Model：ZBT-WE2008-B

Version：V1.0

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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, dimensions and application environment of ZBT-WE2008-A. Under the introduction of this document description, end users or developers can quickly understand the hardware functions of ZBT-WE2008-A.

ZBT-WE2008-B is a home wireless router product that accesses the Internet through 4G mobile communication dial-up, and then shares the Internet network through wireless WiFi 4 and 100Mbps wired LAN.

1.2 Guideline

Relevant standard specifications:

- USB2.0 bus standard
- SIM/USIM interface standard
- IEEE802.11n/g/b
- IEEE802.3/802.3u
- 4G Mobile communication standard, which is determined by the selected 4G mobile communication module

2 Product Image

3 Product main features

- Using MT7620N solution, MIPS24KEc architecture CPU, the main frequency is up to 580MHZ
- Main chip integrated baseband 2.4G WIFI rate up to 300Mbps
- With 64MB DDR2, and 8MB Nor Flash
- 1WAN, 1LAN full 100M adaptive network port, support automatic flip (Auto MDI/MDIX)
- Support "one-key flashing mode", that is, long press the reset button to turn on the machine to enter the rescue flashing mode
- Built-in LCC SMD module interface (40.6mmx30mmx1.5mm), which can be used to connect 4G mobile communication module

- External standard Nano SIM card (small card) and built-in eSIM (QFN-8 6mmx5mm) card interface, support SIM/USIM card
- External WiFi and 4G antenna, wireless signal 360 degrees without dead angle
- This product supports hardware watchdog function, which can automatically restart the device when the routing system fails

4 Hardware Features

4.1 Introduction of hardware interface

Network port	1* LAN port, 100Mbps supports automatic flip (Auto MDI/MDIX) Compliant with IEEE 802.3/802.3u
	1* WAN port, 100Mbps supports automatic flip (Auto MDI/MDIX) Compliant with IEEE 802.3/802.3u
SIM card interface	1* Nano SIM card interface, 1 built-in eSIM (QFN-8 6mmx5mm) card
Power interface	1 *DC power interface
Button	1* reset button
Antenna	1 *omnidirectional 2.4G external antenna
	1* built-in 2.4G FPC antenna
	1* omnidirectional 4G external antenna
	1* built-in 4G FPC antenna
4G module interface	LCC SMD module interface 1(40.6mmx30mmx1.5mm)

4.2 Introduction to the function of indicator lights

LAN LED	Connected to the Internet port is always on, and flashes when there is data communication
4G LED	When the 4G module is recognized and works normally, the LED light is always on, and it is off when the 4G module is faulty
2.4G WIFI LED	Always on when the 2.4G WIFI function is turned on, flashing when there is data communication, and off when the 2.4G WIFI is not turned on or the 2.4G WIFI function fails
Power supply LED	Always on when the power is on, off when the power fails or is not connected to the power
WAN LED	Connected to the Internet port is always on, and flashes when there is data communication

4.3 Hardware Platform Introduction

Processor	MT7620N MIPS24KEc Architecture CPU, the main frequency is up to 580MHZ
2.4G WIFI Chipset	MT7620N integrated 2.4G WIFI function IEEE 802.11n/g/b, the highest rate is 300Mbps
5.8G WIFIChipset	NA
RAM	DDR2 64MB
Flash	Nor Flash 8MB
	Not support NAND Flash

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 turn on and detect the heartbeat level output by the routing system that jumps once per second. If the routing system itself fails (such as 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 itself for 15 seconds and then restart the entire system.

The routing system can independently control the power supply of the 4G module. When the routing system detects a 4G module dialing failure, the corresponding GPIO can be used to power off the faulty 4G module, and then power on again to restart the 4G module.

Hardware watchdog specific functions	
system error	4G Module dial failure
Power off and restart the system	Only restart the 4G module

5 4G Mobile communication function

This product has a built-in LCC patch module interface, which can be used to expand 4G mobile communication functions, and the built-in interface supports USB 2.0 bus. Different models of 4G modules can support 4G frequency bands in different countries. For detailed 4G functions, please communicate with Zhibotong customer service, and refer to the 4G module specification to determine。

5.1 4G Module technical parameters

The module of this product adopts Yilian Technology EM03 series full Netcom Cat 4 module. It supports the maximum downlink rate of 150 Mbps and the maximum uplink rate of 50 Mbps, which realizes seamless switching between 3G network and 4G network。

5.2 Other features

✓ (U)SIM Card detection (optional)

Supply voltage：3.4~4.3V ,typical3.8V
Operating temperature：-35~+75℃

6 WIFI Wireless parameter introduction

6.1 WIFI EVM index

	Mode Description	index parameter	unit
EVM index	802.11B 11Mbps	≤ -1 5 dB	dBm
	802.11G 54 Mbps	≤ -25 dB	dBm
	802.11N HT20@ MCS7	≤ -28 dB	dBm
	802.11N HT40@ MCS7	≤ -28 dB	dBm

6.2 WIFI 2.4G

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。

	illustrate	maximum value	Rated value	minimum	unit
working frequency		2484		2412	MHz
Receive sensitivity	11 Mbps CCK	-86	-87.5	-89	dBm
	54 Mbps OFDM	-70	-72	-74	dBm
	BW=20MHz MCS 7	-68	-70	-72	dBm
	BW=40MHz MCS 7	-66	-68	-70	dBm
transmit power	11 Mbps CCK	20	19	18	dBm
	54 Mbps OFDM	17	16	15	dBm
	BW=20MHz MCS 7	17	16	15	dBm
	BW=40MHz MCS 7	16	15	14	dBm

7 Power supply and power consumption description

	Test Conditions	minimum	Rated value	maximum value	unit
Operating Voltage	T A = 25°C	6	12	15	V
Absolute working voltage	T A = 25°C	5		16	V
Absolute working voltage	VIN=12V，T A = 25°C	0.2	0.5	1	A

Please use the standard power adapter of ZBT to supply power to this product. If the standard power supply of ZBT is not used, please supply power to this product in strict accordance with the above power specifications, otherwise the product will be damaged. If you use battery or vehicle power supply for power supply, be sure to take anti-static and anti-surge measures。

8 Introduction of structural parameters and accessories

weight （KG）	TBD	
Shell size	L*W*H=170*94.5*27.86MM	
color matching	Black	
	manual	1PCS
	certificate	1PCS
	cable	1PCS

9 Product working environment requirements

Operating temperature	0℃ to 40℃

storage temperature	-40℃to 70℃
Working humidity	10% to 90%RH Does not condense
Storage humidity	5% to 90%RH Does not condense

10 Software configuration information

Default IP	192.168.1.1
Username/Password	root/admin
2.4G SSID	WIFI-XXXXXX (X is the last 6 digits of the MAC address), no password by default
5.8G SSID	WIFI-5G-XXXXXX (X is the last 6 digits of the MAC address), no password by default

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.