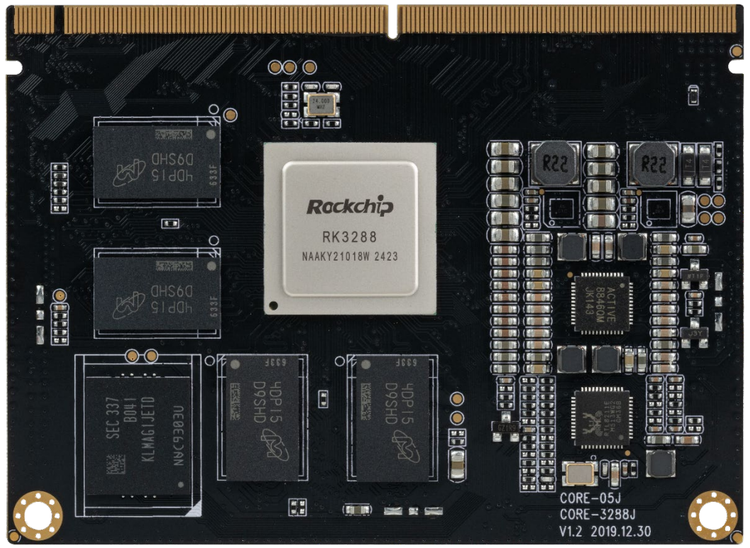
Core-3288J

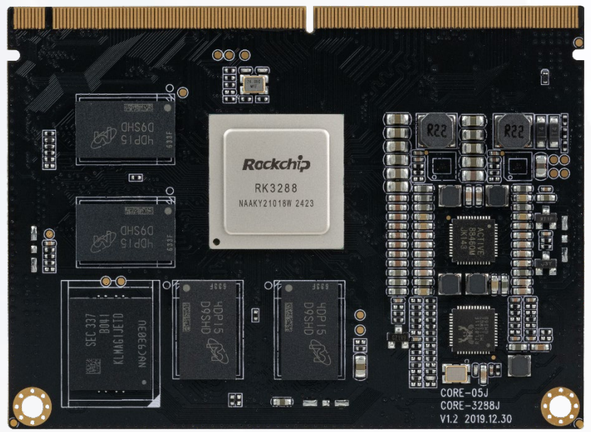
Quad-core high-performance core board



V1.2 2024-10-17

T-CHIP INTELLIGENCE TECHNOLOGY

Product features



New Cortex-A17 architecture processors

Equipped with four ARM Cortex-A17 cores, the highest frequency can reach 1.8GHz; The performance of Cortex-A17 has improved by 60% compared to Cortex-A9.

Mali-T760 MP4 Graphics processing

It supports OpenGL ES1.1/2.0/3.0, etc., and can realize 2160P@24fps video decoding, which is 500% faster than Mail-400 performance.

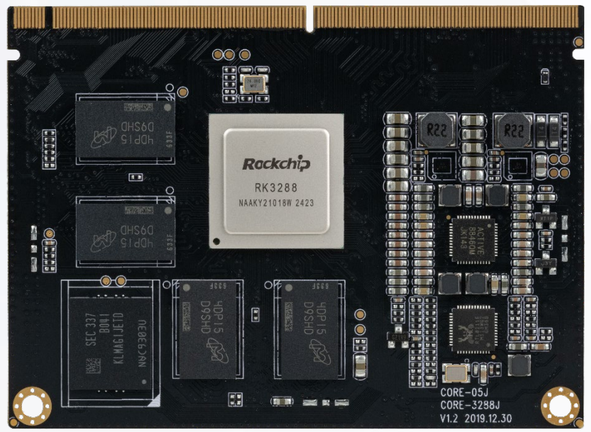
Strong network communication capabilities

It supports 1 Gigabit Ethernet, WiFi & Bluetooth 2-in-1 module can be expanded through SDIO3.0 signal, and supports 2.4GHz/5GHz dual-band WiFi, so that network communication has a higher rate.

Stable And Reliable

Using MXM3.0-314P interface, the whole chip is drawn, the data transmission and expansion performance is best played, the immersion process pin, corrosion resistance, 4 stud fixation, firm and reliable.

Product features



Supports multiple operating systems

It supports Android and Linux operating systems, with stable and reliable performance, providing a safe and stable system environment for product research and production to meet the needs of different scenarios.

Abundant expansion interfaces

Equipped with HDMI2.0, MIPI-DSI, eDP, MIPI-CSI, DVP, USB2.0, I2C, I2S, SPI, UART, PWM, ADC and other extension interfaces to meet the peripheral expansion needs of different scenarios.

Open Source

Complete with SDK, tutorial, technical information and development tools can be downloaded on the website, and provide development base plate for purchase, making development and learning easier.

A wide range of applications

It is widely used in amusement/game equipment, commercial display equipment, medical and health equipment, vending machines, intelligent POS machines, interactive printers, intelligent robots, industrial computers, etc.

