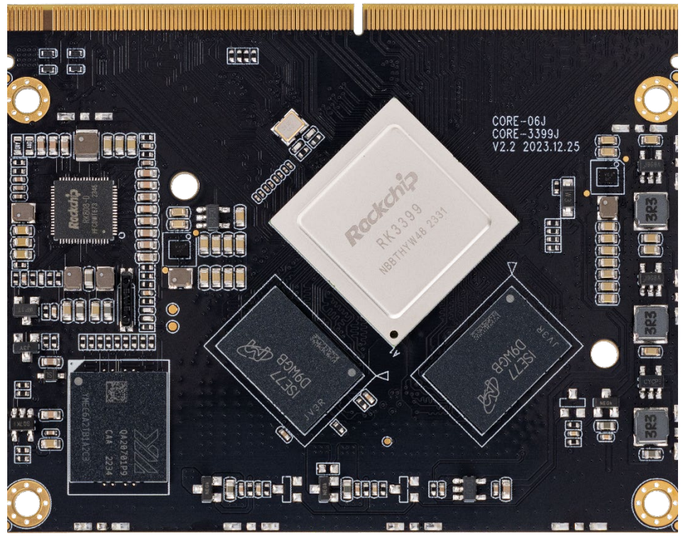
Hexa-core 64-bit High Performance Core Board

- Core-3399J(Commercial)
- Core-3399KJ(Industrial)



V2.2 2024-10-8

T-CHIP INTELLIGENCE TECHNOLOGY

Product features

Hexa-core 64-bit processor

RK3399, Rockchip's flagship AIoT SoC, features a hexa-core 64-bit (A72x2 + A53x4) ARM architecture with a frequency of up to 1.8 GHz and a quad-core Mali-T860 GPU. Multiple storage configurations are available, enabling users to rapidly advance project development by extending backplanes.

4K HD video decoding

This core board supports 4K@60fps H.265/VP9, 4K@30fps H.264, 1080P@60fps(VC-1, MPEG-1/2/4) video decoding, equipped with video post-processing functions, including deinterlacing, noise reduction, and edge/detail/color optimization. It also supports 1080P@30fps H.264/AVC/VP8 video encoding.

Multiple display interfaces

Dual VOP displays support 4096×2160 and 2560×1600 resolutions respectively, with multiple display interfaces available: dual-channel MIPI-DSI, eDP1.3, HDMI2.0 (4K@60Hz with HDCP 1.4/2.2 support), and DisplayPort 1.2. These enable dual-screen output with the same or different displays.

Product features

Accelerate image recognition with dual ISP

Dual ISP, capable of processing at a maximum of 13 MPix/s for a single input or dual 8 MPix/s, supports simultaneous input from two cameras. It enables advanced functions such as panoramic capture, gesture detection, depth sensing, and 3D processing, accelerating image recognition.

314P MXM 3.0 for high performance

The 314P MXM3.0 interface provides access to all functionalities of the chip, maximizing data transfer and expansion performance. Pins with an immersion gold process feature corrosion resistance. The core board can be fixed with four screws for reliability. Its compact design, measuring only 82mm x 63mm, saves more space.

Support various operating systems

Android and Linux OS are supported. These provide a safe and stable system environment for product research and production to meet user needs.

A wide range of applications

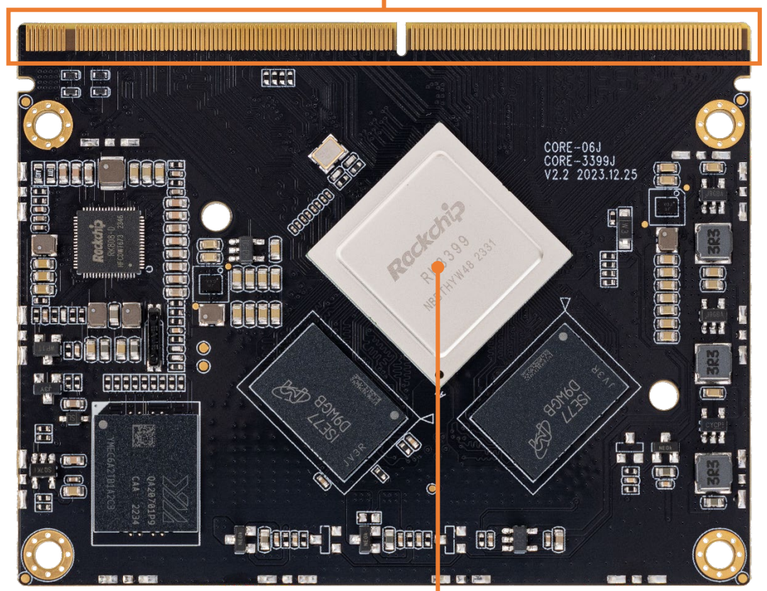
This core board is widely used in industrial computers, edge computing, computer vision, self-service terminals, all-in-one digital signage, cloud servers, and more.

Specifications

		Core-3399J (Commercial)	Core-3399KJ (Industrial)
Basic Specifications	CPU	RK3399 Hexa-core 64-bit (Cortex-A72×2 + Cortex-A53×4) processor Up to 1.8 GHz	RK3399K Hexa-core 64-bit (Cortex-A72×2 + Cortex-A53×4) processor Up to 2.0 GHz
	GPU	Mali-T860 MP4 quad-core GPU Support OpenGL ES1.1/2.0/3.0/3.1, OpenVG1.1, OpenCL, DX11 Support AFBC (Frame Buffer Compression)	
	ISP	Built-in dual hardware ISP Support up to single 13M pixel or dual 8M pixel	
	VPU	Hardware decoding: 4K@60fps H.265/VP9, 4K@30fps H.264 video decoding, 1080P@60fps(VC-1, MPEG-1/2/4) multi-format video decoding Hardware encoding: 1080P@30fps H.264/AVC/VP8 video encoding Video post-processing: deinterlacing, noise reduction, edge/detail/color optimization	
	RAM	LPDDR4 (2GB/4GB optional)	
	Storage	eMMC (16GB/32GB/64GB/128GB optional)	
	Power	5V (voltage tolerance ± 5%)	
	Power consumption	Min: ≈0.125W(5.0V/25mA), Normal: ≈2.0W(5.0V/400mA), Max: ≈10.0W(5.0V/2.0A)	
	OS	Android and Linux OS	
	Interface	Gold finger (314 Pin, MXM3.0, 0.5mm pitch)	
	Size	82.0mm × 63.0mm × 3.7mm	
	Environment	Operating temperature: -20℃ ~ 60℃ Storage humidity: 10% ~ 90%RH (non-condensing)	Operating temperature: -20℃ ~ 70℃ Storage humidity: 10% ~ 90%RH (non-condensing)
Interface Specifications	Internet	Integrated with GMAC/SDIO3.0/USB3.0, expandable 1 Gigabit Ethernet, 2.4GHz/5GHz dual-band WiFi/Bluetooth, 3G/4G LTE	
	Video Input	2 × MIPI-CSI (4 lanes) 1 × DVP (supporting up to 5M pixel)	
	Video Output	1 × HDMI2.0 (supports 4K@60fps output and HDCP 1.4/2.2) 1 × MIPI-DSI (supports single-channel 2560×1600@60fps output) 1 × eDP1.3 (4lanes with 10.8Gbps) 1 × DP1.2 (DisplayPort, supports up to 4K×2K@60Hz resolution, output from the Type-C) * Support dual-display	
	Audio Output	1 × SPDIF, 3 × I2S (I2S0/I2S2 supporting 8-channel input/output and I2S2 providing audio output for HDMI/DP)	
	USB	2 × USB2.0 HOST, 2 × USB3.0 OTG	
	PCIe	1 × PCIe2.1	
	Other	8 × I2C, 5 × SPI, 5 × UART, 5 × ADC, 5 × PWM, 1 × SDMMC, GPIOs	

