

# M2 主板产品规格书

## M2 Mainboard Specification

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## 修改记录 Changelog

1.0.0	2018-06-22	中英文合并版本。Chinese and English merged version.
1.0.1	2018-11-29	修订文字笔误。Correct text errors only.
1.1.0	2019-01-15	增加组装注意事项。Add assembly precautions.
1.2.0	2019-12-26	增加 USB 端口使用说明。Add USB port notices.

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## 1 产品概述 Product Overview

M2 主板基于瑞芯微 RK3368 高性能八核应用处理器平台, RK3368 主芯片集成八核 Cortex-A53 和 GC6110 高性能四核 GPU, 主频最高可达 1.5GHz, 具备超强的计算性能、2D/3D 图形处理能力和全高清视频编解码能力, 完美支持 4Kx2K@60fps 超清解码和 4Kx2K HDMI 超清输出。

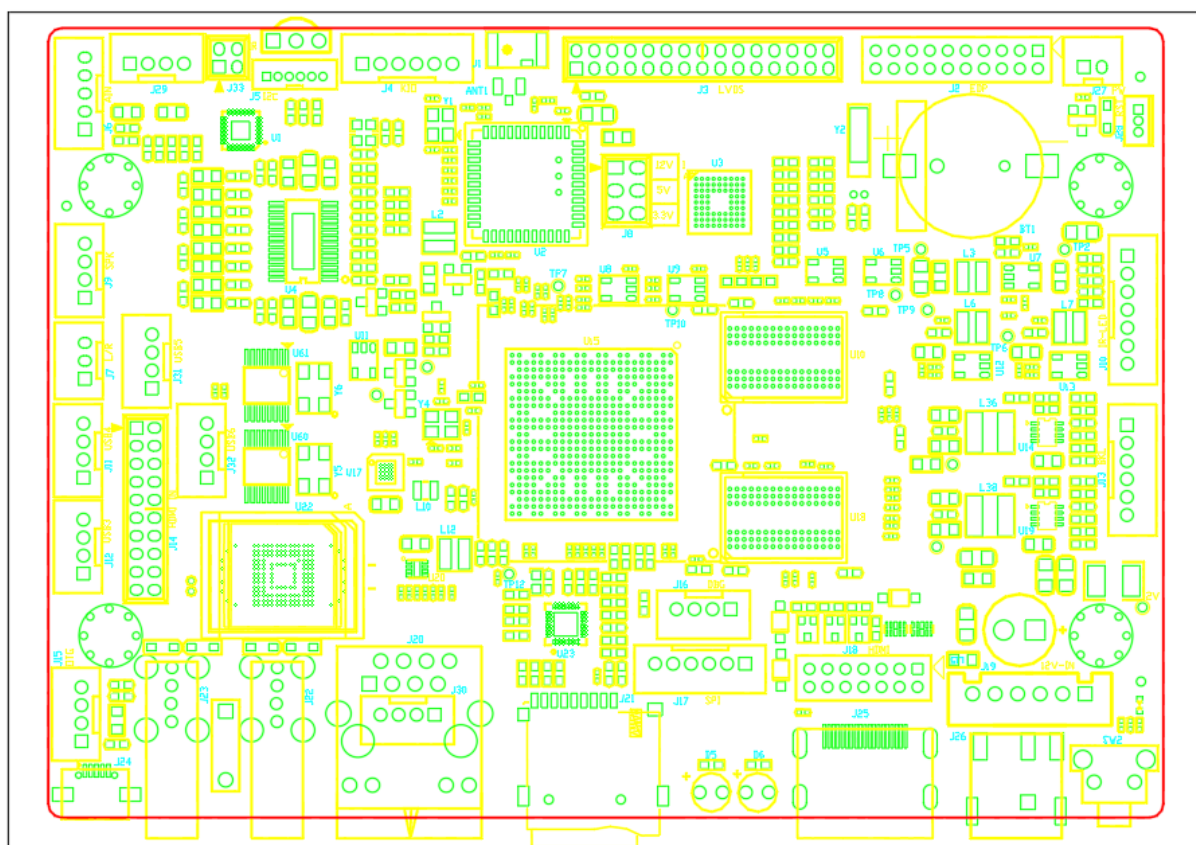
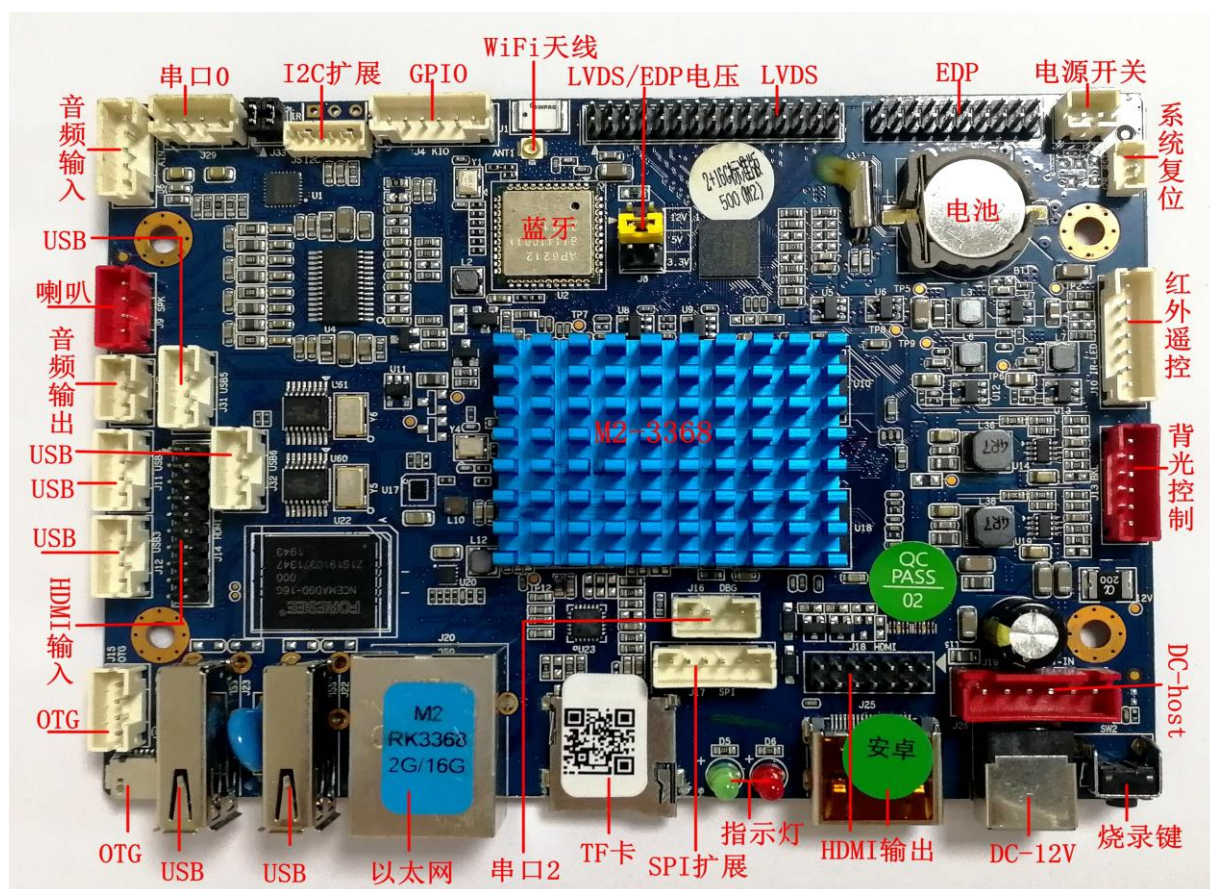
M2 mainboard is based on Rockchip RK3368 high-performance application processor platform. RK3368 SOC chip integrates Cortex-A53 octa-core and GC6110 quad-core GPU, clocked at up to 1.5GHz, with superior computing performance, 2D/3D graphics processing capabilities and Full HD video codec capabilities. It perfectly supports 4Kx2K@60fps decoding and 4Kx2K HDMI output.

