



# Datasheet

External Circular Polarized Active GPS Antenna with Screw Mount

**Model:** AEGW002

**PN:** M02-0300220R0A

**Description:**

Active B1/L1/G1 Band BDS/GPS/GLONASS Antenna

Operating Frequency: 1550 - 1610 MHz

**Features:**

UV-resistant, impact-resistant, waterproof

Cable: 100 mm RF 1.13

Connector: IPEX 1

Dimensions:  $\Phi$  32 x 59.9 mm

Customizable Options: RF cables, connectors

RoHS Compliant





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## FEATURES & BENEFITS

- Lightweight, low profile and rugged design
- Easy installation with a built-in bolt interface, allowing it to be directly screwed onto devices without the need for additional screws.
- The perfect anti-vandal antenna with a UV and impact-resistant outer shell
- Dustproof and waterproof, durable and stable in harsh environments

## APPLICATIONS

- Military, Law Enforcement, or Private Security
- Hand-held/Portable Devices
- Asset and Fleet Tracking
- Scientific Instrumentations
- Oil, Gas, and Mining Industries
- M2M Applications
- Precision Agriculture
- BeiDou B1 Band / GPS L1 Band / GLONASS G1 Band



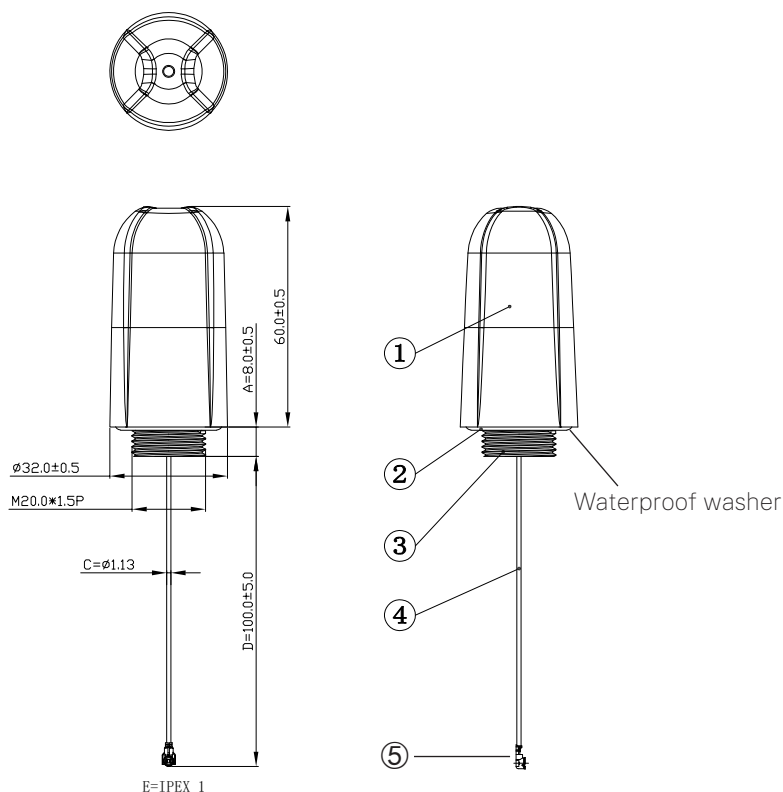
Antenna Image

## ORDER INFORMATION

<b>Product Name</b>	External Circular Polarized GPS Antenna with Screw Mount
<b>Part Number</b>	M02-0300220R0A
<b>Dimensions</b>	Ø32 x 59.9 mm
<b>Weight</b>	31 g
<b>Color</b>	Black
<b>Outer Shell Material</b>	PC+ABS+UV
<b>Mounting</b>	Screw mount
<b>Cable</b>	Default IPEX 1 RF 1.13 coaxial cable ( Ø 1.13 x 100 mm ) , customizable.

## MECHANICAL DIMENSIONS

REV.	DESCRIPTION	APPD.	DATE
A	INITIAL RELEASED	Chen	2024/12/12



**Note:**

③④⑤ support customization.  
Feel free to contact us for more details.

