VAP11S-D232 Product Specification

VAP11S-D232 is a professional Dual frequency 2.4G/5G WiFi bridge, WiFi repeater and serial port forwarding function carefully developed by Houtian Network., adopt temperature compensated auto frequency control technology (TAFC), WiFi signal is more stable and not easy to drop, its main features as below:

- Industrial-grade 2.4G/5G band WiFi bridge/repeater/router/serial server/serial pass-through bridge;
- Serial port transparent transmission supports Ethernet broadcast transparent transmission, one serial port to one IP transparent transmission, and one serial port to multiple IP transparent transmission;
- Support wide voltage DC5V-24V power supply, two-stage automatic overvoltage protection, overvoltage protection point 29V, power supply reverse protection;
- Support 802.11ac, 802.11a, 802.11n and other WiFi transmission protocols;
- Wireless transmission rate: 300Mbps (2.4G)+900Mbps (5G);
- Transmission power: 2.4G is 15dBm, 5G is 19dBm/23dBm optional;
- Maximum point-to-point barrier-free transmission distance: 2.4G 200m;
- One 10/100Mbps adaptive Ethernet port RJ45 male;
- One RJ45 female base (2 * UART serial port - supporting TTL level (LVTTL-3.3V) or CMOS level - 3.3V);
- Optional accessories: support RS232: VDB9-232, VDB9-232-X2 (built-in RS232 chip);
- Support RS485/RS422: VRJ45-422-1 (built-in RS485/RS422 chip with toggle switch switching);
- Support TTL level (3.3V): VRJ45-5P adapter;
- Standard industrial rail fixed kit and industrial power DC connector;
- Support the simultaneous connection of more than 20 WiFi terminal devices;

- VDNS virtual domain name configuration technology is adopted to alleviate user configuration difficulties;
- Support manual closing of SSID broadcast and WiFi hardware;
- Support SSA signal strength detection and reporting function to realize WiFi mobile positioning;
- Support the import and export of configuration parameters to facilitate the batch configuration of engineering projects;
- Support IP layer transparent transmission and MAC layer transparent transmission to meet various bridge applications;
- IP layer transparent transmission (factory default), transparent transmission of IP layer data, can meet most of the bridge applications;
- The MAC layer transparently transmits all data above the MAC layer (link layer) and the MAC layer, including the IP layer data. MAC pass-through can solve some special applications for MAC layer encryption, such as AC-managed AP, GoPro camera, Cisco AP, Hikvision monitoring system, etc.
- Digital analog temperature compensation frequency stabilization technology is adopted to make WiFi signal more stable and not easy to drop;
- Working environment temperature: - 40 ℃ to 55 ℃.

One: Hardware Spec	
External interface	1）DC/USB power supply cable; 2）10/100M Adaptive Ethernet cable; 3）One RJ45 female socket (2*UART serial port-support TTL level (LVTTL-3.3V) or CMOS level -3.3V).
LED	Status Indication: Ethernet Port (Cable) Status Light (Yellow); WiFi Connection Status Light (Blue);
Antenna	2*3dBi 2.4G Whip antennas
Button	Reset button (Long press 5 seconds then release)
Module Size	93mm x 45mm x 25mm（L x W x H）

Product Weight	79.3g
Two: WiFi Related	
Protocol Standards	IEEE 802.11n、IEEE 802.11g、IEEE 802.11b、IEEE 802.11a、IEEE 802.11ac;
WiFi Transmission Rate	300Mbps+900Mbps
Basic Function	1) Bridge mode, supports WiFi access and serial port access (the forwarding function is enabled by default (instant forwarding, TCP/UDP protocol, broadcasting allowed); 2) Transparent bridge (IP layer transparent, MAC layer transparent); 3) Routing mode, support WiFi access; 4) SSID broadcast exchange, WiFi hardware exchange; 5) WiFi mode option: 11B/G/N、11B/G、11N、11G、11B; 6) WiFi hotspot automatic reconnection, two hotspot matching methods: Full match authentication mode, SSID and password authentication mode; 7) WiFi hotspot memory, maximum memory 100 hotspots; 8) SSA signal strength detection and reporting function: all-round intelligent motion detection, mobile applications that identify loops or regular paths, and automatically switch to points;
Supported Channel	1-14
WiFi RF Power	2.4G：15dBm; 5G: normal power: 19dBm; Enhanced power: 23dBm;
Compliance acceptance sensitivity	-69dbm (2.4G) -72dbm (5G)
LNA Sensitivity	14dBi
Application Method	WiFi Serial Server; WiFi Repeater (WiFi signal repeater), Can extend WiFi transmission distance; WiFi router;

