ECB-960T

SMARC Specifications 1.0

ARM, x86 Interface

SATA 3.0 Gb/s x 2, USB 2.0 x 4

PCIe [x1] x 3, microSD, I2C

HDMI, LVDS, HD Audio

ECB-960T Rev. A Manual 1st Ed.
June 29, 2015

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Packing List

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

- DVD-ROM for manual (in PDF format) and drivers
- ECB-960T SMARC Carrier Board
- 1701090150 UART Cables x 2
- 1709070500 SATA cable x 1
- 1702150155 SATA PWR cable x 1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

China RoHS Requirements
产品中有毒有害物质或元素名称及含量

AAEON Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○

O：表示该有毒有害物质在该部件所有均质材料中的含量均在 **SJ/T 11363-2006** 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 **SJ/T 11363-2006** 标准规定的限量要求。

备注：此产品所标示之环保使用期限，系指在一般正常使用状况下。

China RoHS Requirements

Poisonous or Hazardous Substances or Elements in Products

AAEON Main Board/ Daughter Board/ Backplane

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	**Mercury (Hg)**	**Cadmium (Cd)**	**Hexavalent Chromium (Cr(VI))**	**Polybrominated Biphenyls (PBB)**	**Polybrominated Diphenyl Ethers (PBDE)**
PCB & Other Components	X	O	O	O	O	O○
Wires & Connectors for External Connections	X	O	O	O	O	O

O：The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.

X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

Contents

Chapter

1

General Information

1.1 Introduction

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the AAEON.com for the latest version of this document.

1.2 Features

- Supports both ARM/x86 interface
- Supports 1x Gigabit Ethernet, RJ-45
- HDMI, 24-bit Single Channel LVDS
- High Definition Audio Interface
- SATA 6.0 Gb/s x 2, USB 2.0 x 4, USB OTG 2.0 x 1 (Not Supported for E3800 Platforms)
- PCIe [x1] x 3 (in PCIe [x4] connector)
- MIPI Interface for Cameras (Not Supported for E3800 Platforms)
- I2C/I2S Interface (I2S Not Supported for E3800 Platforms), SPI Interface, UART x 2
- microSD card Slot

** The above features are dependent on the SMARC module*

1.3 Specifications

System

- Form Factor: Mini-iTX
- Dimensions: 170 x 170 mm
- Platform: x86/ ARM
- I/O Chip: N/A
- Ethernet: RJ-45 x 1
- BIOS: N/A
- Wake On LAN: From SMARC Module
- Watchdog Timer: From SMARC Module
- H/W Status Monitoring: From SMARC Module
- Battery: Lithium RTC battery
- Power Requirement: DC 12V, AT/ATX
- Gross Weight: 0.4kg (0.88 lbs)
- Operating Temperature: 0 °C ~ 60 °C (32 °F ~ 140 °F)
- Storage Temperature: -40°C ~ 80°C (-40°F ~ 176°F)
- Operation Humidity: 0% ~ 90% Relative Humidity, Non-Condensing

Display

- LCD Interface: LVDS

I/O

- Storage: SATA 6.0Gb/s x 2
- USB: USB 3.0/2.0 x 1
- Serial Port: 2-wire UART x 1, 4-wire UART x 1
- DI/O: 12-bit digital I/O interface controlled by BIOS (DI/O default)
- Audio: Realtek ALC 892