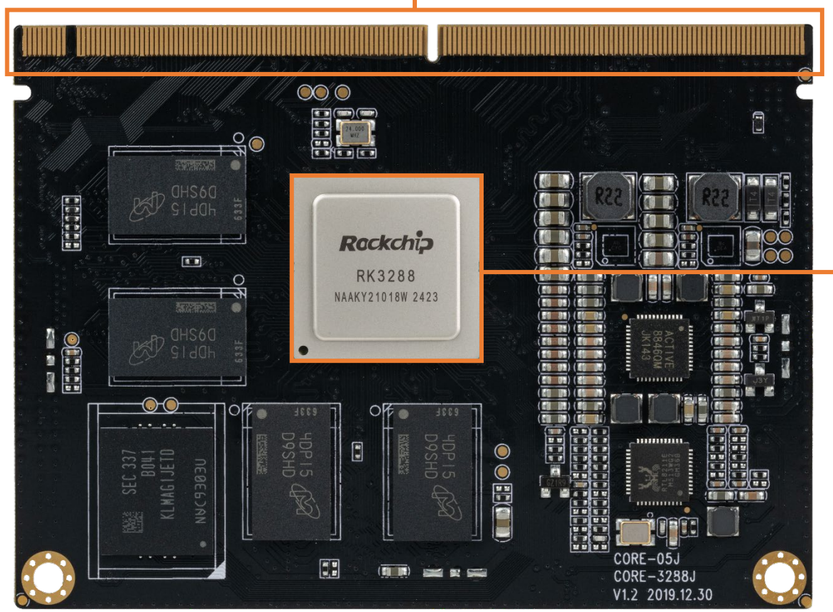
Specifications

Specifications		
Basic Specifications	SOC	Rockchip RK3288 (28nm HKMG process)
	CPU	Quad-core 64bits ARM® Cortex-A17 processor, clocked up to 1.8GHz
	GPU	ARM® Mali-T760 MP4 Quad-core GPU with AFBC (Frame Buffer Compression) Support OpenGL ES1.1/2.0/3.0/3.1, OpenVG1.1, OpenCL, DirectX 11 Embedded high-performance 2D acceleration hardware
	Encoding/ Decoding	Video decoding: 4K@60fps H.265, 4K@24fps H.264/VP8/VP6/MVC/MPEG-2, 1080P@60fps AVS/RV/Sorenson Spark/MPEG-1/4, 1080P@30fps VC-1 Video encoding: 1080P@30fps H.264/MVC/VP8 Video post processor: deinterlacing, denoising, edge/detail/color optimization
	RAM	Dual channel 64bits DDR3-1333MHz (1GB/2GB/4GB optional)
	Storage	High-speed eMMC 5.1 (8GB/16GB/32GB/128GB optional)
	Power	12V (voltage tolerance ± 5%)
	PMU	ACT8846 PMU Power Management Unit
	Power consumption	Normal: 2.304W(12V/192mA), Max: 8.16W(12V/680mA)
	OS	Android, Linux
	Interface	Goldfinger (MXM3.0 standard interface, 314Pin, 0.5mm pitch)
	Size	82mm × 60mm
	Weight	≈22g
	Environment	Operating Temperature: -20℃ ~ 60℃, storage temperature: -20℃ ~ 70℃, Storage Humidity: 10% ~ 90%RH (non-condensing)
Interface Specifications	Ethernet	1 channel of 10/100/1000Mbps Ethernet can be extended via RGMII and RMII interfaces
	Wi-Fi	Expand Wifi & Bluetooth 2-in-1 module via SDIO3.0 signal, support 2.4GHz/5GHz dual-band WiFi (802.11a/b/g/n/ac protocol)
	Video input	1 × MIPI-CSI (Built-in hardware ISP, up to 13Mpixel supported) 1 × DVP (Up to 5Mpixel)
	Video output	1 × HDMI2.0 (4K@60Hz output, support HDCP 1.4/2.2) 1 × Dual-channel MIPI-DSI 1 × Dual-channel LVDS or RGB 1 × eDP * Support dual-screen simultaneous display and dual-screen different display
	Audio	1 × HDMI audio output 1 × SPDIF digital audio interface (for audio output) 1 × I2S(For audio input and output, supports 8 channels)
	USB	1 × USB2.0 OTG, 2 × USB2.0 HOST
	Other interfaces	4 × UART (UART2 is used as Debug Serial by default) 2 × SDIO (SDIO0 for Extended WiFi Module) 1 × SDMMC (for expanding TF card) 4 × PWM (PWM0 is used for IR reception, PWM2~3 is multiplexed with UART2) 5 × I2C, 3 × I2S, 2 × SPI, ADC, 55 × GPIO

Interface description

Gold finger

MXM3.0 standard interface, 314Pin, 0.5mm pitch

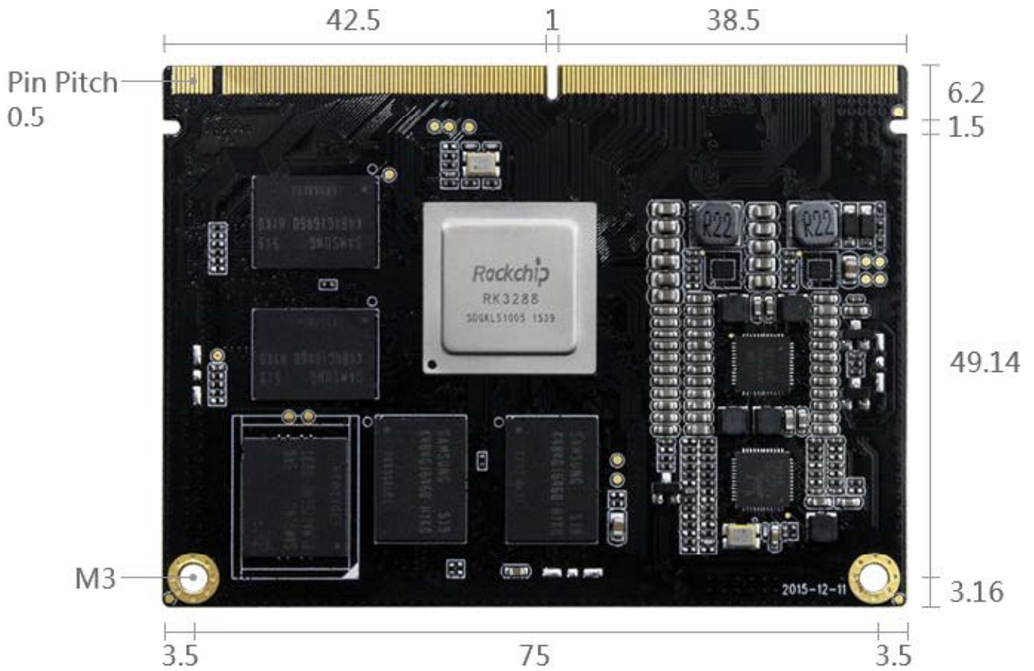


Rockchip RK3288

Quad-core Cortex-A17 processor,
the main frequency up to 1.8GHz

Dimension


82mm
60mm
Rockchip
RK3288
2015-12-11


42.5
1
38.5
Pin Pitch
0.5
6.2
1.5
49.14
M3
3.16
3.5
75
3.5
Rockchip
RK3288
2015-12-11

