



Model No.: WG1608-5G

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Product Specification

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1. Summary

1.1 Brief overview

This document describes the electrical characteristics, RF performance, size, and application environment of WG1608-5G. Under the introduction of this document, end users or developers can quickly understand the hardware functions of WG1608-5G.



WG1608-5G is 5G CPE product for home use. It accesses the Internet through 5G mobile communication dial-up or 1000Mbps WAN port dial-up, and then shares the Internet network through wireless WiFi 5 and 1000Mbps wired LAN.

1.2 Reference standard

Related standard specifications:

- USB3.0/USB2.0 Bus standard
- PCI- Express Bus standard
- TF Card Interface standard
- SIM/USIM Interface standard
- IEEE802.11n/g/b/a/ac
- IEEE802.3/802.3u/802.ab
- PCI Express M.2 Specification Rev1.1
- Mini PCI Express Card Electro mechanical Specification Revision 1.0-2003
- 5G mobile communication standard, determined by the selected 5G mobile communication module

2. Product picture



3. Main features of the product

- Adopt MT7621A project, MIPS dual-core CPU, the main frequency is up to 880MHZ
- 2.4G rate up to 300Mbps, 5.8G rate up to 867Mbps, 5.8G supports MU-MIMO
- Using high-speed 256MB DDR3 with 16MB Nor Flash
- 1WAN, 4LAN all 1000M adaptive network ports, support automatic flip (Auto MDI/MDIX)
- Support USB3.0 and TF card storage interface, can be used to expand SMABA or FTP network storage function
- Support "One-key flash mode", that is, long press the reset button to enter the rescue flash mode
- Built-in M.2 standard interface, can be used to connect 5G mobile



communication module

- External standard SIM card interface, support SIM/USIM card
- External high gain omnidirectional antenna, wireless signal 360 degrees without dead angle

4. Hardware function

4.1 Hardware interface introduction

Ethernet Port	1*WAN port,1000Mbps supports auto flip (Auto MDI/MDIX) Compliant with IEEE 802.3/802.3u/802.ab
	4*LAN port,1000Mbps support auto flip (Auto MDI/MDIX) Compliant with IEEE 802.3/802.3u/802.ab
USB Interface	1*USB3.0 slot
TFcard Interface	TF card slot
SIMcard Interface	1*sim card slot, support SIM/USIM
Power Interface	DC5.0*2.1MM interface
Button	1*reset
Antennas	2* omnidirectional 5dbi 2.4G and 5.8G antennas
	4*omnidirectional 5dbi 5G mobile communication antennas, 1*GPS antenna
M.2 Interface	Built-in M.2 slot, support PCIE and USB3.0 bus

4.2 Indicator function introduction

WAN LED	Connect to the Internet port always bright, flashes when have data communication
LAN1 LED	Connect to the Internet port always bright, flashes when have data communication
LAN2 LED	Connect to the Internet port always bright, flashes when have data communication



LAN3 LED	Connect to the Internet port always bright, flashes when have data communication
LAN4 LED	Connect to the Internet port always bright, flashes when have data communication
Adapter LED	Always bright when power on, No light when the power supply is faulty or not connected
2.4G WIFI LED	Open 2.4G WIFI function is always bright, flashes when there is data communication; when not open 2.4G WIFI or 2.4G WIFI function fails, Not bright
5.8G WIFI LED	Open 5.8G WIFI function is always bright, flashes when there is data communication; when not open 5.8G WIFI or 5.8G WIFI function fails, Not bright
Move 5G LED	When the routing system recognizes and successfully mounts the 5G mobile communication module, it is always bright. When the 5G mobile communication module is faulty or does not access the 5G mobile communication module, it does not light.
Internet LED	The device dials successfully through 5G mobile communication module or WAN port. It is always bright when communication with the Internet is normal, and it is off when the device cannot access the Internet