4	Cable Asm		Black	$\phi 1.13$ mm Coaxial Line, IPEX 1	1	
3	Body Screws		Aluminum	M20*1.5P	1	
2	O-RING		Black	$\phi 28.0 \times 3.1$ mm	1	
1	Body		Black	$\phi 32.0 \times 59.9$ mm	1	
No.	Name	Material	Color	Treatment	Amount	Remark
DIMENSIONS ARE IN MILLIMETERS			CUS P/N:		<b>ABOOSTY</b> 爱比速 TITLE: GPS ANTENNA	
UNLESS OTHERWISE SPECIFIED TOLERANCES			PART NO.: M02-0300220R0A			
ANGLES = $\pm 3^\circ$			APPD: 陈建坊		DWG NO.:	
UP TO 6 = $\pm 0.1$			CHKD: 陈建坊		SCALE: 1:1 SHEET: 1/1 REV.: V01	
6-40 = $\pm 0.2$			DR: 董看玲			
40-120 = $\pm 0.6$						
120-315 = $\pm 1.0$						
ABOVE 315 = $\pm 1.6$						



## REFERENCE GUIDE

Antenna				
Frequency	1550-1610 MHz			
Technical Features	BeiDou	GPS	GLONASS	
	1561 ± 2 MHz	1575.42 ± 2 MHz	1602 ± 5 MHz	
Frequency Bands	B1 Band	L1 Band	G1 Band	
Passive Efficiency (Max)	34.24 %	33.40 %	29.09 %	
Passive Gain	1.24 dBic	0.87 dBic	0.23 dBic	
Axial Ratio (AR)	<1.5 dB			
Passive VSWR	<2			
Input Impedance	50 Ω			
Polarization	RHCP			
Radiation Pattern	Directional			
LNA				
Active Gain	29.16 dB	27.16 dB	27.31 dB	
LNA Gain	28.71 dB	28.10 dB	27.44 dB	
Noise Figure	1.5 Max			
DC Voltage	3.3 ± 0.3 V			
DC Current	12 ± 2 mA (@3.0 V)			
Environmental				
Operating Temperature	-40°C to +85°C			
Storage Temperature	-40°C to +90°C			
Relative Humidity	Non-condensing 65°C 95% RH			
Vibration	Wave Form: Random Vibration			
	Test Time: 30min/Axis			
	Direction: X, Y, Z Axis			
	PSD Break Points for 9.8 RMS (m/s <sup>2</sup> )	Frequency (Hz)	50	300
Acceleration ((m/s <sup>2</sup> )/Hz)		0.38416	0.38416	
RoHS Compliant	Yes			
All data were measured with an 100-mm-long RF 1.13 cable. Application data might vary.				

