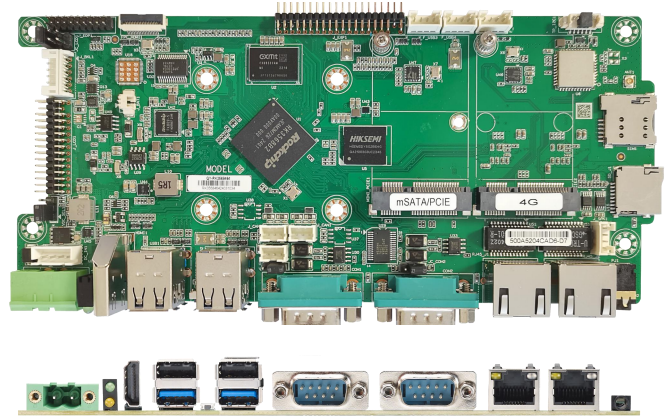


QY-RK3568 Series

- CPU: Quad-core Cortex-A55, up to 2.00GHz,
GPU: Mail-G52,
NPU: Support 1Tops computing power
- 6*COM, 2*USB3.0, 7*USB2.0, 2*1G LAN
- 1*LVDS/eDP, 1*HDMI, 1*FPC_HDMI
(Support dual display simultaneously)
- 2*Mini-pcie (1*mSATA/PCIE, 1*4G)
- 12V Power Input
- 200*90mm



1. Specification

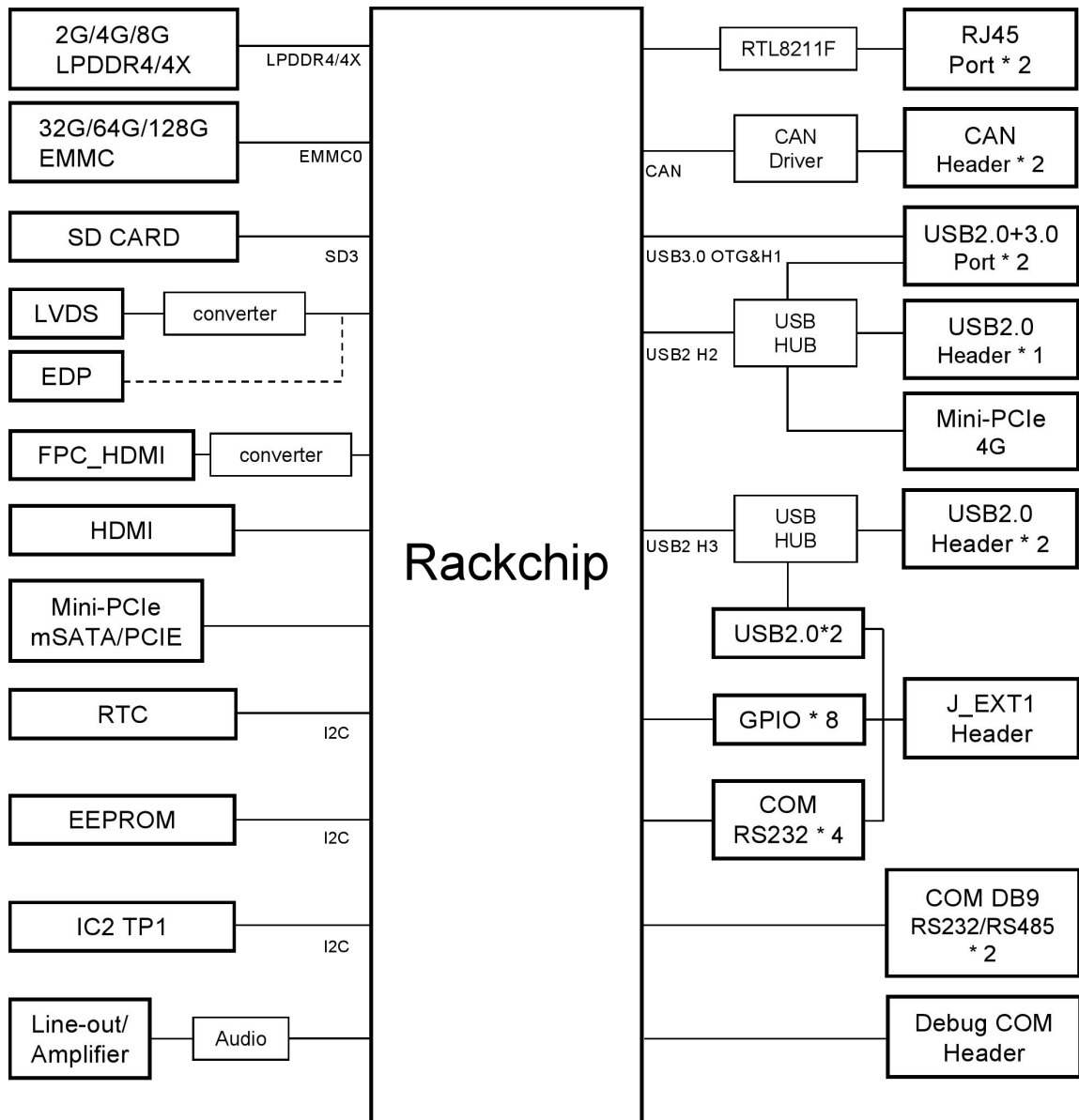
Model	QY-RK3568 Series
CPU	Quad-core Cortex-A55, up to 2.00GHz
GPU	Mail-G52
NPU	Support 1Tops computing power
Display	Support dual display simultaneously: 1 * LVDS/eDP: LVDS, resolution up to 1920 * 1080@60Hz eDP: resolution up to 1920 * 1080@60Hz 1 * HDMI: resolution up to 4096 * 2304@60Hz 1 * FPC_HDMI: resolution up to 1920 * 1080@60Hz
Wireless network	Onboard 2.4G WIFI+BT4.2/2.4G&5G WIFI+BT4.2
Expansion Interface	1 * Mini-PCIe: mSATA/PCIE 1 * Mini-PCIe: 4G
Ethernet	2 * 1Gbps Ethernet Controller, RJ45
Audio	MIC/Line-out and Amplifier(3W/5W) 1 * Line-Out/MIC 2in1 Phone Jack
COM	4 * RS232(J_EXT1 Header) ^[1] 2 * RS232/RS485(DB9 Connector)
USB	2 * USB3.0 (Rear I/O, TYPE-A) 2 * USB2.0 (Rear I/O, TYPE-A) 3 * USB2.0 (Internal, 4PIN Header) 2 * USB2.0 (J_EXT1 Header) ^[1]
Other Ports	1 * Micro SIM Card Slot 1 * Front Panel (J_EXT1 Header) ^[1] 1 * GPIO (J_EXT1 Header) ^[1] 1 * DEBUG COM Header 1 * VDC SEL Jumper(Auto Power off/Auto Power on) 1 * TP I2C Header 1 * Recover Button 1 * TF Card Connector 2 * CAN Headers 1 * Battery Header 1 * System LED
System	Android/Linux
Temperature	Storage: -20~70°C Operating: -5°~50°C
Power Input	12V
Factor	200 * 90mm

