



TAOGLAS®



Datasheet

Part No:
TI.08.C.0111

Description

868MHz and 915MHz ISM Band Terminal Antenna

Features:

868MHz and 915MHz ISM/LoRA Band
Omni-Directional Radiation Pattern
Robust, Lightweight TPEE Enclosure
Dimensions: Ø7x 54mm
Connector: SMA Male
RoHS & Reach Compliant

| | | |
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Taiwan
ISO 9001:2015
Certified



1. Introduction



The TI.08.C.0111 is a powerful ISM band terminal mount antenna for emerging 868MHz and 915MHz LPWA technologies including LoRa and Helium. It has 25% efficiency in free space but performs best, with an efficiency of up to 78%, when mounted on a ground plane.

It easily attaches externally to a user device via an SMA male straight connector and is therefore a quick and easy solution, ready for immediate deployment. The robust and ruggedized TPEE housing makes it ideal in even the most demanding of applications.

Typical applications include:

- Remote Monitoring
- Smart Metering
- Mesh Networks
- Helium Networks
- Smart Home

For further information or support with integrating this antenna into your device, please contact your regional Taoglas customer support team.

2. Specification

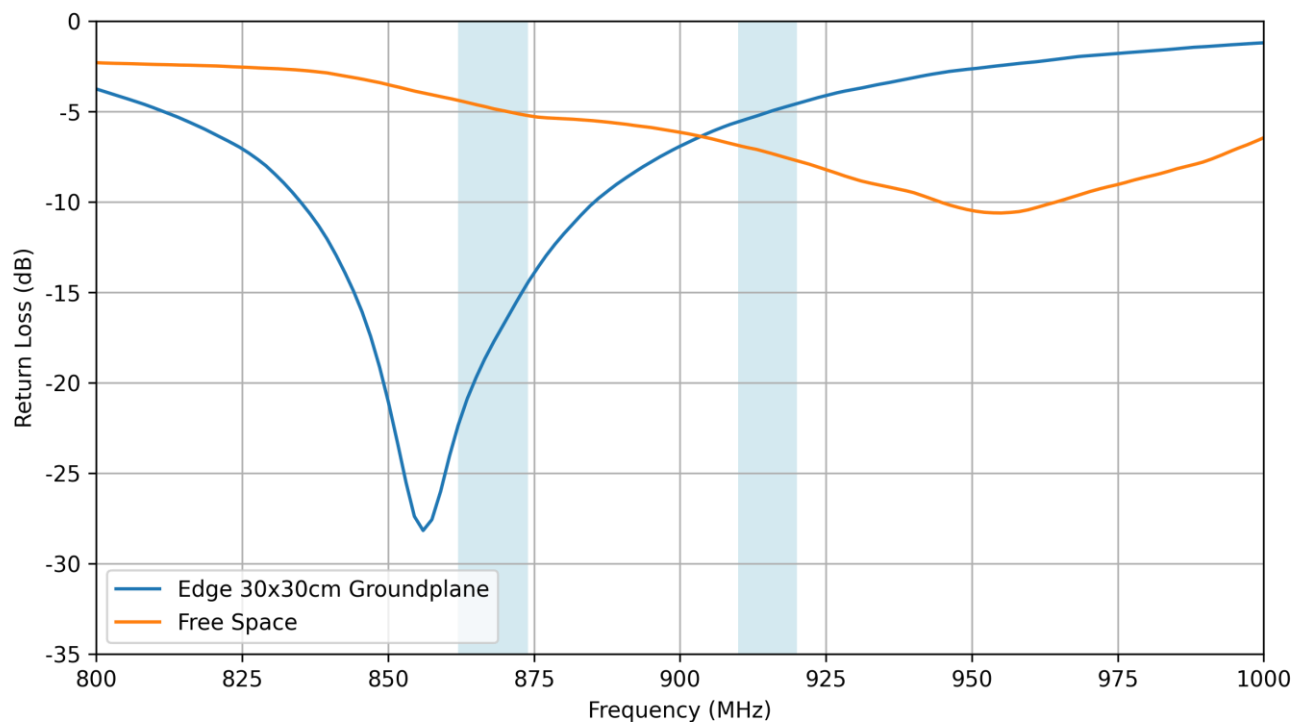
| Electrical | | | | | | | | | |
|------------|-----------------|--------------------------|----------------|-------------------|-----------------|-------------|--------------|-------------------|------------------|
| Band | Frequency (MHz) | Measurement | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Polarization | Radiation Pattern | Max. input power |
| 868MHz | 862-874 | Edge 30x30cm Groundplane | 61.5 | -2.11 | 1.87 | 50 Ω | Linear | Omni | 2W |
| | | Free Space | 29.9 | -5.24 | 0.90 | | | | |
| 915MHz | 910-920 | Edge 30x30cm Groundplane | 59.3 | -2.27 | 1.67 | | | | |
| | | Free Space | 38.7 | -4.12 | 1.42 | | | | |

| Mechanical | |
|------------|----------|
| Height | 54 mm |
| Diameter | 7 mm |
| Casing | TPEE |
| Connector | SMA Male |
| Colour | Black |
| Weight | 7g |

