TAOGLAS

Datasheet

Part No:
TI.89.B.2111

Description

860-930MHz Terminal Antenna 2dBi SMA(M) Fixed Straight Waterproof Enclosure

Features:

Terminal Mount Waterproof Antenna
Covering 860-930MHz Bands
Dipole Structure with Real Omni-Directional Radiation Pattern
Ground Independent
IP67 Rated Enclosure Design
Dims: Ø13 x 180mm
Connector: Standard SMA(M)
RoHS & Reach Compliant

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1. Introduction

The Taoglas **TI.89.B** is a high-performance 860-930MHz terminal antenna designed for reliable long-range wireless communication in ISM, LoRaWAN, Sigfox, and RFID applications. The standard dipole structure design featuring a 2dBi peak gain, omnidirectional radiation pattern and ground independent, this antenna ensures stable and consistent signal coverage across a wide frequency band. Its enclosure is designed to be IP67 rated when installed correctly making it suitable for use in hard environments.

Typical Applications:

- LoRaWAN Gateways and Nodes
- Smart Metering
- Industrial IoT (IoT)
- Smart Agriculture
- Asset and Fleet Tracking
- Environmental Monitoring
- Smart Cities
- Security and Access Control

Engineered with a robust, durable TPEE housing, the TI.89.B is ideal for both indoor and outdoor deployments where environmental resistance and signal integrity are critical. Its SMA(M) fixed straight connector allows for easy installation directly onto terminals, gateways, or IoT devices, ensuring a secure and reliable RF connection.

The antenna connector type can be customizable, please contact your regional Taoglas customer support team for installation guidelines or additional support to integrate and test this antenna's performance in your device.

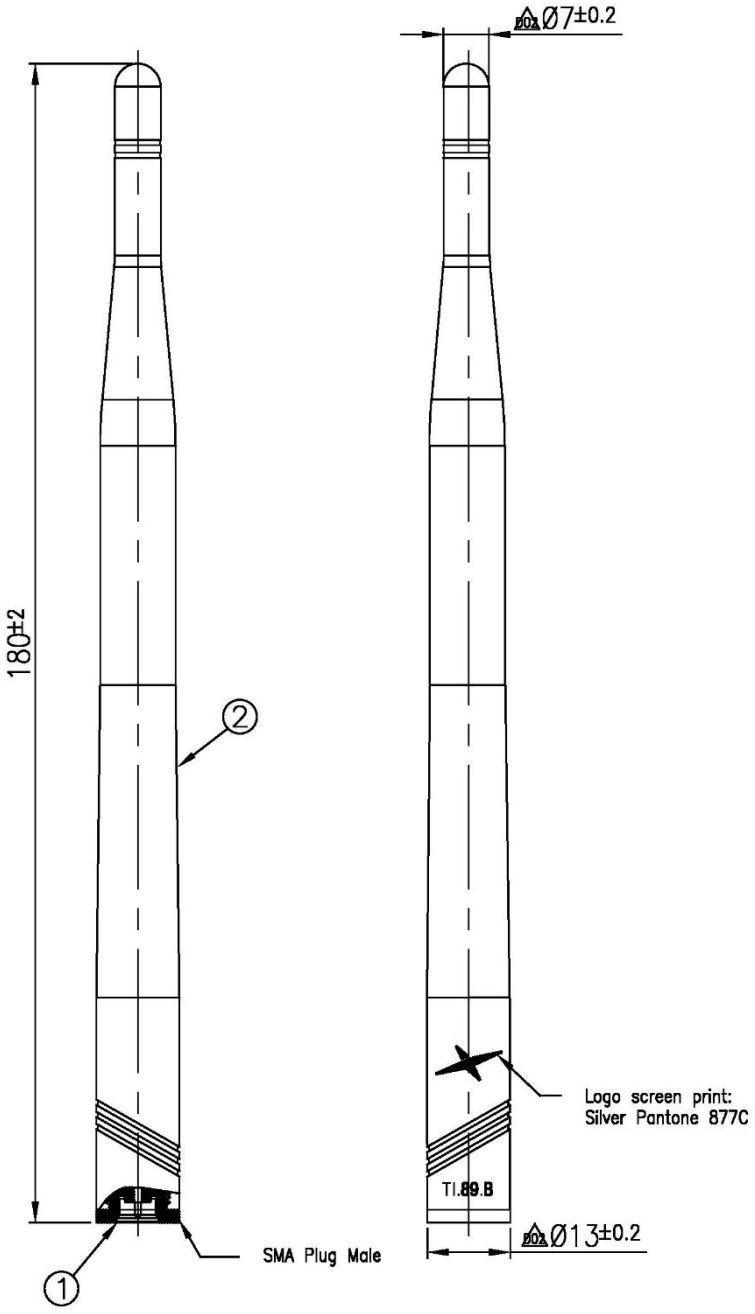
2. Specification

Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
868MHz	862-874	150 x 90mm Ground Plane	77.7	-1.10	2.15	50 Ω	Linear	Omni directional	10W
		90 x 150mm Ground Plane	79.3	-1.01	2.61				
		Free Space	87.7	-0.57	2.07				
915MHz	910-920	150 x 90mm Ground Plane	89.9	-0.46	3.15				
		90 x 150mm Ground Plane	91.6	-0.38	3.79				
		Free Space	88.1	-0.55	1.80				

Mechanical	
Dimensions	Ø13mm x 180mm
Weight	23g
Material	TPEE
Connector	SMA (M)

Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	Non-condensing 65°C 95% RH
IP Rating	IP 67 Enclosure

3. Mechanical Drawing

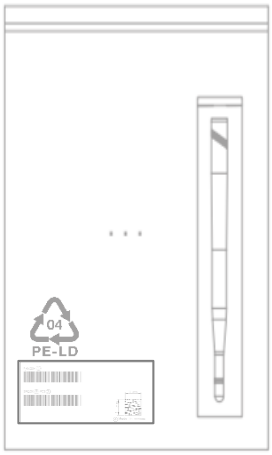


	Name	Material	Finish	QTY
1	Connector	Brass	Ni Plated	1
2	Antenna Cap	TPEE	Black	1

