RICO-3568

Rockchip RK3568 Platform

User's Manual 1st Ed

Last Updated: February 10, 2025

Copyright Notice

Acknowledgement

Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● RICO-3568	1
● RTC Battery	1
● MB Power Cable	1

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

About this Document

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 product page on AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
    i. Damaged power cord or plug
    ii. Liquid intrusion to the device
    iii. Exposure to moisture
    iv. Device is not working as expected or in a manner as described in this manual
    v. The device is dropped or damaged
    vi. Any obvious signs of damage displayed on the device
18. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60°C (140°F) TO PREVENT DAMAGE.

FCC Statement

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur.
Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

ISEDC RSS Warning

This product meets the applicable Industry Canada technical specifications.

Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON 主板/子板/背板 QO4-381 Rev.A2

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	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：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GB/T 26572标准规定的限量要求以下。

×：表示该有害物质的某一均质材料超出了GB/T 26572的限量要求，然而该部件仍符合欧盟指令2011/65/EU 的规范。

环保使用期限(EFUP (Environmental Friendly Use Period)) : 10年

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 Requirement (EN)

Name and content of hazardous substances in product

AAEON Main Board/Daughter Board/Backplane QO4-381 Rev.A2

Part Name	Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB Assemblies	×	O	O	O	O	O
Connector and Cable	×	O	O	O	O	O

The table is prepared in accordance with the provisions of SJ/T 11364.

O：Indicates that said hazardous substance contained in all of the homogenous materials for this product is below the limit requirement of GB/T 26572.

×：Indicates that said hazardous substance contained in at least one of the homogenous materials used for this part is above the limit requirement of GB/T 26572. But this product still be compliance with 2011/65/EU Directive (allowed with 2011/65/EU Annex III of RoHS exemption with number 6(c),7(a),7(c)-1).

EFUP (Environment Friendly Use Period) value: 10 years

Notes: This product defined period of use is under normal condition.

Table of Contents

Chapter 1

Product Specifications

1.1 Specifications

System	
Form Factor	PICO-ITX Plus (100mm x 80mm)
CPU	Rockchip ™ RK3568
	Quad-Core Arm® Cortex®-A55 Processor
	NPU: 0.8 TOPS
GPU	Arm® Mali™-G52 GPU
Graphics	Video Encode: 1080p @60fps H.264/H.265
	Video Decode: 4K @60fps H.264/H.265/AV1 4KP60
	AVS2/VP9 1080p MPEG1/VP8
Memory Capacity	Onboard LPDDR4 2GB/4GB/8GB (Optional)
Storage/SSD	16GB eMMC + Micro SD
	Full-size Mini PCIe x 1 (mSATA/USB)
Operating System	Android™ 12
	Debian® 10
Kernel	Kernel 4.19
Watchdog Timer	Integrated
Power Requirement	+12V DC Input
	AT: Default, ATX: Optional
Power Consumption	Max. 15W, Main Board only
Dimension	3.94" x 3.15" (100mm x 80mm)
Gross Weight	0.44 lb. (0.2Kg)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)
	Optional: -4°F ~ 140°F (-20°C ~ 60°C)
Storage Temperature	-40˚F ~ 176˚F (-40˚C ~ 80˚C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing

System

MTBF (Hours)	TBD
Certification	CE/FCC

Display

HDMI	HDMI 2.0, up to 4K x 2K @60Hz
eDP	eDP 1.3, up to 2560 x 1600 @60Hz
LVDS	18/24-bit LVDS, up to 1280 x 800 @60Hz
	JP2, 3.3V/5V: LVDS Power Selection
	JP3, 5V/12V: Backlight Power Selection
	LCD Backlight connector
MIPI	Up to 2048 x 1536 @60Hz for Dual-MIPI Mode

RF Function

Wi-Fi	Onboard 802.11 a/b/g/n/ac
	ANT1 for Antenna
Bluetooth	Bluetooth V5.0 + EDR

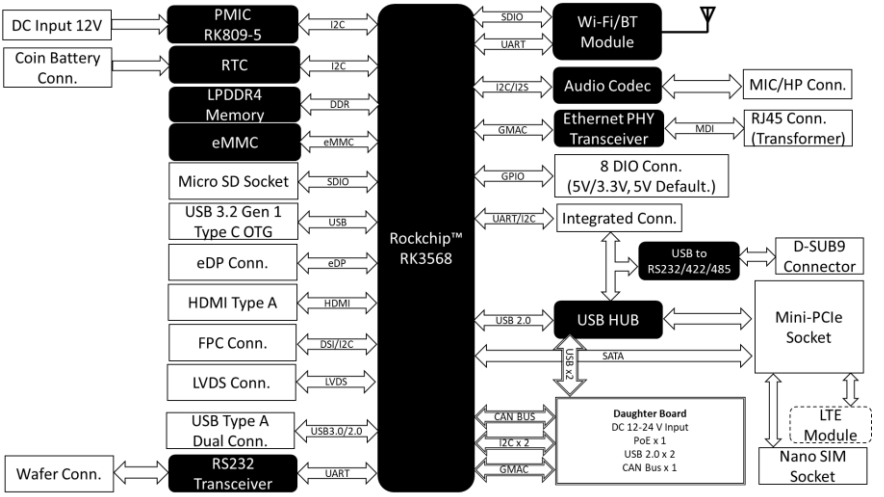
I/O

Ethernet	GbE x 2
	RJ-45 x 2 (Onboard x 1 + T650 Daughter Board RJ-45
	Port or T650 Wide-Voltage Board RJ-45 Port)
USB Port	USB 3.2 Gen 1 OTG (Type-C) x 1
	USB 3.2 Gen 1 x 1
	USB 2.0 x 2 (Type-A x 1, Pin Header with Integrated USB,
	I2C, 5V x 1)

