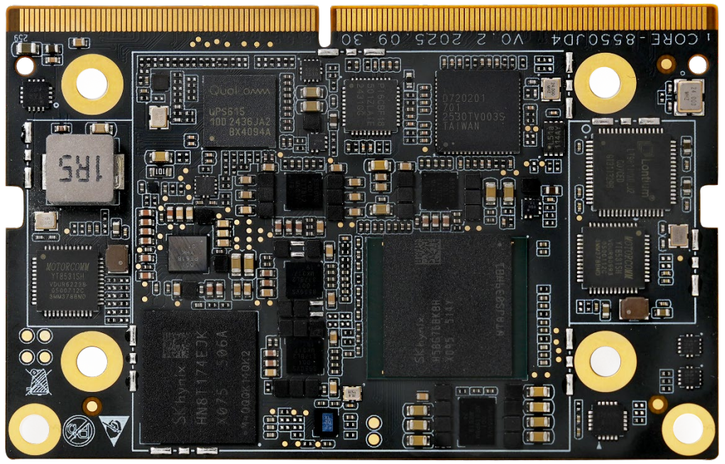
CORE-8550JD4

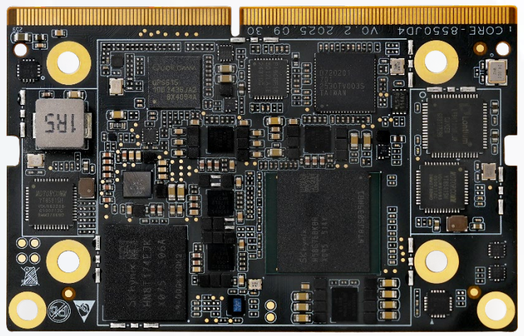
High-performance AI Core Board



V0.2 2025-12-1

T-CHIP INTELLIGENCE TECHNOLOGY

Product features



High-performance AI processor QCS8550

Features an octa-core 64-bit high-performance Qualcomm Kryo CPU (QCS8550), based on the ARM architecture with a maximum frequency of up to 3.36GHz, delivering robust support for high-performance computing and multitasking.

Supports 8K video codec

Supports 8K@60fps/4K@240fps video decoding and 8K@30fps/4K@120fps video encoding; its powerful video codec capability enables 8K ultra-high-definition display with finer image quality.

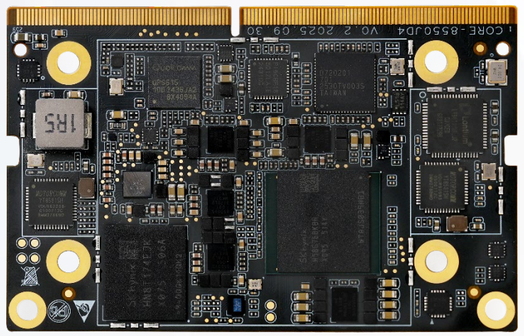
Powerful image processing capability

Integrated with the Adreno 740 GPU, it fully supports ray tracing technology and is compatible with OpenGL ES 3.2, Vulkan 1.2, and full-profile OpenCL 3.0. Combined with Hexagon neural network direct acceleration, it delivers enhanced graphics processing and AI computing performance.

48TOPS computing power NPU

Integrated with a 48TOPS NPU, it supports INT4/INT8/INT16/FP16 mixed-precision computing, enabling intelligent data processing, speech recognition, and image analysis to meet the AI application requirements of edge computing for most terminal devices.

Product features



The private deployment of large language models

Support the privatization deployment of ultra-large-scale parametric models under the Transformer architecture, such as Deepseek-R1 series, Gemma series, Llama series, Qwen series, Phi series and other large language models.

Multiple deep learning frameworks

Supports QNN AI inference framework, as well as various deep learning frameworks: TensorFlow, TensorFlow Lite, PyTorch, ONNX, etc.

4nm Low-power design for hardware iteration acceleration

Built on a 4nm process, it balances high energy efficiency with stable performance, suitable for devices requiring long-term operation. Its hardware interfaces are compatible with NVIDIA Jetson Orin NX and NVIDIA Jetson Orin Nano, enabling rapid iteration of hardware platforms.

SODIMM 260Pin Gold finger interface, compact size

Features a standard SODIMM 260Pin gold finger interface and a compact, exquisite design. With overall dimensions of 69.6mm × 45mm and a weight of only 16g, it is small and lightweight, easy to install and carry, and compatible with various device scenarios.

