

Datasheet

Part No:
TG.64.8113

Description

Wideband (600-6000MHz) LTE Dipole Terminal Antenna
With 90 degrees Hinged RA SMA (M) Connector

Features:

600-6000MHz Wideband 5G/4G Cellular Antenna
Fantastic Efficiency Across all Bands
Small Form Factor with Rotatable Hinged Design for Flexible Positioning
Dipole Antenna Design Suitable for Small Ground Plane
Omnidirectional Gain Patterns for Optimum Coverage
Connector: 90 degrees Hinged RA SMA (M) Connector
Dimensions: 135 x 19.4 x 10 mm
RoHS & Reach Compliant

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046
QUALITY MANAGEMENT SYSTEM
IATF16949



1. Introduction



The TG.64 is a dipole 5G/4G antenna designed for use with the next generation of router and gateway applications. Covering the full 600-6000MHz cellular frequency spectrum, the TG.64 is ideal for applications where a wideband dipole antenna may be required. The TG.64 can also be used for NB-IoT, Cat-M, assisted GNSS and dual-band Wi-Fi and due to its full spectrum coverage is backwards compatible with legacy technologies such as 3G and GSM.

The TG.64 has a sleek yet robust PC+ABS enclosure allowing it to be used with a wide variety of devices. The TG.64 is designed to work with any ground plane size or in free space for ease of integration.

Typical applications include:

- Gateways and Routers
- In-Building Connectivity Systems
- Point of Sales Kiosks
- Connected Industries
- Smart Metering

The TG.64 is supplied with a hinged SMA connector for ease of mounting in MIMO systems. The dimensions of the TG.64 are 135 x 19.4 x 6 mm, meaning it can be covertly installed on routers and other similar devices unlike some of the bulkier products on the market. For further information please contact your regional Taoglas customer support team.

2. Specification

LTE Electrical									
Band	Frequency (MHz)	Measurement		Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern
5G NR Band 71	617-698	Free Space	Straight	40.4	-3.94	1.91	50 Ω	Linear	Omni
			Bent	37.9	-4.22	1.38			
		Ground Plane 1	Straight	51.2	49.4	0.71			
			Bent	49.4	-3.06	1.09			
		Ground Plane 2	Straight	69.2	-1.60	2.54			
			Bent	69.0	-1.61	1.49			
LTE700	698-824	Free Space	Straight	44.6	-3.50	2.46	50 Ω	Linear	Omni
			Bent	42.8	-3.68	1.62			
		Ground Plane 1	Straight	44.3	-3.53	1.73			
			Bent	53.6	-2.71	1.03			
		Ground Plane 2	Straight	64.2	-1.93	2.95			
			Bent	69.4	-1.58	1.79			
GSM800/900	824-960	Free Space	Straight	42.1	-3.76	2.48	50 Ω	Linear	Omni
			Bent	40.1	-3.96	1.54			
		Ground Plane 1	Straight	57.9	-2.37	3.10			
			Bent	68.1	-1.67	1.98			
		Ground Plane 2	Straight	65.7	-1.83	2.95			
			Bent	66.1	-1.80	2.06			
5G NR Band 1500	1427-1518	Free Space	Straight	28.0	-5.52	1.20	50 Ω	Linear	Omni
			Bent	39.1	-4.07	0.02			
		Ground Plane 1	Straight	65.3	-1.85	3.12			
			Bent	55.7	-2.54	1.92			
		Ground Plane 2	Straight	70.7	-1.51	3.71			
			Bent	58.4	-2.33	1.89			
5G NR N66	1710-2200	Free Space	Straight	51.3	-2.90	2.00	50 Ω	Linear	Omni
			Bent	65.1	-1.87	3.11			
		Ground Plane 1	Straight	63.9	-1.95	3.35			
			Bent	67.4	-1.71	3.47			
		Ground Plane 2	Straight	62.0	-2.08	4.58			
			Bent	67.3	-1.72	3.52			
LTE2600	2300-2690	Free Space	Straight	68.6	-1.64	3.06	50 Ω	Linear	Omni
			Bent	70.8	-1.50	3.19			
		Ground Plane 1	Straight	54.4	-2.64	3.35			
			Bent	58.6	-2.32	5.09			
		Ground Plane 2	Straight	49.4	-3.06	2.08			
			Bent	56.2	-2.50	4.99			
5G NR N77	3300-4200	Free Space	Straight	47.3	-3.25	1.81	50 Ω	Linear	Omni
			Bent	49.5	-3.05	2.49			
		Ground Plane 1	Straight	34.9	-4.57	1.33			
			Bent	36.3	-4.41	2.45			
		Ground Plane 2	Straight	34.1	-4.67	2.39			
			Bent	37.4	-4.27	1.24			
5G NR N78	3300-3800	Free Space	Straight	47.7	-3.22	1.77	50 Ω	Linear	Omni
			Bent	47.1	-3.27	1.36			
		Ground Plane 1	Straight	33.7	-4.73	0.17			
			Bent	35.1	-4.55	0.05			
		Ground Plane 2	Straight	33.9	-4.69	0.15			
			Bent	37.2	-4.30	0.35			
5G NR N79	4400-5000	Free Space	Straight	54.5	-2.64	3.26	50 Ω	Linear	Omni
			Bent	59.4	-2.26	2.79			
		Ground Plane 1	Straight	37.4	-4.27	1.73			
			Bent	36.6	-4.36	2.00			
		Ground Plane 2	Straight	31.0	-5.09	2.16			
			Bent	32.9	-4.83	1.62			
LTE5200	5150-5925	Free Space	Straight	43.1	-3.65	3.01	50 Ω	Linear	Omni
			Bent	62.0	-2.07	3.99			
		Ground Plane 1	Straight	41.0	-3.87	3.22			
			Bent	45.9	-3.38	4.12			
		Ground Plane 2	Straight	30.8	-5.12	3.08			
			Bent	36.7	-4.35	2.63			

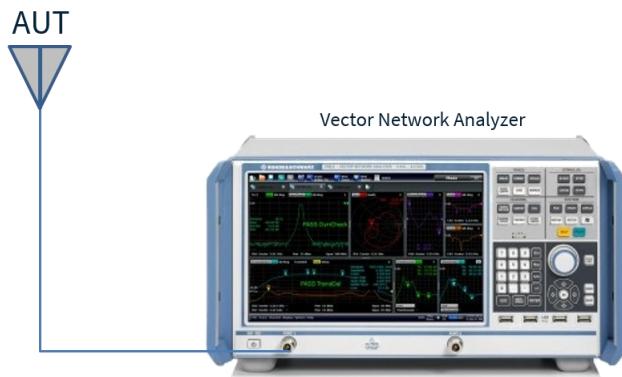
Note: Ground Plane 1 - 15x9cm, Ground Plane 2 - 9x15cm

Mechanical	
Dimensions	135 x 19.4 x 6 mm
Weight	19 g
Material	ABS
Connector	SMA(M)

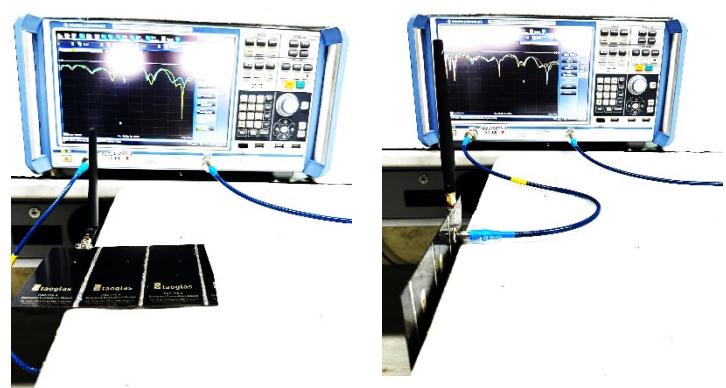
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
RoHs Compliant	Yes

3. Antenna Characteristics

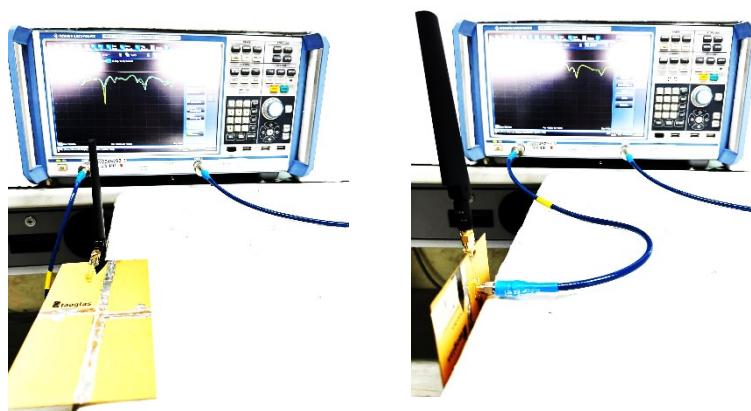
3.1 Test Setup



In Free space

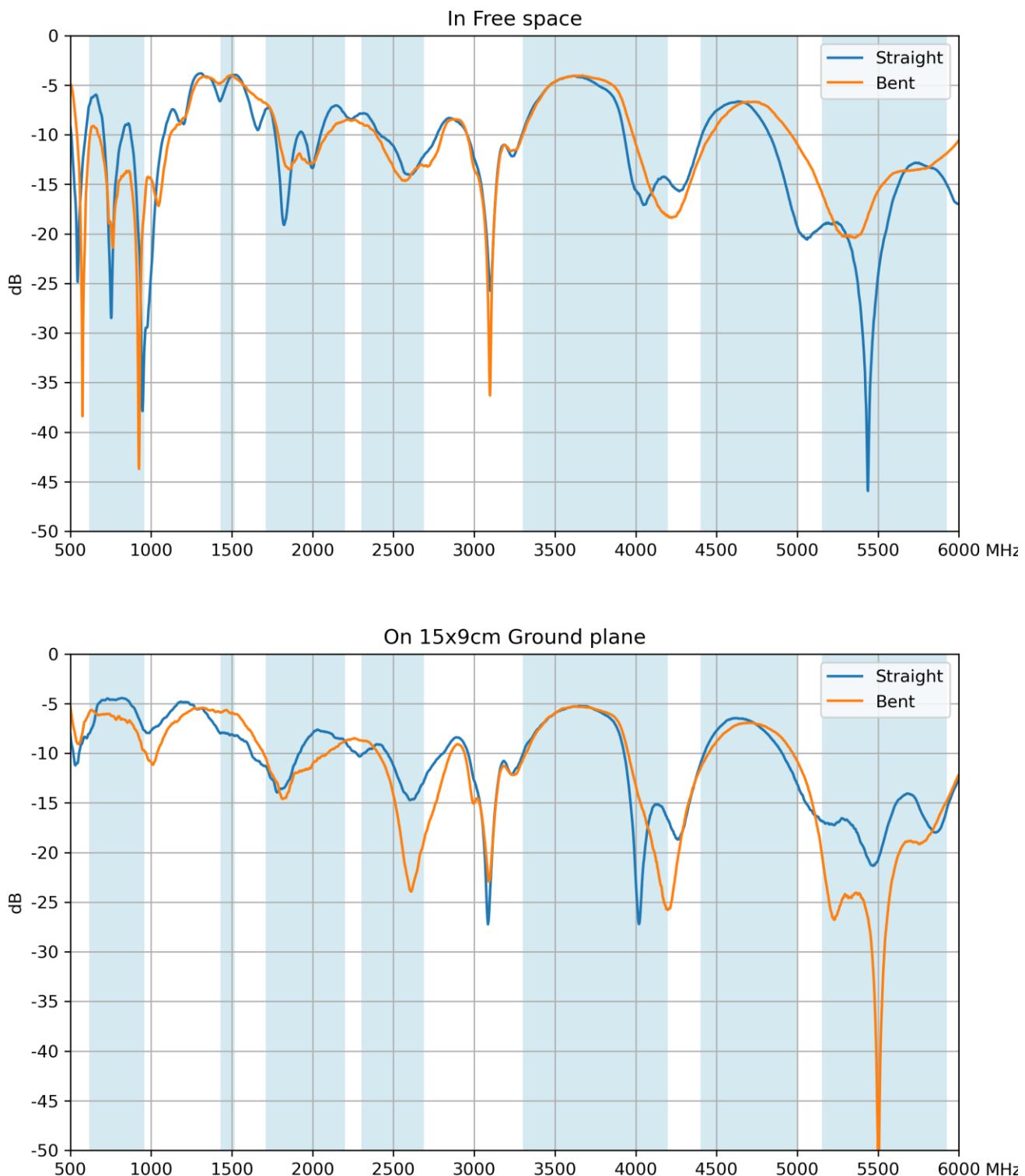


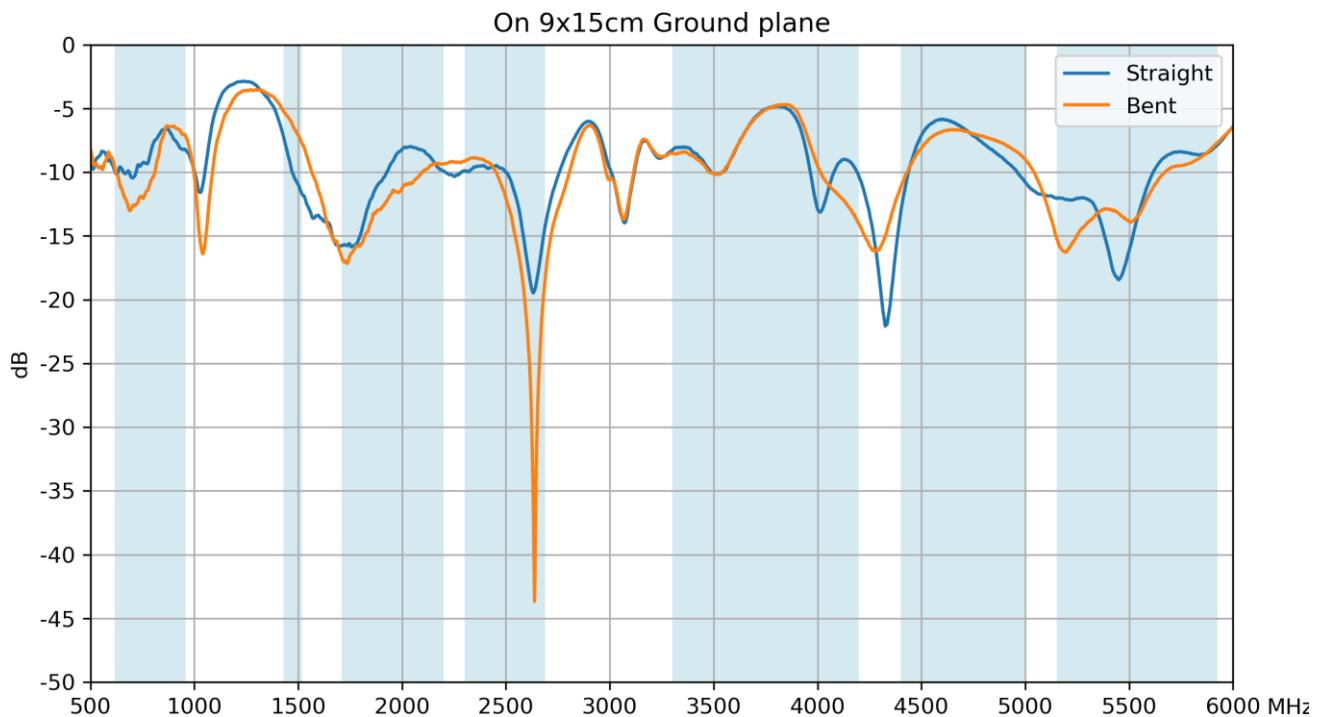
On 15X9cm Ground plane



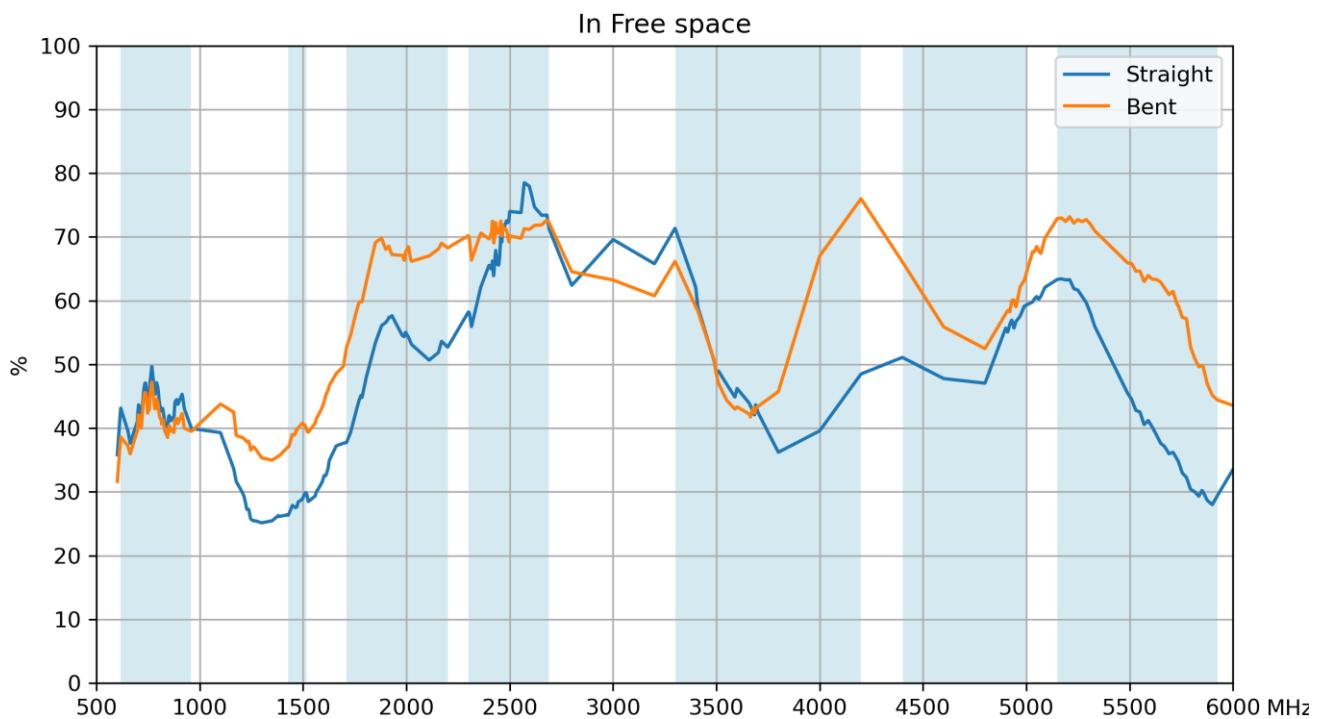
On 9X15cm Ground plane

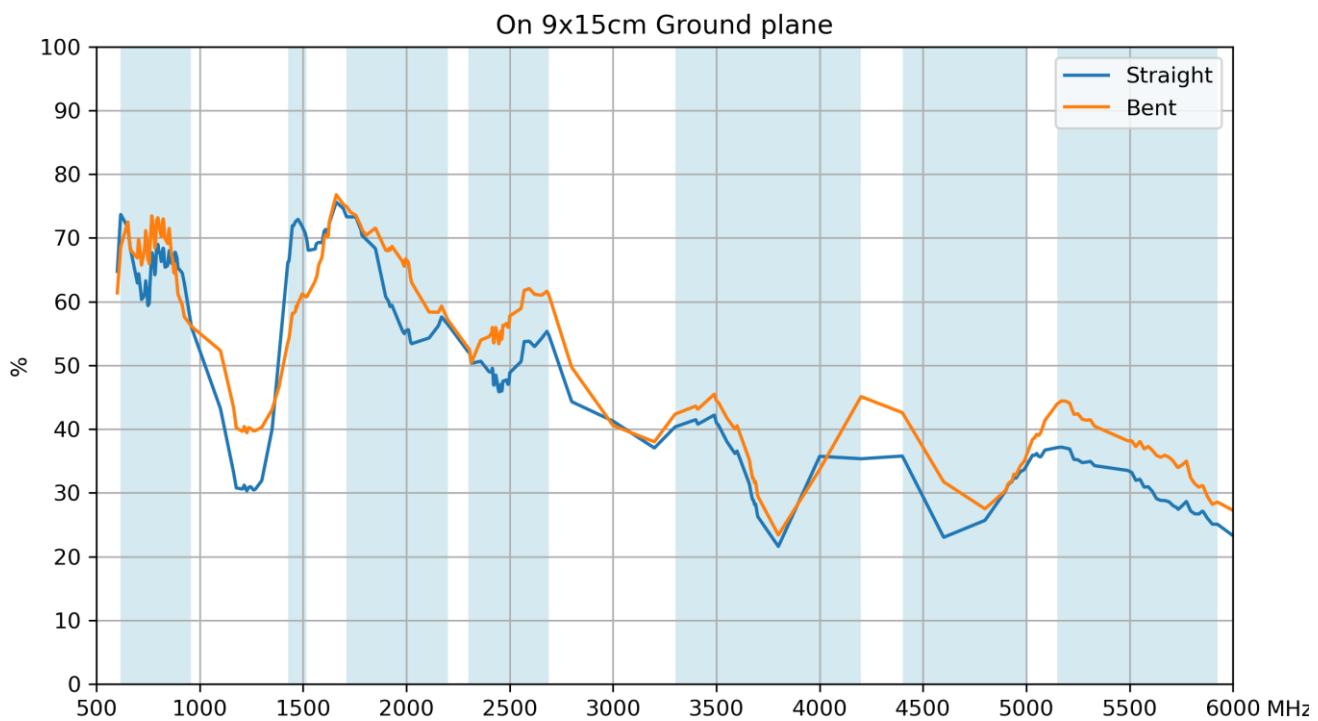
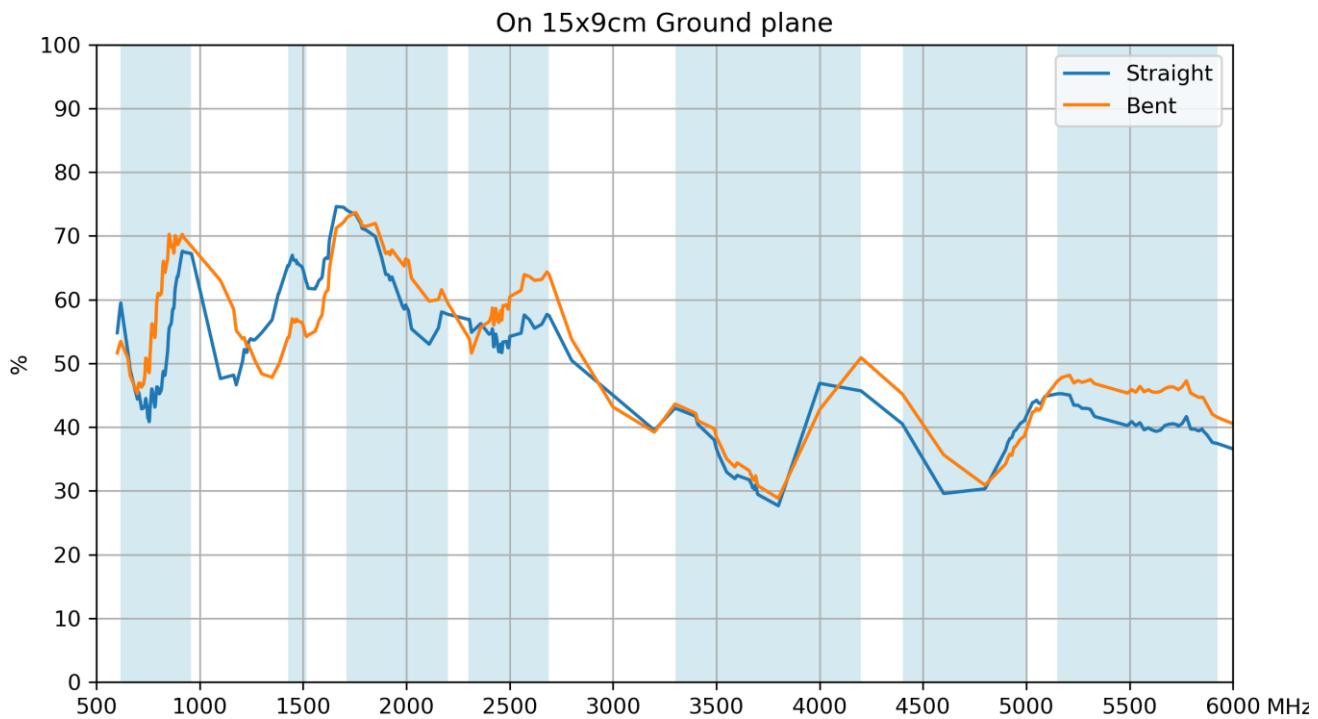
3.2 Return Loss



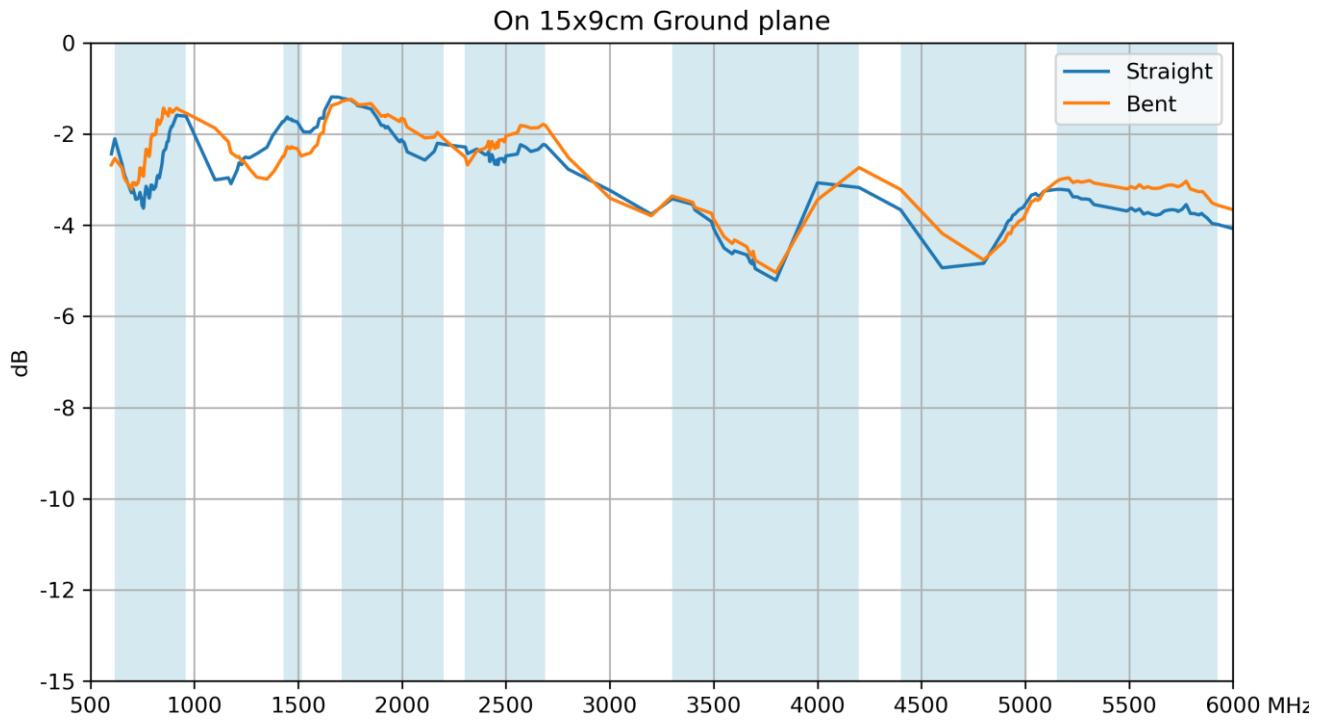
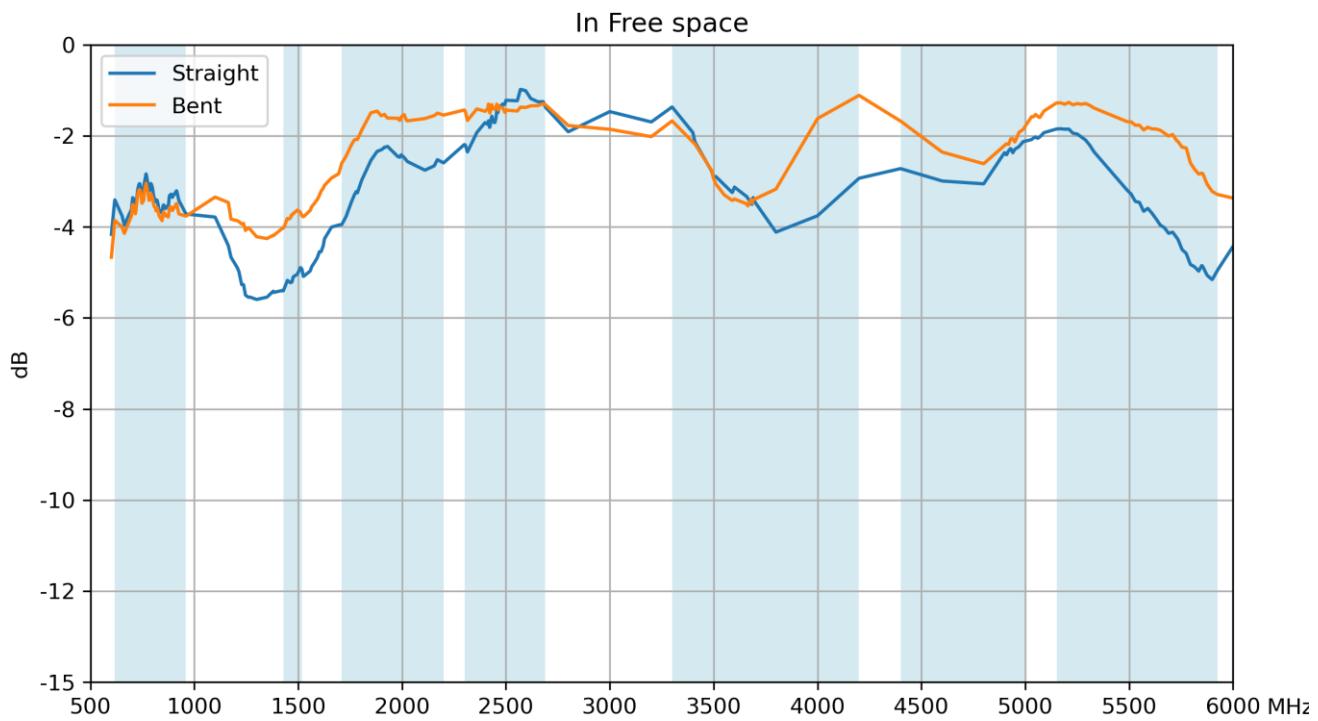


3.3 Efficiency





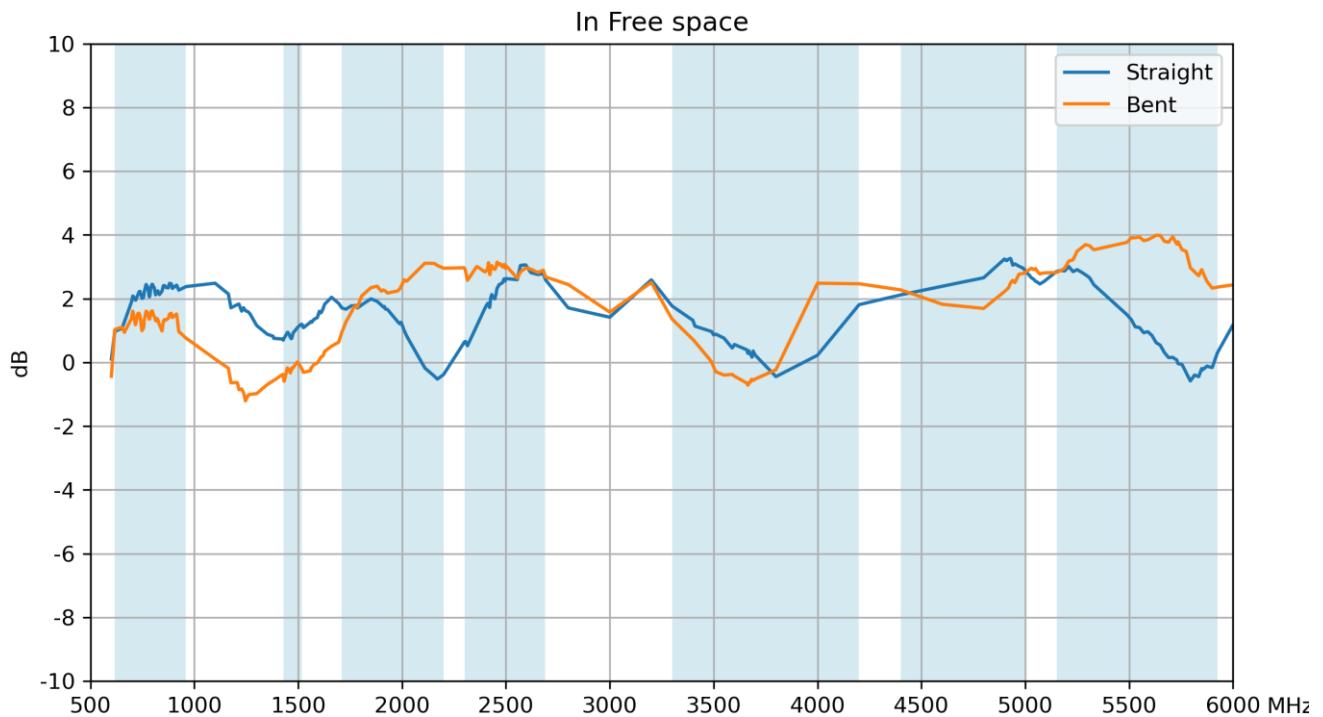
3.4 Average Gain

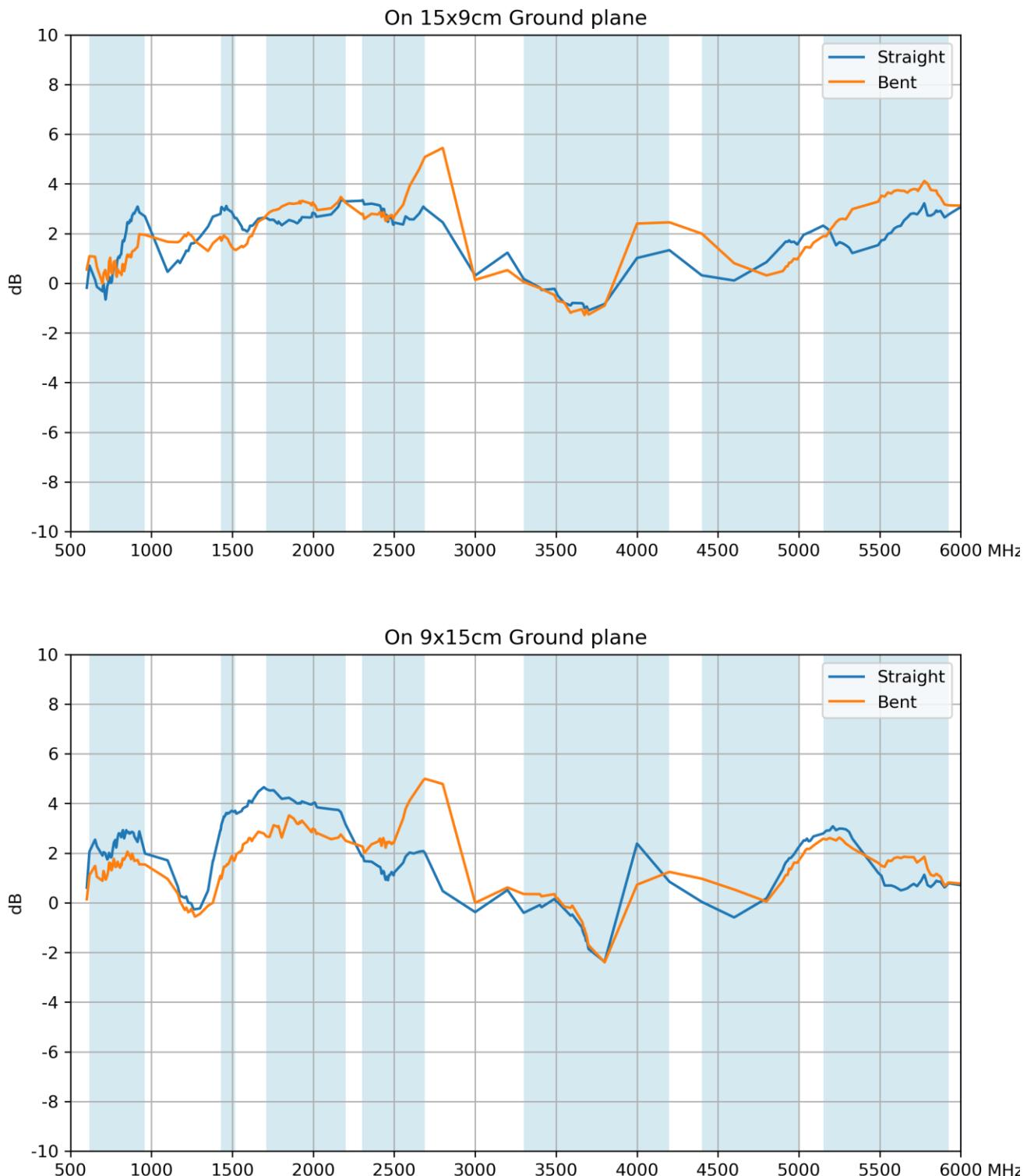


On 9x15cm Ground plane



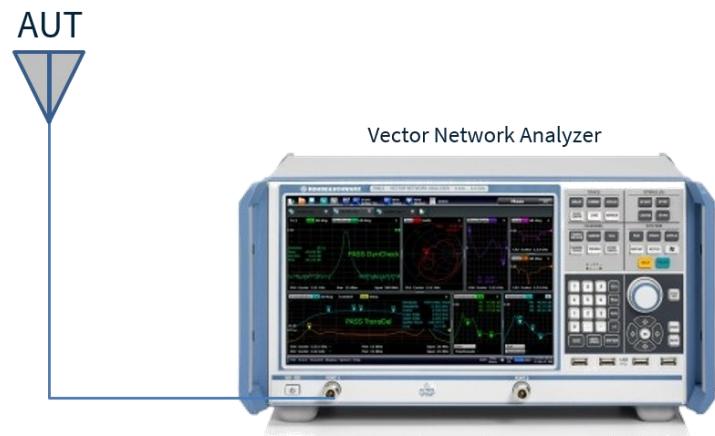
3.5 Peak Gain





4. Radiation Patterns

4.1 Test Setup



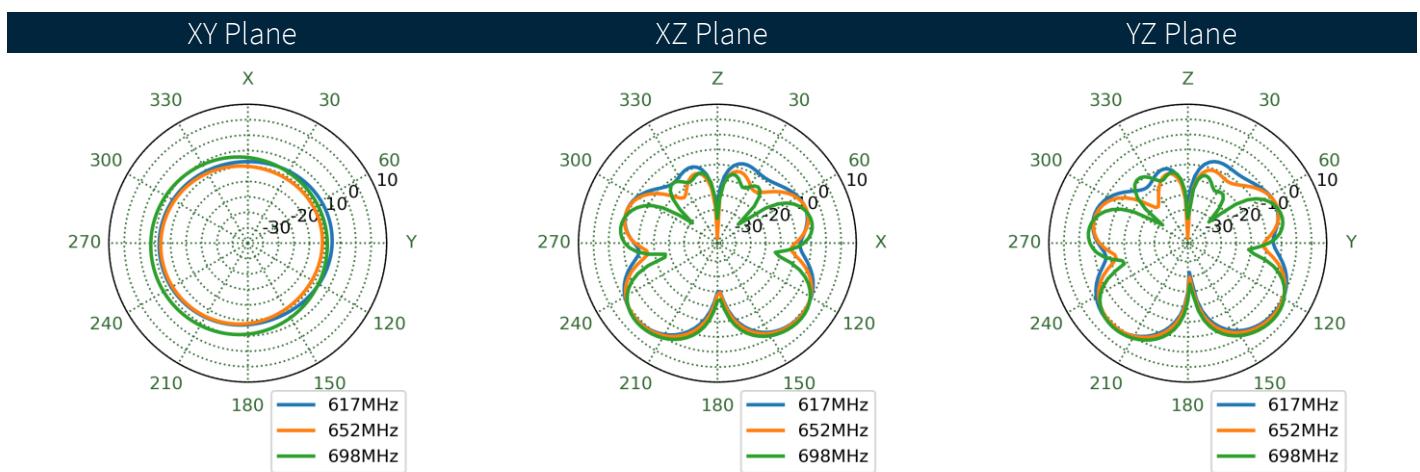
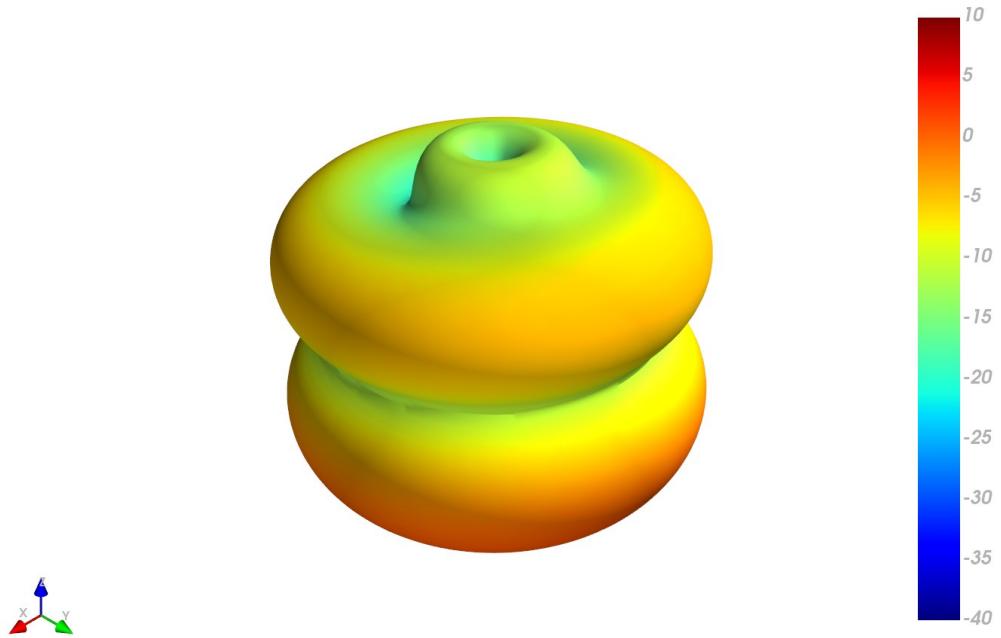
In Free space

On 15X9cm Ground plane

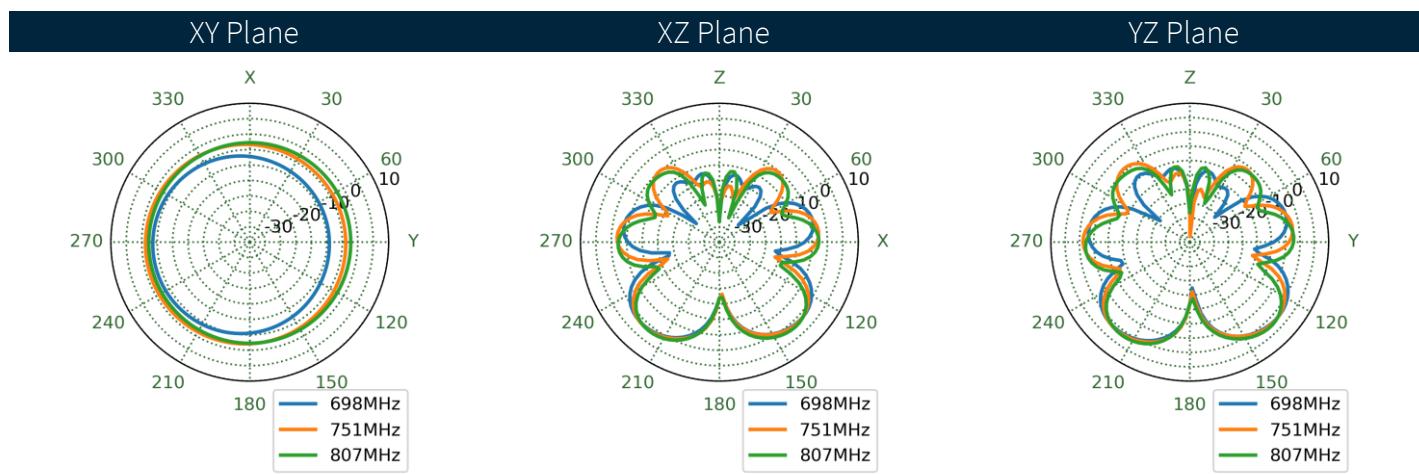
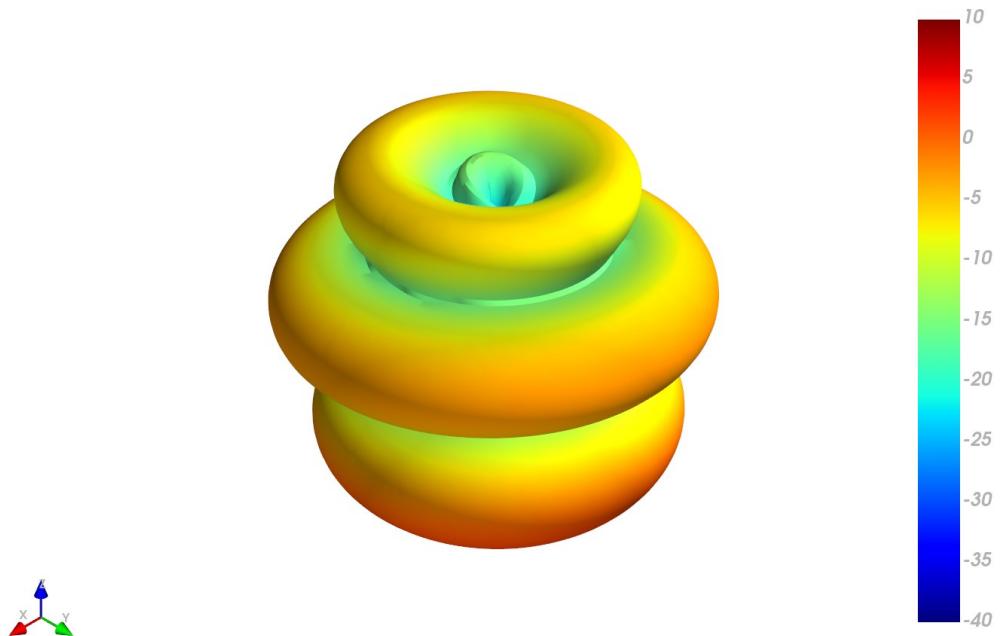


