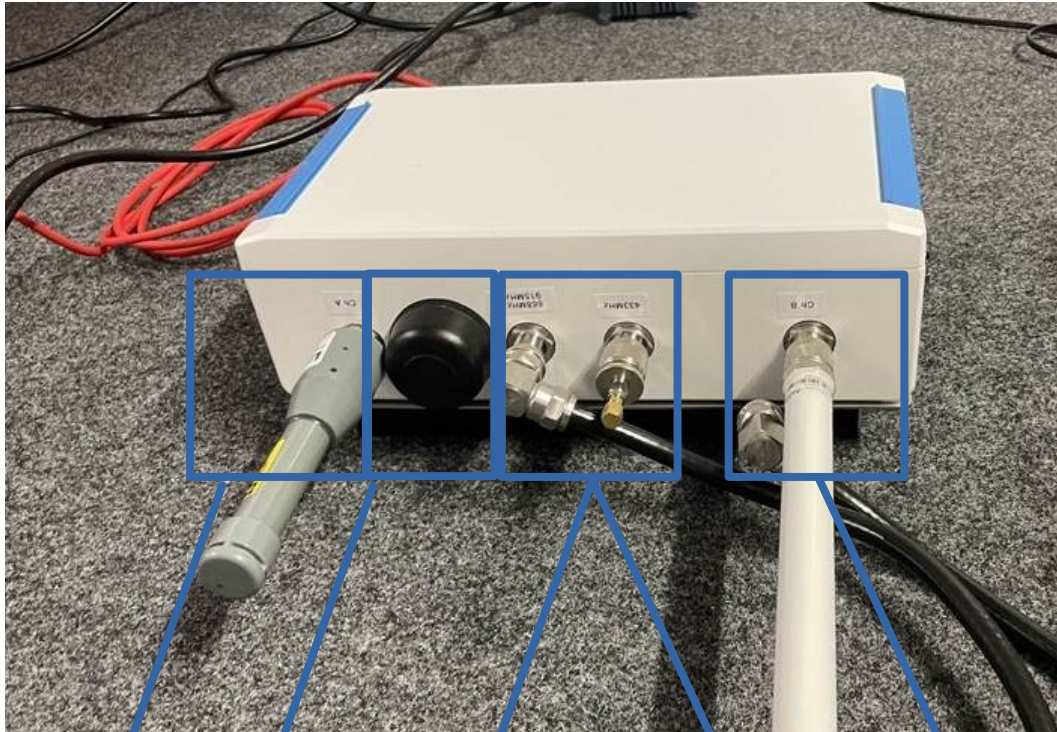


ANTENNA SPECIFICATION

Top side



<p>CH A 2280-2600 MHz 5180-5875 MHz</p> <p>Antenna: -apa-l2458-08a -HGV-2458-03U-NM</p>	<p>GNSS 1575.42 MHz</p> <p>Antenna: -A.40.A.301111</p>	<p>A1 433.05-434.79 MHz 860.00-928.00 MHz</p> <p>Antenna: -OMB.433.B03F21 -OMB.868.B05F21 -OMB.915.B03F21</p>	<p>A2 433.05-434.79 MHz 860.00-928.00 MHz</p> <p>Antenna: -OMB.433.B03F21 -OMB.868.B05F21 -OMB.915.B03F21</p>	<p>CH B 2280-2600 MHz 5180-5875 MHz</p> <p>Antenna: -apa-l2458-08a -aoa-2458-78am</p>
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Bottom side



Mobile Communication

LTE Band

USA: B2, B5, B12, B14, B66

EU: B1, B3, B20

Antenna

-TLS.01.1F21



TAOGLAS®



Datasheet

Barracuda

Part No:
OMB.433.B03F21

Description:

Barracuda - 433MHz 3dBi Omni Directional Outdoor Antenna with N Type Female Connector, U-Bolt, 523mm Length

Features:

- Omni-Directional Radiation Pattern
- Collinear
- 3dBi Peak gain, 433 MHz
- Fiberglass Housing
- Robust design for all weather operation
- IP65 Waterproof
- Length: 553mm, Weight: 350g
- N type Female connector
- Wall/Pole Mount bracket included
- RoHS & Reach Compliant

1. Introduction	3
2. Specifications	4
3. Antenna Characteristics	5
4. Radiation Patterns	7
5. Mechanical Drawing	11
6. Packaging	12
7. Antenna Installation Guide	13
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Changelog	14

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1. Introduction



The OMB.433.B03F21 is a fiberglass Omni-directional outdoor antenna, operating in the 433 MHz ISM band. The antenna is designed for applications such as metering, industrial / environmental monitoring, remote asset monitoring, and mesh network applications.

The OMB.433 operates at 433MHz, one of the most widely used license free ISM bands, with a 3dBi peak gain. The omni-directional antenna radiates uniformly in the azimuth. This collinear design characteristic provides the best performance, giving optimized coverage and therefore longer range in the horizontal plane over 360 degrees, thus minimizing the amount of nodes needed for a mesh network.

The UV resistant fiberglass housing enables the OMB antenna to be utilized in all kinds of harsh environments, making it more robust and safer than traditional whip antennas. It can be connected directly to the access point or telemetry unit, or can be mounted on wall or device surface via the N-type connector.

Another larger model, the OMB.433.B06F21 with 6dBi peak gain, also working in the 433MHz ISM band, is also available. Gain and connector customizable, subject to MOQ.

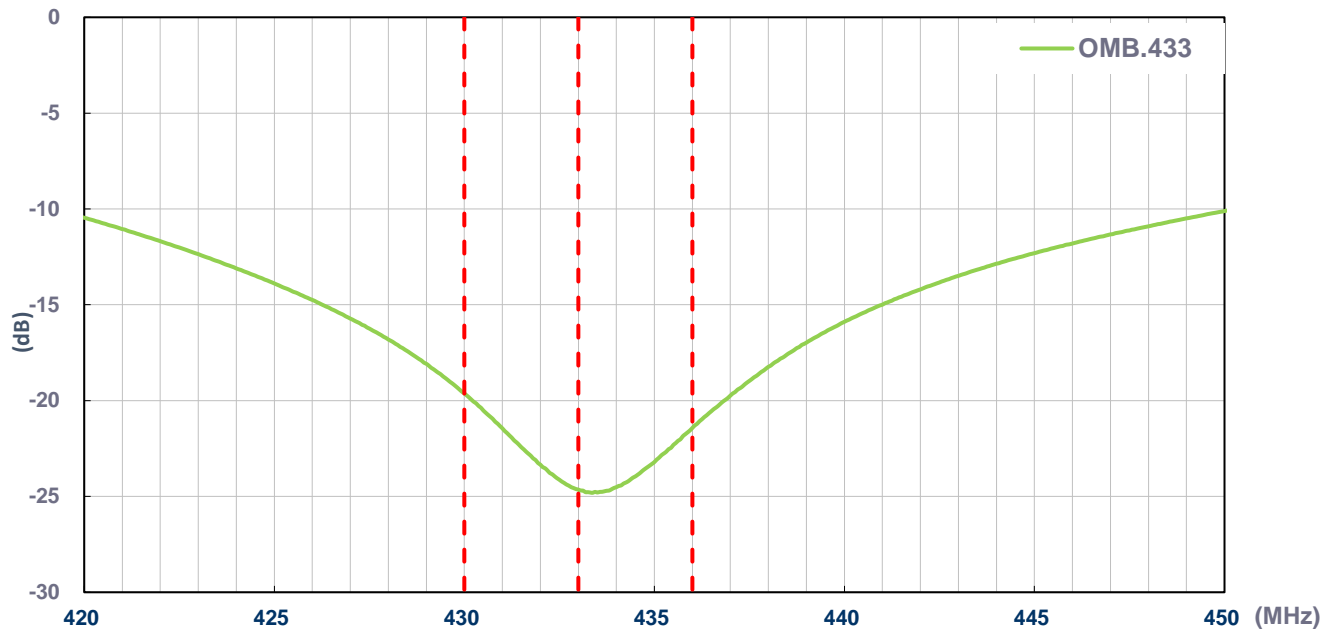
2. Specifications

Electrical	
Frequency (MHz)	433
Antenna Type	Collinear Dipole Array
Peak Gain	3 dB
Polarization	Vertical
Impedance	50 ohms
Max Input Power	100 watts
VSWR	1.5:1
Radiation	Omni-Directional
Vertical Beamwidth	60 Deg
Horizontal Beamwidth	360 Deg
Internal Material	Copper
Connector	N Type Female
Mechanical	
Length	553 mm (Max)
Radome Diameter	24mm
Bracket Dimension	70 x 53mm (Max)
Antenna Weight	350g
Mounting Accessories Weight	70g
Application	Indoor/Outdoor
Radome Material	White Fiberglass
Bracket Material	Aluminium
Mount Style	Pole Mount/Wall Mount
U Bolt	Stainless Steel
Wind Resistance	>150mph (>241km/h)
Waterproof	IP65
Environmental	
Storage Temperature	-40°C to +85°C
Operating Temperature	-40°C to +85°C
Operating Humidity	10%~90% non-condensing
Storage Humidity	5%~90% non-condensing