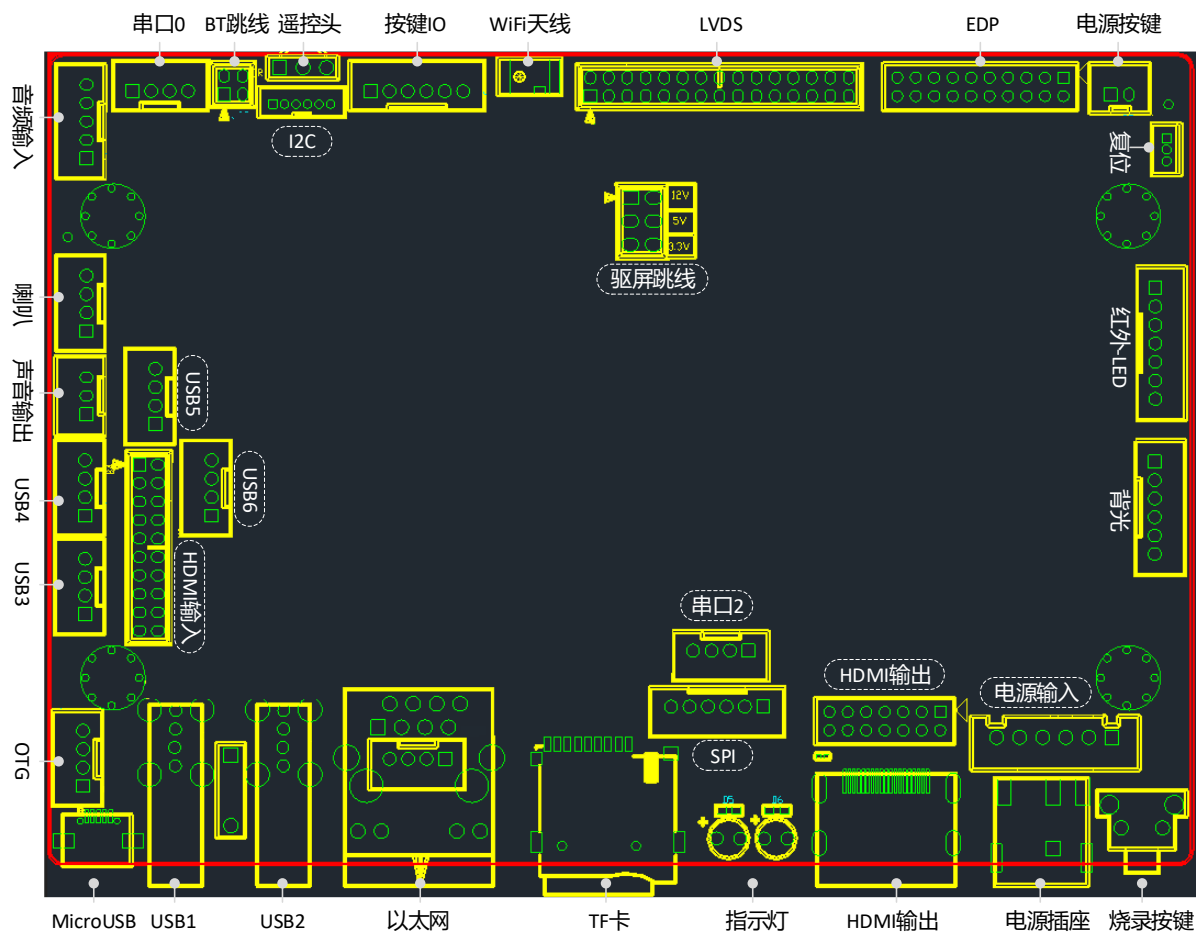
此款主板专门针对行业应用进行严格选材和设计, 紧凑的尺寸和丰富的接口方便其集成到整机中, 为最终的产品带来流畅的体验和超强的性能, 可应用于数字标牌、触摸互动、消费电子、娱乐系统等行业。

