ECM-BSWA

Intel® Pentium®/Celeron® SoC Processor 3.5" Micro Module

User's Manual

3rd Ed – 15 February 2019

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) 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 HIS OWN EXPENSE.

Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into body, or (b) support or sustain life and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

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A Message to the Customer

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To receive the latest version of the user's manual; please visit our Web site at:
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Avalue warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Avalue, or which have been subject to misuse, abuse, accident or improper installation. Avalue assumes no liability under the terms of this warranty as a consequence of such events. Because of Avalue's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If any of Avalue's products is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details. If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, Avalue's products model name, hardware & BIOS revision number, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.

2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information available.

3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your good return more quickly.

4. Carefully pack the defective product, a complete Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.

5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Content

ECM-BSWA User's Manual

1. Getting Started

1.1 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 electronics 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.

1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x 3.5" ECM-BSWA Micro Module
- 1 x Cable set contains the followings:
    — 1 x Serial ATA cable (7-pin, standard)
    — 1 x Wire SATA power cable (15-pin, 2P/2.0mm)
    — 1 x Flat cable 9P(M)-PHD 10P/2.0mm
    — 1 x VGA cable PHD 16P/2.0-HDB15F/23cm
- 3M foam (VHB-4622 10mm*20mm*1.1mm)

If any of the above items is damaged or missing, contact your retailer.

1.3 Document Amendment History

Revision	Date	By	Comment
1st	November 2017	Avalue	Initial Release
2nd	April 2018	Avalue	Update Packing List
3rd	February 2019	Avalue	Update BIOS Setup

1.4 Manual Objectives

This manual describes in details Avalue Technology ECM-BSWA Single Board.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of this board.

We strongly recommend that you study this manual carefully before attempting to set up ECM-BSWA or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

Please be aware that it is possible to create configurations within the CMOS RAM that make booting impossible. If this should happen, clear the CMOS settings, (see the description of the Jumper Settings for details).

If you have any suggestions or find any errors regarding this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

1.5 System Specifications

System	
CPU	INTEL® PENTIUM®/CELERON® PROCESSOR N3000 SERIES FOR MOBILE
BIOS	AMI uEFI BIOS,64 Mbit SPI Flash ROM
System Chipset	Braswell SoC integrated
I/O Chip	ITE_IT8528VG/FX
System Memory	1 x 204-pin DDR3L 1600 SODIMM up to 8G (non ECC) (If 1333 MHz DIMM is installed, it will run at 1066 MHz)
SSD	mSATA (from MiniPCIe)
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
H/W Status Monitor	CPU temperature monitoring Voltages monitoring
Expansion	1 x Full-Size Mini PCI Express Mini Card with mSATA supported (on solder side) 1 x Half-size Mini PCIe
Built-in Touch screen (optional)	EETI ETP-CP-MER4485XRU With 5-pin 2.0mm Box Header (Can be Selected to Support 5Wire Touch Screen)
I/O	
MIO	1 x SATA III 1 x DB-9 male connector for COM1(RS-232) 1 x JCOM2 (RS232/422/485 selected by GPIO w/ Auto Flow),422/485 with 2 x 3 pin header 4 x RS-232 (Pin Header)—COM3~COM6
USB	4 x USB3.0 (Edge connectors), 2 x USB 2.0 (Wafer)
GPIO	8-bit
Others	LPC, SPI
Display	
Chipset	Braswell SoC integrated Graphics
Resolution	HDMI mode: 1920 x 1080@60Hz LVDS mode: 1920 x 1080@60Hz VGA by pin header
Triple Display	HDMI+LVDS+VGA
HDMI	HDMI x1.4b
LCD Interface	Dual channel 18/24-bit LVDS LVDS via (via 7511B)
Audio	
AC97 Codec	Realtek ALC892 HD codec Supports 5.1-CH Audio

Ethernet	
LAN Chip	2 x Intel I211AT (Co-lay I210AT)
Ethernet Interface	10/100/1000 Base-Tx compatible
Internal I/O Connectors	
Fan	CPU_FAN1 4pin 2.5mm wafer header (smart FAN)
Buzzer	With Pin header
CMOS Battery	CR2032
Power On	AX / ATX selectable by jumper
Audio	6 x 2 pin header w/2.0mm pitch
COM	1 x JCOM2 (RS232/422/485 selected by GPIO w/ Auto Flow),422/485 with 2 x 3 pin header 4 x RS232 (Pin header) for COM3 ~ 6 (D81216 for COM3 ~ COM6)
Rear I/O Connectors	
USB	4 x USB3.0
LAN	2 x RJ-45
HDMI	1 x HDMI (HDMI 19P 90D(F) STD w/Flange BLK)
COM	1 x DB-9 male connector for COM1 (RS-232)
LED	Stack LED for PWR and HDD LED
Mechanical & Environmental	
Power Requirement	+11.4V ~ +26V
ACPI	Single power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
Power Type	AT/ATX
Operating Temp.	0°C ~ 60°C
Storage Temp.	-40°C ~ 75°C
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Size (L x W)	5.7" x 4" (146mm x 101mm)
Weight	0.44lbs (0.2kg)
OS support	Windows 10/Windows 7/Linux

Note: Specifications are subject to change without notice.

1.6 Architecture Overview—Block Diagram

The following block diagram shows the architecture and main components of ECM-BSWA.
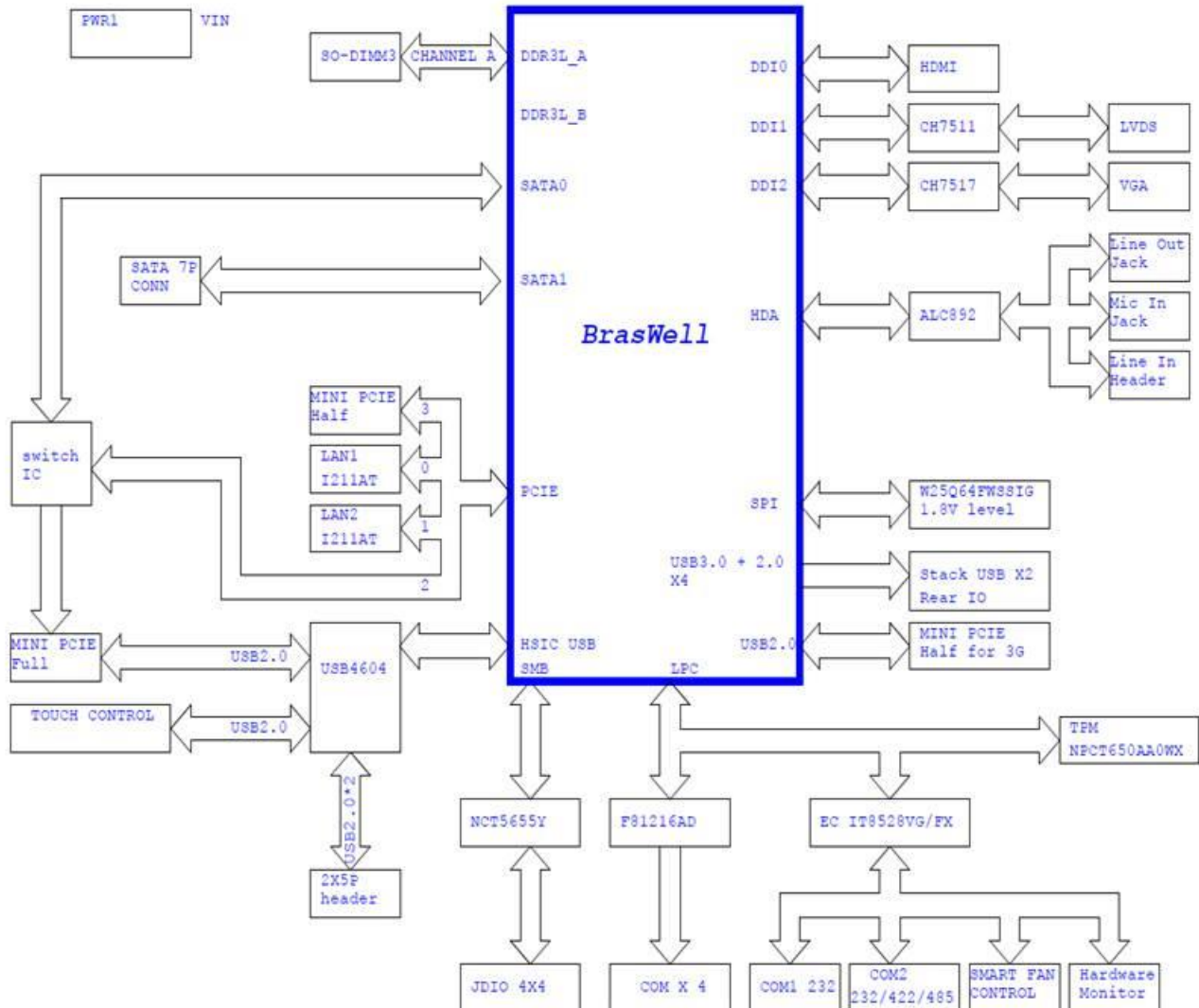
2. Hardware Configuration

2.1 Product Overview

MINI_PCIE1

SO_DIMM1
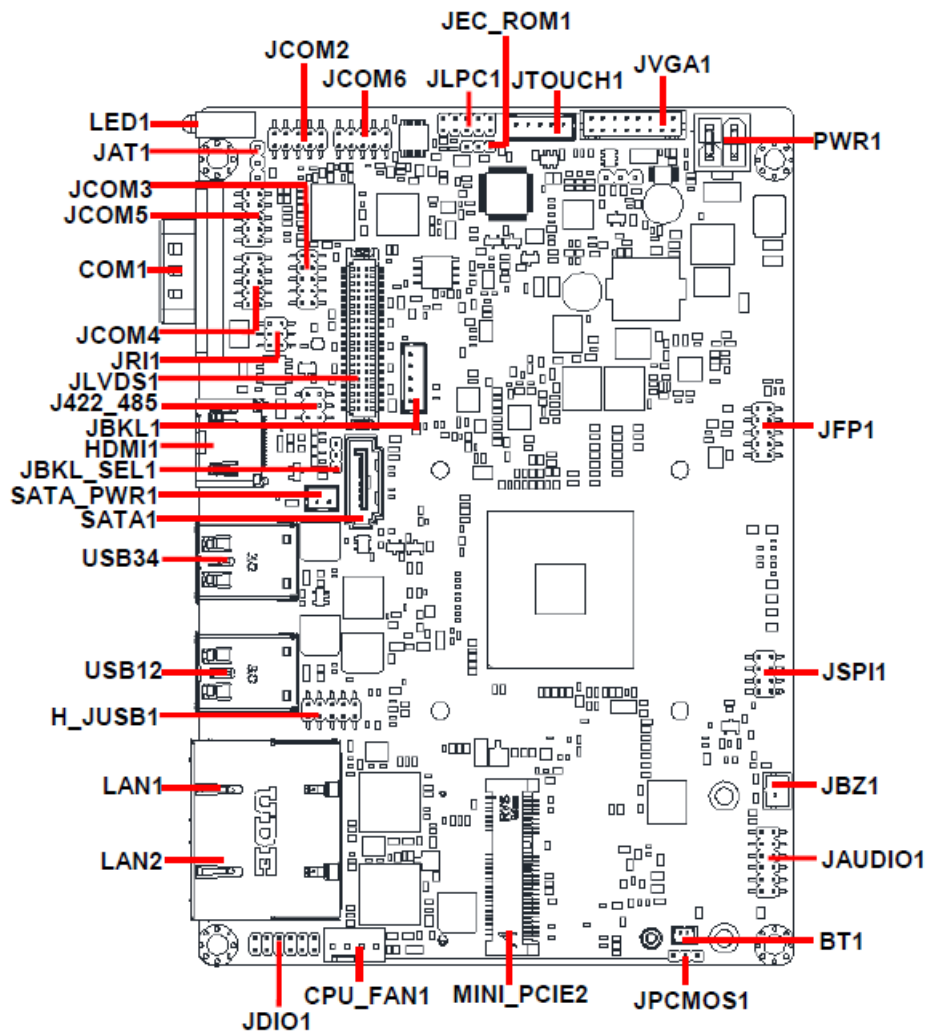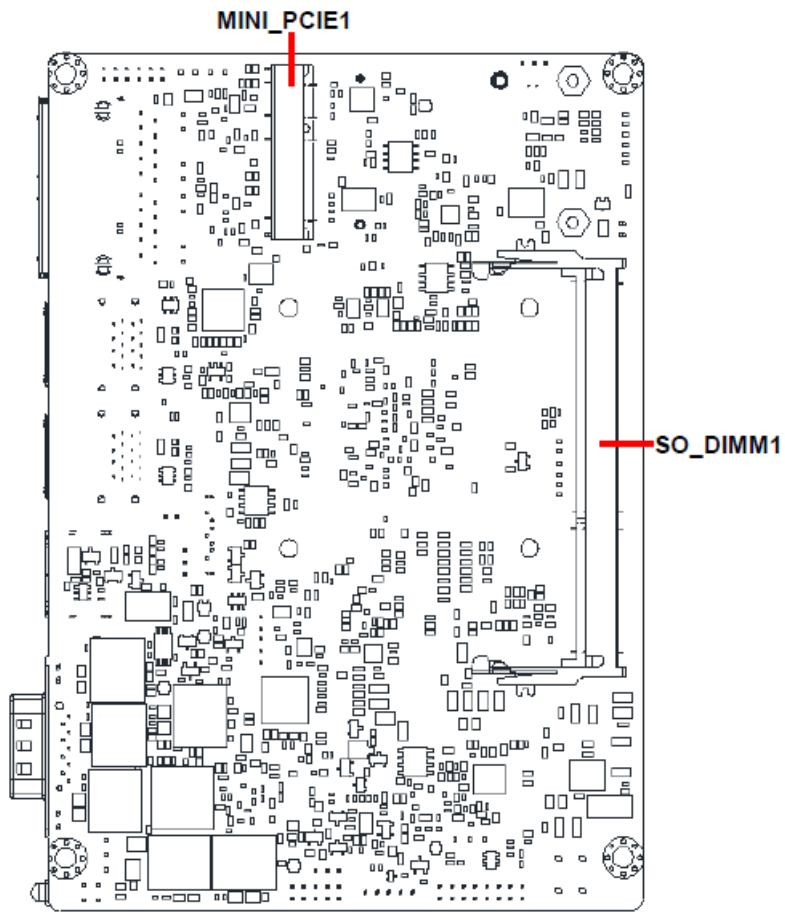
2.2 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip. To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.
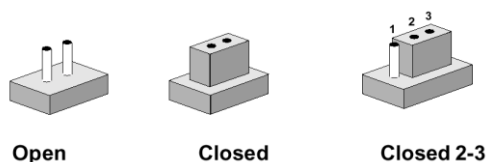
The jumper settings are schematically depicted in this manual as follows:

A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

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.

The following tables list the function of each of the board's jumpers and connectors.

