

深圳市亿圣邦科技有限公司

The Holy bond Electronics Co., Ltd. Antenna Test Report

Customer: 茂现

Project: JB02

Product: WIFI Antenna—FPC

Report date: 2022.7.15

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Approved by :

Purpose

This report is to measure the performance of SLK for Master Antenna on 茂现. All measure data are showed below.

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3. Conclusions

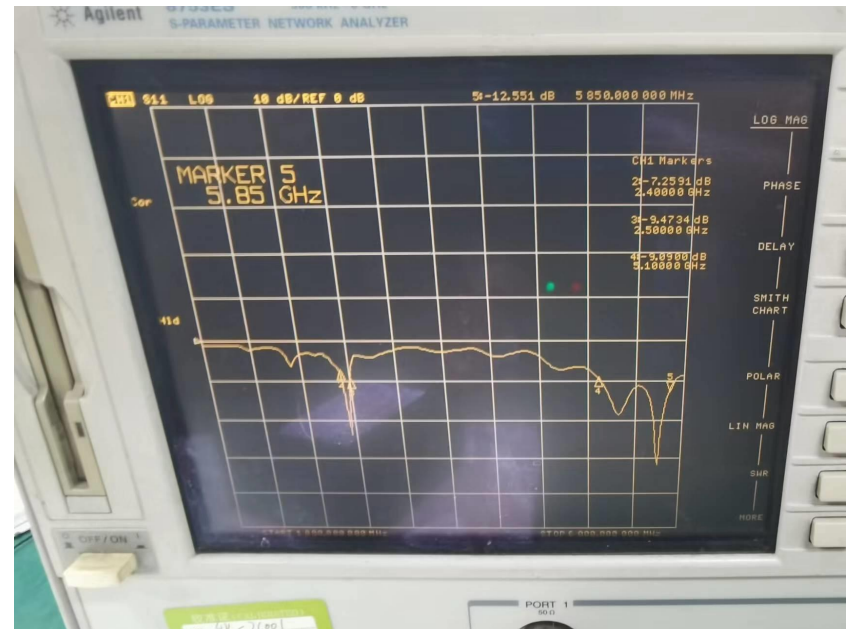
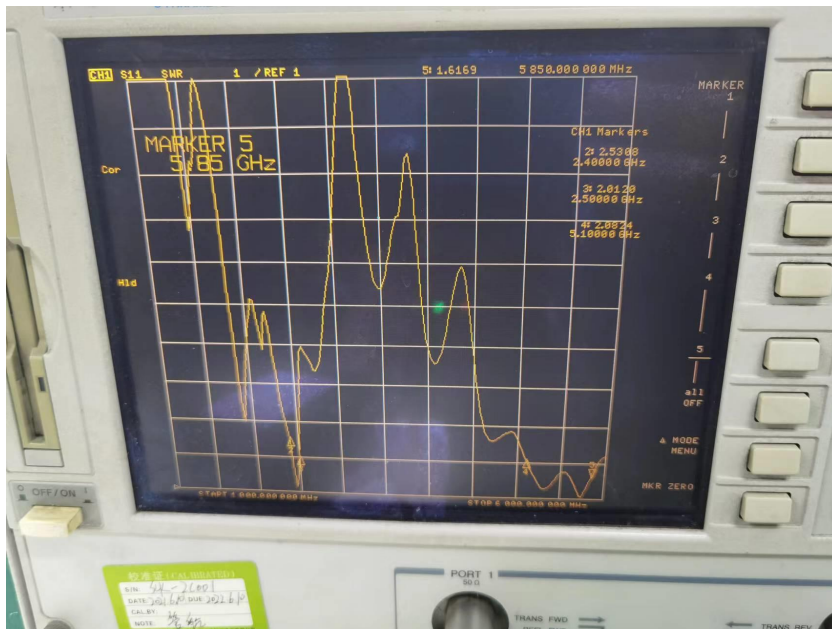
1. Product Overview



