



# TAOGLAS®



# Datasheet

**Part No:**  
TI.42.A113

**Description**

400-470MHz Terminal Mount Antenna with 90 Degree Hinged SMA(M) Connector

**Features:**

Terminal Antenna with Sleek, Stylish Design  
Covering ISM/UHF 400-470MHz  
Dimensions: Ø13 x 198mm  
Connector: SMA(M)  
Custom Cables and Connectors Available  
RoHS & Reach Compliant

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# 1. Introduction



The TI.42.A113 is a high performance 433MHz and 450MHz Terminal mount antenna, it is 198mm tall and 13mm in diameter and can be mounted straight or right angled due to its hinged SMA(M) connector which comes as standard. This antenna performs very well with metal enclosures, which would be a common mounting placement for this antenna as it will be used with a variety of smart meters, remote monitoring devices.

The sub 600MHz spectrum has been opened up to a range of cellular bands between 400 and 500MHz, the TI.42 is the perfect antenna for these sub 500MHz bands such as band 87 and band 88.

Typical Application include:

- Smart Metering
- Remote Monitoring
- Industrial IoT
- Connected Enterprise

The TI.42 is manufactured using TPEE which makes it very lightweight at just 22.5g. The swivel and hinge mechanism allows the antenna to be orientated in different directions which helps to avoid other antennas or objects. 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

LTE Electrical								
Band	Frequency (MHz)	Test Set-up	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern
433MHz	400-435	Straight	88	-0.55	4.2	50 Ω	Linear	Omni
		Bent	80	-1.0	3.7			
450MHz	450-470	Straight	72	-1.4	2.5			
		Bent	78	-1.1	3.0			

Mechanical	
Dimensions	Ø13 x 198mm
Material	PC+PBT
Weight	23g
Connector	SMA(M)

Environmental	
Operation Temperature	-40°C - +85°C
Storage Temperature	-40°C - +85°C

\*Measure the antenna with 110X90X30mm metal housing.

