ARC-1232/1532

12.1"/15" 6th Gen Intel® ULT Core™ Processor i7/i5/i3
Fanless Rugged Touch Panel PC with IET Expansion

Quick Reference Guide

7th Ed – 28 January 2019

Copyright Notice

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Part No. E2017A220A6R

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 INSTATLLED 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.

A Message to the Customer

Customer Services

Each product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new device is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation.

Your satisfaction is our primary concern. Here is a guide to our customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

Technical Support

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone. So please consult the user's manual first.

Content

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

- 1 x ARC-1232/1532 Panel PC
- 1 x Power Adapter
- 1 x Power cord
- 4 x screws for VESA

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

1.3 System Specifications

Panel	ARC-1232	ARC-1532
LCD Size	12.1", 4:3	15", 4:3
Display Type	XGA	
Resolution	1024 x 768	
Pixel pitch	0.1905 mm (H) x 0.1905 mm (V)	0.297mm(H) x 0.297mm(V)
Luminance	600 cd/m²	400 cd/m²
Contrast ratio	700	
Viewing angle	70 (U), 70 (D), 80 (L), 80 (R)	70 (U), 70 (D), 80 (L), 80 (R)
Response time	16ms	
Backlight	LED	
Touch Type	5 Wires resistive (A Model) Projected Capacitive (B Model)	
Touch Light Transmission	80% (A Model) 89% (B Model)	
Touch Controller	Onboard USB touch (PenMount) (A Model) EETI (B Model)	
System		
SBC	ARC-SKLU	
Processor	6th Gen Intel® Core™ i5-6300U, 2-Core, 2.4GHz processor	
I/O Chipset	EC ITE IT8528E	
System Memory	1 x 260-Pin DDR4 2133MHz SO-DIMM	
Watchdog Timer	H/W Reset, 1sec. ~ 65535min. and 1sec. or 1min./step	
H/W Status Monitor	Monitoring SYSTEM Temperature and Voltage with Auto Throttling Control	
Expansion		
Expansion	1 x Mini PCIe Support mSATA 1 x Optional 80-pin Expansion	
Storage		
Storage	1 x 2.5" Drive Bay (7mm HDD Restricted)	
I/O		
USB	4 x USB 3.0	
SATA	1 x SATA III	
Com Port	1 x RS-232/422/485 (Factory Optional) 1 x RS-232	
Other	3 x Knockouts for Antenna Mounting	
Display		
Chipset	Intel® Skylake SoC integrated Graphics Supports optional dual display	

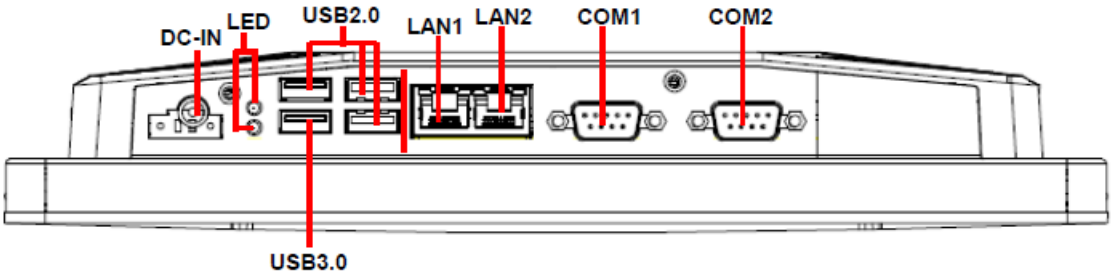
Resolution	HDMI: Max. resolution 4096 x 2160 @ 24Hz (by IET module)	
Audio		
Audio Codec	Realtek ALC892_optional expansion BD	
Audio Interface	Speaker Out	
Speaker Output	2 x 2W	
Ethernet		
Chipset	1 x Intel® I210AT 1 x Intel® I219LM	
Ethernet Interface	10/100/1000 Base-Tx GbE compatible	
Lan Port	2 x RJ-45	
Power Requirement		
Power Connector	Lockable DC Jack	
Power Requirement	+12V ~ +26V	
Power Type	AT/ATX (ATX is default setting)	
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz	
Mechanical & Environmental		
System Fan	Fanless	
Construction - Front	Silver Aluminum	
Construction – Rear	Black	
Dimension	284 x 223 x 62.2 mm (A Model) 294 x 226.3 x 51 mm (B Model)	350 x 274 x 49.8 mm (A Model) 350.5 x 274.5 x 53 mm (B Model)
Weight	2.4 Kgs	3.7 Kgs
Operating Temperature	-20°C ~ 60°C (-4°F ~ 140°F) (A Model) -10°C ~ 50°C (14°F ~ 122°F) (B Model)	
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing	
Vibration Test	ARC-1232 With SSD/mSATA : 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis ARC-1532 With SSD/mSATA : 3Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis	
Mounting	Wall / Stand / VESA 75mm x 75mm, 100mm x 100mm	
Shock Test	Operating with SSD/CFast/mSATA : MIL-STD-810G, Method 516.6, Procedure I, functional shock=20G	
Certifications		
Certifications Information	CE FCC Class B	
Software Support		
OS Information	Win7, Win 8.1,Win 10, Linux	

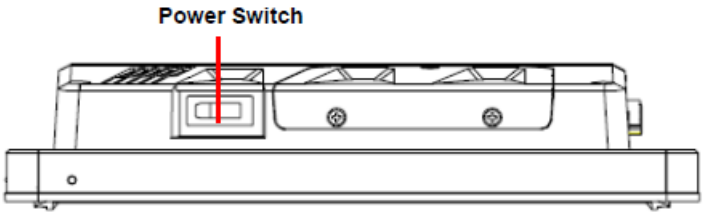
Ordering Information/ Description	
ACC-ARC-USB-1R	4 x USB3.0 (ARC-BYT DB-A)
ACC-ARC-AUDIO-1R	HDMI + Audio/Line out, Line in, Mic in (ARC-BYT DB-B)
ACC-ARC-MPCIE-1R	HDMI + Mini PCIe w/ SIM slot (ARC-BYT DB-C)
ACC-ARC-COM-1R	2 x Isolated RS-232 / 2kv (ARC-BYT DB-D)
ACC-ARC-COM-2R	3 x RS-232 (ARC-BYT DB-G)
ACC-ARC-COM-3R	2 x RS-232 + USB 2.0 (ARC-BYT DB-H)
ACC-ARC-COM-4R	2 x RS-232 + LAN (ARC-BYT DB-K)
ACC-ARC-GPIO-1R	12-bit GPIO + 2-pin CAN Bus Kit for ARC Series
ACC-ARC-OBDII-1R	OBDII - CAN Bus Kit for ARC Series (Small Vehicle)
ACC-ARC-OBDII-2R	OBDII - CAN Bus Kit for ARC Series (Large Vehicle)
ACC-ARC-OBDII-3R	OBDII - CAN Bus Kit for ARC Series (Special Large Vehicle)

Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 I/O View



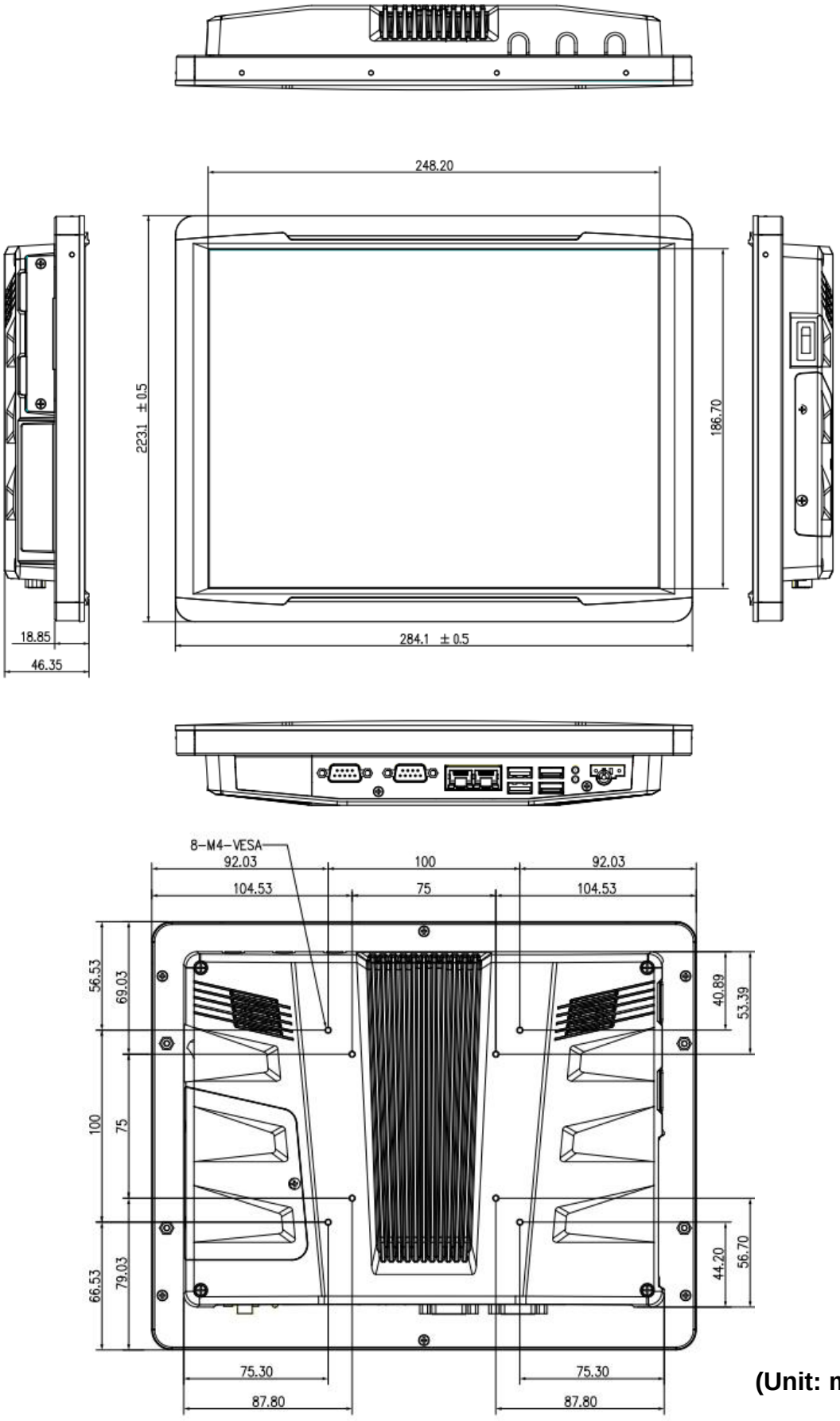


Connectors

Label	Function	Note
DC-IN	DC Power-in connector	Default: Lockable DC Jack Option: Phoenix Connector(MOQ apply)
COM1/2	Serial port 1/2 connector	DB-9 male connector
USB	4 x USB 3.0 connector	
LAN1/2	RJ-45 Ethernet 1/2	
LED	HDD/Power LED indicator	
Power Switch	Power on button	

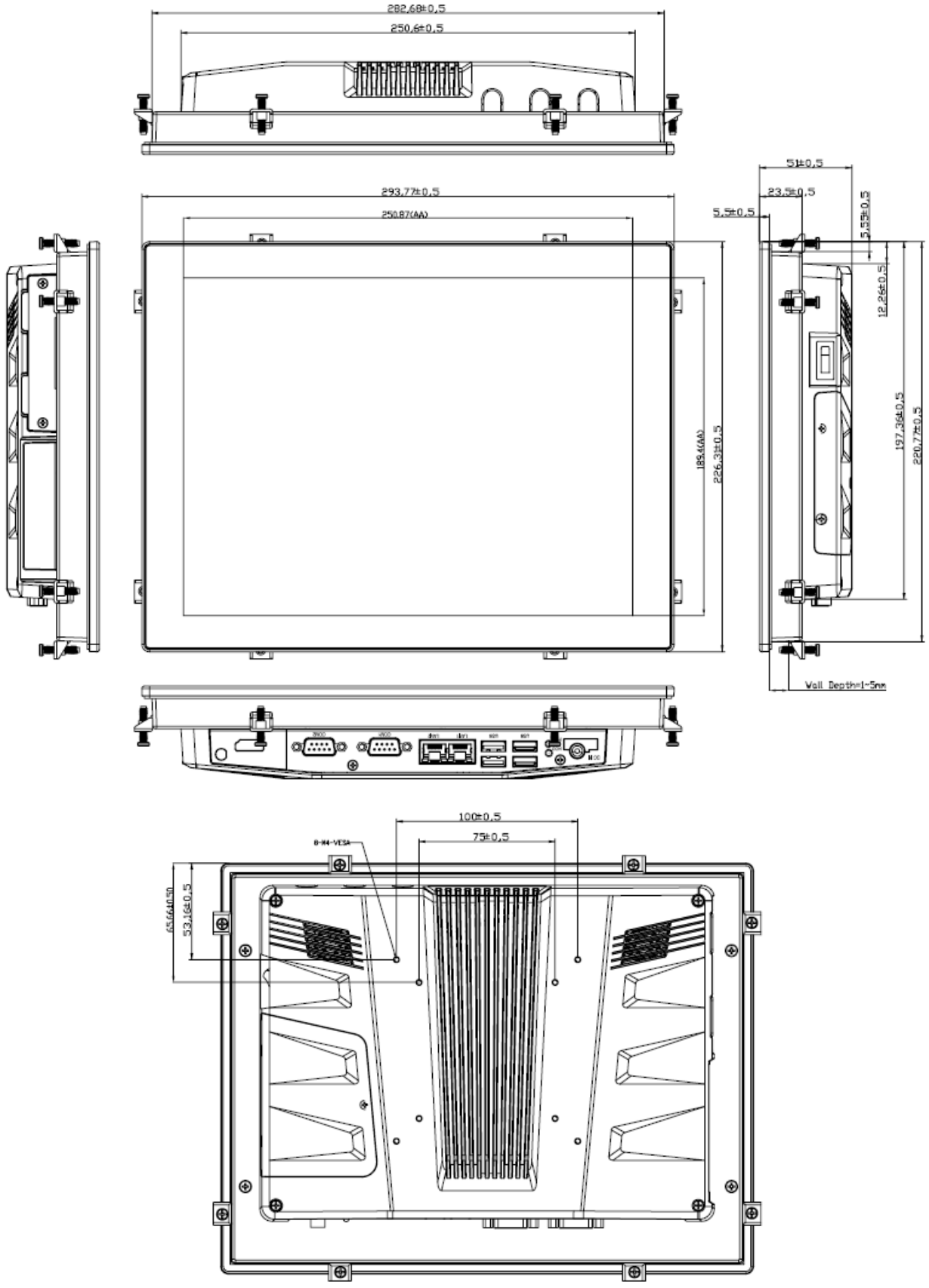
1.5 System Dimensions

1.5.1 ARC-1232 (A Model)



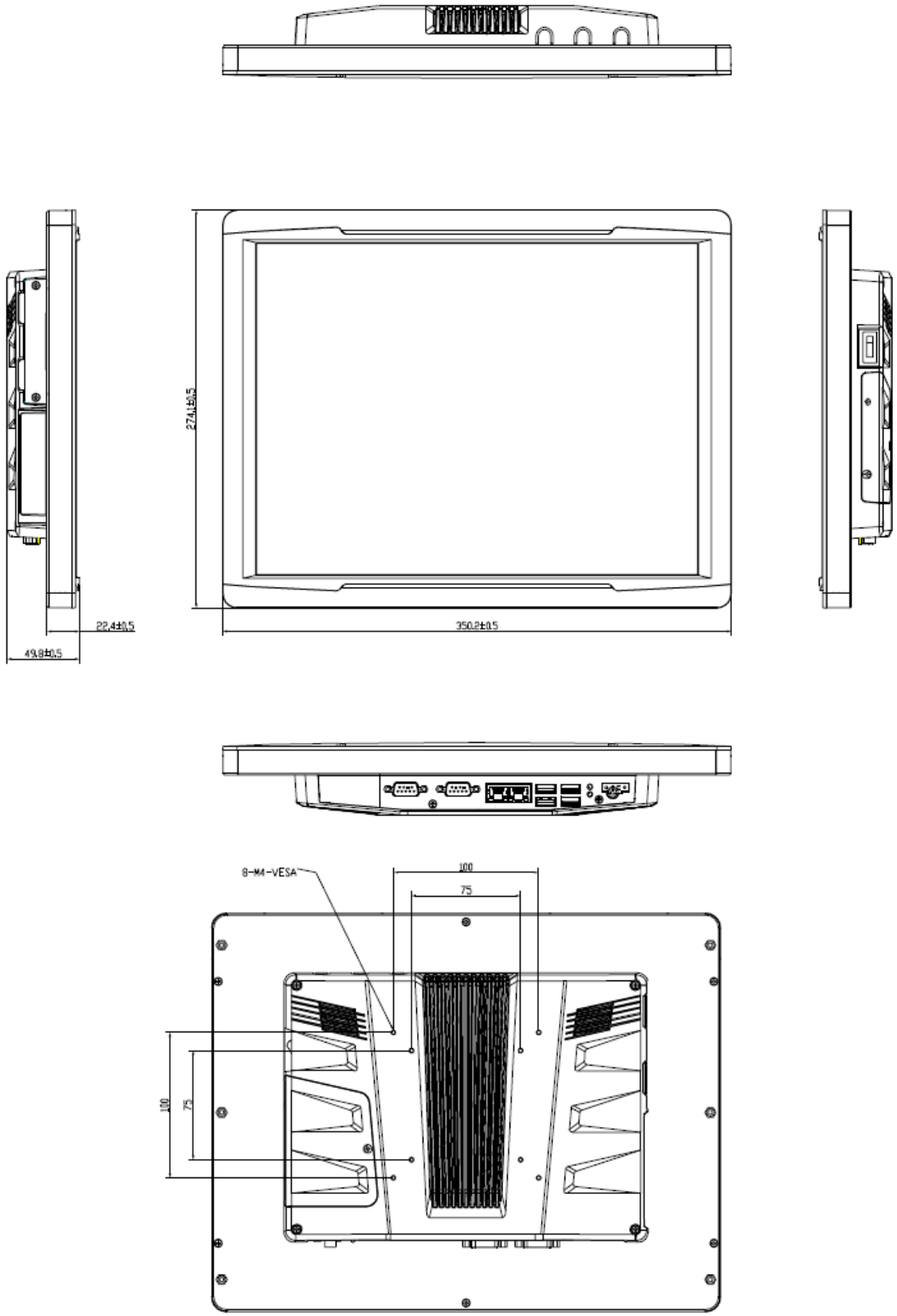
(Unit: mm)

1.5.2 ARC-1232 (B Model)



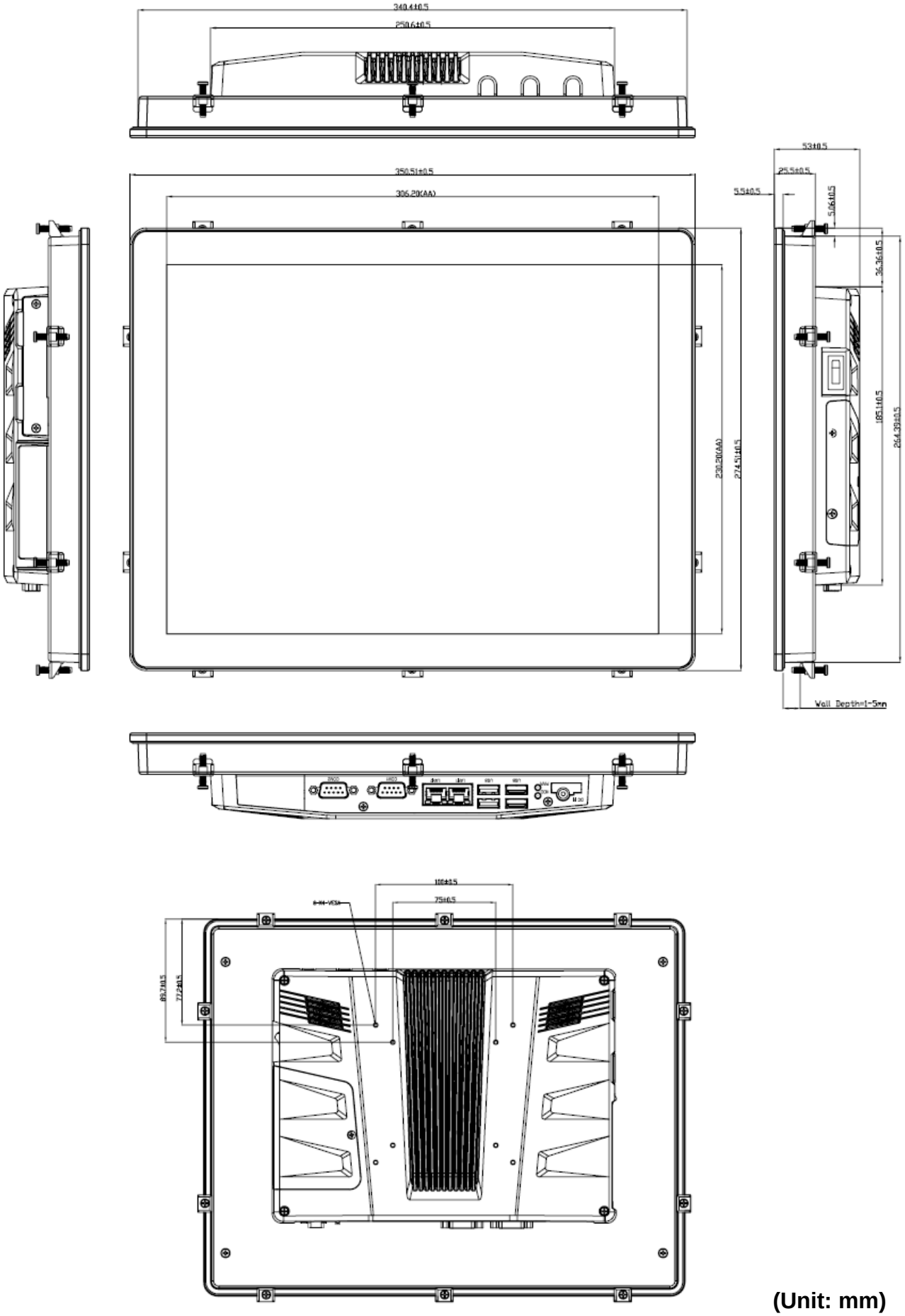
(Unit: mm)

1.5.3 ARC-1532 (A Model)



(Unit: mm)

1.5.4 ARC-1532 (B Model)



(Unit: mm)

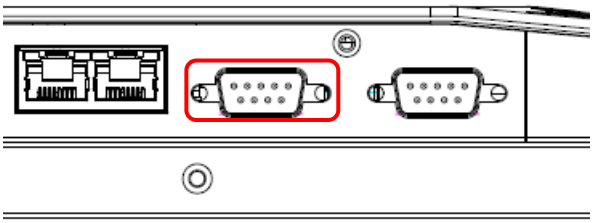
2. Hardware Configuration

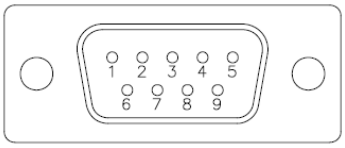
For advanced information, please refer to:

1- ARC-SKLU, ARC-BYT DB-A/B/C/D/G/H/K included in this manual.

