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Datasheet

Omnidirectional 2.4GHz 5.8GHz Dual-band WiFi PCB Antenna

Model: AEWP002
PN: M02-0200370R0A

Description:
Mini Black Rugged Waterproof WiFi/Bluetooth/Zigbee Antenna with LPM Encapsulation
Operating Frequency: 2400-2500 MHz | 5100-5900 MHz

Features:
Peak Gain: 5.62 dBi @2480 MHz
Cable: LMR-200-UF Cable, L: 1.12 Meter
Connector: SMA Male
Dimensions: 20.9 x 40.55 x 11.4 mm
Ground Plane Independent
IP68 Rating Waterproof
Custom Cable and Connector Available
RoHS Compliant

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Table of Contents

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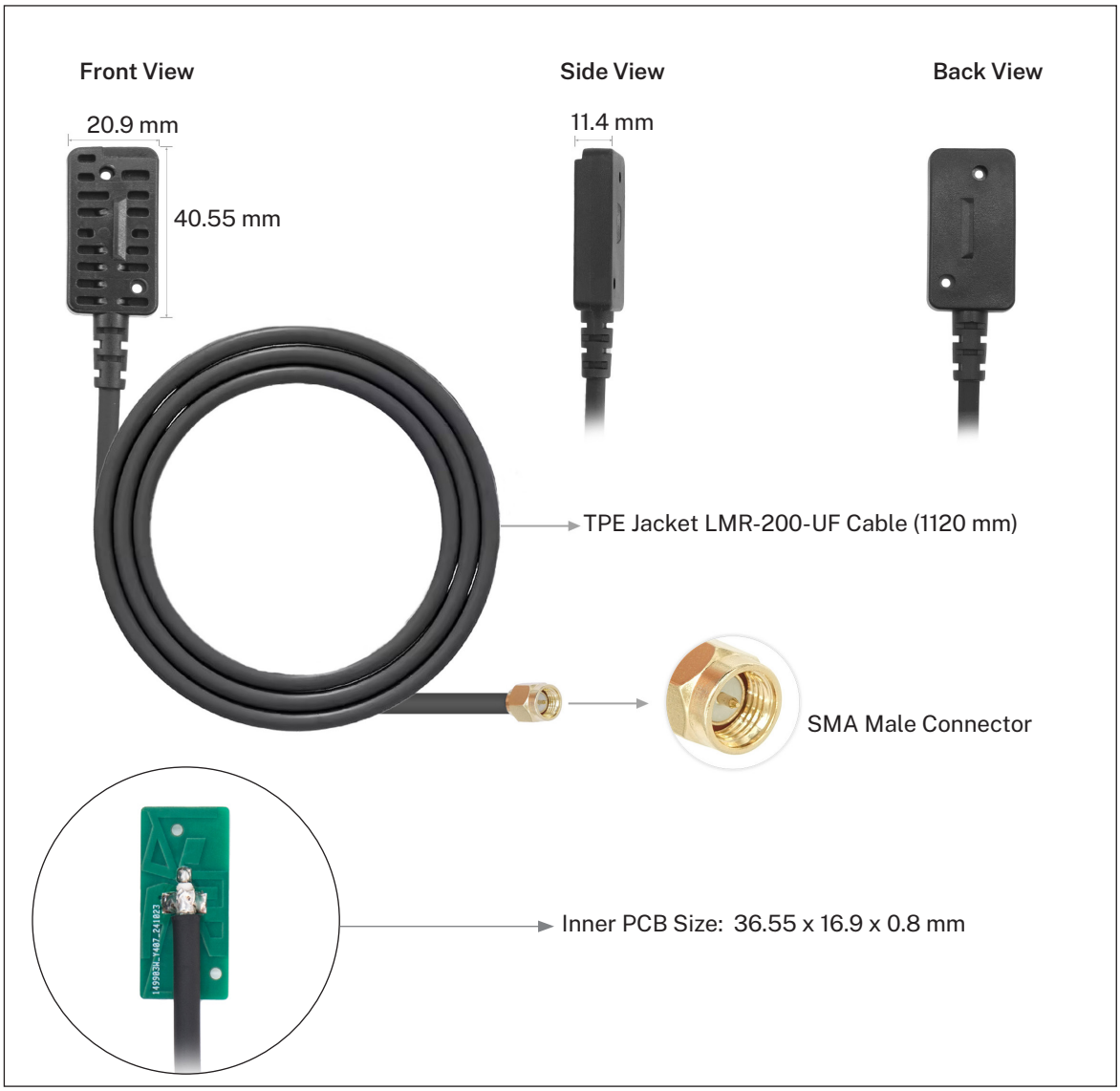
FEATURES & BENEFITS

