

600-6000MHz Wideband External Hinged Terminal Antenna Product Specification

Rev 2.0

May. 2026

Part No :
630810000123



CONTENTS

- 1. SCOPE**
- 2. PRODUCT DESCRIPTION**
- 3. GENERAL SPECIFICATION**
- 4. ANTENNA PERFORMANCE**
- 5. ENVIRONMENTAL SPECIFICATION**
- 6. ANTENNA GAIN OF BANDS**

Revision History

1.0 Scope

This Product Specification covers the mechanical, electrical and environmental performances specification for 600-6000MHz Wideband hinged terminal Antenna.

2.0 Product Description

2.1 Product name and Part Number

Product Name : 600~6000MHz Wideband External Hinged Terminal Antenna
Product Number : 630810000123

2.2 Description

Part of 630810000123 is a Dipole and low-profile terminal antenna for 600~960/1200~3000/3000~6000MHz band application.

It's made from Poly-ABS material, has a size form 152.4 x 21.8 x 14.5mm.

It has an SMA (M) connector as standard and is an ideal solution

for any device requiring reliable performance in a medium size form factor.

It was designed primarily for use with 5G/4G modules and devices that require high efficiency and peak gain to deliver best in class throughput on all major cellular bands worldwide for access points, terminals, and routers.

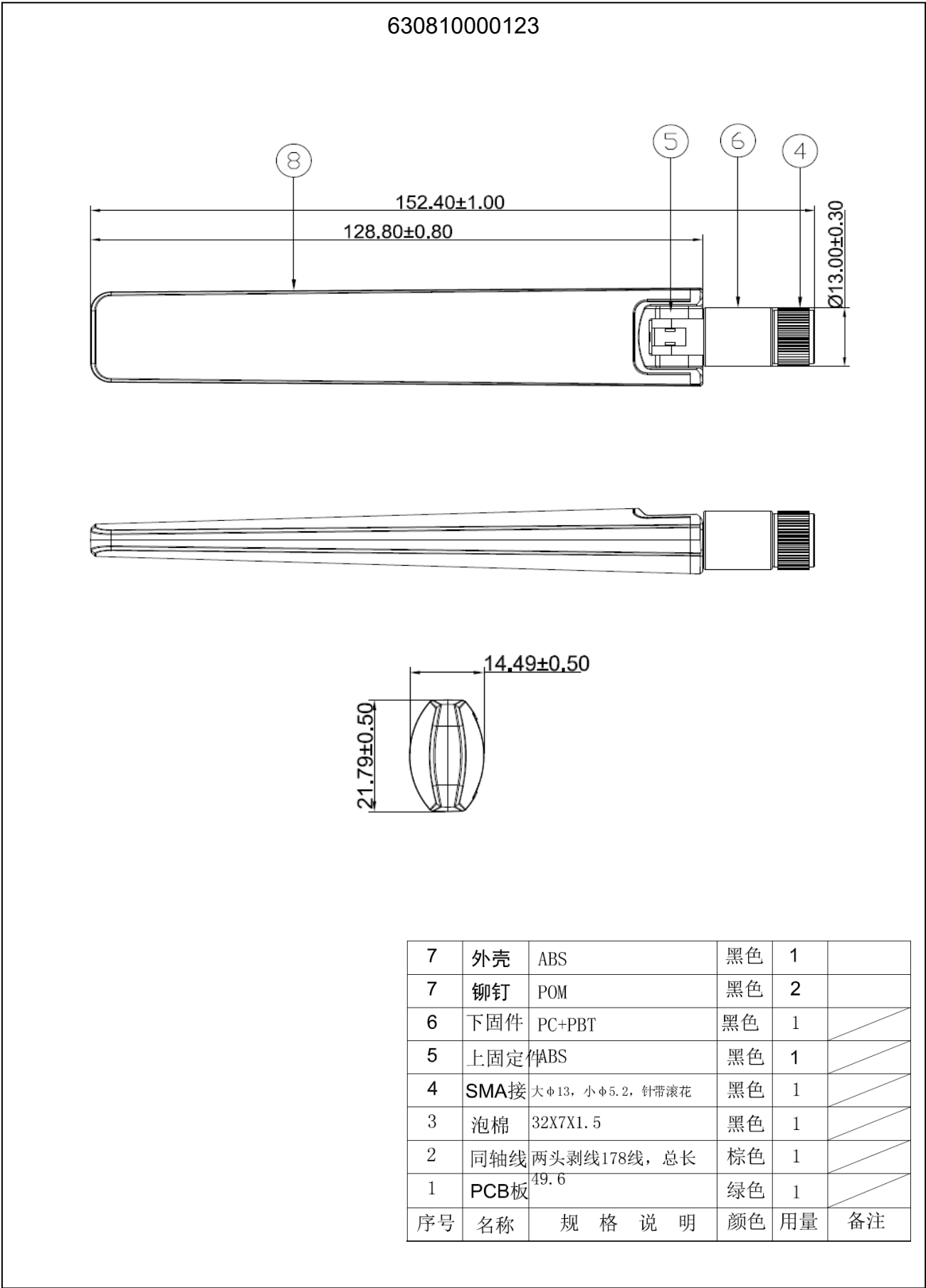
2.3 Features

- 600~6000MHz, Linear polarization, Omni-directional
- Straight size: 152.4 x 21.8 x 14.5mm
- SMA(Male) compatible connector
- RoHS Compliant



630810000123 Wideband Hinged Terminal Antenna 3D View

2.4 Product Structure Information



3.0 General Specification

Product name	600-6000 MHz External Hinged Terminal Antenna		
Part number	630810000123		
Frequency Range	600-960 MHz	1200-3000 MHz	3000-6000 MHz
Polarization	Linear		
Operating with matching	-40℃ to 85℃		
Storage with matching	-40℃ to 85℃		
Max. Input Power	25.0 Watts		
Impedance	50 Ohms		
Antenna type	Dipole		
Connector type	SMA(Male)		
VSWR	< 3.5		
Peak Gain	3.5 dBi		
Manufacturer	Sunnyway Technology Co., Ltd.		
Address	1F, Building 4 Lane 215 Gaoguang Road, Qingpu District, Shanghai		

4.0 Antenna Performance

4.1 RF Test Conditions

All measurements are done of the antenna mounted on a polyfoam material block of supporter with VNA Agilent E5071C and Over-The-Air (OTA) chamber. All measurements in this document have done in mode of Free Space.

