TAOGLAS

Datasheet

Part No:
TI.45.A113

Description

450-510MHz Terminal Antenna with 90 Degree Hinged SMA(M) connector

Features:

Terminal Antenna with Sleek, Stylish Design
Covering ISM/UHF 450-510MHz
Dimensions: Ø13 x 198mm
Connector: SMA(M)
Custom Cables and Connectors Available
RoHS & Reach Compliant

1. Introduction

The TI.45.A113 is a high performance terminal mount antenna 440-510MHz, 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.45 is the perfect antenna for these sub 500MHz bands such as band 31, band 72 and band 73.

Typical Application include:

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

The TI.45 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

Electrical								
Band	**Frequency (MHz)**	**Test Set-up**	**Efficiency (%)**	**Average Gain (dB)**	**Peak Gain (dBi)**	**Impedance**	**Polarization**	**Radiation Pattern**
Band 31,72,73	440-490	Straight	82	-0.87	3.5	50 Ω	Linear	Omni
		Bent	79.4	-1.0	3.4			
UHF/TETRA	490-510	Straight	83.5	-0.78	4.0			
		Bent	85.7	-0.67	3.8			

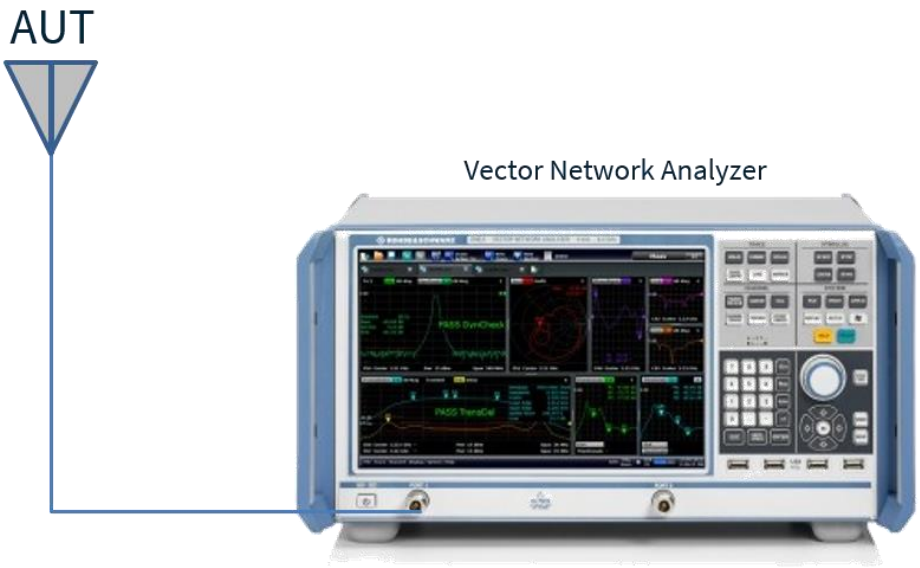
Mechanical	
Dimensions	Ø13 x 198mm
Material	PC+PBT
Weight	23g
Connector	SMA(M)

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

*Measured the antenna with 110X90X30mm metal housing.

