
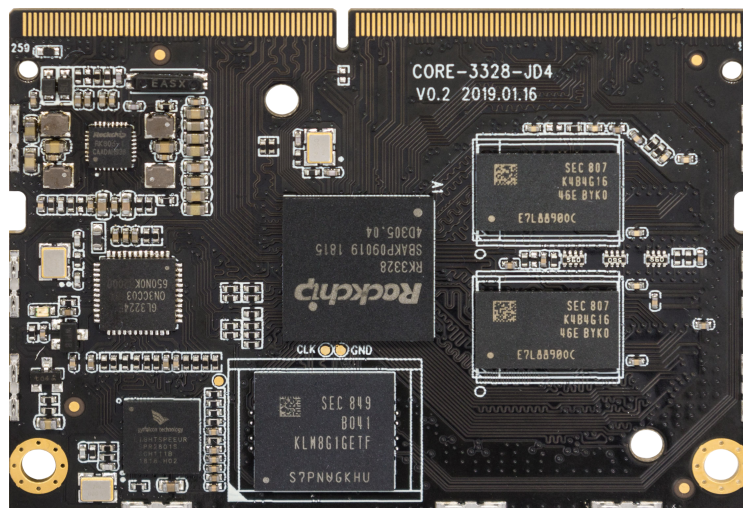


DOCTYPE	VERSION	DATE	CONFIDENTIALITY	
Specification	V1.2	2019-08-15	Public	



T-CHIP TECHNOLOGY

Quad-core 64-bit Core Board Core-3328-JD4 V1.2



Version	Date	Updated content
V1.0	2019-5-25	Original version
V1.1	2019-5-28	Update Pin Definition
V1.2	2019-8-15	Add backplane Definition



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1. Overview

1. Quad-core 64-bit Processor

Adopts RK3328 quad-core 64-bit A53 high-performance processor, integrated dual-core Mali-450 GPU. Provide a variety of storage configuration options, users only need to expand the function backplane to quickly achieve project development.

2. AI Neural Network Processor NPU

Onboard AI neural network processor SPR2801S:

Computing power up to 2.8 TOPS, peak up to 5.6Tops, 9.3Tops/W ultra-high efficiency
Support PLAI (PyTorch) and MDK (Caffe) model training tools

Follow-up support TensorFlow

Support Image Classification Model VGG-16(GNet1)、GNet18 and Gnetfc

Support Target Detection Model: SSD (Based on VGG)

3. Rich Extension Interfaces

With rich interfaces such as I2C、UART、SPI、SDIO3.0、USB2.0、USB3.0、I2S (supports 8-way digital microphone array input),etc.

4. Powerful Hardware Decoding Capability

Supports 4K VP9, 4K 10bits H265/H264, 1080P (VC-1, MPEG-1/2/4, VP8) multi-format video decoding, and 1080P (H.264/H.265) video encoding.

5. Stable And Reliable

With SODIMM 260P interface, the data transmission and expansion performance can be best achieved, immersion gold process pin, corrosion resistant, 2 studs fixed, stable and reliable. Designed measurement is only 69.6mm x 49.6mm for saving more precious space.

6. Small-scale Core board

Measurement is only 69.6mm x 49.6mm for saving more precious space. With SODIMM 260P interface, the data transmission and expansion performance can be best achieved.

7. Support For Multiple OS

Supports Android, Linux+QT, Ubuntu multiple operating system, the performance is stable and reliable

8. 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.

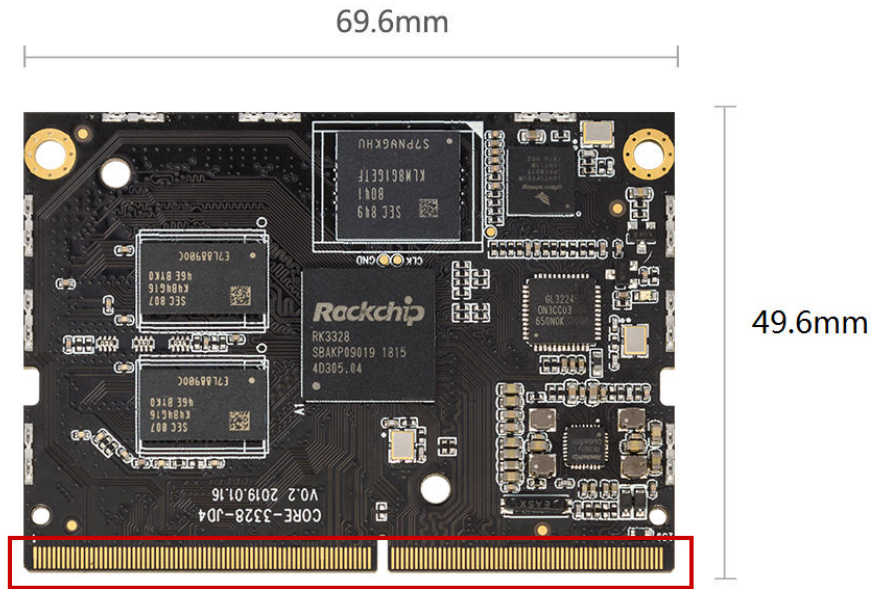
9. Application

Core-3328-JD4 is suitable for cluster servers, high-performance computing/storage, gaming equipment, commercial display equipment, medical equipment, vending machines, interactive printer, industrial computers, etc.

