

测试名称：20 公里无线图数一体电台拉距测试

测试时间：2025 年 9 月 5 日

测试地点 北京蟒山森林公园天池停车场（海拔 878 米）、黑寨村

测试产品：最新的高带宽（28Mbps）无线图数一体产品



山顶上面的设备



山下设备

测试方法 1: 北京蟒山森林公园天池停车场放置模块，连接网络摄像头；黑寨村放置模块，网线接电脑。建链后，通过软件访问摄像头 IP 地址，查看实时图像。

测试方法 2: 北京蟒山森林公园天池停车场放置模块，黑寨村放置模块，网线接电脑；网线接电脑。建链后，模块之间互相灌包，测试实时带宽。

测试模块简介:

1、2412-30-1400: 双发双收双向图数传，最大发射功率 $2*30\text{dBm}$ ，中心频点 1400MHz，最大支持 28MHz 带宽，双向最大 28Mbps 码率（室内可以到 36Mbps），通视情况下推荐使用范围 5-80KM。

详细参数参考规格书参考。

测试参数: 测试频点 1400MHz，发射功率 $2*30\text{dBm}$ ，带宽 28MHz，两边分别接 5dbi、5dbi 天线，30KM 距离模式下，测试码流。

测试数据汇总:

上行数据流如下：15Mbps，下行数据流 5Mbps 。

```

C:\Users\Administrator>C:\Users\Administrator\Desktop\iperf-3.1.3-win64\iperf-3.1.3-win64\iperf3.exe -u -c 192.168.10.230 -i 1 -t 1200 -b 50m -R
Connecting to host 192.168.10.230, port 5201
Reverse mode, remote host 192.168.10.230 is sending
[ 4] local 192.168.10.200 port 57668 connected to 192.168.10.230 port 5201
[ ID] Interval      Transfer      Bandwidth      Jitter    Lost/TOTAL Datagrams
[ 4] 0.00-1.00    sec  1.70 MBytes  14.2 Mbits/sec  7.955 ms  101/218 (32%)
[ 4] 1.00-2.00    sec  1.73 MBytes  14.6 Mbits/sec  4.446 ms  436/658 (66%)
[ 4] 2.00-3.00    sec  1.76 MBytes  14.7 Mbits/sec  9.725 ms  711/936 (76%)
[ 4] 3.00-4.00    sec  1.83 MBytes  15.3 Mbits/sec  4.037 ms  369/603 (61%)
[ 4] 4.00-5.00    sec  1.78 MBytes  14.9 Mbits/sec  5.378 ms  602/830 (73%)
[ 4] 5.00-6.00    sec  1.72 MBytes  14.4 Mbits/sec  7.783 ms  664/884 (75%)
[ 4] 6.00-7.00    sec  1.77 MBytes  14.8 Mbits/sec  7.706 ms  452/678 (67%)
[ 4] 7.00-8.00    sec  1.76 MBytes  14.7 Mbits/sec  9.395 ms  523/748 (70%)
[ 4] 8.00-9.00    sec  1.77 MBytes  14.8 Mbits/sec  5.273 ms  579/805 (72%)
[ 4] 9.00-10.00   sec  1.75 MBytes  14.7 Mbits/sec  8.646 ms  572/796 (72%)
[ 4] 10.00-11.00  sec  1.80 MBytes  15.1 Mbits/sec  6.328 ms  317/548 (58%)
[ 4] 11.00-12.00  sec  1.82 MBytes  15.3 Mbits/sec  9.590 ms  572/805 (71%)
[ 4] 12.00-13.00  sec  1.77 MBytes  14.9 Mbits/sec  13.653 ms  640/867 (74%)
[ 4] 13.00-14.00  sec  1.82 MBytes  15.3 Mbits/sec  3.756 ms  442/675 (65%)
[ 4] 14.00-15.00  sec  1.77 MBytes  14.9 Mbits/sec  4.785 ms  599/826 (73%)
[ 4] 15.00-16.00  sec  1.72 MBytes  14.4 Mbits/sec  9.471 ms  595/815 (73%)
[ 4] 16.00-17.00  sec  1.84 MBytes  15.4 Mbits/sec  6.678 ms  397/632 (63%)
[ 4] 17.00-18.00  sec  1.80 MBytes  15.1 Mbits/sec  6.205 ms  589/820 (72%)
[ 4] 18.00-19.00  sec  1.78 MBytes  15.0 Mbits/sec  3.900 ms  378/606 (62%)
[ 4] 19.00-20.00  sec  1.80 MBytes  15.1 Mbits/sec  4.991 ms  637/867 (73%)
[ 4] 20.00-21.00  sec  1.82 MBytes  15.3 Mbits/sec  13.734 ms  631/864 (73%)
[ 4] 21.00-22.00  sec  1.80 MBytes  15.2 Mbits/sec  4.670 ms  414/645 (64%)
[ 4] 22.00-23.00  sec  1.76 MBytes  14.7 Mbits/sec  8.602 ms  653/878 (74%)
[ 4] 23.00-24.00  sec  1.75 MBytes  14.7 Mbits/sec  4.324 ms  426/650 (66%)
[ 4] 24.00-25.00  sec  1.79 MBytes  15.0 Mbits/sec  3.585 ms  572/801 (71%)
[ 4] 25.00-26.00  sec  1.77 MBytes  14.9 Mbits/sec  18.058 ms  650/877 (74%)
[ 4] 26.00-27.00  sec  1.73 MBytes  14.6 Mbits/sec  5.925 ms  518/740 (70%)
[ 4] 27.00-28.00  sec  1.71 MBytes  14.3 Mbits/sec  6.896 ms  600/819 (73%)
[ 4] 28.00-29.00  sec  1.80 MBytes  15.1 Mbits/sec  3.910 ms  367/597 (61%)
[ 4] 29.00-30.00  sec  1.77 MBytes  14.9 Mbits/sec  8.697 ms  631/858 (74%)
[ 4] 30.00-31.00  sec  1.69 MBytes  14.2 Mbits/sec  13.280 ms  581/797 (73%)

```

测试总结：在两端使用 5dbi 天线，在雨天，并且山顶有栏杆遮挡的情况下，传输速率达到 20Mbps，上行 15Mbps，下行 5mbps。