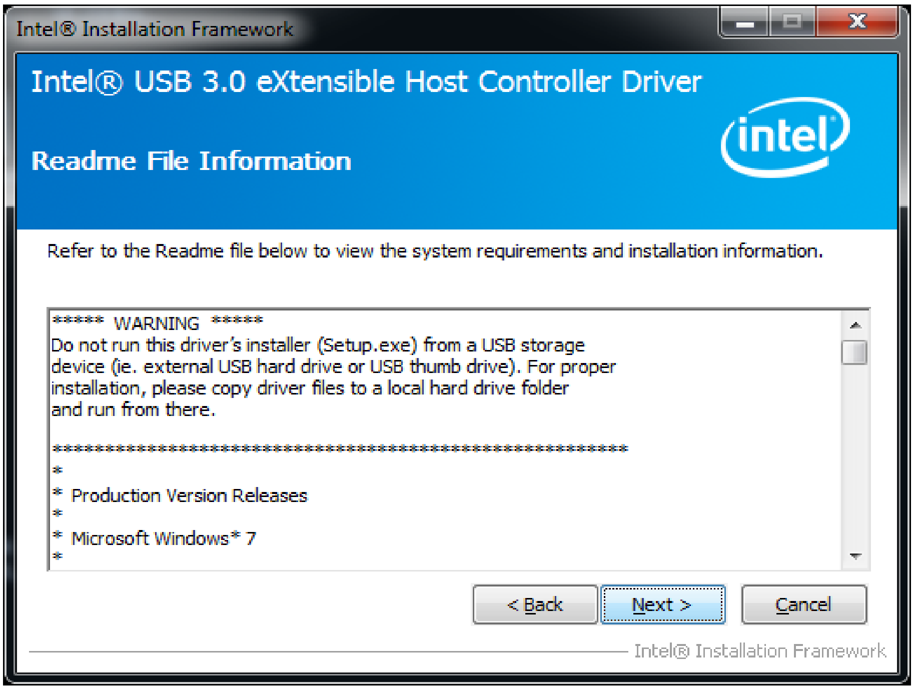
Step.4. Read License Agreement and click “Yes” to proceed.



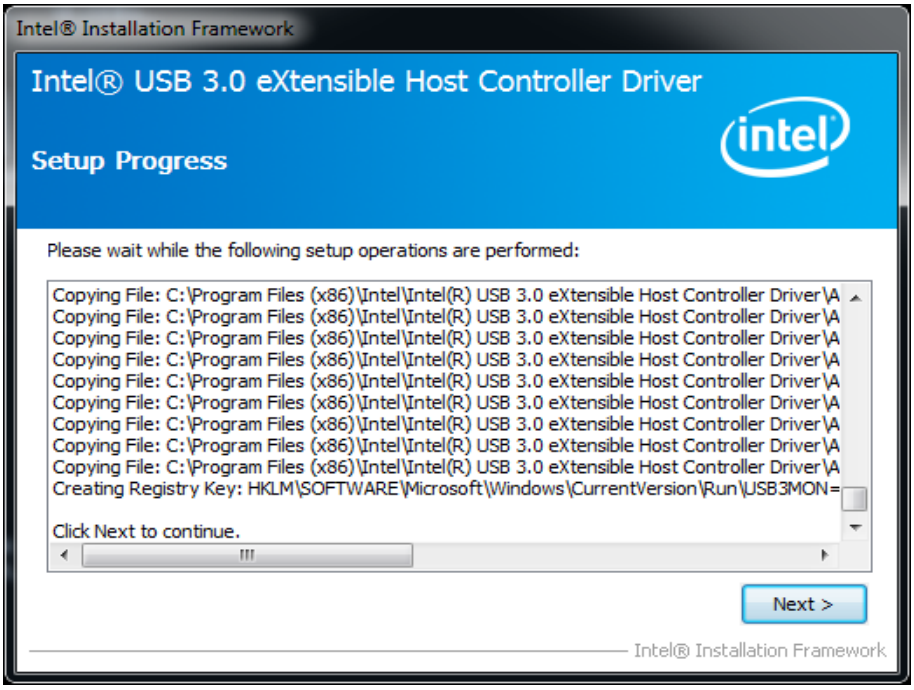
Step.5. Review Readme File Information and click “Next” to proceed.



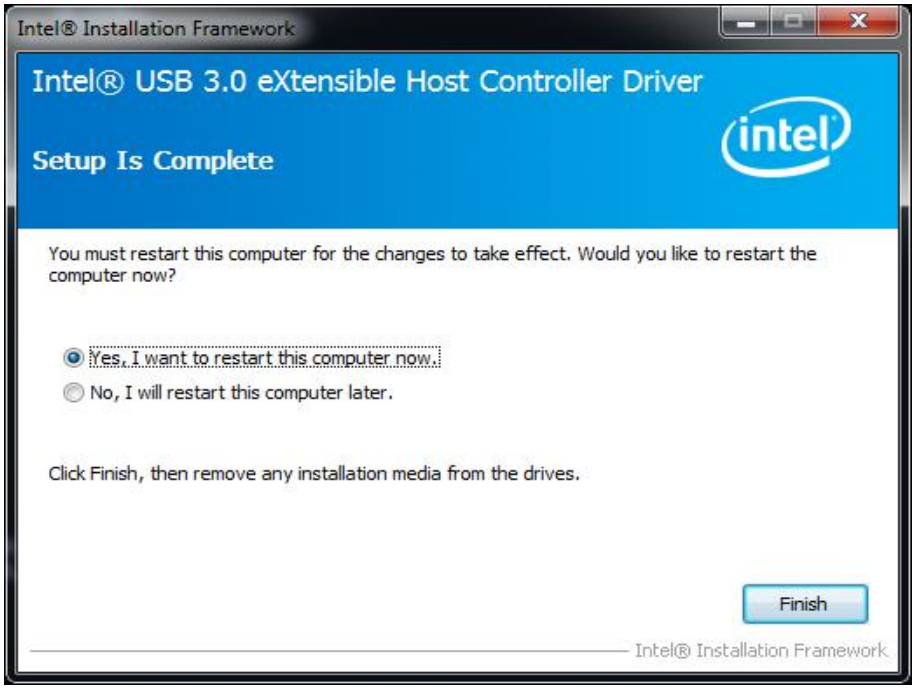
Step.6. When the “Setup Progress” is complete click “Next” to proceed.



