VBGO1200 Product Specification

VBGO1200 is a professional-grade dual-band Gigabit wireless repeater and bridge product developed by HouTian WuXian Network. It can work in 5G and 2.4G frequency bands at the same time. It adopts digital-analog temperature compensation frequency stabilization technology (TAFC), and the WiFi signal is more stable. Stable and not easy to drop. The main features are as follows:

Hardware Specifications:

- Supports wide voltage DC12V-DC48V power supply with two-stage automatic overvoltage protection up to 56V;
- Supports WiFi transmission protocols including 802.11b, 802.11g, 802.11n, 802.11ac, and 802.11a;
- Wireless transmission rate: 300Mbps (2.4GHz) + 900Mbps (5GHz), 2T2R;
- Built-in omnidirectional 5dBi antenna; transmit power: 17dBm/25dBm (2.4GHz), 19dBm/25dBm (5GHz);
- Maximum point-to-point pairing range without obstacles: Over 1000m for both 2.4G/5G bands;
- Camouflage housing for exceptional outdoor concealment, with built-in lightning and electrostatic protection;
- Waterproof and dustproof rating: IP65;
- Integrated 4 high-power FEMs and intelligent auto-start/stop cooling fan;
- Supports 1 POE output (RJ45 Ethernet port, LAN interface, 48V power supply active);
- 1 POE input (both cannot be active simultaneously; when POE input is active, POE output functions as a standard Gigabit Ethernet port);
- Built-in intelligent start/stop cooling fan with heat dissipation holes on the bottom of the housing for uniform and efficient cooling;
- Operating temperature range: -20° C to 55° C;

Features:

- WiFi smart bridge relay, enabling wireless-to-wired and wired-to-wireless conversion;
- Supports router mode and bridge relay mode, compatible with both 2.4GHz and 5GHz bands;
- In router mode, supports WiFi WAN access and WAN/LAN switching for wired ports;
- Automatic WiFi hotspot reconnection with two matching methods (full authentication mode, SSID and password authentication mode);
- WiFi hotspot memory supporting up to 100 hotspots;
- Supports simultaneous connection of over 20 WiFi terminal devices;
- Supports SSA signal strength detection reporting for WiFi mobile positioning;

- Supports manual SSID broadcast shutdown and manual WiFi hardware shutdown;
- Hotspot connection parameter import/export functionality;
- Utilizes VDNS virtual domain configuration technology to simplify user setup;
- Features web-based management with freely switchable Chinese/English configuration interfaces;
- Employs digital-analog temperature-compensated frequency stabilization for enhanced WiFi signal stability and reduced disconnections;
- Supports both IP-layer and MAC-layer transparent bridge modes to accommodate diverse bridging applications;
- IP Layer Transparent Mode (factory default): Transmits IP-layer data transparently, suitable for most bridge applications;
  MAC Layer Transparent Mode: Transmits all data from the MAC layer (link layer) and above transparently, including IP-layer data. MAC transparent mode addresses specific applications requiring MAC-layer encryption, such as APs managed by an Access Controller, GoPro cameras, Cisco APs, and Hikvision surveillance systems.

One:Hardware Spec

Protocol Standards	IEEE 802.11ac, IEEE 802.11a; IEEE 802.11n, IEEE 802.11g, IEEE 802.11b;
Transmission Rate	2.4GHz band: 300Mbps 5GHz band: 900Mbps
External Interface	Two 10/100/1000M auto-negotiating Gigabit Ethernet ports;
Button	Reset button (long press 5 seconds, then release, the device will automatically restore the factory)
LED	Status instruction: Ethernet port status light (Yellow); 2.4G WiFi connection status light (Blue); 5G WiFi connection status light (Green); Connect to 48V/1.2A power supply, POE Output status light (red light)；
Antenna	Built-In 2pcs Smart omnidirectional 2.4G Antennas; Built-In 2pcs Smart omnidirectional 5G Antennas;
Product size	202*101*45mm（L x W x H）
Item weight	235g

