

FleetPC-9

Embedded Computing

User's Manual

Version 1.0

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CarTFT.com e.K.

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.

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Website : www.cartft.com

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1.0 INTRODUCTION

1.0 INTRODUCTION

1.1 Model Specification

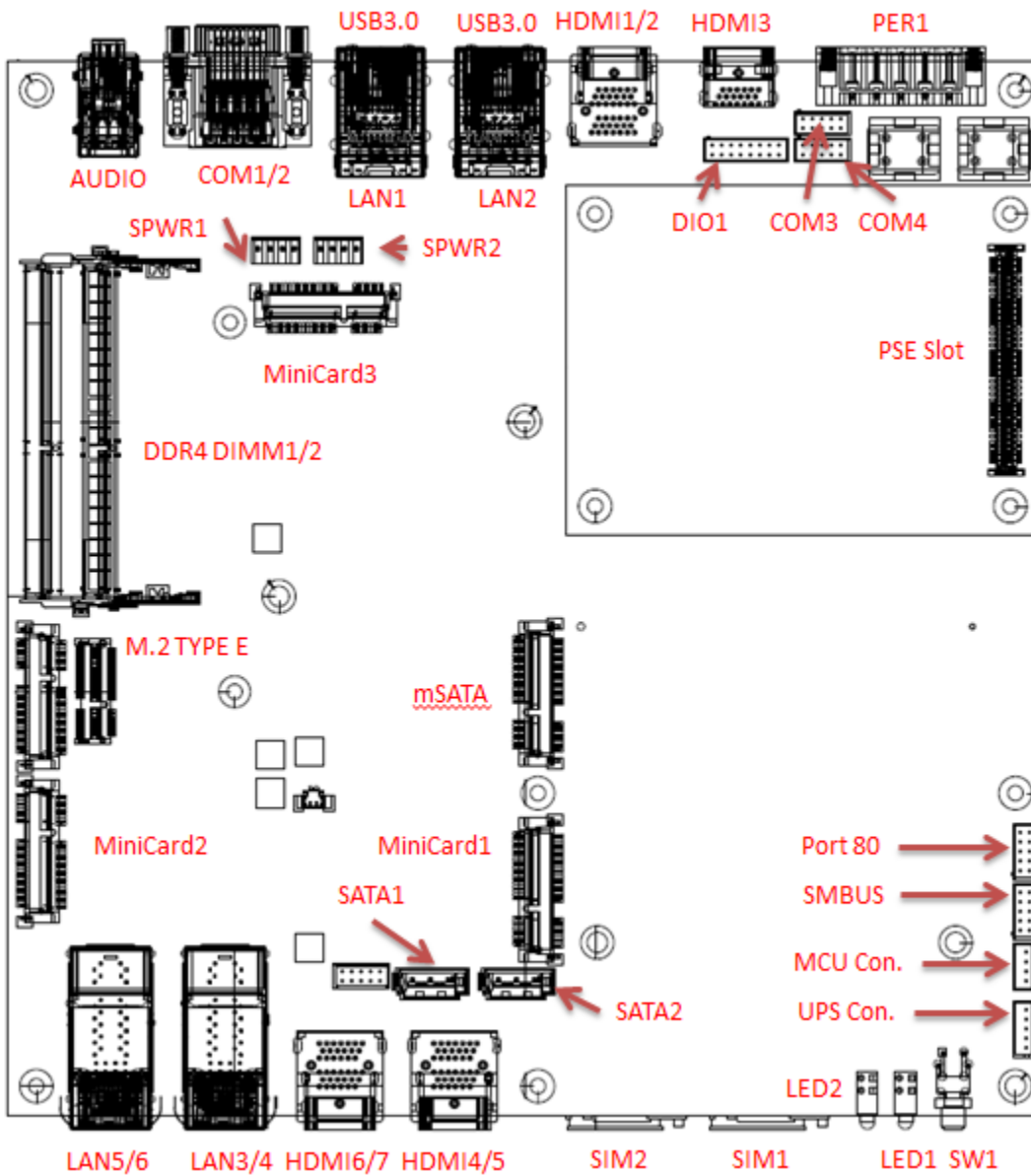


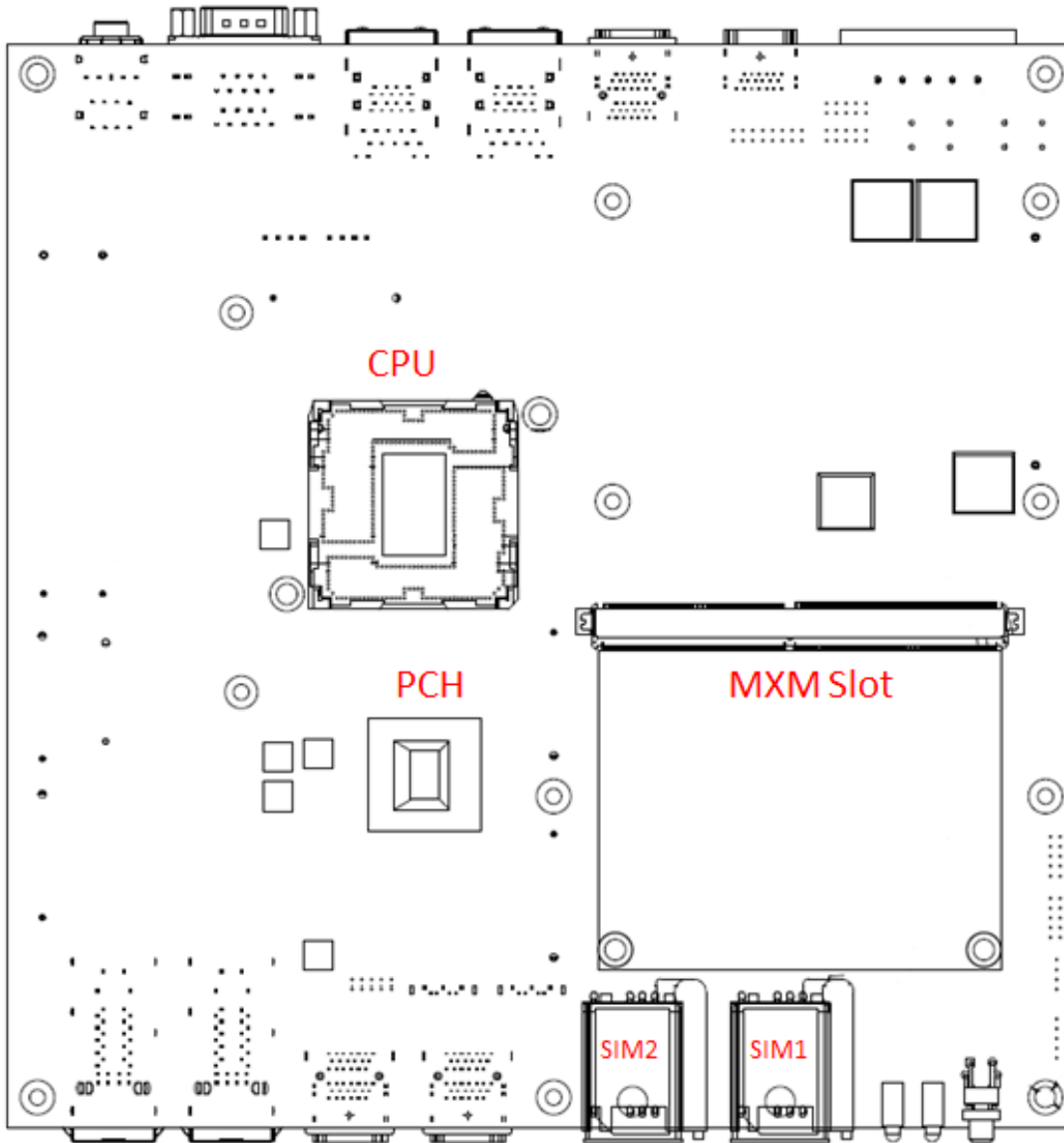
System	
CPU	Intel Gen6 Core i7-6700TE (8M Cache 2.4GHz up to 3.4GHz) Intel Gen6 Core i5-6500TE (6M Cache 2.3GHz up to 3.3GHz) Intel Gen6 Core i3-6100TE (4M Cache 2.7GHz) Intel Pentium Processor G4400TE (3M Cache, 2.40 GHz)
Memory	2 x DDR4 2133 MHz SO-DIMM up to 32GB
Chipset	Intel® Q170 Platform Controller Hub
LAN Chipset	5 x Intel i210-AT and 1 x i219LM (Support iAMT) Gb/s Ethernet Controllers Onboard Support PXE and WOL
Audio	1 x Line-out and 1 x Mic-in (Line-in Optional)
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)

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	NVIDIA® GeForce GTX 1050 GPU (768 CUDA Cores) Support for OpenGL 4.5 and OpenCL™ 1.2 Support for DirectX® 12 (Feature Level 12_0) features
Resolution	Max Resolution (HDMI 2.0b) : 7680x3840@60Hz
I/O	
Serial Port	4 x RS-232/422/485 (Auto Direction Control)
USB Port	4 x USB 3.0 Ports
LAN	6 x RJ45 Ports for GbE (Optional for 4 x POE 15.4W per port)
Video Port	7 x HDMI 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.	-40°C ~ 70°C
Storage Temp.	-40°C ~ 80°C
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, VESA-mount, Din Rail Mounting Kit
Weight	3860g (Barebone)
Dimensions	240(L) x 226(W) x 79(H) mm

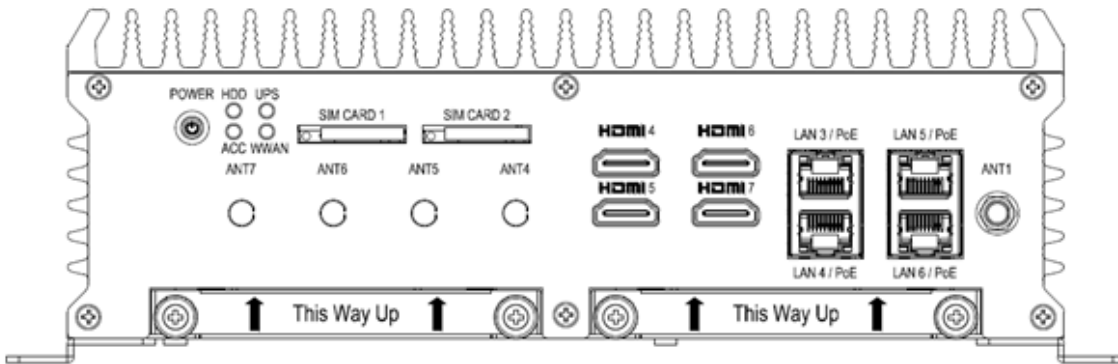
1.2 FleetPC-9 Illustration (MB, System)

Main Board

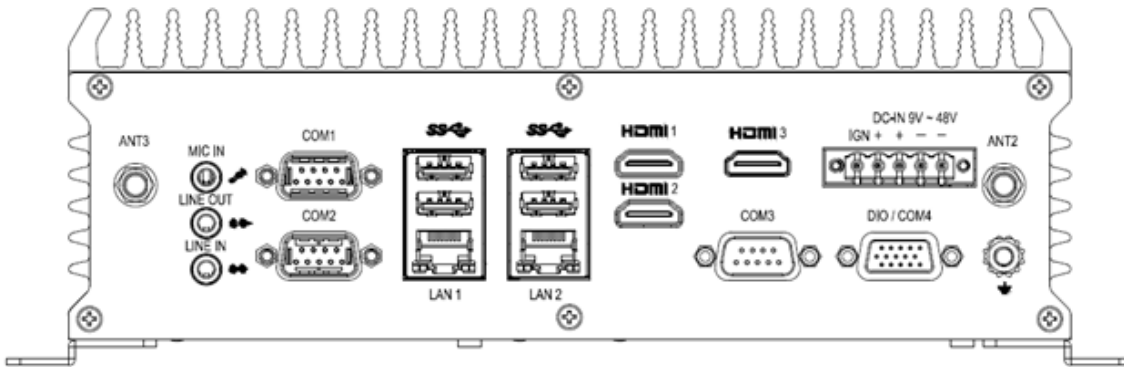




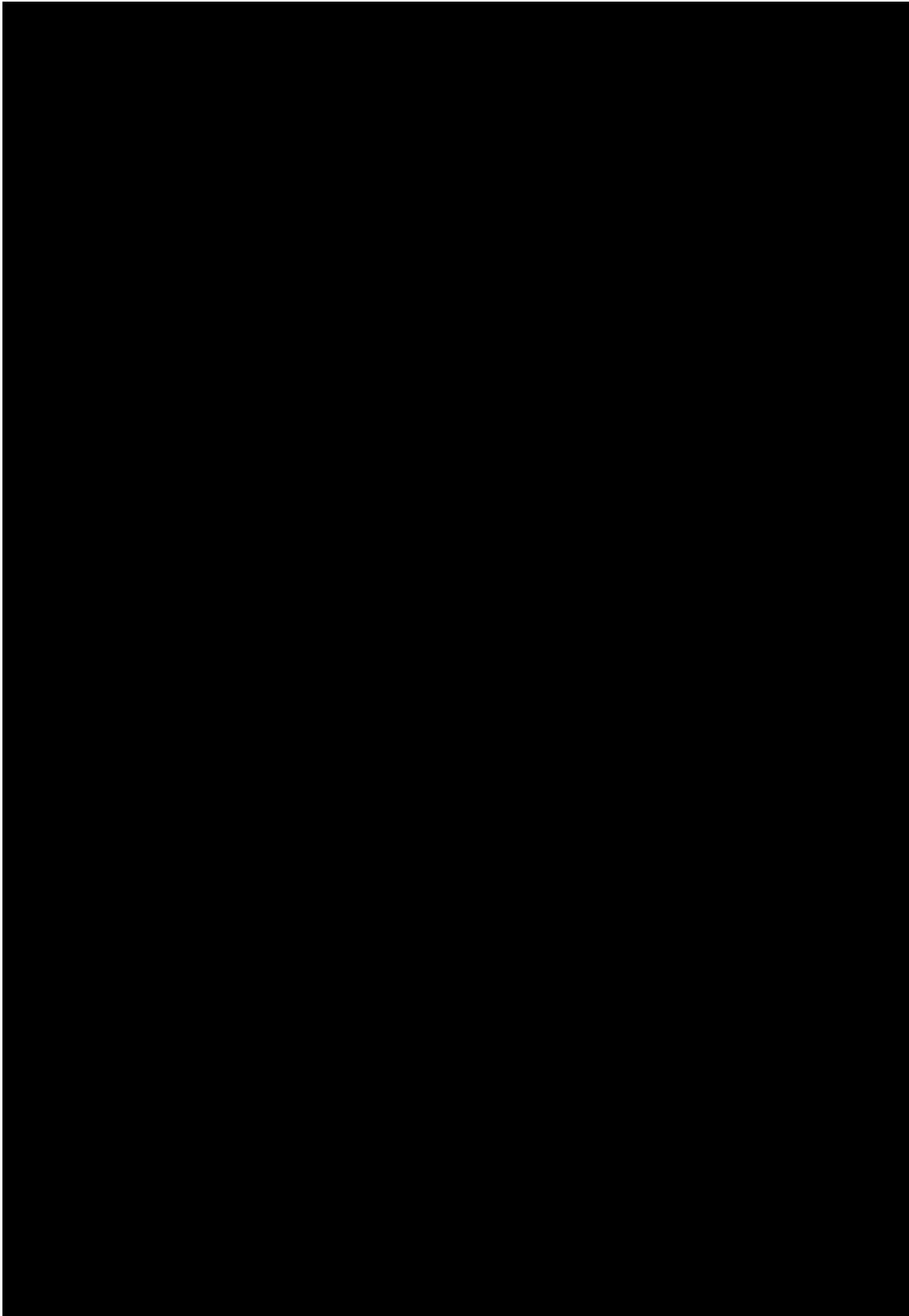
Front I/O



Rear I/O

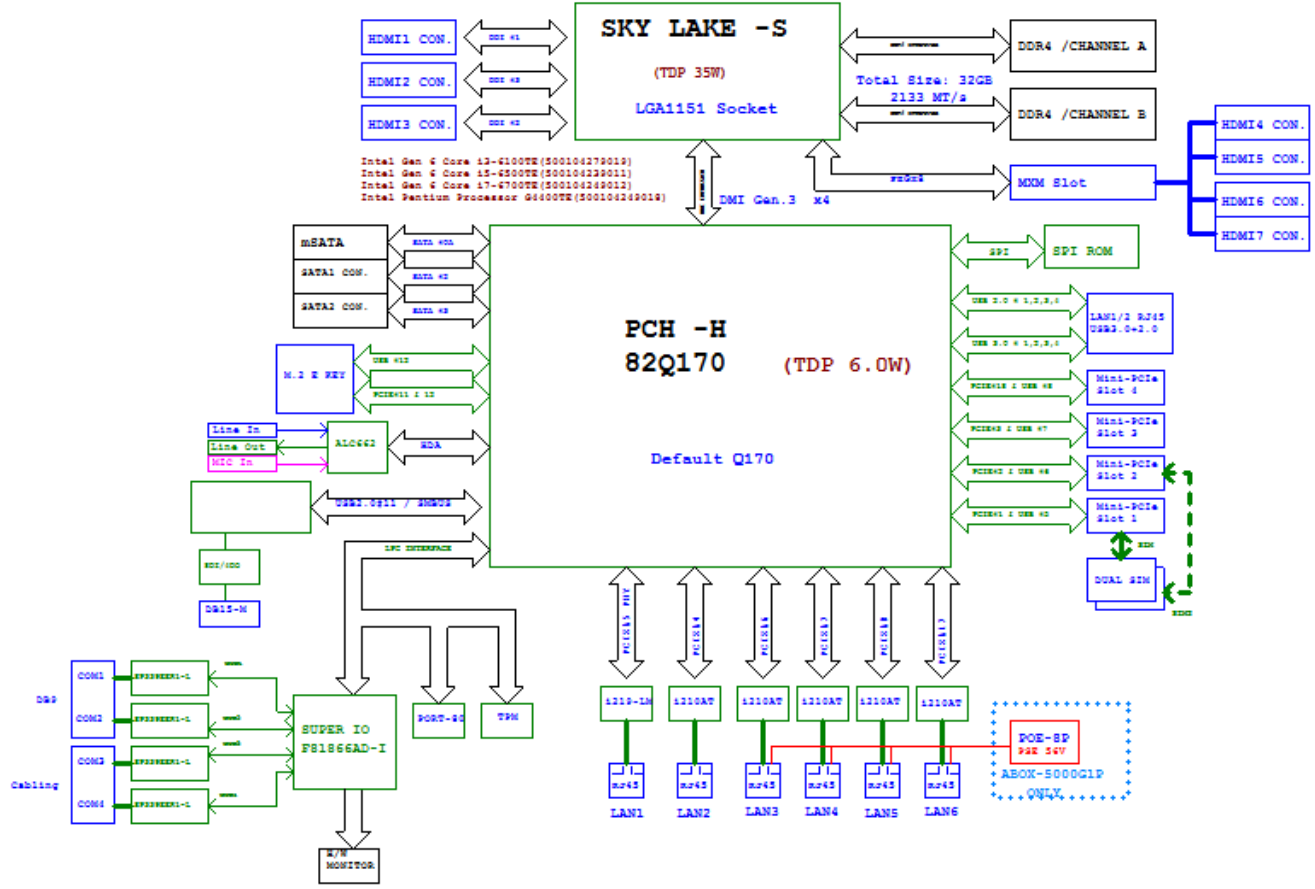


System



1.3 Architecture

ABOX-5000G1/P BLOCK DIAGRAM



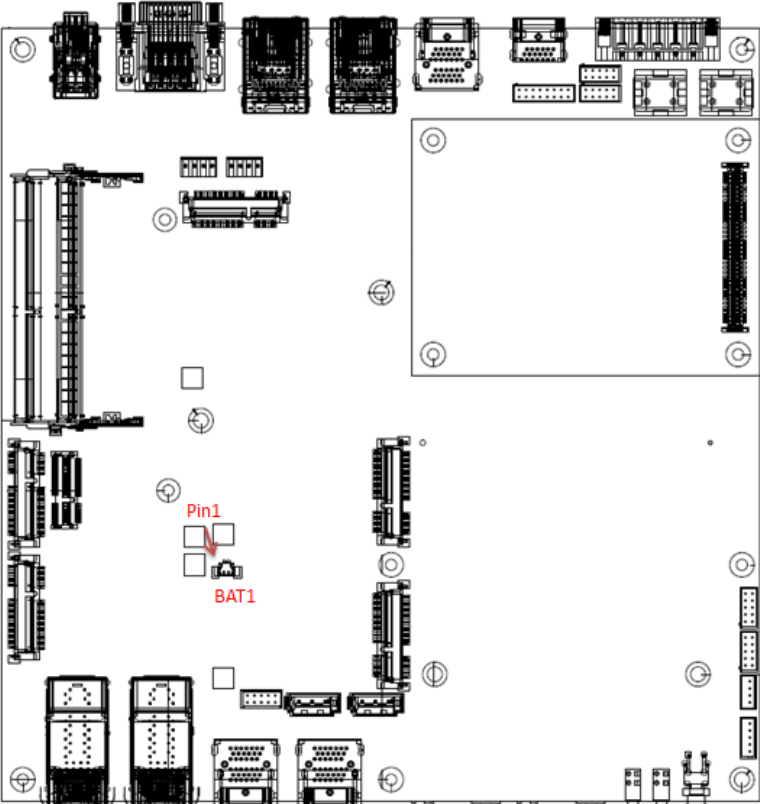
1.4 Power Consumption

Chip	Description				
Intel	Power consumption:				
	CPU	Core Frequency	Cache	TDP	Tj
	i7-6700TE(4C/8T)	3.4 GHz	8M	35W	100°C
	i5-6500TE(4C/4T)	3.3 GHz	6M	35W	100°C
	i3-6100TE(2C/4T)	2.7 GHz	4M	35W	100°C
G4400TE(2C/2T)	2.4 GHz	3M	35W	100°C	

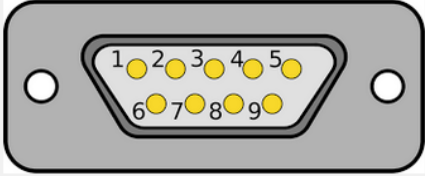
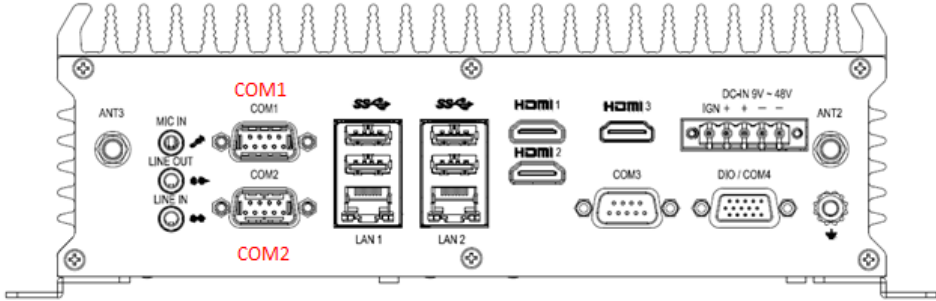
2.0
INTERNAL CONNECTOR
SPECIFICATION

2.0 INTERNAL CONNECTOR SPECIFICATION

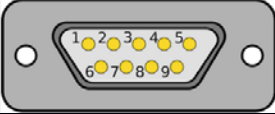
2.1 Battery Connector (BAT1)

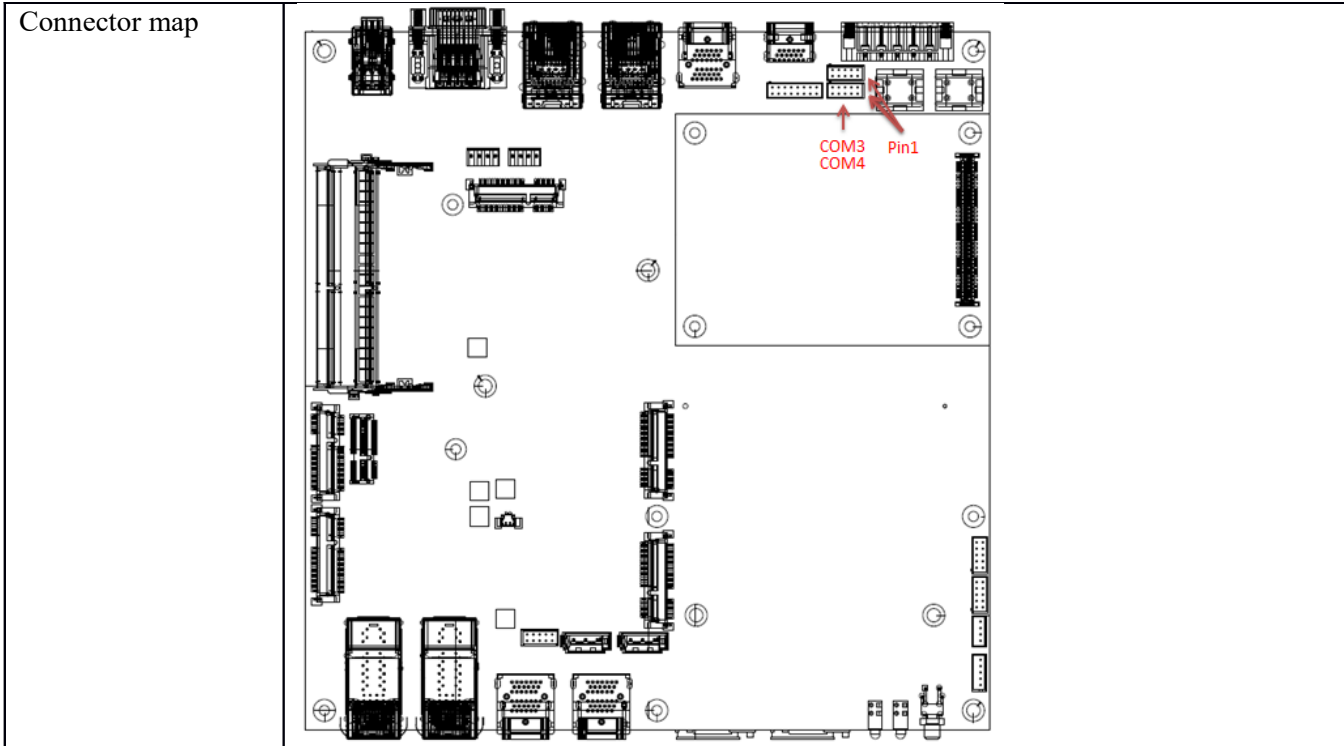
Connector size	1 X 2 = 2 Pin			
Connector type	JST-1.25mm-M-180			
Connector location	BAT1			
Connector pin definition	Pin	Signal	Pin	Signal
	1	+3VDC	2	GND
Connector map				

