



# 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:  $\varnothing$ 8.5mm x 50.8mm  
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 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<br>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            |           |              |                   |                  |

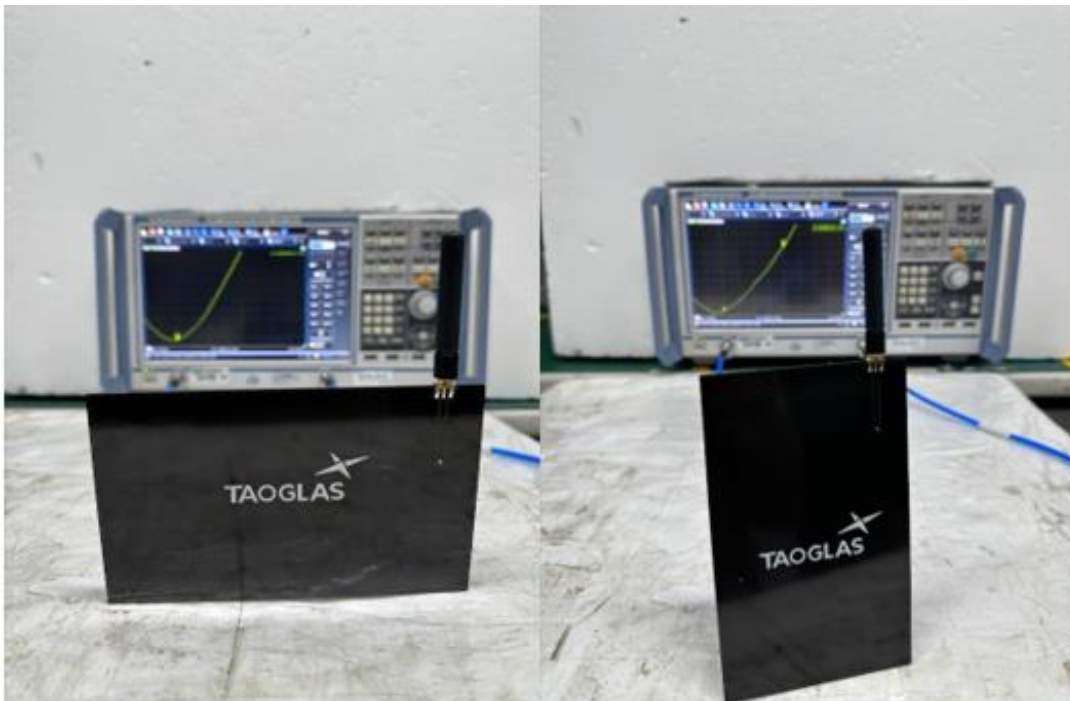
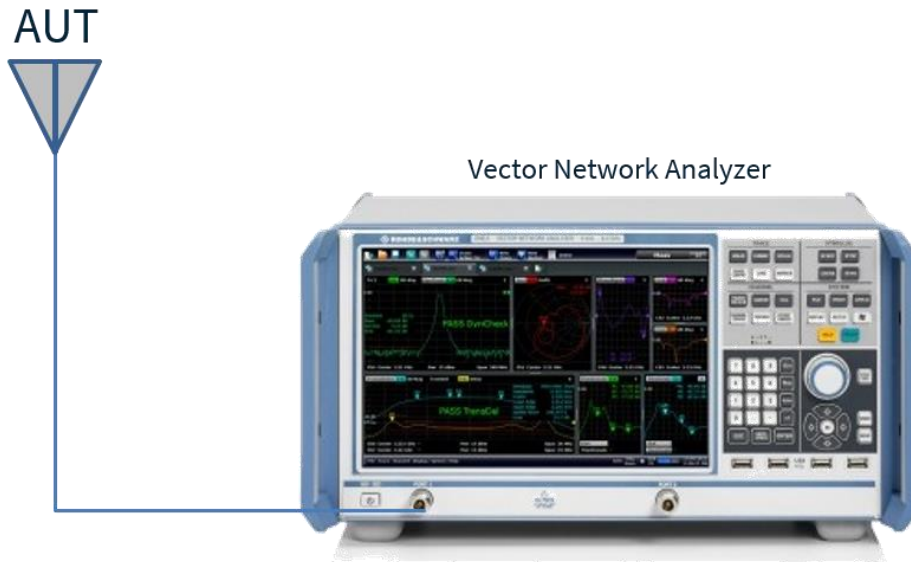
| 5G/4G Bands |  |          |                        |                        |
|-------------|--|----------|------------------------|------------------------|
| Band Number | 5G NR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA |          |                        |                        |
|             | 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   | TPEE            |
| Connector  | SMA(M)          |

