
RK7169C Technical Specifications

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1. Parameter table

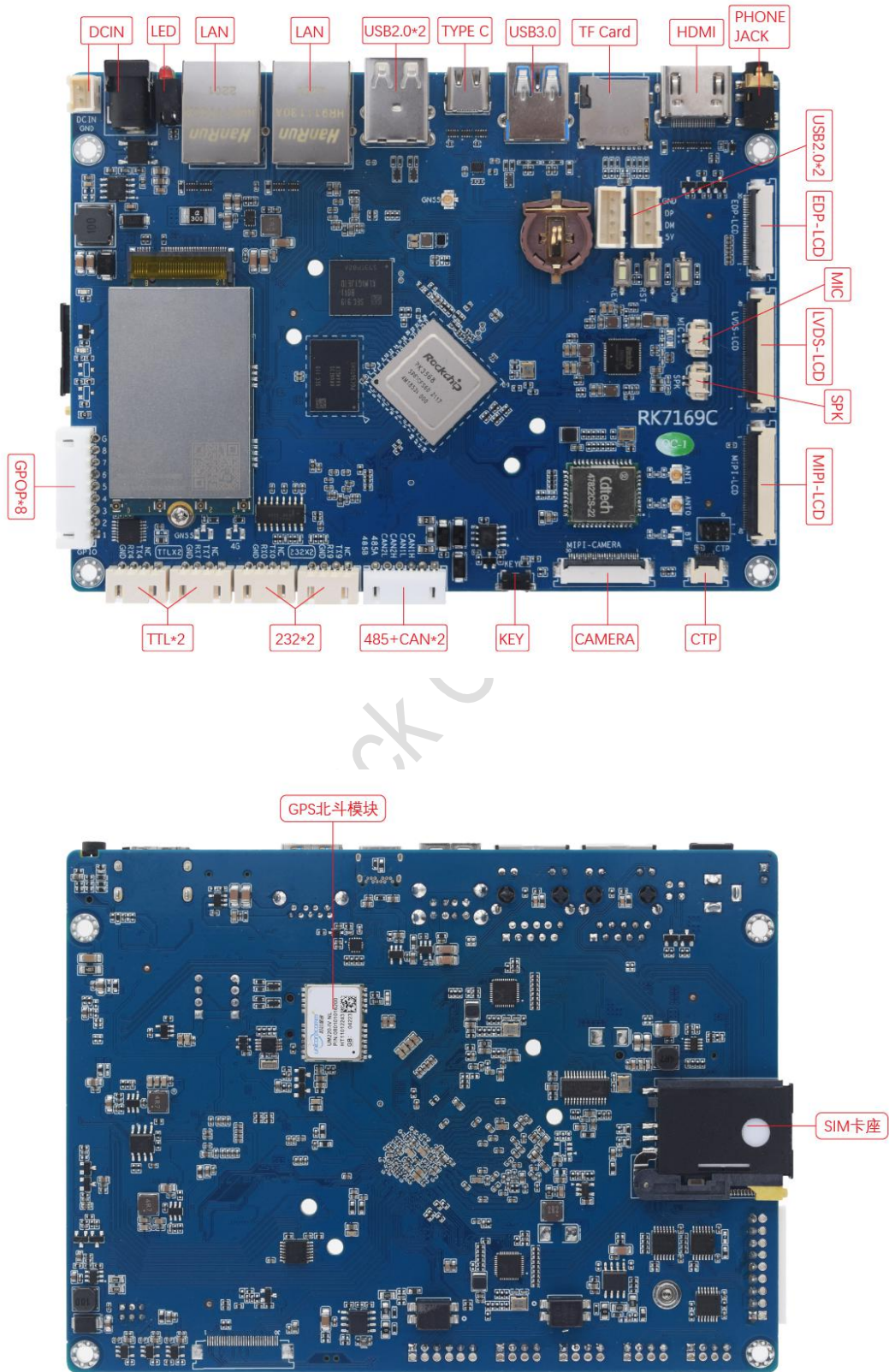
Product Specifications	
Model Description	RK7139C Standard type(DDR2G+EMMC16G) RK7139C-WB Standard type with 5.8GHZ WIFI and Bluetooth RK7139C-C Standard type with CAN2.0x2 RK7139C-D Standard type with GPS(BeiDou) RK7139C-4 Standard type with 4G CAT4 RK7139C-5 Standard type with 5G
CPU	Rockchip RK3568 2GHz Quad-Core Processor
GPU	ARM Mail-G52 2EE Quad-core GPU
NPU	0.8Tops@INT8 performance with integrated high-performance AI gas pedal RKNN NPU
Multimedia	Support 4K VP9 and 4K 10bits H265/H264 video decoding, up to 60fps 1080P multi-format video decoding (WMV, MPEG-1/2/4, VP8) 1080P video encoding, support H.264
Memory	LPDDR4X Standard : 2GB
Local Storage	EMMC Flash Standard :16GB
Supported	Ubuntu 18.04 / Android 11

