

Datasheet

Circularly Polarized Active GPS Ceramic Antenna

Model:	AIGC022	AIGC023
PN:	M04-0103730ROA	M04-0103750ROA
Cable Length:	150 mm	100 mm

Description:

Active B1/L1/G1 Band BDS/GPS/GLONASS Antenna
Operating Frequency: 1550-1605 MHz

Features:

Ceramic Patch Element
Cable: 100/150 mm RF 1.13
Connector: IPEX 1
Dimensions: 20 x 20 x 4 mm
RoHS & Reach Compliant





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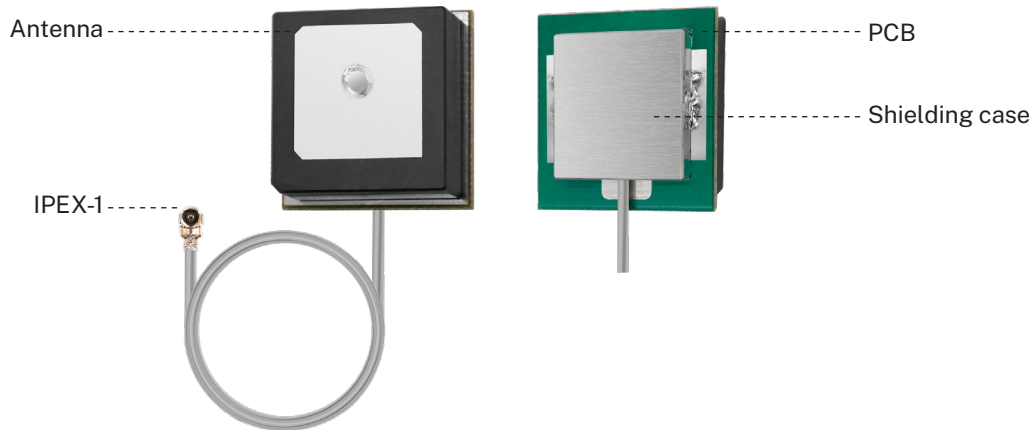


FEATURES & BENEFITS

- 20x20x4 mm embedded ceramic patch antenna
- 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
- BeiDou B1 Band / GPS L1 Band / GLONASS G1 Band



ORDER INFORMATION

Product Name	Circularly Polarized Active GPS Ceramic Antenna	
Dimensions	20 x 20 x 4 mm	
Weight	8.1 g	
Mounting	Internal/Embedded/Adhesive mount	
Model	AIGC022	AIGC023
Part Number	M04-0103730R0A	M04-0103750R0A
Cable Length	150 mm	100 mm
Cable and Connector	Default IPEX 1, RF 1.13 (Ø 1.13 mm) coaxial cable, customizable.	



MECHANICAL DIMENSIONS

REV.	DESCRIPTION	APPD.	DATE
A	INITIAL RELEASED	Chen	2024/07/16

DETAIL A
SCALE 4:1

4	CABLE ASSY	/	Black	Φ1.13Coaxial Line, 1.13 RF 1	1	
3	Ceramic Patch		Black	20.0*20.0*4.0mm	1	
2	PCBA		Green	22.0*22.0*0.6mm	1	
1	Shielding Case		Silvery	16.0*16.0*2.0mm	1	
No.	Name	Material	Color	Treatment	Amount	Remark

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.: M04-0103730R0A				
	APPD: 陈建坊		DWG NO.:		
	CHKD: 陈建坊				
	DR: 董有夜				
		1:1		1/1	V01

REV.	DESCRIPTION	APPD.	DATE
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DETAIL A
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	M04-0103750R0A		TITLE:								
			20*20*4 Active GPS Ceramic Antenna								
		APPD: 陈建坊		DWG NO.:							
		CHKD: 陈建坊		<table border="1" style="font-size: small;"> <thead> <tr> <th>SCALE</th> <th>SHEET</th> <th>REV.</th> </tr> </thead> <tbody> <tr> <td>1:1</td> <td>1/1</td> <td>V01</td> </tr> </tbody> </table>		SCALE	SHEET	REV.	1:1	1/1	V01
SCALE	SHEET	REV.									
1:1	1/1	V01									
		DR: 董有夜									