Note:

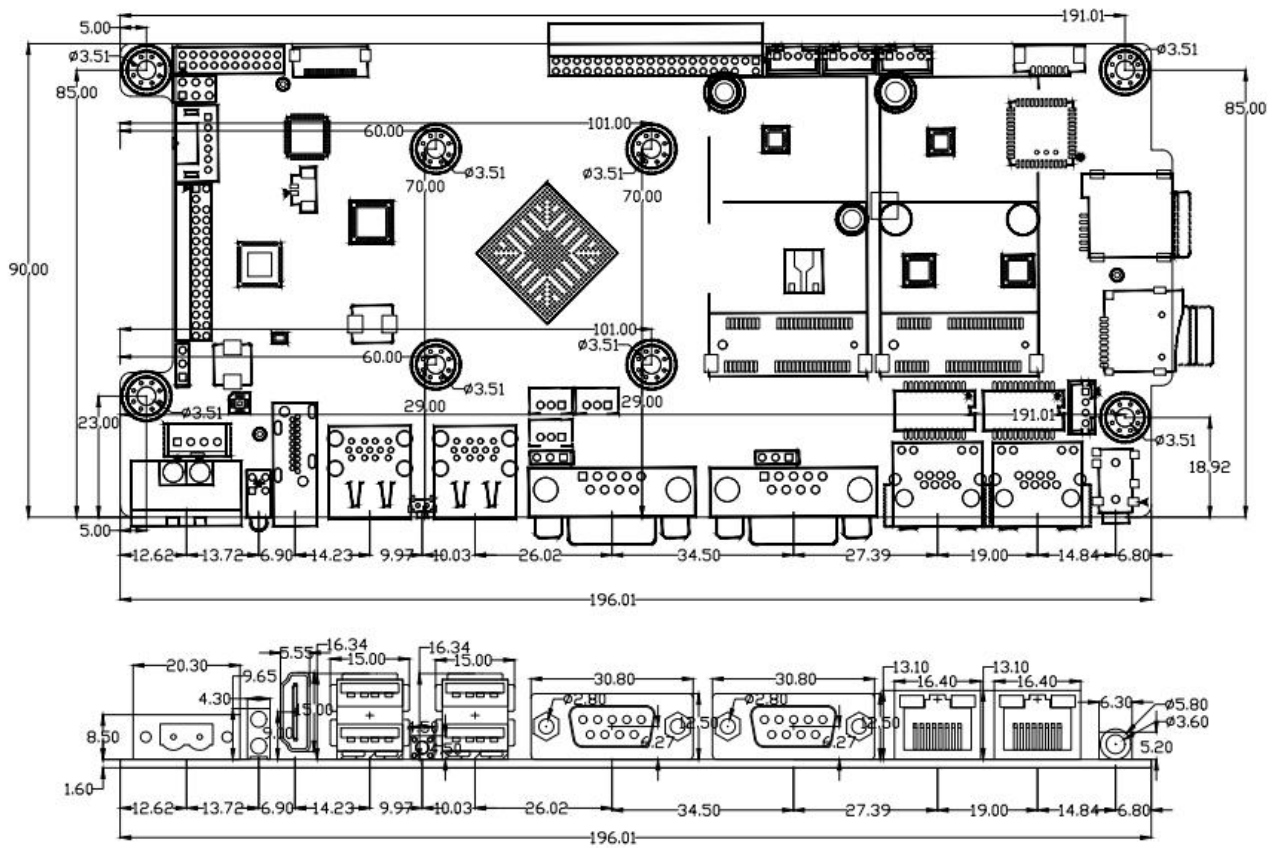
[1] :J_EXT1(20 * 2 PIN Header) Contain 4 * RS232 COM, 2 * USB2.0, 1 * Front Panel, 8 * GPIO signal.

