TAOGLAS

Datasheet

TI.43 Series

Part No:
TI.43.xxxx

Description

400-470MHz Terminal Mount Antenna

Features:

Frequency Range: 400-470MHz
>50% efficiency when mounted on a Ground Plane
TNC, N-Type, BNC and SMA Male Connector Options
RoHS and REACH Compliant

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1. Introduction

The TI.43 Series is range of terminal mount antenna designed to operate between 400-470MHz, on some of the most widely used license-free ISM bands. The omni-directional antenna radiates uniformly in the azimuth. This antenna is mounted directly on a device via male connector. Multiple options are available with either SMA, TNC, N-Type or BNC connectors to suit all mounting requirements.

TI.43 SKU's and Configurations:

- **TI.43.A111** - 400 to 470MHz Terminal Mount Antenna with SMA(M) Connector
- **TI.43.A311** - 400 to 470MHz Terminal Mount Antenna with TNC(M) Connector
- **TI.43.AH11** - 400 to 470MHz Terminal Mount Antenna with N-Type(M) Connector
- **TI.43.AL11** - 400 to 470MHz Terminal Mount Antenna with BNC(M) Connector

With a robust, durable mechanical design and integrated connector, the TI.43 Series is ideal for integration into M2M, IoT, industrial, metering, and telemetry systems where consistent performance and ease of installation are critical. The antenna is optimized for use directly mounted on a device chassis or enclosure, providing maximum performance with great efficiency on a ground plane.

Typical Applications include:

- Smart Metering – Water, Gas or Electricity
- Mesh Networks and Industrial IoT
- SCADA Systems
- Telemetry and Public Safety Services
- Remote Control and Asset Monitoring Devices

For further information please contact your regional Taoglas customer support team.

2. Specification

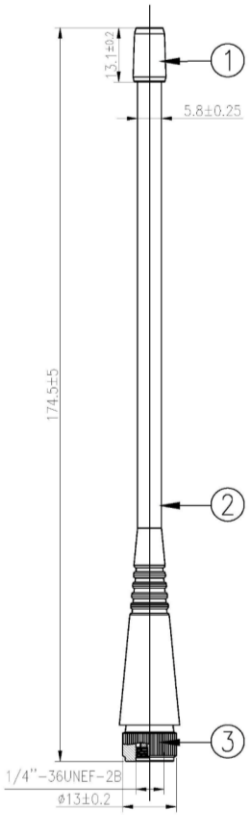
Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
ISM 433MHz	433.05- 434.79	Free Space	14.4	-8.36	-3.67	50 Ω	Linear	Omni directional	10W
		on 30x30cm Ground Plane	56.3	-2.46	-0.90				
B31	451-466	Free Space	21.8	-6.61	-2.82				
		on 30x30cm Ground Plane	56.8	-2.46	-0.31				
B72	451-465	Free Space	21.5	-6.68	-2.82				
		on 30x30cm Ground Plane	56.9	-2.45	-0.31				
B73	450-465	Free Space	21.3	-6.71	-2.82				
		on 30x30cm Ground Plane	57.1	-2.44	-0.28				
B87	410-425	Free Space	18.4	-7.36	-3.16				
		on 30x30cm Ground Plane	46.8	-3.30	-1.05				
B88	412-427	Free Space	18.0	-7.45	-3.16				
		on 30x30cm Ground Plane	48.0	-3.19	-1.04				

Mechanical	
Dimensions	TI.43.A111 - Ø13 x 174.5mm TI.43.A311 – Ø13.6 x 180mm TI.43.AH11- Ø20 x 182.5mm TI.43.AL11 – Ø14.5 x 180.4mm
Weight	25g
Material	TPEE
Connector	TI.43.A111 - SMA(M) TI.43.A311 - TNC(M) TI.43.AH11 – N-TYPE(M) TI.43.AL11 - BNC(M)

Environmental	
Waterproof Rating	IP67
Operation Temperature	-40 - +85°C
Storage Temperature	-40 - +85°C