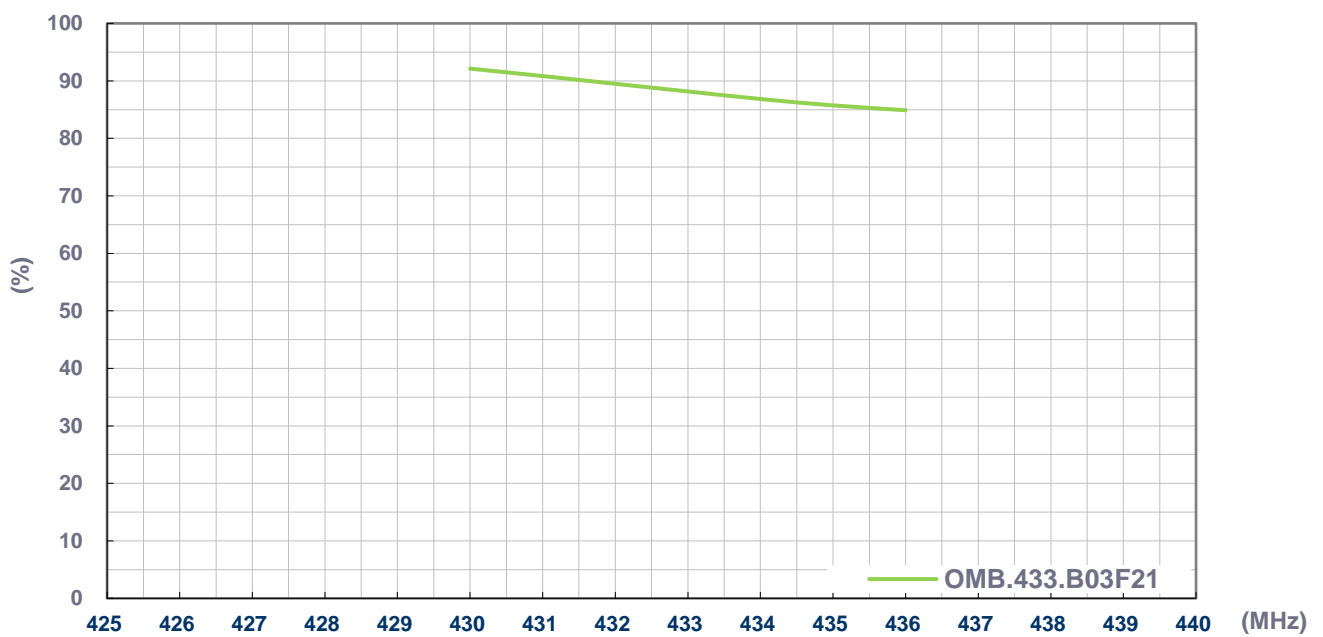
3. Antenna Characteristics

3.1 ISM 433

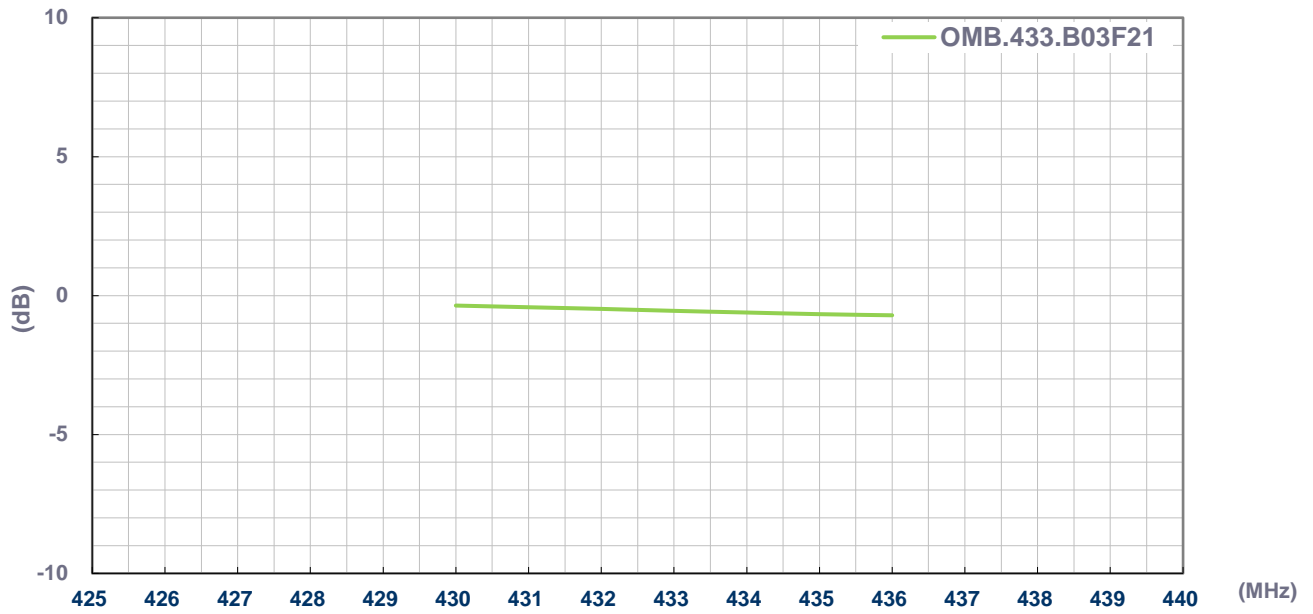
Return Loss



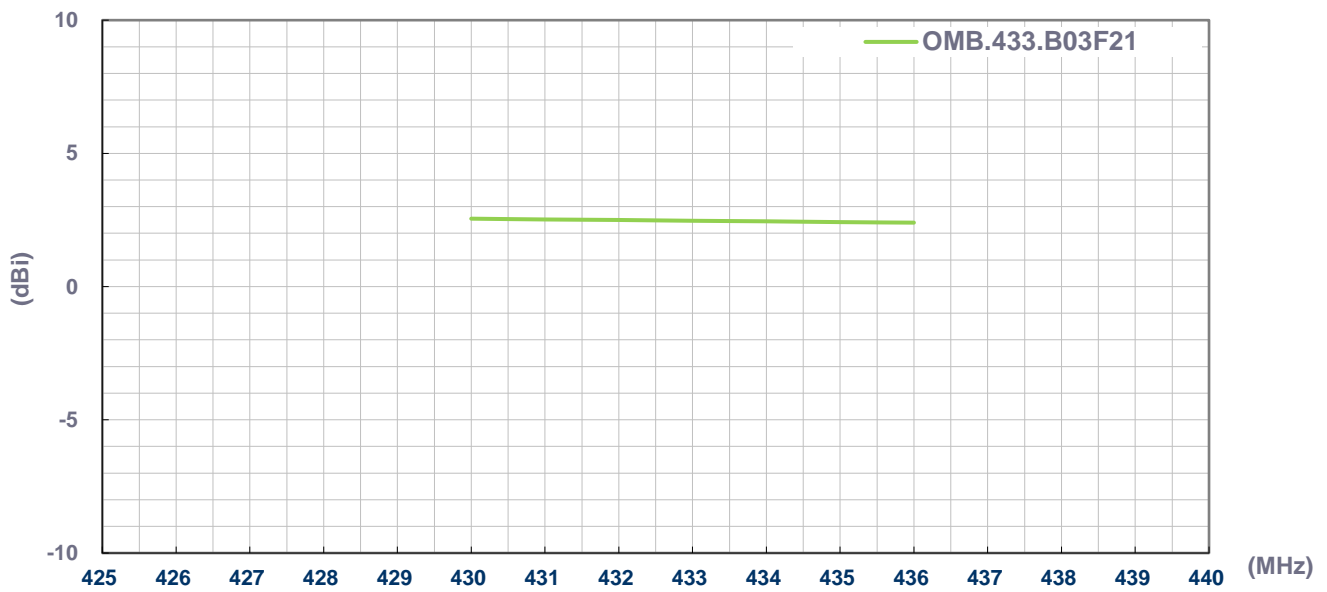
Efficiency



Average Gain

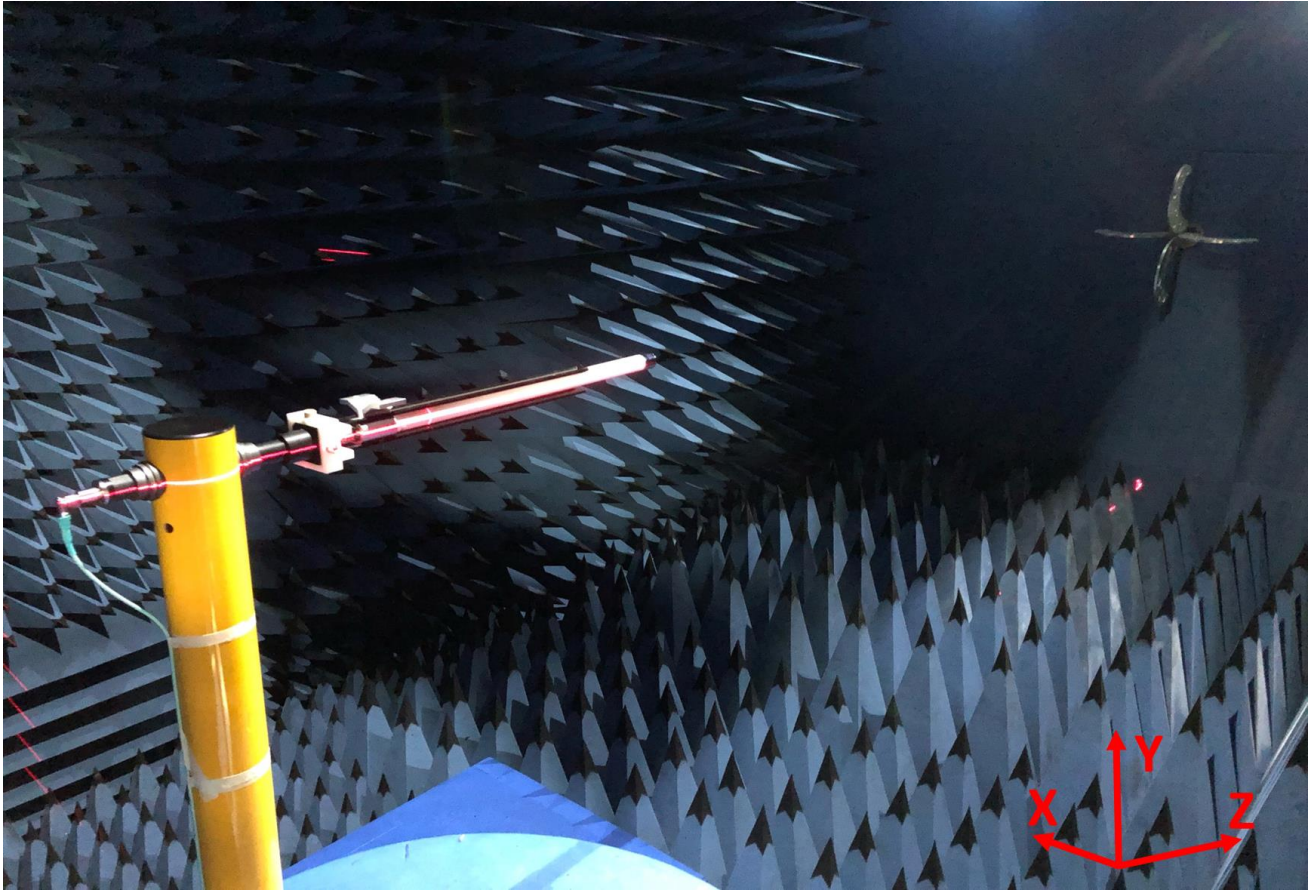


Peak Gain

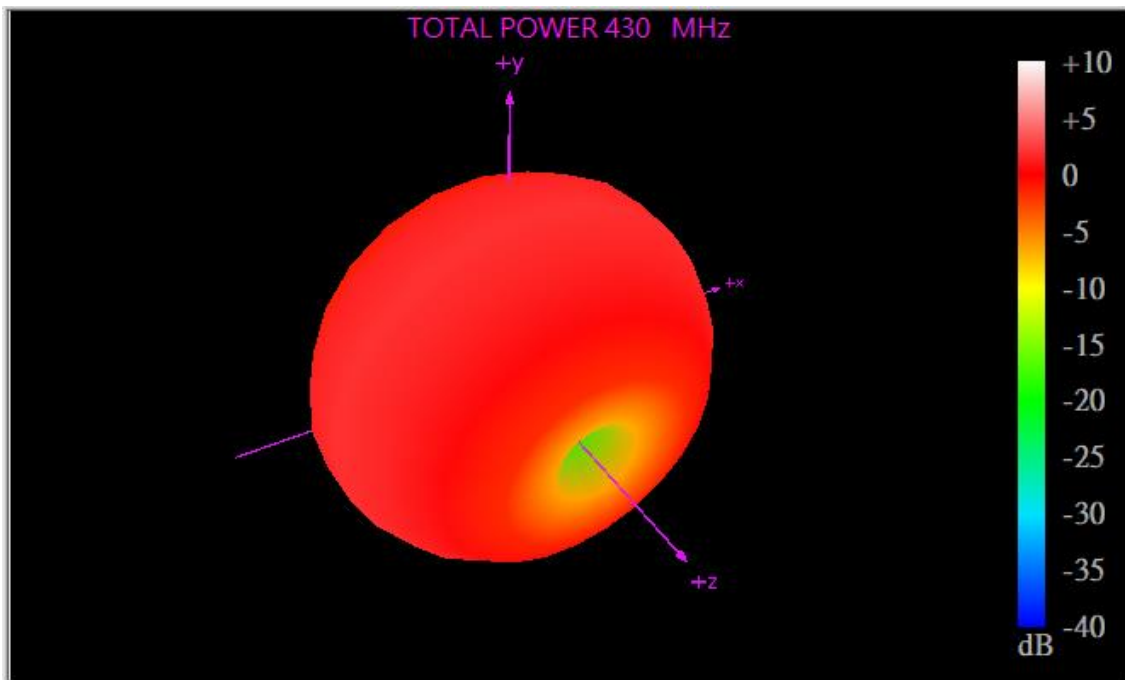


4. Radiation Patterns

4.1 Test Setup



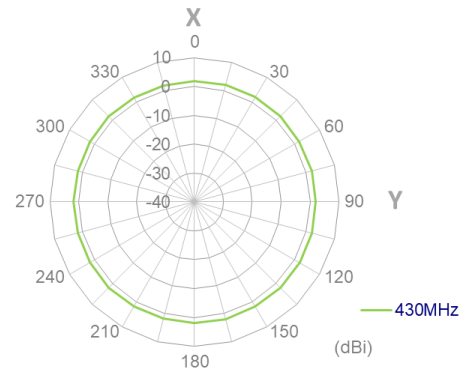
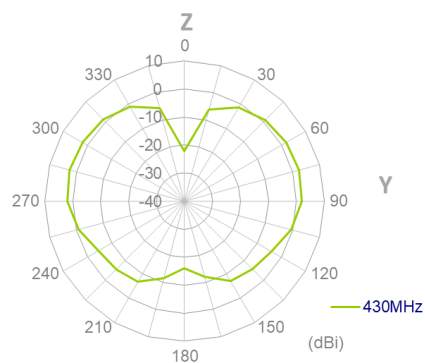
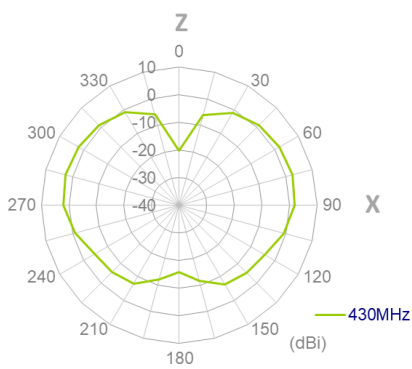
4.2 430MHz 3D and 2D Radiation Patterns



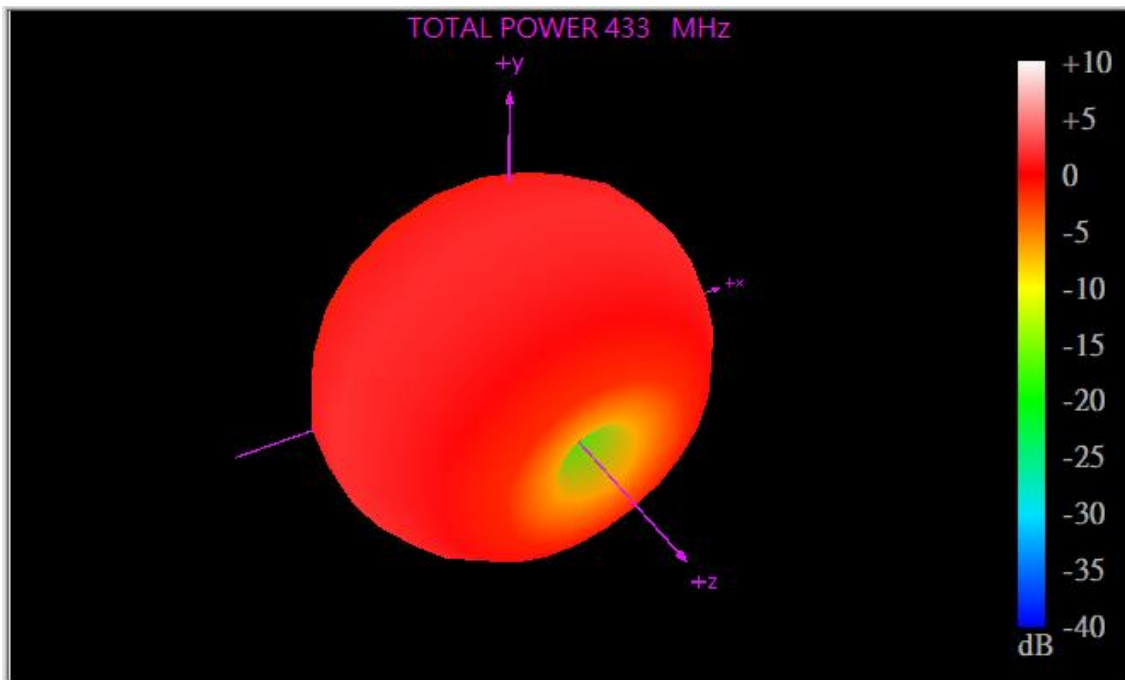
XZ Plane

YZ Plane

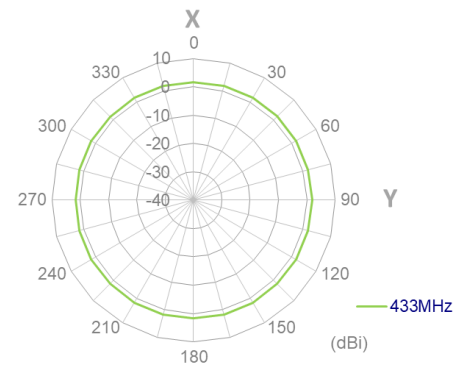
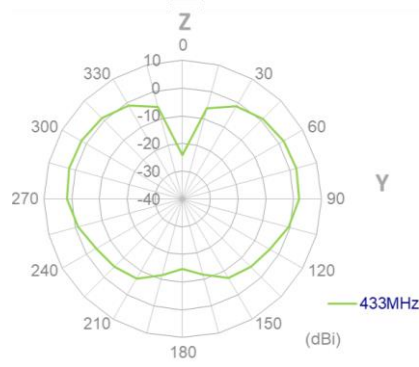
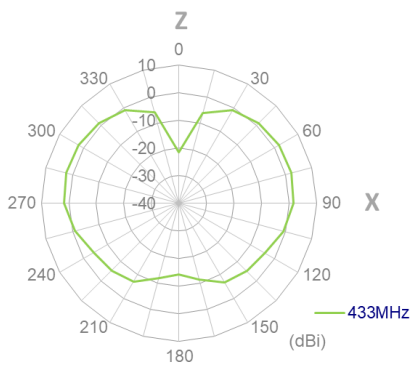
XY Plane



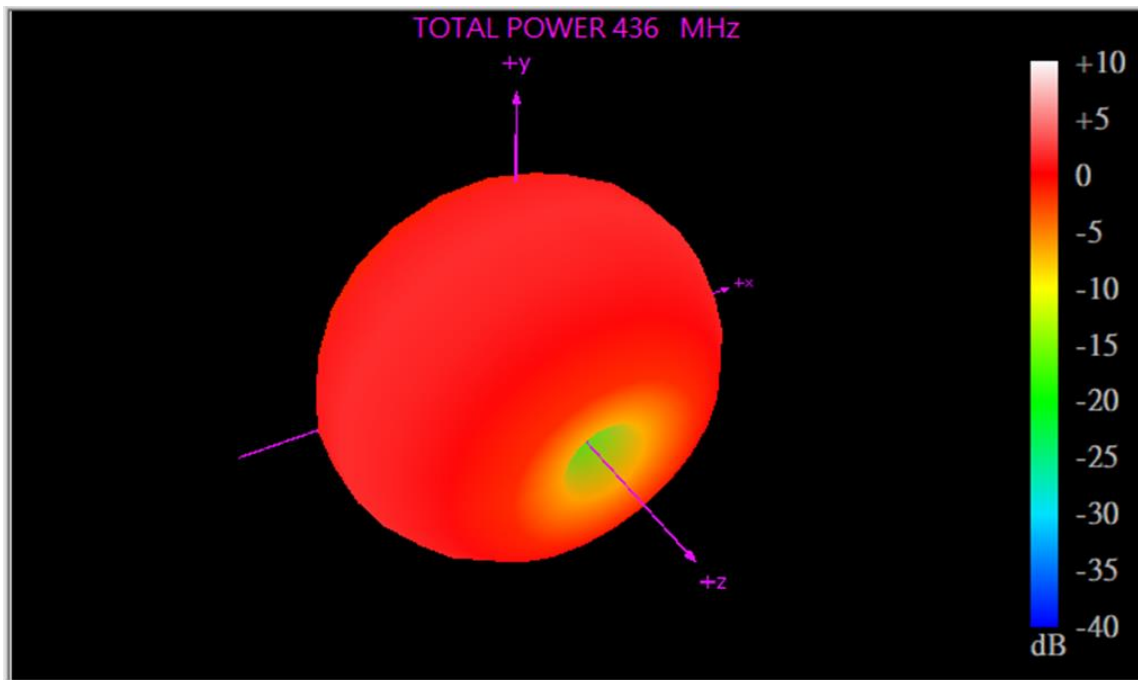
4.3 433 MHz 3D and 2D Radiation Patterns



XZ Plane YZ Plane XY Plane



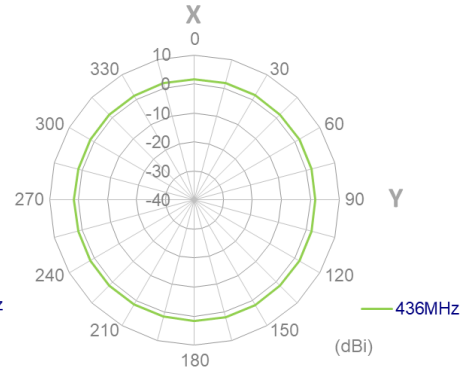
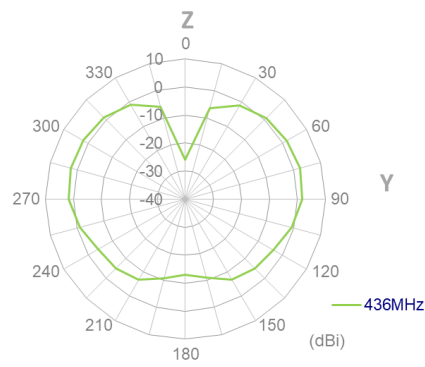
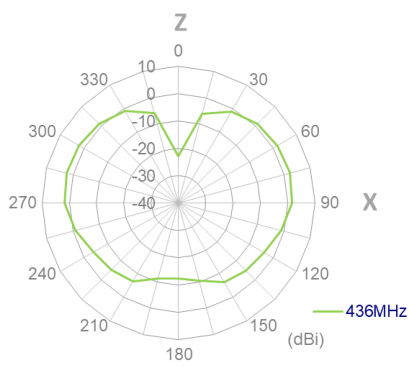
4.4 436 MHz 3D and 2D Radiation Patterns