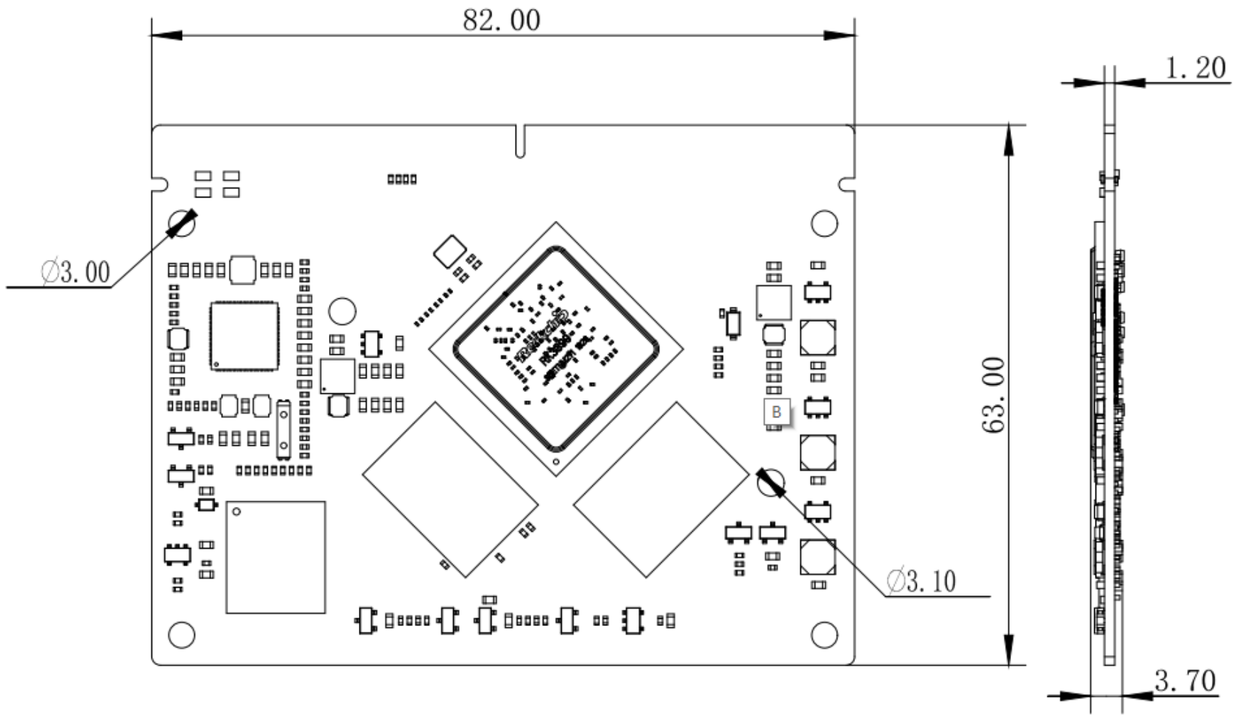
Core Board Interface description

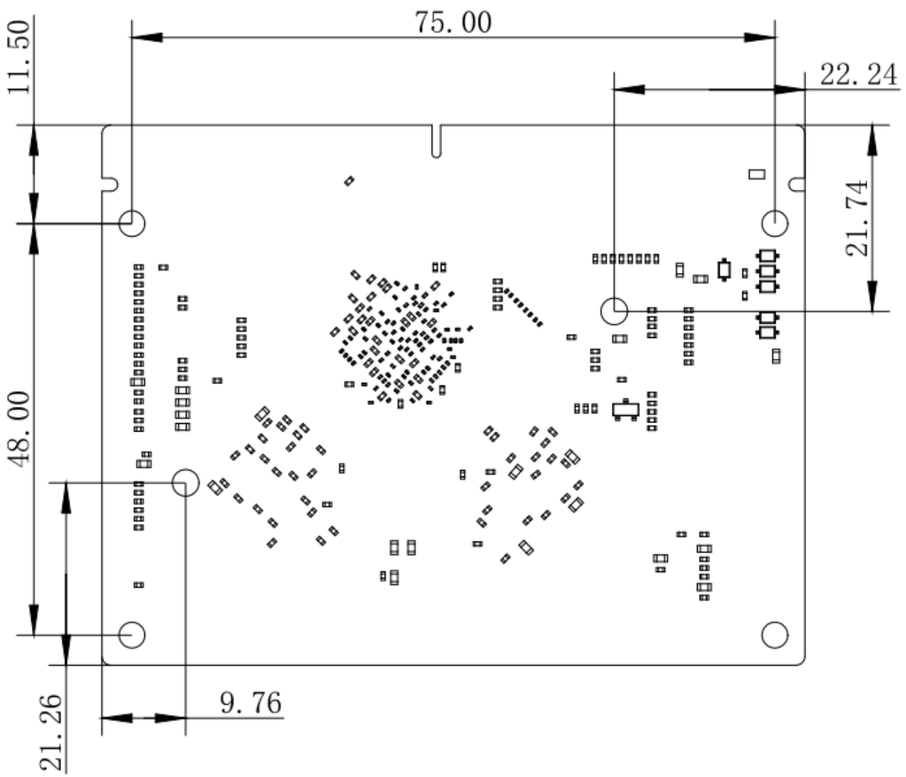
MXM3.0
(314Pin, 0.5mm Pitch)



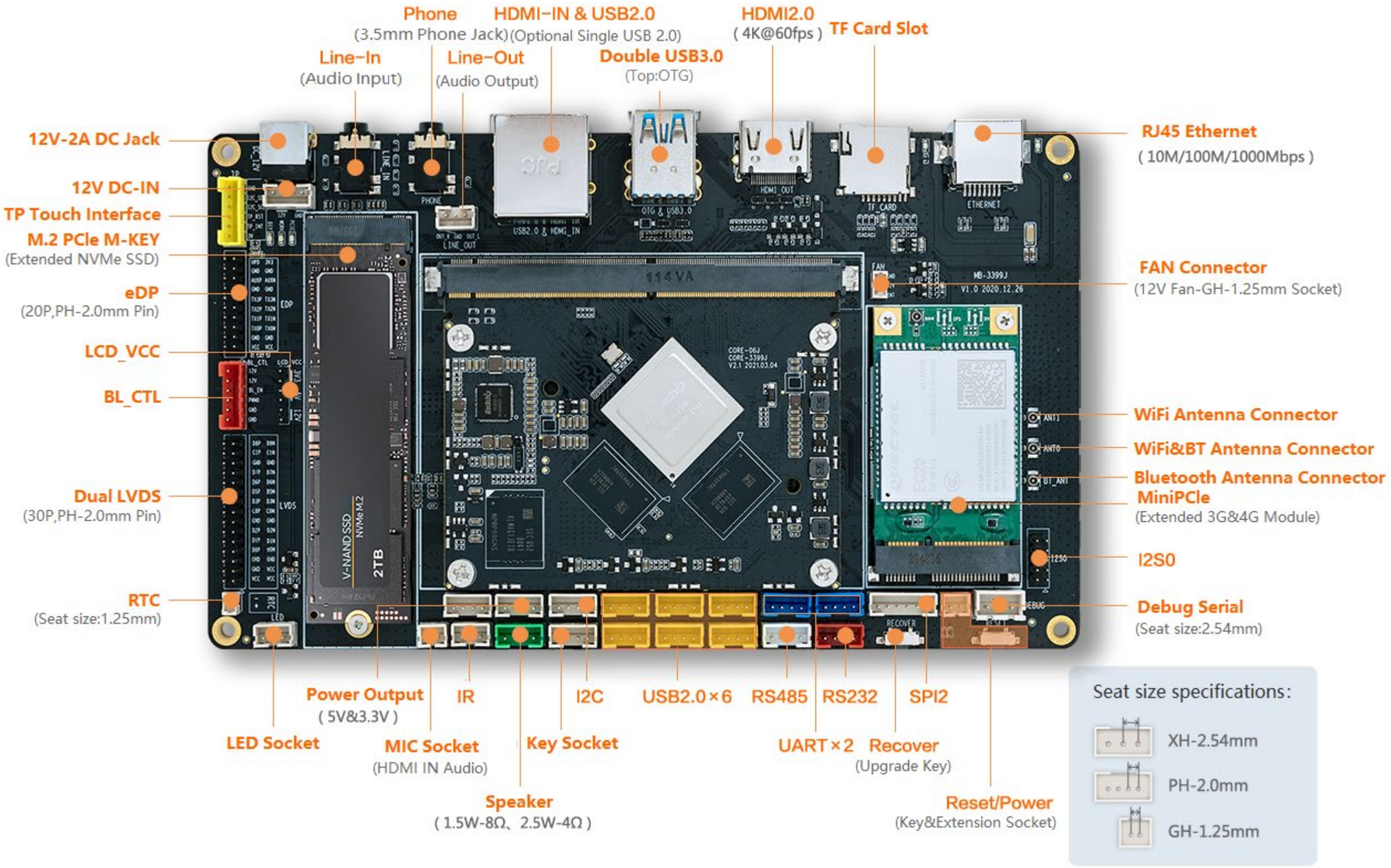
Rockchip RK3399
(Main frequency up to 1.8GHz)

