



# TAOGLAS®



# Datasheet

**Hercules IS.01 433MHz 0dBi Permanent Mount Antenna, 3m NFC-200 & SMA(M)**

**Part No:**  
IS.01.B.305111

**Description:**

433 MHz Heavy Duty Screw Mount Antenna

**Features:**

Hercules Screw-Mount  
0dBi ISM 433 MHz Band  
3m NFC-200 SMA (M)  
29mm\*49mm (Diameter)  
IP65 Rated Enclosure  
RoHS & REACH Compliant

1.	Introduction	3
2.	Specifications	4
3.	Antenna Characteristics	5
4.	Radiation Patterns	10
5.	Mechanical Drawing – Antenna	12
6.	Installations	13
7.	Packaging	14
8.	Changelog	15

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## 1. Introduction



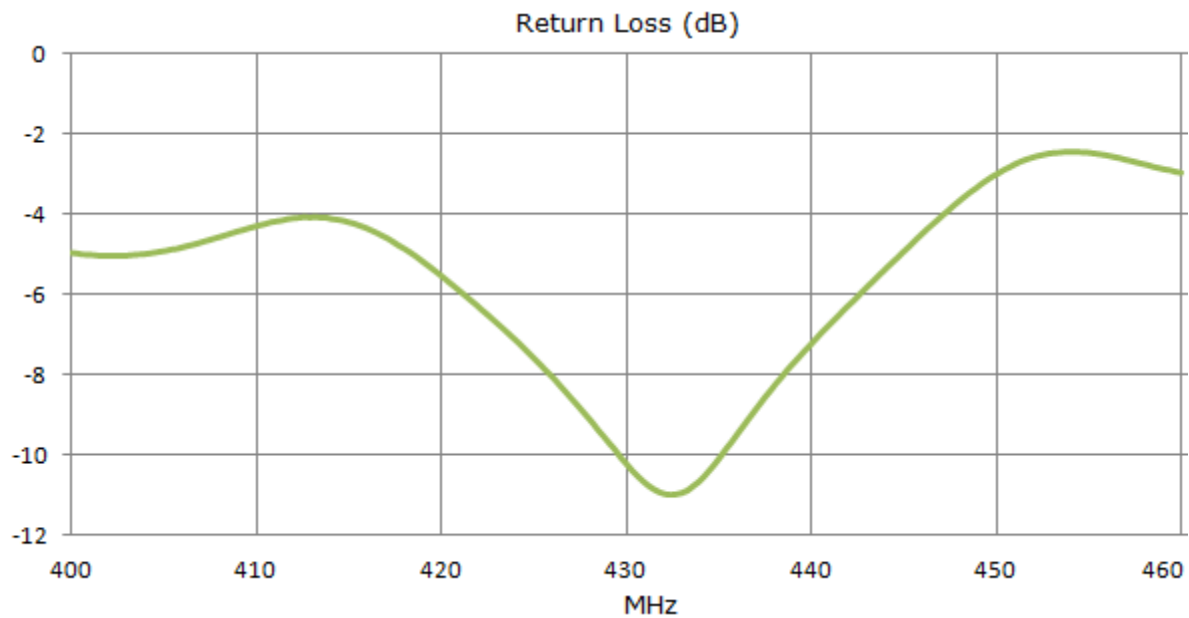
The IS.01 is a high performance 433MHz thread mount antenna for external use on mesh Networks, vehicles and outdoor and indoor assets. It is designed for heavy duty work with extra thick threads. Durable UV resistant PC housing is IP65 rated, resistant to vandalism and direct attack. At only 29mm high it complies with the latest EU directives for vehicle height restrictions, whilst also enabling covert operation with a diameter of 49mm. Range of signal travels up to 300m (see range tests below).

## 2. Specifications

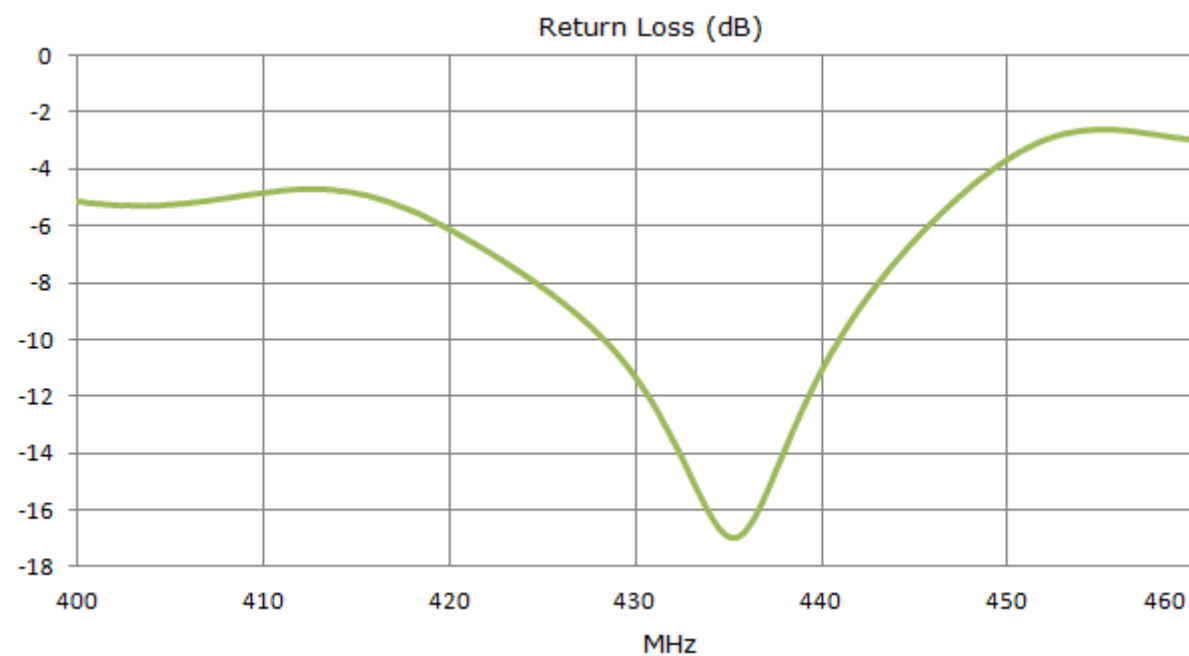
Antenna	
Frequency (MHz)	400~460 MHz (ISM)
Efficiency (%)	
30 x 30 mm Ground Plane	45 (typical)
Average Gain (dB)	
30 x 30 mm Ground Plane	-3.5 dB
Peak Gain (dBi)	
30 x 30 mm Ground Plane	1.6 dBi
Max Return Loss (dB)	-17 dB
VSWR	<1.8:1
Impedance ( $\Omega$ )	50 $\Omega$
Polarization	Linear
Radiation Pattern	Omni
Input Power(W)	5
Mechanical	
Dimensions (mm)	Height=29mm x Diameter=49mm
Cable	3m NFC-200- Fully Customizable
Casing	UV Resistant PC
Base and Thread	Nickel plated steel
Weather-proof gasket	CR4305 foam with 3M9448B double-side adhesive
Connector	SMA Male Fully Customizable
Thread Diameter	18 mm
Sealant	Rubber Stopper
Recommended Mounting Torque	24.5N·m
Maximum Mounting Torque	29.4N·m
Environmental	
Corrosion	5% NACI for 48hrs- Nickel plated steel base and thread
Temperature Range	40°C to +85°C
Thermal Shock	100 cycles -40 C to +885 C
Humidity	Non-condensing 65 C 95% RH
Shock (Drop Test)	1m drop on concrete 6 axes
Cable Pull	8Kgf
Ingress Protection	IP65

