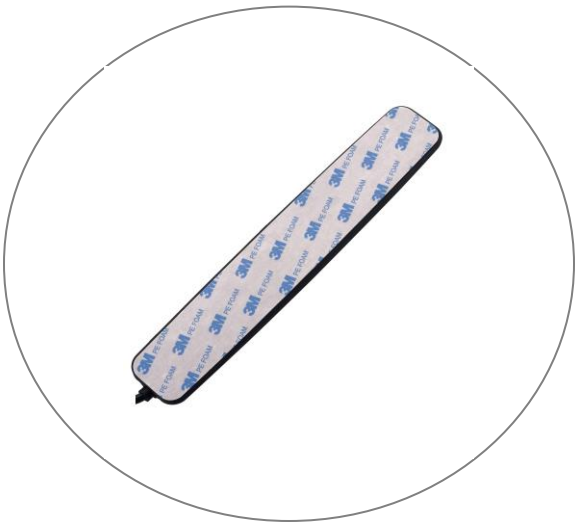
Specification

Part No	:	**ISA.06.A.301111**
Product Name	:	0dBi 400~470MHz UHF Band Low Profile Adhesive Mount Antenna for Plastic Surfaces For ISM/ TETRA/CDMA 450/ SCADA Family Radio Service/General Mobile Radio Service/Bio-Medical Telemetry
Features	:	239*42*11mm Robust, Heavy Duty, Semi-Flexible, Low profile Omnidirectional Wide-band response from 400Mhz to 470MHz IP67 Waterproof (Internal PCB) 3M Adhesive for easy mounting Standard 3 meters RG174 cable SMA(M) Connector Cables and Connectors Fully Customizable **RoHS Compliant**



1. INTRODUCTION

The ISA.06 is an omnidirectional 400MHz to 470MHz UHF band antenna with IP67 level protection antenna for internal or external applications. The housing is made of robust TPR and can flex up to 20 degrees to fit curved surfaces.

Unlike our competitors, Taoglas shows full performance data for our antennas. The ISA.06 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 more environments with more resistance to detuning. All low frequency UHF antennas need to be tuned to suit their mounting environment. For this reason this antenna is tuned to be mounted on plastic surfaces (i.e. excluding metal or glass mounting), so is ideal for covert non-obtrusive placement in vehicles. For glass-mount applications please use ISA.01.

Typical applications are in law enforcement (Tetra and public safety), remote telemetry, public transportation, mining,

At only 10.5mm thick and 42mm in width, its semi-flexible properties and strong 3M automotive approved double-sided adhesive allows for convenient installation. The standard cable is 3 meters RG174 coaxial cable.

Cable length and connector type are fully customizable

The ISA.06 can be customized for other low frequency bands for a minimum order quantity. Please contact your local Taoglas sales office.

2. Specification

ISM						
Frequency		410	433	450	470	MHz
Peak Gain	Cable 1m	2.0	0.1	-1.5	-1.0	dBi
	Cable 2m	1.2	-2.3	-2.5	-1.8	dBi
	Cable 3m	0.5	1.5	0.8	-0.2	dBi
Average Gain *		-5.0	-3.5	-4.5	-4.8	dBi
Efficiency *		30	45	35	33	%
Return Loss *		-9.0	<-15.0	-9.0	-7.0	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**

