TAOGLAS

Datasheet

LTE/5GNR Terminal Mount Monopole Antenna

Part No:
TG.55.8113

Description:

LTE Terminal Antenna with 90° Hinged SMA (M) Connector

Features:

Covering Worldwide LTE Bands

Covering Sub 6GHz 5GNR Bands

600MHz-6GHz Operation

High Efficiency up to 80%

3G/2G Fallback

90° Hinged Right Angle SMA (M) Connector

Straight Dimensions: 172 x 23.9 x 13 mm

Right Angle Dimensions: 148 x 42.4 x 13 mm

RoHS & REACH Compliant

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1. Introduction

The hinged TG.55 Dipole LTE Antenna – is primarily designed for use with 4G LTE 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. The TG.55 also covers many 5G NR Sub 6GHz bands and the antenna has an SMA (M) connector as standard, including the new 600MHz band 71.

Typical Applications include:

- Gateways & Routers
- Industrial IoT
- Smart Metering
- Smart Home
- Vending Machines
- Connected Enterprise

The TG.55 exhibits an efficiency of up to 80% across wideband 4G LTE bands and is backward compatible with 3G and 2G cellular applications such as GSM, LTE, UMTS, WI-FI. With high efficiency on every cellular band globally it is an ideal solution for any device requiring high, reliable performance but in a slim form factor. It is also guaranteed to meet any type of approval or carrier certification requirements from an RF standpoint.

The TG.55 is a fully omnidirectional antenna as seen in the radiation patterns and is stable across all bands. The SMA (M) connector swivel mechanism allows the antenna to be rotated into the preferred orientation which helps to avoid other antennas or objects. This also helps with isolation by pointing the antennas in different directions when used in MIMO systems or when other antennas are present on the same device. The antenna blade can swivel 90 degrees from the connector accommodating different installation configurations.

Contact your regional Taoglas customer support team to request these services or additional support to integrate and test this antenna's performance in your device.

2. Specifications

LTE Antenna											
Frequency (MHz)	5G NR Band 71	LTE700	GSM 850/900	5G NR Band 74, 75, 76	DCS	PCS	UMTS1	LTE2600	5G NR Band	Japan 5G NR	LTE5200/ Wi-Fi 5800
	617 ~698	698 ~824	824 ~960	1427~ 1518	1710 ~1880	1850 ~1990	1920 ~2170	2300 ~2690	3300 ~3500	3600 ~4600	5150 ~5925
Efficiency (%)											
Bent with ground 9x15cm	44.01	52.07	69	57.07	80.45	75.75	65.15	61.64	55.63	69.55	48.31
Straight with ground 9x15cm	43.09	59.36	73.50	56.36	80.25	78.42	68.40	60.20	56.57	70.75	45.76
Average Gain (dB)											
Bent with ground 9x15cm	-3.56	-2.83	-1.61	-2.44	-0.94	-1.21	-1.86	-2.10	-2.55	-1.58	-3.16
Straight with ground 9x15cm	-3.66	-2.27	-1.34	-2.49	-0.96	-1.06	-1.65	-2.20	-2.47	-1.50	-3.40
Peak Gain (dBi)											
Bent with ground 9x15cm	0.62	1.68	2.66	1.51	2.79	2.82	2.72	2.14	2.91	3.95	2.97
Straight with ground 9x15cm	1.26	2.51	3.20	4.05	3.40	3.05	3.05	3.12	2.62	3.99	3.08
Impedance	50Ω										
Polarization	Linear										
Radiation Pattern	Omni										
Max. input power	2W										

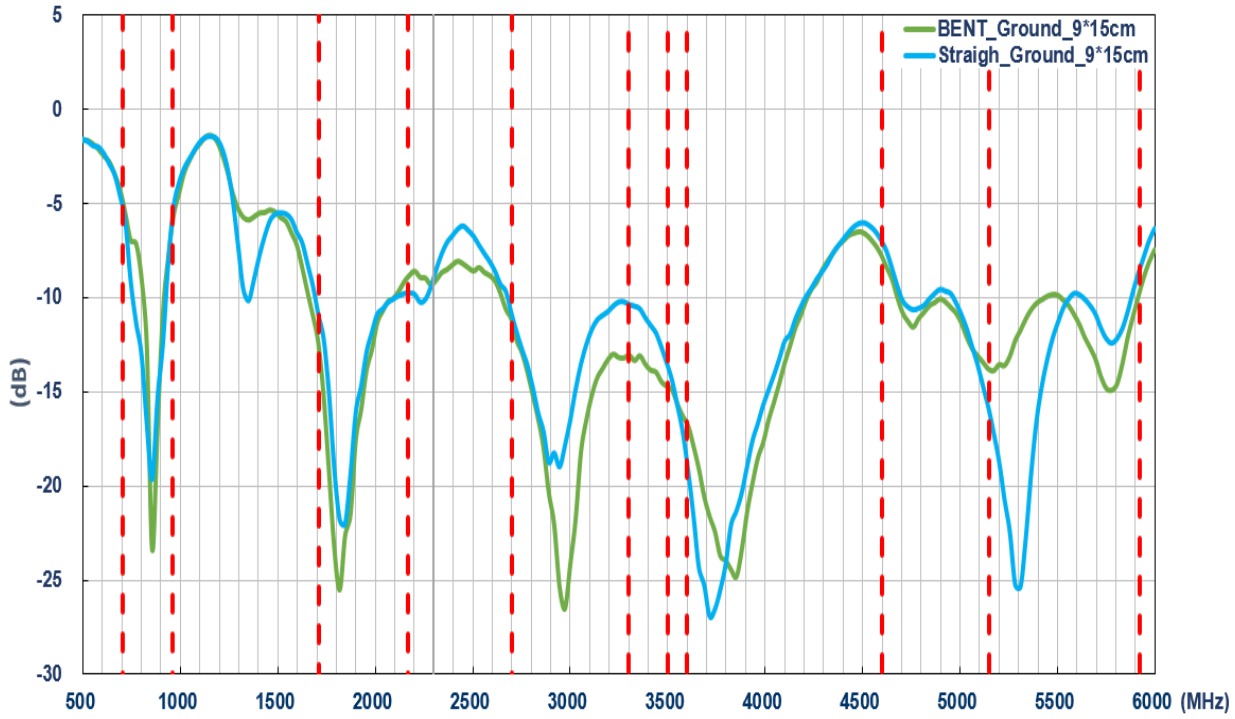
*The test data is based on 9x15cm ground plane

Mechanical	
SMA Connector Diameter	13mm
Planner Dimension	172mm * 23.88mm
Casing	ABS + PC
Connector	SMA (M)
Weight	24.3g
Environmental	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

LTE Bands				
Band Number	LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA			
	Uplink	Downlink	Covered	Covered
1	UL: 1920 to 1980	DL: 2110 to 2170	✓	✓
2	UL: 1850 to 1910	DL: 1930 to 1990	✓	✓
3	UL: 1710 to 1785	DL: 1805 to 1880	✓	✓
4	UL: 1710 to 1755	DL: 2110 to 2155	✓	✓
5	UL: 824 to 849	DL: 869 to 894	✓	✓
7	UL: 2500 to 2570	DL:2620 to 2690	✓	✓
8	UL: 880 to 915	DL: 925 to 960	✓	✓
9	UL: 1749.9 to 1784.9	DL: 1844.9 to 1879.9	✓	✓
11	UL: 1427.9 to 1447.9	DL: 1475.9 to 1495.9	✓	✓
12	UL: 699 to 716	DL: 729 to 746	✓	✓
13	UL: 777 to 787	DL: 746 to 756	✓	✓
14	UL: 788 to 798	DL: 758 to 768	✓	✓
17	UL: 704 to 716	DL: 734 to 746 (LTE only)	✓	✓
18	UL: 815 to 830	DL: 860 to 875 (LET only)	✓	✓
19	UL: 830 to 845	DL: 875 to 890	✓	✓
20	UL: 832 to 862	DL: 791 to 821	✓	✓
21	UL: 1447.9 to 1462.9	DL: 1495.9 to 1510.9	✓	✓
22	UL: 3410 to 3490	DL: 3510 to 3590	✓	✓
23	UL:2000 to 2020	DL: 2180 to 2200 (LTE only)	✓	✓
24	UL:1625.5 to 1660.5	DL: 1525 to 1559 (LTE only)	✓	✓
25	UL: 1850 to 1915	DL: 1930 to 1995	✓	✓
26	UL: 814 to 849	DL: 859 to 894	✓	✓
27	UL: 807 to 824	DL: 852 to 869 (LTE only)	✓	✓
28	UL: 703 to 748	DL: 758 to 803 (LTE only)	✓	✓
29	UL: -	DL: 717 to 728 (LTE only)		✓
30	UL: 2305 to 2315	DL: 2350 to 2360 (LTE only)	✓	✓
31	UL: 452.5 to 457.5	DL: 462.5 to 467.5 (LTE only)	-	-
32	UL: -	DL: 1452 - 1496		✓
35	1850 to 1910		✓	✓
38	2570 to 2620		✓	✓
39	1880 to 1920		✓	✓
40	2300 to 2400		✓	✓
41	2496 to 2690		✓	✓
42	3400 to 3600		✓	✓
43	3600 to 3800		✓	✓
71	617-698MHz		✓	✓

3. Antenna Characteristics

3.1 Return Loss



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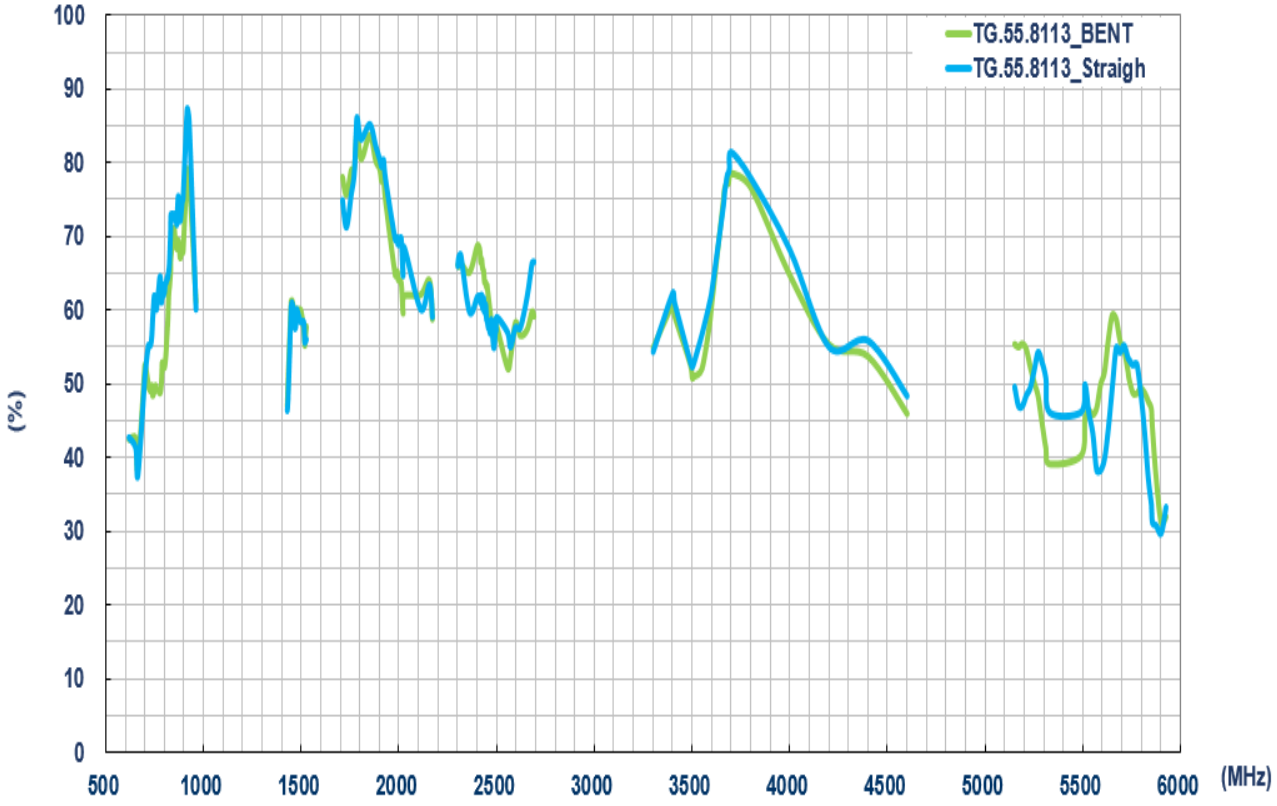

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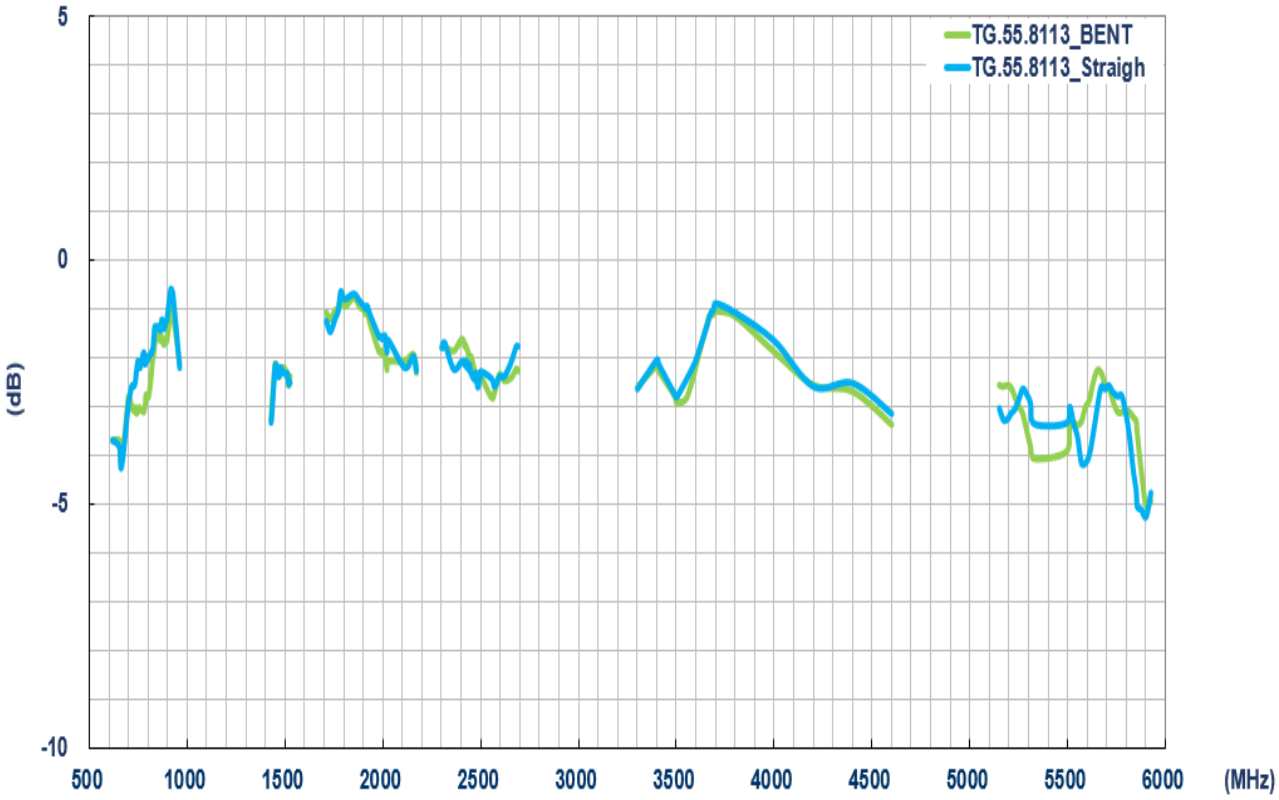