### 3. Antenna Characteristics

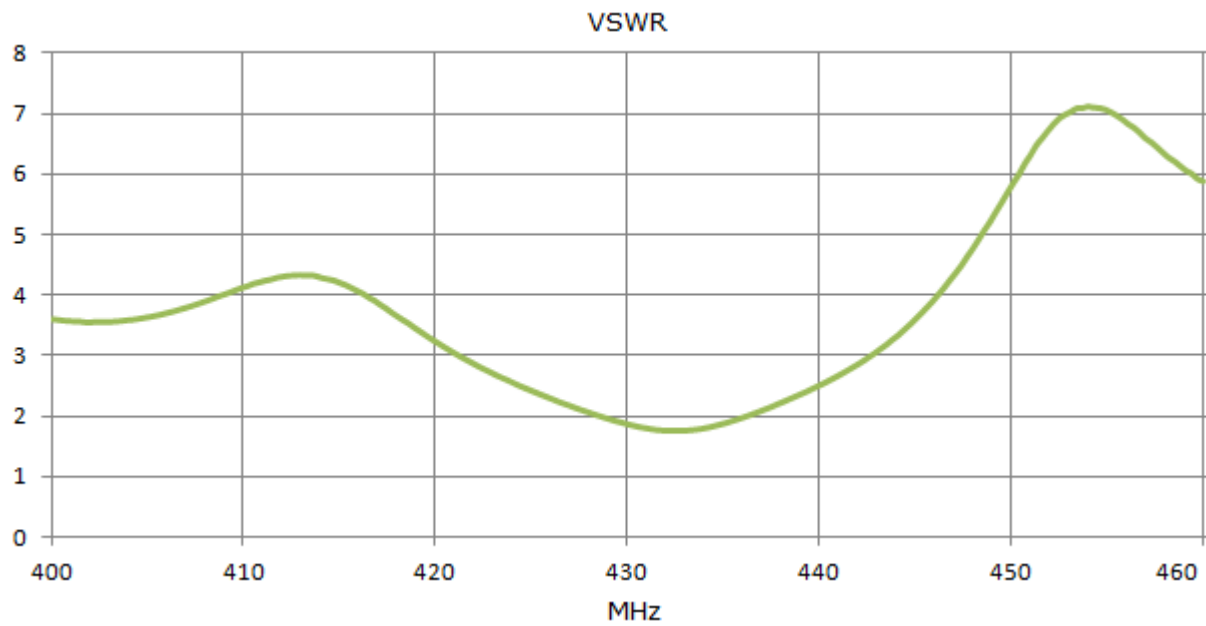
#### 3.1 Return loss of IS.01 Antenna in Free Space



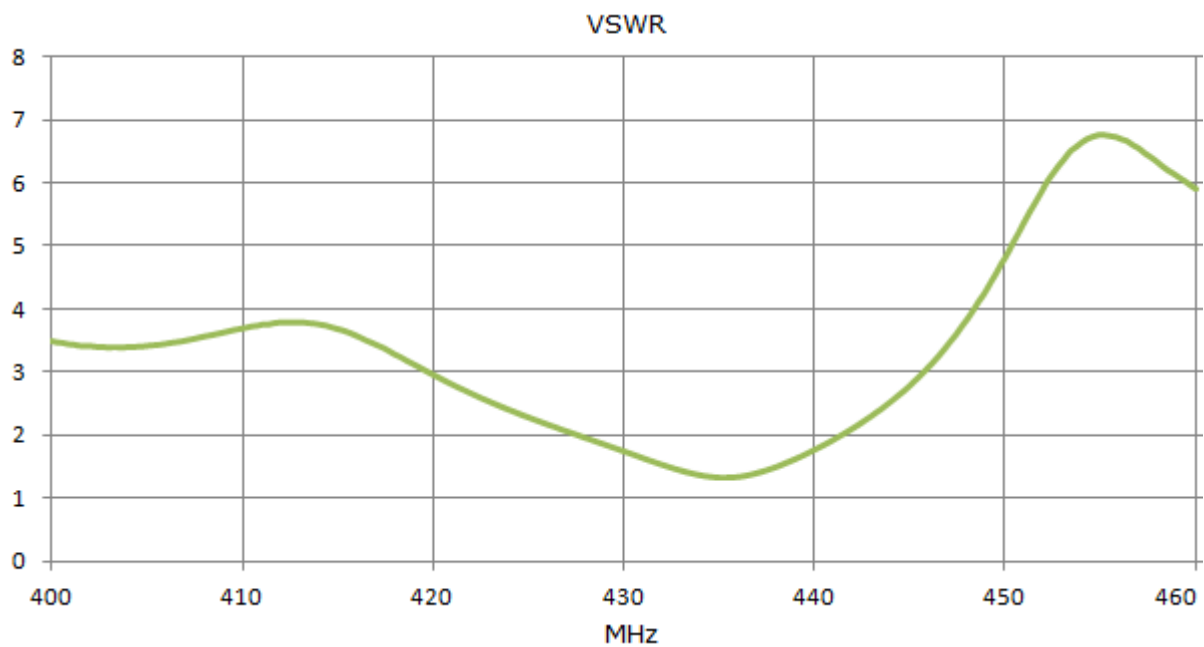
#### 3.2 Return Loss of IS.01 Antenna on 30x30 cm metal plate