### 3. Antenna Characteristics

#### 3.1 Test Set-up

AUT



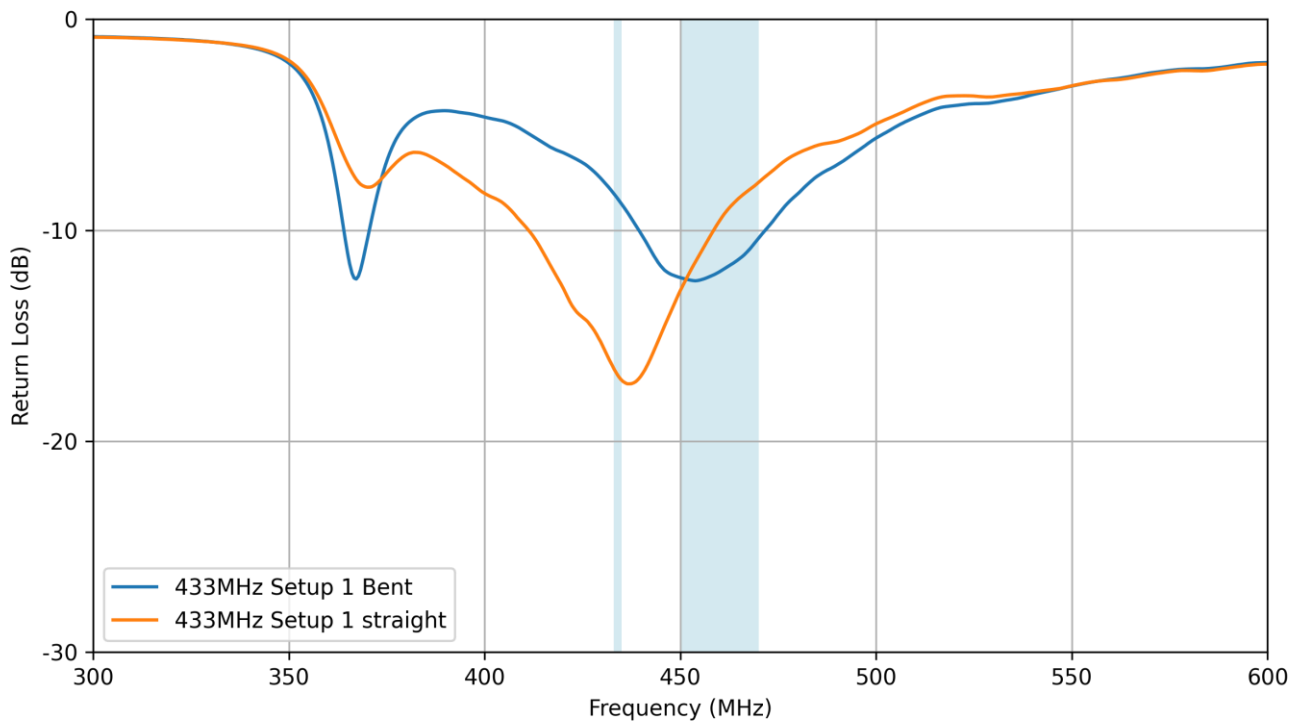
