TAOGLAS



Datasheet

iDAS MIMO LTE Ceiling Mount Omni Antenna

Part No:
iDAS.C.001

Features:

2* LTE MIMO Antenna for Indoor Distributed Antenna Systems
High Performance, Low PIM Antenna
Ceiling Screw Mount, Compact Design
Covers Worldwide LTE Bands (Including 3G/2G)
699-960MHz / 1710-2700MHz / 3400-4000MHz
IP54 Rated Enclosure
Cables: 300mm Low Loss Plenum Rated RG-402 Equivalent
Connector: 4.3-10 mini-DIN [F]
Fully customizable cable and connectors
Dimensions: Ø218 * 38mm
RoHS & REACH Compliant

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1. Introduction



The Taoglas iDAS LTE MIMO antenna is a compact circular ceiling mount antenna with high performance and low Passive Inter-Modulation (PIM) designed for use in indoor distributed antenna systems (iDAS) to address in-building coverage problems and increasing demand for constant connectivity.

The iDAS delivers powerful worldwide 4G LTE MIMO coverage while also covering the 3G and 2G bands and features a compact, easy-to-install design.

iDAS networks are an excellent solution to bring LTE coverage to areas traditional base stations cannot reach:

- Stadiums, Arenas, Convention Centers
- Hotels, Shopping Malls, Hospitals
- Factories, Warehouses
- Airports, Train Stations, Bus Stations
- Schools, College Campuses
- Office Buildings, High Density Residential Complexes

LTE 4G applications demand high speed data uplink and downlink. High efficiency and high gain MIMO antennas are necessary to achieve the signal to noise ratio and throughput required to solve these challenges. The iDAS antenna is also designed for high isolation and low PIM between the two MIMO antennas to prevent self-interference. Low loss plenum rated cables are used to keep efficiency high while complying with stringent fire rating standards.

The product ships with an RG-402 equivalent plenum rated cable with a temperature spec of up to 150C. The PTFE/FEP jacket is flexible yet chemical and fire resistant. Taoglas offers customizable cable lengths, cable types and connector types, contact your regional Taoglas sales office for support.

2. Specification

LTE Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
LTE 700 Band 12,13	699-756	Port1	86.5	-0.63	3.27	50 Ω	Linear	Omni	2W
		Port2	90.4	-0.44	3.40				
GSM 850/900	824-960	Port1	80.8	-0.92	3.37				
		Port2	79.4	-1.00	3.85				
DCS 1800	1710-1880	Port1	77.5	-1.11	6.13				
		Port2	79.8	-0.98	5.73				
PCS 1900	1850-1990	Port1	71.4	-1.46	5.13				
		Port2	81.7	-0.88	5.69				
UMTS 1700/1800_n_1900/ 2100	1710-2170	Port1	75.6	-1.22	6.13				
		Port2	80.5	-0.94	5.73				
LTE2600 Band 7	2500-2690	Port1	63.9	-1.94	5.53				
		Port2	63.8	-1.95	5.65				
LTE3500 & LTE3700 Band 42 & 43	3400-3800	Port1	69.1	-1.61	4.81				
		Port2	69.2	-1.60	5.15				

Mechanical	
Dimensions	Ø 218*38mm
Casing	UV Resistant ABS
Connector	4.3-10 mini-DIN (F)
Cable	2*300mm Low Loss Plenum Rated RG-402 Equivalent
Weight	0.5Kg
Color	RAL 9003 White

Environmental	
Flammability Rating	UL 94-V0
IP rating	IP54
Operating Temperature range	-40°C to +85°C
Storage Temperature range	-40°C to +90°C
Humidity	Non-condensing 65°C 95% RH
Flammability Rating	UL 94-V0

5G/4G Bands				
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA			
	Uplink	Downlink	Port1	Port2
B1	1920 to 1980	2110 to 2170	✓	✓
B2	1850 to 1910	1930 to 1990	✓	✓
B3	1710 to 1785	1805 to 1880	✓	✓
B4	1710 to 1755	2110 to 2155	✓	✓
B5	824 to 849	869 to 894	✓	✓
B7	2500 to 2570	2620 to 2690	✓	✓
B8	880 to 915	925 to 960	✓	✓
B9*	1749.9 to 1784.9	1844.9 to 1879.9	✓	✓
B11	1427.9 to 1447.9	1475.9 to 1495.9	✓	✓
B12	699 to 716	729 to 746	✓	✓
B13	777 to 787	746 to 756	✓	✓
B14	788 to 798	758 to 768	✓	✓
B17	704 to 716	734 to 746	✓	✓
B18	815 to 830	860 to 875	✓	✓
B19	830 to 845	875 to 890	✓	✓
B20	832 to 862	791 to 821	✓	✓
B21	1447.9 to 1462.9	1495.9 to 1510.9	✓	✓
B22*	3410 to 3490	3510 to 3590	✓	✓
B23*	2000 to 2020	2180 to 2200	✓	✓
B24	1626.5 to 1660.5	1525 to 1559	✓	✓
B25	1850 to 1915	1930 to 1995	✓	✓
B26	814 to 849	859 to 894	✓	✓
B27*	807 to 824	852 to 869	✓	✓
B28	703 to 748	758 to 803	✓	✓
B29	717 to 728		✓	✓
B30	2305 to 2315	2350 to 2360	✓	✓
B31	452.5 to 457.5	462.5 to 467.5	✗	✗
B32	1452 to 1496		✓	✓
B34	2010 to 2025		✓	✓
B35	1850 to 1910		✓	✓
B36	1930 to 1990		✓	✓
B37	1910 to 1930		✓	✓
B38	2570 to 2620		✓	✓
B39	1880 to 1920		✓	✓
B40	2300 to 2400		✓	✓
B41	2496 to 2690		✓	✓
B42	3400 to 3600		✓	✓
B43	3600 to 3800		✓	✓
B45	1447 to 1467		✓	✓
B46	5150 to 5925		✓	✓
B47	5855 to 5925		✓	✓
B48	3550 to 3700		✓	✓
B49	3550 to 3700		✓	✓
B50	1432 to 1517		✓	✓
B51	1427 to 1432		✓	✓
B52	3300 to 3400		✓	✓
B53	2483.5 to 2495		✓	✓
B65	1920 to 2010	2110 to 2200	✓	✓
B66	1710 to 1780	2110 to 2200	✓	✓
B68	698 to 728	753 to 783	✓	✓
B69	2570 to 2620		✓	✓
B70	1695 to 1710	1995 to 2020	✓	✓
B71	663 to 698	617 to 652	✓	✓
B72	451 to 456	461 to 466	✗	✗
B73	450 to 455	460 to 465	✗	✗
B74	1427 to 1470	1475 to 1518	✓	✓
B75	1432 to 1517		✓	✓
B76	1427 to 1432		✓	✓
B77	3300 to 4200		✓	✓
B78	3300 to 3800		✓	✓
B79	4400 to 5000		✓	✓
B85	698 to 716	728 to 746	✓	✓
B87	410 to 415	420 to 425	✗	✗
B88	412 to 417	422 to 427	✗	✗

3. Cable Specification

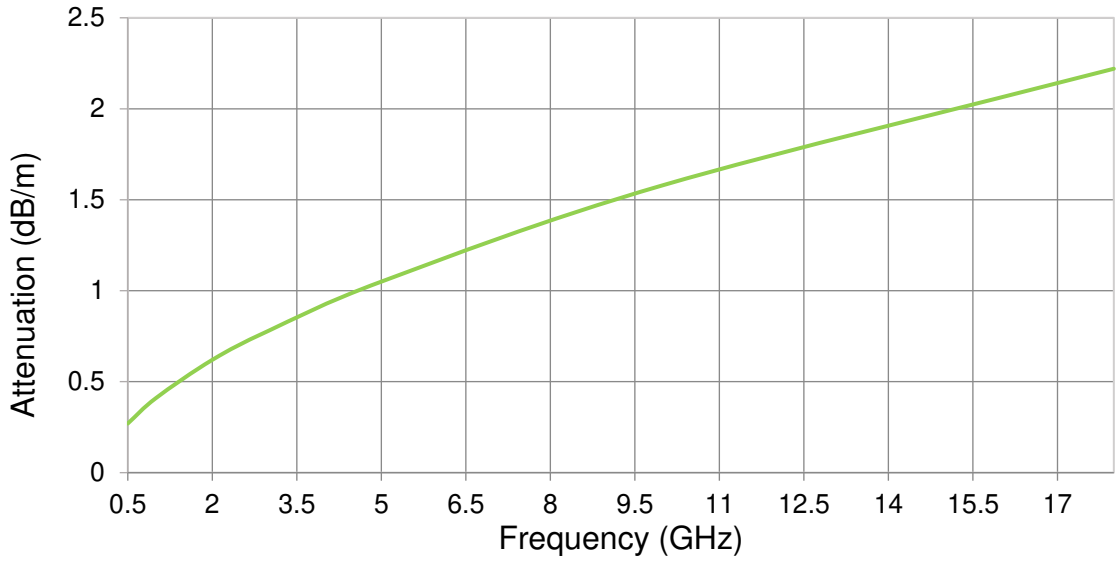


Part Designation	Material	Outer Diameter (mm)
Inner Conductor	Silver Plated Copper	0.94±0.01
Dielectric	PTFE	2.98±0.05
Outer Conductor	Tin Plated Copper Wire (16*6*0.12)	3.55±0.05
Jacket	FEP Blue	4.10±0.05

Electrical Characteristics	
Performance Property	Spec.
Capacitance (pF/m)	98
Impedance(Ohm)	50±2
Cutoff Frequency (GHz)	34
Time delay (ns/m)	4.7
Max Operating Voltage (KVrms)	3000

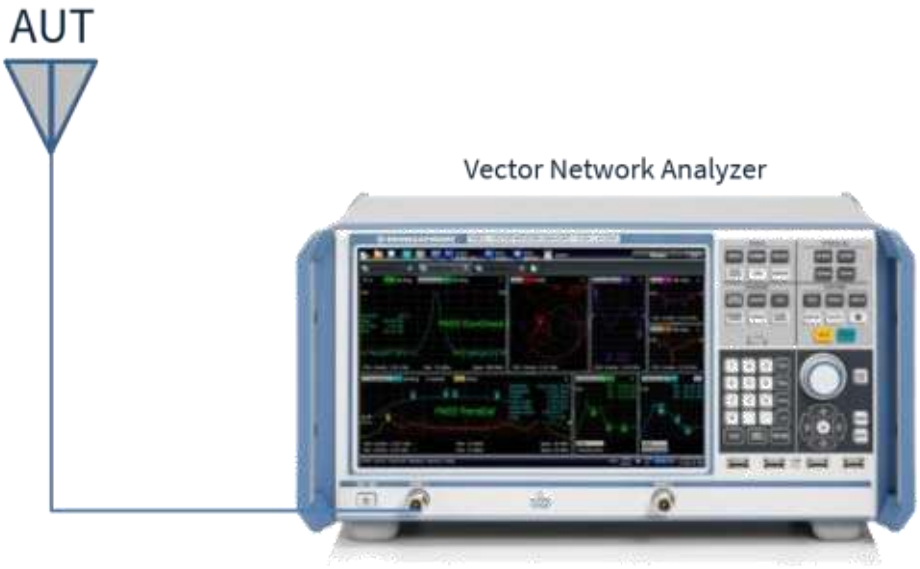
Mechanical	
Performance Properties	Spec.
Min. bending radius static, single(mm)	8
Weight (kg/km)	48
Environmental	
Operating Temperature (℃)	-65~150

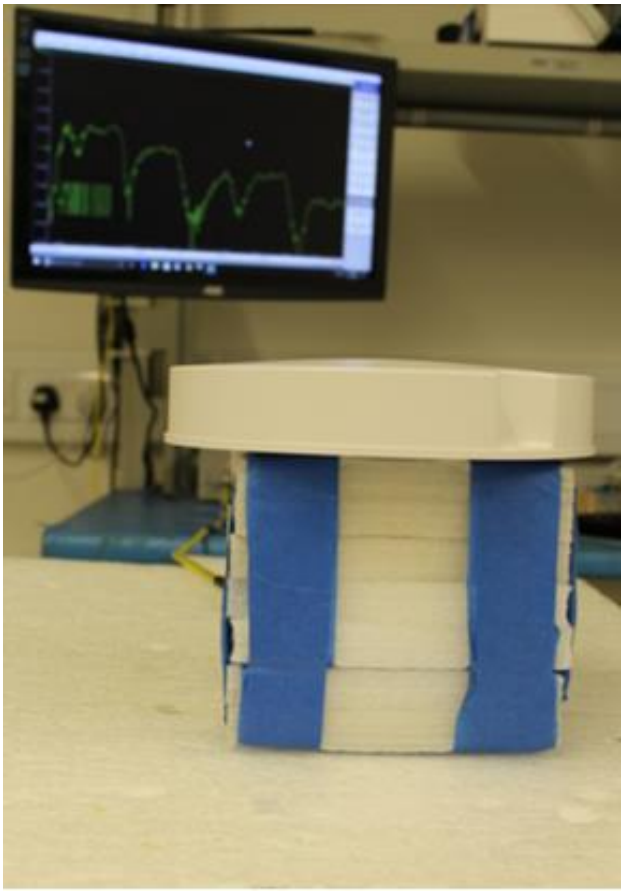
Attenuation @ 20 ℃	
Frequency (GHz)	Attenuation (dB/m)
0.5	0.27
1	0.41
2	0.62
3	0.78
5	1.05
10	1.58
18	2.22