I/O

Serial Port	RS-232/422/485 x 1
	JP1, 5V/12V: RS-232/422/485 Voltage Output Selection
	RS-232/Debug Port 7-pin Wafer x 1
	CN3: UART (Tx/Rx Only), I2C, USB, Others
Audio	Microphone/Earphone (3.5mm)
GPIO	GPIO x 8 via 2x6P Wafer x 1
Expansion Slot	Full-size Mini PCIe x 1 (mSATA/USB)
	40-pin FPC Connector x 1 (via Daughter Board)
SIM Slot	Nano SIM, Push-Push Type with Tray
SD Socket	Micro SD Card, Push-Push Type
Camera	N/A

1.2 Block Diagram

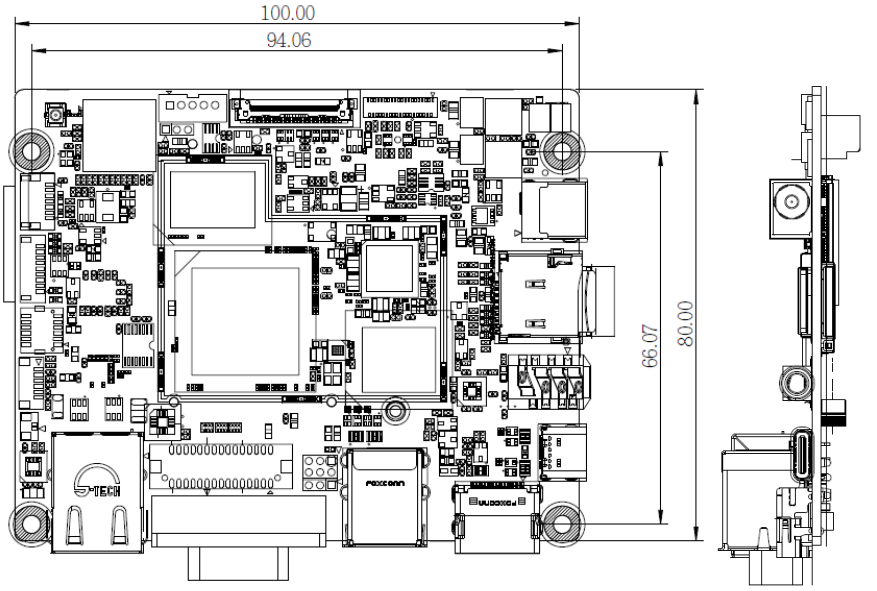


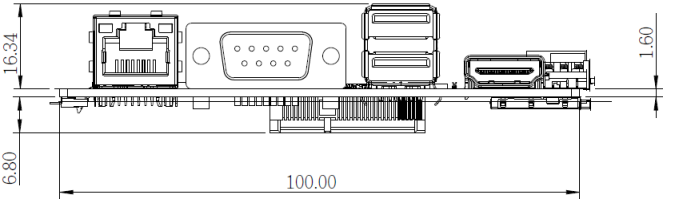
Chapter 2

Hardware Information

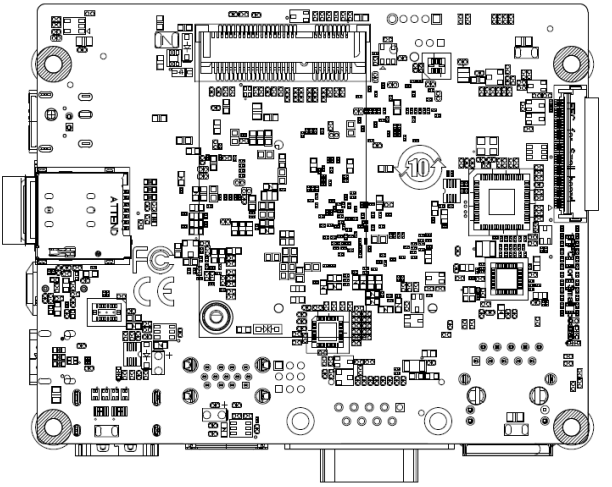
2.1 Dimensions

Component Side



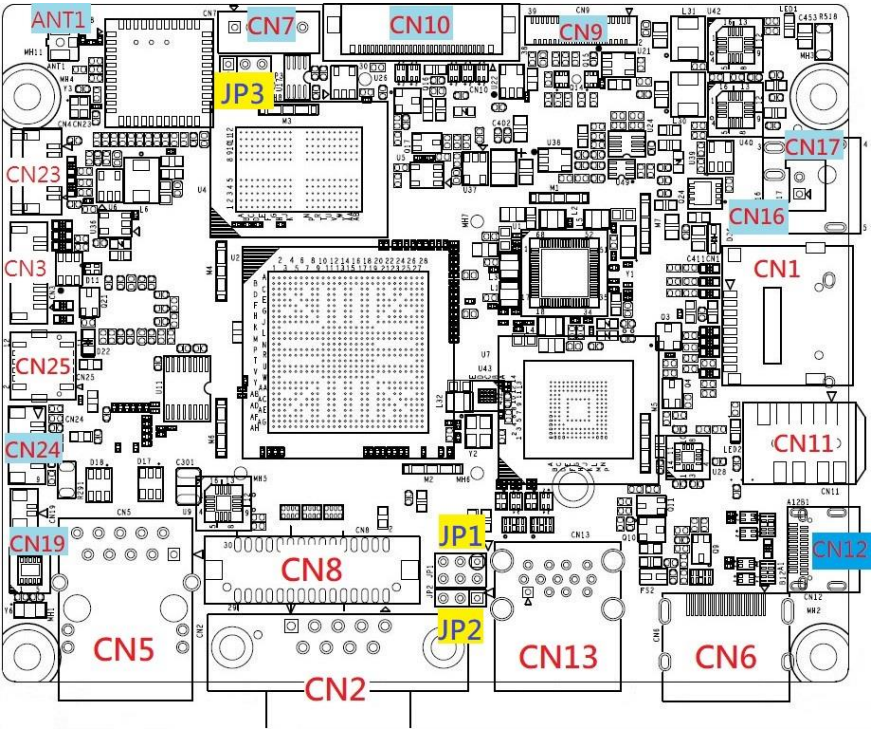


Solder Side

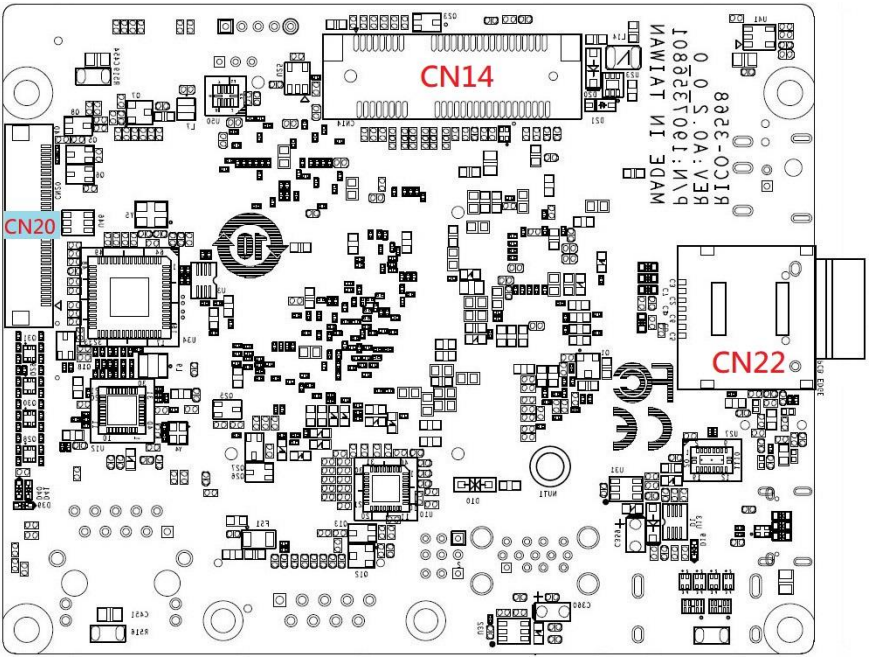


2.2 Jumpers and Connectors

Top



Bottom

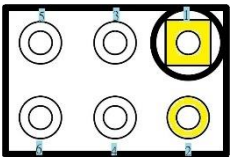


2.3 List of Jumpers

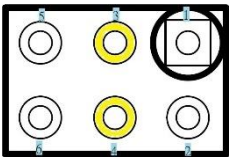
Please refer to the table below for all of the board's jumpers that you can configure for your application

Label	Function
JP1	COM Pin 9 Mode Selection (Ring/+5V/+12V)
JP2	LVDS Operating Voltage Selection
JP3	LVDS Inverter/Backlight Voltage Selection

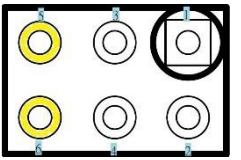
2.3.1 COM Pin 9 Function Selection (JP1)



