

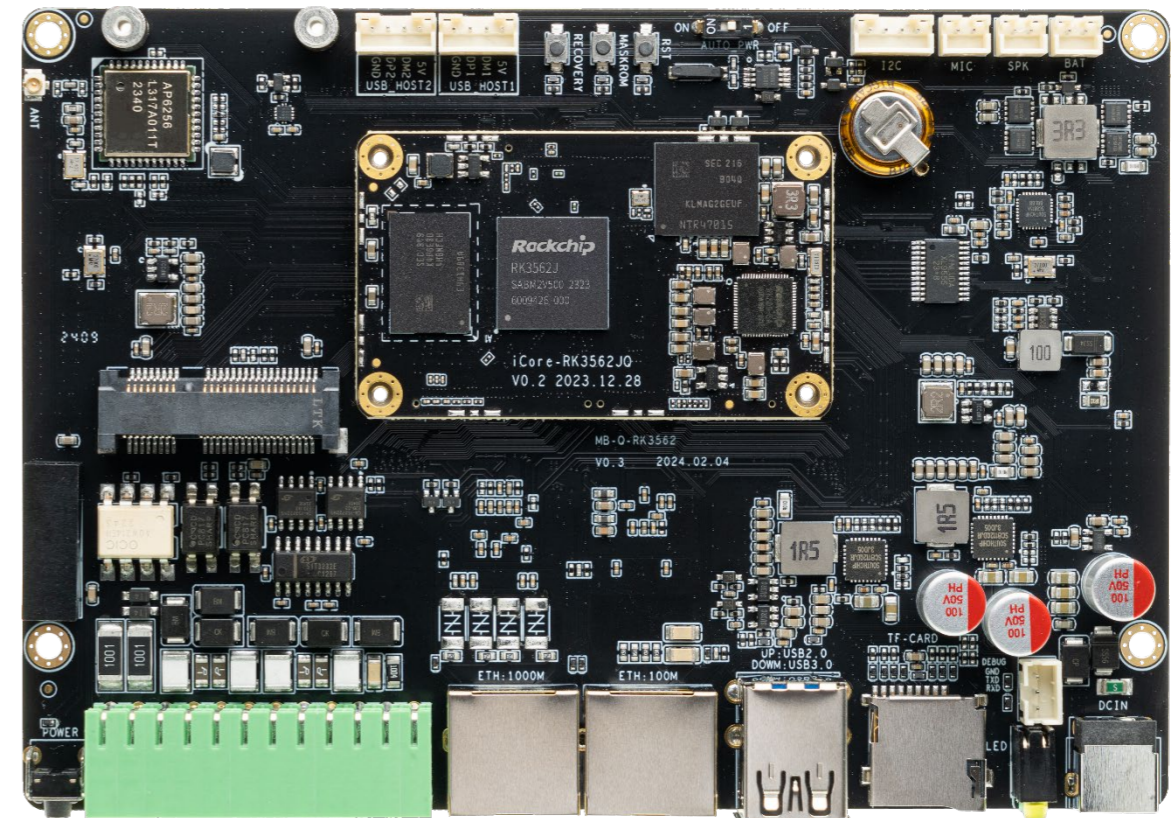


# AIO-3562JQ

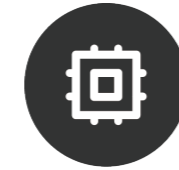
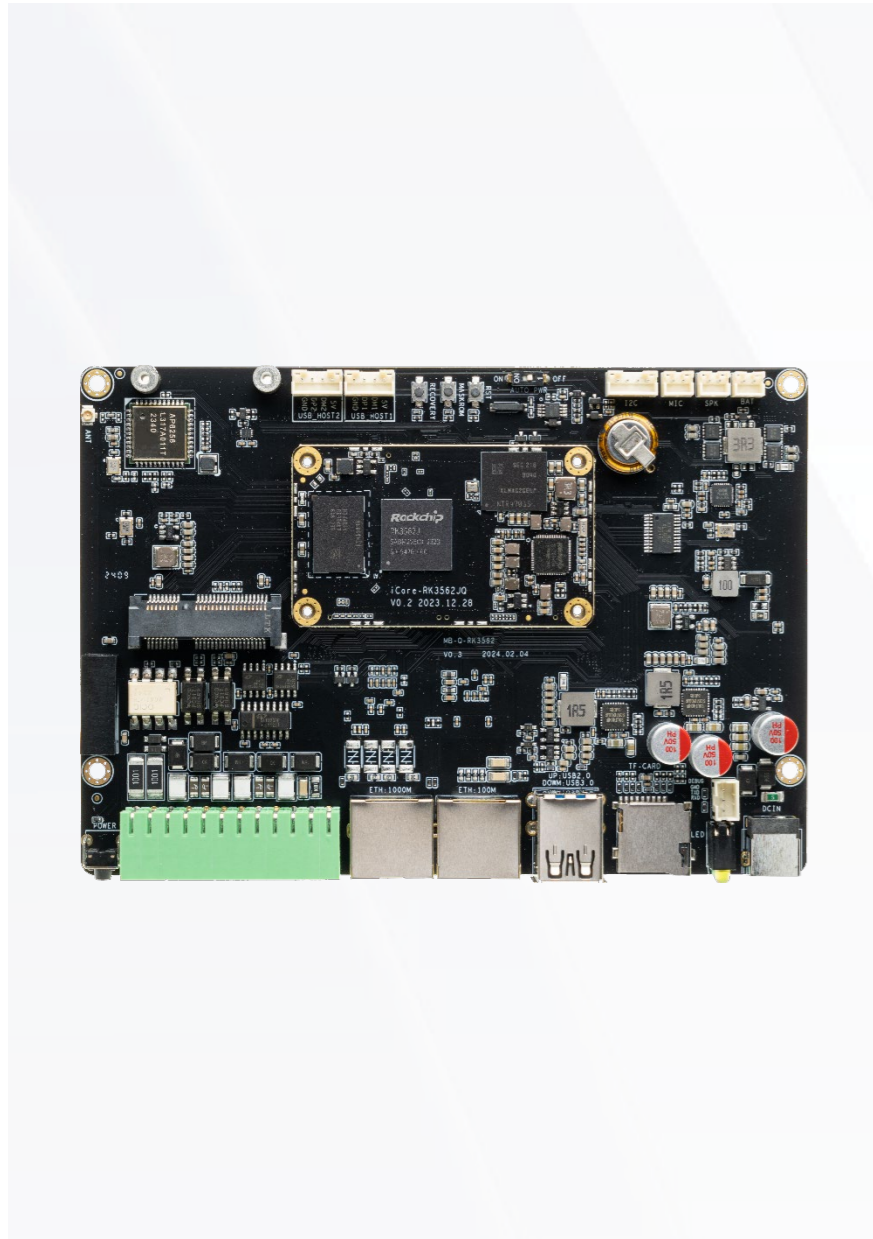
High-performance industrial Mainboard

