



Product model: Z8102AX-M2-A-T

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Editor: Zhu Xiaowen

产品规格书

深圳市智博通电子有限公司
Shenzhen Zhibotong Electronics Co.,LTD.



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1 review

1.1 Brief overview

This document describes the electrical characteristics, RF performance, dimensions and application environment of the Z8102AX-M2. With the introduction of this document, end users or developers can quickly understand the hardware functions of Z8102AX-M2.

Z8102AX-T is a 5G/4G+WIFI6 CPE router, which can access the Internet through 5G/4G mobile communication dial-up or 1000Mbps WAN port, and then share the Internet network through wireless WiFi 6 and 1000Mbps wired LAN.

1.2 Reference standards

Related standard specifications:

1)USB3.0/USB2.0 bus standard

2)PCI- Express bus standard

3)SIM/USIM interface standard

4)IEEE802.11n/g/b/a/ac/ax

5)IEEE802.3/802.3u/802.ab

6)PCI Express M.2 Specification Rev1.1

7)5G/4G mobile communication standard, specifically determined by the selected 5G/4G mobile communication module

2 Product image



3 Product main features

- 1) Using MT7981B solution, ARM Cortex-A53 dual-core CPU, main frequency up to 1.3GHZ
- 2) Adopt independent WIFI6 chip, MT7976CN, the speed is up to 3000Mbps
- 3) High-speed 1GB DDR4, with 128MB SPI NAND Flash
- 4) 1WAN+4LAN 1000M adaptive network port, support automatic flip (Auto MDI/MDIX)...
- 5) Support "one-key flashing mode", that is, long press the reset button to enter the rescue flashing mode...
- 6) Support "one-key" MESH networking...
- 7) Built-in 1 M.2/Mini-PCIE standard interfaces (choose one of the two), which can be used to connect to 5G/4G mobile communication modules
- 8) External high-gain WIFI antenna, 360-degree wireless signal without dead angle



4 Hardware function

4.1 Hardware Interface Introduction

RJ45 ports		1*WAN port, 1000Mbps supports automatic flip (Auto MDI/MDIX) Conforms to IEEE 802.3/802.3u/802.ab
		4* LAN port, 1000Mbps supports automatic flip (Auto MDI/MDIX) Conforms to IEEE 802.3/802.3u/802.ab
power interface		DC5.5*2.1MM
Button		1 reset button, 1 MESH button
4G/5G interface		1 *M.2 port
Antennas	5G module	2 external omnidirectional 5dbi 2.4GWIFI dual frequency dual outlet antennas
		3 external omnidirectional 5dbi 5.8GWIFI dual frequency dual outlet antennas
		4 external omnidirectional 5dbi 5G mobile communication single outlet antennas
	4G module	2 external omnidirectional 5dbi 2.4G WIFI antennas
		2 external omnidirectional 5dbi 5.8GWIFI antennas
		2 external omnidirectional 5dbi 4G mobile communication antennas

4.2 Indicator light function introduction

MESH LED	<ol style="list-style-type: none">1. The red light is on during the boot process, when the boot is completed, the red light is off and the green light is on2. Press the mesh button to enter the mesh pairing state, the green light flashes once a second, and the other lights are off3. The network of the main device is normal, and the green light and blue light are on at the same time (cyan)4. The MESH connection from the device is successful. If the distance is far away, the green light and red light will be on at the same time (orange), and the green light and blue light will be on at the same time (cyan) if the distance is suitable.
4G/5G1 LED	The 4G/5G1 network is always on, and flashes when there is data communication

4.3 Hardware Platform Introduction

Processor	MT7981B ARM Cotext-A53 dual-core CPU, 1.3GHZ main frequency
WIFI Chip	MT7976CN IEEE 802.11n/g/b/a/ac/ax,Max. 3000Mbps
RAM	DDR4 1GB
Flash	Nor Flash 16MB(Choosable)
	SPI NAND Flash 128MB
	EMMC 8GB (Choosable)

4.4 Hardware watchdog function introduction

This hardware product is designed with a hardware watchdog function. After the hardware watchdog is powered on, it will automatically start up and detect the heartbeat level output by the routing system that jumps once every second. If the routing system itself fails (such as a crash), it will also Naturally, the heartbeat level can no longer be output. At this time, if the hardware watchdog has not detected the heartbeat level within 120 seconds, it will shut down by itself for 15 seconds and then restart the entire system.

When the routing system is running normally, but the 5G/4G module dialing is abnormal, the routing system will control the power supply of the 5G/4G module through GPIO, so that the module will automatically restart to fix the 5G/4G dialing abnormality.

Specific function of hardware watchdog	
Routing system exception	Module dialing exception
restart the whole system	Only restart the module