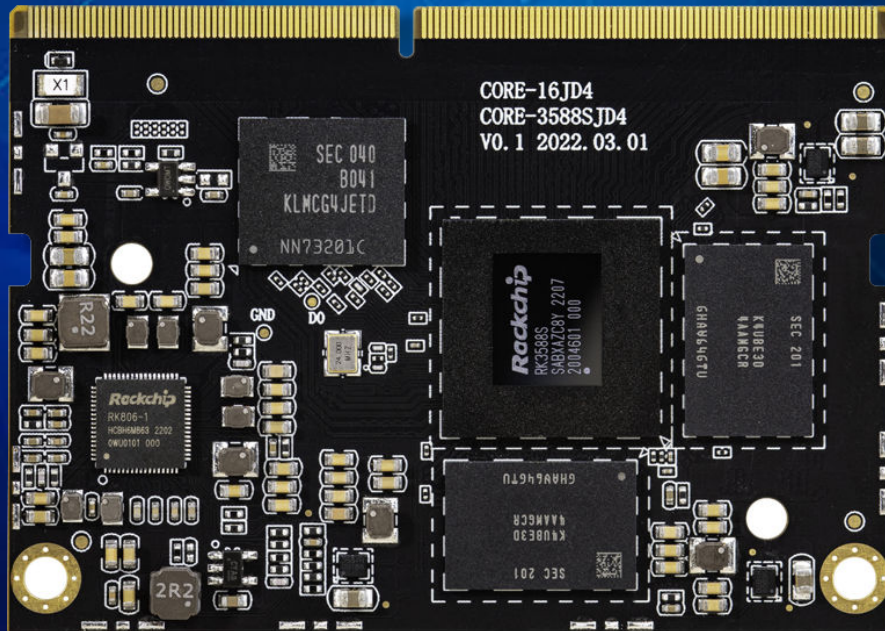


Core-3588SJD4

8-Core 8K AI Core Board

V0.1



T-CHIP INTELLIGENCE TECHNOLOGY CO.,LTD.
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| Update history

Version	Date	Details
V1.0	2022-5-18	initial version

| Directory

1. Overview.....	4
2. Technical Parameter.....	7
3. Dimensions.....	8
4. Interface definition.....	9
5. About us	14

Overview

Powered by Rockchip RK3588S new-gen 8-core 64-bit processor, the core board can be configured with up to 32GB RAM. Capable of 8K video encoding and decoding, it provides abundant interfaces, supporting multiple hard disks, Gigabit Ethernet and dual-band WiFi6. It also supports various operating systems. Backplane reference design is provided for users to make further customization.

RK3588S a new generation of high-end processor

RK3588S is Rockchip's new-gen flagship AIoT SoC with 8nm lithography process. Equipped with 8-core 64-bit CPU, it has frequency up to 2.4GHz. Integrated with ARM Mali-G610 MP4 quad-core GPU and built-in AI accelerator NPU, it provides 6Tops computing power and supports mainstream deep learning frameworks. The powerful RK3588S can deliver more optimized performance in various AI application scenarios.

8K video encoding and decoding

The core board supports 8K@60fps H.265/VP9 video decoding and 8K@30fps H.265/H.264 video encoding, and also supports encoding and decoding simultaneously — up to 32-channel 1080P@30fps decoding and 16-channel 1080P@30fps encoding can be achieved. The strong video encoding and decoding capability makes 8K HD display and delicate picture quality available.



Super-large 32GB RAM

Up to 32GB of super-large RAM can be configured, which exceeds the limit of the previous RAM and delivers a faster response speed. It can meet the application requirements of products with large RAM and large storage.

RK3588S		32GB
RK3568		8GB
RK3399		4GB

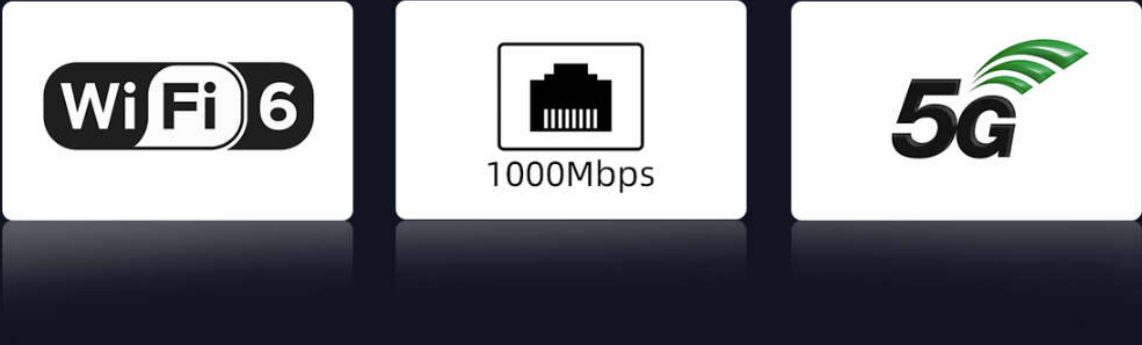
Multi-channel input and output

It supports HDMI 2.1 (8K), DP1.4 (8K), and dual MIPI-DSI multi-channel video output — up to four-screen output with different displays can be achieved. Dual MIPI-CSI camera input is also supported.



Strong network communication capability

Integrated with PCIe/GMAC/SDIO3.0/USB3.0, it can be extended to Gigabit Ethernet, WiFi 6/Bluetooth, 5G/4G LTE, enabling network communication have a higher speed.



Multiple hard disks, Massive capacity

PCIe2.1 and SATA3.0 interfaces can be connected with multiple SSD/HDD mass storage devices at the same time, making it a reality that the device can be easily expanded with TB storage capacity.



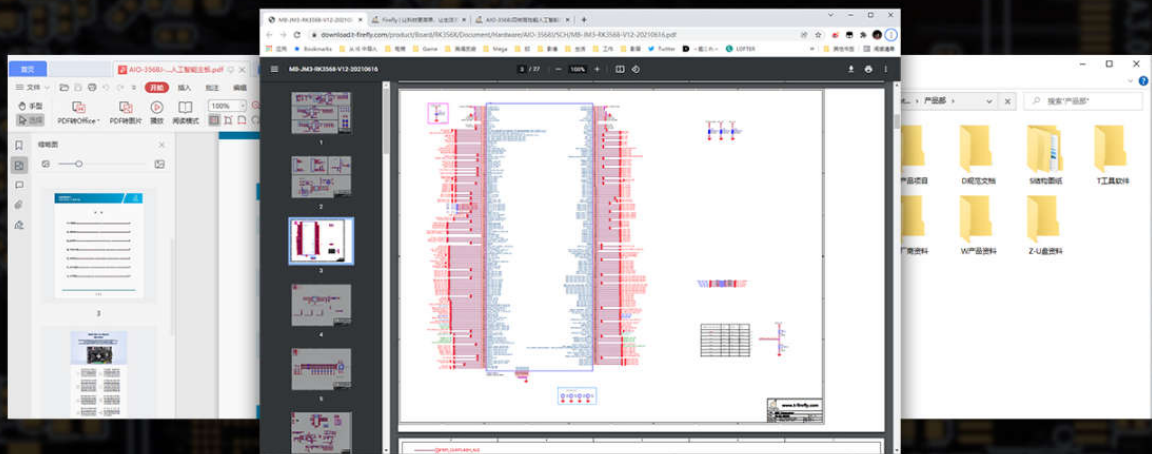
A variety of interfaces

SATA3.0, PCIe2.1, I2S, I2C, CAN, UART, SPDIF, SDIO3.0, MIPI-CSI, MIPI-DSI, USB3.0, USB2.0, SPI and GPIO are configured.



Provide backplane reference design

Backplane reference design and complete technical information are provided, so users can efficiently proceed with secondary development to quickly create independent and controllable products.



Support various operating systems

Android 12.0, Ubuntu Desktop version and Server version, Debian11, Buildroot, Kylin and UOS are supported. It supports RTLinux, delivering excellent real-time performance. UEFI Boot is also available. The reliable operation provides a safe and stable system environment for product research and production.



Abundant resources

SDK, tutorials, tech docs and development tools are provided, making development simpler and more convenient.



A wide range of applications

The core board can be widely used in edge computing, Artificial Intelligence, cloud computing, VR/AR, blockchain, smart security, smart home, intelligent retail and smart industry.



