TAOGLAS®



# Datasheet

***Part No:***
***GA.140.01.2000D***

***Description***

Magnetic Mount Wideband Cellular Antenna - 600 - 6000MHz

2m RG-174 and SMA(M)ST

***Features:***

Magnetic Mount Wideband Cellular Antenna
IP67 Waterproof Enclosure
Covering: 600-6000 MHz
Dims: Ø30.0 x 116.3mm
Cable: 2m of RG-174
Connector: SMA(M)ST
RoHS & Reach Compliant

| | | |
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# 1. Introduction



**Compact. Versatile. Ready for Global Cellular Connectivity.**

The **Taoglas GA.140** is a compact, wideband cellular antenna designed to deliver dependable connectivity across **5G, 4G LTE, 3G and LTE-M/NB-IoT networks**. With broad **600 to 6000 MHz** coverage, it provides a versatile antenna solution for routers, gateways, terminals and connected IoT devices operating across multiple cellular bands and regions.

Designed for **fast, flexible deployment**, the GA.140.01.2000D features a convenient magnetic mount that attaches quickly to suitable metal surfaces without permanent mounting hardware. Its compact design and omnidirectional radiation pattern make it an easy-to-integrate solution for both new product designs and connectivity upgrades. From **industrial IoT and remote monitoring to smart infrastructure, kiosks, telematics and Fixed Wireless Access**, the GA.140 provides a practical way to add reliable cellular connectivity across a broad range of applications.
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**Typical Applications**

- 5G & LTE Routers and Industrial IoT Gateways
- Remote Monitoring Systems
- Smart City Infrastructure
- Vending & Kiosk Applications
- Transportation & Telematics
- Fixed Wireless Access (FWA)

Supplied with a **2 m RG-174 cable and SMA (M) straight connector**, the GA.140.01.2000D is ready for straightforward integration with a wide range of cellular-enabled devices.

For integration support, testing services, or additional technical assistance, please contact your regional Taoglas customer support team.

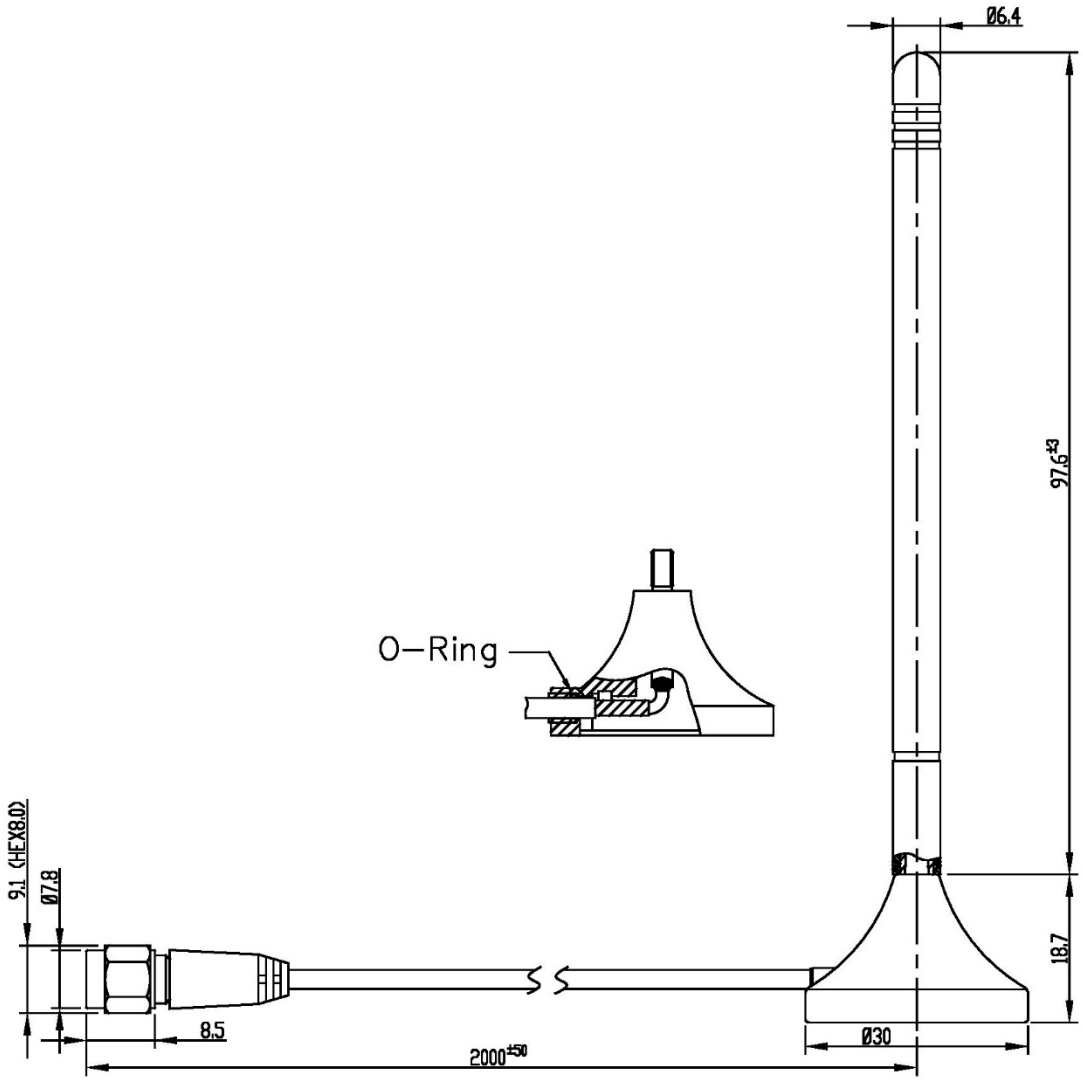
# 2. Specification

| Electrical | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Band** | Frequency (MHz) | Measurement | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Polarization | Radiation Pattern | Max. input power |
| **5GNR/4G** Band71 | 617-698 | 2m - 30x30cm Ground Plane | 46.9 | -3.29 | 0.87 | 50 Ω | Linear | Omni directional | 10W |
| | | 2m – Free Space | 15.7 | -8.05 | -2.50 | | | | |
| | | 30cm - 30x30cm Ground Plane | 67.0 | -1.74 | 2.35 | | | | |
| | | 30cm – Free Space | 35.2 | -4.53 | 2.26 | | | | |
| **4G/3G** Band 12,13,14,17,28,29 | 698-806 | 2m - 30x30cm Ground Plane | 52.2 | -2.82 | 1.13 | | | | |
| | | 2m – Free Space | 36.9 | -4.33 | 3.11 | | | | |
| | | 30cm - 30x30cm Ground Plane | 73.8 | -1.32 | 2.69 | | | | |
| | | 30cm – Free Space | 58.9 | -2.30 | 2.60 | | | | |
| **4G/3G/NB-IoT/Cat M** Band 5,8,18,19,20,26,27 | 824-960 | 2m - 30x30cm Ground Plane | 41.3 | -3.84 | 0.40 | | | | |
| | | 2m – Free Space | 36.6 | -4.37 | 1.19 | | | | |
| | | 30cm - 30x30cm Ground Plane | 61.7 | -2.10 | 1.84 | | | | |
| | | 30cm – Free Space | 74.8 | -1.26 | 2.52 | | | | |
| **5GNR/4G** Band 21,32,74,75,76 | 1427-1518 | 2m - 30x30cm Ground Plane | 8.7 | -10.61 | -6.06 | | | | |
| | | 2m – Free Space | 7.5 | -11.25 | -7.25 | | | | |
| | | 30cm - 30x30cm Ground Plane | 16.3 | -7.89 | -3.67 | | | | |
| | | 30cm – Free Space | 15.5 | -8.10 | -4.50 | | | | |
| **4G/3G** Band 1,2,3,4,9,23,25,35,39, 66 | 1710-2200 | 2m - 30x30cm Ground Plane | 22.2 | -6.53 | 2.55 | | | | |
| | | 2m – Free Space | 17.3 | -7.62 | 0.71 | | | | |
| | | 30cm - 30x30cm Ground Plane | 42.3 | -3.73 | 5.44 | | | | |
| | | 30cm – Free Space | 34.8 | -4.59 | 2.51 | | | | |
| **4G/3G** Band 7,30,38,40,41 | 2300-2690 | 2m - 30x30cm Ground Plane | 26.2 | -5.81 | 2.02 | | | | |
| | | 2m – Free Space | 28.7 | -5.41 | 0.78 | | | | |
| | | 30cm - 30x30cm Ground Plane | 57.3 | -2.42 | 5.07 | | | | |
| | | 30cm – Free Space | 62.0 | -2.08 | 2.54 | | | | |
| **5GNR/4G** Band 22,42,48,77,78,79 | 3300-5000 | 2m - 30x30cm Ground Plane | 19.1 | -7.19 | -0.21 | | | | |
| | | 2m – Free Space | 15.7 | -8.05 | -2.69 | | | | |
| | | 30cm - 30x30cm Ground Plane | 48.4 | -3.15 | 5.32 | | | | |
| | | 30cm – Free Space | 43.8 | -3.59 | 2.20 | | | | |
| **LTE5200/Wi-Fi5800** | 5150-5925 | 2m - 30x30cm Ground Plane | 14.0 | -8.52 | 0.50 | | | | |
| | | 2m – Free Space | 13.0 | -8.85 | -3.62 | | | | |
| | | 30cm - 30x30cm Ground Plane | 43.9 | -3.57 | 6.49 | | | | |
| | | 30cm – Free Space | 46.0 | -3.37 | 2.08 | | | | |

| Mechanical | |
|---|---|
| **Dimensions** | Ø30.0mm x 116.3mm |
| **Weight** | 36.4g |
| **Enclosure Material** | TPE |
| **Connector** | SMA(M) |
| **Cable** | RG-174 |
| **Magnetic Pull-Force (Horizontal)** | 1.8kgf |

| Environmental | |
|---|---|
| **Waterproof Rating** | IP67 Enclosure |
| **Operation Temperature** | -40°C - +85°C |
| **Storage Temperature** | -40°C - +85°C |
| **Relative Humidity** | Non-condensing 65°C 95% RH |