3. TEST SET UP

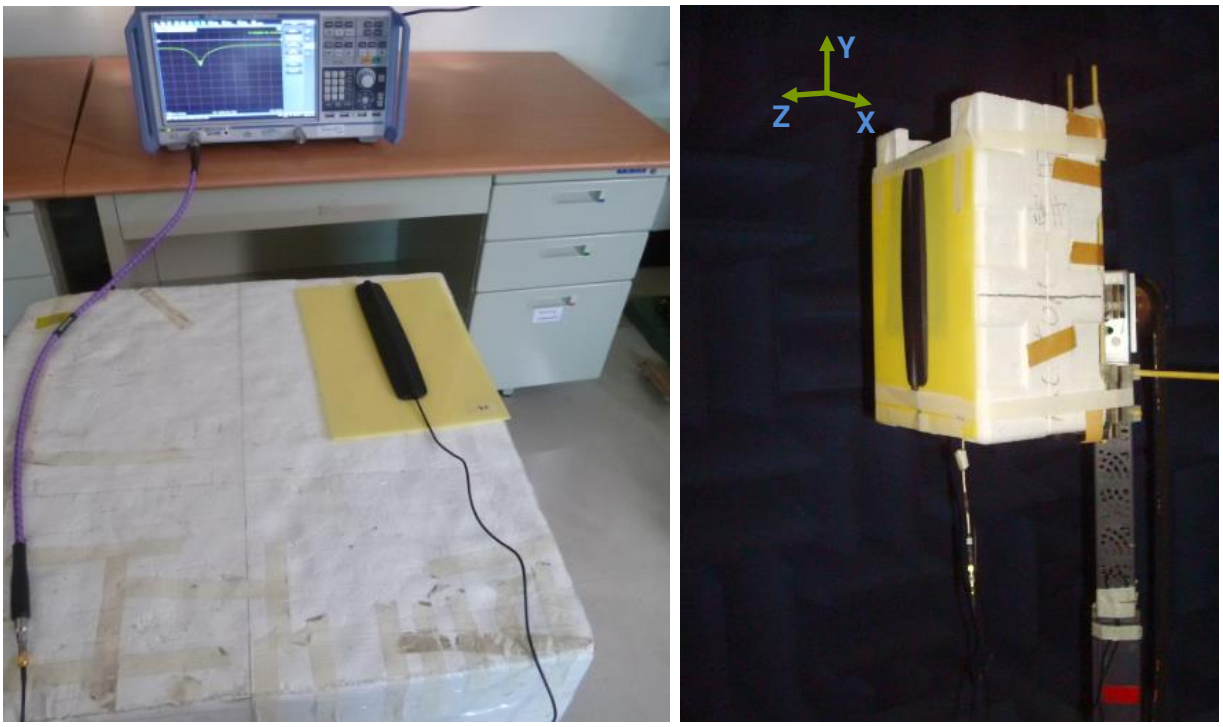


Figure 1. Impedance measurements (left hand) and peak gain, efficiency and radiation pattern measurements (right hand).

4. ANTENNA PARAMETERS

4.1. Return Loss

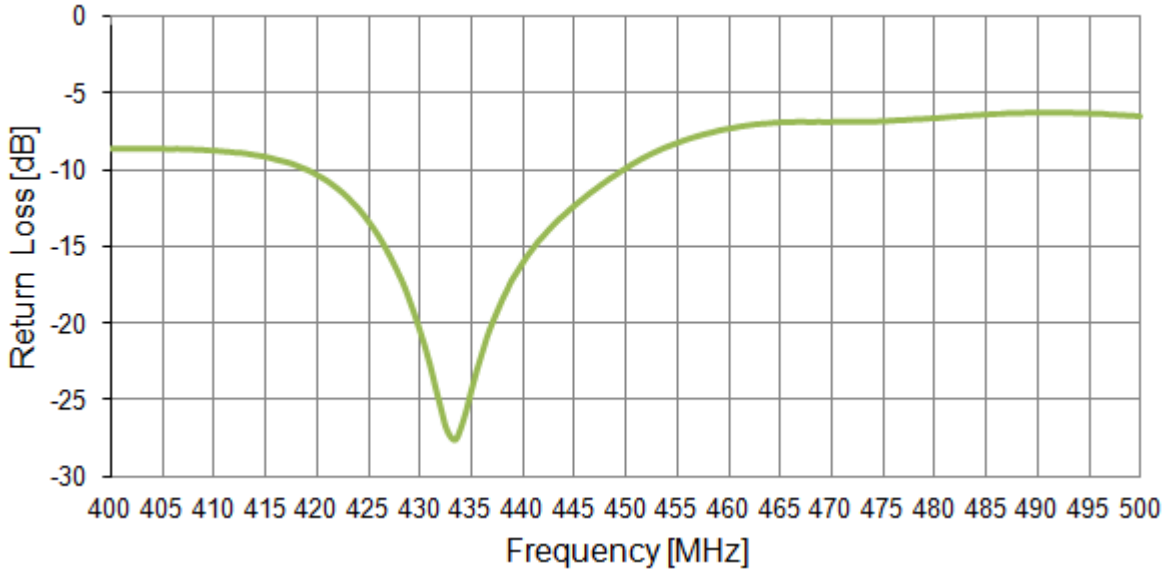


Figure 2. Return loss of the ISA.06 Antenna.

