

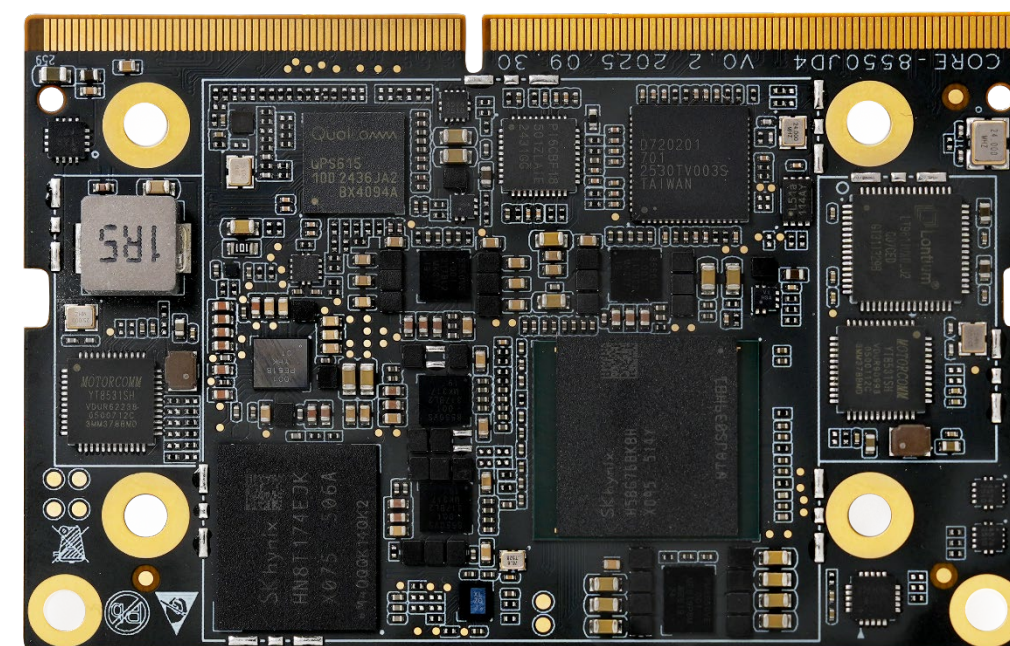


CORE-8550JD4

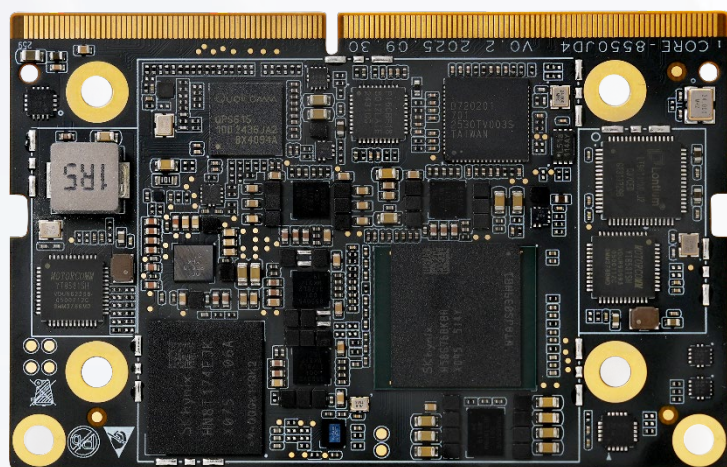
高性能 AI 核心板

V0.2 2025-12-1

天启智能科技



产品特点 Product features



高性能 AI 处理器 QCS8550

采用八核64位高性能 Kryo CPU 高通 QCS 8550，基于ARM架构，主频高达3.36GHz，为高性能计算和多任务处理提供了强大支持



强大的图像处理能力

内置 Adreno 740 GPU，全面支持光线追踪技术，同时兼容 OpenGL ES 3.2、Vulkan 1.2、OpenCL 3.0 全配置文件，图形处理与 AI 计算性能更加强劲



支持大语言模型的私有化部署

支持Transformer架构下大规模参数模型的私有化部署，如：Qwen系列、Llama系列、Gemma系列、Phi系列等大语言模型



4nm低功耗设计，助力硬件迭代

基于4nm工艺，兼具高能效比与稳定性能，适配长时间运行设备；硬件接口兼容 Jeston Orin NX/Nano，助力硬件平台快速迭代



支持 8 K 视频编解码

支持8K@60fps/4K@240fps视频解码、8K@30fps/4K@120fps视频编码，支持无线显示场景下4K解码与编码并发处理



内置 48 TOPS 算力 NPU

内置 48TOPS NPU，支持 INT4/INT8/INT16/FP16 混合运算，能进行智能的数据处理、语音识别、图像分析，满足绝大多数终端设备边缘计算AI应用需求