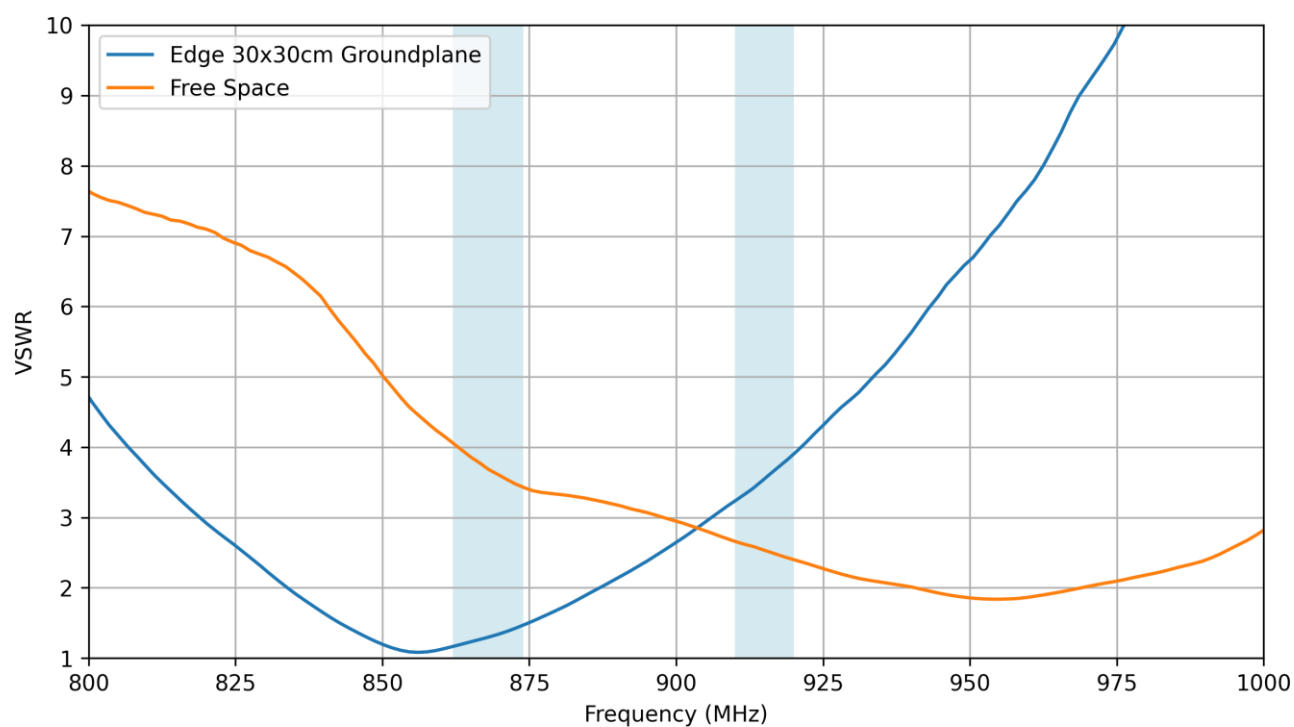
| Environmental | |
|-----------------------|----------------------------|
| Operation Temperature | -40°C to 85°C |
| Storage Temperature | -40°C to 85°C |
| Relative Humidity | Non-condensing 65°C 95% RH |

