ASLAN-W922C-IP

Fanless Industrial Panel PC with Intel® Core i5-6300U 2.4GHz Processor

User's Manual

Version 1.0

P/N: 4019092200100P

2018.03

Revision History

Version	Date	Description
1.0	2018.03	Initial release

Copyright Notice

The information in this document is subject to change without prior notice in order to improve the reliability, design and function. It does not represent a commitment on the part of the manufacturer.

Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

Declaration of Conformity

CE

The CE symbol on your product indicates that it is in compliance with the directives of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from ARBOR. Please contact your local supplier for ordering information.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Class A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE:

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.

RoHS

ARBOR Technology Corp. certifies that all components in its products are in compliance and conform to the European Union's Restriction of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC.

The above mentioned directive was published on 2/13/2003. The main purpose of the directive is to prohibit the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in electrical and electronic products. Member states of the EU are to enforce by 7/1/2006.

ARBOR Technology Corp. hereby states that the listed products do not contain unintentional additions of lead, mercury, hex chrome, PBB or PBDB that exceed a maximum concentration value of 0.1% by weight or for cadmium exceed 0.01% by weight, per homogenous material. Homogenous material is defined as a substance or mixture of substances with uniform composition (such as solders, resins, plating, etc.). Lead-free solder is used for all terminations (Sn(96-96.5%), Ag(3.0-3.5%) and Cu(0.5%)).

SVHC / REACH

To minimize the environmental impact and take more responsibility to the earth we live, Arbor hereby confirms all products comply with the restriction of SVHC (Substances of Very High Concern) in (EC) 1907/2006 (REACH --Registration, Evaluation, Authorization, and Restriction of Chemicals) regulated by the European Union.

All substances listed in SVHC < 0.1 % by weight (1000 ppm)

Important Safety Instructions

Read these safety instructions carefully

1. Read all cautions and warnings on the equipment.
2. Place this equipment on a reliable surface when installing. Dropping it or letting it fall may cause damage
3. Make sure the correct voltage is connected to the equipment.
4. For pluggable equipment, the socket outlet should be near the equipment and should be easily accessible.
5. Keep this equipment away from humidity.
6. The openings on the enclosure are for air convection and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
7. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
8. Never pour any liquid into opening. This may cause fire or electrical shock.
9. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
10. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped or damaged.
    f. The equipment has obvious signs of breakage.
11. Keep this User's Manual for later reference.

Warning

The Box PC and its components contain very delicately Integrated Circuits (IC). To protect the Box PC and its components against damage caused by static electricity, you should always follow the precautions below when handling it:

1. Disconnect your Box PC from the power source when you want to work on the inside.
2. Use a grounded wrist strap when handling computer components.
3. Place components on a grounded antistatic pad or on the bag that came with the Box PC, whenever components are separated from the system.

Lithium Battery Replacement

Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trash can. It must be disposed of in accordance with local regulations concerning special waste.

Technical Support

If you have any technical difficulties, please consult the user's manual first at: http://www.arbor.com.tw

Please do not hesitate to call or e-mail our customer service when you still cannot find out the answer.

http://www.arbor-technology.com

E-mail:info@arbor.com.tw

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

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Chapter 1

Introduction

1.1. The Computer

Product Highlights

- 21.5" LCD Display w/ LED backlight
- Full IP65 stainless steel chassis w/ waterproof connectors
- Flat panel with projected capacitive touchscreen
- Serial Ports (RS-232/422/485), RS-485 w/ auto-flow control
- Mini PCIe expansion slot support
- Fanless cooling system
- Low power consumption
- 4 x SMA antenna holes for optional wireless function

1.2. About this Manual

This manual is meant for the experienced users and integrators with hardware knowledge of personal computers. If you are not sure about the description in this manual, consult your vendor before further handling.

We recommend that you keep one copy of this manual for the quick reference for any necessary maintenance in the future. Thank you for choosing ARBOR products.

1.3. Specifications

System	
CPU	Intel® Core i5-6300U™ Processor 2.4GHz
Memory	1 x 260-pin DDR4 SO-DIMM socket, supporting 2133MHz SDRAM up to 8GB (4GB DDR4 SO-DIMM pre-installed)
LAN Chipset	1 x Intel® i219LM PCIe controller w/ iAMT
	1 x Intel® i210IT PCIe controller
Watchdog Timer	1~255 levels reset
Storage	
Device	2 x 2.5" drive bay (default), 1 x mSATA
Audio	
Device	Line Out / Mic In (Optional)
LCD Display	
Size/Type	21.5" TFT LCD Panel
Max. Resolution	1920 x 1080 (Full HD)
Max. Colors	16.2M
Luminance	250 cd/m²
Touch Screen	Projected capacitive touch panel
View Angle (U/D/R/L)	80°/80°/85°/85°
Power System	
Power Input	9~36VDC
Power Consumption	Max. 38.1W (w/o I/O cards)
Qualification	
Certification	CE, FCC Class A
Expansion	
Expansion Bus	1 x mSATA (SATA, Full Size) 1 x mPCIE (PCIex1+USB2.0, Full Size) 1 x mPCIE (PCIex1+USB2.0, Half Size)
External I/O	
Serial Ports	2 x RS-232/422/485 ports
USB Ports	2 x USB 2.0 ports
LAN	2 x RJ-45 GbE ports
Video	1 x VGA / 1 x HDMI (optional)

DIO	4IN / 4OUT Digital I/O (optional)
Mechanical	
Mounting Type	VESA-100 Mounting
Chassis	Stainless steel chassis
Dimension (W x H x D)	620.3 x 423 x 62 mm (24.42” x 16.65” x 2.44”)
Weight (Net)	11.56 kg (25.49lb)
Environmental	
Operating Temp.	-10ºC ~ 50ºC (14°F ~ 122°F)
Storage Temp.	-20ºC ~ 60°C (-4°F ~ 140°F)
Operating Humidity	10 ~ 95% RH @ 50°C (non-condensing)
Vibration	5 ~ 500Hz, 1Grms Random (w/ SSD)
Shock	Operating 10G, 11ms Non-operating 30G, 11ms (w/ SSD)
OS Support	
Windows 7 / Windows 8.1 / Windows 10 / Linux: Ubuntu*	

*For Windows 7, Windows 8.1 and Linux, only system image is available.

1.4. Inside the Package

Upon opening the package, carefully inspect the contents. If any of the items is missing or appears damaged, contact your local dealer or distributor. The package should contain the following items:

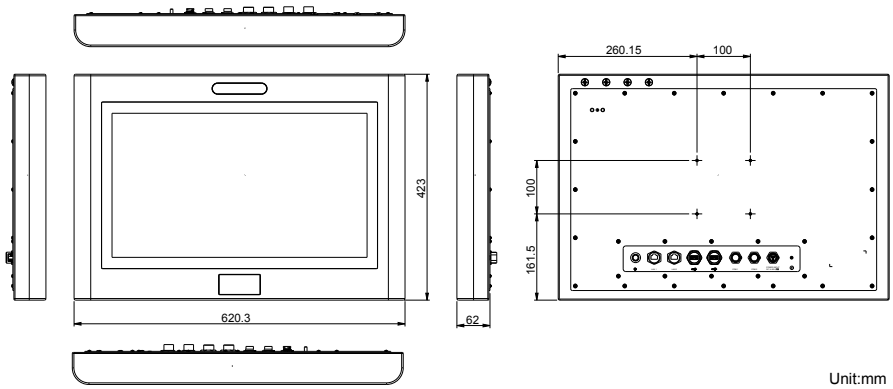
1.5. Ordering Information

ASLAN-W922C-IP-6300G4	21.5” Intel® Core i5-6300U 2.4GHz Processor Wide-screen industrial panel PC with 4GB Memory

Chapter 2

Getting Started

2.1. Dimensions



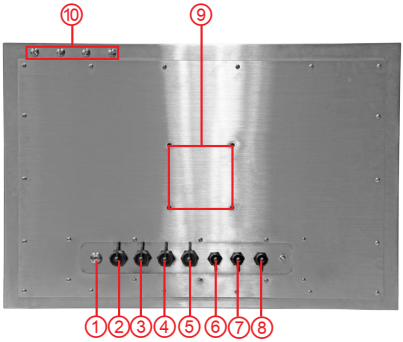
Unit:mm

2.2. Tour the Computer

Take a look around the computer and find the external controls and connectors.

2.2.1. Front View

2.2.2. Rear View



No.	Description
①	Power button
②③	LAN1/2, RJ-45 GbE ports
④⑤	2 x Type-A USB 2.0 ports
⑥⑦	COM1/2, RS-232/422/485 selectable COM ports
⑧	Power jack
⑨	VESA-100 mounting holes
⑩	4 x SMA antenna holes for optional WiFi function

2.3. Driver Installation Note

The computer supports the operating systems Windows 7, Windows 8.1 and Windows10. Find the necessary device drivers on the CD that comes with your purchase. Always follow the sequence below to install all drivers to prevent errors:

Windows 7 and Windows 8.1 64-Bit

For Windows 7 and 8.1 64-bit, please use system image to install the OS and the drivers.

Windows 10 64-Bit

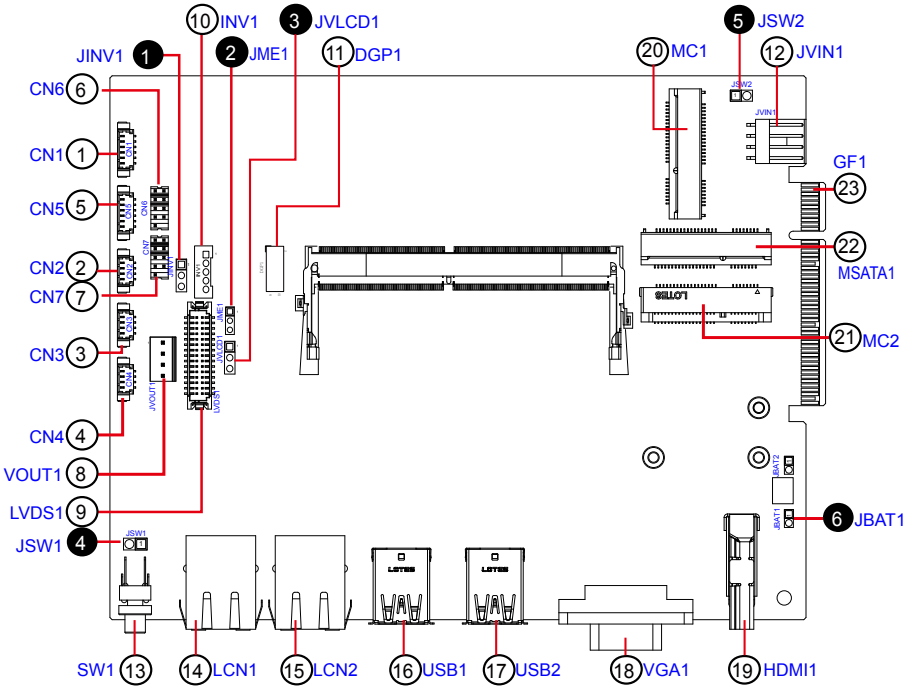
Device	Driver Path
Chipset	\Chipset_INF\Chipset_10.1.1.14_Public\SetupChipset.exe
Ethernet	\Ethernet\Win10\PROWin64.exe
Graphic	\Graphic\64bit\win64_154025.4463.exe
Audio	\Audio\64bit\0006-64bit_Win7_Win8_Win81_Win10_R279.exe
ME	\ME_11.0_Corporate_11.0.0.1177\SetupME.exe
RAID	\Intel Rapid Storage Technology Driver (for RAID)\Intel Rapid Storage Technology Driver 14.8.0.1042\SetupRST.exe

Chapter 3

Engine of the Computer

3.1. Board Layout

Main Board (FMB-i89U1)



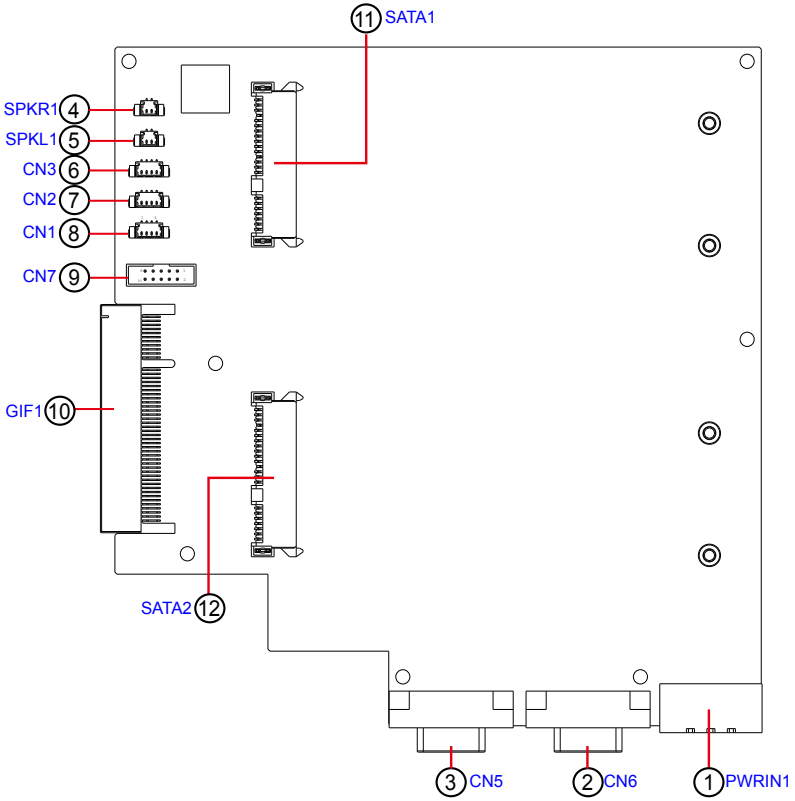
Jumpers

Label	Description
❶JINV1	LVDS Inverter Voltage Select Jumper
❷JME1	ME FLASH Select Jumper
❸JVLCD1	LVDS VDD Voltage Select Jumper
❹JSW1	Power Button
❺JSW2	Reset Button
❻JBAT1	CMOS Settings

Connectors

Label	Description
①CN1	Audio Connector
②③④CN2, 3, 4	USB 2.0 Connectors
⑤CN5	PS2 Connector
⑥⑦CN6, 7	COM1, 2 (RS-232/422-485 Selectable Serial Port)
⑧JVOUT1	Power Output
⑨LVDS1	LVDS Connector
⑩INV1	LVDS BL Connector
⑪DGP1	Debug Port
⑫JVIN1	Power Input
⑬SW1	Power Button
⑭⑮LCN1, 2	RJ-45 Ethernet Connectors
⑯⑰USB1, 2	USB 3.0/2.0 Connectors
⑱VGA1	VGA Connector (reserved)
⑲HDMI1	HDMI Connector (reserved)
⑳㉑MC1, 2	PCI Express Mini-card Full/Half Size Socket
㉒MSATA1	mSATA Socket
㉓GF1	PCIe Gold Finger Connector

Daughter Board (SCDB-1299H)



Connectors

Label	Description
①PWRIN1	Power Connector
②③CN6, 5	COM4, 3 (RS-232/422/485 Selectable Serial Port)
④SPKR1	Speaker Output Connector
⑤SPKL1	Speaker Output Connector
⑥⑦⑧CN3, 2, 1	USB 2.0 Connector
⑨CN7	DIO Connector
⑩GIF1	Gold Finger Connector
⑪⑫SATA1	SATA HDD Connector

3.2. Jumpers and Connectors

3.2.1 Main Board (FMB-i89U1)

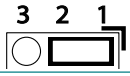
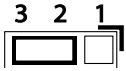
3.2.1.1. Jumpers

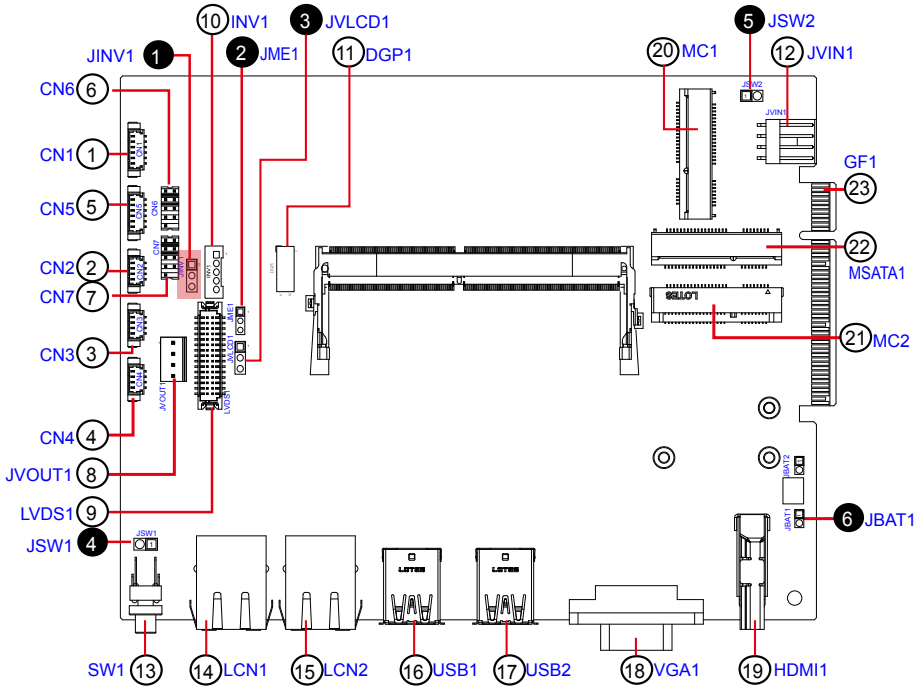
❶JINV1

Function: Sets LVDS inverter voltage. (This jumper sets the voltage of LVDS connector INV1, which means this jumper decides the pin 1 of the LVDS connector INV1.)