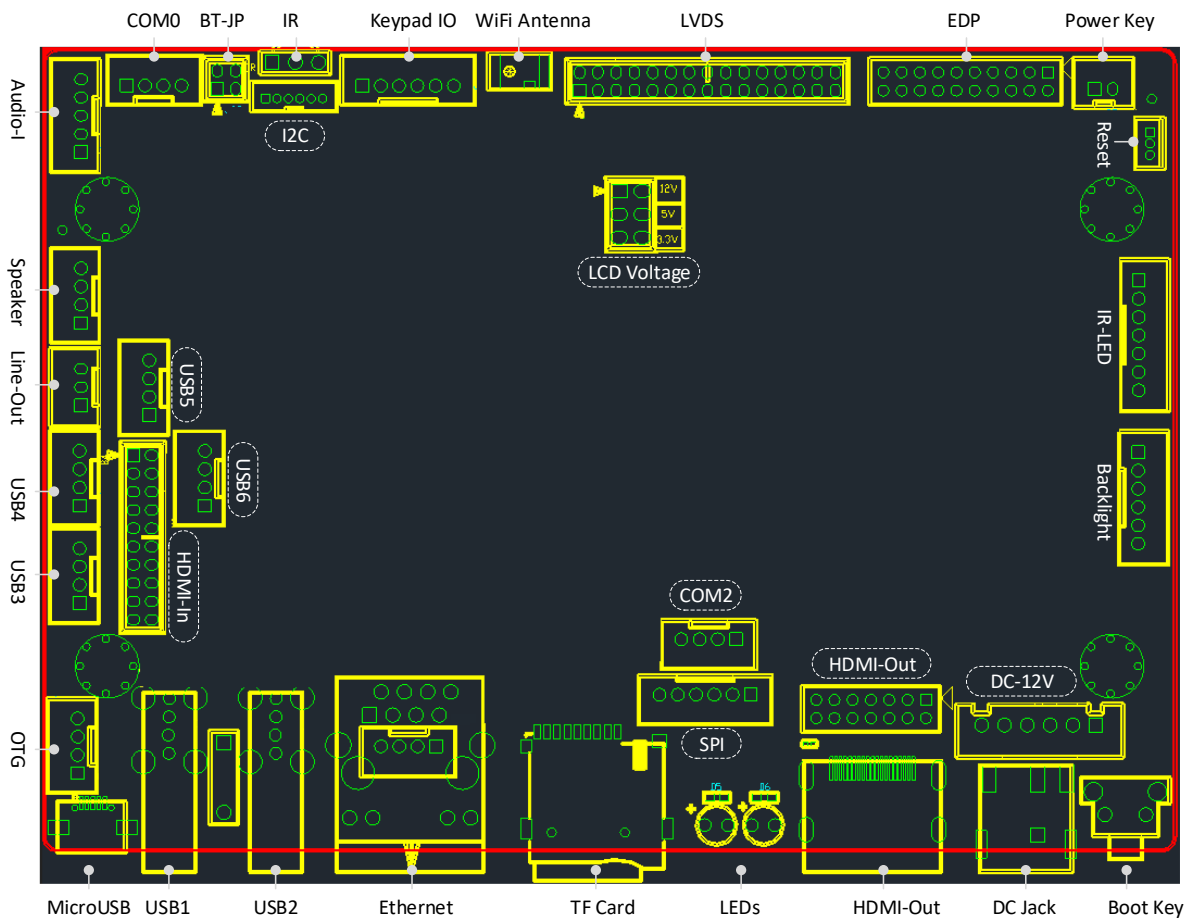
This mainboard is specially designed for commercial display applications with strict material selection and design. The compact size and rich interface facilitate its integration into the complete machine, bringing a smooth experience and superior performance to the final product. It can be applied to digital signage, touch interactive, consumer electronics, entertainment systems and other industries.

M2 主板实物照片接口示意图如下所示。

M2 mainboard actual interface diagram as shown below.







## 2 规格清单 Specification List

M2 的系统功能和接口特性如下表所示。M2's system functions and interface features are shown in the following table.