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, 0 = Lowe Level 1 = High level

pin	Core board pin definition	Default function	Defualt function description	IO Power domain	Pad type IO Pull
1	GND#1	GND	GND	GND	
3	GND#2	GND	GND	GND	
5	GND#3	GND	GND	GND	
7	FLASH0_RDY/GPIO3_B0_U_1.8V	MIPI_RST	LCD panel reset output	1.8V	I/O UP
9	FLASH0_RDN/GPIO3_B2_U_1.8V	MIPI_PWR	MIPI power enable	1.8V	I/O UP
11	FLASH0_ALE/GPIO3_B3_D_1.8V	FLASH0_ALE	FLASH Address input enable	1.8V	I/O DOWN
13	FLASH0_CLE/GPIO3_B4_D_1.8V	FLASH0_CLE	FLASH Command word input enable	1.8V	I/O DOWN
15	SDIO0_WP/GPIO4_D3_D_1.8V	GPIO4_D3_D	GPIO	1.8V	I/O DOWN
17	VCC18_DVP	1.8V or 2.8V camera power supply	1.8V or 2.8V IN select (Default:1.8V)	1.8V_IN	
19	NC	NC	NC	NC	
21	NC	NC	NC	NC	
23	VCC28_DVP	2.8V camera power supply	2.8V_IN	2.8V_IN	
25	I2C3_SCL/GPIO2_C0_U_2.8V	I2C3_SCL	I2C serial port 3，for camera	1.8V	I/O UP
27	I2C3_SDA/GPIO2_C1_U_2.8V	I2C3_SDA	I2C serial port 3，for camera	1.8V	I/O UP
29	CIF_D10/GPIO2_B6_D_2.8V	CIF_PDN0	Camera Power off terminal	1.8V	I/O DOWN
31	CIF_D11/GPIO2_B7_D_2.8V	LINEIN_DET	LINE_IN detect input	1.8V	I/O DOWN
33	CIF_D2/HOST_D0/TS_D0/GPIO2_A0_D_2.8V	CIF_PDN1	Camera power down control output for rear	1.8V	I/O DOWN

Interface definition

35	CIF_D3/HOST_D1/TS_D1/GPIO2_A1_D_2.8V	CIF_D3	Camera0 interface input pixel data	1.8V	I/O DOWN
37	CIF_D4/HOST_D2/TS_D2/GPIO2_A2_D_2.8V	CIF_D4	Camera0 interface input pixel data	1.8V	I/O DOWN
39	CIF_D5/HOST_D3/TS_D3/GPIO2_A3_D_2.8V	CIF_D5	Camera0 interface input pixel data	1.8V	I/O DOWN
41	CIF_D6/HOST_CKINP/TS_D4/GPIO2_A4_D_2.8V	CIF_D6	Camera0 interface input pixel data	1.8V	I/O DOWN
43	CIF_D7/HOST_CKINN/TS_D5/GPIO2_A5_D_2.8V	CIF_D7	Camera0 interface input pixel data	1.8V	I/O DOWN
45	CIF_D8/HOST_D4/TS_D6/GPIO2_A6_D_2.8V	CIF_D8	Camera0 interface input pixel data	1.8V	I/O DOWN
47	CIF_D9/HOST_D5/TS_D7/GPIO2_A7_D_2.8V	GPIO2_A7_D	GIPO	1.8V	I/O DOWN
49	CIF_VSYNC/HOST_D6/TS_SYNC/GPIO2_B0_D_2.8V	GPIO2_B0_D	GIPO	1.8V	I/O DOWN
51	CIF_HREF/HOST_D7/TS_VALID/GPIO2_B1_D_2.8V	GPIO2_B1_D	GIPO	1.8V	I/O DOWN
53	CIF_CLKIN/HOST_WKACK/GPS_CLK/TS_CLKOUT/GPIO2_B2_D_2.8V	GPIO2_B2_D	GIPO	1.8V	I/O DOWN
55	CIF_CLKOUT/HOST_WKREQ/TS_FAIL/GPIO2_B3_D_2.8V	CIF_CLKOUT	Camera0 interface output work clock	1.8V	I/O DOWN
57	CIF_D0/GPIO2_B4_D_2.8V	CIF_D0	Camera0 interface input pixel data	1.8V	I/O DOWN
59	CIF_D1/GPIO2_B5_D_2.8V	CIF_D1	Camera0 interface input pixel data	1.8V	I/O DOWN
61	EFUSE_VQPS_3.3V	VCC_EFUSE	EFUSE_Power IN	3.3V	
63	GPIO7_A6_U_3.3V	SPK_CTL	Speaker control	3.3V	I/O UP
65	PWM0/GPIO7_A0_D_3.3V	IR_INT	IR receiver input	3.3V	I/O DOWN
67	PWM1/GPIO7_A1_D_3.3V	LCD_BL_PWM1	PWM1 output For LCD Backlight	3.3V	I/O DOWN
69	GPIO7_A2_D_3.3V	GPIO7_A2_D	GPIO	3.3V	I/O DOWN
71	GPIO7_A4_U_3.3V	RTC_INT	RTC interrupt input	3.3V	I/O UP
73	PS2_CLK/GPIO8_A0_U_3.3V	HDMIIN_HPDOUT	HDMI Hot Plug Detection interrupt with 5V tolerance	3.3V	I/O UP

Interface definition

75	GPIO7_A5_D_3.3V	HDMIIN_STBY	HDMI_IN IC Sleep mode	3.3V	I/O DOWN
77	UART3_RX/GPS_MAG/HSADC_D0_T1/GPIO7_A7_U_3.3V	UART3_RX	Uart3 serial port data input,	3.3V	I/O UP
79	UART3_TX/GPS_SIG/HSADC_D1_T1/GPIO7_B0_D_3.3V	UART3_TX	Uart3 serial port data input,	3.3V	I/O DOWN
81	UART3_CTSN/GPS_RFCLK/GPS_CLK_T1/GPIO7_B1_U_3.3V	TP_RST/GPIO7_B1_U	TP_Reset	3.3V	I/O UP
83	UART3_RTSN/GPIO7_B2_U_3.3V	CPU_DET	CPU detect to MCU	3.3V	I/O UP
85	EDP_HOTPLUG/GPIO7_B3_D_3.3V	SDMMC_PWR	SDMMC power enable	3.3V	I/O DOWN
87	ISP_SHUTTEREN/SPI1_CLK/GPIO7_B4_D_3.3V	CIF_PWR	Camera power enable0	3.3V	I/O DOWN
89	ISP_SHUTTERTRIG/SPI1_TXD/GPIO7_B7_D_3.3V	HP_DET	Headphone detect (Headphone plug in:H)	3.3V	I/O DOWN
91	ISP_FLASHTRIGIN/EDPHDMI_CEC_T1/GPIO7_C0_U_3.3V	HDMI_CEC	HDMI CEC communication	3.3V	I/O UP
93	ISP_FLASHTRIGOUT/SPI1_CSN0/GPIO7_B5_U_3.3V	LCD_RST/GPIO7_B5_U	LCD_Reset(MIPI)	3.3V	I/O UP
95	I2C4_SDA/GPIO7_C1_U_3.3V	I2C4_SDA	I2C serial port 4，for TP	3.3V	I/O UP
97	I2C4_SCL/GPIO7_C2_U_3.3V	I2C4_SCL	I2C serial port 4，for TP	3.3V	I/O UP
99	I2C5_SDA/EDPHDMI_I2C_SDA/GPIO7_C3_U_3.3V	I2C5_SDA_HDMI	I2C serial port 5，for HDMI	3.3V	I/O UP
101	I2C5_SCL/EDPHDMI_I2C_SCL/GPIO7_C4_U_3.3V	I2C5_SCL_HDMI	I2C serial port 5，for HDMI	3.3V	I/O UP
103	GPIO7_C5_D_3.3V	HDMI_IN_PWRON	HDMI_IN_IC POWER_EN	3.3V	I/O DOWN
105	UART2_RX/IR_RX/PWM2/GPIO7_C6_U_3.3V	UART2_RX	Uart2 serial port ,for AP debug	3.3V	I/O UP
107	UART2_TX/IR_TX/PWM3/EDPHDMI_CEC/GPIO7_C7_U_3.3V	UART2_TX	Uart2 serial port ,for AP debug	3.3V	I/O UP
109	GND#4	GND	GND	GND	
111	ADC_IN1/RECOVER_1.8V	RECOVER	ADC keyboard input, Core board interiorl pull up Resistor 10K	1.8V	
113	ADC_IN2_1.8V	ADC_IN2	ADC2 input,	1.8V	