2. Test Result

2.1 WIFI Antenna VSWR/S11

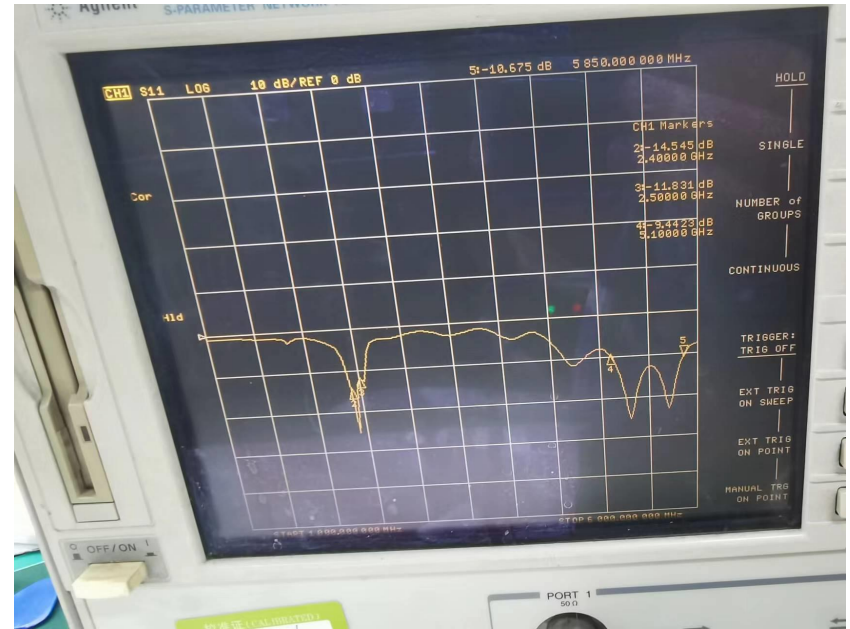
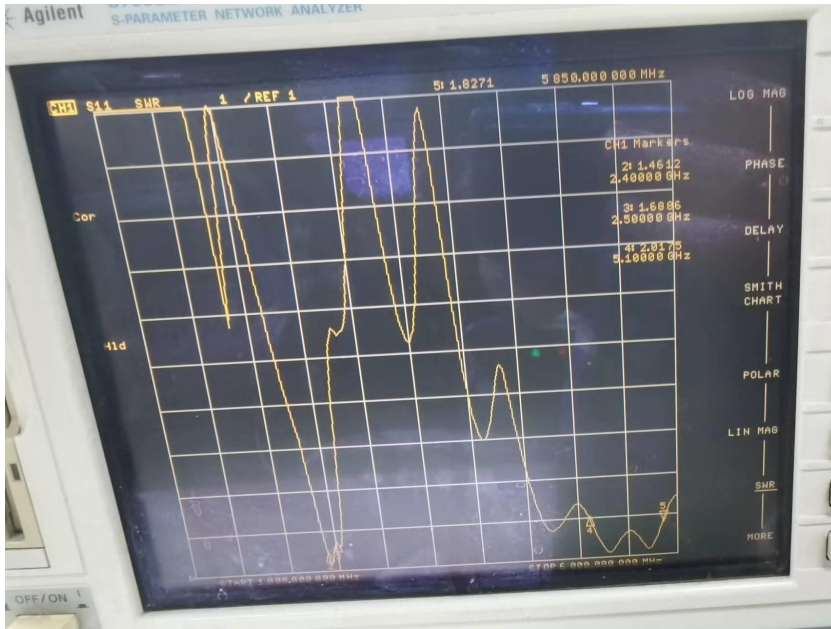
MAIN