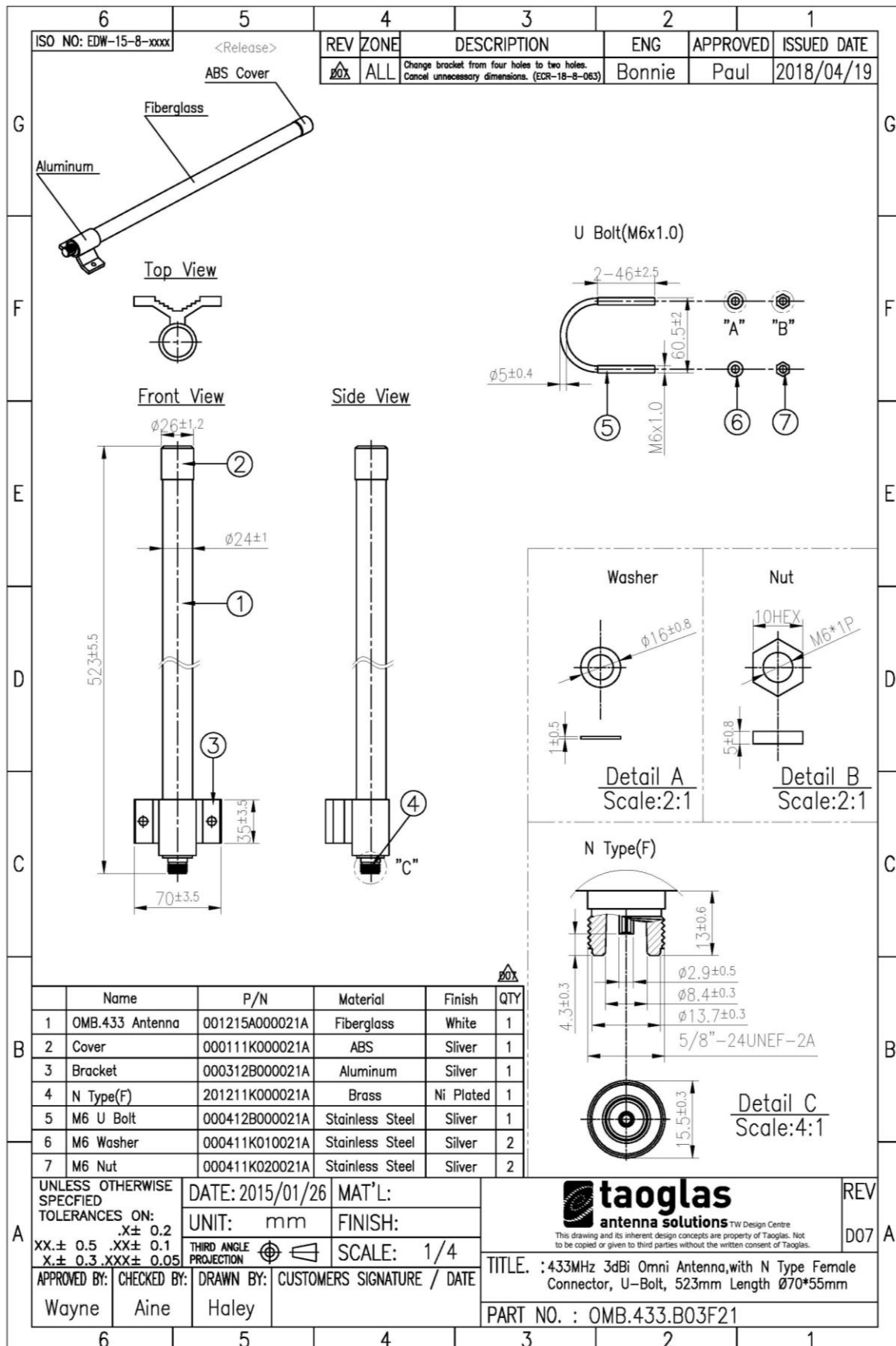
XZ Plane

YZ Plane

XY Plane



5. Mechanical Drawing (Units: mm)

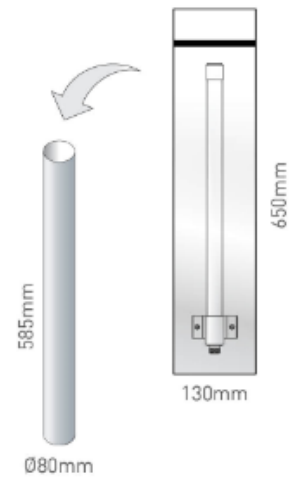


6. Packaging

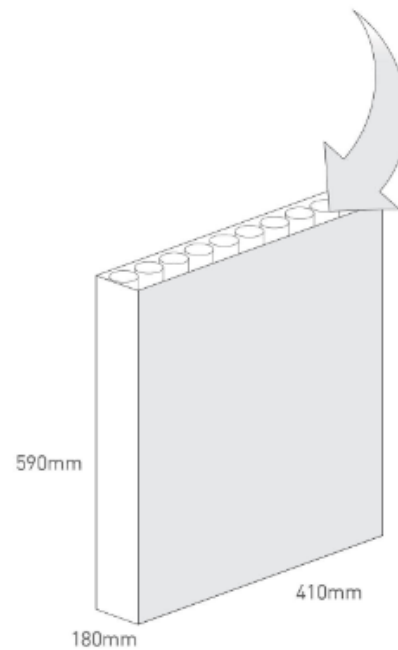
OMB.433.B03F21

Packaging Specifications

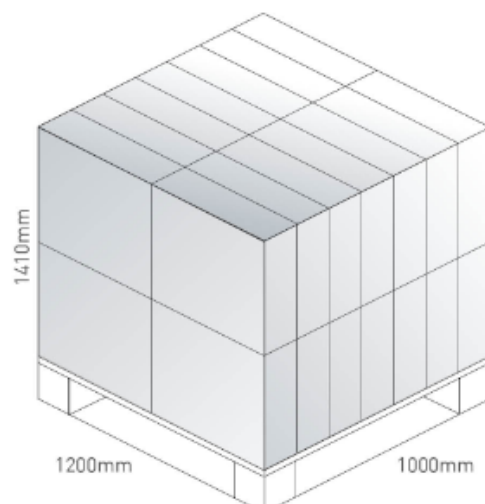
1 OMB.433.B03F21 per PE Bag
 Bag Dimensions 130mm*650mm
 1 PE Bag per Tube
 Tube Dimensions - Ø80mm*Height 585mm
 Total Weight - 620g



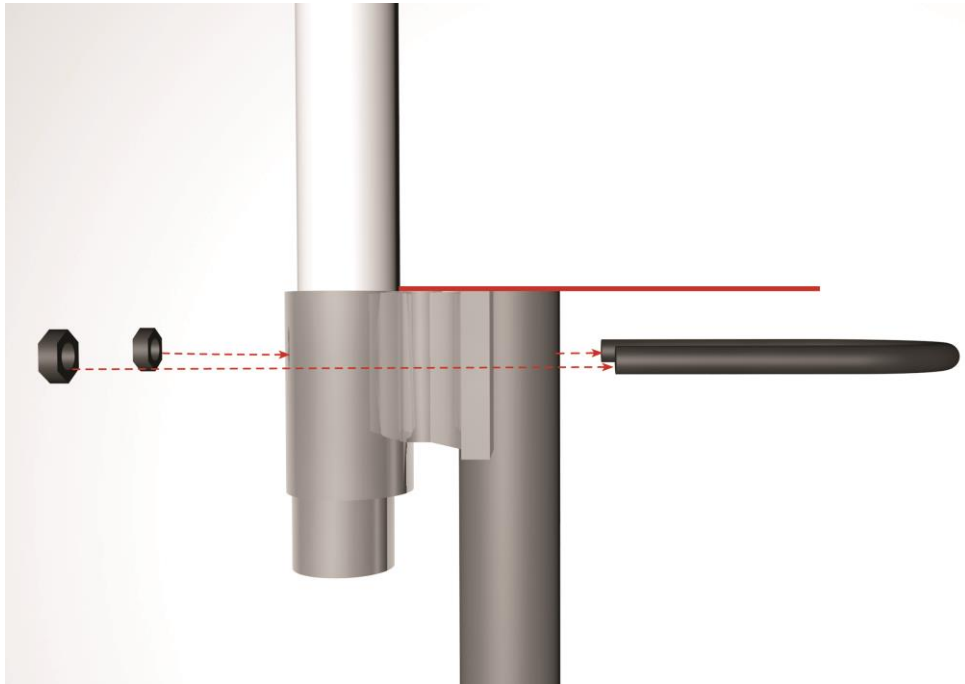
10 tubes per carton
 Carton Dimensions - 590*410*180mm
 Weight - 7.26Kg



Pallet dimensions 1200*1000*1410mm
 28 Cartons per pallet



7. Antenna Installation Guide



Changelog for the datasheet

SPE-16-8-019 – OMB.433.B03F21

Revision: F (Current Version)

Date:	2019-09-02
Notes:	Updated template, added Return Loss, Efficiency, Average Gain
Author:	Yu Kai Yeung

Previous Revisions



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SPECIFICATION

Part No.	:	OMB.868.B05F21
Description	:	Barracuda 5dBi 868MHz ISM Band Indoor/Outdoor Omnidirectional Antenna
Features	:	Omni-Directional Radiation Pattern Collinear 5 dBi Peak Gain Robust Design for all Weather operation IP65 Waterproof Length: 818.75mm, Weight: 580g Connector: N-type Female Wall/Pole Mount Bracket Included RoHS compliant



1. Introduction

The Barracuda 868MHz ISM Outdoor antenna is designed to have a long distance coverage. Omni-directional high gain across all bands ensures constant reception and transmission. The UV resistant coating with fiberglass housing makes this antenna suitable to be mounted in robust outdoor environment, pole-mounting and wall-mounting bracket is included.

The antenna finds its usage in metering, industrial monitoring and security applications.

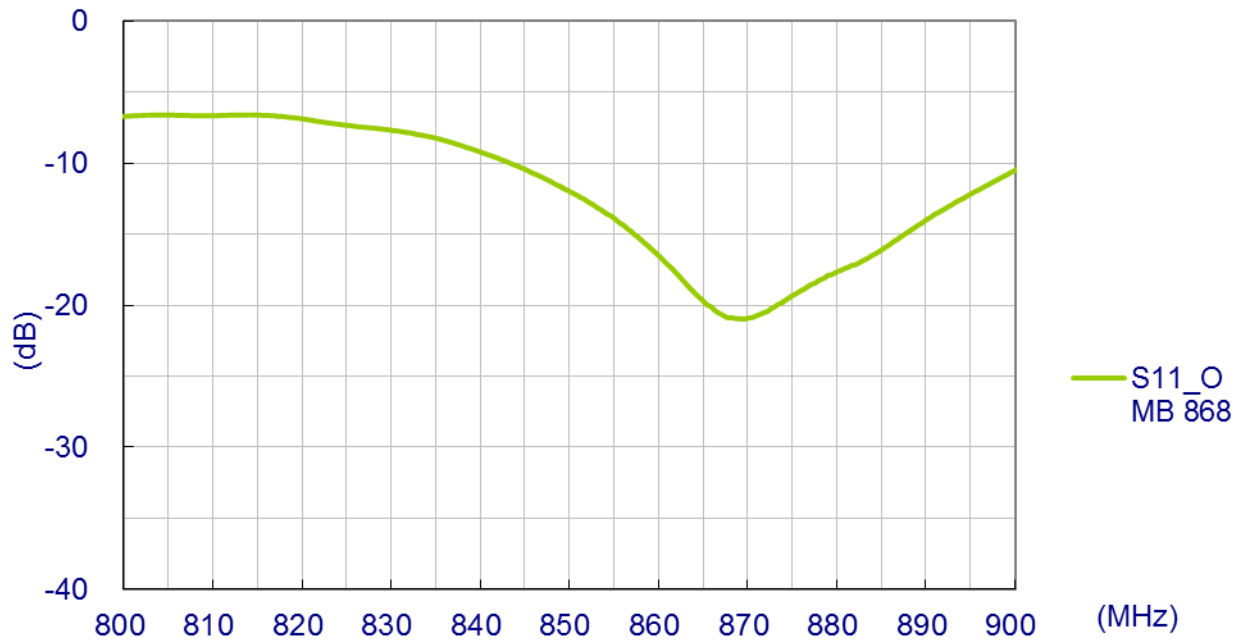
This antenna is suitable to use as part of narrow channel M2M Sigfox Network, for simple M2M management in cities. The main applications would be Smart Cities, Utilities, Public Transport.

2. Specification

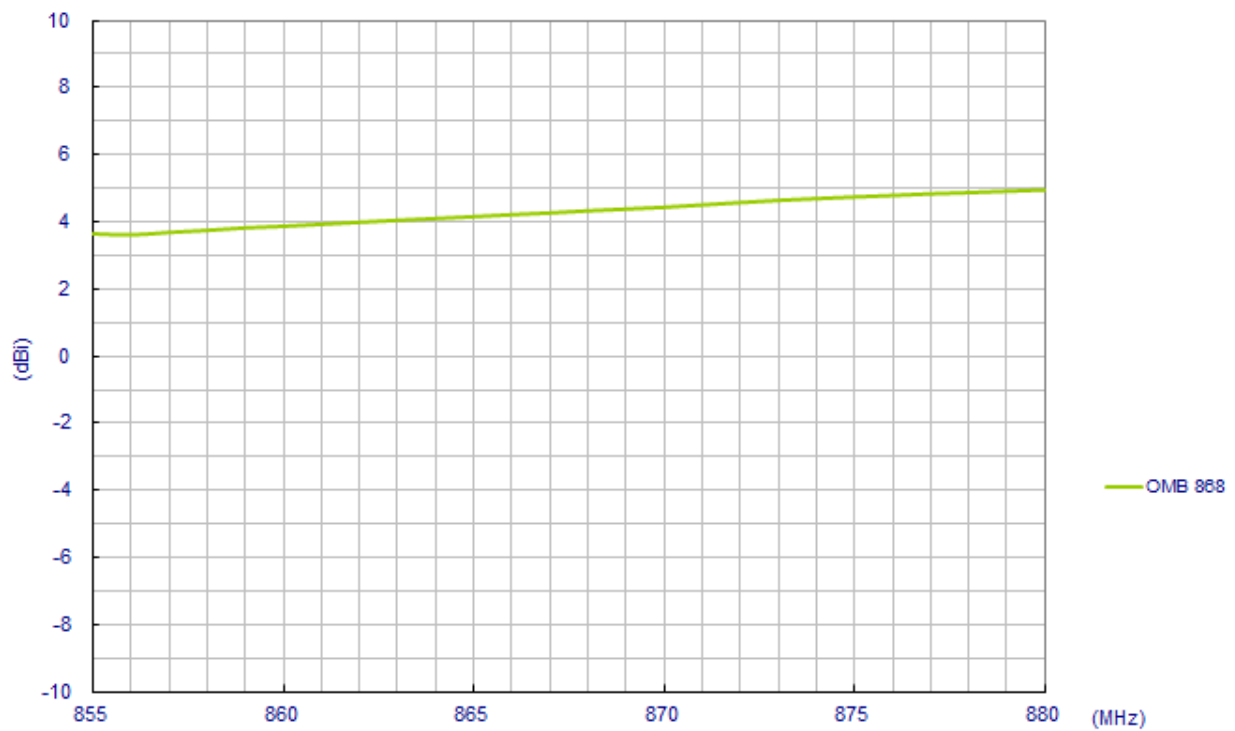
ELECTRICAL	
Standard	ISM 868
Band	860~870MHz
Antenna Type	Collinear
Gain(max)	5dBi
Polarization	Vertical
Impedance	50 ohms
Max Input Power	50 watts
VSWR	<1.5:1
Radiation	Omnidirectional
Vertical Beam-width	16 Deg
Horizontal Beam-width	360 Deg
Antenna Design	Dipole Array
Internal Material	Copper
Connector	N Type Female
MECHANICAL	
Length	818.75mm(Max)
Bracket Dimension	70*53mm(Max)
Radome Diameter	24mm
Antenna Weight	580g
Mounting Accessories	70g
Application	Indoor/Outdoor
Radome Material	White Fiberglass
Base Material	Aluminum
Mount Style	Pole Mount/Wall Mount
Mounting	Stainless Steel
Wind Resistance	>150mph(>241km/h)
Housing	Fiberglass
ENVIRONMENTAL	
Storage Temperature	-40°C to +80°C
Operating Temperature	-40°C to +60°C
Operating Humidity	10%~90% non-condensing
Storage Humidity	5%~90% non-condensing