Interface definition

115	ADC_IN0_1.8V	ADC_IN0	ADC0 input,	1.8V	
117	GND#5	GND	GND	GND	
119	SDMMC0_D0/JTAG_TMS/GPIO6_C0_U_3.3V	SDMMC_D0	SDMMC0 data port	3.3V	I/O UP
121	SDMMC0_D1/JTAG_TRSTN/GPIO6_C1_U_3.3V	SDMMC_D1	SDMMC0 data port	3.3V	I/O UP
123	SDMMC0_D2/JTAG_TDI/GPIO6_C2_U_3.3V	SDMMC_D2	SDMMC0 data port	3.3V	I/O UP
125	SDMMC0_D3/JTAG_TCK/GPIO6_C3_U_3.3V	SDMMC_D3	SDMMC0 data port	3.3V	I/O UP
127	SDMMC0_CLKOUT/JTAG_TDO/GPIO6_C4_D_3.3V	SDMMC_CLK	SDMMC0 clock output	3.3V	I/O DOWN
129	SDMMC0_CMD/GPIO6_C5_U_3.3V	SDMMC_CMD	SDMMC0 command output	3.3V	I/O UP
131	SDMMC0_DET/GPIO6_C6_U_3.3V	SDMMC_DET	SDMMC0 detect input	3.3V	I/O UP
133	GND#6	GND	GND	GND	
135	LCDC0_D12/LVDS_D5P/TRACE_D12_3.3V	LVDS_D5P	LVDS data lane5+	3.3V	
137	LCDC0_D13/LVDS_D5N/TRACE_D13_3.3V	LVDS_D5N	LVDS data lane5-	3.3V	
139	LCDC0_D15/LVDS_D6N/TRACE_D15_3.3V	LVDS_D6N	LVDS data lane6-	3.3V	
141	LCDC0_D14/LVDS_D6P/TRACE_D14_3.3V	LVDS_D6P	LVDS data lane6+	3.3V	
143	LCDC0_D22/LVDS_CLK1P_3.3V	LVDS_CLK1P	LVDS clock lane1+	3.3V	
145	LCDC0_D23/LVDS_CLK1N_3.3V	LVDS_CLK1N	LVDS clock lane1-	3.3V	
147	LCDC0_D17/LVDS_D7N/TRACE_CTL_3.3V	LVDS_D7N	LVDS data lane7-	3.3V	
149	LCDC0_D16/LVDS_D7P/TRACE_CLK_3.3V	LVDS_D7P	LVDS data lane7+	3.3V	
151	LCDC0_D21/LVDS_D9N_3.3V	LCD_D21	LCDC data output	3.3V	
153	LCDC0_D20/LVDS_D9P_3.3V	LCD_D20	LCDC data output	3.3V	

Interface definition

155	LCDC0_DCLK/GPIO1_D3_D_3.3V	GPIO1_D3_D	GPIO	3.3V	I/O DOWN
157	LCDC0_HSYNC/GPIO1_D0_D_3.3V	GPIO1_D0_D	GPIO	3.3V	I/O DOWN
159	LCDC0_VSYNC/GPIO1_D1_D_3.3V	GPIO1_D1_D	GPIO	3.3V	I/O DOWN
161	LCDC0_DEN/GPIO1_D2_D_3.3V	GPIO1_D2_D	GPIO	3.3V	I/O DOWN
163	GND#7	GND	GND	GND	
165	GND#8	GND	GND	GND	
167	MIPI_TX/RX_D3N_1.8V	MIPI_TX/RX_D3-	MIPI TXRX negative differential data line transceiver output	1.8V	
169	MIPI_TX/RX_D3P_1.8V	MIPI_TX/RX_D3+	MIPI TXRX positive differential data line transceiver output	1.8V	
171	MIPI_TX/RX_D2P_1.8V	MIPI_TX/RX_D2+	MIPI TXRX positive differential data line transceiver output	1.8V	
173	MIPI_TX/RX_D2N_1.8V	MIPI_TX/RX_D2-	MIPI TXRX negative differential data line transceiver output	1.8V	
175	MIPI_TX/RX_CLKP_1.8V	MIPI_TX/RX_CLK+	MIPI TXRX positive differential clock line transceiver output	1.8V	
177	MIPI_TX/RX_CLKN_1.8V	MIPI_TX/RX_CLK-	MIPI TXRX negative differential clock line transceiver output	1.8V	
179	MIPI_TX/RX_D1P_1.8V	MIPI_TX/RX_D1+	MIPI TXRX positive differential data line transceiver output	1.8V	
181	MIPI_TX/RX_D1N_1.8V	MIPI_TX/RX_D1-	MIPI TXRX negative differential data line transceiver output	1.8V	
183	MIPI_TX/RX_D0P_1.8V	MIPI_TX/RX_D0+	MIPI TXRX positive differential data line transceiver output	1.8V	
185	MIPI_TX/RX_D0N_1.8V	MIPI_TX/RX_D0-	MIPI TXRX negative differential data line transceiver output	1.8V	
187	GND#9	GND	GND	GND	
189	I2S_SCLK/GPIO6_A0_D_3.3V	I2S_SCLK	I2S serial clock	3.3V	I/O DOWN
191	I2S_LRCK_RX/GPIO6_A1_D_3.3V	I2S_LRCK_RX	I2S left & right channel signal for receiving serial data, synchronous left & right channel in I2S mode and the beginning of a group of left & right channels in PCM mode	3.3V	I/O DOWN
193	I2S_LRCK_TX/GPIO6_A2_D_3.3V	I2S_LRCK_TX	I2S left & right channel signal for transmitting serial data, synchronous left & right channel in I2S mode and the beginning of a group of left & right channels in PCM mode	3.3V	I/O DOWN