3. Antenna Characteristics

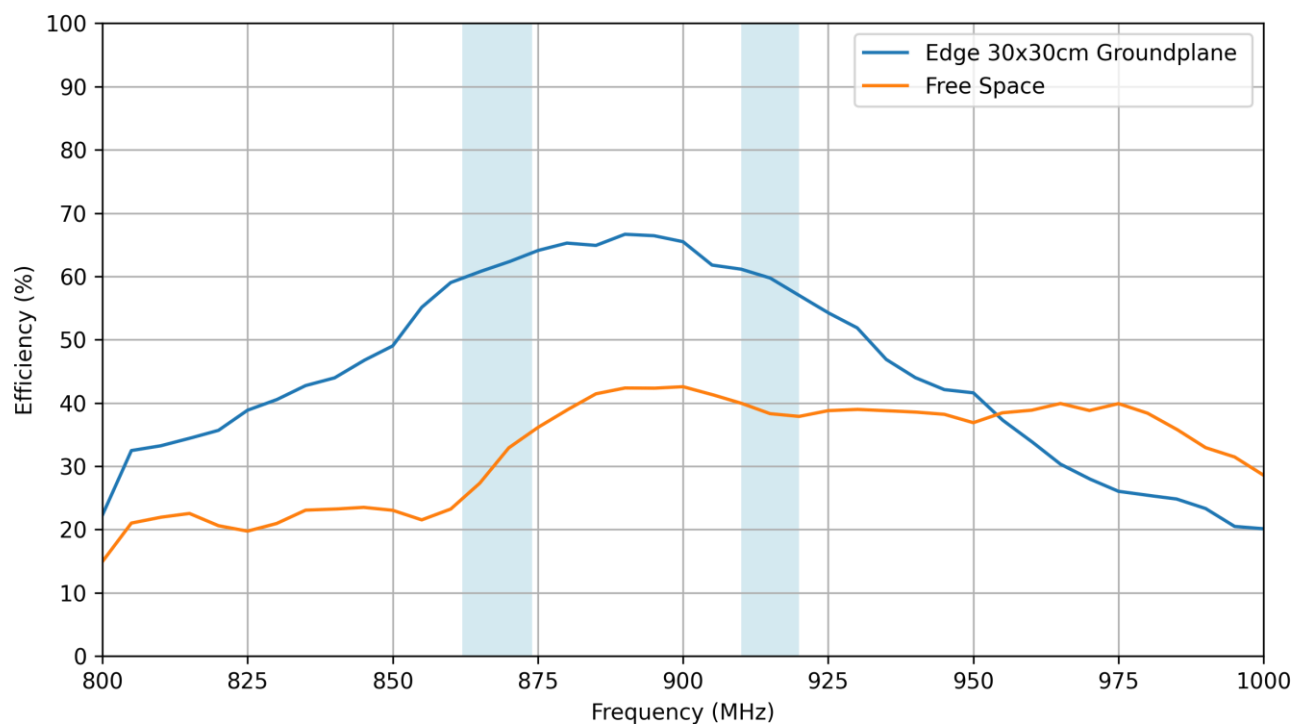
3.1 Return Loss



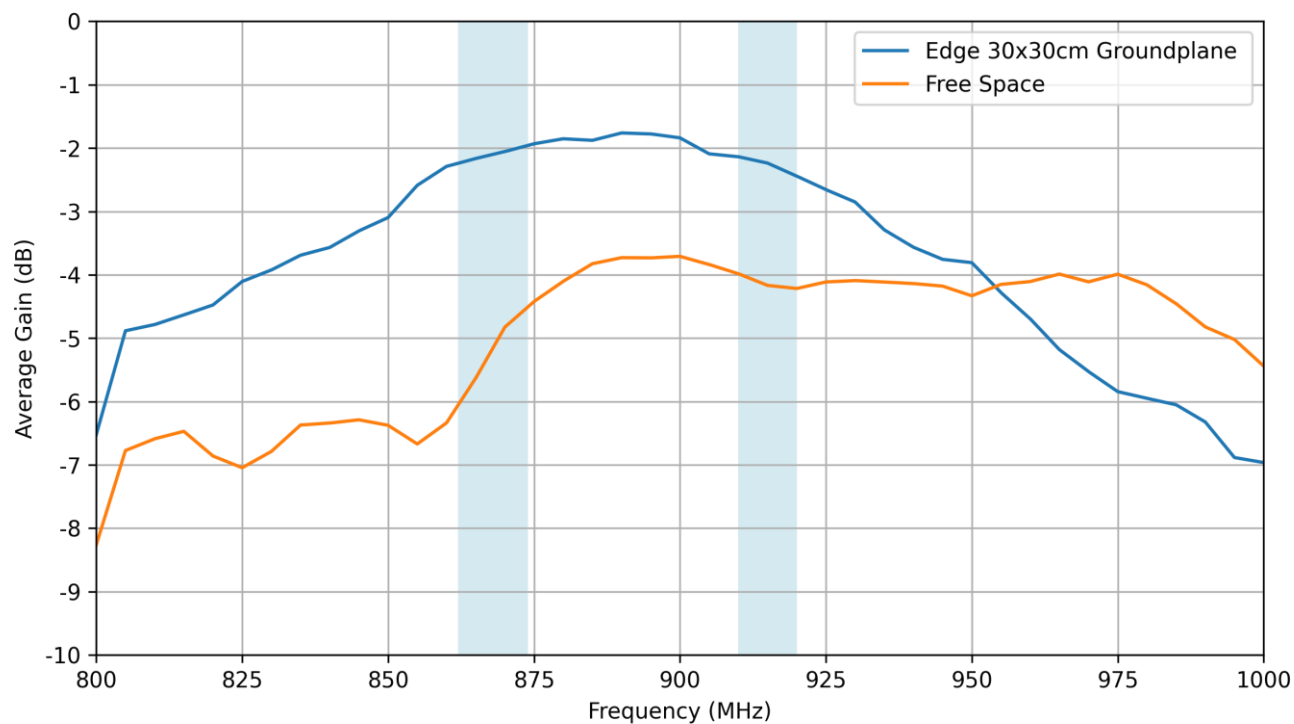
3.2 VSWR