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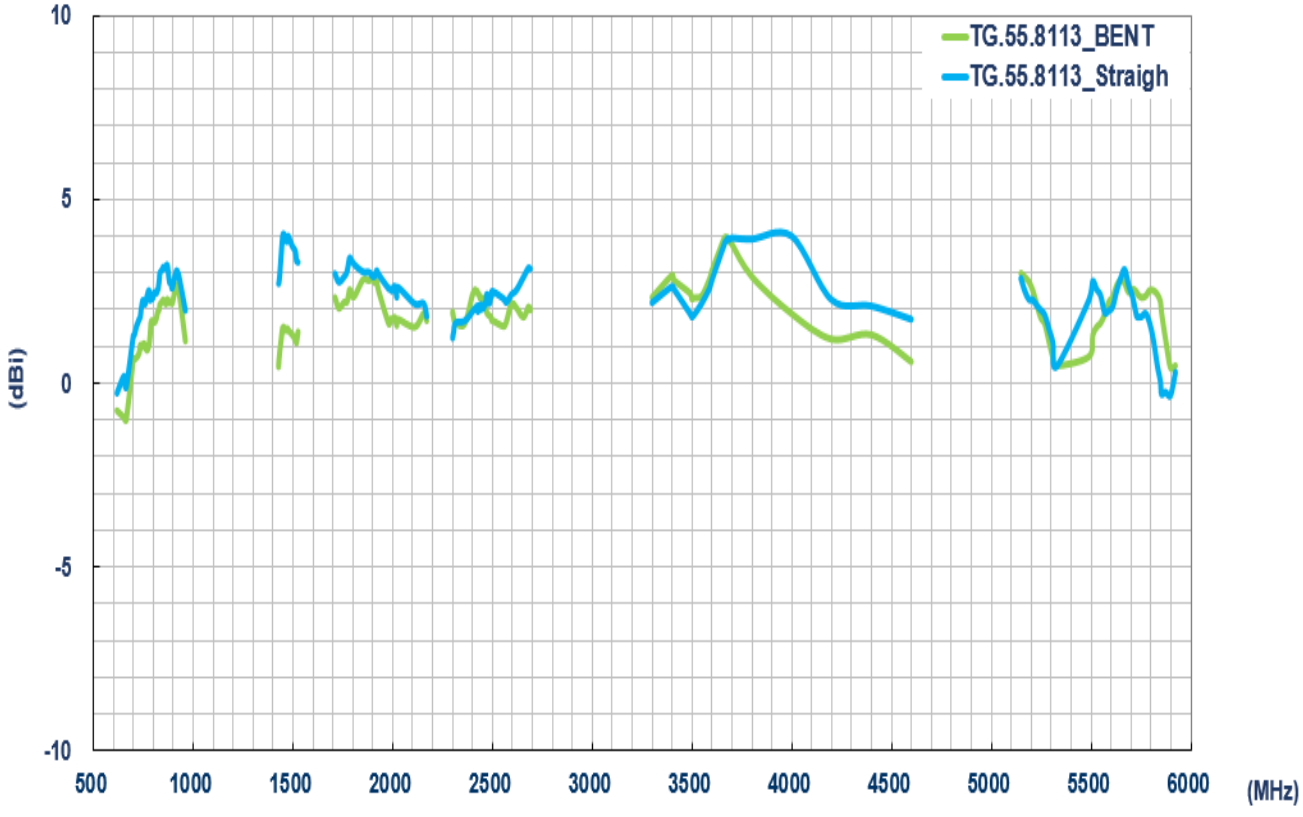
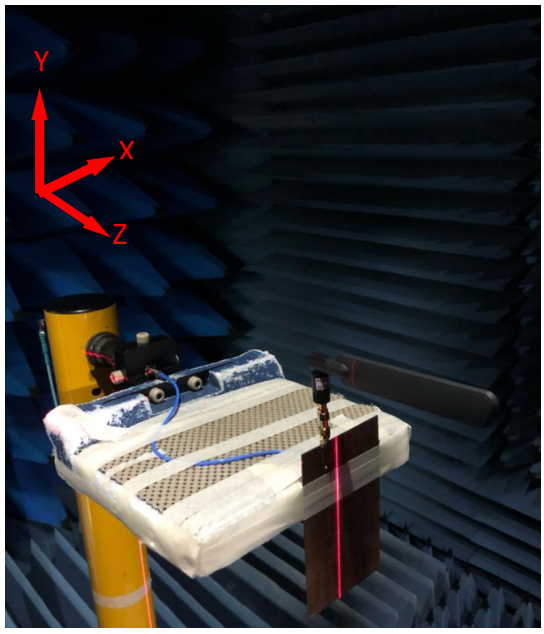