Chapter

2

Quick Installation Guide

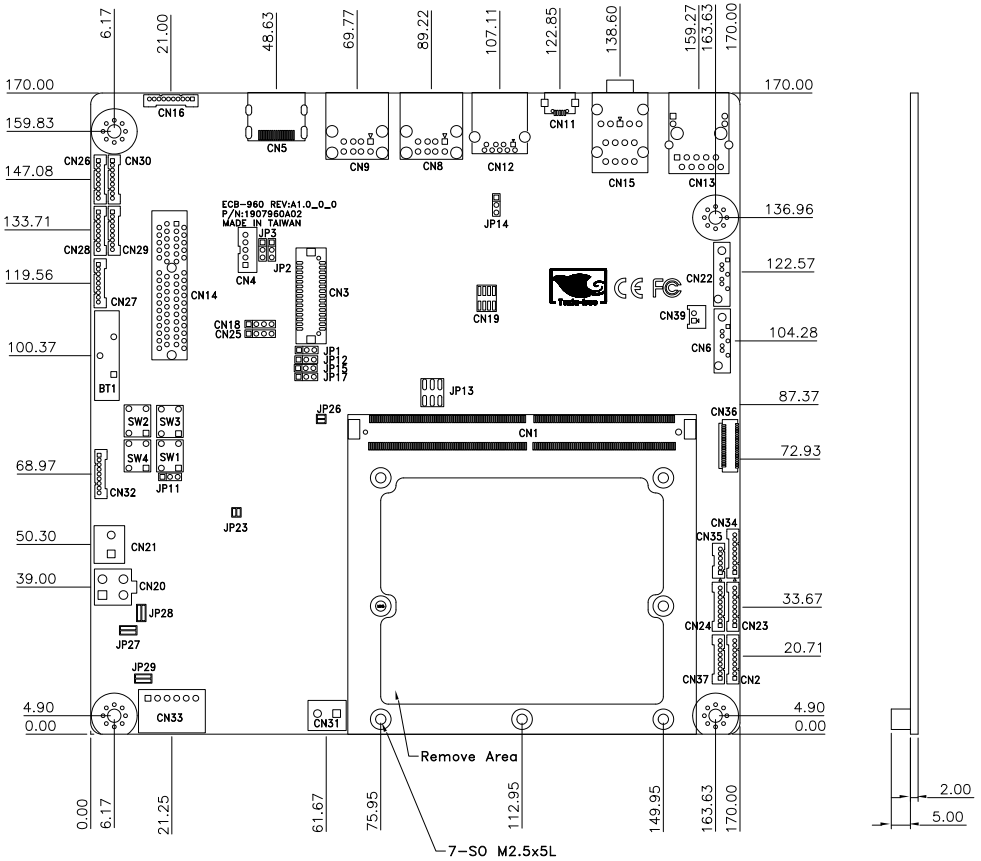
2.1 Safety Precautions

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

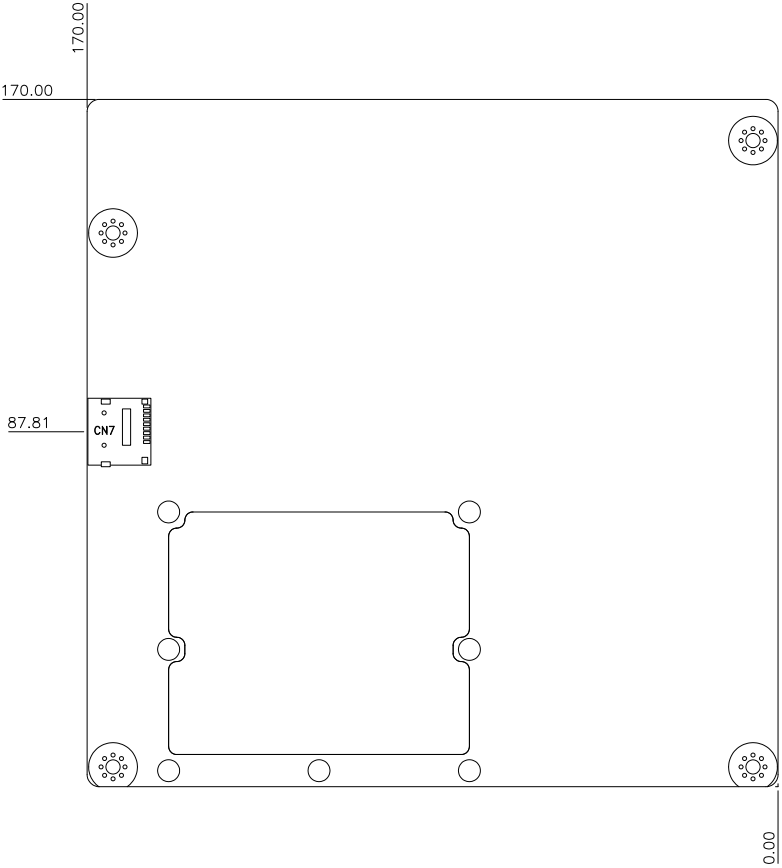
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Board Layout

Component Side



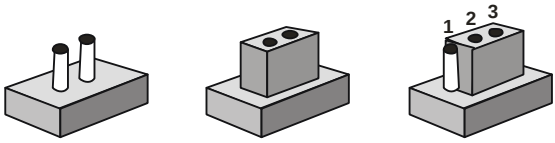
Solder Side



2.3 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip.

To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



Open **Closed** **Closed 2-3**

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

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

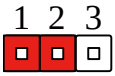
2.4 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

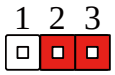
The table below shows the function of each of the board's jumpers:

Label	Function
JP1	LVDS Voltage Selection
JP2	Backlight Control Voltage Selection
JP3	Backlight Control
JP11	AT/ATX Selection
JP12	VDD_IO Voltage Selection(System Power)
JP13	Boot Selection
JP14	USB Selection
JP15	VDD_IO Voltage Selection(SBY Power)
JP17	Clear CMOS Selection
SW1	Power Button
SW2	Rest Button
SW3	LID# Button
SW4	Sleep# Button

2.4.1 LVDS Voltage Selection (JP1)

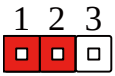


+5 V

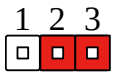


+3.3 V (Default)

2.4.2 LVDS Backlight Control Voltage Selection (JP2)

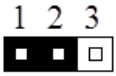


+5 V (Default)

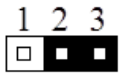


+12 V

2.4.3 Backlight Control (JP3)

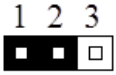


LVD_1ND_VR

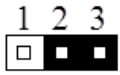


LCD_BKLT_PWM_VIO (Default)

2.4.4 AT/ATX Selection (JP11)

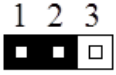


AT

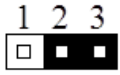


ATX (Default)

2.4.5 VDD_IO Voltage Selection (System Power) (JP12)

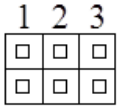


VDD_IO Output +1.8 V (Default)



VDD_IO Output +3.3 V

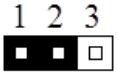
2.4.6 Boot Selection (JP13)



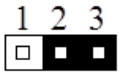
Module SPI (Default, all pins not shorted)

Carrier Board Connection			Boot Source
Pin 1	Pin 2	Pin 3	
GND	GND	GND	Carrier Board SATA
GND	GND	Float	Carrier Board SD Card
GND	Float	GND	Carrier Board eMMC Flash
GND	Float	Float	Carrier Board SPI
Float	GND	GND	Module Device
Float	GND	GND	Remote Boot
Float	Float	GND	Module eMMC Flash
Float	Float	Float	Module SPI

2.4.7 USB Selection (JP14)

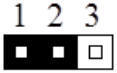


Always ON (Default)

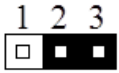


Cable Select

2.4.8 VCC_VIO Voltage Selection (SBY Power) (JP15)

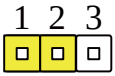


VDD_IO Output +1.8V (Default)

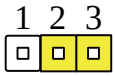


VDD_IO Output +3.3 V

2.4.9 Clear CMOS (JP17)



Normal (Default)