Core Board Dimension





Mainboard Interface description



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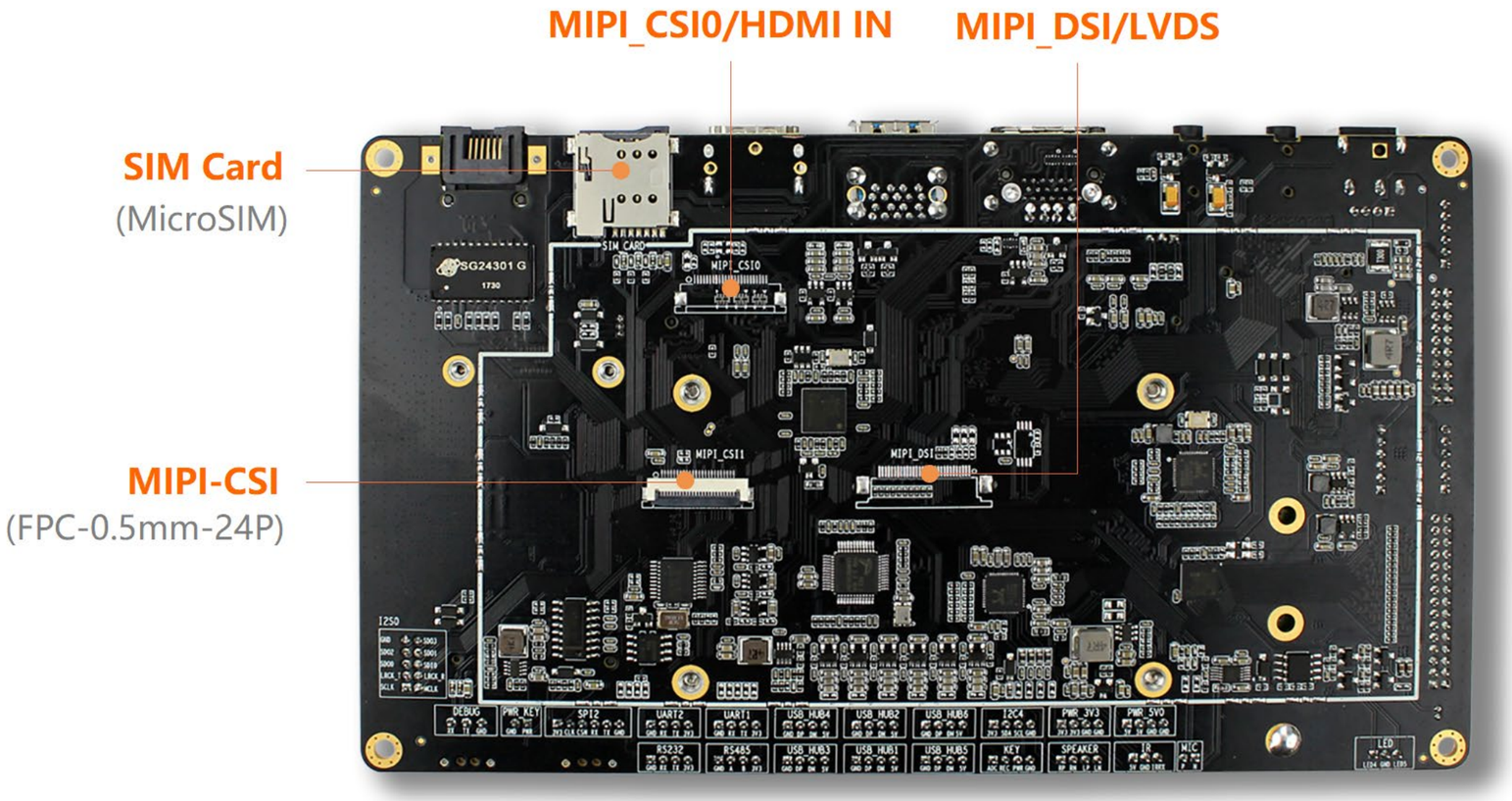
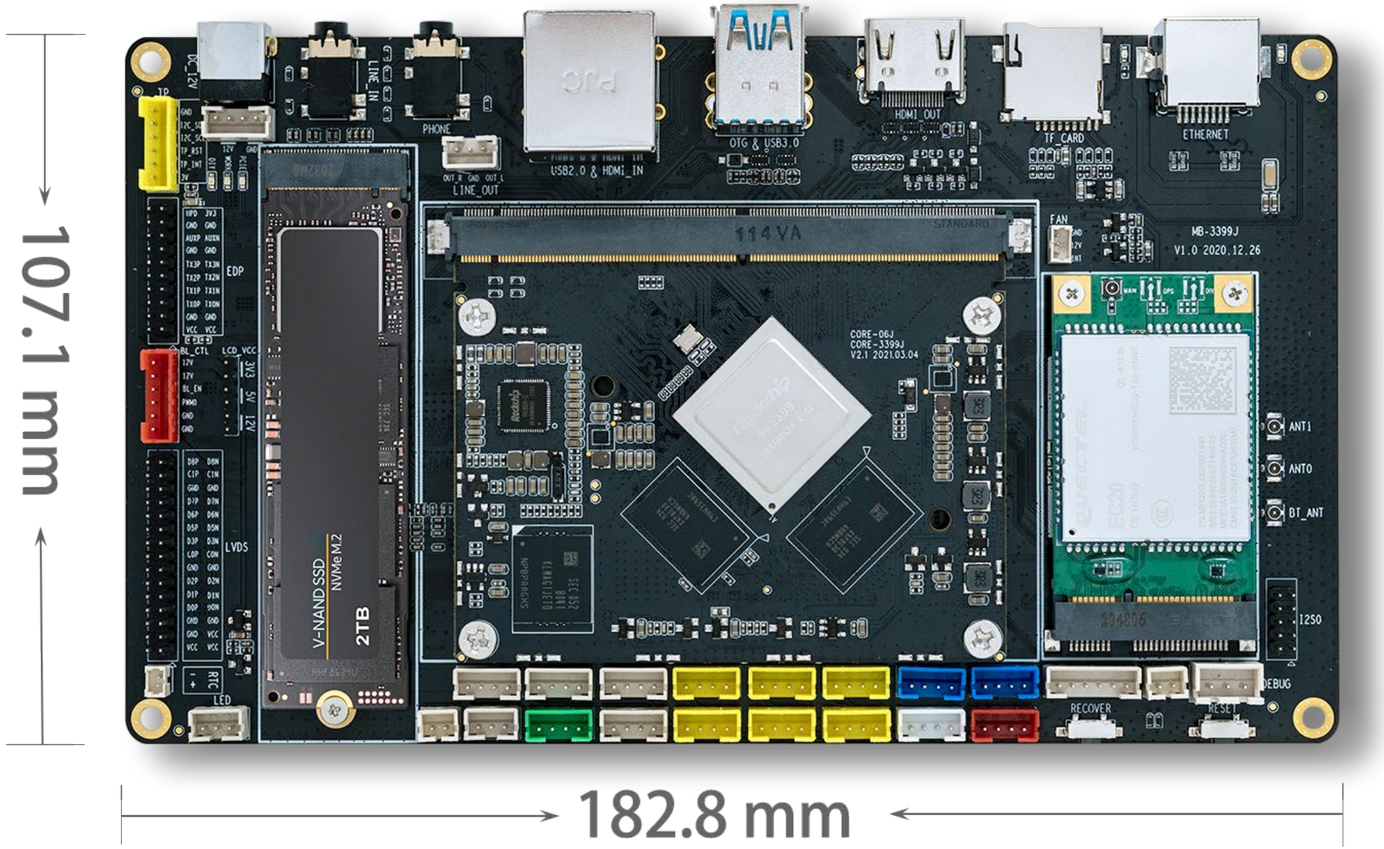


