FleetPC-9-B

Embedded Computing

User's Manual

Version 1.0

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Reversion		**Date**	**Notes**	**Author(s)**
From	**To**			
1.0		Apr. 1, 2019	Initial document issued	Stanley Chou

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User Manual

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

1. This device may not cause harmful interference.
2. This device must withstand any background interference including those that may cause undesired operation.

Safety Information

Read the following precautions before setting up a CarTFT.com Product.

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

CAUTION

Incorrectly replacing the battery may damage this computer. Replace only with the same or its equivalent as recommended by CarTFT.com e.K. Dispose used battery according to the manufacturer's instructions.

Technical Support

Please do not hesitate to call or e-mail our customer service when you still cannot fix the problems.

Tel : +49 7121 3878264

Fax : +49 7121 3878265

E-mail : sales@cartft.com

Website : www.cartft.com

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INTRODUCTION

1.0 INTRODUCTION

1.1 Model Specification

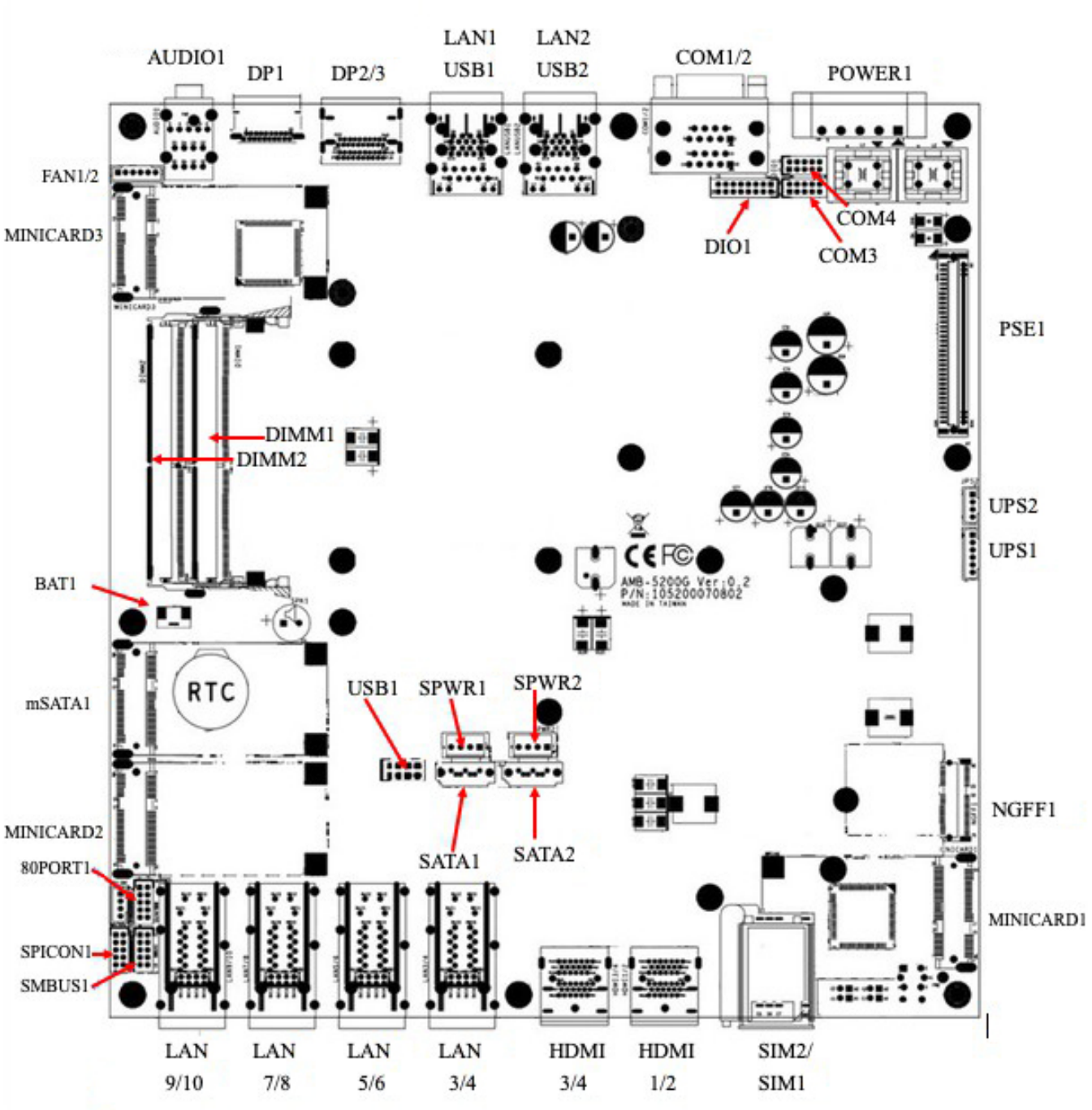
System	
CPU	Intel Gen8 Core i7-8700T (12M Cache 2.4GHz up to 4.0GHz) Intel Gen8 Core i5-8500T (9M Cache 2.1GHz up to 3.5GHz) Intel Gen8 Core i3-8100T (6M Cache 3.1GHz) Intel Gen8 Celeron G4900T (2M Cache 2.9GHz)
Memory	2 x DDR4 2400 MHz SO-DIMM up to 32GB
Lan Chipset	9 x Intel i210-AT and 1 x i219 (support iAMT) Gb/s Ethernet Controllers Onboard Support PXE and WOL
Watchdog	1 ~ 255 Level Reset
TPM	2.0
Power Requirement	
Power Input	9V-48V DC Power input
Power Protection	Automatics Recovery Short Circuit Protection
Power Management	Vehicle Power Ignition for Variety Vehicle
Power Off Control	Power off Delay Time Setting by BIOS and Software
Battery	Internal Battery Kit for 10 Mins Operating (optional) Patent No. : M447854 - Build-in Battery
Storage	
Type	2 x 2.5” Drive Bay for SATA Type HDD/SSD RAID 0, 1, 5 1 x mSATA

Qualification	
Certifications	CE, FCC Class A, E13
Graphics	
Graphics	Intel® UHD Graphics 630
Resolution	Max Resolution (DP) : 4096x2304@60Hz
Graphics (for model name with G1 only)	NVIDIA® GeForce GTX 1050TI GPU (768 CUDA Cores) Support for OpenGL 4.5 and OpenCL™ 1.2 Support for DirectX® 12 (Feature Level 12_0) features
Graphics (for model name with G4 only)	NVIDIA® GeForce GTX 1060 GPU (1280 CUDA Cores) Support for OpenGL 4.5 and OpenCL™ 1.2 Support for DirectX® 12 (Feature Level 12_0) features, VR Ready
I/O	
Serial Port	3 x RS 232/422/485 (Auto Direction Control)
USB Port	4 x USB 3.0 Ports
LAN	10 x RJ45 Ports for GbE(Optional for 8 x POE total Max.100w)
Video Port	3 x DP Ports
DIO Port	8 x GPI and 4 x GPO
Audio	1 x Line-out, 1 x Line-in and 1 x Mic-in
Expansion Bus	3 x Full Mini-PCIe Slots and 1 x M.2 A-E Key 2230 Slot (2 x SIM Card Sockets for 3G/LTE)
Environment	
Operating Temp.	-40ºC ~ 70ºC, ambient w/ 0.6m/s airflow
Storage Temp.	-40ºC ~ 80ºC
Relative Humidity	0% RH – 95% RH
Vibration (random)	IEC60068-2-64, random, 2.5G@5~500Hz, 1hr/axis with SSD
Vibration Operating	MIL-STD-810G, Method 514.6, Procedure I, Category 4
Shock	Operating: MIL-STD-810G, Method 516.6, Procedure I, Trucks and semi-trailers=15G (11ms) with SSD
Mechanical	
Construction	Aluminum Alloy
Mounting	Wall-mount
Weight	4760g (Barebone)
Dimensions	260(L) x 250(W) x 95(H) mm

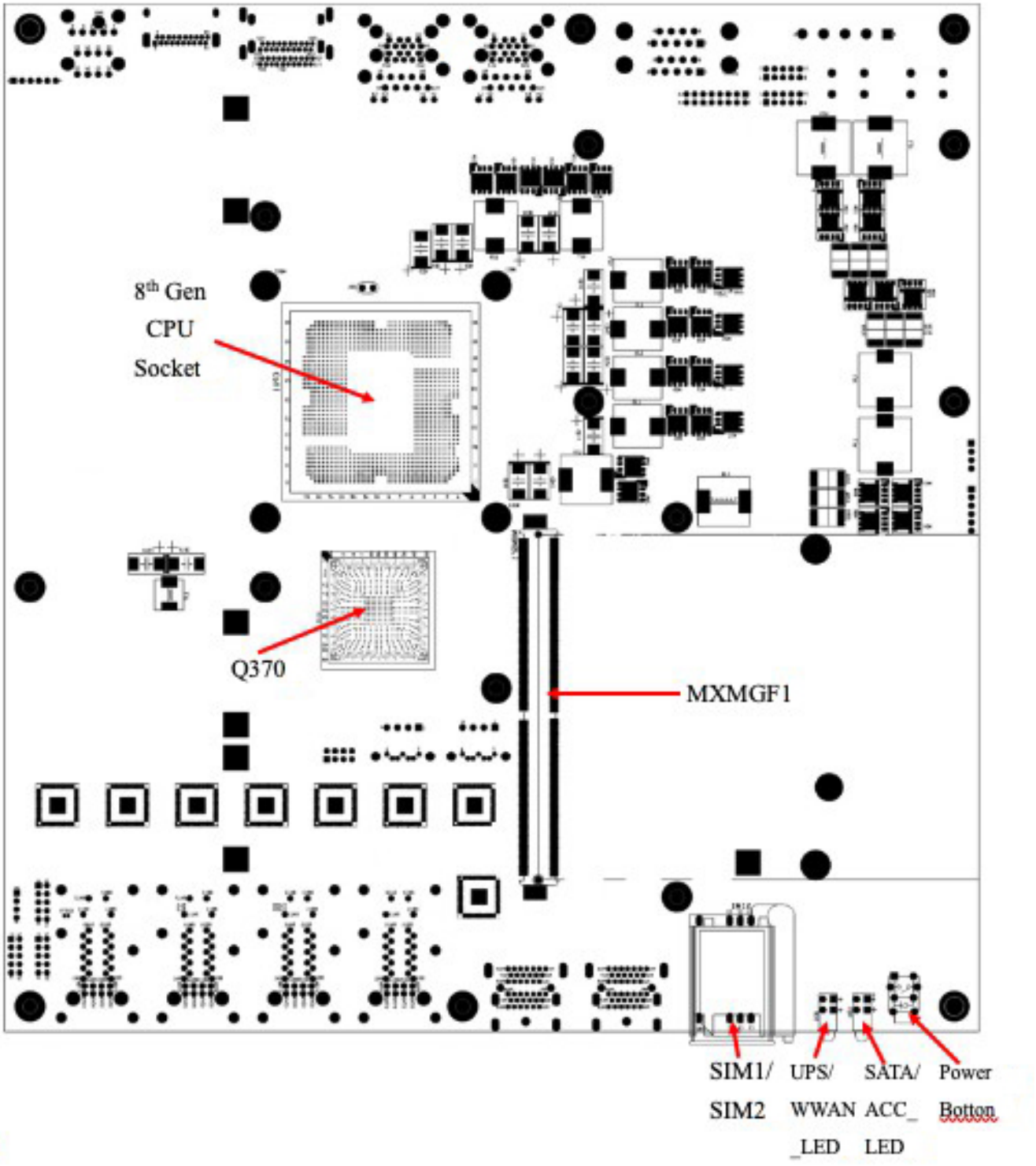
1.2 FleetPC-9-B Illustration (MB, System)

Main Board

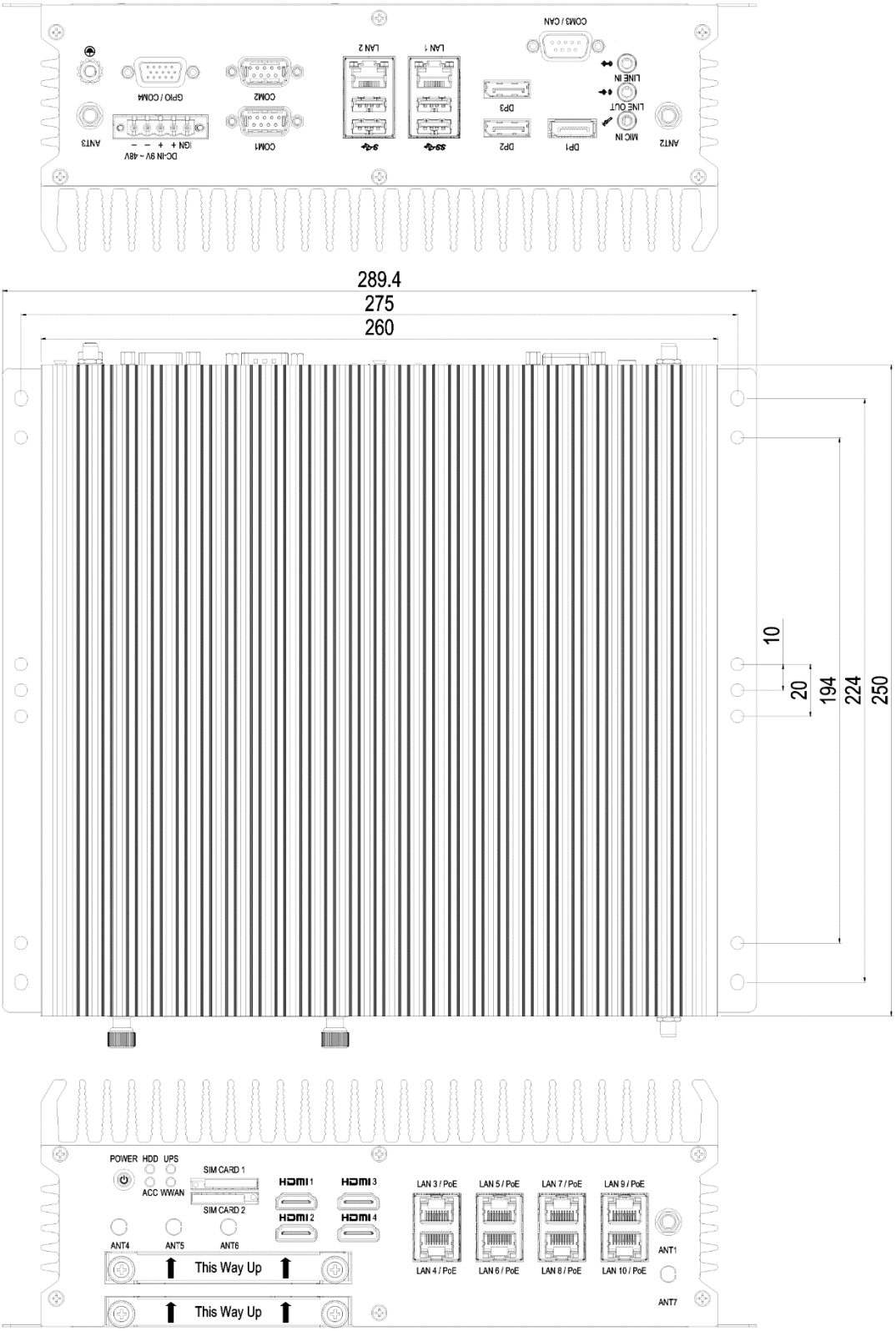
TOP



Bottom


8th Gen
CPU
Socket
Q370
MXMGF1
SIM1/
SIM2
UPS/
WWAN
_LED
SATA/
ACC_
LED
Power
Botton

System


COM3 / CAN
LAN 2
LAN 1
LINE IN
LINE OUT
MIC IN
DP3
DP2
DP1
ANT2
GPIO / COM4
COM2
COM1
DC-IN 9V ~ 48V
IGN + + – –
ANT3
289.4
275
260
10
20
194
224
250
POWER HDD UPS
ACC WWAN
SIM CARD 1
SIM CARD 2
HDMI 1
HDMI 3
HDMI 2
HDMI 4
LAN 3 / PoE
LAN 5 / PoE
LAN 7 / PoE
LAN 9 / PoE
LAN 4 / PoE
LAN 6 / PoE
LAN 8 / PoE
LAN 10 / PoE
ANT4
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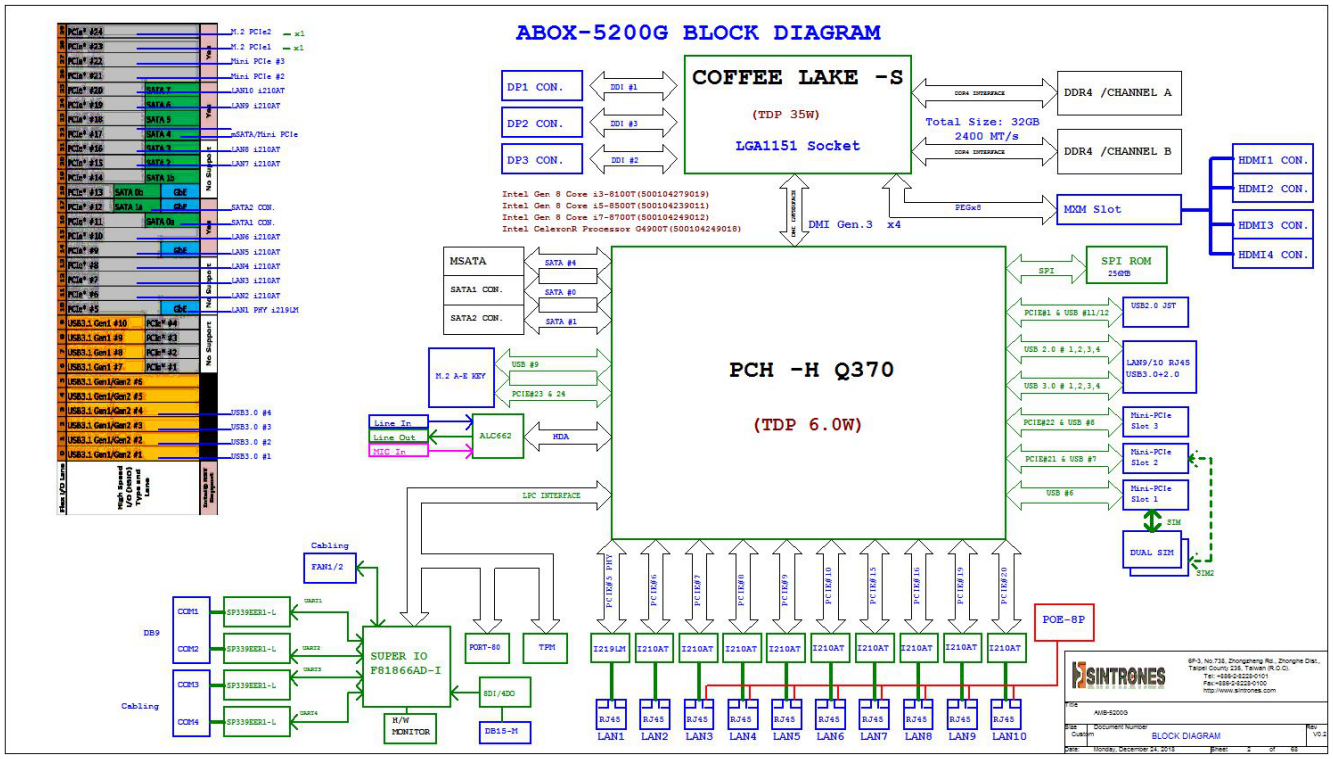
This Way Up

1.3 Architecture



1.4 Power Consumption

Chip	Description
Intel Q370	**1.** Power consumption:

Symbol	Processor Number	Core Frequency / GHz	Thermal Design Power	Unit	Tj max()	Cache
8th Gen LGA1151	Celeron-G4900T	2.9GHz	35	W	88	2M
	i3-8100T	3.1GHz	35	W	82	6M
	i5-8500T	2.1GHz	35	W	100	9M
	i7-8700T	2.4GHz	35	W	100	12M

Note: Not support 6th or 7th generation CPU

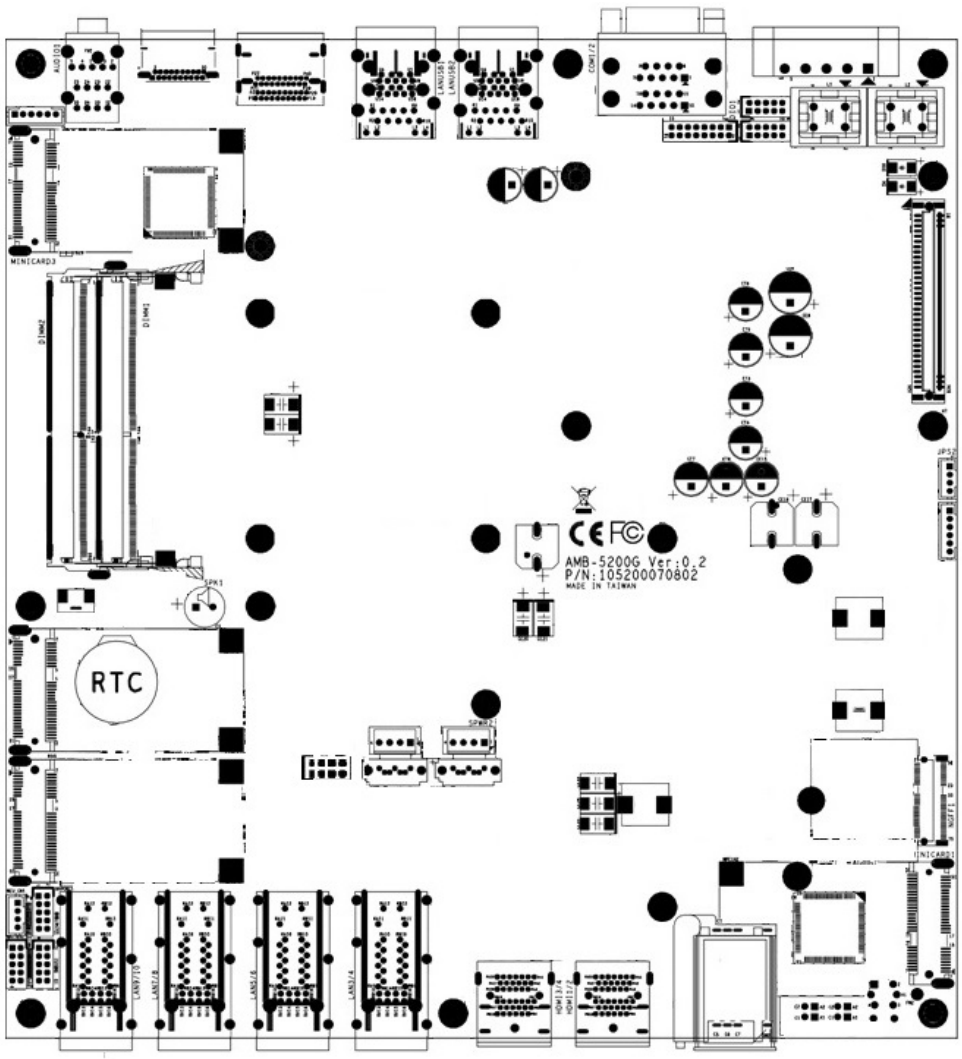
2.0
INTERNAL CONNECTOR SPECIFICATION

2.0 INTERNAL CONNECTOR SPECIFICATION

2.1 MINI PCI-E 1 slot

Connector size	2 X 26 = 52 Pin
Connector type	MINI PCI-E CON 9.2mmH
Connector location	**MINICARD1**
Connector pin definition	

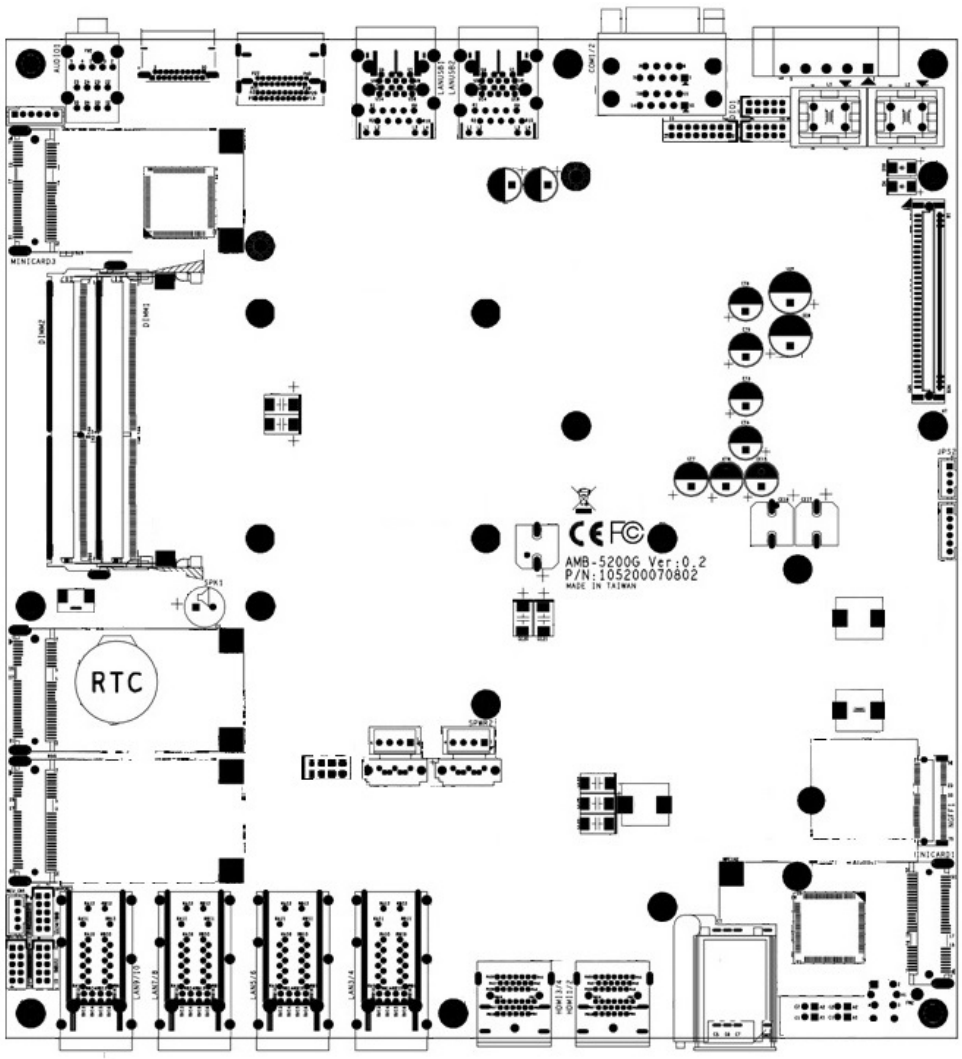
Pin	Signal	Pin	Signal
1	PCIE_WAKE#	2	3VSB
3	NC	4	GND
5	NC	6	NC
7	NC	8	UIM_PWR_A
9	GND	10	UIM_DAT_A
11	NC	12	UIM_CLK_A
13	NC	14	UIM_RST_A
15	GND	16	NC
17	NC	18	GND
19	NC	20	MINICARD1_DIS#
21	GND	22	PCIE_RST#
23	NC	24	3VSB
25	NC	26	GND
27	GND	28	NC
29	GND	30	NC
31	NC	32	NC
33	NC	34	GND
35	GND	36	USB_6N
37	GND	38	USB_6P
39	3VSB	40	GND
41	3VSB	42	WWAN_LED#
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	3VSB

Connector map	

2.2 MINI PCI-E 2 slot

Connector size	2 X 26 = 52 Pin
Connector type	MINI PCI-E CON 9.2mmH
Connector location	**MINICARD2**
Connector pin definition	

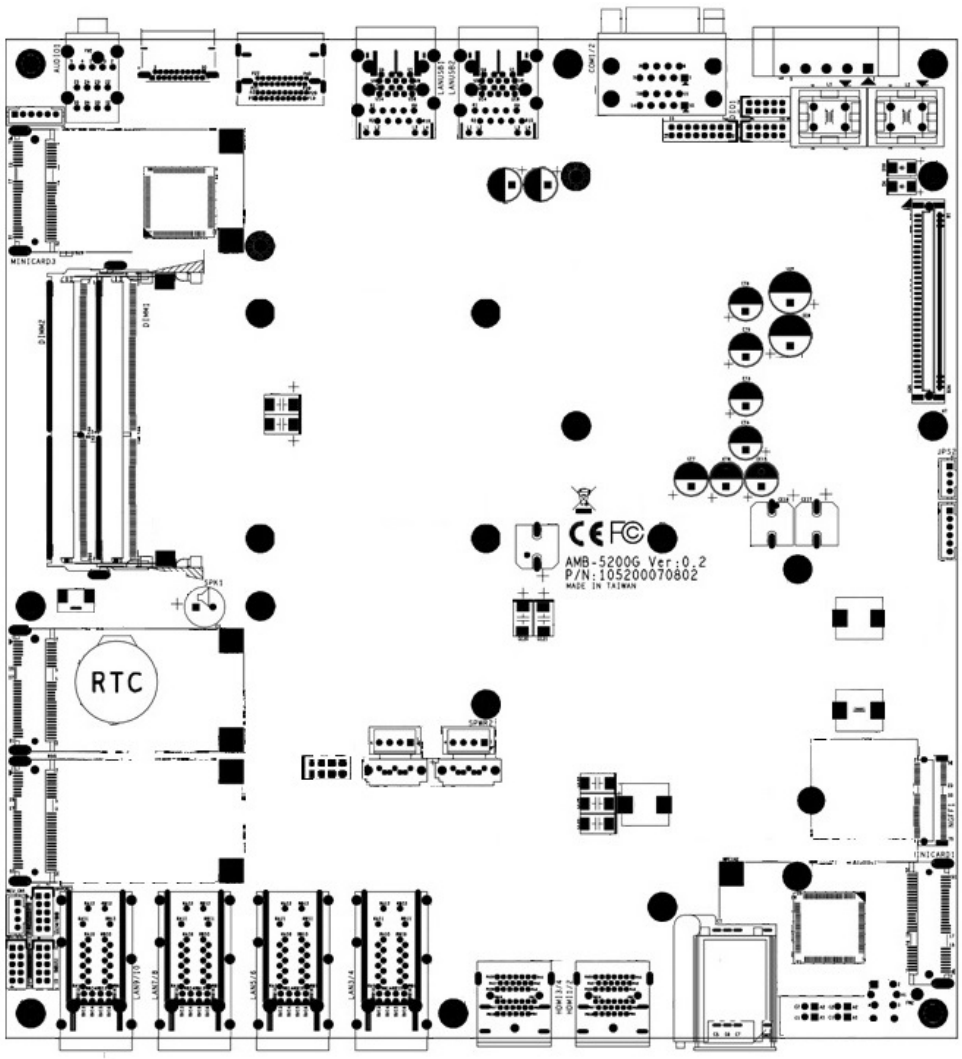
Pin	Signal	Pin	Signal
1	PCIE_WAKE#	2	3VSB
3	NC	4	GND
5	NC	6	+1.5V
7	MINICARD2_CLKREQ#	8	UIM_PWR_B
9	GND	10	UIM_DAT_B
11	PCIE_MCARD2_CLK_DN	12	UIM_CLK_B
13	PCIE_MCARD2_CLK_DP	14	UIM_RST_B
15	GND	16	NC
17	NC	18	GND
19	NC	20	MINICARD2_DIS#
21	GND	22	PCIE_RST#
23	PCIE_MCARD2_RX_N	24	3VSB
25	PCIE_MCARD2_RX_P	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PCIE_MCARD2_TX_N	32	SMB_DATA
33	PCIE_MCARD2_TX_P	34	GND
35	GND	36	USB_7N
37	GND	38	USB_7P
39	3VSB	40	GND
41	3VSB	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	3VSB

Connector map	

2.3 MINI PCI-E 3 slot

Connector size	2 X 26 = 52 Pin
Connector type	MINI PCI-E CON 9.2mmH
Connector location	**MINICARD3**
Connector pin definition	