支持多种深度学习框架

支持QNN AI推理框架，以及TensorFlow、TensorFlow Lite、PyTorch、ONNX等多种深度学习框架



采用金手指接口，尺寸小巧

采用金手指 SODIMM 260Pin 标准接口，兼具精致小尺寸设计，整体规格为 69.6mm×45mm，重量仅16g，小巧轻盈

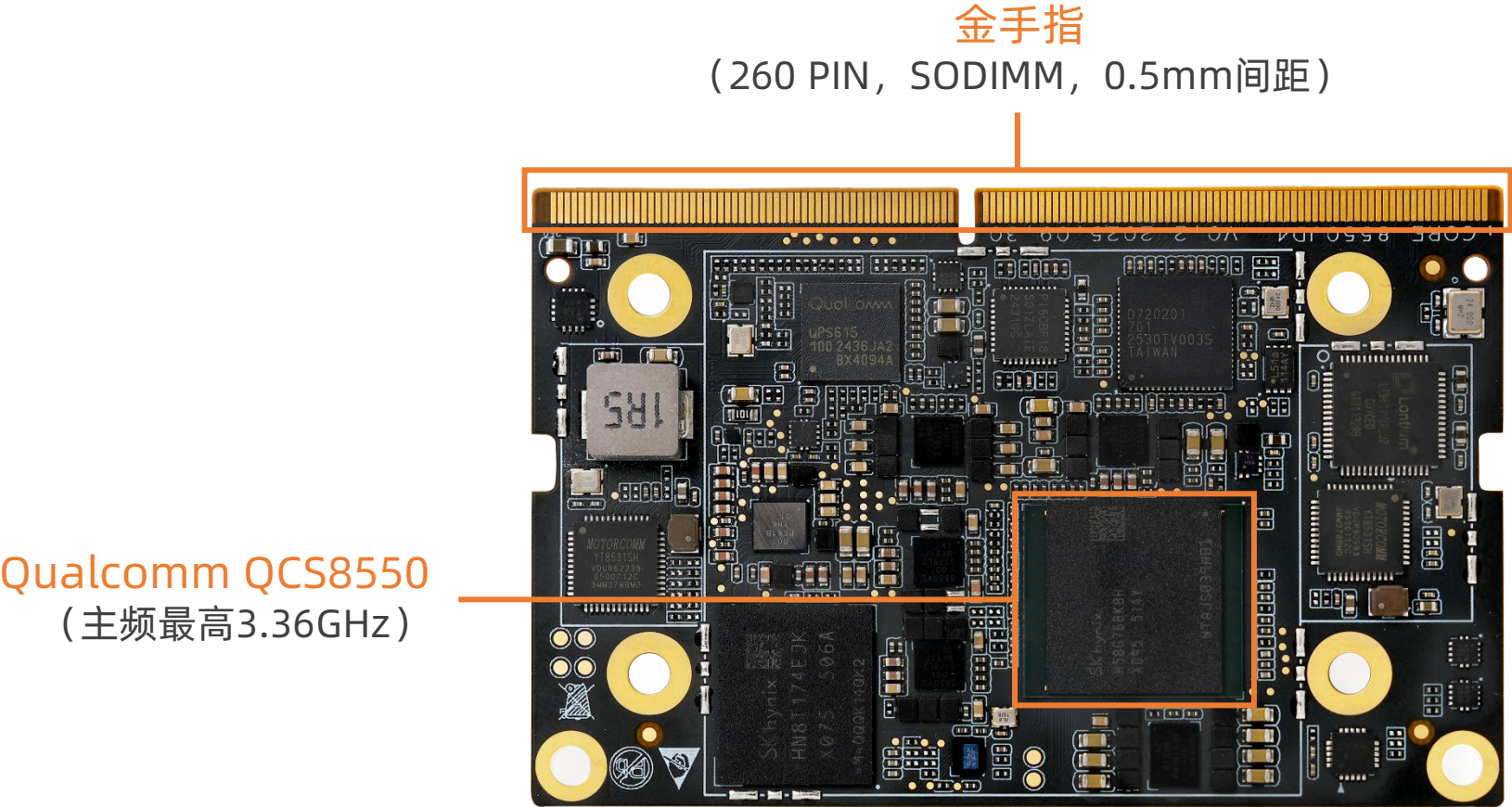
规格参数 Specifications



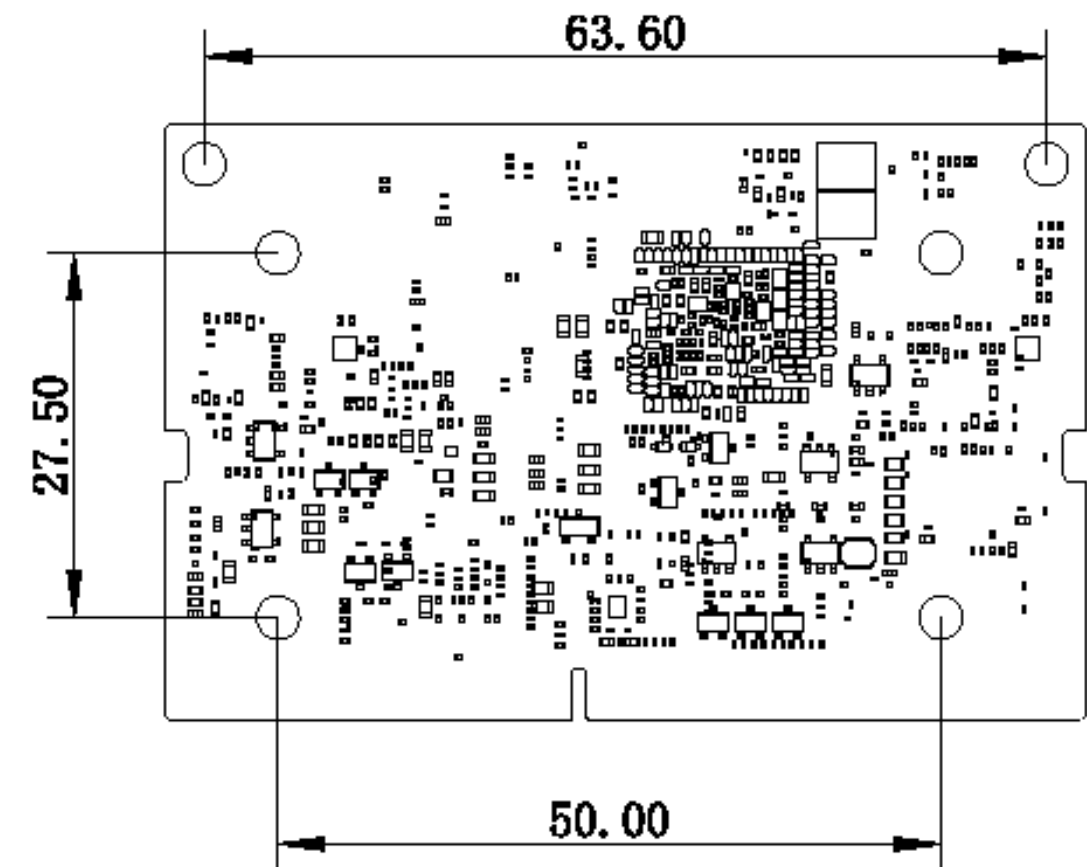
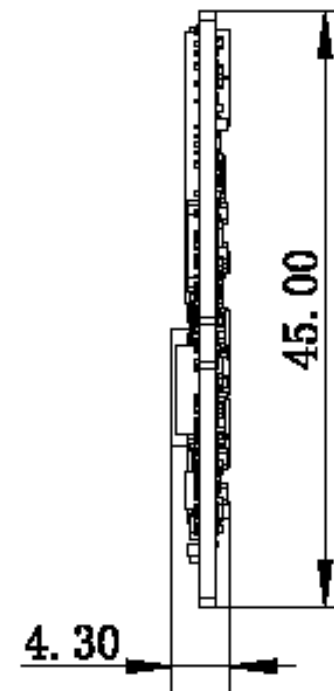
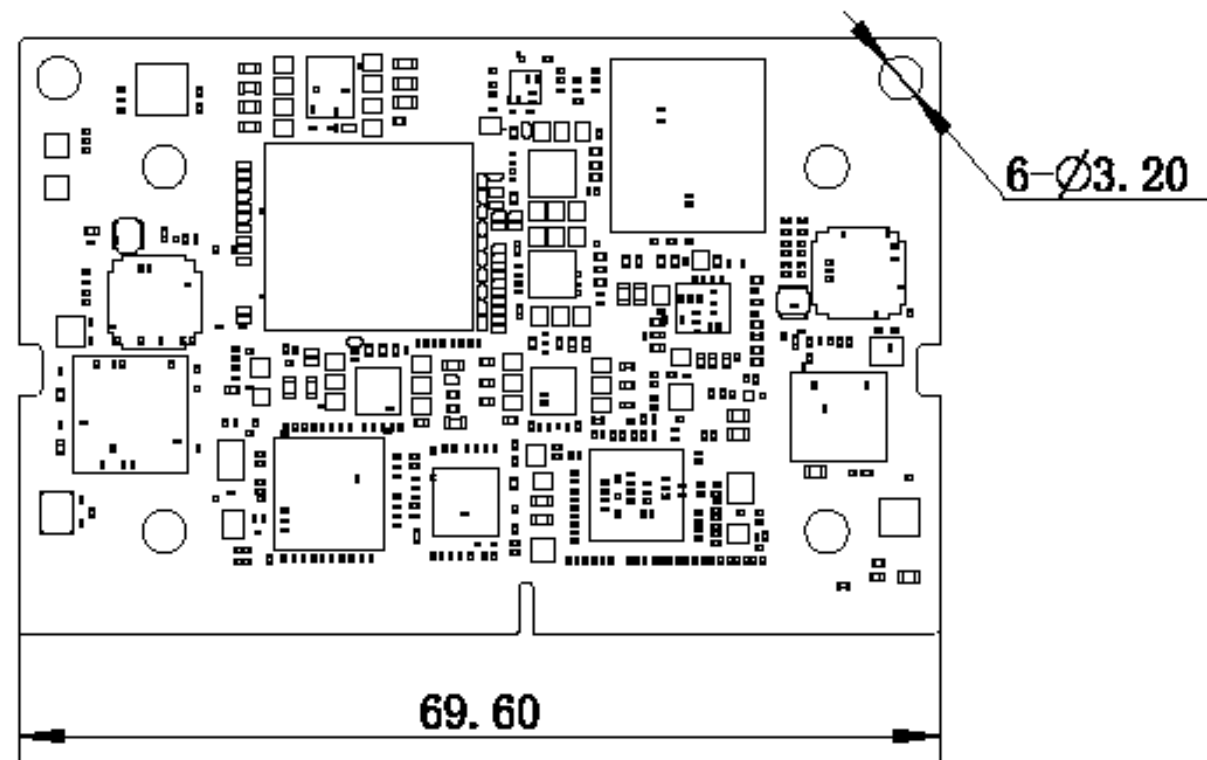
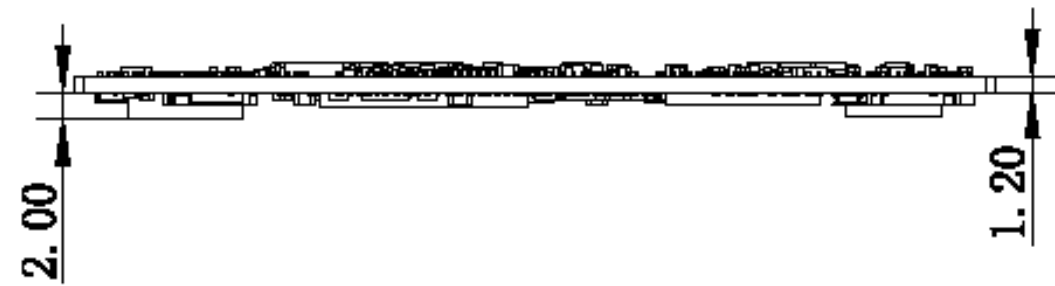
规格参数		
基本参数	SOC	高通QCS8550
	CPU	高通 Kryo® CPU：八核64位（1×GoldPlus@3.2GHz + (2+2)Gold@2.8GHz + 3×Silver@2.0GHz），4nm先进工艺，主频高达3.36GHz
	GPU	Adreno 740 GPU：支持光线追踪技术、OpenGL ES 3.2、Vulkan 1.2、OpenCL 3.0 全配置文件、Adreno NN Direct
	ISP	搭载高通 Spectra™认知 ISP 图像信号处理器，拥有三个 18 位3600万像素ISP
	NPU	双 eNPU V3：配备4个HVX（Hexagon 向量扩展）、1个HMX（Hexagon 矩阵扩展），算力可达 48 TOPS（INT8）、12 TOPS（FP16）
	编解码	视频解码：8K@60fps/4K@240fps H.265/H.264/VP9/AV1 视频编码：8K@30fps/4K@120fps H.265/H.264 支持无线显示场景下 4K@60fps 解码与 4K@60fps 编码并发处理