Mainboard Dimension



Interface definition

Notes1:
① : Pad types: I = input, O = output, I/O = input/output (bidirectional) , G= Ground ,
P = power supply , DOWN = Internal pull down , UP = Internal pull UP
0 = Lowe Level 1 = High level

Part A	PIN	Core-3399J pin definition	RK3399 Pin Number	Pad type	IO Pull	Function for Floor(MB-JM3-RK3399)	Defual function description	IO Power domain
	1	VCC_SYS		P		VCC_SYS Input	Input Voltage 5.0V +/-5% rated power: Normal:2.25W(5V/450mA) Max: 9W(5V/1800mA)	5.0V
	3	VCC_SYS		P				5.0V
	5	VCC_SYS		P				5.0V
	7	VCC_SYS		P				5.0V
	9	VCC_SYS		P				5.0V
	11	VCC_SYS		P				5.0V
	13	VCC_SYS		P				5.0V
	15	VCC_SYS		P				5.0V
	17	VCC_SYS		P				5.0V
	19	NC				NC	NC	
	21	NC				NC	NC	
	23	GND		G		GND	GND	
	25	GPIO3_B3/MAC_CLK/I2C5_SCL_U	G24	I/O	UP	MAC_CLK	MAC_CLK	3.3V
	27	GPIO3_B7/MAC_CRS/CIF_CLKOUTB/UART3_TX_U	B27	I/O	UP	PHY_RST	PHY_RESET Output, Active L	3.3V
	29	GPIO0_A1/DDRIO_PWROFF/TCPD_CCDB_EN_U	R29	I/O	UP	PHY_PMEB	PHY_PMEB	1.8V
	31	GPIO3_B5/MAC_MDIO/UART1_TX_U	G26	I/O	UP	MAC_MDIO	MAC_MDIO	3.3V
	33	GPIO3_B0/MAC_MDC/SPI0_CSN1_U	E29	I/O	UP	MAC_MDC	MAC_MDC	3.3V
	35	GPIO3_B2/MAC_RXER/I2C5_SDA_U	F23	I/O	UP	PHY_INT	PHY_INT input,Active L Core board internal series resistance 0R	3.3V
	37	GND		G		GND	GND	

39	GPIO3_B4/MAC_TXEN/UART1_RX_U	H22	I/O	UP	PHY_TXEN	PHY_TXEN Core board internal series resistance 22R	3.3V
41	GPIO3_A1/MAC_TXD3/SPI4_TXD_D	H23	I/O	DOWN	PHY_TXD3	PHY_TXD3 , Core board internal series resistance 22R	3.3V
43	GPIO3_A0/MAC_TXD2/SPI4_RXD_D	F24	I/O	DOWN	PHY_TXD2	PHY_TXD2 , Core board internal series resistance 22R	3.3V
45	GPIO3_A5/MAC_TXD1/SPI0_TXD_D	G23	I/O	DOWN	PHY_TXD1	PHY_TXD1 , Core board internal series resistance 22R	3.3V
47	GPIO3_A4/MAC_TXD0/SPI0_RXD_D	D26	I/O	DOWN	PHY_TXD0	PHY_TXD0 , Core board internal series resistance 22R	3.3V
49	GPIO3_C1/MAC_TXCLK/UART3_RTSN_U	E28	I/O	UP	PHY_TXCLK	PHY_TXCLK, Core board internal series resistance 22R	3.3V
51	GND		G		GND	GND	
53	GPIO3_B1/MAC_RXDV_D	C27	I/O	DOWN	MAC_RXDV	MAC_RXDV	3.3V
55	GPIO3_A6/MAC_RXD0/SPI0_CLK_U	E26	I/O	UP	MAC_RXD0	MAC_RXD0	3.3V
57	GPIO3_A7/MAC_RXD1/SPI0_CSN0_U	F27	I/O	UP	MAC_RXD1	MAC_RXD1	3.3V
59	GPIO3_A2/MAC_RXD2/SPI4_CLK_U	E30	I/O	UP	MAC_RXD2	MAC_RXD2	3.3V
61	GPIO3_A3/MAC_RXD3/SPI4_CSN0_U	E25	I/O	UP	MAC_RXD3	MAC_RXD3	3.3V
63	GPIO3_B6/MAC_RXCLK/UART3_RX_U	F25	I/O	UP	MAC_RXCLK	MAC_RXCLK	3.3V
65	GND		G		GND	GND	
67	GPIO2_B4/SPI2_CSN0_U	F31	I/O	UP	GPIO2_B4/SPI2_CSn0	GPIO2_B4/SPI2_CSn0	1.8V
69	GPIO2_A0/VOP_D0/CIF_D0/I2C2_SDA_U	G31	I/O	UP	AT18_RST	Reset the encryption chip (Default NC)	1.8V
71	GPIO2_A1/VOP_D1/CIF_D1/I2C2_SCL_U	H25	I/O	UP	GPIO2_A1/DVP_PDN1_H	Camera1 power down control output	1.8V
73	GPIO2_A2/VOP_D2/CIF_D2_D	H30	I/O	DOWN	GPIO2_A2/DIY_LED	DIY_LED EN, Active H	1.8V
75	GPIO2_A3/VOP_D3/CIF_D3_D	F28	I/O	DOWN	GPIO2_A3/HDMIIN_PWR_EN	HDMIIN Power EN, Active H	1.8V
77	GPIO2_A4/VOP_D4/CIF_D4_D	H29	I/O	DOWN	GPIO2_A4/UART_PWR_EN	UART Power EN, Active H	1.8V
79	GPIO2_A5/VOP_D5/CIF_D5_D	F29	I/O	DOWN	GPIO2_A5/CIF_D5	LCD hot swap detection	1.8V

