



TAOGLAS®



Datasheet

Flexible PCB Penta Band GSM Antenna, 100mm Ø1.13 cable, IPEX connector

Part No:
FXP07.07.0100A

Features:

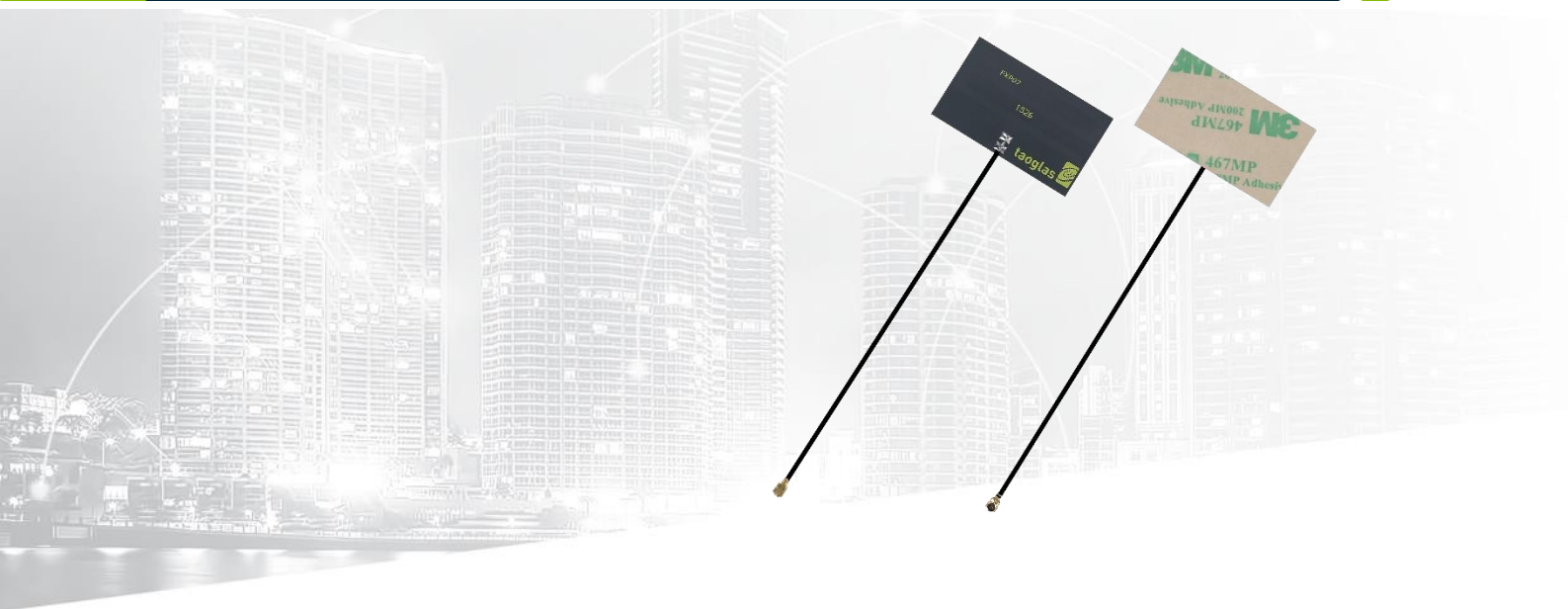
Very low profile Penta band GSM
Adhesive tape for easy mounting
RoHS Compliant

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1. Introduction



The FXP07 is a 4G/3G flexible PCB antenna design for use in in-device applications. The FXP07 can be adhered with the peel and stick adhesive, already attached to the back side of the antenna, to a customer's device for 4G/3G/NB-IoT/CAT-M applications.

Typical applications Include:

- Smart Meters
- Medical Devices
- Vending Machines
- Industrial IoT
- Pollution Monitoring

The FXP07's cables and connectors are fully customizable, please contact your regional Taoglas customer support team for further information.

2. Specification

Electrical								
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern
AMPS	824-896	Free Space	17.3	-7.62	0.50	50 Ω	Linear	Omni
		Ground Plane 110x45mm	64.2	-1.92	4.59			
		2mmABS	23.0	-6.38	1.67			
GSM	880-960	Free Space	25.8	-5.89	1.55			
		Ground Plane 110x45mm	69.1	-1.60	4.59			
		2mmABS	35.3	-4.52	2.41			
DCS	1710-1880	Free Space	41.3	-3.84	2.26			
		Ground Plane 110x45mm	10.2	-9.91	-1.43			
		2mmABS	28.9	-5.39	1.61			
PCS	1850-1990	Free Space	24.9	-6.03	1.29			
		Ground Plane 110x45mm	32.9	-4.83	0.91			
		2mmABS	29.4	-5.32	1.61			
UMTS	1710-2170	Free Space	29.5	-5.31	2.26			
		Ground Plane 110x45mm	19.8	-7.02	0.91			
		2mmABS	28.7	-5.42	1.61			

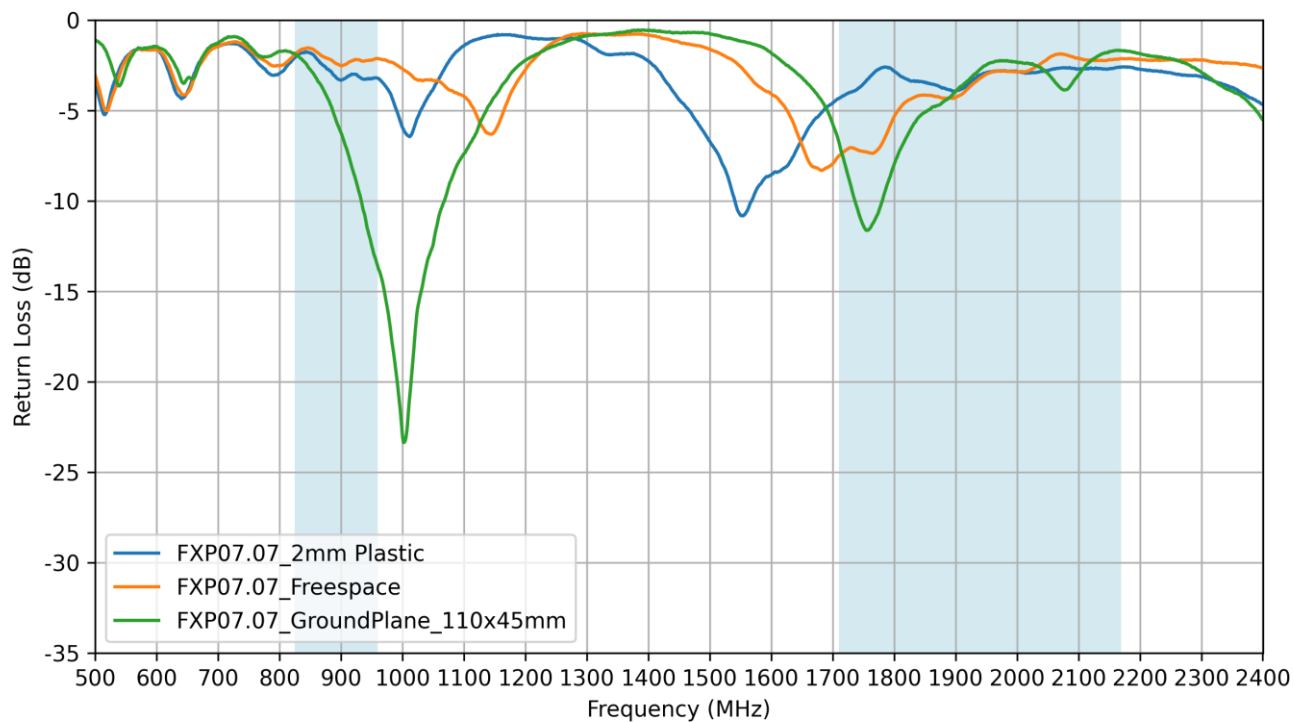
Mechanical	
FPCB	41.0 x 24.0mm
Connector	IPEX MHF® I U.FL Compliant
Cable	100mm \varnothing 1.13 Mini Coaxial Cable
Adhesive Tape	3M 467

Environmental	
Operation Temperature	-40°C ~ +85°C
Storage Temperature	-40°C ~ +85°C

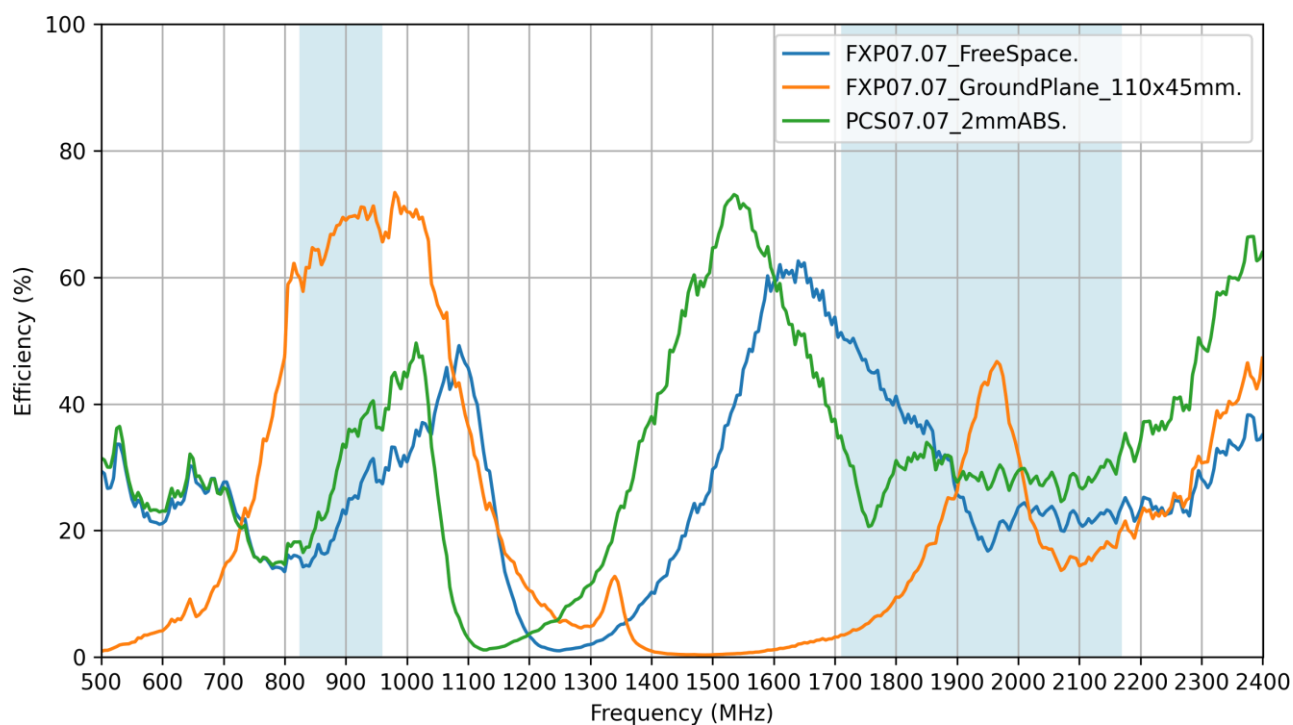
5G/4G Bands					
Band Number	5G NR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA				
	Uplink	Downlink	Free Space	Ground Plane 110x45mm	2mmABS
B1	1920 to 1980	2110 to 2170	✗	✗	✓
B2	1850 to 1910	1930 to 1990	✗	✓	✓
B3	1710 to 1785	1805 to 1880	✓	✗	✓
B4	1710 to 1755	2110 to 2155	✓	✗	✓
B5	824 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. Antenna Characteristics