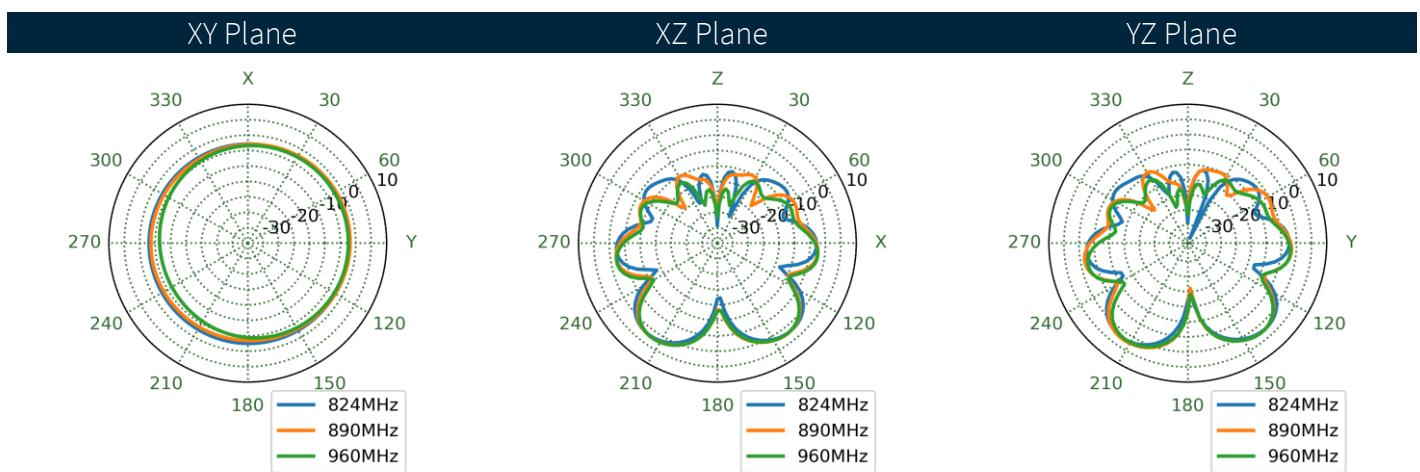
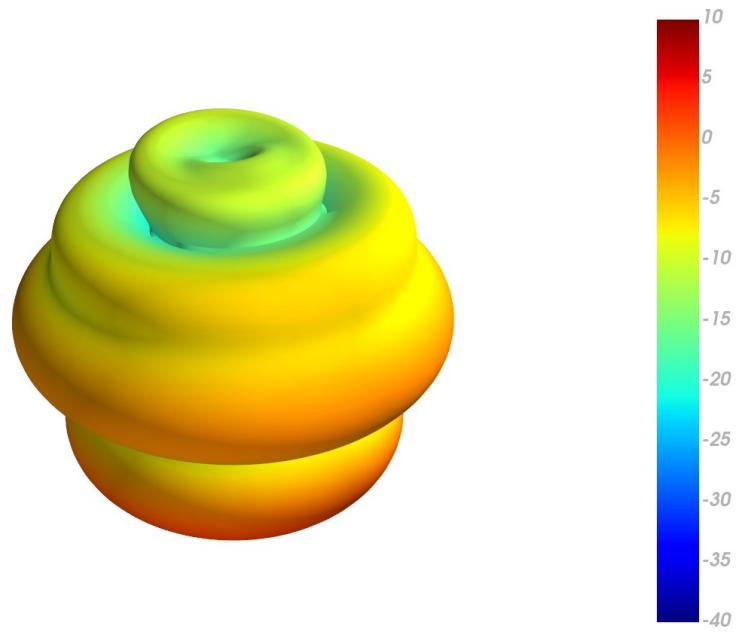
On 9X15cm Ground plane

4.2 3D and 2D Radiation Patterns in Free Space - Straight at 625MHz

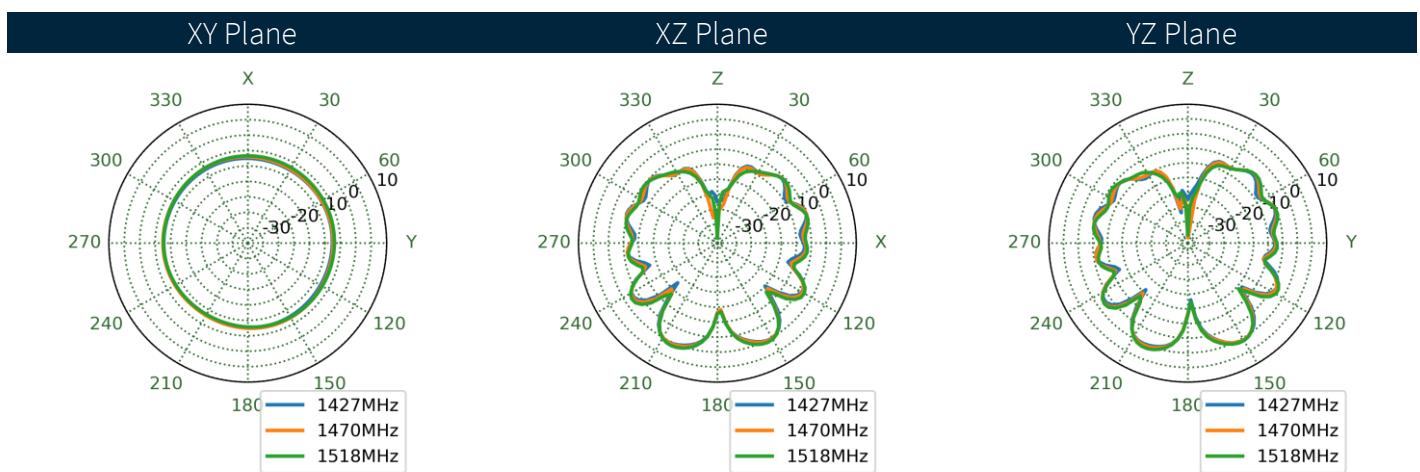
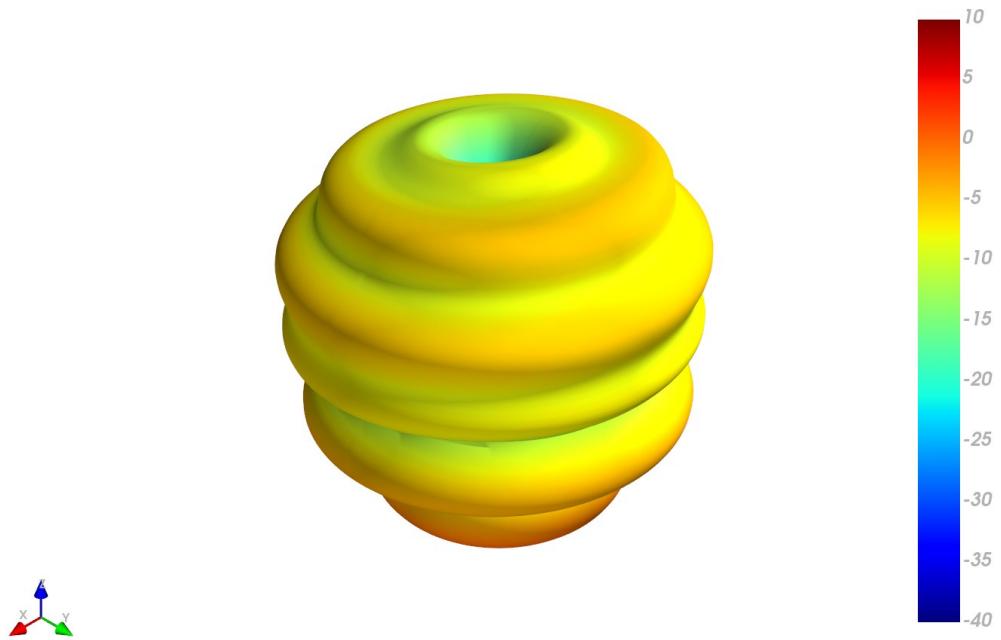


4.3 3D and 2D Radiation Patterns in Free Space – Straight at 751 MHz

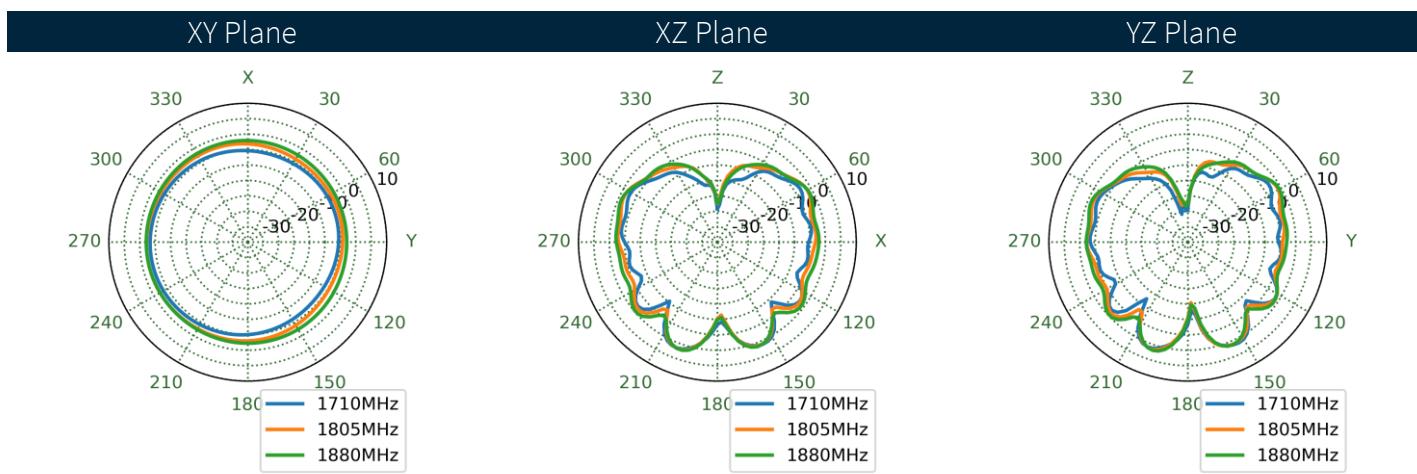
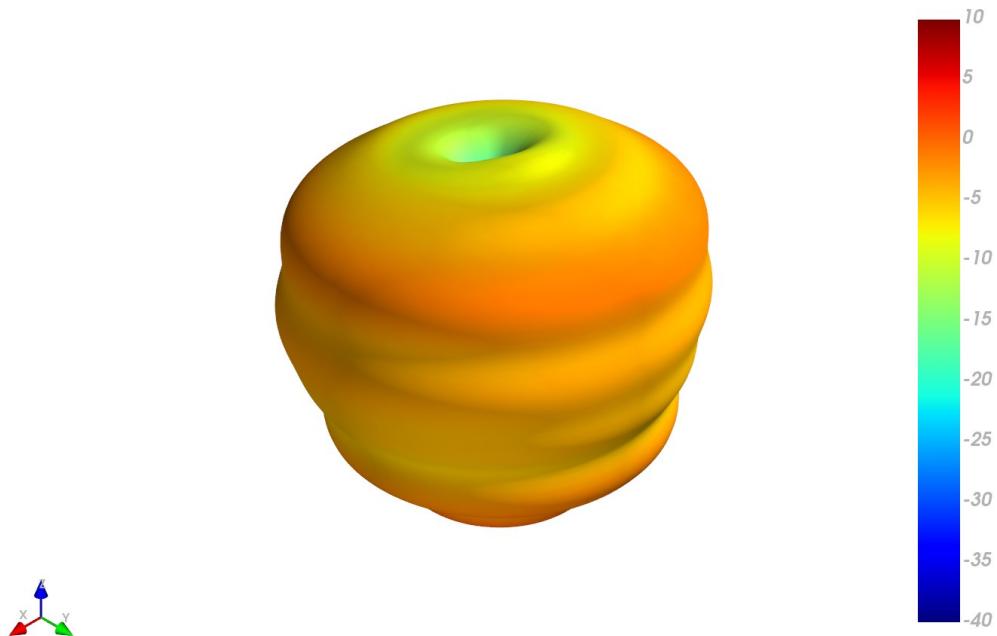


4.4
3D and 2D Radiation Patterns in Free Space – Straight at 890 MHz


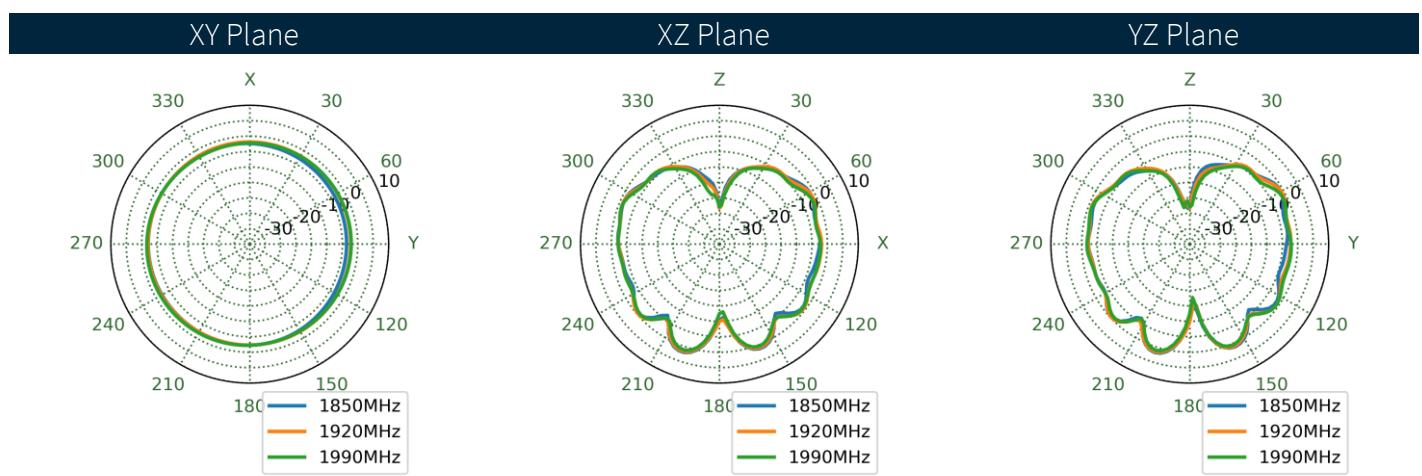
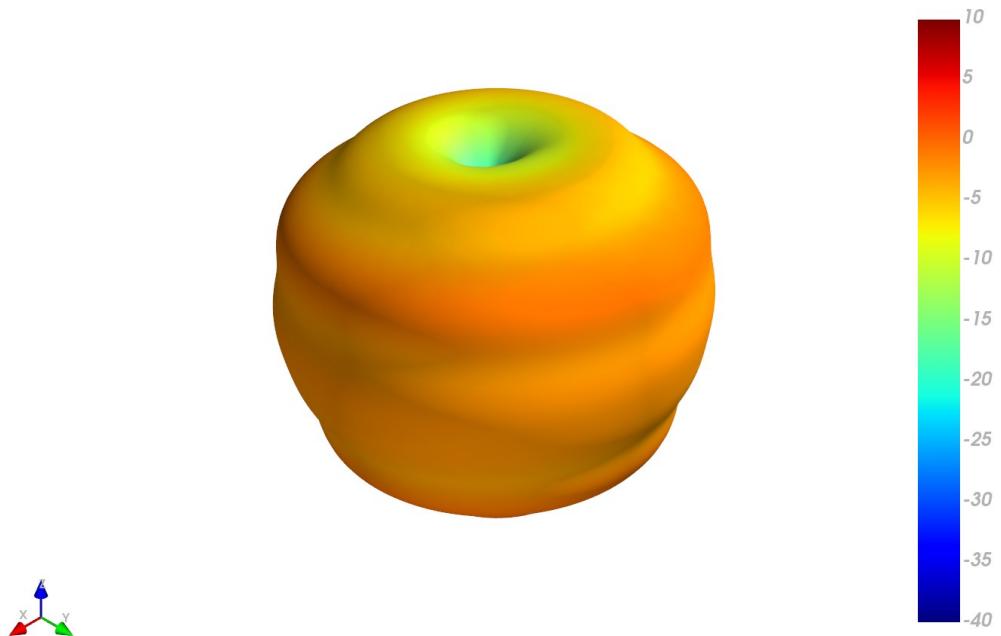
4.5 3D and 2D Radiation Patterns in Free Space – Straight at 1470 MHz



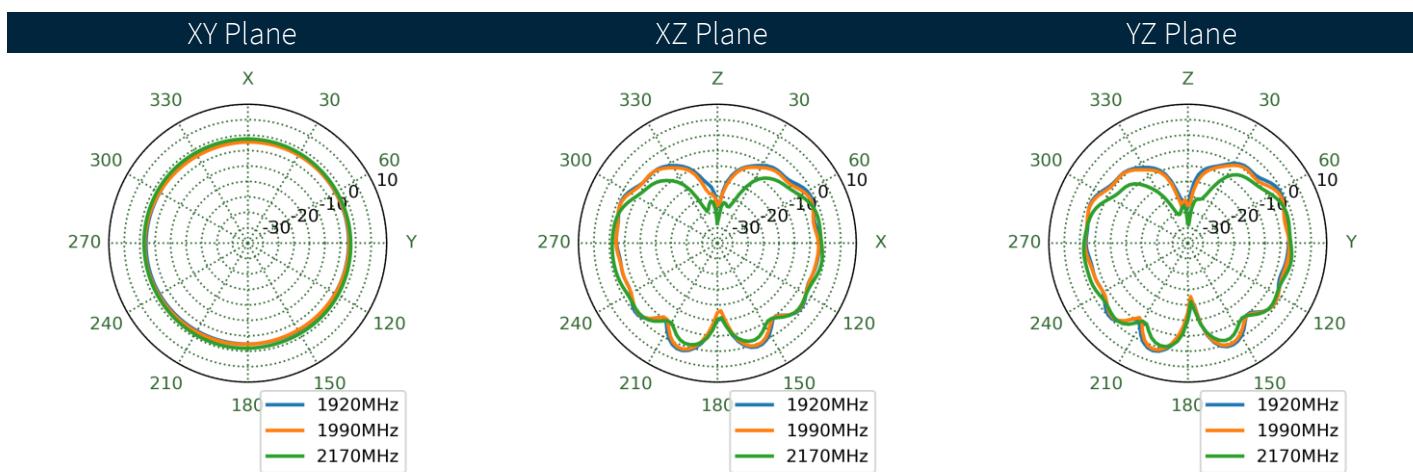
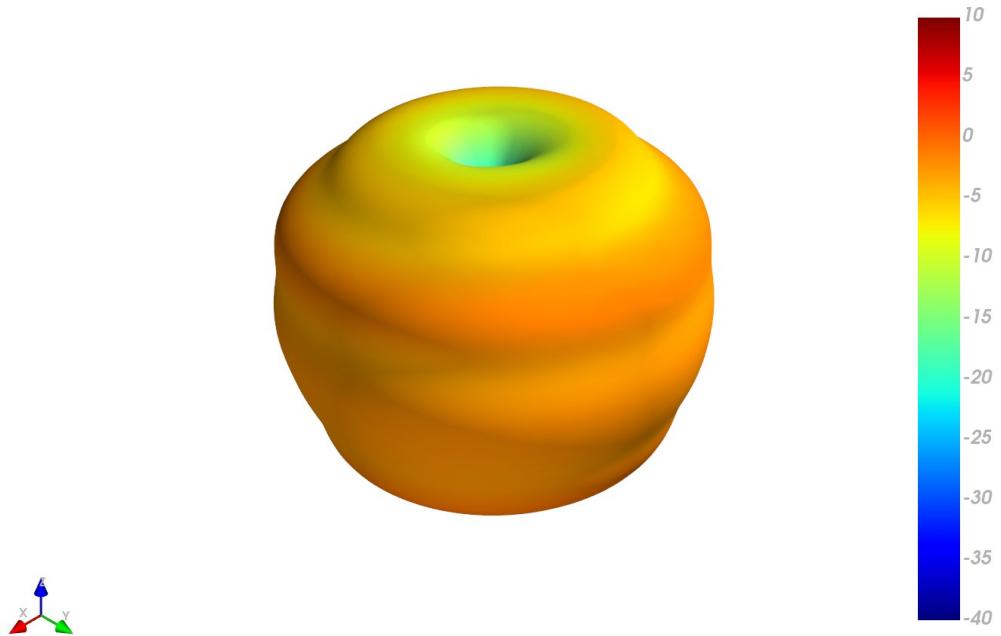
4.6 3D and 2D Radiation Patterns in Free Space – Straight at 1805 MHz



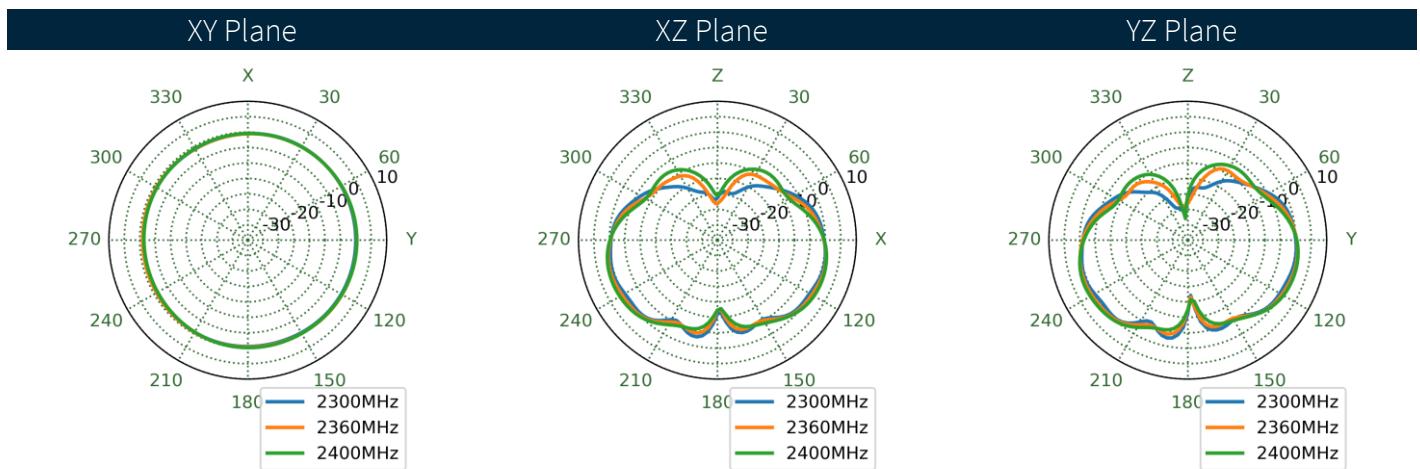
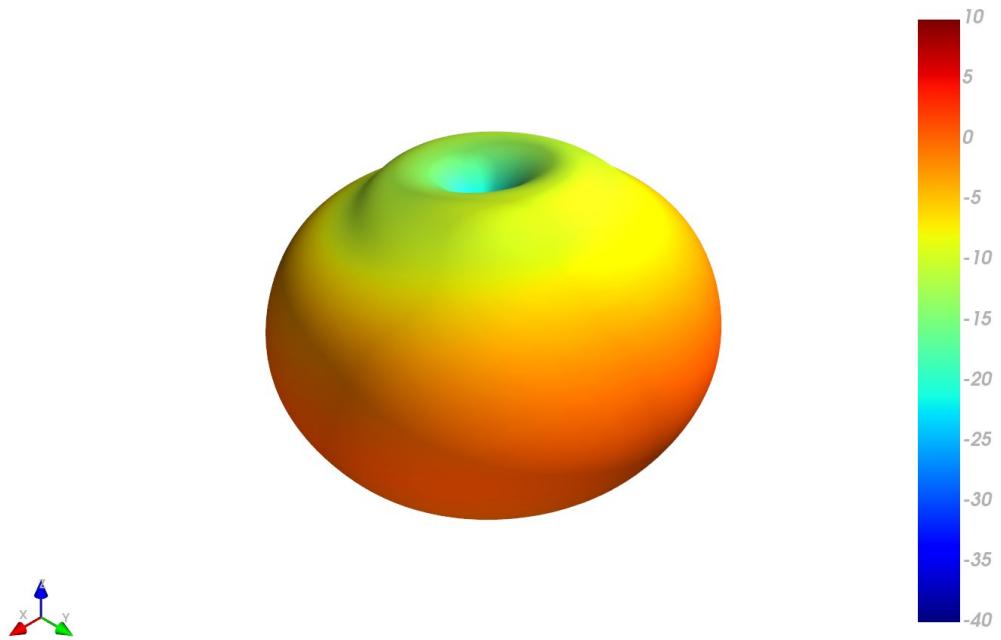
4.7 3D and 2D Radiation Patterns in Free Space – Straight at 1920 MHz



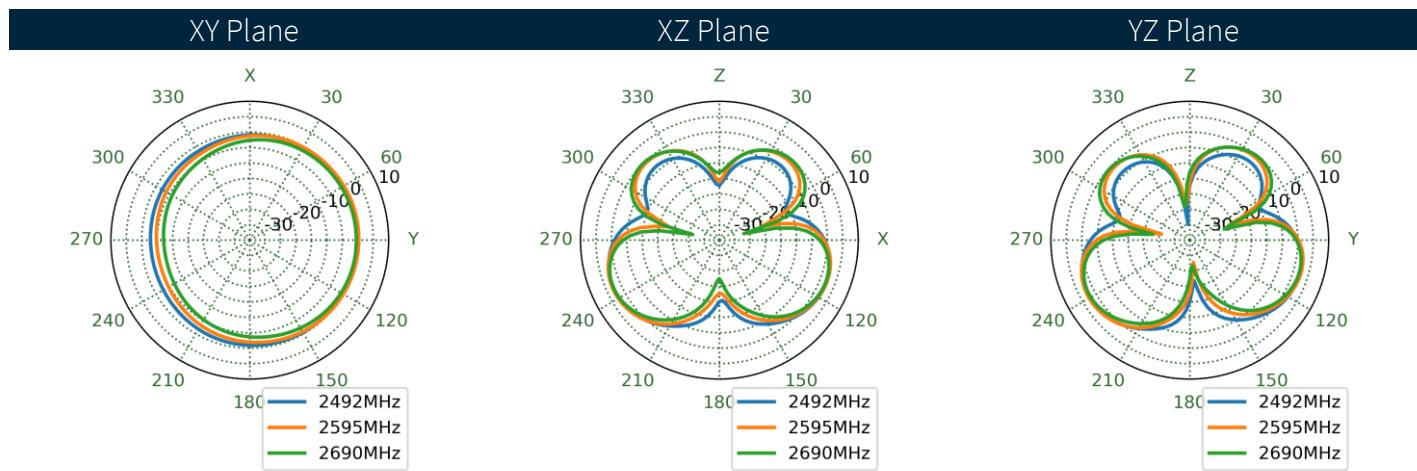
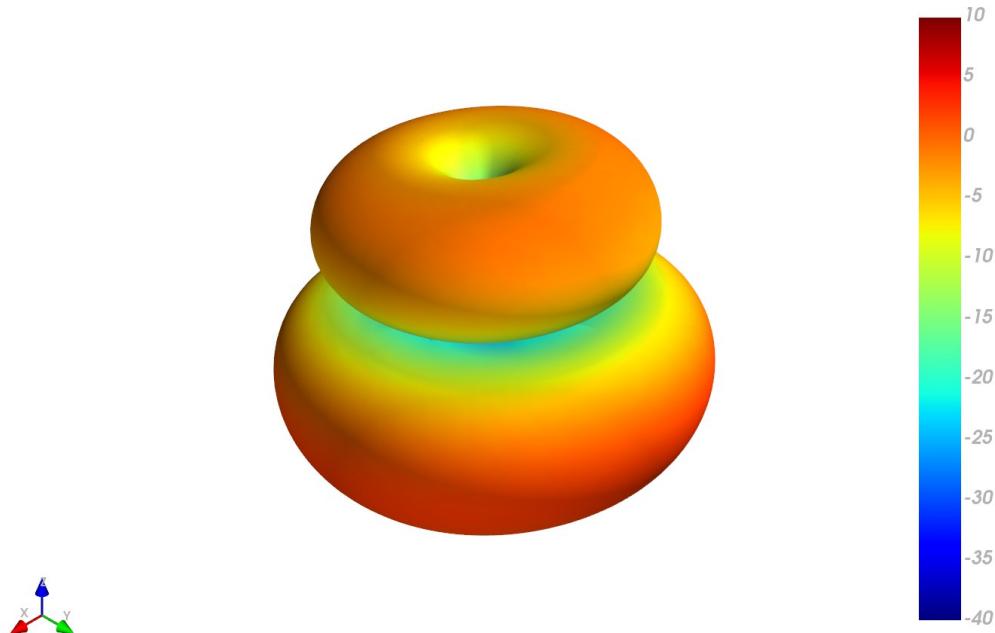
4.8 3D and 2D Radiation Patterns in Free Space – Straight at 1990 MHz



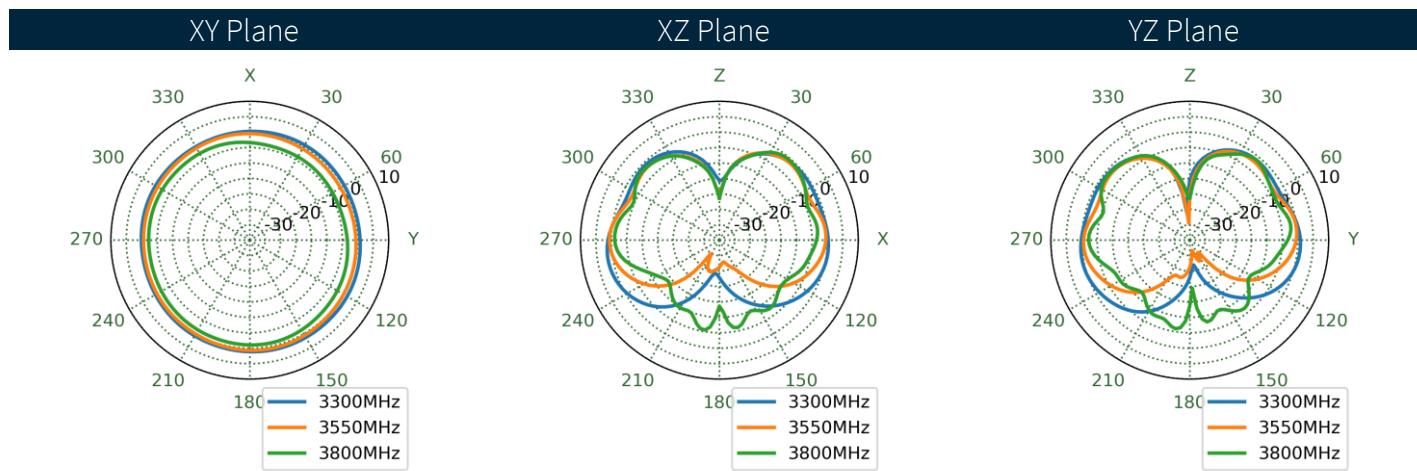
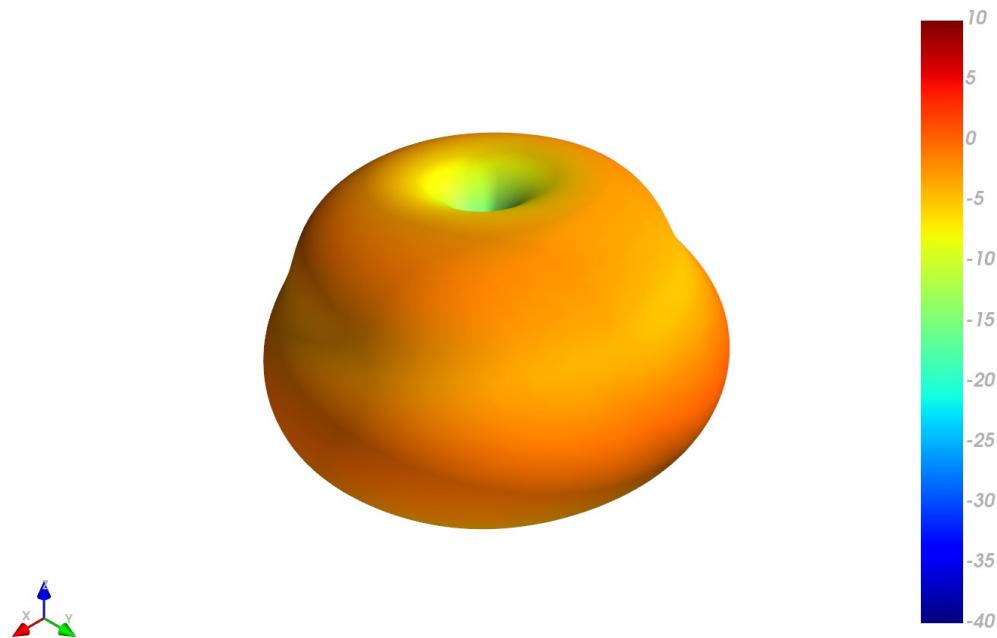
4.9 3D and 2D Radiation Patterns in Free Space – Straight at 2360 MHz



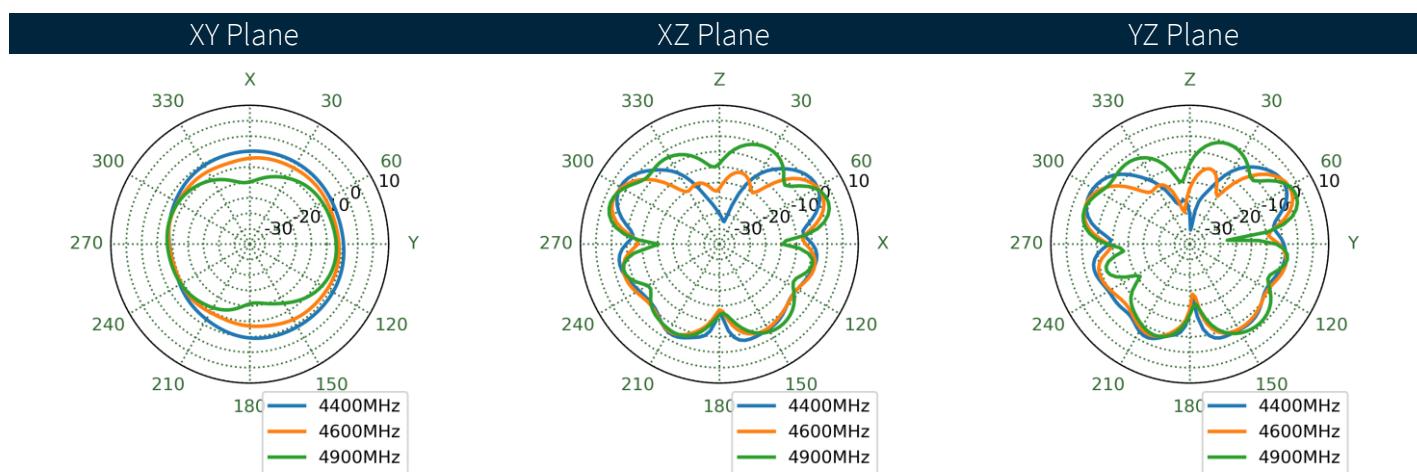
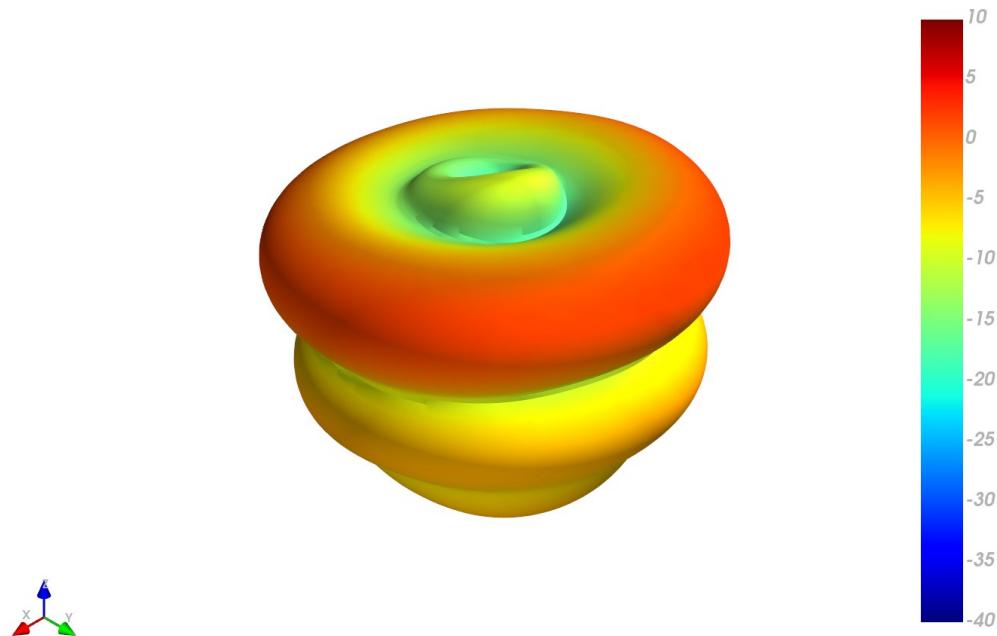
4.10 3D and 2D Radiation Patterns in Free Space – Straight at 2595 MHz



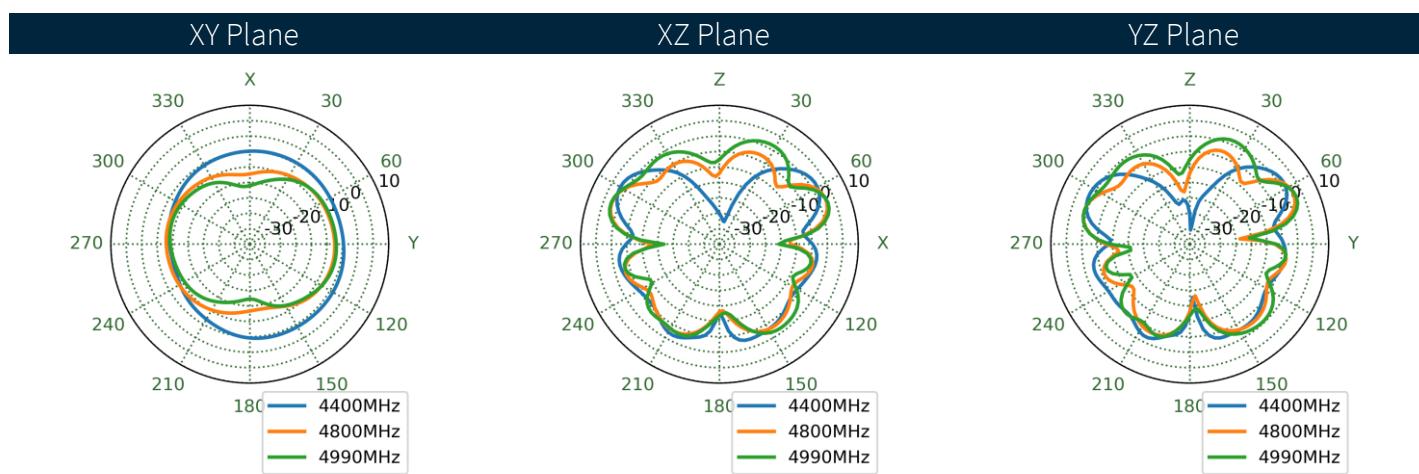
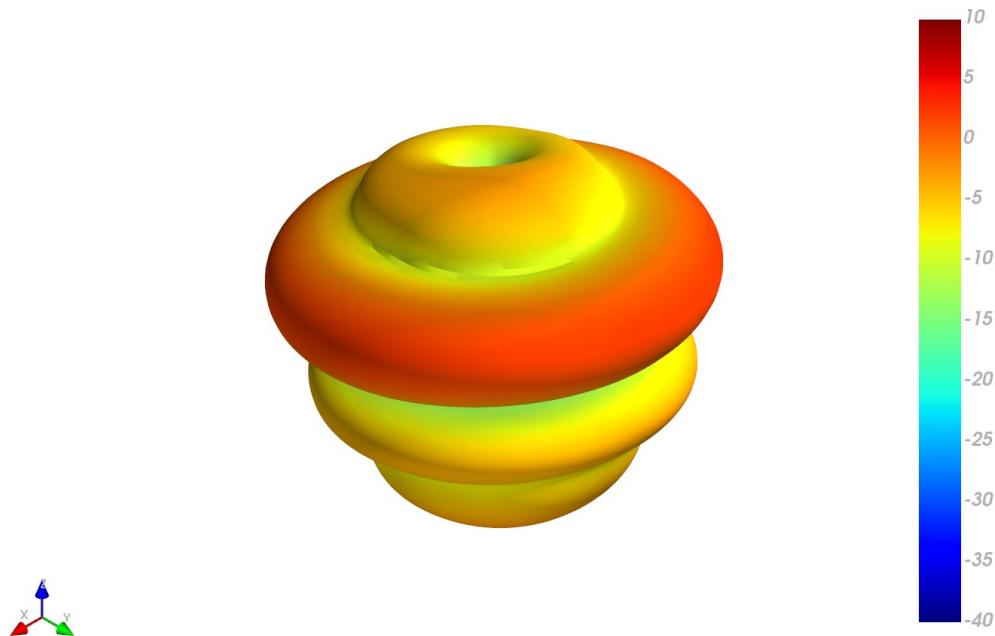
4.11 3D and 2D Radiation Patterns in Free Space – Straight at 3550 MHz



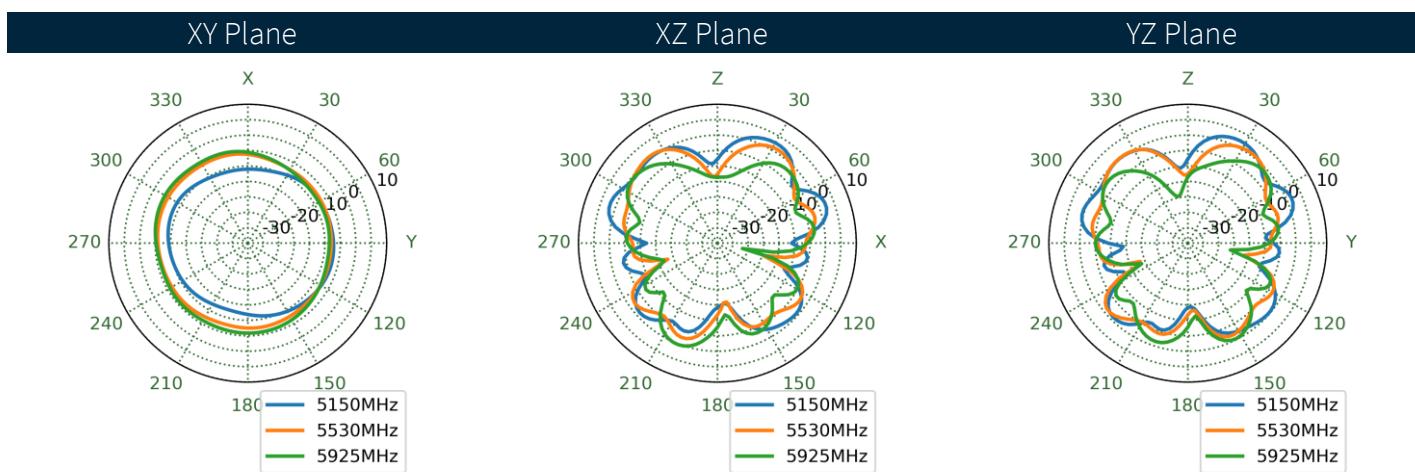
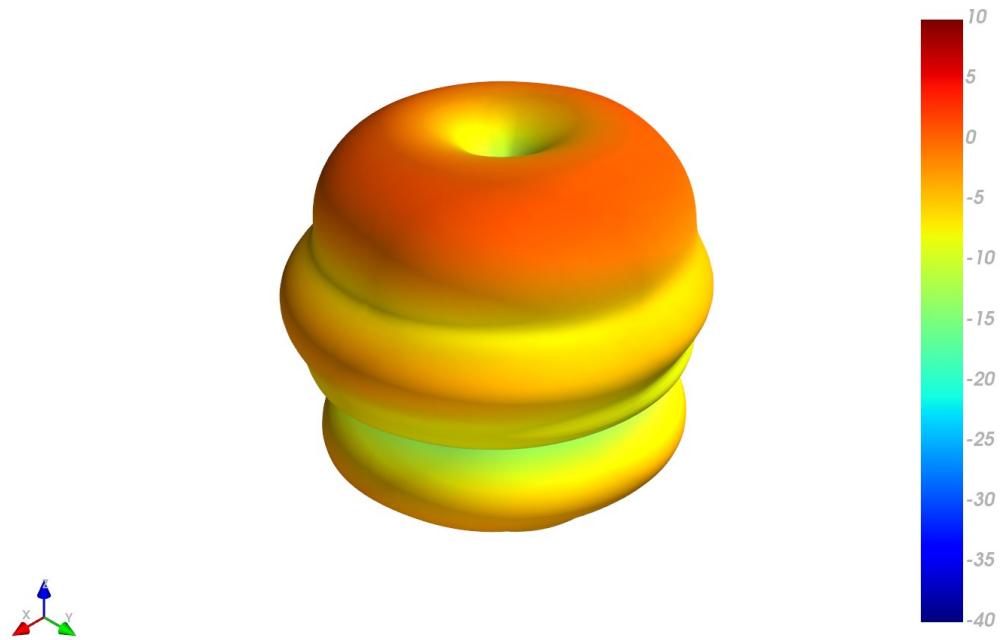
4.12 3D and 2D Radiation Patterns in Free Space – Straight at 4600 MHz



