# **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.

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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 1W13Axxxxxxx 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

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# **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<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> Bay Trail processors
- Intel<sup>®</sup> SoC Integrated
- 204-pin SO-DIMM DDR3L 1333/1600 MHz, up to 8GB
- Intel<sup>®</sup> HD Graphics Engine
- VGA, 18/24-bit Dual-Channel LVDS, 1 x HDMI
- 2 x Intel<sup>®</sup> 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 <sup>®</sup> SoC Integrated	
BIOS	AMI 64Mbit Flash	
Graphic	Intel <sup>®</sup> 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 <sup>®</sup> 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 +5V for external power(Blue) / 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	
Operating Temperature: -10~70°C (14~158°F)Operating Humidity: 10~90% Relative Hum 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







# 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<sup>®</sup> 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<sup>®</sup> 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 Type₀	<b>Description</b> .	<b>Function</b>
15.4			1-2: 5.0V* <sup>2</sup>
JP1₽	Header 3*1#	Inverter voltage Select	2-3: 12 V∉

※ Default : 1-2.

#### JP2: Inverter Enable Select

Location.	Header Type₀	<b>Description</b> <sub>2</sub>	<b>Function</b>
150			1-2: Control to BLON
JP2₽	Header 3*1₽	Inverter Enable Select	2-3: Normal (Always)₽

※ Default : 1-2.

#### JP4: DC Mode Control

Location.	Header Type₀	<b>Description</b> .	<b>Function</b> <sub>e</sub>
15.4		DC Mode Control 🖉	1-2: Control to VRD43
JP4₽	Header 3*1#	(For VR)⊷	2-3: Normal(For DC)₀

※ Default : 2-3.

#### JP5: From SoC Brightness PWM Voltage Select

Location.	Header Type₀	<b>Description</b> ~	<b>Function</b> .
185		From SoC Brightness PWM	1-2: 3.3V₽
JH25	Header 3*1#	Voltage Select	2-3: 5.0V₽

※ Default : 1-2.

#### JP6: Brightness Control Select

Location.	Header Type₀	<b>Description</b> <i></i> <b></b>	<b>Function</b>
100		Brightness Control Select	1-2: DC Mode⊷
JP6∘	Header 3*1#	(DC Mode or PWM Mode)	2-3: PWM Mode

※ Default : 1-2.



#### JP7: Brightness Control to VRD

Location.	Header Type₀	<b>Description</b> .	<b>Function</b> ~
107		Brightness Control to VRD	1-2: Normal Mode
JP7₽	Header 3*1@	(VRD PWM)⊷	2-3: VRD Control+

#### ※ Default : 1-2.





#### JP8/JP9: COM Port Select

Location.	Header Type <i>₀</i>	<b>Description</b> <sub>*</sub>	<b>Function</b>
JP8₽	Header 2*3.	RS232₽	1-2₽
		RS422₽	3-4₽
		RS485₽	5-6₽

※ Default : 1-2.





Location.	Header Type₀	<b>Description</b> .	<b>Function</b>
	Header 3*4₽	RS232₽	1-2⊷
			4-5⊷
			7-8⊷
JP9₄ <sup>3</sup>			<b>10-11</b> <i>₽</i>
		RS422₽	2-3⊷
			5-6⊷
		RS485₽	8-9⊷
			11-12₽

※ Default : 1-2 4-5 7-8 10-11+

1	٢	$\odot$
٩	$\odot$	6
$\odot$	٢	$\odot$
10	(1)	

### JP10: VRD Brightness Function

Location.	Header Type₀	<b>Description</b> .	<b>Function</b>
1040			1-2: Analog (VR)
JP10₽	Header 3^1@	VRD Brightness Function∉	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 <sup>®</sup> 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



0		$ \bigcirc_{A1} \bigcirc_{A2} \bigcirc_{A6} \bigcirc_{A7} \bigcirc_{A6} \bigcirc_{A7} O_{A7} O_{A7}$	$ \begin{array}{c} \bigcirc \\ A3 \\ A4 \\ A5 \\ \bigcirc \\ A8 \\ A9 \end{array} $
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<sup>®</sup> 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

