

IB32 Motherboard

3.5" SBC with Intel ® Bay Trail Processors, HDMI, LVDS, VGA, Dual Giga Ethernet, and Mini-PCIe Interface V400

User Manual

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Preface



IMPORTANT:

This product can be used only in industrial-grade computers.

Copyright Notice

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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. (Standard is one year, extended warranty will need to discuss with our sales representatives. 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 1W11Axxxxxxx means October of year 2011.

Packing List

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

- IB32 Motherboard
- User Manual & Driver CD\

Optional Accessories:

- > AC to DC 12V Power Adapter
- Power Cord

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

Customer Service

We provide a service guide as below for any problem by the following steps: First, contact your distributor, sales representative, or our customer service center for technical support if you need additional assistance.

You need to prepare the following information before you call:

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Detailed problem description
- 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.

Advisory Conventions

Three types of advisories are used throughout the user manual to provide helpful information or to alert you to the potential for hardware damage or personal injury. These are Notes, Important, Cautions, and Warnings. The following is an example of each type of advisory.



NOTE:

A note is used to emphasize helpful information



IMPORTANT:

An important note indicates information that is important for you to know.



CAUTION

A Caution alert indicates potential damage to hardware and explains how to avoid the potential problem.



WARNING!

An Electrical Shock Warning indicates the potential harm from electrical hazards and how to avoid the potential problem.

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- 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. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- 8. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- 9. All cautions and warnings on the equipment should be noted.
- 10. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
- 11. 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.

Chapter 1: General Information

This chapter includes the IB32 Motherboard background information. Sections include:

- 1.1 Introduction
- 1.2 Features
- 1.3 Motherboard Specifications

1.1 Introduction

Thank you for choosing the IB32 motherboard. This motherboard is integrated with Intel® Celeron® Bay Trail-M N2930 1.83GHz which offers a high-performance computing platform with low power consumption. The new motherboard supports 204-pin SO-DIMM DDR3L at speeds of 1333 MHz, up to 8GB.

There is an advanced full set of I/O ports including one USB 3.0, five USB 2.0, two LAN ports and audio jack for microphone, line-in and line-out. The motherboard is designed in 3.5" form factor and measures 146mm x 102mm.

1.2 Features

- > 3.5" Form Factor (146mm x 102mm / 5.7 x 4 inches)
- Supports Intel® Celeron® Bay Trail-M N2930
- > System memory up to 8GB DDR3L 1333 MHz, SO-DIMM
- Intel[®] HD Graphics
- > 2 x Giga LAN (Intel[®] I210 GbE)
- 2 x Mini PCIe, 4 x COM, 1 x USB3.0, 5 x USB 2.0 ,1 x SATAII, 1 x 12 bit GPIO ports, 1 x HDMI,1xVGA

1.3 Motherboard Specifications

1.3.1 Hardware and Software Description

	Model Name		
	IB32 SBC		
Hardware Support:			
	_	Intel® Celeron® Bay Trail-M N2930 1.83GHz	
System Specifications	Processor	(2M Cache, up to 2.16GHz)	
	System Memory	DDR3L 1333 MHz SO-DIMM Slot. Max. 8GB	
	BIOS	AMI 64Mbit Flash	
	Graphic	Intel [®] HD Graphics Engine	
Display Specification	LCD Interface	Dual-channel18/24bit LVDS Up to 1920x1080@ 60Hz	
opeenieuten	Graphic Resolution	VGA Mode: Up to 1600 x 1200 @ 60Hz HDMI: 1920 x 1080 @ 60Hz	
Audio	Codec	Realtek HD Audio Codec	
Audio	Audio Interface	Line-in, Line-out, Mic in	
	LAN	2 x Giga LAN (Intel® I210 GbE LAN)	
Ethernet	Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible	
*TPM	TPM 2.0	Optional	
	Rear I/O	2 x RJ-45 1 x HDMI 1 x USB 3.0, 1 x USB 2.0 1 x RS232 / 422 / 485 1 x DC-in Power Jack (+12V)	
I/O Connectons	Internal I/O Expansion Slot	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 +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 Audio (Mic-in / Line-in / Line-out) / 12-pin(2x6) 1 x Mini PCIe slot (for USB 2.0 wireless module) 1 x Mini PCIe slot (for USB 2.0 wireless module)	
		1 x Mini PCIe slot (for SATA II SSD)	
Mechanical	Dimensions (L x W)	146mm x 102mm	
specifications	Form Factor		
Environmental	Storage Temp.	-40 °Cto 70 °C	
Considerations	Humidity	60 °C @ 95% RH, (noncondensing)	

	Model Name		
	IB32 SBC		
Power Management	Power Requirement 12V DC-IN Power Jack		
Software Support:			
Drivers	Intel Chipset Driver Graphics Driver Audio Driver Intel Sideband Fabric Device (Intel MBI) Driver (Windows 10) Intel Trusted Engine Interface (Intel TXE) Driver USB 3.0 Driver (Windows 7)		
SDK	Digital I/O Watchdog		

1.3.2 Function block



. .

1.3.3 Board dimensions



AC to DC Power Adapter Components (optional)



AC to DC 12V Power Adapter

Power Cord

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

Chapter 2: Hardware Installation

This chapter provides information on how to use jumpers and connectors on the IB32 Motherboard. Be cautious while working with these modules. Please carefully read the content of this chapter in order to avoid any damages. The sections include:

- 2.1 Memory Module Installation
- 2.2 I / O Equipment Installation
- 2.3 Jumpers and Connectors
- 2.4 Jumper Settings
- 2.5 Connectors and Pin Assignment

2.1 Memory Module (SO-DIMM) Installation

The IB32 Motherboard has two 204-pin SODIMM slot. The socket supports up to 8GB DDR3L 1333 SO-DIMM RAM. When installing the –memory unit, please follow the steps below:

Steps 1 Firmly insert the SO-DIMM at an angle of about 30-degree into the slot. Align the SO-DIMM with the slot until it is fully inserted. The notch on the SO-DIMM should match the break on the slot.

Step 2 Press downwards on SO-DIMM until the retaining clips at both ends fully snap closed 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

The Motherboard allows plugging in 12V DC-IN jack on the board without another power module converter under power consumption by Intel® Celeron® Bay Trail-M N2930 1.83GHz

2.2.2 Serial COM ports

Three RS-232 connectors build-in the rear I/O. One optional COM port supports RS-422/485. When an optional touch-screen is ordered with PPC, serial COM port can be connected to a serial or an optional touch-screen.

2.2.3 External HDMI

The Motherboard has one HDMI port that can be connected to an external LCD monitor by 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® I210 Gigabit-LAN Controller which is fully compliant with the PCIe 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) can be connected to the system through an adapter cable. You should install the device driver before you use the device. Various adapters may come with USB ports. USB usually connected the external system. The USB ports support hot plug-in connection.

2.2.6 Audio function

The Audio function is provided by a Realtek chipset supporting digital audio outputs. The audio interface includes three jacks: line-in, line-out and mic-in.

2.3 Jumpers and Connectors

This section describes the location of each of the board's jumpers and connectors.

2.3.1 Component Side



2.3.2 Solder Side



2.3.3 I/O Side



2.4 Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.



NOTE:

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. Generally, you simply need a standard cable to make most connections.

The jumper setting diagram is shown below. When the jumper cap is placed on both pins, the jumper is SHORT. The illustration below shows a 3-pin jumper; pins 1 and 2 are short. If you remove the jumper cap, the jumper is OPEN.



2.4.1 Jumper List

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

Label	Function	Note
JP1	Backlight Power selector	1x3 header, pitch 2.0mm
JP2	Backlight Power Enable Selector	1x3 header, pitch 2.0mm
JP3	Backlight Control VR	1x3 Wafer, pitch 2.0mm
JP4	DC Mode Control selector	1x3 header, pitch 2.0mm
JP5	Backlight Control Power selector	1x3 header, pitch 2.0mm
JP6	Brightness Control Mode Selector	1x3 header, pitch 2.0mm
JP7	Brightness Control To VRD Selector	1x3 header, pitch 2.0mm
JP8	Serial Port(RS232/422/485)Select	2x3 header, pitch 2.0mm
JP9	Serial Port(RS232/422/485)Select	3x4 header, pitch 2.0mm
JP10	VRD Brightness Control Select	1x3 header, pitch 2.0mm
JP11	Clear CMOS	1x3 header, pitch 2.0mm

2.4.2 Setting Jumpers

2.4.2.1 JP1: Backlight Power Selector





Setting	Function
1-2*	5 V
2-3	12 V

*Default

2.4.2.2 JP2: Backlight Enable Selector



ţ	
12	3

Setting	Function
1-2*	Control by platform
2-3	Always on

*Default

2.4.2.3 JP3: Backlight Control VR



Pin №	Name	Pin №	Name
1	+5V	2	Black Light Control
3	GND		

2.4.2.4 JP4: DC Mode Control Selector





Setting	Function
1-2	VR knob Control to
2-3*	VR knob Control to
*Default	

2.4.2.5 JP5: Backlight Control Power Selector



Setting	Function
1-2	+ 3.3V
2-3*	+ 5.0V

*Default

2.4.2.6 JP6: Brightness Control Selector





Setting	Function
1-2	Adjust by VR Knob
2-3*	PWM Mode

*Default

2.4.2.7 JP7: Brightness Control to VRD Selector





Setting	Function
1-2	WM to DC mode by
2-3*	VRD Control Mode

*Default

2.4.2.8 JP8/JP9: Serial Port (RS232/422/485) Select

Refer to J8/J9 settings below.