2. Test Result

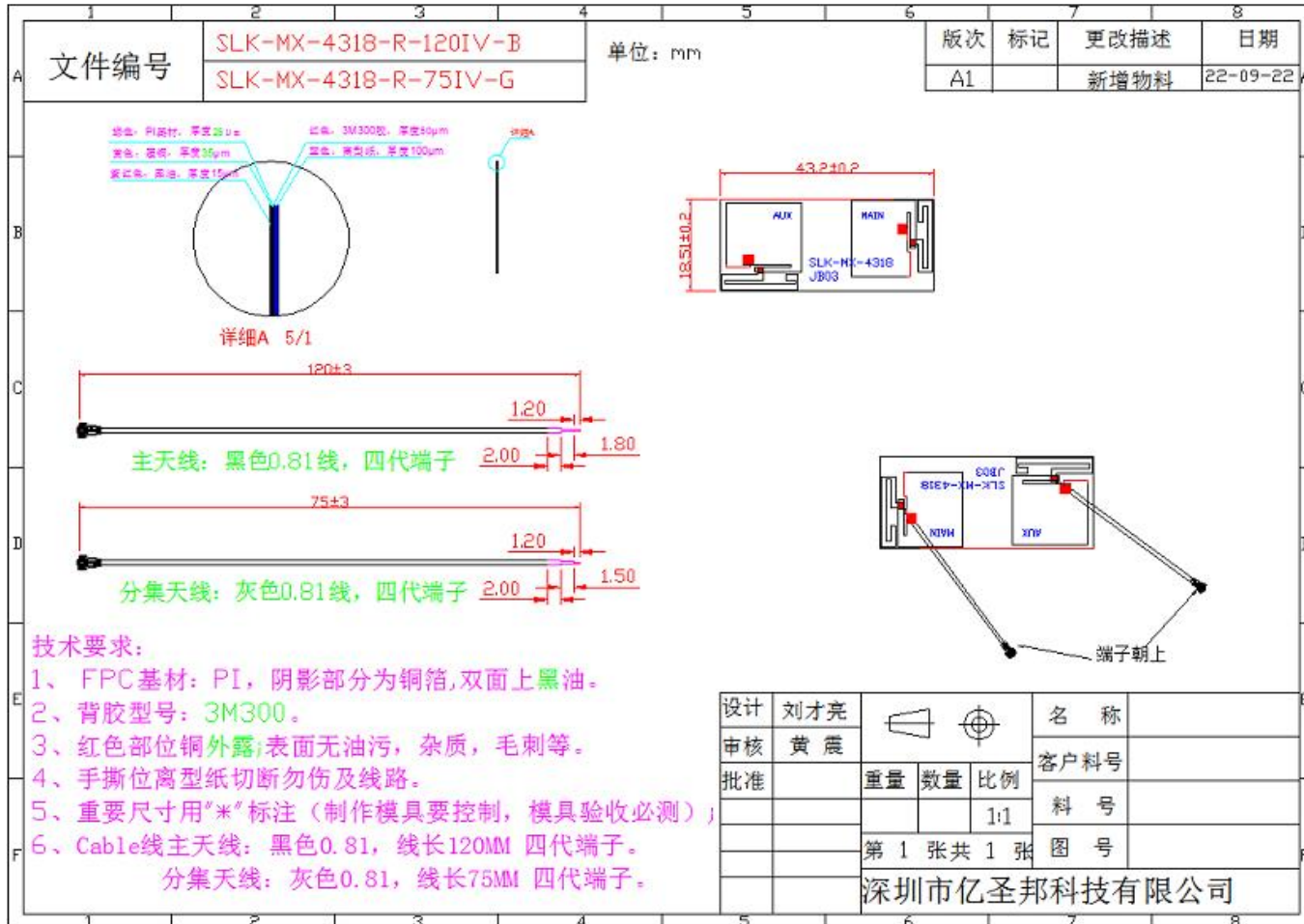
2.1 WIFI Antenna VSWR/S11

AUX



2. Test Result

2.2 Antenna Parameters



2. Test Result

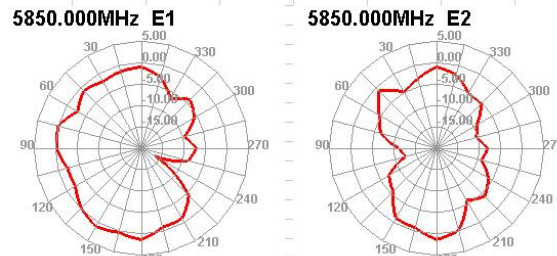
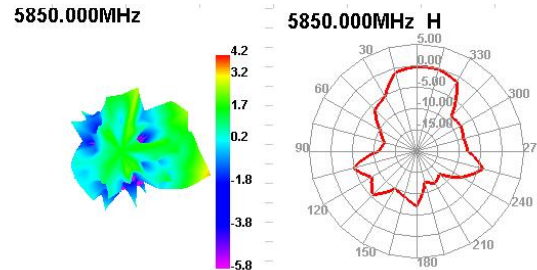
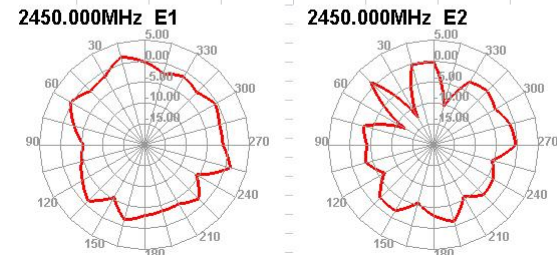
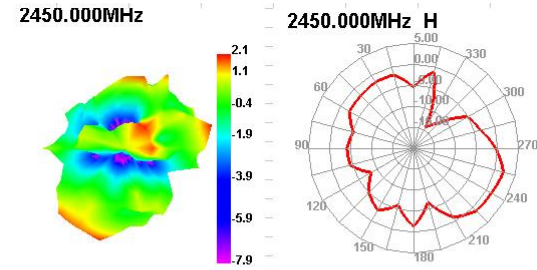
2.3 WIFI Antenna TRP/TIS

