

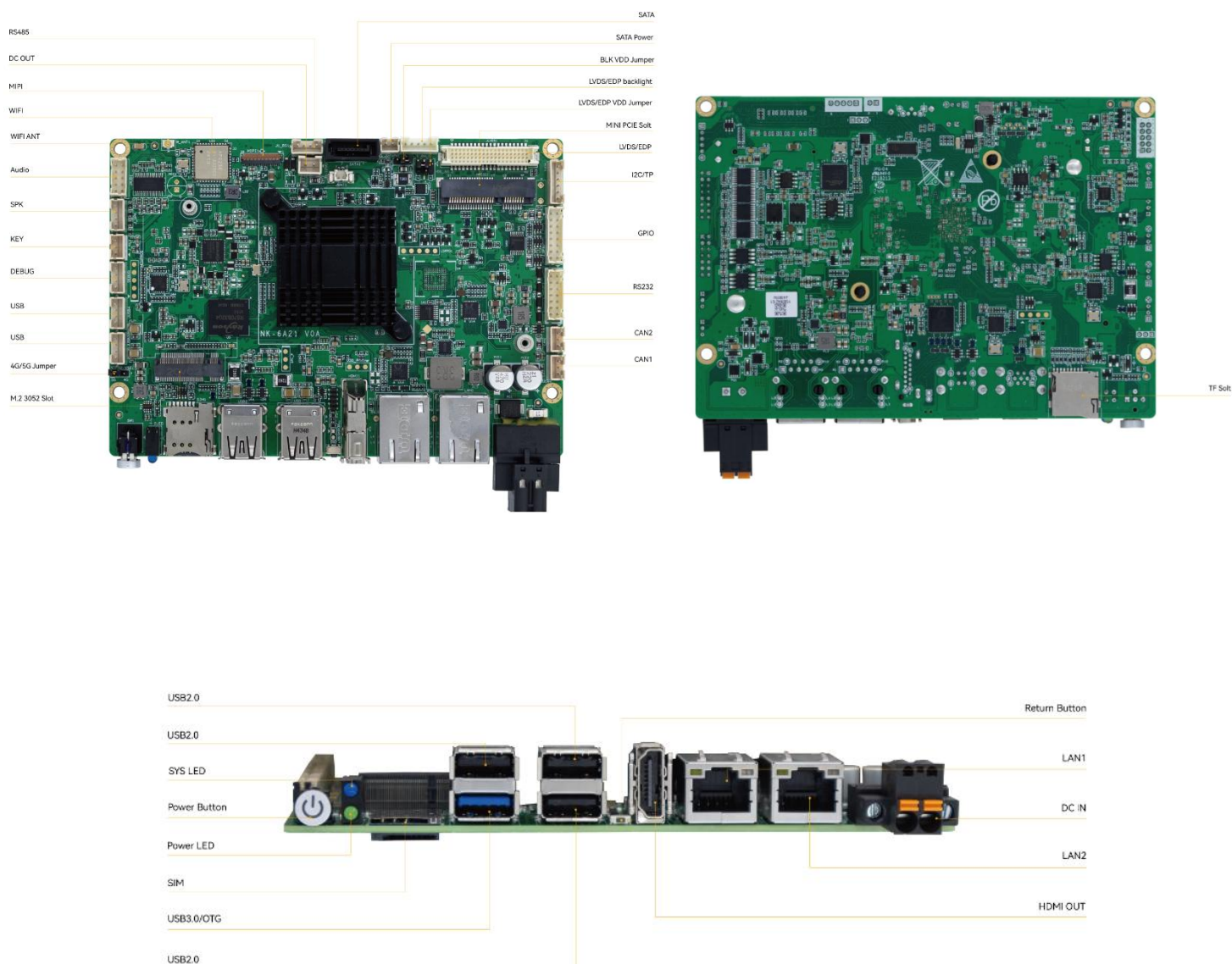
NK-6A21

Rockchip ARM Cortex-A72+Cortex-A55 RK3576 3.5" SBC

特点 Feature

- Rockchip RK3576 Quad-core Cortex-A72 + Quad-core Cortex-A55@2.2GHz
- ARM G52 MC3
- 6TOPS* RKNN
- Onboard 2/4GB LPDDR4 memory and 32/64GB eMMC
- Supports 1 x HDMI Out 4K30@120Hz, 1 x LVDS and 1 x eDP
- Provides 2 x GbE, 1 x SATA3.0, 1 x USB3.0(OTG), 3 x USB2.0, 5 x Serial(option), 2xI2C, 2SPI, 2 x CAN,
- 1 x MINI-PCIE with USB 2.0 signal for LTE/ Wi-Fi 6 Modules or PCIE 2.1 signal for Dual LAN Card(Option), 1 x M.2-B Key with USB 3.0 signal for 5G Modules
- Provides a 2.4G/5G dual-channel WiFi, Support bluetooth 5.0
- Supports Linux and Android OS

