Potomac Wireless Video/Data Transmission System User Manual

Contents

1.Product description

Potomac Two-way Wireless Transmission System is a wireless image transmission transceiver specially developed by our company for automobiles and robots. Aiming at the complex ground environment, it adopts leading multi-carrier modulation technology, has strong anti-interference and penetration ability, and realizes the transmission of high-definition, stable, low-latency real-time video image signals on the move.

Potomac Two-way Wireless Transmission System is suitable for complex ground environments and can be placed on cars, firefighting robots, public security robots and other facilities.

Currently, three types of image transmission equipment are introduced according to the power amplifier transmission power. They are 0.3W video transmission equipment, 2W video transmission equipment and 10W video transmission equipment.

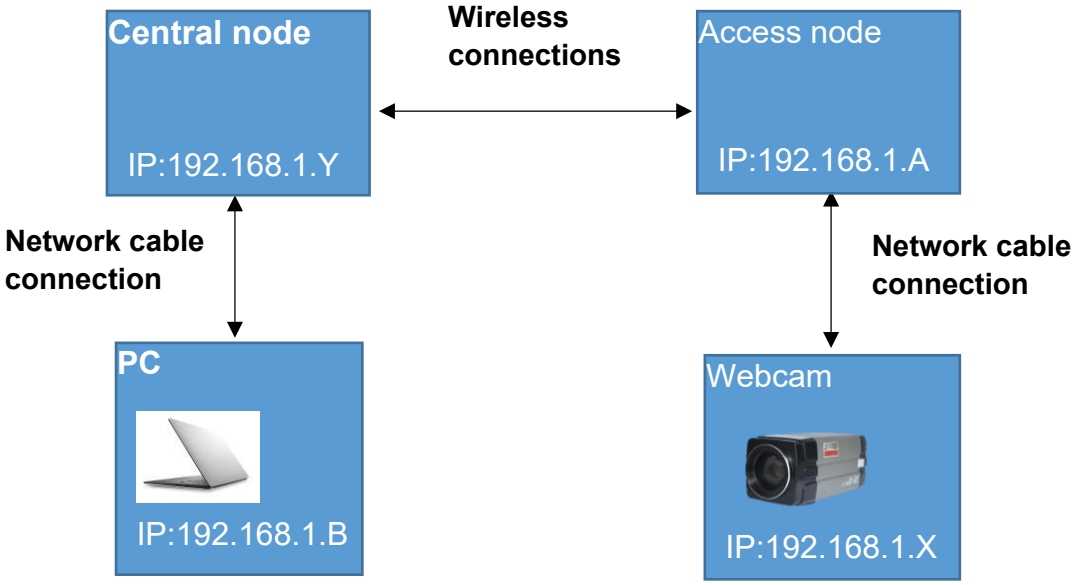
2.Network introduction

There are currently two networking modes: one-to-one and one-to-many. One-to-one network mode is generally used to connect the main device to the computer, and the slave device to the camera. After the system is connected, the video playback software can be used on the computer to watch the picture taken by the camera.

One-to-many networking mode uses the master device to connect to the computer, and the slave device to connect to the camera. After the system is connected, the computer can use the video playback software to watch all the pictures taken by the slave device connected to the camera.