V0.3 2024-4-18

T-CHIP INTELLIGENCE TECHNOLOGY



# Product features



## Quad-core industrial-grade high-performance processor

It is RK3562J with quad-core 64-bit Cortex-A53 industrial-grade high-performance processor, with a maximum frequency of 1.2GHz.



## Powerful image processing capabilities

Built-in Mali-G52 GPU, support 4K 30fps H.265/VP9 and 1080P 60fps H.264 video decoding, support 1080P 60fps H.264 video encoding.



## Strong network communication capabilities

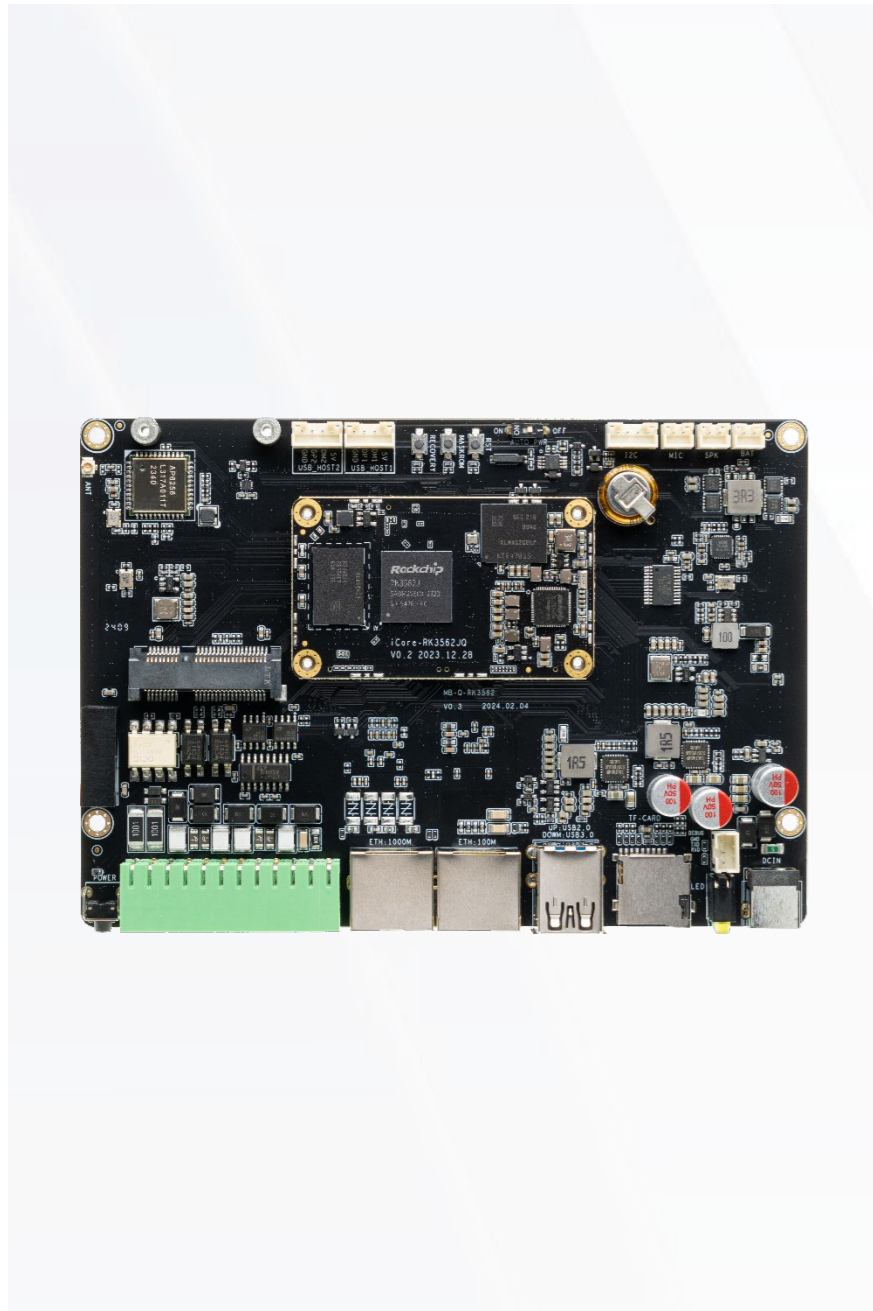
Integrated PCIe/GMAC/SDIO3.0/USB3.0, support Gigabit Ethernet, dual-band WiFi, Bluetooth 5.0, expandable 4G LTE, network communication has a higher speed.



