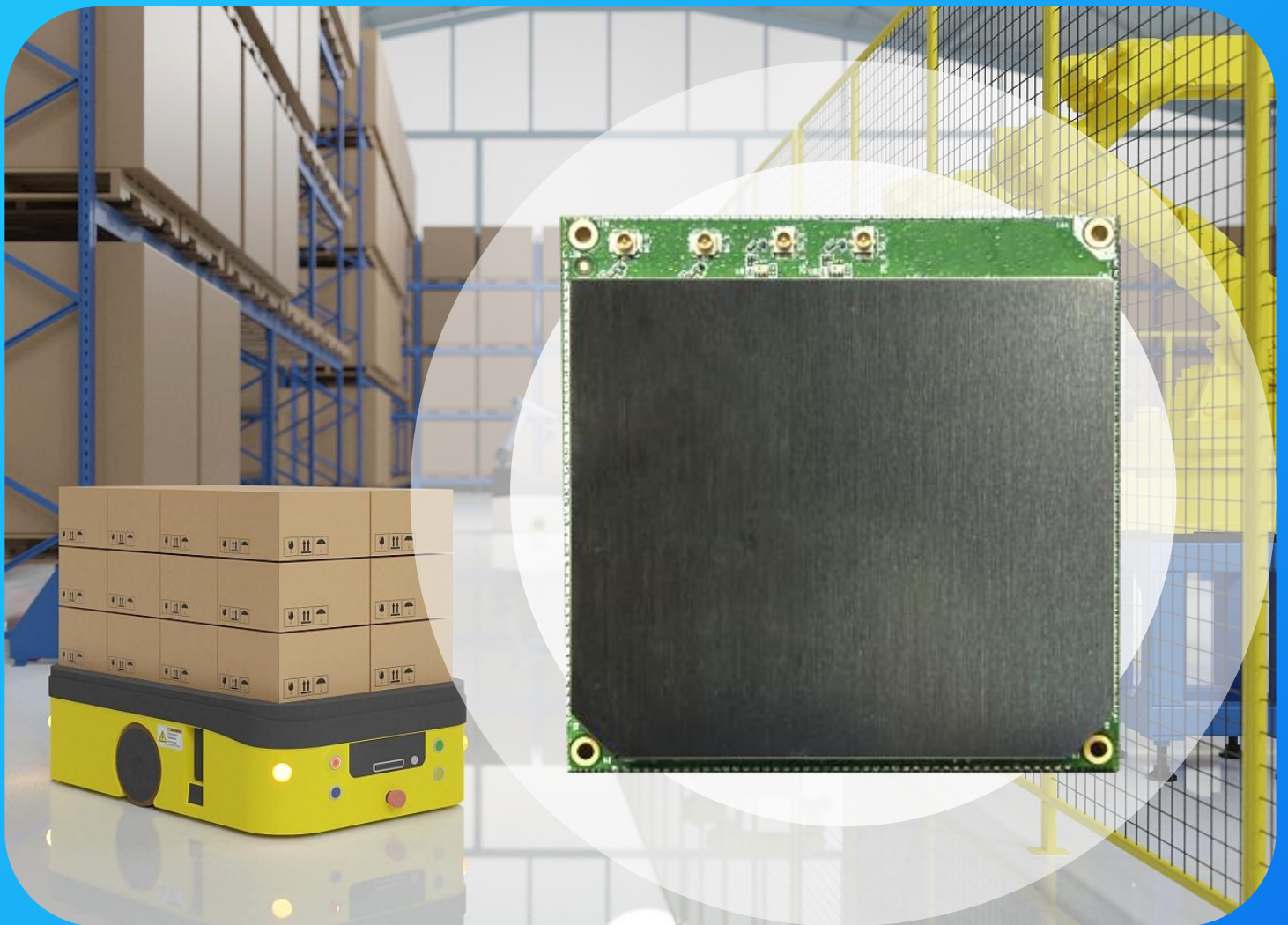




Industrial Wi-Fi 7 Module 2.4G+5G+6G Tri-Band

GP-ME9600-E Series



INDUSTRIAL NETWORK SOLUTION SPECIALIST
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Introduction

The GP-ME9600-E series is a high-performance industrial Wi-Fi 7 module supporting 802.11 b/g/n/ac/ax/be standards. Powered by Qualcomm IPQ5321 and QCN6274 chips, it offers strong multi-core performance and robust security.