ROUT+

1

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

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

				ľ
<b>1</b> <sup>39</sup> ··· ·				
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		Inction
		3.3V	1-2	
CON5	I5 Header 2*3 LVDS VO	LVDS VOLTAGE	5V	3-4
			12V	5-6

#### 2.5.10 SATA II: SATA 2.0 Port



	1	,	
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

	3.3V (Blue)	1 2 5V (Red)	1 12V (Yellow)
Pin No.	SYMBOL	Pin No.	SYMBOL
1	VCC	2	GND



#### 2.5.15 GPIO: General Purpose I/O



SYMBOL	Pin No.	SYMBOL
GND	2	+V5A
DOUT3	4	DOUT1
DOUT2	6	DOUT0
DINT3	8	DINT2
DINT1	10	DINT0
GPIO53_IN0	12	GPIO56_OUT0
GPIO54_IN1	14	GPIO57_OUT1
	SYMBOL GND DOUT3 DOUT2 DINT3 DINT3 DINT1 GPI053_IN0 GPI054_IN1	SYMBOL         Pin No.           GND         2           DOUT3         4           DOUT2         6           DINT3         8           DINT1         10           GPI053_IN0         12           GPI054_IN1         14

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

4	=0	2
d	=	1

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

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

2 4 6 8		] ] ] ] 5 7
	 	ĩ.

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	



# 3

**CHAPTER** 

# **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

tel® Chipset Device Software			- 8 💌
Intel® Chipset Device Sol License Agreement	ftware		intel
You must accept all of the terms of the license a program. Do you accept the terms? INTEL SOFTWARE LICENSE AGREEMENT (OEM IMPORTANT - READ BEFORE COPYING, INSTA Do not use or load this software and any asso until you have carefully read the following term Software, you agree to the terms of this Agre install or use the Software. Please Also Note:	agreement in order 1 / IHV / ISV Distrib ALLING OR USING. ciated materials (c ms and conditions. ement. If you do r	r to continue the ution & Single U ollectively, the By loading or us iot wish to so ay	e setup Iser) ^ "Software") sing the gree, do not
(IHV), or Independent Software Vendor (ISV),	, this complete LIC	ENSE AGREEME	NT applies;
	< Back	Yes Intel® Insta	No No

#### Step.4. Click on "Next" to install driver.

el® Chipset Device Software	
ntel® Chipset Device Readme File Information	Software
Refer to the Readme file below to view the Press the Page Down key to view the res	ne system requirements and installation information. t of the file.
*****	******
* Product: Intel(R) Chi	pset Device Software
* Release: PV	
* Version: 9.2.2.1034	
* Target: Intel(R)	Atom(TM) Processor D2xxx/N2xxx
* Intel(R)	SM35 Express Chipset
* Intel(R)	DH89xxCC
* Date: July 20 2011	
٠ m	
	< Back Next > Cancel
	Intel(8) Installation Framework


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

Intel® Chipset Device Software	
Intel® Chipset Device Software Setup Progress	(intel)
Please wait while the following setup operations are performed:	
Installing Driver: Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4 Version: 9, 1, 1, 1016 Installing Driver: Intel(R) N10/ICH7 Family PCI Express Root Port - 27D6 Version: 9, 1, 1, 1016 Installing Driver: Intel(R) N10/ICH7 Family SMBus Controller - 27DA Version: 9, 1, 1, 1016 Installing Driver: Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0 Version: 9, 1, 1, 1016 Installing Driver: Intel(R) NM10 Family LPC Interface Controller - 27BC Version: 9, 1, 1, 1022	
Click Next to continue,	-
	Next
Intel® Instal	lation Framework

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





## 4

**CHAPTER** 

## **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.

Name	× .	Date modified	Туре	Size
鷆 Graphics		12/27/2011 5:26 PM	File folder	
📕 HDMI		12/27/2011 5:26 PM	File folder	
📕 ICC		12/27/2011 5:26 PM	File folder	
🍌 Lang		12/27/2011 5:26 PM	File folder	
iautorun	12/30/2008 3:31 PM Setup Information		1 KB	
S DIFxAPI.dll		11/2/2006 7:21 AM	Application extens	312 KB
Installation_Re	adme	12/20/2011 10:37	Text Document	30 KB
Readme		12/20/2011 10:37	Text Document	3 KB
👪 Setup		12/13/2011 3:20 PM	Application	930 KB
Setup.if2	,	6/22/2010 2:21 PM	IF2 File	19 KB
Setup2.if2	Type: Application Size: 929 KB Date modified: 12/13/	9 2:15 PM 2011 3:20 PM	IF2 File	3 KB