4. Packaging

☑ 1 PCS / Small PE Bag

☑ Small PE Bag (mm): 240x30 (Ref)



☑ 50 PCS / PE Bag

☑ PE bag(mm): 330x230 (Ref)

☑ Weight (kg): 1.2 ±3%

☑ SPQ Label

☑ 400 PCS / Carton

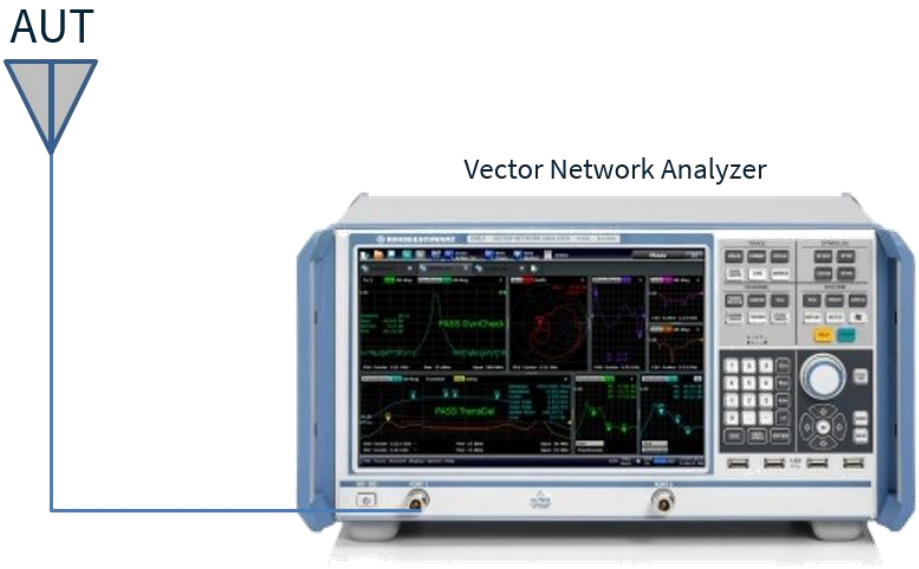
☑ Carton(mm): 320x250x230