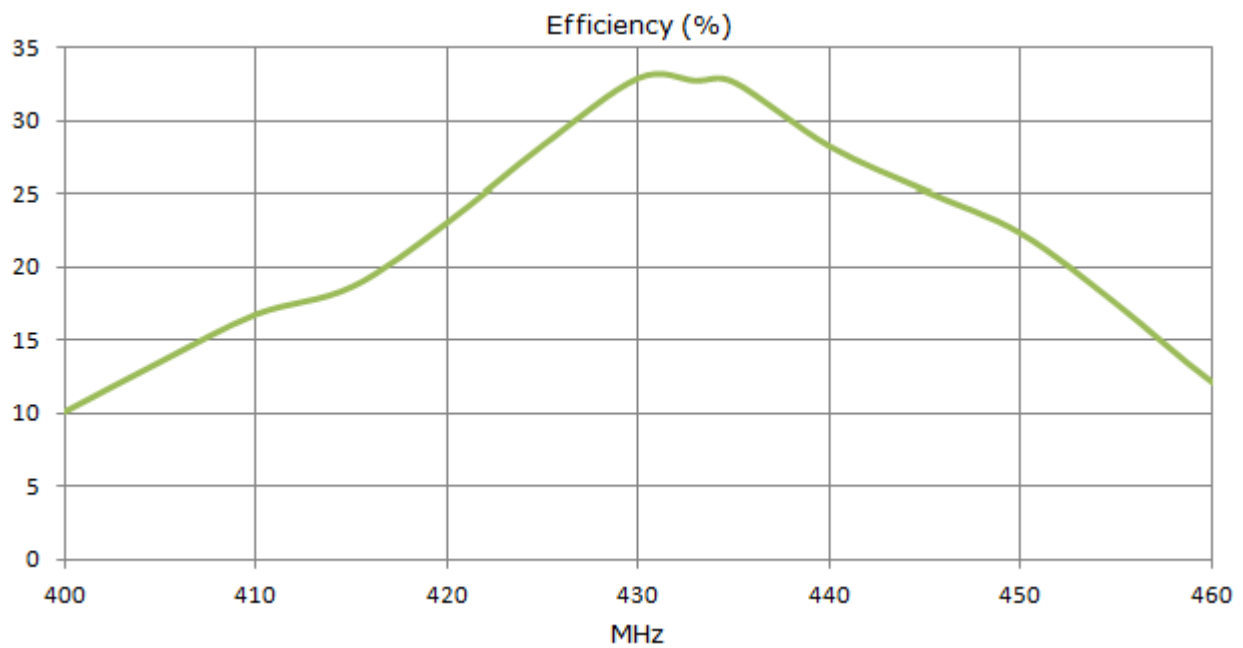
### 3.3 VSWR of IS.01 Antenna in Free Space



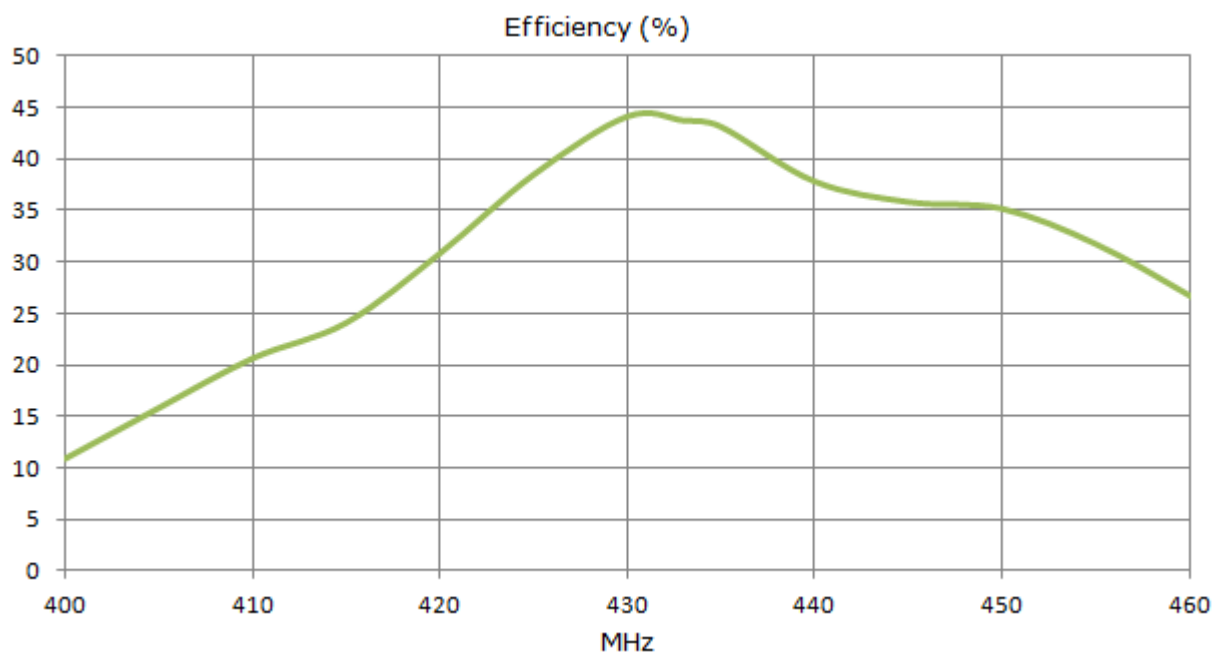
### 3.4 VSWR of IS.01 Antenna on 30x30 cm metal plate