4. Radiation Patterns

4.1 Test Setup

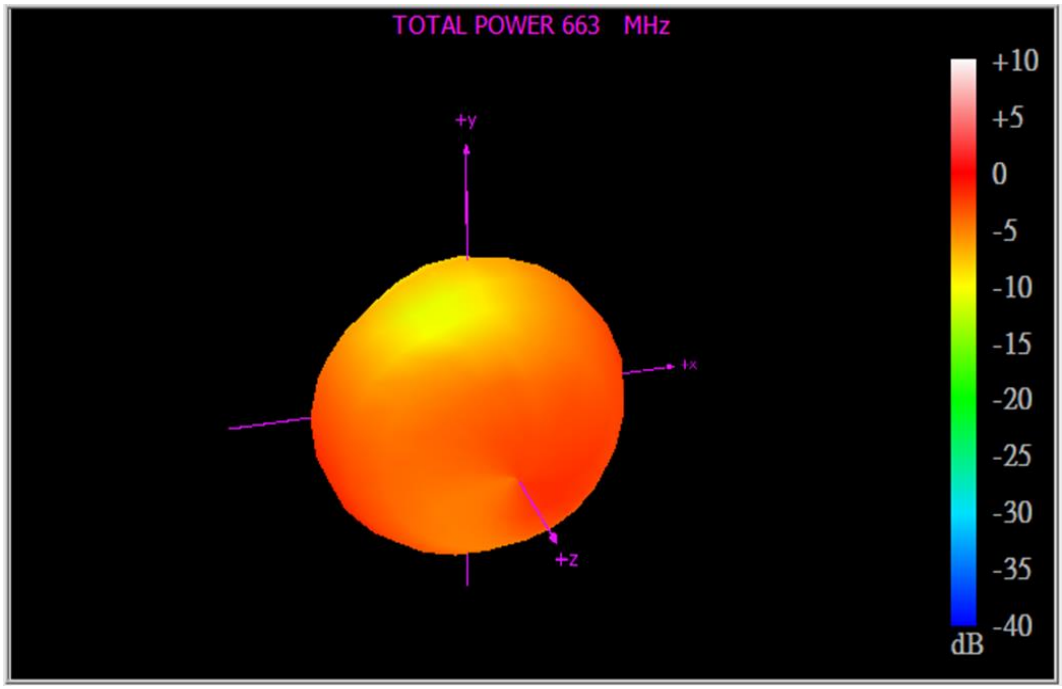
Straight With Ground_9*15cm



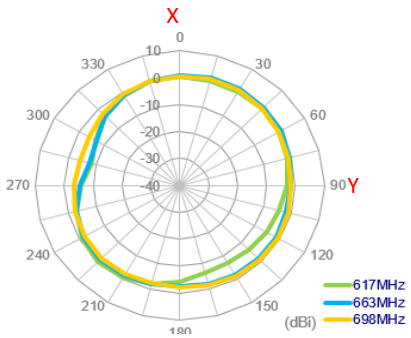
Bent With Ground_9*15cm

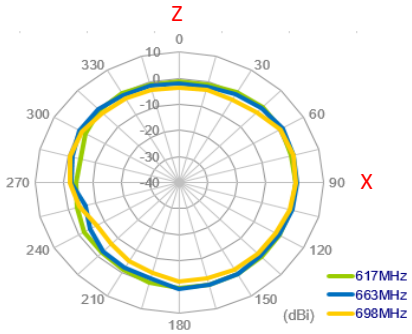
4.2 LTE Bent 2D & 3D Radiation Patterns

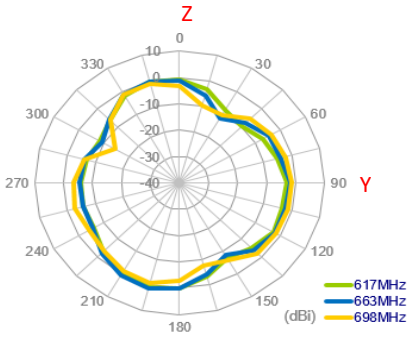
663MHz



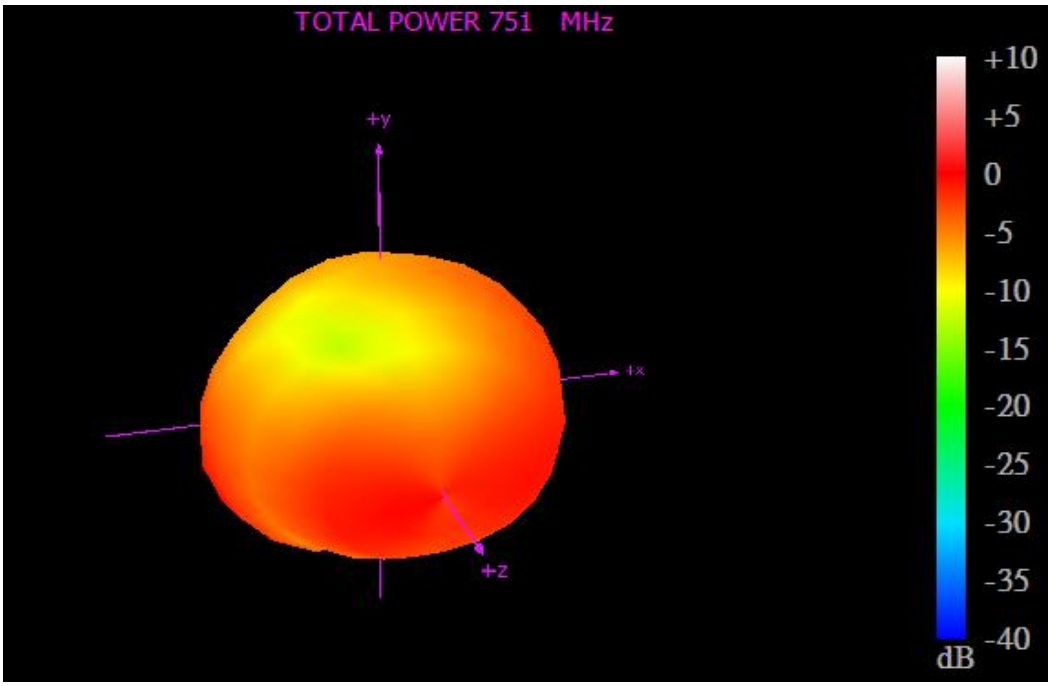
XY Plane	XZ Plane	YZ Plane



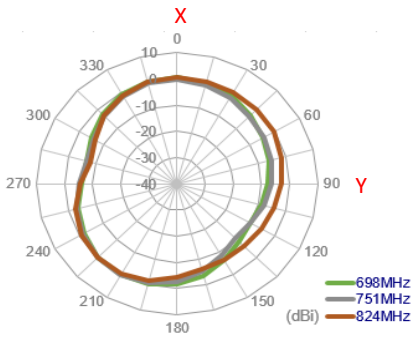


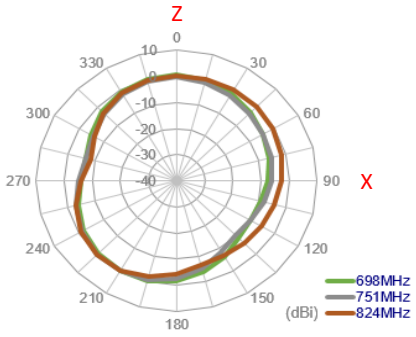


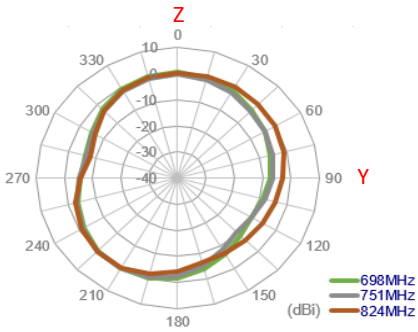
751MHz



XY Plane	XZ Plane	YZ Plane

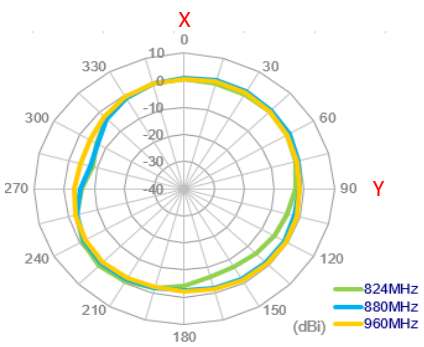


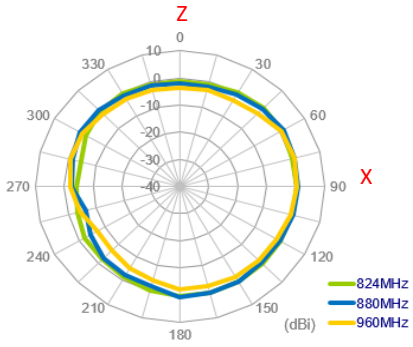


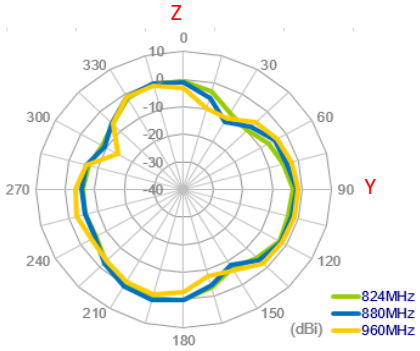


880MHz

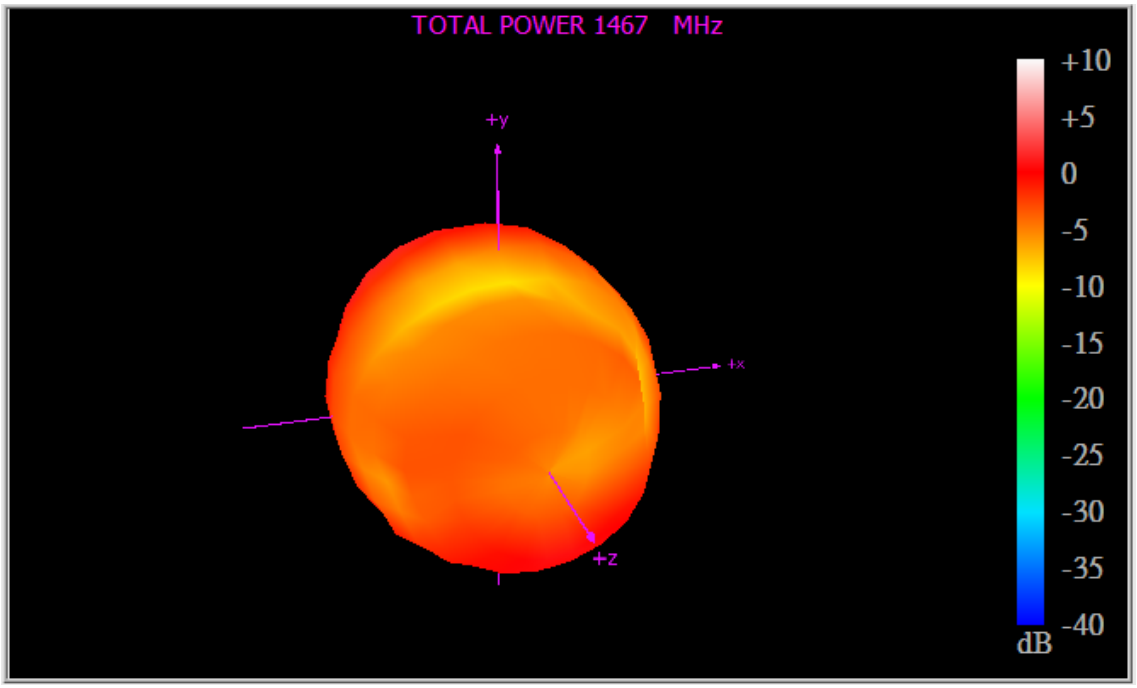
XY Plane	XZ Plane	YZ Plane



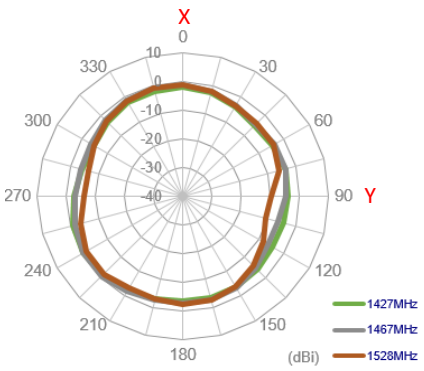


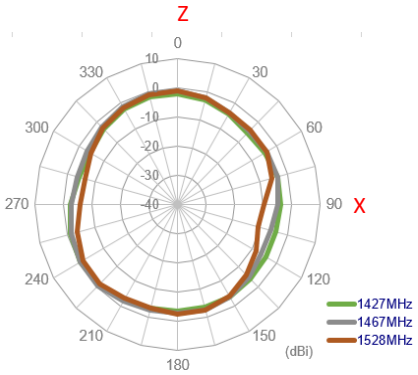


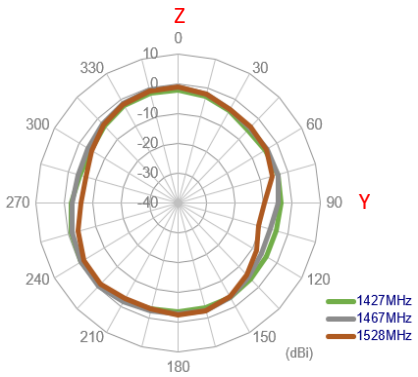
1467MHz



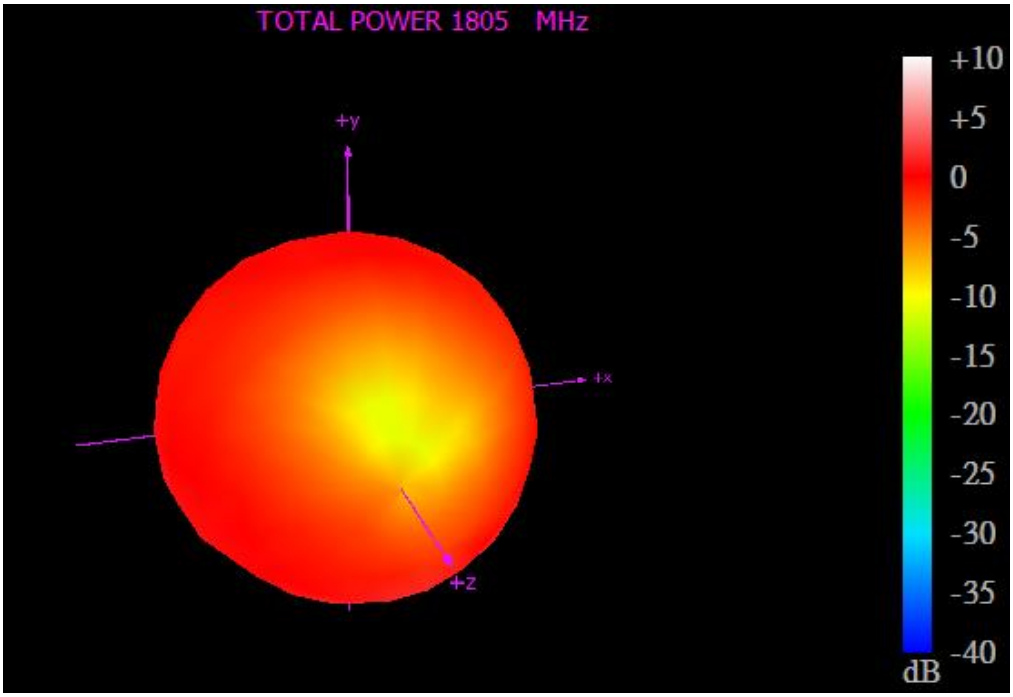
XY Plane	XZ Plane	YZ Plane



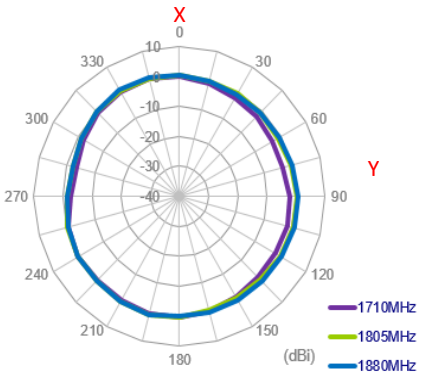


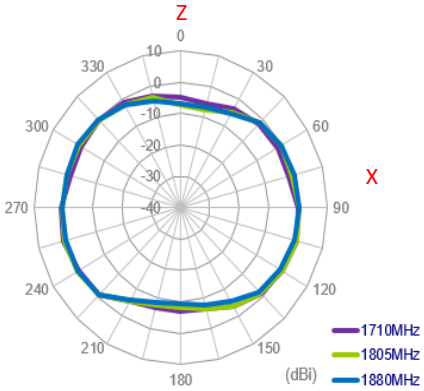


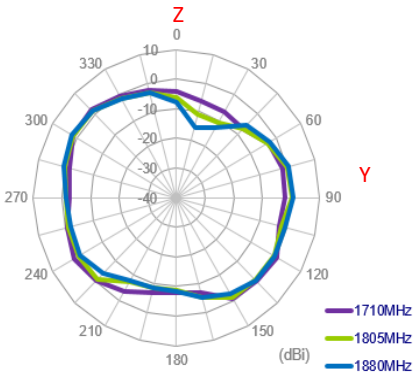
1805MHz



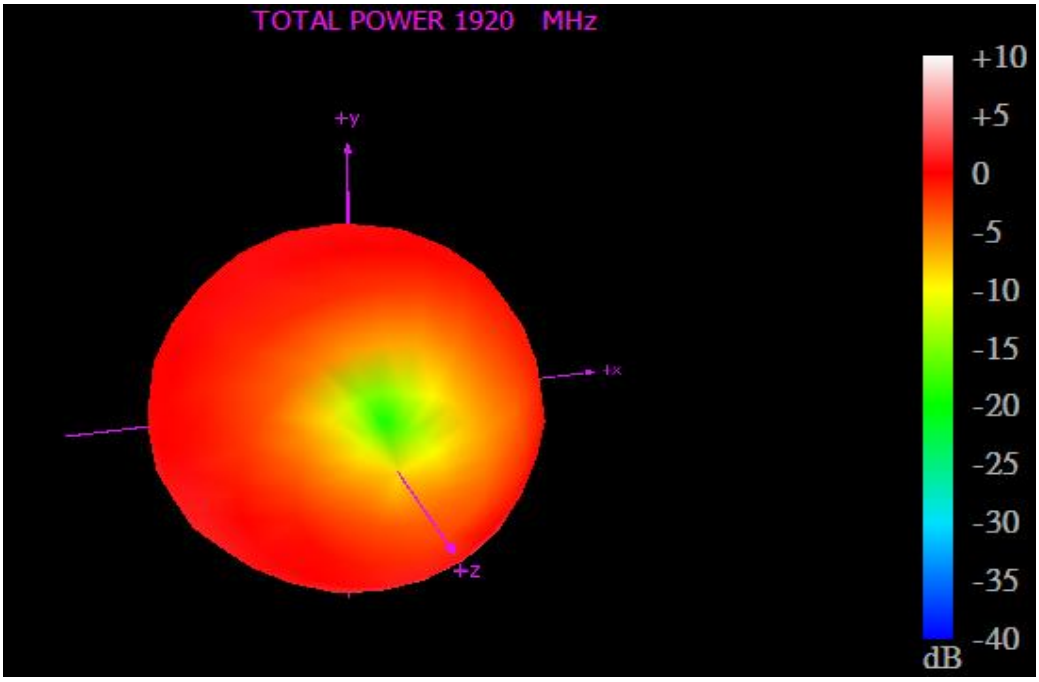
XY Plane	XZ Plane	YZ Plane

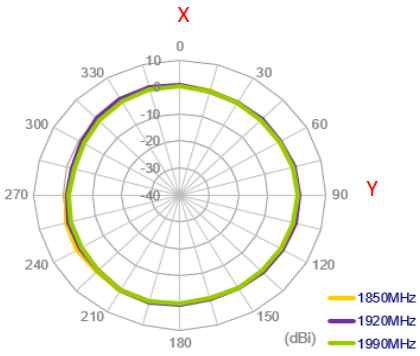
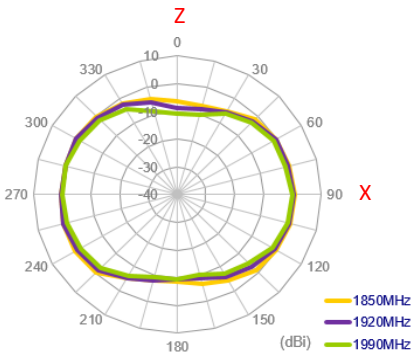
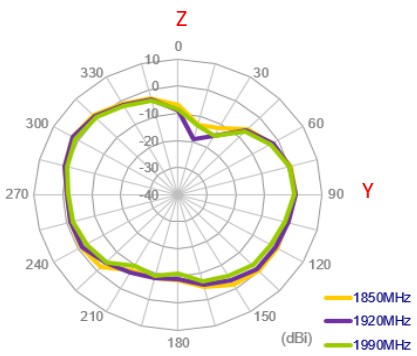




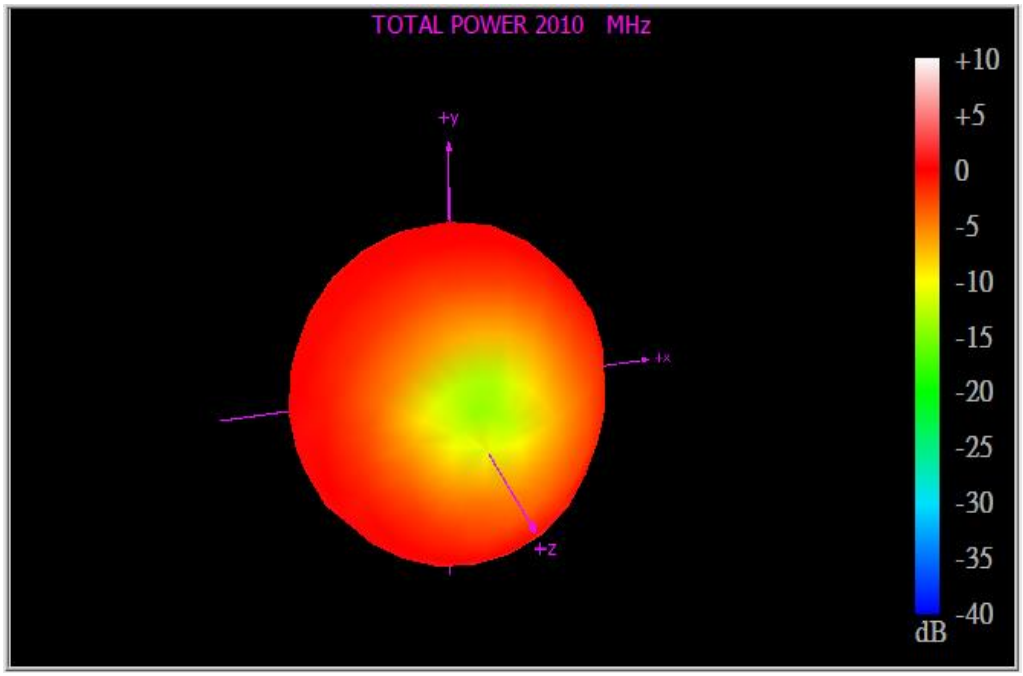


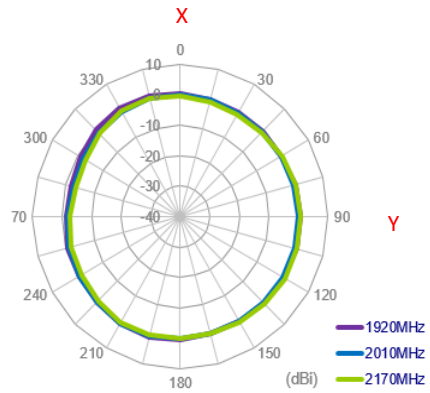
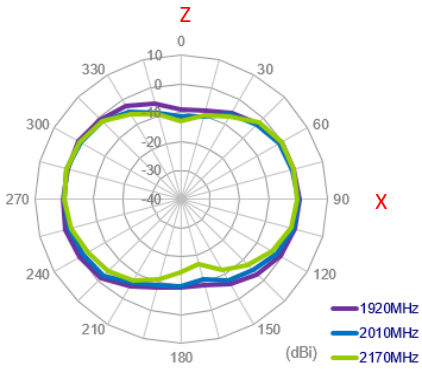
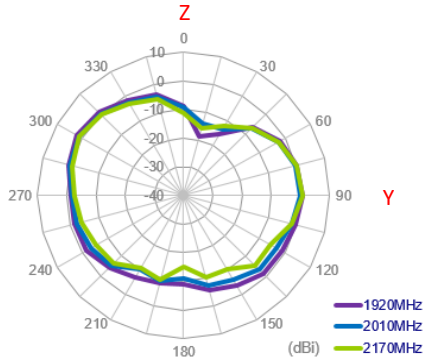
1920MHz



