



Datasheet

Circularly Polarized Passive GPS Embedded Ceramic Patch Antenna

Model: AIGC049

PN: M04-0104550R0A

Description:

GPS/GLONASS Passive Patch Antenna

Operating Frequency: 1572-1578 MHz

Features:

Ceramic Patch Element

Dimensions: 10 x 10 x 4mm

Tuned for 15 x 15 mm Ground Plane

Low Axial Ratio

Adhesive Mount

RoHS Compliant



ABOOSTY



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

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FEATURES & BENEFITS

- 10x10x4mm Embedded Ceramic Patch Element
- Miniaturized, Multi-system Compatible
- Low Axial Ratio
- Adhesive Mount
- RoHS Compliant
- Covering Bands: GPS (L1) / Galileo (E1)

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 Image

ORDER INFORMATION

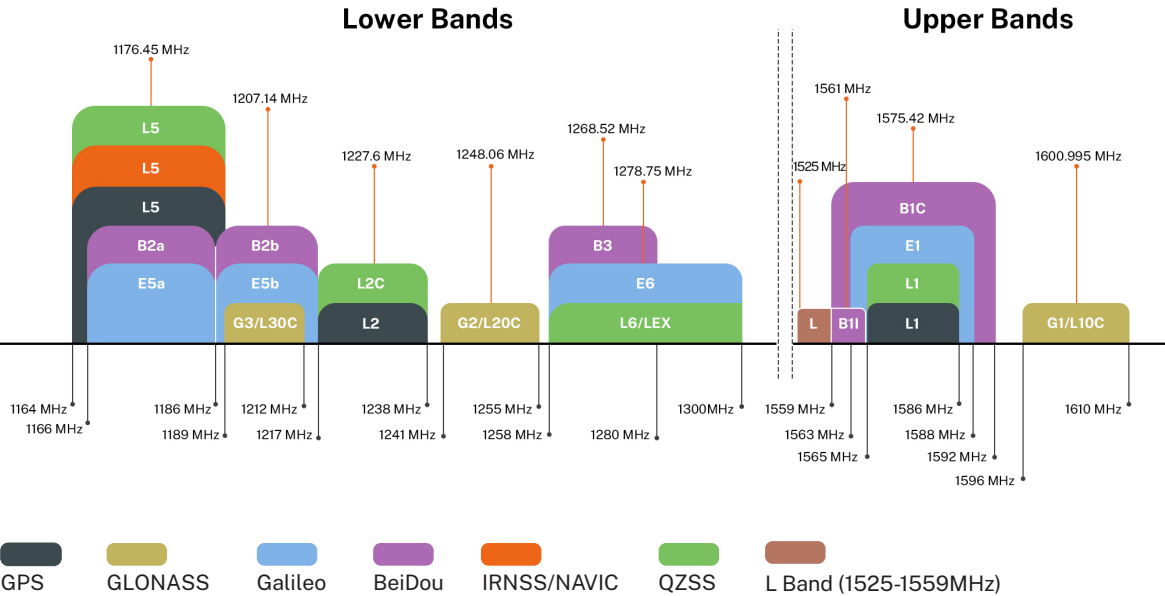
Product Name	Circularly Polarized Passive GPS Embedded Ceramic Patch Antenna
Model	AIGC049
Part Number	M04-0104550R0A
Dimensions	10 x 10 x 4 mm
Weight	2g
Mounting	Internal/Embedded/Adhesive Mount
MOQ	500 pcs
Custom Options	Logo, Packaging, Cable and Connectors



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), EGNOS(E1/E5a), SDCM(G1/G2/G3), SNAS(B1,B2a), GAGAN(L1/L5), QZSS(L1/L5), KAZZ(L1/L5).