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

### 3. Antenna Characteristics

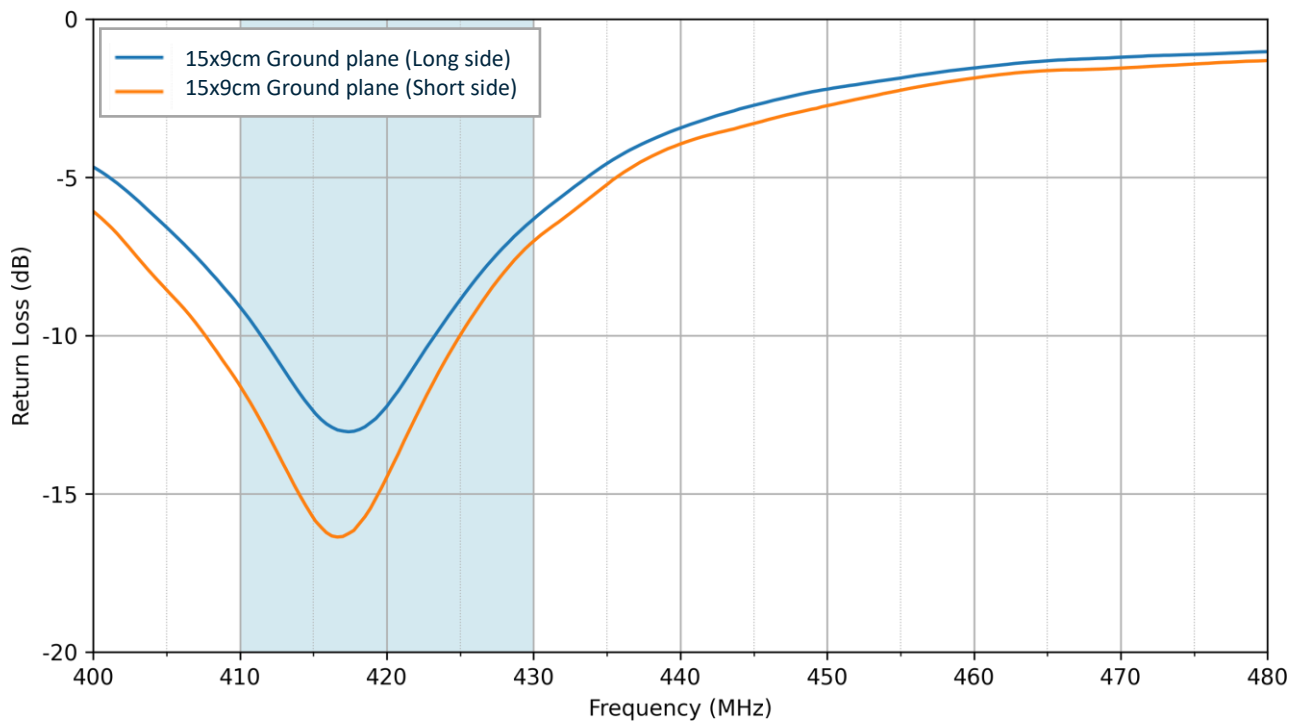
#### 3.1 Test Setup



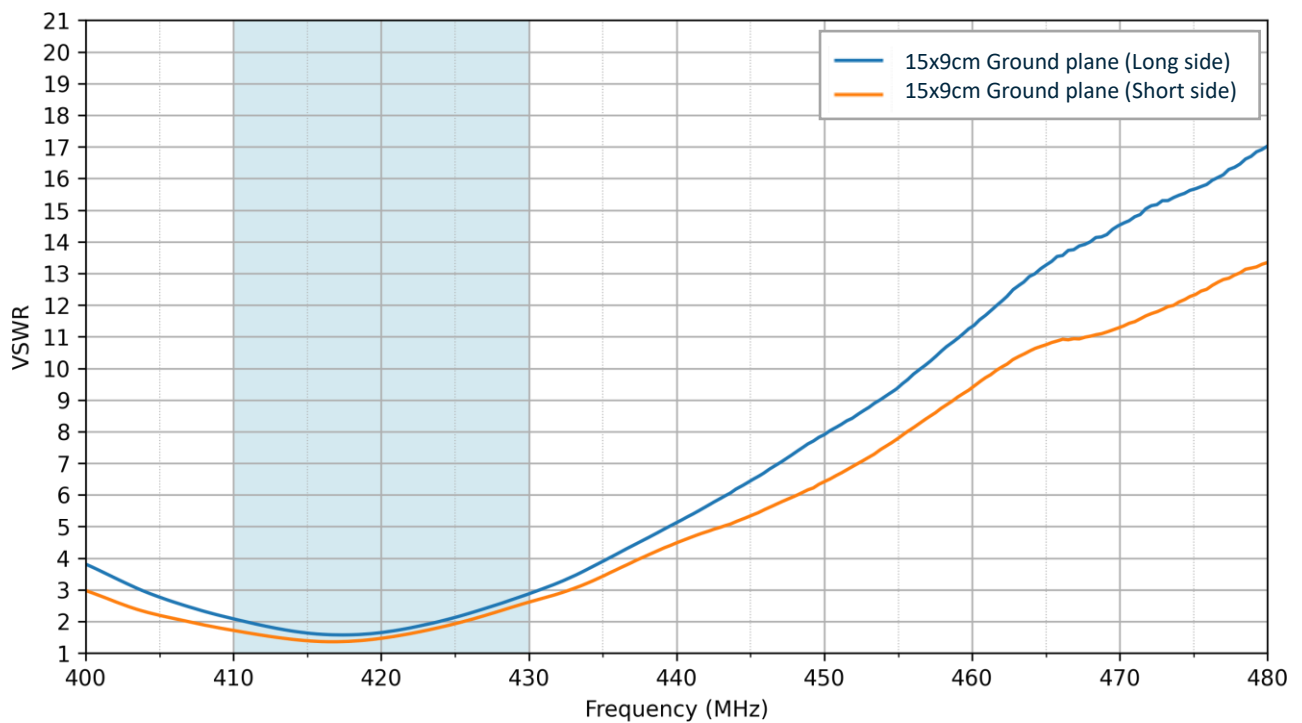
On 15x9cm Ground plane (Long side)

On 15x9cm Ground plane (Short side)