Jumpers

Label	Function	Note
JPCMOS1	Clear CMOS	3 x 1 header, pitch 2.00 mm
JRI1	Serial port 1 pin9 signal select	3 x 2 header, pitch 2.00 mm
JAT1	AT/ATX Input power select	3 x 1 header, pitch 2.00 mm
JBKL_SEL1	LCD backlight brightness adjustment	3 x 1 header, pitch 2.00 mm

Connectors

Label	Function	Note
BT1	Battery connector	2 x 1 wafer, pitch 1.25 mm
CPU_FAN1	CPU fan connector	4 x 1 wafer, pitch 2.54 mm
JAUDIO1	Audio connector	6 x 2 header, pitch 2.00 mm
JBKL1	LCD inverter connector	5 x 1 wafer, pitch 2.00 mm

		Matching Connector: JST PHR-5
J422_485	Serial port 2 in RS-422/485 mode	3 x 2 header, pitch 2.00 mm
COM1	Serial port 1 connector	D-sub 9-pin, male (Only for RS232)
JCOM2/3/4/5/6	Serial port 2/3/4/5/6 connector	5 x 2 header, pitch 2.00 mm
JDIO1	General purpose I/O connector	6 x 2 header, pitch 2.00 mm
JFP1	Miscellaneous setting connector	5 x 2 header, pitch 2.00 mm
JLPC1	Low pin count interface	5 x 2 header, pitch 2.00 mm
JLVDS1	LVDS connector	20 x 2 header, pitch 1.25 mm Matching Connector: Hirose DF13-40DS-1.25C
JTOUCH1	Touch Panel connector	5 x 1 wafer, pitch 2.00 mm
USB12/34	On-board connector for USB3.0 x 4	
H_JUSB1	On-board header for USB2.0	5 x 2 header, pitch 2.00 mm
JEC_ROM1	EC Debug connector	4 x 2 header, pitch 2.00 mm
LAN1/2	RJ-45 Ethernet connector x 2	
LED1	HDD/Power LED indicator	
PWR1	Power connector	2 x 2 wafer, pitch 4.20 mm
SATA_PWR1	SATA power header	2 x 1 wafer, pitch 2.00 mm
SATA1	Serial ATA connector 1	
JVGA1	VGA header (optional)	8 x 2 wafer, pitch 2.00 mm
JSPI1	BIOS SPI header	4 x 2 header, pitch 2.00 mm
JBZ1	PC Buzzer header	2 x 1 wafer, pitch 2.00 mm
HDMI1	HDMI connector	
MINI_PCIE1/2	Mini-PCI connector 1/2	
SO_DIMM1	DDR3 SODIMM connector	

2.3 Setting Jumpers & Connectors

2.3.1   AT/ATX Input power select (JAT1)

AT*

1

ATX

1
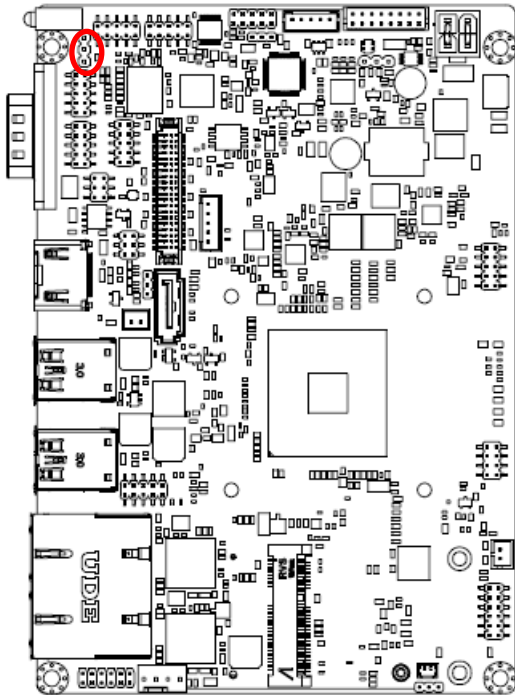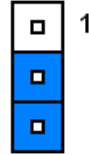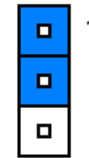
* Default

2.3.2   Serial port 1 pin9 signal select (JRI1)

Ring*

5

1

+5V

5

1

+12V

5

1
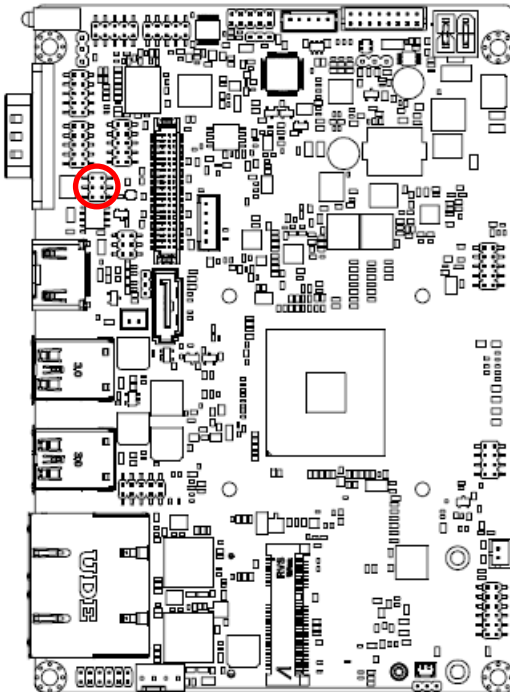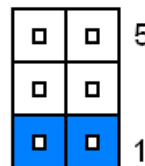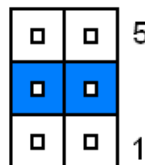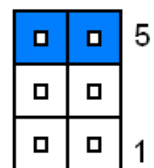
* Default

2.3.3 Clear CMOS (JPCMOS1)

Protect*

1

Clear CMOS

1
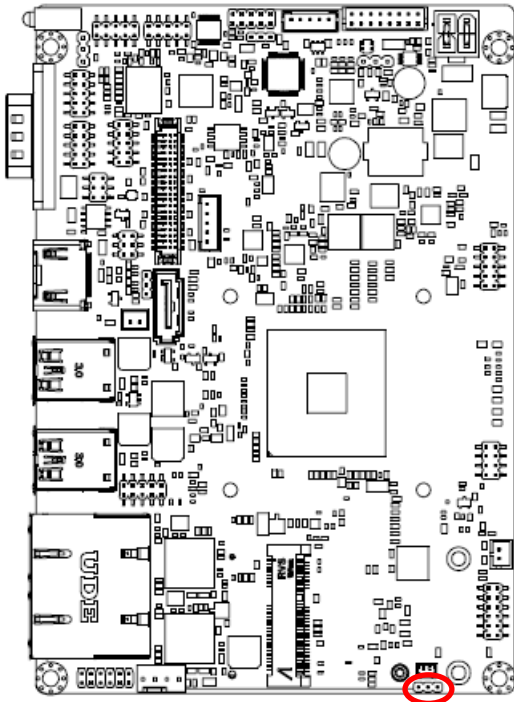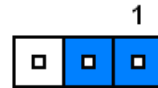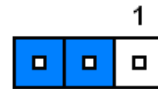
 ***Default**

2.3.4 LCD backlight brightness adjustment (JBKL_SEL1)

PWM*

1

DC

1
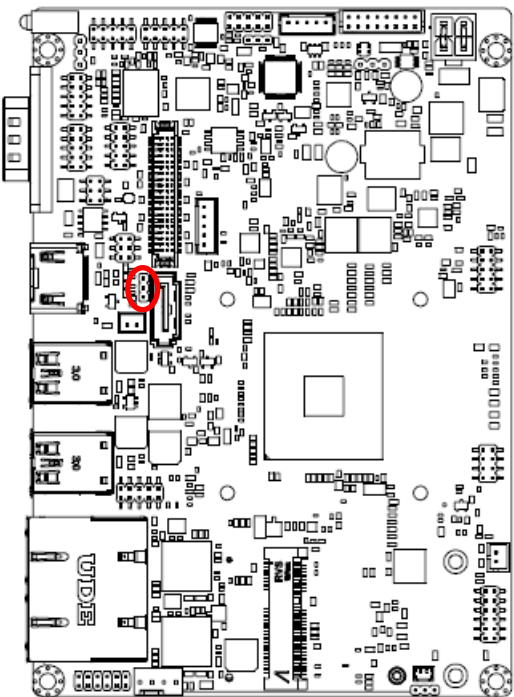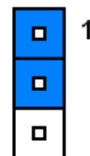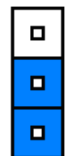
 ***Default**

2.3.5   LCD Inverter connector (JBKL1)
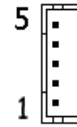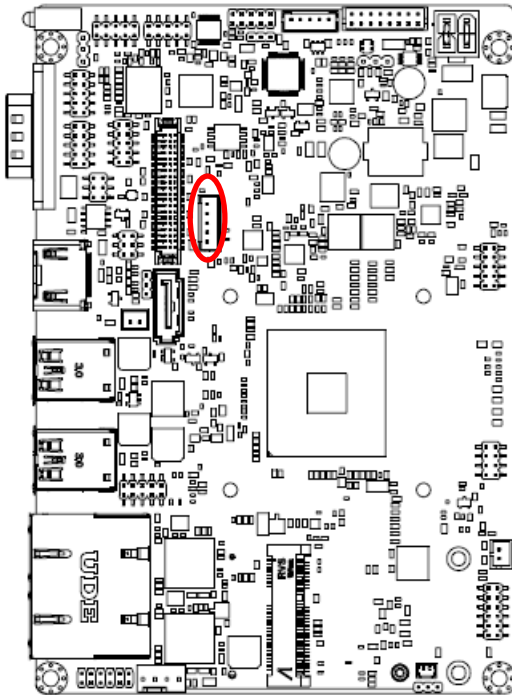
Signal	PIN
+5V	5
VBRIGHT	4
BKLEN	3
GND	2
+12V	1

2.3.6   CPU fan connector (CPU_FAN1)
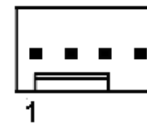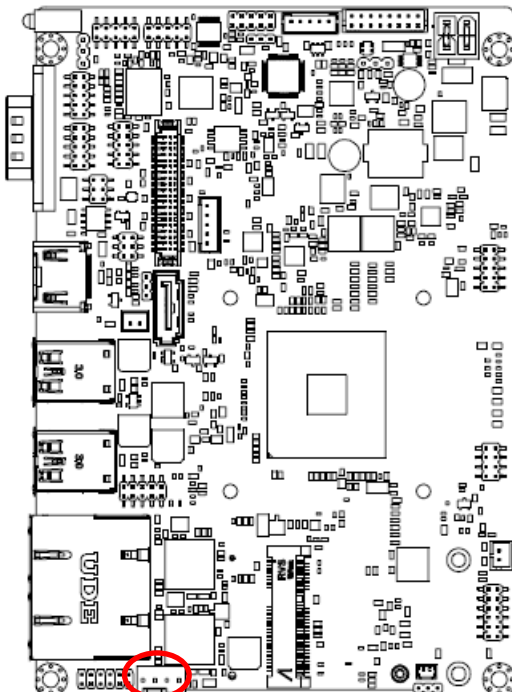
Signal	PIN
GND	1
+12V	2
EC_TACH0	3
FAN_PWM0	4

2.3.7 Serial port 1 connector (COM1)
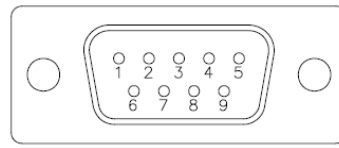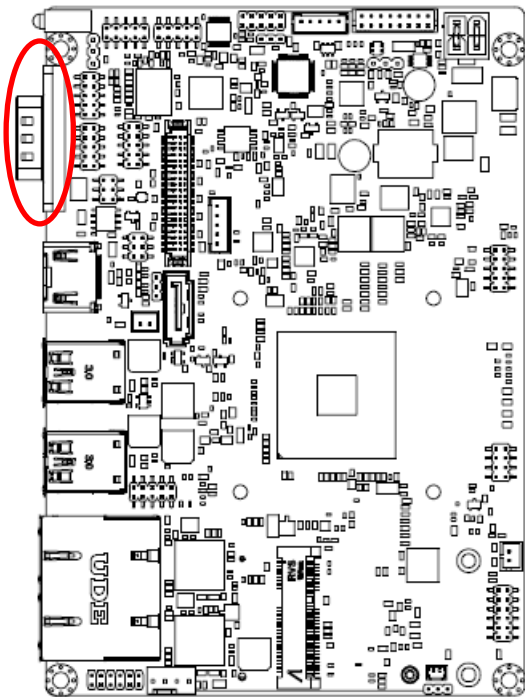
Signal	PIN	PIN	Signal
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5		

2.3.8 Serial port 2/6 connector (JCOM2/JCOM 6)
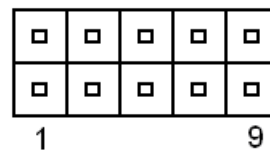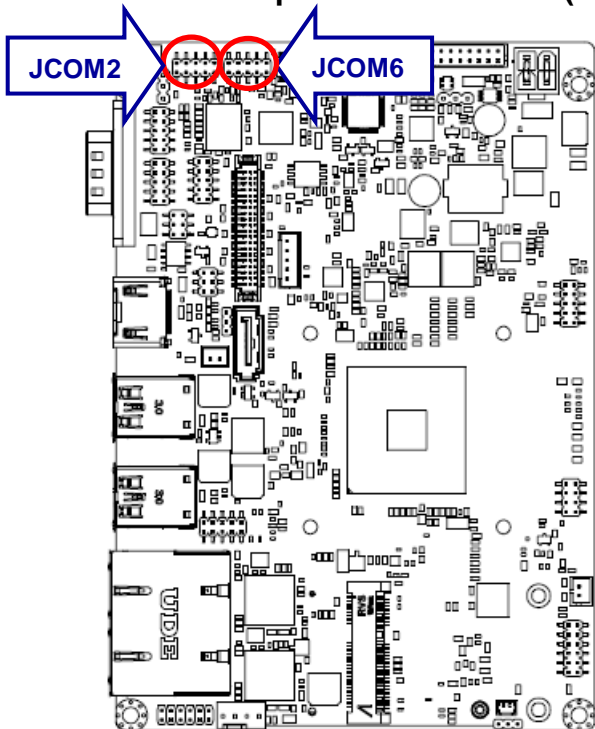
Signal	PIN	PIN	Signal
NDCD#	1	2	NRXD
NTXD	3	4	NDTR#
GND	5	6	NDSR#
NRTS#	7	8	NCTS#
NRI#	9	10	NC

2.3.9   Serial port 3/4/5 connector (JCOM3/JCOM4/JCOM5)
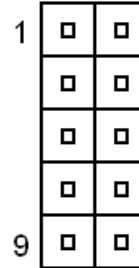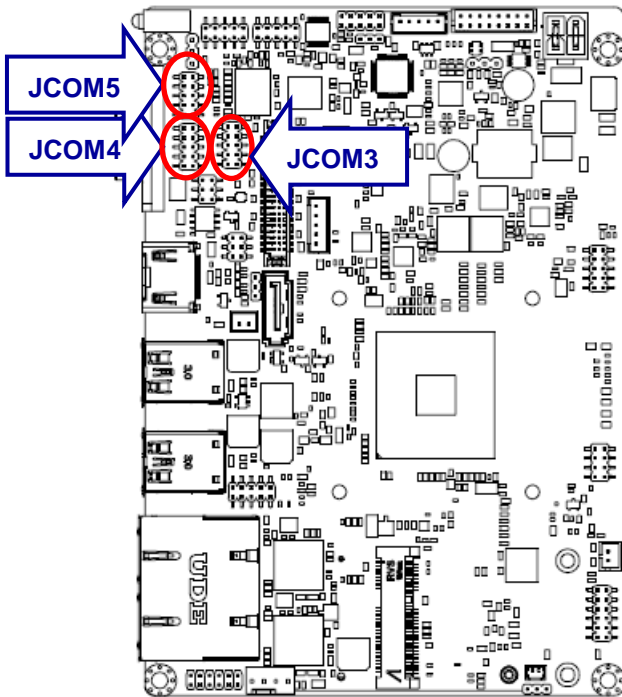
Signal	PIN	PIN	Signal
NDCD#	1	2	NRXD
NTXD	3	4	NDTR#
GND	5	6	NDSR#
NRTS#	7	8	NCTS#
NRI#	9	10	NC