REFERENCE GUIDE

Antenna			
Frequency	1550-1605 MHz		
Technical Features	BeiDou	GPS	GLONASS
	1561 ± 2 MHz	1575.42 ± 2 MHz	1602 ± 5 MHz
Frequency Bands	B1 Band	L1 Band	G1 Band
Axial Ratio (AR)	<1.5 dB		
Input Impedance	50 Ω		
Polarization	RHCP		
Radiation Pattern	Directional		
LNA			
Active Gain	23.28 dB	26.04 dB	27.88 dB
LNA Gain	24.24 dB	23.72 dB	24.05 dB
Noise Figure	1.5 Max		
DC Voltage	3.3 ± 0.3 V		
DC Current	12 ± 2 mA (@3.0 V)		
Mechanical			
Antenna Dimension	20 x 20 x 4 mm		
Antenna Material	Dielectric ceramics		
Shielding Case Dimension	16 x 16 x 2.0 mm		
Shielding Case Material	Tin		
PCB Material	FR4		
All data were measured with an 100-mm-long RF 1.13 cable. Application data might vary.			



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 ²)	Frequency (Hz)	50
	Acceleration ((m/s ²) ² /Hz)	0.38416	0.38416
Antenna Certificaton			
RoHS Approval	Compliant [2011/65/EU&2015/863]		
REACH Approval	Conform or declared [(EC)1907/2006]		
Hazardous material regulation conformance: A certificate of conformance is available upon request. Feel free to consult us for details.			