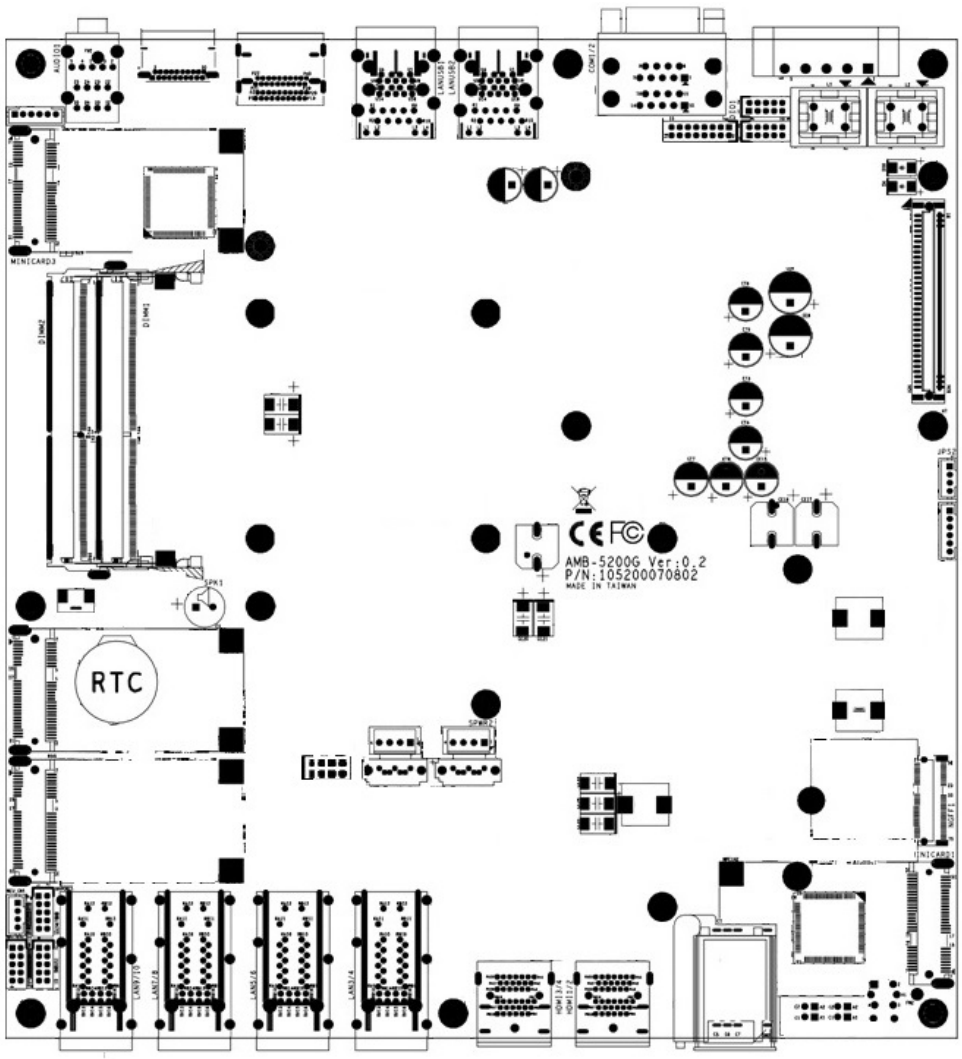
Pin	Signal	Pin	Signal
1	PCIE_WAKE#	2	3VSB
3	NC	4	GND
5	NC	6	+1.5V
7	MINICARD3_CLKREQ#	8	NC
9	GND	10	NC
11	PCIE_MCARD3_CLK_DN	12	NC
13	PCIE_MCARD3_CLK_DP	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	MINICARD3_DIS#
21	GND	22	PCIE_RST#
23	PCIE_MCARD3_RX_N	24	3VSB
25	PCIE_MCARD3_RX_P	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PCIE_MCARD3_TX_N	32	SMB_DATA
33	PCIE_MCARD3_TX_P	34	GND
35	GND	36	USB_8N
37	GND	38	USB_8P
39	3VSB	40	GND
41	3VSB	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	3VSB

Connector map	

2.4 mSATA1 slot

Connector size	2 X 26 = 52 Pin
Connector type	MINI PCI-E CON 9.2mmH
Connector location	**MSATA1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	NC	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC	8	NC
9	GND	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	PCIE_RST#
23	SATA3_RX_P	24	+3.3V
25	SATA3_RX_N	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	SATA3_TX_N	32	SMB_DATA
33	SATA3_TX_P	34	GND
35	GND	36	NC/USB_5N
37	GND	38	NC/USB_5P
39	+3.3V	40	GND
41	+3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	+3.3V

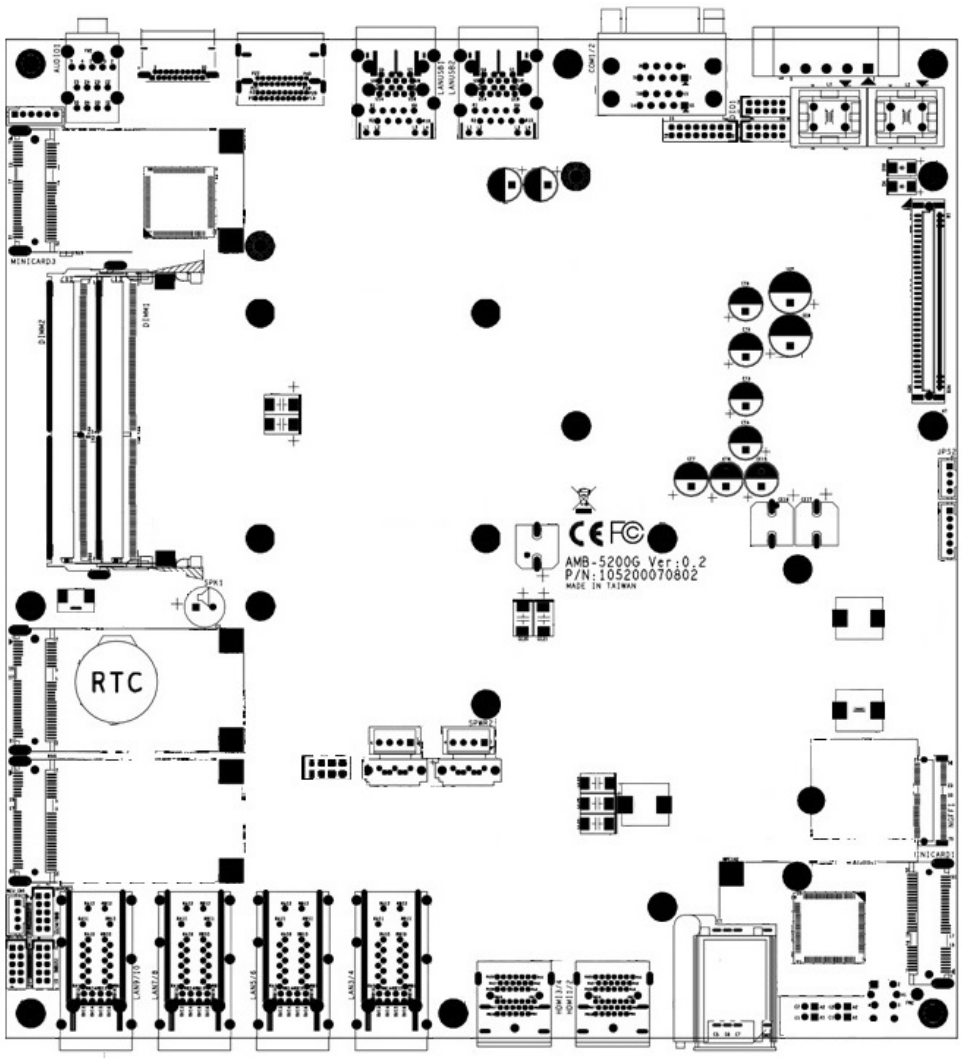
Connector map	

2.5 NGFF1 slot

Connector size	2 X 34 = 67 Pin
Connector type	NGFF _AE KEY_H:8.5mm
Connector location	NGFF1

Connector pin definition

Pin	Signal	Pin	Signal
1	GND	2	3VSB
3	USB_9P	4	3VSB
5	USB_9N	6	NC
7	GND	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	NC
17	NC	18	NC
19	NC	20	NC
21	NC	22	NC
23	NC	24	KEY
25	KEY	26	KEY
27	KEY	28	KEY
29	KEY	30	KEY
31	KEY	32	NC
33	GND	34	NC
35	PCIE_M.2_TX_0P	36	NC
37	PCIE_M.2_TX_0N	38	NC
39	GND	40	NC
41	PCIE_M.2_RX_0P	42	NC
43	PCIE_M.2_RX_0N	44	NC
45	GND	46	NC
47	PCIE_M.2_CLK_0P	48	NC
49	PCIE_M.2_CLK_0N	50	NC
51	GND	52	M.2_RST#
53	M.2_CLKREQ0#	54	M.2_DIS2#
55	PCIE_WAKE#	56	M.2_DIS1#
57	GND	58	NC
59	NC/ PCIE_M.2_TX_1P	60	NC
61	NC/ PCIE_M.2_TX_1N	62	NC
63	GND	64	NC
65	NC/ PCIE_M.2_RX_1P	66	PCIE_RST#
67	NC/ PCIE_M.2_RX_1N	68	M.2_CLKREQ0#
69	GND	70	PCIE_WAKE#
71	NC/ PCIE_M.2_CLK_1P	72	NC
73	NC/ PCIE_M.2_CLK_1N	74	NC
75	GND		

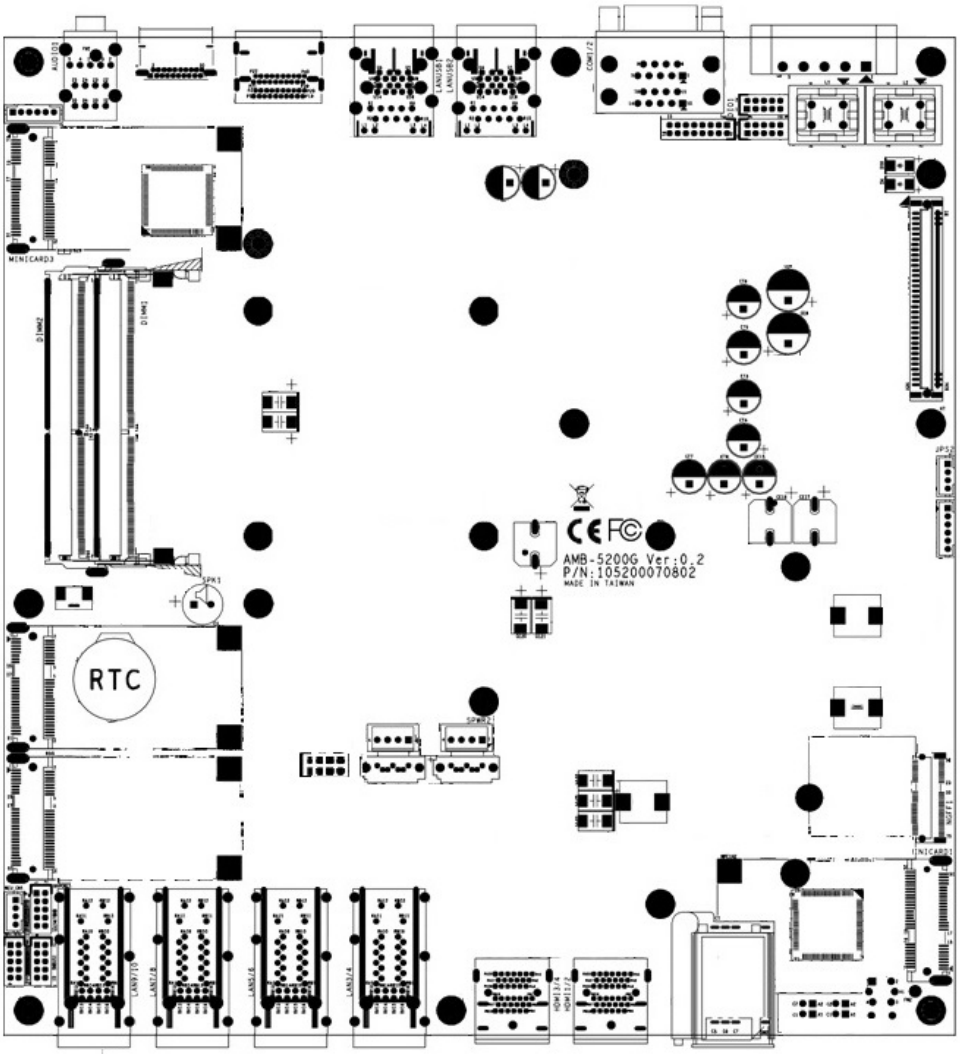
Connector map	

2.6 DIO1 JST connector

Connector size	2 X 8 = 16 Pin
Connector type	JST-2.0mm-M-180
Connector location	**DIO1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	D0_1	2	D0_2
3	D0_3	4	D0_4
5	GND	6	GND
7	DI_1	8	DI_2
9	DI_3	10	DI_4
11	DI_5	12	DI_6
13	DI_7	14	DI_8
15	GND	16	GND

Connector map

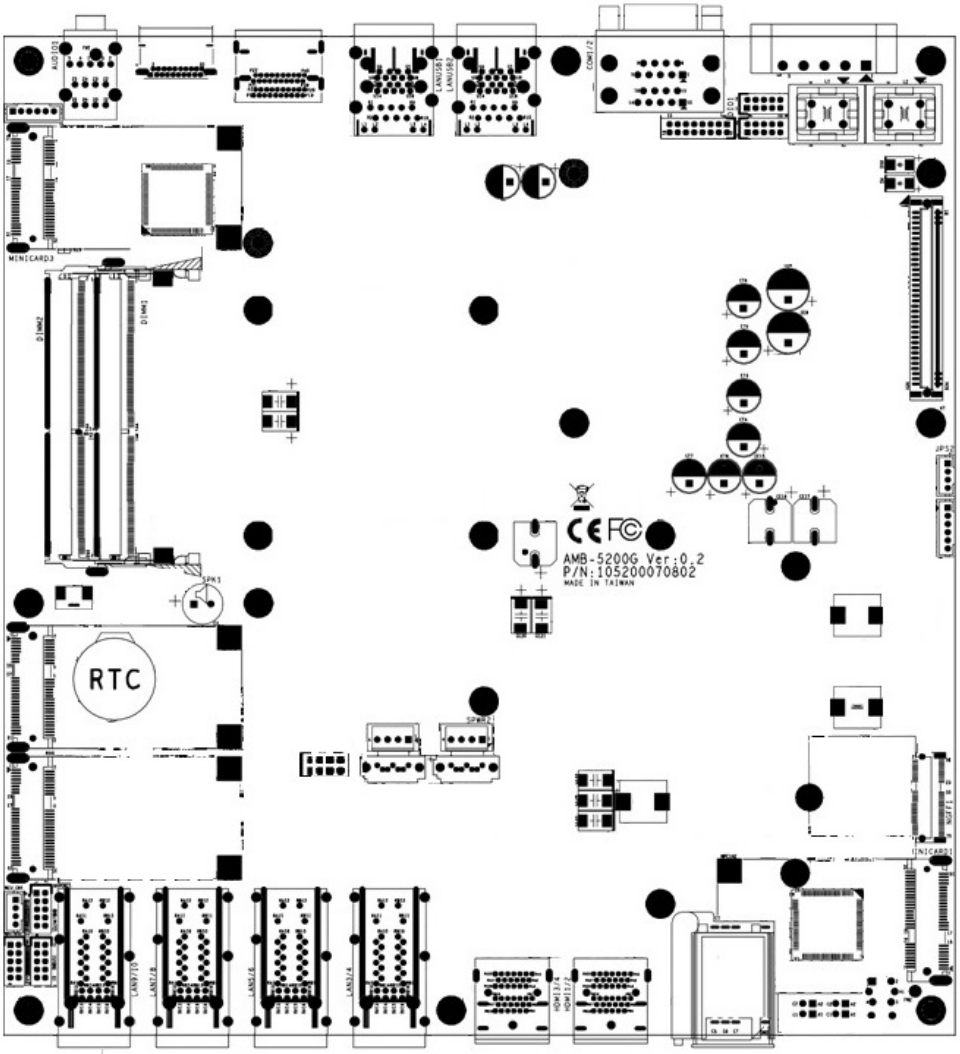


2.7 COM3 JST Connector

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**COM3**
Connector pin definition	

Pin	Signal	Pin	Signal
1	COM3_DCD	2	COM3_RXD
3	COM3_TXD	4	COM3_DTR
5	GND	6	COM3_DSR
7	COM3_RTS	8	COM3_CTS
9	COM3_RI	10	GND

Connector map

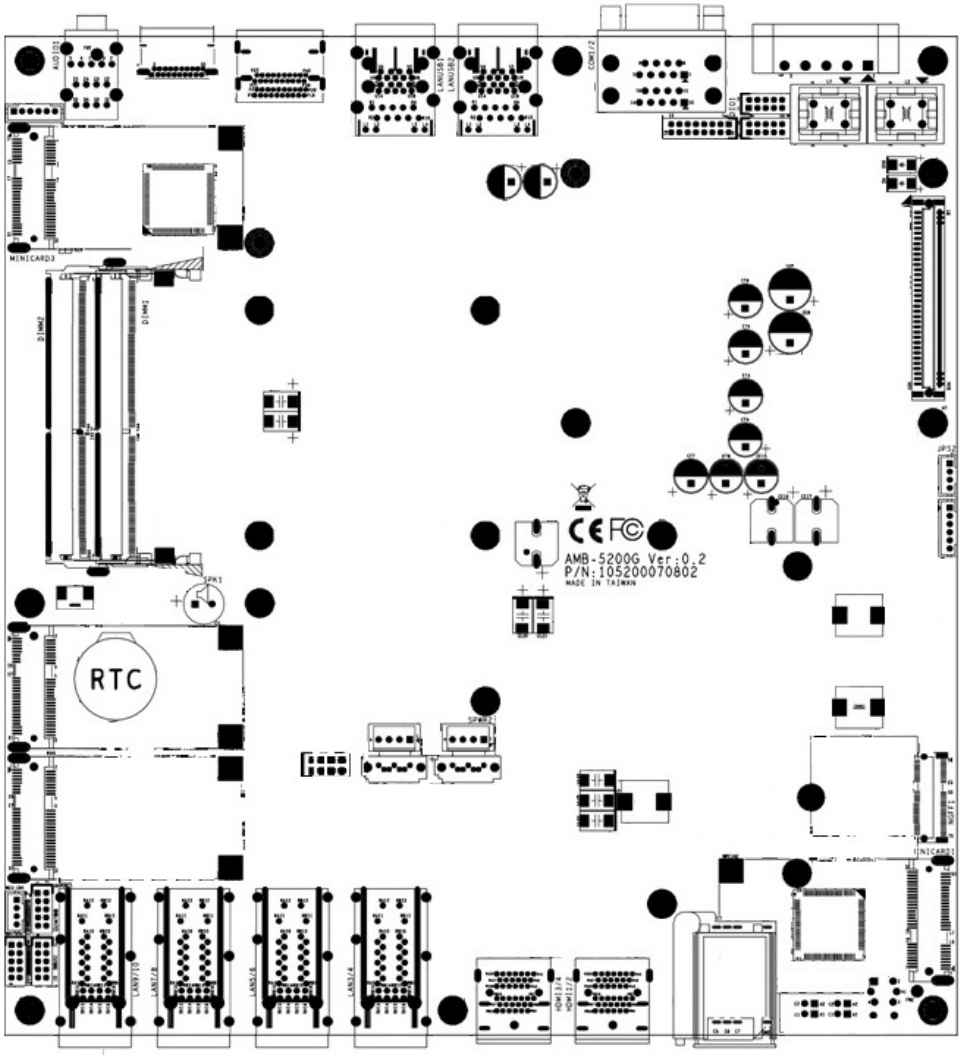


2.8 COM4 JST Connector

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**COM4**
Connector pin definition	

Pin	Signal	Pin	Signal
1	COM4_DCD	2	COM4_RXD
3	COM4_TXD	4	COM4_DTR
5	GND	6	COM4_DSR
7	COM4_RTS	8	COM4_CTS
9	COM4_RI	10	GND

Connector map

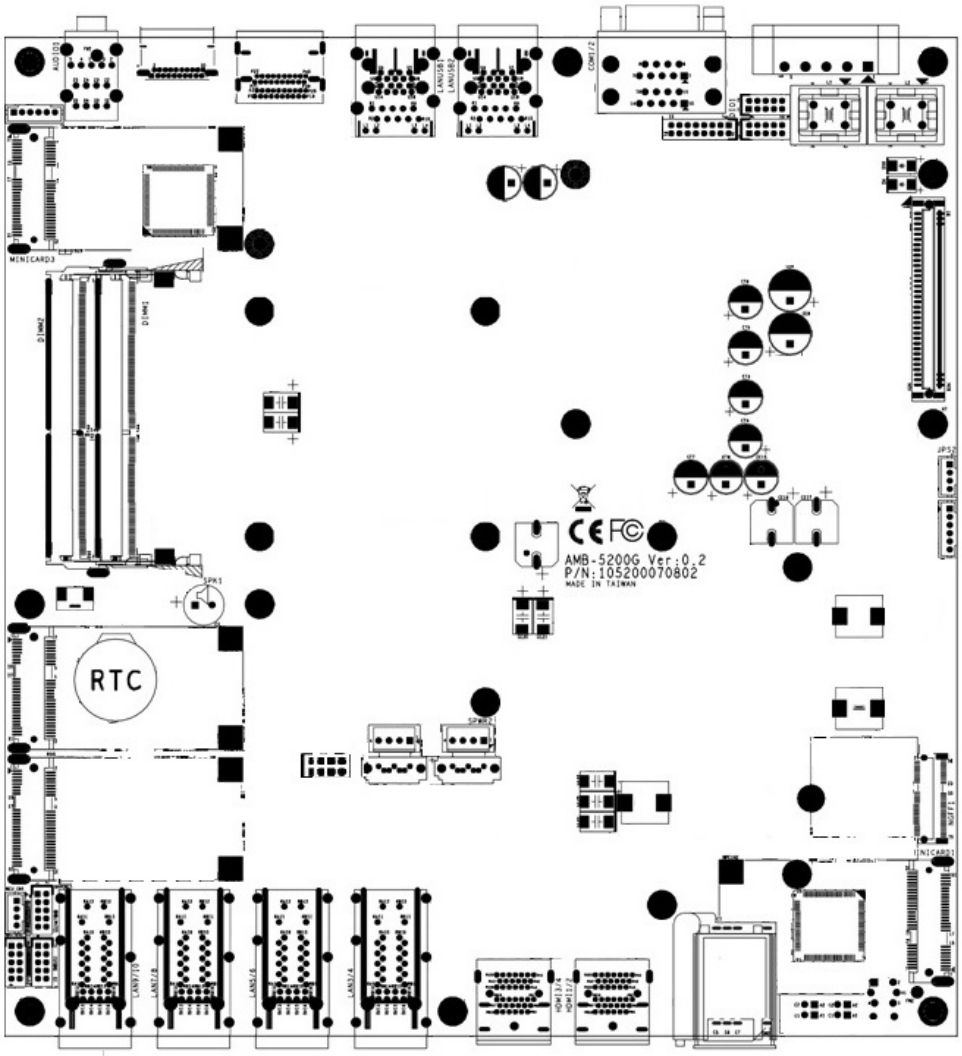


2.9 USB JST Connector

Connector size	2 X 4 = 8 Pin
Connector type	JST-2.0mm-M-180
Connector location	**USB1**
Connector pin definition	

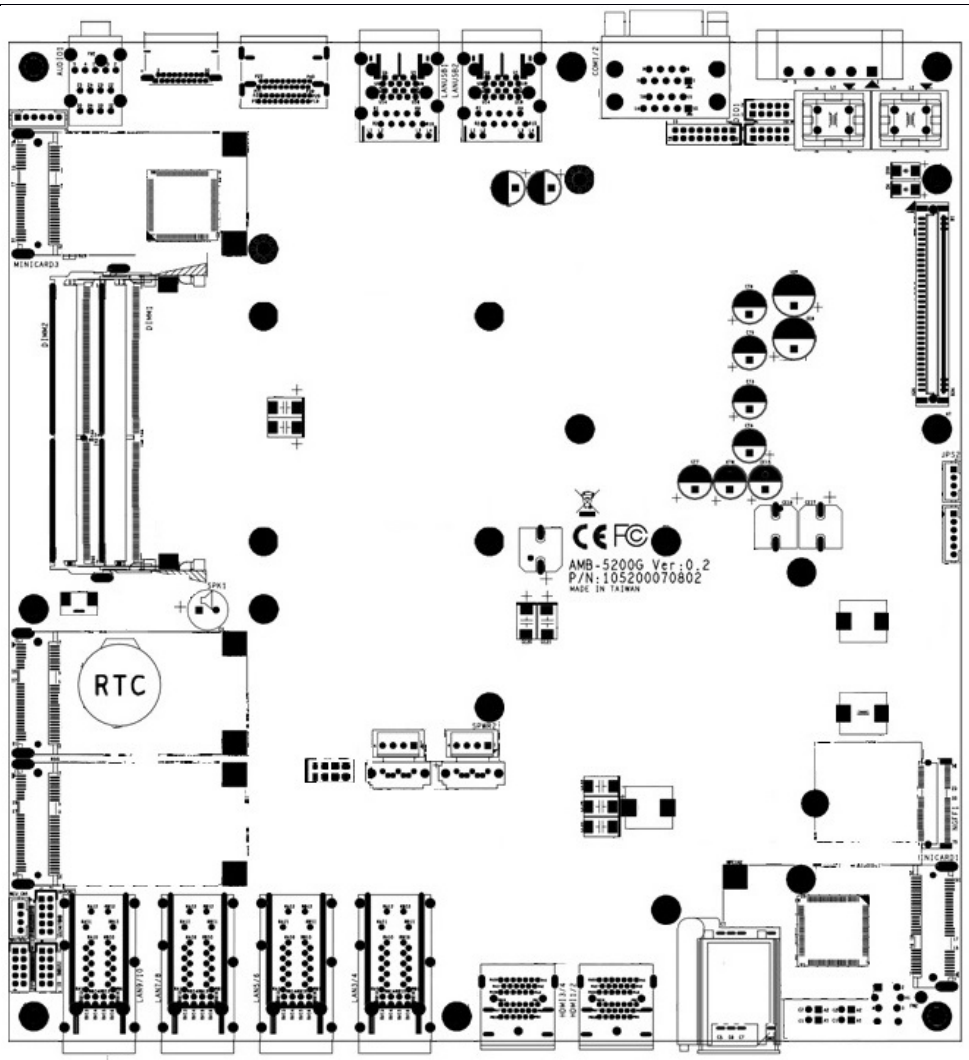
Pin	Signal	Pin	Signal
1	5VSB	2	5VSB
3	USB_11N	4	USB_12N
5	USB_11P	6	USB_12P
7	GND	8	GND

Connector map



2.10 SATA1 Connector

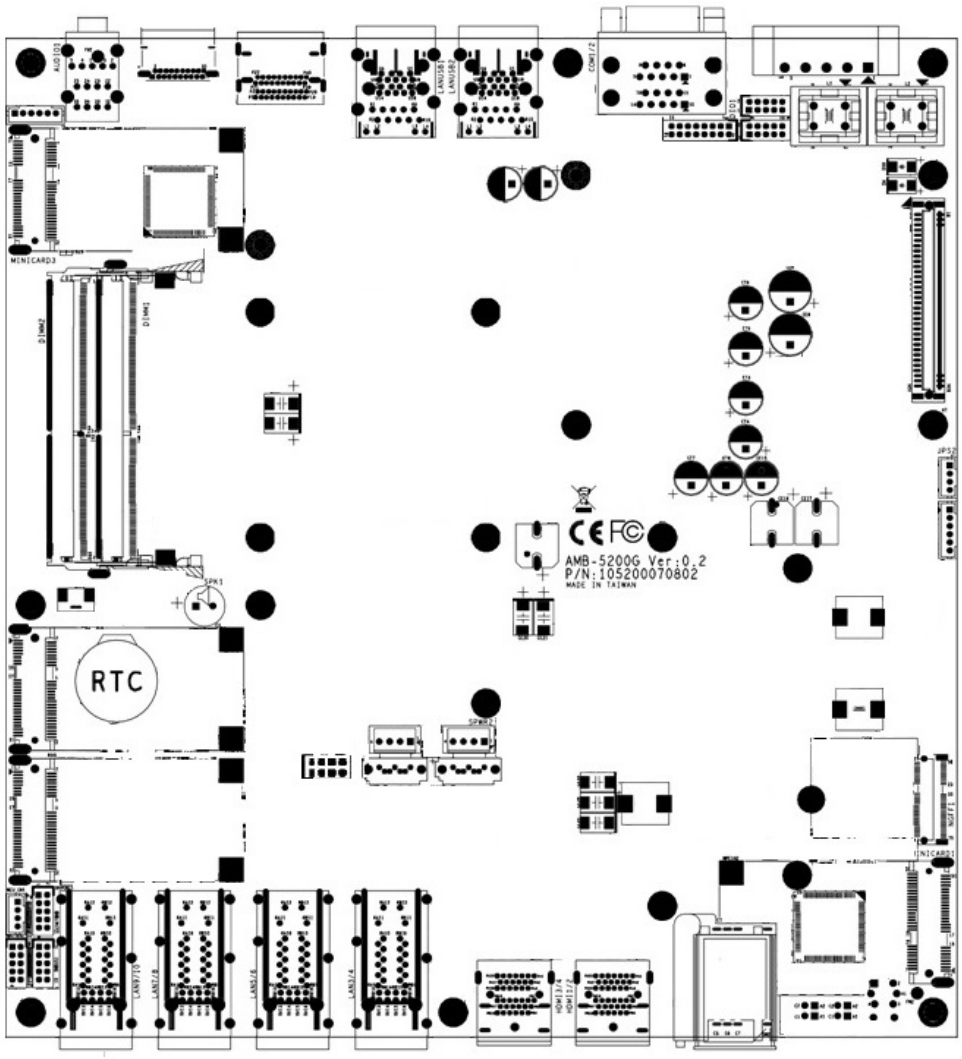
<table>
<tr><td>Connector size</td><td>1 X 7 = 7 Pin</td></tr>
<tr><td>Connector type</td><td>SATA 1.27mm-M-180D</td></tr>
<tr><td>Connector location</td><td>SATA1</td></tr>
<tr><td>Connector pin definition</td><td>
<table>
<tr><th>Pin</th><th>Signal</th></tr>
<tr><td>1</td><td>GND</td></tr>
<tr><td>2</td><td>SATA_TXP1</td></tr>
<tr><td>3</td><td>SATA_TXN1</td></tr>
<tr><td>4</td><td>GND</td></tr>
<tr><td>5</td><td>SATA_RXN1</td></tr>
<tr><td>6</td><td>SATA_RXP1</td></tr>
<tr><td>7</td><td>GND</td></tr>
</table>
</td></tr>
<tr><td>Connector map</td><td></td></tr>
</table>



2.11 SATA2 Connector

Connector size	1 X 7 = 7 Pin
Connector type	SATA 1.27mm-M-180D
Connector location	**SATA2**
Connector pin definition	