Vector Network Analyzer



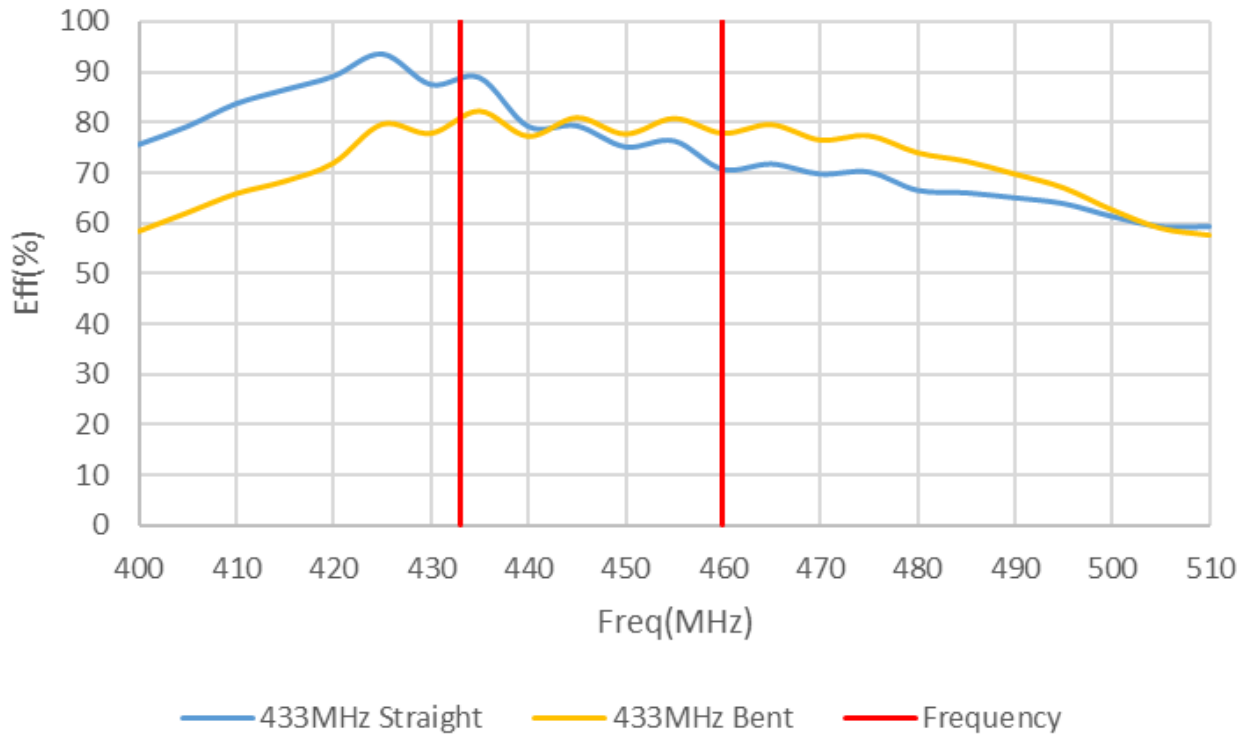
Straight

Bent

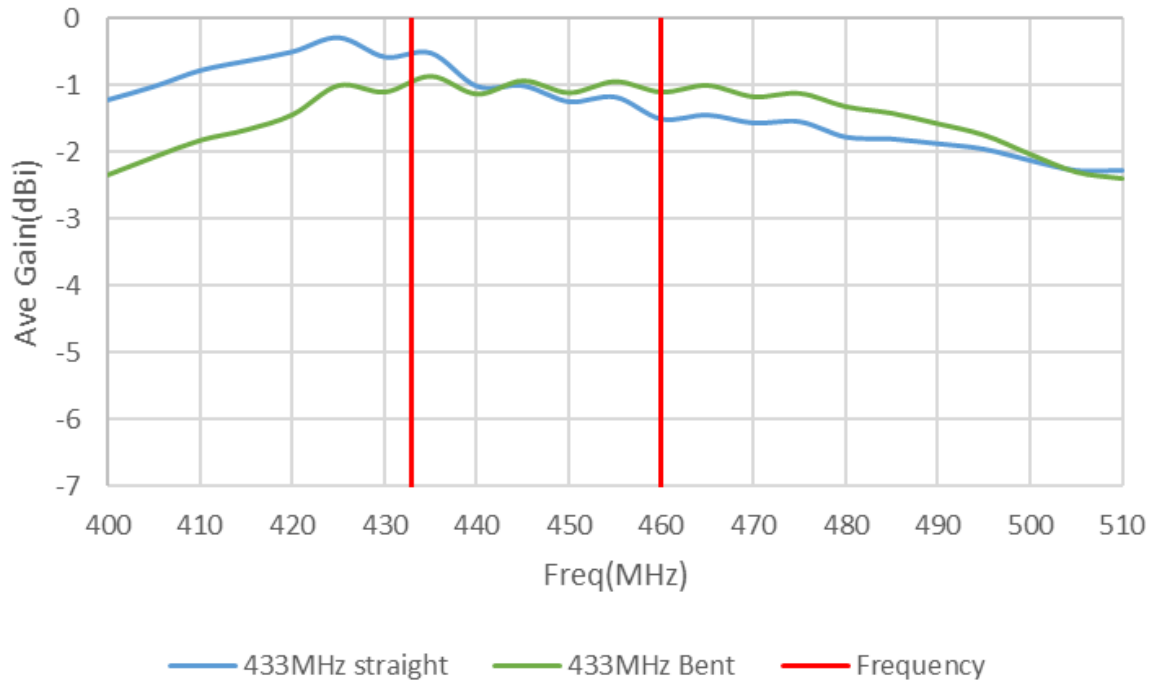