2.1 ARC-1232/1532 connector mapping

2.1.1 Serial port 1 connector (COM1)





RS-485

Signal	PIN	PIN	Signal
DATA-	1	6	NC
DATA+	2	7	NC
NC	3	8	NC
NC	4	9	NC
GND	5		

Please set BIOS & JCOM1_SEL1

RS-232

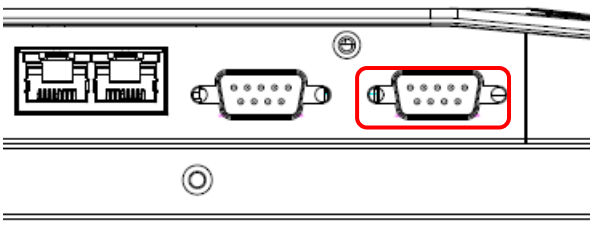
Signal	PIN	PIN	Signal
NDCDA#	1	6	NDSRA#
NRXDA	2	7	NRTSA#
NTXDA	3	8	NCTSA#
NDTRA#	4	9	NRIA#
GND	5		

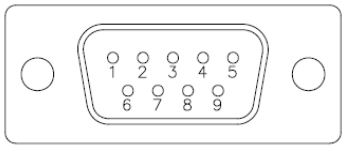
RS-422

Signal	PIN	PIN	Signal
TxD-	1	6	NC
TxD+	2	7	NC
RxD+	3	8	NC
RxD-	4	9	NC
GND	5		

Please set BIOS & JCOM1_SEL1

2.1.2 Serial port 2 connector (COM2)

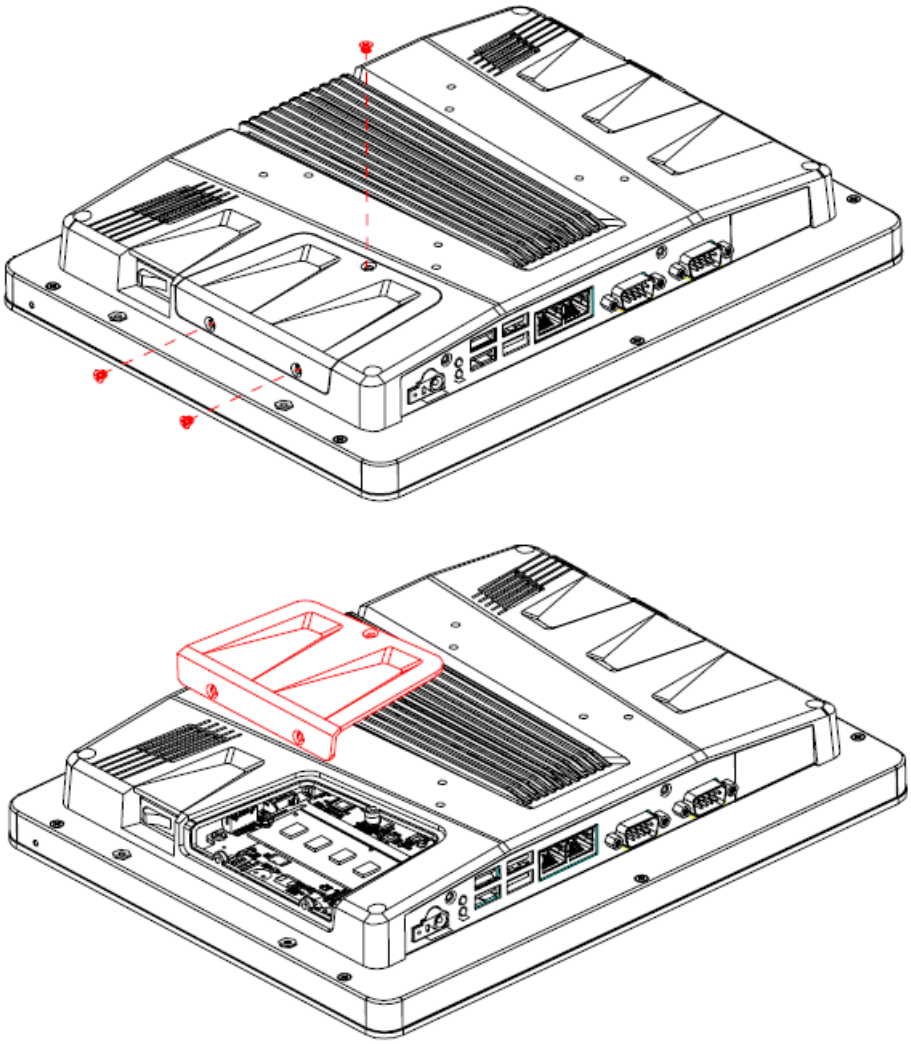




Signal	PIN	PIN	Signal
NDCDB#	1	6	NDSRB#
NRXDB	2	7	NRTSB#
NTXDB	3	8	NCTSB#
NDTRB#	4	9	NRIB#
GND	5		

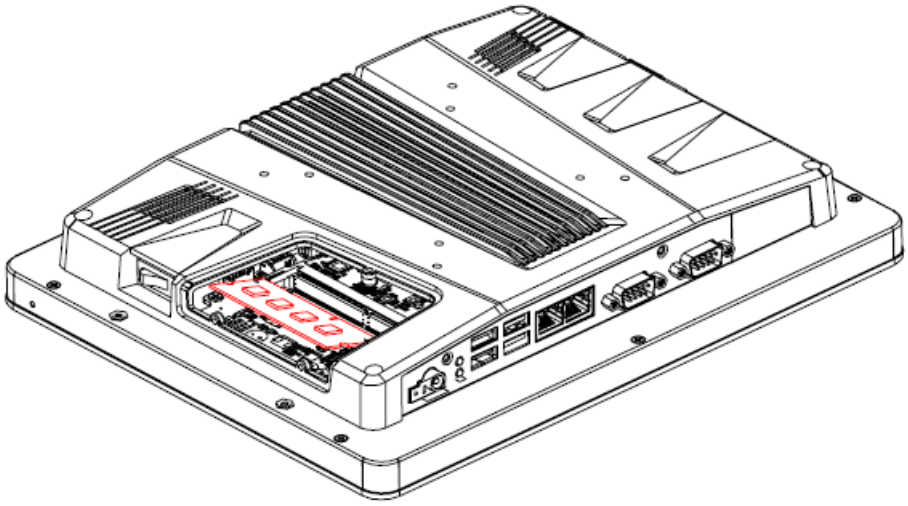
2.2 Installing Hard Disk & Memory

Step 1. Memory Installation: Remove 3 screws to release the chassis cover, and remove it.

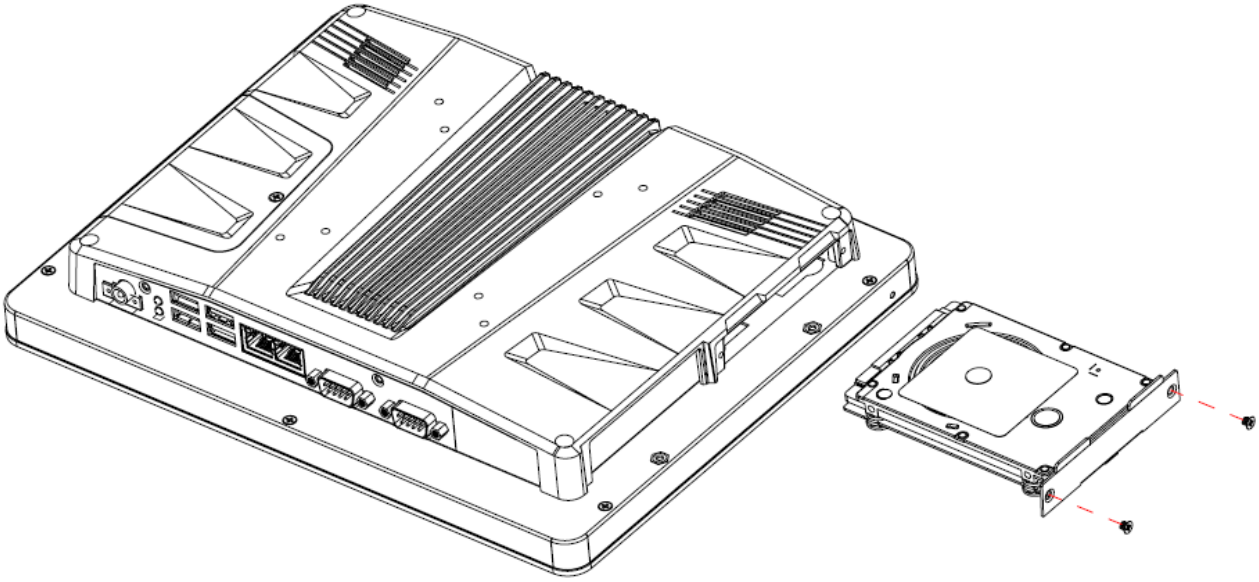


Step 2.1 Insert the SODIMM into the memory socket.

Step 2.2 Re-assemble your system back through previous steps to complete the installation.

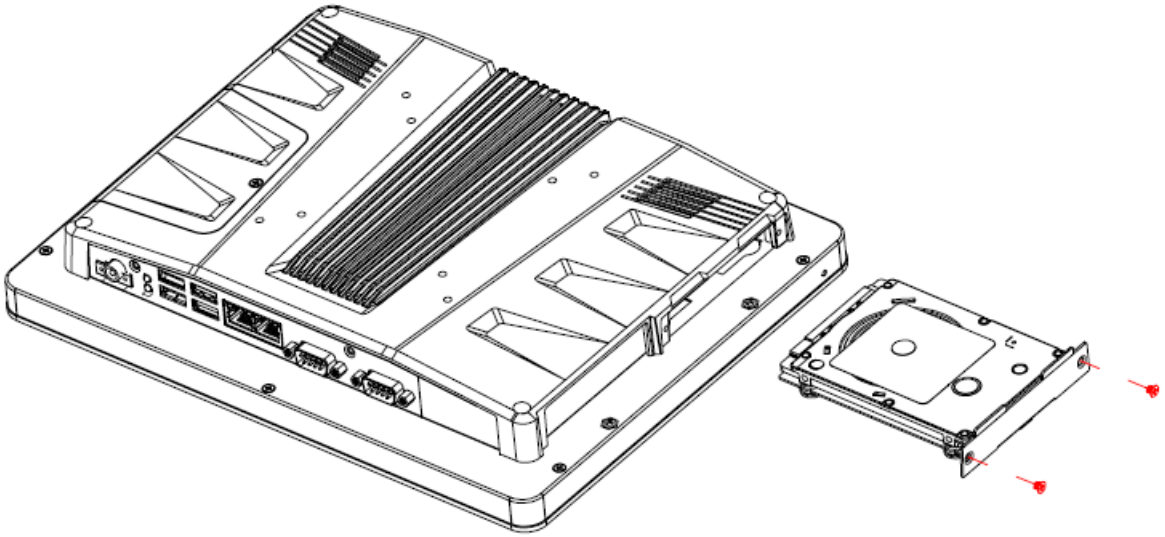


Step 3. HDD Installation: Insert the HDD into the Drive Bay and fasten 2 screws.

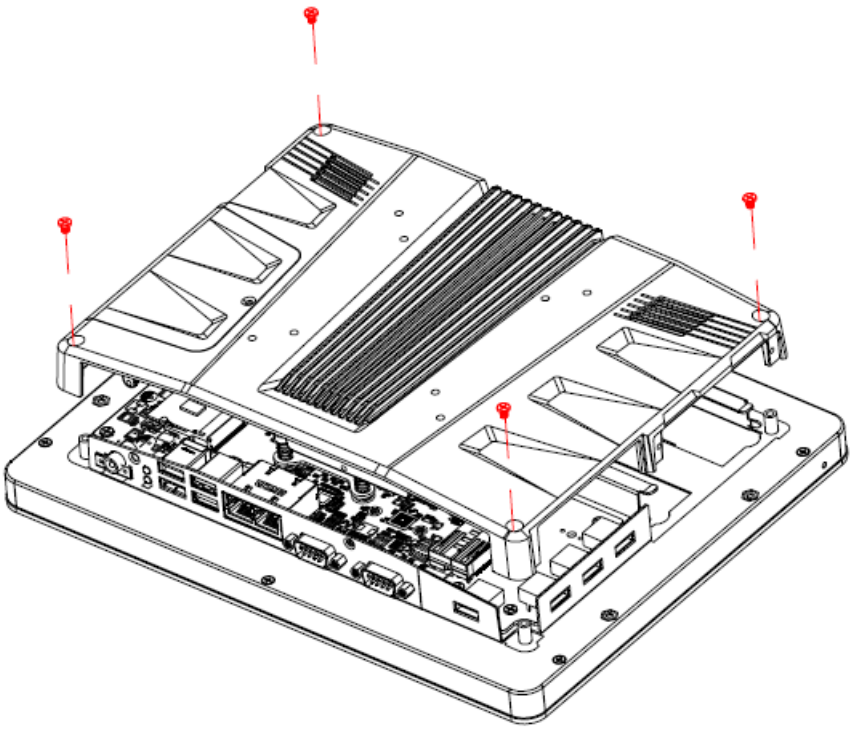


2.3 Installing ARC-BYT DB

Step 1. Unfasten 2 screws of the HDD bracket and take it off.

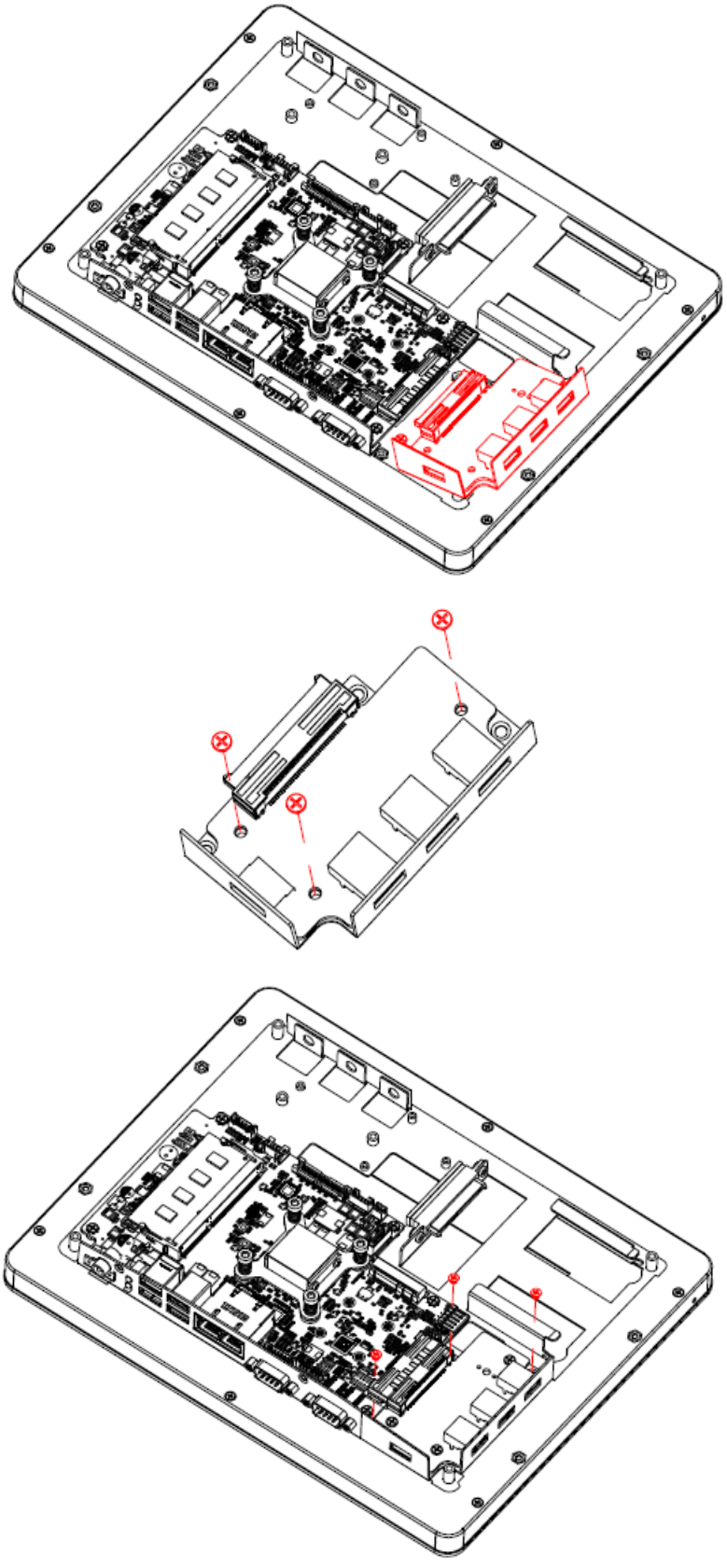


Step 2. Remove 4 screws to release the chassis cover, and remove it.

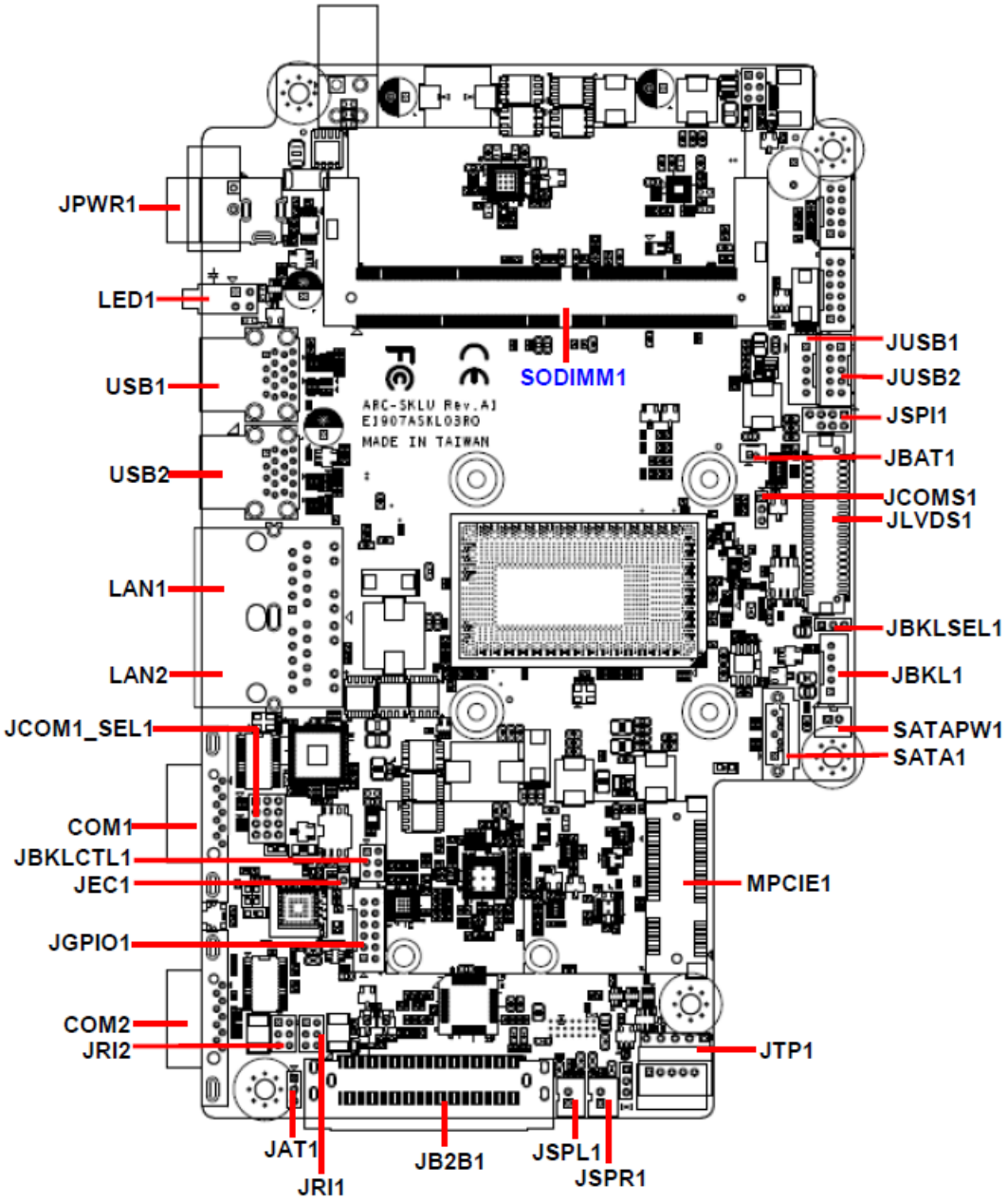


Step 2.1 Insert the ARC-BYT DB into the socket and fasten 3 screws.