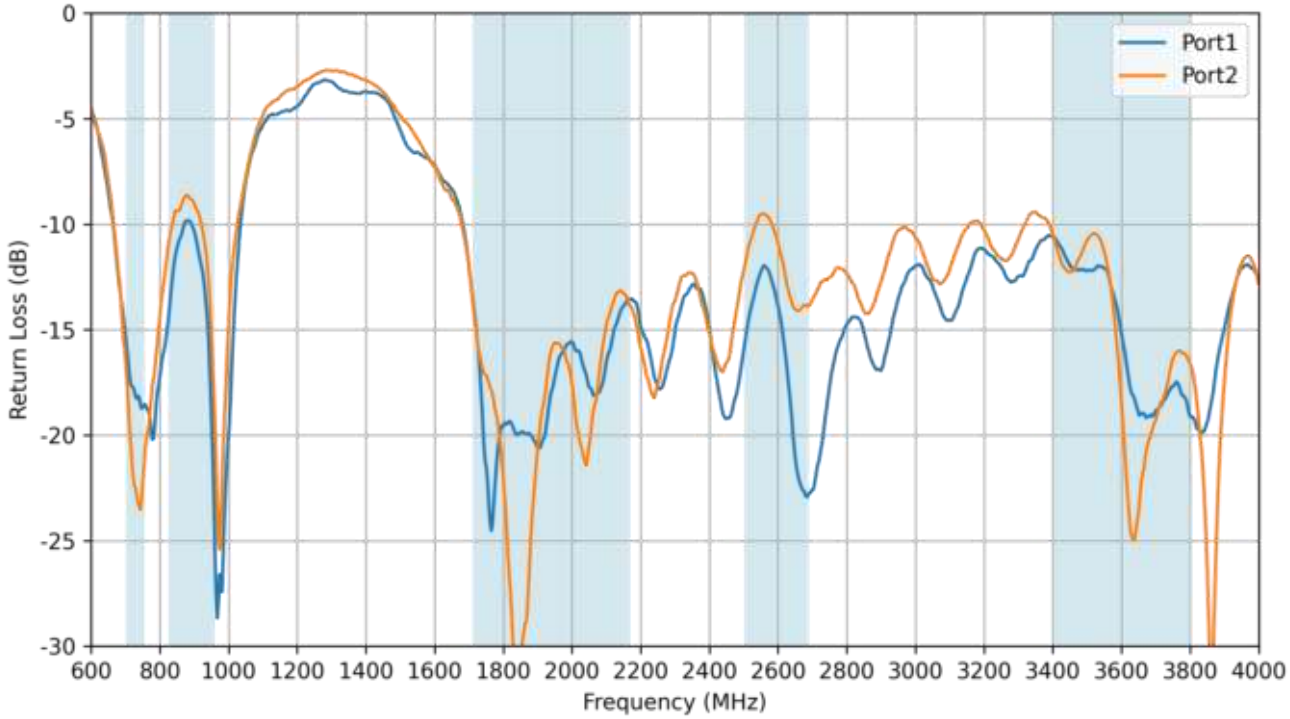
4. Antenna Characteristics

4.1 Test Setup

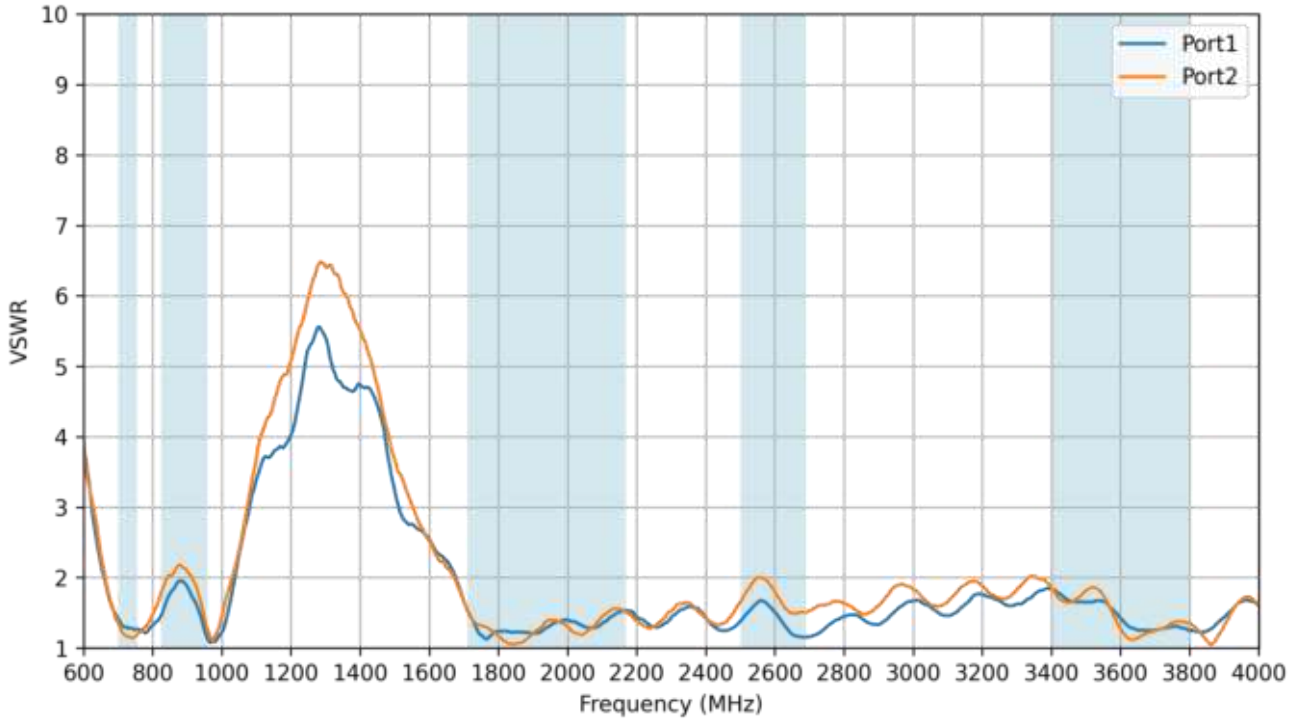




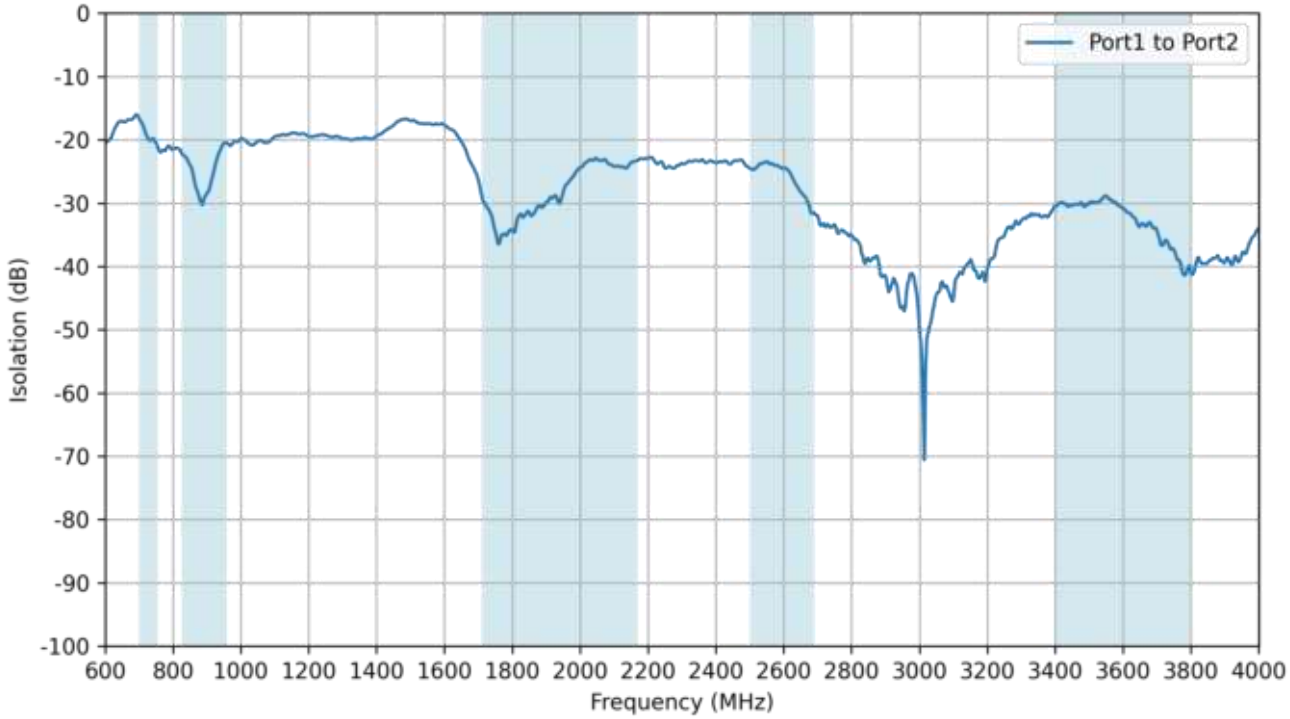
4.2 Return Loss



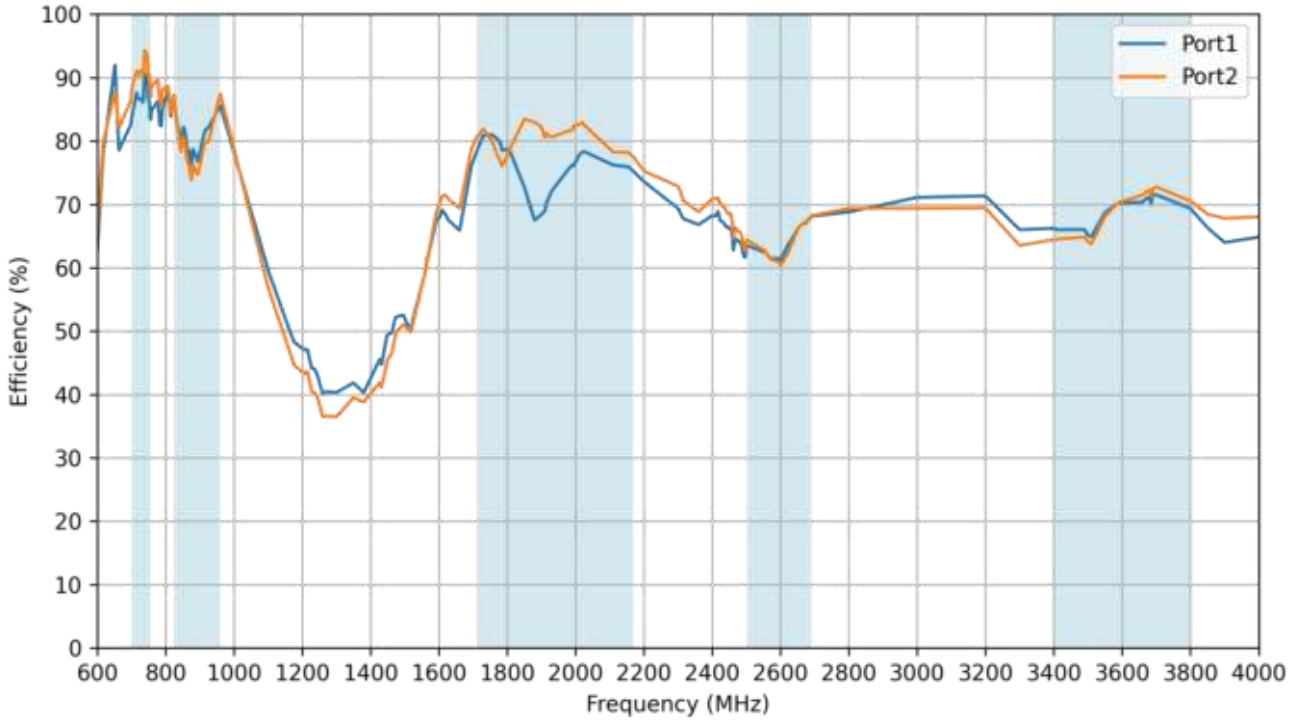
4.3 VSWR



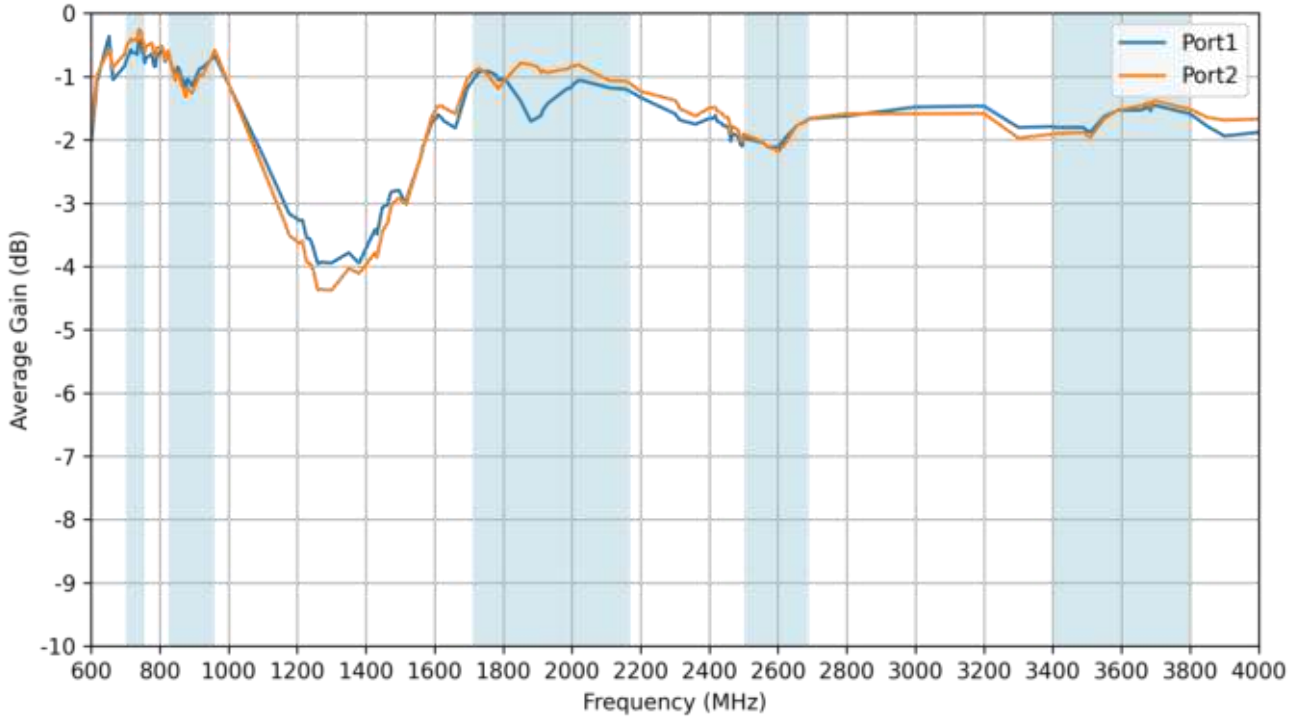
4.4 Isolation



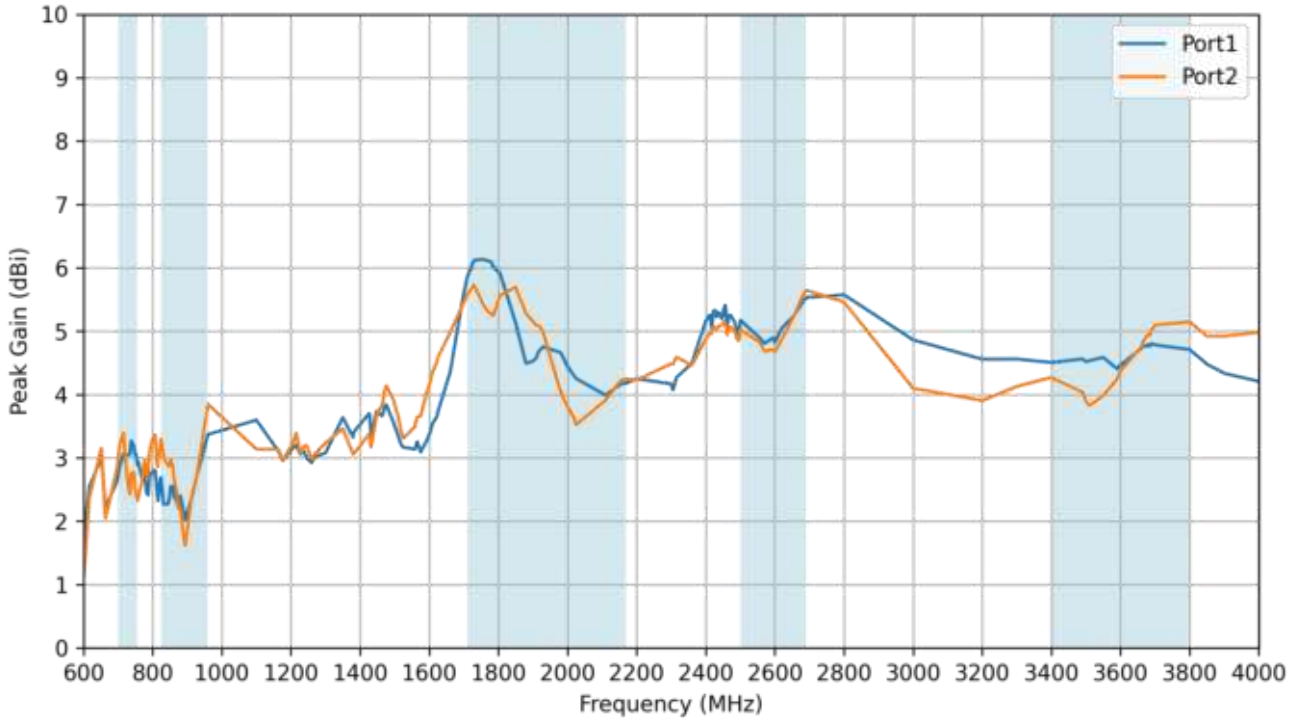
4.5 Efficiency



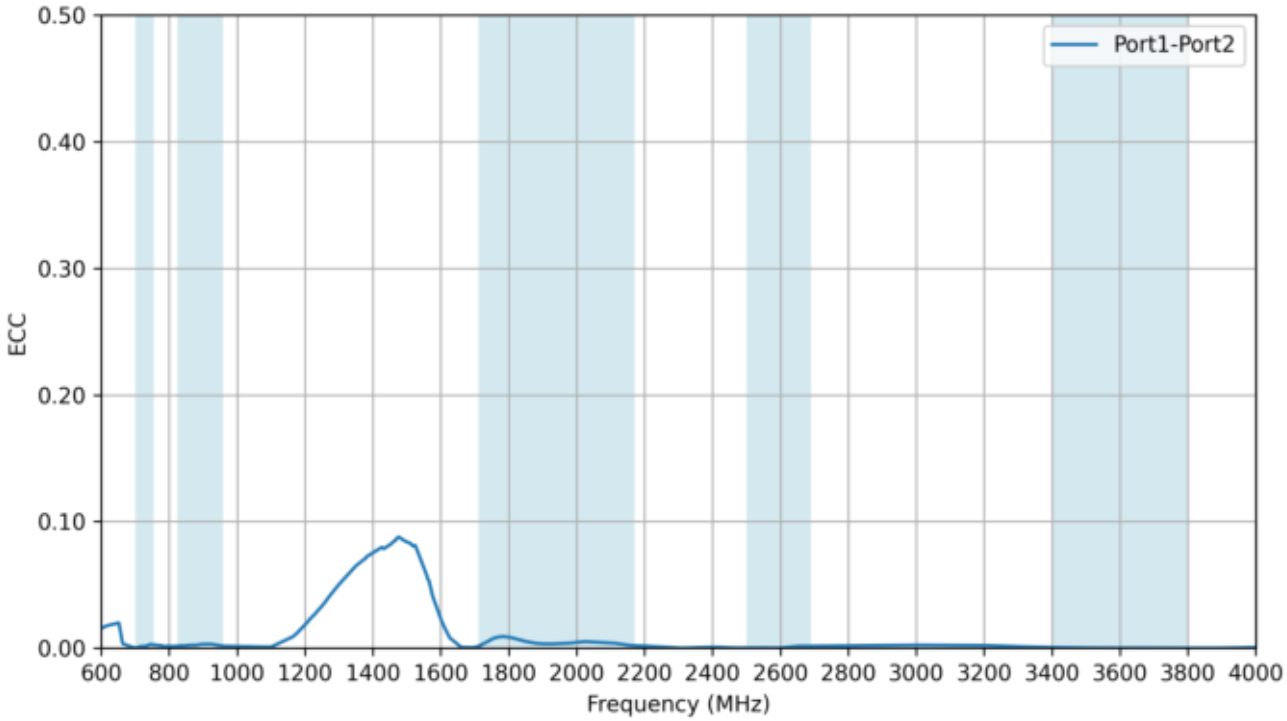
4.6 Average Gain



4.7 Peak Gain

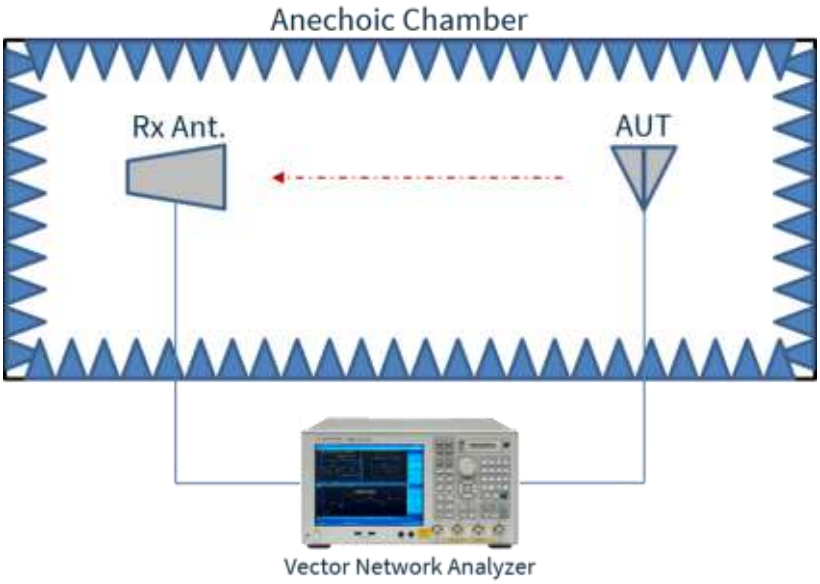


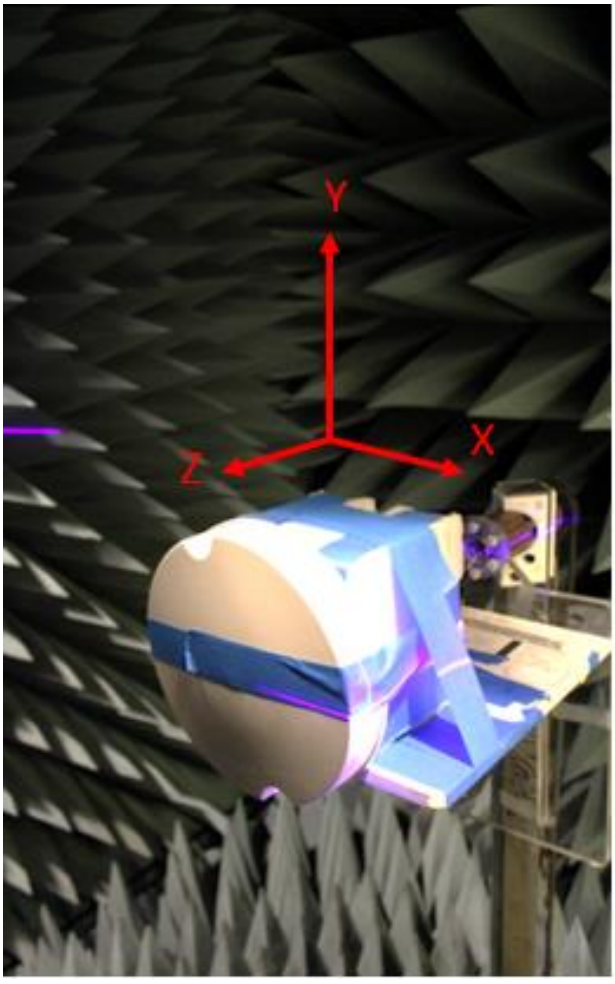
4.8 ECC


Port1-Port2
ECC
0.50
0.40
0.30
0.20
0.10
0.00
600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 3800 4000
Frequency (MHz)

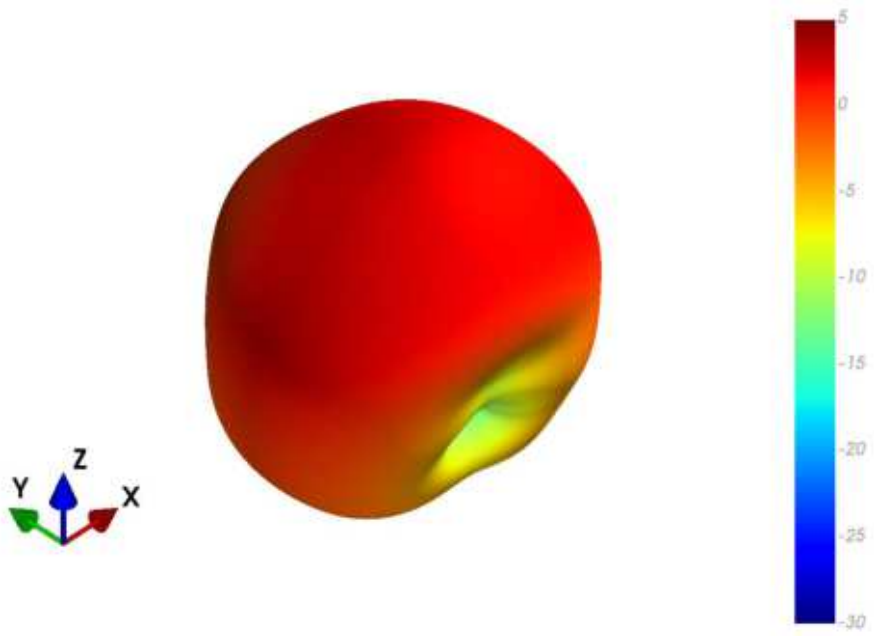
5. Radiation Patterns

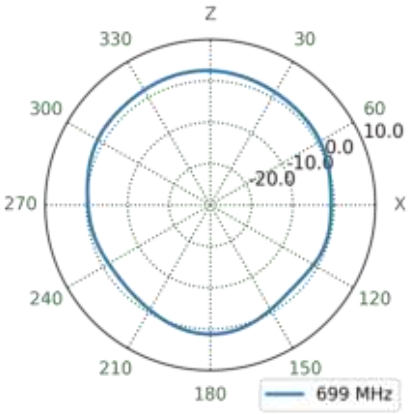