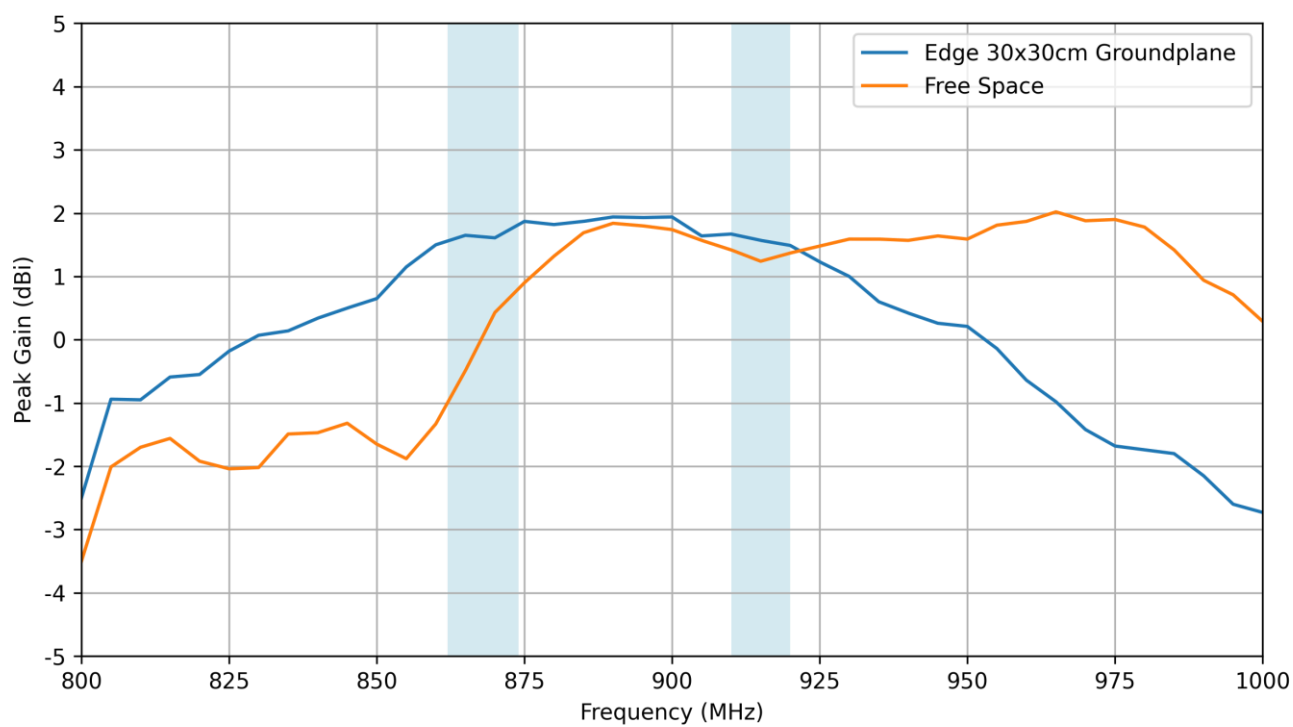
3.3 Efficiency



3.4 Average Gain

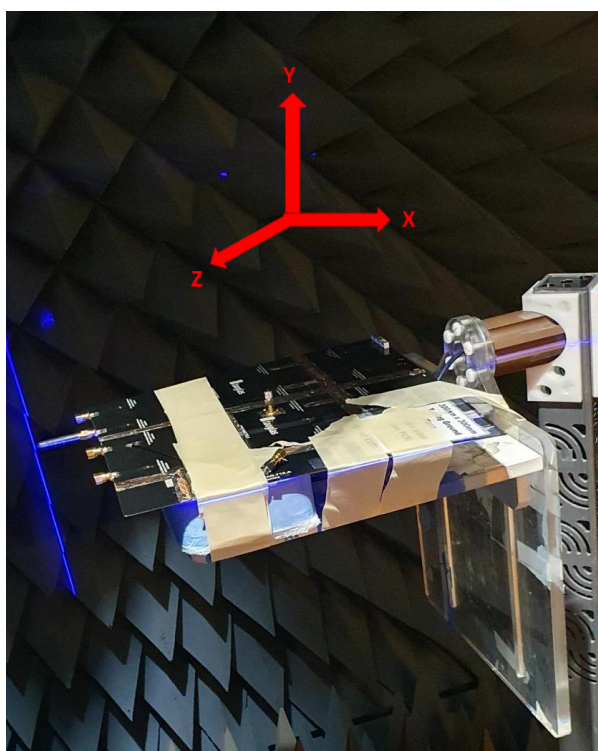
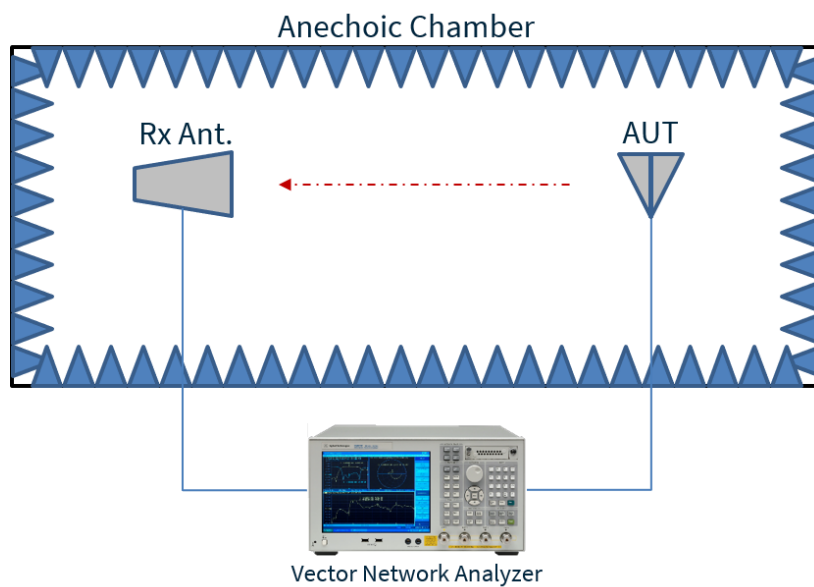