3. Antenna Characteristics

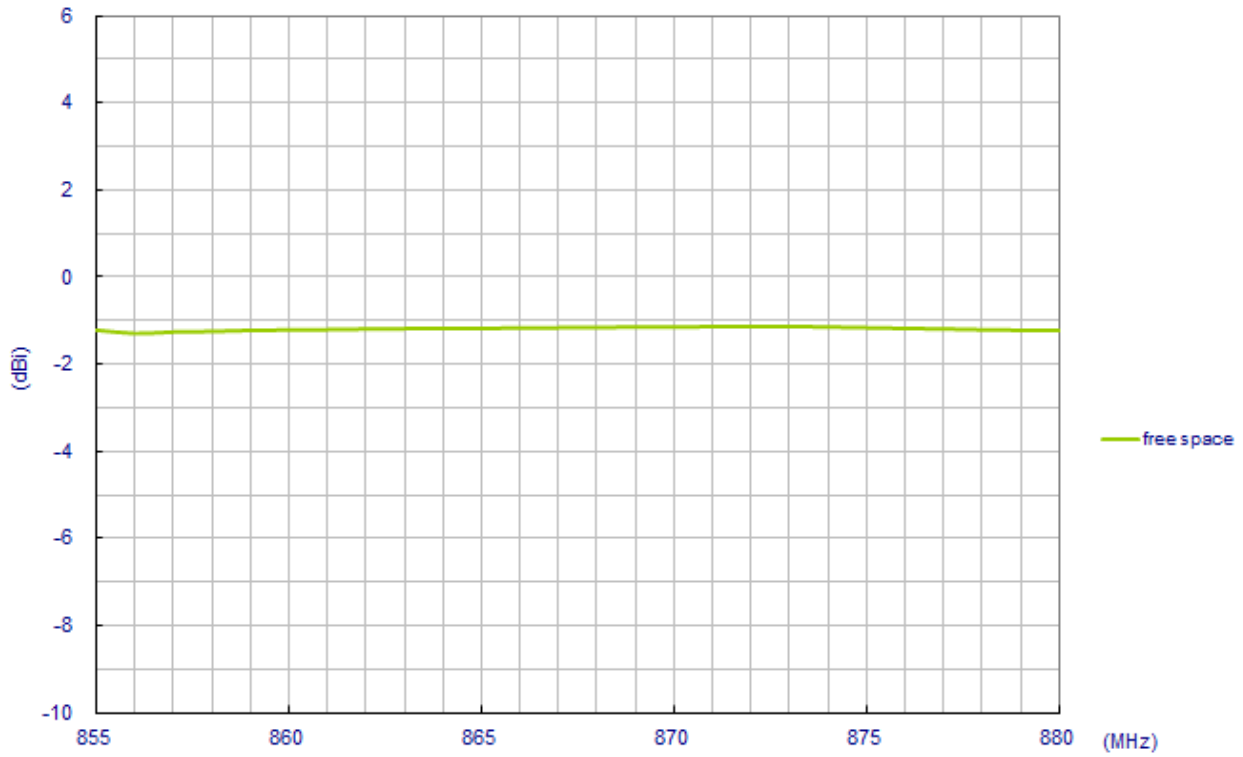
3.1 Return Loss



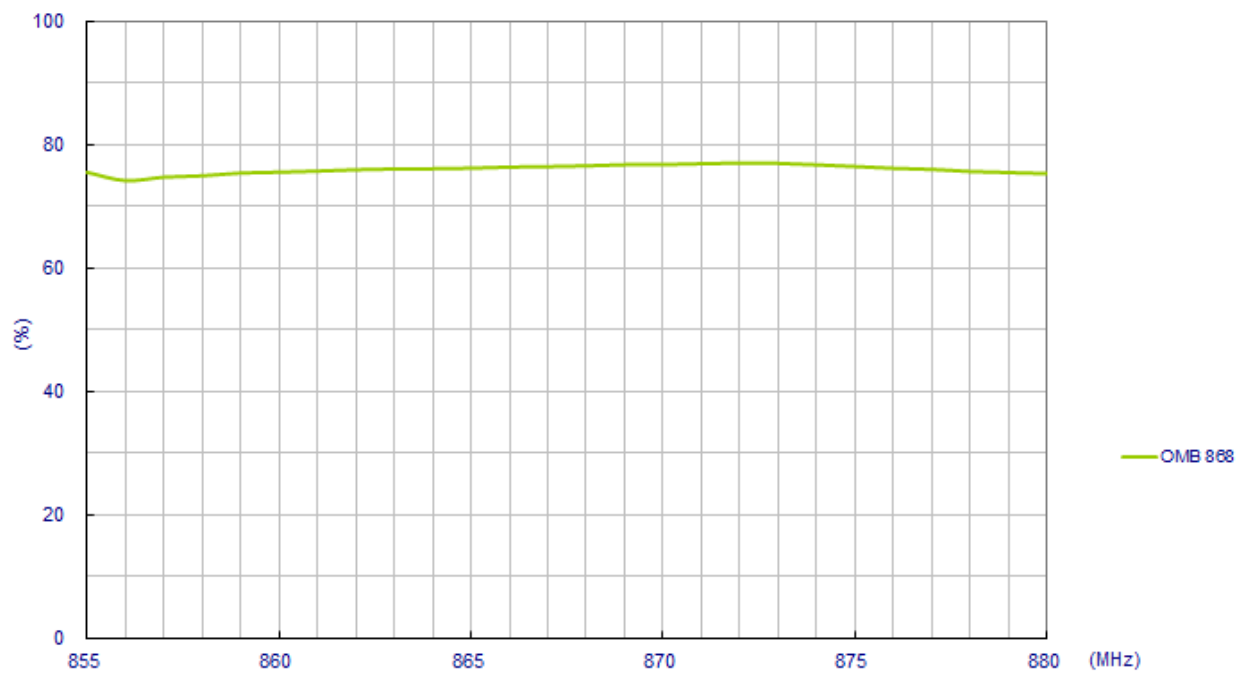
3.2 Maximum Gain



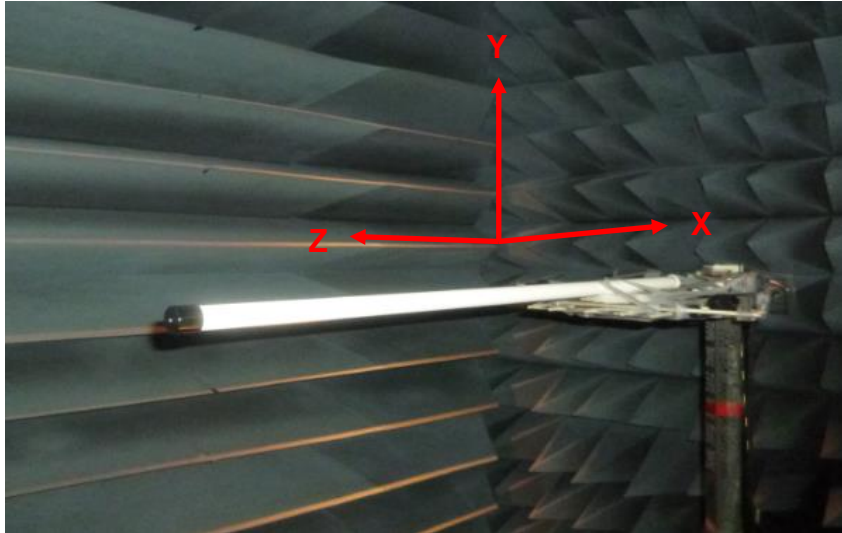
3.3 Average Gain



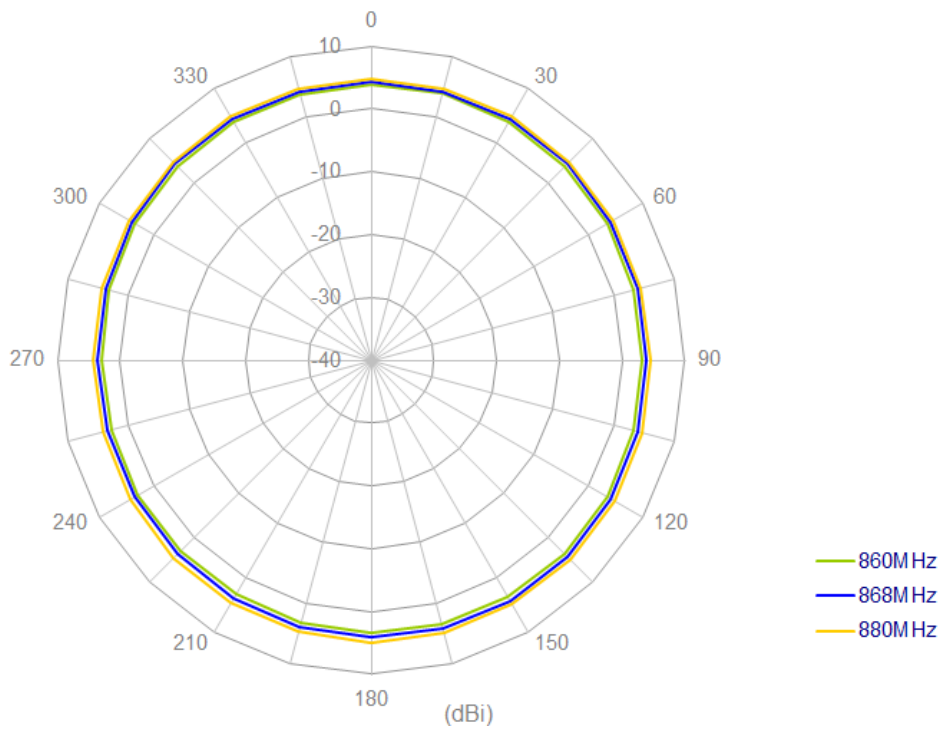
3.4 Efficiency



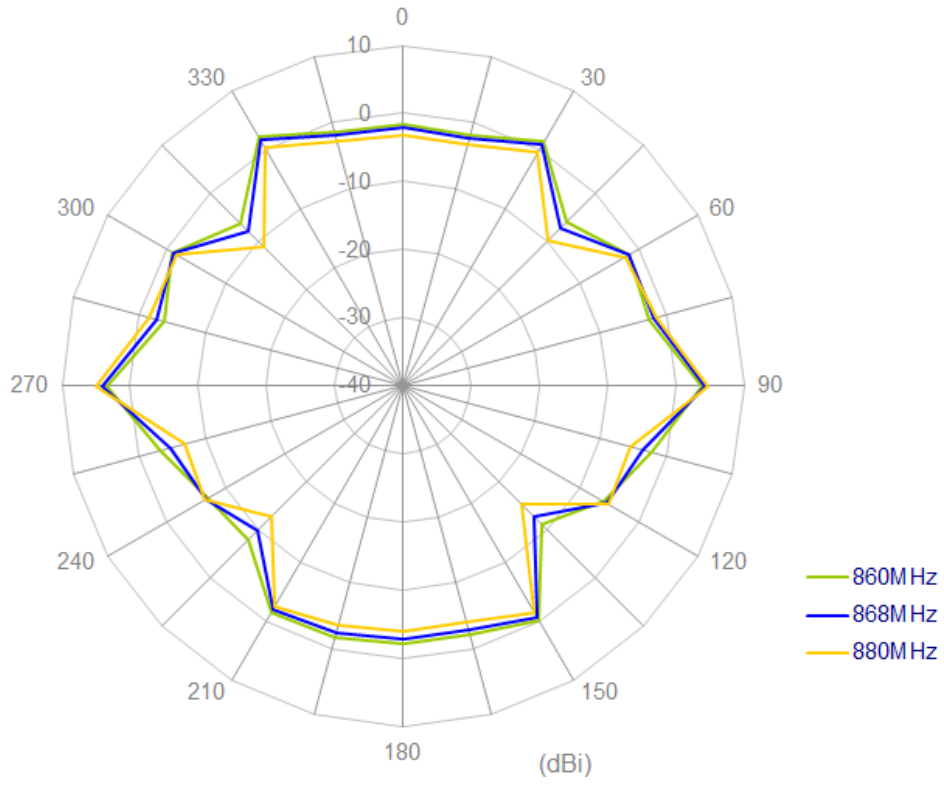
4. 3D Radiation Property



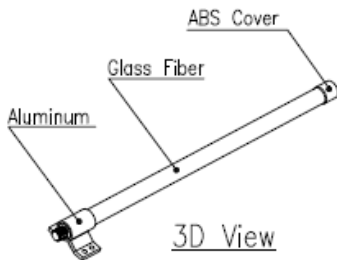
XY Plane



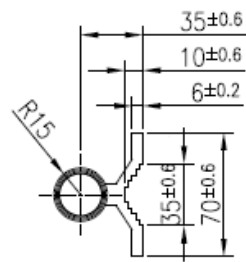
XZ Plane



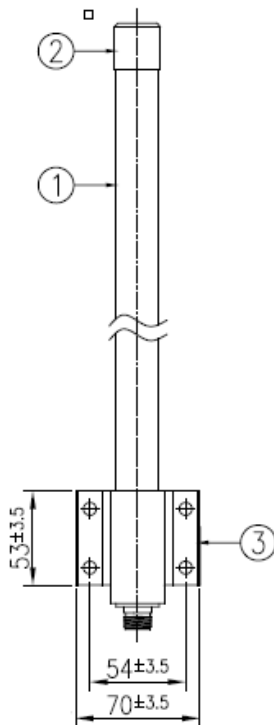
5. Drawing



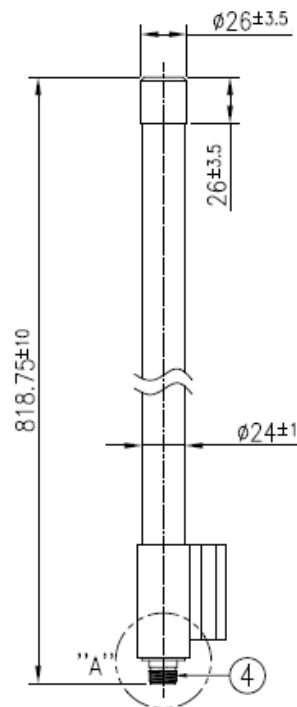
Top View



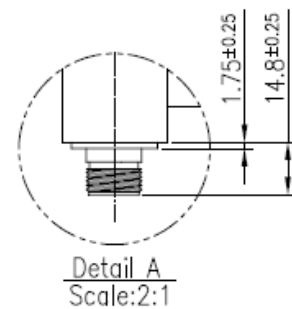
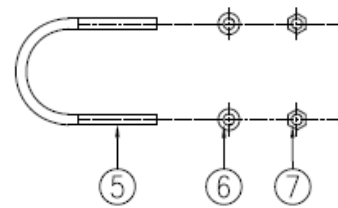
Front View



Side View



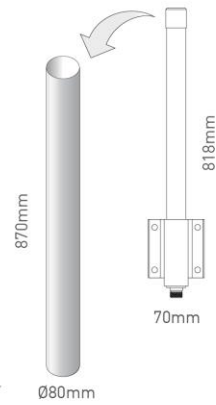
U-Bolt



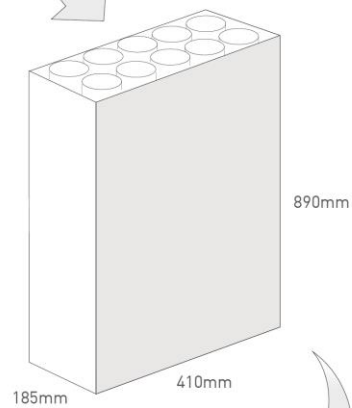
	Name	P/N	Material	Finish	QTY
1	OMB.868 Antenna	001212B010021A	Glass Fiber	White	1
2	Cover	000111K000021A	ABS	Silver	1
3	Bracket	000312B000021A	Aluminum	Silver	1
4	N Type(F)	201211K000021A	Brass	Ni Plated	1
5	M6 U Bolt	000412B000021A	Stainless Steel	Silver	2
6	M6 Washer	000411K010021A	Stainless Steel	Silver	4
7	M6 Nut	000411K020021A	Stainless Steel	Silver	4