Clear CMOS

2.5 List of Connectors

The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

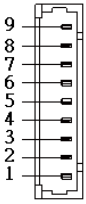
Label	Function
CN1	MXM Connector
CN2	I2C Signal Connector
CN3	Internal LVDS Connector
CN4	LVDS Backlight Connector
CN5	HDMI Connector
CN6	SATA Connector
CN7	MicroSD Card Connector
CN8	USB 2.0 Connector
CN9	USB 2.0 Connector
CN11	Micro USB 2.0 Connector
CN12	USB 3.0 Connector
CN13	LAN Connector
CN14	PCIe Connector
CN15	Audio Connector
CN16	Audio Connector
CN18	CAN Bus Connector
CN19	SPI Flash Connector
CN20	ATX Power-In Connector
CN21	Wide Voltage Input Connector (Not Connected by Default)

CN22	SATA Connector
CN23	I2S0 Signal Connector
CN24	MCSI2 Signal Connector
CN25	CAN Bus Connector
CN26	UART Connector
CN27	UART Connector
CN28	UART Connector
CN29	DIO Connector
CN30	DIO Connector
CN31	Adapter Power-In Connector
CN32	Signal Information Connector
CN33	Lithium-Ion Battery Connector (Not Connected by Default)
CN34	Signal Information Connector
CN35	SPI1 Connector
CN36	Camera Connector
CN37	I2S1 Signal Connector
CN39	SATA Power Connector

2.5.1 MXM Connector (CN1)

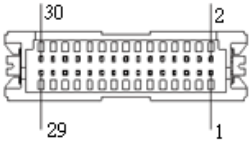
Please refer to section 2.6

2.5.2 I2C Connector (CN2)



Pin	Pin Name	Signal type	Signal Level
1	VCC	OUT	+3.3V
2	VCC	OUT	+1.8V
3	I2C_GP_CK_3V		
4	I2C_GP_DTA_3V		
5	I2C_PM_CK_3VSB		
6	I2C_PM_DTA_3VSB		
7	NC		
8	NC		
9	GND	GND	

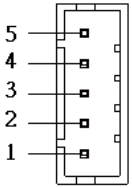
2.5.3 Internal LVDS Connector (CN3)



Pin	Pin Name	Signal Type	Signal level
1	LVD1_BKLTEN	OUT	
2	LVD1_BKLCTL	OUT	
3	VLCD_1ND	PWR	+3.3V OR +5V
4	GND	GND	
5	LVD1_A_CLKN	OUT	
6	LVD1_A_CLKP	OUT	
7	VLCD_1ND	PWR	+3.3V OR +5V
8	GND	GND	
9	LVD1_A_TXN2	I/O	
10	LVD1_A_TXP2	I/O	
11	LVD1_A_TXN1	I/O	
12	LVD1_A_TXP1	I/O	
13	LVD1_A_TXN0	I/O	
14	LVD1_A_TXP0	I/O	
15	NC	NC	
16	NC	I/O	
17	LVD1_DDC_SDA	I/O	
18	LVD1_DDC_SCL	I/O	
19	NC	NC	
20	NC	NC	
21	NC	NC	

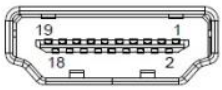
22	NC	NC	
23	NC	NC	
24	NC	NC	
25	NC	NC	
26	NC	NC	
27	VLCD_1ND	PWR	+3.3V OR +5V
28	GND	GND	
29	NC	NC	
30	NC	NC	

2.5.4 LVDS Backlight Connector (CN4)



Pin	Pin Name	Signal Type	Signal level
1	LVDS Voltage select	OUT	
2	LVDS Backlight control	OUT	
3	GND	GND	
4	GND	GND	
5	LVDS Backlight Enable	OUT	

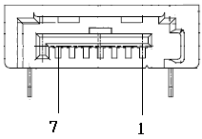
2.5.5 HDMI Connector (CN5)



Pin	Pin Name	Signal type	Signal Level
1	TMDS_DAT2+	DIFF	
2	GND	GND	
3	TMDS_DAT2-	DIFF	
4	TMDS_DAT1+	DIFF	
5	GND	GND	
6	TMDS_DAT1-	DIFF	
7	TMDS_DAT0+	DIFF	
8	GND	GND	
9	TMDS_DAT0-	DIFF	
10	TMDS_CLK+	DIFF	
11	GND	GND	
12	TMDS_CLK-	DIFF	
13	NC		
14	NC		
15	DDC_CLK	I/O	
16	DDC_DATA	I/O	
17	GND	GND	
18	+5V	PWR	+5V

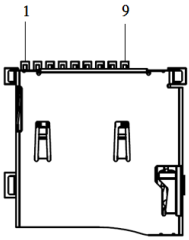
19	HPLG_DETECT

2.5.6 SATA Connector (CN6)



Pin	Pin Name	Signal type	Signal level
1	GND	GND	
2	SATA_TXP1_C	I/O	
3	SATA_TXN1_C	I/O	
4	GND	GND	
5	SATA_RXN1_C	I/O	
6	SATA_RXP1_C	I/O	
7	GND	GND	

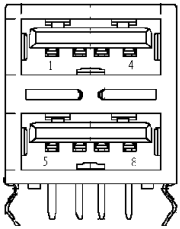
2.5.7 MicroSD Card Connector (CN7)



Pin	Pin Name	Signal type	Signal level
1	SDIO_D2_3V	I/O	
2	SDIO_D3_3V	I/O	
3	SDIO_CMD_3V	I/O	
4	+3.3V	PWR	+3.3 V

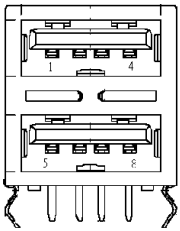
5	SDIO_CK_3V	I/O	
6	GND	GND	
7	SDIO_D0_3V	I/O	
8	SDIO_D1_3V	I/O	
9	SDIO_CD#_3V	I/O	