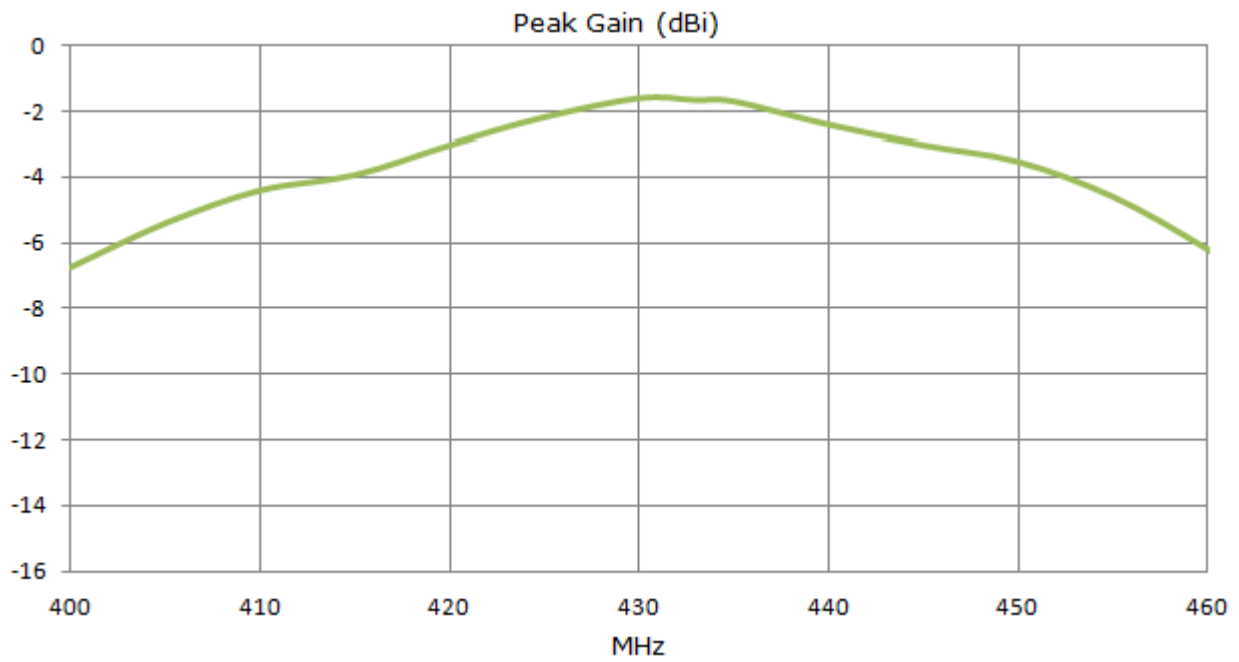
### 3.5 Efficiency of IS.01 Antenna in Free Space



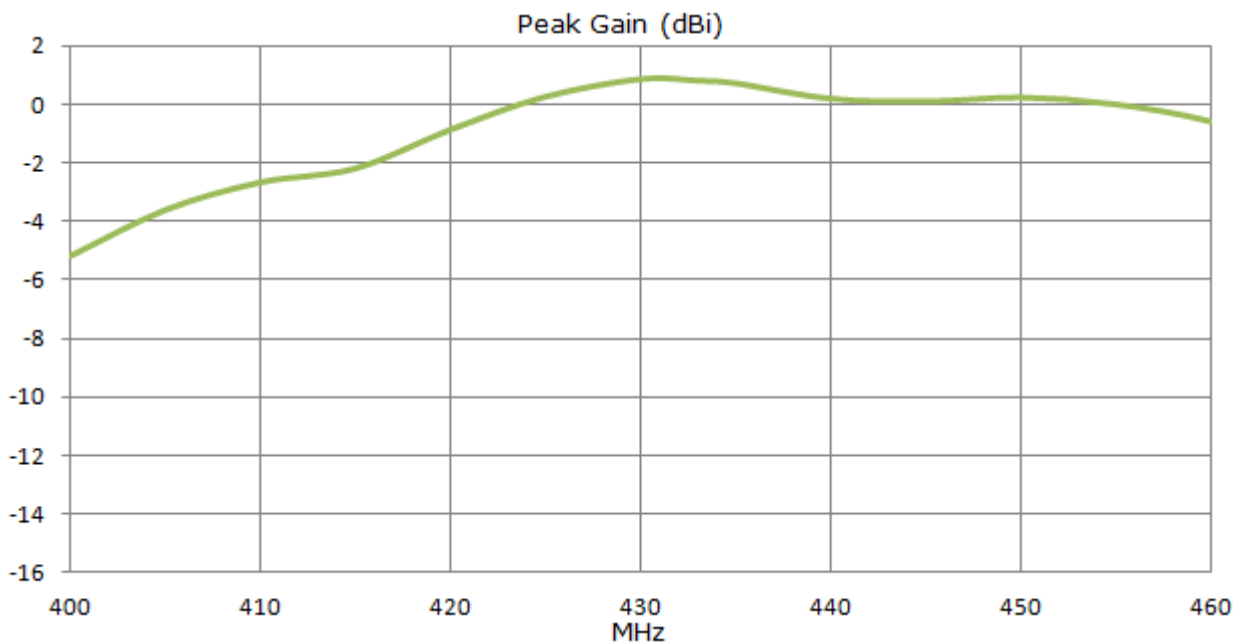
### 3.6 Efficiency of IS.01 Antenna on 30x30 cm metal plate