Jumper Type: 2.54mm pitch, 1x3-pin header

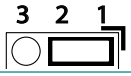
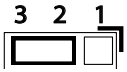
Setting:

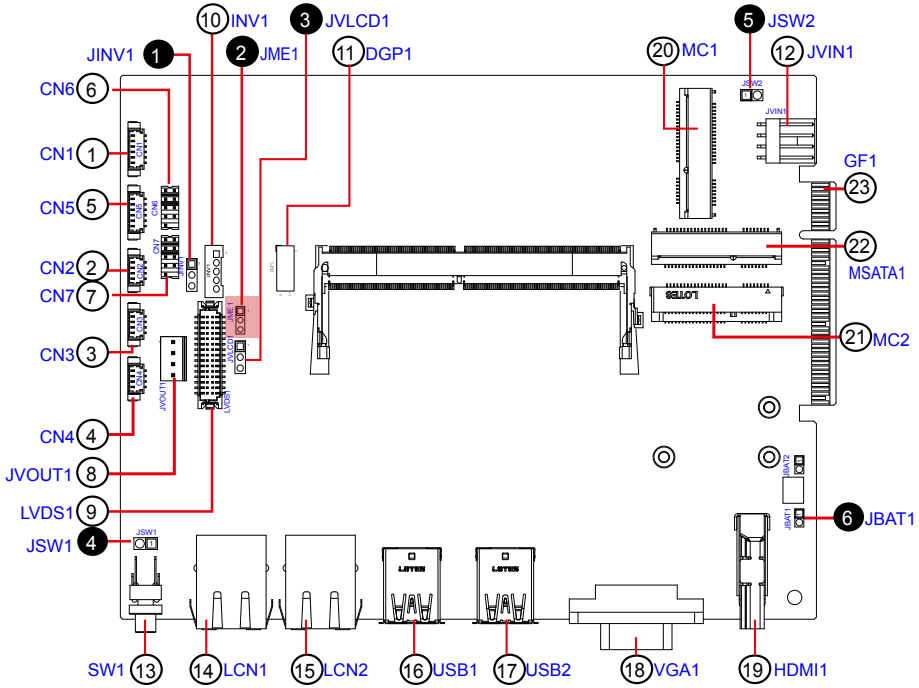
Pin	Description	
1-2	+12V (default)	
2-3	+5V	



❷ JME1

Function: ME Flash Select Jumper
Jumper Type: 2.00mm pitch, 1x3-pin header
Setting:

Pin	Description	
1-2	ME Flash disable (Default)	
2-3	ME Flash enable	

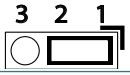
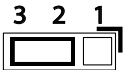


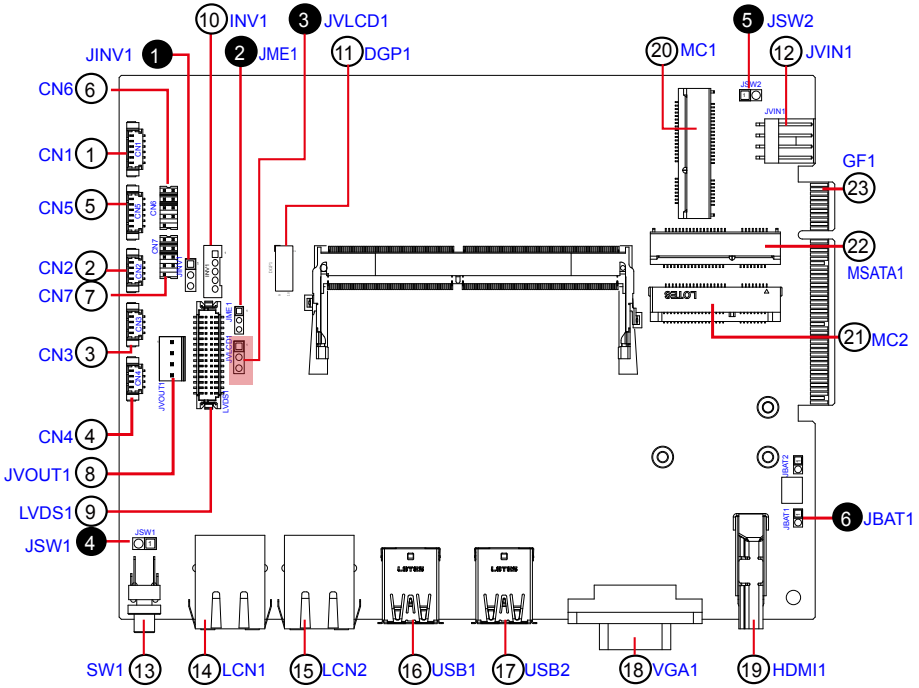
❸ JVLCD1

Function: LVDS VDD Voltage Select Jumper

Jumper Type: 2.54mm pitch, 1x3-pin header

Setting:

Pin	Description	
1-2	+3V (default)	
2-3	+5V	



❹ JSW1

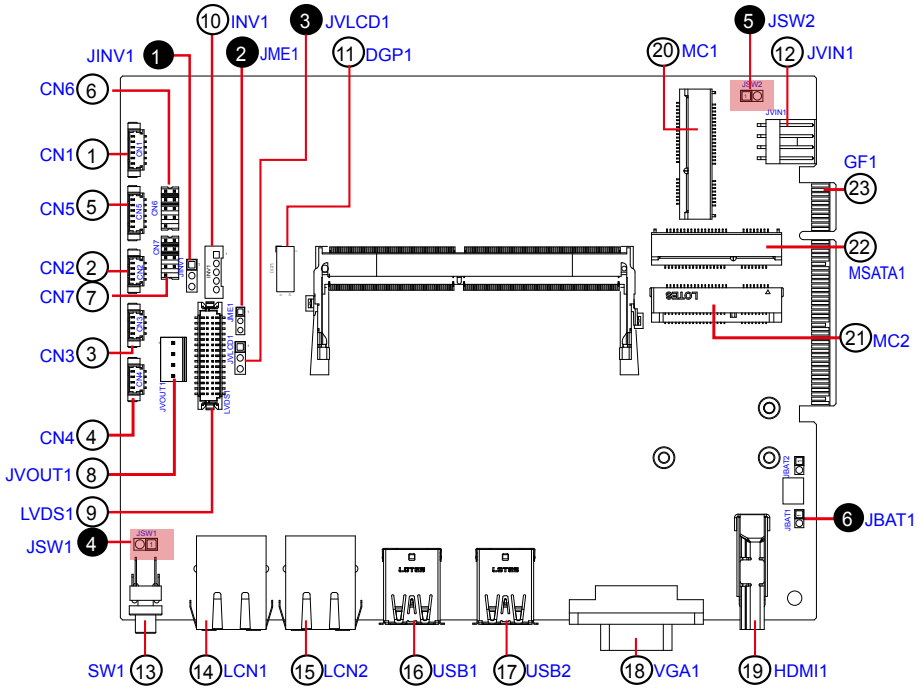
Function: Power Button
Connector Type: 2.54 mm pitch 1x2-pin header
Setting:

Pin	Desc.
1	PWR_IN_SW#
2	GND

❺ JSW2

Function: Reset Button
Connector Type: 2.54 mm pitch 1x2-pin header
Setting:

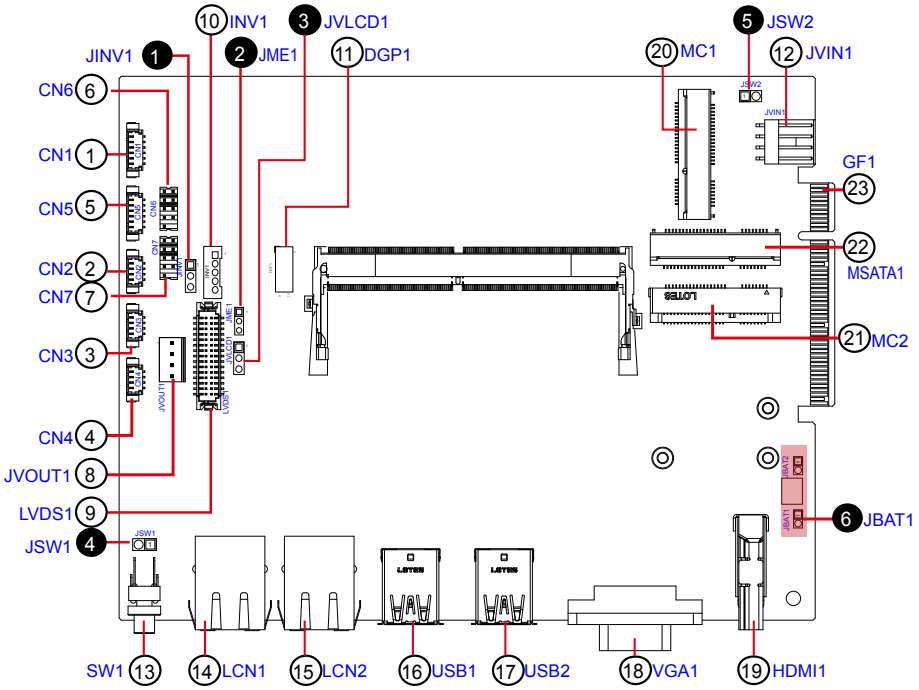
Pin	Desc.
1	RST_SW#
2	GND



⑥ JBAT1

Function: Clears/keeps CMOS
Jumper Type: 2.00 mm pitch 1x2-pin header
Setting:

Pin	Description	
Short	Clears CMOS	1 2 
Open	Keeps CMOS (default)	1 2 

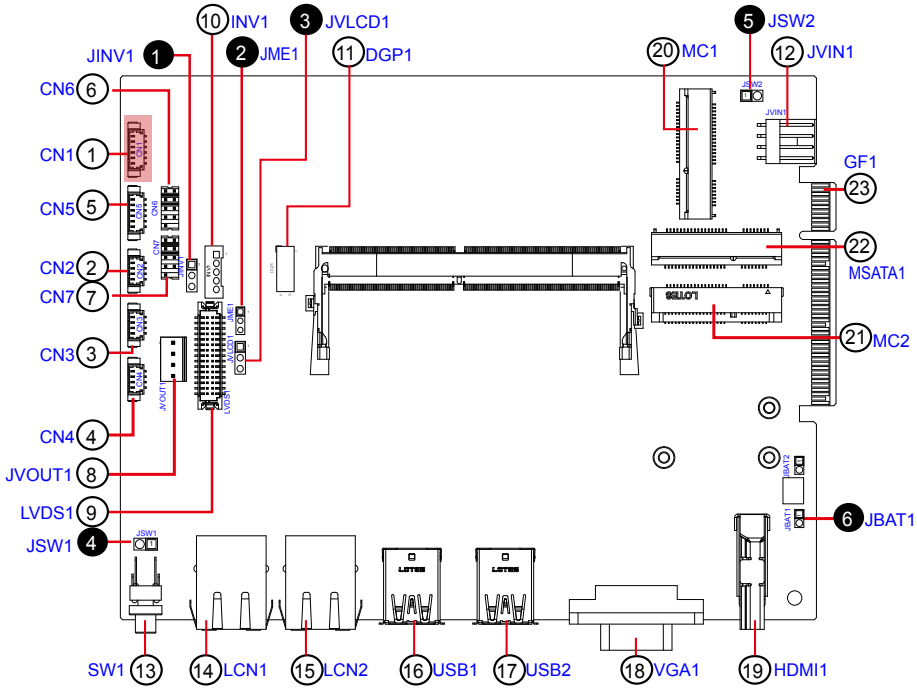


3.2.1.2. Connectors

① CN1

Function: Audio Connector
Connector Type: 1.25mm pitch 1x6 wire to board connector
Pin Assignment:

Pin	Desc.
1	MIC_L
2	MIC_R
3	GND
4	GND
5	Line Out_L
6	Line Out_R



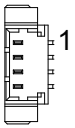
②③④ CN2, 3, 4

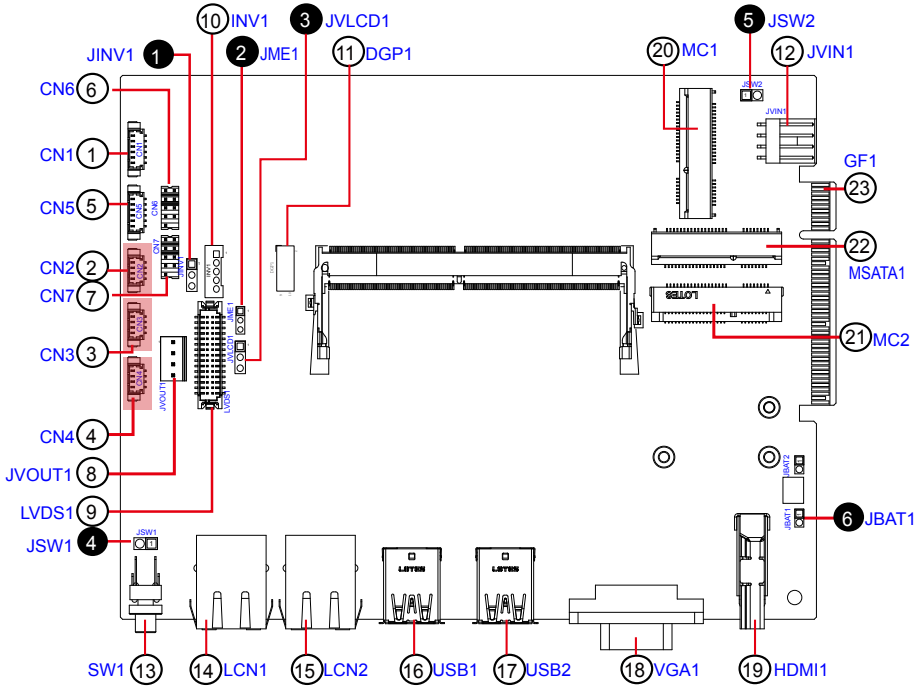
Function: USB 2.0 Connectors

Connector Type: 1.25mm pitch 1x4 wire to board connector

Pin Assignment:

Pin	Desc.
1	VCC5
2	DATA-
3	DATA+
4	GND





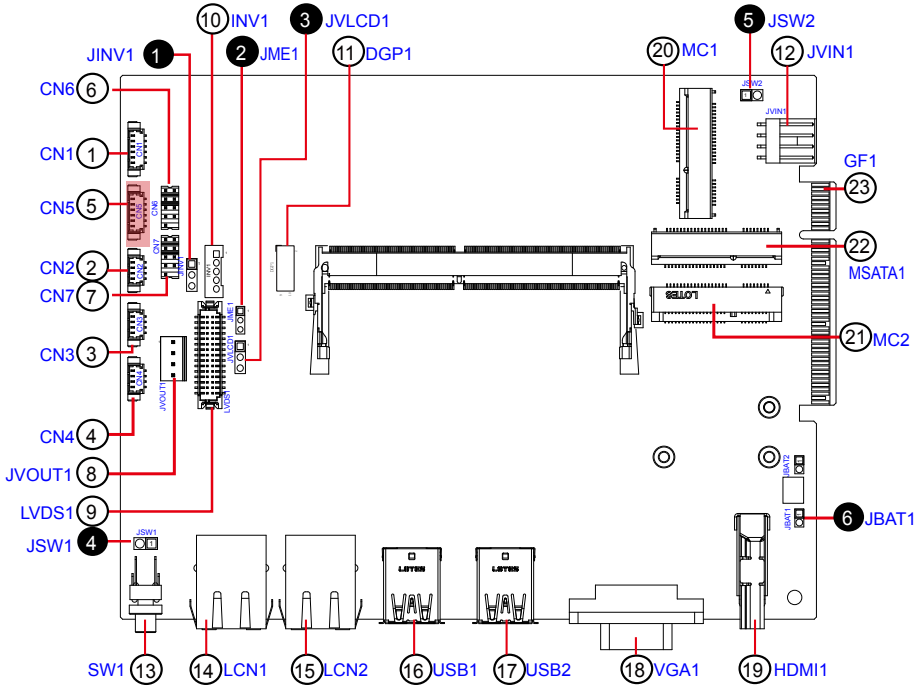
⑤ CN5

Function: PS2 Connector

Connector Type: 1.25mm pitch 1x6 wire to board connector

Pin Assignment:

Pin	Desc.
1	KDATA
2	GND
3	MDATA
4	KCLK
5	VCC5
6	MCLK

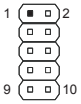


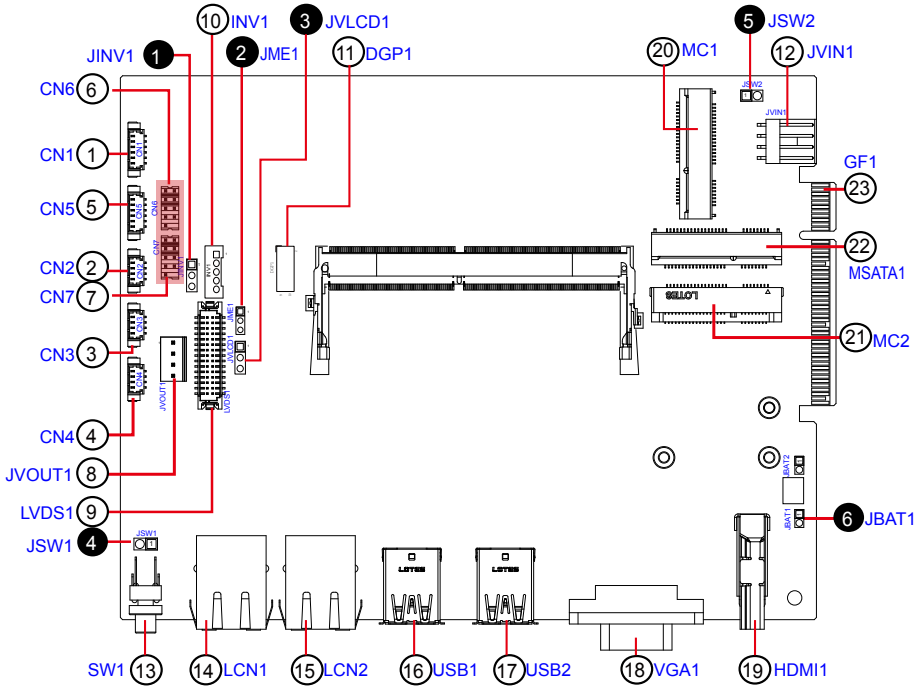
⑥⑦ CN6, CN7 (COM1, COM2)

Function: RS-232/422/485 selectable pin header
Connector Type: 2.00mm pitch 2x5-pin header

Pin Assignment:

Pin	Desc.			Pin	Desc.		
1	DCD	RS-485(D-)	RS-422(TX-)	2	RXD	RS-485(D+)	RS-422(TX+)
3	TXD		RS-422(RX+)	4	DTR		RS-422(RX-)
5	GND			6	DSR		
7	RTS			8	CTS		
9	RI			10	N/C		

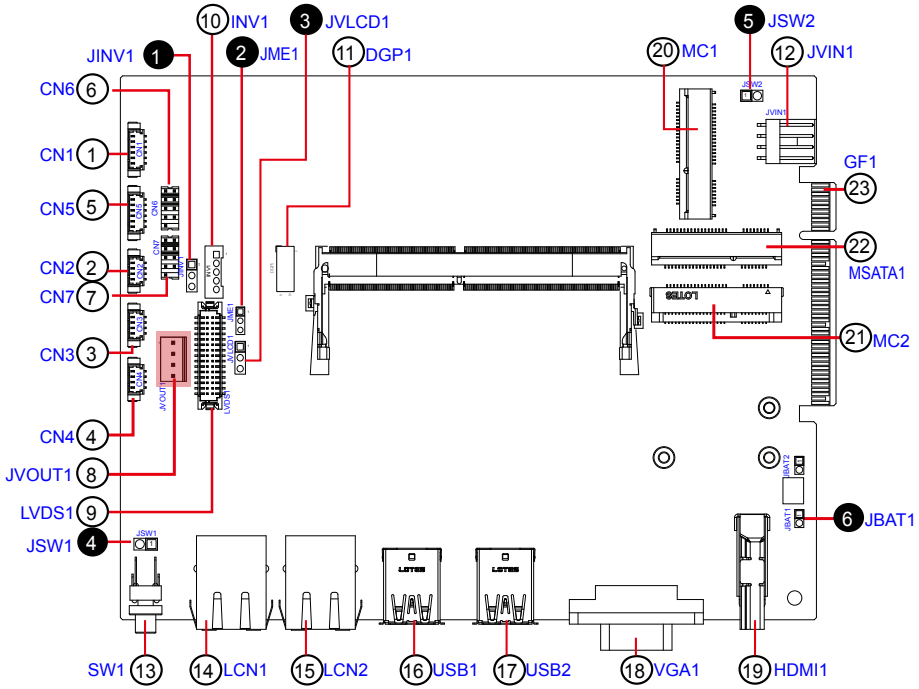




⑧ JVOUT1

Function: Power output
Connector Type: 2.54mm pitch 1x4-pin one-wall connector
Pin Assignment:

