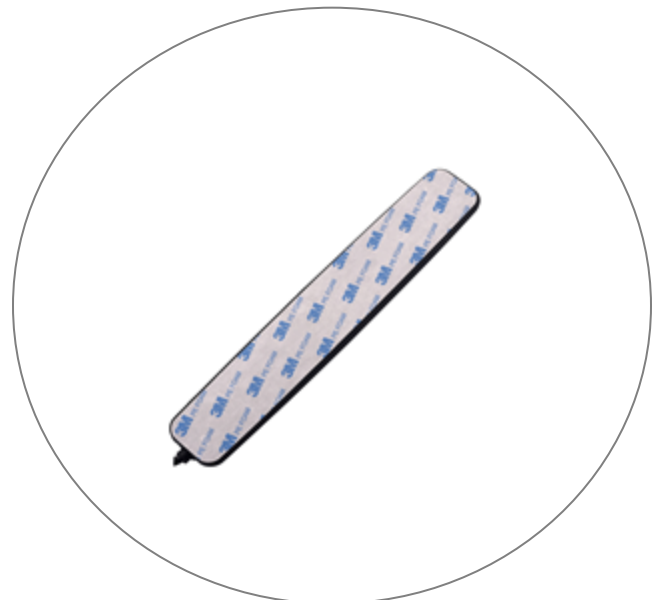


# SPECIFICATION

- Part No. : **ISA.01.A.301111**
- Product Name : Wide-band Omni-directional Low Profile 400~470MHz Adhesive Glass Mount Antenna
- For ISM/ TETRA/CDMA 450/ SCADA  
Family Radio Service/General Mobile Radio Service/Bio-Medical Telemetry
- Features : 239mm x 42mm x 11mm  
1.5dBi gain, 35%+ efficiency  
Omni-Directional  
Stable Wide-band response from 400Mhz to 470MHz  
Semi-Flexible, Low profile IP67 Waterproof Housing  
Standard 3 meters RG174 cable  
Automotive Approved 3M Adhesive  
SMA (M) Connector  
**RoHS Compliant**



## 1. Introduction

The ISA.01 is an Omni-directional wide-band low profile 400MHz to 470MHz antenna for internal or external applications adhesive mounted on glass.

Its applications are in the automotive industry and telematics. At only 10.5mm thick and 42mm in width, its semi-flexible properties and strong 3M automotive approved double-sided adhesive allows for convenient glass installation. ISA.01 antenna offers exceptionally stable peak gain and efficiency across a very wide bandwidth, tuned to operate optimally on glass, which makes it a unique low frequency solution in low profile form. Unlike our competitors, Taoglas shows full performance data for our antennas. The ISA.01 shows real gain figures and radiation patterns INCLUDING cable losses, tested in state of the art low frequency anechoic chambers. We have invested heavily in research to create a uniquely wide-band UHF antenna with minimum 70MHz bandwidth that can replace expensive externally mounted antenna solutions. The wide-band compared to other narrow-band 20MHz antennas delivers more stable performance in a range of diverse on-glass environments with more resistance to detuning. All low frequency UHF antennas need to be tuned to suit their mounting conditions. For this reason this antenna is tuned to be mounted on glass. (i.e. excluding plastic or metal mounting), so is ideal for vehicles or building windows.

The standard cable is the RG174.

Cable length and connector type are fully customizable

The antenna can be customized for other low frequency bands for a minimum order quantity. Please contact your local sales office. For mounting applications on plastic please use ISA.06. For mounting directly on metal please use our FW series whip antennas.

# 1. Specification

ISM					
Frequency	410	433	450	470	MHz
Peak Gain *	0.5	1.5	0.8	0	dBi
Average Gain *	-5.0	-4.3	-5.0	-5.0	dB
Efficiency *	30	35	30	30	%
Return Loss *	-10.0	<-15.0	-10.0	-8.0	dB
Polarization	Linear				
Impedance	50				Ω
MECHANICAL					
Antenna Dimensions	239mm x 42mm x 10.5mm				
Cable	3m RG174 standard, customizable cable length				
Connector	SMA (M) standard, fully customizable				
Casing	TPR				
Waterproof	Outside Casing – IP65 Internal PCB Antenna - IP67				
ENVIRONMENTAL					
Operation Temperature	-40°C ~ +85°C				
Storage Temperature	-40°C ~ +85°C				