Step 2.2 Re-assemble your system back through previous steps to complete the installation



2.4 ARC-SKLU Overviews



2.5 ARC-SKLU Jumper and Connector list

Jumper

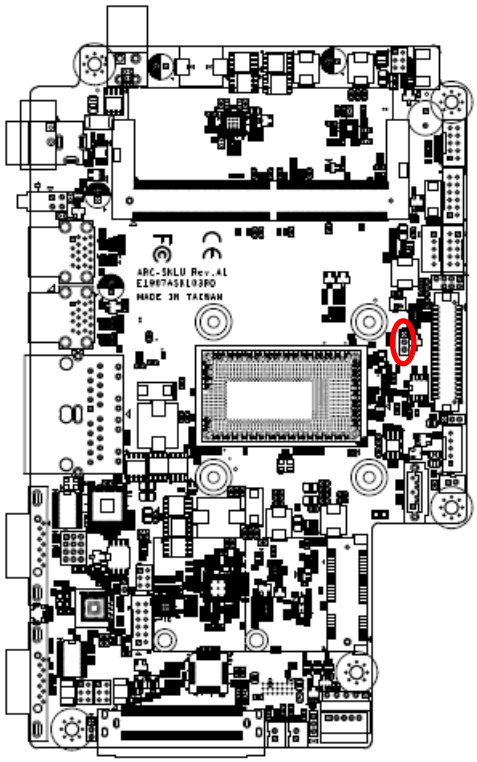
Label	Function	Note
JCOMS1	Clear CMOS	3 x 1 header, pitch 2.00mm
JRI1/2	Serial port 1/2 pin9 signal select	3 x 2 header, pitch 2.00mm
JCOM1_SEL1	Serial port 1 in RS-232/422/485 mode	4 x 3 header, pitch 2.00mm
JBKLSEL1	LCD backlight brightness adjustment	3 x 1 header, pitch 2.00mm
JAT1	AT/ATX Input power select	3 x 1 header, pitch 2.00mm

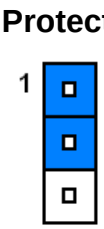
Connectors

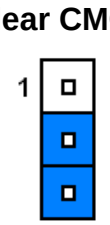
Label	Function	Note
SODIMM1	1 x 260-Pin DDR4 2133MHz SO-DIMM	
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.00mm
COM1/2	Serial Port 1/2 connector	D-sub 9 pin, male
JTP1	Touch panel connector	5 x 1 header, pitch 2.54mm
JSPR1	AMPLIFIER_R	2 x 1 wafer, pitch 2.00mm
JSPL1	AMPLIFIER_L	2 x 1 wafer, pitch 2.00mm
JB2B1	B2B connector	40 x 2 wafer, pitch 0.80mm
JBKLCTL1	LCD backlight brightness adjustment	3 x 2 header, pitch 2.00mm
LED1	HDD/Power LED indicator	
JLVDS1	LVDS connector	DIN 40-pin wafer, pitch 1.25mm
USB1/2	USB connector 1/2	
JUSB1	On-board header for USB2.0	5 x 1 wafer, pitch 2.00mm
JUSB2	On-board header for USB2.0	5 x 2 wafer, pitch 2.00mm
LAN1/2	RJ-45 Ethernet 1/2	
MPCIE1	Mini-PCIe connector	
JBAT1	Battery connector	2 x 1 wafer, pitch 1.25mm
JGPIO1	General purpose I/O connector	6 x 2 wafer, pitch 2.00mm
JPWR1	Power connector	
JSPI1	SPI connector	4 x 2 header, pitch 2.00mm
JEC1	EC Debug connector	2 x 1 header, pitch 2.00 mm
SATA1	Serial ATA connector	
SATAPW1	SATA Power connector	2 x 1 wafer, pitch 2.00mm

2.6 ARC-SKLU Jumpers & Connectors settings

2.6.1 Clear CMOS (JCOMS1)

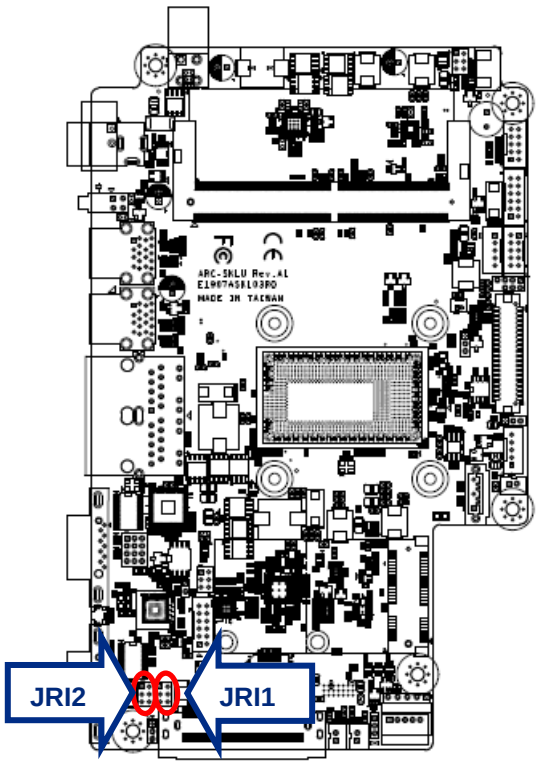


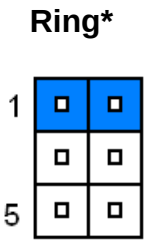


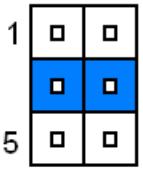


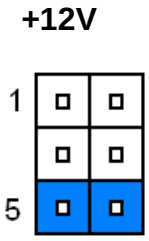
***Default**

2.6.2 Serial port 1/2 pin9 signal select (JRI1/JRI2)



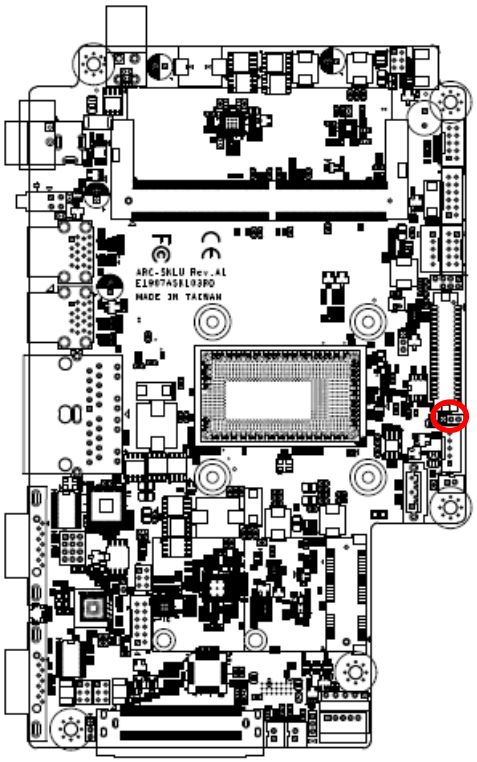




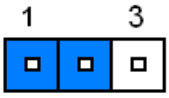


*** Default**

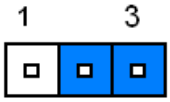
2.6.3 LCD backlight brightness adjustment (JBKLSEL1)



PWM Mode*

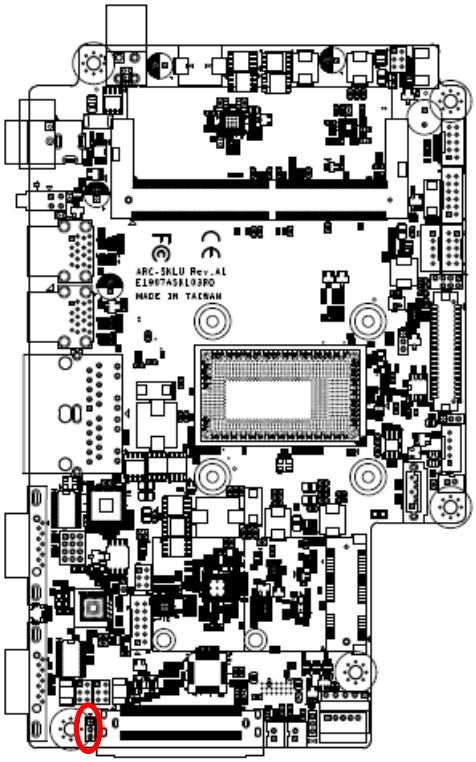


DC Mode

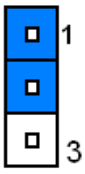


*** Default**

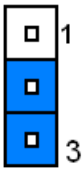
2.6.4 AT/ATX Input power select (JAT1)



ATX*

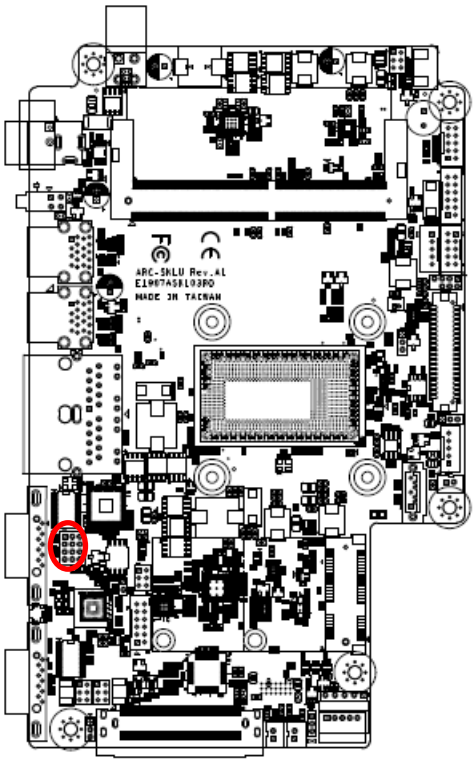


AT

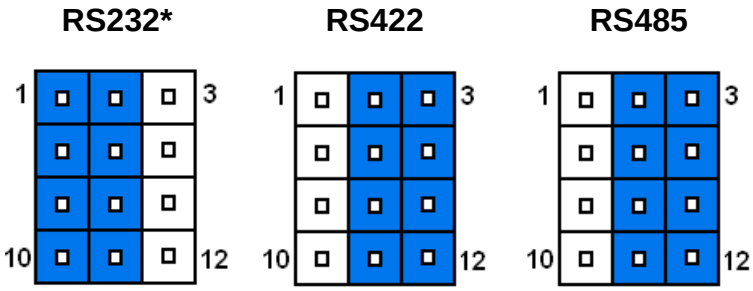


*** Default**

2.6.5 Serial port 1 in RS-232/422/485 mode (JCOM1_SEL1)



*** Default**

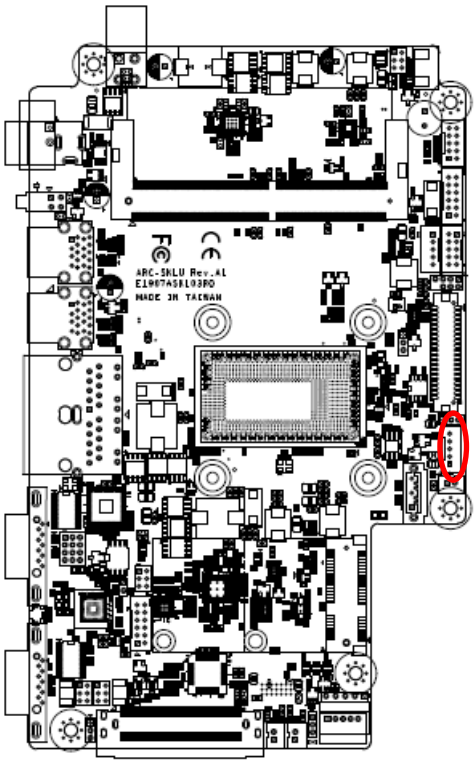


PIN	Signal	PIN	Signal	PIN	Signal
12	422RX1-	11	COM1-4	10	NDTRA#
9	485_422TX1+	8	COM1-2	7	NRXDA
6	422RX1+	5	COM1-3	4	NTXDA
3	485_422TX1-	2	COM1-1	1	NDCDA#

Note:

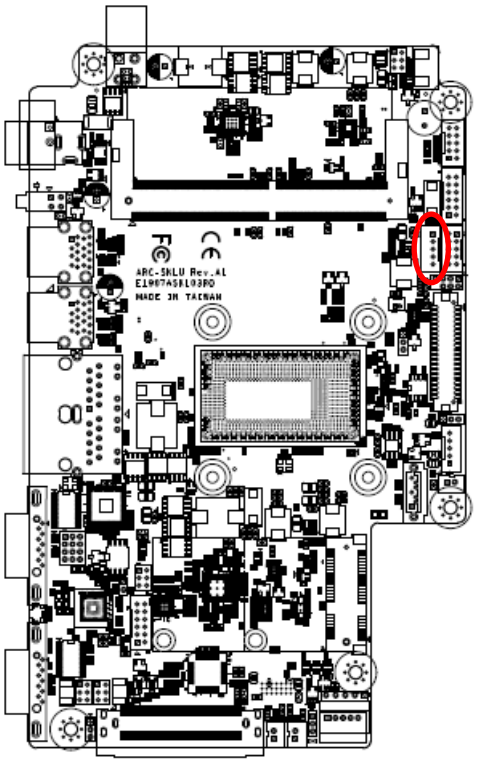
This connector is available after modify the mode of COM1 in BIOS setting.

2.6.6 LCD Inverter connector (JBKL1)



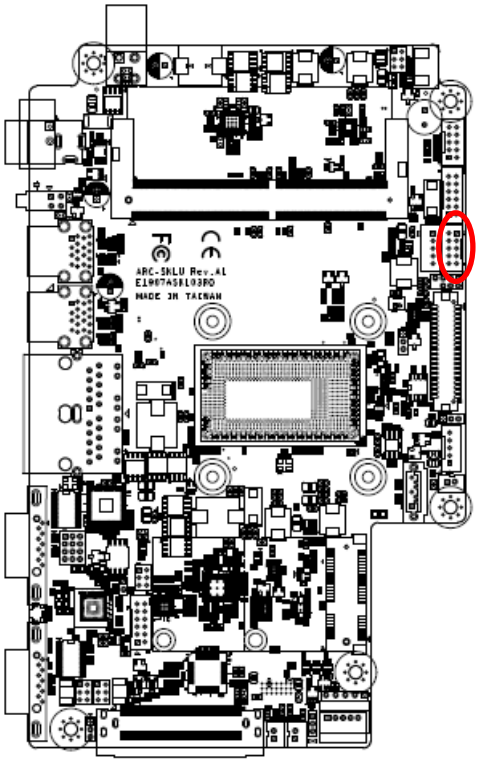
Signal	PIN
+5V	5
LVDS_BKLT_CTL	4
LVDS_BKLT_EN	3
GND	2
+12V	1

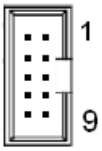
2.6.7 On-board header for USB2.0 (JUSB1)



Signal	PIN
+5VSB	1
USB_z_PN10	2
USB_z_PP10	3
GND	4
GND	5

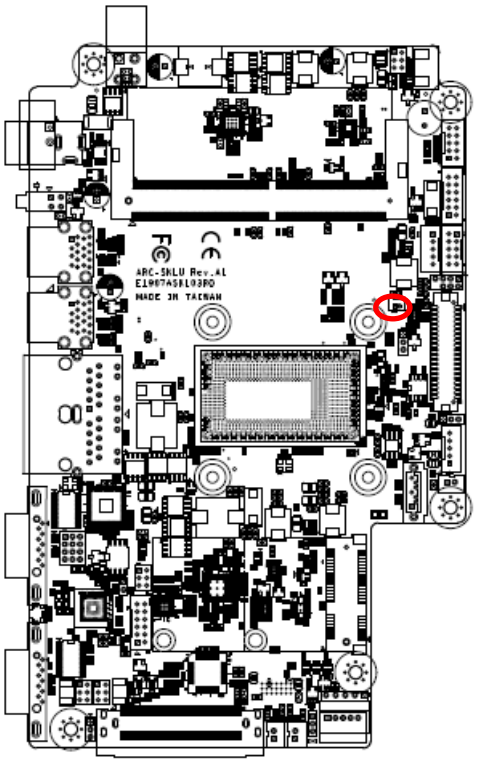
2.6.8 On-board header for USB2.0 (JUSB2)

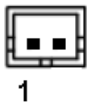




Signal	PIN	PIN	Signal
+5VSB	2	1	+5VSB
USB_z_PN6	4	3	USB_z_PN5
USB_z_PP6	6	5	USB_z_PP5
GND	8	7	GND
GND	10	9	GND

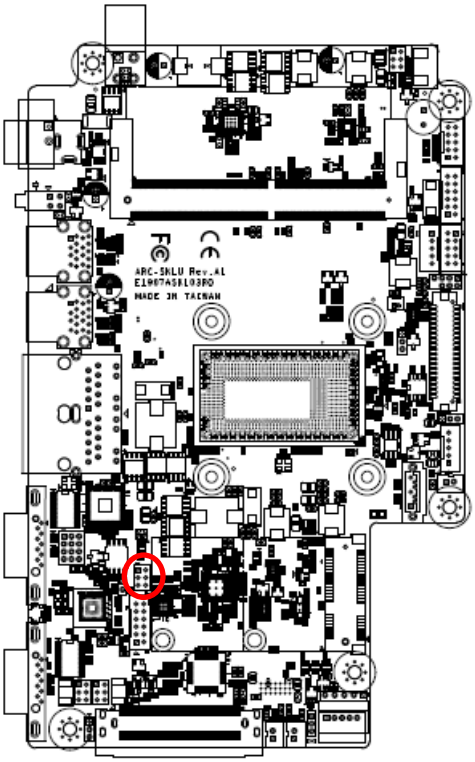
2.6.9 Battery connector (JBAT1)

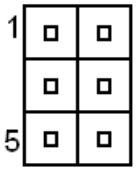




Signal	PIN
+RTCBAT	1
GND	2

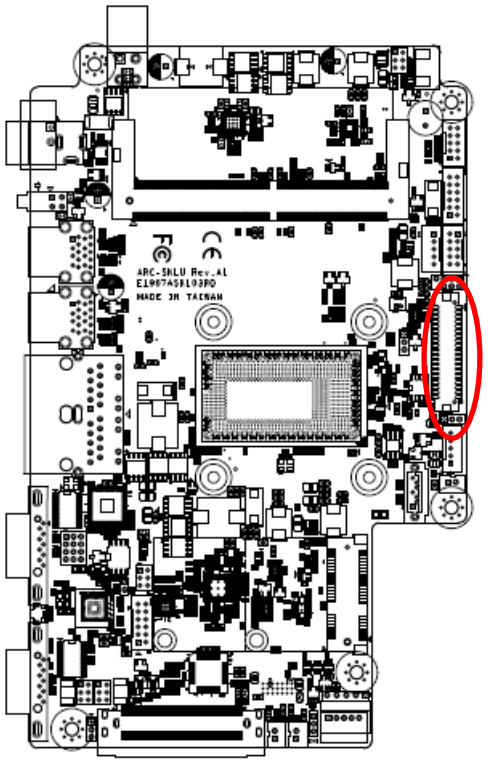
2.6.10 LCD backlight brightness adjustment (JBLK_CTRL1)





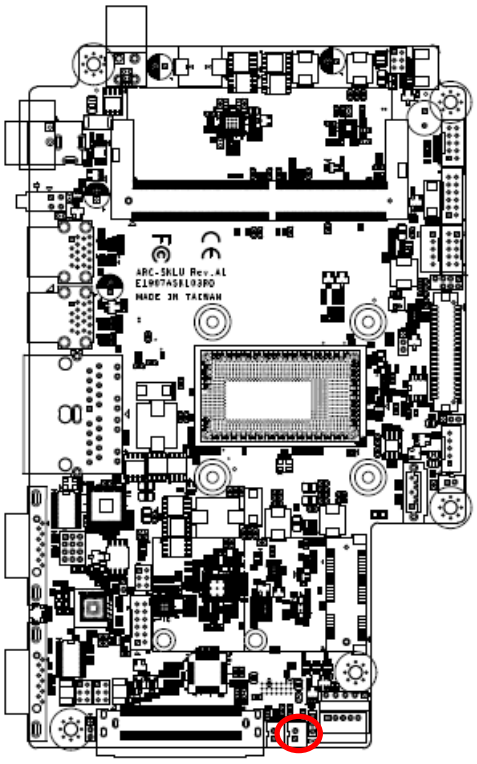
PIN	Signal	Note
1-2	BLK_VR_MOD	VR must select 10K/1%
3-4	BLK_BRI_UP	Low pulse button for backlight brighter
5-6	BLK_BRI_DN	Low pulse button for backlight dim

2.6.11 LVDS connector (JLVDS1)



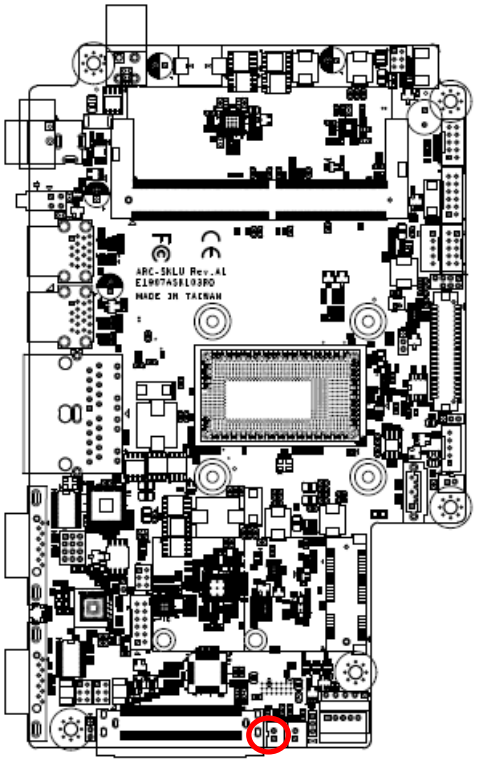
Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
NC	6	5	NC
GND	8	7	GND
LVDS_DATA0_P	10	9	LVDS_DATA1_P
LVDS_DATA0_N	12	11	LVDS_DATA1_N
GND	14	13	GND
LVDS_DATA2_P	16	15	LVDS_DATA3_P
LVDS_DATA2_N	18	17	LVDS_DATA3_N
GND	20	19	GND
LVDS_DATA4_P	22	21	LVDS_DATA5_P
LVDS_DATA4_N	24	23	LVDS_DATA5_N
GND	26	25	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

2.6.12 AMPLIFIER_R (JSPR1)



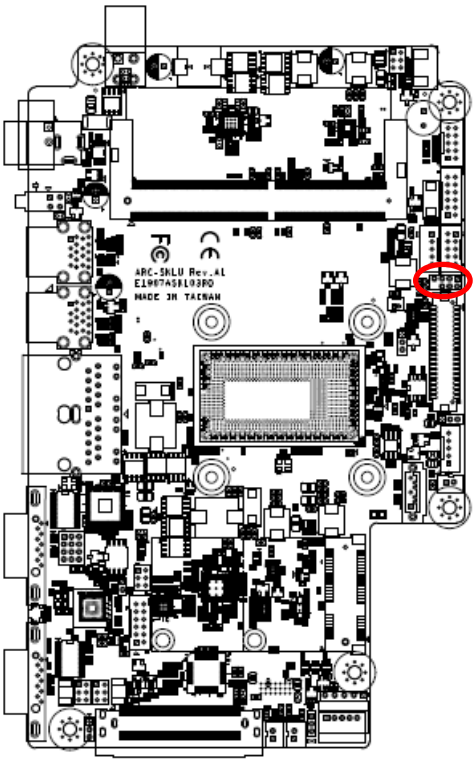
Signal	PIN
SPK_R-	2
SPK_R+	1

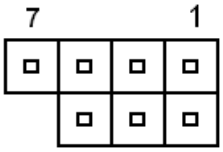
2.6.13 AMPLIFIER_L (JSPL1)



Signal	PIN
SPK_L-	2
SPK_L+	1

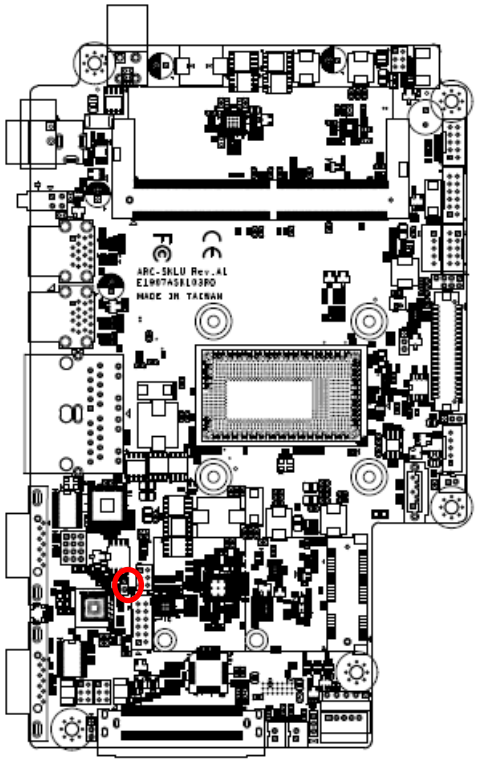
2.6.14 SPI connector (JSPI1)

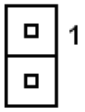




Signal	PIN	PIN	Signal
+3.3VSB	1	2	GND
SPI0_CS0#	3	4	SPI_CLK
SPI_SO	5	6	SPI_SI
HOLD#	7		