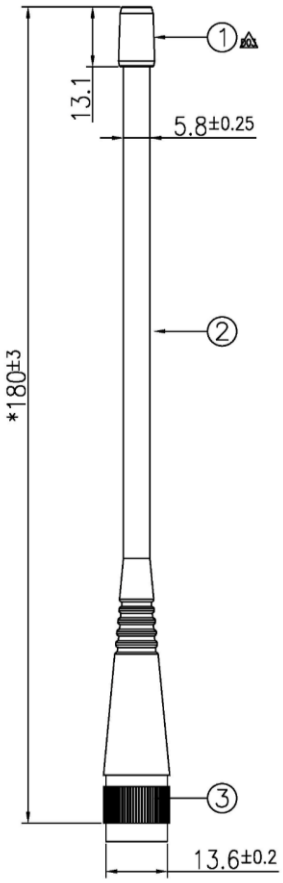
3. Mechanical Drawings

3.1 TI.43.A111



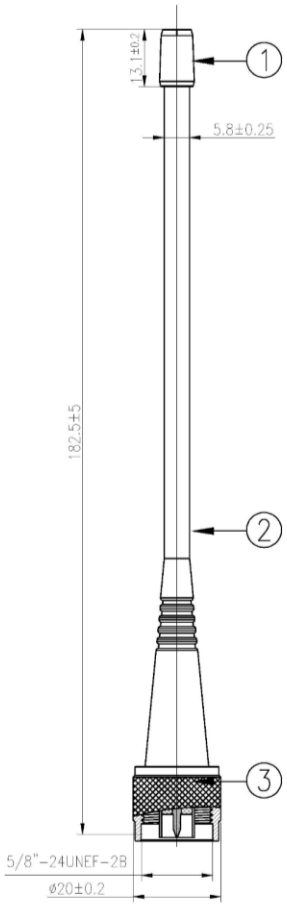
	Name	Material	Finish	QTY
1	Cap	ABS	Black	1
2	Body	TPEE	Black	1
3	SMA(M)	Brass	Au Plated	1

3.2 TI.43.A311



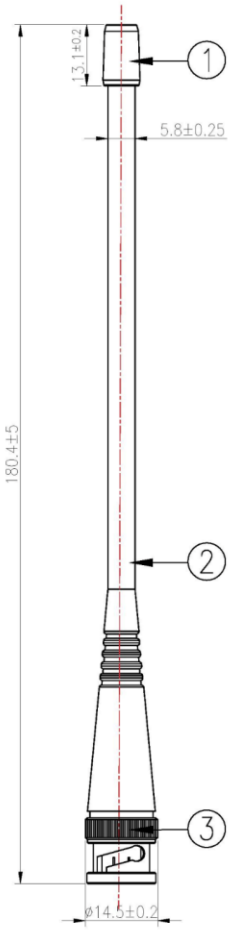
	Name	Material	Finish	QTY
1	CAP	ABS 757	Black	1
2	Body	TPEE	Black	1
3	TNC(M)ST Plug	Brass	Black	1

3.3 TI.43.AH11



	Name	Material	Finish	QTY
1	Cap	ABS	Black	1
2	Body	TPEE	Black	1
3	N TYPE(M)	Brass	Ni Plated	1