4.2. VSWR

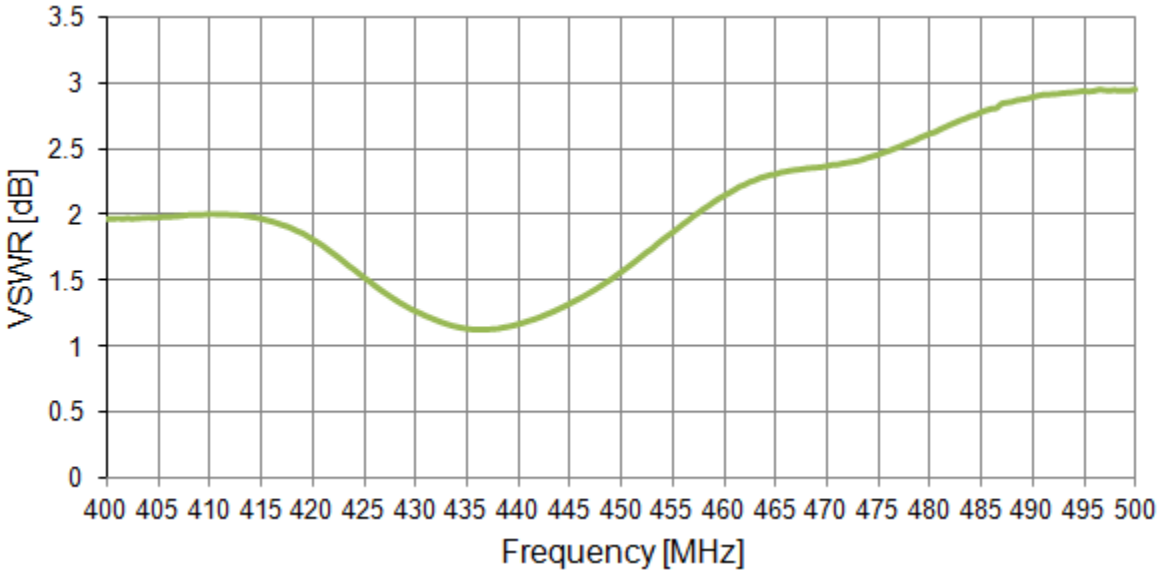


Figure 3. VSWR of the ISA.06 Antenna.

4.3. Efficiency

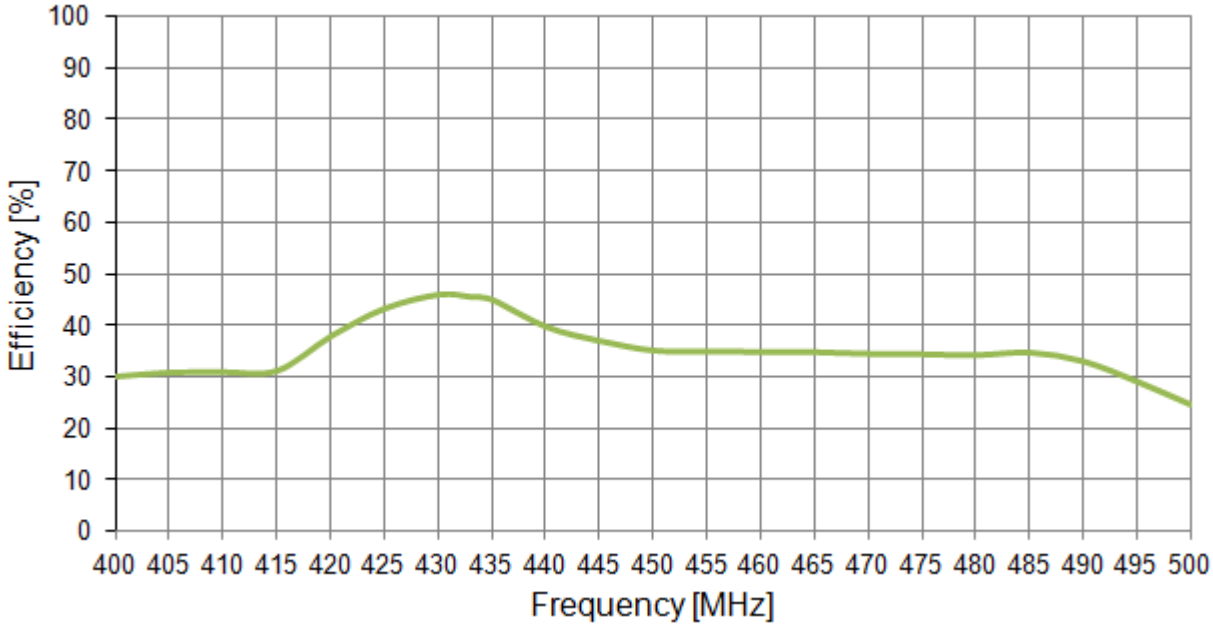


Figure 4. Efficiency of the ISA.06 Antenna.