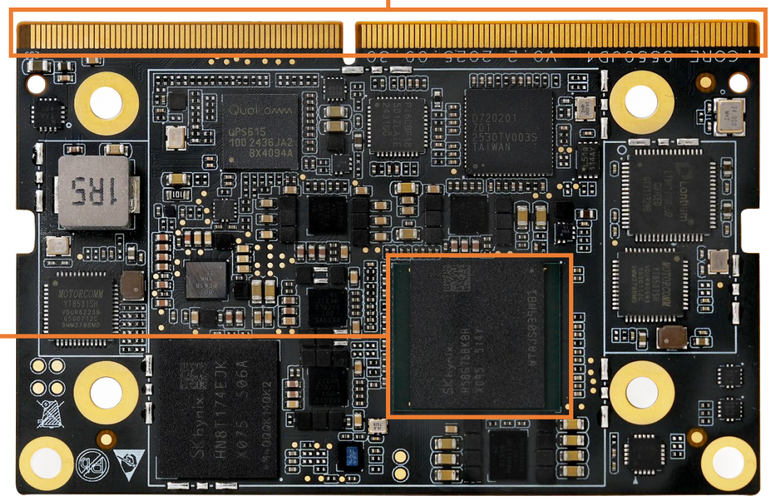
Specifications

Specifications		
Basic Specifications	SOC	Qualcomm QCS8550
	CPU	Qualcomm Kryo® CPU: Octa-core 64-bit (1×GoldPlus@3.2GHz + (2+2)Gold@2.8GHz + 3×Silver@2.0GHz), 4nm advanced process, maximum frequency up to 3.36GHz
	GPU	Adreno 740 GPU: Supports ray tracing technology, OpenGL ES 3.2, Vulkan 1.2, full-profile OpenCL 3.0, and Adreno NN Direct
	ISP	Equipped with Qualcomm Spectra™ Cognitive ISP (Image Signal Processor), featuring three 18-bit 36MP ISPs
	NPU	Dual eNPU V3: Equipped with 4 HVX (Hexagon Vector Extensions), 1 HMX (Hexagon Matrix Extension); Computing power up to 48 TOPS (INT8), 12 TOPS (FP16)
	Codec	Video decoding: 8K@60fps/4K@240fps H.265/H.264/VP9/AV1 Video encoding: 8K@30fps/4K@120fps H.265/H.264 Supports concurrent 4K@60fps decoding and 4K@60fps encoding for wireless display scenarios
	RAM	16GB LPDDR5x
	storage	256GB UFS4.0
	Power	5V (voltage tolerance ±5%)
	Power consumption	Normal: 3W(5V/600mA), Max: 10W(5V/2000mA), Min(Sleep): 0.4W(5V/80mA)
	OS	Ubuntu
	Software support	Supports on-premises deployment of large-scale parameter models based on the Transformer architecture, such as large language models (LLMs) including the Deepseek-R1 series, Gemma series, Llama series, Qwen series, Phi series, etc. Supports the QNN AI inference framework, as well as various deep learning frameworks including TensorFlow, TensorFlow Lite, PyTorch, ONNX, etc.
	Interface type	SODIMM (260PIN, 0.5mm pitch)
	Size	69.6mm × 45.0mm × 4.3mm
	Weight	≈16g
	Environment	Operating Temperature: -20℃ ~ 60℃, Storage Temperature: -20℃ ~ 70℃, Operating Humidity: 10% ~ 90%RH (No condensation)
Interface Specifications	Network	Supports 2×Gigabit Ethernet (via PCIe expansion; onboard Ethernet PHY chip on core board); 5G/4G expandable
	Video input	2 × MIPI D/C PHY (4 lanes DPHY or 3 trios CPHY) + 2 × MIPI D/C PHY (2 lanes DPHY or 1 trio CPHY) Supports 36MP triple camera / 64MP + 36MP dual camera / 108MP single camera
	Video output	1 × HDMI2.0 (4K@60Hz), 1 × DP1.4 (via Type-C output)
	Audio	2 × I2S (2 data channels per channel; supports 4-channel TX/RX, TDM/PCM modes, 48kHz sampling rate)
	PCIe	1 × PCIe3.0 (2lanes), 1 × PCIe4.0 (2lanes)
	USB	1 × USB3.1 Gen2 DRD with DP, 2 × USB3.0 HOST (via PCIe expansion)
	Others	3 × CCI I2C, 2 × I3C/I2C, 2 × SPI, 4 × UART, 1 × ADC, 1 × SDMMC, GPIOs