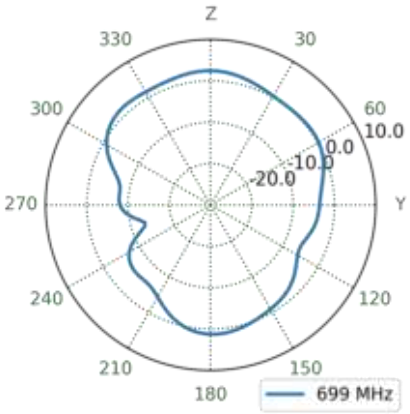
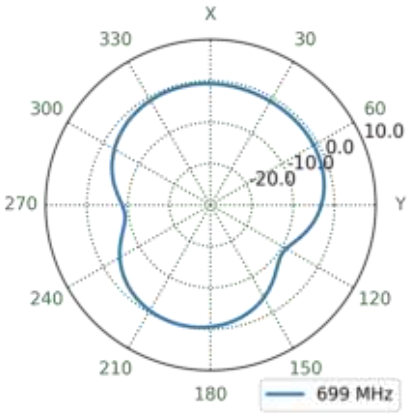
5.1 Test Setup



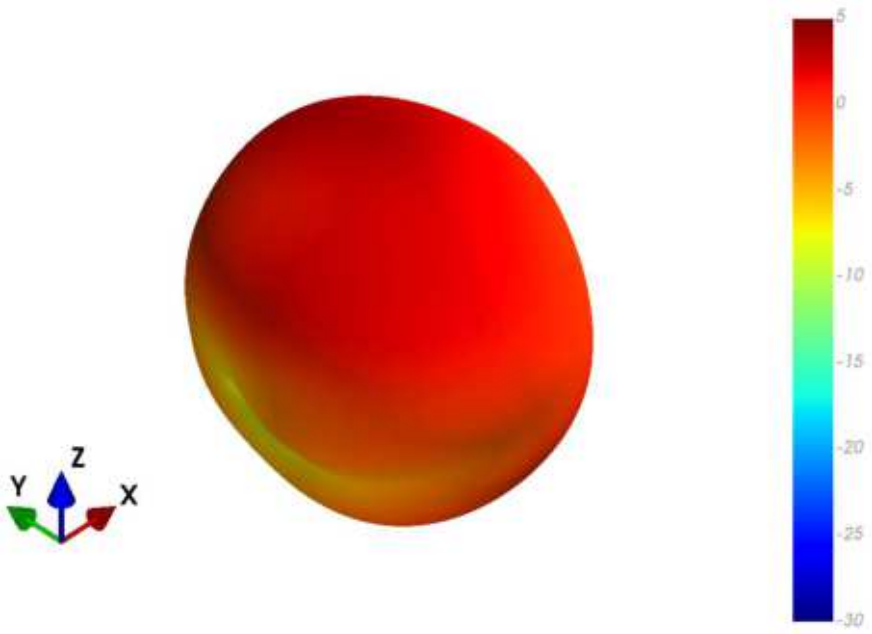


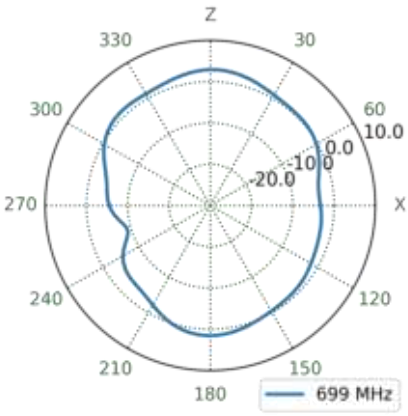
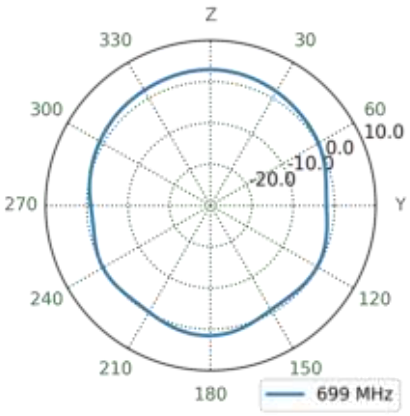
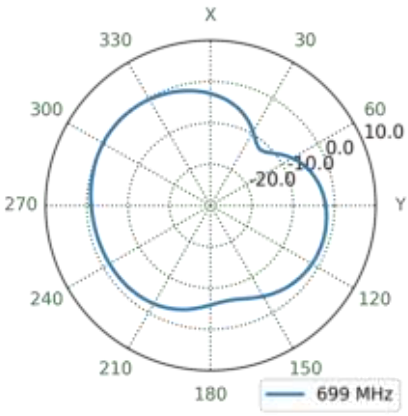
5.2 Port1 Patterns at 699 MHz



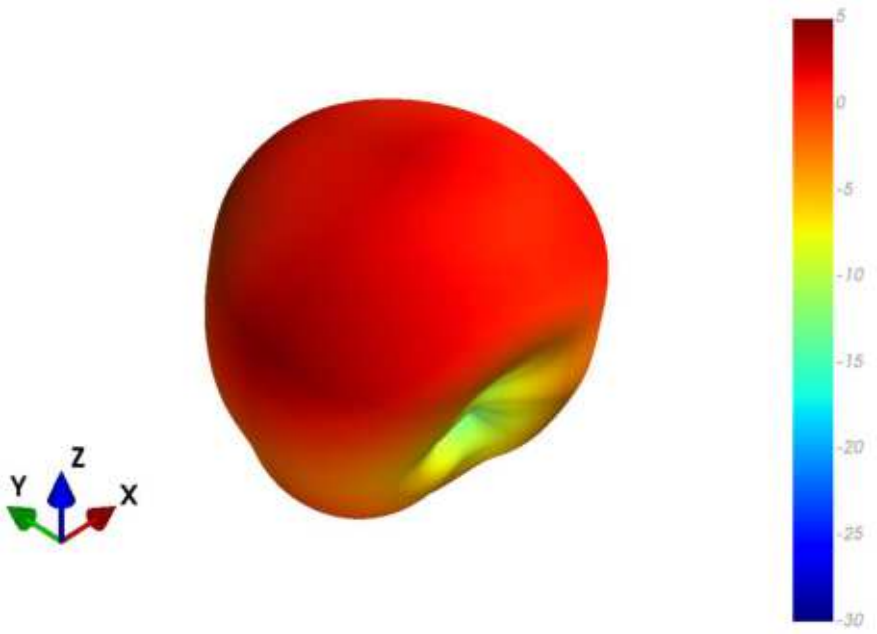
XZ Plane	YZ Plane	XY Plane
		

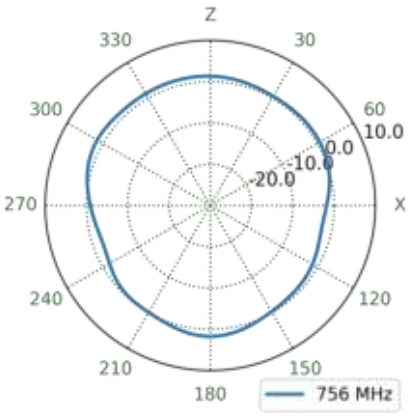
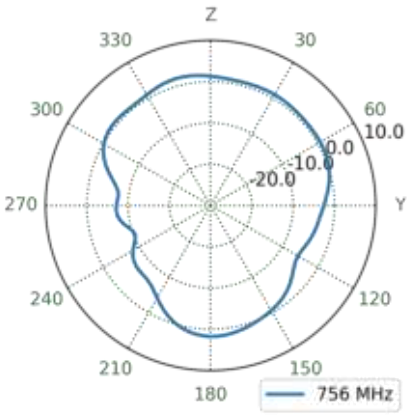
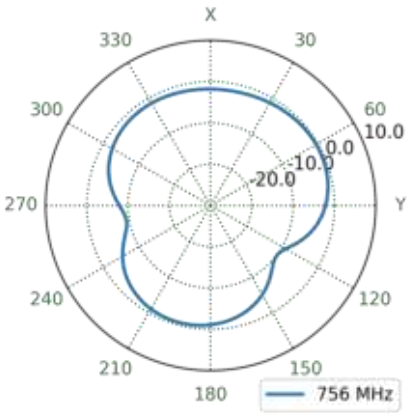
5.3 Port2 Patterns at 699 MHz



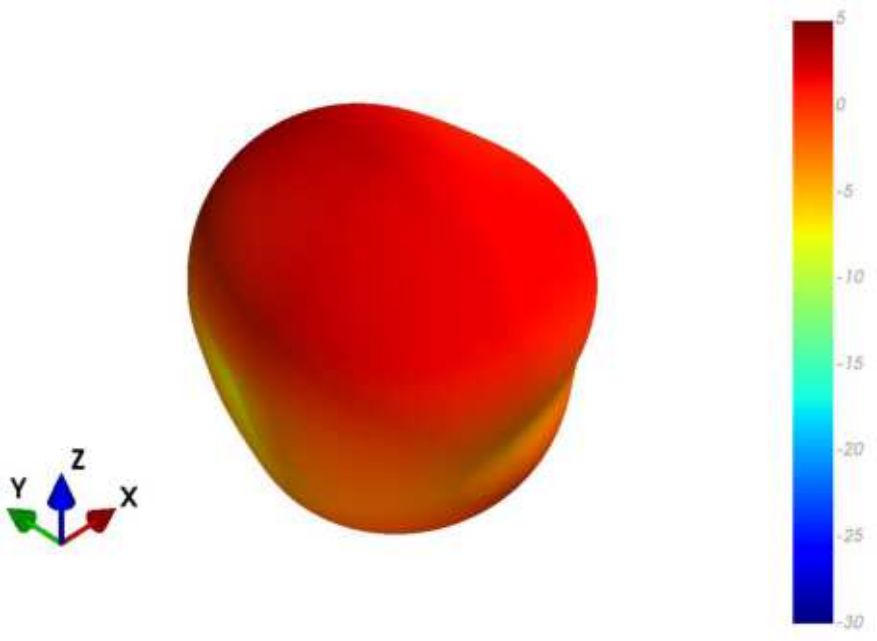
XZ Plane	YZ Plane	XY Plane
		

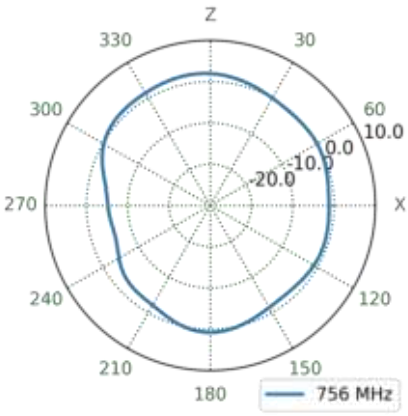
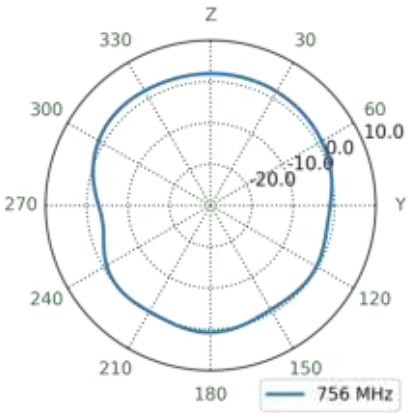
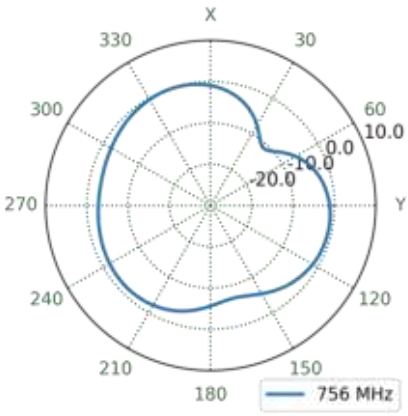
5.4 Port1 Patterns at 756 MHz