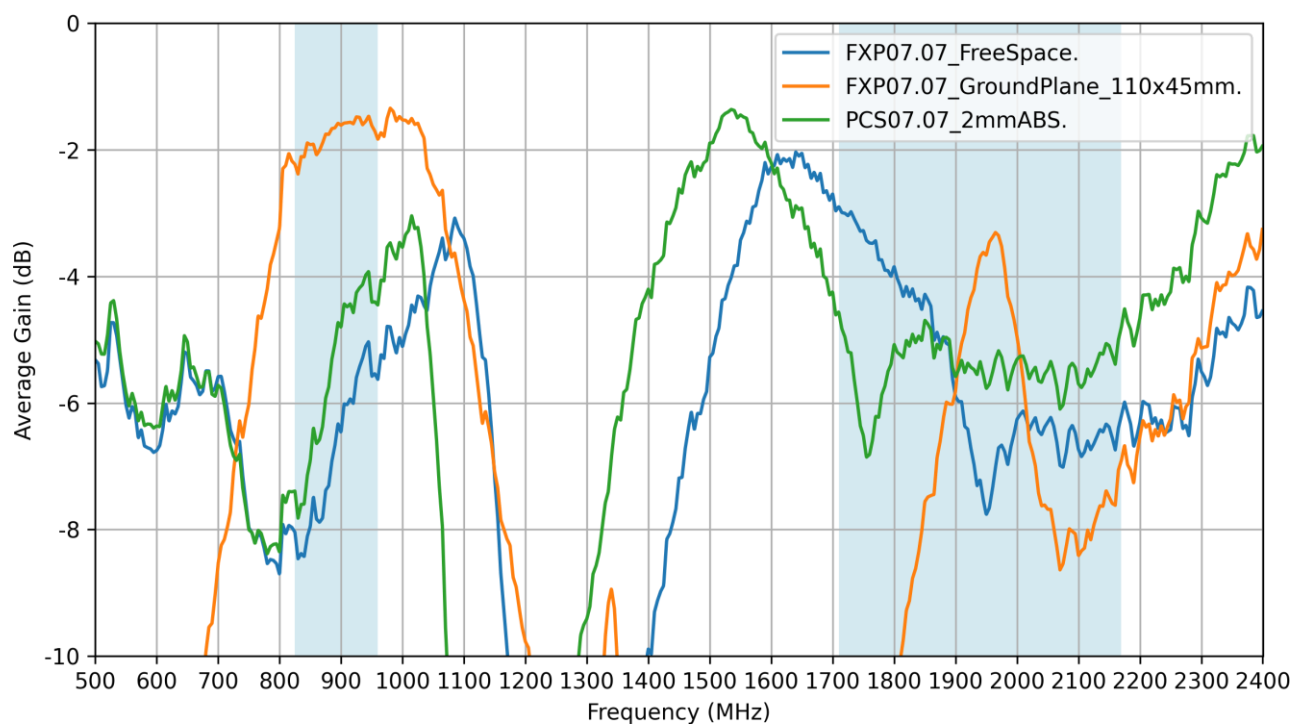
3.1 Return Loss



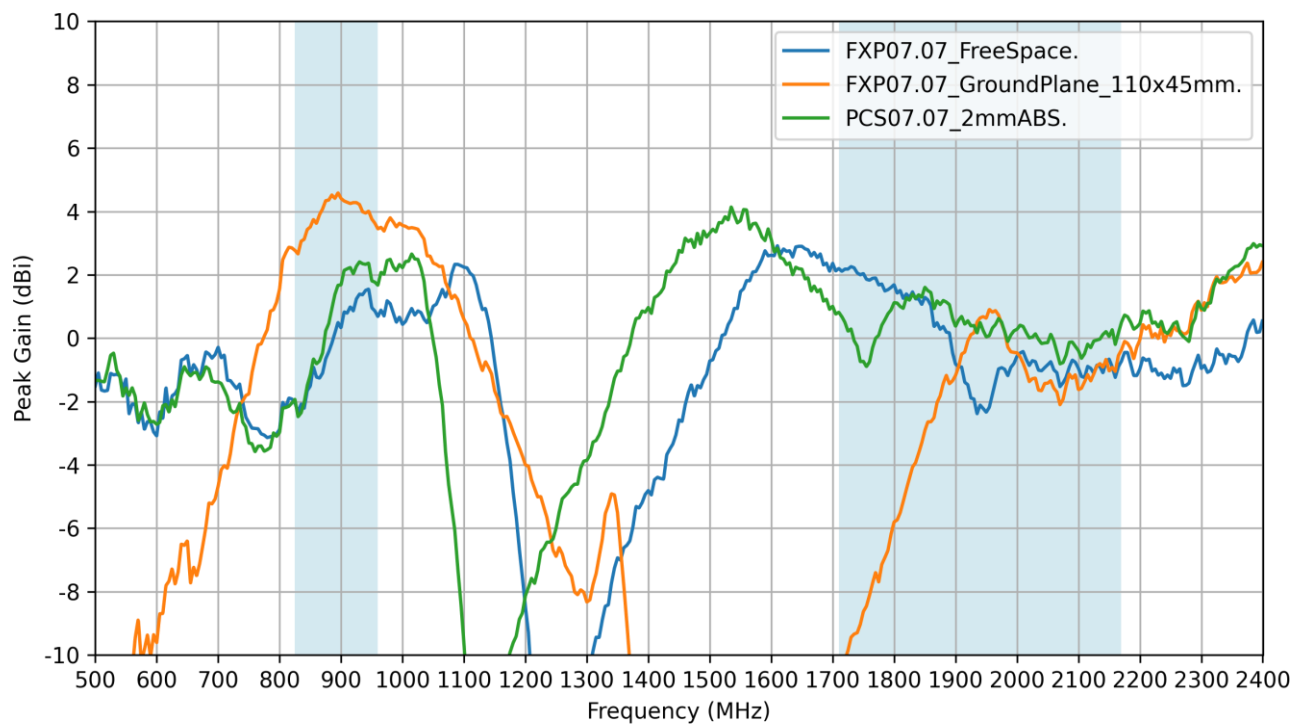
3.2 Efficiency



3.3 Average Gain

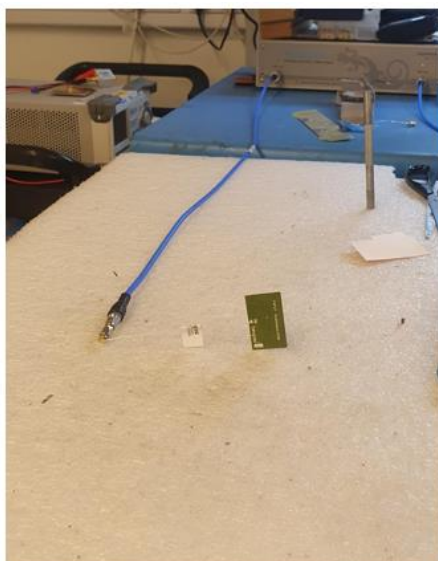
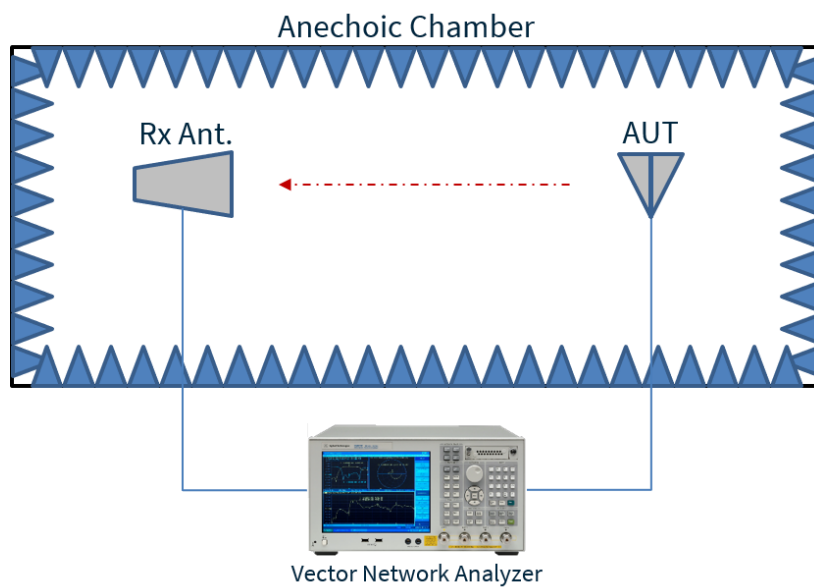