2. Product Specification

Specification	
SOC	Rockchip RK3328
CPU	Quad-core ARM® Cortex-A53 64-bit processor, frequency up to 1.5GHz
GPU	ARM Mali-450 MP2 GPU Support OpenGL ES1.1/2.0, OpenVG1.1
VPU	Support 4K VP9 and 4K 10bits H265/H264 video decoding, up to 60fps 1080P multi-format video decoding (WMV, MPEG-1/2/4, VP9, H.264, H.265) 1080P video coding, support H.264/H.265 Video postprocessor: de-interlacing, denoising, edge / detail / color optimization
NPU	Computing power up to 2.8 TOPS , peak up to 5.6Tops , 9.3Tops/W ultra-high efficiency Support PLAI (PyTorch) and MDK (Caffe) model training tools Follow-up support TensorFlow Support Image Classification Model VGG-16(GNet1)、 GNet18 and Gnetfc Support Target Detection Model: SSD (Based on VGG)
RAM	DDR3 (1GB / 2GB / 4GB)
Storage	eMMC 5.1 (8GB/16GB/32GB/64GB/128GB) Support MLC NAND
Hardware Features	
Ethernet	10 / 100 MbpsEthernet interface (RJ45)
WiFi	Extend WiFi & Bluetooth via SDIO3.0
Display	1 x HDMI 2.0, support 4K@60Hz output 1x TV Out, in accordance with 480i, 576i standard
Audio	1 x HDMI , for audio output 1 x 8ch I ² S /TDM, 1x8ch PDM, 1x2ch I ² S/PCM
USB	1 x OTG , 1 x USB2.0 HOST、 1xUSB3.0
Interface	4xI2C , 4xUART , 2xSPI , 8xPWM、 Support SDIO3.0
Power	DC input voltage 5V
OS / Software	
OS	Android, Linux+QT, Ubuntu
Appearance	
Size	69.6mm x 49.6 mm
Type	Gold finger (SODIMM 260P, 0.5mm pitch)
PCB	6-layer board design

3. PCB Size



0.5mm



Pin Pitch

0.15mm 0.35mm



Blank Pitch

4. Interface definition

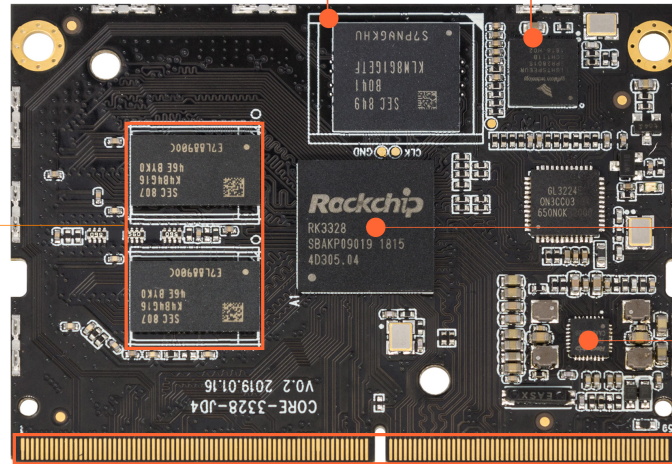
High Speed eMMC
(8GB/16GB/32GB/64GB/128GB)

NPU
(SPR2801S)

DDR3

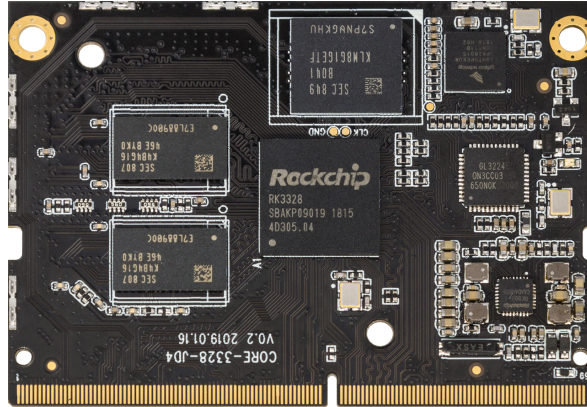
RK3328
Quad core 64 bit
1.5GHz

PMU

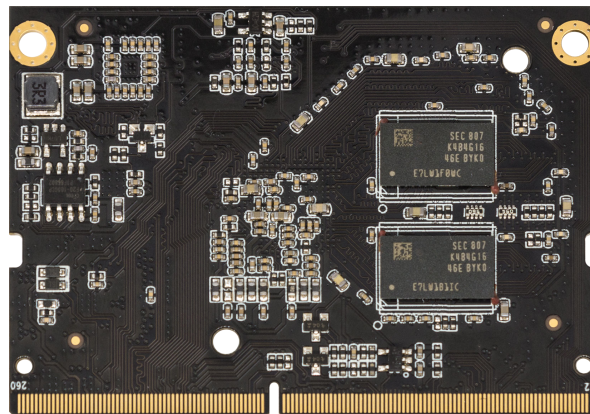


SODIMM (260P)