\* all measurements were conducted with 3m RG174 cable

## 2. Antenna Characteristics

### 2.1. Return Loss

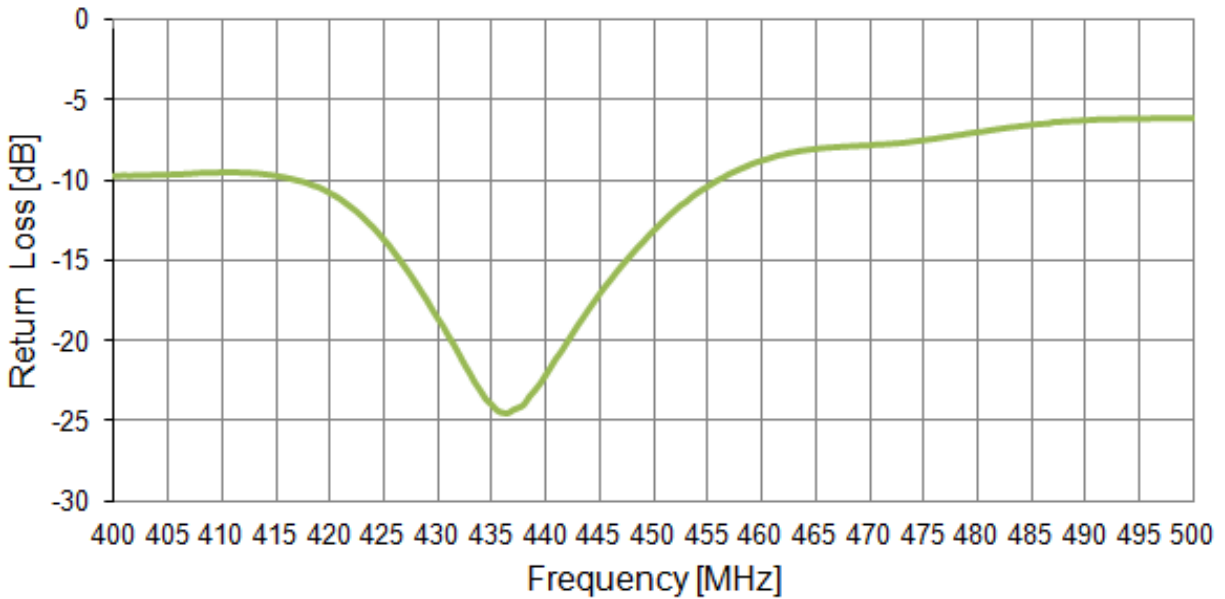


Figure 1. Return loss of the ISA.01 Antenna.

