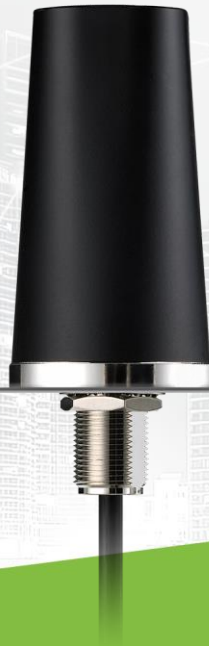




# TAOGLAS®



## Datasheet

### Shockwave ISM 433MHz Permanent Mount

**Part No:**  
TLS.30.105111

**Description:**

Shockwave 433MHz  
Permanent Mount External Antenna  
1M TGC-200 SMA(M) connector

**Features:**

ISM 433MHz with 55% efficiency  
Mechanically robust for indoor/outdoor applications  
Height: 79.45mm(3.13") ; Diameter : 42mm(1.65")  
IP67 Waterproof  
1 meter of low loss TGC-200 cable  
SMA(M) connector  
RoHS & REACH Compliant

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# 1. Introduction



The Shockwave TLS.30.105111 is a mechanically robust, waterproof, external antenna operating at the 433MHz ISM band with 1 meter low loss TGC-200 cable and SMA(M) connector. It has been designed to be used on a ground plane.

Typical Applications Include:

- Mesh networks
- Indoor/outdoor asset monitoring
- Security systems
- Remote control systems
- Heavy-duty equipment/vehicle communication in harsh environments

The antenna has 55% efficiency and -1.1 dBi peak gain at ISM 433MHz on a 30x30 cm ground plane. Stable radiation patterns over low angles provides consistent gain in the horizontal plane, meaning that it is especially suitable for mesh networks or hot spots.

A unique indent tab on the base of the antenna allows a wrench to be used to solidly lock the antenna on top of its mounting location while tightening up the nut beneath the metal panel. Waterproof O-rings around the bottom base prevent water from leaking under the antenna.

The TLS.30 antenna is IP67 waterproof resistant against high pressure water jets in commercial cleaning environments, which makes the antenna ideal for ISM 433MHz applications in harsh outdoor environments.

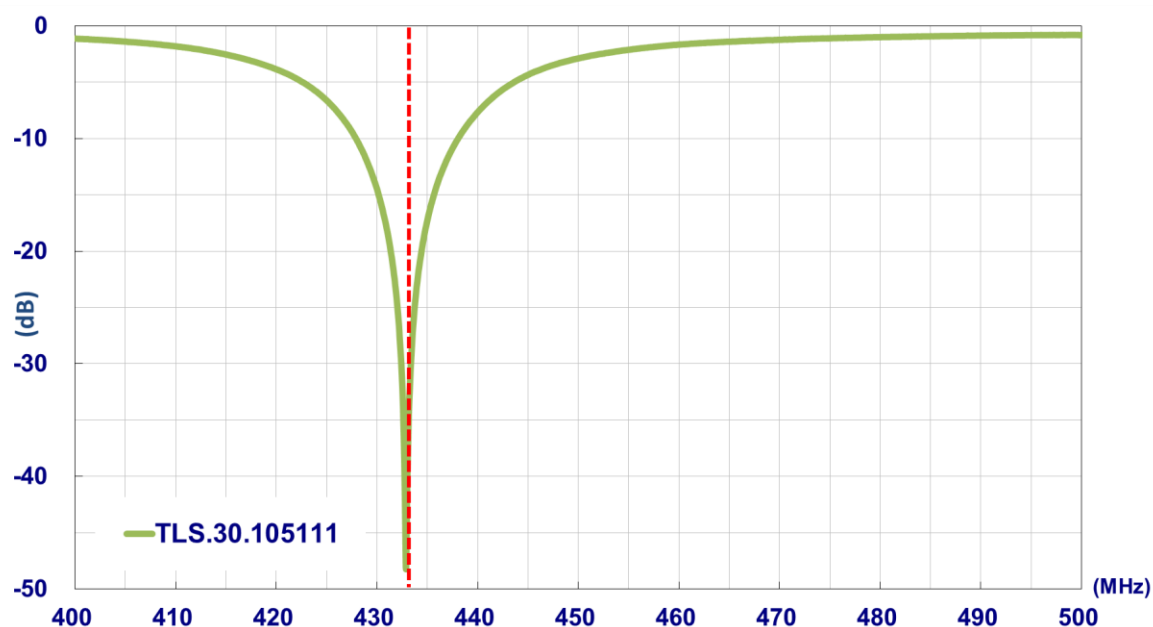
Cable lengths and connector types are customizable. Contact your regional Taoglas customer support team for further information.

