深圳星源创科技有限公司
Shen Zhen Xing Yuan Chuang Technology Co., Ltd

规 格 承 认 书
Approval Sheet

客户名称 Customer	六联智能	日期 Data	2024/09/04
产品名称 Product	WiFi主天线	客户机型 Models	ARN79C-160H-SCD
料号 P/N	F1178-14LB-290	客户料号 Customer P/N	M.T.A.0000795
规格描述 Specifications	黑色FPC；RF0.81四代端子黑色同轴线；L=290mm		

供应商承认签印 Vender Approved By	客户承认签印 Customer Approved By
深圳市星源创科技有限公司 工程专用章	
Checked By:	Checked By:
Audit By:	Audit By:
Approval By:	Approval By:

文件修订履历表

版本 Version	修订内容 Revise The Content	修订人 Revused	核准 Approval	修订日期 Date	备注 Note

地址：深圳市宝安区福永镇福海街道塘尾股份商务大厦1506
Address:1506,Tangwei Business Building,Fuhai Street,Fuyong Town,Baoan District,Shenzhen
Tel：0755-82103639 QQ：487580356 Email：Stephdeng_Vis@126.com

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Specification

1.1 Electrical Properties

Characteristics	Specifications
Working Band	2.4GWiFi; 5GWiFi
Antenna From	PIFA
Impedance	50Ω
Polarization	Linear
Peak Effi	37%@2.4G; 50%@5G
Peak Gain	2.8dBi@2.4G; 3.9dBi@5G

1.2 Physical Properties

Characteristics	Specifications
Operating Temp	-10℃~+60℃
Storage Temp	-10℃~+70℃
Humidity	10~95%RH

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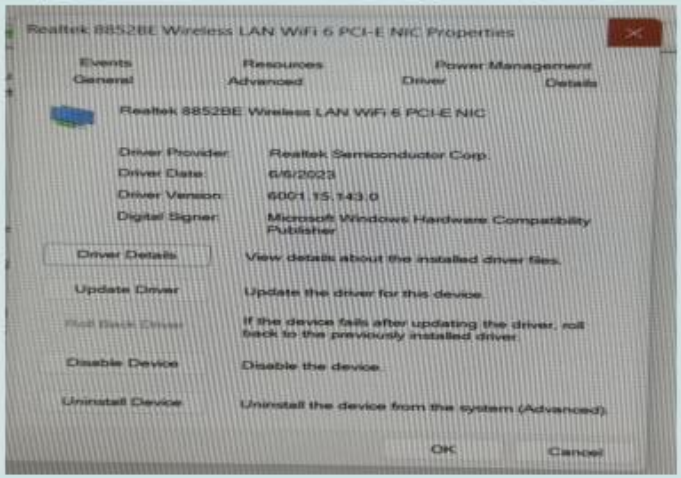
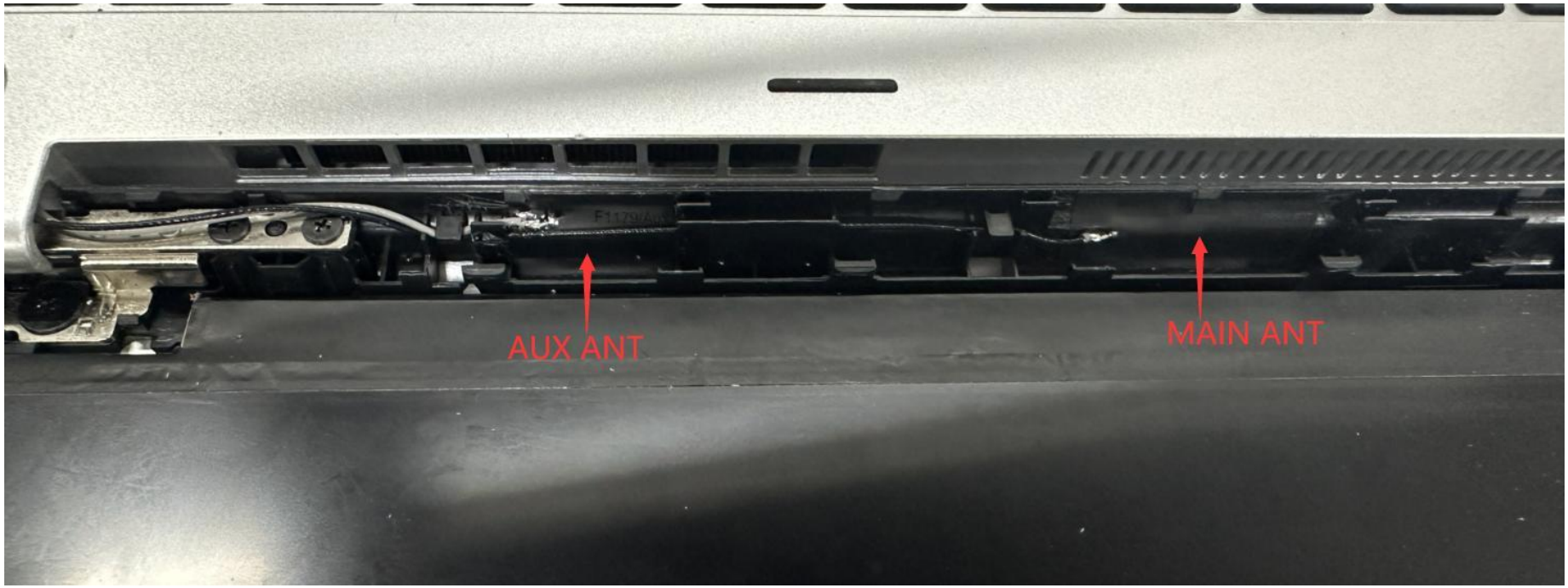
WiFi Ant Test Information