	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	Ripple	Protection voltage upper limit	Upper limit of serial port voltage
DC12V-24V	≥10W	12V/1A	<100mV	29V	3.6V

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

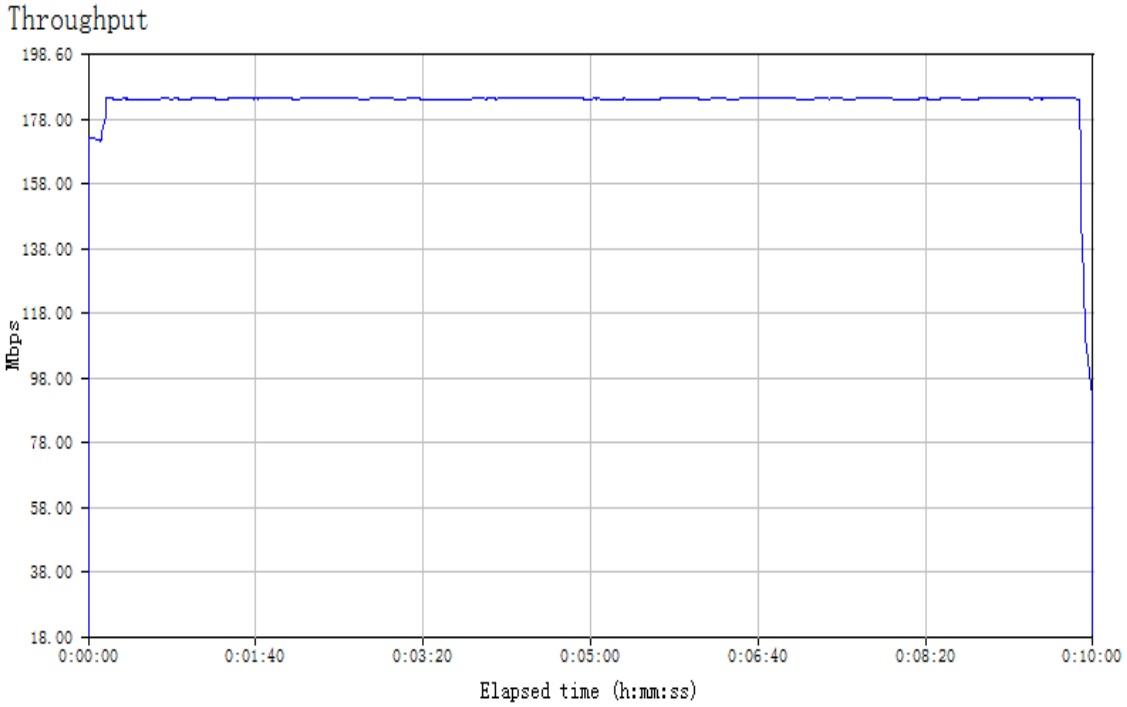
Supply Voltage	Work Stage	Work Current (mA)	Main Chip Temperature (℃)	Case Temperature
12V	Booting Up	40-180	27-43	27-33
	Standby	75-100	48	37
	Transfer Data	100-250	66	45

Four. RJ45 network port pin definition (Note: the power supply is not standard, it is an external power supply)

Pin	Pin definition	Pin description
1	VDD_3.3V	Internal working voltage of the device
2	COM1_CTL	COM1-RS485 control
3	COM2_CTL	COM2-RS485 control
4	COM2_TX	COM2-Transmit
5	COM2_RX	COM2-Receive
6	GND	Data ground
7	COM1_TX	COM1-Transmit
8	COM1_RX	COM1-Receive
Note: The internal working voltage is VDD-3.3V, this pin will affect the stability of the device. Do not use it		