功能&接口 Function&Interface	详细描述 Detailed Description
<b>CPU</b>	RK33688 Cortex-A53 八核, 最高主频 1.5GHz RK33688 Cortex-A53 quad-core, up to 1.5GHz
<b>DDR</b>	DDR-III 1GB (2GB 可选) DDR-III 1GB (2GB optional)
<b>存储·Storage</b>	默认标配 8GB EMMC NAND 芯片, 可扩展至最大 128GB The default comes with an 8GB EMMC NAND chip that can scale up to 128GB
<b>LVDS</b>	30 针行业标准双路 LVDS 接口, 支持 VESA/JEITA 格式, 最高支持 1080P 输出 30-pin industry-standard dual LVDS supporting VESA/JEITA format up to 1080P output
<b>HDMI 输出 HDMI Output</b>	HDMI 2.0 标准显示接口, 最高支持 4K 输出 HDMI 2.0 standard display interface supports up to 4K output
<b>HDMI 输入 HDMI Input</b>	HDMI 1.4 标准输入接口, 支持 720P 和 1080P 信号 HDMI 1.4 standard video input interface supports 720P and 1080P signals
<b>EDP</b>	20 针行业标准双路 eDP 接口 (eDP 1.1), 支持 1~4 通道模式, 最高支持 1080P 输出 20-pin industry-standard EDP (eDP 1.1) supporting 1~4 lanes format up to 1080P output
<b>线路输出·Line Output</b>	支持标准左右声道线路输出 (排针接口) Support standard left and right channel line output (pin header)
<b>功放输出 Amplifier output</b>	8 欧·6W 双路音频功放输出 8 Ohm 6W Dual Audio Amplifier Output
<b>MIC 输入 MIC Input</b>	差分 MIC 输入 (排针接口) Differential MIC input (pin header)
<b>线路输入·Line Input</b>	支持标准左右声道线路输入 (排针接口) Support standard left and right channel line input (pin header)
<b>USB 2.0 接口 USB 2.0 Interface</b>	2 个外置竖插接口 (单层插座), 4 个内置排针, 1 个 OTG 排针, 1 个 MicroUSB 插座 2 horizontal connectors (Single Socket), 4 pin headers, 1 OTG pin header, 1 MicroUSB
<b>串口 Serial Port</b>	1 个 TTL 内置 (和 TF 卡复用), 1 个 TTL 内置 (和蓝牙串口复用) 1 TTL 4 pin header (shared with TF), 1 TTL 4 pin header (shared with BT)
<b>TF 卡 Micro SD Card</b>	自弹式 TF 卡插座, 最高支持 128GB TF 卡 Self-elastic micro SD card socket, up to 128GB capacity
<b>摄像头 Camera</b>	支持 200 万像素以内 USB 摄像头 Support USB camera within 2 million pixels
<b>WiFi</b>	内置高性能 SDIO 接口 WiFi 模块, 支持 IEEE 802.11 b/g/n Built-in high performance SDIO interface WiFi module, support IEEE 802.11 b/g/n
<b>蓝牙 Bluetooth</b>	内置高性能串口 BT 模块 (选配), 支持 V2.1+EDR/BT v3.0/BT v3.0+HS/BT v4.0 Built-in high performance serial interface BT module (optional) with support for



功能&接口 Function&Interface	详细描述 Detailed Description
	V2.1+EDR/BT v3.0/BT v3.0+HS/BT v4.0
<b>以太网口</b> Ethernet	10/100M 自适应以太网 RJ45 网口+4 芯排针 (需外接变压器) 10/100M Adaptive Ethernet RJ45 connector+4-Pin header
<b>背光控制</b> Backlight Control	行业标准液晶屏背光控制接口, 支持背光开关和亮度调节 Industry standard LCD backlight control header, support for backlight switch and brightness adjustment
<b>红外遥控</b> Infrared RC	标准红外遥控接收头和红外接收排针接口 Standard infrared remote control receiver and infrared receiver pin header
<b>GPIO 信号</b> GPIO Signals	5 路 GPIO 信号, 可扩展 GPIO 按键和/或 3.3V 输入/输出 5-way GPIO signals for such as GPIO buttons and/or 3.3V digital input/output
<b>I2C 总线</b> I2C Bus	I2C 排针接口, 可扩展 I2C 电容屏等 I2C pin header for I2C capacitive screen and etc
<b>SPI 总线</b> SPI Bus	SPI 排针接口, 可扩展 SPI 串口等 SPI pin header for SPI UART and etc
<b>实时时钟</b> Real Time Clock	超低功耗 RTC 电路 (CR1220 电池), 并可支持定时开关机 Ultra-low-power RTC circuit (CR1220 battery) with timer and alarm functionalities
<b>指示灯</b> LED Indicator	红色待机指示和绿色工作指示灯 Red LED indicator for standby and green LED indicator for running
<b>按键</b> Buttons	烧录键 (RECOVERY) 和电源键 Recovery mode button and power switch button
<b>开关机控制</b> Switch Control	2 芯轻触开关接口开关机信号插座, 可一键开关机/一键开关屏 2-pin header for one-key power on and off
<b>复位控制</b> Reset Control	3 芯轻触开关接口复位信号插座 3-pin header for hardware reset
<b>电源输入</b> DC Input	支持 9~15V 宽电压直流电源输入 Supports 9~15V wide voltage DC power input
<b>环境要求</b> Ambient Requirement	工作温度 0°~70°, 工作湿度 0%~95% (不结露) Working temperature 0°~70°, working humidity 0%~95% (non-condensing)
<b>物理尺寸</b> Physical Size	长*宽*高 (123.8mm*87.7mm*17mm), <b>PCB 正面高度 15mm</b> Length*Width*Height (123.8mm*87.7mm*17mm), <b>PCB top side height 15mm</b>
<b>安卓系统</b> Android Version	推荐 Android 5.1.1, 可选 Android 6.0 Recommended Android 5.1.1, Optional Android 6.0

### 3 接口定义 Interface definition

#### 3.1 J2 EDP 接口 EDP Header

【J2】EDP 接口（双排 2.0mm-方孔为 1 脚）。[J2] EDP header [DIP 2.0mm-Square pad is pin 1].