## 2. Specifications

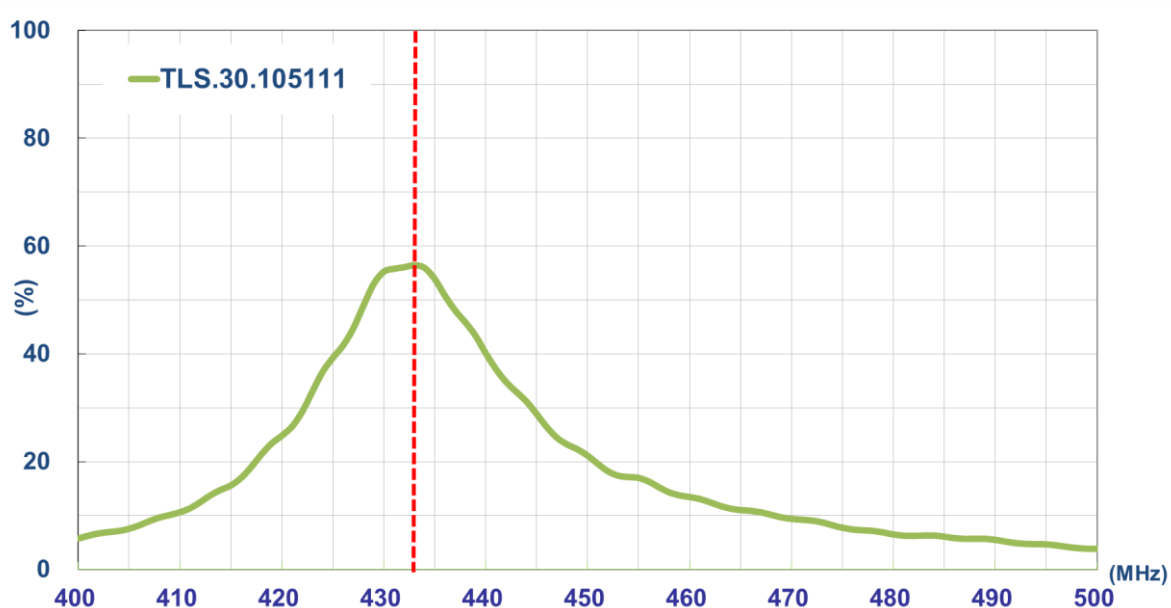
ELECTRICAL	
Application Band	ISM433
Operation Frequency	433 MHz
	On 30 x 30 cm ground plane
Efficiency (%)	56.46%
Peak Gain (dBi)	-0.54
Average Gain (dBi)	-2.48
Return Loss (dB)	< -15
Impedance	50 $\Omega$
Polarization	Vertical
Radiation Property	Omni-Directional
Max Input Power	100 W
MECHANICAL	
Dimension (mm)	Height: 79.45mm (3.13") ; Diameter : 42mm(1.65")
Cable	1 meter TGC-200
Connector	SMA (M)
Material	Housing: UV Resistant ABS, Base: Nickel Plated Zinc Alloy
Weight (g)	205
Rec. Torque for Mounting	4.018 N.m
Max. Torque for Mounting	9.8 N.m
ENVIRONMENTAL	
Waterproof Rating	IP67
Operation Temperature	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