2.5.8 USB 2.0 Connector (CN8)



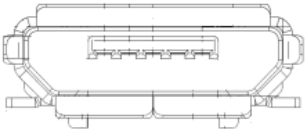
Pin	Pin Name	Signal type	Signal level
1	VCC_5V_USB1	PWR	+5V
2	USB1_HUB_N	I/O	
3	USB1_HUB_P	I/O	
4	GND	GND	
5	VCC_5V_USB1	PWR	+5V
6	USB2_HUB_N	I/O	
7	USB2_HUB_P	I/O	
8	GND	GND	

2.5.9 USB 2.0 Connector (CN9)



Pin	Pin Name	Signal type	Signal level
1	VCC_5V_USB2	PWR	+5V
2	USB3_HUB_N	I/O	
3	USB3_HUB_P	I/O	
4	GND	GND	
5	VCC_5V_USB2	PWR	+5V
6	USB4_HUB_N	I/O	
7	USB4_HUB_P	I/O	
8	GND	GND	

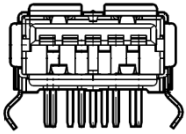
2.5.10 Micro USB 2.0 Connector (CN11)



Pin	Pin Name	Signal type	Signal level
1	VCC_5V_USB3	PWR	+5V
2	USB0_N	I/O	
3	USB0_P	I/O	
4	USB0_OTG_ID	I/O	

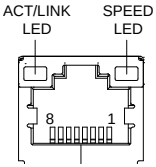
5	GND	GND

2.5.11 USB 3.0 Connector (CN12)



Pin	Pin Name	Signal type	Signal level
1	VCC_5V_USB0	PWR	+5V
2	USB2_N	I/O	
3	USB2_P	I/O	
4	GND	GND	
5	USB3_RX0_CON_N	I/O	
6	USB3_RX0_CON_P	I/O	
7	GND	GND	
8	USB3_TX0_CON_N	I/O	
9	USB3_TX0_CON_P	I/O	

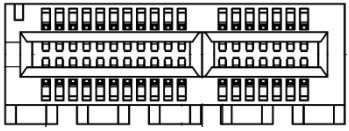
2.5.12 LAN Connector (CN13)



Pin	Pin Name	Signal type	Signal level
1	LAN1_MDI0P	I/O	
2	LAN1_MDI0N	I/O	
3	LAN1_MDI1P	I/O	

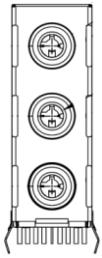
4	LAN1_MDI1N	I/O
5	LAN1_MDI2P	I/O
6	LAN1_MDI2N	I/O
7	LAN1_MDI3P	I/O
8	LAN1_MDI3N	I/O

2.5.13 PCIe Connector (CN14)



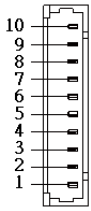
Standard PCIe [x4] Connector with only 3 PCIe[x1] lanes available as defined in SMARC 1.1 pin definitions

2.5.14 Audio Connector (CN15)



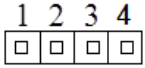
Color	Function
Blue	Line In
Green	Line Out
Pink	Mic In

2.5.15 Audio Connector (CN16)



Pin	Pin Name	Signal type	Signal level
1	MIC1_P_R	I/O	
2	MIC1_N_R	I/O	
3	GND	I/O	
4	NC	I/O	
5	NC	I/O	
6	GND	I/O	
7	HPO_L_ROUT	I/O	
8	GND	I/O	
9	HPO_R_LOU	I/O	
10	SPKVDD_CDC	I/O	

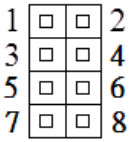
2.5.16 CAN Bus Connector (CN18)



Pin	Pin Name	Signal type	Signal level
1	CANH1	I/O	

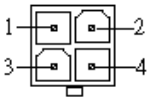
2	GND	GND
3	CANL1	I/O
4	NC	

2.5.17 SPI Flash Connector (CN19)



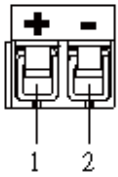
Pin	Pin Name	Signal type	Signal level
1	3VSB_SPI	PWR	+3.3V
2	GND	GND	
3	SPI_CE#_F	I/O	
4	SPI_CLK_F	GND	
5	SPI_DI_F	I/O	
6	SPI_DO_F	I/O	
7	NC		
8	NC		

2.5.18 ATX Power-In Connector (CN20)



Pin	Pin Name	Signal type	Signal level
1	GND	GND	
2	GND	GND	
3	+VIN	PWR	+12 V
4	+VIN	PWR	+12 V

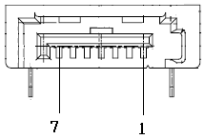
2.5.19 Wide Voltage Input Connector (CN21)



Pin	Pin Name	Signal type	Signal level
1	+VIN	PWR	+12 V
2	GND	GND	

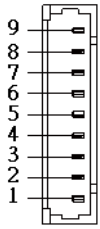
***** Wide voltage input support: 8 ~ 20 V (This feature is disabled by default. Please contact AAEON tech support to enable)

2.5.20 SATA Connector (CN22)



Pin	Pin Name	Signal type	Signal level
1	GND	GND	
2	SATA_TXP1_C	I/O	
3	SATA_TXN1_C	I/O	
4	GND	GND	
5	SATA_RXN1_C	I/O	
6	SATA_RXP1_C	I/O	
7	GND	GND	
8	NC		

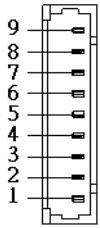
2.5.21 I2S0 Signal Connector (CN23)