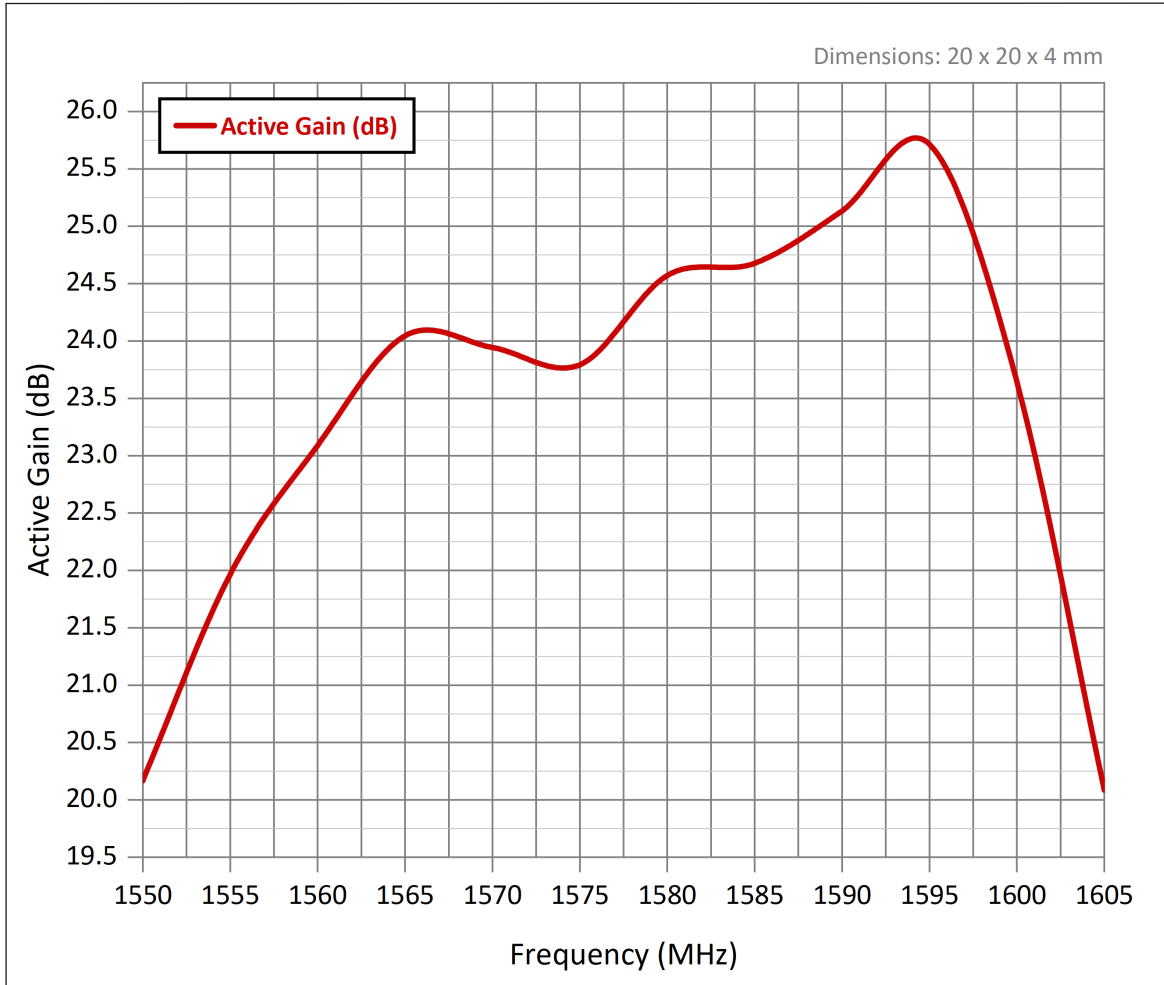


ELECTRICAL PERFORMANCE

© Note

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

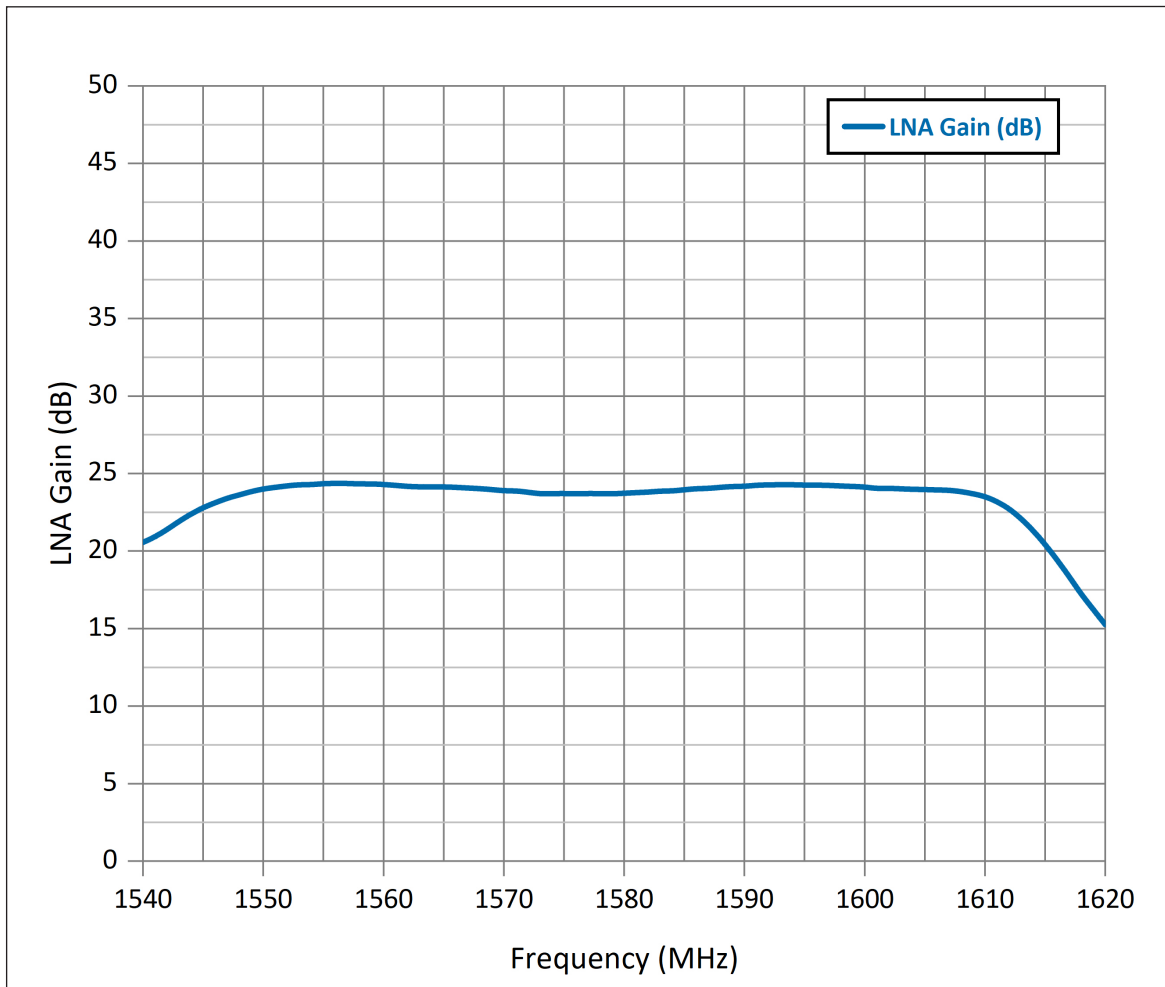
Active Gain (dB)



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



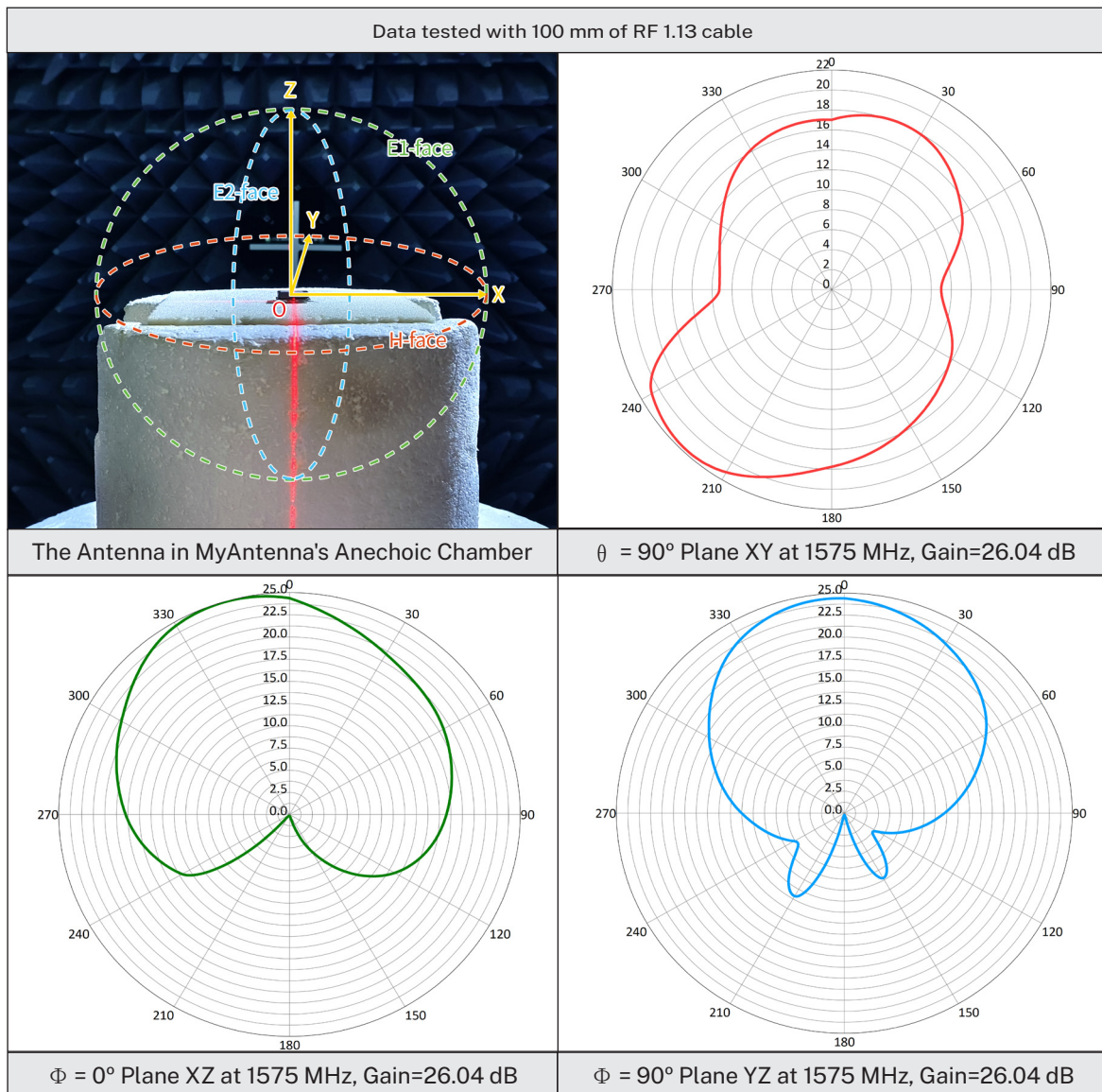
LNA Gain (dB)



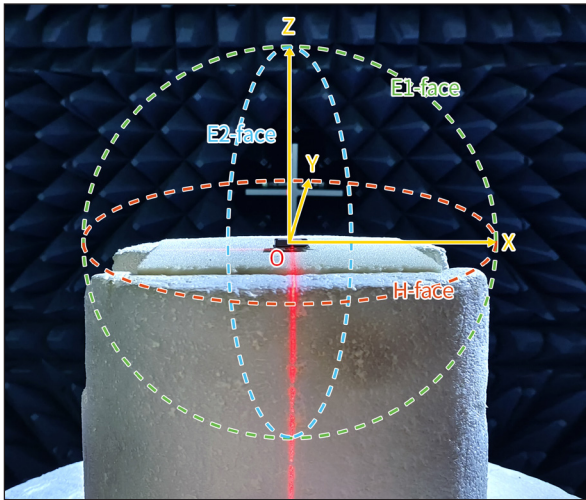
(Note: Data were tested with 100 mm of RF 1.13 cable.)

Antenna Data					
Freq (MHz)	Active Gain (dB)	LNA Gain (dB)	Freq (MHz)	Active Gain (dB)	LNA Gain (dB)
1550	20.33	24.00	1580	26.57	23.72
1555	22.26	24.35	1585	26.84	23.95
1560	23.28	24.29	1590	26.95	24.17
1565	24.21	24.14	1595	26.78	24.25
1570	25.18	23.88	1600	26.65	24.14
1575	26.04	23.72	1605	27.88	23.97