2.3.10   Serial port 2 in RS-422/485 mode (J422_485)
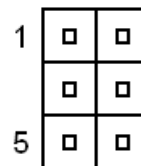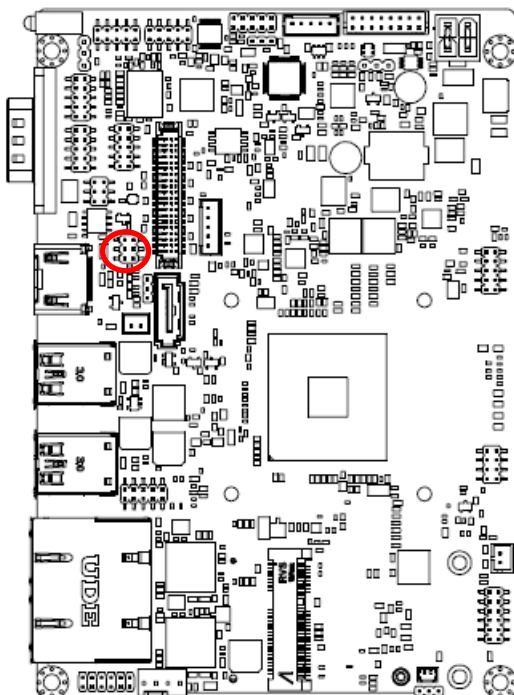
Signal	PIN	PIN	Signal
485TX2-	1	2	485RX2-
485TX2+	3	4	485RX2+
+5V	5	6	GND

2.3.11 General purpose I/O connector (JDIO1)
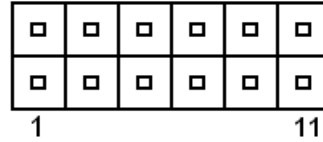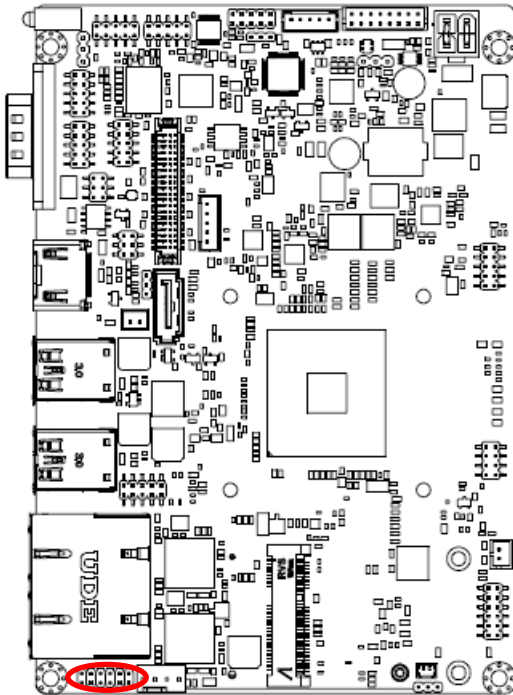
Signal	PIN	PIN	Signal
DIO_GP20	1	2	DIO_GP10
DIO_GP21	3	4	DIO_GP11
DIO_GP22	5	6	DIO_GP12
DIO_GP23	7	8	DIO_GP13
SMB_CLK_MAIN	9	10	SMB_DATA_MAIN
GND	11	12	+5V

2.3.12 Touch Panel connector (JTOUCH1)
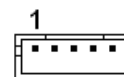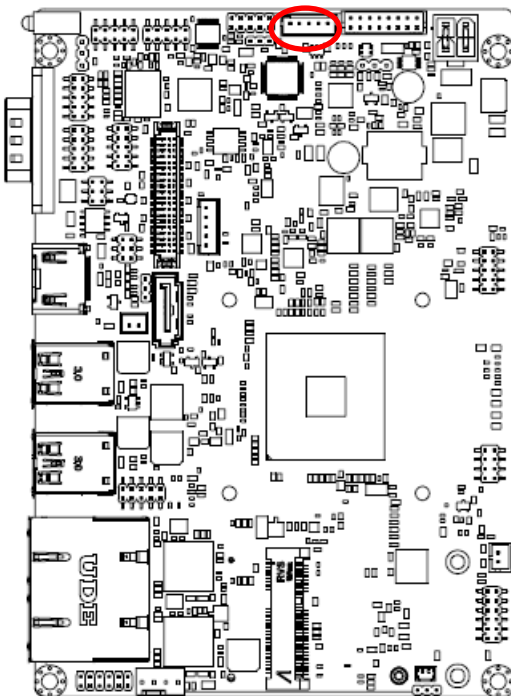
Signal	PIN
THX+	1
THX-	2
THPROBE_R	3
THY+	4
THY-	5

2.3.13　SATA Power header (SATA_PWR1)
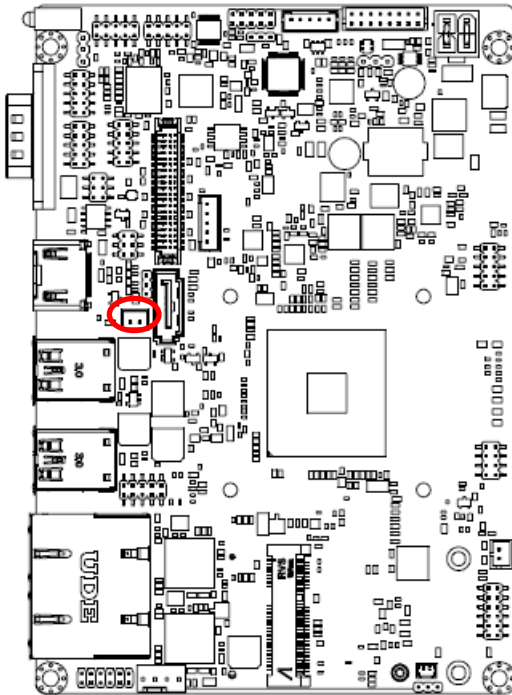
Signal	PIN
GND	1
SATA_PWR	2

2.3.14　Power connector (PWR1)
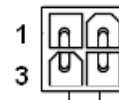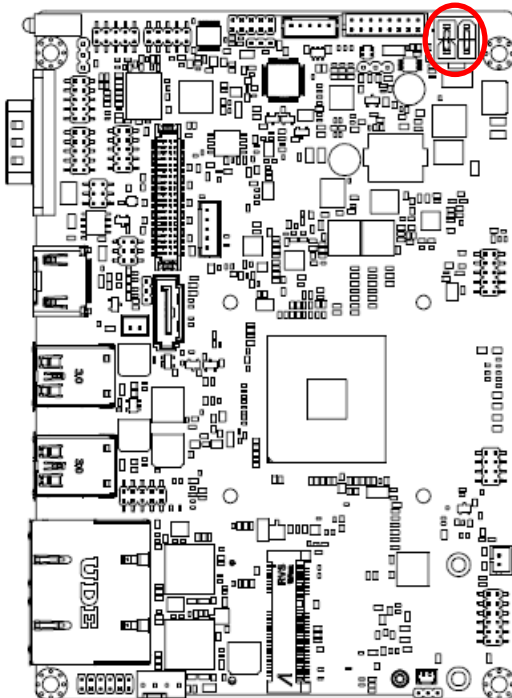
Signal	PIN	PIN	Signal
GND	1	2	GND
+26V	3	4	+26V

2.3.15 EC Debug connector (JEC_ROM1)
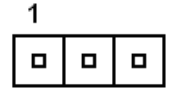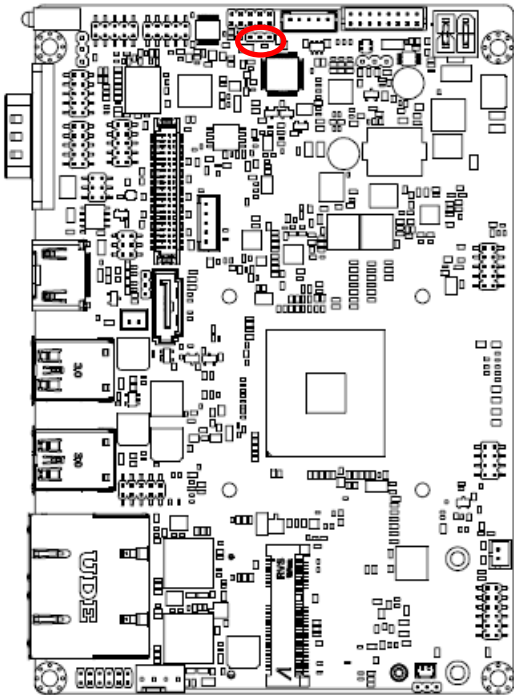
Signal	PIN
EC_SMBCLK	1
EC_SMBDATA	2
GND	3

2.3.16 On-board header for USB2.0 (H_JUSB1)
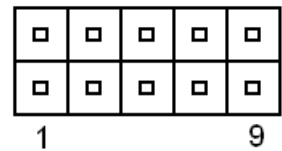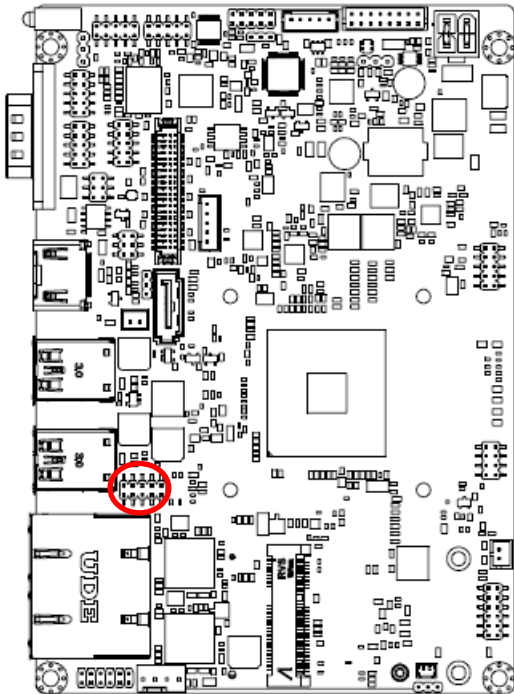
Signal	PIN	PIN	Signal
USBVCC_HSIC12	1	2	GND
HSIC_DN_2	3	4	GND
HSIC_DP_2	5	6	HSIC_DP_1
GND	7	8	HSIC_DN_1
GND	9	10	USBVCC_HSIC12

2.3.17 LVDS connector (JLVDS1)
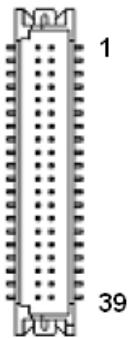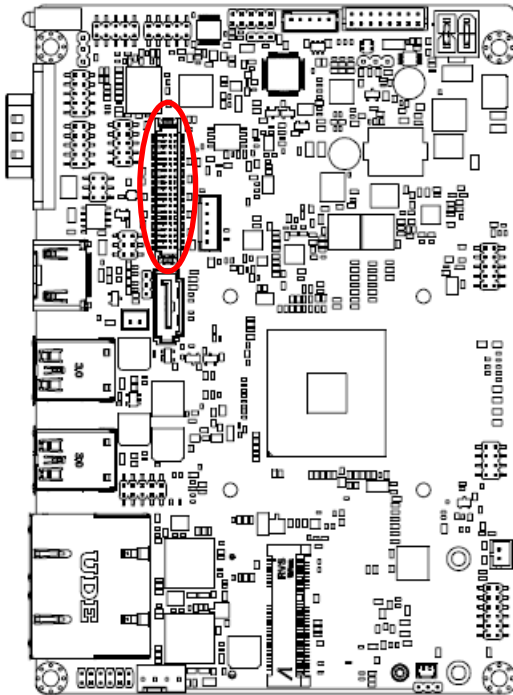
Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
NC	6	5	NC
GND	8	7	GND
LVDS_DATA0_P	10	9	LVDS_DATA1_P
LVDS_DATA0_N	12	11	LVDS_DATA1_N
GND	14	13	GND
LVDS_DATA2_P	16	15	LVDS_DATA3_P
LVDS_DATA2_N	18	17	LVDS_DATA3_N
GND	20	19	GND
LVDS_DATA4_P	22	21	LVDS_DATA5_P
LVDS_DATA4_N	24	23	LVDS_DATA5_N
GND	26	25	GND
LVDS_DATA6_P	28	27	LVDS_DATA7_P
LVDS_DATA6_N	30	29	LVDS_DATA7_N
GND	32	31	GND
LVDS_CLK1_P	34	33	LVDS_CLK2_P
LVDS_CLK1_N	36	35	LVDS_CLK2_N
GND	38	37	GND
+12V	40	39	+12V

2.3.18　Miscellaneous setting connector (JFP1)
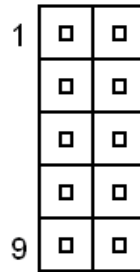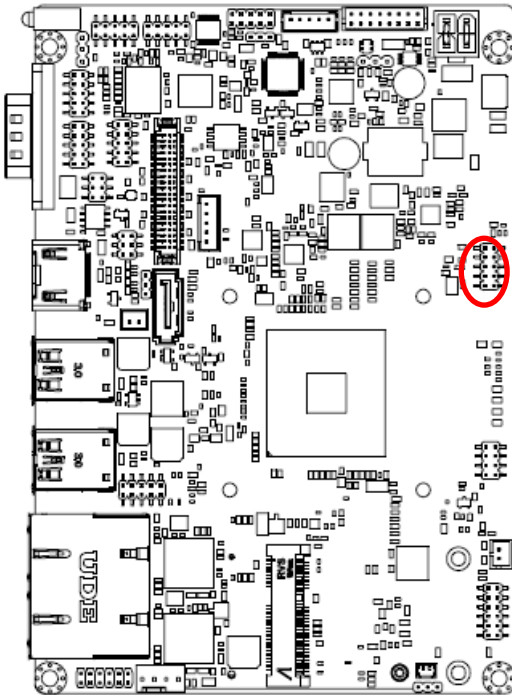
Signal	PIN
PWBT	1
	2
RST#	3
	4
PWR-LED+	5
PWR-LED-	6
HDD-LED-	7
HDD-LED+	8
NC	9
	10

2.3.19　BIOS SPI header (JSPI1)
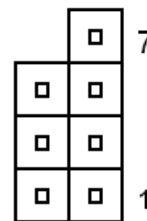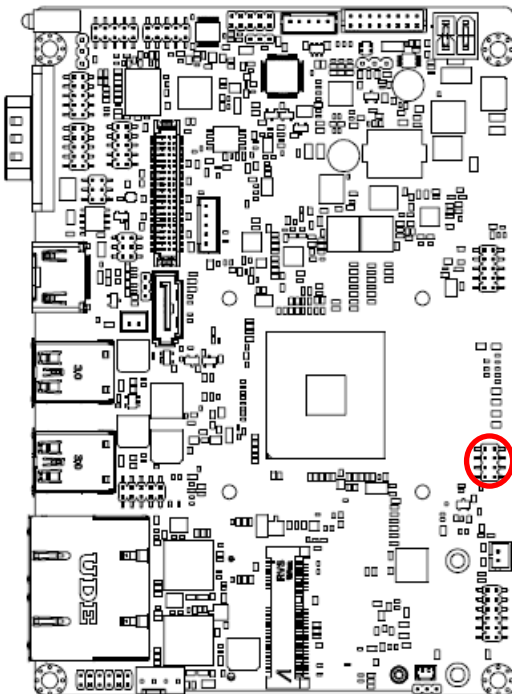
Signal	PIN	PIN	Signal
		7	SPI_HOLD#
SPI_MOSI	6	5	SPI_MISO
CPI_CLK	4	3	SPI_CS#0
GND	2	1	+1.8VSB

