

# M12U/M13U-2DM-OPS

## User Manual



Product Name: M12U/M13U-2DM-OPS

PCB VERSION: V3.2

## 声明： Statement:

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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.

INYUDA®

产品机箱展示 Product Photos:



欧规: 120\*180\*30mm



国标: 195\*180\*30mm



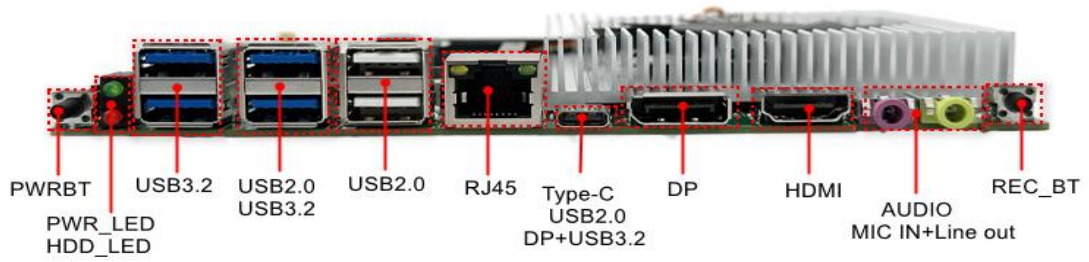
国标: 195\*180\*42mm

Shenzhen Inyuda Intelligent Technology Co., Ltd.

### I. 详细规格 Details Specifications:

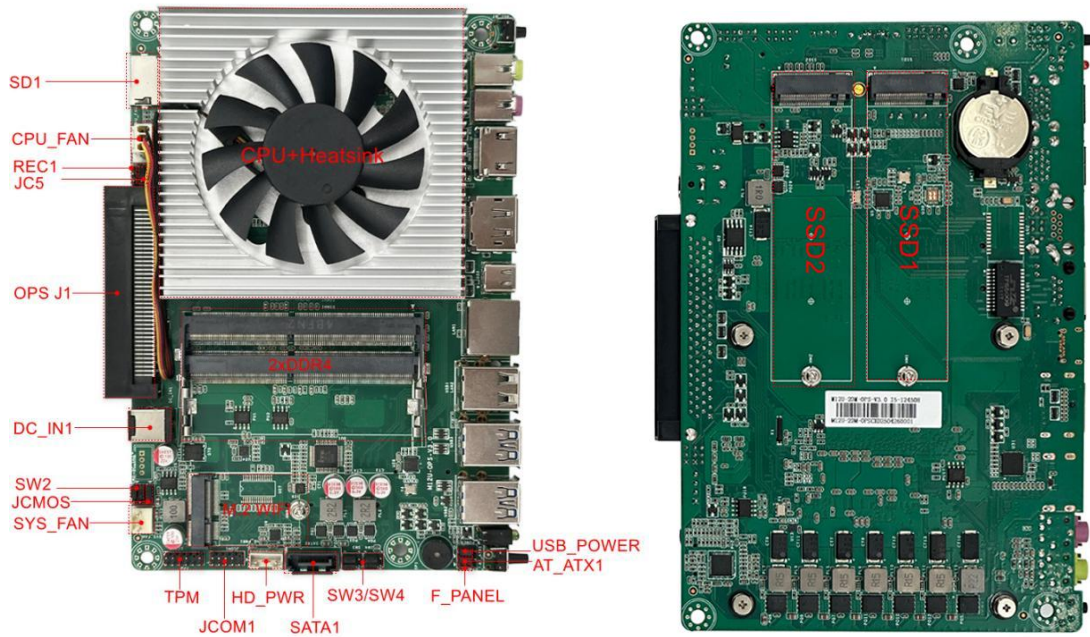
<b>主板型号 MB Model.:</b>	M12U/M13U-2DM-OPS V3.2
<b>处理器 Processor</b>	Support Intel®12th /13th Core i3/i5/i7 Mobile Processor
<b>显示芯片 Graphics</b>	Integrated Graphics: Intel® Iris® Xe Graphics eligible 1.25GHz
<b>显示输出 Display Output</b>	IO Port: HDMI+DP+Type-C_DP (optional) OPS Port: HDMI+DP [最大分辨率 Max Resolution: HDMI 支持 Max Support 4096x2304@60Hz DP 支持 Max Support 7680x4320@60Hz]
<b>内存 RAM</b>	2 *SO-DIMM 支持 Support DDR4 2133/2400/2666/3200MHz MAX: 64G
<b>存储 Storage</b>	1*SATA3.0 2*M.2 M Key 2280 solt [SSD1 Support NVMe/SATA 协议 protocol, Via JMP switch;SSD2 only support M.2 NVME 协议 protocol]
<b>扩展槽 Extension</b>	1*M.2 E Key 2230 solt [支持 WiFi+ 蓝牙模块 support WiFi +Bluetooth]
<b>音频 Audio</b>	1*Realtek ACL897 High Definition Audio Driver
<b>网络 Internet</b>	1*Realtek RLT8111H Gigabit LAN card [optional dual LAN]
<b>USB</b>	默认生产 Defaulted: 6*USB2.0 (IO panel 4*USB2.0; OPS 2*USB2.0) 4*USB3.2 (IO panel 3*USB3.2; OPS 1*USB3.2)  可选生产 Optional: 4*USB2.0 (IO panel 2*USB2.0; OPS 2*USB2.0) 6*USB3.2 (IO panel 5*USB3.2; OPS 1*USB3.2)
<b>I/O 芯片 Chip-set</b>	ITE8613E
<b>BIOS</b>	AMI BIOS
<b>供电 Power Input</b>	DC_JACK INPUT DC12V-19V
<b>散热系统 Fan</b>	● 自带 With CPU FAN [内置 Built-in: 1*SYS_FAN1x3Pin 1*CPU_FAN 1x4Pin]
<b>环境 Environment</b>	● Working Temperature: 0~60°C Storage Temperature: -20°C~75°C Humidity: 0%~95% Relative humidity, non-condensing