Model	QY-RK3568232	QY-RK3568464	QY-RK35688128
Memory	LPDDR4/4X: 2GB	LPDDR4/4X: 4GB	LPDDR4/4X: 8GB
Storage	Onboard eMMC: 32GB	Onboard eMMC: 64GB	Onboard eMMC: 128GB

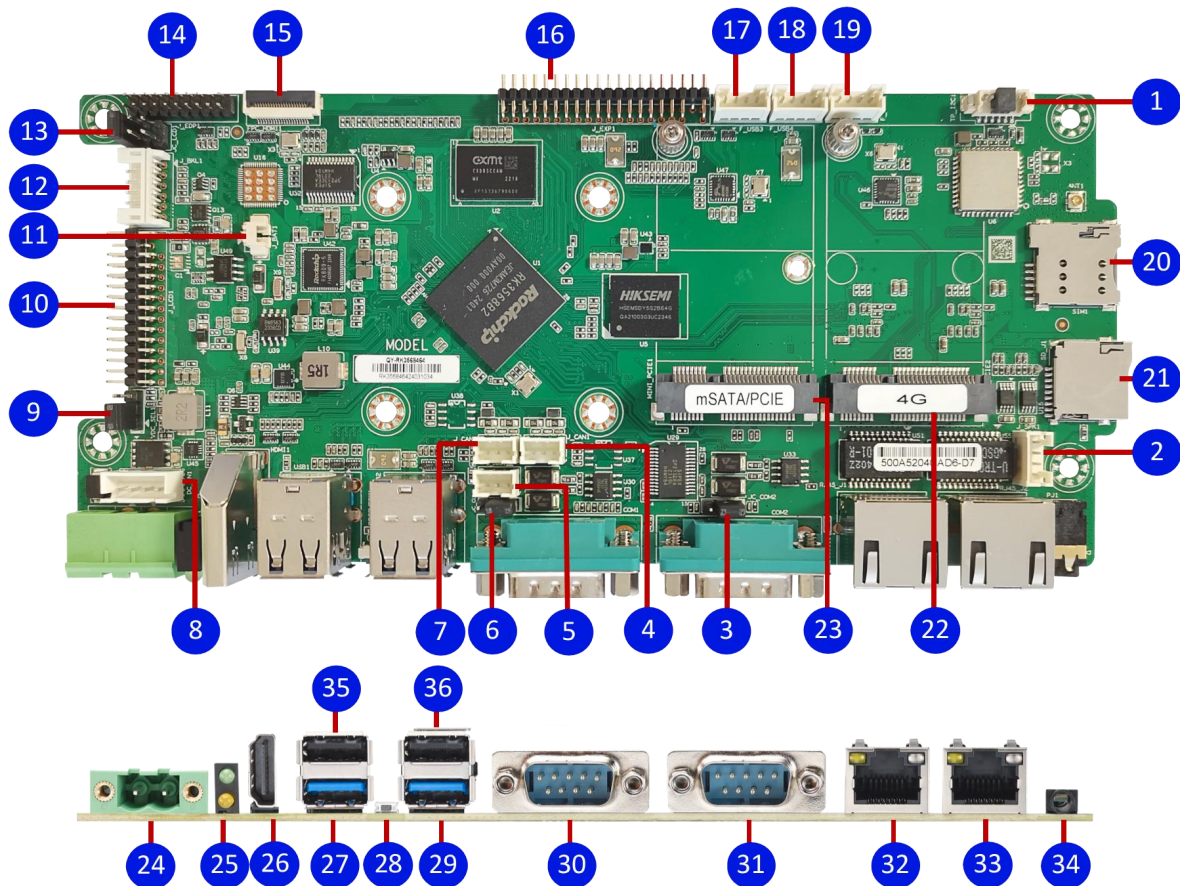
2. Data Flow



3. Mechanical structure



4. Marking instruction



Connector&Header

1	TP I2C Pin Header	19	Front USB5 Pin Header
2	Amplifier Pin Header	20	SIM Card Slot
3	COM2 RS232/485 Signal Select Jumper	21	TF Card Pin Connector
4	CAN1 Pin Header	22	Mini PCIE2 Slot (4G)
5	DEBUG COM Pin Header	23	Mini PCIE1 Slot (mSATA/PCIE)
6	COM1 RS232/485 Signal Select Jumper	24	DC12V Power Input Connector
7	CAN2 Pin Header	25	System LED
8	DC12V Power Input Header	26	HDMI Connector
9	VDC SEL Jumper	27	USB3.0 Connector
10	LVDS Signal Pin Header	28	Recover Button
11	Battery Pin Header	29	USB3.0 Connector
12	LVDS Backlight Control Pin Header	30	COM1 Connector
13	LVDS VDD Select Jumper	31	COM2 Connector
14	EDP Signal Pin Header	32	LAN1 Connector
15	FPC_HDMI Pin Header	33	LAN2 Connector
16	J_EXP Pin Header	34	Mic-in/Line-out Connector
17	Front USB3 Pin Header	35	USB2.0 Connector
18	Front USB4 Pin Header	36	USB2.0 Connector

5. Definition

[1] TP I2C Pin Header (6*1 Pin 1.25mm)

No.	Location	Pin	Definition	Pin	Definition
1	TP_I2C1	1	+ 3.3V	2	TP1_SCL
		3	TP1_SDA	4	TP1_RST#
		5	TP1_INT	6	GND

[2] Amplifier Pin Header (4*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