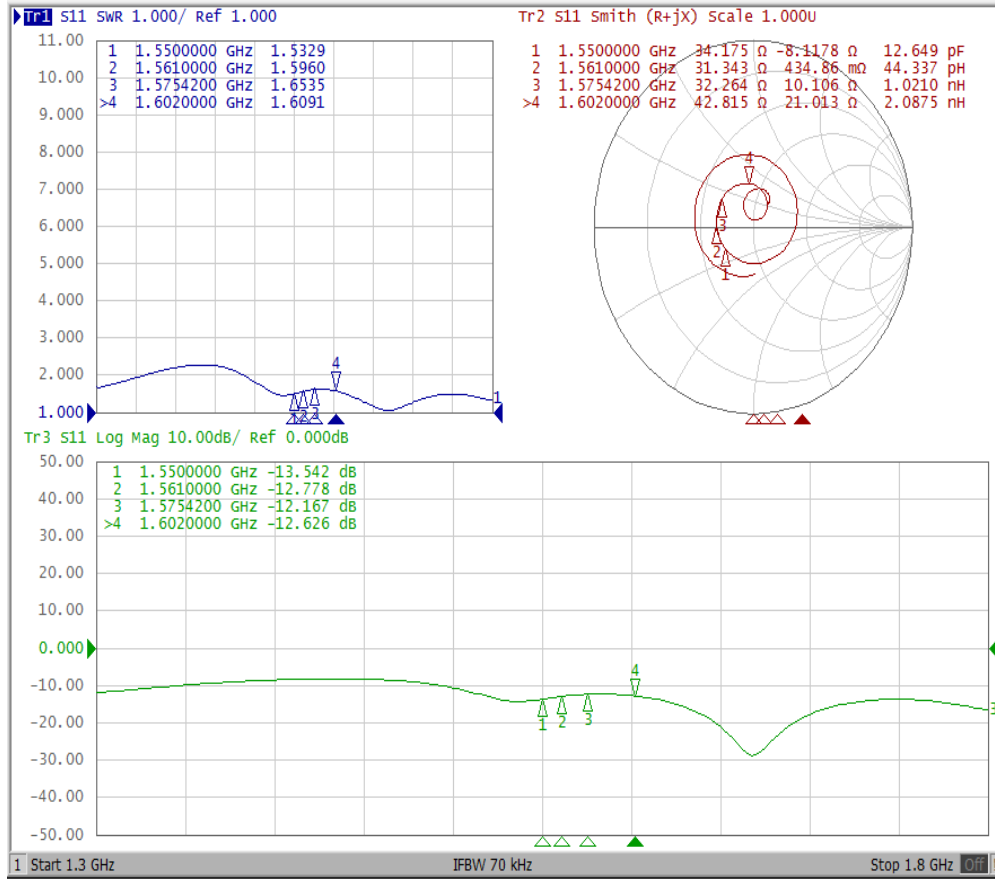


## ELECTRICAL PERFORMANCE

© Note

All data displayed in "ELECTRICAL PERFORMANCE" were measured with a 100-mm-long RF 1.13 cable.

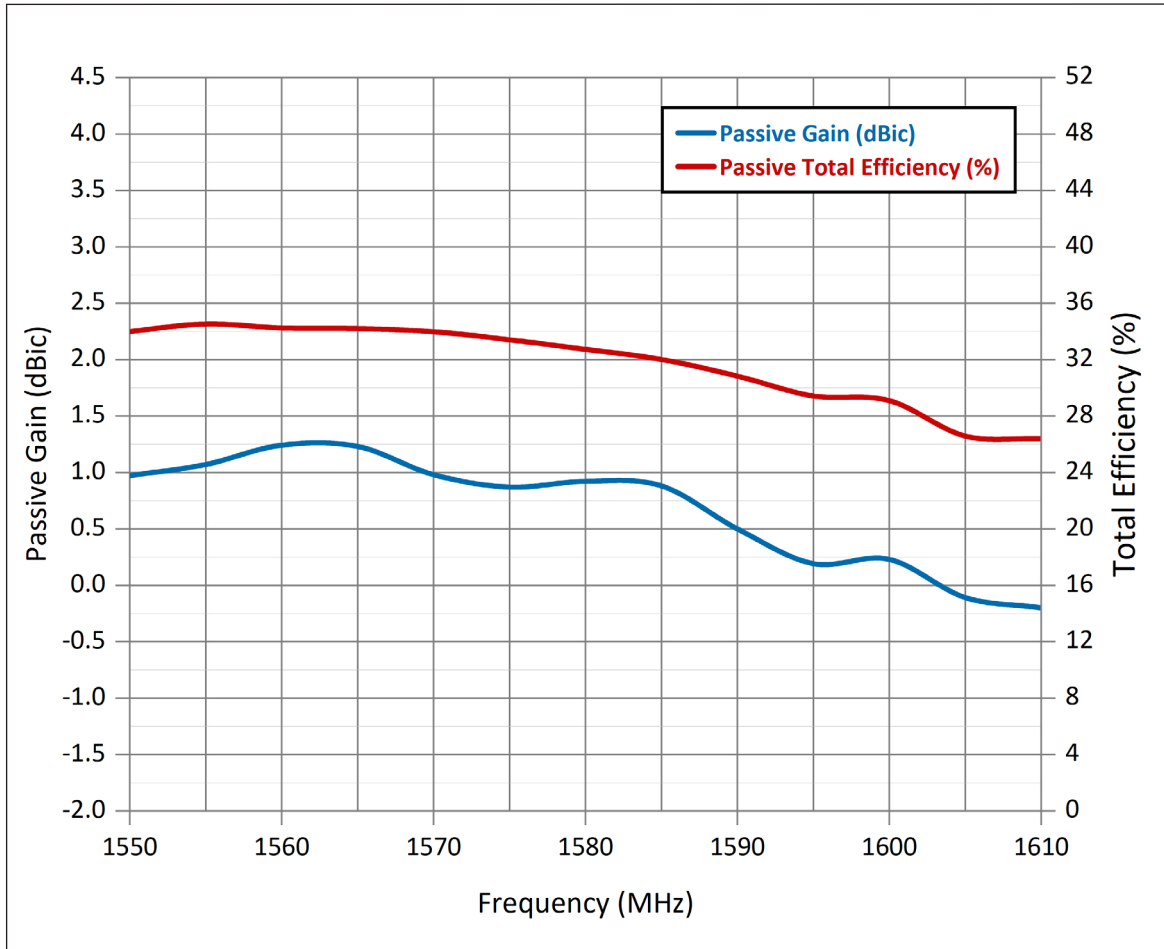
### Passive S11 (dB)