### 3.2 Return Loss



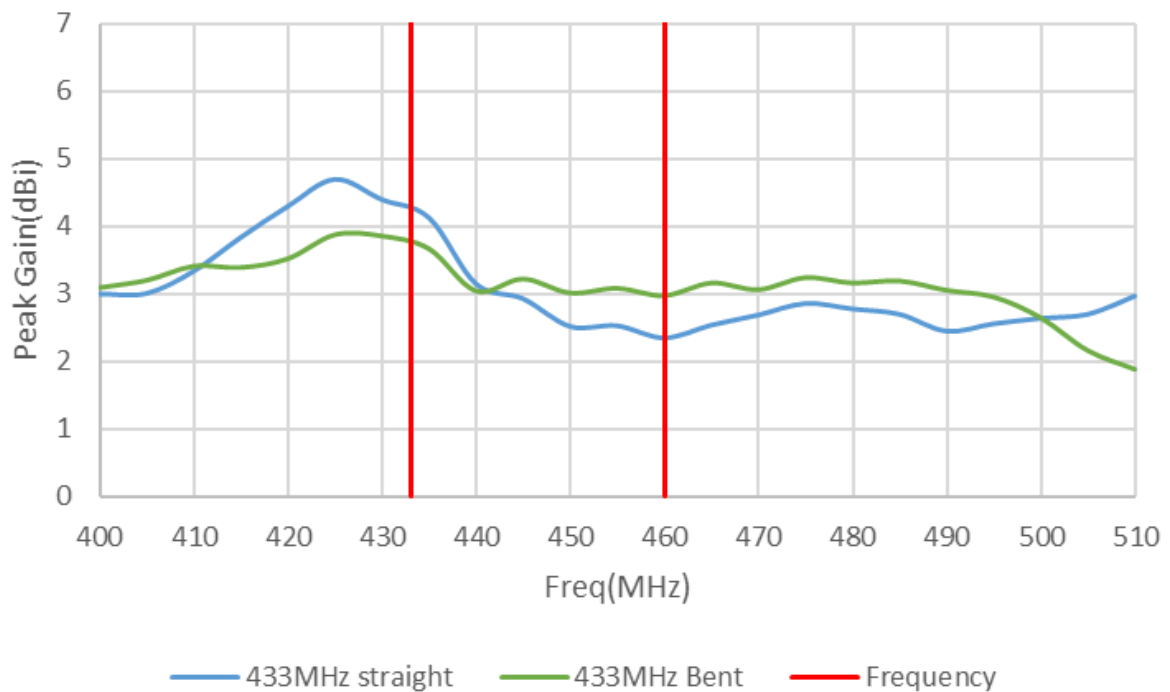
### 3.3 Efficiency