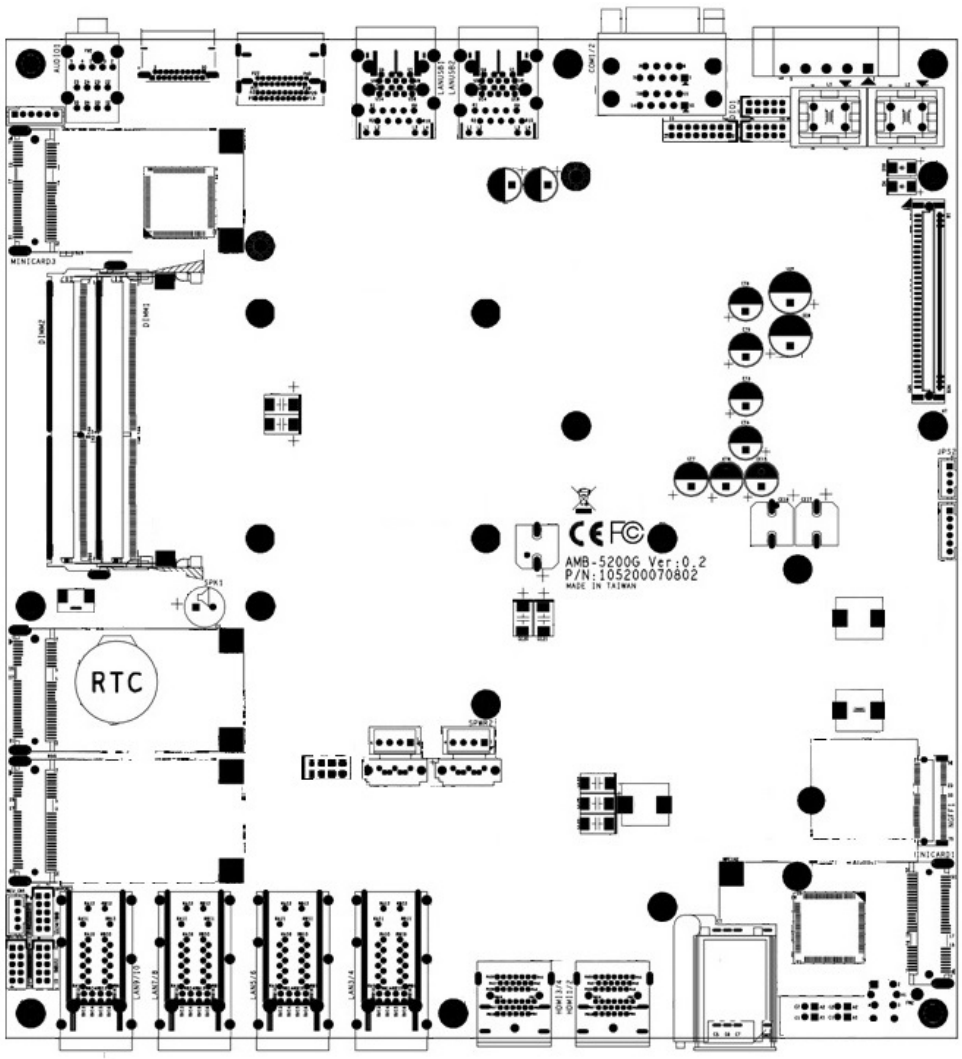
Pin	Signal
1	GND
2	SATA_TXP2
3	SATA_TXN2
4	GND
5	SATA_RXN2
6	SATA_RXP2
7	GND

Connector map	

2.12 SATA Power1 JST Connector

Connector size	1X4 = 4 Pin
Connector type	JST 2.54mm-M-180
Connector location	SPWR1
Connector pin definition	

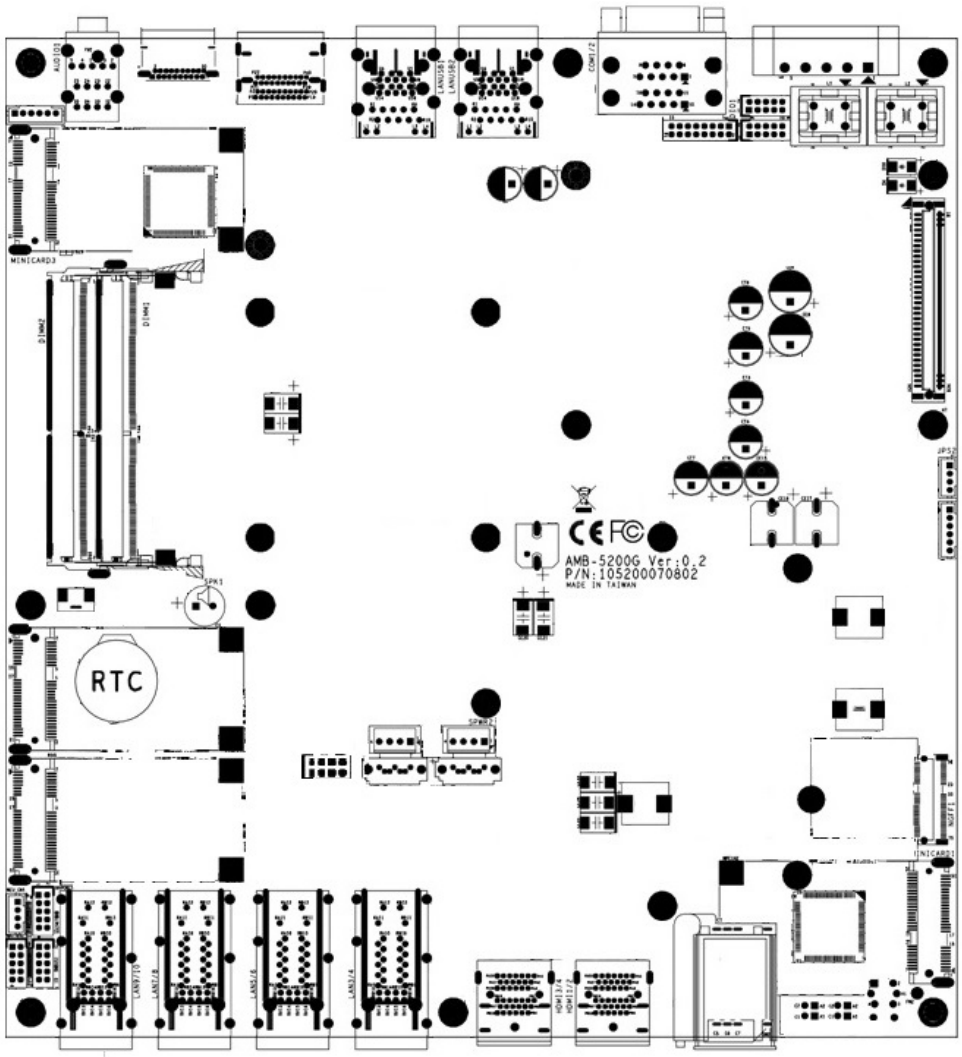
Pin	Signal	Pin	Signal
1	+5V	2	GND
3	GND	4	+12V

Connector map	

2.13 SATA Power2 JST Connector

Connector size	1 X 4 = 4 Pin
Connector type	JST 2.54mm-M-180
Connector location	SPWR2
Connector pin definition	

Pin	Signal	Pin	Signal
1	+5V	2	GND

	3	GND	4	+12V
Connector map				

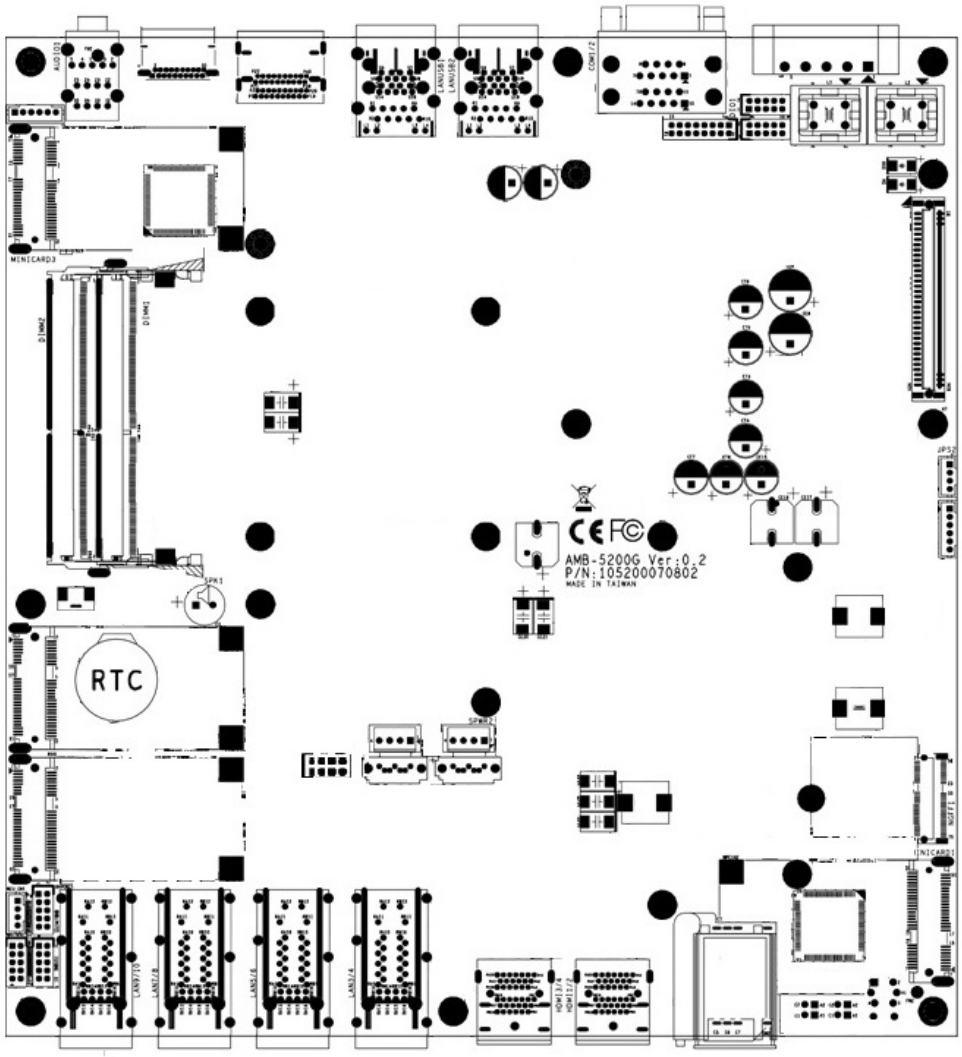
2.14 UPS1 JST connector

Connector size	1 X 6 = 6 Pi n
Connector type	JST-2.0mm-M-180
Connector location	UPS1
Connector pin	

definition

Pin	Signal
1	+12V
2	+12V
3	GND
4	GND
5	UPS_CLK
6	UPS_DA

Connector map



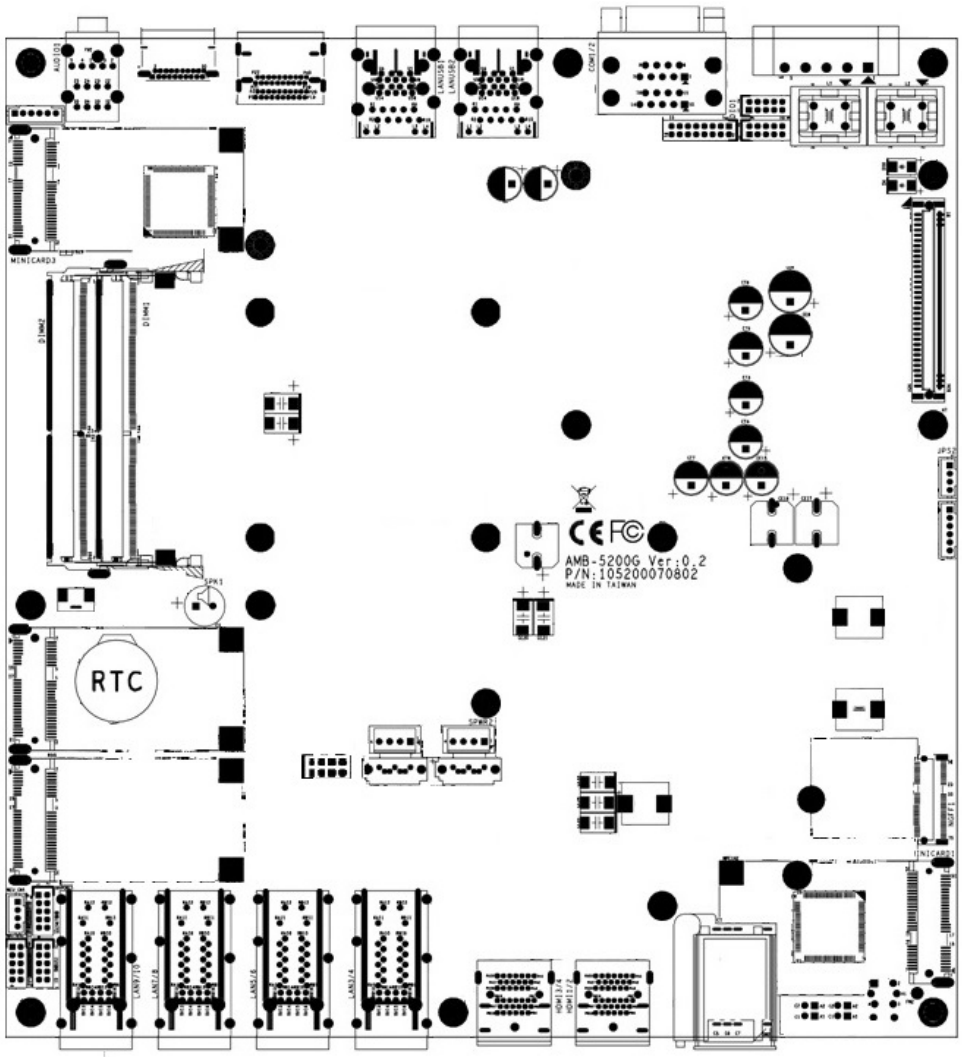
2.15 UPS2 JST connector

Connector size	1 X 4 = 4 Pi n
Connector type	JST-2.0mm-M-180

Connector location	UPS2
Connector pin definition	

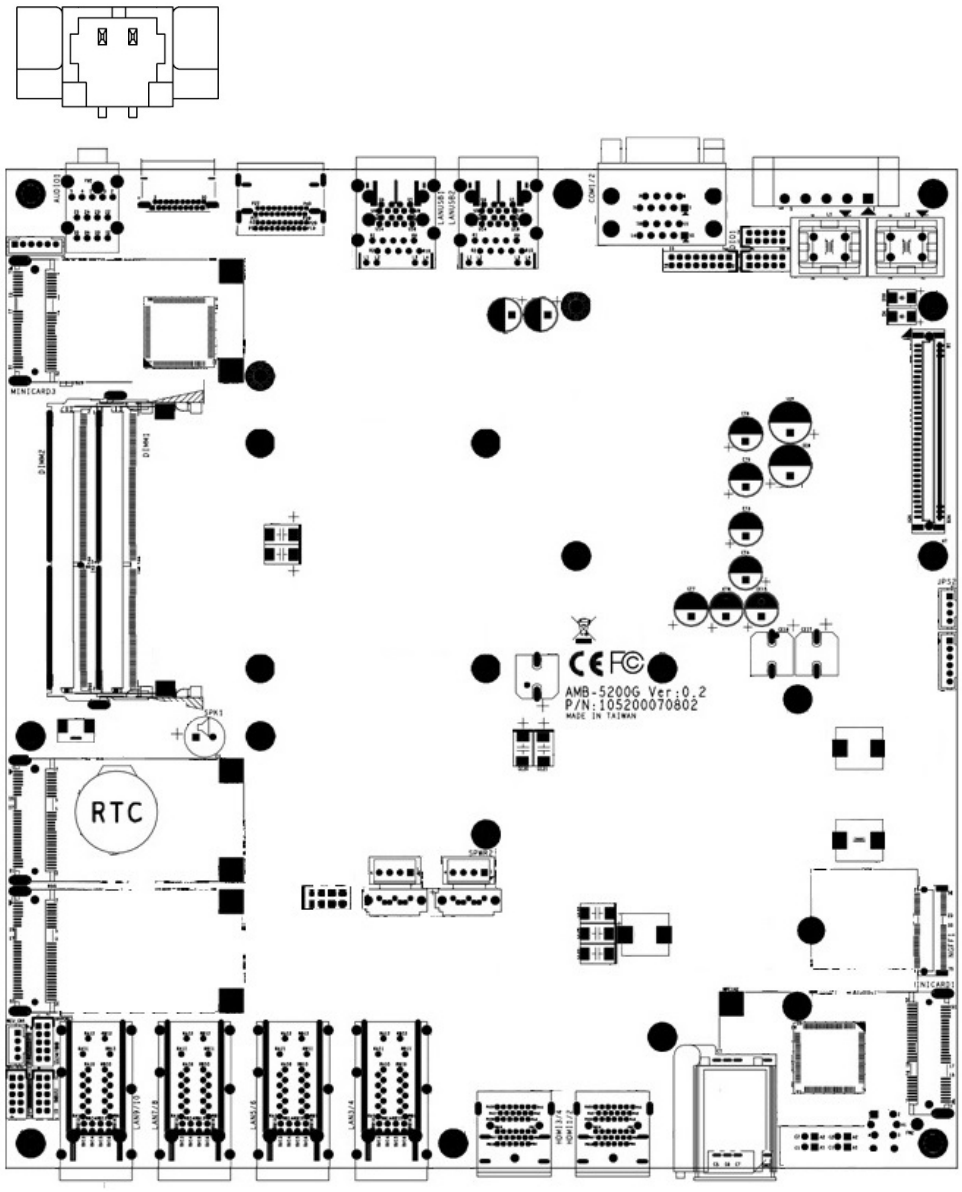
Pin	Signal
1	DCIN_VCC
2	DCIN_VCC
3	GND
4	GND

Connector map



2.16 BAT Power connector

Connector size	1 X 2 = 2 Pin
Connector type	JST-1.25mm-M-180

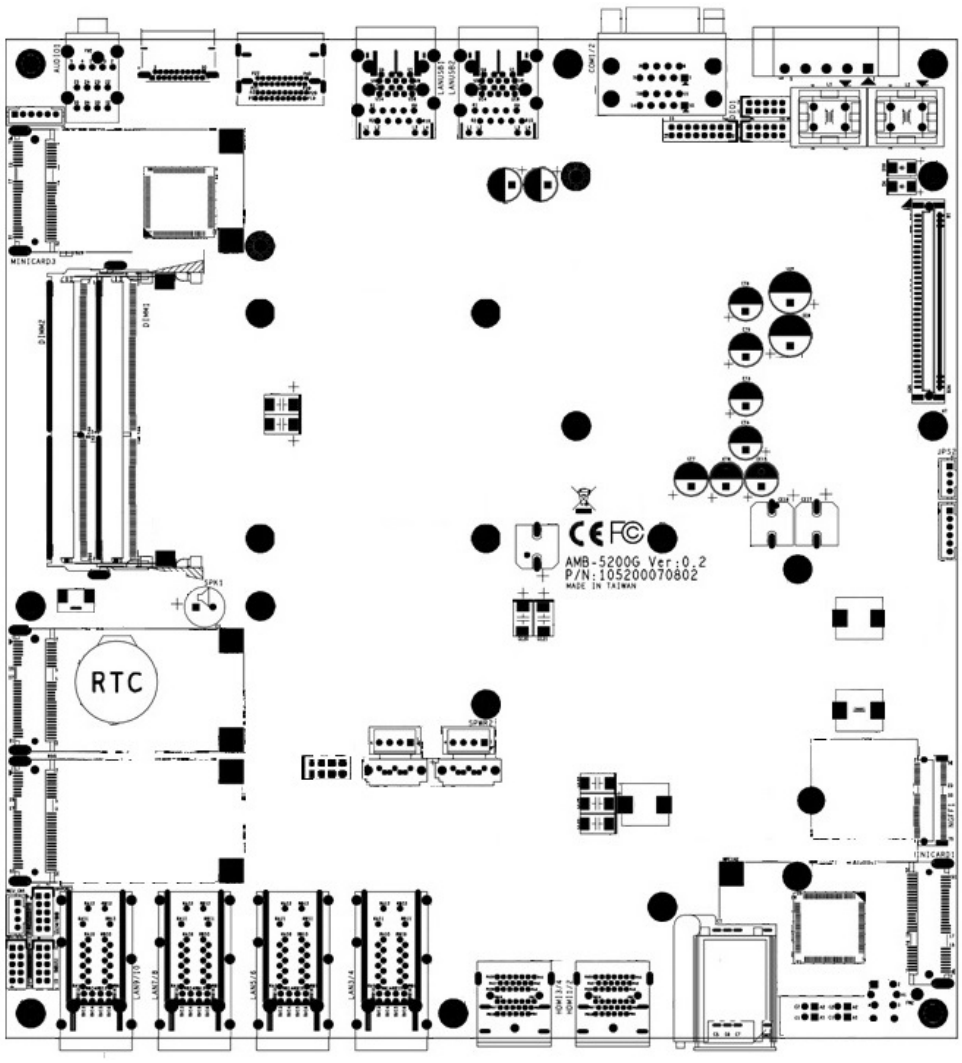
Connector location	**BAT1**
Connector pin definition	<table><tr><th>Pin</th><th>Signal</th></tr><tr><td>1</td><td>BAT +3V</td></tr><tr><td>2</td><td>GND</td></tr></table>
Connector map	

2.17 UFAN1/2 Power connector

Connector size	1 X 6 = 6 Pin
Connector type	JST-2.0mm-M-180
Connector location	**FAN1/2**
Connector pin definition	

Pin	Signal
1	GND
2	+12V
3	FAN1DET
4	FAN1CTL
5	FAN2DET
6	FAN2CTL

Connector map

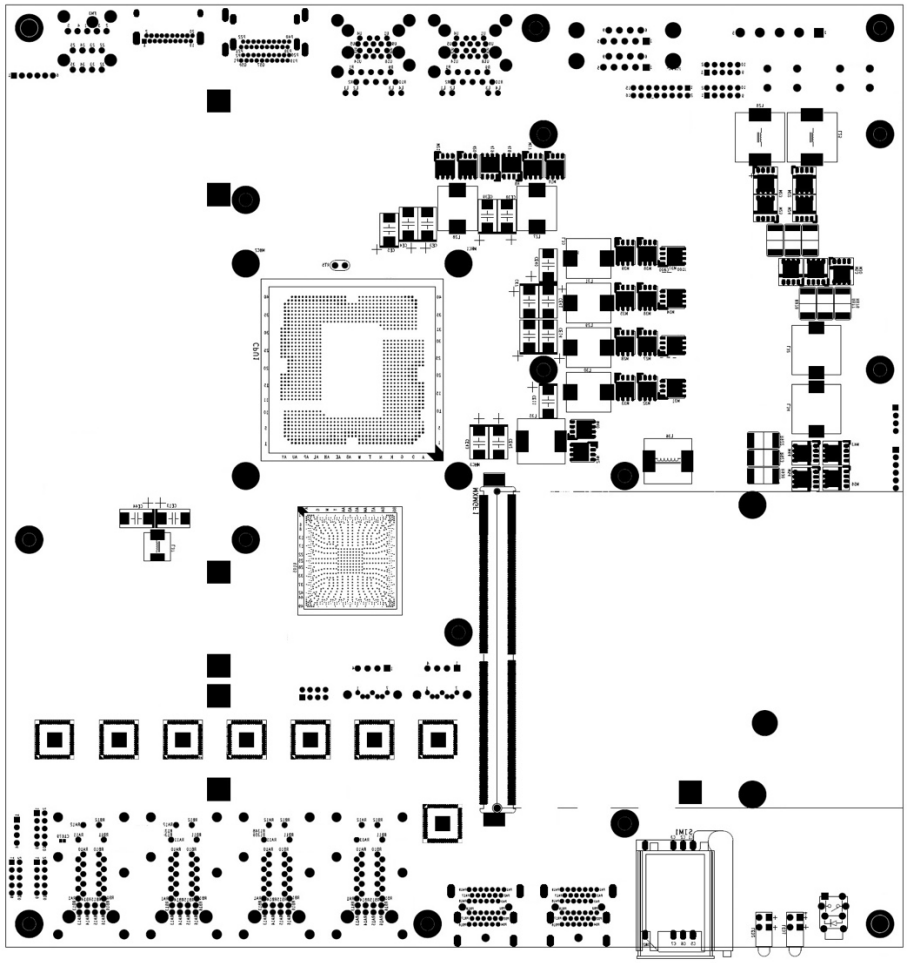


2.18 MXM connector

Connector size	281 Pin
Connector type	MXM3.0 CONNECTOR_H:5.5mm
Connector location	MXMGF1

Connector pin definition

Pin	Signal	Pin	Signal
E1	+12V	E2	+12V
E3	GND	E4	GND
1	+5V	2	PRSNT
3	+5V	4	NC
5	+5V	6	PWRGD
7	+5V	8	PWR_EN
9	+5V	10	NC
11	GND	12	NC
13	GND	14	NC
15	GND	16	NC
17	GND	18	PWR_LEVEL
19	NC	20	NC
21	GND	22	NC
23	NC	24	NC
25	NC	26	NC
27	NC	28	NC
29	NC/CEC	30	NC
31	NC	32	SMB_DAT
33	NC	34	SMB_CLK
35	NC	36	GND
37	GND	38	NC
39	NC	40	NC
41	NC	42	NC
43	NC	44	NC
45	NC	46	GND
47	GND	48	NC
49	NC	50	NC
51	NC	52	GND
53	GND	54	NC
55	NC	56	NC
57	NC	58	GND
59	GND	60	NC
61	NC	62	NC
63	NC	64	GND
65	GND	66	NC
67	NC	68	NC
69	NC	70	GND
71	GND	72	NC
73	NC	74	NC
75	NC	76	GND
77	GND	78	NC
69	NC	80	NC
81	NC	82	GND
83	GND	84	NC
85	NC	86	NC
87	NC	88	GND

Connector map	

3.0
EXTERNAL CONNECTOR SPECIFICATION

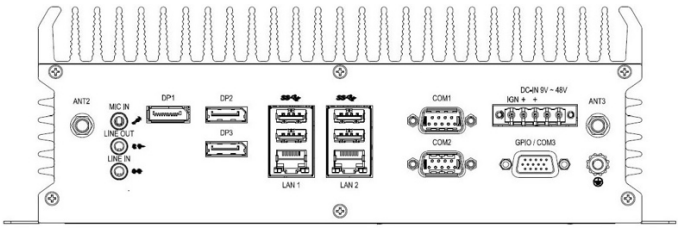
3.0 EXTERNAL CONNECTOR SPECIFICATION

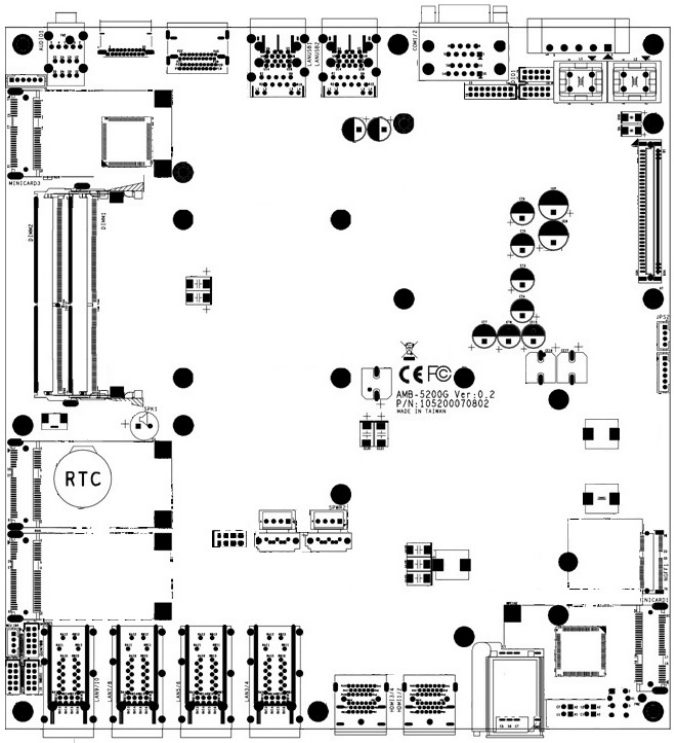
3.1 Audio Connector

Connector size	3 Pin x3
Connector type	3.5mm Phone Jack x 3
Connector location	**AUDIO1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	GND	2	MIC_R
3	MIC_JD	4	GND
5	MIC_L	22	LINE OUT_R
23	LINE OUT_JD	24	GND
25	LINE OUT_L	32	LINE IN_R
33	LINE IN_JD	34	GND
35	LINE IN_L		

Connector map

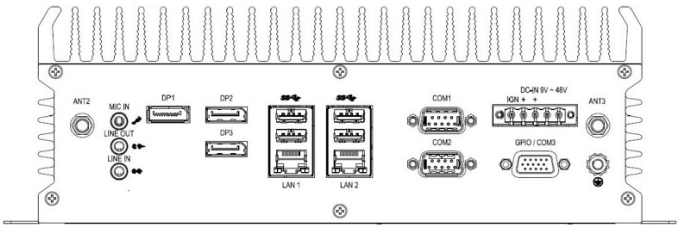
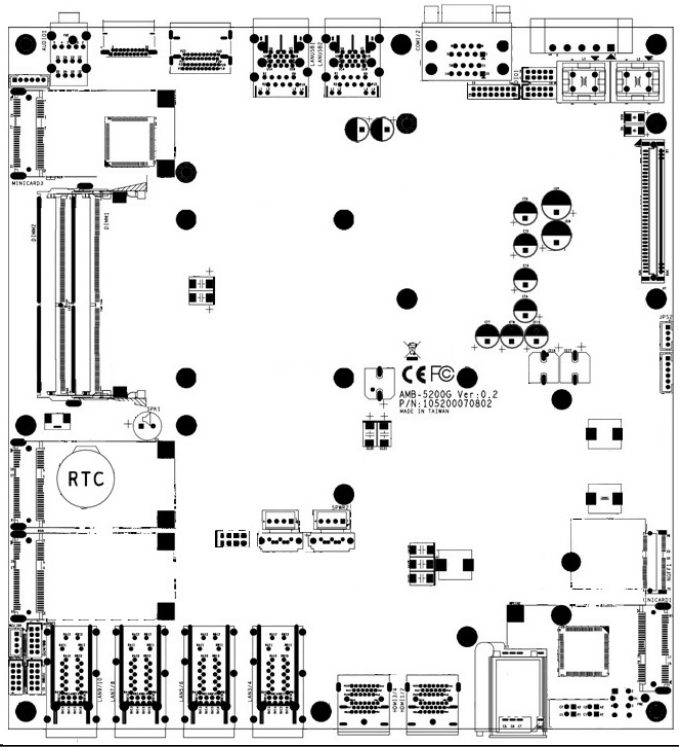




3.2 DP1 Connector

Connector size	20 Pin
Connector type	Display Port
Connector location	**DP1**
Connector pin definition	

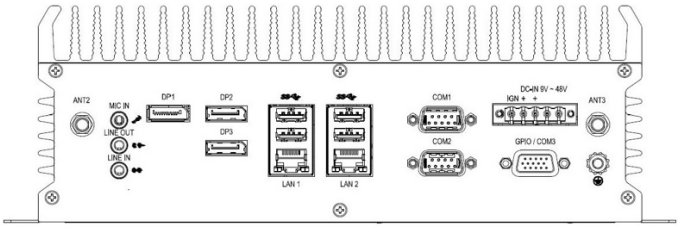
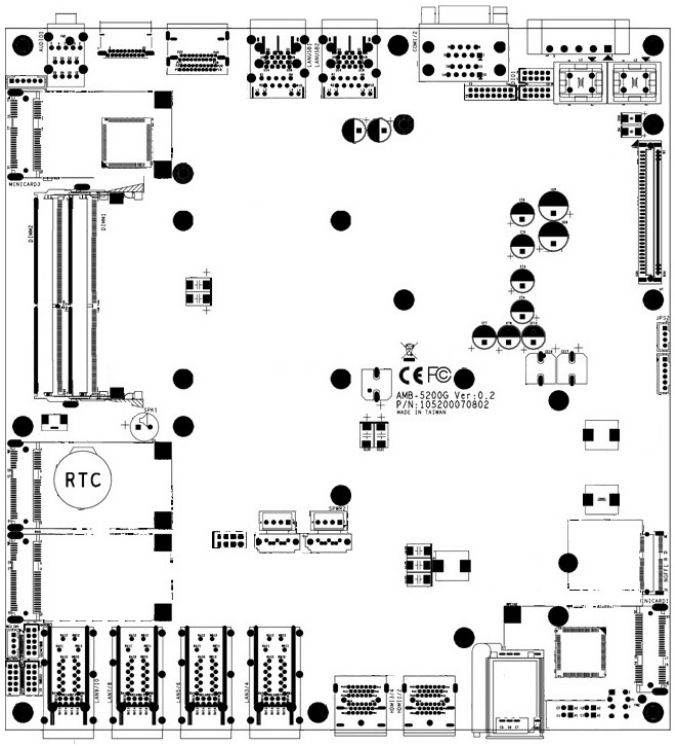
Pin	Signal	Pin	Signal
1	DP1_LANE_0P	2	GND
3	DP1_LANE_0N	4	DP1_LANE_1P
5	GND	6	DP1_LANE_1N
7	DP1_LANE_2P	8	GND
9	DP1_LANE_2N	10	DP1_LANE_3P
11	GND	12	DP1_LANE_3N
13	DP1_AUX_EN#	14	GND
15	DP1_AUXP/LK	16	GND
17	DP1_AUXN/DATA	18	DP1_HPD
19	GND	20	DP1_VCC+3V

Connector map	 

3.3 DP2 Connector

Connector size	20 Pin
Connector type	Display Port
Connector location	**DP2**
Connector pin definition	

