



# TAOGLAS®



## Datasheet

### 410-430MHz UHF Terminal Mount Antenna

Part No:  
TI.33.A111

#### Description

410-430MHz SMA Male Straight Terminal Mount Antenna

#### Features:

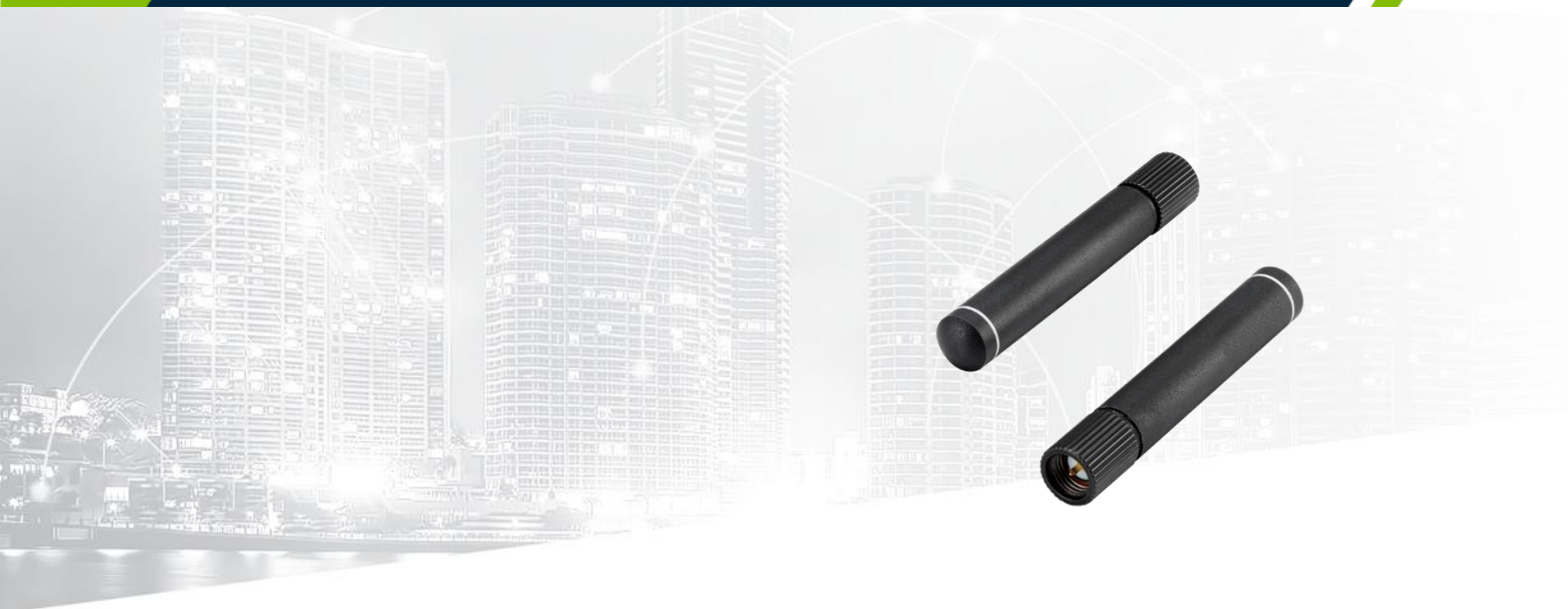
- 410-430MHz Band Operation
- IP67 Waterproof Rated
- Low-profile Terminal Antenna
- SMA(M) Straight Connector
- Dimensions:  $\varnothing 8.5\text{mm} \times 50.8\text{mm}$
- RoHS & Reach Compliant

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## 1. Introduction



The TI.33 is one of a range of super small form factor, lightweight, IP67 rated terminal mount antennas from Taoglas. It is ideal for wireless applications operating on ISM or LoRa bands covering 410-430MHz. Its robust silicone enclosure is engineered to perform in the most challenging of external environments when connecting IoT devices to smart grid and smart monitoring applications.

With its IP67 rating, the TI.33 can withstand dust, dirt, and even complete submersion in water, making it the perfect choice for any IoT application that demands both reliable connectivity and extreme durability. Whether you're connecting sensors for remote agricultural, monitoring equipment in industrial settings, or building the infrastructure for smart cities, the TI.33 is a great solution.

If you are looking for an antenna that's small, tough, and versatile, look no further than the TI.33. Contact your regional Taoglas Customer Services Team for more information or to discuss your project.

## 2. Specification

LTE Electrical								
Band		Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. Input Power
UHF 410-430MHz	On 15x9cm Ground plane (Long side)	21.8	-6.61	1.22	50 Ω	Linear	Omni	10W
	On 15x9cm Ground plane (Short side)	31.8	-4.97	2.78				

5G/4G Bands				
Band Number	5G NR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA			
	Uplink	Downlink	ON 15x9cm Ground Plane	ON 9x15cm Ground Plane
UHF	410 to 430		✓	✓

Mechanical	
Dimensions	ø8.5mm x 50.8mm
Weight	6.9g
Material	Silicone
Connector	SMA(M)

