

F1i 主板产品规格书

F1 iMainboard Specification

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修改记录 Changelog

1.0.0	2020-06-17	本文档第一个版本。
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1 产品概述 Product Overview

F1i 主板基于瑞芯微 PX30 高性能四核应用处理器平台，PX30 主芯片集成四核 Cortex-A35 和 Mali Dvalin-2EE 高性能 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 1080P@60fps 高清解码和 1080P@30fps 高清编码。

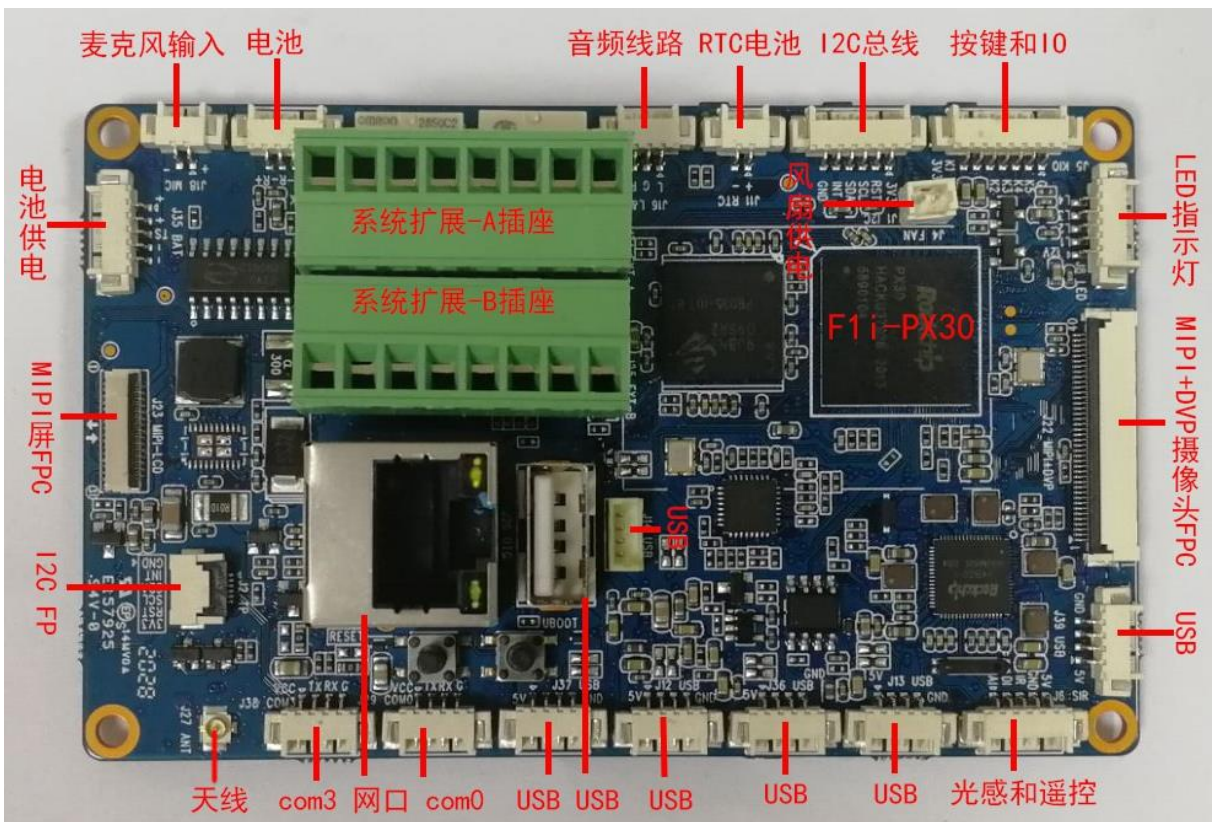
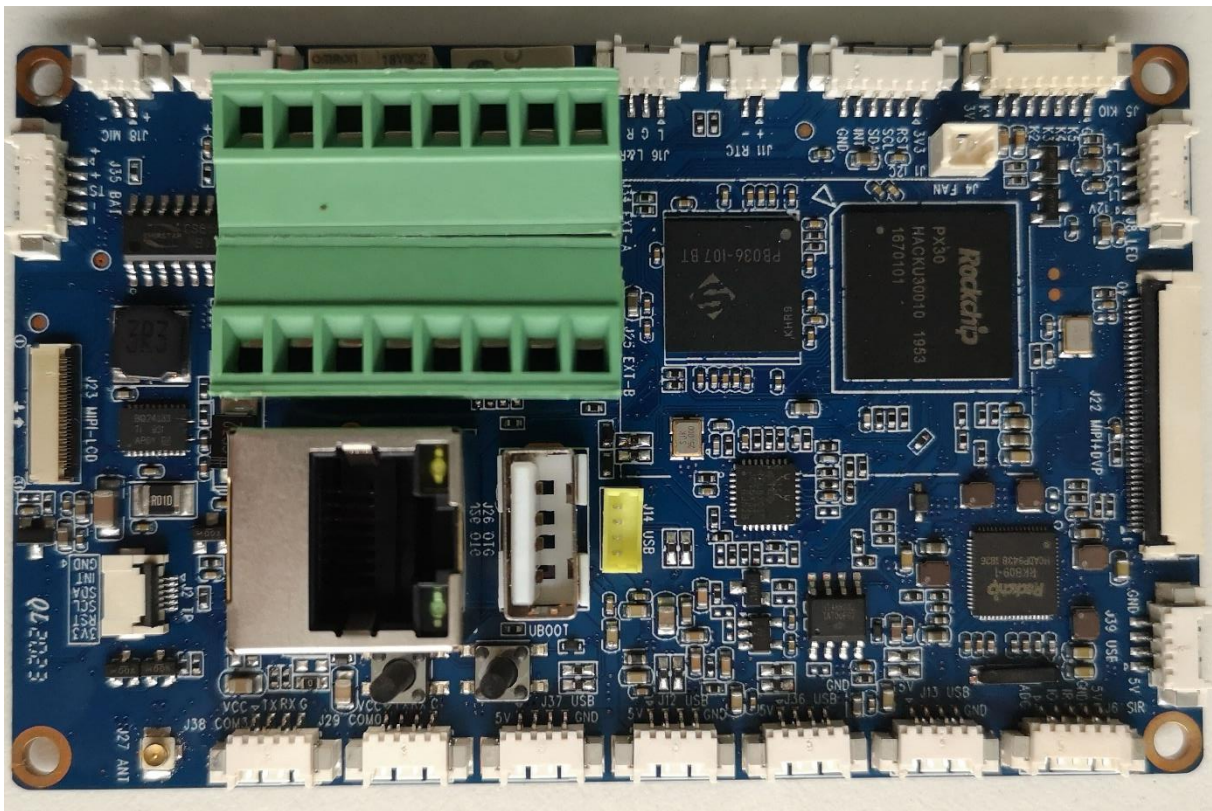
F1i mainboard is based on Rockchip PX30 high-performance application processor platform. PX30 SOC chip integrates Cortex-A35 quad-core and Mali Dvalin-2EE GPU, clocked at up to 1.5GHz, with superior computing performance, 2D/3D graphics processing capabilities and Full HD video codec capabilities. It perfectly supports 1080P@60fps decoding and 1080P@30fps encoding.