	内存	16GB LPDDR5x
	存储	256GB UFS4.0
	电源	5V（电压误差 ±5%）
	功耗	典型功耗：3W(5V/600mA)，最大功耗：10W(5V/2000mA)，休眠功耗：0.4W(5V/80mA)
	系统	Ubuntu
	软件支持	支持Transformer架构下超大规模参数模型的私有化部署，如 Deepseek-R1系列、Gemma系列、Llama系列、Qwen系列、Phi系列等大语言模型 支持QNN AI推理框架，以及TensorFlow、TensorFlow Lite、PyTorch、ONNX等多种深度学习框架
	接口类型	SODIMM（260 PIN，0.5mm 间距）
	尺寸	69.6mm × 45.0mm × 4.3mm
	重量	≈16g
	环境	工作温度：-20℃ ~ 60℃，存储温度：-20℃ ~ 70℃，工作湿度：10% ~ 90%RH（无凝露）
接口参数	网络	支持2路千兆以太网（通过PCIe转出，核心板已板载以太网PHY芯片），可扩展5G/4G
	视频输入	2 × MIPI D/C PHY (4 lanes DPHY or 3 trios CPHY) + 2 × MIPI D/C PHY (2 lanes DPHY or 1 trio CPHY) 支持3600 万像素三摄/6400 万 + 3600 万像素双摄/1.08 亿像素单摄
	视频输出	1 × HDMI2.0（4K@60Hz）、1 × DP1.4（通过Type-C输出）
	音频	2 × I2S（每路含2条数据通道，支持4通道TX/RX，支持TDM/PCM模式，48kHz采样率）
	PCIe	1 × PCIe3.0（2lanes）、1 × PCIe4.0（2lanes）
	USB	1 × USB3.1 Gen2 DRD with DP、2 × USB3.0 HOST（通过PCIe转出）
	其他接口	3 × CCI I2C、2 × I3C/I2C、2 × SPI、4 × UART、1 × ADC、1 × SDMMC、GPIOs