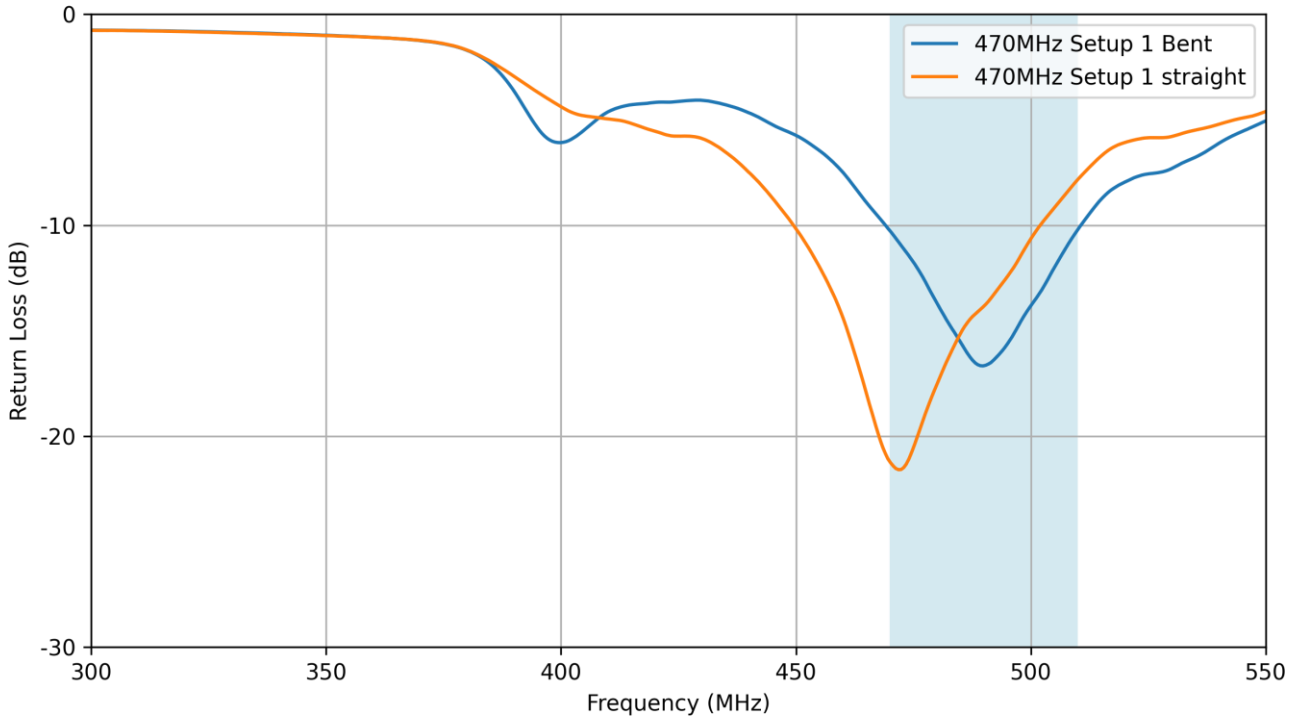
3. Antenna Characteristics

3.1 Test Set-up

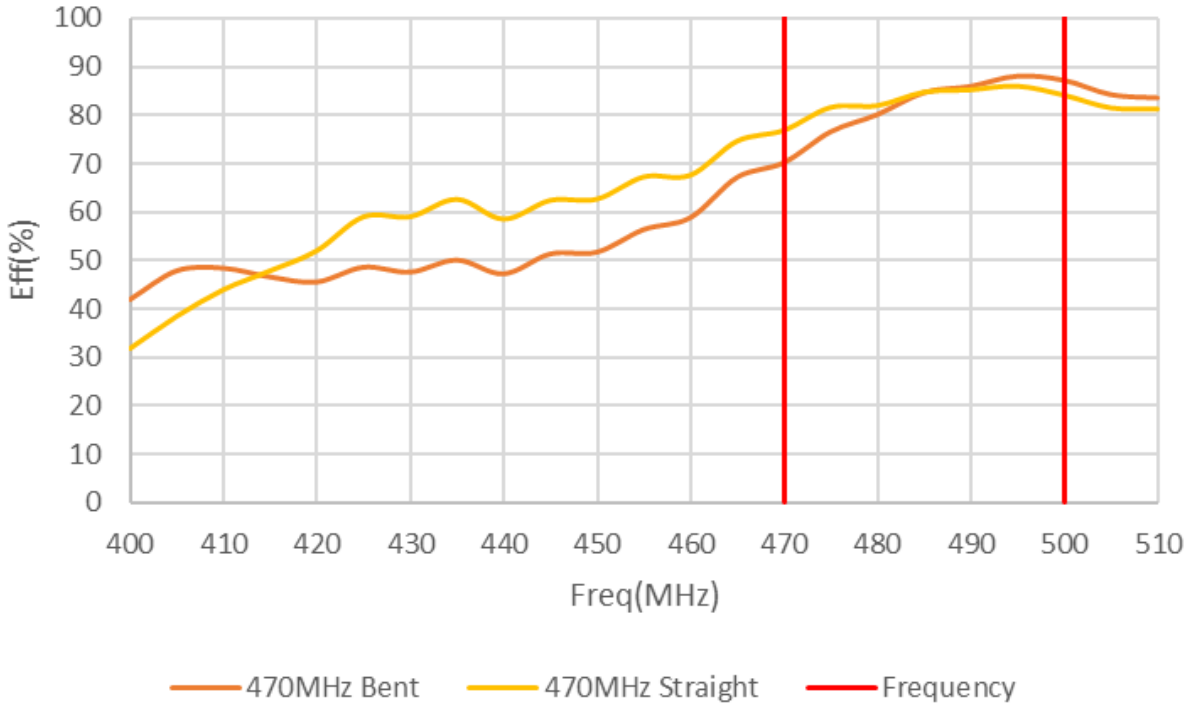


Straight Bent

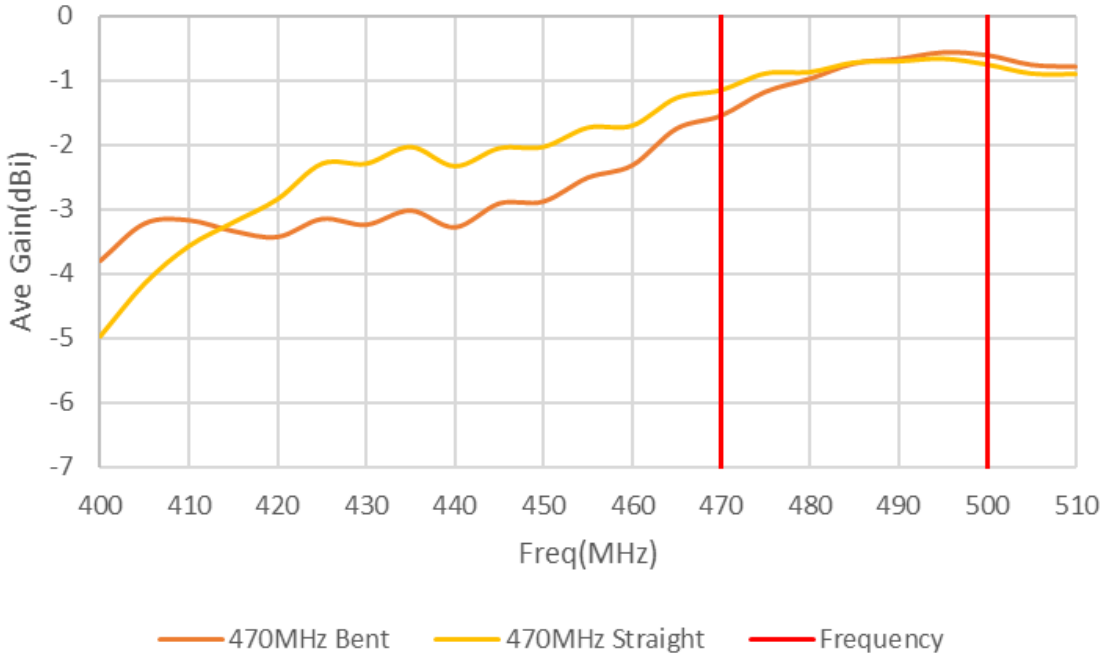