Specification

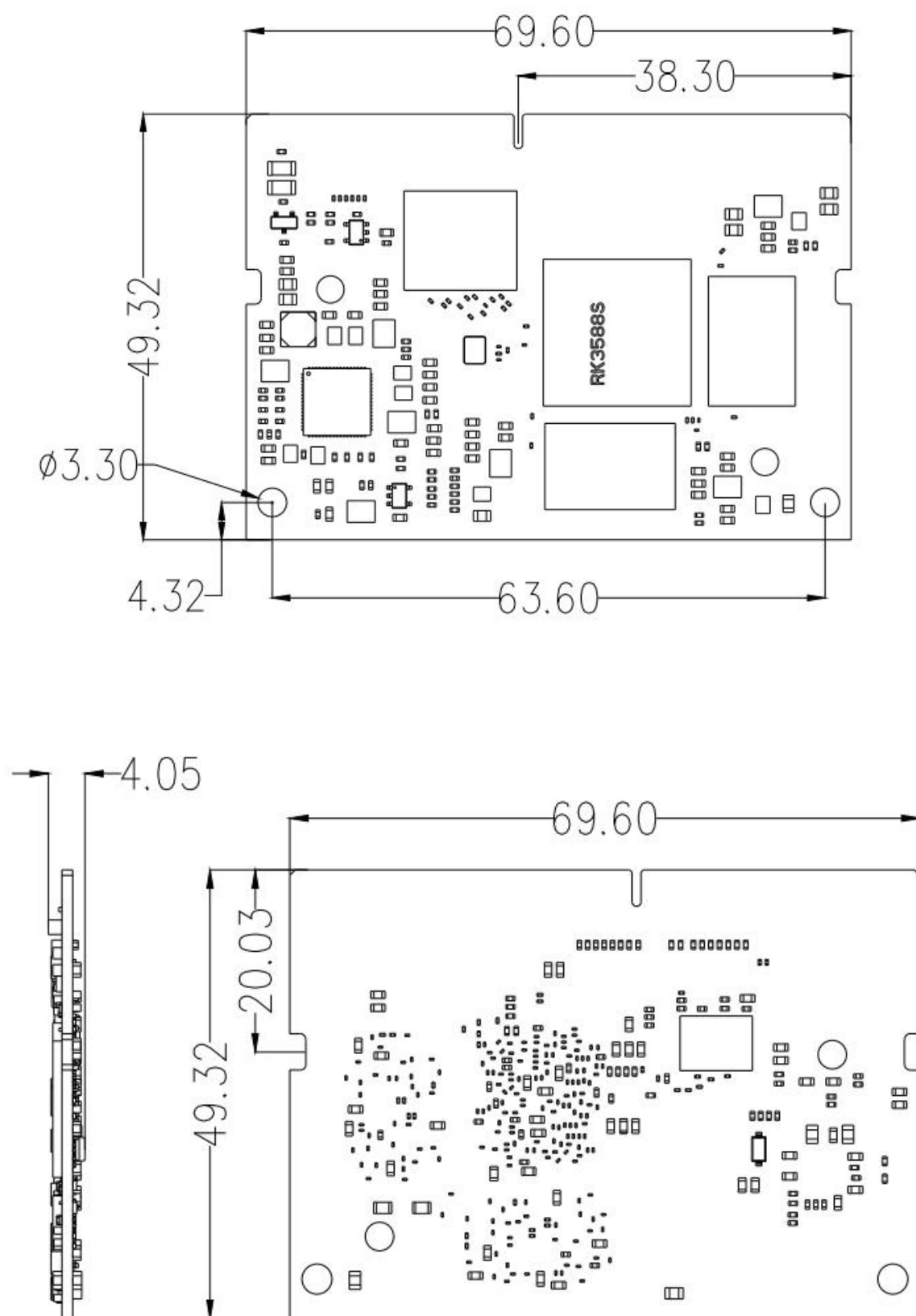
Basic Specifications	
SOC	RockChip RK3588S
CPU	8-core 64-bit (4×Cortex-A76+4×Cortex-A55), 8nm lithography process, frequency up to 2.4GHz
GPU	ARM Mali-G610 MP4 quad-core GPU Support OpenGL ES3.2 / OpenCL 2.2 / Vulkan1.1, 450 GFLOPS
NPU	NPU computing power up to 6 TOPS, Support INT4/INT8/INT16 mixed operation, Support framework switching of TensorFlow / MXNet / PyTorch / Caffe
ISP	Integrated 48MP ISP with HDR&3DNR
VPU	Video decoding: 8K@60fps H.265/VP9/AVS2 8K@30fps H.264 AVC/MVC 4K@60fps AV1 1080P@60fps MPEG-2/-1/VC-1/VP8 Video encoding: 8K@30fps encoding, support H.265 / H.264 *Achieve up to 32-channel 1080P@30fps decoding and 16-channel 1080P@30fps encoding
RAM	4GB/8GB/16GB 64bit LPDDR4/LPDDR4x/LPDDR5 （Up to 32GB optional）
Storage	16GB/32GB/64GB/128GB eMMC

Hardware Specifications	
Network	Integrated GMAC/SDIO3.0/USB3.0 interface, can be expanded with GbE, WiFi6/Bluetooth and 5G/4G LTE