4.4. Peak Gain

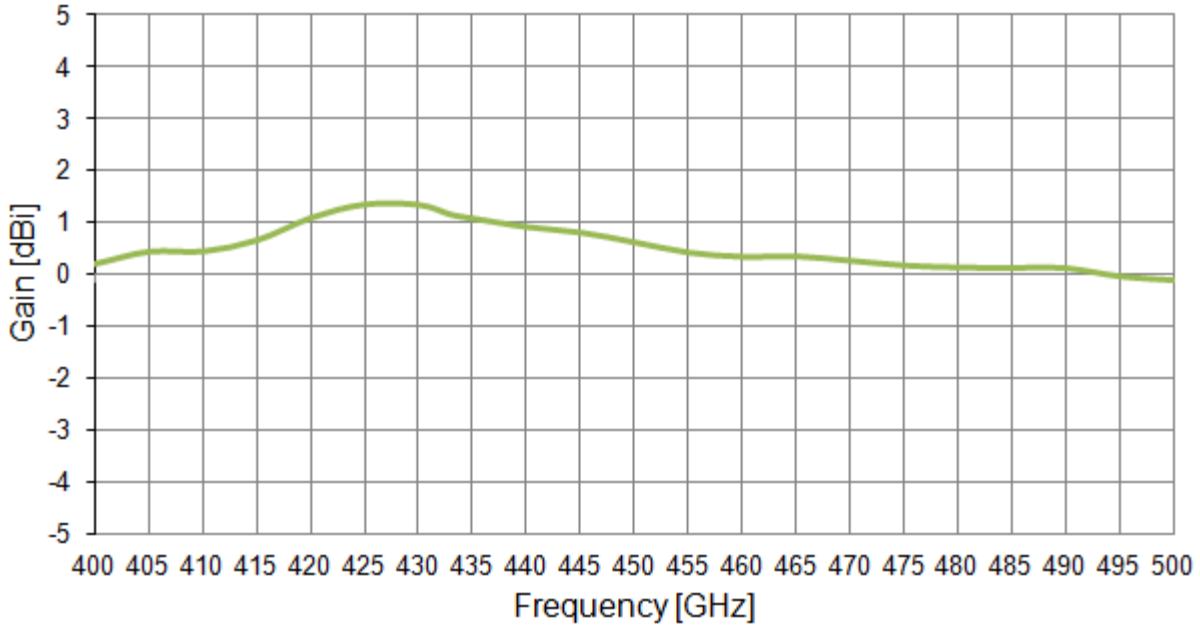


Figure 5. Peak Gain of the ISA.06 Antenna.

4.5. Average Gain

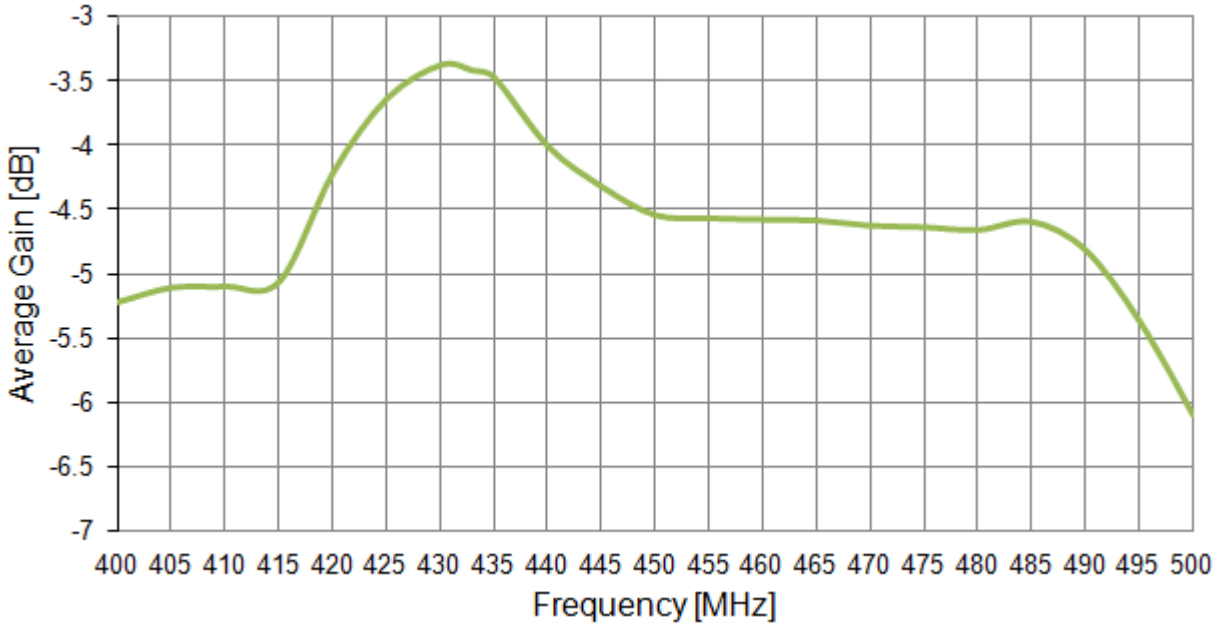


Figure 6. Average Gain of the ISA.06 Antenna.