+5V (Default)

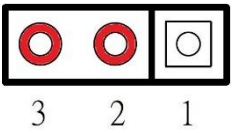


Ring

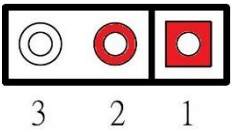


+12V

2.3.2 LVDS Operating Voltage Selection (JP2)

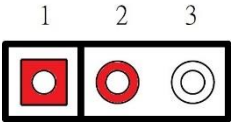


+3.3V (Default)

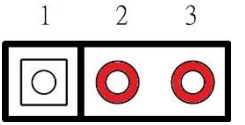


+5V

2.3.3 LVDS Inverter/Backlight Voltage Selection (JP3)



+5V



+12V (Default)

2.4 List of Connectors

Please refer to the table below for all of the board's connectors that you can configure for your application. For connector vendor and model information, please refer to Appendix A.

Label	Function
CN1	Micro SD Card
CN2	COM Port
CN3	External 3.3V I2C/USB 2.0/3.3V UART Port
CN5	RJ-45 LAN Port 1
CN6	HDMI
CN7	LVDS Inverter/Backlight Connector
CN8	LVDS LCD Connector
CN9	MIPI LCD Connector
CN10	eDP LCD Connector
CN11	Audio Jack w/ Mic Function
CN12	USB 3.2 Gen 1 Type-C OTG
CN13	USB 3.2 Gen 1/USB 2.0
CN14	Mini PCIe for LTE/mSATA
CN16	DC Power Jack (Optional)
CN17	External +12V Power Input
CN19	RTC Battery
CN20	Dual USB 2.0/LAN/3.3V I2C/CANBus Connector
CN22	Nano SIM Card
CN23	External 5V/RS-232/3.3V/Debug Port
CN24	Power Button/Reset Button/Power LED
CN25	DIO/Buzzer/5V

2.4.1 Micro SD Card (CN1)

Standard specifications.