WIFI	CH	功率(54M)	灵敏度(54M)	WIFI	CH	功率(54M)	灵敏度(54M)
802.11a	36	13.39	-67.67	802.11g	1	9.85	-63.94
	149	12.69	-66.29		6	10.34	-63.79
	165	12.73	-67.51		11	10.64	-64.57
WIFI	CH	功率(11M)	灵敏度(11M)	WIFI	CH	功率(MCS7)	灵敏度(MCS7)
802.11b	1	8.64	-74.72	802.11n	1	8.49	-64.37
	6	8.51	-76.37		6	8.76	-63.71
	11	8.89	-77.33		11	8.41	-63.42

2. Test Result

2.4 WIFI Antenna Gain/Efficiency/3D DATE

MAIN			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	36.06	-4.43	3.05
2410	30.83	-5.11	2.47
2420	34.51	-4.62	2.56
2430	31.83	-4.97	2.15
2440	33.4	-4.76	2.02
2450	31.34	-5.04	2.14
2460	31.03	-5.08	1.7
2470	31.94	-4.96	1.82
2480	34.74	-4.59	1.97
2490	33.7	-4.72	2.31
2500	36.95	-4.32	2.18
5150	36.38	-4.39	3.63
5350	37.18	-4.30	3.15
5500	40.29	-3.95	4.61
5750	33.86	-4.70	4.54
5850	33.84	-4.71	4.15



2. Test Result

2.5 WIFI Antenna Throughput

2.4G上传

```
8821
Command Prompt
[296] 4.0- 5.0 sec 2.43 MBytes 20.4 Mbits/sec
[296] 5.0- 6.0 sec 1.60 MBytes 13.4 Mbits/sec
[296] 6.0- 7.0 sec 2.23 MBytes 18.7 Mbits/sec
[296] 7.0- 8.0 sec 2.18 MBytes 18.3 Mbits/sec
[296] 8.0- 9.0 sec 2.34 MBytes 19.6 Mbits/sec
[296] 9.0-10.0 sec 1.87 MBytes 15.7 Mbits/sec
[296] 10.0-11.0 sec 796 KBytes 6.03 Mbits/sec
[296] 11.0-12.0 sec 1.50 MBytes 12.6 Mbits/sec
[296] 12.0-13.0 sec 1.24 MBytes 10.4 Mbits/sec
[296] 13.0-14.0 sec 1.39 MBytes 11.7 Mbits/sec
[296] 14.0-15.0 sec 1.66 MBytes 14.0 Mbits/sec
[296] 15.0-16.0 sec 2.27 MBytes 19.0 Mbits/sec
[296] 16.0-17.0 sec 2.45 MBytes 20.6 Mbits/sec
[296] 17.0-18.0 sec 2.91 MBytes 24.4 Mbits/sec
[296] 18.0-19.0 sec 1.99 MBytes 16.7 Mbits/sec
[296] 19.0-20.0 sec 1.63 MBytes 13.7 Mbits/sec
[296] 20.0-21.0 sec 2.53 MBytes 21.2 Mbits/sec
[296] 21.0-22.0 sec 2.59 MBytes 21.8 Mbits/sec
[296] 22.0-23.0 sec 1.42 MBytes 11.9 Mbits/sec
[296] 23.0-24.0 sec 1.01 MBytes 8.45 Mbits/sec
[296] 24.0-25.0 sec 1.52 MBytes 12.7 Mbits/sec
[296] 25.0-26.0 sec 1.97 MBytes 16.5 Mbits/sec
[296] 26.0-27.0 sec 2.66 MBytes 22.3 Mbits/sec
[296] 27.0-28.0 sec 2.05 MBytes 17.2 Mbits/sec
[296] 28.0-29.0 sec 1.84 MBytes 15.5 Mbits/sec
[296] 29.0-30.0 sec 1.70 MBytes 14.3 Mbits/sec
[296] 0.0-30.4 sec 58.7 MBytes 16.2 Mbits/sec
```