2.3.20 PC Buzzer header (JBZ1)
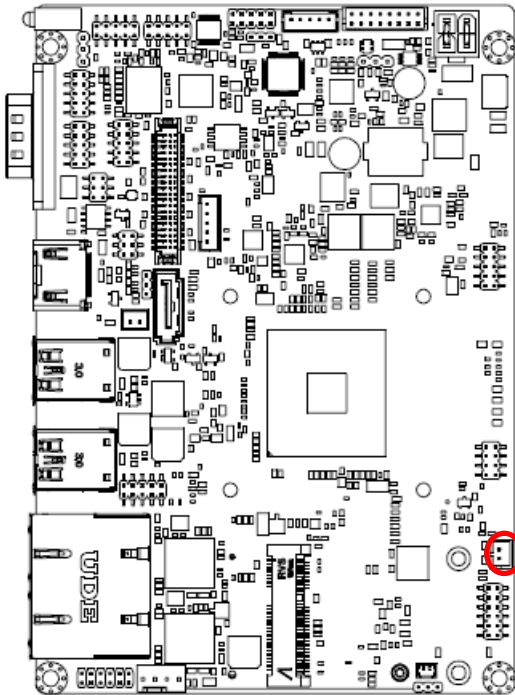
Signal	PIN
+5V	2
SOC_SPKR_R	1

2.3.21 Battery connector (BT1)
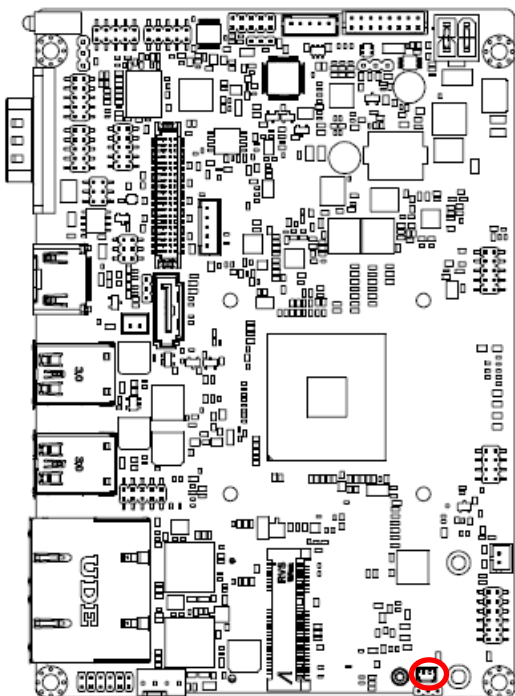
Signal	PIN
+RTCBATT	1
GND	2

2.3.22   Audio connector (JAUDIO1)
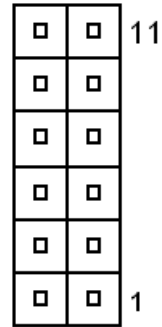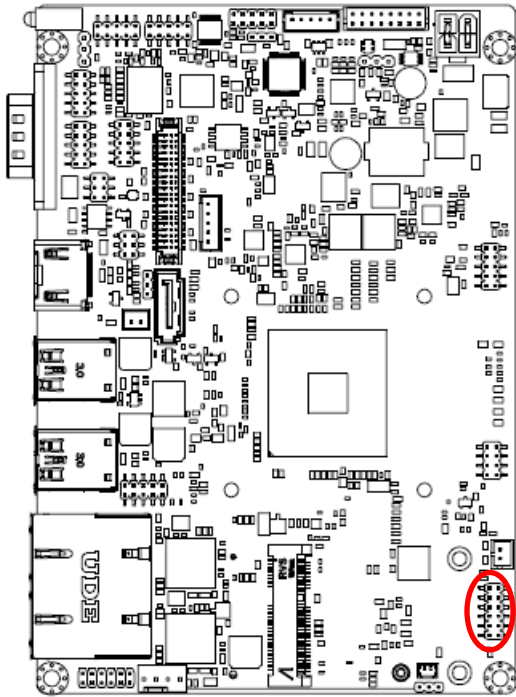
Signal	PIN	PIN	Signal
HD_AGND	12	11	MIC1-JD
LINE1-JD	10	9	FRONT-JD
MIC1-L-IN	8	7	MIC1-R-IN
LIN1-L-IN	6	5	LINE1-R-IN
HD_AGND	4	3	HD_AGND
FRONT-L-OUT	2	1	FRONT-R-OUT

2.3.22.1 Signal Description – Audio connector (JAUDIO1)

Signal	Signal Description
LINE1-JD	AUDIO IN (LINE_RIN/LIN)sense pin
FRONT-JD	AUDIO Out(ROUT/LOUT) sense pin
MIC1-JD	MIC IN (MIC_RIN/LIN) sense pin

2.3.23   VGA header (JVGA1)
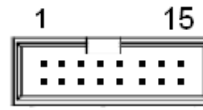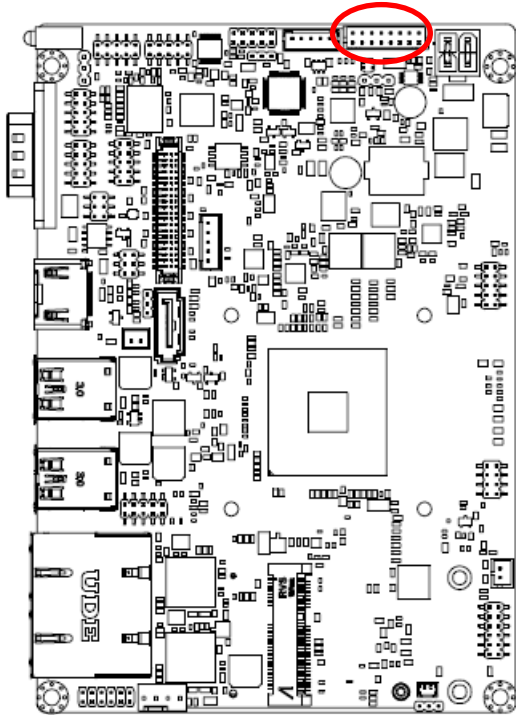
Signal	PIN	PIN	Signal
+5V	1	2	VGA_RED
GND	3	4	VGA_GREEN
NC	5	6	VGA_BLUE
VGA_DDCDAT	7	8	NC
VGA_HSYNC_R	9	10	GND
VGA_VSYNC_R	11	12	GND
VGA_DDCCLK	13	14	GND
GND	15	16	GND

2.3.24   Low pin count interface (JLPC1)
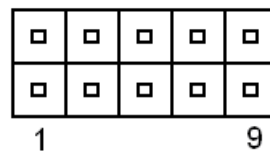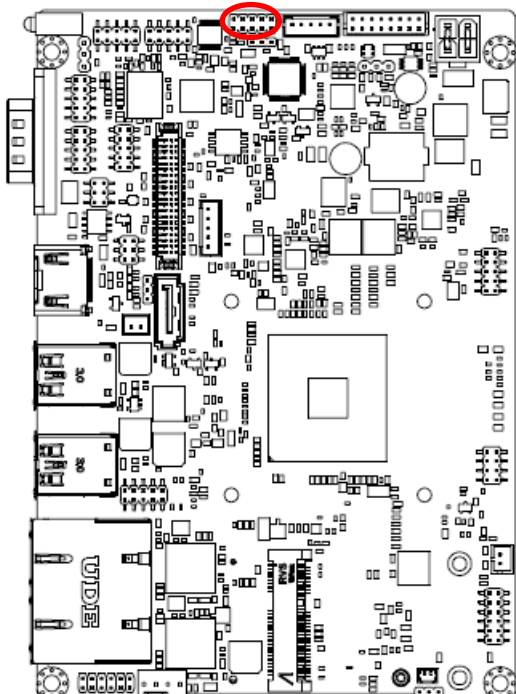
Signal	PIN	PIN	Signal
LPC_AD0	1	2	+3.3V
LPC_AD1	3	4	PLT_RST#
LPC_AD2	5	6	LPC_FRAME#
LPC_AD3	7	8	LPC_CLK_DEB
LPC_SERIRQ	9	10	GND

3.BIOS Setup

3.1 Introduction

The AMI setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

3.2 Starting Setup

The AMI BIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the NVRAM and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:
By pressing <Del> or <F2> immediately after switching the system on, or
By pressing the <Del> or <F2> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press <Del> or <F2> to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to.

Press F1 to Continue, DEL to enter SETUP

3.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Button	Description
↑	Move to previous item
↓	Move to next item
←	Move to the item in the left hand
→	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into NVRAM Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Previous Values.
F3 key	Optimized defaults
F4 key	Save & Exit Setup

- **Navigating Through The Menu Bar**

  Use the left and right arrow keys to choose the menu you want to be in.

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

- **To Display a Sub Menu**

  Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>.   A "➢" pointer marks all sub menus.

3.4 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

3.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the NVRAM settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

3.6 BIOS setup

Once you enter the Aptio Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

3.6.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.

```
           Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
  Main  Advanced  Chipset  Security  Boot  Save & Exit

    BIOS Information                                        Choose the system default
    BIOS Vendor              American Megatrends            language
    Core Version             5.11
    Compliancy               UEFI 2.4; PI 1.3
    Project Version          1ASBI 0.29 x64
    Build Date and Time      10/31/2017 13:51:10
    Access Level             Administrator
    EC 8528 Firmware         07
    BIOS Name                EMBWA006

    System Language          [English]
  ▶ Intel RC Version

    System Date              [Tue 10/31/2017]             ↔: Select Screen
    System Time              [15:24:03]                   ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



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```

```
           Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
  Main

    Intel RC Version

    CPU Configuration
    Microcode Patch          408
    Braswell SoC             SocD1

    Memory Information
    Total Memory             2048 MB (LPDDR3)

    GOP Information
    Intel(R) GOP Driver      [8.0.1038]

    TXE Information
    Sec RC Version           00.05.00.00                  ↔: Select Screen
    TXE FW Version           02.00.02.2092                ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



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```

3.6.1.1 System Language
This option allows choosing the system default language.

3.6.1.2 System Date
Use the system date option to set the system date. Manually enter the day, month and year.

3.6.1.3 System Time
Use the system time option to set the system time. Manually enter the hours, minutes and seconds.

Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

3.6.2 Advanced Menu
This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.

```
         Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Main  Advanced  Chipset  Security  Boot  Save & Exit

  ▶ ACPI Settings                                    System ACPI Parameters.
  ▶ IT8528 Super IO Configuration
  ▶ EC 8528 HW monitor
  ▶ S5 RTC Wake Settings
  ▶ CPU Configuration
  ▶ SATA Configuration
  ▶ Network Stack Configuration
  ▶ CSM Configuration
  ▶ USB Configuration


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


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```

3.6.2.1 APCI Settings

```
                    Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
         Advanced

        ACPI Settings                                               Enables or Disables BIOS ACPI
                                                                    Auto Configuration.
        Enable ACPI Auto Configuration      [Disabled]

        Enable Hibernation                  [Enabled]
        ACPI Sleep State                    [S3 (Suspend to RAM)]

        ErP Function                        [Disabled]
        PWR-On After PWR-Fail               [Off]
        Watch Dog                           [Disabled]


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



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```

Item	Options	Description
Enable ACPI Auto Configuration	Disabled**[Default]** Enabled	Enables or Disables BIOS ACPI Auto Configuration.
Enable Hibernation	Disabled Enabled**[Default]**	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM)**[Default]**	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
ErP Function	Disabled**[Default]**, Enabled	ErP Function (Deep S5).
Pwr-On After PWR-Fail	Off**[Default]** On Last state	AC loss resume.
Watch Dog	Disabled**[Default]**, 30 sec 40 sec 50 sec 1 min 2 min 10 min 30 min	Select WatchDog.

3.6.2.2 IT8528 Super IO Configuration

You can use this item to set up or change the IT8528 Super IO configuration for serial ports. Please refer to 3.6.2.2.1~ 3.6.2.2.6 for more information.

```
                    Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
       Advanced

    IT8528 Super IO Configuration                        Set Parameters of Serial Port
                                                         1 (COMA)
    Super IO Chip                    IT8528
  ▶ Serial Port 1 Configuration
  ▶ Serial Port 2 Configuration

    Super IO Chip                    F81216SEC
  ▶ Serial Port 3 Configuration
  ▶ Serial Port 4 Configuration
  ▶ Serial Port 5 Configuration
  ▶ Serial Port 6 Configuration

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

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```

Item	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC).
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD).
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME).
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COMF).

3.6.2.2.1 Serial Port 1 Configuration

```
           Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
      Advanced

   Serial Port 1 Configuration                              Enable or Disable Serial Port
                                                            (COM)
   Serial Port                     [Enabled]
   Device Settings                 IO=3F8h; IRQ=4;

   Change Settings                 [Auto]




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




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```

Item	Option	Description
Serial Port	Disabled Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=3F8h; IRQ=4; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select an optimal setting for Super IO Device.

3.6.2.2.2 Serial Port 2 Configuration

```
                    Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
         Advanced

     Serial Port 2 Configuration                                Enable or Disable Serial Port
                                                                (COM)
     Serial Port                      [Enabled]
     Device Settings                  IO=2F8h; IRQ=3;

     Change Settings                  [Auto]

     UART 232 422 485                 [UART 232]



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



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```

Item	Option	Description
Serial Port	Disabled Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=2F8h; IRQ=3; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select an optimal setting for Super IO Device.
UART 232 422 485	UART 232**[Default]** UART 422 UART 485	Change the Serial Port as RS232/422/485.

3.6.2.2.3 Serial Port 3 Configuration

```
              Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
      Advanced

   Serial Port 3 Configuration                              Enable or Disable Serial Port
                                                            (COM)
   Serial Port                      [Enabled]
   Device Settings                  IO=3E8h; IRQ=10;

   Change Settings                  [Auto]




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




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```

Item	Option	Description
Serial Port	Disabled Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=3E8h; IRQ=10; IO=3F8h; IRQ=3,4,5,6,7,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for Super IO Device.

3.6.2.2.4 Serial Port 4 Configuration

```
                    Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
        Advanced

 Serial Port 4 Configuration                                    Enable or Disable Serial Port
                                                                (COM)
 Serial Port                             [Enabled]
 Device Settings                         IO=2E8h; IRQ=11;

 Change Settings                         [Auto]




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




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```

Item	Option	Description
Serial Port	Disabled Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=2E8h; IRQ=11; IO=3F8h; IRQ=3,4,5,6,7,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for Super IO Device.

3.6.2.2.5 Serial Port 5 Configuration
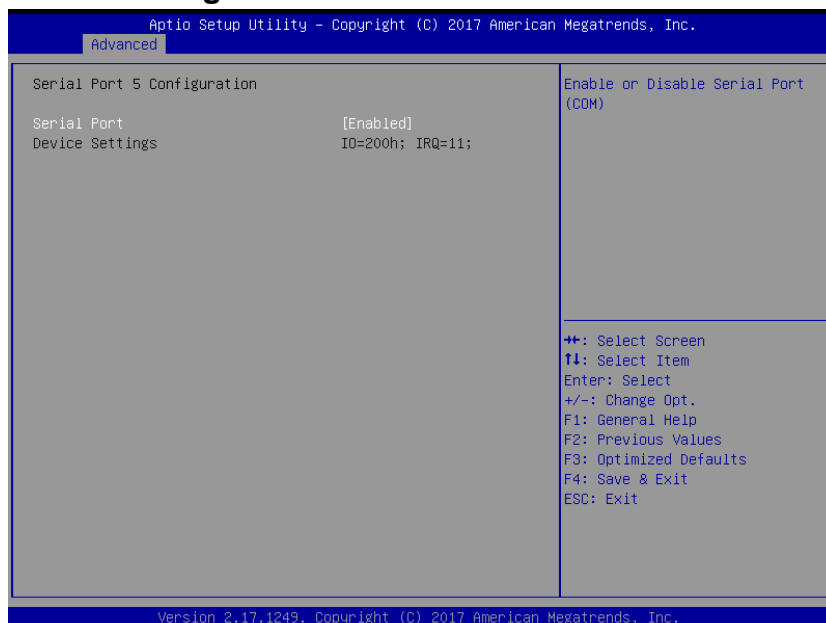
```
                    Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
        Advanced

 Serial Port 5 Configuration                                    Enable or Disable Serial Port
                                                                (COM)
 Serial Port                             [Enabled]
 Device Settings                         IO=200h; IRQ=11;




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




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```

Item	Option	Description
Serial Port	Disabled Enabled**[Default]**	Enable or Disable Serial Port (COM).

