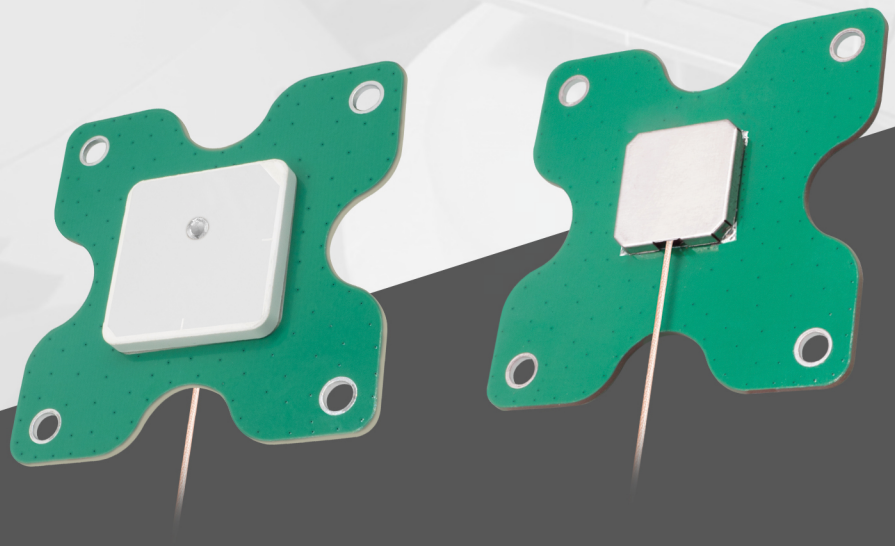
www.aboosty.com



Datasheet

Circularly Polarized Active GPS Embedded Ceramic Patch Antenna

Model: AIGC059

Description:

GPS/GALILEO/BeiDou Active Patch Antenna

Operating Frequency: 1559-1605 MHz

Features:

Ceramic Patch Element

Cable:82 mm RG 316

Connector:SMA Female

Dimensions: 75x 75 x 9.2 mm

RoHS & Reach Compliant

ABOOSTY

Table of Contents

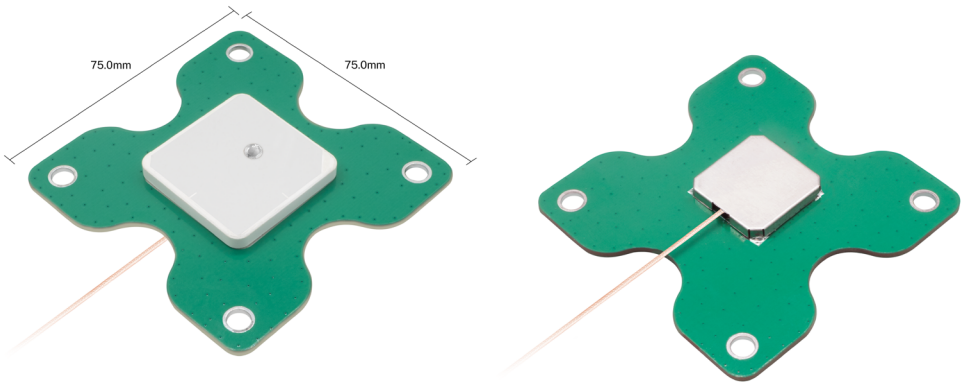
Global Site: www.aboosty.com China Site: www.aboosty.cn

FEATURES & BENEFITS

- 35x35x4 mm Embedded Ceramic Patch Element
- Miniaturized, multi-system compatible
- High gain, high sensitivity, highly reliable
- Low power consumption, supports multiple frequency bands
- Longer cables available, supports cable and connector customization

APPLICATIONS

- Satellite Navigation Receivers
- Geodetic Surveying and Mapping
- Channel Surveying and Mapping
- Precision Agriculture
- Marine Surveying
- Asset and Fleet Tracking
- Oil, Gas, and Mining Industries
- M2M Applications
- Hand-held/Portable Devices



