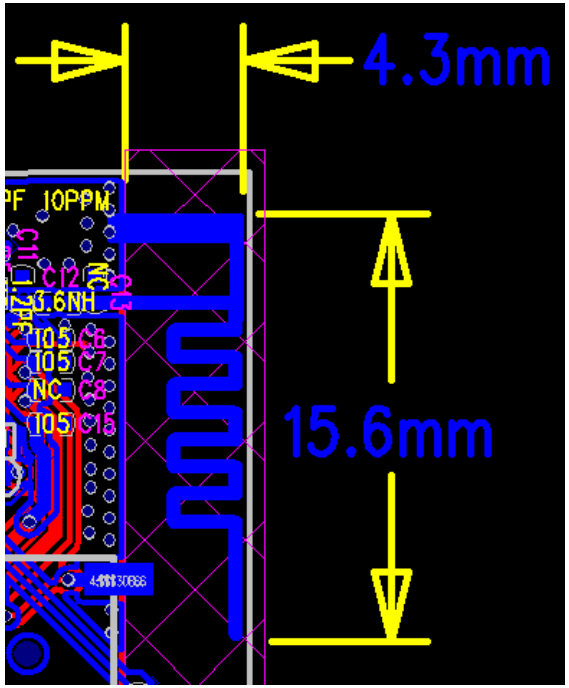
IQ-171BT **Antenna Test Report**

Customer	优程
Project	IQ-171BT
Antenna Revision	A1
Product Description	PCB
Gain Max	-2.0dBi
DATE	2024.1.17

Product Overview & Dimension

Front

Size



Purpose

This report is to measure the performance of BT antenna for IQ-171BT.The antenna operating frequency at 2.4~2.5GHz, All test data are showed as below.

Content

2.Test System

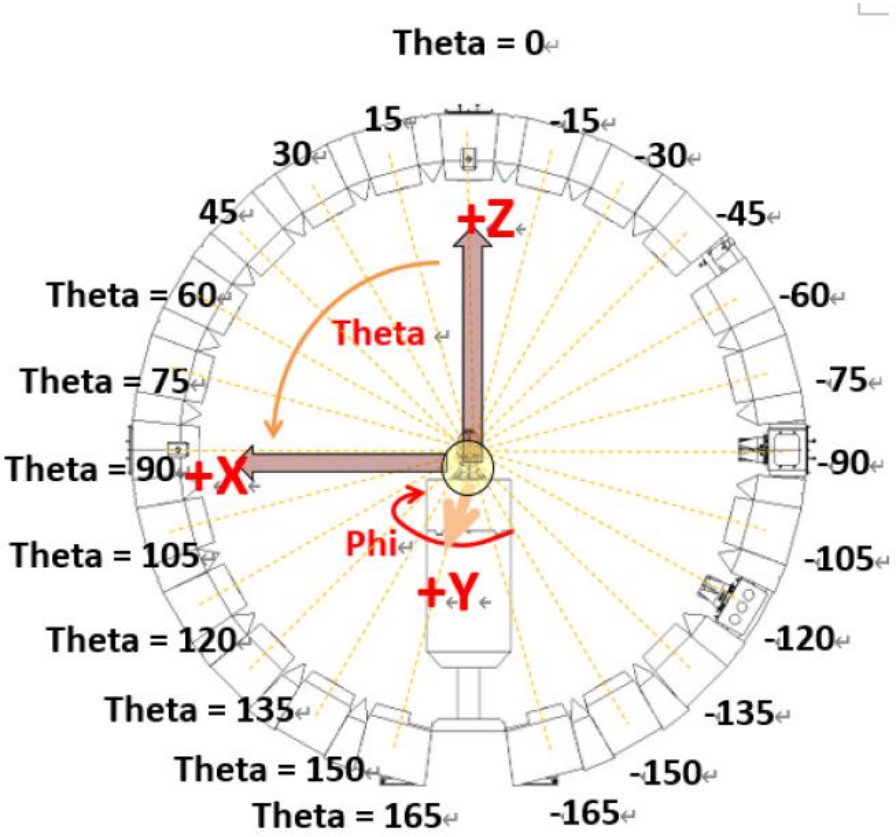
Sequence Number	Test Item	equipment
S parameter	VSWR	Agilent 5071C & Agilent 5062A
OTA Test	TRP&TIS	CMW500 &CMW270 ETS&SATIMO
Gain & Efficiency	Gain & Efficiency	ETS&SATIMO Agilent 5071C