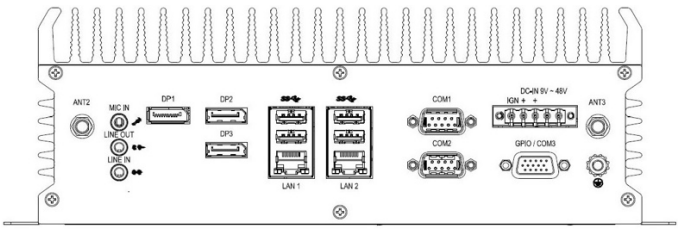
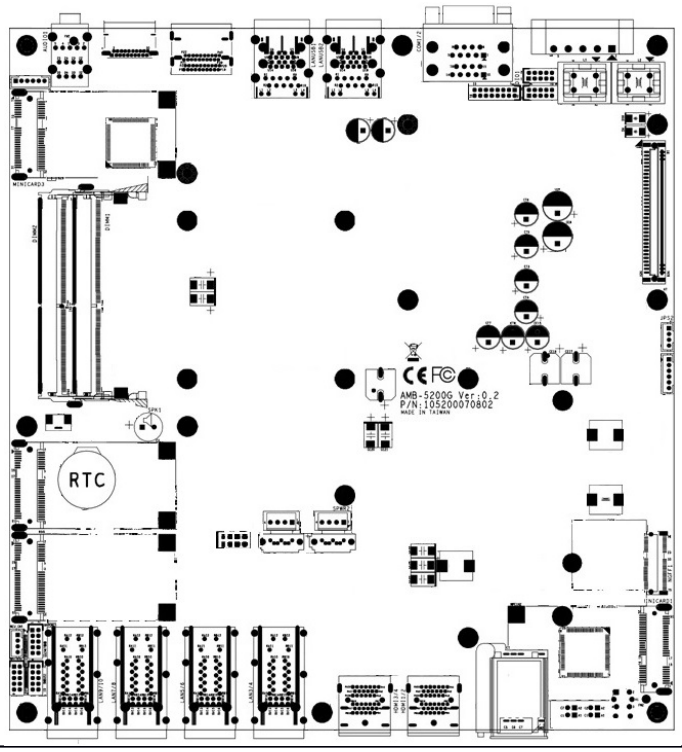
Pin	Signal	Pin	Signal
1	DP2_LANE_0P	2	GND
3	DP2_LANE_0N	4	DP2_LANE_1P
5	GND	6	DP2_LANE_1N
7	DP2_LANE_2P	8	GND
9	DP2_LANE_2N	10	DP2_LANE_3P
11	GND	12	DP2_LANE_3N
13	DP2_AUX_EN#	14	GND
15	DP2_AUXP/LK	16	GND
17	DP2_AUXN/DATA	18	DP2_HPD
19	GND	20	DP2_VCC+3V

Connector map	 

3.4 DP3 Connector

Connector size	20 Pin
Connector type	Display Port
Connector location	**DP3**
Connector pin definition	

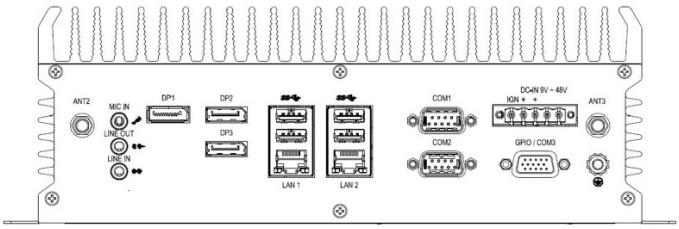
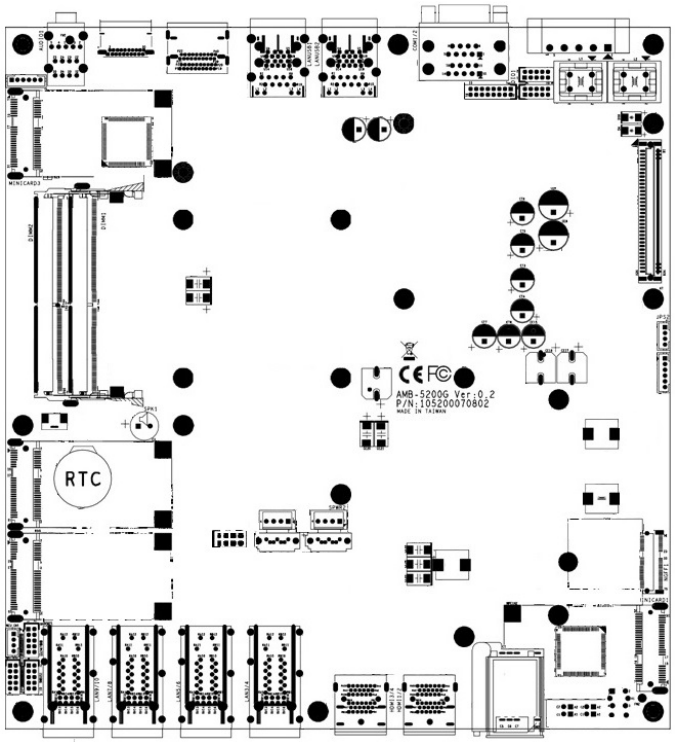
Pin	Signal	Pin	Signal
1	DP3_LANE_0P	2	GND
3	DP3_LANE_0N	4	DP3_LANE_1P
5	GND	6	DP3_LANE_1N
7	DP3_LANE_2P	8	GND
9	DP3_LANE_2N	10	DP3_LANE_3P
11	GND	12	DP3_LANE_3N
13	DP3_AUX_EN#	14	GND
15	DP3_AUXP/LK	16	GND
17	DP3_AUXN/DATA	18	DP3_HPD

	19	GND	20	DP3_VCC+3V
Connector map	 			

3.5 LAN1 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LANUSB1**
Connector pin definition	

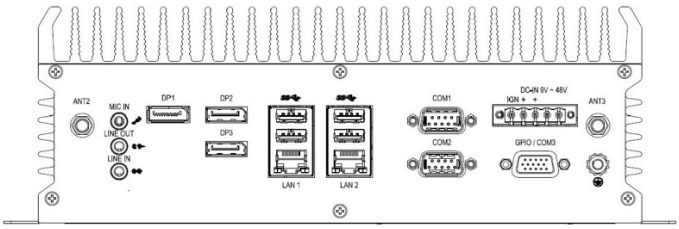
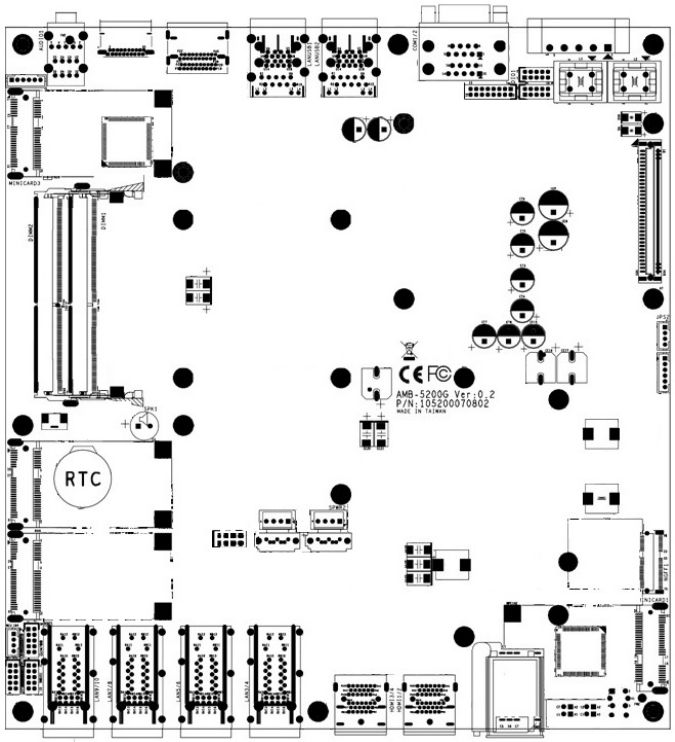
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	 

3.6 LAN2 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LANUSB2**
Connector pin definition	

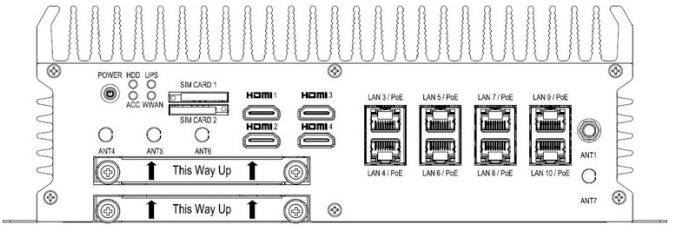
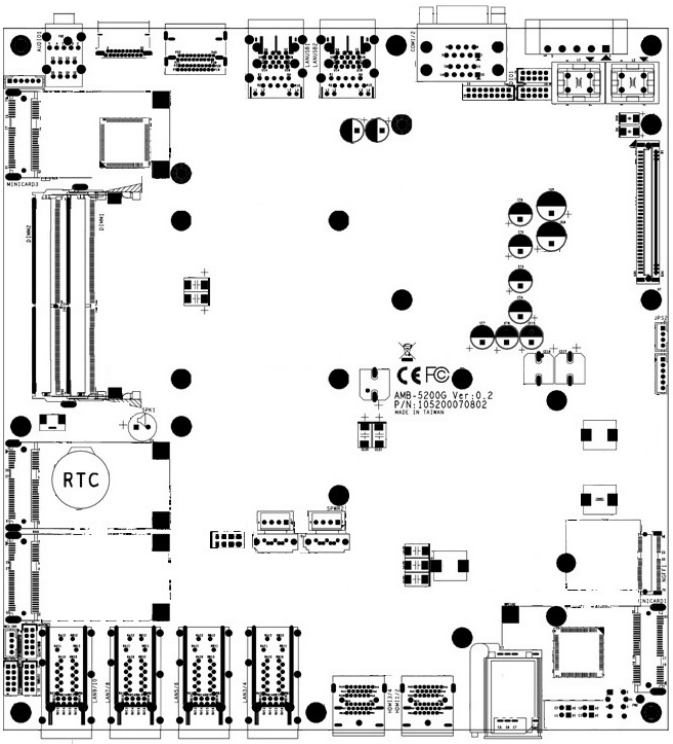
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	 

3.7 LAN3 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN3/4**
Connector pin definition	

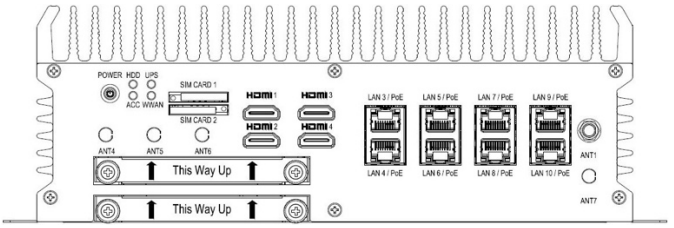
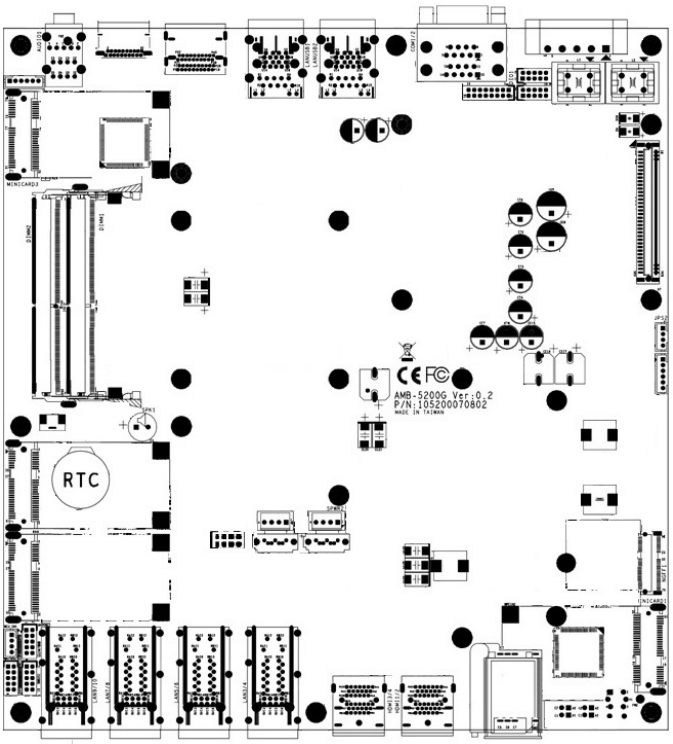
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	 

3.8 LAN4 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN3/4**
Connector pin definition	

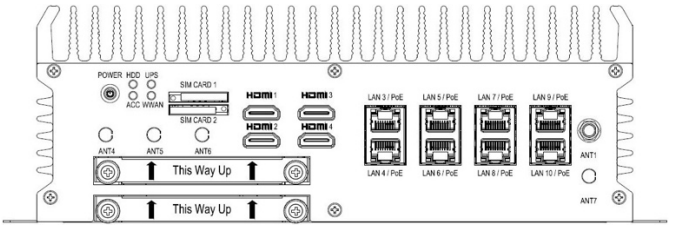
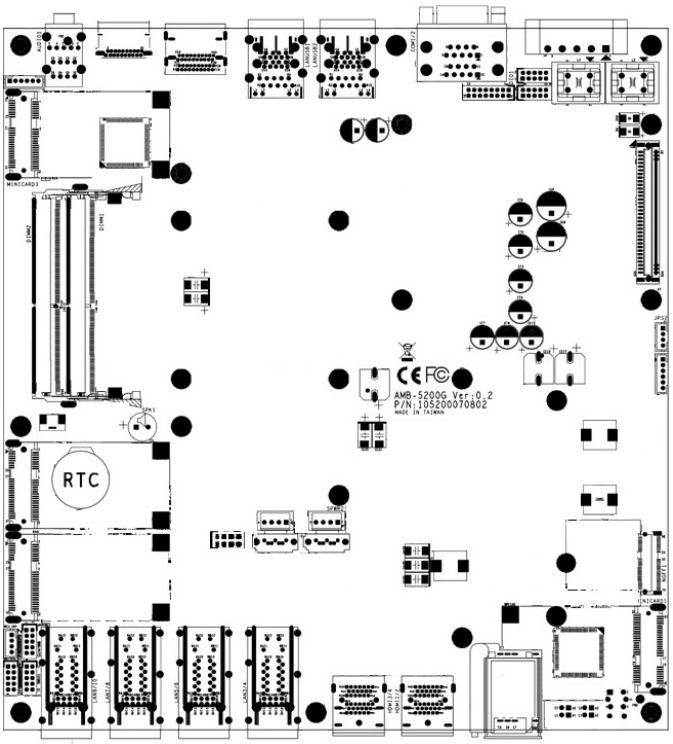
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	 

3.9 LAN5 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN5/6**
Connector pin definition	

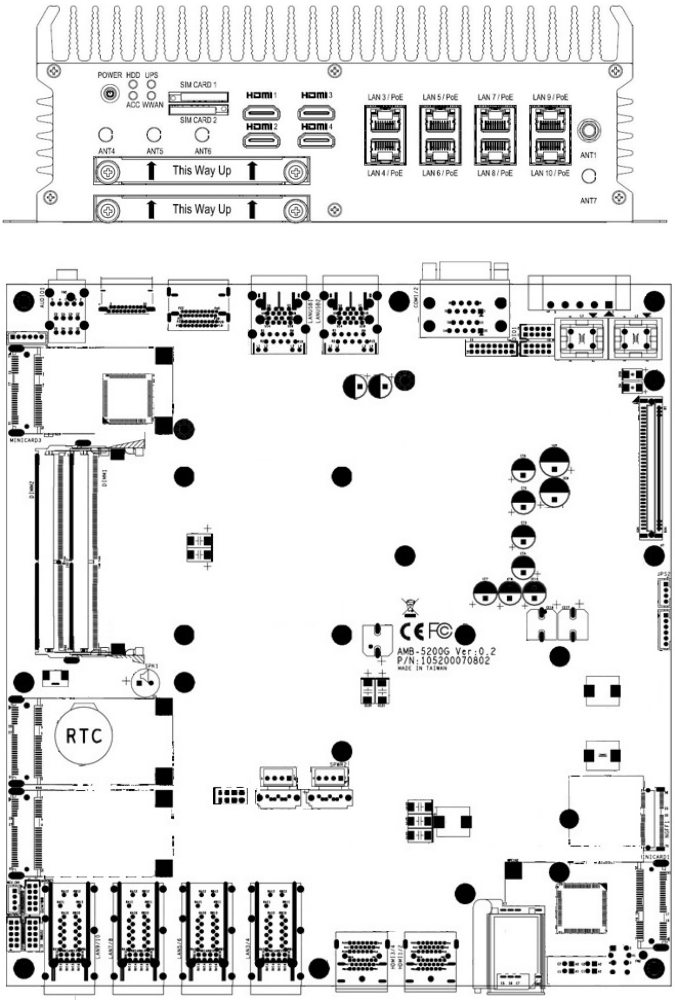
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	 

3.10 LAN6 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN5/6**
Connector pin definition	

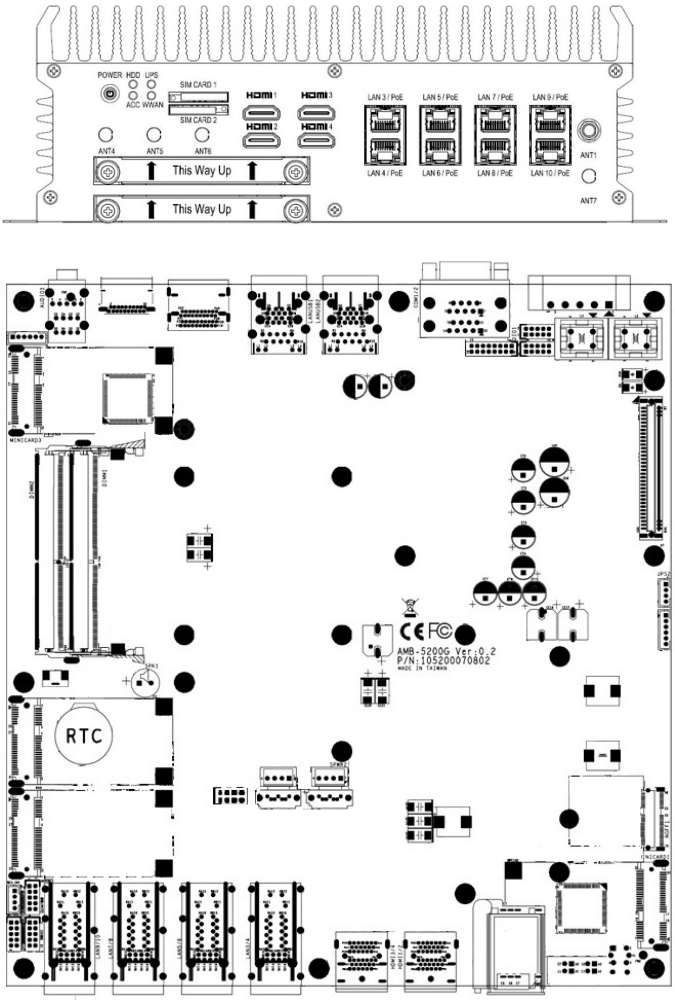
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	

3.11 L AN7 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN7/8**
Connector pin definition	

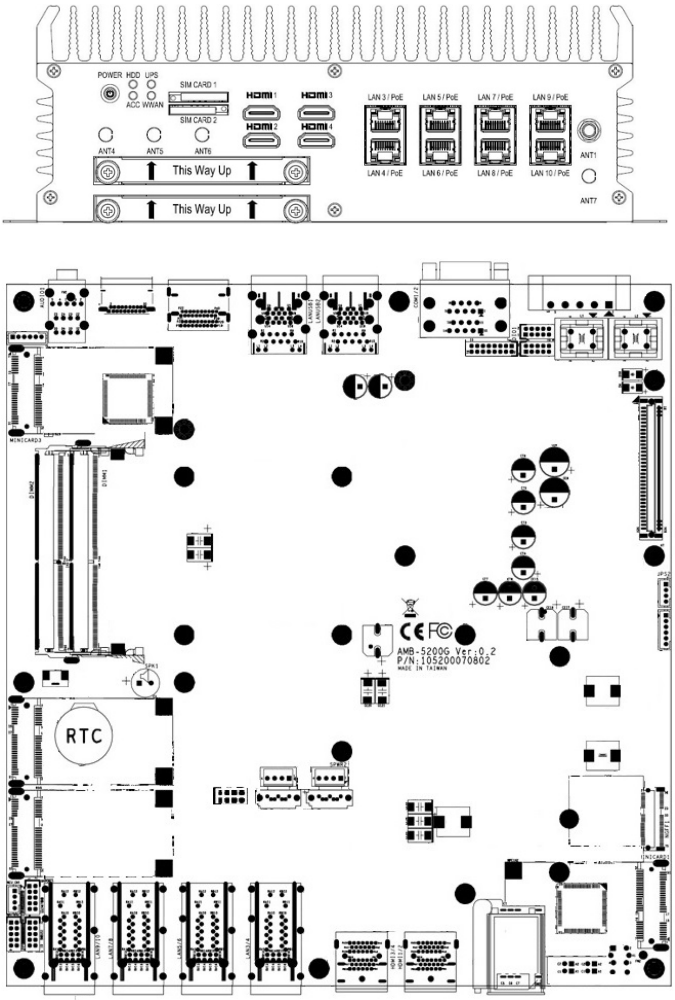
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	

3.12 LAN8 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN7/8**
Connector pin definition	

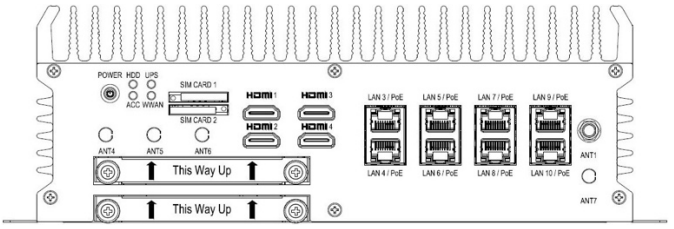
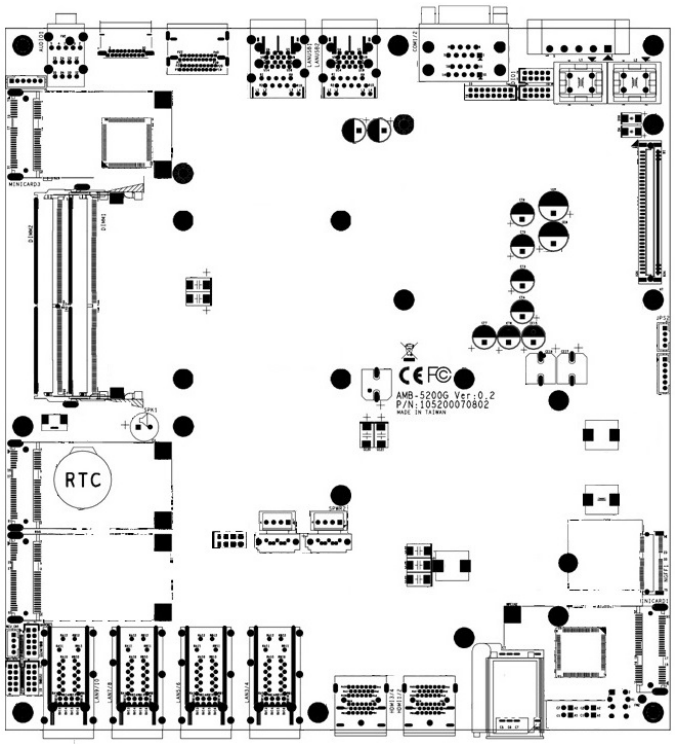
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	

3.13 LAN9 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN9/10**
Connector pin definition	

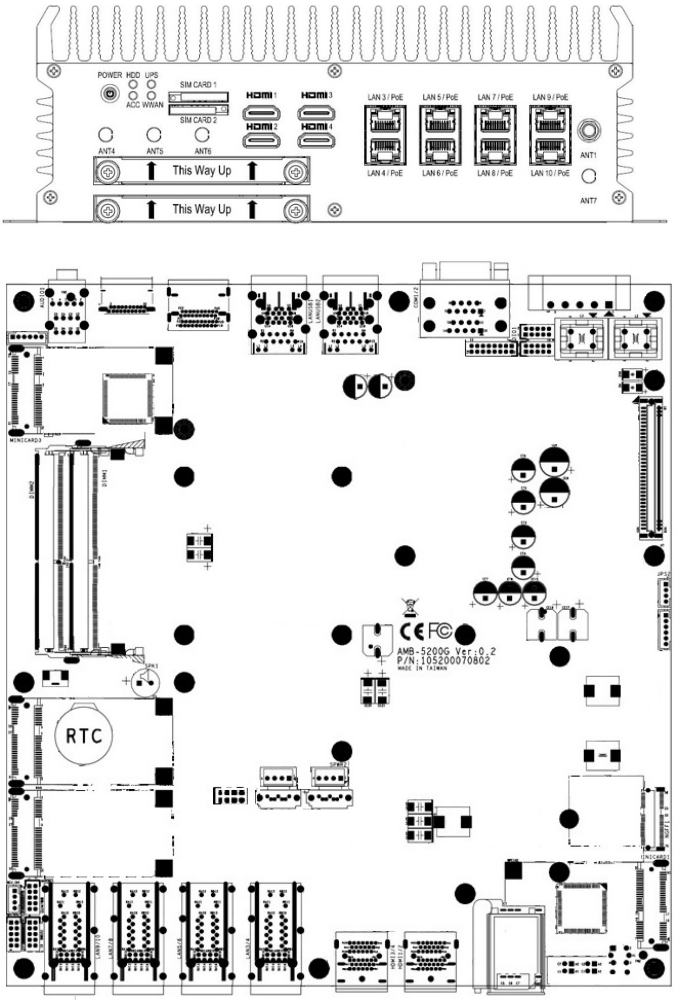
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	 

3.14 LAN10 Connector

Connector size	8 Pin
Connector type	RJ45
Connector location	**LAN9/10**
Connector pin definition	

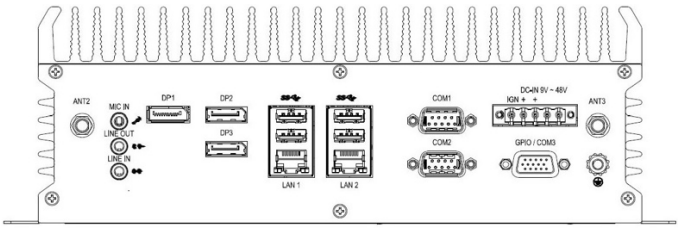
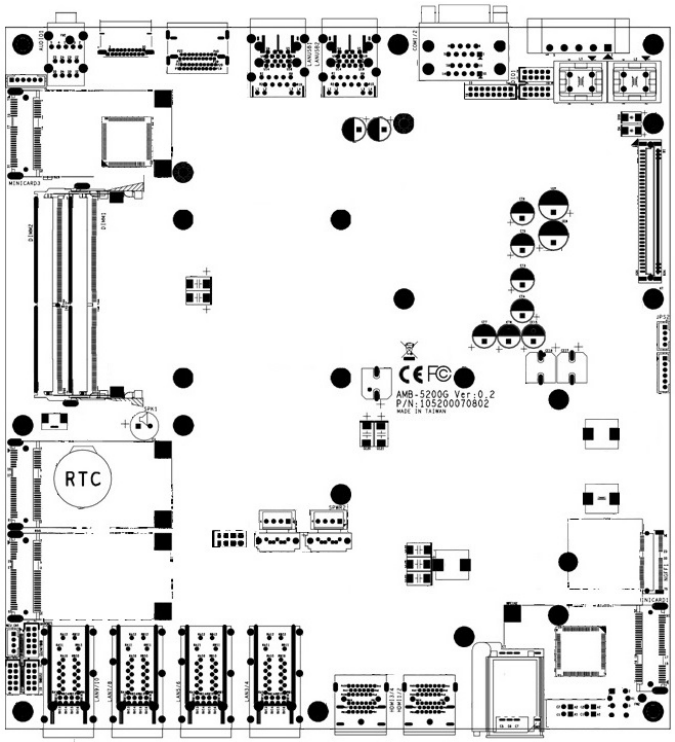
Pin	Signal	Pin	Signal
1	Bi-directional A+	2	Bi-directional A-
3	Bi-directional B+	4	Bi-directional C+
5	Bi-directional C-	6	Bi-directional B-
7	Bi-directional D+	8	Bi-directional D-

Connector map	

3.15 USB3.0_1/2 Connector

Connector size	9 Pin x2
Connector type	USB3.0 Type A x2
Connector location	**LANUSB1**
Connector pin definition	

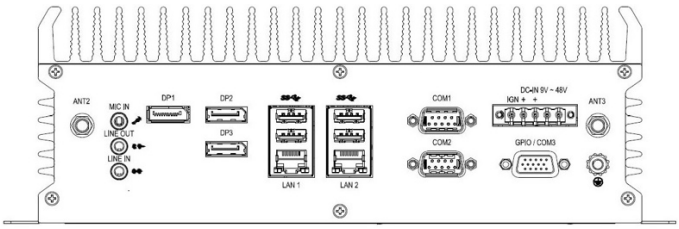
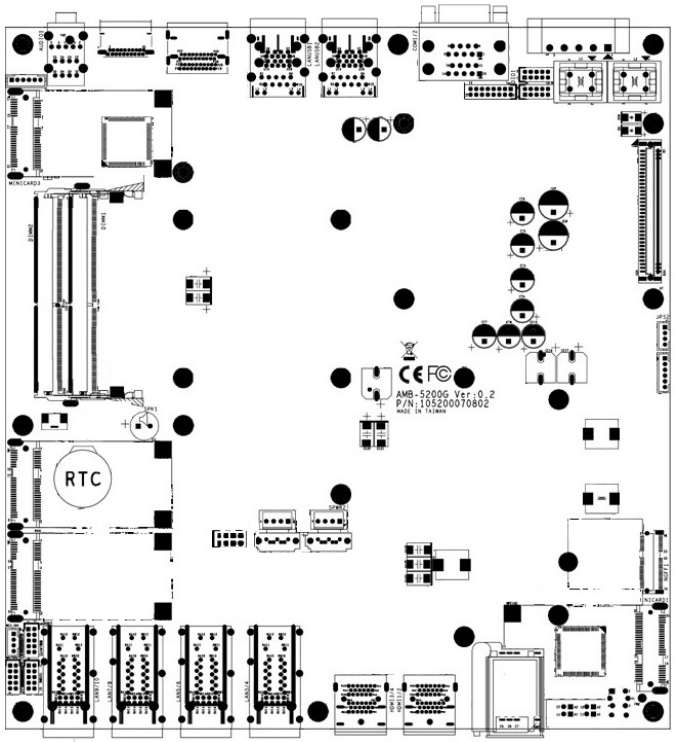
Pin	Signal	Pin	Signal
1	5VSB	2	USB_DN
3	USB_DP	4	GND
5	USB3_SSRX_DN	6	USB3_SSRX_DP
7	GND	8	USB3_SSTX_DN
9	USB3_SSTX_DP		

Connector map	 

3.16 USB3.0_3/4 Connector

Connector size	9 Pin x2
Connector type	USB3.0 Type A x2
Connector location	**LANUSB2**
Connector pin definition	