# 3. Mechanical Drawing



# 4. Packaging




☑ 1 PCS / Small PE bag

☑ Small PE bag(mm): 220x105




☑ 50 PCS / PE bag

☑ PE bag(mm): 460x350

☑ Weight (Kg): 1.9 ±3%

☑ SPQ Label



☑ 200 PCS / Carton

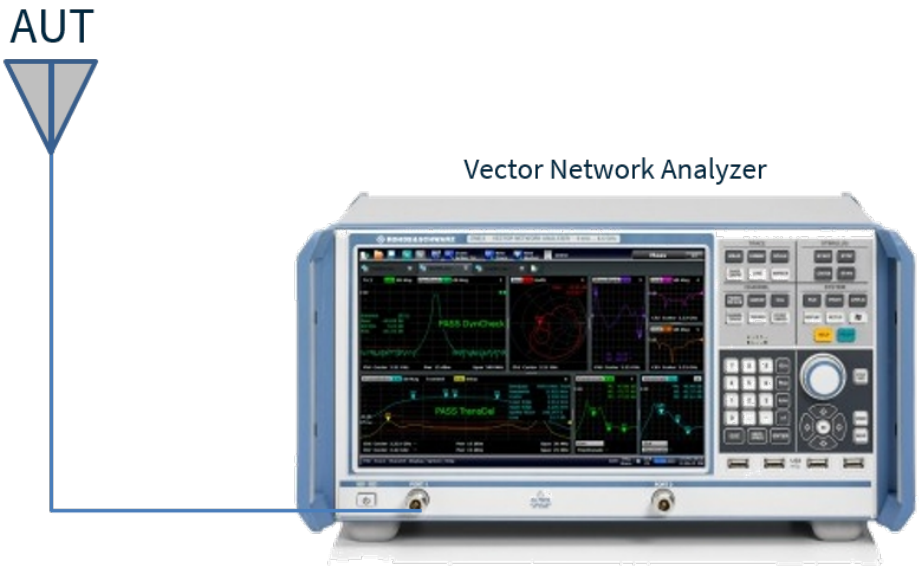
☑ Carton(mm): 410x310x220

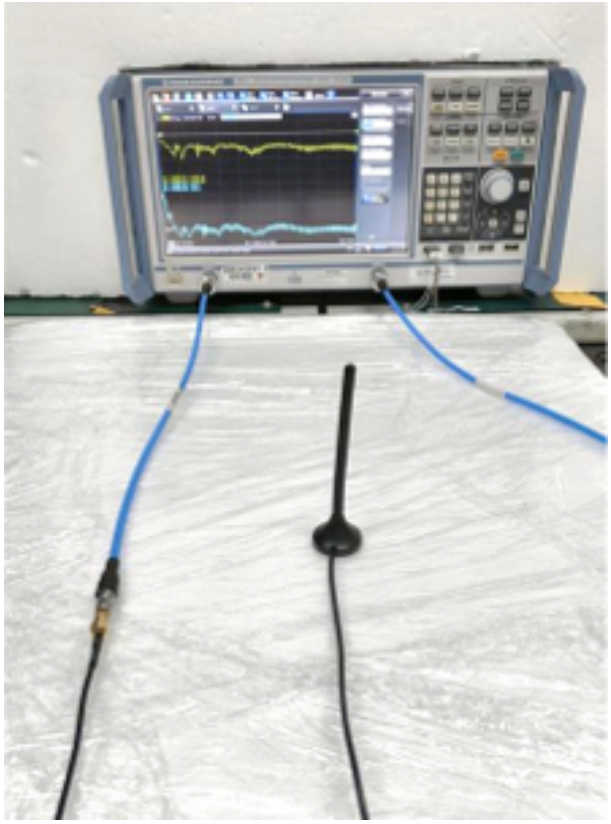
☑ Weight (Kg): 8.1 ±3%

☑ Carton Label

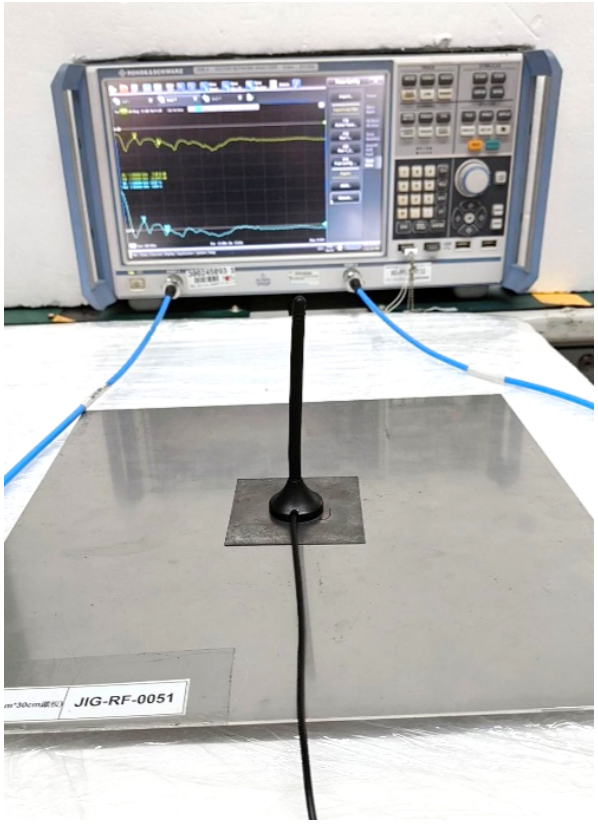
# 5. Antenna Characteristics

## 5.1 Test Setup



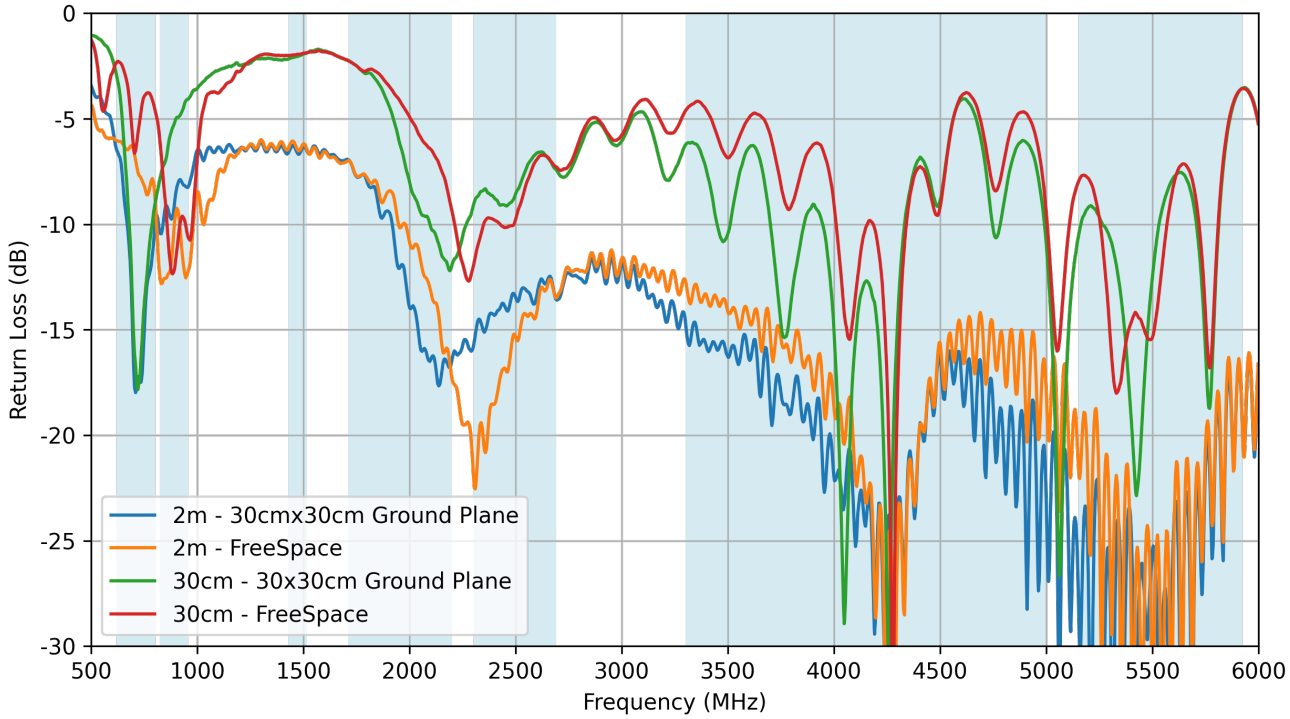



Free Space

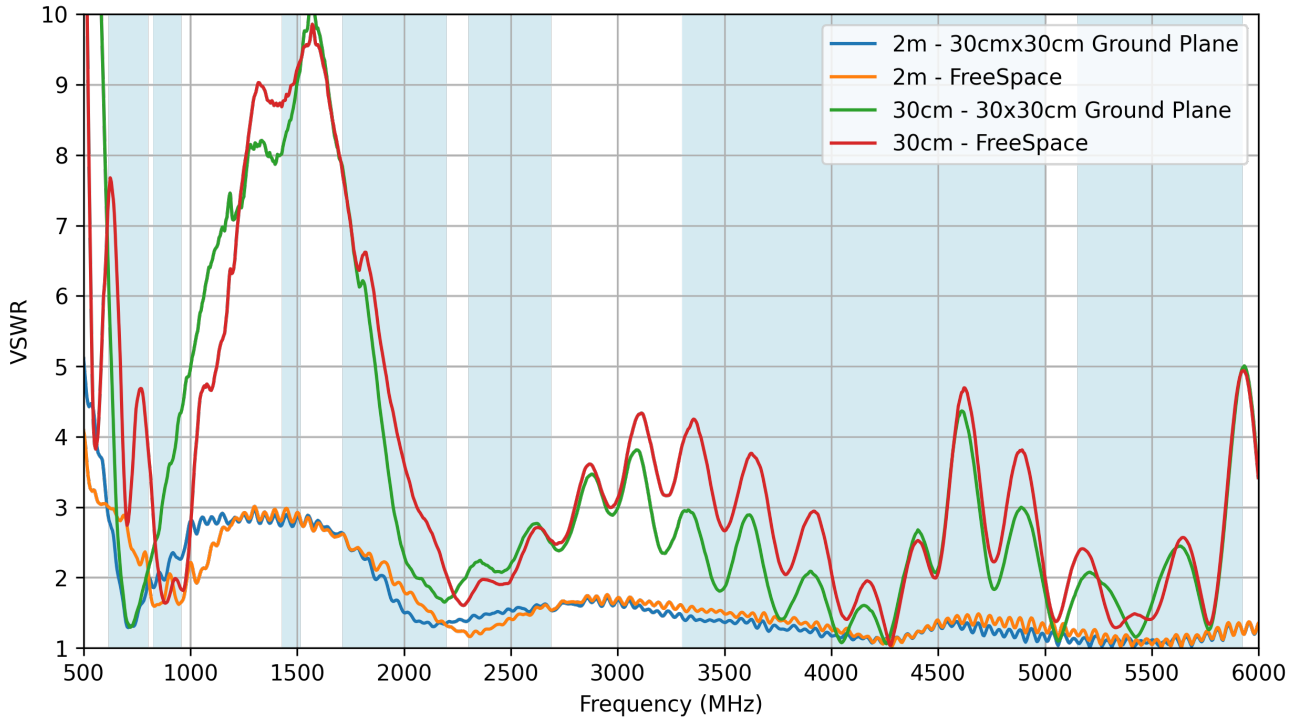



30x30cm Ground Plane

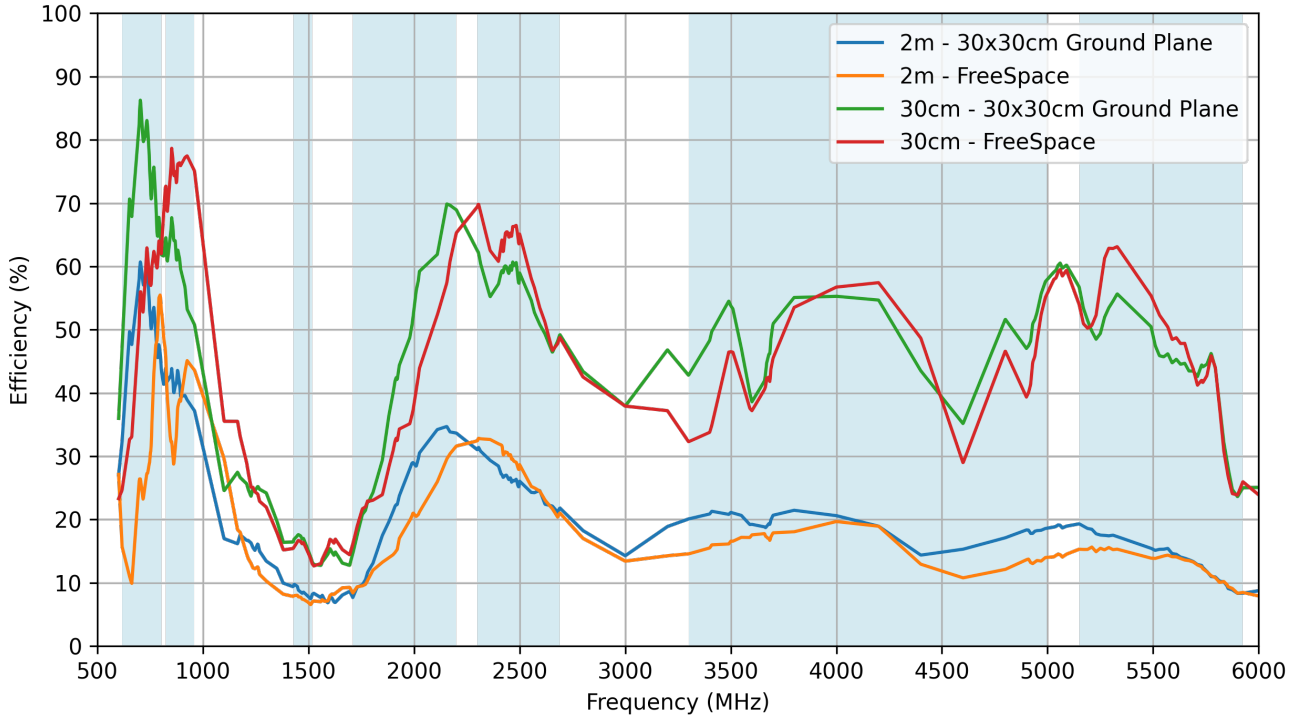
## 5.2 Return Loss



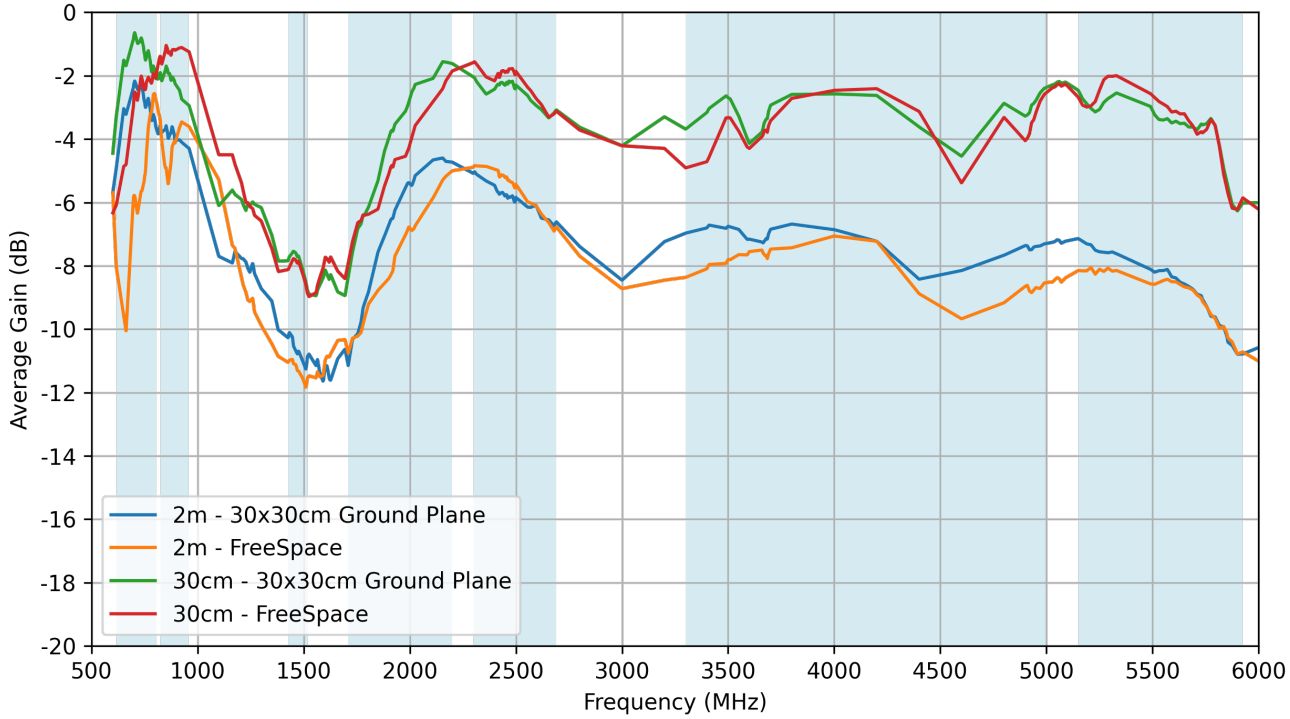

## 5.3 VSWR



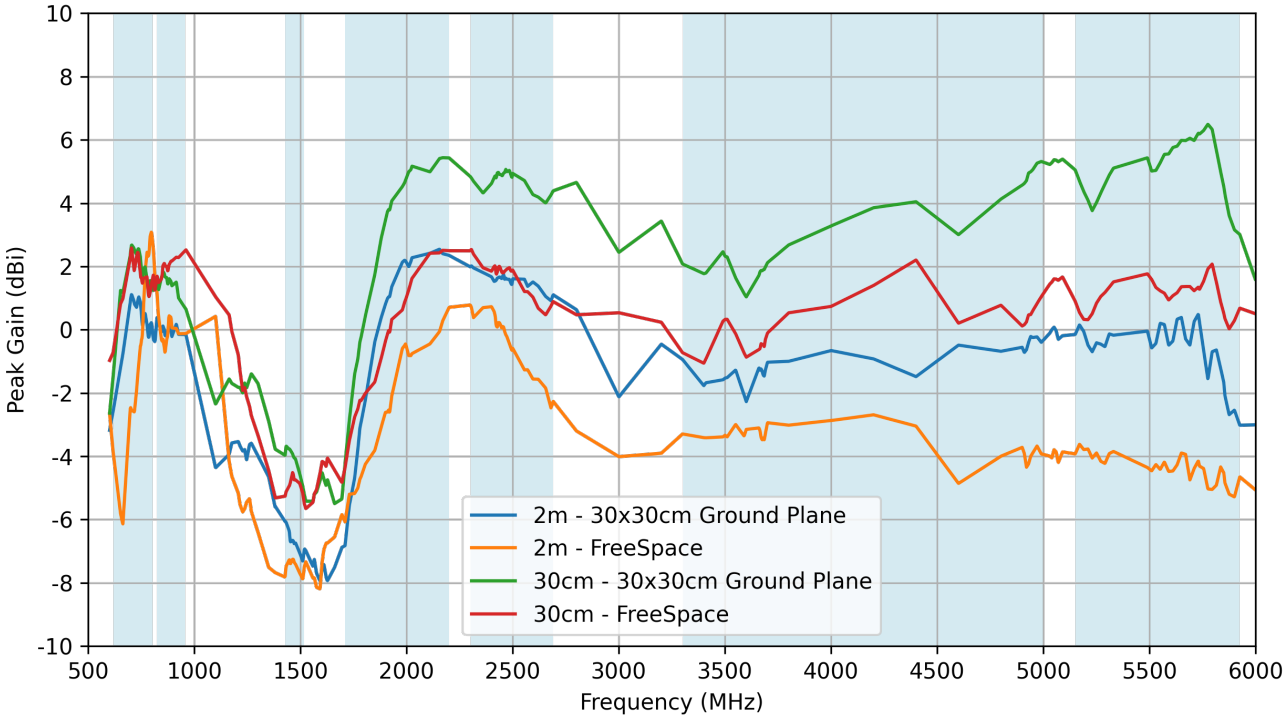
## 5.4 Efficiency




## 5.5 Average Gain

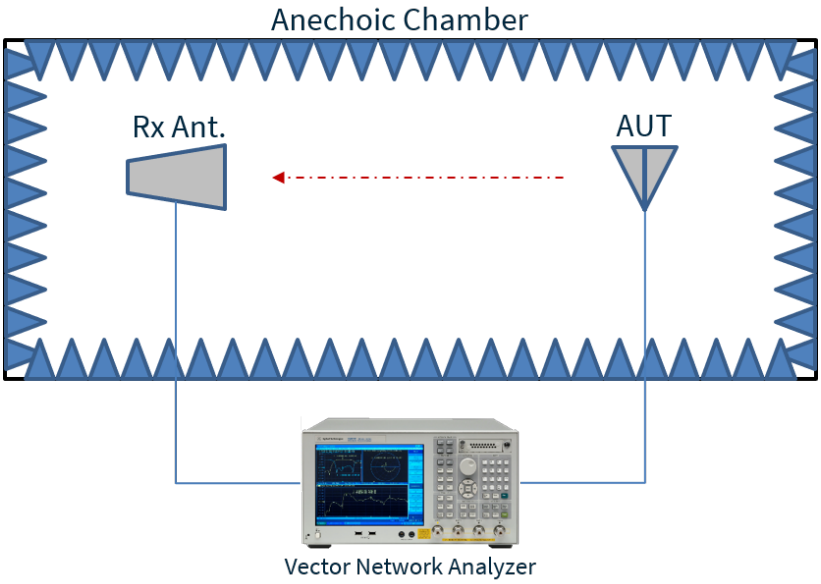


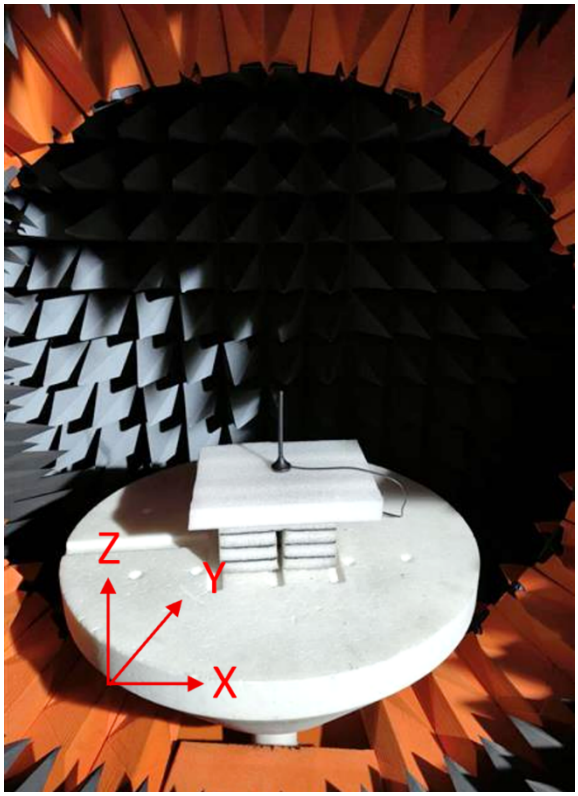
## 5.6 Peak Gain


Peak Gain (dBi)
Frequency (MHz)
2m - 30x30cm Ground Plane
2m - FreeSpace
30cm - 30x30cm Ground Plane
30cm - FreeSpace