Video Output	1 × HDMI2.1 (8K@60fps or 4K@120fps) 2 × MIPI-DSI (4K@60fps) 1 × DP1.4 (8K@30fps) 2 × eDP1.3 (4K@60Hz) 1 × BT.1120 (1080@60fps) * Up to four-screen output with different displays can be achieved.
Video input	2 × MIPI DC (4 Lane DPHY v2.0 or 3 Lane CPHY V1.1) 1 × MIPI CSI (4 Lane) or 2×MIPI CSI (2 Lane) 1 × DVP camera interface (up to 150MHz data input)
Audio	2 × 8 Lane I2S 2 × 2 Lane I2S 2 × SPDIF 2 × 8 Lane PDM (support multi-Mic array) 1 × dual-channel digital audio codec (16-bit DAC) 1 × VAD
PCIE	2 × PCIe2.0
SATA	2 × SATA3.0
USB	3 × USB3.0、2 × USB2.0 Host 1 × USB2.0 OTG
Power	4V (voltage deviation±5%)
Other	9 × I2C、10 × UART、5 × SPI、12 × ADC 、3 × CAN、16 × PWM 、1 × SDMMC、Multiple GPIO

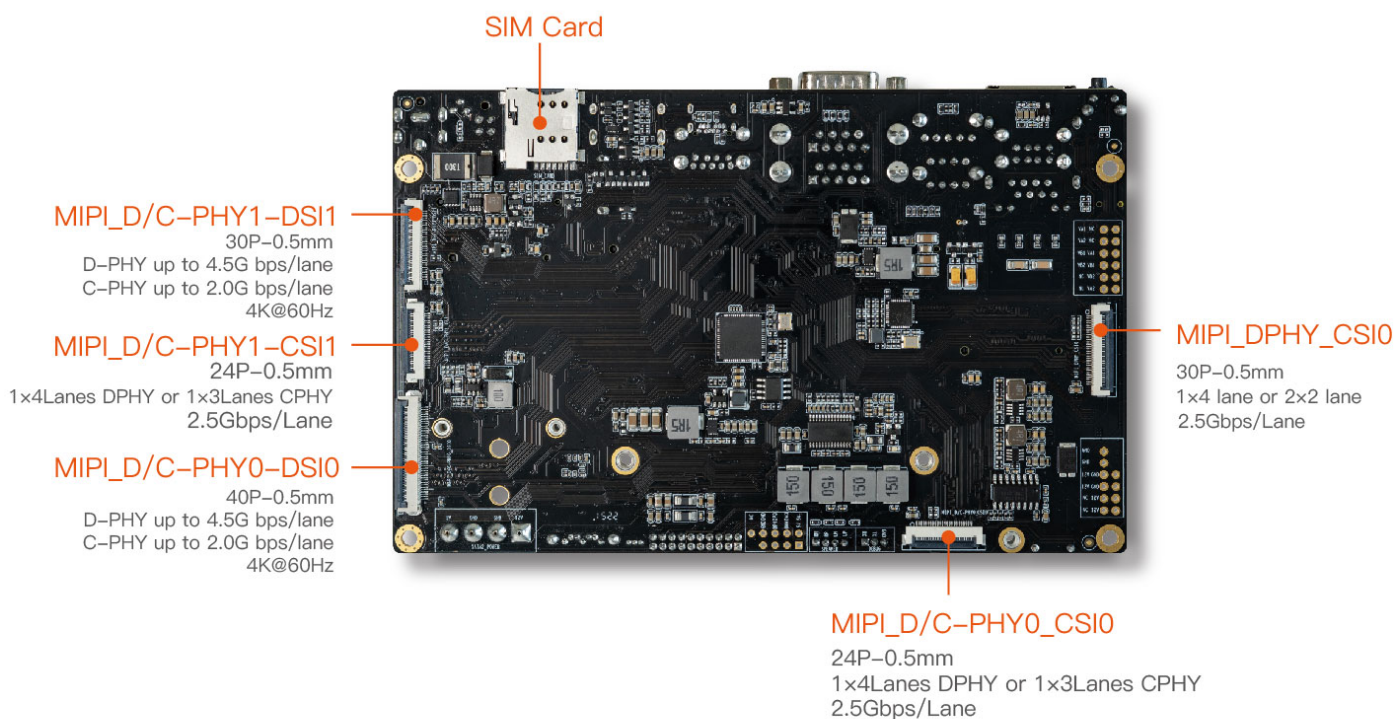
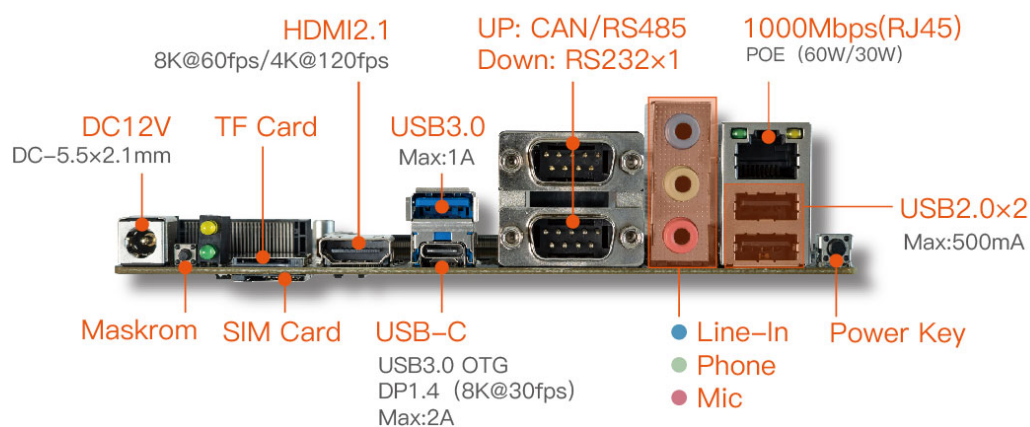
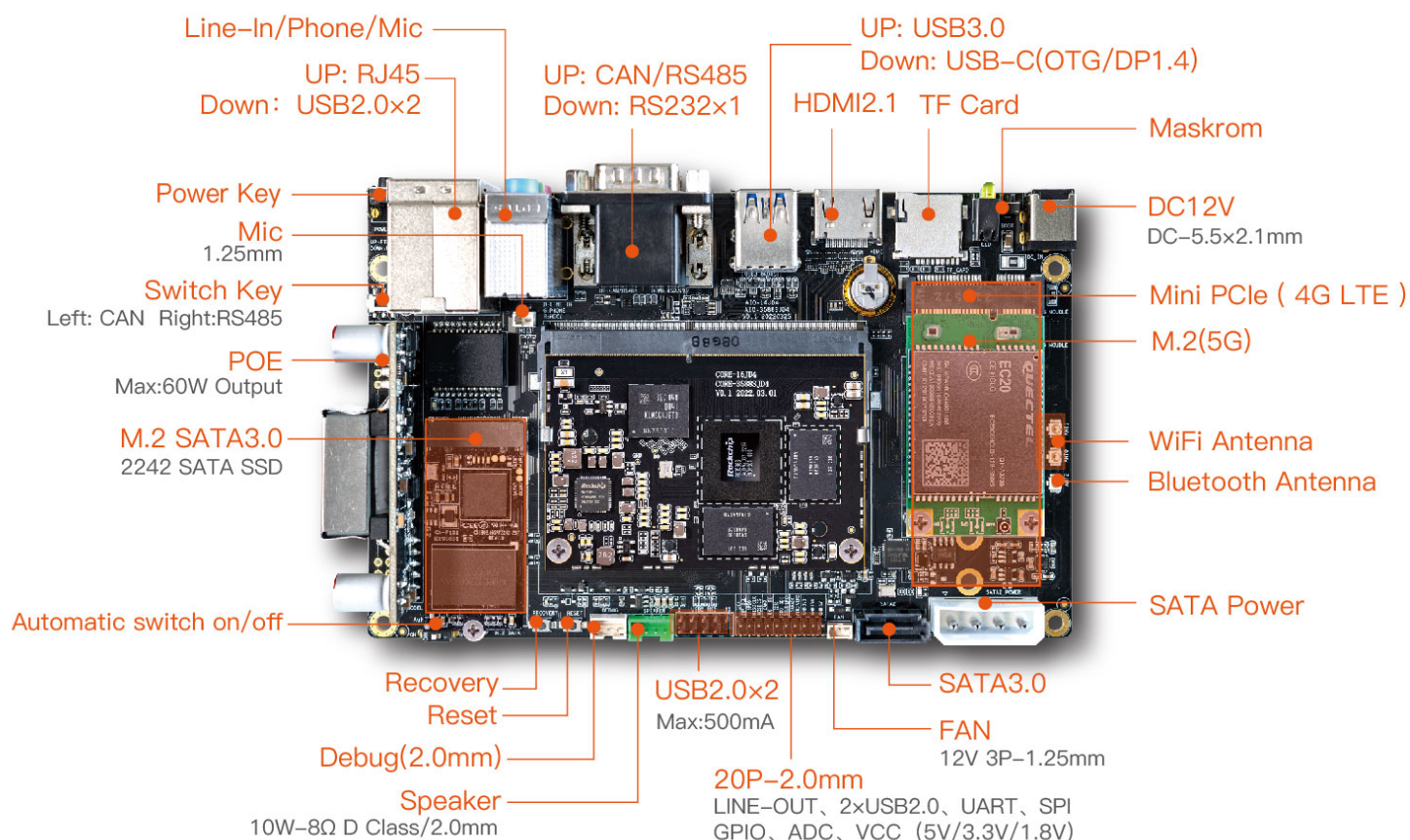
OS/Software	
OS	Android：Android 12.0 Linux：Ubuntu Desktop, Ubuntu Server, Debian11, Buildroot, RTLinux Kylin Linux, UOS, etc. *Supports UEFI Boot

