

M12HX-OPS

用户使用手册 User Manual



产品型号 Model No.: M12HX-OPS

PCB 版本 PCB_VERSION: V0.1

声明： Statement:

本手册包含的内容并不代表本公司承诺，本公司保留对此手册更改的权力，且不另行通知，对于任何因安装、使用不当而导致的间接、直接、有意或无意的损坏及隐患概不负责。

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警告提示 Warning

为避免电击危险： To avoid the risk of electric shock:

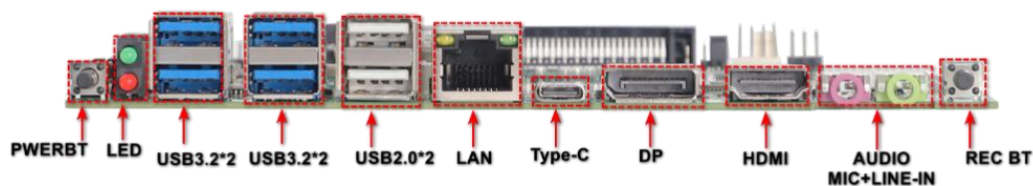
- 请勿在雷暴天气期间连接或断开任何电缆的连接，安装，维护或重新配置本产品。 Do not connect or disconnect any cables, install, maintain or reconfigure this product during a thunderstorm.
- 将所有电源线连接正确且采用接地的电源插座。 Connect all power cords properly and use a grounded electrical outlet.
- 将所有要连接到本产品的设备连接到正确连线的插座。 Connect all devices to be connected to this product to properly wired outlets.
- 尽量仅用单手连接或断开信号电缆的连接。 Try to connect or disconnect signal cables with one hand only.

更换系统电池时，请使用同类电池进行更换。电池含锂，如果使用、操作或处理不当会发生爆炸。 When replacing the system battery, use a comparable battery for replacement. Batteries contain lithium and can explode if used, handled, or disposed of incorrectly.