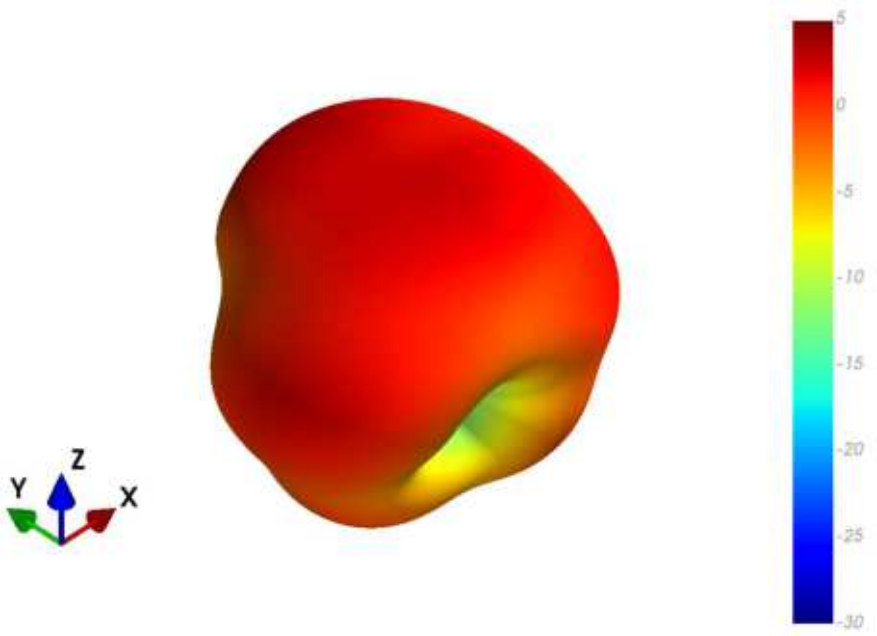
XZ Plane	YZ Plane	XY Plane
		

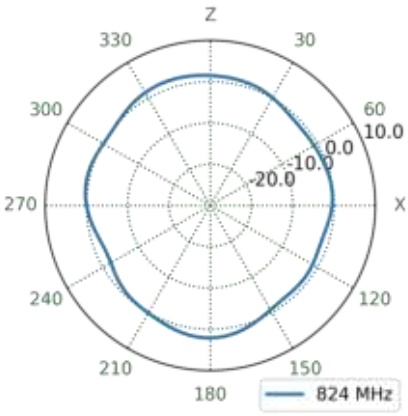
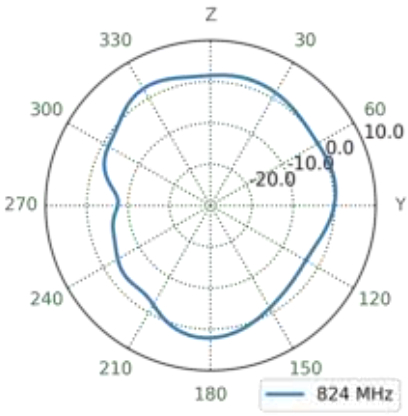
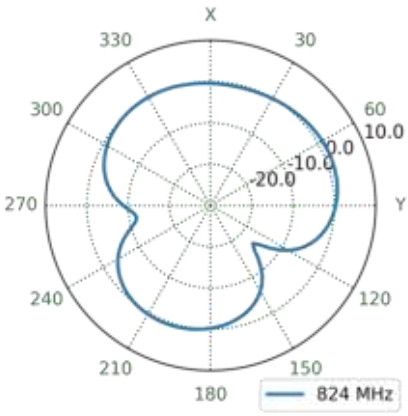
5.5 Port2 Patterns at 756 MHz



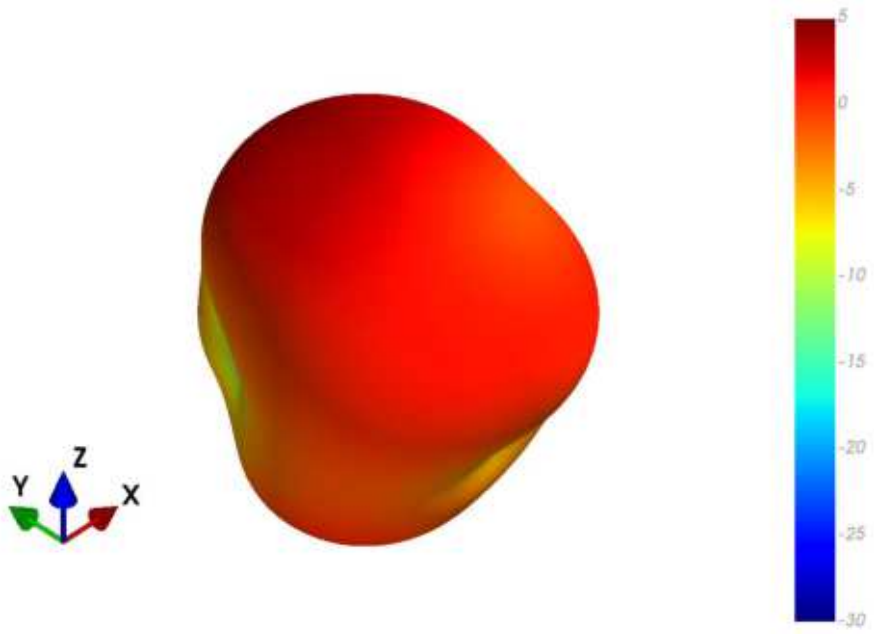
XZ Plane	YZ Plane	XY Plane
		

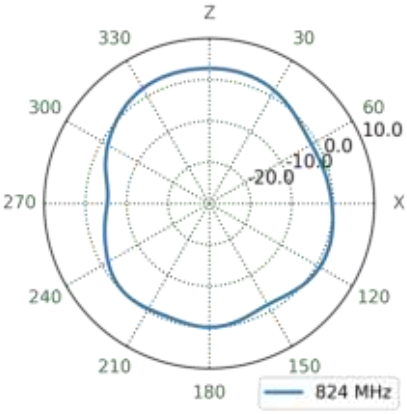
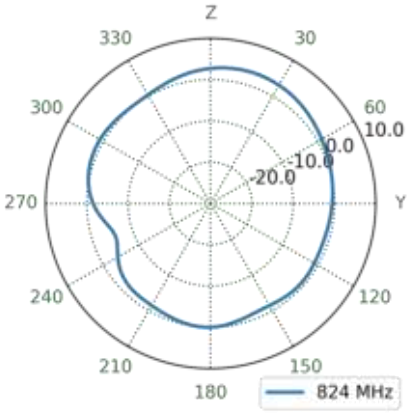
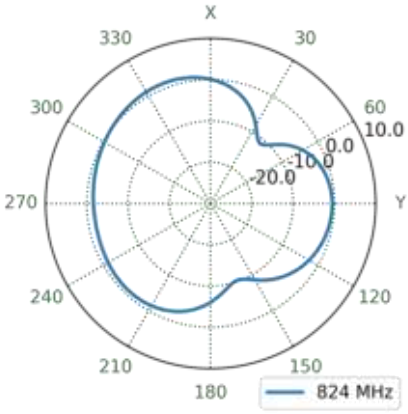
5.6 Port1 Patterns at 824 MHz



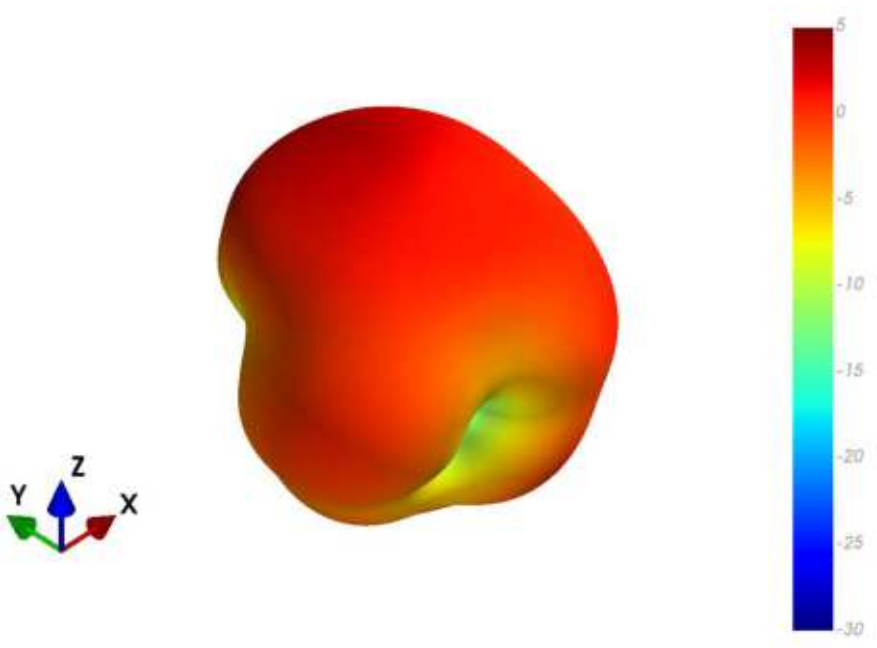
XZ Plane	YZ Plane	XY Plane
		

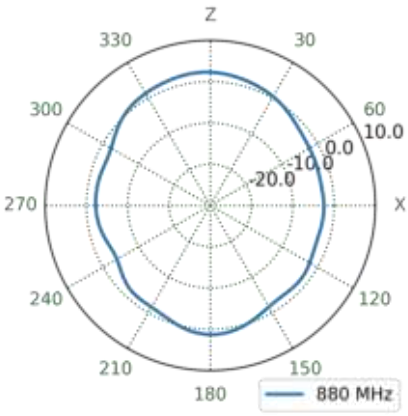
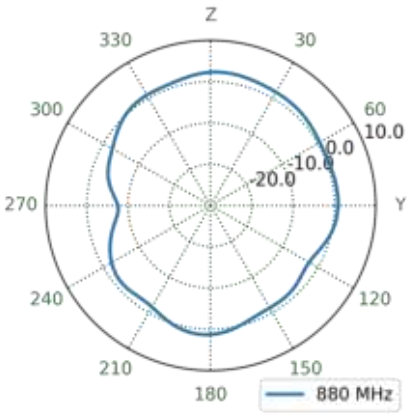
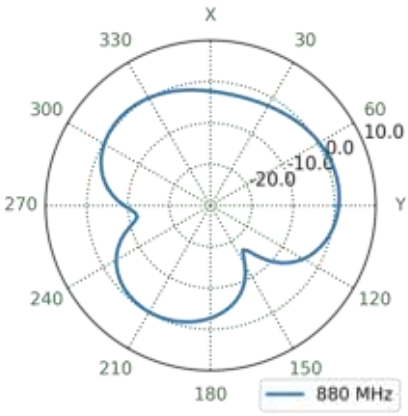
5.7 Port2 Patterns at 824 MHz



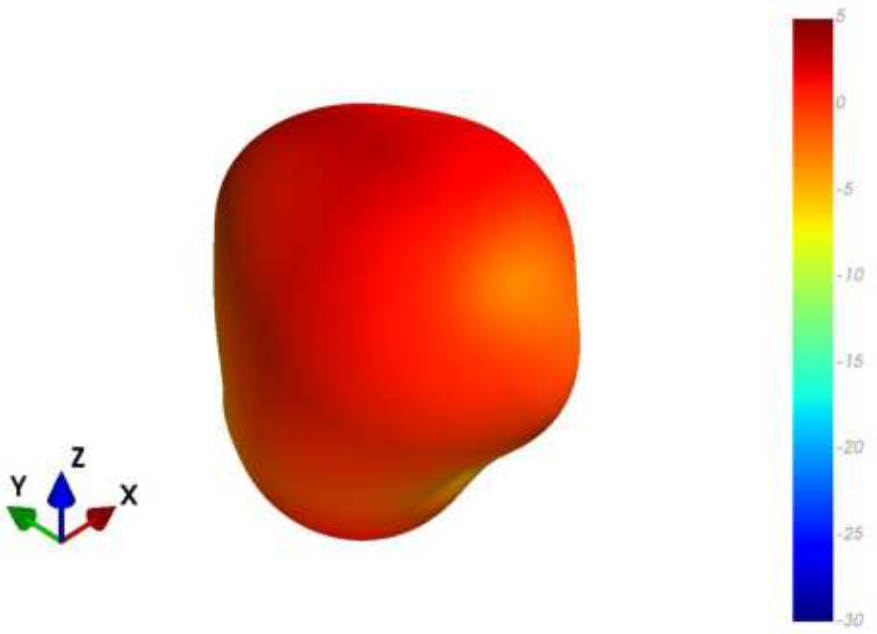
XZ Plane	YZ Plane	XY Plane
		

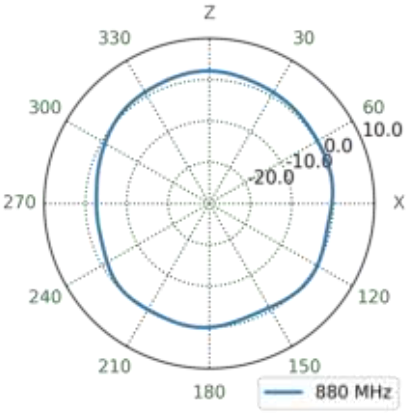
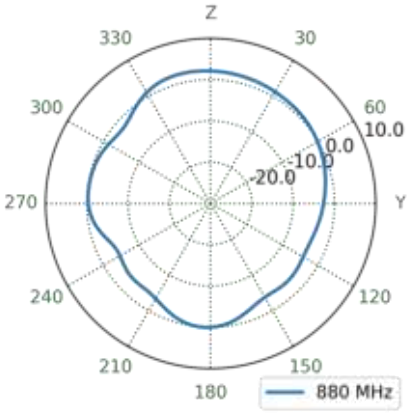
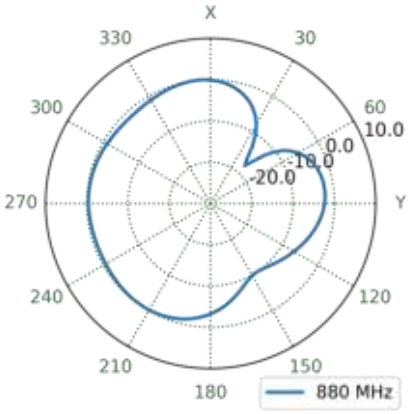
5.8 Port1 Patterns at 880 MHz



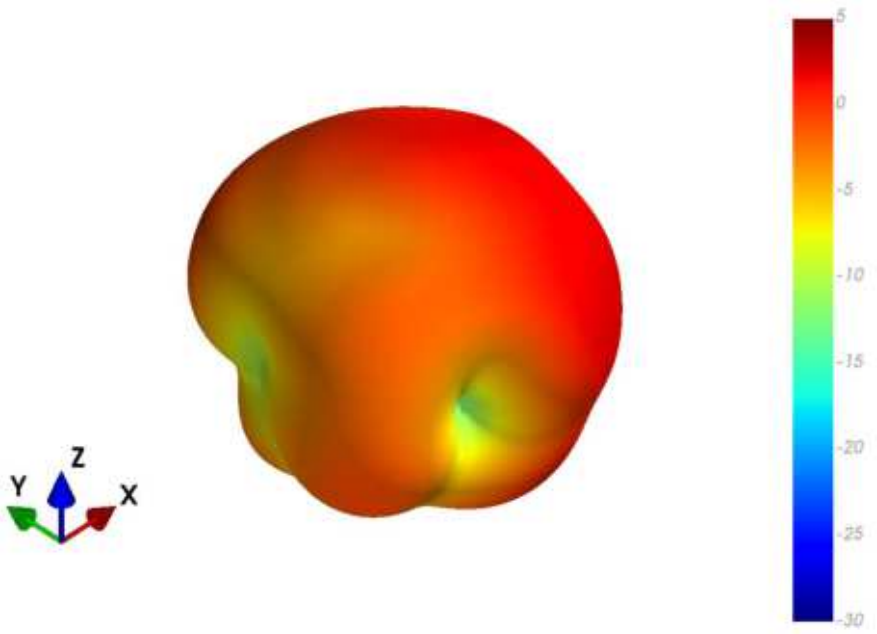
XZ Plane	YZ Plane	XY Plane
		

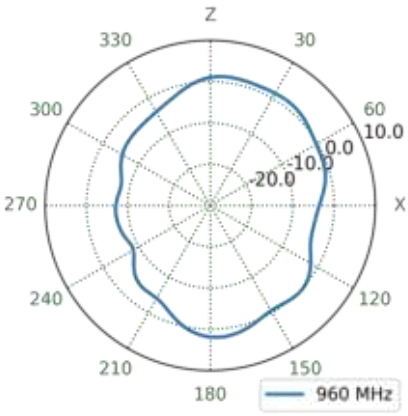
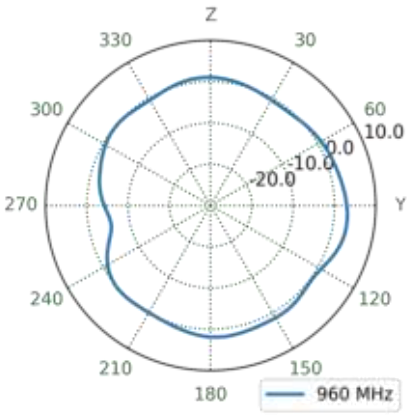
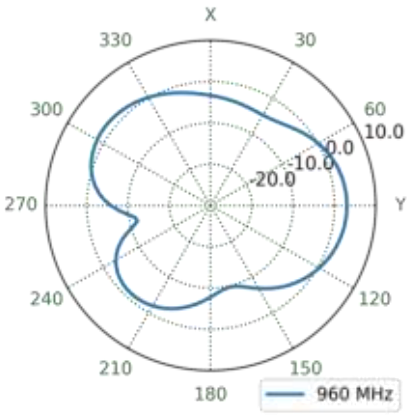
5.9 Port2 Patterns at 880 MHz