	RS232	RS422	RS485	
JP8	1-2	3-4	5-6	
JP9	1-2	2-3	2-3	
	4-5	5-6	5-6	
	7-8	8-9	8-9	
	10-11	11-12	11-12	

For example: At the picture below, you can see RS-232, RS-422, RS-485 (J8/J9) jumper setting. To Select RS-232 set Jumper 8 Pin 1-2 to the SHORT position, and Jumper 9 Pin1-2, 4-5, 7-8, 10-11 to the SHORT position.

RS232₽		RS422₽		232÷ RS422÷		RS	485 ₽
JP8₽	JP9₽	JP8₽	JP9₽	JP8₊ [∋]	JP9₽		
RS232 1 2 3 0 0 4 5 0 0 6	RS232 1 0 0 3 4 0 0 6 7 0 0 9 10 0 0 12	$ \begin{array}{c} RS422 \\ 1 \\ 2 \\ 3 \\ 5 \\ 0 \\ 0 \\ 6 \\ 4 \end{array} $	RS422/485 1 0 0 3 4 0 0 6 7 0 0 9 10 0 0 12	$ \begin{array}{c} RS485 \\ 1 \bigcirc & \bigcirc & 2 \\ 3 \bigcirc & \bigcirc & 4 \\ 5 \bigcirc & \bigcirc & 6 \\ \end{array} $	$\begin{array}{c c} RS422/485 \\ 1 & \bigcirc & \bigcirc & 3 \\ 4 & \bigcirc & \bigcirc & 6 \\ 7 & \bigcirc & \bigcirc & 9 \\ 10 & \bigcirc & \bigcirc & 12 \\ \end{array}$		

2.4.2.9 JP10: VRD Brightness Control Select





Setting	Function
1-2	VRD REVERSE -
2-3*	VRD FORWARD +

*Default

2.4.2.10 JP11: Clear CMOS





Setting	Function
1-2	Clear CMOS
2-3*	Normal

*Default

2.5 Connectors and Pin Assignment

2.5.1 Front Side Setting Description

Label	Function	Note
AUDIO1	AUDIO	2x6 Wafer, pitch 2.0mm
BT1	RTC Battery	2P Wafer, pitch 1.25mm
CN1	R-Speaker out	1x2 Wafer, pitch 2.0mm
CN2	L-Speaker out	1x2 Wafer, pitch 2.0mm
CON1	Panel Power Selector	2x3 header, pitch 2.54mm
CON2	Backlight	1x7 Wafer, pitch 2.0mm
CON3	Serial port (RS232/422/485)	2x5 header, pitch 2.0mm
COM2	Serial port (RS232)	2x5 header, pitch 2.0mm
СОМЗ	Serial port (RS232)	2x5 header, pitch 2.0mm
COM4	Serial port (RS232)	2x5 header, pitch 2.0mm
CPU_FAN1	CPU_FAN	3P Wafer, pitch 2.54mm
DCJACK2	DC In 2.5	1x2P Wafer, pitch 3.96mm
DEBUG1	DEBUG PORT	2x5 header, pitch 2.0mm
DIMM1	DDR3L	204pin, SODIMM slot
DIDO1	GPIO	2x7 header, pitch 2.0mm
J1	VRD Debug	1x5 Wafer, pitch 1.25mm
LAN_LED1	External LAN LED	2x4 Wafer, pitch 2.0mm
LVDS1	LVDS	2x20 Wafer, pitch 1.25mm
MINI PCIE1	Mini-PCIE	Mini-PCIe slot
Panel1	OSD membrane control	2x5 Wafer, pitch 2.0mm
SATA1	SATA	SATA Connector
SATA_PWR1	SATA Power	2x4 Wafer, pitch 2.0mm
SSD1	mSATA	Mini-PCIe slot
USB2	Internal USB2.0	2x4 Wafer, pitch 2.0mm
USB3	Internal USB2.0	2x4 Wafer, pitch 2.0mm
VGA1	VGA Signal	2x5 Wafer, pitch 2.0mm
3V1	3.3V output	1x2 Wafer, pitch 2.0mm
5V1	5V output	1x2 Wafer, pitch 2.0mm
12V1	12V output	1x2 Wafer, pitch 2.0mm

2.5.1.1 AUDIO1: AUDIO



Pin №	Name	Pin №	Name
1	LINE_OUT_R	2	LINE_OUT_L
3	+5V	4	GND
5	LINE_IN_R	6	LINE_IN_L
7	MIC_R	8	MIC_L
9	GND	10	LINE_OUT_JACK DET
11	MIC_JACK DET	12	LINE_IN_JACK DET

2.5.1.2 BT1: COMS Battery



Pin №	Name	Pin №	Name
1	BAT	2	GND

2.5.1.3 CN1: R-Speaker Out



Pin №	Name	Pin №	Name
1	ROUT-	2	ROUT+

2.5.1.4 CN2: L-Speaker Out



2.5.1.5 CON1: Panel Power Select



Setting	Function
1-2*	Panel Power +3.3V
3-4	Panel Power +5V
5-6	Panel Power +12V
*Defeult	

*Default

2.5.1.6 CON2: Backlight



Pin №	Name	Pin №	Name
1	Backlight Power	2	Backlight Power
3	Backlight Power	4	GND
5	Brightness Adjust	6	GND
7	Backlight Enable		

Note: Please refer to <u>JP1</u> settings to select POWER RATING

2.5.1.7 CON3: Serial ports (RS232/422/485)



Pin №	Name	Pin №	Name
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	GND	10	GND

2.5.1.8 CPU_FAN1: CPU FAN



Pin №	Name	Pin №	Name
1	GND	2	+12V
3	SENSE		

2.5.1.9 DCJACK2: DC-In 2.5



Pin №	Name	Pin №	Name
1	DC_IN	2	GND
3*	GND		

*Not visible for user

2.5.1.10 Debug 1: Debug Port



Pin №	Name	Pin №	Name
1	LPC_AD0	2	+3.3V
3	LPC_AD1	4	GND
5	LPC_AD2	6	LPC_FRAME
7	LPC_AD3	8	GND
9	RESET	10	CLOCK

2.5.1.11 DIMM1: DDR3 SODIMM



2.5.1.12 DIDO1: GPIO



Pin №	Name	Pin №	Name
1	GND	2	+5V
3	DOUT3	4	DOUT1
5	DOUT2	6	DOUT0
7	DINT3	8	DINT1
9	DINT2	10	DINT0
11	DIN4	12	DOUT4
13	DIN5	14	DOUT5

2.5.1.13 J1: VRD Debug



Pin №	Name	Pin №	Name
1	+3.3V	2	DATA
3	CLOCK	4	RESET
5	GND		

2.5.1.14 LAN_LED1: External LAN LED



Pin №	Name	Pin №	Name
1	+3.3V	2	LAN1_1000_O
3	LAN1_100_10_G	4	LAN1_ACTIVE_Y
5	+3.3V	6	LAN2_1000_O
7	LAN2_100_10_G	8	LAN2_ACTIVE_Y

2.5.1.15 LVDS1: LVDS



Pin №	Signal Name	Pin №	Signal Name
1	LCDVDD	2	LVDS0_TX0_N
3	LCDVDD	4	LVDS0_TX0_P
5	LCDVDD	6	LVDS0_TX1_N
7	GND	8	LVDS0_TX1_P
9	GND	10	LVDS0_TX2_N
11	GND	12	LVDS0_TX2_P
13	GND	14	LVDS0_CLK_N
15	GND	16	LVDS0_CLK_P
17	GND	18	LVDS0_TX3_N
19	GND	20	LVDS0_TX3_P
21	GND	22	LVDS1_TX0_N
23	GND	24	LVDS1_TX0_P
25	GND	26	LVDS1_TX1_N
27	GND	28	LVDS1_TX1_P
29	GND	30	LVDS1_TX2_N
31	GND	32	LVDS1_TX2_P
33	GND	34	LVDS1_CLK_N
35	GND	36	LVDS1_CLK_P
37	GND	38	LVDS1_TX3_N
39	GND	40	LVDS1_TX3_P