REFERENCE GUIDE

Antenna	
Frequency	1575±3 MHz
Bandwidth	6MHz
VSWR	2.0: 1
Peak Gain (dBi)	-4 (15×15mm ground plane)
Axial Ratio (dB)	<6
Polarization	RHCP
Radiation Pattern	Directional
Input Impedance	50 Ω

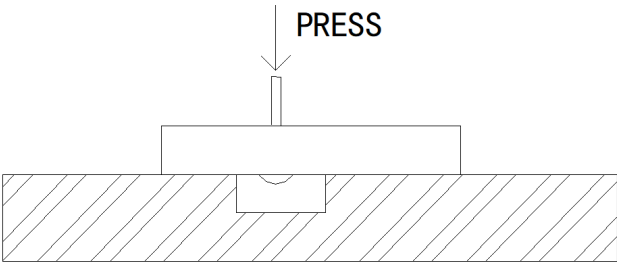
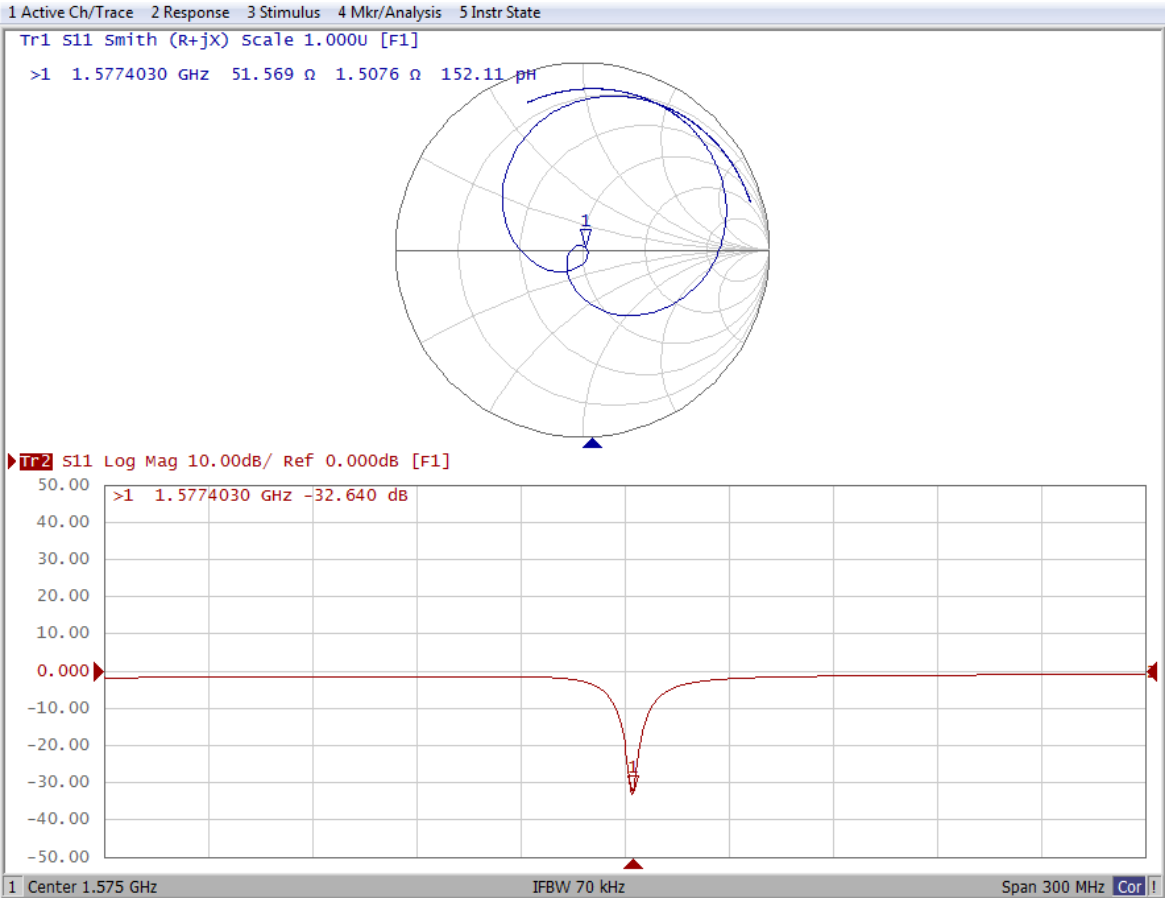
Environmental				
Operating Temperature	-40°C to +85°C			
Storage Temperature	-10°C to +40°C			
Relative Humidity	≤70% RH			
Vibration	Wave Form: Random Vibration			
	Test Time: 30min/Axis			
	Direction: X, Y, Z Axis			
	PSD Break Points for 9.8 RMS (m/s ²)	Frequency (Hz)	50	300
		Acceleration ((m/s ²) ² /Hz)	0.38416	0.38416
RoHS Compliant	Yes			
All data were measured with a 15 x 15 mm ground plane. Application data might vary.				