Pin Arrangement



1, 3, 5, 7, 9, 11 253, 255, 257, 259



260, 258, 256, 254 12, 10, 8, 6, 4, 2

PIN	Core board pin definition	Default function	Defual function description	IO Power domain	Pad type IO Pull
1	GND	GND	GND		
3	RK805_OUT2	WORK LED	System working state refers to LED	3.3V	
5	RK805_OUT1	DIY LED	User Defines LED	3.3V	
7	NC	NC	NC		
9	NC	NC	NC		
11	NC	NC	NC		
13	GND	GND	GND		
15	NC	NC	NC		
17	NC	NC	NC		
19	NC	NC	NC		
21	NC	NC	NC		
23	NC	NC	NC		
25	NC	NC	NC		
27	NC	NC	NC		
29	NC	NC	NC		
31	NC	NC	NC		
33	NC	NC	NC		
35	GND	GND	GND		
37	GPIO1_A5/SDMMC0_DET <u>n</u> _u	SDMMC0_DET	SDMMC0 detect input	1.8V/3.3V auto	I/O UP
39	GPIO1_A1/SDMMC0_D1/UART2_RX_M0 <u>_u</u>	SDMMC0_D1	SDMMC0 data port	1.8V/3.3V auto	I/O UP
41	GPIO1_A0/SDMMC0_D0/UART2_TX_M0 <u>_u</u>	SDMMC0_D0	SDMMC0 data port	1.8V/3.3V auto	I/O UP
43	GPIO1_A6/SDMMC0_CLK/TEST_CLK0 <u>_d</u>	SDMMC0_CLK	SDMMC0 clock output	1.8V/3.3V auto	I/O DOWN
45	GPIO1_A4/SDMMC0_CMD <u>_u</u>	SDMMC0_CMD	SDMMC0 command output	1.8V/3.3V auto	I/O UP
47	GPIO1_A3/SDMMC0_D3/JTAG_TMS <u>_u</u>	SDMMC0_D3/JTAG_TMS	SDMMC0 data port	1.8V/3.3V auto	I/O UP
49	GPIO1_A2/SDMMC0_D2/JTAG_TCK <u>_u</u>	SDMMC0_D2/JTAG_TCK	SDMMC0 data port	1.8V/3.3V auto	I/O UP
51	GND	GND	GND		

53	NC	NC	NC		
55	NC	NC	NC		
57	NC	NC	NC		
59	NC	NC	NC		
61	GPIO2_B4/SPI_CSN1_M0/FLASH_VOL_SEL_u	GPIO2_B4	General GPIO	3.3V	I/O UP
63	NC	NC	NC		
65	NC	NC	NC		
67	GPIO2_D0/I2C0_SCL/FEPHY_LED_LIN_K_M1_u	I2C0_SCL	I2C serial port 0, need external pull-up	3.3V	I/O UP
69	GPIO2_D1/I2C0_SDA/FEPHY_LED_DATA_M1_u	I2C0_SDA	I2C serial port 0, need external pull-up	3.3V	I/O UP
71	NC	NC	NC		
73	NC	NC	NC		
75	NC	NC	NC		
77	NC	NC	NC		
79	NC	NC	NC		
81	NC	NC	NC		
83	NC	NC	NC		
85	NC	NC	NC		
87	NC	NC	NC		
89	NC	NC	NC		
91	NC	NC	NC		
93	NC	NC	NC		
95	NC	NC	NC		
97	GPIO2_A6/PWM2_u	PWM2	LCD panel backlight brightness control output	3.3V	I/O UP
99	GPIO0_A0/CLKOUT_WIFI_M0_d	USB_HOST5V_EN	USB HOST 5V output power enable	3.3V	I/O DOWN
101	GND	GND	GND		
103	NC	NC	NC		
105	NC	NC	NC		

107	NC	NC	NC		
109	NC	NC	NC		
111	NC	NC	NC		
113	NC	NC	NC		
115	NC	NC	NC		
117	NC	NC	NC		
119	NC	NC	NC		
121	NC	NC	NC		
123	GND_11	GND	GND		
125	USB30_TXN	USB30_TXN	Super Speed Transmit negative data		
127	USB30_TXP	USB30_TXP	Super Speed Transmit positive data		
129	USB30_RXP	USB30_RXP	Super Speed receive positive data		
131	USB30_RXN	USB30_RXN	Super Speed receive negative data		
133	USB0_DP	OTG20_DP	USB2.0 Channel 0 OTG positive data		
135	USB0_DM	OTG20_DM	USB2.0 Channel 0 OTG negative data		
137	USB30_DP	USB30_DP	USB3_USB3.0 positive data		
139	USB30_DN	USB30_DM	USB3_USB3.0 negative data		
141	NC	NC	NC		
143	GND	GND	GND		
145	OTG_DET	OTG_DET	USB2.0 Channel 0 OTG device mode detection	3.3V	
147	GPIO0_A4/HDMI_HPD_d	HDMI_HPD	HDMI Port hotplug detection	3.3V	I/O DOWN
149	I2C3_SDA/HDMI_SDA_od	HDMI_SDA	I2C serial for HDMI,need external pull-up	3.3V	I/O DOWN
151	I2C3_SCL/HDMI_SCL_od	HDMI_SCL	I2C serial for HDMI,need external pull-up	3.3V	I/O DOWN
153	HDMI_CEC_u	HDMI_CEC	HDMI CEC communication	3.3V	I/O UP
155	GND14	GND	GND		
157	HDMI_TXCLKN	HDMI_TX_C-	HDMI differential pixel clock negative		
159	HDMI_TXCLKP	HDMI_TX_C+	HDMI differential pixel clock positive		

161	HDMI_TX0N	HDMI_TX_D0-	HDMI channel 0 differential serial data negative		
163	HDMI_TX0P	HDMI_TX_D0+	HDMI channel 0 differential serial data positive		
165	HDMI_TX1N	HDMI_TX_D1-	HDMI channel 1 differential serial data negative		
167	HDMI_TX1P	HDMI_TX_D1+	HDMI channel 1 differential serial data positive		
169	HDMI_TX2N	HDMI_TX_D2-	HDMI channel 2 differential serial data negative		
171	HDMI_TX2P	HDMI_TX_D2+	HDMI channel 2 differential serial data positive		
173	GND	GND	GND		
175	NC	NC	NC		
177	NC	NC	NC		
179	NC	NC	NC		
181	CODEC_AOL	AOL	Left channel output		
183	CODEC_AOR	AOR	Right channel output		
185	FEPHY_RXN	RD-	FEPHY Receive negative data		
187	FEPHY_RXP	RD+	FEPHY Receive positive data		
189	FEPHY_TXN	TD-	FEPHY Transmit negative data		
191	FEPHY_TXP	TD+	FEPHY Transmit positive data		
193	NC	NC	NC		
195	NC	NC	NC		
197	NC	NC	NC		
199	NC	NC	NC		
201	NC	NC	NC		
203	NC	NC	NC		
205	GND	GND	GND		
207	NC	NC	NC		
209	NC	NC	NC		
211	NC	NC	NC		
213	NC	NC	NC		