#### Step.3. Click on "Next " to install Driver.



#### Step.4. Click on "Yes " to agree License.

ntel® Graphics Media Ac	celerator Drive	ir (in	te
icense Agreement	ARE AND	Maria 1	
You must accept all of the terms of the li program. Do you accept the terms?	cense agreement in orc	ler to continue the setup	
INTEL SOFTWARE LICENSE AGREEMENT IMPORTANT - READ BEFORE COPYING, Do not use or load software from this sit	(OEM / IHV / ISV Distri INSTALLING OR USING e or any associated ma	bution & Single User) aterials (collectively, the	
"Software") until you have carefully read using the Software, you agree to the te agree, do not install or use the Software Please Also Note: If you are an Original Equipme Vendor (IHV) or Independent Software V annlies:	d the following terms ar rms of this Agreement. a. nt Manufacturer (OEM) /endor (ISV), this comp	nd conditions. By loading c If you do not wish to so ), Independent Hardware lete LICENSE AGREEMENT	nr F



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

ntel® Graphics Media Accelerator Driver	
intel® Graphics Media Accelerator Drive	r (intel
Readme File Information	
Refer to the Readme file below to view the system requirement	s and installation information.
Production Version Release	A
Microsoft Windows* 7 Driver Revision: 8.0.0.0.1064	
Display Audio Driver: 6, 14.0, 3081	
December 20, 2011	
December 20, 2011	********
December 20, 2011	*******
December 20, 2011 ***********************************	******
December 20, 2011 ***********************************	••••••••••••••••••••••••••••••••••••••

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

ntel® Gra	phics Media Accelerator Dr	river
etun Drog	TOPE	inte
ctup Prog		
Please wait whil	e the following setup operations are perform	med:
CODVING FILE: C	; Program Files unteruntertRT Gradnics Medi	a Accelerator Driver (Uninstall (de-De
Copying File: C Copying File: C Copying File: C Copying File: C Copying File: C Copying File: C Copying File: C Deleting Regist Deleting Regist Click Next to co	: \Program Files\Intel\Intel(R) Graphics Medi : \Windows\system32\dfKapi.dll ry Key: HKLM\SOFTWARE\Vicrosoft\Window ry Key: HKLM\SOFTWARE\Intel\Intel\IGDI ontinue.	ia Accelerator Driver \uninstall \da-DK ia Accelerator Driver \uninstall \da-DK ia Accelerator Driver \uninstall \cs-CZ ia Accelerator Driver \uninstall \cs-CZ ia Accelerator Driver \uninstall \cs-SA ia Accelerator Driver \uninstall \ar-SA ws \Current Version \Uninstall \HDMI



#### 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".

ieneral Adapter	Monitor Troubleshoot Color Management
Monitor type Digital I	Flat Panel (640x480)
	Properties
Monitor settings	
Screen refresh i	rate:
Use hardware	default setting
V Hide modes	that this monitor cannot display
Clearing this ch	eck box allows you to select display modes that this
monitor cannot and/or damage	display conectiy. This may lead to an unusable display d hardware.
monitor cannot and/or damage	display conectly. This may lead to an unusable display d hardware.
monitor cannot and/or damage	display conectly. This may lead to an unusable display d hardware.
monitor cannot and/or damage	display conectly. This may lead to an unusable display d hardware.
monitor cannot and/or damage	d hardware.



**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.

l hemes	Desktop	Screen Saver	Appearance	Settings	
				•	
Display Digital F Scree Less	Flat Panel (f	640x480) on Mot n	bile Intel(R) 945 Color qua	i Express Chips ality (32 bit)	et Family
	640 by 48	80 pixels	Troublesh	oot) Adv	vanced



## Ethernet Driver Installation 5

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

ieneral	Driver	Details	Resources
1	Ethem	et Control	ler
	Driver	Provider:	Unknown
	Driver	Date:	Not available
	Driver	Version:	Not available
	Digital	Signer:	Not digitally signed
Dri	iver Detai	ls	To view details about the driver files.
Upd	late Drive	:r ]	To update the driver software for this device.
Roll	Back Dri	ver	If the device fails after updating the driver, roll back to the previously installed driver.
	Disable		Disables the selected device.
	Uninstall		To uninstall the driver (Advanced).