### 2.2. VSWR

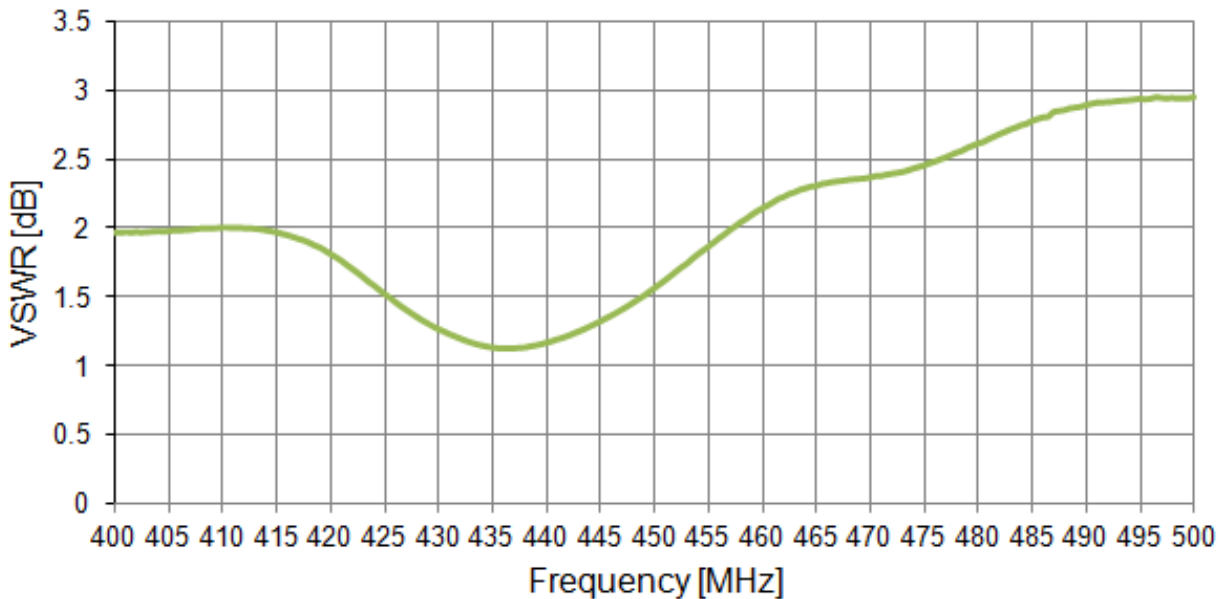
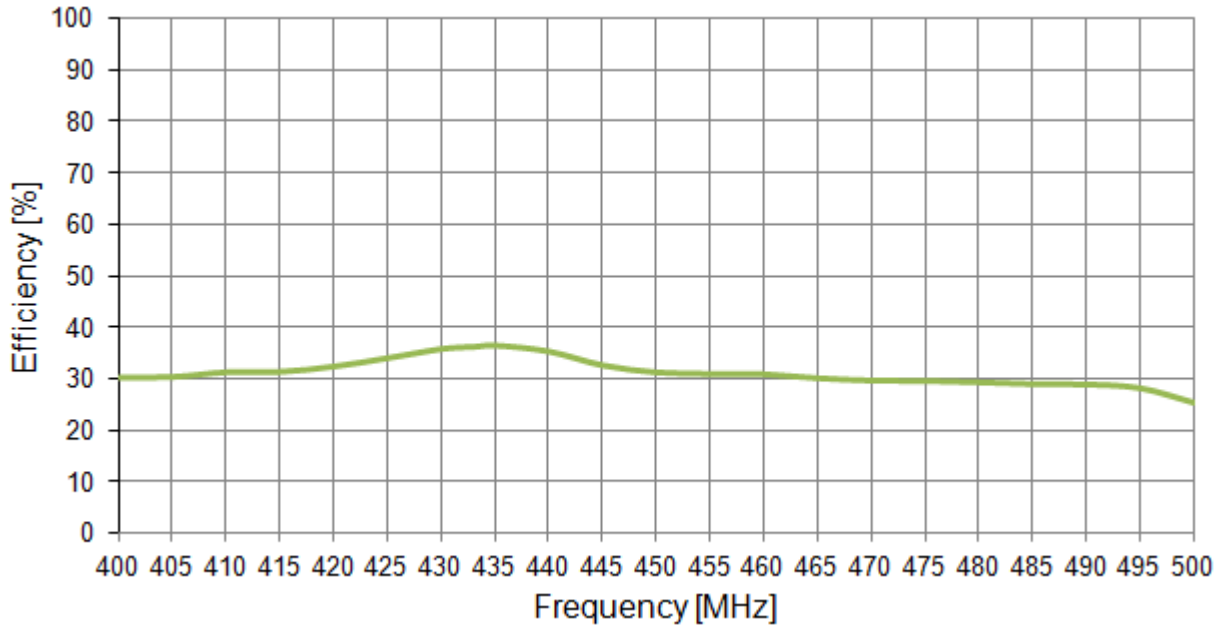