## Multiple camera inputs

It supports single-channel MIPI-DSI, 2048\*1080@60fps, has a 13M ISP image signal processor, and can support dual cameras and HDR functions.

# Product features



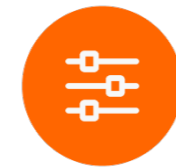
## Supports multiple operating systems

Support Linux OS (Ubuntu, Debian), the system is safe and stable, and meets different needs.



## The product is independent and controllable

The technology is completely independent and controllable, industrial-grade product quality, and stable supply cycle to meet the needs of various industries.



## Abundant expansion interfaces

Support a variety of peripheral interfaces: MIPI-CSI, MIPI-DSI, USB3.0, USB2.0, I2C, BAT, DIN, DOUT, RS485, RS232, CAN, UART.



## Wide range of application scenarios

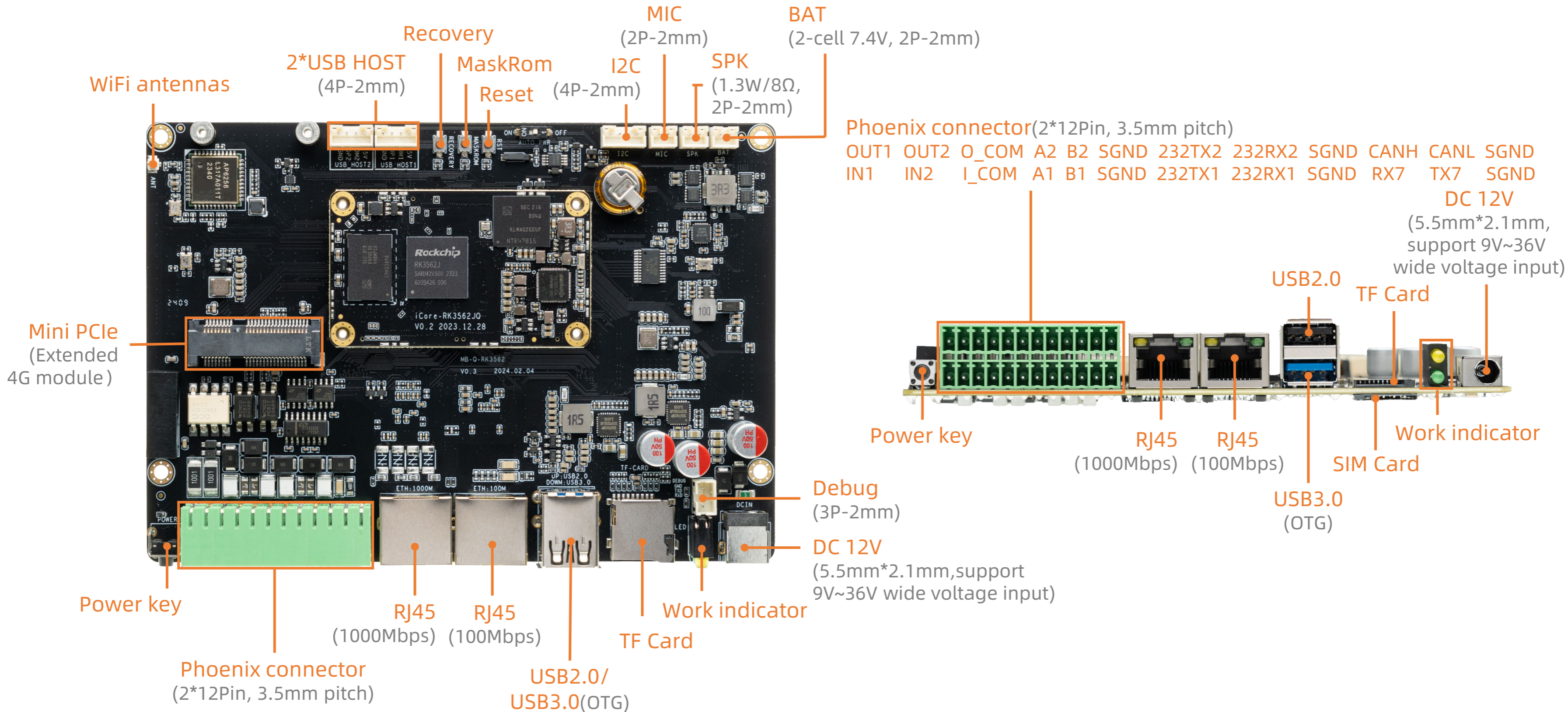
It is widely used in smart commercial displays, tablets, video conferences, dictionary pens, sweepers, image recognition, medical equipment, industrial HMI, PLC, edge computing, power distribution and other fields.