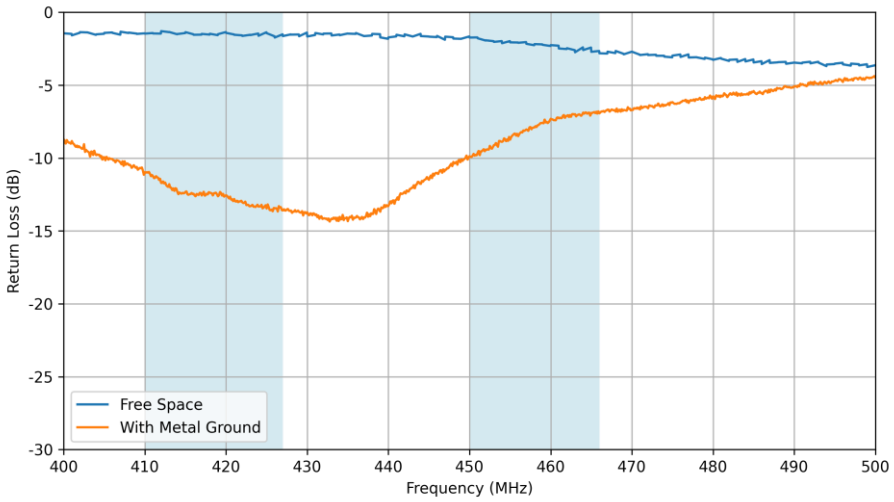
3.4 TI.43.AL11



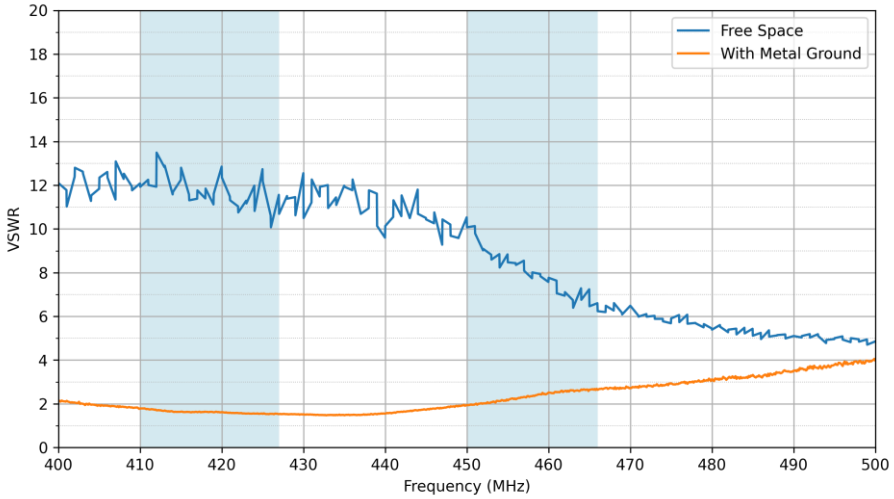
	Name	Material	Finish	QTY
1	Cap	ABS	Black	1
2	Body	TPEE	Black	1
3	BNC(M)	Brass	Ni Plated	1