Operating Systems	
Expanded Storage	TF Card
Ethernet	Wried x 2 10/100/1000M
WIFI	2.4GHz/5.8GHz dual-band WiFi with 802.11a/b/g/n/ac protocol support (Optional)
Bluetooth	Bluetooth 4.2 (Optional)
USB	USB3.0 x1, USB2.0 x2, USB2.0(Built-in) x2, USB type-C x1 (OTG)
HDMI output	x1
LCD	EDP x1, LVDS x1, MIPI x1
CAMERA	MIPI x1
Audio I/O	line out x1 and mic x1 , 3.5mm Headphone jack, Speakersx1 (8Ω 1W)
UART	TTL x 2; RS232 x 2; RS485 x 1; CAN x 2
RTC	Real Time Clock
4G/5G network	All-net Access (Optional)
GPS	GPS, BeiDdou (Optional)
Expanded	Bidirectionalx 8 I/O; +/- 15KV ESD

port	
Power	9~36V ; <15W (Recommendation 12V or 24V)
Operating temperatur e	-20-60°C
Dimension	
Dimension	150×110 mm

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2.Appearance



3. Hardware Interface

3.1 Performance Overview

◆ electrical performance parameters

Properties	Conditions	Min	TYP	Max	Unit
Power Voltage	—	9	12	36	V
Operation Current	VCC=+12V, no external device operation	—	450	—	mA

◆ Operating environment and reliability parameters

Properties	Conditions	Min	TYP	Max	Unit
Working Temperature	60%RH at 12V voltage	-20	25	60	°C
Storage Temperature	—	-20	25	70	°C
Working Humidity	25°C	10%	60%	90%	RH
Protective Paint	—	—	None	—	—
ESD protection Level	Class 3				

◆ Interface performance parameters

Properties	Conditions	Min	TYP	Max	Unit
UART RS232-0、RS232-9	User set	300	—	115200	bps

Baud rate					
Output Voltage	Output 1	—	-5.0	—	V
	Output 0	—	5.0	—	V
Input Voltage	Input 1	—	-5.0	—	V
	Input 0	—	5.0	—	V
UART TTL-4, TTL-7 Baud rate	User set	300	—	115200	bps
Output Voltage	Output 1	—	3.3	—	V
	Output 0	—	0	—	V
Input Voltage	Input 1	—	3.3	—	V
	Input 0	—	0	—	V
UART 485 Baud rate	User set	300	—	57600	bps
Serial port level V_AB	Output 1	2.5	5.0	—	V
	Output 0	—	-5.0	-2.5	V
Serial port level V_AB	Input 1	0	2.5	—	V
	Input 0	—	-2.5	-0.2	V

3.2 Power connector

- provides 2 types of power supply holders to access 9V~36V DC power supply.

A) Use DC-044A (2.0 inner diameter) horizontal power supply holder for power supply interface.

B) Use 2PIN 2.54mm pitch terminal block for power supply interface.