2.4.2 COM Port (CN2)

RS-232			
Pin	Pin Name	Signal Type	Signal Level
1	DCD	IN	
2	RX	IN	
3	TX	OUT	+10V
4	DTR	OUT	+10V
5	GND	GND	GND
6	DSR	IN	
7	RTS	OUT	+10V
8	CTS	IN	
9	RI/+5V/+12V	IN/ PWR	+5V/+12V

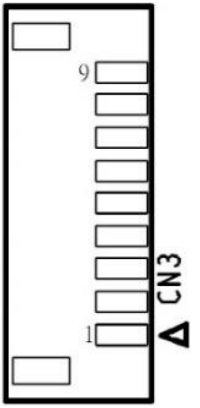
RS-485			
Pin	Pin Name	Signal Type	Signal Level
5	GND	GND	GND
1	RS485_D-	I/O	+5V
2	RS485_D+	I/O	+5V

RS-422			
Pin	Pin Name	Signal Type	Signal Level
5	GND	GND	GND
1	RS422_TX-	OUT	±5V
2	RS422_TX+	OUT	±5V

RS-422			
Pin	Pin Name	Signal Type	Signal Level
3	RS422_RX+	IN	
4	RS422_RX-	IN	

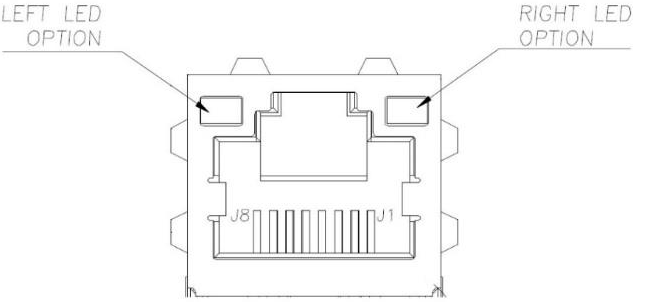
Note: COM RS-232/422/485 mode can be set by APP settings. Default is RS-232.

2.4.3 External 3.3V I2C/USB2.0/3.3V UART Port (CN3)



Pin	Pin Name	Signal Type	Signal Level
1	I2C4_SCL_3V3	I/O	+3.3V
2	I2C4_SDA_3V3	I/O	+3.3V
3	GND	GND	GND
4	5V_SYS	PWR	+5V
5	HUB_USB2_P_C	I/O	
6	HUB_USB2_N_C	I/O	
7	UART5_TX_M1	OUT	+3.3V
8	UART5_RX_M1	IN	+3.3V
9	GPIO3_C1_d	I/O	+3.3V

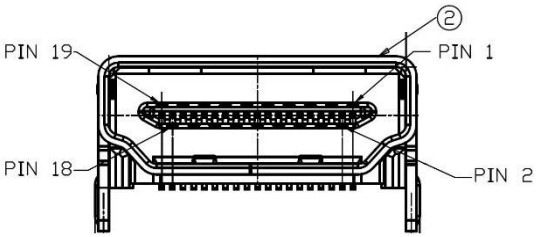
2.4.4 RJ-45 LAN Port 1 (CN5)



Pin	Pin Name	Signal Type	Signal Level
J1	LAN1_MDI0_P	DIFF	
J2	LAN1_MDI0_N	DIFF	
J3	LAN1_MDI1_P	DIFF	
J4	LAN1_MDI1_N	DIFF	
J5	LAN1_MDI2_P	DIFF	
J6	LAN1_MDI2_N	DIFF	
J7	LAN1_MDI3_P	DIFF	
J8	LAN1_MDI3_N	DIFF	

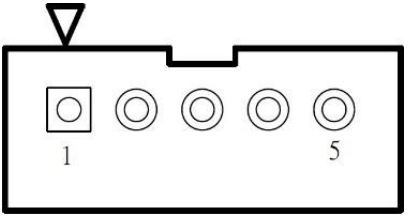
LED Color		Link Speed
Left	Right	-
OFF	Orange	10 Mbps
OFF	Green	100 Mbps
Yellow	OFF	1000 Mbps

2.4.5 HDMI Connector (CN6)



Pin	Pin Name	Signal Type	Signal Level
1	HDMI_TX2P_CONN	DIFF	
2	GND	GND	GND
3	HDMI_TX2N_CONN	DIFF	
4	HDMI_TX1P_CONN	DIFF	
5	GND	GND	GND
6	HDMI_TX1N_CONN	DIFF	
7	HDMI_TX0P_CONN	DIFF	
8	GND	GND	GND
9	HDMI_TX0N_CONN	DIFF	
10	HDMI_TXCP_CONN	DIFF	
11	GND	GND	GND
12	HDMI_TXCN_CONN	DIFF	
13	PORT_CEC	OUT	
14	N.C.	N/A	N/A
15	HDMI_SCL	I/O	
16	HDMI_SDA	I/O	
17	GND	GND	GND
18	VCC5V_HDMI	PWR	+5V
19	PORT_HPD	IN	

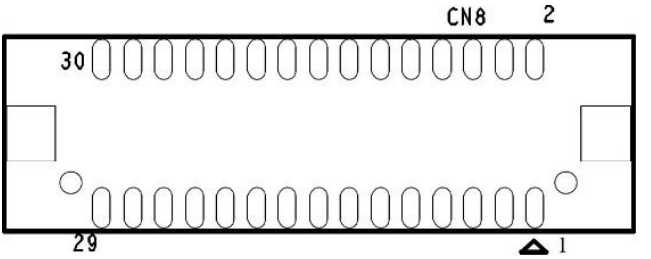
2.4.6 LVDS Inverter/Backlight Connector (CN7)



Pin	Pin Name	Signal Type	Signal Level
1	DIS_PWR	PWR	+5V /+12V(Default)
2	BKLCTL	OUT	+3.3V(Default)/+5V
3	GND	GND	
4	GND	GND	
5	ENABLK	OUT	+3.3V(Default)/+5V

Note: DIS_PWR can be set to +12V or +5V by JP3.
Note: BKLCTL can be set by JP2.
Note: The driving current of DIS_PWR supports up to 2A.