General	
Size	69.6mm × 49.3mm
Weight	≈50g (no peripheral devices)
Interface Type	SODIMM (260 PIN, 0.5mm pitch)
Heat Dissipation	cooling fan (Click to view)
Power Consumption	Typical: ≈1.6W(4.0V/400mA) Max: ≈12W(4.0V/3A)
Environment	Operating Temperature: -20℃～60℃ Storage Temperature: -20℃～70℃ Storage Humidity: -40%～70 %

Dimension



Mainboard



Interface Definition

Pad types: I = input, O = output, I/O = input/output (bidirectional) , ;A/O=Analog Input/Output; G= Ground ,
P = power supply , DOWN = Internal pull down , UP = Internal pull UP L = Lowe Level H = High level"

PIN	CORE-3588SJD4 pin definition	RK3588S Pin NO.	Pad type	IO Pull	Function for Main BOARD(MB-JD4-RK3588S)	Defual function description	IO Power domain
1	GND			G	GND	GND	GND
3	CIF_D3/BT1120_D3/I2S1_SCLK_M0/DDRPHY_CH0_DTB_3/UART0_TX_M2/GPIO4_A3_d	AY19	DWON	I/O	UART0_TX_M2	UART0_TX_M2	3.3V
5	CIF_CLKOUT/BT1120_D10/I2S1_SDO3_M0/DP0_HPDI_N_M0/SP_DIF0_TX_M1/DDRPHY_CH3_DTB0/UART9_TX_M1/PWM11_IR_M1/GPIO4_B4_u	AV27	UP	I/O	I2S1_SDO3_M0	I2S1_SDO3_M0	3.3V
7	GND			G	GND	GND	GND
9	USB20_HOST0_DM	AV6		AI/O	USB20_HOST0_DM	USB20_HOST0_DM	3.3V
11	USB20_HOST0_DP	AW6		AI/O	USB20_HOST0_DP	USB20_HOST0_DP	3.3V
13	USB20_HOST1_DM	AW7		AI/O	USB20_HOST1_DM	USB20_HOST1_DM	3.3V
15	USB20_HOST1_DP	AV7		AI/O	USB20_HOST1_DP	USB20_HOST1_DP	3.3V
17	TYPEC1_USB20_OTG_DM	AY10		AI/O	TYPEC0_OTG_DM	TYPEC0_OTG_DM (System update)	3.3V
19	TYPEC0_USB20_OTG_DP	AY11		AI/O	TYPEC0_OTG_DP	TYPEC0_OTG_DP (System update)	3.3V
21	GND			G	GND	GND	GND
23	HDMI_TX0_SBDN/EDP_TX0_AUXN	AY1		I	HDMI0_TX_SBDN	HDMI0_TX_SBDN	1.8V
25	HDMI_TX0_SBDP/EDP_TX0_AUXP	BA1		I	HDMI0_TX_SBDP	HDMI0_TX_SBDP	1.8V
27	HDMI_TX0_D3N/EDP_TX0_D3N	BB2		O	HDMI0_TX3N	HDMI0_TX3N	1.8V
29	HDMI_TX0_D3P/EDP_TX0_D3P	BA2		O	HDMI0_TX3P	HDMI0_TX3P	1.8V
31	HDMI_TX0_D0N/EDP_TX0_D0N	BA4		O	HDMI0_TX0N	HDMI0_TX0N	1.8V
33	HDMI_TX0_D0P/EDP_TX0_D0P	BB4		O	HDMI0_TX0P	HDMI0_TX0P	1.8V
35	HDMI_TX0_D1N/EDP_TX0_D1N	BB5		O	HDMI0_TX1N	HDMI0_TX1N	1.8V
37	HDMI_TX0_D1P/EDP_TX0_D1P	BA5		O	HDMI0_TX1P	HDMI0_TX1P	1.8V
39	HDMI_TX0_D2N/EDP_TX0_D2N	BA7		O	HDMI0_TX2N	HDMI0_TX2N	1.8V
41	HDMI_TX0_D2P/EDP_TX0_D2P	BB7		O	HDMI0_TX2P	HDMI0_TX2P	1.8V
43	GND			G	GND	GND	GND
45	TYPEC0_SSRX1N/DP0_TX0N	BA10		AI/O	TYPEC0_SSRX1N	TYPEC0_SSRX1N	1.8V
47	TYPEC0_SSRX1P/DP0_TX0P	BB10		AI/O	TYPEC0_SSRX1P	TYPEC0_SSRX1P	1.8V
49	TYPEC0_SSTX1P/DP0_TX1P	BB11		AI/O	TYPEC0_SSTX1P	TYPEC0_SSTX1P	1.8V
51	TYPEC0_SSTX1N/DP0_TX1N	BA11		AI/O	TYPEC0_SSTX1N	TYPEC0_SSTX1N	1.8V
53	TYPEC0_SSRX2N/DP0_TX2N	BA13		AI/O	TYPEC0_SSRX2N	TYPEC0_SSRX2N	1.8V
55	TYPEC0_SSRX2P/DP0_TX2P	BB13		AI/O	TYPEC0_SSRX2P	TYPEC0_SSRX2P	1.8V
57	TYPEC0_SSTX2P/DP0_TX3P	BB14		AI/O	TYPEC0_SSTX2P	TYPEC0_SSTX2P	1.8V
59	TYPEC0_SSTX2N/DP0_TX3N	BA14		AI/O	TYPEC0_SSTX2N	TYPEC0_SSTX2N	1.8V
61	GND			G	GND	GND	GND
63	MIPI_DPHY1_TX_D0N/MIPI_CPHY1_TX_TRIO0_A	BA16		O	MIPI_DPHY1_TX_D0N	MIPI_DPHY1_TX_D0N	1.8V
65	MIPI_DPHY1_TX_D0P/MIPI_CPHY1_TX_TRIO0_B	BB16		O	MIPI_DPHY1_TX_D0P	MIPI_DPHY1_TX_D0P	1.8V
67	MIPI_DPHY1_TX_D1N/MIPI_CPHY1_TX_TRIO0_C	BB17		O	MIPI_DPHY1_TX_D1N	MIPI_DPHY1_TX_D1N	1.8V
69	MIPI_DPHY1_TX_D1P/MIPI_CPHY1_TX_TRIO1_A	BA17		O	MIPI_DPHY1_TX_D1P	MIPI_DPHY1_TX_D1P	1.8V
71	MIPI_DPHY1_TX_CLKN/MIPI_CPHY1_TX_TRIO1_B	BA19		O	MIPI_DPHY1_TX_CLKN	MIPI_DPHY1_TX_CLKN	1.8V
73	MIPI_DPHY1_TX_CLKP/MIPI_CPHY1_TX_TRIO1_C	BB19		O	MIPI_DPHY1_TX_CLKP	MIPI_DPHY1_TX_CLKP	1.8V
75	MIPI_DPHY1_TX_D2N/MIPI_CPHY1_TX_TRIO2_A	BB20		O	MIPI_DPHY1_TX_D2N	MIPI_DPHY1_TX_D2N	1.8V
77	MIPI_DPHY1_TX_D2P/MIPI_CPHY1_TX_TRIO2_B	BA20		O	MIPI_DPHY1_TX_D2P	MIPI_DPHY1_TX_D2P	1.8V
79	MIPI_DPHY1_TX_D3N/MIPI_CPHY1_TX_TRIO2_C	BA22		O	MIPI_DPHY1_TX_D3N	MIPI_DPHY1_TX_D3N	1.8V
81	MIPI_DPHY1_TX_D3P/NO_USE	BB22		O	MIPI_DPHY1_TX_D3P	MIPI_DPHY1_TX_D3P	1.8V
83	MIPI_DPHY1_RX_D0N/MIPI_CPHY1_RX_TRIO0_A	BB23		O	MIPI_DPHY1_RX_D0N/MIPI_CPHY1_RX_TRIO0_A	MIPI_DPHY1_RX_D0N/MIPI_CPHY1_RX_TRIO0_A	1.8V
85	MIPI_DPHY1_RX_D0P/MIPI_CPHY1_RX_TRIO0_B	BA23		O	MIPI_DPHY1_RX_D0P/MIPI_CPHY1_RX_TRIO0_B	MIPI_DPHY1_RX_D0P/MIPI_CPHY1_RX_TRIO0_B	1.8V
87	MIPI_DPHY1_RX_D1N/MIPI_CPHY1_RX_TRIO0_C	BA25		O	MIPI_DPHY1_RX_D1N/MIPI_CPHY1_RX_TRIO0_C	MIPI_DPHY1_RX_D1N/MIPI_CPHY1_RX_TRIO0_C	1.8V
89	MIPI_DPHY1_RX_D1P/MIPI_CPHY1_RX_TRIO1_A	BB25		O	MIPI_DPHY1_RX_D1P/MIPI_CPHY1_RX_TRIO1_A	MIPI_DPHY1_RX_D1P/MIPI_CPHY1_RX_TRIO1_A	1.8V
91	MIPI_DPHY1_RX_CLKN/MIPI_CPHY1_RX_TRIO1_B	BB26		O	MIPI_DPHY1_RX_CLKN/MIPI_CPHY1_RX_TRIO1_B	MIPI_DPHY1_RX_CLKN/MIPI_CPHY1_RX_TRIO1_B	1.8V
93	MIPI_DPHY1_RX_CLKP/MIPI_CPHY1_RX_TRIO1_C	BA26		O	MIPI_DPHY1_RX_CLKP/MIPI_CPHY1_RX_TRIO1_C	MIPI_DPHY1_RX_CLKP/MIPI_CPHY1_RX_TRIO1_C	1.8V
95	MIPI_DPHY1_RX_D2N/MIPI_CPHY1_RX_TRIO2_A	BA28		O	MIPI_DPHY1_RX_D2N/MIPI_CPHY1_RX_TRIO2_A	MIPI_DPHY1_RX_D2N/MIPI_CPHY1_RX_TRIO2_A	1.8V
97	MIPI_DPHY1_RX_D2P/MIPI_CPHY1_RX_TRIO2_B	BB28		O	MIPI_DPHY1_RX_D2P/MIPI_CPHY1_RX_TRIO2_B	MIPI_DPHY1_RX_D2P/MIPI_CPHY1_RX_TRIO2_B	1.8V