It supports 2.4GHz (688 Mbps), 5GHz (2882 Mbps), and 6GHz (5765 Mbps) bands with tri-band concurrent speeds up to 9300 Mbps (MIMO 2x2). Designed with enhanced heat dissipation, it ensures stable operation under high-load conditions.

Ideal for mining, factory automation, AGVs, and various IoT applications, the GP-ME9600-E delivers fast, reliable wireless connectivity in both indoor and outdoor environments.

Parameter

Model	GP-ME9600-E
Protocol	802.11 b/g/n/ac/ax/be
Chipset	Qualcomm IPQ5321 & QCN6274
ARM	Quad-core processor
DDR	4Gbit
Flash	1 Gbit NAND, reserved NOR Flash
Frequency Band Connection Rate	2.4GHz: 688Mbps 5GHz: 2882Mbps 6GHz: 5765
Max. Wireless Connection Rate	Tri-band concurrent, max wireless rate up to 9300 Mbps
Dimensions	69.8 x 69.8 x 1.6 mm, 1.27 mm pitch, 184-pin, castellated holes
Interface	Antenna interfaces: 2 × IPEX Gen1 (2.4 GHz + 5 GHz) 2 × IPEX Gen1 (6 GHz) 2 × IPEX Gen1 (reserved) Interfaces: 1 × SerDes2 (2.5 GE) 1 × MDI (2.5 GE) 1 × SPI Flash 1 × eMMC Flash 1 × I2C 2 × UART or 1 × RS485 + 1 × UART 2 × SMI 1 × PCIe 3.0 lane1 or 1 × USB 3.0

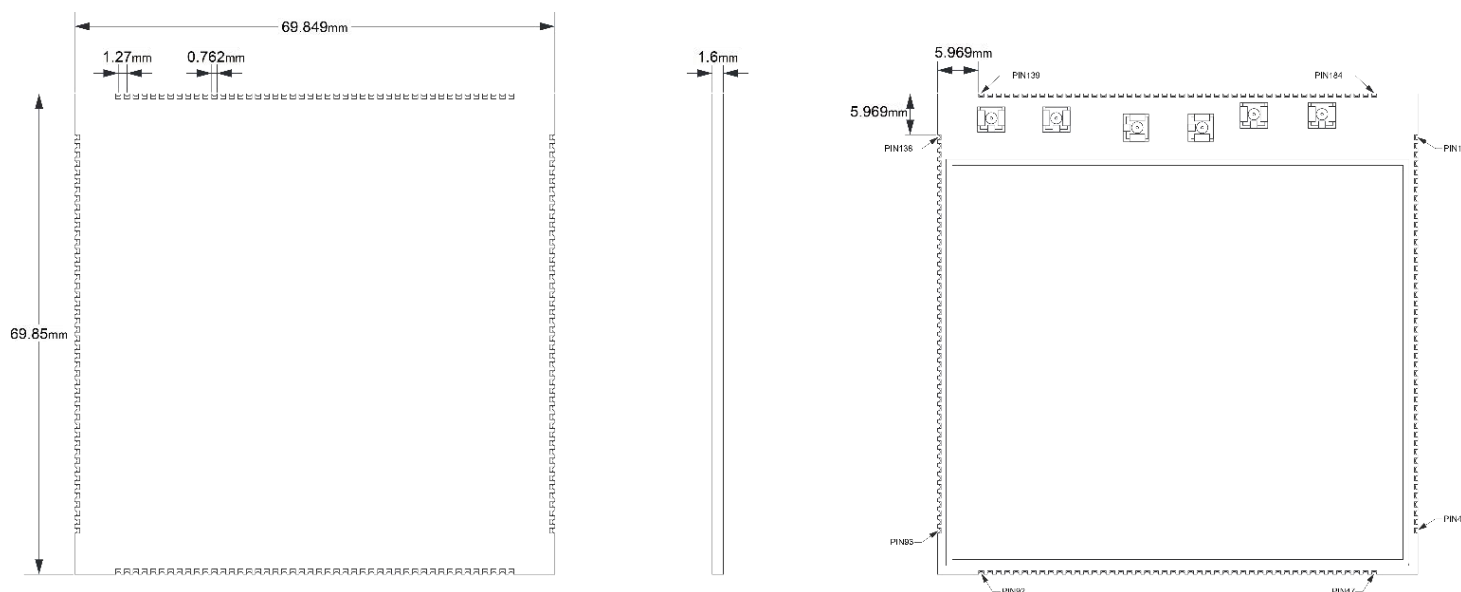
Transmit Power (Single Chain)