81	GPIO2_A6/VOP_D6/CIF_D6_D	H27	I/O	DOWN	GPIO2_A6/3G_PWR_EN	3G/4G Power_EN, Active H	1.8V
83	GPIO2_A7/VOP_D7/CIF_D7/I2C7_SDA_U	G30	I/O	UP	GPIO2_A7/WORK_LED	System working LED EN	1.8V
85	GPIO2_B1/SPI2_RXD/CIF_HREF/I2C6_SDA_U	F30	I/O	UP	GPIO2_B1/SPI2_RXD	GPIO2_B1/SPI2_RXD	1.8V
87	GPIO2_B0/VOP_CLK/CIF_VSYNC	H28	I/O	UP	GPIO2_B0/DVP_PDN0_H	Camera0 power down control output	1.8V
89	GND		G		GND	GND	
91	GPIO2_B2/SPI2_TXD/CIF_CLKIN/I2C6_SCL_U	H24	I/O	UP	GPIO2_B2/SPI2_TXD	GPIO2_B2/SPI2_TXD	1.8V
93	GPIO2_B3/SPI2_CLK/VOP_DEN/CIF_CLKOUTA_U	H31	I/O	UP	GPIO2_B3/SPI2_CLK	GPIO2_B3/SPI2_CLK	1.8V
95	GND		G		GND	GND	
97	VCC1V8_DVP		P		VCC1V8_DVP	1.8V Output, MAX current 150mA	1.8V
99	VCC2V8_DVP		P		VCC2V8_DVP	2.8V Output, MAX current 150mA	2.8V
101	VCCA(3V-5V)		P		NC	NC	5.0V
103	GPIO1_A7/SPI1_RXD/UART4_RX_U	P27	I/O	UP	SPI1_RXD/UART4_RX	SPI1_RX	3.0V
105	GPIO1_B0/SPI1_TXD/UART4_TX_U	R31	I/O	UP	SPI1_TXD/UART4_TX	SPI1_TX	3.0V
107	GPIO1_B1/SPI1_CLK/PMCU_JTAG_TCK_U	P28	I/O	UP	SPI1_CLK/GPIO1_B1_U	SPI1_CLK	3.0V
109	GPIO1_B2/SPI1_CSN0/PMCU_JTAG_TMS_U	P29	I/O	UP	SPI1_CSn0/GPIO1_B2_U	SPI1_CS0	3.0V
111	GND		G		GND	GND	
113	PCIE_RCLK_100M_P	AD31	O		PCIE_REF_CLKP	PCIE_REF_CLKP	
115	PCIE_RCLK_100M_N	AD30	O		PCIE_REF_CLKN	PCIE_REF_CLKN	
117	GND		G		GND	GND	
119	PCIE_TX0_N	AE31	O		PCIE_TX0N	PCIE_TX0N	
121	PCIE_TX0_P	AE30	O		PCIE_TX0P	PCIE_TX0P	
123	GND		G		GND	GND	
125	PCIE_RX0_N	AF31	I		PCIE_RX0_N	PCIE_RX0_N	
127	PCIE_RX0_P	AF30	I		PCIE_RX0_P	PCIE_RX0_P	
129	GND		G		GND	GND	

131	PCIE_TX1_N	AG31	O		PCIE_TX1N	PCIE_TX1N	
133	PCIE_TX1_P	AG30	O		PCIE_TX1P	PCIE_TX1P	
135	GND		G		GND	GND	
137	PCIE_RX1_N	AH31	I		PCIE_RX1_N	PCIE_RX1_N	
139	PCIE_RX1_P	AH30	I		PCIE_RX1_P	PCIE_RX1_P	
141	GND		G		GND	GND	
143	PCIE_TX2_N	AA28	O		PCIE_TX2N	PCIE_TX2N	
145	PCIE_TX2_P	AA27	O		PCIE_TX2P	PCIE_TX2P	
147	GND		G		GND	GND	
149	PCIE_RX2_N	AC28	I		PCIE_RX2_N	PCIE_RX2_N	
151	PCIE_RX2_P	AC27	I		PCIE_RX2_P	PCIE_RX2_P	
153	GND		G		GND	GND	
155	PCIE_TX3_N	AD28	O		PCIE_TX3N	PCIE_TX3N	
157	PCIE_TX3_P	AD27	O		PCIE_TX3P	PCIE_TX3P	
159	GND		G		GND	GND	
161	PCIE_RX3_N	AF28	I		PCIE_RX3_N	PCIE_RX3_N	
163	PCIE_RX3_P	AF27	I		PCIE_RX3_P	PCIE_RX3_P	
165	GND		G		GND	GND	
167	GPIO1_C1/SPI3_CLK_D	M27	I/O	DOWN	WK2124_RST	WK2124 Reset Output, Active L	3.0V
169	GPIO1_C4/I2C8_SDA_U	M29	I/O	UP	SDPWR_EN	TF Card Power_EN, Active H	3.0V
171	GPIO1_B3/I2C4_SDA_U	P31	I/O	UP	I2C4_SDA	I2C4_SDA , Core board interiorl pull up Resistor 2.2K	3.0V
173	GPIO1_B4/I2C4_SCL_U	P30	I/O	UP	I2C4_SCL	I2C4_SCL , Core board interiorl pull up Resistor 2.2K	3.0V
175	VDC		I		PWR_EN	Automatic power-on Input , Active H	3.0V
177	POWER_ON		I		POWER_ON	Power key Input, Active L	5.0V

179	GPIO1_D0/TCPD_VBUS_SOURCE2_D	L26	I/O	DOWN	CPU_DET	Power off output to MCU, active L	3.0V
181	GPIO0_A6/PWM3A_IR_D	P25	I/O	DOWN	IR_INT	IR receiver input	1.8V
183	GPIO0_B5/TCPD_VBUS_FDIS/TCPD_VBUS_SOURCE3_D	P24	I/O	DOWN	GPIO0_B5/PCIE_PWR_EN	PCIE Power_EN , Active H	1.8V
185	NPOR_U	T30	I		RESET_L	System reset input (Reset key)	1.8V
187	GPIO0_A2/WIFI_26MHZ_D	N24	I/O	DOWN	GPIO0_A2_D/HDMIIN_RST	HDMI_in IC reset output, Active L	1.8V
189	GPIO0_B0/SDMMC0_WRPT/TEST_CLKOUT2_U	U28	I/O	UP	MIPI_RST	Mipi CAMERA reset output, Active L	1.8V
191	GPIO0_A5/EMMC_PWRON_U	V27	I/O	UP	PWR_KEY_L	Power button press down detect Input, active L	1.8V
193	GPIO2_D3/SDIO0_PWREN_D	AD9	I/O	DOWN	GPIO2_D3/RESX	Mipi to lvds IC reset output, Active L	1.8V
195	GPIO4_C7/HDMI_CECINOUT/EDP_HOTPLUG_U	AD7	I/O	UP	HDMI_CEC	HDMI CEC communication	3.0V
197	HDMI_HPD	AE15	A		PORT_HPD	HDMI Hot Plug Detection input with 5V tolerance (Core board series resistor 1K)	5.0V
199	GPIO4_C1/I2C3_SCL/UART2B_TX_U	AL2	I/O	UP	I2C3_SCL_HDMI	I2C3_SCL,for HDMI, need external pull-up	3.0V
201	GPIO4_C0/I2C3_SDA/UART2B_RX_U	AG6	I/O	UP	I2C3_SDA_HDMI	I2C3_SDA,for HDMI, need external pull-up	3.0V
203	GPIO1_A2/ISP0_FLASHTRIGIN/ISP1_FLASHTRIGIN/TCPD_CC1_VCONN_EN_D	R26	I/O	DOWN	WK2124_INT	WK2124 interrupt input	3.0V
205	RTC_CLK_OUT	U31	I/O	UP	RTC_CLK_OUT	RTC Clock output	1.8V
207	GND		G		GND	GND	
209	GPIO0_A4/SDIO0_INTN_D	AA25	I/O	DOWN	BT_HOST_WAKE_L	BT module wake up AP	1.8V
211	GPIO2_D2/SDIO0_DETN/PCIE_CLKREQN_U	AL4	I/O	UP	BT_WAKE_L	AP wake up BT module	1.8V
213	GPIO2_C3/UART0_RTSN_U	AL5	I/O	UP	UART0_RTS	UART0_RTS	1.8V
215	GPIO2_C2/UART0_CTSN_U	AG8	I/O	UP	UART0_CTS	UART0_CTS	1.8V
217	GPIO2_C1/UART0_TX_U	AH8	I/O	UP	UART0_TXD	UART0_TXD	1.8V
219	GPIO2_C0/UART0_RX_U	AE9	I/O	UP	UART0_RXD	UART0_RXD	1.8V
221	GPIO0_B1/PMUIO2_VOLSEL_D	V30	I/O	DOWN	BT_REG_ON_H	BT module power enable, Active H Core board interiorl pull up Resistor 10K	1.8V
223	GPIO2_C5/SDIO0_D1/SPI5_TXD_U	AK5	I/O	UP	SDIO0_D1	SDIO0_D1	1.8V
225	GPIO2_C4/SDIO0_D0/SPI5_RXD_U	AD8	I/O	UP	SDIO0_D0	SDIO0_D0	1.8V