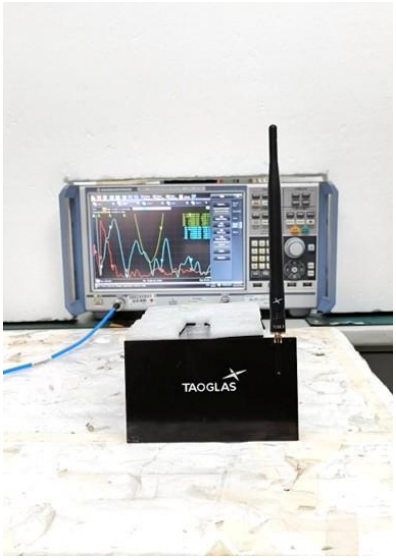
☑ Weight (kg): 10.1 ±3%

☑ Carton Label

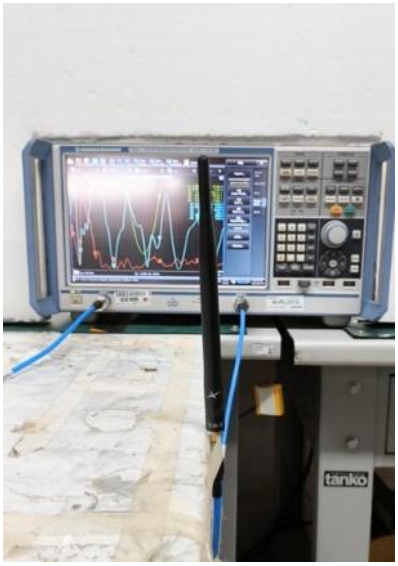
5. Antenna Characteristics

5.1 Test Setup

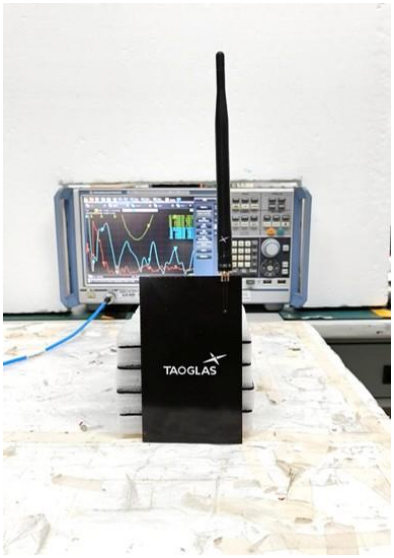




150x90mm Ground Plane

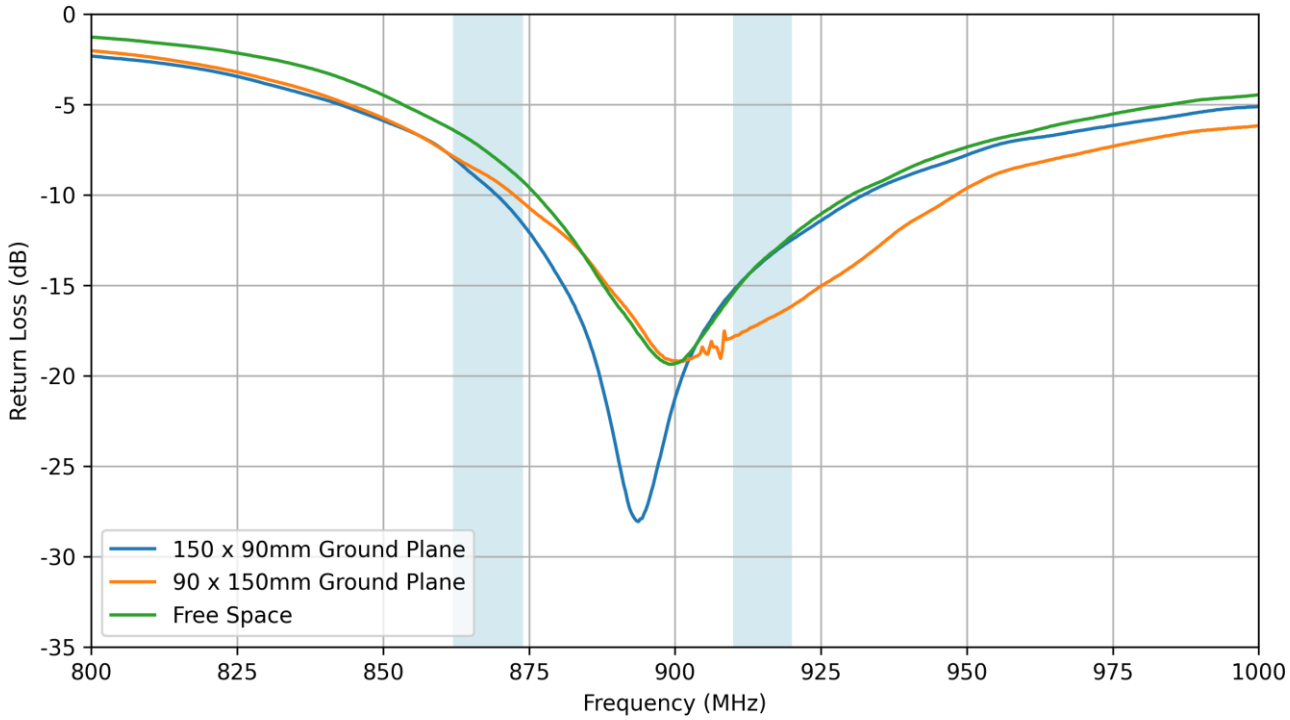


