TAOGLAS



Datasheet

Shockwave ISM 433MHz Permanent Mount

Part No:
TLS.30.1F21

Description:

Shockwave 433MHz

Permanent Mount External Antenna

N Type(F) connector

Features:

ISM 433MHz with 55% efficiency

Mechanically robust for indoor/outdoor applications

Height: 79.45mm(3.13") ; Diameter : 42mm(1.65")

IP67 Waterproof

N type(F) connector

RoHS & REACH Compliant

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1. Introduction



The Shockwave TLS.30.1F21 is a mechanically robust, waterproof, external antenna operating at the 433MHz band with an N type female 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.

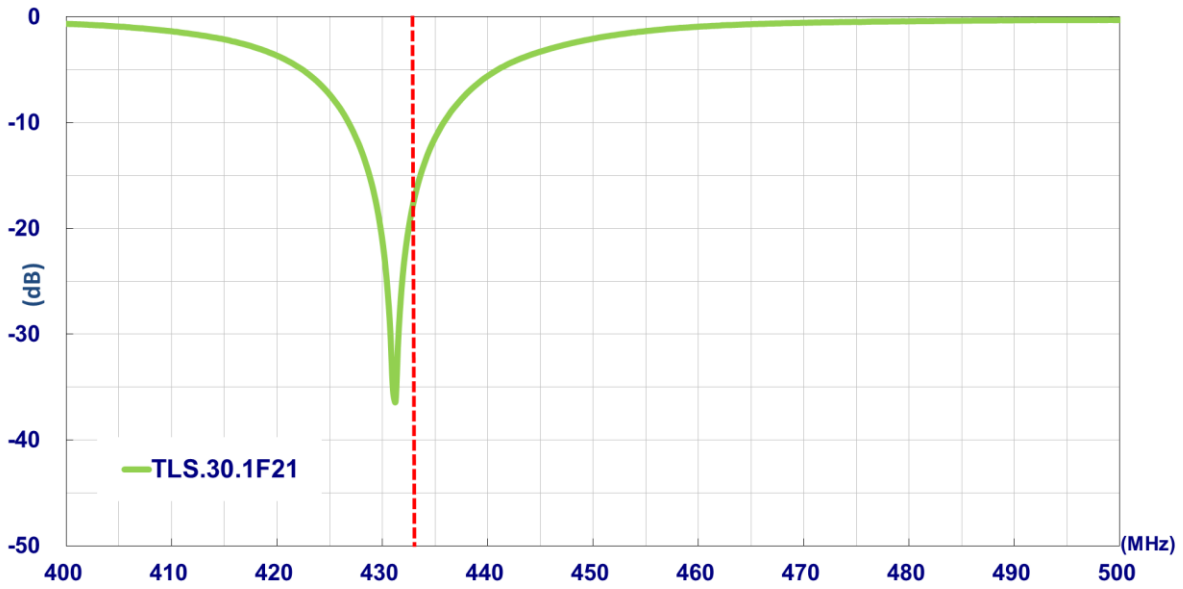
Cable lengths and connector types are customizable. Contact your regional Taoglas customer support team for further information.