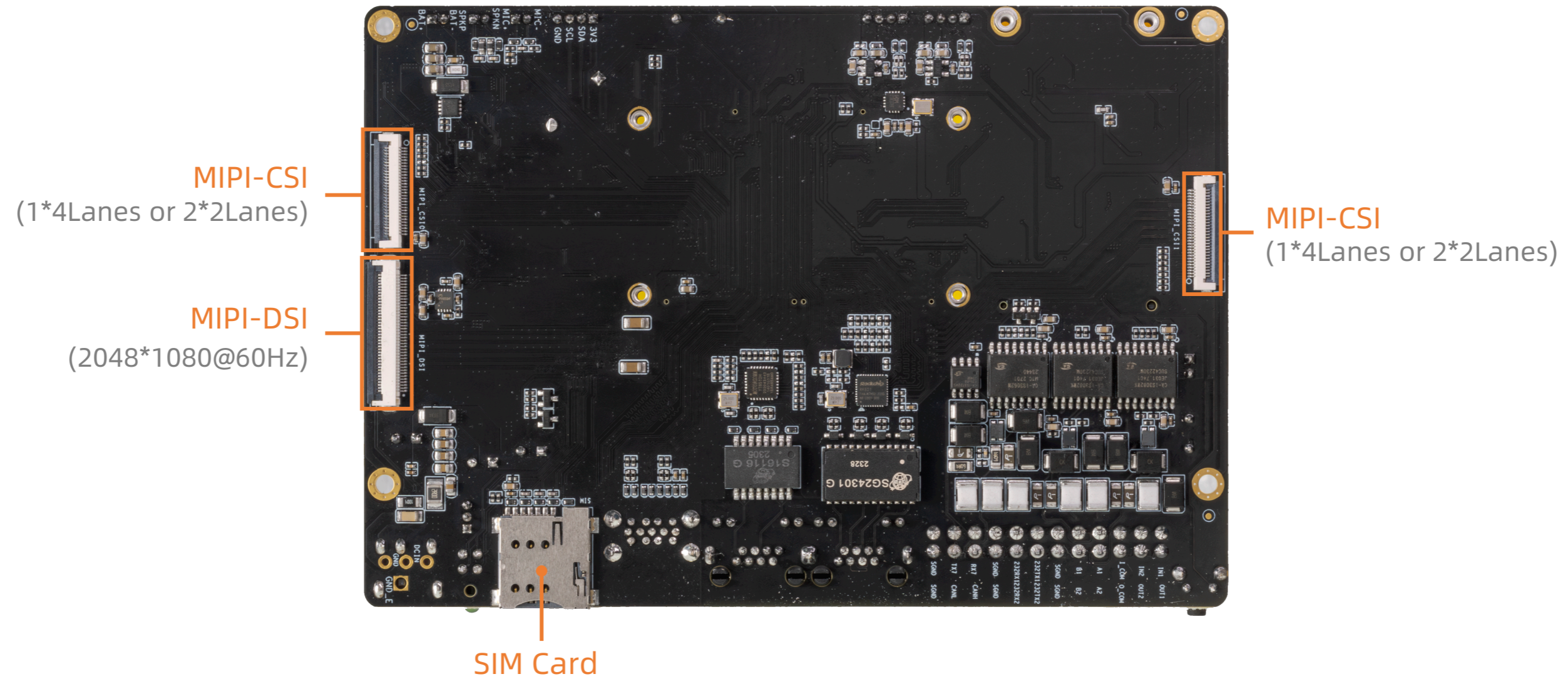
# Specifications

Specification		
Basic Specifications	SOC	Rockchip RK3562J
	CPU	Quad-core 64-bit Cortex-A53 processor with a frequency of up to 1.2GHz
	GPU	ARM G52 2EE, support OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1, embedded with high-performance 2D acceleration hardware
	VPU	Supports 4K 30fps H.265/VP9 and 1080P 60fps H.264 video decoding Support 1080P 60fps H.264 video encoding Support 13M ISP, support HDR
	RAM	LPDDR4/LPDDR4x (2GB/4GB/8GB optional)
	Storage	eMMC (16GB/32GB/64GB optional), 1 * TF Card
	Power	DC 12V (5.5mm * 2.1mm, support 9V~36V wide voltage input)
	OS	Ubuntu, Debian, Buildroot+QT
	Size	146mm * 102mm * 21.5mm
	Weight	≈120g
	Power consumption	Normal: 2.04W(12V/0.17A), Max: 4.8W(12V/400mA), Min: 0.06W(12V/5mA)
	Environment	Operating Temperature:-40°C- 85°C Storage Humidity:5% ~ 90%RH(non-condensing)
Interface Specifications	Internet	1 * Gigabit Ethernet (1000 Mbps), 1 * 100 Gigabit Ethernet (100 Mbps), 2.4GHz/5GHz dual-band WiFi (802.11a/b/g/n/ac), Bluetooth 5.0, expandable 4G LTE (Mini PCIE)
	Video input	2 * MIPI-CSI (1 * 4 Lanes or 2 * 2 Lanes)
	Video output	1 * MIPI-DSI (2048 * 1080@60Hz)
	Audio	1 * MIC (2P-2mm) , 1 * SPK (1.3W/8Ω, 2P-2mm)
	USB	1 * USB3.0 (OTG) , 1 * USB2.0, 2 * USB2.0 HOST (Wafer seat)
	Extended interfaces	1 * I2C (4P-2mm) , 1 * BAT (2-cell 7.4V, 2P-2mm) , 1 * 24P Phoenix connector (2 * Opto-Coupling Isolation DIN, 2 * Relay Isolation DOUT, 2 * RS485 Isolation, 2 * RS232 Isolation, 1 * CAN Isolation, 1 * UART Isolation)