215	NC	NC	NC		
217	NC	NC	NC		
219	GND	GND	GND		
221	PWRON	PWRON	Power on Signal Input, External connection Power key , active low		
223	NC	NC	NC		
225	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
227	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
229	VCC_1V8	1.8V Power supply (LDO)	Output Voltage 1.8V, Rated output current 150mA		
231	NC	NC	NC		
233	VCC_5V_S	5V System power supply	Input Voltage 4.8V-5.5V		
235	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
237	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
239	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
241	GND	Power ground	Power ground		
243	GND	Power ground	Power ground		
245	GND	Power ground	Power ground		
247	GND	Power ground	Power ground		
249	GND	Power ground	Power ground		
251	VCC_SYS_1	5V System power supply	Input Voltage 4.8V-5.5V		
253	VCC_SYS_3	5V System power supply	Input Voltage 4.8V-5.5V		
255	VCC_SYS_5	5V System power supply	Input Voltage 4.8V-5.5V		
257	VCC_SYS_7	5V System power supply	Input Voltage 4.8V-5.5V		
259	VCC_SYS_9	5V System power supply	Input Voltage 4.8V-5.5V		
2	GND_2	GND	GND		
4	GPI02_C2/I2S1_SCLK/PDM_CLK_M0/TSP_D7_M1/CIF_D7_M1_d	I2S1_SCLK	I2S1 serial clock	3.3V	I/O DOWN
6	GPI02_C0/I2S1_LRCK_RX/TSP_D5_M1/CIF_D5_M1_u	I2S1_LRCK_RX	Left Right channel receive clock	3.3V	I/O UP
8	GPI02_C1/I2S1_LRCK_TX/SPDIF_TX_M1/TSP_D6_M1/CIF_D6_M1_u	I2S1_LRCK_TX	Left Right channel transmit clock	3.3V	I/O UP

10	GPI02_C3/I2S1_SDI/PDM_SDIO_M0/CARD_CLK_M1_u	I2S1_SDI	I2S1 data input	3.3V	I/O UP
12	GPI02_C7/I2S1_SDO/PDM_FSYNC_M0_u	I2S1_SDO	I2S1 data output	3.3V	I/O UP
14	GPI02_C6/I2S1_SDIO3/PDM_SDI3_M0/CARD_IO_M1_u	I2S1_SDO3	I2S1 data input/output 3	3.3V	I/O UP
16	GPI02_C5/I2S1_SDIO2/PDM_SDI2_M0/CARD_DET_M1_u	I2S1_SDO2	I2S1 data input/output 2	3.3V	I/O UP
18	GPI02_C4/I2S1_SDIO1/PDM_SDI1_M0/CARD_RST_M1_u	I2S1_SDO1	I2S1 data input/output 1	3.3V	I/O UP
20	GPI02_B7/I2S1_MCLK/TSP_SYNC_M1/CIF_CLKOUT_M1_d	I2S1_MCLK	I2S1 master clock	3.3V	I/O DOWN
22	GPI02_A4/PWM0/I2C1_SDA_u	I2C1_SDA_PMIC	I2C serial port 1,for PMIC, Core board interiorl pull up Resistor 2.2K	3.3V	I/O UP
24	GPI02_A5/PWM1/I2C1_SCL_u	I2C1_SCL_PMIC	I2C serial port 1,for PMIC, Core board interiorl pull up Resistor 2.2K	3.3V	I/O UP
26	GND_3	GND	GND		
28	GPIO_MUTE_d	SPK_MUTE	Audio Mute out control	3.3V	I/O DOWN
30	NC	NC	NC		
32	NC	NC	NC		
34	NC	NC	NC		
36	NC	NC	NC		
38	NC	NC	NC		
40	GND	GND			
42	GPI03_B0/TSP_D4/CIF_D4/SPI_CSNO_M2/I2S2_LRCK_TX_M1/USB3PHY_DEBUG8/I2S2_LRCK_RX_M1_d	WIFI_REG_ON	WIFI module power enable	3.3V	I/O DOWN
44	GPI03_A1/TSP_FAIL/CIF_HREF/SDMMC0EXT_DET/SPI_TXD_M2/USB3PHY_DEBUG2/I2S2_SDO_M1_u	WIFI_WAKE_HOST	WIFI module wake up AP	3.3V	I/O UP
46	GPI03_A6/TSP_D2/CIF_D2/SDMMC0EXT_D2/UART1_RX/USB3PHY_DEBUG6_u	SDMMC0EXT_D2	SDIO0 data port ,for WIFI module	3.3V	I/O UP
48	GPI03_A7/TSP_D3/CIF_D3/SDMMC0EXT_D3/UART1_CTSN/USB3PHY_DEBUG7_u	SDMMC0EXT_D3	SDIO1 data port ,for WIFI module	3.3V	I/O UP
50	GPI03_A0/TSP_VALID/CIF_VSYNC/SDMMC0EXT_CMD/SPI_CLK_M2/USB3PHY_DEBUG1/I2S2_SCLK_M1_u	SDMMC0EXT_CMD	SDIO0 command output ,for WIFI module	3.3V	I/O UP