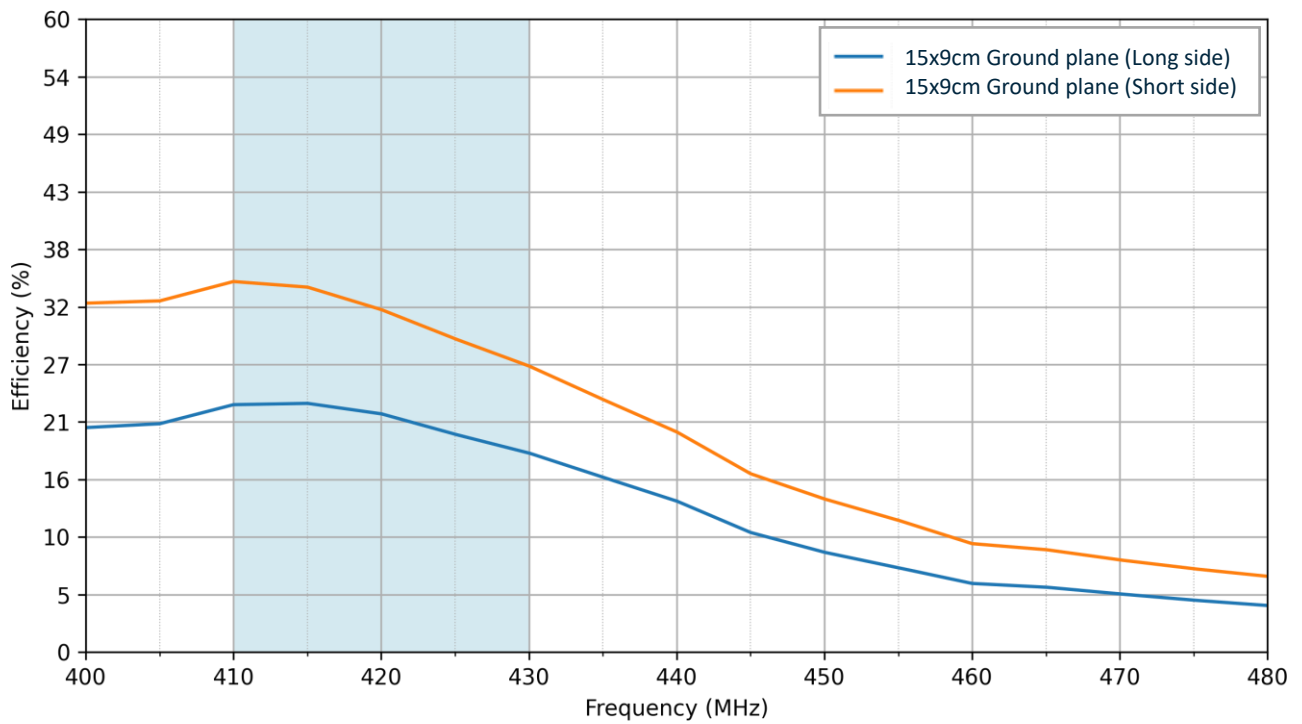
### 3.2 Return Loss



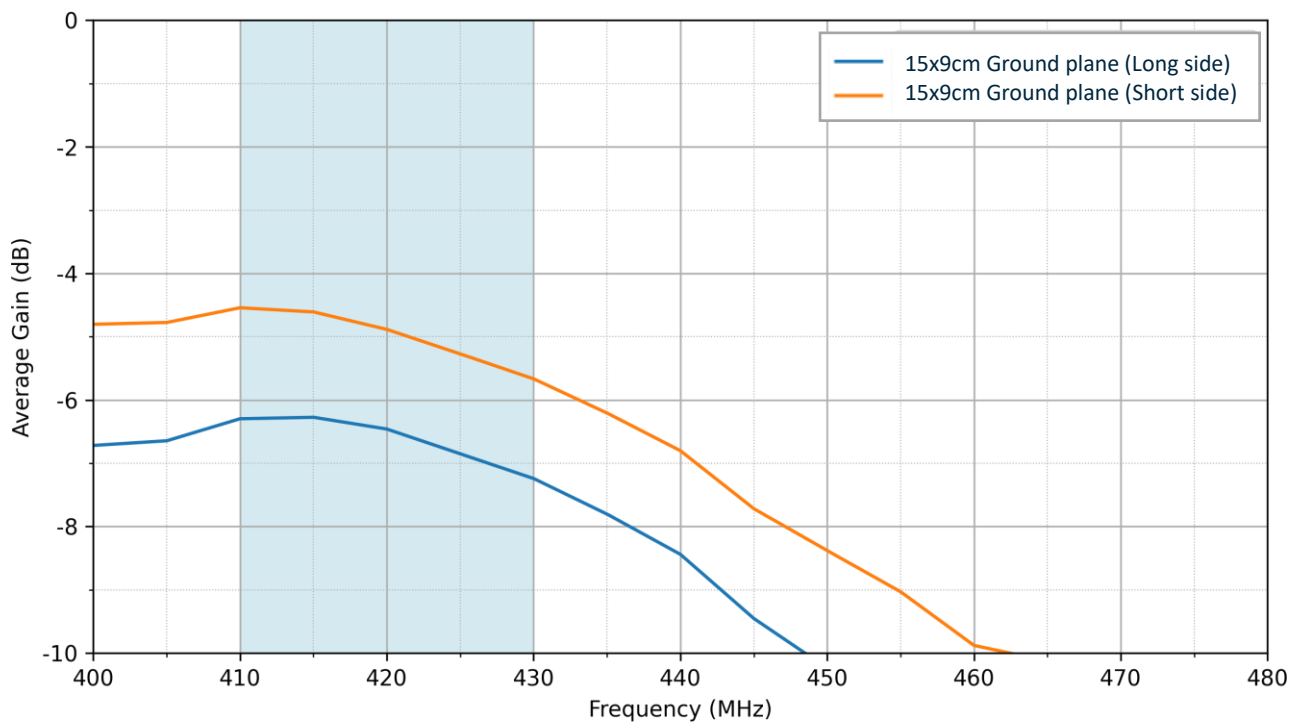
### 3.3 VSWR



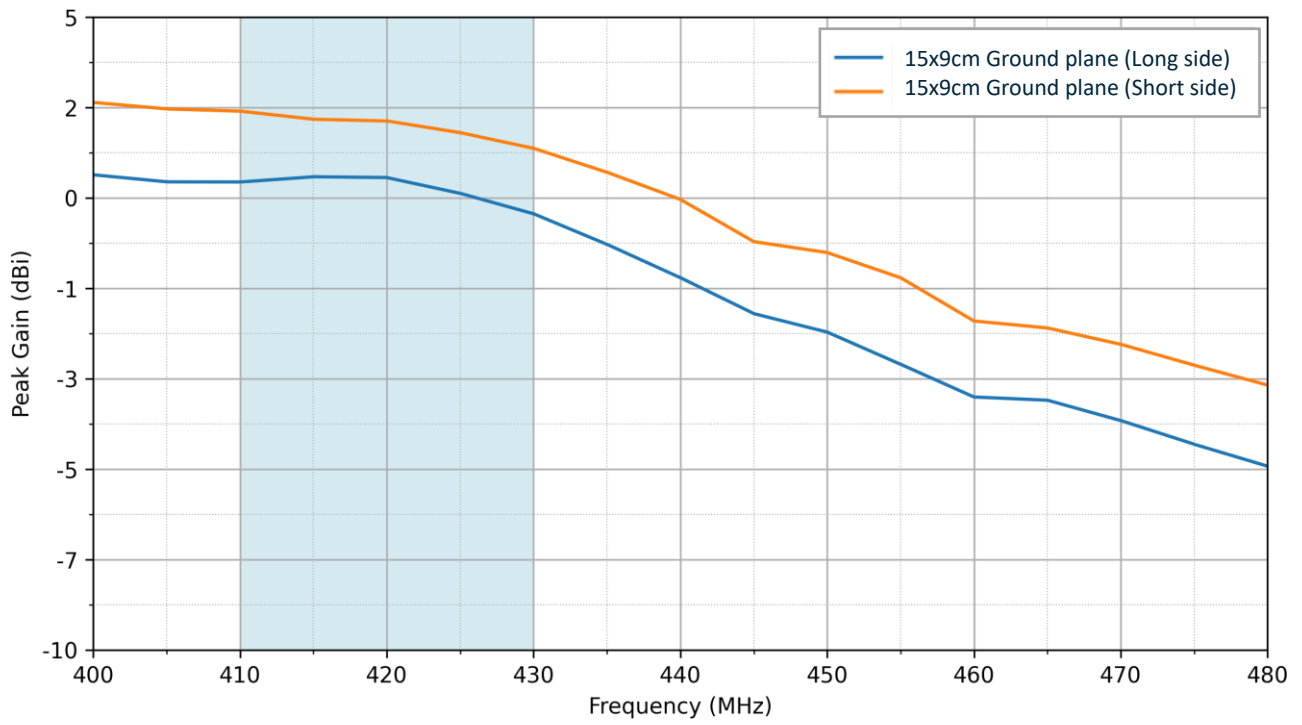