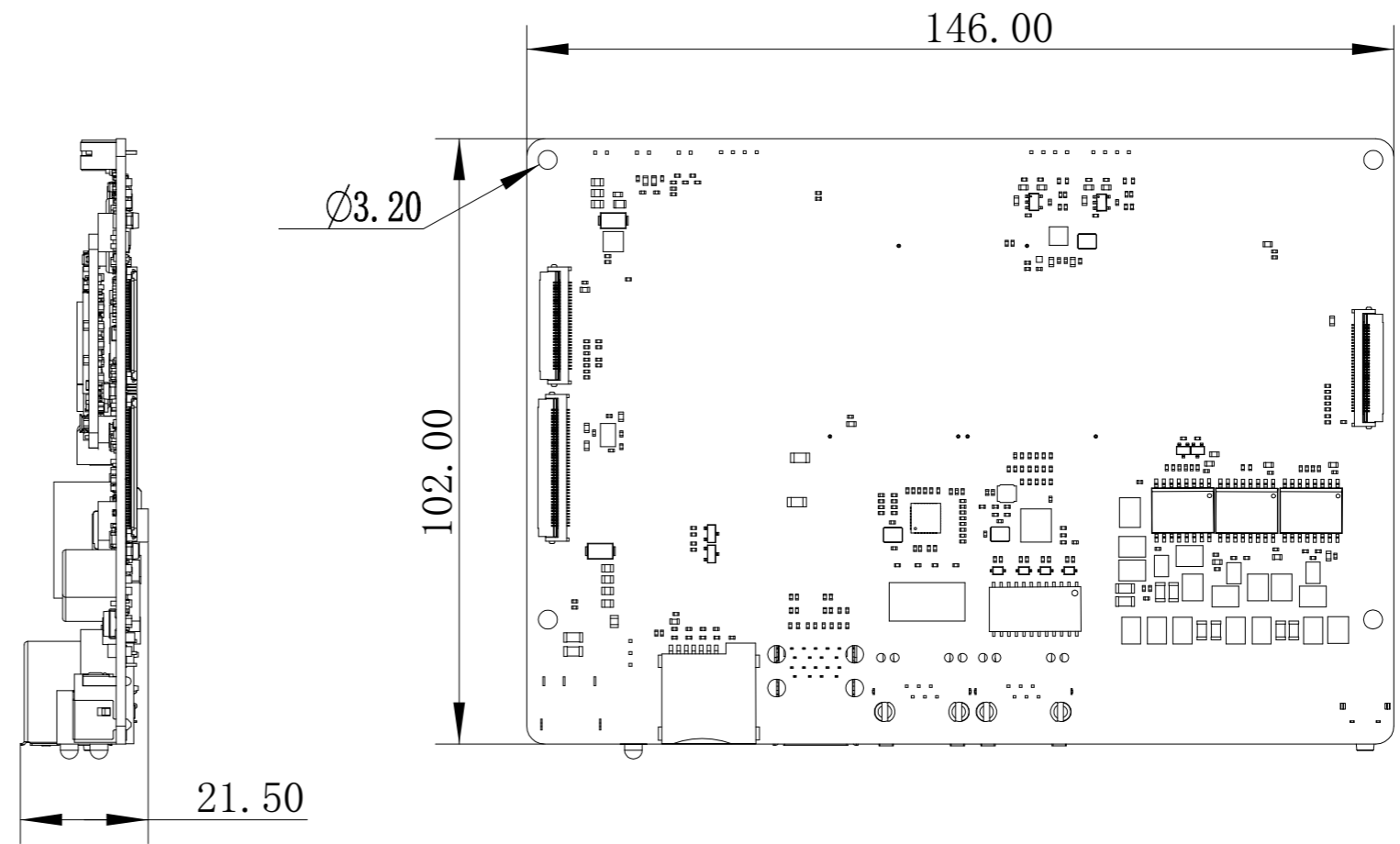
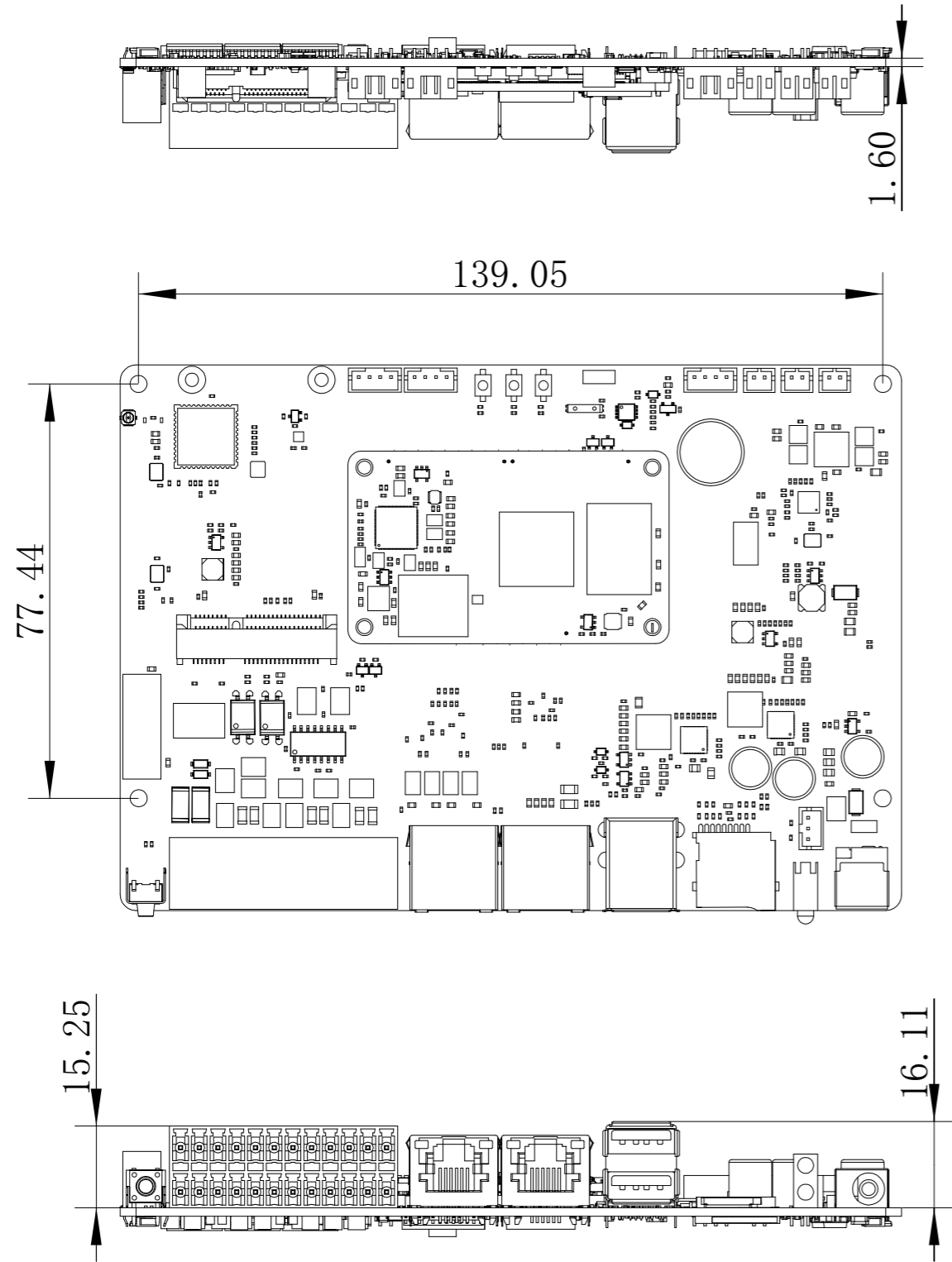
# Interface description



# Interface description

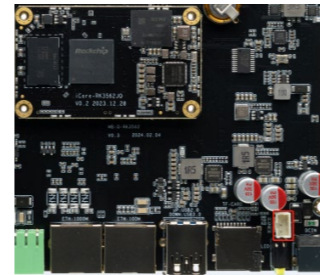


# Dimension



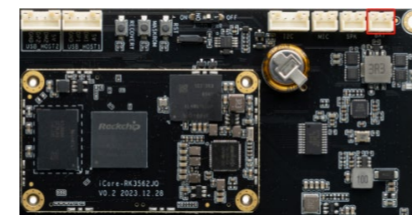
# Interface definition

## 1. (J9101)DEBUG 3PIN 2.0mm pitch wafer (WHITE)



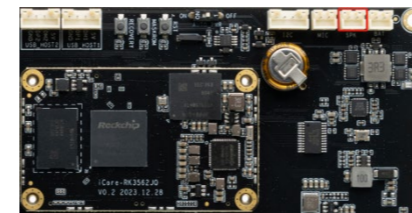
NO.	Definition	Power/V	NO.	Definition	Power/V
1	UART0_RX_M0_DEBUG_C 【pull up resistor 10K】	3.3	3	GND	
2	UART0_TX_M0_DEBUG_C 【pull up resistor 10K】	3.3			