2.2 COM Port Connector (COM1/2)

Connector size	2 X 5 = 10 Pin																																													
Connector type	Dual DB9 Connector																																													
Connector location	COM1/COM2																																													
DB9 pin definition	 <table border="1" data-bbox="418 575 1365 961"> <thead> <tr> <th rowspan="2">Pin</th> <th colspan="3">Signal</th> </tr> <tr> <th>RS232</th> <th>RS422</th> <th>RS485</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DCD</td> <td>TXD-</td> <td>TXD-/RXD-</td> </tr> <tr> <td>2</td> <td>RXD</td> <td>TXD+</td> <td>TXD+/RXD+</td> </tr> <tr> <td>3</td> <td>TXD</td> <td>RXD+</td> <td>NC</td> </tr> <tr> <td>4</td> <td>DTR#</td> <td>RXD-</td> <td>NC</td> </tr> <tr> <td>5</td> <td>GND</td> <td>GND</td> <td>GND</td> </tr> <tr> <td>6</td> <td>DSR#</td> <td>N/C</td> <td>N/C</td> </tr> <tr> <td>7</td> <td>RTS#</td> <td>N/C</td> <td>N/C</td> </tr> <tr> <td>8</td> <td>CTS#</td> <td>N/C</td> <td>N/C</td> </tr> <tr> <td>9</td> <td>RI#</td> <td>N/C</td> <td>N/C</td> </tr> </tbody> </table>			Pin	Signal			RS232	RS422	RS485	1	DCD	TXD-	TXD-/RXD-	2	RXD	TXD+	TXD+/RXD+	3	TXD	RXD+	NC	4	DTR#	RXD-	NC	5	GND	GND	GND	6	DSR#	N/C	N/C	7	RTS#	N/C	N/C	8	CTS#	N/C	N/C	9	RI#	N/C	N/C
Pin	Signal																																													
	RS232	RS422	RS485																																											
1	DCD	TXD-	TXD-/RXD-																																											
2	RXD	TXD+	TXD+/RXD+																																											
3	TXD	RXD+	NC																																											
4	DTR#	RXD-	NC																																											
5	GND	GND	GND																																											
6	DSR#	N/C	N/C																																											
7	RTS#	N/C	N/C																																											
8	CTS#	N/C	N/C																																											
9	RI#	N/C	N/C																																											
Connector map																																														

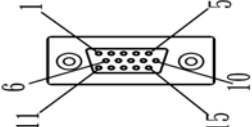
2.3 COM Port Connector (COM3/4)

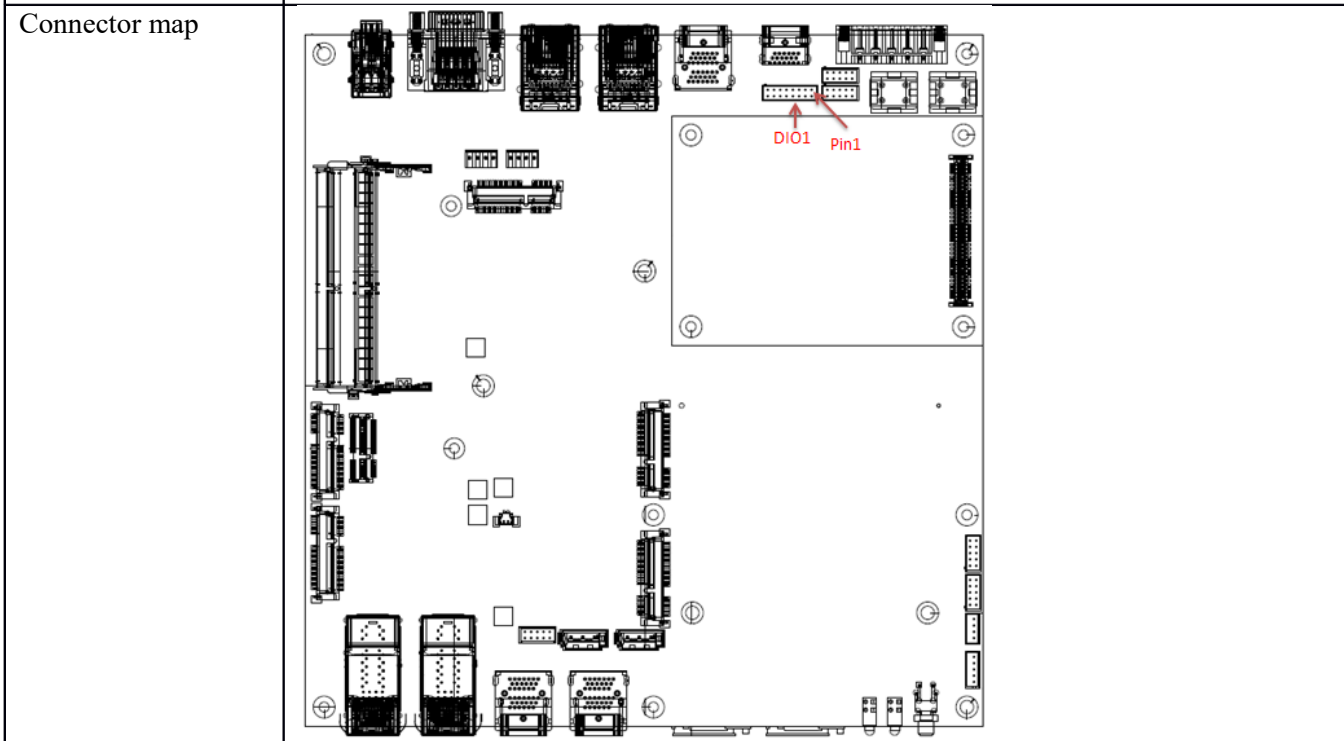
Connector size	2 X 5 = 10 Pin			
Connector type	JST-2.0mm-M-180			
Connector location	COM3/4			
Connector pin definition	Pin	Signal	Pin	Signal
	1	DCD	2	RXD
	3	TXD	4	DTR
	5	GND	6	DSR#
	7	RTS#	8	CTS#
	9	RI#	10	GND
DB9 pin definition				
	Pin	Signal		
		RS232	RS422	RS485
	1	COM2 DCD	TXD-	TXD-/RXD-
	2	COM2 RXD	TXD+	TXD+/RXD+
	3	COM2 TXD	RXD+	NC
	4	COM2 DTR	RXD-	NC
	5	GND	GND	GND
	6	DSR#	N/C	N/C
	7	RTS#	N/C	N/C
	8	CTS#	N/C	N/C
	9	RI#	N/C	N/C



2.4 DI/DO Connector (DIO1)

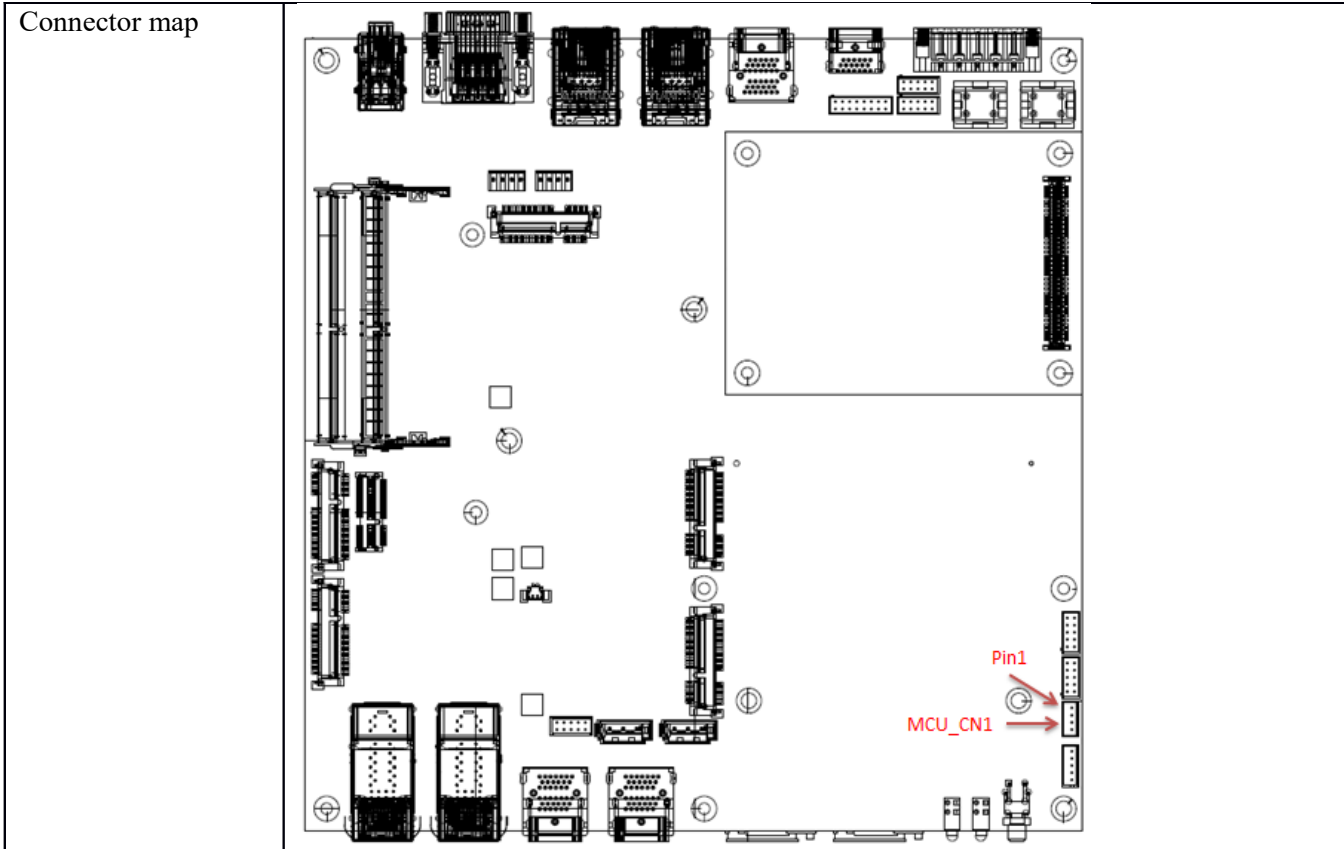
Connector size	2 X 8 = 16 Pin			
Connector type	JST-2.0mm-M-180			
Connector location	DIO1			
Connector pin definition	Pin	Signal	Pin	Signal
	1	DO 1	2	DO 2
	3	DO 3	4	DO 4
	5	GND	6	GND
	7	DI 1	8	DI 2
	9	DI 3	10	DI 4
	11	DI 5	12	DI 6
	13	DI 7	14	DI 8
	15	GND	16	CASE GND

DB15MALE pin definition				
	Pin	Signal	Pin	Signal
	1	DO 1	2	DO 2
	3	DO 3	4	DO 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		



2.5 MCU Down Connector (MCU_CN1)

Connector size	1 X 4 = 4 Pin		
Connector type	JST-2.0mm-M-180		
Connector location	MCU_CN1		
Connector pin definition	Pin	Signal	
	1	MCU PROGRAM	
	2	RXD	
	3	GND	
	4	TXD	



2.6 POWER Button Switch (SW1)

Connector size	8 PIN	
Connector type	DIP-Switch	
Connector location	SW1	
Connector pin definition	Pin	Signal
	1	GND
	2	PWRBTN#
	3	PWRBTN#

	4	GND
	C1	PWRLED P (RED LED)
	A1	PWRLED N (GREEN LED)
	MH1	N/C
	MH2	N/C
Connector map		

2.7 SATA Power Connector (SPWR1&2)

Connector size	1 X 4 = 4 Pin
Connector type	WAFER 2.54mm-M-180
Connector location	SPWR1 & 2

Connector pin definition	Pin	Signal
	1	+5V
	2	GND
	3	GND
	4	+12V
Connector map		

2.8 SATA Connector (SATA 1&2)

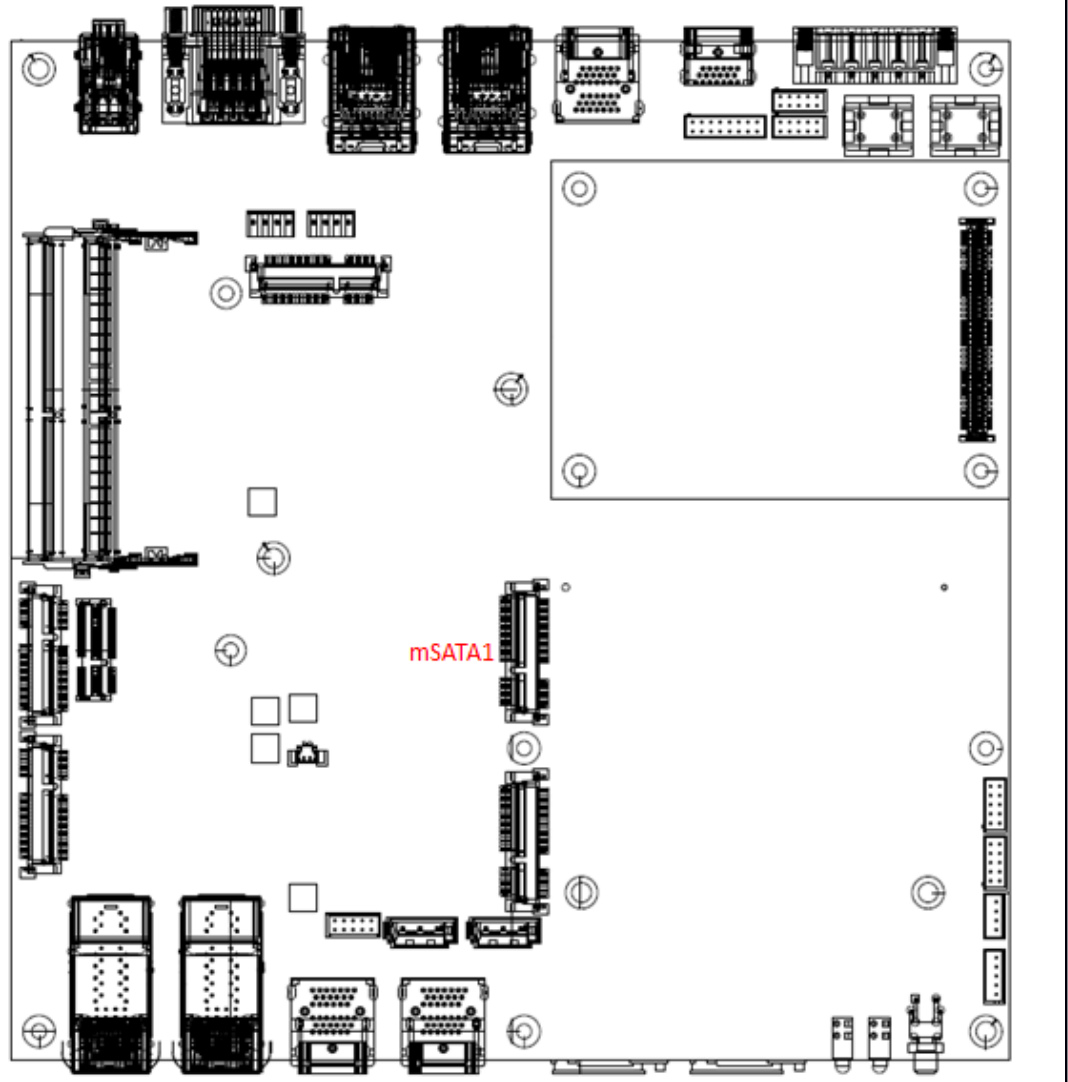
Connector size	1 X 7 = 7 Pin
----------------	---------------

Connector type	SATA 1.27mm-M-180D	
Connector location	SATA1&2	
Connector pin definition	Pin	Signal
	1	GND
	2	SATA TXP
	3	SATA TXN
	4	GND
	5	SATA RXN
	6	SATA RXP
7	GND	
Connector map		

2.9 SATA DOM Connector (SATADOM1)

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	PCIE WAKE#	2	3VSB
	3	NC	4	GND
	5	NC	6	+1.5V
	7	NC	8	NC
	9	GND	10	NC
	11	NC	12	NC
	13	NC	14	NC
	15	GND	16	NC
	17	NC	18	GND
	19	NC	20	NC
	21	GND	22	NC
	23	SATA RX P	24	3VSB
	25	SATA RX N	26	GND
	27	GND	28	+1.5V
	29	GND	30	NC
	31	SATA TX P	32	NC
	33	SATA TX N	34	GND
	35	GND	36	USB D-
	37	GND	38	USB D+
	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	

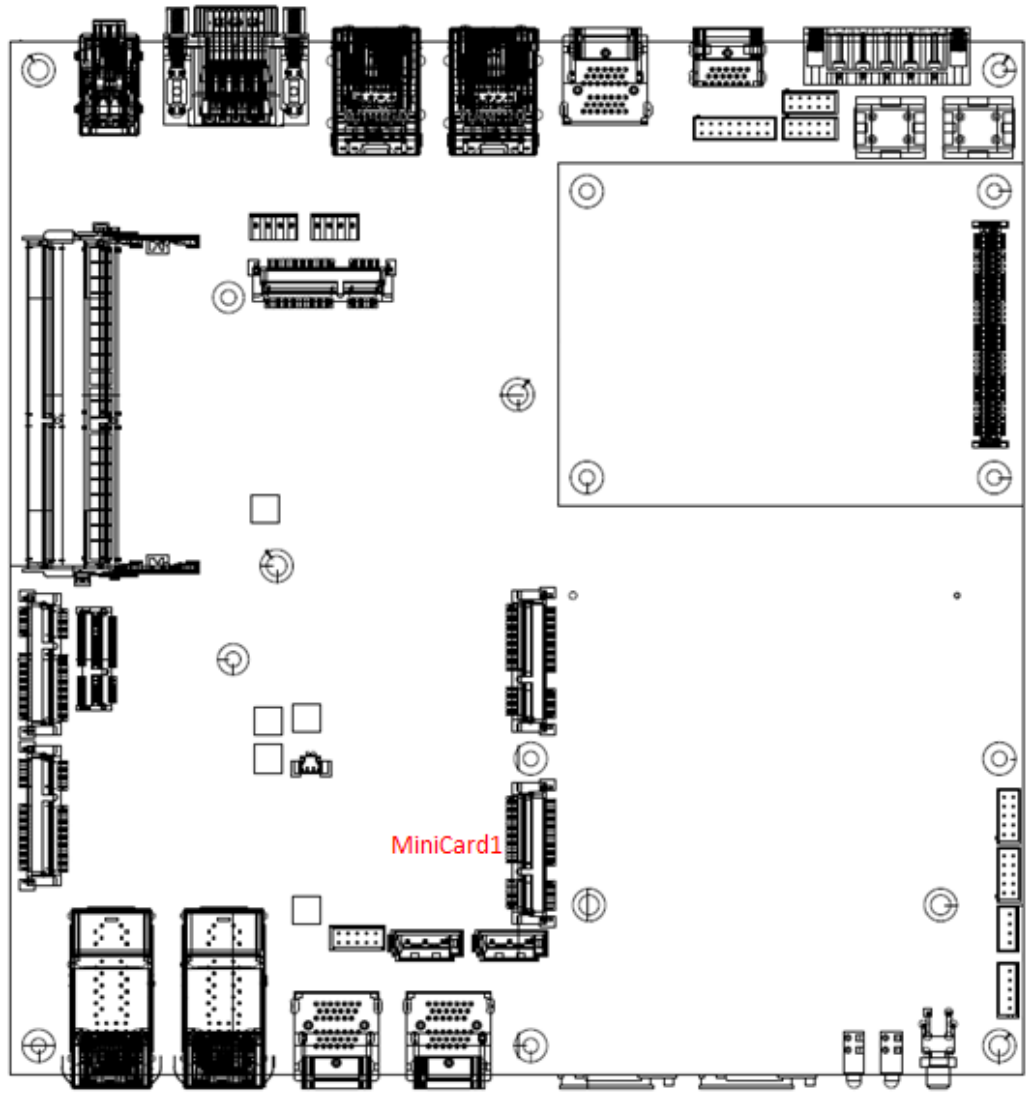
Connector map



2.10 Mini PCI-E Connector (MINICARD1)

Connector size	2 X 26 = 52 Pin			
Connector type	MINI PCI-E CON 9.2mmH			
Connector location	MINICARD1 (3G/LTE)			
Connector pin definition	Pin	Signal	Pin	Signal
	1	PCIE WAKE#	2	3VSB
	3	NC	4	GND
	5	NC	6	NC
	7	NC	8	UIM1 PWR
	9	GND	10	UIM1 DATA
	11	NC	12	UIM1 CLK
	13	NC	14	UIM1 RST
	15	GND	16	NC
	17	NC	18	GND
	19	NC	20	W_DISABLE#
	21	GND	22	PERST#
	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 D-
	37	GND	38	USB D+
	39	3VSB	40	GND
	41	3VSB	42	LED WWAN#
	43	GND	44	NC
	45	NC	46	NC
	47	NC	48	NC
	49	NC	50	GND
51	NC	52	3VSB	

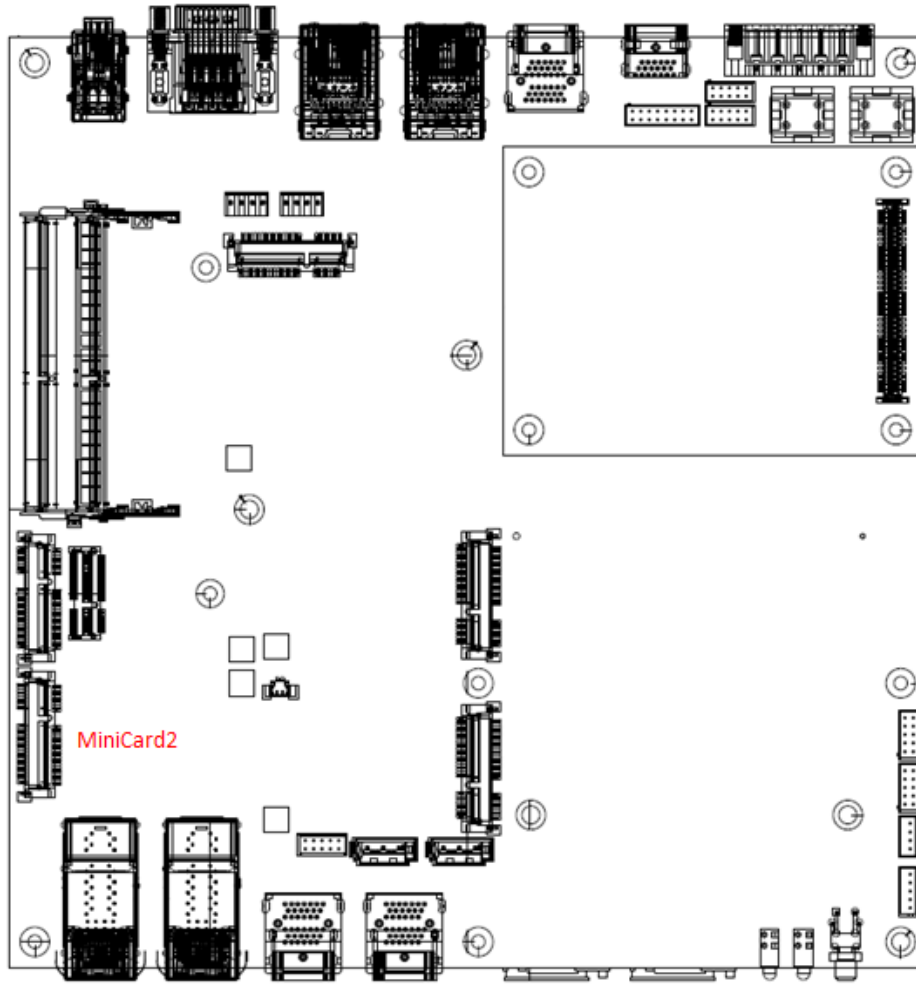
Connector map



2.11 Mini PCI-E Connector (MINICARD2)

Connector size	2 X 26 = 52 Pin			
Connector type	MINI PCI-E CON 9.2mmH			
Connector location	MINICARD2 (Mini PCI-E spec. V1.2)			
Connector pin definition	Pin	Signal	Pin	Signal
	1	PCIE_WAKE#	2	3VSB
	3	NC	4	GND
	5	NC	6	+1.5V
	7	CLKREQ#	8	UIM2_PWR
	9	GND	10	UIM2_DATA
	11	CLK_N	12	UIM2_CLK
	13	CLK_P	14	UIM2_RST
	15	GND	16	NC
	17	NC	18	GND
	19	NC	20	W_DISABLE#
	21	GND	22	PERST#
	23	PERn0	24	3VSB
	25	PERp0	26	GND
	27	GND	28	+1.5V
	29	GND	30	SMBCLK
	31	PETn0	32	SMBDATA
	33	PETp0	34	GND
	35	GND	36	USB_D-
	37	GND	38	USB_D+
	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	