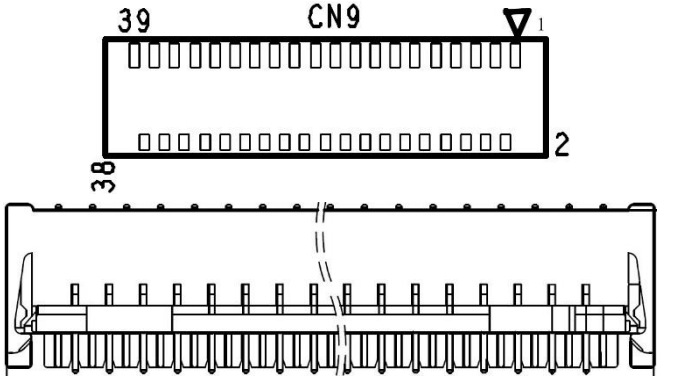
2.4.7 LVDS LCD Connector (CN8)



Pin	Pin Name	Signal Type	Signal Level
1	ENABLK	OUT	
2	BKLCTL	OUT	
3	VCC_LVDS	PWR	+3.3V(Default) /+5V

Pin	Pin Name	Signal Type	Signal Level
4	GND	GND	
5	LVDS_CLK0N_C	DIFF	
6	LVDS_CLK0P_C	DIFF	
7	VCC_LVDS	PWR	+3.3V(Default) /+5V
8	GND	GND	
9	LVDS_D0N_C	DIFF	
10	LVDS_D0P_C	DIFF	
11	LVDS_D1N_C	DIFF	
12	LVDS_D1P_C	DIFF	
13	LVDS_D2N_C	DIFF	
14	LVDS_D2P_C	DIFF	
15	LVDS_D3N_C	DIFF	
16	LVDS_D3P_C	DIFF	
17	DDC_SDA	I/O	+3.3V
18	DDC_CLK	I/O	+3.3V
19	N.C.	N/A	N/A
20	N.C.	N/A	N/A
21	N.C.	N/A	N/A
22	N.C.	N/A	N/A
23	N.C.	N/A	N/A
24	N.C.	N/A	N/A
25	N.C.	N/A	N/A
26	N.C.	N/A	N/A
27	VCC_LVDS	PWR	+3.3V(Default) /+5V
28	GND	GND	
29	N.C.	N/A	N/A
30	N.C.	N/A	N/A

2.4.8 MIPI LCD Connector (CN9)



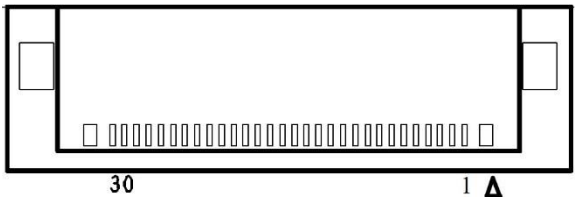
Pin	Pin Name	Signal Type	Signal Level
1	TOUCH_2V8	PWR	+2.8V
2	GND	GND	
3	TOUCH_RST_R	OUT	
4	TOUCH_SCL	I/O	
5	TOUCH_SDA	I/O	
6	TOUCH_INT	IN	
7	N.C.	N/A	N/A
8	LED+	PWR	
9	LED+	PWR	
10	N.C.	N/A	N/A
11	LED-	PWR	
12	LED-	PWR	
13	LED-	PWR	
14	N.C.	N/A	N/A
15	GND	GND	
16	GND	GND	
17	N.C.	N/A	N/A
18	GND	GND	

Pin	Pin Name	Signal Type	Signal Level
19	MIPI_D3P	DIFF	
20	MIPI_D3N	DIFF	
21	GND	GND	
22	MIPI_D2P	DIFF	
23	MIPI_D2N	DIFF	
24	GND	GND	
25	MIPI_CLK0P	DIFF	
26	MIPI_CLK0N	DIFF	
27	GND	GND	
28	MIPI_D1P	DIFF	
29	MIPI_D1N	DIFF	
30	GND	GND	
31	MIPI_D0P	DIFF	
32	MIPI_D0N	DIFF	
33	GND	GND	
34	GND	GND	
35	LCD_RST_R	OUT	
36	LCD_1V8	PWR	+1.8V
37	MIPI_3V3	PWR	+3.3V
38	MIPI_3V3	PWR	+3.3V
39	LCD_FMARK	OUT	

Note: The driving current of LED+ supports up to 0.45A.

.

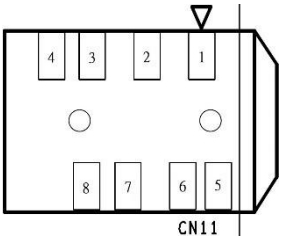
2.4.9 eDP LCD Connector (CN10)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	EDP_TX0N_R	DIFF	
3	EDP_TX0P_R	DIFF	
4	GND	GND	
5	EDP_TX1N_R	DIFF	
6	EDP_TX1P_R	DIFF	
7	GND	GND	
8	EDP_TX2N_R	DIFF	
9	EDP_TX2P_R	DIFF	
10	GND	GND	
11	GND	GND	
12	LCD_3V3	PWR	
13	LCD_3V3	PWR	
14	EDP_TX3N_R	DIFF	
15	EDP_TX3P_R	DIFF	
16	GND	GND	
17	EDPAUXN_R	DIFF	
18	EDPAUXP_R	DIFF	
19	GND	GND	
20	GND	GND	
21	EDP_HPD	IN	