2	J_SPK1	1	SPK_L-	2	SPK_L+
		3	SPK_R-	4	SPK_R+

[3] COM2 RS232/RS485 Signal Select Jumper (3*1 Pin 2.54mm)

No.	Location	Settings	Function
3	JC_COM2	1-2(Default)	RS232
		2-3	RS485

[4] CAN1 Pin Header (3*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
4	J_CAN1	1	GND	2	CAN_L
		3	CAN_H		

[5] DEBUG COM Pin Header (3*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
5	J_DBG1	1	TX_M0_DEBUG	2	RX_M0_DEBUG
		3	GND		

Note:

[1] :It supports TTL levels and the default baud rate is 1500000bps.

[6] COM1 RS232/RS485 Signal Select Jumper (3*1 Pin 2.54mm)

No.	Location	Settings	Function
6	JC_COM1	1-2(Default)	RS232
		2-3	RS485

[7] CAN2 Pin Header (3*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
7	J_CAN2	1	GND	2	CAN_L
		3	CAN_H		

[8] DC12V Power Input Header (4*1 Pin 2.54mm)

No.	Location	Pin	Definition	Pin	Definition
8	DC_IN1	1	+ 12V	2	+ 12V
		3	GND	4	GND

[9] VDC SEL Jumper (3*1 Pin 2.54mm)

No.	Location	Settings	Function
9	VDC_SEL1	1-2(Default)	Auto Power off
		2-3	Auto Power on

[10] LVDS Signal Pin Header (15*2 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
10	J_LCD1	1	VDD(Default3.3V) ^[1]	2	VDD(Default3.3V) ^[1]
		3	VDD(Default3.3V) ^[1]		
		5	LVDS_Detect#	6	LVDS_Detect#
		7	LVDS_A_DATA0-	8	LVDS_A_DATA0+
		9	LVDS_A_DATA1-	10	LVDS_A_DATA1+
		11	LVDS_A_DATA2-	12	LVDS_A_DATA2+
		13	GND	14	GND
		15	LVDS_A_CLK-	16	LVDS_A_CLK+
		17	LVDS_A_DATA3-	18	LVDS_A_DATA3+