2. Specifications

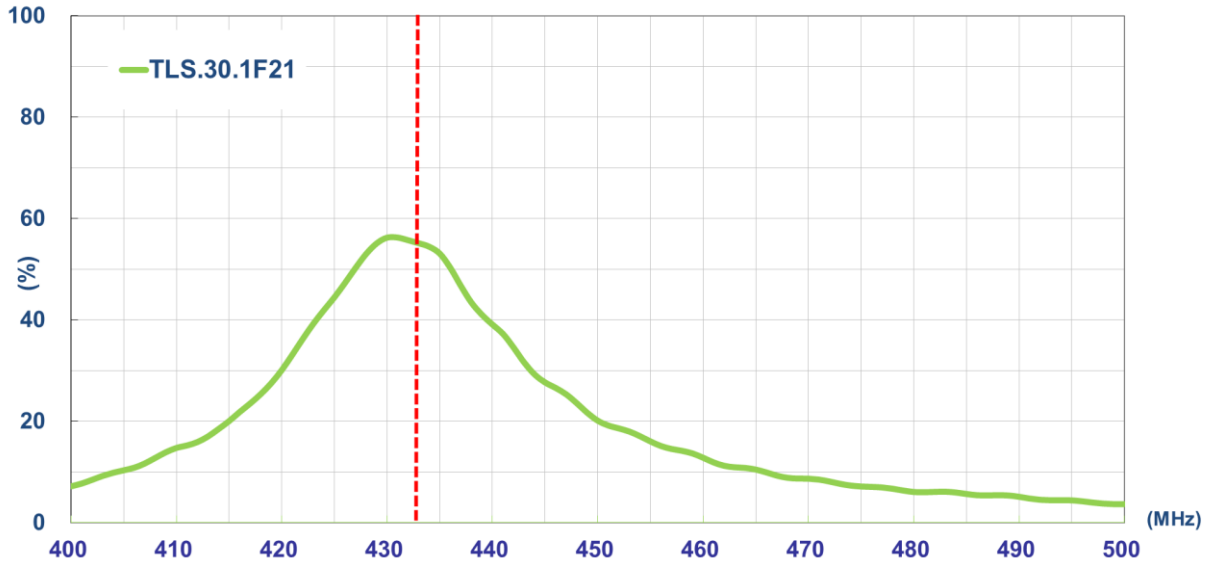
ELECTRICAL	
Application Band	ISM433
Operation Frequency	433 MHz
	On 30 x 30 cm ground plane
Efficiency (%)	55.14%
Peak Gain (dBi)	-1.16
Average Gain (dBi)	-2.59
Return Loss (dB)	< -15
Impedance	50 Ω
Polarization	Vertical
Radiation Property	Omni-Directional
Max Input Power	35 W
MECHANICAL	
Dimension (mm)	Height: 79.45mm (3.13") ; Diameter : 42mm(1.65")
Connector	N type (F)
Material	Housing: UV Resistant ABS, Base: Nickel Plated Zinc Alloy
Weight (g)	169
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