99	MIPI_DPHY1_RX_D3N/MIPI_CPHY1_RX_TRIO2_C	BB29		O	MIPI_DPHY1_RX_D3N/MIPI_CPHY1_RX_TRIO2_C	MIPI_DPHY1_RX_D3N/MIPI_CPHY1_RX_TRIO2_C	1.8V
101	MIPI_DPHY1_RX_D3P/NO_USE	BA29		O	MIPI_DPHY1_RX_D3P	MIPI_DPHY1_RX_D3N/MIPI_CPHY1_RX_TRIO2_C	1.8V
103	GND			G	GND	GND	GND
105	MIPI_DPHY0_TX_D0N/MIPI_CPHY0_TX_TRIO0_A	BA31		O	MIPI_DPHY0_TX_D0N/MIPI_CPHY0_TX_TRIO0_A	MIPI_DPHY0_TX_D0N/MIPI_CPHY0_TX_TRIO0_A	1.8V
107	MIPI_DPHY0_TX_D0P/MIPI_CPHY0_TX_TRIO0_B	BB31		O	MIPI_DPHY0_TX_D0P/MIPI_CPHY0_TX_TRIO0_B	MIPI_DPHY0_TX_D0P/MIPI_CPHY0_TX_TRIO0_B	1.8V
109	MIPI_DPHY0_TX_D1N/MIPI_CPHY0_TX_TRIO0_C	BB32		O	MIPI_DPHY0_TX_D1N/MIPI_CPHY0_TX_TRIO0_C	MIPI_DPHY0_TX_D1N/MIPI_CPHY0_TX_TRIO0_C	1.8V
111	MIPI_DPHY0_TX_D1P/MIPI_CPHY0_TX_TRIO1_A	BA32		O	MIPI_DPHY0_TX_D1P/MIPI_CPHY0_TX_TRIO1_A	MIPI_DPHY0_TX_D1P/MIPI_CPHY0_TX_TRIO1_A	1.8V
113	MIPI_DPHY0_TX_CLKN/MIPI_CPHY0_TX_TRIO1_B	BA34		O	MIPI_DPHY0_TX_CLKN/MIPI_CPHY0_TX_TRIO1_B	MIPI_DPHY0_TX_CLKN/MIPI_CPHY0_TX_TRIO1_B	1.8V
115	MIPI_DPHY0_TX_CLKP/MIPI_CPHY0_TX_TRIO1_C	BB34		O	MIPI_DPHY0_TX_CLKP/MIPI_CPHY0_TX_TRIO1_C	MIPI_DPHY0_TX_CLKP/MIPI_CPHY0_TX_TRIO1_C	1.8V
117	MIPI_DPHY0_TX_D2N/MIPI_CPHY0_TX_TRIO2_A	BB35		O	MIPI_DPHY0_TX_D2N/MIPI_CPHY0_TX_TRIO2_A	MIPI_DPHY0_TX_D2N/MIPI_CPHY0_TX_TRIO2_A	1.8V
119	MIPI_DPHY0_TX_D2P/MIPI_CPHY0_TX_TRIO2_B	BA35		O	MIPI_DPHY0_TX_D2P/MIPI_CPHY0_TX_TRIO2_B	MIPI_DPHY0_TX_D2P/MIPI_CPHY0_TX_TRIO2_B	1.8V
121	MIPI_DPHY0_TX_D3N/MIPI_CPHY0_TX_TRIO2_C	BA37		O	MIPI_DPHY0_TX_D3N/MIPI_CPHY0_TX_TRIO2_C	MIPI_DPHY0_TX_D3N/MIPI_CPHY0_TX_TRIO2_C	1.8V
123	MIPI_DPHY0_TX_D3P/NO_USE	BB37		O	MIPI_DPHY0_TX_D3P	MIPI_DPHY0_TX_D3P	1.8V
125	MIPI_DPHY0_RX_D0N/MIPI_CPHY0_RX_TRIO0_A	BB38		I	MIPI_DPHY0_RX_D0N/MIPI_CPHY0_RX_TRIO0_A	MIPI_DPHY0_RX_D0N/MIPI_CPHY0_RX_TRIO0_A	1.8V
127	MIPI_DPHY0_RX_D0P/MIPI_CPHY0_RX_TRIO0_B	BA38		I	MIPI_DPHY0_RX_D0P/MIPI_CPHY0_RX_TRIO0_B	MIPI_DPHY0_RX_D0P/MIPI_CPHY0_RX_TRIO0_B	1.8V
129	MIPI_DPHY0_RX_D1N/MIPI_CPHY0_RX_TRIO0_C	AY40		I	MIPI_DPHY0_RX_D1N/MIPI_CPHY0_RX_TRIO0_C	MIPI_DPHY0_RX_D1N/MIPI_CPHY0_RX_TRIO0_C	1.8V
131	MIPI_DPHY0_RX_D1P/MIPI_CPHY0_RX_TRIO1_A	BA40		I	MIPI_DPHY0_RX_D1P/MIPI_CPHY0_RX_TRIO1_A	MIPI_DPHY0_RX_D1P/MIPI_CPHY0_RX_TRIO1_A	1.8V
133	MIPI_DPHY0_RX_CLKN/MIPI_CPHY0_RX_TRIO1_B	BA41		I	MIPI_DPHY0_RX_CLKN/MIPI_CPHY0_RX_TRIO1_B	MIPI_DPHY0_RX_CLKN/MIPI_CPHY0_RX_TRIO1_B	1.8V
135	MIPI_DPHY0_RX_CLKP/MIPI_CPHY0_RX_TRIO1_C	BB41		I	MIPI_DPHY0_RX_CLKP/MIPI_CPHY0_RX_TRIO1_C	MIPI_DPHY0_RX_CLKP/MIPI_CPHY0_RX_TRIO1_C	1.8V
137	MIPI_DPHY0_RX_D2N/MIPI_CPHY0_RX_TRIO2_A	BA42		I	MIPI_DPHY0_RX_D2N/MIPI_CPHY0_RX_TRIO2_A	MIPI_DPHY0_RX_D2N/MIPI_CPHY0_RX_TRIO2_A	1.8V
139	MIPI_DPHY0_RX_D2P/MIPI_CPHY0_RX_TRIO2_B	AY42		I	MIPI_DPHY0_RX_D2P/MIPI_CPHY0_RX_TRIO2_B	MIPI_DPHY0_RX_D2P/MIPI_CPHY0_RX_TRIO2_B	1.8V
141	MIPI_DPHY0_RX_D3N/MIPI_CPHY0_RX_TRIO2_C	AW42		I	MIPI_DPHY0_RX_D3N/MIPI_CPHY0_RX_TRIO2_C	MIPI_DPHY0_RX_D3N/MIPI_CPHY0_RX_TRIO2_C	1.8V
143	MIPI_DPHY0_RX_D3P/NO_USE	AW41		I	MIPI_DPHY0_RX_D3P	MIPI_DPHY0_RX_D3P	1.8V
145	TYPEC0_USB20_VBUSDET	AV10		I	TYPEC0_OTG_VBUSDET	TYPEC0_OTG_VBUSDET, Active H	3.3V
147	MIPI_CSIO_CLK1P	AU41		I	MIPI_CSIO_RX_CLK1P	MIPI_CSIO_RX_CLK1P	1.8V
149	MIPI_CSIO_CLK1N	AU42		I	MIPI_CSIO_RX_CLK1N	MIPI_CSIO_RX_CLK1N	1.8V
151	MIPI_CSIO_D2N	AT42		I	MIPI_CSIO_RX_D2N	MIPI_CSIO_RX_D2N	1.8V
153	MIPI_CSIO_D2P	AT41		I	MIPI_CSIO_RX_D2P	MIPI_CSIO_RX_D2P	1.8V
155	MIPI_CSIO_D3N	AP41		I	MIPI_CSIO_RX_D3N	MIPI_CSIO_RX_D3N	1.8V
157	MIPI_CSIO_D3P	AP42		I	MIPI_CSIO_RX_D3P	MIPI_CSIO_RX_D3P	1.8V
159	MIPI_CSIO_CLK0P	AN42		I	MIPI_CSIO_RX_CLK0P	MIPI_CSIO_RX_CLK0P	1.8V
161	MIPI_CSIO_CLK0N	AN41		I	MIPI_CSIO_RX_CLK0N	MIPI_CSIO_RX_CLK0N	1.8V
163	MIPI_CSIO_D0N	AL41		I	MIPI_CSIO_RX_D0N	MIPI_CSIO_RX_D0N	1.8V
165	MIPI_CSIO_D0P	AL42		I	MIPI_CSIO_RX_D0P	MIPI_CSIO_RX_D0P	1.8V
167	MIPI_CSIO_D1N	AK42		I	MIPI_CSIO_RX_D1N	MIPI_CSIO_RX_D1N	1.8V
169	MIPI_CSIO_D1P	AK41		I	MIPI_CSIO_RX_D1P	MIPI_CSIO_RX_D1P	1.8V
171	GND			G	GND	GND	GND
173	PCIE20_0_RXP/SATA30_0_RXP	J42		I	PCIE20_0_RXP	PCIE20_0_RXP	1.8V
175	PCIE20_0_RXN/SATA30_0_RXN	J41		I	PCIE20_0_RXN	PCIE20_0_RXN	1.8V
177	PCIE20_0_TXP/SATA30_0_TXP	H41		O	PCIE20_0_TXP	PCIE20_0_TXP	1.8V
179	PCIE20_0_TXN/SATA30_0_TXN	H42		O	PCIE20_0_TXN	PCIE20_0_TXN	1.8V
181	PCIE20_0_REFCLKN	K41		AI/O	PCIE20_0_REFCLKN	PCIE20_0_REFCLKN	1.8V
183	PCIE20_0_REFCLKP	L42		AI/O	PCIE20_0_REFCLKP	PCIE20_0_REFCLKP	1.8V
185	GND			G	GND	GND	GND
187	MIPI_CAMERA1_CLK_M0/SPDIF0_TX_M0/I2C5_SCL_M3/UART1_TX_M1/GPIO1_B6_u	L38	UP	I/O	I2C5_SCL_M3_CAM	I2C5_SCL_M3_CAM	1.8V
189	MIPI_CAMERA2_CLK_M0/SPDIF1_TX_M0/SATA2_ACT_LED_M1/I2C5_SDA_M3/UART1_RX_M1/PWM13_M2/GPIO1_B7_u	F37	UP	I/O	I2C5_SDA_M3_CAM	I2C5_SDA_M3_CAM	1.8V
191	GND			G	GND	GND	GND
193	PDM1_CLK0_M1/UART7_RX_M2/SPI0_CS0_M2/GPIO1_B4_u	M39	UP	I/O	TP_RST_L	TP_Reset Output,Active L	1.8V