Frequency	2.4G(2402~2483)Mhz	5G(5150~5850)Mhz
Module information		
Driver version information		

Antenna Placement



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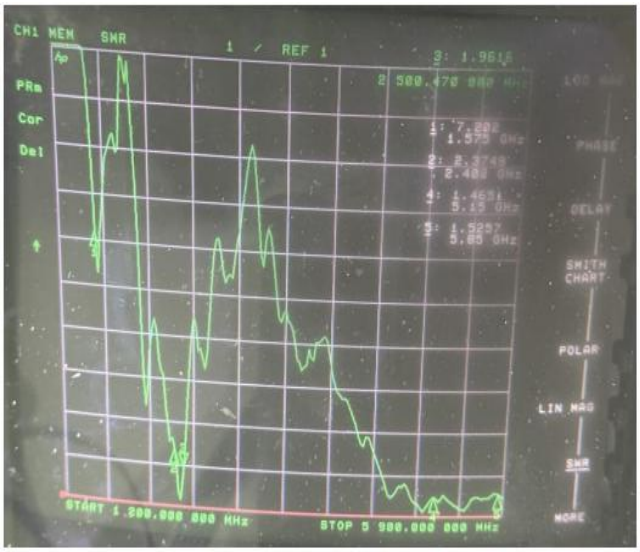
Test Data

S11 Parameter-VSWR



Frequency (MHZ)	2400	2500	5150	5850
VSWR	2.37	1.96	1.46	1.52
Return Loss (DB)	-7.87	-10.21	-14.48	-13.63