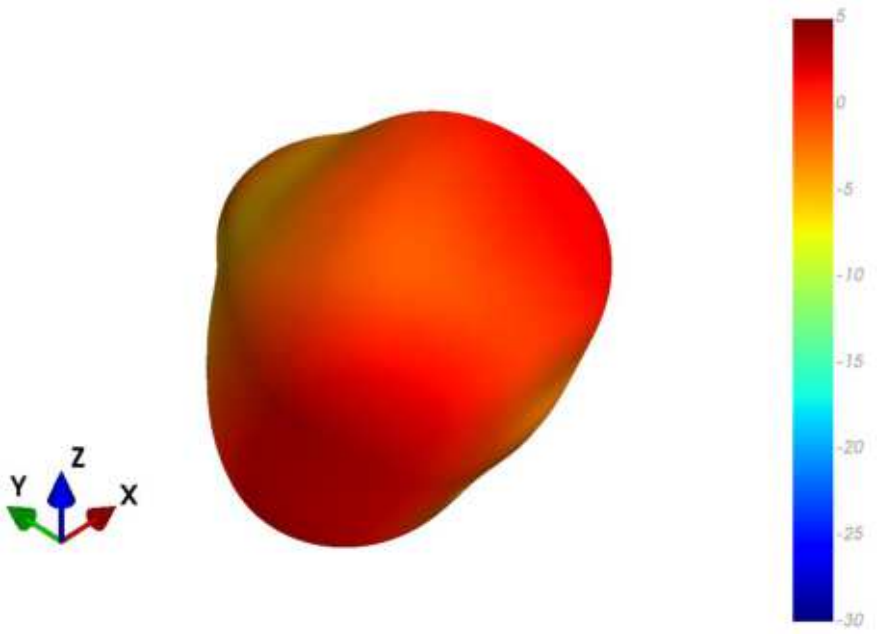
XZ Plane	YZ Plane	XY Plane
		

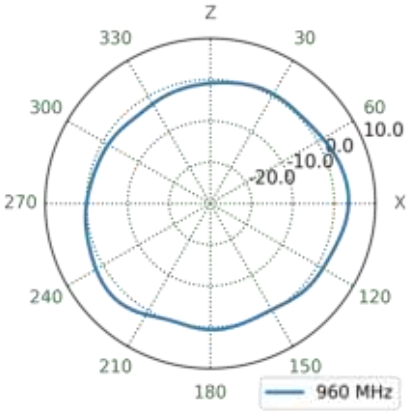
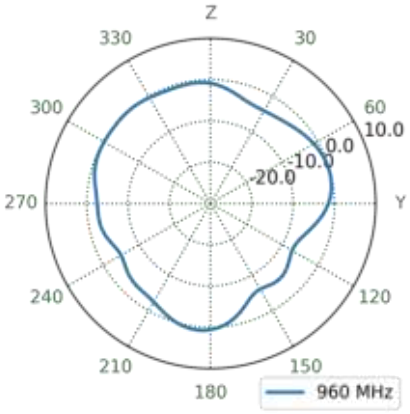
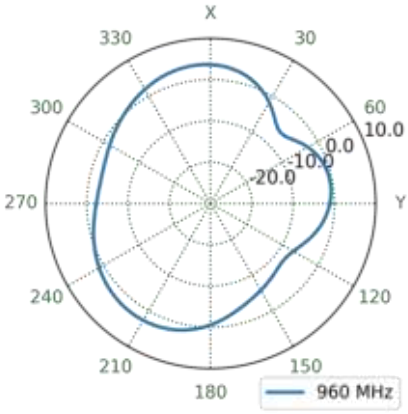
5.10 Port1 Patterns at 960 MHz



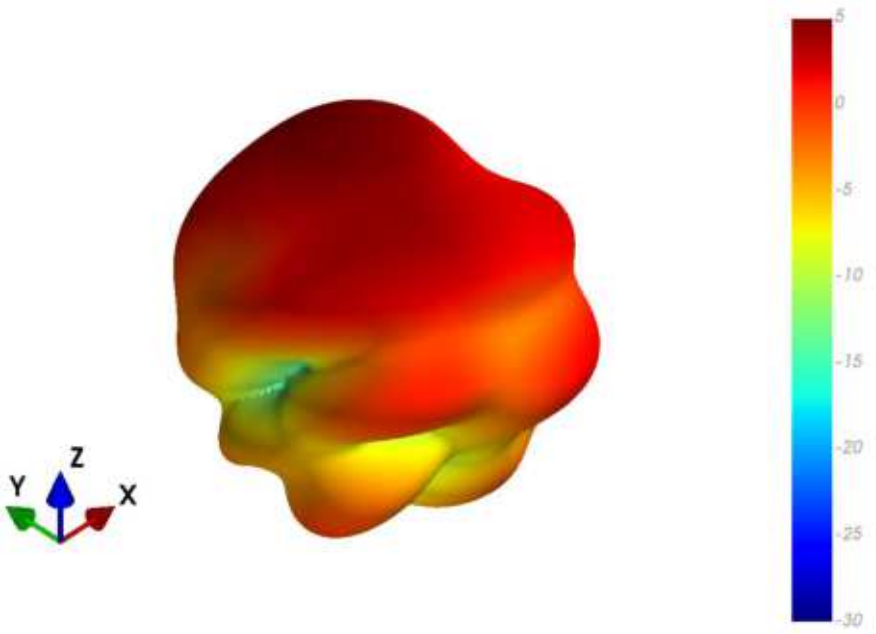
XZ Plane	YZ Plane	XY Plane
		

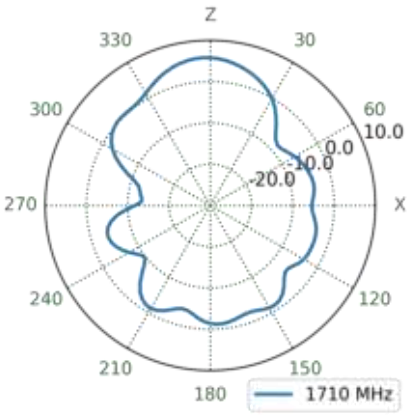
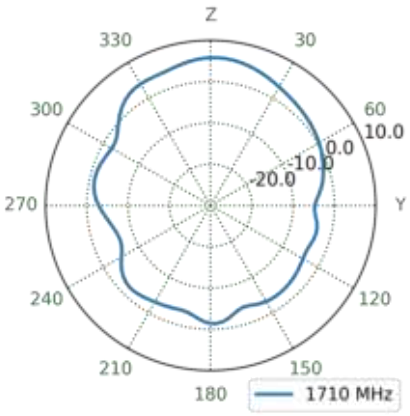
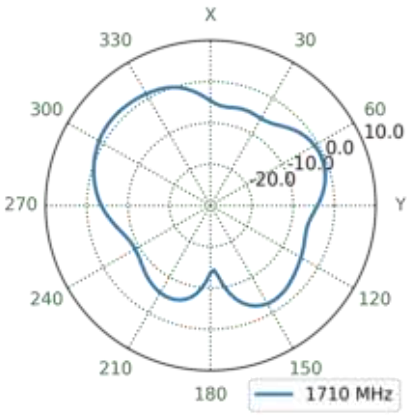
5.11 Port2 Patterns at 960 MHz



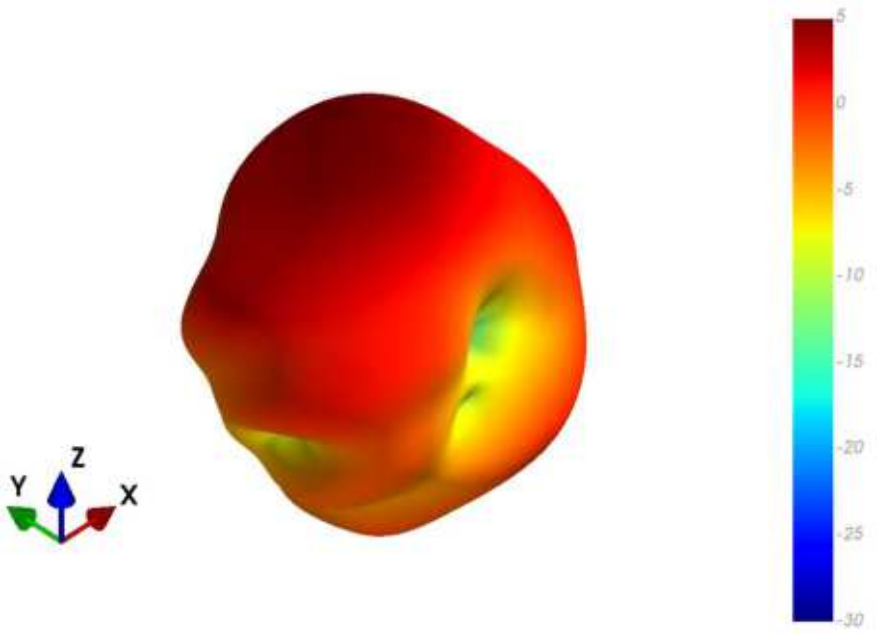
XZ Plane	YZ Plane	XY Plane
		

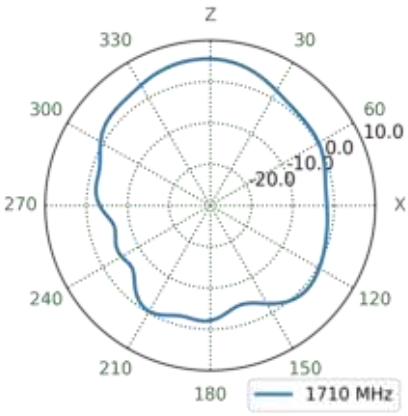
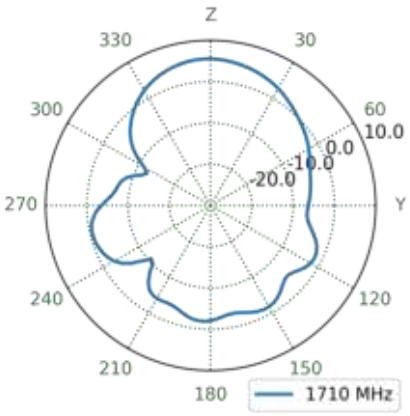
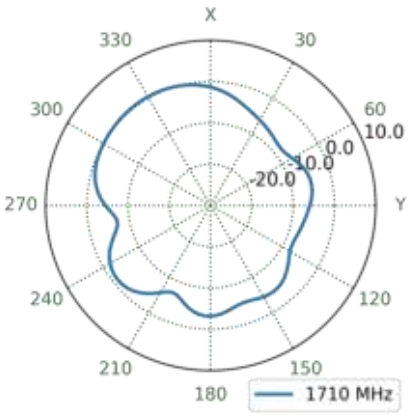
5.12 Port1 Patterns at 1710 MHz



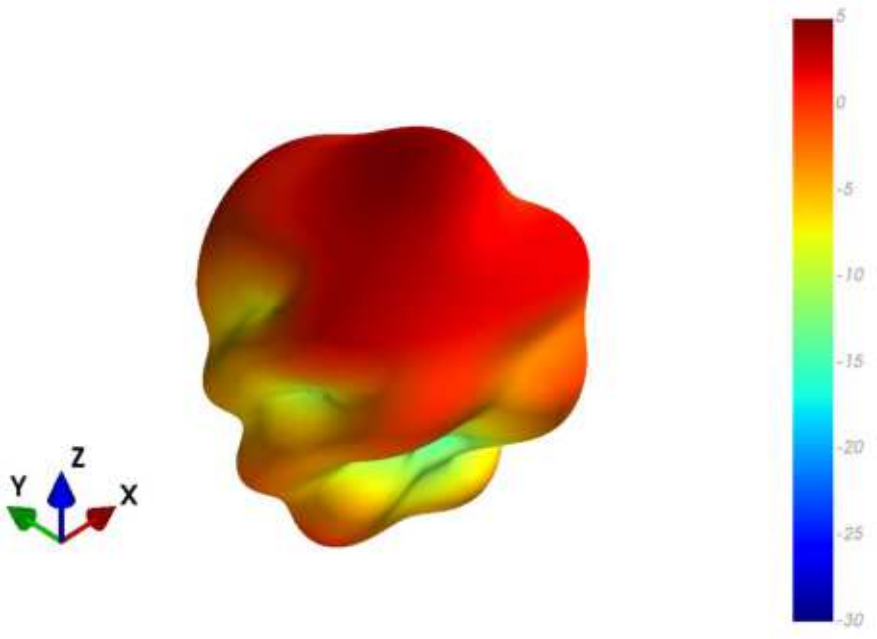
XZ Plane	YZ Plane	XY Plane
		

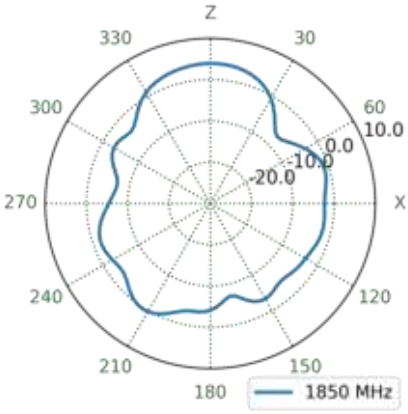
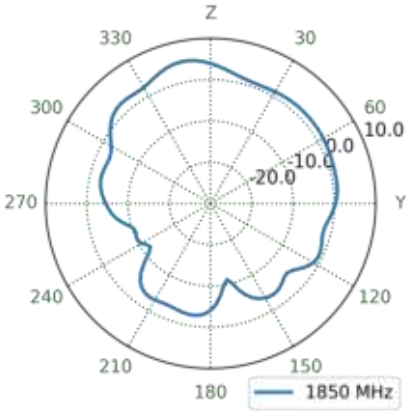
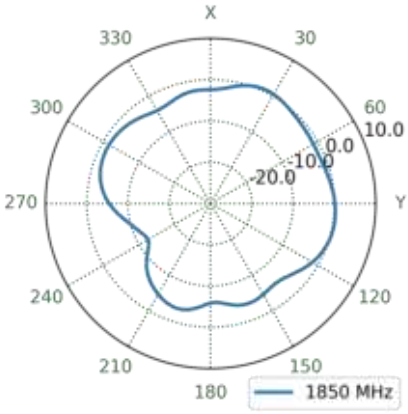
5.13 Port2 Patterns at 1710 MHz



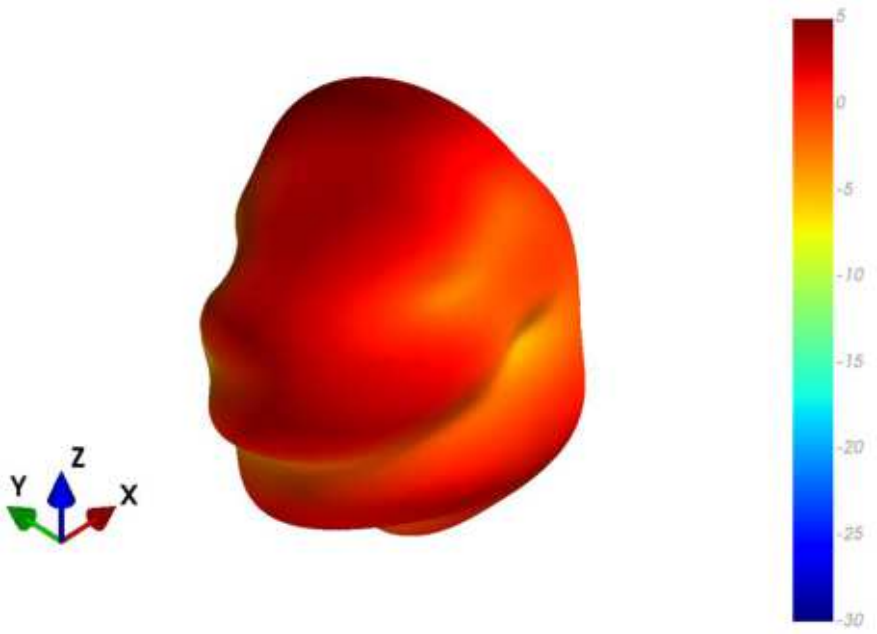
XZ Plane	YZ Plane	XY Plane
		

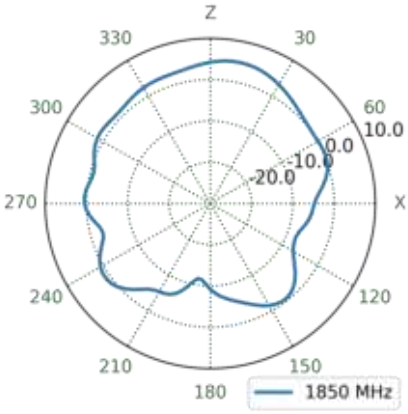
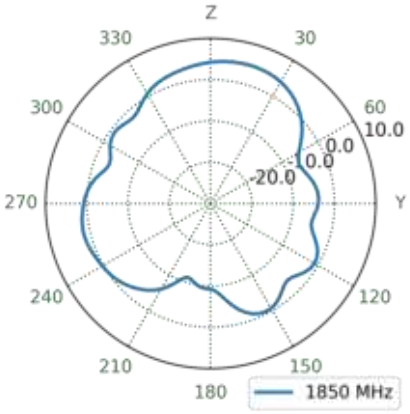
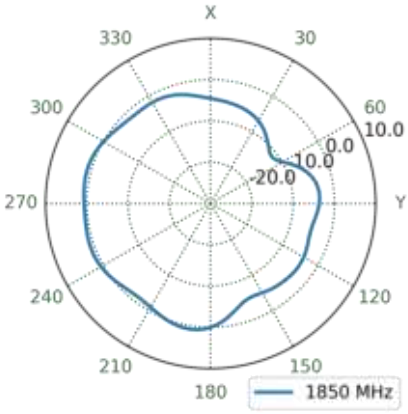
5.14 Port1 Patterns at 1850 MHz