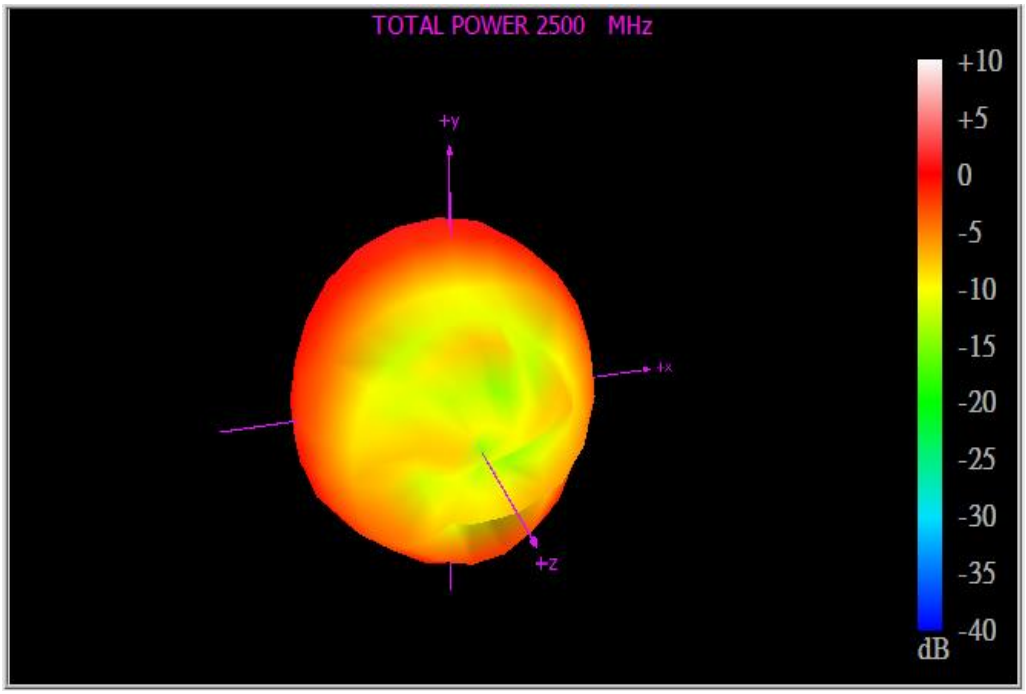
XY Plane	XZ Plane	YZ Plane
		

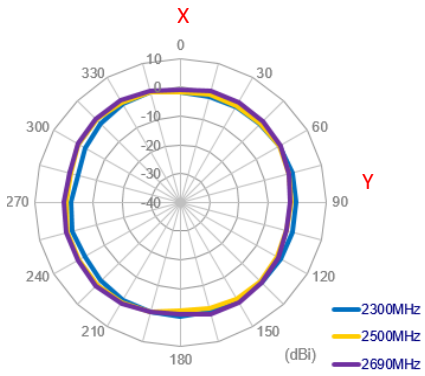
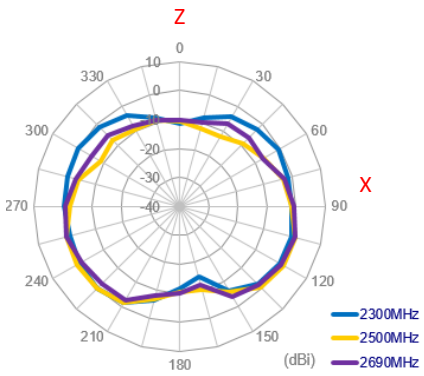
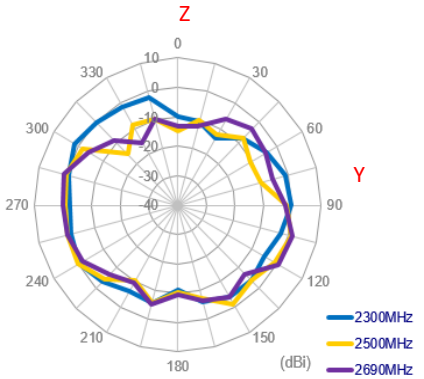
2010MHz



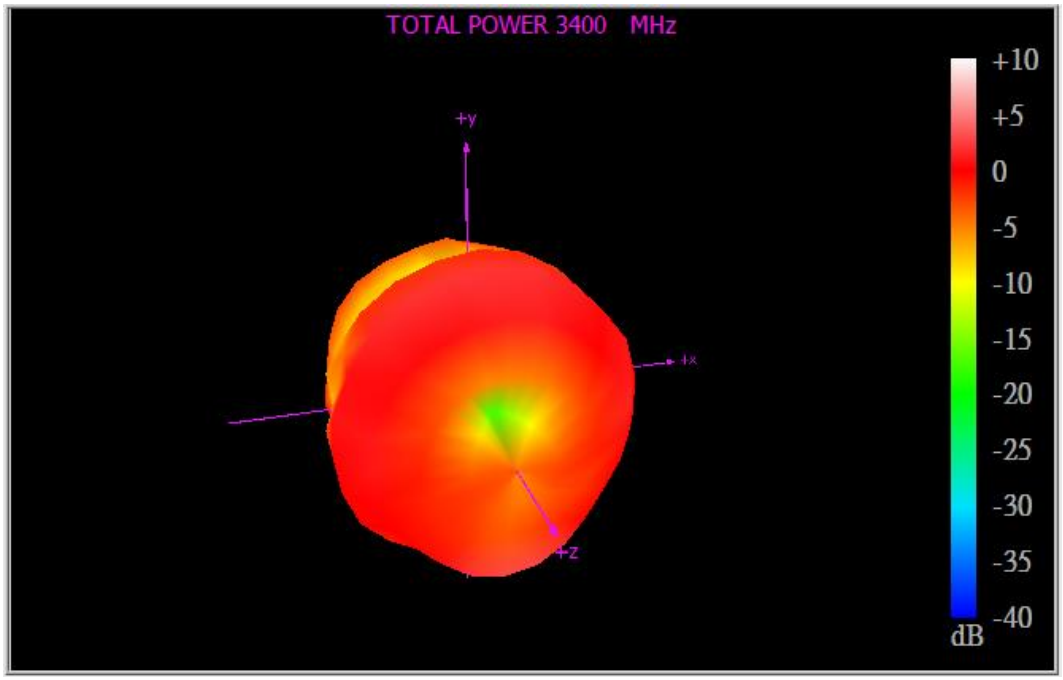
XY Plane	XZ Plane	YZ Plane
		

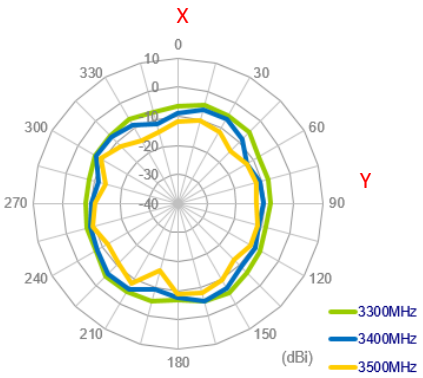
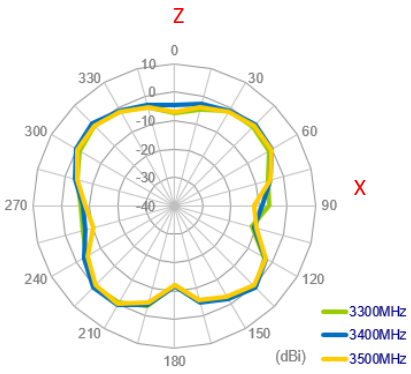
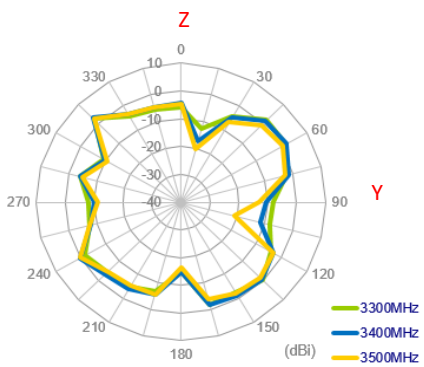
2500MHz



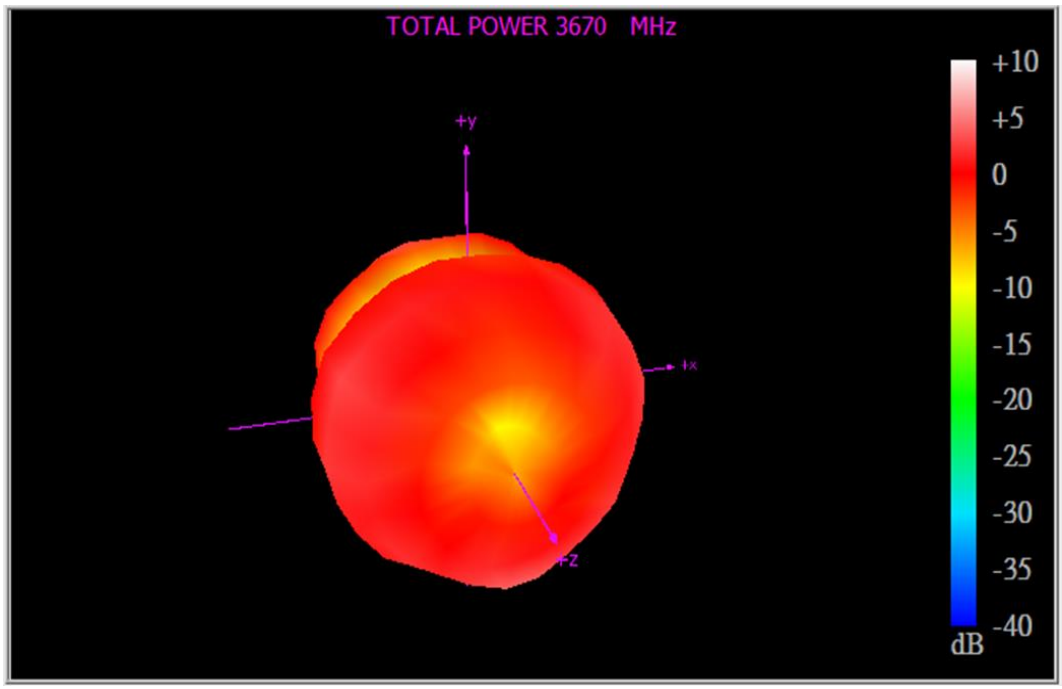
XY Plane	XZ Plane	YZ Plane
		

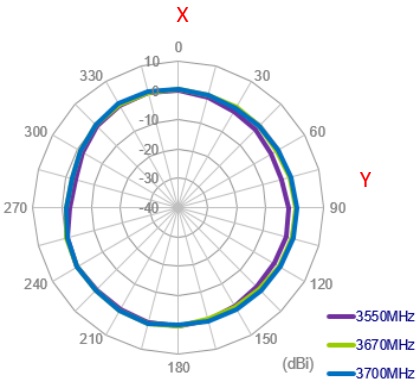
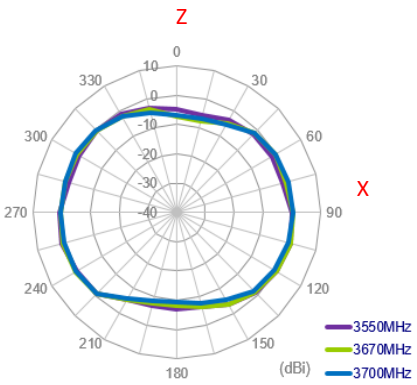
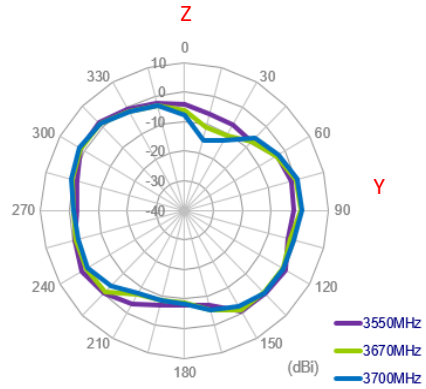
3400MHz