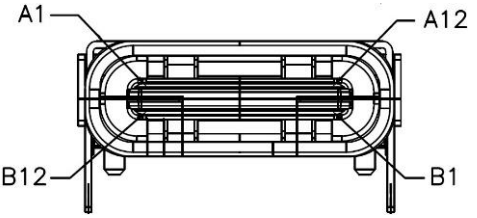
Pin	Pin Name	Signal Type	Signal Level
22	ENABLK	OUT	
23	BKLCTL	OUT	
24	GND	GND	
25	GND	GND	
26	DIS_PWR	PWR	+5V/+12V(Default)
27	DIS_PWR	PWR	+5V/+12V(Default)
28	DIS_PWR	PWR	+5V/+12V(Default)
29	DIS_PWR	PWR	+5V/+12V(Default)
30	GND	GND	

2.4.10 Audio Jack w/ MIC Function (CN11)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	HP_DET	IN	
3	HP_J_R	OUT	
4	N.C.	N/A	N/A
5	N.C.	N/A	N/A
6	HP_MIC1N	IN	
7	N.C.	N/A	N/A
8	HP_J_L	OUT	

2.4.11 USB 3.2 Gen 1 Type-C OTG (CN12)

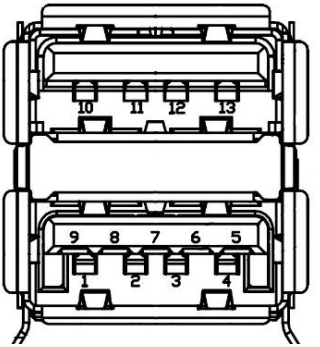


Pin	Pin Name	Signal Type	Signal Level
A1	GND	GND	GND
A2	TYPEC0_TX1P_C	DIFF	
A3	TYPEC0_TX1N_C	DIFF	
A4	VBUS_TYPEC	PWR	
A5	TYPEC_CC1	I/O	
A6	TYPEC0_DP_C	DIFF	
A7	TYPEC0_DM_C	DIFF	
A8	N.C.	N/A	N/A
A9	VBUS_TYPEC	PWR	
A10	TYPEC0_RX2N_C	DIFF	
A11	TYPEC0_RX2P_C	DIFF	
A12	GND	GND	GND
B1	GND	GND	GND
B2	TYPEC0_TX2P_C	DIFF	
B3	TYPEC0_TX2N_C	DIFF	
B4	VBUS_TYPEC	PWR	
B5	TYPEC_CC2	I/O	
B6	TYPEC0_DP_C	DIFF	
B7	TYPEC0_DM_C	DIFF	
B8	N.C.	N/A	N/A
B9	VBUS_TYPEC	PWR	

Pin	Pin Name	Signal Type	Signal Level
B10	TYPEC0_RX1N_C	DIFF	
B11	TYPEC0_RX1P_C	DIFF	
B12	GND	GND	GND

Note: The driving current of VBUS_TYPEC supports up to 2A.

2.4.12 USB 3.2 Gen 1/USB 2.0 Port (CN13)

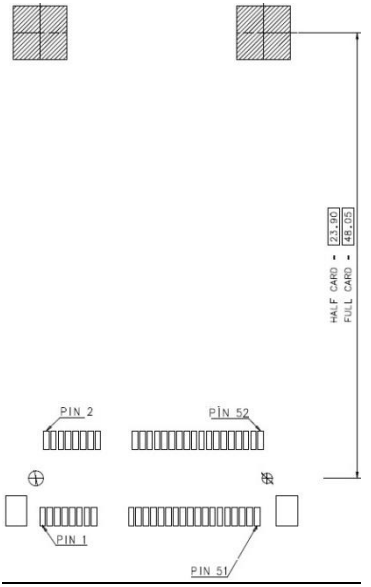


Pin	Pin Name	Signal Type	Signal Level
1	5V_USB_C	PWR	+5V
2	USB3_DM_C	DIFF	
3	USB3_DP_C	DIFF	
4	GND	GND	GND
5	USB3_SSRXN_C	DIFF	
6	USB3_SSRXP_C	DIFF	
7	GND	GND	GND
8	USB3_SSTXN_C	DIFF	
9	USB3_SSTXP_C	DIFF	
10	5V_USB_C	PWR	+5V
11	USB2_N_C	DIFF	

Pin	Pin Name	Signal Type	Signal Level
12	USB2_P_C	DIFF	
13	GND	GND	GND

Note: The driving current of 5V_USB_C supports up to 2A.

2.4.13 Mini PCIe for LTE/mSATA (CN14)

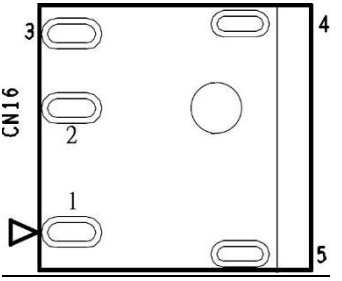


Pin	Pin Name	Signal Type	Signal Level
1	WAKE_UP	I/O	
2	PCIE_3V3	PWR	+3.3V
3	N.C.	N/A	N/A
4	GND	GND	GND
5	N.C.	N/A	N/A
6	PCIE_1V5	PWR	+1.5V
7	PCIE20_CLKREQn_M1	I/O	
8	USIM_PWR		

Pin	Pin Name	Signal Type	Signal Level
9	GND	GND	GND
10	USIM_DATA		
11	PCIE20_REFCLKN	DIFF	
12	USIM_CLK		
13	PCIE20_REFCLKP	DIFF	
14	USIM_RESET		
15	GND	GND	GND
16	N.C.	N/A	N/A
17	MODULE_WAKEUP		
18	GND	GND	GND
19	N.C.	N/A	N/A
20	PCIE_W_OFF		
21	GND	GND	GND
22	PCIE_RST		
23	SATA2_RXP	DIFF	
24	PCIE_3V3	PWR	+3.3V
25	SATA2_RXN	DIFF	
26	GND	GND	GND
27	GND	GND	GND
28	PCIE_1V5	PWR	+1.5V
29	GND	GND	GND
30	PCIE_SCL_3V3		
31	SATA2_TXN	DIFF	
32	PCIE_SDA_3V3		
33	SATA2_TXP	DIFF	
34	GND	GND	GND
35	GND	GND	GND
36	MINIPCIE_DN	DIFF	