4.6. Radiation Pattern

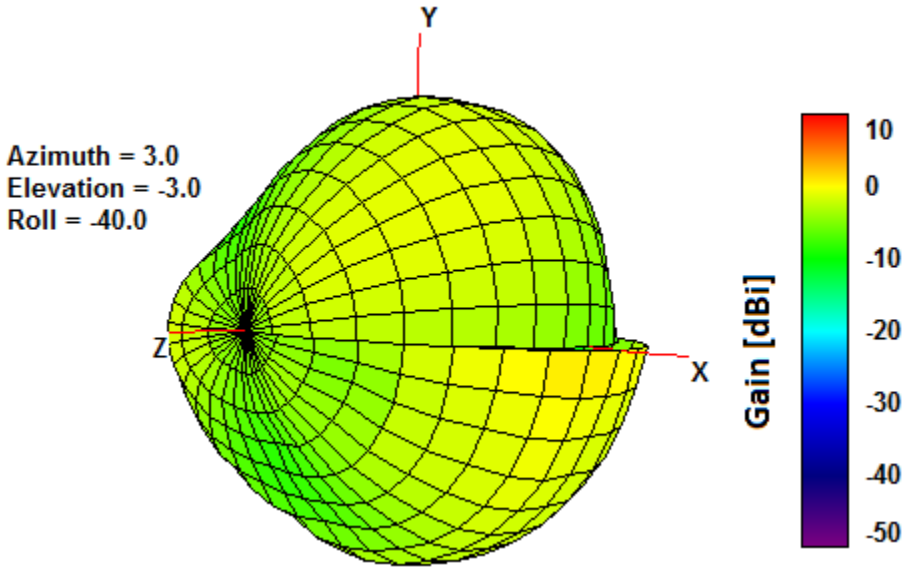
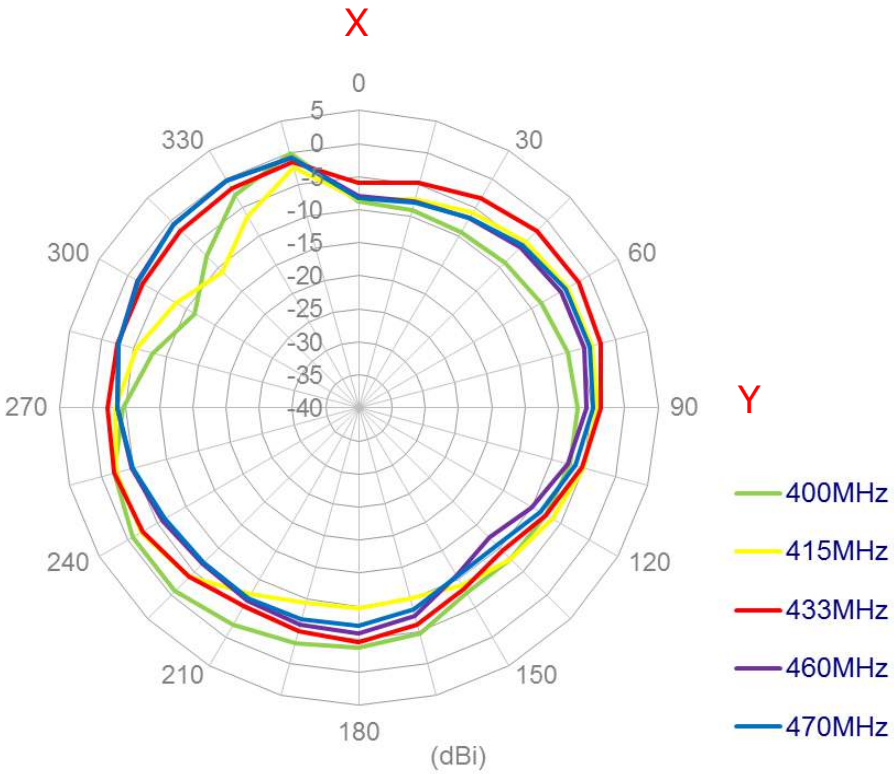


Figure 7. Radiation Pattern at 433 MHz of the ISA.06 Antenna.