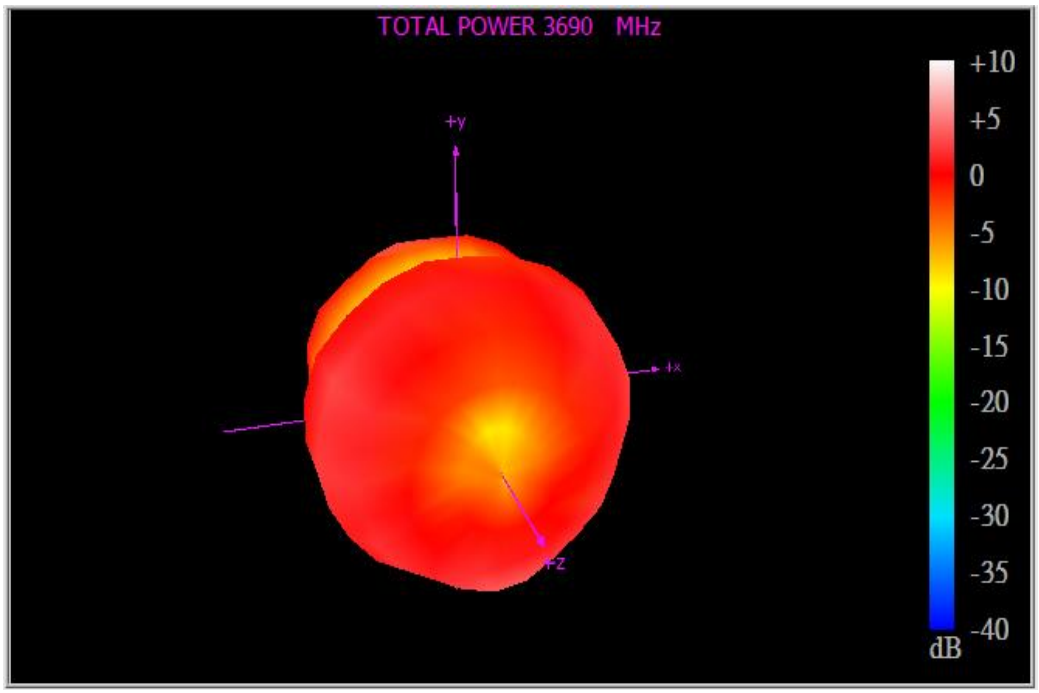
XY Plane	XZ Plane	YZ Plane
		

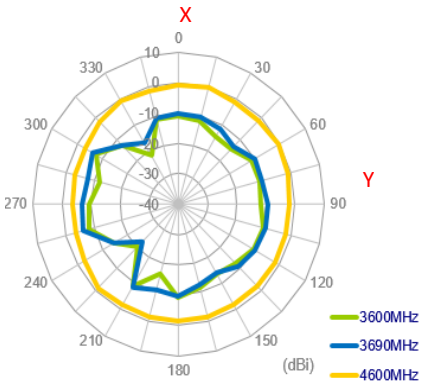
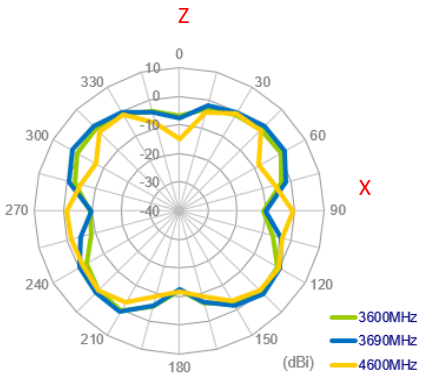
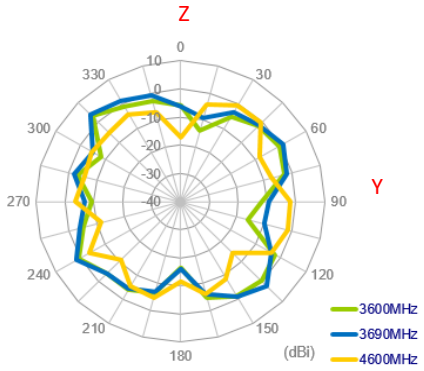
3670MHz



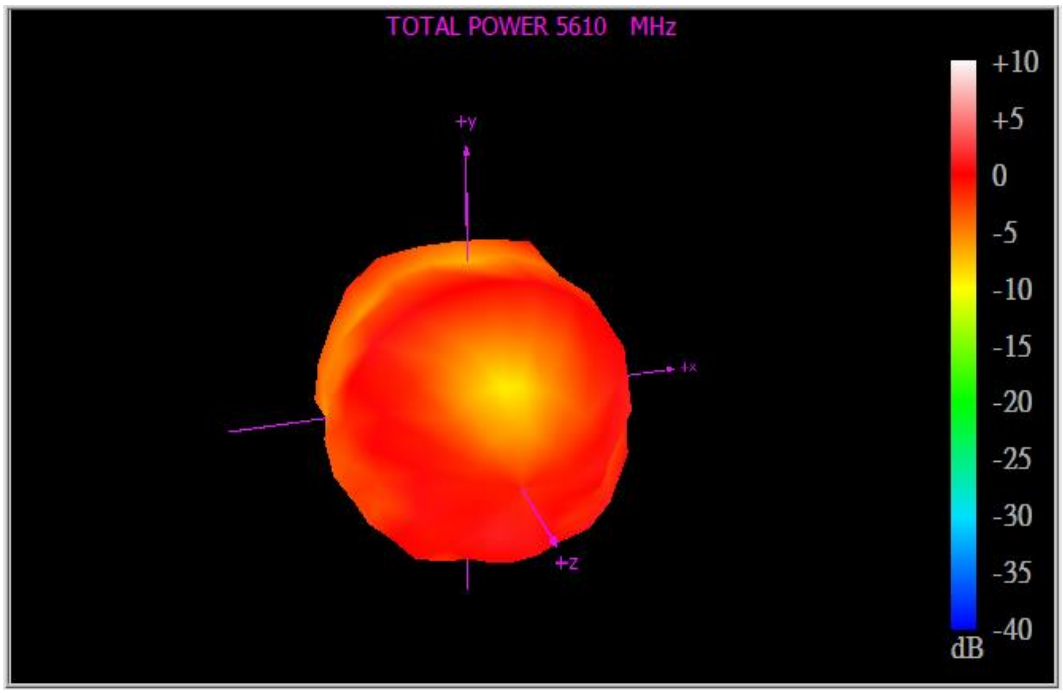
XY Plane	XZ Plane	YZ Plane
		

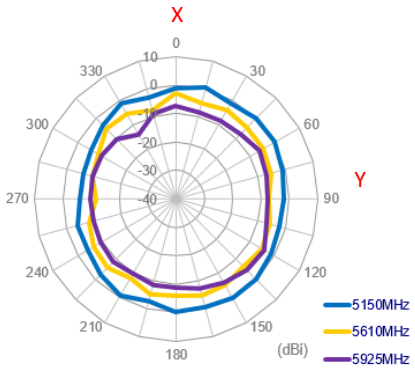
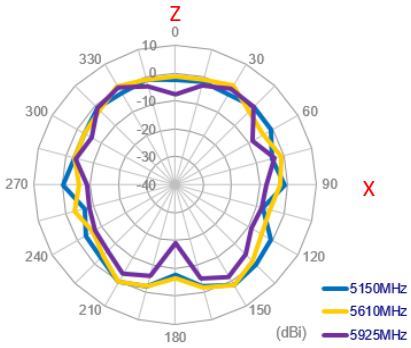
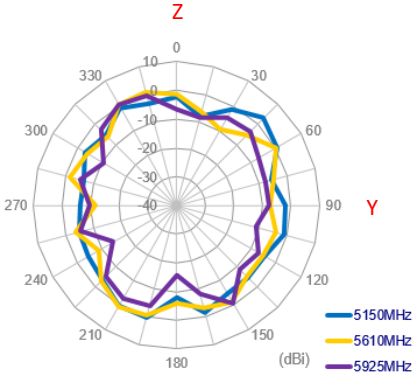
3690MHz



XY Plane	XZ Plane	YZ Plane
		

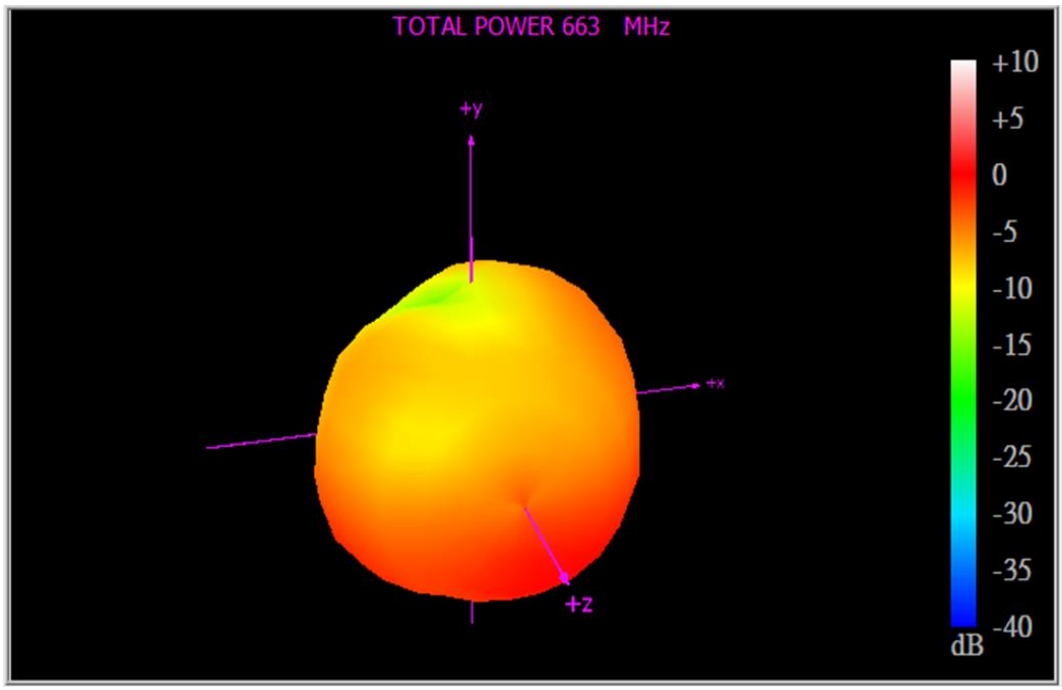
5610MHz



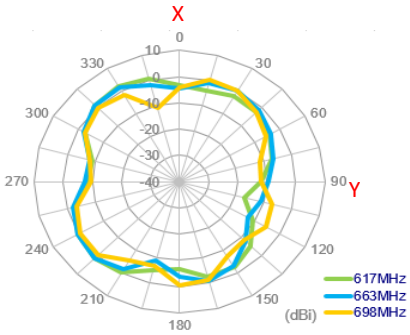
XY Plane	XZ Plane	YZ Plane
		

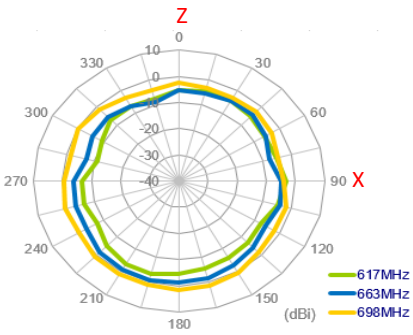
4.3 LTE Straight 2D & 3D Radiation Pattern