3.2 Return Loss



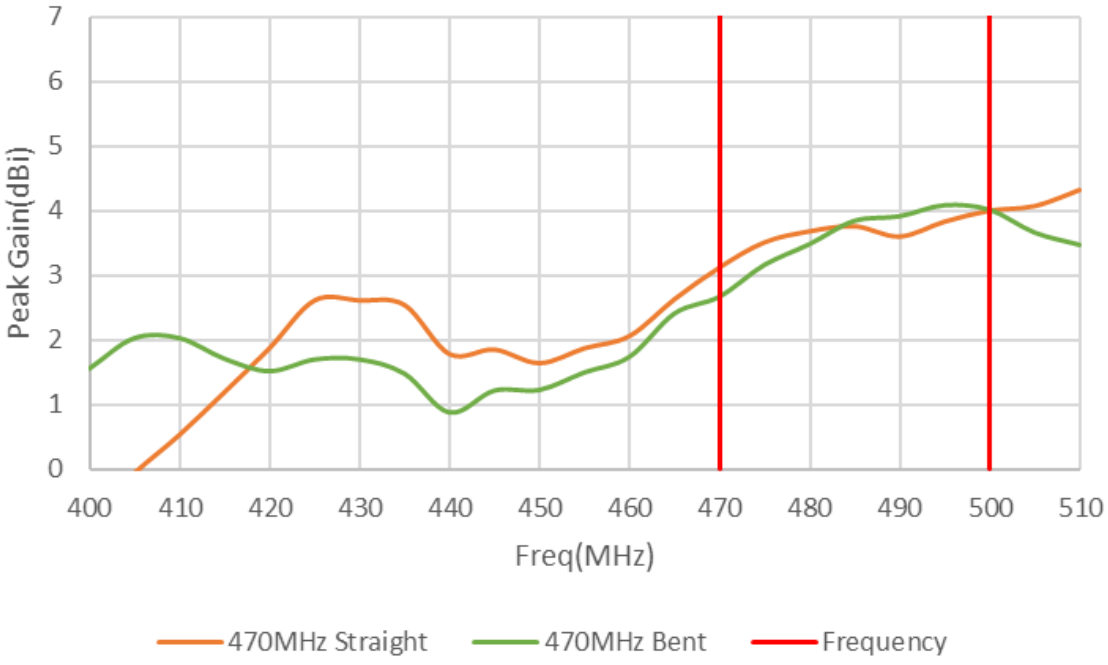
3.3 Efficiency



3.4 Average Gain

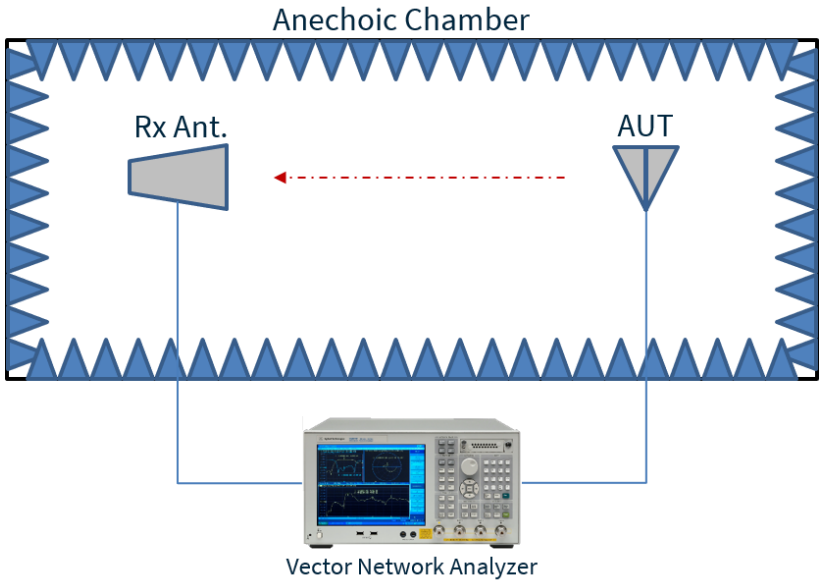