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





#### Step.5. Choose the path to install driver.

Browse fo	or driver software on your com	puter		
Search for d	river software in this location:			
E:\Driver\II	030\Win7\LAN BCM57780_k57_32	• [	Browse	
🔽 Include s	ubfolders			
Let r	ne pick from a list of device driv st will show installed driver software com are in the same category as the device.	vers on my comp patible with the devic	uter e, and all driver	

Step.6. Click on "Close" and go on.







## **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.

Name	Date modified	Туре	Size
Vista_Win7_R260	5/10/2011 3:21 PM	Application	86,021 KB



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



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

Realtek High Definition Audio Driver Setup (3.21) R2.60
Realtek High Definition Audio Driver R2.60
Restarting Windows
Setup has finished copying files to your computer. Before you can use the program, you must restart your computer.
Select one of the following options and click OK to finish setup.
Yes, I want to restart my computer now. No, I will restart my computer later.
ОК



# 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\*.

							x
<b>O</b> -	🝌 🕨 Computer 🕨	► Local Disk (C:) ► New fold	der 🕨	👻 🐓	Search New folder		Q
Organize	👻 🖬 Open	New folder					?
쑭 Fav	Name	*	Date modified	Туре	Size		
📰 D	퉬 apps		3/25/2015 7:38 PM	File folder			
鷆 C	퉬 Drivers		3/25/2015 7:38 PM	File folder			
🕮 R	퉬 Lang		3/25/2015 7:38 PM	File folder			
	鷆 хб4		3/25/2015 7:38 PM	File folder			
🥽 Lib	DIFxAPI.dll		11/1/2006 3:21 PM	Application extens	312 KB		
📑 D	📄 mup		12/20/2013 12:38	XML Document	9 KB		
J N	📄 Readme		12/20/2013 12:38	Text Document	45 KB		
📔 P	🔽 🝇 Setup		12/20/2013 12:38	Application	944 KB		
😸 V	Setup.if2		12/20/2013 12:38	IF2 File	6 KB		
	🚳 USB3Ver.dll		12/20/2013 12:38	Application extens	41 KB		
🖳 Co							
🦳 🏭 L							
💼 Nei							
- Ne							
	Setup Date m	nodified: 12/20/2013 12:38 AM Size: 943 KB	M Date created: 3/	25/2015 7:38 PM			



#### **Step.3.**Click "Next" to continue.

Intel® Installation Framework	
Intel® USB 3.0 eXtensible Host C Welcome to the Setup Program	Controller Driver
This setup program will install the following components Intel® USB 3.0 eXtensible Host Controller Driver Intel® USB 3.0 Hub Driver Intel® USB 3.0 Host Controller Switch Driver Intel® USB 3.0 Monitor Click Next to continue.	s: < <u>Back</u> Next > <u>Cancel</u> Intel® Installation Framework

## **Step.4.** Read License Agreement and click "Yes" to proceed.

Intel® Installation Framework	×
Intel® USB 3.0 eXtensible Host Controller Driver License Agreement	
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?	
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User) IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING. Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software. Please Also Note:	
* If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICENSE AGREEMENT, *	-
	VOIN



Step.5.	Review	Readme	File	Information	and	click	"Next"	to	proceed.
---------	--------	--------	------	-------------	-----	-------	--------	----	----------

Intel® Installation Framework	
Intel® USB 3.0 eXtensible Host Controller Setup Progress	Driver
Please wait while the following setup operations are performed: Copying File: C: \Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensibl Copying File: C: \Program Files (x86)	e Host Controller Driver \A le Host Controller Driver \A htVersion \Run \USB 3MON=
	– Intel® Installation Framework