Free Space

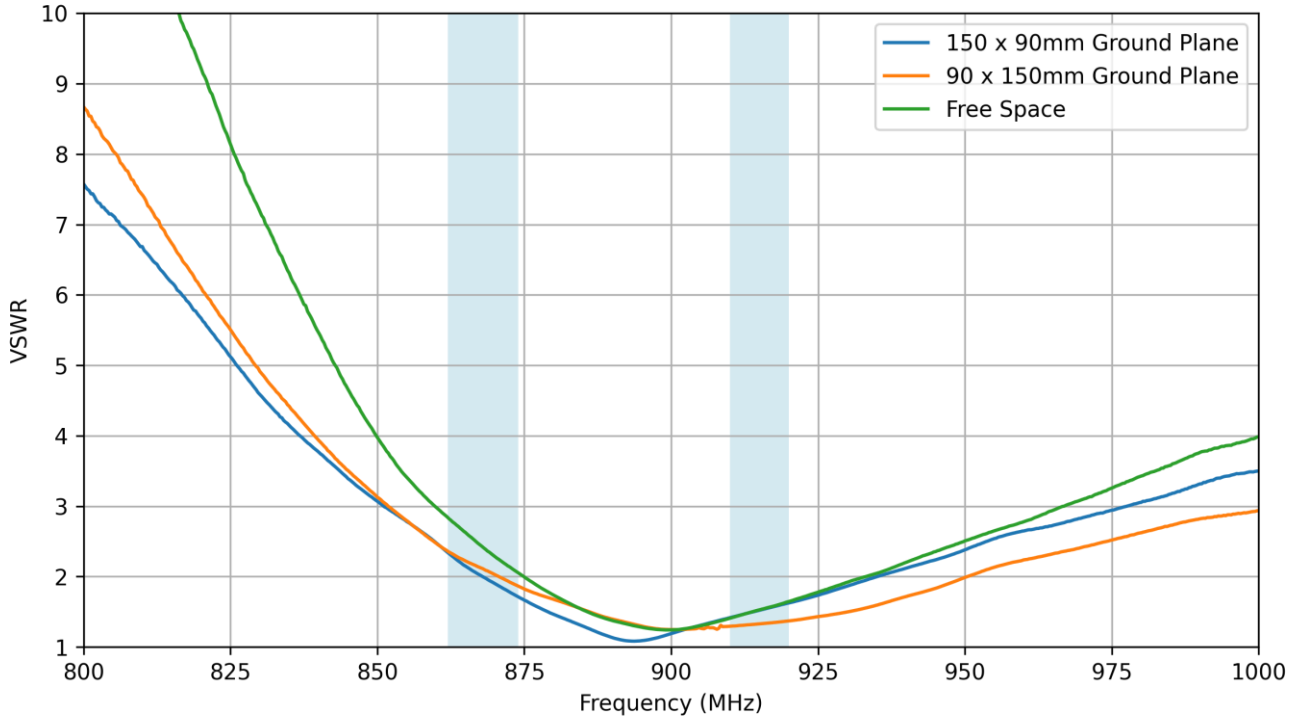


90x150mm Ground Plane

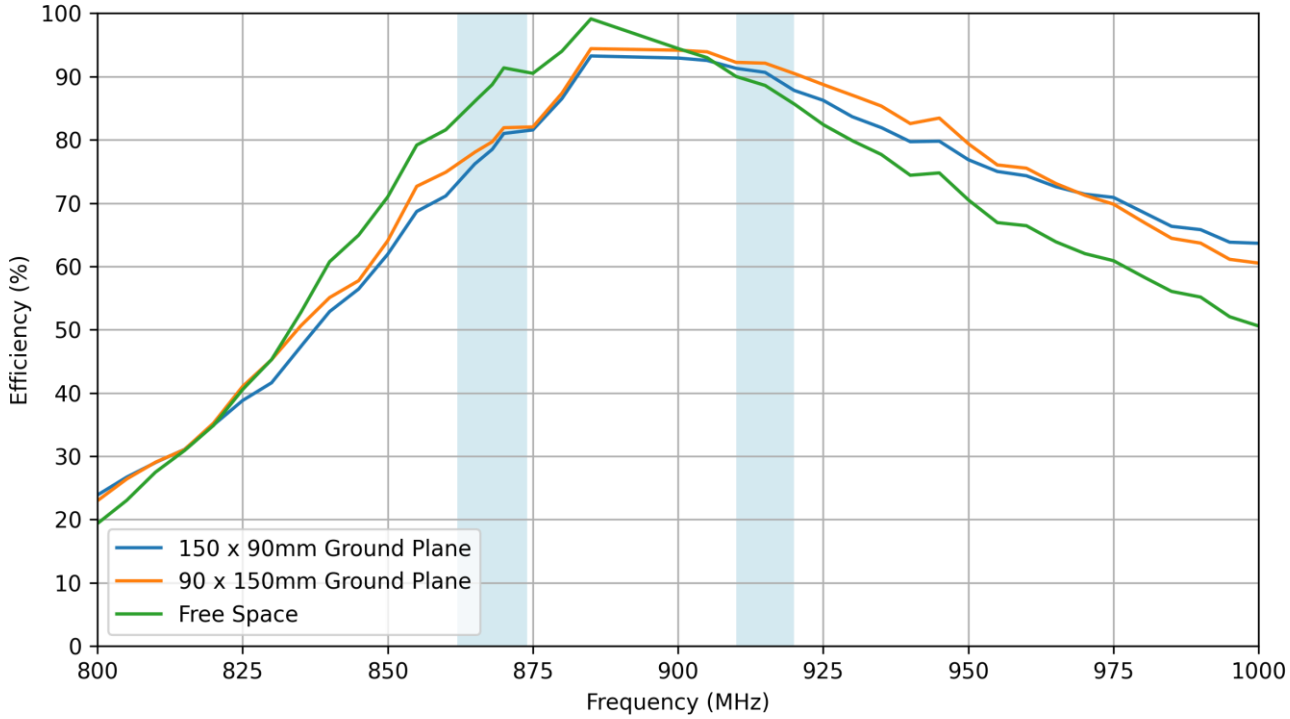
5.2 Return Loss



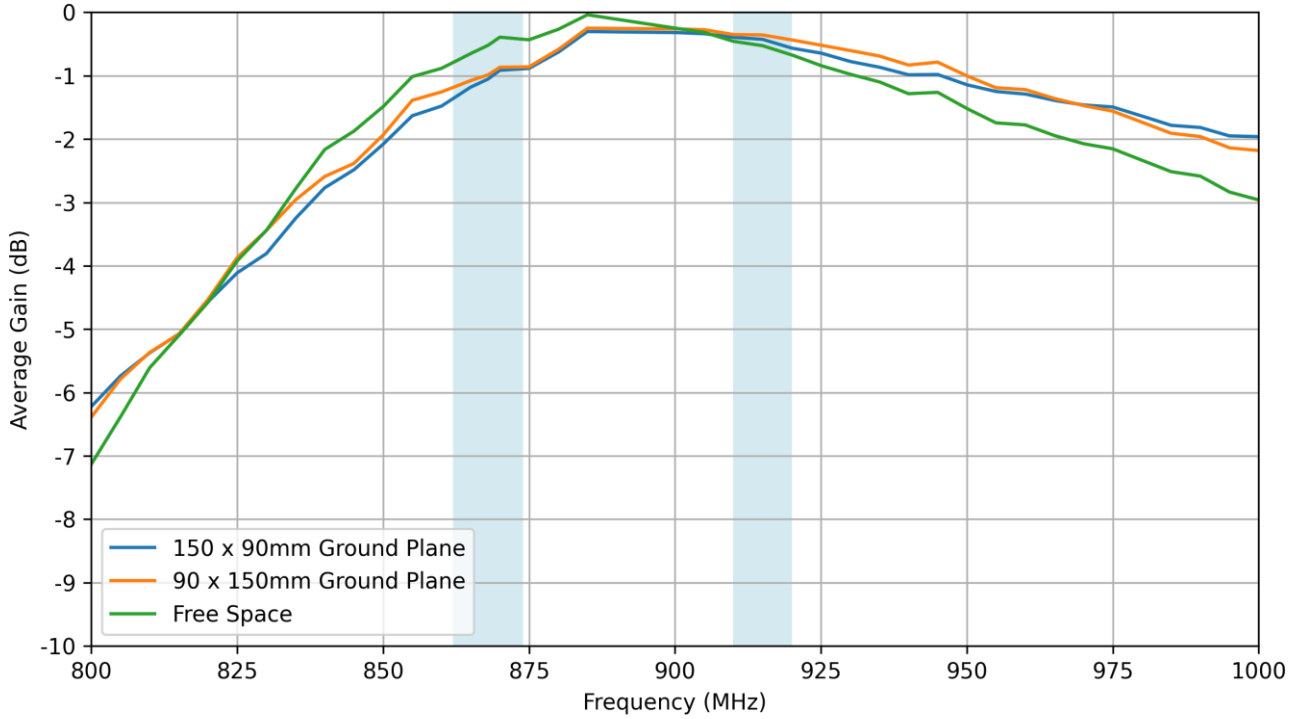
5.3 VSWR



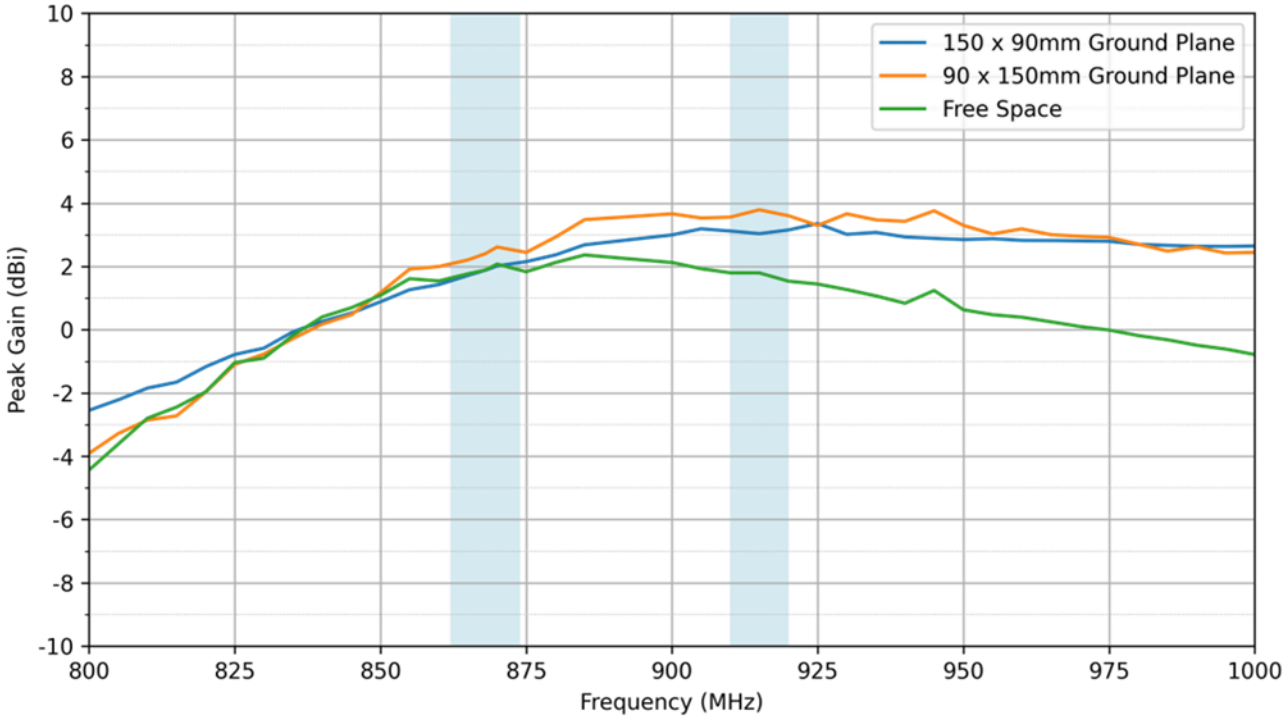
5.4 Efficiency



5.5 Average Gain