S11—(BT ANT)


曲线1 S11 史密斯圆图(R+iX) 分辨率 1.000U 「F1」
1 2.4000000 GHz 28.736 Ω -14.414 Ω 4.6006 pF
2 2.4502400 GHz 66.450 Ω -23.845 Ω 2.7240 pF
>3 2.4803900 GHz 56.105 Ω -58.260 Ω 1.1014 pF
曲线2 S11 SWR 1.000/ 基准 1.000 「F1」
1 2.4000000 GHz 1.9452
2 2.4502400 GHz 1.6447
>3 2.4803900 GHz 2.8780
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
曲线3 S11 对数 10.00dB/ 基准 0.000dB 「F1」
1 2.4000000 GHz -9.8717 dB
2 2.4502400 GHz -12.270 dB
>3 2.4803900 GHz -6.3023 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00

Test Result

Sample status & coordinates



Test Result

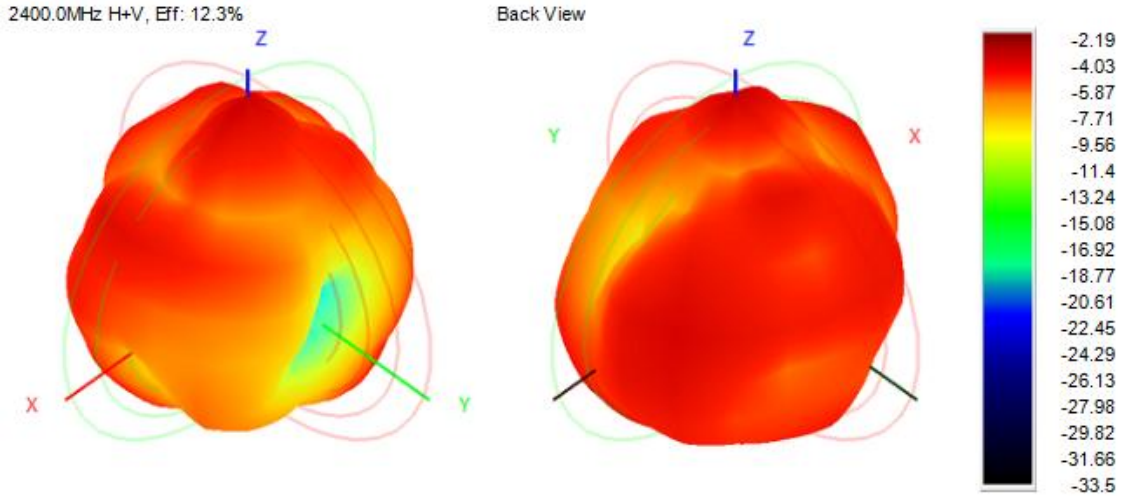
Gain & Efficiency——BT- ANT

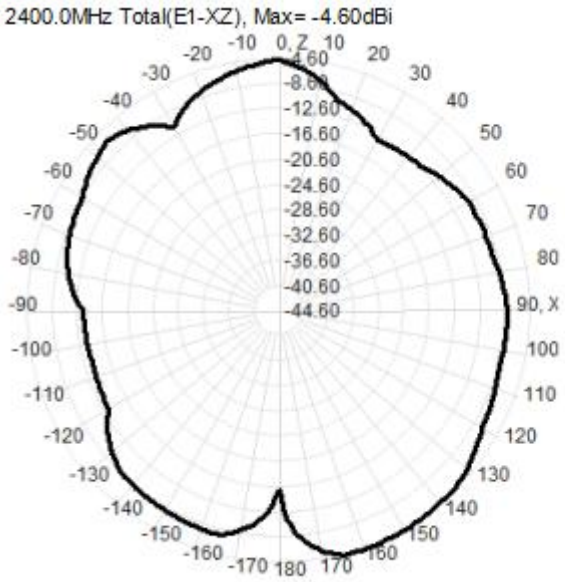
深圳市合拓科技有限公司

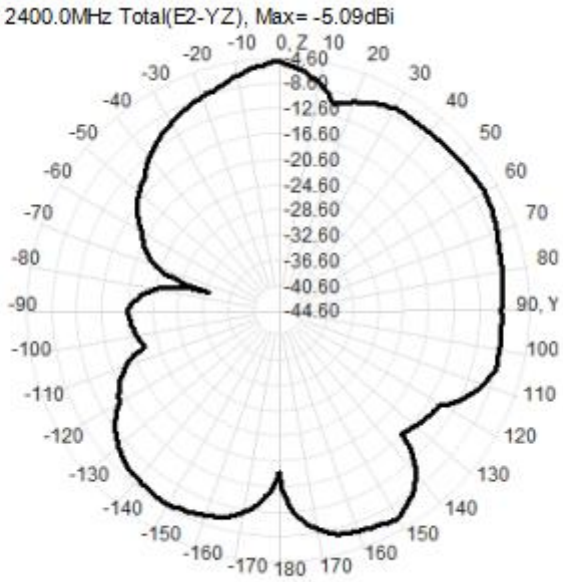
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-9.09	-8.91	-8.95	-8.85	-8.73	-8.71	-8.73	-8.62	-8.85	-8.69	-8.63