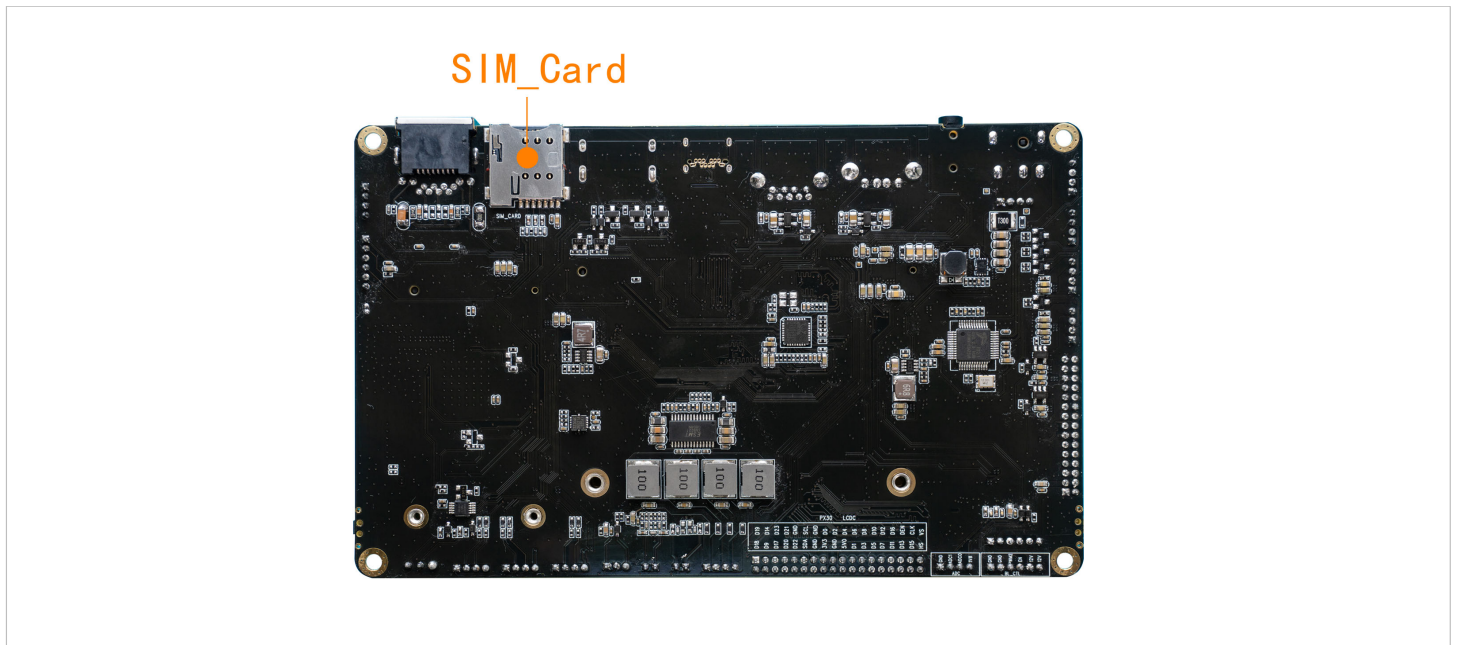
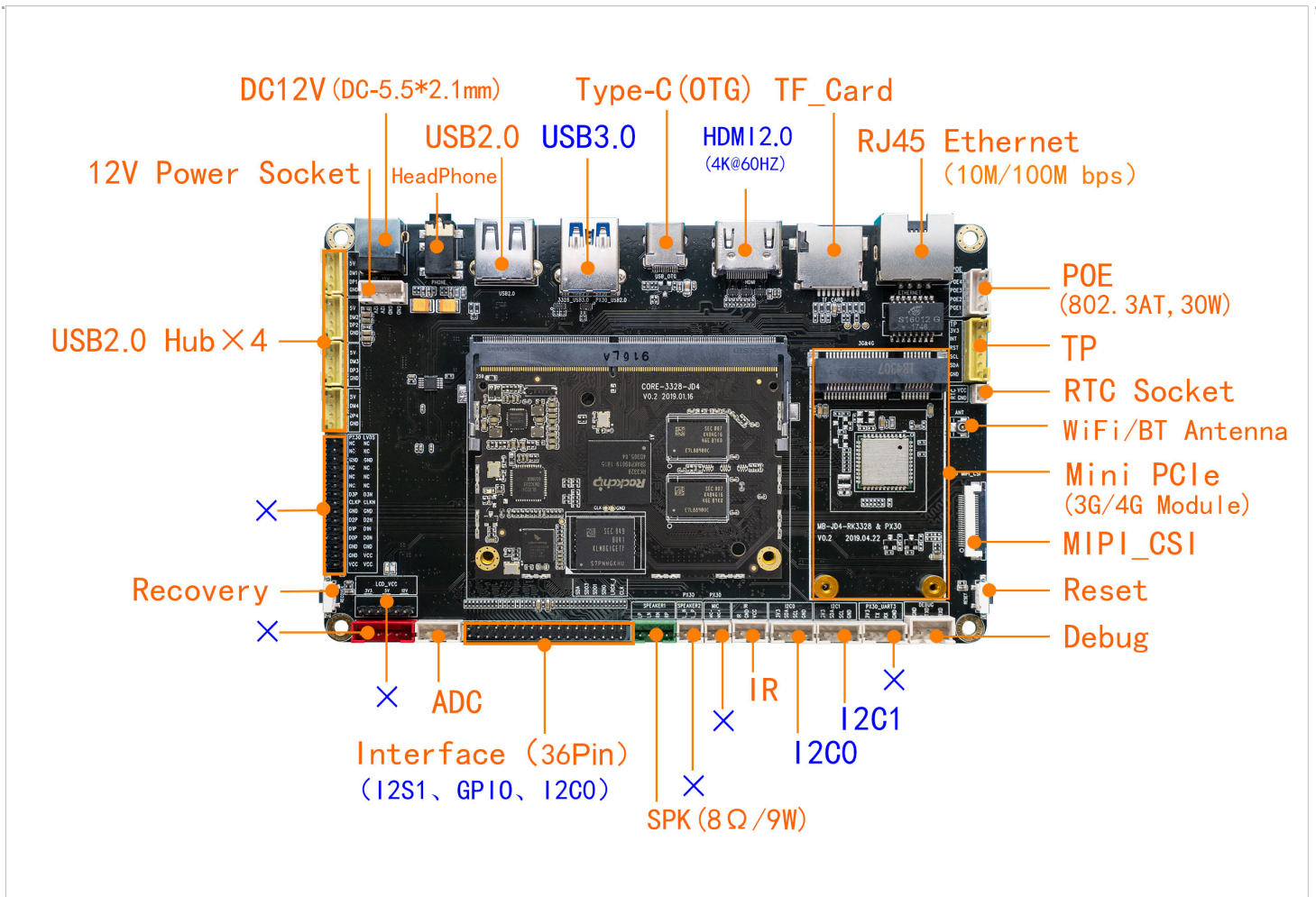
52	GPIO3_A2/TSP_CLK/CIF_CLKIN/SDMMC0EXT_CLK/SPI_RXD_M2/USB3PHY_DEBUG3/I2S2_SDI_M1_d	SDMMC0EXT_CLK	SDIO0 clock output, for WIFI module	3.3V	I/O DOWN
54	GPIO3_A4/TSP_D0/CIF_D0/SDMMC0EXT_D0/UART1_TX/USB3PHY_DEBUG4_u	SDMMC0EXT_D0	SDIO0 data port ,for WIFI module	3.3V	I/O UP
56	GPIO3_A5/TSP_D1/CIF_D1/SDMMC0EXT_D1/UART1_RTSN/USB3PHY_DEBUG5_u	SDMMC0EXT_D1	SDIO0 data port ,for WIFI module	3.3V	I/O UP
58	GND	GND	GND		
60	RK805_32KOUT	RK805_32KOUT	32.768K clock output to WIFI	3.3V	
62	GPIO2_A3/EFUSE_PWREN/POWERSTATE3_u	BT_REG_ON_H	BT module power enable	3.3V	I/O UP
64	NC	NC	NC		
66	NC	NC	NC		
68	NC	NC	NC		
70	NC	NC	NC		
72	VCC_18	NC	NC		
74	GPIO1_D2/I2S2_LRCK_RX_M0/CLKOUT_GMAC_M2/PDM_SDI3_M1_d	BT_HOST_WAKE_L	BT module wake up AP	3.3V	I/O DOWN
76	NC	NC	NC		
78	NC	NC	NC		
80	NC	NC	NC		
82	GPIO1_D4/CLK32KOUT_M1_d	GPIO1_D4	General GPIO	3.3V	I/O DOWN
84	NC	NC	NC		
86	NC	NC	NC		
88	NC	NC	NC		
90	NC	NC	NC		
92	NC	NC	NC		
94	NC	NC	NC		
96	NC	NC	NC		
98	GPIO0_D6/FEPHY_LED_SPEED10/SDMMC0_PWREN_M1_d	SDMMC0_PWREN	SD/TF Card Power control	3.3V	I/O DOWN