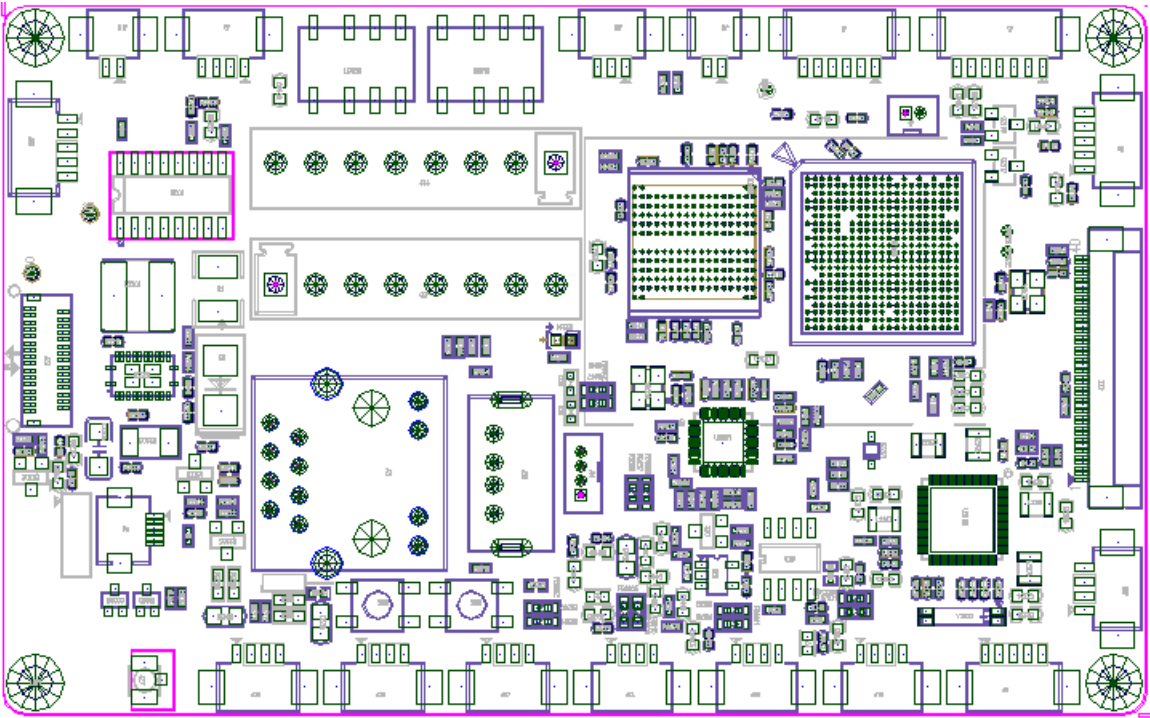
此款主板专门针对**门禁行业**选材和设计，紧凑的尺寸和丰富的接口方便其集成到整机中，为最终的产品带来流畅的体验和超强的性能。