227	GPIO2_C6/SDIO0_D2/SPI5_CLK_U	AG7	I/O	UP	SDIO0_D2	SDIO0_D2	1.8V
229	GPIO2_C7/SDIO0_D3/SPI5_CSN0_U	AE8	I/O	UP	SDIO0_D3	SDIO0_D3	1.8V
231	GPIO2_D1/SDIO0_CLKOUT/TEST_CLKOUT1_U	AF7	I/O	UP	SDIO0_CLK	SDIO0_CLK	1.8V
233	GPIO2_D0/SDIO0_CMD_U	AH6	I/O	UP	SDIO0_CMD	SDIO0_CMD	1.8V
235	GPIO0_A3/SDIO0_WRPT_D	V31	I/O	DOWN	WIFI_HOST_WAKE_L	WIFI module wake up AP	1.8V
237	GPIO0_B2_D	W31	I/O	DOWN	WIFI_REG_ON_H	WIFI module power enable 1:Enable 0:Disable	1.8V
239	GND		G		GND	GND	
241	RTC_CLKO_WIFI		O		RTC_CLKO_WIFI	32.768K clock output to WIFI , Core board interior pull up Resistor 10K	1.8V
243	EXT_EN		O		EXT_EN	External Power_EN output,, active H	5V
245	OTP_RST		I		OTP_RST	Over temperature protection reset Input, Active L	5V
247	TYPEC1_ID	AE26			NC	TYPEC1_ID (no used)	
249	TYPEC0_ID	AL30			NC	TYPEC0_ID (no used)	
251	GPIO4_D4_D	AH5	I/O	DOWN	TP_INT1	MIPI TP_INT input, Active L	3.0V
253	GPIO4_D5_D	AJ3	I/O	DOWN	LCD_RST	MIPI reset Output, Active L	3.0V
255	GPIO4_C4/UART2C_TX_U	AJ4	I/O	UP	UART2DBG_TX	UART2_TX for system debug	3.0V
257	GPIO4_C3/UART2C_RX_U	AK2	I/O	UP	UART2DBG_RX	UART2_RX for system debug	3.0V
259	GPIO4_D3_D	AK3	I/O	DOWN	TP_INT	EDP TP_INT input, Active L	3.0V
261	GPIO4_D0/PCIE_CLKREQNB_U	AE6	I/O	UP	PCIE_CLKREQ	PCIE_CLKREQ	3.0V
263	GPIO4_D1/DP_HOTPLUG_D	AK4	I/O	DOWN	PCIE_RST	PCIE_Reset Output , Active L.	3.0V
265	GPIO4_D2_D	AH3	I/O	DOWN	PCIE_WAKE	AP wake up PCIE	3.0V
267	GPIO4_C6/PWM1_D	AL3	I/O	DOWN	LCD_BL_PWM1	PWM1:MIPI_panel backlight brightness control output	3.0V
269	GPIO4_C2/PWM0/VOP0_PWM/VOP1_PWM_D	AF5	I/O	DOWN	LCD_BL_PWM0	PWM0:EDP_panel backlight brightness control output	3.0V
271	VCCA3V0_CODEC		P		VCCA3V0_CODEC	3.3V Output , Max output current 300mA	3.3V
273	VCCA3V0_CODEC		P		VCCA3V0_CODEC		3.3V

	275	VCCA1V8_CODEC		P		VCCA1V8_CODEC	1.8V Output , Max output current 300mA	1.8V
	277	VCCA1V8_CODEC		P		VCCA1V8_CODEC		1.8V
	279	GND		G		GND	GND	
	281	GPIO3_D0/I2S0_SCLK_D	AG3	I/O	DOWN	I2S0_SCLK	I2S0_SCLK	1.8V
	283	GPIO3_D1/I2S0_LRCK_RX_D	AF4	I/O	DOWN	I2S0_LRCK_RX	I2S0_LRCK_RX	1.8V
	285	GPIO3_D2/I2S0_LRCK_TX_D	AJ2	I/O	DOWN	I2S0_LRCK_TX	I2S0_LRCK_TX	1.8V
	287	GPIO3_D3/I2S0_SDI0_D	Y7	I/O	DOWN	I2S0_SDI0	I2S0_SDI0	1.8V
	289	GPIO3_D4/I2S0_SDI1SDO3_D	AE5	I/O	DOWN	I2S0_SDO3	I2S0_SDO3	1.8V
	291	GPIO3_D5/I2S0_SDI2SDO2_D	AA6	I/O	DOWN	I2S0_SDO2	I2S0_SDO2	1.8V
	293	GPIO3_D6/I2S0_SDI3SDO1_D	AH2	I/O	DOWN	I2S0_SDO1	I2S0_SDO1	1.8V
	295	GPIO3_D7/I2S0_SDO0_D	AH1	I/O	DOWN	I2S0_SDO0	I2S0_SDO0	1.8V
	297	GPIO4_A0/I2S_CLK_D	AC7	I/O	DOWN	I2S_CLK	I2S_CLK	1.8V
	299	GPIO4_A3/I2S1_SCLK_D	AF3	I/O	DOWN	I2S1_SCLK	I2S1_SCLK	1.8V
	301	GPIO4_A4/I2S1_LRCK_RX_D	AA7	I/O	DOWN	I2S1_LRCK_RX	I2S1_LRCK_RX	1.8V
	303	GPIO4_A5/I2S1_LRCK_TX_D	AJ1	I/O	DOWN	I2S1_LRCK_TX	I2S1_LRCK_TX	1.8V
	305	GPIO4_A6/I2S1_SDI0_D	AD6	I/O	DOWN	I2S1_SDI0	I2S1_SDI0	1.8V
	307	GPIO4_A7/I2S1_SDO0_D	AC6	I/O	DOWN	I2S1_SDO0	I2S1_SDO0	1.8V
	309	GND		G		GND	GND	
	311	GPIO4_A1/I2C1_SDA_U	AG1	I/O	UP	I2C1_SDA	I2C1_SDA, Core board interiorl pull up Resistor 2.2K	1.8V
	313	GPIO4_A2/I2C1_SCL_U	Y6	I/O	UP	I2C1_SCL	I2C1_SCL, Core board interiorl pull up Resistor 2.2K	1.8V
	314	GPIO4_C5/SPDIF_TX_D	AK1	I/O	DOWN	EAR_CTL	Headphone EN, Active H	3.0V
Part B	**PIN**	**Core-3399J pin definition**	**RK3399 Pin Number**	**Pad type**	**IO Pull**	**Function for Floor(MB-JM3-RK3399)**	**Defual function description**	**IO Power domain**
	2	GND		G		GND		

	4	GND		G		GND	Power ground	
	6	GND		G		GND		
	8	GND		G		GND		
	10	GND		G		GND		
	12	GND		G		GND		
	14	GND		G		GND		
	16	GND		G		GND		
	18	GND		G		GND		
	20	NC				NC	NC	
	22	NC				NC	NC	
	24	VCC3V3_SYS		P		VCC3V3_SYS	3.3V Output ,Max output current 500mA	3.3V
	26	VCC3V3_SYS		P		VCC3V3_SYS		3.3V
	28	VCC3V3_SYS		P		VCC3V3_SYS		3.3V
	30	VCC3V3_S3		P		VCC3V3_S3	3.3V Output Max output current 150mA	3.3V
	32	VCC3V3_S3		P		VCC3V3_S3		3.3V
	34	VCC3V3_S3		P		VCC3V3_S3		3.3V
	36	GND		P		GND	GND	GND
	38	VCC_3V0		P		VCC_3V0	3.0V Output , Max output current 150mA	3.0V
	40	VCC_3V0		P		VCC_3V0		3.0V
	42	VCC_1V8		P		VCC_1V8	1.8V Output , Max output current 1A	1.8V
	44	VCC_1V8		P		VCC_1V8		1.8V
	46	VCC_RTC		P		VCC_RTC	RTC Power supply Input: 3.0V-5.0V	3.0~5.0V
	48	VCCA1V8_S3		P		VCCA1V8_S3	1.8V Output , Max output current 100mA	1.8V
	50	GND		G		GND	GND	
	52	EDP_AUXN	A28	I/O		EDP_AUXN	EDP_AUXN	

