VBG1200 5.0 Product Specification

VBG1200 is a professional dual band WiFi bridge, repeater and router product carefully developed by HouTian network, can work in 5G and 2.4G band at the same time, adopt temperature compensated auto frequency control technology (TAFC), WiFi signal is more stable and not easy to drop, its main features as below:

Hardware Features:
- Support wide voltage DC5-15V power supply, two-stage automatic overvoltage protection (Protection voltage upper limit 15.5V);
- The output power of the power supply is not less than 10W (typical power supply 5V/2A, ripple less than 100mV);
- Module power supply: 1.3W -- 3.75W;
- WiFi Work Band: 2.4G + 5G;
- WiFi transmission rate: 300Mbps(2.4G)+900Mbps(5G);
- RF Power: 2.4G is 15dBm/16.5dBm optional, 5G is 19dBm/23dBm optional;
- The transmission distance (5G without obstacle): 500 meters;
- The module built-in LNA, the receiving sensitivity is 14dB;
- Standard package external antenna: 2*3dBi 2.4G antennas, 2*3dBi 5G antennas;
- Adopt temperature compensated auto frequency control technology, WiFi signal is more stable and not easy to drop;
- The aluminum alloy shell has good heat dissipation characteristics, which can quickly dissipate the heat generated when the device is working;
- Work Environment temperature: -20℃ to 55℃.

Function Features:
- Support router and bridge repeater mode;
- In router mode, support WiFi WAN access;
- In router mode, support WAN/LAN exchange of wired network ports;
- Support WiFi smart bridge repeater, can achieve WiFi to wired, wired to WiFi function;
- Support 802.11ac, 802.11a, 802.11n and so on transmission protocol;
- Support WiFi hotspot automatic reconnection, two hotspot matching methods: Full match authentication mode, SSID and password authentication mode;
- WiFi hotspot memory, maximum memory 100 hotspots;
- Support connecting more than 20pcs WiFi terminal at the same time;
- Support SSA protocol, built-in hotspot signal strength detection and reporting function to realize WiFi mobile positioning;

- Support hotspot forced disable, WiFi hardware forced disable;
- Hotspot connection parameter import and export function;
- Adopt VDNS virtual domain configuration technology to solve the user's trouble of configuration;
- Support WEB management, Chinese and English configuration interface;
- Support upgrade online;
- Support IP layer transparent transmission and MAC layer transparent transmission two bridge modes to meet various bridge applications:
  IP layer transparent transmission (factory default), transparent transmission of IP layer data, can meet most of the bridge applications;
  MAC layer transparent transmission all data above the MAC layer (link layer) and the MAC layer, including IP layer data; MAC transparent transmission can solve some special applications for MAC layer encryption, such as GoPro camera, Cisco AP, Hikvision monitoring.
  system, etc.

One: Hardware Spec

External interface	A USB/DC power supply line; A 10/100M adaptive Ethernet cable;
Button	Reset button (press and hold for about 5 seconds to release, the device will automatically restore to the factory)
LED	Status Indication: Ethernet Port Status Light (Yellow); 2.4G WiFi Connection Status Light (Blue); 5G WiFi Connection Status Light (Green);
Antenna Interface	2 external 3dBi 2.4G antennas; 2 external 3dBi 5G antennas;
Module Size	84mm x 45mm x 15mm（L x W x H）
Module Weight(Including Antennas)	133.8g