4. Antenna Characteristics

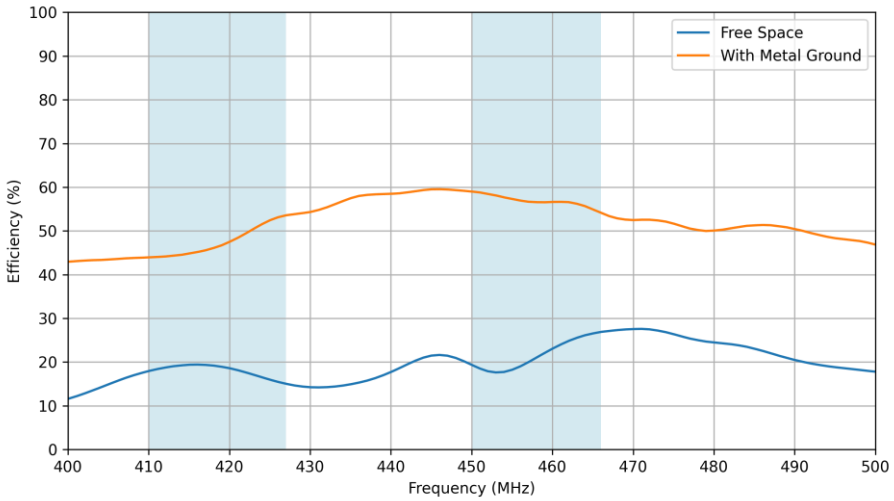
4.1 Return Loss



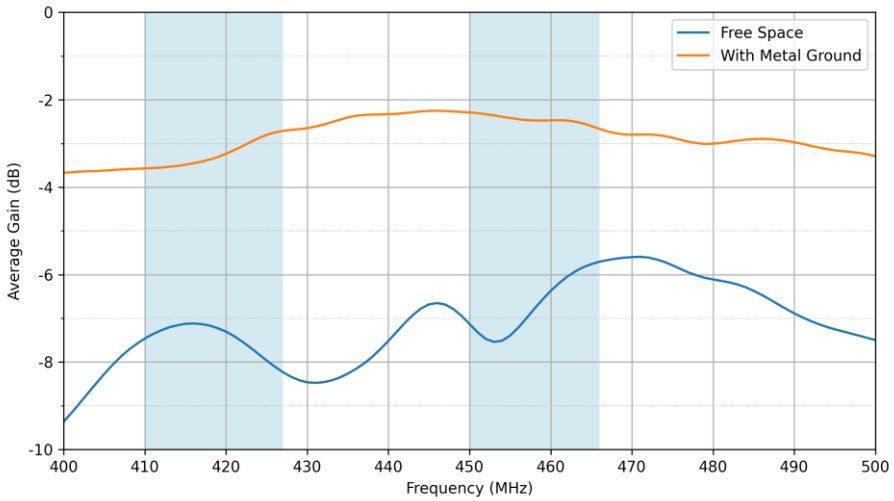
4.2 VSWR



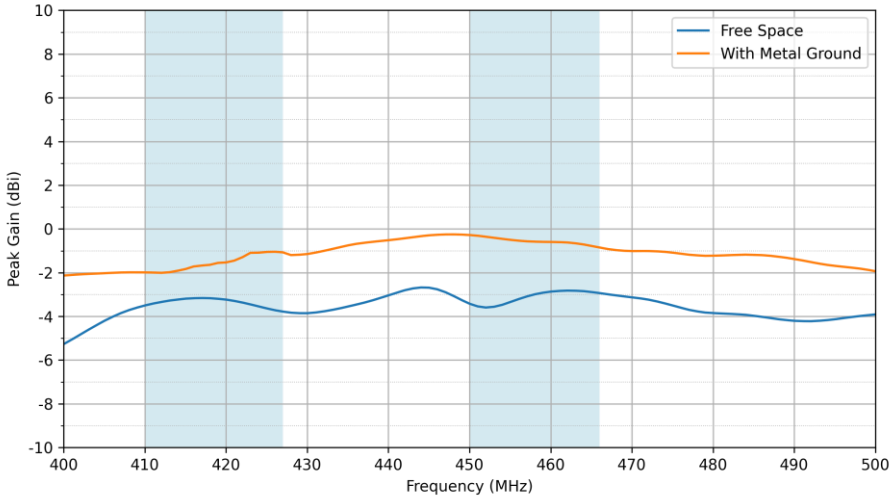
4.3 Efficiency



4.4 Average Gain

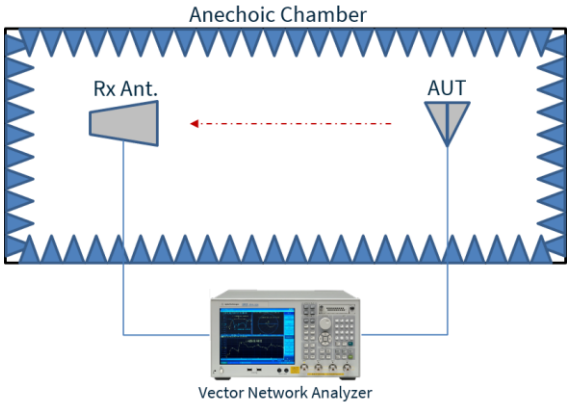


4.5 Peak Gain

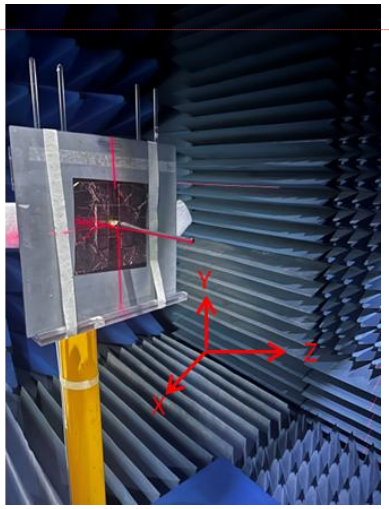

Free Space
With Metal Ground
Peak Gain (dBi)
Frequency (MHz)
10
8
6
4
2
0
-2
-4
-6
-8
-10
400
410
420
430
440
450
460
470
480
490
500

5. Radiation Patterns

5.1 Test Setup



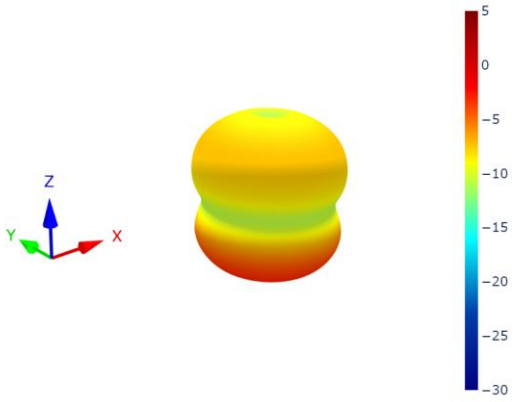
Chamber Set-up in Free Space.