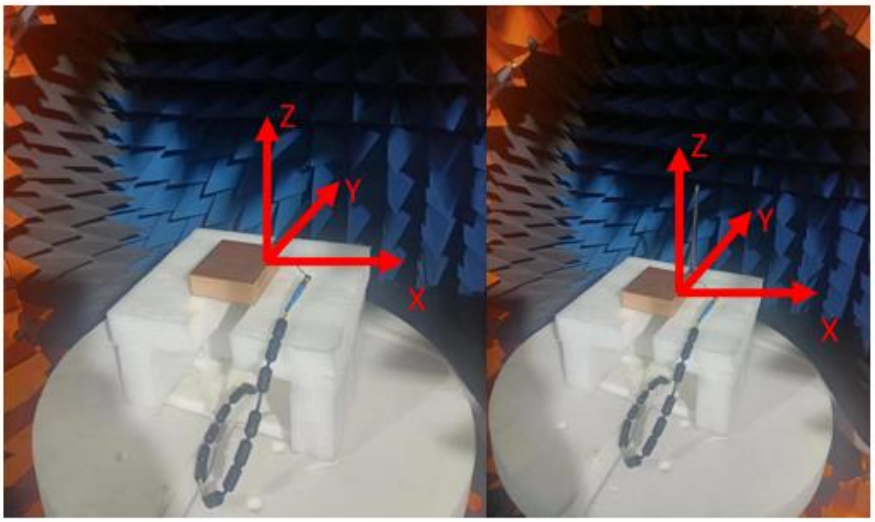
3.5 Peak Gain



4. Radiation Patterns

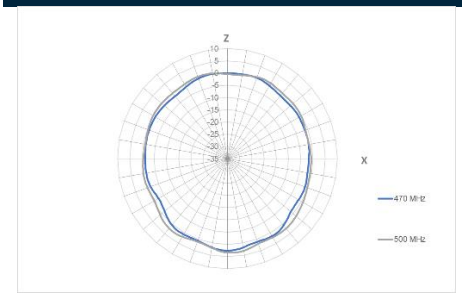
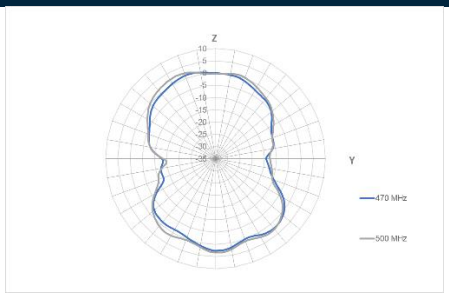