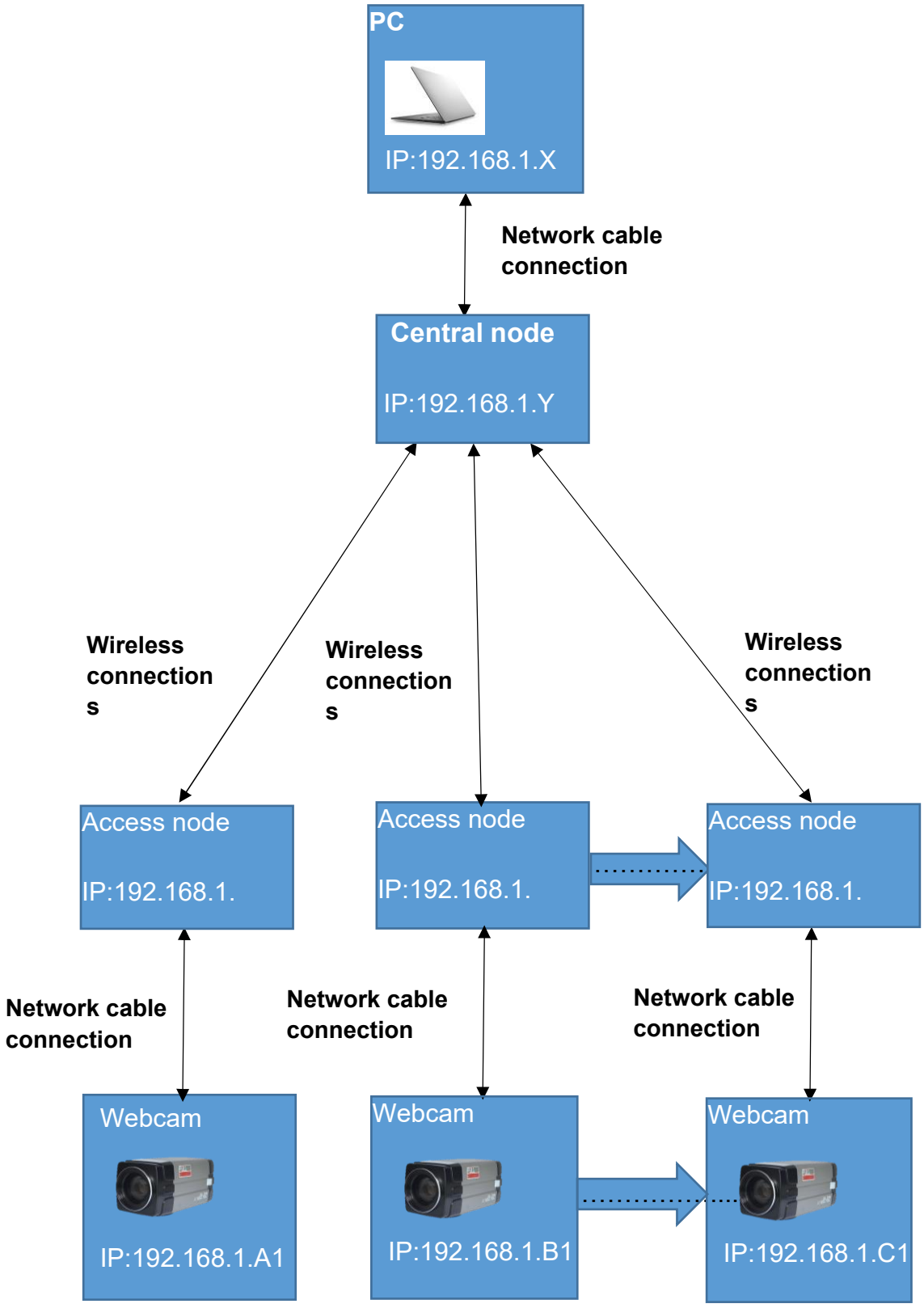
At present, in the one-to-many networking mode, a maximum of 1 master device can be connected to 16 slave devices.