3.6.2.2.6 Serial Port 6 Configuration
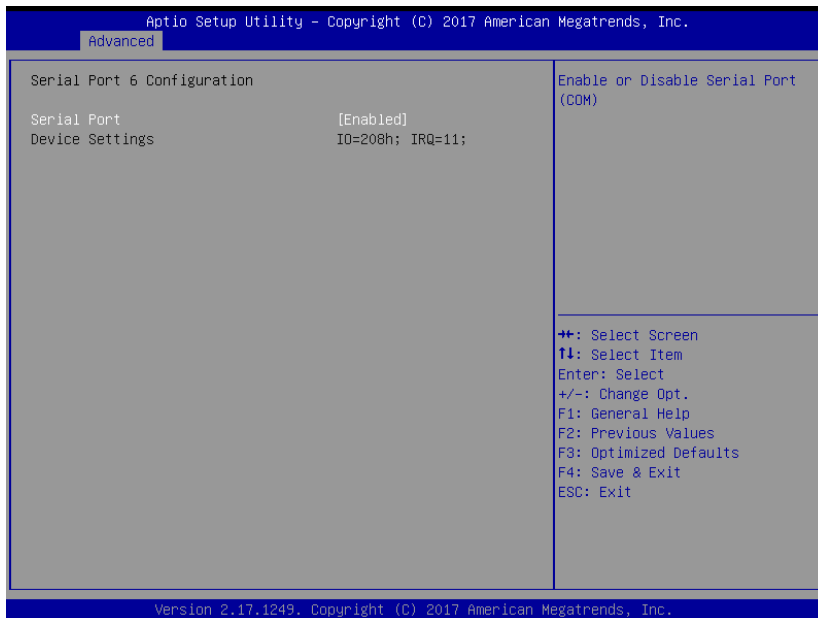
Item	Option	Description
Serial Port	Disabled Enabled**[Default]**	Enable or Disable Serial Port (COM).

3.6.2.3 H/W Monitor
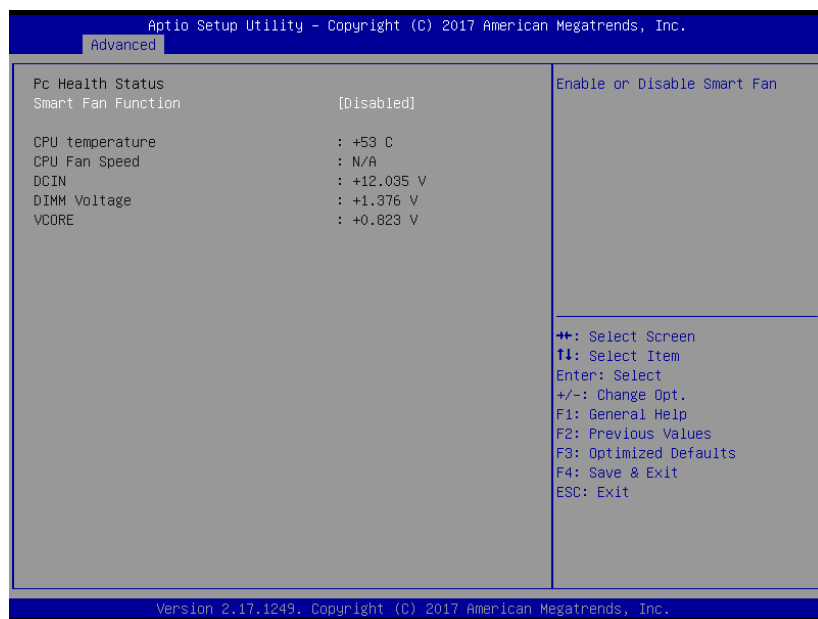
Item	Options	Description
Smart Fan Function	Enabled, Disabled**[Default]**	Enables or Disables Smart Fan.

3.6.2.4 S5 RTC Wake Settings
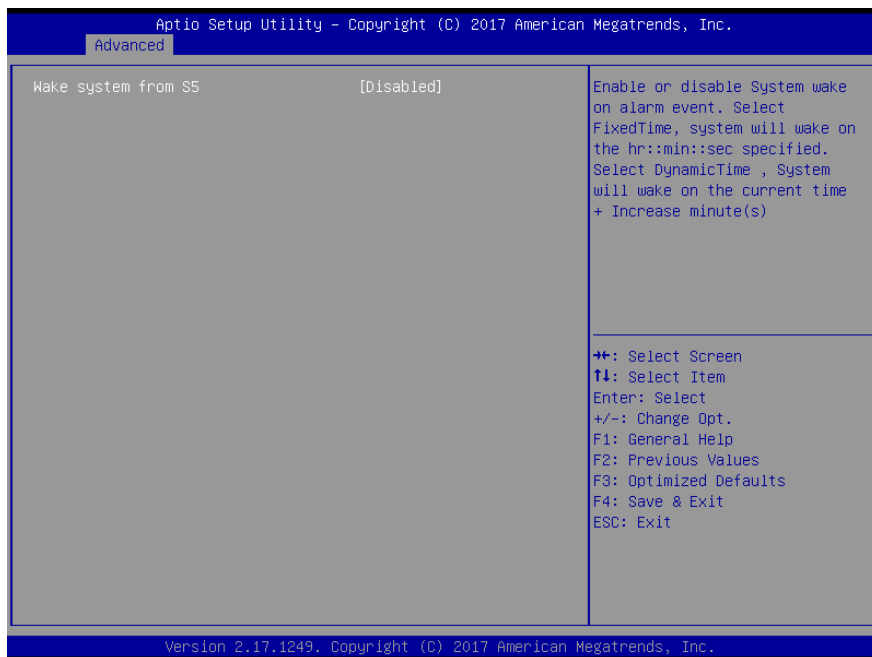
Item	Options	Description
Wake system from S5	Disabled**[Default]**, Fixed Time Dynamic Time	Enable or disable System wake on alarm event. Select Fixed Time, system will wake on the hr::min::sec specified. Select Dynamic Time, System will wake on the current time + Increase minute(s).

3.6.2.5 CPU Configuration

Use the CPU configuration menu to view detailed CPU specification and configure the CPU.

Item	Options	Description
Intel Virtualization Technology	Disabled Enabled**[Default]**	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
Power Technology	Disabled Energy Efficient Custom**[Default]**	Enable the power management features.
EIST	Disabled Enabled**[Default]**	Enable/Disable Intel SpeedStep.
Turbo Mode	Disabled Enabled**[Default]**	Turbo Mode.
P-STATE Coordination	HW_ALL**[Default]** SW_ALL SW_ANY	Change P-STATE Coordination type.
Package C State limit	HW_ALL**[Default]** SW_ALL SW_ANY	Change P-STATE Coordination type.

3.6.2.5.1 Socket 0 CPU Information

```
             Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
       Advanced

      Socket 0 CPU Information

      Intel(R) Pentium(R) CPU N3710 @ 1.60GHz
      CPU Signature                 406C4
      Microcode Patch               408
      Max CPU Speed                 1600 MHz
      Min CPU Speed                 480 MHz
      Processor Cores               4
      Intel HT Technology           Not Supported
      Intel VT-x Technology         Supported

      L1 Data Cache                 24 kB x 4
      L1 Code Cache                 32 kB x 4
      L2 Cache                      1024 kB x 2      →←: Select Screen
      L3 Cache                      Not Present      ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit




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```

3.6.2.6   SATA Configuration

```
                    Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
        Advanced

    SATA Configuration                                           Enable/Disable SATA Device

    SATA Controller                  [Enabled]
    SATA Mode Selection              [AHCI]
    SATA Interface Speed             [Gen3]

    SATA Port0
    Not Present
    Port 0                           [Enabled]

    SATA Port1
    Not Present
    Port 1                           [Enabled]
                                                              →←: Select Screen
                                                              ↑↓: Select Item
                                                              Enter: Select
                                                              +/-: Change Opt.
                                                              F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit



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```

Item	Options	Description
SATA Controller	Disabled Enabled**[Default]**	Enable/Disable SATA Device.
SATA Mode Selection	AHCI**[Default]**	Determines how SATA controller operate.
SATA Interface Speed	Gen1 Gen2 Gen3**[Default]**	Select SATA Interface Speed, CHV A1 always with Gen 1 Speed.
Port 0/1	Disabled Enabled**[Default]**	Enable/Disable SATA Port.

3.6.2.7   Network Stack Configuration

```
                    Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
        Advanced

    Network Stack                    [Disabled]               Enable/Disable UEFI Network
                                                              Stack








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



                    Version 2.17.1249. Copyright (C) 2017 American Megatrends, Inc.
```
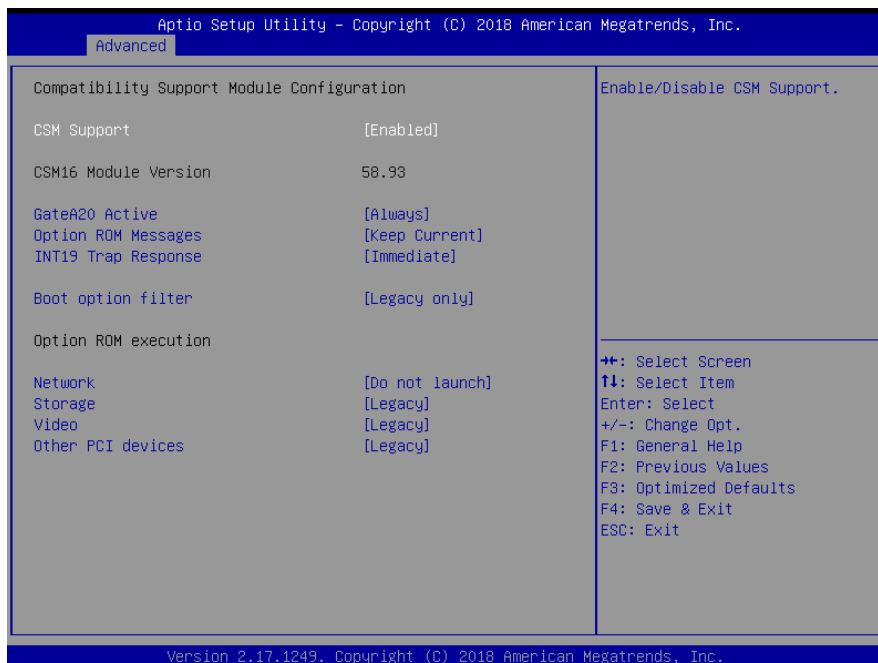
Item	Options	Description
Network Stack	Disabled**[Default]** Enabled	Enable/Disable UEFI Network Stack.

3.6.2.8 CSM Configuration

Use Win10: CSM support setting "Disabled".

```
          Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
          Advanced

  Compatibility Support Module Configuration          Enable/Disable CSM Support.

  CSM Support                        [Disabled]




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



          Version 2.17.1249. Copyright (C) 2017 American Megatrends, Inc.
```