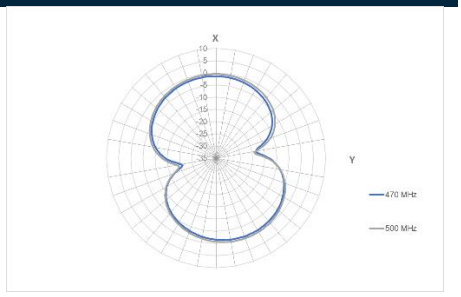
4.1 Test Setup



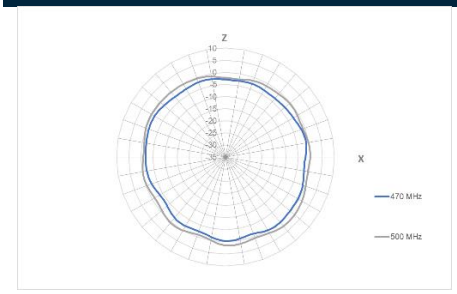
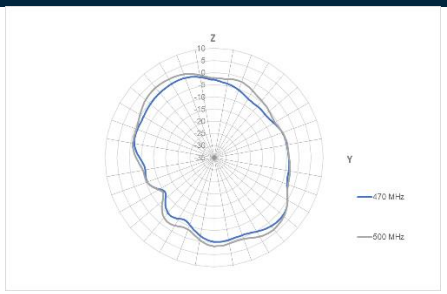
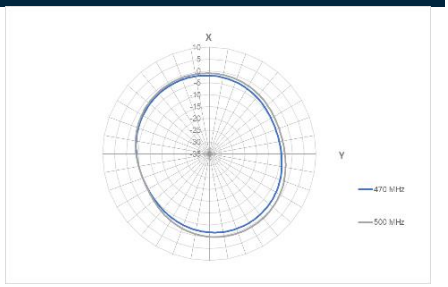