3.5 Peak Gain

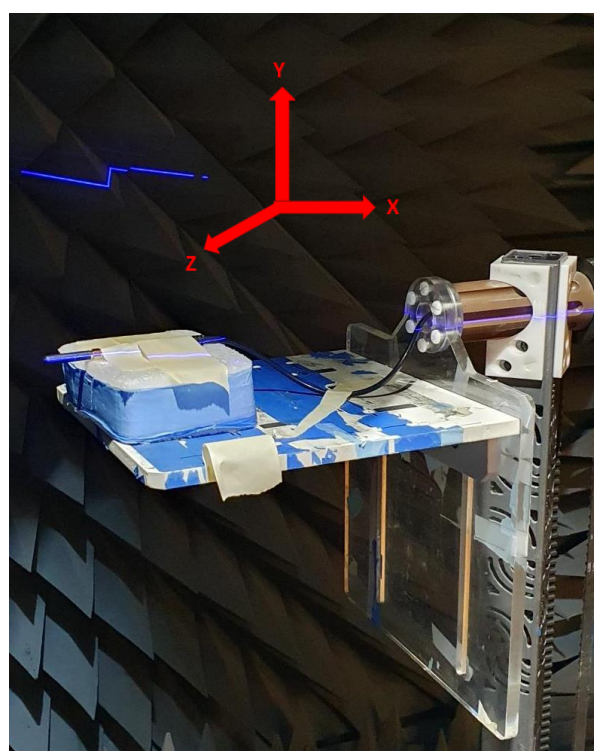


4. Radiation Patterns

4.1 Test Setup

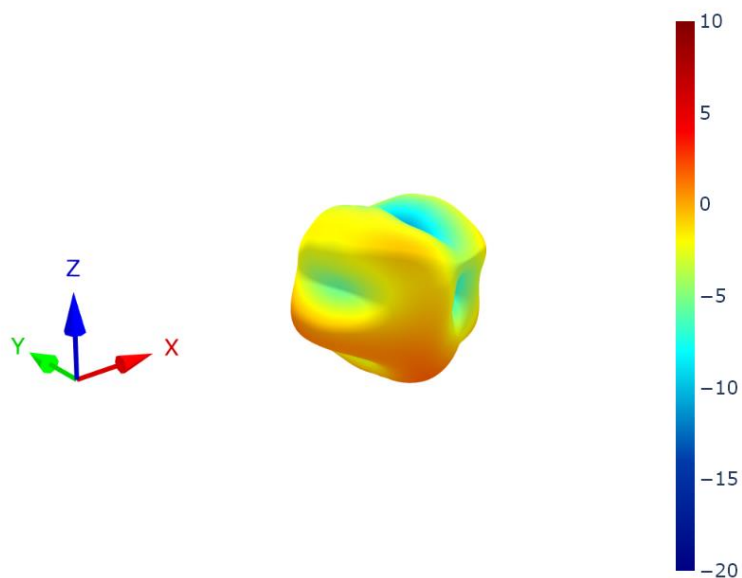


Edge of 30x30cm Ground Plane

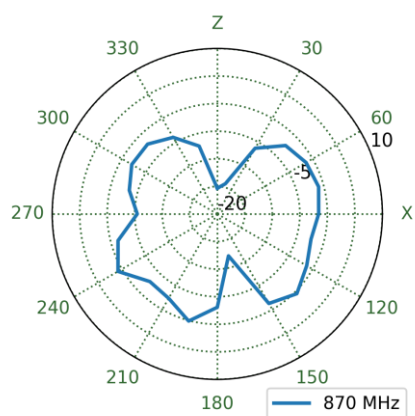


Free Space

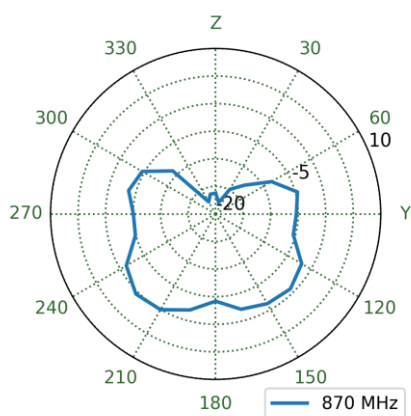
4.2 Edge 30x30cm Groundplane - Patterns at 870 MHz