Note: Please refer to CON1 settings to select POWER RATING

2.5.1.16 MINI PCIE1: 3G/Wi-Fi

52 0	51
2	

Pin №	Name	Pin №	Name
1	PCIE_WAKE#	2	+3.3V
3	NC	4	GND
5	BT_EN	6	+1.5V
7	CLK_OE#	8	USIM_PWR
9	GND	10	USIM_DATA
11	PCIE_CLKM	12	USIM_CLOCK
13	PCIE_CLKP	14	USIM_RESET
15	GND	16	USIM_VPP
17	NC	18	GND
19	NC	20	Wireless_ENABLE
21	GND	22	PCIE_RESET
23	PCIE_RXM	24	+3.3V
25	PCIE_RXP	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PCIE_TXM	32	SMB_DATA
33	PCIE_TXP	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	+3.3V	40	GND
41	+3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	+3.3V	52	+3.3V

2.5.1.17 Panel1: OSD Membrane Control



Pin №	Name	Pin №	Name
1	+5V	2	+3.3V
3	GND	4	HDD_LED
5	PWRBTN#	6	GND
7	GND/ Backlight	8	Reset
	ADJ+		
9	NC/Backlight ADJ-	10	+5V

NOTE:

Backlight ADJ+ / Backlight ADJ- optional functions

2.5.1.18 SATA1: SATA



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

2.5.1.19 SATA_PWR1: SATA Power



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

2.5.1.20 SIM1: Cable connector for SIM-100



Pin №	Name	Pin №	Name
1	VREG_USIM	2	SIM_RESET
3	SIM_CLK	4	GND
5	SIM_VPP	6	SIM_DATA

2.5.1.21 SSD1: mSATA



Pin №	Name	Pin №	Name
1	NC	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC	8	NC
9	GND	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	NC
23	SATA_RXP	24	+3.3V
25	SATA_RXN	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_Clock
31	SATA_TXN	32	SMB_Data
33	SATA_TXP	34	GND
35	GND	36	NC
37	GND	38	NC
39	+3.3V	40	GND
41	+3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	SSD_LED#	50	GND
51	NC	52	+3.3V

2.5.1.22 USB2, USB3: Internal USB2.0



Pin №	Name	Pin №	Name
1	+5V	2	+5V
3	USB_D-	4	USB_D-
5	USB_D+	6	USB_D+
7	GND	8	GND

2.5.1.23 VGA1: VGA Signal



Pin №	Name	Pin №	Name
1	DDC_DATA	2	+5V
3	DDC_CLOCK	4	RED
5	Horizontal Sync	6	GREEN
7	Vertical Sync	8	BLUE
9	GND	10	GND

2.5.1.24 3V1: 3.3V output



Pin №	Name	Pin №	Name
1	+3.3V	2	GND

2.5.1.25 5V1: 5V output



Pin №	Name	Pin №	Name
1	+5V	2	GND

2.5.1.26 12V1: 12V output



Pin №	Name	Pin №	Name
1	+12V	2	GND

2.5.2 I/O Side Setting Description

The table below shows each of I/O side connectors and its functions.

Label	Function	Note
COM1	Serial port (RS232/422/485)	D-sub9 Male
DCJACK1	DC JACK	2.5ø DC Jack
HDMI	HDMI Signal	HDMI Type A
LAN1 Gigabit Ethernet		RJ45+LED
LAN2 Gigabit Ethernet		RJ45+LED
USB	USB 2.0 / USB 3.0	USB Type A

2.5.2.1 COM1: D-Sub 9



Pin №	RS232	RS422	RS485
1	DCD	TxD-	D-
2	RXD	TxD+	D+
3	TXD	RxD+	NC
4	DTR	RxD-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC
2.5.2.2 DCJACK1: DC Jack1 (optional)



Pin №	Name	Pin №	Name
1	DC_IN	2	GND

2.5.2.3 HDMI: HDMI Type A



Pin №	Name	Pin №	Name
1	TMDS_DATA2+	2	GND
3	TMDS_DATA2-	4	TMDS_DATA1+
5	GND	6	TMDS_DATA1-
7	TMDS_DATA0+	8	GND
9	TMDS_DATA0-	10	TMDS_CLOCK+
11	GND	12	TMDS_CLOCK-
13	CEC	14	NC
15	DDC_CLOCK	16	DDC_DATA
17	GND	18	5V
19	Hot Plug Detect		

2.5.2.4 LAN1, LAN2: Gigabit Ethernet



Pin №	Name	Pin №	Name
1	TX1+	2	TX1-
3	TX2+	4	TX2-
5	TX3+	6	TX3-
7	TX4+	8	TX4-

2.5.2.5 USB: USB 2.0 / USB 3.0



Pin №	Name	Pin №	Name
1	+5V	2	USB_D-
3	USB_D+	4	GND
5	STDA_SSRX-	6	STDA_SSRX+
7	GND_DRAIN	8	STDA_SSTX-
9	STDA_SSTX+	10	+5V
11	USB_D-	12	USB_D+
13	GND		

Chapter 3: AMI BIOS Setup

This chapter contains BIOS Configuration and OS Recovery information. Sections include:

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

3.1 When and How to Use BIOS Setup

To enter the BIOS setup, you need to connect 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.



IMPORTANT:

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

You may need to run BIOS setup utility for reasons listed below:

- 1. Error message on screen indicates to check BIOS setup
- 2. Restoring the factory default settings.
- 3. Modifying the specific hardware specifications
- 4. Necessity to optimize specifications

BIOS Navigation Keys

The following keys are enabled during POST:

Key	Function
Del	Enters the BIOS setup menu.
F7	Display the boot menu. Lists all bootable devices that are connected to the system. With cursor ↑and cursor ↓and by pressing <enter>, select the device used for the boot.</enter>
Pause	Pressing the [Pause] key stops the POST. Press any other key to resume the POST.

The following Keys can be used after entering the BIOS Setup.

Key	Function
F1	General Help
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit
Esc	Exit
+/-	Change Opt.
Enter	Select or execute command
Cursor ↑	Moves to the previous item
Cursor ↓	Goes to the next item
$Cursor \leftarrow$	Moves to the previous item
$\text{Cursor} \rightarrow$	Goes to the next item



NOTE:

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

3.2 BIOS Functions

3.2.1 Main Menu

When you enter BIOS setup, the first menu that appears on the screen is the main menu. The Main menu displays the basic information about yoursystem including BIOS version, processor RC version, system language, time, and date. It contains the system information including BIOS version, processor RC version, system language, time, and date.

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BIOS Setting	Description	Setting Option	Effect
System	Displays the system	Adjustment of	Set the language in other
Language	language. [English] is set up	the language	language. The language in
	by default.		this device is English.
System	This is current date setting.	Date and time	Set the date in the format
Date/Time	The time is maintained by	changes.	[mm/dd/yyyy];
	the battery when the device		The time in the format:
	is turned off.		[hh/mm/ss]
Access Level	The current user access	Changes to the	Administrator is set up by
	settings	level of access	the default

3.2.2 Advanced Menu

The advanced menu also uses to set configuration of the CPU and other system devices. There are sub menus on the left frame of the screen.



IMPORTANT:

Handle advanced BIOS settings page with caution. Any changes can affect the operation of your computer.

For items marked ► press **<Enter>** for more options.

Advanced Configuration and Power Interface (ACPI) settings allow to control how the power switch operates. The power supply can be adjusted for power requirements. You can use the screen to select options of ACPI configuration. A description of the selected items will appear on the right side of the screen.