Two: WiFi Related
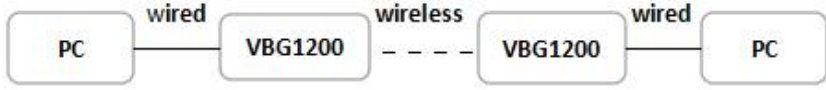
Protocol Standard	IEEE 802.11ac, IEEE 802.11a; IEEE 802.11n, IEEE 802.11g, IEEE 802.11b;
WiFi Transmission rate	2.4GHz band: 300Mbps 5GHz band: 900Mbps
Basic Function	1) Router mode, support WiFi WAN access and WAN/LAN exchange; 2) Transparent bridge (IP layer transparent, MAC layer transparent); 3) WiFi Hotspot exchange, WiFi hardware exchange; 4) 2.4G WiFi mode option: 11B/G/N, 11B/G, 11N, 11G, 11B; 5G WiFi mode option: 11AC/AN/A, 11AC/AN, 11A/N, 11A, 11N; 5) WiFi hotspot automatic reconnection, two hotspot matching methods: Full match authentication mode, SSID and password authentication mode; 6) WiFi hotspot memory, maximum memory 100 hotspots; 7) SSA signal strength detection and reporting function ; 8) Hotspot connection parameter import and export function;
Supported Band	2.4G band channel: 1-14; 5G band channel: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153,157,161, 165
WiFi RF Power	2.4G: normal power 15dBm; enhanced power 16.5dBm. 5G: normal power 19dBm; enhanced power 23dBm.
Compliance acceptance sensitivity	-69dbm (2.4G) -75dbm (5G)
LNA Sensitivity	14dB
Application Method	WiFi Repeater (WiFi signal repeater), can extend WiFi transmission distance; WiFi Bridge: IP layer transparent transmission, MAC layer transparent transmission; WiFi access point (AP);

| WiFi Security	64/128/WEP security; WPA-PSK/WPA2-PSK, WPA/WPA2 Security mechanism;
System Function	Firmware Upgrade Reboot device Reset factory Account and password revise

Three: Electrical performance parameters

1.Power supply parameters			
Supply Voltage Range	Input Power	Typical Power Supply	Ripple
DC5-15V	≥10W	5V/2A	<100mV

2. Working Electrical Performance Parameter Measurement Form (Environment Temperature: 25℃)

Work Band	Supply Voltage	Work Stage	Work Current(mA)	Main chip temperature (℃)
2.4G	5V	Booting Up	160-280	25-38
		Standby	260-280	40
		Transfer Data	400-450	43
5G	5V	Booting Up	160-380	25-40
		Standby	360-380	42
		Transfer Data	420-470	44
Dual Band	5V	Booting Up	160-480	25-45
		Standby	460-480	48
		Transfer Data(2.4G)	590-690	50
		Transfer Data(5G)	550-610	50
		Transfer Data (Dual Band）	650-750	53

Four: Network Throughput Test Report

Device	2pcs VBG1200,2pcs computers
Test Tool	IxChariot Software
Top relationship	

Test Result:

Band	WiFi Protocol	Throughput (Mbps)
2.4G	B/G/N	94
5G	AC/A/N	56
	N	94
	A	22

2.4G (B/G/N) Throughput Test Fluctuation Chart:
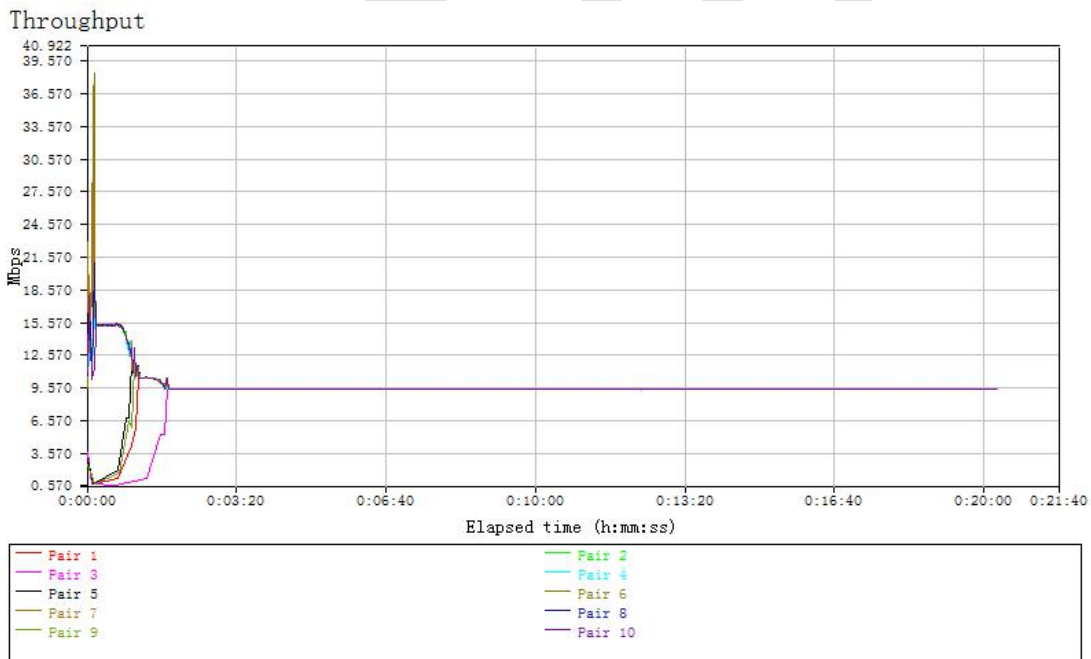
5G (AC/A/N) Throughput Test Fluctuation Chart:
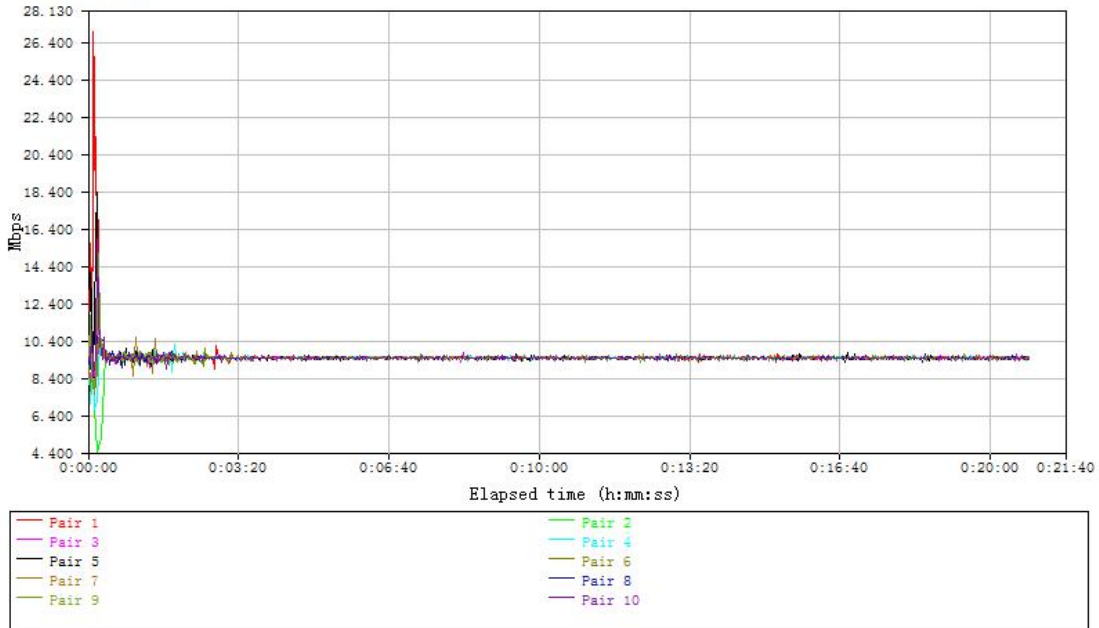
Five: RF Test Report

2.4G RF Parameters Form (Hardware Version: 6.0)

Channel (Band)	1 （2412M）	6 (2437M)	7 (2442M)	9 (2452M)	11 (2462M)	13 (2472M)
Transmit power	14.6	14.4	14.6	14.4	14.5	14.6
EVM	-33	-33	-33.5	-33	-33.5	-33.5