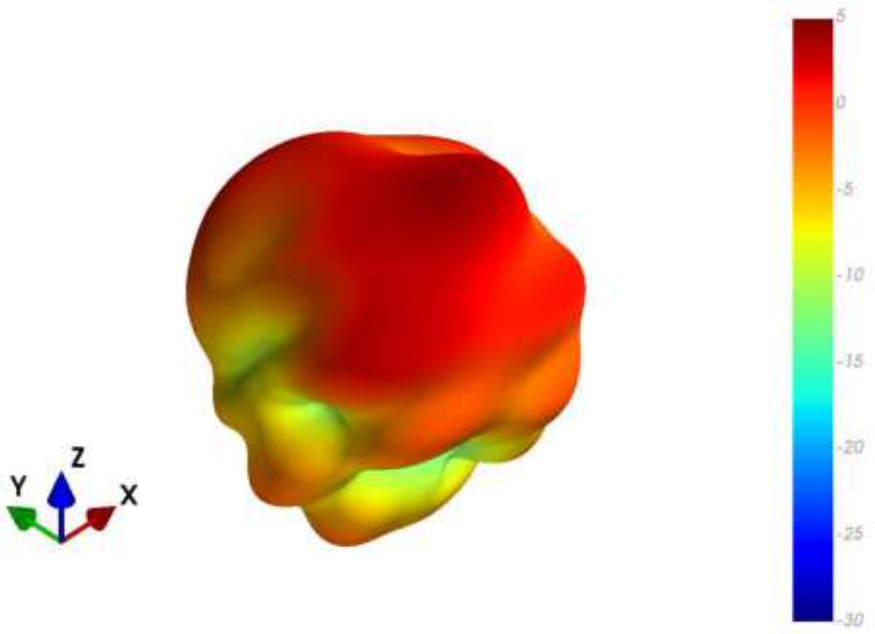
XZ Plane	YZ Plane	XY Plane
		

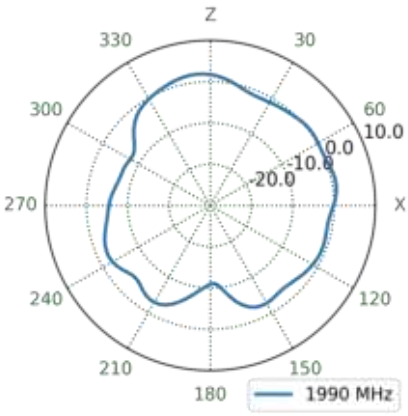
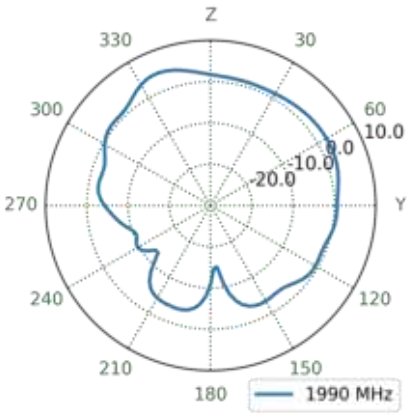
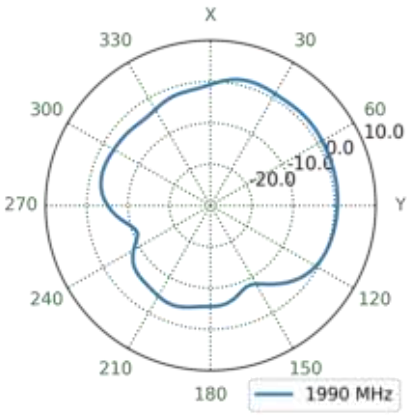
5.15 Port2 Patterns at 1850 MHz



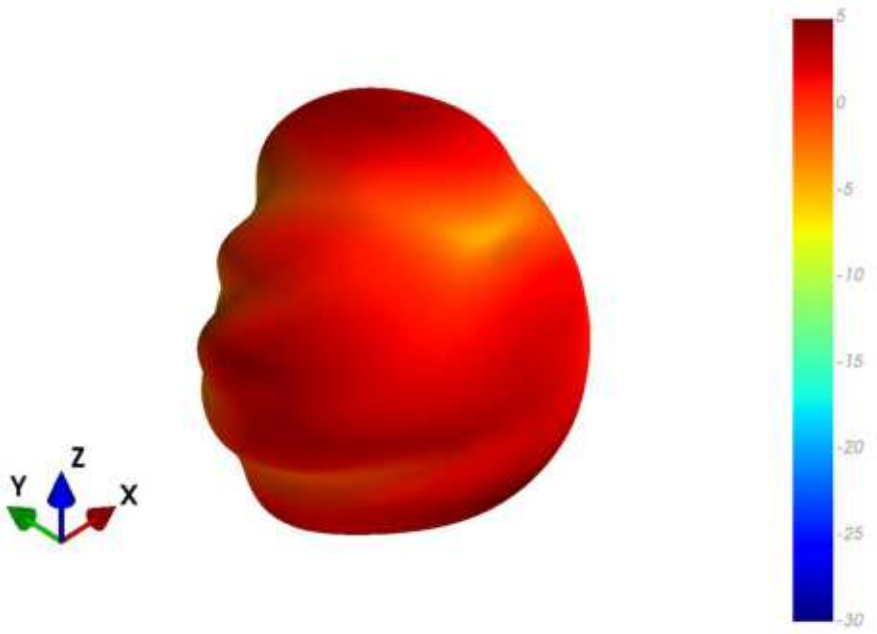
XZ Plane	YZ Plane	XY Plane
		

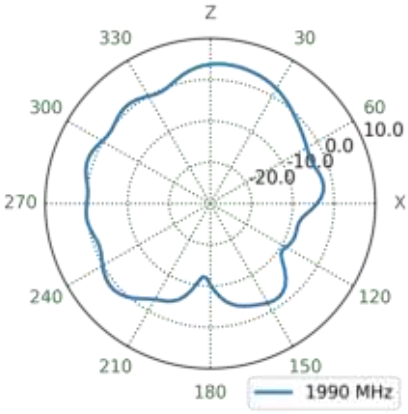
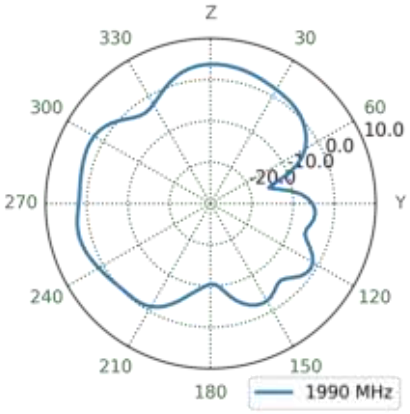
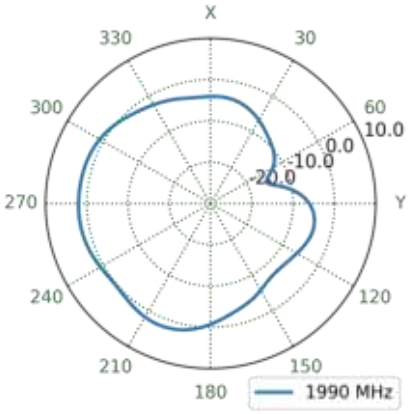
5.16 Port1 Patterns at 1990 MHz



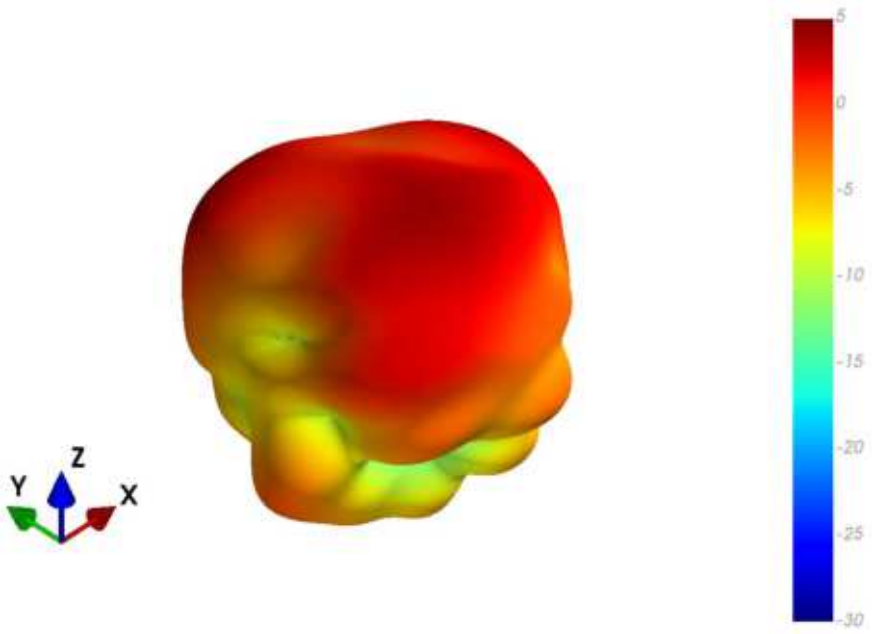
XZ Plane	YZ Plane	XY Plane
		

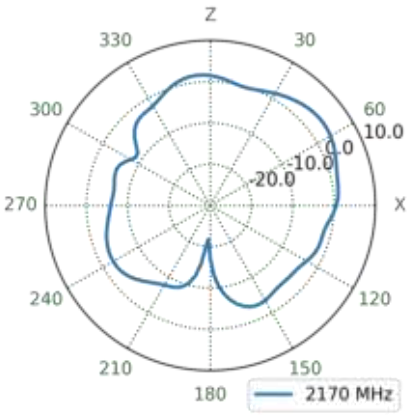
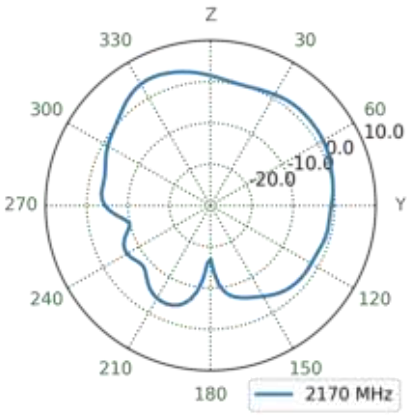
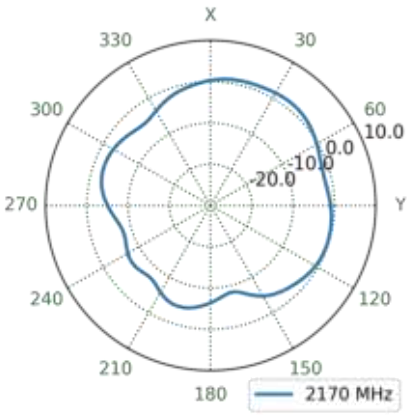
5.17 Port2 Patterns at 1990 MHz



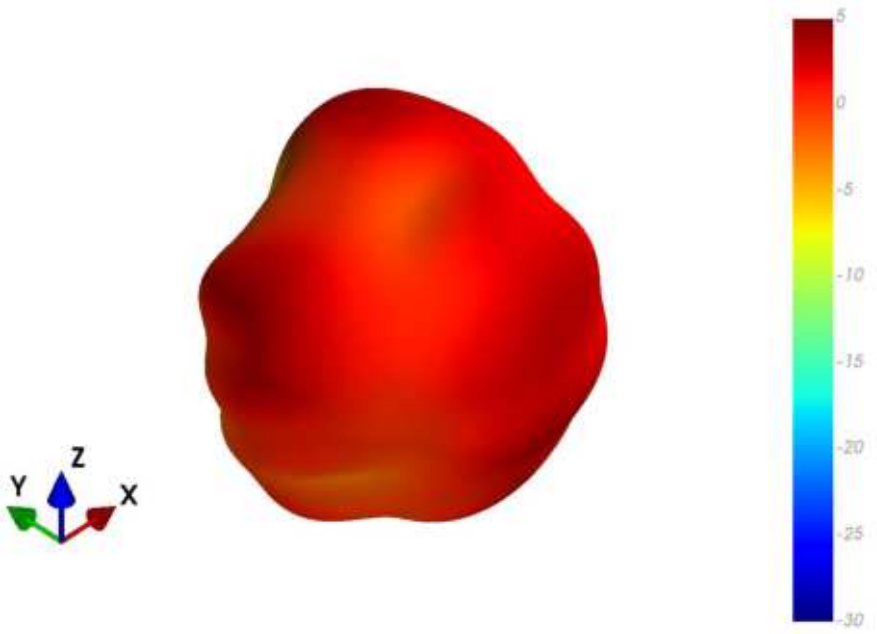
XZ Plane	YZ Plane	XY Plane
		

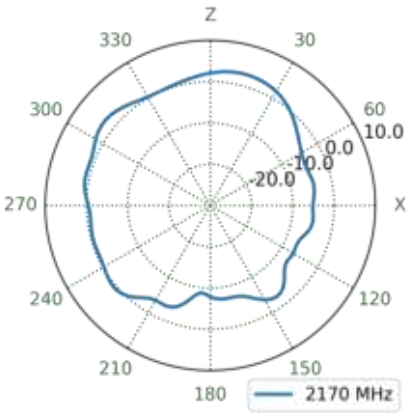
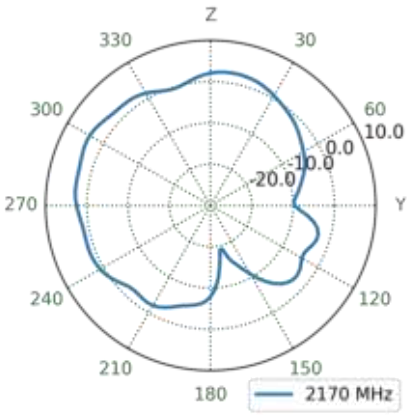
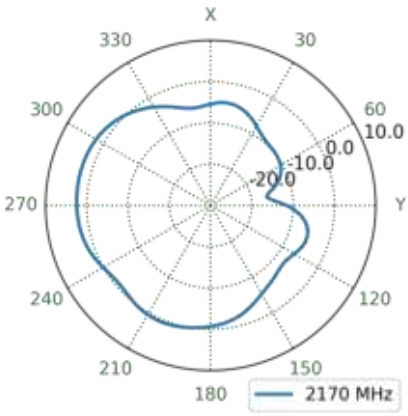
5.18 Port1 Patterns at 2170 MHz



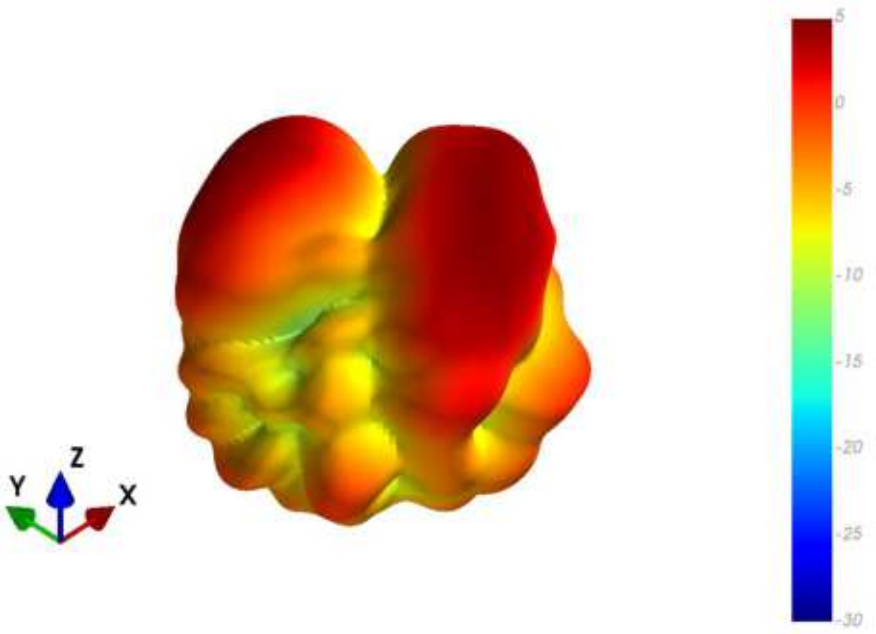
XZ Plane	YZ Plane	XY Plane
		

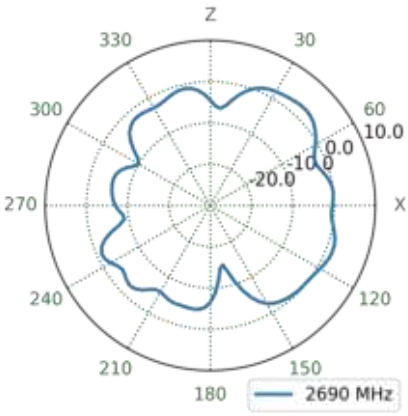
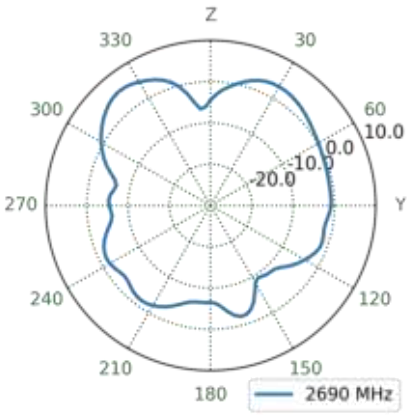
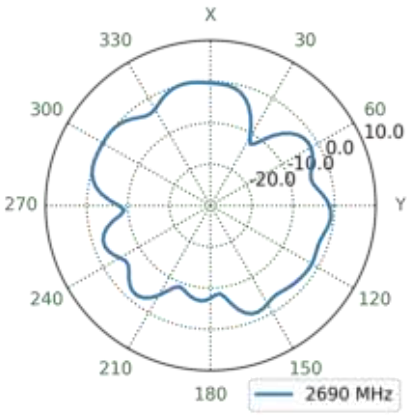
5.19 Port2 Patterns at 2170 MHz



