



Model: ZBT-CPE2801-A

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产品规格书

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1 Overview

1.1 Brief overview

This document describes the electrical characteristics, RF performance, size and application environment of CPE2801-A. With the introduction of this documentation, end users or developers can quickly understand the hardware features of CPE2801-A.

CPE2801-A is an outdoor 4G CPE routing product, which accesses the Internet through 4G mobile communication dialing or 100Mbps WAN port dialing, and then shares the Internet network through wireless WiFi 4 and 100Mbps wired LAN.

1.2 Reference standards

Relevant standards and specifications:

- USB2.0 bus standard
- SIM/USIM interface standard
- IEEE 802.11 n/g/b
- IEEE 802.3/802.3 u
- The 4G mobile communication standard is determined by the selected 4G mobile communication module

2 product pictures



3 Main features of products

- It adopts MT7628NN scheme and MIPS24KEc architecture CPU, and the main frequency is as high as 580MHZ
- The MT7628NN chip integrates 2.4 G WiFi function with a speed of up to 300Mbps
- With high-speed 128MB DDR2, 16MB Nor Flash
- 1WAN (support IEEE 802.3 af, IEEE 802.3 at standard POE), 1LAN full 100M adaptive network port, support auto MDI/MDIX
- Support "one-button brushing mode", that is, press the reset button for a long time to start up and enter the rescue brushing mode

- Built-in 1 mini-PCle and 1 LCC chip module (one of two) interface, through USB2.0 bus to achieve 4G dial-up Internet access
- Built-in mini-PCle and LCC interface, its power supply can be controlled by independent GPIO
- One external NANO SIM card (small card) and one internal eSIM (QFN-8 6mmx5mm) card interface, supporting SIM/USIM card
- Built-in WiFi and external 4G high-gain omni-directional antenna, wireless signal 360 degrees without dead angle
- This product supports hardware watchdog function, which will automatically restart the device when the routing system fails

4 Hardware Functions

4.1 Introduction to Hardware Interface

Net port	1 WAN port, 100Mbps Auto MDI/MDIX support IEEE 802.3/802.3 u compliant
	1 LAN port, 100Mbps Auto MDI/MDIX support IEEE 802.3/802.3 u compliant
SIM card interface	One NANO SIM card (small card) interface, one built-in eSIM (QFN-8 6mmx5mm) card interface, supporting SIM/USIM
Power interface	DC5.0*2. 1MM interface
Keystroke	1 reset button
Antenna	Four removable omni-directional 5dbi 4G mobile communication antennas compatible with 3G/2G mobile data communication Built-in WiFi onboard antenna 2PCS
4G module interface	Built-in mini-PCle and LCC (one out of two) interface, supporting USB2.0 bus

4.2 Indicator Function Introduction

WAN LED	The connection port is always bright and flashes when there is data communication
LAN LED	The connection port is always bright and flashes when there is data communication



NET LED	The equipment is connected to the network and flashes when there is data communication
2.4 G WiFi LED	When the 2.4 G WiFi function is turned on, it often lights up, flashes when there is data communication, and does not light up when the 2.4 G WiFi function is not turned on or the 2.4 G WiFi function fails
4G Module 1 LED	The 4G Mobile Communication Module 1 flashes when there is data communication, and does not light up when the 4G Mobile Communication Module 1 fails or is not connected to the 4G Mobile Communication Module 1
Power LED	Often turn on when the power supply is turned on, but not when the power supply is out of order or not connected

4.3 Introduction to Hardware Platform

Processor	MT7628NN MIPS24KEC CPU with 580MHZ main frequency
2.4 G WiFi chip	MT7628NN integrates 2.4 G WiFi function IEEE 802.11 n/g/b, up to 300Mbps
Memory	DDR2 128MB
Flash memory	Nor Flash 16MB
	NAND Flash is not supported

4.4 Introduction of Hardware Watchdog Function

This hardware product has designed the hardware watchdog function, The hardware watchdog will automatically start up after being powered on, and detect the heartbeat level that jumps once every second output by the routing system. If the routing system fails (such as crash), it will naturally be unable to output the heartbeat level. At this time, if the hardware watchdog has not detected the heartbeat level within 120 seconds, it will shut down itself for 15 seconds and then restart the whole system.

The routing system can independently control the power supply of each 4G module. When the routing system detects the dialing failure of any module, it will automatically power down the faulty 4G module, and then get a new power-on to restart the 4G module.

5. 4G Mobile Features



This product has a built-in mini-PCle/LCC patch interface, which can be used to expand the 4G mobile communication function. The built-in mini-PCle/LCC interface supports USB2.0 bus. Choosing different 4G modules can support 4G frequency bands in different countries. Please communicate with Zhibotong customer service for specific 4G functions and refer to 4G module specifications for determination.

6 Power Supply and Power Consumption Description

	Test conditions	Minimum value	Rating	Maximum value	Unit
Operating voltage	T A = 25 ° C	6.5	12	34	V
Absolute operating voltage	T A = 25 ° C	6		35	V
Operating current	VIN = 12V, T A = 25 ° C	0.6	0.8	1.5	A

Use ZBT standard power adapter or support IEEE 802.3 af (less than 15W), IEEE 802.3 at (less than 25W) standard PSE to supply power to this product. If ZBT standard power supply is not used, please supply power to this product strictly according to the above power specification parameters, otherwise it will damage the product. If you use battery or vehicle-mounted power supply, please take anti-static and anti-surge measures.

7 WIFI Wireless parameter

Compatible with IEEE 802.11 b/g/n, supports IEEE 802.11 d/h/k; supports 20MHz, 40MHz, adopts 2T2R MIMO antenna technology, and the highest connection rate is up to 300Mbps. The following is the description of the power frequency, receiving sensitivity and transmitting power of 2.4G WIFI.

	Item	Max.	Rated value	Mim.	
Frequency		2484		2412	MHz
Receive sensitivity	11 Mbps CCK	-86	-87.5	-89	dBm
	54 Mbps OFDM	-72	-74	-76	dBm
	BW=20MHz MCS 7	-70	-72	-74	dBm

	BW=40MHz MCS 7	-68	-70	-71	dBm
transmit power	11 Mbps CCK	21	20	19	dBm
	54 Mbps OFDM	19	18	17	dBm
	BW=20MHz MCS 7	18	17	16	dBm
	BW=40MHz MCS 7	18	17	16	dBm

8 Structural parameters and accessories introduction

Color	White	
Accessories	Power adapter	48V/0.5A 1PCS
	User manual	1PCS
	Ethernet Cable	1PCS
	Antenna	4G 5DB detachable paddle * 2PCS Internal WiFi Onboard Antenna * 2PCS

10 Software

Default IP	192.168.1.1
User name /password	root/admin
2.4G SSID	WIFI-XXXXXX (X is the last 6 of MAC), default no password

The above is the general default configuration information of the product. The WIFI SSID of our company's OS firmware or OPENWRT firmware may be different, but the default IP and WEB login name and password of this product remain unchanged. For other detailed software functions, please refer to the product description.