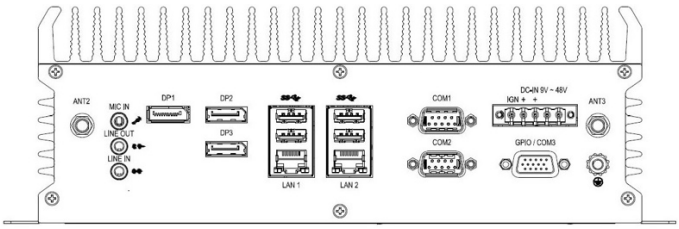
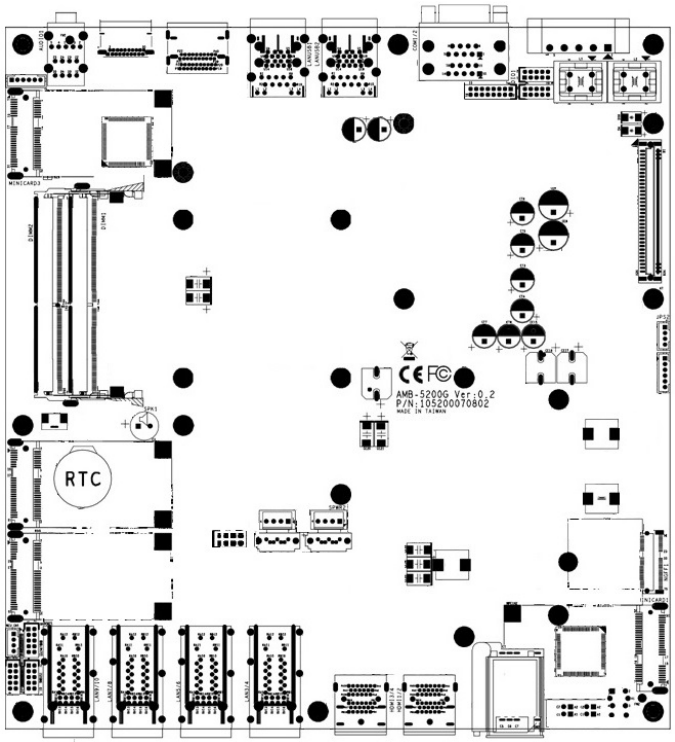
Pin	Signal	Pin	Signal
1	5VSB	2	USB_DN
3	USB_DP	4	GND
5	USB3_SSRX_DN	6	USB3_SSRX_DP
7	GND	8	USB3_SSTX_DN
9	USB3_SSTX_DP		

Connector map	 

3.17 COM1 Connector

Connector size	9 Pin
Connector type	D-SUB_9P
Connector location	**COM1**
Connector pin definition	

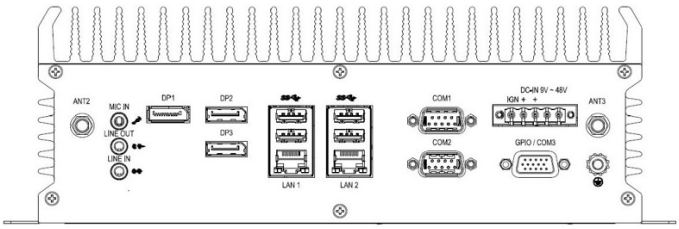
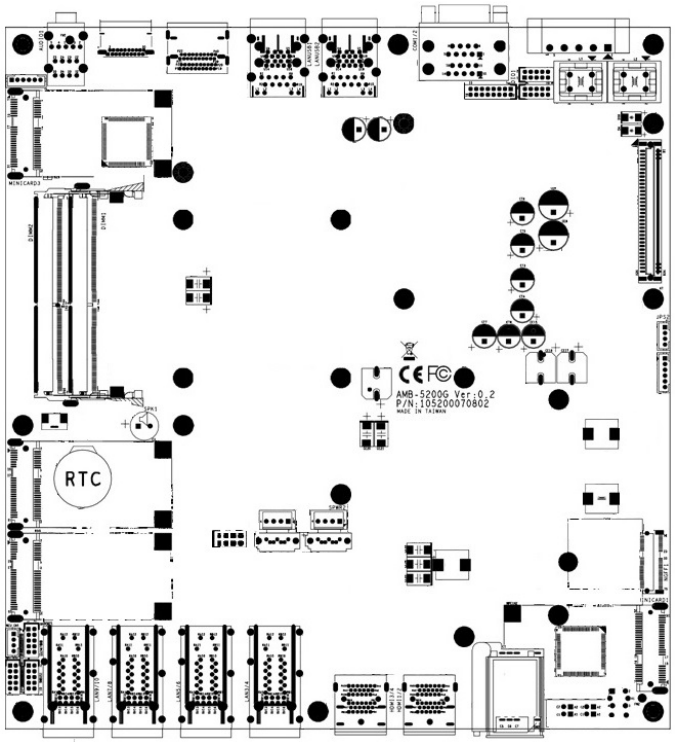
Pin	Signal	Pin	Signal
1	COM1_DCD	2	COM1_RXD
3	COM1_TXD	4	COM1_DTR
5	GND	6	COM1_DSR
7	COM1_RTS	8	COM1_CTS
9	COM1_RI#		

Connector map	 

3.18 COM2 Connector

Connector size	9 Pin
Connector type	D-SUB_9P
Connector location	**COM2**
Connector pin definition	

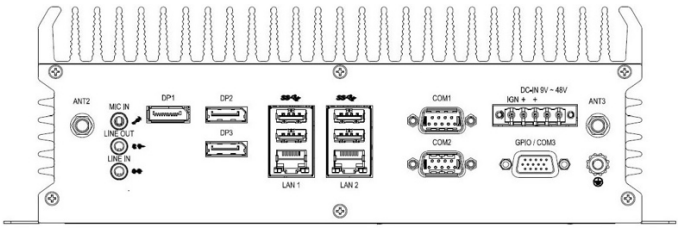
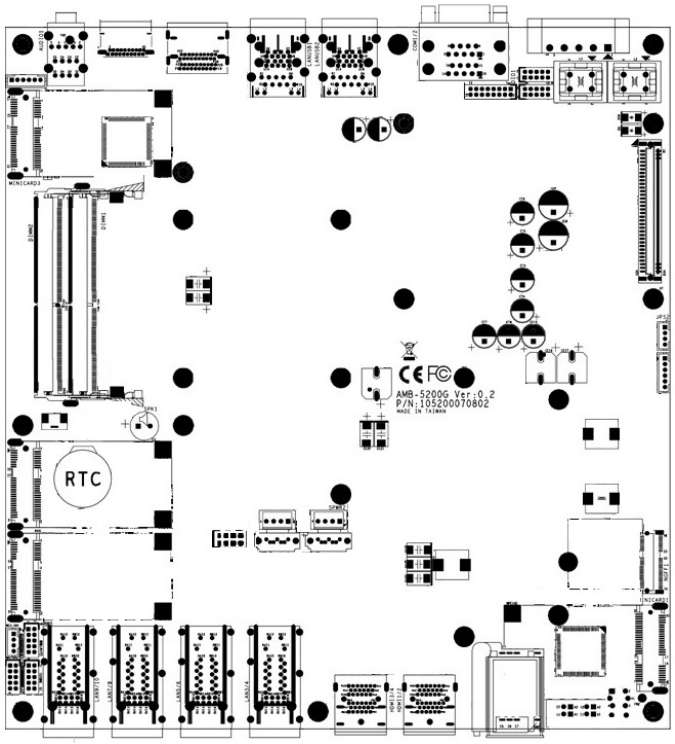
Pin	Signal	Pin	Signal
1	COM1_DCD	2	COM1_RXD
3	COM1_TXD	4	COM1_DTR
5	GND	6	COM1_DSR
7	COM1_RTS	8	COM1_CTS
9	COM1_RI#		

Connector map	 

3.19 DC Power Connector

Connector size	1x5 Pin
Connector type	DECA 5mm-F-90D-5PIN
Connector location	**Power1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	GND	2	GND
3	DC_IN(+9~+48V)	4	DC_IN(+9~+48V)
5	Ignition		

Connector map	 

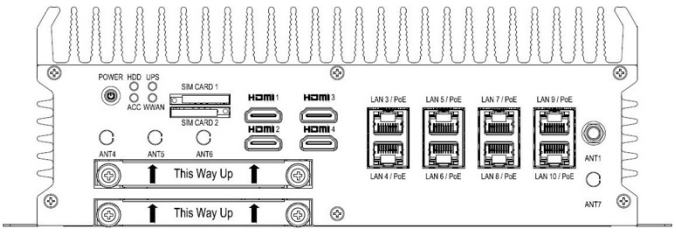
3.20 HDMI1 Connector (only for model name with G1&G4)

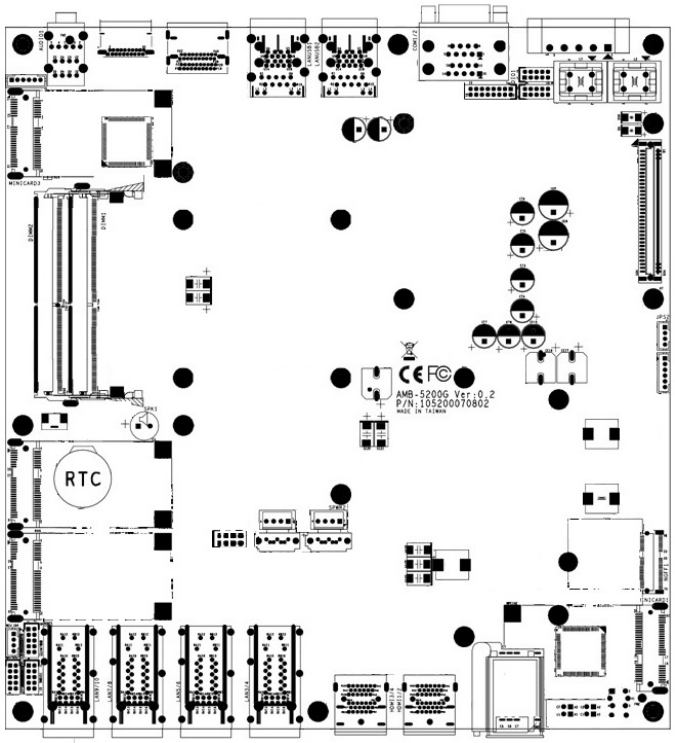
Connector size	19 Pin
Connector type	HDMI-TYPE A
Connector location	**HDMI1/2**

Connector pin definition

Pin	Signal	Pin	Signal
1	TMDS Data2+	2	GND
3	TMDS Data2-	4	TMDS Data1+
5	GND	6	TMDS Data1-
7	TMDS Data0+	8	GND
9	TMDS Data0-	10	TMDS Clock+
11	GND	12	TMDS Clock-
13	NC/CEC	14	NC
15	SCL	16	SDA
17	GND	18	+5V VCC
19	Hot Plug Detect		

Connector map





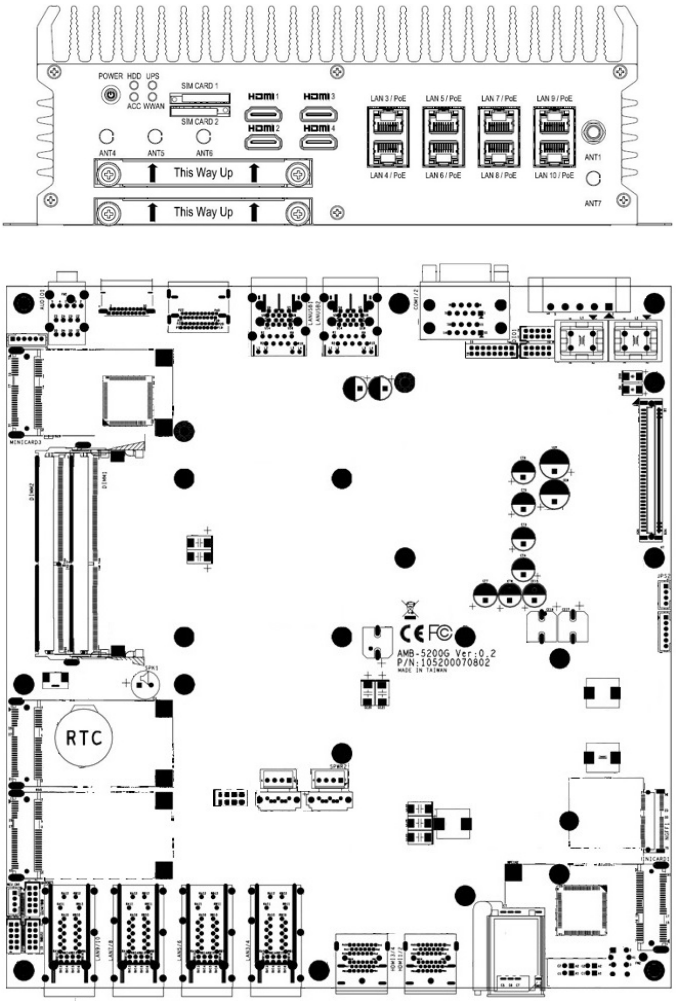
3.21 HDMI2 Connector (only for model name with G1&G4)

Connector size	19 Pin

Connector type	HDMI-TYPE A
Connector location	**HDMI1/2**
Connector pin definition	

Pin	Signal	Pin	Signal
1	TMDS Data2+	2	GND
3	TMDS Data2-	4	TMDS Data1+
5	GND	6	TMDS Data1-
7	TMDS Data0+	8	GND
9	TMDS Data0-	10	TMDS Clock+
11	GND	12	TMDS Clock-
13	NC/CEC	14	NC
15	SCL	16	SDA
17	GND	18	+5V VCC
19	Hot Plug Detect		

Connector map

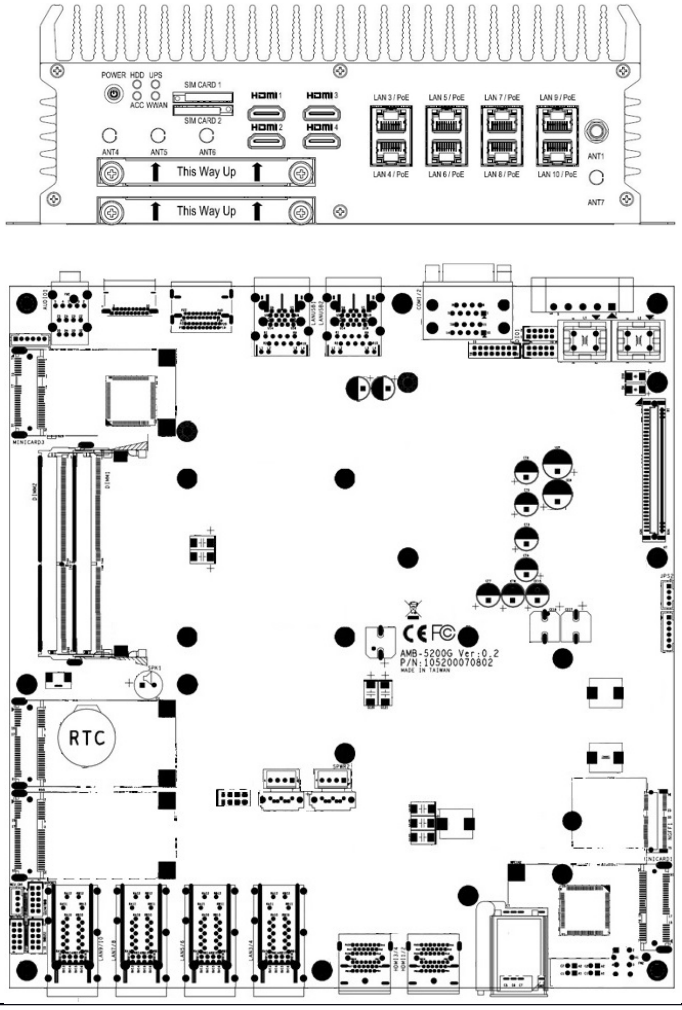


3.22 HDMI3 Connector (only for model name with G1&G4)

Connector size	19 Pin
Connector type	HDMI-TYPE A
Connector location	**HDMI3/4**
Connector pin definition	

Pin	Signal	Pin	Signal
1	TMDS Data2+	2	GND
3	TMDS Data2-	4	TMDS Data1+
5	GND	6	TMDS Data1-
7	TMDS Data0+	8	GND
9	TMDS Data0-	10	TMDS Clock+
11	GND	12	TMDS Clock-
13	NC/CEC	14	NC
15	SCL	16	SDA
17	GND	18	+5V VCC
19	Hot Plug Detect		

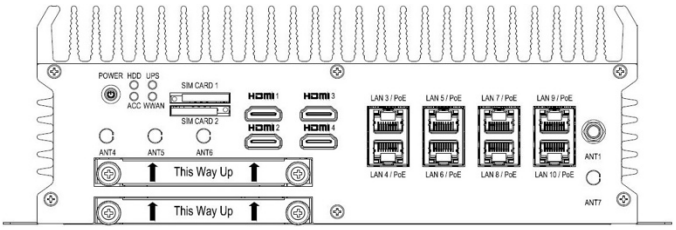
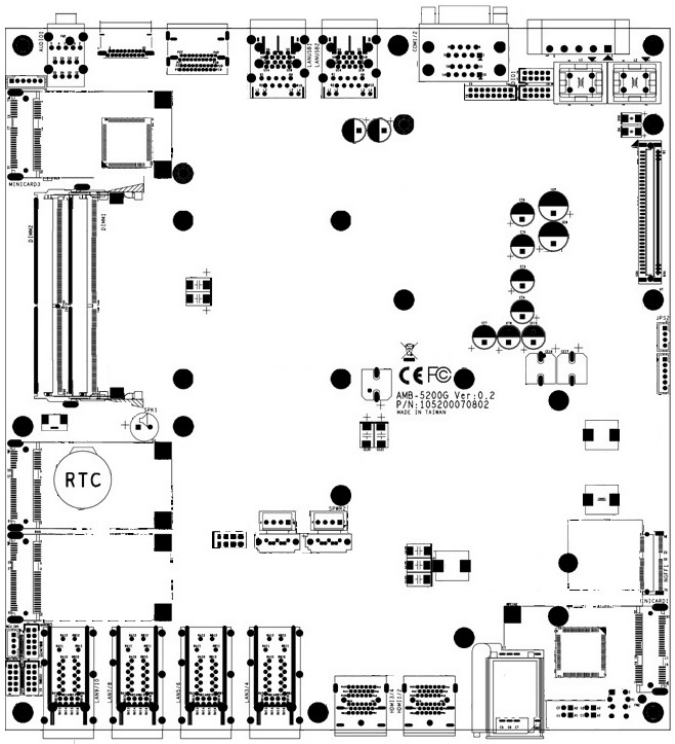
Connector map



3.23 HDMI4 Connector (only for model name with G1&G4)

Connector size	19 Pin
Connector type	HDMI-TYPE A
Connector location	**HDMI3/4**
Connector pin definition	

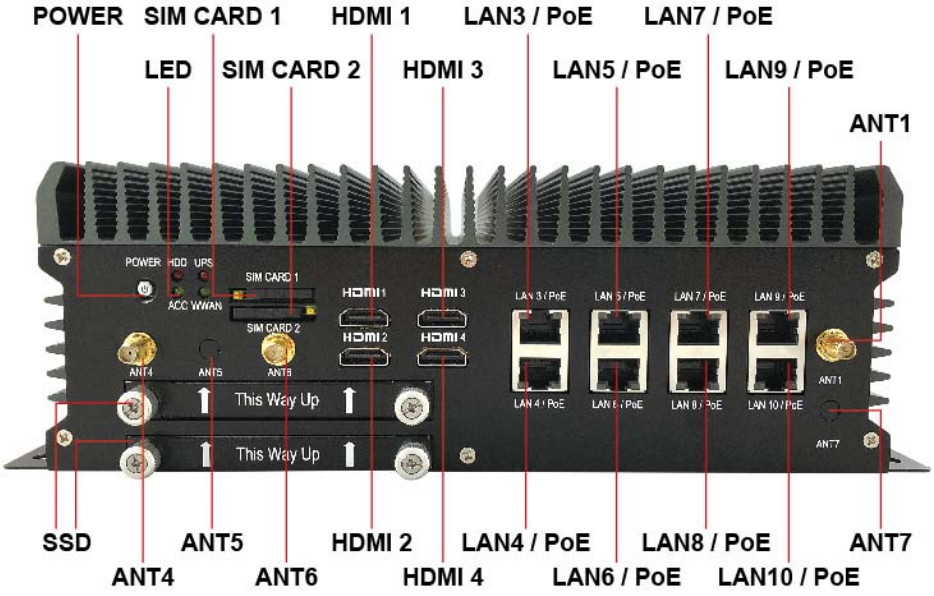
Pin	Signal	Pin	Signal
1	TMDS Data2+	2	GND
3	TMDS Data2-	4	TMDS Data1+
5	GND	6	TMDS Data1-
7	TMDS Data0+	8	GND
9	TMDS Data0-	10	TMDS Clock+
11	GND	12	TMDS Clock-
13	NC/CEC	14	NC
15	SCL	16	SDA
17	GND	18	+5V VCC
19	Hot Plug Detect		

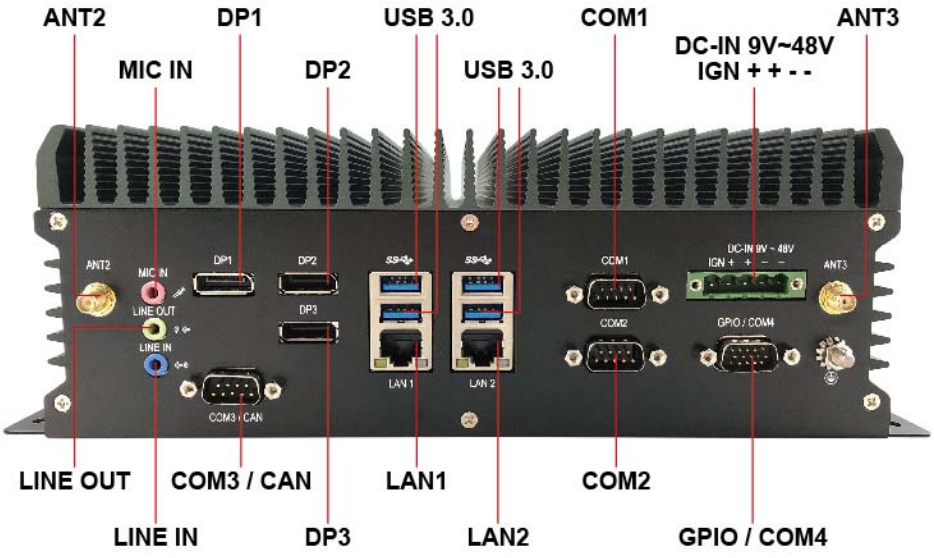
Connector map	 

4.0
SYSTEM INSTALLATION

4.0 SYSTEM INSTALLATION

4.1 System Introduction





4.2 Opening Chassis

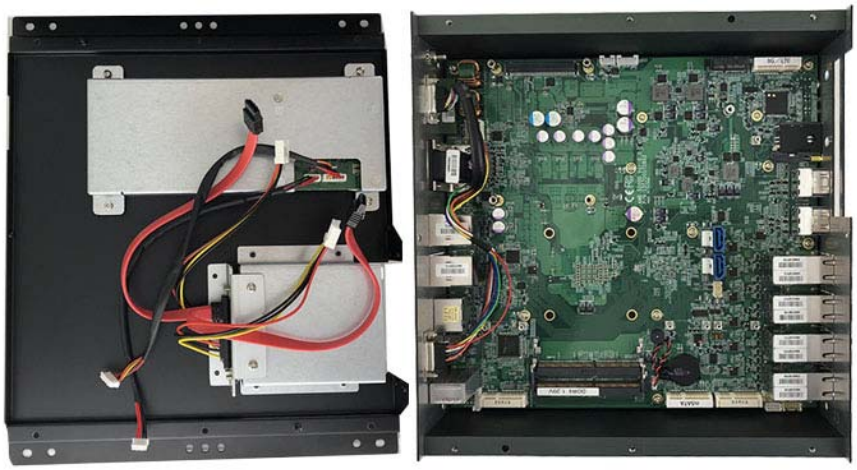
Step1. Unscrew the six screws of the Back Cover as shown in the picture.

Step2. Unscrew the three screws of the Front Panel as shown in the picture.

Step3. Unscrew the three screws of the Rear Panel as shown in the picture.

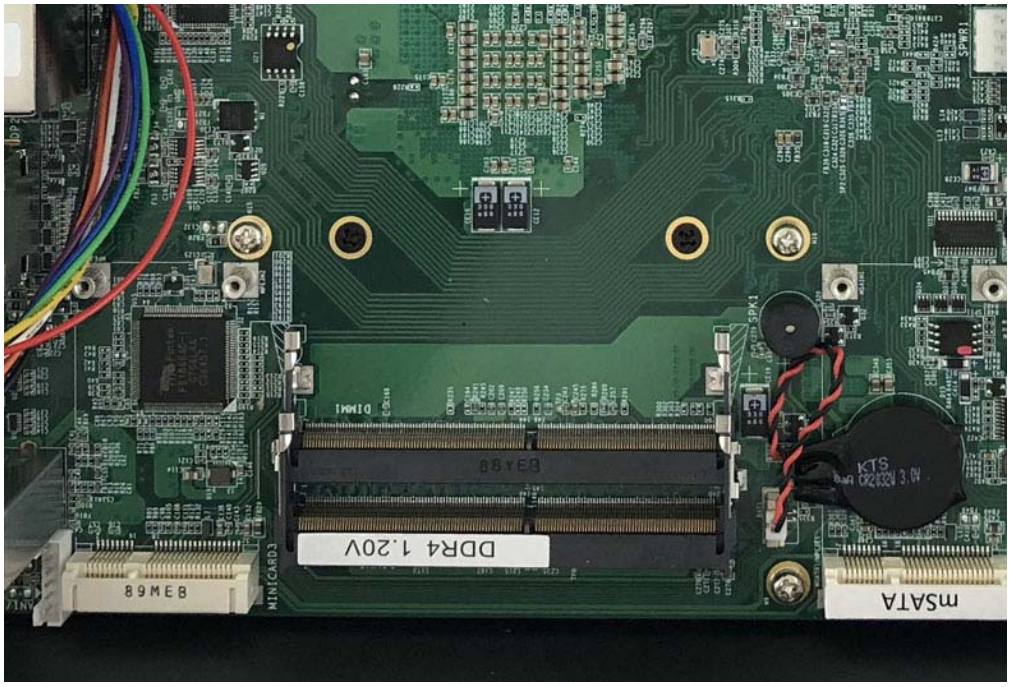
Step4. Untighten to Storage Bracket screws as shown in the picture.

Step5. Open Bottom Cover as shown in the picture.



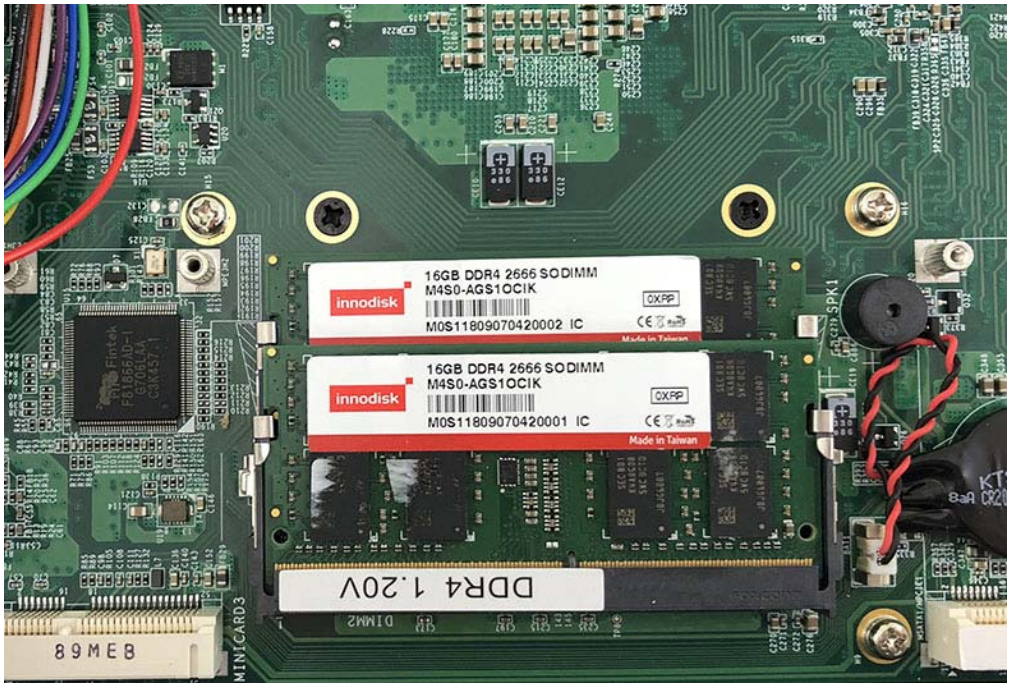
4.3 Installing Memory

Step1. Put Memory on this place as shown in the picture.



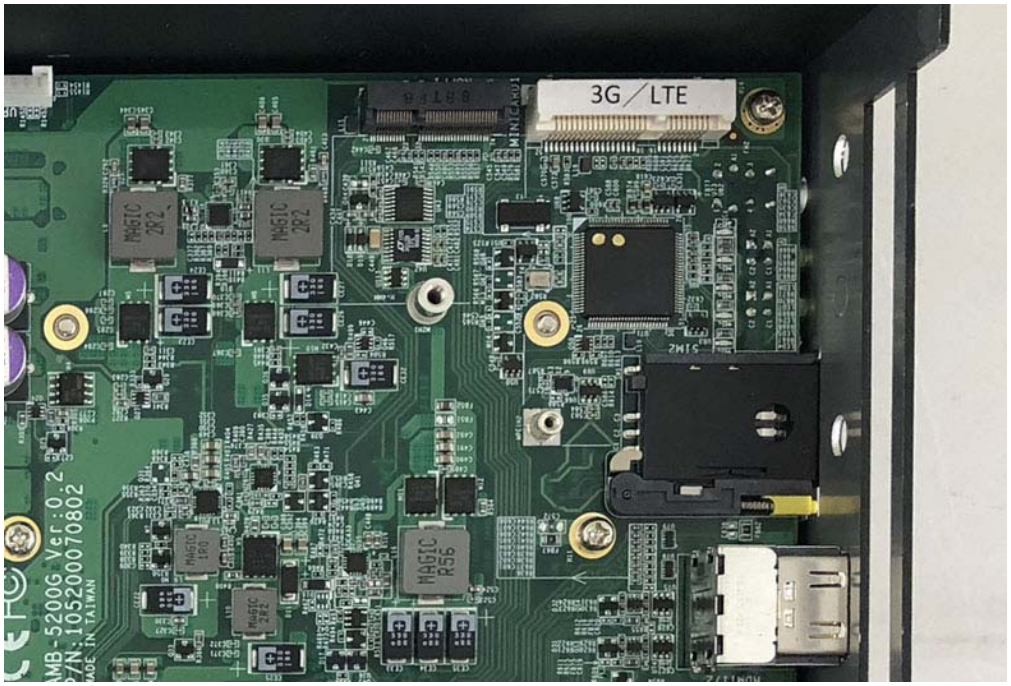
Step2. Hold the Memory with its notch aligned with the Memory socket of the board and insert it at a 30-degree angle into the socket as shown in the picture.

Step3. Press down on the Memory so that the tabs of the socket lock on both sides of the module as shown in the picture.



4.4 Installing MINI PCIe Expansion Card (Minicard 1, 3G/LTE)

Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.



Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.

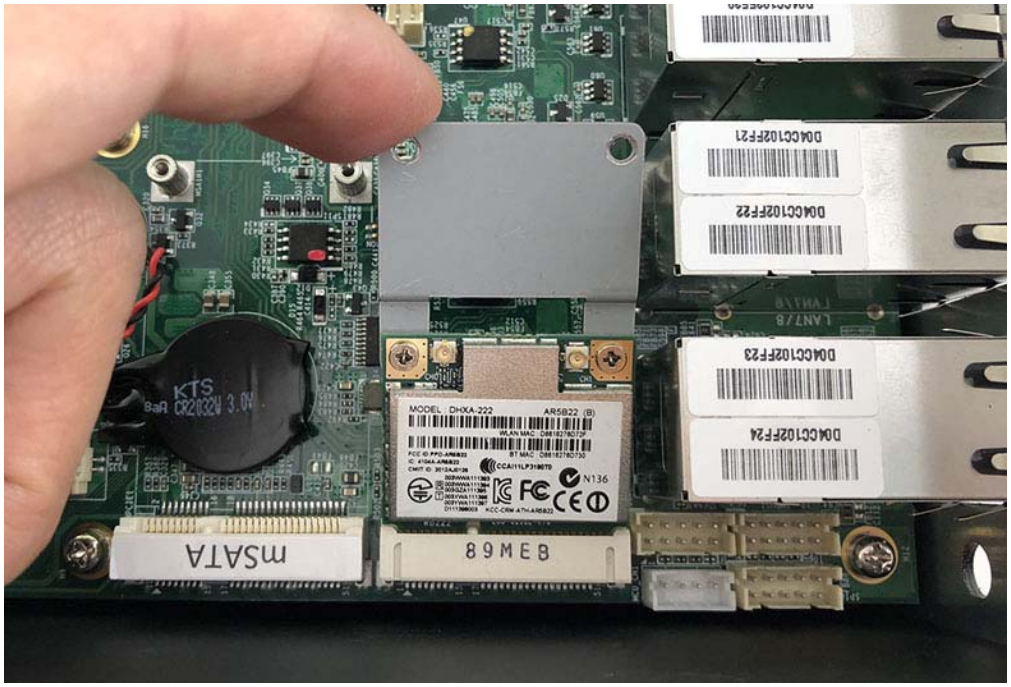
Step 3. Screw one screw to the holder as shown in the picture.