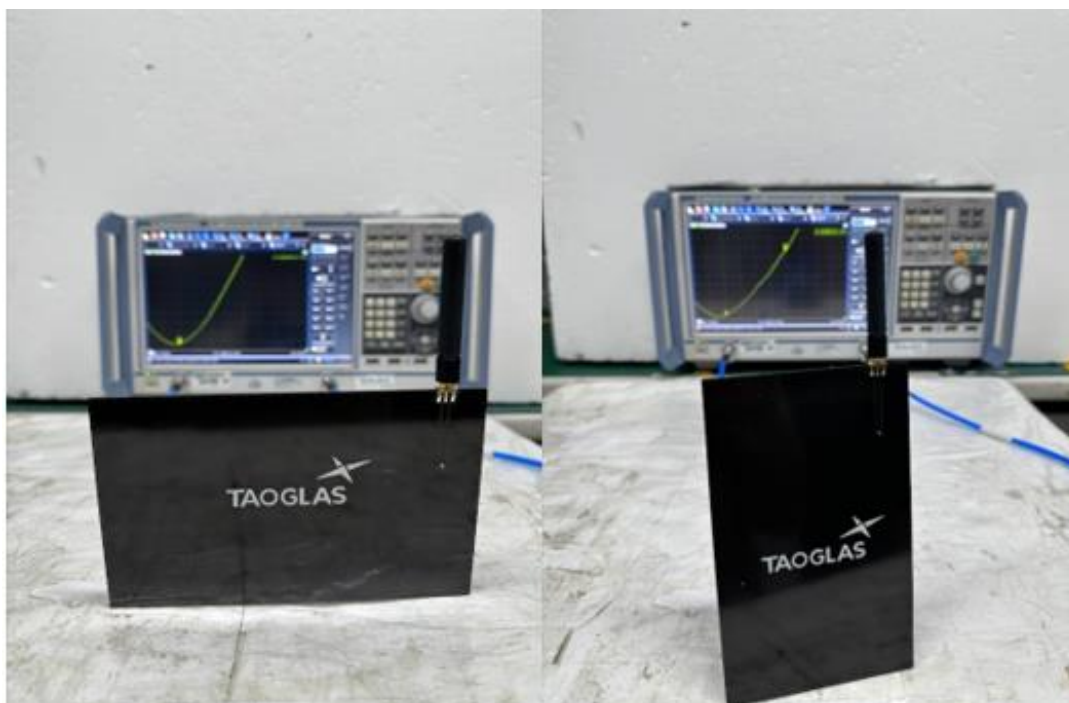
Environmental	
Operating Temperature	-40°C ~ +85°C
Waterproof Rating	IP67