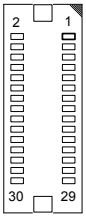
Pin	Desc.
1	VCC5
2	GND
3	GND
4	VCC12

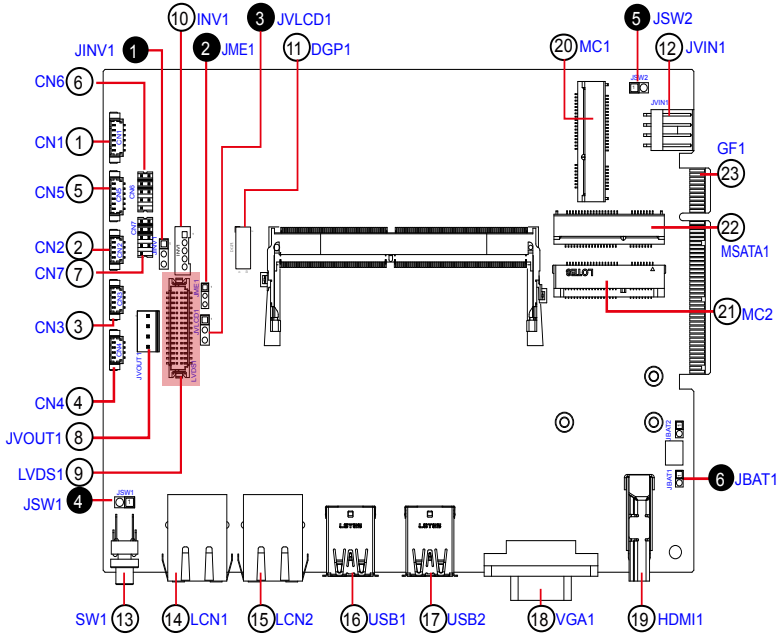


⑨ LVDS1

Function: LVDS Connector
Connector Type: Onboard 30-pin header
Pin Assignment:

Pin	Desc.	Pin	Desc.
2	VCC_LCD	1	VCC_LCD
4	LVDS_B_CLK+	3	LVDS_A_CLK+
6	LVDS_B_CLK-	5	LVDS_A_CLK-
8	GND	7	GND
10	LVDS_B0+	9	LVDS_A0+
12	LVDS_B0-	11	LVDS_A0-
14	GND	13	GND
16	LVDS_B1+	15	LVDS_A1+
18	LVDS_B1-	17	LVDS_A1-
20	GND	19	GND
22	LVDS_B2+	21	LVDS_A2+
24	LVDS_B2-	23	LVDS_A2-
26	GND	25	GND
28	LVDS_B3+	27	LVDS_A3+
30	LVDS_B3-	29	LVDS_A3-

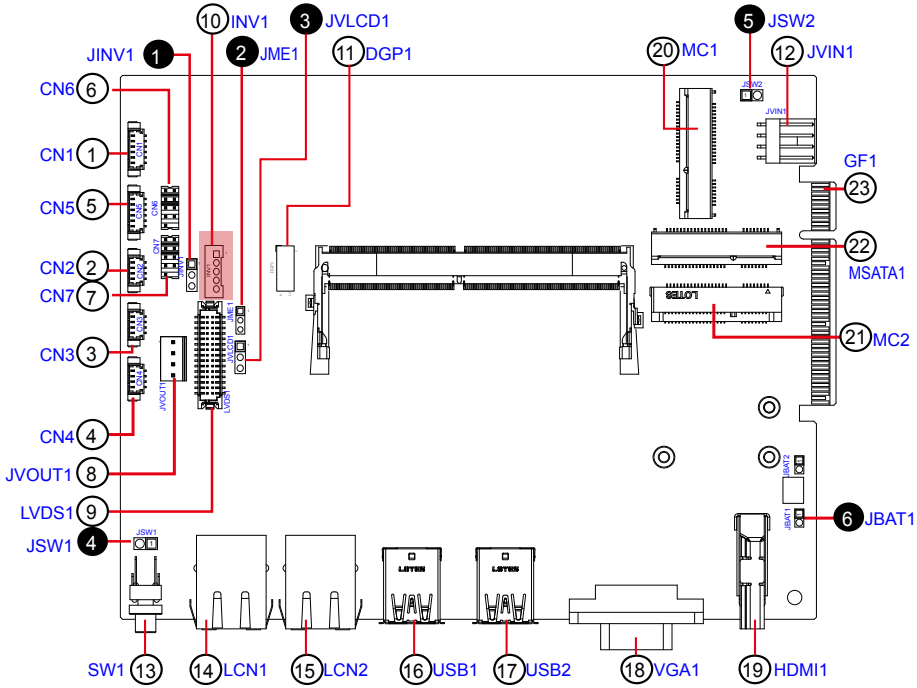




⑩ INV1

Function: LVDS BL Connector
Connector Type: 2.00mm pitch 1x5-pin one-wall connector
Pin Assignment:

Pin	Description
1	VCC_INV
2	GND
3	LVDS_BKLT_EN
4	LVDS_BKLTCTL
5	GND



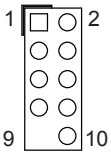
⑪ DGP1

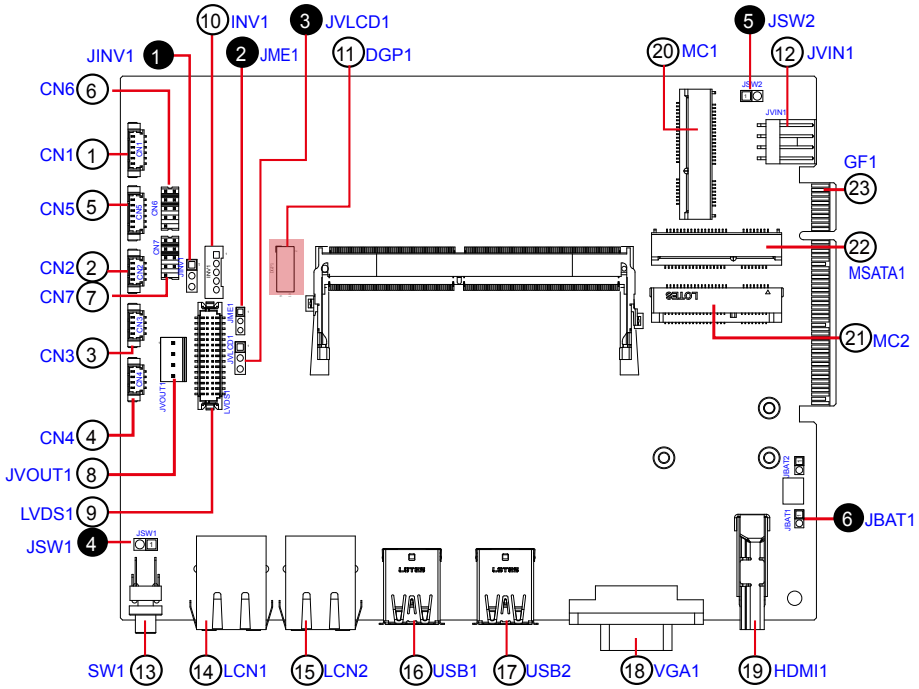
Function: Debug port

Connector Type: 2.00mm-pitch 2x5-pin header

Pin Assignment:

Pin	Description	Pin	Description
1	24MHz Clock	2	GND
3	LPC_FRAME#	4	LPC_LAD0
5	PLTRST#	6	N.C
7	LPC_LAD3	8	LPC_LAD2
9	VCC3	10	LPC_LAD1





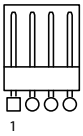
⑫ JVIN1

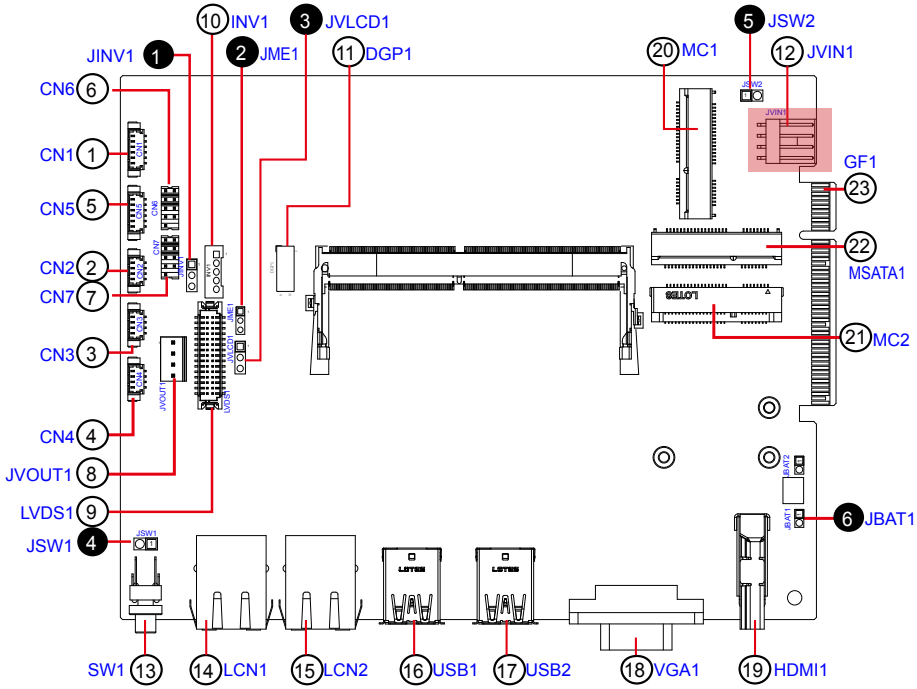
Function: Power Input Connector

Connector Type: 2.54mm pitch 1x4-pin wafer connector

Pin Assignment:

Pin	Desc.
1	VCC
2	VCC
3	GND
4	GND





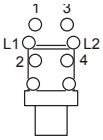
⑬ SW1

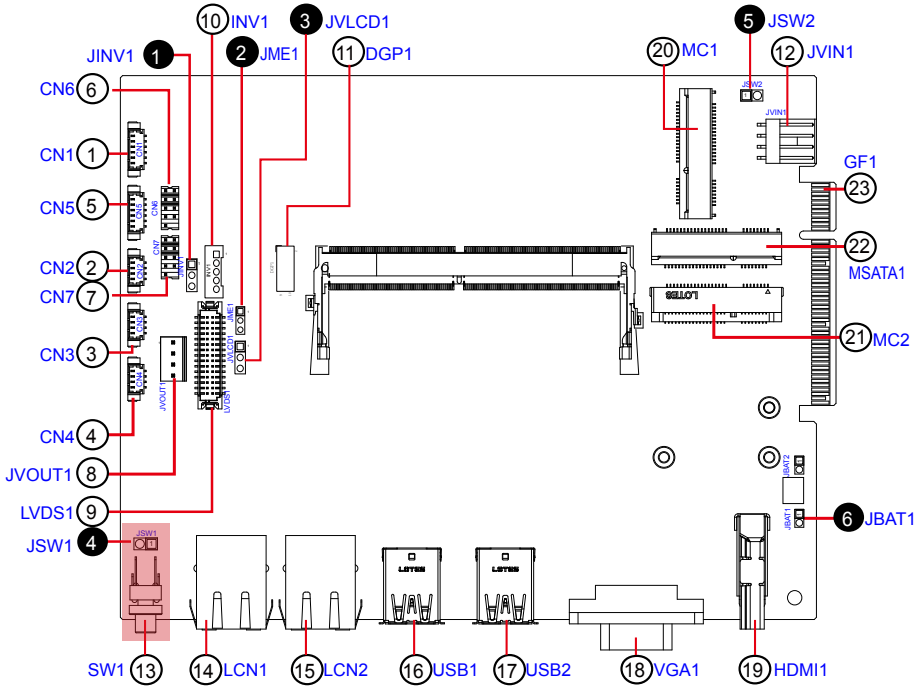
Function Power Button

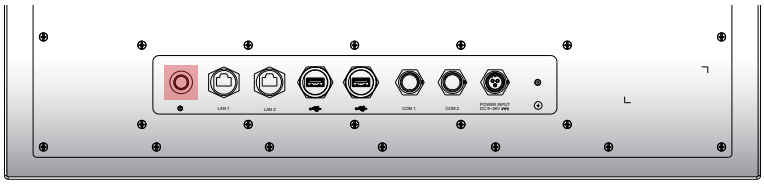
Connector Type: LED tact switch with green and red colors

Pin Assignment:

Pin	Description	Pin	Description
1	GND	2	N/A
3	BTN	4	N/A
L1	SW1_LED_N	L2	SW1_LED_P

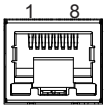


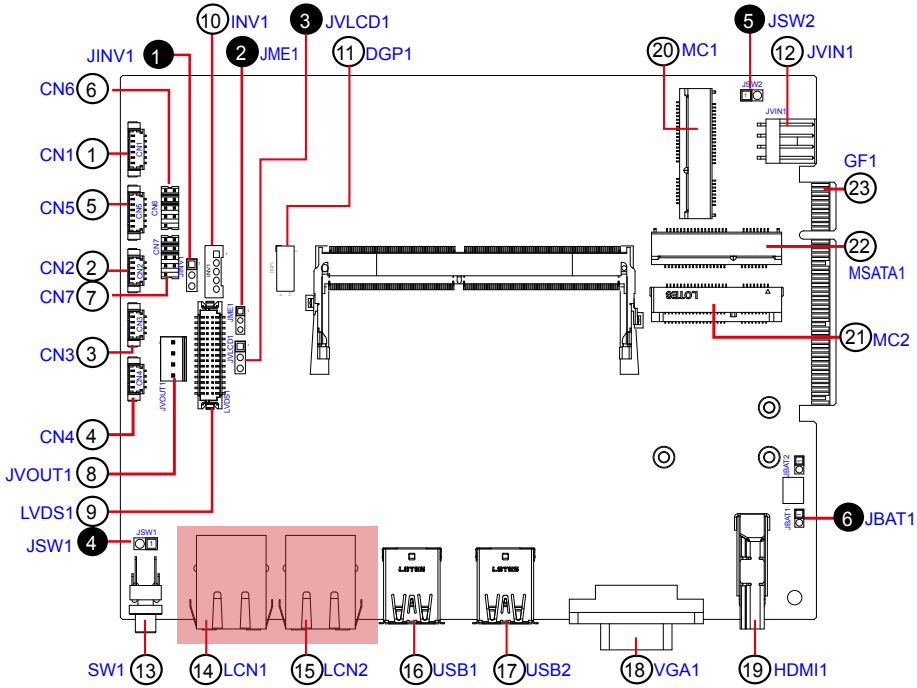


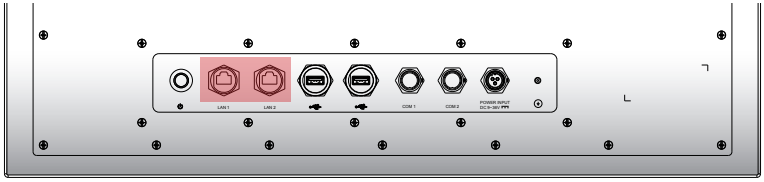


⑭⑮ LCN1, 2

Function: RJ-45 Ethernet connectors
Connector Type: RJ-45 connector that supports 10/100/1000Mbps fast Ethernet
Pin Assignment: The pin assignments conform to the industry standard.

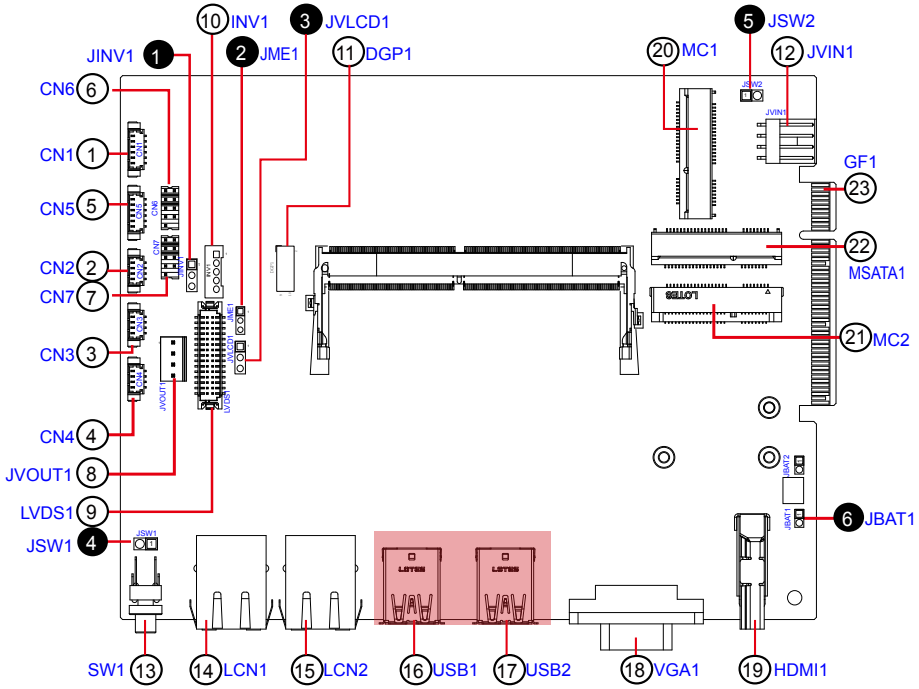




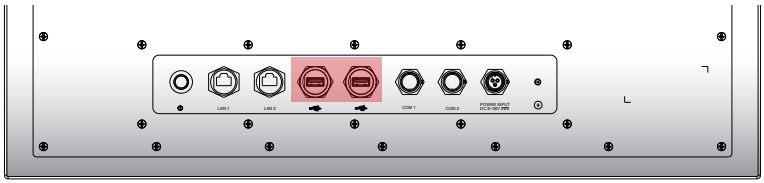


⑯⑰ USB1, 2

Function: USB 3.0/2.0 Connectors
Connector Type: Double-stacked Type-A USB connectors
Pin Assignment: The pin assignments conform to the industry standard.



Note that the external USB connectors support USB 2.0 only, due to that USB 2.0 cable is usd to connect the onboard connectors.