Step 4. Done as shown in the picture.

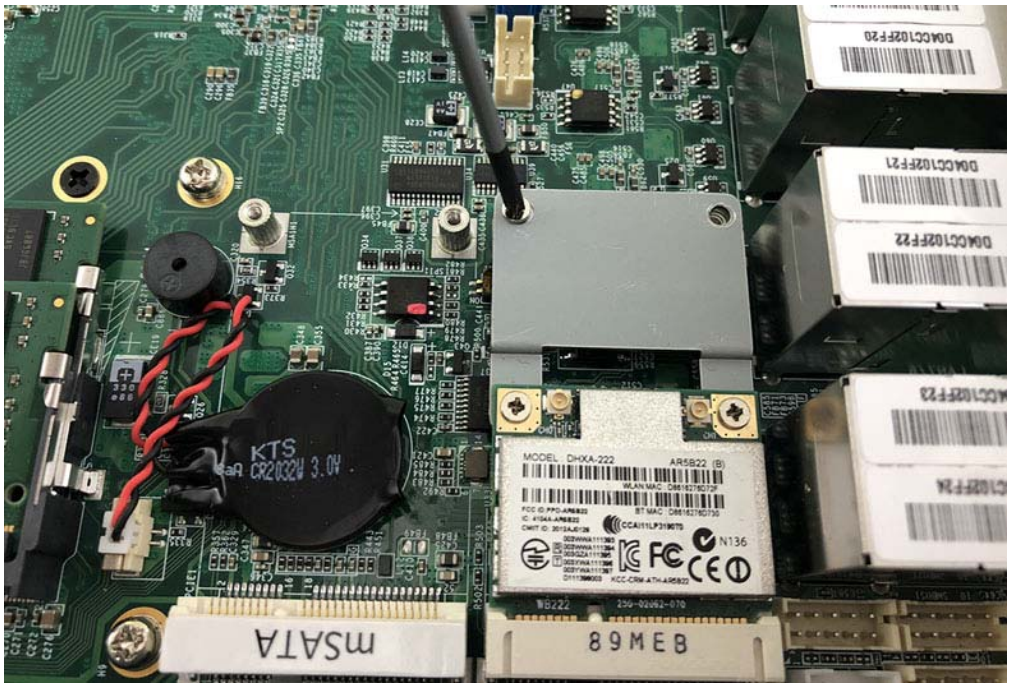
4.5 Installing MINI PCIe Expansion Card (MiniCard 2)

Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.

Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.



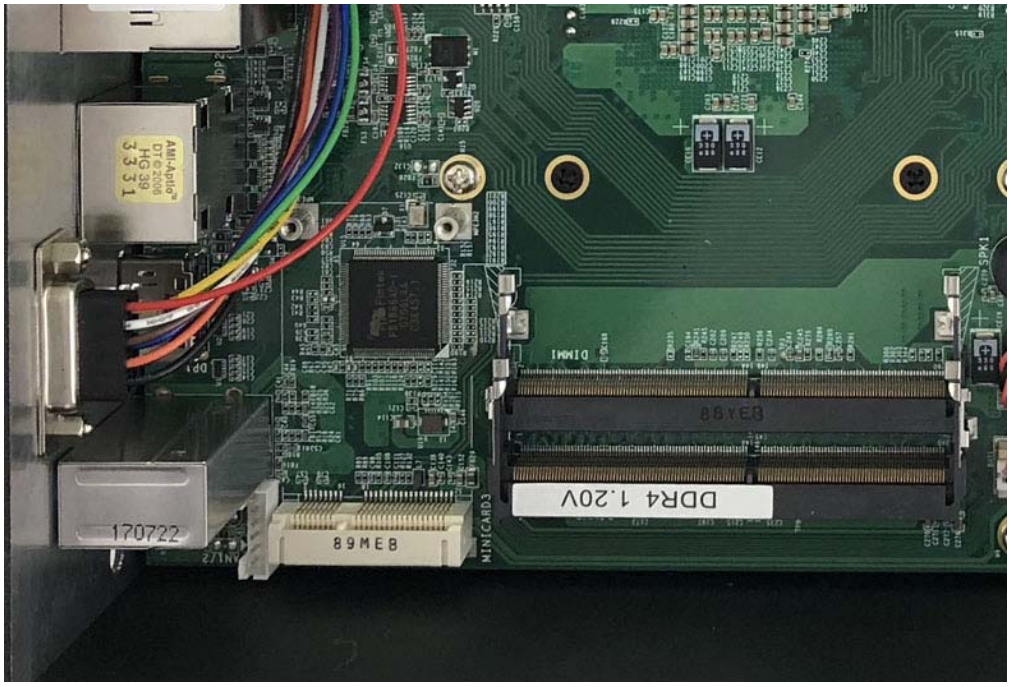
Step 3. Screw two screws to the holder as shown in the picture.



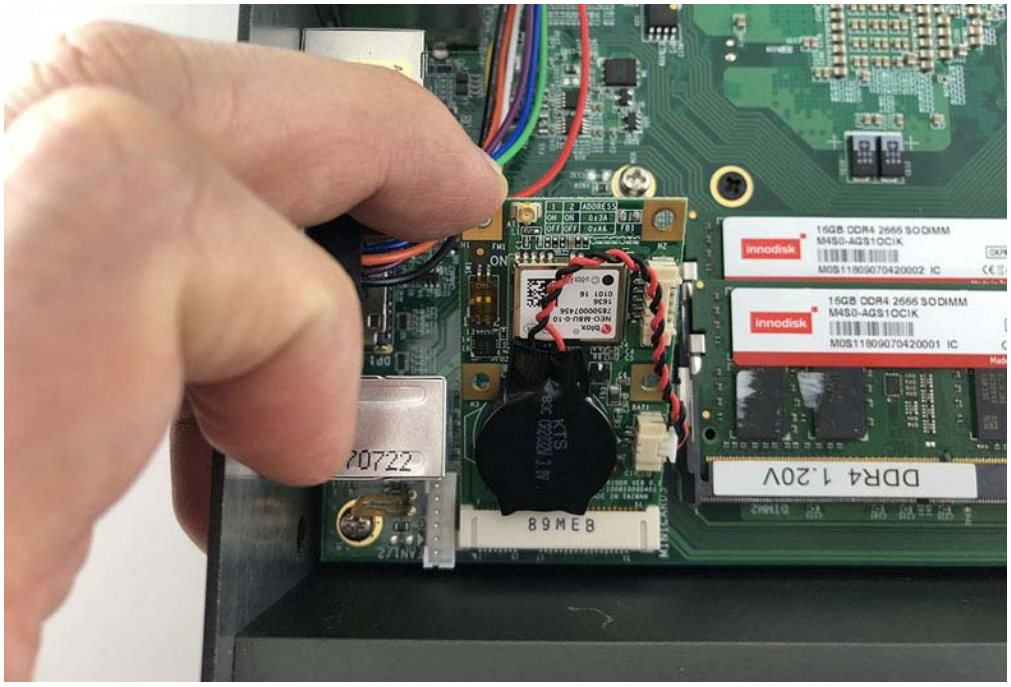
Step 4. Done as shown in the picture.

4.6 Installing MINI PCIe Expansion Card (MiniCard 3)

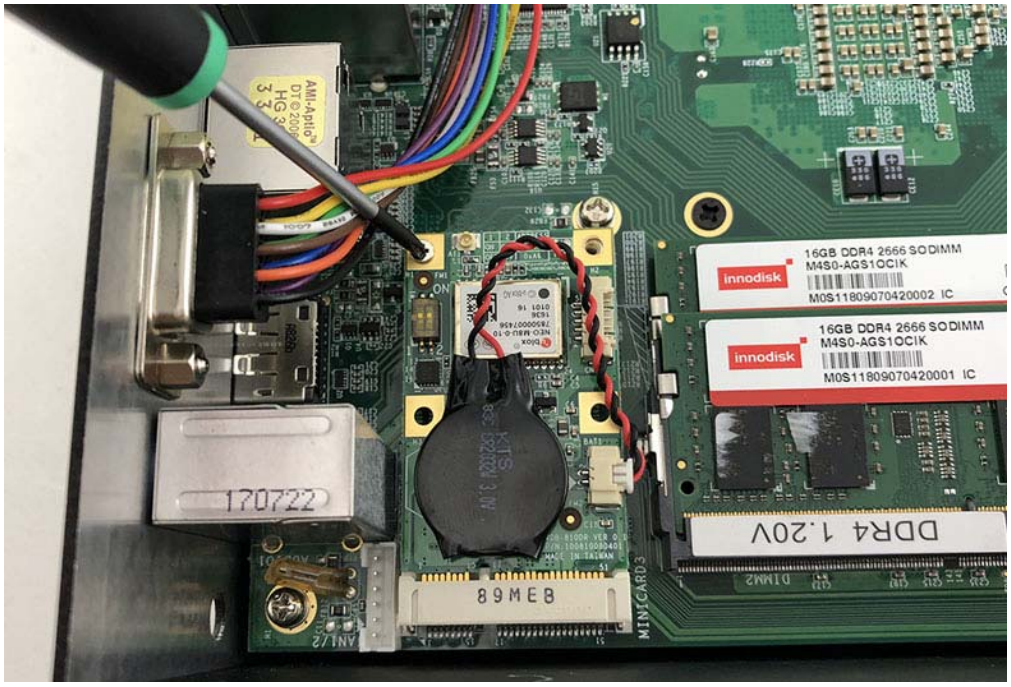
Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.



Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.



Step 3. Screw two screws to the holder as shown in the picture.



Step 4. Done as shown in the picture.

4.7 Installing M.2 Module

Step 1. Put M.2 module on this place as shown in the picture.

Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.

Step 3. Screw one screw to the holder as shown in the picture.

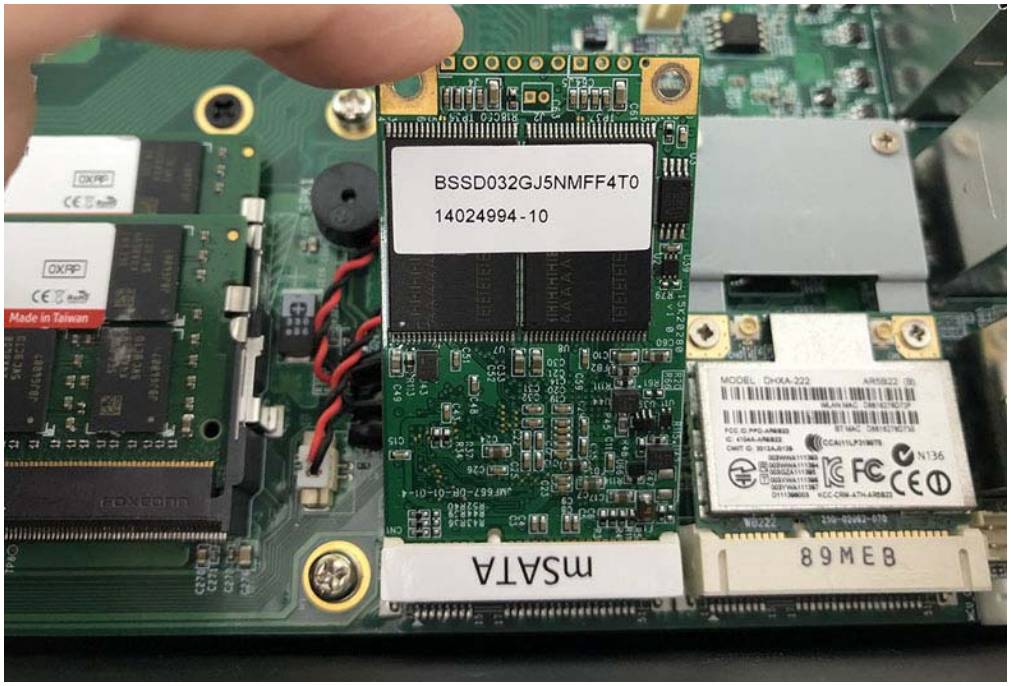
Step 4. Done as shown in the picture.

Step 6. Take the Ipex Connector and press on the M.2 module as shown in the picture.

4.8 Installing mSATA Module

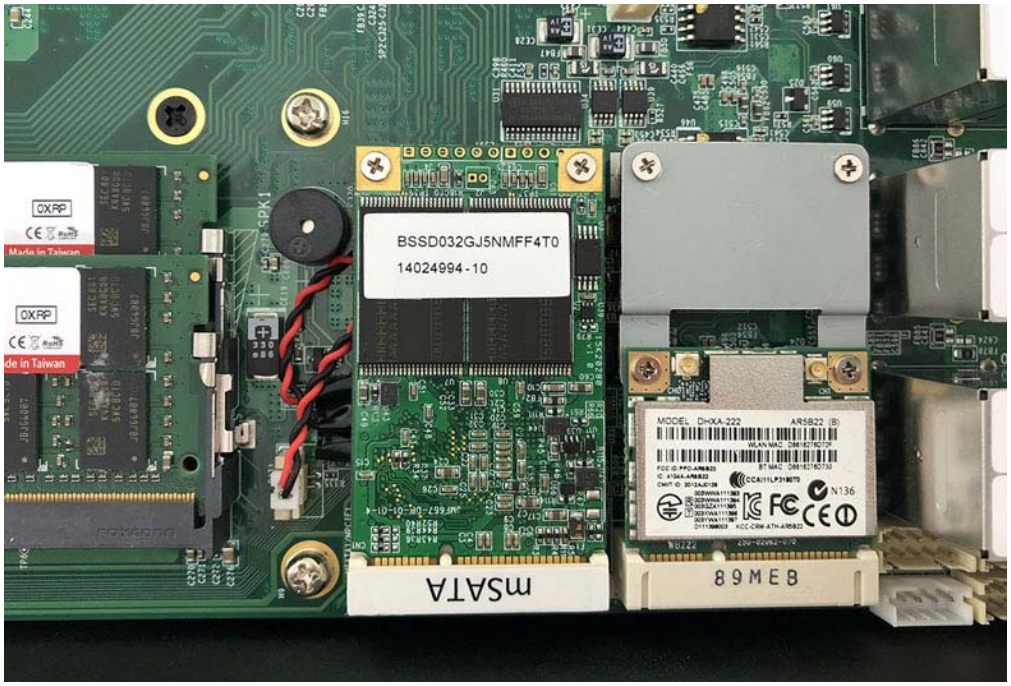
Step 1. Put mSATA module on this place as shown in the picture.

Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.



Step 3. Screw two screws to the holder as shown in the picture.

Step 4. Done as shown in the picture.



4.9 Installing Internal Antenna Cable

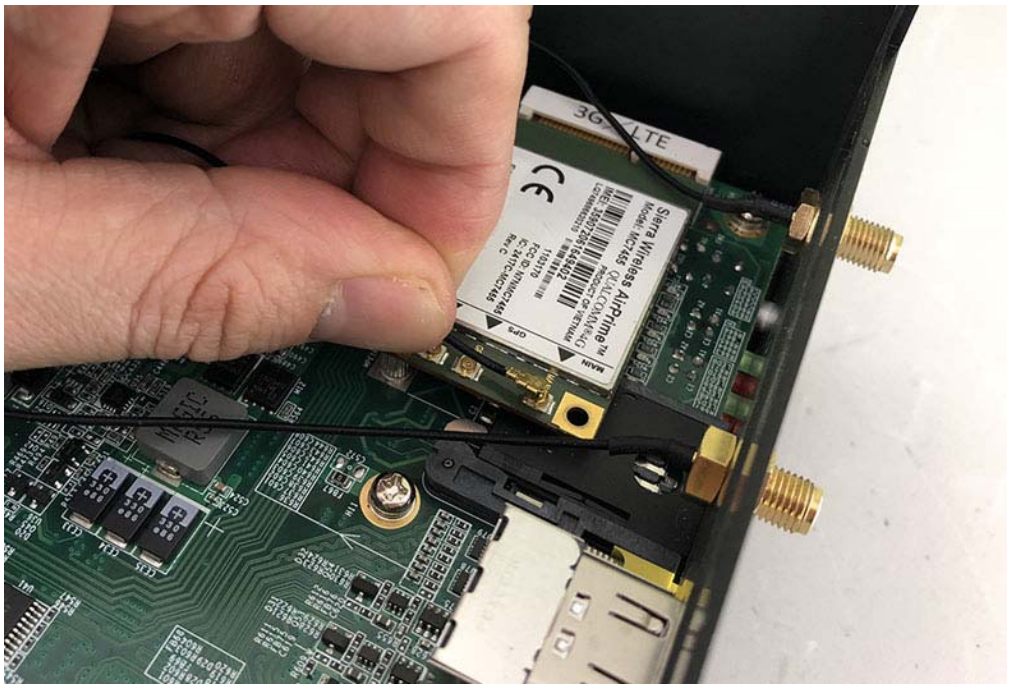
Step 1. Take the SMA Connector and Plug into IO Panel as shown in the picture.

Step 2. Put the Washer into the SMA Connector as shown in the picture.

Step 3. Put the Oring to SMA Connector and tighten as shown in the picture.

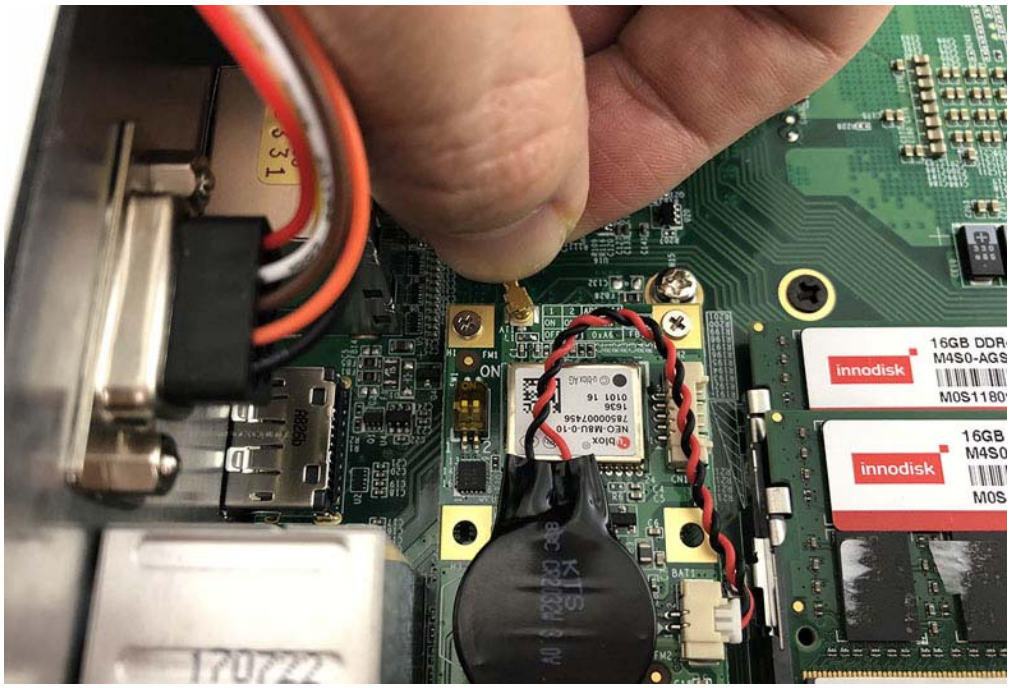
Step 4. Done as shown in the picture.

Step 5. Take the Ipex Connector and press on the 3G module as shown in the picture. (3G/LTE)



Step 6. Take the Ipex Connector and press on the wifi module as shown in the picture. (Wifi)

Step 7. Take the Ipex Connector and press on the GPS module as shown in the picture. (GPS)



4.10 Installing SIM Card

Step 1. Use thin stick to push the button as shown in the picture.

Step 2. Take the holder away from front panel as shown in the picture.

Step 3. Put your SIM Card into the holder as shown in the picture.

Step 4. Take the SIM card holder and Insert it into the socket as shown in the picture.

tion:

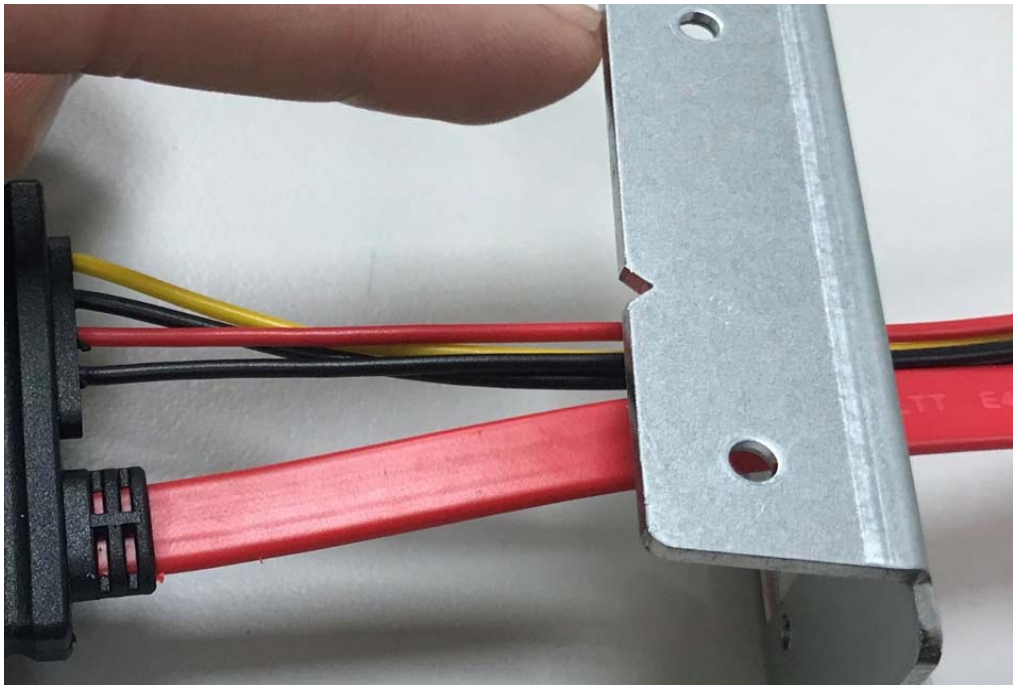
When insert a SIM card to the SIM card holder, please remove the main power at input to avoid undetectable SIM card.

4.11 Installing HDD

Step 1. Put the HDD bracket into bottom cover as shown in the picture.

Step 2. Turn over the bottom cover and screw four screws as shown in the picture.

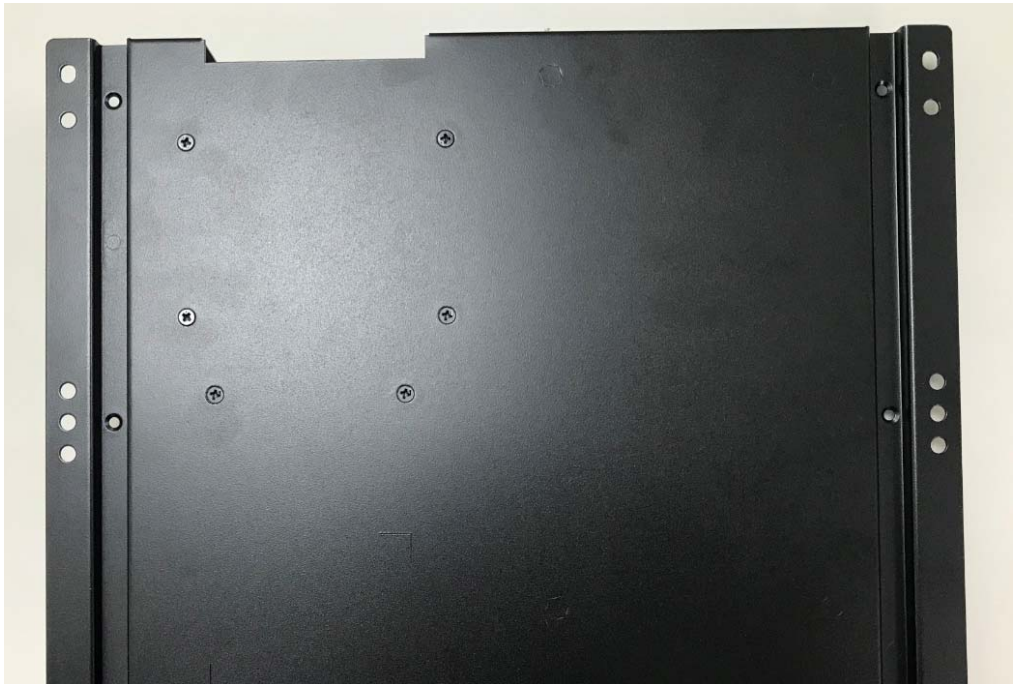
Step 3. Take SATA cable into the SATA bracket as shown in the picture.



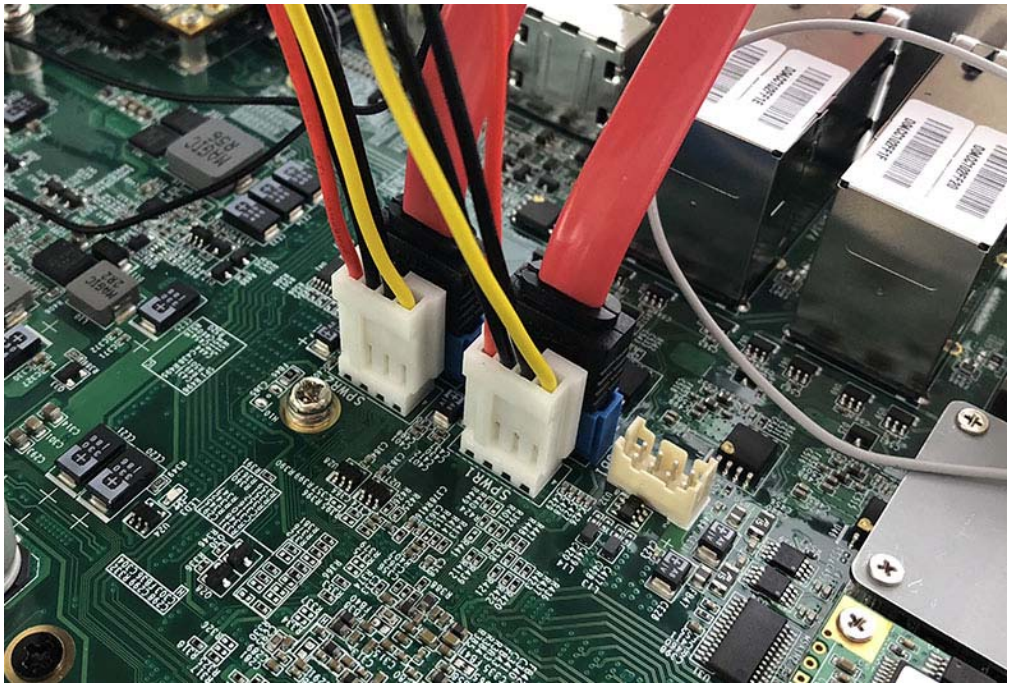
Step 4. Screw two screws(one hdd) or four screws (two hdd) as shown in the picture.

Step 5. Put SATA bracket and on the bottom cover and screw two screws as shown in the picture.

Step 6. Turn over the bottom cover and screw two screws as shown in the picture.



Step 7. Connect SATA cable to motherboard (SATA1 to SPWR1, SATA2 to SPWR2) as shown in the picture.



Step 8. Put the HDD into HDD Holder as shown in the picture.

Step 9. Screw two screws on both side as shown in the picture.

Step 10. Push the HDD Holder into the socket as shown in the picture.

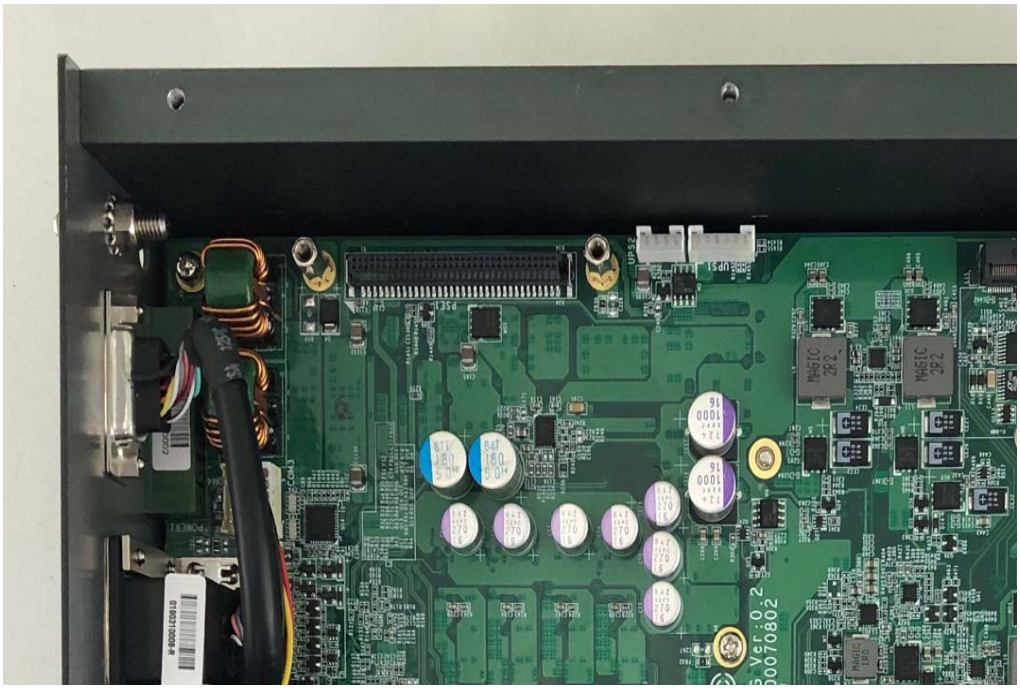
Step 11. Fully insert the HDD Holder into the socket until a “click” is heard as shown in the picture.

Step 12. Tighten to Storage Bracket screws as shown in the picture.

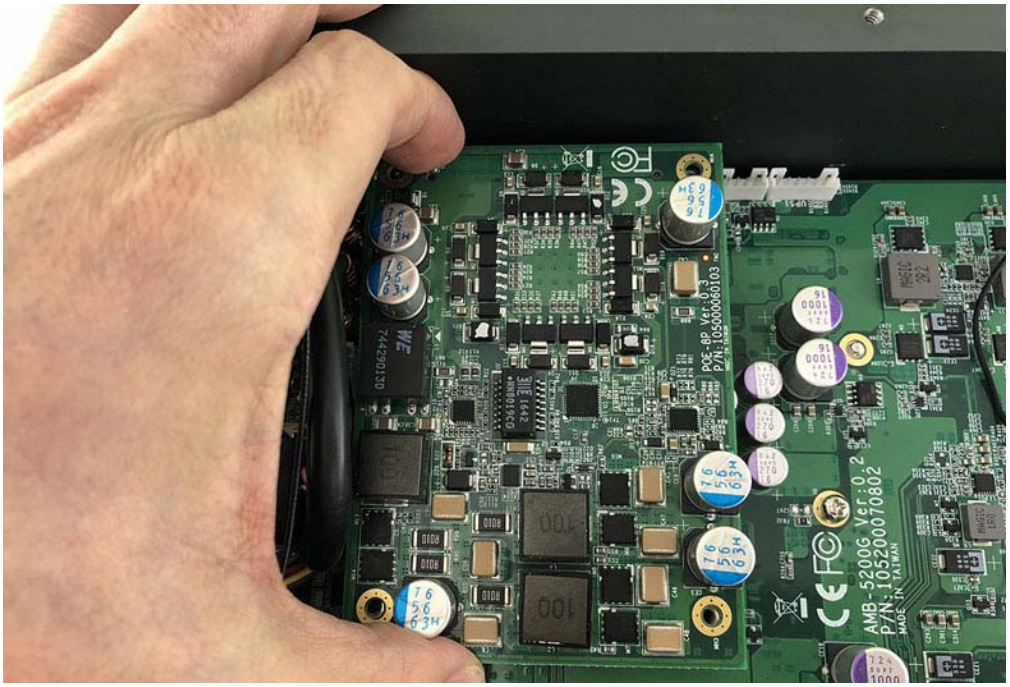
Step 13. Done as as shown in the picture.