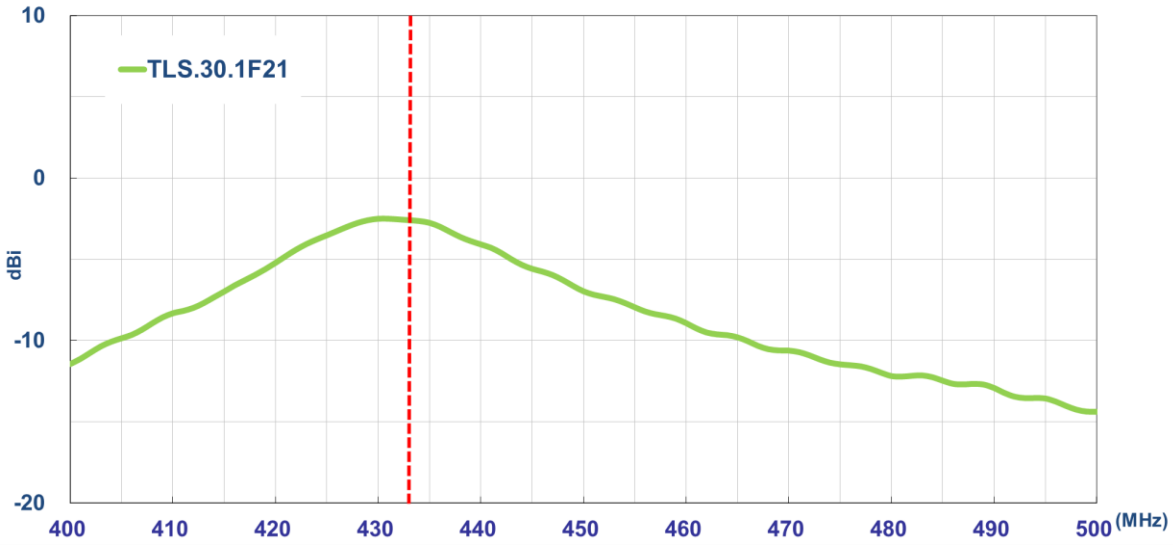
3.1 Return Loss



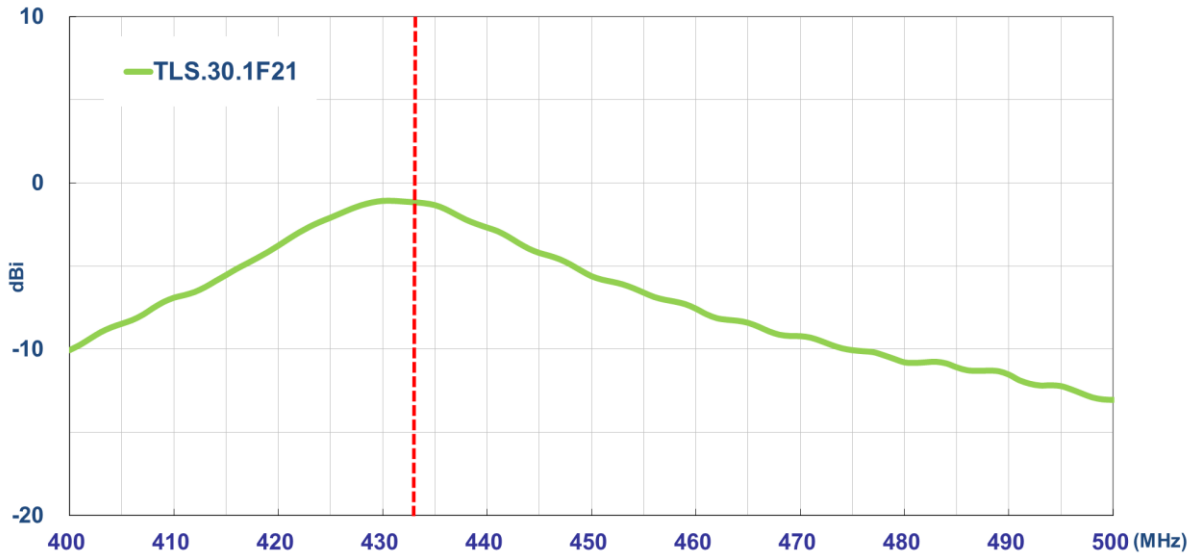
3.2 Efficiency



3.3 Average Gain

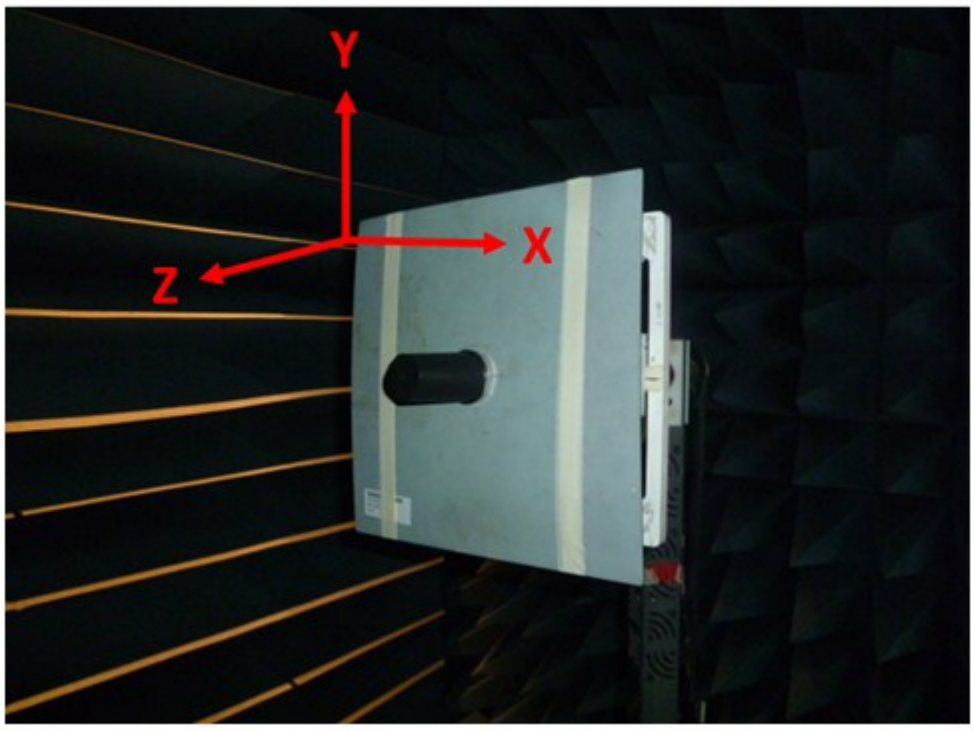


3.4 Peak Gain



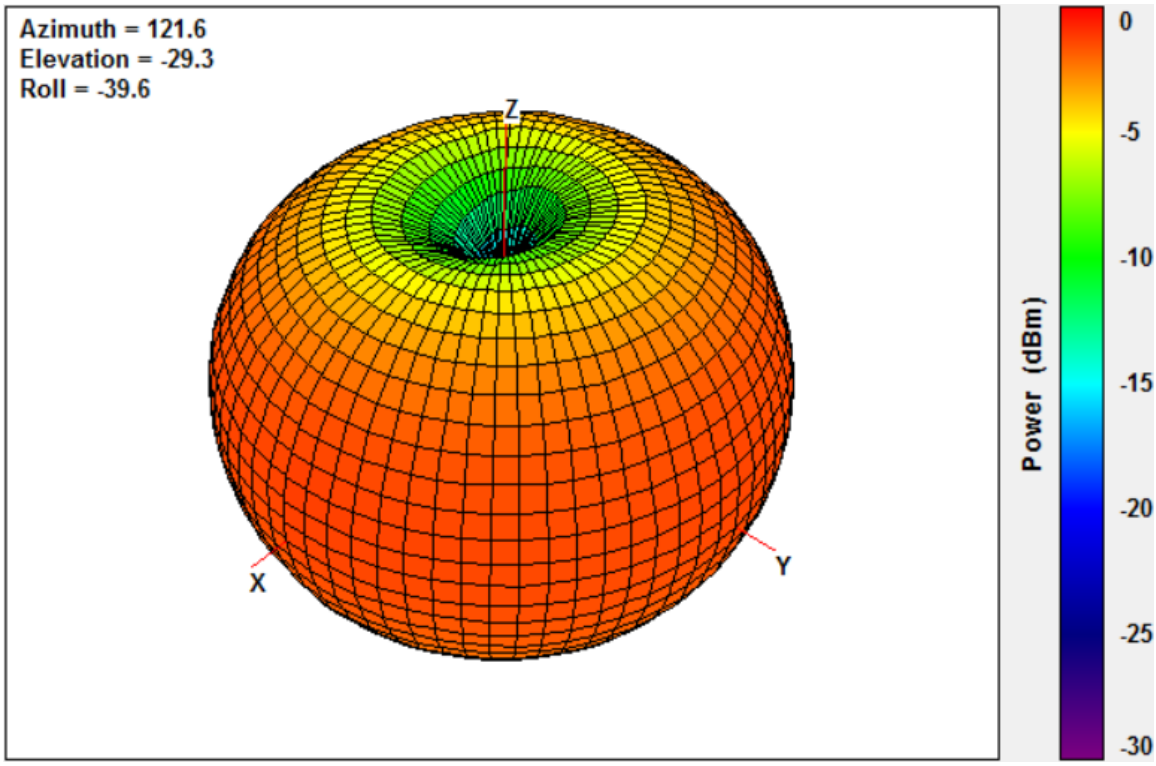
4. Radiation Patterns

4.1 Test Setup

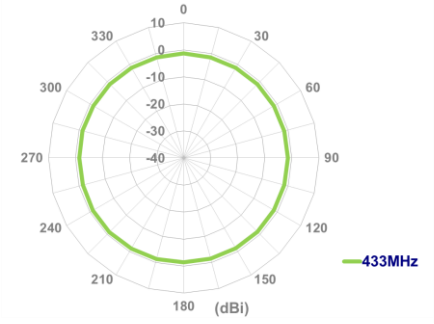


4.2 3D and 2D radiation Patterns

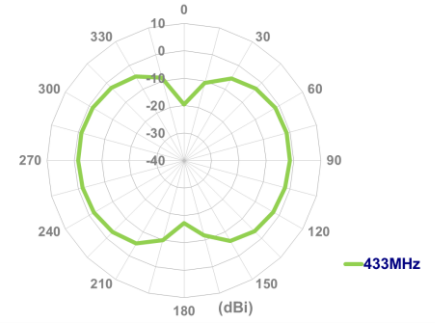
433MHz



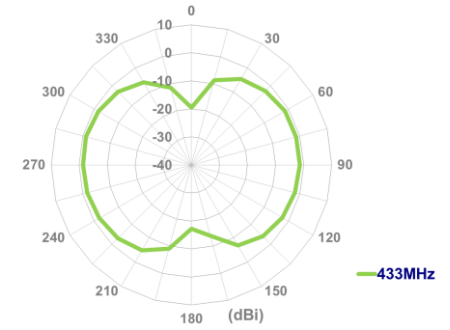