Gain (dBi)	-2.19	-2.39	-2.70	-2.75	-2.65	-2.57	-2.20	-2.00	-2.09	-2.15	-2.14
Efficiency (%)	12.33	12.85	12.73	13.02	13.38	13.46	13.40	13.74	13.04	13.52	13.71
Directivity (dB)	6.90	6.52	6.25	6.11	6.08	6.14	6.53	6.62	6.76	6.54	6.49
Peak Gain Position (Theta)	135.00	135.00	135.00	0.00	0.00	135.00	135.00	135.00	135.00	135.00	135.00
Peak Gain Position (Phi)	150.00	150.00	150.00	0.00	150.00	135.00	135.00	135.00	135.00	135.00	150.00
Efficiency ThetaPol (%)	4.89	5.11	5.03	5.19	5.55	5.58	5.75	6.12	5.77	6.17	6.27
Efficiency PhiPol (%)	7.44	7.75	7.70	7.82	7.84	7.88	7.65	7.62	7.27	7.35	7.44
Upper Hem. Efficiency (%)	5.68	5.81	5.78	5.91	6.22	6.18	6.23	6.31	6.07	6.33	6.36
Lower Hem. Efficiency (%)	6.65	7.04	6.94	7.11	7.17	7.28	7.17	7.43	6.97	7.20	7.35