3.3 RS485 CAN connector

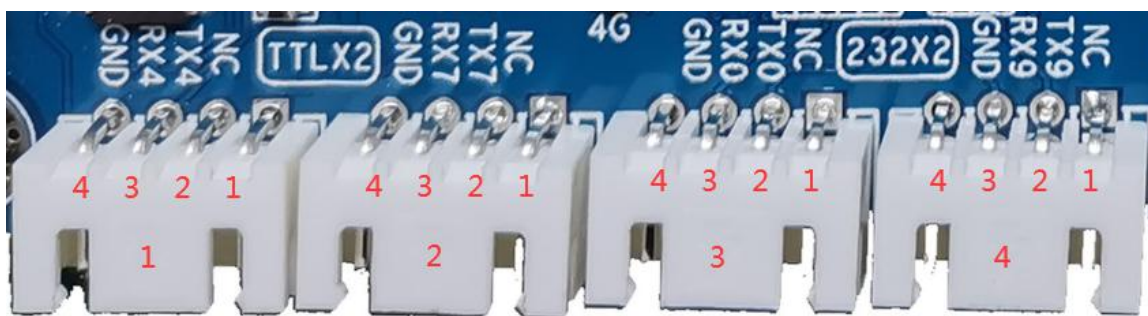
- provides 1 RS485 port and 2 CAN function interfaces, which are connected through 6PIN 2.54mm pitch terminal blocks.



Terminals: XH2.54-6P		
Pin	Description	Equipment name
1	CAN1_H	—
2	CAN1_L	
3	CAN2_H	—
4	CAN2_L	
5	RS485_A	/dev/ttyS3
6	RS485_B	

3.4 UART connector

- provides 2 TTL and 2 RS232 channels, each connected via 4PIN 2.54mm pitch terminal blocks.



Terminals 1: XH2.54-4P		
Pin	Description	Equipment name
1	NC	/dev/ttyS4
2	TXD4 TTL	
3	RXD4 TTL	
4	GND	

Terminals 2: XH2.54-4P		
Pin	Description	Equipment name
1	NC	/dev/ttyS7
2	TXD7 TTL	
3	RXD7 TTL	
4	GND	

Terminals 3: XH2.54-4P		
Pin	Description	Equipment name
1	NC	/dev/ttyS0
2	TXD0 RS232	
3	RXD0 RS232	
4	GND	

Terminals 4: XH2.54-4P		
Pin	Description	Equipment name
1	NC	/dev/ttyS9
2	TXD9 RS232	
3	RXD9 RS232	

4	GND	
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3.5 GPIO connector

- Connection via 9PIN 2.54mm pitch terminal block



Terminals: XH2.54-9P		
Pin	Description	GPIO Number
1	IO1	8
2	IO2	15
3	IO3	33
4	IO4	32
5	IO5	36
6	IO6	40
7	IO7	41
8	IO8	42
9	GND	

3.6 LED Indicator light

- Provide 2 LED indicators, controlled by 2 GPIOs.

Pin	Description	GPIO Number
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1	Green light	96
2	Red light	60

3.7 EDP-LCD connector

- The EDP-LCD interface is connected via FPC 0.5-30PIN cable.



Pin	Description	Pin	Description
1	NC	16	GND
2	GND	17	EDP_HPDP
3	EDP_D1N	18	BL_GND
4	EDP_D1P	19	BL_GND
5	GND	20	BL_GND
6	EDP_D0N	21	BL_GND
7	EDP_D0P	22	BL_ENABLE
8	GND	23	BL_PWM
9	EDP_AUXP	24	NC
10	EDP_AUXN	25	NC
11	GND	26	BL_POWER 12V
12	VCC_3V3	27	BL_POWER 12V
13	VCC_3V3	28	BL_POWER 12V
14	NC	29	BL_POWER 12V
15	GND	30	NC

3.8 LVDS-LCD connector

- The LVDS-LCD interface is connected via an FPC 0.5-40PIN cable.



Pin	Description	Pin	Description
1	NC	21	LVDS_D3P
2	VCC_3V3	22	NC
3	VCC_3V3	23	NC
4	VCC_3V3	24	NC
5	NC	25	GND
6	NC	26	NC
7	NC	27	NC
8	LVDS_D0N	28	GND
9	LVDS_D0P	29	NC
10	GND	30	NC
11	LVDS_D1N	31	LED_GND
12	LVDS_D1P	32	LED_GND
13	GND	33	LED_GND
14	LVDS_D2N	34	NC
15	LVDS_D2P	35	LED_PWM PWM
16	GND	36	LED_EN EN
17	LVDS_CLKN	37	NC
18	LVDS_CLKP	38	VLED Backlight Power 12V
19	GND	39	VLED Backlight Power 12V

20	LVDS_D3N	40	VLED Backlight Power 12V
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3.9 MIPI-LCD connector

- MIPI-LCD interface via FPC 0.5-40PIN cable connection.