核心板接口描述 Core board Interface description



核心板尺寸 Core board Dimension





接口定义 Interface definition

Notes1: Pin type: I = input, O = output, I/O = input/output (bidirectional), G= Ground , P = power supply , DOWN = Internal pull down , UP = Internal pull UP , L = Lowe Level , H = High level							
PIN	CORE-8550JD4 pin definition	QCS8550 Pin Number	Pin type	IO Power domain	I/O Pull	Function for Floor (MB-JD4-QCS8550)	Default function description
1	GND		G			GND	GND
3	CSIO_A2_LN2_M	D10	I	-		CSIO_A2_LN2_M	CSIO_A2_LN2_M
5	CSIO_C1_LN2_P	E10	I	-		CSIO_C1_LN2_P	CSIO_A2_LN2_M
7	GND		G			GND	GND
9	NC		-			NC	NC
11	NC		-			NC	NC
13	GND		G			GND	GND
15	CSIO_C2_LN3_M	B10	I	-		CSIO_C2_LN3_M	CSIO_C2_LN3_M
17	CSIO_B2_LN3_P	C10	I	-		CSIO_B2_LN3_P	CSIO_B2_LN3_P
19	GND		G			GND	GND
21	CSI6_C0_LN0_M	T5	O	-		CSI6_C0_LN0_M	CSI6_C0_LN0_M
23	CSI6_B0_LN0_P	T4	O	-		CSI6_B0_LN0_P	CSI6_B0_LN0_P
25	GND		G			GND	GND
27	CSI6_A0_CLK_M	R6	O	-		CSI6_A0_CLK_M	CSI6_A0_CLK_M
29	CSI6_NC_CLK_P	R5	O	-		CSI6_NC_CLK_P	CSI6_NC_CLK_P
31	GND		G			GND	GND



接口定义 Interface definition

33	CSI6_B1_LN1_M	U6	O	-		CSI6_B1_LN1_M	CSI6_B1_LN1_M
35	CSI6_A1_LN1_P	U5	O	-		CSI6_A1_LN1_P	CSI6_A1_LN1_P
37	GND		G			GND	GND
39	USB0_SS_RX0_M	AK38	O	-		USB0_SS_RX0_M	USB0_SS_RX0_M
41	USB0_SS_RX0_P	AJ39	O	-		USB0_SS_RX0_P	USB0_SS_RX0_P
43	GND		G			GND	GND
45	USB0_SS_TX0_M	AG38	I	-		USB0_SS_TX0_M	USB0_SS_TX0_M
47	USB0_SS_TX0_P	AH38	I	-		USB0_SS_TX0_P	USB0_SS_TX0_P
49	GND		G			GND	GND
51	USB0_SS_RX1_M	AL39	O	-		USB0_SS_RX1_M	USB0_SS_RX1_M
53	USB0_SS_RX1_P	AK39	O	-		USB0_SS_RX1_P	USB0_SS_RX1_P
55	GND		G			GND	GND
57	USB0_SS_TX1_M	AF38	I	-		USB0_SS_TX1_M	USB0_SS_TX1_M
59	USB0_SS_TX1_P	AG39	I	-		USB0_SS_TX1_P	USB0_SS_TX1_P
61	GND		G			GND	GND
63	HDMI_TX_D2N	-	O	-		HDMI_TX_D2N	HDMI_TX_D2N
65	HDMI_TX_D2P	-	O	-		HDMI_TX_D2P	HDMI_TX_D2P
67	GND		G			GND	GND



接口定义 Interface definition

69	HDMI_TX_D1N	-	O	-		HDMI_TX_D1N	HDMI_TX_D1N
71	HDMI_TX_D1P	-	O	-		HDMI_TX_D1P	HDMI_TX_D1P
73	GND		G			GND	GND
75	HDMI_TX_D0N	-	O	-		HDMI_TX_D0N	HDMI_TX_D0N
77	HDMI_TX_D0P	-	O	-		HDMI_TX_D0P	HDMI_TX_D0P
79	GND		G			GND	GND
81	HDMI_CLKN	-	O	-		HDMI_CLKN	HDMI_CLKN
83	HDMI_CLKP	-	O	-		HDMI_CLKP	HDMI_CLKP
85	GND		G			GND	GND
87	QUP1_SE2_SPI_CS_2/QUP1_SE3_SPI_MOSI/QUP1_SE3_I2C_SCL/QUP1_SE3_UART_RFR/GPIO41	AY35	I/O	1.8V	DOWN	FP_WUHB_INT_N	FP_WUHB_INT_N
89	QUP1_SE2_SPI_MOSI/QUP1_SE2_I2C_SCL/QUP1_SE2_UART_RFR/GPIO37	AY36	I/O	1.8V	DOWN	FP_SPI_MOSI	FP_SPI_MOSI
91	QUP1_SE2_SPI_SCLK/QUP1_SE2_UART_TXD/GPIO38	BA37	I/O	1.8V	DOWN	FP_SPI_SCK	FP_SPI_SCK
93	QUP1_SE2_SPI_MISO/QUP1_SE2_I2C_SDA/QUP1_SE2_UART_CTS/GPIO36	AY37	I/O	1.8V	DOWN	FP_SPI_MISO	FP_SPI_MISO
95	QUP1_SE2_SPI_CS_0/QUP1_SE2_UART_RXD/GPIO39	BA36	I/O	1.8V	DOWN	FP_SPI_CS_N	FP_SPI_CS_N
97	QUP1_SE2_SPI_CS_1/QUP1_SE3_SPI_MISO/QUP1_SE3_I2C_SDA/QUP1_SE3_UART_CTS/GPIO40	BA35	I/O	1.8V	DOWN	FP_INT_N	FP_INT_N
99	QUP2_SE6_SPI_SCLK/QUP2_SE6_UART_TXD/GPIO78_U	AH5	I/O	1.8V	UP	SM_GPIO_78_HMT_BT_UART_TX	SM_GPIO_78_HMT_BT_UART_TX
101	QUP2_SE6_SPI_CS_0/QUP2_SE6_UART_RXD/GPIO79	AH4	I/O	1.8V	DOWN	SM_GPIO_79_HMT_BT_UART_RX	SM_GPIO_79_HMT_BT_UART_RX
103	QUP2_SE6_SPI_MOSI/QUP2_SE6_I2C_SCL/QUP2_SE6_UART_RFR/GPIO77	AJ4	I/O	1.8V	DOWN	SM_GPIO_77_HMT_BT_UART_RFR	SM_GPIO_77_HMT_BT_UART_RFR