ELECTRICAL PERFORMANCE

⦿ **Note**
All data displayed in "ELECTRICAL PERFORMANCE" were measured with a 15 x15 mm ground plane.

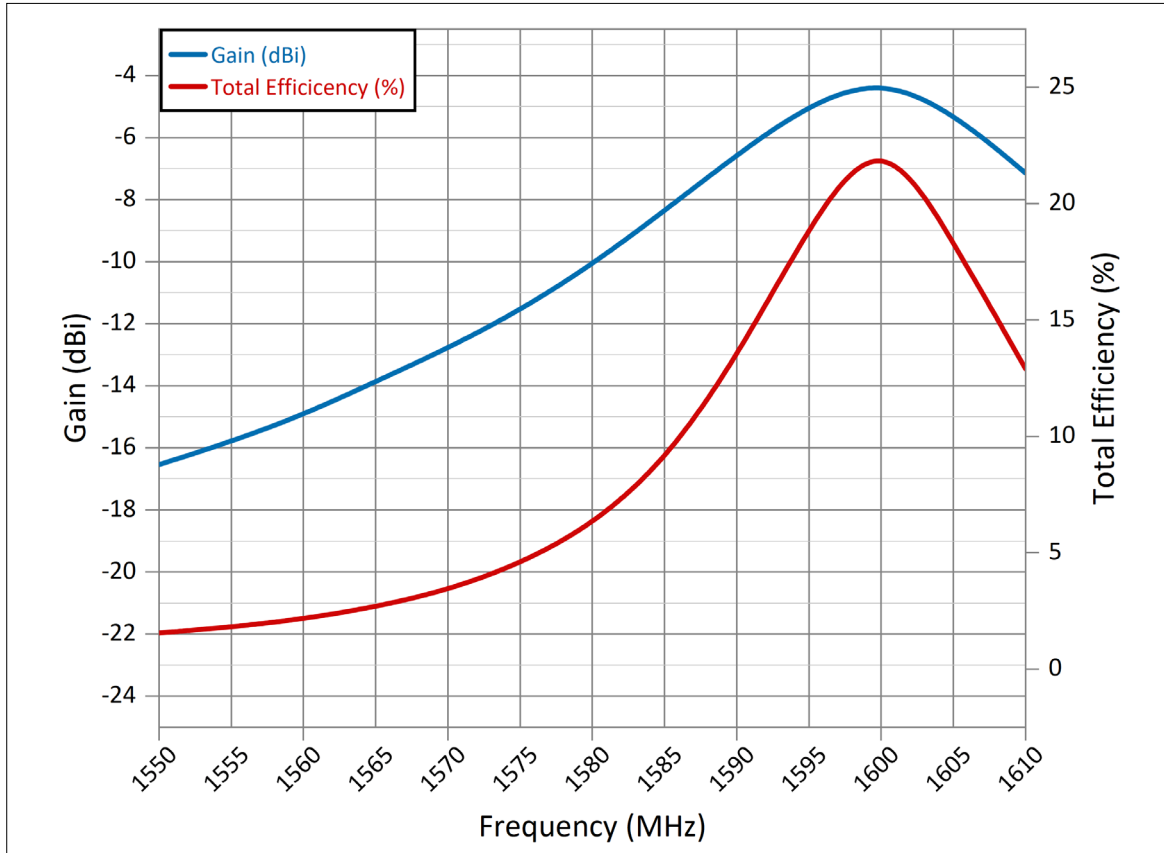
S11



Item	Specification After Test (MHz)
Center Frequency Change	±2.0
-10dB Bandwidth Change	±2.0