I/O Layout

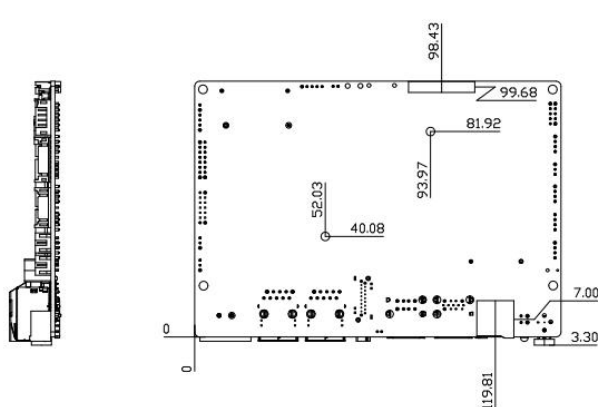
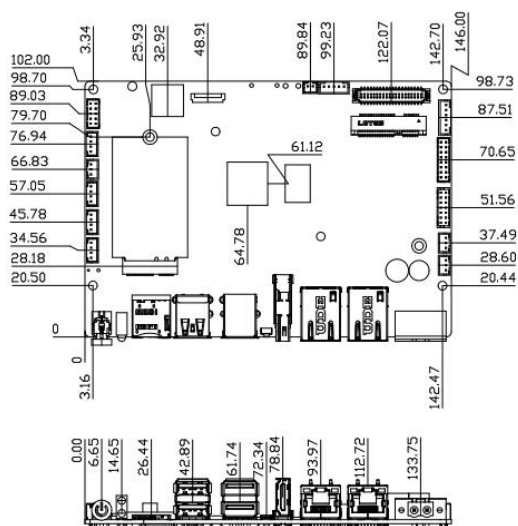


规格 Specification

处理器 Processor System	CPU	Rockchip RK3576 Quad-core Cortex-A72 + Quad-core Cortex-A53@2.2GHz
	GPU	ARM G52 MC3
	NPU	6TOPS x RKNN
内存 Memory	Memory	Onboard 4/8GB LPDDR4
存储 Storage	eMMC	Onboard 32/64GB eMMC
	SATA	1 x SATA3.0 port
	MSATA	1 x MSATA port (Option)
	TF Socket	1 x TF card Socket, Support 128GB TF card
	UFS	1 x UFS (Option)
外部接口 Rear I/O	显示 Display	1 x HDMI OUT 4K30@120Hz
	网络 Ethernet	2 x GbE (10/100/1000Mbps), Realtek8211F controller
		1 x Onboard AP6256
	USB	1 x USB3.0, OTG Colay, 3 x USB2.0
	DC IN	12~24V power input, 1 x 2-pin lockable DC-IN phoenix terminal block
	按键 Button	1 x Power Button, 1 x Return Button
内部接口 Internal I/O	指示灯 Indicators	1 x System LED (Blue), 1 x Power LED (Green)
	显示 Display	1 x LVDS
		1 x eDP, upto 2560x1600@60Hz (share connector with LVDS)
		1 x MIPI-CSI
	DEBUG	1 x DEBUG for debug
	KEY	1 x KEY, Supports reset, recovery
	串口 Serial Port	1 x RS485, 2 x RS232, 2 x TTL
	USB	2 x USB2.0 wafer (1*4pin)
	CAN	2 x CAN
	DC OUT	1 x DC 12V Power Out put
	I2C/SPI	2 x I2C, 2 x SPI (It can expand 8 local ids, I2C can expand 32 IO, and SPI can expand 8 AD channels)
	GPIO	12 x GPIO
扩展接口 Expansion Slots	Mini-PCIE slot	1 x MINI-PCIE with USB 2.0 signal for LTE/ Wi-Fi 6 Modules or PCIE 2.1 signal for Dual LAN Card (Option), 1 x SIM card socket
	M.2 slot	1 x M.2 B key with USB 3.0 signal for 3042/3052-5G match PCIE (default)
电源 Power	接口 Interface	1 x 2-pin phoenix terminal block
	功耗 Power Consumption	TBD
操作系统 O.S Support	OS	Android14、Debian12
机械参数 Mechanism	尺寸 Dimensions	146mmx102mm
	净重 Gross Weigh	TBD
环境 Environment	Operating	-20℃ ~60℃
	Storage	-30℃ ~80℃
	湿度 Humidity	5~95% (Non-condensing)
	振动 Vibration	5~500Hz, 3Grms operating