WiFi Active Test Data

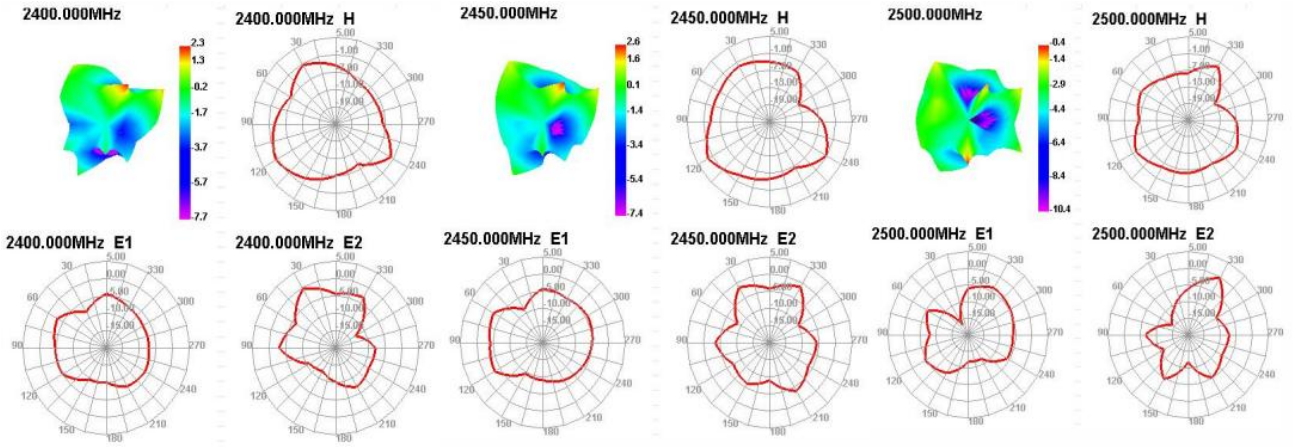
	Frequency	TRP		TIS	
802.11b	2412	CH1 11Mbps	10.41	CH1 11Mbps	-78.53
	2437	CH6 11Mbps	9.31	CH6 11Mbps	-78.31
	2467	CH11 11Mbps	8.59	CH11 11Mbps	-78.01
802.11a		TRP		TIS	
	5180	CH36 6Mbps	9.98	CH36 54Mbps	-70.35
	5300	CH60 6Mbps	9.83	CH60 54Mbps	-69.95
	5805	CH161 6Mbps	13.32	CH161 54Mbps	-70.41

Efficiency Table

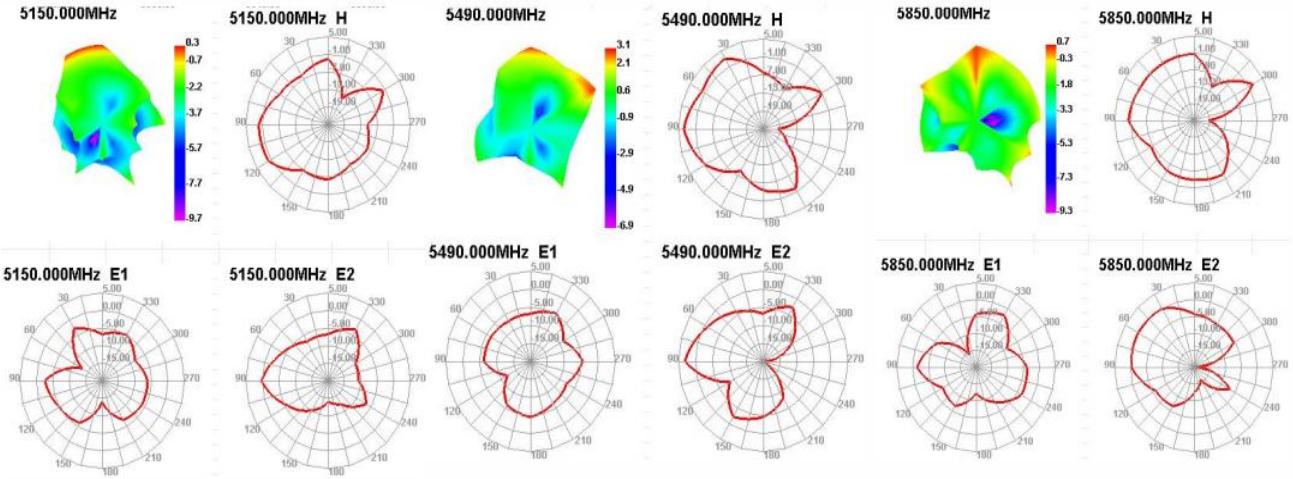
Passive Test For WIFI2.4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)
2400	30.9	-5.1	2.26	0.11	19.455	11.441	2.26	-16.01
2410	29.58	-5.29	1.94	-0.21	18.544	11.035	1.94	-16.42
2420	34.83	-4.58	2.62	0.47	21.655	13.174	2.62	-16.36
2430	36.08	-4.43	2.83	0.68	22.363	13.716	2.83	-16.94
2440	37.44	-4.27	2.86	0.71	23.087	14.358	2.86	-16.71
2450	37.03	-4.31	2.63	0.48	22.709	14.318	2.63	-16.05
2460	35.04	-4.55	2.5	0.35	21.545	13.498	2.5	-15.94
2470	36.31	-4.4	2.75	0.6	22.154	14.154	2.75	-16.11
2480	33.57	-4.74	2.1	-0.05	20.284	13.282	2.1	-16.19
2490	29.36	-5.32	0.97	-1.18	17.519	11.842	0.97	-16.09
2500	23.62	-6.27	-0.37	-2.52	13.906	9.714	-0.37	-18.02