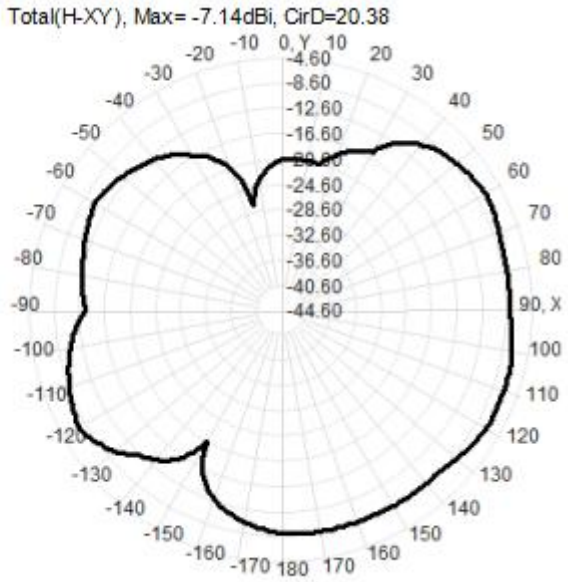
Test Result

2D&3D——BT- ANT



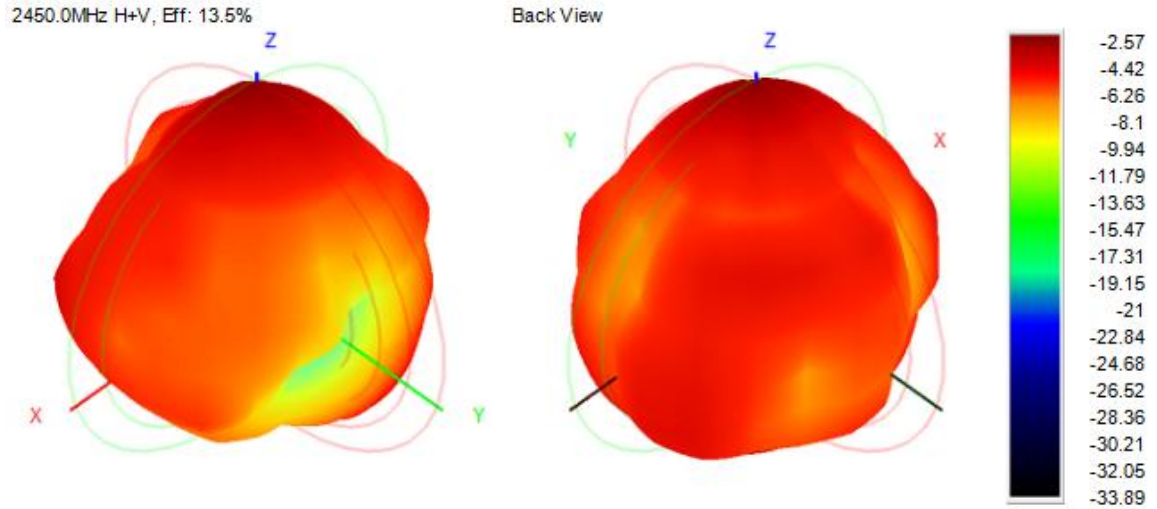


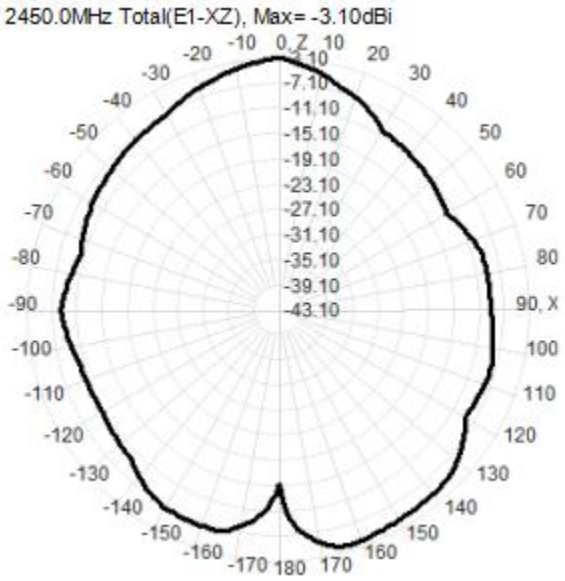


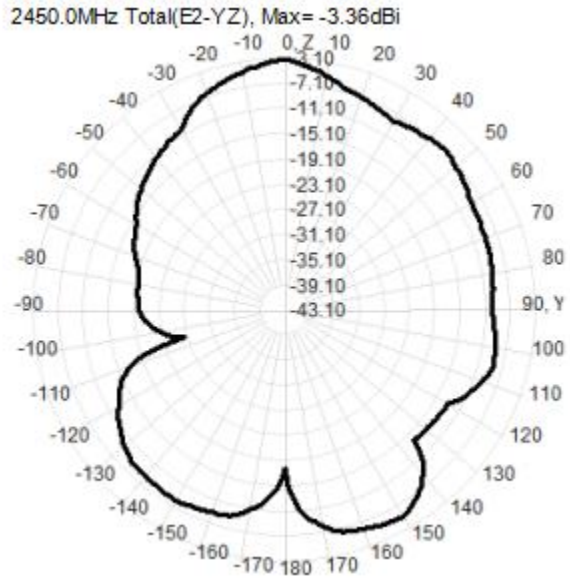


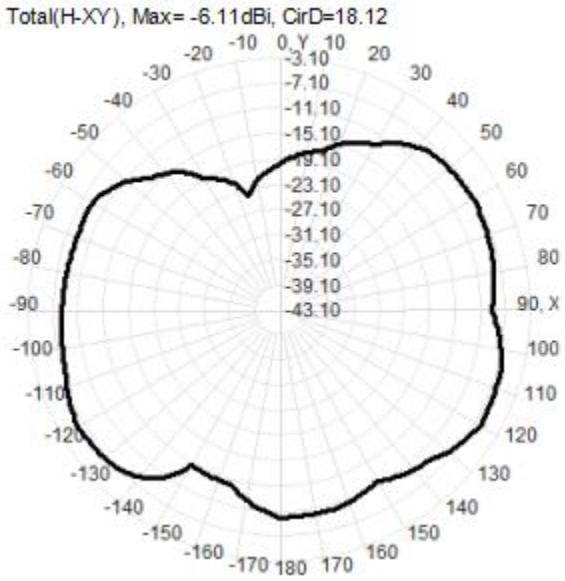
Test Result

2D&3D——BT- ANT



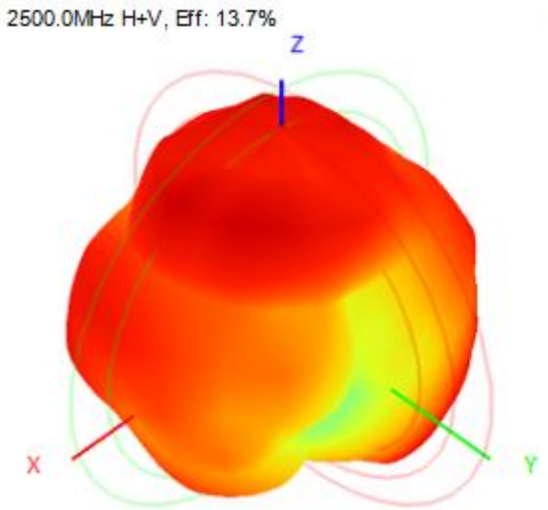


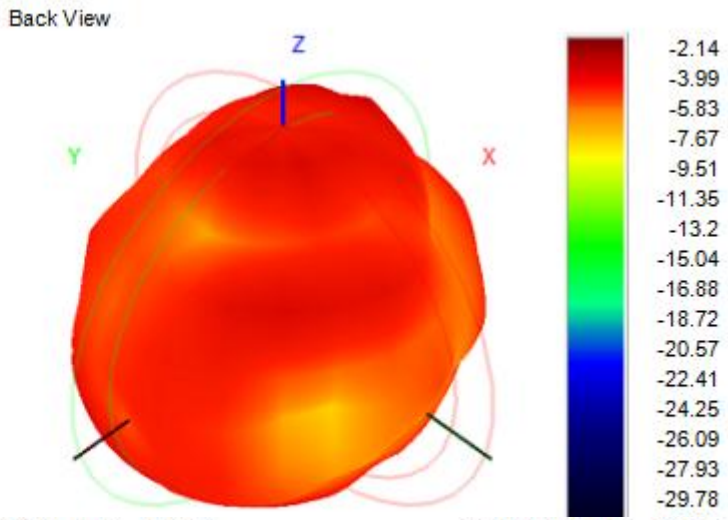


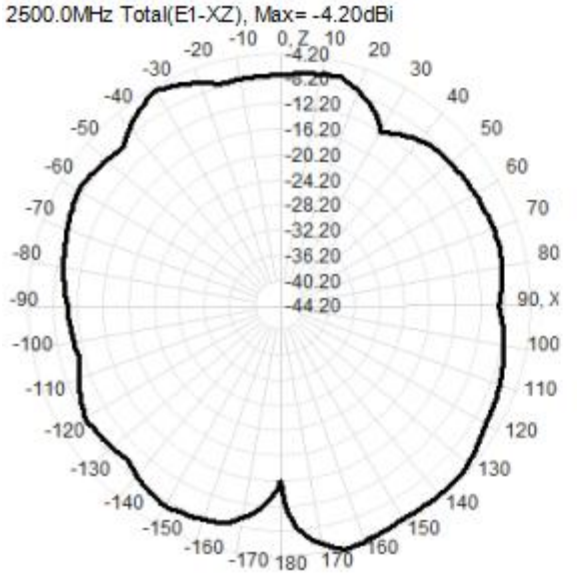


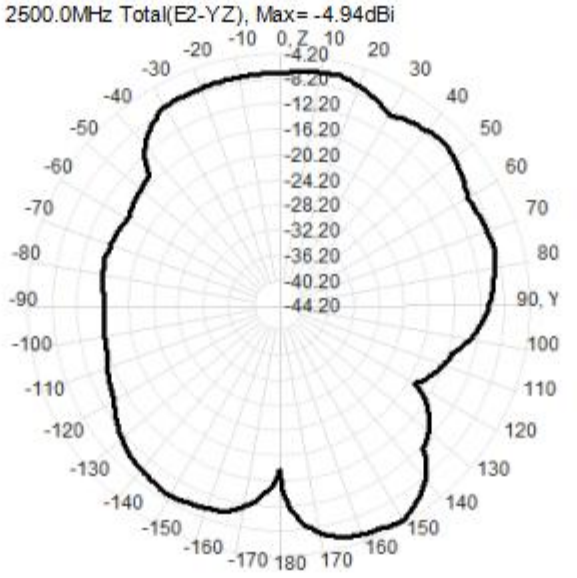
Test Result

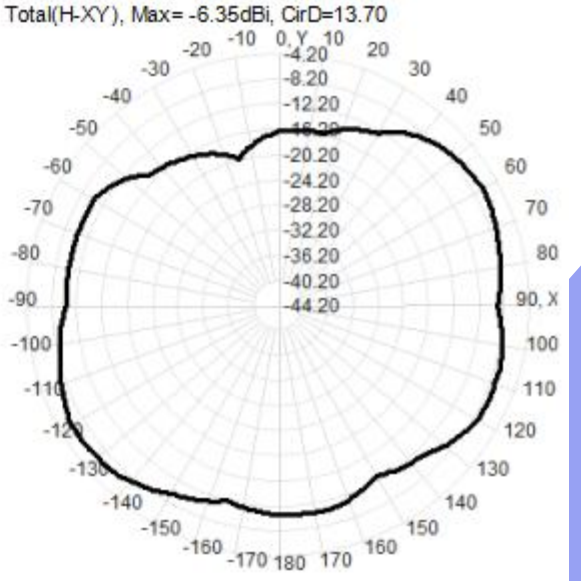
2D&3D——BT- ANT











OTA DATA--自由

Bluetooth Band Antenna Performance Table

Whole Band TRP (dBm): -0.81
Whole Band TIS (dBm): -87.47

		Channel No.	Freq. (MHz)	TRP (dBm)	TIS (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