Use Win7: CSM support setting "Enabled".

```
          Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
          Advanced

  Compatibility Support Module Configuration          Enable/Disable CSM Support.

  CSM Support                        [Enabled]

  CSM16 Module Version               58.93

  GateA20 Active                     [Always]
  Option ROM Messages                [Keep Current]
  INT19 Trap Response                [Immediate]

  Boot option filter                 [Legacy only]

  Option ROM execution

                                                      →←: Select Screen
  Network                            [Do not launch]  ↑↓: Select Item
  Storage                            [Legacy]         Enter: Select
  Video                              [Legacy]         +/-: Change Opt.
  Other PCI devices                  [Legacy]         F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit



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```

Item	Options	Description
CSM Support	Disabled Enabled**[Default]**	Enable/Disable CSM Support.
GateA20 Active	Upon Request Always**[Default]**	UPON REQUEST – GA20 can be disabled using BIOS services. ALWAYS – do not

		allow disabling GA20; this option is useful when any RT code is executed above 1MB.
Option ROM Messages	Force BIOS Keep Current**[Default]**	Set display mode for Option ROM.
INT19 Trap Response	Immediate**[Default]** Postponed	BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED – execute the trap during legacy boot.
Boot option filter	UEFI and Legacy Legacy only**[Default]** UEFI only	This option controls Legacy/UEFI ROMs priority.
Network	Do not launch**[Default]** UEFI Legacy	Controls the execution of UEFI and Legacy PXE OpROM.
Storage	Do not launch UEFI Legacy**[Default]**	Controls the execution of UEFI and Legacy Storage OpROM.
Video	Do not launch UEFI Legacy**[Default]**	Controls the execution of UEFI and Legacy Video OpROM.
Other PCI devices	Do not launch UEFI Legacy**[Default]**	Determines OpROM execution policy for devices other than Network, Storage, or Video.

3.6.2.9 USB Configuration

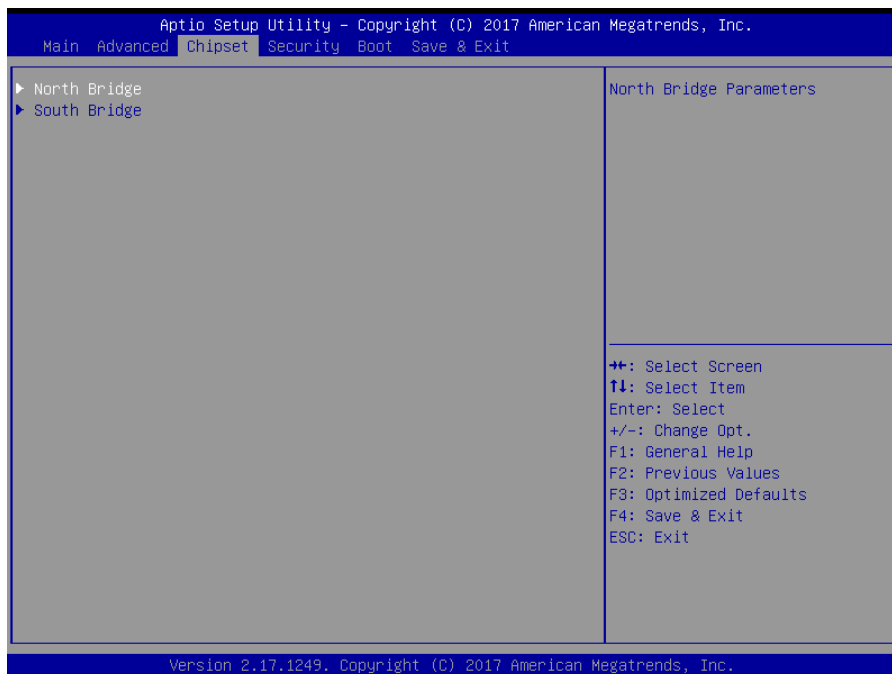The USB Configuration menu helps read USB information and configures USB settings.
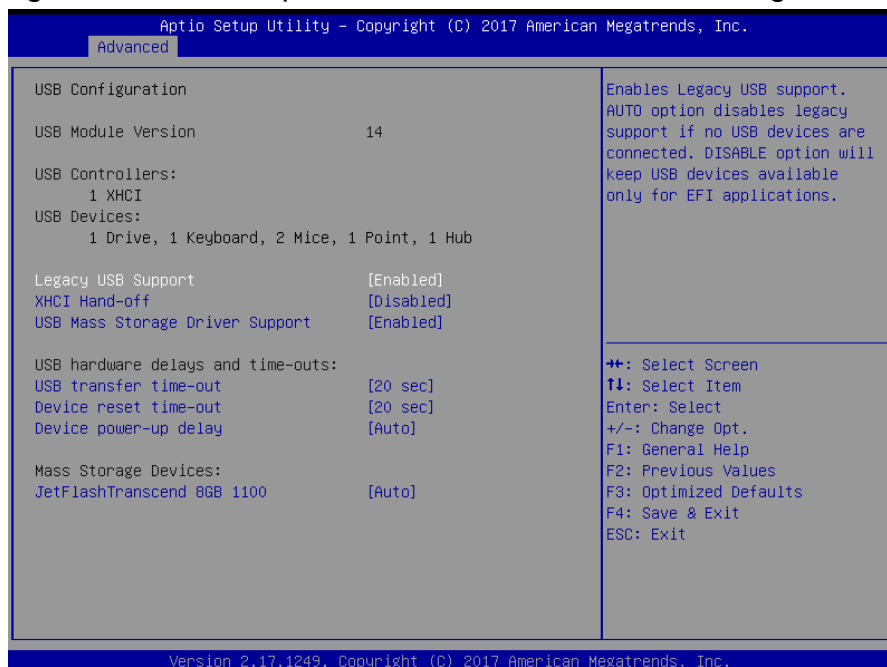
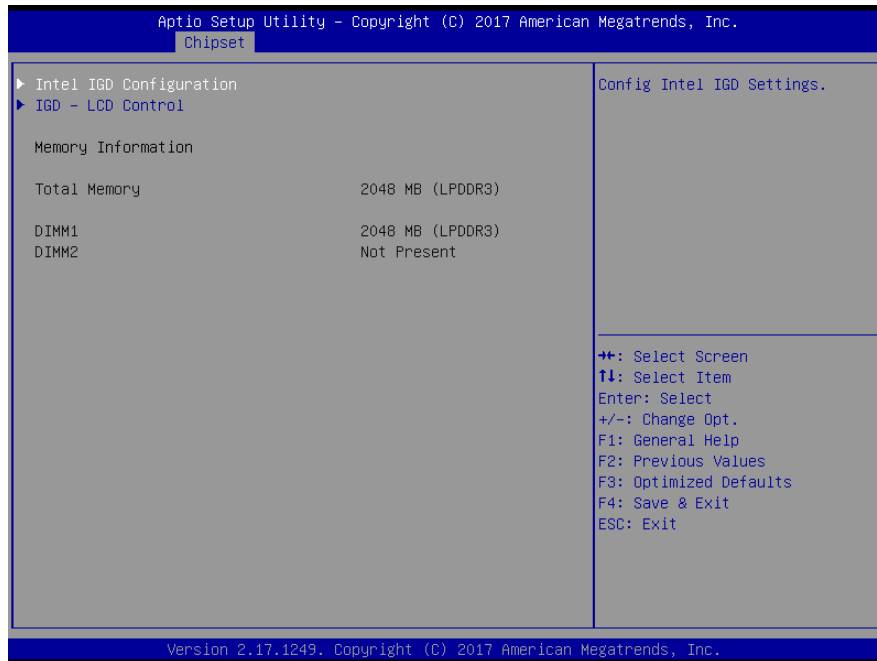| Item	Options	Description
Legacy USB Support	Enabled**[Default]** Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

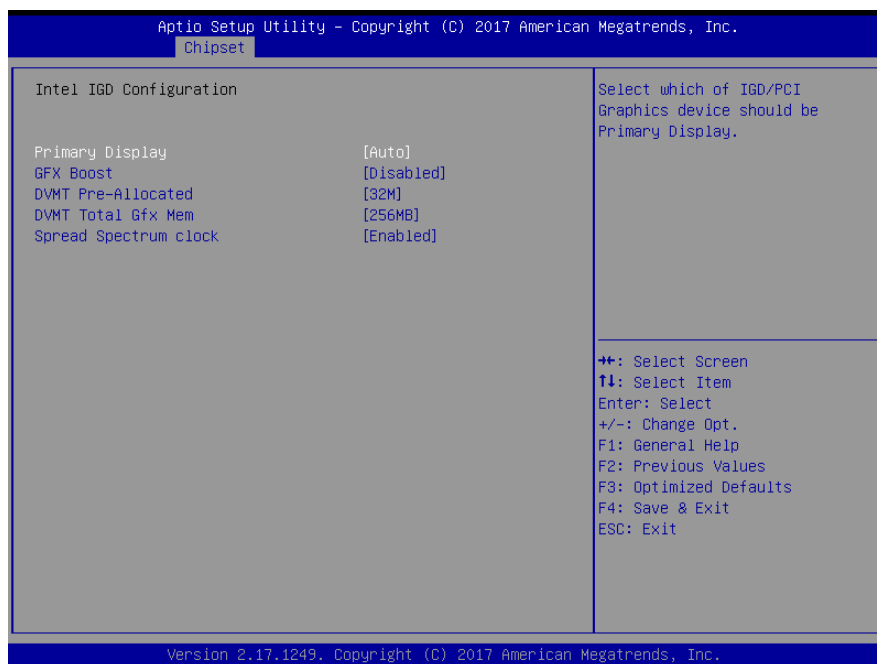|		
XHCI Hand-off	Disabled**[Default]** Enabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Disabled Enabled**[Default]**	Enable/Disable USB Mass Storage Driver Support.
USB transfer time-out	1 sec 5 sec 10 sec 20 sec**[Default]**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec 20 sec**[Default]** 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto**[Default]** Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken form Hub descriptor.
Mass Storage Devices	Auto**[Default]** Floppy Forced FDD Hard Disk CD-ROM	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.

3.6.3   Chipset
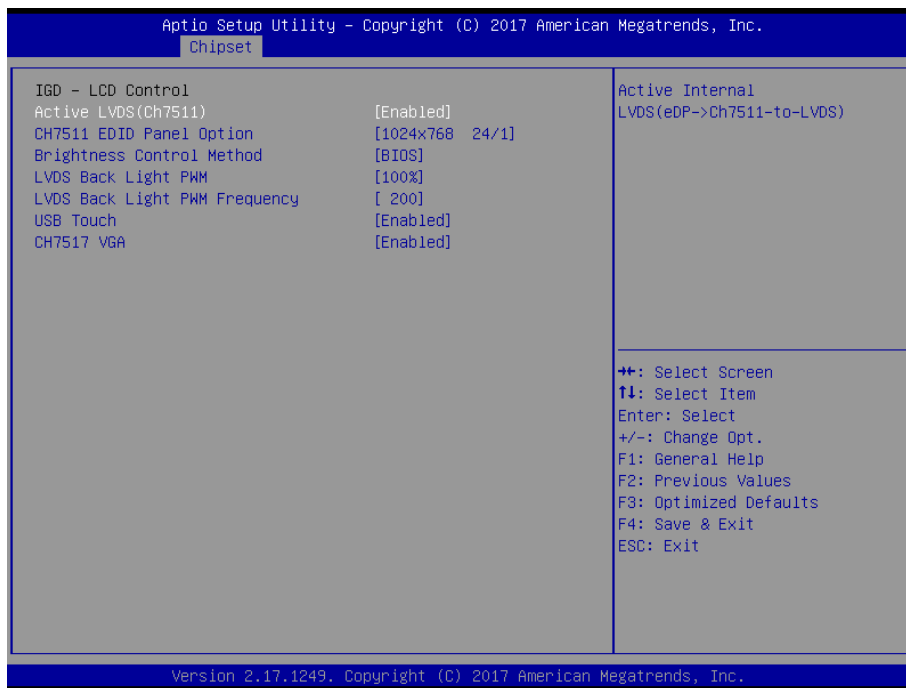
3.6.3.1   North Bridge

```
            Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
                    Chipset

▶ Intel IGD Configuration                            Config Intel IGD Settings.
▶ IGD - LCD Control

  Memory Information

  Total Memory                      2048 MB (LPDDR3)

  DIMM1                             2048 MB (LPDDR3)
  DIMM2                             Not Present


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


            Version 2.17.1249. Copyright (C) 2017 American Megatrends, Inc.
```

3.6.3.1.1 Intel IGD Configuration

```
            Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
                    Chipset

  Intel IGD Configuration                            Select which of IGD/PCI
                                                     Graphics device should be
  Primary Display              [Auto]                Primary Display.
  GFX Boost                    [Disabled]
  DVMT Pre-Allocated           [32M]
  DVMT Total Gfx Mem           [256MB]
  Spread Spectrum clock        [Enabled]




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


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```

Item	Option	Description
Primary Display	Auto**[Default]** IGD PCIe	Select which of IGD/PCI Graphics device should be Primary Display.
GFX Boost	Enabled, Disabled**[Default]**	Enable/Disable GFX Boost.
DVMT Pre-Allocated	32M**[Default]**/64M/96M128M/160M/192M/224M/256M/288M/320M/352M/384M/416M/448M/480M/512M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

|		
DVMT Total Gfx Mem	128MB 256MB**[Default]** Max	Select DVMT 5.0 Total Graphics Memory size used by the Internal Graphics Device.
Spread Spectrum clock	Enabled**[Default]**, Disabled	Enable/Disable Speed Spectrum clock.

3.6.3.1.2 IGD - LCD Control

Item	Option	Description
Active LVDS (Ch7511)	Enabled**[Default]** Disabled	Active Internal LVDS(eDP->Ch7511-to –LVDS).
CH7511 EDID Panel Option	1024x768 24/1**[Default]** 800x600 18/1 1024x768 18/1 1366x768 18/1 1024x600 18/1 1280x800 18/1 1920x1200 24/2 640x480 18/1 800x480 18/1 1920x1080 18/2 1280x1024 24/2 1440x900 18/2 1600x1200 24/2 1366x768 24/1 1920x1080 24/2 1680x1050 24/2	Port1-EDP to LVDS (Chrotel 7511) Panel EDID Option.
Brightness Control Method	BIOS**[Default]** OS Driver	LVDS Brightness Control Method. 1.BIOS 2.OS Driver.
LVDS Back Light PWM	00% 25%	Select LVDS back light PWM duty.

	50%	
	75%	
	100%**[Default]**	
LVDS Back Light PWM Frequency	200**[Default]** 300 400 500 700 1k 2k 3k 5k	Select LVDS back light PWM Frequency.
USB Touch	Enabled**[Default]** Disabled	Enable or Disable USB Touch.
CH7517 VGA	Enabled**[Default]** Disabled	Enable or Disable CH7517 VGA.

3.6.3.2 South Bridge
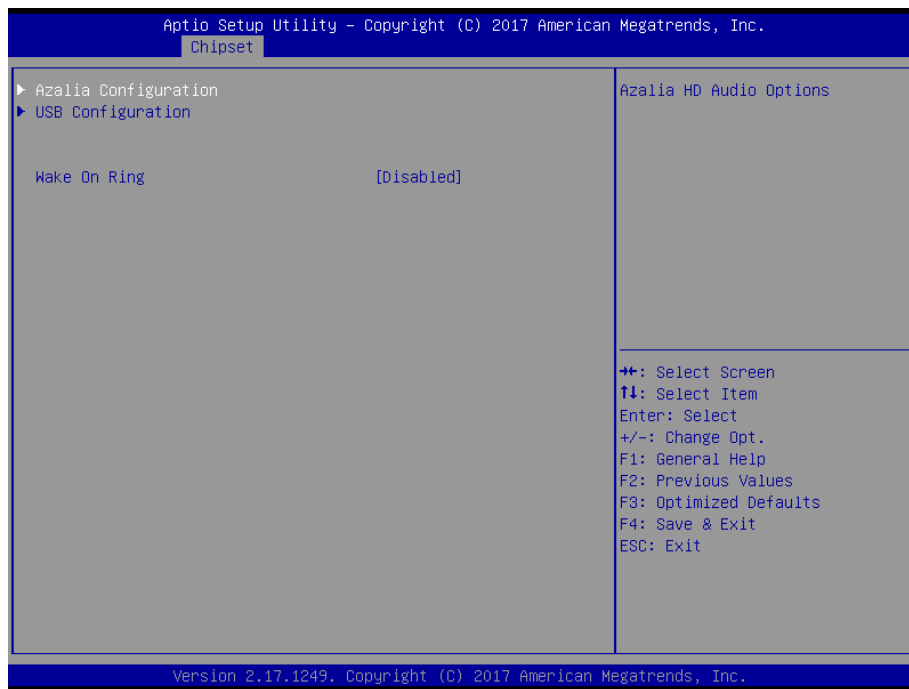
Item	Option	Description
Wake On Ring	Disabled**[Default]** Enabled	Enable/Disable Wake On Ring.

3.6.3.2.1 Azalia Configuration
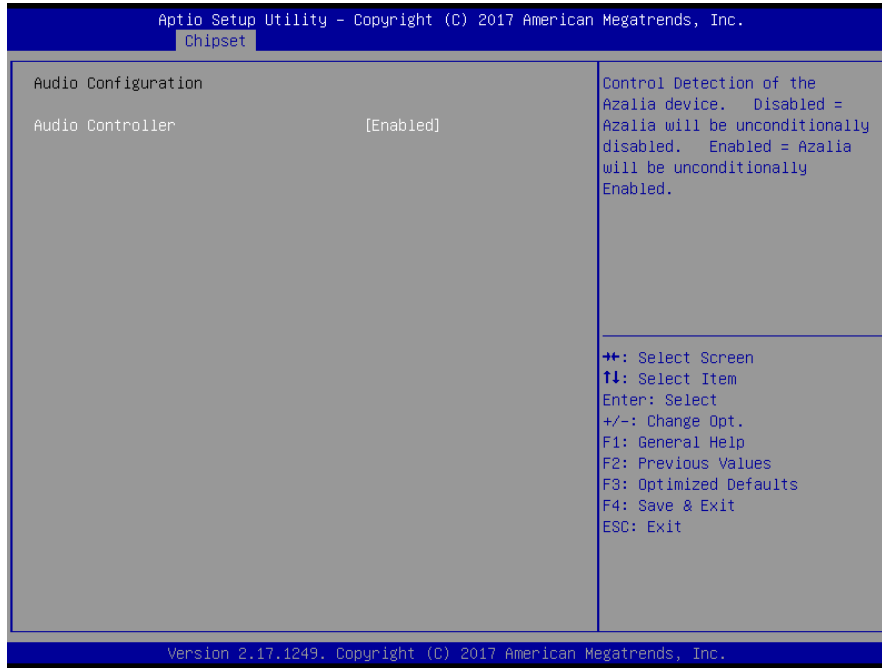
Item	Option	Description
Audio Controller	Enabled**[Default]**, Disabled	Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled.