4.2 Antenna Performance

Description	Equipment	Performance		
Frequency Range	VNA E5071C	600-960MHz	1200-3000MHz	3000-6000MHz
Return Loss	VNA E5071C	<-5 dB	<-7 dB	<-6 dB
Peak Gain (Max)	OTA Chamber	-0.5 dBi	2.9 dBi	3.5 dBi
Average Total Efficiency. (dB)	OTA Chamber	-4.3	-2.3	-2.8
Input Impedance	VNA E5071C	50 ohms		

Note that the above antenna performance is measured under a similar free-space condition. When implement into the system, the frequency resonant might be off-tune due to the loading of surrounding components especially metal plane. This off-tune can be compensated through matching. The radiation pattern will change due to the surround components as well.

4.3 Return Loss Plot

All measurements in this document have done in Free Space.

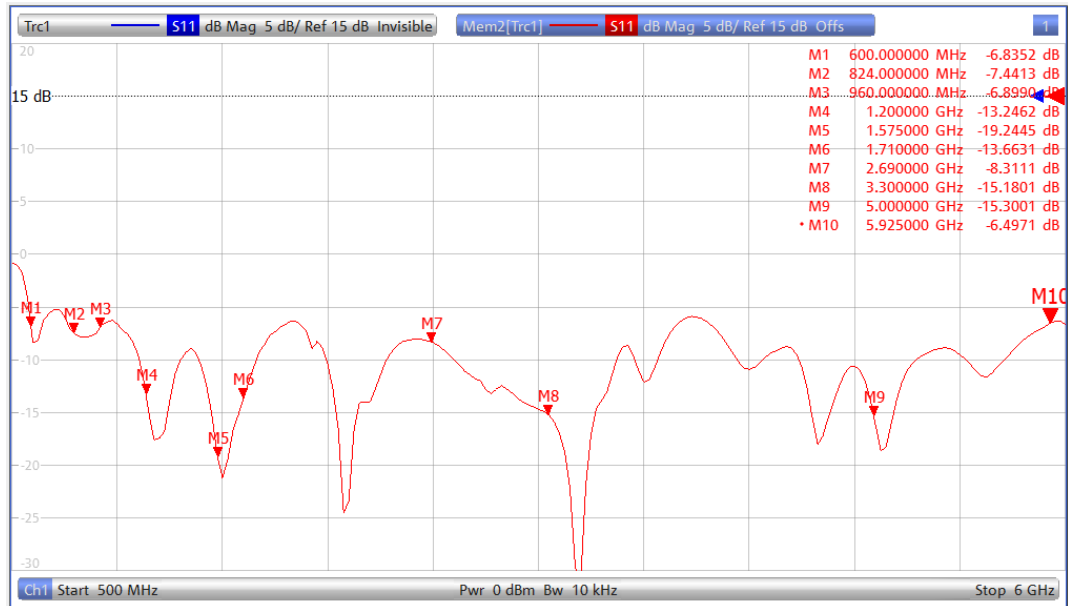


Figure 4.3.1 Return Loss of Antenna at 600-6000MHz In Free Space

4.4 Efficiency Plot

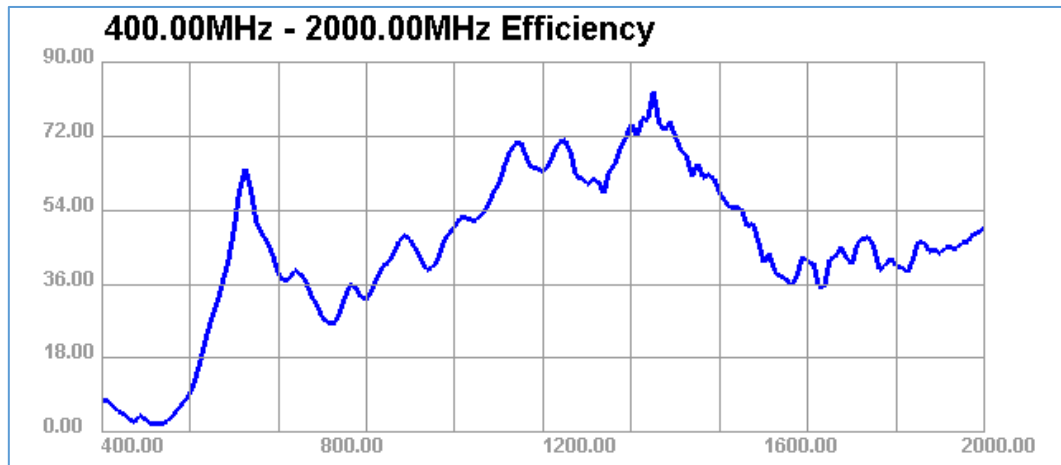


Figure 4.4.1 Efficiency of Antenna at 400-2000MHz In Free Space

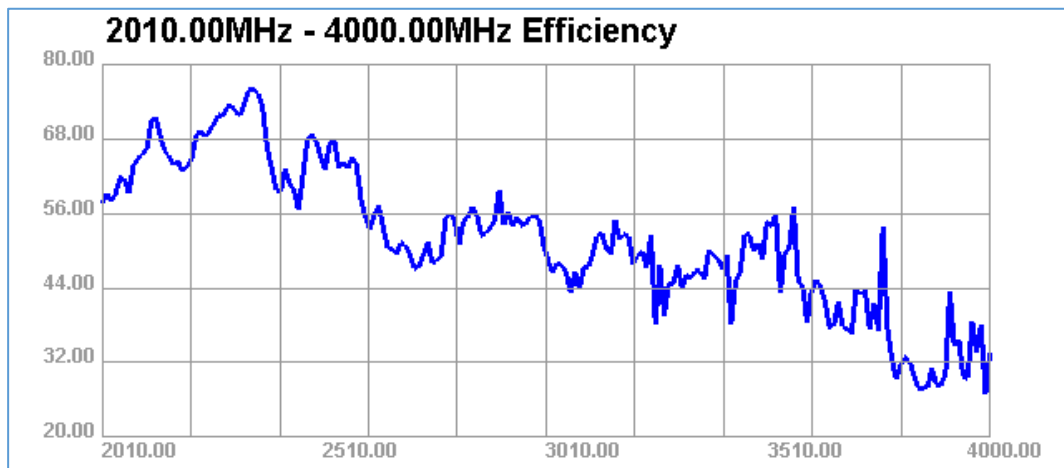


Figure 4.4.2 Efficiency of Antenna at 2.0-4.0GHz In Free Space

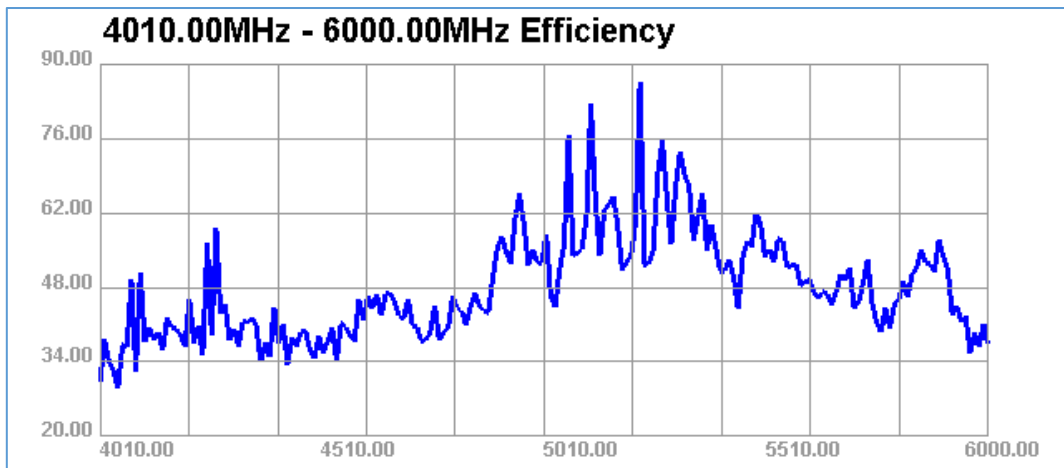
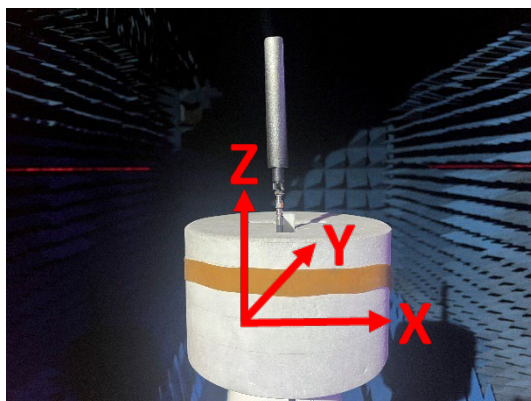


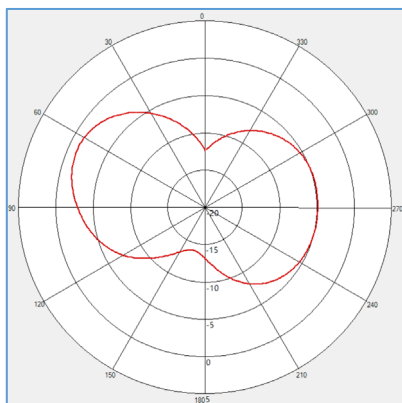
Figure 4.4.3 Efficiency of Antenna at 4.0-6.0GHz In Free Space

4.5 2D Radiation Pattern

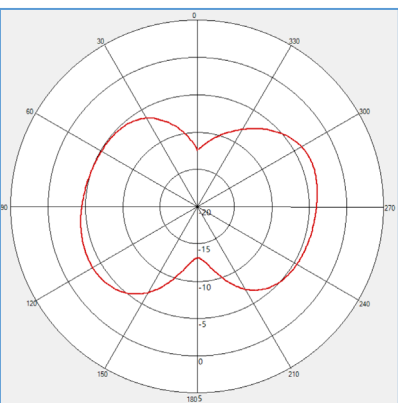
Test condition:



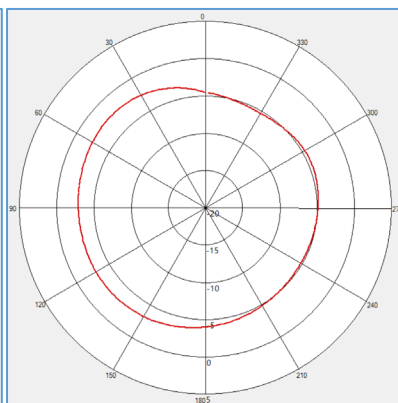
Y-Z 600MHz



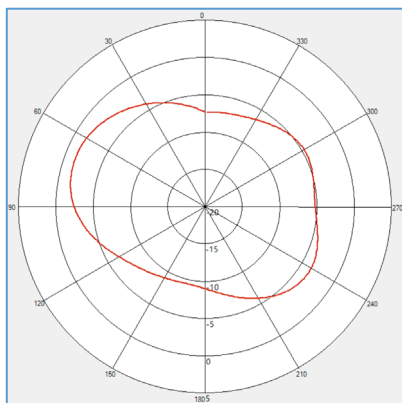
X-Z 600MHz



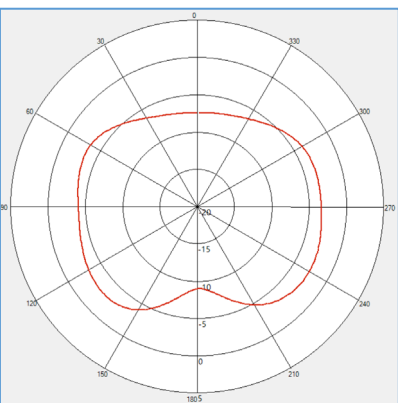
X-Y 600MHz



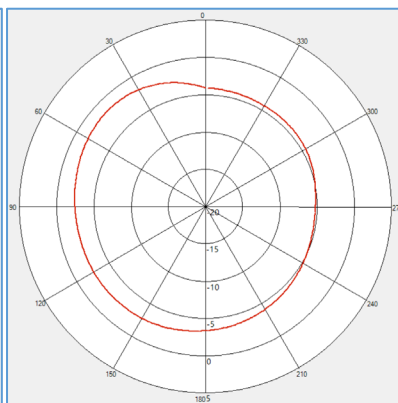
Y-Z 700MHz



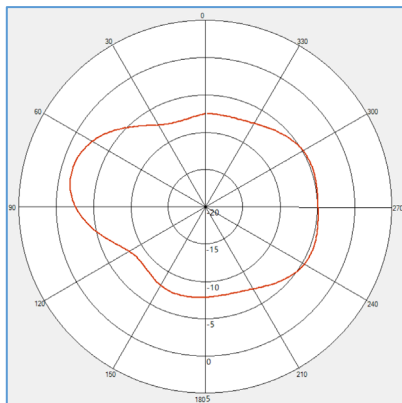
X-Z 700MHz



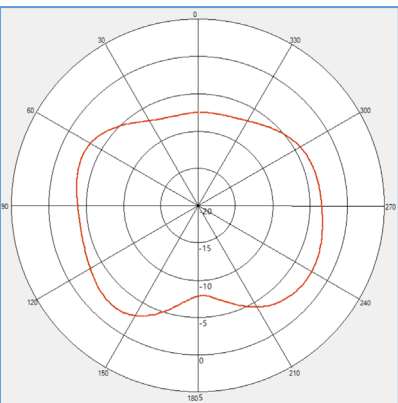
X-Y 700MHz



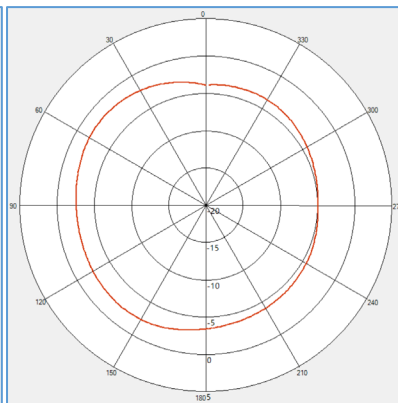
Y-Z 800MHz



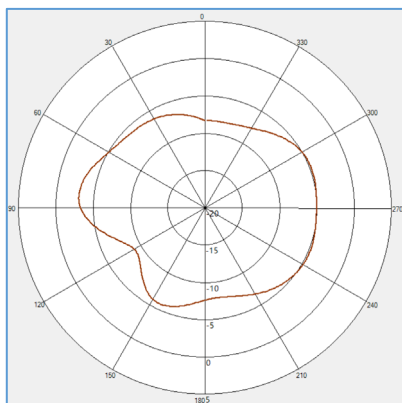
X-Z 800MHz



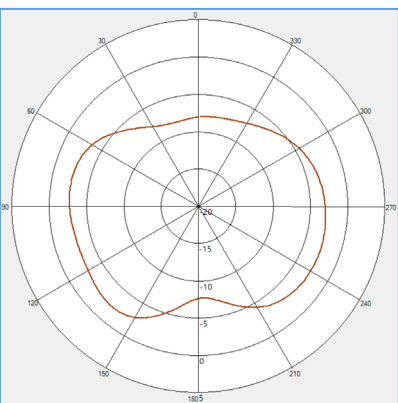
X-Y 800MHz



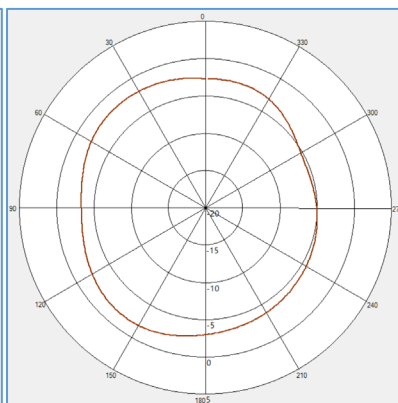
Y-Z 900MHz



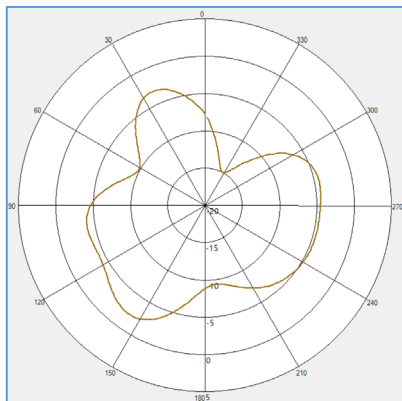
X-Z 900MHz



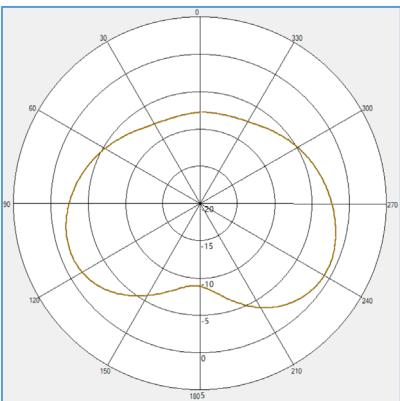
X-Y 900MHz



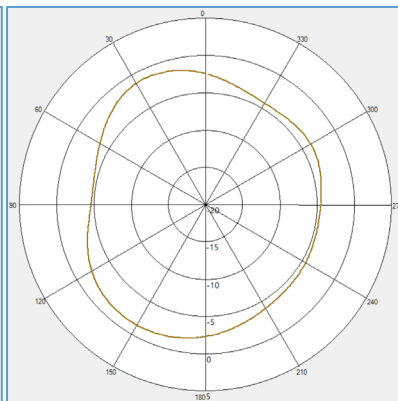
Y-Z 1200MHz



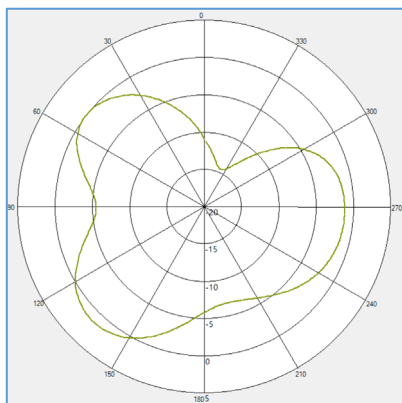
X-Z 1200MHz



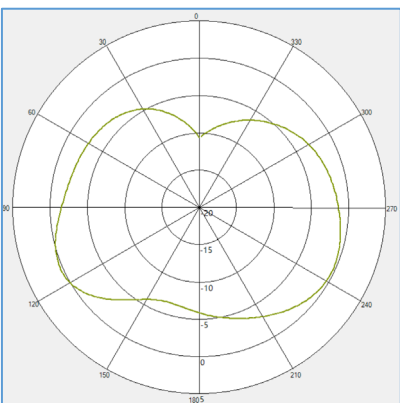
X-Y 1200MHz



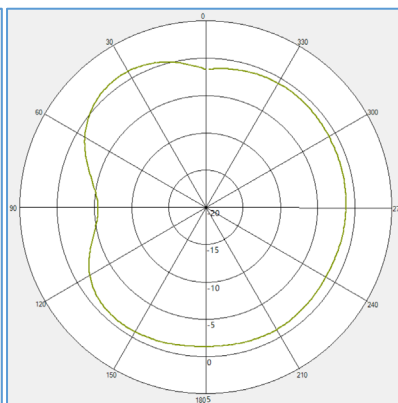
Y-Z 1570MHz



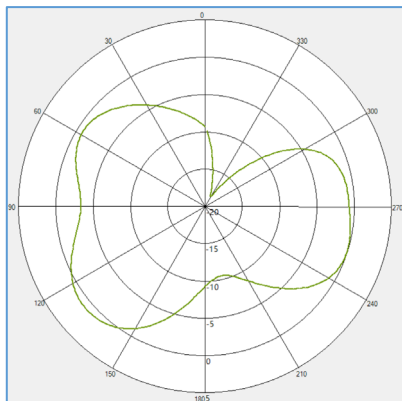
X-Z 1570MHz



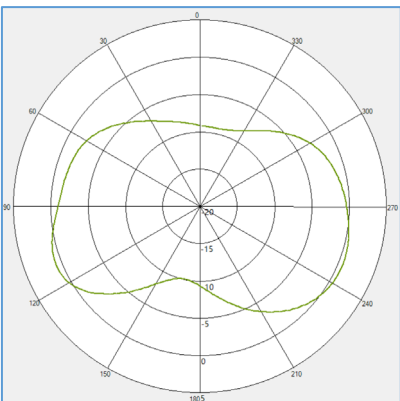
X-Y 1570MHz



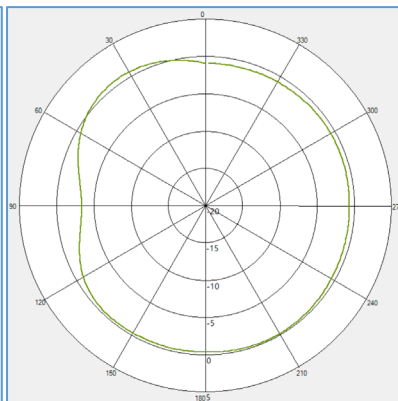
Y-Z 1700MHz



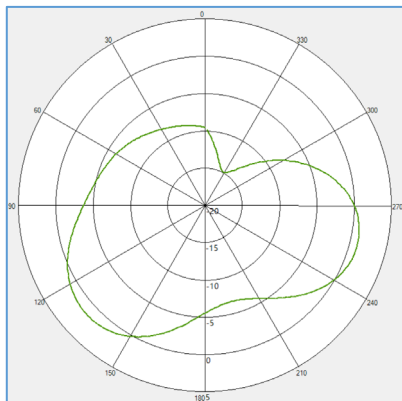
X-Z 1700MHz