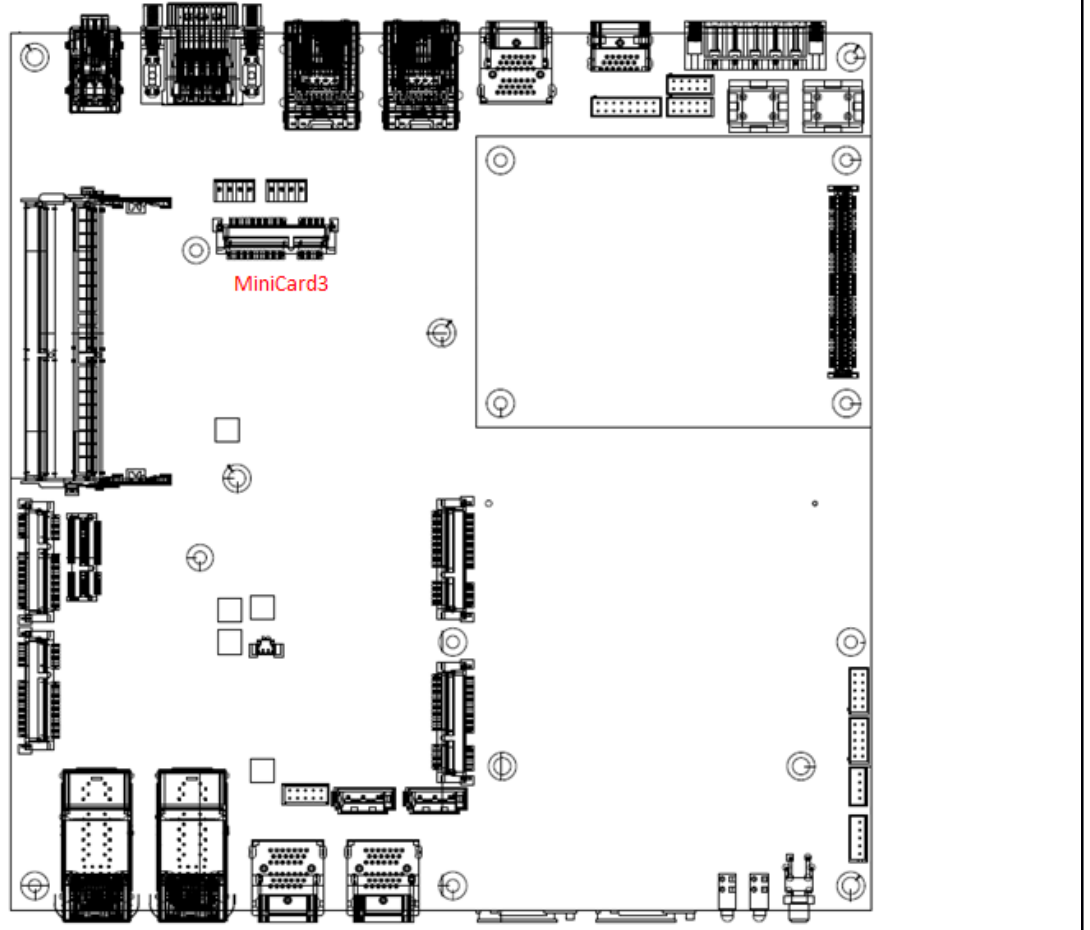
Connector map



2.12 Mini PCI-E Connector (MINICARD3)

Connector size	2 X 26 = 52 Pin			
Connector type	MINI PCI-E CON 9.2mmH			
Connector location	MINICARD3 (Mini PCI-E spec. V1.2)			
Connector pin definition	Pin	Signal	Pin	Signal
	1	PCIE_WAKE#	2	3VSB
	3	NC	4	GND
	5	NC	6	+1.5V
	7	CLKREQ#	8	NC
	9	GND	10	NC
	11	CLK_N	12	NC
	13	CLK_P	14	NC
	15	GND	16	NC
	17	NC	18	GND
	19	NC	20	W_DISABLE#
	21	GND	22	PERST#
	23	PERn0	24	3VSB
	25	PERp0	26	GND
	27	GND	28	+1.5V
	29	GND	30	SMBCLK
	31	PETn0	32	SMBDATA
	33	PETp0	34	GND
	35	GND	36	USB_D-
	37	GND	38	USB_D+
	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	

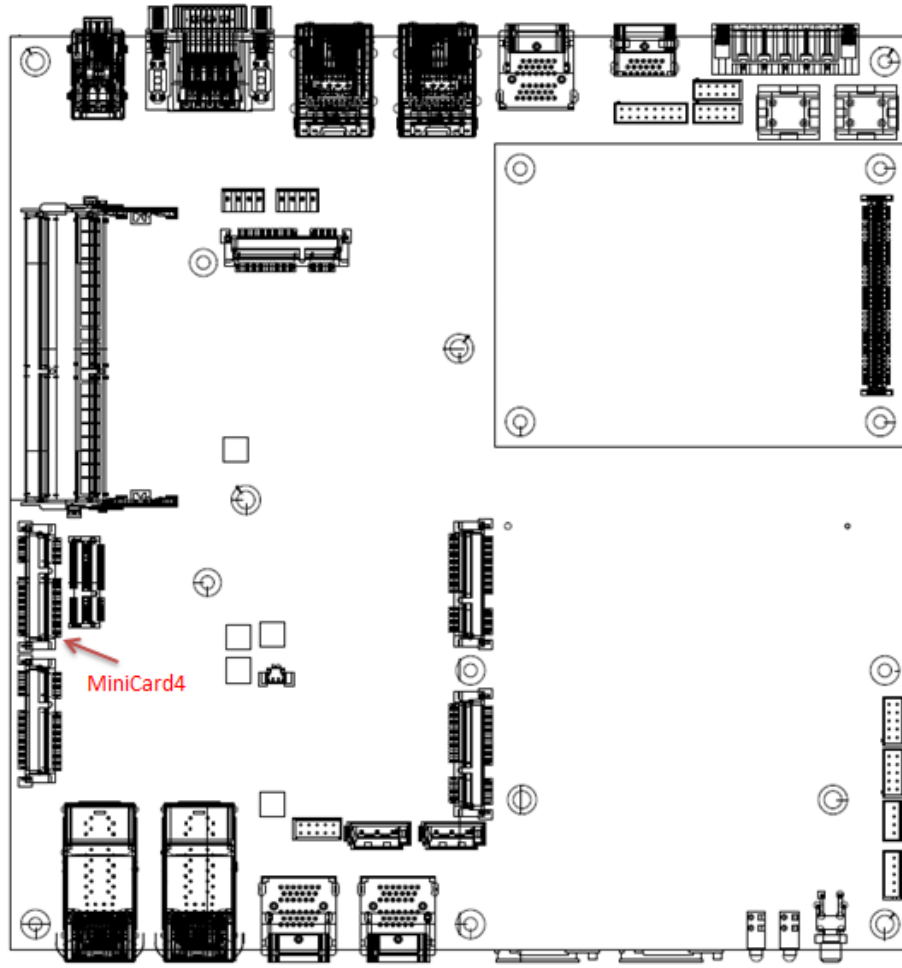
Connector map



2.13 Mini PCI-E Connector (MINICARD4)

Connector size	2 X 26 = 52 Pin			
Connector type	MINI PCI-E CON 9.2mmH (Half Size OPT.)			
Connector location	MINICARD4 (Mini PCI-E spec. V1.2)			
Connector pin definition	Pin	Signal	Pin	Signal
	1	PCIE_WAKE#	2	3VSB
	3	NC	4	GND
	5	NC	6	+1.5V
	7	CLKREQ#	8	NC
	9	GND	10	NC
	11	CLK_N	12	NC
	13	CLK_P	14	NC
	15	GND	16	NC
	17	NC	18	GND
	19	NC	20	W_DISABLE#
	21	GND	22	PERST#
	23	PERn0	24	3VSB
	25	PERp0	26	GND
	27	GND	28	+1.5V
	29	GND	30	SMBCLK
	31	PETn0	32	SMBDATA
	33	PETp0	34	GND
	35	GND	36	USB_D-
	37	GND	38	USB_D+
	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	

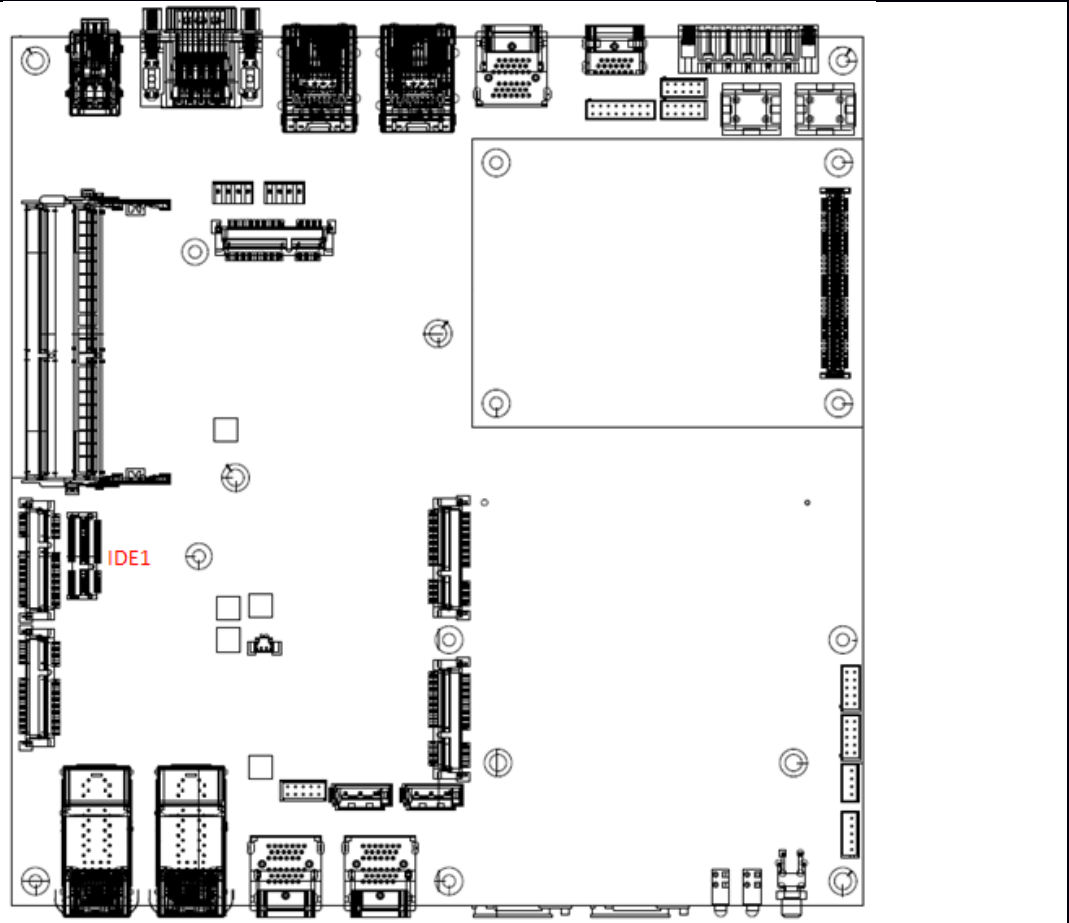
Connector map



2.14 M.2 E KEY Connector (IDE1)

Connector size	75 Pin			
Connector type	M.2 E KEY H:8.5mm			
Connector location	IDE1			
Connector pin definition	Pin	Signal	Pin	Signal
	1	GND	2	3.3VSB
	3	USB D+	4	3.3VSB
	5	USB D-	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	Module Key
	25	Module Key	26	Module Key
	27	Module Key	28	Module Key
	29	Module Key	30	Module Key
	31	Module Key	32	NC
	33	GND	34	NC
	35	PERp0	36	NC
	37	PERn0	38	NC
	39	GND	40	NC
	41	PETp0	42	NC
	43	PETn0	44	NC
	45	GND	46	NC
	47	PEFCLKp0	48	NC
	49	PEFCLKn0	50	NC
	51	GND	52	PERST0#
53	CLKREQ0#	54	W_DISABLE2#	
55	PEWAKE0#	56	W_DISABLE1#	
57	GND	58	NC	
59	PERp1	60	NC	
61	PERn1	62	NC	
63	GND	64	NC	
65	PETp1	66	PERST1#	
67	PETn1	68	CLKREQ1#	
69	GND	70	PEWAKE1#	
71	PEFCLKp1	72	3.3VSB	
73	PEFCLKn1	74	3.3VSB	
75	GND			

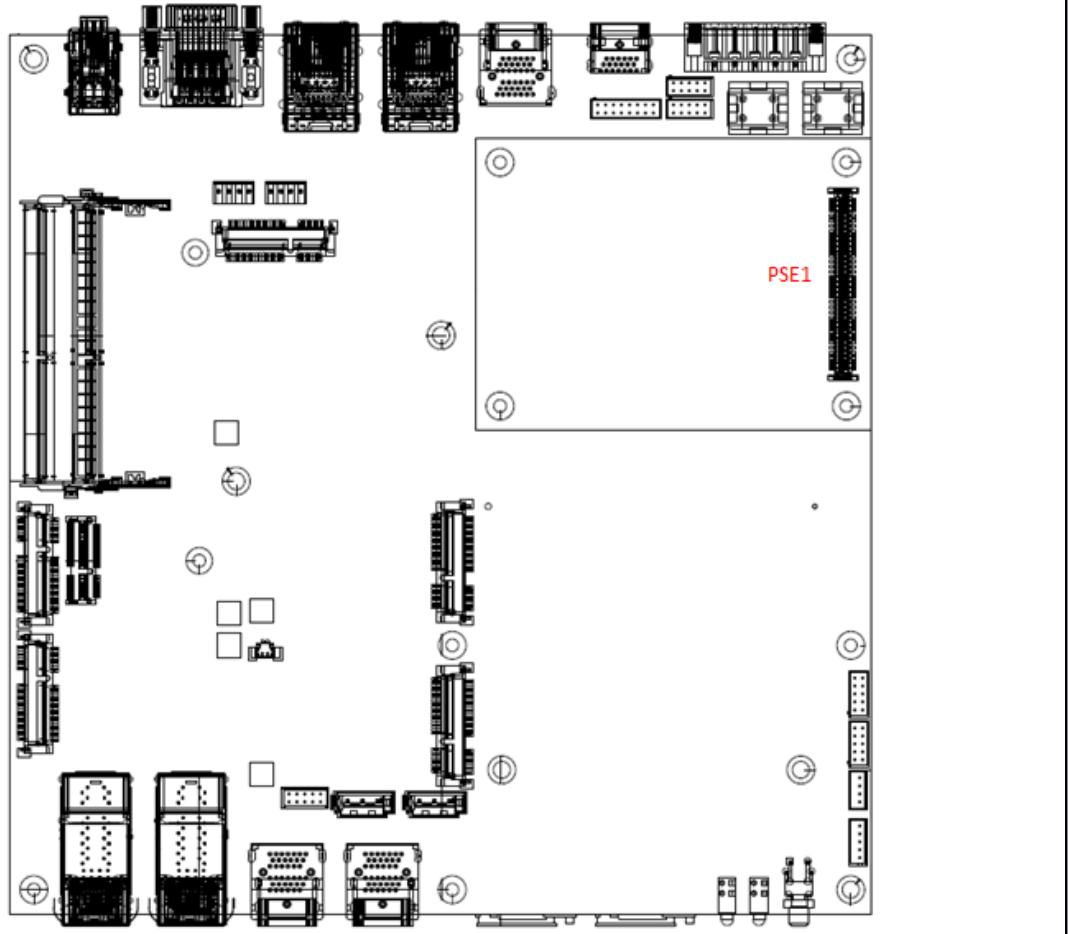
Connector map



2.15 PSE Power Board Connector (PSE1)

Connector size	2x34=68 Pin			
Connector type	Female 9.05mm pitch=1.27mm			
Connector location	PSE1			
Connector pin definition	Pin	Signal	Pin	Signal
	A1	+3.3V	B1	9~48V VIN
	A2	+3.3V	B2	9~48V VIN
	A3	+5V	B3	9~48V VIN
	A4	GND	B4	9~48V VIN
	A5	GND	B5	9~48V VIN
	A6	GND	B6	9~48V VIN
	A7	SMB CLK	B7	9~48V VIN
	A8	SMB DATA	B8	9~48V VIN
	A9	NC	B9	9~48V VIN
	A10	PSE AGND	B10	9~48V VIN
	A11	PDE INT#	B11	9~48V VIN
	A12	PSE AGND	B12	9~48V VIN
	A13	PDE OUT1	B13	NC
	A14	PSE AGND	B14	9~48V GND
	A15	PSE OUT2	B15	9~48V GND
	A16	PSE AGND	B16	9~48V GND
	A17	PDE OUT3	B17	9~48V GND
	A18	PSE AGND	B18	9~48V GND
	A19	PSE OUT4	B19	9~48V GND
	A20	PSE AGND	B20	9~48V GND
	A21	PSE OUT5	B21	9~48V GND
	A22	PSE AGND	B22	9~48V GND
	A23	PSE OUT6	B23	9~48V GND
	A24	PSE AGND	B24	9~48V GND
	A25	PSE OUT7	B25	9~48V GND
	A26	PSE AGND	B26	NC
	A27	PSE OUT8	B27	PSE GND
	A28	NC	B28	PSE GND
	A29	PSE 54.4V	B29	PSE GND
	A30	PSE 54.4V	B30	PSE GND
	A31	PSE 54.4V	B31	PSE GND
	A32	PSE 54.4V	B32	PSE GND
	A33	PSE 54.4V	B33	PSE GND
A34	PSE 54.4V	B34	PSE GND	

Connector map



2.16 MXM 3.0 Slot (MXMGF1)

Connector size	281 Pin			
Connector type	MXM 3.0 Slot			
Connector location	MXMGF1			
Connector pin definition	Pin	Signal	Pin	Signal
	E2	PWR_SRC E2	E1	PWR_SRC E1
	E4	GND E4	E3	GND E3
	2	PRSNT R#	1	5V
	4	WAKE#	3	5V
	6	PWR_GOOD	5	5V
	8	PWR_EN	7	5V
	10	RSVD	9	5V
	12	RSVD	11	GND
	14	RSVD	13	GND
	16	RSVD	15	GND
	18	PWR_LEVEL	17	GND
	20	TH_OVERT3	19	PEX_STD_SW#
	22	TH_ALERT#	21	VGA_DISABLE#
	24	TH_PWM	23	PNL_PWR_EN
	26	GPIO_0	25	PNL_BL_EN
	28	GPIO_1	27	PNL_PWM
	30	GPIO_2	29	HDMI_CEC
	32	SMB_DAT	31	DVI_HPD
	34	SMB_CLK	33	LVDS_DDC_DAT
	36	GND	35	LVDS_DDC_CLK
	38	OEM	37	GND
	40	OEM	39	OEM
	42	OEM	41	OEM
	44	OEM	43	OEM
	46	GND	45	OEM
	48	PEX_TX15#	47	OEM
	50	PEX_TX15	49	PEX_RX15#
	52	GND	51	PEX_RX15
	54	PEX_TX14#	53	GND
	56	PEX_TX14	55	PEX_RX14#
	58	GND	57	PEX_RX14
60	PEX_TX13#	59	GND	
62	PEX_TX13	61	PEX_RX13#	
64	GND	63	PEX_RX13	
66	PEX_TX12#	65	GND	
68	PEX_TX12	67	PEX_RX12#	
70	GND	69	PEX_RX12	
72	PEX_TX11#	71	GND	
74	PEX_TX11	73	PEX_RX11#	
76	GND	75	PEX_RX11	
78	PEX_TX10#	77	GND	
80	PEX_TX10	79	PEX_RX10#	

82	GND	81	PEX RX10
84	PEX TX9#	83	GND
86	PEX TX9	85	PEX RX9#
88	GND	87	PEX RX9
90	PEX TX8#	89	GND
92	PEX TX8	91	PEX RX8#
94	GND	93	PEX RX8
96	PEX TX7#	95	GND
98	PEX TX7	97	PEX RX7#
100	GND	99	PEX RX7
102	PEX TX6#	101	GND
104	PEX TX6	103	PEX RX6#
106	GND	105	PEX RX6
108	PEX TX5#	107	GND
110	PEX TX5	109	PEX RX5#
112	GND	111	PEX RX5
114	PEX TX4#	113	GND
116	PEX TX4	115	PEX RX4#
118	GND	117	PEX RX4
120	PEX TX3#	119	GND
122	PEX TX3	121	PEX RX3#
124	GND	123	PEX RX3
126	KEY	125	GND
128	KEY	127	KEY
130	KEY	129	KEY
132	KEY	131	KEY
134	GND	133	GND
136	PEX TX2#	135	PEX RX2#
138	PEX TX2	137	PEX RX2
140	GND	139	GND
142	PEX TX1#	141	PEX RX1#
144	PEX TX1	143	PEX RX1
146	GND	145	GND
148	PEX TX0#	147	PEX RX0#
150	PEX TX0	149	PEX RX0
152	GND	151	GND
154	CLK REQ#	153	PEX REFCLK#
156	PEX RST#	155	PEX REFCLK
158	VGA DDC DAT	157	GND
160	VGA DDC CLK	159	RSVD
162	VGA VSYC	161	RSVD
164	VGA HSYC	163	RSVD
166	GND	165	RSVD
168	VGA RED	167	RSVD
170	VGA GREEN	169	LVDS UCLK#
172	VGA BLUE	171	LVDS UCLK
174	GND	173	GND
176	LVDS LCLK#	175	LVDS UTX3#
178	LVDS LCLK	177	LVDS UTX3

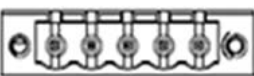
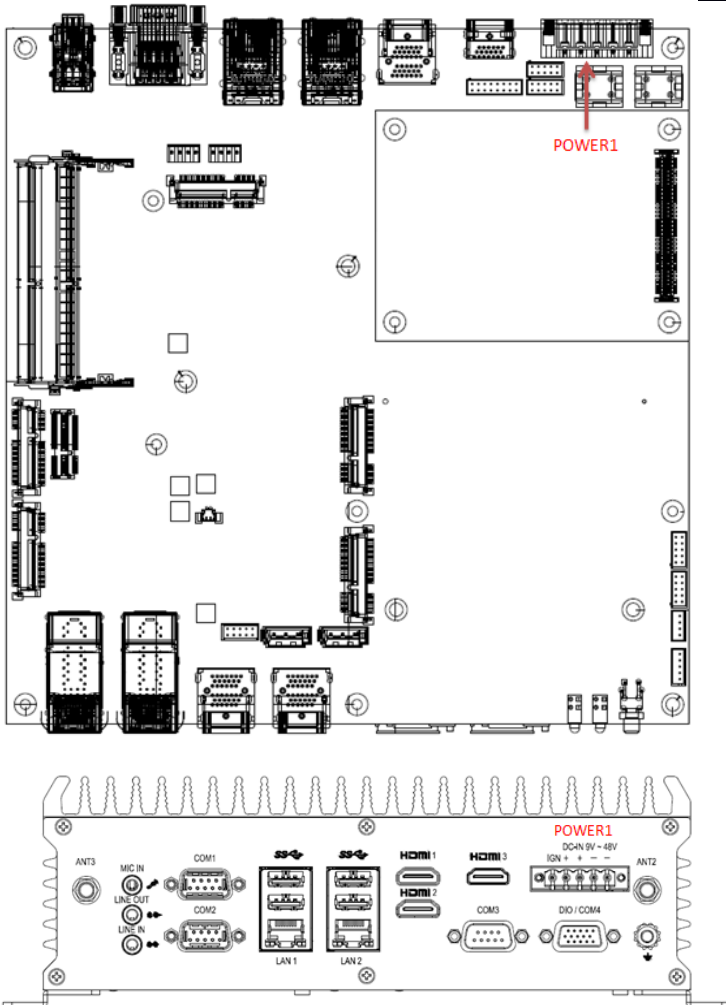
180	GND	179	GND
182	LVDS LTX3#	181	LVDS UTX2#
184	LVDS LTX3	183	LVDS UTX2
186	GND	185	GND
188	LVDS LTX2#	187	LVDS UTX1#
190	LVDS LTX2	189	LVDS UTX1
192	GND	191	GND
194	LVDS LTX1#	193	LVDS UTX0#
196	LVDS LTX1	195	LVDS UTX0
198	GND	197	GND
200	LVDS LTX0#	199	DP C L0#
202	LVDS LTX0	201	DP C L0
204	GND	203	GND
206	DP D L0#	205	DP C L1#
208	DP D L0	207	DP C L1
210	GND	209	GND
212	DP D L1#	211	DP C L2#
214	DP D L1	213	DP C L2
216	GND	215	GND
218	DP D L2#	217	DP C L3#
220	DP D L2	219	DP C L3
222	GND	221	GND
224	DP D L3#	223	DP C AUX#
226	DP D L3	225	DP C AUX
228	GND	227	RSVD
230	DP D AUX#	229	RSVD
232	DP D AUX	231	RSVD
234	DP C HPD	233	RSVD
236	DP D HPD	235	RSVD
238	RSVD	237	RSVD
240	RSVD	239	RSVD
242	RSVD	241	RSVD
244	GND	243	RSVD
246	DP B L0#	245	RSVD
248	DP B L0	247	RSVD
250	GND	249	RSVD
252	DP B L1#	251	GND
254	DP B L1	253	DP A L0#
256	GND	255	DP A L0
258	DP B L2#	257	GND
260	DP B L2	259	DP A L1#
262	GND	261	DP A L1
264	DP B L3#	263	GND
266	DP B L3	265	DP A L2#
268	GND	267	DP A L2
270	DP B AUX#	269	GND
272	DP B AUX	271	DP A L3#
274	DP B HPD	273	DP A L3
276	DP A HPD	275	GND