XY Plane



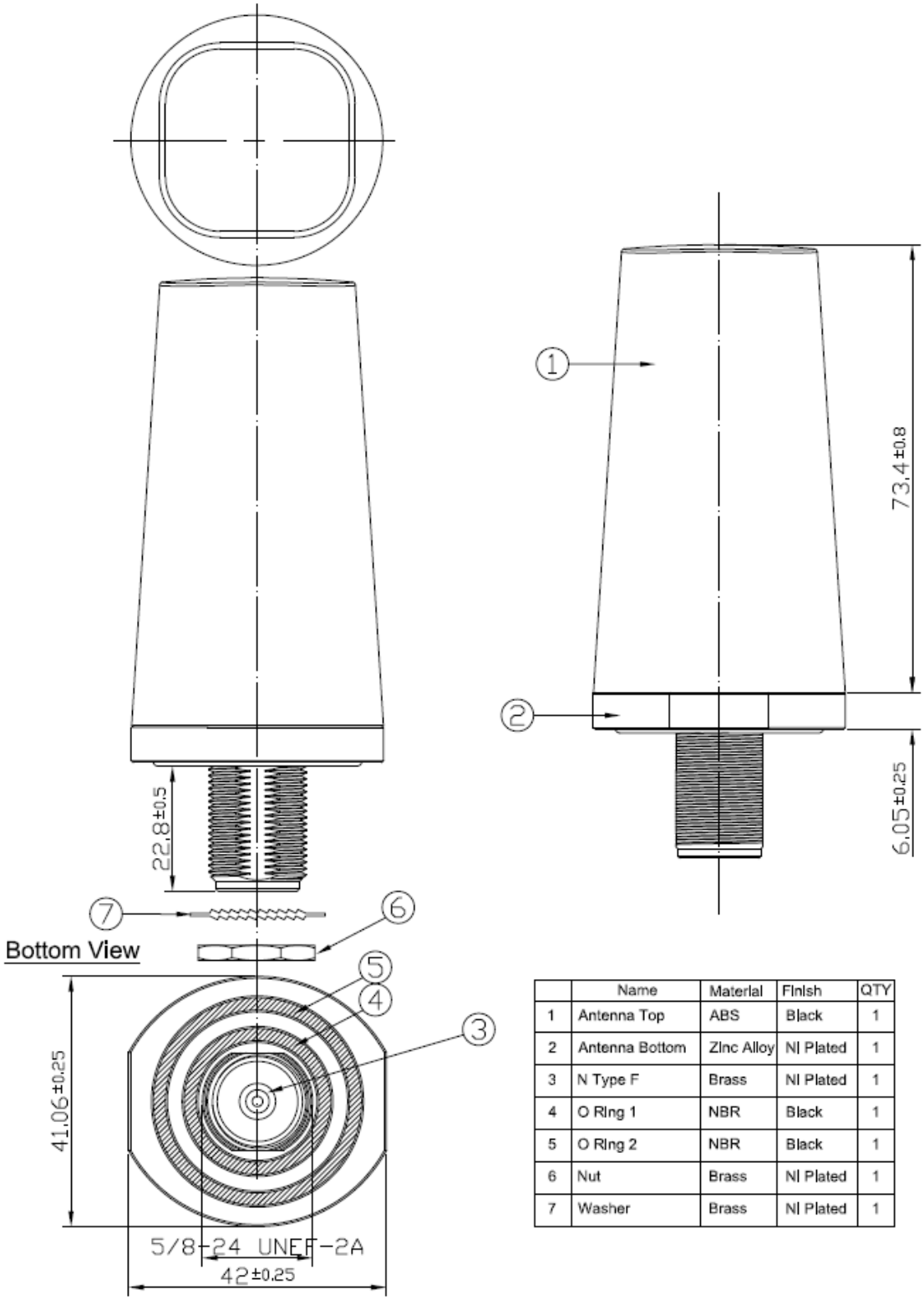
XZ Plane



YZ Plane

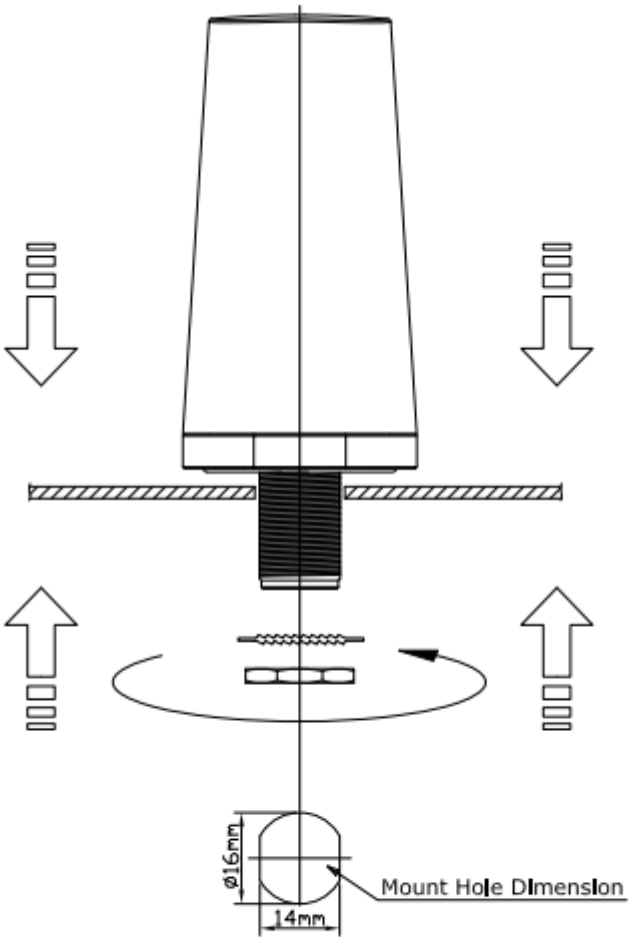


5. Mechanical Drawing (Units: mm)



	Name	Material	Finish	QTY
1	Antenna Top	ABS	Black	1
2	Antenna Bottom	Zinc Alloy	Ni Plated	1
3	N Type F	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

6. Installation Guidelines



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

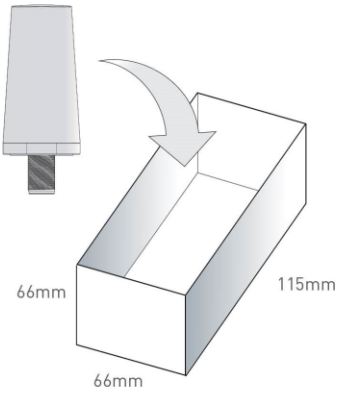