Step.7. When the “Setup Progress” is complete click “Next” to proceed.



Step.8. Lastly, the “Setup Complete” screen appears so click “Finish” to restart your computer.



CHAPTER 8

Fintek COM Port Driver Installation

This chapter describes the step by step method to install the Fintek COM port driver.

- Installation

Chapter 8: Fintek COM Port Driver

Installation

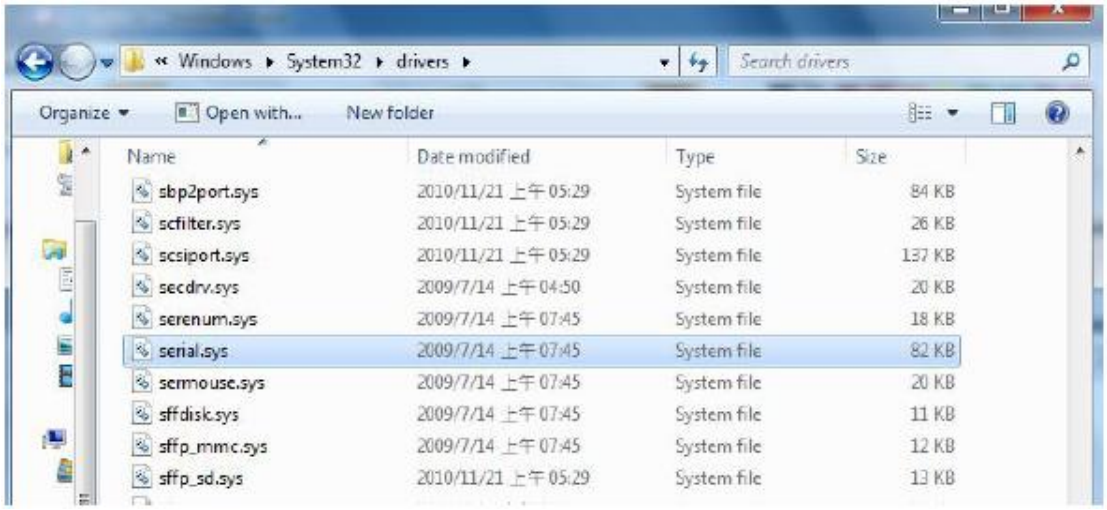
Step.1. If the system is WIN7 please first do close UAC.(Refer following "Disabling User Account Control (UAC) in Windows 7")

Step.2. Extract the Patch_0408.zip to a folder.

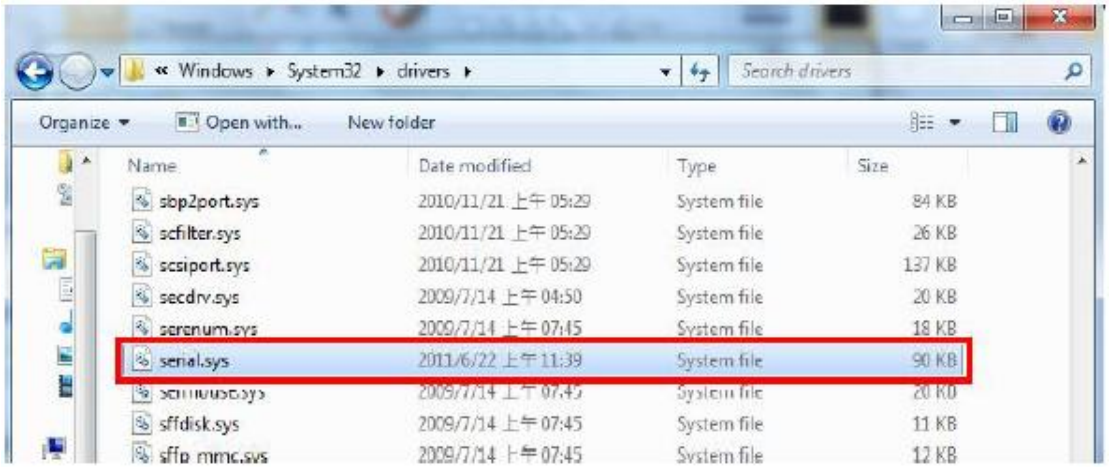
Step.3. Double-click batch file(patch.bat) will install driver.

Step.4. Check driver install success.

Before the update or update fail.



After the update and update success.