6. Packaging Spec

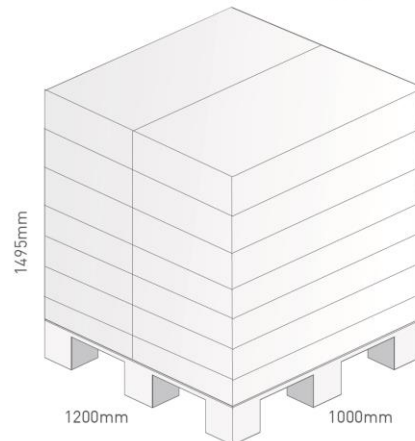
1 OMB.868.B05F21 per tube
 Tube Dimensions - Ø80mm*Height 870mm
 Total Weight - 835g



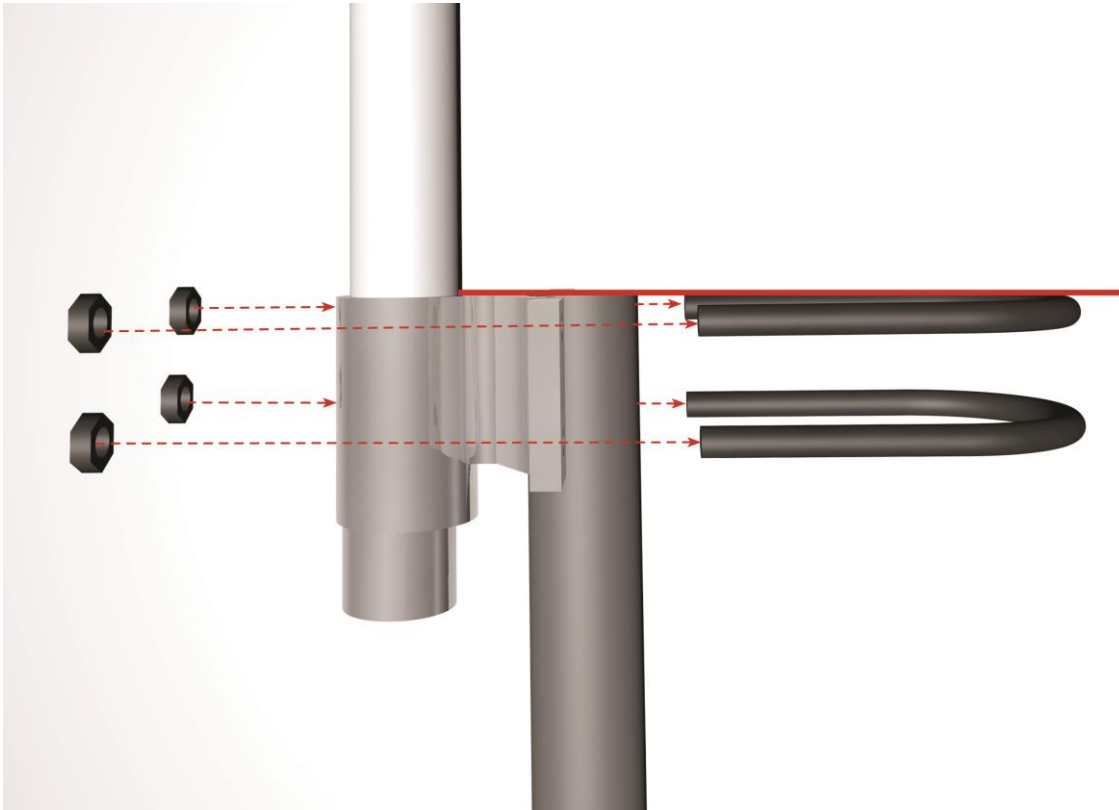
10 tubes per carton
 10 pcs OMB.868.B05F21 per carton
 Carton Dimensions - 890*410*185mm
 Weight - 9.4kg



Pallet Dimensions 1200mm*1000mm*1495mm
 14 Cartons per Pallet
 2 Cartons per layer
 7 Layers



7. Antenna Installation Guide



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SPECIFICATION

Part No.	:	OMB.915.B03F21
Description	:	Barracuda - 915MHz 3dBi ISM Band Indoor/Outdoor Omnidirectional Antenna
Features	:	Omni-Directional Radiation Pattern Collinear 3.5 dBi Peak Gain Efficiency > 61% Robust Design for all Weather operation IP65 Waterproof Length: 320mm, Weight: 350g Connector: N-type Female Wall/Pole Mount Bracket Included RoHS compliant



1. Introduction

The OMB.915.B03F21 is a fiberglass omnidirectional outdoor antenna, operating in the 902-915MHz ISM band, is designed to offer long distance coverage. The antenna is designed for applications such as metering, industrial / environmental monitoring, remote asset monitoring, and mesh network applications.

The OMB.915 operates at 915MHz, one of the most widely used license free ISM bands, with a 3.5dBi peak gain. The omnidirectional antenna radiates uniformly in the azimuth. This collinear design characteristic provides the best performance, giving optimized coverage and therefore longer range in the horizontal plane over 360 degrees, thus minimizing the amount of nodes needed for a mesh network.

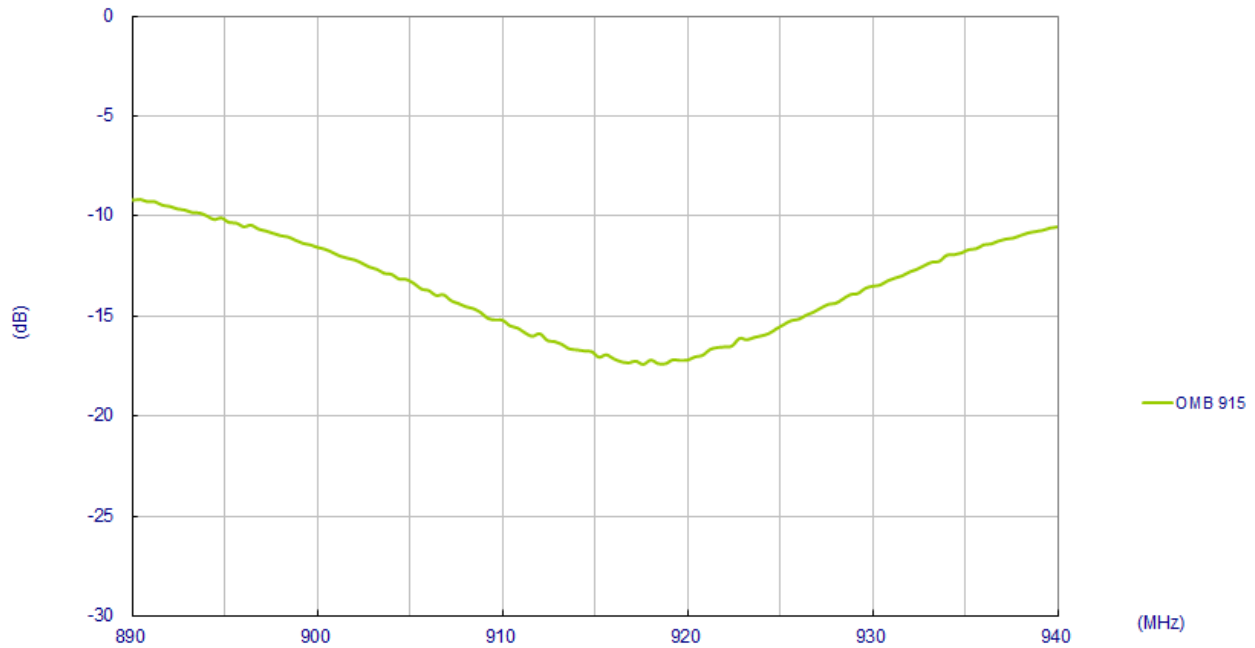
The UV resistant fiberglass housing enables the OMB antenna to be utilized in all kinds of harsh environments, making it more robust and safer than traditional whip antennas. It can be connected directly to the access point or telemetry unit, or can be mounted on wall or device surface via the N-type connector.

2. Specification

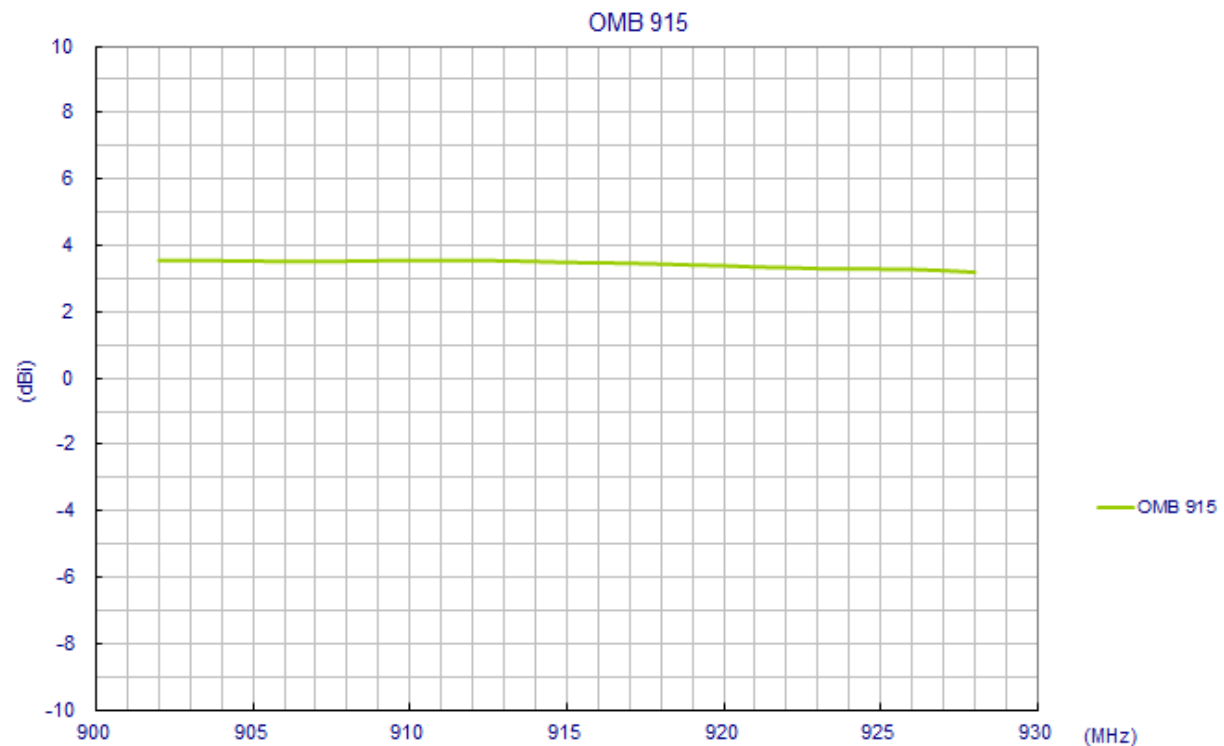
ELECTRICAL	
Standard	ISM 915
Band	902~928MHz
Antenna Type	Collinear
Gain(max)	3.5dBi
Polarization	Vertical
Impedance	50 ohms
Max Input Power	50 watts
VSWR	<1.5:1
Radiation	Omnidirectional
Vertical Bandwidth	78 Deg
Horizontal Bandwidth	360 Deg
Antenna Design	Dipole Array
Internal Material	Copper
Connector	N Type Female
MECHANICAL	
Length	320mm(Max)
Bracket Dimension	70*35mm(Max)
Radome Diameter	24mm
Antenna Weight	280g
Mounting Accessories	70g
Application	Indoor/Outdoor
Radome Material	White Fiberglass
Base Material	Aluminum
Mount Style	Pole Mount/Wall Mount
Mounting	Stainless Steel
Wind Resistance	>150mph (>241km/h)
Waterproof	IP65
ENVIRONMENTAL	
Storage Temperature	-40°C to +80°C
Operating Temperature	-40°C to +60°C
Operating Humidity	10%~90% non-condensing
Storage Humidity	5%~90% non-condensing