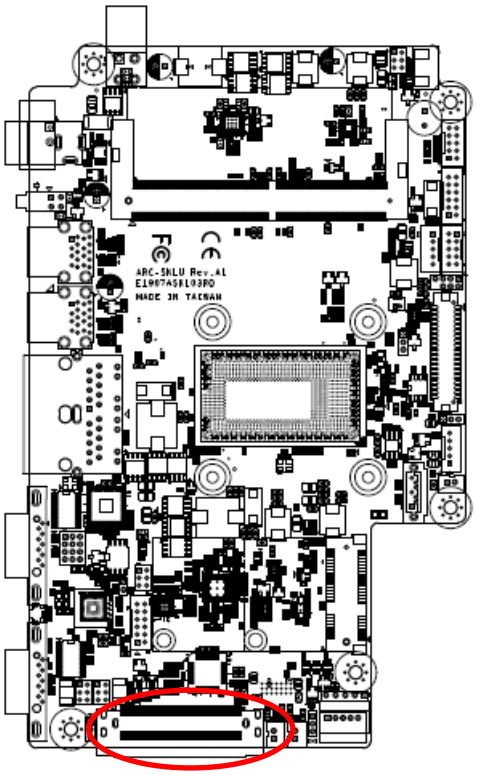
2.6.15 EC Debug connector (JEC1)

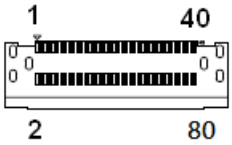




Signal	PIN
EC_SMCLK_DEBUG	1
EC_SMDAT_DEBUG	2

2.6.16 B2B connector (JB2B1)

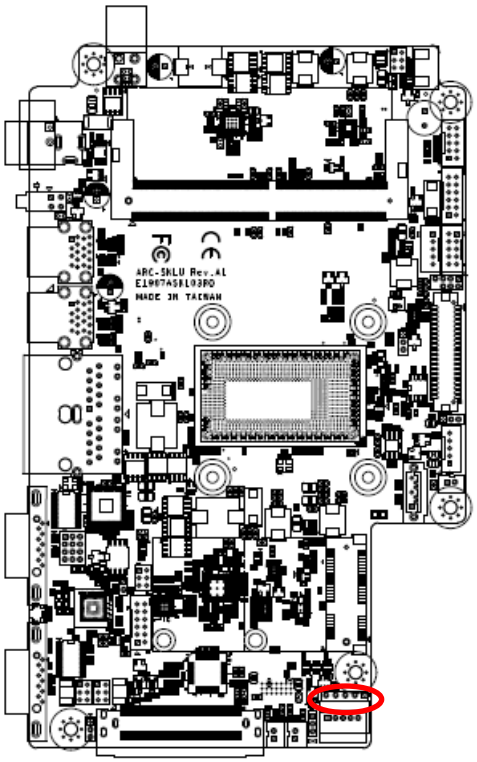




Signal	PIN	PIN	Signal
GND	1	41	GND
GND	2	42	GND
+12V	3	43	GND
+12V	4	44	GND
GND	5	45	GND
LPC_SERIRQ	6	46	+5VSB
LPC_LFRAME#	7	47	+5VSB
CLK3_LPC_B2B	8	48	+5VSB
LPC_AD0	9	49	+5VSB
LPC_AD1	10	50	+5VSB

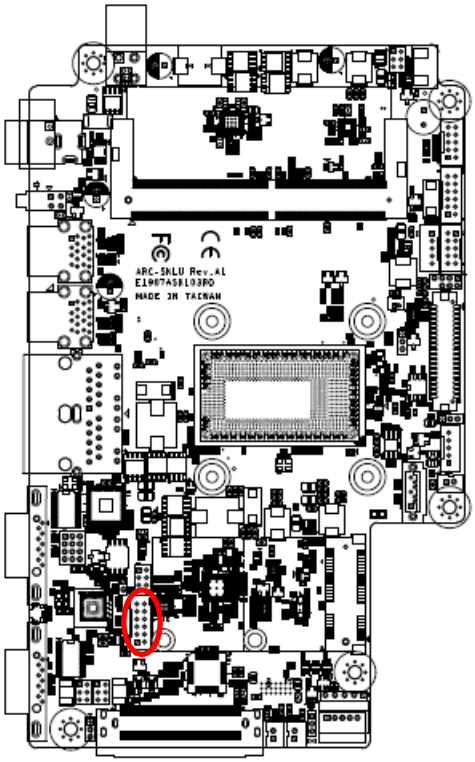
Signal	PIN	PIN	Signal
LPC_AD2	11	51	GND
LPC_AD3	12	52	USB_PP8
PS_ON_B2B	13	53	USB_PN8
PLT_RST#	14	54	GND
PCH_SLP_S3#	15	55	SMBCLK
HDMI_HPD	16	56	SMBDATA
GND	17	57	GND
HDMI1_CTRL_CLK	18	58	BOARD_ID
HDMI1_CTRL_DAT	19	59	PCIEUSB3_PONRSTB
GND	20	60	PCIEUSB3_SMIB_INT#
HDMI1_TXN_2	21	61	B2BPCIE_WAKE#
HDMI1_TXP_2	22	62	RST_B2BPCIE#
GND	23	63	B2BPCIE_CLK_REQ#
HDMI1_TXN_1	24	64	GND
HDMI1_TXP_1	25	65	PCIE_TXN8
GND	26	66	PCIE_TXP8
HDMI1_TXN_0	27	67	GND
HDMI1_TXP_0	28	68	PCIE_RXN8
GND	29	69	PCIE_RXP8
HDMI1_CLKN	30	70	GND
HDMI1_CLKP	31	71	CLK_B2BPCIE_N2
GND	32	72	CLK_B2BPCIE_P2
GND	33	73	GND
MIC_RIN	34	74	GND
MIC_LIN	35	75	MIC1_JD
GND	36	76	GND
LINEOUT1_JD	37	77	LINE1_JD
LINEOUT_R	38	78	LINE1_RIN
LINEOUT_L	39	79	LNE1_LIN
GND	40	80	GND

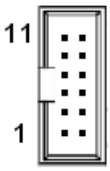
2.6.17 Touch panel connector (JTP1)



Signal	PIN
Y-	1
Y+	2
SENSE	3
X-	4
X+	5

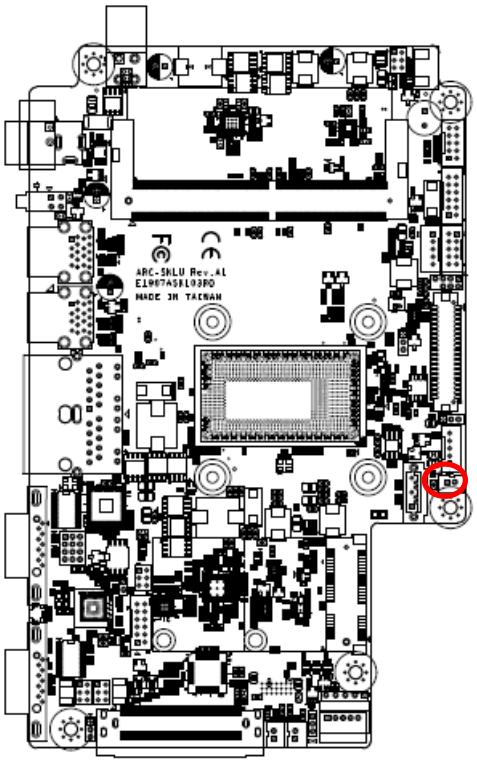
2.6.18 General purpose I/O connector (JGPIO1)

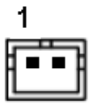




Signal	PIN	PIN	Signal
+3.3V	11	12	GND
SMB_DATA	9	10	SMB_CLK
DIO_GP23	7	8	DIO_GP13
DIO_GP22	5	6	DIO_GP12
DIO_GP21	3	4	DIO_GP11
DIO_GP20	1	2	DIO_GP10

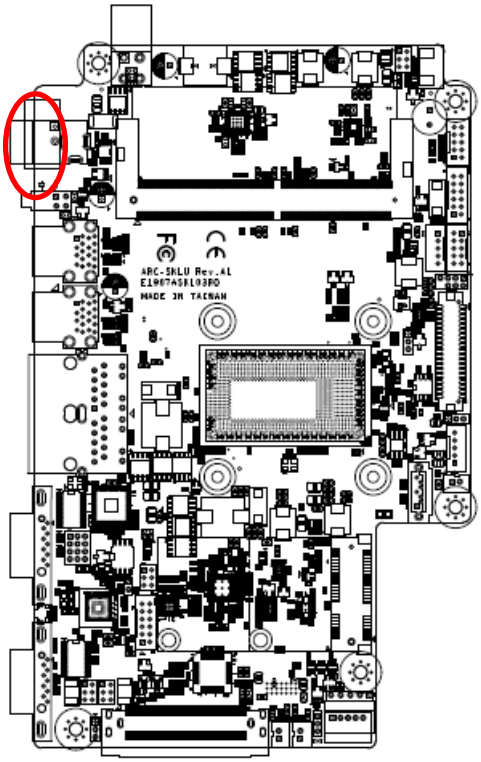
2.6.19 SATA Power connector (SATAPW1)

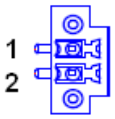




Signal	PIN
GND	1
+5V	2

2.6.20 Power connector (PWR1)



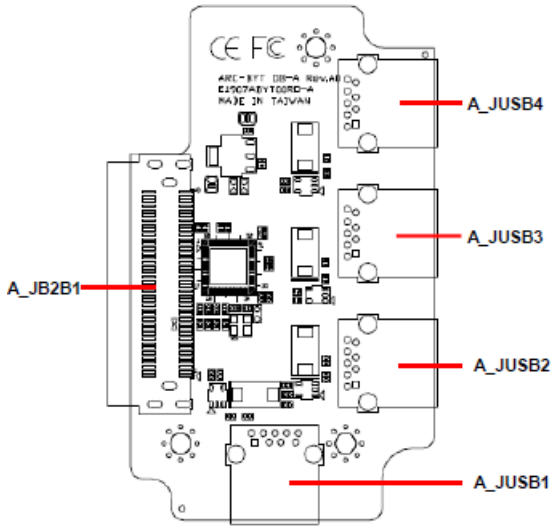


***Option: Phoenix Connector**

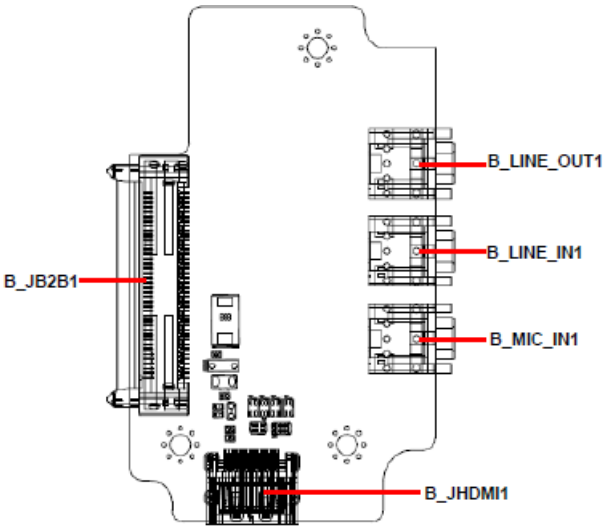
Signal	PIN
+DCIN	1
GND	2

2.7 ARC-BYT DB-A/B/C/D/G/H/K Overviews

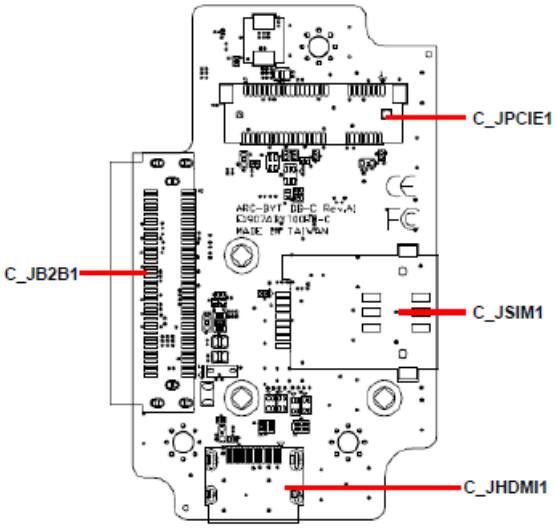
2.7.1 ARC-BYT DB-A



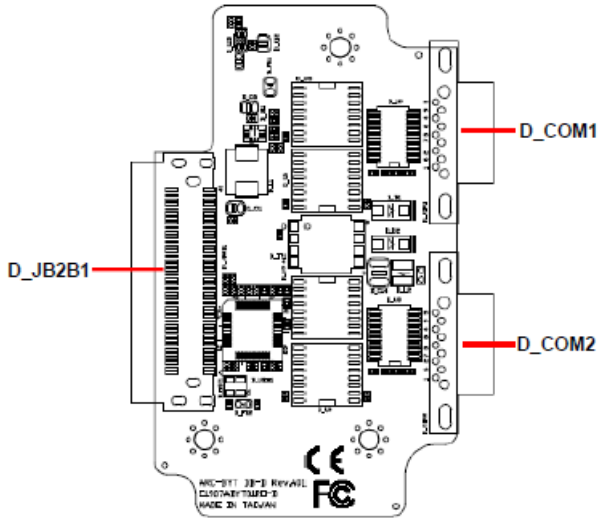
2.7.2 ARC-BYT DB-B



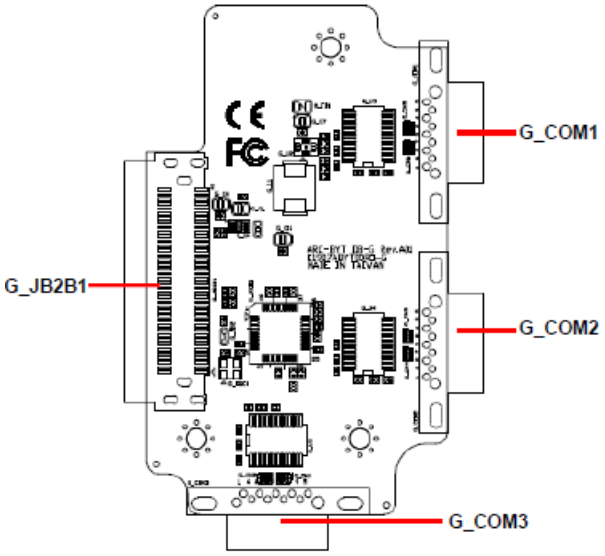
2.7.3 ARC-BYT DB-C



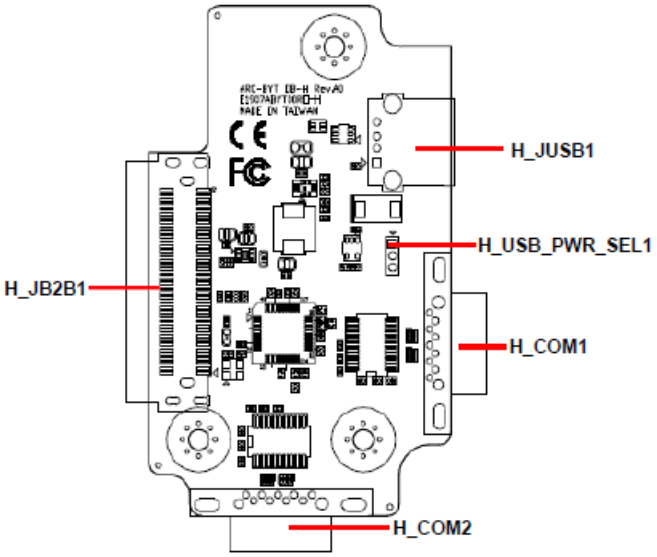
2.7.4 ARC-BYT DB-D



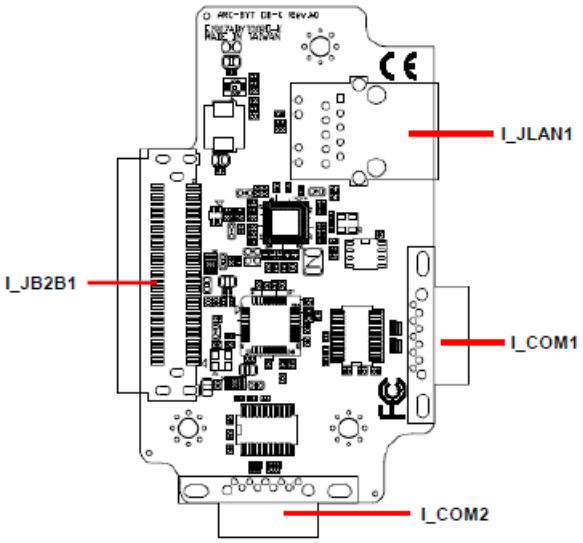
2.7.5 ARC-BYT DB-G



2.7.6 ARC-BYT DB-H



2.7.7 ARC-BYT DB-K



2.8 ARC-BYT DB-A/B/C/D/G/H/K Connector list

2.8.1 ARC-BYT DB-A

Connectors

Label	Function	Note
A_JUSB1~4	USB3.0 connector 1~4	
A_JB2B1	B2B connector	

2.8.2 ARC-BYT DB-B

Connectors

Label	Function	Note
B_LINE_OUT1	Line-out audio jack	
B_LINE_IN1	Line-in audio jack	
B_MIC_IN1	Mic-in audio jack	
B_JHDMI1	HDMI connector	
B_JB2B1	B2B connector	

2.8.3 ARC-BYT DB-C

Connectors

Label	Function	Note
C_JPCIE1	Mini PCI Express connector	
C_JSIM1	SIM card slot (Push-push)	
C_JHDMI1	HDMI connector	
C_JB2B1	B2B connector	

2.8.4 ARC-BYT DB-D

Connectors

Label	Function	Note
D_COM1/2	Serial Port 1/2 connector	DB-9 male connector
D_JB2B1	B2B connector	

2.8.5 ARC-BYT DB-G

Connectors

Label	Function	Note
G_COM1/2/3	Serial Port 1/2/3 connector	DB-9 male connector
G_JB2B1	B2B connector	

2.8.6 ARC-BYT DB-H

Jumpers

Label	Function	Note
H_USB_PWR_SEL1	USB Power selector	3 x 1 header, pitch 2.00mm

Connectors

Label	Function	Note
H_JUSB1	USB3.0 connector	
H_COM1/2	Serial Port 1/2 connector	DB-9 male connector
H_JB2B1	B2B connector	

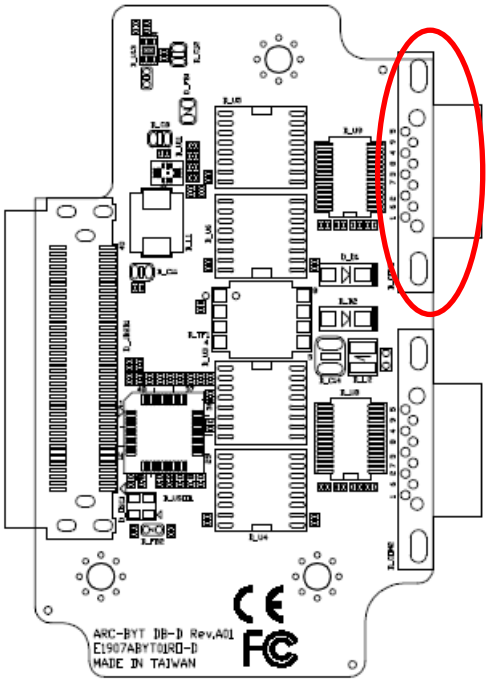
2.8.7 ARC-BYT DB-K

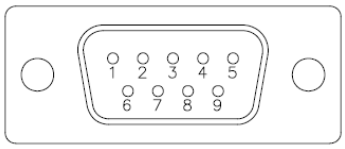
Connectors

Label	Function	Note
I_JLAN1	RJ-45 Ethernet	
I_COM1/2	Serial Port 1/2 connector	DB-9 male connector
I_JB2B1	B2B connector	

2.9 ARC-BYT DB-D Connectors settings

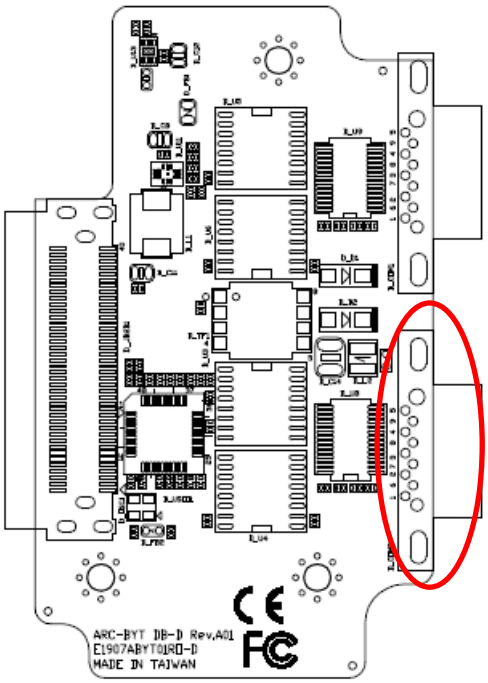
2.9.1 Serial Port 1 connector (D_COM1)

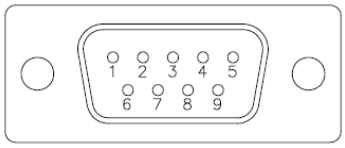




Signal	PIN	PIN	Signal
NDCD#_3_D	1	6	NDSR#_3_D
NRXD_3_D	2	7	NRTS#_3_D
NTXD_3_D	3	8	NCTS#_3_D
NDTR#_3_D	4	9	NRI#_3_D
GND	5		

2.9.2 Serial Port 2 connector (D_COM2)

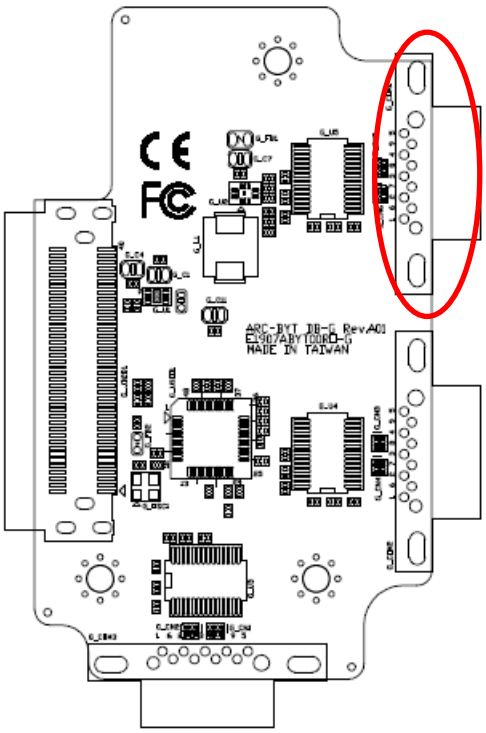


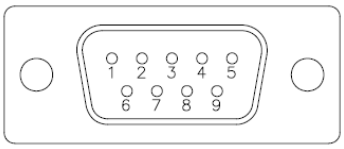


Signal	PIN	PIN	Signal
NDCD#_2_D	1	6	NDSR#_2_D
NRXD_2_D	2	7	NRTS#_2_D
NTXD_2_D	3	8	NCTS#_2_D
NDTR#_2_D	4	9	NRI#_2_D
GND	5		

2.10 ARC-BYT DB-G Connectors settings

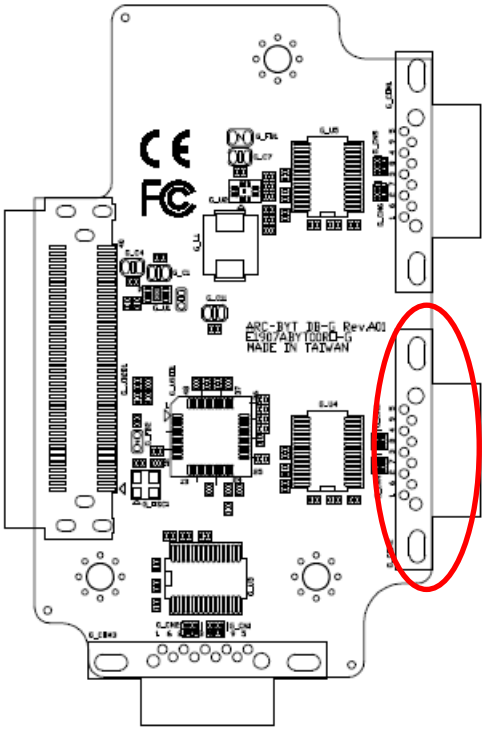
2.10.1 Serial Port 1 connector (G_COM1)