(Note: Data were tested with 100 mm of RF 1.13 cable.)



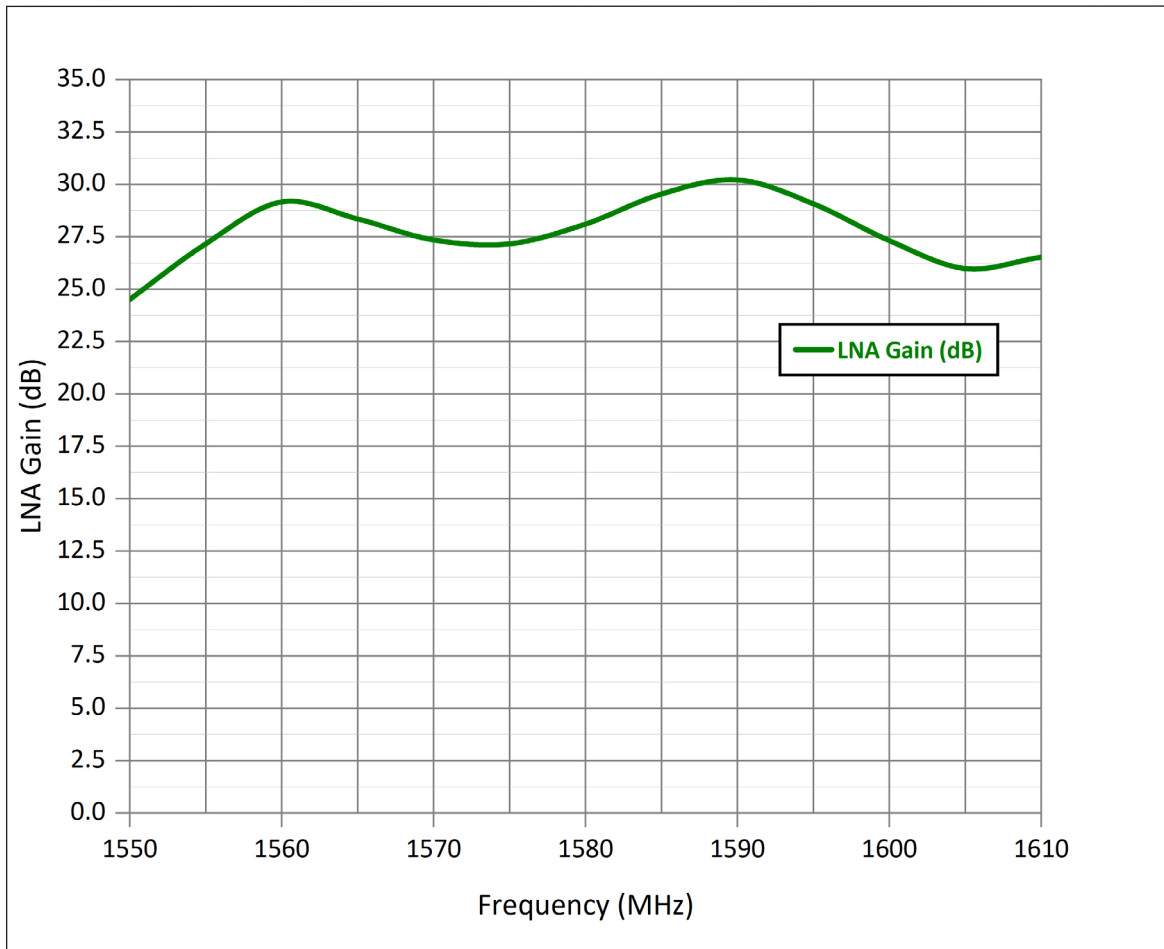
## Passive Gain (dBic) and Total Efficiency (%)



(Note: Data were tested with 100 mm of RF 1.13 cable.)