		19	LVDS_B_DATA0-	20	LVDS_B_DATA0+
		21	LVDS_B_DATA1-	22	LVDS_B_DATA1+
		23	LVDS_B_DATA2-	24	LVDS_B_DATA2+
		25	GND	26	GND
		27	LVDS_B_CLK-	28	LVDS_B_CLK+
		29	LVDS_B_DATA3-	30	LVDS_B_DATA3+

Notes:

[1] : Panel Power VDD is 3.3V by default, 5V or 12V is selectable by "LVDS VDD Select Jumper" (JC_LCD1, Location 13).

[11] Battery Pin Header (2*1 Pin 1.25mm)

No.	Location	Pin	Definition	Pin	Definition
11	J_BAT1	1	GND	2	+ 3.3V

[12] LVDS Backlight Control Pin Header (6*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
12	J_BKL1	1	GND	2	GND
		3	LVDS_BKL_CTL	4	LVDS_BKL_EN
		5	+ 12V	6	+ 12V

[13] LVDS VDD Select Jumper (3*2 Pin 2.54mm)

No.	Location	Setting	Function
13	JC_LCD1	1-2(Default)	+ 3.3V
		3-4	+ 5V
		5-6	+ 12V

[14] EDP Signal Pin Header (10*2 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
14	J_EDP1	1	VDD(Default3.3V)	2	VDD(Default3.3V)
		3	GND		GND
		5	EDP_AUX-	6	EDP_AUX+
		7	GND	8	GND

		9	EDP_TX3-	10	EDP_TX3+
		11	EDP_TX2-	12	EDP_TX2+
		13	EDP_B1-	14	EDP_B1+
		15	EDP_B0-	16	EDP_B0+
		17	GND	18	GND
		19	N/C	20	EDP_HPDP

[15] FPC_HDMI Pin Header (20*1 Pin 0.5mm)

No.	Location	Pin	Definition	Pin	Definition
15	FPC_HDMI1	1	+ 5V	2	N/C
		3	HDMI_HDP	4	HDMI_SDA
		5	HDMI_SCL	6	N/C
		7	GND	8	N/C
		9	HDMI_TXC-	10	HDMI_TXC+
		11	GND	12	HDMI_TX0-
		13	HDMI_TX0+	14	GND
		15	HDMI_TX1-	16	HDMI_TX1+
		17	GND	18	HDMI_TX2-
		19	HDMI_TX2+	20	N/C

[16] J_EXP Pin Header (20*2 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
16	J_EXP1 ^[1]	1	+ 3V	2	GND
		3	+ 3V		
		5	GPIO_D7	6	GPIO_D6
		7	GPIO_D5	8	GPIO_D4
		9	GPIO_D3	10	GPIO_D2
		11	GPIO_D1	12	GPIO_D0
		13	PWR-	14	RESET-
		15	PWR+	16	RESET+
		17	Power LED-	18	HD LED-

	19	Power LED+	20	HD LED+
	21	GND	22	GND
	23	USB+	24	USB+
	25	USB-	26	USB-
	27	+ 5V	28	+ 5V
	29	GND	30	GND
	31	TXD6 ^[1]	32	TXD5 ^[1]
	33	RXD6 ^[1]	34	RXD5 ^[1]
	35	GND	36	GND
	37	TXD4 ^[1]	38	TXD3 ^[1]
	39	RXD4 ^[1]	40	RXD3 ^[1]

Notes:

[1] : COM4/5/6 is support RS232 by default, it also can support TTL levels(resistor selectable).

[17] From USB3 Pin Header (4*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
17	F_USB3	1	+ 5V	2	USB-
		3	USB+	4	GND

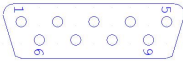
[18] From USB4 Pin Header (4*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
18	F_USB4	1	+ 5V	2	USB-
		3	USB+	4	GND

[19] From USB5 Pin Header (4*1 Pin 2.00mm)

No.	Location	Pin	Definition	Pin	Definition
19	F_USB5	1	+ 5V	2	USB-
		3	USB+	4	GND

[20] COM1/2 Connectors

No.	Location	Pin	Definition	Pin	Definition
30/31	 <p>COM1/2</p>	1	RS485-	2	RXD/RS485+ ^[1]
		3	TXD	4	DTR#
		5	GND	6	DSR#
		7	RTS#	8	CTS#
		9	RI#		

Note:

[1] COM1/2 support RS232 by default, and also can support RS485 selected by JC_COM1/2(Location6/3).

[END]