	Speed	Value (dBm)	Tolerance (dBm)
5GHz	HE20 MCS0	20	+/-2
	HE20 MCS11	17.5	+/-2
	EHT20 MCS13	17	+/-2
	HE40 MCS0	20	+/-2
	HE40 MCS11	17.5	+/-2
	EHT40 MCS13	17	+/-2
	HE80 MCS0	19.5	+/-2
	HE80 MCS11	17	+/-2
	EHT80 MCS13	16.5	+/-2
	HE160 MCS0	19.5	+/-2
	HE160 MCS11	17	+/-2
	EHT160 MCS13	16.5	+/-2
6GHz	EHT20 MCS0	20	+/-2
	EHT20 MCS11	17.5	+/-2
	EHT20 MCS13	17	+/-2
	EHT40 MCS0	20	+/-2
	EHT40 MCS11	17.5	+/-2
	EHT40 MCS13	17	+/-2
	EHT80 MCS0	19.5	+/-2
	EHT80 MCS11	17	+/-2
	EHT80 MCS13	16.5	+/-2
	EHT160 MCS0	19	+/-2
	EHT160 MCS11	16.5	+/-2
	EHT160 MCS13	16	+/-2
	EHT320 MCS0	19	+/-2
	EHT320 MCS11	16.5	+/-2
	EHT320 MCS13	16	+/-2
2.4GHz	EHT20 MCS0	20	+/-2
	EHT20 MCS11	17	+/-2
	EHT20 MCS13	16	+/-2
	EHT40 MCS0	20	+/-2
	EHT40 MCS11	17	+/-2
	EHT40 MCS13	16	+/-2