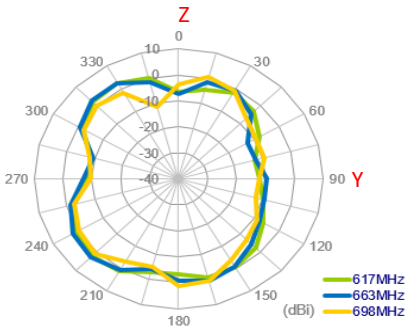
663 MHz



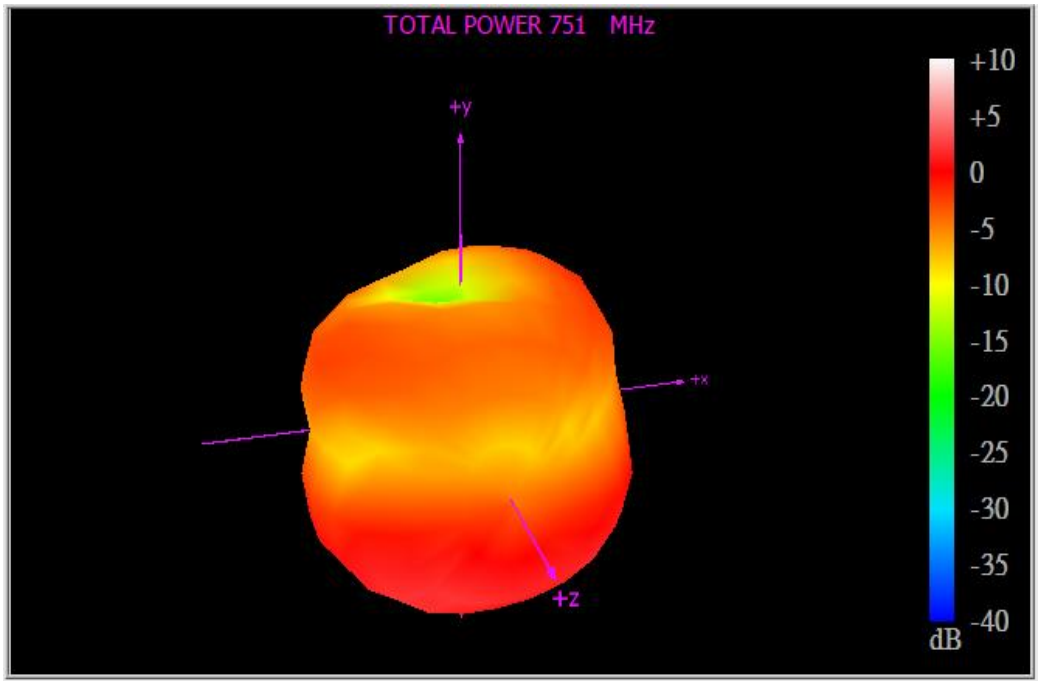
XY Plane	XZ Plane	YZ Plane



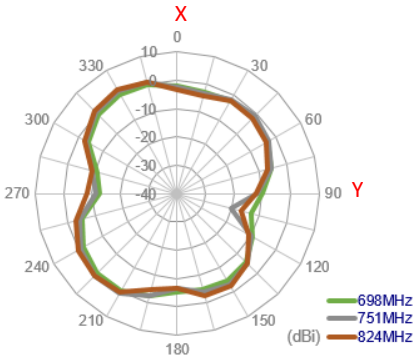


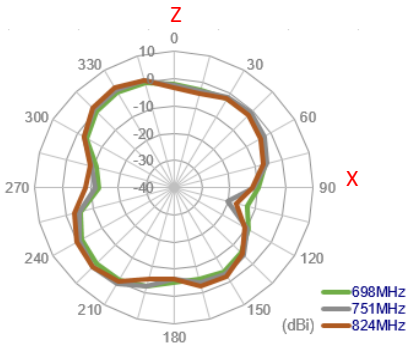


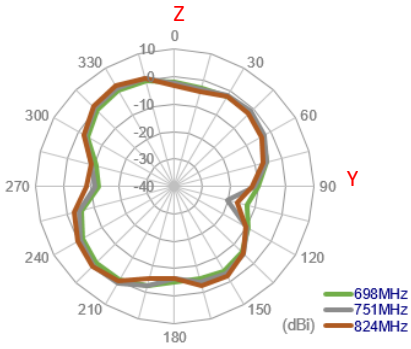
751 MHz



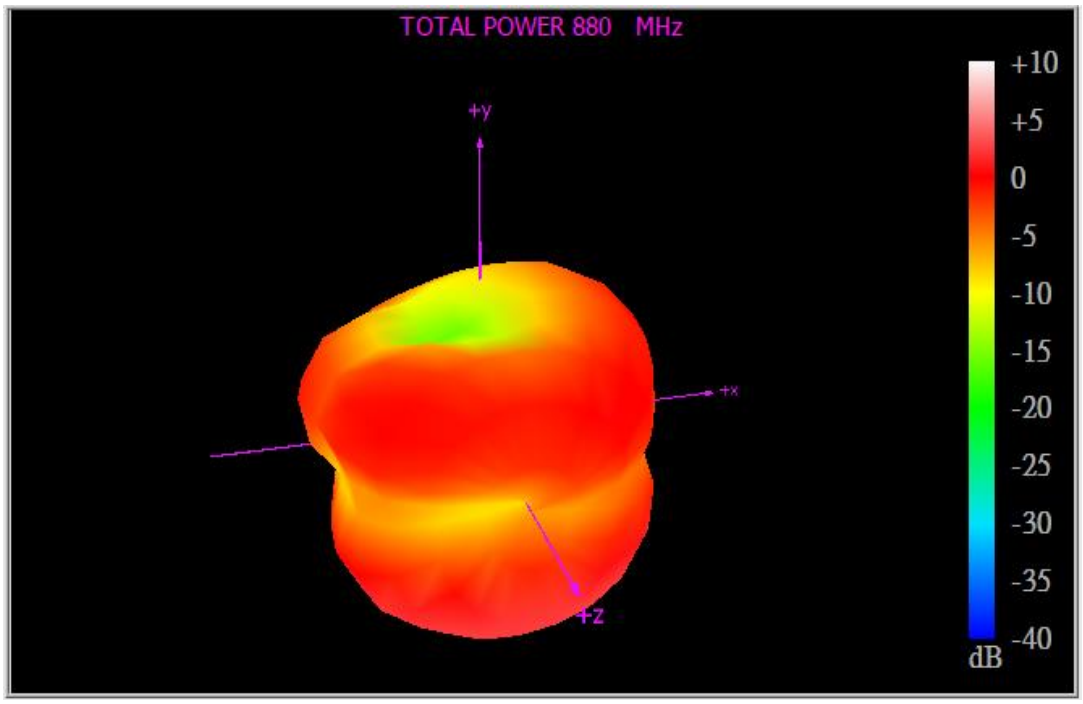
XY Plane	XZ Plane	YZ Plane



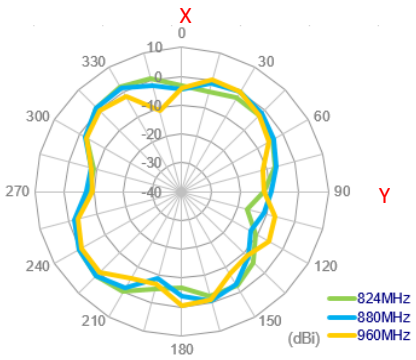


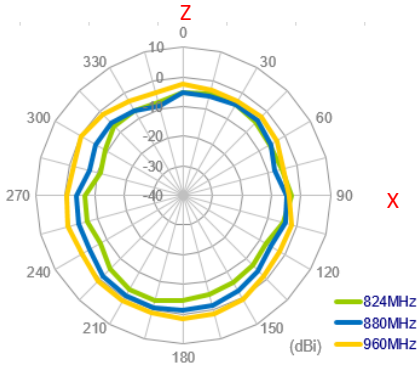


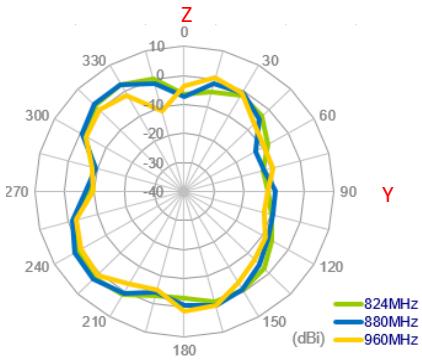
880MHz



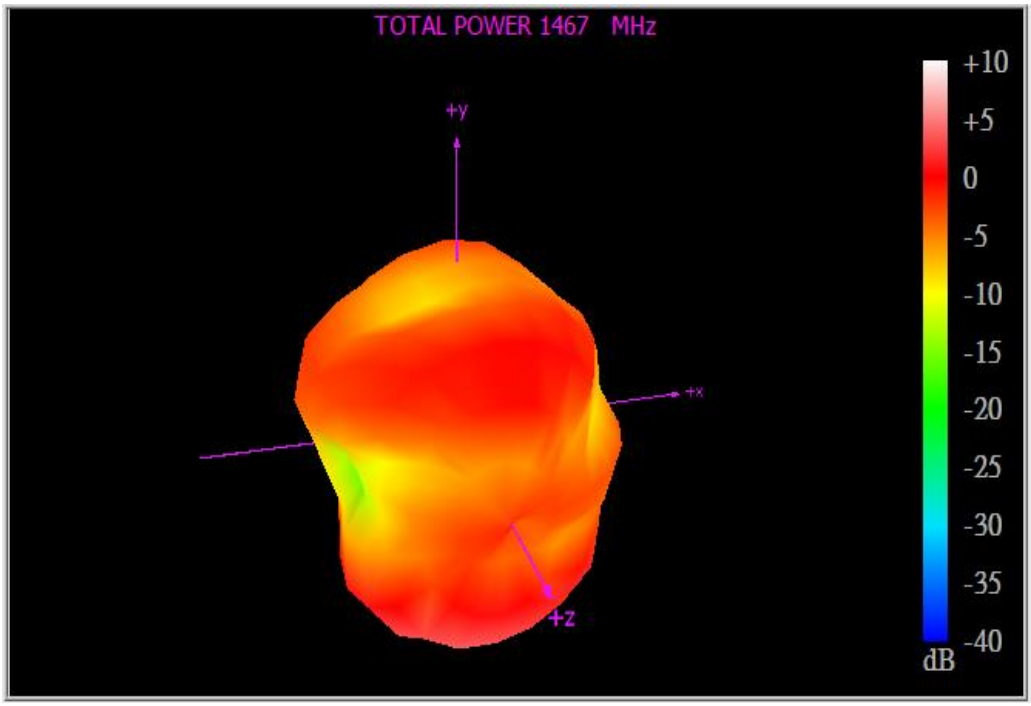
XY Plane	XZ Plane	YZ Plane



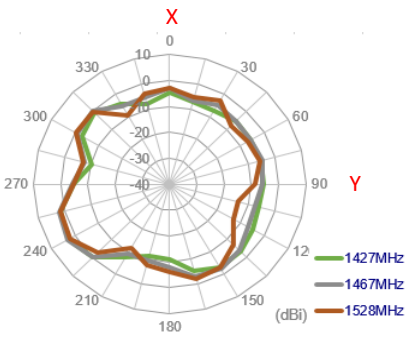


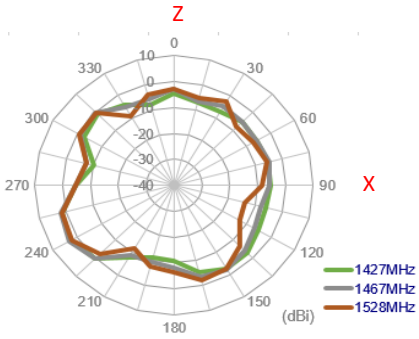


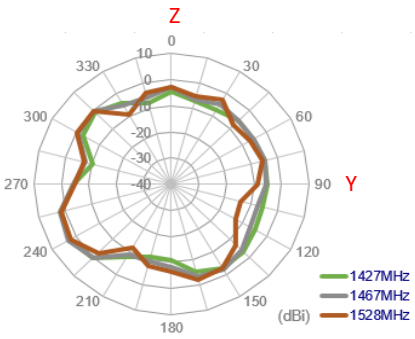
1467MHz



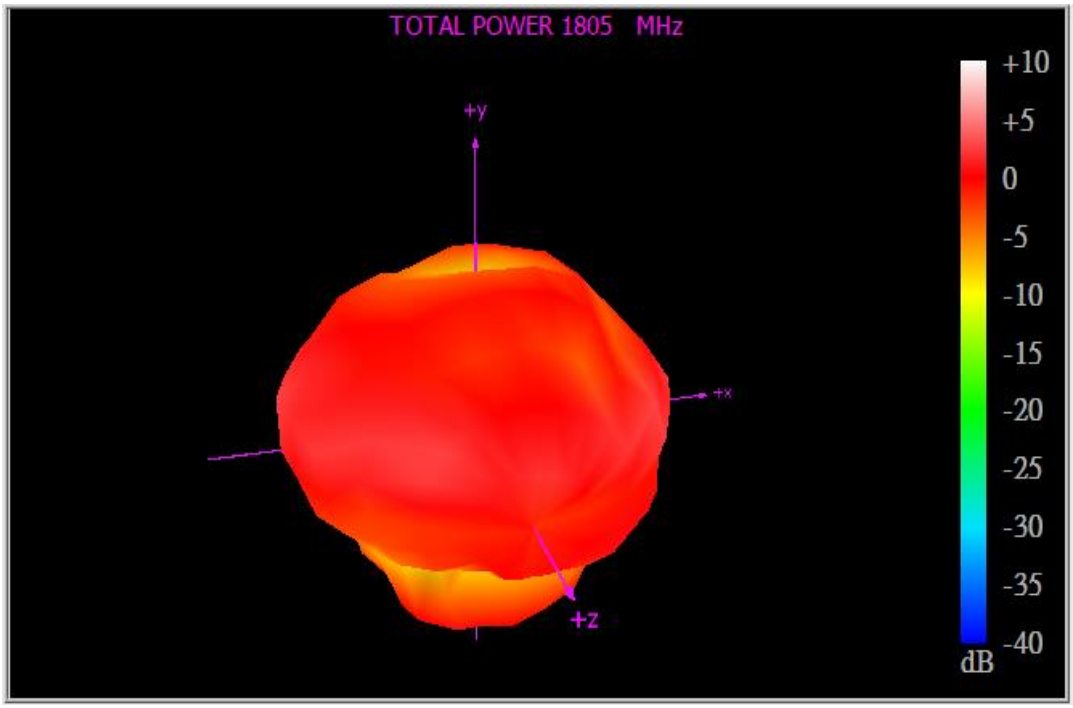
XY Plane	XZ Plane	YZ Plane



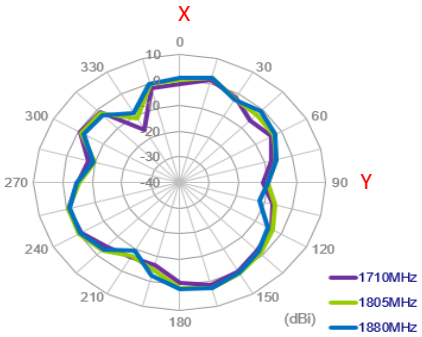


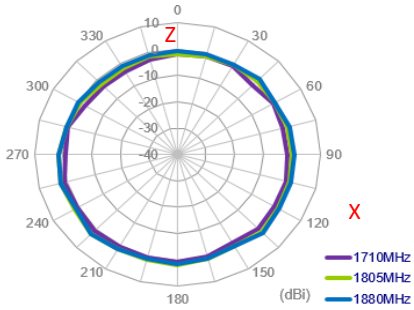


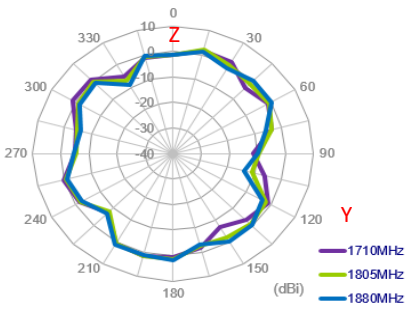
1805MHz



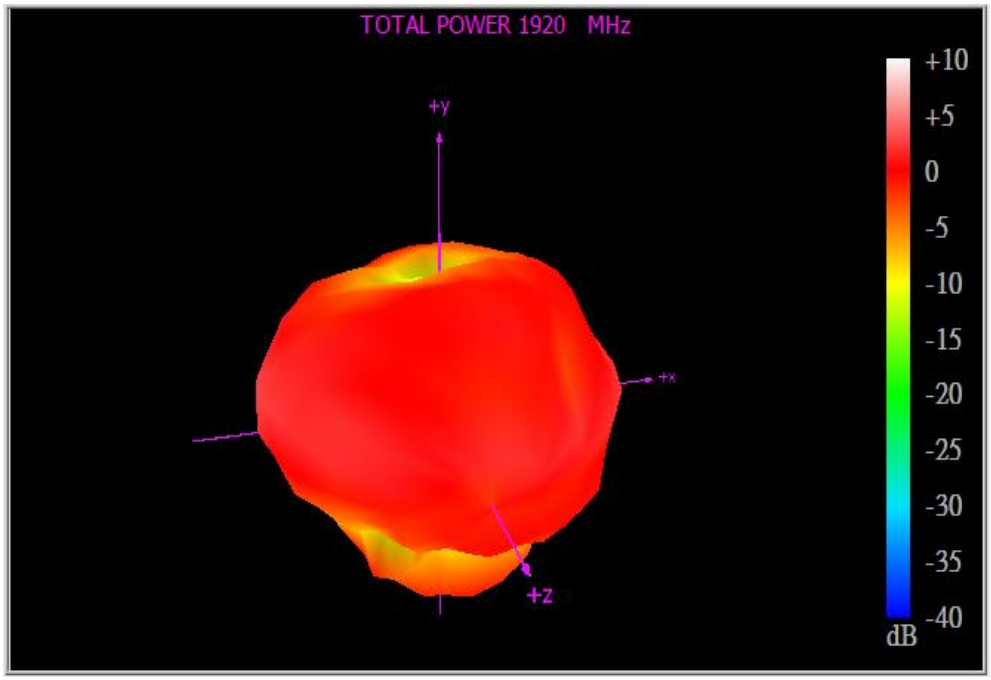
XY Plane	XZ Plane	YZ Plane

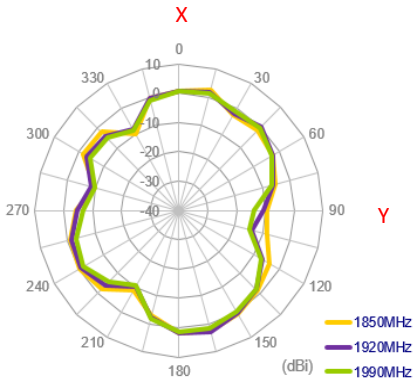
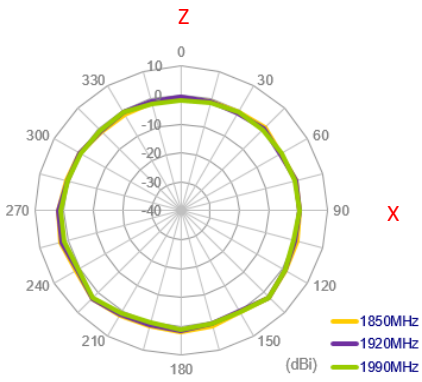
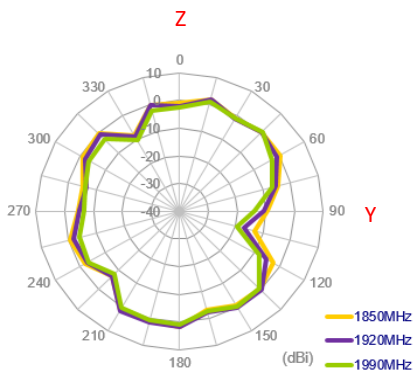