Passive Gain (dBi) and Total Efficiency (%)



Freq (MHz)	Gain (dBi)	Efficiency (%)	Freq (MHz)	Gain (dBi)	Efficiency (%)
1550	-16.53	1.56	1600	-4.08	23.38
1555	-15.79	1.81	1605	-5.19	18.36
1560	-14.93	2.16	1610	-7.14	12.9
1565	-13.85	2.68	1615	-6.78	12.99
1570	-12.78	3.4	1620	-5.53	18.96
1575	-11.56	4.53	1625	-8.32	10.41
1580	-10.08	6.19	1630	-10.4	5.96
1585	-8.35	8.91	1635	-12.2	3.82
1590	-6.54	13.37	1640	-13.48	2.76
1595	-4.91	19.07	1645	-14.86	1.99
1555	-6.58	17.06	1650	-15.82	1.59

The figure displays the radiation pattern of the antenna in the Aboosty's Anechoic Chamber. It includes a photograph of the antenna setup and four polar plots showing the radiation pattern in different planes at 1600 MHz.

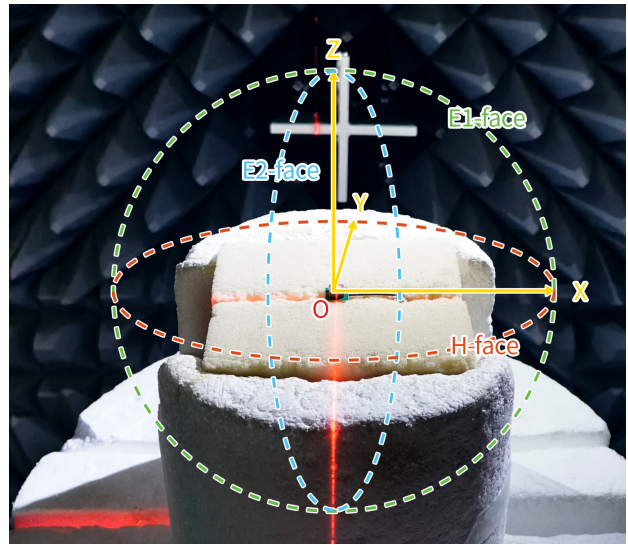
Top Left: Antenna Setup
 The antenna is shown in the Aboosty's Anechoic Chamber. The coordinate system (X, Y, Z) is defined, and the faces of the antenna are labeled: E1-face, E2-face, and H-face.

Top Right: Radiation Pattern in the XY Plane at 1600 MHz ($\theta = 90^\circ$)
 The plot shows the radiation pattern in the XY plane. The gain is measured in dBi, ranging from 0 dBi to -30 dBi. The pattern shows a main lobe and side lobes.