### 3.7 Peak Gain of IS.01 Antenna in Free Space

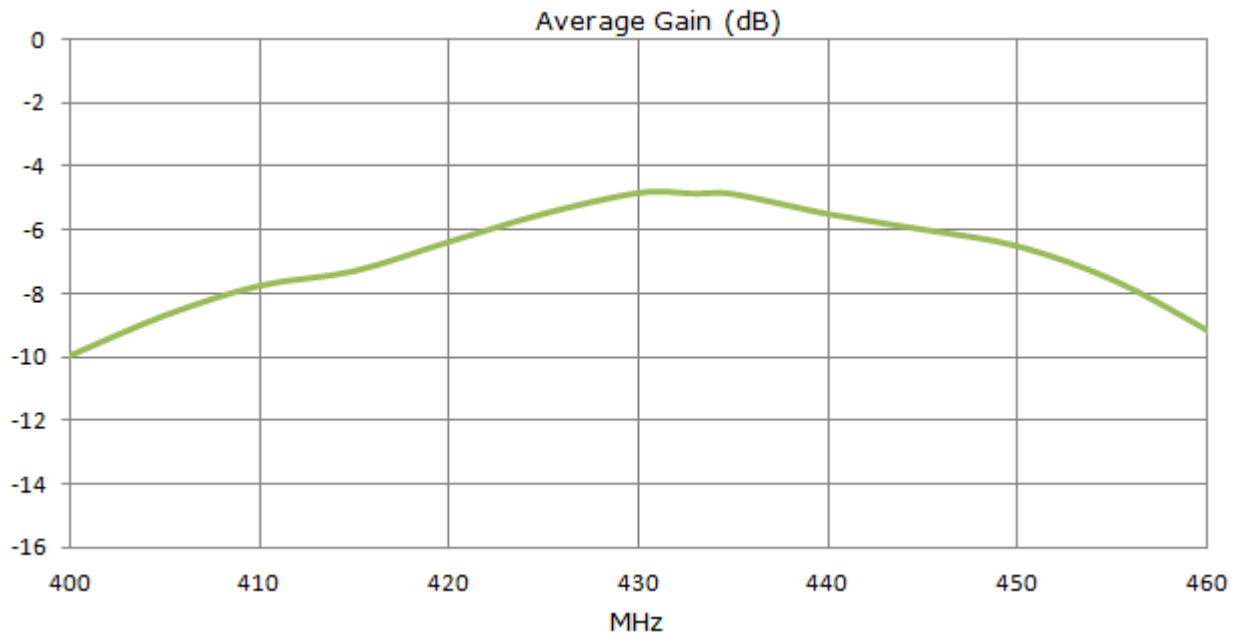


### 3.8 Peak Gain of IS.01 Antenna on 30x30 cm metal plate

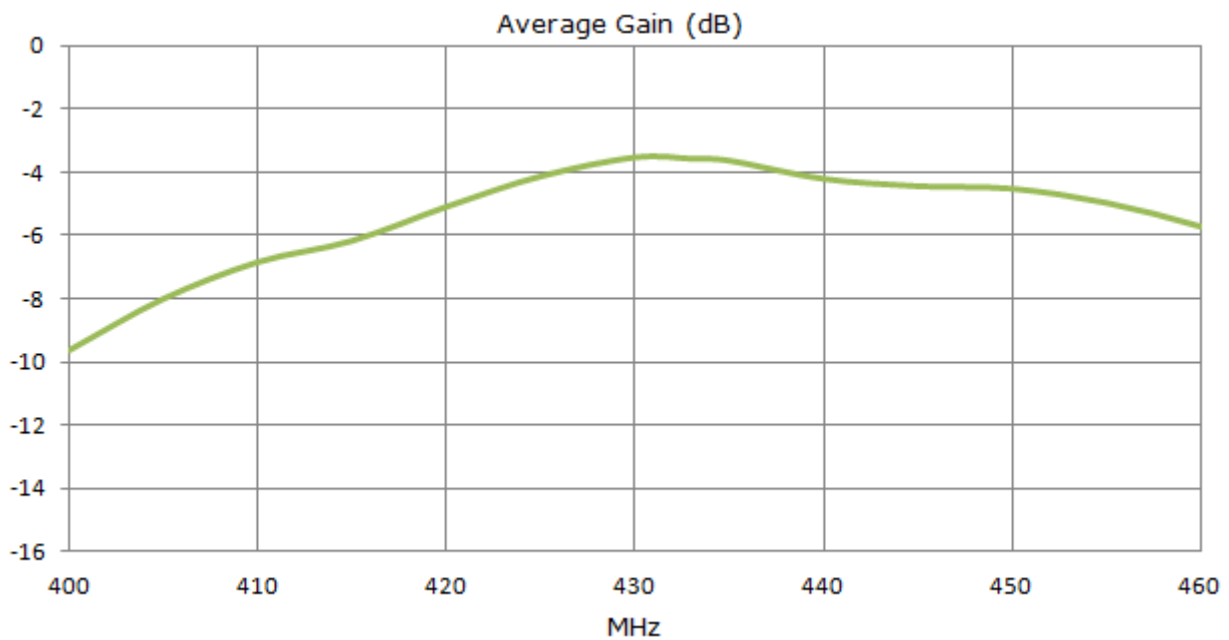




### 3.9 Average Gain of IS.01 Antenna in Free Space

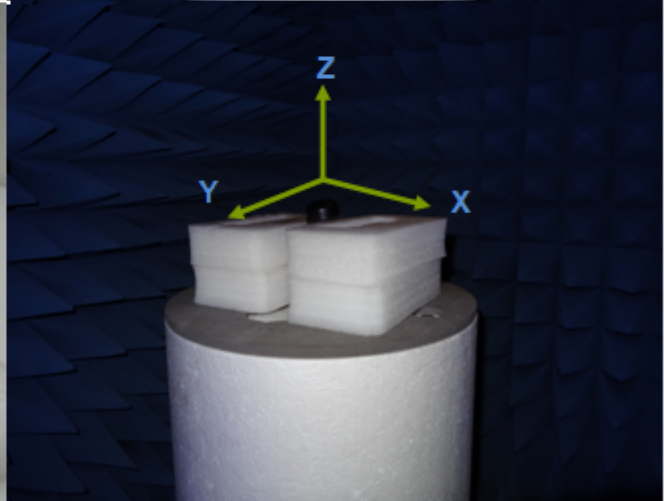
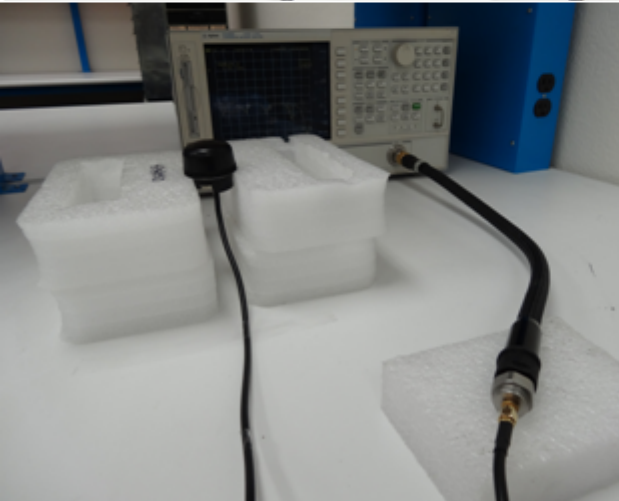
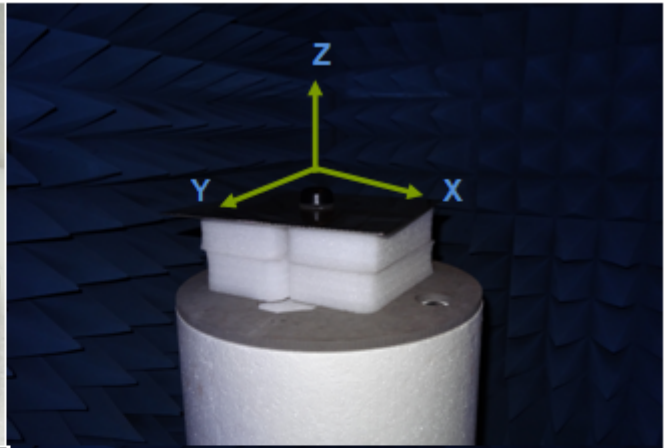
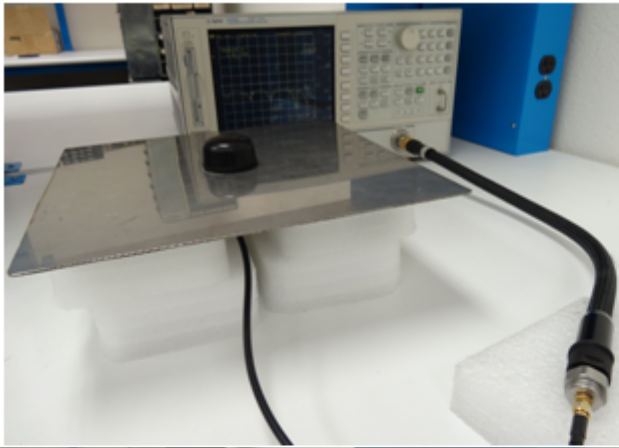