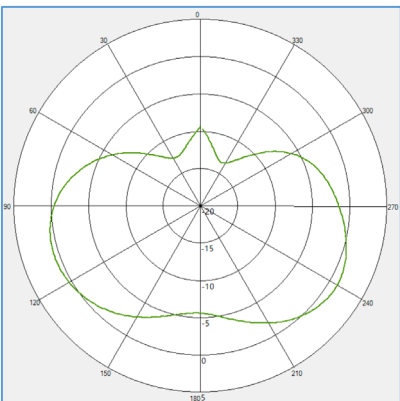
X-Y 1700MHz



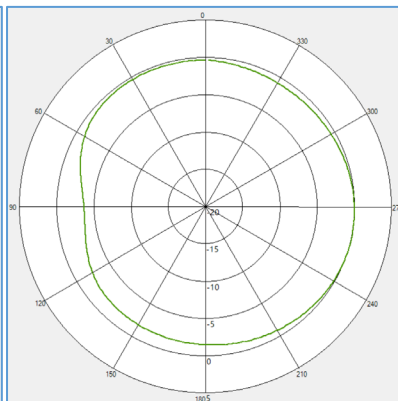
Y-Z 1900MHz



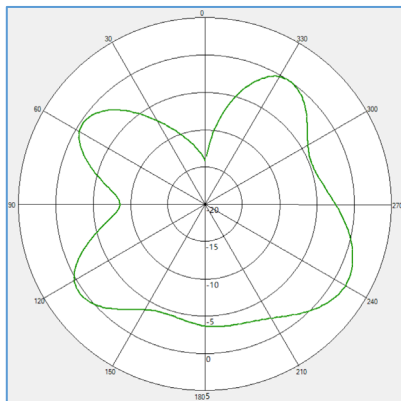
X-Z 1900MHz



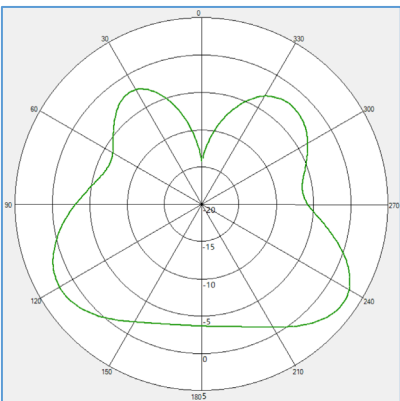
X-Y 1900MHz



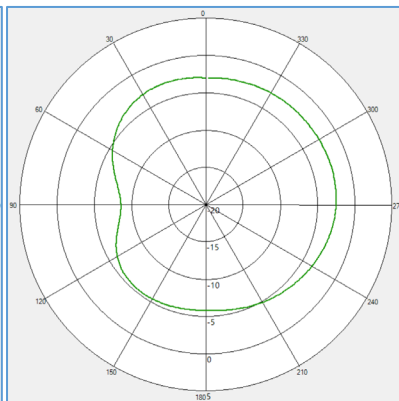
Y-Z 2170MHz



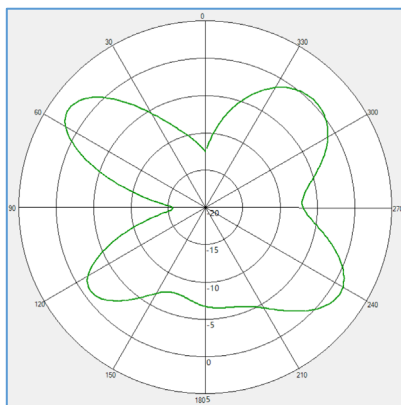
X-Z 2170MHz



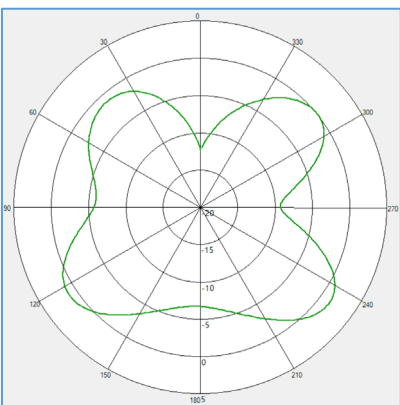
X-Y 2170MHz



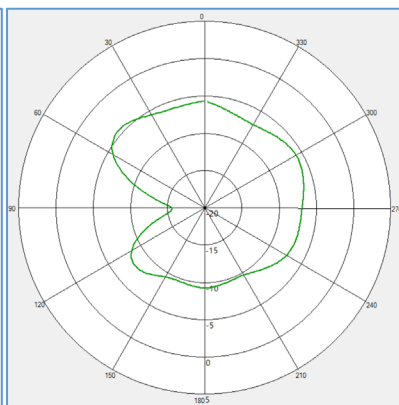
Y-Z 2300MHz



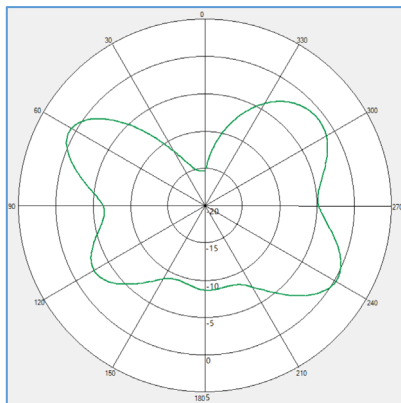
X-Z 2300MHz



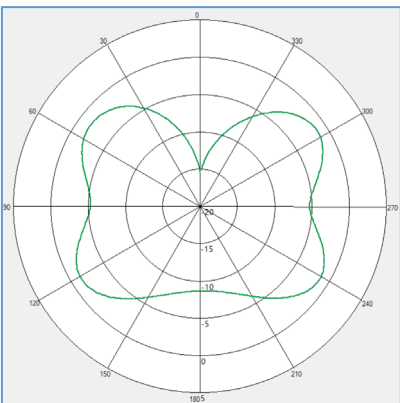
X-Y 2300MHz



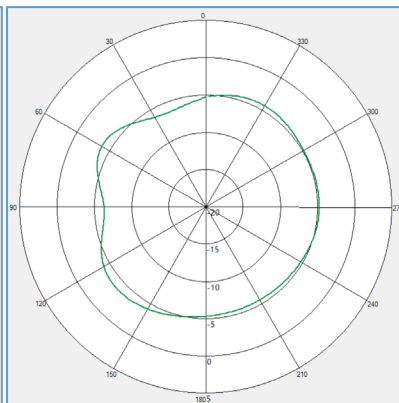
Y-Z 2690MHz



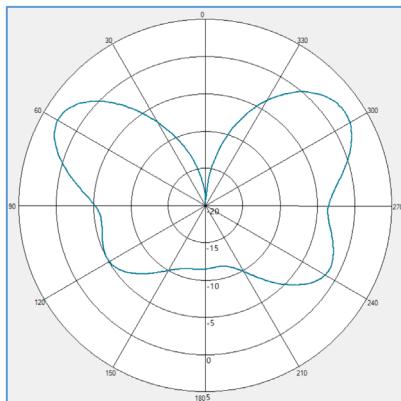
X-Z 2690MHz



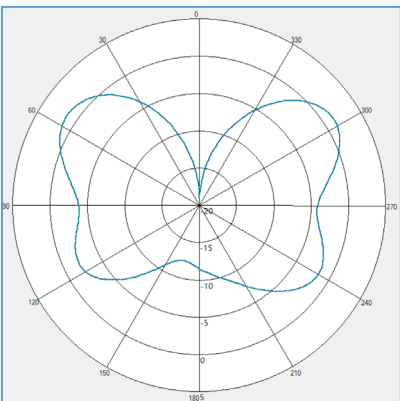
X-Y 2690MHz



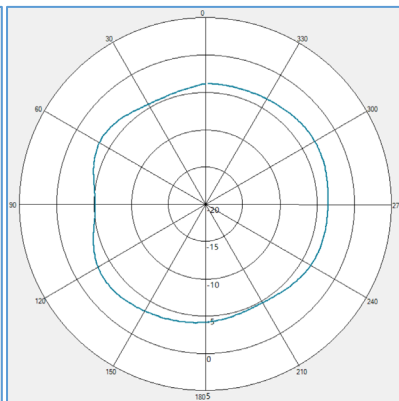
Y-Z 3300MHz



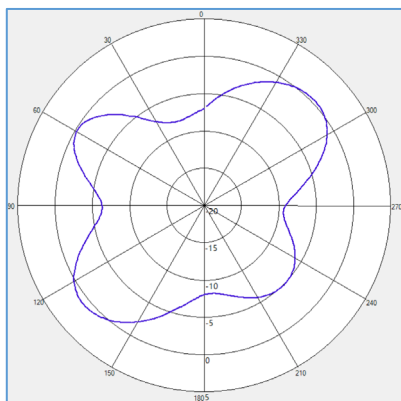
X-Z 3300MHz



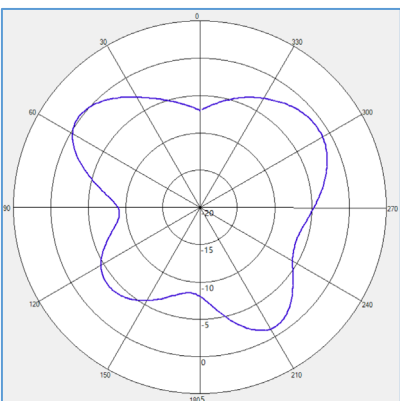
X-Y 3300MHz



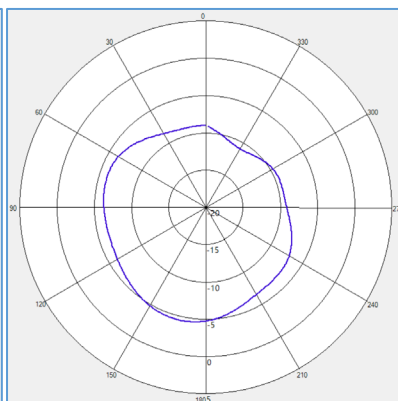
Y-Z 4200MHz



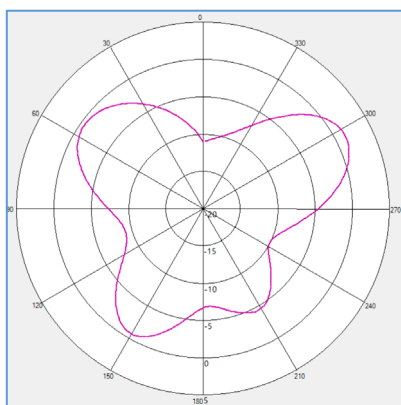
X-Z 4200MHz



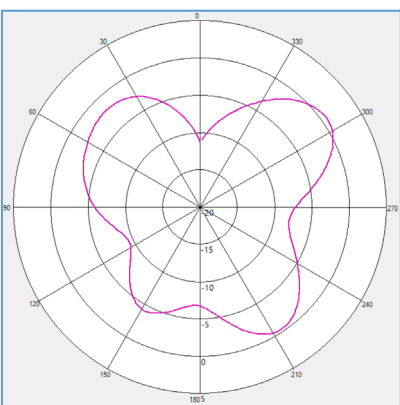
X-Y 4200MHz



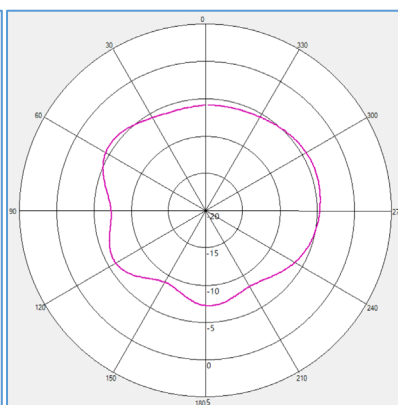
Y-Z 5000MHz