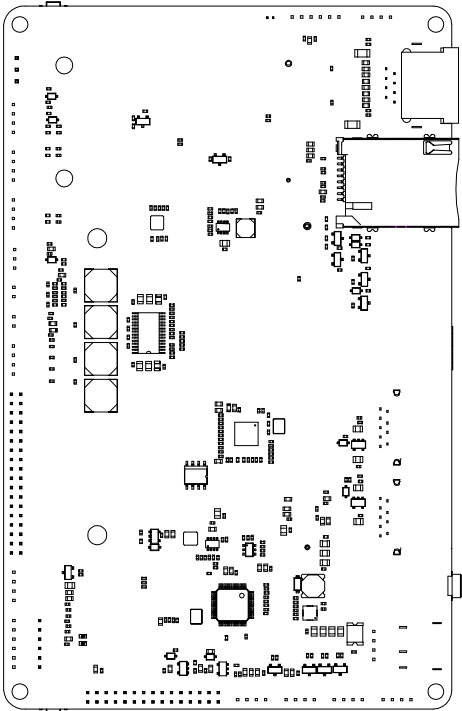
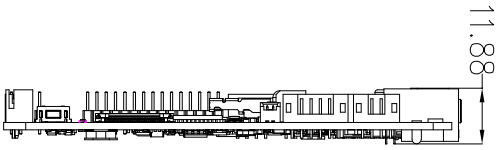
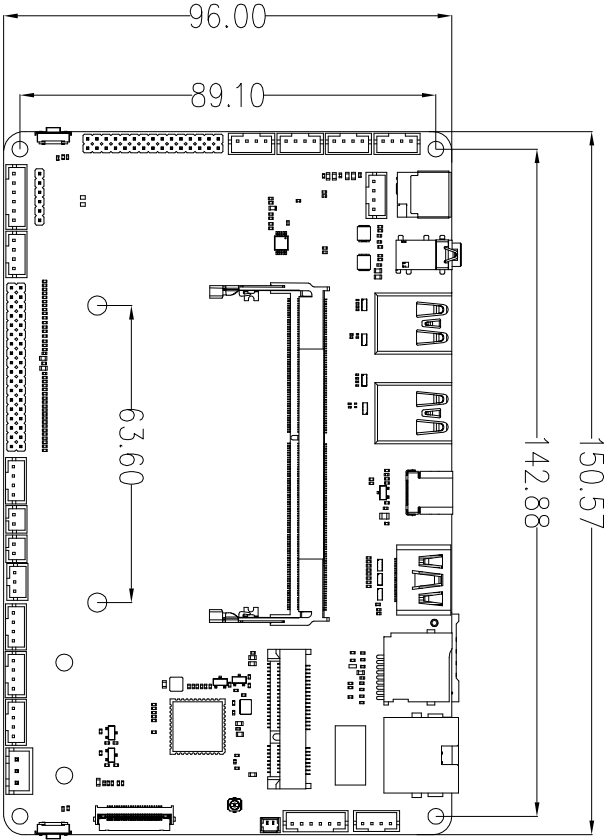
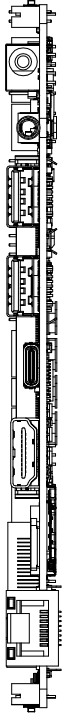
100	GPIO2_A1/UART2_RX_M1/POWERST ATE1_u	UART2_RX	Uart2 serial port data input, for AP debug	3.3V	I/O UP
102	GPIO2_A0/UART2_TX_M1/POWERST ATE0_d	UART2_TX	Uart2 serial port data output ,for AP debug	3.3V	I/O DOWN
104	NC	NC	NC		
106	GPIO2_A2/IR_RX/POWERSTATE2_u	IR_RX	Infrared Radiation signal receive	3.0V	I/O UP
108	NC	NC	NC		
110	NC	NC	NC		
112	GND	GND	GND		
114	NC	NC	NC		
116	NC	NC	NC		
118	NC	NC	NC		
120	NC	NC	NC		
122	VDAC_IOUT	VDAC_IOUT	VDAC_IOUT		
124	NC	NC	NC		
126	NC	NC	NC		
128	NC	NC	NC		
130	NC	NC	NC		
132	GND_12	GND	GND		
134	NC	NC	NC		
136	NC	NC	NC		
138	NC	NC	NC		
140	NC	NC	NC		
142	NC	NC	NC		
144	NC	NC	NC		
146	NC	NC	NC		
148	NC	NC	NC		
150	SARADC_IN1	ADC_IN1	Battery voltage input, Board ID detect input,Core board interiorl pull up Resistor 10K	1.8V	
152	RECOVER	RECOVER	AD keyboard input, Core board interiorl pull up Resistor 10K	1.8V	