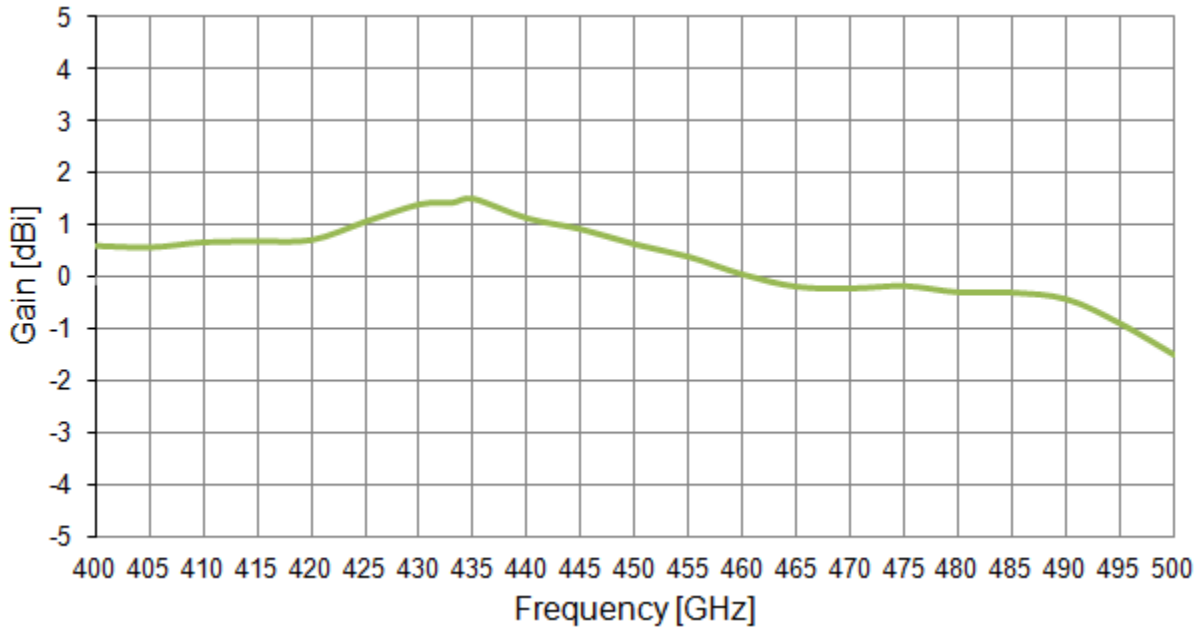
Figure 2. VSWR of the ISA.01 Antenna.

### 2.3. Efficiency



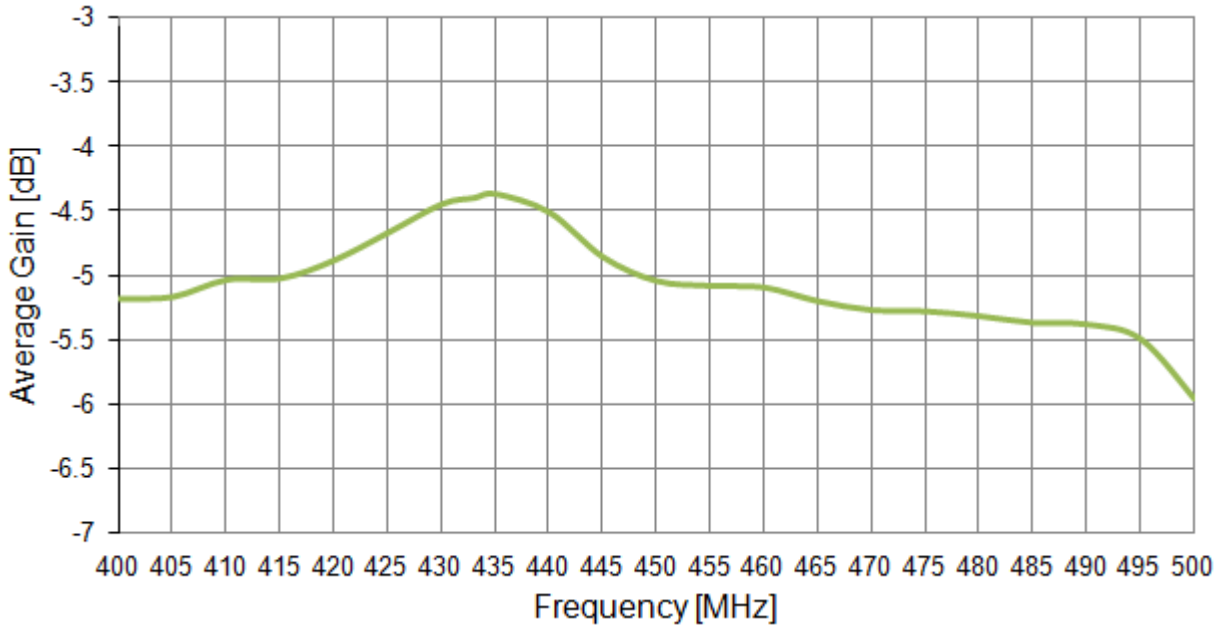
**Figure 3.** Efficiency of the ISA.01 antenna.