- 2.4 &5.8 GHz dual-band performance
- Improved durability with low-pressure injection molding packaging process
- Mini and Compact
- IP68 rated waterproof
- Ground plane independent
- Tailored for household fresh air purifiers
- Customizable RF cables and connectors

APPLICATIONS

- Smart Home Automation
- IoT Devices
- Telecommunications
- Healthcare
- Consumer Electronics
- Transportation and Logistics
- Smart Agriculture



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ORDER INFORMATION

Product Name	Omnidirectional 2.4GHz 5.8GHz Dual-band WiFi PCB Antenna
Model	AEWP002
Part Number	M02-0200370R0A
Dimensions	20.9 x 40.55 x 11.4 mm
Weight	48.2 g (with default cables)
Color	Black
Mounting	Surface mount; mount through two housing fixing holes
Cable	Default TPE jacket LMR-200-UF x 1120 mm length cable, customizable.
Connector	Default SMA MALE connector, customizable.

REFERENCE GUIDE

Technical Features (MHz)	**2400-2500**	**5100-5900**
Max VSWR	2.02:1	1.71:1
Max Return Loss	-9.4 dB	-11.6 dB
Max Efficiency	53.81%	63.48%
Peak Gain	5.62 dBi	4.59 dBi
Max Input Power	10 Watts CW	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Input Impedance	50 Ω	
Operating Temperature	-40°C to +85°C	
Storage Temperature	-40°C to +85°C	
Relative Humidity	10 to 70%	
Material Substance Compliance	RoHS Compliant	
All data were measured with an LMR-200-UF 1.3-meter-long cable. Application data might vary.		

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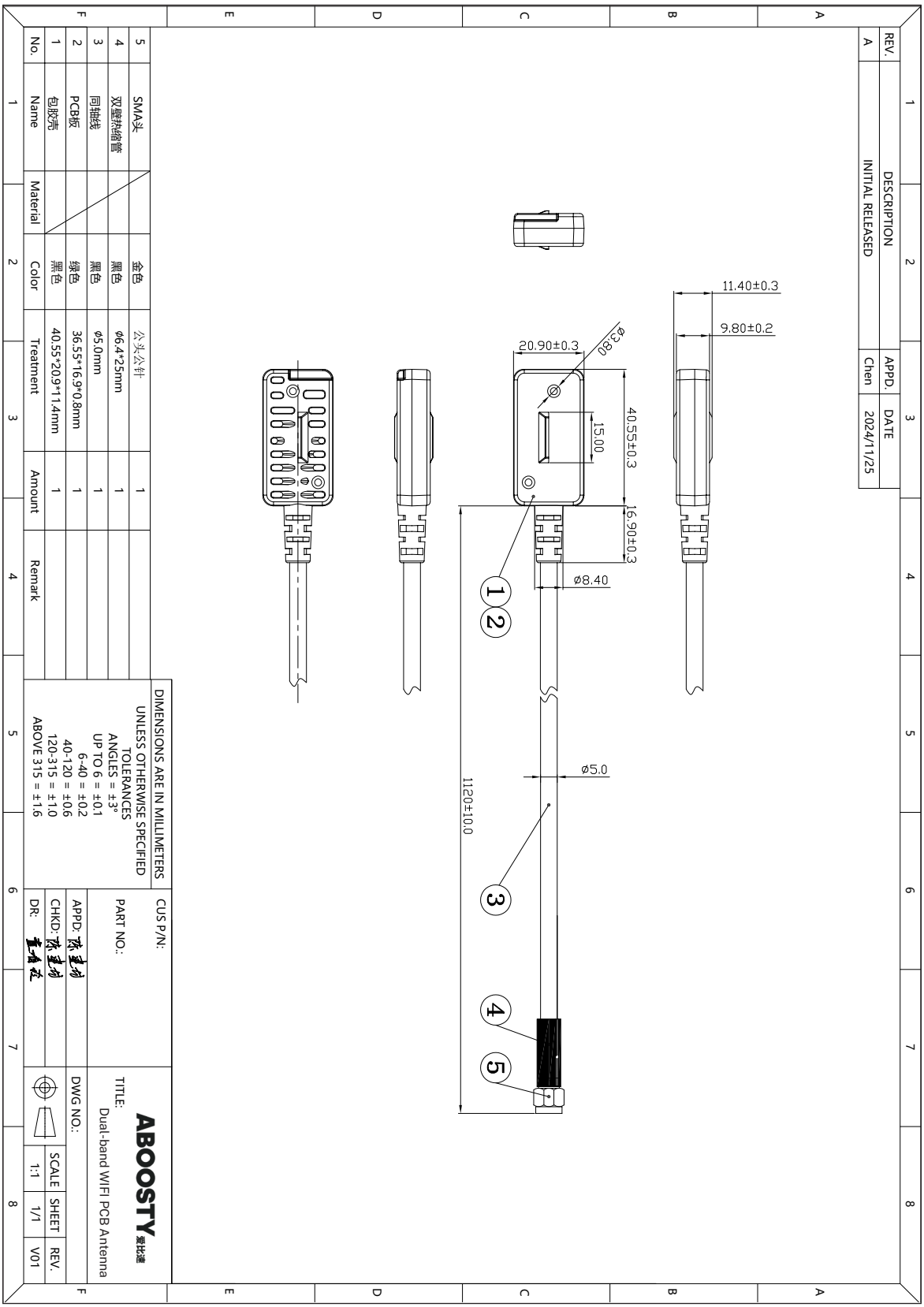
MECHANICAL DIMENSIONS