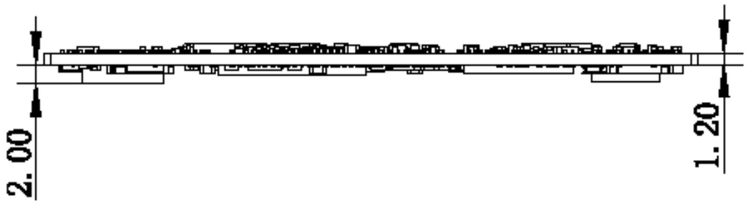
Core board Interface description

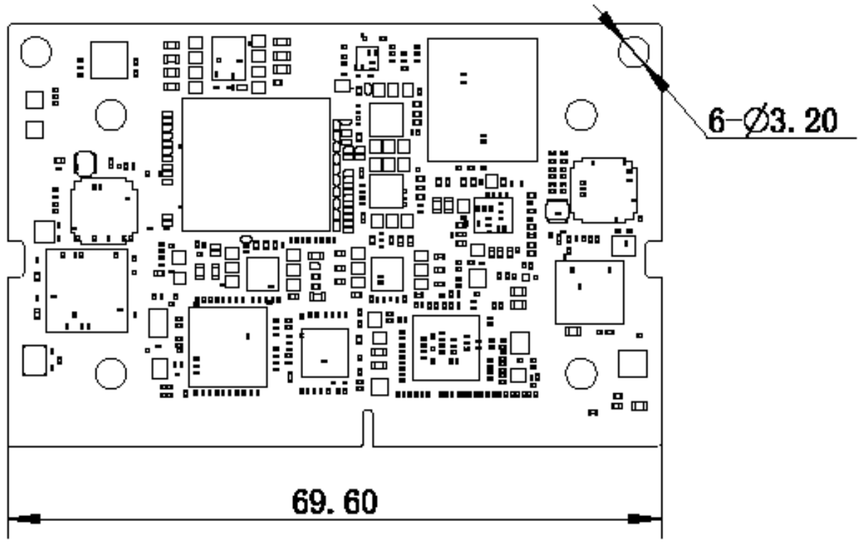
Goldfinger
(260 PIN, SODIMM, 0.5mm pitch)

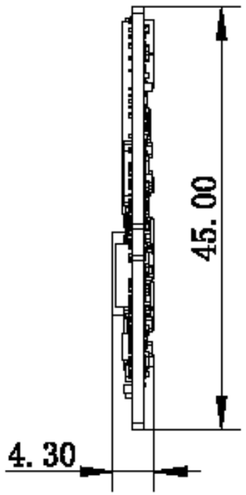
Qualcomm QCS8550
(Main frequency up to 3.36GHz)

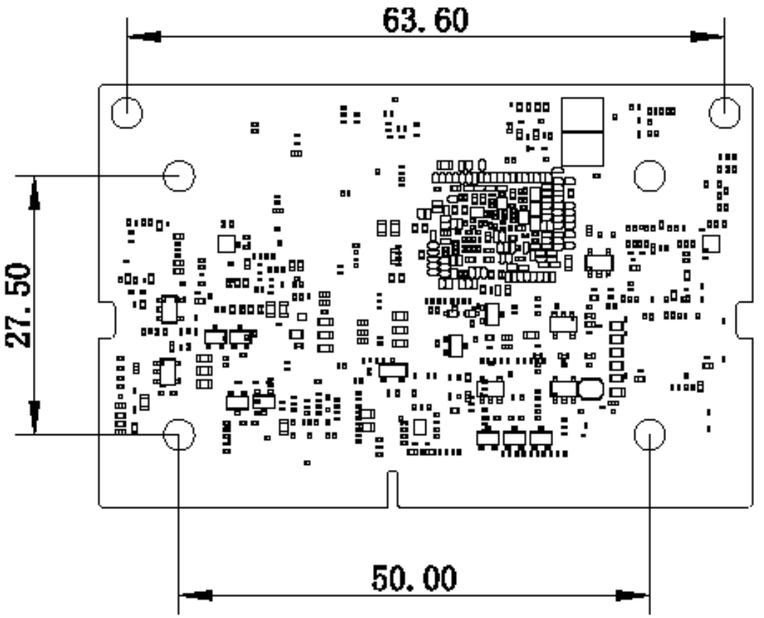


Core board Dimension









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	CSI0_A2_LN2_M	D10	I	-		CSI0_A2_LN2_M	CSI0_A2_LN2_M
5	CSI0_C1_LN2_P	E10	I	-		CSI0_C1_LN2_P	CSI0_A2_LN2_M
7	GND		G			GND	GND
9	NC		-			NC	NC
11	NC		-			NC	NC
13	GND		G			GND	GND
15	CSI0_C2_LN3_M	B10	I	-		CSI0_C2_LN3_M	CSI0_C2_LN3_M
17	CSI0_B2_LN3_P	C10	I	-		CSI0_B2_LN3_P	CSI0_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

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

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

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

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

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_TRIG0_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

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,Acive 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

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	CSI0_C0_LN0_M	B12	I			CSI0_C0_LN0_M	CSI0_C0_LN0_M
6	CSI0_B0_LN0_P	C12	I			CSI0_B0_LN0_P	CSI0_B0_LN0_P
8	GND		G			GND	GND
10	CSI0_A0_CLK_M	D12	I			CSI0_A0_CLK_M	CSI0_A0_CLK_M
12	CSI0_NC_CLK_P	E12	I			CSI0_NC_CLK_P	CSI0_NC_CLK_P
14	GND		G			GND	GND
16	CSI0_B1_LN1_M	D11	I			CSI0_B1_LN1_M	CSI0_B1_LN1_M
18	CSI0_A1_LN1_P	E11	I			CSI0_A1_LN1_P	CSI0_A1_LN1_P
20	GND		G			GND	GND
22	CSI7_C0_LN0_M	J2	O			CSI7_C0_LN0_M	CSI7_C0_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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