Interface definition

195	I2S_SDI/GPIO6_A3_D_3.3V	I2S_SDI	I2S serial data input	3.3V	I/O DOWN
197	I2S_SDO0/GPIO6_A4_D_3.3V	I2S_SDO0	I2S serial data0 ouput	3.3V	I/O DOWN
199	I2S_SDO1/GPIO6_A5_D_3.3V	I2S_SDO1	I2S serial data1 ouput	3.3V	I/O DOWN
201	I2S_SDO2/GPIO6_A6_D_3.3V	I2S_SDO2	I2S serial data2 ouput	3.3V	I/O DOWN
203	I2S_SDO3/GPIO6_A7_D_3.3V	I2S_SDO3	I2S serial data3 ouput	3.3V	I/O DOWN
205	I2S_CLK/GPIO6_B0_D_3.3V	I2S_MCLK	I2S MCLK, for both I2S0 and I2S1	3.3V	I/O DOWN
207	I2C2_SDA/GPIO6_B1_U_3.3V	I2C2_SDA_AUDIO	I2C serial port 2,for Audio,	3.3V	I/O UP
209	I2C2_SCL/GPIO6_B2_U_3.3V	I2C2_SCL_AUDIO	I2C serial port 2,for Audio,	3.3V	I/O UP
211	SPDIF_TX/GPIO6_B3_D_3.3V	AT18_RST	AT18 Reset	3.3V	I/O DOWN
213	GND#10	GND	GND	GND	
215	VCC_18#1_1.8V	1.8V Power supply(OUT)	Output Voltage 1.8V,Max output current 200mA	1.8V_OUT	
217	VCC_18#2_1.8V	1.8V Power supply(OUT)		1.8V_OUT	
219	VCC_18#3_1.8V	1.8V Power supply(OUT)		1.8V_OUT	
221	VCC_18#4_1.8V	1.8V Power supply(OUT)		1.8V_OUT	
223	VCC_IO#1_3.3V	3.3V Power supply(OUT)	Output Voltage 3.3V,Max output current 500mA	3.3V_OUT	
225	VCC_IO#2_3.3V	3.3V Power supply(OUT)		3.3V_OUT	
227	VCC_IO#3_3.3V	3.3V Power supply(OUT)		3.3V_OUT	
229	VCC_IO#4_3.3V	3.3V Power supply(OUT)		3.3V_OUT	
231	VCC_IO#5_3.3V	3.3V Power supply(OUT)		3.3V_OUT	
233	VCC_IO#6_3.3V	3.3V Power supply(OUT)		3.3V_OUT	

Interface definition

235	VCC_IO#7_3.3V	3.3V Power supply(OUT)	Output Voltage 3.3V,Max output current 500mA	3.3V_OUT	
237	VCC_IO#8_3.3V	3.3V Power supply(OUT)		3.3V_OUT	
239	GND#11	GND	GND	GND	
241	GND#12	GND	GND	GND	
243	GND#13	GND	GND	GND	
245	GND#14	GND	GND	GND	
247	GND#15	GND	GND	GND	
249	GND#16	GND	GND	GND	
251	VCCA_33#1_3.3V	3.3V Power supply(OUT)	Output Voltage 3.3V,Max output current 200mA	3.3V_OUT	
253	VCCA_33#2_3.3V	3.3V Power supply(OUT)		3.3V_OUT	
255	VCC_LAN_3.3V	3.3V Power supply(OUT)		3.3V_OUT	
257	LED_AD1_3.3V	LED1_AD1	Ethernet LED	3.3V	
259	LED_AD0_3.3V	LED0_AD0	Ethernet LED	3.3V	
261	GND#17	GND	GND	GND	
263	MDI3-	MDI3-	In MDI mode, this is the fourth pair in 1000Base-T, i.e., the BI_DD+/- pair. In MDI crossover mode, this pair acts as the BI_DC+/- pair.		
265	MDI3+	MDI3+			
267	MDI2-	MDI2-	In MDI mode, this is the third pair in 1000Base-T, i.e., the BI_DC+/- pair. In MDI crossover mode, this pair acts as the BI_DD+/- pair.		
269	MDI2+	MDI2+			
271	MDI1-	MDI1-	In MDI mode, this is the second pair in 1000Base-T, i.e., the BI_DB+/- pair, and is the receive pair in 10Base-T and 100Base-TX. In MDI crossover mode, this pair acts as the BI_DA+/- pair, and is the transmit pair in 10Base-T and 100Base-TX.		
273	MDI1+	MDI1+			

Interface definition

275	MDI0-	MDI0-	In MDI mode, this is the first pair in 1000Base-T, i.e., the BI_DA+/- pair, and is the transmit pair in 10Base-T and 100Base-TX. In MDI crossover mode, this pair acts as the BI_DB+/- pair, and is the receive pair in 10Base-T and 100Base-TX.		
277	MDI0+	MDI0+			
279	GND#18	GND	GND	GND	
281	GND#19	GND	GND	GND	
283	VCC_SYS#1	5V System power supply	Input Voltage 4.8V-5.5V	5.0V_IN	
285	VCC_SYS#2	5V System power supply		5.0V_IN	
287	VCC_SYS#3	5V System power supply		5.0V_IN	
289	VCC_SYS#4	5V System power supply		5.0V_IN	
291	VCC_SYS#5	5V System power supply		5.0V_IN	
293	VCC_SYS#6	5V System power supply		5.0V_IN	
295	VCC_SYS#7	5V System power supply		5.0V_IN	
297	VCC_SYS#8	5V System power supply		5.0V_IN	
299	VCC_SYS#9	5V System power supply		5.0V_IN	
301	VCC_SYS#10	5V System power supply		5.0V_IN	
303	VCC_SYS#11	5V System power supply		5.0V_IN	
305	VCC_SYS#12	5V System power supply		5.0V_IN	
307	VCC_SYS#13	5V System power supply		5.0V_IN	
309	VCC_SYS#14	5V System power supply		5.0V_IN	
311	VCC_SYS#15	5V System power supply		5.0V_IN	
313	VCC_SYS#16	5V System power supply		5.0V_IN	