Passive Test For WIFI5G								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)
5150	26.33	-5.79	0.26	-1.89	15.04	11.293	0.26	-18.55
5170	28.01	-5.53	0.72	-1.43	15.919	12.092	0.72	-16.34
5190	27.4	-5.62	0.59	-1.56	15.356	12.045	0.59	-16.36
5210	30.63	-5.14	1.11	-1.04	17.171	13.463	1.11	-16.6
5230	29.37	-5.32	-0.18	-2.33	16.447	12.923	-0.18	-15.35
5250	31.3	-5.04	0.18	-1.97	17.463	13.841	0.18	-14.39
5270	33.23	-4.79	0.34	-1.81	18.511	14.714	0.34	-15.47
5290	34.93	-4.57	0.76	-1.39	19.173	15.759	0.76	-16.13
5310	32.1	-4.93	0.71	-1.44	17.697	14.406	0.71	-15.88
5330	31.93	-4.96	0.95	-1.2	17.871	14.058	0.95	-16.21
5350	33.99	-4.69	1.13	-1.02	19.42	14.574	1.13	-19.24
5370	34.92	-4.57	1.93	-0.22	20.213	14.706	1.93	-18.68
5390	33.6	-4.74	1.46	-0.69	19.594	14.006	1.46	-23.35
5410	41.73	-3.8	2.49	0.34	24.773	16.955	2.49	-23.3
5430	37.95	-4.21	2.07	-0.08	23.188	14.759	2.07	-24.67
5450	42	-3.77	2.92	0.77	25.824	16.177	2.92	-19.72
5470	37.01	-4.32	2.61	0.46	22.599	14.406	2.61	-16.63
5490	37.98	-4.2	3.13	0.98	23.052	14.929	3.13	-23.09
5510	40.97	-3.88	3.49	1.34	24.814	16.157	3.49	-16.87
5530	44.39	-3.53	3.41	1.26	26.523	17.864	3.41	-17.26
5550	47.06	-3.27	3.29	1.14	28.203	18.859	3.29	-17.91
5570	44.38	-3.53	2.65	0.5	26.798	17.587	2.65	-17.38
5590	50.35	-2.98	3.16	1.01	30.44	19.91	3.16	-14.82
5610	44.4	-3.53	2.43	0.28	27.002	17.399	2.43	-17
5630	48.24	-3.17	3	0.85	29.609	18.627	3	-18.96
5650	42.24	-3.74	3.36	1.21	26.834	15.41	3.36	-19.18
5670	47.64	-3.22	3.95	1.8	30.854	16.785	3.95	-21.52
5690	45.65	-3.41	3.61	1.46	29.351	16.302	3.61	-19.34
5710	45.35	-3.43	3.14	0.99	29.011	16.343	3.14	-19.76
5730	47.46	-3.24	2.93	0.78	30.296	17.163	2.93	-18.16
5750	40.94	-3.88	1.92	-0.23	25.919	15.023	1.92	-17.01
5770	42.46	-3.72	1.57	-0.58	26.37	16.088	1.57	-17.26
5790	36.69	-4.35	0.98	-1.17	22.627	14.061	0.98	-23.12
5810	37.79	-4.23	0.69	-1.46	23.579	14.207	0.69	-25.57
5830	34.29	-4.65	0.22	-1.93	21.705	12.586	0.22	-20.76
5850	36.22	-4.41	0.7	-1.45	22.967	13.257	0.7	-19.66