	278	3V3	277	DP A AUX#
	280	3V3	279	DP A AUX
			281	PRSNT L#
Connector map				

3.0 EXTERNAL CONNECTOR SPECIFICATION

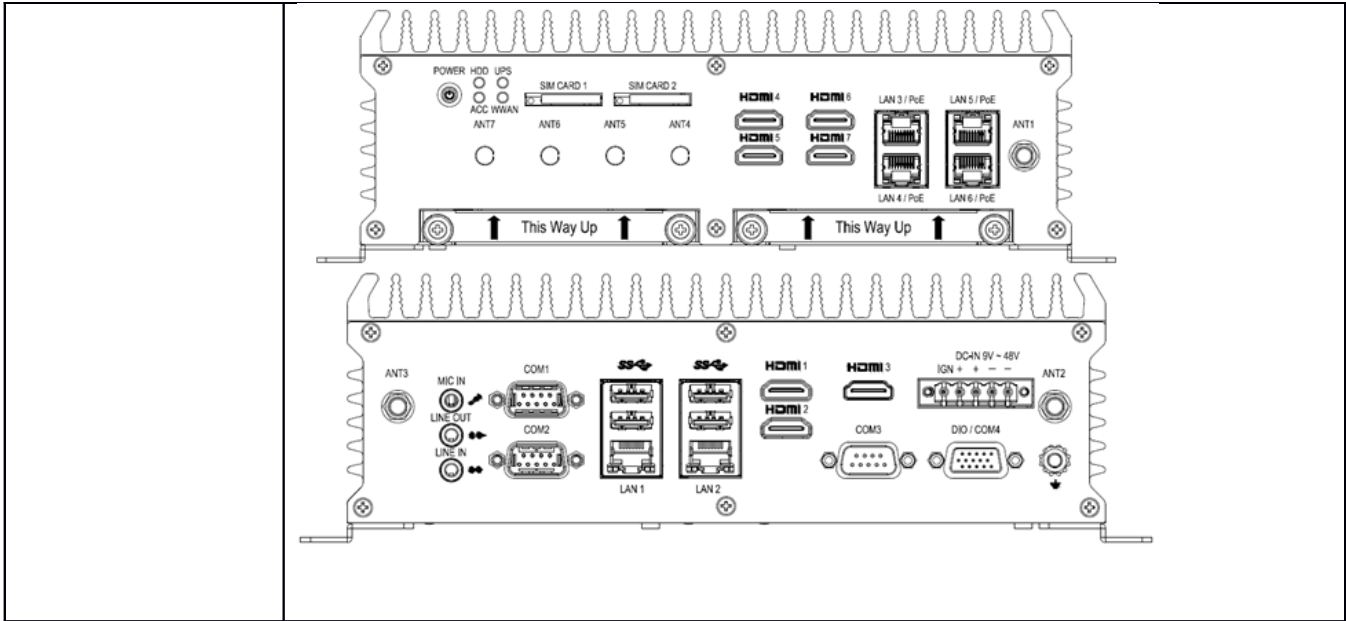
3.0 EXTERNAL CONNECTOR SPECIFICATION

3.1 Power Input Connector (POWER1)


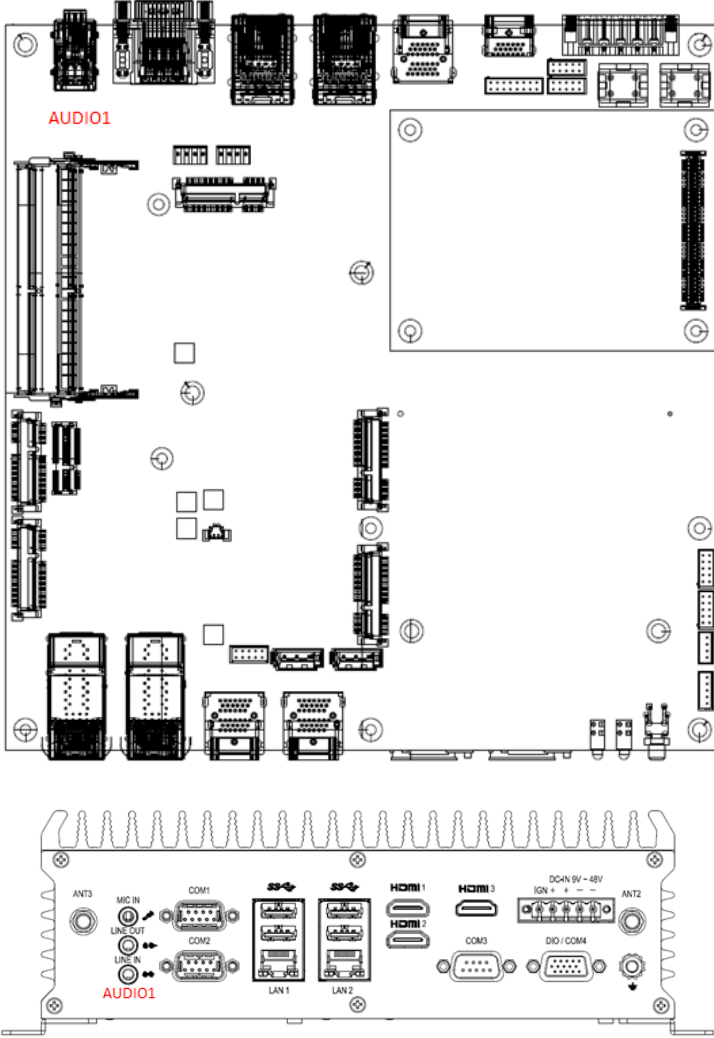
Connector size	1 X 5 = 5 Pin												
Connector type	Terminal block 5PIN pitch :5.08mm												
Connector location	POWER1												
Connector pin definition	<p>PIN1 PIN5</p>  <table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>VIN (9VDC~48VDC)</td> </tr> <tr> <td></td> <td>VIN (9VDC~48VDC)</td> </tr> <tr> <td></td> <td>IGNITION</td> </tr> </tbody> </table>	Pin	Signal	1	GND	2	GND	3	VIN (9VDC~48VDC)		VIN (9VDC~48VDC)		IGNITION
Pin	Signal												
1	GND												
2	GND												
3	VIN (9VDC~48VDC)												
	VIN (9VDC~48VDC)												
	IGNITION												
Connector map													

3.2 HDMI Port Connector (HDMI 1/2/3/4/5/6/7)

Connector size	19 Pin																																														
Connector type	HDMI port																																														
Connector location	HDMI 1/2/3/4/5/6/7																																														
Connector pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>HDMI DATA2 P</td> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>HDMI DATA2 N</td> <td>4</td> <td>HDMI DATA1 P</td> </tr> <tr> <td>5</td> <td>GND</td> <td>6</td> <td>HDMI DATA1 N</td> </tr> <tr> <td>7</td> <td>HDMI DATA0 P</td> <td>8</td> <td>GND</td> </tr> <tr> <td>9</td> <td>HDMI DATA0 N</td> <td>10</td> <td>HDMI CLK P</td> </tr> <tr> <td>11</td> <td>GND</td> <td>12</td> <td>HDMI CLK N</td> </tr> <tr> <td>13</td> <td>CEC(NC)</td> <td>14</td> <td>NC</td> </tr> <tr> <td>15</td> <td>HDMI SCL</td> <td>16</td> <td>HDMI SDA</td> </tr> <tr> <td>17</td> <td>GND</td> <td>18</td> <td>HDMI +5V</td> </tr> <tr> <td>19</td> <td>HDMI HPD</td> <td></td> <td></td> </tr> </tbody> </table>			Pin	Signal	Pin	Signal	1	HDMI DATA2 P	2	GND	3	HDMI DATA2 N	4	HDMI DATA1 P	5	GND	6	HDMI DATA1 N	7	HDMI DATA0 P	8	GND	9	HDMI DATA0 N	10	HDMI CLK P	11	GND	12	HDMI CLK N	13	CEC(NC)	14	NC	15	HDMI SCL	16	HDMI SDA	17	GND	18	HDMI +5V	19	HDMI HPD		
Pin	Signal	Pin	Signal																																												
1	HDMI DATA2 P	2	GND																																												
3	HDMI DATA2 N	4	HDMI DATA1 P																																												
5	GND	6	HDMI DATA1 N																																												
7	HDMI DATA0 P	8	GND																																												
9	HDMI DATA0 N	10	HDMI CLK P																																												
11	GND	12	HDMI CLK N																																												
13	CEC(NC)	14	NC																																												
15	HDMI SCL	16	HDMI SDA																																												
17	GND	18	HDMI +5V																																												
19	HDMI HPD																																														
Connector map																																															

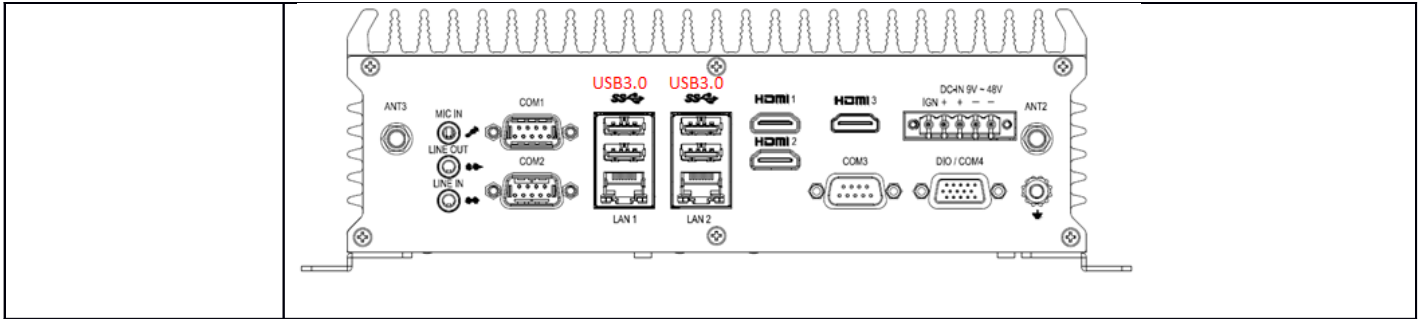


3.3 AUDIO Connector (AUDIO1)

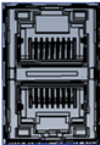
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Connector type	HAD Jack																																								
Connector location	AUDIO1																																								
Connector pin definition	 <table border="1" data-bbox="418 579 1497 789"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CASE GND</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>MIC In R</td> <td>22</td> <td>FRONT OUT R</td> <td>32</td> <td>LINE In R</td> </tr> <tr> <td>3</td> <td>MIC-JD</td> <td>23</td> <td>FRONT JD</td> <td>33</td> <td>LINE JD</td> </tr> <tr> <td>4</td> <td>AUD GND</td> <td>24</td> <td>AUD GND</td> <td>34</td> <td>AUD GND</td> </tr> <tr> <td>5</td> <td>MIC In L</td> <td>25</td> <td>FRONT OUT L</td> <td>35</td> <td>LINE In L</td> </tr> </tbody> </table>					Pin	Signal	Pin	Signal	Pin	Signal	1	CASE GND					2	MIC In R	22	FRONT OUT R	32	LINE In R	3	MIC-JD	23	FRONT JD	33	LINE JD	4	AUD GND	24	AUD GND	34	AUD GND	5	MIC In L	25	FRONT OUT L	35	LINE In L
Pin	Signal	Pin	Signal	Pin	Signal																																				
1	CASE GND																																								
2	MIC In R	22	FRONT OUT R	32	LINE In R																																				
3	MIC-JD	23	FRONT JD	33	LINE JD																																				
4	AUD GND	24	AUD GND	34	AUD GND																																				
5	MIC In L	25	FRONT OUT L	35	LINE In L																																				
Connector map																																									

3.4 RJ45+USB 3.0 Connector (USB1&2)

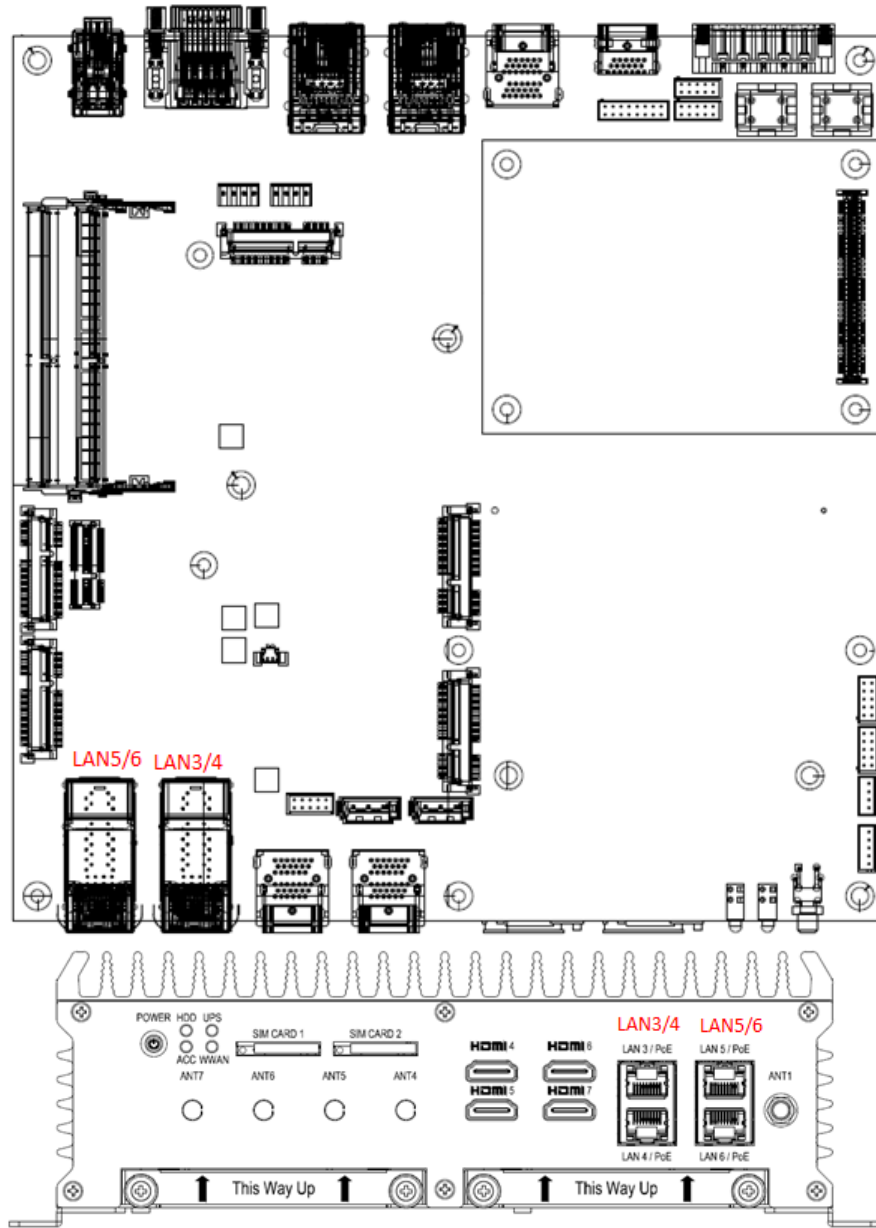
Connector size	28 Pin																																																																						
Connector type	USB3.0 Type A																																																																						
Connector location	USB1 & 2																																																																						
Connector pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>R1</td> <td>VCC</td> <td>U10</td> <td>5VSB</td> <td>U1</td> <td>5VSB</td> </tr> <tr> <td>R2</td> <td>MDI0 P</td> <td>U11</td> <td>USB N</td> <td>U2</td> <td>USB N</td> </tr> <tr> <td>R3</td> <td>MDI0 N</td> <td>U12</td> <td>USB P</td> <td>U3</td> <td>USB P</td> </tr> <tr> <td>R4</td> <td>MDI1 P</td> <td>U13</td> <td>GND</td> <td>U4</td> <td>GND</td> </tr> <tr> <td>R5</td> <td>MDI1 N</td> <td>U14</td> <td>SSRX-</td> <td>U5</td> <td>SSRX-</td> </tr> <tr> <td>R6</td> <td>MDI2 P</td> <td>U15</td> <td>SSRX+</td> <td>U6</td> <td>SSRX+</td> </tr> <tr> <td>R7</td> <td>MDI2 N</td> <td>U16</td> <td>GND</td> <td>U7</td> <td>GND</td> </tr> <tr> <td>R8</td> <td>MDI3 P</td> <td>U17</td> <td>SSTX-</td> <td>U8</td> <td>SSTX-</td> </tr> <tr> <td>R9</td> <td>MDI3 N</td> <td>U18</td> <td>SSTX+</td> <td>U9</td> <td>SSTX+</td> </tr> <tr> <td>R10</td> <td>GND</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Pin	Signal	Pin	Signal	Pin	Signal	R1	VCC	U10	5VSB	U1	5VSB	R2	MDI0 P	U11	USB N	U2	USB N	R3	MDI0 N	U12	USB P	U3	USB P	R4	MDI1 P	U13	GND	U4	GND	R5	MDI1 N	U14	SSRX-	U5	SSRX-	R6	MDI2 P	U15	SSRX+	U6	SSRX+	R7	MDI2 N	U16	GND	U7	GND	R8	MDI3 P	U17	SSTX-	U8	SSTX-	R9	MDI3 N	U18	SSTX+	U9	SSTX+	R10	GND				
Pin	Signal	Pin	Signal	Pin	Signal																																																																		
R1	VCC	U10	5VSB	U1	5VSB																																																																		
R2	MDI0 P	U11	USB N	U2	USB N																																																																		
R3	MDI0 N	U12	USB P	U3	USB P																																																																		
R4	MDI1 P	U13	GND	U4	GND																																																																		
R5	MDI1 N	U14	SSRX-	U5	SSRX-																																																																		
R6	MDI2 P	U15	SSRX+	U6	SSRX+																																																																		
R7	MDI2 N	U16	GND	U7	GND																																																																		
R8	MDI3 P	U17	SSTX-	U8	SSTX-																																																																		
R9	MDI3 N	U18	SSTX+	U9	SSTX+																																																																		
R10	GND																																																																						
Connector map																																																																							



3.5 LAN Connector (LAN3/4 & LAN5/6)

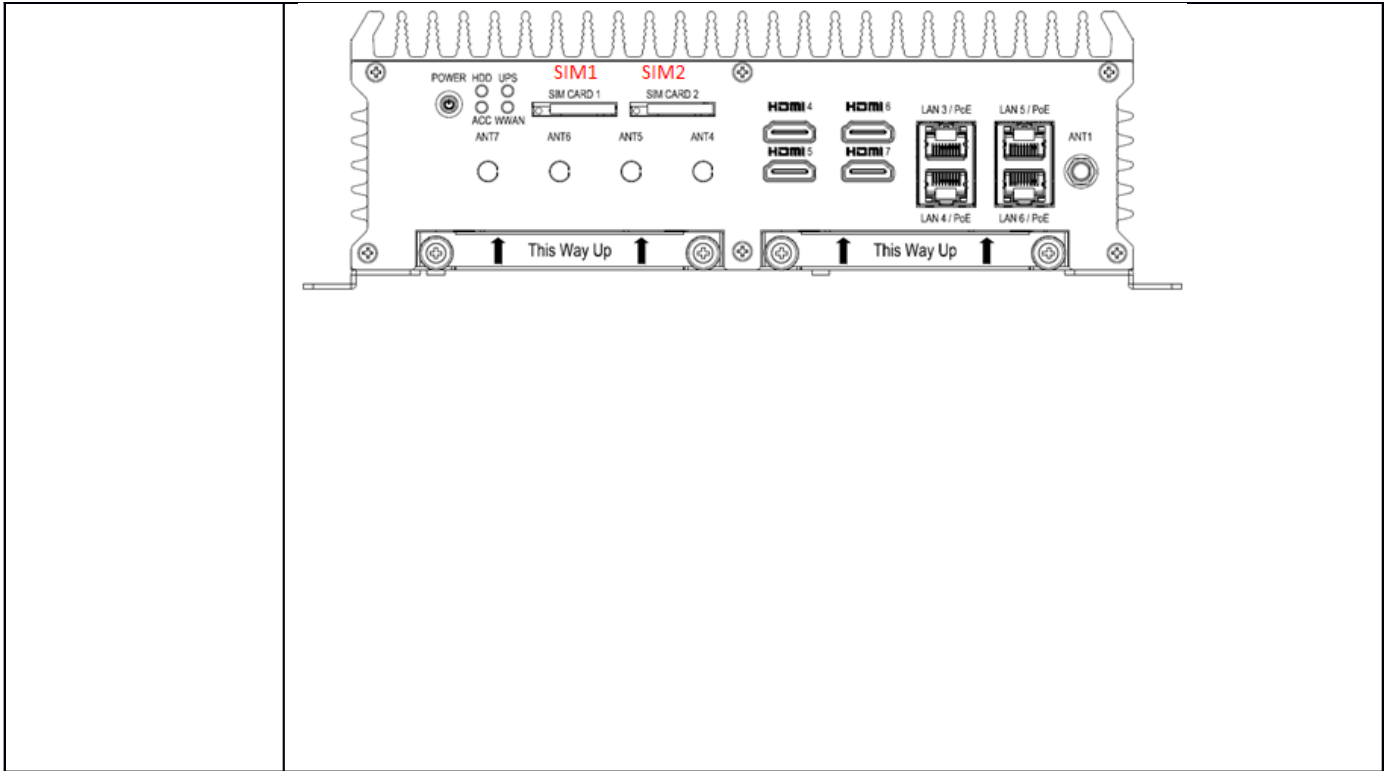
Connector size	32 Pin																																										
Connector type	Dual Port RJ45+LED With PoE																																										
Connector location	LAN3/4 & LAN5/6																																										
Connector pin definition	 <p>UP</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>MDI0P</td> <td>2</td> <td>MDI0N</td> </tr> <tr> <td>3</td> <td>MDI1P</td> <td>4</td> <td>MDI2P</td> </tr> <tr> <td>5</td> <td>MDI2N</td> <td>6</td> <td>MDI1N</td> </tr> <tr> <td>7</td> <td>MDI3P</td> <td>8</td> <td>MDI3N</td> </tr> </tbody> </table> <p>DOWN</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>MDI0P</td> <td>2</td> <td>MDI0N</td> </tr> <tr> <td>3</td> <td>MDI1P</td> <td>4</td> <td>MDI2P</td> </tr> <tr> <td>5</td> <td>MDI2N</td> <td>6</td> <td>MDI1N</td> </tr> <tr> <td>7</td> <td>MDI3P</td> <td>8</td> <td>MDI3N</td> </tr> </tbody> </table>			Pin	Signal	Pin	Signal	1	MDI0P	2	MDI0N	3	MDI1P	4	MDI2P	5	MDI2N	6	MDI1N	7	MDI3P	8	MDI3N	Pin	Signal	Pin	Signal	1	MDI0P	2	MDI0N	3	MDI1P	4	MDI2P	5	MDI2N	6	MDI1N	7	MDI3P	8	MDI3N
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Connector map



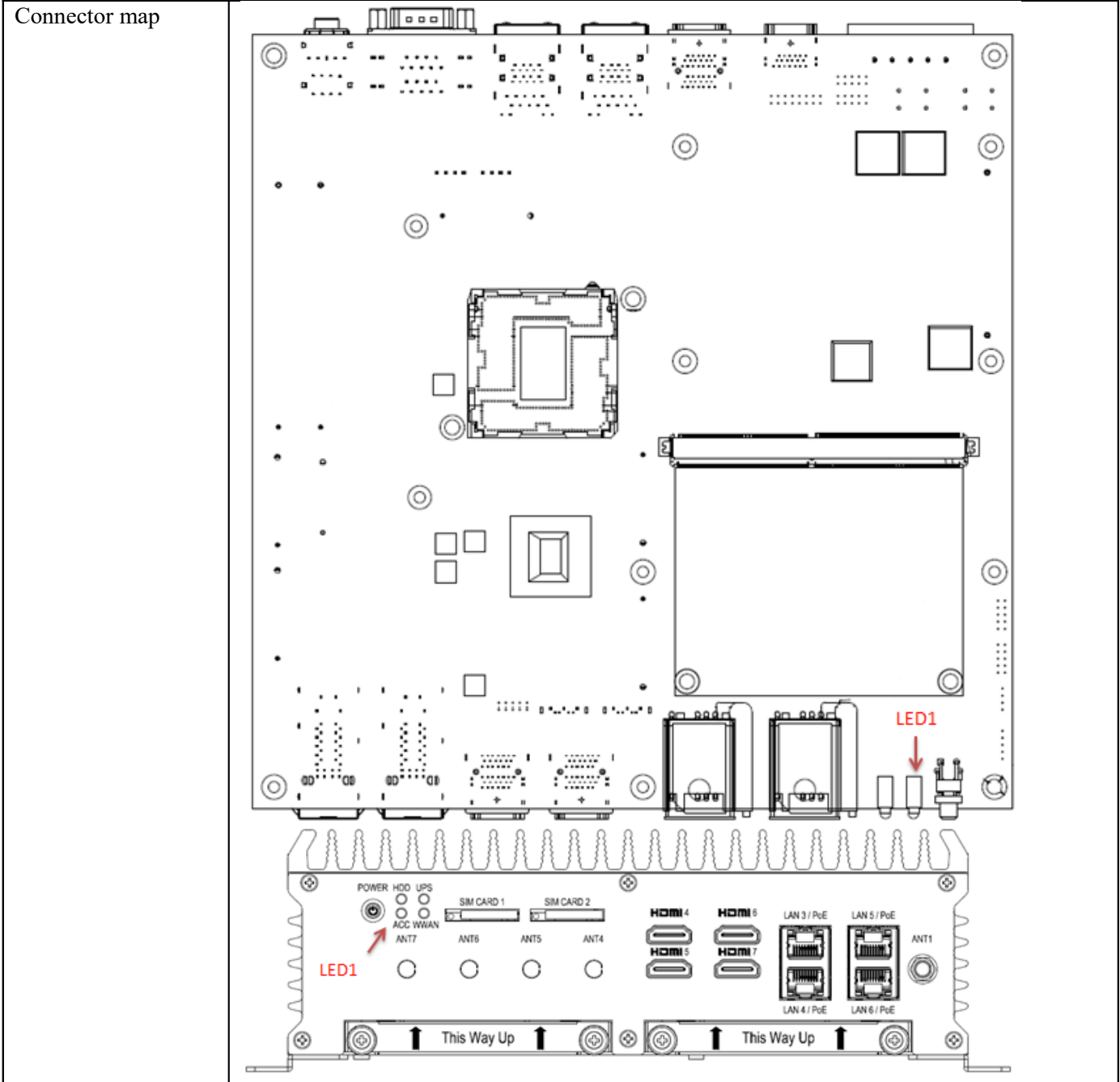
3.6 SIM Card Connector (SIM1 &SIM2)