BIOS Setting	Description	Setting Option	Effect
ACPI Settings	Configures ACPI settings	Enter	Opens submenu
F81866 Super IO Configuration	Configures IO settings	Enter	Opens submenu
Hardware Monitor	Configures Hardware Monitor settings	Enter	Opens submenu
S5 RTC Wake Settings	Configures RTC Wake parameters	Enter	Opens submenu

BIOS Setting	Description	Setting Option	Effect
CPU Configuration	Configures CPU settings	Enter	Opens
			submenu
PPM Configuration	Configures PPM settings	Enter	Opens
			submenu
Thermal	Configures Thermal	Enter	Opens
Configuration	Parameters		submenu
IDE Configuration	Configures IDE	Enter	Opens
	Parameters		submenu
Miscellaneous	Configures	Enter	Opens
Configuration	Miscellaneous		submenu
	Parameters		
CSM Configuration	Configures CSM	Enter	Opens
	Parameters		submenu
USB Configuration	Configures USB Settings	Enter	Opens
			submenu
Platform Trust	Configures Platform Trust	Enter	Opens
Technology	Technology parameters		submenu
Security	Configures Security	Enter	Opens
Configuration	parameters		submenu

3.2.2.1 ACPI Settings

Advanced Aptic	o Setup Utility – Copyright ((C) 2014 American Megat	rends, Inc.	
ACPI Settings				
Enable ACPI Auto Configuration	[Disabled]			
Enable Hibernation	[Enabled]		++: Select Scre 1: Select Item Enter: Select +/-: Change Opt F1: General Hel F2: Previous Va F3: Optimized D F4: Save & Exit ESC: Exit	en , p lues efaults
	sion 2.15.1236. Copyright (C)	2014 American Megatre	ends, Inc.	
US Setting	Description	Setting O	ption	Effect
nable ACPI Auto	BIOS ACPI	Enable/ D	isable	Enables or
onfiguration	Auto			Disables this
	Configuration			function
hable Hibernation	Control hibernation	Enable/ D	isable	Enables or Disables this
				function

3.2.2.2 F81866 Super IO Configuration

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

Serial Port 1~5

Use these items to set parameters related to serial port 1~5.

Aptio Setu Advanced	µp Utility − Copyright (C) 2015 (American Megatrends, Inc.
F81866 Super IO Configur	ration	Set Parameters of Serial Port 1 (COMA)
Super IO Chip > Serial Port 1 Configurat > Serial Port 2 Configurat > Serial Port 3 Configurat > Serial Port 4 Configurat > Serial Port 5 Configurat > GPIO Port Configuration	F81866 ion ion ion ion ion	
Watch Dog Timer Select	[Disabled]	
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2	2.17.1246. Copyright (C) 2015 Ame	erican Megatrends, Inc.

Watch Dog Time Select

You can either disable **Watch Dog Time Select**, or set up the time.Use **<Arrow>** keys to navigate and please press **<Enter>** to select the item.

Aptio Setup Util Advanced	ity – Copyright (C) 2015 American	Megatrends, Inc.
F81866 Super IO Configuration Super IO Chip Serial Port 1 Configuration Serial Port 2 Configuration Serial Port 3 Configuration	F81866	
 Serial Port 4 Configuration Serial Port 5 Configuration GPIO Port Configuration Watch Dog Timer Select 	Watch Dog Timer Select Disabled 1 Min 2 Min 3 Min 4 Min 5 Min 6 Min 7 Min 8 Min 9 Min 10 Min	<pre>←: Select Screen ↓: Select Item nter: Select /-: Change Opt. 1: General Help 2: Previous Values 3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.12	46. Copyright (C) 2015 American M	egatrends, Inc.

GPI0 Port Configuration

You can use the screen to change GPI0 Port setting. Use these items to set parameters related to **PIN3-PIN14 Control**.

Aptio Setup Advanced	Utility – Copyright (C) 2015 (American Megatrends, Inc.
GPIO Port Configuration		
PIN 3 Control PIN 4 Control PIN 5 Control PIN 6 Control PIN 7 Control PIN 9 Control PIN 9 Control PIN 10 Control PIN 11 Control PIN 12 Control PIN 13 Control PIN 14 Control	[Input] [Input] [Input] [Input] [Input] [Input] [Input] [Input] [Input] [Input] [Input]	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.	17.1246. Copyright (C) 2015 Ame	erican Megatrends, Inc.

3.2.2.3 Hardware Monitor

You can check PC Health Status parameters such as system temperature, fan speed etc.

Aptio Setup Utili Advanced	ty – Copyright (C) 2015 Amer	rican Megatrends, Inc.
Pc Health Status		
System temperature1 Fani Speed Fan2 Speed VIN1 VIN2 VIN3 VIN4 VCC3V VSB3V VSB5V VBAT	: +28 C : N/A : N/A : +0.800 V : +12.144 V : +3.408 V : +5.160 V : +3.424 V : +3.424 V : +3.424 V : +5.208 V : +3.392 V	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.124	6. Copyright (C) 2015 Americ	can Megatrends, Inc.

3.2.2.4 S5 RTC Wake Settings

Wake System from S5 with fixed time setting

Wake system from S5 enables or disables system wake on alarm event. It allows you to wake up the system in a certain time.

Aptio Setup Advanced	Utility – Copyright (C) 2015 Americ	an Megatrends, Inc.
Wake system from S5	[Disabled]	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime , System will wake on the current time + Increase minute(s)
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.	17.1246. Copyright (C) 2015 American	Megatrends, Inc.

Select Fixed Time to set the system to wake on the specified time.

Use Navigation Keys **T u** to switch among the items: Day, Hour, Minute and Second. Type the desired value in the selected item.

For example, if you want the system to start up automatically at 15:30:30, the 10th day of each month, then you should enter 10, 15, 30, and 30 from top to bottom.

Aptio : Advanced	Setup Utility – Copyright (C) 2015 American	Megatrends, Inc.
Advanced Wake system from S5 Wake up hour Wake up minute Wake up second	[Fixed Time] 0 0 0 Wake system from S5 Disabled Fixed Time Dynamic Time	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime , System will wake on the current time + Increase minute(s) ++: Select Screen 11: Select Item Enter: Select t +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
		ESC: Exit
Versi	on 2.17.1246. Copyright (C) 2015 American M	egatrends, Inc.

Wake system from S5 after dynamic time setting

Select **Dynamic Time** to set the system to wake on the current time + increase minute (s).

Aptio Setup Ut Advanced	ility – Copyright (C) 2015 Ame	rican Megatrends, Inc.
Wake system from S5 Wake up minute increase	[Dynamic Time] 1 Wake system from S5 - Disabled Fixed Time Dunamic Time	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime , System will wake on the current time + Increase minute(s)
		14: Select Item Enter: Select +/-: Change Opt. F1: General Help E2: Previous Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.	1246. Conuright (C) 2015 Ameri	can Megatrends. Inc.

3.2.2.5 CPU Configuration

Press **<Enter>** to view current CPU configuration and make settings for the following sub-items.

Aptio Setup Utility -) Advanced	Copyright (C) 2015 American	Megatrends, Inc.
CPU Configuration		Socket specific CPU Information
 Socket 0 CPU Information CPU Thermal Configuration 		
CPU Speed 64-bit	1834 MHz Supported	
Limit CPUID Maximum Execute Disable Bit Intel Virtualization Technology Power Technology	[Disabled] [Enabled] [Enabled] [Energy Efficient]	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
		ESC: Exit

BIOS Setting Setting Option Description Effect Socket CPU This item contains socket Enter Open sub-menu Information specific CPU information. **CPU** Thermal Thermal control Enter Open sub-menu Configuration Limit CPUID Limits CPIID Maximum Enable/Disable Disabled/ Enabled this function Maximum Execute Disable **Execute Disable Bit** Disabled/ Enable/Disable Bit Enabled this function Intel Virtualization Allows to run recent OS Enabled/ Enable/Disable Technology and applications Disabled this function Power **Disable this** Control the performance Disabled function Technology and power management functions of the processors **Energy Efficient** Work on energy efficient mode

3.2.2.6 PPM Configuration

Advar	Aptio Setup Utility – Copyri: nced	ght (C) 2015 Americar	n Megatrends, Inc.
PPM Configu	ration		Enable/Disable CPU C state
CPU C state Max CPU C-s	Report [Enab tate [C7]	led]	
			<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
	Version 2.17.1246. Copyrigh	t (C) 2015 American ⊧	Megatrends, Inc.
IOS Setting	Description	Setting Opti	Ion Effect
eport	Report	Enabled/ Disabled	state report to OS
lax CPU C- tate	Allows to enter power- saving mode in order to	C1E, C3, C6 C7, Auto	, Enable or Disable CPU Max CPU S-Sate

save energy

3.2.2.7 Thermal Configuration

Aptio Setup Utility - Advanced	– Copyright (C) 2015 Am	merican 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 off.
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

BIOS Setting	Description	Setting Option	Effect
Critical Trip	Specifies the temperature	90C, 87C, 85C,	Select the disable
Point	at which the OS will shut	79C, 71C,	temperature for the
	down the system	63C,55C,47C,	system to shut down
		39C, 31C, 23C,	
		15C	
Passive Trip	Specifies the temperature	90C, 87C, 85C,	Select the disable
Point	at which the OS will begin	79C, 71C,	temperature for the
	adjusting the processor	63C,55C,47C,	system to start
		39C, 31C, 23C,	adjusting the
		15C	processor