### 3.4 Average Gain

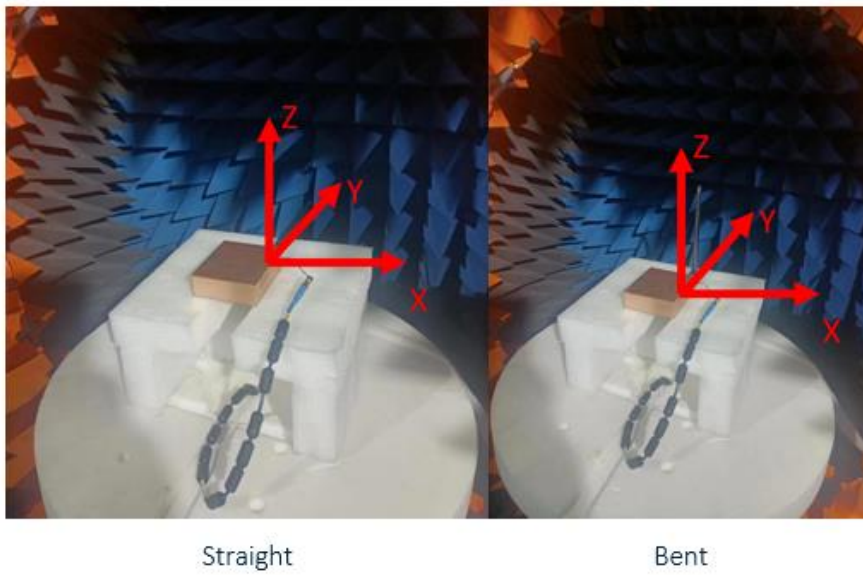
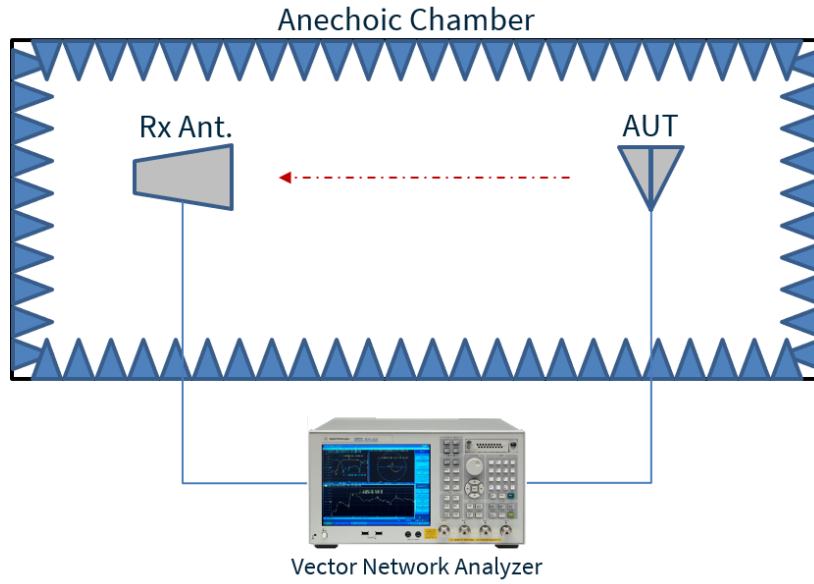