Radiation Pattern(2.4G)



Radiation Pattern(5G)



BT Test

测试环境：开放空间(通道）
测试工具：蓝牙音响
测试距离：10/m
结果：播放音乐流畅，无杂音。

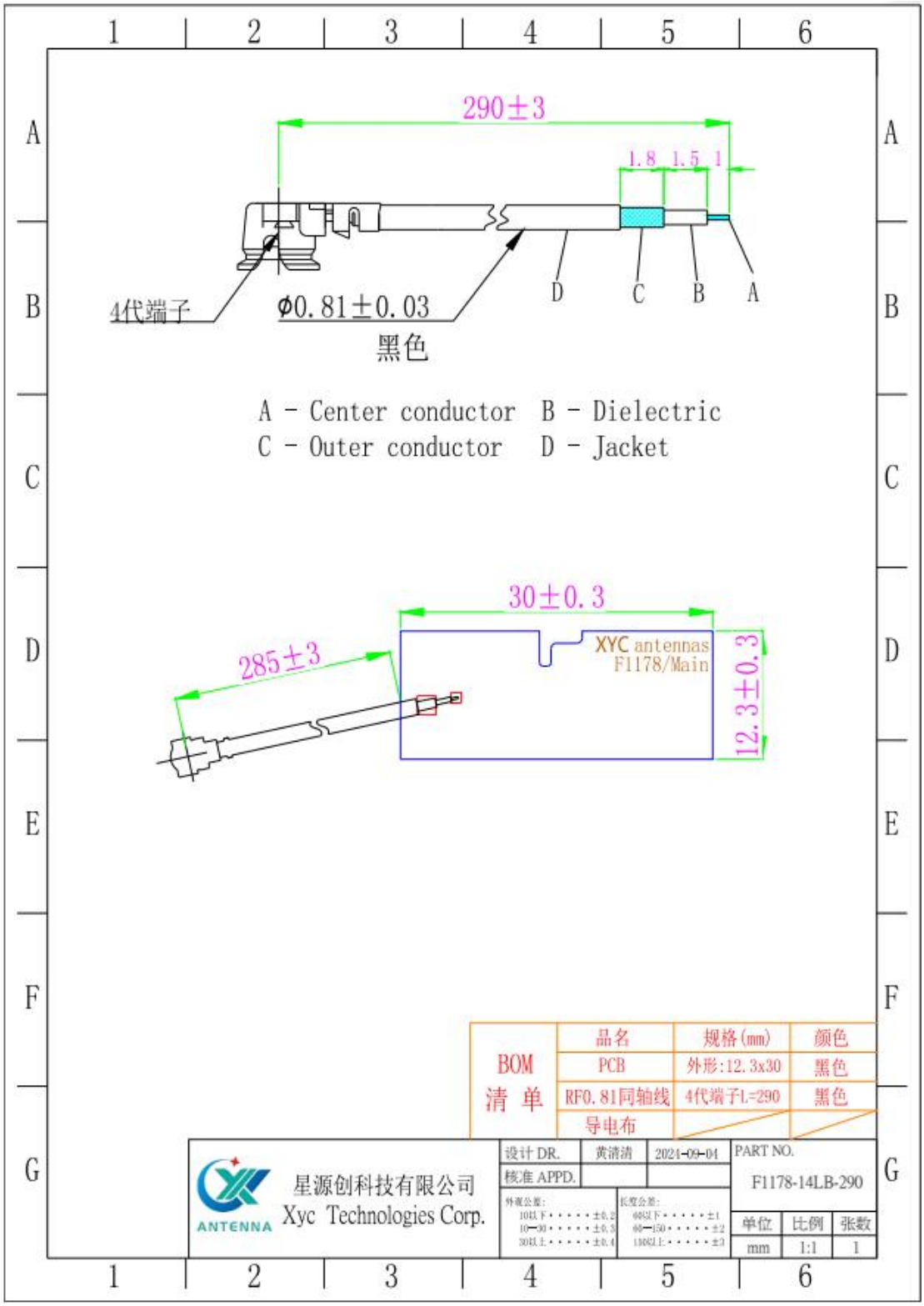
Throughput Test(2.4G)