This mainboard is specially designed for **door control application** 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.

F1i V1.0 主板接口示意图如下所示。

F1i V1.0 mainboard interface diagram as shown below.





2 规格清单 Specification List

F1i 的系统功能和接口特性如下表所示。F1i's system functions and interface features are shown in the following table.

功能&接口 Function&Interface	详细描述 Detailed Description
CPU	PX30 Cortex-A35 四核, 最高主频 1.5GHz PX30 Cortex-A35 quad-core, up to 1.5GHz
DDR	LPDDR-III 1GB (2GB 可选) LPDDR-III 1GB (2GB optional)
存储·Storage	默认标配 16GB EMMC NAND 芯片, 可扩展至最大 128GB The default comes with an 16GB EMMC NAND chip that can scale up to 128GB
MIPI-DSI	31-Pin FPC MIPI-DSI 显示接口, 最高支持 1920x1200 输出, MIPI 和 LVDS 不支持同时输出且主板默认只有一种输出格式 (更换输出需调整电阻焊接) 31-Pin FPC MIPI-DSI display port supporting up to 1920x1200
MIPI+DVP	40-Pin FPC MIPI+DVP 双目摄像头接口 40-Pin FPC MIPI+DVP dual camera port
线路输出·Line Output	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)
功放输出 Amplifier output	8 欧·10W 双路音频功放输出 8 Ohm 10W Dual Audio Amplifier Output
MIC 输入 MIC Input	单端 MIC 输入 (排针接口) Single-end MIC input (pin header)
USB 2.0 接口 USB 2.0 Interface	1 个外置竖插接口 (USB Device/Host 兼容), 6 个内置排针 1 vertical connector (USB Device/Host Compatible), 6 pin headers
韦根接口	标准双线韦根输入和输出信号接口 Standard two-line Wiegand input and output port
串口 Serial Port	1 个 TTL/RS-232/RS-485 兼容, 1 个 TTL/RS-232 兼容, 1 个 TTL 串口 1 TTL/RS-232/RS-485 compatible, 1 TTL/RS-232 compatible, 1 TTL port
门禁接口 Door Control	单刀双掷门禁继电器接口 (最大 2A) Single-pole double-throw access control relay interface (Maximum 2A)
门铃接口 Bell Control	门铃开关继电器接口 (最大 1A) Bell switch relay interface (Maximu 1A)
LED 接口 LED Port	4 个 LED 灯开关驱动接口 (可接 4 种颜色 LED 灯) 4 LED switch and driver port for 4 color LEDs
光感接口 Light Sensor	模拟和数字输入环境光感接口 Analog and digital input ambience light sensor port
风扇接口 Fan Port	12V 风扇供电接口 12V fan power supply port
TF 卡	自弹式 TF 卡插座, 最高支持 128GB TF 卡【和 KIO 复用, 功能 2 选 1】