### 3.5 Peak Gain



## 4. Radiation Patterns

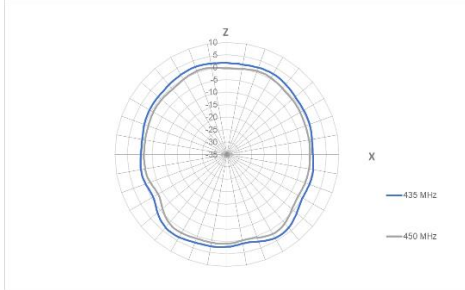
### 4.1 Test Setup



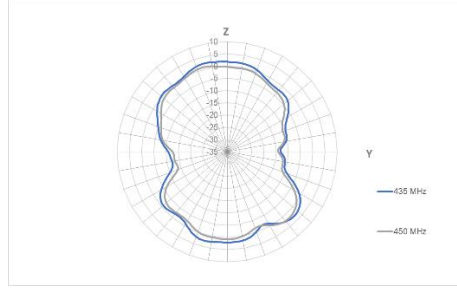


## 4.2 Straight - Patterns at 435 & 450 MHz

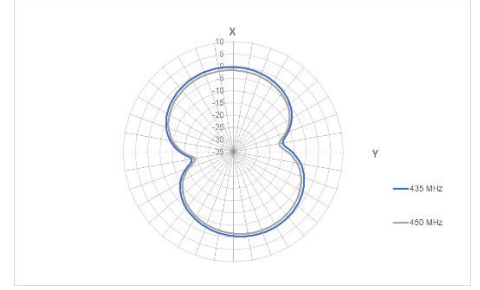
XZ Plane



YZ Plane

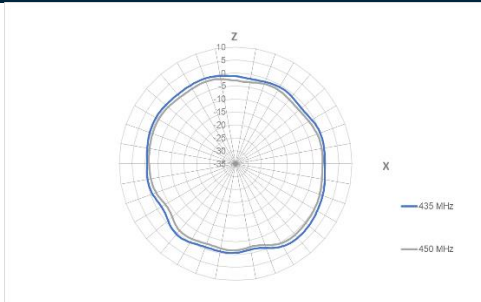


XY Plane

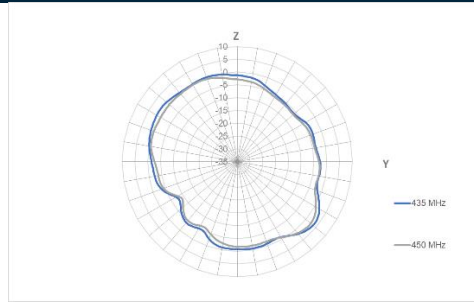


## 4.3 Bent - Patterns at 435 & 450 MHz

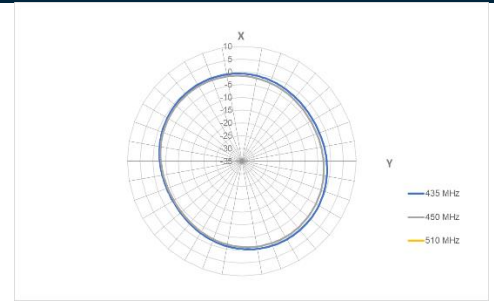
XZ Plane



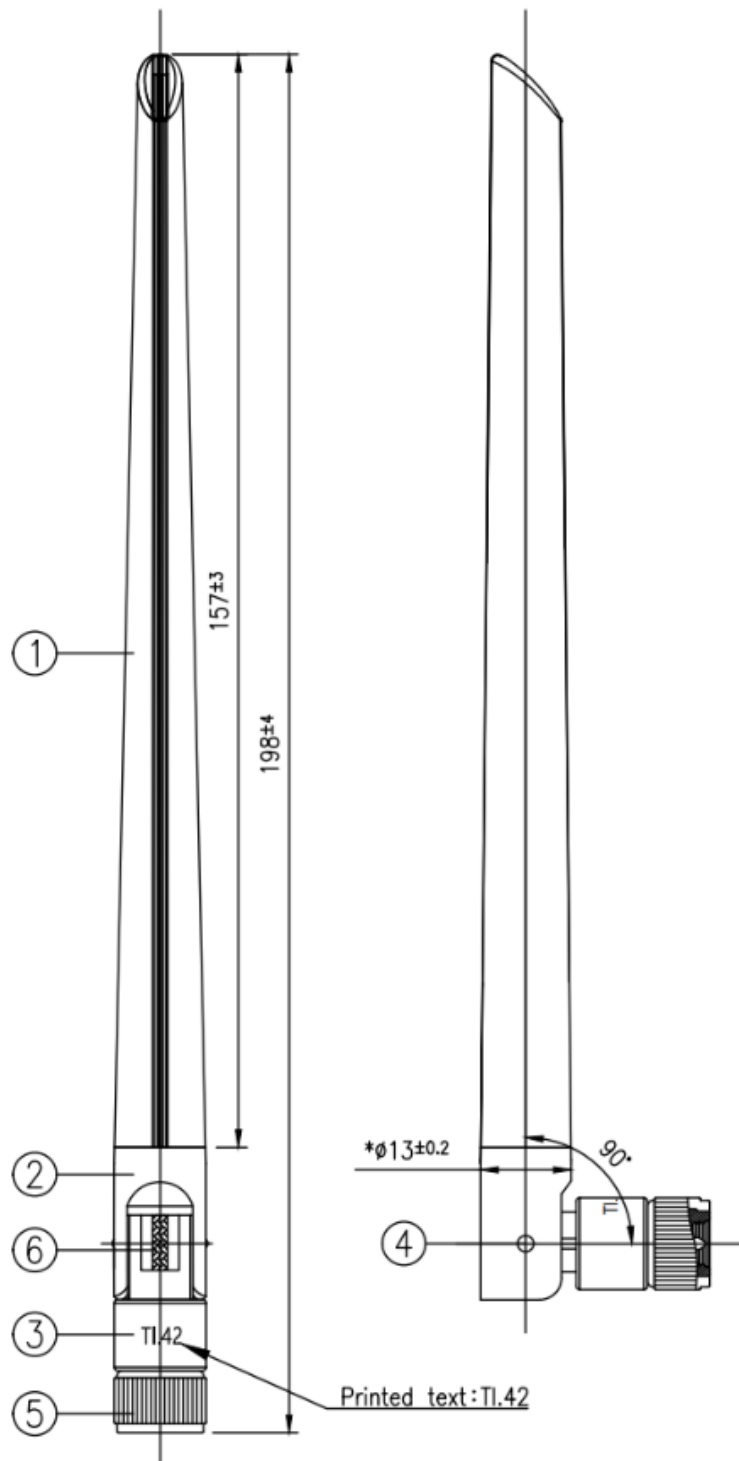
YZ Plane



XY Plane



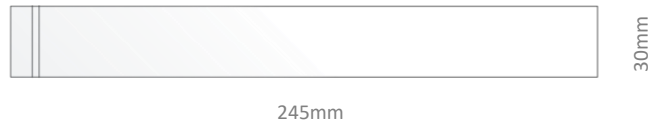