### 3.10 Average Gain of IS.01 Antenna on 30x30 cm metal plate



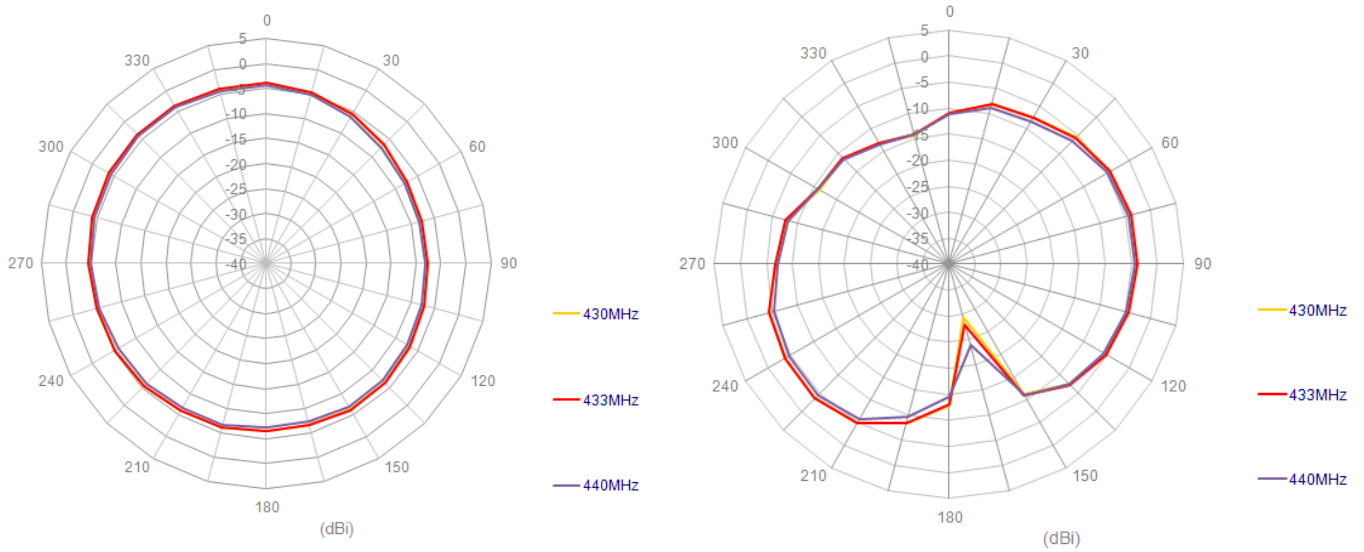
## 4. Radiation Patterns

### 4.1 Test Setup – Antenna on Evaluation Board



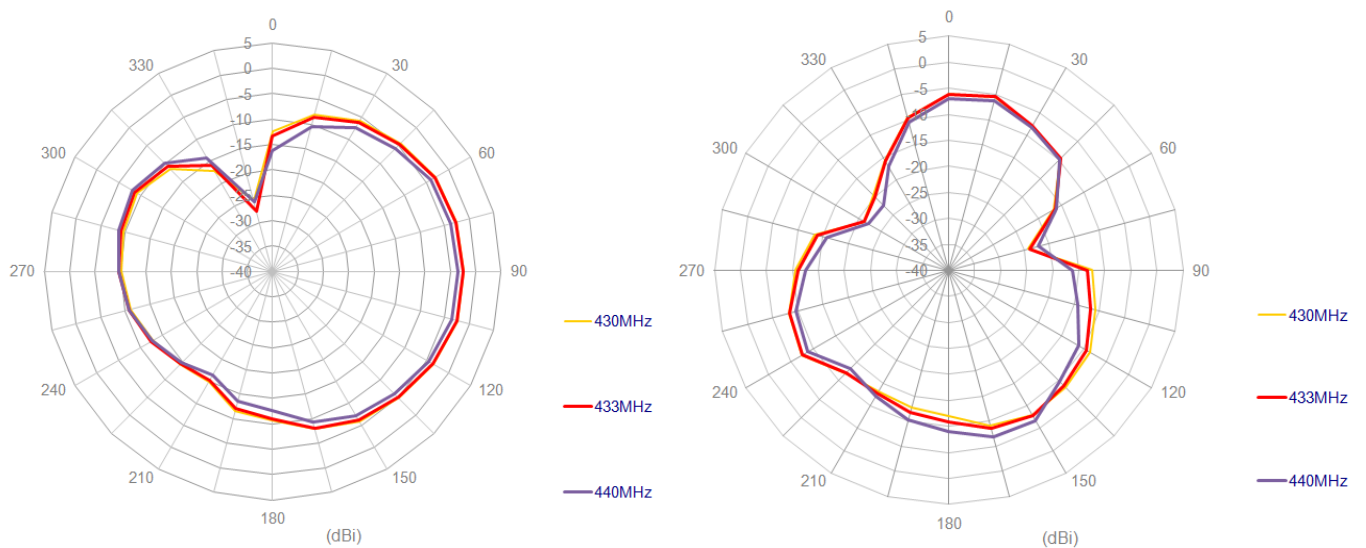
## 4.2 Radiation Pattern of IS.01 Antenna in Free Space

430-440 MHz



## 4.3 Radiation Pattern of IS.01 Antenna on 30x30cm metal plate

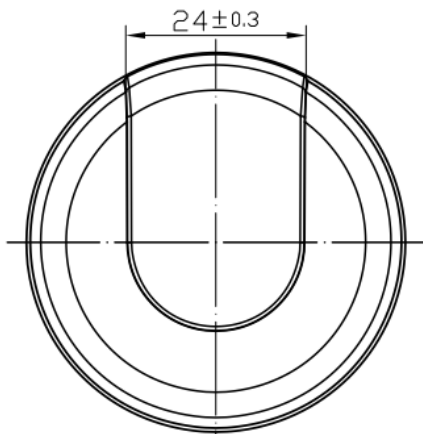
430-440 MHz



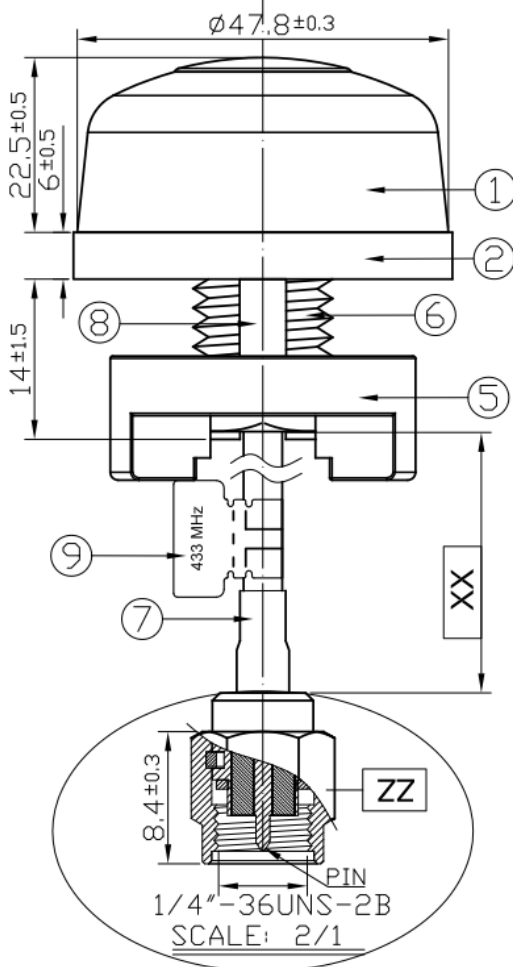