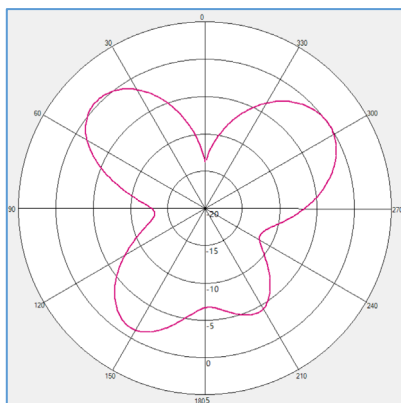
X-Z 5000MHz



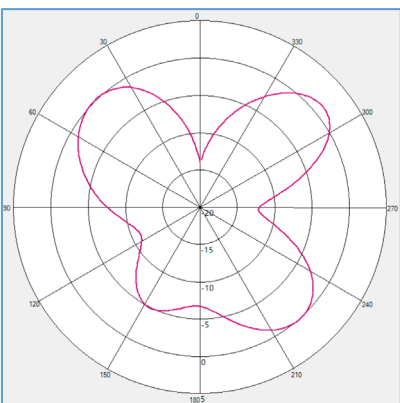
X-Y 5000MHz



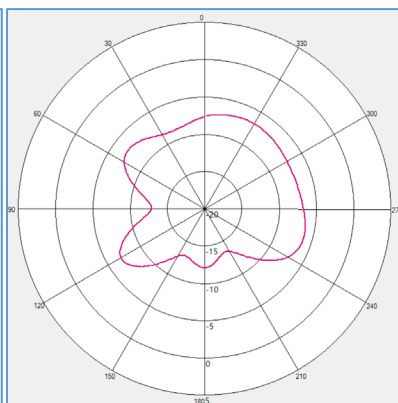
Y-Z 5200MHz



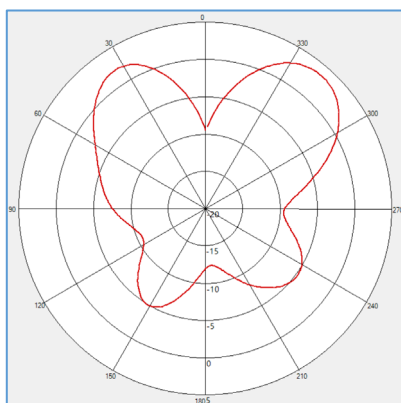
X-Z 5200MHz



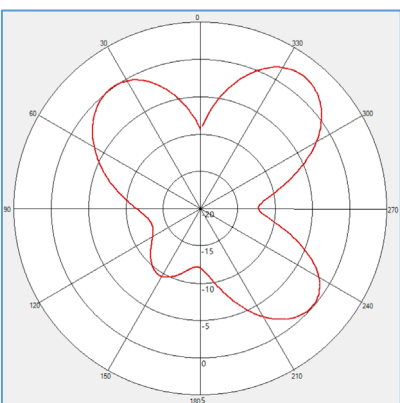
X-Y 5200MHz



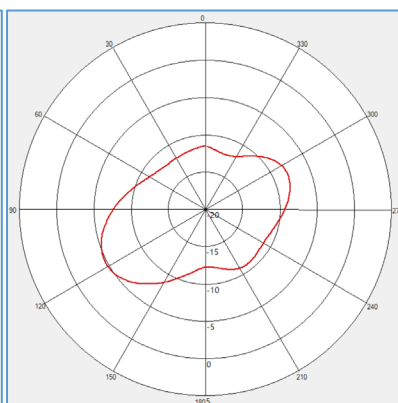
Y-Z 5900MHz



X-Z 5900MHz



X-Y 5900MHz



5.0 Environmental Specification

Description	Specification
Low Temperature Storage	1. Keep test samples in $-40\pm 2^{\circ}\text{C}$ chamber with 24 hours. 2. Parts should meet RF spec before and after test. 3. No cosmetic problem (No soldering problem; No adhesion problem of glue)
High Temperature Storage	1. Keep test samples in $85\pm 2^{\circ}\text{C}$ chamber with 48 hours. 2. Parts should meet RF spec before and after test. 3. No cosmetic problem (No soldering problem; No adhesion problem of glue)
Humidity Test	1. Test temperature: $40\pm 2^{\circ}\text{C}$, humidity: 95%, time: 96h 2. Parts should meet RF spec before and after test. 3. No cosmetic problem (No soldering problem; No adhesion problem of glue)