### 3.4 Efficiency



### 3.5 Average Gain

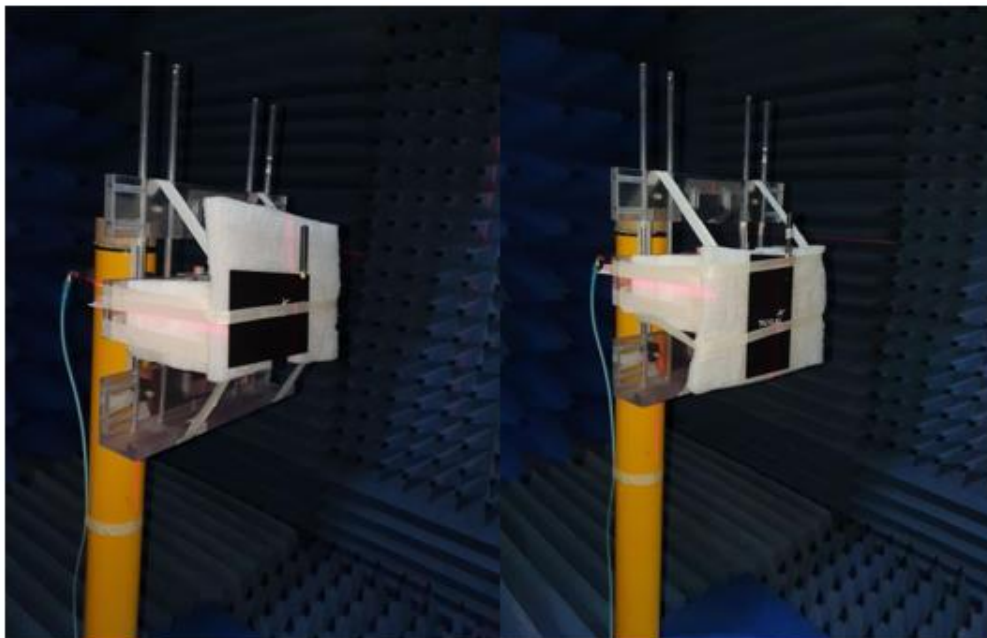
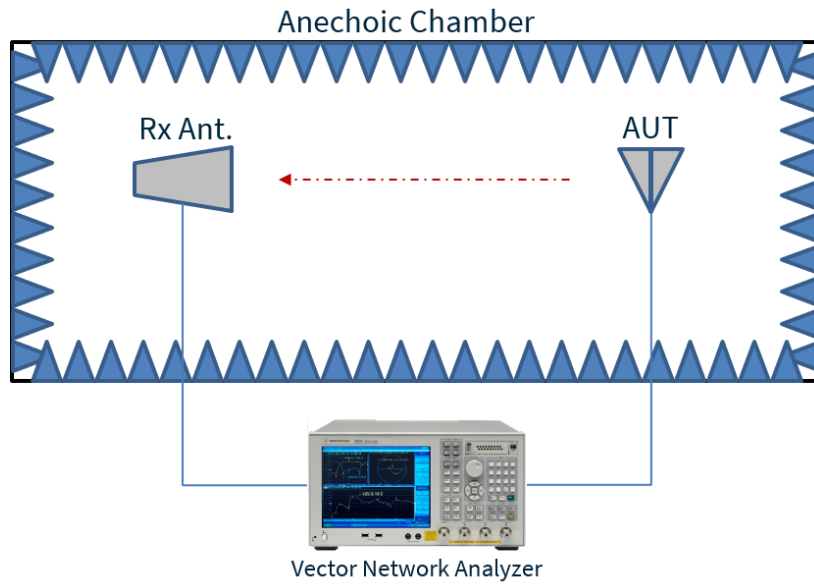