功能&接口 Function&Interface	详细描述 Detailed Description
Micro SD Card	Self-elastic micro SD card socket, up to 128GB capacity
摄像头 Camera	支持 200 万像素以内 USB 摄像头 Support USB camera within 2 million pixels
WiFi	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
蓝牙 Bluetooth	内置高性能串口接口 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 V2.1+EDR/BT v3.0/BT v3.0+HS/BT v4.0
以太网口 Ethernet	10/100M 自适应以太网 RJ45 网口 10/100M Adaptive Ethernet RJ45 connector
背光控制 Baclight 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
红外遥控 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
GPIO 信号 GPIO Signals	5 路 GPIO 信号, 可扩展 GPIO 按键和/或 3.3V 输入/输出【和 TF 卡复用, 功能 2 选 1】 5-way GPIO signals for such as GPIO buttons and/or 3.3V digital input/output
I2C 总线 I2C Bus	I2C 排针和 FPC 接口, 可扩展 I2C 电容屏等 I2C pin header and FPC for I2C capacitive screen and etc
实时时钟 Real Time Clock	超低功耗 RTC 电路 (带 CR1220 纽扣电池), 并可支持定时开关机 Ultra-low-power RTC circuit (CR1220 battery) with timer and alarm functionalities
指示灯 LED Indicator	贴片系统运行指示灯 One LED for system running
按键 Buttons	两个竖按按键 (烧录和复位)、三个侧按按键 (音量+、音量-、PW) Two vertical button (Uboot and Reset) and three side button (Vol+, Vol- and PW)
电源输入 DC Input	支持 9~15V 宽电压直流电源输入 Supports 9~15V wide voltage DC power input
电池供电 Battery Supply	支持两节锂电池供电 (8.4V) 和充电 Support dual cell Lithium-ion battery supply and charge
环境要求 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)
物理尺寸 Physical Size	长*宽*高 (100mm*62mm*25mm), PCB 正面高度 18mm Length*Width*Height (100mm*62mm*25mm), PCB top side height 18mm
安卓系统 Android Version	推荐 Android 8.1 Recommended Android 8.1

3 接口定义 Interface definition

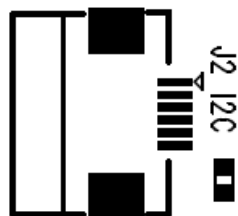
3.1 J1 I2C 总线接口 I2C Bus Header

【J1】I2C 总线接口 (单排 1.25mm-三角为 1 脚)。[J1] I2C Bus Header (SIP 1.25mm-Triangle pad is pin 1).

Pin#	Definition	Note
1	3V3	3.3V 供电输出 Power output supply 3.3V
2	RST	复位输出 (3.3V 电平) Mainboard reset output (3.3V level)
3	SCL	I2C 总线时钟信号 I2C Bus clock signal
4	SDA	I2C 总线数据信号 I2C Bus data
5	INT	中断输入 (3.3V 电平) Interrupt input (3.3V level)
6	GND	数字地 Digital Ground

3.2 J2 I2C FPC 接口 I2C FPC Header

【J2】I2C 总线接口 (FPC-0.5mm 上下接触三角为 1)。[J2] I2C Bus Header (FPC-0.5mm Top/Bottom Contact Triangle Pin-1).



Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	INT	中断输入 (3.3V 电平) Interrupt input (3.3V level)
3	SDA	I2C 总线数据信号 I2C Bus data
4	SCL	I2C 总线时钟信号 I2C Bus clock signal
5	RST	复位输出 (3.3V 电平) Mainboard reset output (3.3V level)
6	3V3	3.3V 供电输出 Power output supply 3.3V

3.3 J4 风扇供电 Fan Supply

【J4】风扇供电接口 (单排 1.25mm-方孔为 1 脚)。[J4] Keypad and Switch header (SIP 1.25mm-Square pad is pin 1).

Pin#	Definition	Note
1	5V	5V 供电 5V Power Supply
2	P-	供电开关 Power Switch

说明：P-可通过 GPIO 编号 109 进行控制开关（高电平导通打开风扇供电）。

3.4 J5 按键和 IO Keypad and IO Header

【J5】按键和开关接口（单排 1.25mm-三角为 1 脚）。[J5] Keypad and Switch header (SIP 1.25mm-Triangle pad is pin 1).

Pin#	Definition	Note
1	GND	数字地 Digital Ground
2	K5	按键/IO [软件编号63] Keypad/IO
3	K4	按键/IO [软件编号61] Keypad/IO
4	K3	按键/IO [软件编号60] Keypad/IO
5	K2	按键/IO [软件编号59] Keypad/IO
6	K1	按键/IO [软件编号58] Keypad/IO
7	3V3	3.3V 供电 3.3V Supply

说明：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.

注意：KIO 信号和 TF 卡冲突，两者功能 2 选 1，需通过不同的软件版本选择。

3.5 J6 光感和遥控接口 Light Sensor & Remote Control Header

【J6】光感和遥控接口（单排 1.25mm-三角为 1 脚）。[J6] Light Sensor & Remote Control Header (SIP 1.25mm-Triangle pad is pin 1).

Pin#	Definition	Note
1	ADC	模拟 ADC 信号输入 Analogue ADC signal input
2	IO	3.3V 电平 GPIO 输入信号 [软件编号17] 3.3V level GPIO input signal
3	IR	5V 电平遥控/光感输入信号 5V level Irda or sensor input signal
4	GND	数字地 Digital Ground
5	5VS	5V Standby 供电输出 Power output supply 5V standby

3.6 J8 LED 指示灯 LED Indicators

【J8】LED 指示灯（单排 1.25mm-三角为 1 脚）。[J8] LED Indicators (SIP 1.25mm-Triangle pad is pin 1).

Pin#	Definition	Note
1	12V	板载12V 输出 On-board 12V Power Output
2	L1	LED1控制开关 [软件 GPIO 编号112] LED1 Switch
3	L2	LED2控制开关 [软件 GPIO 编号113] LED2 Switch
4	L3	LED3控制开关 [软件 GPIO 编号114] LED3 Switch
5	L4	LED3控制开关 [软件 GPIO 编号115] LED3 Switch

说明：将 LED 灯板正极接电源 12V 或 5V、负极接 LED1~3 的某个针脚，可通过 GPIO 编号进行控制开关（高电平导通则点亮 LED 灯）。此接口如果 12V 供电每个 LED 信号最大可提供约 1A 的电流；如果用 5V 供电则每个 LED 信号最大电流不超过 100mA。

3.7 J9 喇叭接口 Speaker Header

【J9】喇叭接口（单排 1.25mm-三角为 1 脚）。[J9] Speaker Header (SIP 1.25mm-Triangle pad is pin 1).

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

3.8 J11 RTC 电池座 RTC Battery Header

【J11】RTC 电池座（单排 1.25mm-三角为 1 脚）。[J11] RTC Battery Header (SIP-1.25mm Square pad is pin 1).