Phone Tx (Uplink Path)	1	0	--	-0.01	--	--	--	--	--	4.81	0	0	-9.39	0	0	0.34	14.20	-2.74	-3.33
	2	39	--	-0.97	--	--	--	--	--	4.38	0	1	-7.78	0	1	-0.49	12.16	-3.81	-4.16
	3	78	--	-1.58	--	--	--	--	--	4.49	0	2	-8.38	0	2	-1.31	12.86	-4.09	-5.15
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phone Rx (Downlink Path)	1	0	--	--	-89.13	--	--	--	--	-79.75	0	0	-93.95	0	0	-87.56	14.20	-86.40	-85.81
	2	39	--	--	-86.26	--	--	--	--	-79.45	0	1	-91.61	0	1	-84.64	12.16	-83.42	-83.07
	3	78	--	--	-86.40	--	--	--	--	-79.60	0	2	-92.47	0	2	-84.51	12.86	-83.89	-82.83
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

OTA DATA--头模

Bluetooth Band Antenna Performance Table

Whole Band TRP (dBm): -2.39
Whole Band TIS (dBm): -85.44

		Channel No.	Freq. (MHz)	TRP (dBm)	TIS (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
Phone Tx (Uplink Path)	1	0	--	-1.42	--	--	--	--	--	3.44	0	0	-15.05	0	0	-1.18	18.49	-3.63	-5.40
	2	39	--	-2.58	--	--	--	--	--	2.00	0	1	-19.48	0	1	-2.37	21.48	-4.90	-6.41
	3	78	--	-3.40	--	--	--	--	--	1.50	0	2	-17.19	0	2	-3.25	18.69	-5.39	-7.75
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phone Rx (Downlink Path)	1	0	--	--	-87.21	--	--	--	--	-73.58	0	0	-92.07	0	0	-83.27	18.49	-85.00	-83.23
	2	39	--	--	-83.11	--	--	--	--	-66.21	0	1	-87.69	0	1	-78.01	21.48	-80.79	-79.28
	3	78	--	--	-85.05	--	--	--	--	-71.26	0	2	-89.95	0	2	-80.97	18.69	-83.06	-80.70
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Thanks for your comment!

- 深圳市合拓科技有限公司
  - **深圳:深圳市宝安区西乡恒丰工业城C 6栋1202B**
  - RF: **胡雪文**