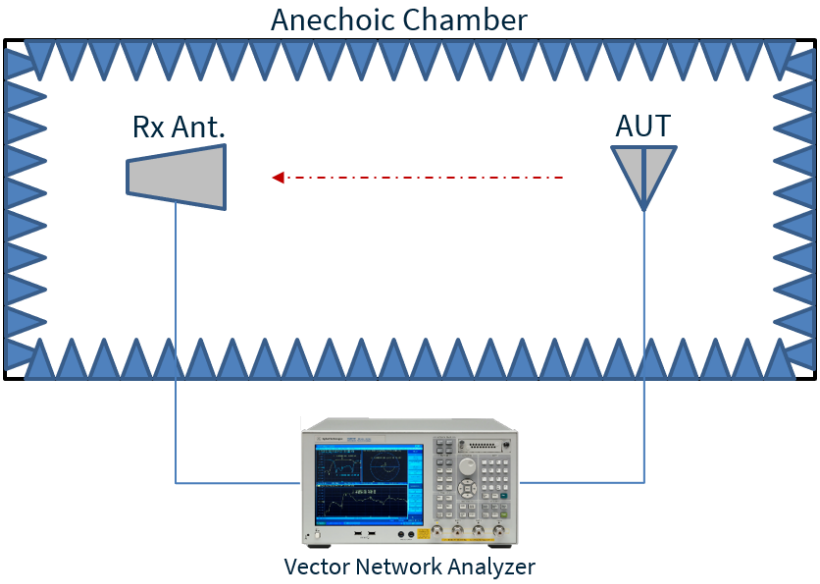


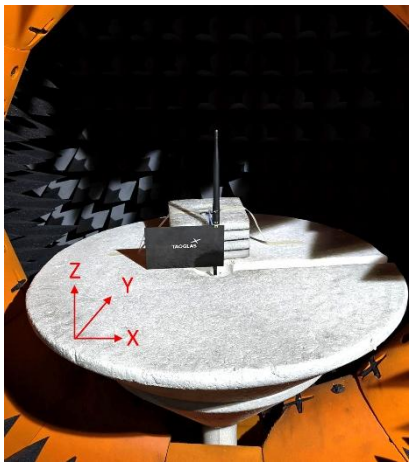
5.6 Peak Gain


150 x 90mm Ground Plane
90 x 150mm Ground Plane
Free Space
Peak Gain (dBi)
Frequency (MHz)
10
8
6
4
2
0
-2
-4
-6
-8
-10
800
825
850
875
900
925
950
975
1000