Two: WiFi Related

Basic Function	1) Routing mode, support WiFi WAN access and WAN/LAN interchange; 2) Smart WiFi bridge(IP layer transparent transmission, MAC layer transparent transmission); 3) WiFi hotspot exchange; 4) WiFi hardware exchange; 5) 2.4G WiFi mode optional: 11B/G/N, 11B/G, 11N, 11G, 11B; 5G WiFi mode optional: 11AC/AN/A, 11AC/AN, 11A/N, 11A, 11N; 6) WiFi hotspots automatically reconnected, and two hotspot matching methods (full match authentication mode, SSID and password authentication mode); 7) WiFi hotspot memory, maximum memory 100 hotspots; 8) Support SSA signal strength detection and reporting function ; 9) 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 transmit power	2.4G: ordinary power: 17dBm; enhanced power: 25dBm; 5G: ordinary power: 19dBm; enhanced power: 25dBm;
Compliance acceptance sensitivity	-76dbm (2.4G) -77dbm (5G)
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 encryption; 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	Overvoltage Protection
DC12V-DC48V	≥36W	12V/3A、48V/1.2A	56V

2. Working Electrical Performance Parameter Measurement Form (Environment Temperature: 26℃)

Work Band	Supply Voltage	Work Stage	Work Current (mA)	Main chip temperature (℃)
2.4G	12V	Booting Up	160-650	30-45
		Standby	260-600	46-60
		Transfer Data	350-700	60-74
5G	12V	Booting Up	160-640	30-45
		Standby	320-550	45-64
		Transfer Data	350-700	60-75
Dual Band	12V	Booting Up	160-700	30-47
		Standby	310-750	48-60
		TransferData (2.4G)	350-900	60-78
		Transfer Data(5G)	350-950	60-80
		Transfer Data (Dual Band)	350-1060	65-85

Note: PSE function requires 48V power supply voltage to use!
If the POE output port (PSE) is connected to a non-POE network port (PD is an access network port), please use it with caution and ensure that the access network port is isolated from the ground, otherwise it may cause damage to the access device!

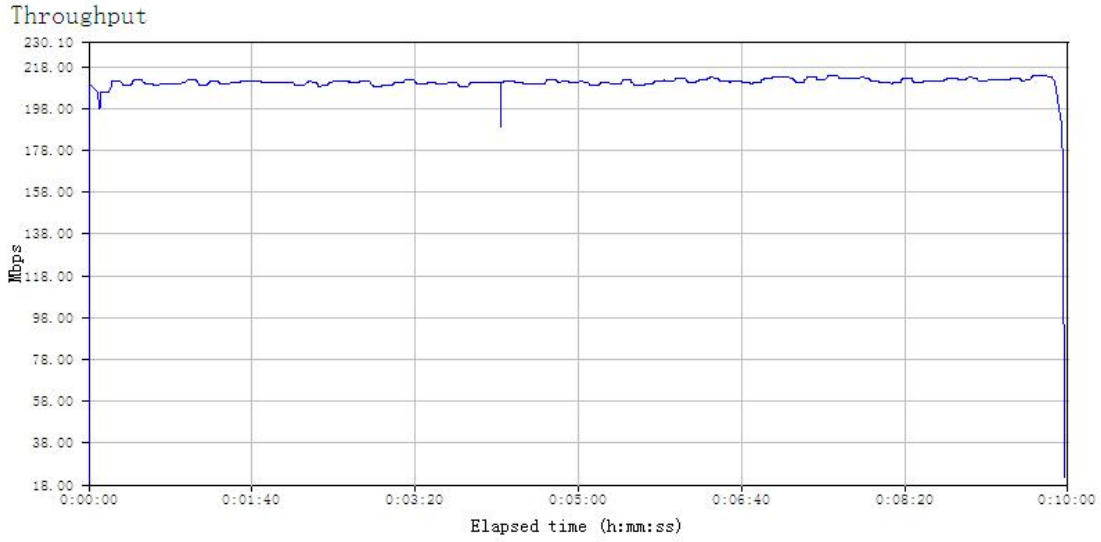
Four: Network Throughput Test Report

Device	2pcs VBGO1200, 2pcs Computers
Test Tool	IxChariot Software
Top relationship	PC1 ---->VBGO1200(AP) （（（（（ VBGO1200(Client)---->PC2