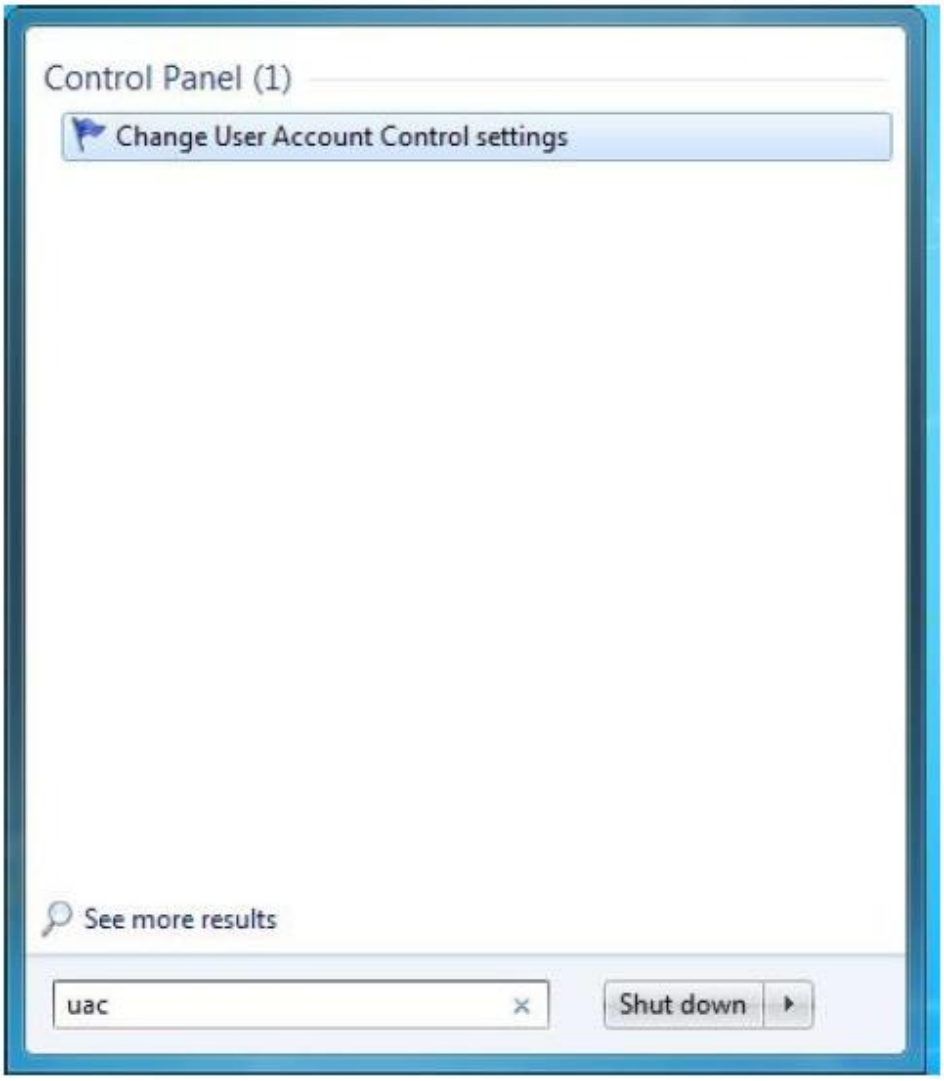
Step.5. You will need to restart your computer for driver install success.

Type in this command from the Run menu:

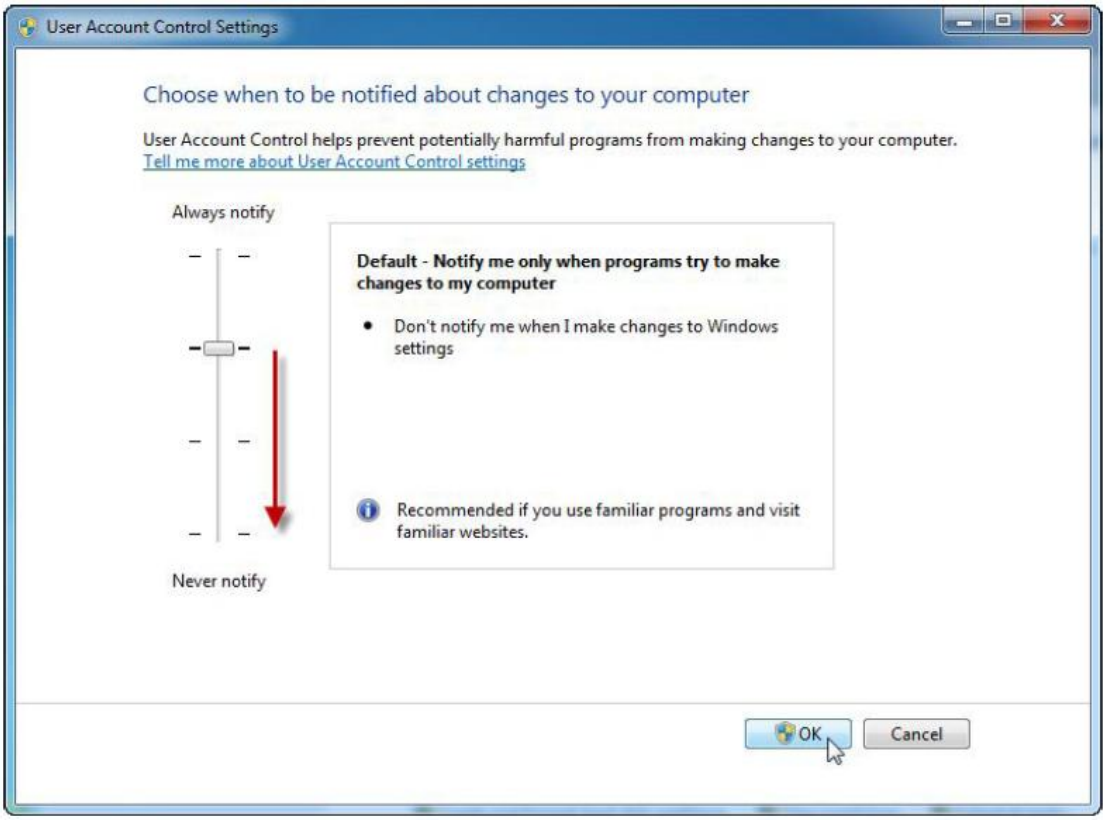
C:\Windows\System32\UserAccountControlSettings.exe

or

uac



To turn off UAC, move the slider to the Never notify position, and then click OK. If you're prompted for an administrator password or confirmation, type the password or provide confirmation.