	54	EDP_AUXP	B28	I/O		EDP_AUXP	EDP_AUXP	
	56	GND		G		GND	GND	
	58	EDP_TX0N	A29	O		EDP_TX0N	EDP_TX0N (Core board internal series capacitor 100nF)	
	60	EDP_TX0P	B29	O		EDP_TX0P	EDP_TX0P (Core board internal series capacitor 100nF)	
	62	GND		G		GND	GND	
	64	EDP_TX1N	A30	O		EDP_TX1N	EDP_TX1N (Core board internal series capacitor 100nF)	
	66	EDP_TX1P	B30	O		EDP_TX1P	EDP_TX1P (Core board internal series capacitor 100nF)	
	68	GND		G		GND	GND	
	70	EDP_TX2N	C31	O		EDP_TX2N	EDP_TX2N (Core board internal series capacitor 100nF)	
	72	EDP_TX2P	C30	O		EDP_TX2P	EDP_TX2P (Core board internal series capacitor 100nF)	
	74	GND		G		GND	GND	
	76	EDP_TX3N	D31	O		EDP_TX3N	EDP_TX3N (Core board internal series capacitor 100nF)	
	78	EDP_TX3P	D30	O		EDP_TX3P	EDP_TX3P (Core board internal series capacitor 100nF)	
	80	GND		G		GND	GND	
	82	GPIO3_C0/MAC_COL/UART3_CTSN/SPDIF_TX_U	D27	I/O	UP	MIPI_PWR_EN	MIPI_Power_EN, Active H	3.3V
	84	GND		G		GND	GND	
	86	GPIO0_B4/TCPD_VBUS_BDIS_D	V26	I/O	DOWN	TP_RST_1.8V	EDP TP reset output,Active L	1.8V
	88	GPIO0_A7/SDMMC0_DET_U	V28	I/O	UP	SDMMC0_DET_L	TF card detect input ,Active L	1.8V
	90	GPIO4_B2/SDMMC0_D2/APJTAG_TCK_U & 3.0V	Y28	I/O	UP	SDMMC0_D2	SDMMC0_D2	VCC_SDIO 1.8V/3.3V
	92	GPIO4_B3/SDMMC0_D3/APJTAG_TMS_U & 3.0V	U27	I/O	UP	SDMMC0_D3	SDMMC0_D3	
	94	GPIO4_B5/SDMMC0_CMD/MCUJTAG_TMS_U & 3.0V	V25	I/O	UP	SDMMC0_CMD	SDMMC0_CMD	
	96	GPIO4_B4/SDMMC0_CLKOUT/MUCJTAG_TCK_D & 3.0V	V29	I/O	DOWN	SDMMC0_CLK	SDMMC0_CLK	
	98	GPIO4_B0/SDMMC0_D0/UART2A_RX_U & 3.0V	Y27	I/O	UP	SDMMC0_D0	SDMMC0_D0	
	100	GPIO4_B1/SDMMC0_D1/UART2A_TX_U & 3.0V	Y26	I/O	UP	SDMMC0_D1	SDMMC0_D1	
	VCC_SDIO: Default is 3.3V; 1.8V(SDIO3.0) /3.3V(SDIO2.0) auto select.							

	102	GPIO1_A1/ISP0_SHUTTER_TRIG/ISP1_SHUTTER_TRIG/TCPD_CC0_VCONN_EN_D	T31	I/O	DOWN	BL_EN	BL_EN, Active H Core board internal series resistance 33R	3.0V
	104	GPIO1_A4/ISP0_PRELIGHT_TRIG/ISP1_PRELIGHT_TRIG_D	R28	I/O	DOWN	LCD_EN	LCD_EN，Active H Core board internal series resistance 33R	3.0V
	106	GPIO1_A3/ISP0_FLASHTRIGOUT/ISP1_FLASHTRIGOUT_D	R27	I/O	DOWN	VCC5V0_TYPEC0_EN	VCC5V0_TYPEC0_EN，Active H Core board internal series resistance 33R	3.0V
	108	GPIO1_A0/ISP0_SHUTTER_EN/ISP1_SHUTTER_EN/TCPD_VBUS_SINK_EN_D	R25	I/O	DOWN	VCC5V0_HOST_EN	VCC5V0_HOST_EN，Active H Core board internal series resistance 33R	3.0V
	110	TYPEC0_U2VBUSDET	AK30	I		TYPEC0_U2VBUSDET	VBUS_TYPEC0 detect , Active H	3.3V
	112	TYPEC1_U2VBUSDET	AK31	I		NC	VBUS_TYPEC1 detect , Active H (default NC)	3.3V
	114	GPIO1_C6/TCPD_VBUS_SOURCE0_D	L25	I/O	DOWN	CIF_PWR	Camera Power_EN0 , Active H	3.0V
	116	GPIO1_C7/TCPD_VBUS_SOURCE1_D	M31	I/O	DOWN	DVP_PWR	Camera Power_EN1 , Active H	3.0V
	118	GPIO2_D4/SDIO0_BKPWR_D	AF8	I/O	DOWN	HDMIIN_INT	HDMIIN_INT Input , Active L	1.8V
	120	ADC_IN4	AH27	I		HP_DET (need pull up Resistor)	ADC4 input: Headphone det Input, , Active H	1.8V
	122	ADC_IN3	AG28	I		FAN_INT (need pull up Resistor)	ADC3 input	1.8V
	124	ADC_IN0	AG26	I		ADC_IN0 (need pull up Resistor)	ADC0 input	1.8V
	126	ADC_IN1	AH26	I		RECOVER (need pull up Resistor)	ADC1 input: RECOVER_KEY input, Active L	1.8V
	128	ADC_IN2	AG25	I		LINE_IN_DET (need pull up Resistor)	LINE_IN_DET input, Active H	1.8V
	130	GND		G		GND	GND	
	132	HOST1_DM	AA31			HOST1_DM	HOST1_DM	
	134	HOST1_DP	AA30			HOST1_DP	HOST1_DP	
	136	GND		G		GND	GND	
	138	HOST0_DM	AB31			HOST0_DM	HOST0_DM	
	140	HOST0_DP	AB30			HOST0_DP	HOST0_DP	
	142	GND		G		GND	GND	
	144	TYPEC1_AUXP	AK29			NC	TYPEC1_SBU1.(no used)	
	146	TYPEC1_AUXM	AL29			NC	TYPEC1_SBU2.(no used)	