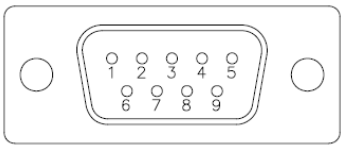




Signal	PIN	PIN	Signal
NDCD#_3_G	1	6	NDSR#_3_G
NRXD_3_G	2	7	NRTS#_3_G
NTXD_3_G	3	8	NCTS#_3_G
NDTR#_3_G	4	9	NRI#_3_G
GND	5		

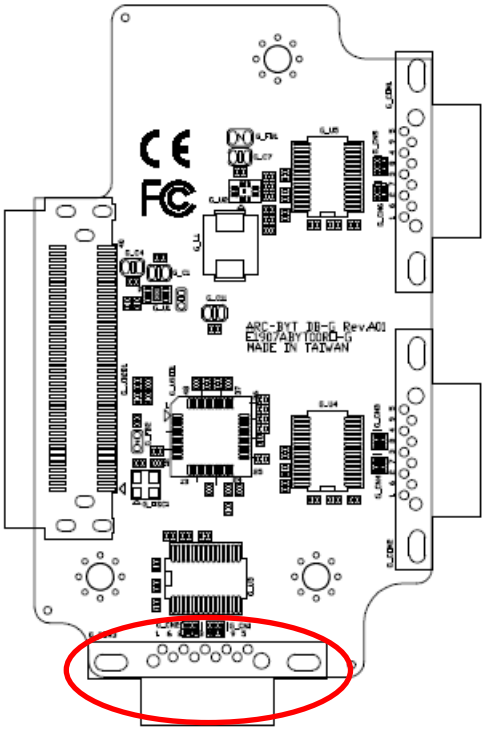
2.10.2 Serial Port 2 connector (G_COM2)

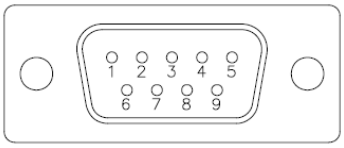




Signal	PIN	PIN	Signal
NDCD#_2_G	1	6	NDSR#_2_G
NRXD_2_G	2	7	NRTS#_2_G
NTXD_2_G	3	8	NCTS#_2_G
NDTR#_2_G	4	9	NRI#_2_G
GND	5		

2.10.3 Serial Port 3 connector (G_COM3)

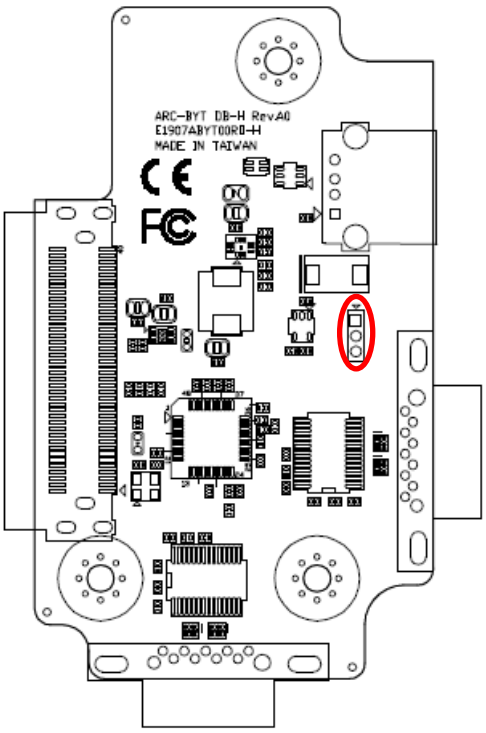




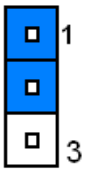
Signal	PIN	PIN	Signal
NDCD#_1_G	1	6	NDSR#_1_G
NRXD_1_G	2	7	NRTS#_1_G
NTXD_1_G	3	8	NCTS#_1_G
NDTR#_1_G	4	9	NRI#_1_G
GND	5		

2.11 ARC-BYT DB-H Jumpers settings

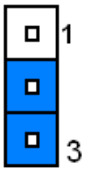
2.11.1 USB Power selector (H_USB_PWR_SEL1)



+5VSB*



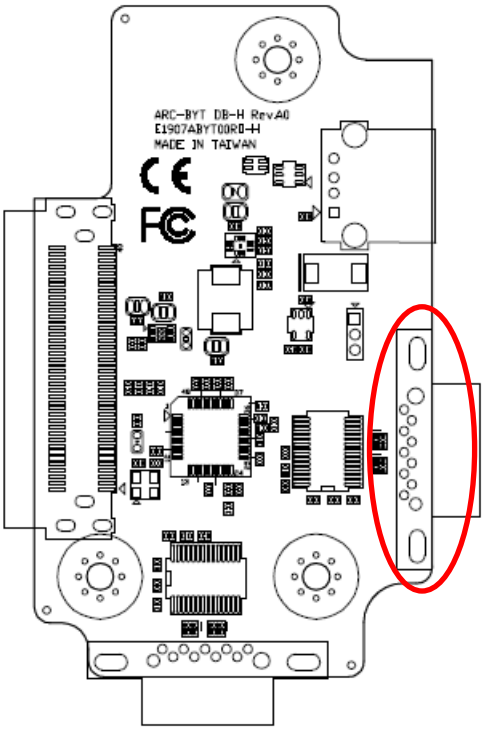
+5V

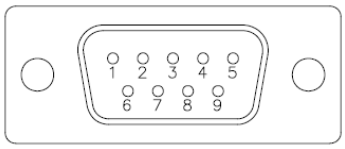


***Default**

2.12 ARC-BYT DB-H Connectors settings

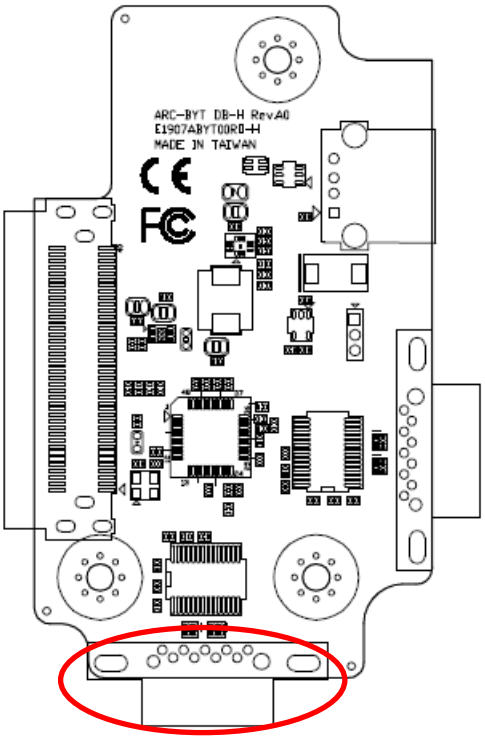
2.12.1 Serial Port 1 connector (H_COM1)

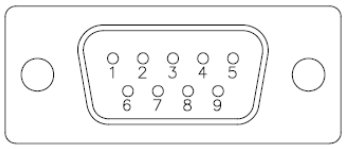




Signal	PIN	PIN	Signal
NDCD#_1_H	1	6	NDSR#_1_H
NRXD_1_H	2	7	NRTS#_1_H
NTXD_1_H	3	8	NCTS#_1_H
NDTR#_1_H	4	9	NRI#_1_H
GND	5		

2.12.2 Serial Port 2 connector (H_COM2)

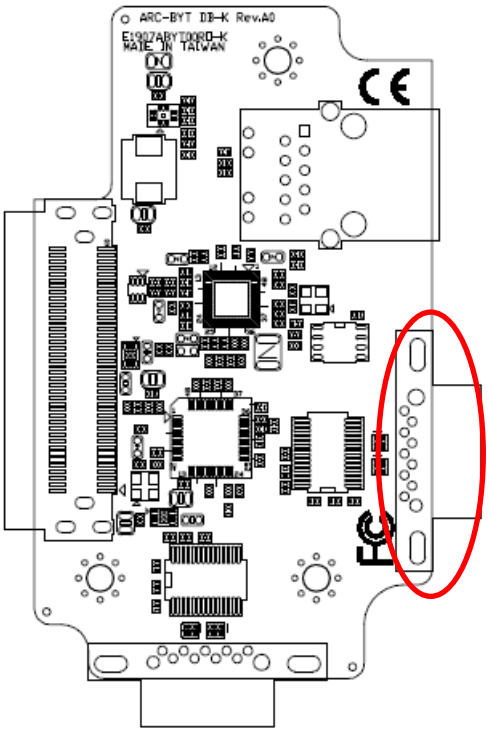


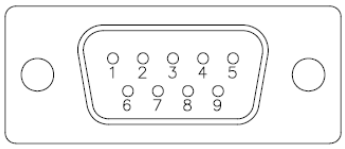


Signal	PIN	PIN	Signal
NDCD#_2_H	1	6	NDSR#_2_H
NRXD_2_H	2	7	NRTS#_2_H
NTXD_2_H	3	8	NCTS#_2_H
NDTR#_2_H	4	9	NRI#_2_H
GND	5		

2.13 ARC-BYT DB-K Connectors settings

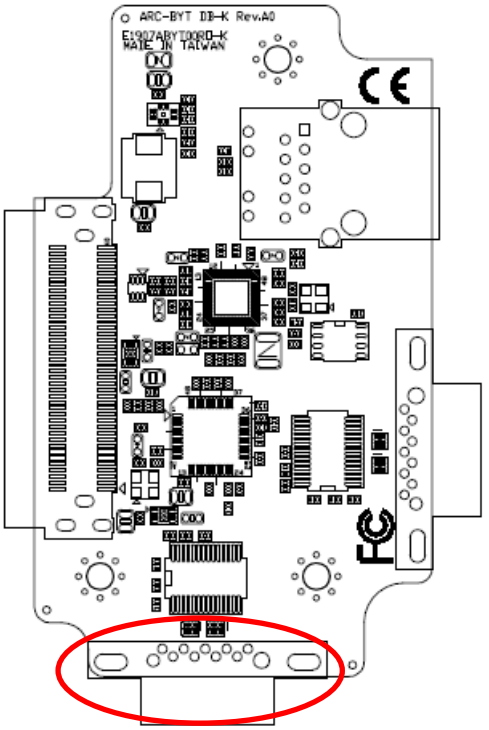
2.13.1 Serial Port 1 connector (I_COM1)

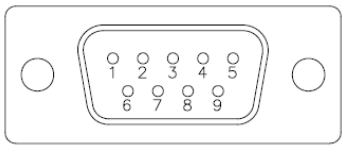




Signal	PIN	PIN	Signal
NDCD#_1_I	1	6	NDSR#_1_I
NRXD_1_I	2	7	NRTS#_1_I
NTXD_1_I	3	8	NCTS#_1_I
NDTR#_1_I	4	9	NRI#_1_I
GND	5		

2.13.2 Serial Port 2 connector (I_COM2)





Signal	PIN	PIN	Signal
NDCD#_2_I	1	6	NDSR#_2_I
NRXD_2_I	2	7	NRTS#_2_I
NTXD_2_I	3	8	NCTS#_2_I
NDTR#_2_I	4	9	NRI#_2_I
GND	5		

3.BIOS Setup

3.1 Introduction

The BIOS 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

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 <F2> or <Del> immediately after switching the system on, or
By pressing the <F2> or <Del> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press <F2> or <Del> 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.

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.

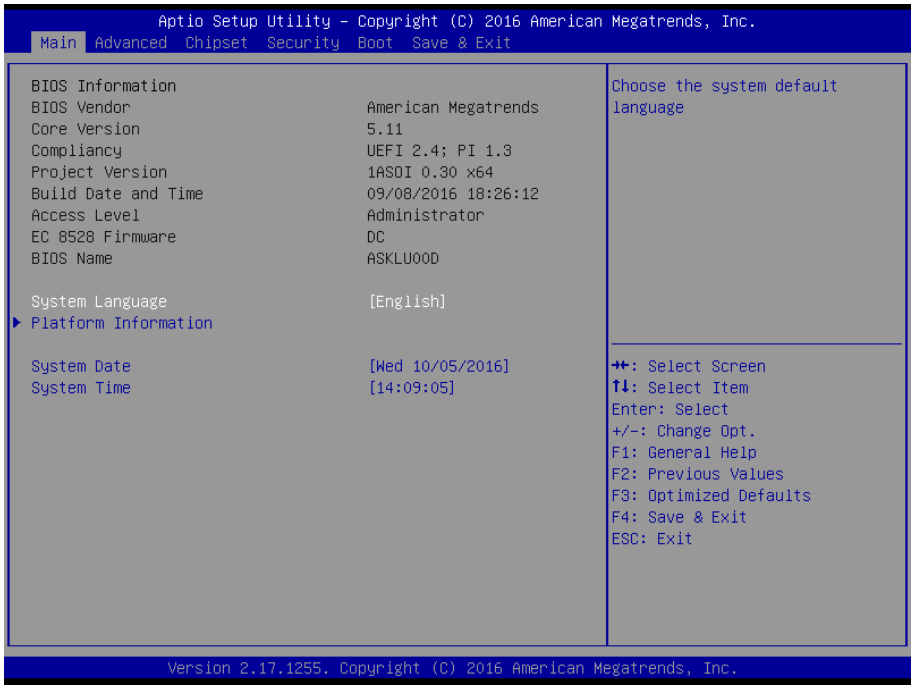
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance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

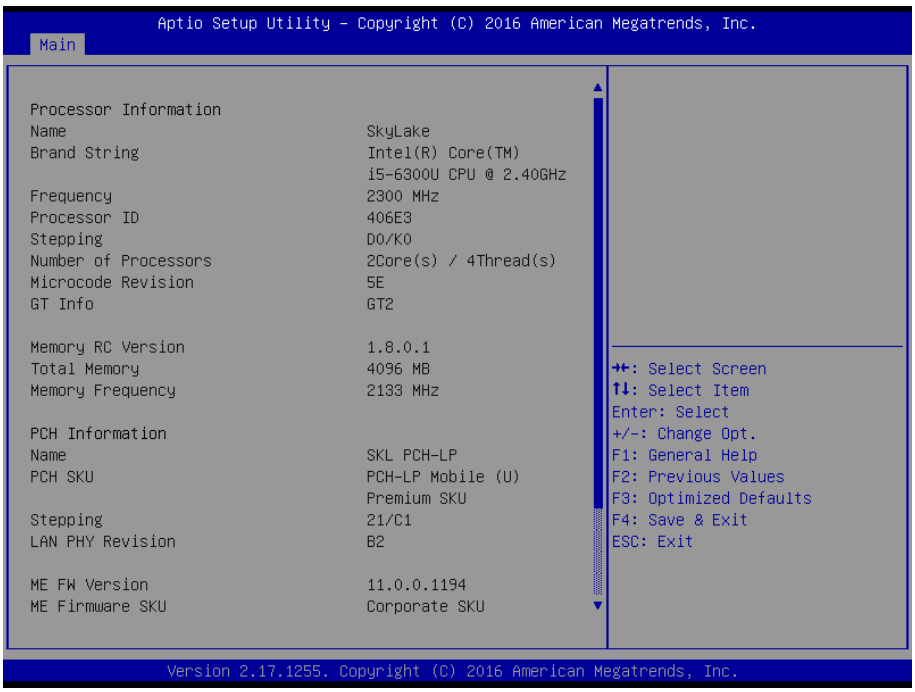
3.6 BIOS setup

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.





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.

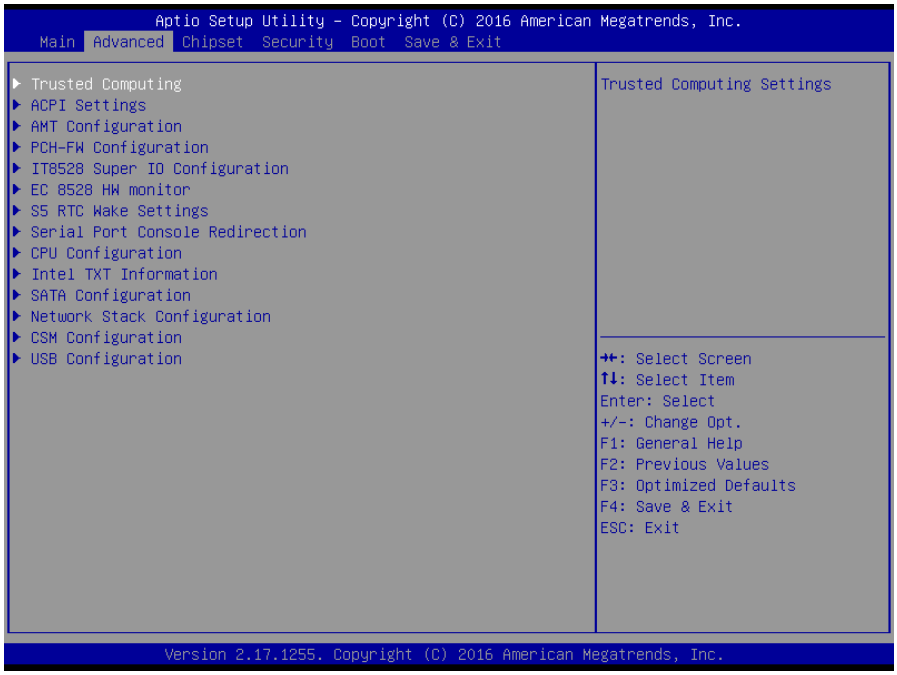
3.6.1.3 System Time

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

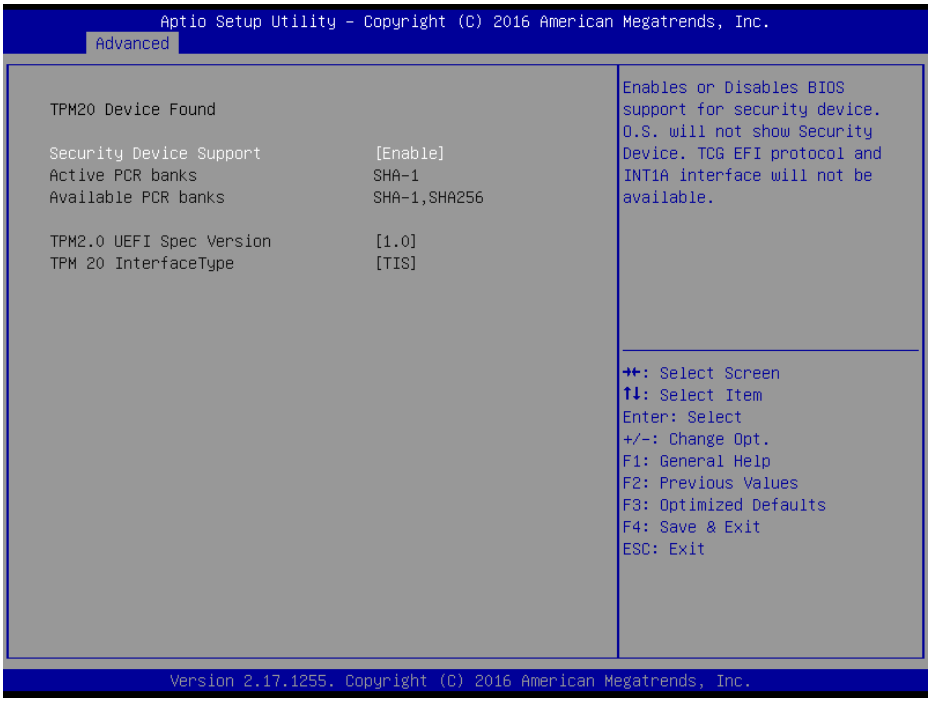
Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.

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.