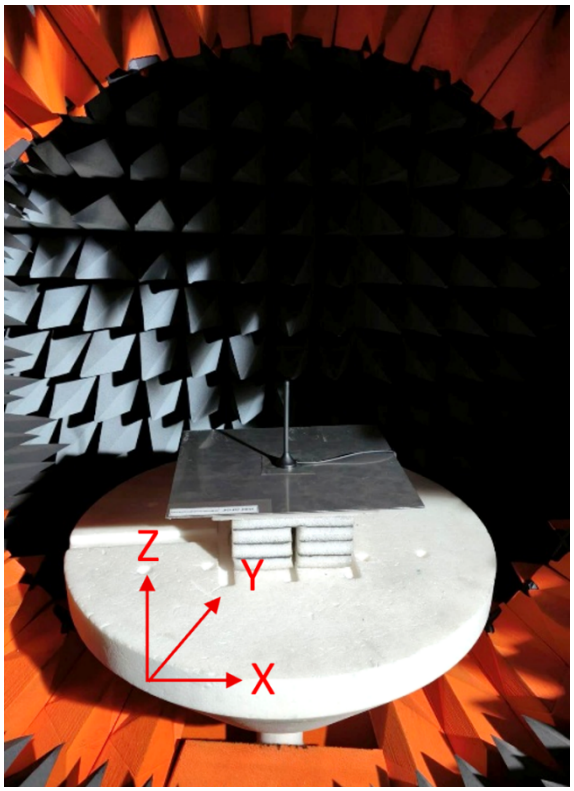
# 6. Radiation Patterns

## 6.1 Test Setup



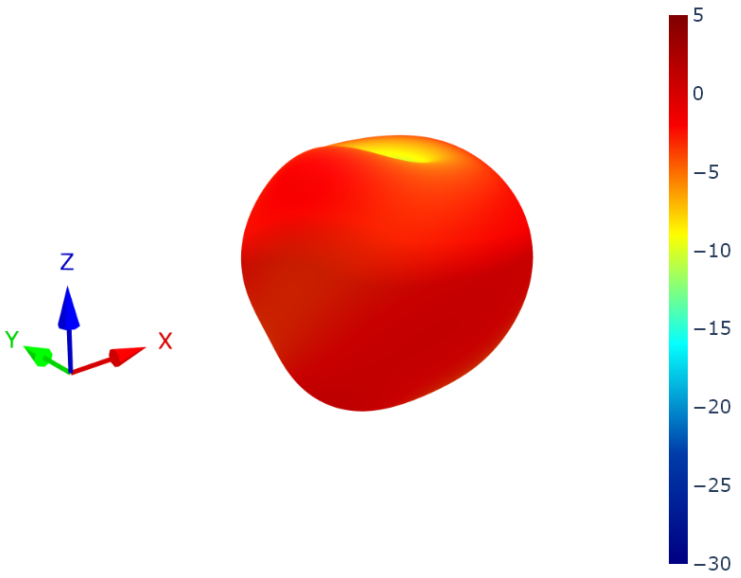



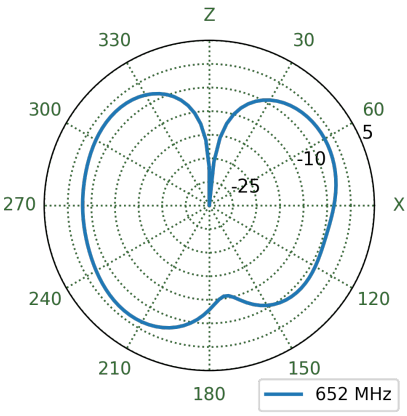
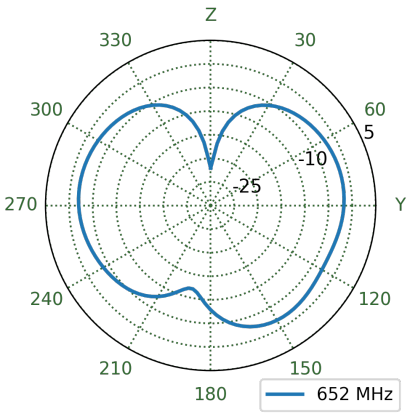
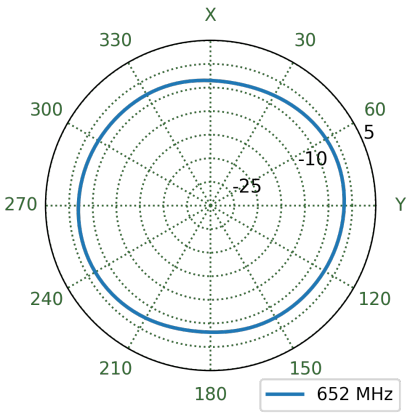

Free Space



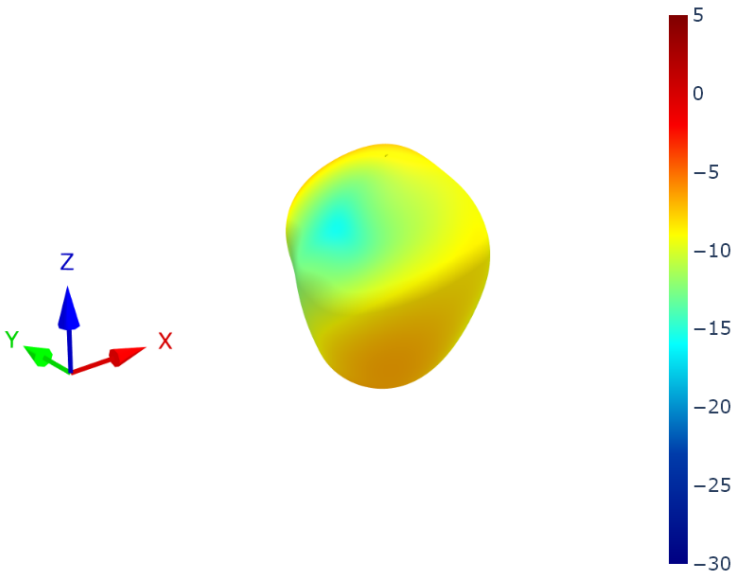

30x30cm Ground Plane

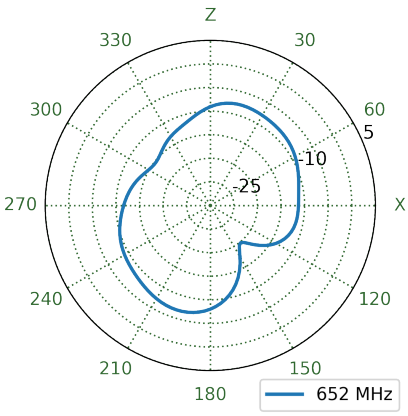
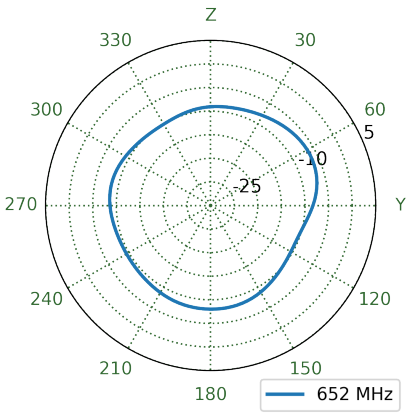
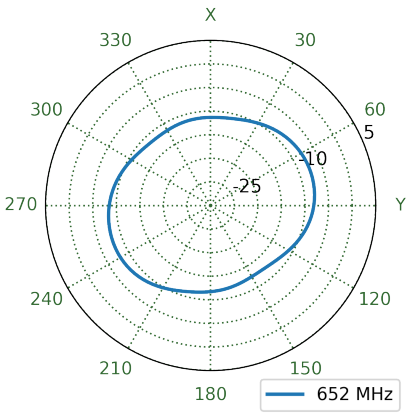
## 6.2 30x30cm Ground Plane Patterns at 652 MHz – 2m



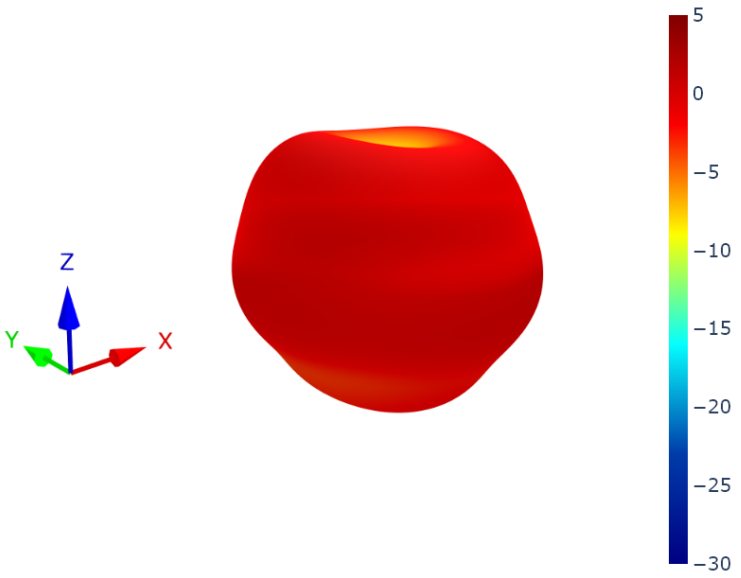

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

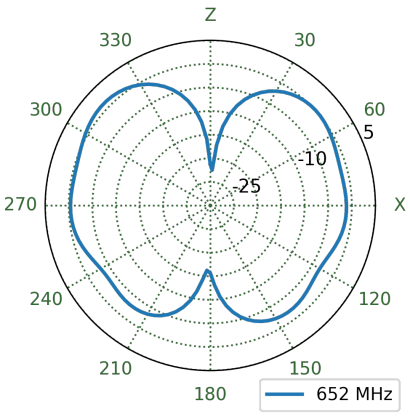
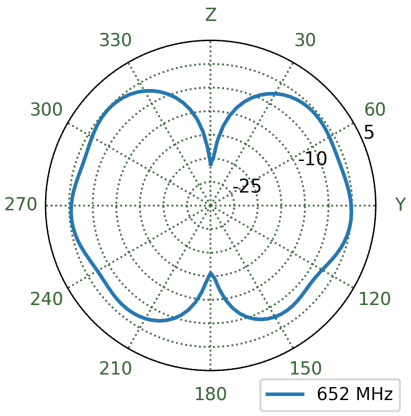
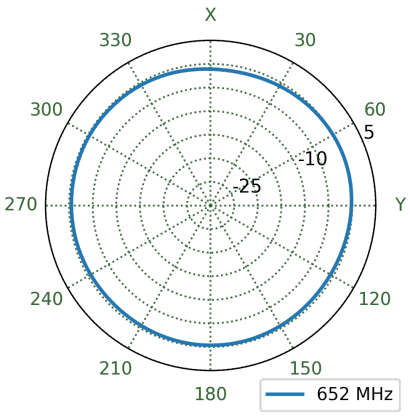
## 6.3 Free Space Patterns at 652 MHz – 2m



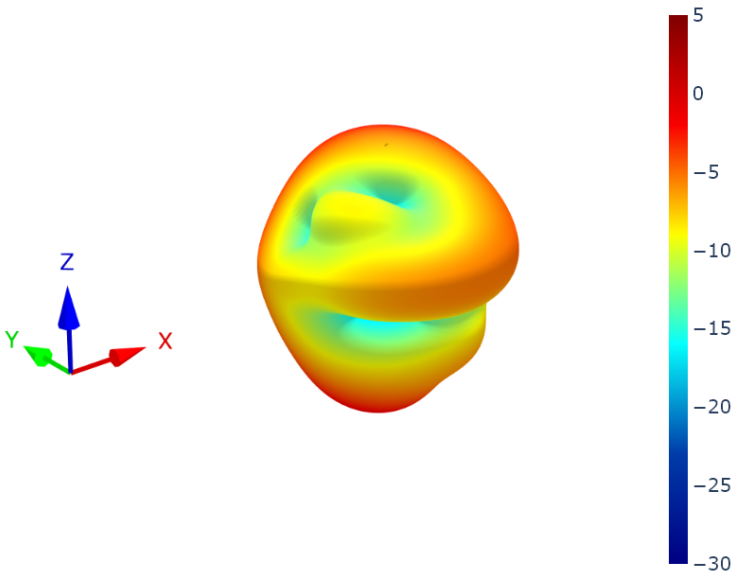

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

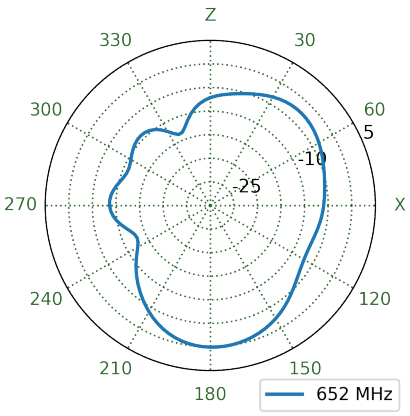
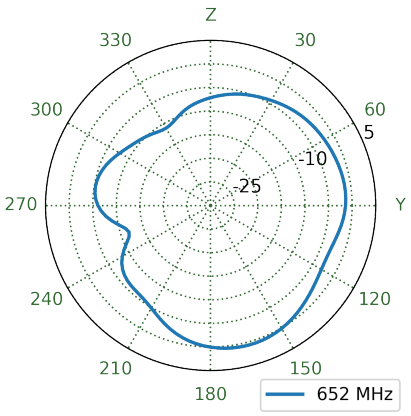
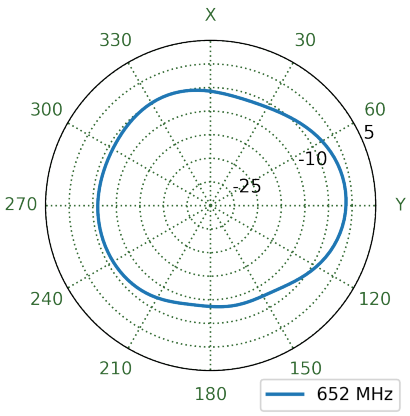
## 6.4 30x30cm Ground Plane Patterns at 652 MHz – 30cm



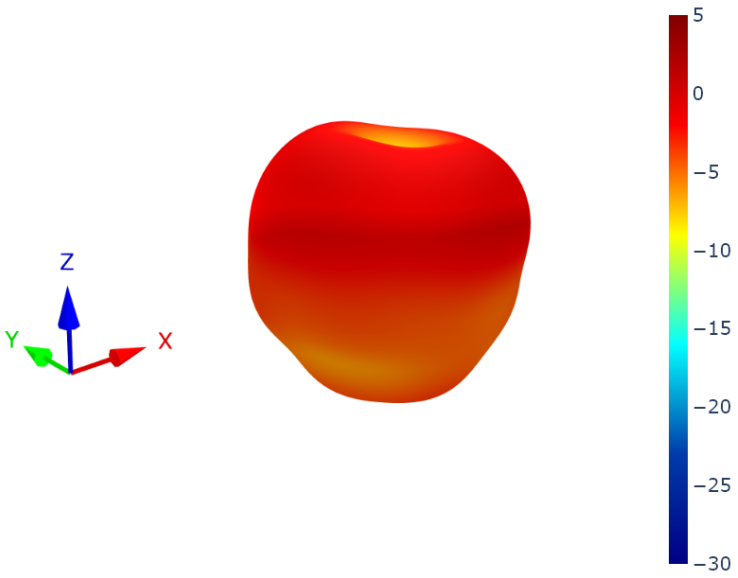

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

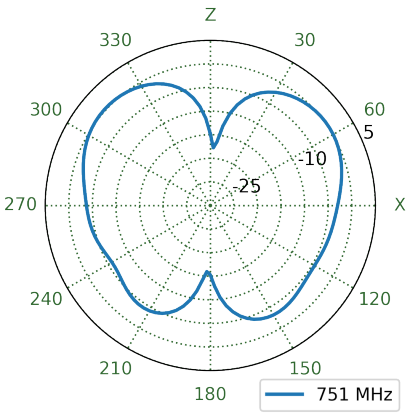
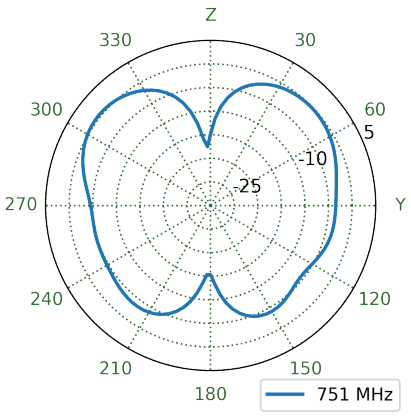
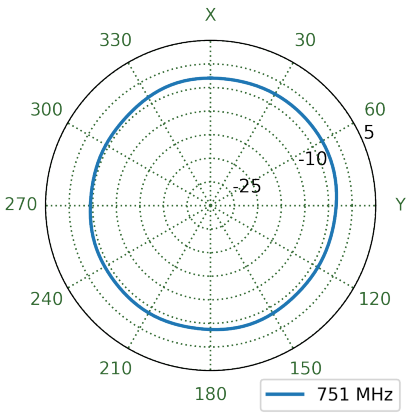
## 6.5 Free Space Patterns at 652 MHz – 30cm