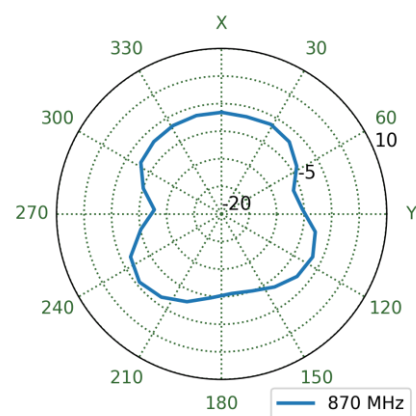
XZ Plane



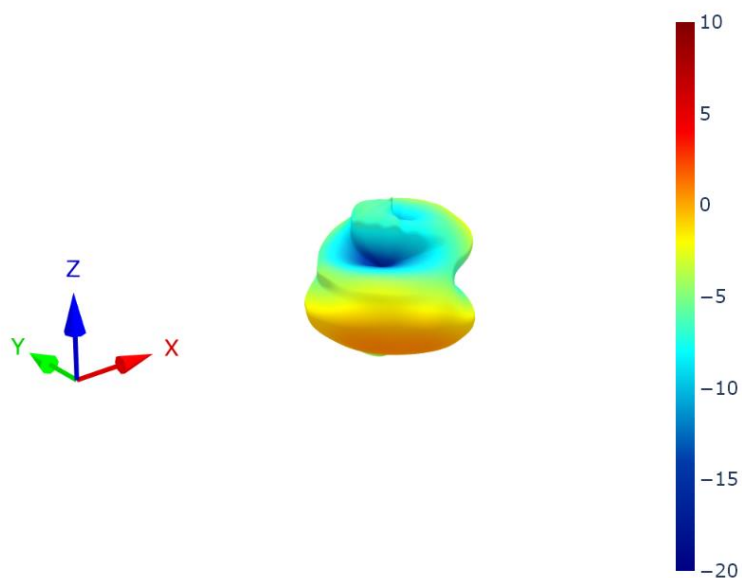
YZ Plane



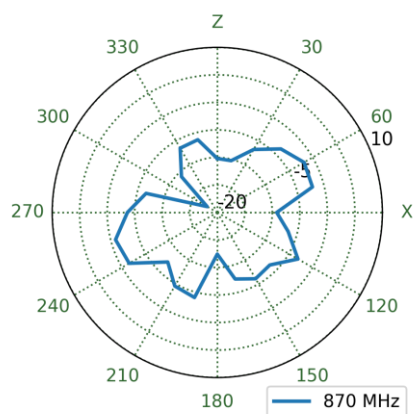
XY Plane



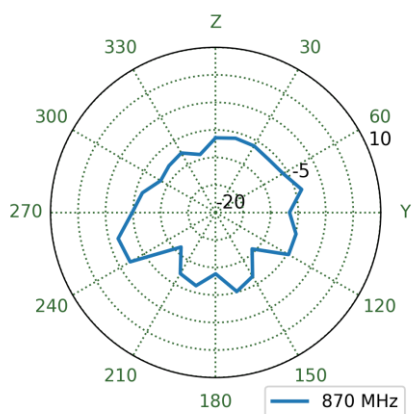
4.3 Free Space - Patterns at 868 MHz



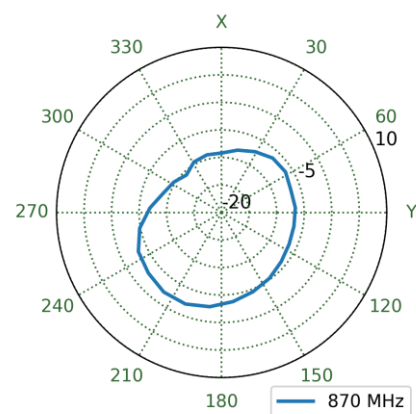
XZ Plane



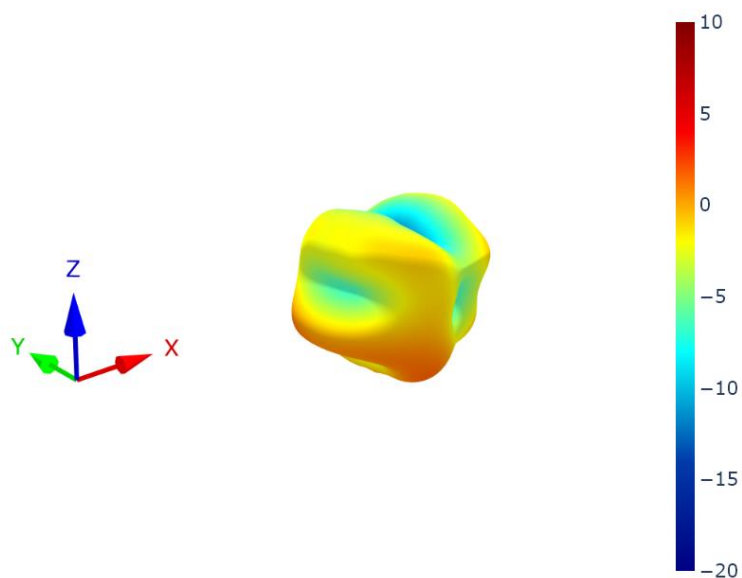
YZ Plane



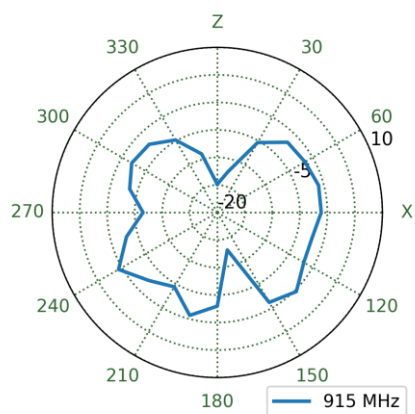
XY Plane



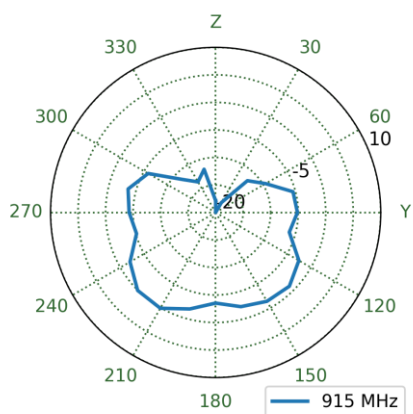
4.4 Edge 30x30cm Groundplane - Patterns at 915 MHz