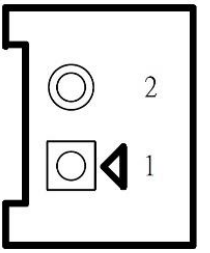
Pin	Pin Name	Signal Type	Signal Level
37	GND	GND	GND
38	MINIPCIE_DP	DIFF	
39	PCIE_3V3	PWR	+3.3V
40	GND	GND	GND
41	PCIE_3V3	PWR	+3.3V
42	N.C.	N/A	N/A
43	GND	GND	GND
44	N.C.	N/A	N/A
45	N.C.	N/A	N/A
46	N.C.	N/A	N/A
47	N.C.	N/A	N/A
48	PCIE_1V5	PWR	+1.5V
49	N.C.	N/A	N/A
50	GND	GND	GND
51	N.C.	N/A	N/A
52	PCIE_3V3	PWR	+3.3V

2.4.14 DC Power Jack (Optional) (CN16)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	GND	GND	
3	DCIN	PWR	+12V
4	GND	GND	
5	N.C.	N/A	N/A

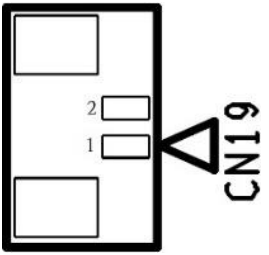
2.4.15 External +12V Power Input (CN17)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	DCIN	PWR	+12V

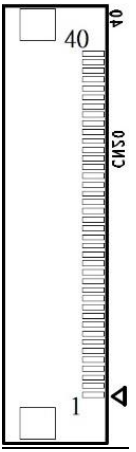
Note: CN16 and CN17 cannot be used at the same time.

2.4.16 RTC Battery (CN19)



Pin	Pin Name	Signal Type	Signal Level
1	VRTC_BAT	PWR	+3.3V
2	GND	GND	GND

2.4.17 Dual USB 2.0/LAN/3.3V I2C/CANBus Connector (CN20)

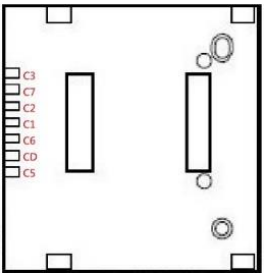


Pin	Pin Name	Signal Type	Signal Level
1	MAC1_RXD0		
2	MAC1_RXD1		
3	MAC1_RXD2		
4	MAC1_RXD3		

Pin	Pin Name	Signal Type	Signal Level
5	MAC1_RXDV		
6	MAC1_RXCLK		
7	MAC1_MDC		
8	MAC1_MDIO		
9	GND	GND	GND
10	PHY1_TXD0		
11	PHY1_TXD1		
12	PHY1_TXD2		
13	PHY1_TXD3		
14	PHY1_TXEN		
15	PHY1_TXCLK		
16	MAC1_RSTn		
17	MAC1_INTn		
18	GND	GND	GND
19	HUB_USB6_DP		
20	HUB_USB6_DN		
21	GND	GND	GND
22	HUB_USB7_DP		
23	HUB_USB7_DN		
24	GND	GND	GND
25	CAN1_STB_3V3	OUT	+3.3V
26	CAN1_TX	OUT	+3.3V
27	CAN1_RX	IN	+3.3V
28	N.C.	N/A	N/A
29	N.C.	N/A	N/A
30	N.C.	N/A	N/A
31	N.C.	N/A	N/A
32	N.C.	N/A	N/A

Pin	Pin Name	Signal Type	Signal Level
33	N.C.	N/A	N/A
34	GND	GND	GND
35	I2C4_SDA_3V3	I/O	+3.3V
36	I2C4_SCL_3V3	I/O	+3.3V
37	I2C3_SDA_3V3	I/O	+3.3V
38	I2C3_SCL_3V3	I/O	+3.3V
39	N.C.	N/A	N/A
40	DAU_3V3_EN	OUT	+3.3V

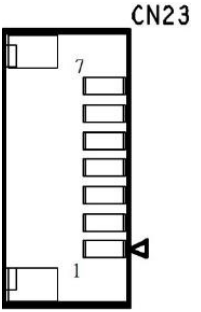
2.4.18 Nano SIM Card (CN22)



Pin	Pin Name	Signal Type	Signal Level
C3	USIM_CLK	IN	
C7	USIM_DATA	I/O	
C2	USIM_RESET	IN	
C1	USIM_PWR	PWR	
C6	N.C.	N/A	
CD	Card Detect	IN	
C5	GND	GND	GND

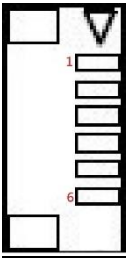
Note: CN22 must be used with the Nano SIM Card tray (P/N: P2M0410010)

2.4.19 External 5V/RS232/3.3V/Debug Port (CN23)



Pin	Pin Name	Signal Type	Signal Level
1	3V3_SYS	PWR	+3.3V
2	UART2_TX_DBG	OUT	
3	UART2_RX_DBG	IN	
4	GND	GND	GND
5	RS232_TX_3	OUT	
6	RS232_RX_3	IN	
7	5V_SYS	PWR	+5V