## 3. Antenna Characteristics

### 3.1 Test Setup



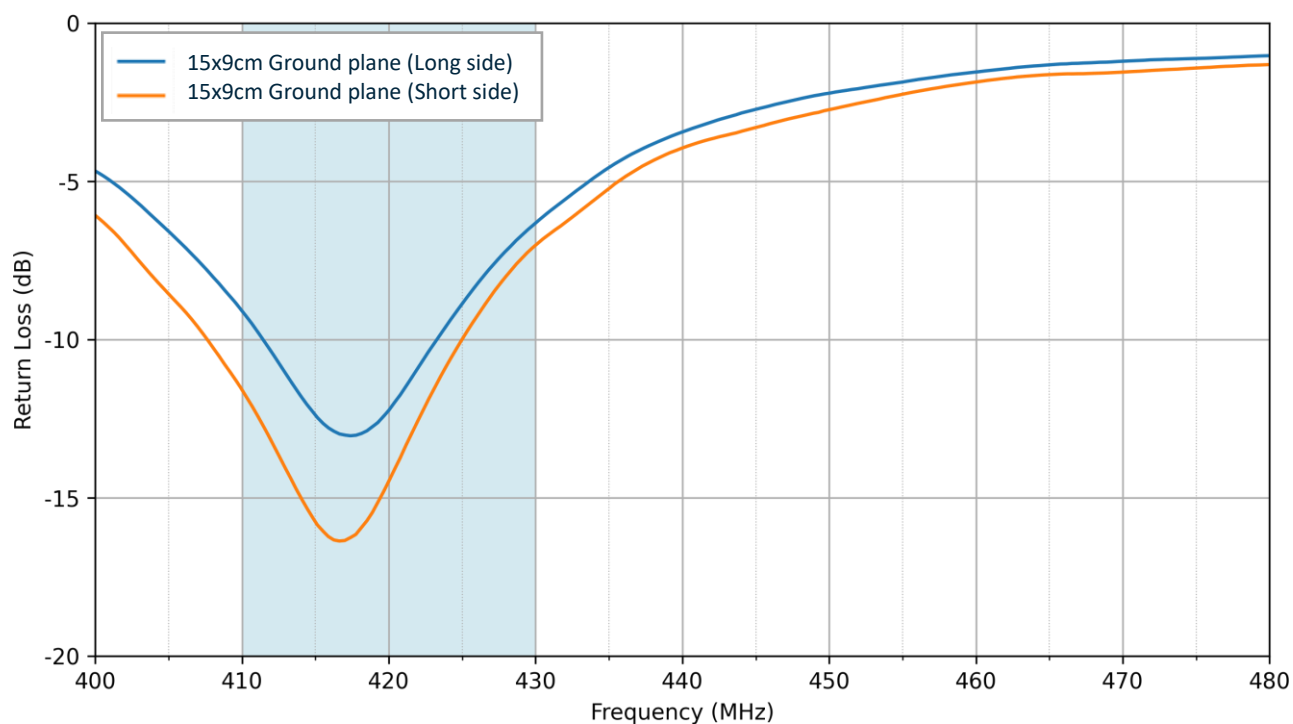
Vector Network Analyzer



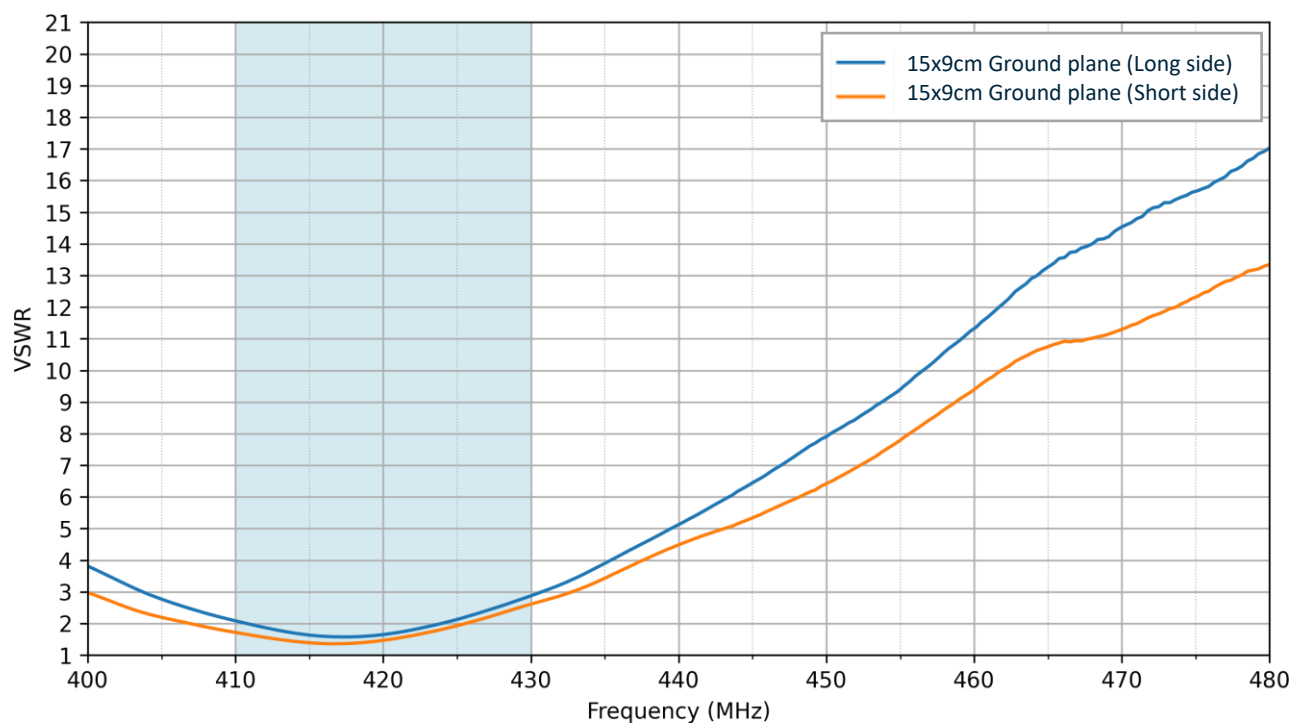
On 15x9cm Ground plane (Long side)

On 15x9cm Ground plane (Short side)