	148	GND		G		GND	GND	
	150	TYPEC1_TX2M	AK28			NC	TYPEC1_TX2N.(no used)	
	152	TYPEC1_TX2P	AL28			NC	TYPEC1_TX2P(no used)	
	154	GND		G		GND	GND	
	156	TYPEC1_RX2P	AK27			NC	TYPEC1_RX2P(no used)	
	158	TYPEC1_RX2M	AL27			NC	TYPEC1_RX2N(no used)	
	160	GND		G		GND	GND	
	162	TYPEC1_AUXP_PD_PU	AE24			NC	TYPEC1_SBU1_DC(no used)	
	164	TYPEC1_AUXM_PU_PD	AF25			NC	TYPEC1_SBU2_DC(no used)	
	166	TYPEC1_TX1M	AK26			USB3_SSTXN	USB3_SSTXN	
	168	TYPEC1_TX1P	AL26			USB3_SSTXP	USB3_SSTXP	
	170	TYPEC1_RX1P	AK25			USB3_SSRXP	USB3_SSRXP	
	172	TYPEC1_RX1M	AL25			USB3_SSRXN	USB3_SSRXN	
	174	TYPEC1_DP	AG24			USB3_DP	USB3_DP	
	176	TYPEC1_DM	AH24			USB3_DM	USB3_DM	
	178	TYPEC0_TX2M	AK24			TYPEC0_TX2N	TYPEC0_TX2N	
	180	TYPEC0_TX2P	AL24			TYPEC0_TX2P	TYPEC0_TX2P	
	182	TYPEC0_RX2P	AK23			TYPEC0_RX2P	TYPEC0_RX2P	
	184	TYPEC0_RX2M	AL23			TYPEC0_RX2N	TYPEC0_RX2N	
	186	TYPEC0_DM	AH23			TYPEC0_DM	TYPEC0_DM	
	188	TYPEC0_DP	AG23			TYPEC0_DP	TYPEC0_DP	
	190	TYPEC0_TX1M	AK22			TYPEC0_TX1N	TYPEC0_TX1N	
	192	TYPEC0_TX1P	AL22			TYPEC0_TX1P	TYPEC0_TX1P	
	194	TYPEC0_RX1P	AK21			TYPEC0_RX1P	TYPEC0_RX1P	
	196	TYPEC0_RX1M	AL21			TYPEC0_RX1N	TYPEC0_RX1N	

	198	TYPEC0_AUXP	AK20			TYPEC0_SBU1	TYPEC0_SBU1	
	200	TYPEC0_AUXM	AL20			TYPEC0_SBU2	TYPEC0_SBU2	
	202	TYPEC0_AUXM_PU_PD	AG17			TYPEC0_SBU2_DC	TYPEC0_SBU2_DC	
	204	TYPEC0_AUXP_PD_PU	AH17			TYPEC0_SBU1_DC	TYPEC0_SBU1_DC	
	206	GND		G		GND	GND	
	208	HDMI_TX2P	AK19	O		HDMI_TX_2P	HDMI_TX_2P Output	
	210	HDMI_TX2N	AL19	O		HDMI_TX_2N	HDMI_TX_2N Output	
	212	HDMI_TX1P	AK18	O		HDMI_TX_1P	HDMI_TX_1P Output	
	214	HDMI_TX1N	AL18	O		HDMI_TX_1N	HDMI_TX_1N Output	
	216	HDMI_TX0P	AK17	O		HDMI_TX_0P	HDMI_TX_0P Output	
	218	HDMI_TX0N	AL17	O		HDMI_TX_0N	HDMI_TX_0N Output	
	220	HDMI_TCP	AK16	O		HDMI_TX_CP	HDMI_TX_CP Output	
	222	HDMI_TCN	AL16	O		HDMI_TX_CN	HDMI_TX_CN Output	
	224	GND		G		GND	GND	
	226	MIPI_TX0_D0P	AG15	O		MIPI_TX0_D0P	MIPI_TX0_D0P Output	
	228	MIPI_TX0_D0N	AH15	O		MIPI_TX0_D0N	MIPI_TX0_D0N Output	

	230	GND		G		GND	GND	
	232	MIPI_TX0_D1P	AG14	O		MIPI_TX0_D1P	MIPI_TX0_D1P Output	
	234	MIPI_TX0_D1N	AH14	O		MIPI_TX0_D1N	MIPI_TX0_D1N Output	
	236	GND		G		GND	GND	
	238	MIPI_TX0_CLKP	AG12	O		MIPI_TX0_CLKP	MIPI_TX0_CLKP Output	
	240	MIPI_TX0_CLKN	AH12	O		MIPI_TX0_CLKN	MIPI_TX0_CLKN Output	
	242	GND		G		GND	GND	
	244	MIPI_TX0_D2P	AG11	O		MIPI_TX0_D2P	MIPI_TX0_D2P Output	
	246	MIPI_TX0_D2N	AH11	O		MIPI_TX0_D2N	MIPI_TX0_D2N Output	
	248	GND		G		GND	GND	
	250	MIPI_TX0_D3P	AG9	O		MIPI_TX0_D3P	MIPI_TX0_D3P Output	
	252	MIPI_TX0_D3N	AH9	O		MIPI_TX0_D3N	MIPI_TX0_D3N Output	
	254	GND		G		GND	GND	
	256	MIPI_RX0_D0P	AK15	I		MIPI_RX0_D0P	MIPI_RX0_D0P Input	
	258	MIPI_RX0_D0N	AL15	I		MIPI_RX0_D0N	MIPI_RX0_D0N Input	
	260	GND		G		GND	GND	
	262	MIPI_RX0_D1P	AK14	I		MIPI_RX0_D1P	MIPI_RX0_D1P Input	
	264	MIPI_RX0_D1N	AL14	I		MIPI_RX0_D1N	MIPI_RX0_D1N Input	
	266	GND		G		GND	GND	
	268	MIPI_RX0_CLKP	AK13	I		MIPI_RX0_CLKP	MIPI_RX0_CLKP Input	
	270	MIPI_RX0_CLKN	AL13	I		MIPI_RX0_CLKN	MIPI_RX0_CLKN Input	
	272	GND		G		GND	GND	
	274	MIPI_RX0_D2P	AK12	I		MIPI_RX0_D2P	MIPI_RX0_D2P Input	
	276	MIPI_RX0_D2N	AL12	I		MIPI_RX0_D2N	MIPI_RX0_D2N Input	
	278	GND		G		GND	GND	

	280	MIPI_RX0_D3P	AK11	I		MIPI_RX0_D3P	MIPI_RX0_D3P Input	
	282	MIPI_RX0_D3N	AL11	I		MIPI_RX0_D3N	MIPI_RX0_D3N Input	
	284	GND		G		GND	GND	
	286	MIPI_TX1/RX1_D3P	AK10	I/O		MIPI_TX1/RX1_D3P	MIPI_TX1/RX1_D3P Output/Input	
	288	MIPI_TX1/RX1_D3N	AL10	I/O		MIPI_TX1/RX1_D3N	MIPI_TX1/RX1_D3N Output/Input	
	290	GND		G		GND	GND	
	292	MIPI_TX1/RX1_D2P	AK9	I/O		MIPI_TX1/RX1_D2P	MIPI_TX1/RX1_D2P Output/Input	
	294	MIPI_TX1/RX1_D2N	AL9	I/O		MIPI_TX1/RX1_D2N	MIPI_TX1/RX1_D2N Output/Input	
	296	GND		G		GND	GND	
	298	MIPI_TX1/RX1_CLKP	AK8	I/O		MIPI_TX1/RX1_CLKP	MIPI_TX1/RX1_CLKP Output/Input	
	300	MIPI_TX1/RX1_CLKN	AL8	I/O		MIPI_TX1/RX1_CLKN	MIPI_TX1/RX1_CLKN Output/Input	
	302	GND		G		GND	GND	
	304	MIPI_TX1/RX1_D1P	AK7	I/O		MIPI_TX1/RX1_D1P	MIPI_TX1/RX1_D1P Output/Input	
	306	MIPI_TX1/RX1_D1N	AL7	I/O		MIPI_TX1/RX1_D1N	MIPI_TX1/RX1_D1N Output/Input	
	308	GND		G		GND	GND	
	310	MIPI_TX1/RX1_D0P	AK6	I/O		MIPI_TX1/RX1_D0P	MIPI_TX1/RX1_D0P Output/Input	
	312	MIPI_TX1/RX1_D0N	AL6	I/O		MIPI_TX1/RX1_D0N	MIPI_TX1/RX1_D0N Output/Input	

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