Pin	Description	Pin	Description
1	NC	21	MIPI_D3P
2	VCC_3V3	22	GND
3	VCC_3V3	23	NC
4	GND	24	NC
5	LCD_RESET	25	GND
6	NC	26	NC
7	GND	27	NC
8	MIPI_D0N	28	NC
9	MIPI_D0P	29	NC
10	GND	30	GND
11	MIPI_D1N	31	LED_GND
12	MIPI_D1P	32	LED_GND
13	GND	33	NC
14	MIPI_CLKN	34	NC
15	MIPI_CLKP	35	NC
16	GND	36	NC
17	MIPI_D2N	37	NC
18	MIPI_D2P	38	NC

19	GND	39	VLED Backlight Power
20	MIPI_D3N	40	VLE Backlight Power

3.10 MIPI-CAMERA Interface

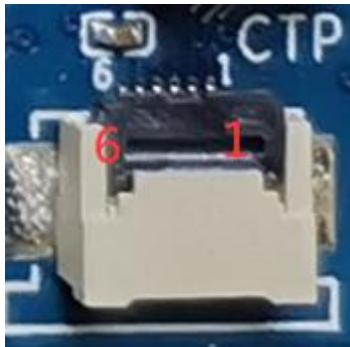
- The MIPI-CAMERA interface is connected via FPC 0.5-30PIN cable.



Pin	Description	Pin	Description
1	NC	16	D3P
2	AFVDD_2V8	17	D3N
3	DVDD_1V2	18	GND
4	DOVDD_1V8	19	D2P
5	NC	20	D2N
6	GND	21	GND
7	AVDD_2V8	22	D1P
8	GND	23	D1N
9	SDA	24	GND
10	SCL	25	CLKP
11	RST	26	CLKN
12	PWDN	27	GND
13	GND	28	D0P
14	MCLK	29	D0N
15	GND	30	GND

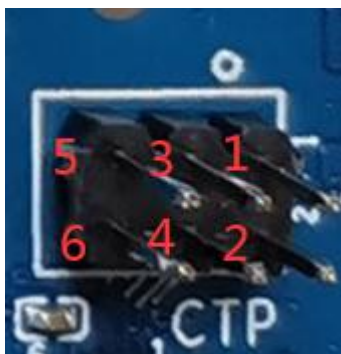
3.11 Touch screen interface

- Mode 1 is connected via FPC 0.5-6PIN cable.



Pin	Description	Pin	Description
1	RST	4	SDA
2	INT	5	VCC_3V3
3	SCL	6	GND

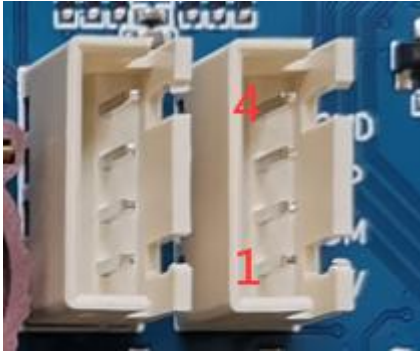
- Mode 2 is connected via 2.0 pitch 6pin dual row pins.



Pin	Description	Pin	Description
1	VCC_3V3	4	SCL
2	RST	5	SDA
3	INT	6	GND

3.12 Built-in USB interface

- Provides two built-in USB ports with a common current output of 1A, connected via 4PIN 2.54mm pitch terminals.



Pin	Description	Pin	Description
1	VCC5V	3	DP
2	DM	4	GND

3.13 Built-in MIC interface, speaker interface

- Provides 1 internal MIC connector and 1 internal speaker connector (8Ω 1W), connected via 1.25mm pitch 2PIN patch header.



3. Dimensional drawings