195	MIPI_CAMERA3_CLK_M0/I2C8_SCL_M2/UART1_RTSN_M1/PW M14_M2/GPIO1_D6_u	L37	UP	I/O	I2C8_SCL_M2_CAM	I2C8_SCL_M2_CAM	1.8V
197	MIPI_CAMERA4_CLK_M0/I2C8_SDA_M2/UART1_CTSN_M1/PW M15_IR_M3/GPIO1_D7_u	G38	UP	I/O	I2C8_SDA_M2_CAM	I2C8_SDA_M2_CAM	1.8V
199	PDM1_SDI0_M1/PCIE20X1_1_PERSTN_M2/PWM3_IR_M3/SPI2_CS0_M0/GPIO1_A7_u	H38	UP	I/O	MIPI_CAM2_PDN_L	MIPI_CAM2_PDN	1.8V
201	PDM1_SDI1_M1/SPI2_CS1_M0/GPIO1_B0_u	H39	UP	I/O	GPIO1_B0	GPIO1_B0	1.8V
203	PDM1_SDI2_M1/SPI0_MISO_M2/GPIO1_B1_d	G39	DWON	I/O	MIPI_CAM2_PWREN_H	MIPI_CAM2_Power EN, Active H	1.8V
205	GND			G	GND	GND	GND
207	PCIE20_2_REFCLKP	F41		AI/O	PCIE20_2_REFCLKP	PCIE20_2_REFCLKP	1.8V
209	PCIE20_2_REFCLKN	F42		AI/O	PCIE20_2_REFCLKN	PCIE20_2_REFCLKN	1.8V
211	PCIE20_2_TXP/SATA30_2_TXP/USB30_2_SSTXP	E41		O	USB30_2_SSTXP	USB30_2_SSTXP	1.8V
213	PCIE20_2_TXN/SATA30_2_TXN/USB30_2_SSTXN	D41		O	USB30_2_SSTXN	USB30_2_SSTXN	1.8V
215	PCIE20_2_RXP/SATA30_2_RXP/USB30_2_SSRXP	D42		I	USB30_2_SSRXP	USB30_2_SSRXP	1.8V
217	PCIE20_2_RXN/SATA30_2_RXN/USB30_2_SSRXN	C42		I	USB30_2_SSRXN	USB30_2_SSRXN	1.8V
219	GND				GND	GND	GND
221	POWER_ON				PWRON_L	Power Key Input,Active L	4.0V
223	VDC				VDC	VDC Input, Active H	4.0V
225	VCC_3V3_S3				VCC_3V3_S3	3.3V Output (Pin224/225/226/227 Total Max:500mA)	3.3V
227	VCC_3V3_S3				VCC_3V3_S3		3.3V
229	VCC_1V8_S3				VCC_1V8_S3	1.8V Output (Pin228/229 Total Max:500mA)	1.8V
231	VCCA_1V8_S0				VCCA_1V8_S0	1.8V Output (Pin230/231 Total Max:100mA)	1.8V
233	VCCA (TO RK806-1)				VCCA	Power supply of PMIC Power on circuit	4.0V
235	VCCA_3V3_S0				VCCA_3V3_S0	3.3V Output (Pin234/235 Total Max:100mA)	3.3V
237	CORE-ID				NC	NC	3.3V
239	VCCIO5_CTL				NC	NC (default) or L : VCCIO5=1.8V, H:VCCIO5=3.3V	3.3V
241	GND		G				GND
243	GND		G				GND
245	GND		G		GND		GND
247	GND		G				GND
249	GND		G				GND
251	VCC4V0		P				4.0V
253	VCC4V0		P				4.0V
255	VCC4V0		P		VCC4V0_SYS Input	Input Voltage 4.0V +/-5%	4.0V
257	VCC4V0		P				4.0V
259	VCC4V0		P				4.0V
PIN	CORE-3588SJ4 pin definition	RK3588S Pin NO.	Pad type	IO Pull	Function for Main BOARD(MB-JD4-RK3588S)	Defual function description	IO Power
2	GND			G	GND	GND	GND
4	SDMMC_D1/PDM1_SDI2_M0/JTAG_TMS_M1/I2C3_SDA_M4/UA RT2_RX_M1/PWM9_M1/GPIO4_D1_u	AR2	UP	I/O	SDMMC_D1	SDMMC_D1 to TF Card,	3.3V/1.8V Auto
6	SDMMC_CLK/PDM1_CLK0_M0/TEST_CLKOUT_M0/MCU_JTAG_T MS_M0/CAN0_RX_M1/UART5_TX_M0/GPIO4_D5_d	AR1	DWON	I/O	SDMMC_CLK	SDMMC_CLK to TF Card,	
8	SDMMC_D3/PDM1_SDI0_M0/JTAG_TMS_M0/I2C8_SDA_M0/UA RT5_RTSN_M0/PWM10_M1/GPIO4_D3_u	AT1	UP	I/O	SDMMC_D3	SDMMC_D3 to TF Card,	
10	SDMMC_CMD/PDM1_CLK1_M0/MCU_JTAG_TCK_M0/CAN0_TX _M1/UART5_RX_M0/PWM7_IR_M1/GPIO4_D4_u	AU1	UP	I/O	SDMMC_CMD	SDMMC_CMD to TF Card,	
12	SDMMC_D2/PDM1_SDI1_M0/JTAG_TCK_M0/I2C8_SCL_M0/UA RT5_CTSN_M0/GPIO4_D2_u	AV1	UP	I/O	SDMMC_D2	SDMMC_D2 to TF Card,	
14	SDMMC_D0/PDM1_SDI3_M0/JTAG_TCK_M1/I2C3_SCL_M4/UA RT2_TX_M1/PWM8_M1/GPIO4_D0_u	AV2	UP	I/O	SDMMC_D0	SDMMC_D0 to TF Card,	
16	SDMMC_DET/GPIO0_A4_u	AC38	UP	I/O	SDMMC_DET_L	SDMMC0_DET Input, Active L	1.8V
18	GND			G	GND	GND	GND
20	TYPEC0_USB20_OTG_ID	AW10		I	TYPEC0_USB20_OTG_ID	TYPEC0_USB20_OTG_ID, Active L	3.3V
22	CIF_CLKIN/BT1120_CLKOUT/I2S1_SDI3_M0/DDRPHY_CH2_DTB 0/I2C6_SDA_M3/UART8_TX_M0/SPI2_CS1_M1/GPIO4_B0_d	AW27	DWON	I/O	I2C6_SDA_M3	I2C6_SDA_M3	3.3V
24	MIPI_CAMERA0_CLK_M0/SPDIF1_TX_M1/I2S1_SDO0_M0/SATA 2_ACT_LED_M0/DDRPHY_CH2_DTB1/I2C6_SCL_M3/UART8_RX_ M0/SPI0_CS1_M1/GPIO4_B1_u	AU22	UP	I/O	I2C6_SCL_M3	I2C6_SCL_M3	3.3V
26	TYPEC0_SBU2/DP0_AUXN	BB8		AI/O	TYPEC0_SBU2	TYPEC0_SBU2	1.8V
28	TYPEC0_SBU1/DP0_AUXP	BA8		AI/O	TYPEC0_SBU1	TYPEC0_SBU1	1.8V
30	CIF_D4/BT1120_D4/DDRPHY_CH1_DTB_0/I2C3_SCL_M2/UART0 _RX_M2/SPI2_MISO_M1/GPIO4_A4_d	AW19	DWON	I/O	UART0_RX_M2	UART0_RX_M2	3.3V
32	CIF_D1/BT1120_D1/I2S1_SCLK_M0/PCIE20X1_1_WAKEN_M1/D DRPHY_CH0_DTB_1/UART9_CTSN_M1/SPI0_MOSI_M1/GPIO4_ A1_d	AW18	DWON	I/O	TYPEC0_SBU2_DC	TYPEC0_SBU2_DC	3.3V
34	CIF_D0/BT1120_D0/I2S1_MCLK_M0/PCIE20X1_1_CLKREQN_M1 /DDRPHY_CH0_DTB0/UART9_RTSN_M1/SPI0_MISO_M1/GPIO4 _A0_d	AV19	DWON	I/O	TYPEC0_SBU1_DC	TYPEC0_SBU1_DC	3.3V
36	BT1120_D13/PCIE20X1_2_CLKREQN_M1/HDMI_TX0_SCL_M0/D DRPHY_CH3_DTB3/I2C5_SDA_M1/SPI3_CLK_M1/GPIO4_B7_u	AV22	UP	I/O	HDMI_TX0_SCL_M0	HDMI_TX0_SCL_M0	3.3V
38	BT1120_D14/PCIE20X1_2_WAKEN_M1/HDMI_TX0_SDA_M0/I2C 8_SCL_M3/SPI3_CS0_M1/GPIO4_C0_u	AW23	UP	I/O	HDMI_TX0_SDA_M0	HDMI_TX0_SDA_M0	3.3V
40	HDMI_TX0_HPD_M0/SPI2_MOSI_M0/GPIO1_A5_d	M40	DWON	I/O	HDMI_TX0_HPD_M0	HDMITX0_HPD Input, Active H	3.3V
42	BT1120_D15/SPDIF1_TX_M2/PCIE20X1_2_PERSTN_M1/HDMI.T X0_CEC_M0/I2C8_SDA_M3/PWM6_M1/SPI3_CS1_M1/GPIO4_C1 _d	AY26	DWON	I/O	HDMI_TX0_CEC_M0	HDMI_TX0_CEC_M0	3.3V
44	BT1120_D12/SATA0_ACT_LED_M0/DDRPHY_CH3_DTB2/I2C5_S CL_M1/PWM13_M1/SPI3_MOSI_M1/GPIO4_B6_d	AW22	DWON	I/O	HDMI0_TX_ON_H	HDMI0_TX_ON_H	3.3V
46	BT1120_D11/DDRPHY_CH3_DTB1/UART9_RX_M1/PWM12_M1/ SPI3_MISO_M1/GPIO4_B5_d	AU23	DWON	I/O	USB_HOST_PWREN_H	USB_HOST_Power_EN, Active H	3.3V
48	CIF_HREF/BT1120_D8/I2S1_SDO1_M0/PCIE20X1_1_BUTTON_RS TN/DDRPHY_CH2_DTB2/I2C7_SCL_M3/UART8_RTSN_M0/PWM 14_M1/SPI0_CS0_M1/CAN1_RX_M1/GPIO4_B2_u	AT15	UP	I/O	TP1_INT	TP1_INT Input ,Active L	3.3V
50	CIF_VSYNC/BT1120_D9/I2S1_SDO2_M0/PCIE20X1_2_BUTTON_ RSTN/DDRPHY_CH2_DTB3/I2C7_SDA_M3/UART8_CTSN_M0/P WM15_IR_M1/CAN1_TX_M1/GPIO4_B3_u	AV23	UP	I/O	LCD_RESET_L	Mipi DSI0 Reset Output ,Active L	3.3V
52	CIF_D11/PCIE20X1_2_CLKREQN_M0/HDMI_TX0_SCL_M2/I2C5_ SCL_M0/SPI3_MOSI_M3/GPIO3_C7_u	AU30	UP	I/O	PCIE20X1_2_CLKREQN_M0	PCIE20X1_2_CLKREQN_M0	VCCIOS
54	CIF_D10/SPI3_MISO_M3/GPIO3_C6_u	AV30	UP	I/O	SDMMC_PWREN	TF Card Power EN, Active H	VCCIOS
56	CIF_D12/PCIE20X1_2_WAKEN_M0/HDMI_TX0_SDA_M2/I2C5_S DA_M0/UART4_RX_M1/PWM8_M2/SPI3_CLK_M3/GPIO3_D0_u	AW31	UP	I/O	PCIE20X1_2_WAKEN_M0/PWM8_M2	PCIE20X1_2_WAKEN_M0	VCCIOS
58	CIF_D7/BT1120_D7/I2S1_SDI2_M0/DDRPHY_CH1_DTB3/I2C5_S DA_M2/SPI2_CS0_M1/GPIO4_A7_d	AW26	DWON	I/O	I2S1_SDI2_M0	I2S1_SDI2_M0	3.3V
60	CIF_D13/PCIE20X1_2_PERSTN_M0/UART4_TX_M1/PWM9_M2/S PI0_MISO_M3/GPIO3_D1_d	AY27	DWON	I/O	PCIE20X1_2_PERSTN_M0	PCIE20X1_2_PERSTN_M0	VCCIOS
62	CIF_D6/BT1120_D6/I2S1_SDI1_M0/DDRPHY_CH1_DTB2/I2C5_S CL_M2/UART3_RX_M2/SPI2_CLK_M1/GPIO4_A6_d	AV18	DWON	I/O	UART3_RX_M2	UART3_RX_M2	3.3V
64	I2S1_SDO3_M1/CPU_BIG1_AV5/I2C1_SDA_M2/CAN2_TX_M1/H DMI_TX0_SCL_M1/SPI3_CS1_M2/SATA_MP_SWITCH/GPIO0_D5 _u	AM39	UP	I/O	CAN2_TX_M1	CAN2_TX_M1	1.8V

