

RAK WIS-PLC Quick Start Guide

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1、 Product introduction

RAK WIS-PLC is a new type of data transmission based on OFDM (Orthogonal Frequency Division Multiplexing) orthogonal frequency division multiplexing modulation technology. Maximum transmission rate of power lines can reach 200Mbps, Standard Ethernet port, Twisted pair interface.

Support AES 128-bit encryption, Occupied 2-30MHz band communication, No impact on existing CATV signals or cable broadcasting. No user configuration, after the completion of the line can be put into work. Accelerate the time to market and product features flexibility.

2、 Characteristic

1) Media (supports multiple media)

- Power line mode to complete the last 300 m IP access;
- Twisted pair mode to complete the last 600 m IP access;

2) speed

- Transmission rate up to 200Mbps;
- Smooth transmission of IPTV, HDTV and other audio and video signal.

3) reliable

- Support AES 128bit encryption, Ensure network communication security;
- Occupied 2-30MHz band communication, No impact on existing CATV signals or cable broadcasting;
- Follow IEEE 1901 and HomePlug AV standard, Can take up to 4 modules. If communication with RAK WIS-PLC, 1 RAK WIS-PLC supports up to 63 RAK WIS-PLC networking.

4) simple

- No user configuration, wiring can be completed;
- Special management configuration software, Convenient division network, Convenient networking;
- Modular design, Easy integration into customer products, Accelerated listing cycle.

3、 application area

RAK WISPLC is widely used in industrial and intelligent home systems, A good complement to Ethernet and WIFI, To achieve the purpose of hybrid

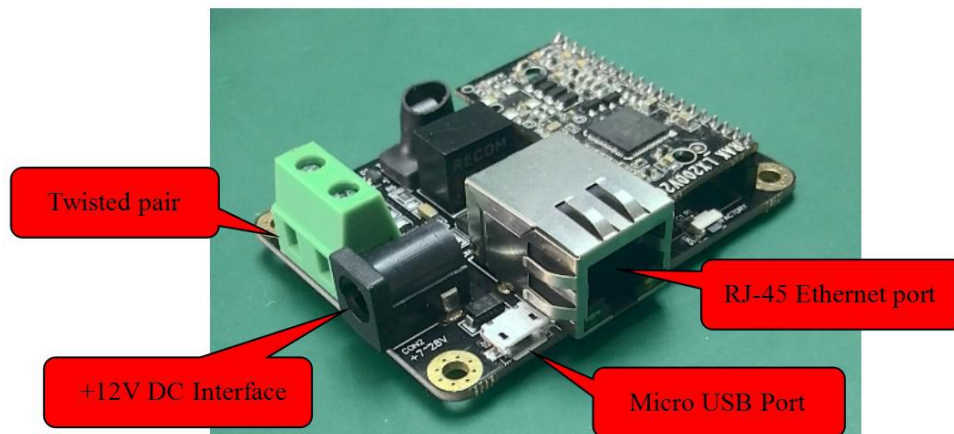
network and seamless network. The current, In smart home、Monitor、Medical equipment networking and other scenarios have a good application.

Table 1 RAK WIS-PLC Module application domain

intelligent instrument	Smart home
energy management system	Medical system
Automotive electronics charging pile	Industry

4、RAK WIS-PLC Module physical map

RAK WIS-PLC The module is shown in Figure 1, Module small size, Size of 65x50mm.