## Active Gain (dB)



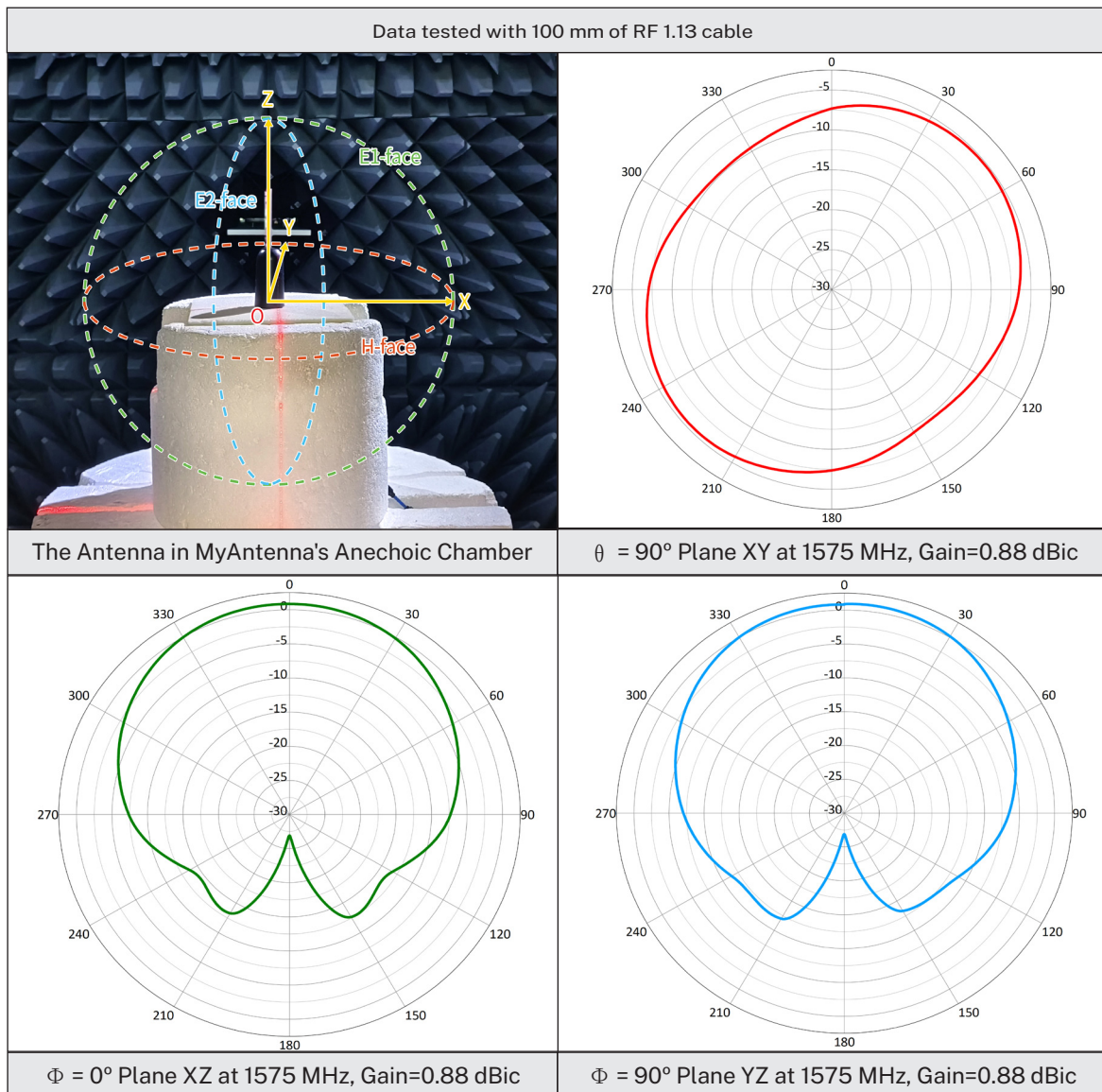
(Note: Data were tested with 100 mm of RF 1.13 cable.)