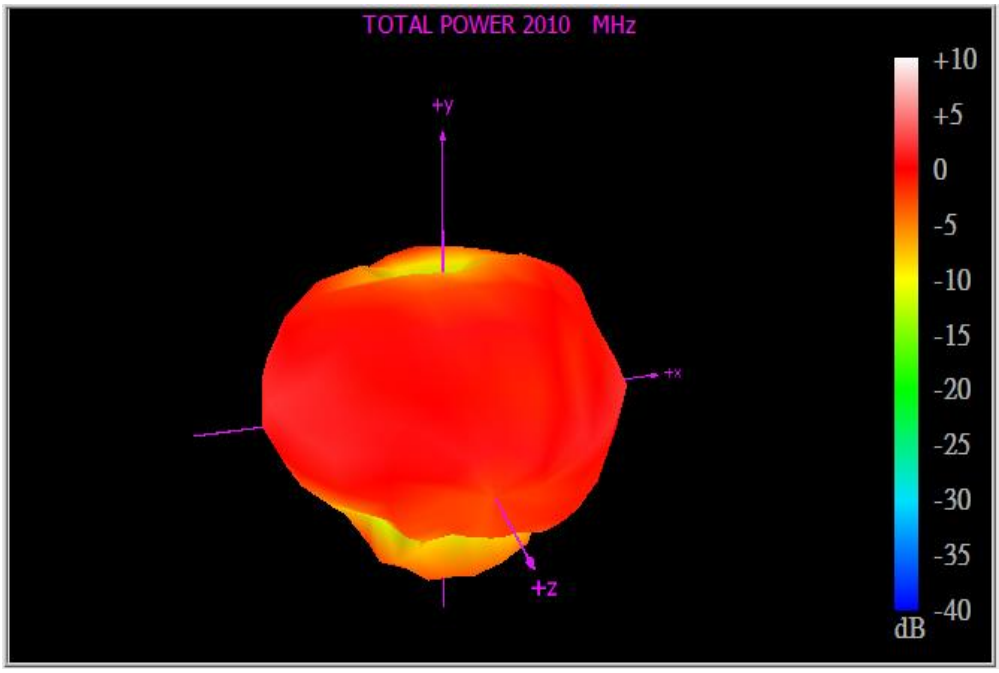


1920MHz

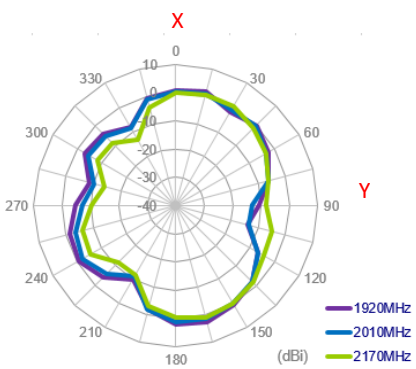


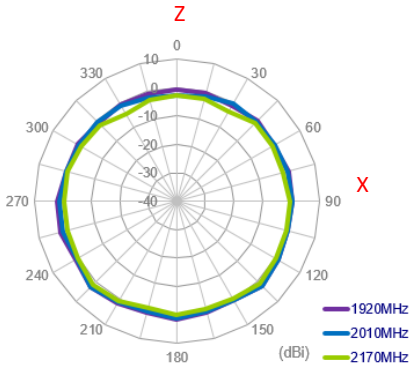
XY Plane	XZ Plane	YZ Plane
		

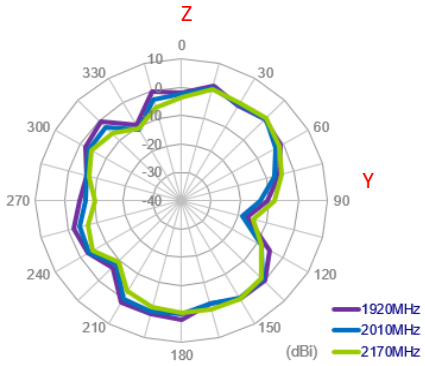
2010MHz



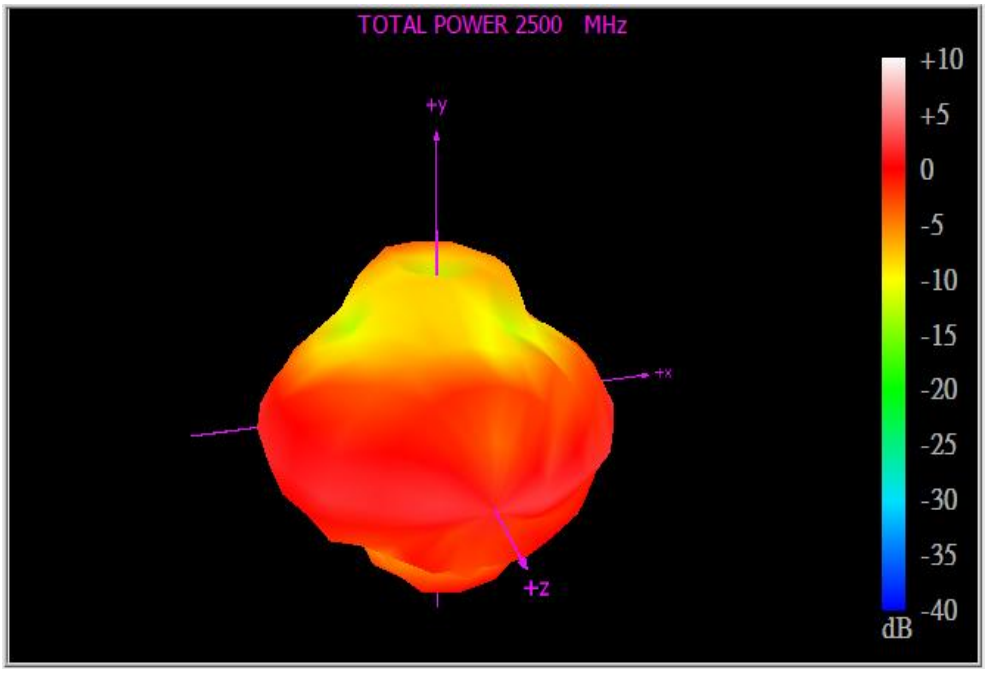
XY Plane	XZ Plane	YZ Plane



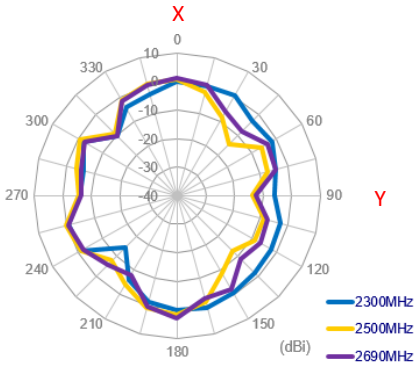


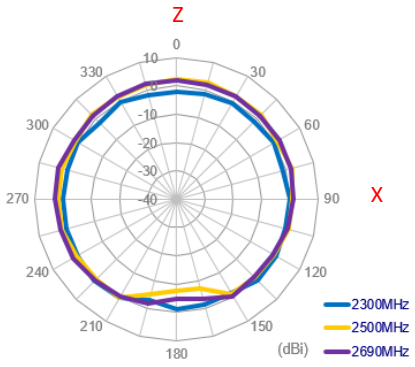


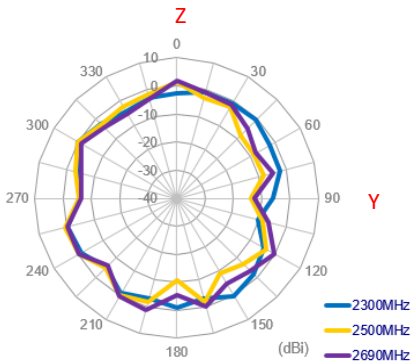
2500MHz



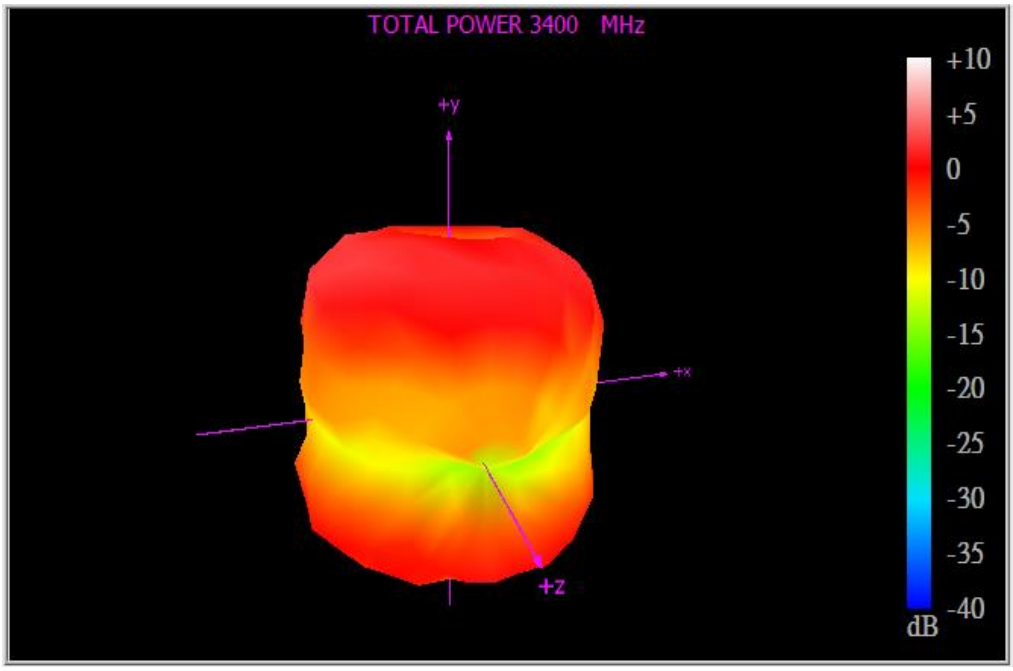
XY Plane	XZ Plane	YZ Plane



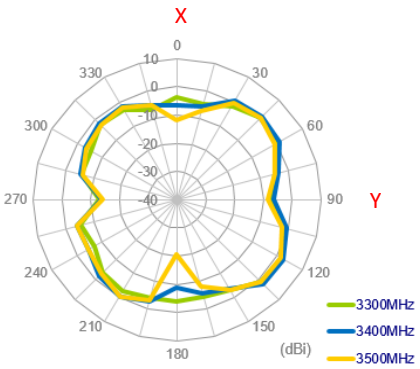


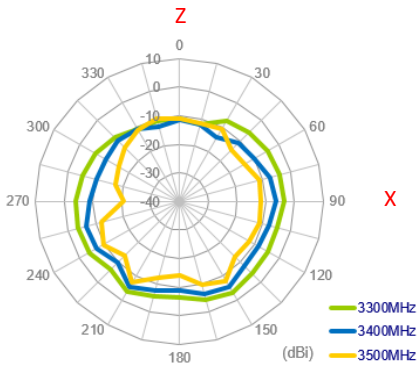


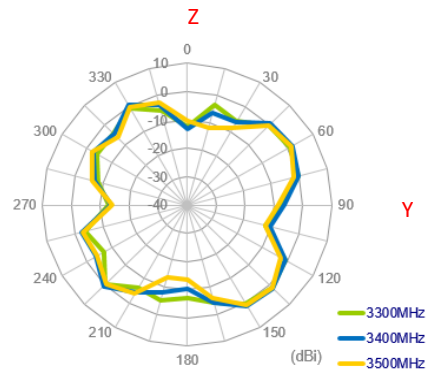
3400MHz



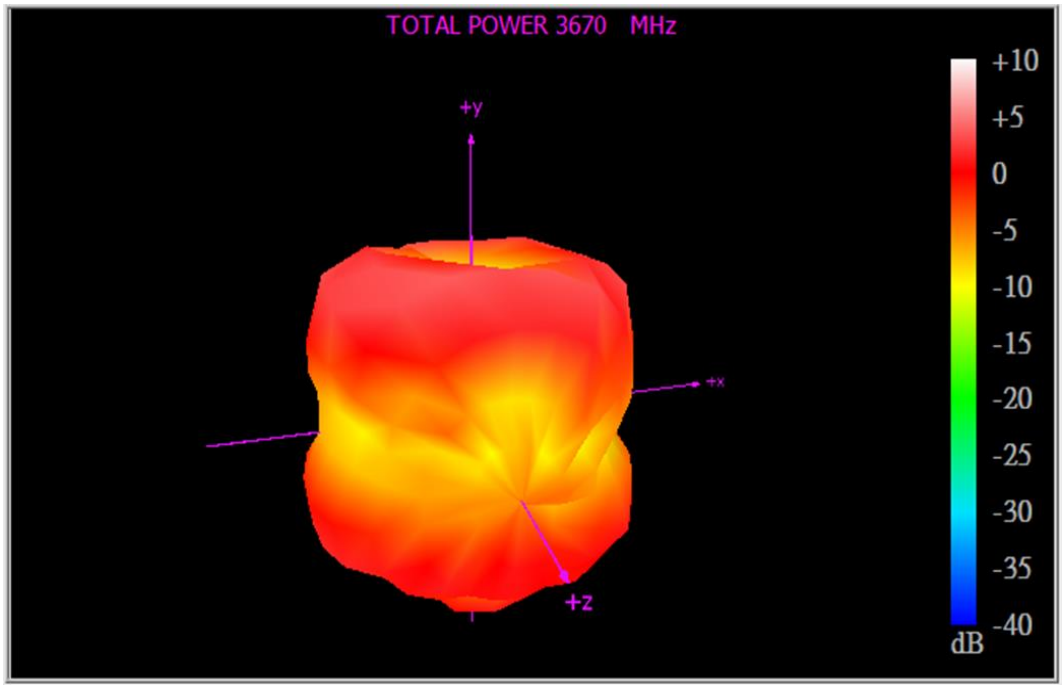
XY Plane	XZ Plane	YZ Plane



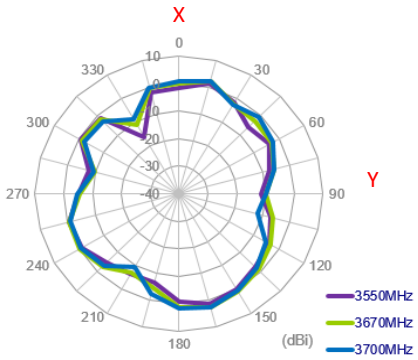


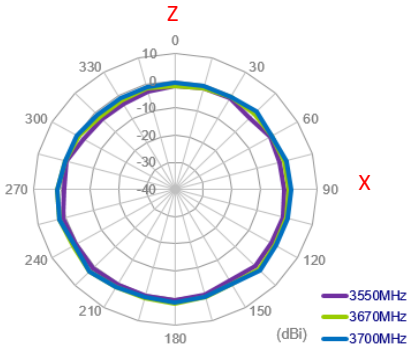


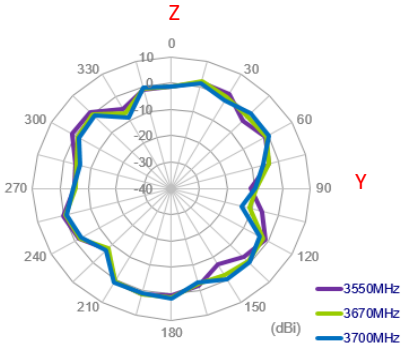
3670MHz



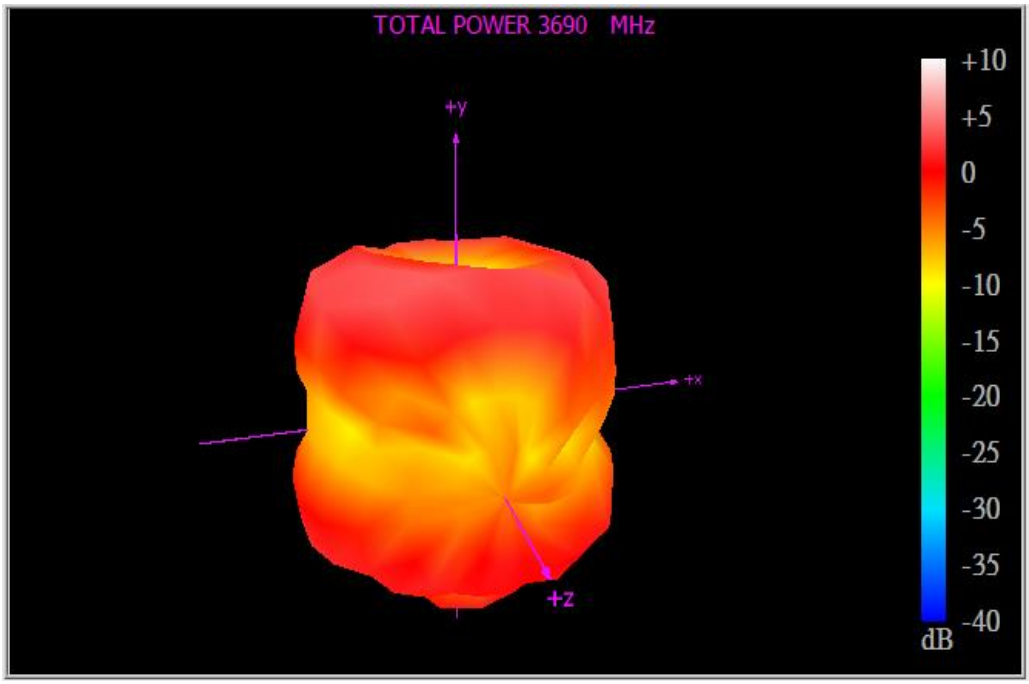
XY Plane	XZ Plane	YZ Plane