Pin#	Definition	Note
1	BAT+	3V 纽扣电池正极 3V Coin Battery Positive
2	BAT-	3V 纽扣电池负极 3V Coin Battery Negative

3.9 J12 USB 2.0 接口 USB 2.0 Host Header

【J12】USB 2.0 接口 (单排 1.25mm-三角为 1 脚)。[J12] USB 2.0 Host Header (SIP 1.25mm-Square pad is pin 1).

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

3.10 J13 USB 2.0 接口 USB 2.0 Host Header

【J13】USB 2.0 接口 (单排 1.25mm-三角为 1 脚)。[J13] USB 2.0 Host Header (SIP 1.25mm-Square pad is pin 1).

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

3.11 J14 USB 2.0 接口 USB 2.0 Host Header

【J14】USB 2.0 接口 (单排 1.25mm-方孔为 1 脚)。[J14] USB 2.0 Host Header (SIP 1.25mm-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

3.12 J16 音频线路输出 Audio Line Output

【J16】音频线路输出 (单排 1.25mm-三角为 1 脚)。[J16] Audio Line Output (SIP 1.25mm-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

3.13 J18 麦克风输入接口 Mic Input Header

【J18】音频输入接口（单排 1.25mm-三角为 1 脚）。[J18] Audio input header (SIP 1.25mm-Square pad is pin 1).

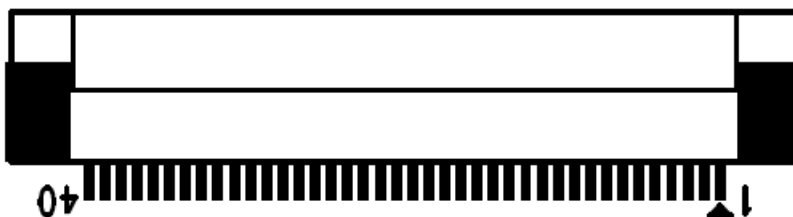
Pin#	Definition	Note
1	MIC	单声道麦克风输入 Mono microphone input
2	GND	音频地 Audio Ground

3.14 J21 RJ45 以太网插座 RJ45 Ethernet Jack

【J21】RJ45 以太网口。[J21] RJ45 Ethernet Jack.

3.15 J22 MIPI+DVP 摄像头 FPC 接口 MIPI +DVP Camera FPC Connector

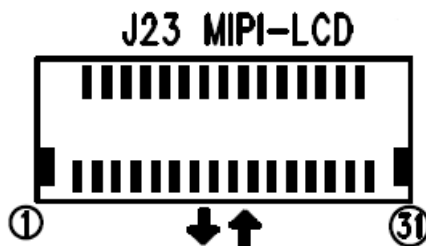
【J22】MIPI+DVP 摄像头 FPC 接口（FPC-0.5mm 40-Pins **上下接触**三角为 1 脚）。[J22] MIPI+DVP Camera FPC Connector (FPC-0.5mm 40-Pin **Top/Bottom Contact Triangle Pin-1**).



PIN脚定义		对接平台的IO信号为1.8V													
01	VCC1.2	06	IR_D7	11	IR_D2	16	GND	21	NC	26	NC	31	RGB_MDNO	36	RGB_MCN
02	VCC3.3	07	IR_D6	12	IR_D1	17	IR_MCLK	22	IR_SCL	27	NC	32	GND	37	RGB_RST
03	VCC1.8	08	IR_D5	13	IR_D0	18	GND	23	IR_SDA	28	RGB_MDP1	33	RGB_MCLK	38	NC
04	IR_D9	09	IR_D4	14	IR_VSYNC	19	IR_PCLK	24	NC	29	RGB_MDN1	34	GND	39	RGB_SCL
05	IR_D8	10	IR_D3	15	IR_HREF	20	IR_RST	25	NC	30	RGB_MDP0	35	RGB_MCP	40	RGB_SDA

3.16 J23 MIPI 屏 FPC 接口 MIPI Panel FPC Connector

【J23】MIPI 屏 FPC 接口（FPC-0.3mm 31-Pin **上下接触后翻盖**）。[J23] MIPI Panel FPC Connector (FPC-0.3mm 31-Pin **Top/Bottom Contact**).