3. Antenna Characteristics

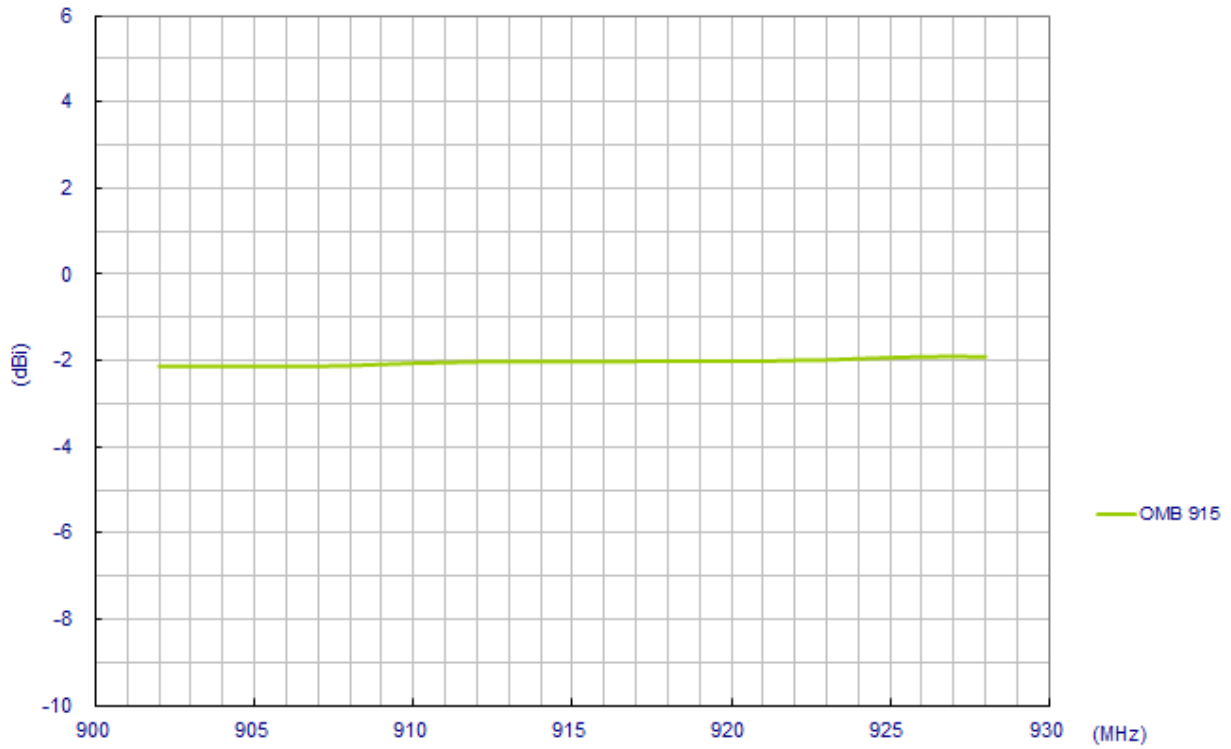
3.1 Return Loss



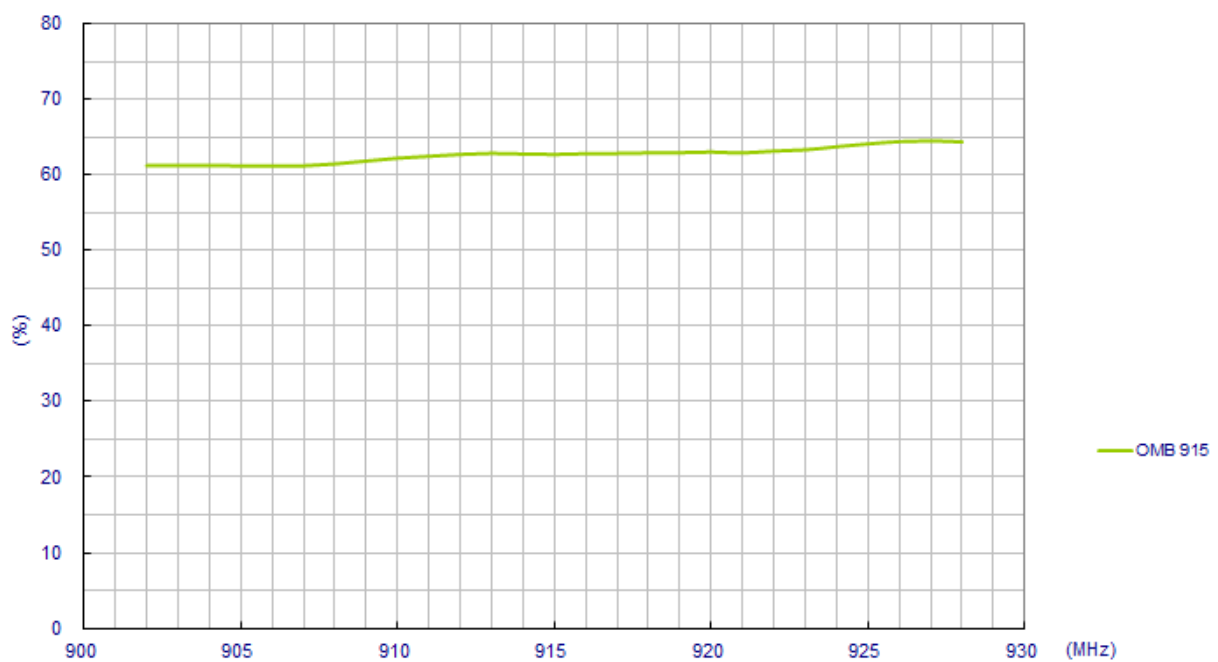
3.2 Maximum Gain



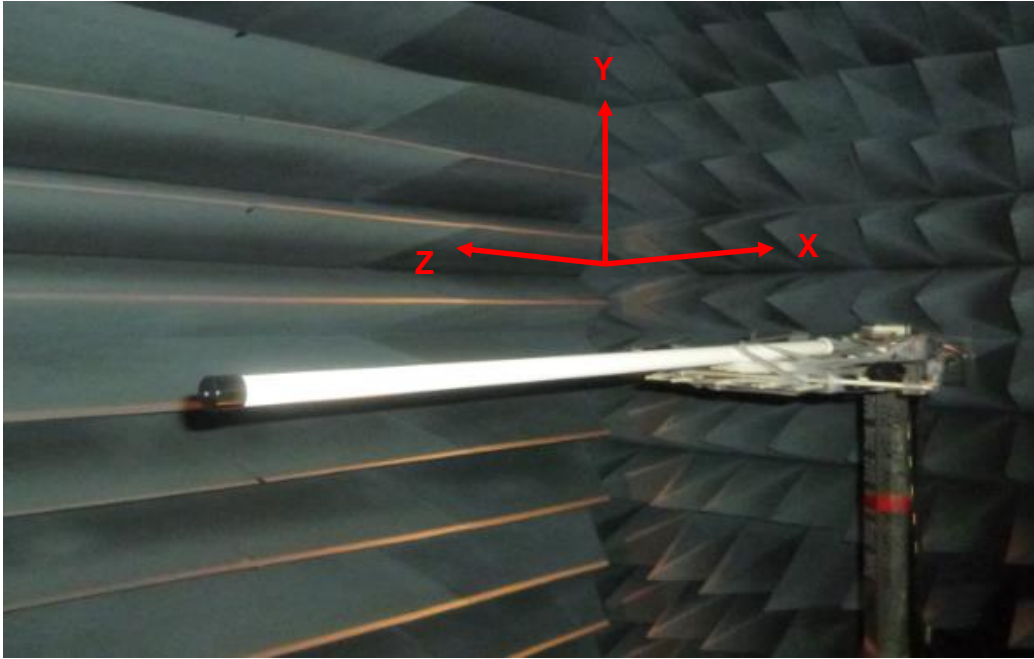
3.3 Average Gain



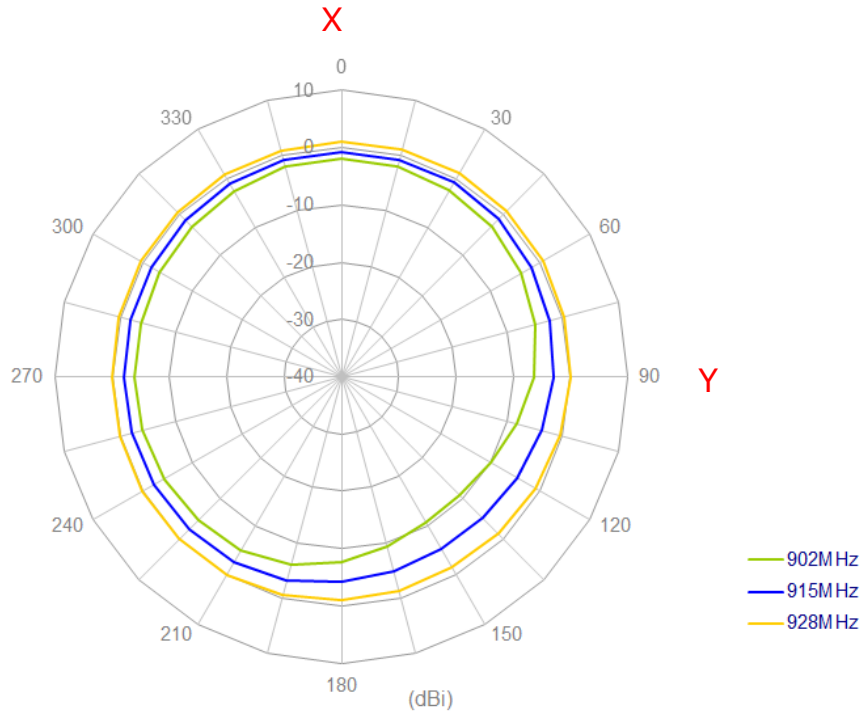
3.4 Efficiency



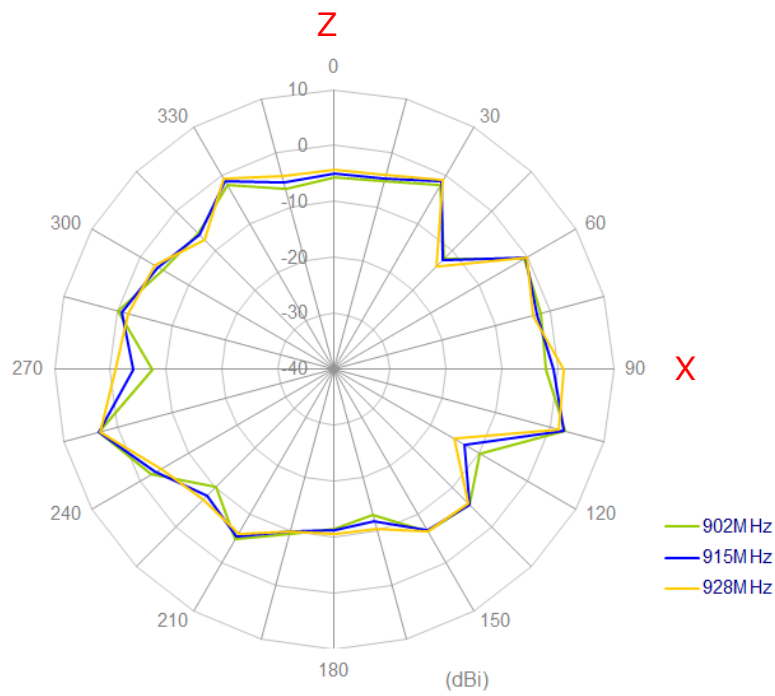
4.3D Radiation Property



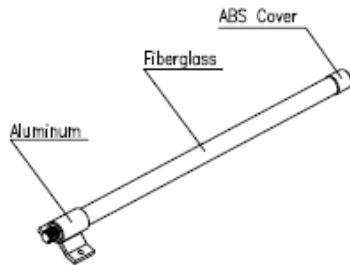
XY Plane



XZ Plane



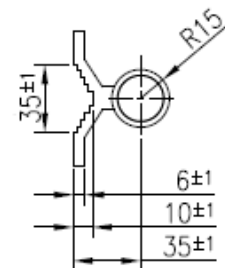
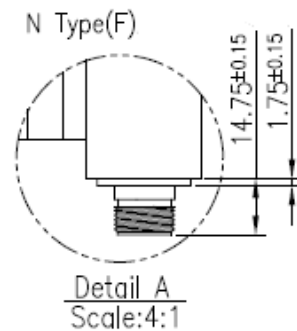
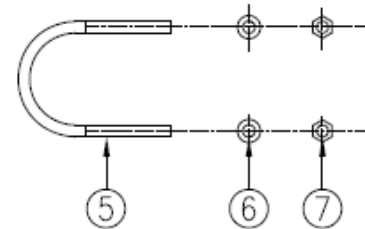
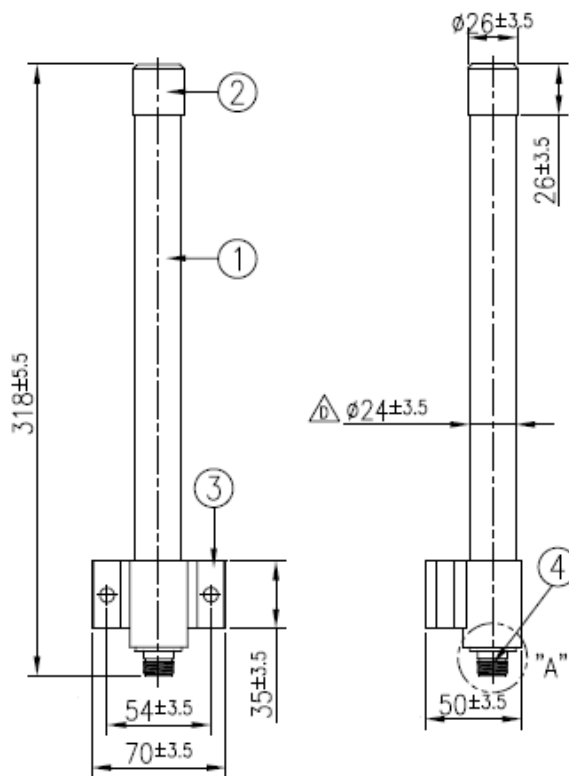
5. Drawing



Top View

Side View

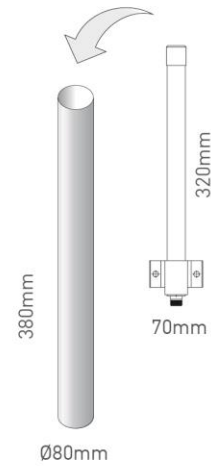
U-Bolt



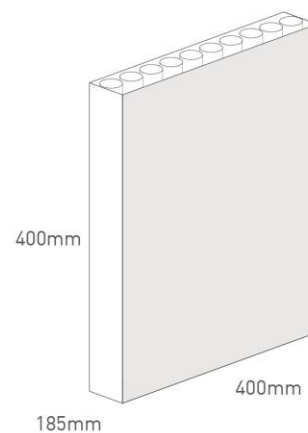
	Name	P/N	Material	Finish	QTY
1	OMB.915 Antenna	001212B020021A	Glass Fiber	White	1
2	Cover	000111K000021A	ABS	Sliver	1
3	Bracket	000311K000021A	Aluminum	Silver	1
4	N Type(F)	201211K000021A	Brass	Ni Plated	1
5	M6 U Bolt	000412B000021A	Stainless Steel	Sliver	1
6	M6 Washer	000411K010021A	Stainless Steel	Silver	2
7	M6 Nut	000411K020021A	Stainless Steel	Sliver	2

6. Packaging

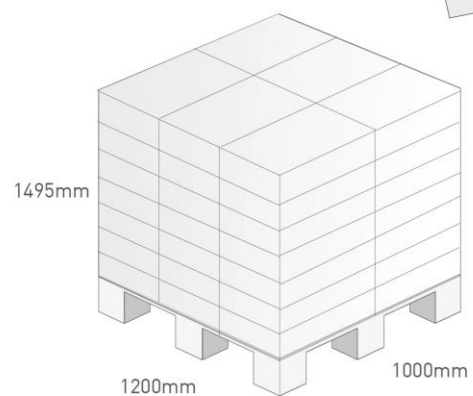
1 OMB.915.B03F21 per tube
 Tube Dimensions - Ø80mm*Height 380mm
 Total Weight - 443g



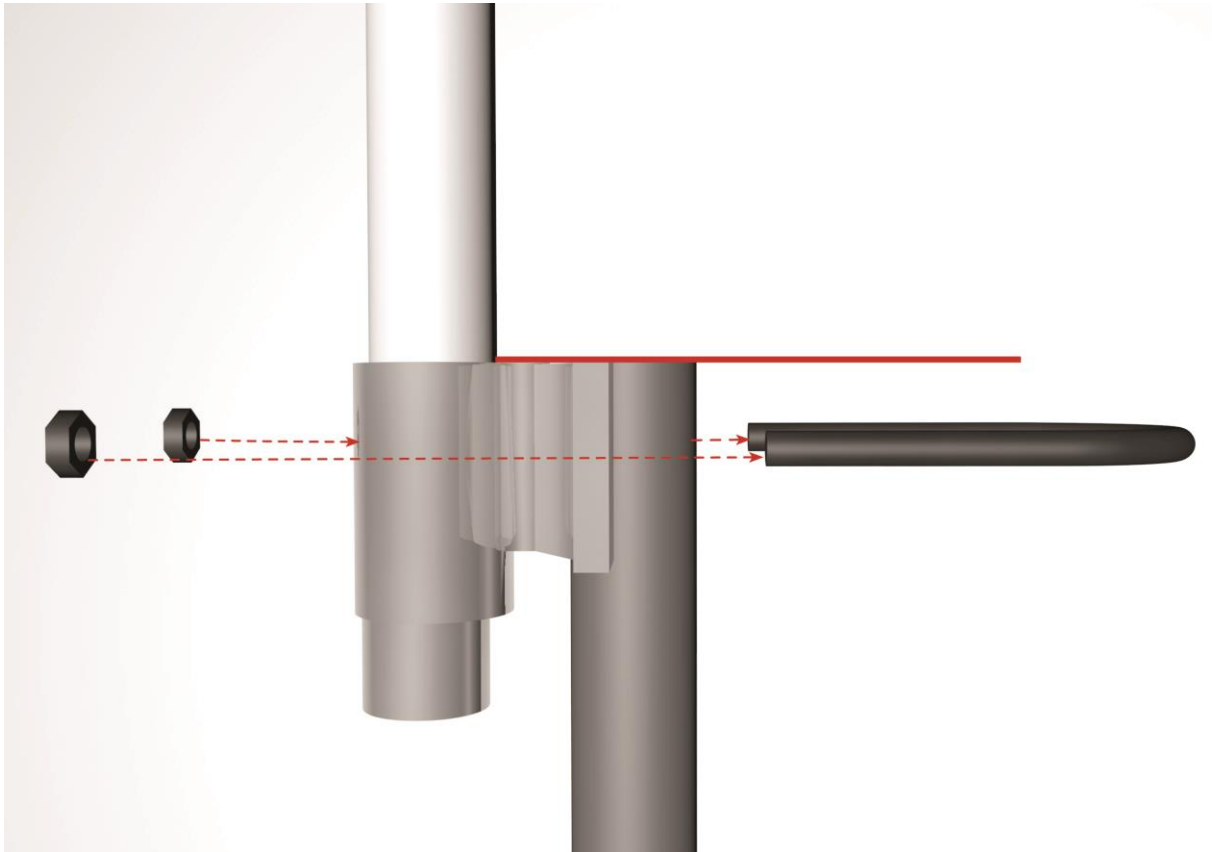
10 tubes per carton
 Carton Dimensions - 400*400*185mm
 Weight - 519Kg



Pallet Dimensions 1200mm*1000mm*1495mm
 42 Cartons per Pallet
 6 Cartons per layer
 7 Layers



7. Antenna Installation Guide





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TAOGLAS®



Datasheet

GNSS Hercules

Part No:
A.40.A.301111

Description:

GPS/GLONASS/Galileo Hercules Heavy Duty Permanent Mount Antenna

Features:

Bands Covered:

- GPS L1
- GLONASS G1
- Galileo E1

Heavy duty Permanent mount

Dimensions: Ø48*29mm

Cable: 3m RG-174

IP65 Rated Enclosure

Connector: SMA(M) Straight

RoHS & Reach Compliant

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1. Introduction



The A.40 Hercules is an active high-performance permanent mount GPS/GLONASS/Galileo antenna designed for external use on vehicles and outdoor assets. 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 height restrictions, whilst also enabling covert operation with a diameter of only 49mm.

Typical Applications Include:

- Remote Asset Tracking
- Navigation
- Telematics Devices

The cable and connector is fully customizable, for further information, please contact your regional Taoglas customer support team.