## 5. Mechanical Drawing



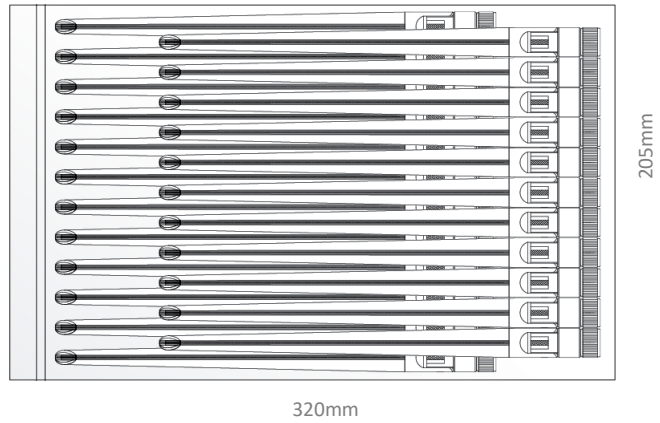
	Name	Material	Finish	QTY
1	Antenna Cap	TPEE	Black	1
2	Upper Base	PBT+PC	Black	1
3	Bottom Base	PBT+PC	Black	1
4	Rivet	PBT+PC	Black	2
5	SMA(M)	Brass	Au Plated	1
6	RG178 Coaxial Cable	FEP	Brown	1

## 6. Packaging

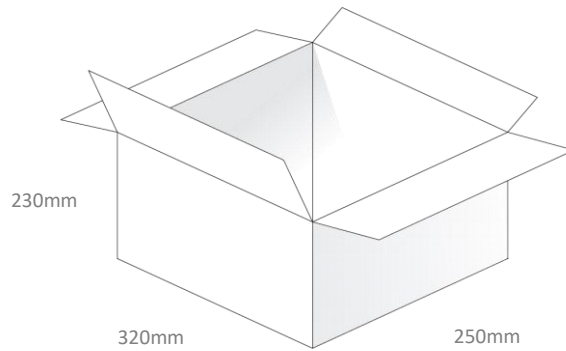
1pc TI.42.A113 per PE Bag  
 Bag Dimension: 245\*30mm  
 Weight: 23g



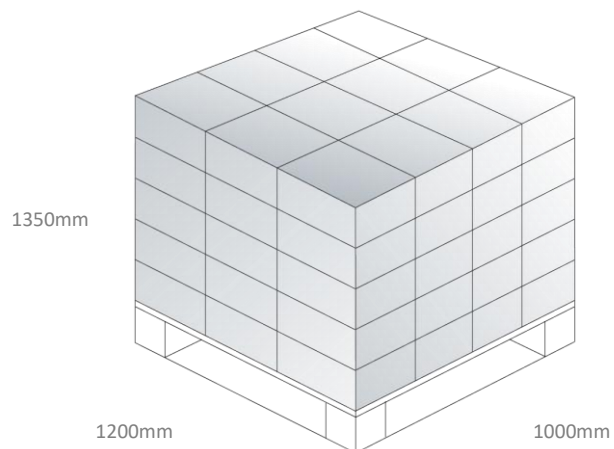
40pcs TI.42.A113 per Large PE Bag  
 Bag Dimensions: 320\*205mm  
 Weight: 0.9Kg