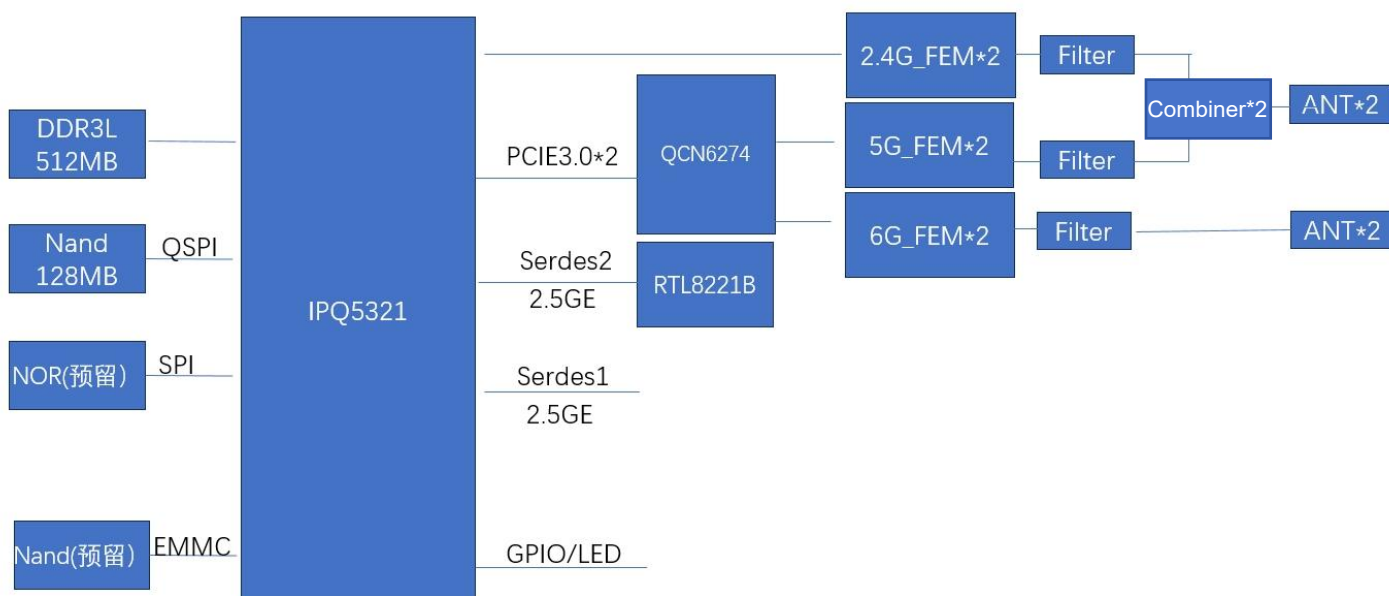
Receive Sensitivity

	Speed	Value (dBm)	Tolerance (dBm)
5GHz	HE20 MCS0	-92	+/-2
	HE20 MCS11	-62	+/-2
	HE20 MCS13	-56	+/-2
	HE40 MCS0	-89	+/-2
	HE40 MCS11	-59	+/-2
	HE40 MCS11	-53	+/-2
	HE80 MCS0	-86	+/-2
	HE80 MCS11	-56	+/-2
	HE80 MCS13	-50	+/-2
	HE160 MCS0	-83	+/-2
	HE160 MCS11	-53	+/-2
	EHT160 MCS13	-47	+/-2
6GHz	EHT20 MCS0	-92	+/-2
	EHT20 MCS11	-62	+/-2
	EHT20 MCS13	-56	+/-2
	EHT40 MCS0	-89	+/-2
	EHT40 MCS11	-59	+/-2
	EHT40 MCS13	-53	+/-2
	EHT80 MCS0	-86	+/-2
	EHT80 MCS11	-56	+/-2
	EHT80 MCS13	-50	+/-2
	EHT160 MCS0	-83	+/-2
	EHT160 MCS11	-53	+/-2
	EHT160 MCS13	-47	+/-2
2.4GHz	EHT20 MCS0	-92	+/-2
	EHT20 MCS11	-62	+/-2
	EHT40 MCS0	-89	+/-2
	EHT40 MCS11	-59	+/-2