3.4 Peak Gain

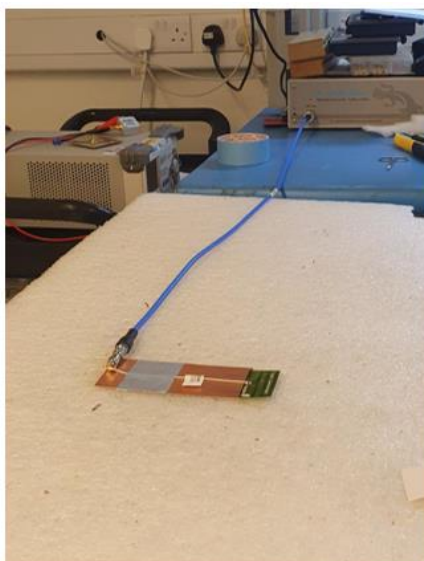


4. Radiation Patterns

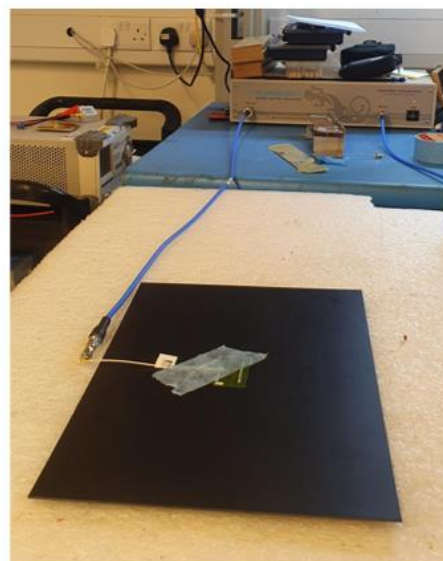
4.1 Test Setup



Free Space

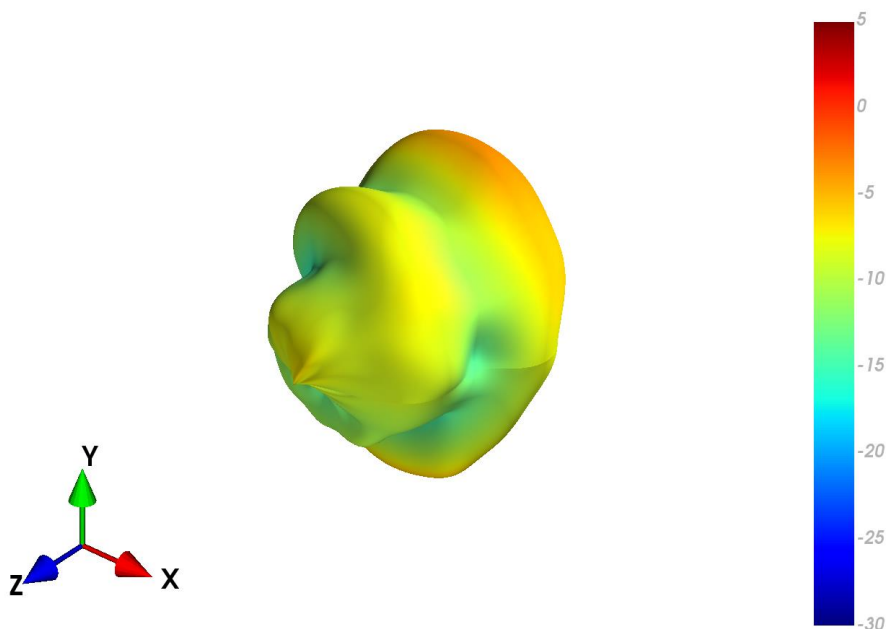


Ground Plane
110x45mm

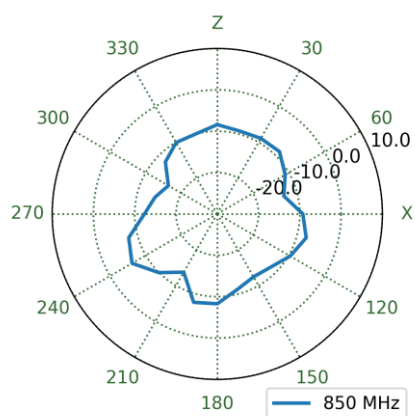


2mm ABS

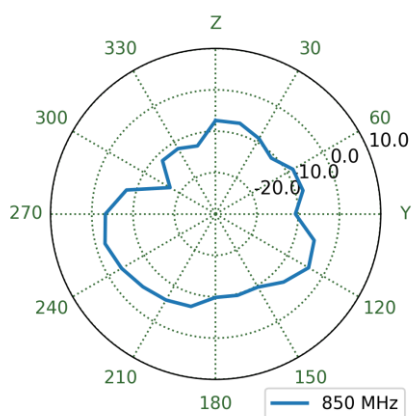
4.2 Free Space - Patterns at 850 MHz



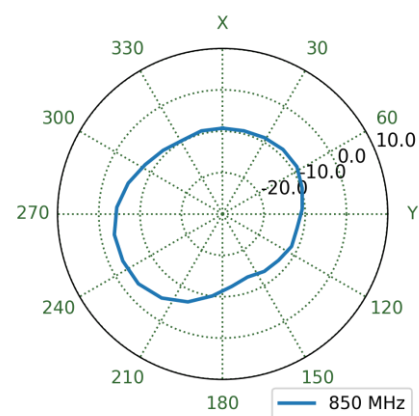
XZ Plane



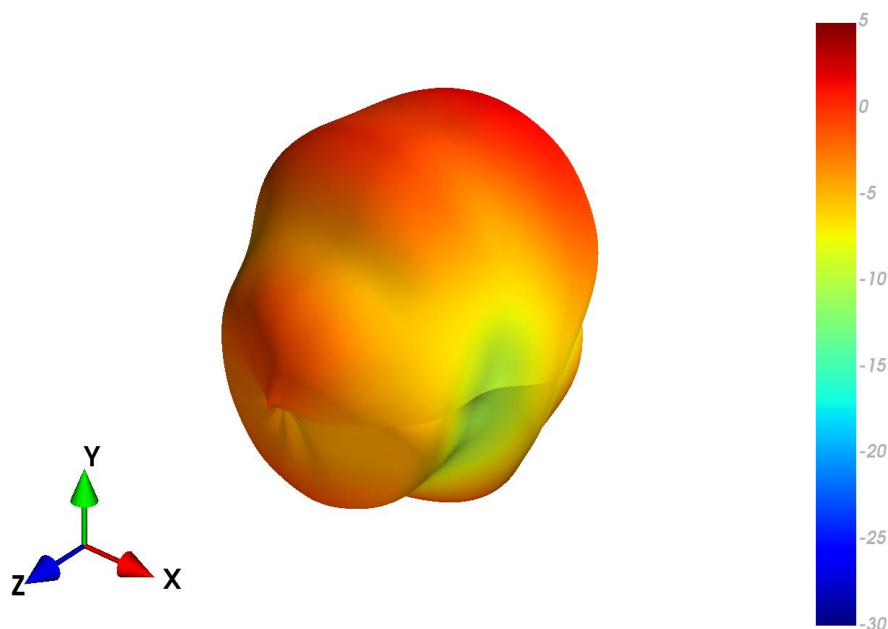
YZ Plane



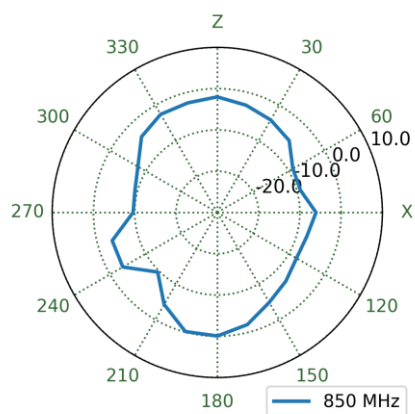
XY Plane



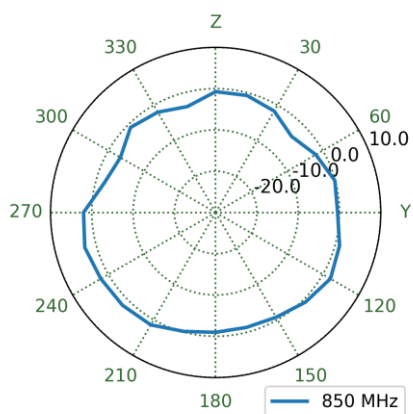
4.3 Ground Plane_110x45mm - Patterns at 850 MHz



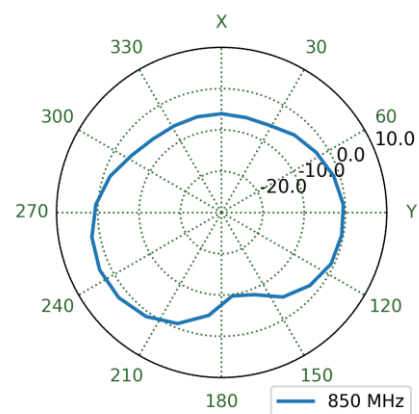
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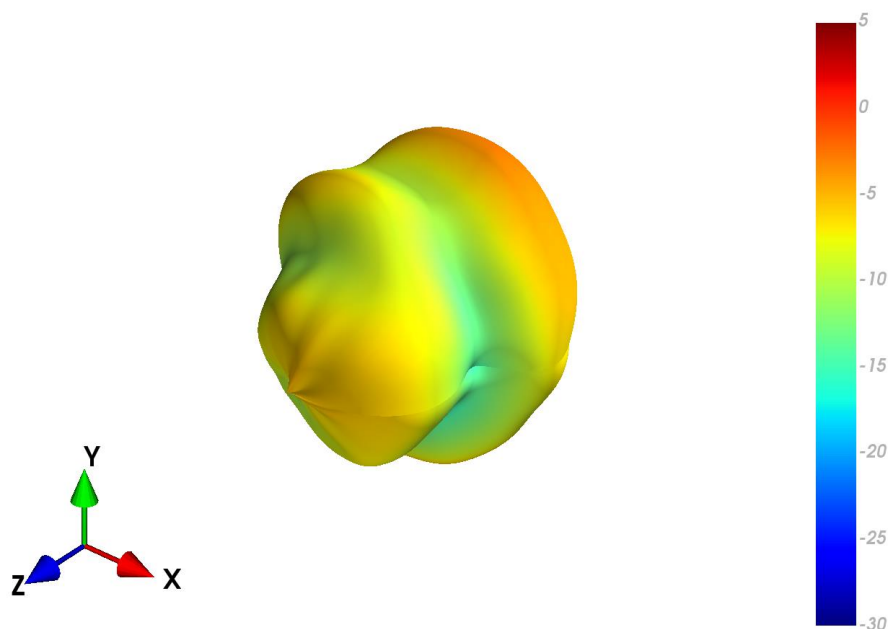
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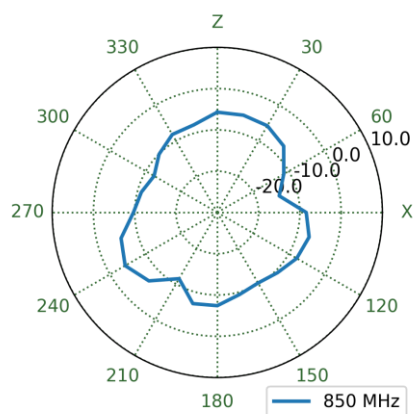
XY Plane