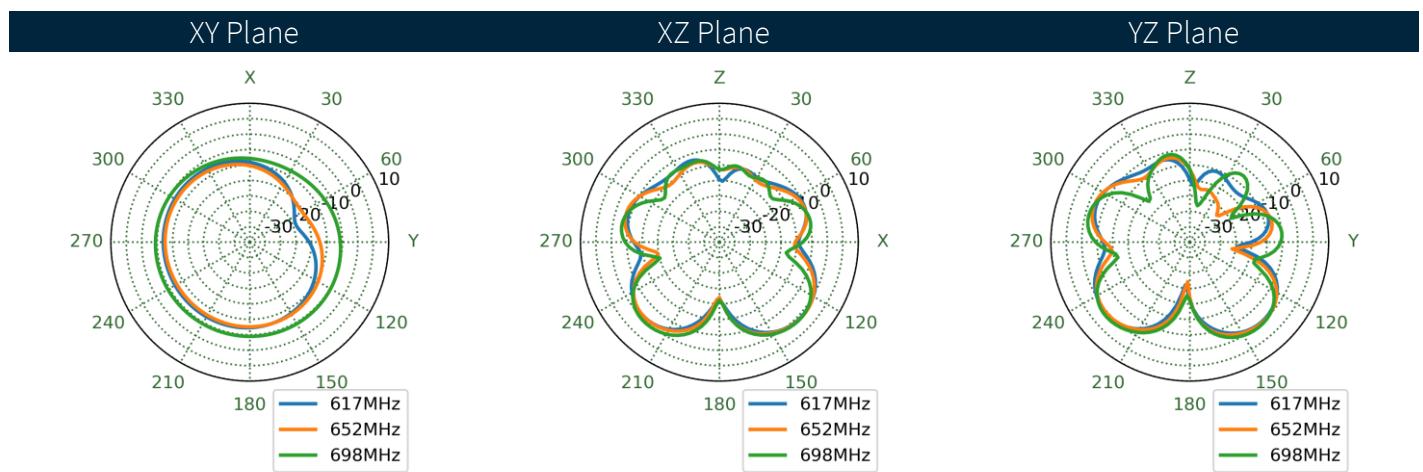
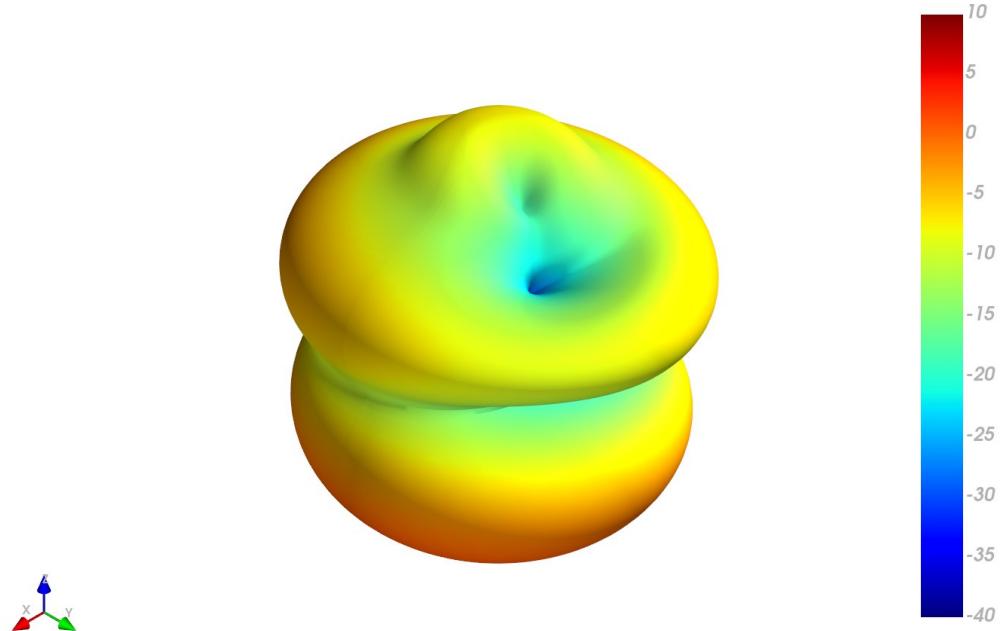
4.13 3D and 2D Radiation Patterns in Free Space – Straight at 4800 MHz



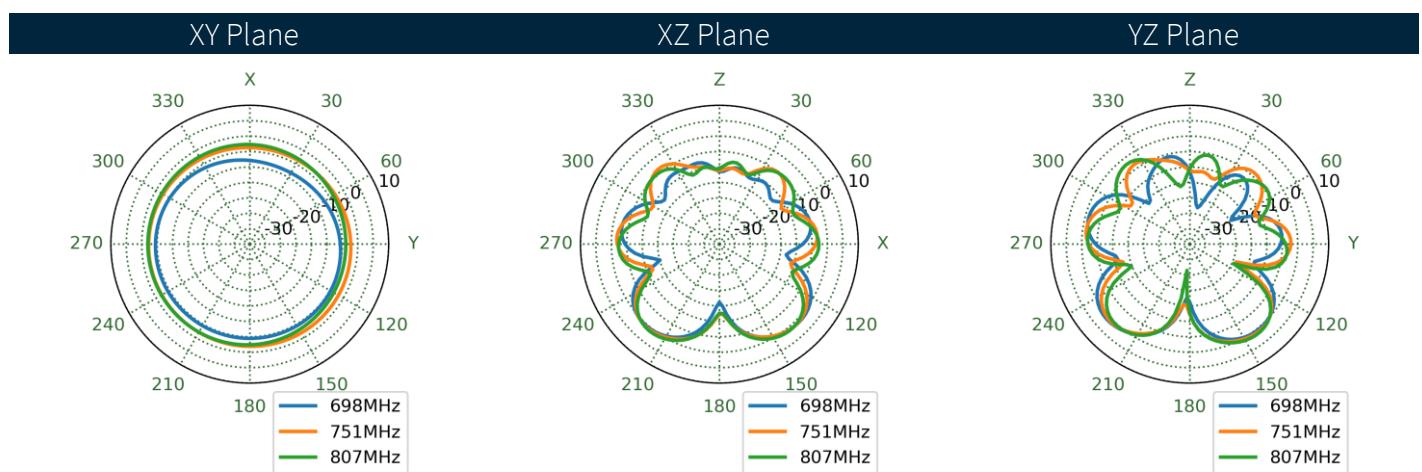
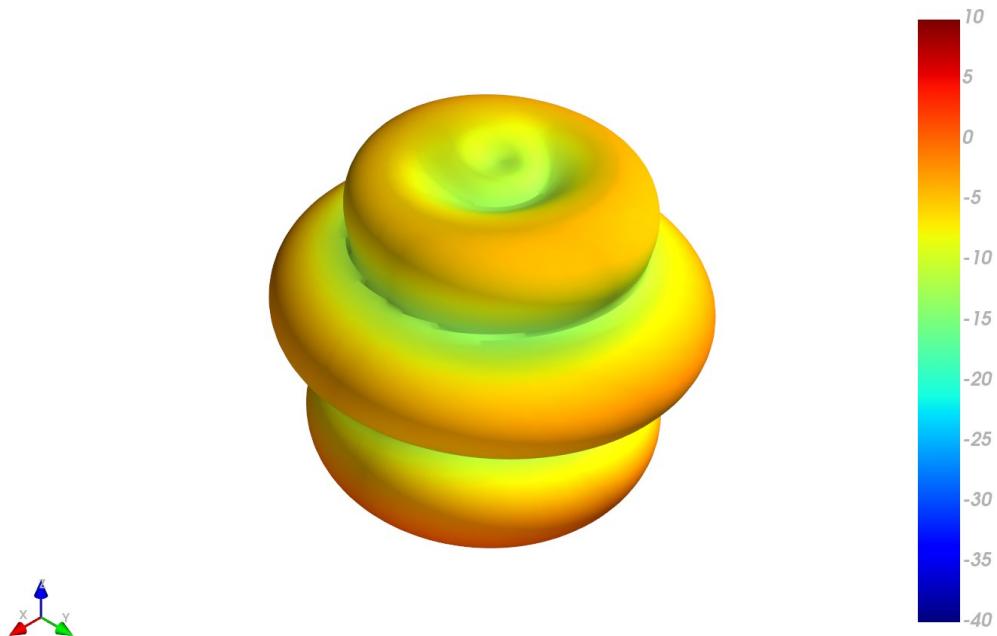
4.14 3D and 2D Radiation Patterns in Free Space – Straight at 5530 MHz



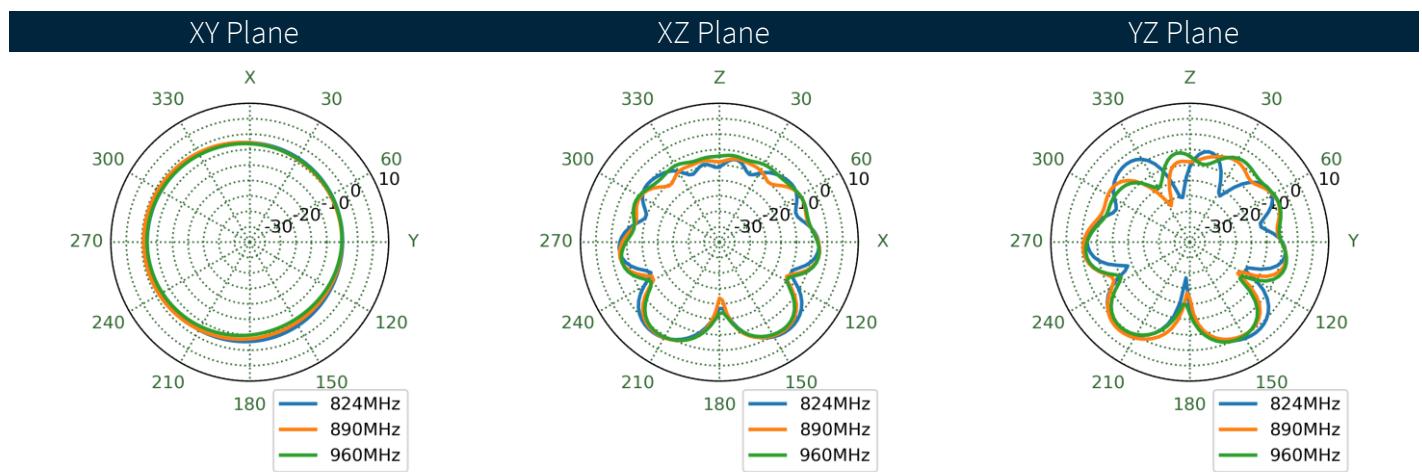
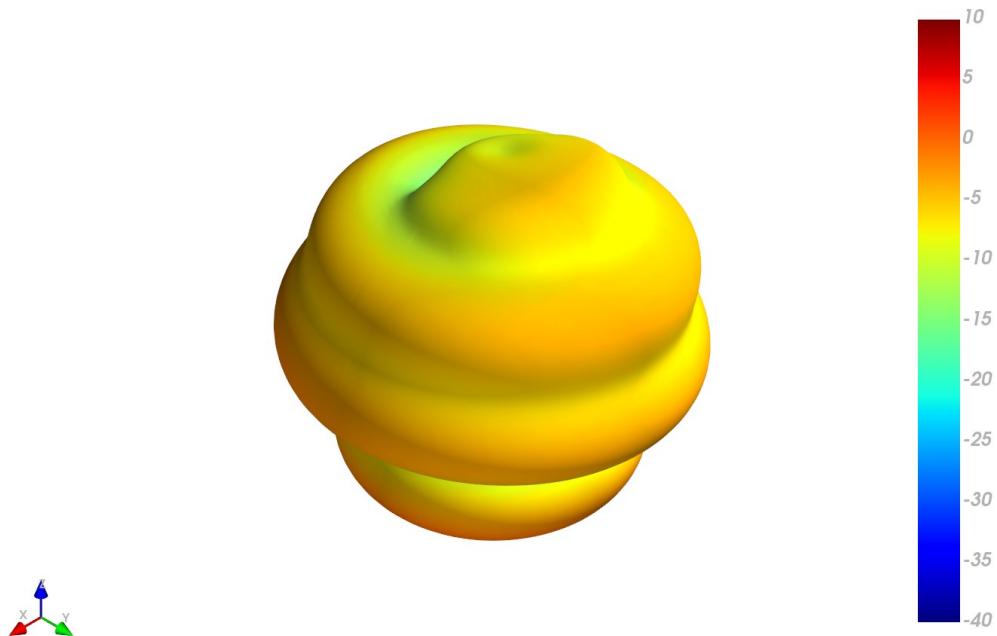
4.15 3D and 2D Radiation Patterns in Free Space – Bent at 652 MHz



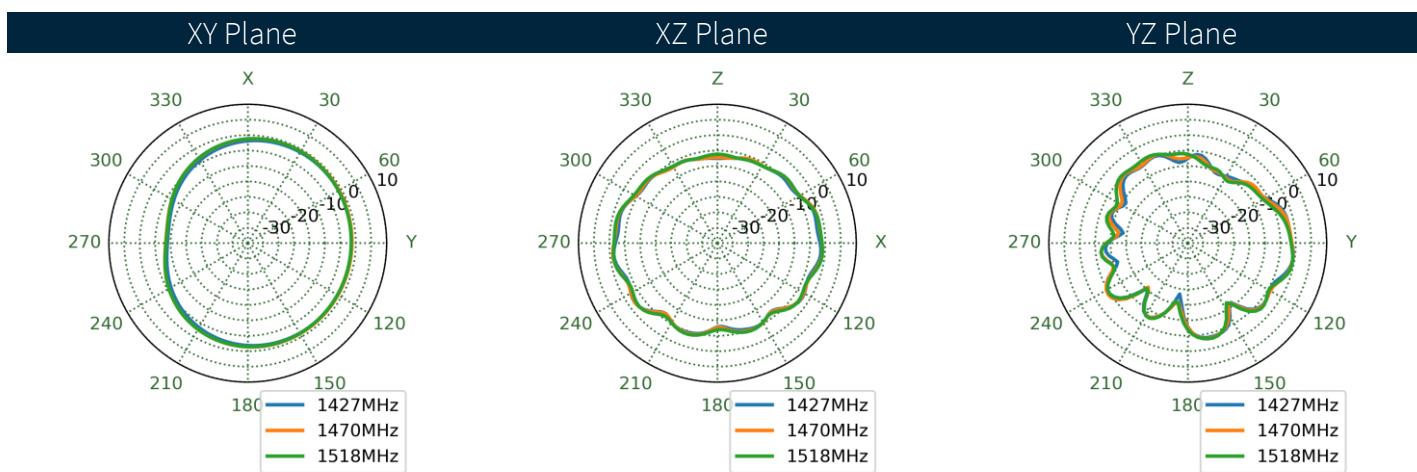
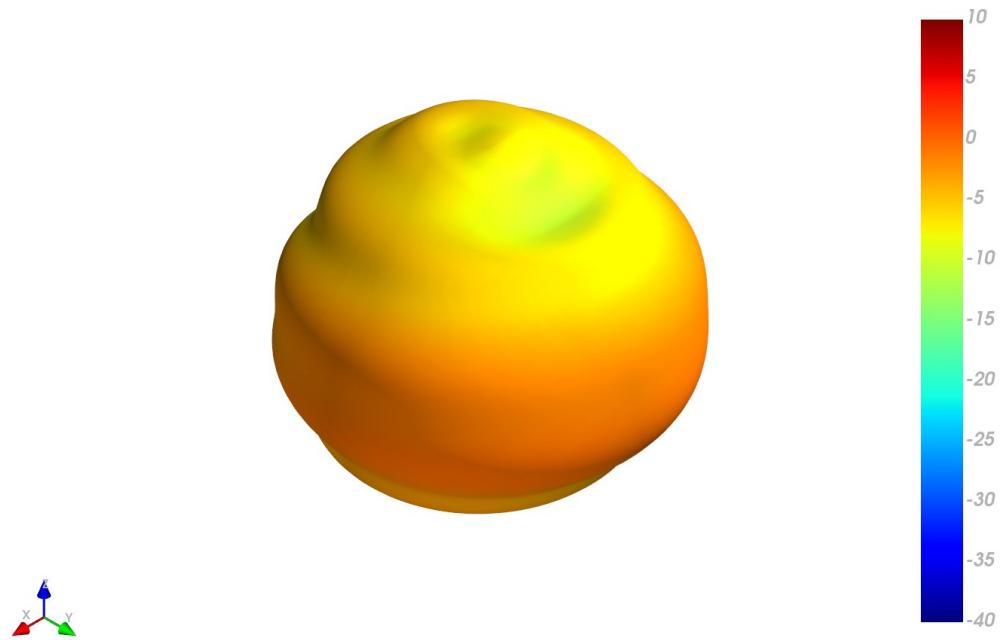
4.16 3D and 2D Radiation Patterns in Free Space – Bent at 751 MHz



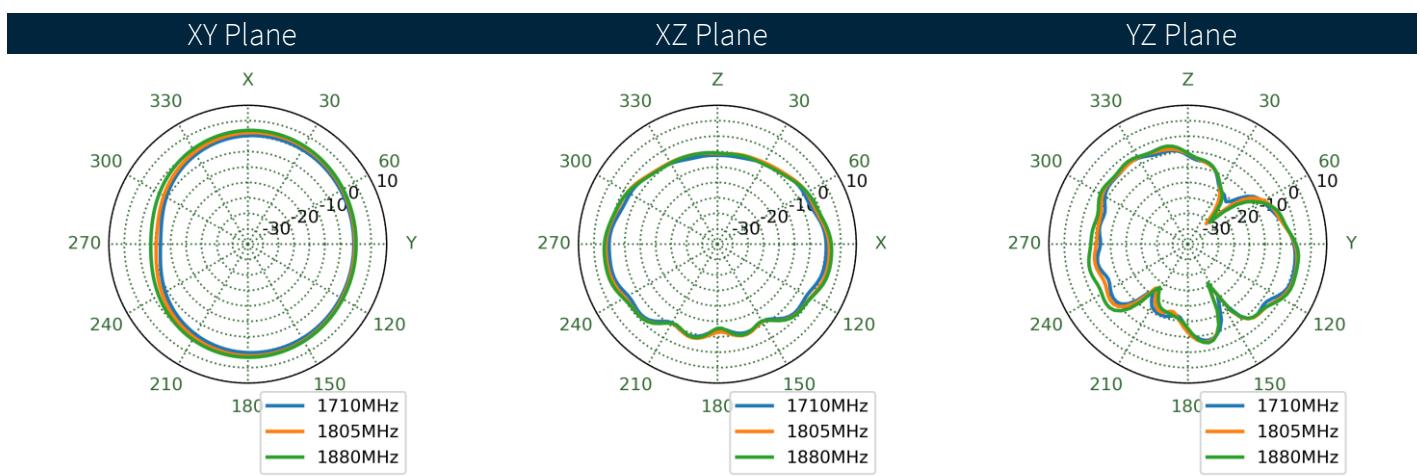
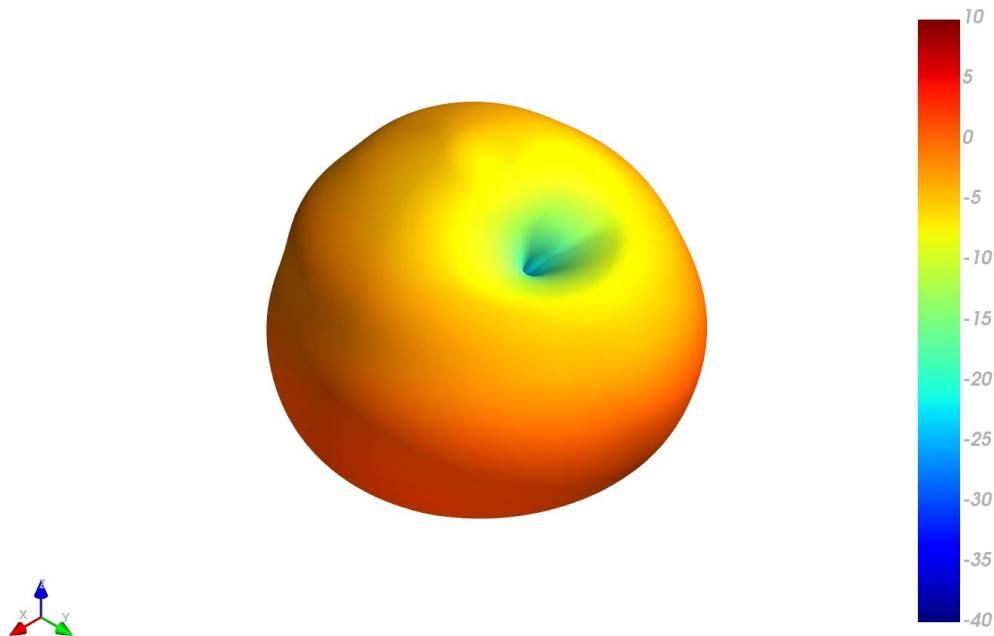
4.17 3D and 2D Radiation Patterns in Free Space – Bent at 890 MHz



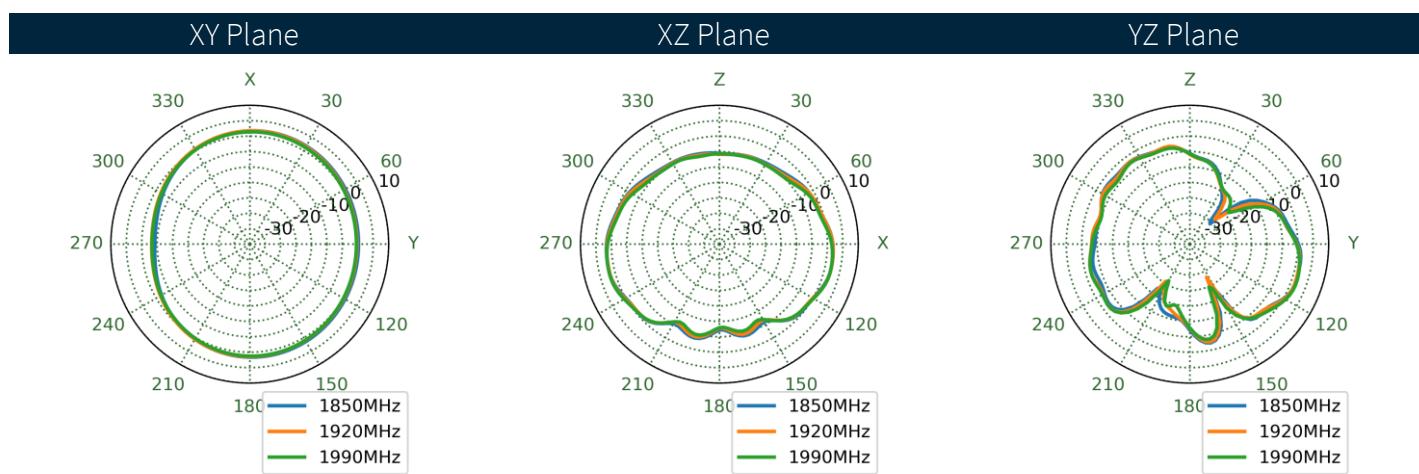
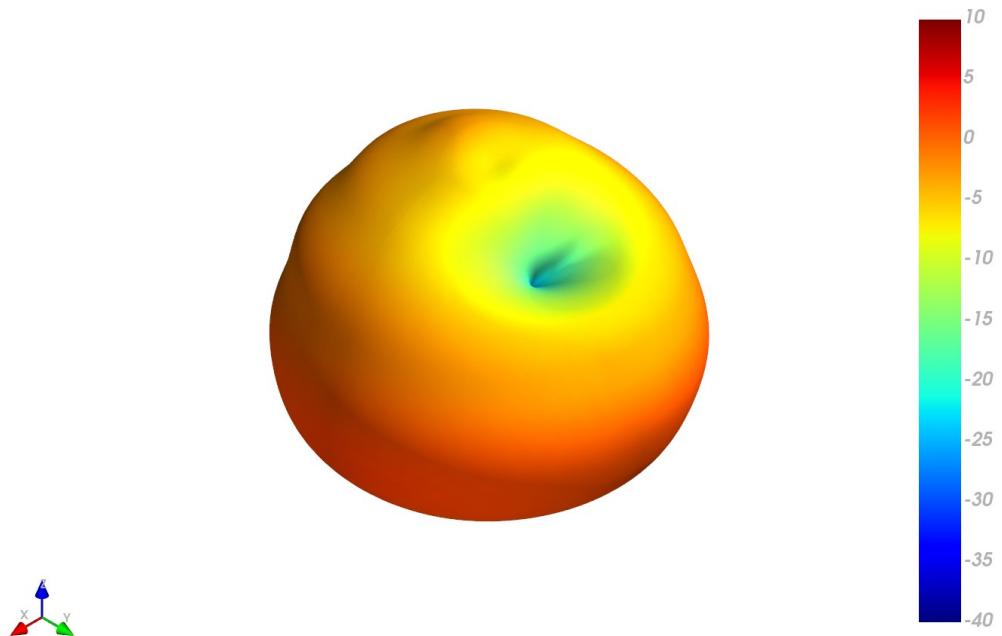
4.18 3D and 2D Radiation Patterns in Free Space – Bent at 1470 MHz



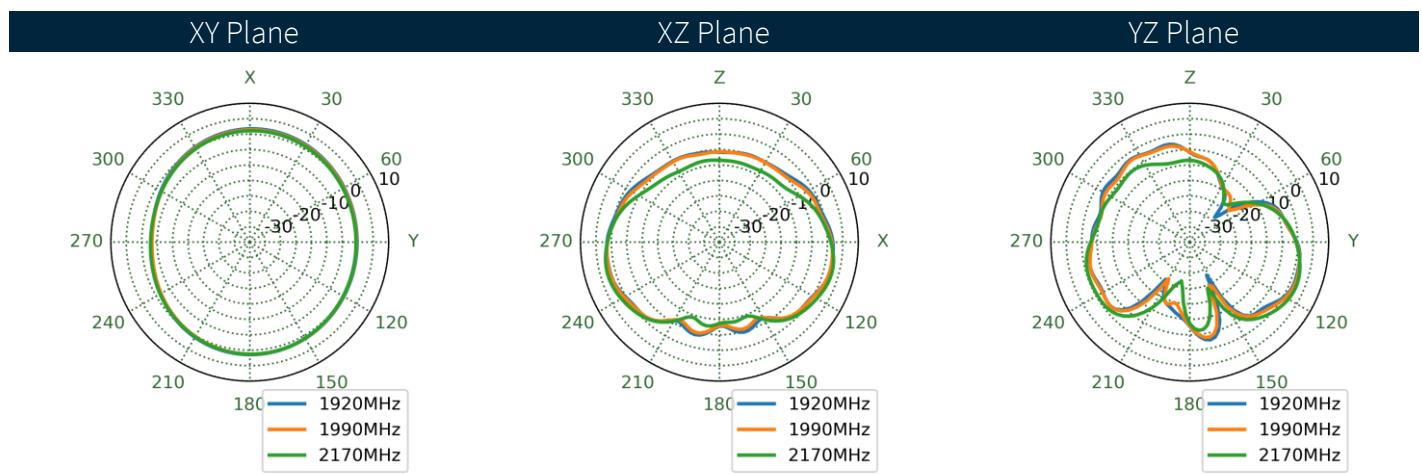
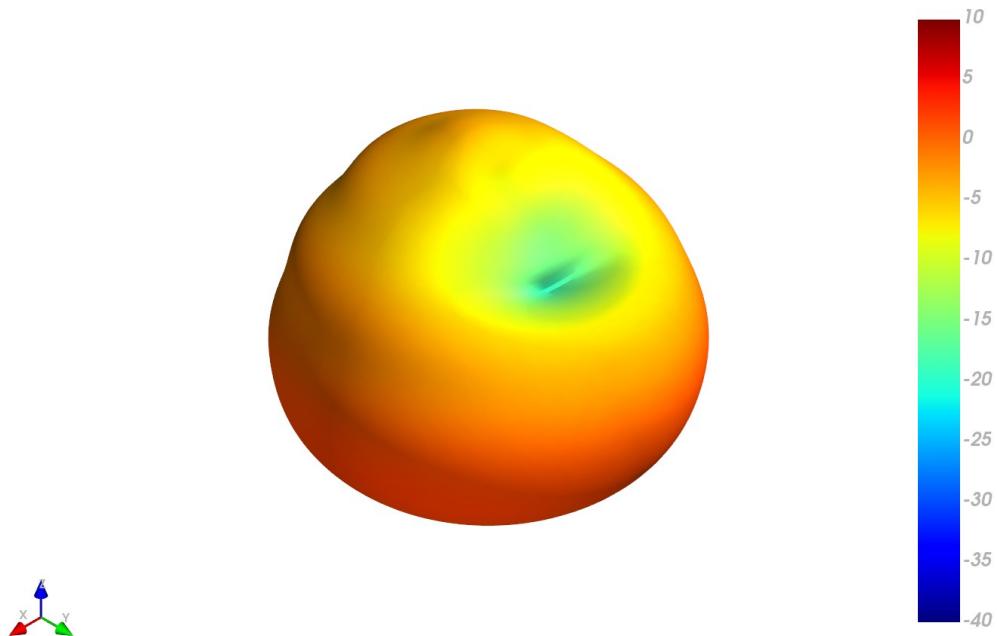
4.19 3D and 2D Radiation Patterns in Free Space – Bent at 1805 MHz



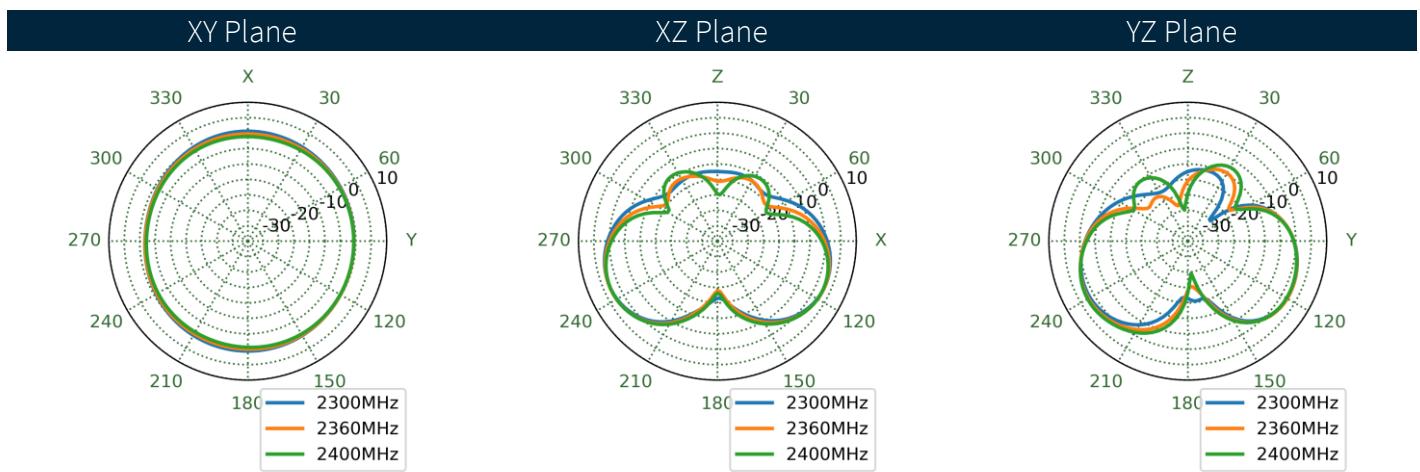
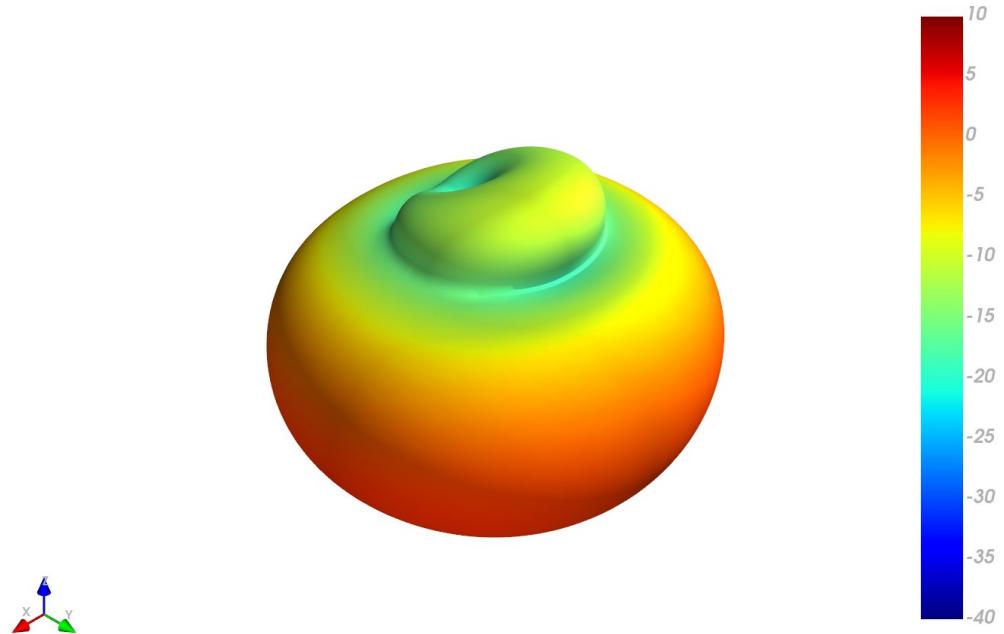
4.20 3D and 2D Radiation Patterns in Free Space – Bent at 1920 MHz



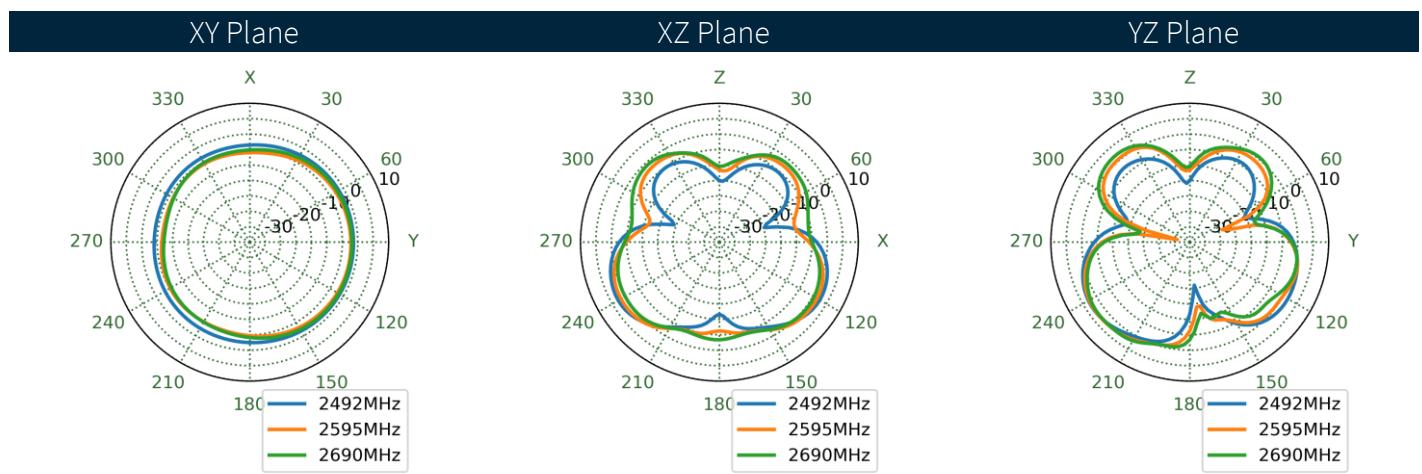
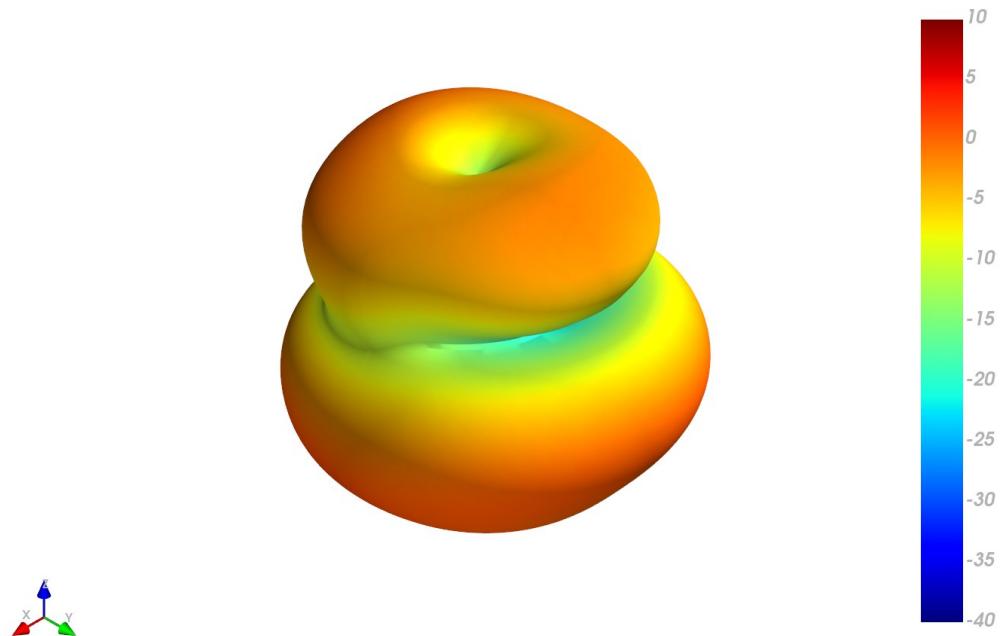
4.21 3D and 2D Radiation Patterns in Free Space – Bent at 1990 MHz



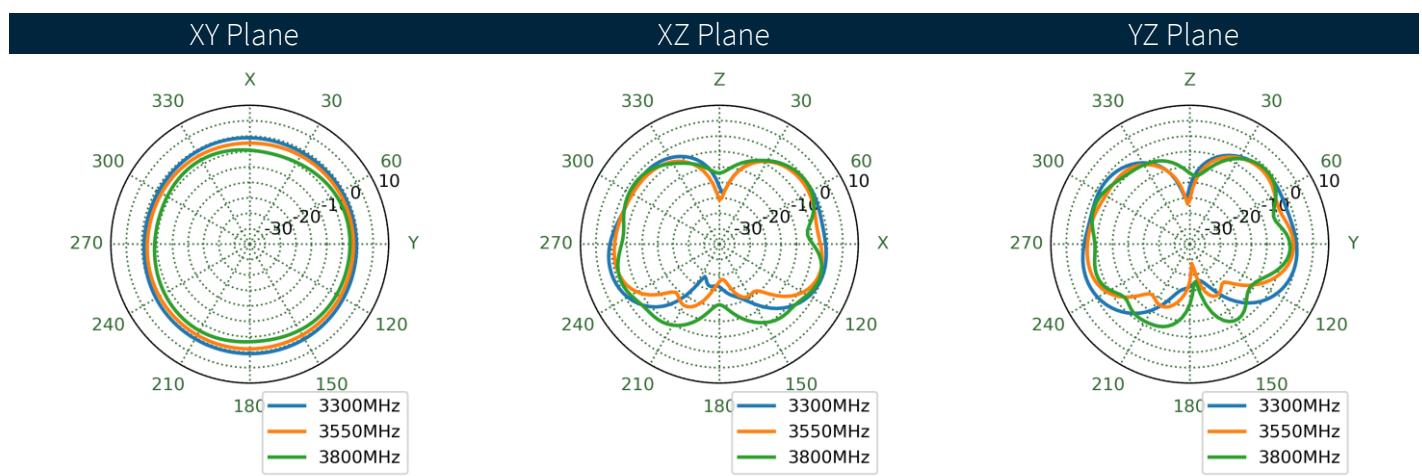
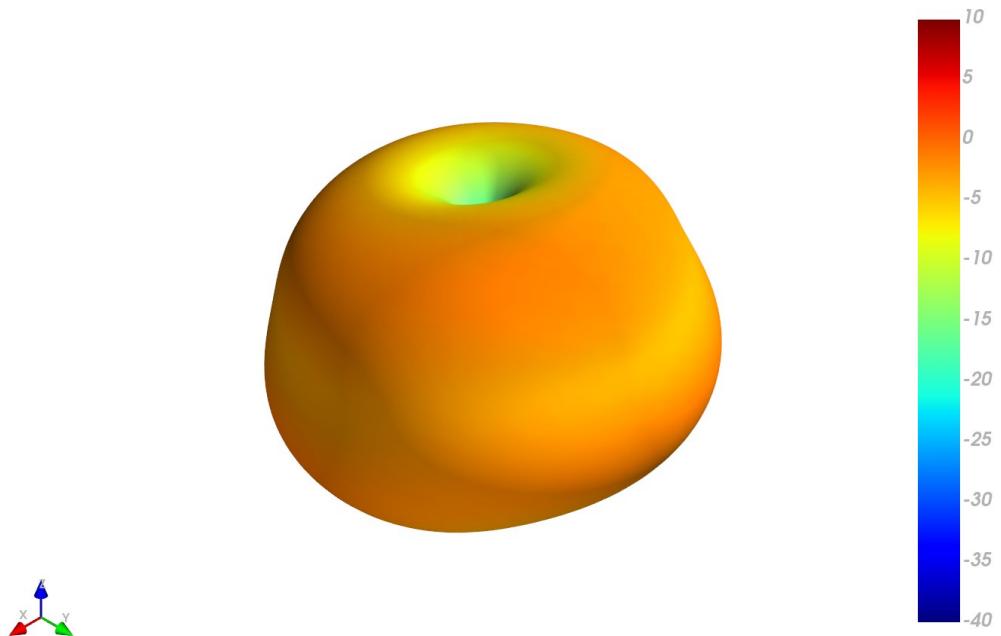
4.22 3D and 2D Radiation Patterns in Free Space – Bent at 2360 MHz



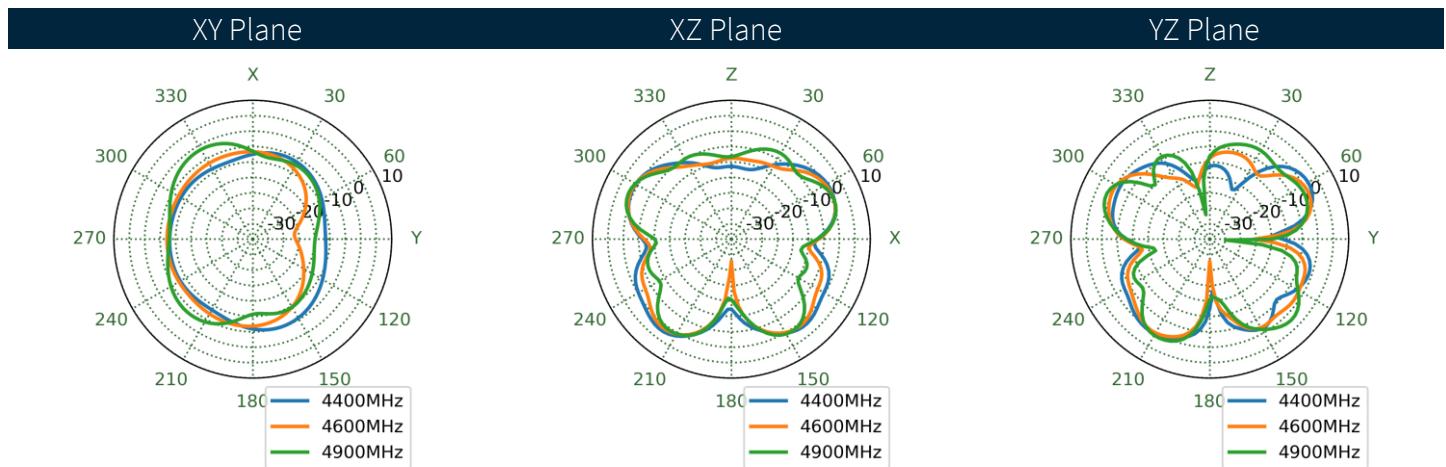
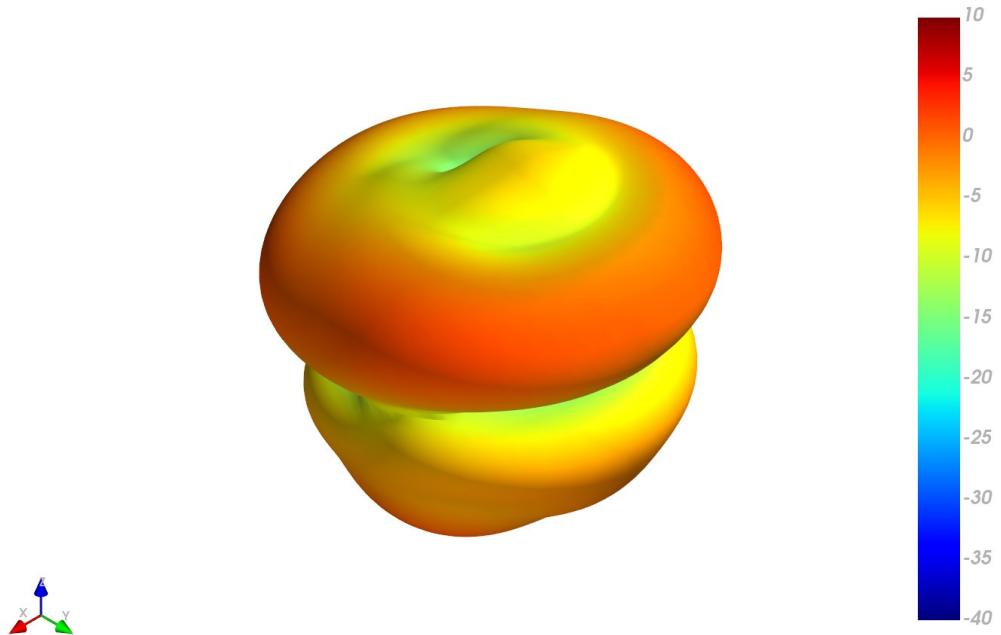
4.23 3D and 2D Radiation Patterns in Free Space – Bent at 2595 MHz