To turn UAC back on, move the slider to choose when you want to be notified, and then click OK. If
you're prompted for an administrator password or confirmation, type the password or provide
confirmation.
You will need to restart your computer for UAC to be turned off.

CHAPTER 9

AMI BIOS Setup

This chapter describes how to set up the BIOS Configuration

- How and When to Use BIOS Setup
- BIOS Functions
- Using Recovery Wizard to Restore Computer

Chapter 9: AMI BIOS SETUP

9.1 How and When to Use BIOS Setup

For enter to the Tablet PC BIOS setup, you need to connect with an external USB keyboard, press "**Del**" key when the prompt appears on the screen during start up. The prompt screen shows only few seconds so need press Del key quickly.

****NOTICE**

Updated BIOS version may be published after the manual is released. Check with the latest version of BIOS on website.

You may need to run BIOS setup utility when the below status.

1. Error message on sreen indicate to check BIOS setup.
2. Restoring the factory default settings.
3. Modifing the specific hardware specification
4. Want to optimize the specification.

In order to control the keyboard to select BIOS utility setup, you need

Keyboard Icon	Function Description
⬅ ➡	Selects a menu title.
⬆ ⬇	Selects an item or option.
Enter	Go to the sub-menu when available. Opens or closes the option window when an item is selected.
Esc	To leave sub-menu and return to main menu.

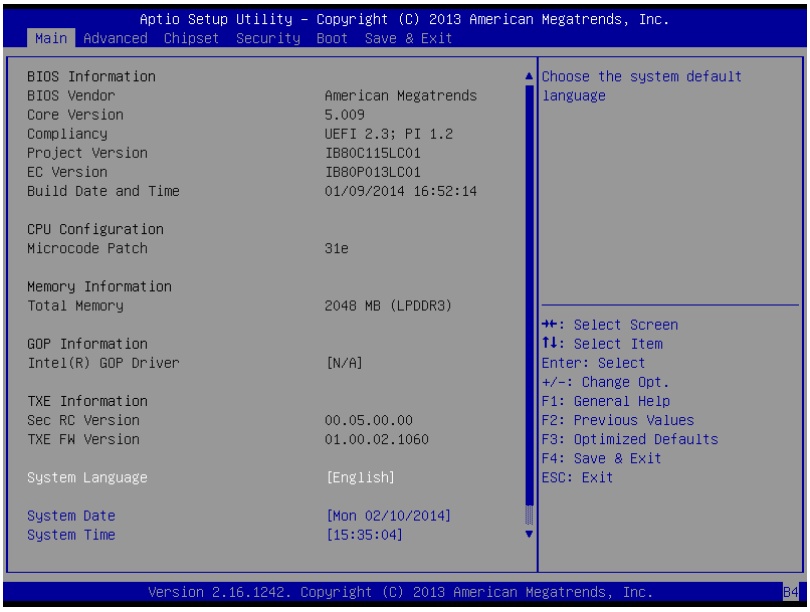
****NOTICE**

You can press the F1, F2, F3, F4, –/+, and Esc keys by connecting a USB keyboard to your tablet PC.

9.2 BIOS Functions

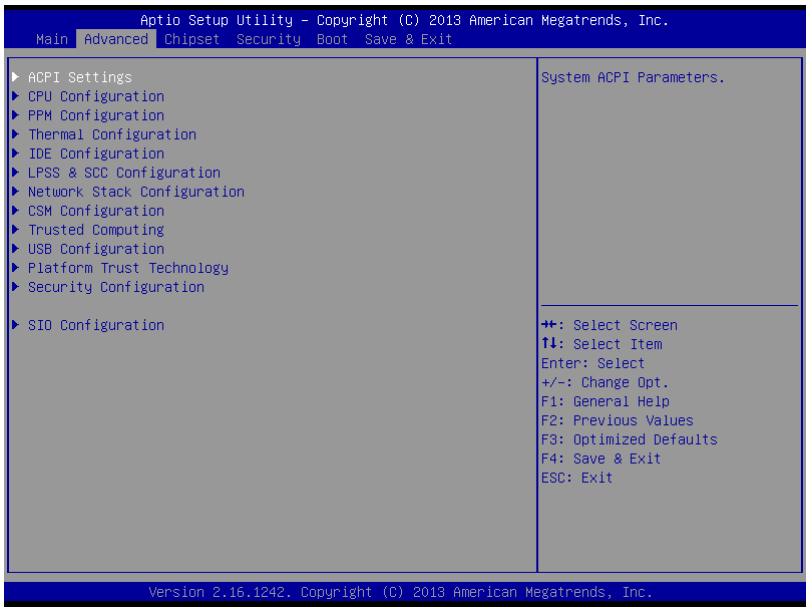
9.2.1 Main Menu

The Main menu contains the information of the Tablet system including BIOS version, processor RC version, system language, time, and date.