2.1 One-to-one system diagram



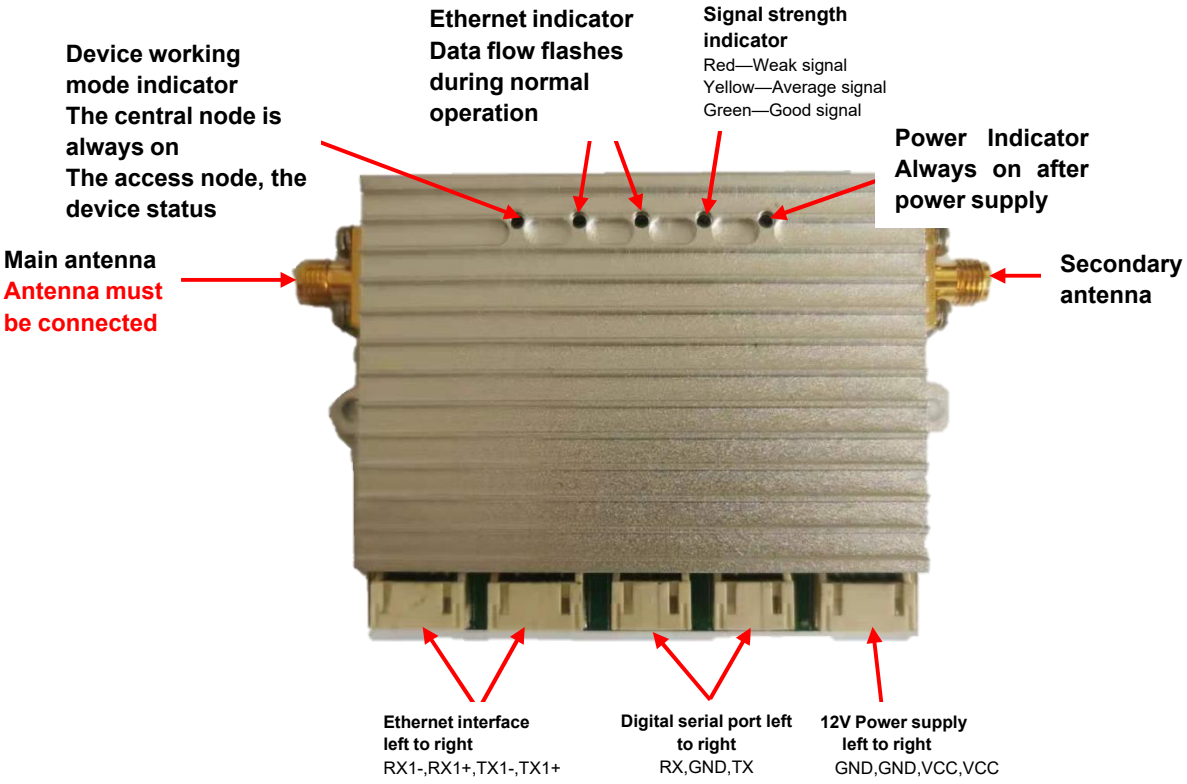
One-to-one System Diagram

2.2 Schematic diagram of one-to-many system

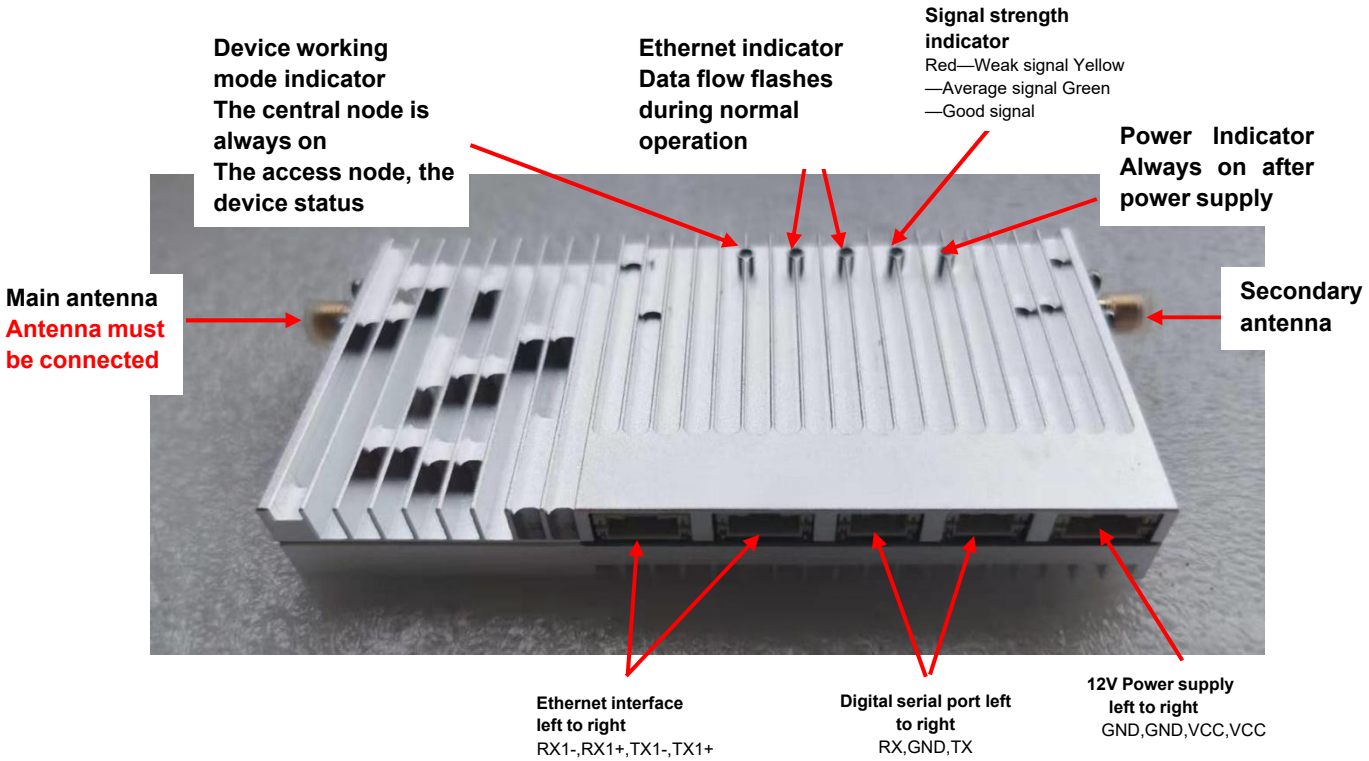


Schematic diagram of one-to-many system

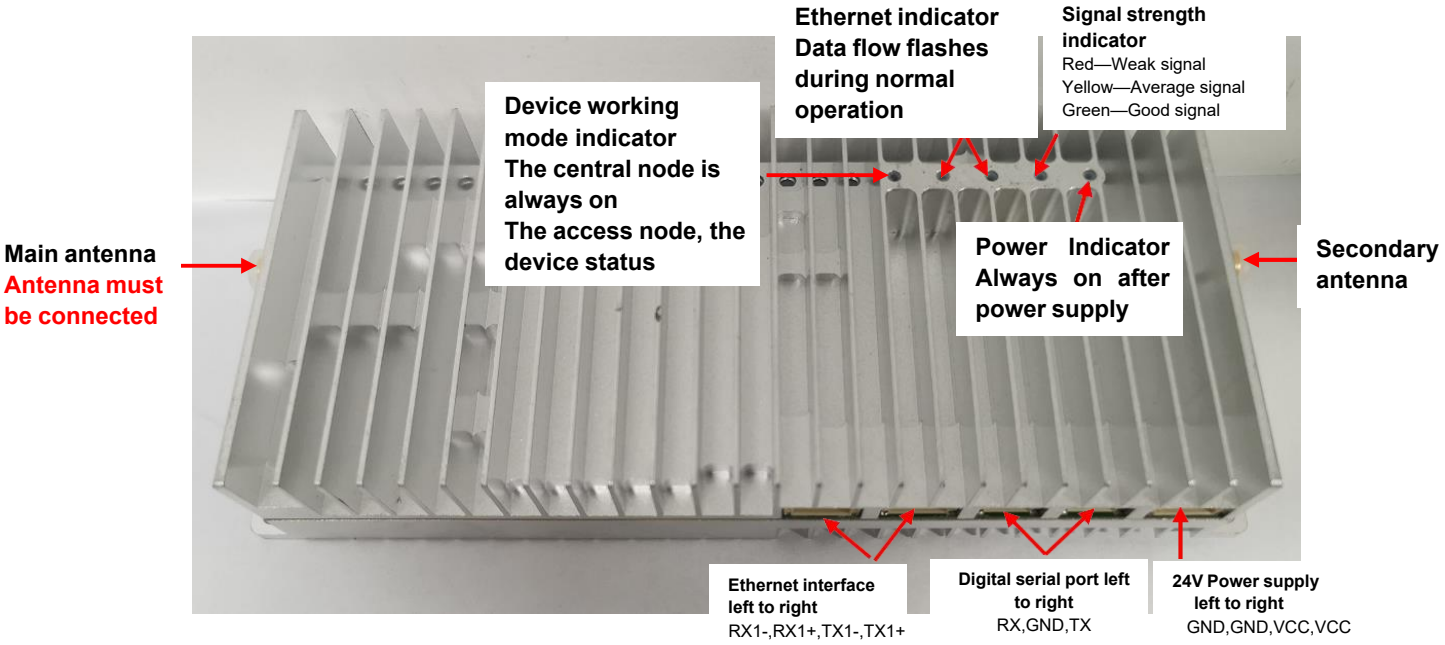
3.Hardware interface description



RF power：0.3W



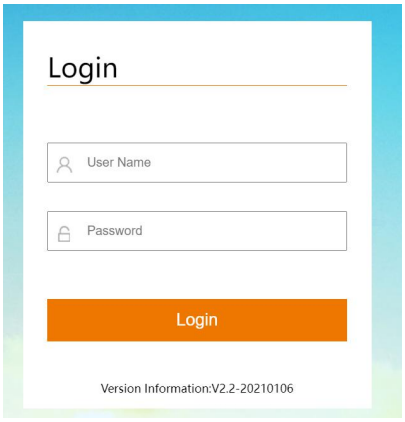
RF power：2W



RF power：10W

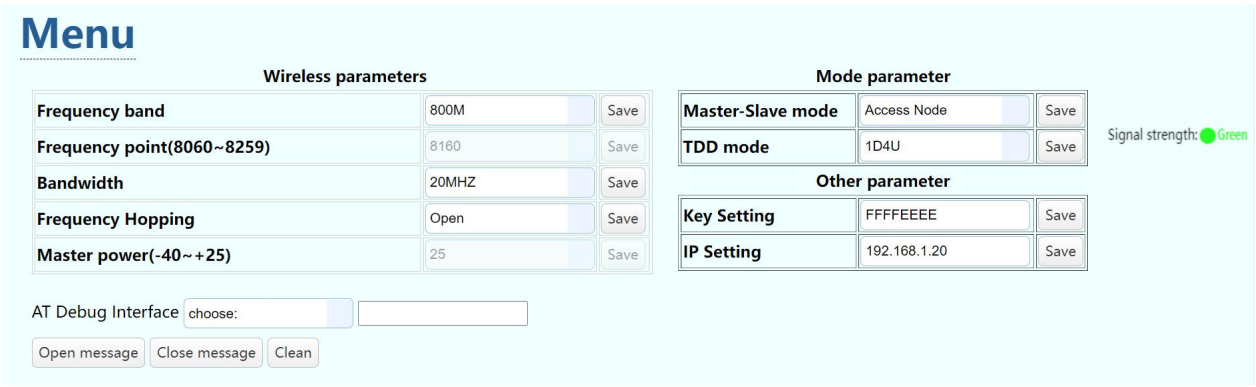
4.Software use

4.1 Web instructions

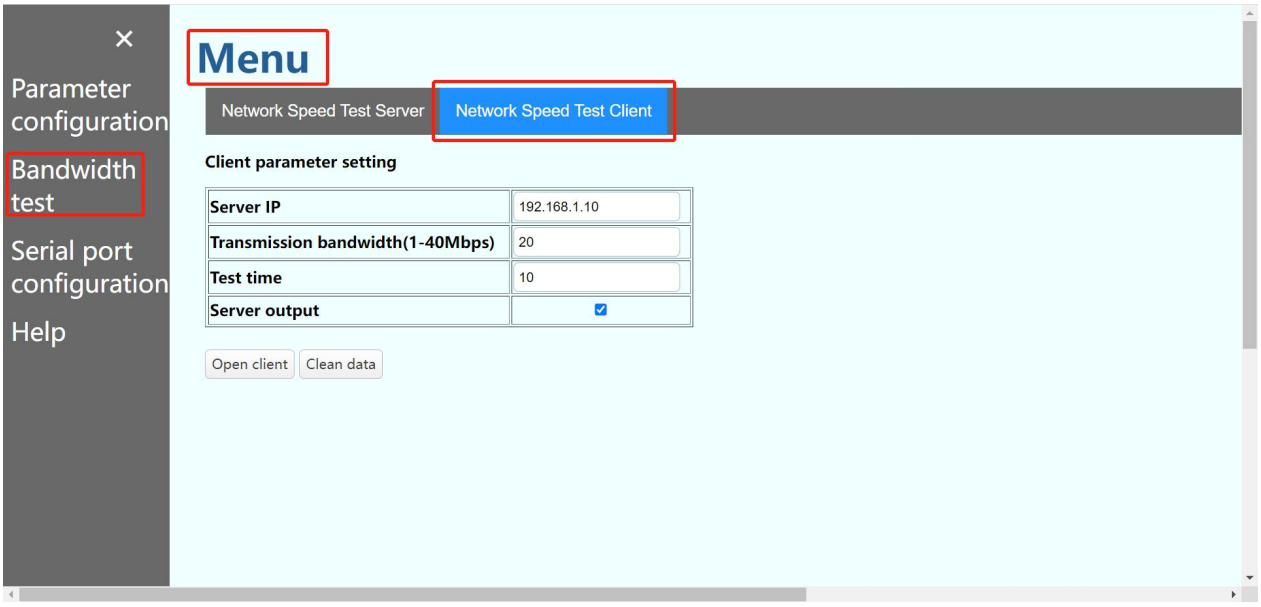


Web login interface

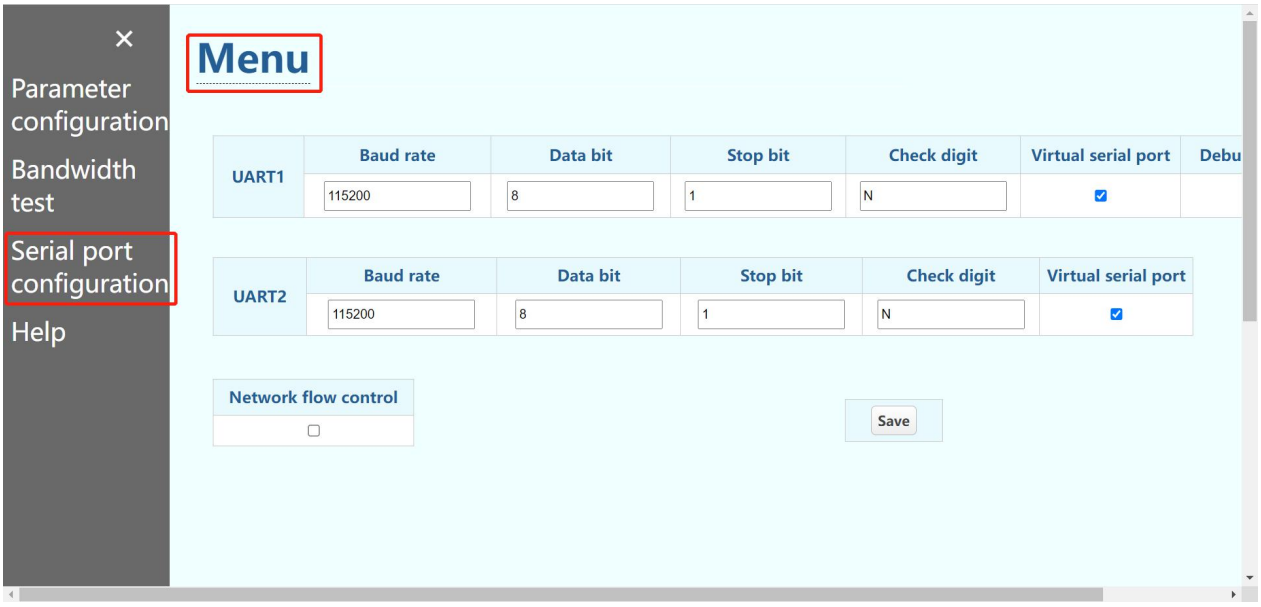
Default username and password: admin



Wireless parameter configuration interface



Network speed test client interface



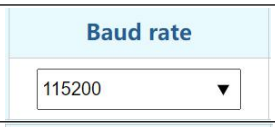
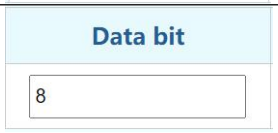
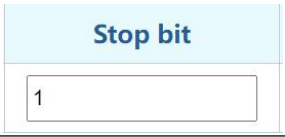
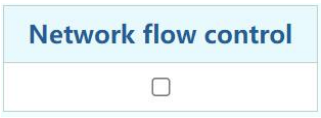
Serial port configuration interface

Operating instructions: some parameters only support Central node settings

Parameter name	Illustrate
	Click to open the main menu
	The content classification of the menu bar, select the corresponding option according to the situation