Pin	Pin Name	Signal type	Signal level
1	VCC	OUT	+3.3V
2	VCC	OUT	+1.8V

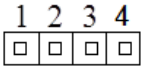
3	AUDIO_MCK	I/O	
4	I2S0_LRCK_3V	I/O	
5	I2S0_SDOUT_3V	I/O	
6	I2S0_SDIN_3V	I/O	
7	I2S0_CK_3V	I/O	
8	NC		
9	GND	GND	

2.5.22 MCSI2 Signal Connector (CN24)



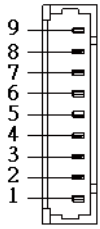
Pin	Pin Name	Signal type	Signal level
1	VCC	OUT	+3.3V
2	VCC	OUT	+1.8V
3	MCSI2_CLKP	I/O	
4	MCSI2_CLKN	I/O	
5	MCSI2_DP0	I/O	
6	MCSI2_DN0	I/O	
7	MCSI2_DP1	I/O	
8	MCSI2_DN1		
9	GND	GND	

2.5.23 CAN Bus Connector (CN25)



Pin	Pin Name	Signal type	Signal level
1	CANH0	I/O	
2	GND	GND	
3	CANL0	I/O	
4	NC		

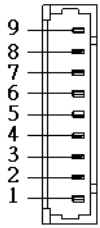
2.5.24 UART Connector (CN26)



Pin	Pin Name	Signal type	Signal level
1	NC		
2	NC		
3	SRXD0	I/O	
4	SRTS#0	I/O	
5	STXD0	I/O	
6	SCTS#0	I/O	
7	NC		

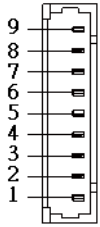
8		
9	GND	GND

2.5.25 UART Connector (CN27)



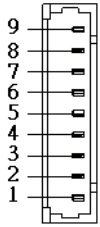
Pin	Pin Name	Signal type	Signal level
1	NC		
2	NC		
3	SRXD2	I/O	
4	SRTS#2	I/O	
5	STXD2	I/O	
6	SCTS#2	I/O	
7	NC		
8	NC		
9	GND	GND	

2.5.26 UART Connector (CN28)



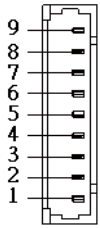
Pin	Pin Name	Signal type	Signal level
1	NC		
2	NC		
3	SRXD1	I/O	
4	NC		
5	STXD1	I/O	
6	NC		
7	NC		
8	NC		
9	GND	GND	

2.5.27 DIO Connector (CN29)



Pin	Pin Name	Signal type	Signal level
1	VCC	OUT	+3.3V or +5.0V
2	NC		
3	GPIO0	I/O	
4	GPIO1	I/O	
5	GPIO2	I/O	
6	GPIO3	I/O	
7	GPIO4	I/O	
8	GPIO5	I/O	
9	GND	GND	

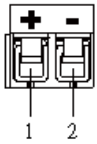
2.5.28 DIO Connector (CN30)



Pin	Pin Name	Signal type	Signal level
1	VCC	OUT	+3.3V or +5.0V
2	NC		
3	GPIO0	I/O	
4	GPIO1	I/O	
5	GPIO2	I/O	

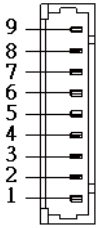
6	GPIO3	I/O
7	GPIO4	I/O
8	GPIO5	I/O
9	GND	GND

2.5.29 Adapter Power-In Connector (CN31)



Pin	Pin Name	Signal type	Signal level
1	+VIN	PWR	+19V
2	GND	GND	

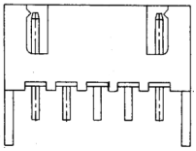
2.5.30 Signal Information Connector (CN32)



Pin	Pin Name	Signal type	Signal level
1	WDT_TIME_OUT#	I/O	
2	LID#	I/O	
3	SLEEP#	I/O	

4	BATLOW#	I/O
5	TEST#	I/O
6	NC	
7	NC	
8	NC	
9	GND	GND

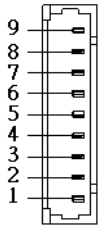
2.5.31 Lithium-Ion Battery Connector (CN33)



Pin	Pin Name	Signal type	Signal level
1	VCC_BAT1	PWR	11.1V Max
2	VCC_BAT1	PWR	11.1V Max
3	I2C_PM_CK_3VSB	I/O	
4	I2C_PM_DTA_3VSB	I/O	
5	GND	GND	
6	GND	GND	

***** Smart battery connector: 11.1V (This feature is disabled by default. Please contact AAEON tech support to enable)

2.5.32 Signal Information Connector (CN34)

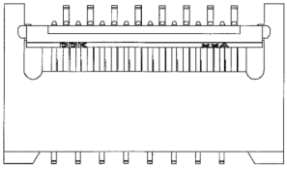


Pin	Pin Name	Signal type	Signal level
1	VIN_PWR_BAD#	I/O	
2	CHARGING#	I/O	
3	CHARGER_PRSNT#	I/O	
4	CARRIER_STBY#	I/O	
5	CARRIER_PWR_ON_3VSB	I/O	
6	NC		
7	NC		
8	NC		
9	GND	GND	

2.5.33 SPI1 Connector (CN35)

Pin	Pin Name	Signal type	Signal level
1	VCC_3V3	PWR	
2	SPI1_CS0#_3V	I/O	
3	SPI1_DIN_3V	I/O	
4	SPI1_CK_3V	I/O	
5	SPI1_DO_3V	I/O	
6	GND	GND	