154	NC	NC	NC		
156	NC	NC	NC		
158	NC	NC	NC		
160	NC	NC	NC		
162	NC	NC	NC		
164	NC	NC	NC		
166	NC	NC	NC		
168	NC	NC	NC		
170	GND	GND	GND		
172	NC	NC	NC		
174	NC	NC	NC		
176	NC	NC	NC		
178	NC	NC	NC		
180	GND	GND	GND		
182	GPIO1_C3/SDMMC1_DET/GMAC_MDIO_M1/PDM_FSYNC_M1_u	MAC_MDIO	GAMC management data	3.3V	I/O UP
184	GPIO1_C7/I2S2_LRCK_TX_M0/GMAC_MDC_M1/PDM_SDIO_M1_d	MAC_MDC	GMAC management data clock	3.3V	I/O DOWN
186	GPIO1_B4/SDMMC1_CLK/GMAC_TXCLK_M1_d	PHY_TXCLK	GMAC transmit clock	3.3V	I/O DOWN
188	GPIO1_B5/SDMMC1_CMD/GMAC_RXCLK_M1_u	MAC_RXCLK	GMAC receive clock	3.3V	I/O UP
190	GND	GND	GND		
192	GPIO1_C5/I2S2_MCLK/GMAC_CLK_M1_d	MAC_CLK	GMAC reference clock input/output	3.3V	I/O DOWN
194	GPIO1_B2/UART0_RTSM/GMAC_RXD1_M1_d	MAC_RXD1	GMAC receive data 1	3.3V	I/O DOWN
196	GPIO1_B6/SDMMC1_D0/GMAC_RXD3_M1_u	MAC_RXD3	GMAC receive data 3	3.3V	I/O UP
198	GPIO1_B3/UART0_CTSN/GMAC_RXD0_M1_d	MAC_RXD0	GMAC receive data 0	3.3V	I/O DOWN
200	GPIO1_B7/SDMMC1_D1/GMAC_RXD2_M1_u	MAC_RXD2	GMAC receive data 2	3.3V	I/O UP
202	GPIO1_C6/I2S2_SCLK_M0/GMAC_RXDV_M1/PDM_CLK_M1_u	MAC_RXDV	GMAC receive data valid	3.3V	I/O UP
204	GPIO1_B1/UART0_TX/GMAC_TXD0_M1_u	PHY_TXD0	GMAC transmit data 0	3.3V	I/O UP
206	GPIO1_C1/SDMMC1_D3/GMAC_TXD2_M1_u	PHY_TXD2	GMAC transmit data 2	3.3V	I/O UP