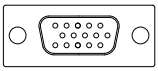


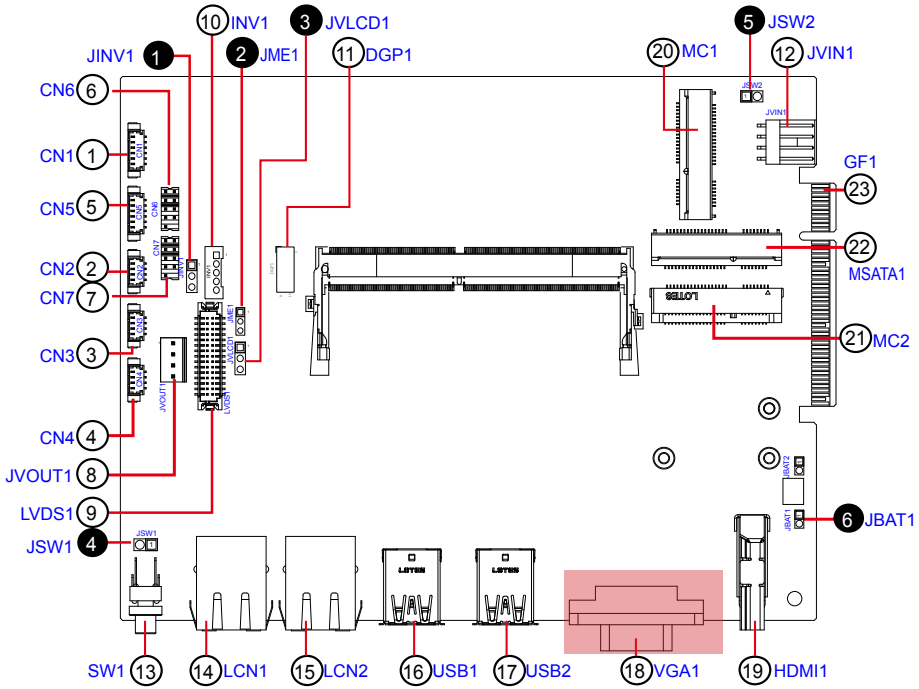
Support USB 2.0 only

⑱ VGA1

Function: VGA Connector (Reserved)
Connector Type: D-Sub 15-pin female connector
Pin Assignment:

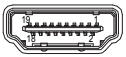
Pin	Description	Pin	Description
1	RED	9	5V
2	GREEN	10	GND
3	BLUE	11	N/C
4	N/C	12	D-DATA
5	GND	13	H-SYNC
6	GND	14	V-SYNC
7	GND	15	D-DCLK
8	GND		

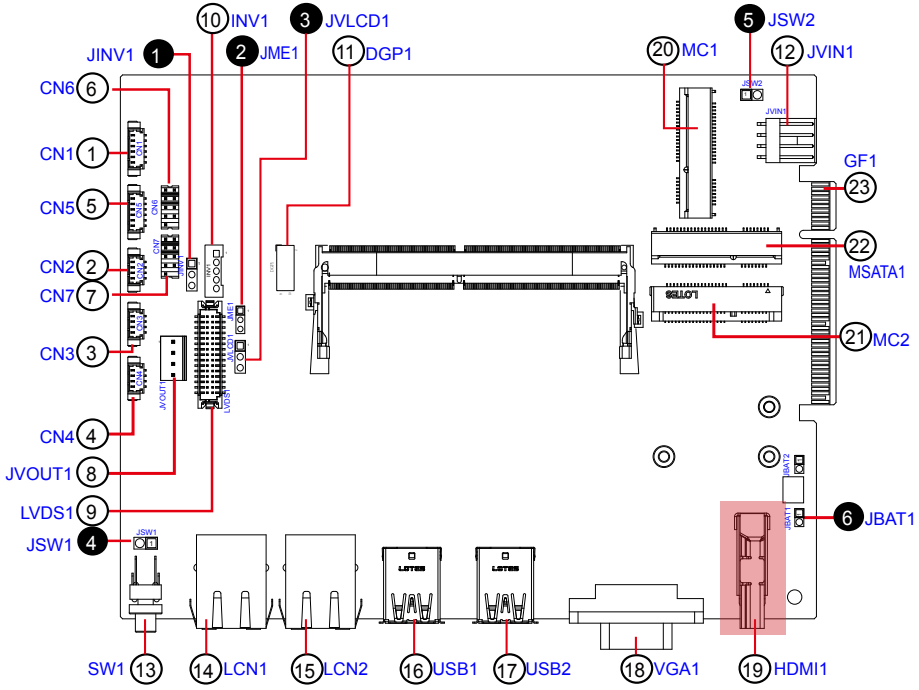




⑲ HDMI1

Function: HDMI connector (Reserved)
Connector Type: 19-pin HDMI connector with flange
Pin Assignment: The pin assignments conform to the industry standard.



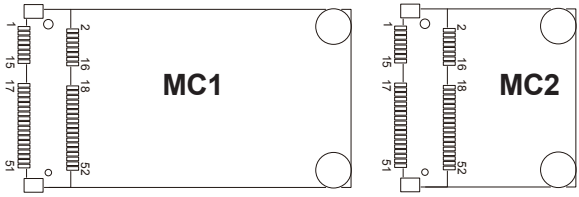


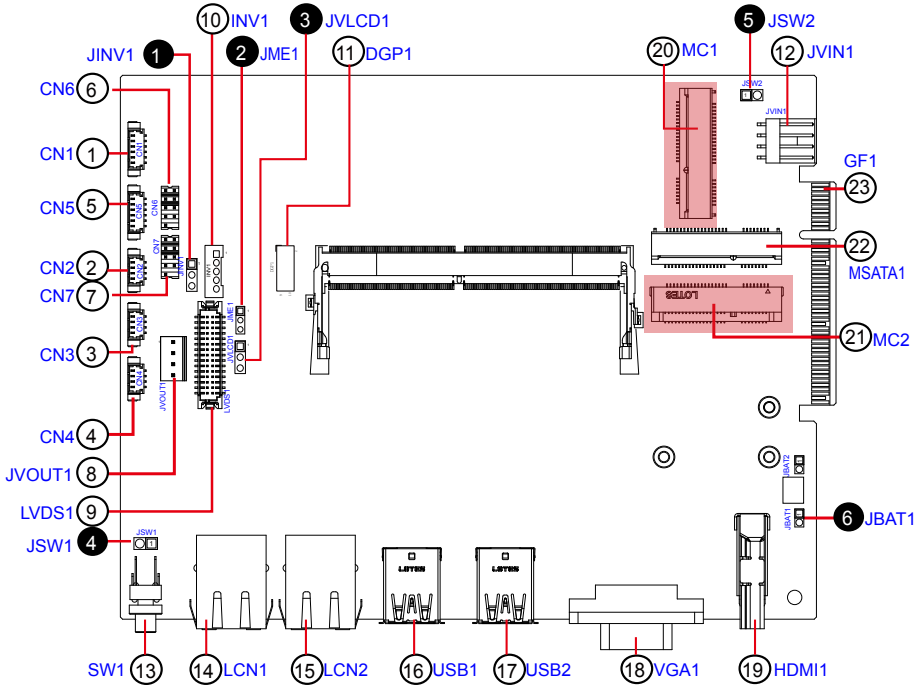
⑳㉑ MC1, 2

Function: MC1: PCI Express Mini-card Full Size socket, supporting both PCI Express and USB signals.
MC2: PCI Express Mini-card Half Size socket, supporting both PCI Express and USB signals.

Connector Type: Onboard 0.8mm pitch 52-pin edge card connector

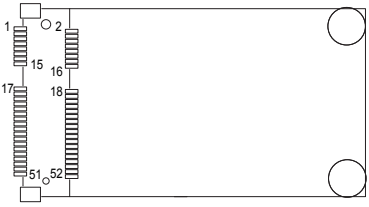
Pin Assignment: The pin assignments conform to the industry standard.

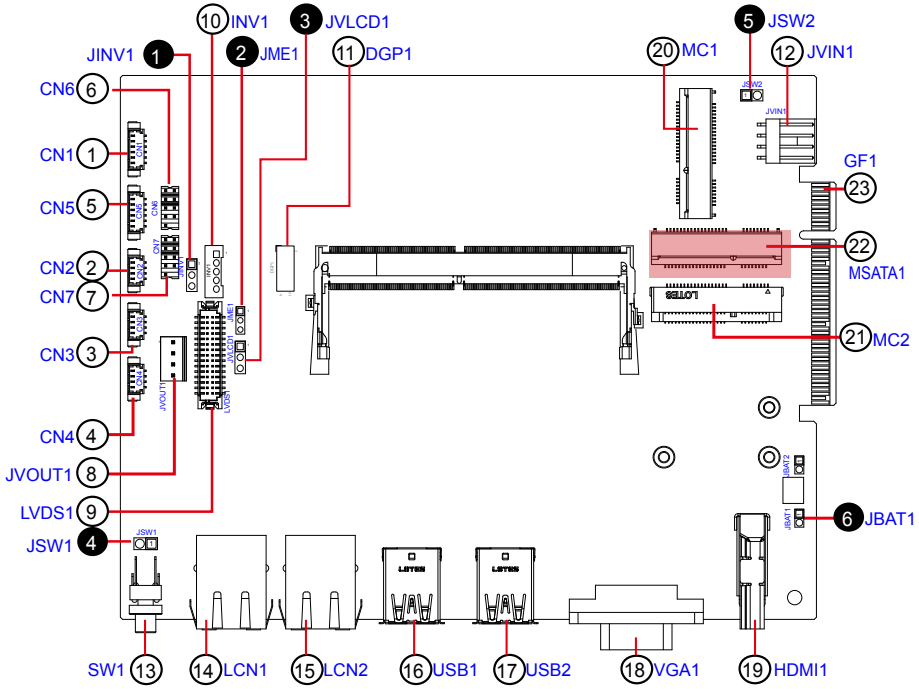




㉒ MSATA1

Function: mSATA socket
Connector Type: Onboard 0.8mm pitch 52-pin edge card connector
Pin Assignment: The pin assignments conform to the industry standard.





㉓ GF1

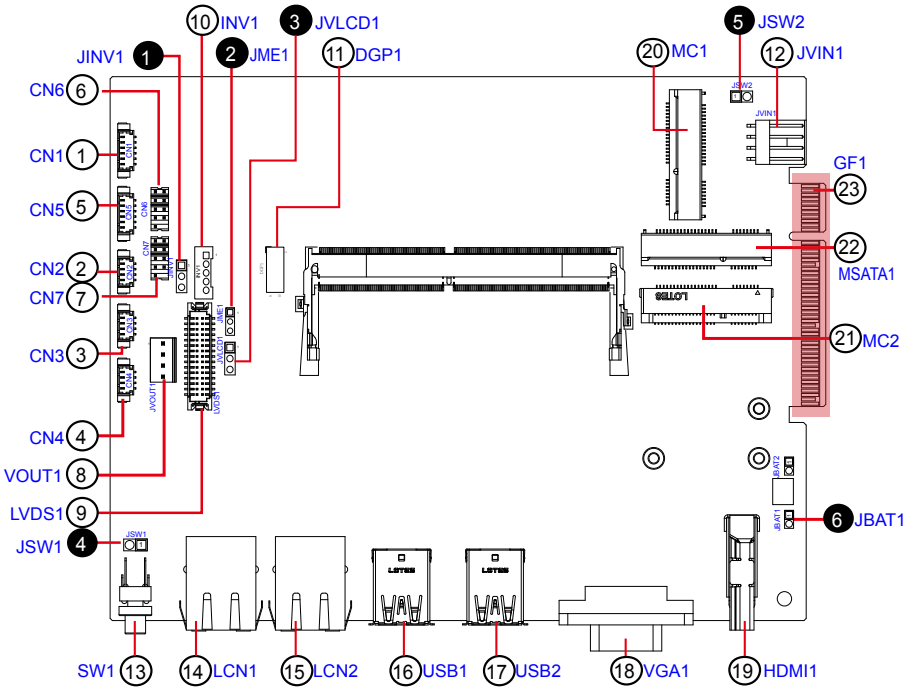
Function: Gold Finger Connector for Daughter Board

Connector Type: Onboard 49-pin Golden Finger

Pin Assignment:

Pin	Desc.	Pin	Desc.
A1	NC	A26	NC
A2	+12VAUX	A27	GND
A3	+12VAUX	A28	GND
A4	GND	A29	NC
A5	LPC_LAD0	A30	NC
A6	LPC_LAD1	A31	GND
A7	LPC_LAD2	A32	NC
A8	LPC_LAD3	A33	NC
A9	NC	A34	GND
A10	NC	A35	NC
A11	BUF_PLTRST#	A36	NC
A12	GND	A37	GND
A13	NC	A38	GND
A14	NC	A39	SATA1_TX+
A15	GND	A40	SATA1_TX-
A16	NC	A41	GND
A17	NC	A42	GND
A18	GND	A43	SATA1_RX+
A19	CLK_24M_GF	A44	SATA1_RX-
A20	GND	A45	GND
A21	NC	A46	GND
A22	NC	A47	NC
A23	GND	A48	NC
A24	GND	A49	GND
A25	NC		

Pin	Desc.	Pin	Desc.
B1	+12VAUX	B26	GND
B2	+12VAUX	B27	NC
B3	+12VAUX	B28	NC
B4	GND	B29	GND
B5	SMBCLK_PCIE	B30	NC
B6	SMBDATA_PCIE	B31	NC
B7	GND	B32	GND
B8	NC	B33	NC
B9	LPC_FRAME#	B34	NC
B10	NC	B35	GND
B11	PCIE_WAKE#	B36	GND
B12	LPC_SERIRQ	B37	SATA0_TX+
B13	GND	B38	SATA0_TX-
B14	NC	B39	GND
B15	NC	B40	GND
B16	GND	B41	SATA0_RX+
B17	NC	B42	SATA0_RX-
B18	GND	B43	GND
B19	NC	B44	GND
B20	NC	B45	USB2_1+
B21	GND	B46	USB2_1-
B22	GND	B47	GND
B23	NC	B48	PS_ON#
B24	NC	B49	GND
B25	GND		

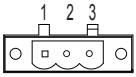

JINV1 1
10 INV1
3 JVLCD1
2 JME1
11 DGP1
20 MC1
5 JSW2
12 JVIN1
CN6 6
CN1 1
CN5 5
CN2 2
CN7 7
CN3 3
CN4 4
VOUT1 8
LVDS1 9
JSW1 4
GF1
23
22
MSATA1
21 MC2
6 JBAT1
SW1 13
14 LCN1
15 LCN2
16 USB1
17 USB2
18 VGA1
19 HDMI1

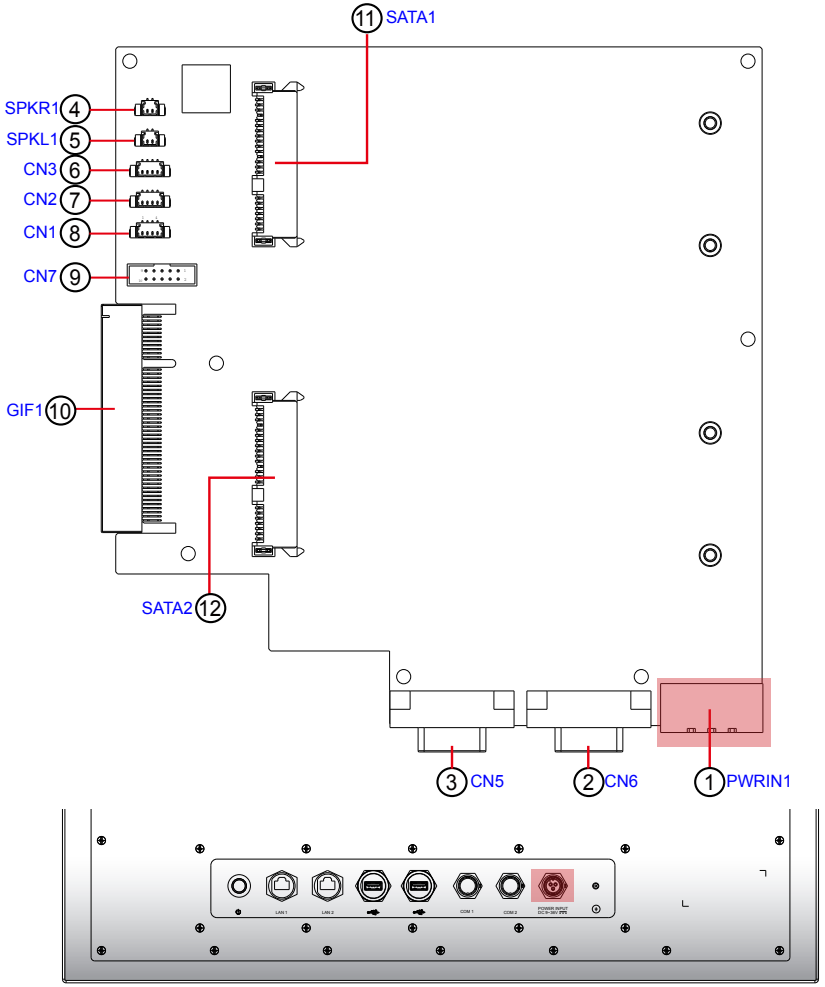
3.2.2 Daughter Board (SCB-1299H)

① PWRIN1

Function: DC Adapter Power Input
Connector Type: 1x3-pin Terminal block
Pin Assignment:

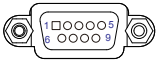
Pin	Desc.
1	V+
2	V-
3	GND





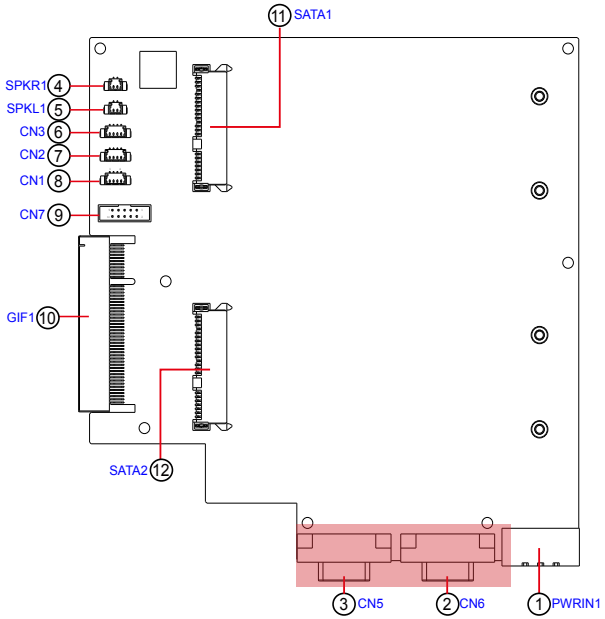
②③ CN6, CN5 (COM4, COM3)

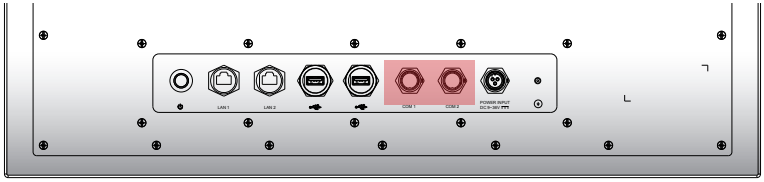
Function: RS-232/422/485 Selectable Serial Port
Connector Type: External 9-pin D-sub male connector



Pin Assignment:

RS232				RS422				RS485			
Pin	Desc	Pin	Desc	Pin	Desc	Pin	Desc	Pin	Desc	Pin	Desc
1	DCD	6	DSR	1	COM_422 TX-	6	N/C	1	COM_485 D-	6	N/C
2	RXD	7	RTS	2	COM_422 TX+	7	N/C	2	COM_485 D+	7	N/C
3	TXD	8	CTS	3	COM_422 RX+	8	N/C	3	N/C	8	N/C
4	DTR	9	RI	4	COM_422 RX-	9	N/C	4	N/C	9	N/C
5	GND			5	GND			5	GND		