Pin#	Definition	Pin#	Definition
1	VLCD	2	VLCD
3	GND	4	GND
5	TX0-	6	TX0+
7	TX1-	8	TX1+
9	TX2-	10	TX2+
11	TX3-	12	TX3+
13	GND	14	GND
15	AUX-	16	AUX+
17	GND	18	GND
19	3.3V	20	HPD

#### 3.2 J3 LVDS 接口 LVDS Header

【J3】双路 LVDS 接口（双排 2.0mm-方孔为 1 脚）。[J3] Dual LVDS header [DIP 2.0mm-Square pad is pin 1].

Pin#	Definition	Pin#	Definition
1	VLCD	2	VLCD
3	VLCD	4	GND
5	GND	6	GND
7	RX00-	8	RX00+
9	RX01-	10	RX01+
11	RX02-	12	RX02+
13	GND	14	GND
15	RX0C-	16	RX0C+
17	RX03-	18	RX03+
19	RXE0-	20	RXE0+
21	RXE1-	22	RXE1+
23	RXE2-	24	RXE2+
25	GND	26	GND
27	RXEC-	28	RXEC+
29	RXE3-	30	RXE3+

### 3.3 J4 KIO 按键接口 KIO Keypad Header

【J4】KIO 按键接口 (单排 2.0mm-方孔为 1 脚)。[J4] KIO Keypad Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	3.3V	3.3V 供电输出 Power output supply 3.3V
2	K1	按键1 (可做普通 GPIO 用) K1 (Regular GPIO option)
3	K2	按键2 (可做普通 GPIO 用) K2 (Regular GPIO option)
4	K3	按键3 (可做普通 GPIO 用) K3 (Regular GPIO option)
5	K4	按键4 (可做普通 GPIO 用) K4 (Regular GPIO optiol)
6	K5	按键5 (可做普通 GPIO 用) K5 (Regular GPIO option)
7	GND	数字地 Digital Ground

注意：所有 KIO 信号均可以通过单独的软件版本调整为常规 GPIO 使用 (电平为 3.3V)；默认情况下 K1 音量+/K2 音量-/K3 待机/K4 退出/K5 主屏。Note: All KIO signals can be adjusted to regular GPIO via a separated software version (level is 3.3V); by default K1 Volume+/K2 Volume-/K3 Standby/K4 Exit/K5 Home.

### 3.4 J5 I2C 总线接口 I2C Bus Header

【J5】I2C 总线接口 (单排 1.25mm-方孔为 1 脚)。[J5] I2C Bus Header (SIP 1.25mm-Square pad is pin 1).

Pin#	Definition	Note
1	3.3V	3.3V 供电输出 Power output supply 3.3V
2	SCL	I2C 总线时钟信号 I2C Bus clock signal
3	SDA	I2C 总线数据信号 I2C Bus data
4	INT	中断输入 (3.3V 电平) Interrupt input (3.3V level)
5	RST	复位输出 (3.3V 电平) Mainboard reset output (3.3V level)
6	GND	数字地 Digital Ground

### 3.5 J6 音频输入接口 Audio Input Header

【J6】音频输入接口 (单排 2.0mm-方孔为 1 脚)。[J6] Audio inut header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	音频地 Audio Ground

2	MIC	单声道麦克风输入 Mono microphone input
3	RIN	线路输入右声道 Line input right channel
4	GND	音频地 Audio Ground
5	LIN	线路输入左声道 Line input left channel

### 3.6 J7 音频线路输出 Audio Line Output

【J7】音频线路输出（单排 2.0mm-方孔为 1 脚）。[J7] Audio Line Output (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	AL	立体声输出左声道 Stereo output left channel
2	GND	音频地 Audio Ground
3	AR	立体声输出右声道 Stereo output right channel

### 3.7 J8 驱屏电压接口 LCD Voltage Header

【J8】驱屏跳线接口（双排 2.54mm-方孔为 1 脚）。1 和 2 脚跳线帽短接则 J2 和 J3 的 VLCD 为 12V，3 和 4 脚跳线帽短接则 J2 和 J3 的 VLCD 为 5V，5 和 6 脚跳线帽短接则 J2 和 J3 的 VLCD 为 3.3V。请根据实际使用的液晶屏的逻辑电压调整跳线帽位置，注意不要跳错位置否则会造成液晶屏和主板电路的损坏。

[J8] LCD Voltage Header (DIM 2.54mm-Square pad is pin 1). If pin 1 and 2 are jumper shorted, the VLCD of J2 and J3 is 12V. If pin 3 and 4 are jumper shorted, the VLCD of J2 and J3 is 5V. If pin 5 and 6 are jumper shorted, the VLCD of J2 and J3 is 3.3V. Please adjust the jumper position according to the actual logic voltage of the LCD screen. Be careful not to jumper to the wrong position or it may damage the LCD screen and the motherboard circuit.