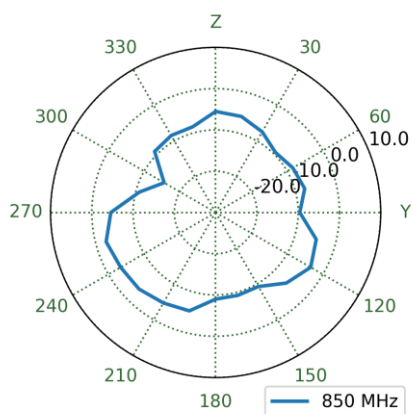
4.4 2mmABS - Patterns at 850 MHz



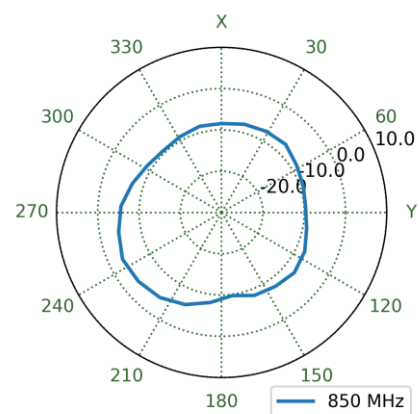
XZ Plane



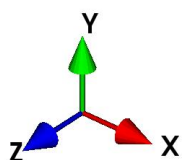
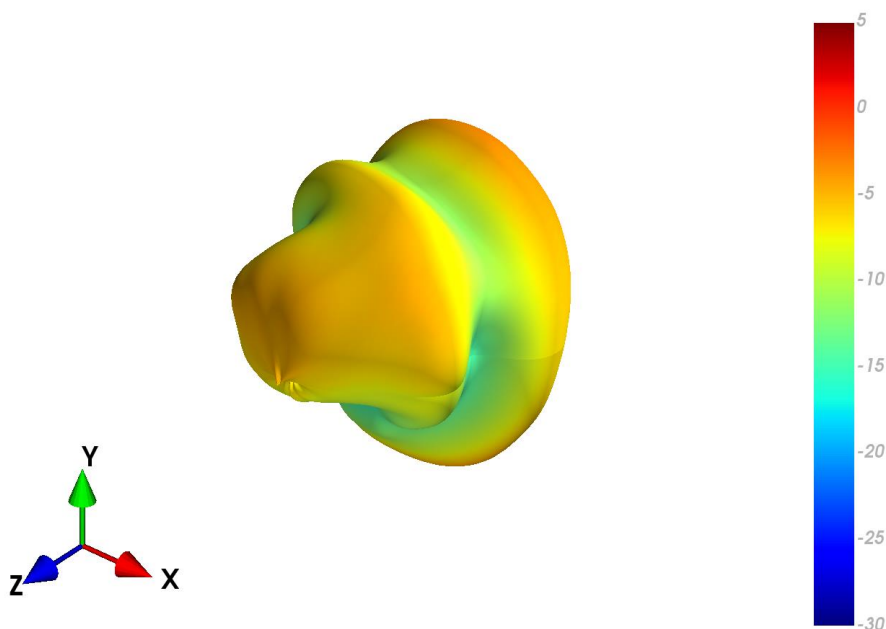
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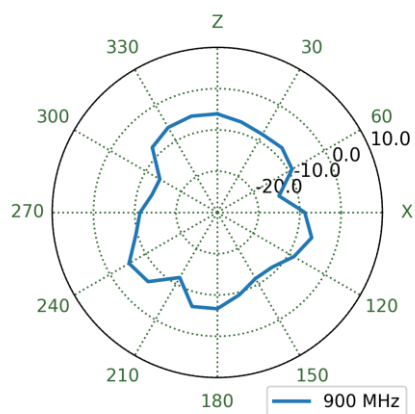
XY Plane



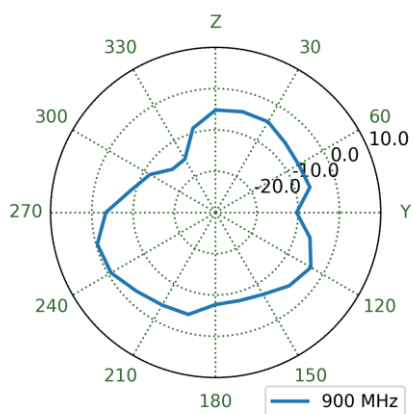
4.5 Free Space - Patterns at 900 MHz



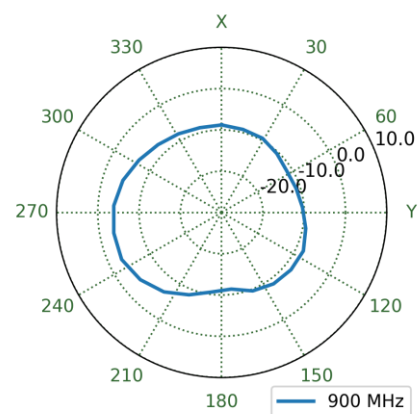
XZ Plane



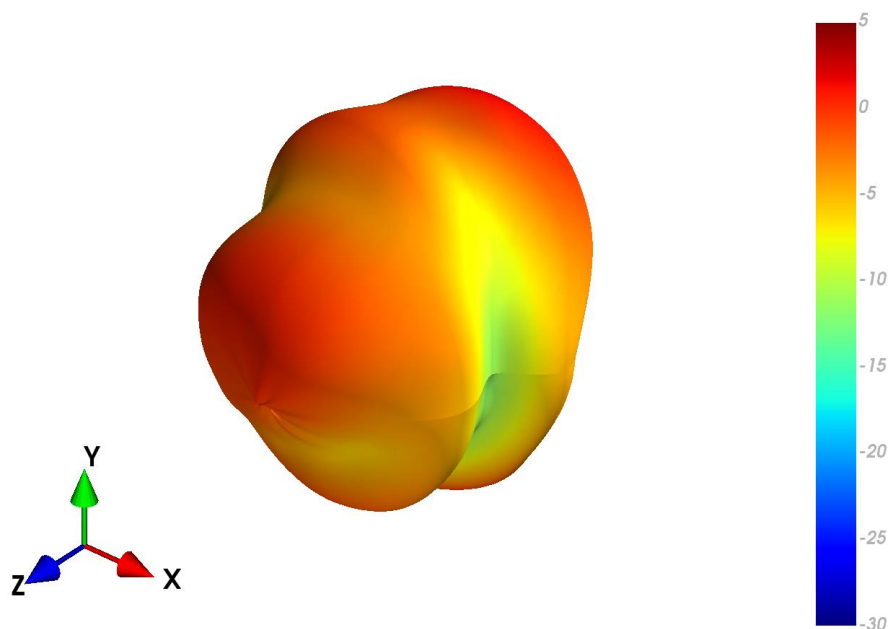
YZ Plane



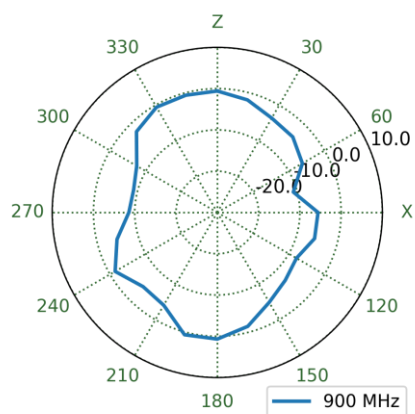
XY Plane



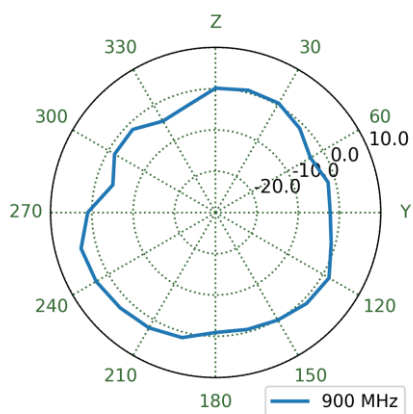
4.6 Ground Plane_110x45mm - Patterns at 900 MHz