Pin#	Definition	Note
1	LED+	LED 阳极 LED Anode
2	LED+	LED 阳极 LED Anode
3	LED+	LED 阳极 LED Anode
4	NC	未连接 Not Connected
5	LED-	LED 阴极 LED Cathode
6	LED-	LED 阴极 LED Cathode
7	LED-	LED 阴极 LED Cathode
8	LED-	LED 阴极 LED Cathode
9	GND	数字地 Digital Ground
10	GND	数字地 Digital Ground
11	MIPI_D2P	+MIPI 差分数据输出 +MIPI differential lane2
12	MIPI_D2N	-MIPI 差分数据输出 -MIPI differential lane2
13	GND	数字地 Digital Ground
14	MIPI_D1P	+MIPI 差分数据输出 +MIPI differential lane1
15	MIPI_D1N	-MIPI 差分数据输出 -MIPI differential lane1
16	GND	数字地 Digital Ground
17	MIPI_CKP	+MIPI 差分时钟输出 +MIPI differential clock output
18	MIPI_CKN	-MIPI 差分时钟输出 -MIPI differential clock output
19	GND	数字地 Digital Ground
20	MIPI_D0P	+MIPI 差分数据输出 +MIPI differential lane0
21	MIPI_D0N	-MIPI 差分数据输出 -MIPI differential lane0
22	GND	数字地 Digital Ground
23	MIPI_D3P	+MIPI 差分数据输出 +MIPI differential lane3
24	MIPI_D3N	-MIPI 差分数据输出 -MIPI differential lane3
25	GND	数字地 Digital Ground
26	VDD-1V8	供电输出1.8V Power Supply 1.8V (默认不连接, 需加焊 R9232 0R)
27	RESET	复位信号 (1.8V 电平) Reset Signal in 1.8V
28	GND	数字地 Digital Ground
29	VDD-1V8	供电输出1.8V Power Supply 1.8V
30	VDD-3V3	供电输出3.3V Power Supply 3.3V
31	VDD-3V3	供电输出3.3V Power Supply 3.3V

3.17 J25 系统扩展-B 插座 System Extend-B Socket

【J25】系统扩展-B 插座 (2EDG-3.5mm 方孔 1 脚)。 [J25] System Extend-B Socket (2EDG-3.5mm-Square pad pin 1).

Pin#	Definition	Note
1	GND	电源地 Power Ground
2	WG_OUT1	韦根输出1 [软件编号116]
3	WG_OUT0	韦根输出0 [软件编号117]
4	GND	电源地 Power Ground
5	WG_IN1	韦根输入1 [软件编号106]
6	WG_IN0	韦根输入0 [软件编号107]
7	BELL-	门铃- [软件编号102]
8	BELL+	门铃+ [软件编号102]

3.18 J26 USB Type A 插座 USB Type A Socket

【J26】标准竖插 USB 2.0 Type A 插座，默认配置为 USB Device 功能用于烧录和调试，可通过软件配置为 USB Host。 [J26] USB Type A Socket, it is configured as USB Device function by default for firmware download and debug. It could be configured as USB Host function via software.

3.19 J27 WiFi 天线卡扣 WiFi Antenna IPEX

【J27】WiFi 天线卡扣。 [J27] WiFi Antenna IPEX.

3.20 J28 TF 卡座 TF Card Jack

【J28】TF 卡座。 [J28] TF Card Jack.

3.21 J29 内置串口 0 Built-in Serial Port 0

【J29】内置数据串口 0 (单排 1.25mm-三角为 1 脚)，U35 焊接则为 RS-232 电平，否则为 TTL 电平。 [J29] Built-in Serial Port 2 (SIP 1.25mm-Square pad is pin 1). It is RS-232 voltage level if U35 mounted.