66	I2S1_SDI3_M1/PDM0_SDI1_M1/I2C6_SCL_M0/UART1_CTSN_M2/PWM7_IR_M0/SPI3_MISO_M2/GPIO0_D0_d	AG39	DWON	I/O	BT_REG_ON_H	BT EN, Active H	1.8V
68	CIF_D14/I2C7_SCL_M2/UART9_RTSN_M2/SPI0_MOSI_M3/GPIO3_D2_d	AY30	DWON	I/O	UART9_RTSN_M2_BT	UART9_RTSN_M2_BT	VCCIOS
70	CIF_D15/I2C7_SDA_M2/UART9_CTSN_M2/PWM10_M2/SPI0_CLK_M3/GPIO3_D3_d	AY31	DWON	I/O	UART9_CTSN_M2_BT	UART9_CTSN_M2_BT	VCCIOS
72	MCU_JTAG_TMS_M1/UART9_TX_M2/PWM11_IR_M3/SPI0_CS1_M3/GPIO3_D5_d	AW30	DWON	I/O	UART9_TX_M2_BT	UART9_TX_M2_BT	VCCIOS
74	HDMI_TX0_HPD_M1/MCU_JTAG_TCK_M1/UART9_RX_M2/SPI0_CS0_M3/GPIO3_D4_d	AV31	DWON	I/O	UART9_RX_M2_BT	UART9_RX_M2_BT	VCCIOS
76	I2S1_SDO1_M1/I2C0_SDA_M2/UART1_RX_M2/SPI3_MOSI_M2/GPIO0_D2_u (core board pull up resistance 2.2K)	AG41	UP	I/O	I2C0_SDA_M2	I2C0_SDA_M2	1.8V
78	I2S1_SDO0_M1/CPU_BIG0_AV5/I2C0_SCL_M2/UART0_CTSN_UART1_TX_M2/SPI0_CS0_M0/HDMI_TX0_CEC_M1/GPIO0_D1_u (core board pull up resistance 2.2K)	AH41	UP	I/O	I2C0_SCL_M2	I2C0_SCL_M2	1.8V
80	PDM0_CLK1_M1/PWM2_M0/UART0_RX_M0/I2C4_SDA_M2/DP0_HPDIN_M1/GPIO0_C4_d	AL38	DWON	I/O	CC_INT0_L	Type-C insert INT ,Active L	1.8V
82	CIF_D8/FSPI_CS0N_M2/CAN2_RX_M0/UART5_TX_M1/SPI3_CS0_M3/GPIO3_C4_u	AU34	UP	I/O	FAN_CTL	Fan EN, Active H	VCCIOS
84	CIF_D9/FSPI_CS1N_M2/CAN2_TX_M0/UART5_RX_M1/SPI3_CS1_M3/GPIO3_C5_u	AV34	UP	I/O	PCA9555_INT	PCA9555_INT Input ,Active L	VCCIOS
86	CIF_D5/BT1120_D5/I2S1_SDI0_M0/DDRPHY_CH1_DTB_1/I2C3_SDA_M2/UART3_TX_M2/SPI2_MOSI_M1/GPIO4_A5_d	AU15	DWON	I/O	UART3_TX_M2	UART3_TX_M2	3.3V
88	CIF_D2/BT1120_D2/I2S1_LRCK_M0/PCIE20X1_1_PERSTN_M1/DDRPHY_CH0_DTB2/SPI0_CLK_M1/GPIO4_A2_d	AV26	DWON	I/O	I2S1_LRCK_M0	I2S1_LRCK_M0	3.3V
90	PDM0_CLK0_M1/PWM1_M0/I2C2_SDA_M0/CAN0_RX_M0/SPI0_MOSI_M0/GPIO0_C0_d (core board pull up resistance 2.2K)	AM40	DWON	I/O	I2C2_SDA_M0	I2C2_SDA_M0	1.8V
92	I2S1_LRCK_M1/PWM0_M0/I2C2_SCL_M0/CAN0_TX_M0/SPI0_CS1_M0/PCIE20X1_1_PERSTN_M0/GPIO0_B7_d (core board pull up resistance 2.2K)	AK39	DWON	I/O	I2C2_SCL_M0	I2C2_SCL_M0	1.8V
94	I2S1_SDI2_M1/PDM0_SDI0_M1/I2C6_SDA_M0/UART1_RTSN_M2/PWM6_M0/SPI0_MISO_M0/GPIO0_C7_d	AL40	DWON	I/O	WIFI_REG_ON_H	WIFI EN, Active H	1.8V
96	I2S1_SDO2_M1/PDM0_SDI2_M1/PWM3_IR_M0/I2C1_SCL_M2/CAN2_RX_M1/HDMI_TX0_SDA_M1/SPI3_CS0_M2/SATA_CPDET/GPIO0_D4_u	AL39	UP	I/O	CAN2_RX_M1	CAN2_RX_M1	1.8V
98	I2S1_SDI1_M1/NPU_AV5/UART0_RTSN/PWM5_M1/SPI0_CLK_M0/SATA_CP_POD/GPIO0_C6_u	AH42	UP	I/O	HOST_WAKE_BT_H	Host--> BT	1.8V
100	I2S1_SCLK_M1/JTAG_TMS_M2/I2C1_SDA_M0/UART2_RX_M0/PCIE20X1_1_WAKEN_M0/GPIO0_B6_d	AH40	DWON	I/O	UART2_RX_M0	UART2_RX_M0 for system Debug	1.8V
102	I2S1_MCLK_M1/JTAG_TCK_M2/I2C1_SCL_M0/UART2_TX_M0/PCIE20X1_1_CLKREQN_M0/GPIO0_B5_d	AH39	DWON	I/O	UART2_TX_M0	UART2_TX_M0 for system Debug	1.8V
104	I2S1_SDI0_M1/GPU_AV5/UART0_TX_M0/I2C4_SCL_M2/PWM4_M0/GPIO0_C5_u	AG38	UP	I/O	BT_WAKE_HOST_H	BT---> Host, Active H	1.8V
106	GMAC1_PPSCCLK/UART7_RX_M1/SPI1_CLK_M1/GPIO3_C1_d	AW38	DWON	I/O	LCD_PWREN	MIPI DSI0 Power EN, Active H	VCCIOS
108	LITCPU_AV5/SPI3_CLK_M2/GPIO0_D3_u	AG37	UP	I/O	GPIO0_D3	GPIO0_D3	1.8V
110	GMAC1_PPSTRIG/I2C3_SDA_M1/UART7_TX_M1/SPI1_MISO_M1/GPIO3_C0_d	AR36	DWON	I/O	PHONE_CTL	Earphone EN, Active H	VCCIOS
112	SPI2_CS1_M2/I2C1_SCL_M1/UART0_RX_M1/GPIO0_B0_z	AC37	Tri-State	I/O	RTC_INT_L	RTC_INT Input ,Active L	1.8V
114	REFCLK_OUT/GPIO0_A0_d	W38	DWON	I/O	WIFI_WAKE_HOST_H	WIFI--> HOST, Active H	1.8V
116	I2S0_SDO2/I2S0_SDI3/PDM0_SDI1_M0/I2C7_SDA_M0/UART6_RX_M2/SPI1_MOSI_M2/GPIO1_D1_d	U38	DWON	I/O	I2C7_SDA_M0_CODEC	I2C7_SDA_M0	1.8V
118	I2S0_SDO1/I2C7_SCL_M0/UART6_TX_M2/SPI1_MISO_M2/GPIO1_D0_d	U37	DWON	I/O	I2C7_SCL_M0_CODEC	I2C7_SCL_M0	1.8V
120	GND			G	GND		GND
122	CLK32K_IN/CLK32K_OUT0/GPIO0_B2_u	AD38	UP	I/O	RTC_32K_IN	RTC Clock 32.768KHz to 3588S	1.8V
124	GND			G	GND		GND
126	I2S0_MCLK/I2C6_SDA_M1/UART3_RTSN/PWM3_IR_M2/SPI4_CLK_M0/GPIO1_C2_d	U36	DWON	I/O	I2S0_MCLK	I2S0_MCLK	1.8V
128	I2S0_LRCK/I2C2_SCL_M3/UART4_RTSN/GPIO1_C5_d	P39	DWON	I/O	I2S0_LRCK_TX	I2S0_LRCK_TX	1.8V
130	I2S0_SDO0/I2C4_SCL_M4/UART4_CTSN/GPIO1_C7_d	P41	DWON	I/O	I2S0_SDO0	I2S0_SDO0	1.8V
132	I2S0_SDI0/GPIO1_D4_d	N42	DWON	I/O	I2S0_SDI0	I2S0_SDI0	1.8V
134	I2S0_SCLK/I2C6_SCL_M1/UART3_CTSN/PWM7_IR_M2/SPI4_CS0_M0/GPIO1_C3_d	M42	DWON	I/O	I2S0_SCLK_TX	I2S0_SCLK_TX	1.8V
136	I2S0_SDO3/I2S0_SDI2/PDM0_SDI2_M0/I2C1_SCL_M4/UART4_TX_M0/PWM0_M1/SPI1_CLK_M2/GPIO1_D2_d	P40	DWON	I/O	WORK_LED	WORK_LED control, Active H	1.8V
138	PDM0_SDI0_M0/SPI1_CS1_M2/GPIO1_D5_d	P38	DWON	I/O	DIY_LED	DIY_LED control, Active H	1.8V
140	PDM0_CLK1_M0/I2C2_SDA_M3/PWM11_IR_M2/SPI4_CS1_M0/GPIO1_C4_d	U35	DWON	I/O	MIPI_CAM_PDN2	MIPI_CAM_PDN2	1.8V
142	PDM0_CLK0_M0/I2C4_SDA_M4/PWM15_IR_M2/GPIO1_C6_d	M41	DWON	I/O	MIPI_CAM_RESET2	MIPI_CAM_RESET2 Output ,Active L	1.8V
144	GND			G	GND		GND
146	I2S0_SDI1/PDM0_SDI3_M0/I2C1_SDA_M4/UART4_RX_M0/PWM1_M1/SPI1_CS0_M2/GPIO1_D3_d	R39	DWON	I/O	MIPI_CAM_RESET1	MIPI_CAM_RESET1 Output ,Active L	1.8V
148	GND			G	GND		GND
150	SARADC_IN2 (core board pull up resistance 10K)	AV11		I	SARADC_VIN2	ADC2 Input	1.8V
152	SARADC_IN0_BOOT (core board pull up resistance 100K)	AW15		I	SARADC_VIN0_BOOT	ADC0 Input (BOOT Mode)	1.8V
154	SARADC_IN3 (core board pull up resistance 10K)	AV13		I	SARADC_VIN3	ADC3 Input	1.8V
156	SARADC_IN4 (core board pull up resistance 10K)	AY15		I	SARADC_VIN4_HP_HOOK	ADC4 Input (HP_HOOK)	1.8V
158	SARADC_IN1 (core board pull up resistance 10K)	AY13		I	SARADC_VIN1_KEY/RECOVERY	ADC1 Input (RECOVERY)	1.8V
160	I2C3_SCL_M0/UART3_TX_M0/SPI4_MOSI_M0/GPIO1_C1_z	N41	Tri-State	I/O	MIPI_CAM_PDN1	MIPI_CAM_PDN1	1.8V
162	I2C3_SDA_M0/UART3_RX_M0/SPI4_MISO_M0/GPIO1_C0_z	R38	Tri-State	I/O	HP_DET_L	Phone detect ,Active L	1.8V
164	PDM1_CLK1_M1/SATA0_ACT_LED_M1/UART4_TX_M2/SPI0_CLK_M2/GPIO1_B3_d	M37	DWON	I/O	SPI0_CLK_M2	SPI0_CLK_M2	1.8V
166	PDM1_SDI3_M1/UART4_RX_M2/SPI0_MOSI_M2/GPIO1_B2_d	M38	DWON	I/O	SPI0_MOSI_M2	SPI0_MOSI_M2	1.8V
168	PCIE20X1_1_WAKEN_M2/I2C2_SCL_M4/UART6_TX_M1/SPI4_MOSI_M2/GPIO1_A1_d	L40	DWON	I/O	MIPI_RESET1_CAM	MIPI_RESET1_CAM ,Active L	1.8V
170	PCIE20X1_1_CLKREQN_M2/DP0_HPDIN_M2/I2C2_SDA_M4/UART6_RX_M1/SPI4_MISO_M2/GPIO1_A0_d	G40	DWON	I/O	MIPI_RESET0_CAM	MIPI_RESET0_CAM ,Active L	1.8V
172	I2C4_SCL_M3/UART6_CTSN_M1/PWM1_M2/SPI4_CS0_M2/GPIO1_A3_d	L39	DWON	I/O	I2C4_SCL_M3	I2C4_SCL_M3	1.8V
174	VOP_POST_EMPTY/I2C4_SDA_M3/UART6_RTSN_M1/PWM0_M2/SPI4_CLK_M2/GPIO1_A2_d	D38	DWON	I/O	I2C4_SDA_M3	I2C4_SDA_M3	1.8V
176	GND			G	GND		GND
178	ETH1_REFCLK0_25M/MIPI_CAMERA1_CLK_M1/I2C4_SCL_M0/GPIO3_A6_d	AV37	DWON	I/O	MIPI_CAMERA1_CLK_M1	MIPI_CAMERA1_CLK_M1 Output	VCCIOS
180	GND			G	GND		GND
182	GMAC1_MDIO/MIPI_TE1/I2C8_SDA_M4/UART7_CTSN_M1/PWM15_IR_M0/SPI1_CS1_M1/GPIO3_C3_d	AW39	DWON	I/O	GMAC1_MDIO	GMAC1_MDIO	VCCIOS
184	GMAC1_MDC/MIPI_TE0/I2C8_SCL_M4/UART7_RTSN_M1/PWM14_M0/SPI1_CS0_M1/GPIO3_C2_d	AV40	DWON	I/O	GMAC1_MDC	GMAC1_MDC	VCCIOS
186	GMAC1_TXCLK/SDIO_CMD_M1/I2S3_SDI/AUDDSM_RP/UART8_RTSN_M1/SPI4_CS1_M1/GPIO3_A4_d	AT39	DWON	I/O	GMAC1_TXCLK	GMAC1_TXCLK	VCCIOS
188	GMAC1_RXCLK/SDIO_CLK_M1/MIPI_CAMERA0_CLK_M1/FSPI_CLK_M2/I2C4_SDA_M0/UART8_CTSN_M1/GPIO3_A5_d	AV38	DWON	I/O	GMAC1_RXCLK	GMAC1_RXCLK	VCCIOS
190	GND			G	GND		GND
192	GMAC1_MCLKINOUT/I2S2_LRCK_M1/CAN1_TX_M0/UART3_RX_M1/PWM13_M0/GPIO3_B6_d	AW37	DWON	I/O	GMAC1_MCLKINOUT	GMAC1_MCLK Input(default)/Output	VCCIOS