### 3.8 J9 喇叭接口 Speaker Header

【J9】喇叭接口（单排 2.0mm-方孔为 1 脚）。[J9] Speaker Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	OUTP_R	喇叭右声道+ Speaker right channel +
2	OUTN_R	喇叭右声道- Speaker right channel -
3	OUTN_L	喇叭左声道- Speaker left channel -
4	OUTP_L	喇叭左声道+ Speaker left channel +

### 3.9 J10 遥控-LED 接口 Remote Control & LED Header

【J10】遥控-LED 接口 (单排 2.0mm-方孔为 1 脚)。[J10] Remote Control & LED Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	5VS	5V Standby 供电输出 Power output 5V standby
2	GND	数字地 Digital Ground
3	IR	5V 电平红外遥控输入信号 5V level Irda remote control input singal
4	IO	3.3V 电平 GPIO 输入信号 3.3V level GPIO input signal
5	GREEN	运行指示灯信号 (外接绿灯) Running indicator for external green LED
6	5VS	5V Standby 供电输出 Power output supply 5V standby
7	RED	待机指示灯信号 (外接红灯) Standby indicator for external red LED

### 3.10 J11 USB 2.0 接口 USB 2.0 Host Header

【J11】USB 2.0 接口 (单排 2.0mm-方孔为 1 脚)。[J11] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	DP	USB 差分数据+ USB Differential Data+
3	DM	USB 差分数据- USB Differential Data-
4	5V	5V 输出 Power output 5V

**注意：此端口为二级 Hub 扩展端口，触摸屏和摄像头等 USB 设备建议接 J12 口。**

### 3.11 J12 USB 2.0 接口 USB 2.0 Host Header

【J12】USB 2.0 接口 (单排 2.0mm-方孔为 1 脚)。[J12] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	DP	USB 差分数据+ USB Differential Data+
3	DM	USB 差分数据- USB Differential Data-
4	5V	5V 输出 Power output 5V

**注意：此端口为一级 Hub 扩展端口，触摸屏和摄像头等 USB 设备建议接此接口。**

### 3.12 J13 背光控制接口 Backlight Control Header

【J13】背光控制接口 (单排 2.0mm-方孔为 1 脚)。[J13] Backlight Control Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	12V	If the current exceeds 2A, external 12V is recommended
2	12V	如果电流超过2A 则建议外接12V 供电
3	EN	默认输出5V The default output is 5V
4	ADJ	3.3V 方波 (1KHz 频率) 3.3V square wave (1KHz Freq.)
5	GND	电源地 Power Ground
6	GND	电源地 Power Ground

### 3.13 J14 HDMI 输入接口 HDMI Input Header

【J14】基于 MIPI CSI 方式的 HDMI 输入接口 (双排 2.0mm-方孔为 1 脚)。[J14] HDMI input header based on MIPI CSI format [DIP 2.0mm-Square pad is pin 1].

Pin#	Definition	Pin#	Definition
1	5V	2	PON
3	GND	4	GND
5	RX0-	6	RX0+
7	RX1-	8	RX1+
9	RX2-	10	RX2+
11	RX3-	12	RX3+
13	CLK-	14	CLK+
15	INT	16	STB
17	HPD	18	RST
19	SDA	20	SCL

### 3.14 J15 USB OTG 接口 USB OTG Header

【J15】USB 调试接口 (单排 2.0mm-方孔为 1 脚) ,此接口仅用于进行系统烧录和 ADB 调试。[J15] USB ADB Header (SIP 2.0mm-Square pad is pin 1), this port should only be used as system burn or ADB connection.

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	DP	USB 差分数据+ USB Differential Data+

3	DM	USB 差分数据- USB Differential Data-
4	V5S	PC 端提供5V 供电 5V power supply from PC

### 3.15 J16 调试串口 Debug Serial Port

【J16】系统调试串口 (单排 2.0mm-方孔为 1 脚)。[J16] Debug Serial Port (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	3.3V	3.3V 供电输出 Power output supply 3.3V
2	GND	数字地 Digital Ground
3	TX	数据发送 (输出 TTL 3.3V) Data transmit (output TTL 3.3V)
4	RX	数据接收 (输入 TTL 3.3V) Data receive (input TTL 3.3V)

注意：如需将调试串口作为数据串口使用，则请联系供应商获取定制版本软件；在上电的前 5 秒此串口会输出启动信息（上位机或下位机需要处理数据容错）。Note: If you need to use the debugging serial port as a data serial port, please contact the supplier to obtain the customized software; this serial port will output the startup information in the first 5 seconds of power on (the upper or lower machine should handle this kind of data fault tolerance).

### 3.16 J17 SPI 总线接口 SPI Bus Port

【J17】SPI 总线接口 (单排 2.0mm-方孔为 1 脚)。[J17] SPI Bus Port (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	CS	SPI 片选 SPI chip select
3	CLK	SPI 时钟 SPI clock
4	RXD	SPI 数据接收 SPI data receive
5	TXD	SPI 数据发送 SPI data transmit
6	3.3V	3.3V 供电输出 Power output supply 3.3V

### 3.17 J18 HDMI 输出接口 HDMI Output Header

【J18】HDMI 输出接口 (双排 2.0mm-方孔为 1 脚)。注意：HDMI 排针输出接口对于连接线质量和长度要求很高，建议使用优质接头和线缆且长度控制在 20cm 以内。

[J18] HDMI Output Header (DIP 2.0mm-Square pad is pin 1). Note: The HDMI output header requires high quality and short cable. It is recommended to use high quality connectors and cables and the length is within 20cm.