2.5.34 Camera Connector (CN36)

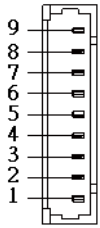


Pin	Pin Name	Signal type	Signal level
1	GND	GND	
2	GND	GND	
3	GND	GND	
4	I2C_CAM_CK	I/O	
5	I2C_CAM_DAT	I/O	
6	VCC_1V2_VCM	PWR	+1.2V
7	VCC_2V75_VCM	PWR	+2.75V
8	VCC_2V75_VCM	PWR	+2.75V
9	CAM1_RST#_R	I/0	
10	VCC_1V2_VCM	PWR	+1.2V

11	VCC_1V2_VCM	PWR	+1.2V
12	VCC_1V8	PWR	+1.8V
13	VCC_1V8	PWR	+1.8V
14	VCC_1V8	PWR	+1.8V
15	VCC_2V75_VCM	PWR	+2.75V
16	VCC_2V75_VCM	PWR	+2.75V
17	GND	GND	
18	PCAM_MCK	I/O	
19	GND	GND	
20	MCSI1_DN1	I/O	
21	GND	GND	
22	MCSI1_DP1	I/O	
23	GND	GND	
24	MCSI1_CLKN	I/O	
25	GND	GND	
26	MCSI1_CLKP	I/O	
27	GND	GND	
28	MCSI1_DN0	I/O	
29	GND	GND	
30	MCSI1_DP0	I/O	
31	GND	GND	
32	MCSI1_DN2	I/O	
33	GND	GND	
34	MCSI1_DP2	I/O	

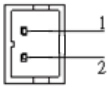
35	GND	GND
36	MCSI1_DN3	I/O
37	GND	GND
38	MCSI1_DP3	I/O
39	GND	GND

2.5.35 I2S1 Signal Connector (CN37)



Pin	Pin Name	Signal type	Signal level
1	VCC_3V3	PWR	3.3V
2	VCC_1V8	PWR	1.8V
3	AUDIO_MCK	I/O	
4	I2S1_LRCK_3V	I/O	
5	I2S1_SDOUT_3V	I/O	
6	I2S1_SDIN_3V	I/O	
7	I2S1_CK_3V	I/O	
8	NC		
9	GND	GND	

2.5.36 SATA Power Connector (CN39)



Pin	Pin Name	Signal type	Signal level
1	VCC_5V0	PWR	5V
2	GND	GND	

2.6 MXM Connector Pin Definitions

Pin	Pin Name	Signal	Pin	Pin Name	Signal
P1	PCAM_PXL_CK1	NC	P79	GND25	GND
P2	GND1	GND	P80	PCIE_C_REFCK_P	PCIE_C_REFCK+
P3	CSI1_CK_P/PCAM_D0	CSI1_CK+	P81	PCIE_C_REFCK_N	PCIE_C_REFCK-
P4	CSI1_CK_N/PCAM_D1	CSI1_CK-	P82	GND26	GND
P5	PCAM_DE	NC	P83	PCIE_A_REFCK_P	PCIE_A_REFCK+
P6	PCAM_MCK	NC	P84	PCIE_A_REFCK_N	PCIE_A_REFCK-
P7	CSI1_D0_P/PCAM_D2	CSI1_D0+	P85	GND27	GND
P8	CSI1_D0_N/PCAM_D3	CSI1_D0+	P86	PCIE_A_RX_P	PCIE_A_RX+
P9	GND2	GND	P87	PCIE_A_RX_N	PCIE_A_RX-
P10	CSI1_D1_P/PCAM_D4	CSI1_D1+	P88	GND28	GND
P11	CSI1_D1_N/PCAM_D5	CSI1_D1-	P89	PCIE_A_TX_P	PCIE_A_TX+
P12	GND3	GND	P90	PCIE_A_TX_N	PCIE_A_TX-
P13	CSI1_D2_P/PCAM_D6	CSI1_D2+	P91	GND29	GND
P14	CSI1_D2_N/PCAM_D7	CSI1_D2-	P92	HDMI_D2_P	HDMI_D2+
P15	GND4	GND	P93	HDMI_D2_N	HDMI_D2-
P16	CSI1_D3_P/PCAM_D8	CSI1_D2+	P94	GND30	GND
P17	CSI1_D3_N/PCAM_D9	CSI1_D2-	P95	HDMI_D1_P	HDMI_D1+
P18	GND5	GND	P96	HDMI_D1_N	HDMI_D1-
P19	GBE_MDI3_N	GBE_MDI3-	P97	GND31	GND
P20	GBE_MDI3_P	GBE_MDI3+	P98	HDMI_D0_P	HDMI_D0+
P21	GBE_LINK100#	GBE_LINK100#	P99	HDMI_D0_N	HDMI_D0-