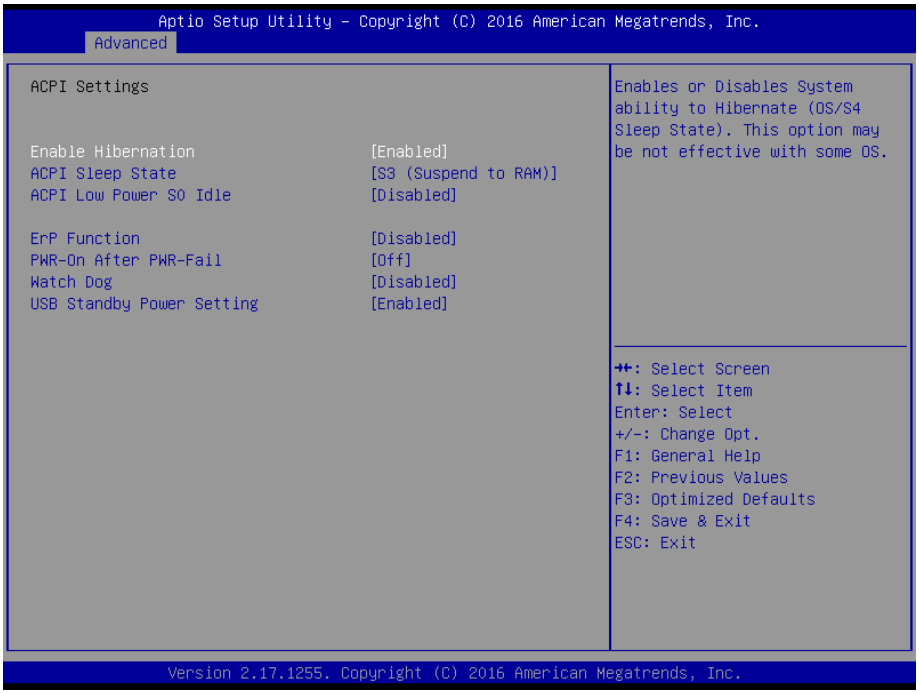


3.6.2.1 Trusted Computing



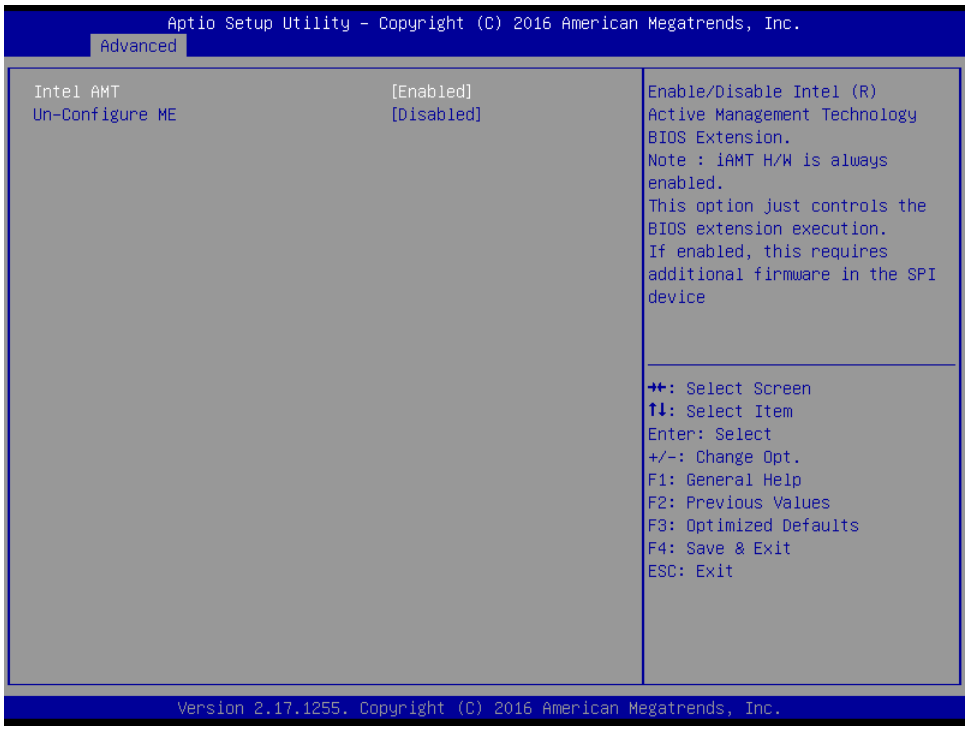
Item	Options	Description
Security Device Support	Disable, Enable**[Default]**	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

3.6.2.2 APCI Settings



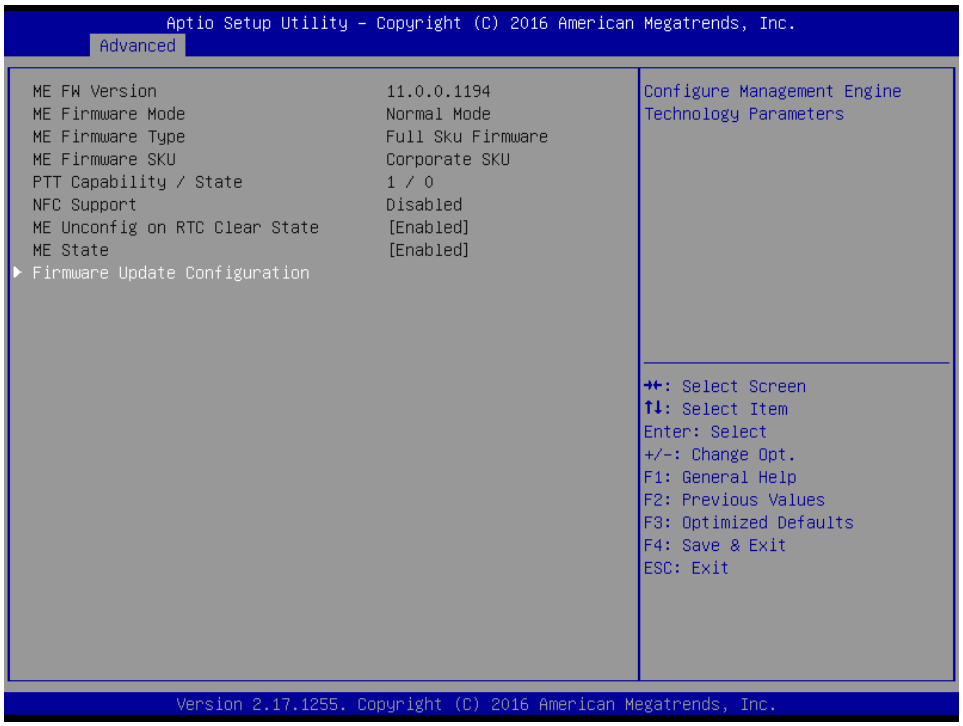
Item	Options	Description
Enable Hibernation	Disabled Enabled**[Default]**,	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM) **[Default]**	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
ACPI Low Power S0 Idle	Disabled**[Default]**, Enabled	Enable or Disable ACPI Low Power S0 Idle Support.
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.
USB Standby Power Setting	Disabled Enabled**[Default]**,	Enabled/Disabled USB Standby Power during S3/S4/S5.

3.6.2.3 AMT Configuration



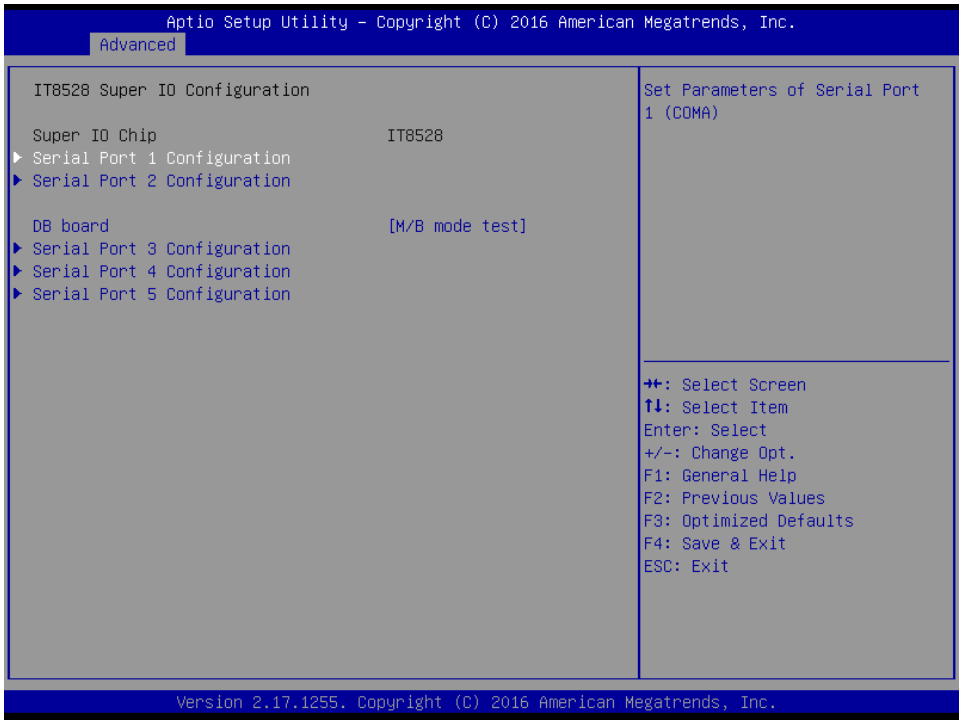
Item	Options	Description
Intel AMT	Disabled Enabled**[Default]**,	Enable/Disable Intel® Active Management Technology BIOS Extension. Note: iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.
Un-Configure ME	Disabled**[Default]** Enabled,	OEMFlag Bit 15: Un-Configure ME without password.

3.6.2.4 PCH-FW Configuration



3.6.2.5 IT8528 Super IO Configuration

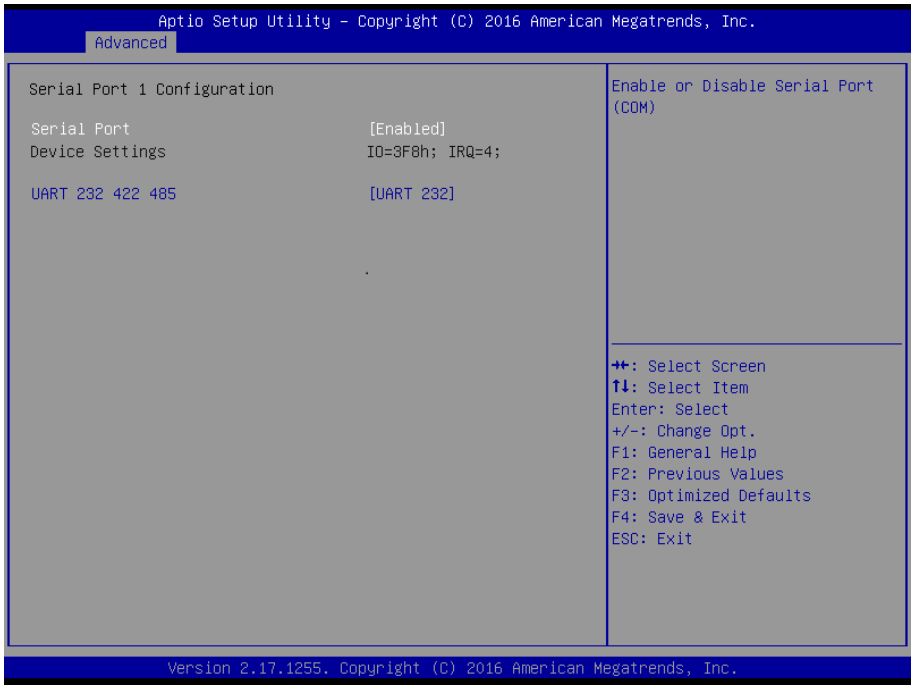
You can use this item to set up or change the IT8528 Super IO configuration for serial ports. Please refer to 3.6.2.5.1~ 3.6.2.5.5 for more information.



Item	Options	Description
DB board	DB-A/C/E/J DB-B DB-F 1COM	DB board A-K. DA-A/B/C/E/J w/o UART DB-G w/t 3UART DB-D/H/K w/t 2UART DB-F w/t 1UART.

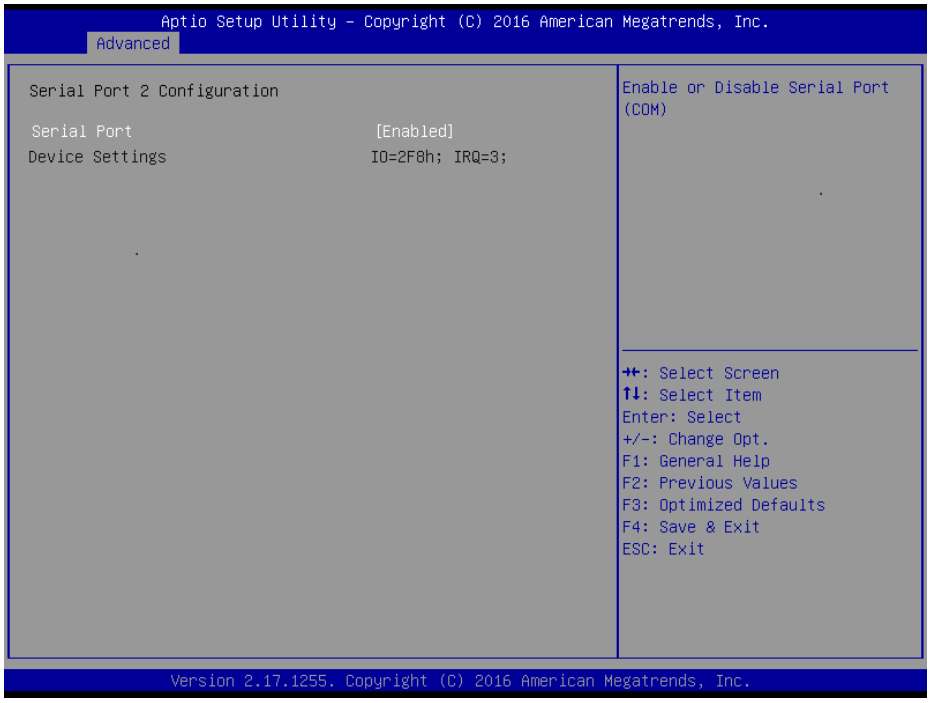
	DB-D/H/K 2COM DB-G 3COM M/B mode test**[Default]**,	
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).	
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).	
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC).	
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD).	
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME).	

3.6.2.5.1 Serial Port 1 Configuration



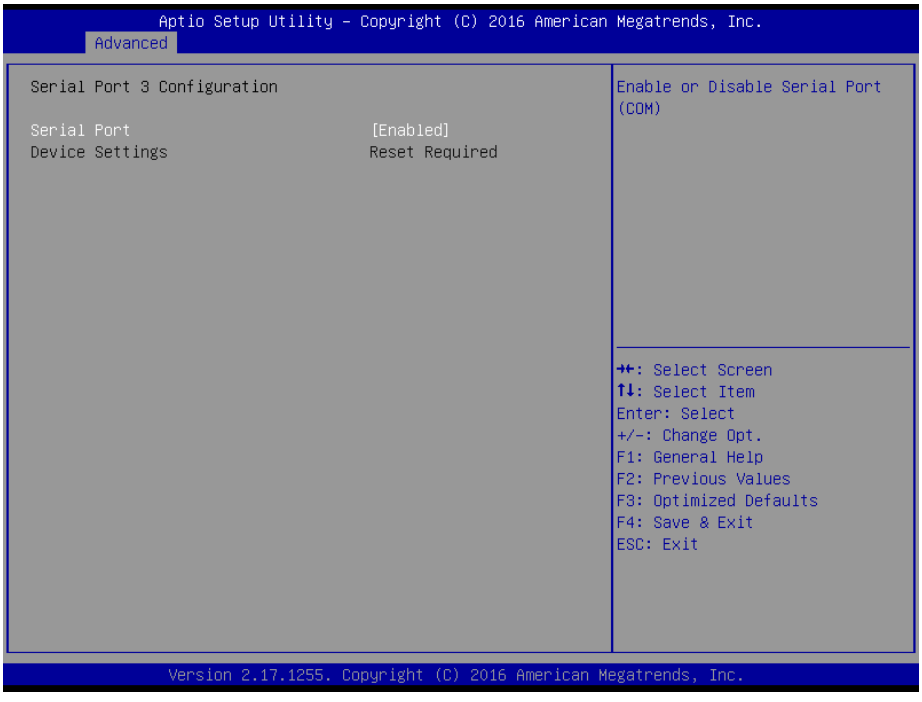
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
UART 232 422 485	UART 232**[Default]** UART 422 UART 485	Change the Serial Port

3.6.2.5.2 Serial Port 2 Configuration



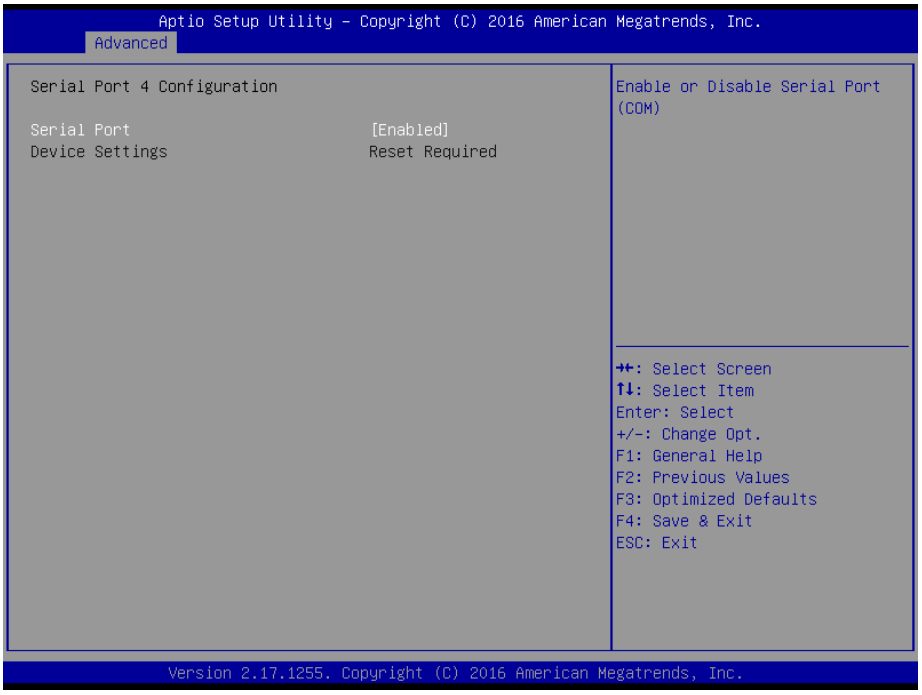
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.5.3 Serial Port 3 Configuration



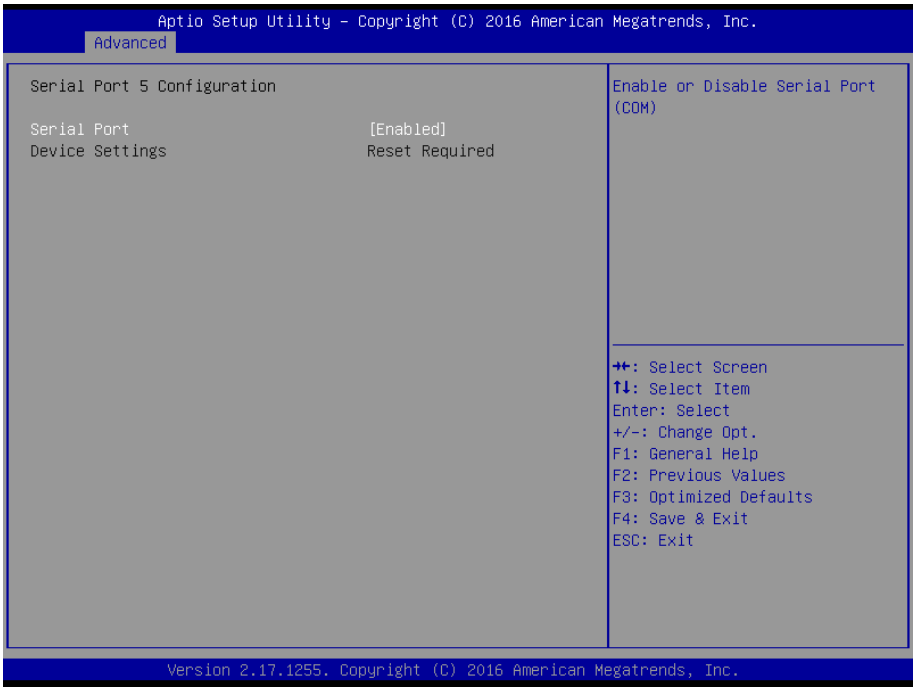
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.5.4 Serial Port 4 Configuration



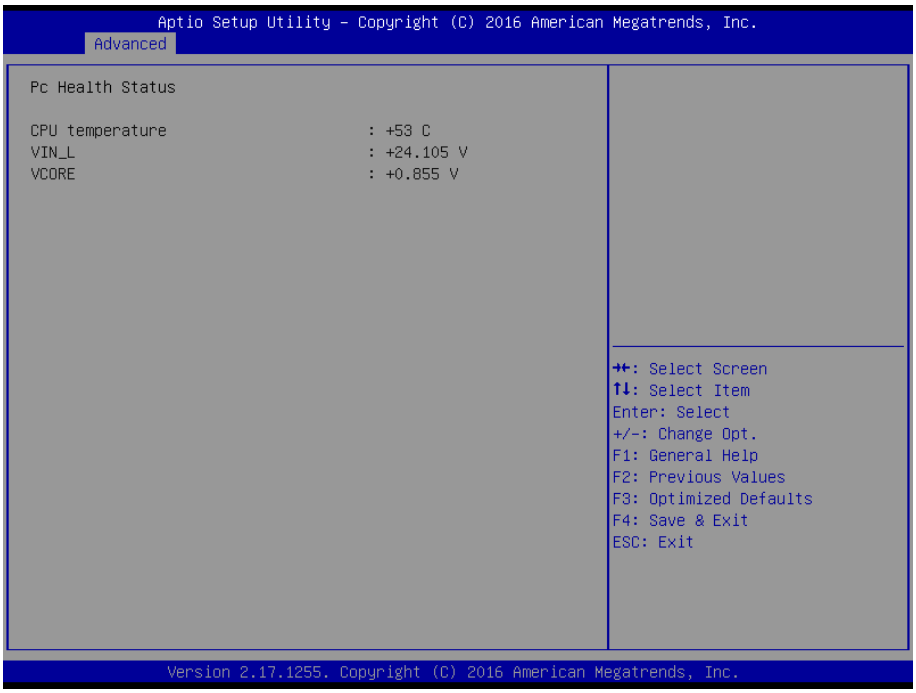
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.5.5 Serial Port 5 Configuration

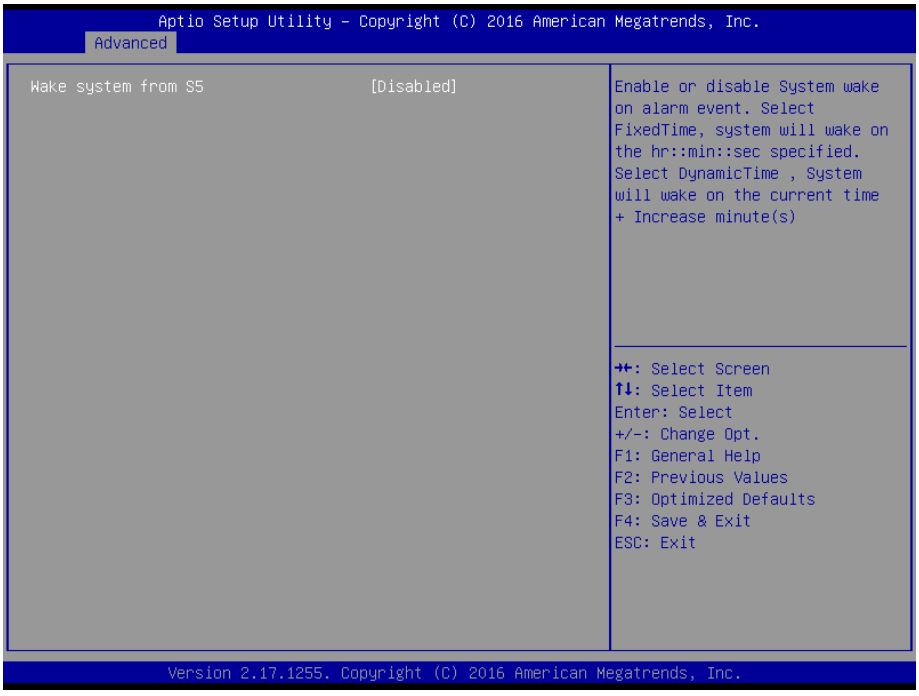


Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.6 H/W Monitor

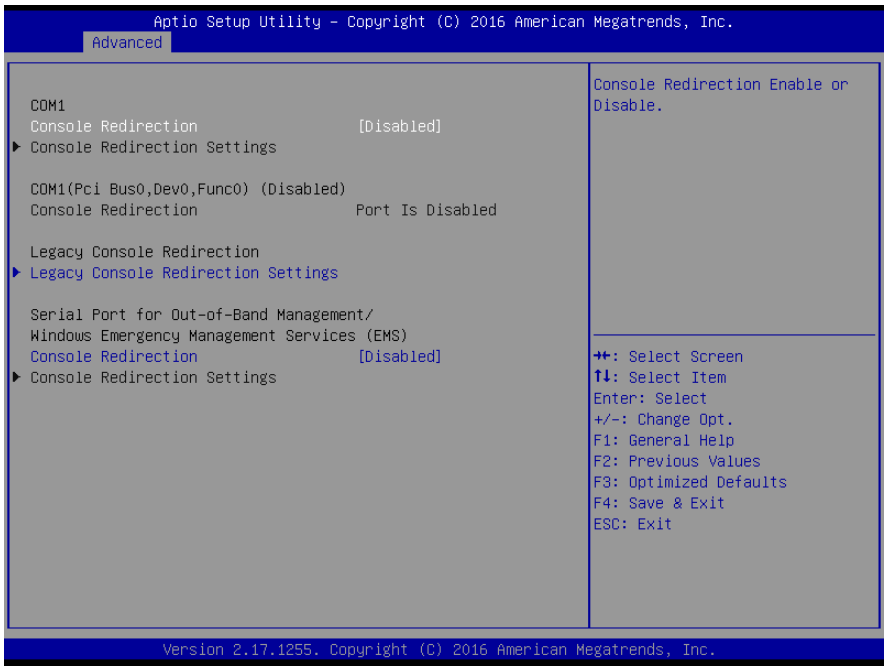


3.6.2.7 S5 RTC Wake Settings



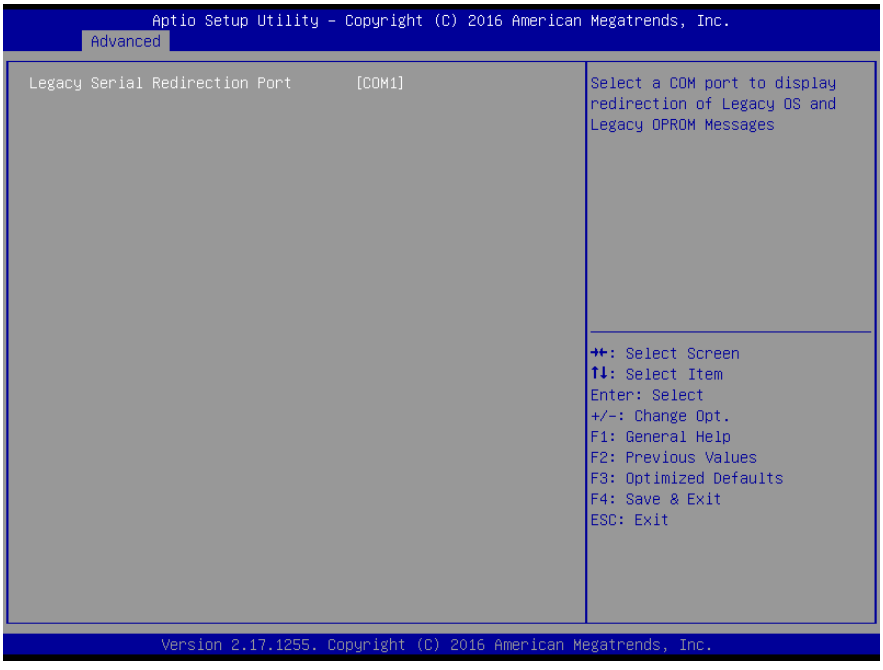
Item	Options	Description
Wake system from S5	Disabled**[Default]**, Fixed Time Dynamic Time	Enable or disable System wake on alarm event. Select Fixed Time, system will wake on the hr::min::sec specified. Select Dynamic Time, System will wake on the current time + Increase minute(s).