Interface definition

315	VCC_SYS#17	5V System power supply	Input Voltage 4.8V-5.5V	5.0V_IN	
2	GND#20	GND	GND	GND	
4	FLASH0_WRN/GPIO3_B5_U_1.8V	EFUSE_PWR_EN	EFUSE power enable	1.8V	I/O UP
6	FLASH0_CSN0/GPIO3_B6_U_1.8V	UART_PWR_EN	UART power enable	1.8V	I/O UP
8	FLASH0_CSN1/GPIO3_B7_U_1.8V	3G_PWR_EN	3G power enable	1.8V	I/O UP
10	FLASH0_CSN3/EMMC_RSTNOUT/GPIO3_C1_U_1.8V	GPIO3_C1_U	GPIO	1.8V	I/O UP
12	PMUGPIO0_A7_U_3.3V	WK2124_INT	WK2124 interrupt input	3.3V	I/O UP
14	PMUGPIO0_C2_U_3.3V	WK2124_RST	WK2124 Reset	3.3V	I/O UP
16	GND#21	GND	GND	GND	
18	RTC_CLKOUT	RTC_CLKOUT	RTC_Clock IN (32.768KHz to RK3288)	3.3V	
20	NC	NC	NC	NC	
22	NC	NC	NC	NC	
24	VCCIO_WL#1_1.8V	VCCIO_WL	1.8V_OUT to WIFI,Max output current 200mA	1.8V	
26	VCCIO_WL#2_1.8V	VCCIO_WL		1.8V	
28	UART0_RXD/GPIO4_C0_U_1.8V	UART0_RX	UART0 serial port, for BT module	1.8V	I/O UP
30	UART0_TXD/GPIO4_C1_U_1.8V	UART0_TX	UART0 serial port, for BT module	1.8V	I/O DOWN
32	UART0_CTSN/GPIO4_C2_U_1.8V	UART0_CTS	UART0 serial port, for BT module	1.8V	I/O UP
34	UART0_RTSN/GPIO4_C3_U_1.8V	UART0_RTS	UART0 serial port, for BT module	1.8V	I/O UP
36	GND#22	GND	GND	GND	
38	SDIO0_D0/GPIO4_C4_U_1.8V	SDIO0_D0	sdio0 data0 input and output	1.8V	I/O UP

Interface definition

40	SDIO0_D1/GPIO4_C5_U_1.8V	SDIO0_D1	sdio0 data1 input and output	1.8V	I/O UP
42	SDIO0_D2/GPIO4_C6_U_1.8V	SDIO0_D2	sdio0 data2 input and output	1.8V	I/O UP
44	SDIO0_D3/GPIO4_C7_U_1.8V	SDIO0_D3	sdio0 data3 input and output	1.8V	I/O UP
46	SDIO0_CMD/GPIO4_D0_U_1.8V	SDIO0_CMD	sdio0 command output and reponse input	1.8V	I/O UP
48	SDIO0_CLKOUT/GPIO4_D1_D_1.8V	SDIO0_CLK	sdio0 clock	1.8V	I/O DOWN
50	GND#23	GND	GND	GND	
52	SDIO0_DET/GPIO4_D2_U_1.8V	BT_WAKE	AP wake up BT module	1.8V	I/O UP
54	SDIO0_PWR/GPIO4_D4_D_1.8V	WIFI_REG_ON	WIFI module power enable	1.8V	I/O DOWN
56	SDIO0_BKPWR/GPIO4_D5_D_1.8V	BT_RST	BT Reset	1.8V	I/O DOWN
58	SDIO0_INTN/GPIO4_D6_U_1.8V	WIFI_HOST_WAKE	WIFI module wake up AP	1.8V	I/O UP
60	GPIO4_D7_U_1.8V	BT_HOST_WAKE	BT module wake up AP	1.8V	I/O UP
62	PS2_DATA/GPIO8_A1_U_3.3V	WORK_LED	System working state refers to LED	3.3V	I/O UP
64	SC_DET/GPIO8_A2_U_3.3V	DIY_LED	User Defines LED	3.3V	I/O UP
66	SPI2_CSN1/SC_IO/GPIO8_A3_U_3.3V	COMP_INT	GSEN1 Interrupt	3.3V	I/O UP
68	I2C1_SDA/SC_RST/GPIO8_A4_U_3.3V	I2C1_SDA	I2C serial port 1,for HDMI_IN IC	3.3V	I/O UP
70	I2C1_SCL/SC_CLK/GPIO8_A5_U_3.3V	I2C1_SCL	I2C serial port 1,for HDMI_IN IC	3.3V	I/O UP
72	SPI2_CLK/SC_IO_T1/GPIO8_A6_U_3.3V	SPI2_CLK	spi serial clock	3.3V	I/O DOWN
74	SPI2_CSN0/SC_DET_T1/GPIO8_A7_U_3.3V	SPI2_CSN0	spi chip select signal,low active	3.3V	I/O UP
76	SPI2_RXD/SC_RST_T1/GPIO8_B0_D_3.3V	SPI2_RXD	spi serial data input	3.3V	I/O DOWN
78	SPI2_TXD/SC_CLK_T1/GPIO8_B1_D_3.3V	SPI2_TXD	spi serial data output	3.3V	I/O DOWN