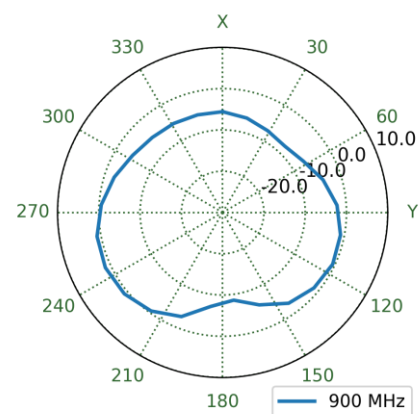
XZ Plane



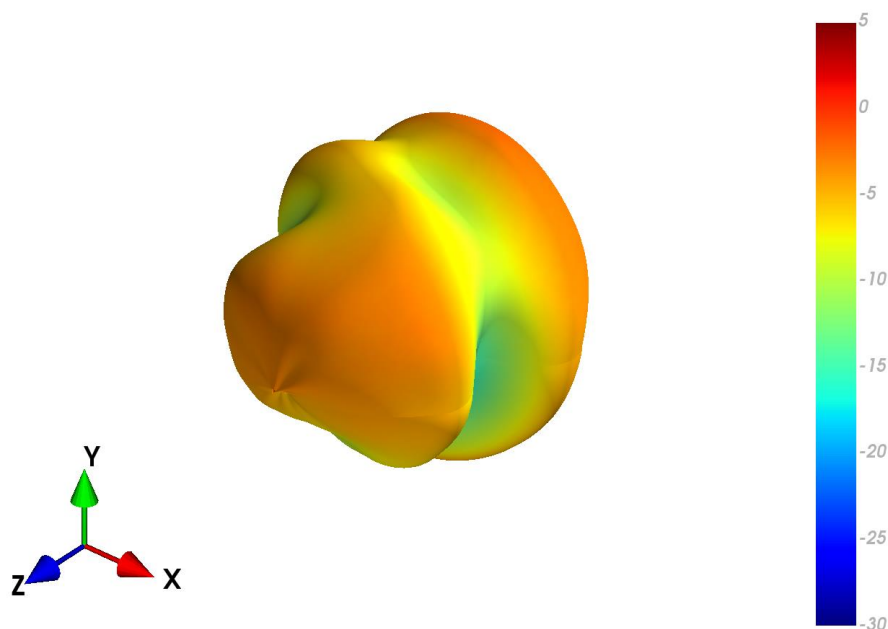
YZ Plane



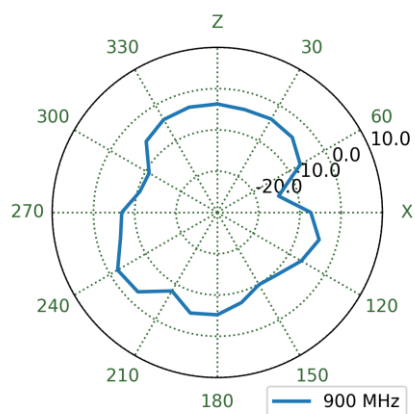
XY Plane



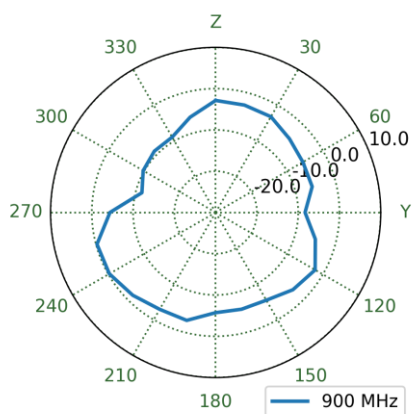
4.7 2mm ABS - Patterns at 900 MHz



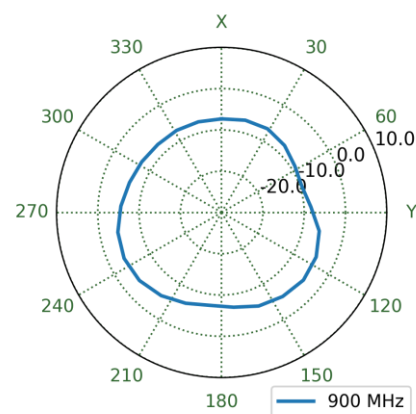
XZ Plane



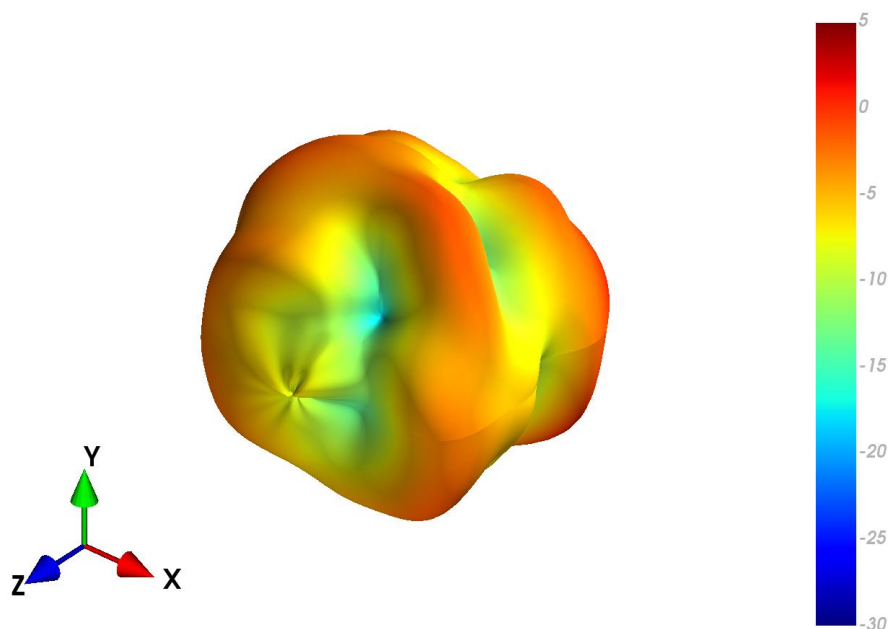
YZ Plane



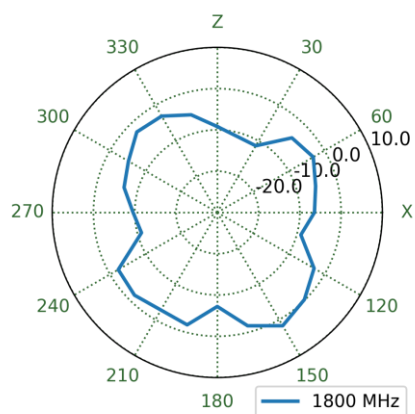
XY Plane



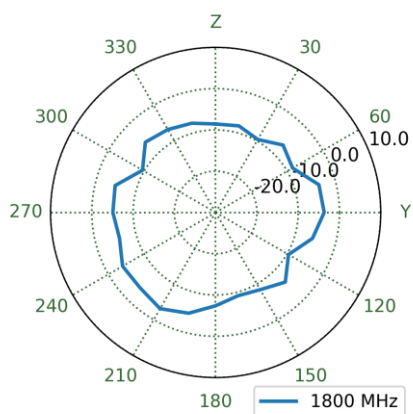
4.8 Free Space - Patterns at 1800 MHz



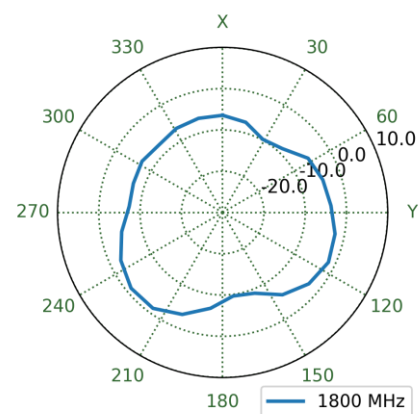
XZ Plane



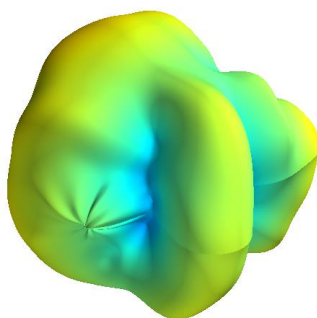
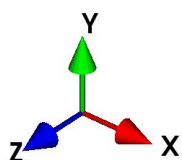
YZ Plane



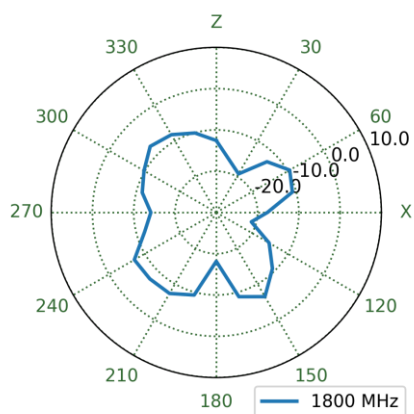
XY Plane



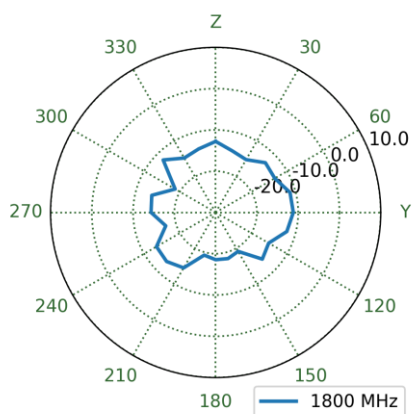
4.9 Ground Plane_110x45mm - Patterns at 1800 MHz