6. Radiation Patterns

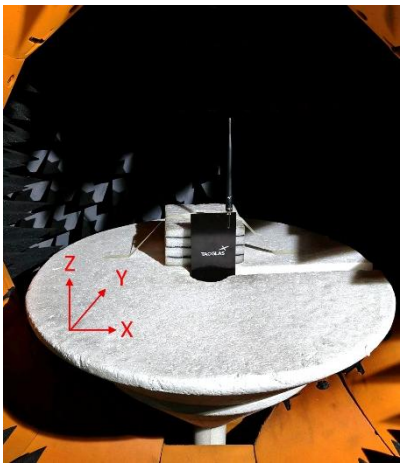
6.1 Test Setup





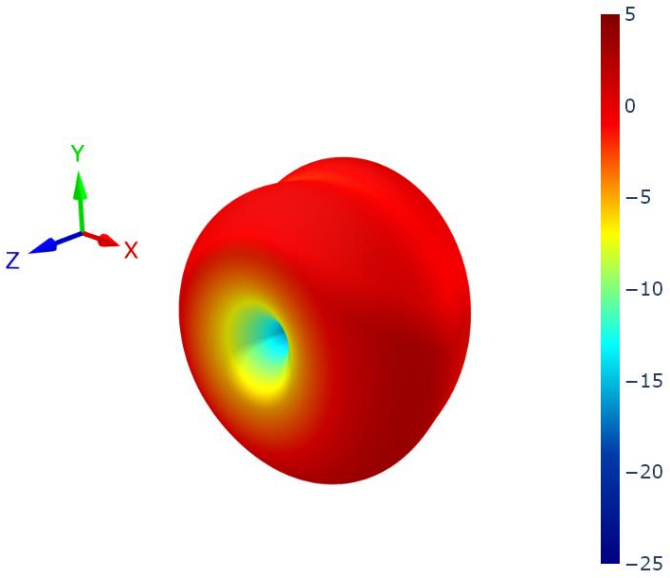
150x90mm Ground Plane

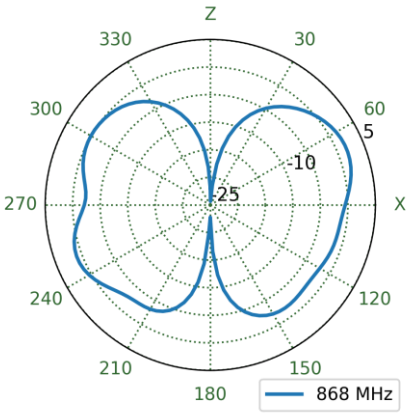
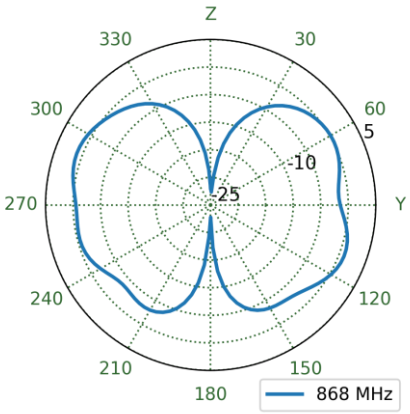
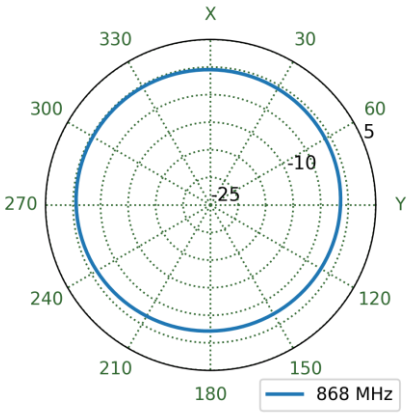
Free Space



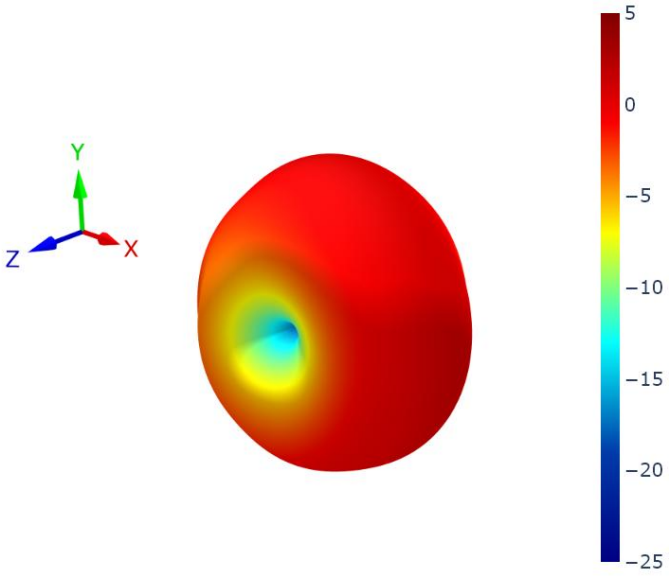
90x150mm Ground Plane

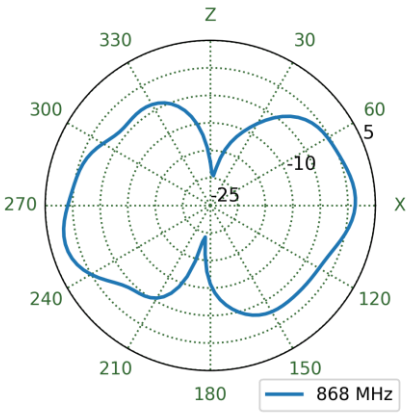
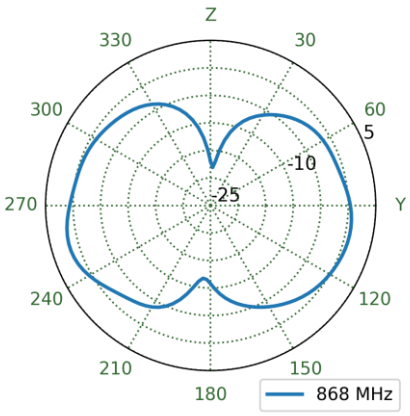
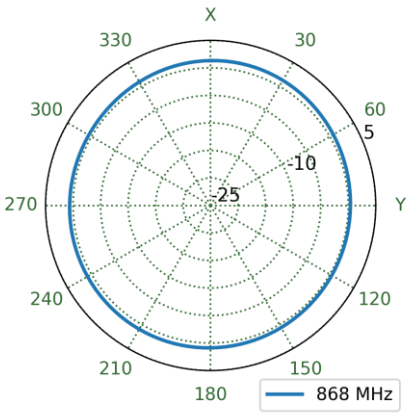
6.2 150 x 90mm Ground Plane Patterns at 868 MHz