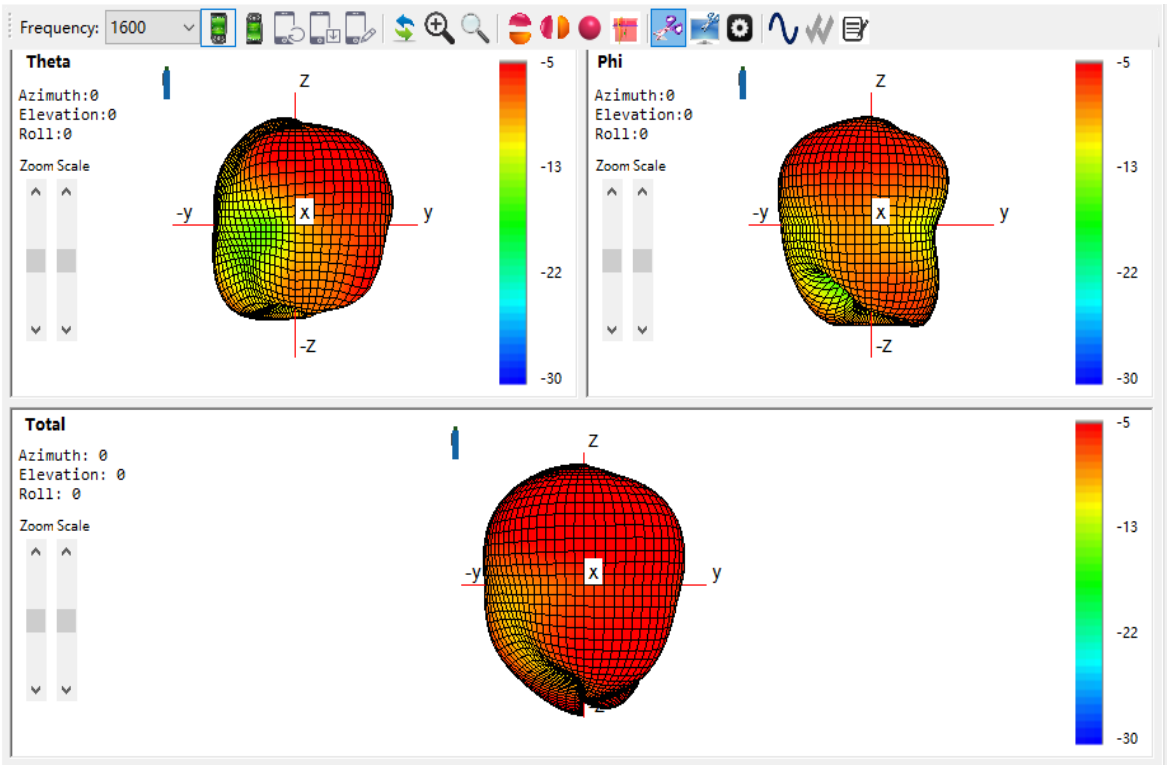
Bottom Left: Radiation Pattern in the XZ Plane at 1600 MHz ($\Phi = 0^\circ$)
 The plot shows the radiation pattern in the XZ plane. The gain is measured in dBi, ranging from 0 dBi to -30 dBi. The pattern shows a main lobe and side lobes.

Bottom Right: Radiation Pattern in the YZ Plane at 1600 MHz ($\Phi = 90^\circ$)
 The plot shows the radiation pattern in the YZ plane. The gain is measured in dBi, ranging from 0 dBi to -30 dBi. The pattern shows a main lobe and side lobes.

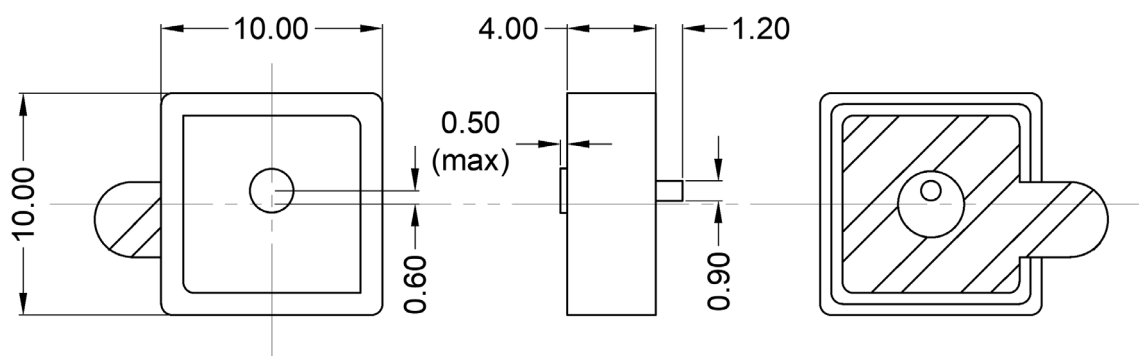
Active 3D Radiation Patterns (1600 MHz)