Straight Bent

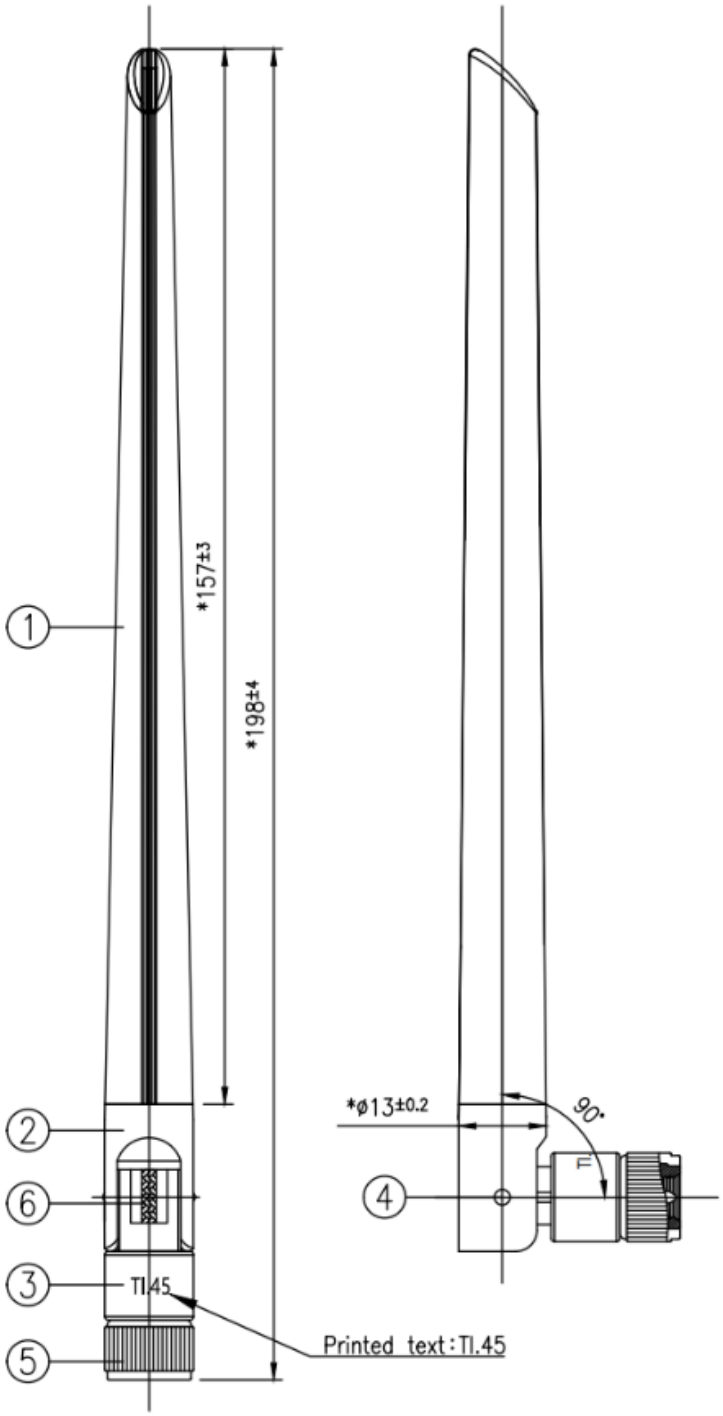
4.2 Straight - Patterns at 470 & 500 MHz