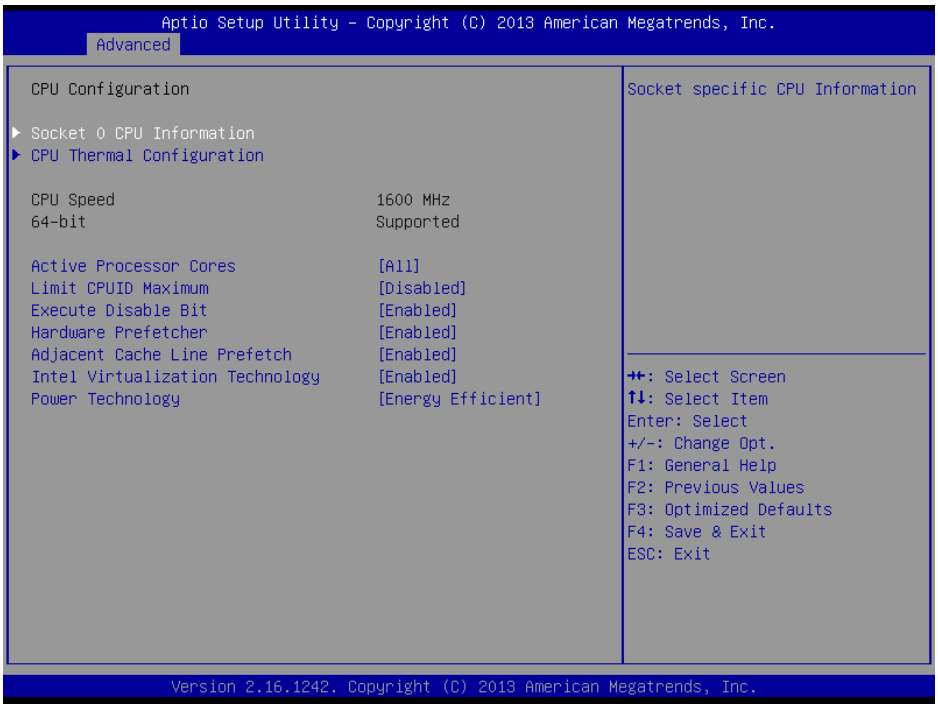


9.2.2 Advanced Menu

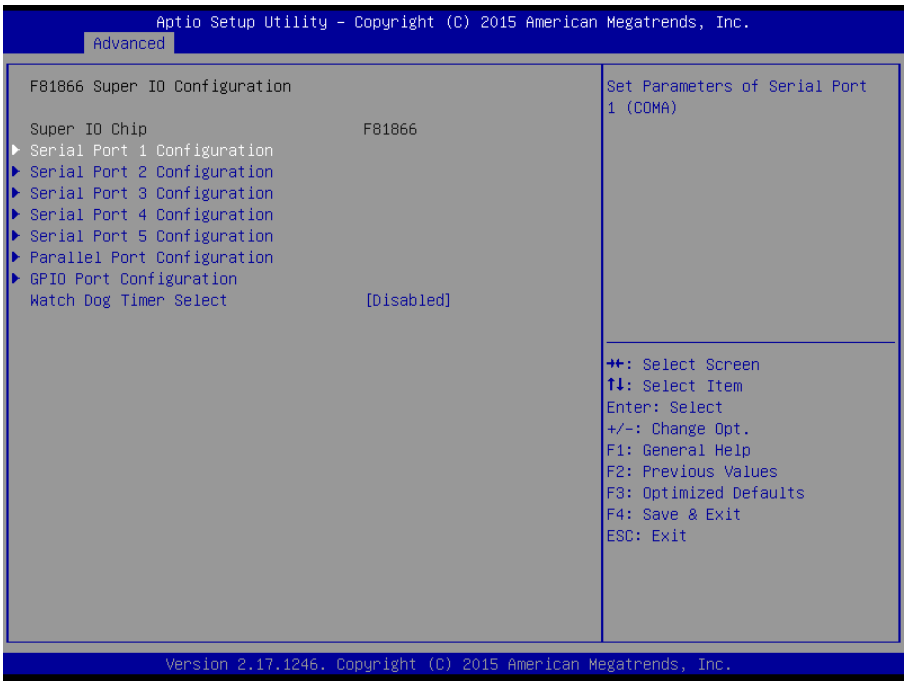
The Advanced menu contains the selections of PXE OpROM and Watch Dog Timer, and the settings of PCI Subsystem, ACPI, and S5 RTC Wake. Besides, it also contains the configuration information of CPU, Thermal, IDE/SATA, USB, and PPM Configuration.



