VAP11S-232 Product Specification

VAP11S-232 is a professional 2.4G 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 2.4G WiFi bridge/repeater/serial server;
- Serial port transparent transmission supports Ethernet broadcast transparent transmission, one serial port to one IP transparent transmission, one serial port to multiple IP transparent transmission;
- Support wide voltage DC5V-24V power supply, two-level automatic overvoltage protection, overvoltage protection point 29V, power reverse protection;
- Support 802.11b/g/n WiFi transmission protocol;
- WiFi transmission rate: 300Mbps;
- RF Power: 19dBm/22dBm optional;
- Point-to-point maximum transmission distance: 300 meters;
- 2pcs 3dBi external antennas, can be extended by extension cable (optional);
- One 10/100Mbps adaptive Ethernet port RJ45 male;
- One RJ45 female port (2*UART serial port-support TTL level (LVTTL-3.3V) or CMOS level-3.3V);
- Optional accessories:
  Support RS232:DB9-232, VDB9-232-X2 (built-in RS232 chip);
  Support RS485/RS422: VRJ45-422-1 (built-in RS485/RS422 chip, with toggle switch);Support TTL level (3.3V): VRJ45-5P adapter;
- WIFI/network port/serial port two-way transparent transmission, one-to-one/one-to-multiple transparent transmission;
- Standard accessories industrial track fixing kit and Industrial power supply DC connector;
- WiFi hotspot memory, maximum memory 100 hotspots;
- Support connecting more than 20pcs WiFi terminal at the same time;
- Adopt VDNS virtual domain configuration technology to solve the

user’s trouble of configuration;

- Support manually close SSID broadcast, WiFi hardware;
- Support SSA signal strength detection reporting function to realize WiFi mobile positioning;
- Support configuration parameter import and export function to facilitate batch configuration of engineering projects;
- 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;

  MMAC layer transparent transmission, transparent transmission of 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 AP managed by AC, GoPro camera, Cisco AP, Hikvision surveillance system, etc.
- Adopt temperature compensated auto frequency control technology (TAFC), WiFi signal is more stable and not easy to drop
- Working environment temperature: -40 ° C to 55 ° C;

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	94mm x 45mm x 15mm（L x W x H）

Product Weight	81.2g
Two: WiFi Related	
Protocol Standards	IEEE 802.11n、IEEE 802.11g、IEEE 802.11b;
WiFi Transmission Rate	300Mbps
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	Normal Power: 19dBm; Enhanced Power: 22dBm。
Compliance acceptance sensitivity	-95dbm
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

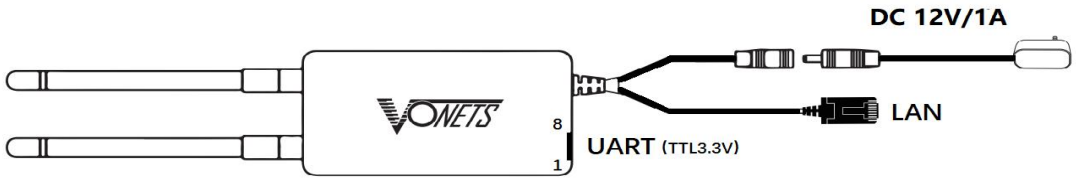
1.Power supply parameters

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

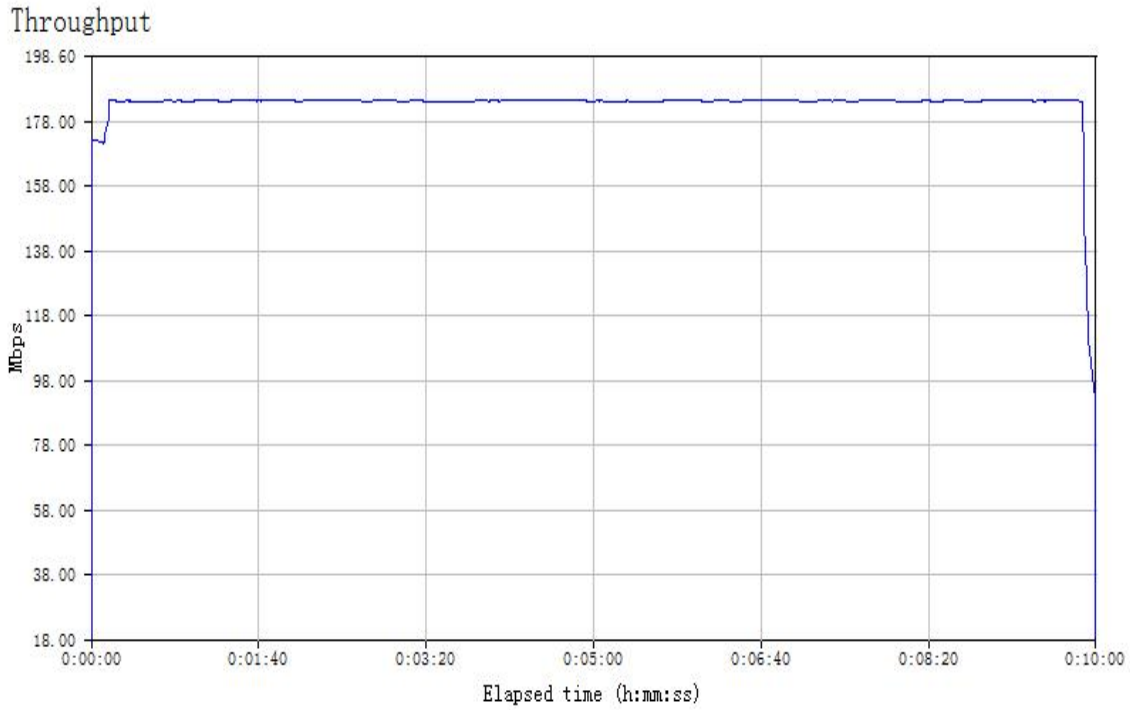
Four. RJ45 network port pin definition (Note: the power supply is not standard, it is an external power supply)



