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LED610-OPS

（With Subcard）

用户使用手册 **User Manual**

产品名称 **DESCRIPTION：LED610-OPS**

PCB 版本 PCB_VERSION：V1.1

Shenzhen Inyuda Intelligent Technology Co., Ltd.

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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.

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I. 产品整机展示：Products Photos

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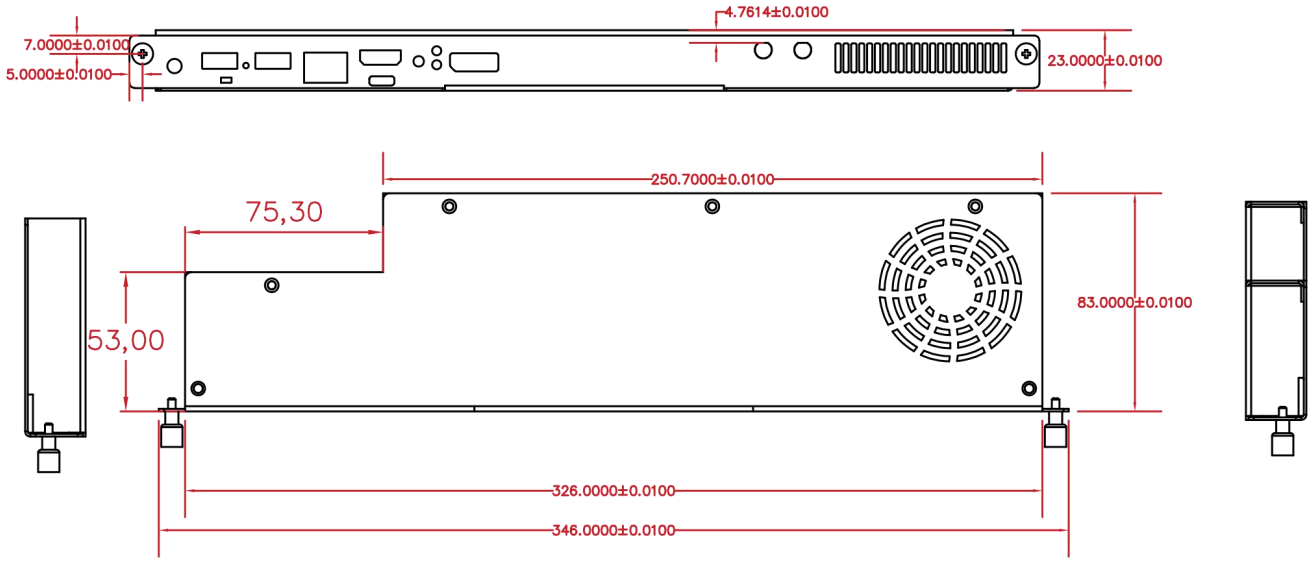
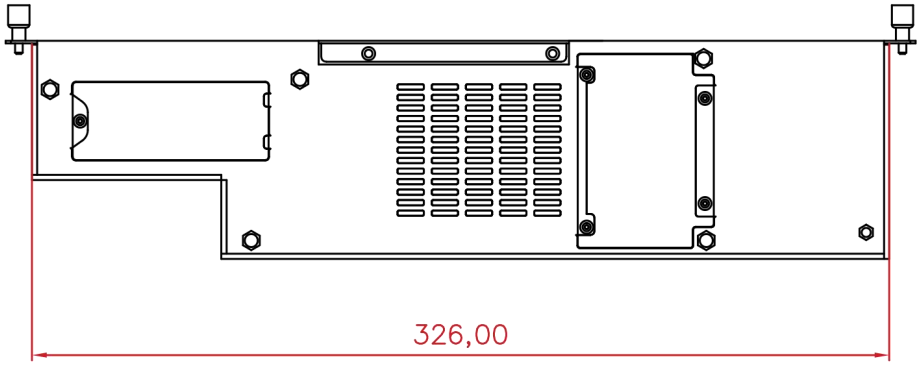
II. 产品尺寸图：Product Size





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III. 详细规格 Details Specifications:

主板型号 Model No.	● LED610-OPS V1.1
处理器 CPU	● 支持 LGA1700,支持赛扬/奔腾/酷睿/I3/I5/I7 12/13 桌面平台 CPU Support LGA1700 Celeron/ Pentium/ Core I3/I5/I7 12-13th Desktop CPU
显示芯片 Graphics	● Intel®HD Graphics 核显 Integrated Graphics
显示输出 Display Port	● IO Port: HDMI+DP ● OPS Port：HDMI+DP 最大分辨率 Max resolution for HDMI 支持 support 3840x2160@60hZ 最大分辨率 Max resolution for DP 支持 support 3840x2160@60hz
内存 Memory	● 1 *SO-DIMM 支持 Support DDR4 2133/2400/2666/3200MHz MAX：32G
存储 Storage	● 1*MSATA ● 1*M.2 M Key 2260 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 ALC897 High Definition Audio Driver
网络 Internet	● 1*Realtek RLT8111H 千兆网卡 Gigabit Ethernet card
USB	● 2*USB3.2 Gen2 X1 [最大支持 max support：10Gbps] ● 2*USB2.0 [Pitch2.0 插针 Pins] ● 1*Type-C [USB2.0 信号 Signal]
I/O 芯片 chip-set	● ITE8613E
BIOS	● AMI BIOS
供电 Power Supply	● DC 12V ~19V
散热系统 Cooling System	● 自带 CPU 散热器 [内置： 1*CPU_FAN 1x4Pin] Self-contained CPU cooler [Built-in: 1*CPU_FAN 1x4Pin]
环境	● 工作温度 Working Temperature：0~60℃ ● 存储温度湿度 Storage Temperature：-20℃~75℃ Storage Humidity: 0%~95% 相对湿度，无冷凝 Relative humidity, non-condensing

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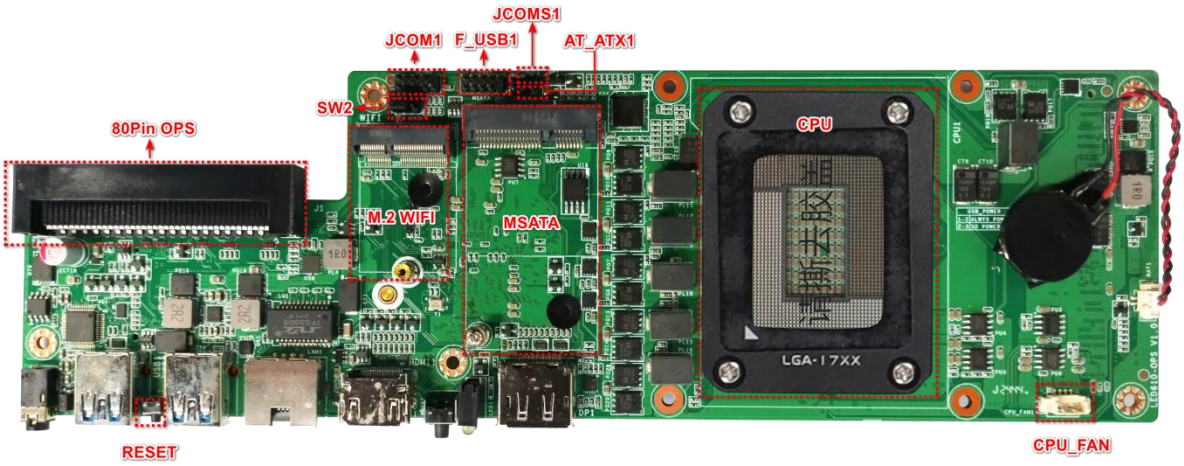
IV. 主板正面内置接口 Inner Interface for motherboard face:



主板正面内置接口 **Inner Interface for motherboard face**	● SW2: TTL&232 切换 Switch
	● RESET：复位重启 Reset and restart
	● CPU FAN：1x4Pin Wafer CPU_FAN Connector
	● CPU: 支持 LGA1700 赛扬/奔腾/酷睿/I3/I5/I7 12/13/14 桌面平台 CPU /Support LGA1700 Celeron/ Pentium/ Core I3/I5/I7 12-13th Desktop CPU
	● MSATA：Mini SATA SSD
	● M.2 WIFI: M.2 E Key 2230 Slot 支持 Support WiFi+蓝牙模块 BT
	● 80pin OPS: JATEX25-80Pin 开放式可拔插 Open Pluggable
	● JCOM1: 2x5:9Pin Header RS232
	● F_USB1: 2x5:9Pin Header Pitch2.0mm
	● JCMOS1: 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]

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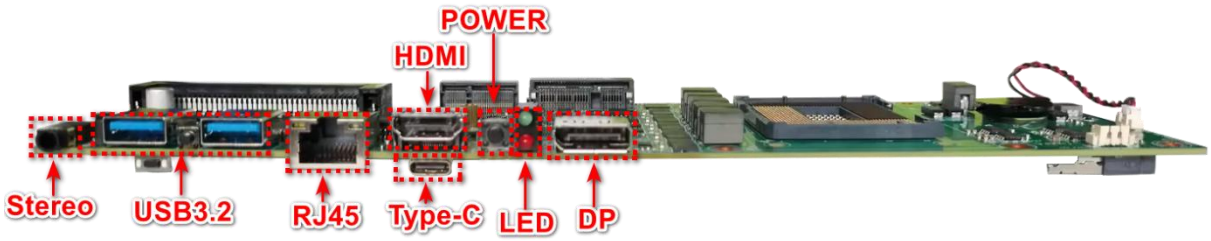
V. 主板底部内置接口 Inner Interfaces for Motherboard Back:

RECOVER	● [一键还原 配合软件使用 One-Key Restore Used with software]
M.2 SSD	● M.2 M Key 2260 Solt [SATA /NVMe 协议自动切换 protocol auto switch]
Type-C	● Type-C 接口 port，支持 support USB2.0 及充电功能 and charging function
BGA	● LGA1700 封装 package， 支持 H610 系列桥片 support H610 series bridge chip
SO-DDR4 slot	● 1*SO-DIMM DDR4 Solt 支持 support DDR4 2133/2400/2666/3200MHz 最大支持 MAX support：32GB

VI. 主板 IO 接口 Motherboard I/O Interfaces:



SETEREO	● 一体接口，AUDIO 和 MIC 麦克风 Combo jack, for AUDIO and MIC microphone
USB3.2	● 2x USB3.2 [Gen2*3 MAX：10Gbps]
RJ45	● LAN/RJ45 以太网 Ethernet With10/100/1000Mbps LAN Realtek 千兆网卡 Gigabit Network Card
Type-C	● Type-C 接口，支持 USB2.0 及充电功能 Type-C port, support USB2.0 and charging function
HDMI	● 3840x2160@60Hz

PWERBT	● 开关机按钮 Power On/Off button
LED	● 电源&硬盘指示灯 Power supply & hard disk indicator
DP	● 3840x2160@60Hz

VII. OPS Port JATEX25-80Pin 定义 definition:

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_0N	30	HDMI_SCL	50	SYS_FAN	70	AUDIO_R
11	DP_0P	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

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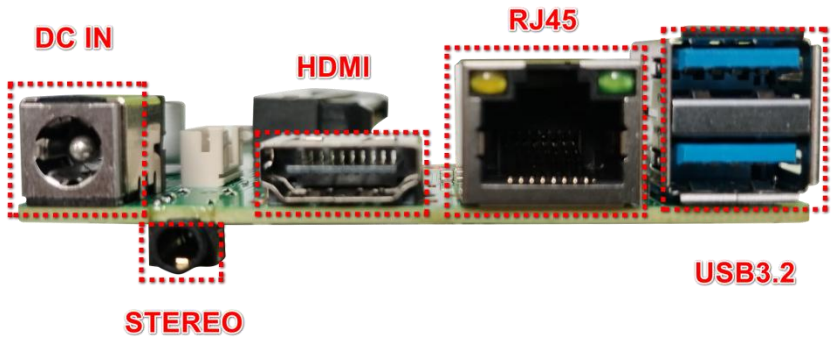
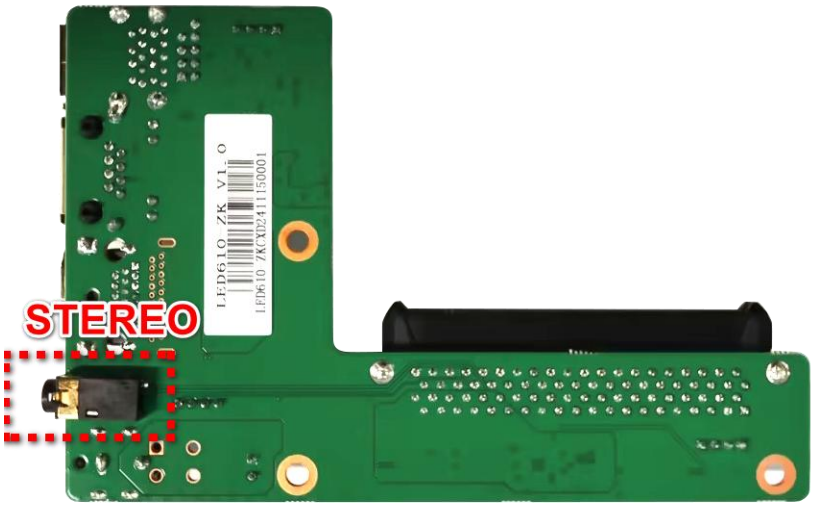
VIII. LED610-ZK V1.1 子卡 Subcard