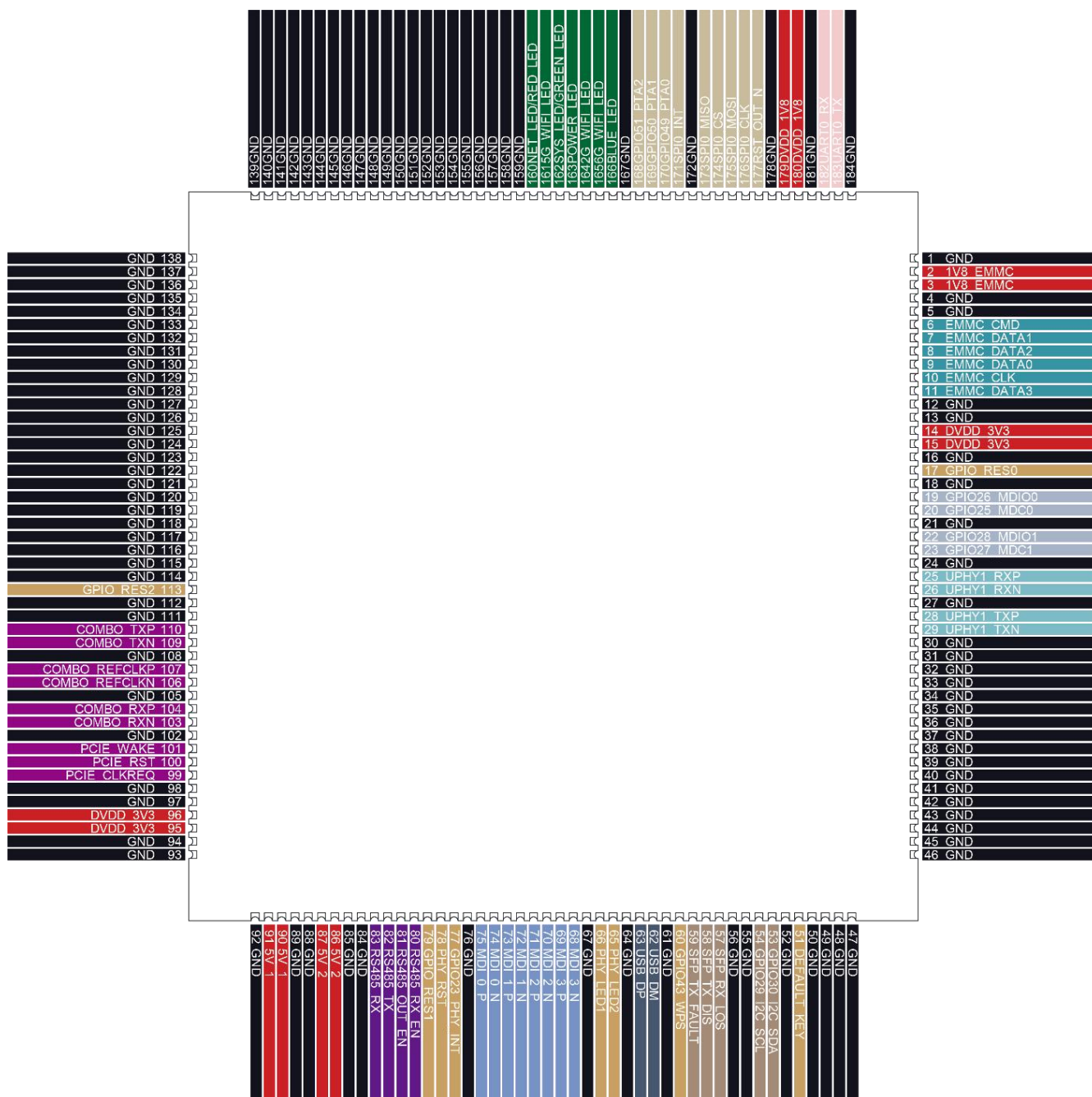
Dimensions Diagram



Block Diagram



PIN Specifications



PIN Definition

Pin	Pin Name	Voltage Level	Type	Function Description
1	GND			
2	1V8_EMMC	V18	OUT	POWER_V18_EMMC Output
3	1V8_EMMC	V18	OUT	POWER_V18_EMMC Output
4	GND			
5	GND			

6	EMMC_CMD	V18	DO	EMMC FLASH Access
7	EMMC_DATA1	V18	DI/DO	EMMC FLASH Access
8	EMMC_DATA2	V18	DI/DO	EMMC FLASH Access
9	EMMC_DATA0	V18	DI/DO	EMMC FLASH Access
10	EMMC_CLK	V18	DO	EMMC FLASH Access
11	EMMC_DATA3	V18	DI/DO	EMMC FLASH Access
12	GND			
13	GND			
14	DVDD_3V3	V33	OUT	POWER_V33 Output
15	DVDD_3V3	V33	OUT	POWER_V33 Output
16	GND			
17	GPIO_RES0	V18	DI/DO	GPIO Function Reserved (Alternative with PIN 51)
18	GND			
19	GPIO26_MDIO0	V18	DI/DO	SMIO_MDIO (Alternative with PIN 171)
20	GPIO25_MDC0	V18	DO	SMIO_MDC (Alternative with PIN 166)
21	GND			
22	GPIO28_MDIO1	V18	DI/DO	SMI1_MDIO (Recommend)
23	GPIO27_MDC1	V18	DO	SMI1_MDC (Recommend)
24	GND			
25	UPHY1_RXP	V095	DI	UPHY1_Serdes_RX
26	UPHY1_RXN	V095	DI	UPHY1_Serdes_RX
27	GND			
28	UPHY1_TXP	V095	DO	UPHY1_Serdes_TX
29	UPHY1_TXN	V095	DO	UPHY1_Serdes_TX
30~50	GND			
51	DEFAULT_KEY	V18	DI	1. Reset to Default Button Input 2. Same Function as PIN 17
52	GND			
53	GPIO30_I2C_SDA	V18	DI/DO	IIC
54	GPIO29_I2C_SCL	V18	DO	IIC
55	GND			
56	GND			
57	SFP_RX_LOS	V18	DI	SFP_RX_LOS
58	SFP_TX_DIS	V18	DI	SFP_TX_DIS
59	SFP_TX_FAULT	V18	DI	SFP_TX_FAULT
60	GPIO43_WPS	V18	DI	WPS Reset Button Input
61	GND			
62	USB_DM	V33	DI/DO	USB 2.0 Data Channel
63	USB_DP	V33	DI/DO	USB 2.0 Data Channel
64	GND			