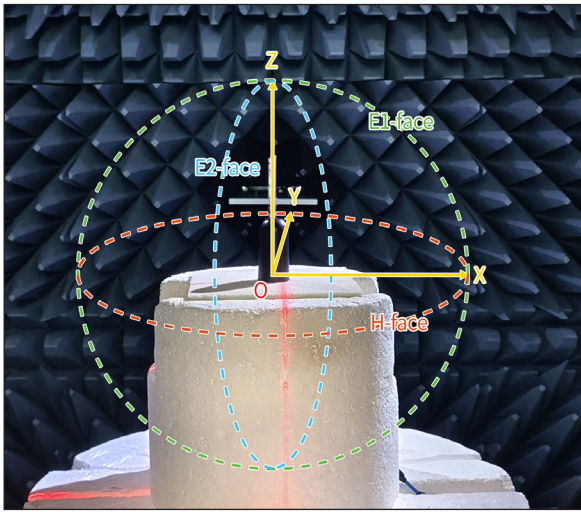


Antenna Data			
Freq (MHz)	Passive Gain (dBic)	Passive Efficiency (%)	Active Gain (dB)
1550	0.97	33.99	24.5
1555	1.07	34.52	27.16
1560	1.24	34.24	29.16
1565	1.23	34.2	28.34
1570	0.98	33.98	27.34
1575	0.87	33.4	27.16
1580	0.92	32.73	28.1
1585	0.88	32	29.53
1590	0.5	30.82	30.21
1595	0.19	29.41	29.07
1600	0.23	29.09	27.31
1605	-0.11	26.57	25.98
1610	-0.2	26.38	26.52

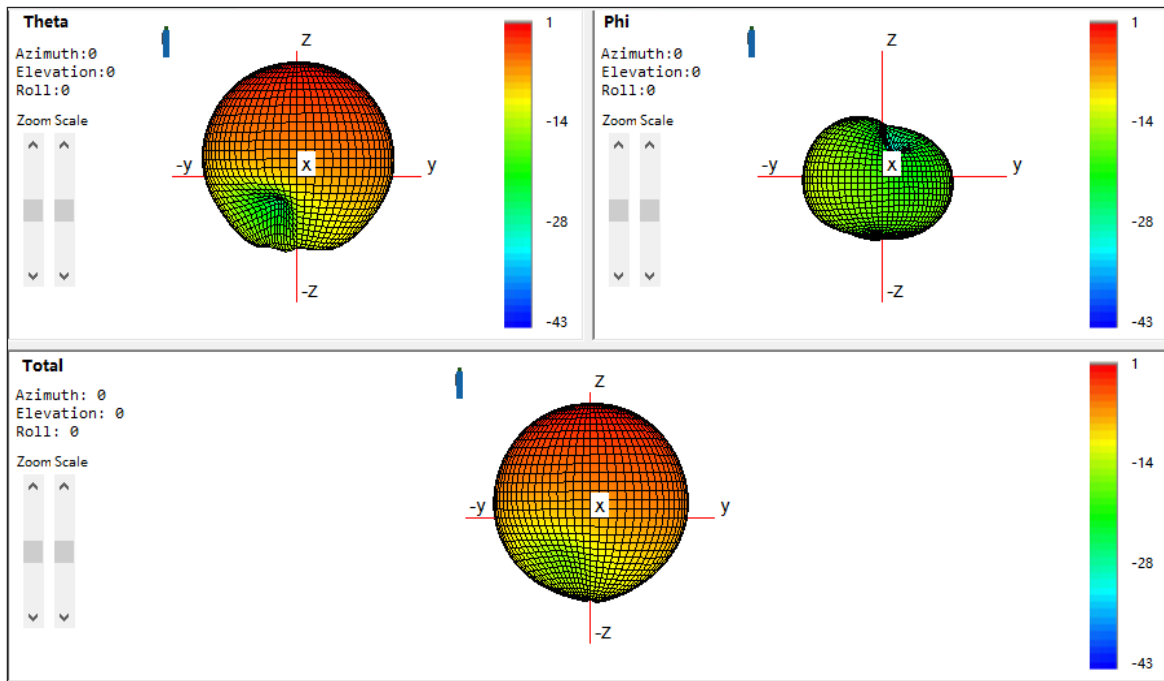
## Passive 2D Radiation Patterns (1550-1610 MHz)