Thermal Cycle	1. 1. Test steps: 2. • Temperature High: $+85^{\circ}\text{C}$, uncontrolled humidity 3. • Temperature Low: -40°C, uncontrolled humidity 4. • Ramp Rate: $20^{\circ}\text{C} / \text{min}$. 5. • Dwell Time: 23 minutes at High and Low temperatures 6. Close to 60 min /cycle. 7. Repeat 30cycles. 8. Parts should meet RF spec before and after test. 9. No cosmetic problem (No soldering problem; No adhesion problem of glue)
Salt mist test	1. NACL concentration:$5\%\pm 1\%$; Temperature:$35\pm 2^{\circ}\text{C}$; PH Range:6.5-7.2, Salt fog deposition:1-2ml/(80cm²•h), Time:48h 2. Parts should meet RF spec before and after test. 3. No visible corrosion. 4. Discoloration acceptable
Mechanical Shock	1. Shock accelerated speed: $a=500\pm 10\% \text{ m/S}^2$, 2. Time input: $t=6 \text{ ms}$, Test 10 times each in six axis (X,Y,Z,-X,-Y,-Z) Mechanical and Function in spec after test 3. Mechanical and Function in spec after test.
Drop Test	1. Drop height :1 m, tested surface: each surface of product. The surface that product will land: Marble surface 2. Parts should meet RF spec before and after test. 3. No cosmetic problem (No discolor ,No crack, No damage)