5G RF Parameters Form (Hardware Version: 6.0)

Channel(Band)	36 (5180M)	52 (5260M)	64 (5320M)	100 (5500M)	128 (5640M)	149 (5745M)	157 (5785M)	165 (5825M)
Transmit Power 1	20.4	20.3	20.3	20.5	20.67	20.3	20.4	20.5
EVM1	-33	-33	-33.5	-33	-31	-31.5	-31	-31.5
Transmit Power 2	23.5	23.6	23.5	23.5	23.2	22.7	22.8	22.7
EVM2	-30	-30.5	-30	-29.5	-28.5	-28	-28	-28

Six: Antenna Matching Test Report:

Standing Wave Ratio Parameters Form (Hardware Version: 5.0)					
Band / ANT Channel	2.412GHz	2.432GHz	2.452GHz	2.462GHz	2.477GHz
ANT1	1.23	1.2	1.32	1.26	1.2
ANT2	1.26	1.23	1.32	1.25	1.22
Band / ANT Channel	5.180GHz	5.350GHz	5.550GHz	5.700GHz	5.825GHz
ANT1	1.65	1.63	1.2	1.56	1.68
ANT2	1.68	1.63	1.22	1.55	1.66

Seven: product specifications

Product Specification

Product Name	VBG1200
WiFi Function	Repeater/Bridge/Router
WiFi Band	2.4GHz/5.8GHz
WiFi Protocol	802.11ac/a/b/g/n
transmission rate	300Mbps+900Mbps
Work Voltage	5V-15V(Typical 5V/2A)
Color	Silver
Device size	84X45X15mm
Package	155X115X30mm
Weight	133.8g
Package Weight	204.5g

LAN
DC
USB
DC connector

- Green Light, 5G WiFi connection status light
- Blue Light, 2.4G WiFi connection status light
- Yellow Light, Ethernet cable connection light

5G Antenna Interface   2.4G Antenna Interface
Reset button
30cm
22cm   8cm
5G Antenna Interface   2.4G Antenna Interface
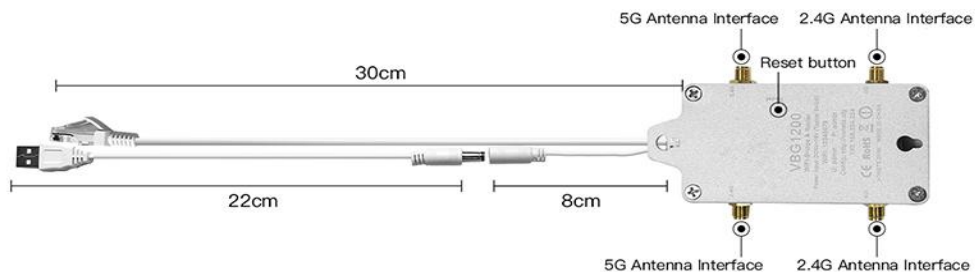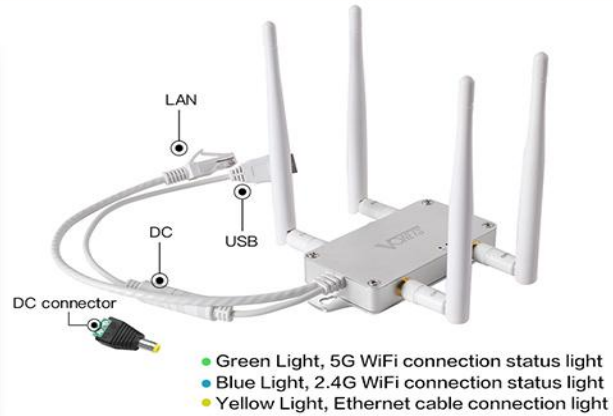
Eight: Accessories included

● 2*3dBi 2.4G glue stick antennas, 2*3dBi 5G glue stick antennas;

● Industrial chassis track hook kit (standard accessory)；

● Industrial power supply DC connector (standard accessory)