接口定义 Interface definition

105	QUP2_SE6_SPI_MISO/QUP2_SE6_I2C_SDA/QUP2_SE6_UART_CTS/GPIO76	AJ5	I/O	1.8V	DOWN	SM_GPIO_76_HMT_BT_UART_CTS	SM_GPIO_76_HMT_BT_UART_CTS
107	GND		G			GND	GND
109	USB0_SS_DM	-	I/O	-		USB0_SS_DM	USB0_SS_DM
111	USB0_SS_DP	-	I/O	-		USB0_SS_DP	USB0_SS_DP
113	GND		G			GND	GND
115	USB20_A_DM	-	I/O	-		ASM_PortA_HS_DM	ASM_PortA_HS_DM
117	USB20_A_DP	-	I/O	-		ASM_PortA_HS_DP	ASM_PortA_HS_DP
119	GND		G			GND	GND
121	USB20_B_DM	-	I/O	-		ASM_PortB_HS_DM	ASM_PortB_HS_DM
123	USB20_B_DP	-	I/O	-		ASM_PortB_HS_DP	ASM_PortB_HS_DP
125	GND		G			GND	GND
127	I2CHUB0_SE7_SDA/QDSS_CTI_TRIG0_OUT_MIRB/GPIO10	AP3	I/O	1.8V	DOWN	SM_GPIO_10	SM_GPIO_10
129	GND		G			GND	GND
131	QCS8550_PCIE1_RX0_M	BA2	I	-		SOM_PCIE1_RX0_M	SOM_PCIE1_RX0_M
133	QCS8550_PCIE1_RX0_P	BB2	I	-		SOM_PCIE1_RX0_P	SOM_PCIE1_RX0_P
135	GND		G			GND	GND
137	QCS8550_PCIE1_RX1_M	BB3	I	-		SOM_PCIE1_RX1_M	SOM_PCIE1_RX1_M
139	QCS8550_PCIE1_RX1_P	BC2	I	-		SOM_PCIE1_RX1_P	SOM_PCIE1_RX1_P



接口定义 Interface definition

141	GND		G			GND	GND
143	QUP2_SE3_SPI_CS0/QUP2_SE3_UART_RXD/CCI_ASYNC_IN0/GPIO71	-	I/O	3.3V	DOWN	HMT_BLE_UART_RX	HMT_BLE_UART_RX
145	QUP2_SE3_SPI_SCLK/QUP2_SE3_UART_TXD/GPIO70	-	I/O	3.3V	DOWN	HMT_BLE_UART_TX	HMT_BLE_UART_TX
147	GND		G			GND	GND
149	USB30_B_RX_N	-	I	-		ASM_PortB_RX_N	ASM_PortB_RX_N
151	USB30_B_RX_P	-	I	-		ASM_PortB_RX_P	ASM_PortB_RX_P
153	GND		G			GND	GND
155	QPS615_PCIE_RX1_M	AB12	I/O	-		CON_DS0_PCIE0_RX1_M	CON_DS0_PCIE0_RX1_M
157	QPS615_PCIE_RX1_P	AC11	I/O	-		CON_DS0_PCIE0_RX1_P	CON_DS0_PCIE0_RX1_P
159	GND		G			GND	GND
161	USB30_A_RX_N	-	I	-		ASM_PortA_RX_N	ASM_PortA_RX_N
163	USB30_A_RX_P	-	I	-		ASM_PortA_RX_P	ASM_PortA_RX_P
165	GND		G			GND	GND
167	QPS615_PCIE_RX0_M	AB6	O	-		CON_DS0_PCIE0_RX0_M	CON_DS0_PCIE0_RX0_M
169	QPS615_PCIE_RX0_P	AC7	O	-		CON_DS0_PCIE0_RX0_P	CON_DS0_PCIE0_RX0_P
171	GND		G			GND	GND
173	QPS615_PCIE_REFCLK_M	-	I	-		CON_DS0_PCIE0_REFCLK_M	CON_DS0_PCIE0_REFCLK_M
175	QPS615_PCIE_REFCLK_P	-	I	-		CON_DS0_PCIE0_REFCLK_P	CON_DS0_PCIE0_REFCLK_P



接口定义 Interface definition

177	GND		G			GND	GND
179	PCIE_WAKE	AT1/AN4	I/O	3.3V		PCIE_WAKE	PCIE_WAKE Core board internal pull up Resistor 10K
181	PCIE1_RESET/GPIO97	-	I/O	3.3V	DOWN	PCIE1_RESET_N	PCIE1_RESET_N Core board internal pull up Resistor 10K
183	QPS615_PCIE_RESET	-	I/O	3.3V		PCIE0_RESET_N	PCIE0_RESET_N Core board internal pull up Resistor 10K
185	CCI_I2C_SCL4/QUP2_SE7_SPI_CS_0/QUP2_SE7_UART_RXD/QDSS_CTI_TRI G0_IN_MIRB/GPIO75 or I2CHUB0_SE1_SCL/GPIO19	-	I/O	3.3V	DOWN	I2C0_SCL_3V3	I2C0_SCL_3V3 Core board internal pull up Resistor 2.2K
187	CCI_I2C_SDA4/QUP2_SE7_SPI_SCLK/QUP2_SE7_UART_TXD/GPIO74 or I2CHUB0_SE1_SDA/GPIO18	-	I/O	3.3V	DOWN	I2C0_SDA_3V3	I2C0_SDA_3V3 Core board internal pull up Resistor 2.2K
189	CCI_I2C_SCL2/QDSS_GPIO_TRACEDATA_LOCB[10]/GPIO115 or I2CHUB0_SE0_SCL/GPIO17	-	I/O	3.3V	DOWN	I2C1_SCL_3V3	I2C1_SCL_3V3 Core board internal pull up Resistor 2.2K
191	CCI_I2C_SDA2/QDSS_GPIO_TRACEDATA_LOCB[9]/GPIO114 or I2CHUB0_SE0_SDA/GPIO16	-	I/O	3.3V	DOWN	I2C1_SDA_3V3	I2C1_SDA_3V3 Core board internal pull up Resistor 2.2K
193	I2S0_DATA1/GP_PDM_MIRA[2]/GPIO128	BA10	I/O	1.8V	DOWN	HIFI_DAC_I2S_DATA1_GPIO128	HIFI_DAC_I2S_DATA1_GPIO128
195	I2S0_DATA0/GP_PDM_MIRA[1]/GPIO127	AY10	I/O	1.8V	DOWN	HIFI_DAC_I2S_DATA0_GPIO127	HIFI_DAC_I2S_DATA0_GPIO127
197	I2S0_WS/_GPIO129	BA9	I/O	1.8V	DOWN	HIFI_DAC_I2S_WS_GPIO129	HIFI_DAC_I2S_WS_GPIO129
199	I2S0_SCLK/GP_PDM_MIRA[0]/GPIO126	AY11	I/O	1.8V	DOWN	HIFI_DAC_I2S_SCK_GPIO126	HIFI_DAC_I2S_SCK_GPIO126
201	GND		G			GND	GND
203	QUP1_SE4_SPI_SCLK/QUP1_SE4_UART_TXD/GPIO46	BC36	I/O	1.8V	DOWN	SM_GPIO_46_UART_TX	SM_GPIO_46_UART_TX
205	QUP1_SE4_SPI_CS_0/QUP1_SE4_UART_RXD/GPIO47	BB36	I/O	1.8V	DOWN	SM_GPIO_47_UART_RX	SM_GPIO_47_UART_RX
207	QUP1_SE4_SPI_MOSI/QUP1_SE4_I2C_SCL/QUP1_SE4_UART_RFR/GPIO45	BC37	I/O	1.8V	DOWN	SM_GPIO_45_UART_RFR	SM_GPIO_45_UART_RFR
209	QUP1_SE4_SPI_MISO/QUP1_SE4_I2C_SDA/QUP1_SE4_UART_CTS/GPIO44	BC38	I/O	1.8V	DOWN	SM_GPIO_44_UART_CTS	SM_GPIO_44_UART_CTS
211	AUDIO_EXT_MCLK0/GPIO125	AY12	I/O	1.8V	DOWN	HIFI_DAC_I2S_MCLK_GPIO125	HIFI_DAC_I2S_MCLK_GPIO125