## 3. Antenna Characteristics

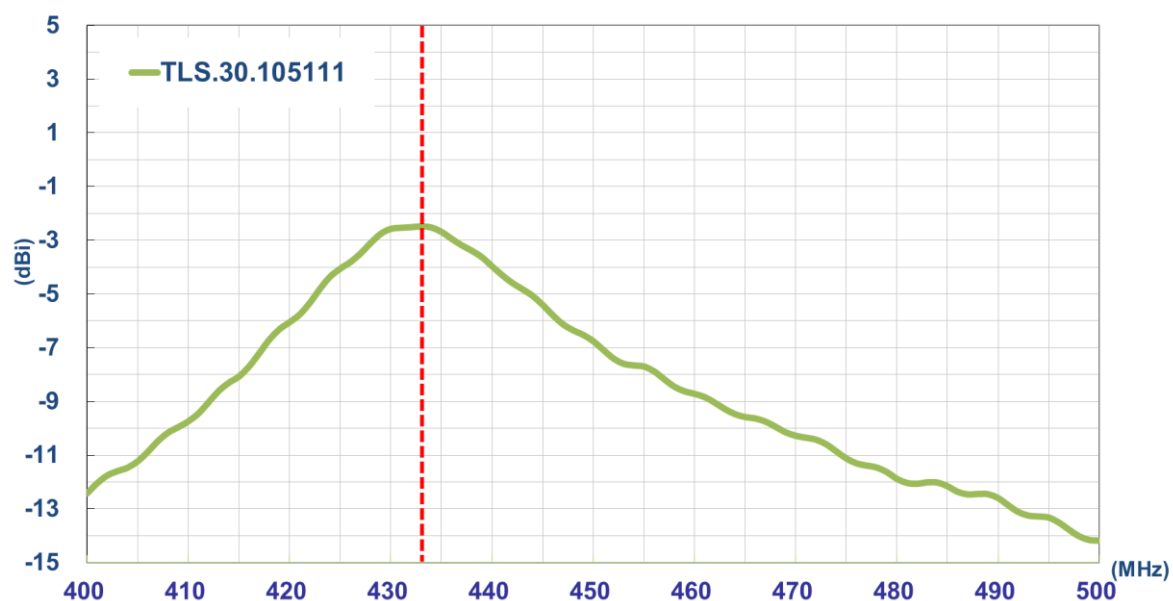
### 3.1 Return Loss



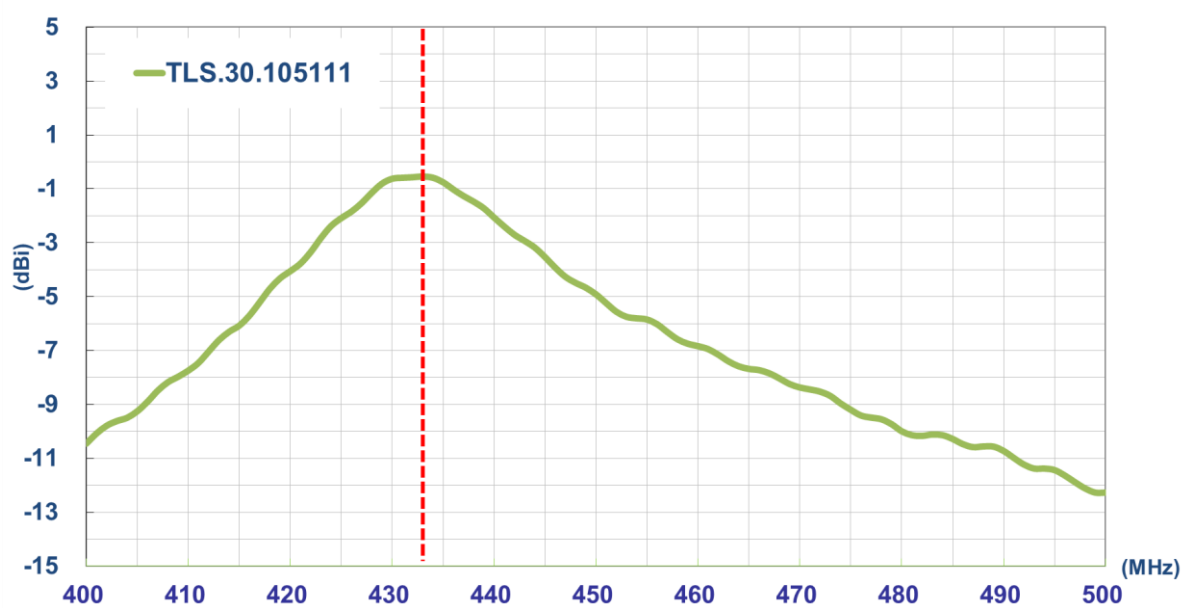
### 3.2 Efficiency



### 3.3 Average Gain

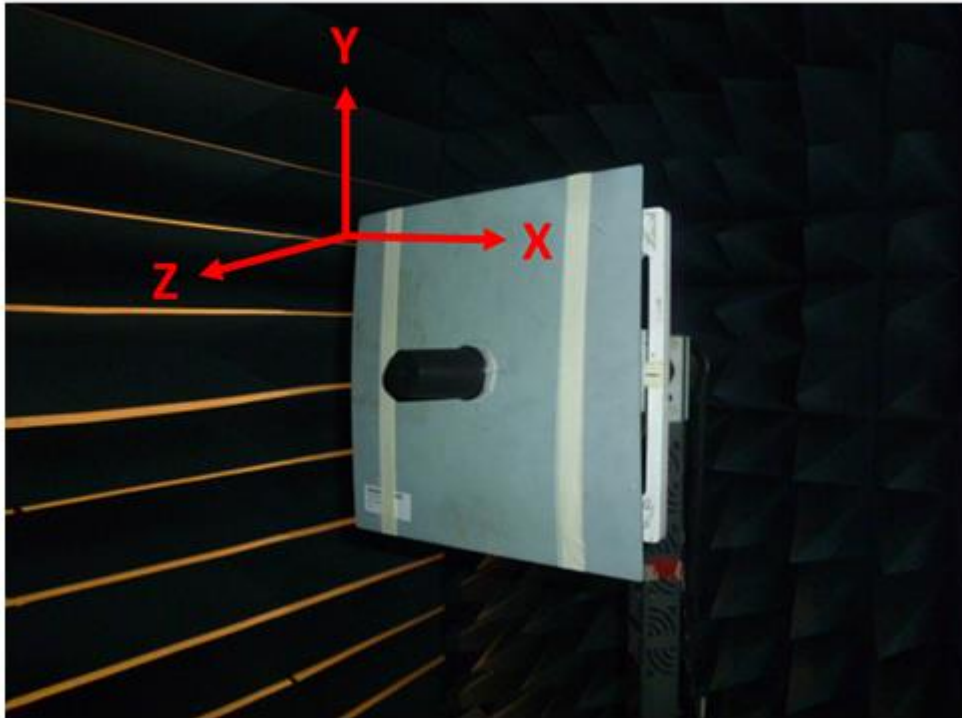


### 3.4 Peak Gain



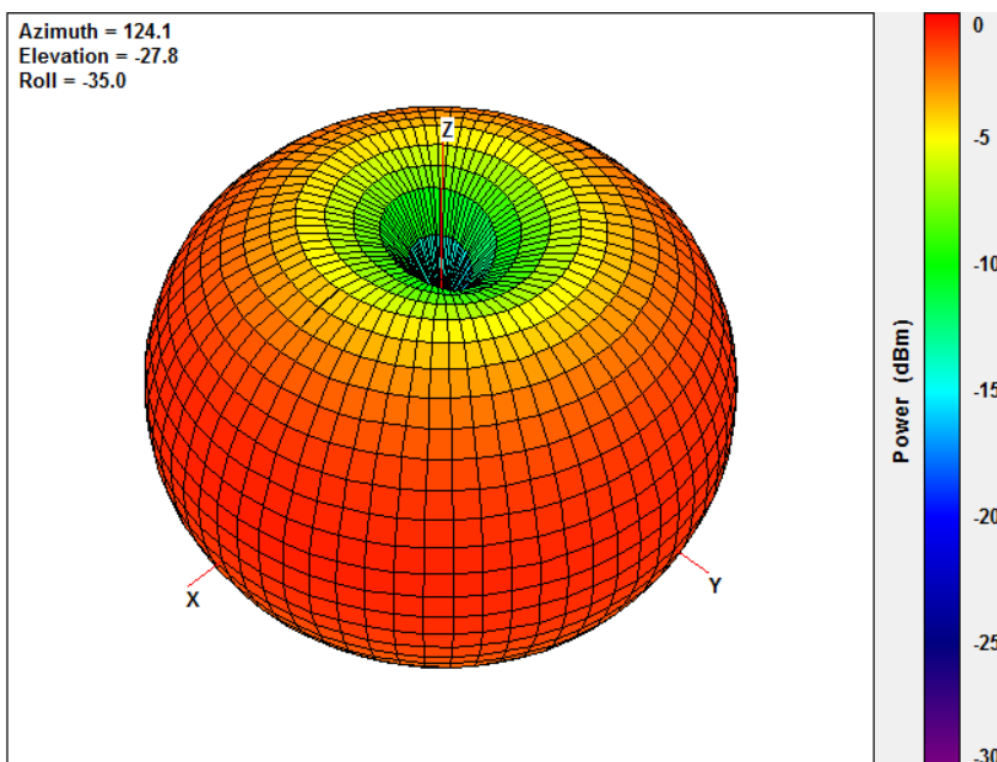
## 4. Radiation Patterns

### 4.1 Test Setup

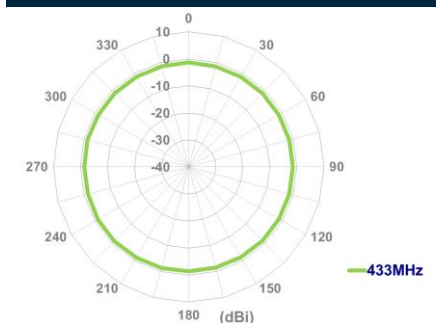