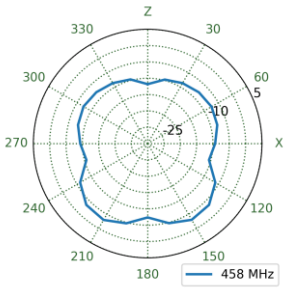
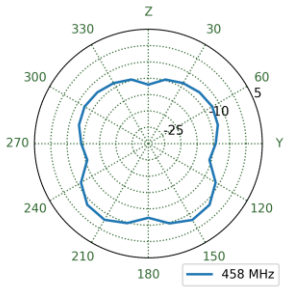
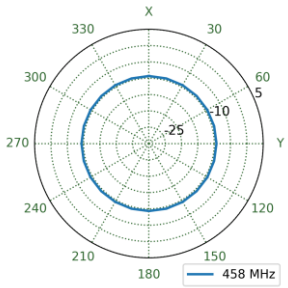


Chamber Set-up on 30x30cm Ground Plane.

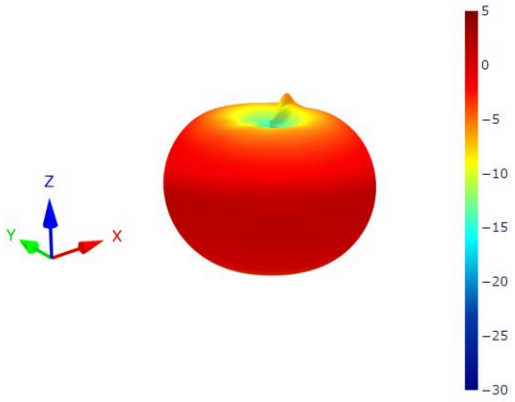
Commented [BB1]: @Gary West , please state the antenna is placed on the center of the ground plane.. It is not clear – I cant easily see the antenna. You can do an additional sketch for the installation on a metal plate.

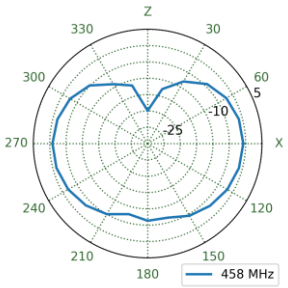
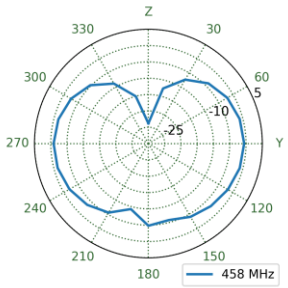
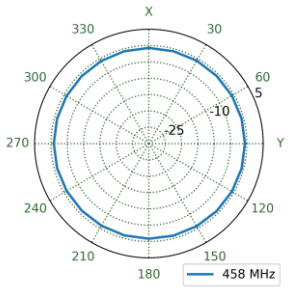
5.2 Free Space Patterns at 459 MHz



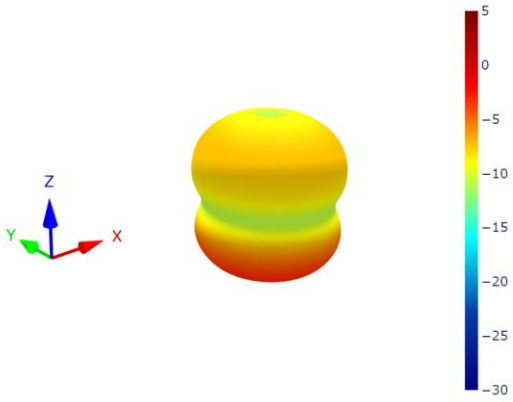
XZ Plane	YZ Plane	XY Plane
		

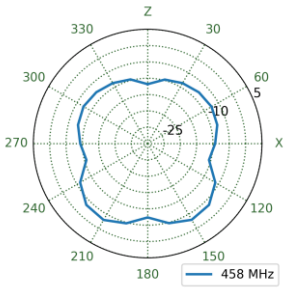
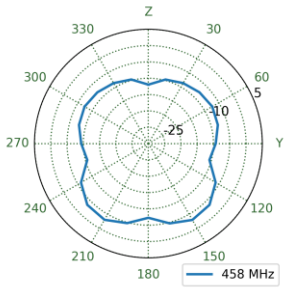
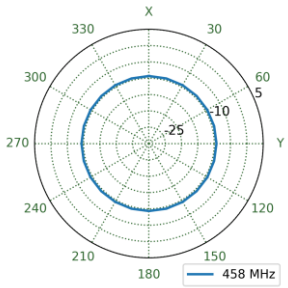
5.3 With Metal Ground Patterns at 459 MHz