3.6.2.8 Serial Port Console Redirection



Item	Options	Description
Console Redirection	Disabled**[Default]**, Enabled	Console Redirection Enable or Disable.

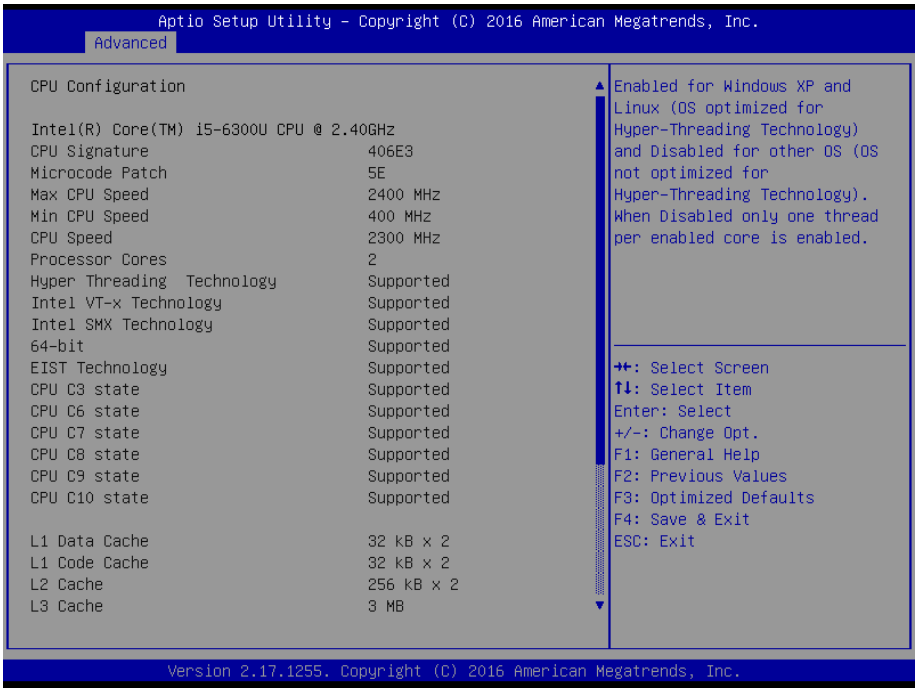
3.6.2.8.1 Legacy Console Redirection Settings



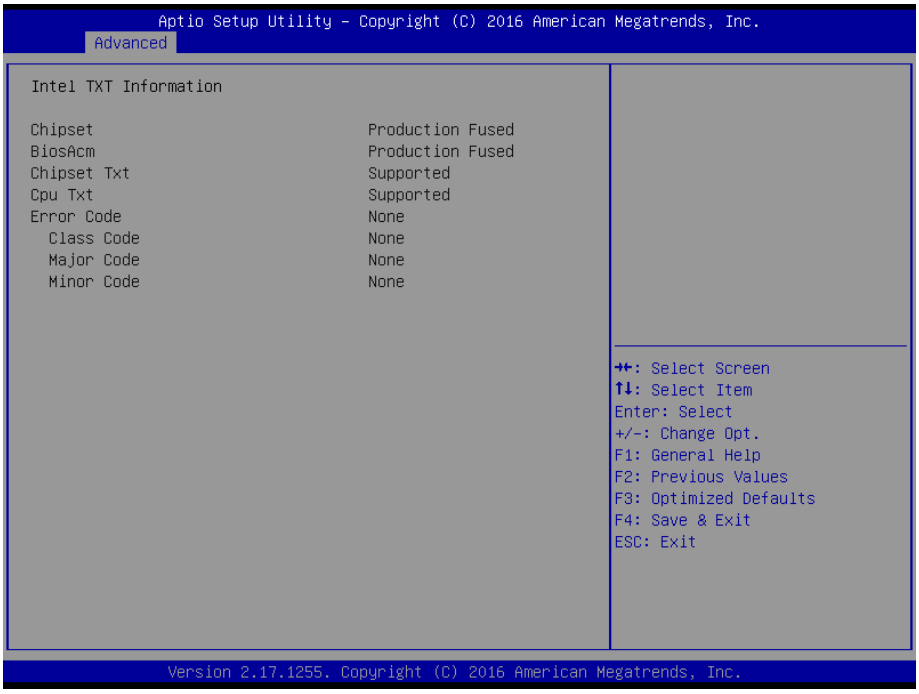
Item	Option	Description
Legacy Serial Redirection Port	COM1**[Default]**,	Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.

3.6.2.9 CPU Configuration

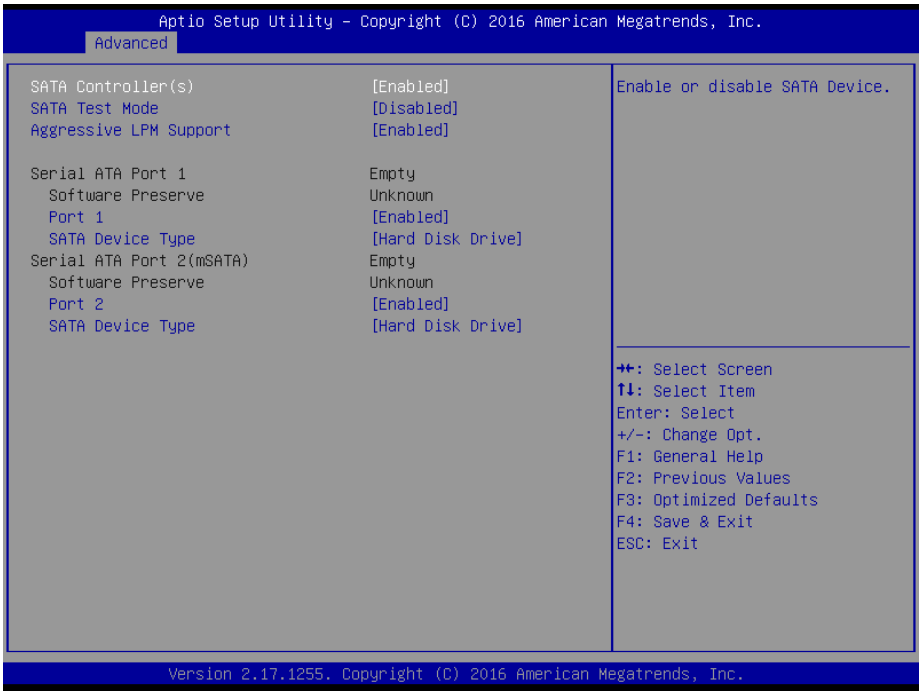
Use the CPU configuration menu to view detailed CPU specification and configure the CPU.



3.6.2.10 Intel TXT Configuration



3.6.2.11 SATA Configuration

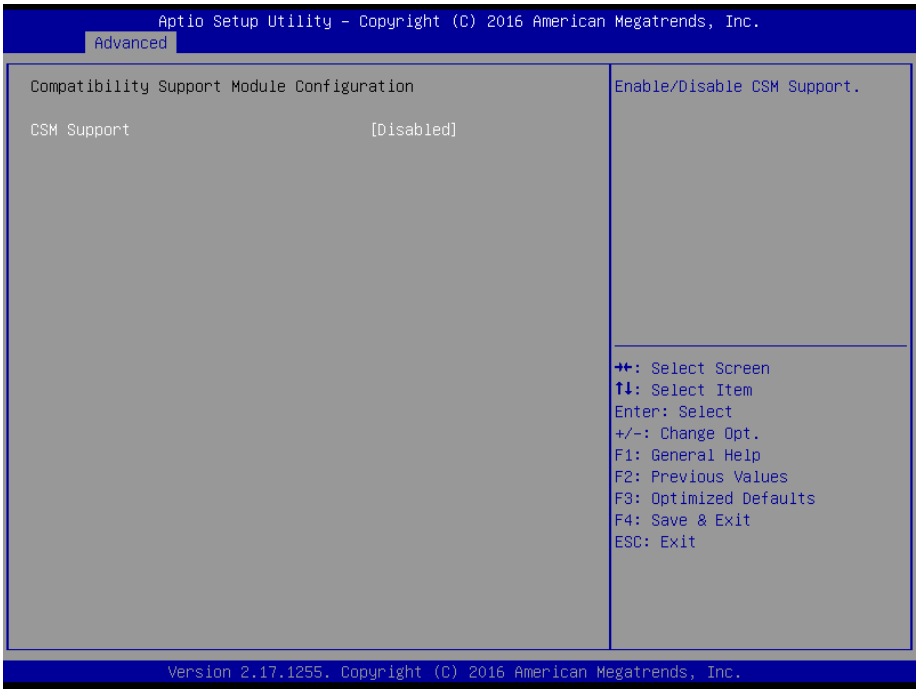


Item	Options	Description
SATA Controller(s)	Enabled**[Default]** Disabled,	Enable or disable SATA Device.
SATA Test Mode	Enabled Disabled**[Default]**,	Test Mode Enable/Disable (Loop Back).
Aggressive LPM Support	Enabled**[Default]** Disabled	Enable PCH to aggressively enter link power state.
Port 1/2	Enabled**[Default]** Disabled,	Enable or Disable SATA Port.
SATA Device Type	Hard Disk Drive **[Default]** Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

3.6.2.12 Network Stack Configuration

Item	Options	Description
Network Stack	Enabled Disabled**[Default]**	Enable/Disable UEFI Network Stack.

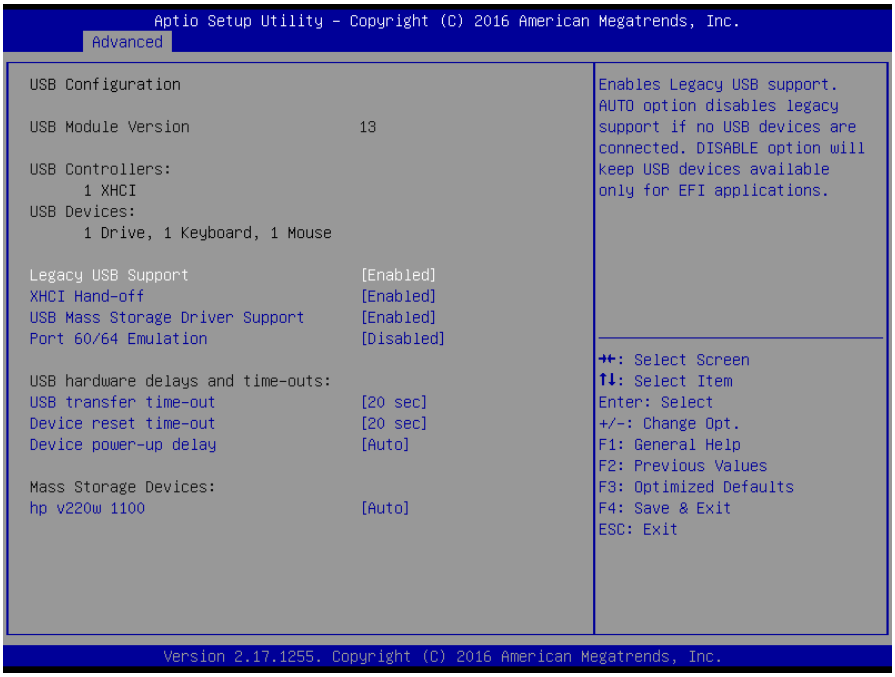
3.6.2.13 CSM Configuration



Item	Options	Description
CSM Support	Enabled Disabled**[Default]**	Enable/Disable CSM Support.

3.6.2.14 USB Configuration

The USB Configuration menu helps read USB information and configures USB settings.

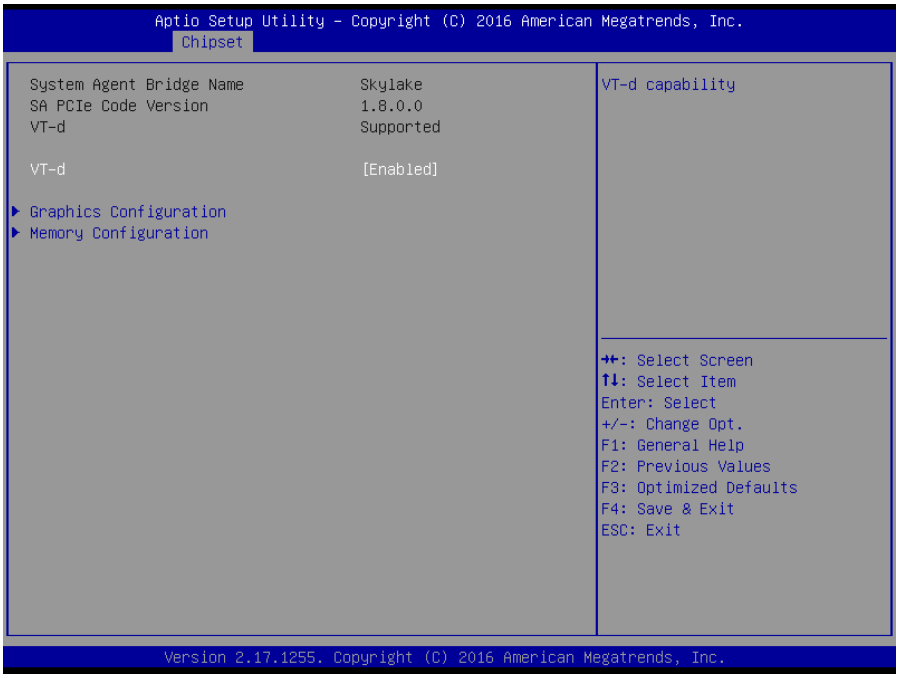


Item	Options	Description
Legacy USB Support	Enabled**[Default]** Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
XHCI Hand-off	Enabled**[Default]** Disabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Enabled**[Default]** Disabled	Enable/Disable USB Mass Storage Driver Support.
Port 60/64 Emulation	Enabled Disabled**[Default]**	Enable I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OSes.
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]**	Maximum time the device will take before it

	Manual	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.
hp v220w 1100	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.

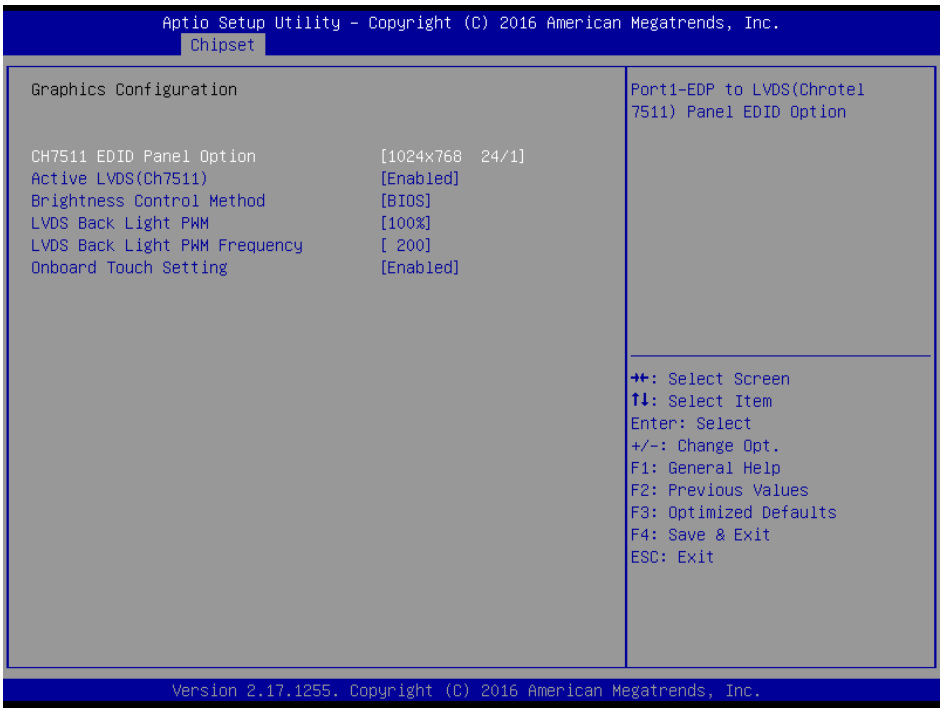
3.6.3 Chipset

3.6.3.1 System Agent (SA) Configuration



Item	Option	Description
VT-d	Enabled**[Default]** Disabled	VT-d capability.

3.6.3.1.1 Graphics Configuration



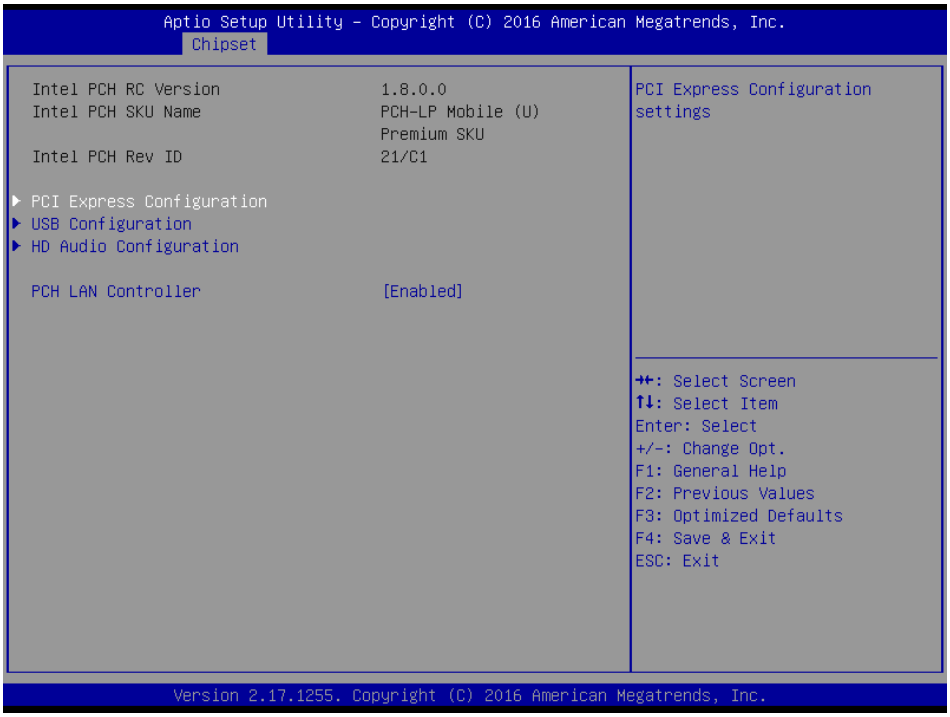
Item	Option	Description
CH7511 EDID Panel Option	1024x768 24/1**[Default]** 800x600 18/1 1024x768 18/1 1366x768 18/1 1024x600 18/1 1280x800 18/1 1920x1200 24/2 1920x1080 18/2 1280x1024 24/2 1440x900 18/2 1600x1200 24/2 1366x768 24/1 1920x1080 24/2 1680x1050 24/2	Port1-EDP to LVDS (Chrotel 7511) Panel EDID Option.
Active LVDS (CH7511)	Enabled**[Default]** Disabled	Active Internal LVDS (eDP->Ch7511-to-LVDS).
Brightness Control Method	BIOS**[Default]** BR Button VR OS Driver	LVDS Brightness Control Method. 1.BIOS 2.Brightness Button 3.Variable Resistor 4.OS Driver.
LVDS Back Light PWM	00% 25% 50%	Select LVDS back light PWM duty.

	75% 100%**[Default]**	
LVDS Back Light PWM Frequency	200**[Default]** 300 400 500 700 1k 2k 3k 5k 10k 20k	Select LVDS back light PWM Frequency.
Onboard Touch Setting	Enabled**[Default]** Disabled	Enable/Disable USB Touch.