## Passive 3D Radiation Patterns (1550-1610 MHz)

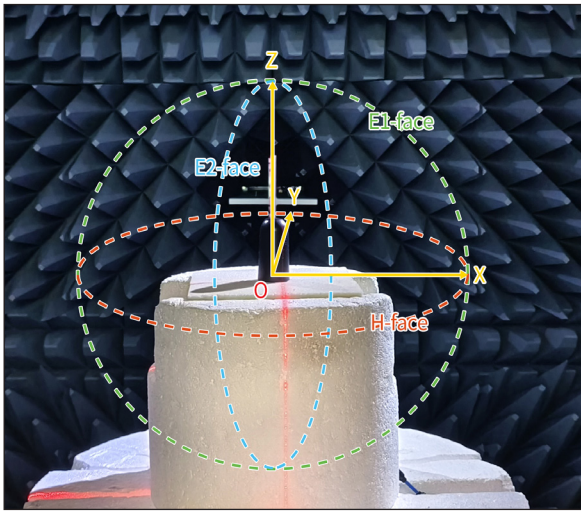


The Antenna in MyAntenna's Anechoic Chamber

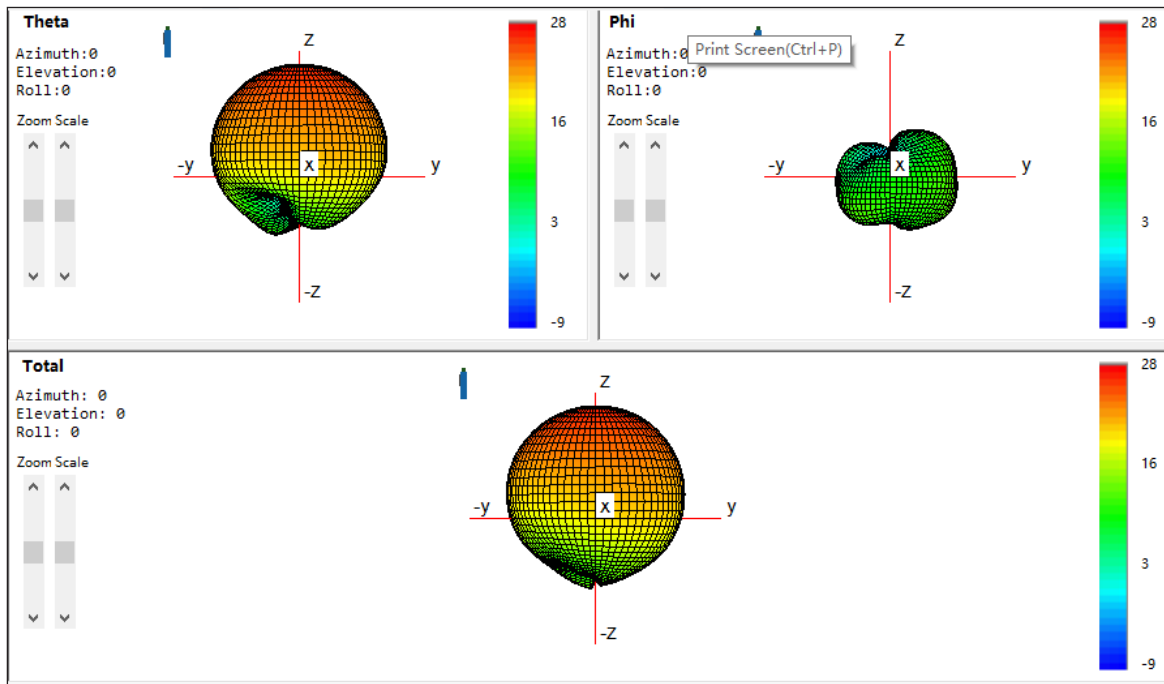


(Note: Data were tested with 100 mm of RF 1.13 cable.)

## Active 3D Radiation Patterns (1550-1610 MHz)









The Antenna in MyAntenna's Anechoic Chamber



(Note: Data were tested with 100 mm of RF 1.13 cable.)