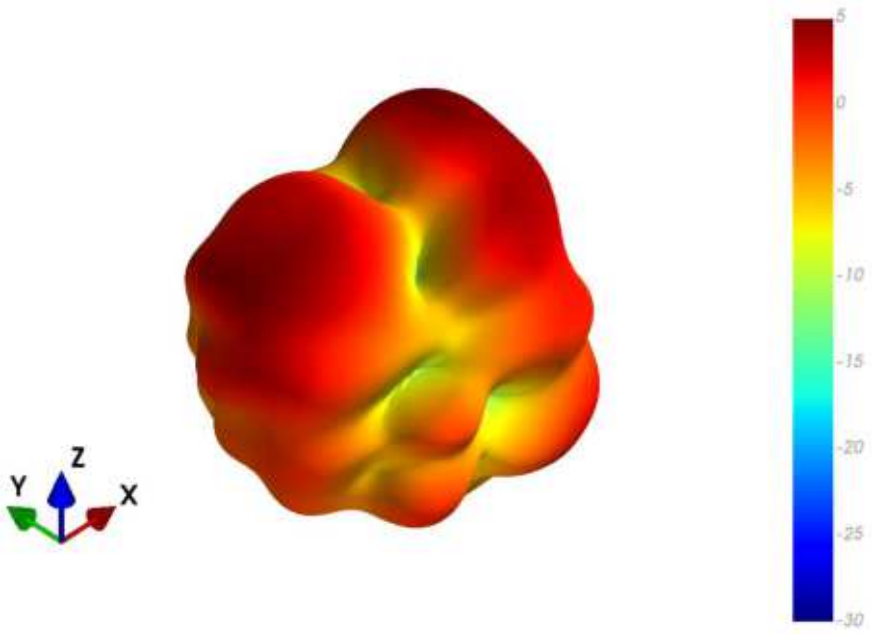
XZ Plane	YZ Plane	XY Plane
		

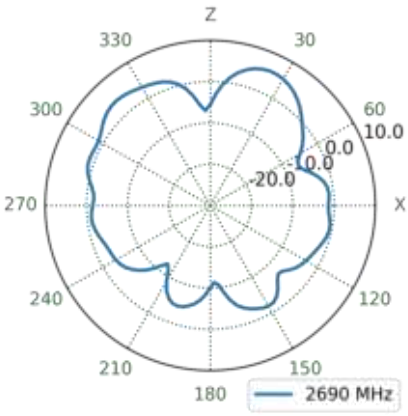
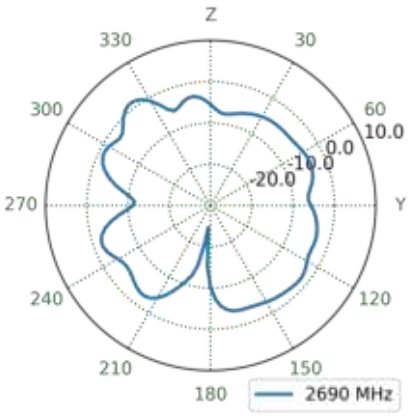
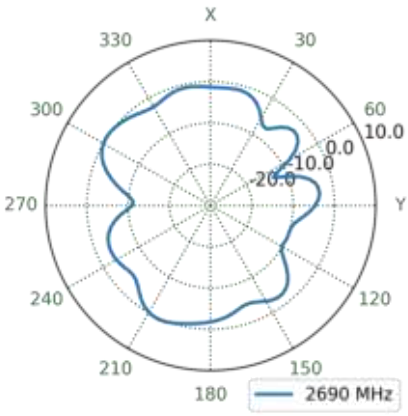
5.20 Port1 Patterns at 2690 MHz



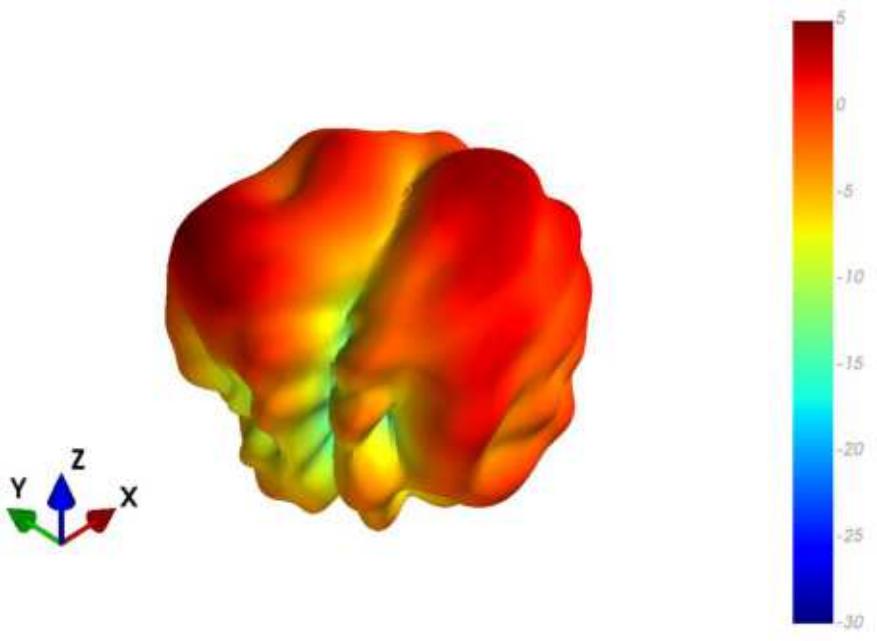
XZ Plane	YZ Plane	XY Plane
		

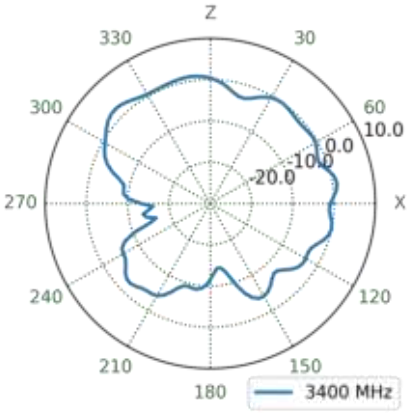
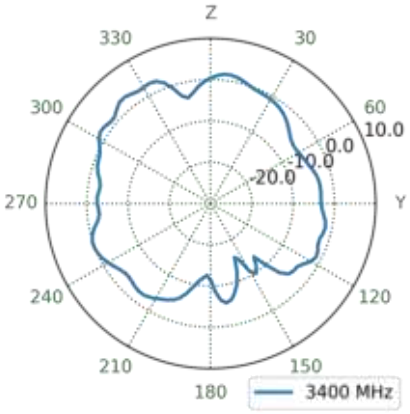
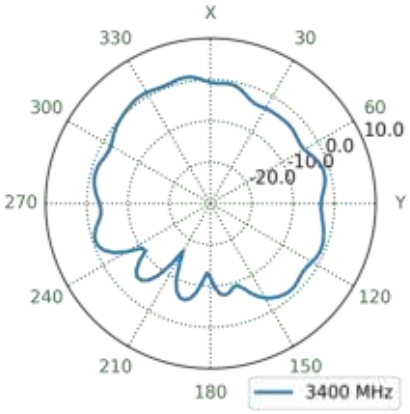
5.21 Port2 Patterns at 2690 MHz



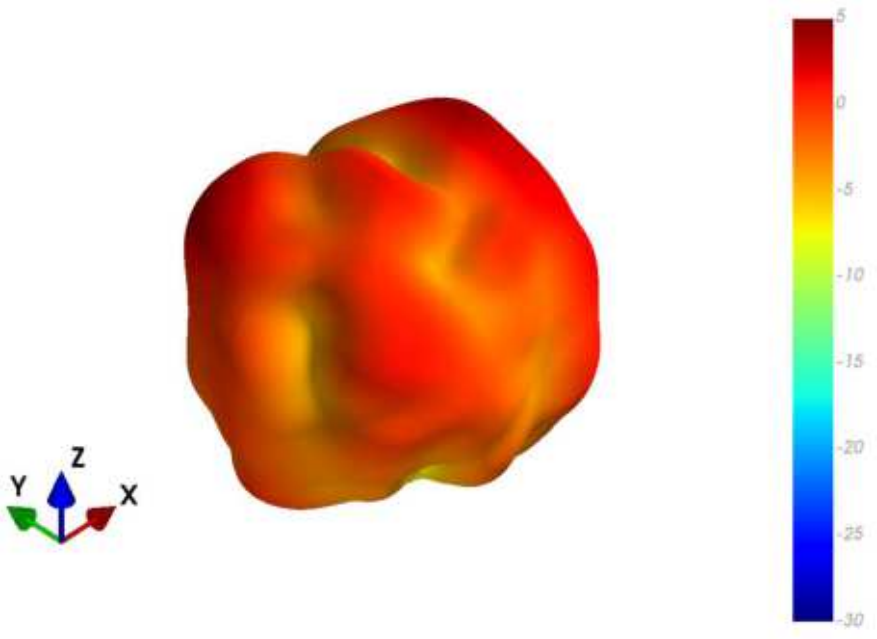
XZ Plane	YZ Plane	XY Plane
		

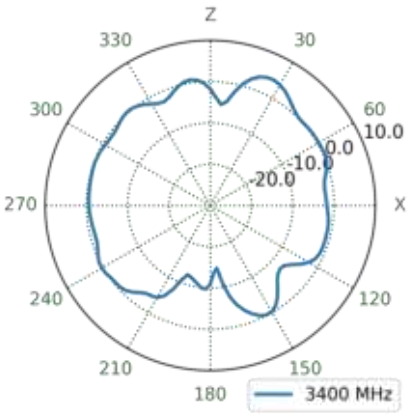
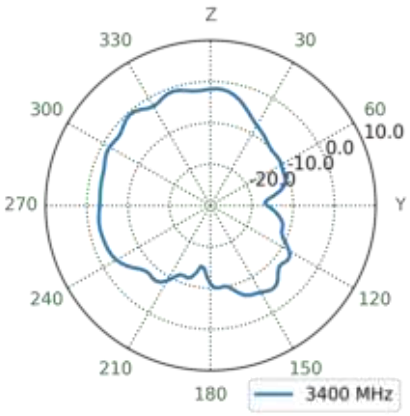
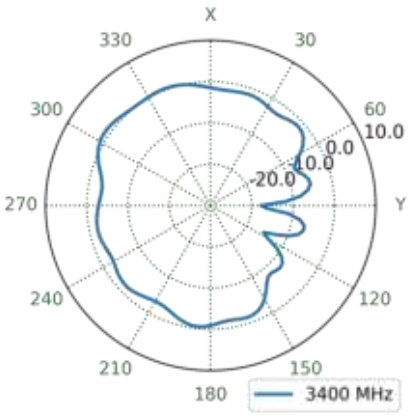
5.22 Port1 Patterns at 3400 MHz



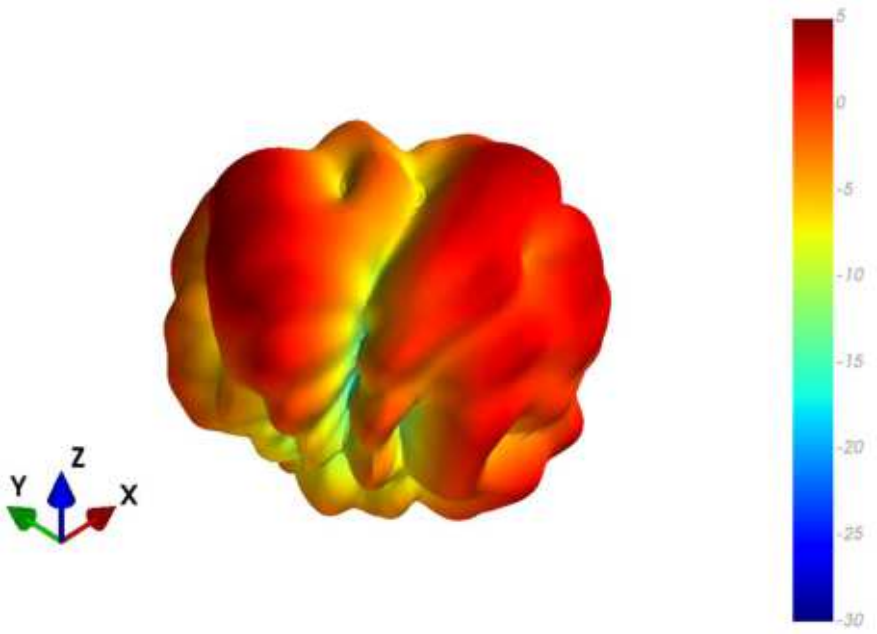
XZ Plane	YZ Plane	XY Plane
		

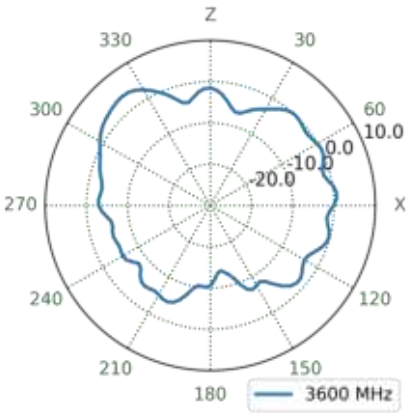
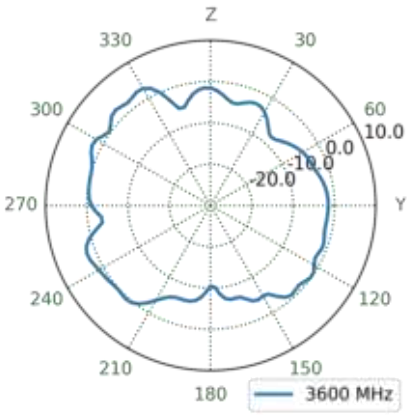
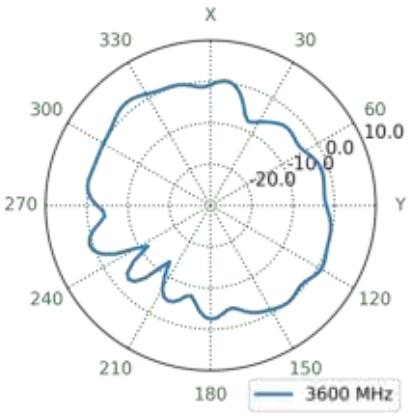
5.23 Port2 Patterns at 3400 MHz