Pin#	Definition	Note
1	VCC	电源输出 (默认3.3V, 可选5V) Power output (Default 3.3V, 5V option)
2	TX	数据发送 (TTL 3.3V 或 RS-232电平) Data transmit (TTL 3.3V or RS-232 level)

3	RX	数据接收 (TTL 3.3V 或 RS-232电平) Data receive (TTL 3.3V or RS-232 level)
4	GND	数字地 Digital Ground

3.22 J34 系统扩展-A 插座 System Extend-A Socket

【J34】系统扩展-B 插座 (2EDG-3.5mm 方孔 1 脚)。[J34] System Extend-B Socket (2EDG-3.5mm-Square pad pin 1).

Pin#	Definition	Note
1	GND	电源地 Power Ground
2	B-	RS485 B-信号 (/dev/ttyS5)
3	A+	RS485 A+信号 (/dev/ttyS5)
4	NO	门禁继电器常开信号 Relay Normal Open
5	COM	门禁继电器公共端 Relay Common Port
6	NC	门禁继电器常闭信号 Relay Normal Close
7	GND	电源地 Power Ground
8	12V-IN	系统12V 电源输入 12-V Power Input

3.23 J35 电池供电接口 Battery Supply Header

【J35】电池供电接口(单排 1.25mm-三角为 1 脚)。[J35] Battery Supply Header (SIP 1.25mm-Triangle pad is pin 1).

Pin#	Definition	Note
1	12V	双节电池正极 Two-cell Li-Ion battery positive
2	12V	双节电池正极 Two-cell Li-Ion battery positive
3	TS	电池温度侦测 Battery Temperature Sensor
4	GND	双节电池负极 Two-cell Li-Ion battery negative
5	GND	双节电池负极 Two-cell Li-Ion battery negative

3.24 J36 USB 2.0 接口 USB 2.0 Host Header

【J36】USB 2.0 接口 (单排 1.25mm-三角为 1 脚)。[J36] USB 2.0 Host Header (SIP 1.25mm-Square pad is pin 1).

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

3.25 J37 USB 2.0 接口 USB 2.0 Host Header

【J37】USB 2.0 接口 (单排 1.25mm-三角为 1 脚)。[J37] USB 2.0 Host Header (SIP 1.25mm-Square pad is pin 1).

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

3.26 J38 内置串口 3 Built-in Serial Port 3

【J38】内置数据串口 3 (单排 1.25mm-三角为 1 脚), 只支持 TTL 电平。[J29] Built-in Serial Port 2 (SIP 1.25mm-Square pad is pin 1). It only supports TTL level.

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

3.27 J39 USB 2.0 接口 USB 2.0 Host Header

【J39】USB 2.0 接口 (单排 1.25mm-三角为 1 脚)。[J39] USB 2.0 Host Header (SIP 1.25mm-Square pad is pin 1).

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

3.28 SW1 音量+按键 Volume Up Button

【SW1】音量+按键。[SW1] Volume Up button.

3.29 SW2 音量-按键 Volume Down Button

【SW1】音量-按键。 [SW1] Volume Down button.

3.30 SW7 电源按键 Power Button

【SW1】电源按键，短按开关屏、长按开关机（开机不上电需特殊的单片机版本）。 [SW1] Power button for short-press switch on/off screen and long-press power on/off board.

3.31 SW6 烧录模式按键 Recovery Mode Button

【SW6】竖按烧录长按键，先按住且保持然后上电约 3 秒后松开则进入烧录模式。 [SW6] On-board recovery mode button. First press and then hold for about 3-second while power on will enter the recovery mode.

3.32 SW8 硬件复位按键 Hardware Reset Button

【SW8】竖按复位长按键。 [SW8] Hardware reset button.

4 物理尺寸 Physical Size

PCB 大小为 100mm*62mm, 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 100mm*62mm 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 Precautions

F1i 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 F1i 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。**使用主板插件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

F1i 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
J29	/dev/ttyS0
J38	/dev/ttyS3
J34-6/7	/dev/ttyS5