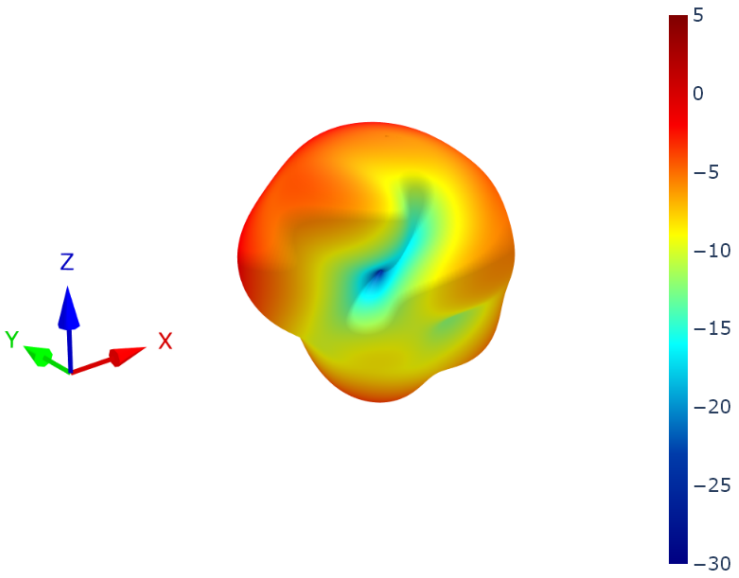

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

## 6.6 30x30cm Ground Plane Patterns at 751 MHz – 2m

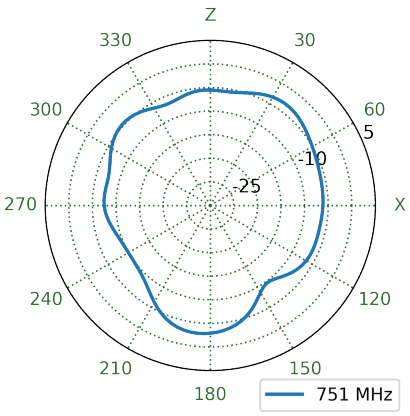


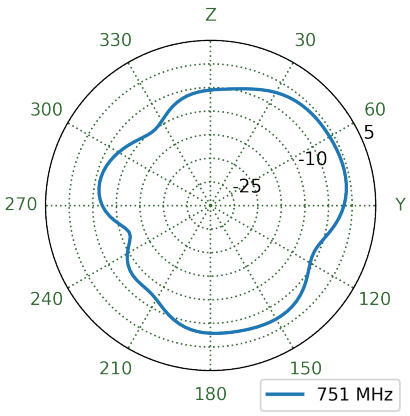

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

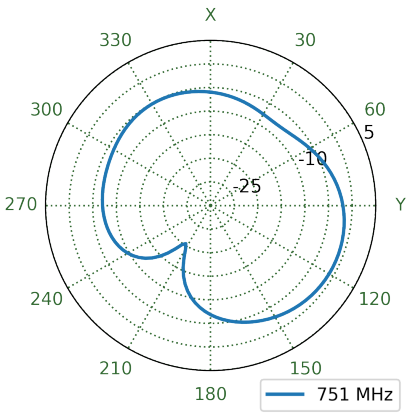
## 6.7 Free Space Patterns at 751 MHz – 2m



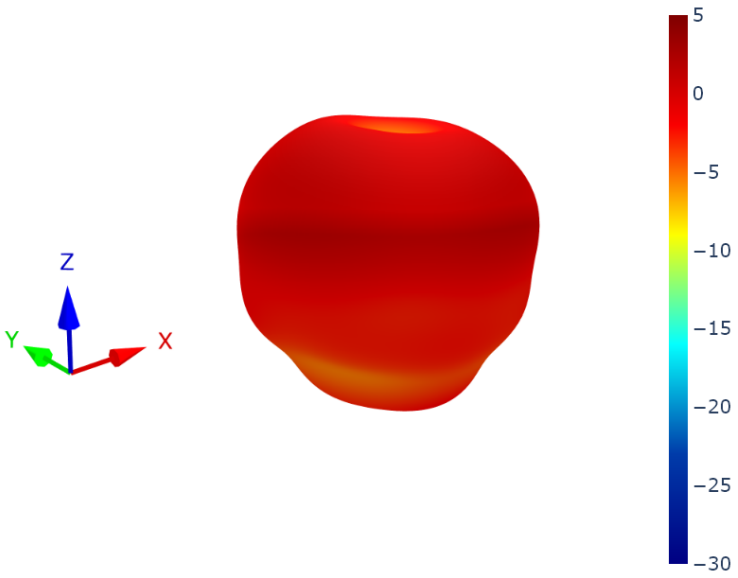

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

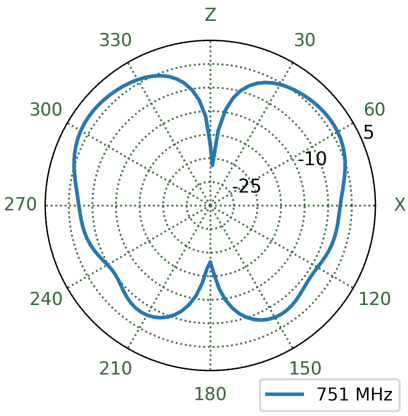
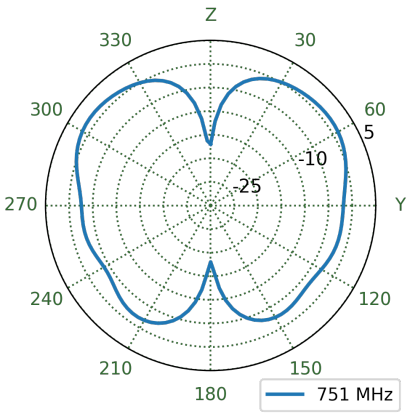
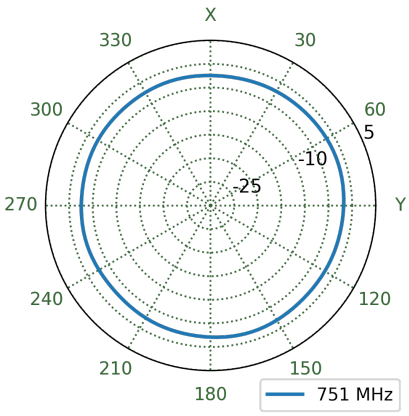


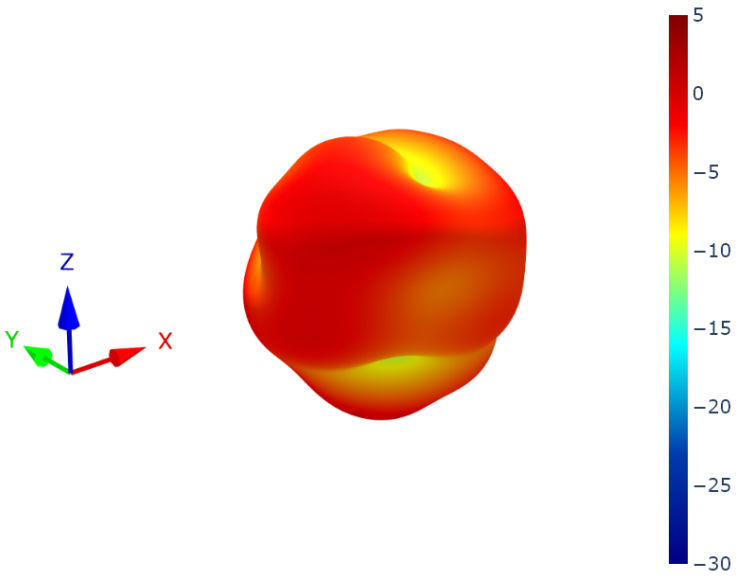



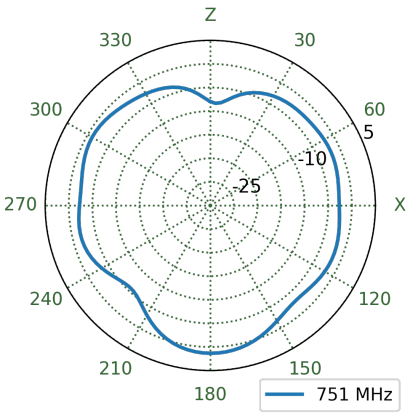
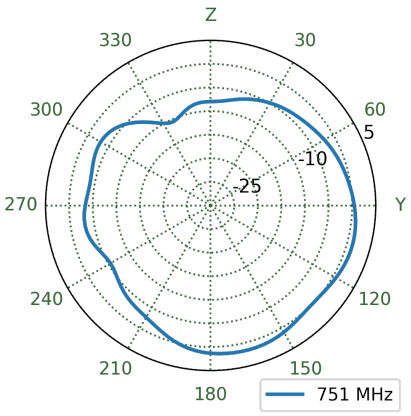
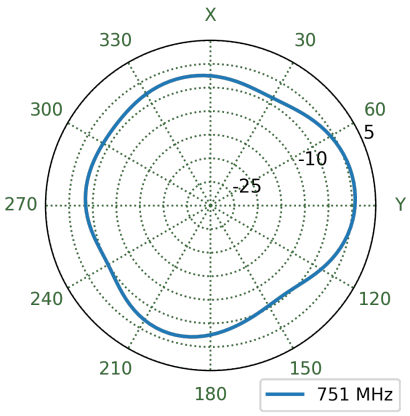
## 6.8 30x30cm Ground Plane Patterns at 751 MHz – 30cm



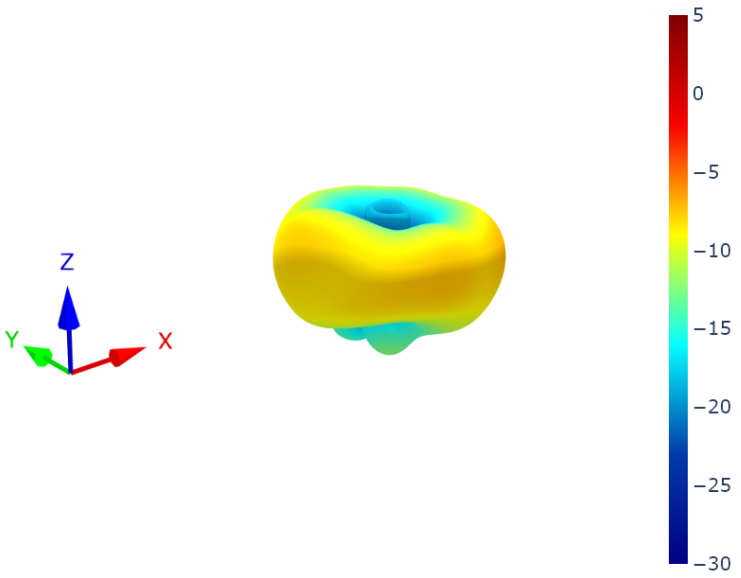

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

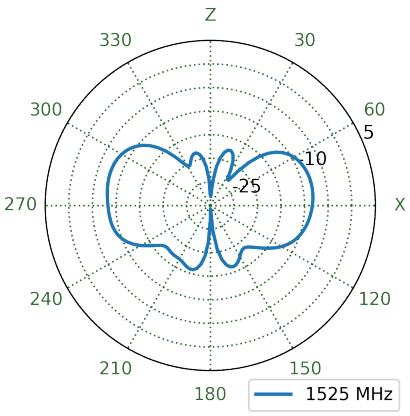
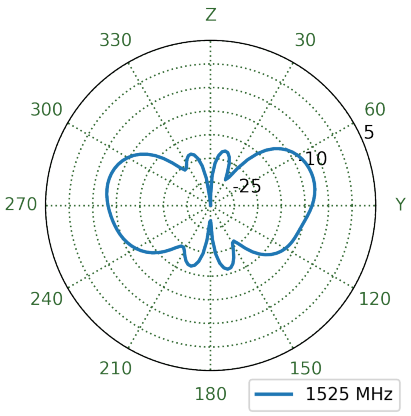
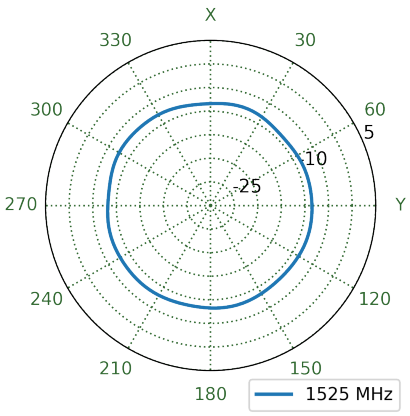
## 6.9 Free Space Patterns at 751 MHz – 30cm



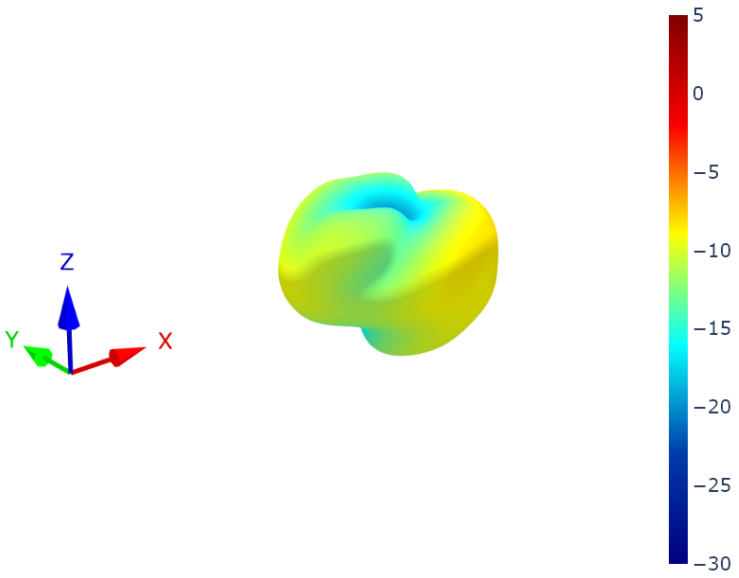

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

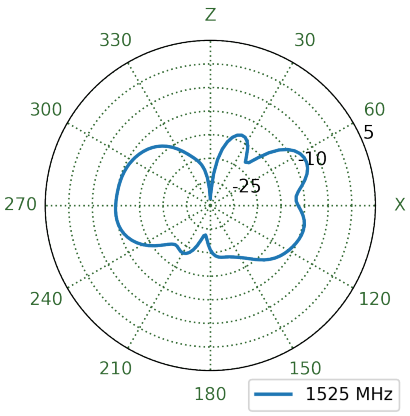
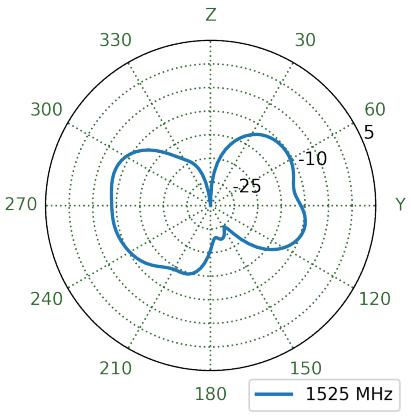
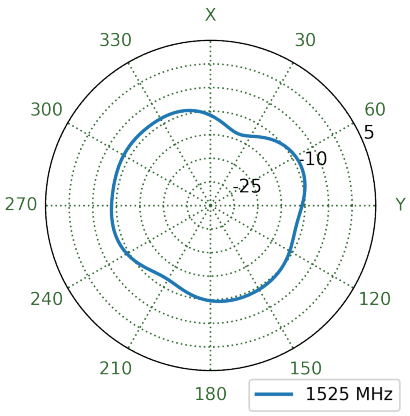
## 6.10 30x30cm Ground Plane Patterns at 1525 MHz – 2m