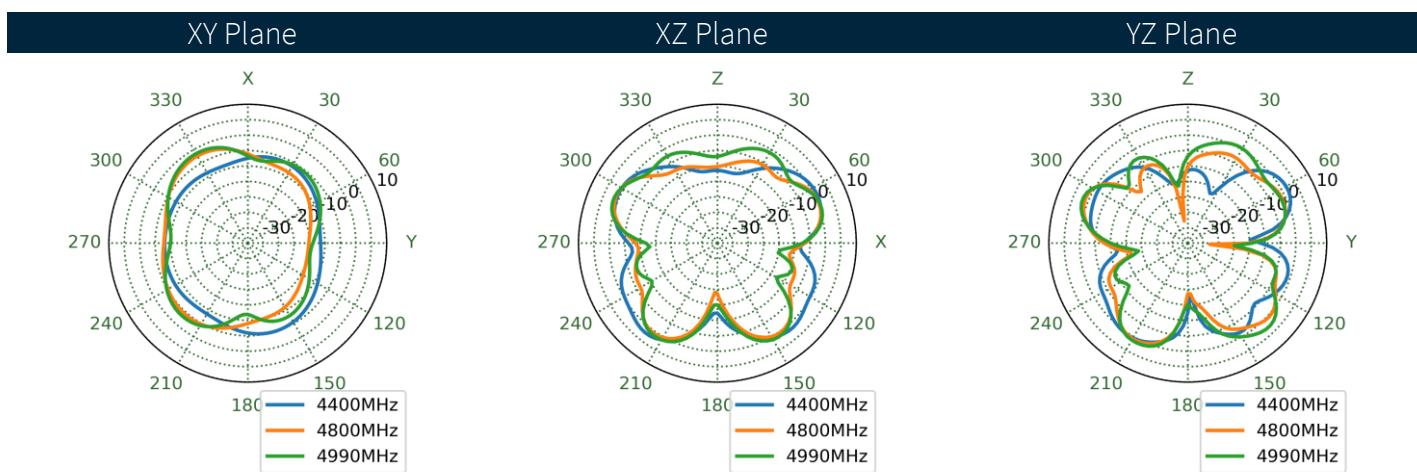
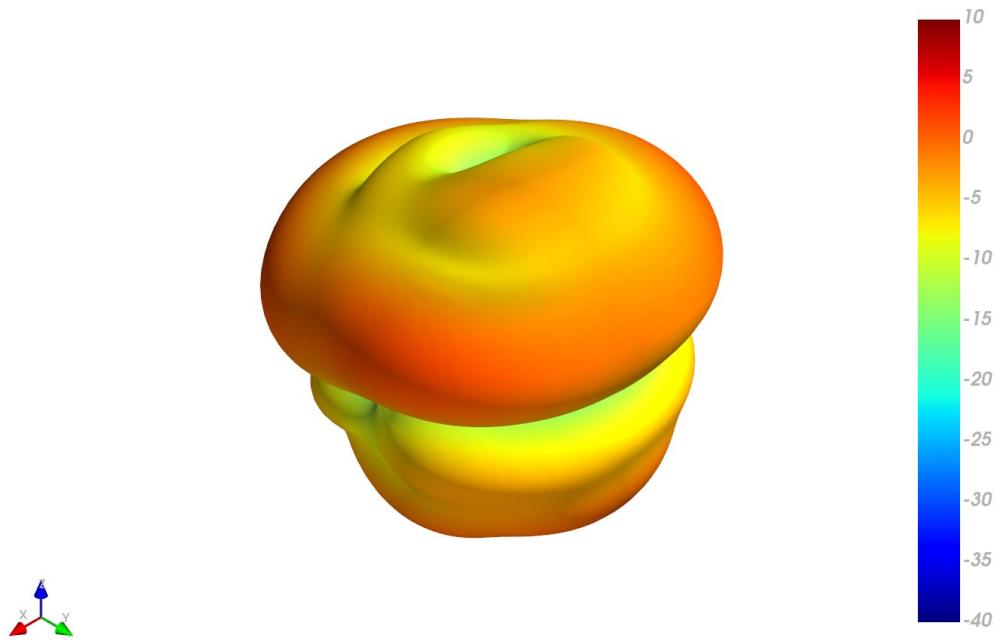
4.24 3D and 2D Radiation Patterns in Free Space – Bent at 3550 MHz



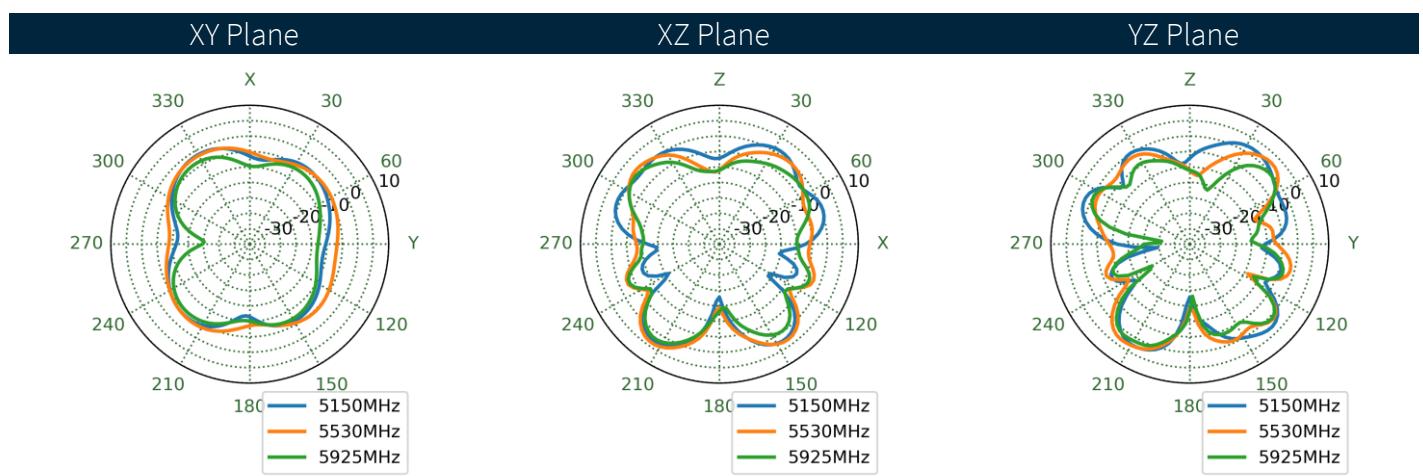
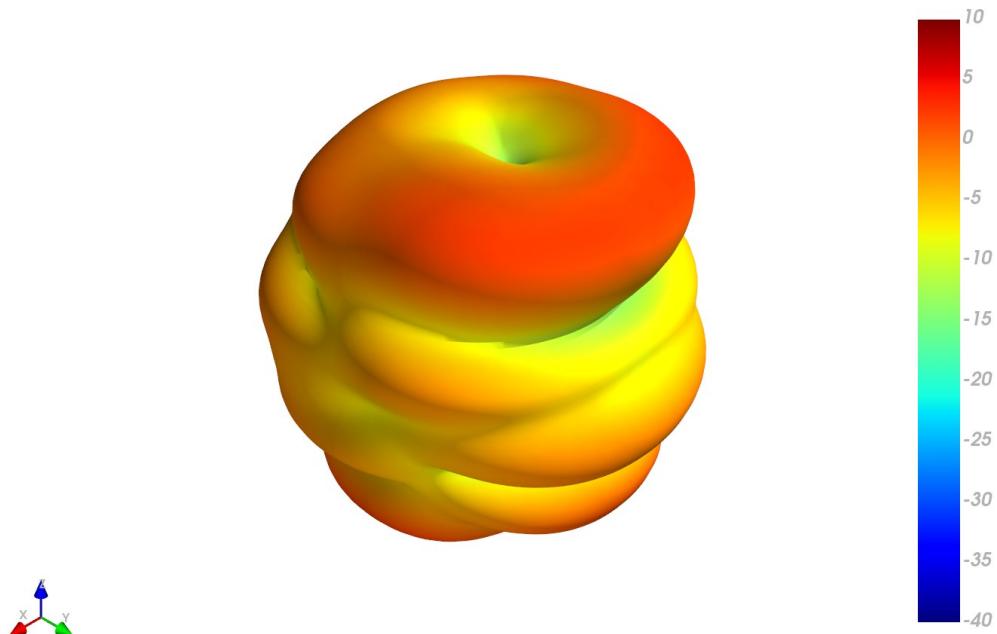
4.25 3D and 2D Radiation Patterns in Free Space – Bent at 4600 MHz



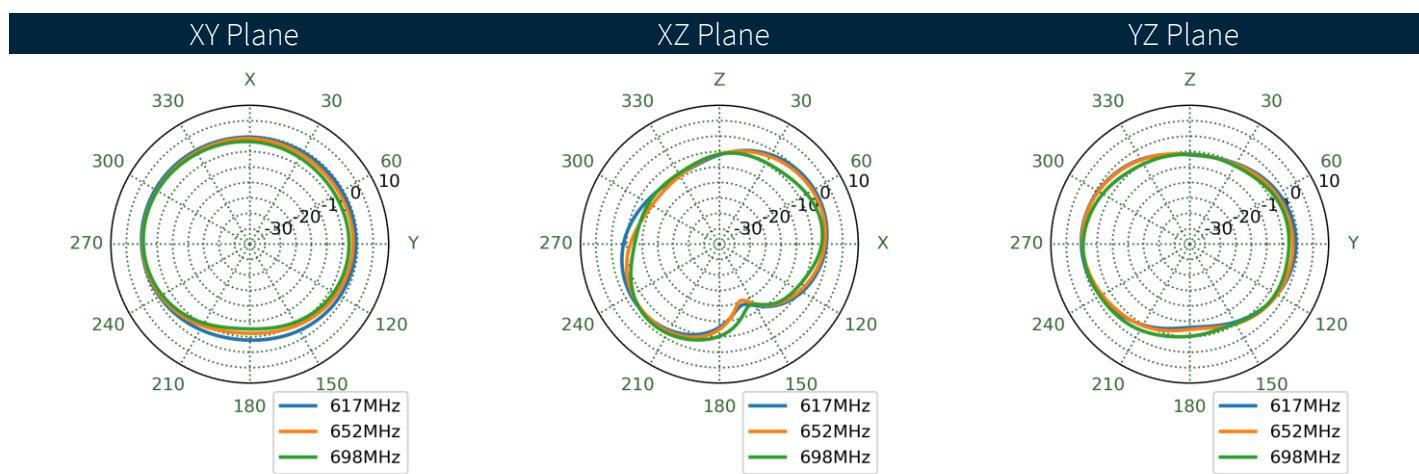
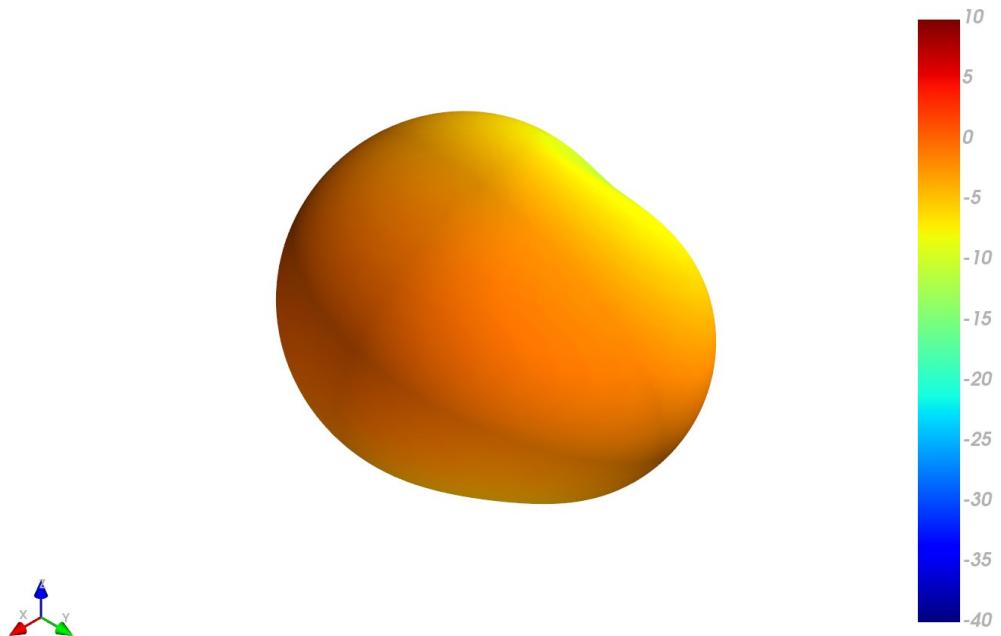
4.26 3D and 2D Radiation Patterns in Free Space – Bent at 4800 MHz



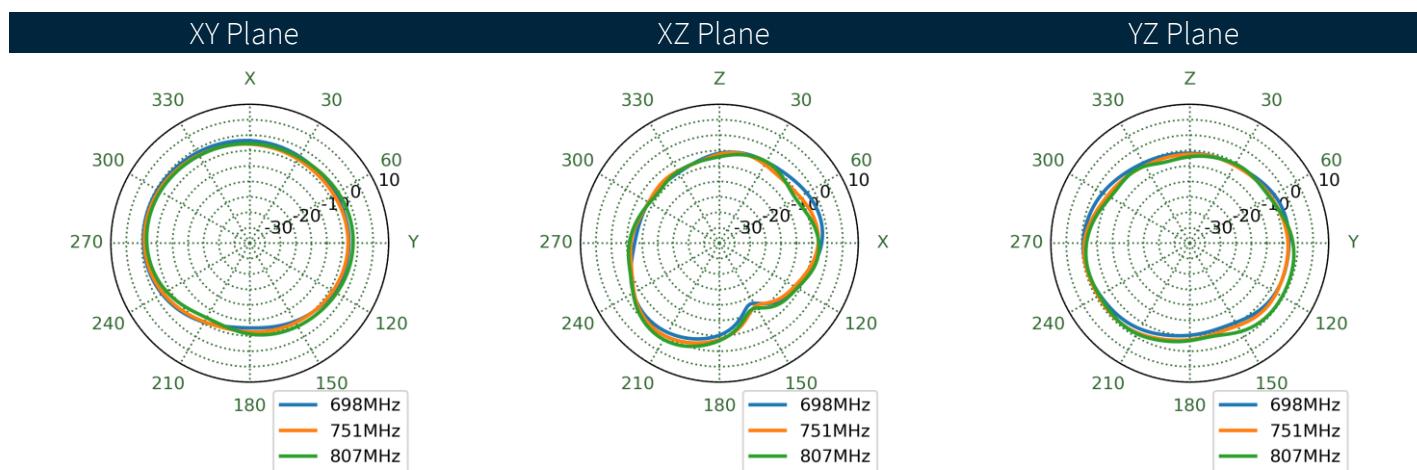
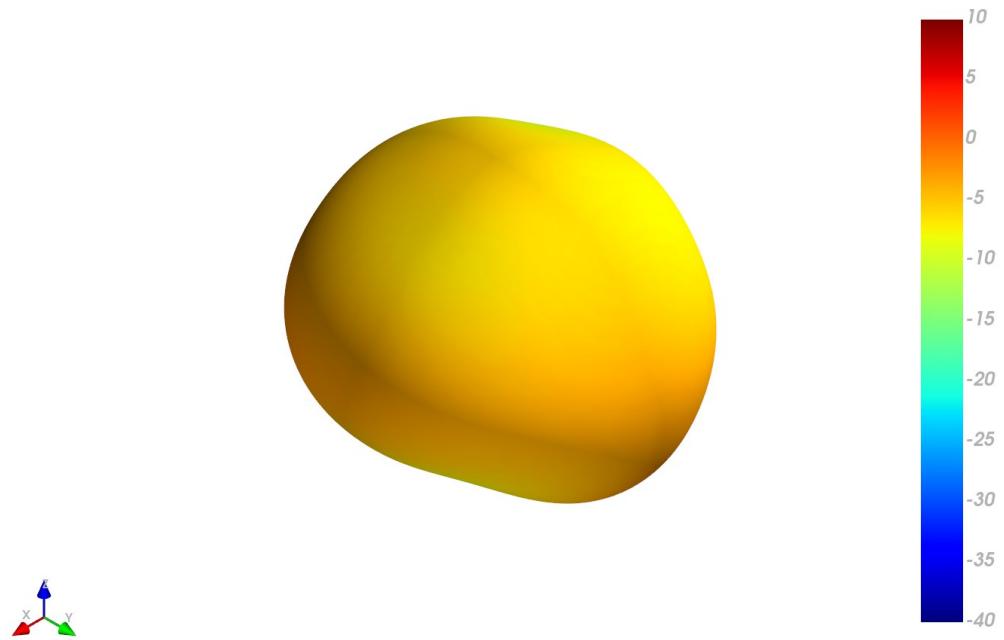
4.27 3D and 2D Radiation Patterns in Free Space – Bent at 5530 MHz



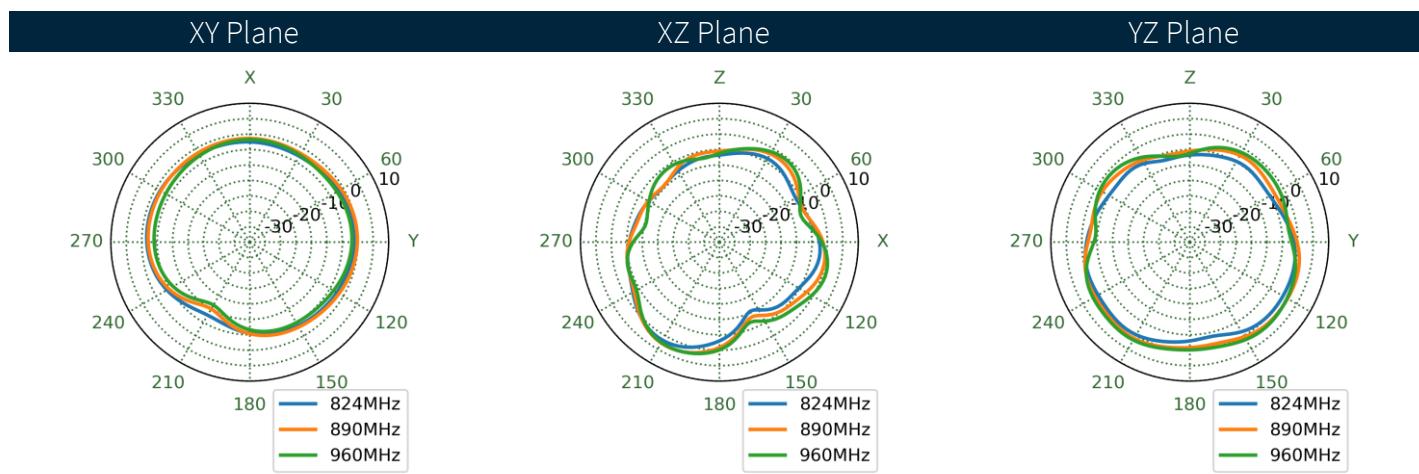
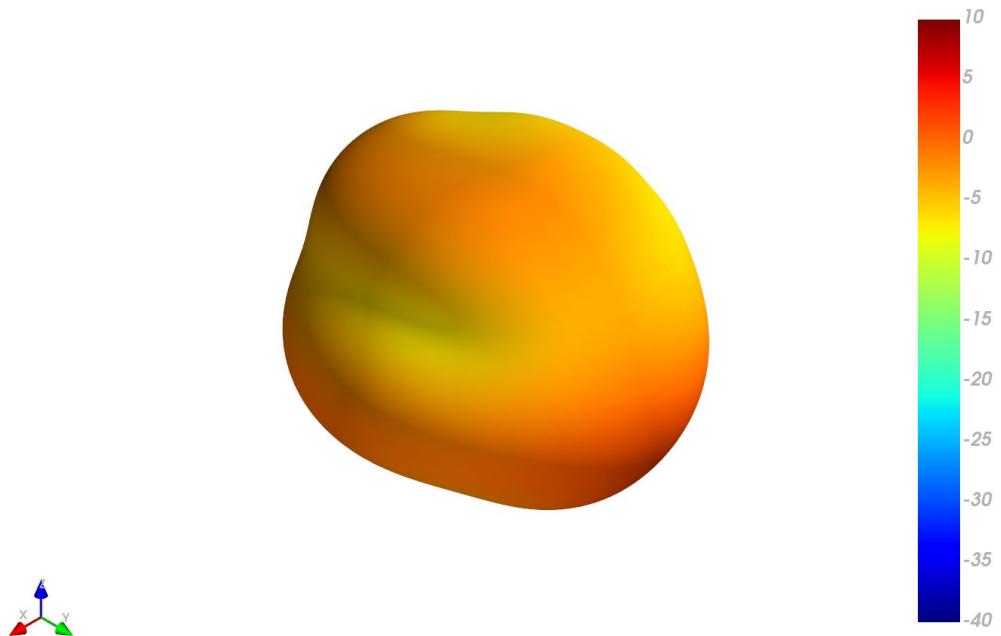
4.28 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 652 MHz



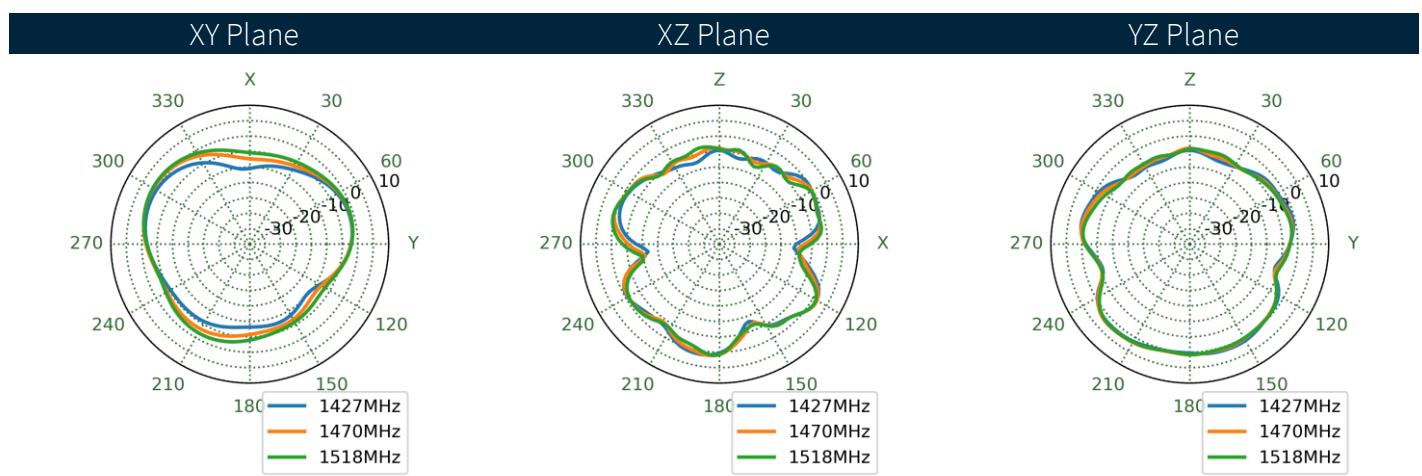
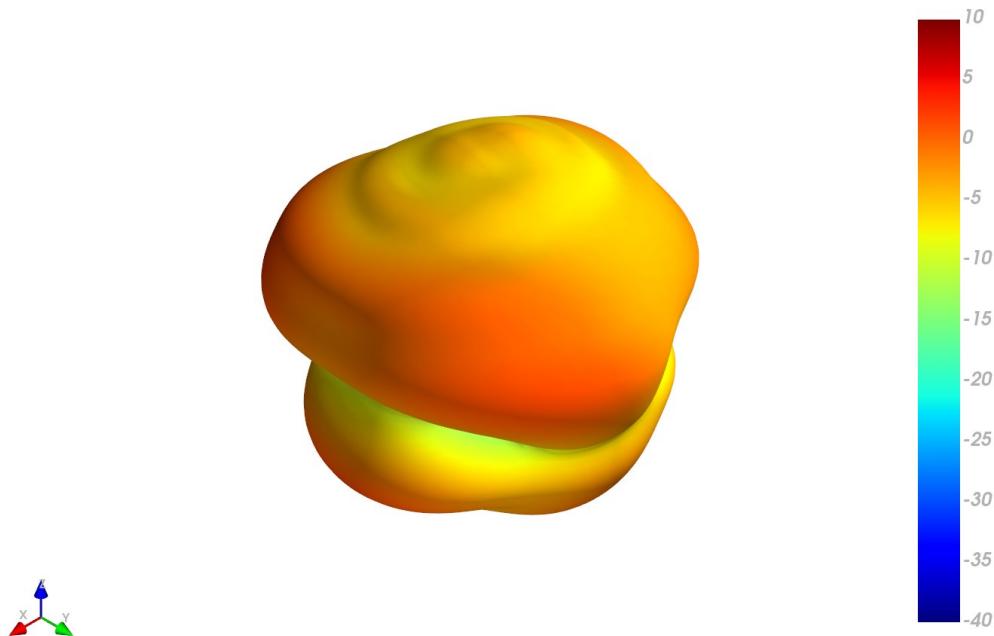
4.29 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 751 MHz



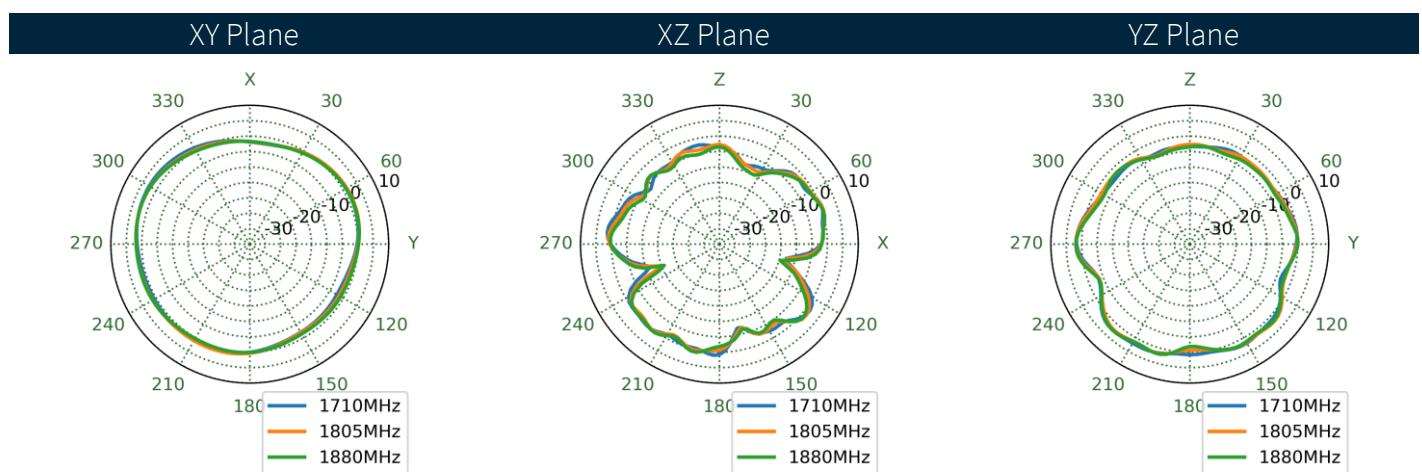
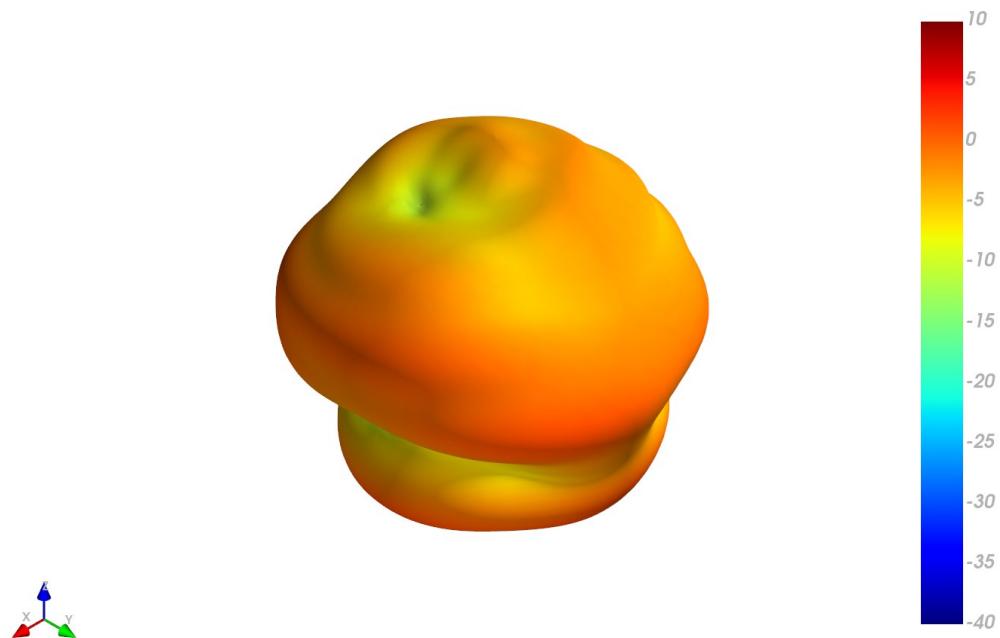
4.30 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 890 MHz



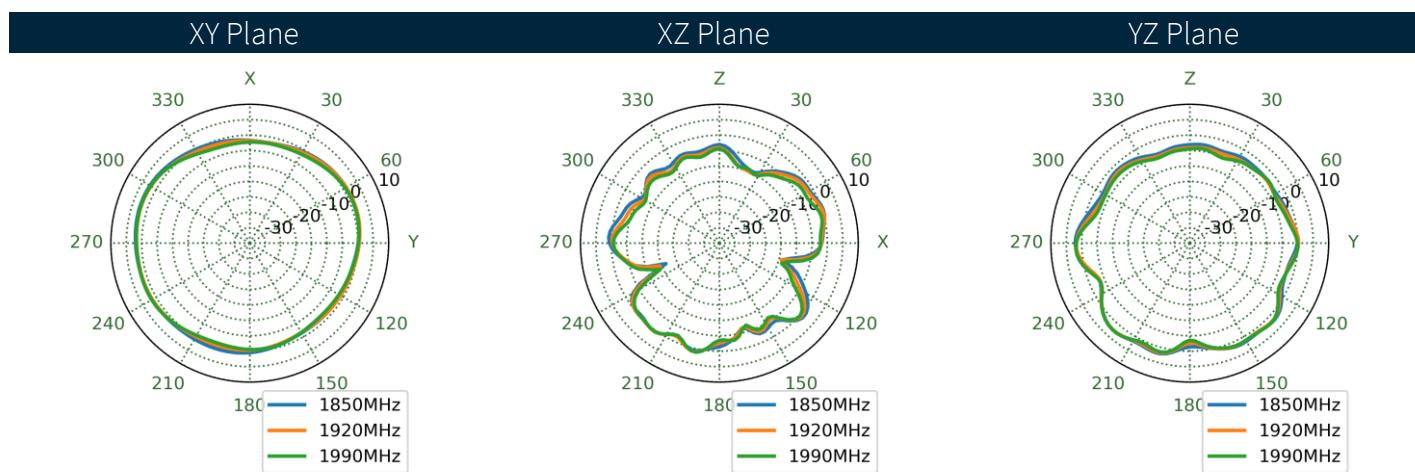
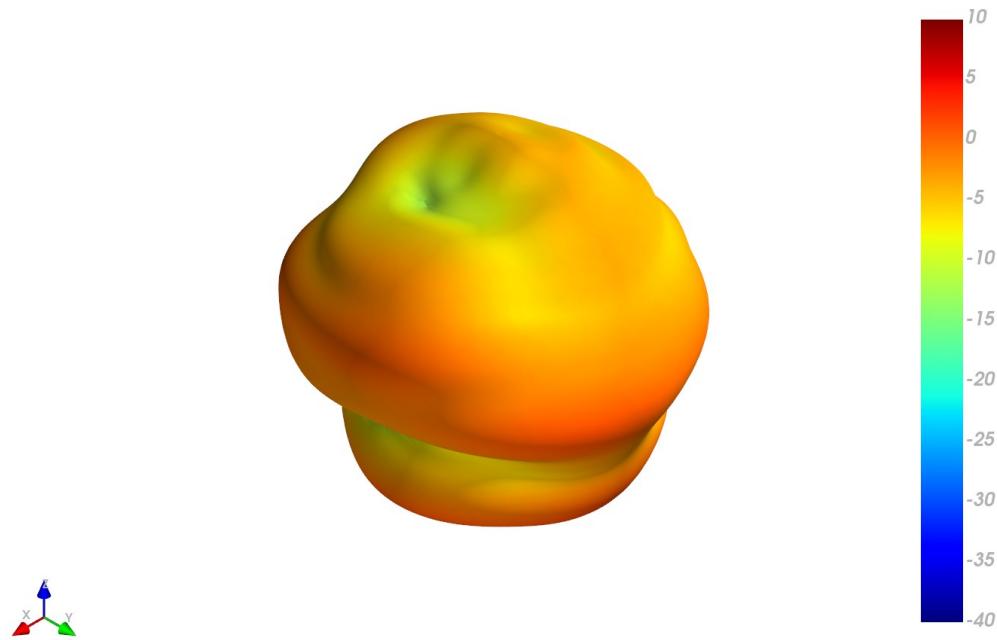
4.31 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 1470 MHz



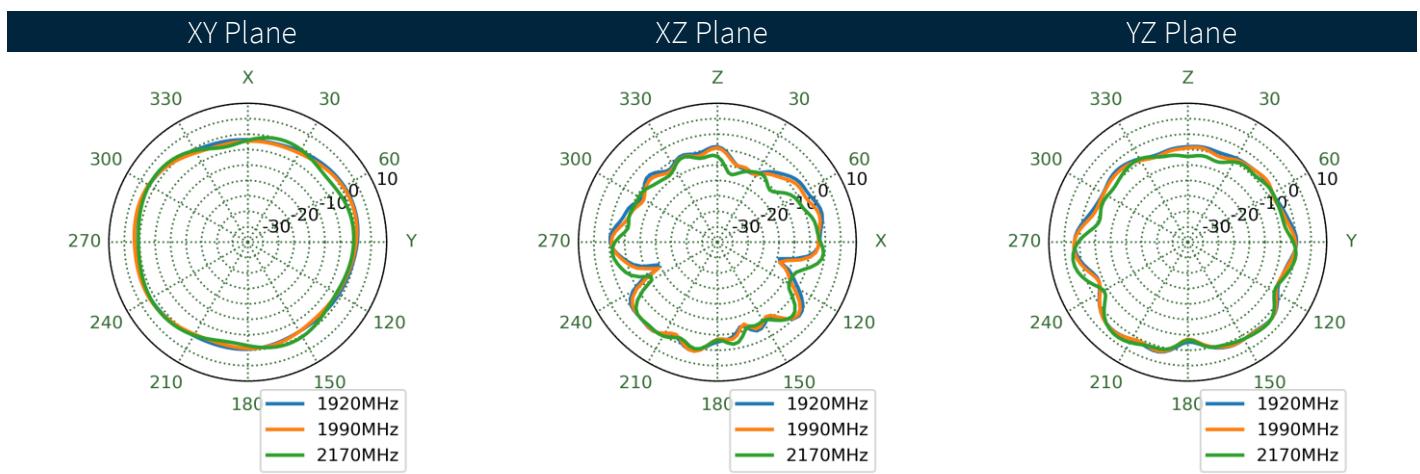
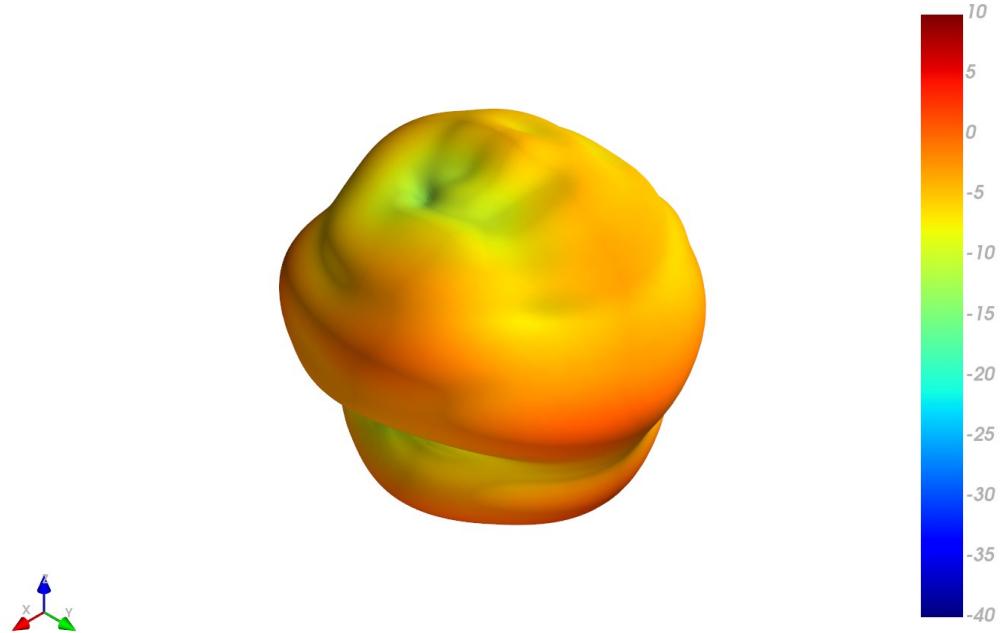
4.32 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 1805 MHz



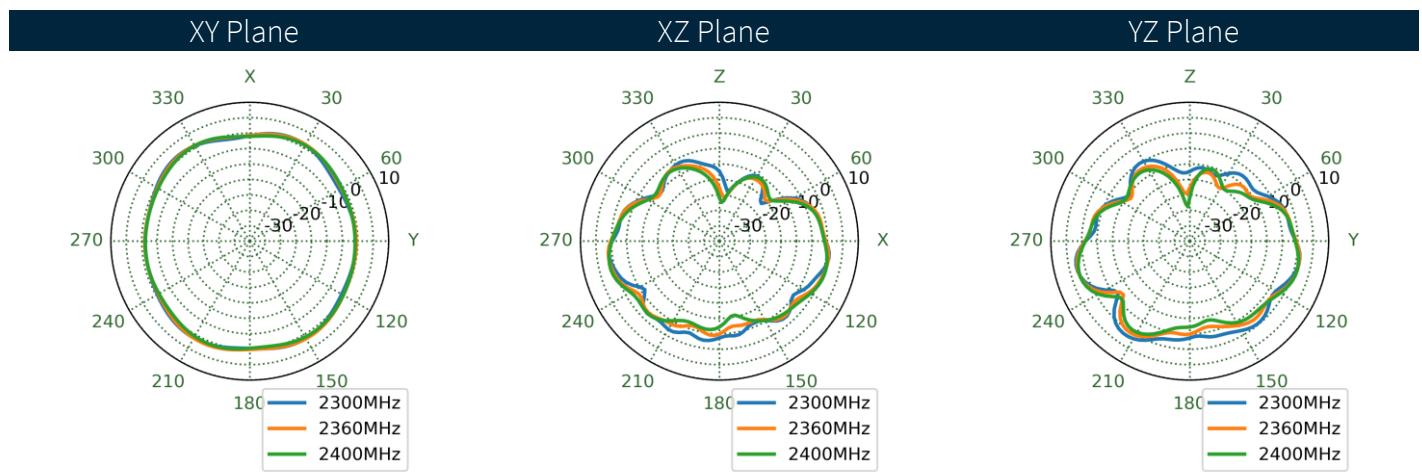
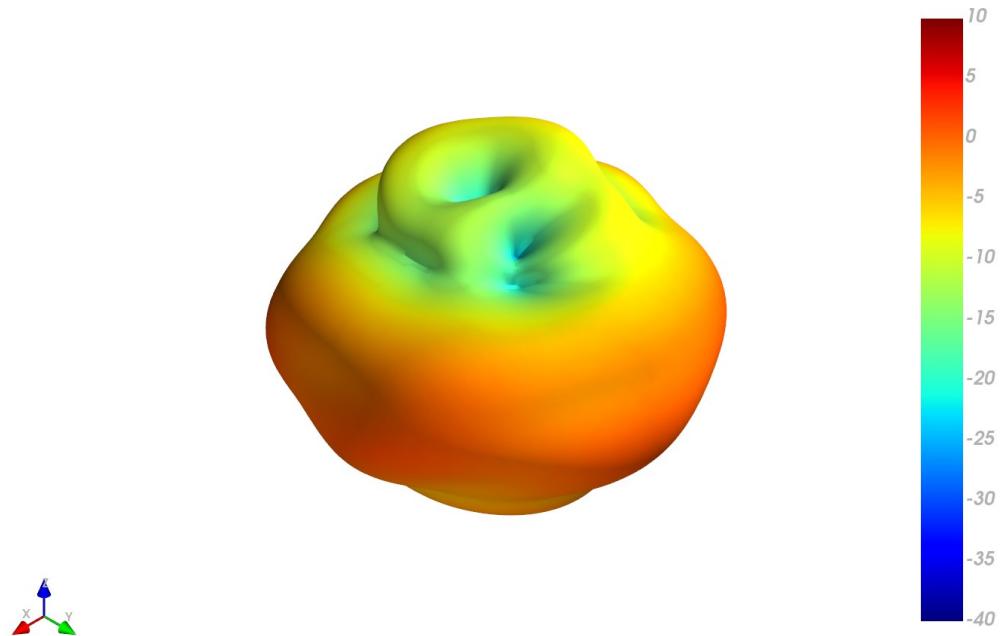
4.33 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 1920 MHz



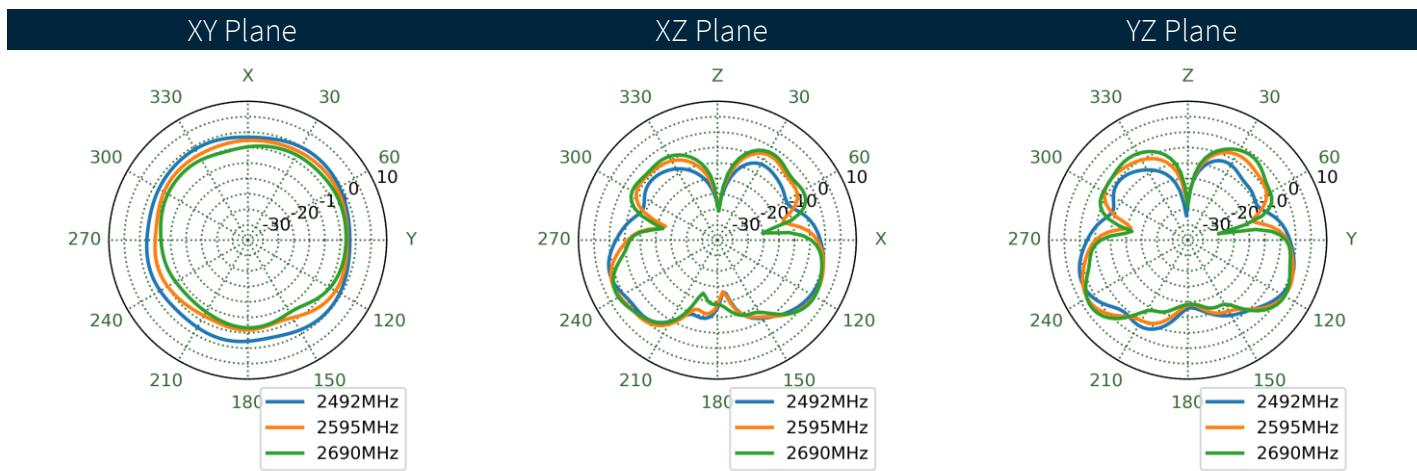
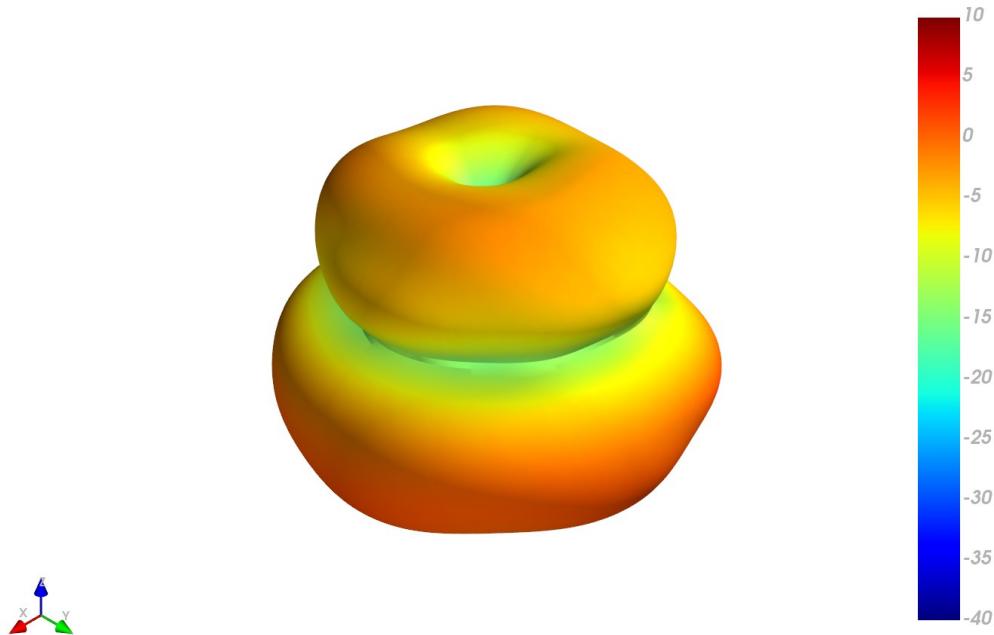
4.34 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 1990 MHz



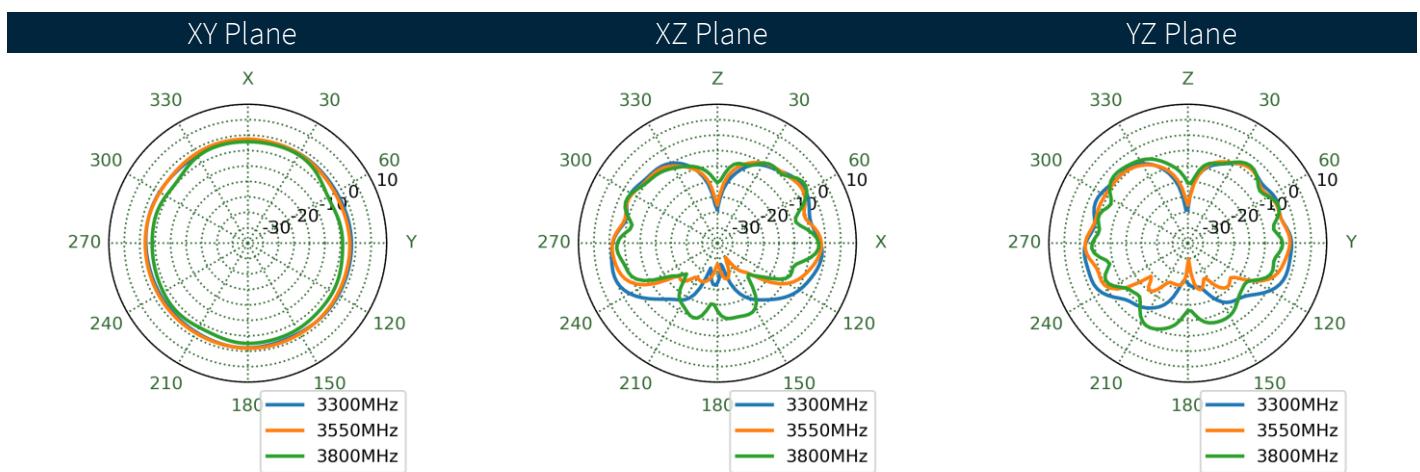
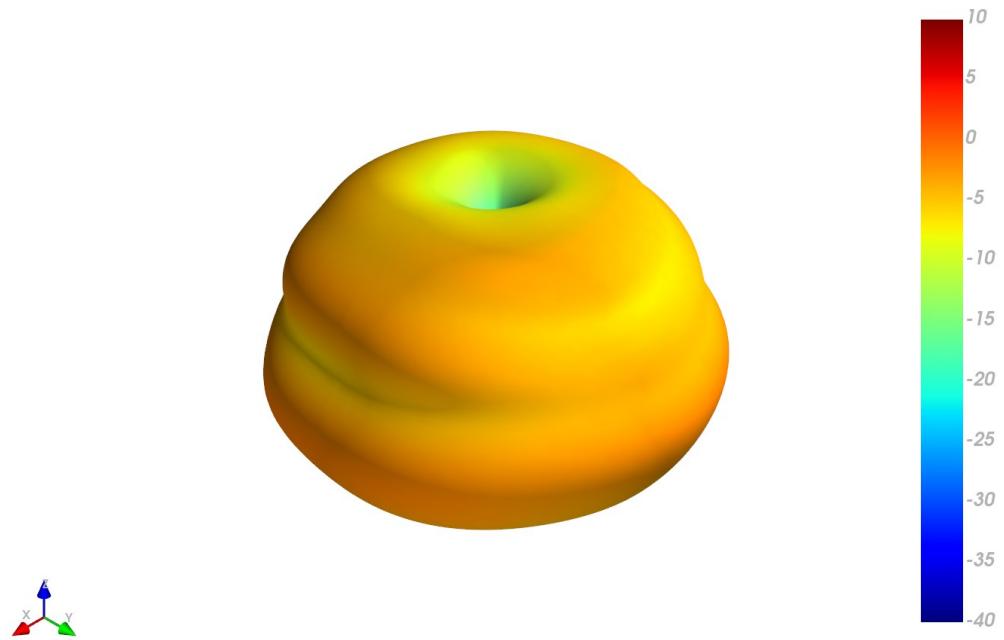
4.35 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 2360 MHz



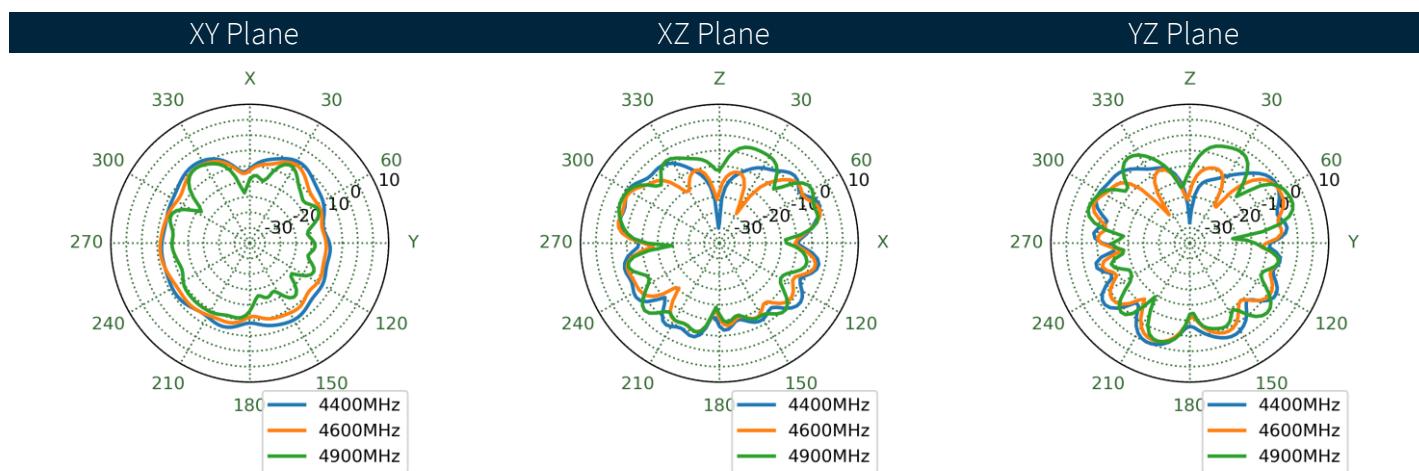
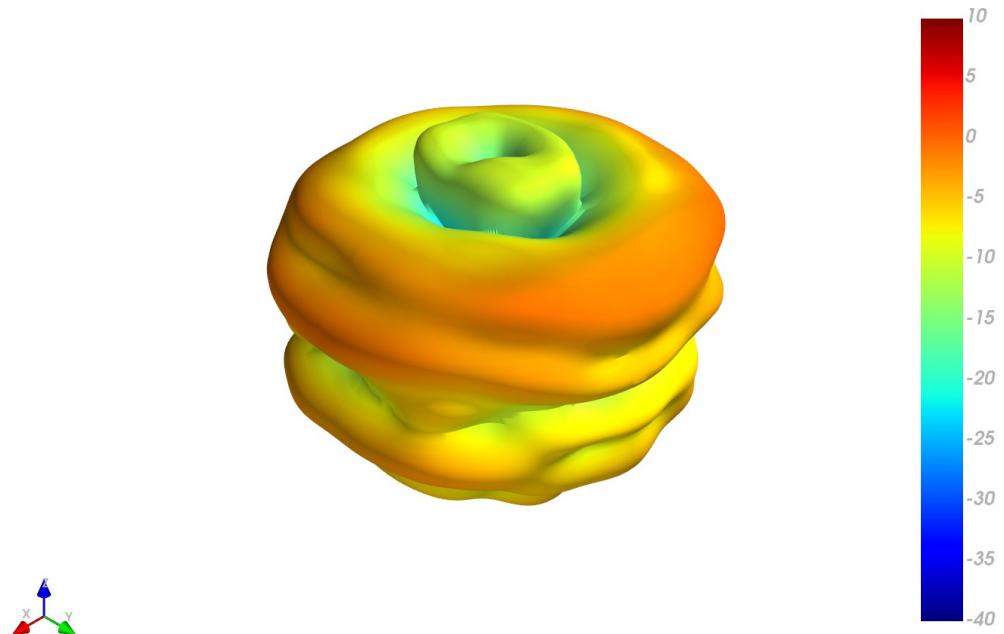
4.36 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 2595 MHz

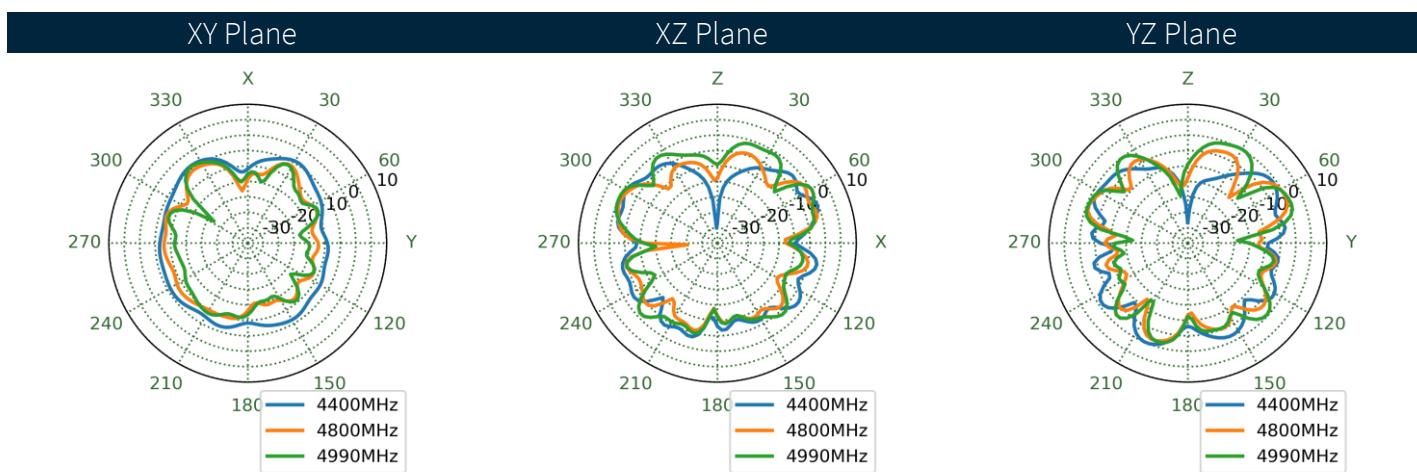
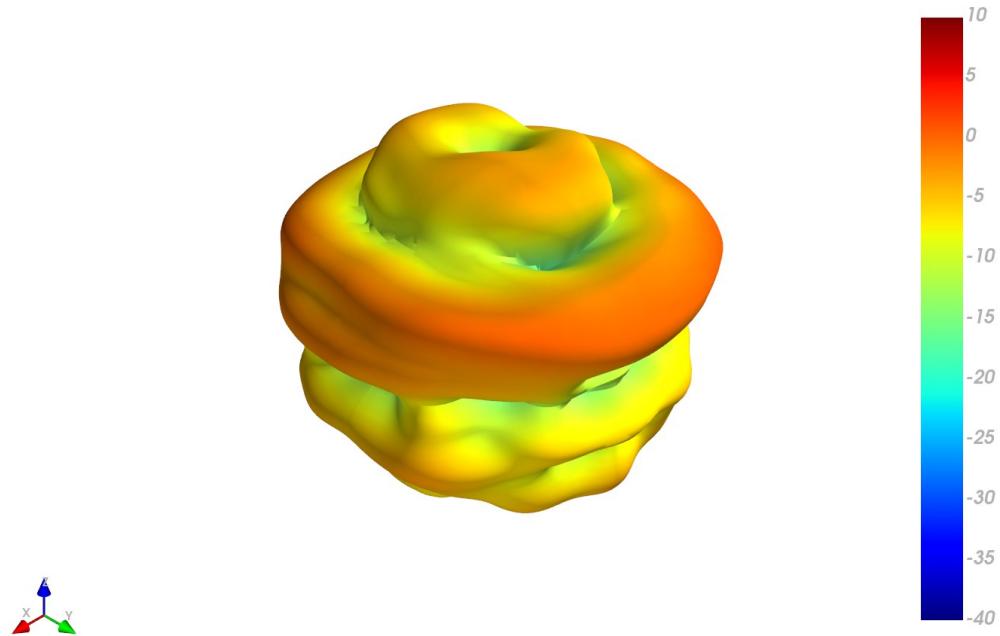


4.37 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 3550 MHz

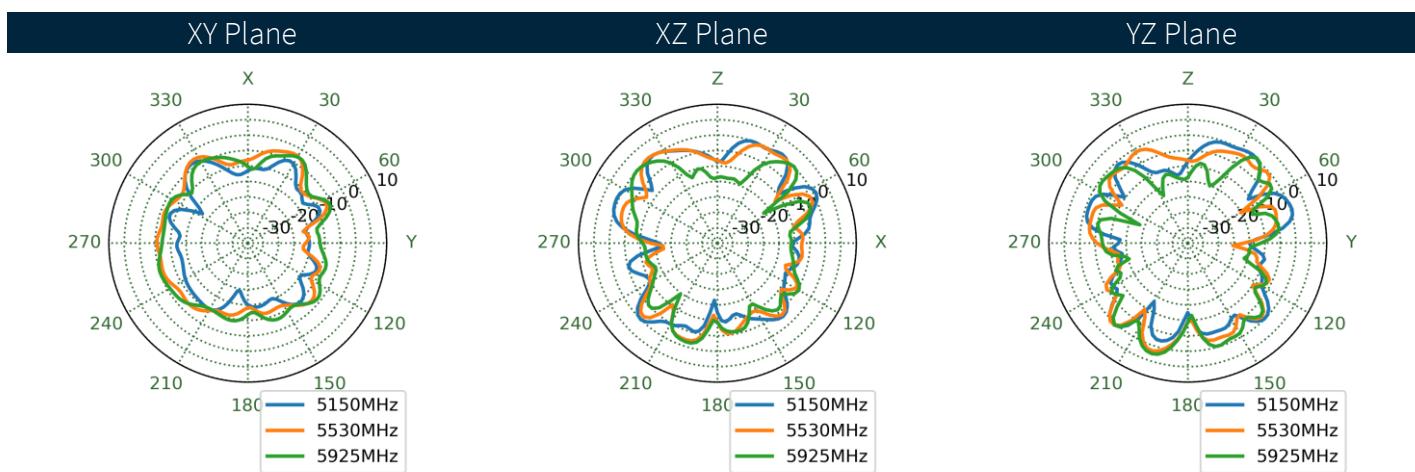
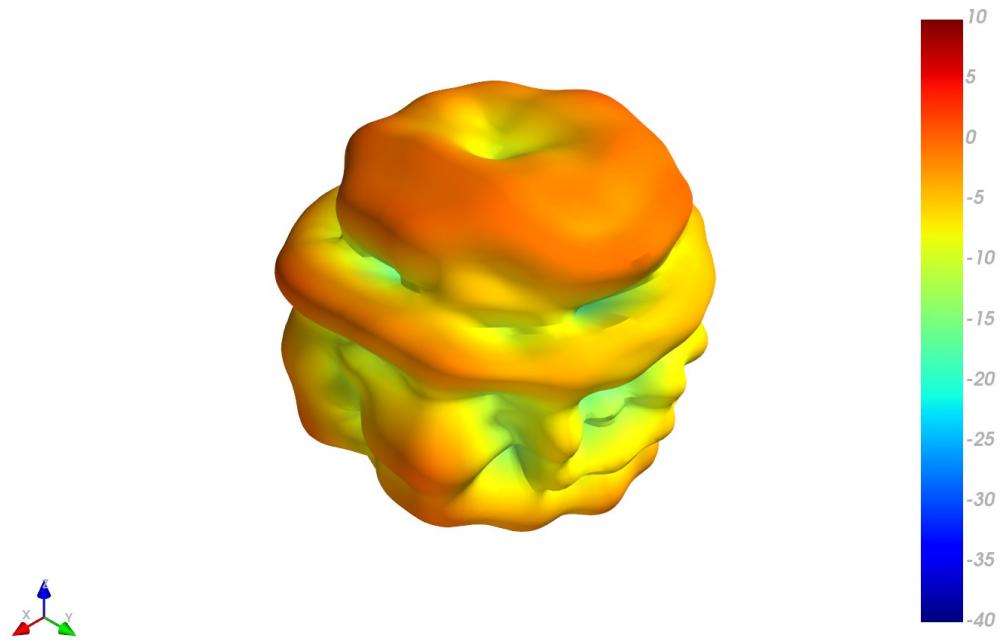


4.38 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 4600 MHz

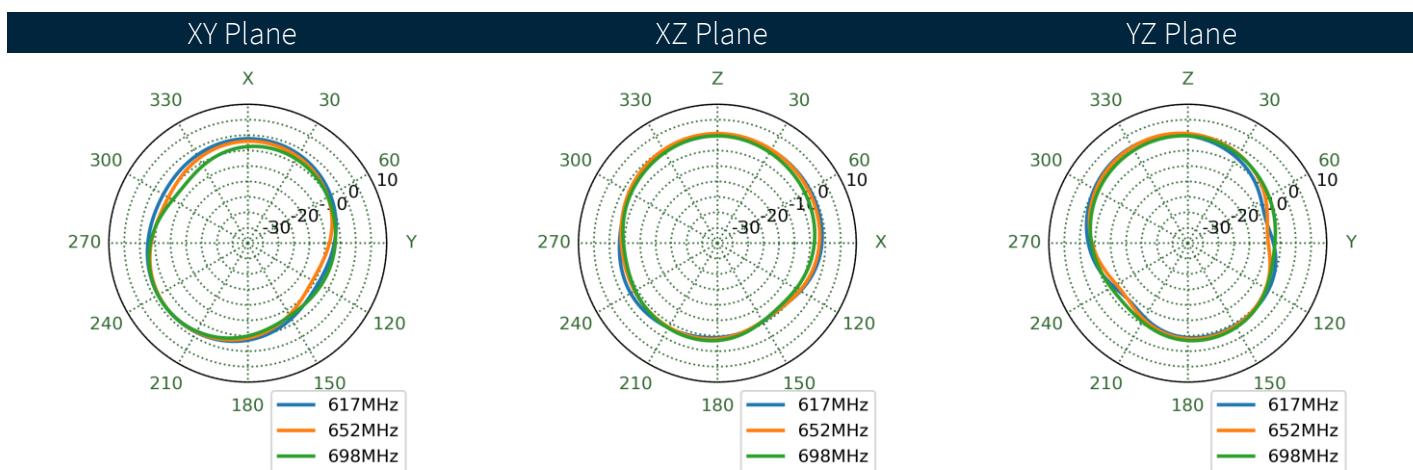
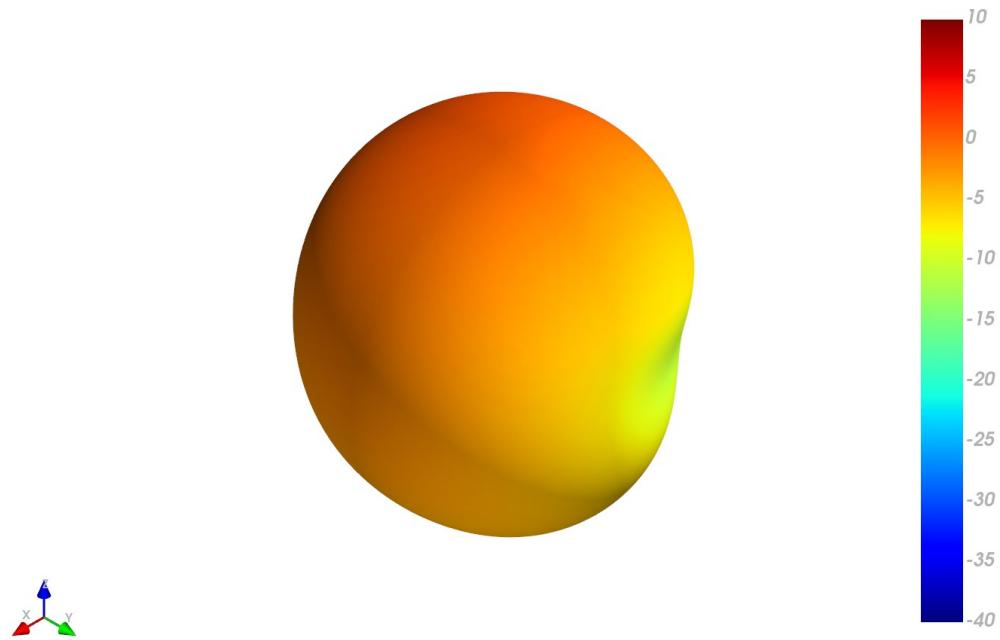


4.39 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 4800 MHz


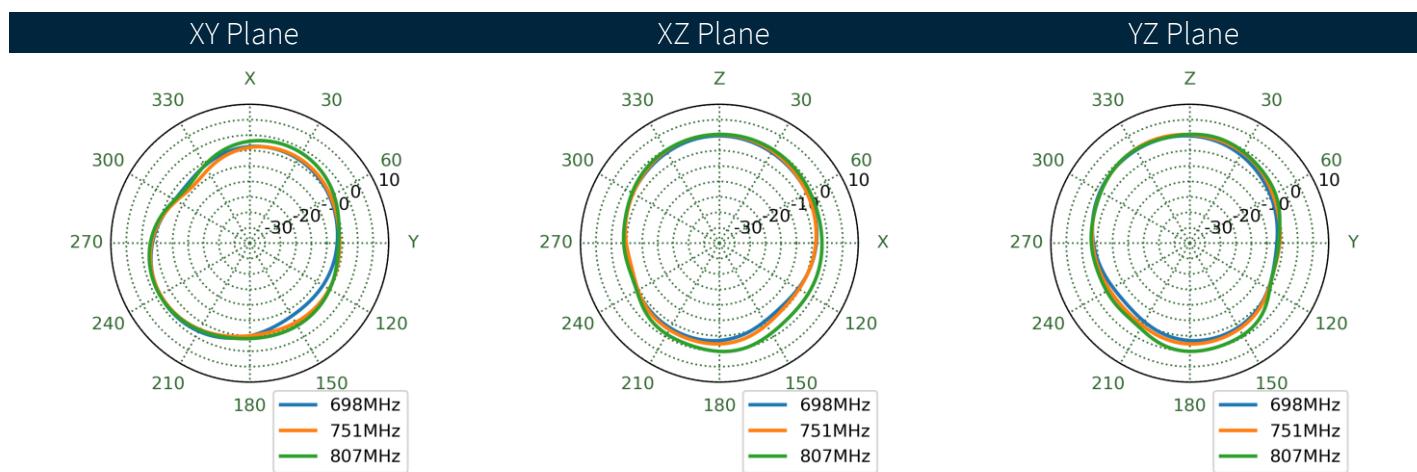
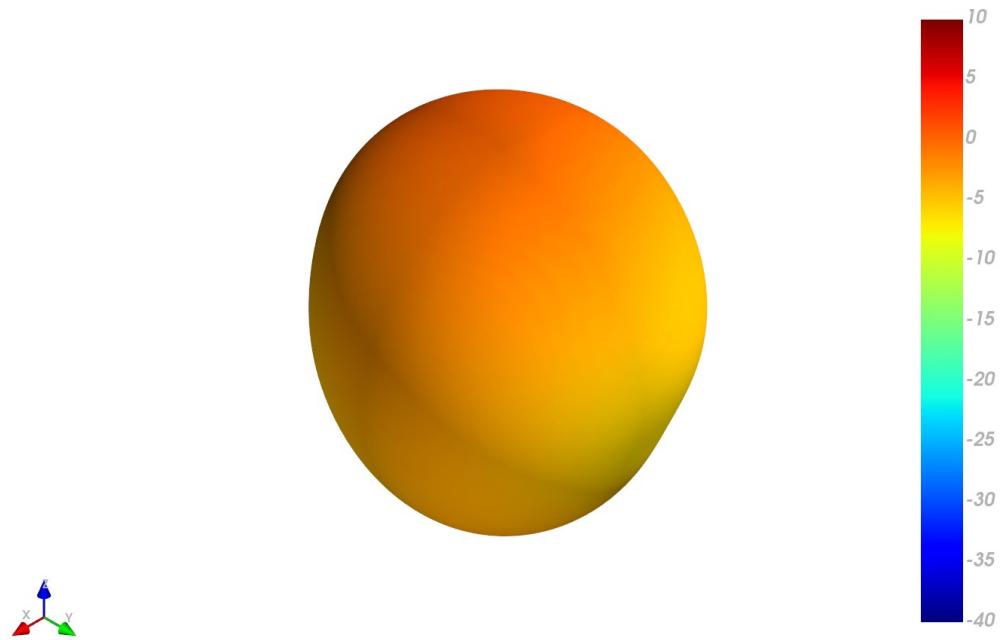
4.40 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Straight at 5530 MHz



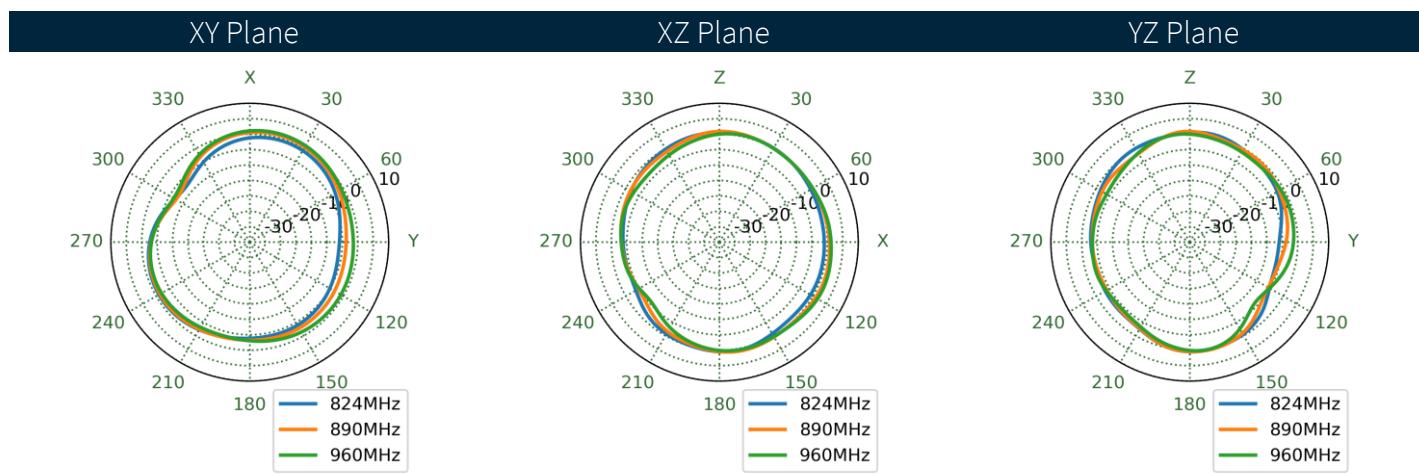
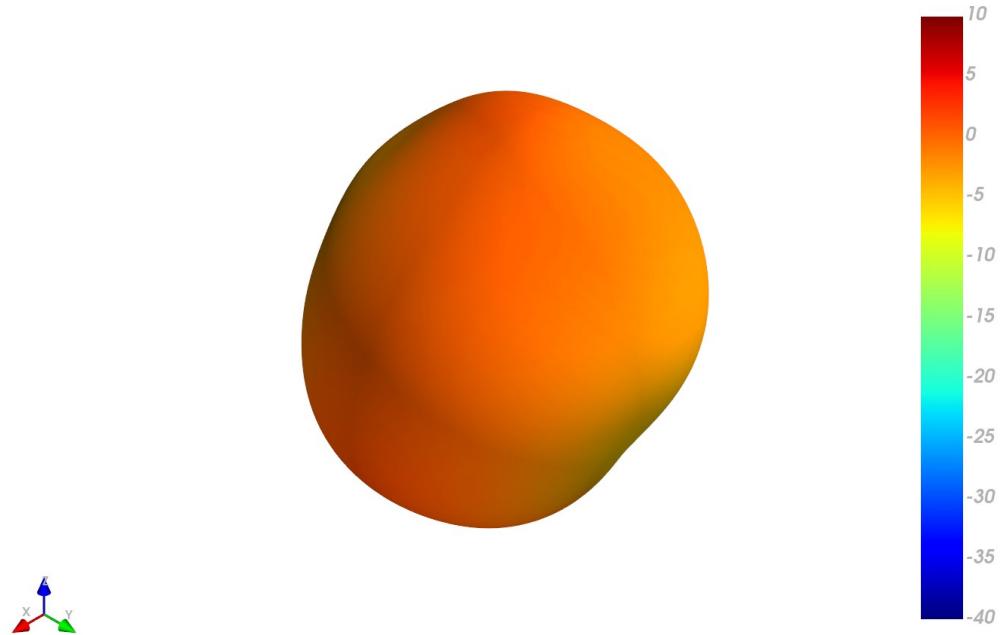
4.41 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 652 MHz



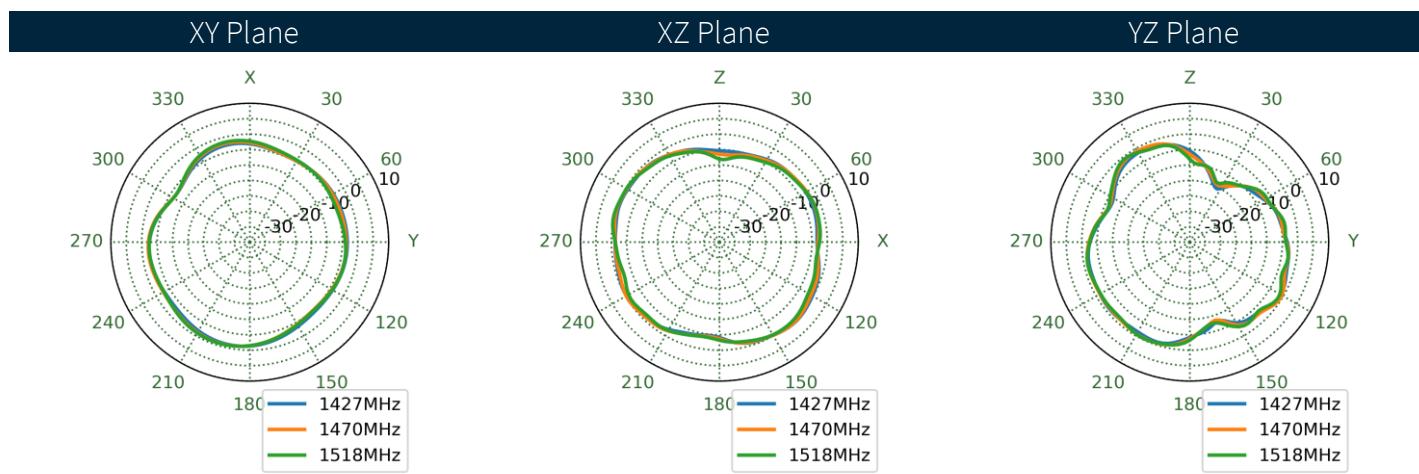
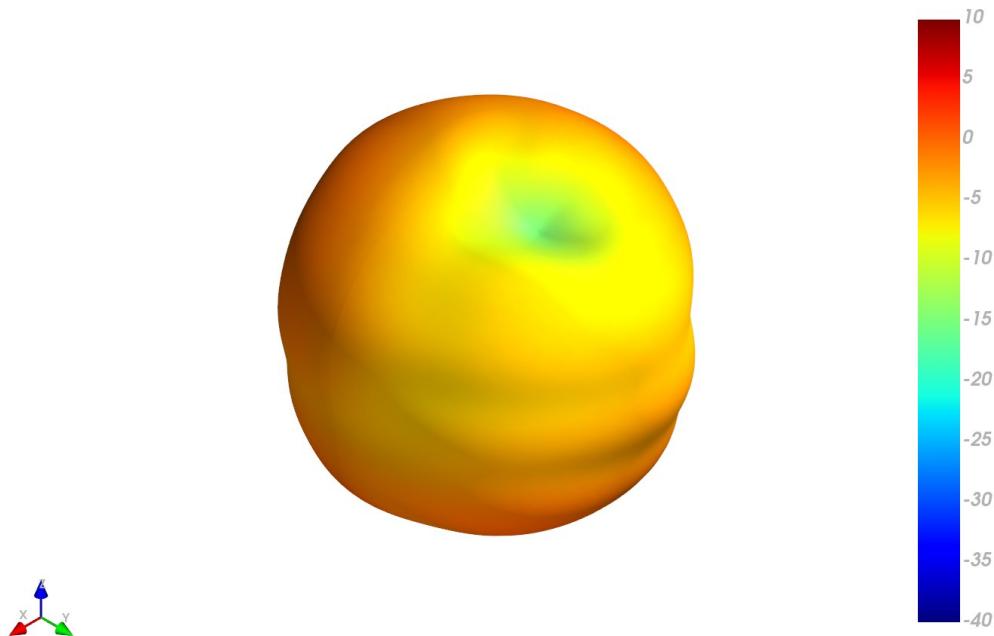
4.42 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 751 MHz



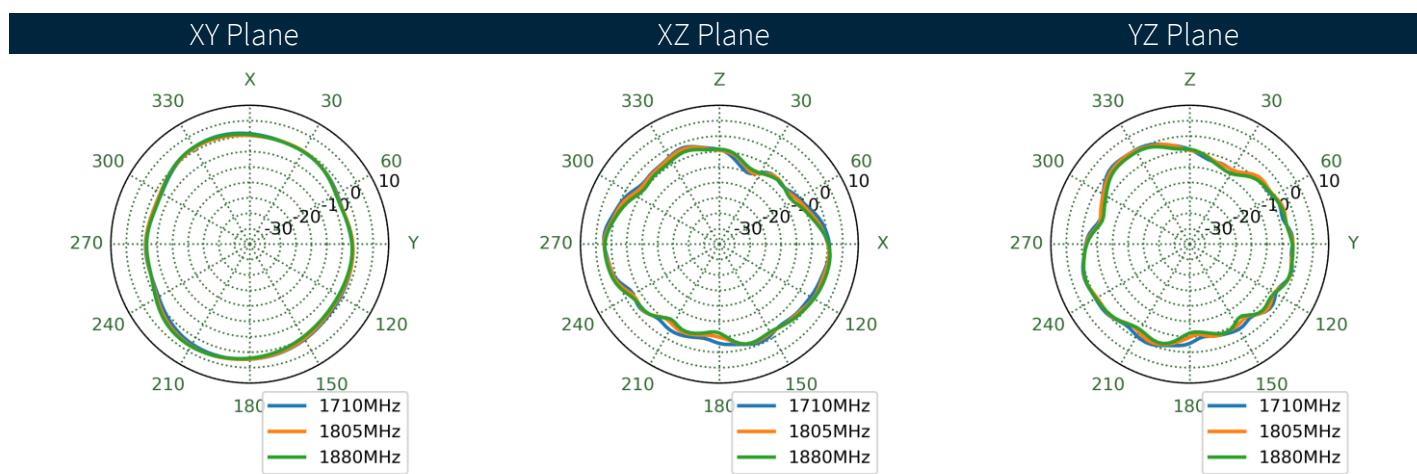
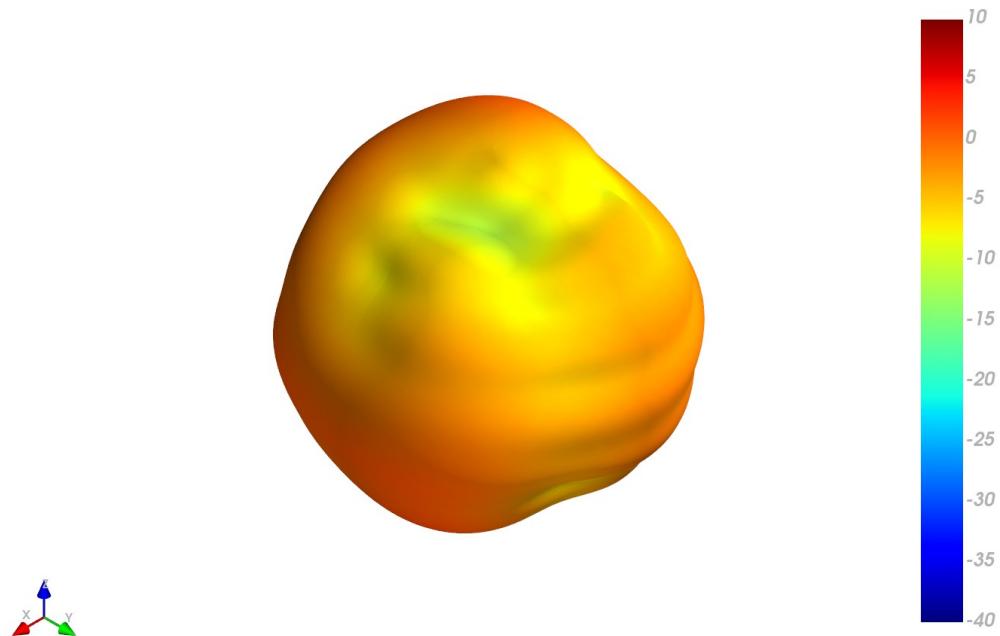
4.43 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 890 MHz



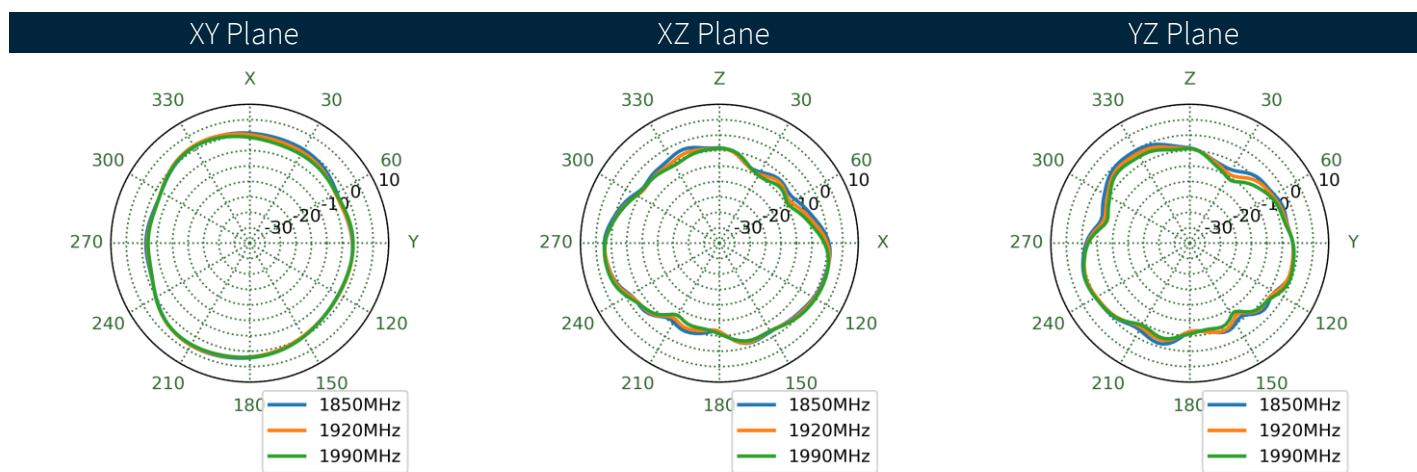
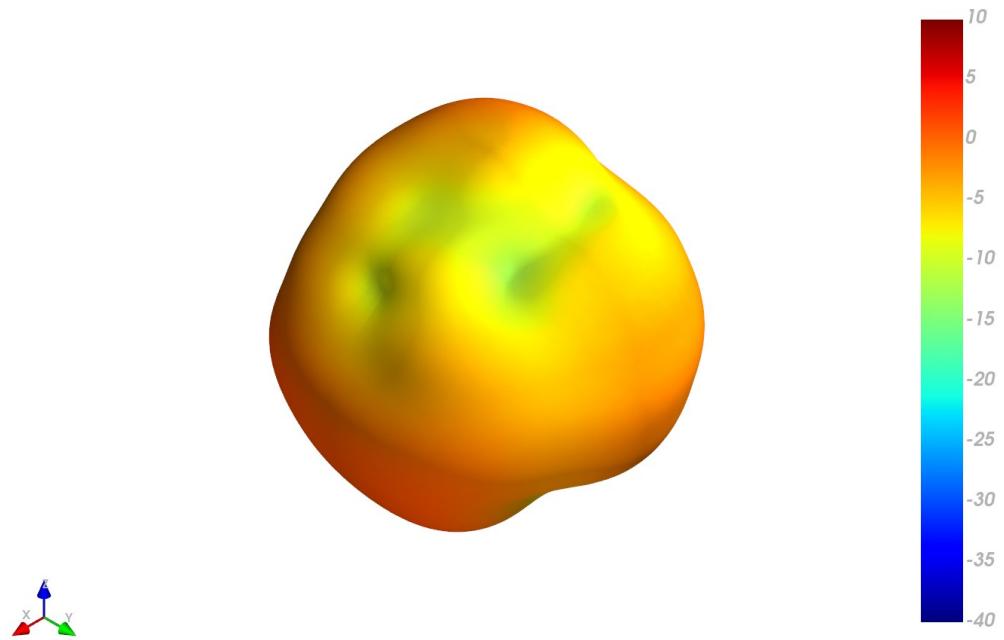
4.44 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 1470 MHz



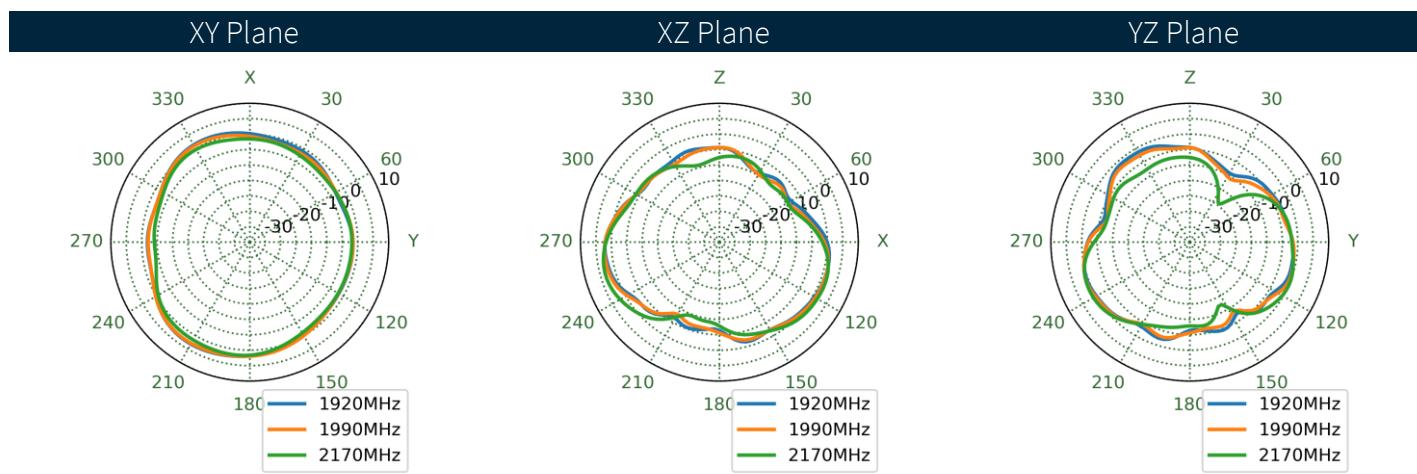
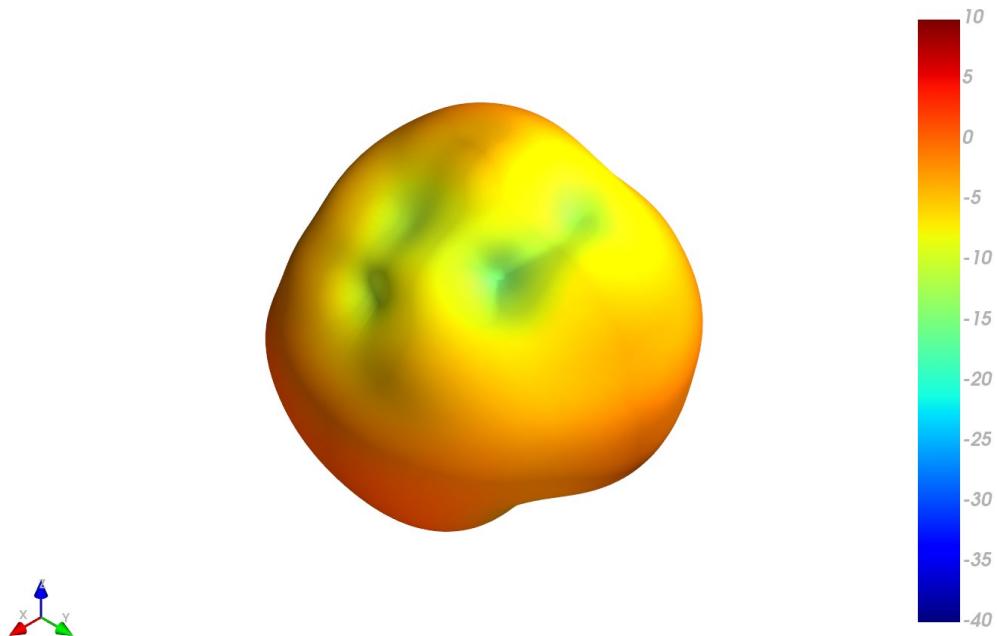
4.45 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 1805 MHz