Antenna Diagram

ORDER INFORMATION

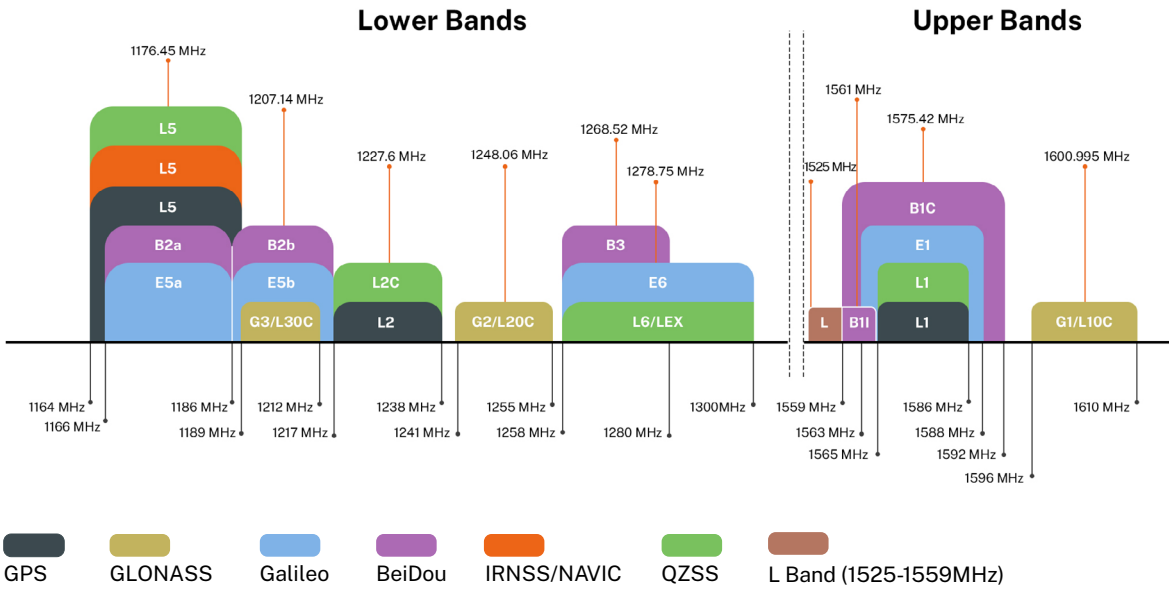
Product Name	Circularly Polarized Active GPS Embedded Ceramic Patch Antenna
Model	AIGC059
Dimensions	75 x 75 x 9.2
Weight	34.6 g
Cable and Connector	Default SMA Female, RG316 (Ø 2.5 mm) coaxial cable
Mounting	Internal/Embedded/Adhesive Mount
Custom Options	Logo, Packaging, Cable and Connectors

www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

GNSS FREQUENCY BANDS

GNSS Frequency Bands Covered					
GPS	L1	L2	L5		
	●	○	○		
GLONASS	G1	G2	G3		
	●	○	○		
Galileo	E1	E5a	E5b	E6	
	●	○	○	○	
Bei Dou	B1I	B1C	B2a	B2b	B3
	●	●	○	○	○
QZSS (Regional)	L1	L2C	L5	L6	
	●	○	○	○	
IRNSS(Regional)	L5				
	○				
SBAS	L1/E1/B1	L5/B2a/E5a	G1	G2	G3
	●	○	●	○	○

*SBAS systems: WASS(L1/L5), EGNOSS(E1/E5a), SDCM(G1/G2/G3), SNAS(B1,B2a), GAGAN(L1/L5), QZSS(L1/L5), KAZZ(L1/L5).



www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

REFERENCE GUIDE

Antenna				
Frequency	**1559-1605 MHz**			
Bandwidth	50 MHz			
VSWR	<2.0			
Efficiency (%)	68.56			
Peak Gain (dBi)	4.16			
Axial Ratio (dB)	<3			
Connector	SMA Female			
Polarization	RHCP			
Radiation Pattern	Directional			
Input Impedance	50 Ω			
LNA				
Frequency Bands	B1 Band	E1 Band	L1 Band	G1 Band
LNA Gain (dB)	33.8	34.9	34.9	32.6
Input Voltage	3.3 ± 0.3 V			
Current Consumption @3.0V	8 ± 1 mA (@3.3 V)			