## 2. (J9916)BAT 2 PIN 2.0mm pitch wafer (WHITE)



NO.	Definition	Power/V	NO.	Definition	Power/V
1	VBAT	4.2	2	GND	

## 3. (J7001)SPEAKER 2PIN 2.0mm pitch wafer (WHITE)

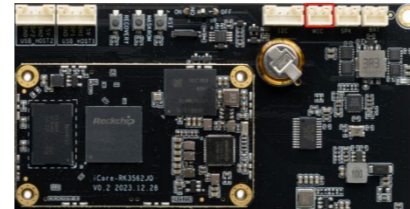


NO.	Definition	Power/V	NO.	Definition	Power/V
1	SPKP_OUT	12	2	SPKN_OUT	12



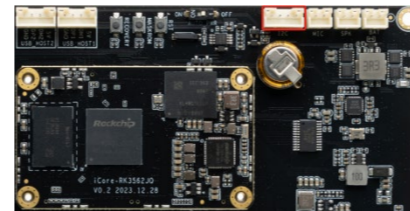
# Interface definition

## 4. (J9915)MIC 2PIN 2.0mm pitch wafer (WHITE)



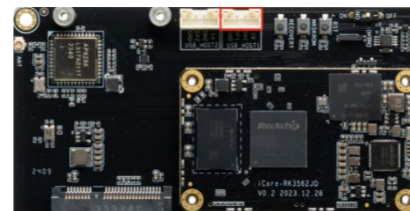
NO.	Definition	Power/V	NO.	Definition	Power/V
1	MIC1_IN	3.3	2	MIC2_IN	3.3

## 5. (J5)I2C 4PIN 2.0mm pitch wafer (WHITE)



NO.	Definition	Power/V	NO.	Definition	Power/V
1	VCC3V3_SYS(3.3V Output)	3.3	3	I2C1_SCL	3.3
2	I2C1_SDA	3.3	4	GND	

## 6. (J9)USB\_HOST1 4PIN 2.0mm pitch



NO.	Definition	Power/V	NO.	Definition	Power/V
1	GND		3	HUB_HOST20_DM2	-
2	HUB_HOST20_DP2	-	4	VCC5V0_USB_HOST1(5V Output)	5.0

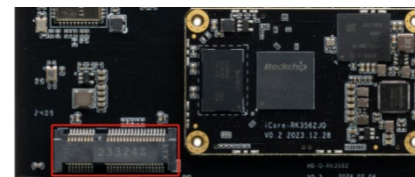
# Interface definition

## 7. (J8)USB\_HOST2 4PIN 2.0mm pitch



NO.	Definition	Power/V	NO.	Definition	Power/V
1	GND		3	HUB_HOST20_DM3	-
2	HUB_HOST20_DP3	-	4	VCC5V0_USB_HOST2(5V Output)	5.0

## 8. (U16) MINI\_PCIE\_52P\_9H (4G MOUDEL) 52PIN



NO.	Definition	Power/V	NO.	Definition	Power/V
1	NC		2	VCC3V8_4G	3.8
3	NC		4	GND	
5	NC		6	NC	
7	NC		8	UIM_PWR	1.8/3.0
9	GND		10	UIM_DAT	1.8/3.0
11	NC		12	UIM_CLK	1.8/3.0
13	NC		14	UIM_RST	1.8/3.0
15	GND		16	NC	
17	NC		18	GND	
19	NC		20	NC	
21	GND		22	4G_RESET[pull up resistor10K]	3.8
23	NC		24	NC	
25	NC		26	GND	



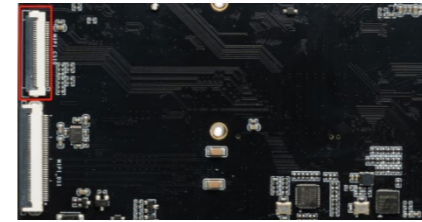
# Interface definition

27	GND		28	NC	
29	GND		30	NC	
31	NC		32	NC	
33	NC		34	GND	
35	GND		36	HUB_HOST20_DM4	-
37	GND		38	HUB_HOST20_DP4	-
39	VCC3V8_4G	3.8	40	GND	
41	VCC3V8_4G	3.8	42	NC	
43	GND		44	SIM_DET	1.8
45	NC		46	NC	
47	NC		48	NC	
49	NC		50	GND	
51	NC		52	VCC3V8_4G	3.8