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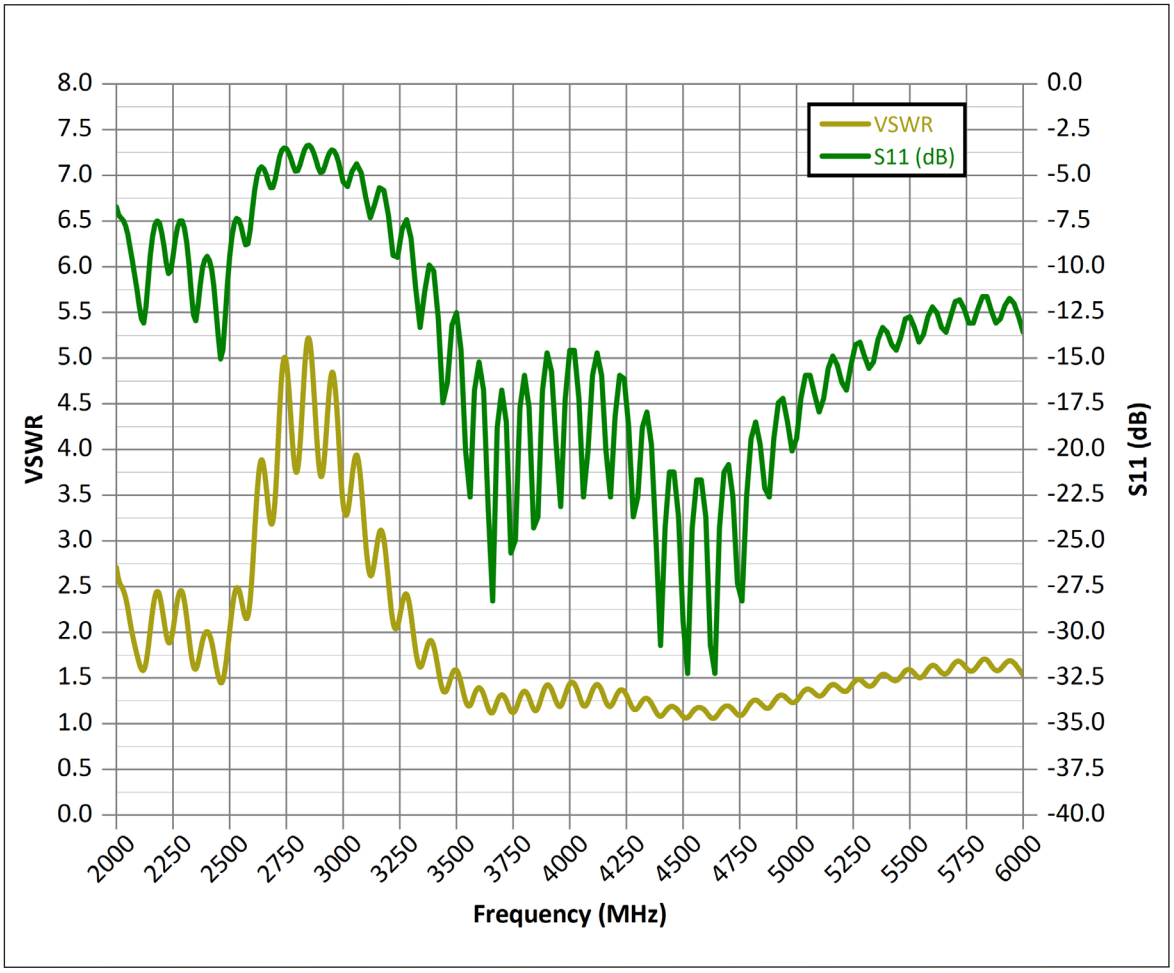
ELECTRICAL PERFORMANCE