208	GPIO1_C0/SDMMC1_D2/GMAC_TXD3_M1_u	PHY_TXD3	GMAC transmit data 3	3.3V	I/O UP
210	GPIO1_B0/UART0_RX/GMAC_TXD1_M1_u	PHY_TXD1	GMAC transmit data 1	3.3V	I/O UP
212	GPIO1_D1/I2S2_SDO_M0/GMAC_TXEN_N_M1/PDM_SDI2_M1_d	PHY_TXEN	GMAC transmit enable	3.3V	I/O DOWN
214	NC	NC	NC		
216	GPIO1_C2/SDMMC1_PWREN/GMAC_CRD_M1_d	PHY_RST	Ethernet phy reset , active low	3.3V	I/O DOWN
218	NPOR_u	RESET	system reset signal Input, External connection Reset key, active low		
220	POWER_EN	POWER_EN	External Power enable output, Voltage 5V		
222	NC	NC	NC		
224	GND	Power ground	Power ground		
226	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
228	VCC_1V8	1.8V Power supply (LDO)	Output Voltage 1.8V, Rated output current 150mA		
230	NC	NC	NC		
232	VCC_RTC	RTC Power supply	Input Voltage 3V–5.5V		
234	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
236	NC	NC	NC		
238	VCC_IO	3.3V Power supply (DCDC)	Output Voltage 3.3V, Rated output current 1A		
240	GND	Power ground	Power ground		
242	GND	Power ground	Power ground		
244	GND	Power ground	Power ground		
246	GND	Power ground	Power ground		
248	GND	Power ground	Power ground		
250	GND	Power ground	Power ground		
252	VCC_SYS_2	5V System power supply	Input Voltage 4.8V–5.5V		
254	VCC_SYS_4	5V System power supply	Input Voltage 4.8V–5.5V		
256	VCC_SYS_6	5V System power supply	Input Voltage 4.8V–5.5V		
258	VCC_SYS_8	5V System power supply	Input Voltage 4.8V–5.5V		
260	VCC_SYS_10	5V System power supply	Input Voltage 4.8V–5.5V		

5. Backplane







Appendix:

1. Company Profile

T-Chip Intelligent Technology Co., Ltd. was founded in 2005. It has more than 10 years of research and development experience in scientific and technological products, has 6 invention patents and more than 30 computer software copyrights, and is a national high-tech enterprise. We focus on the research and development, design, production and sales of open source intelligent hardware, internet of things and digital audio products, and provide the overall solution for intelligent hardware products meanwhile.



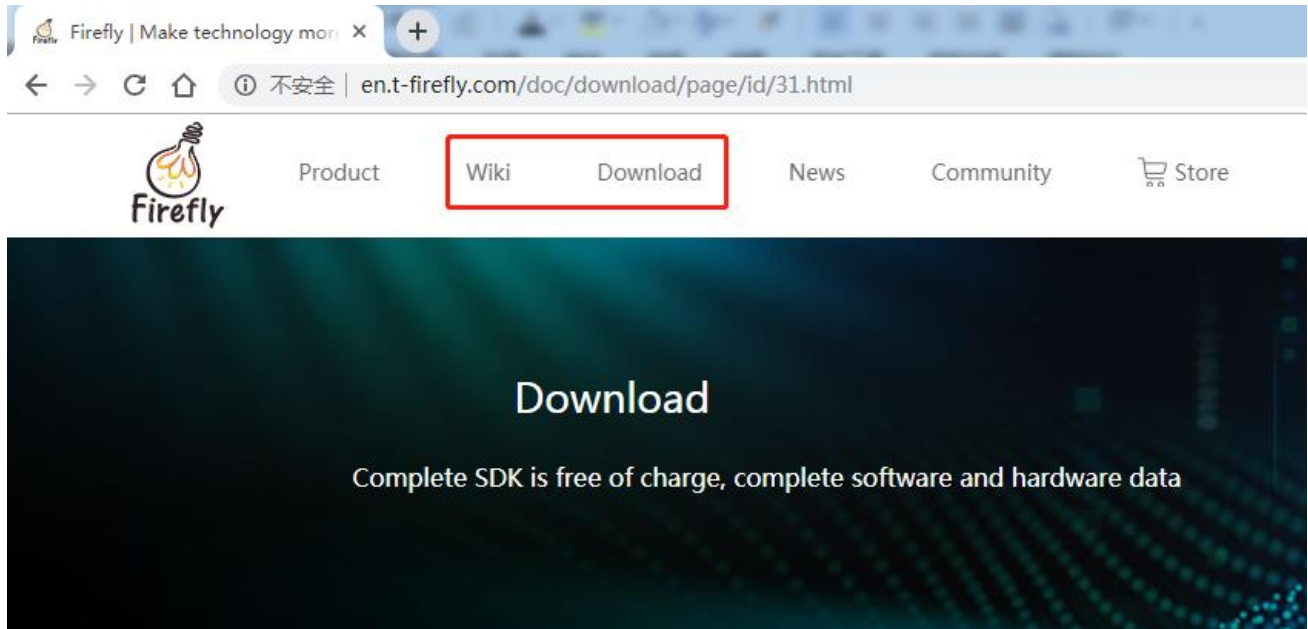
Firefly is a brand owned by T-chip Technology. It operates open source products, open source communities and online stores. It has a large number of enterprise users and developer users, and its products are well received by users. Firefly open source products include open source boards, core boards, industry mainboards, etc. The open-source board series is the recommended board card by chip original factory Rockchip and obtain the support of native SDK. The core boards and industrial mainboards are widely used in commercial displays, advertisement integrated machines, intelligent POS, face recognition terminals, internet of things, intelligent cities, etc. At present, there are more than 100,000 users, including over 2,000 enterprise users. And well-known users include ARM, Google, Baidu, Tencent, Alibaba, etc.

Firefly team has more than 60 research and development members and has the research and development capabilities in schematic design, PCB layout, mainboard production, embedded development, system development, application program development, etc., which accelerates the research and development process for many technology entrepreneurs and start-ups, and provides professional technical services..

" Make technology more simple, Make life more intelligent " is the idea of Firefly team. We hope to make the research and development of various technology products efficient and simple, and let intelligent technology integrate in our lives through the open source products and technical services of Firefly.

2. Source code acquisition

Please visit the official website : ([please click here](#))



3.Contact Us



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