3.2.2.8 IDE Configuration

Aptio Setup Utility - Advanced	- Copyright (C) 2015 Americar	n Megatrends, Inc.
IDE Configuration		Enable ∕ Disable Serial ATA
Serial-ATA (SATA)	[Enabled]	
SATA Speed Support SATA Mode	[Gen2] [AHCI Mode]	
Serial—ATA Port O SATA PortO HotPlug	[Enabled] [Disabled]	
Serial—ATA Port 1 SATA Port1 HotPlug	[Enabled] [Disabled]	
SATA PortO SSE032GPTCO-S8 (32.0GB)		↔: Select Screen ↓: Select Item Enter: Select
SATA Port1 Not Present		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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BIOS Setting	Description	Setting Option	Effect
Serial- ATA (SATA)	Responsible for supporting chipset drives with SATA interface.	Enabled/ Disabled	Enable or disable this function
SATA Speed Support	Allows forcing the speed limit SATA II	Gen1	The maximum speed will be limited to 150 MB/s
	ports standard IDE / SATA-controller	Gen2	The maximum speed will be limited to 300 MB/s
	chipset.	Disabled	Disables manual configuration of SATA II ports (mode will be selected based on the specifications of connected drives)
SATA Mode	This option specifies the operation mode of modern IDE / SATA-controller	[AHCI]	Selecting this option allows you to take full advantage of the extended host controller SATA II
	chipset	[IDE]	SATA controller will operate in a mechanism similar to a conventional IDE-controller

BIOS Setting	Description	Setting Option	Effect
		[RAID]	Allows combining hard drives in RAID-arrays in order to improve the reliability of data storage, or to increase the speed.
Serial- ATA Port 0	The option turns on or off Port 0 of SATA channels of standard IDE / SATA-controller chipset.	Enabled/ Disabled	Turn on (Enabled) or turn off (Disabled) Port 0
SATA Port0 HotPlug	This feature that allows you to attach and remove a SATA Port0	Enabled/ Disabled	Enable or disable this function
Serial- ATA Port 1	The option turns on or off Port 1 of SATA channels of standard IDE / SATA-controller chipset.	Enabled/ Disabled	Turn on (Enabled) or turn off (Disabled) Port 1
SATA Port1 HotPlug	This feature that allows you to attach and remove a SATA Port1	Enabled/ Disabled	Enable or disable this function

3.2.2.9 Miscellaneous Configuration

OS Selection

This item allows users to select the proper Operating System.

Aptio Setup Utility - Advanced	Copyright (C) 2015 American	Megatrends, Inc.
Miscellaneous Configuration OS Selection	[Windows 8.X] OS Selection Windows 8.X Windows 7	DS Selection ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1246. Co	pyright (C) 2015 American M	egatrends, Inc.

BIOS Setting	Description	Setting Option	Effect
Windows 8.X	Allows user to choose the proper OS.	Enter	Use Windows 8.X
Windows 7	Allows user to choose the proper OS.	Enter	Use Windows 7

3.2.2.10 CSM Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2015 American	Megatrends, Inc.
Compatibility Support Module Configu	ration	Enable/Disable CSM Support.
CSM Support	[Enabled]	
CSM16 Module Version	07.76	
GateA20 Active Option ROM Messages	[Upon Request] [Force BIOS]	
Boot option filter	[Legacy only]	
Option ROM execution		
Network Storage Video Other PCI devices	(Legacy) (Legacy) (Legacy) (UEFI)	<pre> ++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.1246. Co	pyright (C) 2015American M	egatrends, Inc.

BIOS Setting	Description	Setting Option	Effect
CSM Support	The Compatibility Support Module	Enabled/	Enable or
	(CSM) is a component of the UEFI	Disabled	disable the
	firmware that provides legacy BIOS		Compatibility
	compatibility by emulating a BIOS		Support
	environment, allowing legacy operating		Module
	systems and some option ROMs that		
	do not support UEFI to still be used.		
GetaA20 Active	Activate GetaA20	Upon Request	Enable or
			disable this
			function
Option ROM	Receiving ROM Messages Settings	Force BIOS	Set ROM
Messages			messages
			parameters
Network	Specifies which Network option ROM is	UEFI	Only UEFI
	booted		option ROMs
			are booted
		Legacy	
Storage	Specifies which Storage option ROM is	UEFI	Only UEFI
	booted		option ROMs
			are booted

BIOS Setting	Description	Setting Option	Effect
		Legacy	Only Legacy
			option ROMs
			are booted
Video	Specifies which Video option ROM is	UEFI	Only UEFI
	booted		option ROMs
			are booted
		Legacy	Only Legacy
			option ROMs
			are booted
Other PCI	Specifies which option ROM is booted	UEFI	Only UEFI
Devices	for devices other than the network,		option ROMs
	storage or video		are booted
		Legacy	Only Legacy
			option ROMs
			are booted

3.2.2.11 USB Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2013 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support.
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		
Legacy USB Support	[Enabled]	
USB3.0 Support	[Enabled]	
XHCI Hand-off	[Enabled]	
EHCI Hand-off	[Disabled]	
USB Mass Storage Driver Support	[Enabled]	
		Contractor and the second
USB hardware delays and time-outs:		++: Select Screen
USB transfer time-out	[20 sec]	T4: Select Item
Device reset time-out	[20 sec]	Enter: Select
Device power-up delay	[Auto]	+/-: Change Opt.
		F1: General Help
Mass Storage Devices:		F2: Previous Values
JetFlashTranscend 1668 1.00	[Auto]	F3: Uptimized Defaults
		F4: Save & Exit
		ESC: EXIT
Version 2.16.1242. C	opyright (C) 2013 Ame <u>rican</u> M	egatrends, Inc.

BIOS Setting	Description	Setting Option	Effect
Legacy USB	User can enable or disable	Disable	Will keep USB
Support	USB port.		devices available
			only for EFI
			applications.
		Enable	Enable all the USB
			devices
USB 3.0	User can enable or disable	Enable	Enable USB 3.0 is
Support	USB 3.0 (XHCI) controller		enable
	support.	Disable	USB 3.0 is disable
XHCI Hand-off	This is a workaround for	Disable	Disables this function
	OSs without XHCI hand- off		
	support.	Enable	Enables this function
EHCI Hand-off	This is a workaround for	Disable	Disables this function
	OSs without ECHI hand- off	Enable	Enables this function
	support.		
USB mass	User can Enable or disable	Disable	Disables this function
storage driver	USB mass storage driver	Enable	Enables this function

BIOS Setting	Description	Setting Option	Effect
support	support.		
USB Transfer	The time-out value for	1 Sec	Depends on the time-
time- out	control, bulk, and interrupt	5 Sec	out value
	transfers.	10 Sec	
		20 Sec	
Device Reset	USB mass storage device	10 Sec	Depends on the time-
time- out	start unit command time-	20 Sec	out value
	out.	30 Sec	
		40 Sec	
Device power-	Maximum time the device	Auto	Uses default value:
up delay	will take before it properly		for a root port it is
	reports itself to the host		100 ms, for a Hub
	controller.		port the delay is
			taken from Hub
			descriptor

3.2.3 Chipset Menu

For items marked with ►, please press **<Enter>** for more options.

Aptio Setup Util Chipset	ity – Copyright (C) 2015 A	merican Megatrends, Inc.
 US8 Configuration PCI Express Configuration 		USB Configuration Settings
High Precision Timer Restore AC Power Loss	(Enabled) (Power Off)	
Serial IRQ Mode	(Cont inuous)	
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

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BIOS Setting	Description	Setting Option	Effect
High Precious	Allow to set up High Precious Timer	Enabled/	Enables/Disab
Timer	settings	Disabled	les this
			function
Restore AC	This function allows to set up	Power on/	Boot
Power Loss	booting options after a power failure	Power off	automatically
			after a power
			failure
Serial IRQ	When working with personal	Continuous	Allow user to
Mode	computer hardware, installing and		set up desired
	removing devices, the system relies		IRQ Mode
	on interrupt requests. Interrupt		
	request		

3.2.4 Security Menu

In the Security menu, users can set administrator password, user password, and HDD security configuration.

Password Description Set Administrator Password If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to
boot or enter setup. In setup the user will have Administrator rights. The password length must be in the following range: Minimum length 3
Maximum length 20
Administrator Password Enter: Select
User Password +/-: Change Opt. F1: General Help F2: Previous Values
HDD Security Configuration: F3: Optimized Defaults
ESC: Exit
▶ Secure Boot menu

	Version 2.16.1242.	CODALTAUL	(6) 2013	Hillenitcau	megatrenus,	INC.	
1							

BIOS Setting	Description	Setting Option	Effect
Administrator	Displays whether or not an	Enter	Enter
Password	administrator password has been		password
	set.		
User	Display whether or not a user	Enter	Enter
Password	Password has been set.		password

3.2.5 Boot Configuration

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 use to look for a boot device from which to load the operating system.