P22	GBE_LINK1000#	GBE_LINK1000#	P100	GND32	GND
P23	GBE_MDI2_N	GBE_MDI2-	P101	HDMI_CK_P	HDMI_CK+
P24	GBE_MDI2_P	GBE_MDI2+	P102	HDMI_CK_N	HDMI_CK-
P25	GBE_LINK_ACT#	GBE_LINK_ACT#	P103	GND33	GND
P26	GBE_MDI1_N	GBE_MDI1-	P104	HDMI_HPD	HDMI_HPD
P27	GBE_MDI1_P	GBE_MDI1+	P105	HDMI_CTRL_CK	HDMI_CTRL_CK
P28	GBE_CTREF	NC	P106	HDMI_CTRL_DAT	HDMI_CTRL_DAT
P29	GBE_MDI0_N	GBE_MDI0-	P107	HDMI_CEC	NC
P30	GBE_MDI0_P	GBE_MDI0+	P108	GPIO0/CAM0_PWR#	GPIO0
P31	SPI0_CS1#	SPI0_CS1#	P109	GPIO1/CAM1_PWR#	GPIO1
P32	GND6	GND	P110	GPIO2/CAM0_RST#	GPIO2
P33	SDIO_WP	SDIO_WP	P111	GPIO3/CAM1_RST#	GPIO3
P34	SDIO_CMD	SDIO_CMD	P112	GPIO4/HDA_RST#	HDA_RST#
P35	SDIO_CD#	SDIO_CD#	P113	GPIO5/PWM_OUT	GPIO5 / PWM_OUT
P36	SDIO_CK	SDIO_CK	P114	GPIO6/TACHIN	GPIO6 / TACHIN
P37	SDIO_PWR_EN	SDIO_PWR_EN	P115	GPIO7/PCAM_FLD	GPIO7
P38	GND7	GND	P116	GPIO8/CAN0_ERR#	GPIO8
P39	SDIO_D0	SDIO_D0	P117	GPIO9/CAN1_ERR#	GPIO9
P40	SDIO_D1	SDIO_D1	P118	GPIO10	GPIO10
P41	SDIO_D2	SDIO_D2	P119	GPIO11	GPIO11
P42	SDIO_D3	SDIO_D3	P120	GND34	GND
P43	SPI0_CS0#	SPI0_CS0#	P121	I2C_PM_CK	I2C_PM_CK
P44	SPI0_CK	SPI0_CK	P122	I2C_PM_DAT	I2C_PM_DAT
P45	SPI0_DIN	SPI0_DIN	P123	BOOT_SEL0#	BOOT_SEL0#

P46	SPI0_DO	SPI0_DO	P124	BOOT_SEL1#	BOOT_SEL1#
P47	GND8	GND	P125	BOOT_SEL2#	BOOT_SEL2#
P48	SATA_TX_P	SATA_TX+	P126	RESET_OUT#	RESET_OUT
P49	SATA_TX_N	SATA_TX-	P127	RESET_IN#	RESET_IN#
P50	GND9	GND	P128	POWER_BTN#	POWER_BTN#
P51	SATA_RX_P	SATA_TX-	P129	SER0_TX	SER0_TX
P52	SATA_RX_N	SATA_RX-	P130	SER0_RX	SER0_RX
P53	GND10	GND	P131	SER0_RTS#	SER0_RTS#
P54	SPI1_CS0#	SPI1_CS0#	P132	SER0_CTS#	SER0_CTS#
P55	SPI1_CS1#	NC	P133	GND35	GND
P56	SPI1_CK	SPI1_CK	P134	SER1_TX	SER1_TX
P57	SPI1_DIN	SPI1_DIN	P135	SER1_RX	SER1_RX
P58	SPI1_DO	SPI1_DO	P136	SER2_TX	NC
P59	GND11	GND	P137	SER2_RX	NC
P60	USB0_P	USB0+	P138	SER2_RTS#	NC
P61	USB0_N	USB0-	P139	SER2_CTS#	NC
P62	USB0_EN/USB0_OC#	USB0_EN_OC#	P140	SER3_TX	NC
P63	USB0_VBUS_DET	USB0_VBUS_DET	P141	SER3_RX	NC
P64	USB0_OTG_ID	GND	P142	GND36	GND
P65	USB1_P	USB1+	P143	CAN0_TX	NC
P66	USB1_N	USB1-	P144	CAN0_RX	NC
P67	USB1_EN/USB1_OC#	USB1_EN_OC#	P145	CAN1_TX	NC
P68	GND12	GND	P146	CAN1_RX	NC
P69	USB2_P	USB2+	P147	VDD_IN1	VDD_IN

P70	USB2_N	USB2-	P148	VDD_IN2	VDD_IN
P71	USB2_EN/USB2_OC#	USB2_EN_OC#	P149	VDD_IN3	VDD_IN
P72	PCIE_C_PRSNT#	PCIE_C_PRSNT#	P150	VDD_IN4	VDD_IN
P73	PCIE_B_PRSNT#	PCIE_B_PRSNT#	P151	VDD_IN5	VDD_IN
P74	PCIE_A_PRSNT#	PCIE_A_PRSNT#	P152	VDD_IN6	VDD_IN
P75	PCIE_A_RST#	PCIE_A_RST	P153	VDD_IN7	VDD_IN
P76	PCIE_C_CKREQ#	PCIE_C_CKR	P154	VDD_IN8	VDD_IN
P77	PCIE_B_CKREQ#	PCIE_B_CKR	P155	VDD_IN9	VDD_IN
P78	PCIE_A_CKREQ#	PCIE_A_CKR	P156	VDD_IN10	VDD_IN

Pin	Pin Name	Signal	Pin	Pin Name	Signal
S1	PCAM_VSYNC	NC	S80	GND37	GND
S2	PCAM_HSYNC	NC	S81	PCIE_C_TX_P	PCIE_C_TX+
S3	GND13	GND	S82	PCIE_C_TX_N	PCIE_C_TX-
S4	PCAM_PXL_CK0	NC	S83	GND38	GND
S5	I2C_CAM_CK	CAM_I2C_CLK_1P8	S84	PCIE_B_REFCK_P	PCIE_B_REFCK+
S6	CAM_MCK	NC	S85	PCIE_B_REFCK_N	PCIE_B_REFCK-
S7	I2C_CAM_DAT	CAM_I2C_DATA_1P8	S86	GND39	GND
S8	CSI0_CK_P/PCAM_D10	CSI0_CK+	S87	PCIE_B_RX_P	PCIE_B_RX+
S9	CSI0_CK_N/PCAM_D11	CSI0_CK-	S88	PCIE_B_RX_N	PCIE_B_RX-
S10	GND14	GND	S89	GND40	GND
S11	CSI0_D0_P/PCAM_D12	CSI0_D0+	S90	PCIE_B_TX_P	PCIE_B_TX+
S12	CSI0_D0_N/PCAM_D13	CSI0_D0+	S91	PCIE_B_TX_N	PCIE_B_TX-
S13	GND15	GND	S92	GND41	GND
S14	CSI0_D1_P/PCAM_D14	NC	S93	LCD_D0	NC