3.6.3.1.2 Memory Configuration

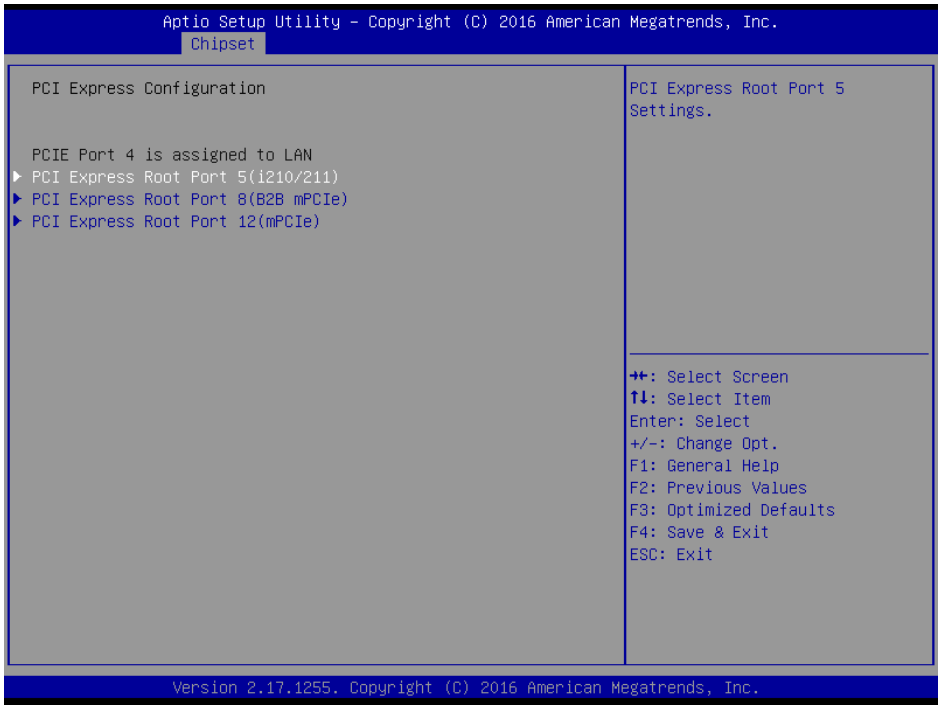
Item	Option	Description
Max TOLUD	Dynamic**[Default]** 1GB/1.25GB/1.5GB/1.75GB /2GB/2.25GB/2.5GB/2.75GB	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

3.6.3.2 PCH-IO Configuration



Item	Option	Description
PCH LAN Controller	Disabled Enabled**[Default]**	Enable or disable onboard NIC.

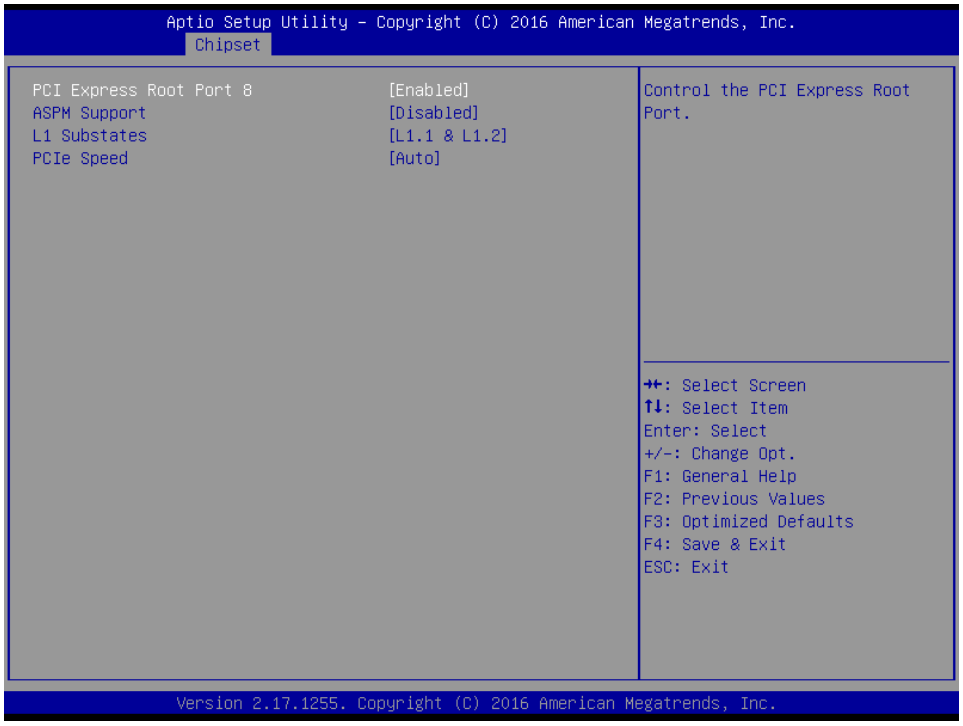
3.6.3.2.1 PCI Express Configuration



3.6.3.2.1.1 PCI Express Root Port5 (i210/211)

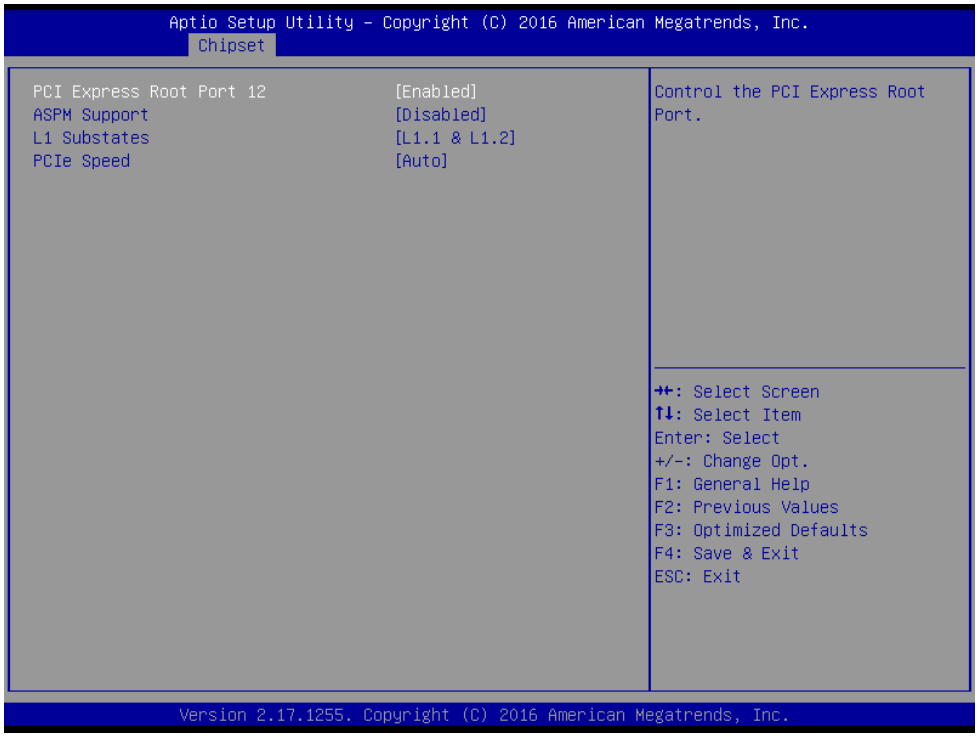
Item	Option	Description
PCI Express Root Port 5	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM Support	Disabled **[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.2 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3	Select PCI Express port speed.

3.6.3.2.1.2 PCI Express Root Port8 (B2B mPCIe)



Item	Option	Description
PCI Express Root Port 8	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM Support	Disabled **[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.2 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3	Select PCI Express port speed.

3.6.3.2.1.3 PCI Express Root Port12 (mPCIe)

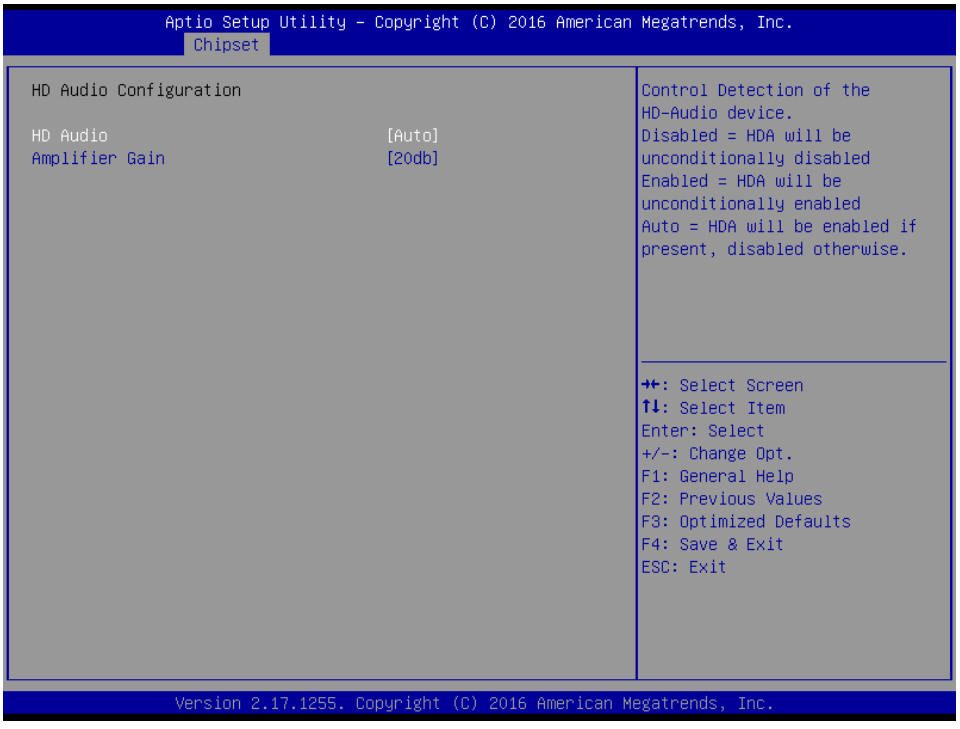


Item	Option	Description
PCI Express Root Port 12	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM Support	Disabled **[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.2 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3	Select PCI Express port speed.

3.6.3.2.2 USB Configuration

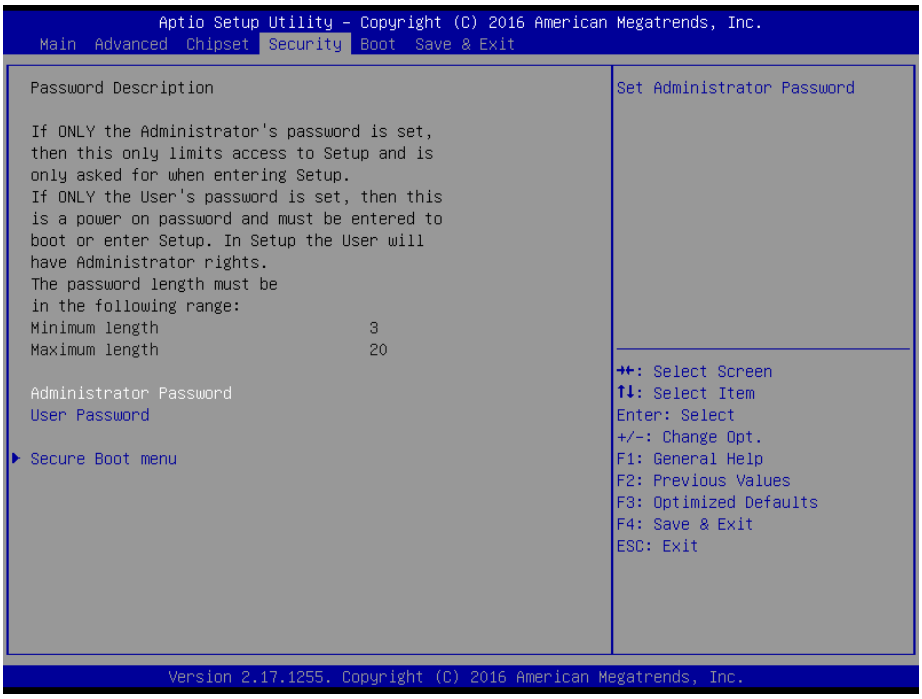
Item	Option	Description
USB Precondition	Enabled Disabled**[Default]**,	Precondition work on USB host controller and root ports for faster enumeration.
XHCI Disable Compliance Mode	FALSE**[Default]**, TRUE	Option to disable Compliance Mode. Default is FALSE to not disable Compliance Mode. Set TRUE to disable Compliance Mode.

3.6.3.2.3 HD Audio Configuration



Item	Option	Description
HD Audio	Disabled Enabled Auto**[Default]**,	Control Detection of the HD-Audio device. Disable = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled Auto = HDA will be enabled if present, disabled otherwise.
Amplifier Gain	20db**[Default]**, 26db 32db 36db	Amplifier Gain.

3.6.4 Security



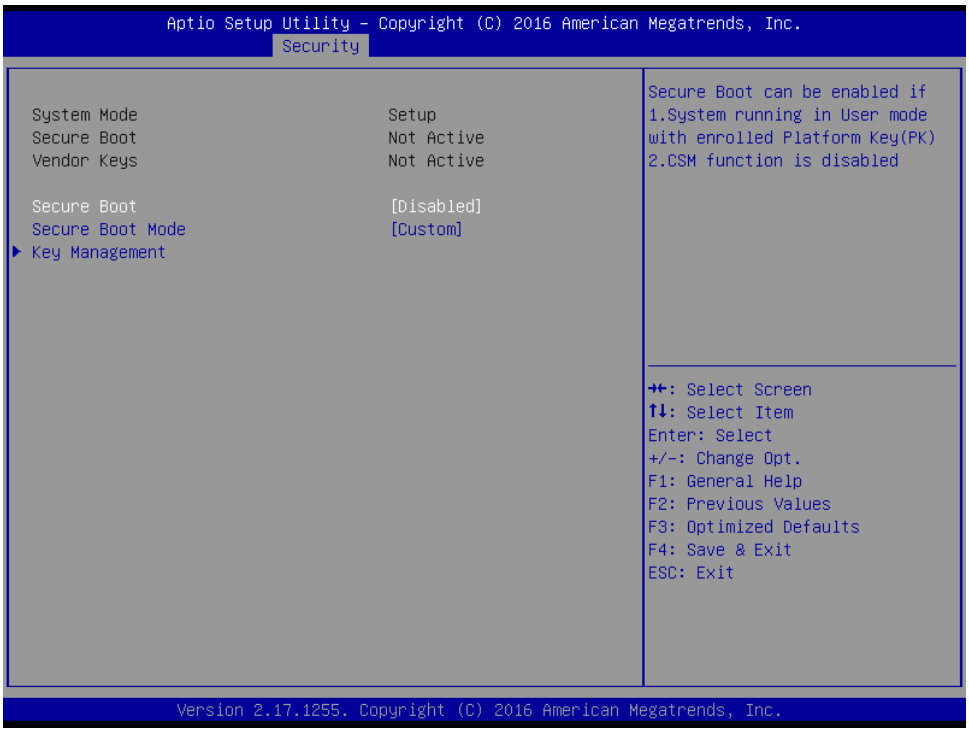
- **Administrator Password**

Set setup Administrator Password

- **User Password**

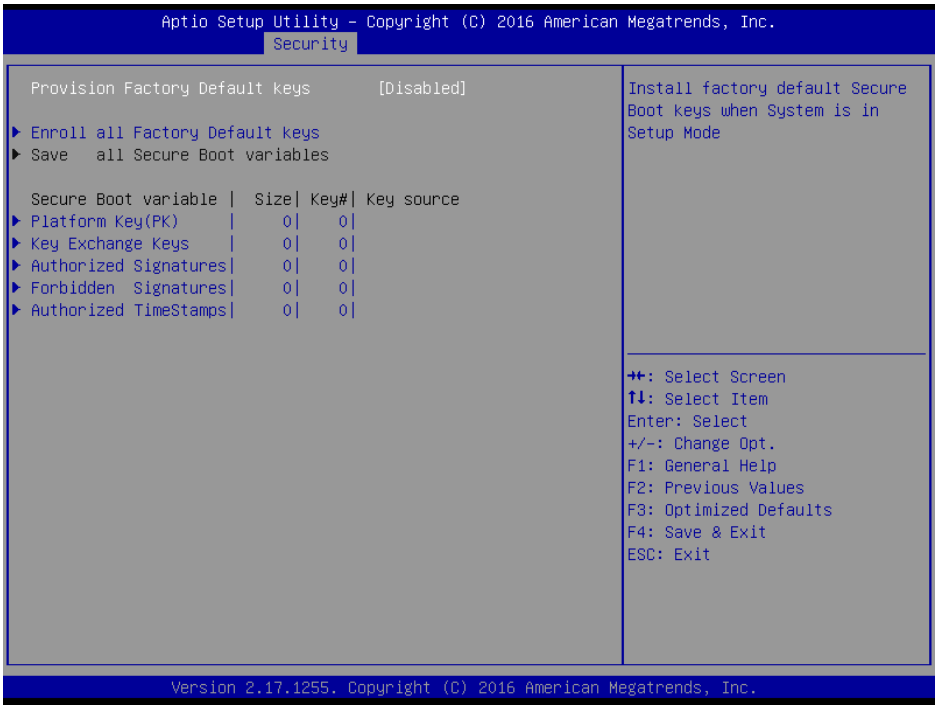
Set User Password

3.6.4.1 Secure Boot menu



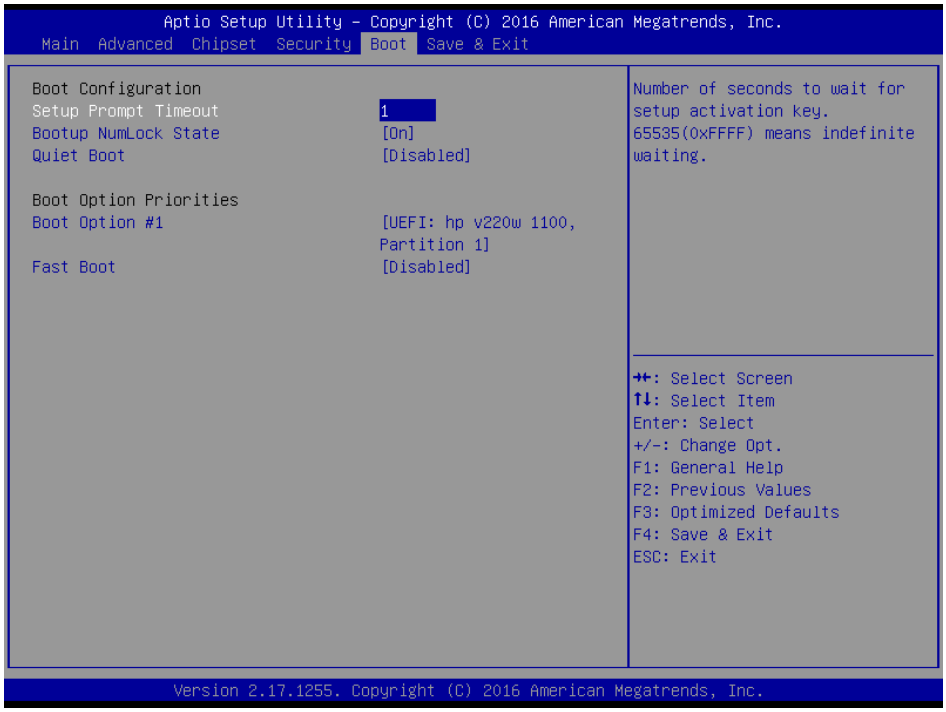
Item	Option	Description
Secure Boot	Disabled**[Default]** Enabled	Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2.CSM function is disabled.
Secure Boot Mode	Standard Custom**[Default]**	Secure Boot mode selector. 'Custom' Mode enables users to change Image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

3.6.4.1.1 Key Management



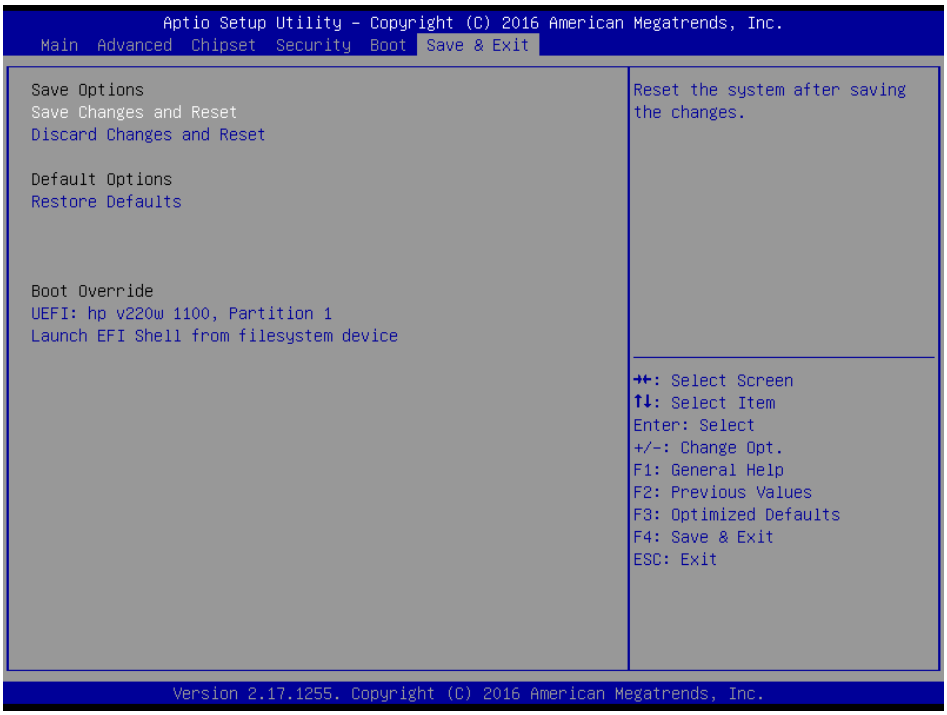
Item	Option	Description
Provision Factory Default keys	Enabled, Disabled**[Default]**	Install Factory default Secure Boot Keys when System is in Setup Mode.

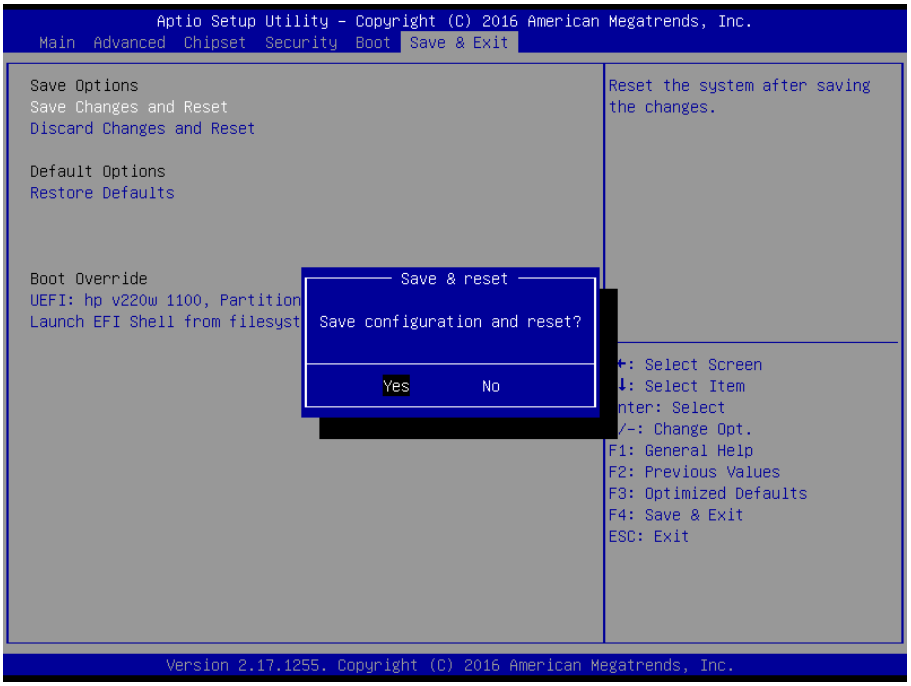
3.6.5 Boot



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
Fast Boot	Disabled**[Default]** Enabled	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Boot Option #1	Set the system boot order.	

3.6.6 Save and exit





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.