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

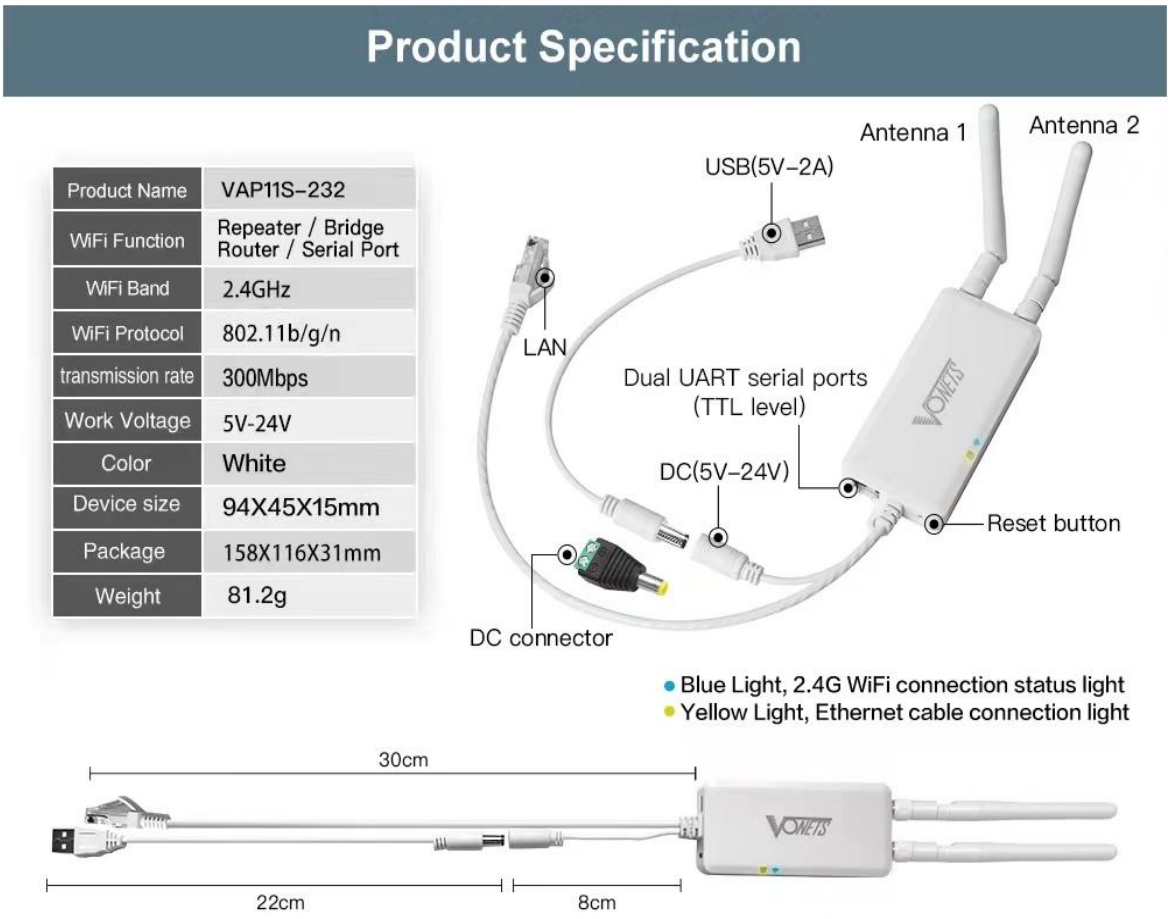
Channel (Band)	1 (2412M)	3 (2422)	6 (2437M)	7 (2442M)	9 (2452M)	11 (2462M)	13 (2472M)
Transmit Power 1	19.7	19.5	19.7	19.6	19.5	19.5	19.5
EVM1	-35	-35	-34	-34	-35	-34	-34
Transmit Power 2	22.3	22	22.0	22.1	22.1	21.9	21.9
EVM2	-30	-30	-30	-30	-30	-30	-30

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



- Other Accessories

1. Industrial power DC connector(standard accessories)	2. Industrial Chassis Rail Hook Kit (standard accessories)	3. Antenna extension cable(optional)
4. VDB9-232 (optional)	5. VDB9-232-X2 (optional)	6.VRJ45-422-1(optional)
7.VRJ45-5P (optional)		
	(The illustration only shows the connection relationship between the corresponding PIN pins, there is no level shifting function, and the corresponding PIN pins are all directly connected)	

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

Attached: