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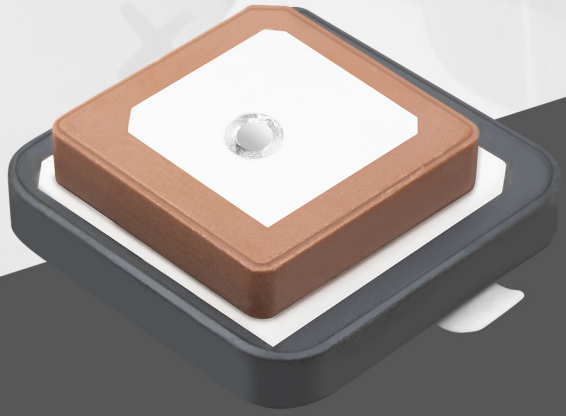

Datasheet

Circularly Polarized Passive GPS Embedded Ceramic Patch Antenna

Model: AIGC041

Description:

GPS/GLONASS/BeiDou Passive Patch Antenna

Operating Frequency：1171-1181 MHz&1570-1580 MHz

Features:

Ceramic Patch Element

Dimensions: 25x25x4+18x18x4mm

Tuned for 26 × 26 mm Ground Plane

Low Axial Ratio

Adhesive Mount

RoHS Compliant

ABOOSTY

Table of Contents

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FEATURES & BENEFITS

- 25x25x4+18x18x4mm Embedded Ceramic Patch Element
- Miniaturized, Multi-system Compatible
- Low Axial Ratio
- Ground Plane Dependent
- RoHS Compliant
- Covering Bands: GPS (L1) / GLONASS (G1)/ BeiDou (B1))

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 AND MOUNTING

ORDER INFORMATION

Product Name	Circularly Polarized Passive GPS Embedded Ceramic Stacked Patch Antenna
Model	AIGC041
Dimensions	25x25x4+18x18x4mm
Weight	17.6 g
Mounting	Internal/Embedded/Adhesive Mount
MOQ	250 pcs
Custom Options	Logo, Packaging, Cable and Connectors

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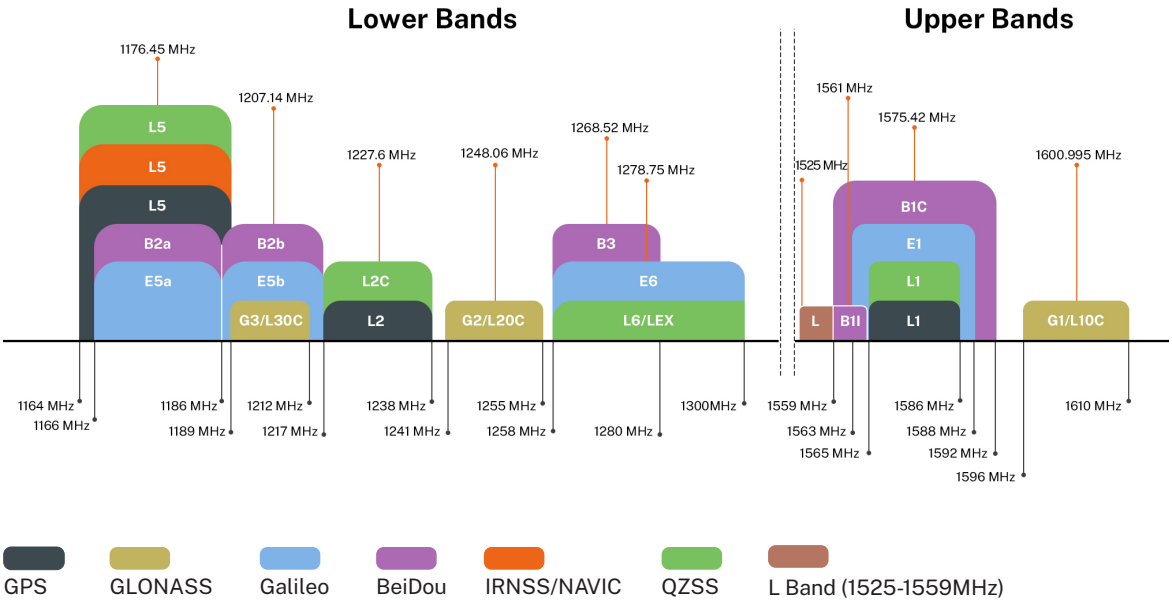
GNSS FREQUENCY BANDS

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).



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REFERENCE GUIDE

Antenna		
Center Frequency	**1176±5MHz**	**1575±5MHz**
Frequency Band	L5	L1G1
Return Loss (dB)	≥ 10	≥ 10
Peak Gain (dBi)	-1.9	-0.9
Axial Ratio (dB)	<3	
Polarization	RHCP	
Radiation Pattern	Directional	
Input Impedance	50 Ω	

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 a 26 x 26 mm ground plane. Application data might vary.

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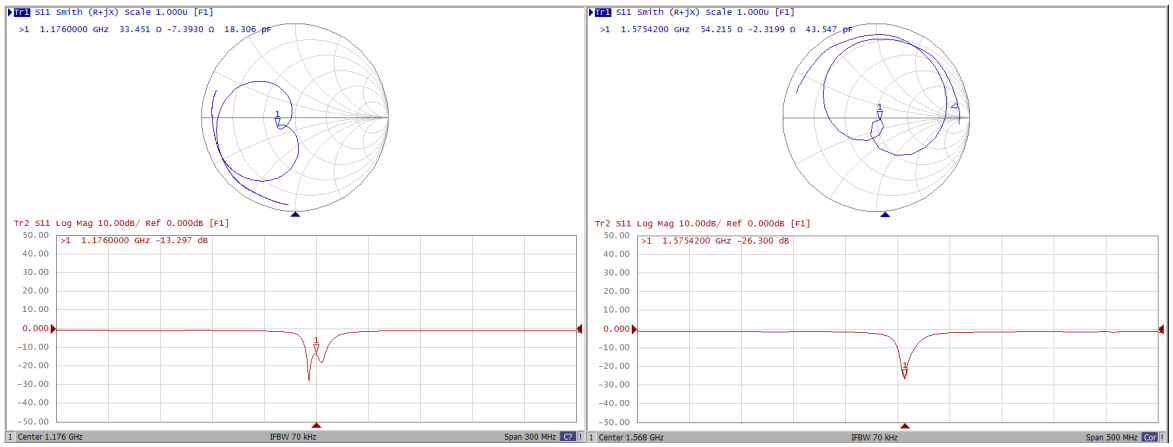
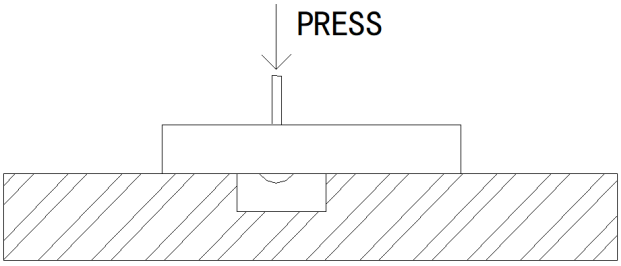
ELECTRICAL PERFORMANCE

◎ Note

All data displayed in "ELECTRICAL PERFORMANCE" were measured with an 26 ×26 mm ground plane.

S11





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

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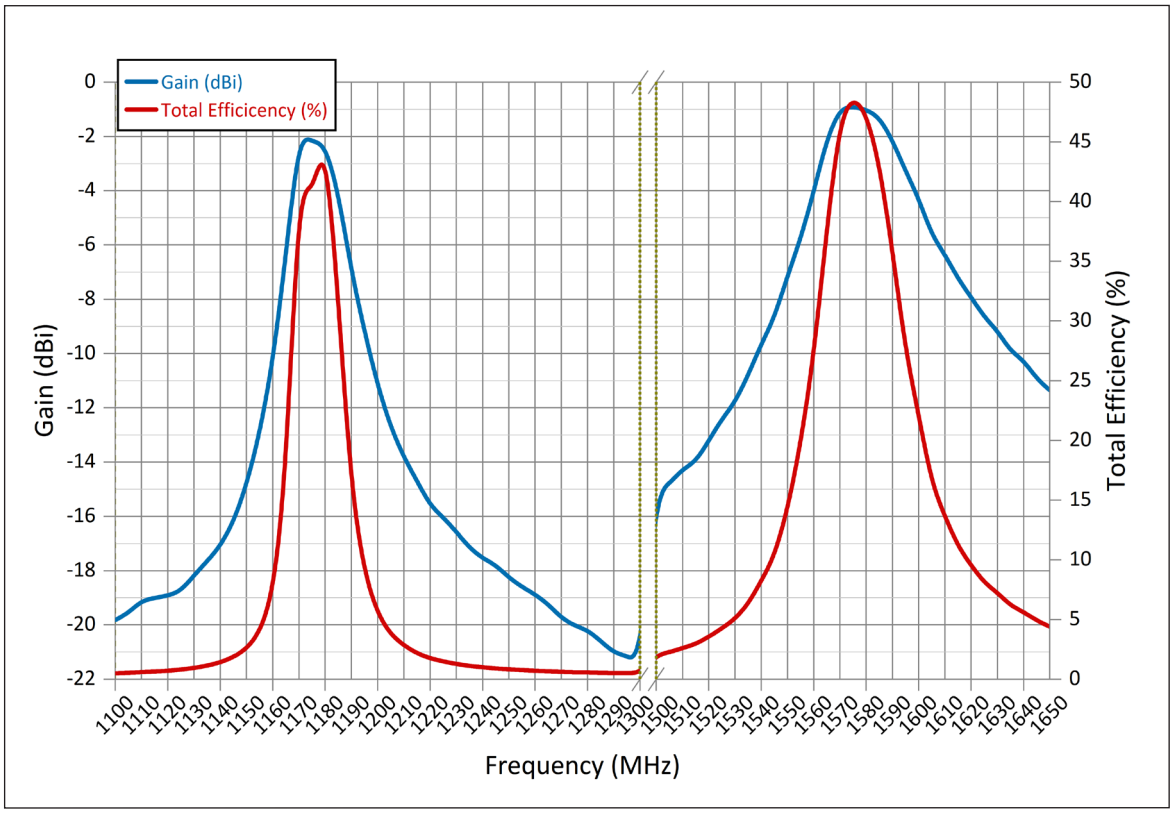
Passive Gain (dBi) and Total Efficiency (%)



Freq (MHz)	Gain (dBi)	Effi. (%)	Freq (MHz)	Gain (dBi)	Effi. (%)	Freq (MHz)	Gain (dBi)	Effi. (%)	Freq (MHz)	Gain (dBi)	Effi. (%)
1100	-19.82	0.49	1190	-6.95	15.77	1280	-20.19	0.57	1565	-2.11	37.65
1105	-19.56	0.54	1195	-9.19	8.83	1285	-20.59	0.53	1570	-0.95	46.91
1110	-19.11	0.59	1200	-11.19	5.45	1290	-21.03	0.5	1575	-0.9	48.8
1115	-19.01	0.63	1205	-12.71	3.75	1295	-21.14	0.5	1580	-1.01	47.45
1120	-18.92	0.71	1210	-13.83	2.82	1300	-21.39	0.49	1585	-1.28	43.23
1125	-18.75	0.8	1215	-14.68	2.16	1500	-15.16	2.01	1590	-2.15	35.84
1130	-18.17	0.94	1220	-15.6	1.74	1505	-14.79	2.25	1595	-3.27	27.54
1135	-17.66	1.13	1225	-16.04	1.48	1510	-14.25	2.61	1600	-4.29	22.09
1140	-17.1	1.41	1230	-16.56	1.27	1515	-14	2.94	1605	-5.63	16.4
1145	-16.21	1.85	1235	-17.16	1.11	1520	-13.2	3.56	1610	-6.34	13.66
1150	-14.86	2.54	1240	-17.55	0.99	1525	-12.42	4.25	1615	-7.25	11.11
1155	-12.95	3.9	1245	-17.79	0.9	1530	-11.8	5.05	1620	-7.92	9.55
1160	-10.31	7.09	1250	-18.26	0.82	1535	-10.79	6.3	1625	-8.66	8.08
1165	-6.43	16.57	1255	-18.59	0.76	1540	-9.66	8.23	1630	-9.16	7.26
1170	-1.91	41.96	1260	-18.87	0.7	1545	-8.68	10.28	1635	-9.91	6.17
1175	-2.19	40.21	1265	-19.24	0.66	1550	-7.12	14.24	1640	-10.25	5.64
1180	-2.26	45.9	1270	-19.74	0.61	1555	-5.78	19.67	1645	-10.93	4.92
1185	-4.1	31.57	1275	-20.03	0.58	1560	-4.03	27.07	1650	-11.35	4.41

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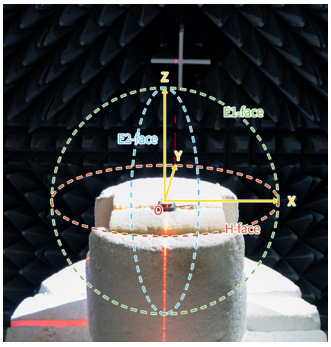
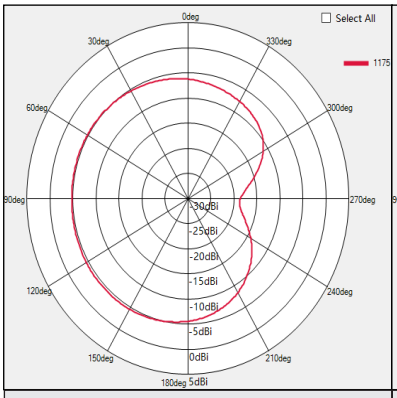
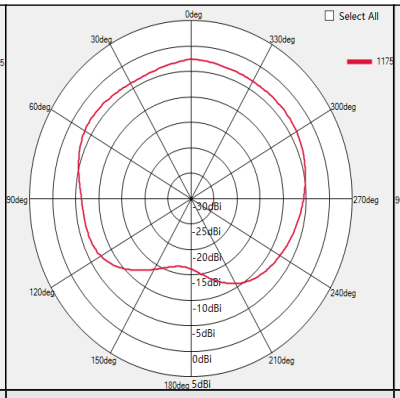
2D Radiation Patterns (L1 and L5 Band)



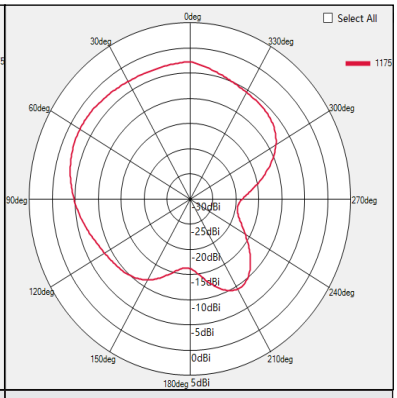
The Antenna in the Aboosty's Anechoic Chamber



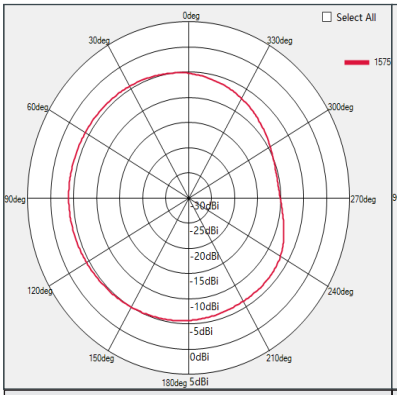
θ = 90° Plane XY at 1175 MHz



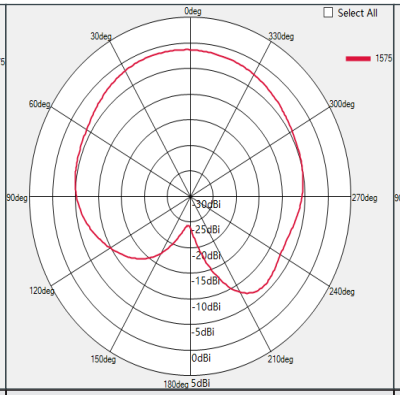
Φ = 0° Plane XZ at 1175 MHz



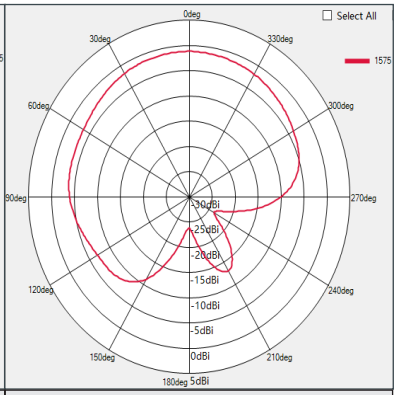
Φ = 90° Plane YZ at 1175 MHz



θ = 90° Plane XY at 1575 MHz



Φ = 0° Plane XZ at 1575 MHz



Φ = 90° Plane YZ at 1575 MHz

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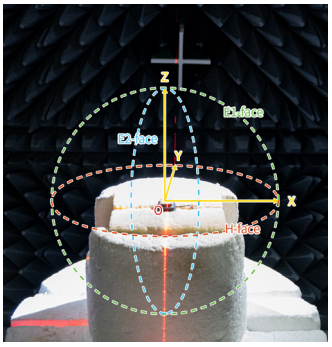
3D Radiation Patterns (L1 and L5 Band)



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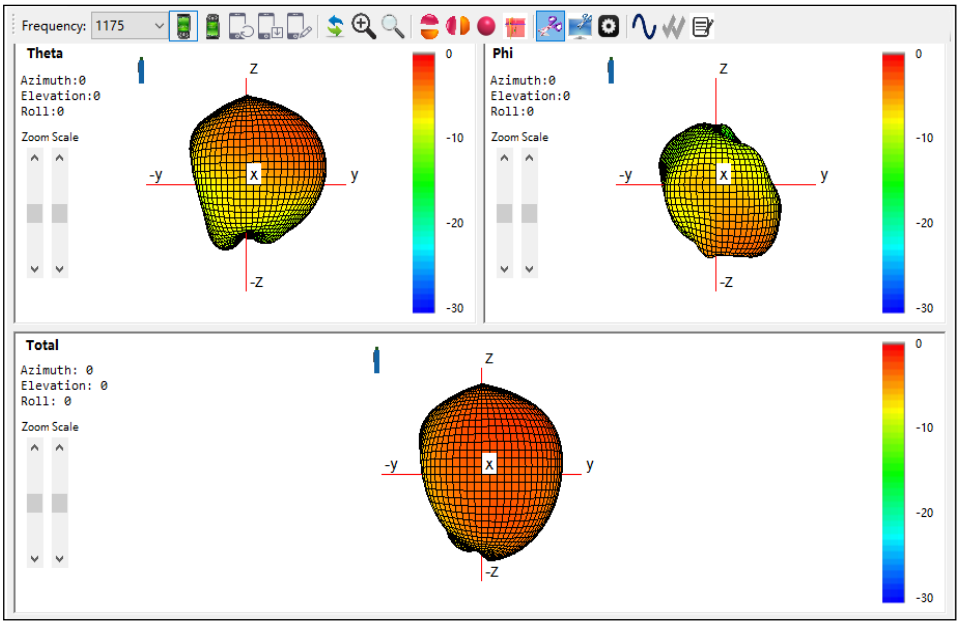
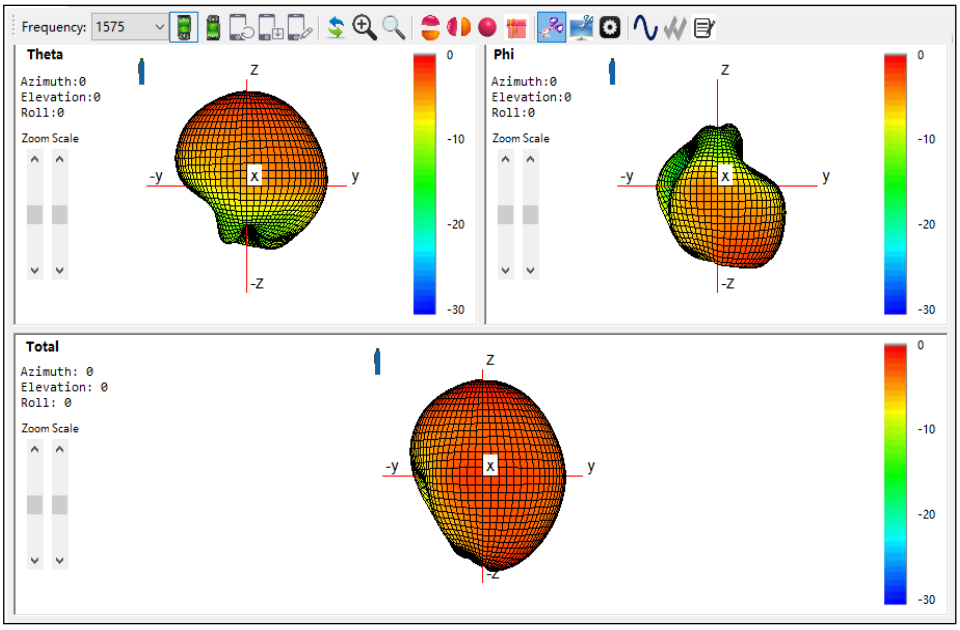


3D at 1175 MHz



3D at 1575 MHz

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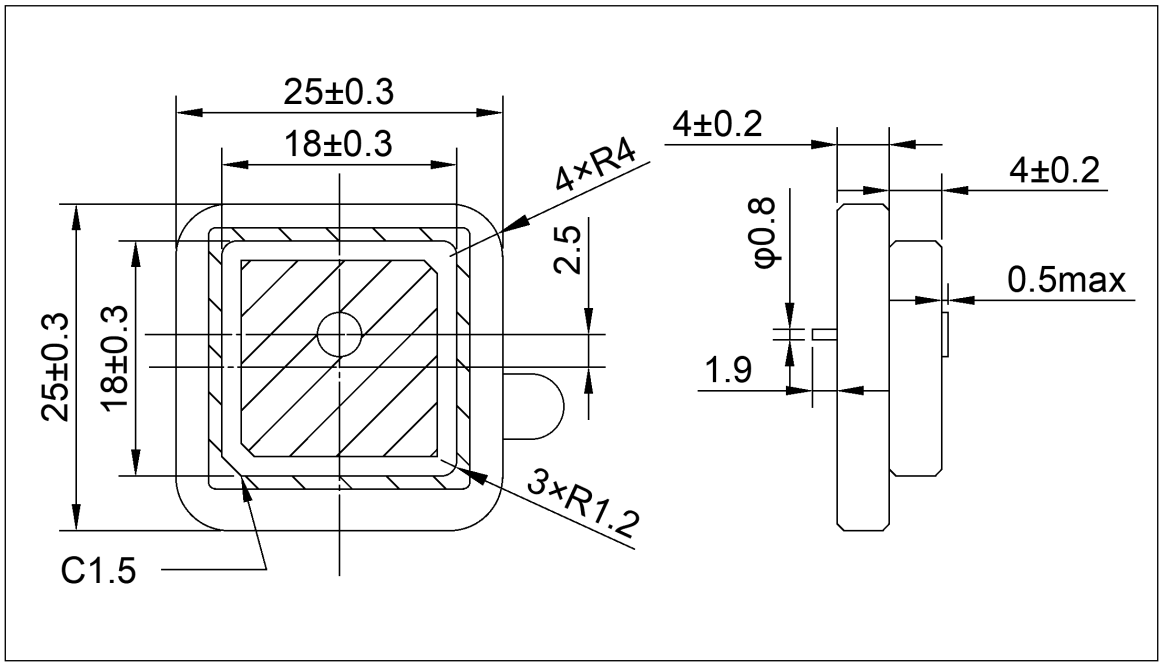
MECHANICAL DIMENSIONS



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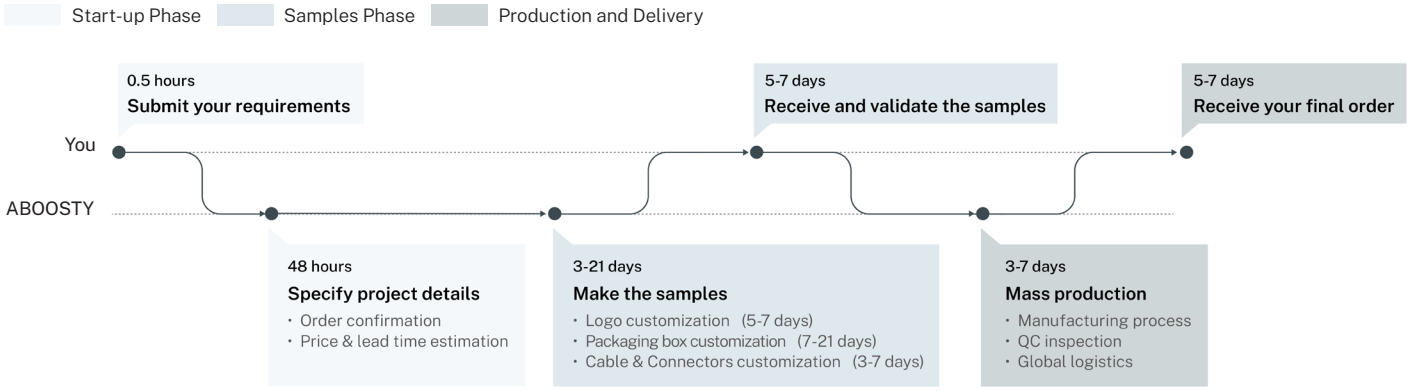
- 10+ years in antenna R&D, production, and OEM/ODM
- MES system supported factory; 50M+ units annual output capacity
- Factory directly competitive price
- Quick price and lead time estimate
- Innovative and patented design solutions
- Professional team support & prompt reply within 24h

What We Provide

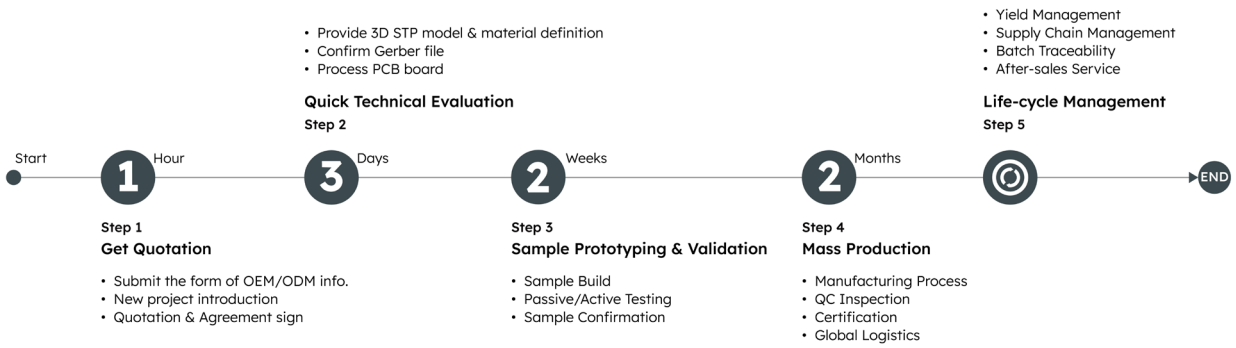
	Light Customization	Deep Customization
OEM/ODM Services	• Logo • Packaging • Cables & Connectors	• In-depth tailoring for specific applications • Functional enhancements • Environmental adaptations • Vertical certifications • ...

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.

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