# WELCOME ALL ANTENNA OEM/ODM PROJECTS

## Why Choose ABOOSTY

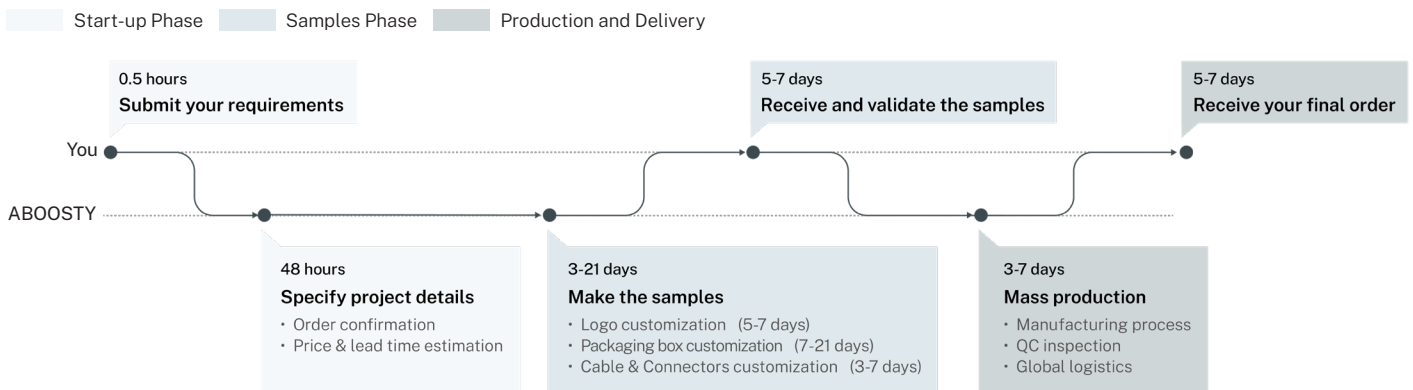
					
10+ years in antenna R&D, production, and OEM/ODM	MES system supported factory; 50M+ units annual output capacity	Factory directly competitive price	Quick price and lead time estimate	Innovative and patented design solutions	Professional team support & prompt reply within 24h

## What We Provide

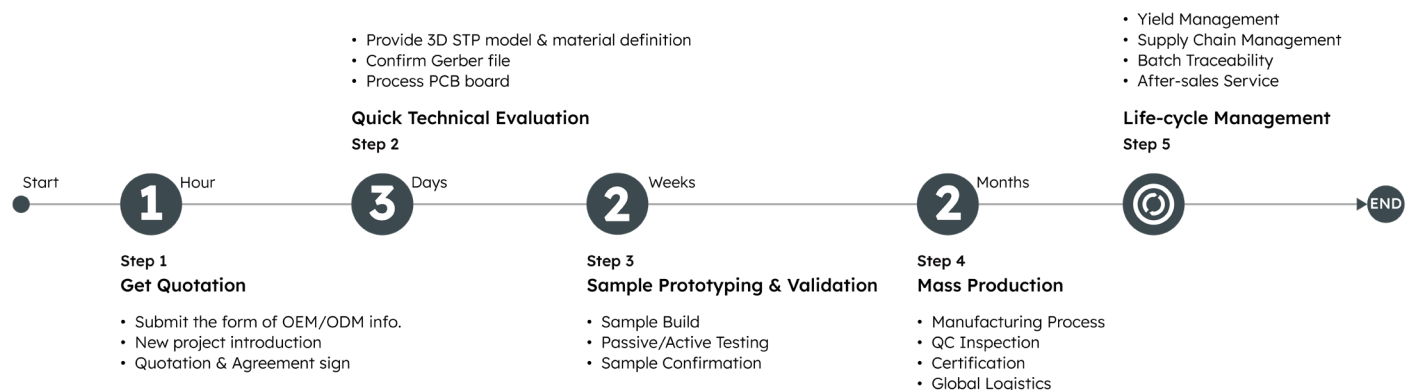
OEM/ODM Services	Light Customization	Deep Customization
	<ul style="list-style-type: none"> <li>• Logo</li> <li>• Packaging</li> <li>• Cables &amp; Connectors</li> </ul>	<ul style="list-style-type: none"> <li>• In-depth tailoring for specific applications</li> <li>• Functional enhancements</li> <li>• Environmental adaptations</li> <li>• Vertical certifications</li> <li>• ...</li> </ul>

## Custom Process

### Light Customization Process



### Deep Customization Process



**Note:** You can let us handle the PCB prototyping or do it yourself. Choosing self-prototyping may add 2 to 5 weeks to the timeline.


Boost Your Signal  
with Our Antennas

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