# 5. Mechanical Drawing – Antenna

## 5.1 Antenna Dimension and Drawing

Top View



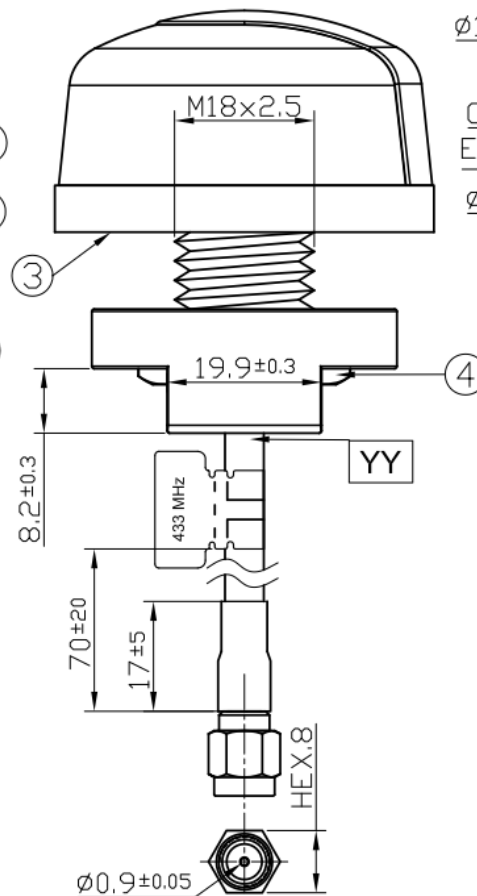
Front View



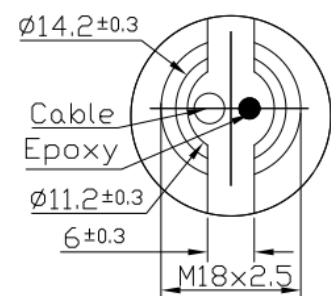
	Name	Material	Finish	QTY
1	Housing	PC	Black	1
2	Closed Cell Foam	CR 4305	Black	1
3	3M Double Adhesive	3M 9448 WC	White Liner	1
4	M18 Inner Nut	Steel Carbon	Ni Plated	1
5	Outer Nut Cover	ABS	Black	1
6	Metal Base	Zinc Alloy	Ni Plated	1
7	Heat Shrink Tube	PE	Black	1
8	Rubber Stopper	Silicon Rubber	Black	1
9	433MHz Label	Coated Paper	Khaki	1