Environmental				
Operating Temperature	-40°C to +75°C			
Storage Temperature	-40°C to +85°C			
Relative Humidity	40% to 95%			
Vibration	Wave Form: Random Vibration			
	Test Time: 30min/Axis			
	Direction: X, Y, Z Axis			
	PSD Break Points for 9.8 RMS (m/s^2)	Frequency (Hz)	50	300
		Acceleration $((m/s^2)^2/Hz)$	0.38416	0.38416
RoHS Compliant	Yes			
All data were measured with an 82-mm-long RG316 cable. Application data might vary				

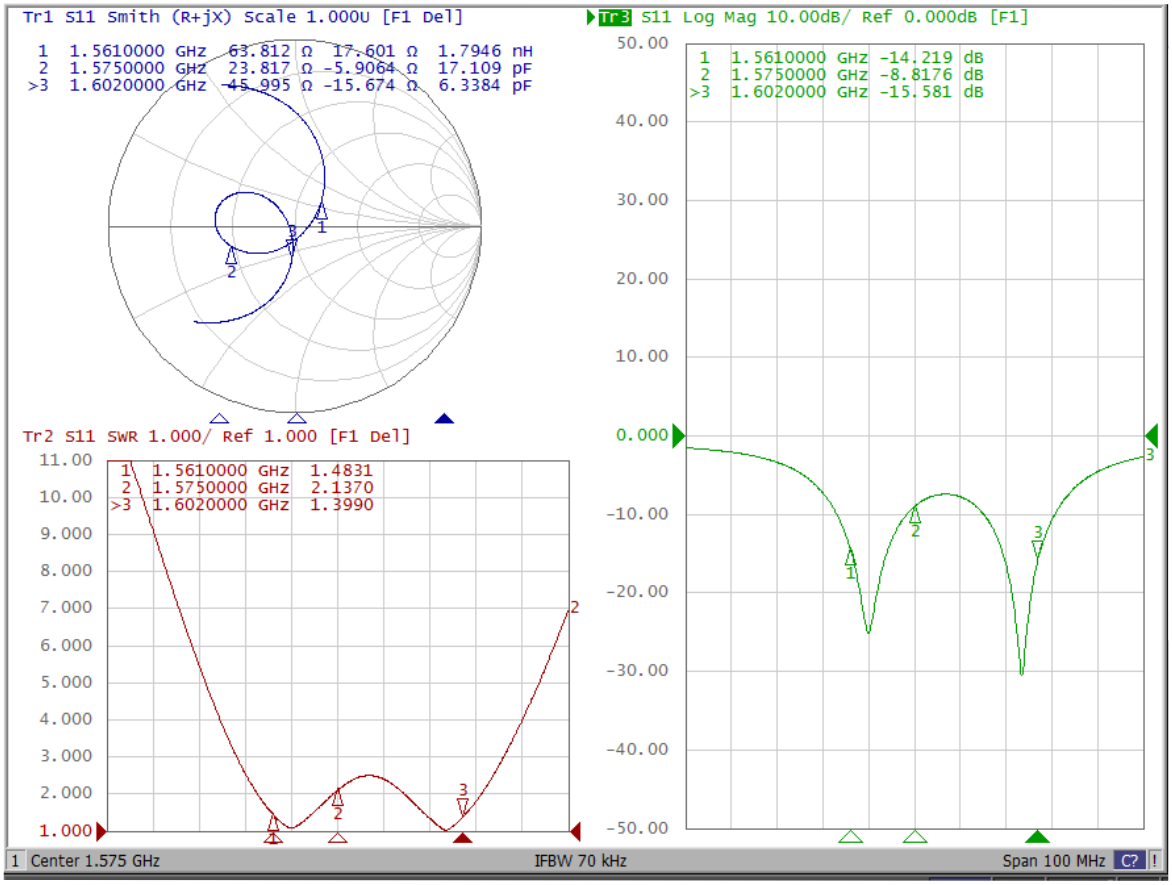
www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