### 3.6 Peak Gain



## 4. Radiation Patterns

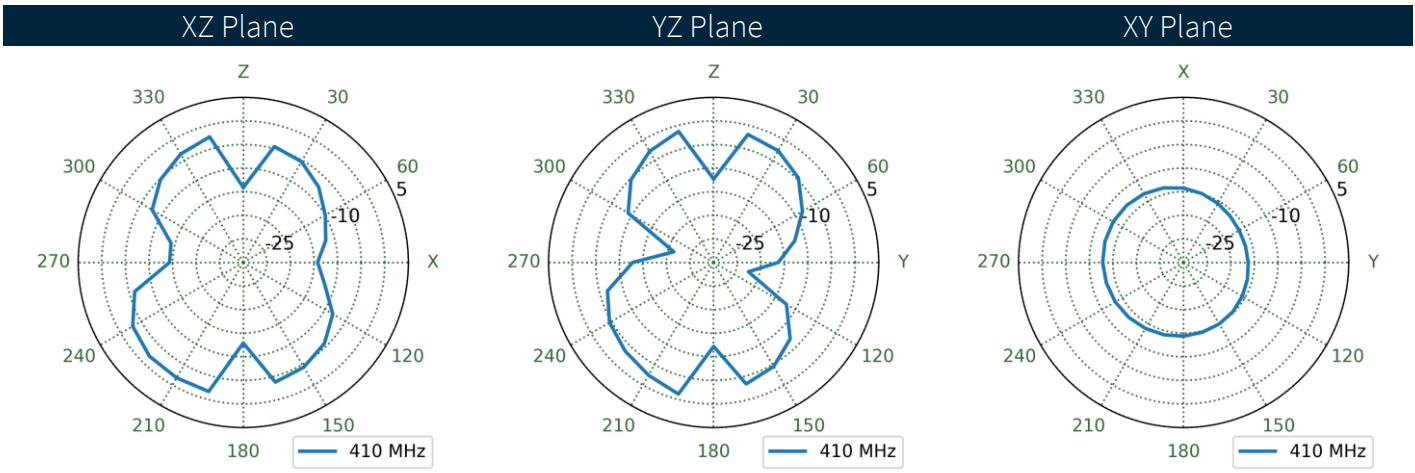
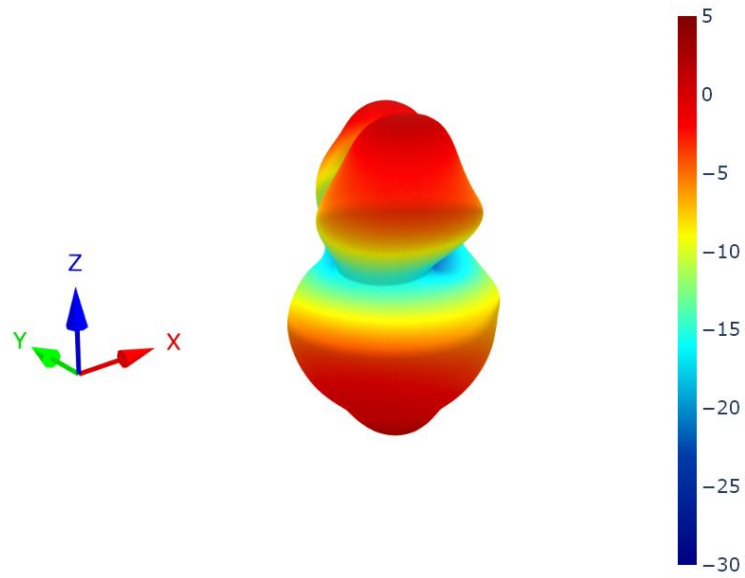
### 4.1 Test Setup



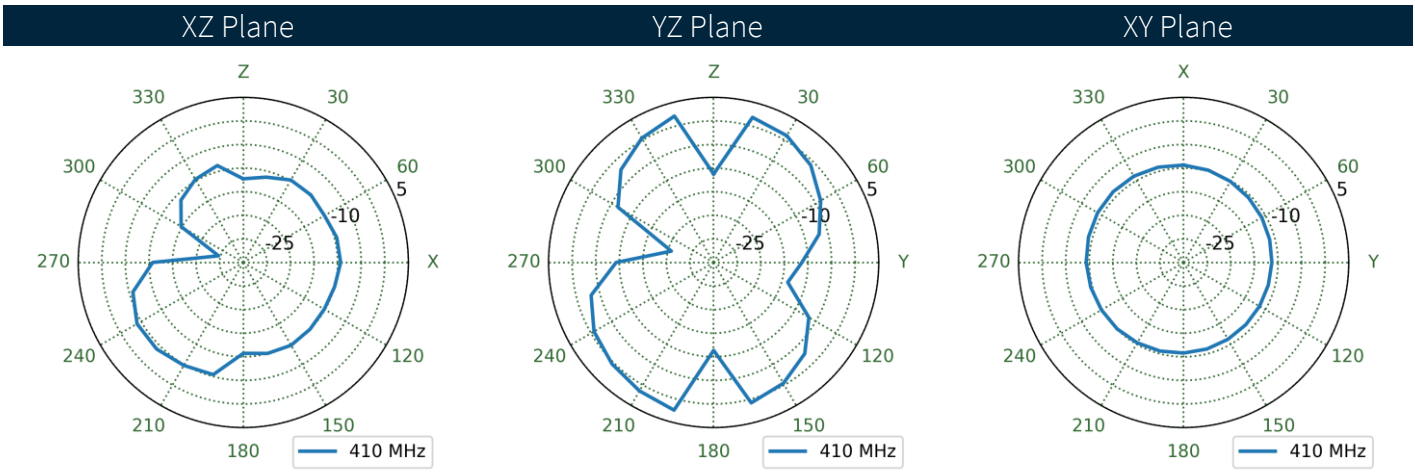
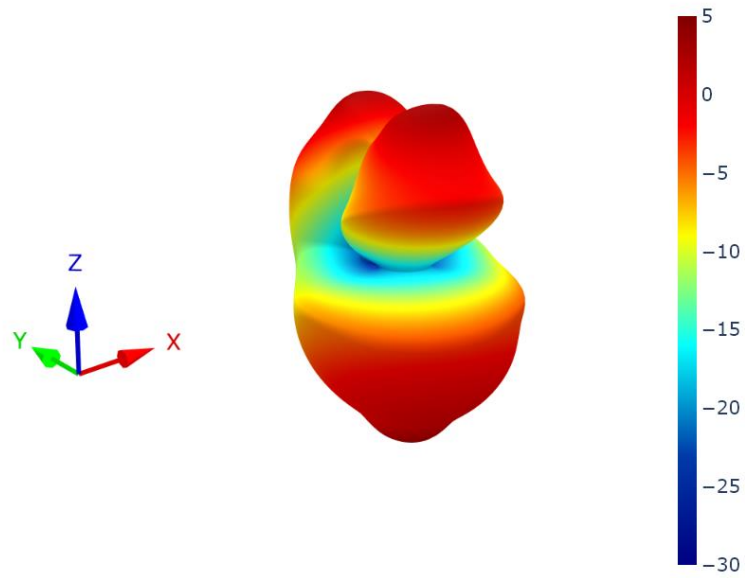
On 15x9cm Ground plane (Long side)