S15	CSI0_D1_N/PCAM_D15	NC	S94	LCD_D1	NC
S16	GND16	GND	S95	LCD_D2	NC
S17	AFB0_OUT	PM_SLP_S3#	S96	LCD_D3	NC
S18	AFB1_OUT	PM_SLP_S3#	S97	LCD_D4	NC
S19	AFB2_OUT	NC	S98	LCD_D5	NC
S20	AFB3_IN	NC	S99	LCD_D6	NC
S21	AFB4_IN	NC	S100	LCD_D7	NC
S22	AFB5_IN	NC	S101	GND42	GND
S23	AFB6_PTIO	NC	S102	LCD_D8	NC
S24	AFB7_PTIO	NC	S103	LCD_D9	NC
S25	GND17	GND	S104	LCD_D10	NC
S26	SDMMC_D0	NC	S105	LCD_D11	NC
S27	SDMMC_D1	NC	S106	LCD_D12	NC
S28	SDMMC_D2	NC	S107	LCD_D13	NC
S29	SDMMC_D3	NC	S108	LCD_D14	NC
S30	SDMMC_D4	NC	S109	LCD_D15	NC
S31	SDMMC_D5	NC	S110	GND43	GND
S32	SDMMC_D6	NC	S111	LCD_D16	NC
S33	SDMMC_D7	NC	S112	LCD_D17	NC
S34	GND18	GND	S113	LCD_D18	NC
S35	SDMMC_CK	NC	S114	LCD_D19	NC
S36	SDMMC_CMD	NC	S115	LCD_D20	NC
S37	SDMMC_RST#	NC	S116	LCD_D21	NC
S38	AUDIO_MCK	CB_MCLK	S117	LCD_D22	NC
S39	I2S0_LRCK	I2S0_LRCK	S118	LCD_D23	NC
S40	I2S0_SDOUT	I2S0_SDOUT	S119	GND44	GND

S41	I2S0_SDIN	I2S0_SDIN	S120	LCD_DE	NC
S42	I2S0_CK	I2S0_CK	S121	LCD_VS	NC
S43	I2S1_LRCK	NC	S122	LCD_HS	NC
S44	I2S1_SDOUT	NC	S123	LCD_PCK	NC
S45	I2S1_SDIN	NC	S124	GND45	GND
S46	I2S1_CK	NC	S125	LVDS0_P	LVDS0+
S47	GND19	GND	S126	LVDS0_N	LVDS0-
S48	I2C_GP_CK	USBP0P	S127	LCD_BKLT_EN	LCD_BKLT_EN
S49	I2C_GP_DAT	GND	S128	LVDS1_P	LVDS1+
S50	I2S2_LRCK	HDA_SYNC	S129	LVDS1_N	LVDS1-
S51	I2S2_SDOUT	HDA_SDO	S130	GND46	GND
S52	I2S2_SDIN	HDA_SDI	S131	LVDS2_P	LVDS2+
S53	I2S2_CK	HDA_CK	S132	LVDS2_N	LVDS2-
S54	SATA_ACT#	SATA_ACT#	S133	LCD_VDD_EN	LCD_VDD_EN
S55	AFB8_PTIO	NC	S134	LVDS_CK_P	LVDS_CK+
S56	AFB9_PTIO	NC	S135	LVDS_CK_N	LVDS_CK-
S57	PCAM_ON_CSI0#	NC	S136	GND47	GND
S58	PCAM_ON_CSI1#	NC	S137	LVDS3_P	LVDS3+
S59	SPDIF_OUT	NC	S138	LVDS3_N	LVDS3-
S60	SPDIF_IN	NC	S139	I2C_LCD_CK	I2C_LCD_CK
S61	GND20	GND	S140	I2C_LCD_DAT	I2C_LCD_DAT
S62	AFB_DIFF0_P	USBP5N	S141	LCD_BKLT_PWM	LCD_BKLT_PWM
S63	AFB_DIFF0_N	USBP5P	S142	LCD_DUAL_PCK	NC
S64	GND21	GND	S143	GND48	GND
S65	AFB_DIFF1_P	USB3_TX0_P	S144	RSVD\EDP_HPD	NC
S66	AFB_DIFF1_N	USB3_TX0_N	S145	WDT_TIME_OUT#	WDT_TIME_OUT#

S67	GND22	GND	S146	PCIE_WAKE#	PCIE_WAKE#
S68	AFB_DIFF2_P	USB3_RX0_P	S147	VDD_RTC	VDD_RTC
S69	AFB_DIFF2_N	USB3_RX0_N	S148	LID#	LID#
S70	GND23	GND	S149	SLEEP#	SLEEP#
S71	AFB_DIFF3_P	SATA_TXP1	S150	VIN_PWR_BAD#	VIN_PWR_BAD#
S72	AFB_DIFF3_N	SATA_TXN1	S151	CHARGING#	CHARGING#
S73	GND24	GND	S152	CHARGER_PRSNT#	CHARGER_PRSNT#
S74	AFB_DIFF4_P	SATA_RXP1	S153	CARRIER_STBY#	CARRIER_STBY#
S75	AFB_DIFF4_N	SATA_RXN1	S154	CARRIER_PWR_ON	CARRIER_PWR_ON
S76	PCIE_B_RST#	PCIE_B_RST	S155	FORCE_RECOV#	FORCE_RECOV#
S77	PCIE_C_RST#	PCIE_C_RST	S156	BATLOW#	BATLOW#
S78	PCIE_C_RX_P	PCIE_C_RX+	S157	TEST#	NC
S79	PCIE_C_RX_N	PCIE_C_RX-	S158	VDD_IO_SEL#	VDD_IO_SEL#