65	PHY_LED2	V18	DO	PHY(RTL8221-B) LED_CTRL
66	PHY_LED1	V18	DO	PHY(RTL8221-B) LED_CTRL
67	GND			
68	MDI_3_N		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
69	MDI_3_P		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
70	MDI_2_N		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
71	MDI_2_P		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
72	MDI_1_N		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
73	MDI_1_P		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
74	MDI_0_N		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
75	MDI_0_P		DI/DO	PHY(RTL8221-B)_MDI Port (2.5G)
76	GND			
77	GPIO23_PHY_INT	V18	DI	PHY_INT Input
78	PHY_RST	V18	DO	PHY_RESET Output (Alternative with PIN 168)
79	GPIO_RES1	V18	DI/DO	GPIO Function Reserved
80	RS485_RX_EN	V18	DO	RS485_RX_EN (Alternative with PIN 101)
81	RS485_OUT_EN	V18	DO	RS485_OUT_EN (Alternative with PIN 100)
82	RS485_TX	V18	DO	1、RS485_TX 2、UART1_TX
83	RS485_RX	V18	DI	1、RS485_RX 2、UART1_RX
84	GND			
85	GND			
86	5V_2	V5.0	IN	Carrier board 5V_1 power, can be combined with 5V_2
87	5V_2	V5.0	IN	
88	GND			
89	GND			
90	5V_1	V5.0	IN	Carrier board 5V_1 power, can be combined with 5V_2
91	5V_1	V5.0	IN	
92	GND			
93	GND			
94	GND			
95	DVDD_3V3	V33	OUT	POWER_V33 Output
96	DVDD_3V3	V33	OUT	POWER_V33 Output
97	GND			
98	GND			
99	PCIE_CLKREQ	V18	DO	PCIE0_CLKREQ (Alternative with PIN 163)
100	PCIE_RST	V18	DO	PCIE0_RST (Alternative with PIN 81)
101	PCIE_WAKE	V18	DO	PCIE0_WAKE (Alternative with PIN 80)
102	GND			

103	COMBO_RXN	V095	DI	1. PCIE0_RX_N 2. USB3.0_RX_N
104	COMBO_RXP	V095	DI	1.PCIE0_RX_P 2.USB3.0_RX_P
105	GND			
106	COMBO_REFCLKN	V095	DO	PCIE0_REFCLK_N CLK_100M
107	COMBO_REFCLKP	V095	DO	PCIE0_REFCLK_P CLK_100M
108	GND			
109	COMBO_TXN	V095	DO	1. PCIE0_TX_N 2.USB3.0_TX_N
110	COMBO_TXP	V095	DO	1.PCIE0_TX_P 2. USB3.0_TX_P
111	GND			
112	GND			
113	GPIO_RES2	V18	DI/DO	GPIO Function Reserved (Alternative with PIN 160)
114~159	GND			
160	NET_LED/RED_LED	V18	DO	1.NET Indicator 2.Breathing Light
161	5G_WIFI_LED	V18	DO	5G_WIFI Indicator
162	SYS_LED/GREEN_LED	V18	DO	1.SYS Indicator 2.Breathing Light
163	POWER_LED	V18	DO	Power Indicator
164	2G_WIFI_LED	V18	DO	2G_WIFI Indicator
165	6G_WIFI_LED	V18	DO	6G_WIFI Indicator
166	BLUE_LED	V18	DO	Breathing Light Control (Alternative with PIN 20)
167	GND			
168	GPIO51_PTA2	V18	DO	PTA2 Function (Alternative with PIN 78)
169	GPIO50_PTA1	V18	DO	PTA1Function (Alternative with PIN 58)
170	GPIO49_PTA0	V18	DO	PTA0Function (Alternative with PIN 59)
171	SPI0_INT	V18	DO	SPI0_INTFunction (Alternative with PIN 19)
172	GND			
173	SPI0_MISO	V18	DI	NOR FLASH SPI Access Interface
174	SPI0_CS	V18	DO	NOR FLASH SPI Access Interface
175	SPI0_MOSI	V18	DO	NOR FLASH SPI Access Interface
176	SPI0_CLK	V18	DO	NOR FLASH SPI Access Interface
177	RST_OUT_N	V18	DO	NOR& EMMC FLASH Reset
178	GND			
179	DVDD_1V8	V18	OUT	POWER_V18 Output
180	DVDD_1V8	V18	OUT	POWER_V18 Output
181	GND			
182	UART0_RX	V18	DI	UART0_RX(DEBUG)
183	UART0_TX	V18	DO	UART0_TX(DEBUG)
184	GND			

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