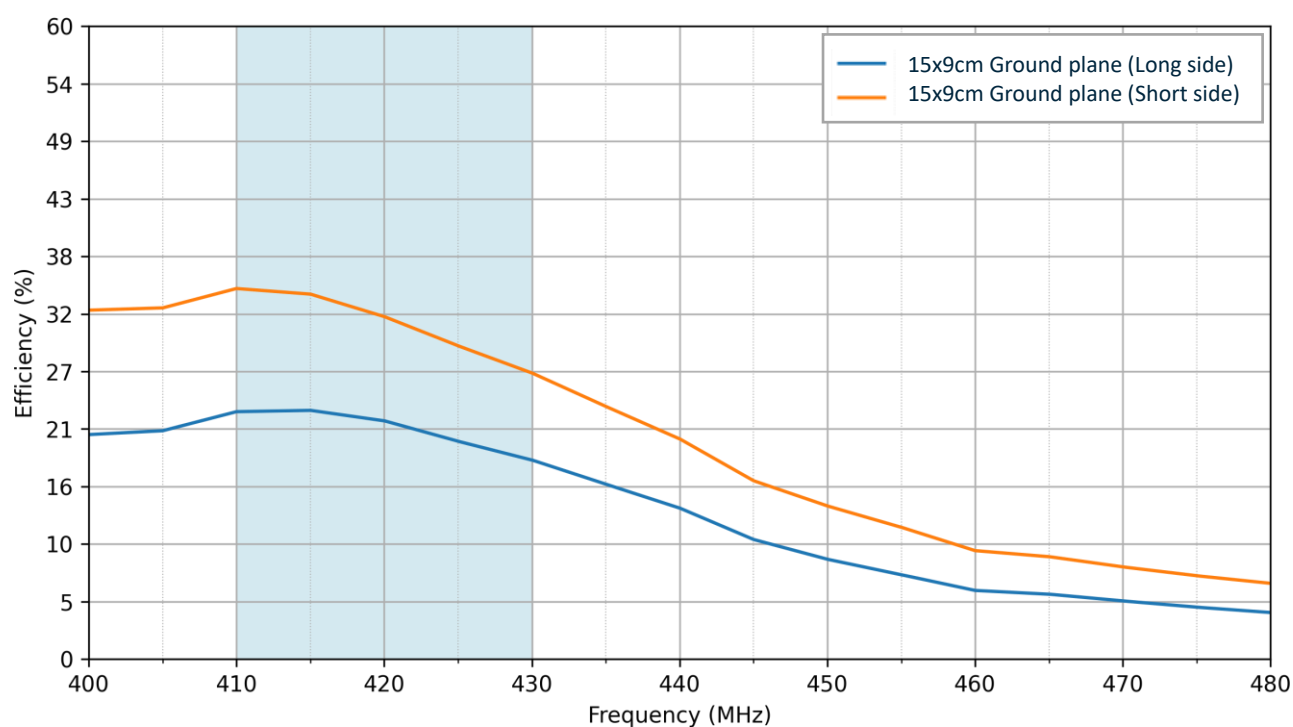
### 3.2 Return Loss



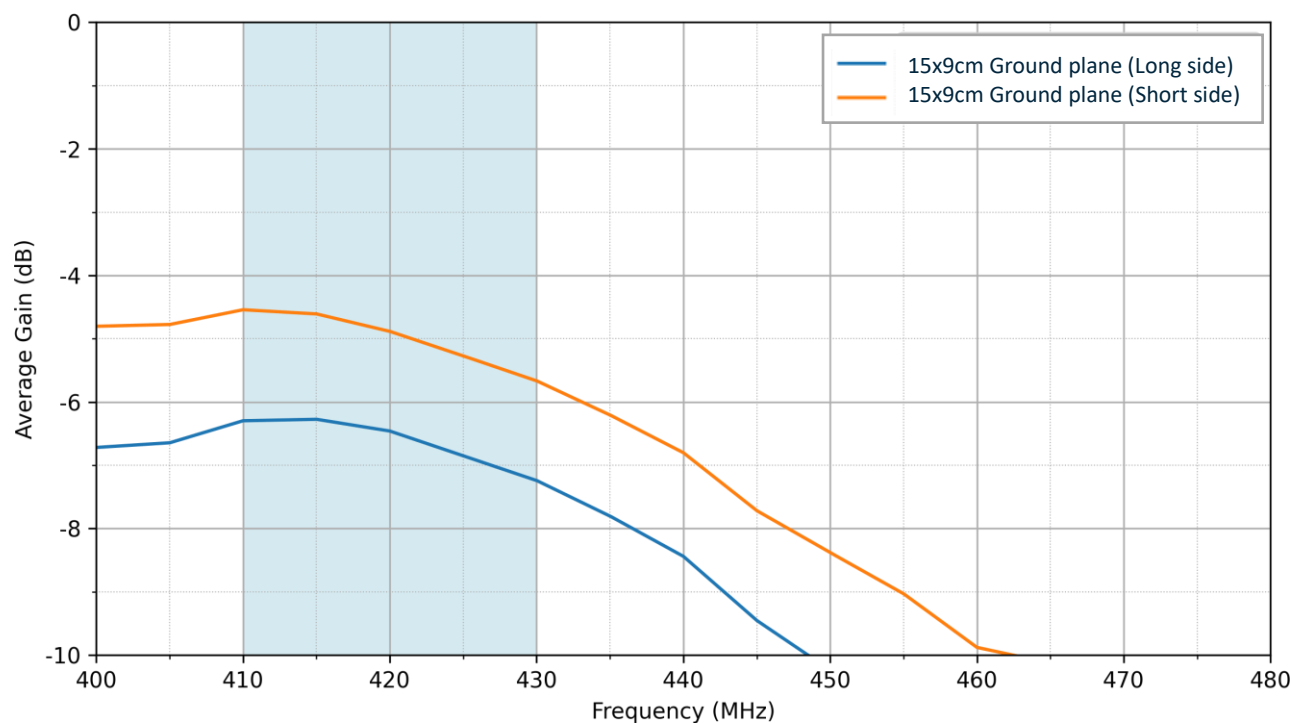
### 3.3 VSWR



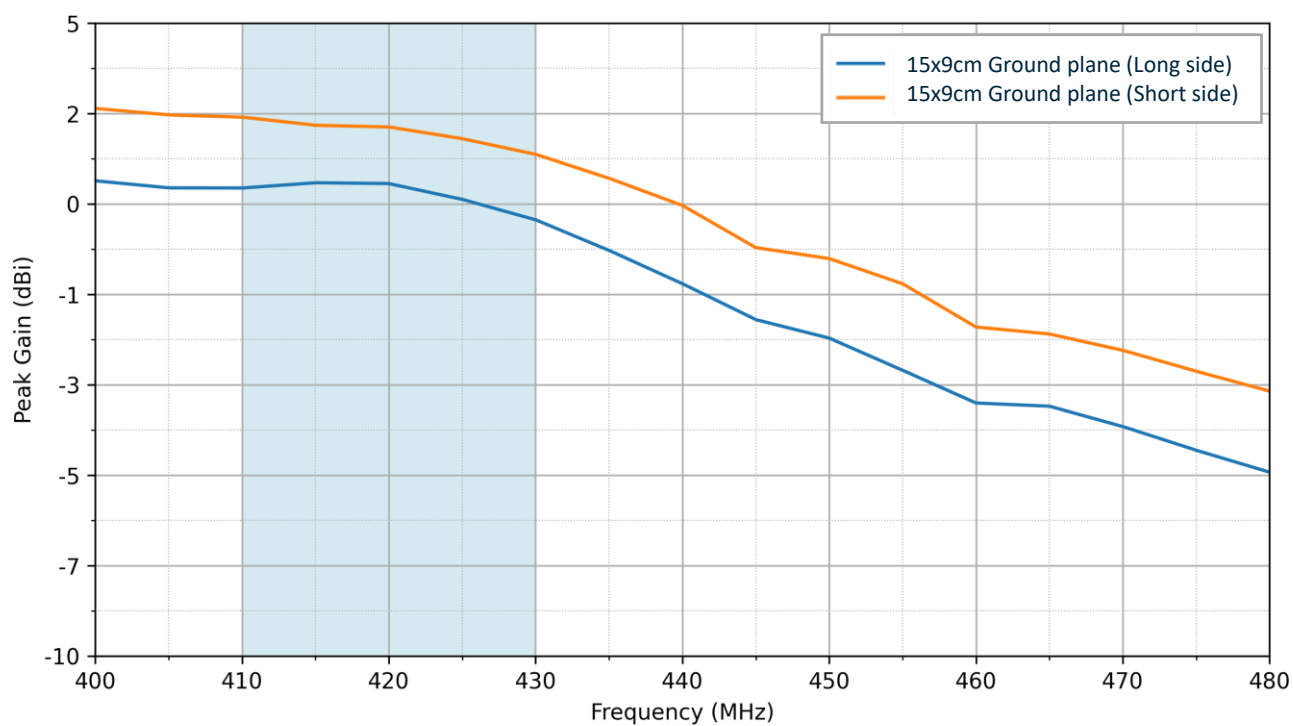
### 3.4 Efficiency



### 3.5 Average Gain



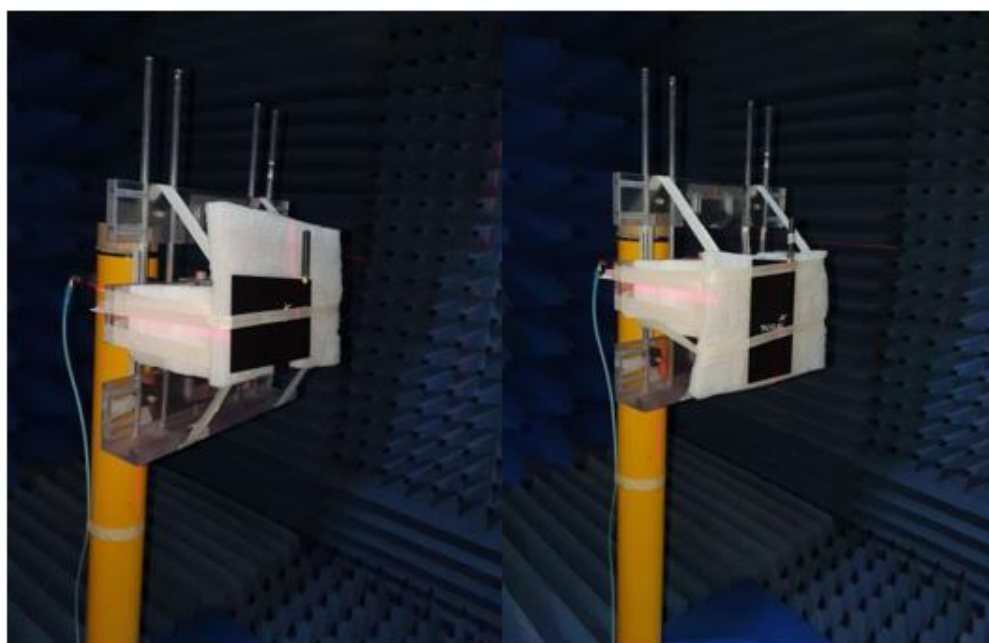
### 3.6 Peak Gain





## 4. Radiation Patterns

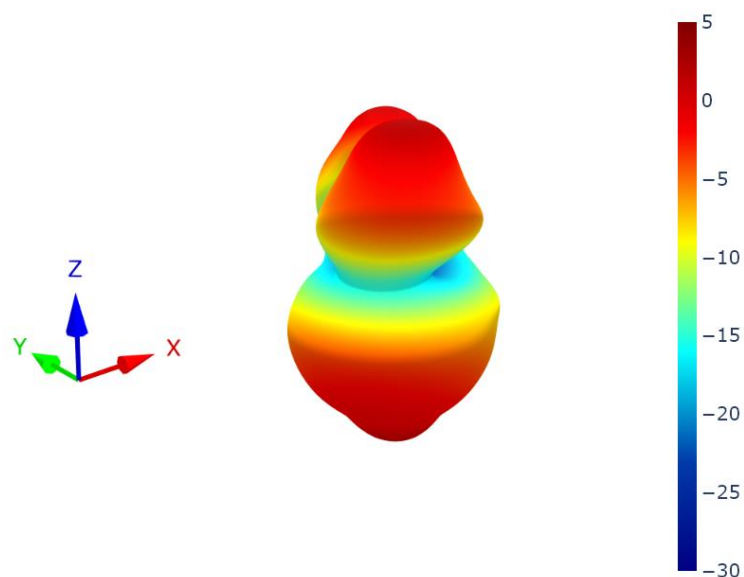