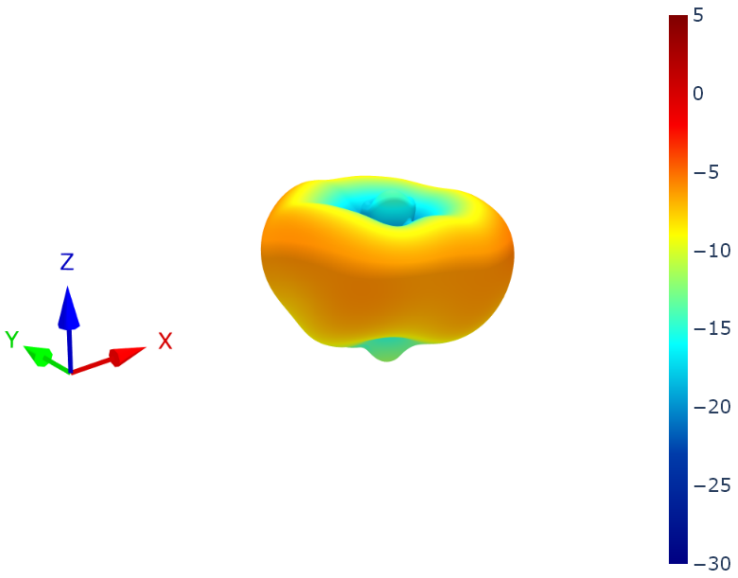

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

## 6.11 Free Space Patterns at 1525 MHz – 2m

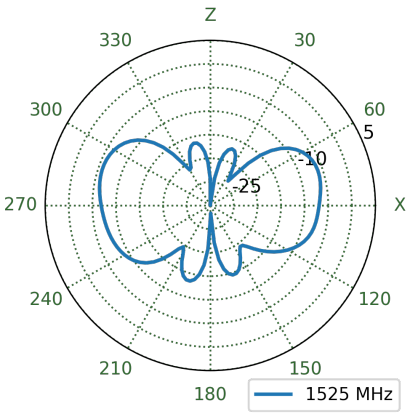


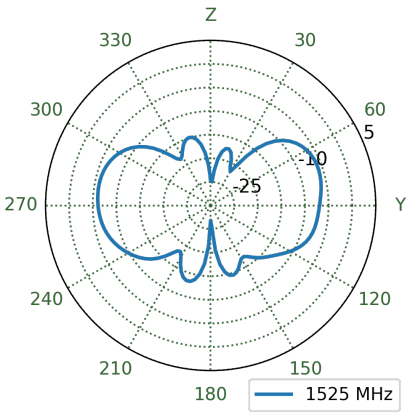

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

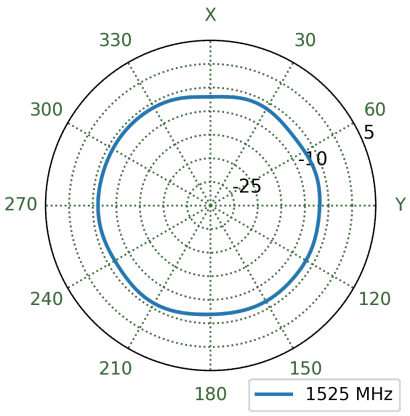
## 6.12 30x30cm Ground Plane Patterns at 1525 MHz – 30cm



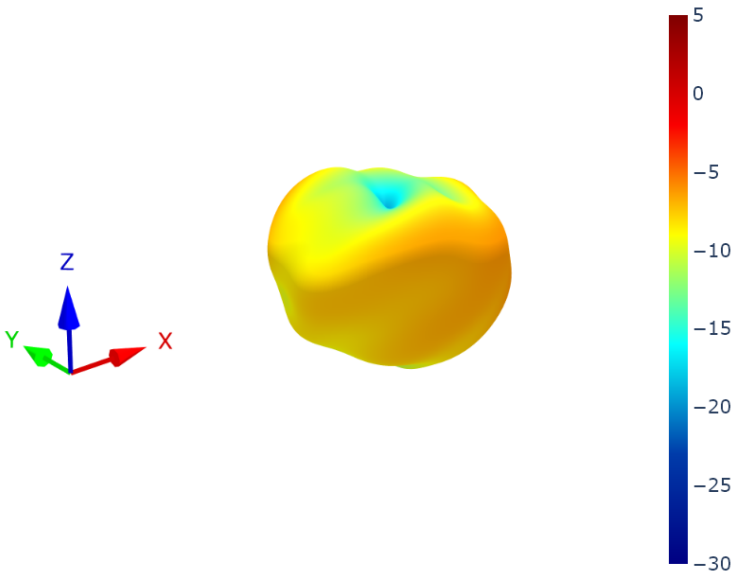

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

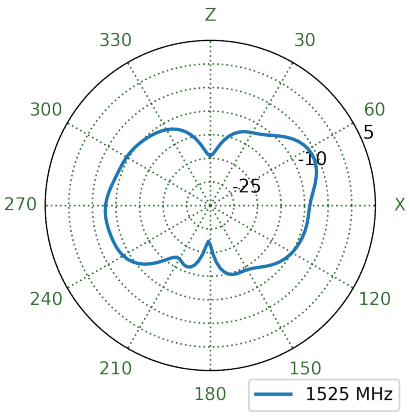
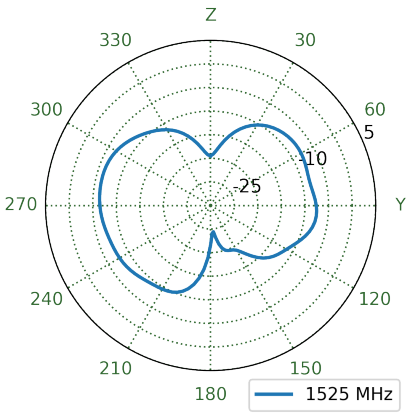
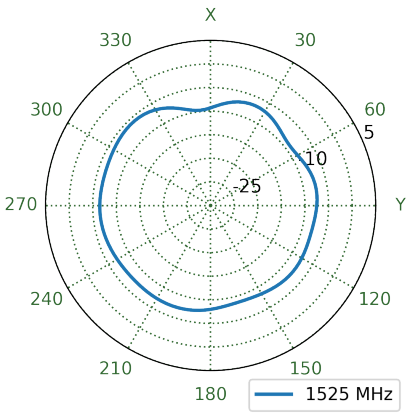


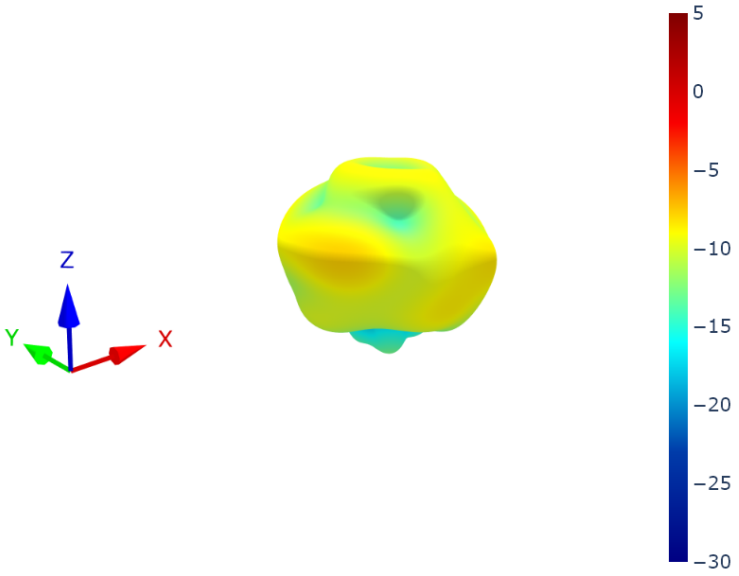



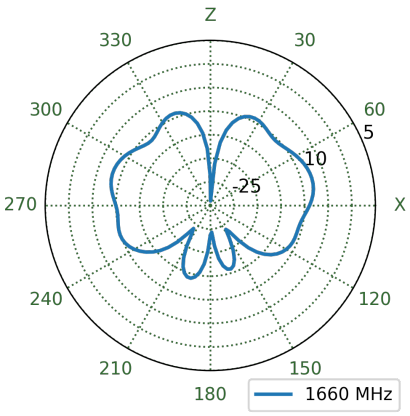
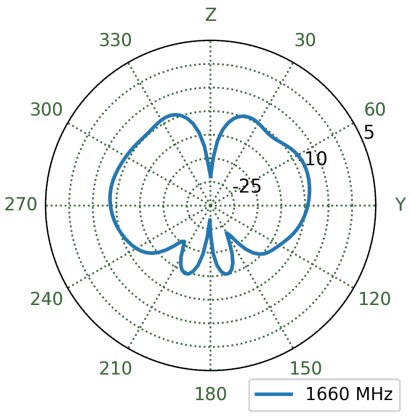
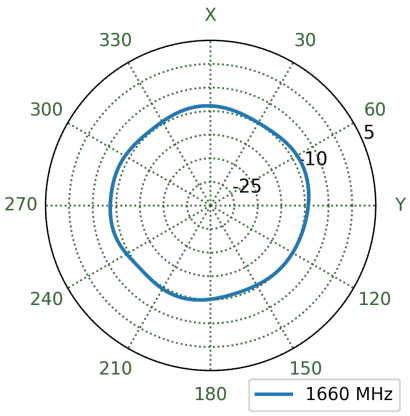
## 6.13 Free Space Patterns at 1525 MHz – 30cm



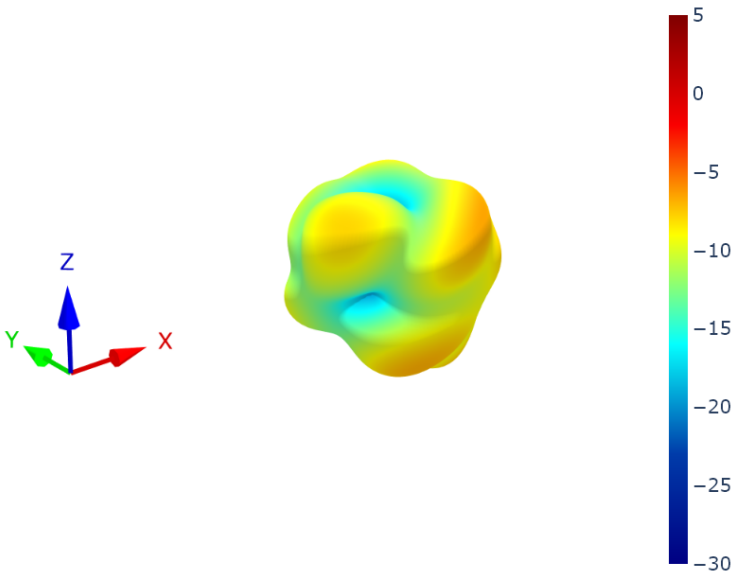

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

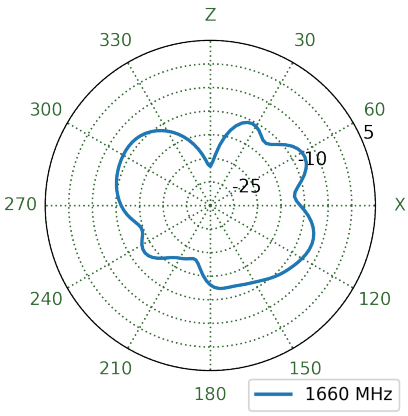
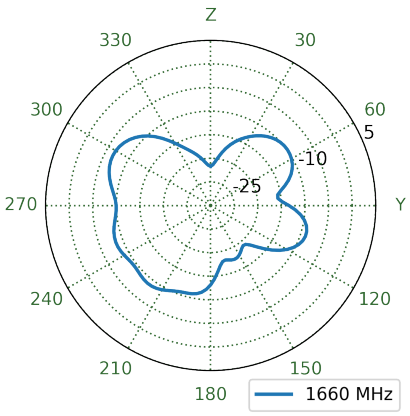
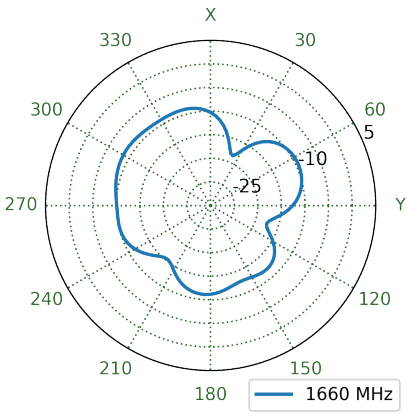
## 6.14 30x30cm Ground Plane Patterns at 1660 MHz – 2m



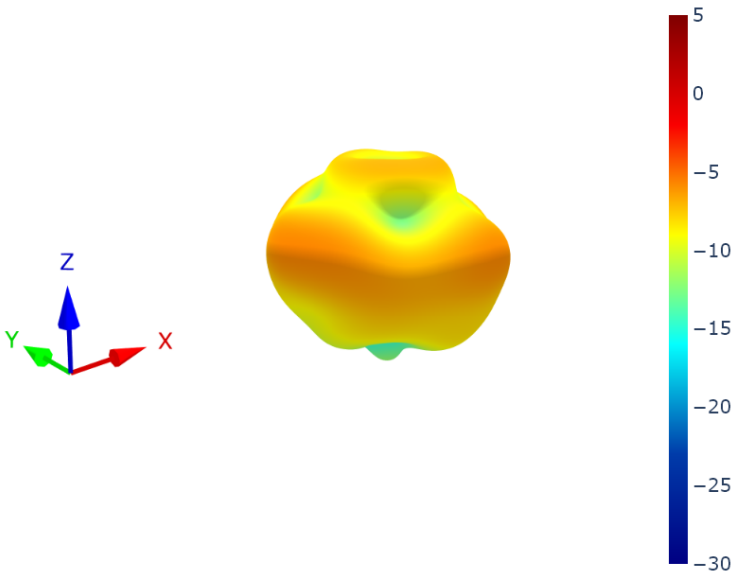

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

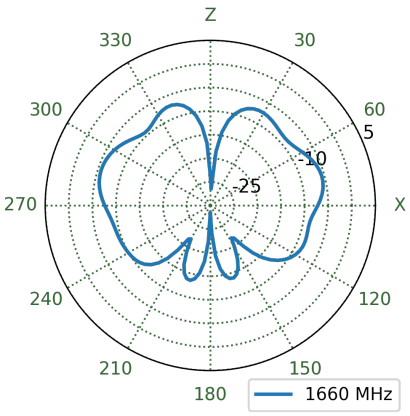
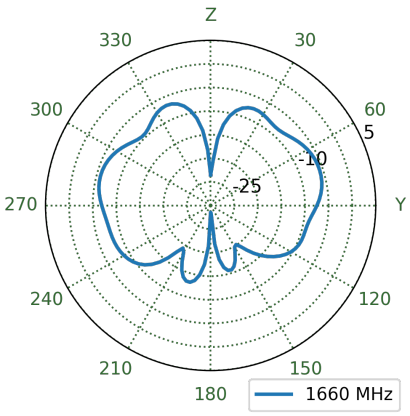
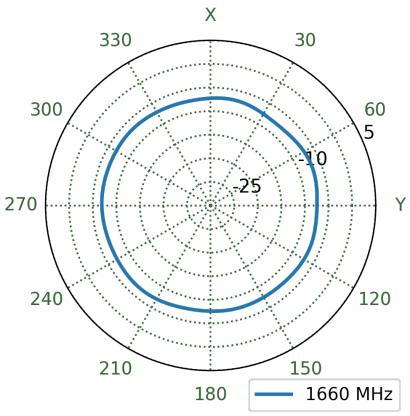
## 6.15 Free Space Patterns at 1660 MHz – 2m



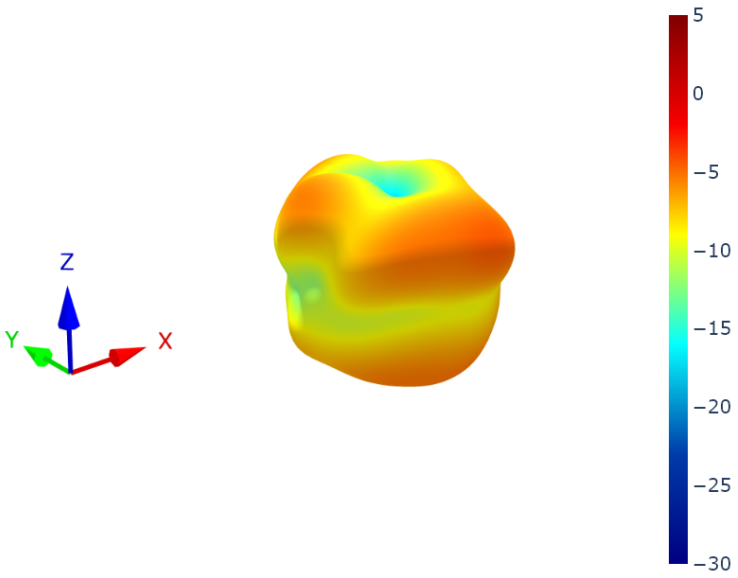

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

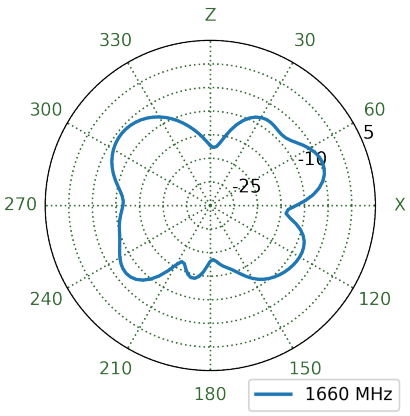
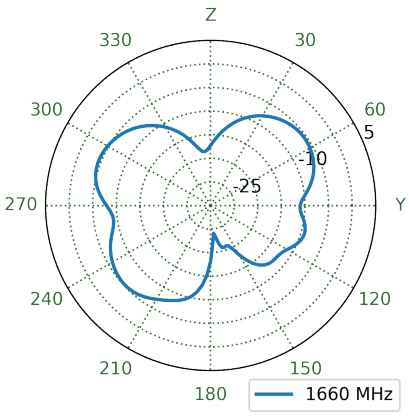
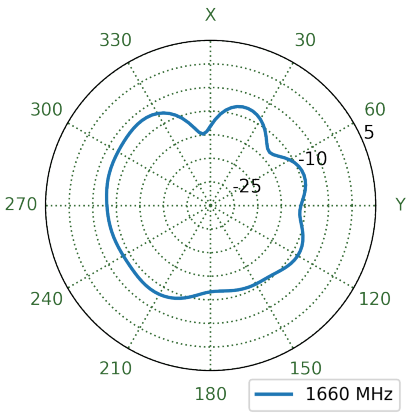
## 6.16 30x30cm Ground Plane Patterns at 1660 MHz – 30cm