◎ **Note**
All data displayed below were measured using a 1.3-meter-long LMR-200-UF cable.

VSWR and Return Loss (S11)



Note: Data measured with 1.3m(4'3") of LMR-200-UF Cable

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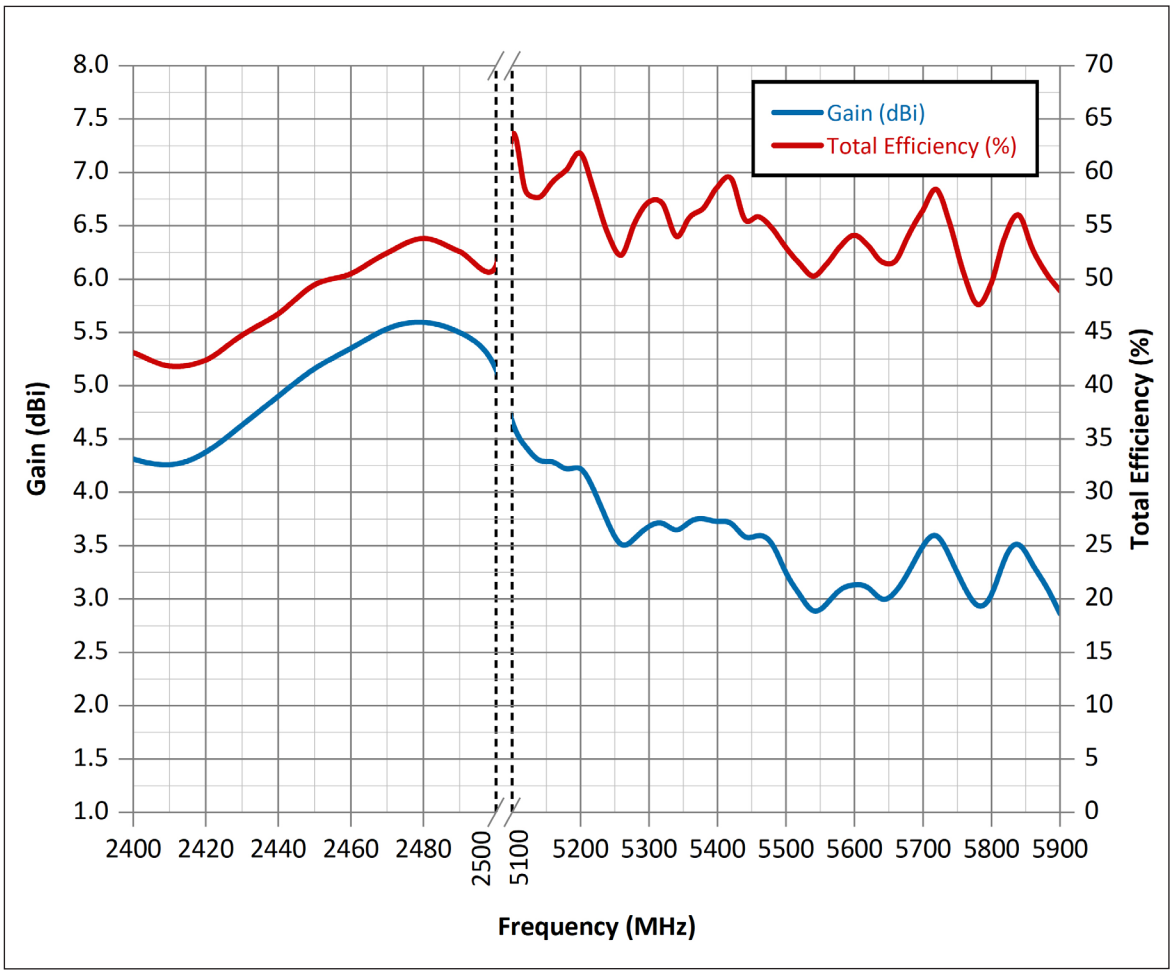
Gain (dBi) and Total Efficiency