2. Specifications

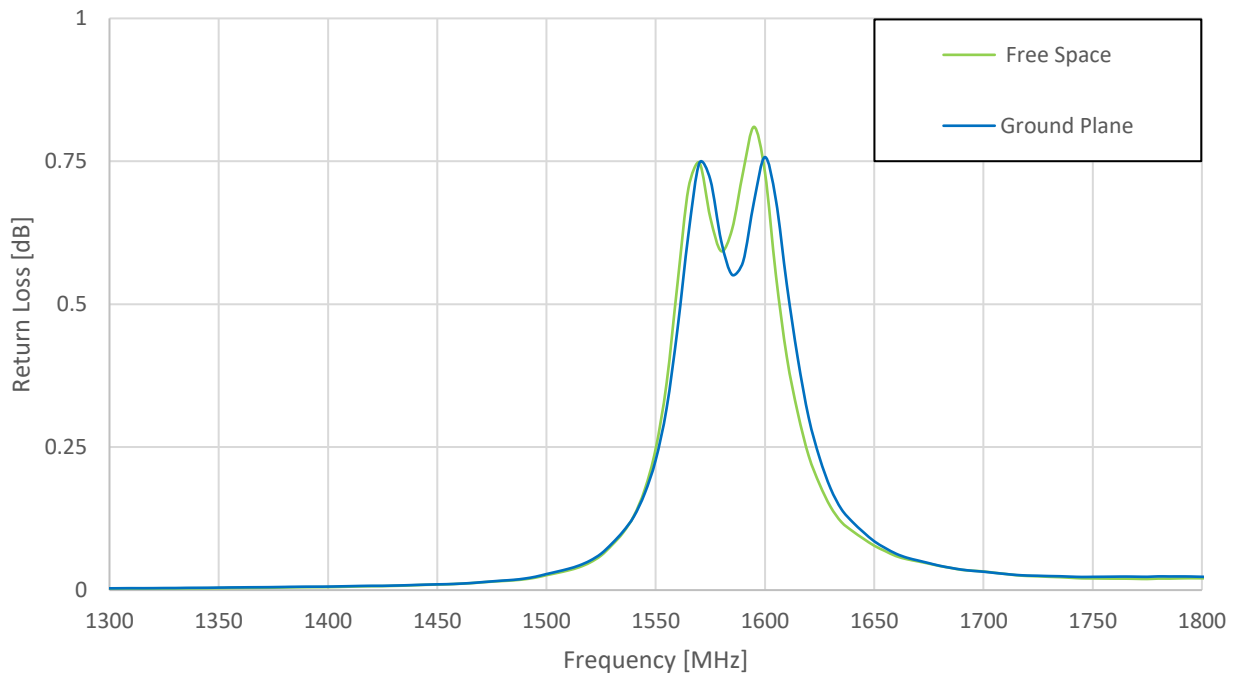
GNSS Frequency Bands Covered							
GPS/QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz			
	■	□	□	□			
GLONASS	L5R 1176.45MHz	L3PT 1201.5MHz	L2PT 1246MHz	L1CR 1575.42MHz	L1PT 1602MHz		
	□	□	□	■	■		
Galileo	E5a 1176.45MHz	E5b 1201.5MHz	E4 1215MHz	E3 1256MHz	E6 1278.75MHz	E2 1561MHz	E1 1575.42MHz
	□	□	□	□	□	□	■
BeiDou	B1 1561MHz	B2 1207.14MHz	B3 1268.52MHz				
	□	□	□				
Compass	E5B(B2)/ E6(B3) 1268.56MHz	E2(B1) 1561MHz					
	□	□					
SBAS	Omnistar 1542.5MHz	WAAS/EGN OS 1575.42MHz					
	□	■					

GNSS Electrical	
Frequency (MHz)	1574 ~ 1606
VSWR (max.)	2.0:1
Impedance (Ohm)	50Ω
Polarization	RHCP
Input Voltage(V)	Typ. 2.5~5.5V
Total Gain @ Zenith	27dB typical at 3.0V
Current consumption(mA)	10mA typical at 3.0V
Noise figure	2.9dB typical
GPS/GALILEO Gain@ Zenith	-1.4dB Passive Gain @ Zenith
GLONASS Patch Gain@ Zenith	-1.3dBi Gain @ Zenith
Out Band Rejection	fo = 1575.42MHz fo ± 30 MHz 5dB Min. fo ± 50 MHz 20dB Min. fo ± 100 MHz 25dB Min.

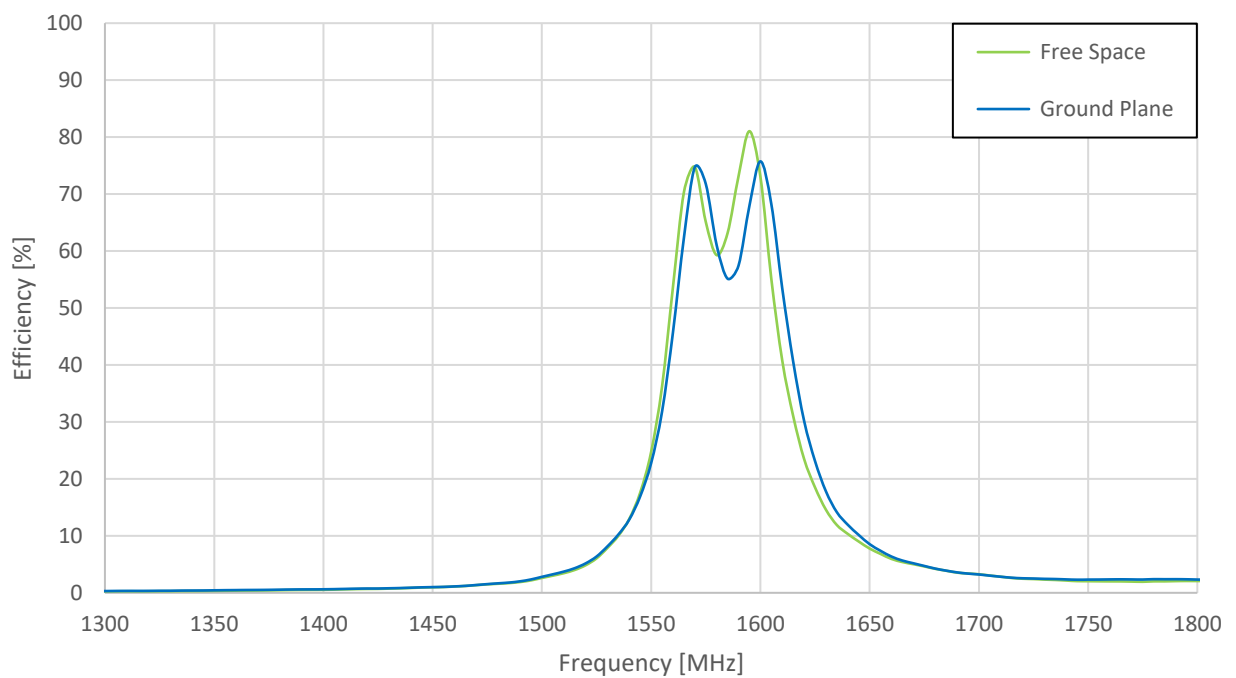
Mechanical	
Dimensions	Ø49mm Height 28.5mm
Cable type	RG-174
Cable length	3000mm
Casing	UV Resistant PC
Connector	SMA Male Straight
Recommended Mounting Torque	5-7Nm
Environmental	
Operation Temperature Range	-40°C to 85°C
Storage Temperature Range	-40°C to 85°C
Waterproof	IP65
Thermal Shock	100 cycles -40°C to +85°C
Shock (drop test)	1m drop on concrete 6 axes