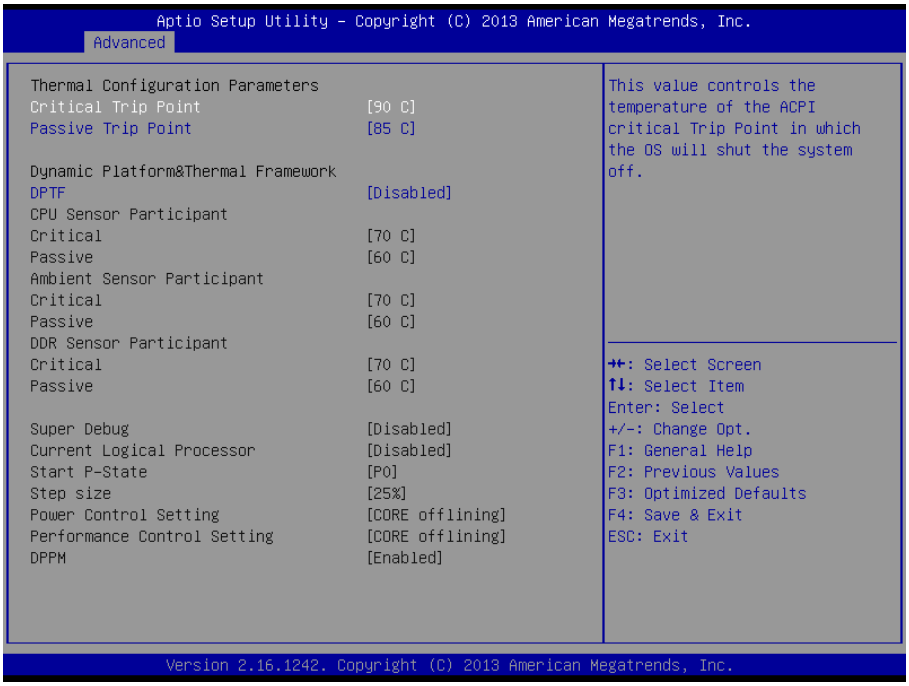
1. CPU Configuration



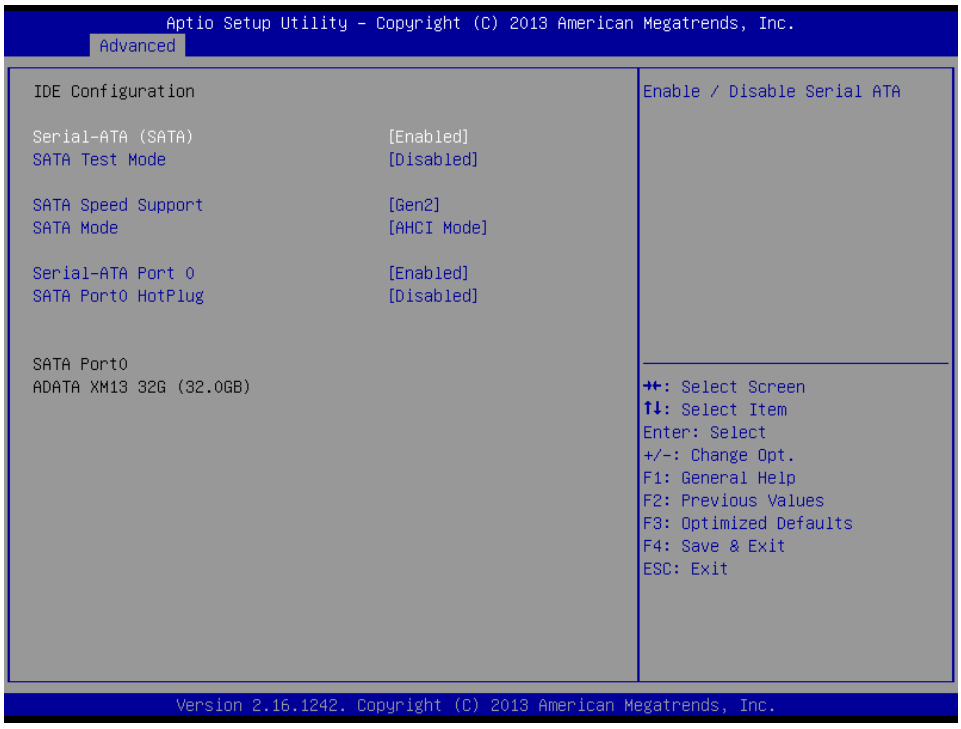
2. Super IO Configuration



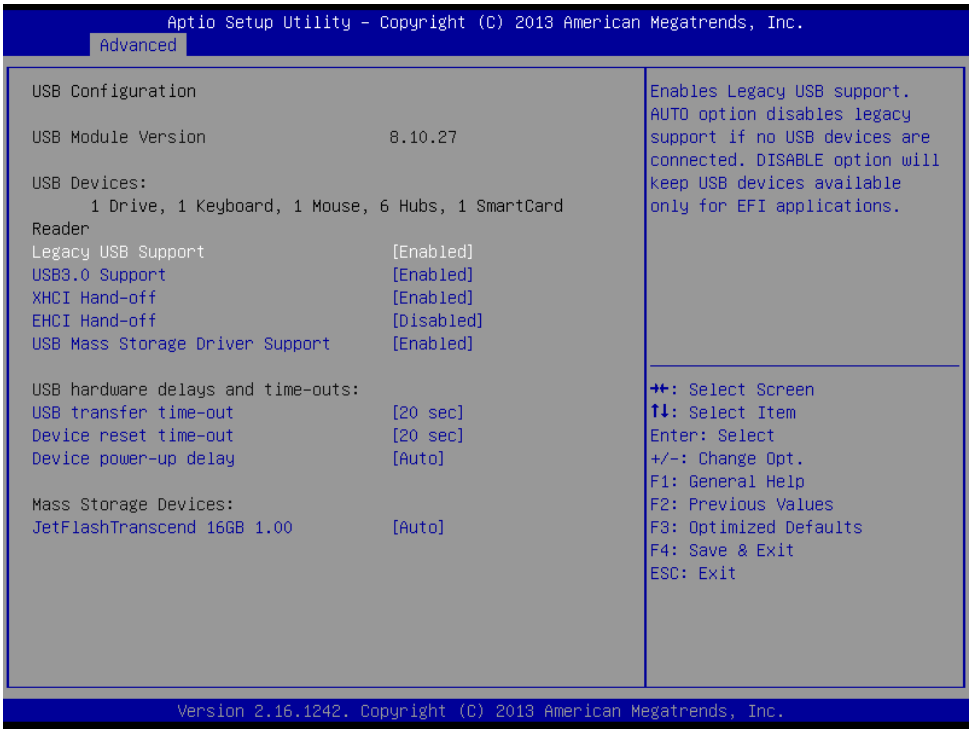
3. Thermal Configuration



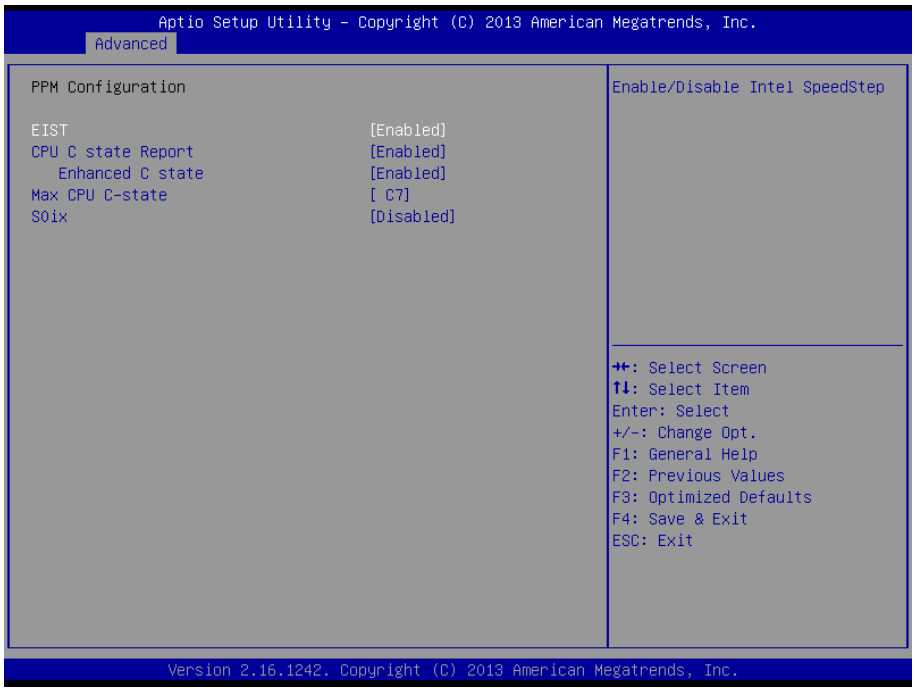
4. IDE / SATA Configuration