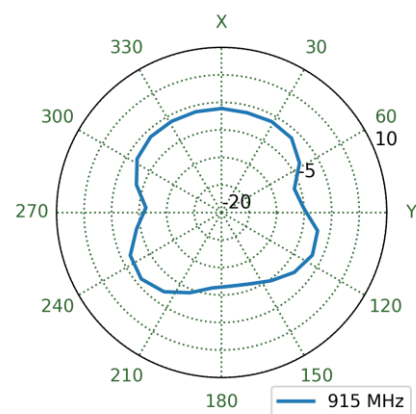
XZ Plane



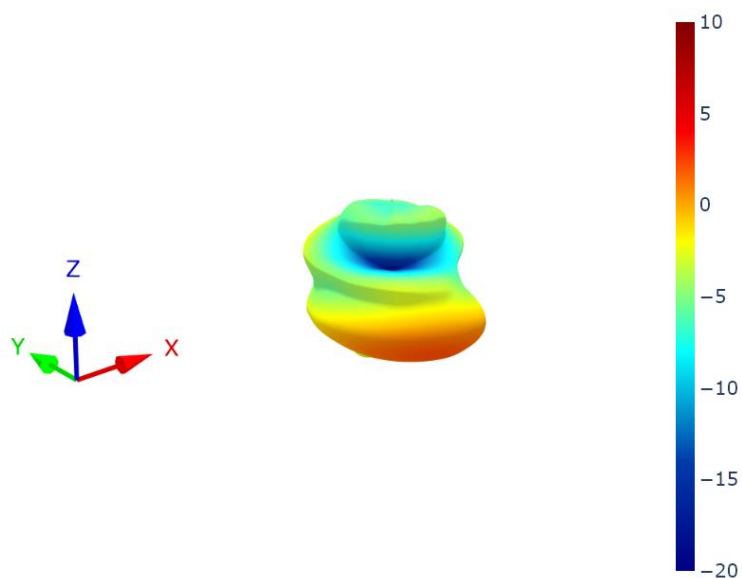
YZ Plane



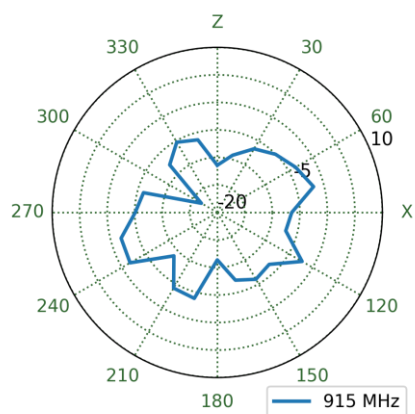
XY Plane



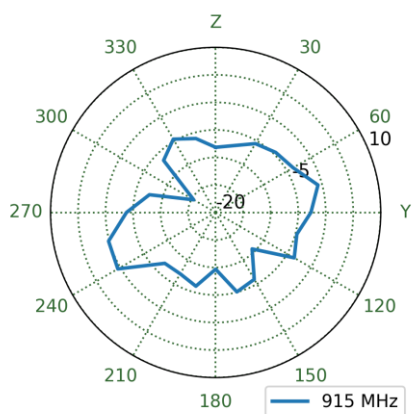
4.5 Free Space - Patterns at 915 MHz



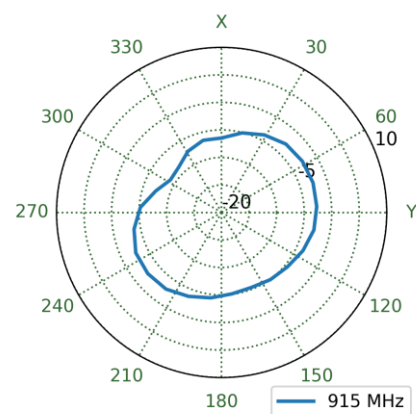
XZ Plane



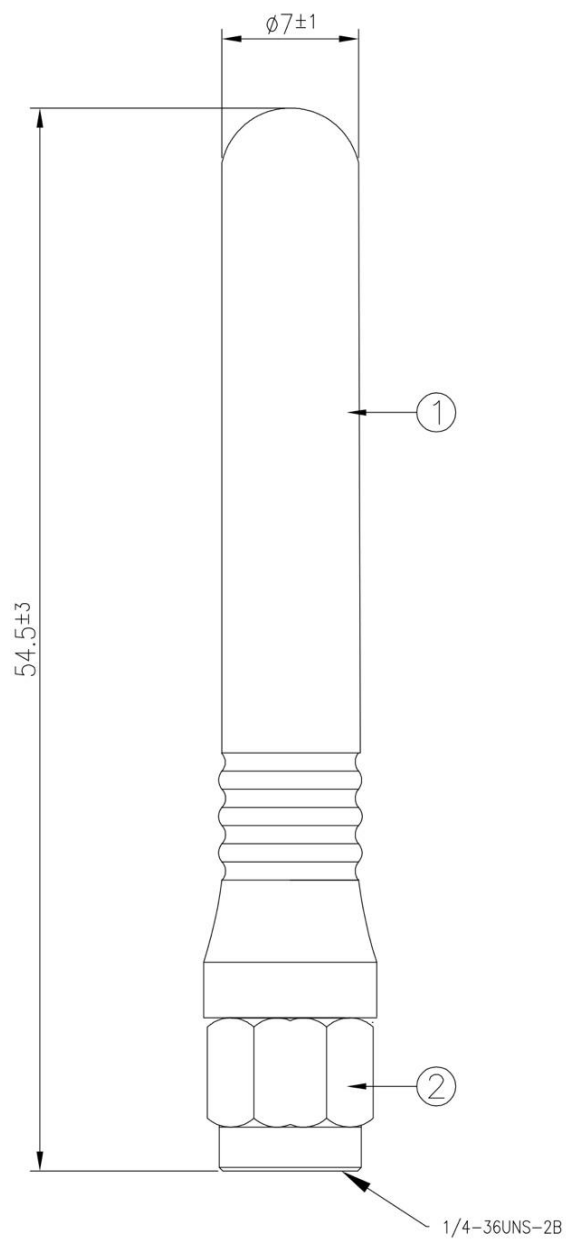
YZ Plane



XY Plane



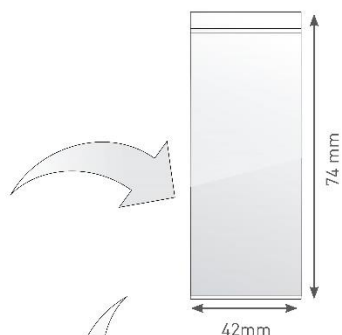
5. Mechanical Drawing



| | Name | Material | Finish | QTY |
|---|---------------|----------|-----------|-----|
| 1 | Antenna Cover | TPEE | Black | 1 |
| 2 | SMA(M)ST | Brass | Au Plated | 1 |

6. Packaging

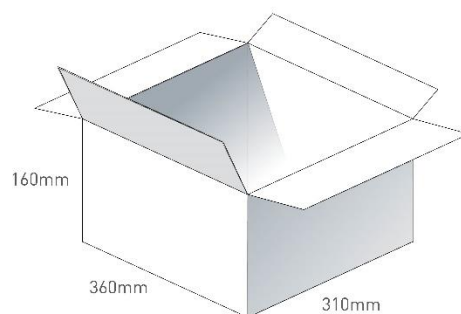
1 pcs TI.08.C.0111 per PE Bag
PE Bag Dimensions - 42*74mm
Weight - 7g



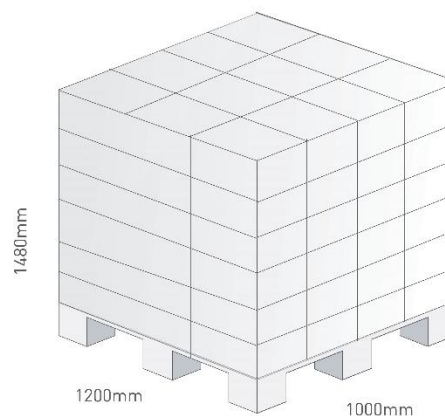
100 PE Bags per Large PE Bag
100 pcs TI.08.C.0111 per Large PE Bag
Large PE Dimensions - 180*280mm
Weight - 0.761kg



15 Large PE bags per carton
1500 pcs TI.08.C.0111 per carton
Carton Dimensions - 360*310*160mm
Weight - 12kg



Pallet Dimensions 1200mm*1000mm*1480mm
72 Cartons per Pallet
9 Cartons per layer
8 Layers



Changelog for the datasheet

SPE-18-8-056 – TI.08.C.0111

Revision: E (Current Version)

| | |
|---------|--------------|
| Date: | 2025-01-31 |
| Notes: | Updated data |
| Author: | Gary West |

Previous Revisions

Revision: D

| | |
|---------|---------------------------|
| Date: | 2024-11-04 |
| Notes: | Frequency coverage update |
| Author: | Cesar Sousa |

Revision: C

| | |
|---------|-----------------------|
| Date: | 2022-12-14 |
| Notes: | Full datasheet update |
| Author: | Evan Murphy |

Revision: B

| | |
|---------|------------------|
| Date: | 2022-05-05 |
| Notes: | |
| Author: | Technical Writer |

Revision: A (Original First Release)

| | |
|---------|-------------|
| Date: | 2018-12-06 |
| Notes: | |
| Author: | Jack Conroy |



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