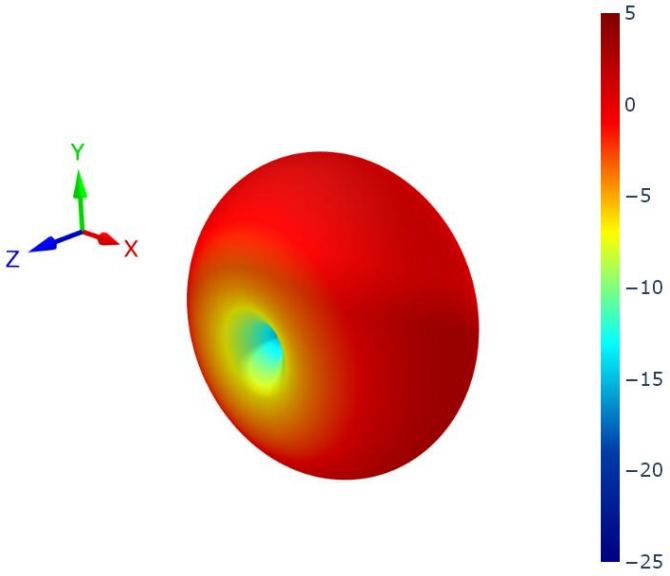
XZ Plane	YZ Plane	XY Plane
		

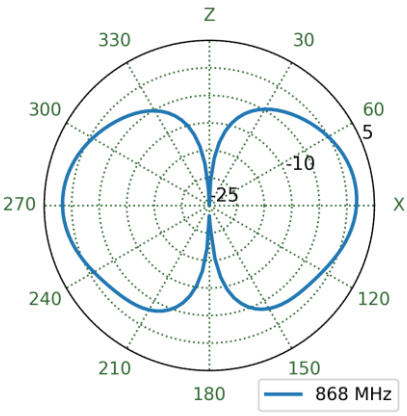
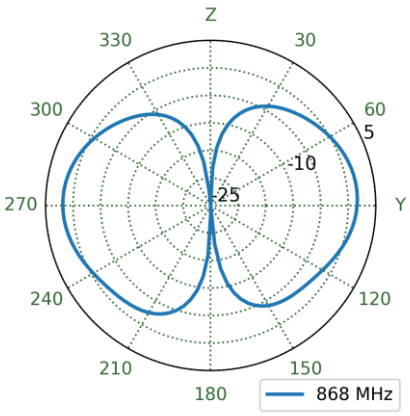
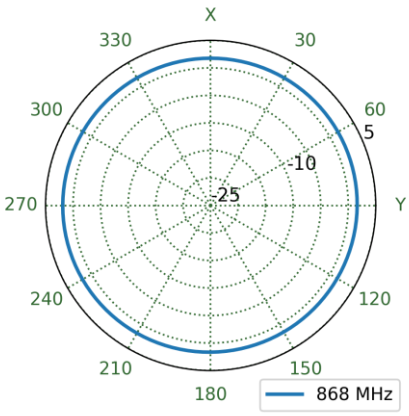
6.3 90 x 150mm Ground Plane Patterns at 868 MHz



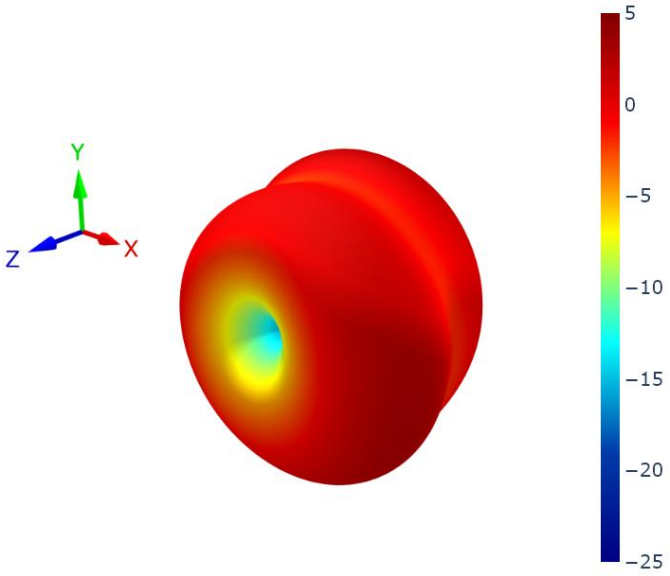
XZ Plane	YZ Plane	XY Plane
		

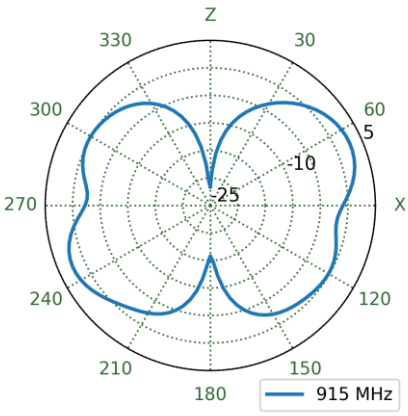
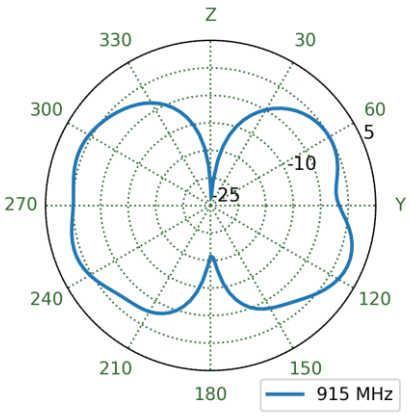
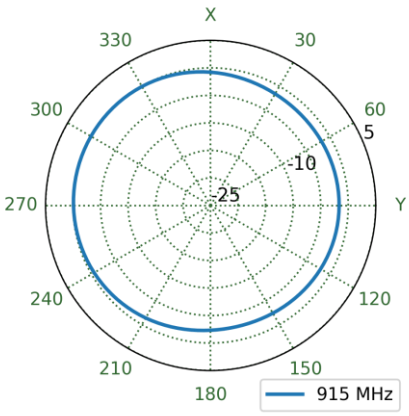
6.4 Free Space Patterns at 868 MHz