ELECTRICAL PERFORMANCE

◎ **Note**

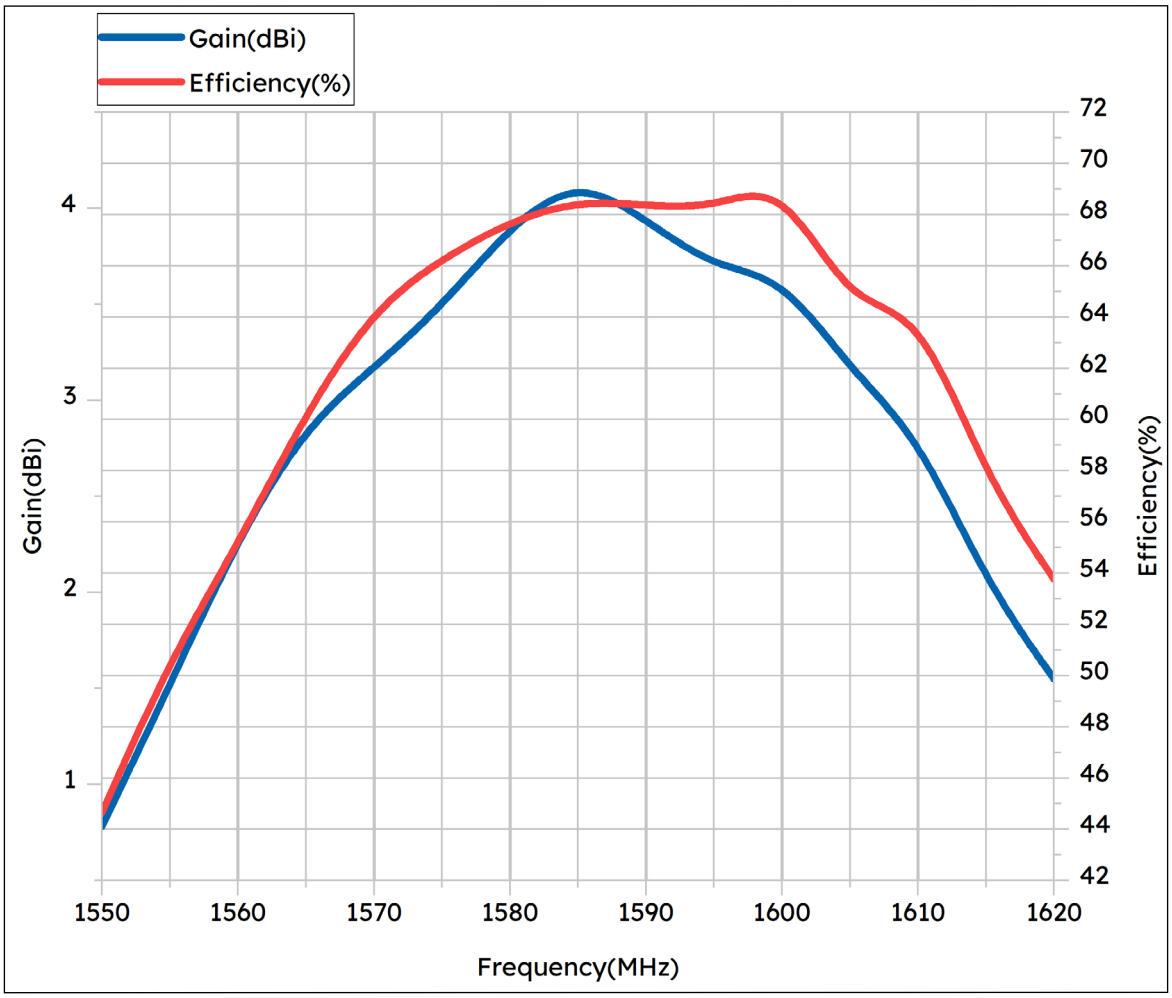
All data displayed in "ELECTRICAL PERFORMANCE" were measured with a 82-mm-long RG316 cable

S11



www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

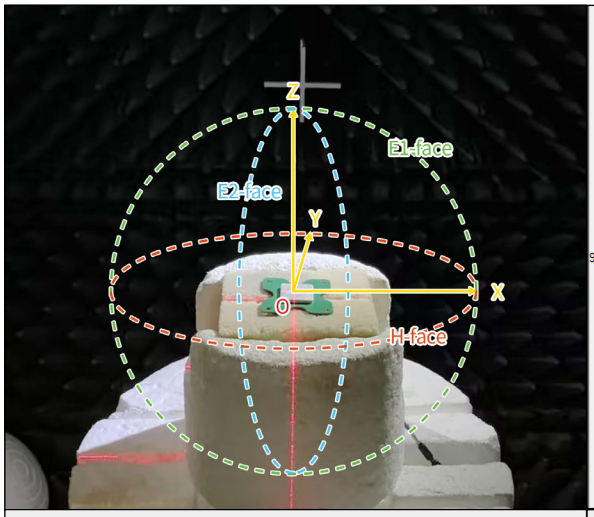
Passive Gain (dBi) and Total Efficiency (%)