### 4.1 Test Setup



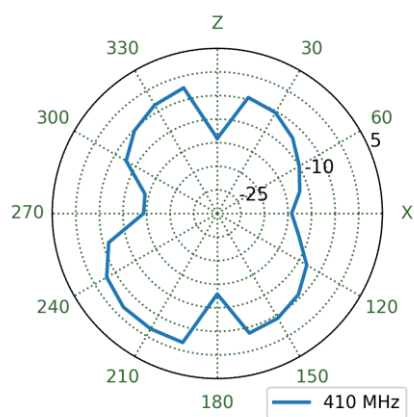
On 15x9cm Ground plane (Long side)

On 15x9cm Ground plane (Short side)

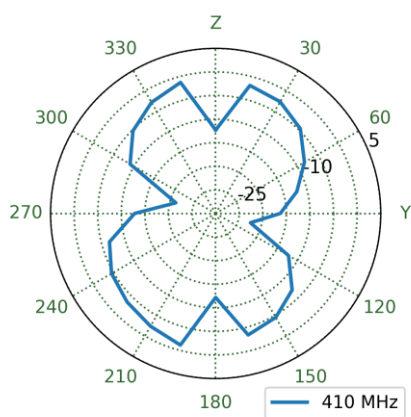
## 4.2 TI.33.A111 - Patterns at 410 MHz on 15x9cm ground plane (Long side)