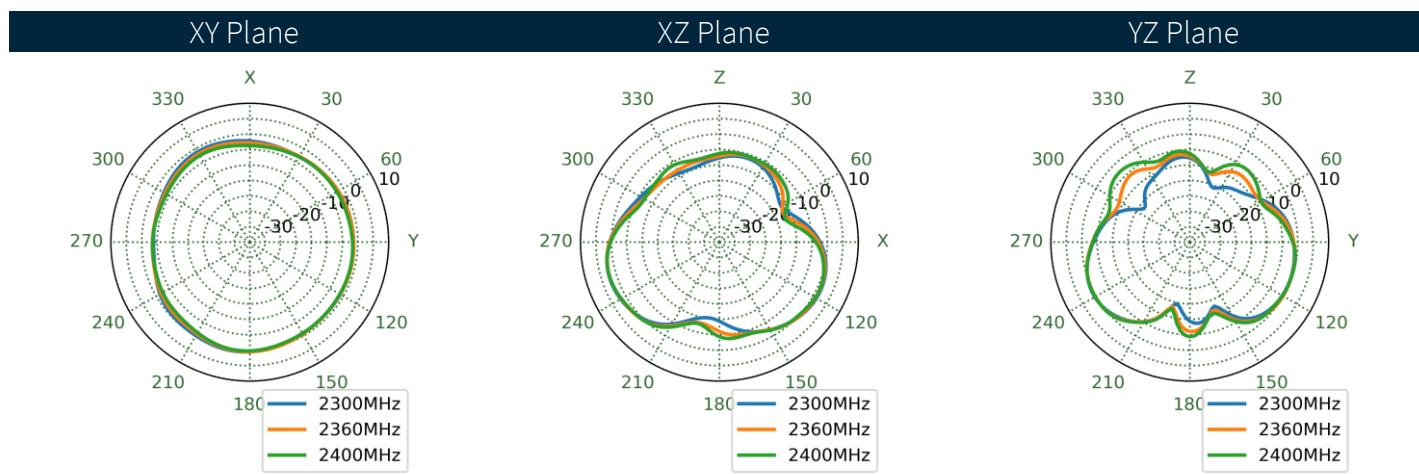
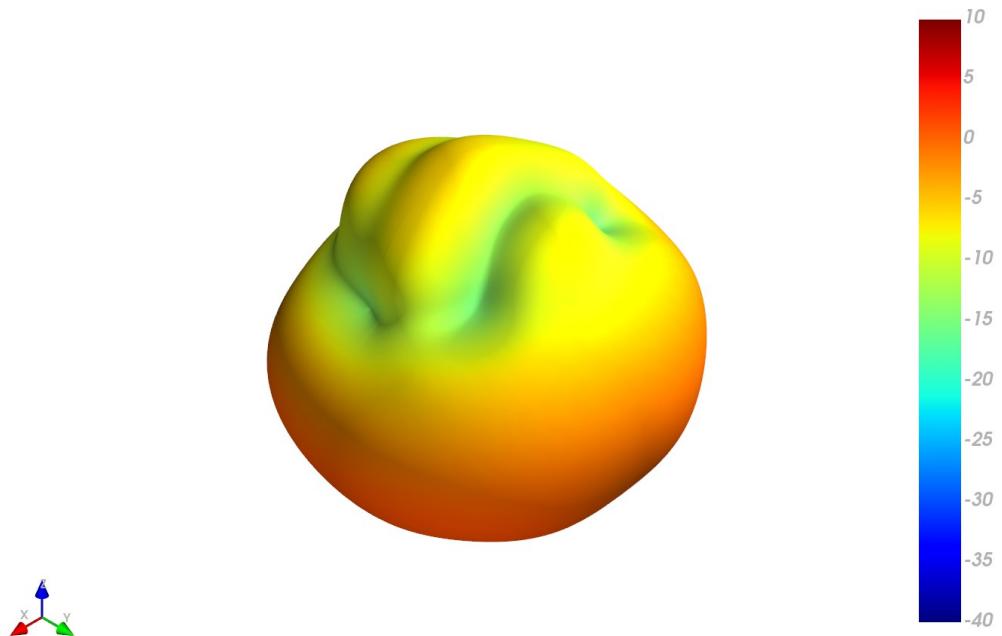
4.46 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 1920 MHz



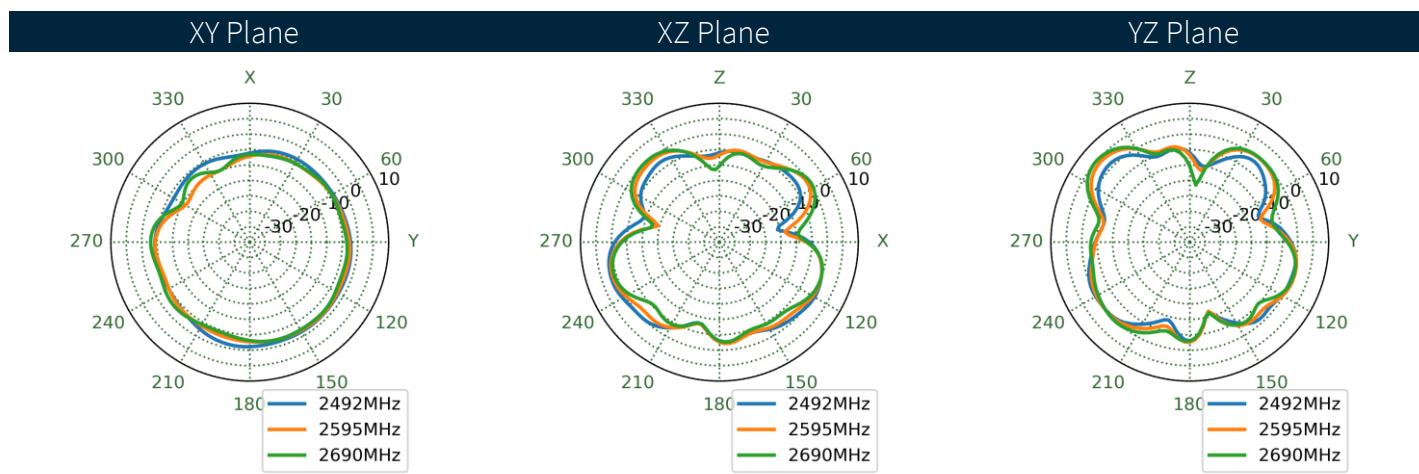
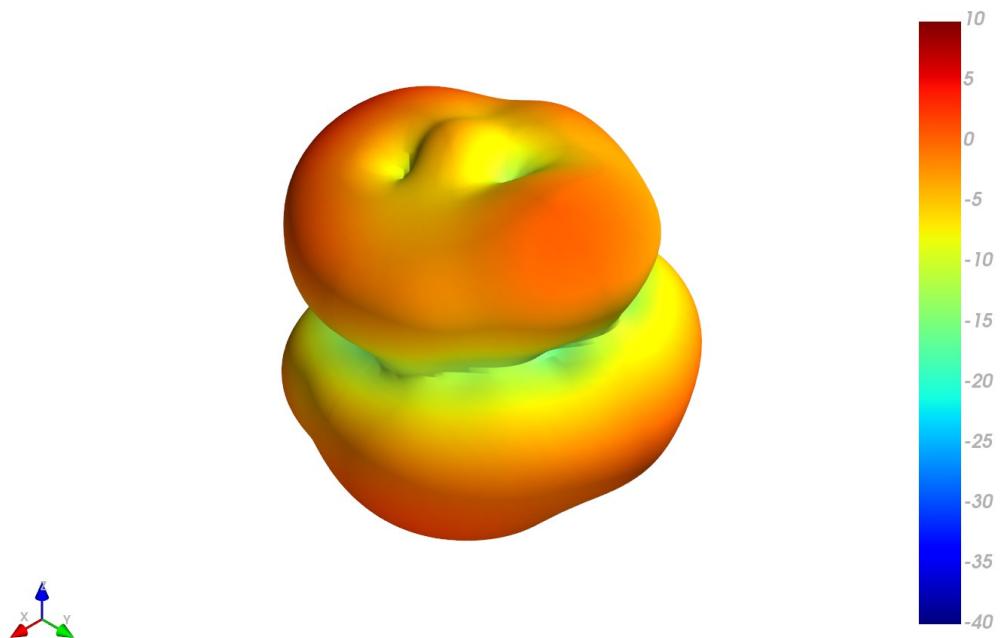
4.47 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 1990 MHz



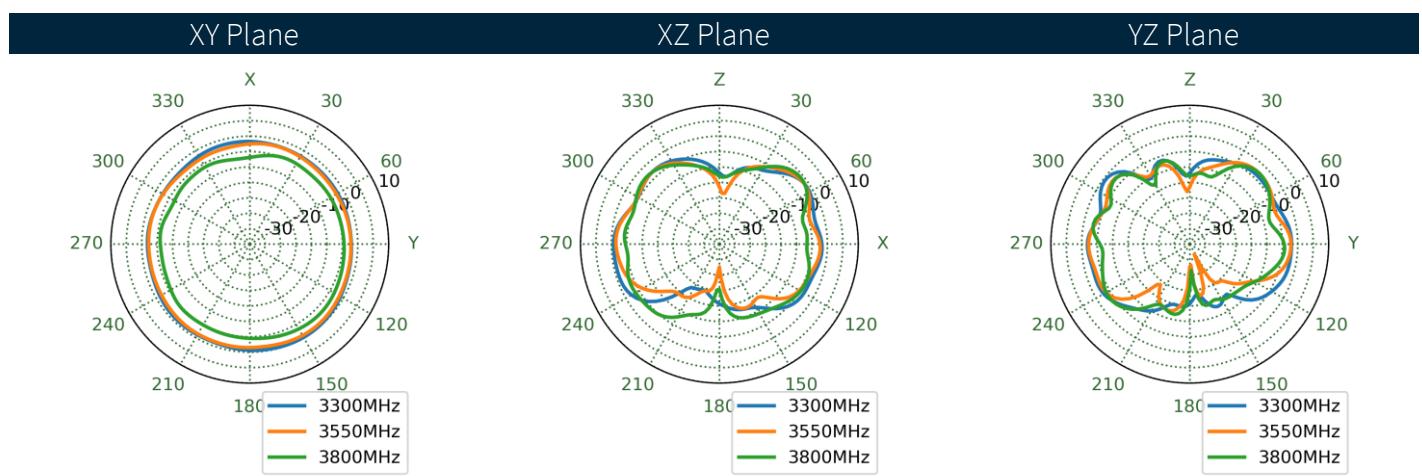
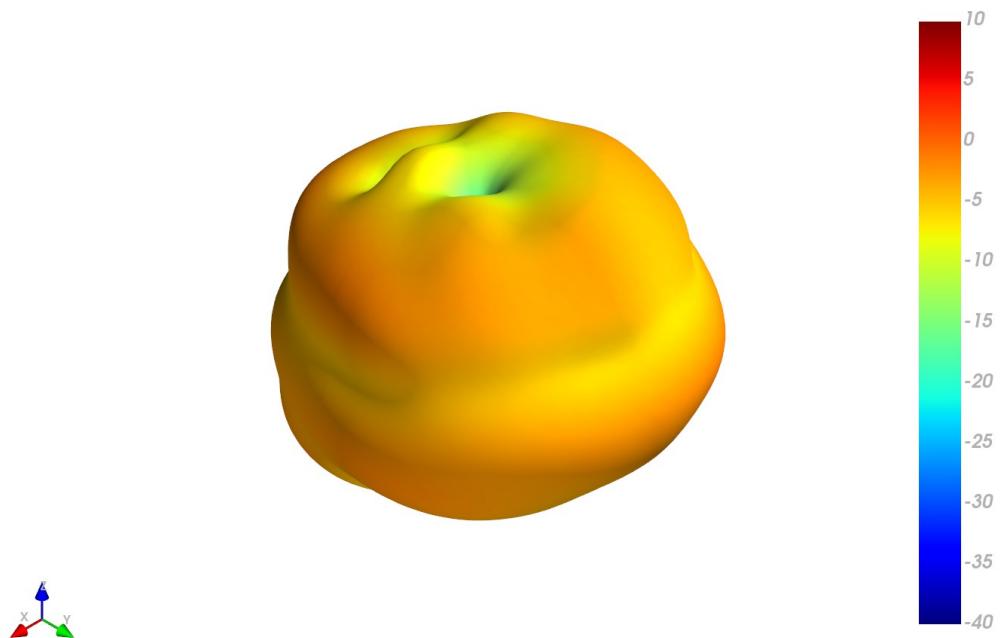
4.48 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 2360 MHz



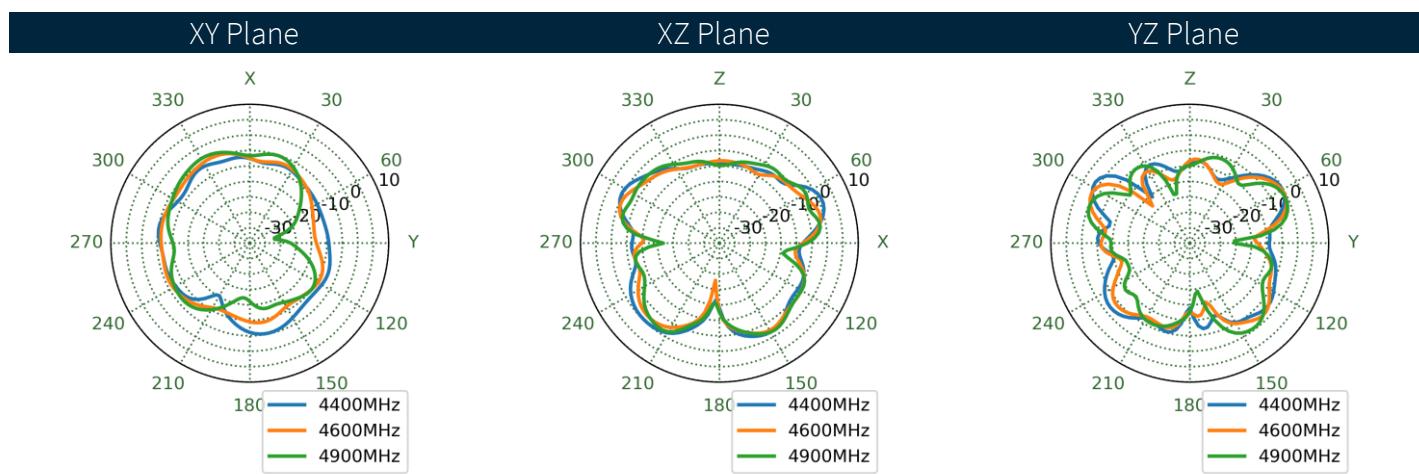
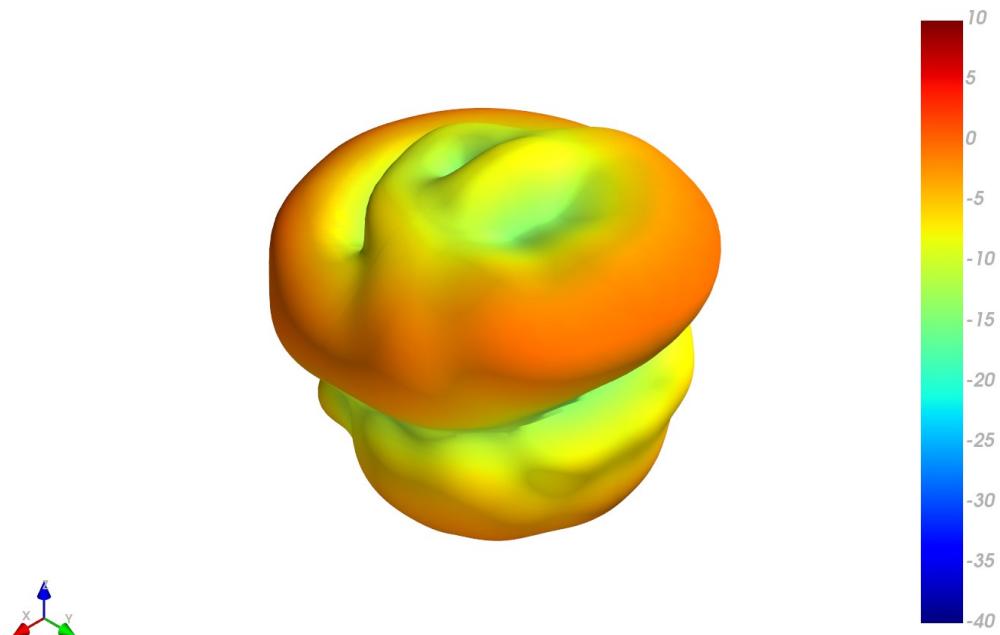
4.49 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 2595 MHz



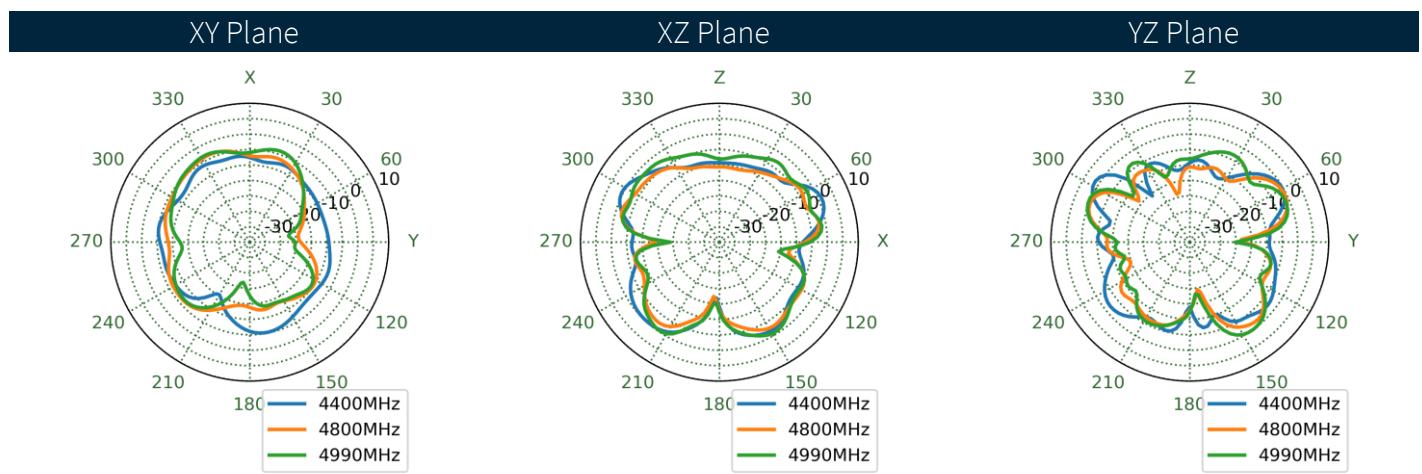
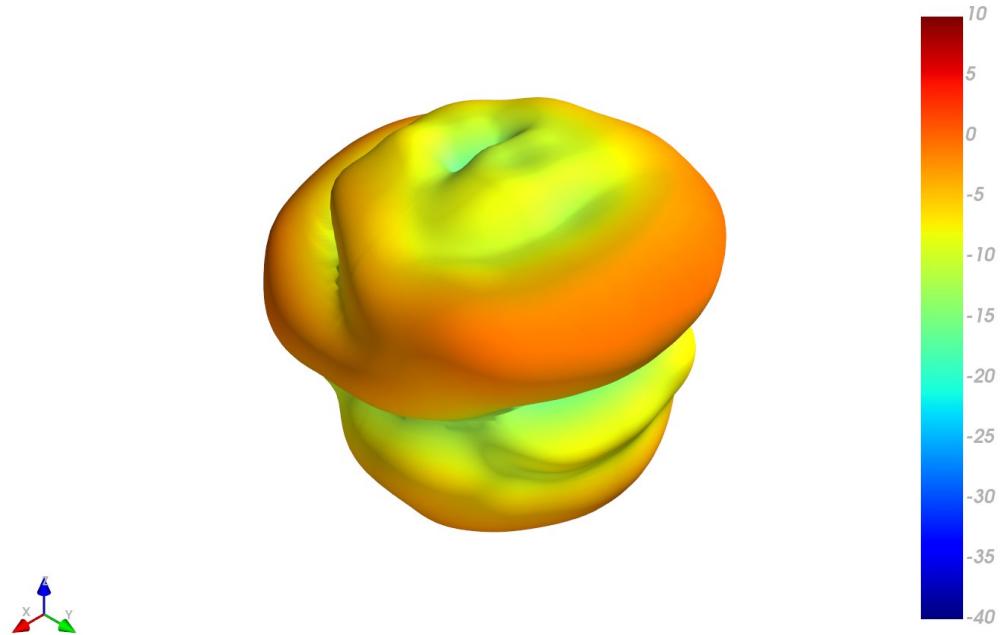
4.50 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 3550 MHz



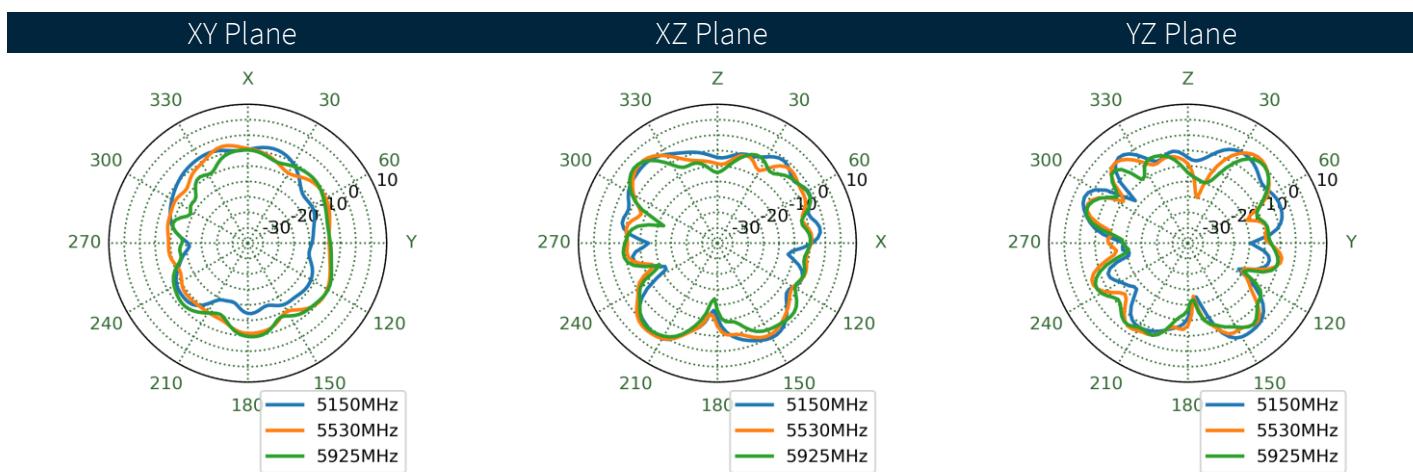
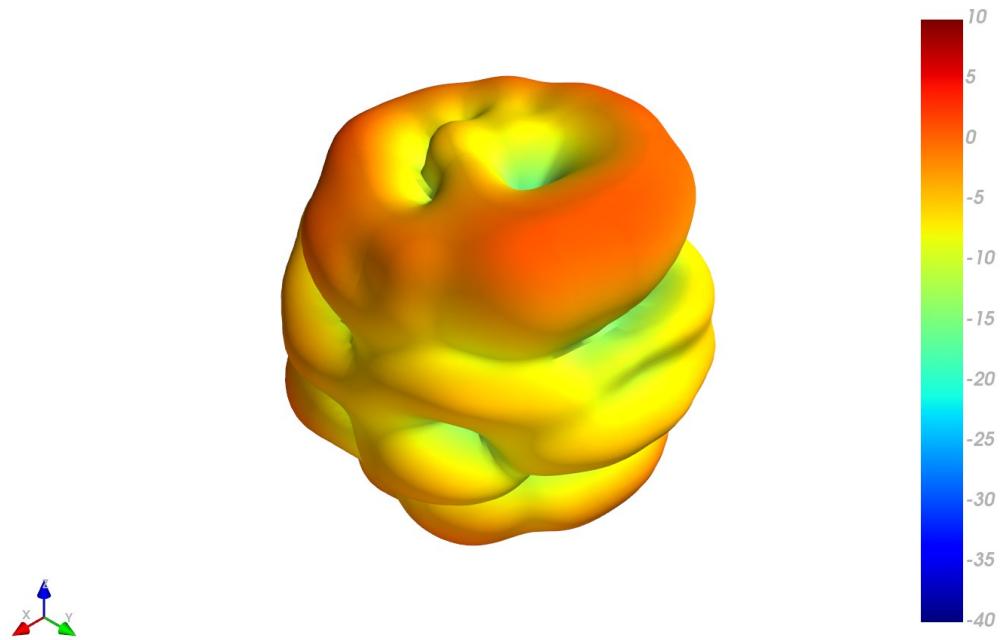
4.51 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 4600 MHz



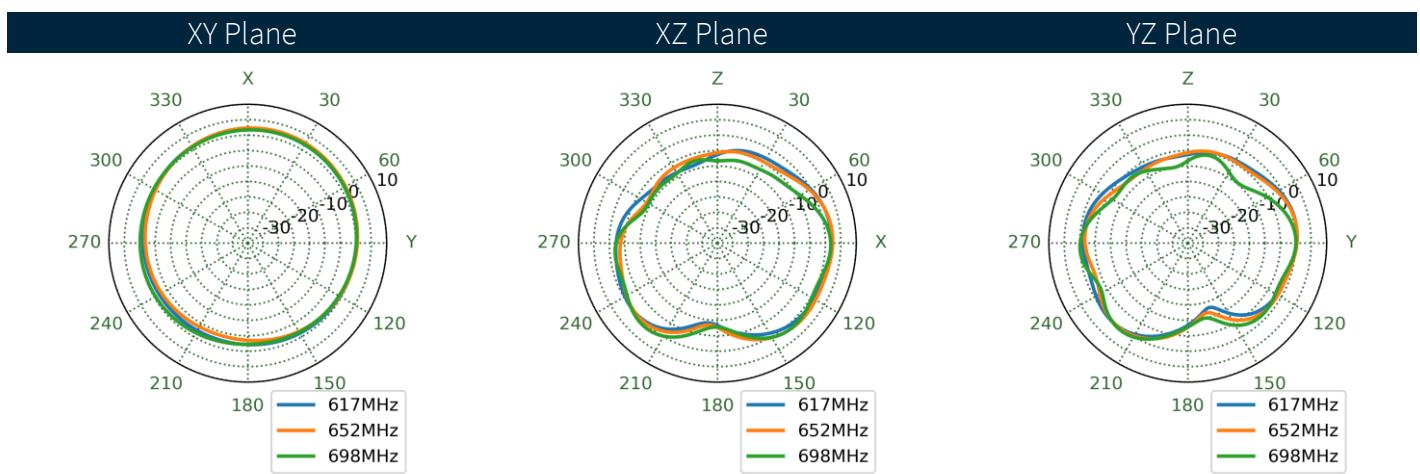
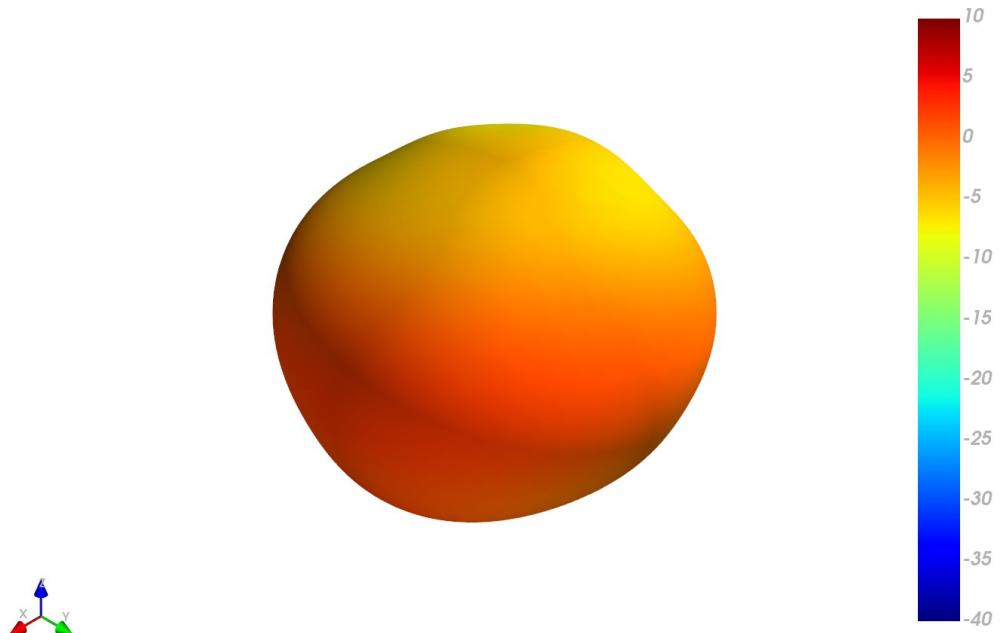
4.52 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 4800 MHz



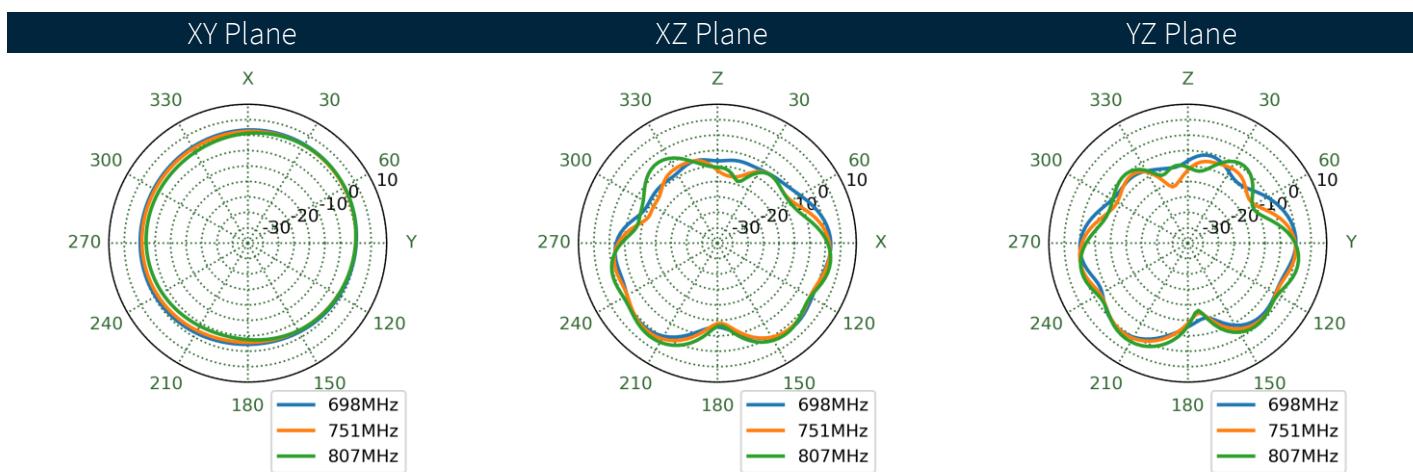
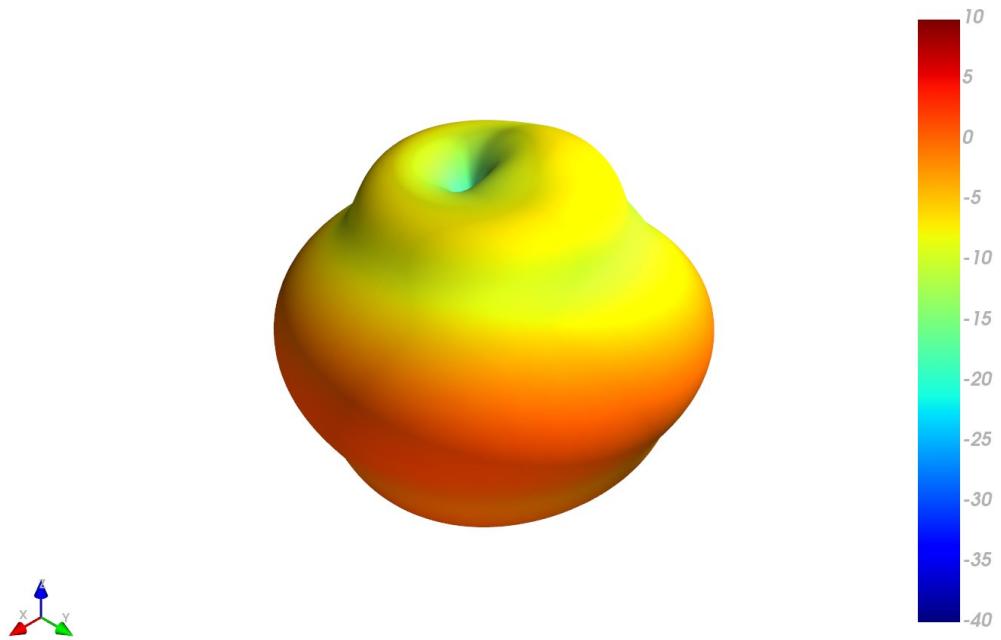
4.53 3D and 2D Radiation Patterns on 15x9cm Ground Plane - Bent at 5530 MHz



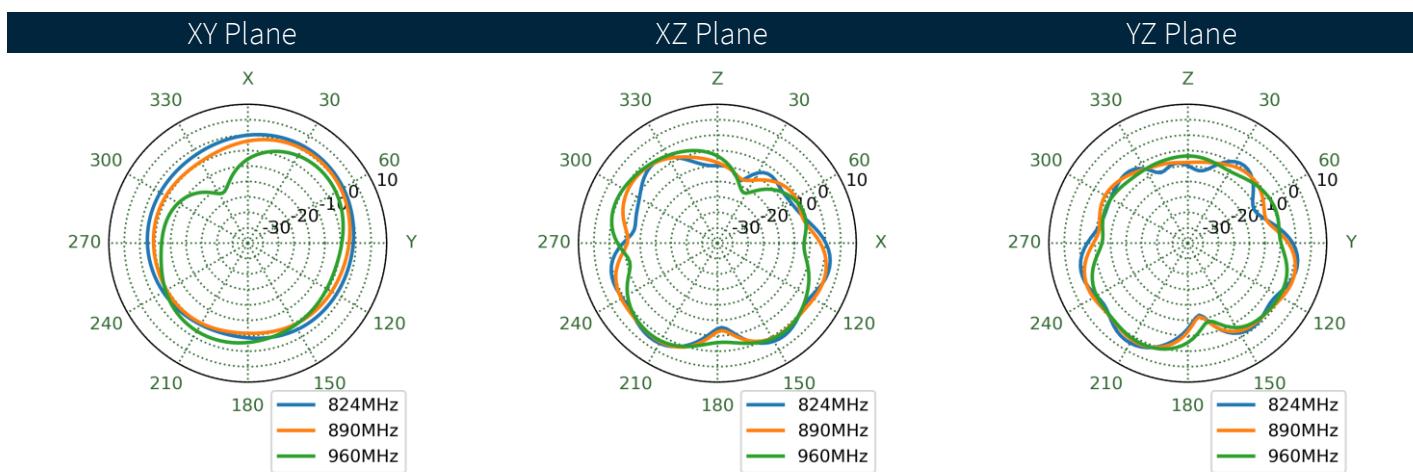
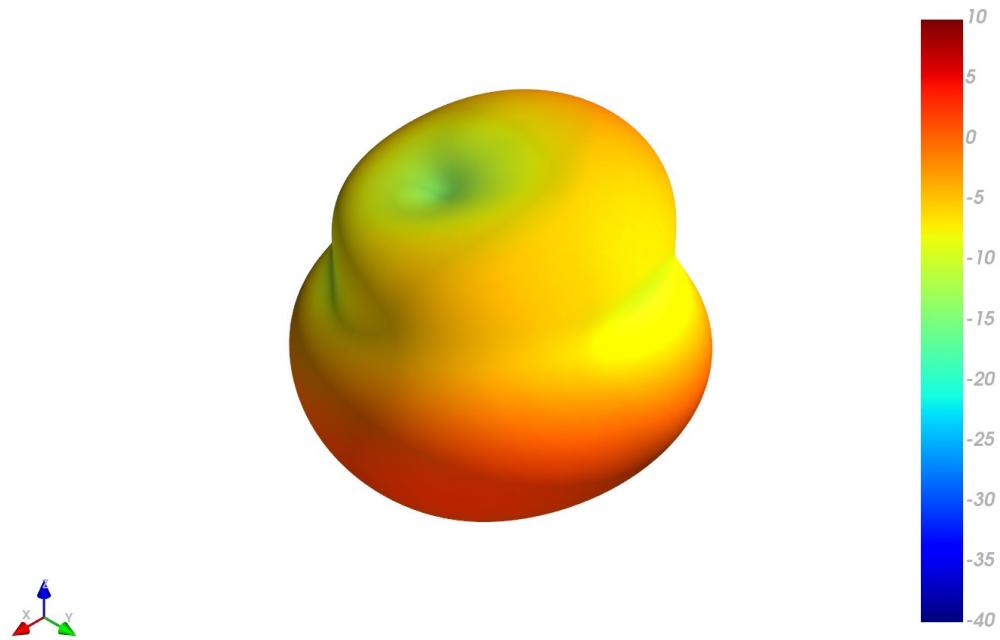
4.54 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 652 MHz



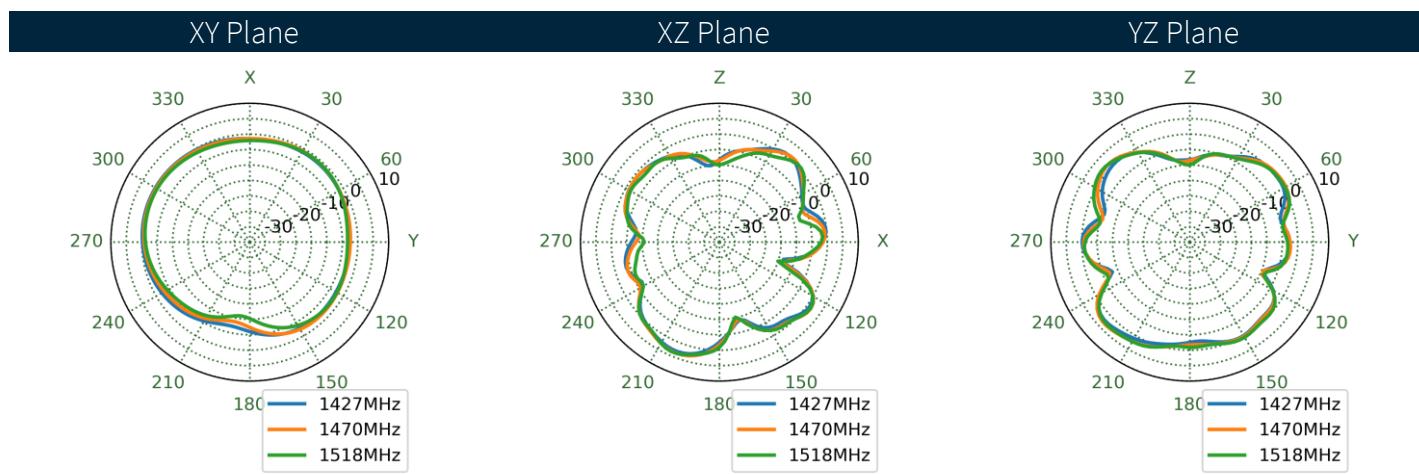
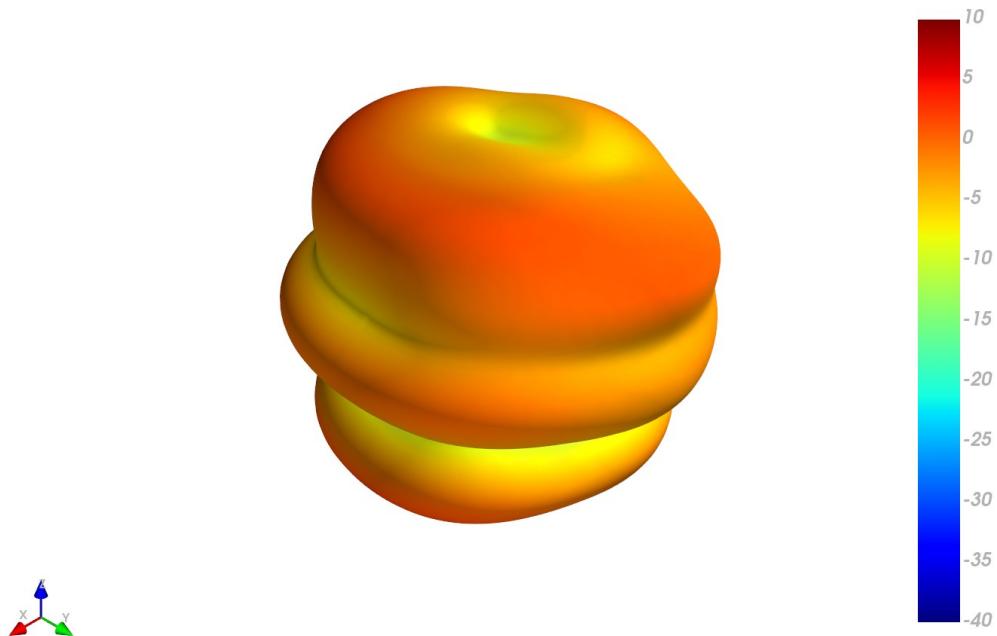
4.55 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 751 MHz



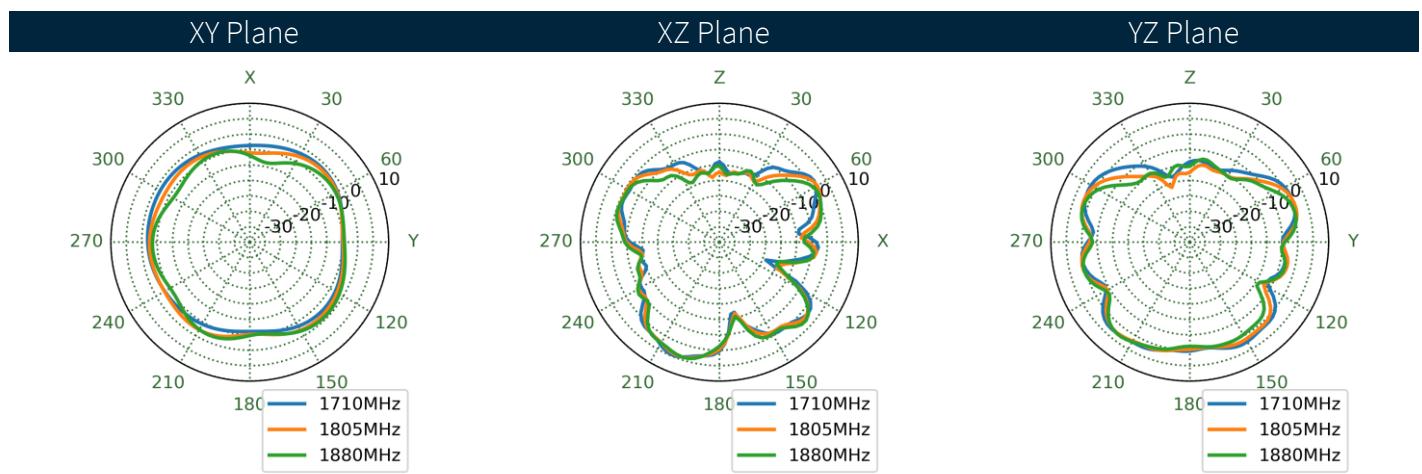
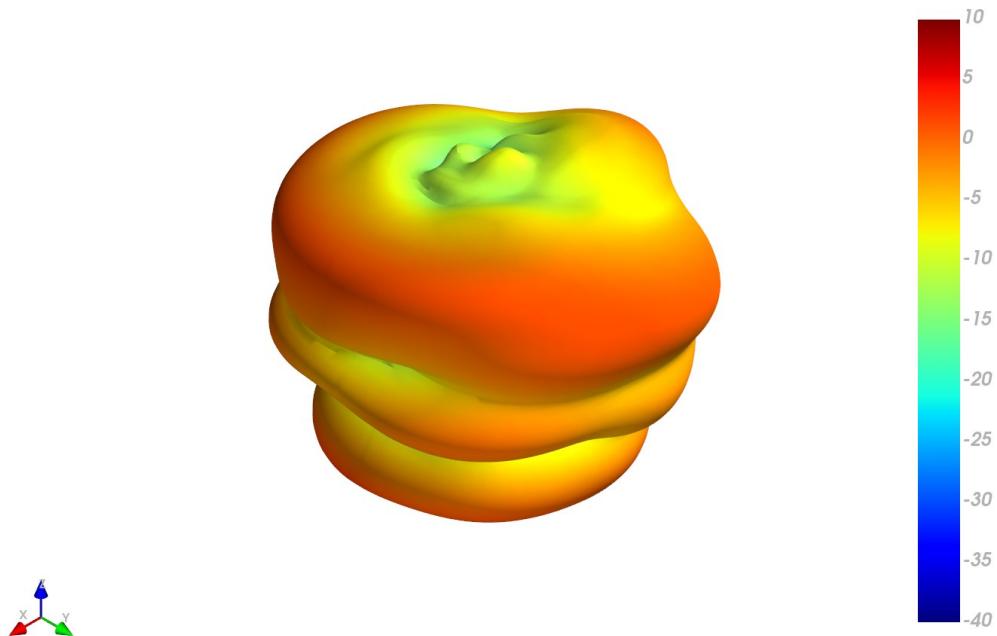
4.56 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 890 MHz