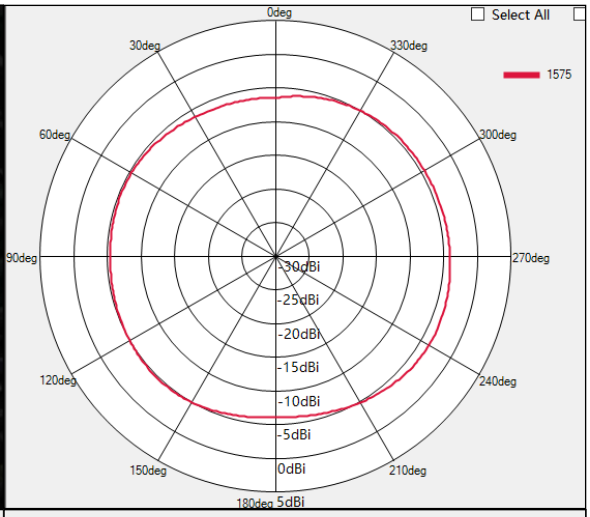
Freq (MHz)	Gain (dBi)	Efficiency (%)	Freq (MHz)	Gain (dBi)	Efficiency (%)
1550	0.78	44.65	**1605**	3.16	64.35
1555	1.52	50.64	**1610**	2.82	64.43
1560	2.28	55.12	**1615**	2.05	57.71
1565	2.87	60.28	**1620**	1.55	53.76
1570	3.17	64.34			
1575	3.49	66.29			
1580	3.91	67.75			
1585	4.16	68.56			
1590	3.94	68.37			
1595	3.69	68.26			
1600	3.65	69.38			

www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

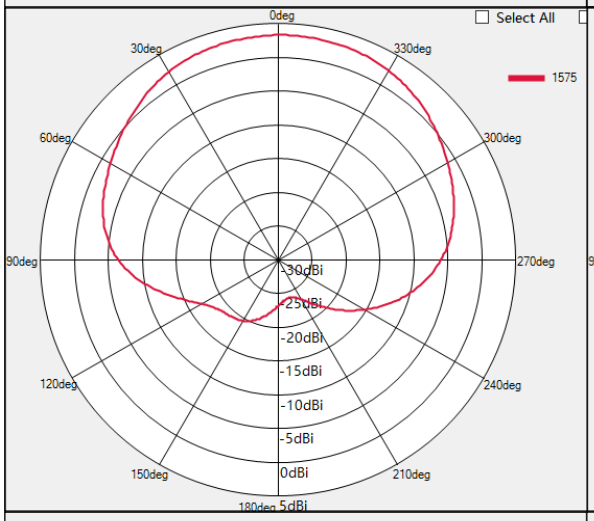
2D and 3D Radiation Patterns (1575 MHz)



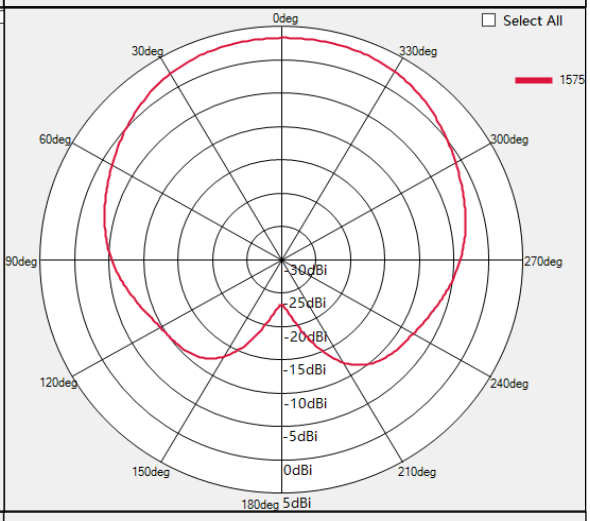
The Antenna in the Aboosty's Anechoic Chamber