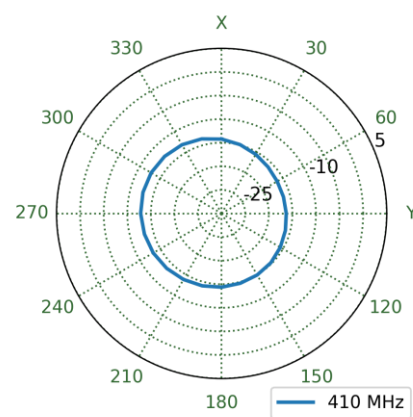
XZ Plane



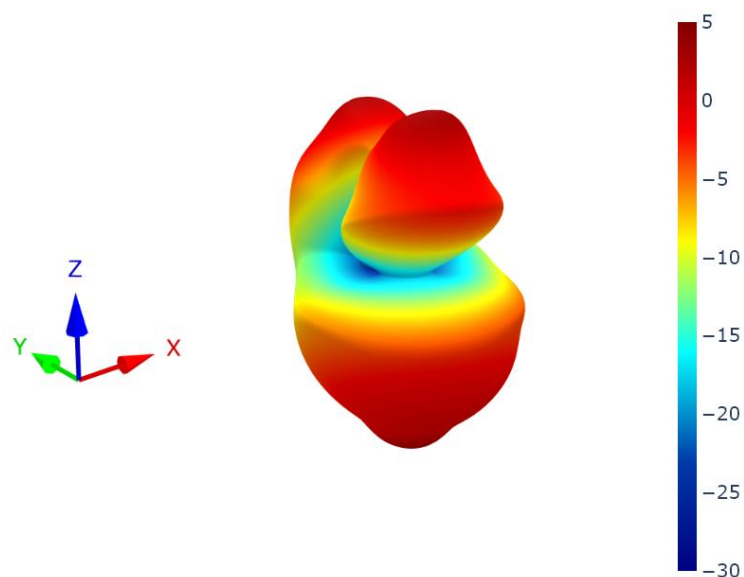
YZ Plane



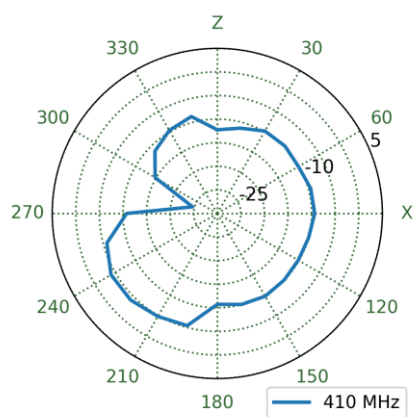
XY Plane



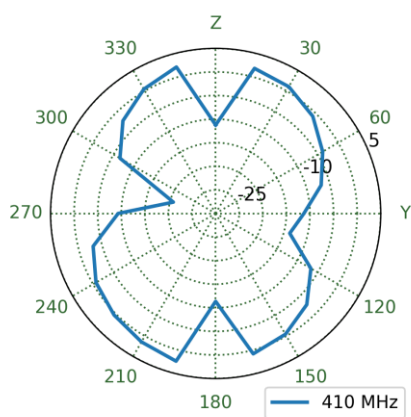
# 4.3 TI.33.A111- Patterns at 410 MHz on 15x9cm ground plane (Short side)



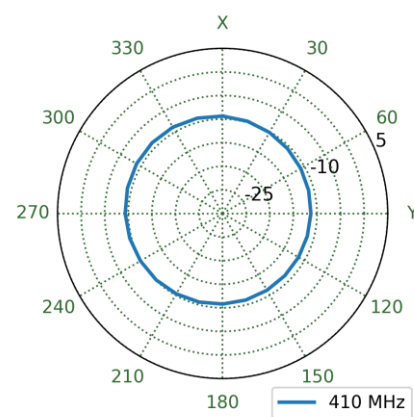
XZ Plane



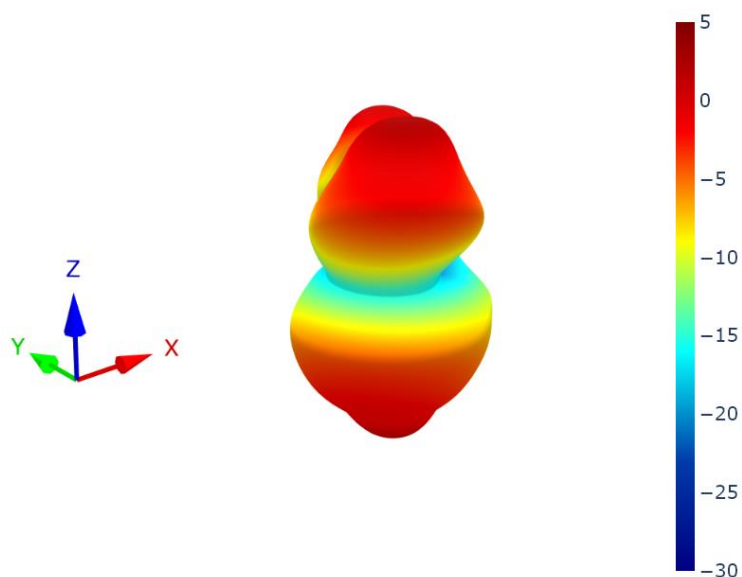
YZ Plane



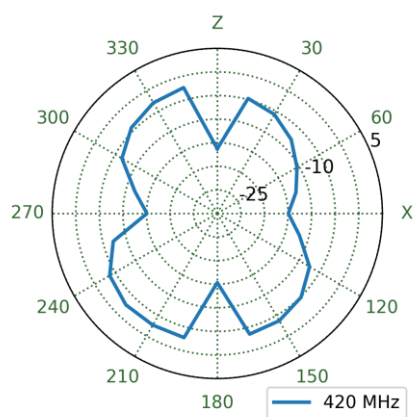
XY Plane



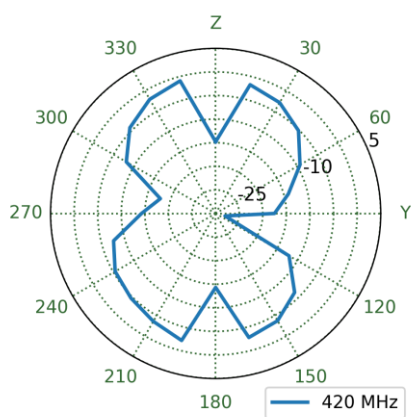
#### 4.4 TI.33.A111- Patterns at 420 MHz on 15x9cm ground plane (Long side)