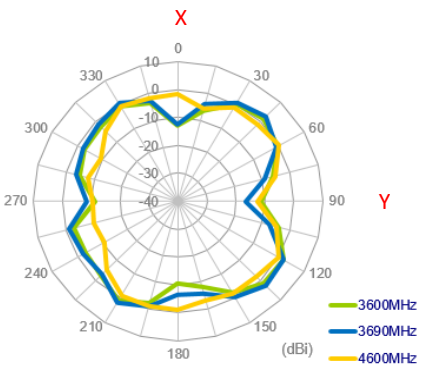


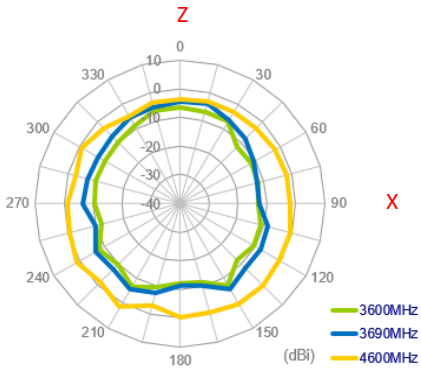


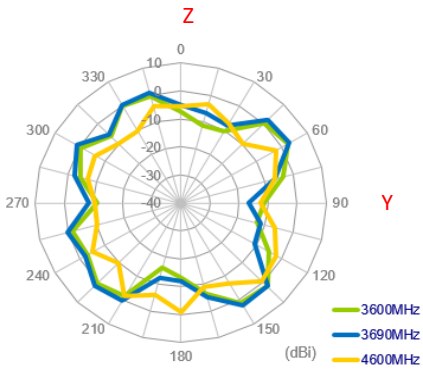
3690MHz



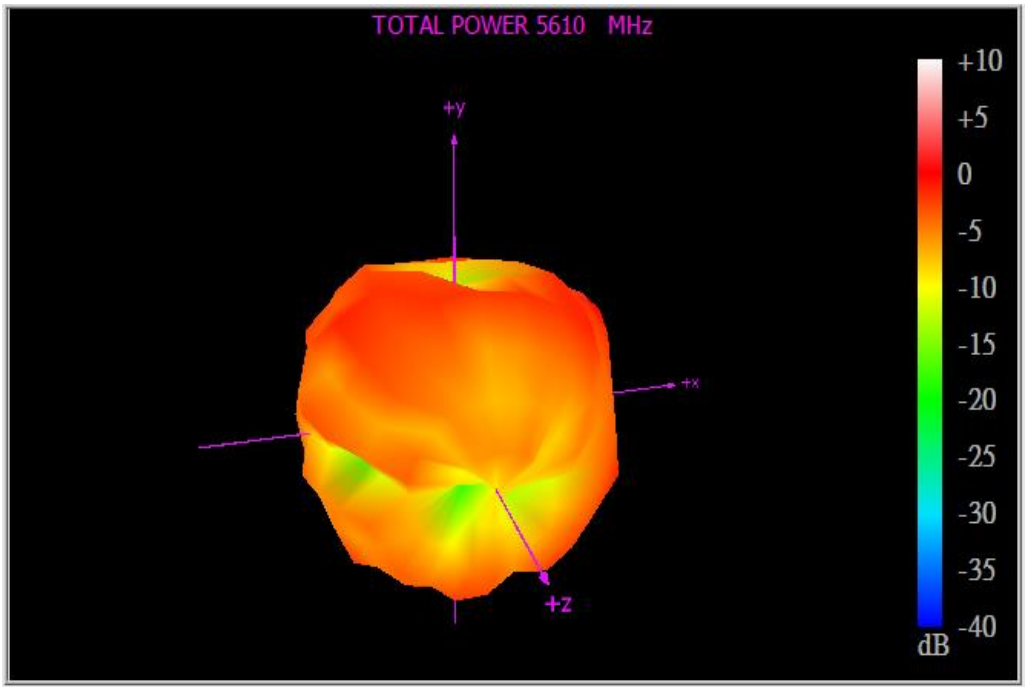
XY Plane	XZ Plane	YZ Plane

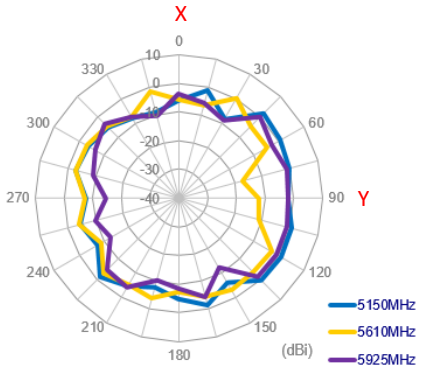
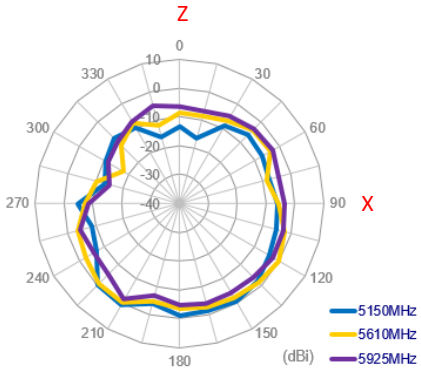
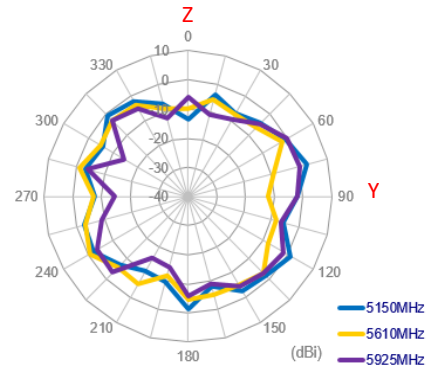




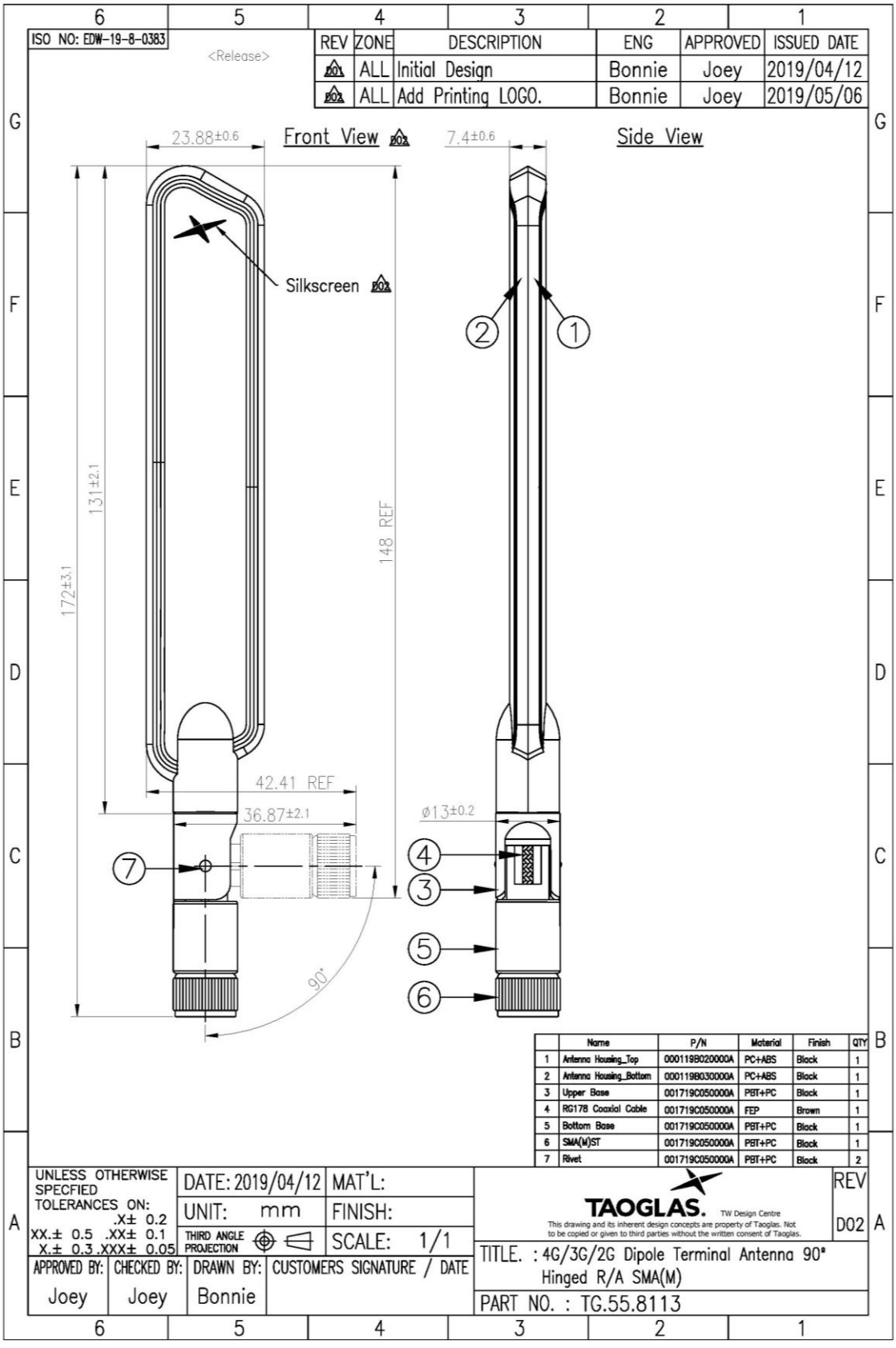


5610MHz



XY Plane	XZ Plane	YZ Plane
		

5. Mechanical Drawing (Units: mm)



6. Packaging

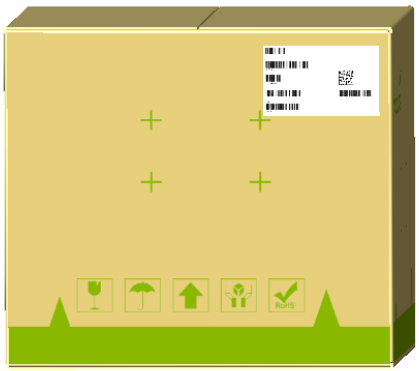
☑ 1 PCS / Small PE bag

☑ 24.3g

☑ 20 PCS / Big PE bag

☑ SPQ Label

☑ 486g



☑ 400 PCS / Carton

☑ Carton 2 PCS / Carton

☑ Carton Label

☑ 19.5kg

Changelog for the datasheet

SPE-19-8-061 – TG.55.8113

Revision: A (Initial Launch)	
Date:	2019-05-22
Changes:	Initial Specification Release
Changes Made by:	Jack Conroy

Previous Revisions

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