上行	302M	下行	344M
图片	[ID] Interval Transfer Bandwidth [368] 17.0-18.0 sec 35.9 MBytes 301 Mbits/sec [ID] Interval Transfer Bandwidth [368] 18.0-19.0 sec 36.3 MBytes 305 Mbits/sec [ID] Interval Transfer Bandwidth [368] 19.0-20.0 sec 35.3 MBytes 296 Mbits/sec [ID] Interval Transfer Bandwidth [368] 20.0-21.0 sec 35.1 MBytes 294 Mbits/sec [ID] Interval Transfer Bandwidth [368] 21.0-22.0 sec 35.7 MBytes 300 Mbits/sec [ID] Interval Transfer Bandwidth [368] 22.0-23.0 sec 35.5 MBytes 297 Mbits/sec [ID] Interval Transfer Bandwidth [368] 23.0-24.0 sec 36.3 MBytes 305 Mbits/sec [ID] Interval Transfer Bandwidth [368] 24.0-25.0 sec 36.7 MBytes 307 Mbits/sec [ID] Interval Transfer Bandwidth [368] 25.0-26.0 sec 34.0 MBytes 285 Mbits/sec [ID] Interval Transfer Bandwidth [368] 26.0-27.0 sec 37.7 MBytes 316 Mbits/sec [ID] Interval Transfer Bandwidth [368] 27.0-28.0 sec 36.7 MBytes 307 Mbits/sec [ID] Interval Transfer Bandwidth [368] 28.0-29.0 sec 36.3 MBytes 305 Mbits/sec [ID] Interval Transfer Bandwidth [368] 29.0-30.0 sec 37.1 MBytes 311 Mbits/sec [ID] Interval Transfer Bandwidth [368] 0.0-30.0 sec 1.05 GBytes 302 Mbits/sec	图片	[280] 17.0-18.0 sec 46.0 MBytes [ID] Interval Transfer Bandwidth [280] 18.0-19.0 sec 43.6 MBytes 366 Mbits/sec [ID] Interval Transfer Bandwidth [280] 19.0-20.0 sec 45.8 MBytes 384 Mbits/sec [ID] Interval Transfer Bandwidth [280] 20.0-21.0 sec 39.9 MBytes 334 Mbits/sec [ID] Interval Transfer Bandwidth [280] 21.0-22.0 sec 34.8 MBytes 292 Mbits/sec [ID] Interval Transfer Bandwidth [280] 22.0-23.0 sec 40.9 MBytes 343 Mbits/sec [ID] Interval Transfer Bandwidth [280] 23.0-24.0 sec 38.4 MBytes 322 Mbits/sec [ID] Interval Transfer Bandwidth [280] 24.0-25.0 sec 40.0 MBytes 335 Mbits/sec [ID] Interval Transfer Bandwidth [280] 25.0-26.0 sec 43.5 MBytes 365 Mbits/sec [ID] Interval Transfer Bandwidth [280] 26.0-27.0 sec 43.4 MBytes 364 Mbits/sec [ID] Interval Transfer Bandwidth [280] 27.0-28.0 sec 45.9 MBytes 385 Mbits/sec [ID] Interval Transfer Bandwidth [280] 28.0-29.0 sec 43.0 MBytes 361 Mbits/sec [ID] Interval Transfer Bandwidth [280] 29.0-30.0 sec 43.0 MBytes 361 Mbits/sec [ID] Interval Transfer Bandwidth [280] 0.0-30.0 sec 1.20 GBytes 344 Mbits/sec