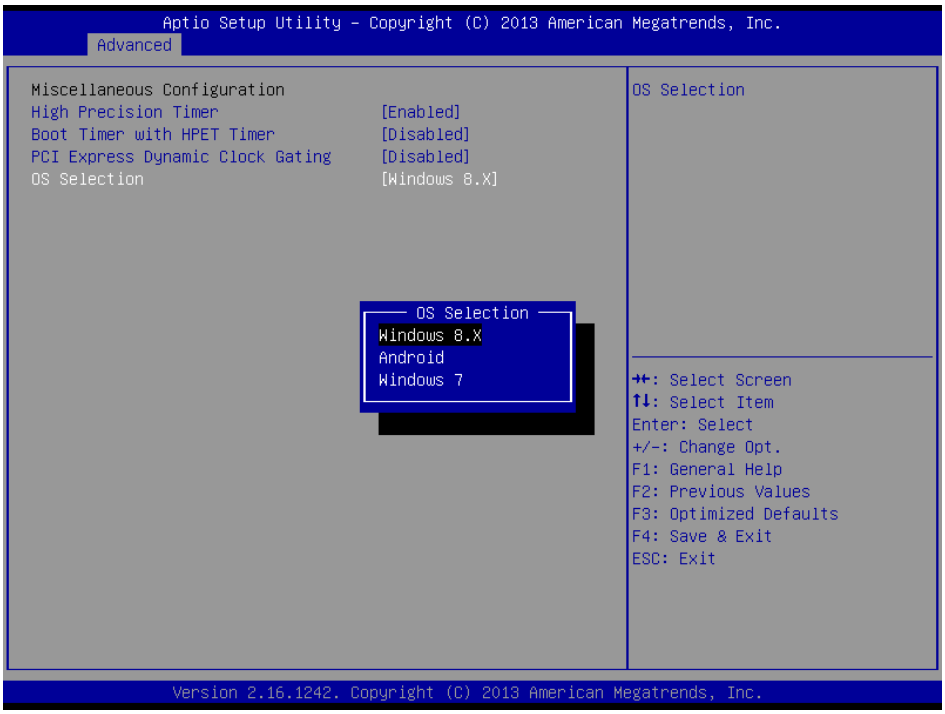
5. USB Configuration



6. PPM Configuration



7. OS Selection



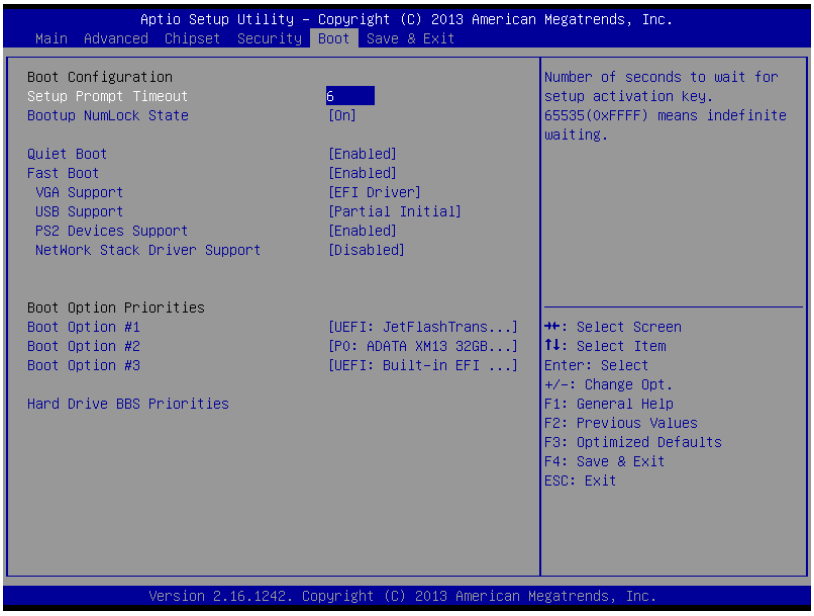
9.2.3 Chipset Menu

The Chipset menu contains the information of North Bridge and South Bridge.