Wireless parameters	Descriptions
Equipment internal parameters	
Frequency band 800M Save	800M、1.4G、2.4G。Changing the frequency band requires changing the corresponding antenna
Frequency point(8060~8259) 8160 Save	The specific center frequency under the working frequency band
Bandwidth 20MHZ Save	The working bandwidth of the wireless device, the default is 20MHZ
Frequency Hopping Open Save	Frequency hopping function
Master power(-40~+25) 25 Save	The transmission power of the Central node, the greater the power, the longer the transmission distance

Master-Slave mode Access Node Save	Equipment working status selection When set as the master node, the device status indicator is always on, and when set as the access node, the device status indicator flashes Only one Central node can exist in a group of networks
TDD mode 1D4U Save	Set TDD time slot allocation Upstream refers to the Access node to the Central node, and downstream refers to the Central node to the Access node
Key Setting FFFFEEEE Save	The Central node and the Access node can always be connected with the paired key
IP Setting 192.168.1.20 Save	The IP address of the device, the device supports pure transparent transmission
AT Debug Interface choose:	Enter the at command in the input box and press Enter to send, the return information is below show.
Open message	After the networking is successful, if it is the Central node, it will display the IP address, SNR, distance and other information of the connected sub-device; if it is a Access node, it will display the SNR, distance and other information from the Central node. Real-time information is displayed on the extended information interface. See

	appendix 2 for the content of the returned information.
Close message	Stop real-time information output
Clean	Clear the real-time information and the data returned by the at command.
Signal strength: Green	Click to open the real-time information and display it, and change the color according to the SNR value. Red—Weak signal Yellow—Average signal Green—Good signal
Bandwidth test	Below is the description of the internal content of the network bandwidth test interface, using iperf as a testing tool internally
Network bandwidth test tool iperf server parameters	
Open server	Turn on the internal server of the device。
Close server	Shut down the internal server of the device
Clean data	Clear server output data
Network bandwidth test tool iperf client parameters	
Server IP 192.168.1.10	Device ip address
Transmission bandwidth(1-40Mbps) 20	The amount of bandwidth that needs to be transmitted
Test time 10	The duration of the client test, the default is 10 seconds
Server output ☑	After the client's transmission is over, the data received by the server is output.
Open server	Open the internal client of the device

	Close the internal client of the device
	Clear client output data
Serial Port Configuration	
	Set the baud rate
	Set the serial port data bit
	Set the serial port stop bit
	Set the serial port check bit
	After the service is checked, you can use the virtual serial port of the network port to receive serial data through the network port.
	After checking, the data transmission port 1 will become the debugging serial port. You can read and set the module parameters.
	According to the strength of the signal, the bandwidth is automatically limited to realize the priority of data transmission.
	save Changes