I. 详细规格 Details Specifications:

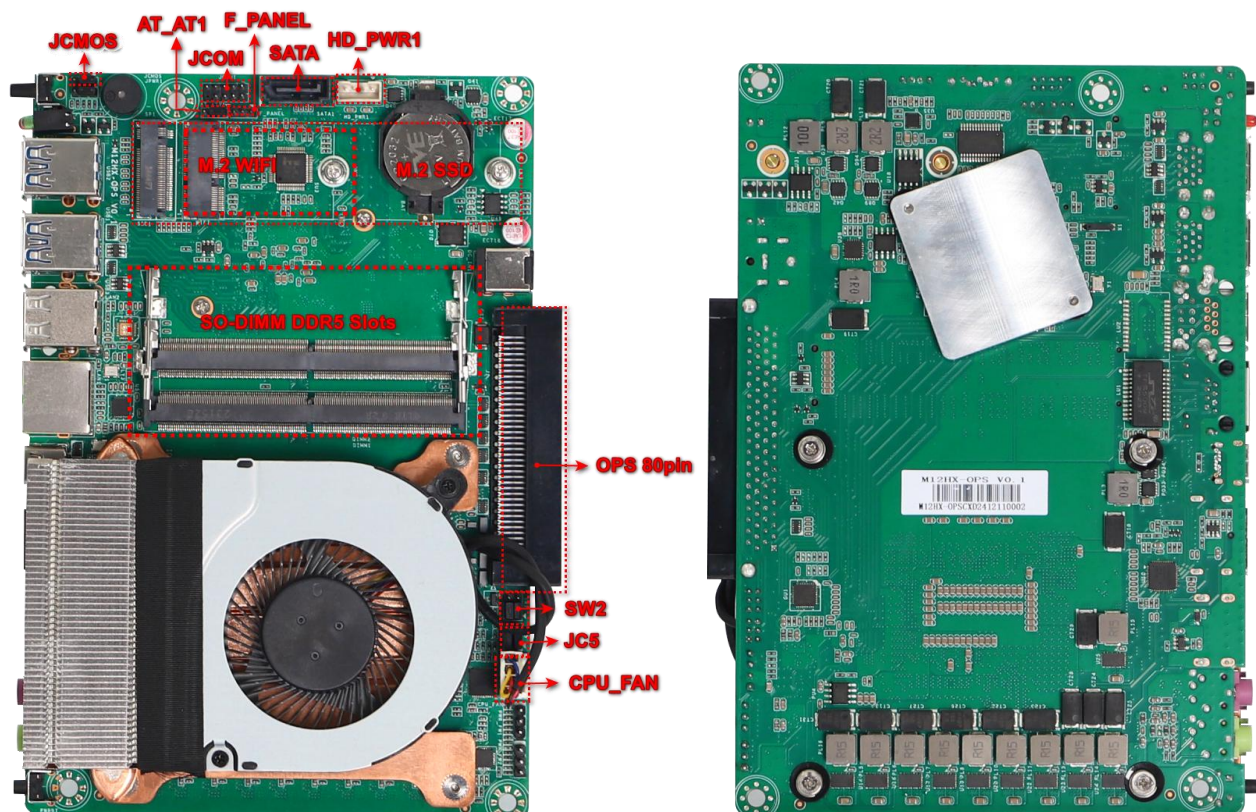
主板型号 MB Model.:	M12HX-OPS V0.1
处理器 Processor	支持 Support Intel®12th/13th/14th HX 系列 series Core I5/I7/I9 移动处理器 Mobile processor
显示芯片 Graphics	Intel®UHD Graphics 核显 Integrated Graphics
显示输出 Display Output	- IO Port: HDMI+DP+Type-C_DP - OPS Port: HDMI+DP - 最大分辨率支持 HDMI Max support 4096x2304@60Hz - 最大分辨率支持 DP Max Support 7680x4320@60Hz
内存 RAM	2 *SO-DIMM 支持 DDR5 4800/5200/6000/6400MHz MAX: 128G
存储 Storage	1*2.5 寸 inch SATA Support 固态硬盘 SSD/机械硬盘 HDD 1*M.2 M Key 2280 solt 支持 Support NVMe/ SATA 协议 Protocol (Auto Switch)
扩展槽 Extension	1*M.2 E Key 2230 solt
音频 Audio	1*Realtek ACL897 High Definition Audio Driver
网络 Internet	1*Realtek RLT8111H 千兆网卡[可选双网] Gigabit LAN card [optional dual LAN] 1*OPS 80Pin Realtek RLT8111H 网卡 LAN card , 需对应子卡配对实现 Need Subcard match this function
USB	2*USB2.0 4*USB3.2
I/O 芯片 Chip-set	ITE8613E
BIOS	AMI BIOS
供电 Power Input	DC_JACK 12~20V
散热系统 Fan	自带 With CPU FAN [内置 Built-in: 1*SYS_FAN1x3Pin 1*CPU_FAN 1x4Pin]
环境 Environment	- 工作温度 Working Temperature: 0~60℃ - 存储温度 Storage Temperature: -20℃~75℃ - 湿度 Humidity: 0%~95% 相对湿度, 无冷凝 0%~95% Relative humidity, non-condensing

II. 后置 IO 面板: Rear Panel I/O Ports:



后置 I/O 面板 Real Panel I/O Ports:	● PWERBT 开关机按钮 Power button
	● 电源 Power_LED+HDD_LED: 电源 Power_LED 绿色常亮 Green light on HDD_LED 红色闪烁 Red light blink
	● USB3.2*2: [Gen2 MAX: 10Gbps]
	● USB2.0*2 (RJ45 optional)
	● RJ45/LAN [以太网接口 Ethernet interface] With10/100/1000MbpsLANRealtek 千兆网口 Gigabit Ethernet port
	● Type-C [DP+USB3.2]
	● DP 支持 Support 4096x2304@60Hz
	● HDMI 支持 Support 7680x4320@60Hz
	● AUDIO [粉色 Pink MIC 绿色 Green Line-IN]
	● REC_BT [一键还原 配合软件使用 One-Click Restore Used in conjunction with software]