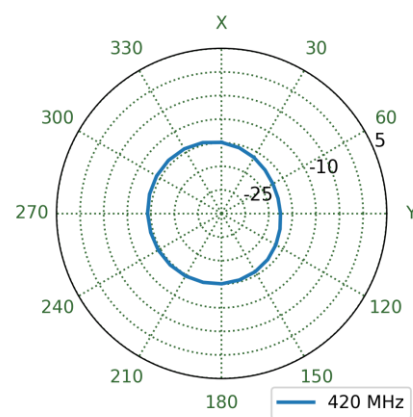
XZ Plane



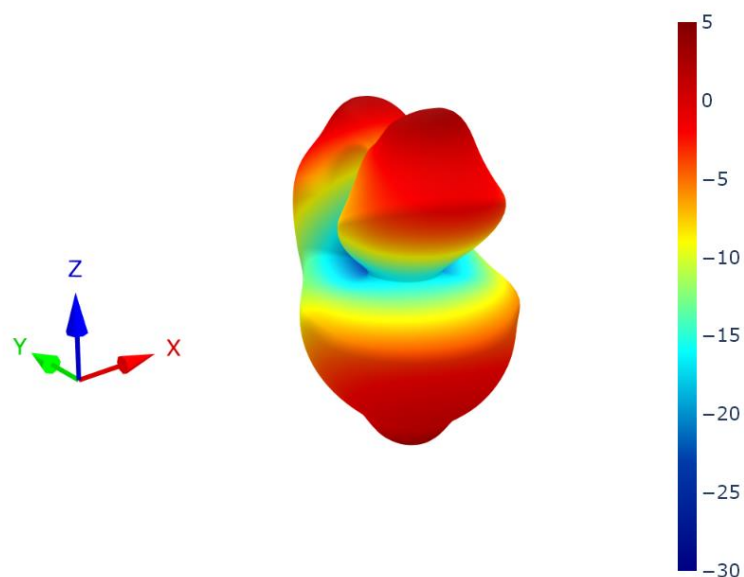
YZ Plane



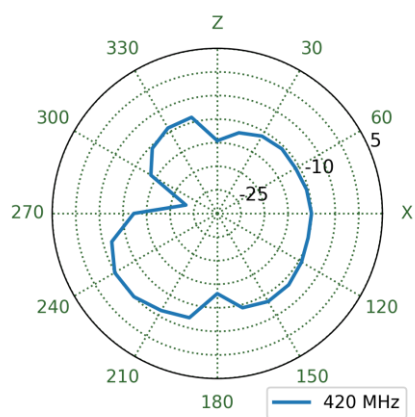
XY Plane



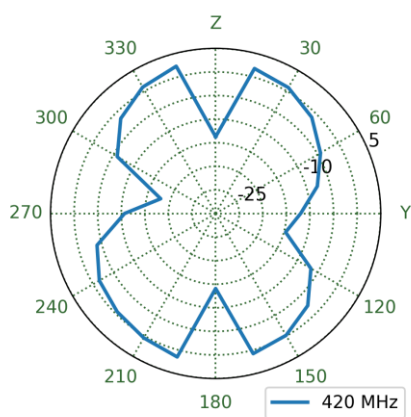
# 4.5 TI.33.A111- Patterns at 420 MHz on 15x9cm ground plane (Short side)



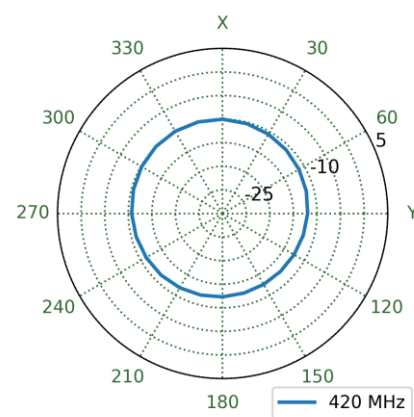
XZ Plane



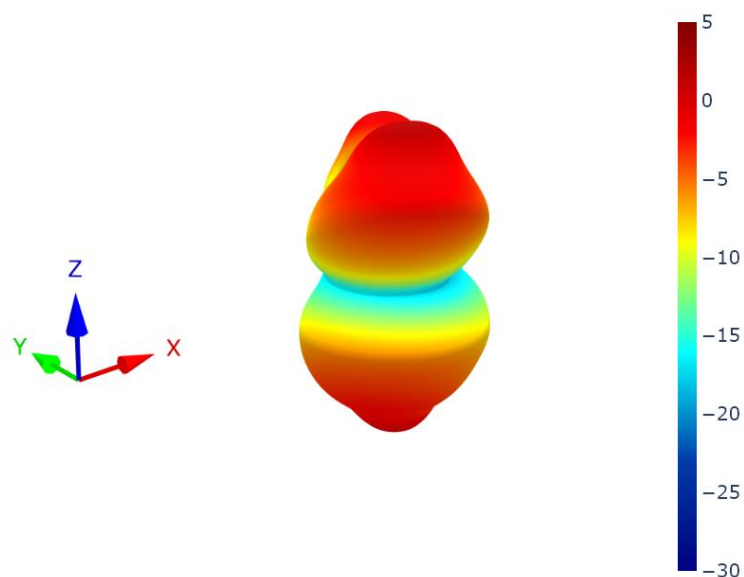
YZ Plane



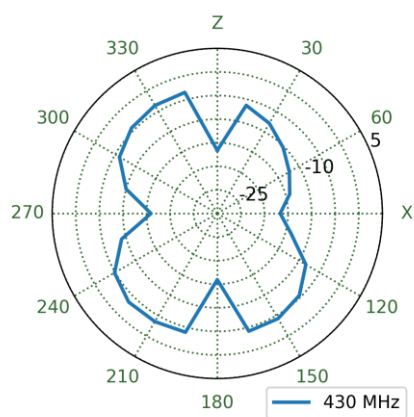
XY Plane



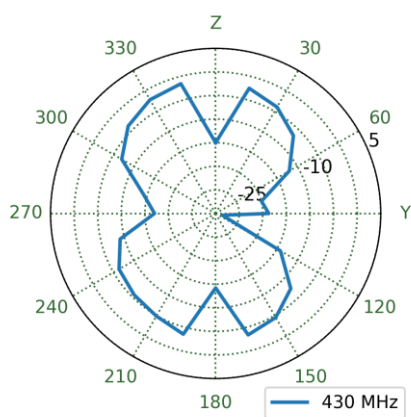
#### 4.6 TI.33.A111- Patterns at 430 MHz on 15x9cm ground plane (Long side)