接口定义 Interface definition

213	CCI_I2C_SCL0/QDSS_GPIO_TRACEDATA_LOCB[8]/GPIO111	-	I/O	3.3V	DOWN	CCI_I2C_SCL0_3V3	CCI_I2C_SCL0_3V3 Core board internal pull up Resistor 2.2K
215	CCI_I2C_SDA0/QDSS_GPIO_TRACEDATA_LOCB[7]/GPIO110	-	I/O	3.3V	DOWN	CCI_I2C_SDA0_3V3	CCI_I2C_SDA0_3V3 Core board internal pull up Resistor 2.2K
217	BOOT_CONFIG[0]/QLINK2_WMSS_RESET_N/GPIO164	-	I/O	3.3V	DOWN	MODULE_ID	MODULE_ID Core board internal pull up Resistor 4.7K
219	SDC2_DATA0	-	I/O	1.8V/3.3V		SDC2_DATA0	SDC2_DATA0
221	SDC2_DATA1	-	I/O	1.8V/3.3V		SDC2_DATA1	SDC2_DATA1
223	SDC2_DATA2	-	I/O	1.8V/3.3V		SDC2_DATA2	SDC2_DATA2
225	SDC2_DATA3	-	I/O	1.8V/3.3V		SDC2_DATA3	SDC2_DATA3
227	SDC2_CMD	-	I/O	1.8V/3.3V		SDC2_CMD	SDC2_CMD
229	SDC2_CLK	-	I/O	1.8V/3.3V		SDC2_CLK	SDC2_CLK
231	GND		G			GND	GND
233	SHUTDOWN_REQ	-	I	1.8V		VREG_L15B_1P8	VREG_L15B_1P8
235	PMIC_BBAT	-	I	PI 3.3V		PMIC_BBAT	PMIC_BBAT
237	POWER_EN(Manual power on signal)	-	O	Input		POWER_EN	Power Key Input,Active L
239	PM_RESIN_N	-	I/O	1.8V		SYS_RESET	system reset signal Input, External connection Reset key, active low Core board internal pull up Resistor 4.7K
241	GND		G			GND	Power ground
243	GND		G			GND	Power ground
245	GND		G			GND	Power ground
247	GND		G			GND	Power ground



接口定义 Interface definition

249	GND		G			GND	Power ground
251	VDD_IN	-	P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
253	VDD_IN	-	P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
255	VDD_IN	-	P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
257	VDD_IN	-	P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
259	VDD_IN	-	P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
PIN	CORE-8550JD4 pin definition	QCS8550 Pin Number	Pin type	IO Power domain	I/O Pull	Function for Floor (MB-JD4-QCS8550)	Default function description
2	GND		G			GND	GND
4	CSIO_CO_LN0_M	B12	I			CSIO_CO_LN0_M	CSIO_CO_LN0_M
6	CSIO_BO_LN0_P	C12	I			CSIO_BO_LN0_P	CSIO_BO_LN0_P
8	GND		G			GND	GND
10	CSIO_A0_CLK_M	D12	I			CSIO_A0_CLK_M	CSIO_A0_CLK_M
12	CSIO_NC_CLK_P	E12	I			CSIO_NC_CLK_P	CSIO_NC_CLK_P
14	GND		G			GND	GND
16	CSIO_B1_LN1_M	D11	I			CSIO_B1_LN1_M	CSIO_B1_LN1_M
18	CSIO_A1_LN1_P	E11	I			CSIO_A1_LN1_P	CSIO_A1_LN1_P
20	GND		G			GND	GND
22	CSI7_CO_LN0_M	J2	O			CSI7_CO_LN0_M	CSI7_CO_LN0_M



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24	CSI7_B0_LN0_P	J3	O			CSI7_B0_LN0_P	CSI7_B0_LN0_P
26	GND		G			GND	GND
28	CSI7_A0_CLK_M	J5	O			CSI7_A0_CLK_M	CSI7_A0_CLK_M
30	CSI7_NC_CLK_P	J6	O			CSI7_NC_CLK_P	CSI7_NC_CLK_P
32	GND		G			GND	GND
34	CSI7_B1_LN1_M	K1	O			CSI7_B1_LN1_M	CSI7_B1_LN1_M
36	CSI7_A1_LN1_P	K2	O			CSI7_A1_LN1_P	CSI7_A1_LN1_P
38	GND		G			GND	GND
40	CSI1_A2_LN2_M	D6	O			CSI1_A2_LN2_M	CSI1_A2_LN2_M
42	CSI1_C1_LN2_P	E6	O			CSI1_C1_LN2_P	CSI1_C1_LN2_P
44	GND		G			GND	GND
46	CSI1_C0_LN0_M	B8	O			CSI1_C0_LN0_M	CSI1_C0_LN0_M
48	CSI1_B0_LN0_P	C8	O			CSI1_B0_LN0_P	CSI1_B0_LN0_P
50	GND		G			GND	GND
52	CSI1_A0_CLK_M	D8	O			CSI1_A0_CLK_M	CSI1_A0_CLK_M
54	CSI1_NC_CLK_P	E8	O			CSI1_NC_CLK_P	CSI1_NC_CLK_P
56	GND		G			GND	GND
58	CSI1_B1_LN1_M	D7	O			CSI1_B1_LN1_M	CSI1_B1_LN1_M