On 15x9cm Ground plane (Short side)

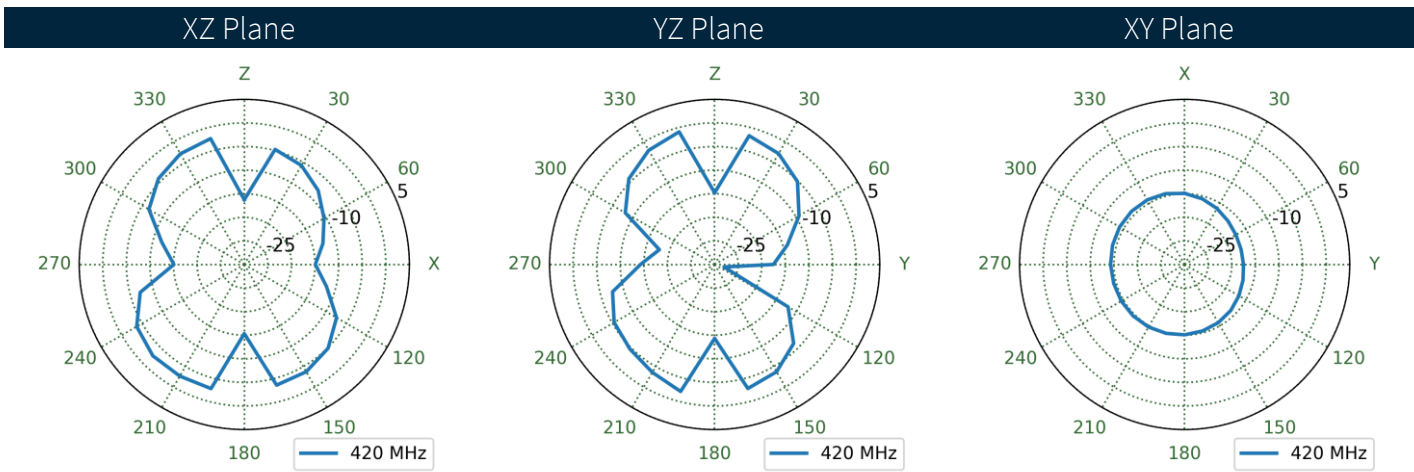
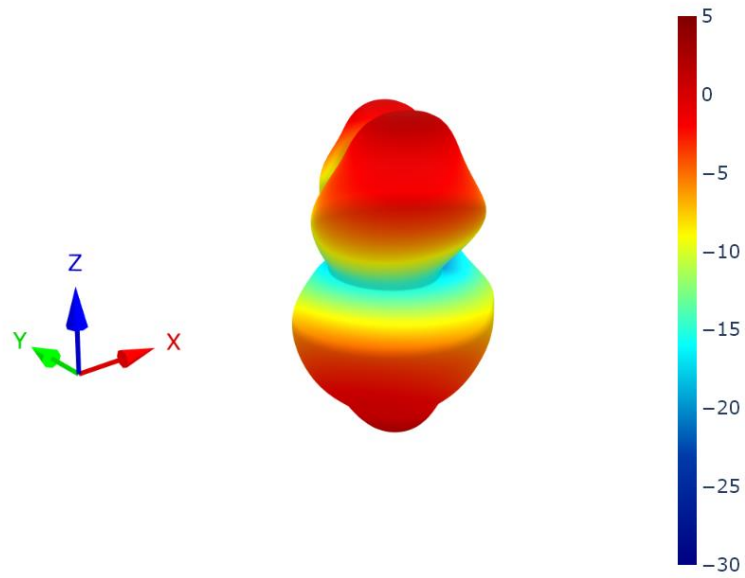
4.2 TI.33.A111 - Patterns at 410 MHz on 15x9cm ground plane (Long side)