**Step.6.**When the "Setup Progress" is complete click "Next" to proceed.

Intel® Installation Framework	
Intel® USB 3.0 eXtensible Host Controller Driver	
Readme File Information	(intel)
Refer to the Readme file below to view the system requirements and installation	n information.
***** WARNING ***** Do not run this driver's installer (Setup.exe) from a USB storage device (ie. external USB hard drive or USB thumb drive). For proper installation, please copy driver files to a local hard drive folder and run from there.	_
*	
* Production Version Releases	
* Microsoft Windows* 7 *	-
< Back Next >	Cancel
Intel® In	stallation Framework



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

Intel® I	Installation Framework	
Inte Setu	l® USB 3.0 eXtensible Host Controller Driver Ip Progress	(intel)
Pleas Cop Cop Cop Cop Cop Cop Cop Cop	se wait while the following setup operations are performed: ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co ying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Co wing File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXt	ntroller Driver \A ntroller Driver \A Run \USB3MON=
•	III	•
		Next >

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







## 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.

/			1		
nize	e 💌 🔳 Open with	New folder		()== ·	
*	Name	Date modified	Туре	Size	
	sbp2port.sys	2010/11/21 上午 05:29	System file	84 KB	
i	scfilter.sys	2010/11/21 上午 05:29	System file	26 KB	
L	🚳 scsiport.sys	2010/11/21 上午 05:29	System file	137 KB	
L	secdrv.sys	2009/7/14 上午 04:50	System file	20 KB	
L	🔊 serenum.sys	2009/7/14 上午 07:45	System file	18 KB	
L	🗟 serial.sys	2009/7/14 上午 07:45	System file	82 KB	
L	sermouse.sys	2009/7/14 上午 07:45	System file	20 KB	
L	🚳 sffdisk.sys	2009/7/14 上午 07:45	System file	11 KB	
L	🚳 sffp_mmc.sys	2009/7/14 上午 07:45	System file	12 KB	
	🚳 sffp_sd.sys	2010/11/21 上午 05:29	System file	13 KB	
61 C	CTh.				



0	1 <del></del>		and the second second		
rganize	<ul> <li>Open with</li> </ul>	New folder		)ii • 🗖	1 0
	Name	Date modified	Туре	Size	
2	sbp2port.sys	2010/11/21 上午 05:29	System file	84 KB	
-	🗟 scfilter.sys	2010/11/21 上午 05:29	System file	26 KB	
	🚳 scsiport.sys	2010/11/21 上午 05:29	System file	137 KB	
8	🚳 secdrv.sys	2009/7/14 上午 04:50	System file	20 K.B	
•	🚳 serenum.sys	2009/7/14 上午 07:45	System file	18 KB	
	serial.sys	2011/6/22 上午11:39	System file	90 KB	
	SCITIOUSE SYS	2009/7/14 上午 07.45	System file	20 KD	
	sffdisk.sys	2009/7/14 上午 07:45	System file	11 KB	
	S sffp mmc.svs	2009/7/14 十年 07:45	System file	12 KB	

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



Type in this command from the Run menu:

 $C: \verb|Windows\System 32\User\Account\Control\Settings.exe|$ 

or

uac

t down 🕨



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.

Choose when to b User Account Control h Tell me more about Use Always notify	e notified about changes to your computer elps prevent potentially harmful programs from making changes to your computer. r Account Control settings
	Default - Notify me only when programs try to make changes to my computer • Don't notify me when I make changes to Windows settings
Never notify	Recommended if you use familiar programs and visit familiar websites.
	Cancel

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.





## **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.
11	Selects an item or option.
	Go to the sub-menu when available.
Enter	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.

Aptio Setup Main Advanced Chipset	Utility – Copyright (C) 2013 Americar Security Boot Save & Exit	n Megatrends, Inc.
BIOS Information BIOS Vendor Core Version Compliancy Project Version EC Version Build Date and Time	American Megatrends 5.009 UEFI 2.3; PI 1.2 IB80C115LC01 IB80P013LC01 01/09/2014 16:52:14	Choose the system default language
CPU Configuration Microcode Patch	31e	
Memory Information Total Memory	2048 MB (LPDDR3)	
GOP Information Intel(R) GOP Driver	[N/A]	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt.
TXE Information		F1: General Help
Sec RC Version	00.05.00.00	F2: Previous Values
TXE FW Version	01.00.02.1060	F3: Optimized Defaults F4: Save & Evit
	[English]	ESC: Exit
System Date System Time	[Mon 02/10/2014] [15:35:04]	
Version 2.1	6.1242. Copyright (C) 2013 American ⊧	Megatrends, Inc. B4