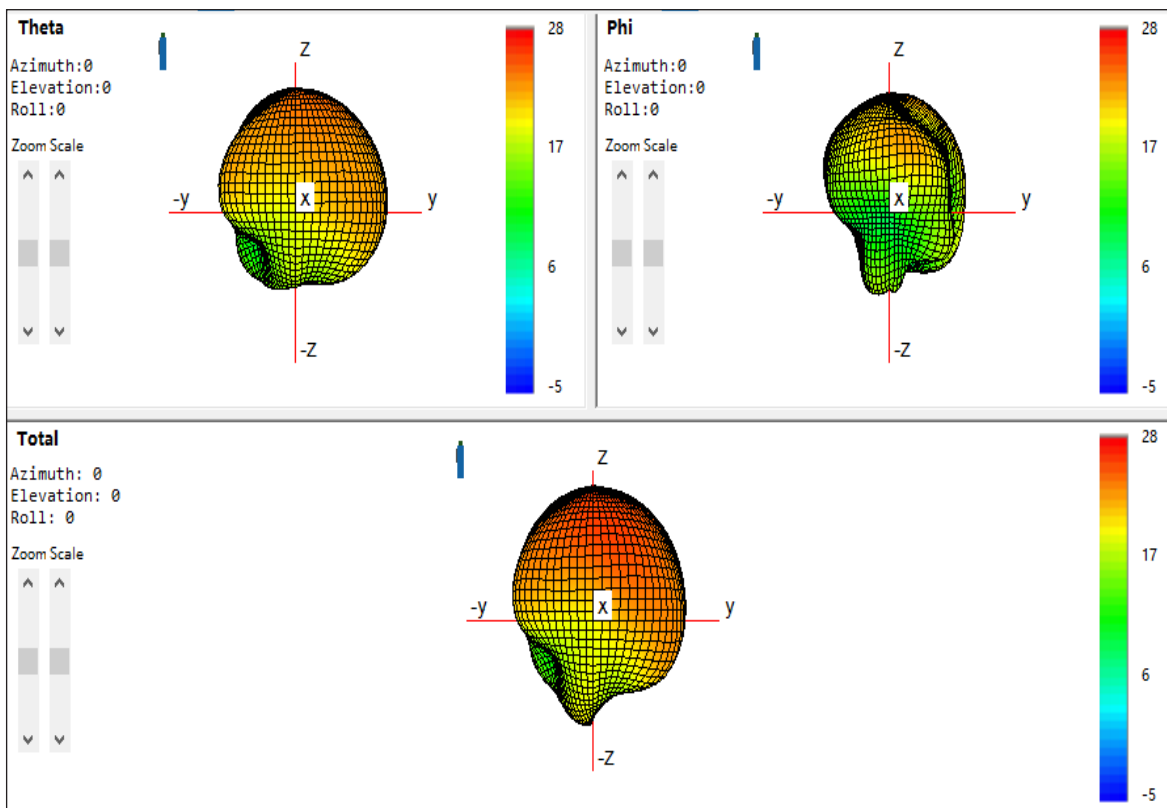
Active 2D Radiation Patterns (1550-1605 MHz)



Active 3D Radiation Patterns (1550-1605 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