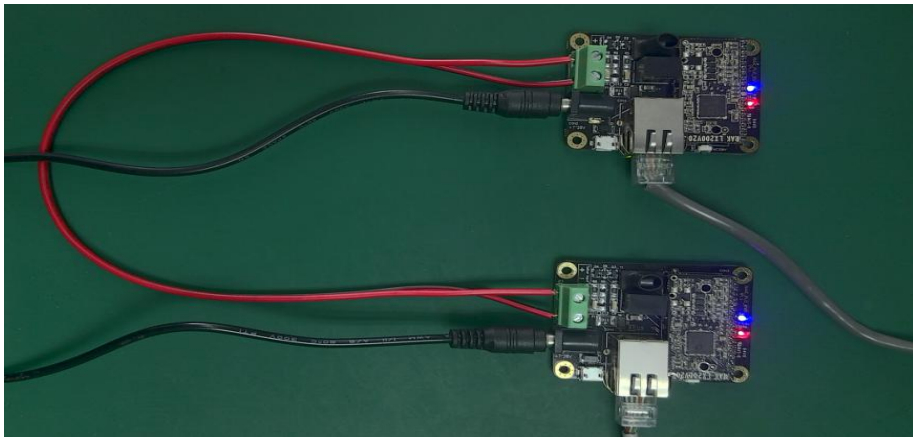


5、Quick use demo

Need tools (Computer 2 PCS、NetPerSec tool、iperf tool、12V DC The power adapter 2 PCS、Cable 2 root、Power line or twisted pair 1 meters)

1) 、Using power lines will be 2 PCS RAK WIS-PLC Module in the direction of the connection, Connect the module to the computer, Connect 12V power supply, At this time the blue light (cable connection) and red light (power indicator) light up;

As follows:



2) 、 The first computer to establish the receiving end

Open operation、input cmd、Enter、input cd、Space、input iperf Program path、Space、input iperf -s -w -64k -i 10 server、Space;

Set the IP address of the network connected to the module to 192.168.10.100;

```

管理员: C:\Windows\system32\cmd.exe - iperf -s -w -64k -i 10 server
Microsoft Windows [版本 6.1.7601]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。

C:\Users\Administrator>cd C:\Users\Administrator\Desktop

C:\Users\Administrator\Desktop>iperf -s -w -64k -i 10 server
WARNING: TCP window size set to -65536 bytes. A small window size
will give poor performance. See the Iperf documentation.
iperf: ignoring extra argument -- server
-----
Server listening on TCP port 5001
TCP window size: 8.00 KByte <WARNING: requested -65536.00 Byte>
    
```

3) 、 Second computers to establish the sender

Open operation、input cmd、Space、input cd、Space、input iperfProgram path、Space、input iperf -c 192.168.10.100 -w -64k -P 10 -i 10 -t99999999、Space;

```

C:\Windows\system32\cmd.exe
Microsoft Windows [版本 6.1.7600]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。

C:\Users\xia>cd C:\Users\xia\Desktop

C:\Users\xia\Desktop>iperf -c 192.168.10.100 -w -64k -P 10 -i 10 -t99999999
WARNING: TCP window size set to -65536 bytes. A small window size
will give poor performance. See the Iperf documentation.
-----
Client connecting to 192.168.10.100, TCP port 5001
TCP window size: 8.00 KByte <WARNING: requested -65536.00 Byte>
    
```

Connection success as shown below
Sending end

```

C:\Windows\system32\cmd.exe
Microsoft Windows [版本 6.1.7600]
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C:\Users\xia>cd C:\Users\xia\Desktop

C:\Users\xia\Desktop>iperf -c 192.168.10.100 -w -64k -P 10 -i 10 -t999999999
WARNING: TCP window size set to -65536 bytes. A small window size
will give poor performance. See the Iperf documentation.

-----
Client connecting to 192.168.10.100, TCP port 5001
TCP window size: 8.00 KByte (WARNING: requested -65536.00 Byte)
-----
[300] local 192.168.10.24 port 52057 connected with 192.168.10.100 port 5001
[284] local 192.168.10.24 port 52055 connected with 192.168.10.100 port 5001
[292] local 192.168.10.24 port 52056 connected with 192.168.10.100 port 5001
[260] local 192.168.10.24 port 52052 connected with 192.168.10.100 port 5001
[244] local 192.168.10.24 port 52050 connected with 192.168.10.100 port 5001
[164] local 192.168.10.24 port 52048 connected with 192.168.10.100 port 5001
[268] local 192.168.10.24 port 52053 connected with 192.168.10.100 port 5001
[276] local 192.168.10.24 port 52054 connected with 192.168.10.100 port 5001
[252] local 192.168.10.24 port 52051 connected with 192.168.10.100 port 5001
[236] local 192.168.10.24 port 52049 connected with 192.168.10.100 port 5001
[ ID] Interval           Transfer             Bandwidth
[276] 0.0-10.0 sec    10.6 MBytes        8.91 Mbits/sec
[164] 0.0-10.0 sec    10.5 MBytes        8.81 Mbits/sec
  