#### 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.

Aptio Setup Utility – Copyright (C) 2013 American Main <mark>Advanced</mark> Chipset Security Boot Save & Exit	Megatrends, Inc.
<ul> <li>ACPI Settings</li> <li>CFU Configuration</li> <li>PFM Configuration</li> <li>Thermal Configuration</li> <li>IDE Configuration</li> <li>LPSS &amp; SCC Configuration</li> <li>Ketwork Stack Configuration</li> <li>CSM Configuration</li> <li>Trusted Computing</li> <li>USB Configuration</li> <li>Platform Trust Technology</li> <li>Security Configuration</li> <li>SID Configuration</li> </ul>	System ACPI Parameters. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
version 2.16.1242. Copyright (C) 2013 American Ma	egatrenus, inc.



## 1. CPU Configuration

Aptio Setup Utility – ( Advanced	Copyright (C) 2013 American	Megatrends, Inc.
CPU Configuration		Socket specific CPU Information
Socket O CPU Information CPU Thermal Configuration		
CPU Speed 64-bit	1600 MHz Supported	
Active Processor Cores Limit CPUID Maximum Execute Disable Bit Hardware Prefetcher Adiacent Cache Line Prefetch	[A11] [Disabled] [Enabled] [Enabled] [Enabled]	
Intel Virtualization Technology Power Technology	[Enabled] [Energy Efficient]	++: Select Screen fl: Select Item Enter: Select +/-: Change Ont
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
		ESC: Exit
Vancian 2 16 1242 Par	aunight (D) 2012 American W	

2. Super IO Configuration

Aptio Setup Utility – Advanced	Copyright (C) 2015 American	Megatrends, Inc.
F81866 Super IO Configuration		Set Parameters of Serial Port 1 (COMA)
Super IO Chip > Serial Port 1 Configuration > Serial Port 2 Configuration > Serial Port 3 Configuration > Serial Port 4 Configuration > Parallel Port Configuration > BPID Port Configuration	F81866	
Watch Dog Timer Select	[Disabled]	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.17.1246. Co	pyright (C) 2015 American M	egatrends, Inc.



## 3. Thermal Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2013 American	Megatrends, Inc.
Thermal Configuration Parameters Critical Trip Point Passive Trip Point	[90 C] [85 C]	This value controls the temperature of the ACPI critical Trip Point in which the OS will shut the system
Dynamic Platform&Thermal Framework DPTF CPU Sensor Participant	[Disabled]	off.
Critical Passive Ambient Sensor Participant	[70 C] [60 C]	
Critical Passive DDR Sensor Participant	[70 C] [60 C]	
Critical Passive	[70 C] [60 C]	↔: Select Screen †↓: Select Item Enter: Select
Super Debug Current Logical Processor Start P-State Step size Power Control Setting Performance Control Setting DPPM	[Disabled] [Disabled] [PO] [25%] [CORE offlining] [CORE offlining] [Enabled]	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Version 2.16.1242. Copyright (C) 2013 American Megatrends,

## 4. IDE / SATA Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2013 American	Megatrends, Inc.
IDE Configuration		Enable ∕ Disable Serial ATA
Serial-ATA (SATA) SATA Test Mode	[Enabled] [Disabled]	
SATA Speed Support SATA Mode	[Gen2] [AHCI Mode]	
Serial-ATA Port 0 SATA Port0 HotPlug	[Enabled] [Disabled]	
SATA PortO ADATA XM13 32G (32.06B)		++: Select Screen
		↑↓: Select Item Enter: Select +/-: Change Ont
		F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.16.1242. Co	pyright (C) 2013 American M	egatrends, Inc.