4.7. 2D Radiation patterns



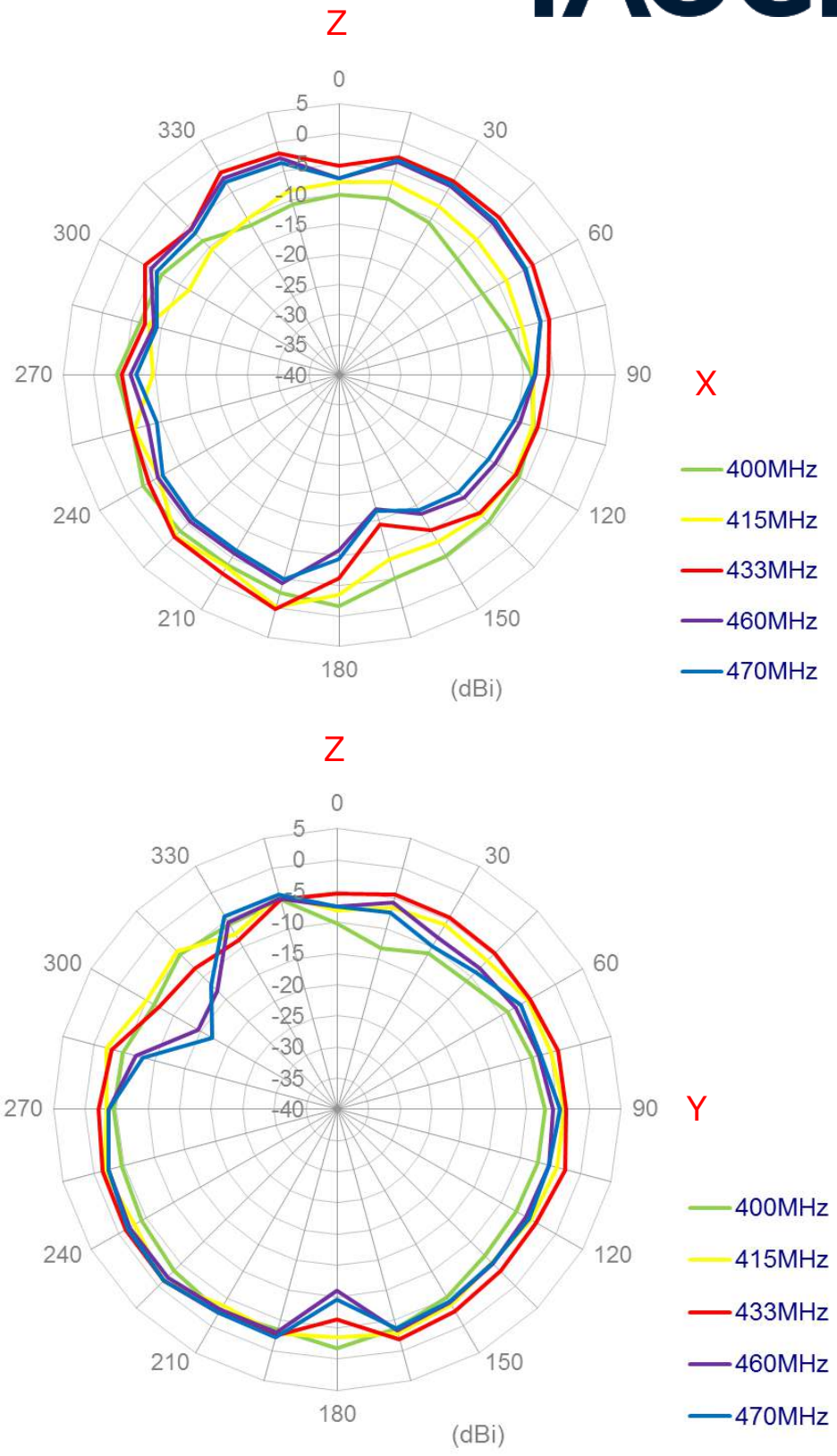
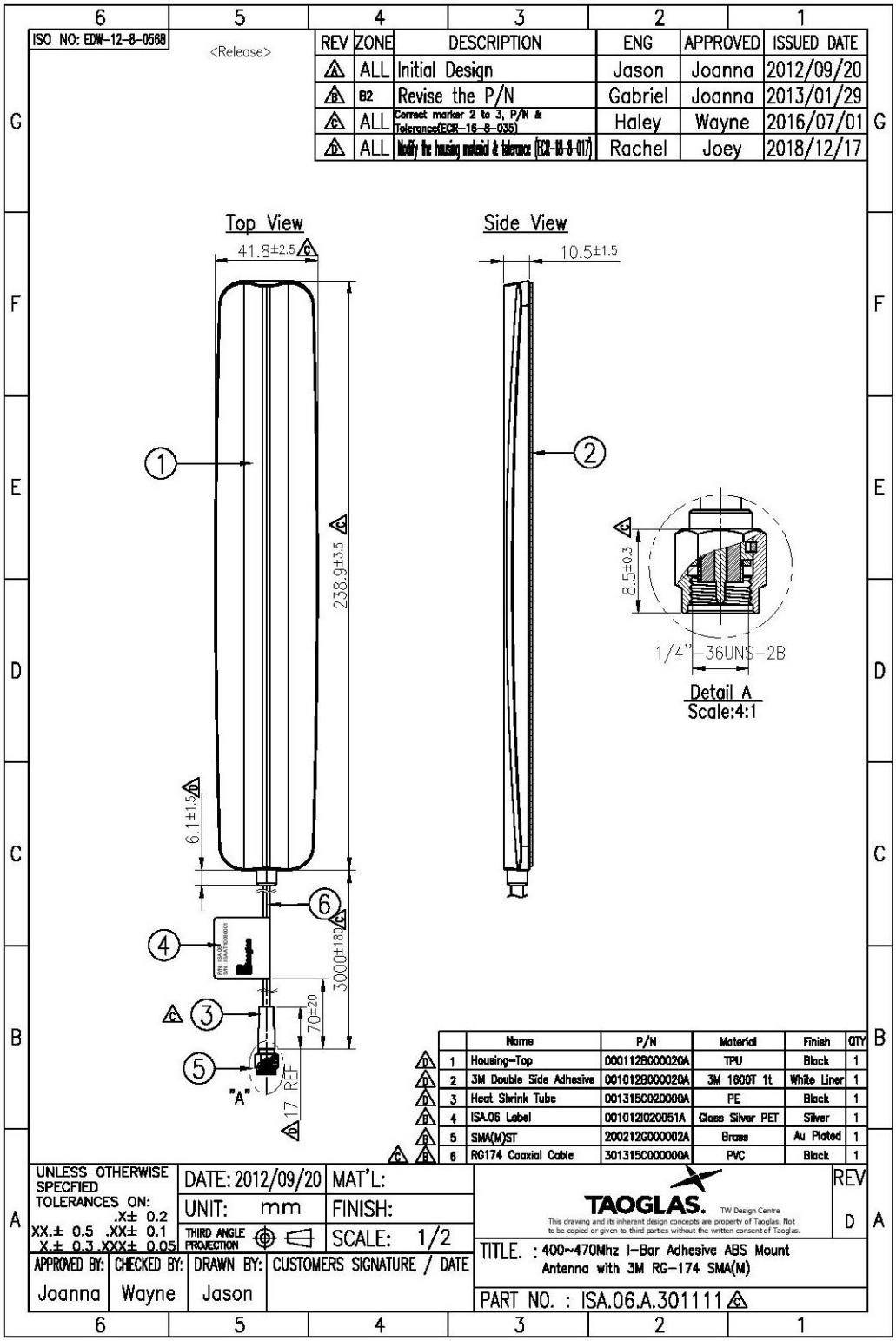