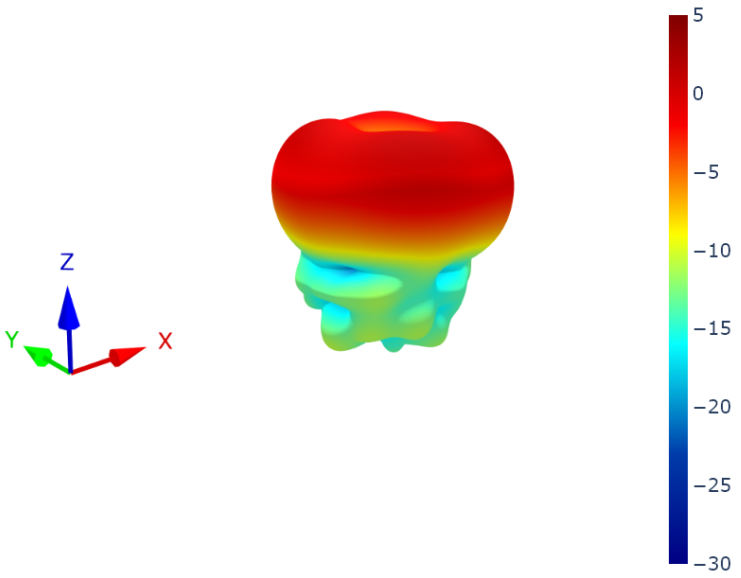

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

## 6.17 Free Space Patterns at 1660 MHz – 30cm

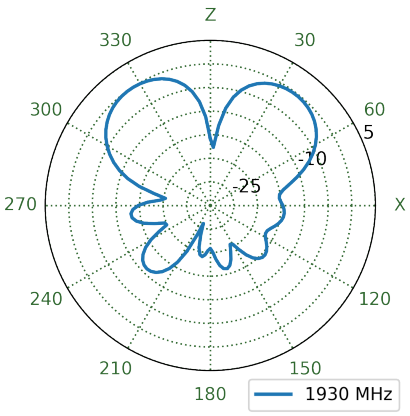


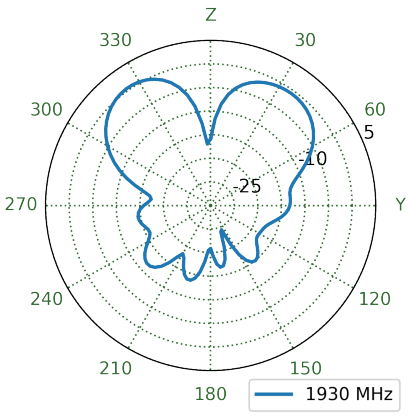

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

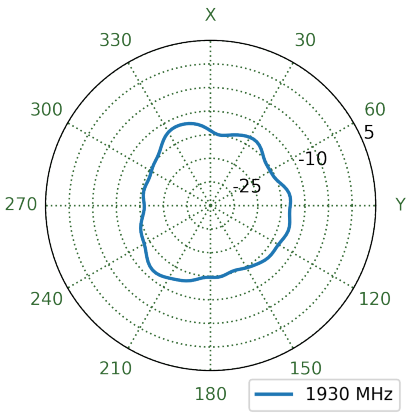
## 6.18 30x30cm Ground Plane Patterns at 1930 MHz – 2m



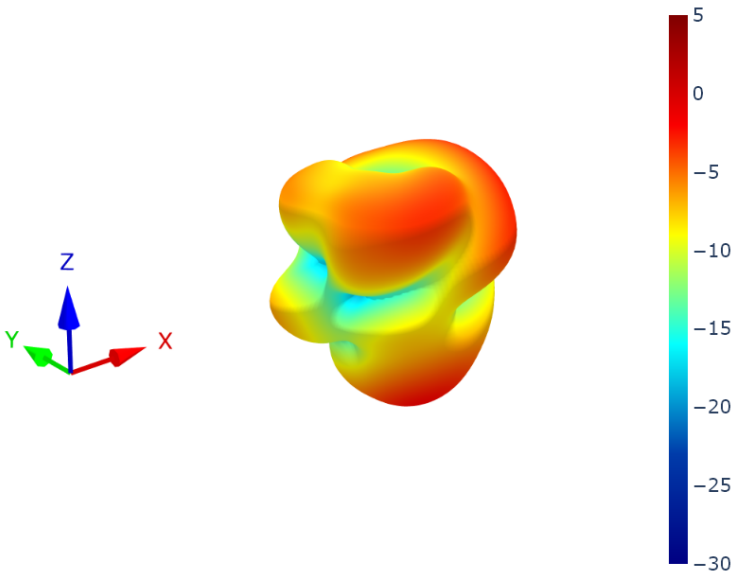

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

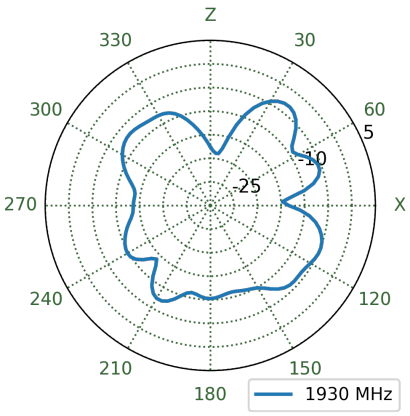
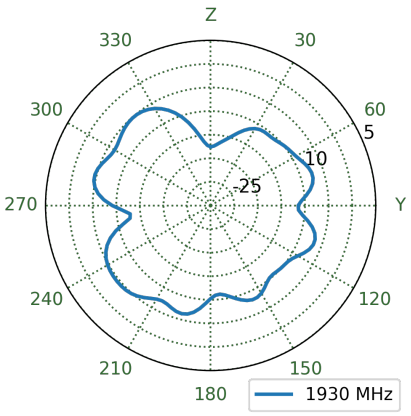
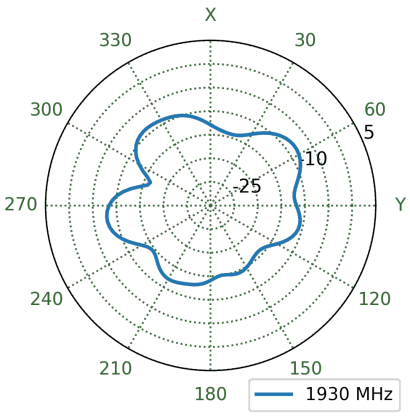


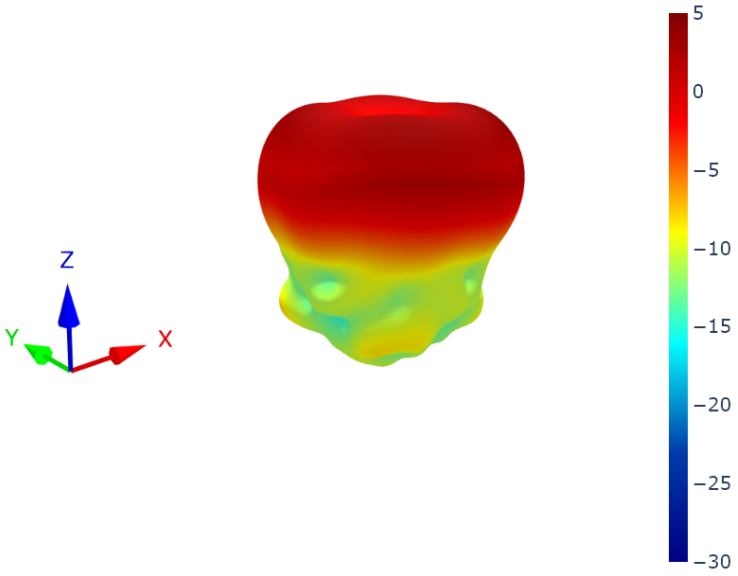



## 6.19 Free Space Patterns at 1930 MHz – 2m

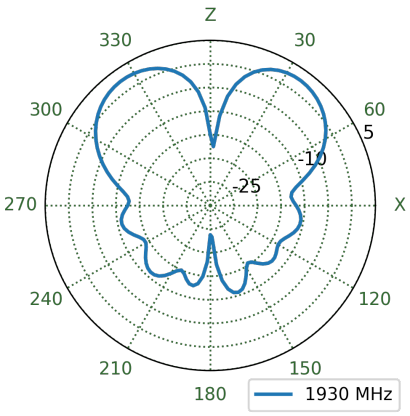


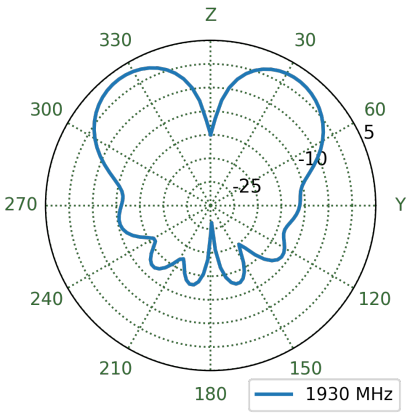

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

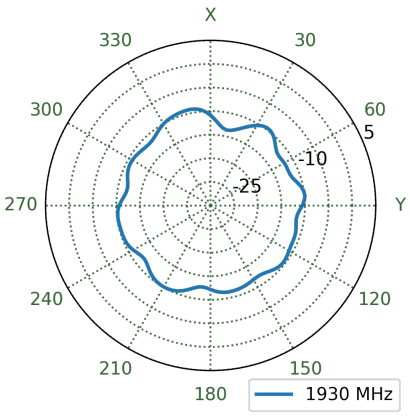
## 6.20 30x30cm Ground Plane Patterns at 1930 MHz – 30cm



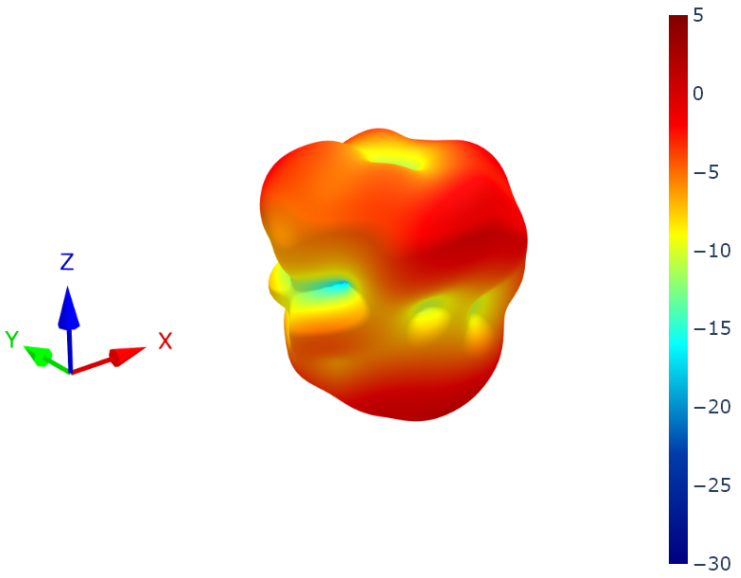

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

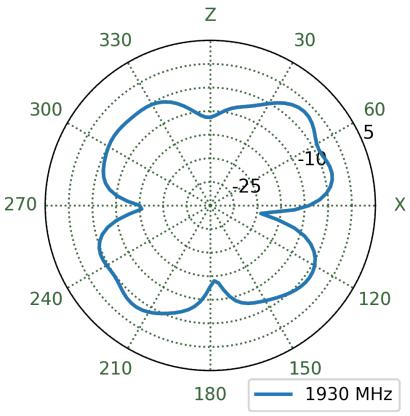
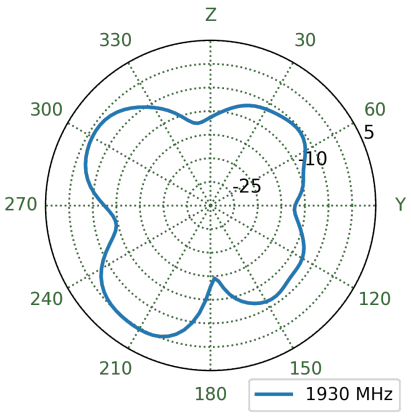
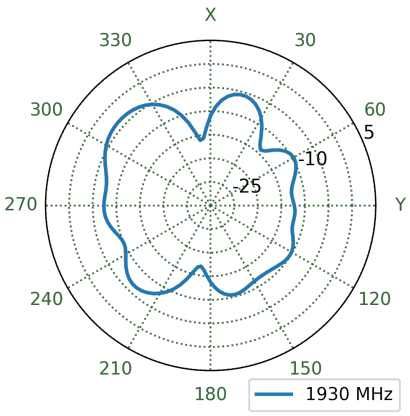


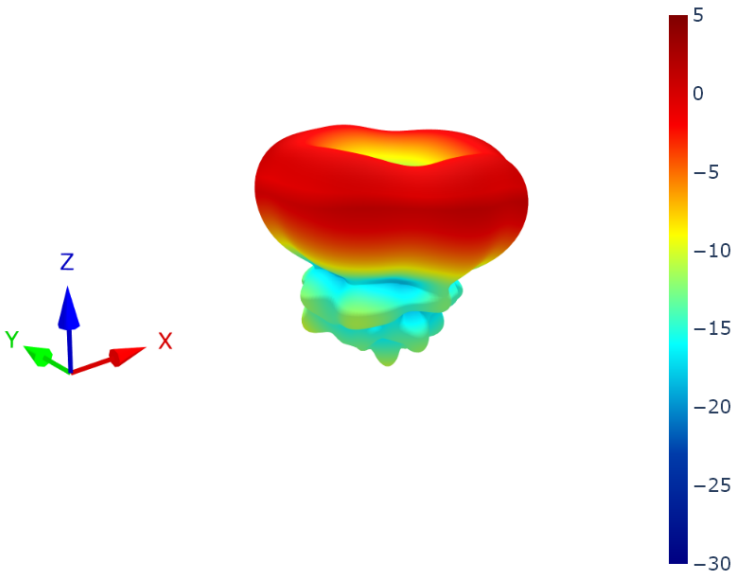



## 6.21 Free Space Patterns at 1930 MHz – 30cm

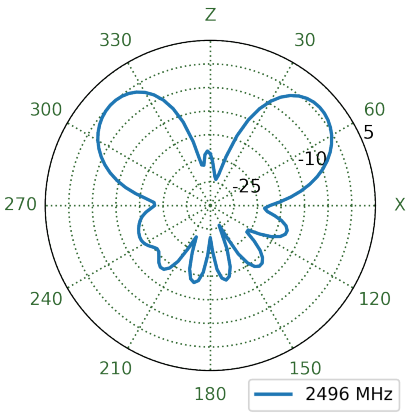


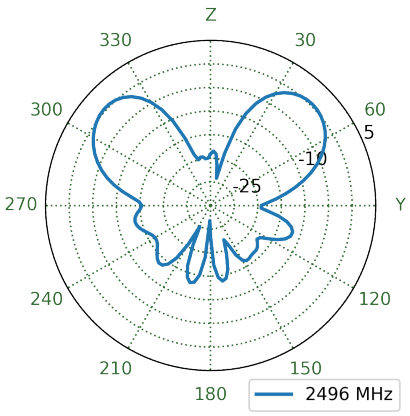

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

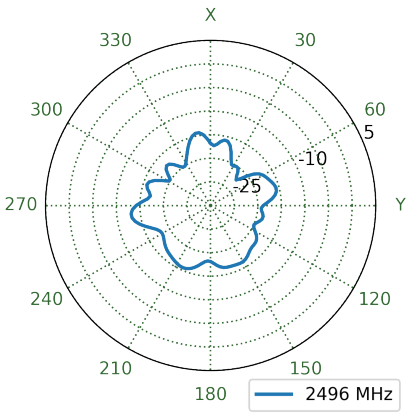
## 6.22 30x30cm Ground Plane Patterns at 2496 MHz – 2m