3. Passive Antenna Characteristics

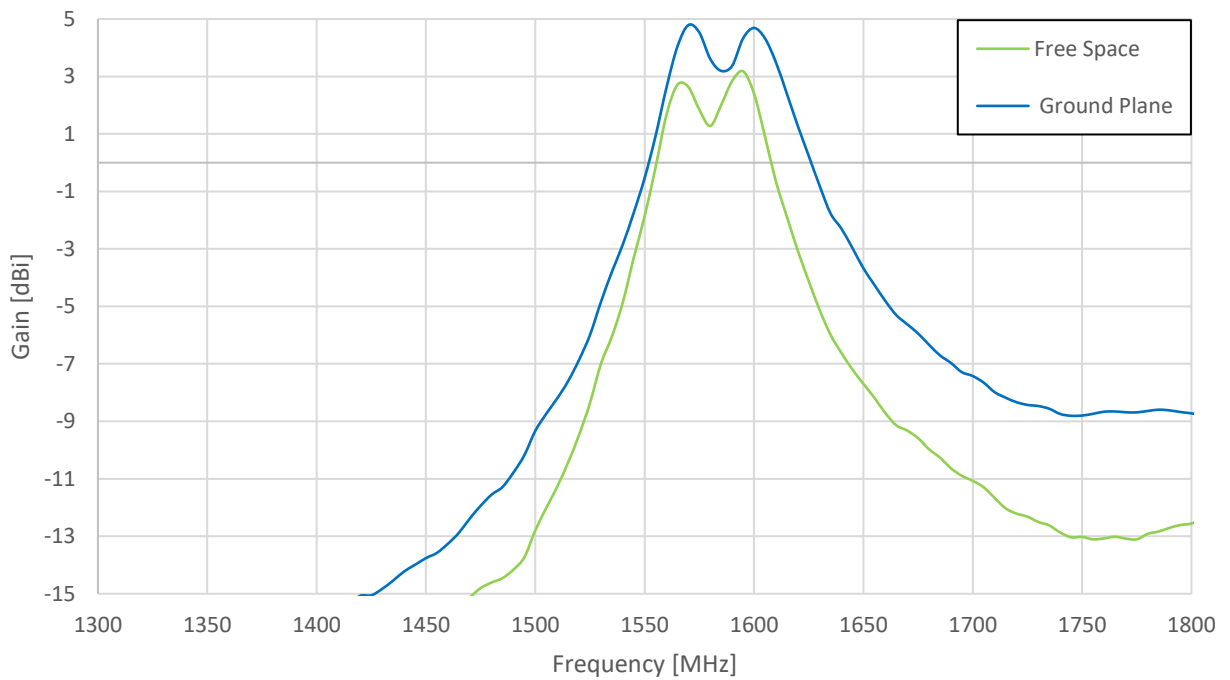
3.1 Return Loss



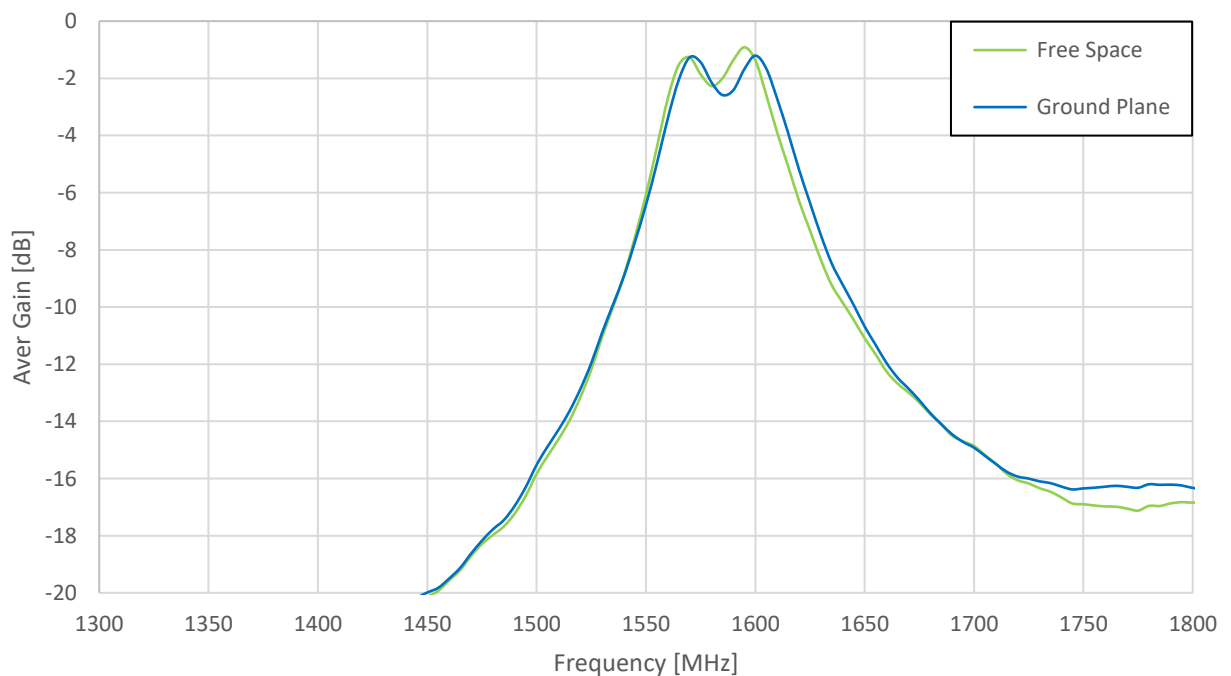
3.2 Efficiency



3.3 Peak Gain

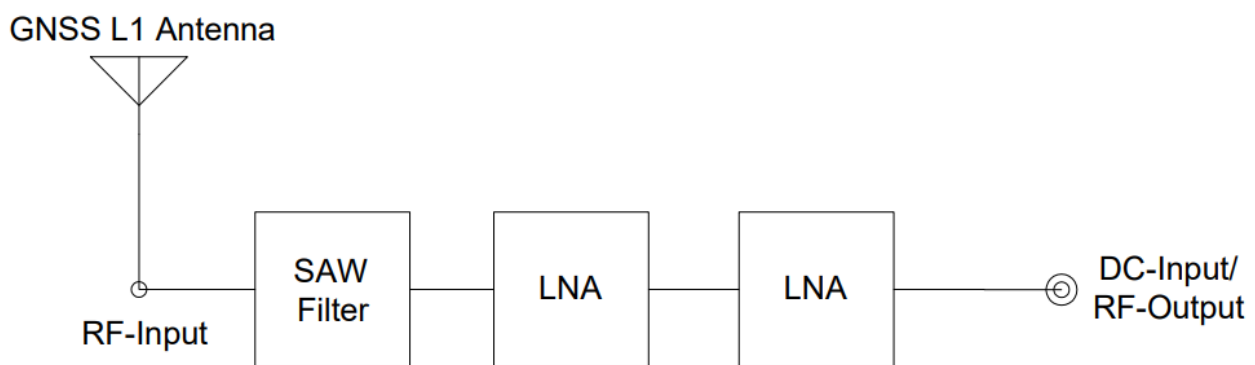


3.4 Average Gain

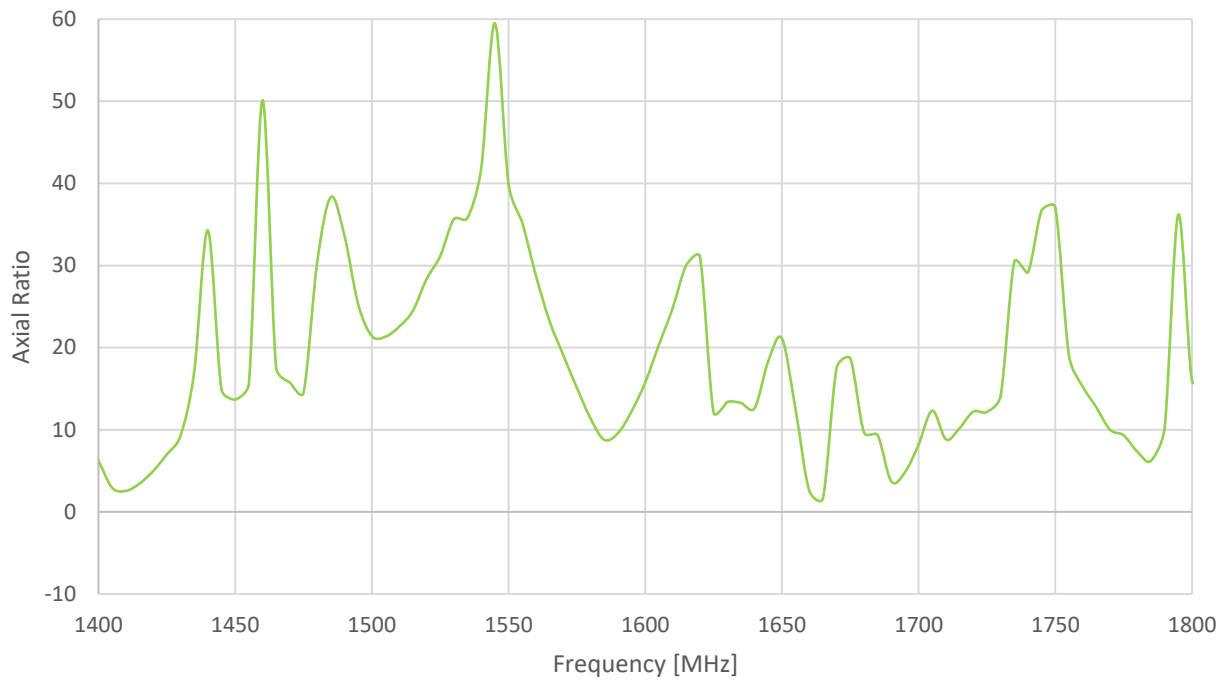


4. Active Antenna Characteristics

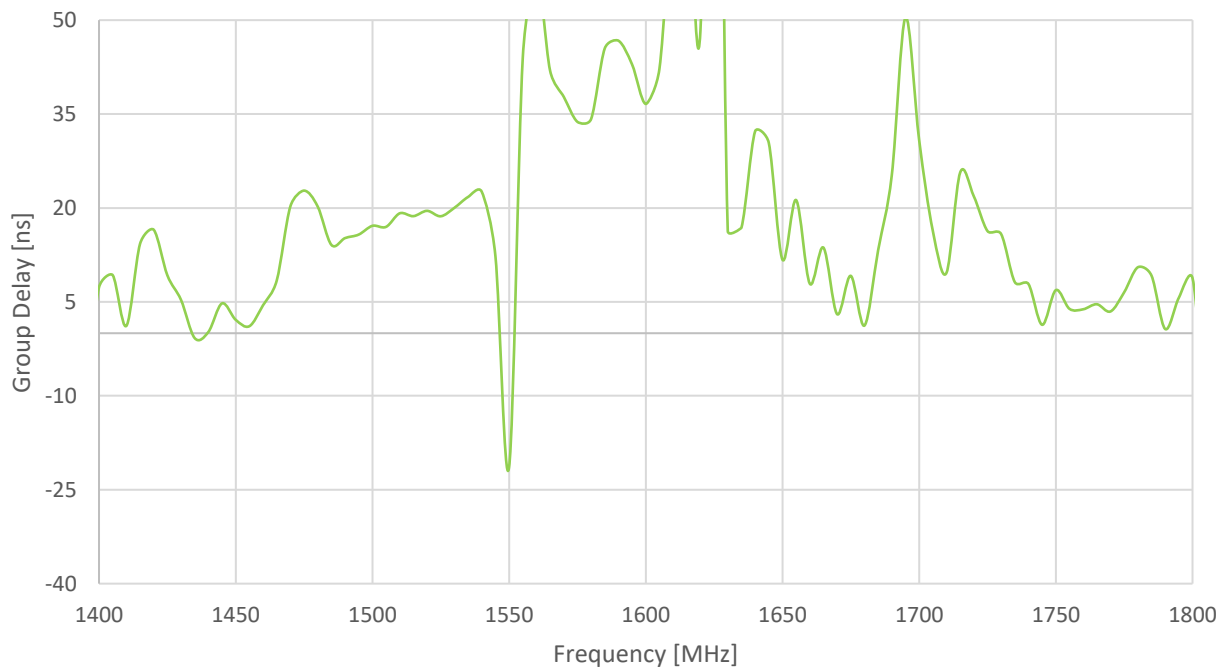
4.1 LNA Block Diagram



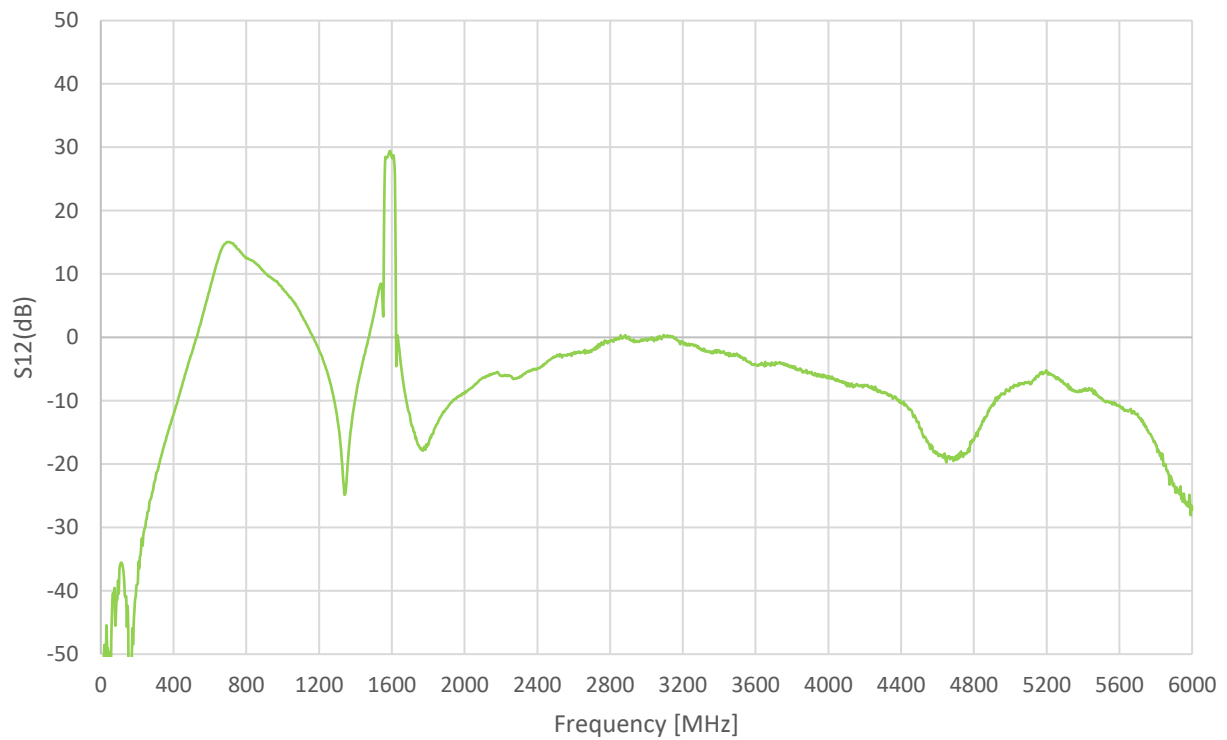
4.2 Axial Ratio



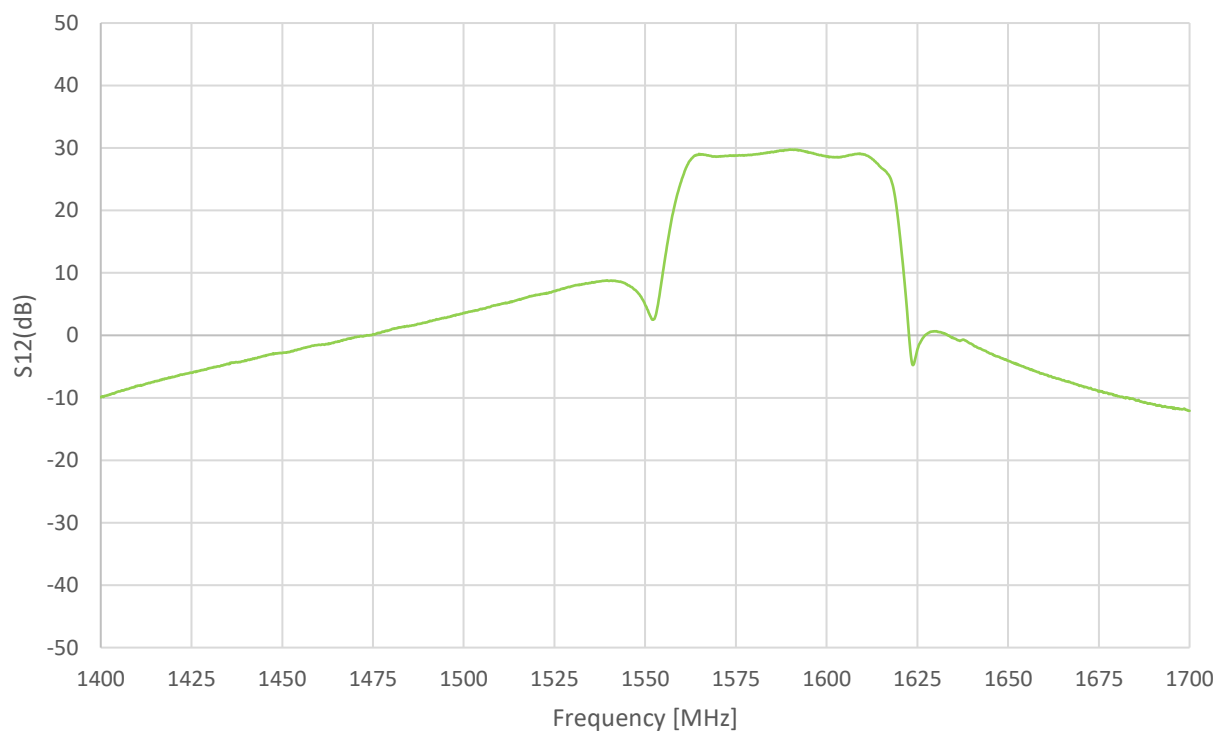
4.3 Group Delay



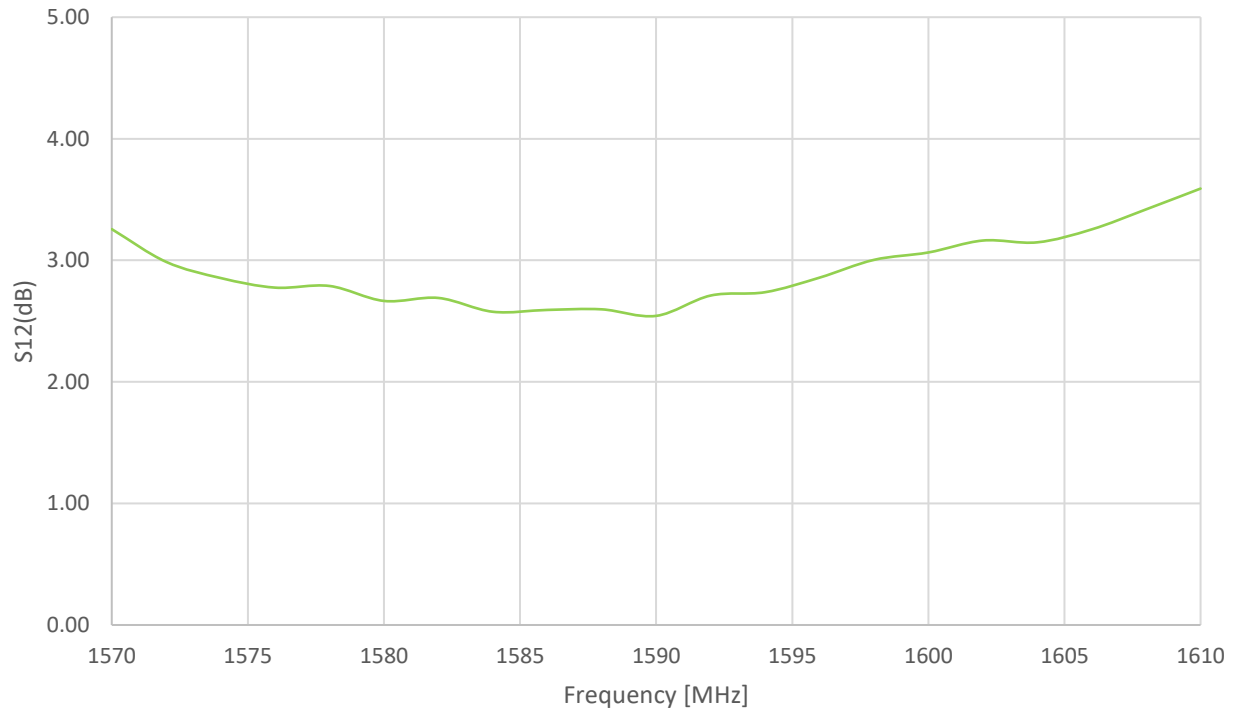
4.4 Out of Band Attenuation



4.5 LNA Gain

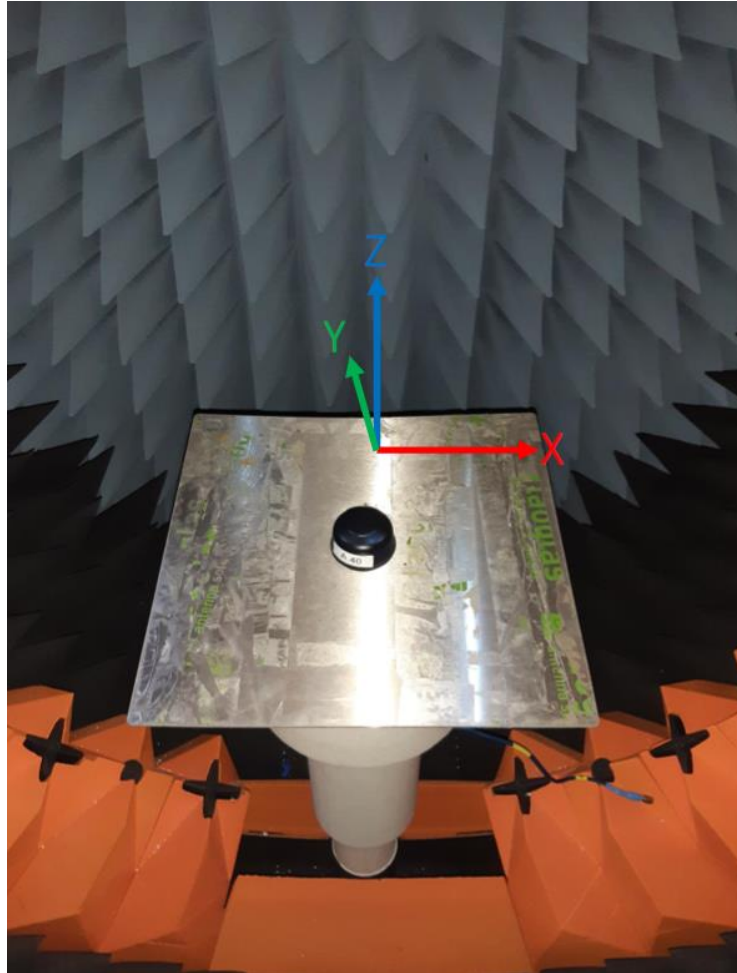


4.6 Noise Figure



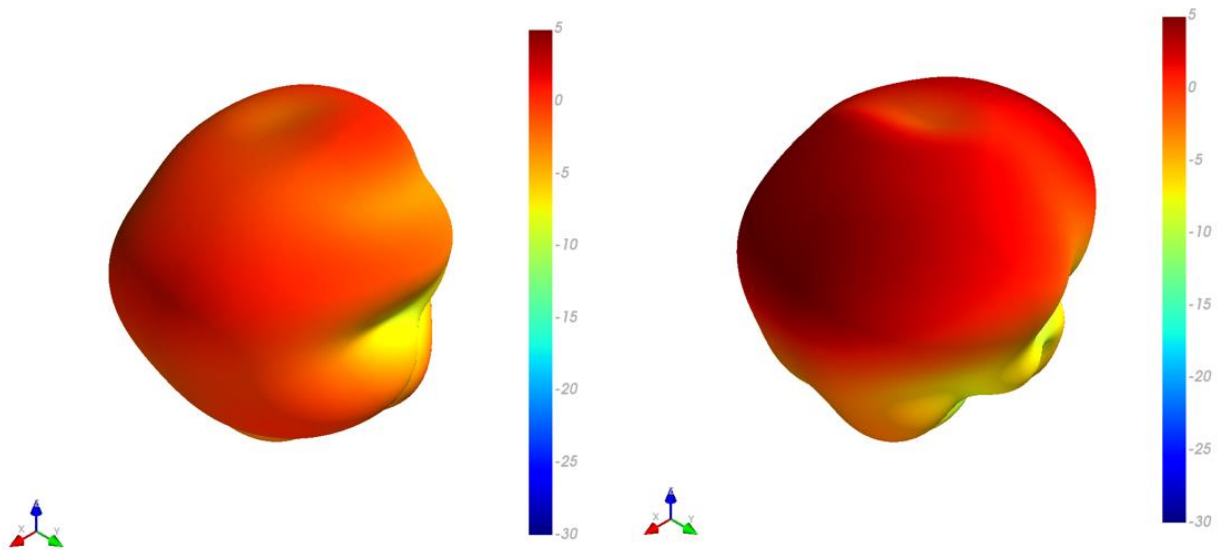
5. Radiation Patterns

5.1 Test Setup



Chamber Setup

5.2 1575.42MHz 3D and 2D Radiation Patterns



A40 Passive Free Space

A40 Passive Ground Plane

XY Plane XZ Plane YZ Plane