9.2.4 Boot Menu

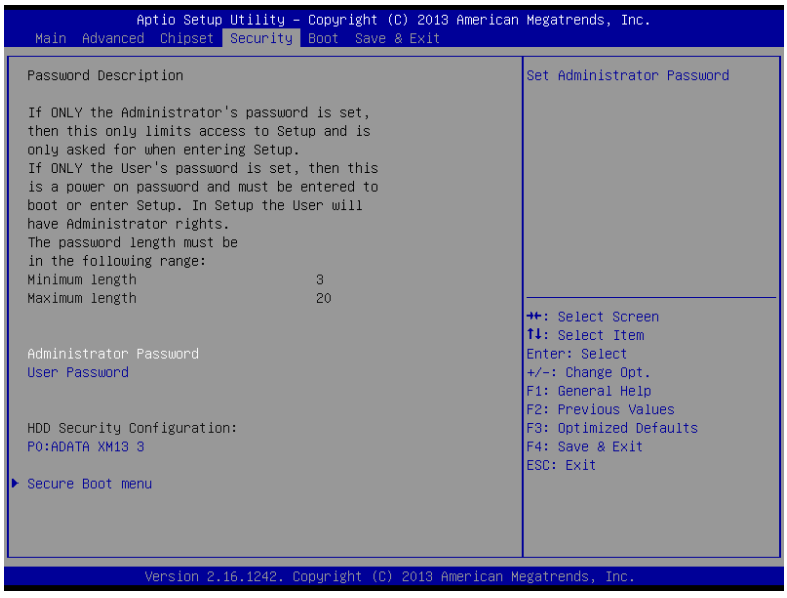
The Boot menu sets the sequence of the devices to be searched for the operating system.

The bootable devices will be automatically detected during POST and shown here, allowing you to set the sequence that the BIOS uses to look for a boot device from which to load the operating system. A brief description of button usage is listed next:



9.2.5 Security Menu

In the Security menu, users can set Administrator Password, User Password, and HDD Security Configuration.



9.2.6 Save & Exit Menu

The Exit menu displays ways of exiting BIOS Setup utility. After finishing with your settings, you must save and exit so that the changes can take effect.

Save Canges and Exit saves the changes you have made and exits BIOS Setup utility.

Discarding Changes and Exit exits BIOS Setup utility without saving the changes you have made.

Save Canges and Rest saves the changes you have made and resets BIOS system.

Discarding Changes and Reset resets BIOS system without saving the changes you have made.

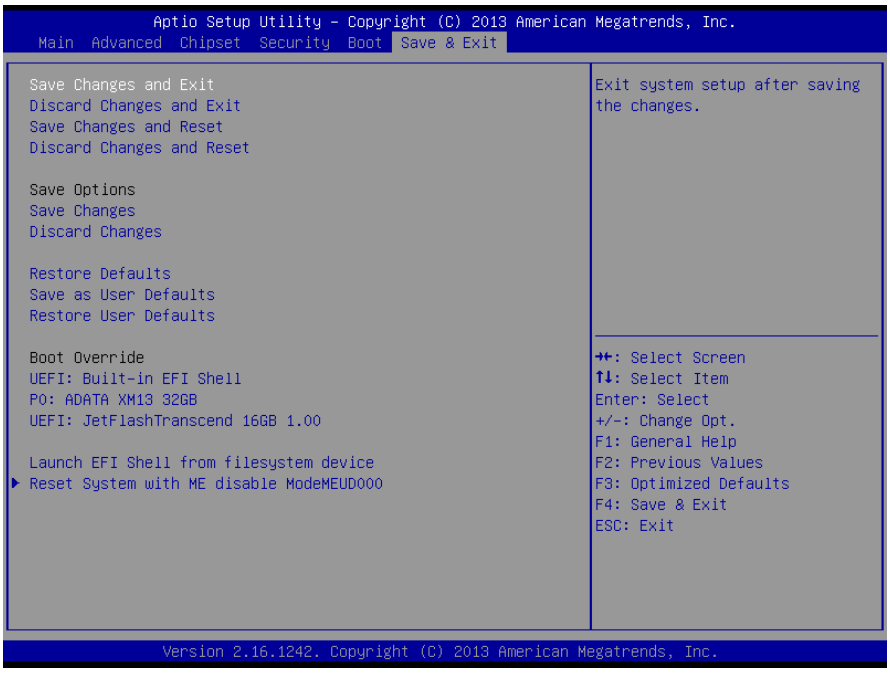
Save Changes done so far to any of the setup options.

Discard Changes done so far to any of the setup options.

Restore Defaults loads/restore the factory default values for all the items.

Save as User Defaults saves the changes one so far as User Defaults.

Restore User Defaults loads/restore the User default values for all the items.



9.3 Using Recovery Wizard to Restore Computer

Bay Trail Intel® Celeron N2930 series computer has a dedicate recovery partition stored on the hard drive of the PC to enable quick one-key recovery process. This partition occupies about 11GB of the storage space, and comes built-in to each IB70 series PC.

Warning: Before starting the recovery process, be sure to backup all user data, as all data will be lost after the recovery process.

Follow the procedure below to enable quick one-key recovery procedure:

- Plug-in the AC adapter to Bay Trail series computer. Make sure the computer stays plugged in to power source during the recovery process.
- Turn on the computer, and when the boot screen shows up, press the **F6** to initiate the Recovery Wizard.
- The following screen shows the Recovery Wizard. Click on “Recovery” button to continue.

- A warning message about data loss will show up. Make sure data is backed up before recovery, and click on “Yes” to continue.

- Wait till the recovery process to complete. During the recovery process, a command prompt will show up to indicate the percent of recovery process. After recovery is completed, and the tablet computer will restart automatically.

Service / Update

Official Website

The relevant information about IB32 including the latest news and downloads will be presented in the website below:
http://www.winmate.com.tw/BoxPc/EmbeddedSpec.asp?Prod=05_0156
Please go there to obtain further details of IB32 Motherboard.

Company Information

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Distributor and more Products (Please refer to our website): www.winmate.com.tw

CHAPTER 10

Appendix

This chapter includes appendix items for this user manual

Chapter 10: Appendix

10.1 Digital I/O Sample Code

To find the Digital I/O Sample code, please refer to the IB32 driver CD SDK or contact us.

10.2 Watchdog Sample Code

To find the Watchdog Sample code, please refer to the IB32 driver CD SDK or contact us.