XZ Plane	YZ Plane	XY Plane
		

4.3 Bent - Patterns at 470 & 500 MHz

XZ Plane	YZ Plane	XY Plane
		

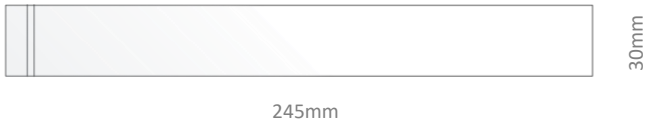
5. Mechanical Drawing



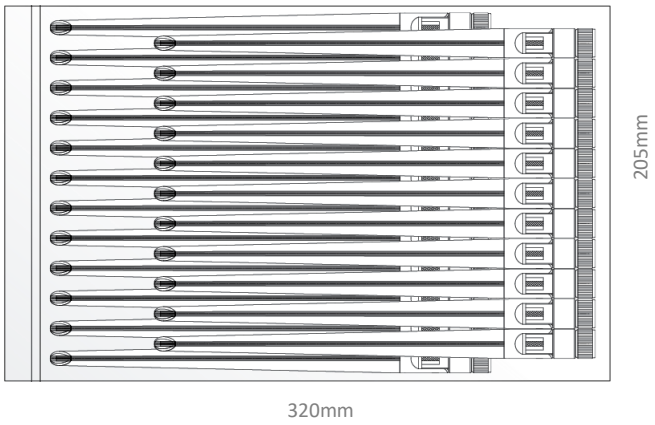
	Name	Material	Finish	QTY
1	Antenna Cap	TPEE	Black	1
2	Upper Base	PBT+PC	Black	1
3	Bottem Base	PBT+PC	Black	1
4	Rivet	PBT+PC	Black	2
5	SMA(M)	Brass	Au Plated	1
6	RG178 Coaxial Cable	FEP	Brown	1

6. Packaging

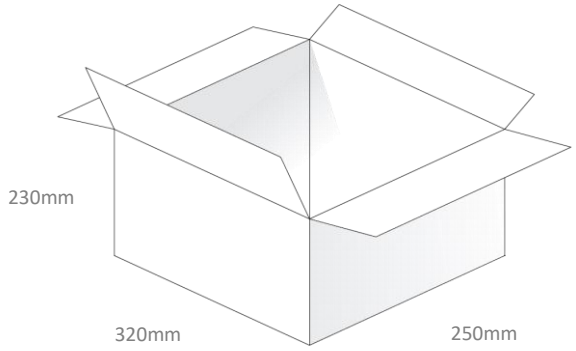
1pc TI.45.A113 per PE Bag
Bag Dimension: 245*30mm
Weight: 23g



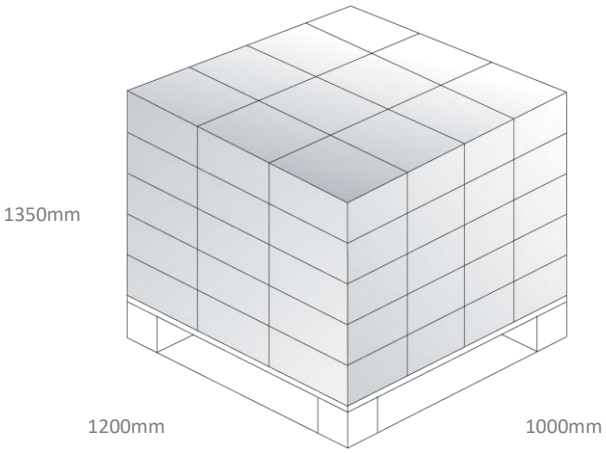
40pcs TI.45.A113 per Large PE Bag
Bag Dimensions: 320*205mm
Weight: 0.9Kg