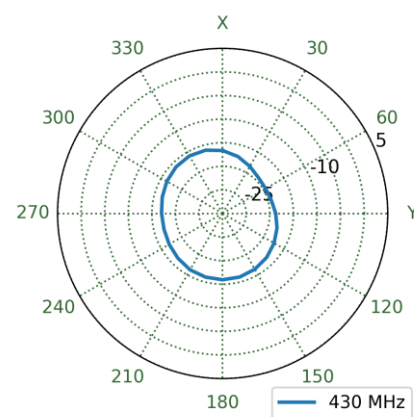
XZ Plane



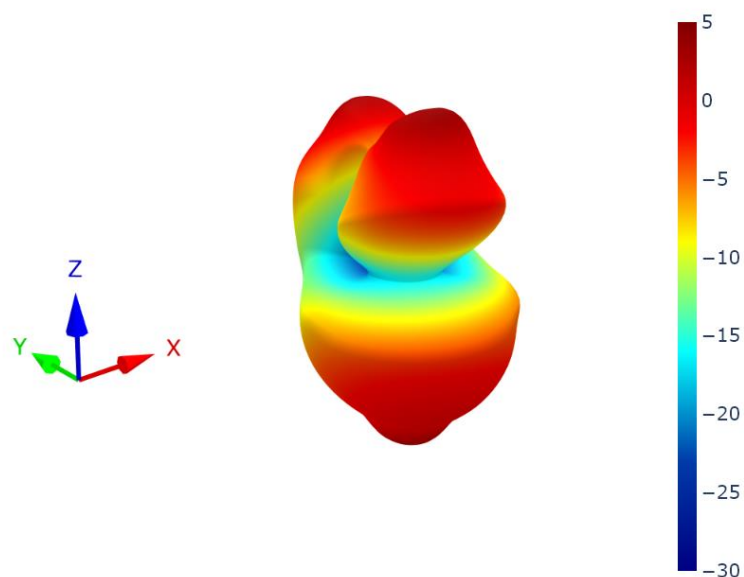
YZ Plane



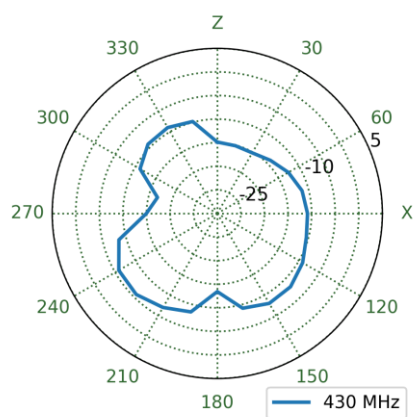
XY Plane



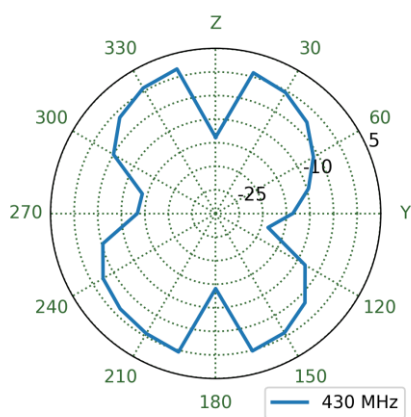
# 4.7 TI.33.A111- Patterns at 430 MHz on 15x9cm ground plane (Short side)



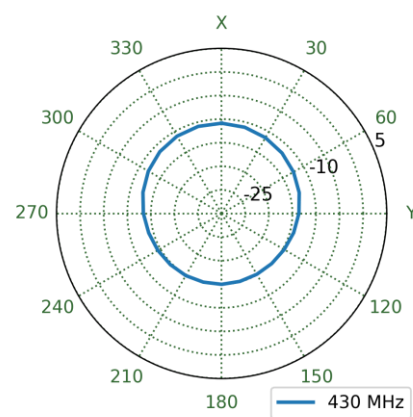
XZ Plane



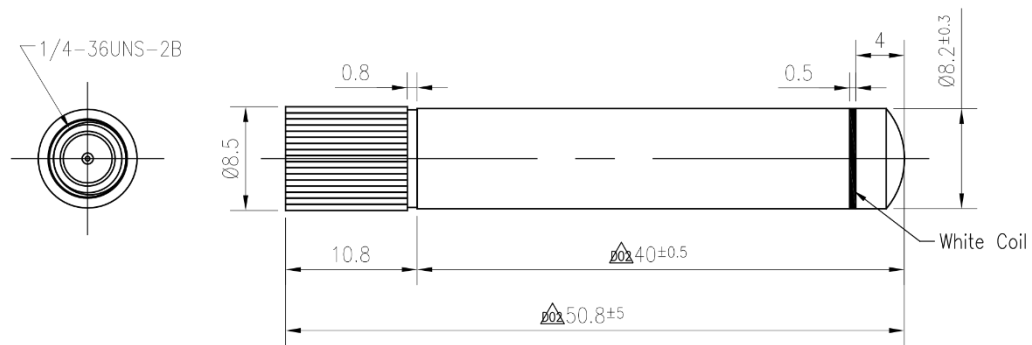
YZ Plane



XY Plane



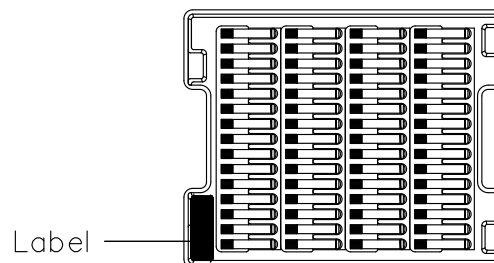
## 5. Mechanical Drawing



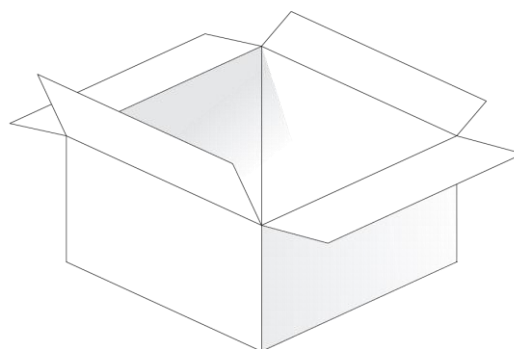


## 6. Packaging

60pcs TI.33.A111 per Tray  
Weight: 0.5Kg



1200pcs per Carton  
Dimensions: 328x296x282mm  
Weight: 10Kg



Changelog for the datasheet

SPE-24-8-026– TI.33.A111

Revision: A (First Release)	
Date:	2024-02-12
Notes:	Initial Release
Author:	Cesar Sousa

Previous Revisions



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