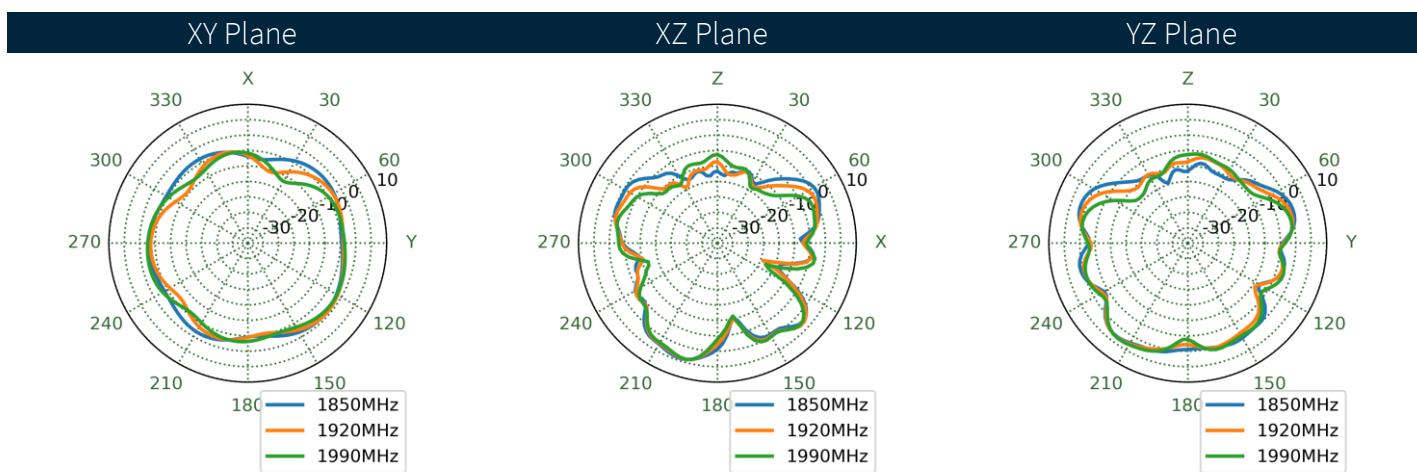
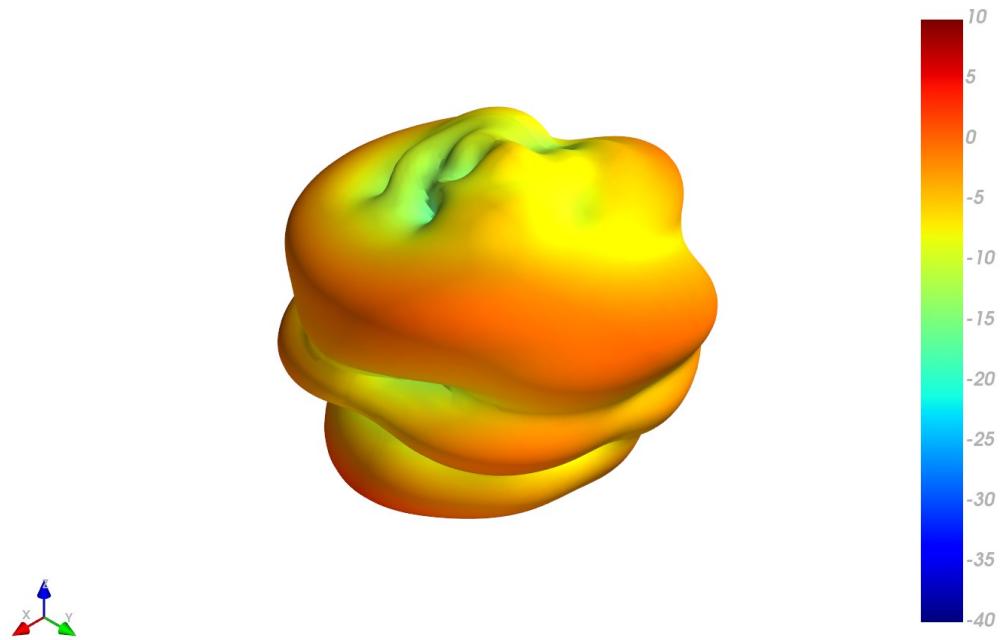
4.57 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 1470 MHz



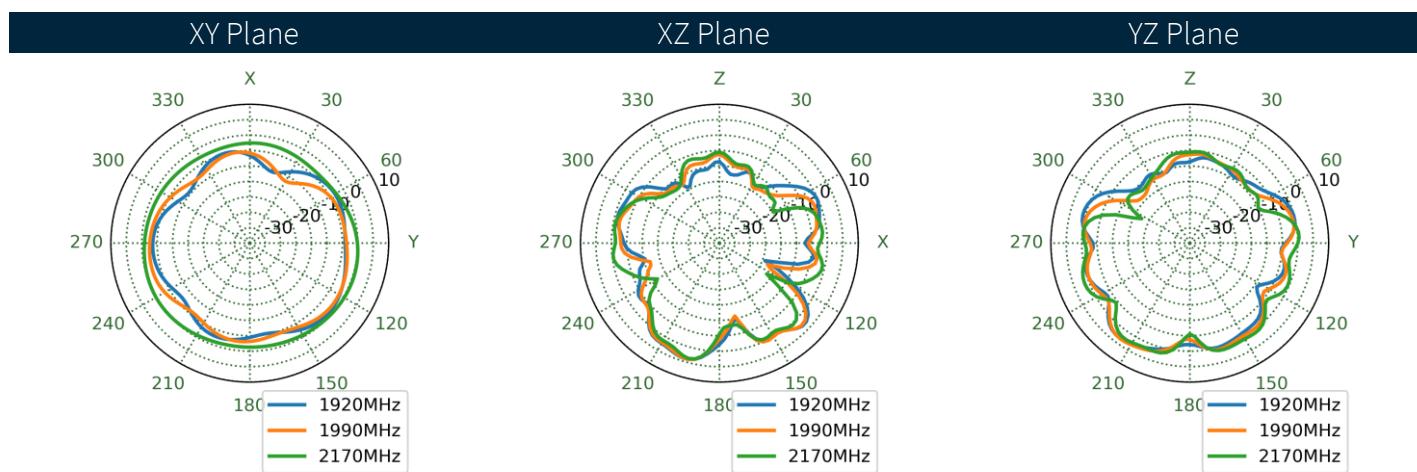
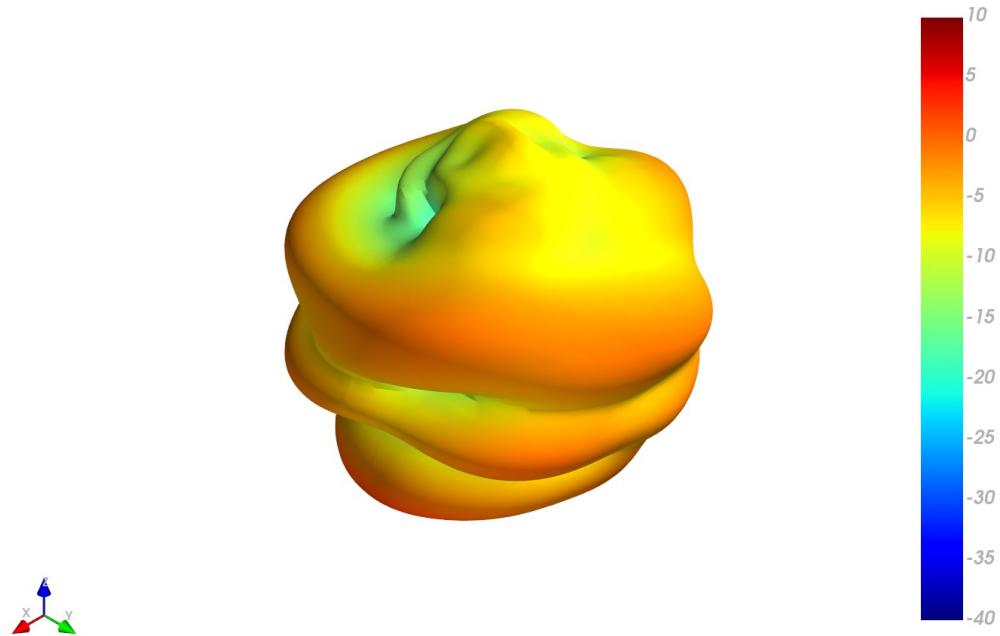
4.58 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 1805 MHz



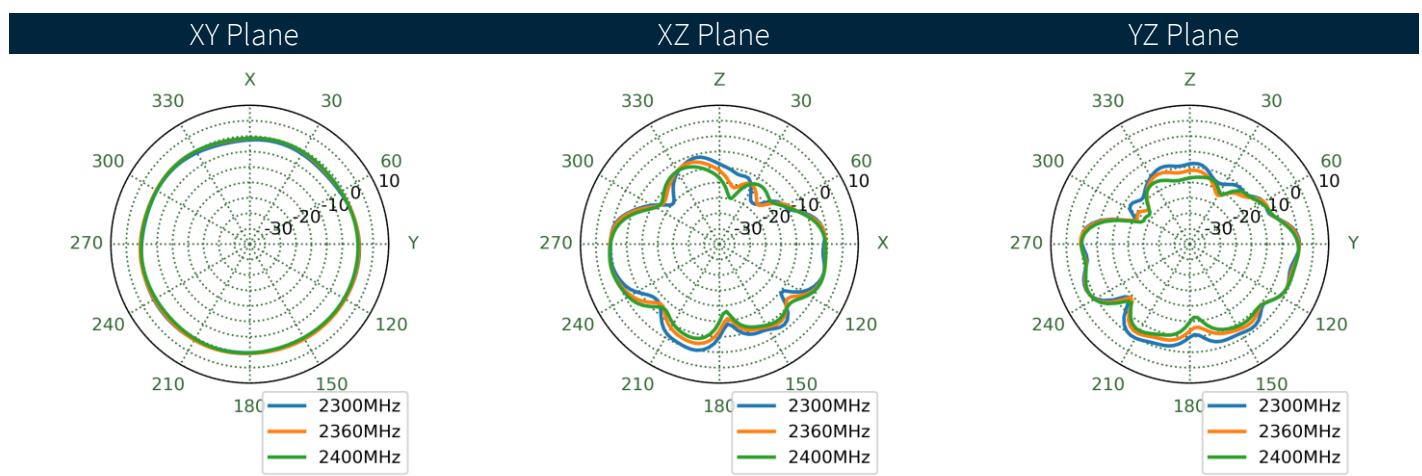
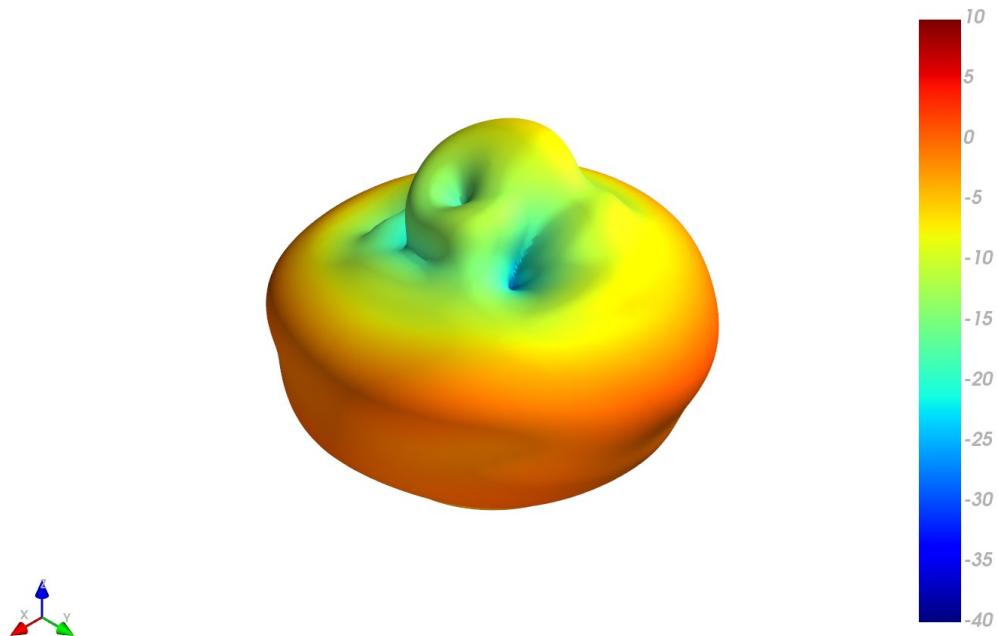
4.59 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 1920 MHz



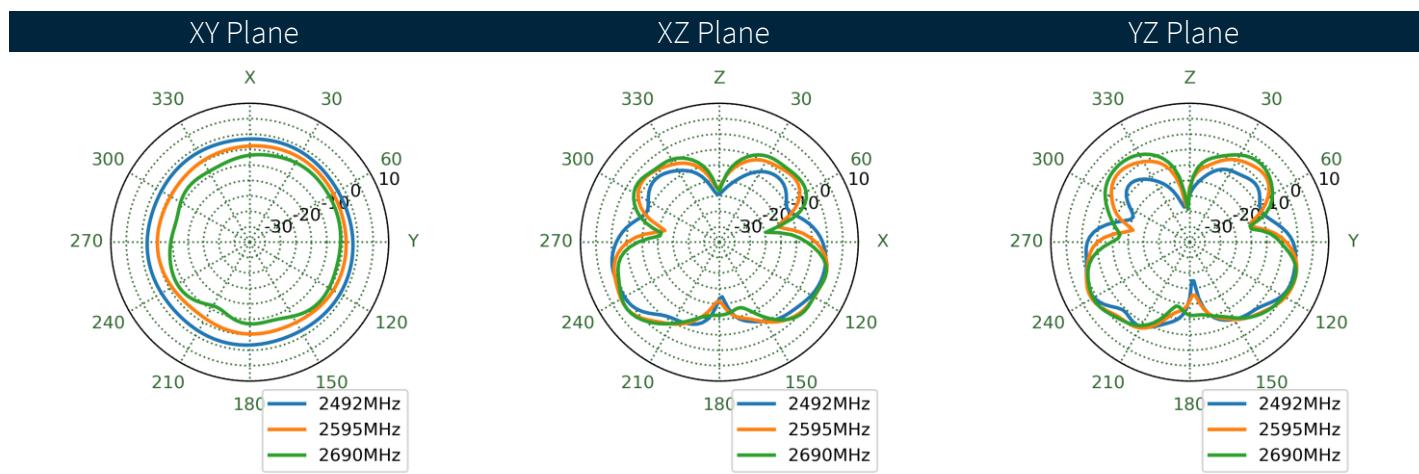
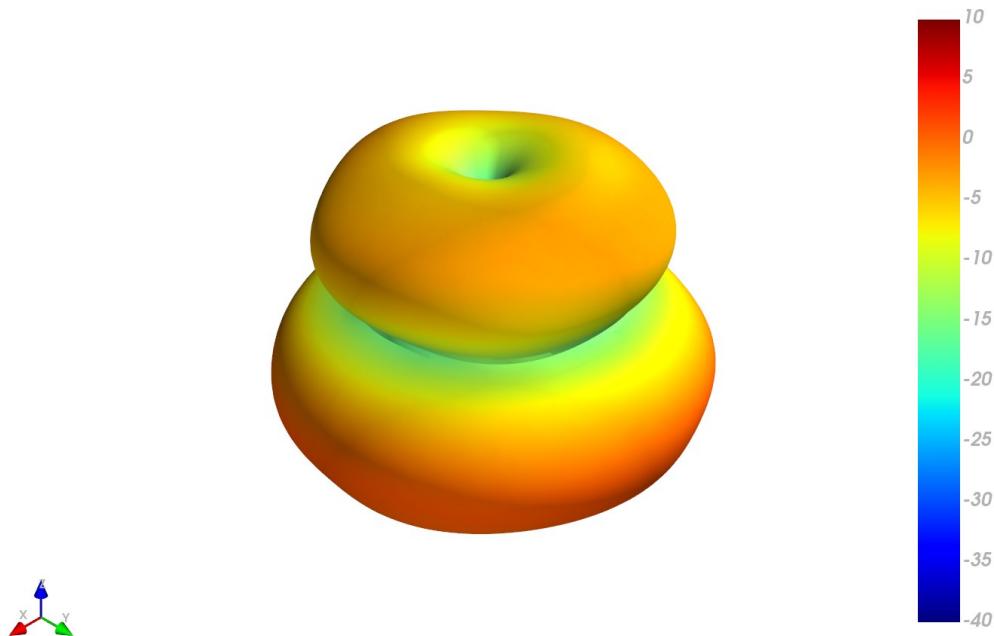
4.60 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 1990 MHz



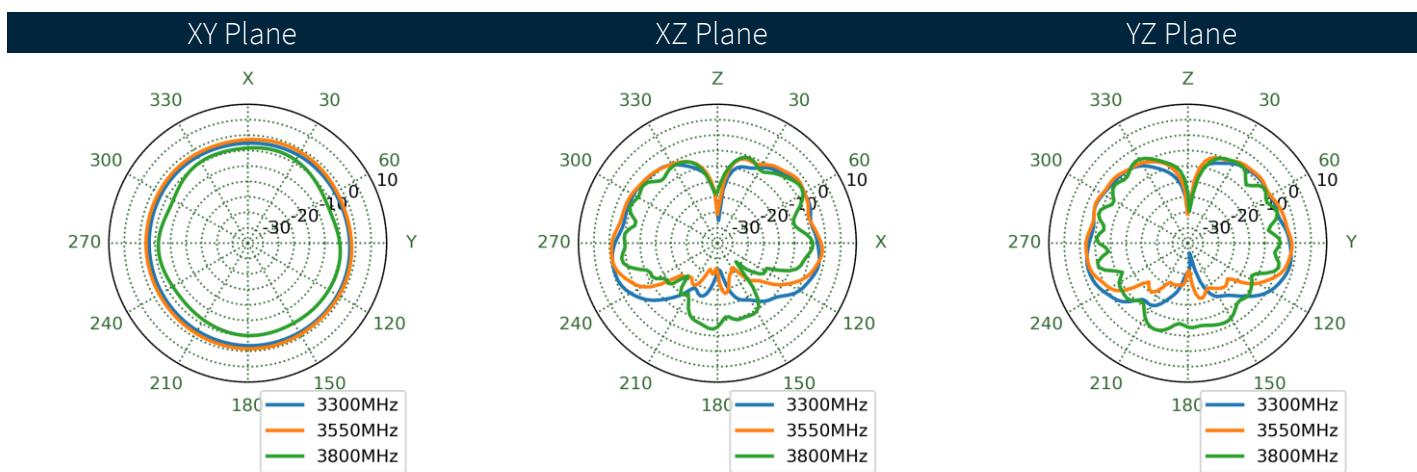
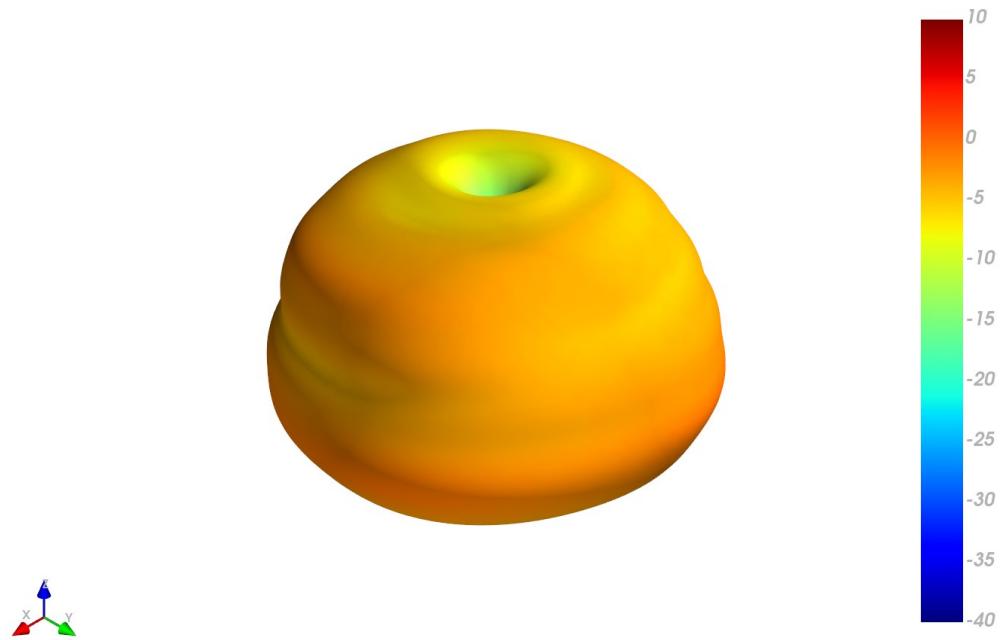
4.61 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 2360 MHz



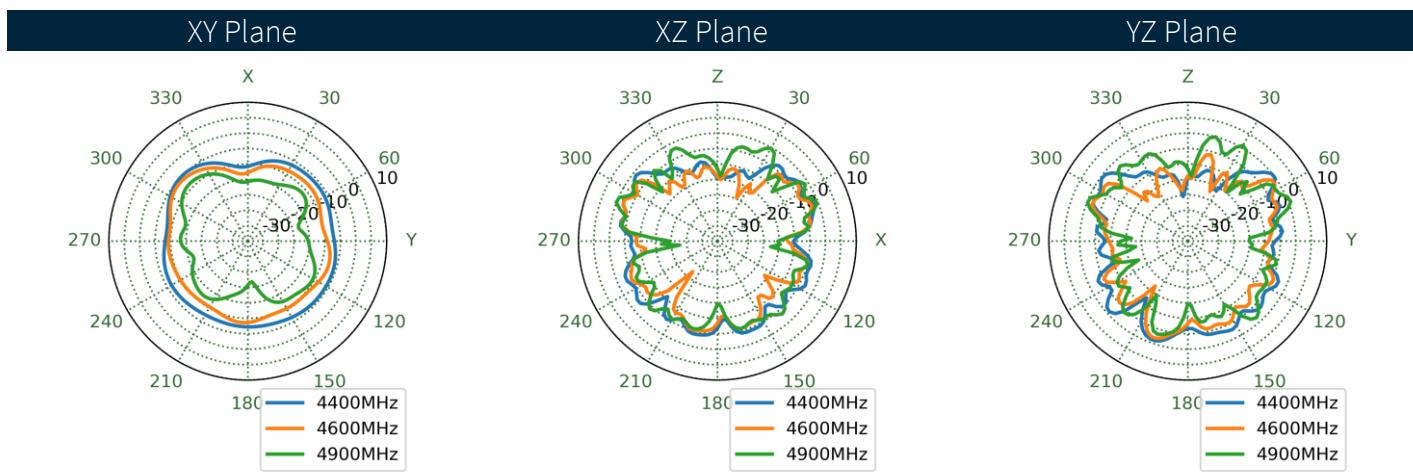
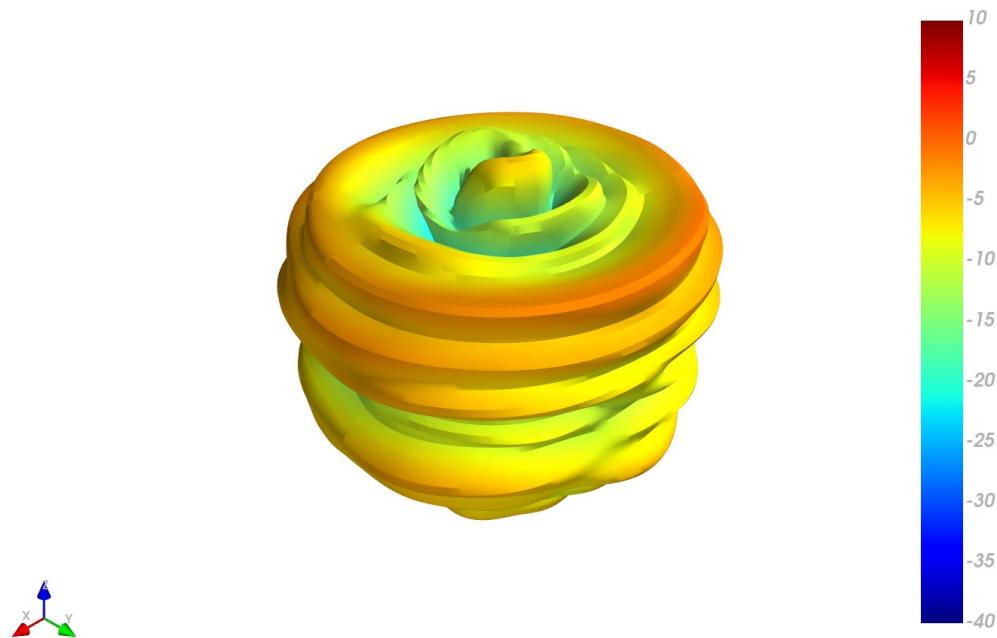
4.62 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 2595 MHz



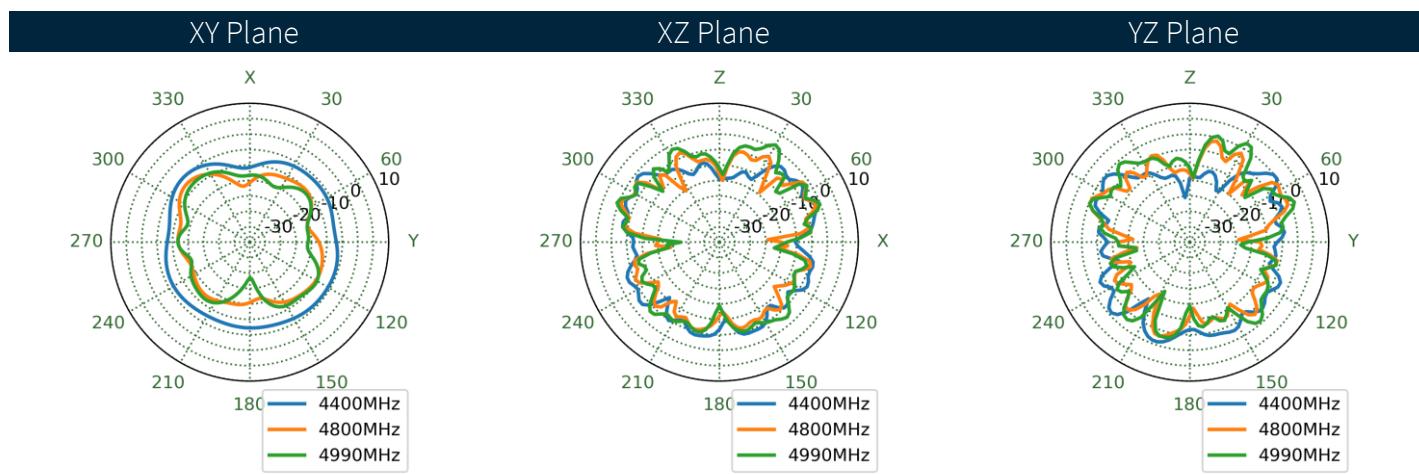
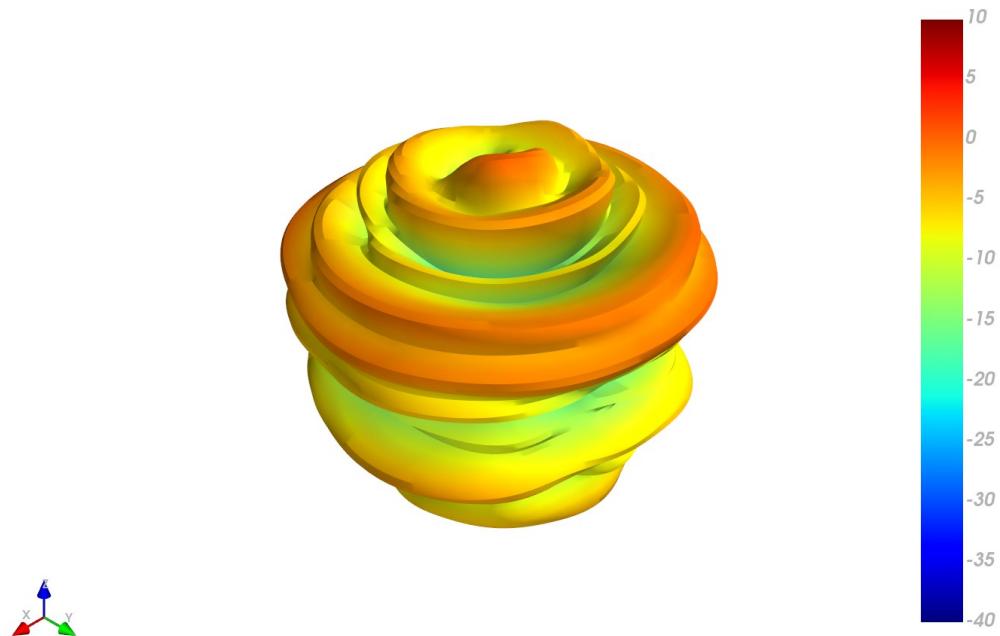
4.63 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 3550 MHz



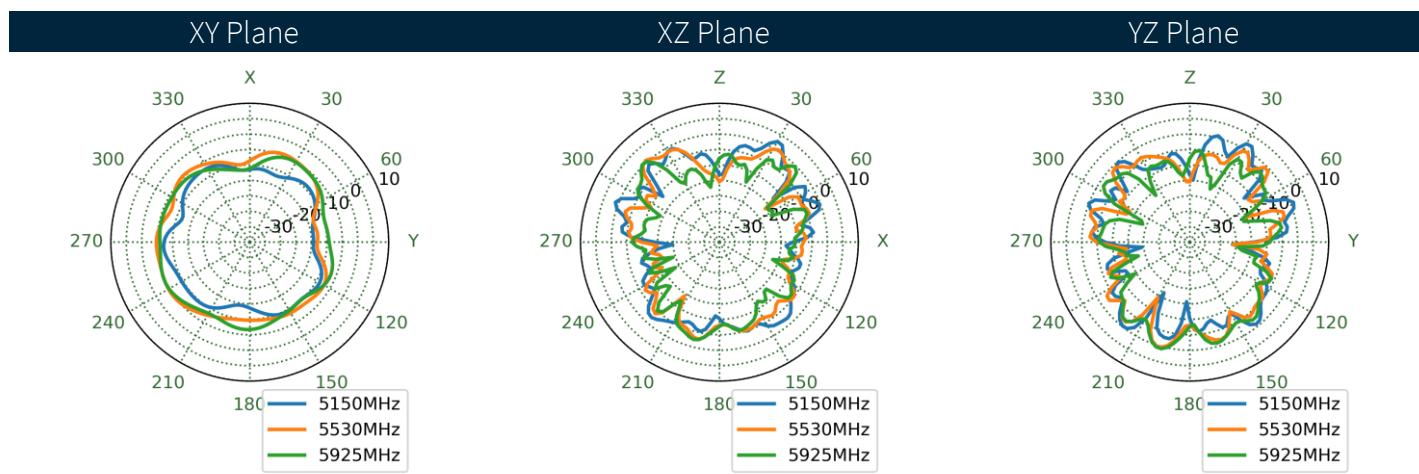
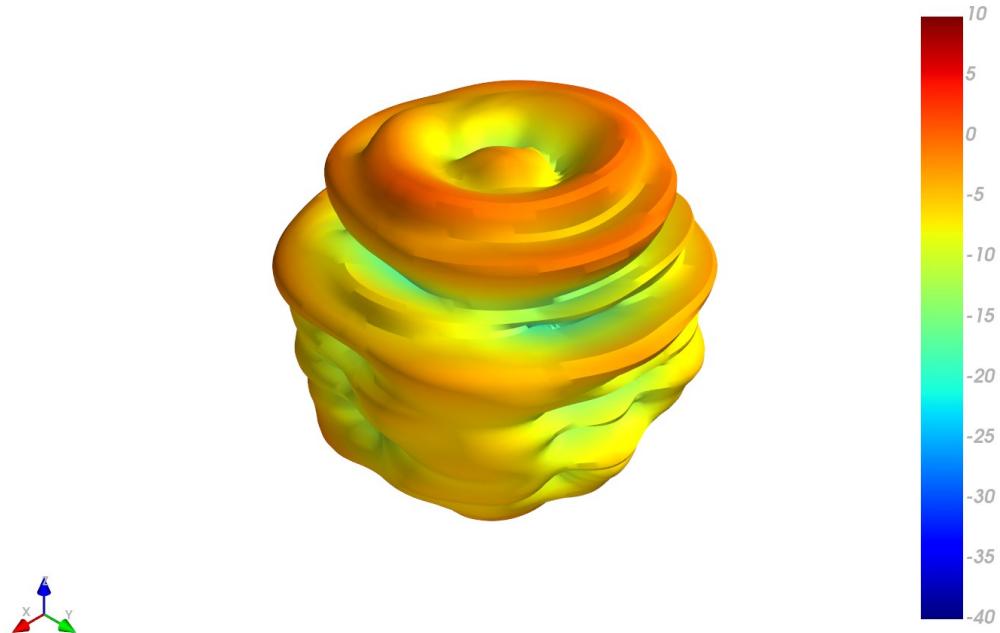
4.64 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 4600 MHz



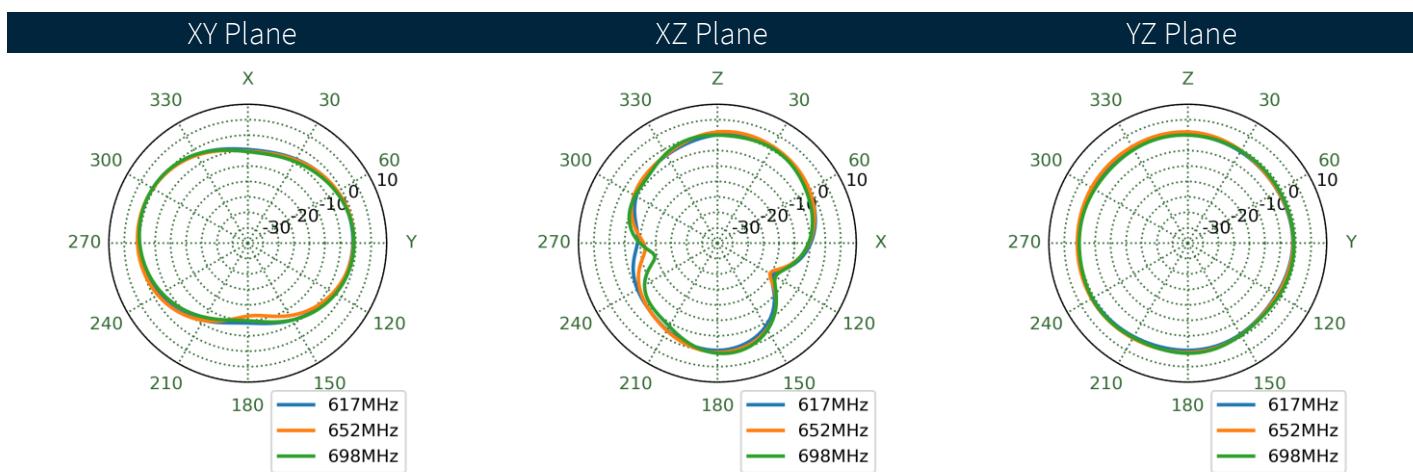
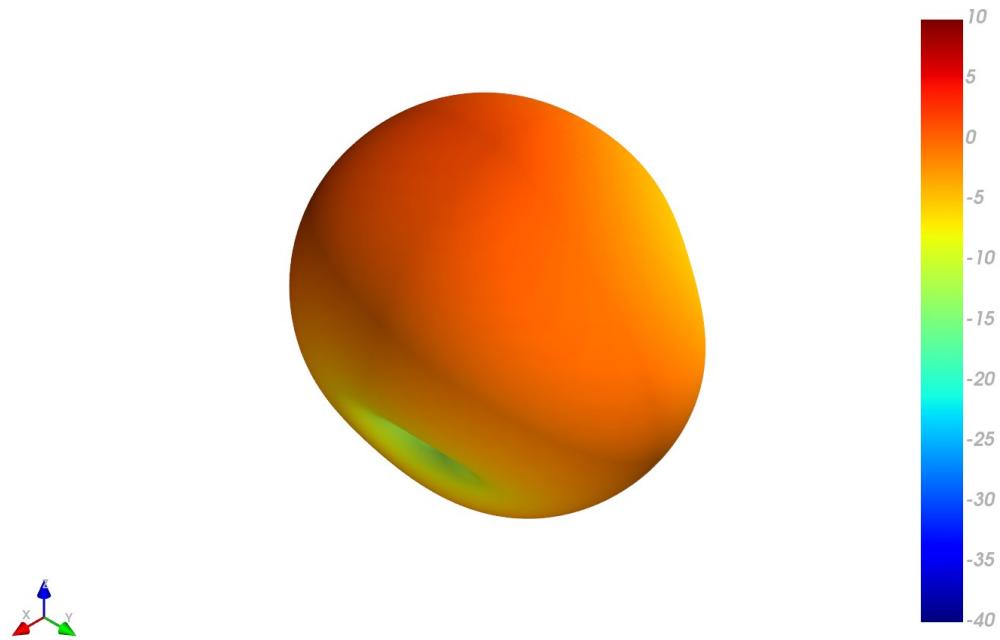
4.65 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 4800 MHz



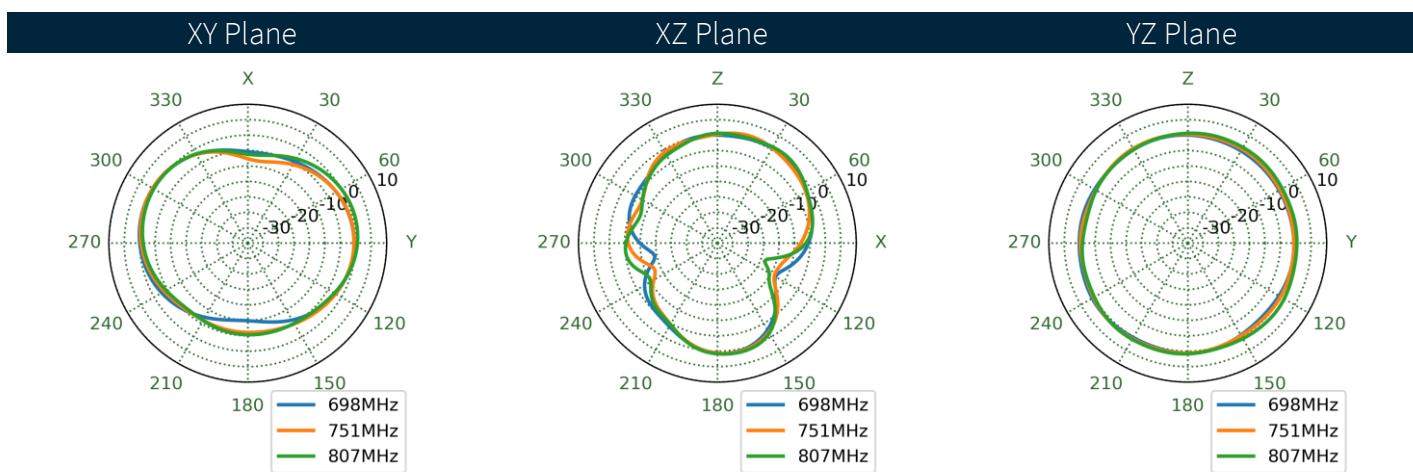
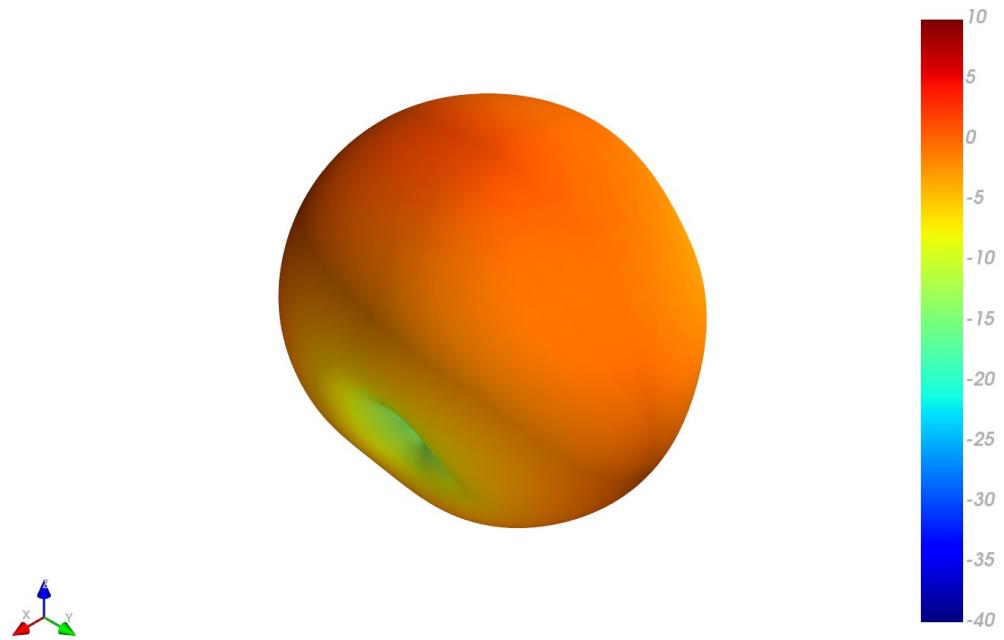
4.66 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Straight at 5530 MHz



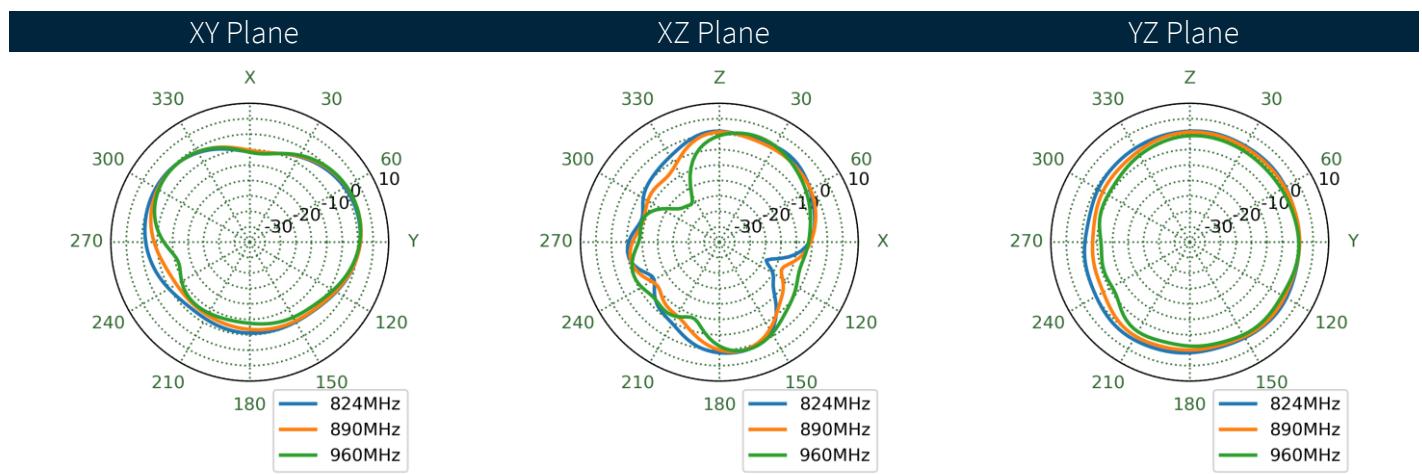
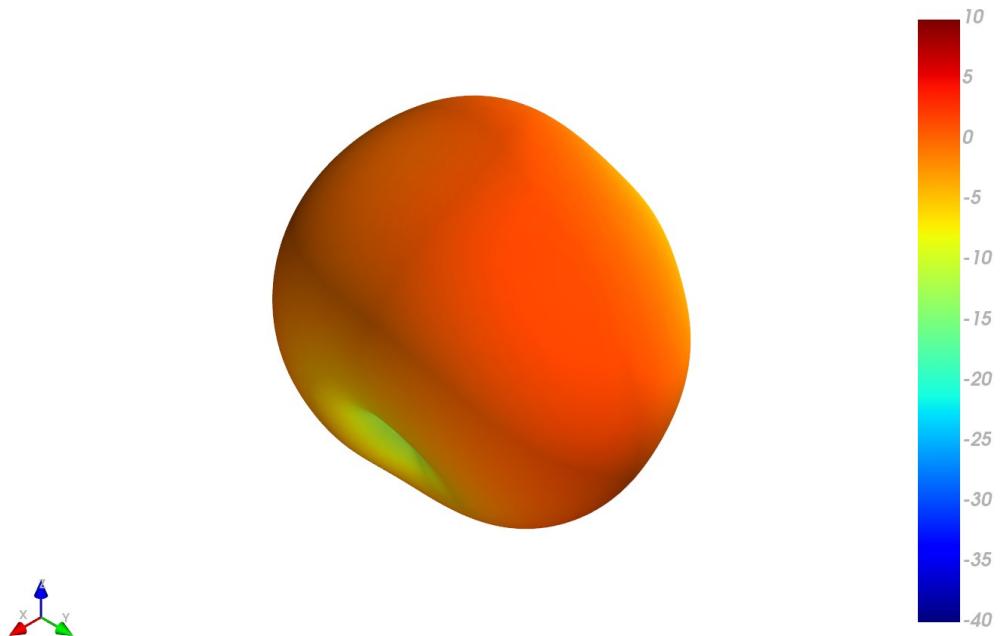
4.67 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 625 MHz