3.6.3.2.2 USB Configuration
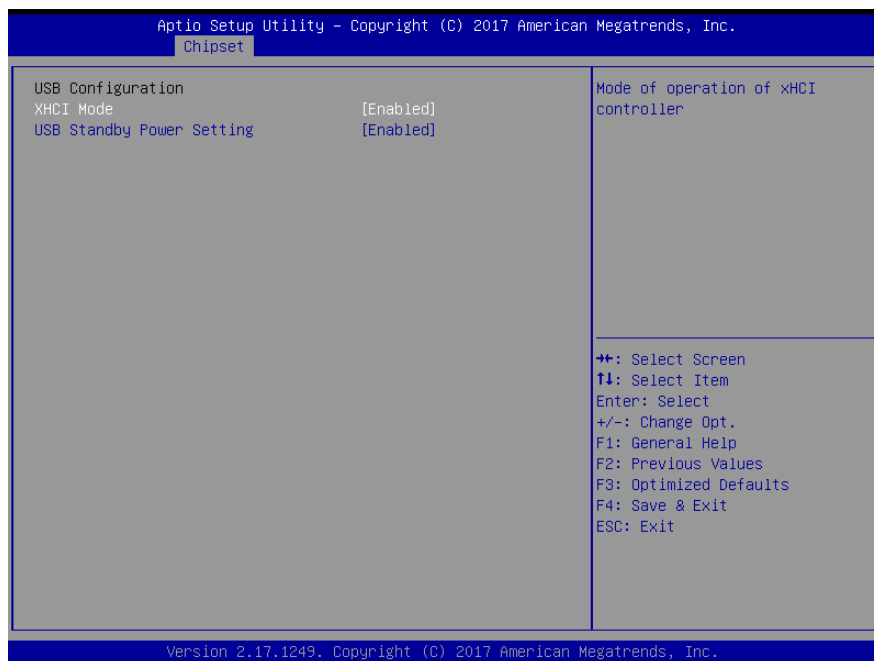
Item	Option	Description
XHCI Mode	Enabled**[Default]**, Disabled	Mode of operation of xHCI controller.
USB Standby Power Setting	Enabled**[Default]**, Disabled	Enabled/Disabled USB Standby Power.

3.6.4   Security
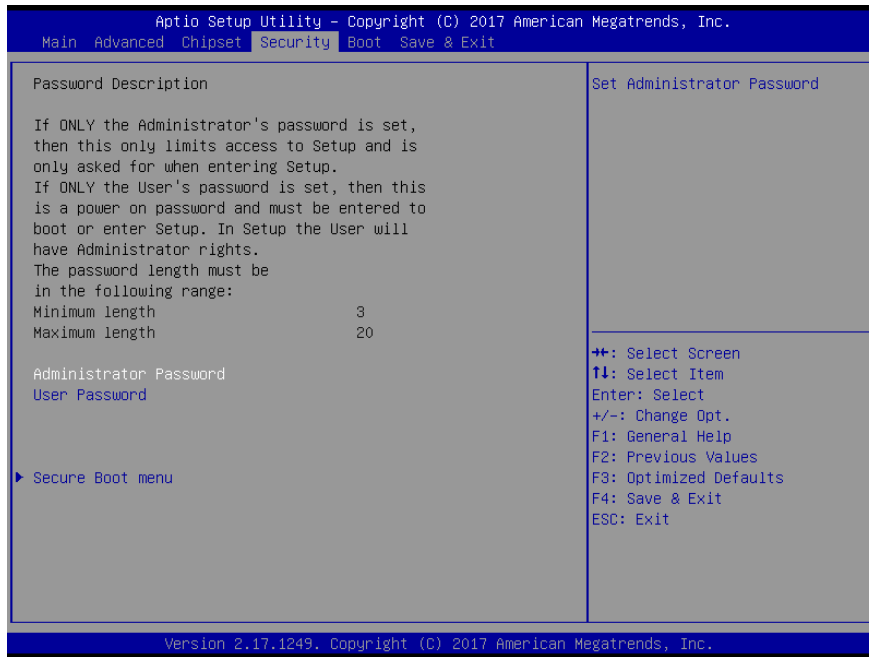
● **Administrator Password**

Set setup Administrator Password

● **User Password**

Set User Password

3.6.4.1   Secure Boot menu

```
            Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
                                 Security

     System Mode                      Setup               Secure Boot can be enabled if
     Secure Boot                      Not Active          1.System running in User mode
     Vendor Keys                      Not Active          with enrolled Platform Key(PK)
                                                          2.CSM function is disabled
     Secure Boot                      [Disabled]
     Secure Boot Mode                 [Custom]
   ▶ Key Management


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



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```

Item	Option	Description
Secure Boot	Disabled**[Default]** Enabled	Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2. CSM function is disabled.
Secure Boot Mode	Standard Custom**[Default]**	Secure Boot mode selector. 'Custom' Mode enables users to change Image Execution policy and manage Secure Boot Keys.

3.6.4.1.1 Key Management

```
            Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
                                 Security

     Provision Factory Default keys       [Disabled]     Install factory default Secure
                                                          Boot keys when System is in
   ▶ Enroll all Factory Default keys                      Setup Mode
   ▶ Save   all Secure Boot variables

     Secure Boot variable | Size| Key#| Key source
   ▶ Platform Key(PK)     |    0|    0|
   ▶ Key Exchange Keys    |    0|    0|
   ▶ Authorized Signatures|    0|    0|
   ▶ Forbidden  Signatures|    0|    0|
   ▶ Authorized TimeStamps|    0|    0|


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



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```

Item	Option	Description
Provision Factory Default keys	Enabled, Disabled**[Default]**	Install factory default Secure Boot keys when System is in Setup Mode.

3.6.5 Boot
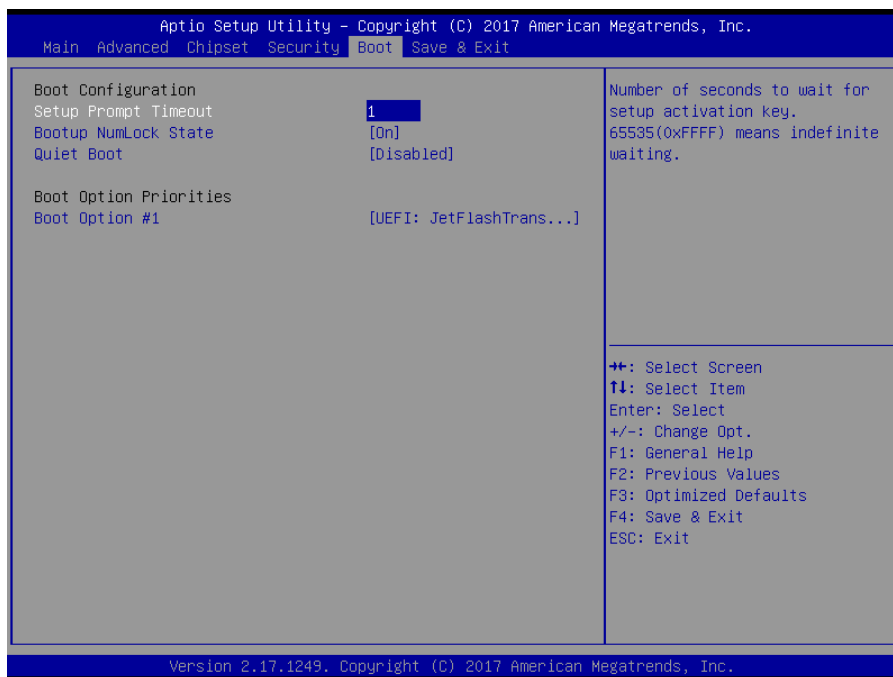
Item	Option	Description
Setup Prompt Timeout	1~ 65535	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On**[Default]** Off	Select the Keyboard NumLock state
Quiet Boot	Disabled**[Default]** Enabled	Enables or disables Quiet Boot option
Boot Option #1	Set the system boot order.	