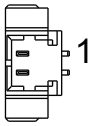
④⑤ SPKR1, SPKL1

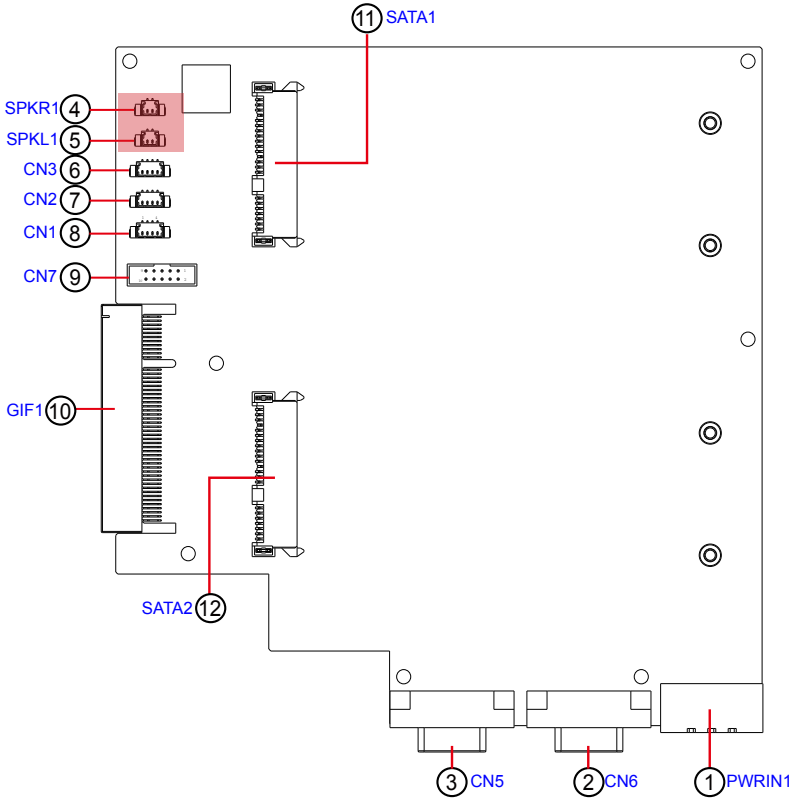
Function: Speaker Output Connector

Connector Type: 1.25mm pitch 1x2 wire to board connector

Pin Assignment:

	Pin	Desc.
SPKR1	1	LOUT-R
	2	GND_AU1
SPKL1	1	LOUT-L
	2	GND_AU1





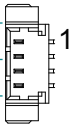
⑥⑦⑧ CN3, 2, 1

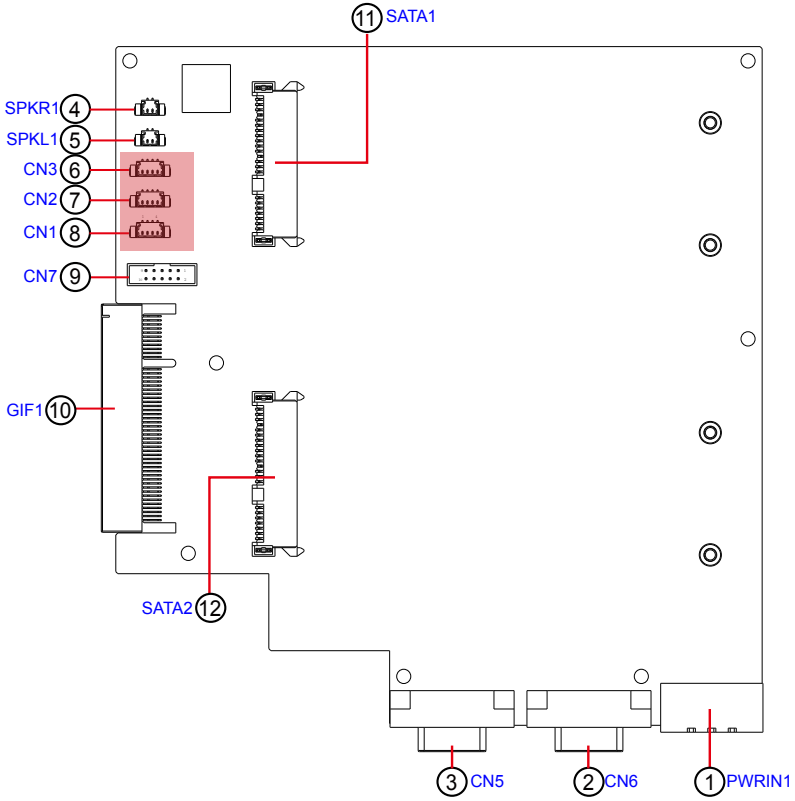
Function: USB 2.0 Connector

Connector Type: 1.25mm pitch 1x4 wire to board connector

Pin Assignment:

Pin	Desc.
1	VCC5
2	DATA-
3	DATA+
4	GND

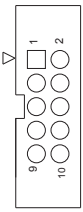


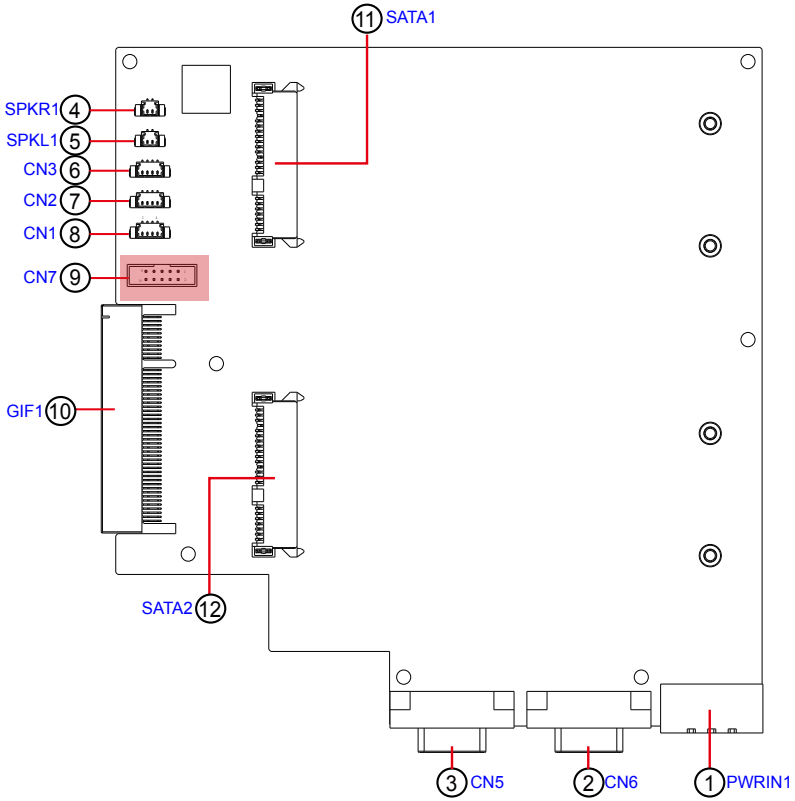


⑨ CN7

Function: DIO Connector
Connector Type: 2.0mm pitch 2x5 box header
Pin Assignment:

Pin	Desc.	Pin	Desc.
1	DIN0	2	DOUT0
3	DIN1	4	DOUT1
5	DIN2	6	DOUT2
7	DIN3	8	DOUT3
9	N/C	10	N/C





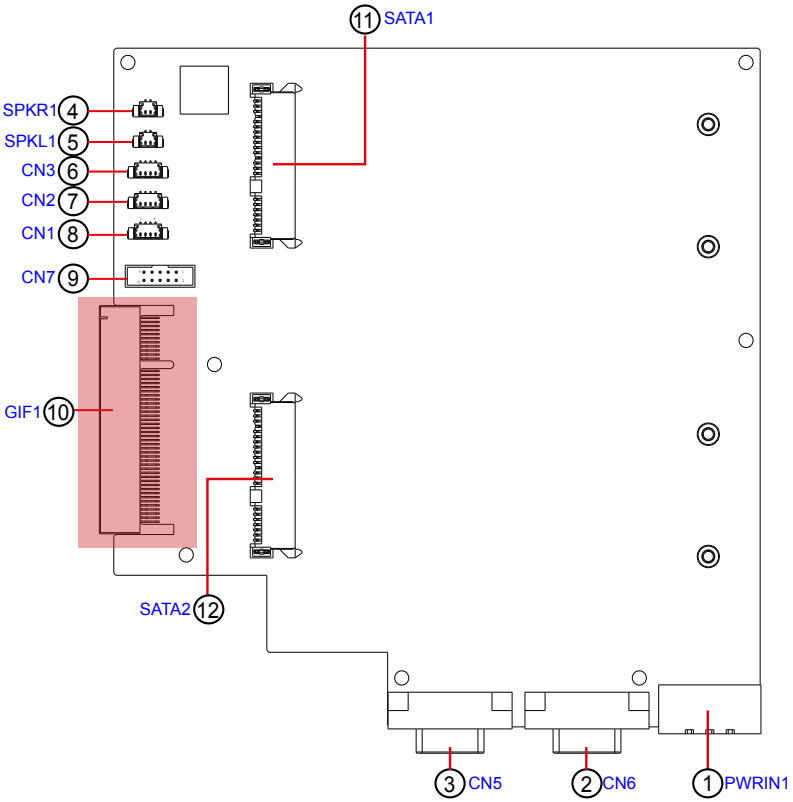
⑩ GIF1

Function: Connector for Main Board

Connector Type: Onboard 49-pin Connector

Pin Assignment:

Pin	Desc.	Pin	Desc.	Pin	Desc.	Pin	Desc.
A1	NC	A26	NC	B1	+12VAUX	B26	GND
A2	+12VAUX	A27	GND	B2	+12VAUX	B27	NC
A3	+12VAUX	A28	GND	B3	+12VAUX	B28	NC
A4	GND	A29	NC	B4	GND	B29	GND
A5	LPC_LAD0	A30	NC	B5	SMBCLK_PCIE	B30	NC
A6	LPC_LAD1	A31	GND	B6	SMBDATA_PCIE	B31	NC
A7	LPC_LAD2	A32	NC	B7	GND	B32	GND
A8	LPC_LAD3	A33	NC	B8	NC	B33	NC
A9	NC	A34	GND	B9	LPC_FRAME#	B34	NC
A10	NC	A35	NC	B10	NC	B35	GND
A11	BUF_PLTRST#	A36	NC	B11	PCIE_WAKE#	B36	GND
A12	GND	A37	GND	B12	LPC_SERIRQ	B37	SATA0_TX+
A13	NC	A38	GND	B13	GND	B38	SATA0_TX-
A14	NC	A39	SATA1_TX+	B14	NC	B39	GND
A15	GND	A40	SATA1_TX-	B15	NC	B40	GND
A16	NC	A41	GND	B16	GND	B41	SATA0_RX+
A17	NC	A42	GND	B17	NC	B42	SATA0_RX-
A18	GND	A43	SATA1_RX+	B18	GND	B43	GND
A19	CLK_24M_GF	A44	SATA1_RX-	B19	NC	B44	GND
A20	GND	A45	GND	B20	NC	B45	USB2_1+
A21	NC	A46	GND	B21	GND	B46	USB2_1-
A22	NC	A47	NC	B22	GND	B47	GND
A23	GND	A48	NC	B23	NC	B48	PS_ON#
A24	GND	A49	GND	B24	NC	B49	GND
A25	NC			B25	GND		


11 SATA1
SPKR1 4
SPKL1 5
CN3 6
CN2 7
CN1 8
CN7 9
GIF1 10
SATA2 12
3 CN5
2 CN6
1 PWRIN1

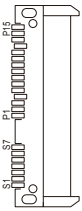
⑪⑫ SATA1, SATA2

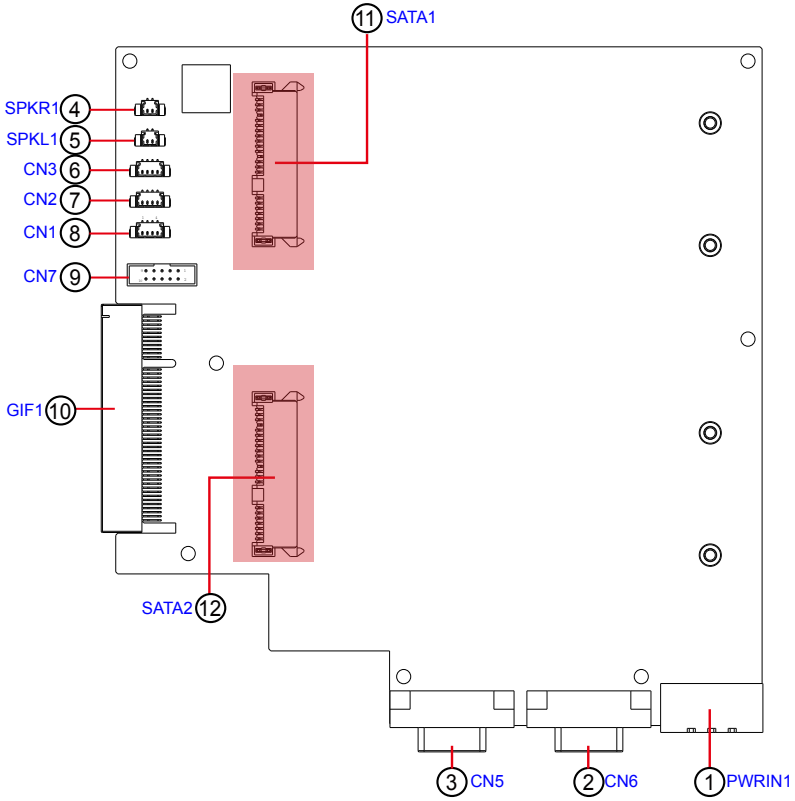
Function: SATA HDD connector

Connector Type: SATA port with data +power vertical connector (7+15pin)

Pin Assignment:

Pin	Desc.	Pin	Desc.	Pin	Desc.
S1	GND	P1	3.3V	P8	5V
S2	TX+	P2	3.3V	P9	5V
S3	TX-	P3	3.3V	P10	GND
S4	GND	P4	GND	P11	NC
S5	RX-	P5	GND	P12	GND
S6	RX+	P6	GND	P13	NC
S7	GND	P7	5V	P14	NC
				P15	NC





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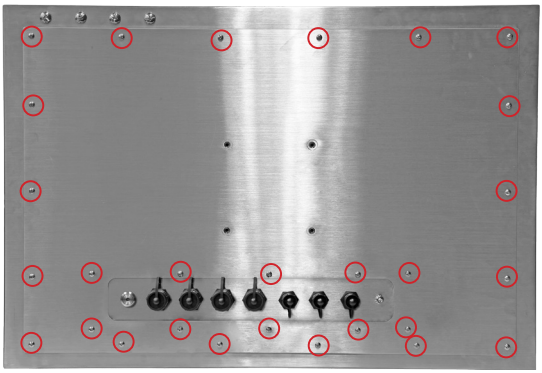
Chapter 4

Installation & Maintenance

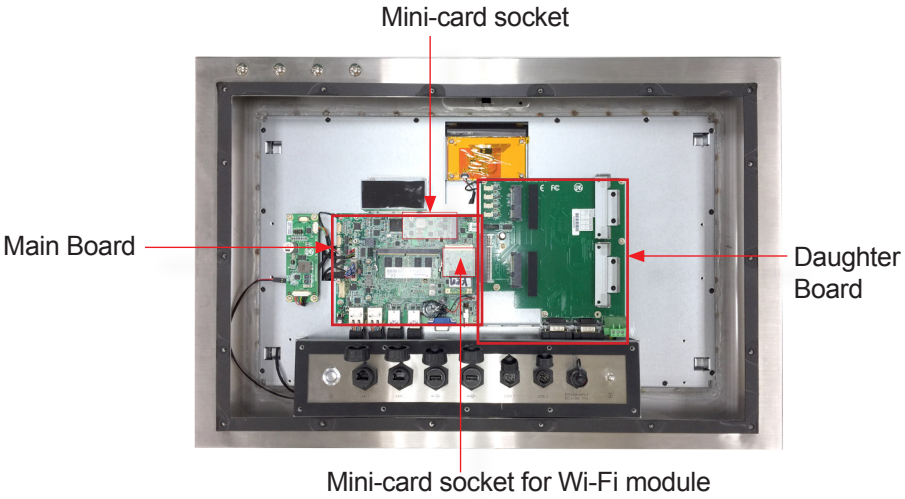
4.1. Disassembly the Computer

The computer's carrier board comes with some connectors to join some devices and also some jumpers to alter hardware configuration. Follow through the guide below to access these components inside the computer.

1. Turn the computer upside down on a flat work surface with the back of the computer facing you. Loosen and remove the screws securing the computer's rear cover



2. Dismount the rear cover from the computer. The inside of the computer comes to view.

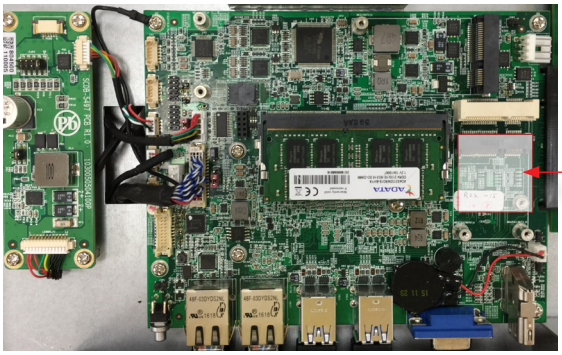


4.2. Install Hardware

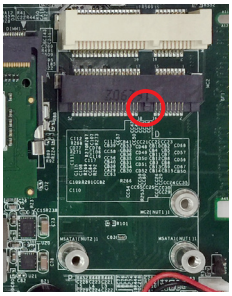
4.2.1. Install Wi-Fi Module

The computer comes with one Mini-card socket to load the computer with a wireless module of PCI Express Mini-card form factor: This section will guide you to install the Wi-Fi module.

1. Locate the **PCI Express Mini-card** socket for wireless module.

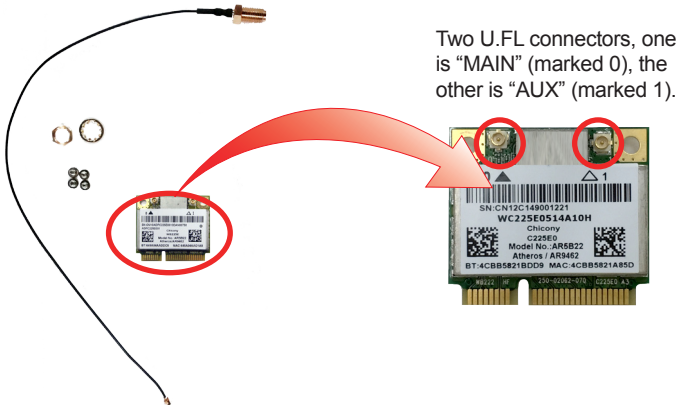


Note the socket has a break among the connector .

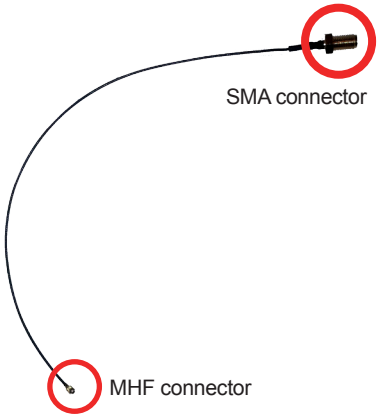


The module's key notch should meet the connector's break.

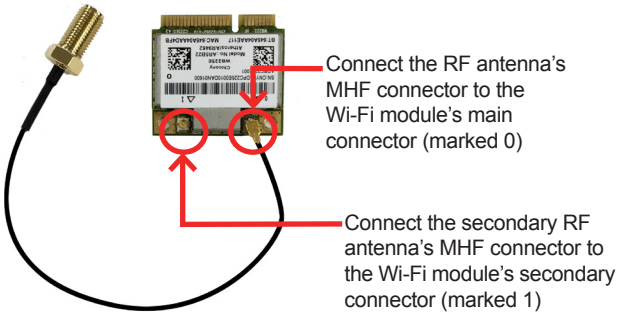
2. Prepare the Wi-Fi module kit. The module is a half-size module of **PCI Express Mini-card** form factor, with two U.FL connectors, one is “MAIN“, and the other is “AUX“.