5.6 SIM Card connector																					
Connector size	6 Pin																				
Connector type	SIM Crad 6 Pin																				
Connector location	SIM1 & SIM2																				
Connector pin definition	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Pin</th> <th style="width: 25%;">Signal</th> <th style="width: 25%;">Pin</th> <th style="width: 25%;">Signal</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>UIM POWER</td> <td>C5</td> <td>GND</td> </tr> <tr> <td>C2</td> <td>UOM RST</td> <td>C6</td> <td>NC</td> </tr> <tr> <td>C3</td> <td>UIM CLK</td> <td>C7</td> <td>UIM DAT</td> </tr> <tr> <td>SW1</td> <td>GND</td> <td>SW2</td> <td>GND</td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	C1	UIM POWER	C5	GND	C2	UOM RST	C6	NC	C3	UIM CLK	C7	UIM DAT	SW1	GND	SW2	GND
Pin	Signal	Pin	Signal																		
C1	UIM POWER	C5	GND																		
C2	UOM RST	C6	NC																		
C3	UIM CLK	C7	UIM DAT																		
SW1	GND	SW2	GND																		
Connector map																					



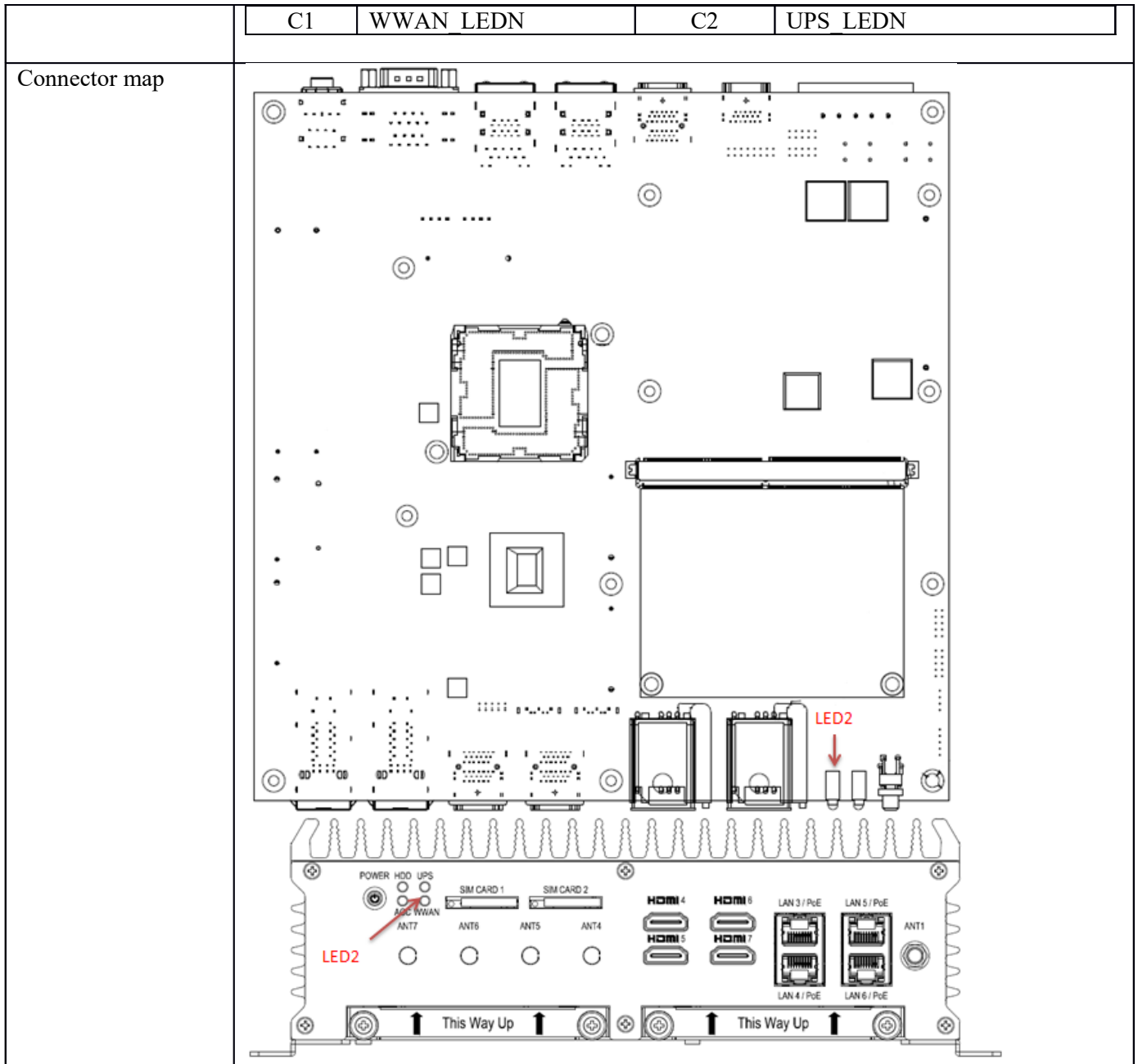
3.7 LED Connector (LED1)

Connector size	4 Pin			
Connector type	Dual LED 4 Pin			
Connector location	LED1			
Connector pin definition	Pin	Signal	Pin	Signal
	A1	+5VSB	A2	+5VDC
	C1	ACC LEDN	C2	HDD LEDN



3.8 LED Connector (LED2)

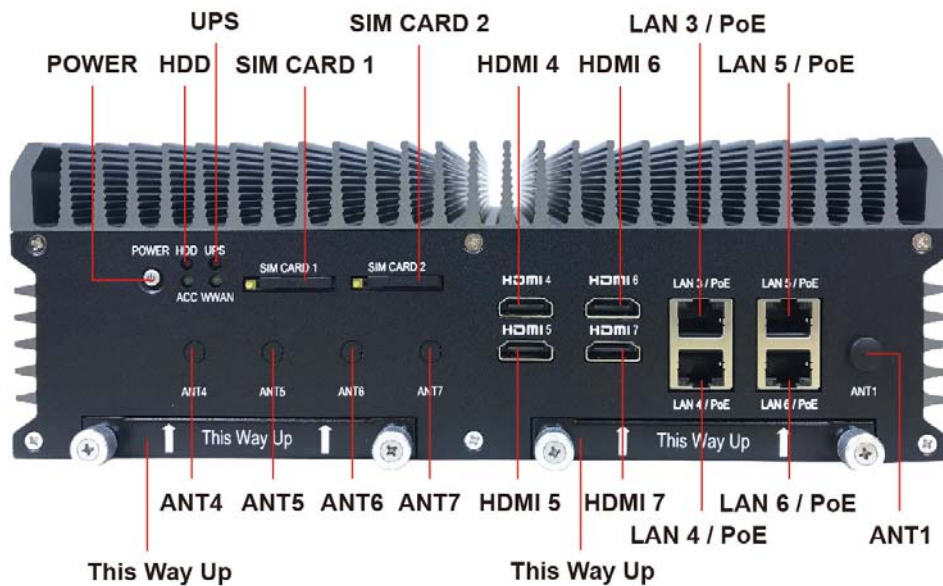
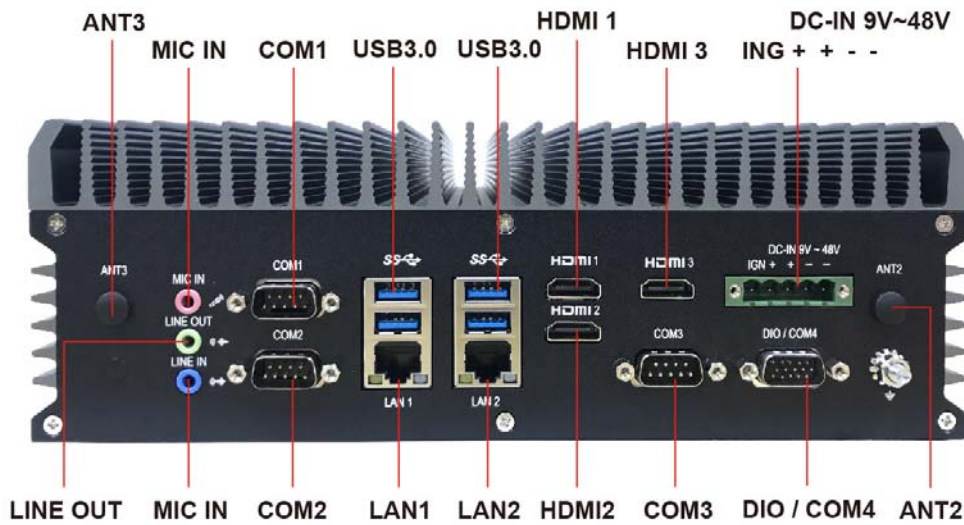
Connector size	4 Pin											
Connector type	Dual LED 4 Pin											
Connector location	LED2											
Connector pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>+5VSB</td> <td>A2</td> <td>+5VDC</td> </tr> </tbody> </table>				Pin	Signal	Pin	Signal	A1	+5VSB	A2	+5VDC
Pin	Signal	Pin	Signal									
A1	+5VSB	A2	+5VDC									



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.

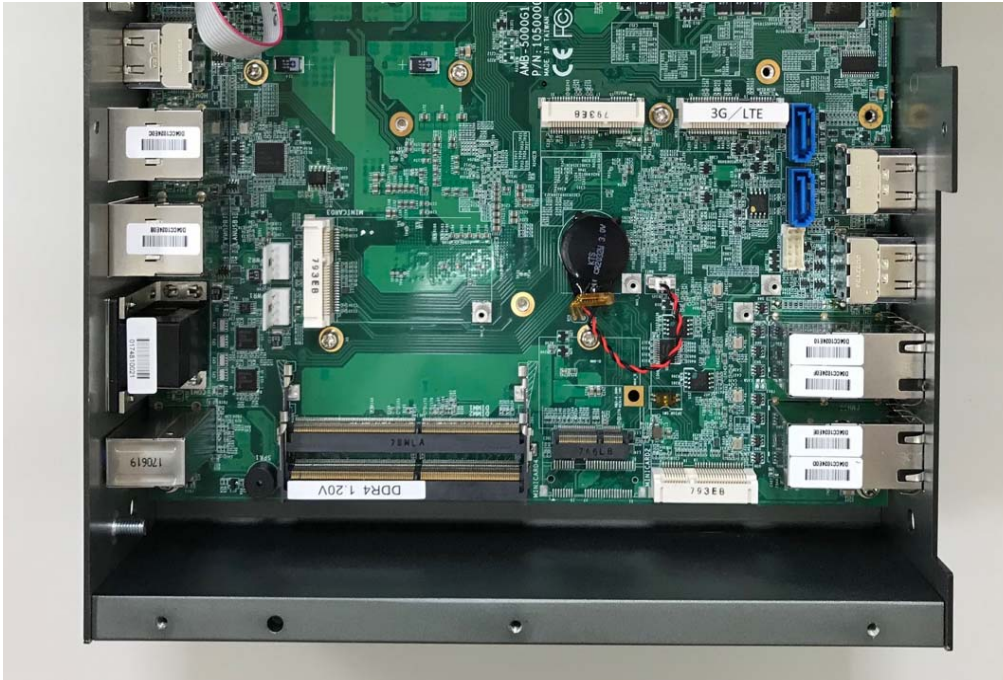


Step4. Open Bottom Cover as shown in the picture.



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)

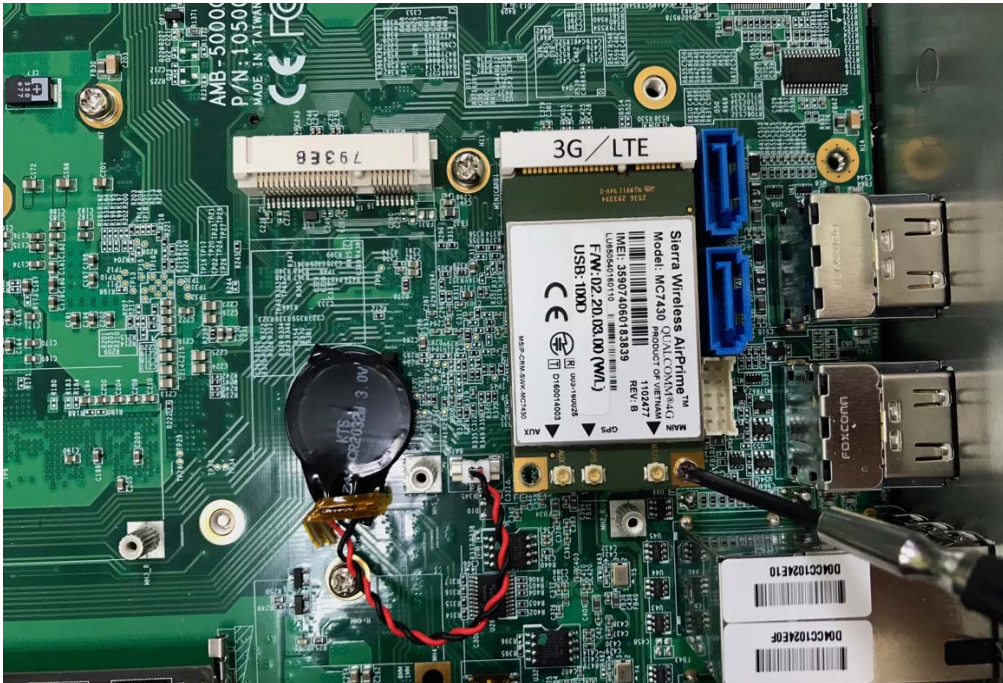
Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.



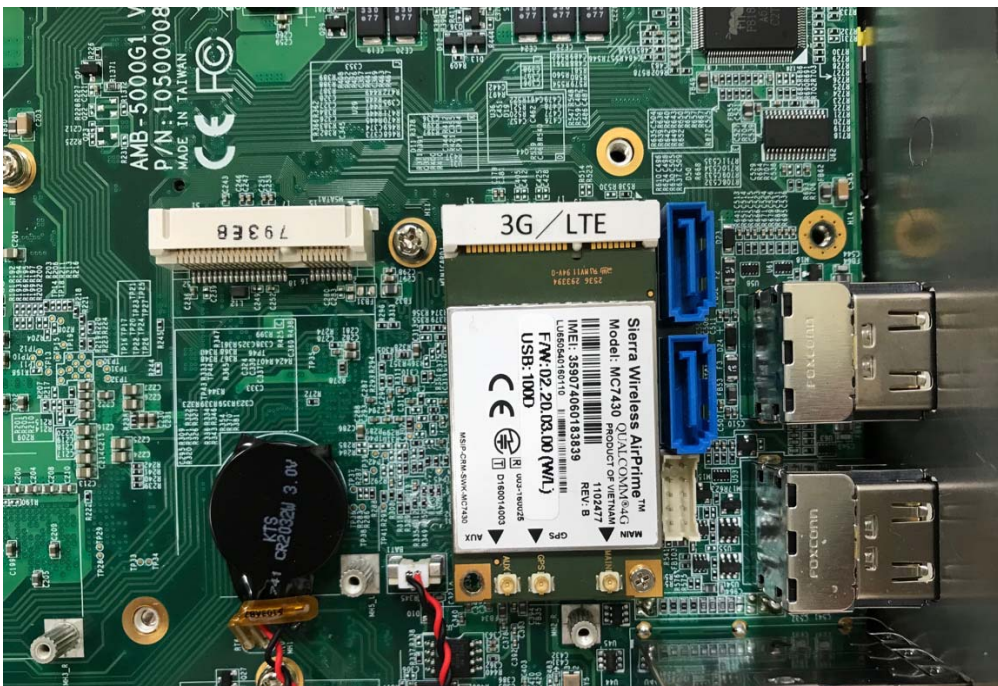
Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.



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

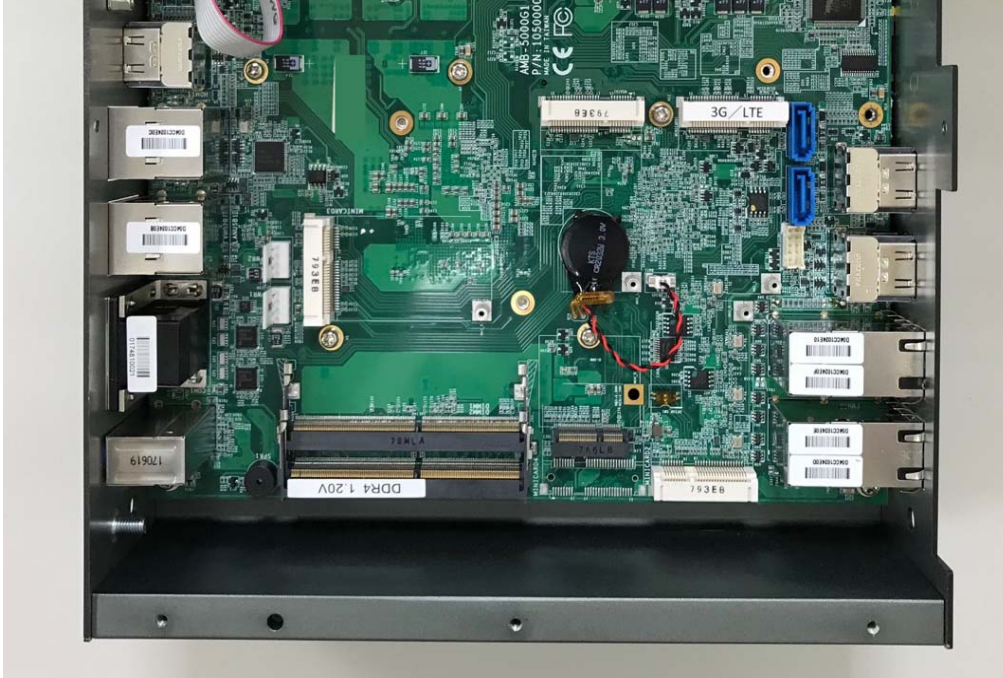


Step 4. Done as shown in the picture.

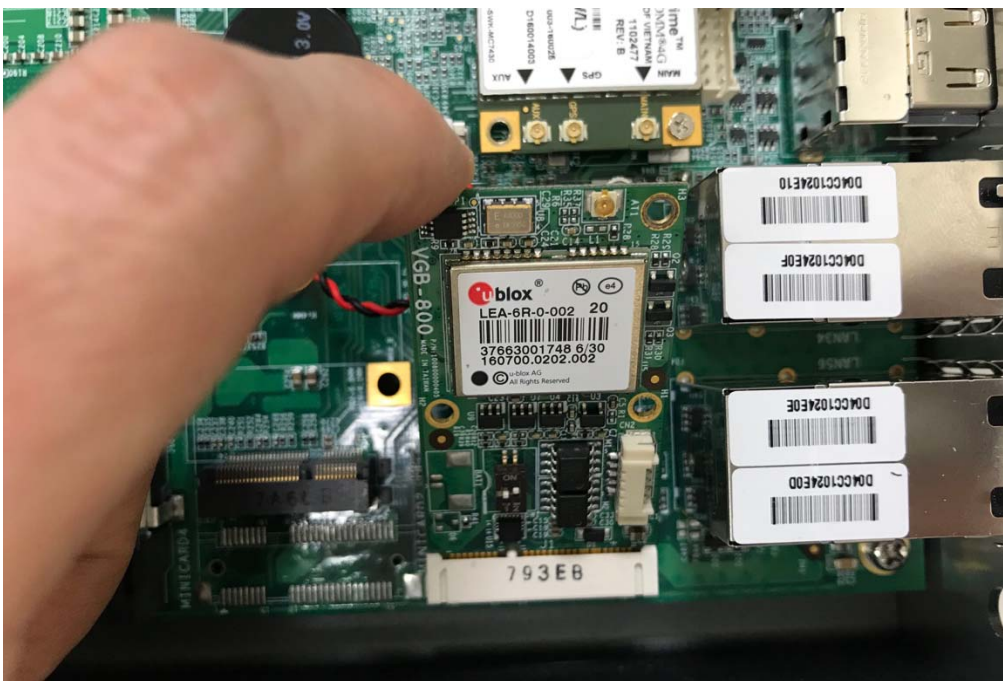


4.5 Installing MINI PCIe Expansion Card (MiniCard 2)

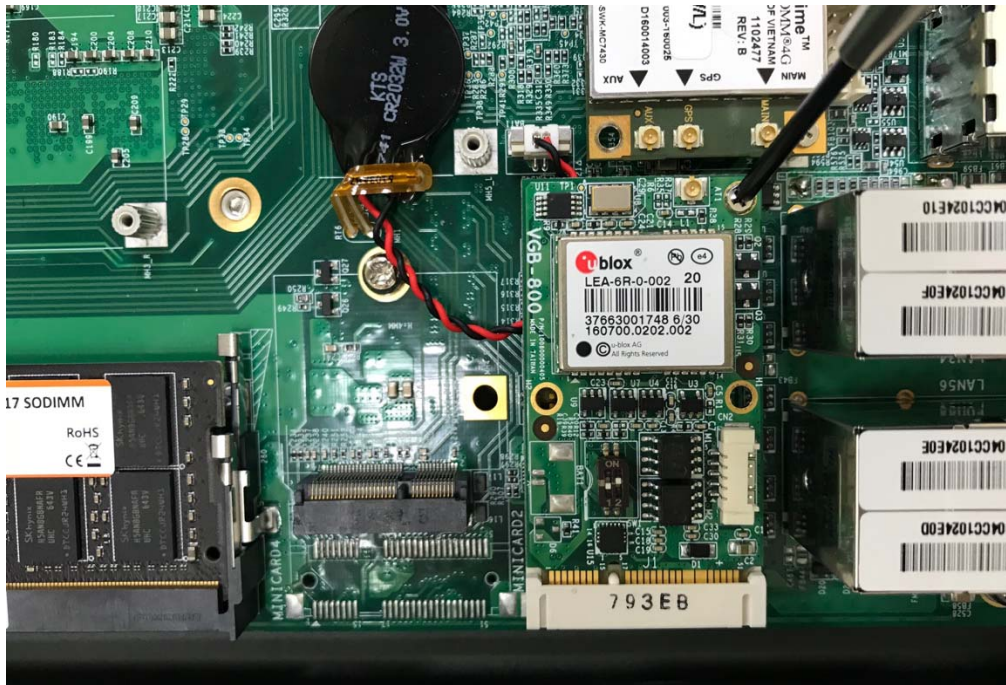
Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.



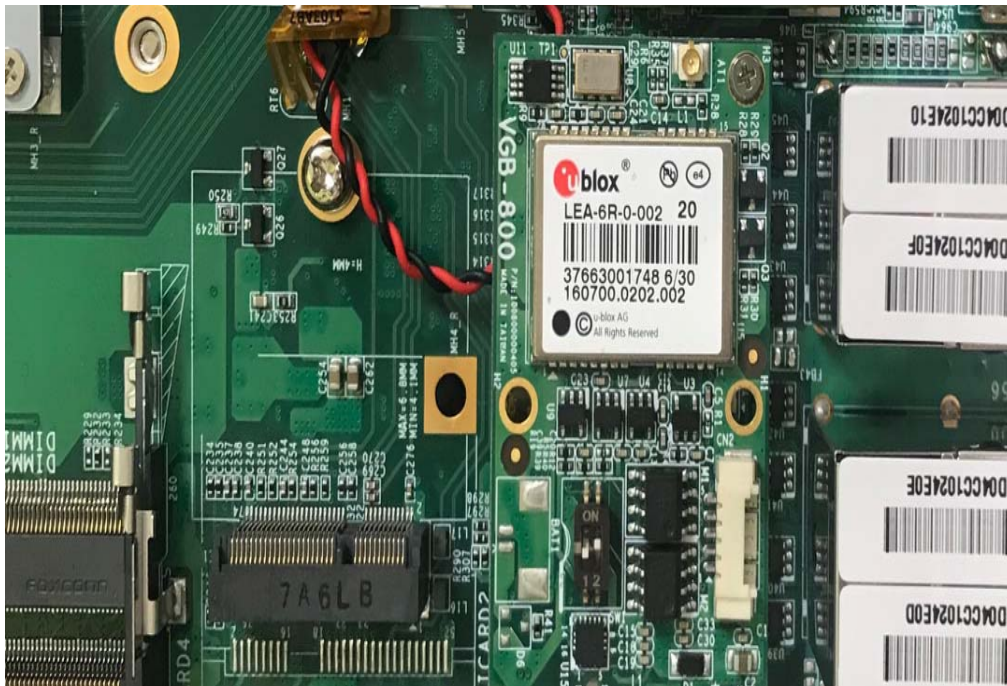
Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.



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

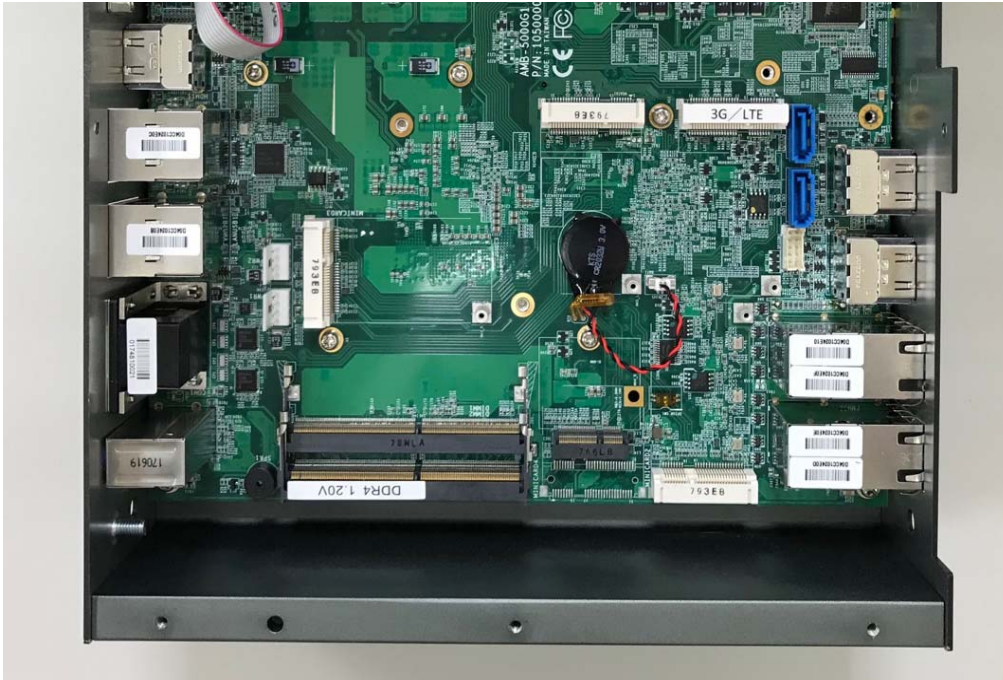


Step 4. Done as shown in the picture.



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 one screw to the holder as shown in the picture.