Aptio Setup Utility Main Advanced Chipset Security	- Copyright (C) 2015 America Boot Save & Exit	n Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot Fast Boot Boot mode select FIXED BOOT ORDER Priorities Boot Option #1 Boot Option #2 Boot Option #3 Boot Option #5 Boot Option #5 Boot Option #6	L [Disabled] [Disabled] [LEGACY] [USB Hard Disk] [USB Key:JetFlashTra] [Hard Disk: ADATA XM] [Hard Disk1] [Network:IBA GE Slot] [USB CD/DVD]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting. ++: Select Screen fl: Select Item Enter: Select
 USB Key Drive BBS Priorities Hard Disk Drive BBS Priorities NETWORK Drive BBS Priorities 		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Version 2.17.1246. Copyright (C) 2015 American Megatrends, Inc.

BIOS Setting	Description	Setting Option	Effect
Setup Prompt Timeout	Allows user to configure the number of seconds to stay in BIOS setup prompt screen.	Enter	Set the prompt timeout
Boot NumLock State	Enables or disables NumLock feature on the numeric keypad of	On	Remains On
	the keyboard after the POST (Default: On).	Off	Remains OFF
Quite Boot	Determines if POST message or OEM logo (default = Black	Disabled	Disables this function
	background) is displayed.	Enabled	Enables this function
Fast Boot	Enables or disables Fast Boot to shorten the OS boot process.	Disabled	Disables this function
	(Default: Disabled).	Enabled	Enables this function

BIOS Setting	Description	Setting Option	Effect
Boot Mode Select	Specifies which mode will be used for booting	Legacy	Only Legacy option is booted
		UEFI	Only UEFI option is booted
Boot Option #1~#6	Specifies the overall boot order from the available devices	Ex: Boot Option#1 (hard drive)	Hard drive as the first priority
USB Key Drive BBS Priorities	USB Key Drive BBS Priorities	Enter	Open sub-menu
Hard Disk Drive BBS Priorities	Hard Disk Drive BBS Priorities	Enter	Open sub-menu
Network Drive BBS Priorities	Network Drive BBS Priorities	Enter	Open sub-menu

3.2.6 Save & Exit

The Exit menu displays a way how to exit BIOS Setup utility. After finishing your settings, you must save and exit for changes to be applied.

Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Options Save Changes Discard Changes Restore Defaults Save as User Defaults Restore User Defaults	Exit system setup after saving the changes.
Boot Override UEFI: Built-in EFI Shell PO: ADATA XM13 32GB UEFI: JetFlashTranscend 16GB 1.00 Launch EFI Shell from filesystem device Reset System with ME disable ModeMEUD000	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

BIOS Setting	Description	Setting Option	Effect
Save Changes and Exit	This saves the changes to the CMOS and exits the BIOS Setup program.	<yes></yes>	Save changes
Discard Changes and	This exits the BIOS Setup without saving the changes made in BIOS	<yes></yes>	Saves the changes
Exit	Setup to the CMOS.	<no></no>	Return to the BIOS Setup Main Menu
Save Changes and Reset	Reset the system after saving the changes.	<yes></yes>	Saves the changes
		<no></no>	Return to the BIOS Setup Main Menu
Discard Changes and	Reset system setup without saving any changes	<yes></yes>	Saves the changes
Reset		<no></no>	Return to the BIOS Setup Main Menu
Save Changes	Save changes done so far to any of the setup options.	<yes></yes>	Saves the changes
		<no></no>	Return to the BIOS Setup Main Menu

BIOS Setting	Description	Setting Option	Effect
Discard	Discard changes done so far to any	<yes></yes>	Saves the
Changes	of the setup options.		changes
		<no></no>	Return to the BIOS
			Setup Main Menu
Restore	Restore/load default values for all	<yes></yes>	Saves the
Default	the setup options.		changes
		<no></no>	Return to the BIOS
			Setup Main Menu
Save as User	Save the changes done so far as	<yes></yes>	Saves the
Defaults	User defaults.		changes
		<no></no>	Return to the BIOS
			Setup Main Menu
Restore User	Restore the User Defaults to all the	<yes></yes>	Saves the
Defaults	setup options.		changes
		<no></no>	Return to the BIOS
			Setup Main Menu

3.3 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 IB32 series PC.



IMPORTANT:

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** key on the external keyboard to initiate the Recovery Wizard.
- The following screen shows the Recovery Wizard. Click Recovery button to continue.

Recovery Wizard
Click " Recovery " to restore your system. WARNING! The process will clear all of your data.
If you do not want to restore your system please press " Quit " to reboot. Quit

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



Wait the recovery process to complete. During the recovery process, a command prompt will show up to indicate the percent of recovery process complete. After complete the recovery process, the system will be turned off automatically. Please restart your system manually to complete the OS initialize process.



Chapter 4: Driver Installation

This chapter offers information on all of the recommend driver installations. Sections include:

- 4.1 Intel Chipset Driver
- 4.2 Graphic Driver
- 4.3 Audio Driver
- 4.4 Intel Sideband Fabric Device (Intel MBI) (for Windows 10)
- 4.5 Intel TXE Driver
- 4.6 USB 3.0 Driver (for Windows 7)

4.1 Intel Chipset Driver

1. Insert the CD that comes with the motherboard. Open the file document **Chipset Driver** and click on **infinst_auto.exe** to install the driver.

- 11 🕞 🕕 ≠ 1	Application Tools	Chipset_V9.4.4.1005	- 🗆 ×
File Home Share	View Manage		~ 🕜
€ 🤿 ▾ ↑ 퉬 « IB70) ► 64bit ► WIN8.1 ► Chipset_V9.4.4.1005	Search Chips	et_V9.4.4.1005 🔎
🔆 Favorites	Name	Date modified Type	Size
Desktop	🚮 infinst_autol	8/13/2013 7:59 PM Application	6,724 KB
Downloads			
🔛 Recent places			
🖳 This PC			
📬 Network			
1 item 1 item selected 6.5	6 MB		

2. Click Next to continue the installation.



3. Click **Yes** to agree with the license terms.



4. Click Next to continue.

297 X	Inte	no Chipse	et Device Soft	ware		
ntel® C Readme I	hipset De File Inform	evice So nation	oftware		(inte	
Refer to the Re Press the Page	adme file below t Down key to viev	to view the sy w the rest of	ystem requirements the file.	and installation i	information.	
<pre>* Produo * Releas * Versio * Target * Date:</pre>	ct: Intel(R se: Product on: 9.4.4.1 t SOC: Bay July 10 20	Chipse ion Vers .005 Trail-M/ 013	t Device So sion /D SOC (form	ftware erly known	as Vali	1
<	*******	******	*******	*******	******	* ~
			< Back	Next >	Cance	

5. Please wait for the following operations to be performed.



6. Click Next to continue.



7. Select Yes, I want to restart this computer now, and click Next to finish the installation.



4.2 Graphics Driver

1. Insert the CD that comes with the motherboard. Open the file document "Graphics Driver" and click "Setup.exe" to install the driver.

l I 🗋 🕕 = I	Application Tools	Graphics_V10.18.1	0.3540	>
File Home Shar	e View Manage			~
🔄 🏵 🝷 🕇 🚺 « I	B70 → 64bit → WIN8.1 → Graphics_V10.1	8.10.3540 🗸 🖒	Search Graphics_	V10.18.10.3540 🔎
☆ Favorites	Name	Date modified	Туре	Size
Desktop	DisplayAudio	5/21/2015 11:45 PM	File folder	
Downloads	Graphics	5/21/2015 11:44 PM	File folder	
🖳 Recent places	LCCS	5/21/2015 11:37 PM	File folder	
	\mu Lang	5/21/2015 11:37 PM	File folder	
🖳 This PC	🍌 x64	5/21/2015 11:36 PM	File folder	
	autorun	3/30/2014 10:28 PM	Setup Information	1 KB
📬 Network	DIFxAPI.dll	11/2/2006 7:21 AM	Application extens	312 KB
	Installation_Readme	4/9/2014 11:25 AM	Text Document	71 KB
	👚 mup	3/30/2014 10:28 PM	XML Document	13 KB
	📋 Readme	4/8/2014 6:42 PM	Text Document	6 KB
	🐏 Setup	4/8/2014 7:03 PM	Application	976 KB
	Setup.if2 Size: 975 KB Date modified: 4	n p14 10:28 PM	IF2 File	15 KB
12 items 1 item selecte	d 975 KB			