3. Have the RF antenna. The antenna has an SMA connector on one end and an MHF connector on the other.

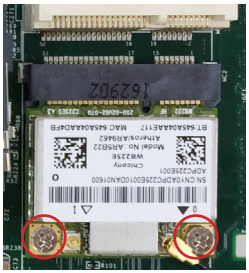


4. Connect the RF antenna's MHF connector to the Wi-Fi module's main connector marked 0. If you are going to connect a secondary antenna, connect it to the connector marked 1.

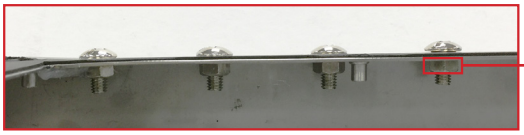


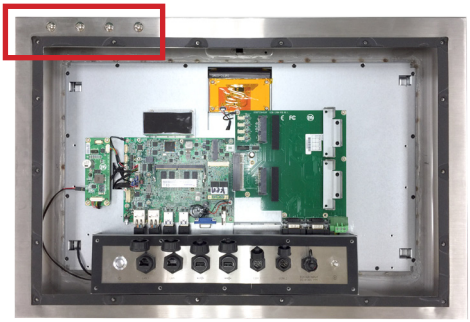
5. Plug the Wi-Fi module to the socket's connector by a slanted angle. Fully plug the module, and note the notch on the wireless module should meet the break of the connector.

6. Press the module down and fix the module in place using two screws.

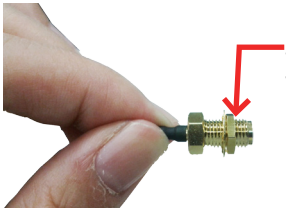


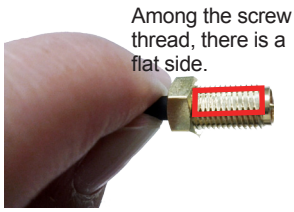
7. Locate the SMA antenna holes on the top-left corner of the frame. To access the hole you want to use, remove the nut and then the screw.



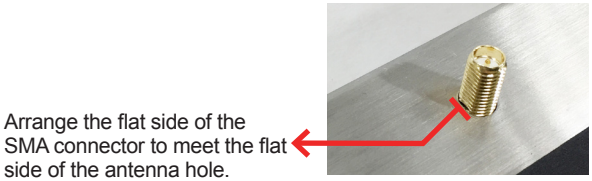


8. From the other end of the RF antenna, which is an SMA connector, remove the washer and the nut. Save the washer and nut for later use. Note the SMA connector has the form of a threaded bolt, with one flat side.

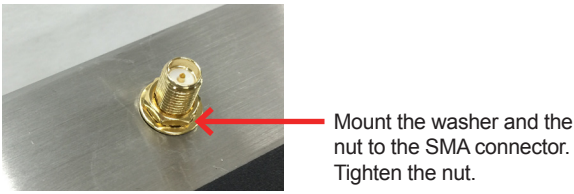




9. Pull the SMA connector through the above mentioned antenna hole. Note to meet the aforesaid flattened side with the antenna hole's flat side.



10. Mount the washer first and then the nut to the SMA connector. Make sure the nut is tightened.

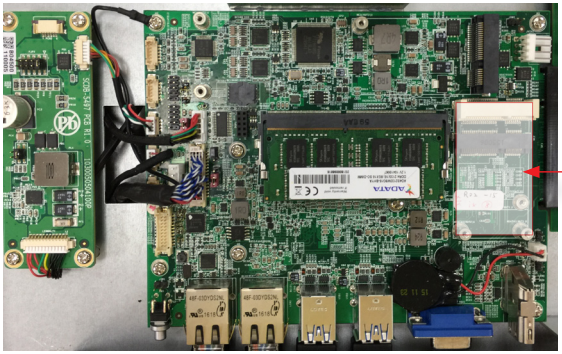


11. Have the external antenna(s). Screw and tightly fasten the antenna(s) to the SMA connector.

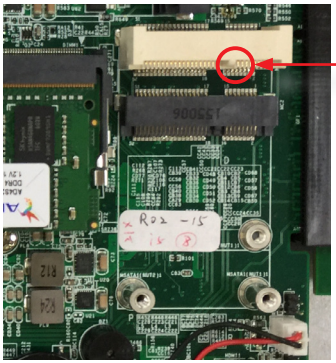
4.2.2. Install mSATA Module

To install an mSATA storage module to the computer:

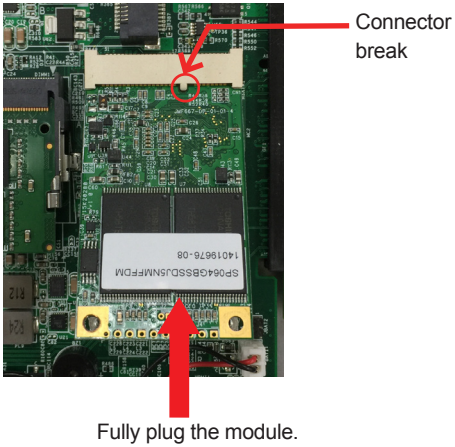
1. Locate the socket for mSATA modules.



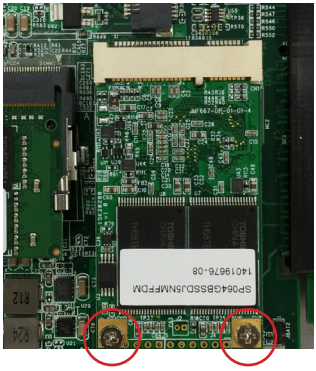
2. Confront the mSATA module’s edge connector with the socket's connector. Align the module’s key notch the connector's break.



3. Fully plug the module until it cannot be plugged any more.



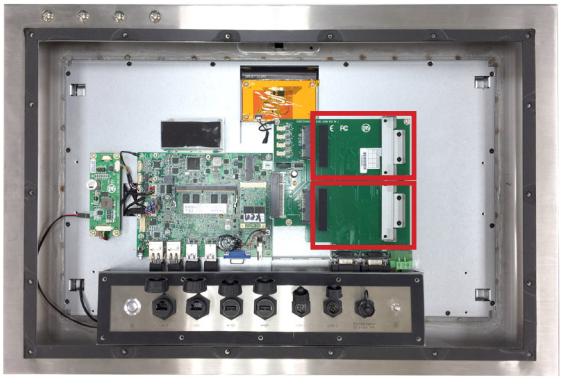
4. Press the module down and fix the module in place using two screws.



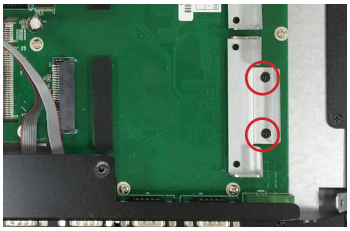
4.2.3. Install SSD or HDD

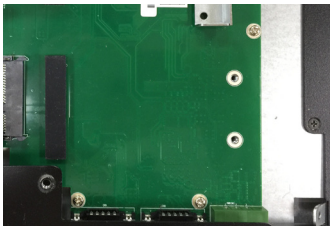
The computer comes with two 2.5" drive bays for 2.5” HDD or SSD storage device. To install 2.5” HDD or SSD to the computer,

1. Locate the 2.5" drive bays inside the computer.



2. For the drive bay you want to use, remove the 2 screws securing the bracket.





3. Fix the 2.5” HDD or SSD storage device to the bracket you just removed using 2 screws coming with the storage device kit.

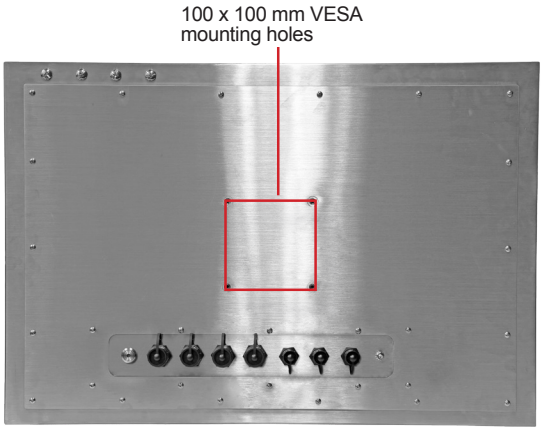
4. Slide the storage device into the SATA connector. Then fix the bracket using the 2 screws removed in step 2.

5. Repeat steps 2 to 5 to install 2.5” HDD or SSD to the other bay.

4.3. VESA Mount the Computer

To integrate the computer to a VESA arm:

1. Find the VESA mounting holes on the Panel PC.



2. Attach the VESA arm to the rear of the computer by meeting the mounting holes on the VESA arm and VESA bracket.

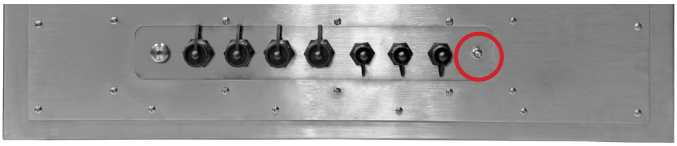
3. Fix the assemblage with four screws.

4.4. Ground the Computer

Follow the instructions below to ground the computer to land. Be sure to follow every grounding requirement in your place.

> **Warning** Whenever the unit is installed, the ground connection must always be made first of all and disconnected lastly.

1. Remove the ground screw from the rear panel.
2. Attach a ground wire to the rear panel with the screw.



4.5. Connecting to the Computer

4.5.1. Connecting to Power Outlet

1. Rotate the O-ring to remove the protective cap of the DC IN jack.


2. Using the provided waterproof power cord, plug one end to the AC adapter and the other end to the DC-in jack of the computer.
   Make sure to rotate the O-ring to secure the connection.


3. Then connect the AC adapter's power cord to an electrical outlet.

4.5.2. Connecting Other Devices to the Computer

To make connection to the USB, LAN or COM ports on the rear of the computer, make sure to use the optional waterproof cables to ensure the protection. Always ensure the O-ring is tightened to secure the connection.

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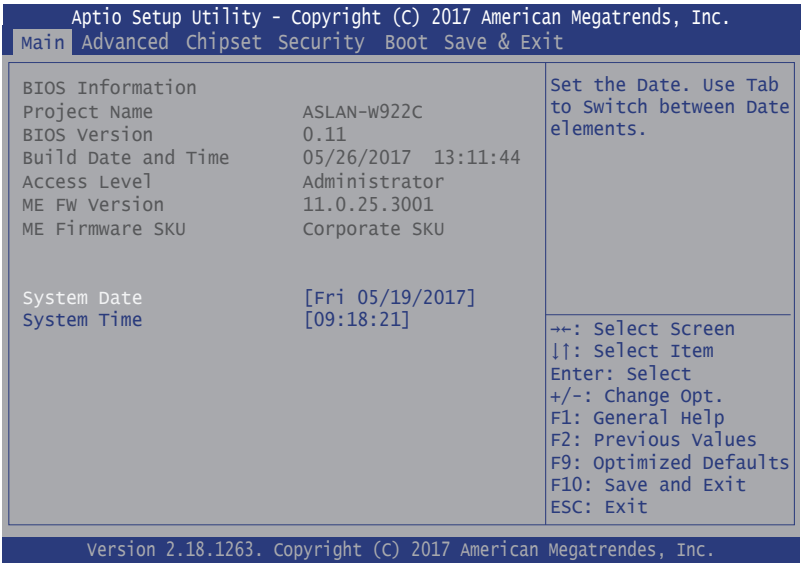
Chapter 5

BIOS

The BIOS Setup utility for the ASLAN-W922C-IP is featured by American Megatrends Inc to configure the system settings stored in the system's BIOS ROM. The BIOS is activated once the computer powers on. When the computer is off, the battery on the main board supplies power to BIOS RAM.

To enter the BIOS Setup utility, keep hitting the "Delete" key upon powering on the computer.



Menu	Description
Main	See 5.1. Main on page 62
Advanced	See 5.2. Advanced on page 63
Chipset	See 5.3. Chipset on page 76
Boot	See 5.4 Security on page 83
Security	See 5.5. Boot on page 84
Save & Exit	See 5.6. Save & Exit on page 85

Key Commands

The BIOS Setup utility relies on a keyboard to receive user's instructions. Hit the following keys to navigate within the utility and use the utility.

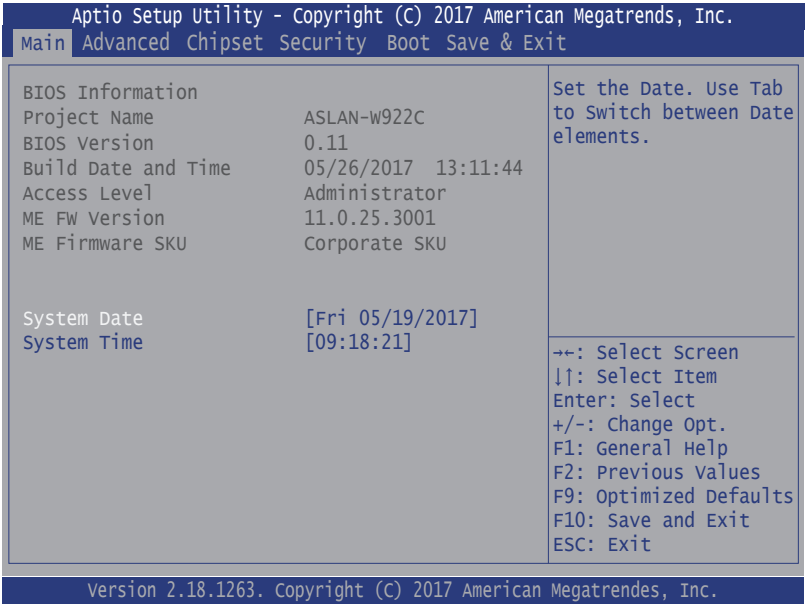
Keystroke	Function
← →	Moves left/right between the top menus.
↓ ↑	Moves up/down between highlight items.
Enter	Selects an highlighted item/field.
Esc	► On the top menus: Use **Esc** to quit the utility without saving changes to CMOS. (The screen will prompt a message asking you to select **OK** or **Cancel** to exit discarding changes. ► On the submenus: Use **Esc** to quit current screen and return to the top menu.
Page Up / +	Increases current value to the next higher value or switches between available options.
Page Down / -	Decreases current value to the next lower value or switches between available options.
F1	Opens the **Help** of the BIOS Setup utility.
F10	Exits the utility saving the changes that have been made. (The screen then prompts a message asking you to select **OK** or **Cancel** to exit saving changes.)

Note: Pay attention to the "WARNING" that shows at the left pane onscreen when making any change to the BIOS settings.

This BIOS Setup utility is updated from time to time to improve system performance and hence the screenshots hereinafter may not fully comply with what you actually have onscreen.

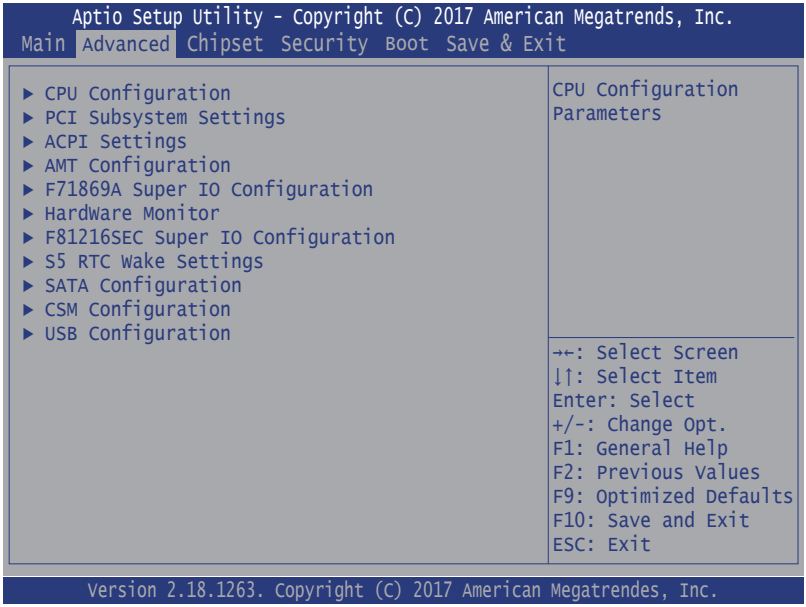
5.1. Main

The **Main** menu features the settings of **System Date** and **System Time** and displays some BIOS info.



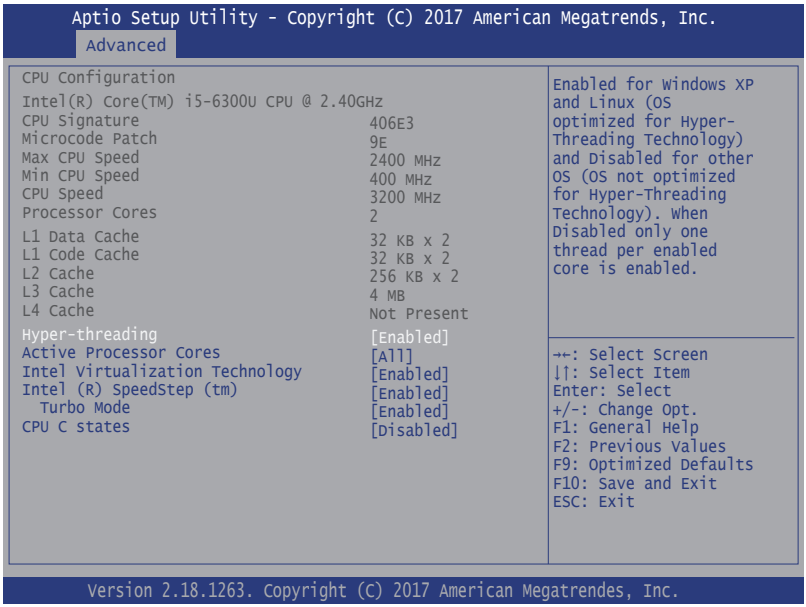
Setting	Description
Project Name	Delivers the model name of the computer.
BIOS Version	Delivers the computer's BIOS version.
Build Date and Time	Delivers the date and time when the BIOS Setup utility was made/ updated.
Access Level	Delivers the level that the BIOS is being accessed at the moment.
System Date	Sets system date.
System Time	Sets system time.

5.2. Advanced



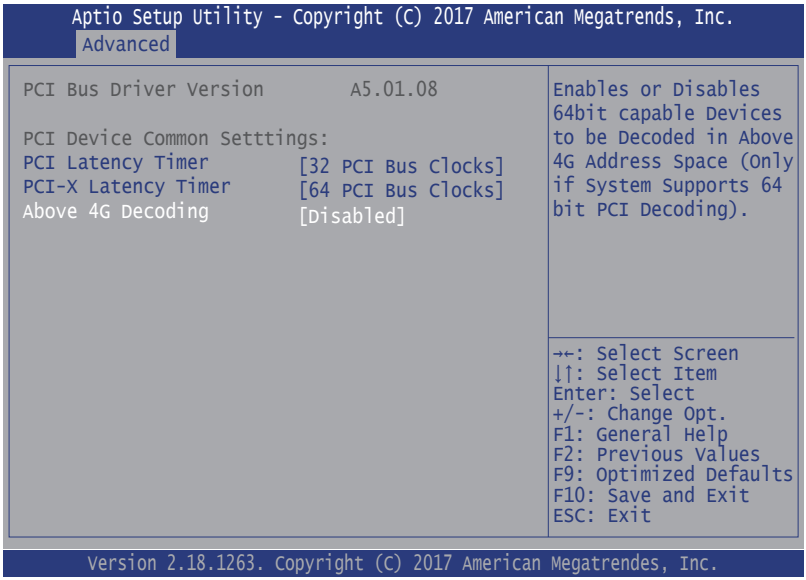
Setting	Description
CPU Configuration	See 5.2.1. CPU Configuration on page 64
PCI Subsystem Settings	See 5.2.2. PCI Sybsystem Settings on page 65
ACPI Settings	See 5.2.3. ACPI Settings on page 66
AMT Configuration	See 5.2.4. AMT Configuration on page 67
F71816A Super IO Configuration	See 5.2.5. F71869A Super IO Configuration on page 68
Hardware Monitor	See 5.2.6. Hardware Monitor on page 69
F81216SEC Super IO Configuration	See 5.2.7. F81216SEC Super IO Configuration on page 70
S5 RTC Wake Settings	See 5.2.8. S5 RTC Wake Settings on page 71
SATA Configuration	See 5.2.9. SATA Configuration on page 72
CSM Configuration	See 5.2.10. CSM Configuration on page 73
USB Configuration	See 5.2.11. USB Configuration on page 74

5.2.1. CPU Configuration



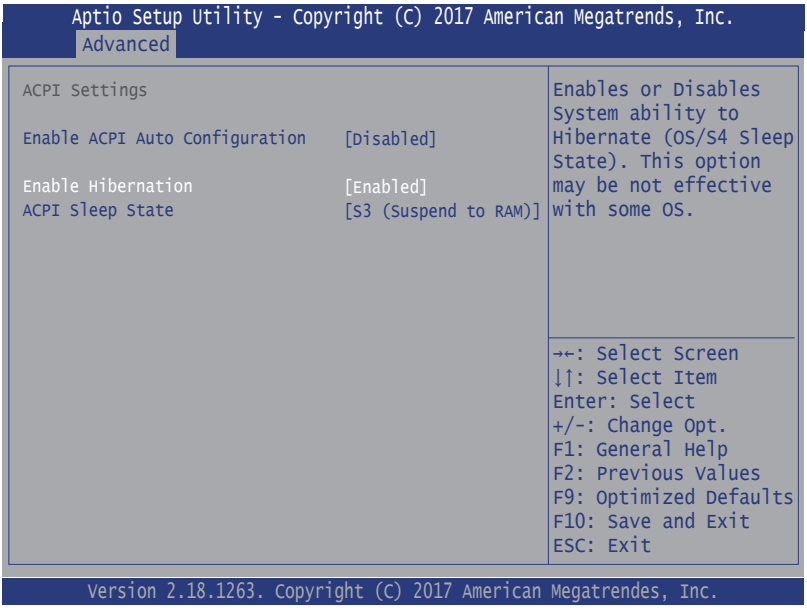
Setting	Description
Hyper-threading	**Enabled** (default) for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and **Disabled** for other OS (OS not optimized or Hyper-Threading Technology). When disabled only one thread per enabled core is enabled.
Active Processor Cores	Number of cores to enable in each processor package. ► Options: **All** (default) and **1**
Intel Virtualization Technology	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology ► Options: **Enabled** (default) or **Disabled**
Intel (R) Speed Step (tm)	**Enable** (default) / **Disable** Intel SpeedStep
Turbo Mode	Only available when Intel Speed Step is **Enabled**. **Enable** (default) / **Disable** Turbo Mode
CPU C States	**Enable** / **Disable** (default) CPU C States

5.2.2. PCI Sybsystem Settings



Setting	Description
PCI Latency Timer	Value to be programmed into PCI Latency Timer Register. ► **Options: 32** (default), **64**, **96**, **128**, **160**, **192**, **224** and **248 PCI Bus Clocks**.
PCI-X Latency Timer	Value to be programmed into PCI-X Latency Timer Register. ► **Options: 32**, **64** (default), **96**, **128**, **160**, **192**, **224** and **248 PCI Bus Clocks**.
Above 4G Decoding	**Enable/Disable** (default) 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64 bit PCI Decoding).

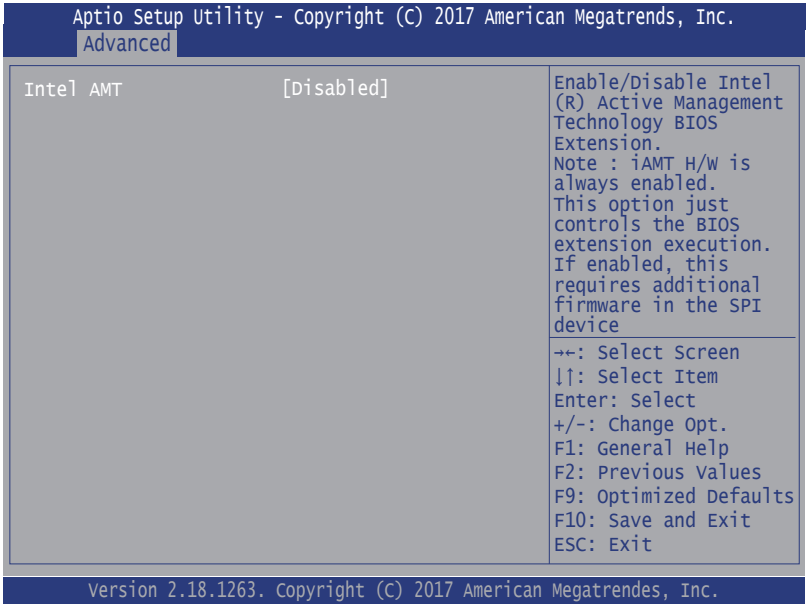
5.2.3. ACPI Settings



Setting	Description
Enable ACPI Auto Configuration	**Enables** or **Disables** (default) BIOS ACPI Auto Configuration
Enable Hibernation	**Enables** (default) or **Disables** System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
ACPI Sleep State	Select ACPI sleep state the system will enter when the SUSPEND button is pressed. ► **Options: Suspend Disabled** and **S3 (Suspend to RAM)** (default)

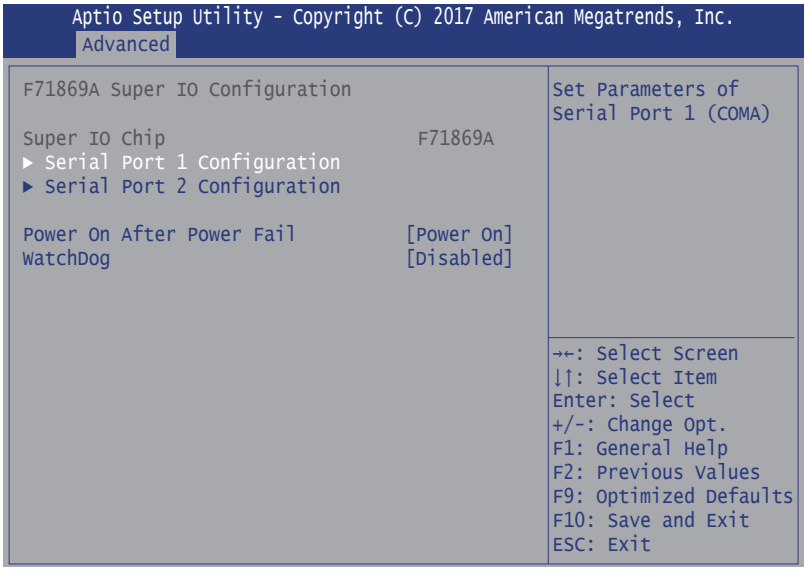
5.2.4. AMT Configuration

Intel® Active Management Technology (Intel® AMT) is a hardware-based solution that uses out-of-band communication for system administrators to monitor and manage the computers and other network equipment by remote control even if the hard drive is crashed, the system is turned off or the operating system is locked. This submenu features the settings of iAMT's BIOS extension, which are required to make use of iAMT.



Setting	Description
Intel AMT	**Enables** (default) /**disables** Intel® Active Management Technology BIOS extensions. ► Note iAMT hardware is always enabled. ► This setting only controls the execution of BIOS extension execution. ► When enabled, additional firmware is required in the SPI device.

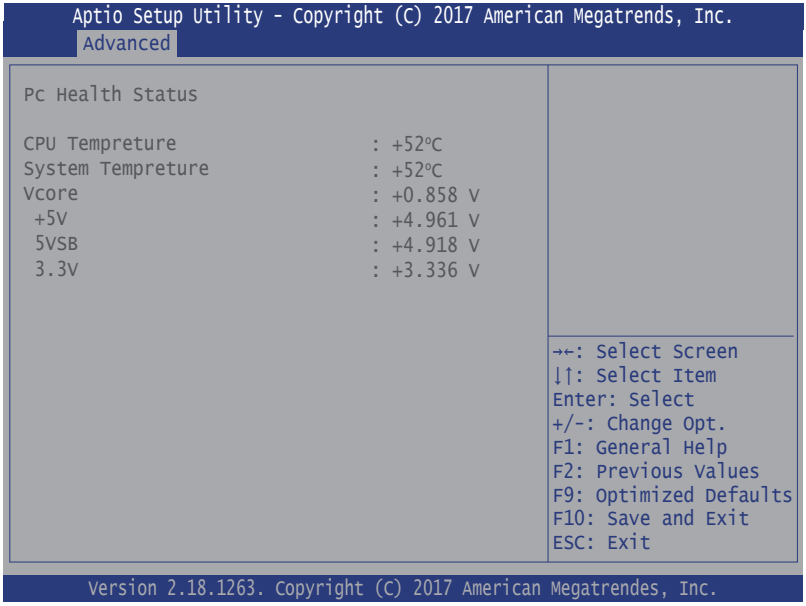
5.2.5. F71869A Super IO Configuration



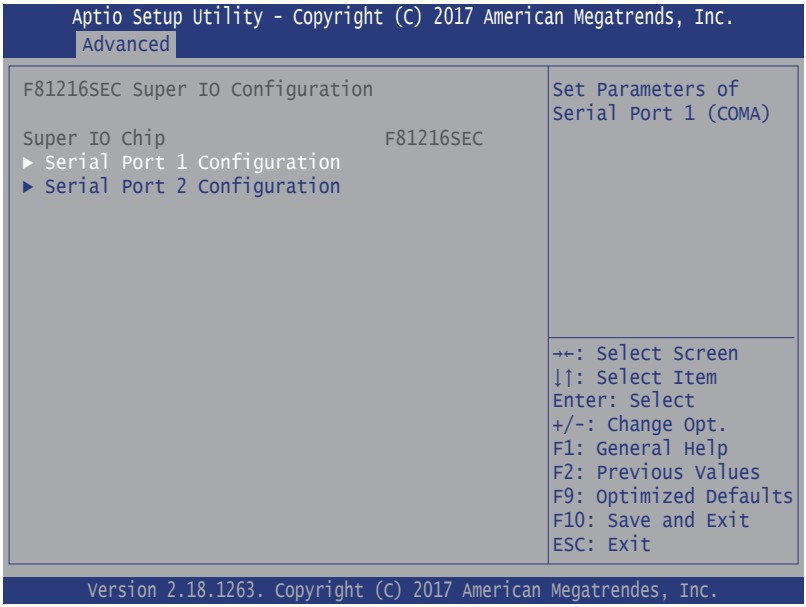
Setting	Description
Serial Port	**Enable** (default) or **Disable** Serial Port (COM).
Change Settings	Select an optimal setting for Super IO device. ▶ Options for Serial Port 1: **Auto**; **IO=3F8h; IRQ=4** (default) ; **IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; **IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 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**; ▶ Options for Serial Port 2: **Auto** **IO=2F8h; IRQ=3** (default) **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**
Mode Select	Select **RS-232** (default), **RS-422** or **RS-485**.
Power On After Power Fail	Specify what state to go to when power is re-applied after a power failure. **Options: Power Off** and **Power On** (default)
WatchDog	**Enables** or **Disables** (default) WatchDog Timer.

5.2.6. Hardware Monitor

Select this submenu to view the main board's hardware status. Select it to run a report of various info as depicted below:

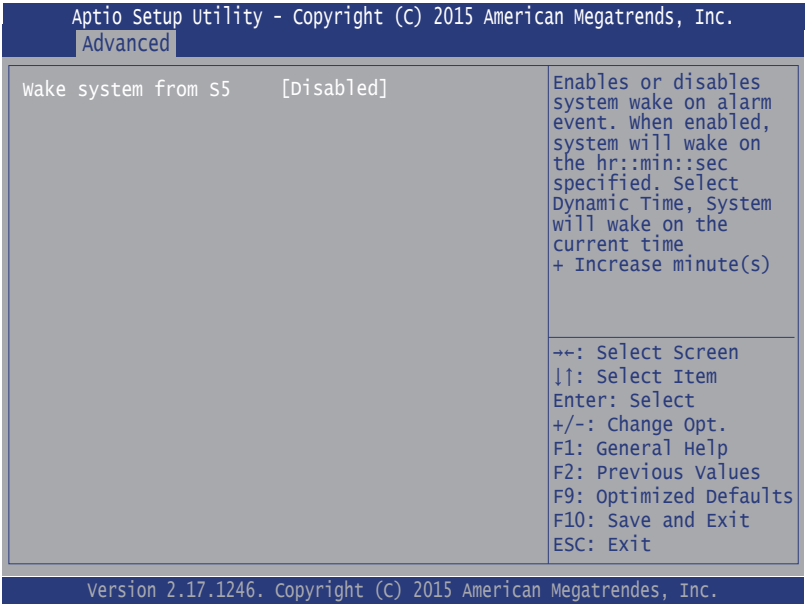


5.2.7. F81216SEC Super IO Configuration



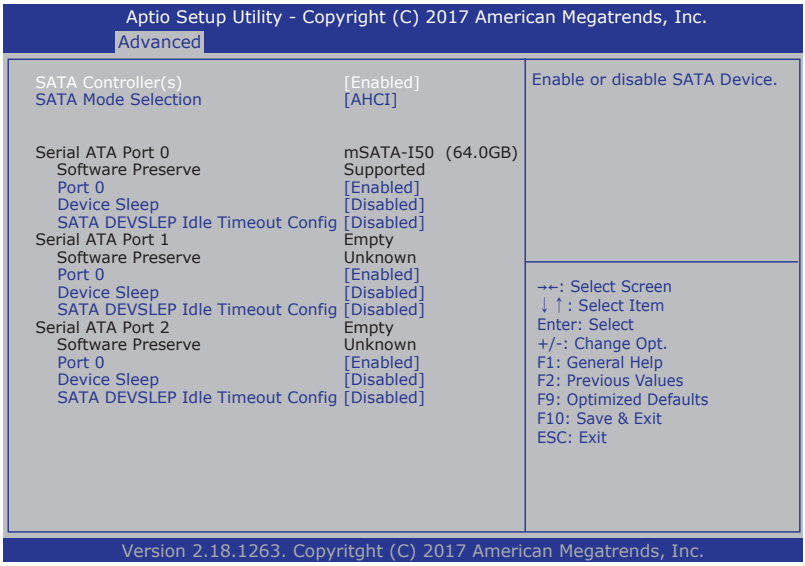
Setting	Description
Serial Port	**Enable** (default) or **Disable** Serial Port (COM).
Change Settings	Select an optimal setting for Super IO device. ▶ Options for Serial Port 1: **Auto**; **IO=240h; IRQ=5** (default) ; **IO=240h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; **IO=248h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; **IO=250h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; **IO=258h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; ▶ Options for Serial Port 2: **Auto** **IO=248h; IRQ=7** (default) ; **IO=240h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; **IO=248h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; **IO=250h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**; **IO=258h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12**;
Mode Select	Select **RS-232** (default), **RS-422** or **RS-485**.

5.2.8. S5 RTC Wake Settings



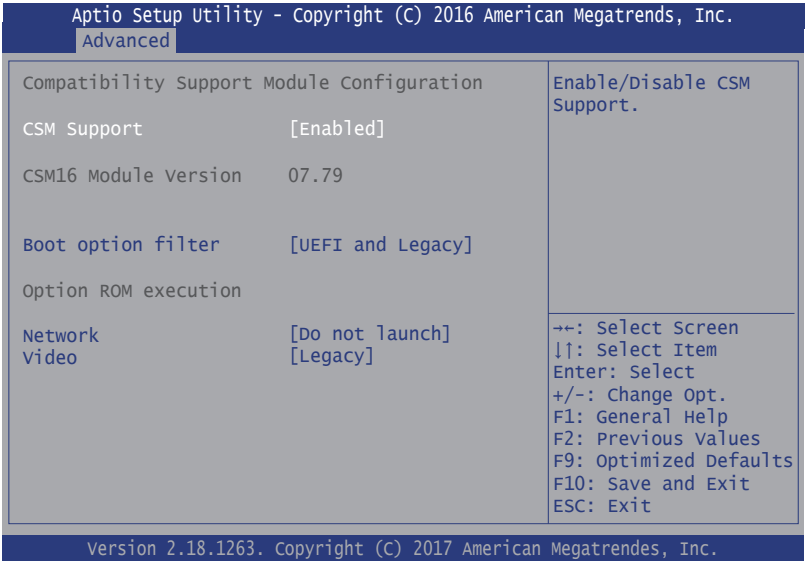
Setting	Description
Wake System from S5	**Enable** or **Disable** (default) system wake on alarm event. ► Options available are: **Disabled** (default): **Fixed Time:** System will wake on the hr::min::sec specifiedc. **DynamicTime:** If selected, you need to set **Wake up minute increase** from 1 - 5. System will wake on the current time + increase minute(s).

5.2.9. SATA Configuration



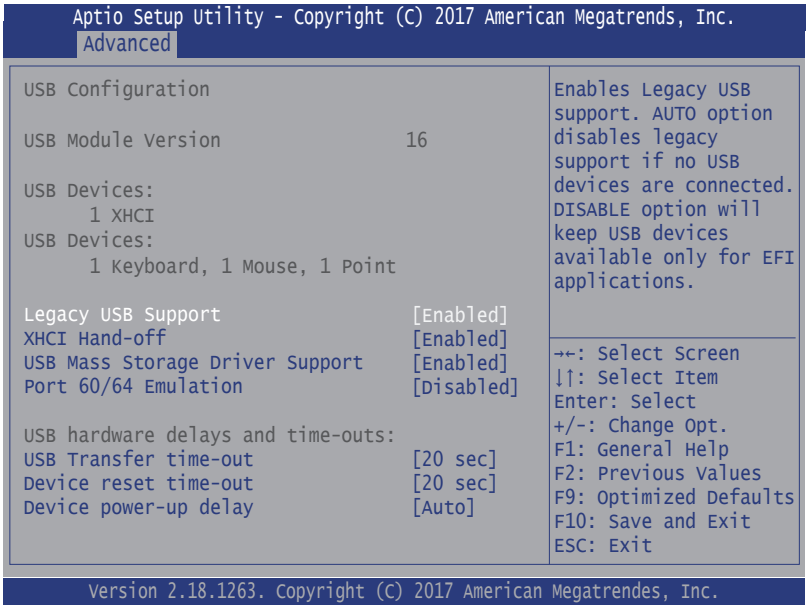
Setting	Description
SATA Controller(s)	**Enables** (default) / **disables** SATA device(s).
SATA Mode Selection	Configures how SATA controller(s) operate. ► Options: **AHCI** (default) and **RAID**.
Serial ATA Port 0 ,1 ,2	SATA device information
Port 0, 1, 2	**Enables** (default) / **disables** the SATA port 0, 1, 2.
Device Sleep	**Enables** / **disables** (default) the mSATA for RTD3.
SATA DEVSLEP Idle Timeout Config	**Enables** / **disables** (default) SATA DTIO config.