# Interface definition



## 9. (J7) MIPI\_CSIO 30 PIN



NO.	Definition	Power/V	NO.	Definition	Power/V
1	I2C2_SDA_TP [pull up resistor 2.2K]	1.8	16	GND	
2	I2C2_SCL_TP [pull up resistor 2.2K]	1.8	17	MIPI_CSIO_RX_CLK0P	-
3	MIPI_PDN0_CAM	3.3	18	MIPI_CSIO_RX_CLK0N	-
4	MIPI_RESET0_CAM	3.3	19	GND	
5	GND		20	MIPI_CSIO_RX_D2P	-
6	MIPI_MCLK0	1.8	21	MIPI_CSIO_RX_D2N	-
7	MIPI_PDN1_CAM	1.8	22	GND	
8	MIPI_RESET1_CAM	3.3	23	MIPI_CSIO_RX_D3P	-
9	MIPI_MCLK1	1.8	24	MIPI_CSIO_RX_D3N	-
10	GND		25	GND	
11	MIPI_CSIO_RX_D0P	-	26	MIPI_CSIO_RX_CLK1P	-
12	MIPI_CSIO_RX_D0N	-	27	MIPI_CSIO_RX_CLK1N	-
13	GND		28	GND	
14	MIPI_CSIO_RX_D1P	-	29	VCC5V0_SYS (5V Output)	5.0
15	MIPI_CSIO_RX_D1N	-	30	VCC5V0_SYS (5V Output)	5.0

# Interface definition

## 10. (J9910) MIPI\_DSI1 40 PIN

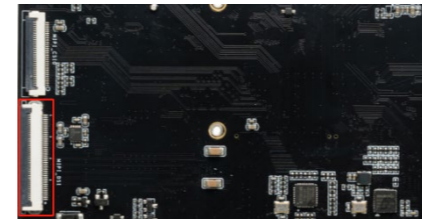


NO.	Definition	Power/V	NO.	Definition	Power/V
1	VCC3V3_TP(3.3V Output)	3.3	21	MIPI_DSI_TX_D3P/LVDS_TX_D3P	-
2	NC		22	GND	
3	TP_RST_L [pull up resistor 2.2K]	1.8	23	NC	
4	TP_INT_L [pull up resistor 2.2K]	1.8	24	NC	1.8
5	I2C2_SDA_TP [pull up resistor 2.2K]	1.8	25	LCD0_RST	1.8
6	I2C2_SCL_TP [pull up resistor 2.2K]	1.8	26	NC	
7	GND		27	NC	
8	MIPI_DSI_TX_D0N/LVDS_TX_D0N	-	28	VCC_LCD1V8	1.8
9	MIPI_DSI_TX_D0P/LVDS_TX_D0P	-	29	NC	
10	GND		30	AVEE_5V5	-5.0
11	MIPI_DSI_TX_D1N/LVDS_TX_D1N	-	31	AVEE_5V5	-5.0
12	MIPI_DSI_TX_D1P/LVDS_TX_D1P	-	32	NC	
13	GND		33	AVDD_5V5(5V Output)	+5.5
14	MIPI_DSI_TX_CLKN/LVDS_TX_CLKN	-	34	AVDD_5V5(5V Output)	+5.5
15	MIPI_DSI_TX_CLKP/LVDS_TX_CLKP	-	35	VCC_LEDK(5V Output)	5.0
16	GND		36	VCC_LEDK(5V Output)	5.0
17	MIPI_DSI_TX_D2N/LVDS_TX_D2N	-	37	VCC_LEDK(5V Output)	5.0
18	MIPI_DSI_TX_D2P/LVDS_TX_D2P	-	38	VCC_LEDA(5V Output)	5.0
19	GND		39	VCC_LEDA(5V Output)	5.0
20	MIPI_DSI_TX_D3N/LVDS_TX_D3N	-	40	VCC_LEDA(5V Output)	5.0

# Interface definition



## 11.(J10) MIPI\_CSI1 30 PIN



NO.	Definition	Power/V	NO.	Definition	Power/V
1	I2C1_SDA_M1[pull up resistor 2.2K]	1.8	16	GND	
2	I2C1_SCL_M1[pull up resistor 2.5K]	1.8	17	MIPI_CSI_RX1_CLK0P	-
3	MIPI_PDN2_CAM	3.3	18	MIPI_CSI_RX1_CLK0N	-
4	MIPI_RESET2_CAM	3.3	19	GND	
5	GND		20	MIPI_CSI_RX1_D2P	-
6	MIPI_MCLK2	3.3	21	MIPI_CSI_RX1_D2N	-
7	MIPI_PDN3_CAM	3.3	22	GND	
8	MIPI_RESET3_CAM	3.3	23	MIPI_CSI_RX1_D3P	-
9	MIPI_MCLK3	1.8	24	MIPI_CSI_RX1_D3N	-
10	GND		25	GND	
11	MIPI_CSI_RX1_D0P	-	26	MIPI_CSI_RX1_CLK1P	-
12	MIPI_CSI_RX1_D0N	-	27	MIPI_CSI_RX1_CLK1N	-
13	GND		28	GND	
14	MIPI_CSI_RX1_D1P	-	29	VCC5V0_SYS (5V Output)	5.0
15	MIPI_CSI_RX1_D1N	-	30	VCC5V0_SYS (5V Output)	5.0



## T-CHIP INTELLIGENCE TECHNOLOGY

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