Interface definition

80	TEST_CLKOUT/CLK_27M_T1/PMUGPIO0_C1_D_3.3V	GSEN_INT	GSEN2 Interrupt	3.3V	I/O DOWN
82	OTP_OUT/PMUGPIO0_B2_D_3.3V	PHONE_CTL	Earphone Output_EN_H	3.3V	I/O DOWN
84	PMUGPIO0_B3_D_3.3V	DVP_PWR	Camera power enable1	3.3V	I/O DOWN
86	PMUGPIO0_B4_DV	OTG_VBUS_DRV	USB OTG 5.0V Output EN		I/O DOWN
88	CLK27M_IN/PMUGPIO0_B5_D_3.3V	PWR5V_EN	Device 5.0V Power enable	3.3V	I/O DOWN
90	PMUGPIO0_B6_D_3.3V	HOST_VBUS_DRV	USB HOST 5.0V Output EN	3.3V	I/O DOWN
92	BS_JTAG_TMS_3.3V	BS_JTAG_TMS	JTAG interface TMS input/SWD interface data out	3.3V	I/O UP
94	BS_JTAG_TDI_3.3V	BS_JTAG_TDI	JTAG interface TDI input	3.3V	I/O UP
96	BS_JTAG_TCK_3.3V	BS_JTAG_TCK	JTAG interface clock input/SWD interface clock input	3.3V	I/O UP
98	BS_JTAG_TDO_3.3V	BS_JTAG_TDO	JTAG interface TDO output	3.3V	
100	EFUSE_PWREN/PMUGPIO0_A3_U_3.3V	HDMIIN_INT	HDMI_IN_INT	3.3V	
102	HDMI_HPD_1.8V	TX_HPD	HDMI_out hot plug detect signal	1.8V	
104	OTG_ID_3.3V	OTG_ID	USB_OTG ID		
106	OTG_VBUS_3.3V	OTG_DET	USB plug detect signal_IN	3.3V	
108	GND#24	GND	GND	GND	
110	HOST2_DM_1.8V	HOST2_DM	USB HOST 2.0 Data signal DM		
112	HOST2_DP_1.8V	HOST2_DP	USB HOST 2.0 Data signal DP		
114	GND#25	GND	GND	GND	
116	HOST1_DM_3.3V	HOST1_DM	USB HOST 2.0 Data signal DM		
118	HOST1_DP_3.3V	HOST1_DP	USB HOST 2.0 Data signal DP		

Interface definition

120	GND#26	GND	GND	GND	
122	OTG_DM_3.3V	OTG_DM	USB OTG 2.0 Data signal DM	3.3V	
124	OTG_DP_3.3V	OTG_DP	USB OTG 2.0 Data signal DP	3.3V	
126	GND#27	GND	GND	GND	
128	HSIC_DATA_1.0V	HSIC_DATA	HSIC DATA signal	1.0V	
130	HSIC_STROBE_1.0V	HSIC_STROBE	HSIC STROBE signal	1.0V	
132	GND#28	GND	GND	GND	
134	LCDC0_D0/LVDS_D0P/TRACE_D0_3.3V	LVDS_D0P	LVDS/TTL data lane0+	3.3V	
136	LCDC0_D1/LVDS_D0N/TRACE_D1_3.3V	LVDS_D0N	LVDS/TTL data lane0-	3.3V	
138	LCDC0_D2/LVDS_D1P/TRACE_D2_3.3V	LVDS_D1P	LVDS/TTL data lane1+	3.3V	
140	LCDC0_D3/LVDS_D1N/TRACE_D3_3.3V	LVDS_D1N	LVDS/TTL data lane1-	3.3V	
142	LCDC0_D10/LVDS_CLK0P/TRACE_D10_3.3V	LVDS_CLK0P	LVDS clock lane/TTL data lane0+	3.3V	
144	LCDC0_D11/LVDS_CLK0N/TRACE_D11_3.3V	LVDS_CLK0N	LVDS clock lane/TTL data lane0-	3.3V	
146	LCDC0_D4/LVDS_D2P/TRACE_D4_3.3V	LVDS_D2P	LVDS/TTL data lane2+	3.3V	
148	LCDC0_D5/LVDS_D2N/TRACE_D5_3.3V	LVDS_D2N	LVDS/TTL data lane2-	3.3V	
150	LCDC0_D6/LVDS_D3P/TRACE_D6_3.3V	LVDS_D3P	LVDS/TTL data lane3+	3.3V	
152	LCDC0_D7/LVDS_D3N/TRACE_D7_3.3V	LVDS_D3N	LVDS/TTL data lane3-	3.3V	
154	LCDC0_D8/LVDS_D4P/TRACE_D8_3.3V	LCD_D8	LCDC data output/input	3.3V	
156	LCDC0_D9/LVDS_D4N/TRACE_D9_3.3V	LCD_D9	LCDC data output/input	3.3V	
158	GND#29	GND	GND	GND	

Interface definition

160	LCDC0_D18/LVDS_D8P	LVDS_D8P	LCDC data output/input	3.3V	
162	LCDC0_D19/LVDS_D8N	LVDS_D8N	LCDC data output/input	3.3V	
164	GND#30	GND	GND	GND	
166	GND#31	GND	GND	GND	
168	MIPI_TX_D3P_1.8V	MIPI_TX_D3+	MIPI TX0 positive differential data line transceiver output	1.8V	
170	MIPI_TX_D3N_1.8V	MIPI_TX_D3-	MIPI TX0 negative differential data line transceiver output	1.8V	
172	MIPI_TX_D2P_1.8V	MIPI_TX_D2+	MIPI TX0 positive differential data line transceiver output	1.8V	
174	MIPI_TX_D2N_1.8V	MIPI_TX_D2-	MIPI TX0 negative differential data line transceiver output	1.8V	
176	MIPI_TX_CLKP_1.8V	MIPI_TX_CLK+	MIPI TX0 positive differential clock line transceiver output	1.8V	
178	MIPI_TX_CLKN_1.8V	MIPI_TX_CLK-	MIPI TX0 negative differential clock line transceiver output	1.8V	
180	MIPI_TX_D1P_1.8V	MIPI_TX_D1+	MIPI TX0 positive differential data line transceiver output	1.8V	
182	MIPI_TX_D1N_1.8V	MIPI_TX_D1-	MIPI TX0 negative differential data line transceiver output	1.8V	
184	MIPI_TX_D0P_1.8V	MIPI_TX_D0+	MIPI TX0 positive differential data line transceiver output	1.8V	
186	MIPI_TX_D0N_1.8V	MIPI_TX_D0-	MIPI TX0 negative differential data line transceiver output	1.8V	
188	GND#32	GND	GND	GND	
190	MIPI_RX_D3P_1.8V	MIPI_RX_D3P	MIPI RX0 positive differential data line transceiver output	1.8V	
192	MIPI_RX_D3N_1.8V	MIPI_RX_D3N	MIPI RX0 negative differential data line transceiver output	1.8V	
194	MIPI_RX_D2P_1.8V	MIPI_RX_D2P	MIPI RX0 positive differential data line transceiver output	1.8V	
196	MIPI_RX_D2N_1.8V	MIPI_RX_D2N	MIPI RX0 negative differential data line transceiver output	1.8V	
198	MIPI_RX_CLKP_1.8V	MIPI_RX_CLKP	MIPI RX0 positive differential clock line transceiver output	1.8V	