## 5. USB Configuration

Aptio Setup Utility – Advanced	Copyright (C) 2013 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support. AUTO option disables legacy
USB Module Version	8.10.27	support if no USB devices are connected. DISABLE option will
USB Devices:		keep USB devices available
1 Drive, 1 Keyboard, 1 Mouse,	6 Hubs, 1 SmartCard	only for EFI applications.
Reader		
USB3 0 Support	[Enabled]	
XHCI Hand-off	[Enabled]	
EHCI Hand-off	[Disabled]	
USB Mass Storage Driver Support	[Enabled]	
USB bandware delaws and time_outs:		the Calact Scheen
USB transfer time-out	[20_sec]	fl: Select Item
Device reset time-out	[20 sec]	Enter: Select
Device power-up delay	[Auto]	+/−: Change Opt.
		F1: General Help
Mass Storage Devices:	[0	F2: Previous Values
JetFlashmanscend 1668 1.00	[Hutu]	F3: Uptimized Defaults F4: Save & Evit
		ESC: Exit
Version 2.16.1242. Co	pyright (C) 2013 American M	egatrends, Inc.

6. PPM Configuration

Aptio Se Advanced	etup Utility – Copyright (C) 2013 Americ	an Megatrends, Inc.
PPM Configuration		Enable/Disable Intel SpeedStep
EIST CPU C state Report Enhanced C state Max CPU C-state SOix	[Enabled] [Enabled] [ C7] [Disabled]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version	n 2.16.1242. Copyright (C) 2013 American	Megatrends, Inc.



#### 7. OS Selection

Aptio Setup Utility - Advanced	Copyright (C) 2013 American	Megatrends, Inc.
Miscellaneous Configuration High Precision Timer Boot Timer with HPET Timer PCI Express Dynamic Clock Gating OS Selection	[Enabled] [Disabled] [Disabled] [Windows 8.X]	OS Selection
	OS Selection — Windows 8.X Android Windows 7	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.16.1242. C	opyright (C) 2013 American M	egatrends, Inc.

#### 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:

Aptio Setup Utility - Main Advanced Chipset Security	Copyright (C) 2013 Americar Boot Save & Exit	) Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State	6 [0n]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite
Quiet Boot Fast Boot VGA Support USB Support PS2 Devices Support NetWork Stack Driver Support	[Enabled] [Enabled] [EFI Driver] [Partial Initial] [Enabled] [Disabled]	Walting.
Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3 Hard Drive BBS Priorities	[UEFI: JetFlashTrans] [PO: ADATA XM13 32GB] [UEFI: Built-in EFI]	++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt, F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.16.1242. 0	Copyright (C) 2013 American ⊧	legatrends, Inc.

#### 9.2.5 Security Menu

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

Aptio Setup Main Advanced Chipset	Utility – Copyright (C) 2013 Security Boot Save & Exit	3 American Megatrends, Inc.
Password Description		Set Administrator Password
If ONLY the Administrator' then this only limits acce only asked for when enter If ONLY the User's passwor is a power on password and boot or enter Setup. In Se have Administrator rights. The password length must b in the following range: Minimum length	s password is set, ess to Setup and is ing Setup. rd is set, then this i must be entered to etup the User will pe	
Maximum length	20	Mar Onland Orman
		↑↓: Select Item
Administrator Password		Enter: Select
user Password		F1: General Help F2: Previous Values
HDD Security Configuration	1:	F3: Optimized Defaults
PO:ADATA XM13 3		F4: Save & Exit
▶ Secure Boot menu		Lat. LAT



#### 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.

Aptio Setup Utility – Copyright (C) 2013 American Main Advanced Chipset Security Boot Save & Exit	Megatrends, Inc.
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset	Exit system setup after saving the changes.
Save Options Save Changes Discard Changes	
Restore Defaults Save as User Defaults Restore User Defaults	
Boot Override UEFI: Built-in EFI Shell PO: ADATA XM13 32GB UEFI: JetFlashTranscend 16GB 1.00	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. E1: Seneral Help
Launch EFI Shell from filesystem device ▶ Reset System with ME disable ModeMEUD000	F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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## 9.3 Using Recovery Wizard to Restore Computer

Bay Trail Intel<sup>®</sup> 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.

Recovery Wizard	
Click " <b>Recovery</b> " to restore your s WARNING! The process will clear all of your	aystem. data.
If you do not want to restore your so reboot.	ystem please press " <b>Quit</b> " to Recovery Quit

• 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: <u>http://www.winmate.com.tw/BoxPc/EmbeddedSpec.asp?Prod=05\_0156</u> Please go there to obtain further details of IB32 Motherboard.

## **Company Information**

#### WinMate Communication INC.

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# 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.