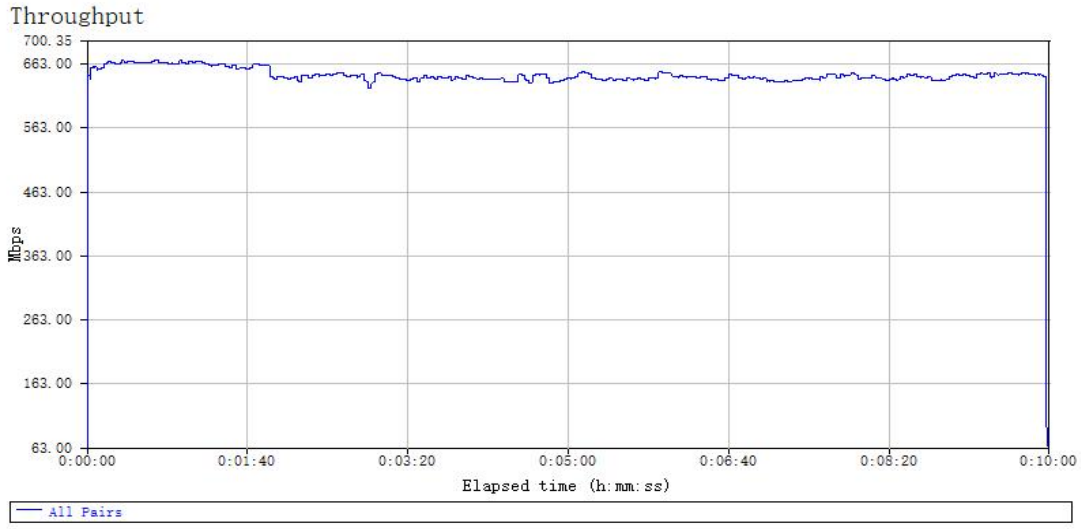
Test Result:

Band	WiFi Protocol	Throughput (Mbps)
2.4G	B/G/N	210
5G	AC/A/N	648

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: 5.0)

Channel Frequency	1 2412MHZ	3 2422MHZ	6 2437MHZ	7 2442MHZ	9 2452MHZ	11 2462MHZ	13 2472MHZ
Normal Power	18.3	18	18.5	18.6	18.8	18.4	18.3
EVM1	-37	-37	-37	-37	-37	-37	-37
Enhanced Power	25.3	25.7	25.1	25.2	25.4	25.1	25.0
EVM1	-31	-30	-30	-30	-30	-30	-30

Normal Power	18.3	18.5	18.7	18.7	18.8	19.2	19.2
EVM2	-37	-37	-37	-37	-37	-38	-38
Enhanced Power	25.8	25.3	25.2	25.1	25.2	25.1	25.0
EVM2	-31	-30	-30	-30	-30	-30	-30

5G RF Parameters Form (Hardware Version: 5.0)

Channel Frequency	36 5180MHZ	52 5260MHZ	64 5320MHZ	100 5500MHZ	128 5640MHZ	149 5745MHZ	157 5785MHZ	165 5825MHZ
Normal Power	19.9	19.6	19.4	19.4	19.4	19.5	19.5	19.4
EVM1	-37	-37	-36	-36	-36	-36	-36	-36
Enhanced Power	24.8	24.6	24.8	25.0	24.8	25.3	25.2	24.6
EVM2	-32	-31	-30	-30	-30	-30	-30	-30
Normal Power	19.6	19.7	19.9	19.6	19.6	19.3	19.6	19.6
EVM1	-37	-37	-37	-37	-36	-36	-36	-35
Enhanced Power	25.2	25.2	24.8	25.4	25.3	24.6	24.8	25.3
EVM2	-30	-31	-30	-30	-30	-30	-30	-30

Sixth: Antenna Matching Test Report:

Standing Wave Ratio Parameters Form (Hardware Version: 5.0)					
Band / Antenna / Channel	2415MHZ	2430MHZ	2445MHZ	2460MHZ	24750MHZ
ANT1	1.23	1.15	1.09	1.11	1.18
ANT2	1.21	1.18	1.16	1.16	1.20
Band / Antenna / Channel	5170MHZ	5320MHZ	5460M	5620MHZ	5790MHZ
ANT1	1.32	1.38	1.40	1.29	1.16
ANT2	1.31	1.19	1.38	1.47	1.83

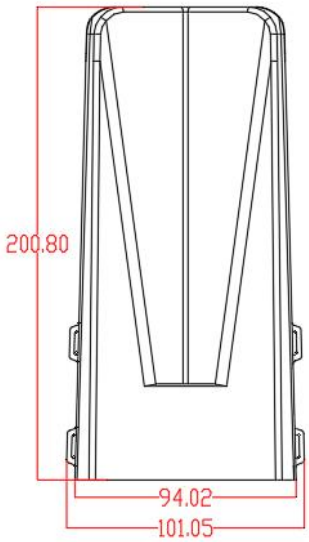
Seven、 Product Picture as below

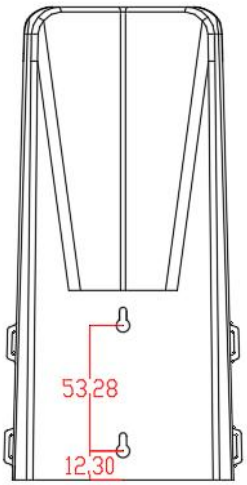
Product Specification

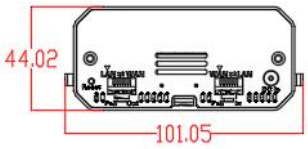
Product Name	VBGO1200
WiFi Function	Repeater/Bridge/Router
WiFi Band	2.4GHz/5.8GHz
WiFi Protocol	802.11ac/a/b/g/n
transmission rate	300Mbps+900Mbps
Work Voltage	12V-48V (Typical 12V/3A Applicable for No POE) 48V(Applicable for POE)
Color	Camouflage
Device size	202*101*45mm
Package	245*130*62mm
Weight	235g

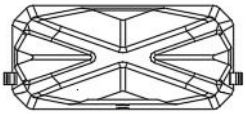
- Green Light, 5G WiFi connection status light
- Blue Light, 2.4G WiFi connection status light
- Yellow Light, Ethernet cable connection light
- Red Light, POE Output Status Light

Eight、 Product size









Nine、Product accessories

1.Power Adapter (POE Option)（48V/1.2A）	2.Power Adapter (No POE Option) （12V/3A）	3.DC Terminal Block (Standard Accessories)	4.Cable ties (2 pieces/Standard Accessory)
			

Ten、Product application and secondary development precautions

1. Problems related to wireless interference:

1.1 Use the ping command to test the wireless transmission performance. If it is found that the delay of the ping packet response is extremely uneven, and there are many responses with a large delay, it can basically be judged that the wireless has been strongly interfered;

1.2 The product antenna should be kept as far away as possible from sources of interference, such as switching power supplies, antennas of other modules or wireless products, etc.;

1.3 If it is too close to the antenna of other wireless products, it will cause mutual interference, resulting in an increase in the transmission bit error rate and a slower transmission rate. At this point, the wireless signal must be properly attenuated. The methods of attenuating the signal include adding obstacles, extending the distance, and adding a resistor in series between the antenna feed point and the antenna, etc., to meet the actual application requirements;

2. Selecting a suitable power supply is the key to good and stable wireless transmission and stable operation of the product. Improper power supply will cause damage to the product or poor wireless performance. The selected power supply must meet the voltage range and input power requirements of the power supply input, and the ripple must be less than the required maximum power supply ripple (100mV);

3. POE related issues:

3.1 If the product has PSE function (POE output), it needs 48V power supply voltage and meets the power requirements of POE output before it can be used;

3.2 If the network port of the product has a POE output port, if it is connected to other non-POE network ports, please use it with caution, and ensure that the access network port is isolated from the ground, otherwise it may cause damage to the connected product!

A safe way is: let the product use a two-pin switching power supply without ground (AC TO DC, AC input is two-pin instead of three-pin).