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60	CSI1_A1_LN1_P	E7	O			CSI1_A1_LN1_P	CSI1_A1_LN1_P
62	GND		G			GND	GND
64	CSI1_C2_LN3_M	B6	O			CSI1_C2_LN3_M	CSI1_C2_LN3_M
66	CSI1_B2_LN3_P	C6	O			CSI1_B2_LN3_P	CSI1_B2_LN3_P
68	GND		G			GND	GND
70	ETHETNET2_YT8531SH_TRXP0	-	I/O			QEP2_A_P	QEP2_A_P
72	ETHETNET2_YT8531SH_TRXN0	-	I/O			QEP2_A_M	QEP2_A_M
74	ETHETNET2_YT8531SH_TRXP1	-	I/O			QEP2_B_P	QEP2_B_P
76	ETHETNET2_YT8531SH_TRXN1	-	I/O			QEP2_B_M	QEP2_B_M
78	GND		G			GND	GND
80	ETHETNET2_YT8531SH_TRXP3	-	I/O			QEP2_C_P	QEP2_C_P
82	ETHETNET2_YT8531SH_TRXN3	-	I/O			QEP2_C_M	QEP2_C_M
84	ETHETNET2_YT8531SH_TRXP4	-	I/O			QEP2_D_P	QEP2_D_P
86	ETHETNET2_YT8531SH_TRXN4	-	I/O			QEP2_D_M	QEP2_D_M
88	I2CHUB0_SE7_SCL/USB_PHY_PS_MIRB/QDSS_CTI_TRIG1_OUT_MIRB/GPIO11	AP2	I/O	3.3V	DOWN	GPIO11_USB_CC_DIR	GPIO11_USB_CC_DIR Core board internal pull up Resistor 4.7K
90	ETHETNET2_YT8531SH_LED1	-	I/O	3.3V		QCA2_PHY_LED1	QCA2_PHY_LED1
92	ETHETNET2_YT8531SH_LED2	-	I/O	3.3V		QCA2_PHY_LED2	QCA2_PHY_LED2
94	HDMI_CEC	-	O	3.3V		HDMI_CEC	HDMI_CEC



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96	HDMI_HPD_1V8	-	I/O	1.8V		HDMI_HPD_1V8	HDMI_HPD_1V8
98	HDMI_DSDA_1V8	-	I/O	1.8V		HDMI_DSDA_1V8	HDMI_DSDA_1V8
100	HDMI_DSCL_1V8	-	I/O	1.8V		HDMI_DSCL_1V8	HDMI_DSCL_1V8
102	GND		G			GND	GND
104	QUP1_SE1_SPI_MOSI/QUP1_SE1_I2C_SCL/QUP1_SE1_UART_RFR/GPIO33	AT38	I/O	1.8V	DOWN	NFC_ESE_SPI_MOSI	NFC_ESE_SPI_MOSI
106	QUP1_SE1_SPI_SCLK/QUP1_SE1_UART_TXD/GPIO34	AU39	I/O	1.8V	DOWN	NFC_ESE_SPI_CLK	NFC_ESE_SPI_CLK
108	QUP1_SE1_SPI_MISO/QUP1_SE1_I2C_SDA/QUP1_SE1_UART_CTS/GPIO32	AT39	I/O	1.8V	DOWN	NFC_ESE_SPI_MISO	NFC_ESE_SPI_MISO
110	QUP1_SE1_SPI_CS_0/QUP1_SE1_UART_RXD/GPIO35	AU38	I/O	1.8V	DOWN	NFC_ESE_SPI_CS_N	NFC_ESE_SPI_CS_N
112	QUP1_SE0_SPI_CS_0/QUP1_SE0_UART_RXD/GPIO31	AW38	I/O	1.8V	DOWN	NFC_CLK_REQ	NFC_CLK_REQ
114	I2CHUB0_SE8_SCL/SSC_QUP_SE7_SPI_MOSI/SSC_QUP_SE7_I2C_SCL/SSC_QUP_SE7_UART_RFR/GPIO207	BB14	I/O	1.8V	DOWN	I2C_HUB0_SCL_GPIO206	I2C_HUB0_SCL_GPIO206
116	CAM_MCLK0/QDSS_GPIO_TRACEDATA_LOCB[11]/GPIO100	AB1	I	1.8V	DOWN	CAM_MCLK0	CAM_MCLK0
118	CAM_MCLK6/QUP2_SE7_SPI_MOSI/QUP2_SE7_I2C_SCL/QUP2_SE7_UART_RFR/GPIO106	AK1	I	1.8V	DOWN	CAM_MCLK6	CAM_MCLK6
120	I2CHUB0_SE8_SDA/SSC_QUP_SE7_SPI_MISO/SSC_QUP_SE7_I2C_SDA/SSC_QUP_SE7_UART_CTS/GPIO206	BB15	I/O	1.8V	DOWN	I2C_HUB0_SDA_GPIO206	I2C_HUB0_SDA_GPIO206
122	CAM_MCLK1/QDSS_GPIO_TRACEDATA_LOCB[12]/GPIO101	AC1	I	1.8V	DOWN	CAM_MCLK1	CAM_MCLK1
124	CAM_MCLK7/QUP2_SE0_SPI_CS_0/QUP2_SE0_UART_RXD/GPIO107	AP1	I/O	1.8V	DOWN	CAM_MCLK7	CAM_MCLK7
126	QUP1_SE2_SPI_CS_3/QUP1_SE3_SPI_SCLK/QUP1_SE3_UART_TXD/GPIO42	BA34	I/O	1.8V	DOWN	SM_GPIO_42_NTN_2_Power_EN	SM_GPIO_42_NTN_2_Power_EN
128	RFFE1_CLK/GRFC2/QDSS_GPIO_TRACEDATA_LOCA[2]/GPIO140	AB38	I/O	1.8V	DOWN	SM_GPIO_140	SM_GPIO_140
130	RFFE1_DATA/GRFC3/QDSS_GPIO_TRACEDATA_LOCA[3]/GPIO141	AC37	I/O	1.8V	DOWN	SM_GPIO_141	SM_GPIO_141



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132	GND		G			GND	GND
134	QCS8550_PCIE1_TX0_M	AV2	I			SOM_PCIE1_TX0_M	SOM_PCIE1_TX0_M Core board internal series resistance 220nF
136	QCS8550_PCIE1_TX0_P	AU2	I			SOM_PCIE1_TX0_P	SOM_PCIE1_TX0_P Core board internal series resistance 220nF
138	GND		G			GND	GND
140	QCS8550_PCIE1_TX1_M	AW2	I			SOM_PCIE1_TX1_M	SOM_PCIE1_TX1_M Core board internal series resistance 220nF
142	QCS8550_PCIE1_TX1_P	AV1	I			SOM_PCIE1_TX1_P	SOM_PCIE1_TX1_P Core board internal series resistance 220nF
144	GND		G			GND	GND
146	PM8550_GPIO_2	-	I	1.8V	DOWN	PM8550_GPIO_2	PM8550_GPIO_2
148	USB30_B_TX_N	-	I			ASM_PortB_TX_N	ASM_PortB_TX_N
150	USB30_B_TX_P	-	I			ASM_PortB_TX_P	ASM_PortB_TX_P
152	GND		G			GND	GND
154	QPS615_PCIE_TX1_M	-	I			CON_DS0_PCIE0_TX1_M	CON_DS0_PCIE0_TX1_M
156	QPS615_PCIE_TX1_P	-	I			CON_DS0_PCIE0_TX1_P	CON_DS0_PCIE0_TX1_P
158	GND		G			GND	GND
160	QCS8550_PCIE1_REFCLK_M	AY1	I			SOM_PCIE1_REFCLK_M	SOM_PCIE1_REFCLK_M
162	QCS8550_PCIE1_REFCLK_P	AW1	I			SOM_PCIE1_REFCLK_P	SOM_PCIE1_REFCLK_P
164	GND		G			GND	GND
166	USB30_A_TX_N	-	I			ASM_PortA_TX_N	ASM_PortA_TX_N