### 2.4. Peak Gain



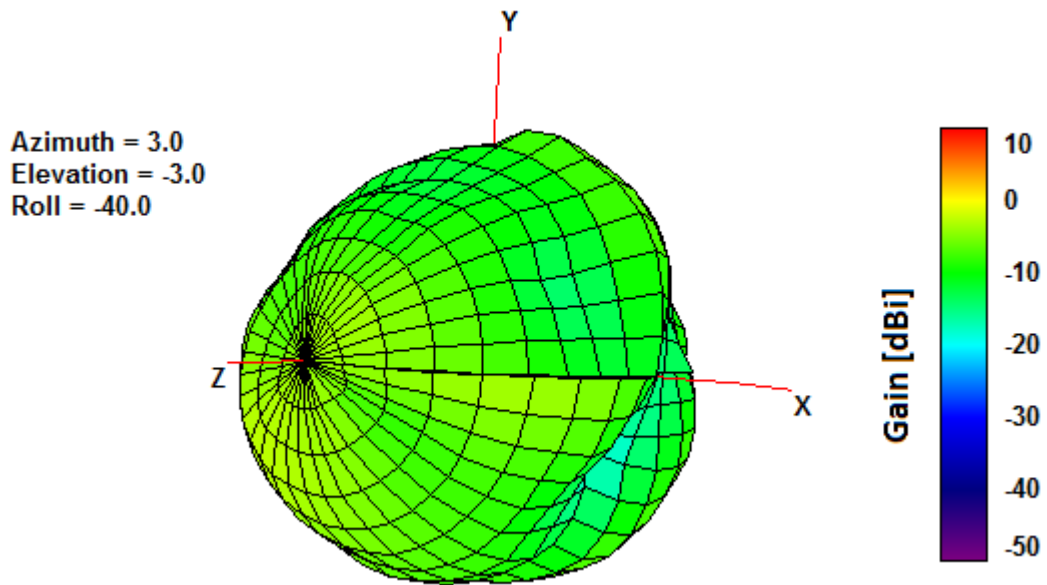
**Figure 4.** Peak Gain of the ISA.01 Antenna.