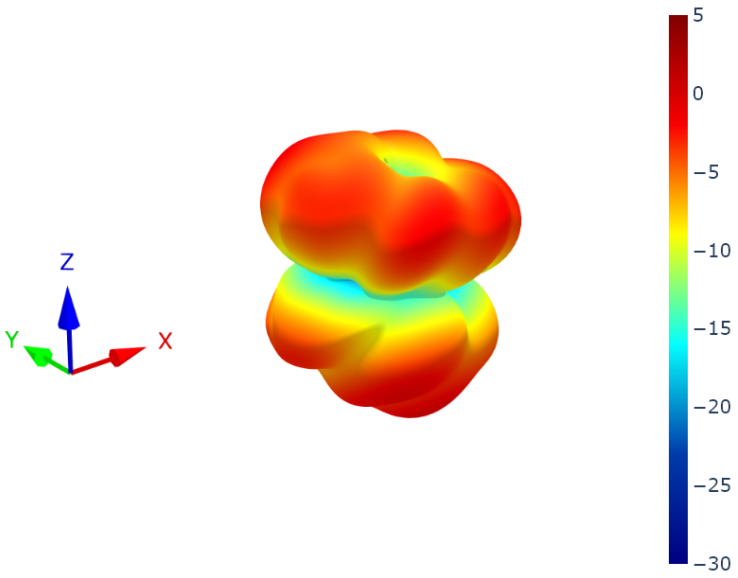

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

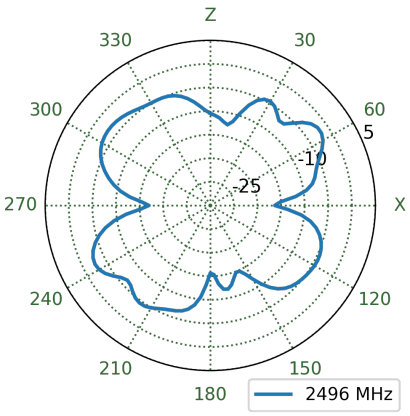
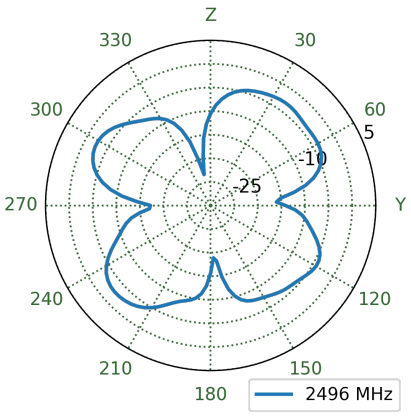
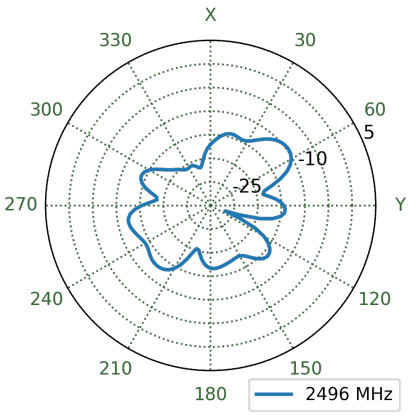


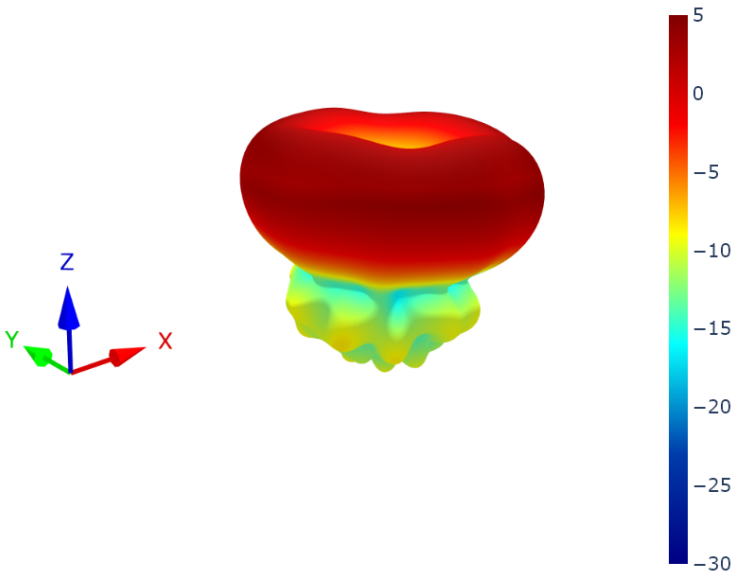



## 6.23 Free Space Patterns at 2496 MHz – 2m

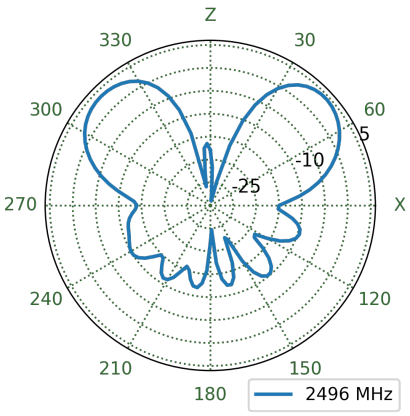


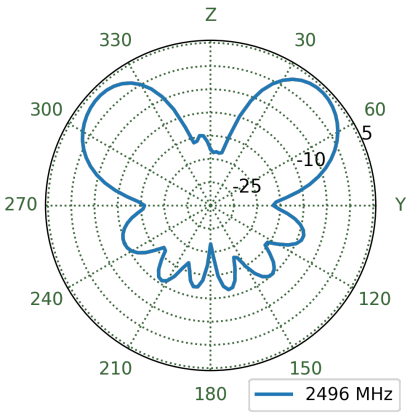

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

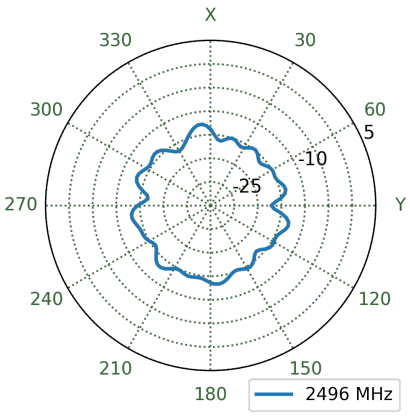
## 6.24 30x30cm Ground Plane Patterns at 2496 MHz – 30cm



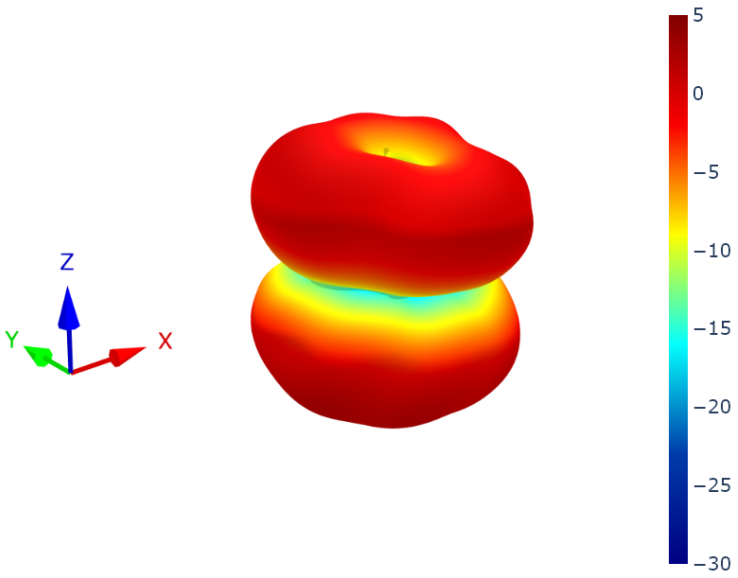

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

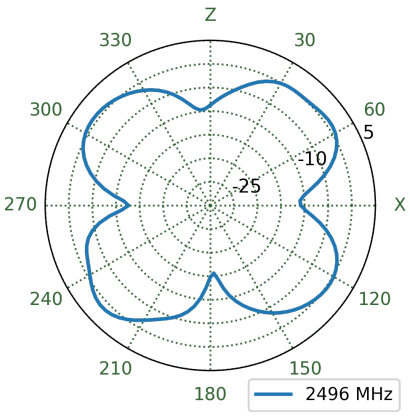
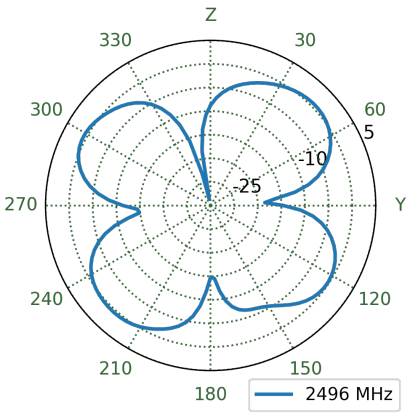
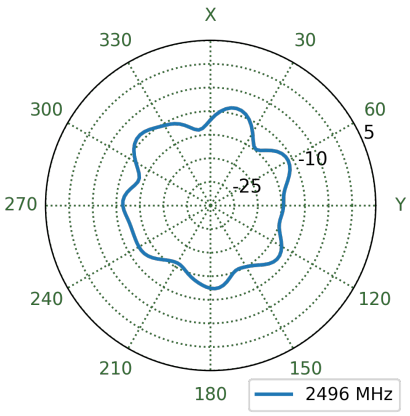


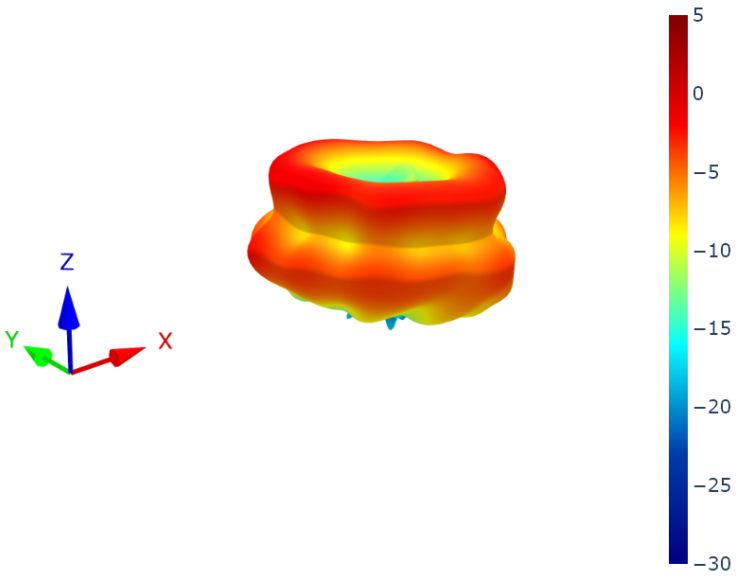



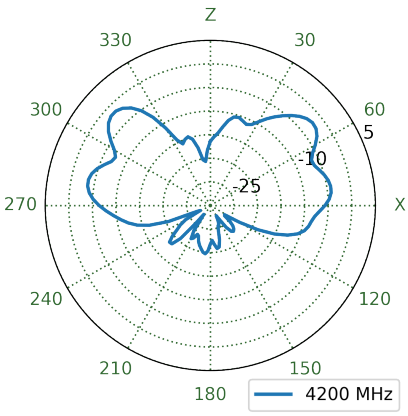
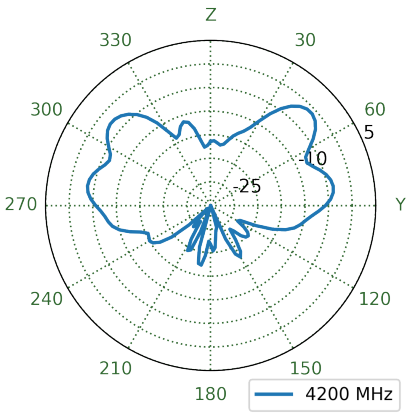
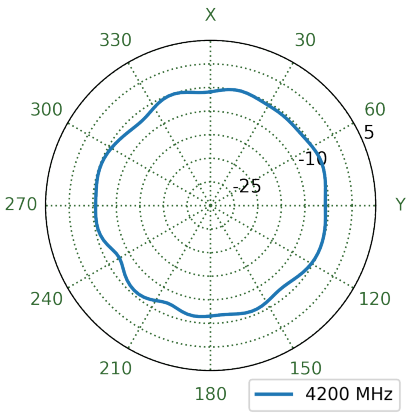
## 6.25 Free Space Patterns at 2496 MHz – 30cm



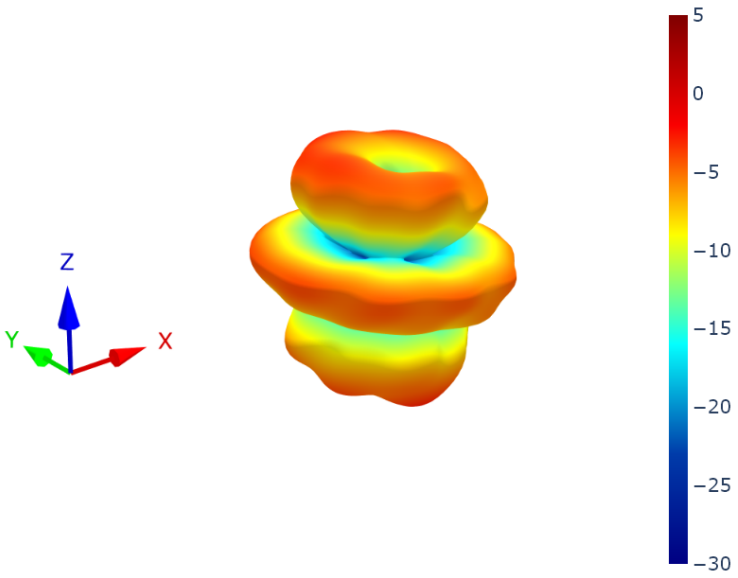

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

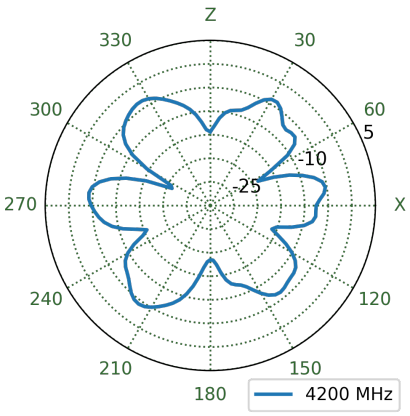
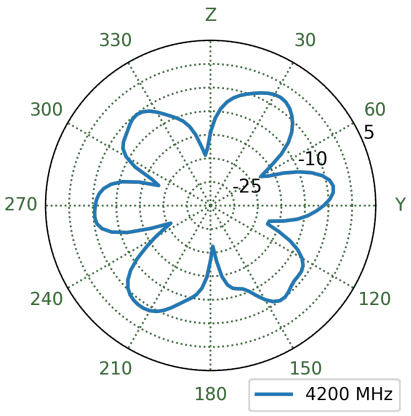
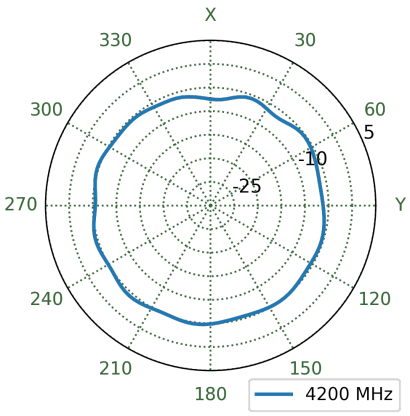
## 6.26 30x30cm Ground Plane Patterns at 4200 MHz – 2m



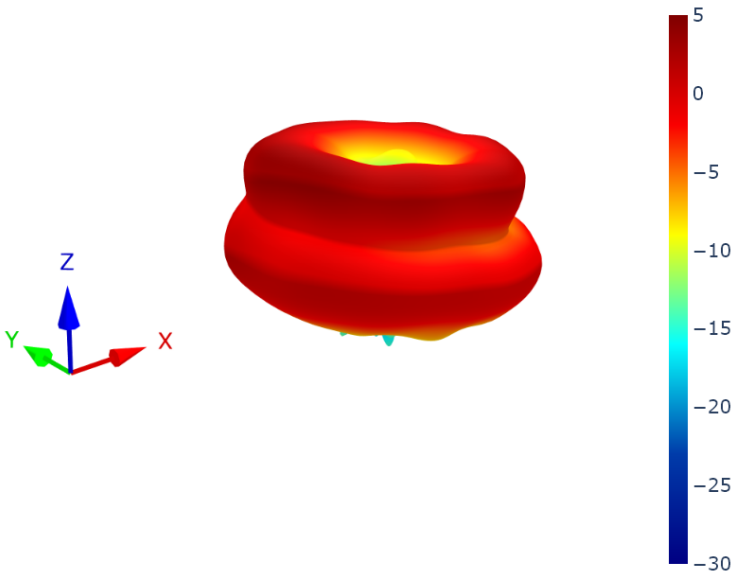

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

## 6.27 Free Space Patterns at 4200 MHz – 30cm

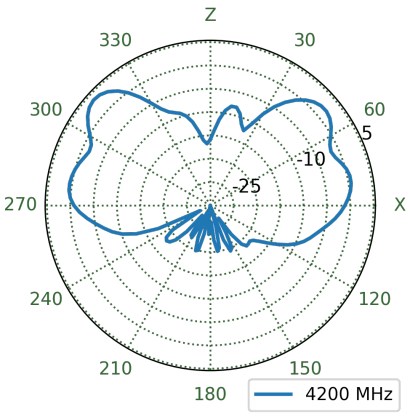


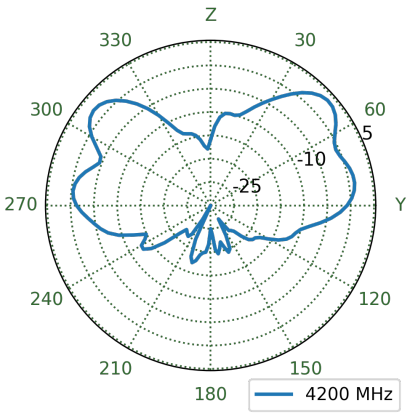

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

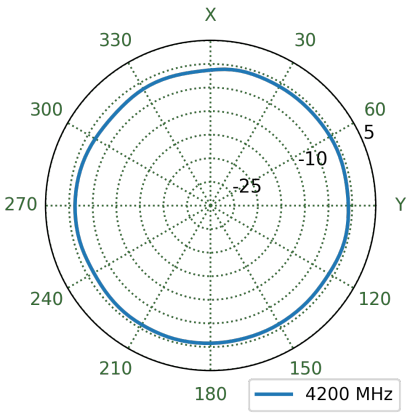
## 6.28 30x30cm Ground Plane Patterns at 4200 MHz – 30cm