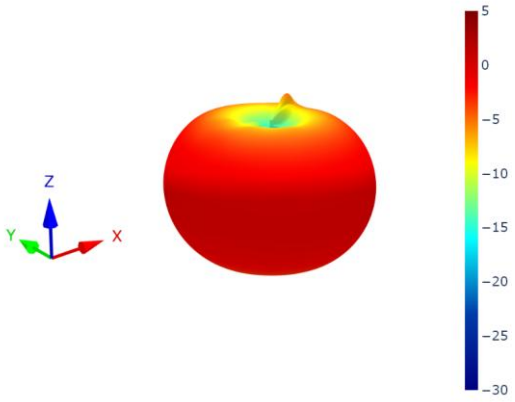
XZ Plane	YZ Plane	XY Plane
		

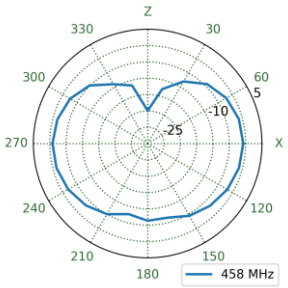
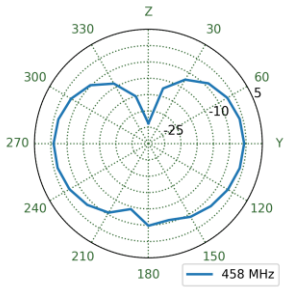
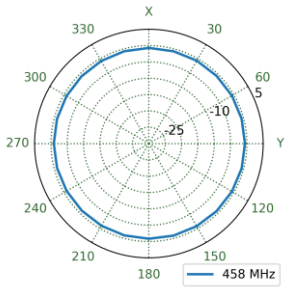
5.4 Free Space Patterns at 458 MHz



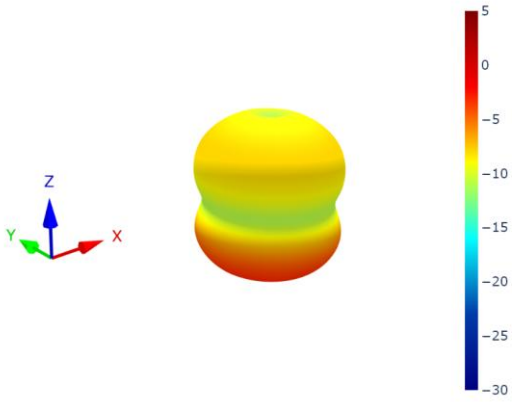
XZ Plane	YZ Plane	XY Plane
		

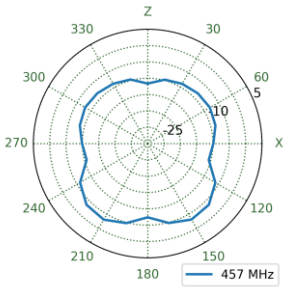
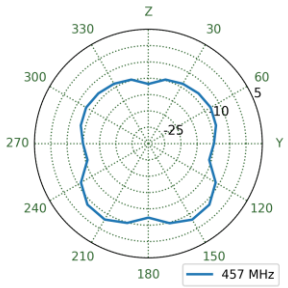
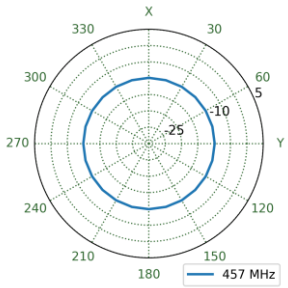
5.5 With Metal Ground Patterns at 458 MHz