4.12 Installing POE Module

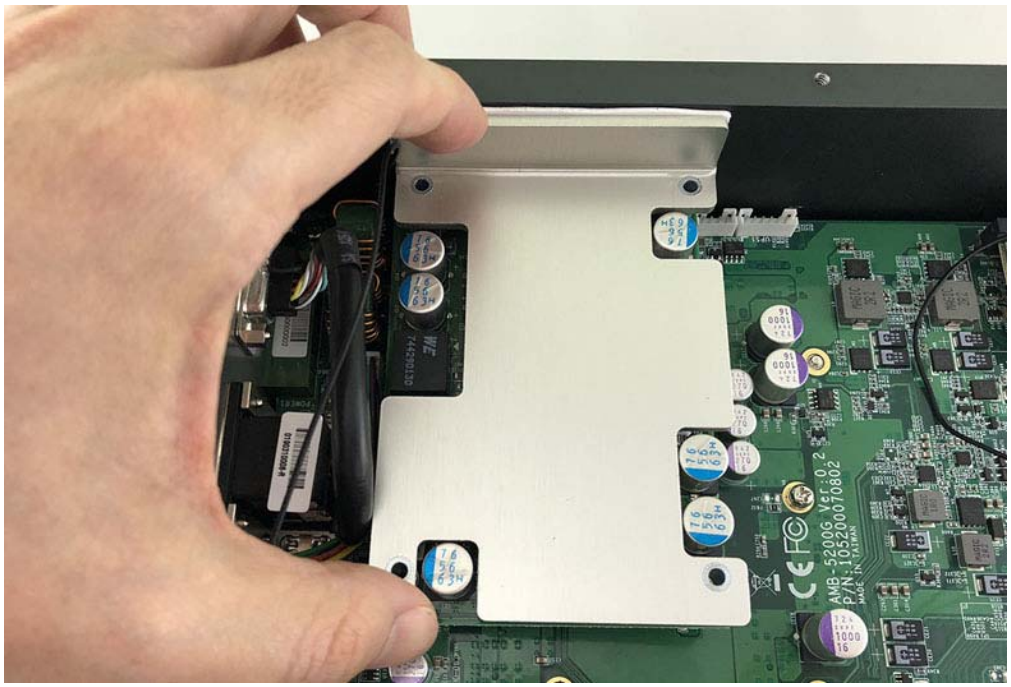
Step 1. Put POE Module on this place as shown in the picture.



Step 2. Put the POE-8P module on the motherboard as shown in the picture

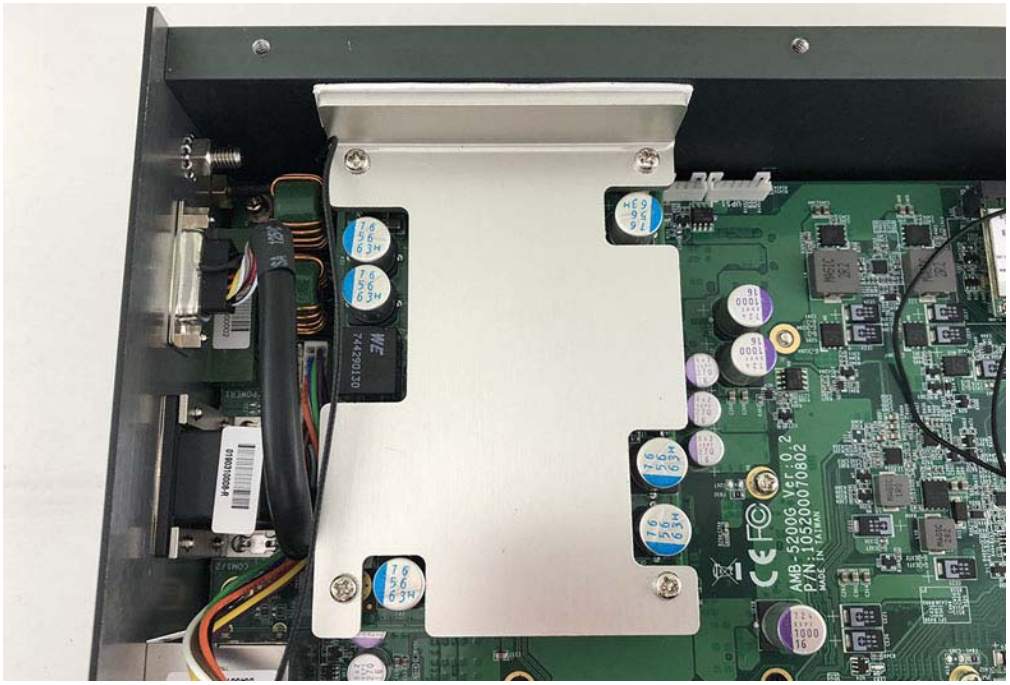


Step 3. Put the Heatsink on the POE module as shown in the picture



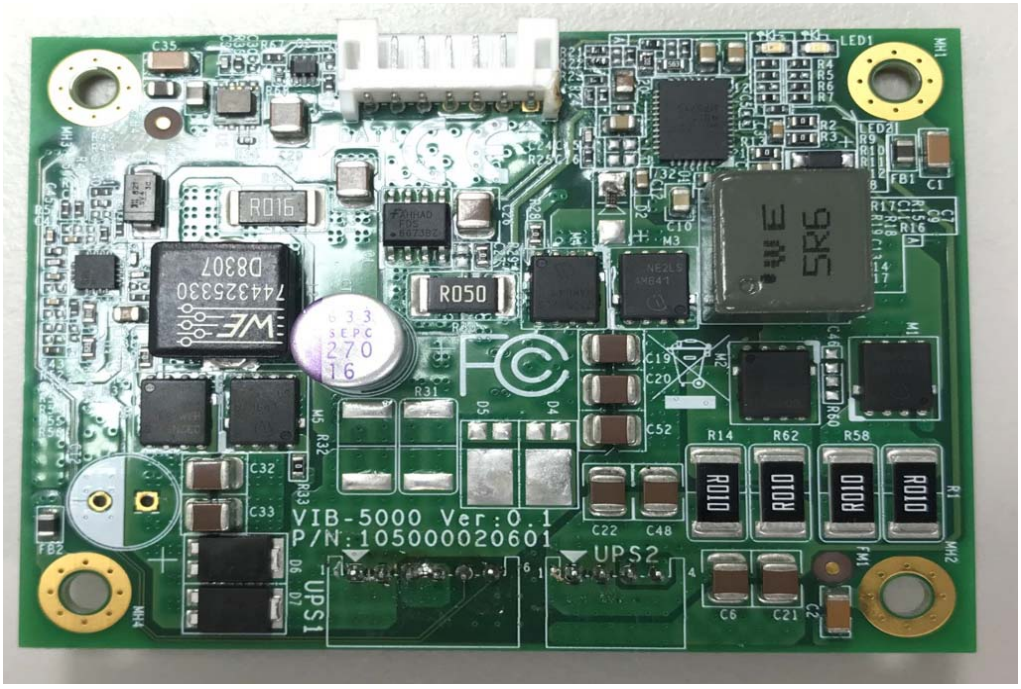
Step 4. Screw the four screws as shown in the picture

Step 5. Done as shown in the picture

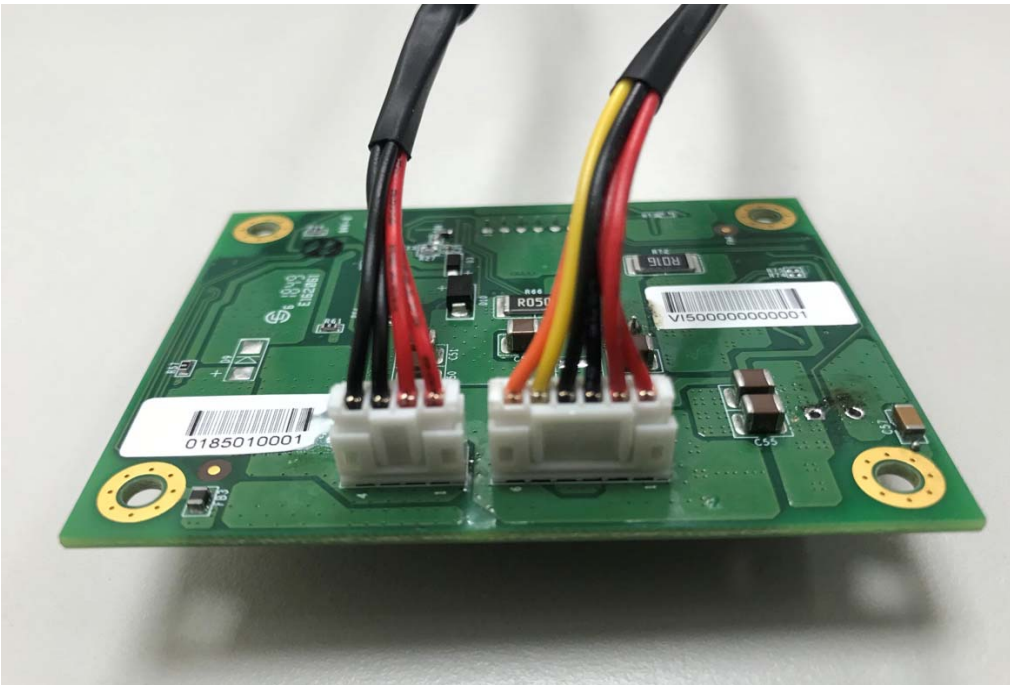


4.13 Installing Battery Module (only for optional BAT-5200 Kit)

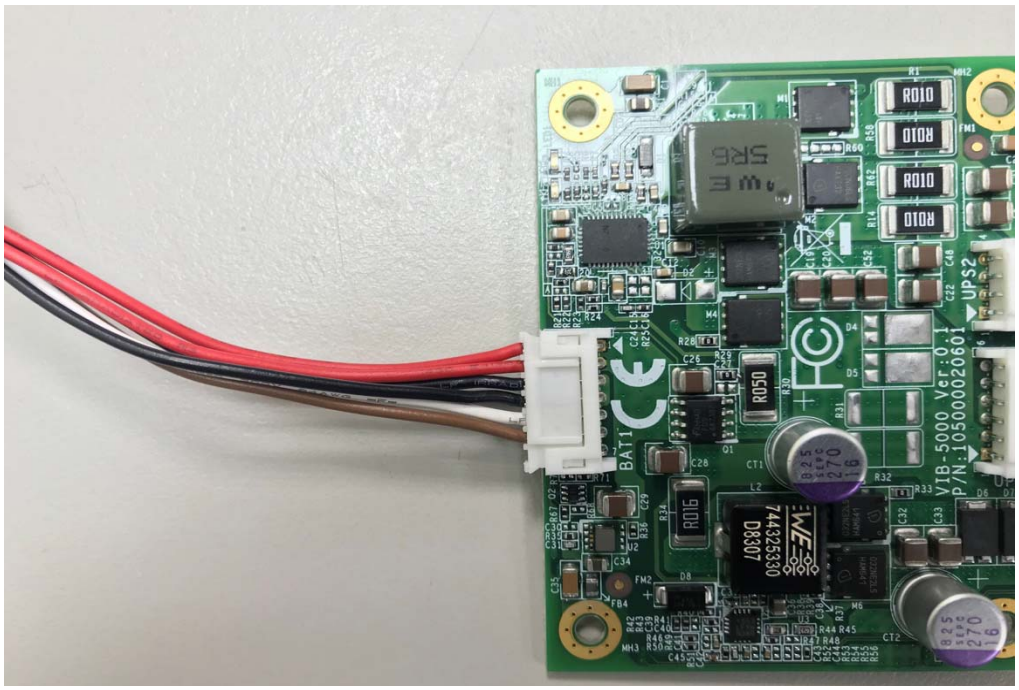
Step 1. VIB-5000 board t as shown in the picture.



Step 2. Take 6pin cable into UPS3 socket & 4pin cable into UPS4 socket on VIB-5000 Board.



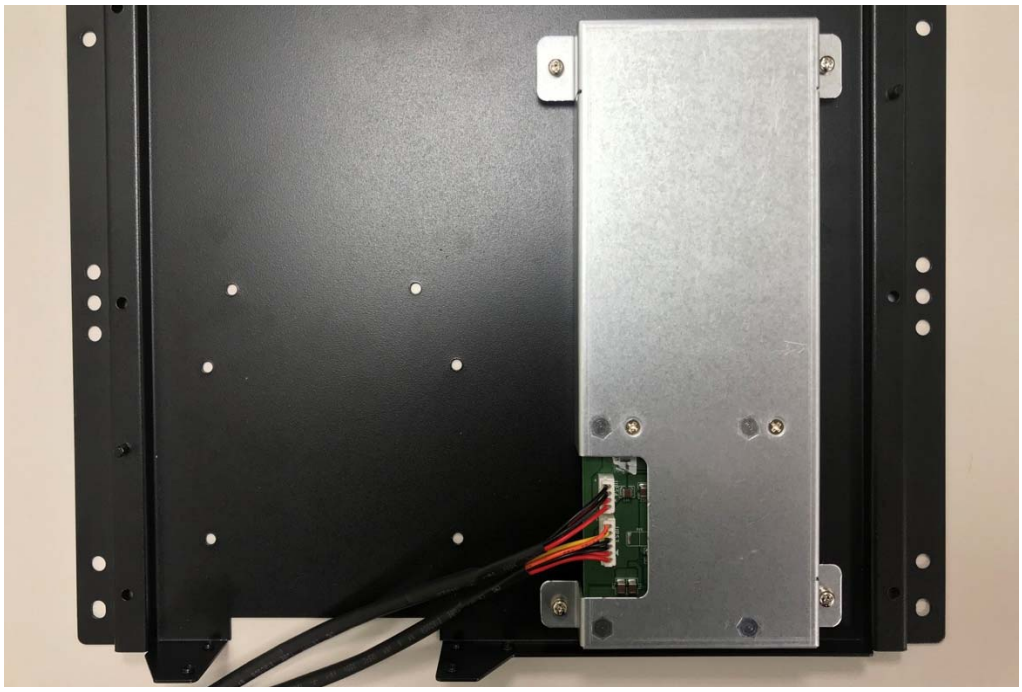
Step 3. Connect the battery with VIB-5000 on BAT-1 Socket.



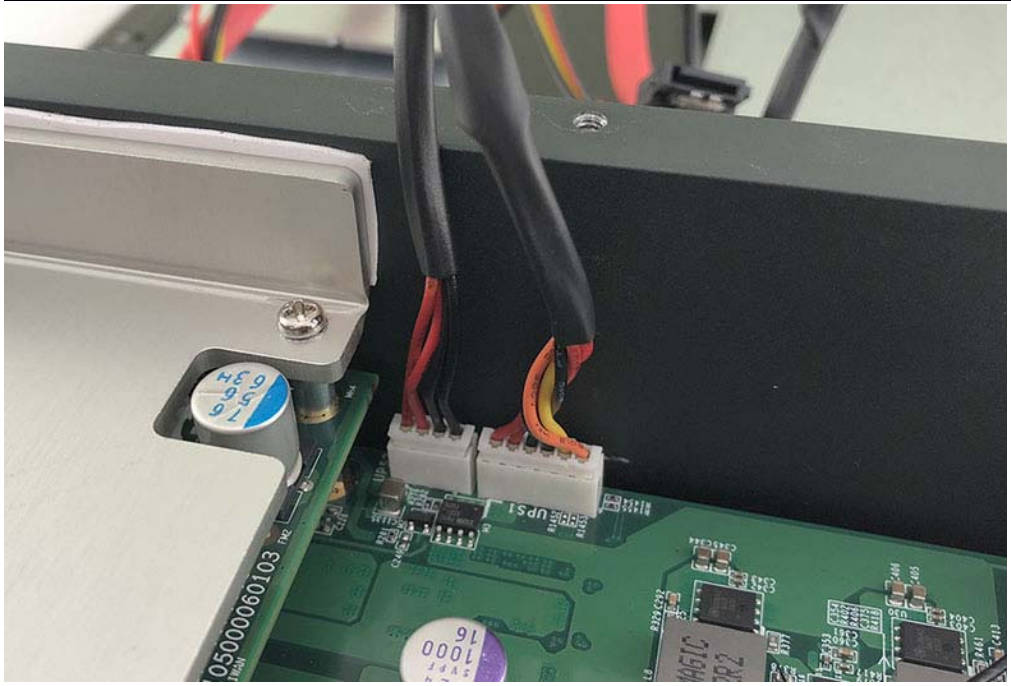
Step 4. BAT-5100 battery bracket as shown as picture.

Step 5. Put the battery and VIB-5000 board into the bracket and screw four screws as shown in the picture.

Step 6. Take the battery kit and screw four screws into the back cover as shown as picture.



Step 7. Connect the battery kit with motherboard on UPS1(6pin) & UPS2(4pin) location as shown as picture.



5.0
BIOS

5.0 BIOS

5.1 Enter The BIOS

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press (DEL) key to enter Setup.

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Important

- The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.
- Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format.

FleetPC-9-B Mainboard V1.0 073109 where :

1st digit refers to BIOS maker as A = AMI, W = AWARD, and P = PHOENIX

2nd - 5th digit refers to the model number.

6th digit refers to the chipset as I = Intel, N = NVIDIA, A = AMD and V = VIA.

7th - 8th digit refers to the customer as MS = all standard customers.

V1.0 refers to the BIOS was released.

073109 refers to the date this BIOS was released.

Control Keys

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press (DEL) key to enter Setup.

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General Help
<F3>	Load Optimized Defaults
<F4>	Save all the CMOS changes and exit

Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Sub-Menu

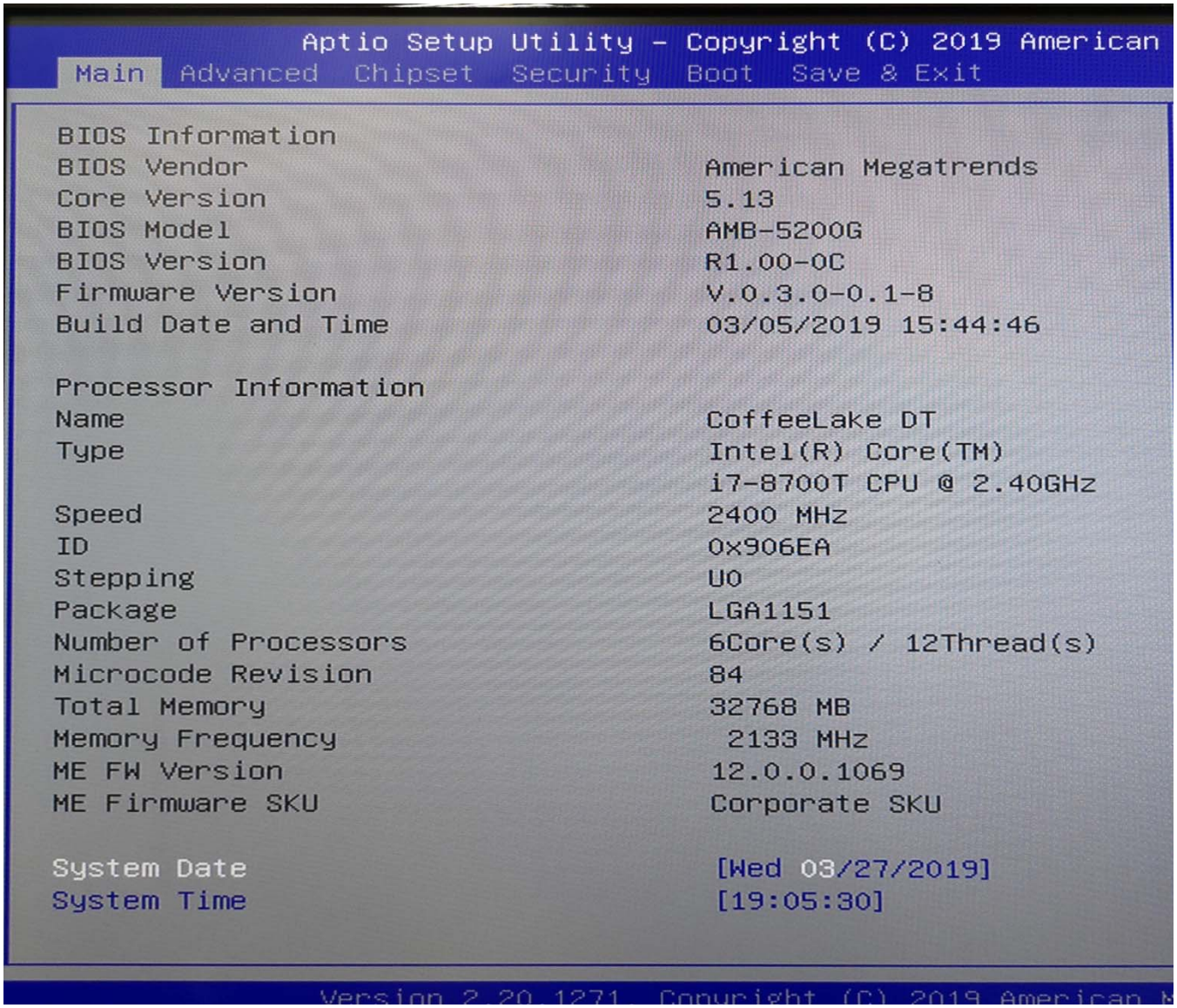
If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

5.2 Main

Time Setting

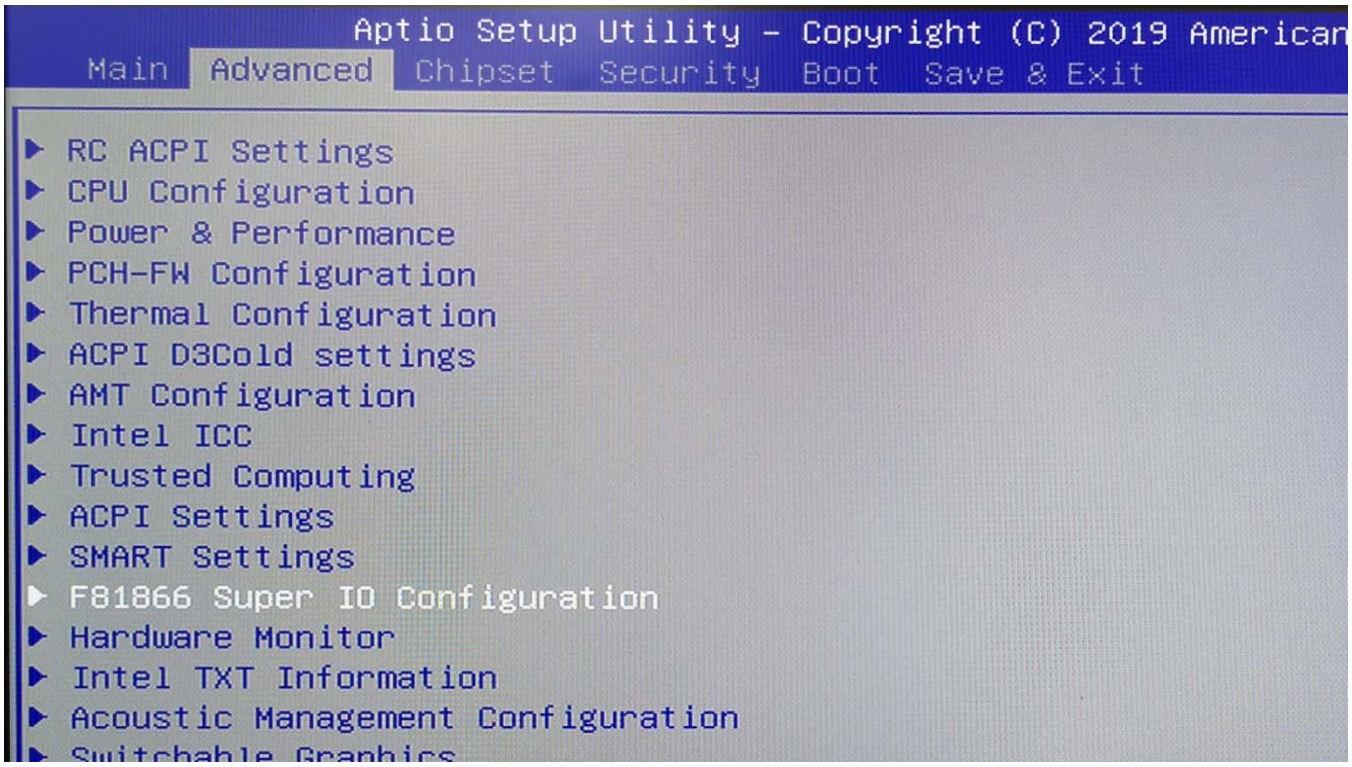


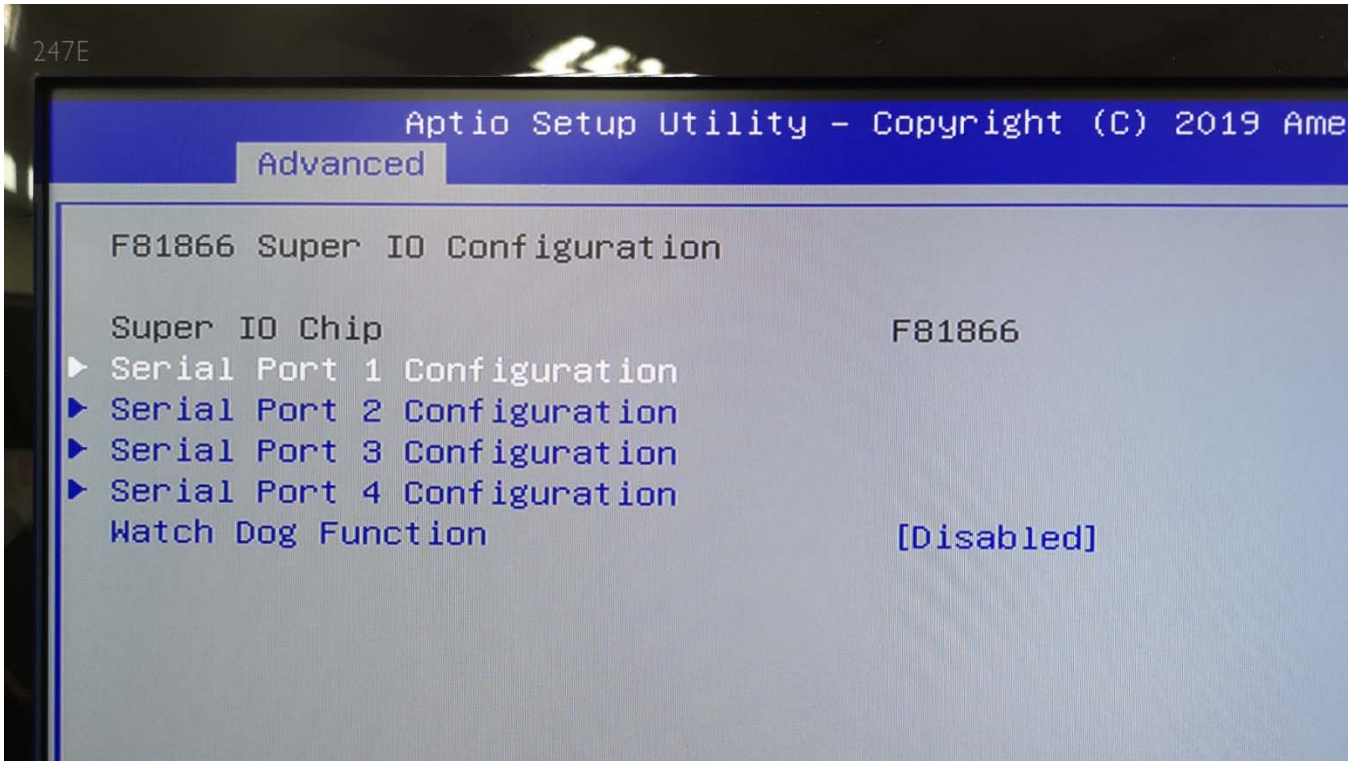
» System Date
This setting allows you to set the system Date. The time format is <Day> <Month> <Date> <Year>.

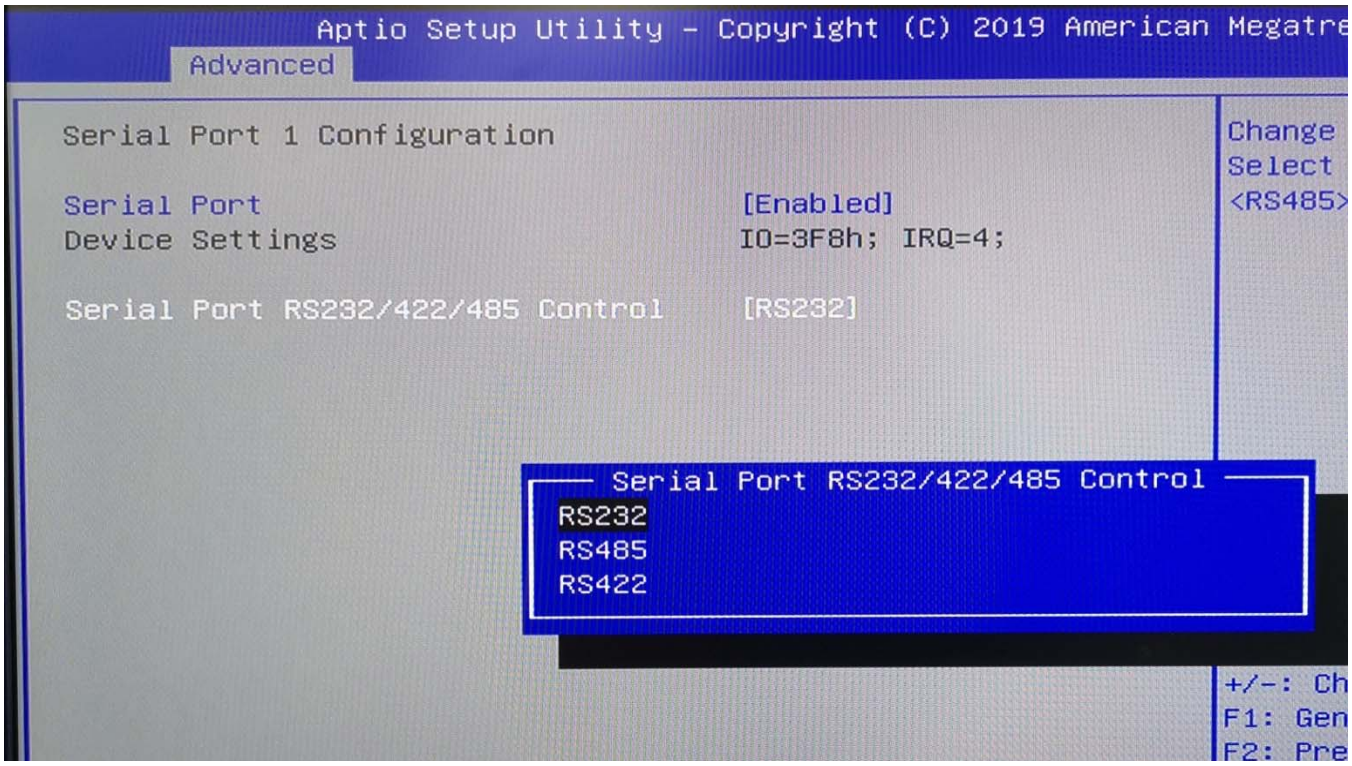
» System Time
This setting allows you to set the system time. The time format is <Hour> <Minute> <Second>.