2. Click Next to continue the installation.



3. Click **Yes** to agree with the license terms.
| Intel® Installation Framework | | × |
|---|---|----|
| icense Agreement | intel | |
| You must accept all of the terms of the license agreement in order to contin
program. Do you accept the terms? | ue the setup | |
| INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Sir | igle User) | ^ |
| IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively
until you have carefully read the following terms and conditions. By loading
Software, you agree to the terms of this Agreement. If you do not wish to
install or use the Software. | , the "Software")
1 or using the
1 so agree, do not | |
| Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hard
(IHV), or Independent Software Vendor (ISV), this complete LICENSE AGR
* If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICE | lware Vendor
EEMENT applies;
NSE AGREEMENT, | ~ |
| < Back Yes | No | |
| Inte | Installation Frame | ew |

4. Click **Next** to continue the installation.

Intel® Install	ation Framework	– 🗆 🗙
Intel® Graphics Driver		
Readme File Information		(intel)
Refer to the Readme file below to view the sys	stem requirements and insta	allation information.
README FILE		^
Release Version: Production Version		
Driver Version: 15.33.19.64.3540		
Operating System(s):		
Microsoft Windows* 7 64 Microsoft Windows* 8 64 Microsoft Windows* 8.1 64		~
	< Back Nex	t > Cancel
	Inte	Installation Framework

5. Click **Next** to continue the installation.

Intel® Install	ation Framework	- 🗆 🗙
Intel® Graphics Driver		
Readme File Information		(intel)
Refer to the Readme file below to view the sys	stem requirements and install	ation information.
README FILE		^
Release Version: Production Version Driver Version: 15.33.19.64.3540		- 1
Operating System(s):		
Microsoft Windows* 7 64 Microsoft Windows* 8 64 Microsoft Windows* 8.1 64		~
	< Back Next	> Cancel
	Intel	® Installation Framework

6. Click **Next** to continue the installation.

Intel® Installation Framework	
Intel® Graphics Driver Setup Progress	(intel)
Please wait while the following setup operations are performed: Installing Driver: Intel(R) Display Audio Version: 6.16.00.3137 •••••••	
Intel	Next > ® Installation Framework

Windows Security warning message will appear on the screen, click "Install this driver software anyway" to continue the installation.

8	Windows can't verify the publisher of this driver software
	Don't install this driver software
	You should check your manufacturer's website for updated driver software for your device.
	Install this driver software anyway
	Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or stea information.

7. Please wait for the following operations to be performed.

Intel® Installation Framework	
Intel® Graphics Driver	
Setup Progress	intel
Please wait while the following setup operations are performed:	
Installing Driver: Intel(R) Display Audio Version: 6.16.00.3137 Installing Driver: Intel(R) HD Graphics	
•••••••	
	Next >
Inte	l® Installation Framework

8. Click **Next** to continue the installation.



9. Click **Yes**, **I** want to restart this computer now to finish the installation and restart the computer.



4.3 Audio Driver

1. Insert the CD that comes with the motherboard. Open the file document **Audio Driver** and click on **Setup.exe** to install the driver.

🖻 🏵 🔻 🕇 🚺 « 🛛	870 ► 64bit ► WIN8.1 ► Audio_V6.3.9600.1638	4 v C	Search Audio_V6.	3.9600.16384
	Name	Date modified	Туре	Size
Desktop	Config	5/21/2015 11:54 PM	File folder	
Downloads	Vista	5/21/2015 11:54 PM	File folder	
🔚 Recent places	Vista64	5/21/2015 11:51 PM	File folder	
	ChCfg	2/8/2011 11:56 PM	Application	75 KE
🖳 This PC	📑 data1	8/19/2013 8:49 PM	Cabinet File	3,032 KE
	data1.hdr	8/19/2013 8:49 PM	HDR File	34 KE
📬 Network	🗎 data2	8/19/2013 8:49 PM	Cabinet File	1 KE
	engine32	8/24/2009 11:09 PM	Cabinet File	541 KE
	layout.bin	8/19/2013 8:49 PM	BIN File	1 KE
	S RtIExUpd.dll	8/8/2013 4:57 AM	Application extens	2,032 KE
	Setup Setup	11/14/2005 12:24	Application	119 KE
	setup.ibt	8/19/2013 8:49 PM	IBT File	447 KE
	🗿 setup	8/19/2013 8:50 PM	Configuration sett	2 KE
	setup.inx	8/19/2013 8:49 PM	INX File	430 KE
	setup.isn	11/14/2005 3:54 PM	ISN File	245 KE
	setup.iss	5/31/2005 12:01 AM	ISS File	1 KE
	USetup.iss	11/13/2007 11:18	ISS File	1 KE

2. Wait while setup is preparing the installation.



3. Click **Next** to continue the installation.



4. Please wait for the driver to configure your new software installation.

Realtek Hi	igh Definition Audio Driver Setup (3.74) 6.0.1.7025 x64 Edition	×
Setup Status		
	Realtek High Definition Audio Driver is configuring your new software installation.	
	C:\\Realtek\Audio\Drivers\Vista64\DT\$NeoPCDLL64.dll	
InstallShield	Cance	:

5. Windows security warning message will pop-up, mark **Always trust software from "Realtek Semiconductor Corp"** and click **Install**.

÷-	Windows Security ×
W	ould you like to install this device software?
	Name: HD Audio Driver Publisher: Realtek Semiconductor Corp
•	Always trust software from "Realtek Semiconductor Install Don't Install Corp".
	You should only install driver software from publishers you trust. <u>How can I decide which</u> <u>device software is safe to install?</u>

6. Select **Yes**, **I** want to restart my computer now, and then press finish to complete the installation.

Realtek H	igh Definition Audio Driver Setup (3.74) 6.0.1.7025 x64 Edition
Realtek H	 igh Definition Audio Driver Setup (3.74) 6.0.1.7025 x64 Edition InstallShield Wizard Complete The InstallShield Wizard has successfully installed Realtek High Definition Audio Driver. Before you can use the program, you must restart your computer. Yes, I want to restart my computer now. No, I will restart my computer later. Remove any disks from their drives, and then click Finish to complete setup.
InstallShield	< Back Cancel

4.4 Intel Sideband Fabric Device (Intel MBI) Driver

(Windows 10)

1. Insert the CD that comes with the motherboard. Open the file document **MBI** and click on **Setup.exe** to install the driver.

31 ⊇ 11 ≠	MBI_V001.070.304.	16315			×
File Home Share	View				~ 🕜
€ → + 🎚 « IB70	0 → 64bit → WIN8.1 → MBI_V001.070.304.16315	~ ¢	Search MBI_V001	.070.304.16315	Q
▲ ★ Favorites	Name	Date modified	Туре	Size	
E Desktop	길 Bin	5/21/2015 11:34 PM	File folder		
Downloads	퉬 Lang	5/21/2015 11:34 PM	File folder		
Recent places	鷆 x64	5/21/2015 11:32 PM	File folder		
	S DIFxAPI.dll	7/13/2009 3:47 AM	Application extens	317 KB	
Image: Point PC	👚 mup	11/4/2013 5:56 PM	XML Document	7 KB	
	Setup.cfg	11/5/2013 8:10 AM	CFG File	3 KB	
Network	😘 Setup	8/29/2013 2:31 AM	Application	952 KB	
	Setup.if2	6/4/2013 12:54 AM	IF2 File	1 KB	
8 items					

2. Click **Next** to continue the driver installation.



3. Click **Yes** to agree with the license terms.



4. Please wait while the following setup operations are performed.



5. It may take some time for the following setup operations to be performed.



6. Select **Yes**, **I** want to restart this computer now, and then click **Finish** to complete the installation.



4.5 Intel® Trusted Execution Engine Driver

Installation

Follow the steps below to install the Intel Trusted Execution Engine driver:

1. Double click the **SetupTXE.exe** from this directory.



2. Click Next.



Setup	2.00	X
Intel® License) Trusted Execution Engine Agreement	(intel)
INTEL S IMPORT Do not i until yo Softwar install o Please / * If you (IHV), c * If you applies.	SOFTWARE LICENSE AGREEMENT (OEM / I TANT - READ BEFORE COPYING, INSTALLI use or load this software and any associat u have carefully read the following terms of re, you agree to the terms of this Agreem or use the Software. Also Note: u are an Original Equipment Manufacturer (or Independent Software Vendor (ISV), thi u are an End-User, then only Exhibit A, the	HV / ISV Distribution & Single User) ING OR USING. ted materials (collectively, the "Software") and conditions. By loading or using the ent. If you do not wish to so agree, do not (OEM), Independent Hardware Vendor is complete LICENSE AGREEMENT applies; e INTEL SOFTWARE LICENSE AGREEMENT,
For OEI LICENS Use of I	Ms, IHVs, and ISVs: E. This Software is licensed for use only in the Software in conjunction with non-Intel cept the terms in the License Agreement.	conjunction with Intel component products. component products is not licensed ~
intel Cor	poration	< <u>Back</u> <u>Next</u> <u>Cancel</u>



3. Choose Yes, I want to restart this computer now., then click Finish to restart.



4.6 USB 3.0 Driver (Windows 7)



NOTE:

If the operating system of the device is Windows 10 operating system, users can skip this installation.