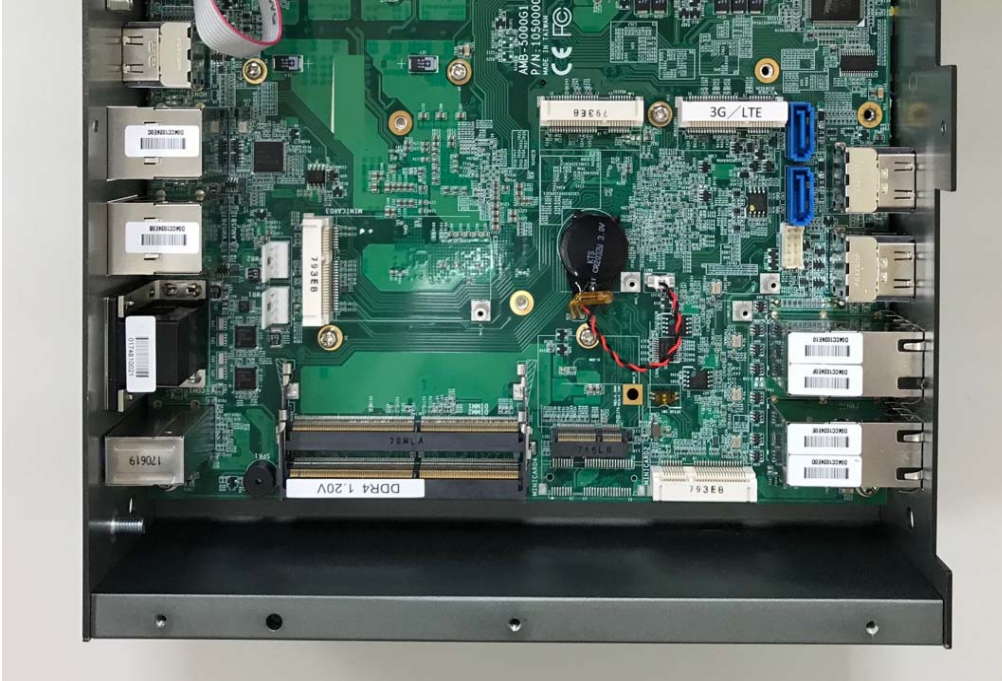


Step 4. Done as shown in the picture.

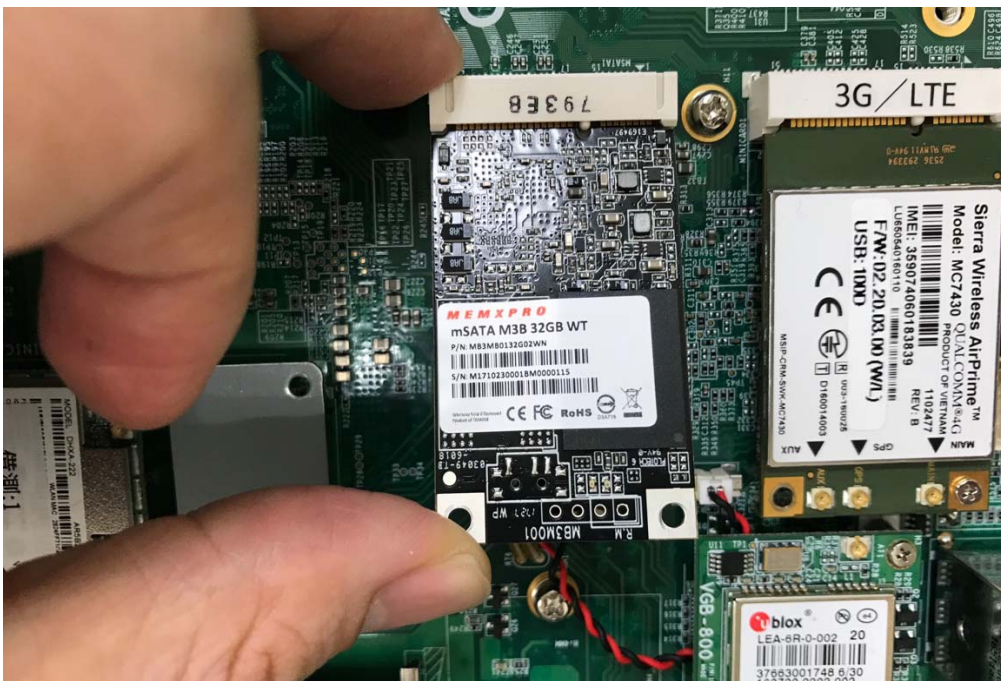


4.7 Installing mSATA Module

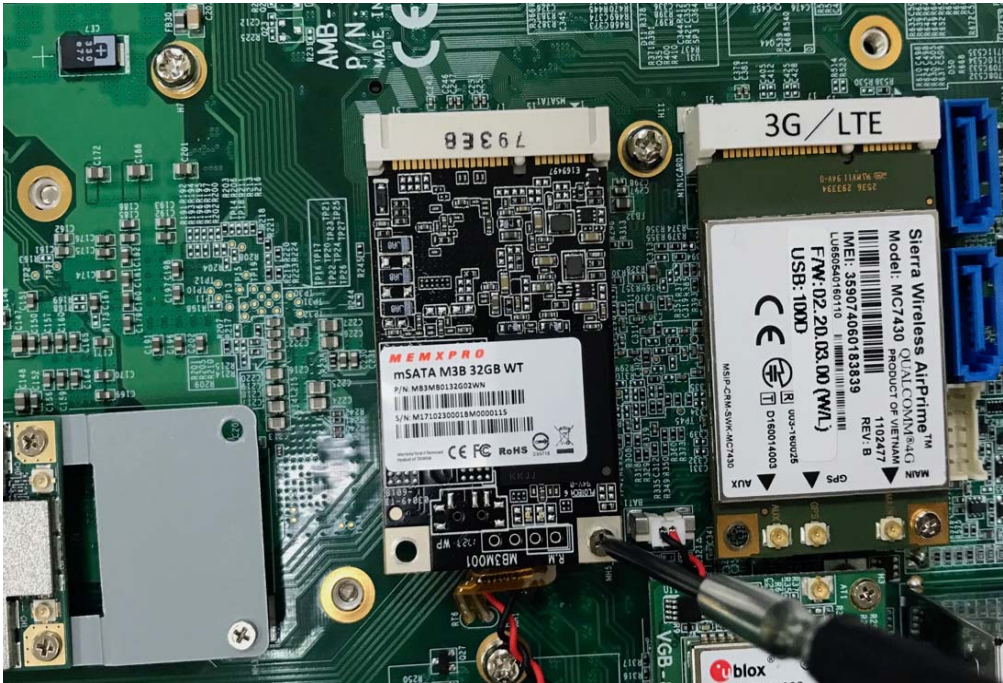
Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.



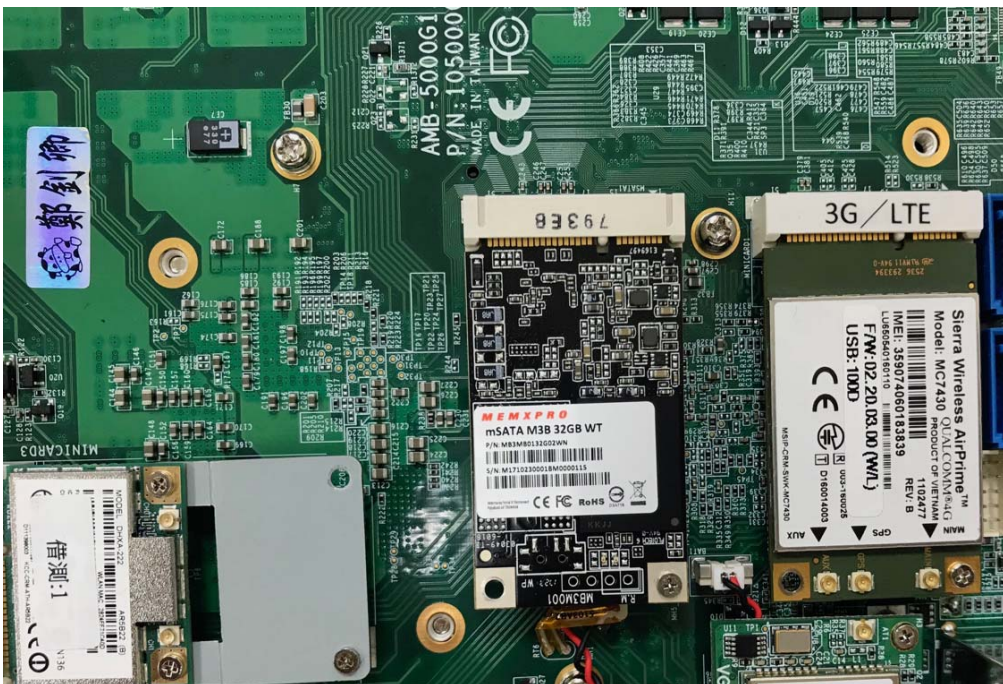
Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.



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

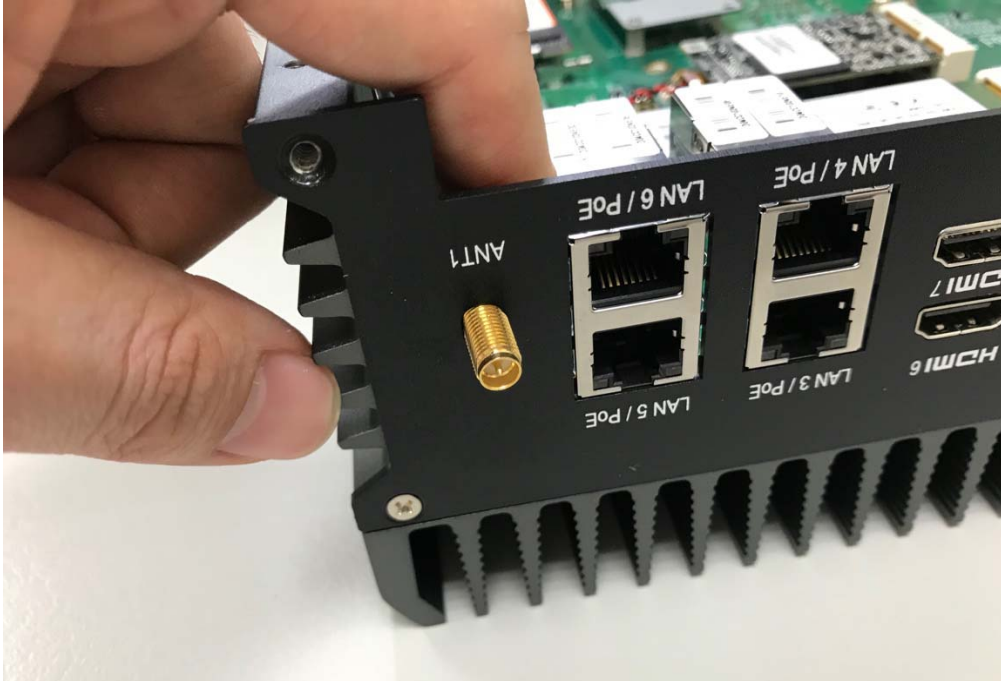


Step 4. Done as shown in the picture.

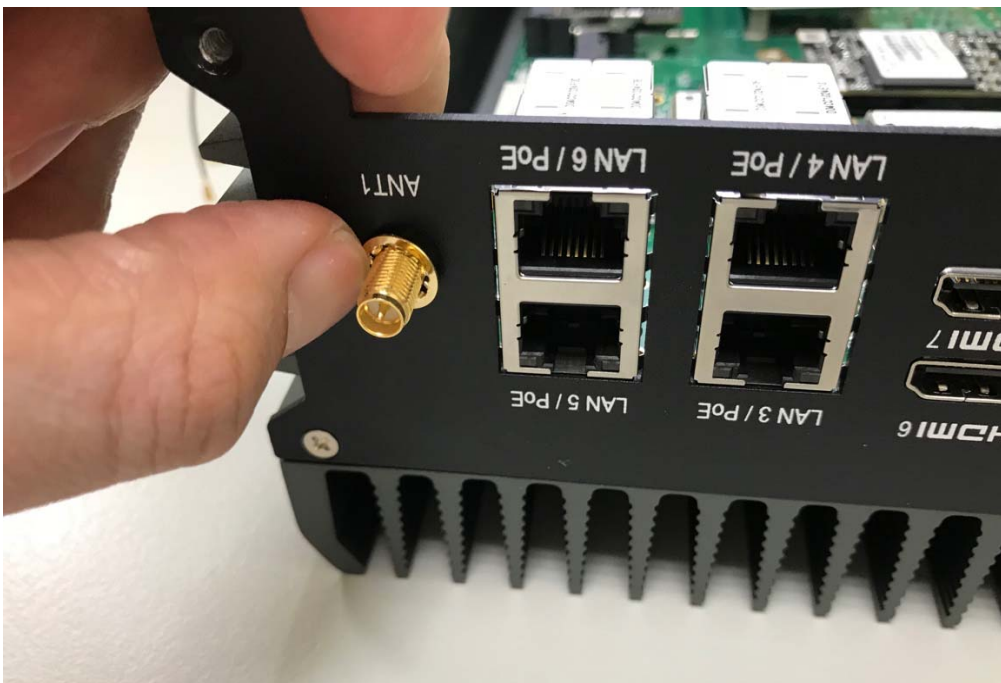


4.8 Installing Internal Antenna Cable

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.



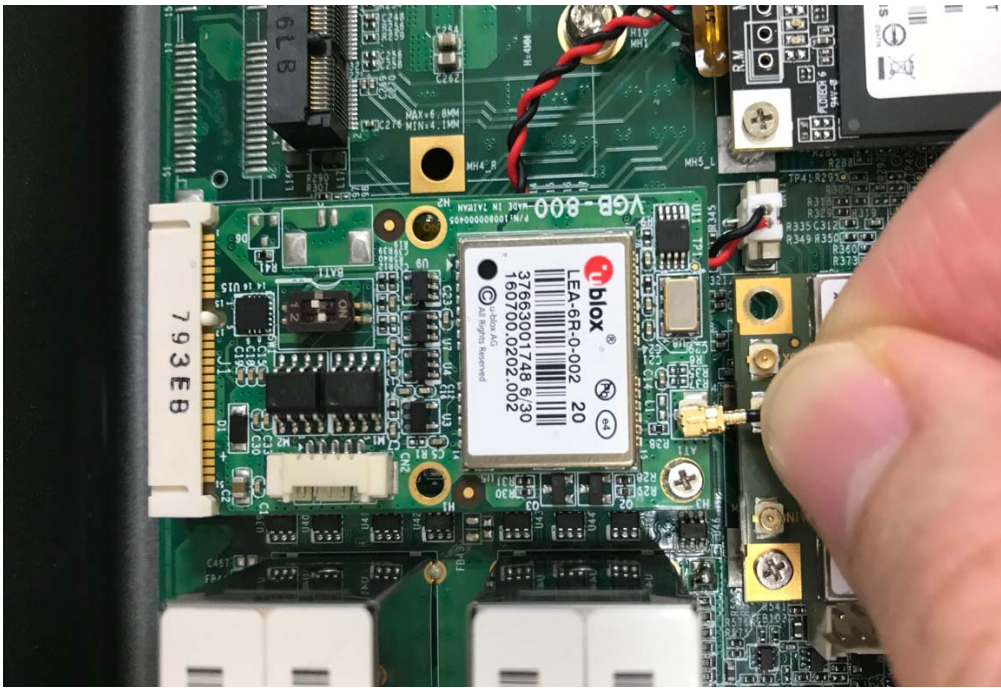
Step 5. Take the Ipex Connector and press on the wifi module as shown in the picture.
(Wifi)



Step 6. Take the Ipex Connector and press on the 3G module as shown in the picture.
(3G/LTE)



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



4.9 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 and take the SIM card holder and Insert it into the socket as shown in the picture.



Warning:

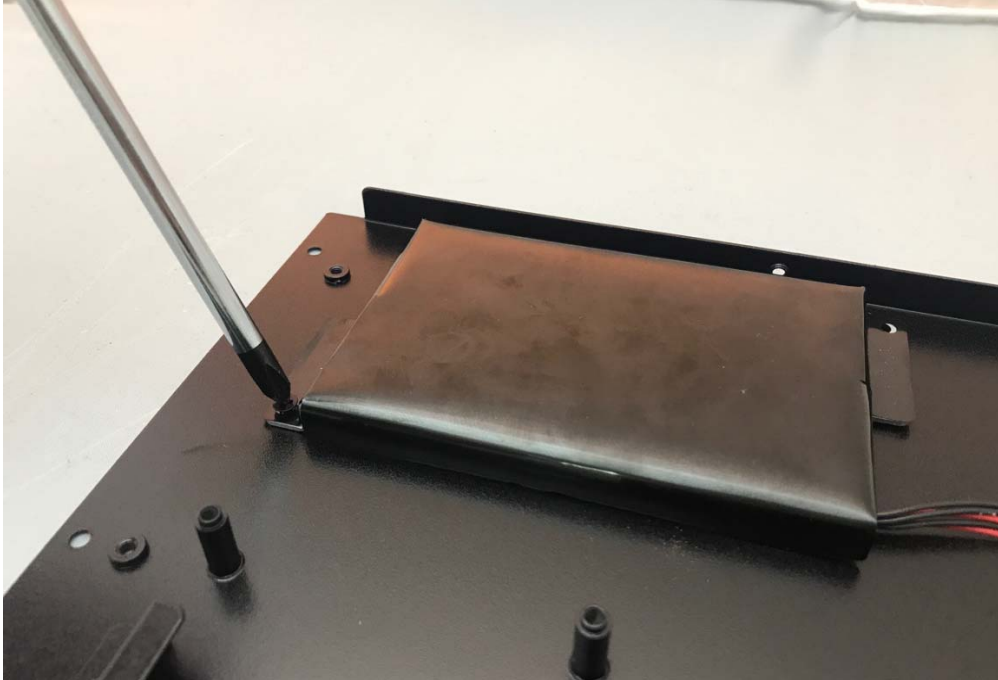
When insert a SIM card to the SIM card holder, please remove the main power at input to avoid undetectable SIM card.

4.10 Installing Battery Module

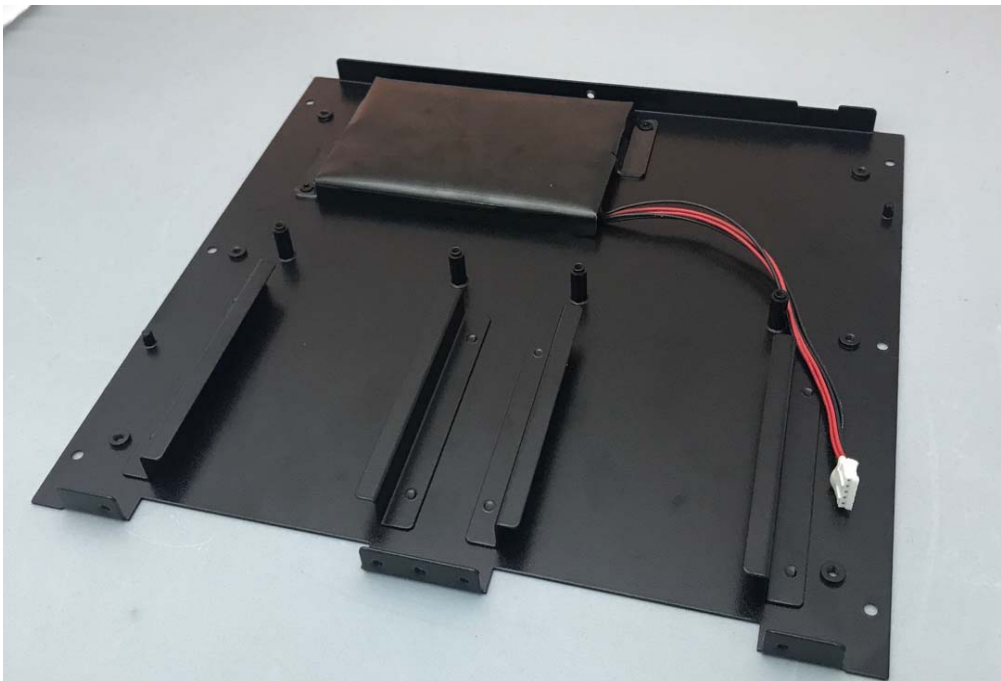
Step 1. Put the battery on the back cover



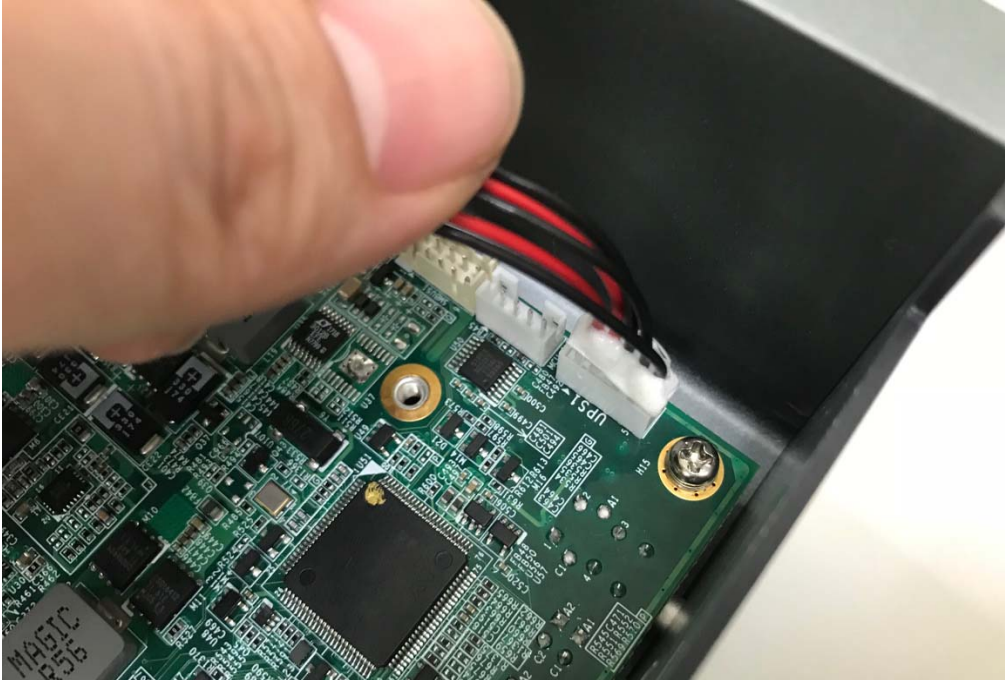
Step 2. Screw two screws as shown in the picture.



Step 3. Done as shown in the picture.



Step 4. Connect the battery with motherboard on UPS location



4.11 Installing HDD

Step 1. Put the HDD into HDD Holder as shown in the picture.



Step 2. Screw two screws on both side as shown in the picture.



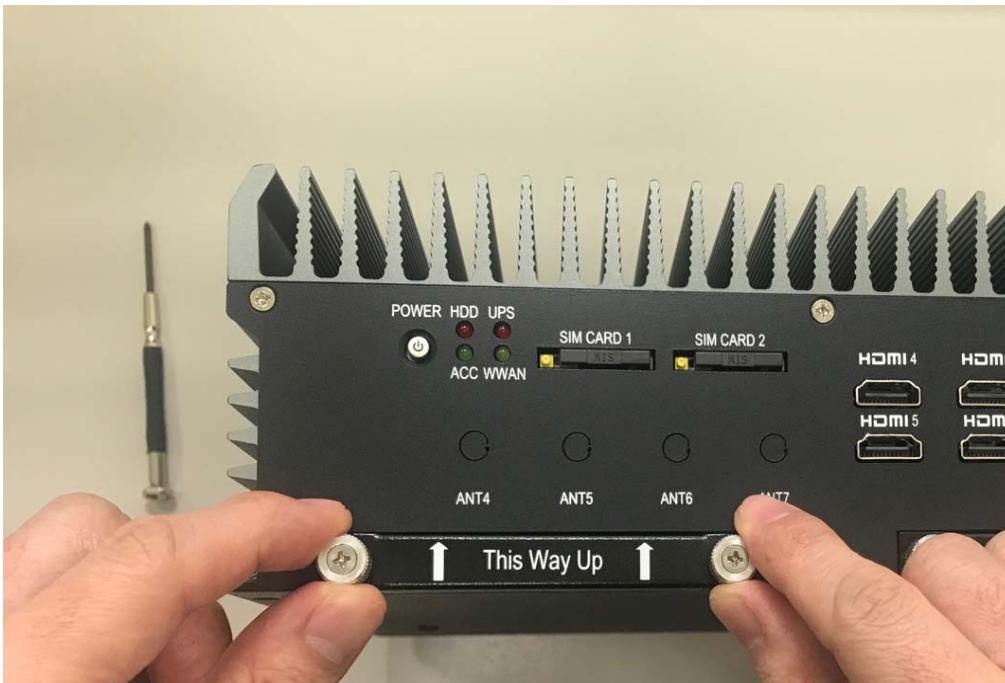
Step 3. Push the HDD Holder into the socket as shown in the picture.



Step 4. Fully insert the HDD Holder into the socket until a “click” is heard as shown in the picture.