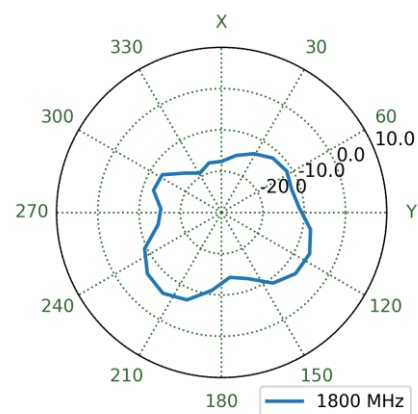
XZ Plane



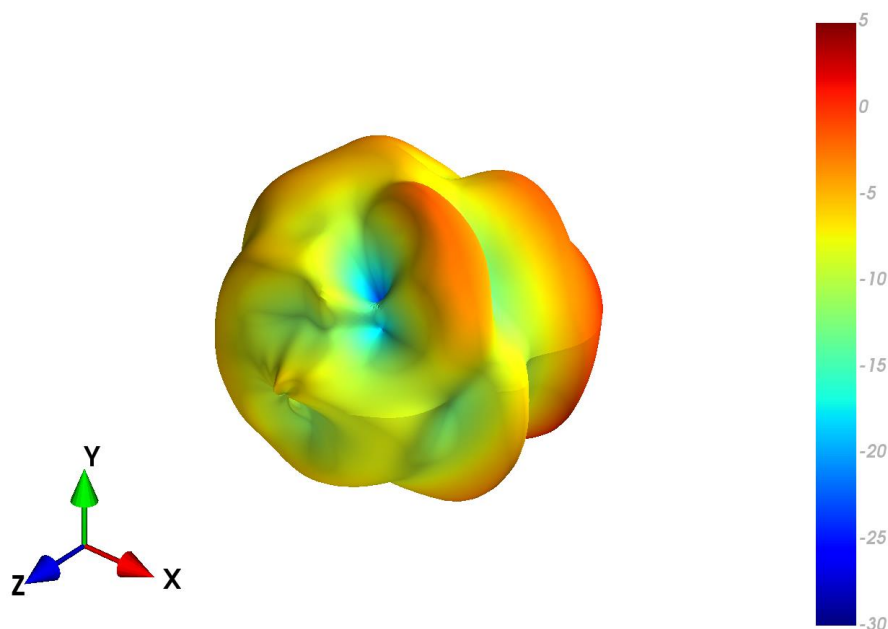
YZ Plane



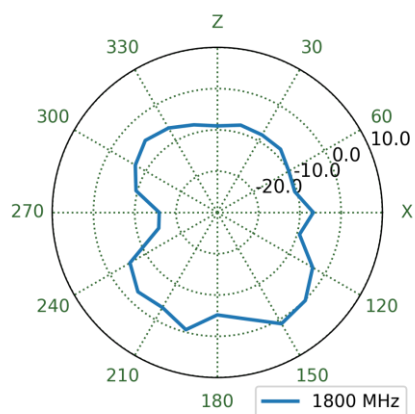
XY Plane



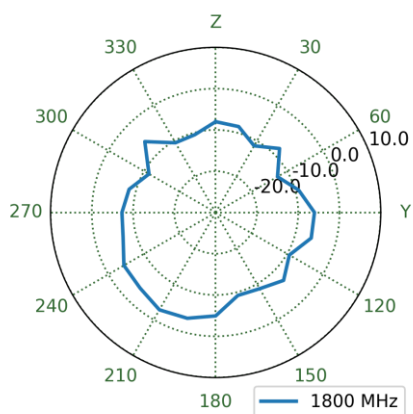
4.10 2mm ABS - Patterns at 1800 MHz



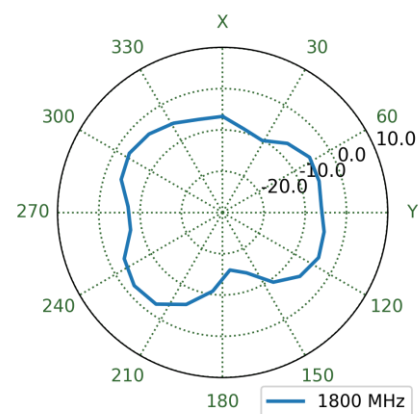
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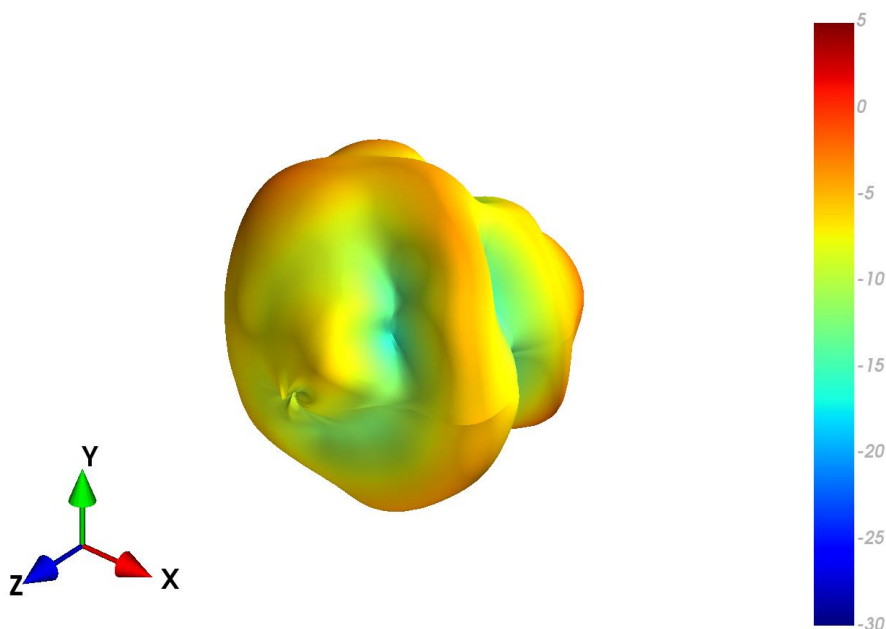
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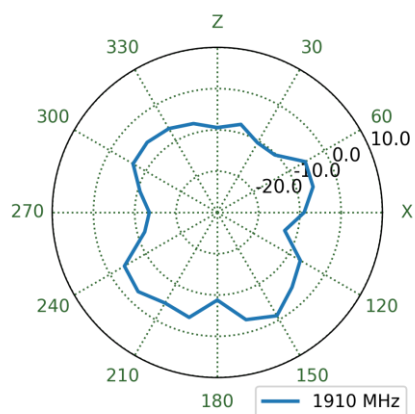
XY Plane



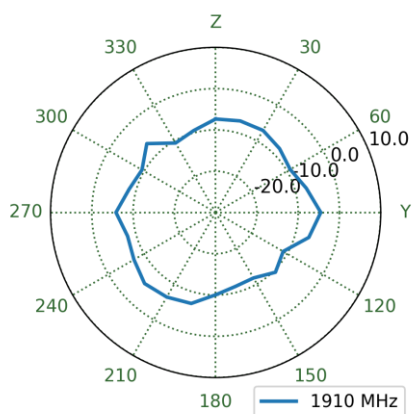
4.11 Free Space - Patterns at 1910 MHz



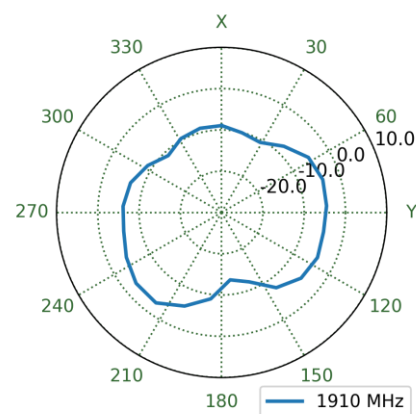
XZ Plane



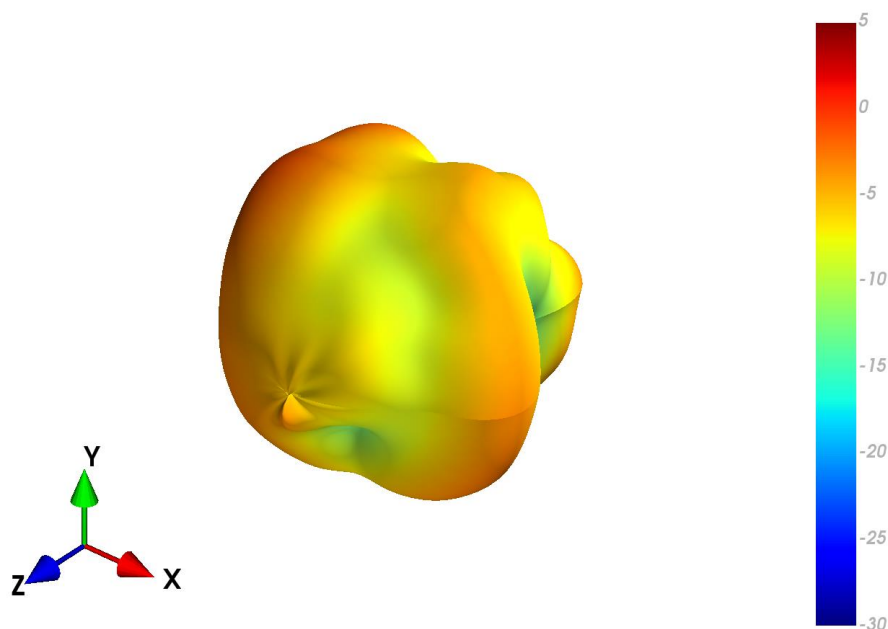
YZ Plane



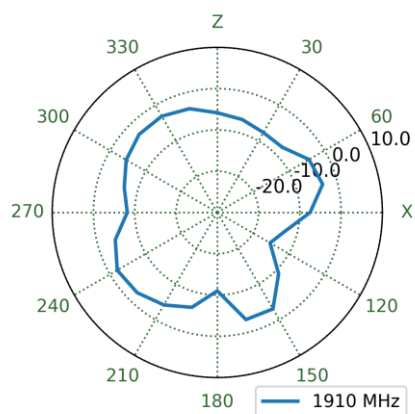
XY Plane



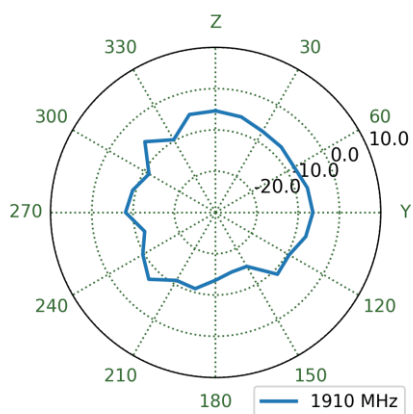
4.12 Ground Plane_110x45mm - Patterns at 1910 MHz