Figure 8. 2D Radiation Pattern of the ISA.06 Antenna.

5. Drawing


ISO NO: EDW-12-8-0568
<Release>
REV ZONE DESCRIPTION ENG APPROVED ISSUED DATE
A ALL Initial Design Jason Joanna 2012/09/20
B B2 Revise the P/N Gabriel Joanna 2013/01/29
C ALL Correct marker 2 to 3, P/N & Tolerance(ECR-16-8-035) Haley Wayne 2016/07/01
D ALL Modify the housing material & tolerance (ECR-18-8-017) Rachel Joey 2018/12/17
Top View
Side View
41.8±2.5
10.5±1.5
238.9±3.5
6.1±1.5
3000±180
70±20
17 REF
"A"
8.5±0.3
1/4"-36UNS-2B
Detail A
Scale:4:1
1 Housing-Top 0001128000020A TPU Black 1
2 3M Double Side Adhesive 0010128000020A 3M 1600T 1t White Liner 1
3 Heat Shrink Tube 001315C020000A PE Black 1
4 ISA.06 Label 0010121020051A Gloss Silver PET Silver 1
5 SMA(M)ST 200212G000002A Brass Au Plated 1
6 RG174 Coaxial Cable 301315C000000A PVC Black 1
UNLESS OTHERWISE SPECFIED TOLERANCES ON: .X± 0.2 XX.± 0.5 .XX± 0.1 X.± 0.3 .XXX± 0.05
DATE: 2012/09/20
UNIT: mm
THIRD ANGLE PROJECTION
MAT'L:
FINISH:
SCALE: 1/2
APPROVED BY: Joanna
CHECKED BY: Wayne
DRAWN BY: Jason
CUSTOMERS SIGNATURE / DATE
TAOGLAS.
TW Design Centre
This drawing and its inherent design concepts are property of Taoglas. Not to be copied or given to third parties without the written consent of Taoglas.
REV D
TITLE. : 400~470Mhz 1-Bar Adhesive ABS Mount Antenna with 3M RG-174 SMA(M)
PART NO. : ISA.06.A.301111