```

Receiving end

```

管理员: C:\Windows\system32\cmd.exe - iperf -s -w -64k -i 10 server
Microsoft Windows [版本 6.1.7601]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。

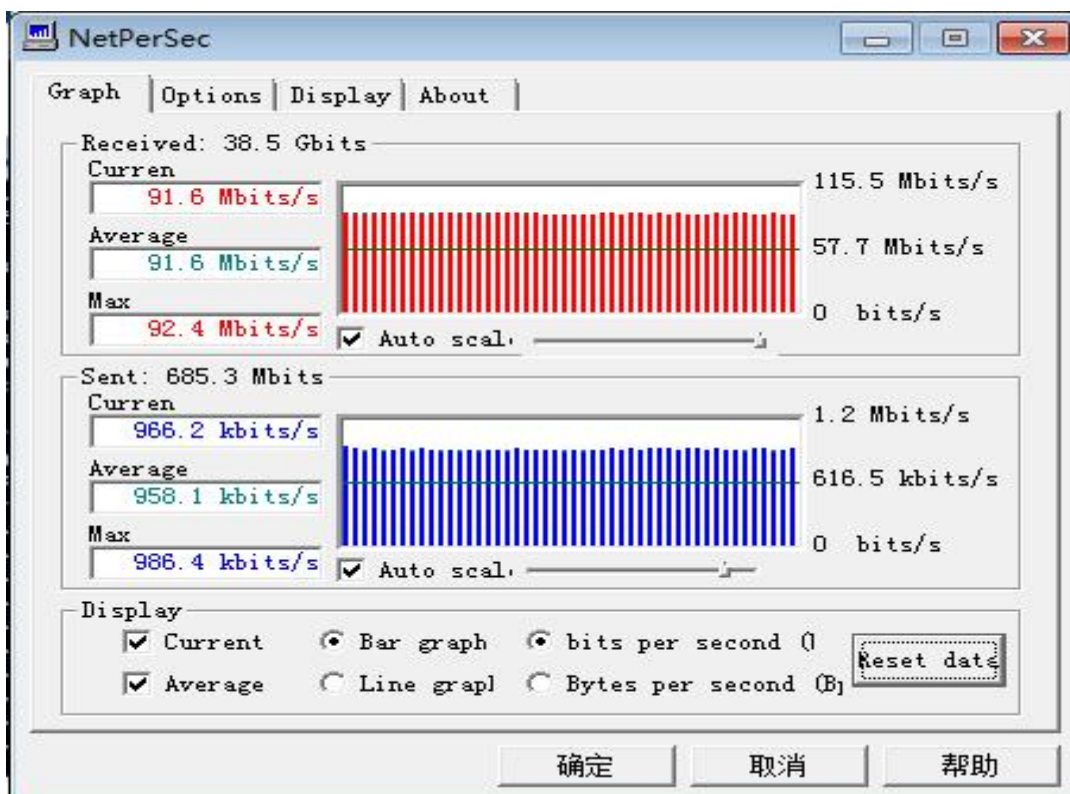
C:\Users\Administrator>cd C:\Users\Administrator\Desktop

C:\Users\Administrator\Desktop>iperf -s -w -64k -i 10 server
WARNING: TCP window size set to -65536 bytes. A small window size
will give poor performance. See the Iperf documentation.
iperf: ignoring extra argument -- server

-----
Server listening on TCP port 5001
TCP window size: 8.00 KByte (WARNING: requested -65536.00 Byte)
-----
[272] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52048
[288] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52049
[304] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52050
[320] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52051
[336] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52052
[352] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52053
[368] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52054
[384] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52055
[400] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52056
[416] local 192.168.10.100 port 5001 connected with 192.168.10.24 port 52057
  
```

Open NetPerSec.exe tool, Can view the transmission rate in real time, The average transmission rate can be achieved 92Mbits/S;

As follows



6、Modify record

Version	Author	Data	Modify content
V1.0	chenxifa	2017/01/04	Create Document