## 2.5. Average Gain



**Figure 5.** Average Gain of the ISA.01 Antenna.

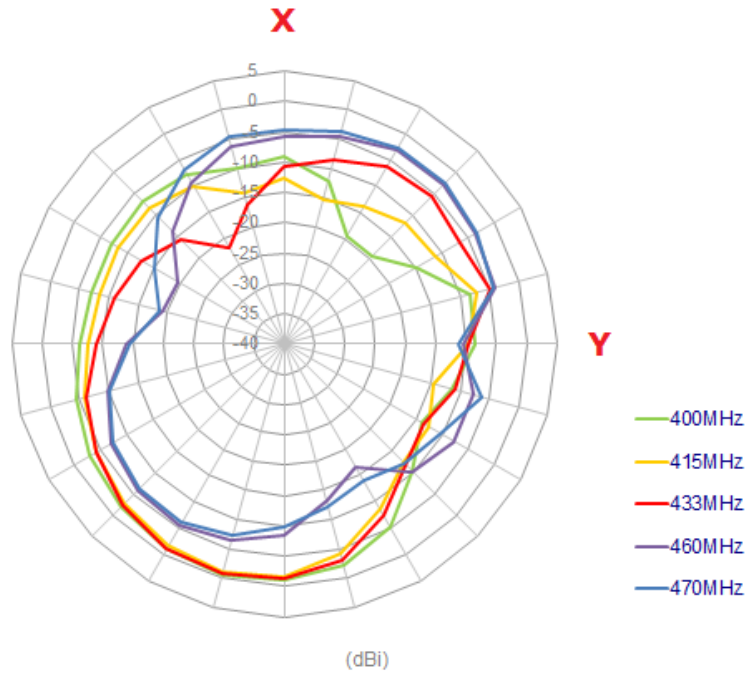
## 4. 3D Radiation pattern



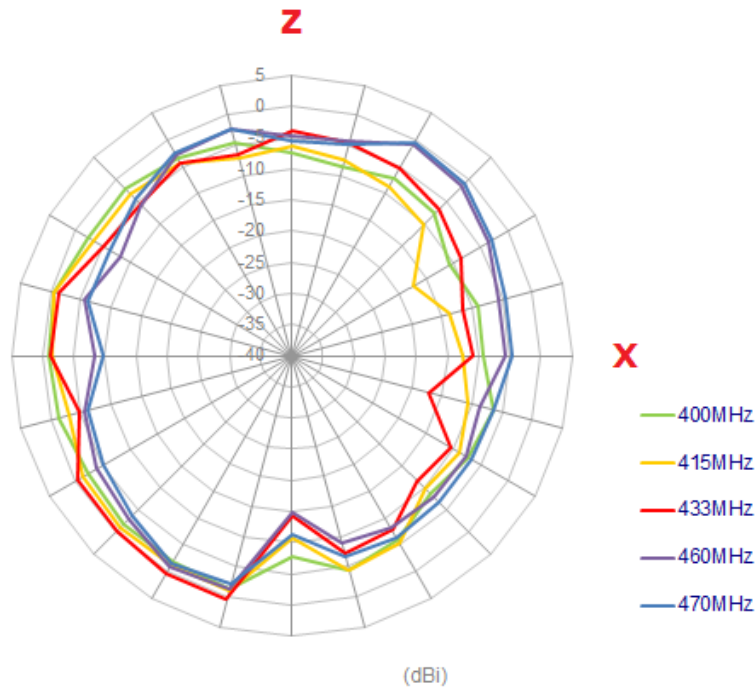
**Figure 6.** 3D Radiation Pattern at 433 MHz of the ISA.01 Antenna.