Pin#	Definition	Pin#	Definition
1	TX2P	2	TX2N
3	TX1P	4	TX1N
5	TX0P	6	TX0N
7	TXCP	8	TXCN
9	GND	10	CEC
11	SCL	12	SDA
13	5V	14	HPD

### 3.18 J19 DC-12V 输入接口 DC-12V Input Header

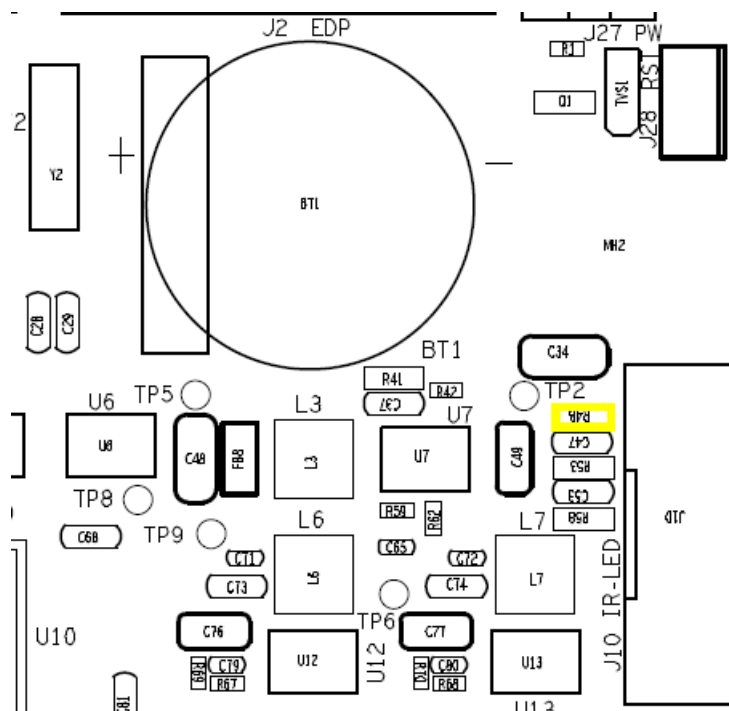
【J19】DC-12V 输入接口（单排 2.54mm-方孔为 1 脚）。[J19] DC-12V Input Header (SIP 2.54mm-Square pad is pin 1).

Pin#	Definition	Note
1	12V	直流电源输入 (9~15V) DC Power Input (9~15V)
2	12V	直流电源输入 (9~15V) DC Power Input (9~15V)
3	GND	电源地 Power Ground
4	GND	电源地 Power Ground
5	V5S	5V 待机电源输入 5V Standby Power Input
6	STB	待机信号输出 (低电平待机) Standby Enable Output (0V for Standby)

注意：如果需要使用外部电源板进行 5V 待机电源输入和待机控制，则请将电源板的 5V 待机电源接 5 脚，待机/使能控制信号接 6 脚，并且将主板内置的 5V 待机电源隔离开（需去掉主板的背面如图 U28 旁边黄色框位置的 R48）。

Note: If you need to use an external power supply board for 5V standby power input and standby control, connect the 5V standby supply of the power board to pin 5, connect the standby/enable control signal to pin 6, and isolate the built-in 5V standby power supply on the mainboard (required remove the yellow highlighted R48 near U28 from the bottom of the board as shown in the figure below).





### 3.19 J26 DC-12V 插座 DC-12V Socket

【J26】DC-12V电源插座,内正外负,内芯直径2.0mm,外圈孔径5.5mm。[J26] DC-12V power socket, positive outer and negative inner, inner pin diameter 2.0mm, outer ring diameter 5.5mm.

### 3.20 J27 电源开关接口 Power Switch Header

【J27】电源开关接口(单排2.0mm-方孔为1脚)。(J27) Power Switch Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	PW+	开关控制信号 Power control signal

注意:可实现一键开关机和一键开关屏复合按键功能。Note: One-key switch on or off and one-key switch screen composite key function.

### 3.21 J28 系统复位接口 System Reset Header

【J28】系统复位接口(单排1.25mm-方孔为1脚)。(J28) System Reset Header (SIP 1.25mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	RESET	复位信号输入 Reset signal input
3	GND	数字地 Digital Ground

### 3.22 J29 内置串口 0 Built-in Serial Port 0

【J29】内置串口 0 [其功能和蓝牙串口冲突] (单排 2.0mm-方孔为 1 脚)。[J29] Built-in Serial Port 0 [It is conflicted with BT serial] (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	RX	数据接收 (只支持3.3V TTL 电平) Data receive (only TTL 3.3V level)
3	TX	数据发送 (只支持3.3V TTL 电平) Data transmit (only TTL 3.3V level)
4	VCC	电源输出 (默认3.3V, 可选5V) Power output (Default 3.3V, 5V option)