## II. 后置 IO 面板: Rear Panel I/O Ports:



<b>后置 I/O 面板</b>  <b>Real Panel I/O Ports:</b>	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]
	USB2.0x2: [可选 optional USB3.2x2]
	USB2.0x2
	RJ45 [10/100/1000Mbps,Realtek RLT8111H 千兆网卡 Gigabit Ethernet port, 可选双网口 optional dual LAN ports]
	Type-C: [默认 Defaulted USB2.0 , optional DP+USB3.2, can add DP display function with extra cost]
	DP: [7680 x 4320 @ 60Hz]
	HDMI: [4096 x 2304 @ 60Hz]
	AUDIO: [粉色 Pink MIC IN 绿色 Green Line-OUT]
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:



<b>CPU+Heatsink</b>	Intel®12th /13th Core i3/i5/i7 移动处理器 Mobile CPU, 配 with Heatsink
<b>USB_POWER</b>	1x3Pin Header [JMP 默认 Defaulted 1-2=VCC5 切换 Switch 2-3=5VSB]
<b>F_PANEL</b>	1x3Pin Header [短接 Shortcut 1-2=重启复位, 短接 Shortcut 2-3=触发开机]
<b>TPM</b>	1x 12pin Header PH=2mm 2x6PIN(10PIN) [External combination lock device]
<b>AT_ATX1</b>	1x3Pin Header [JMP 默认 Defaulted 1-2=关闭通电自启 Off Auto Power-on 切换 Switch 2-3=开启通电自启 On Auto Power-on]
<b>JCMOS</b>	1x3Pin Header [JMP 默认 Defaulted 1-2 切换 Switch 2-3=CLR_CMOS]
<b>JCOM1</b>	2x5:9Pin Header RS232 [可选,默认无,需要另增加 Optional, defaulted none, can add with extra cost]
<b>SW2</b>	2X3:6Pin Header [默认 Defaulted 1-3、2-4=JCOM1 切换 Switch 3-5、4-6=OPS Port (RX TX)]
<b>SW3/SW4</b>	2X3:6Pin Header [SSD1 默认 Defaulted 3-5、4-6=M.2 Sata 协议, 切换 Switch Jumper 1-3、2-4=M.2 Nvme 协议]
<b>HDD_PWR</b>	1x4Pin Wafer [外部 SATA 硬盘供电 External SATA hard disk power supply]
<b>SATA1</b>	SATA3.0
<b>DC_IN1</b>	DC 供电 Power Supply: 12V/19V
<b>CPU_FAN</b>	1x4Pin Wafer CPU_FAN Connector [ PWM Control ]
<b>SYS_FAN</b>	1x3Pin Wafer SYS_FAN Connector
<b>OPS Port</b>	JATEX25-80Pin 开放式可拔插 Open Pluggable
<b>SSD1</b>	M.2 M Key 2280 Solt [默认 defaulted SATA protocol 切换 Swtich 4-3 JMP 切换 switch to Nvme protocol]
<b>SSD2</b>	M.2 M Key 2280 Solt [只支持 Only support M.2 Nvme protocol]

<b>SD1</b>	支持 Support 128M-128G TransFlash [可选, 默认无, 需要另增加 optional, defaulted none, can add with extra cost]
<b>M.2 E Key</b>	M.2 E Key 2230 Slot [支持 Support WiFi+蓝牙模块 Bluetooth Module]
<b>SO-DIMM</b>	2X SO-DIMM DDR4 Solt 支持 Support DDR4 2133/2400/2666/3200MHz MAX: 64G
<b>OPS J1</b>	OPS Port JATEX25-80Pin
<b>JC5</b>	2X3:6Pin Header [默认 Defaulted 1-3、2-4=1pc HDMI OUT 切换 Switch 3-5、4-6=2pcs HDMI OUT,配合 need with BIOS setting]
<b>REC1</b>	1x3Pin Header [JMP 默认无 defaulted none , 1-2= PCIE_RST; 切换 Switch 2-3=PIN49 一键还原 One Key Recovery]
<b>DP</b>	1*DP Display Port
<b>HDMI</b>	1*HDMI Display Port
<b>USB3.2</b>	1*USB3.2 Gen2
<b>USB2.0</b>	2*USB2.0
<b>SYS_FAN_TACH</b>	系统风扇控制 System Fan Control
<b>UART</b>	UART3.3V 输出 Output TX RX
<b>PS_ON#</b>	可拔插信号开启输入 Pluggable Signal On Input
<b>STATUS</b>	电源正常 输出 (oc) 检测 Power 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_TYN	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