- 1. Locate the hard drive directory where the driver files are stored with the browser or the explore feature of Windows*.
- 2. Double click the Setup.exe from this directory.



3. Click Next to continue.



4. Read the License Agreement and click Yes to proceed.



5. Review Readme File Information and click Next to proceed.



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



Click Next to continue. •

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Intel® Installation Framework

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Next >

7. Click Yes, I want to restart this computer now to finish and then restart your computer.



Chapter 5: Technical Support

This chapter contains directory to technical support and Software Development Kit (SDK).

- 5.1 Drivers
- 5.2 Software Development Kit (SDK)

This chapter includes the directory for technical support. 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. If any problem occurs fill in problem report form enclosed and immediately contact us.

5.1 Drivers

The list of drivers available for IB32 Motherboard:

ltem	Driver	Description
1	Windows	1_Chipset
	10	2_Graphics
		3_Audio
		4_Network Connections
		5_Intel TXE Driver
		6_Intel MBI Driver
		7_DIDO Driver
2	Windows 7	1_Chipset
		2_Graphics
		3_Audio
		4_Network Connections
		5_Intel TXE Driver
		6_USB3.0
		7_DIDO Driver

To find the Drivers, please refer to the Driver CD that comes in the package or contact us.

5.2 Software Development Kit (SDK)

The list of SDK available for IB32 Motherboard

Item	File Type	Description
1	SDK	Watchdog SDK
2	SDK	Digital I/O SDK

To find the SDK, please refer to the Driver CD that comes in the package or contact us.

Chapter 6: Watchdog Utility Reference

This section explains where to download and how to install Watchdog and Digital IO Utility.

- 6.1 How to Enable Watchdog
- 6.2 Watchdog Driver Installation
- 6.3 Digital IO Driver Installation
- 6.4 Where to Download

This section explains where to download and how to enable Watchdog Utility on Winmate computer.

If OS has been reinstalled, it is also required to download and install Watchdog Driver.

Quick Steps to enable Watchdog Utility on your computer:

- > Install Watchdog Utility on your computer.
- > Open Watchdog Utility and enable Watchdog.

NOTE :

- Watchdog Utility is burned-in to your OS image.
- If you cannot find Watchdog Utility, please download Winmate Watchdog Utility & Driver from Winmate Download Center or Winmate File Share.

If the operating system of your computer has been reinstalled, it is required to download and install Watchdog driver to enable Watchdog.

- Install Watchdog Driver
 - a. Uninstall the old WMWDG driver
 - b. Install a new version of WMWDG driver

Winmate Watchdog utility and driver

Motherboard	Utility	Driver
IB32	WatchDog_AP V3.0.3	Driver V2.0.0.4

6.1 How to Enable Watchdog in Windows OS

To enable Watchdog, first you need to download and install Winmate Watchdog Utility and then restart the system.

- 1. On the right bottom side of the desktop screen, click **triangle button** to show hidden icons.
- 2. Click W icon to open Watchdog utility.



3. In Watchdog utility window set countdown time and periodically feed time, or disable watchdog.



*Default setting

Watchdog: Enable Watchdog countdown time: 10 min Periodically feed time: 9min

6.2 Watchdog Driver Installation

After the operating system on your computer has been reinstalled, you need to install Watchdog driver first to enable Watchdog function.

6.2.1 Installation Files

Please select the driver for the corresponding operating system.

2	WMWDG	64bit Dr	river Insta	allation (Guide v101	
	A ALL DOLLARS AND A REAL OF A R	A				-

- WMWDG Driver for Win7_32bit
- MWWDG Driver for Win7_64bit

Win7_32bit	Windows 7/8 x86 Edition
Win7_64bit	Windows 7/8 x64 Edition

Each directory contains the following files.

-	File	Description
🕌 x64 💷 devcon	Devcon.exe	Driver Application
🥥 wmwdg	Install.bat	Driver Installation File
	Wmwdg.cat	Digital Signature File
	Wmwdg.inf	Driver information file
	Wmwdg.sys	WMWDG Driver

6.2.2 Driver Installation Procedure

6.2.2.1 Uninstall the old version

Before you start installing the new signature WMWDG driver, please uninstall the old WMWDG driver in Windows's Device Manager.



Select **"WMWDG**" under System devices and right-click it. Use **Uninstall** selection to remove the driver.





6.2.2.2 Install the driver

- i. Type "**cmd**" in the run box.
- ii. The cmd.exe will appear in Programs
- iii. Right click on the cmd.exe and click on "Run as administrator" to start command prompt.

cmd		
Open		
Run as administrator		
Pin to Taskbar		
Pin to Start Menu		
Restore previous versions	5	
Send to	•	
Cut		
Сору		
Delete		
Open file location		
Properties		
See more results		

iv. Change directory to driver's location, and type **install** to install the driver.



v. When Windows Security dialog appears, select install to continue the installation.



When the driver is successfully installed, you can see "Drivers Updated successfully" message in the dos prompt.

And "WMWDG" device also added in the Device Manger under "System devices".



6.3 Digital IO Driver Installation

For more details about Winmate Watchdog, please download Digital IO Guide from Winmate Downloads Center:

Follow instructions below to install Digital IO river.

- 1. Type "cmd" in the run box then the cmd.exe will appear in programs.
- 2. Right click on the cmd.exe and click on "Run as administrator" to start.

Recycle	Bin P Sle	assMark eper V2.	-						eGalaxWork
â	Best n	atch Comm Deskt	nand P Run a Open Pin to Pin to	rompt s adm file lo s Start t taskb	inistra cation ar	tor		Demos Collo	eGalaxWork
۲	ED cmd	۲	ß		2	B	łp		
#	Q	O	Ø	-				^ 🙀 40) 📰 1	0:55 PM 7/3/2018

- 3. Open the Driver CD (included in the package) and select Digital IO driver.
- 4. When Windows Security dialog appear, select install to continue the Installation.
- 5. Wait for installation to complete. When installation is complete, press any key to close.

C Administrator: Command Prompt	-		×
[] MDIO 64bit Driver Installation Guide v101.pdf MMDIO Driver for Win7_32bit.zip MDIO Driver for Win7_64bit.zip 3 File(s) 227,270 bytes 2 Dir(s) 60,734,410,752 bytes free			^
D:\Driver\WMDIO APP v1.0.0.3\Driver\5.0.6.0>CD WMDIO Driver for Win7_64bit			
o:\Driver\₩0D10 APP v1.0.0.3\Driver\5.0.6.0\₩1D10 Driver for Win7_64bit>DIR/W Volume in drive D is RDVD Volume serial Number is 6834-E6A5			
Directory of D:\Driver\WMDIO APP v1.0.0.3\Driver\5.0.6.0\WMDIO Driver for Win7_64bit			
.] [] devcon.exe install.bat wmdio.cat wmdio.inf [x64] 4 File(s) 91,614 bytes 3 Dir(s) 66,736,315,392 bytes free			
0:\Driver\WMDIO APP v1.0.0.3\Driver\5.0.6.0\WMDIO Driver for Win7_64bit>INSTALL			
D:\Driver\WHDIO APP v1.0.0.3\Driver\5.0.6.0\WHDIO Driver for Win7_64bit>DEVCON.EXE INSTALL wmdio.inf "roo bevice node created. Install is complete when drivers are installed ipdating drivers for noot\WHDIO from D:\Driver\WHDIO APP v1.0.0.3\Driver\5.0.6.0\WHDIO Driver for Win7_64 Drivers installed successfully.	t\WMDI(bit\wmw	0" dio.inf	
D:\Driver\₩MDIO APP v1.0.0.3\Driver\5.0.6.0\₩MDIO Driver for Win7_64bit>pause Press any key to continue			
1. Univan WMDTO ADD v1 & & 210 nivan 5 & 6 & 210 nivan fan Winz fahit.			

6. Open the Driver CD (included in the package) and select Digital IO AP.



Network

ዶ 🗆 🛷 🖭 📄

graphic2

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2 items 1 item selected 31.5 KB

Switch Label Normal Normal Test DO Test DI Test

Ree 🛤

^ ⊙ 😨 Φ)) 📖 11:52 PM

6.4 Where to Download Watchdog and DIDO Utility

To find the Drivers and SDK, please refer to the Driver CD that comes in the package or contact us. Also, you can download drivers from Winmate Download Center.

Winmate Download Center

Go to http://www.winmate.com/ > Support > Download Center



NOTE:

Follow your computer's CPU model to find all necessary drivers, SDK and utilities.



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