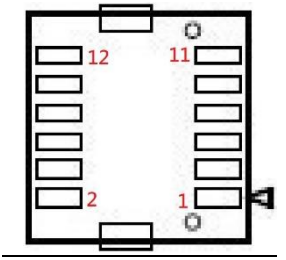
2.4.20 Power Button/Reset Button/Power LED (CN24)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	Power Button	IN	

Pin	Pin Name	Signal Type	Signal Level
3	GND	GND	GND
4	Reset Button	IN	
5	GND	GND	GND
6	Power LED(+)	PWR	+3.3V

2.4.21 DIO/Buzzer/5V (CN25)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	5V/0.5mA	PWR	+5V
3	DIO_104	I/O	+5V(Default) +3.3V(Option)
4	DIO_98	I/O	
5	DIO_105	I/O	
6	DIO_99	I/O	
7	DIO_106	I/O	
8	DIO_100	I/O	
9	DIO_113	I/O	
10	DIO_103	I/O	
11	Buzzer(+)		For 5V Buzzer
12	Buzzer(-)		

Appendix A

Mating Connectors

A.1 List of Mating Connectors and Cables

Onboard Connector				
Label	Function	Vendor	Model No	P/N
CN1	MicroSD Card Socket	TRONTEK	KSIF09R11292	16549X0087
CN2	COM Port	ASTRON	DB6A-09-AMAN1T-R	1654400914
CN3	Integrated 3.3V I2C/USB2.0/3.3V UART Port	PINREX	710-73-09TWEG	1655X00035
CN5	LAN Port 1 (RJ45) Connector	SPEEDTECH	RJJL4A-4WH1-FP0-0R	1652814205
CN6	HDMI Connector	FOXCONN	QJ51191-LFB4-7F	1654401932
CN7	LVDS Backlight Connector	PINREX	721-81-05TW00	1655305025
CN8	LVDS Connector	PINREX	712-76-30GWE0	1654030006
CN9	MIPI Connector	Panasonic	AYF333935	1654903931
CN10	eDP Connector	I-PEX	20455-030E-12	1653530131
CN11	Audio Jack w/ MIC function	Astron	E35S16AA-8S-R	1652708203
CN12	USB 3.2 Gen 1 Type C OTG	AMCO TEC	211-202401-105	16548X0017
CN13	USB 3.2 Gen1 / USB2.0 Port	Foxconn	UEA1112C-UHS6-4F	1654801330
CN14	mPCIe Slot for WWAN Card	FOXCONN	AS0B226-S68Q-7H	1654226304
CN16	DC Power Jack +12V Input (Optional)	SWITCHTECH	DC-044A-2.5	16525X0001
CN17	DC Input	CATCH	1192-700-02S	1655302020
CN19	RTC Battery Connector	ACES	50207-00271-001	1655902025
CN20	USB 2.0/LAN/3.3V I2C/CANBus Connector	Sunfun	FBX520Z-40(21R)	1654904034
CN22	Nano SIM Card Socket	ATTEND	115U-A101	P2M0410010
CN23	Integrated 5V/RS232/3.3V/Debug Port	PINREX	710-73-07TWEG	1655X00032
CN24	Power Button/Reset Button/Power LED	Aces	50228-00671-001	16535X0008
CN25	Integrated DIO / Buzzer	ACES	50238-01241-001	16535X0015

Mating Connector			
Label	Function	Vendor	Model No
CN1	MicroSD Card Socket	N/A	N/A
CN2	COM Port	N/A	N/A
CN3	Integrated 3.3V I2C/USB2.0/3.3V UART Port	JCTC	11002H00-9P
CN5	LAN Port 1 (RJ45) Connector	N/A	N/A
CN6	HDMI Connector	N/A	N/A
CN7	LVDS Backlight Connector	JST	PHR-5
CN8	LVDS Connector	HRS	DF13-30DS-1.25PITCH
CN9	MIPI Connector	N/A	N/A
CN10	eDP Connector	I-PEX	20645-030T-01
CN11	Audio Jack w/ MIC function	N/A	N/A
CN12	USB 3.2 Gen 1 Type C OTG	N/A	N/A
CN13	USB 3.2 Gen1 / USB2.0 Port	N/A	N/A
CN14	mPCIe Slot for WWAN Card	N/A	N/A
CN16	DC Power Jack +12V Input (Optional)	N/A	N/A
CN17	DC Input	JST	PHR-2
CN19	RTC Battery Connector	JST	SUR 0.8 2P
CN20	USB 2.0/LAN/3.3V I2C/CANBus Connector	N/A	N/A
CN22	Nano SIM Card Socket	N/A	N/A
CN23	Integrated 5V/RS232/3.3V/Debug Port	JCTC	11002H00-7P
CN24	Power Button/Reset Button/Power LED	SHR	WL1010H-6P 1.0PITCH
CN25	Integrated DIO / Buzzer	JCTC	11002H00-2*6P

Label	Available Cable	Cable P/N
CN1	N/A	N/A
CN2	N/A	N/A
CN3	Combo cable with USB and Dupont wire connector	170X000694
CN5	N/A	N/A
CN6	N/A	N/A
CN7	LVDS B/L Cable	170X000707
CN8	LVDS Cable	170X000707
CN9	N/A	N/A
CN10	N/A	N/A
CN11	N/A	N/A
CN12	N/A	N/A
CN13	N/A	N/A
CN14	N/A	N/A
CN16	N/A	N/A
CN17	Power Cable	170302015C
CN19	RTC Cable with Battery	1750X00007
CN20	Daughter Board Cable	170X000541
CN22	Nano SIM Card Tray	P2M0410010
CN23	Combo cable with DB9 and Dupont wire connector	170X000696
CN24	N/A	N/A
CN25	Combo cable with LED and Buzzer	170X000705