θ = 90° Plane XY at 1575 MHz

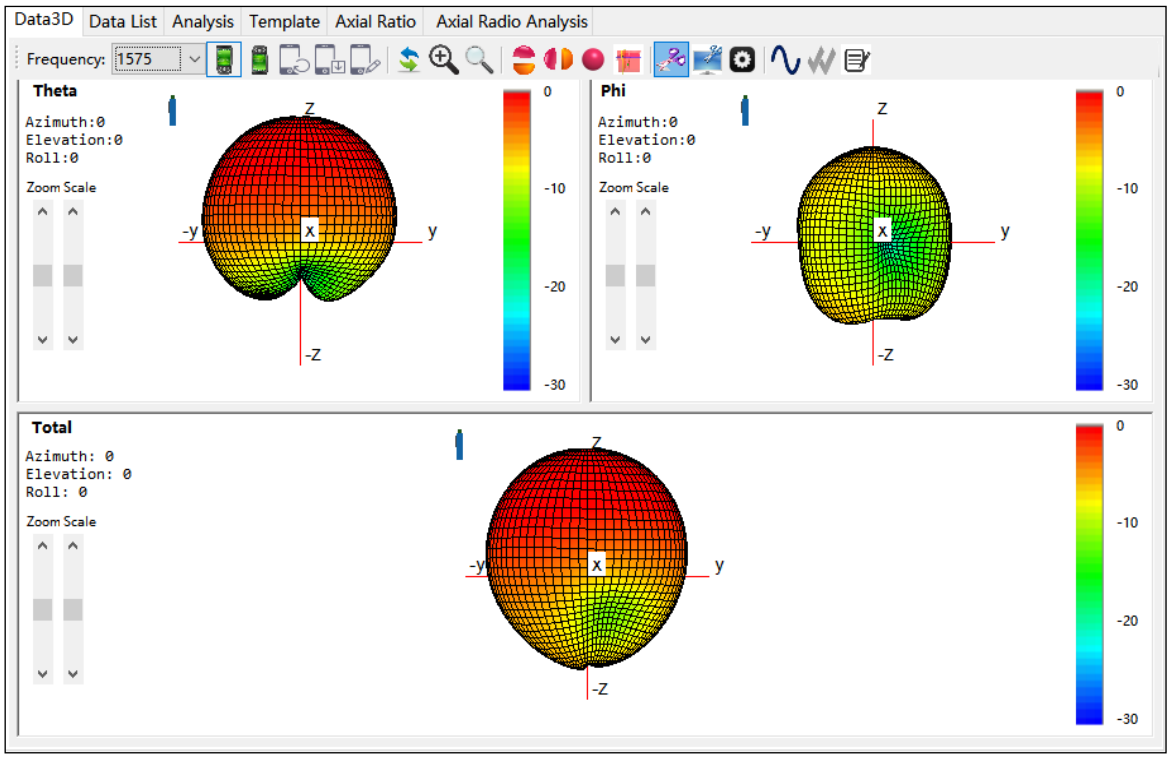


Φ = 0° Plane XZ at 1575 MHz



Φ = 90° Plane YZ at 1575 MHz

www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

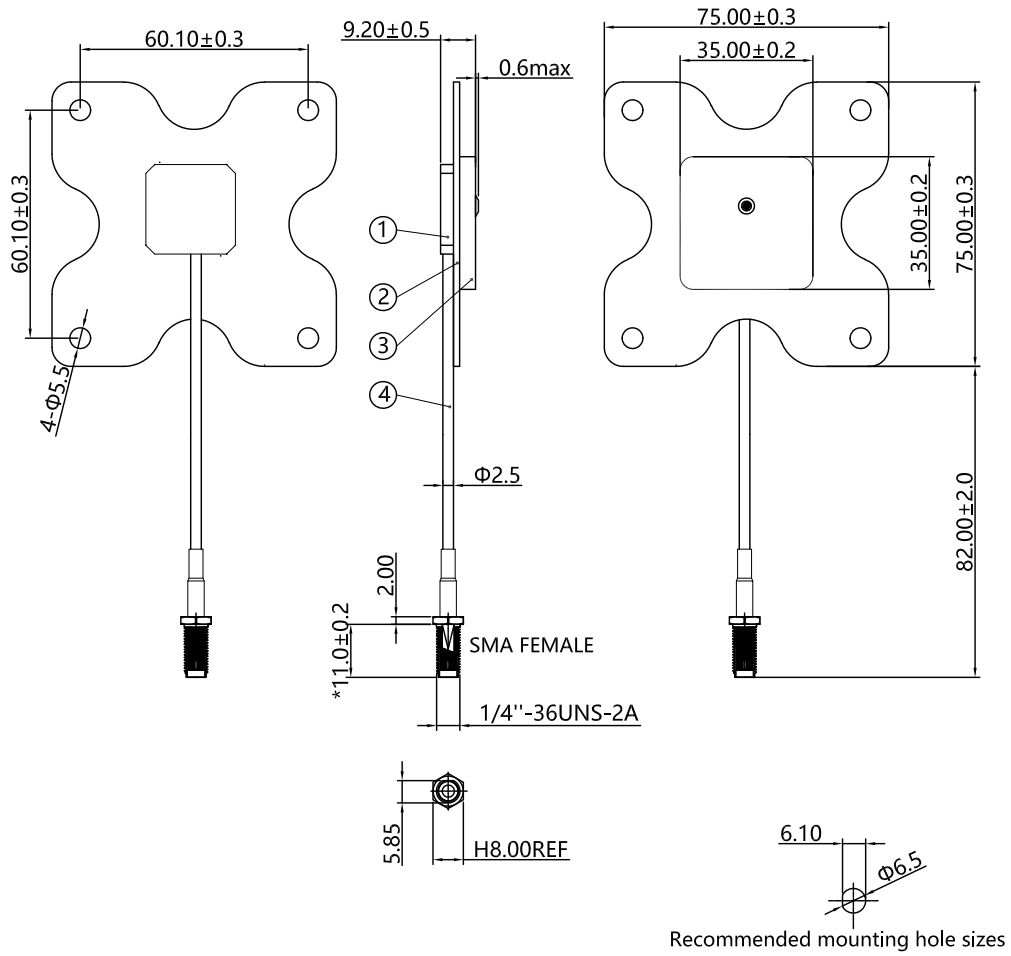


3D at 1575 MHz, Gain= 3.49 dBi

www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

MECHANICAL DIMENSIONS

REV.	DESCRIPTION	APPD.	DATE
A	INITIAL RELEASED	Chen	2025/12/03



No.	Name	Material	Color	Treatment	Amount	Remark
4	Coaxial Cable		Brown	Φ2.5*82.0mm	1	
3	ceramic		White	35.0*35.0*4.0mm	1	
2	PCBA		Green	75.0*75.0*1.6mm	1	
1	Shielding Can		Silvery	24.2*24.2*2.8mm	1	

DIMENSIONS ARE IN MILLIMETERS

UNLESS OTHERWISE SPECIFIED TOLERANCES
ANGLES = ±3°
UP TO 6 = ±0.1
6-40 = ±0.2
40-120 = ±0.6
120-315 = ±1.0
ABOVE 315 = ±1.6

CUS P/N:

PART NO.:

APPD: 陈建功

CHKD: 陈建功

DR: 董春花

ABOOSTY 爱比速

TITLE: EBD00301有源天线

DWG NO.:

SCALE	SHEET	REV.
1:1	1/1	V01

www.aboosty.com
Tel: +86-0755-86503881 Email: support@aboosty.com
410, Building A, Phoenix Zhigu, No. 50 Tiezai Rd, Xixiang Street
Ofiice, Bao'an District, Shenzhen, Guangdong Province, China