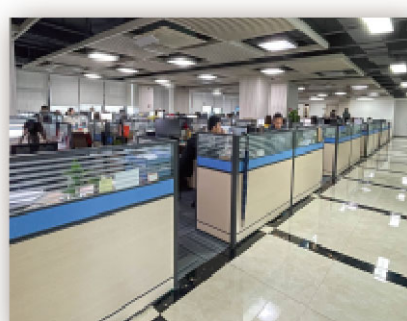
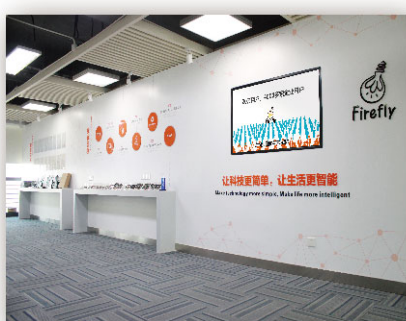
194	GMAC1_RXD1/MIPI_CAMERA3_CLK_M1/PWM9_M0/GPIO3_B0	AR39	UP	I/O	GMAC1_RXD1	GMAC1_RXD1	VCCIO5
196	GMAC1_RXD3/SDIO_D3_M1/I2S3_SDO/AUDDSM_RN/FSPI_D3_M2/UART8_RX_M1/SPI4_CS0_M1/GPIO3_A3_u	AT40	UP	I/O	GMAC1_RXD3	GMAC1_RXD3	VCCIO5
198	GMAC1_RXD0/MIPI_CAMERA2_CLK_M1/PWM8_M0/GPIO3_A7_u	AT37	UP	I/O	GMAC1_RXD0	GMAC1_RXD0	VCCIO5
200	GMAC1_RXD2/SDIO_D2_M1/I2S3_LRCK/AUDDSM_LP/FSPI_D2_M2/UART8_TX_M1/SPI4_CLK_M1/GPIO3_A2_u	AT38	UP	I/O	GMAC1_RXD2	GMAC1_RXD2	VCCIO5
202	GMAC1_RXDV_CRS/MIPI_CAMERA4_CLK_M1/UART2_TX_M2/PWM2_M1/GPIO3_B1_d	AV39	DWON	I/O	GMAC1_RXDV_CRS	GMAC1_RXDV_CRS	VCCIO5
204	GMAC1_TXD0/I2S2_SDO_M1/UART2_RTSN/GPIO3_B3_u	AW35	UP	I/O	GMAC1_TXD0	GMAC1_TXD0	VCCIO5
206	GMAC1_TXD2/SDIO_D0_M1/I2S3_MCLK/FSPI_D0_M2/I2C6_SDA_M4/PWM10_M0/SPI4_MISO_M1/GPIO3_A0_u	AR38	UP	I/O	GMAC1_TXD2	GMAC1_TXD2	VCCIO5
208	GMAC1_TXD3/SDIO_D1_M1/I2S3_SCLK/AUDDSM_LN/FSPI_D2_M2/I2C6_SCL_M4/PWM11_IR_M0/SPI4_MOSI_M1/GPIO3_A1_u	AR37	UP	I/O	GMAC1_TXD3	GMAC1_TXD3	VCCIO5
210	GMAC1_TXD1/I2S2_MCLK_M1/UART2_CTSN/GPIO3_B4_u	AV35	UP	I/O	GMAC1_TXD1	GMAC1_TXD1	VCCIO5
212	GMAC1_TXEN/I2S2_SCLK_M1/CAN1_RX_M0/UART3_TX_M1/PWM12_M0/GPIO3_B5_u	AY35	UP	I/O	GMAC1_TXEN	GMAC1_TXEN	VCCIO5
214	GMAC1_TXER/I2S2_SDI_M1/UART2_RX_M2/PWM3_IR_M1/GPIO3_B2_d	AW34	DWON	I/O	LCD1_BL_PWM	PWM for Icd Backlight Output	VCCIO5
216	GMAC1_PTP_REF_CLK/I2C3_SCL_M1/SPI1_MOSI_M1/GPIO3_B7	AY34	DWON	I/O	GMAC1_RSTN_L	GMAC1_Reset Output_Active L	VCCIO5
218	NPOR	V42	UP	I	RESET_L	System Reset Input_Active L	1.8V
220	PMIC_EXT_EN_OUT			I	PMIC_EXT_EN_OUT	PMIC_EXT_EN_Output Active H	4.0V
222	GND				GND	GND	GND
224	VCC_3V3_S3			G	VCC_3V3_S3	3.3V Output (Pin224/225/226/227 Total Max:500mA)	3.3V
226	VCC_3V3_S3				VCC_3V3_S3		3.3V
228	VCC_1V8_S3				VCC_1V8_S3	1.8V Output (Pin228/229 Total Max:500mA)	1.8V
230	VCCA_1V8_S0				VCCA_1V8_S0	1.8V Output (Pin230/231 Total Max:100mA)	1.8V
232	NC				NC		
234	VCCA_3V3_S0				VCCA_3V3_S0	3.3V Output (Pin234/235 Total Max:100mA)	3.3V
236	SPI2_MISO_M0/GPIO1_A4_d	G37		I/O	GPIO1_A4	GPIO1_A4	1.8V
238	SPI2_CLK_M0/GPIO1_A6_d	D39		I/O	MIPI_PDN0_CAM	MIPI_PDN0_CAM	1.8V
240	UART7_TX_M2/SPI0_CS1_M2/GPIO1_B5_u	D40	UP	I/O	TP_INT_L	TP_INT Input_Active L	1.8V
242	GND			G	GND	GND	GND
244	GND			G			GND
246	GND			G			GND
248	GND			G			GND
250	GND			G			GND
252	VCC4V0			P	VCC4V0_SYS	Input Voltage 4.0V +/-5%	4.0V
254	VCC4V0			P			4.0V
256	VCC4V0			P			4.0V
258	VCC4V0			P			4.0V
260	VCC4V0			P			4.0V
	VCCIO5_CTL is High: VCCIO5=3.3V; VCCIO5_CTL is Low(Or NC): VCCIO5=1.8V---Default						

T-CHIP TECHNOLOGY

Create Value for Customers
Pursue Sustainable Development

About us

T-CHIP focuses on R&D, design, production and sale of open source intelligent hardware, AI, IoT and audio product, and provides the whole solution of intelligent hardware products. T-CHIP is a Independent Design House officially authorized by RockChip and its strategic partner. We have been working closely with RockChip and contributing to embedded electronic industry for over 15 years. "Create Value for Customers, Pursue Sustainable Development" is our philosophy. We hope to achieve win-win development and move together for a shared future



Our Brands



Firefly is an open source brand in 2014. "Make technology more simple, Make life more intelligent" is its philosophy. We promote intelligent upgrades in the industries of new technology, intelligent hardware, AI, AIOT, and digital audio product, and build a more open and professional platform for intelligent hardware technology



Station PC is a new brand in 2020, consisting of the core geek members. We create entertainment products for new generation of people with innovative spirit through exploration of pan-entertainment. "More Entertainment, More Free Creation" is its philosophy. We aim at making everyone enjoy themselves and awakening interesting souls with more extreme product experience



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Make technology more simple
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