The Antenna in the Aboosty's Anechoic Chamber



MECHANICAL DIMENSIONS



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



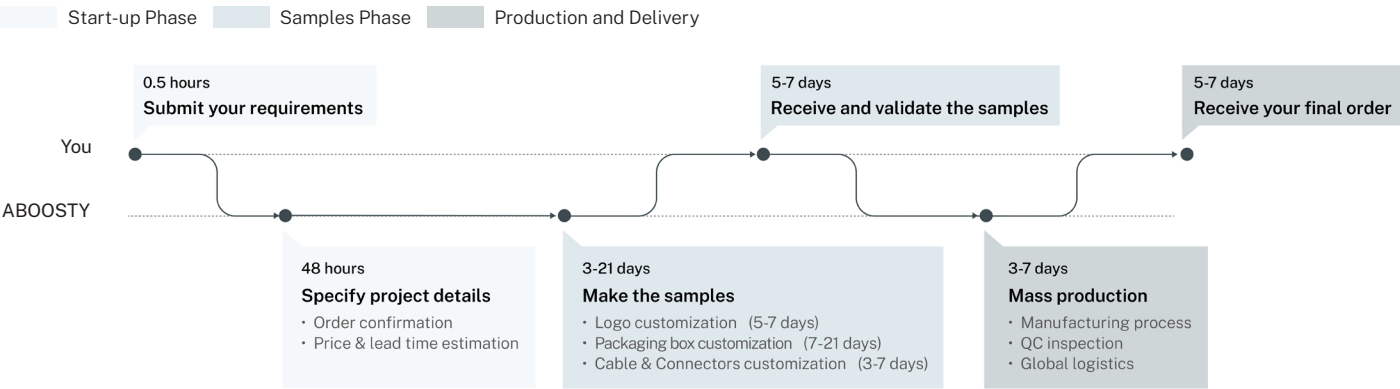
Professional team support & prompt reply within 24h

What We Provide

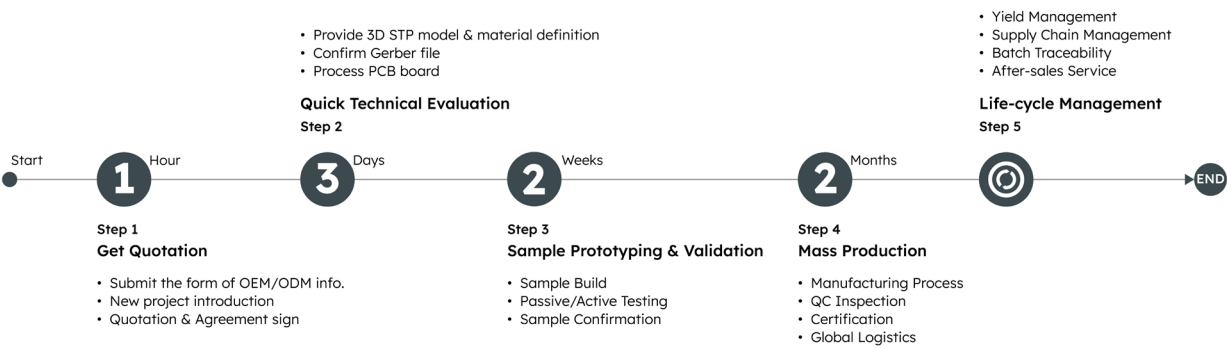
OEM/ODM Services	Light Customization	Deep Customization
	• Logo • Packaging • Cables & Connectors	• In-depth tailoring for specific applications • Functional enhancements • Environmental adaptations • Vertical certifications • ...

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

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