3.6.6   Save and exit

```
                  Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
         Main  Advanced  Chipset  Security  Boot  Save & Exit

         Save Options                                              Reset the system after saving
                                                                   the changes.
         Save Changes and Reset
         Discard Changes and Reset

         Default Options
         Restore Defaults

         Boot Override
         UEFI: JetFlashTranscend 8GB 1100, Partition 1
         Launch EFI Shell from filesystem device
       ► Reset System with ME disable Mode

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



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```

3.6.6.1   Save Changes and Reset

Reset the system after saving the changes.

3.6.6.2   Discard Changes and Reset

Any changes made to BIOS settings during this session of the BIOS setup program are discarded. The setup program then exits and reboots the controller.

3.6.6.3   Restore Defaults

This option restores all BIOS settings to the factory default. This option is useful if the controller exhibits unpredictable behavior due to an incorrect or inappropriate BIOS setting.

3.6.6.4   Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices.

4. Drivers Installation

Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install Chipset Driver

All drivers can be found on the Avalue Official Website:
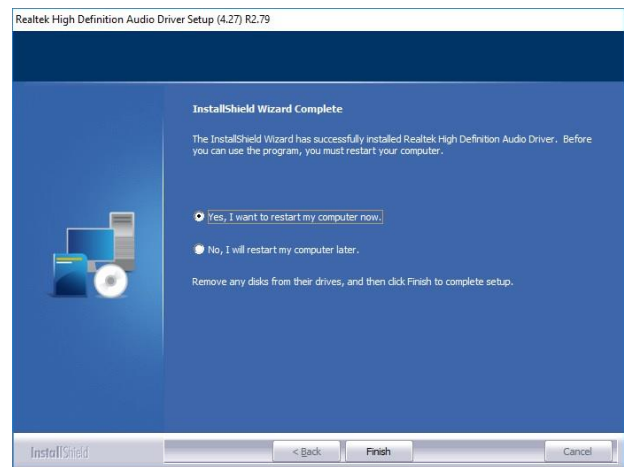
http://www.avalue.com.tw.

Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.
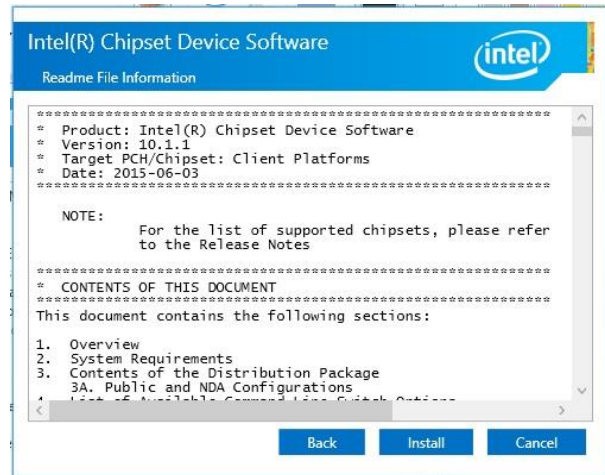
Step 3. Click **Install**.

Step1. Click **Next**.

Step 4. Click **Finish** to complete setup.
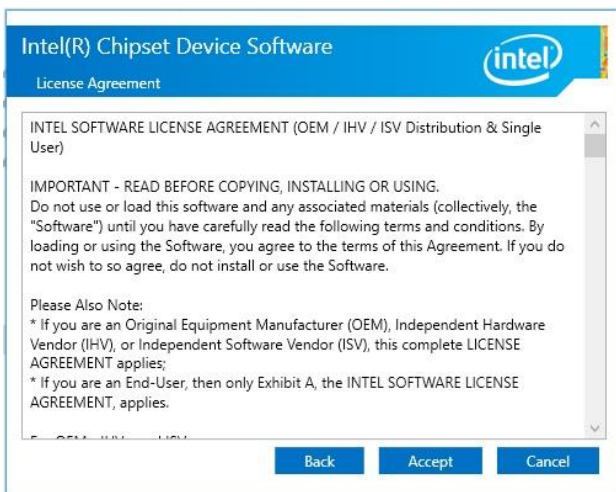
Step 2. Click **Accept**.

4.2 Install VGA Driver

All drivers can be found on the Avalue Official Website:

http://www.avalue.com.tw.
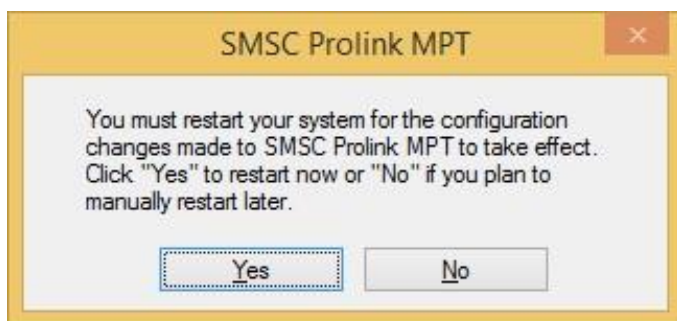

Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.
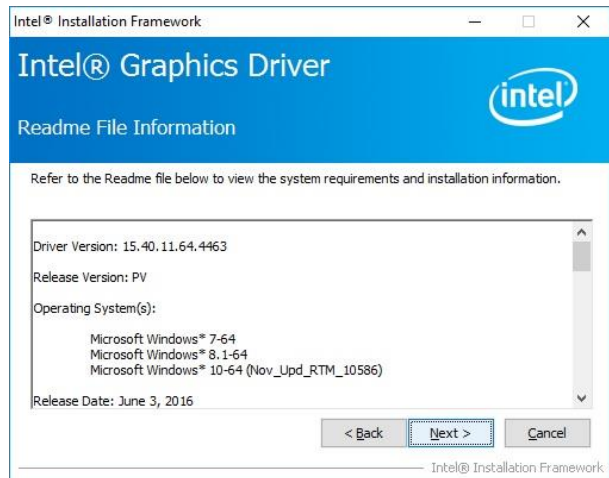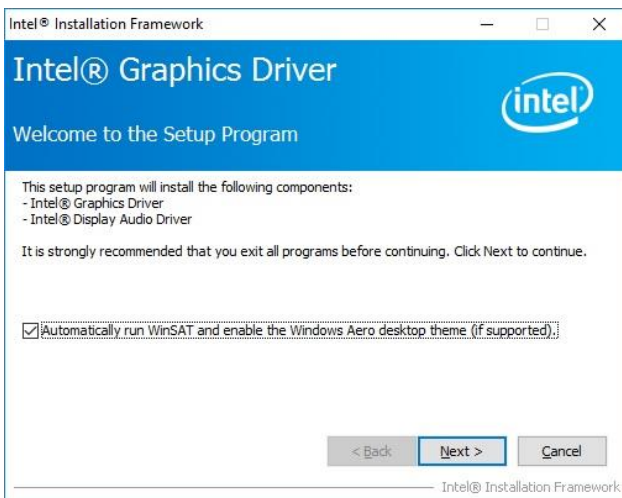
Step 3. Click **Next.**

Step 1. Click **Next** to continue installation.
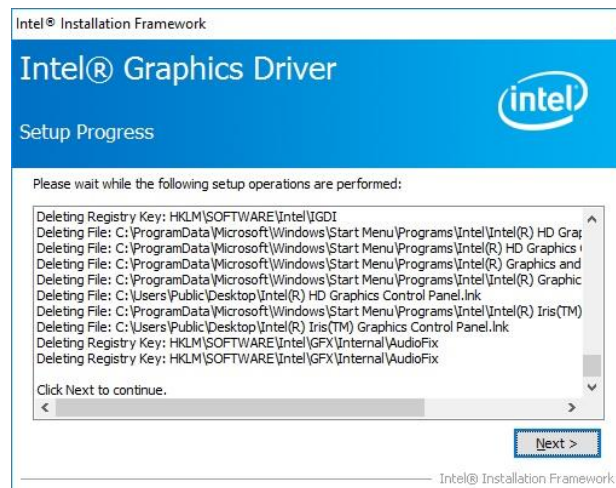
Step 4. Click **Next**.
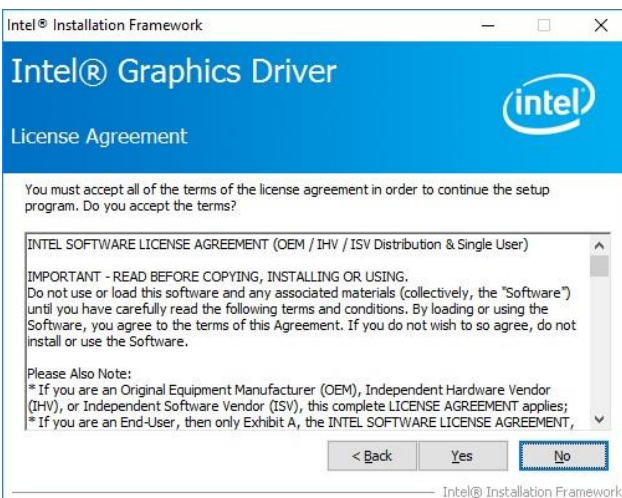
Step 2.

Click **Yes** to accept license agreement.
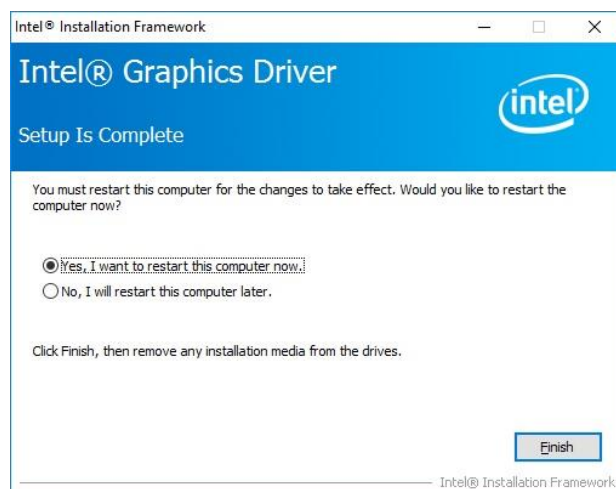
Step 5. Click **Finish** to complete setup.

4.3 Install Audio Driver (For Realtek ALC892 HD Audio)

All drivers can be found on the Avalue
Official Website:
http://www.avalue.com.tw.

Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.
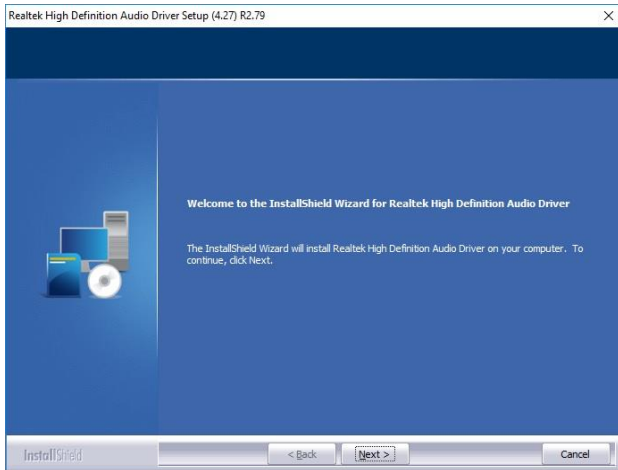
Step1. Click **Next** to Install.

Step 2. Select **Finish** to complete Installation.

4.4 Install LAN Driver (For Intel I211AT)

All drivers can be found on the Avalue Official Website:

**http://www.avalue.com.tw**.

Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.
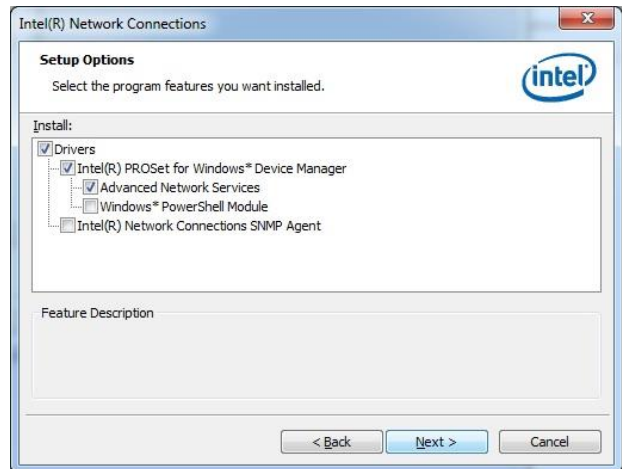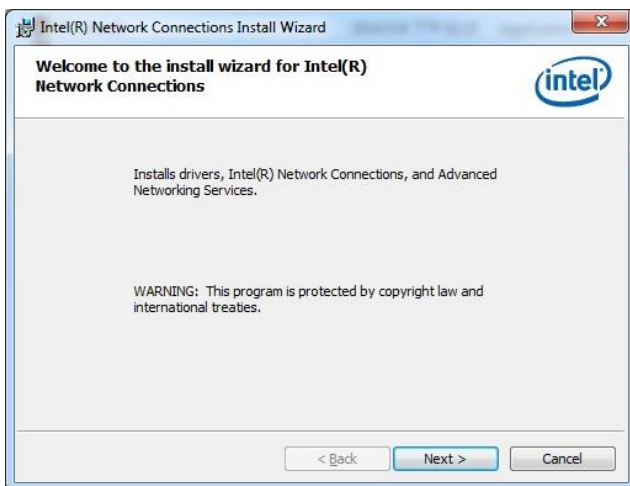
Step 3. Click **Next**.

Step 1. Click **Next** to continue installation.
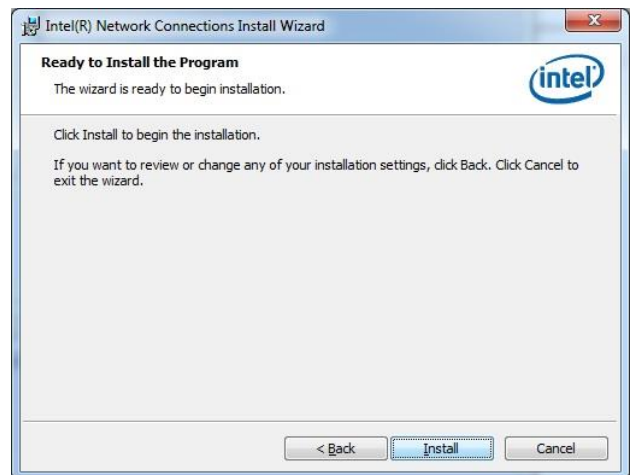
Step 4. Click **Install**.

Step 2. Click **Next**.

Step 5. Wait while installing.
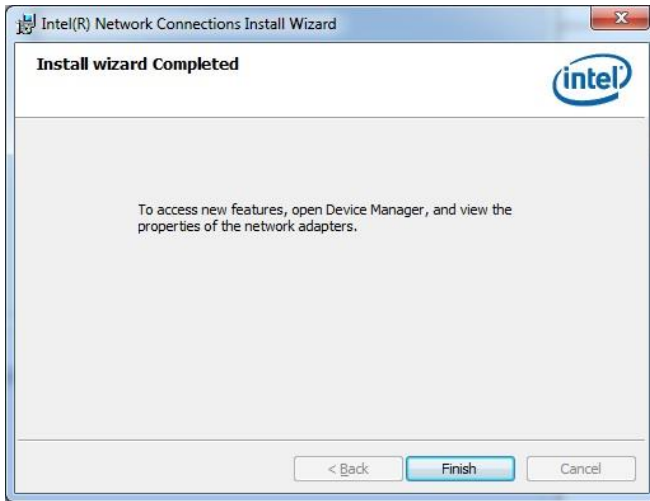
Step 6. Click **Finish** to complete setup.

4.5 Install Serial IO Driver

All drivers can be found on the Avalue Official Website:
http://www.avalue.com.tw.

Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.

Step 1. Click **Next** to continue setup.

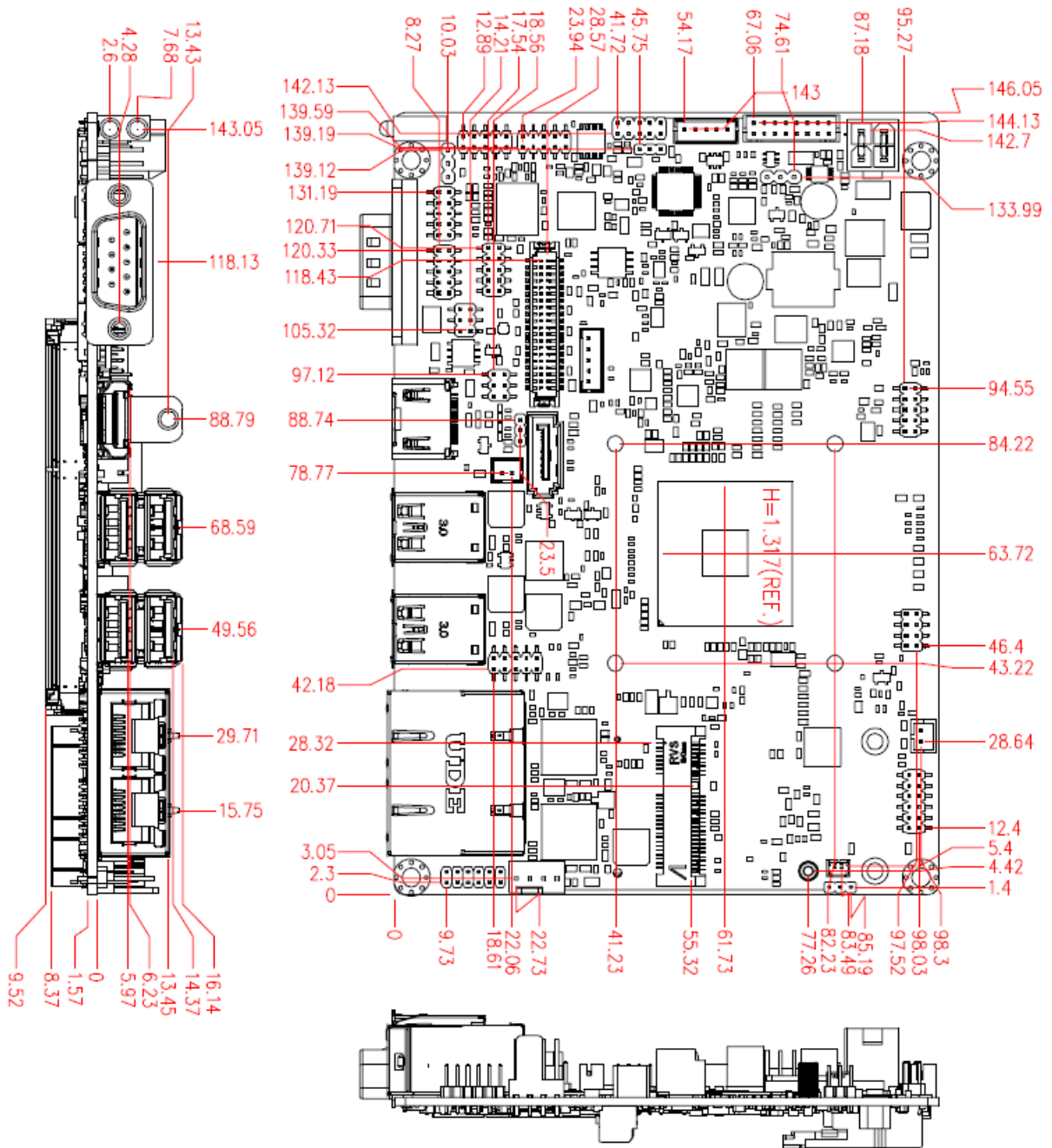**Step 2.** Click **Finish** to complete the setup.

4.6 Install SMSC Hub Driver

All drivers can be found on the Avalue Official
Website:
http://www.avalue.com.tw.

Note: The installation procedures and screen
shots in this section are based on
Windows 10 operation system.

Step 1. Click **Install** to continue setup.

Step 2. Click **Yes** to complete the setup.

4.7 Install TXE Driver

All drivers can be found on the Avalue Official Website:
http://www.avalue.com.tw.

> **Note:** The installation procedures and screen shots in this section are based on Windows 10 operation system.
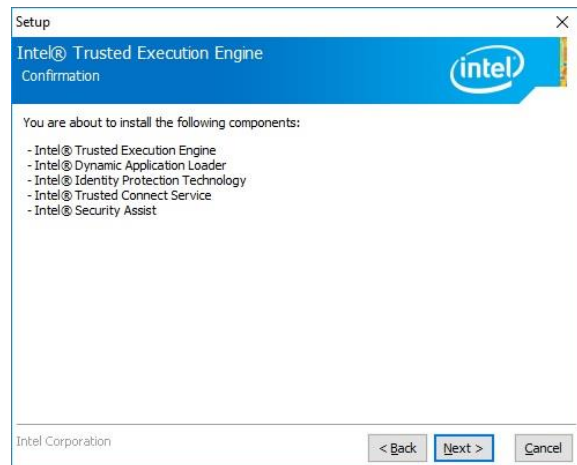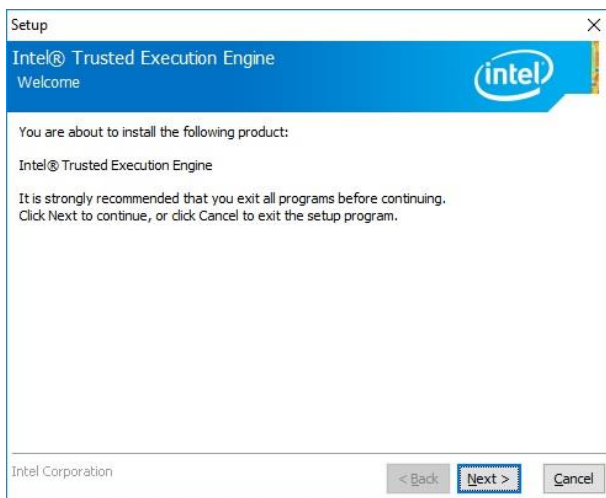
Step 3. Click **Next**

Step 1. Click **Next** to continue setup.
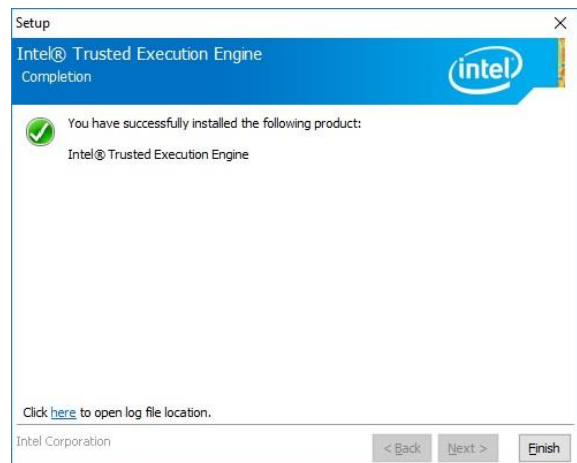
Step 2. Click **Next**.

Step 4. Click **Finish** to complete the setup
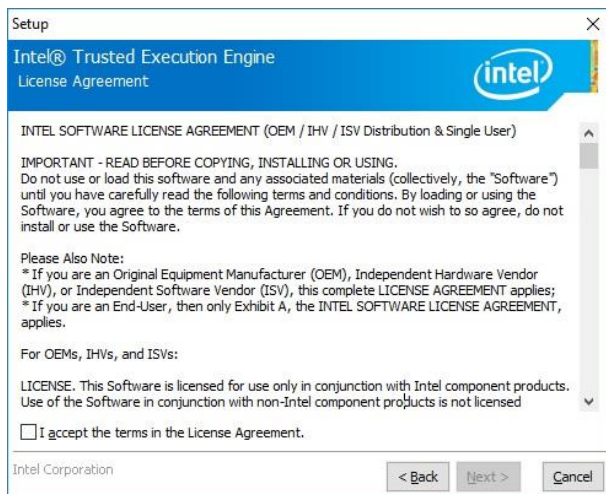
5. Mechanical Drawing

Unit: mm

Unit: mm

Unit: mm