# 5. 2D Radiation patterns

## 5.1 XY Plane Radiation

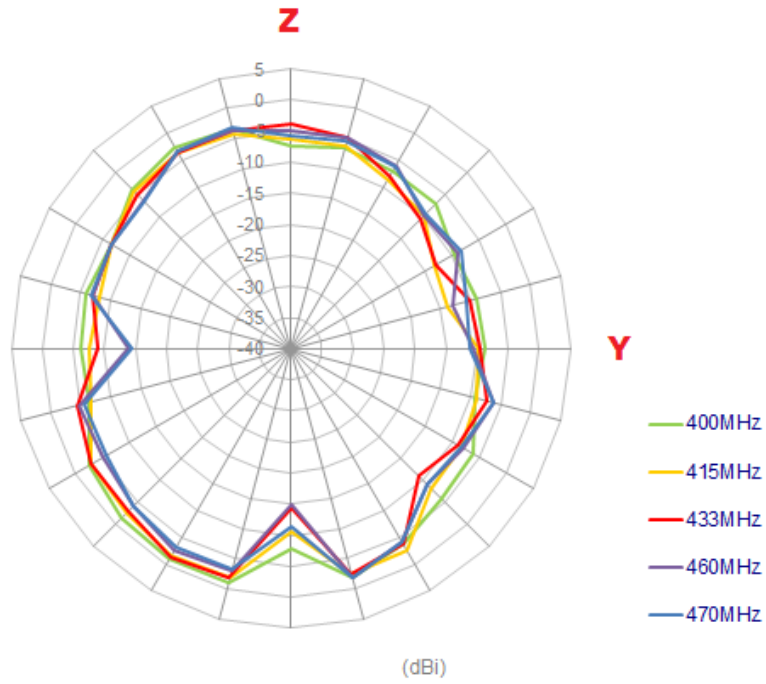


## 5.2 XZ Plane Radiation





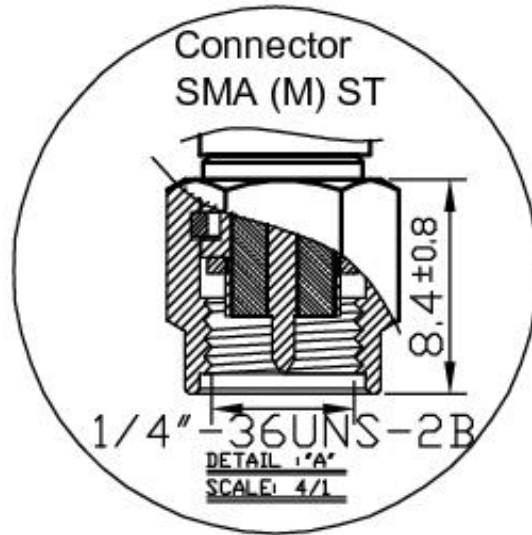
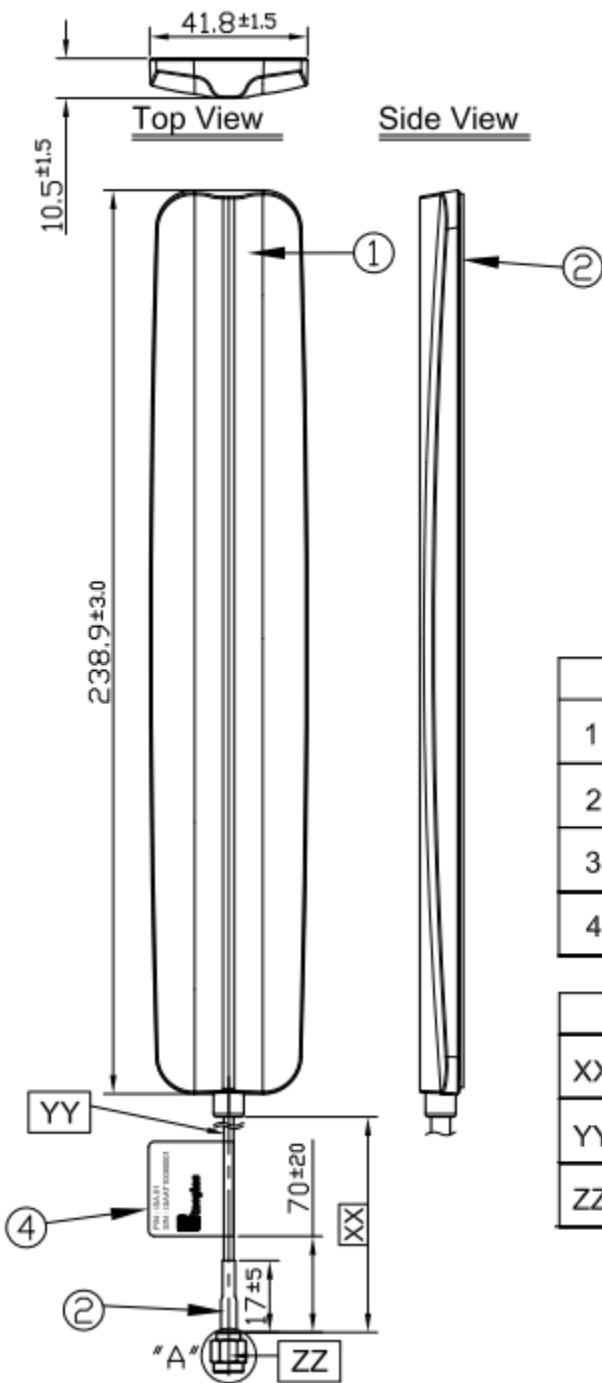
### 5.3 YZ Plane Radiation



**Figure 7.** 2D Radiation Pattern of the ISA.01 Antenna.

## 6. Drawing

Front View



	Name	Material	Finish	QTY
1	Housing-Top	TPR	Black	1
2	3M Double Side Adhesive	3M 1600T 1t	Gray	1
3	Heat Shrink Tube	PE	Black	1
4	ISA.01 Label	Gloss Silver PET	Silver	1

	Name	Spec	Finish	QTY
XX	Cable Length	$3000 \pm 60\text{mm}$		1
YY	Cable Type	RG174	Black	1
ZZ	Connector Type	SMA(M) ST	Gold	1



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