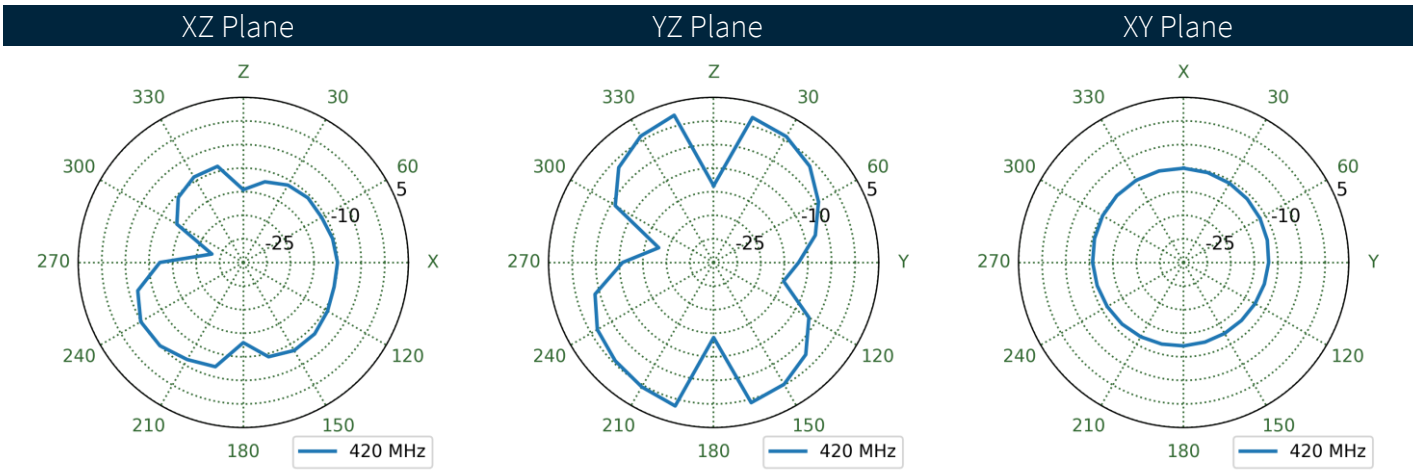
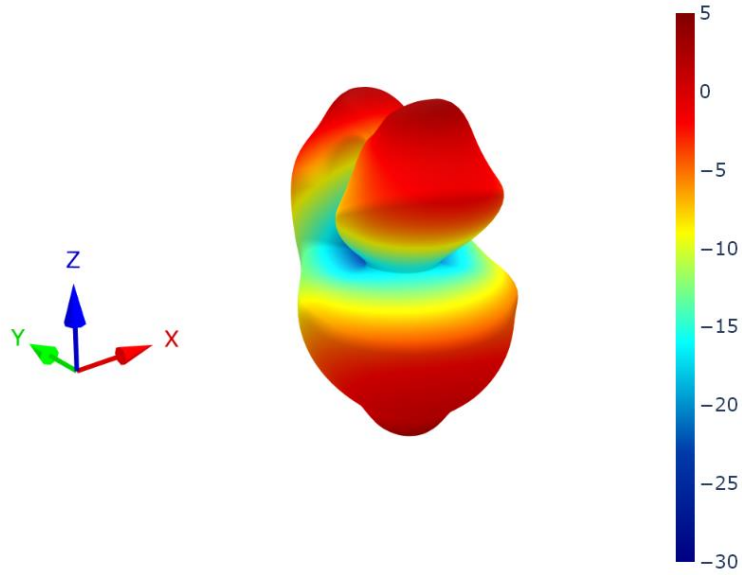
4.3 TI.33.A111- Patterns at 410 MHz on 15x9cm ground plane (Short side)



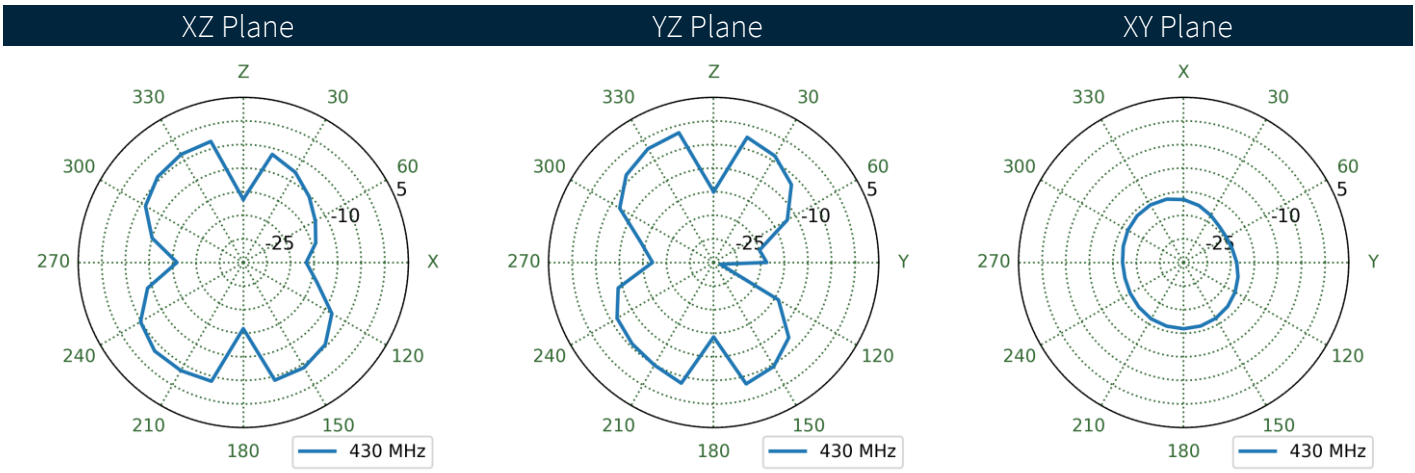
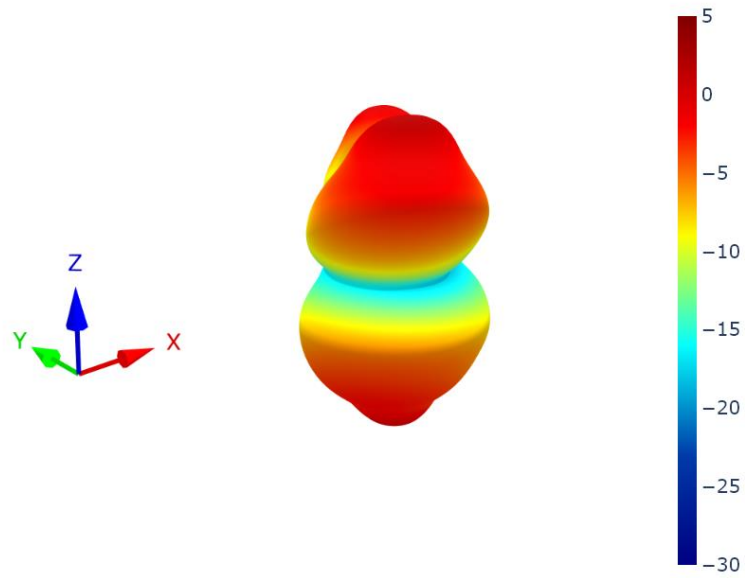
4.4 TI.33.A111- Patterns at 420 MHz on 15x9cm ground plane (Long side)