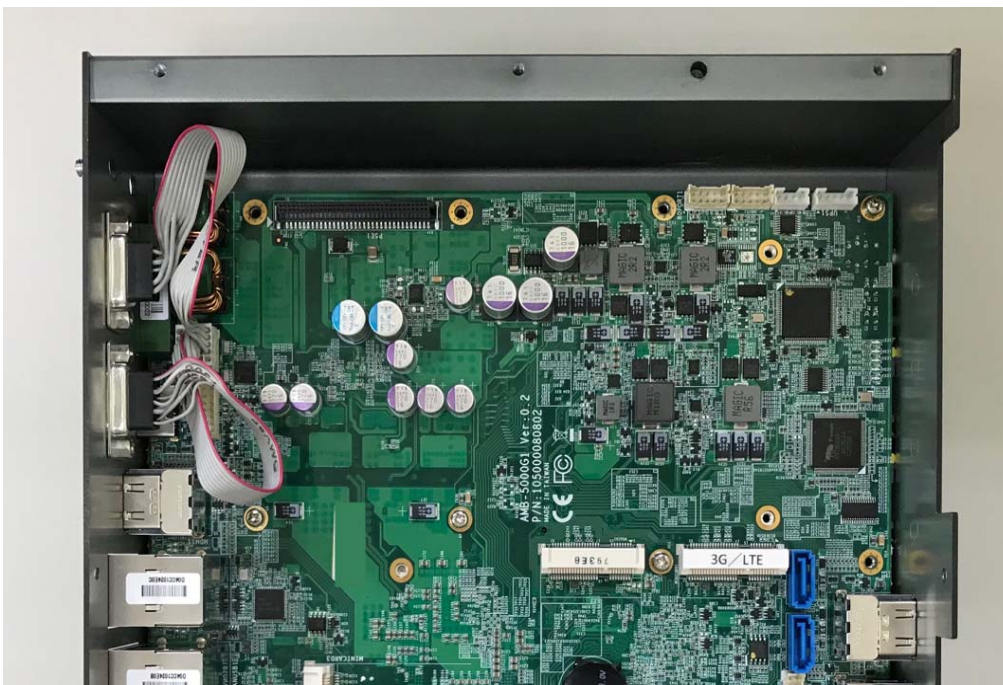


Step 5. Tighten to Storage Bracket screws as shown in the picture.



4.12 Installing POE Module

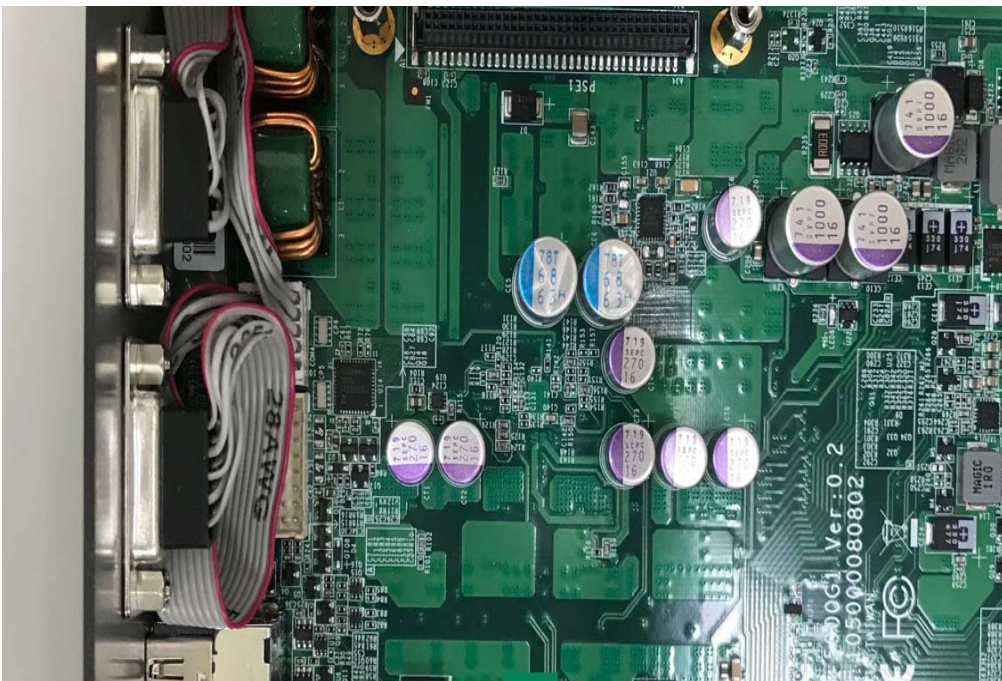
Step 1. Put POE Module on this place as shown in the picture.



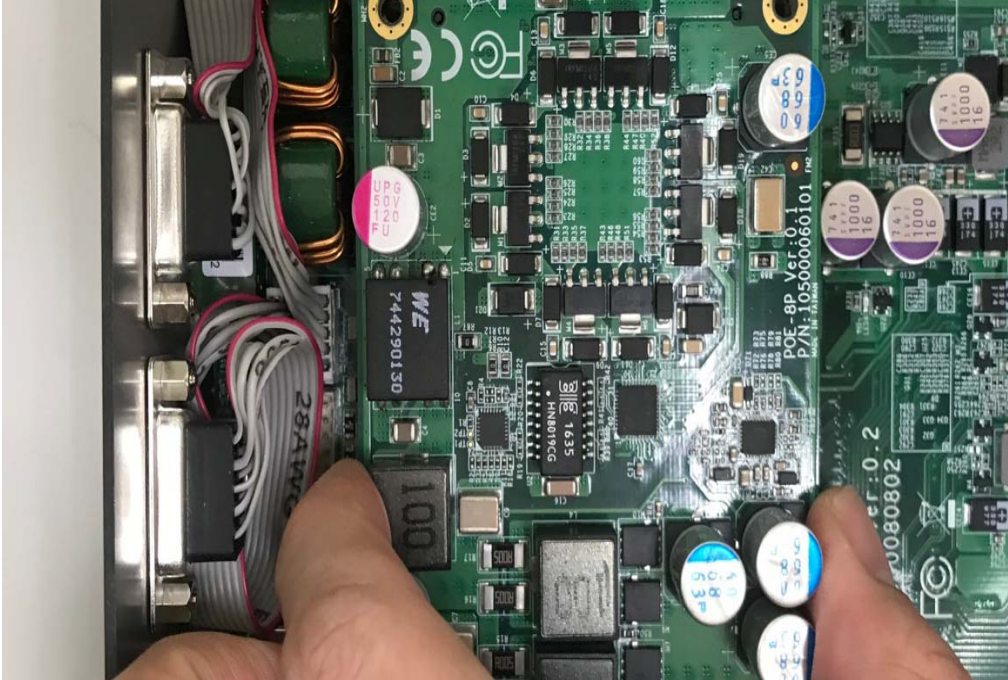
Step 2. Unscrew the four screws of the motherboard as shown in the picture



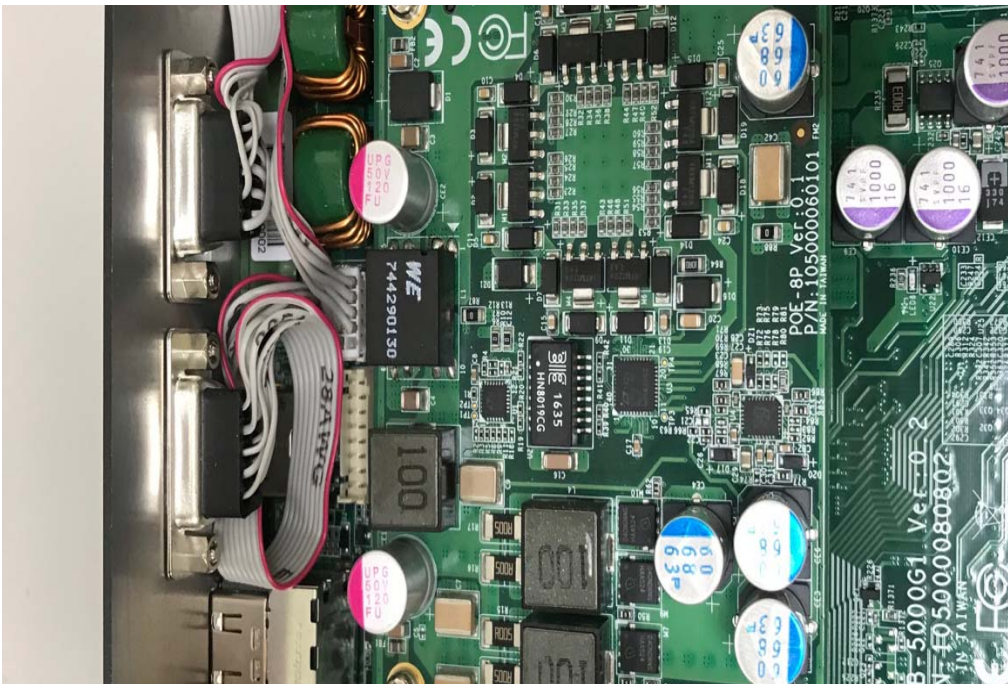
Step 3. Screw the four hex standoff of the motherboard as shown in the picture



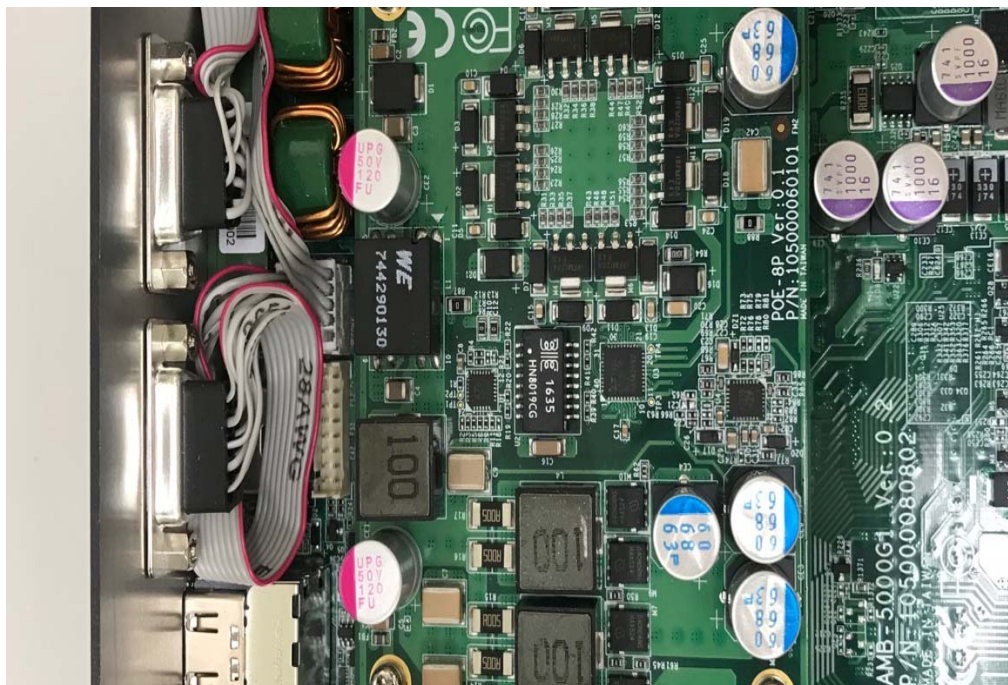
Step 4. Put the POE-8P module on the motherboard as shown in the picture



Step 5. Screw the four screws as shown in the picture

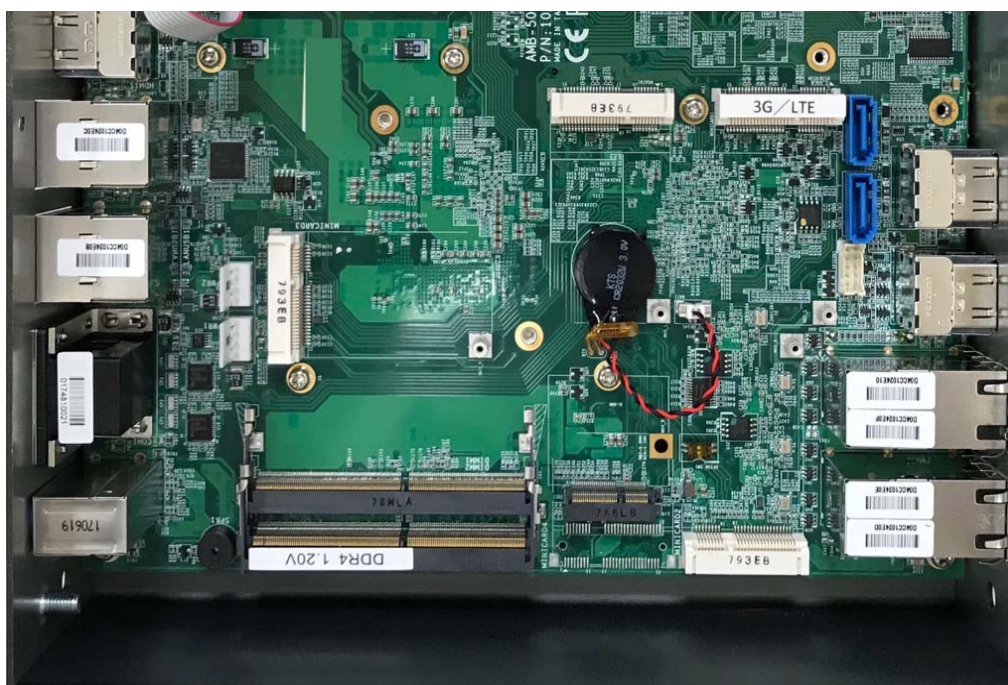


Step 6. Done as shown in the picture

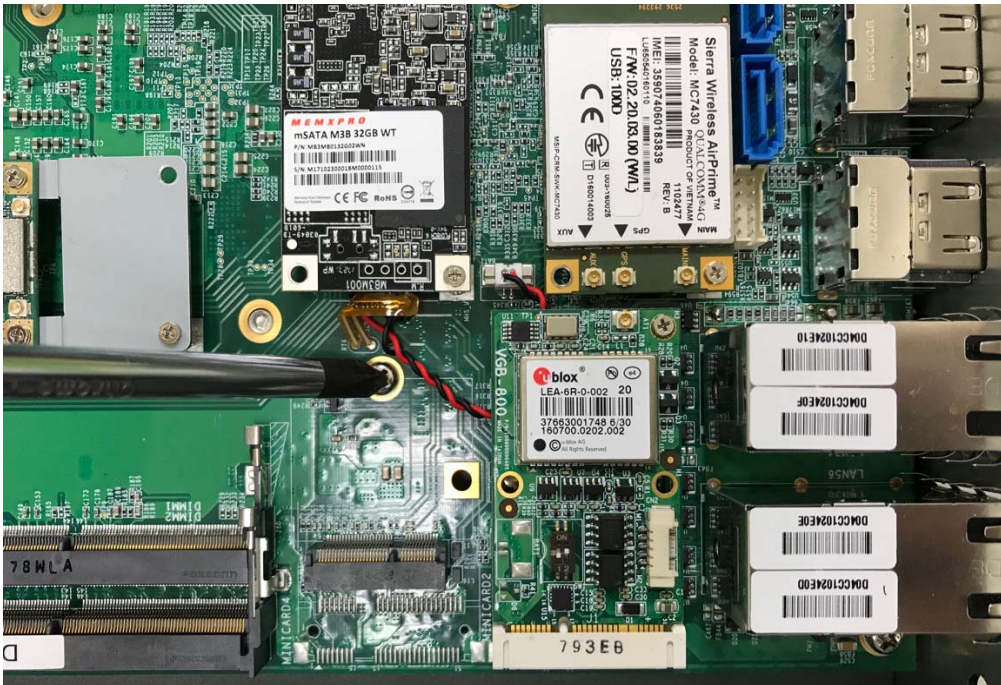


4.13 Installing M.2 Module

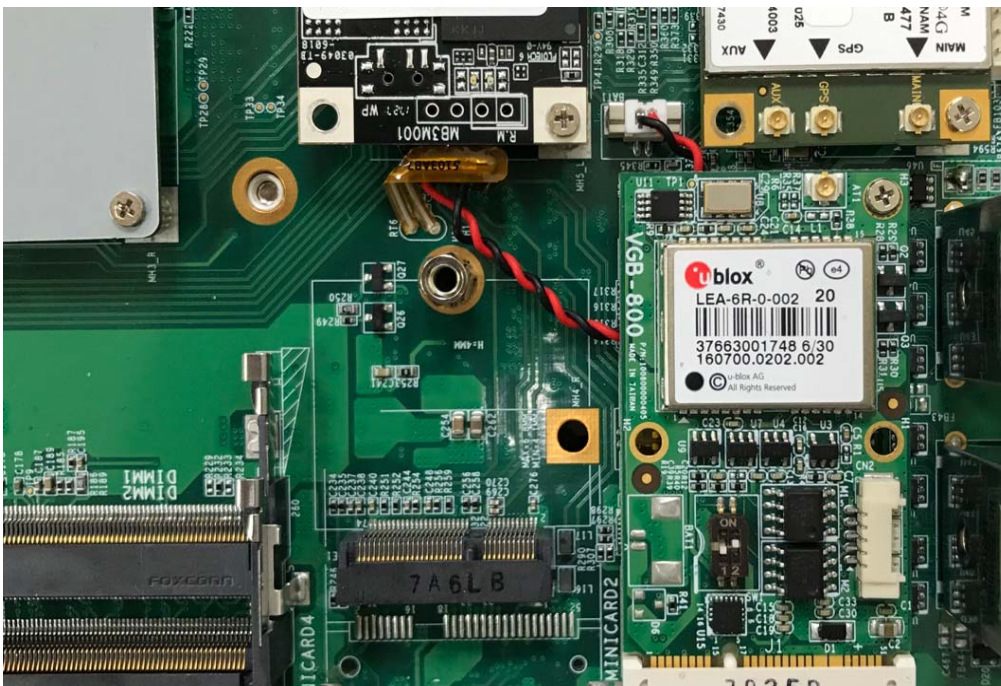
Step 1. Put M.2 Module on this place as shown in the picture.



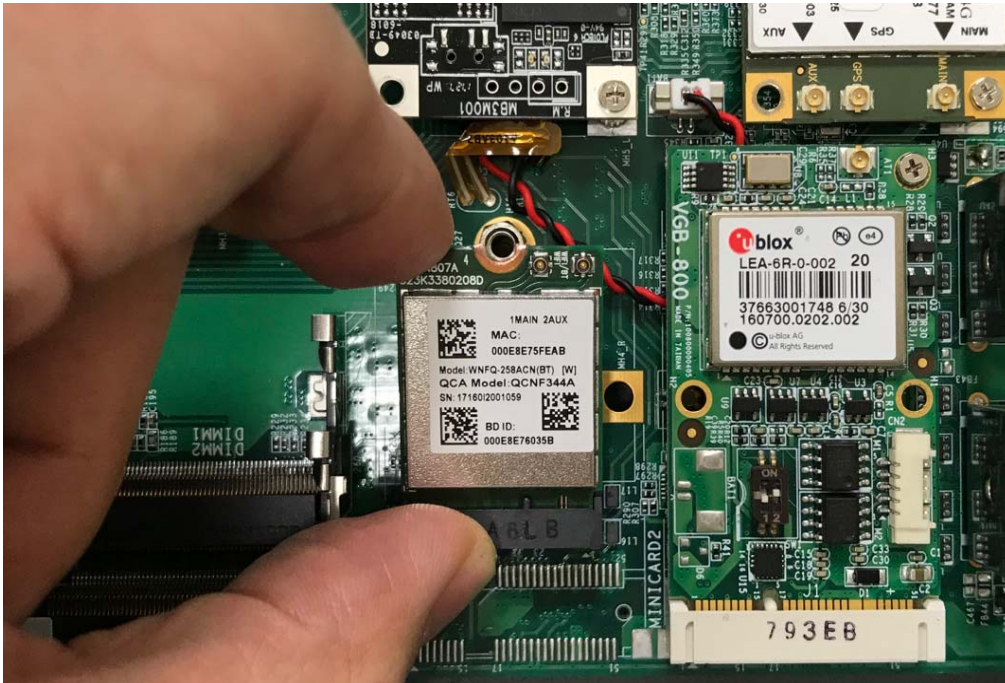
Step 2. Unscrew the one screw of the motherboard as shown in the picture



Step 3. Screw the one hex standoff of the motherboard as shown in the picture



Step 4 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 5. Screw one screw to the holder as shown in the picture.



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



5.0 SYSTEM RESOURCE

5.0 SYSTEM RESOURCE

5.1 Ignition Power Management Quick Guide

Startup/shutdown conditions from the IGNITION signal:

- IGNITION startup signal must be valid during 3 sec. (anti noise protection).
- IGNITION shutdown – IGNITION signal must be inactive during 3 Sec, then PIC controller initiate Power Button signal (**OS must be set to shutdown from the Power Button**). It generate Main Button shutdown event and then goes to complete power off.

Typically the system can start only from IGNITION signal, because startup PIC controller is disconnected from the power source.

The system can be switched off from:

- Power IGNITION OFF signal.
- ACPI OS shutdown
- Power Button – generate ACPI event (OS dependent).

Power Ignition Startup Procedure

Power Ignition Shutdown Procedure

Power Management

- Power-off delay time is selectable by Software to disable and enable in 0-99 minutes
- Ignition On/Off status detectable by SW
- If the ignition is off and the system is still on after 3 Sec, FleetPC-9 will shut down automatically.
- If the ignition is turned on again and the power-off delay is in progress, FleetPC-9 will cancel the delay function and will continue to operate normally.
- If the ignition is turned on again and the power-off delay ended, FleetPC-9 will shut down completely will power-on again automatically.

5.2 GPIO & Delay Time Setting

5.2.1 GPIO and Ignition Control Register

The General Purpose I/O is an interface available on some devices. These can read [digital](#) signals from other parts of a circuit, or output to control other devices. At GPIO control register, the GPI is use to receive data, the GPO is set data to send.

I/O port: 0xA35 (base address) for Control Register (Read 0xA2h / Write 0xA1h)
0xA36 (base address) for Control Data Value

Debug Command Line

- **0 A35 A1**
- **0 A36 0F // Set Bit 4-7 to Low**

7	6	5	4	3	2	1	0
DO4	DO3	DO2	DO1	DI4	DI3	DI2	DI1

GPIO5 Output Enable Register – Index A0h

Bit	Name	R/W	Default	Description
7	GPIO57_OE	R/W	0	0 : GPIO57 is input 1 : GPIO57 is output
6	GPIO56_OE	R/W	0	0 : GPIO56 is input 1 : GPIO56 is output
5	GPIO55_OE	R/W	0	0 : GPIO55 is input 1 : GPIO55 is output
4	GPIO54_OE	R/W	0	0 : GPIO54 is input 1 : GPIO54 is output
3	GPIO53_OE	R/W	0	0 : GPIO53 is input 1 : GPIO53 is output
2	GPIO52_OE	R/W	0	0 : GPIO52 is input 1 : GPIO52 is output
1	GPIO51_OE	R/W	0	0 : GPIO51 is input 1 : GPIO51 is output
0	GPIO50_OE	R/W	0	0 : GPIO50 is input 1 : GPIO50 is output

GPIO5 Output Data Register – Index A1h

Bit	Name	R/W	Default	Description
7	GPIO57_DATA	R/W	1	GPIO57 output data in output mode.
6	GPIO56_DATA	R/W	1	GPIO56 output data in output mode.
5	GPIO55_DATA	R/W	1	GPIO55 output data in output mode.
4	GPIO54_DATA	R/W	1	GPIO54 output data in output mode.
3	GPIO53_DATA	R/W	1	GPIO53 output data in output mode.
2	GPIO52_DATA	R/W	1	GPIO52 output data in output mode.
1	GPIO51_DATA	R/W	1	GPIO51 output data in output mode.
0	GPIO50_DATA	R/W	1	GPIO50 output data in output mode.

GPIO5 Pin Status Register – Index A2h

Bit	Name	R/W	Default	Description
7	GPIO57_ST	R	1	GPIO57 pin status.
6	GPIO56_ST	R	1	GPIO56 pin status.
5	GPIO55_ST	R	1	GPIO55 pin status.
4	GPIO54_ST	R	1	GPIO54 pin status.
3	GPIO53_ST	R	1	GPIO53 pin status.
2	GPIO52_ST	R	1	GPIO52 pin status.
1	GPIO51_ST	R	1	GPIO51 pin status.
0	GPIO50_ST	R	1	GPIO50 pin status.

GPIO5 Drive Enable Register – Index A3h

Bit	Name	R/W	Default	Description
7	GPIO57_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO57 is open drain. 1 : GPIO57 is push pull.
6	GPIO56_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO56 is open drain. 1 : GPIO56 is push pull.
5	GPIO55_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO55 is open drain. 1 : GPIO55 is push pull.
4	GPIO54_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO54 is open drain. 1 : GPIO54 is push pull.
3	GPIO53_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO53 is open drain. 1 : GPIO53 is push pull.
2	GPIO52_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO52 is open drain. 1 : GPIO52 is push pull.
1	GPIO51_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO51 is open drain. 1 : GPIO51 is push pull.
0	GPIO50_DRV_ENST	R/W	0	GPIO57 Drive Enable 0 : GPIO50 is open drain. 1 : GPIO50 is push pull.

I/O port: I/O port: 0xA35 (base address) for Control Register (Read 0xF2h bit 3)
0xA36 (base address) for Control Data Value

7	6	5	4	3	2	1	0
X		X		X		X	Ignitio n Status
							X
							X
							X

Debug Command Line

- O A35 F2
- I A36 // Check Bit 3 Status

5.2.2 WDT Setting

I/O port: **A10 (base address) + 05h and 06h**

1 Watchdog Timer Control Register

The Watchdog Timer Control Register controls the WDT working mode. Write the value to the WDT Configuration Port. The following table describes the Control Register bit definition:

7	6	5	4	3	2	1	0	
0	0	1	1	Timer Unit	0	Select output pulse width of RSTOUT#		

Debug Command Line

- **O A16 05**
- **O A15 32 // 5 sec // 3A → 5 minutes**

Watchdog Timer Function

Watch dog timer is provided for system controlling. If time-out can trigger one signal to high/low level/pulse, the signal is depend on register setting.

The time unit has two ways from 1sec or 60sec. In pulse mode, there are four pulse widths can be selected (1ms/25ms/125ms/5sec). Others, please refer the device register description as below.