4.3 Hardware platform introduction

Processor	MT7621A MIPS dual core CPU, 880MHZ Main frequency
2.4GWIFI chipset	MT7603EN IEEE 802.11n/g/b,Maximum rate 300Mbps
5.8GWIFI chipset	MT7613AEN IEEE 802.11ac/a,Maximum rate 867Mbps
Ram	DDR3 256MB
Flash	Nor Flash 16MB
	Not support NAND Flash

5. Description of power supply and power consumption

	Test Conditions	Min	Rated value	Max	Unit
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Operating Voltage	T A = 25°C	6	12	32	V
Absolute working voltage	T A = 25°C	5.5		36	V
Working current	VIN=12V, T A = 25°C	0.4	0.6	1.5	A

Please use the ZBT standard power adapter to supply power to this product. If not use the ZBT standard power supply, please strictly follow the above power supply specifications to supply power to this product, otherwise it will damage the product. If you use batteries or vehicle power supply, please be sure to take anti-static and anti-surge measures.

6.WIFI Wireless Parameter Introduction

6.1 WIFI 2.4G

Compatible with IEEE 802.11 b/g/n, support IEEE 802.11 d/h/k; support 20MHz, 40MHz, using 2T2R MIMO antenna technology, the maximum connection rate is up to 300Mbps. The following is a description of the power frequency, reception sensitivity, and transmission power of 2.4G WIFI.

	Explanation	Max	Rated value	Min	Unit
Working 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	11 Mbps CCK	20	19	18	dBm



Power	54 Mbps OFDM	18	17	16	dBm
	BW=20MHz MCS 7	18	17	16	dBm
	BW=40MHz MCS 7	17	16	15	dBm

6.2 WIFI 5.8G

Compatible with IEEE 802.11 a/ac, support IEEE 802.11 d/e/h/i/k/r/w; support 20MHz, 40MHz, 80MHz, adopt 2T2R MIMO antenna technology, the highest connection rate is up to 867Mbps. The following is a description of the power frequency, receiving sensitivity, and transmit power of 5.8G WIFI.

	Explanation	Max	Rated value	Min	Unit
Working Frequency		5825		5180	MHz
Receive Sensitivity	54 Mbps OFDM	-72	-74	-75	dBm
	BW=20MHz MCS 7	-70	-72	-73	dBm
	BW=40MHz MCS 7	-69	-70	-71	dBm
	BW=80MHz MCS 9	-58	-59	-60	dBm
Transmit Power	54 Mbps OFDM	19	18	17	dBm
	BW=20MHz MCS 7	18	17	16	dBm
	BW=40MHz MCS 7	18	17	16	dBm
	BW=80MHz MCS 9	17	16	15	dBm

7. Introduction of structural parameters and accessories



Weigh (KG)	1.22KG	
Case Size	L*W*H=240MM*135MM*25MM	
Color	Black	
Accessories	Power Adapter	12V/2A 1PCS
	Manual	1PCS
	Certificate of conformity	1PCS
	Cable	Category 5 network cable 1PCS
	SIMcard cover	1PCS
	Antennas	5G move antenna compatible 4G\3G\2G frequency band 4PCS
1*GPS antenna		
2.4G and 5.8G dual frequency antenna 2PCS		

8. Dual frequency antenna

This product has a built-in M.2 interface, which can be used to expand 5G mobile communication functions. The built-in M.2 interface supports USB3.0 and PCIE bus. The specific support of 5G mobile communications for NSA or SA is determined by the selected 5G module. At present, this product has completed the joint debugging with Guanghetong's FM150 series module.

9. Product working environment requirements

Operating temperature	0°C to 40°C
Storage temperature	-40°C to 70°C
Working humidity	10% to 90%RH Non-condensing
Storage humidity	5% to 90%RH Non-condensing



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 MAC address), no password by default
5.8G SSID	WIFI-5G-XXXXXX (X is the last 6 digits of MAC address), no password by default

Above is the general default preparation information of the product. The WIFI SSID may be different when using our OS firmware or OPENWRT firmware, 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.