## 4.2 3D and 2D radiation Patterns

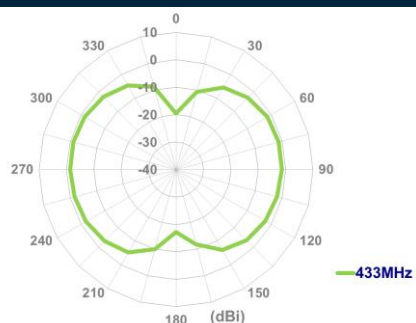
433MHz



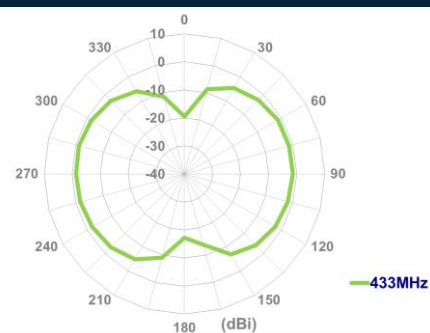
XY Plane



XZ Plane

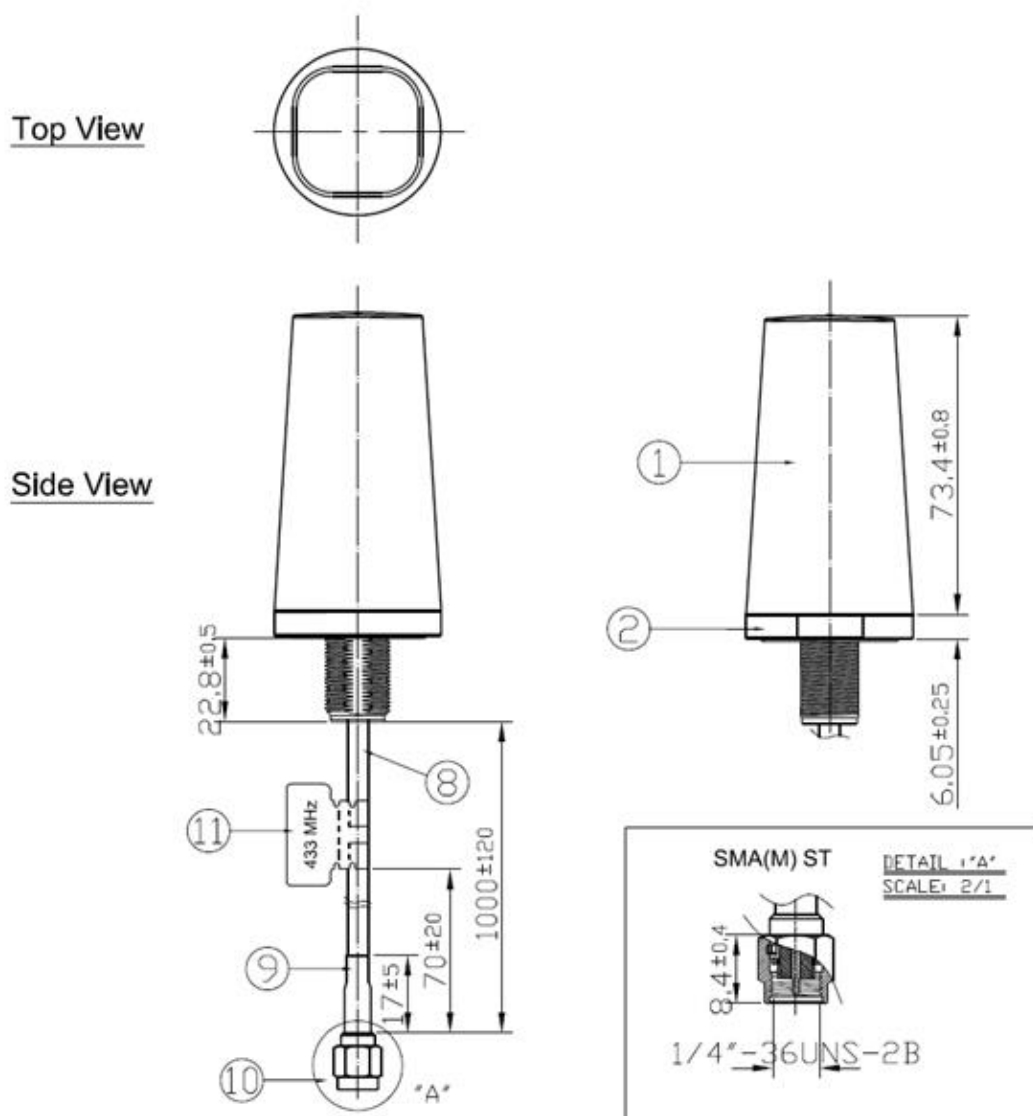


YZ Plane

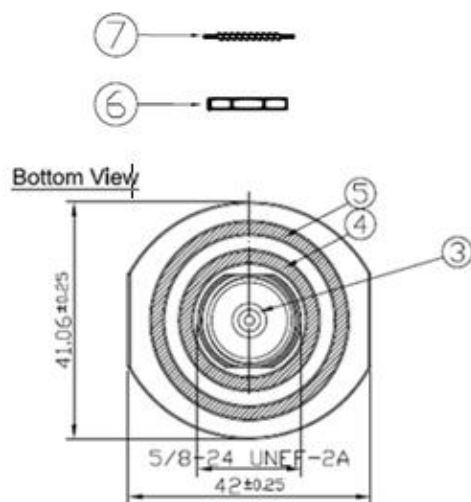




## 5. Mechanical Drawing (Units: mm)

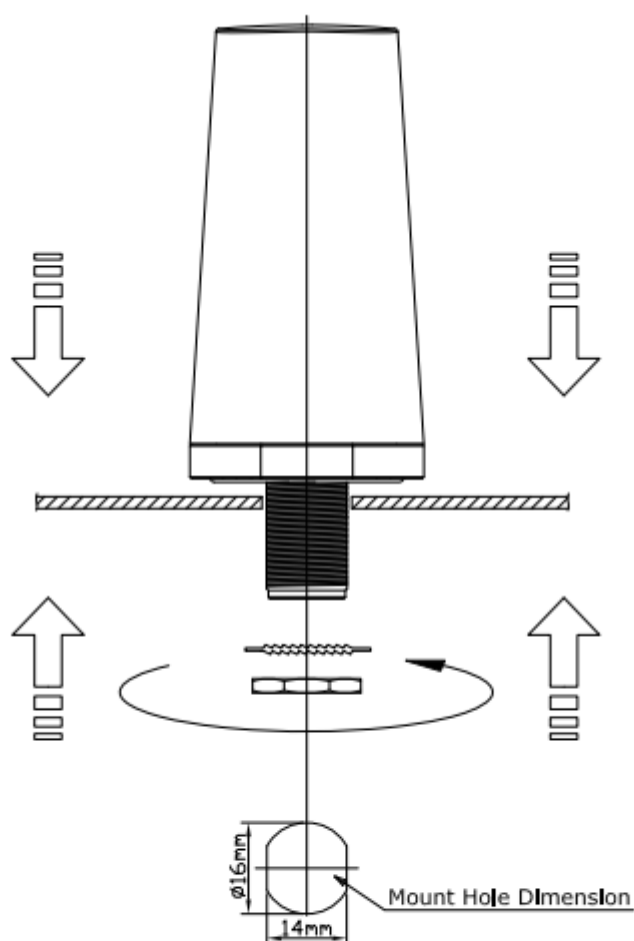


Unit : mm



	Name	Material	Finish	QTY
1	Antenna Top	ABS	Black	1
2	Antenna Bottom	Zinc Alloy	Ni Plated	1
3	TLS Thread	Brass	Ni Plated	1