400pcs TI.42.A113 per Carton  
 Dimensions: 320\*250\*230mm  
 Weight: 10Kg



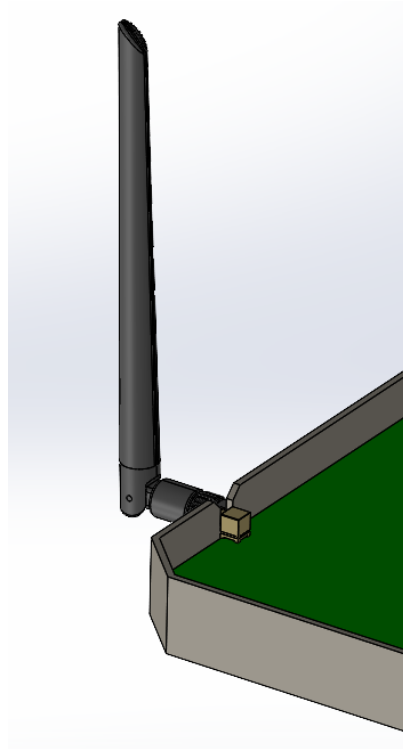
Pallet Dimensions:  
 1200\*1000\*1350mm  
 60 Cartons Per Pallet  
 12 Cartons Per Layer, 5 Layers



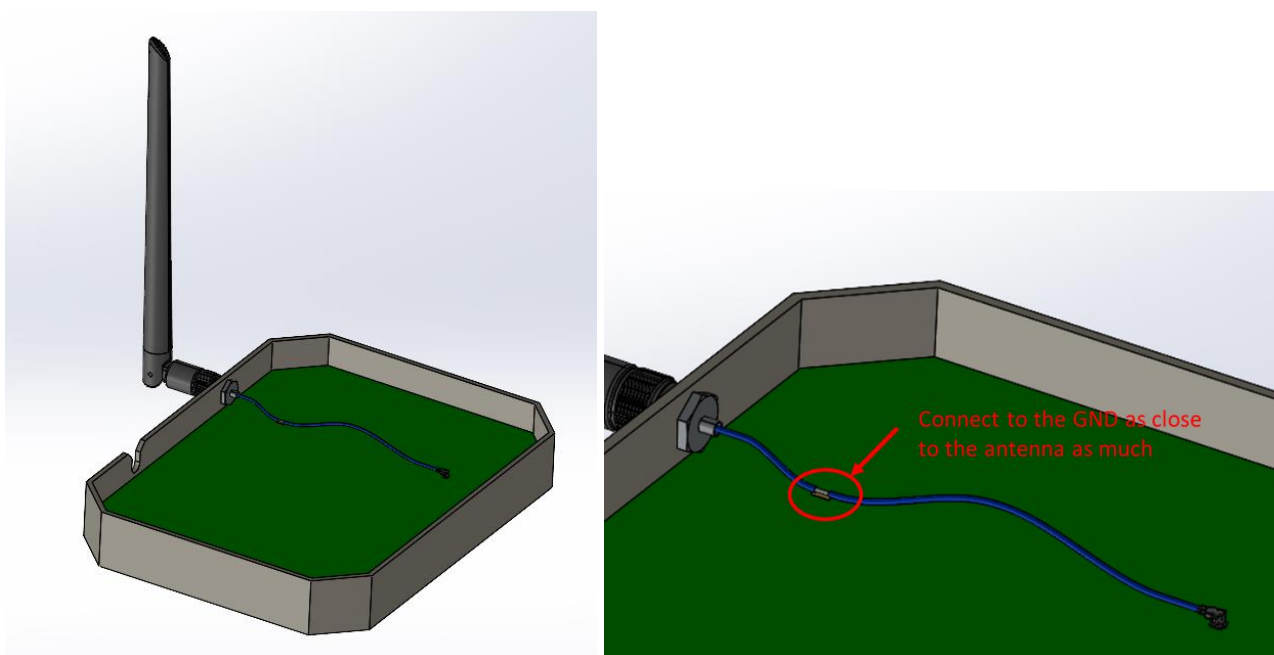
## 7. Application Note

TI.45.A113 has been designed to not only work with metal enclosures, but also with plastic enclosures and device's main board.

Installation using PCB mount SMA female connector as below picture:



Installation using a cable assembly, the cable assembly needs to be connected to the ground of the main PCB of the device such as below picture:



Changelog for the datasheet

**SPE-23-8-280 – TI.42.A113**

**Revision: A (Original First Release)**

Date: 2023-09-27

Notes: Initial Release

Author: Gary West

**Previous Revisions**




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