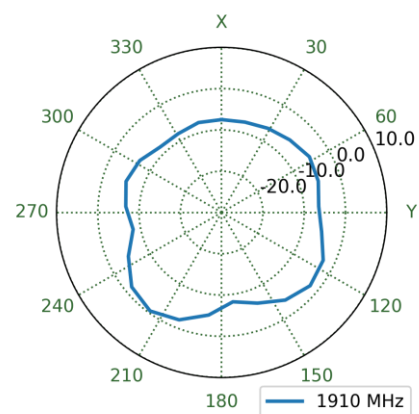
XZ Plane



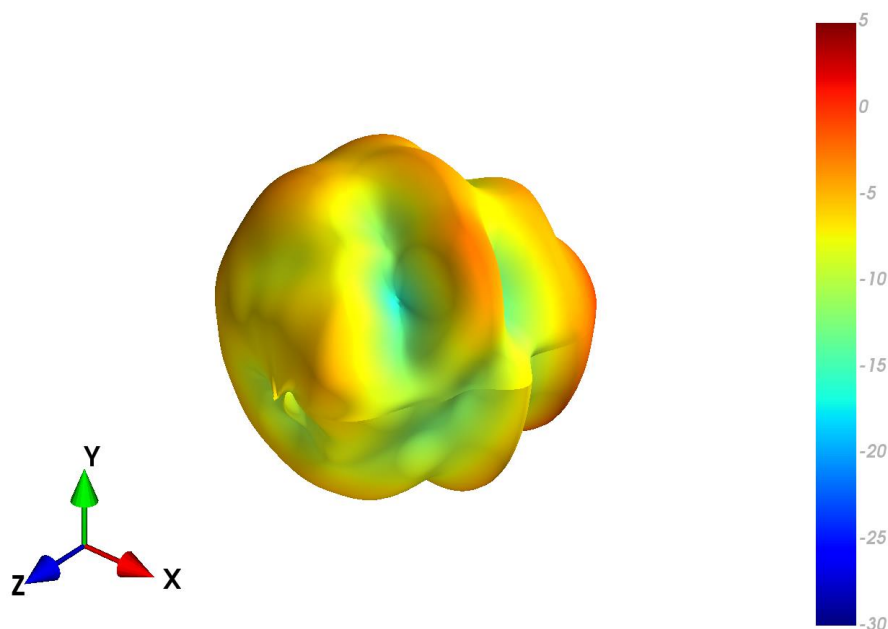
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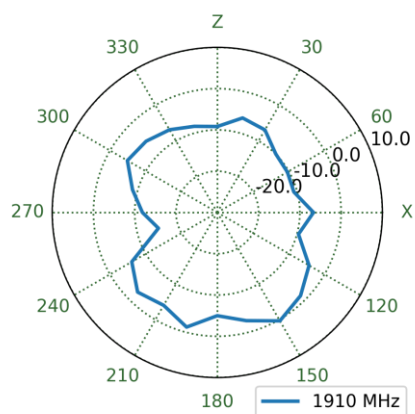
XY Plane



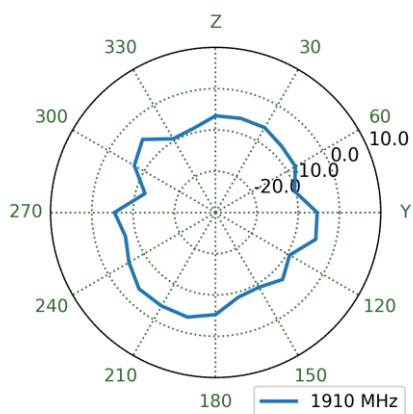
4.13 2mm ABS - Patterns at 1910 MHz



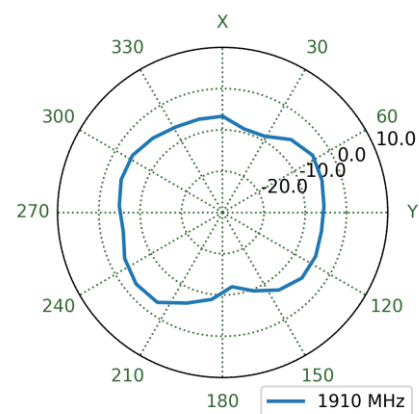
XZ Plane



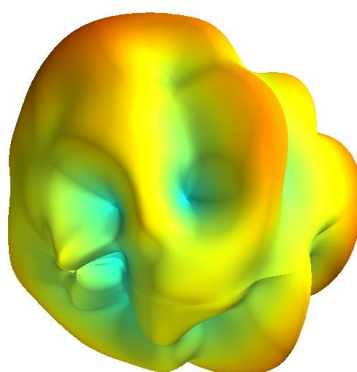
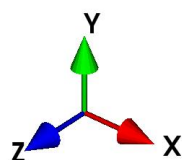
YZ Plane



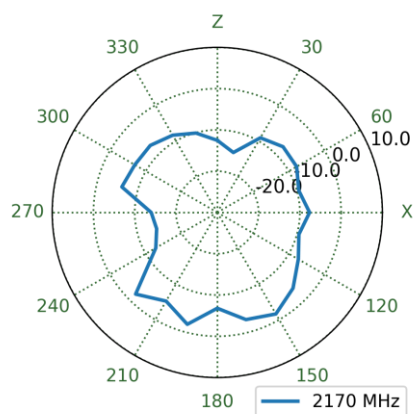
XY Plane



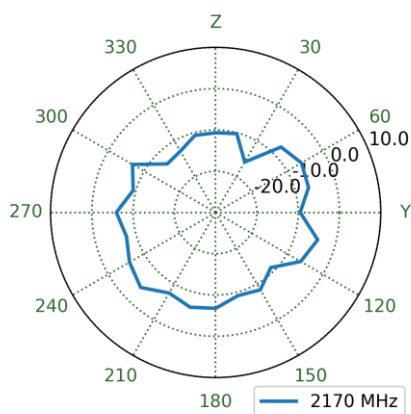
4.14 Free Space - Patterns at 2170 MHz



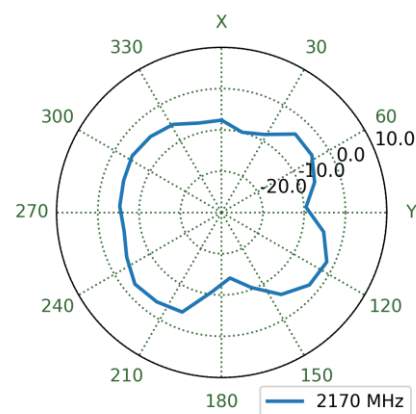
XZ Plane



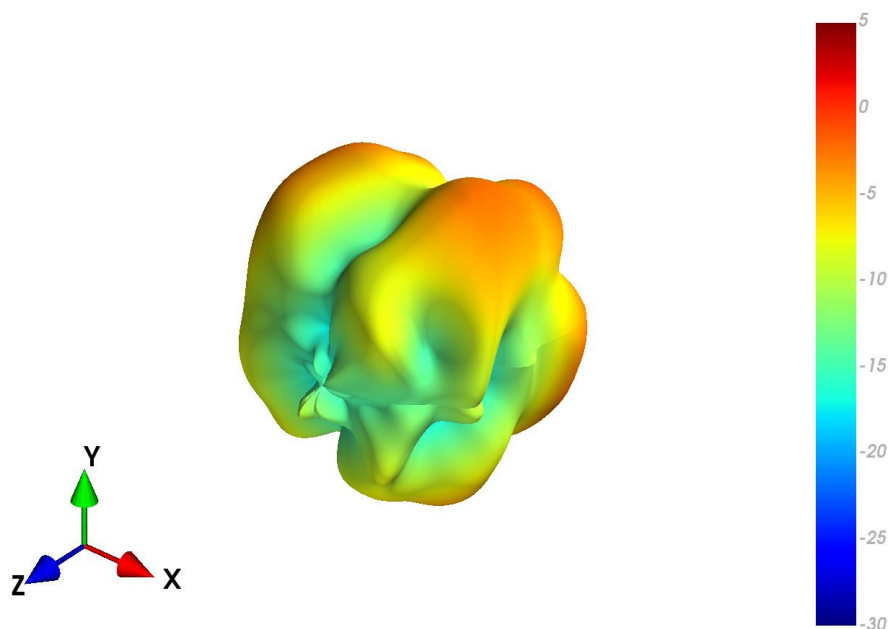
YZ Plane



XY Plane



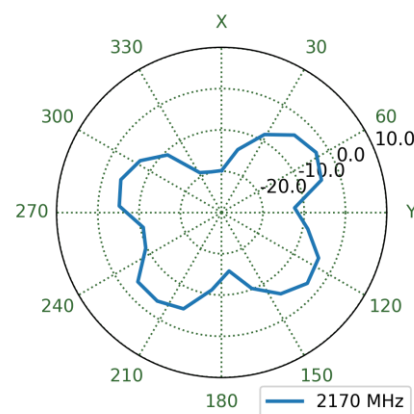
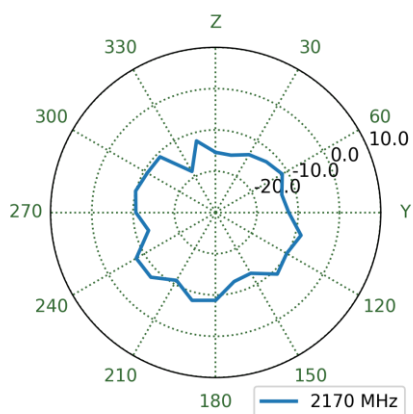
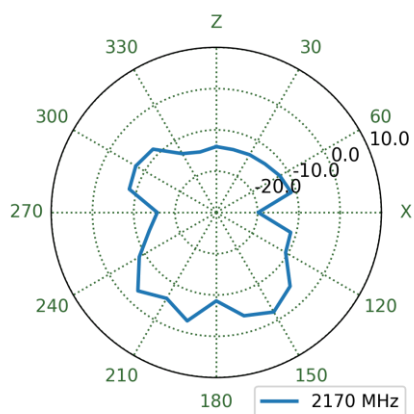
4.15 Ground Plane_110x45mm - Patterns at 2170 MHz