### 3.23 J30 以太网接口 Ethernet Header

【J12】以太网 PHY 信号接口 (单排 2.0mm-方孔为 1 脚)。[J12] Ethernet PHY signal header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	RX-	接收信号负 Receiver signal negative
2	RX+	接收信号正 Receiver signal positive
3	TX-	发送信号负 Transmitter signal negative
4	TX+	发送信号正 Transmitter signal positive

### 3.24 J31 USB 2.0 接口 USB 2.0 Host Header

【J31】USB 2.0 接口 (单排 2.0mm-方孔为 1 脚)。[J31] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	DP	USB 差分数据+ USB Differential Data+
3	DM	USB 差分数据- USB Differential Data-
4	5V	5V 输出 Power output 5V

**注意:** 此端口为二级 Hub 扩展端口, 触摸屏和摄像头等 USB 设备建议接 J12 口。

### 3.25 J32 USB 2.0 接口 USB 2.0 Host Header

【J32】USB 2.0 接口 (单排 2.0mm-方孔为 1 脚)。 [J32] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	DP	USB 差分数据+ USB Differential Data+
3	DM	USB 差分数据- USB Differential Data-
4	5V	5V 输出 Power output 5V

**注意：此端口为二级 Hub 扩展端口，触摸屏和摄像头等 USB 设备建议接 J12 口。**

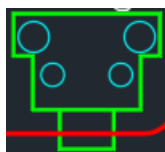
### 3.26 J33 蓝牙串口跳线 BT Serial Jumpers

【J33】蓝牙串口跳线 [当需要蓝牙功能时必须接上 2 个跳线帽] (双排 2.0mm-方孔为 1 脚)。

[J33] Bluetooth serial port jumpers [Should mounted with two jumers if Bluetooth is required] (DIP 2.0mm-Square pad is pin 1).

### 3.27 SW2 烧录模式按键 Recovery Mode Button

【SW2】直插烧录小按键, 先按住且保持然后上电约 3 秒后松开则进入烧录模式。 [SW2] On-board recovery mode button. First press and then hold for about 3-second while power on will enter the recovery mode.



## 4 物理尺寸 Physical Size

PCB 大小为 123.8mm\*87.7mm，固定孔直径 3.0mm，相应的物理尺寸参数如下图所示。如需详细尺寸信息请咨询厂家索取 DXF 档文件。

The PCB size is 123.8mm\*87.7mm and the fixing hole diameter is 3.0mm. The corresponding physical size parameters are shown in the figure below. For detailed size information, please consult the manufacturer for DXF file.

## 5 注意事项 Assembly Precautions

M2 主板组装和使用时请注意以下关键事项：Please note the following key points when using the M2 mainboard:

1. 本产品相对湿度：10%~90%，无凝露。Relative humidity of this product: 10% to 90%, no condensation.
2. 本产品工作温度：0°~70°。The working temperature of this product: 0°~70°.
3. 本产品存储温度：-40°~70°。This storage temperature of this product: -40 ° ~ 70 °.
4. 整机装配和运输过程中需做防静电处理。Anti-static treatment is required during assembly and transportation of this product.
5. 本板接口连接线缆不可过长，否则可能会影响信号质量。The board interface connection cable must not be too long. Otherwise, the signal quality may be affected.
6. 整机装配时严禁使板子受到扭曲或重压而变形。Never allow the board to be distorted or heavily stressed during assembly.
7. 严禁裸板与其他外设之间发生短路。Do not short circuit between mainboard and other peripherals.
8. 外接 LVDS 或 eDP 液晶屏时，注意驱屏电压和电流是否符合要求，且注意屏线插座 1 脚方向。When connecting to external LVDS or eDP LCD screen, pay attention to whether the screen voltage and current meet the requirements, and pay attention to the screen connector pin-1 direction.
9. 外接 LVDS 或 eDP 液晶屏时，注意背光电压和电流是否符合要求。**液晶屏背光功率在 20W 以上则建议使用单独的电源板进行背光供电。**When connecting to external LVDS or eDP LCD screen, pay attention to whether the backlight voltage and current meet the requirements.
10. 外接接口（USB、GPIO、串口、I2C、SPI、HDMI 等）外接设备时，注意外设的 IO 电平和电流是否符合要求。**使用主板接插件上的电源管脚给外设供电时，常规电源脚电流严禁超过 100mA、USB 电源脚电流严禁超过 500mA。**串口连接外设时还需要电平匹配（3.3V TTL 电平、RS-232 电平和 RS-485 电平）。When connecting to peripherals using USB, GPIO, Serial, I2C, SPI, HDMI, etc., pay attention to whether the IO voltage level and current

of the peripheral meet the requirements. When using the power pin on these connectors to supply power to the external circuit, the regular power pin must not exceed 100mA, and the USB power pin must not exceed 500mA.

11. 主板输入电源请务必接入电源输入接口或插座, 并根据总外设评估整板电流是否符合要求; **严禁为了方便操作从背光插座接口直接给主板供电**。Please connect the power to the power input socket or connector, and evaluate whether the current of the whole board meets the requirements according to the total peripherals. It is strictly forbidden to directly supply power from the backlight connector.
12. 通信模块部分距离金属壳体至少 5 毫米, 避免信号受到干扰。The communication module should be mounted at least 5mm away from the metal housing to avoid signal interference.

## 6 软件指南 Software Guide

M2 主板内部串口和扩展串口软件端口号如下：

端口 Port	软件设备节点 Software Device Node
J16	/dev/ttyS2
J29	/dev/ttyS0