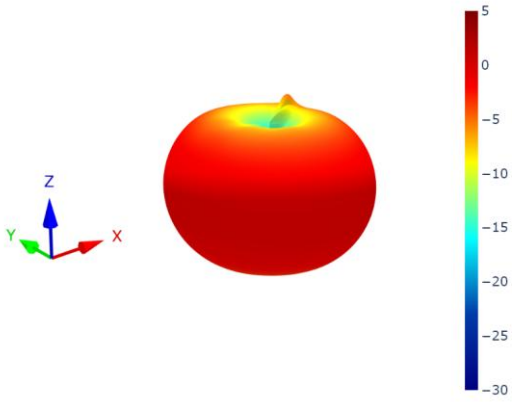
XZ Plane	YZ Plane	XY Plane
		

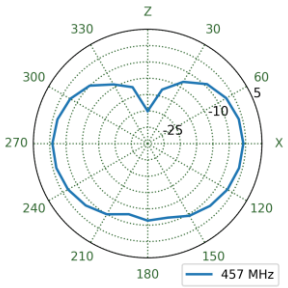
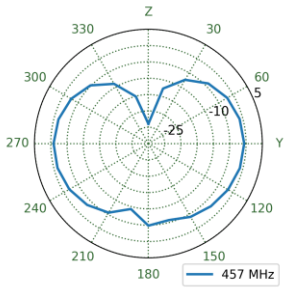
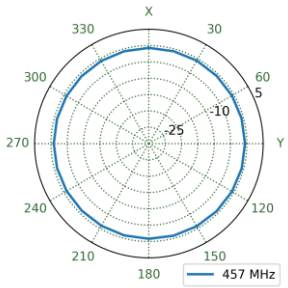
5.6 Free Space Patterns at 457 MHz



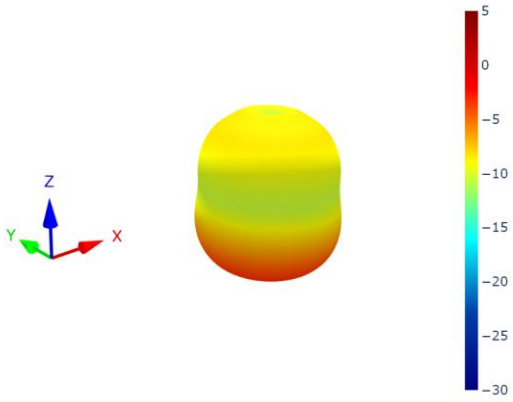
XZ Plane	YZ Plane	XY Plane
		

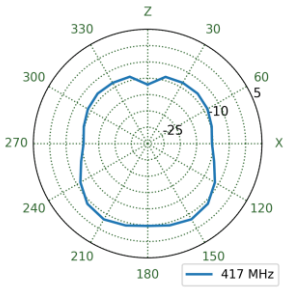
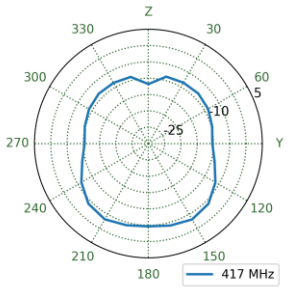
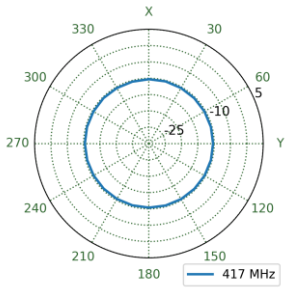
5.7 With Metal Ground Patterns at 457 MHz



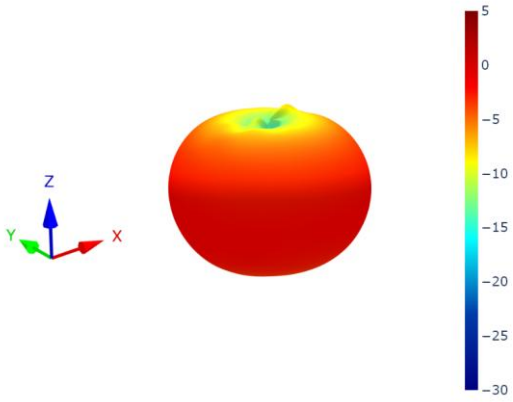
XZ Plane	YZ Plane	XY Plane
		

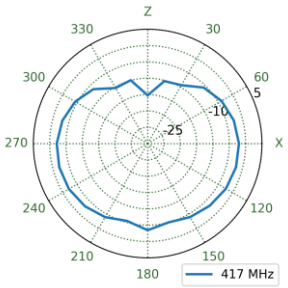
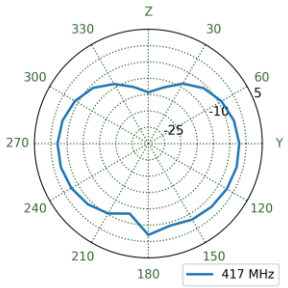
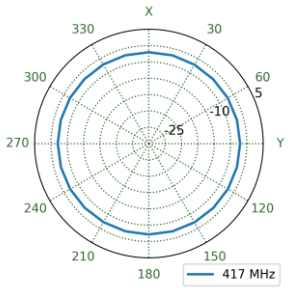
5.8 Free Space Patterns at 417 MHz