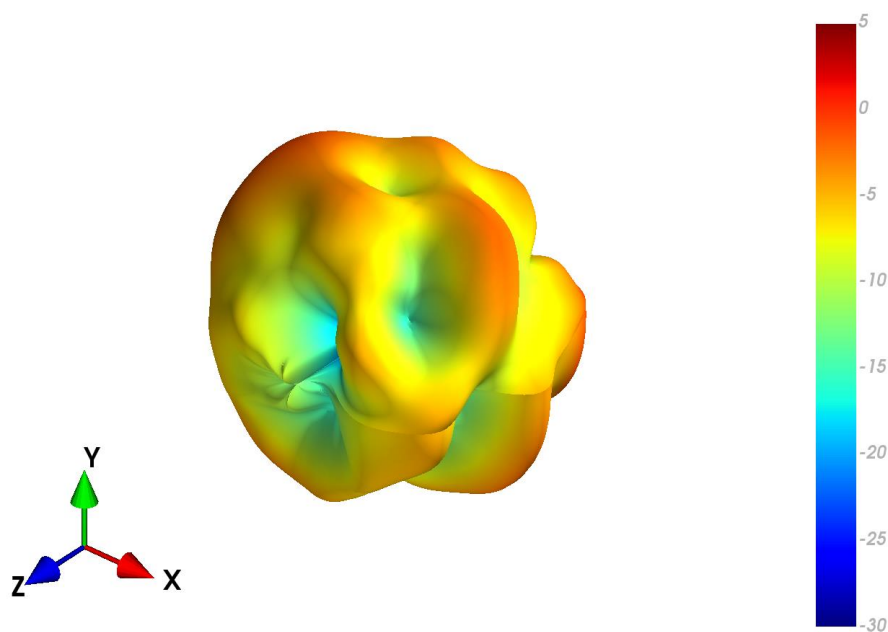
XZ Plane

YZ Plane

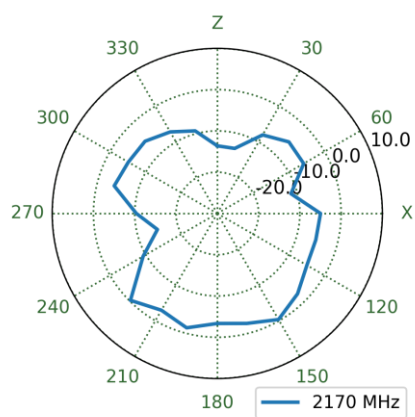
XY Plane



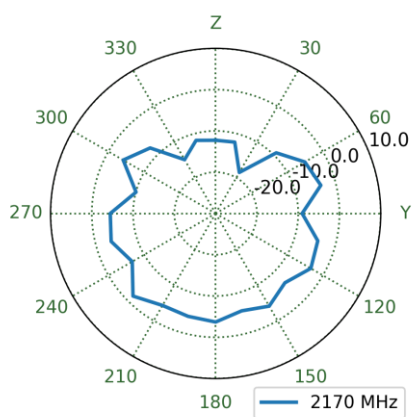
4.16 2mm ABS - Patterns at 2170 MHz



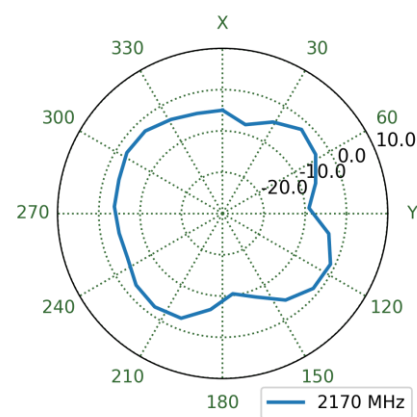
XZ Plane



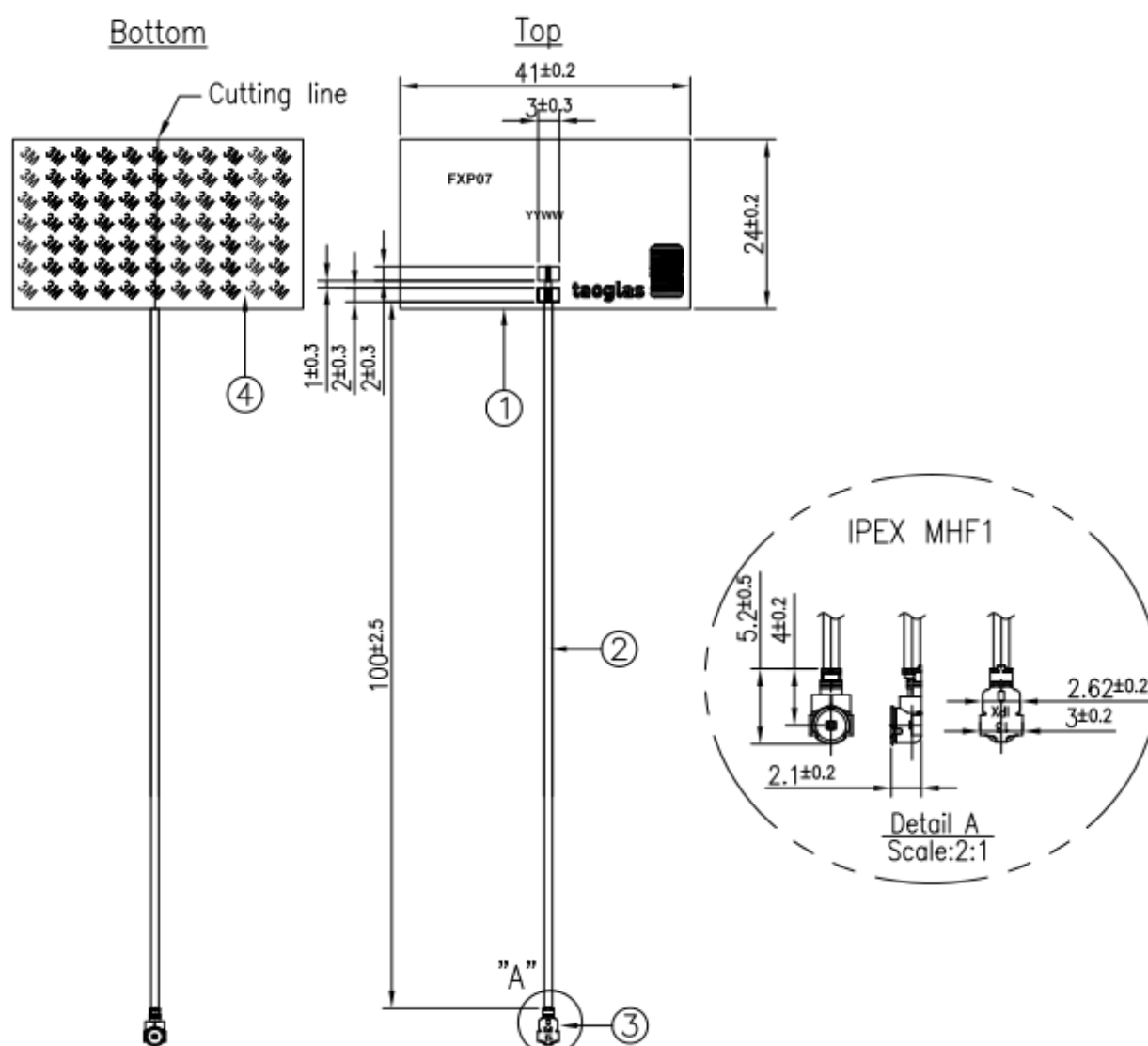
YZ Plane



XY Plane



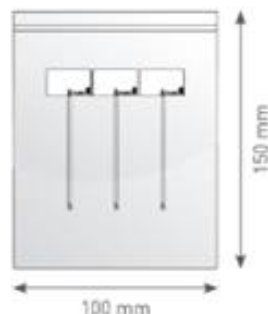
5. Mechanical Drawing



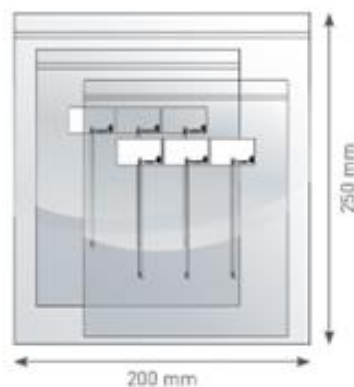
	Name	Material	Finish	QTY
1	FXP07 PCB	FPCB 0.24t	Black	1
2	1.13 Coaxial Cable	FEP	Black	1
3	IPEX MHF1	Brass	Gold	1
4	Double-Sided Adhesive	3M 467	Brown Liner	1

6. Packaging

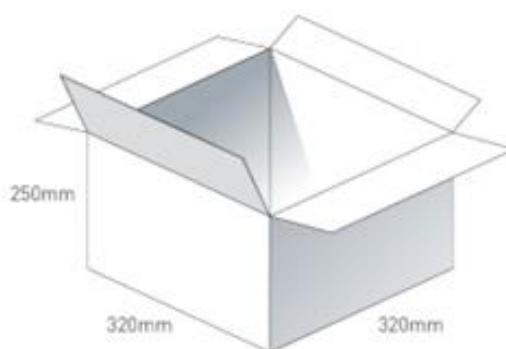
100pcs FXP07.07.0100A per PE Bag
Bag Dimensions - 150 x 100mm
Weight - 80g



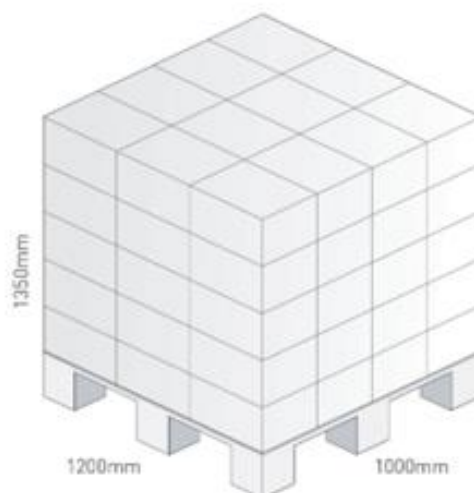
1000pcs FXP07.07.0100A per PE Large Bag
Bag Dimensions - 250 x 200mm
Weight - 800g



5,000 pcs FXP07.07.0100A per carton
Carton - 320 x 320 x 250mm
Weight - 4.5Kg



Pallet Dimensions 1200 x 1000 x 1350mm
60 Cartons per Pallet
12 Cartons per layer
5 Layers



Changelog for the datasheet

SPE-11-8-114 – FXP07.07.0100A

Revision: D (Current Version)

Date:	2023-01-10
Changes:	Full Datasheet Update
Changes Made by:	Evan Murphy

Previous Revisions

Revision: C

Date:	2016-05-27
Changes:	Changed cable to black and removed Quad-Band off antenna
Changes Made by:	Aine Doyle

Revision: B

Date:	2015-07-28
Changes:	
Changes Made by:	Technical Writer

Revision: A (Original First Release)

Date:	2011-10-13
Notes:	
Author:	Technical Writer



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