2.4G下载

```
http://192.168.1.1/
谷歌 网址大全 360搜索 游戏中心 CCTV-5 CCTV节 58
http传输协议, 与你建立的连接不安全, 请勿在页面内输入任何敏感
路由设置
C:\Users\lenovo\Desktop\调天线专用工具>cmd.exe - iperf -s -i 1
6.0- 7.0 sec 17.3 MBytes 145 Mbits/sec
7.0- 8.0 sec 14.4 MBytes 121 Mbits/sec
8.0- 9.0 sec 16.3 MBytes 137 Mbits/sec
9.0-10.0 sec 18.6 MBytes 156 Mbits/sec
10.0-11.0 sec 17.5 MBytes 147 Mbits/sec
11.0-12.0 sec 14.3 MBytes 120 Mbits/sec
12.0-13.0 sec 14.7 MBytes 123 Mbits/sec
13.0-14.0 sec 17.1 MBytes 144 Mbits/sec
14.0-15.0 sec 15.5 MBytes 130 Mbits/sec
15.0-16.0 sec 14.3 MBytes 120 Mbits/sec
16.0-17.0 sec 16.5 MBytes 138 Mbits/sec
17.0-18.0 sec 17.1 MBytes 143 Mbits/sec
18.0-19.0 sec 13.6 MBytes 114 Mbits/sec
19.0-20.0 sec 16.7 MBytes 140 Mbits/sec
20.0-21.0 sec 15.6 MBytes 131 Mbits/sec
21.0-22.0 sec 16.5 MBytes 139 Mbits/sec
22.0-23.0 sec 10.9 MBytes 91.6 Mbits/sec
23.0-24.0 sec 16.6 MBytes 139 Mbits/sec
24.0-25.0 sec 16.0 MBytes 134 Mbits/sec
25.0-26.0 sec 17.5 MBytes 147 Mbits/sec
26.0-27.0 sec 15.1 MBytes 127 Mbits/sec
27.0-28.0 sec 12.3 MBytes 103 Mbits/sec
28.0-29.0 sec 15.3 MBytes 129 Mbits/sec
29.0-30.0 sec 16.1 MBytes 135 Mbits/sec
30.0] 0.0-30.1 sec 459 MBytes 128 Mbits/sec
C:\>
C:\>iperf -s -i 1
Server listening on TCP port 5001
```