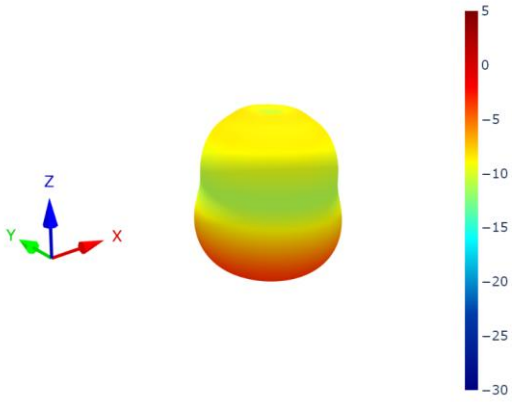
XZ Plane	YZ Plane	XY Plane
		

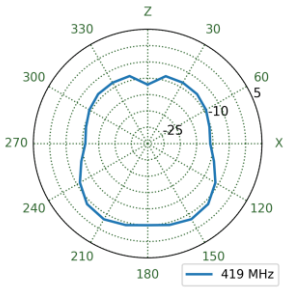
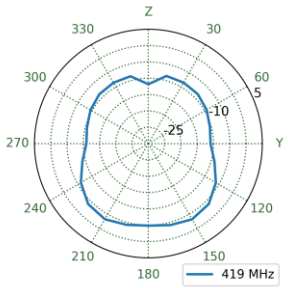
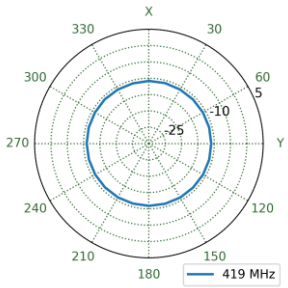
5.9 With Metal Ground Patterns at 417 MHz



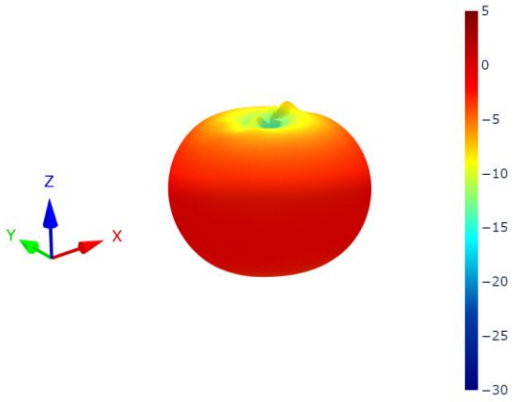
XZ Plane	YZ Plane	XY Plane
		

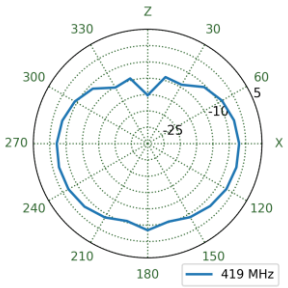
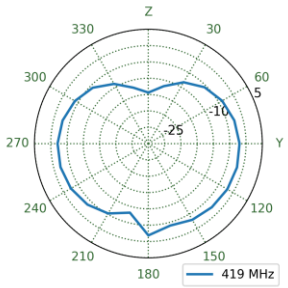
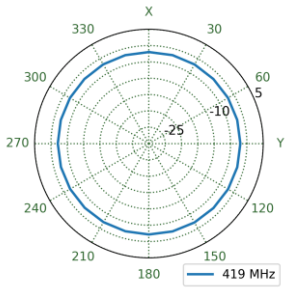
5.10 Free Space Patterns at 419 MHz



XZ Plane	YZ Plane	XY Plane
		

5.11 With Metal Ground Patterns at 419 MHz



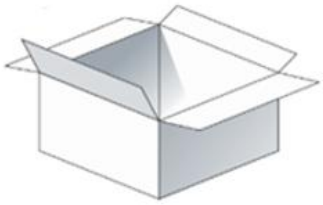
XZ Plane	YZ Plane	XY Plane
		

6. Packaging

1pcs TI.43 per small PE Bag
Dimensions 50 x 220mm
Weight: 25g

50pcs TI.43 per Large PE Bag
Dimensions 270 x 390mm
Weight: 1.25Kg

200pcs TI.43 per carton
Dimensions 360 x 310 x 160mm
Weight: 5.5Kg



Changelog for the datasheet

SPE-25-8-104 – TI.43

Revision: A (Original First Release)	
Date:	2025-03-28
Notes:	Initial Release
Author:	Gary West

Previous Revisions

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