ABOOSTY 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

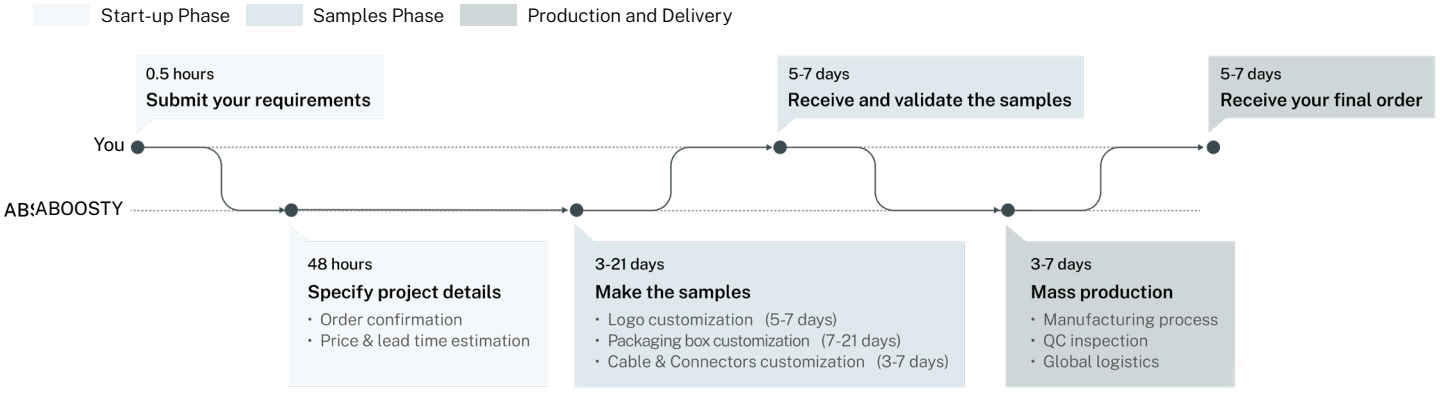
Professional team support & prompt reply within 24h

What We Provide

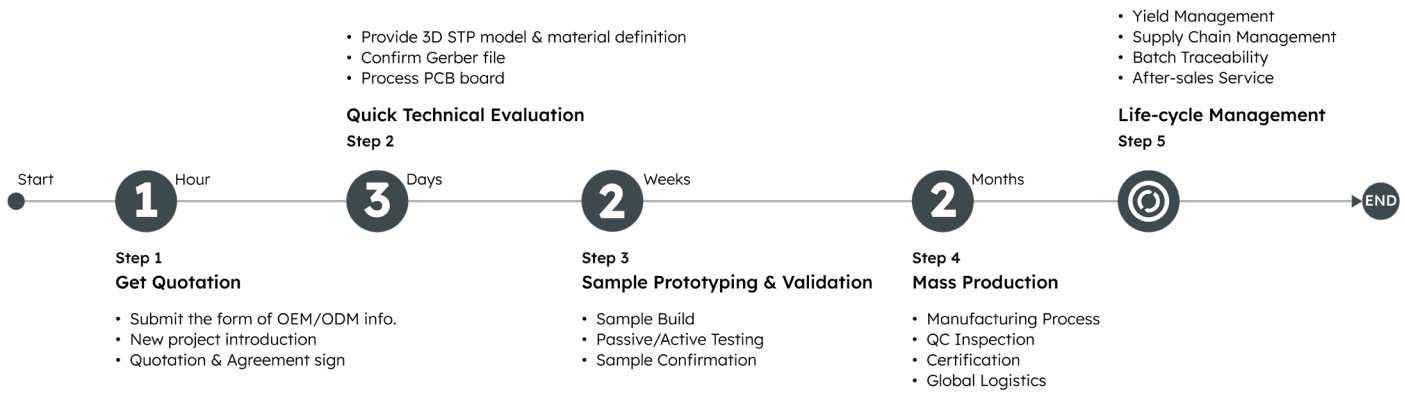
	Light Customization	Deep Customization
OEM/ODM Services	• Logo • Packaging • Cables & Connectors	• In-depth tailoring for specific applications • Functional enhancements • Environmental adaptations • Vertical certifications • ...

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

ABOOSTY

A Globally Leading Manufacturer and Supplier of Multi-band Combination Antennas

Contact us:

support@aboosty.com

+86-18038057443

Find us (Global):

www.aboosty.com

Search to follow us or to get technical support.

@Aboosty

Aboosty Antenna

Or click here to reach us directly.

国内官网: www.aboosty.cn

微信扫一扫以获取技术支持
Scan with WeChat App

微信扫一扫关注公众号
Scan with WeChat App