Five: Network Throughput Test Report

Throughput Test Fluctuation Chart



Six: RF Test Report

Channel (Band)	1 (2412M)	3 (2422)	6 (2437M)	7 (2442M)	9 (2452M)	11 (2462M)	13 (2472M)
Transmit Power 1	19.7	19.5	19.7	19.6	19.5	19.5	19.5
EVM1	-35	-35	-34	-34	-35	-34	-34
Transmit Power 2	22.3	22	22.0	22.1	22.1	21.9	21.9
EVM2	-30	-30	-30	-30	-30	-30	-30

Seven: Antenna Matching Test Report

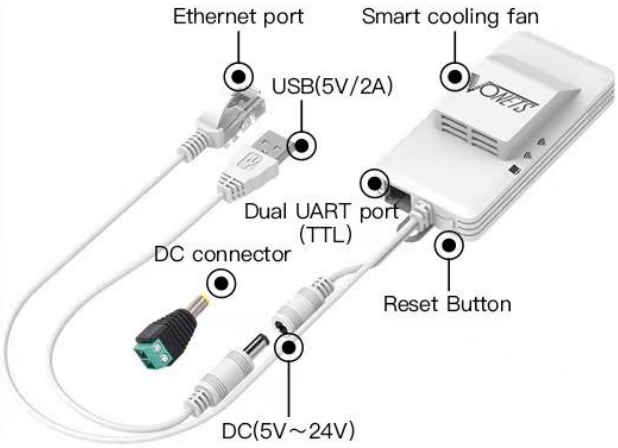
Standing Wave Ratio Parameters Form (Hardware Version: 2.0)					
Band / Antenna / Channel	2.412GHz	2.432GHz	2.452GHz	2.462GHz	2.477GHz
ANT1	1.4	1.4	1.3	1.4	1.4
ANT2	1.4	1.4	1.3	1.3	1.4

Eight: Product Picture

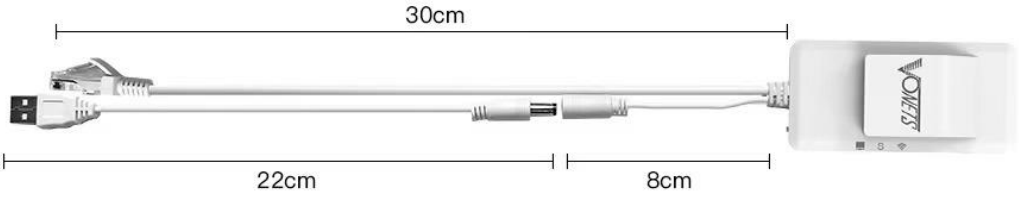
- Device

Product Specification

Product Name	VAP11S-D232
WiFi Function	Router/Repeater Bridge/Serial Port
WiFi Band	2.4GHz/5.8GHz
WiFi Protocol	802.11ac/a/b/g/n
transmission rate	300Mbps+900Mbps
Work Voltage	5V-24V(Typical 5V/2A)
Color	White
Device size	93X45X24mm
Package	140X95X36mm
Weight	79.3g



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



- Other Accessories

1. Industrial power DC connector(standard accessories)	2. Industrial Chassis Rail Hook Kit (standard accessories)	3. VDB9-232 (optional)
		
4.VDB9-232-X2(optional)	5. VRJ45-5P (optional)	6.VRJ45-422-1(optional)
		

Accessories Instruction Sheet			
model	category	Specification Description	Function description
VDB9-232	DB9 female seat	RJ45 crystal head + DB9 interface (built-in RS232 chip)	The UART (TTL3.3V level) of the RJ45 female socket is converted into RS232
VDB9-232-X2	Double DB9 female seat	RJ45 crystal head + double DB9 interface (built-in RS232 chip)	The two UARTs (TTL3.3V level) of the RJ45 female socket are converted into two RS232
VRJ45-5P	5PIN terminal block	RJ45 crystal head to 5P connector	Convert RJ45 female socket to 5PIN terminal block

VRJ45-422-1	6PIN connector	Built-in RS485/RS422 chip with toggle switch RJ45 crystal head + 6P connector (black)	Convert the two UARTs of the RJ45 female socket to two RS485, or use the toggle switch to switch to one UART and convert to one RS422