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168	USB30_A_TX_P	-	I			ASM_PortA_TX_P	ASM_PortA_TX_P
170	GND		G			GND	GND
172	QPS615_PCIE_TX0_M	-	I			CON_DS0_PCIE0_TX0_M	CON_DS0_PCIE0_TX0_M
174	QPS615_PCIE_TX0_P	-	I			CON_DS0_PCIE0_TX0_P	CON_DS0_PCIE0_TX0_P
176	GND		G			GND	GND
178	QUP2_SE4_SPI_MISO/QUP2_SE4_I2C_SDA/QUP2_SE4_UART_CTS/GPIO2	AB4	I/O	1.8V	DOWN	SM_GPIO_2	MOD_SLEEP Core board internal series resistance 0R
180	QCS8550_PCIE1_CLKREQ_N	-	I/O	3.3V		PCIE1_CLK_REQ_N	PCIE1_CLK_REQ_N Core board interiorl pull up Resistor 10K
182	QPS615_PCIE_CLKREQ_N	-	I/O	3.3V		PCIE0_CLKREQB_N	PCIE0_CLKREQB_N Core board interiorl pull up Resistor 10K
184	ETHETNET1_YT8531SH_TRXP0	-	I/O			QEP_A_M	QEP_A_M
186	ETHETNET1_YT8531SH_TRXN0	-	I/O			QEP_A_P	QEP_A_P
188	ETHETNET1_YT8531SH_LED2	-	O	3.3V		QCA_PHY_LED2	QCA_PHY_LED2
190	ETHETNET1_YT8531SH_TRXP1	-	I/O			QEP_B_M	QEP_B_M
192	ETHETNET1_YT8531SH_TRXN1	-	I/O			QEP_B_P	QEP_B_P
194	ETHETNET1_YT8531SH_LED1	-	O	3.3V		QCA_PHY_LED1	QCA_PHY_LED1
196	ETHETNET1_YT8531SH_TRXP2	-	I/O			QEP_C_M	QEP_C_M
198	ETHETNET1_YT8531SH_TRXN2	-	I/O			QEP_C_P	QEP_C_P
200	GND		G			GND	GND
202	ETHETNET1_YT8531SH_TRXP3	-	I/O			QEP_D_M	QEP_D_M



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204	ETHETNET1_YT8531SH_TRXN3	-	I/O			QEP_D_P	QEP_D_P
206	SDC2_CD_N	-	I	1.8V		SDC2_CD_N	SDC2_CD_N
208	PM8550_GPIO_09	-	I/O	1.8V	DOWN	PM8550_GPIO_09	PM8550_GPIO_09
210	PMK_SLEEP_CLK_1P8/PMK8550_GPIO3	-	I/O	1.8V	DOWN	PMK_SLEEP_CLK_1P8	PMK_SLEEP_CLK_1P8
212	QUP2_SE1_SPI_CS_0/QUP2_SE1_UART_RXD/GPIO63	AL2	I/O	1.8V	DOWN	SM_GPIO_63_FAST_BOOT_1	SM_GPIO_63_FAST_BOOT_1
214	FORCE_USB_BOOT(Force USB burning)	-	I/O	1.8V		FORCE_RECEVORY	FORCE_RECEVORY(Force USB burning)
216	CAM_MCLK2/QDSS_GPIO_TRACEDATA_LOCB[0]/GPIO102	AD1	I	1.8V	DOWN	CAM_MCLK2	CAM_MCLK2
218	RFFE3_CLK/GRFC6_MIRA/QDSS_GPIO_TRACEDATA_LOCA[6]/GPIO144	AD38	I/O	1.8V	DOWN	SM_GPIO_144_FAST_BOOT_0	SM_GPIO_144_FAST_BOOT_0
220	LPASS_16/LPI_I2S2_DATA1/WSA2_SWR_DATA/GPIO181	BA24	I/O	1.8V	DOWN	SM_GPIO_181_I2S2_DAT1	SM_GPIO_181_I2S2_DAT1
222	LPASS_15/LPI_I2S2_DATA0/WSA2_SWR_CLK/GPIO180	AY24	I/O	1.8V	DOWN	SM_GPIO_180_I2S2_DAT0	SM_GPIO_180_I2S2_DAT0
224	LPASS_11/LPI_I2S2_WS/WSA_SWR_DATA/GPIO176	BA25	I/O	1.8V	DOWN	SM_GPIO_176_I2S2_WS	SM_GPIO_176_I2S2_WS
226	LPASS_10/LPI_I2S2_CLK/WSA_SWR_CLK/GPIO175	AY25	I/O	1.8V	DOWN	SM_GPIO_175_I2S2_CLK	SM_GPIO_175_I2S2_CLK
228	QUP1_SE5_SPI_MISO/QUP1_SE5_I2C_SDA/QUP1_SE5_UART_CTS/GPIO52	BA38	I	1.8V	DOWN	SM_GPIO_52	SM_GPIO_52
230	PM8550_GPIO_11	-	I/O	1.8V	DOWN	PM8550_GPIO_11	PM8550_GPIO_11
232	I2CHUB0_SE2_SCL/GP_PDM_MIRB[1]/GPIO21	D7	I/O	1.8V	DOWN	I2C_HUB0_SCL_GPIO21	I2C_HUB0_SCL_GPIO21
234	I2CHUB0_SE2_SDA/GP_PDM_MIRB[0]/GPIO20	D28	I/O	1.8V	DOWN	I2C_HUB0_SDA_GPIO20	I2C_HUB0_SDA_GPIO20
236	DEBUG_UART_TX(For System Debug, Must be retained)	BC35	I	1.8V		DEBUG_UART_TX	DEBUG_UART_TX
238	DEBUG_UART_RX(For System Debug, Must be retained)	BB35	O	1.8V		DEBUG_UART_RX	DEBUG_UART_RX



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240	PMK8550_PM_KPD_PWR_N	-	O	5V		SLEEP/WAKE	SLEEP/WAKE
242	GND		G			GND	Power ground
244	GND		G			GND	Power ground
246	GND		G			GND	Power ground
248	GND		G			GND	Power ground
250	GND		G			GND	Power ground
252	VDD_IN		P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
254	VDD_IN		P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
256	VDD_IN		P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
258	VDD_IN		P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V
260	VDD_IN		P	PI 5.0V		VDD_IN	Input Voltage 4.8V-5.5V



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