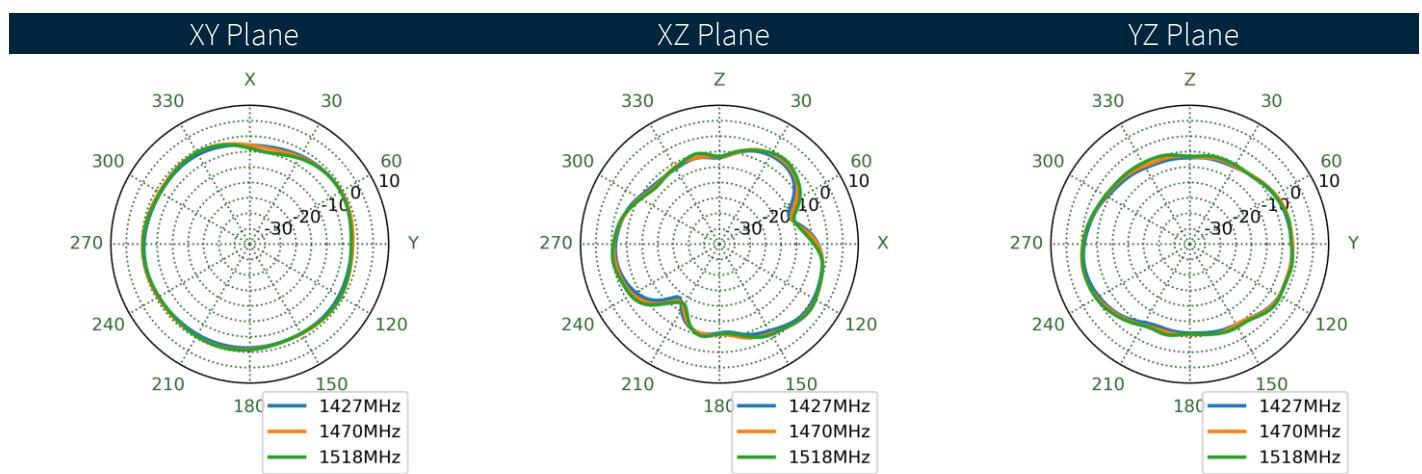
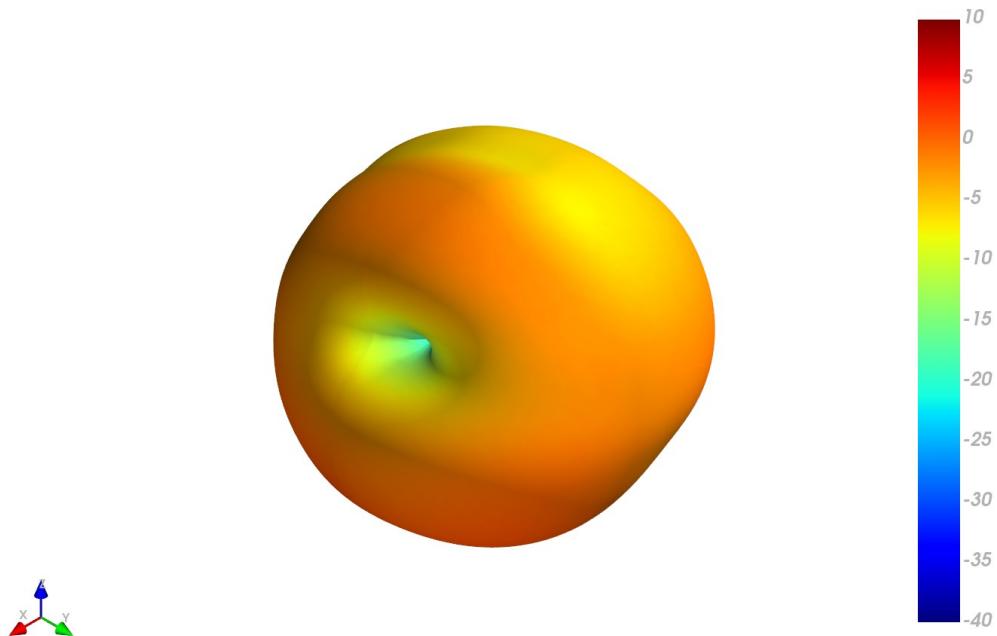
4.68 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 751 MHz



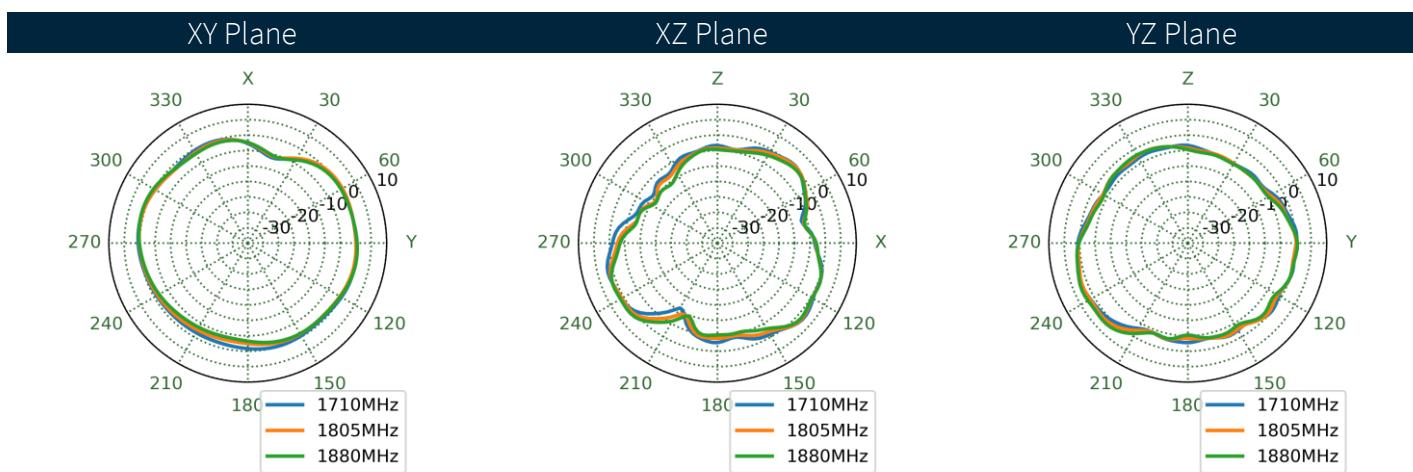
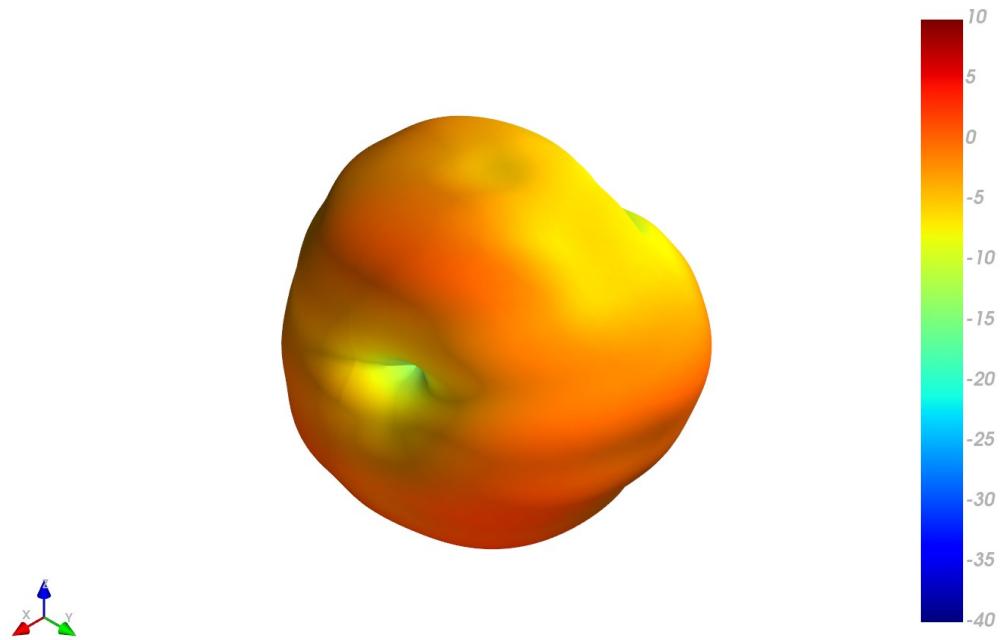
4.69 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 890 MHz



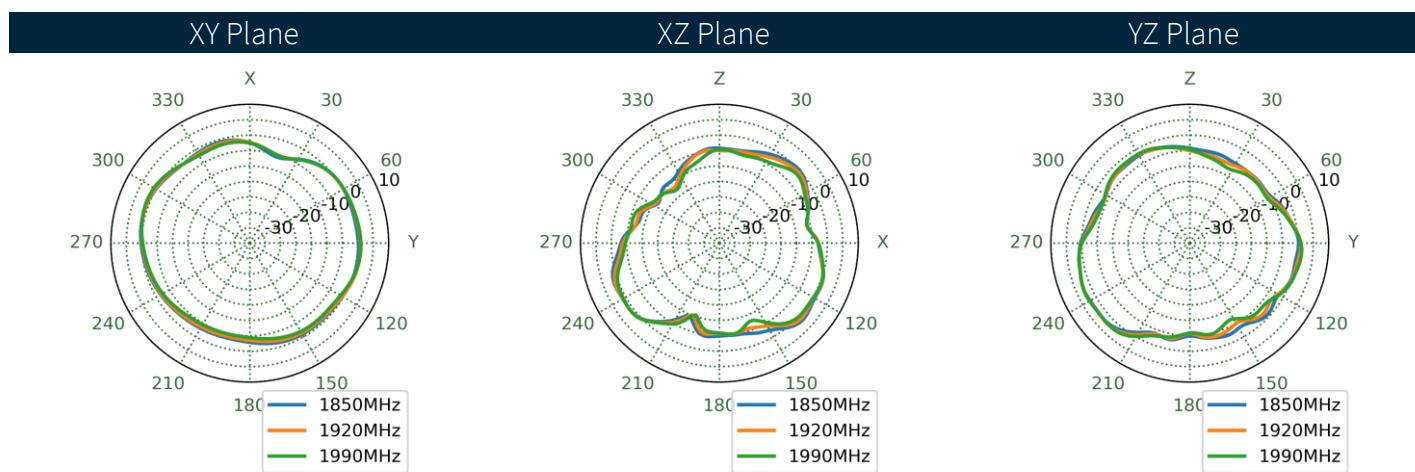
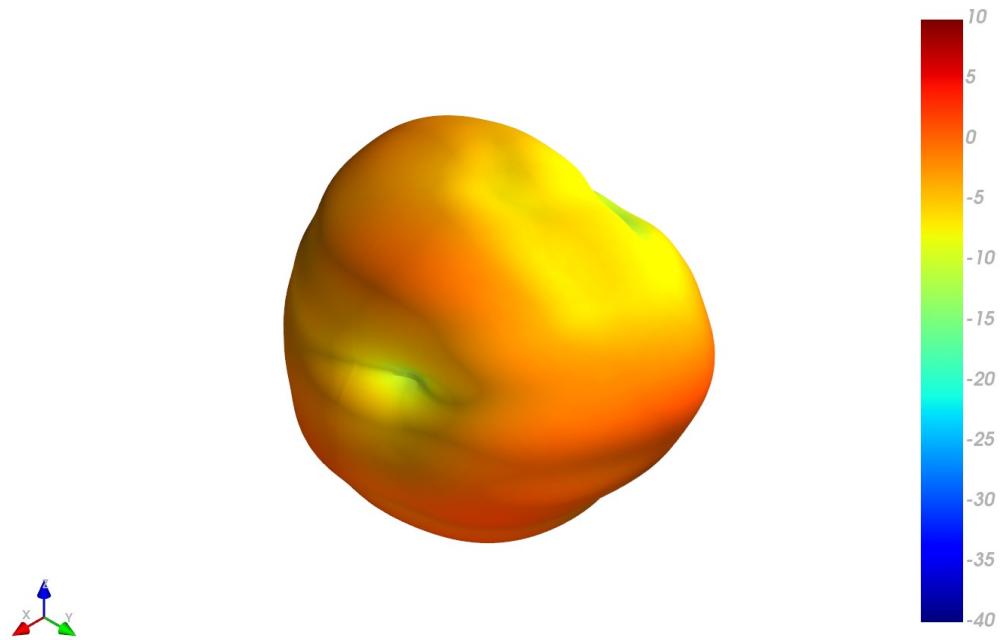
4.70 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 1470 MHz



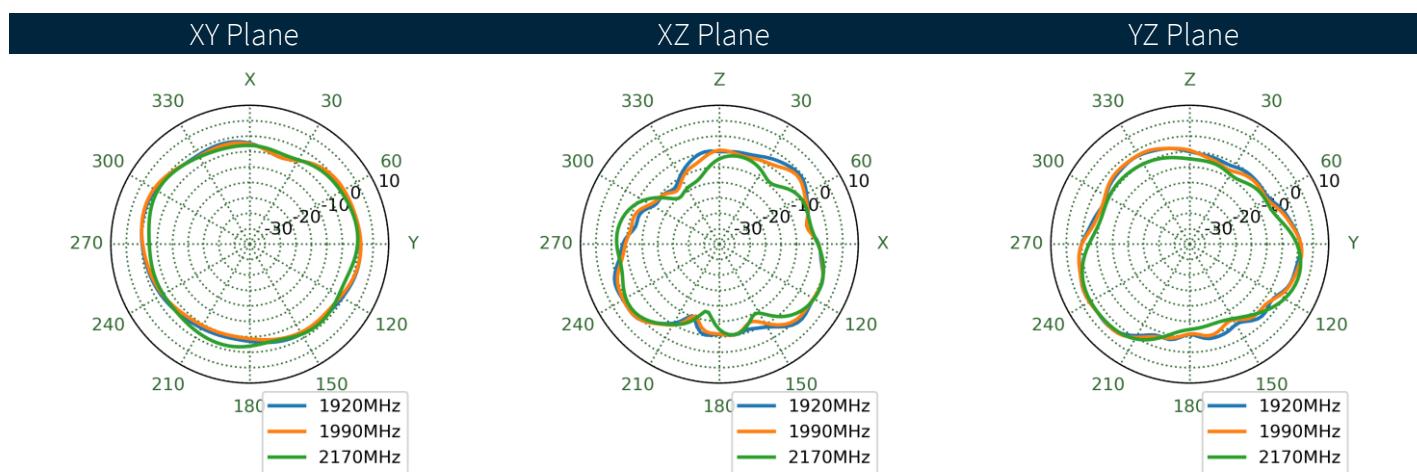
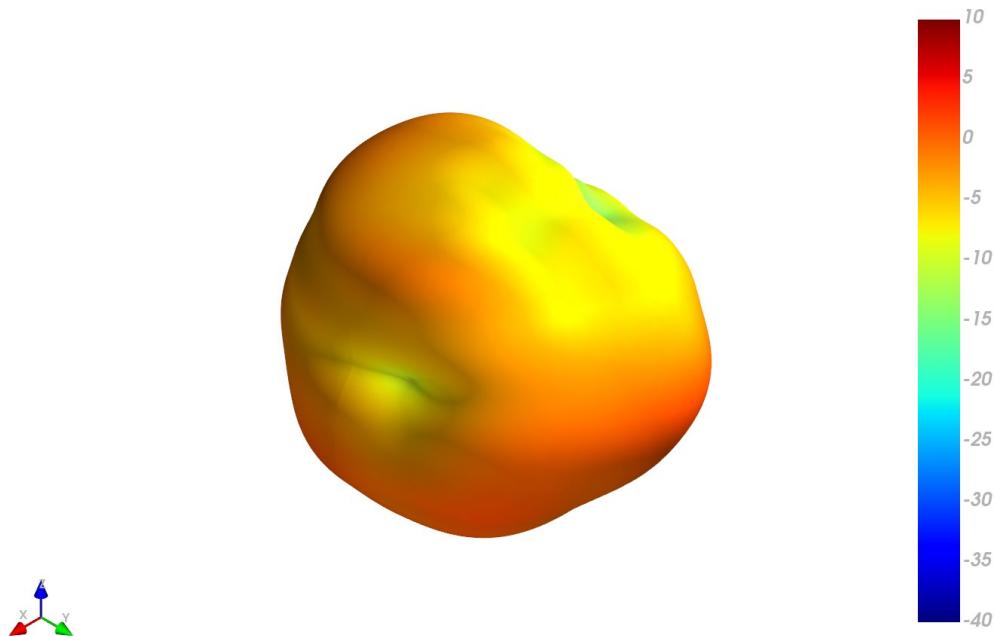
4.71 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 1805 MHz



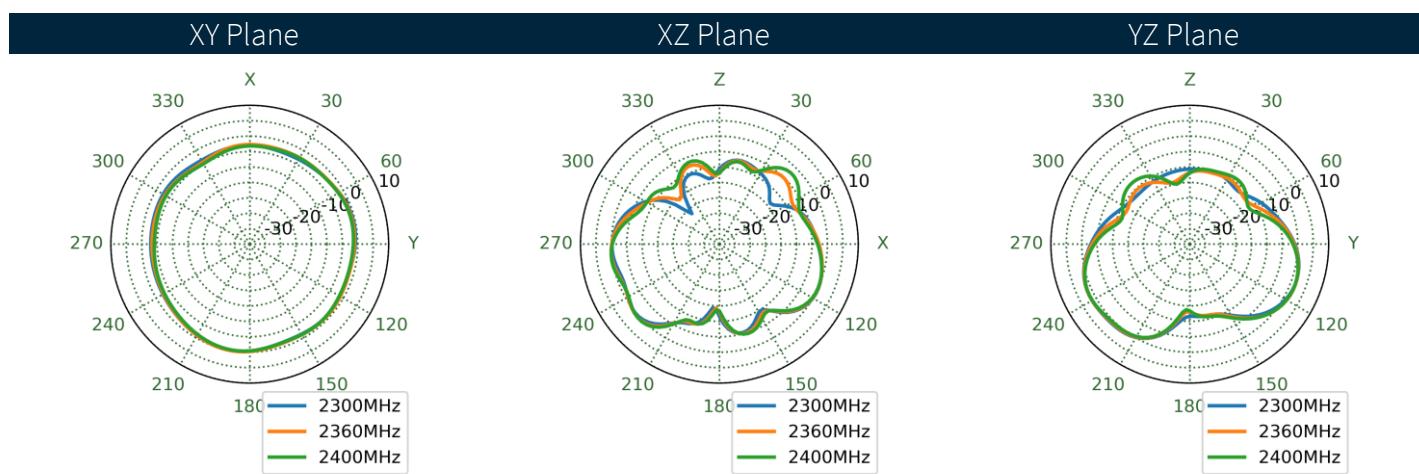
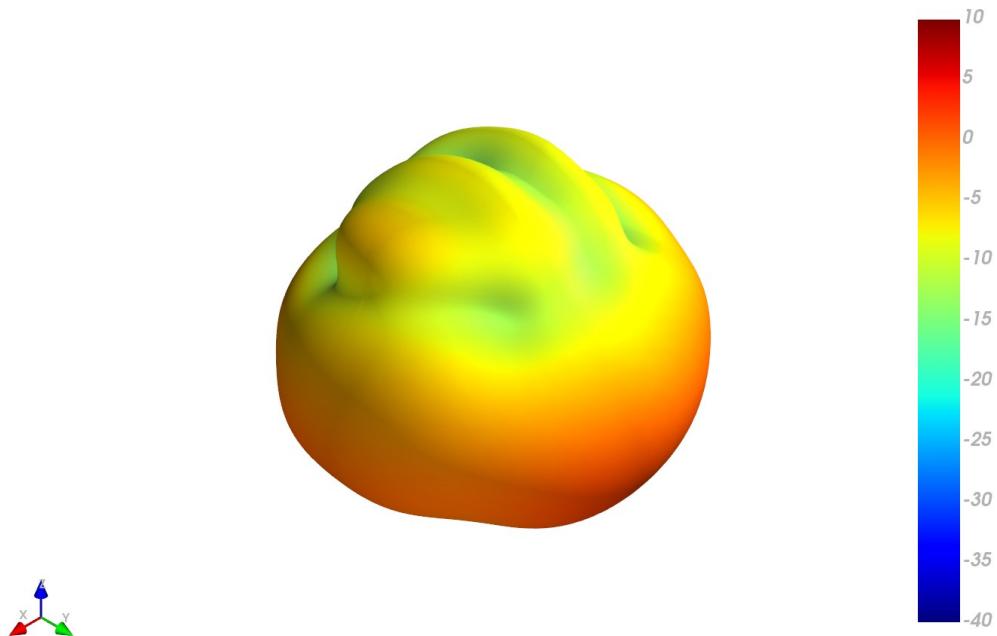
4.72 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 1920 MHz



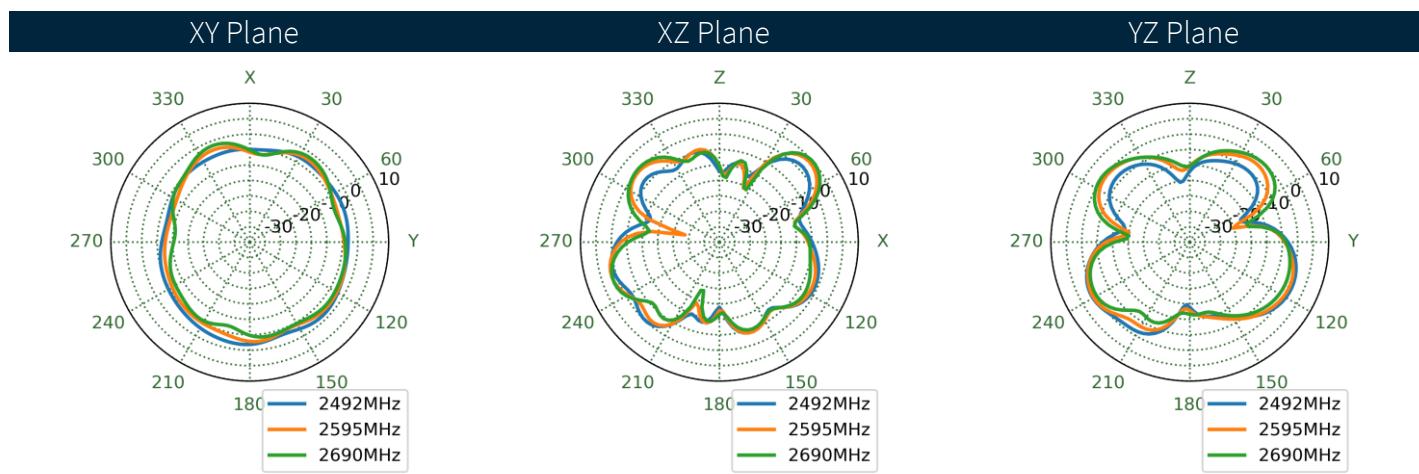
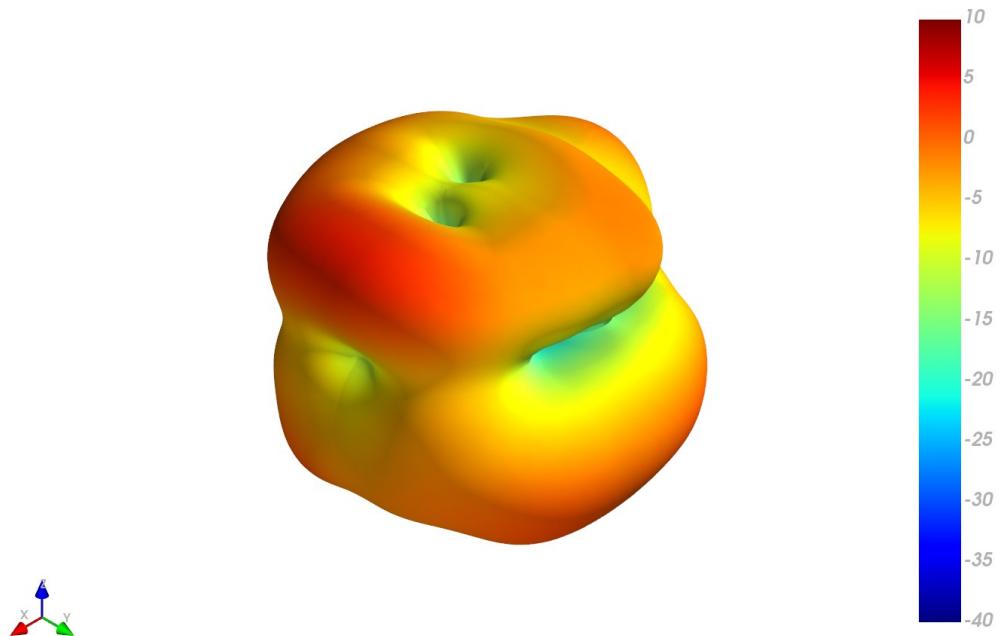
4.73 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 1990 MHz



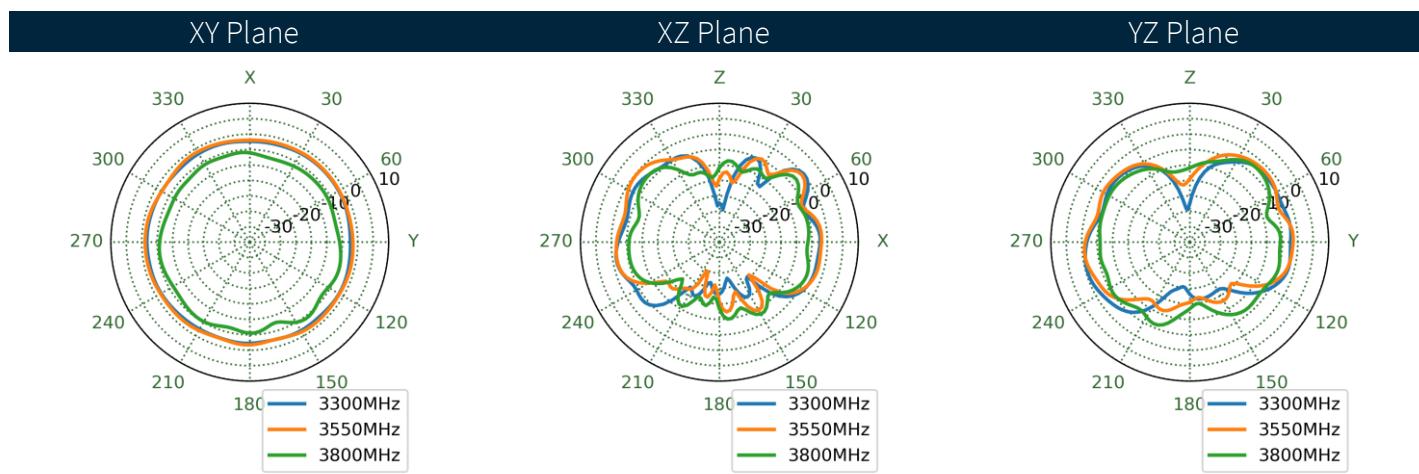
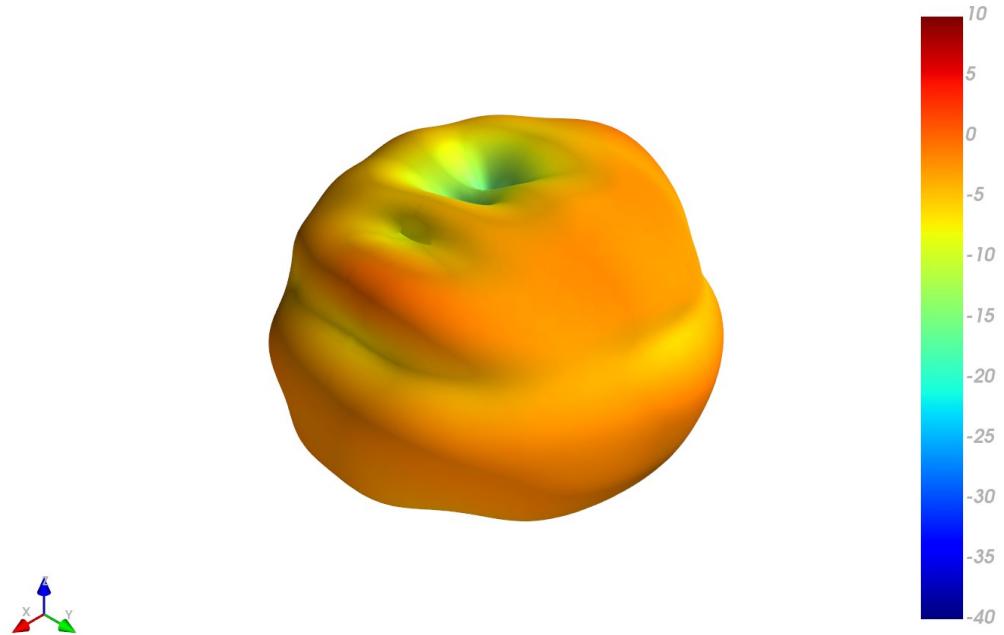
4.74 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 2360 MHz



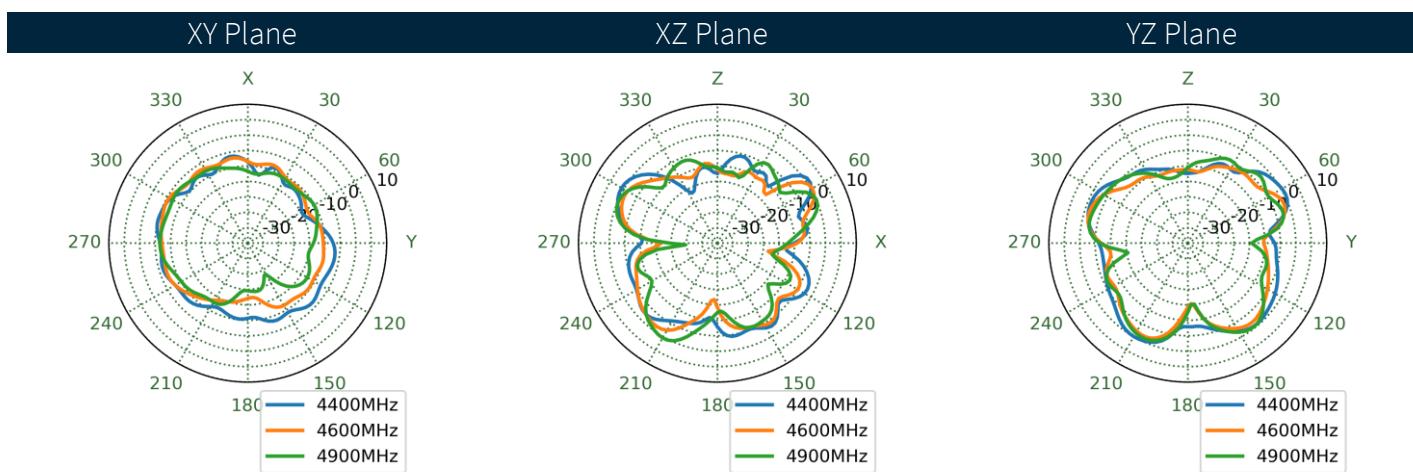
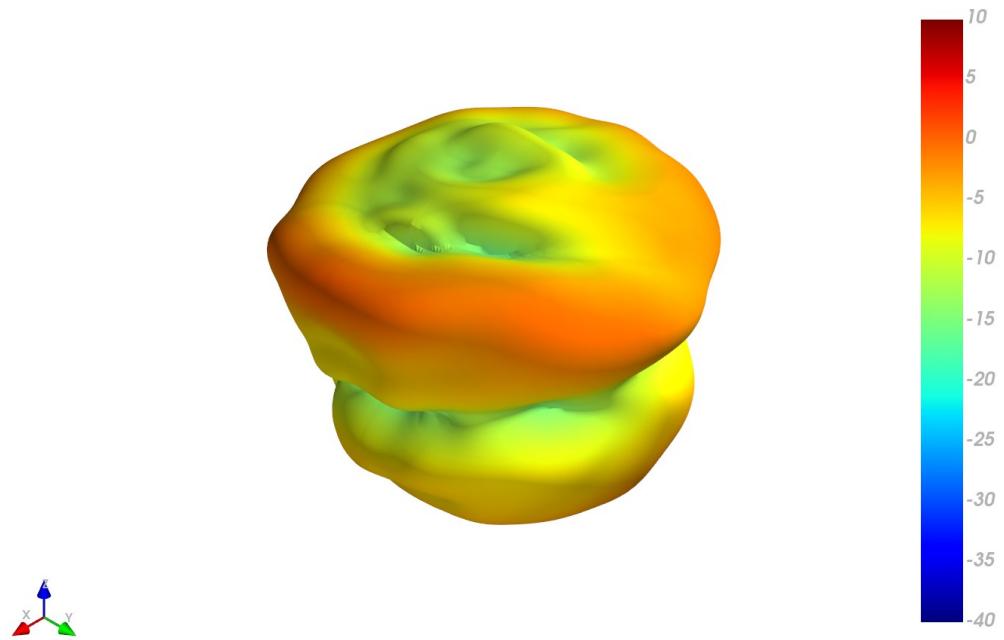
4.75 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 2595 MHz

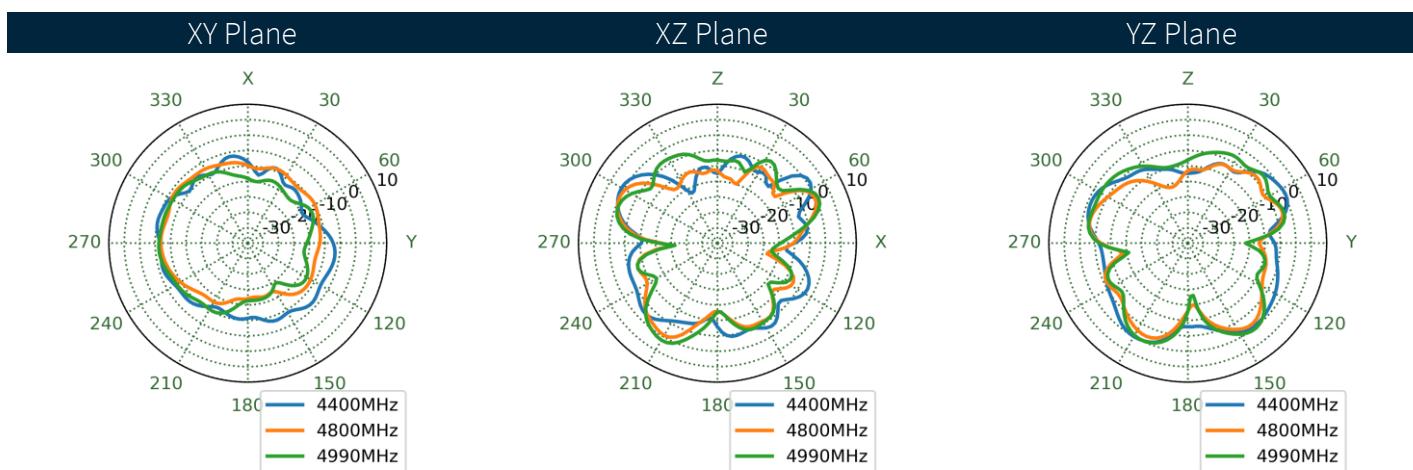
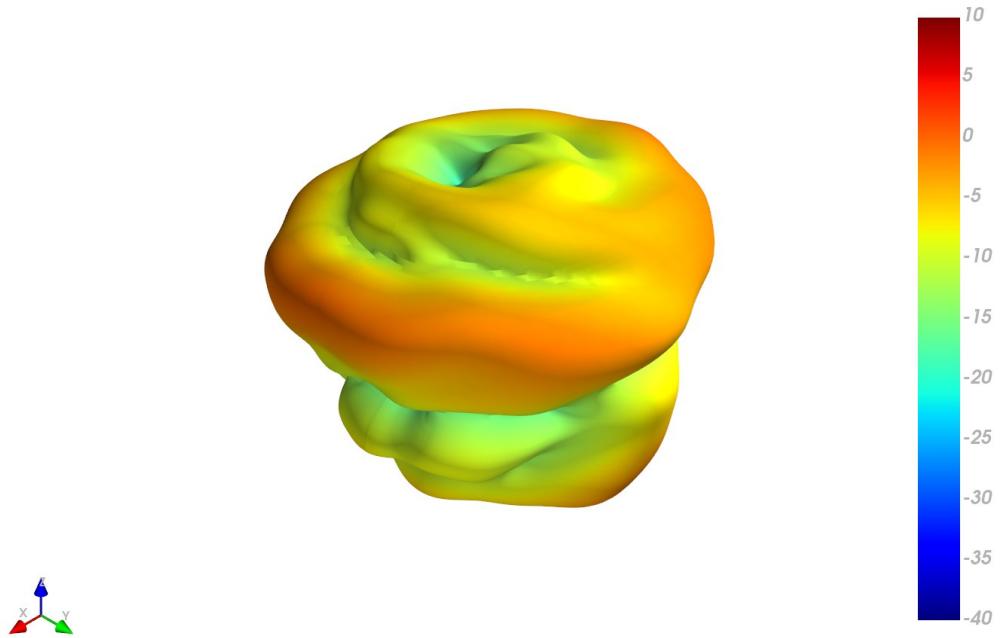


4.76 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 3550 MHz

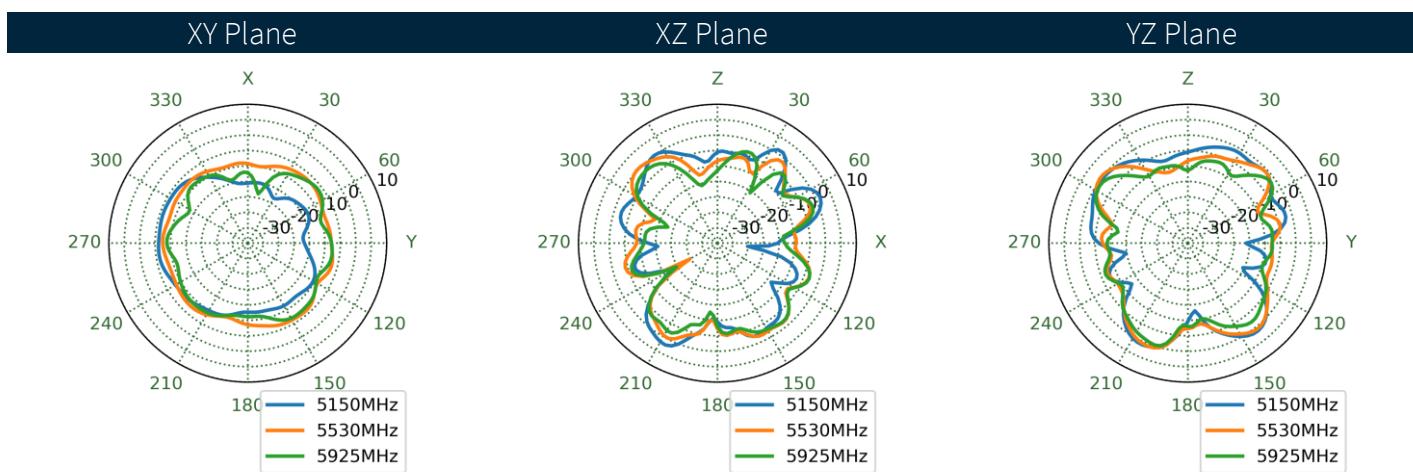
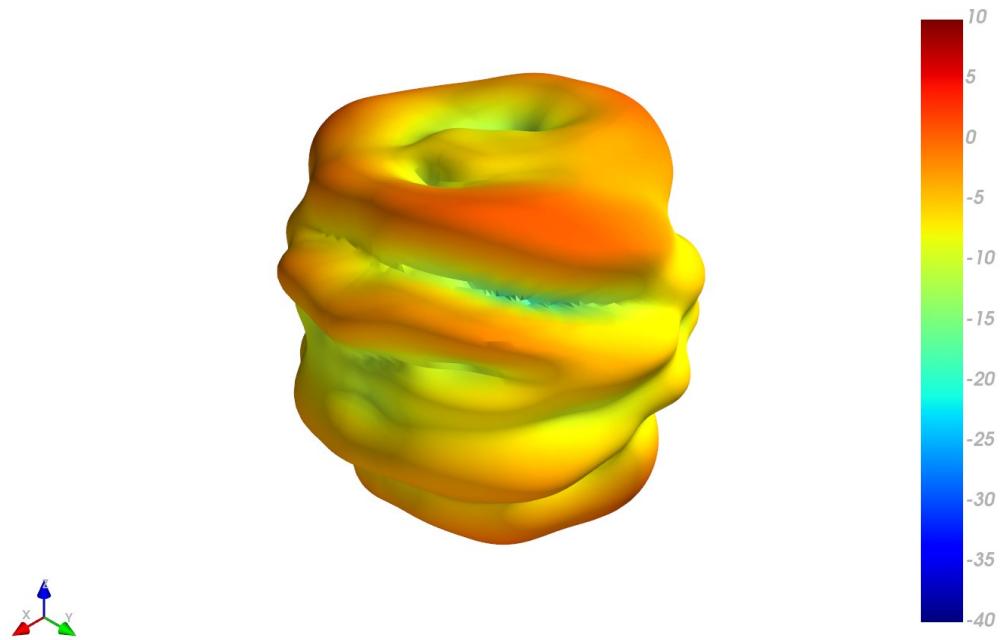


4.77 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 4600 MHz



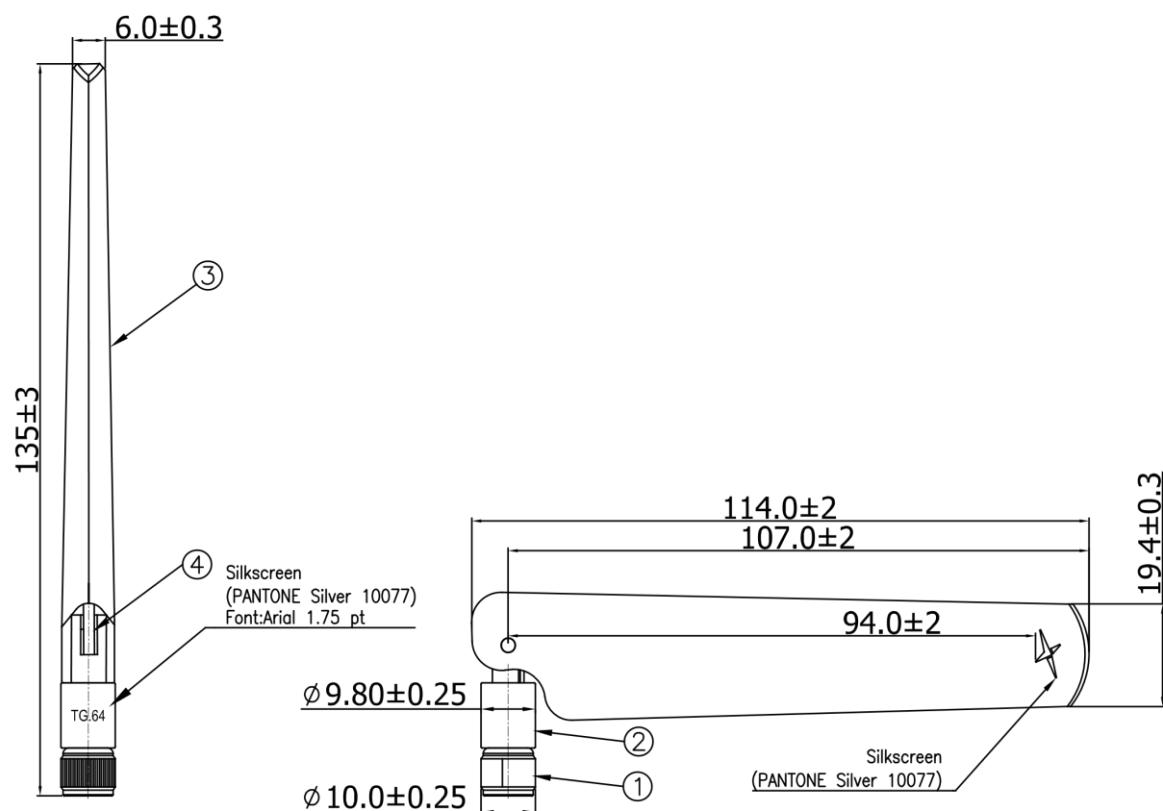
4.78 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 4800 MHz


4.79 3D and 2D Radiation Patterns on 9x15cm Ground Plane - Bent at 5530 MHz



5. Mechanical Drawing

ISO NO.: EDW-23-8-0678
 STATE: Release
 NOTES: 1. All material must be RoHS compliant.



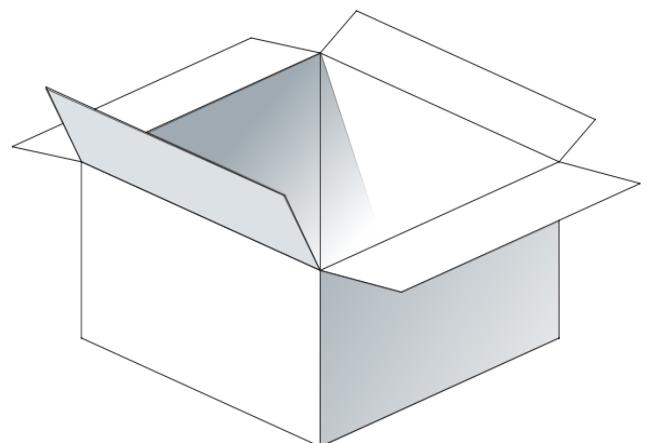
	Name	Material	Finish	QTY
1	SMA(M)	Brass	Au Plated	1
2	Fixed base	PC+PBT	Black	1
3	Upper cover	ABS	Black	1
4	RG-178 Coaxial Cable	FEP	Brown	1

6. Packaging

TG.64.8113
1 PCS Tape/ PE Bag



200 PCS/ Cartoon
Carton Dimensions: 230x175x160mm
Carton Label



Changelog for the datasheet

SPE-23-8-284- TG.64.8113

Revision: A (Original First Release)	
Date:	2023-11-01
Notes:	Initial Release
Author:	Cesar Sousa

Previous Revisions



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