Interface definition

200	MIPI_RX_CLKN_1.8V	MIPI_RX_CLKN	MIPI RX0 negative differential clock line transceiver output	1.8V	
202	MIPI_RX_D1P_1.8V	MIPI_RX_D1P	MIPI RX0 positive differential data line transceiver output	1.8V	
204	MIPI_RX_D1N_1.8V	MIPI_RX_D1N	MIPI RX0 negative differential data line transceiver output	1.8V	
206	MIPI_RX_D0P_1.8V	MIPI_RX_D0P	MIPI RX0 positive differential data line transceiver output	1.8V	
208	MIPI_RX_D0N_1.8V	MIPI_RX_D0N	MIPI RX0 negative differential data line transceiver output	1.8V	
210	GND#33	GND	GND	GND	
212	HDMI_TX2P_1.8V	TX_D2+	HDMI positive TMDS differential line driver data output	1.8V	
214	HDMI_TX2N_1.8V	TX_D2-	HDMI negative TMDS differential line driver data output	1.8V	
216	HDMI_TX1P_1.8V	TX_D1+	HDMI positive TMDS differential line driver data output	1.8V	
218	HDMI_TX1N_1.8V	TX_D1-	HDMI negative TMDS differential line driver data output	1.8V	
220	HDMI_TX0P_1.8V	TX_D0+	HDMI positive TMDS differential line driver data output	1.8V	
222	HDMI_TX0N_1.8V	TX_D0-	HDMI negative TMDS differential line driver data output	1.8V	
224	HDMI_TXCP_1.8V	TX_C+	HDMI positive TMDS differential line driver clock output	1.8V	
226	HDMI_TXCN_1.8V	TX_C-	HDMI negative TMDS differential line driver clock output	1.8V	
228	GND#34	GND	GND	GND	
230	EDP_AUXP_1.8V	EDP_AUX+	eDP CH-AUX positive differential output	1.8V	
232	EDP_AUXN_1.8V	EDP_AUX-	eDP CH-AUX negative differential output	1.8V	
234	EDP_TX3P_1.8V	EDP_D3+	eDP data lane positive output	1.8V	
236	EDP_TX3N_1.8V	EDP_D3-	eDP data lane negative output	1.8V	
238	EDP_TX2P_1.8V	EDP_D2+	eDP data lane positive output	1.8V	

Interface definition

240	EDP_TX2N_1.8V	EDP_D2-	eDP data lane negative output	1.8V	
242	EDP_TX1P_1.8V	EDP_D1+	eDP data lane positive output	1.8V	
244	EDP_TX1N_1.8V	EDP_D1-	eDP data lane negative output	1.8V	
246	EDP_TX0P_1.8V	EDP_D0+	eDP data lane positive output	1.8V	
248	EDP_TX0N_1.8V	EDP_D0-	eDP data lane negative output	1.8V	
250	GND#35	GND	GND	GND	
252	UART1_RX/TS0_D0/GPIO5_B0_U_1.8V	UART1_RX	UART1 serial port	3.3V	I/O UP
254	UART1_TX/TS0_D1/GPIO5_B1_D_1.8V	UART1_TX	UART1 serial port	3.3V	I/O DOWN
256	UART1_CTSN/TS0_D2/GPIO5_B2_U_1.8V	UART1_CTS	UART1 serial port	3.3V	I/O UP
258	UART1_RTSN/TS0_D3/GPIO5_B3_U_1.8V	UART1_RTS	UART1 serial port	3.3V	I/O UP
260	SPI0_CLK/TS0_D4/UART4_CTSN/GPIO5_B4_U_1.8V	SPI0_CLK	spi serial clock	3.3V	I/O UP
262	SPI0_CSN0/TS0_D5/UART4_RTSN/GPIO5_B5_U_1.8V	SPI0_CSN0	spi chip select signal, low active	3.3V	I/O UP
264	SPI0_TXD/TS0_D6/UART4_TX/GPIO5_B6_D_1.8V	SPI0_TXD	spi serial data output	3.3V	I/O DOWN
266	SPI0_RXD/TS0_D7/UART4_RX/GPIO5_B7_U_1.8V	SPI0_RXD	spi serial data input	3.3V	I/O UP
268	SPI0_CSN1/TS0_SYNC/GPIO5_C0_U_1.8V	HDMIIN_RST	HDMIin reset	3.3V	I/O UP
270	TS0_VALID/GPIO5_C1_D_1.8V	BL_EN/GPIO5_C1_D	LCD panel backlight power enable	3.3V	I/O DOWN
272	TS0_CLK/GPIO5_C2_D_1.8V	LCD_HPD/GPIO5_C2_D	GPIO	3.3V	I/O DOWN
274	TS0_ERR/GPIO5_C3_D_1.8V	TP_INT/GPIO5_C3_D	GPIO	3.3V	I/O DOWN
276	POWER_ON	POWER_ON	Power on Signal Input, To Power key , active low(series connection 51K)		
278	PWR_EN_SYS	PWR_EN_SYS	SYS power enable(MCU to Core board)		

Interface definition

280	PWR_EN	PWR_EN	power enable to Core board		
282	NPOR	RESET	System hardware reset	3.3V	I/O UP
284	PMUGPIO0_B7_U/I2C0_SDA	I2C0_SDA_PMIC	I2C serial port 0,for PMIC, Core board interiorl pull up Resistor 1.5K	3.3V	I/O UP
286	PMUGPIO0_C0_U/I2C0_SCL	I2C0_SCL_PMIC	I2C serial port 0,for PMIC, Core board interiorl pull up Resistor 1.5K	3.3V	I/O UP
288	GND#36	GND	GND	GND	
290	GND#37	GND	GND	GND	
292	GND#38	GND	GND	GND	
294	GND#39	GND	GND	GND	
296	GND#40	GND	GND	GND	
298	GND#41	GND	GND	GND	
300	GND#42	GND	GND	GND	
302	GND#43	GND	GND	GND	
304	GND#44	GND	GND	GND	
306	GND#45	GND	GND	GND	
308	GND#46	GND	GND	GND	
310	GND#47	GND	GND	GND	
312	GND#48	GND	GND	GND	
G6	GND#49	GND	GND	GND	
G5	GND#50	GND	GND	GND	
G4	GND#51	GND	GND	GND	

Interface definition

G3	GND#52	GND	GND	GND	
G2	GND#53	GND	GND	GND	
G1	GND#54	GND	GND	GND	

T-CHIP INTELLIGENCE TECHNOLOGY

Contact Us
(+86)18688117175

E-mail
global@t-firefly.com

Website
www.t-firefly.com

Address
Room 2101, Hongyu Building, #57 Zhongshan 4Rd, East District, Zhongshan, Guangdong, China.