测试环境：无障碍环境下，距离路由器10M；上传：16.2M，(用外置天线上传数据无明显提升)；下载：128M；

2. Test Result

2.5 WIFI Antenna Throughput

5.8G上传

```
Command Prompt
[324] 4.0- 5.0 sec 40.6 MBytes 341 Mbits/sec
[324] 5.0- 6.0 sec 42.5 MBytes 357 Mbits/sec
[324] 6.0- 7.0 sec 44.7 MBytes 375 Mbits/sec
[324] 7.0- 8.0 sec 43.9 MBytes 368 Mbits/sec
[324] 8.0- 9.0 sec 41.7 MBytes 350 Mbits/sec
[324] 9.0-10.0 sec 44.3 MBytes 372 Mbits/sec
[324] 10.0-11.0 sec 37.6 MBytes 315 Mbits/sec
[324] 11.0-12.0 sec 42.1 MBytes 354 Mbits/sec
[324] 12.0-13.0 sec 42.7 MBytes 358 Mbits/sec
[324] 13.0-14.0 sec 43.8 MBytes 367 Mbits/sec
[324] 14.0-15.0 sec 42.8 MBytes 359 Mbits/sec
[324] 15.0-16.0 sec 44.3 MBytes 371 Mbits/sec
[324] 16.0-17.0 sec 40.6 MBytes 340 Mbits/sec
[324] 17.0-18.0 sec 43.6 MBytes 366 Mbits/sec
[324] 18.0-19.0 sec 44.5 MBytes 373 Mbits/sec
[324] 19.0-20.0 sec 45.5 MBytes 382 Mbits/sec
[ ID] Interval Transfer Bandwidth
[324] 20.0-21.0 sec 40.0 MBytes 336 Mbits/sec
[324] 21.0-22.0 sec 41.3 MBytes 346 Mbits/sec
[324] 22.0-23.0 sec 41.0 MBytes 344 Mbits/sec
[324] 23.0-24.0 sec 38.8 MBytes 325 Mbits/sec
[324] 24.0-25.0 sec 41.6 MBytes 349 Mbits/sec
[324] 25.0-26.0 sec 40.3 MBytes 338 Mbits/sec
[324] 26.0-27.0 sec 39.9 MBytes 335 Mbits/sec
[324] 27.0-28.0 sec 36.1 MBytes 303 Mbits/sec
[324] 28.0-29.0 sec 43.8 MBytes 368 Mbits/sec
[324] 29.0-30.0 sec 41.0 MBytes 344 Mbits/sec
[324] 0.0-30.0 sec 1.19 GBytes 341 Mbits/sec
C:\>
```

5.8G下载

```
谷徽 网址大全 360搜索 游戏中心 CCTV-5 CCTV节 58
的http传输协议，与你建立的连接不安全，请勿在页面内输入任何
收由设备
C:\Users\lenovo\Desktop\调天线专用工具\cmd.exe
[284] 4.0- 5.0 sec 57.5 MBytes 482 Mbits/sec
[284] 5.0- 6.0 sec 55.7 MBytes 468 Mbits/sec
[284] 6.0- 7.0 sec 56.0 MBytes 469 Mbits/sec
[284] 7.0- 8.0 sec 56.3 MBytes 472 Mbits/sec
[284] 8.0- 9.0 sec 56.1 MBytes 471 Mbits/sec
[284] 9.0-10.0 sec 56.4 MBytes 473 Mbits/sec
[284] 10.0-11.0 sec 53.6 MBytes 449 Mbits/sec
[284] 11.0-12.0 sec 54.3 MBytes 455 Mbits/sec
[284] 12.0-13.0 sec 55.0 MBytes 461 Mbits/sec
[284] 13.0-14.0 sec 60.3 MBytes 506 Mbits/sec
[284] 14.0-15.0 sec 55.3 MBytes 464 Mbits/sec
[284] 15.0-16.0 sec 54.0 MBytes 453 Mbits/sec
[284] 16.0-17.0 sec 56.0 MBytes 470 Mbits/sec
[284] 17.0-18.0 sec 51.6 MBytes 433 Mbits/sec
[284] 18.0-19.0 sec 56.0 MBytes 470 Mbits/sec
[284] 19.0-20.0 sec 49.4 MBytes 415 Mbits/sec
[ ID] Interval Transfer Bandwidth
[284] 20.0-21.0 sec 41.3 MBytes 347 Mbits/sec
[284] 21.0-22.0 sec 36.1 MBytes 303 Mbits/sec
[284] 22.0-23.0 sec 42.3 MBytes 355 Mbits/sec
[284] 23.0-24.0 sec 41.2 MBytes 346 Mbits/sec
[284] 24.0-25.0 sec 44.7 MBytes 375 Mbits/sec
[284] 25.0-26.0 sec 42.8 MBytes 359 Mbits/sec
[284] 26.0-27.0 sec 36.4 MBytes 305 Mbits/sec
[284] 27.0-28.0 sec 38.3 MBytes 322 Mbits/sec
[284] 28.0-29.0 sec 35.2 MBytes 295 Mbits/sec
[284] 29.0-30.0 sec 34.9 MBytes 292 Mbits/sec
[284] 0.0-30.0 sec 1.46 GBytes 416 Mbits/sec
C:\>
```

测试环境：无障碍环境下，距离路由器10M；上传：341M，下载：416M；

3. Conclusions

Thank you