6.0 Antenna Gain of Bands

Band		Uplink/Downlink (MHz)	Peak Gain(dBi)
2G	3G		
-	WCDMA B1	1920~1980	2.78
GSM-1900	WCDMA B2	1850~1910	2.70
GSM-1800	WCDMA B3	1710~1785	2.65
-	WCDMA B4	1710~1755	2.34
GSM-850	WCDMA B5	824~849	-0.93
-	WCDMA B6	830~840	-0.93
GSM-900	WCDMA B8	880~915	-0.89
-	WCDMA B9	1749.9~1784.9	2.65
-	WCDMA B19	830~845	-0.93
-	CDMA2000 BC10	806~901	-0.86
-	CDMA2000 BC0	815~849	-0.93
-	CDMA2000 BC1	1850~1910	2.70
-	CDMA2000 BC15	1710~1755	2.34

Band		Uplink (MHz)	Peak Gain(dBi)
4G LTE	5G NR		
FDD 1	NR 1	1920 – 1980	2.78
FDD 2	NR 2	1850 – 1910	2.70
FDD 3	NR 3	1710 – 1785	2.65
FDD 4	-	1710 – 1755	2.34
FDD 5	NR 5	824 – 849	-0.93
FDD 6	-	830 – 840	-0.93
FDD 7	NR 7	2500 – 2570	2.38
FDD 8	NR 8	880 – 915	-0.89
FDD 9	-	1749.9 – 1784.9	2.65
FDD 10	-	1710 – 1770	2.65
FDD 11	-	1427.9 – 1447.9	1.76
FDD 12	NR 12	699 – 716	-1.16

Band		Uplink (MHz)	Peak Gain(dBi)
4G LTE	5G NR		
FDD 13	NR 13	777 – 787	-1.06
FDD 14	NR 14	788 – 798	-1.06
FDD 17	-	704 – 716	-1.16
FDD 18	NR 18	815 – 830	-0.93
FDD 19	-	830 – 845	-0.93
FDD 20	NR 20	832 – 862	-0.93
FDD 21	-	1447.9 – 1462.9	1.88
FDD 22	-	3410 – 3500	2.75
FDD 23	-	2000 – 2020	2.90

Band		Uplink (MHz)	Peak Gain(dBi)
4G LTE	5G NR		
FDD 24	NR 24	1626.5 – 1660.5	1.98
FDD 25	NR 25	1850 – 1915	2.70
FDD 26	NR 26	814 – 849	-0.93
FDD 27	-	807 – 824	-0.91
FDD 28	NR 28	703 – 748	-1.16
FDD 30	NR 30	2305 – 2315	2.29
FDD 65	NR 65	1920 – 2010	2.78
FDD 66	NR 66	1710 – 1780	2.65
FDD 68	-	698 – 728	-1.16
FDD 70	NR 70	1695 ~1720	2.50
FDD 71	NR 71	663 – 698	-1.2
FDD 74	NR 74	1427 – 1470	1.88
-	SUL-NR 80	1710~1785	2.65
-	SUL-NR 81	880~915	-0.89
-	SUL-NR 82	832~862	-0.93
-	SUL-NR 83	703 ~748	-1.16
-	SUL-NR 84	1920~1980	2.78
FDD 85	NR 85	698 – 716	-1.16
-	SUL-NR 86	1710~1780	2.65
-	SUL-NR 89	824~849	-0.93
-	NR 91	832~862	-0.93
-	NR 92	832~862	-0.93
-	NR 93	880~915	-0.89
-	NR 94	880~915	-0.89
-	SUL-NR 95	2010~2025	2.61
-	SUL-NR 97	2300~2400	2.81
-	SUL-NR 98	1880~1920	2.70
-	SUL-NR 99	1626.5 ~1660.5	1.98

Band		Uplink/Downlink (MHz)	Peak Gain(dBi)
4G LTE	5G NR		
TDD 33	-	1900 – 1920	2.78
TDD 34	NR 34	2010 – 2025	2.87
TDD 35	-	1850 – 1910	2.70
TDD 36	-	1930 – 1990	2.78
TDD 37	-	1910 – 1930	2.78
TDD 38	NR 38	2570 – 2620	1.76
TDD 39	NR 39	1880 – 1920	2.70
TDD 40	NR 40	2300 – 2400	2.81
TDD 41	NR 41	2496 – 2690	2.53
TDD 42	-	3400 – 3600	2.75
TDD 43	-	3600 – 3800	2.62

Band		Uplink/Downlink (MHz)	Peak Gain(dBi)
4G LTE	5G NR		
TDD 44	-	703 – 803	-1.06
TDD 45	-	1447 – 1467	1.88
TDD 46	NR 46	5150 – 5925	3.42
TDD 47	NR 47	5855 – 5925	3.11
TDD 48	NR 48	3550 – 3700	2.55
TDD 49	-	3550 – 3700	2.55
TDD 50	NR 50	1432 – 1517	1.88
TDD 51	NR 51	1427 – 1432	1.76
TDD 52	-	3300 – 3400	2.85
TDD 53	NR 53	2483.5 – 2495	2.59
-	NR 77	3300~4200	2.85
-	NR 78	3300~3800	2.85
-	NR 79	4400~5000	2.87
-	NR 90	2496~2690	2.53
-	NR 101	1900~1910	2.89

Band	Uplink/Downlink (MHz)	Peak Gain(dBi)
WIFI		
2.4G	2400 - 2500	2.59
5.0G	5150~5250	1.91
	5250~5350	3.04
	5350~5450	3.07
	5450~5725	2.65
	5725~5850	3.42

Revision History

Revision	Date	Description
1.0	Nov.14 2024	First Release
2.0	May.19.2026	Supplement manufacturer information



Empowering Every IoT Device with Our Technology

6540 Lusk Blvd. Suite C166 San Diego CA 92121

service@thundercomm.com

+86-10-62662686

www.thundercomm.com

Copyright Thundercomm Technology Co., Ltd. 2019 All right reserved