III. 内置接口: Inner Interfaces:



JCMOS	● 1x3Pin Header [JMP 默认 default 1-2 切换 switch 2-3=CLR_CMOS]
AT_ATX1	● 1x3Pin Header [JMP 默认 default 1-2=关闭通电自启 Turn off Auto power-on 切换 switch 2-3=开启通电自启 Turn on Auto power-on]
F_PANEL	● 1x3Pin Header [短接 short-circuit 1-2=触发开机 Power SW 短接 short-circuit 2-3=重启复位 reboot reset]
JCOM	● 2x5Pin: 9Pin Header RS232
HDD_PWR1	● 1x4Pin Wafer [外部 SATA 硬盘供电 External SATA hard disk power supply]
SATA	● SATA3.0
SW2	● 2X3Pin: 6Pin Header [默认 default 1-3、2-4=JCOM1, 切换 switch 3-5、4-6=OPS Port (RX TX)]
DC_IN	● DC 供电 Power Supply: 12V/20V
CPU_FAN	● 1x4Pin Wafer CPU_FAN Connector
OPS Port	● JATEX25-80Pin 开放式可拔插 Open Pluggable

M.2 M Key	M.2 M Key 2280 Solt [默认 default SATA 协议 protocol 切换 switch SW4 SW3JMP 切换 switch to NVMe 协议 protocol]
M.2 E Key	M.2 E Key 2230 Slot 支持 support WiFi+蓝牙模块 Bluetooth module
SO-DIMM	2 *SO-DIMM 支持 support DDR5 4800/5200/6000/6400MHz MAX: 128G

OPS Port JATEX25-80Pin 集成功能 integrated function:

DP	1*DP Display Port
HDMI	1*HDMI Display Port
USB3.2	4*USB3.2 Gen2
USB2.0	2*USB2.0
SYS_FAN_TACH	系统风扇控制 System Fan Control
UART	UART3.3V 输出 output TX RX
PS_ON#	可拔插信号开启输入 Pluggable signal on input
STATUS	电源正常 输出 (oc) 检测 Power supply normal Output (oc) detection

OPS Port JATEX25-80Pin

80 PIN OPS 端子, 内部包含 HDMI 信号, 音频信号, 串口信号, 开关机信号, 状态检测信号等。具体定义如下:

80Pin OPS terminal, which contains HDMI signal, audio signal, serial port signal, switching signal, status detection signal and so on internally. Specific definitions are as follows:

PIN	定义	PIN	定义	PIN	定义	PIN	定义
1	DP_3N	21	HDMI_TX0_DP	41		61	USB_DP1
2	DP_3P	22	GND	42		62	GND
3	GND	23	HDMI_TX1_DN	43		63	USB_DN2
4	DP_2N	24	HDMI_TX1_DP	44		64	USB_DP2
5	DP_2P	25	GND	45		65	GND
6	GND	26	HDMI_TX2_DN	46		66	USB_DN3
7	DP_1N	27	HDMI_TX2_DP	47		67	USB_DP3
8	DP_1P	28	GND	48		68	GND
9	GND	29	HDMI_SDA	49		69	AUDIO_L
10	DP_ON	30	HDMI_SCL	50	SYS_FAN	70	AUDIO_R
11	DP_OP	31	HDMI_HPD	51	UART_RX	71	CEC
12	GND	32	GND	52	UART_TX	72	PB_DET
13	DP_AUXN	33	VDD	53	GND	73	PS_ON
14	DP_AUXP	34	VDD	54	USB3_RXN	74	STATUS
15	DP_HPD	35	VDD	55	USB3_RXP	75	GND
16	GND	36	VDD	56	GND	76	GND
17	HDMI_CLK_DN	37	VDD	57	USB3_TXN	77	GND
18	HDMI_CLK_DP	38	VDD	58	USB3_TXP	78	GND
19	GND	39	VDD	59	GND	79	GND
20	HDMI_TX0_DN	40	VDD	60	USB_DN1	80	GND