Maximum torque for mounting is 9.8 N.m or 100 kgf.cm

7. Packaging

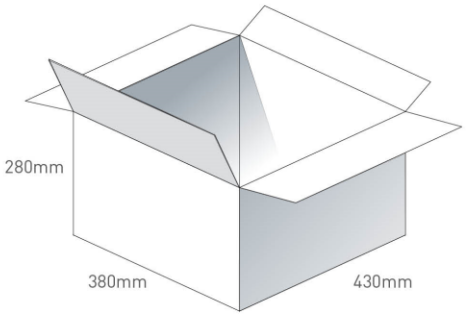
TLS.30.1F21

Packaging Specifications

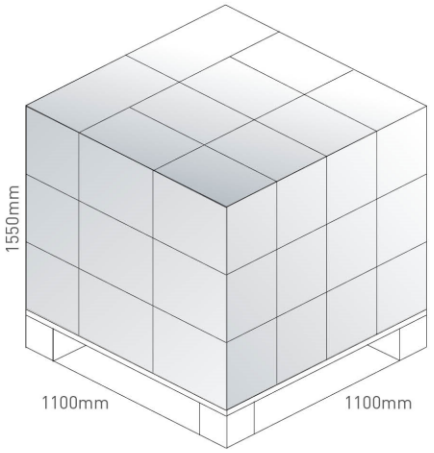
1 No. TLS.30.1F21 per small box
Box Dimensions - 66 x 66 x 115mm
Weight - 210g



1 Outer Carton
Carton Dimensions - 430 x 380 x 280mm
60 pcs TLS.30.1F21 per carton
Weight - 13.02Kg



Pallet Dimensions 1100*1100*1550mm
30 Cartons per Pallet
10 Cartons per layer
3 Layers



Changelog for the datasheet

SPE-15-8-069 – TLS.30.1F21

Revision: C (Current Version)	
Date:	2026-06-11
Changes:	Updated Max Powe Input
Changes Made by:	Cesar Sousa

Previous Revisions

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

Revision: A (Original First Release)	
Date:	2021-09-28
Notes:	
Author:	Jack Conroy



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