About ABOOSTY



10+ years in antenna R&D, production, and OEM/ODM



House of Aboosty: 450,000 units annual output capacity



Factory directly competitive price



Industry-leading quality levels



Professional team-work & support



Quick price and lead time estimation

Why Choose ABOOSTY



Innovative and patented design solutions



Full terminal devices anechoic chamber test



Co-location with its custom



Competitive price



Strict inspection



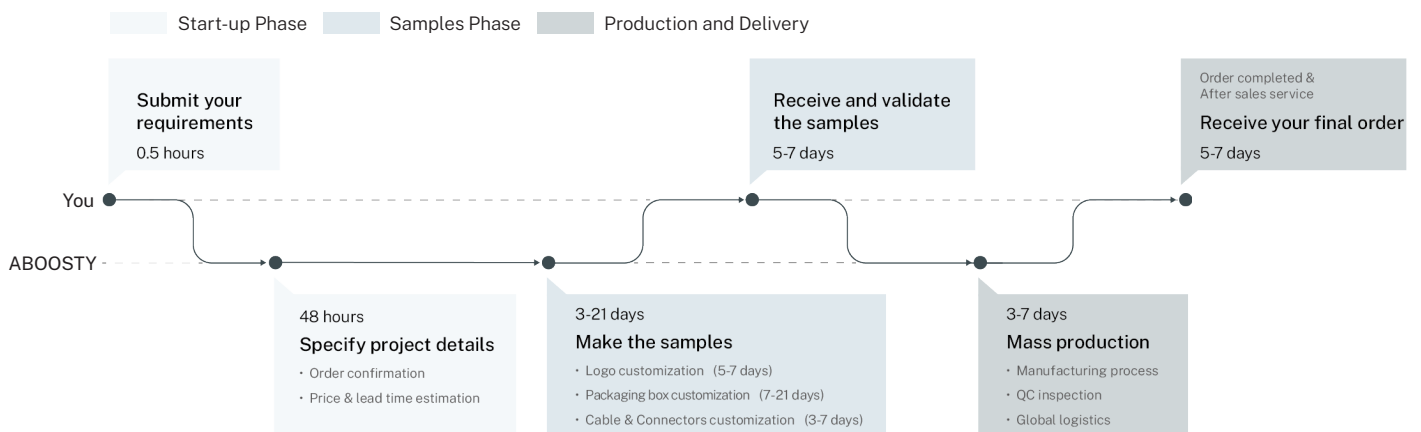
Prompt reply within 24h

What We Provide

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

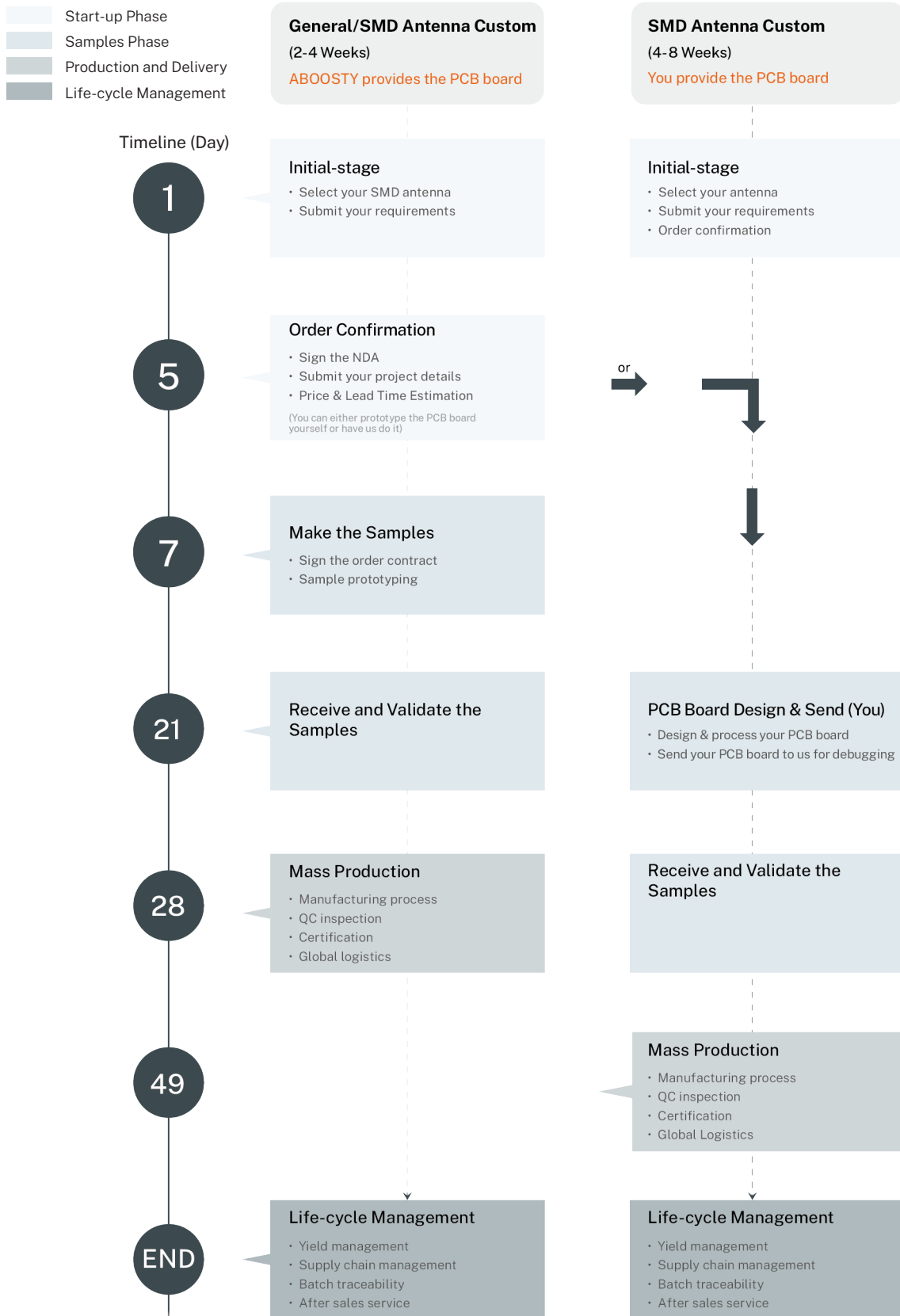
Custom Process

Light Customization Process





Deep Customization Process



Boost Your Signal
with Our Antennas

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