The diagram illustrates the RK3576 SoC with its various interfaces and components. The SoC is represented by a central vertical bar with the label **RK3576** in the middle. The components are connected to the SoC via various interfaces, including:

- MIPI Tx PORT0** and **MIPI CSI Rx** for camera and display connections.
- eDP** and **HDMI Tx/eDP** for display connections.
- DP_2/3PN** for display connections.
- USB 3.0 OTG0** and **USB OTG1** for USB connections.
- USB 3.0 SS** for SuperSpeed USB connections.
- PCIe20 Mux0** for PCIe connections.
- 5V** for power supply.
- UART4**, **SDMMC1**, **UART1**, **UART5**, **UART7**, **UART8**, and **UART10** for various peripheral connections.
- Wafer 2*7** for external memory or storage.
- RS232_1** and **RS232_2** for serial communication.
- TTL** for TTL-level communication.
- Wafer1**, **Wafer2**, **USB2.0**, **USB2.0**, **SIM**, **M.2 Key B 3052 &5G**, **MINIPCIIE 4G/PCIIE**, **SATA**, **SATA/PWR**, **WIFI AP6256**, and **RS485_1** for various other interfaces.
- CH7511BI** and **CH7219A** for video and audio processing.
- USB20*4** for USB connections.
- HUB1** and **HUB2** for USB hub functionality.
- LPDDR4/4X** and **LPDDR4(4GB)** for memory.
- eMMC** and **eMMC(OS) Max:64GB** for eMMC storage.
- SDMMC0** and **TF Card** for SD card storage.
- SAI1** and **Audio** for audio output.
- Amplifier** for audio amplification.
- SPI0+SPI3 I2C5/7+Lev 5V** and **SPI0+SPI3 I2C5+I2C7** for SPI and I2C connections.
- TP** for touch panel.
- UART0** and **Debug Wafer** for debug.
- IIC2** and **MCU EEPROM RTC** for I2C connections.
- KEY** and **KEY** for keyboard connections.
- GMAC0** and **RTL8211F** for Ethernet connections.
- GMAC1** and **RTL8211F** for Ethernet connections.
- CAN0/1** and **CAN Driver *2** for CAN bus connections.
- Wafer** for external components.
- MDI** and **RJ45** for network connections.



Order Information

Part No.	Model	Description
G83.6A2101.0A.NES	NK-6A21-432_V0A	ARM, RK3576, 4G, 32G eMMC, Standard, DC IN 12V~24V, 2*LAN, 双频 WIFI, USB3.0*1, USB2.0*3, RS232*2, TTL*2, RS485*1

Packing List

Part No.	Qty	Description
User Manual	1	User Manual for NK-6A21
Terminal block	1	2-pin terminal block

Optional Accessories

Part No.	Part Name	Description
K75.004010.00.C26	Power Adapter	Power Adapter(侨威 KPL-040F-VI), 2pin 凤凰端子 (台湾进联), OUT:12V\3.3A, IN:220V, 能效六
KE1.000015.00.Y10	Power Cord	AC Power cord (国标电源线)
KE1.000011.00.Y10	Power Cord	AC Power cord (欧标电源线)
F06.000030.00.NDJ	4G 套件	Mini-PCle 模组, USB 总线, 含 :4G 扩展卡, 7 模全网通 EC20CEHDLG\ 内部馈线 L=150mm\ 外部吸盘天线 L=3M
F06.000031.00.NDJ	4G 套件	Mini-PCle 模组, USB 总线, 含 :4G 扩展卡, 7 模全网通 EC20CEHDLG\ 内部馈线 L=150mm\ 外部船桨天线 L=17CM