Watchdog Timer Configuration Register 1- base address +05h

Bit	Name	R/W	Default	Description
7	Reserved	R	0	Reserved
6	WDTMOUT_STS	R/W	0	If watchdog timeout event occurs, this bit will be set to 1. Write a 1 to this bit will clear it to 0.
5	WD_EN	R/W	0	If this bit is set to 1, the counting of watchdog time is enabled.
4	WD_PULSE	R/W	0	Select output mode (0:level, 1:pulse) of RSTOUT# by setting this bit.
3	WD_UNIT	R/W	0	Select time unit (0:1sec, 1:60sec) of watchdog timer by setting this bit.
2	WD_HACTIVE	R/W	0	Select output polarity of RETOUT# (1:high active, 0:low active) by setting the bit.
1-0	WD_PSWIDTH	R/W	0	Select output pulse width of RSTOUT# 0:1 ms 1:25 ms 2:125 ms 3:5 sec

Watchdog Timer Configuration Register 2- base address +06h

Bit	Name	R/W	Default	Description
7-0	WD_TIME	R/W	0	Time of watchdog timer

Watchdog PME Control Register - base address + 0Ah

Bit	Name	R/W	Default	Description
7	WDT_PME	R	--	The PME Status This bit will set when WDT_PME_EN is set and the watchdog timer is 1 unit before time out (of time out)
6	WDT_PME_EN	R/W	0	0 : Disable Watchdog PME. 1 : Enable Watchdog PME
5-1	Reserved	--	--	Reserved
0	WDOUT_EN	R/W	0	0 : disable Watchdog time out output via WDTRST# 1 : enable Watchdog time out output via WDTRST#

6.0 BIOS

6.0 BIOS

6.1 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 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

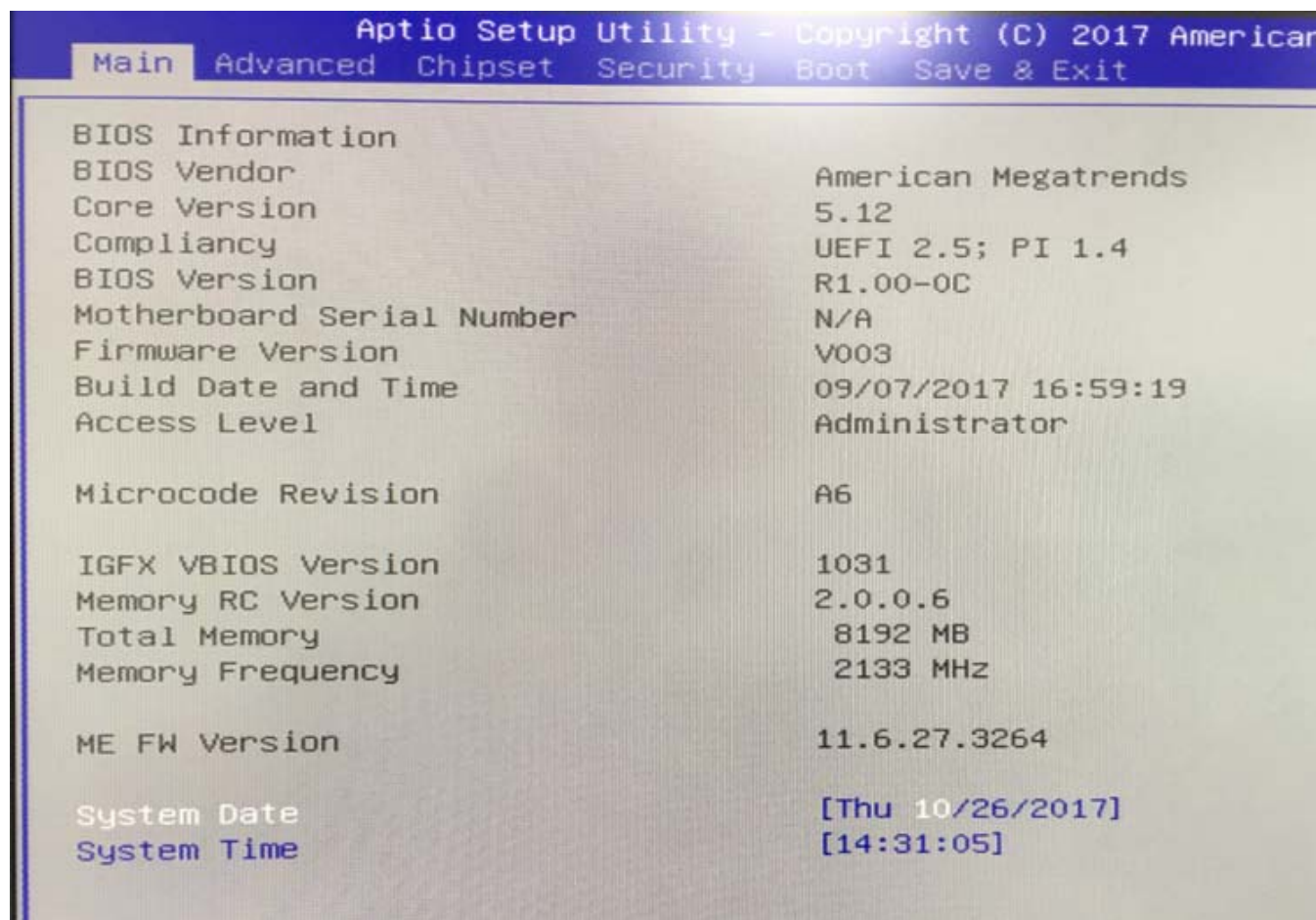
If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the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

6.2 Main

Time Setting



» System Date

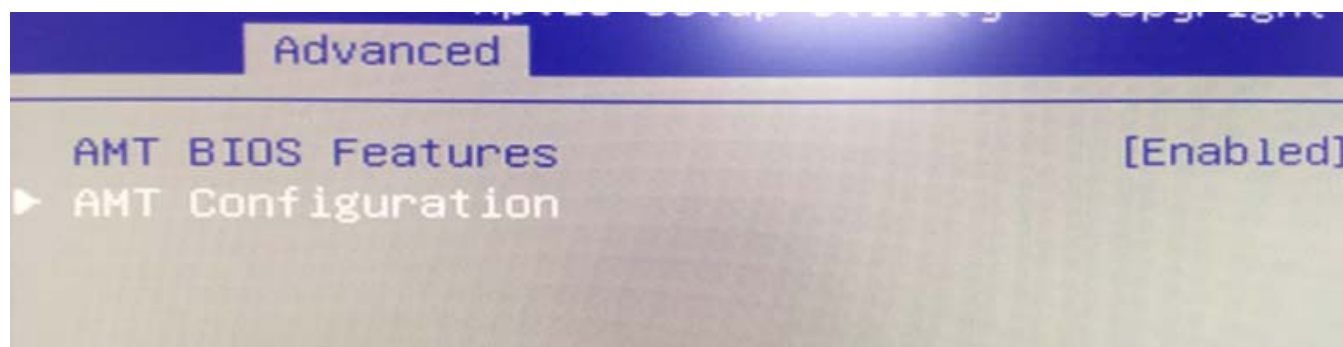
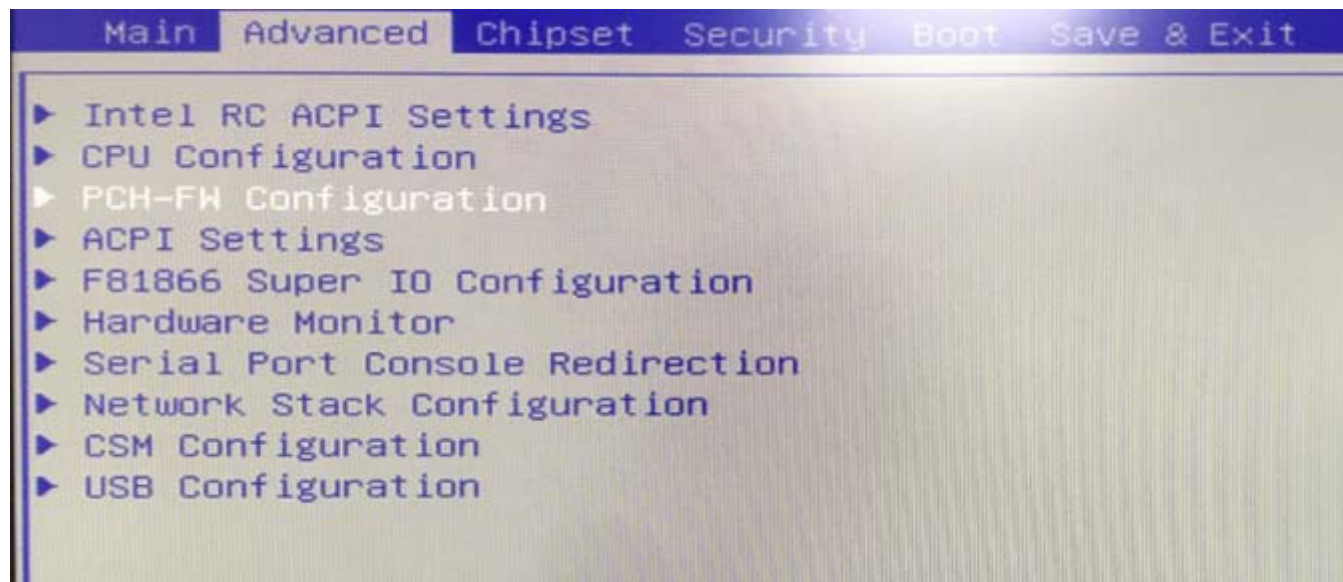
This setting allows you to set the system Date. The time format is <Day> <Month> <Date> <Year>.

» System Time

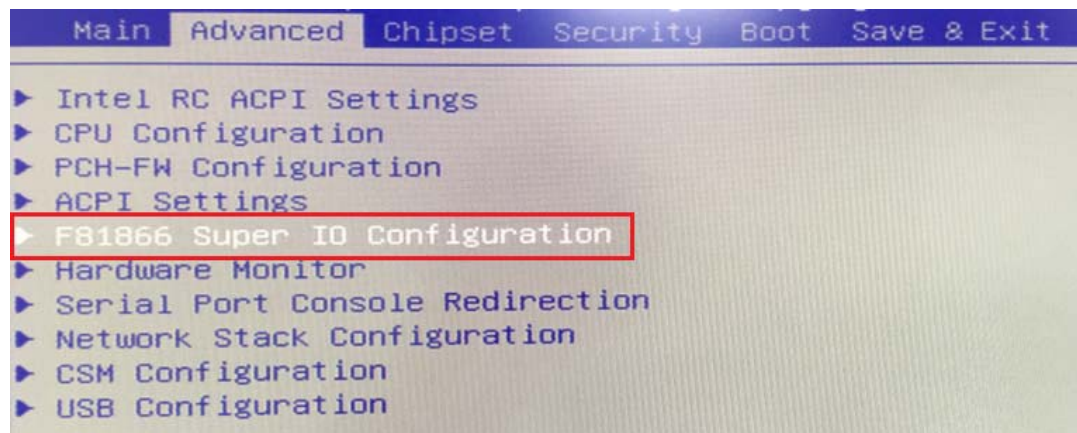
This setting allows you to set the system time. The time format is <Hour> <Minute> <Second>.

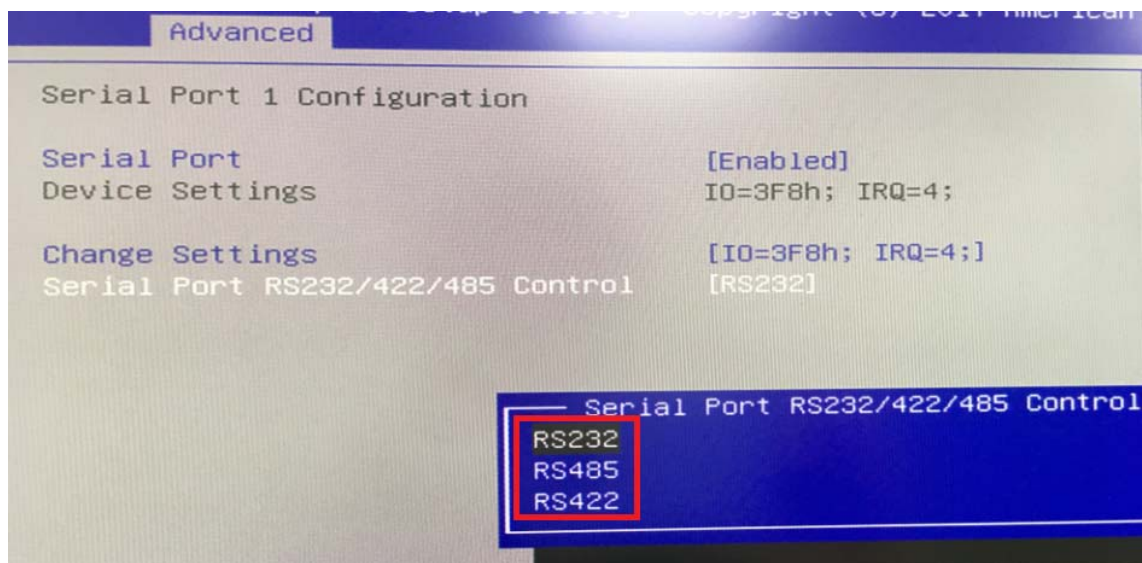
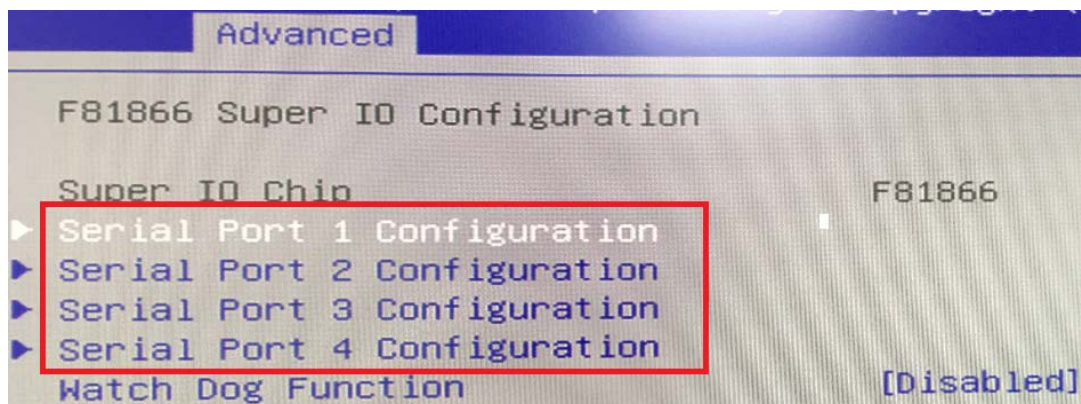
6.3 Advanced

AMT Configuration



Serial Port Configuration

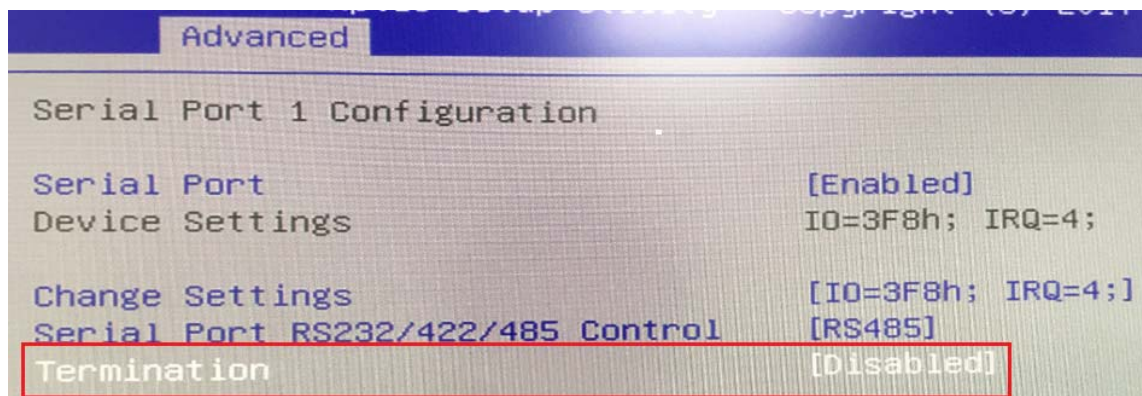




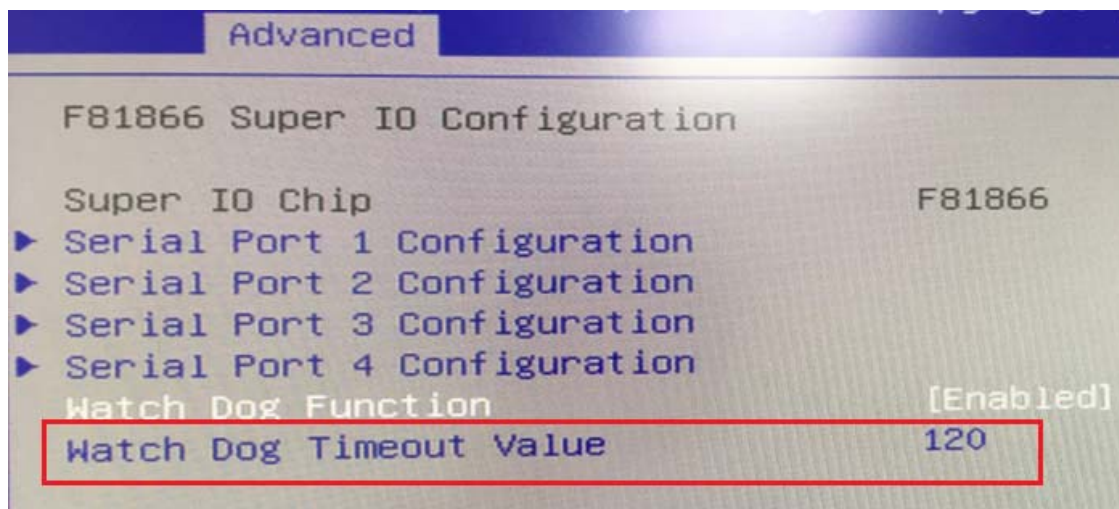
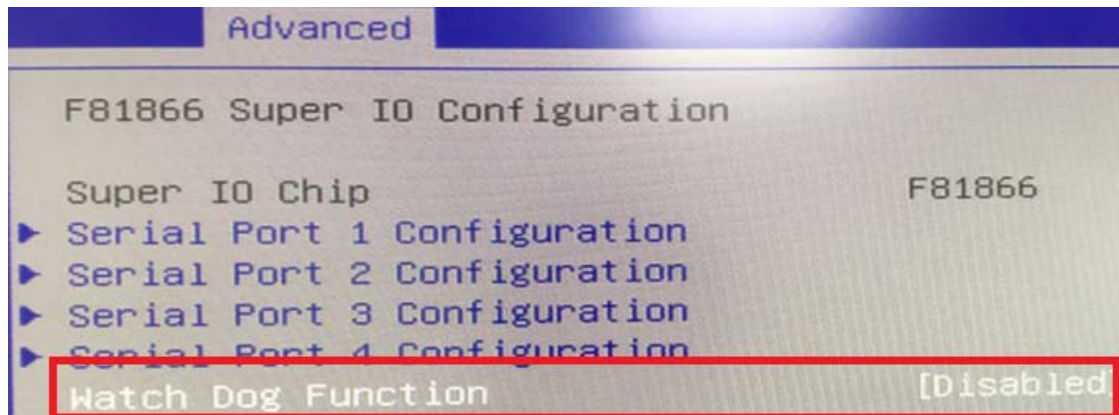
» **Serial Port 1/2/3/4 Enable or Disable**

Select an Enable or Disable for the specified serial ports.

» **COM1 RS232/422/485 Select**

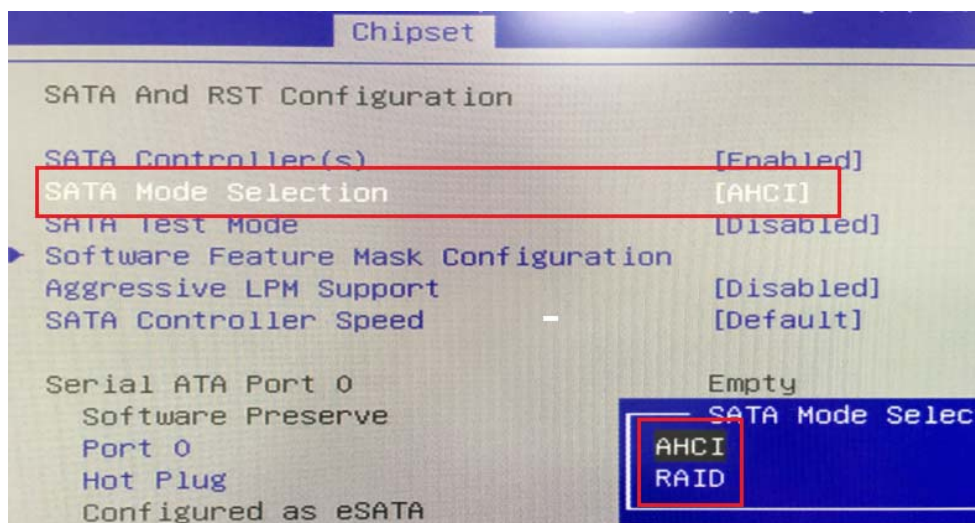
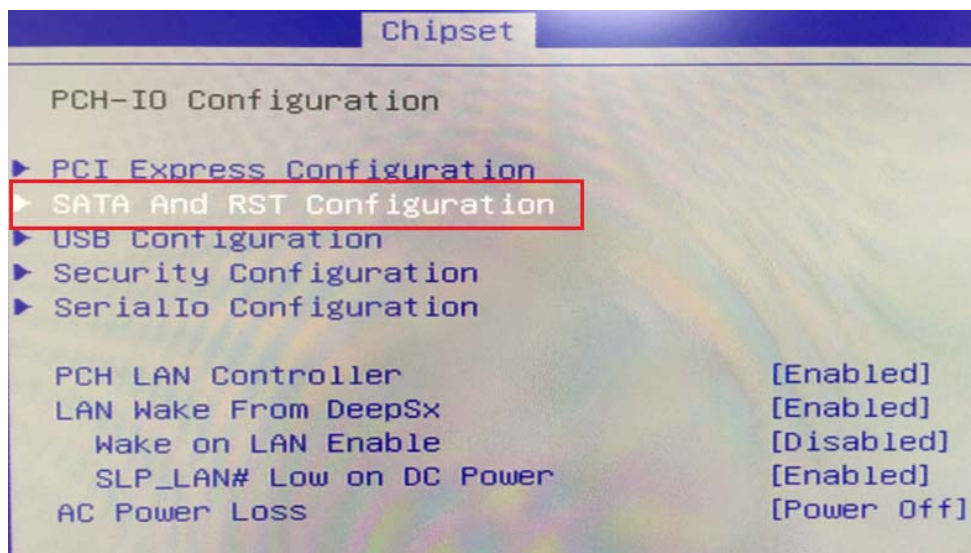


» Watch Dog Function



6.4 Chipset

RAID Mode



```
SATA And RST Configuration

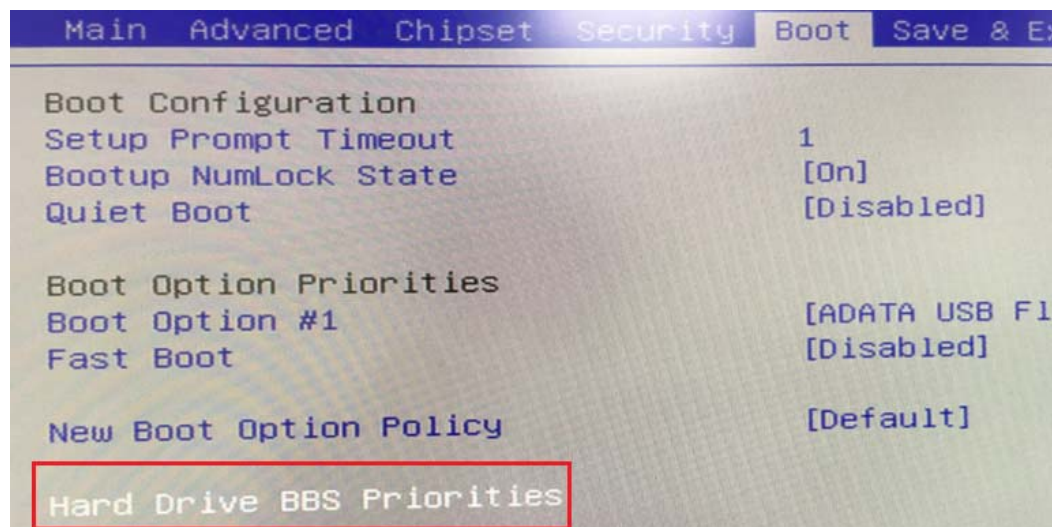
SATA Controller(s)           [Enabled]
SATA Mode Selection          [RAID]
SATA Test Mode               [Disabled]
RAID Device ID               [Client]
Software Feature Mask Configuration
Aggressive LPM Support       [Disabled]
SATA Controller Speed        [Default]

Serial ATA Port 0            Empty
  Software Preserve          Unknown
  Port 0                     [Enabled]
  Hot Plug                   [Disabled]
  Configured as eSATA        Hot Plug su
  Spin Up Device             [Disabled]
  SATA Device Type           [Solid Stat
  Topology                   [ISATA]
  SATA Port 0 DevSlp         [Disabled]
  DITO Configuration         [Disabled]
```

```
Software Feature Mask Configuration

HDD Unlock                   [Enabled]
LED Locate                   [Enabled]
Use RST Legacy OROM          [Enabled]
RAID0                        [Enabled]
RAID1                        [Disabled]
RAID10                       [Disabled]
RAID5                        [Disabled]
Intel Rapid Recovery Technology [Enabled]
OROM UI and BANNER           [Enabled]
IRRT Only on eSATA          [Enabled]
Smart Response Technology     [Enabled]
OROM UI Normal Delay         [2 secs]
RST Force Form               [Disabled]
```


6.5 Boot



» 1st/2nd Boot Device

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

» Try Other Boot Devices

Setting the option to [Enabled] allows the system to try to boot from other device if the system fail to boot from the 1st/2nd boot device.

» Hard Disk Drives, CD/DVD Drives, USB Drives

These settings allow you to set the boot sequence of the specified devices.

7.0 PACKING LIST





7.0 PACKING LIST

7.1 Packing List

System

Item	Part Number	Module Name
1	765000040009	FleetPC-9G1-i7 System
2	765000040010	FleetPC-9PG1-i7 System
3	765000040015	FleetPC-9G1-C1 System
4	765000040016	FleetPC-9PG1-i7K System

Accessory

Picture	Part Number	Module Name	Q'ty
	326910027661	Cabling MC421-350-02G F 90D	1
	326510051061	Cabling MC101-508-05GA1 F 90D	1
	370850001000	FleetPC-9 MOUNT BRACKET	2
	351103040250	Screw F Type M3*4L ISO BK	4