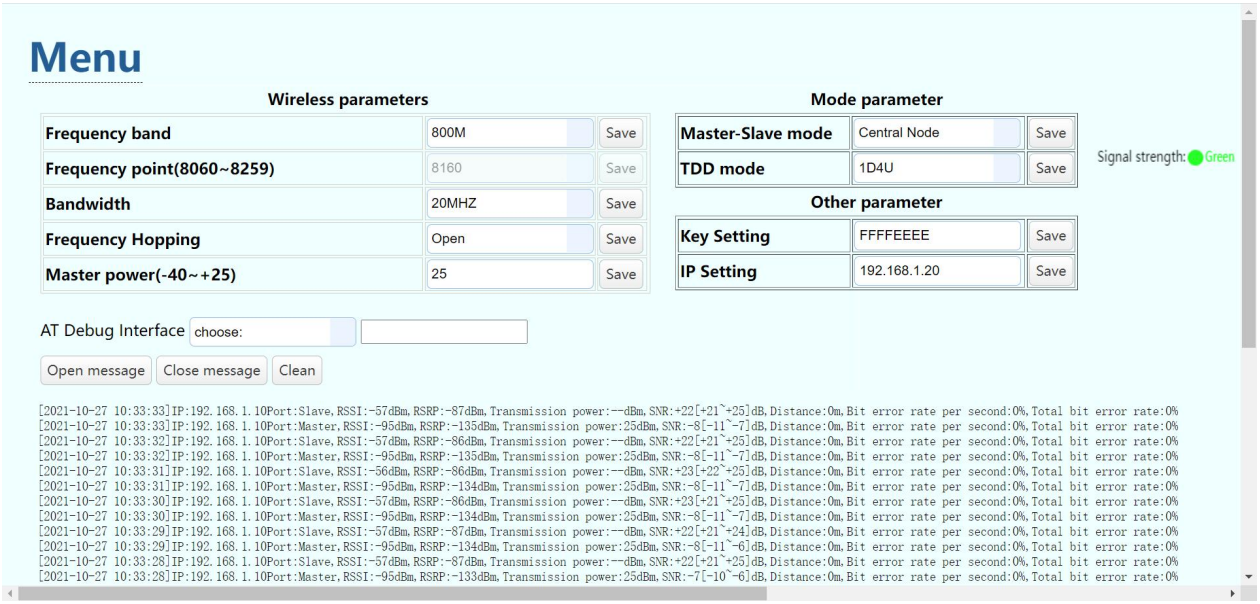
5. Appendix

5.1 Wire picture

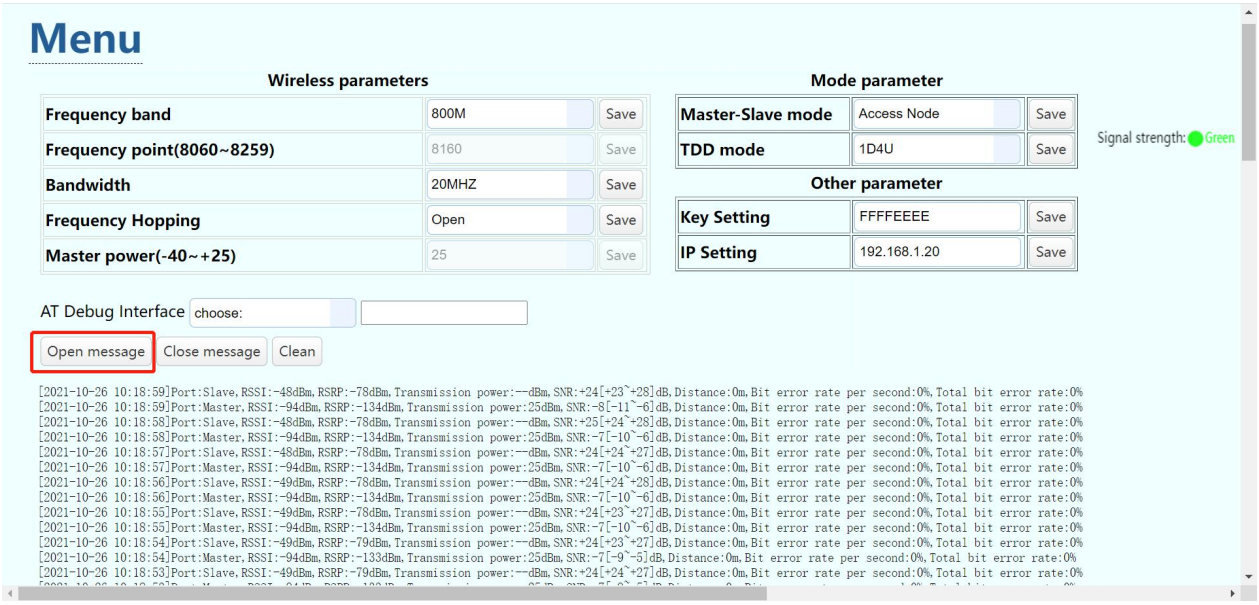
Device power cord

Network port connection line

5.2Appendix 2： Open real-time information to return information

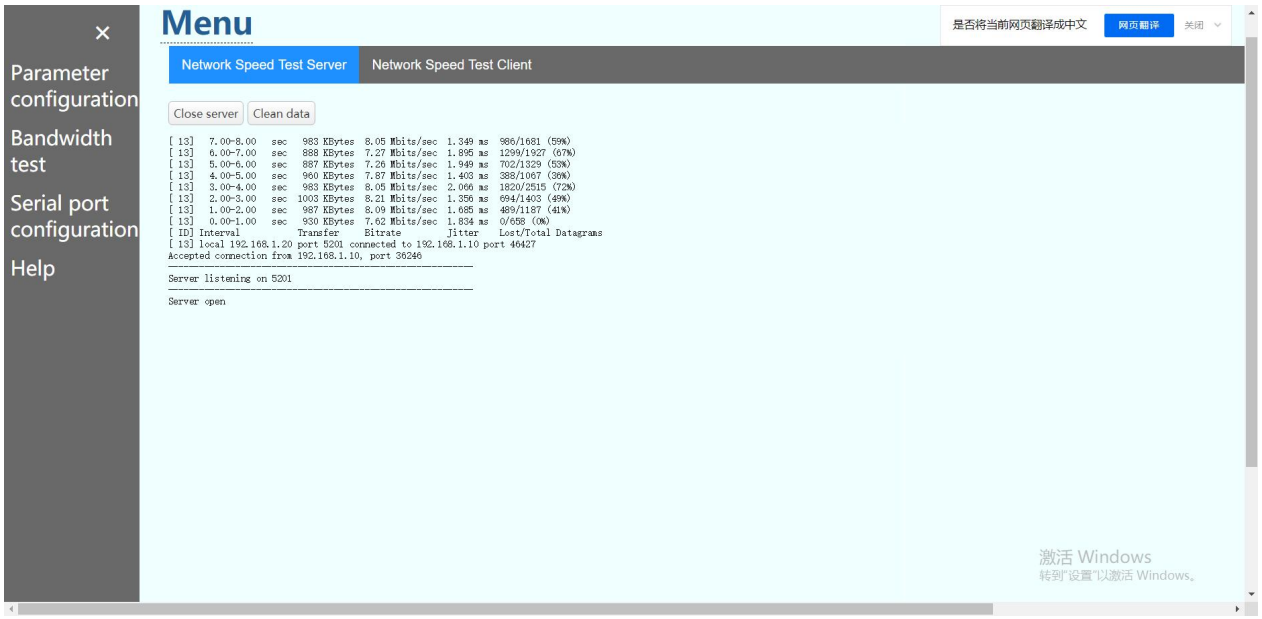