5.2.10. CSM Configuration



Setting	Description
CSM Support	**Enable** (default) or **Disable** CSM Support.
Boot option filter	Control the Legacy/UEFI ROMs priority. ► Options: **UEFI and Legacy** (default), **Legacy only**, **UEFI only**
Network	Control the execution of UEFI and Legacy PXE OpROM ► Options: **Do not launch** (default) and **Legacy**
Video	Control the execution of UEFI and Legacy Video OpROM ► Options: **UEFI** and **Legacy** (default)

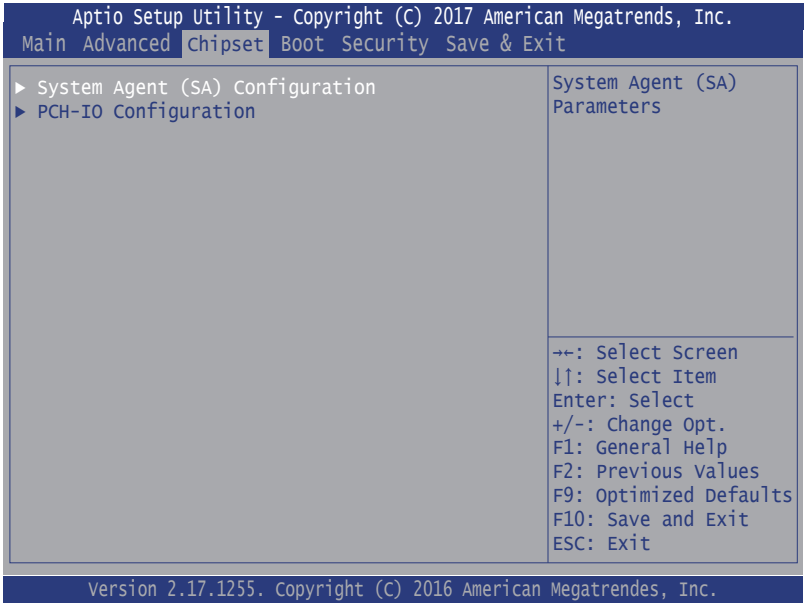
5.2.11. USB Configuration



Setting	Description
Legacy USB Support	Enables/disables legacy USB support. ► Options available are **Enabled** (default), **Disabled** and **Auto**. ► Select **Auto** to disable legacy support if no USB device are connected. ► Select **Disabled** to keep USB devices available only for EFI applications.
XHCI Hand-off	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver. ► The optional settings are: **Enabled** (default) **/ Disabled**.
USB Mass Storage Driver Support	Enables/disables USB Mass Storage Driver Support. ► The optional settings are: **Disabled** / **Enabled** (default).
USB hardware delay and time-out	
Port 60/64 Emulation	**Enables** / **Disables** (default) I/O port 60/64h emulation support.
USB Transfer time-out	Use this item to set the time-out value for control, bulk, and interrupt transfers. ► Options: **1 sec, 5 sec, 10 sec, 20 sec**

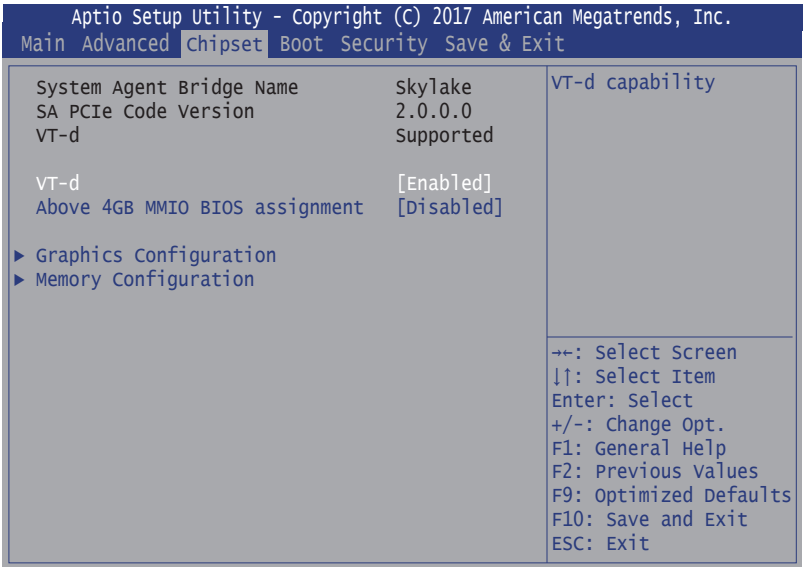
Device reset time-out	Use this item to set USB mass storage device start unit command time-out. ► Options available are: **10 sec, 20 sec** (default)., **30 sec, 40 sec**
Device power-up delay	Use this item to set maximum time the device will take before it properly reports itself to the host controller. 'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor. ► Options available are: **Auto**: Default **Manual**: Select **Manual** you can set value for the following sub-item: 'Device Power-up delay in seconds', the delay range in from 1 to 40 seconds, in one second increments.

5.3. Chipset



Submenu	Description
System Agent (SA) Configuration	See 5.3.1. System Agent (SA) Configuration on page 77
PCH-IO Configuration	See 5.3.2. PCH-IO Configuration on page 80

5.3.1. System Agent (SA) Configuration



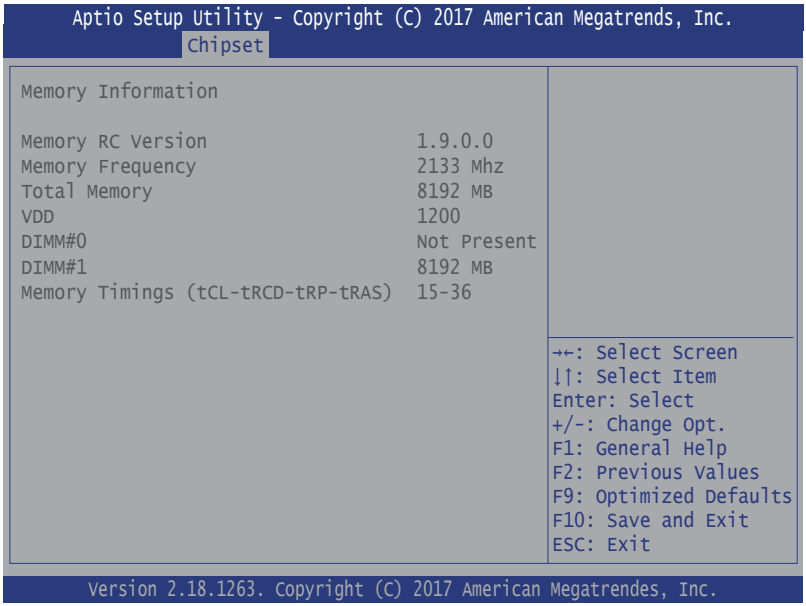
Submenu	Description
VT-d	**Enable** (default) or **Disable** VT-d function
Above 4GB MMIO BIOS assignment	**Enable** or **Disable** (default) Above 4GB MMIO BIOS assignment
System Agent (SA) Configuration	
Graphics Configuration	See 5.3.1.1. Graphics Configuration on page 78
Memory Configuration	See 5.3.1.2. Memory Configuration on page 79

5.3.1.1. Graphics Configuration

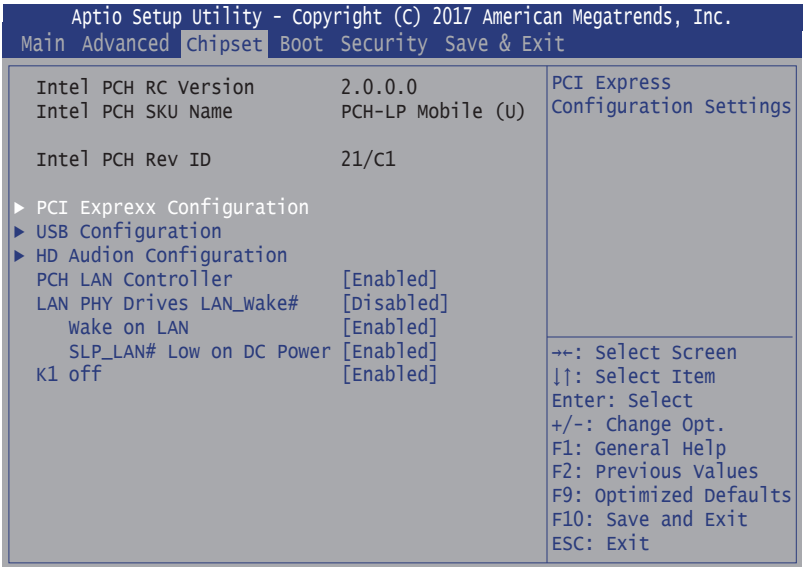
Setting	Description
IGFX VBIOS Version	Display the IGFX(internal VGA) VBIOS version.
Graphics Turbo IMON Current	Sets the graphics turbo IMON current values. ► Options available are **14** to **31**. **31** is the default.
Skip scaning of External Gfx Card	If enabled, it will not scan for External Gfx Card on PEG and PCH PCIE ports.
Primary Display	Select the Graphics device which will be activated as Primary Display. ► Options available are **Auto** (default), **IGFX** and **PCIE**
Primary PEG	Select the Graphics device which will be activated as Primary PEG ► Options available are **Auto** (default), **PEG11**, and **PEG12.**
Primary PCIE	Select the Graphics device which will be activated as Primary PCIE ► Options available are **Auto** (default), **PCIE1~18**.
Internal Graphics	Enables/disables the IGD. ► Options available are **Auto** (default), **Disabled,** and **Enabled.**
GTT Size	Select the GTT Size. ► Options: **4MB, 2MB** and **8MB** (default)**.**
Apeture Size	Select the Apeture Size. Note that above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM support. ► Options: **128MB**, **256MB** (default)**, 512MB**, **1024MB**, **2048MB** and **4096MB**.
DVMT Pre-Allocated	Select the DVMT 5.0 Pre-allocated (Fixed) Graphic Memory size used by the Internal Graphic Device. ► 32M is the default.
DVMT total Gfx Mem	Select the DVMT 5.0 Total Graphic Memory size used by the Internal Graphic Device. ► Options: **128MB, 256MB** (default) and **Max.**

5.3.1.2. Memory Configuration

Access this submenu to view the memory configuration.



5.3.2. PCH-IO Configuration



Setting	Description
PCI Express Configuration	See 5.3.2.1. PCI Express Configuration on page 82
USB Configuration	See 5.3.2.2. USB Configuration on page 82
HD Audio Configuration	► Control Detection of the HD-Audio device. Options available are: **Disabled**: HDA will be unconditionally disabled **Enabled**: HDA will be unconditionally Enabled **Auto** (default) = HDA will be enabled if present, disabled otherwise. ► USB Audio Device Enable (default) or disable USB Audio Device.
PCH LAN Controller	**Enabled** (default) / **disabled** onboard NIC. If enabled, “Wake on LAN” option will be available to enable (default) / disable integrated LAN to wake the system. (The Wake On LAN cannot be disabled if ME is on at Sx state.)

LAN PHY Drives LAN-WAKE#	**Enable** or **disable** (default) LAN Phy driving LAN-WAKE# else platform drives LAN_WAKE#. ► Wake on LAN **Enable** (default) or **disable** integrated LAN to wake the system. (The Wake On LAN cannot be disabled if ME is on at Sx state)/ ► SLP_LAN# Low on DC Power **Enable** (default) or **disable** SLP_LAN# Low on DC Power
K1 Off	**Enable** (default) or **disable** K1 off feature (CLKREQ).

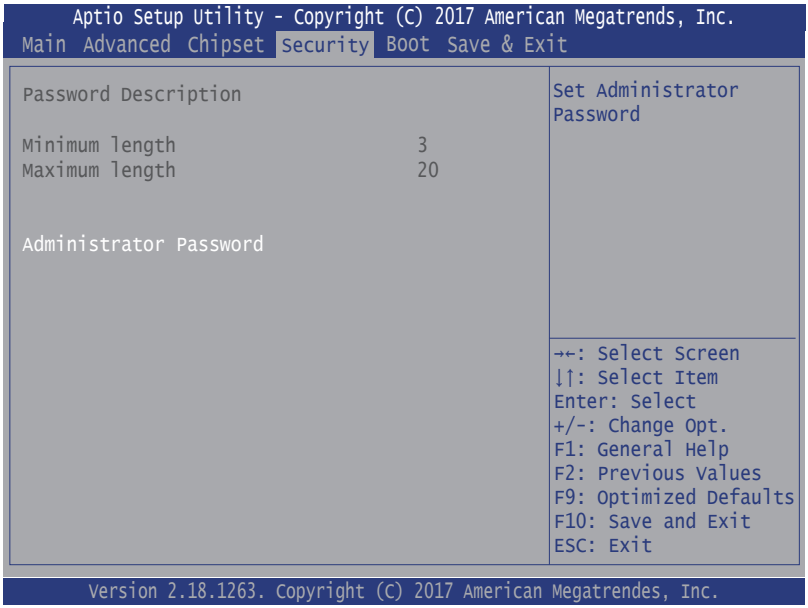
5.3.2.1. PCI Express Configuration

Setting	Description
PCI Express Root Port 1/2/3/4/5/6/10	**Enable** (default) or disable PCI Express Port.
ASPM Support	Disable or set the ASPM level. Force L0s will force all inks to L0s state. “Auto” will allow BIOS to auto configure.”Disable” will disable ASPM. ► Options: **Disabled** (default), **L0s**, **L1**, **L0sL1** and **Auto**.
L1 Substates	PCI Express L1 Substates settings. ► Options: **Disabled**, **L1.1**, **L1.2** and **L1.1 & L1.2** (default).
PCIe Speed	Select PCI Express port speed. ► Options: **Auto** (default), **Gen1**, **Gen2** and **Gen3**

5.3.2.2. USB Configuration

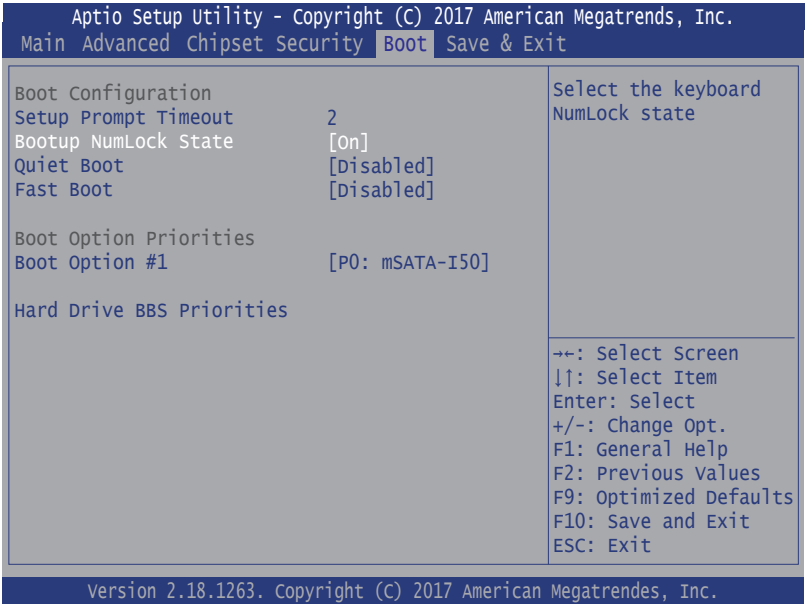
Setting	Description
USB Precondition	Precondition work on USB host controller and root ports for faster enumeration. ► Options: **Enable**/**Disable** (default).
XHCI Disable Compliance Mode	Options to disable Compliance Mode. Default is **FALSE** (default) to not disable Compliance Mode. Set **TRUE** to disable Compliance Mode.
xDCI Support	**Enable**/**disable** (default) xDCI (USB OTG Device).
USB Port Disable Override	Selectively **enable**/**disable** (default) the corresponding USB port from reporting a Device Connection to the controller.

5.4 Security



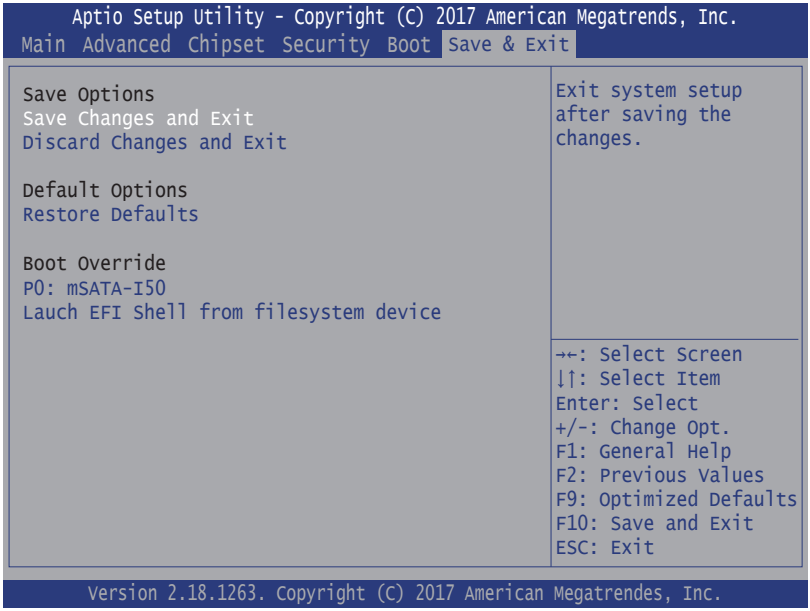
Setting	Description
Administrator Password	To set up an administrator password: 1. Select **Administrator Password**. 2. An **Create New Password** dialog then pops up onscreen. 3. Enter your desired password that is no less than 3 characters and no more than 20 characters. 4. Hit [Enter] key to submit.

5.5. Boot



Setting	Description
Setup Prompt Timeout	Set how long to wait for the prompt to show for entering BIOS Setup. ► The default setting is **2** (sec). ► Set it to **65535** to wait indefinitely.
Bootup NumLock State	Sets whether to enable or disable the keyboard's NumLock state when the system starts up. ► Options available are **On** (default) and **Off**.
Quiet Boot	Sets whether to display the POST (Power-on Self Tests) messages or the system manufacturer's full screen logo during booting. ► Select **Disabled** to display the normal POST message, which is the default.
Fast Boot	Enables or disables (default) boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Boot Option Priority	Set the system boot priorities.
Hard Drive BBS Priorities	Sets the order of the legacy devices in this group. BBS means "BIOS Boot Specification".

5.6. Save & Exit



Setting	Description
Save Changes and Reset	Saves the changes and quits the BIOS Setup utility.
Discard Changes and Exit	Quits the BIOS Setup utility without saving the change(s).
Restore Defaults	Restores all settings to defaults. ► This is a command to launch an action from the BIOS Setup utility.
Boot Override	**Boot Override** presents a list in context with the boot devices in the system. ► **P0: mSATA-I50:** Select the device to boot up the system regardless of the currently configured boot priority. ► **Launch EFI Shell from filesystem device:** Attempts to launch EFI Shell Application (Shell.efi) from one of the available filesystem devices.