400pcs TI.45.A113 per Carton
Dimensions: 320*250*230mm
Weight: 10Kg



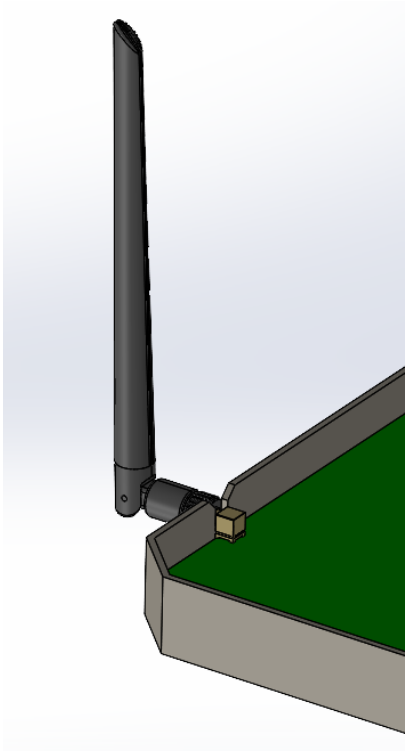
Pallet Dimensions:
1200*1000*1350mm
60 Cartons Per Pallet
12 Cartons Per Layer, 5 Layers



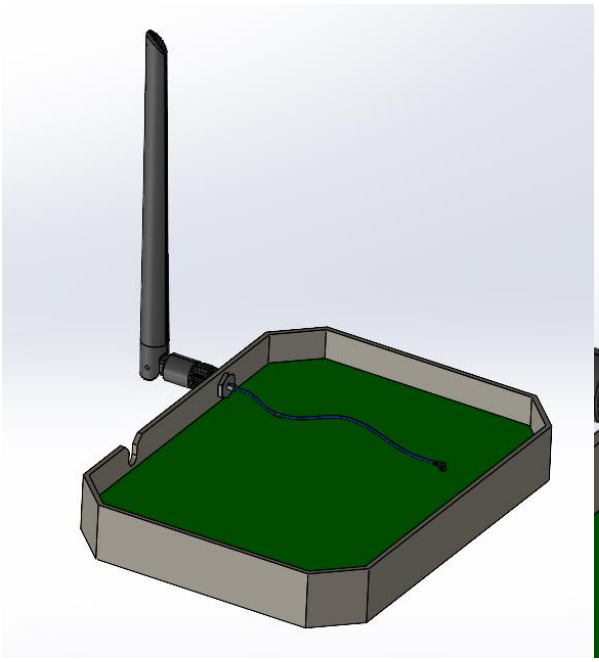
7. Application Note

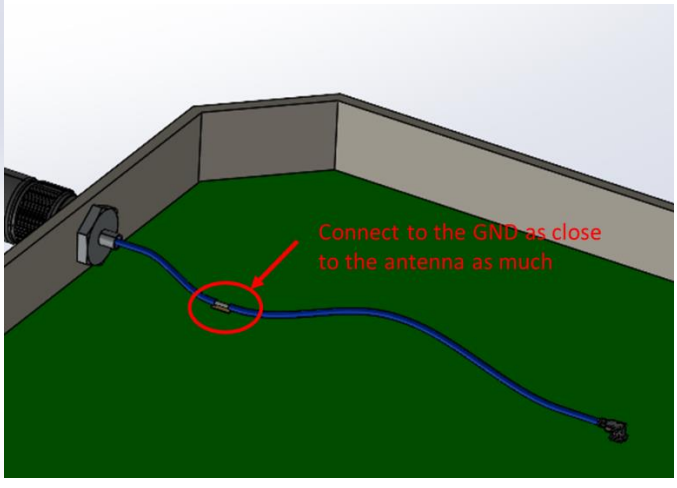
TI.45.A113 has been designed to not only work with metal enclosures, but also with plastic enclosures and device's main board.

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-23-8-278 – TI.45.A113

Revision: A (Original First Release)	
Date:	2023-09-27
Notes:	Initial Release
Author:	Gary West

Previous Revisions

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