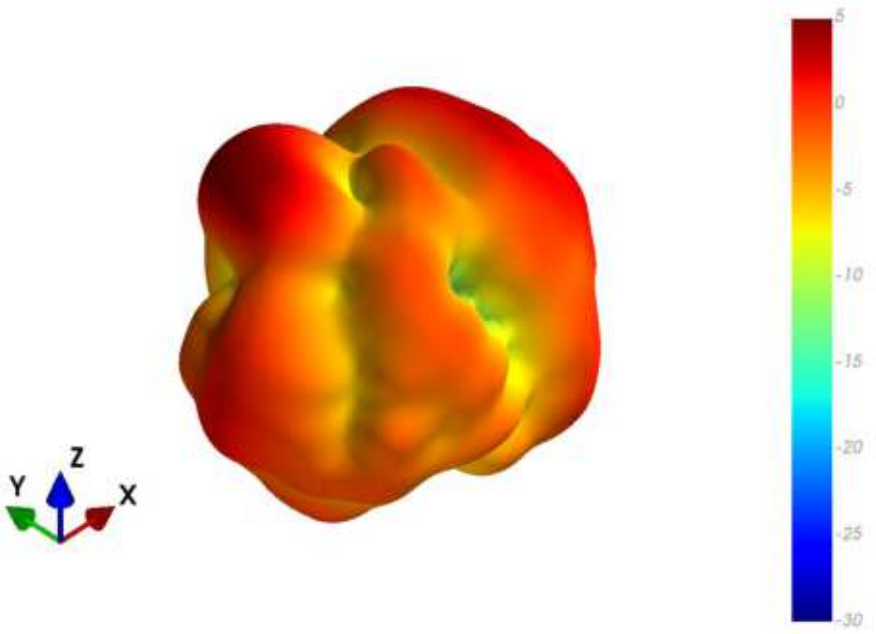
XZ Plane	YZ Plane	XY Plane
		

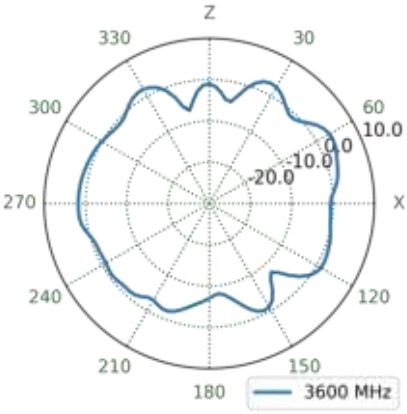
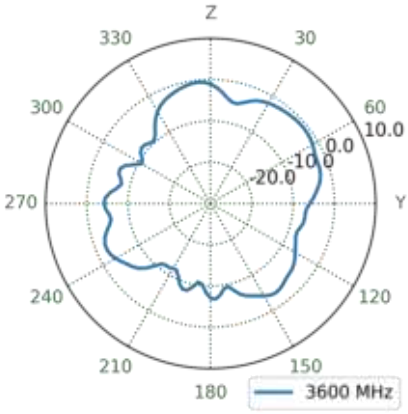
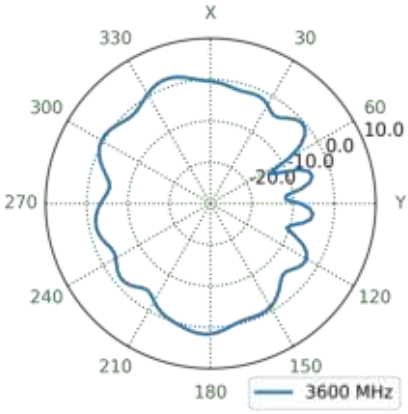
5.24 Port1 Patterns at 3600 MHz



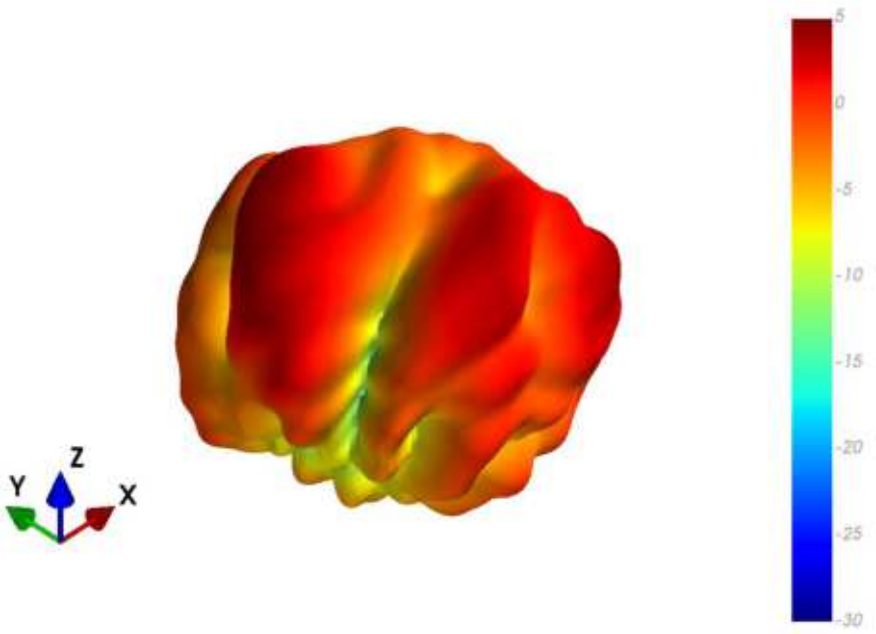
XZ Plane	YZ Plane	XY Plane
		

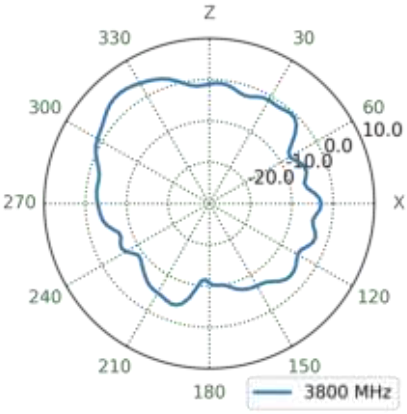
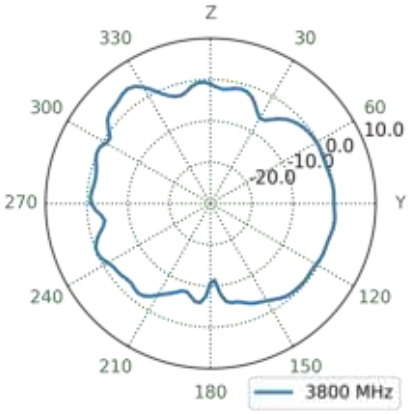
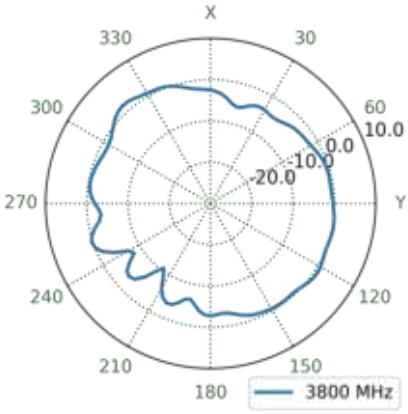
5.25 Port2 Patterns at 3600 MHz



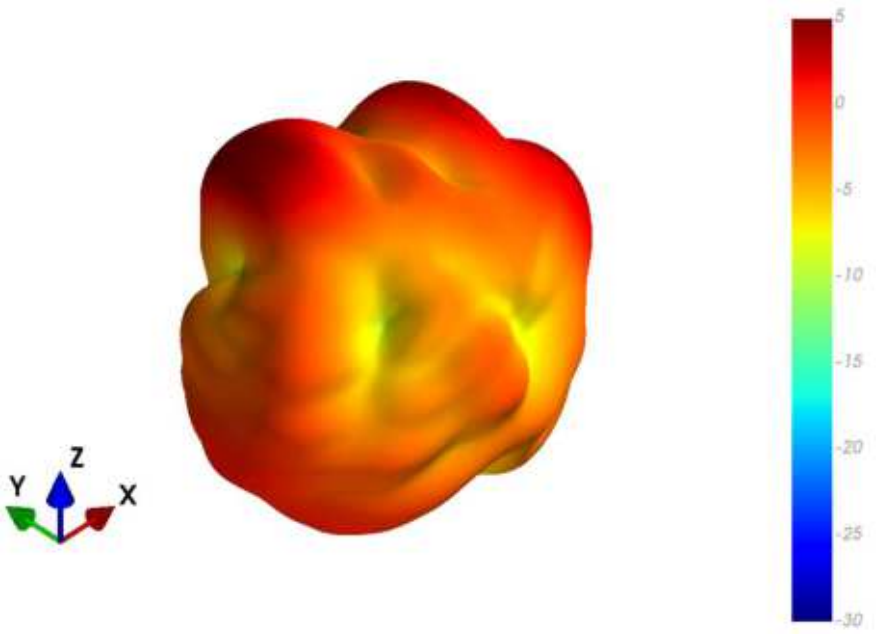
XZ Plane	YZ Plane	XY Plane
		

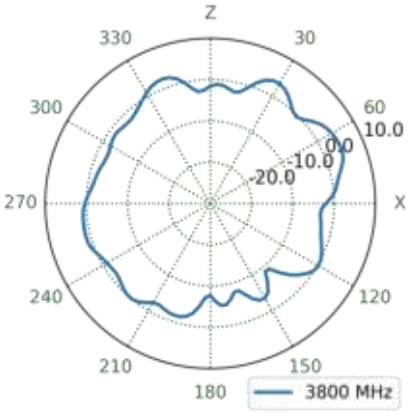
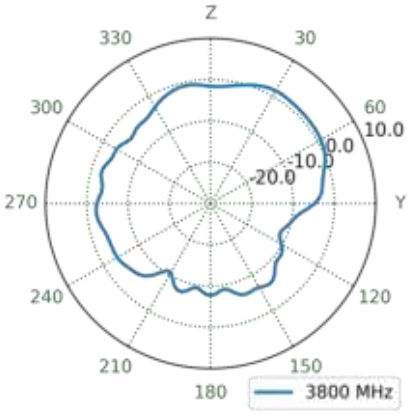
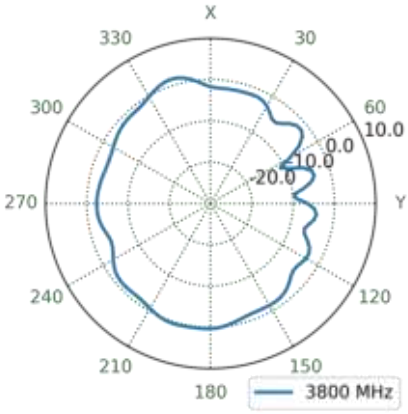
5.26 Port1 Patterns at 3800 MHz



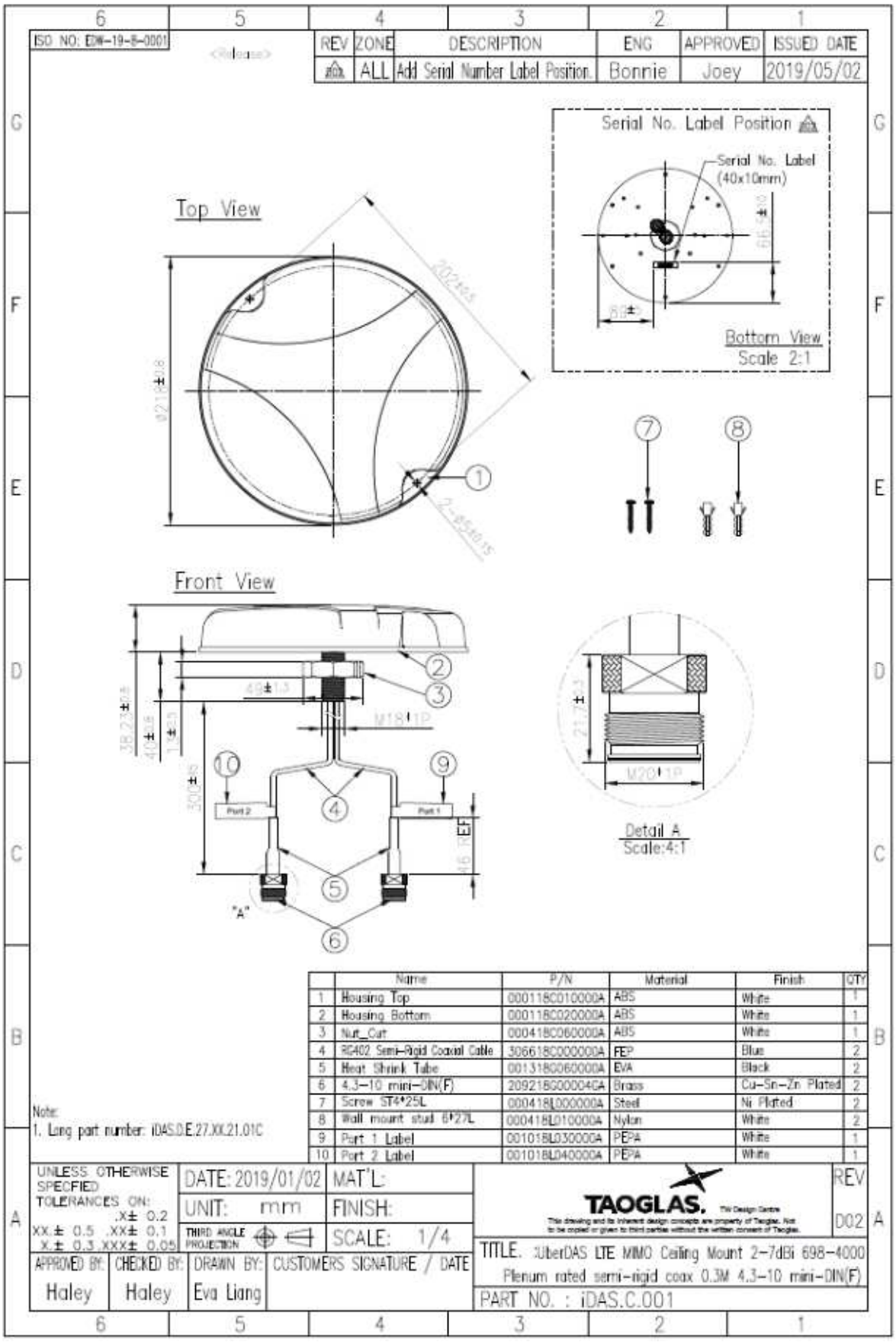
XZ Plane	YZ Plane	XY Plane
		

5.27 Port2 Patterns at 3800 MHz



XZ Plane	YZ Plane	XY Plane
		

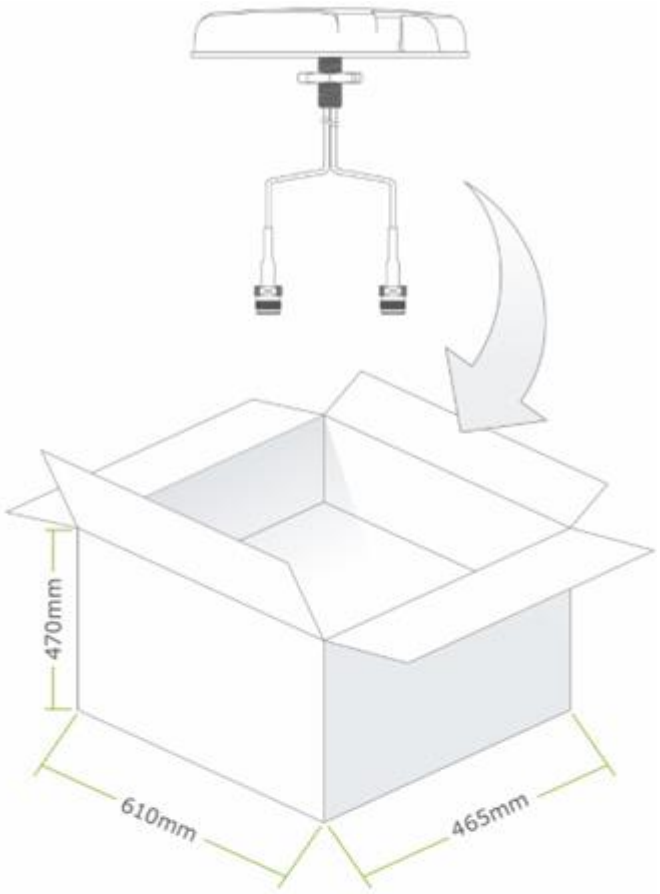
6. Mechanical Drawing



	Name	P/N	Material	Finish	QTY
1	Housing Top	000118C010000A	ABS	White	1
2	Housing Bottom	000118C020000A	ABS	White	1
3	Nut_Cut	000418C060000A	ABS	White	1
4	RG402 Semi-Rigid Coaxial Cable	306618C000000A	FEP	Blue	2
5	Heat Shrink Tube	001318C060000A	EVA	Black	2
6	4.3-10 mini-DIN(F)	209218G00004GA	Brass	Cu-Sn-Zn Plated	2
7	Screw ST4*25L	000418L000000A	Steel	Ni Plated	2
8	Wall mount stud 8*27L	000418L010000A	Nylon	White	2
9	Port 1 Label	001018L030000A	PEPA	White	1
10	Port 2 Label	001018L040000A	PEPA	White	1

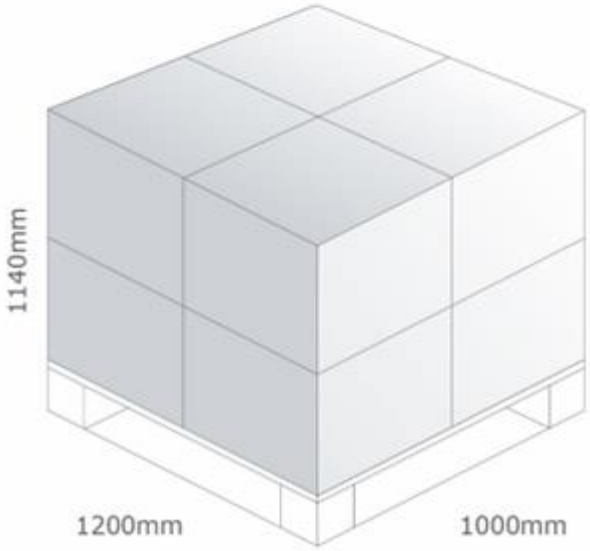
7. Packaging

1pcs iDAS.C.001 per Box
Dimensions - 220*115*225mm
Weight - 0.650Kg



20pcs iDAS.C.001 per Carton
Dimensions - 610*465*470mm
Weight - 15Kg

Pallet Dimensions:
1200mm*1000mm*1140mm
8 Cartons per Pallet
4 Cartons per Layer, 2 Layers



Changelog for the datasheet

SPE-18-8-119 – iDAS.C.001

Revision: B (Current Version)	
Date:	2023-02-17
Changes:	Full datasheet update.
Changes Made by:	Gary West

Previous Revisions

Revision: A (Original First Release)	
Date:	2018-11-28
Notes:	Initial Release
Author:	AW



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