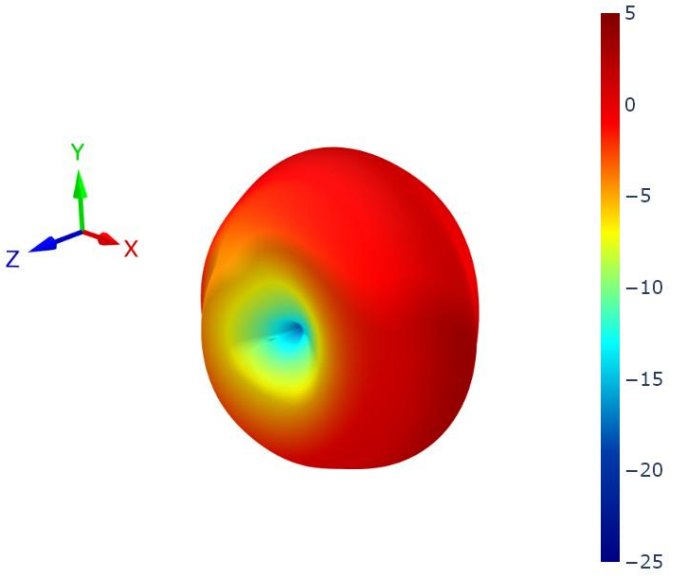
XZ Plane	YZ Plane	XY Plane
		

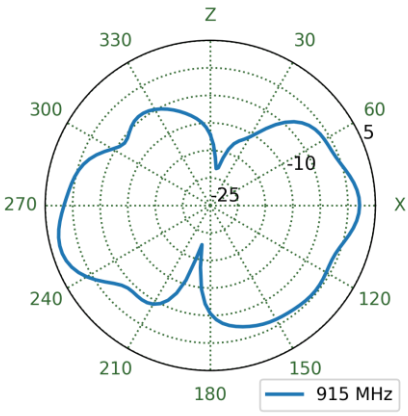
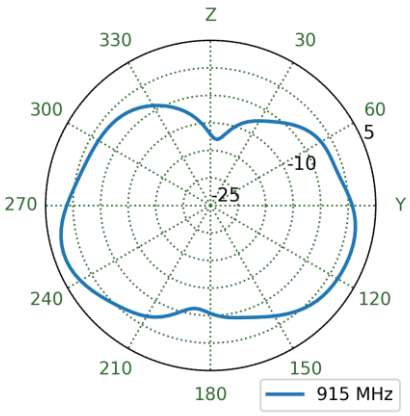
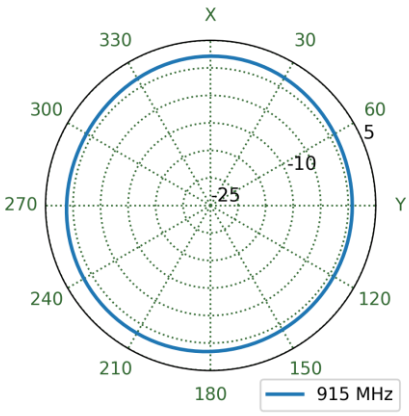
6.5 150 x 90mm Ground Plane Patterns at 915 MHz



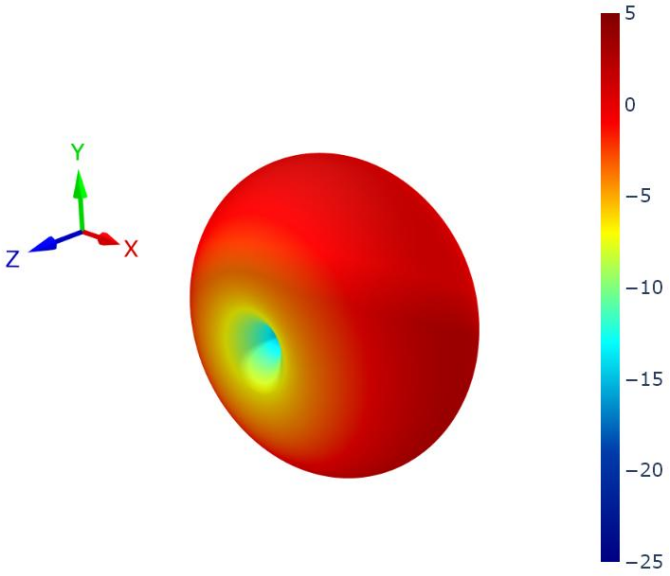
XZ Plane	YZ Plane	XY Plane
		

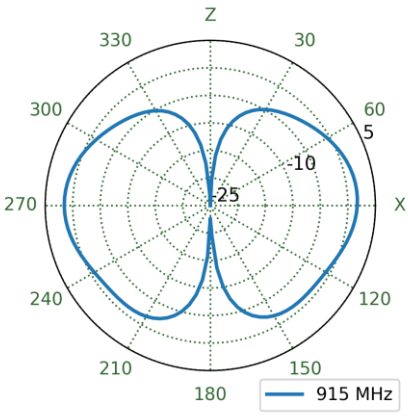
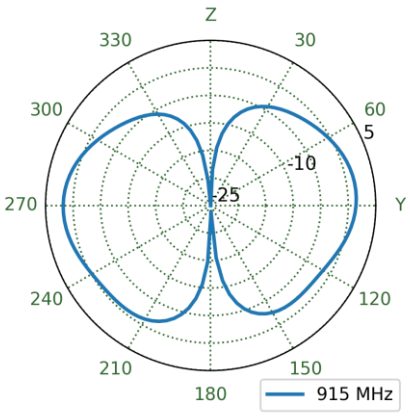
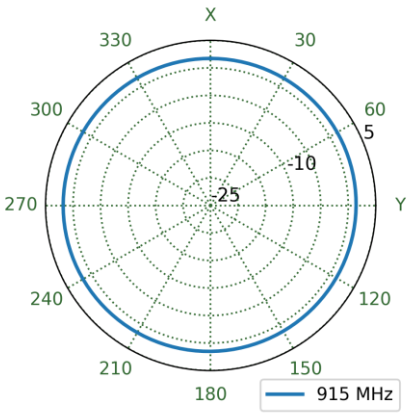
6.6 90 x 150mm Ground Plane Patterns at 915 MHz



XZ Plane	YZ Plane	XY Plane
		

6.7 Free Space Patterns at 915 MHz



XZ Plane	YZ Plane	XY Plane
		

Changelog for the datasheet

SPE-25-8-300 - TI.89.B.2111

Revision: A (Original First Release)	
Date:	2025-11-10
Notes:	Initial Release
Author:	Gary West

Previous Revisions

TAOGLAS®

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