	Name	Spec	Finish	QTY
XX	Cable Length	3000±30mm		1
YY	Cable Type	NFC200	Black	1
ZZ	Connector Type	SMA(M) ST	Gold	1

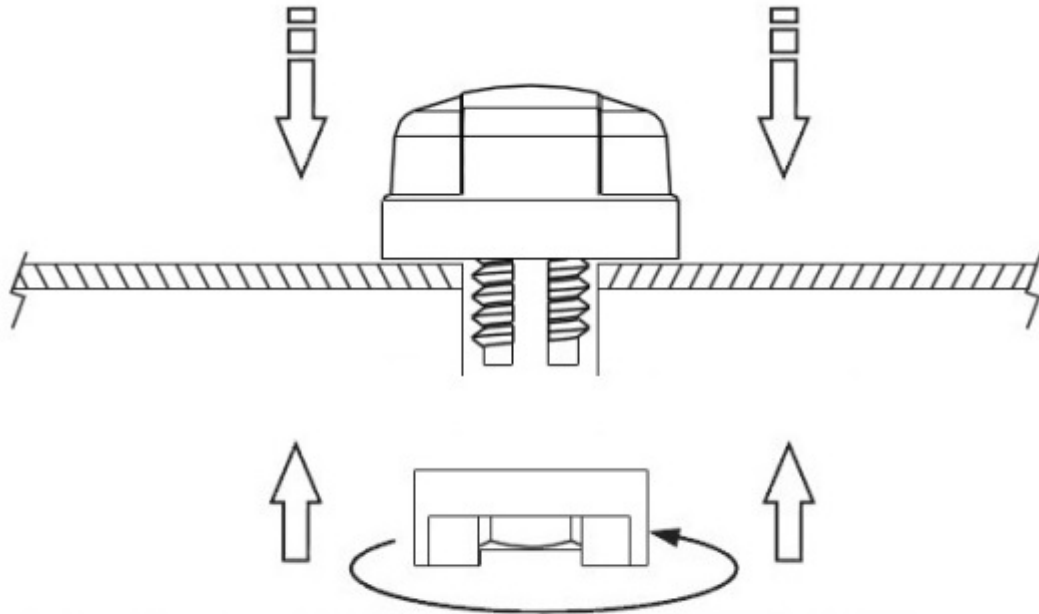
Side View



Bottom Thread View



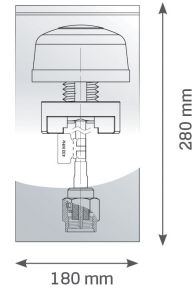
## 6. Installations



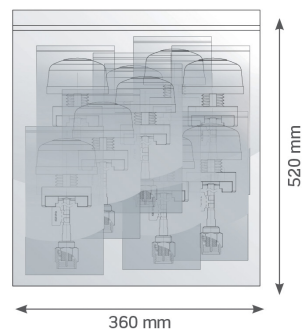
Recommended torque for Mounting is 24.5N·m  
 Maximum torque for mounting is 29.4N·m

## 7. Packaging

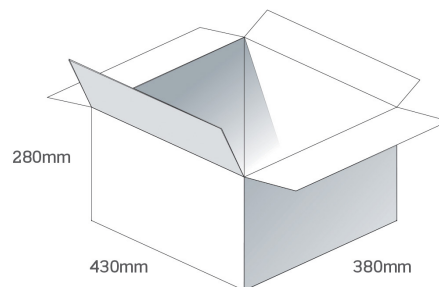
1 pcs IS.01.B.305111 per PE Bag  
 Bag Dimensions - 280 x 180 mm  
 Weight - 214g



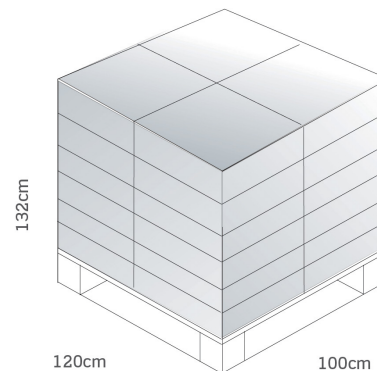
10 pcs IS.01.B.305111 per PE Large Bag  
 Bag Dimensions - 520x 360mm  
 Weight - 2.2kg



50 pcs IS.01.B.305111 per carton  
 Carton - 430 x 380 x 280mm  
 Weight - 11.3Kg



Pallet Dimensions 120x 100 x 132cm  
 24 Cartons per Pallet  
 6 Cartons per layer  
 4 Layers



Changelog for the datasheet

**SPE-13-8-004– IS.01.B.305111**

**Revision: G (Current Version)**

Date:	2021-11-18
Changes:	Format Change, MSL
Changes Made by:	Erik Landi

**Previous Revisions**

**Revision: F**

Date:	2021-02-09
Changes:	
Changes Made by:	Jack Conroy

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

Date:	2012-01-21
Notes:	Initial Release
Author:	STAFF

**Revision: E**

Date:	NA
Changes:	
Changes Made by:	STAFF

**Revision: D**

Date:	2016-12-23
Changes:	Updated with revised salt spray info and disclaimer
Changes Made by:	Andy Mahoney

**Revision: C**

Date:	2014-09-25
Changes:	changed to NFC200
Changes Made by:	AINE DOYLE

**Revision: B**

Date:	2013-02-06
Changes:	
Changes Made by:	STAFF



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