IO 接口 Ports:





DC-IN	● DC12V~19V [**OD5.5 插座和 4 片 5569 弯针座 4.2 间距 2 种接口-供选用]**
耳机口 Stereo	● 一体接口 Combo jack，AUDIO 和 MIC 麦克风
HDMI	● 3840x2160@60Hz
DP	● 3840x2160@60Hz （可选 optional）
LAN	● LAN/RJ45 以太网 Ethernet With 10/100/1000Mbps LAN Realtek 千兆网卡 Gigabit Network Card
USB*2	● 2x USB3.2 [Gen2*3 MAX：10Gbps]

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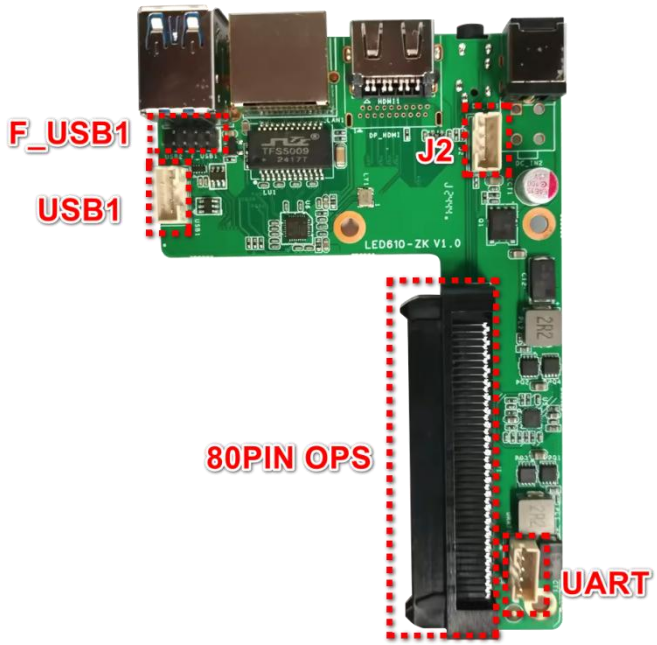
内部接口 Inner interfaces:



F_USB1	● 1* (双排针 double pins 2X5PIN 抽第 9PIN Pitch2mm)
USB1	● 1*(WAFER 1X4PIN Pitch2.0mm)
J2	● 1*(WAFER 1X4PIN Pitch2.0mm)
UART	● 1*(WAFER 1X4PIN Pitch2.0mm)

F_USB1 引脚定义 Pin definition

1	3	5	7	
2	4	6	8	10

Pin	定义
1	电源5V
2	电源5V
3	DATA-
4	DATA-
5	DATA+
6	DATA+
7	GND
8	GND
9	
10	GND

USB1 引脚定义 Pin definition

1	2	3	4

Pin	定义
1	电源5V
2	DATA-
3	DATA+
4	GND

J2 引脚定义 Pin definition

1	2	3	4

Pin	定义
1	OPS_PWRBTN#
2	PWR_STATUS
3	OPS_DET
4	GND

UART 引脚定义 Pin definition

1	2	3	4

Pin	定义
1	SIN1_OPS
2	SOUT1_OPS
3	GND
4	GND