5.3 Advanced

Serial Port Configuration





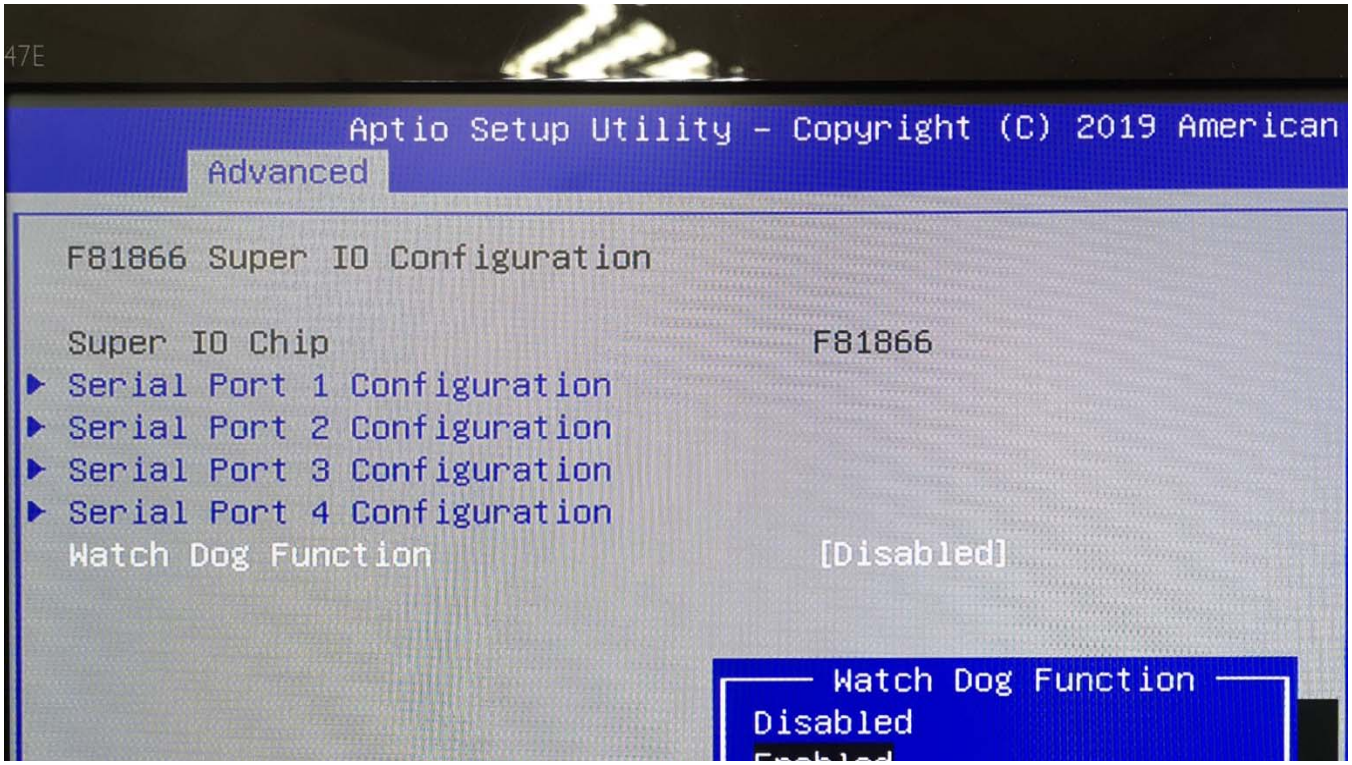


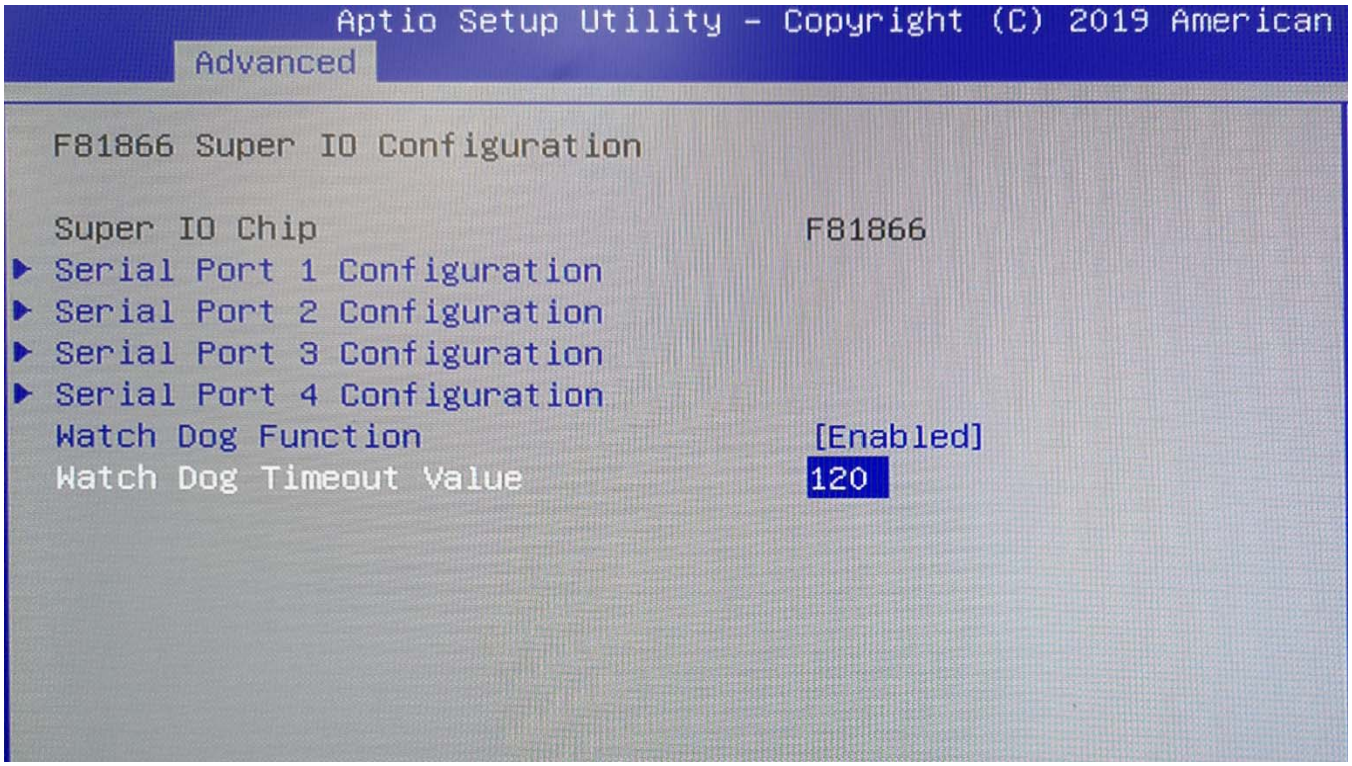
» Serial Port 1/2/3/4 Enable or Disable

Select an Enable or Disable for the specified serial ports.

» COM1 RS232/422/485 Select

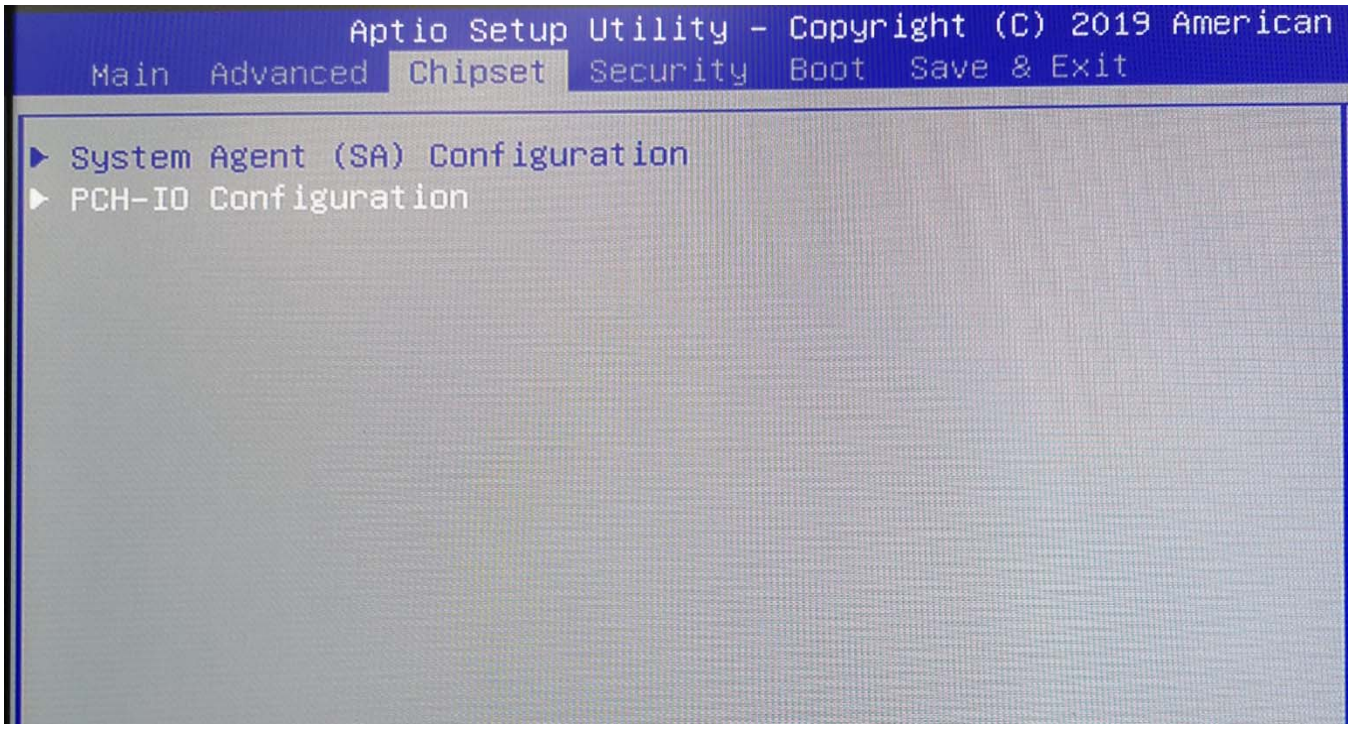
» Watch Dog Function

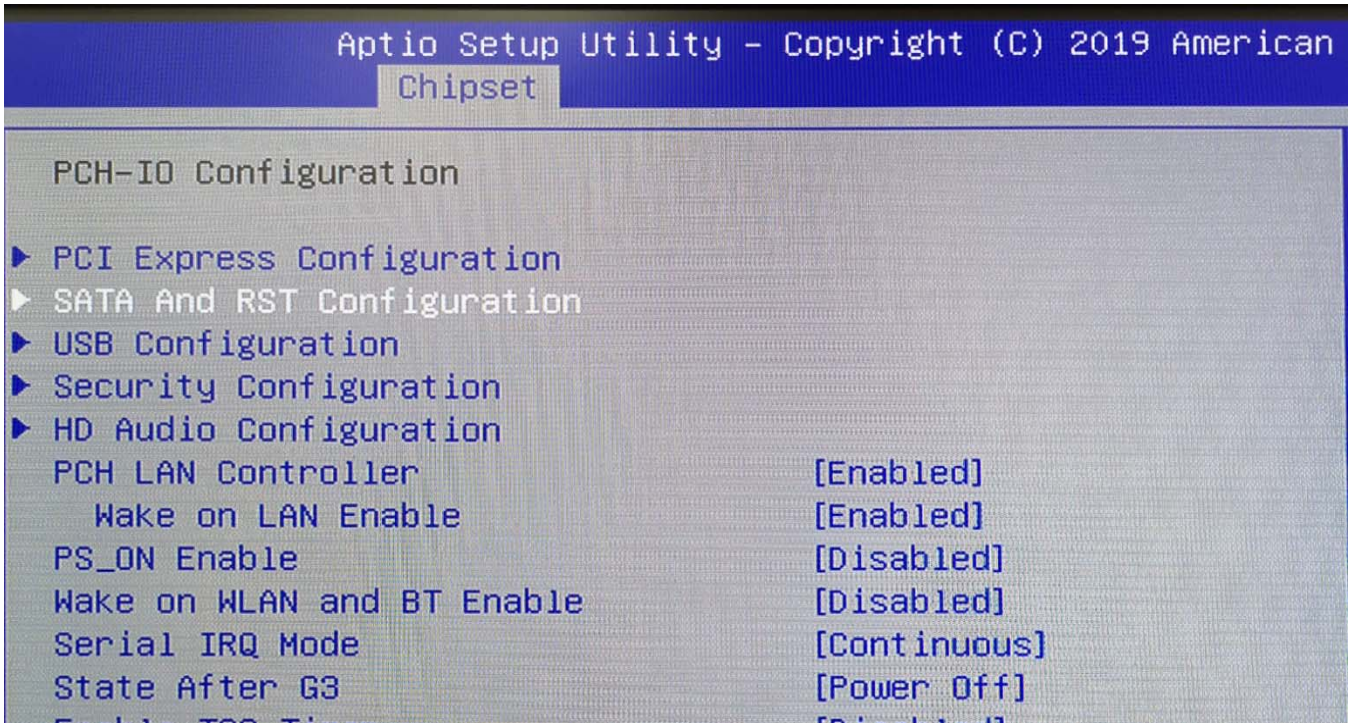


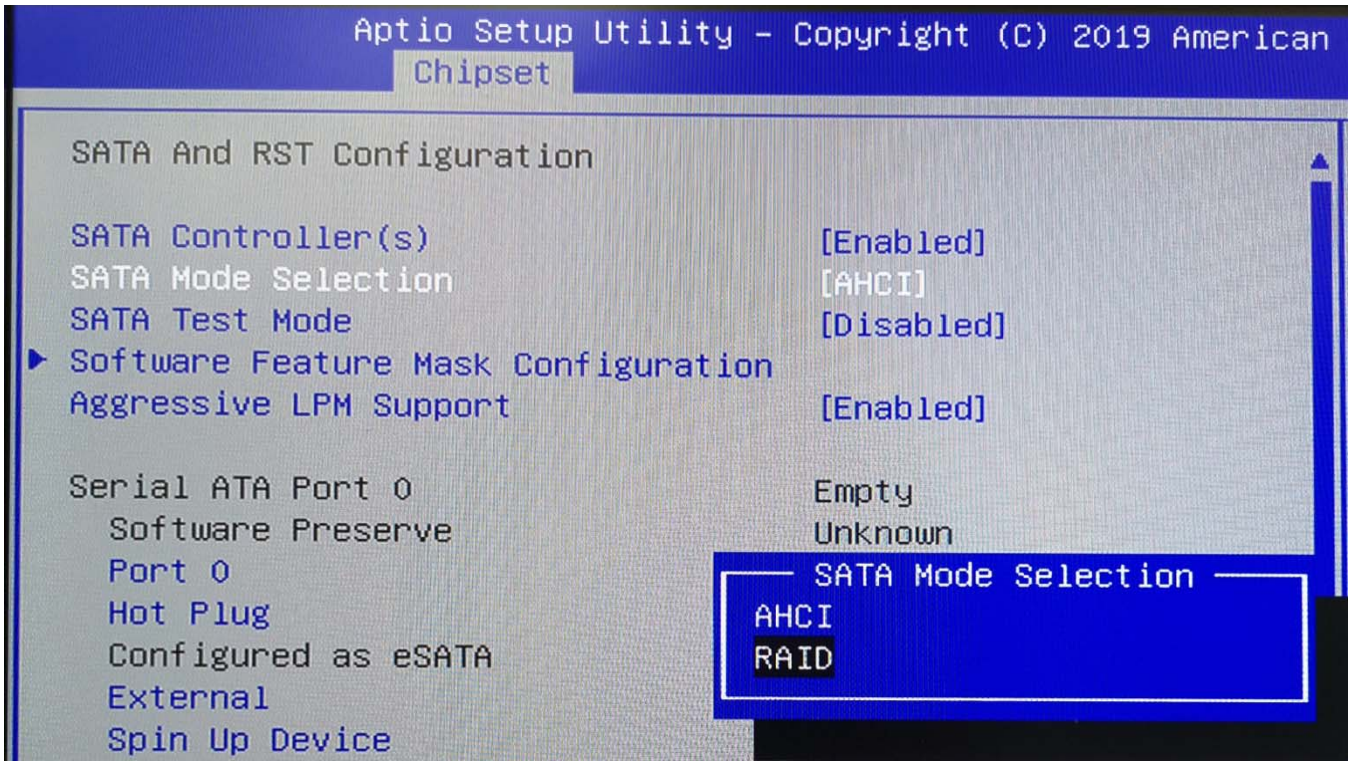


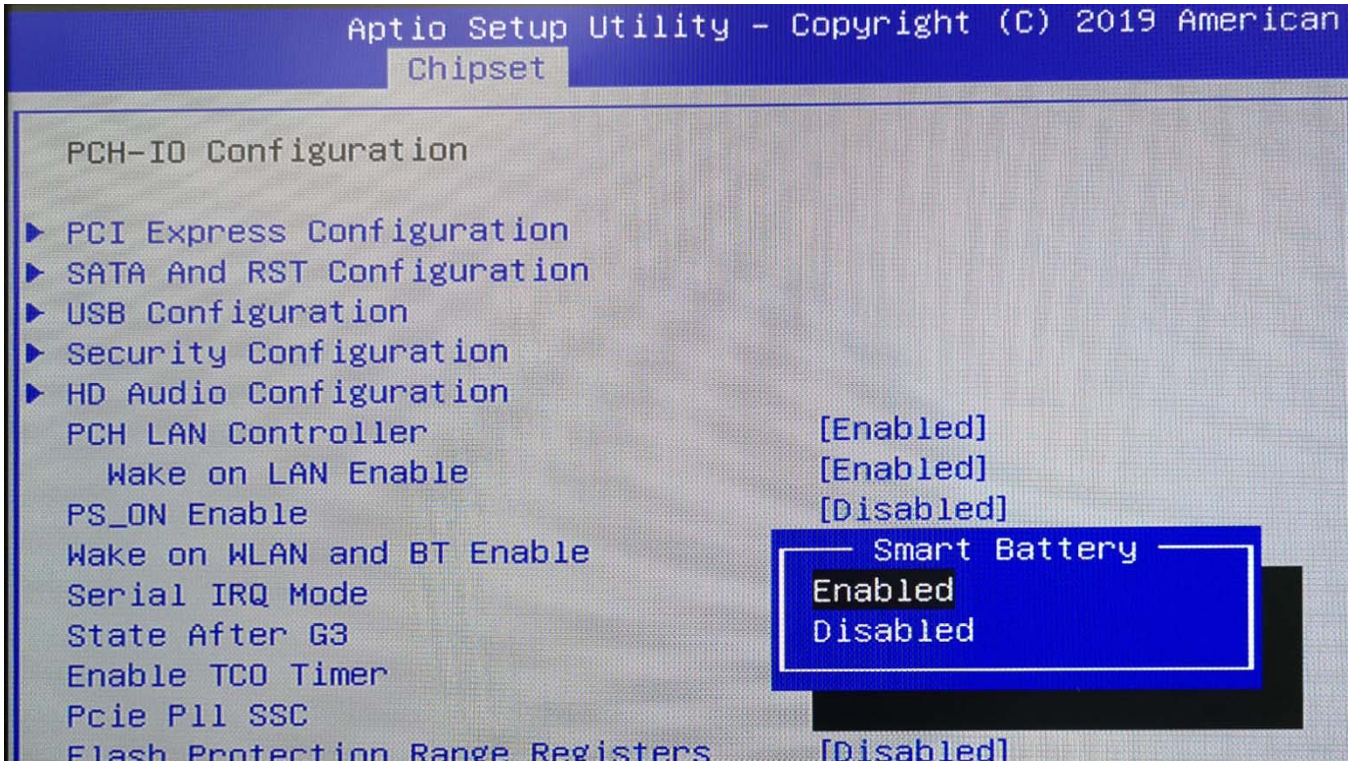
5.4 Chipset

RAID / AHCI Mode

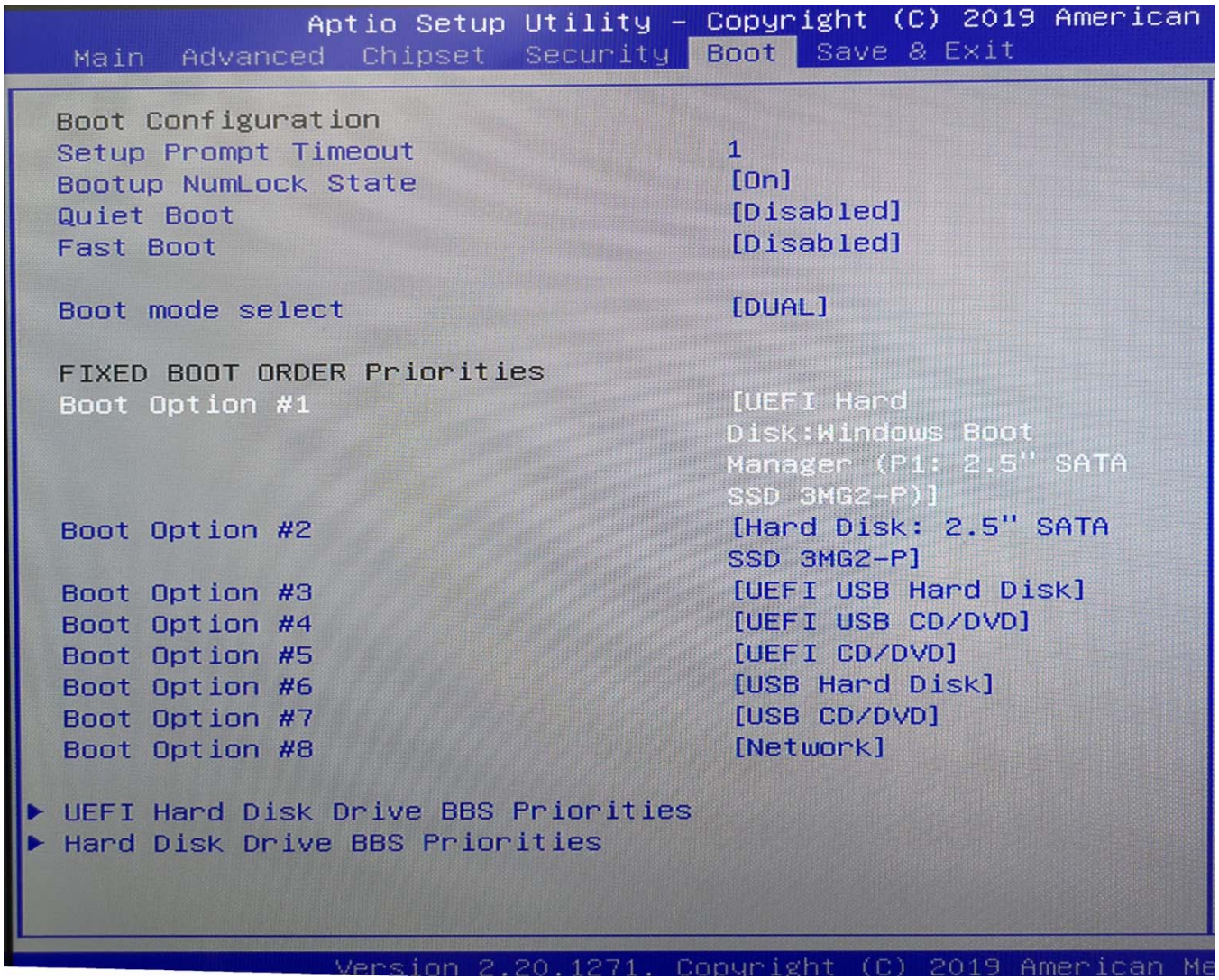





Aptio Setup Utility – Copyright (C) 2019 American
Chipset
SATA And RST Configuration
SATA Controller(s) [Enabled]
SATA Mode Selection [AHCI]
SATA Test Mode [Disabled]
Software Feature Mask Configuration
Aggressive LPM Support [Enabled]
Serial ATA Port 0 Empty
Software Preserve Unknown
Port 0
Hot Plug
Configured as eSATA
External
Spin Up Device
SATA Mode Selection
AHCI
RAID


Aptio Setup Utility – Copyright (C) 2019 American
Chipset
PCH-IO Configuration
PCI Express Configuration
SATA And RST Configuration
USB Configuration
Security Configuration
HD Audio Configuration
PCH LAN Controller [Enabled]
Wake on LAN Enable [Enabled]
PS_ON Enable [Disabled]
Wake on WLAN and BT Enable
Serial IRQ Mode
State After G3
Enable TCO Timer
Pcie Pll SSC
Flash Protection Range Registers [Disabled]
Smart Battery
Enabled
Disabled

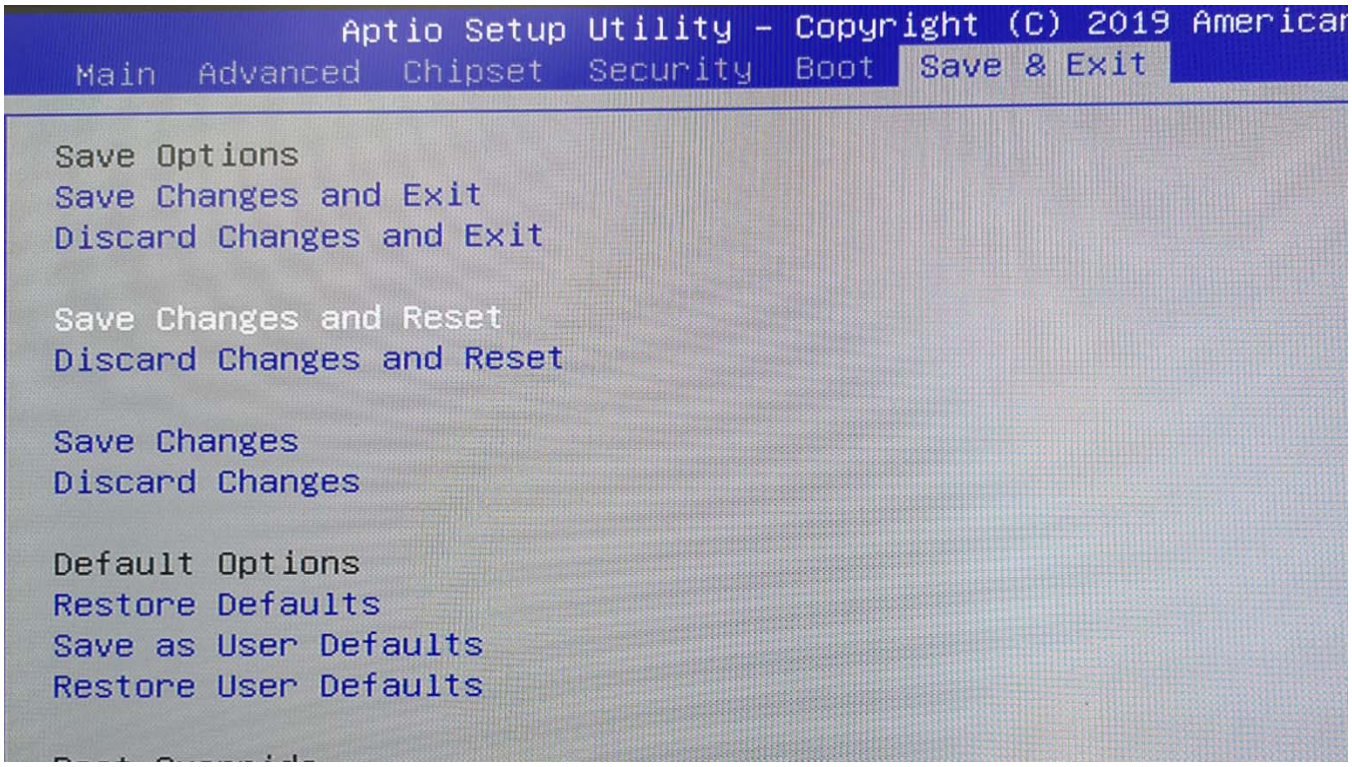
5.5 Boot

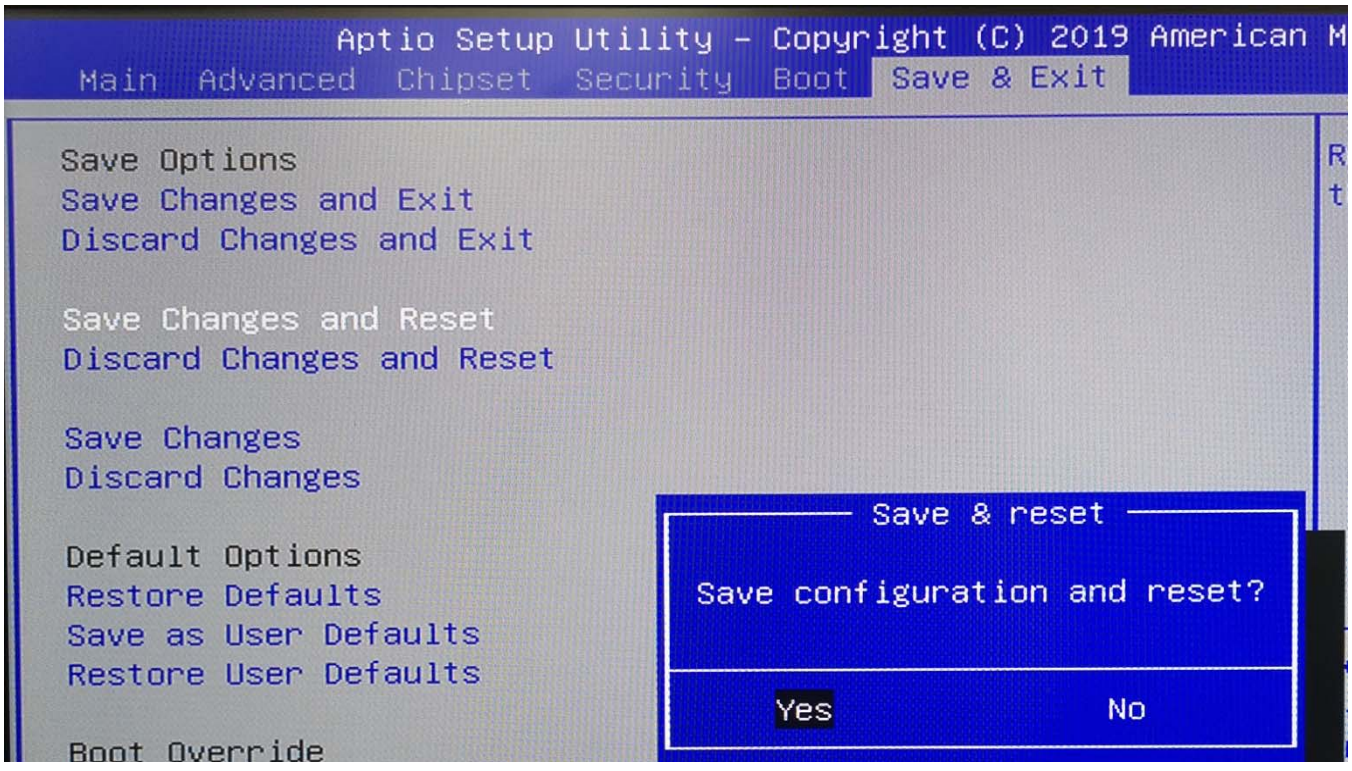


» Boot Option Priorities

The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system.

5.6 Save & Exit


Aptio Setup Utility – Copyright (C) 2019 Americar
Main Advanced Chipset Security Boot Save & Exit
Save Options
Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset
Save Changes
Discard Changes
Default Options
Restore Defaults
Save as User Defaults
Restore User Defaults


Aptio Setup Utility – Copyright (C) 2019 American M
Main Advanced Chipset Security Boot Save & Exit
Save Options
Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset
Save Changes
Discard Changes
Default Options
Restore Defaults
Save as User Defaults
Restore User Defaults
Boot Override
Save & reset
Save configuration and reset?
Yes
No

6.0
PACKING LIST

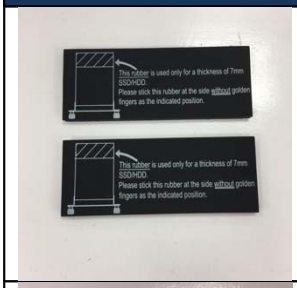
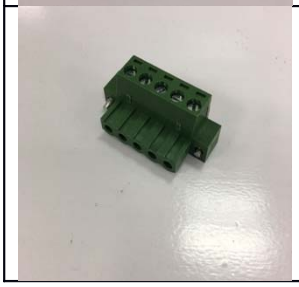
6.0 PACKING LIST

6.1 Packing List

System

Item	Part Number	Module Name
1	765200000000	FleetPC-9-BG4-i7 System
2	765200000001	FleetPC-9-BPG4-i7 System
3	765200040000	FleetPC-9-B-i7 System
4	765200040001	FleetPC-9-B-i3 System
5	765200040002	FleetPC-9-B-i5 System
6	765200060000	FleetPC-9-BG1-i7 System
7	765200070000	FleetPC-9-BP-i7 System
8	765200070001	FleetPC-9-BP-i3 System
9	765200070002	FleetPC-9-BP-i5 System
10	765200100000	FleetPC-9-BPG1-i7 System

Accessory

Picture	Part Number	Module Name	Q'ty
	417290370250	HDD-RUBBER FOR H=7 mm	2
	351103060810	ROUND HAND SCREW W/SPRING_ P3x6L	1
	326510051061	Cabling MC101-508-05GA1 F 90D	1

	351102040110	Screw I Type M2*4L ISO NI	7
	351103040250	Screw F Type M3*4L ISO BK	8