6. Application Note

Return loss of antenna with 1M and 2M cable lengths

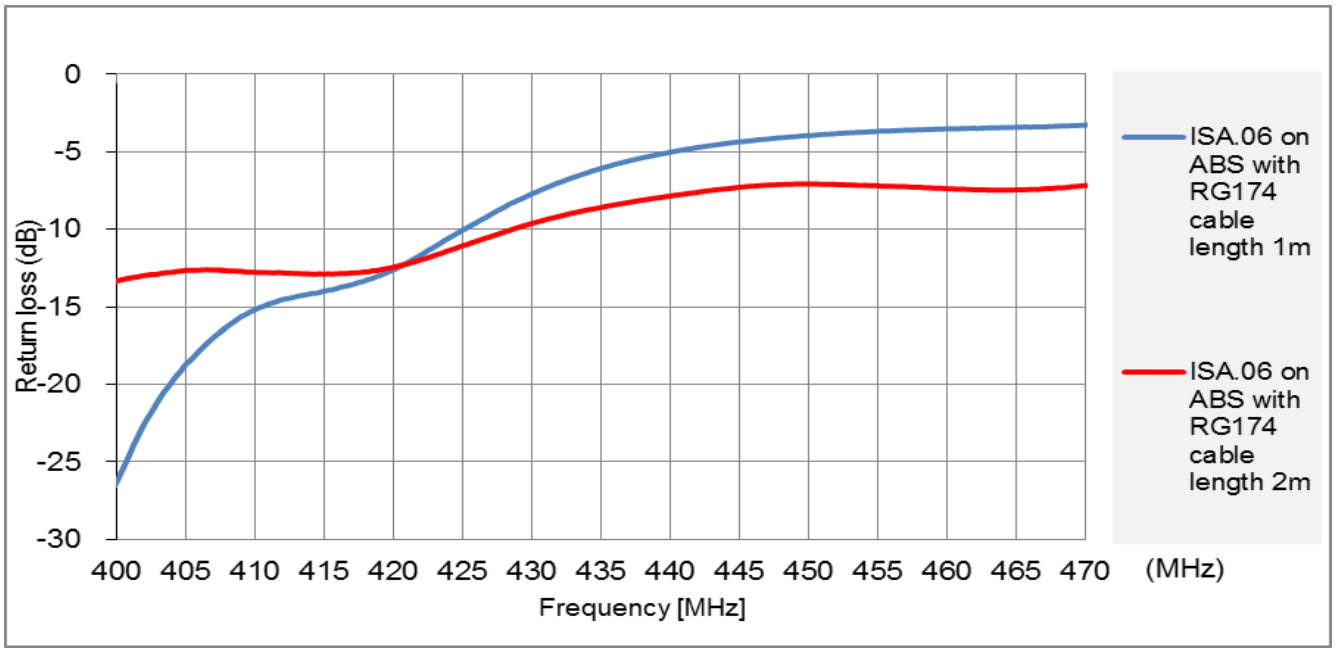


Figure 10. The return loss of ISA.06 antenna with different cable length.

Antenna efficiency with 1M and 2M cable lengths

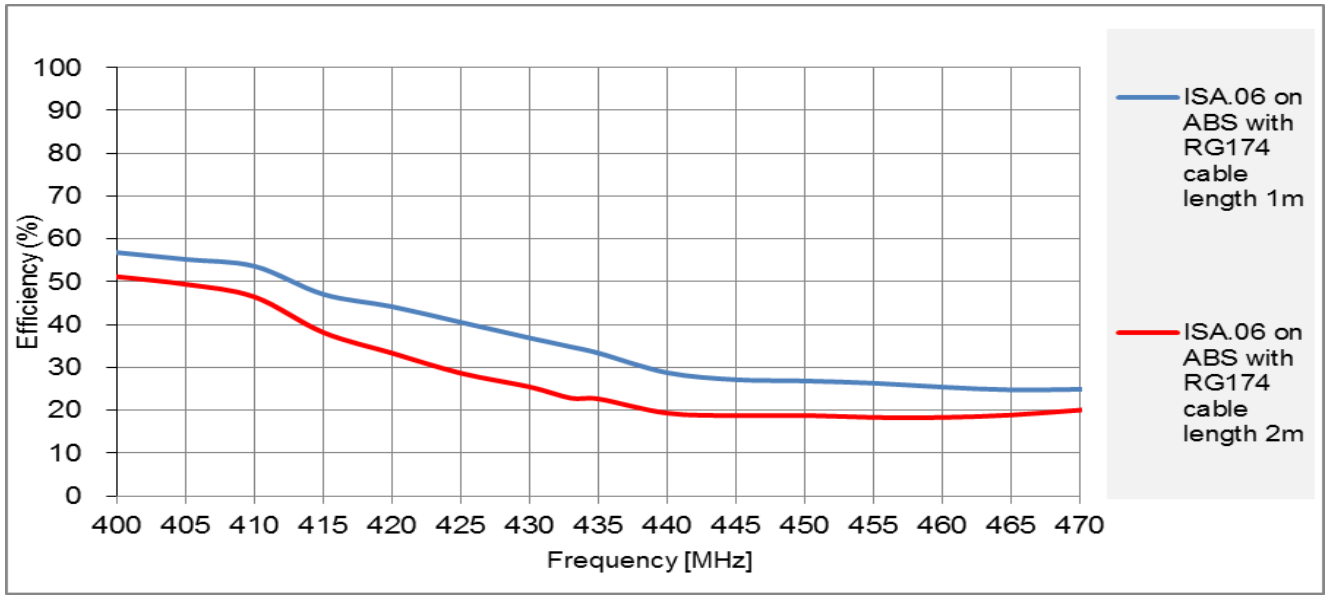


Figure 11. The efficiency of ISA.06 antenna with different cable length.