Central node reports real-time information

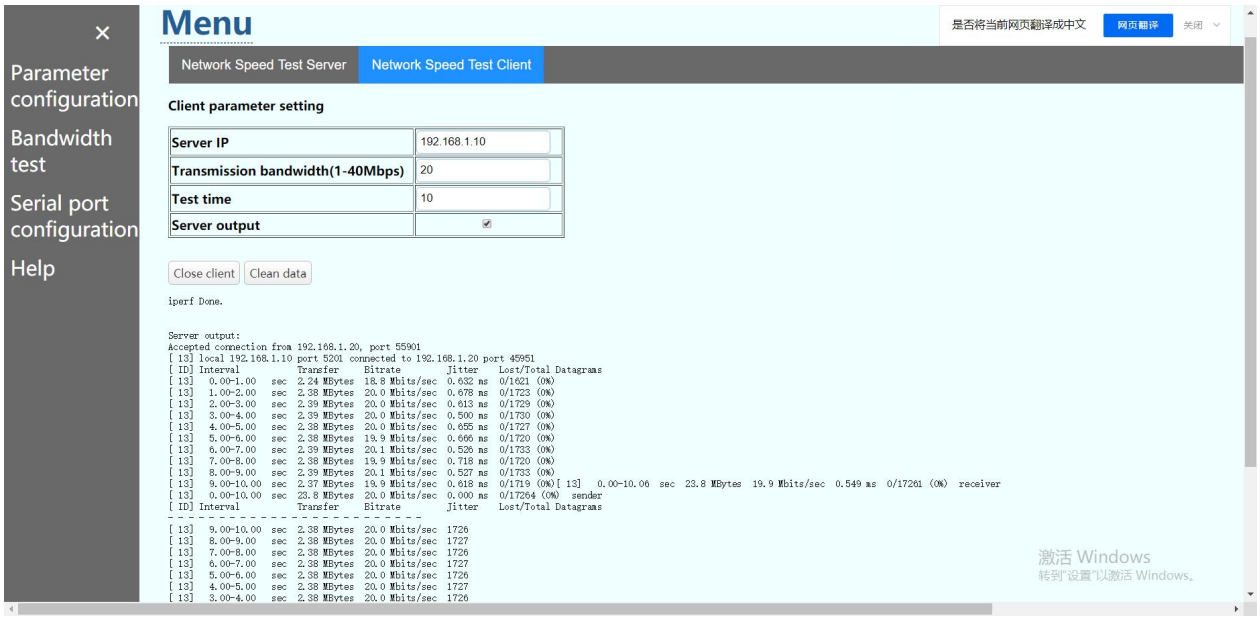


The Access node reports real-time information

5.3 Appendix 3.Bandwidth test screenshot



Bandwidth test server side screenshot



Bandwidth test client screenshot