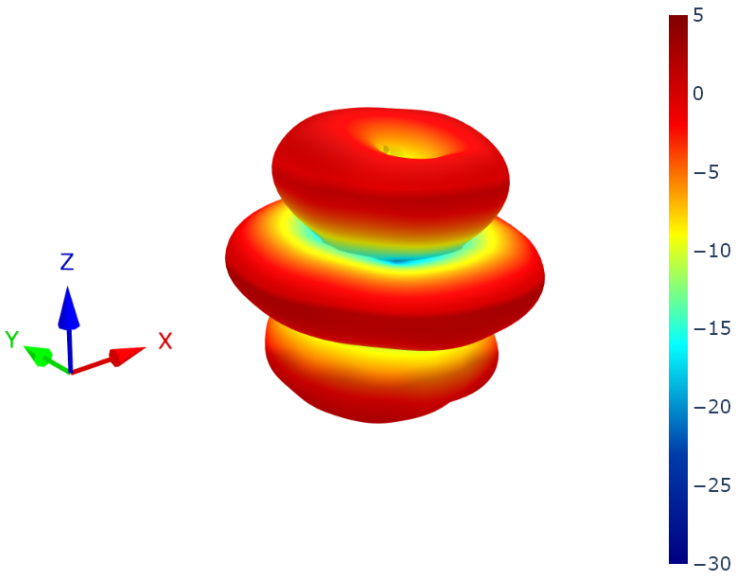

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|



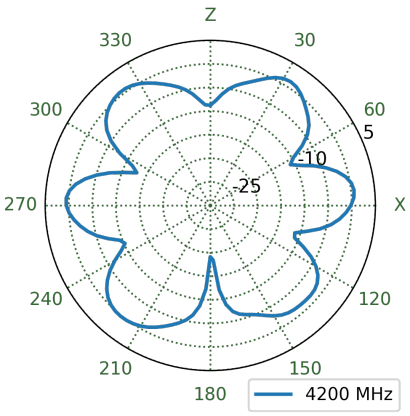



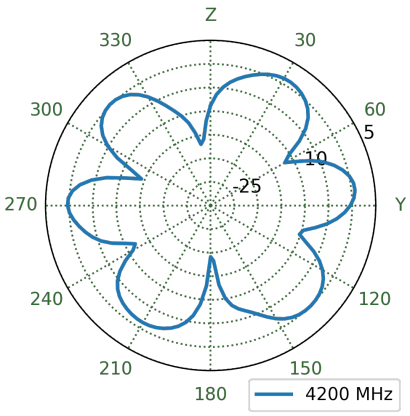



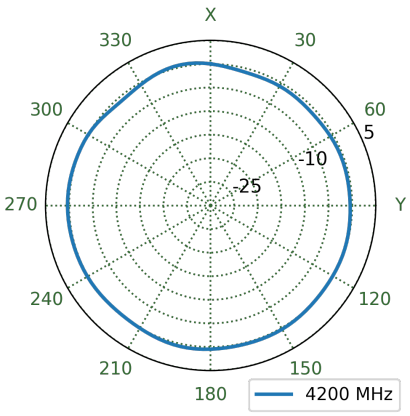
## 6.29 Free Space Patterns at 4200 MHz – 30cm



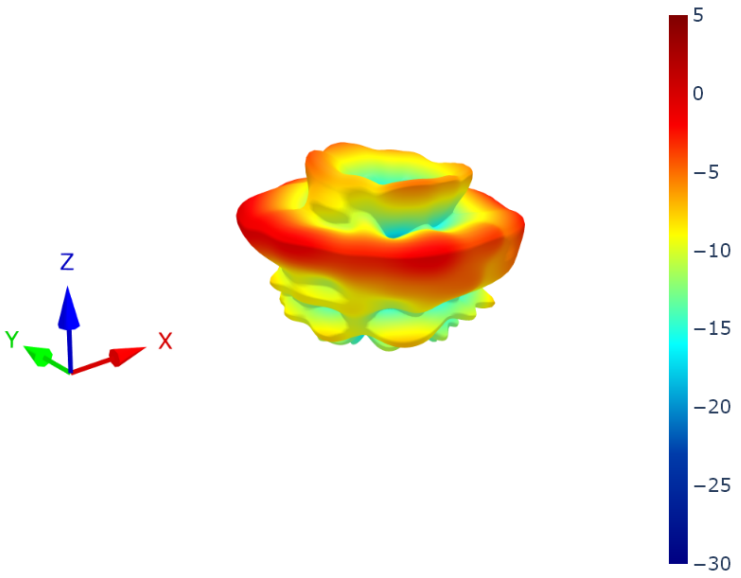

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

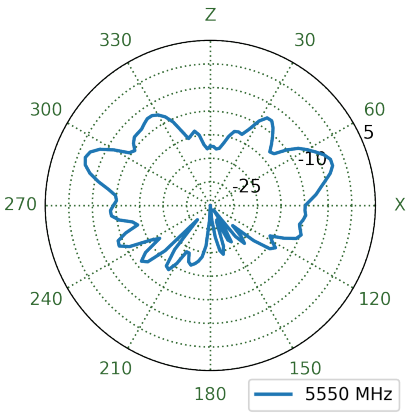
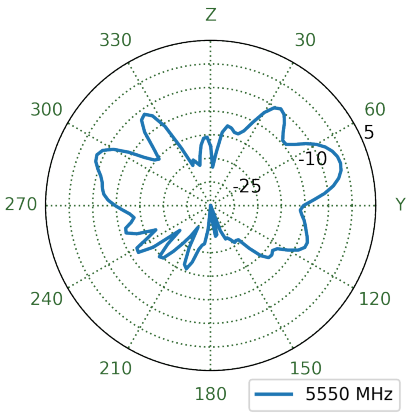
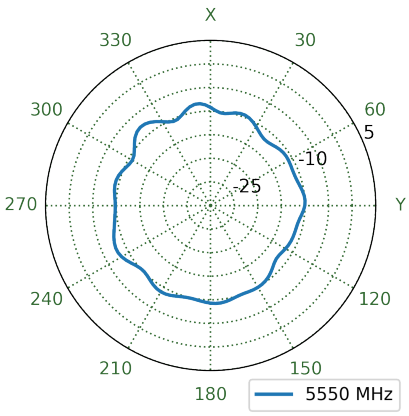


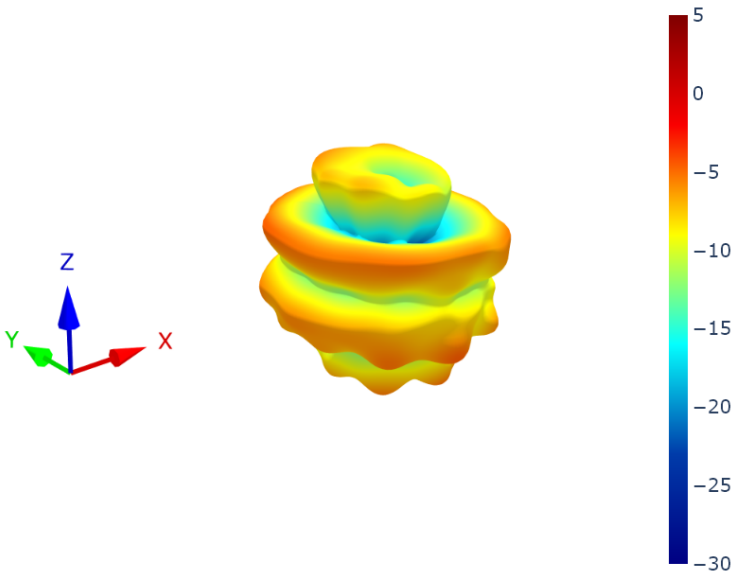



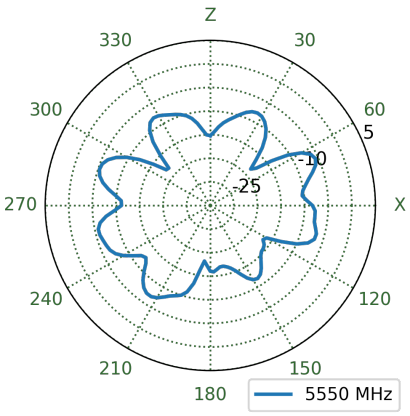
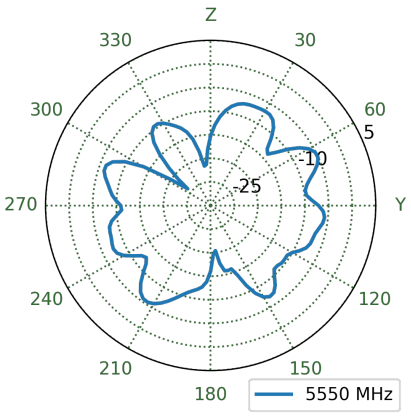
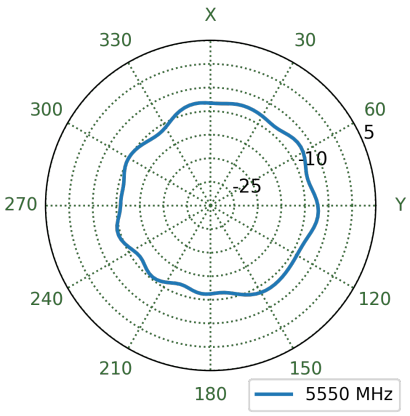
## 6.30 30x30cm Ground Plane Patterns at 5550 MHz – 2m



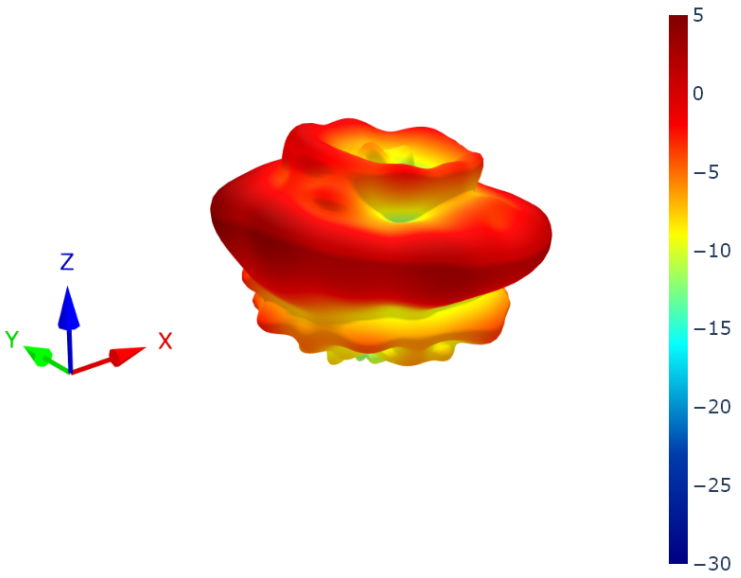

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

## 6.31 Free Space Patterns at 5550 MHz – 2m

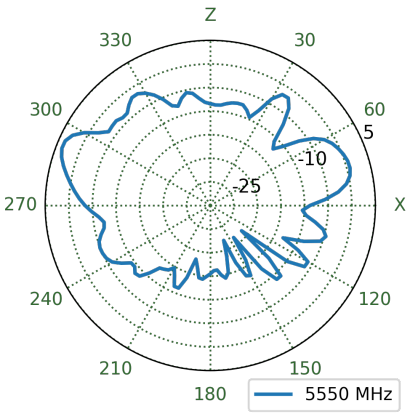


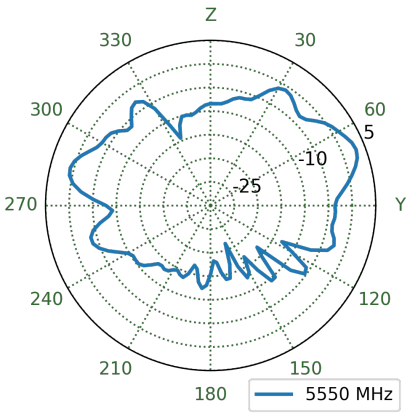

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

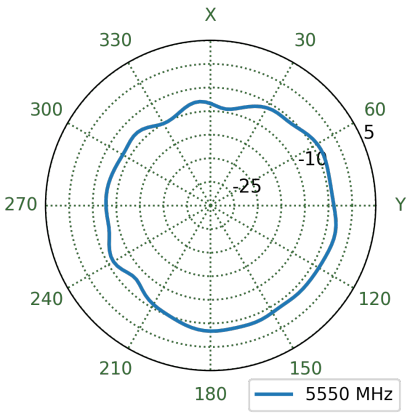
## 6.32 30x30cm Ground Plane Patterns at 5550 MHz – 30cm



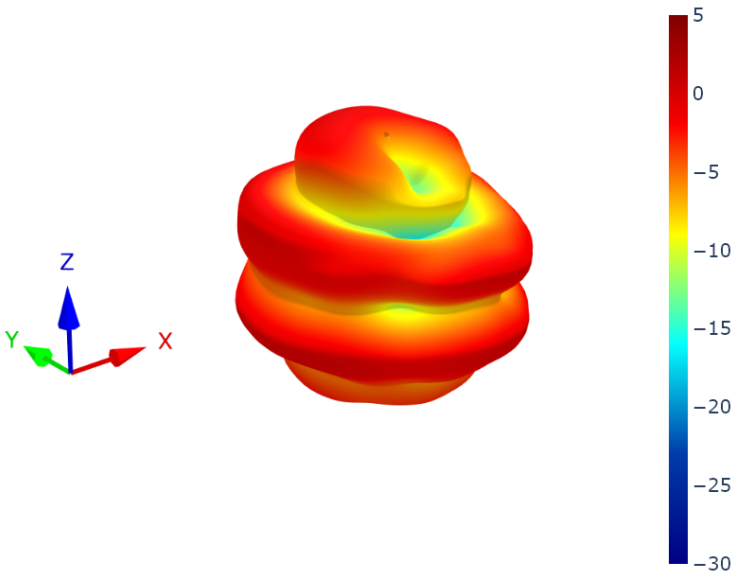

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

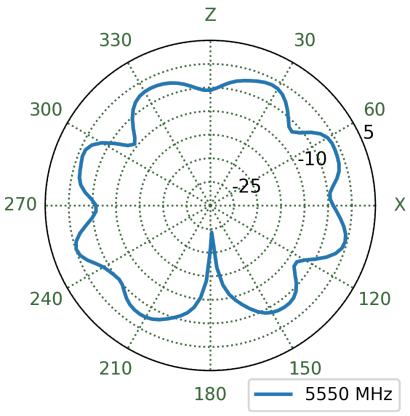
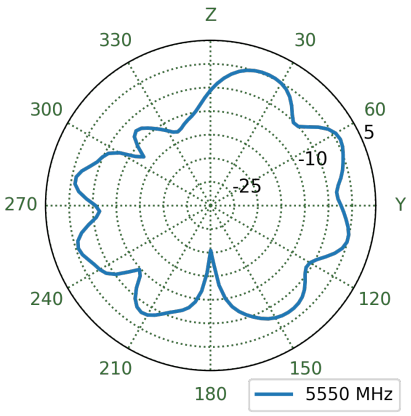
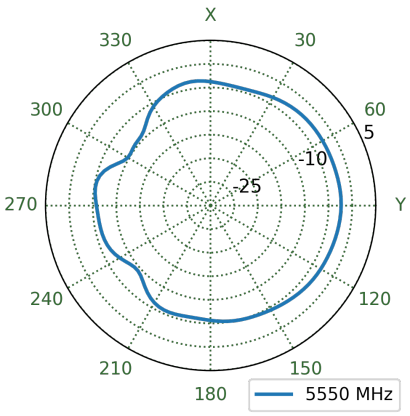


## 6.33 Free Space Patterns at 5550 MHz – 30cm




| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

Changelog for the datasheet

## SPE-26-8-171 - GA.140.01.2000D

| Revision: A (Original First Release) | |
|---|---|
| Date: | 2026-08-07 |
| Notes: | Initial Release |
| Author: | Gary West |

**Previous Revisions**

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