Throughput Test(5G)

上行	581M	下行	605M
图片	[ID] Interval Transfer Bandwidth [372] 17.0-18.0 sec 74.3 MBytes 623 Mbits/sec [ID] Interval Transfer Bandwidth [372] 18.0-19.0 sec 70.7 MBytes 593 Mbits/sec [ID] Interval Transfer Bandwidth [372] 19.0-20.0 sec 69.2 MBytes 580 Mbits/sec [ID] Interval Transfer Bandwidth [372] 20.0-21.0 sec 61.0 MBytes 512 Mbits/sec [ID] Interval Transfer Bandwidth [372] 21.0-22.0 sec 59.2 MBytes 496 Mbits/sec [ID] Interval Transfer Bandwidth [372] 22.0-23.0 sec 69.2 MBytes 580 Mbits/sec [ID] Interval Transfer Bandwidth [372] 23.0-24.0 sec 72.7 MBytes 610 Mbits/sec [ID] Interval Transfer Bandwidth [372] 24.0-25.0 sec 70.6 MBytes 592 Mbits/sec [ID] Interval Transfer Bandwidth [372] 25.0-26.0 sec 71.2 MBytes 597 Mbits/sec [ID] Interval Transfer Bandwidth [372] 26.0-27.0 sec 74.6 MBytes 625 Mbits/sec [ID] Interval Transfer Bandwidth [372] 27.0-28.0 sec 69.5 MBytes 583 Mbits/sec [ID] Interval Transfer Bandwidth [372] 28.0-29.0 sec 72.6 MBytes 609 Mbits/sec [ID] Interval Transfer Bandwidth [372] 29.0-30.0 sec 72.5 MBytes 608 Mbits/sec [ID] Interval Transfer Bandwidth [372] 0.0-30.0 sec 2.03 GBytes 581 Mbits/sec	图片	[280] 17.0-18.0 sec 70.1 MBytes [ID] Interval Transfer Bandwidth [280] 18.0-19.0 sec 75.3 MBytes 632 Mbits/sec [ID] Interval Transfer Bandwidth [280] 19.0-20.0 sec 73.5 MBytes 617 Mbits/sec [ID] Interval Transfer Bandwidth [280] 20.0-21.0 sec 72.9 MBytes 612 Mbits/sec [ID] Interval Transfer Bandwidth [280] 21.0-22.0 sec 74.8 MBytes 628 Mbits/sec [ID] Interval Transfer Bandwidth [280] 22.0-23.0 sec 71.1 MBytes 597 Mbits/sec [ID] Interval Transfer Bandwidth [280] 23.0-24.0 sec 74.2 MBytes 622 Mbits/sec [ID] Interval Transfer Bandwidth [280] 24.0-25.0 sec 73.2 MBytes 614 Mbits/sec [ID] Interval Transfer Bandwidth [280] 25.0-26.0 sec 74.4 MBytes 624 Mbits/sec [ID] Interval Transfer Bandwidth [280] 26.0-27.0 sec 74.1 MBytes 622 Mbits/sec [ID] Interval Transfer Bandwidth [280] 27.0-28.0 sec 74.3 MBytes 624 Mbits/sec [ID] Interval Transfer Bandwidth [280] 28.0-29.0 sec 72.9 MBytes 612 Mbits/sec [ID] Interval Transfer Bandwidth [280] 29.0-30.0 sec 73.6 MBytes 618 Mbits/sec [ID] Interval Transfer Bandwidth [280] 0.0-30.0 sec 2.11 GBytes 605 Mbits/sec

Antenna Assembly



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