4	O Ring 1	NBR	Black	1
5	O Ring 2	NBR	Black	1
6	Nut	Brass	Ni Plated	1
7	Washer	Brass	Ni Plated	1
8	CFD200 Coaxial Cable	PVC	Black	1
9	Heat Shrink Tube	PE	Black	1
10	SMA(M)ST	Brass	Gold Plated	1
11	433 MHz Label	Coated Paper	Khaki	1

## 6. Installation Guidelines



Recommended torque for mounting is 4.018 N.m or 41 kgf.cm

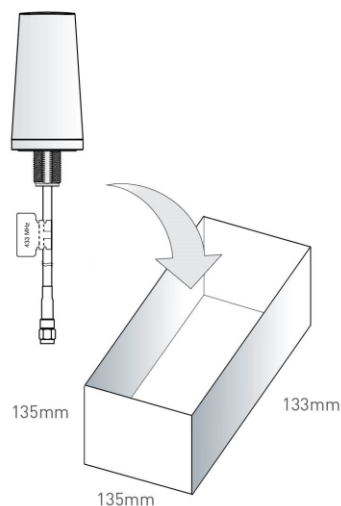
Maximum torque for mounting is 9.8 N.m or 100 kgf.cm

## 7. Packaging

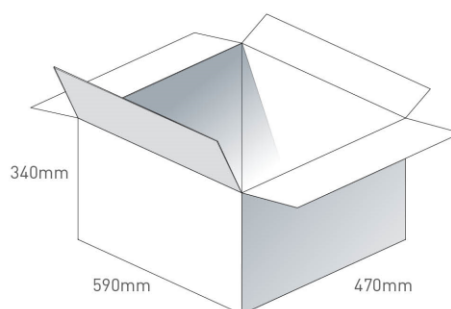
### TLS.30.105111

#### Packaging Specifications

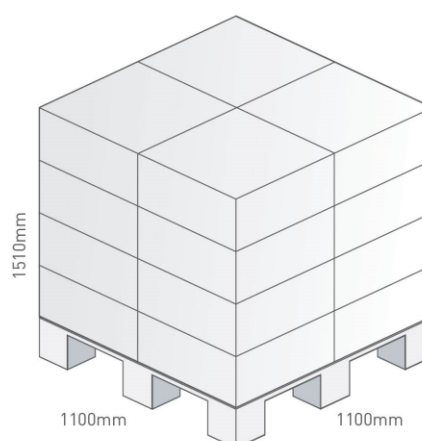
1 No. TLS.30.105111 per small box  
Box Dimensions - 135 x 135 x 133mm  
Weight - 280g



1 Outer Carton  
Carton Dimensions - 590 x 470 x 340mm  
24 pcs TLS.30.105111 per carton  
Weight - 8.5Kg



Pallet Dimensions 1100\*1100\*1510mm  
16 Cartons per Pallet  
4 Cartons per layer  
4 Layers



## Changelog for the datasheet

**SPE-15-8-070 – TLS.30.10511**

### Revision: B (Current Version)

Date:	2022-09-08
Changes:	Updated specifications
Changes Made by:	Cesar Sousa

### Previous Revisions

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

Date:	2021-09-28
Notes:	
Author:	Jack Conroy



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