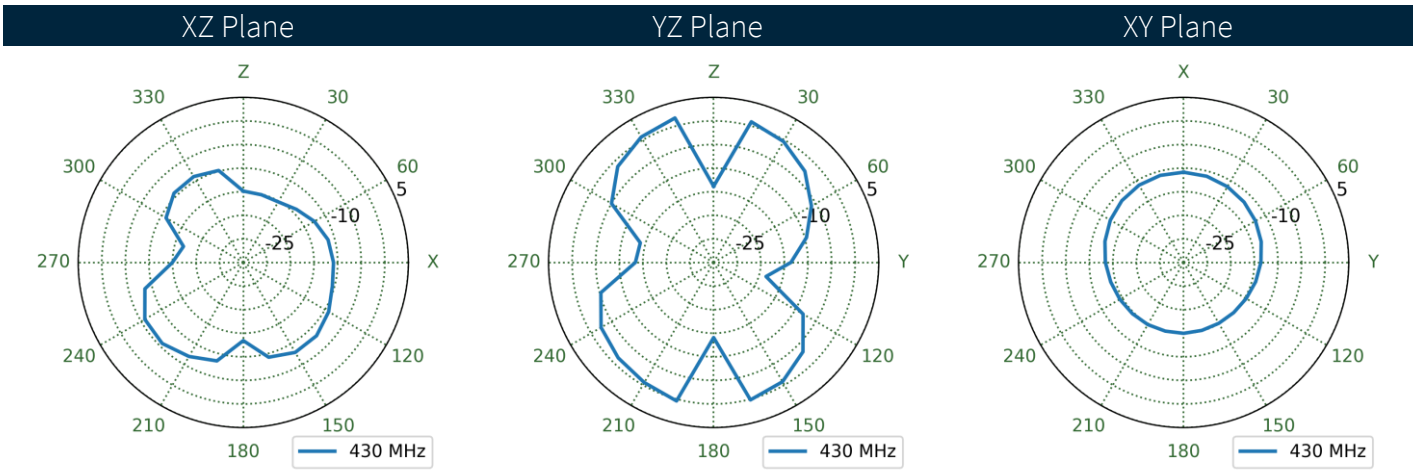
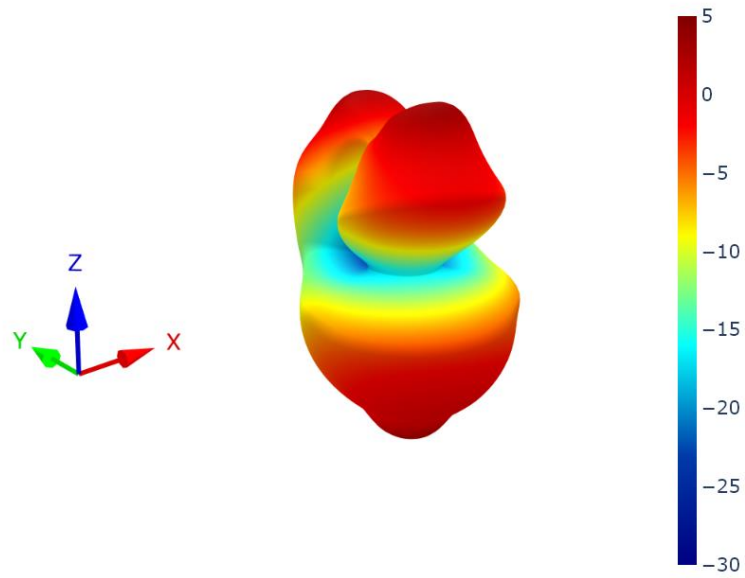
4.5 TI.33.A111- Patterns at 420 MHz on 15x9cm ground plane (Short side)



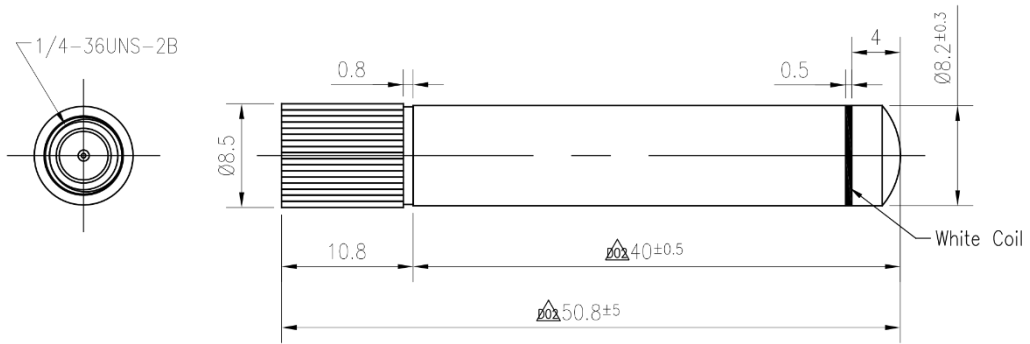
4.6 TI.33.A111- Patterns at 430 MHz on 15x9cm ground plane (Long side)



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

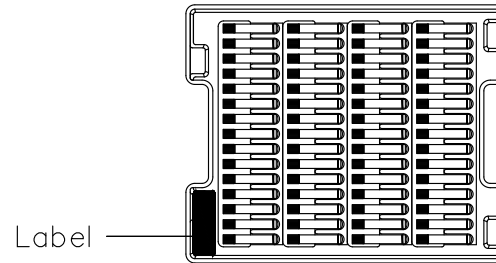


# 5. Mechanical Drawing

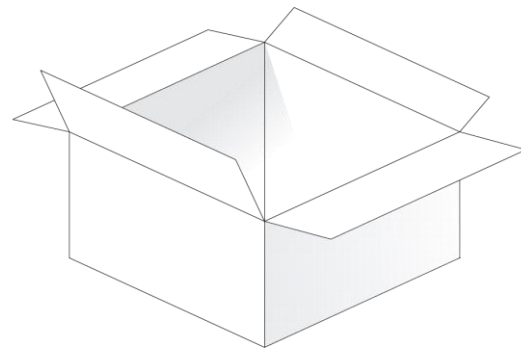


## 6. Packaging

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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