Note: Data measured with 1.3m(4'3") of LMR-200-UF Cable

Freq (MHz)	Gain (dBi)	Efficiency (%)	Freq (MHz)	Gain (dBi)	Efficiency (%)
2400	4.31	43.11	**2500**	5.30	51.18
2410	4.22	41.83	**5100**	4.59	63.48
2420	4.35	42.38	**5200**	4.28	61.78
2430	4.64	44.72	**5300**	3.69	57.22
2440	4.90	46.72	**5400**	3.71	58.64
2450	5.18	49.44	**5500**	3.22	52.94
2460	5.34	50.48	**5600**	3.14	54.10
2470	5.56	52.43	**5700**	3.52	56.47
2480	5.62	53.81	**5800**	2.99	49.65
2490	5.52	52.57	**5900**	2.86	48.91

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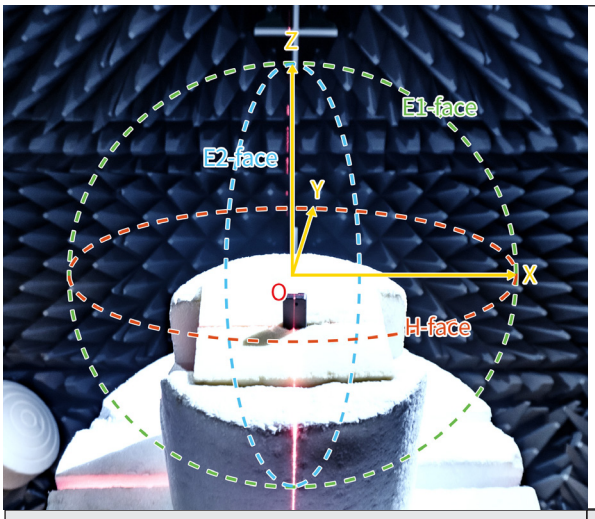
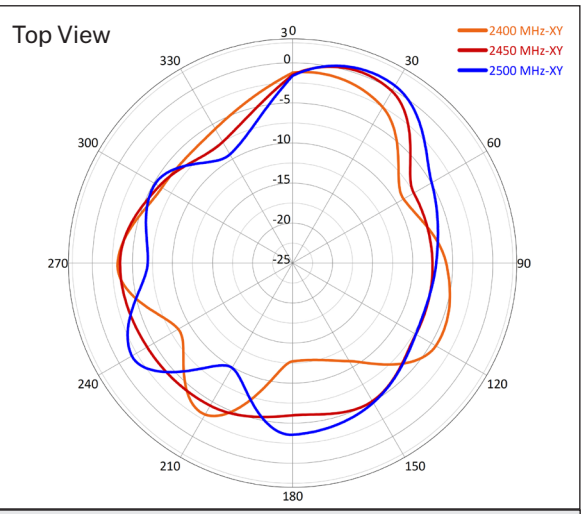
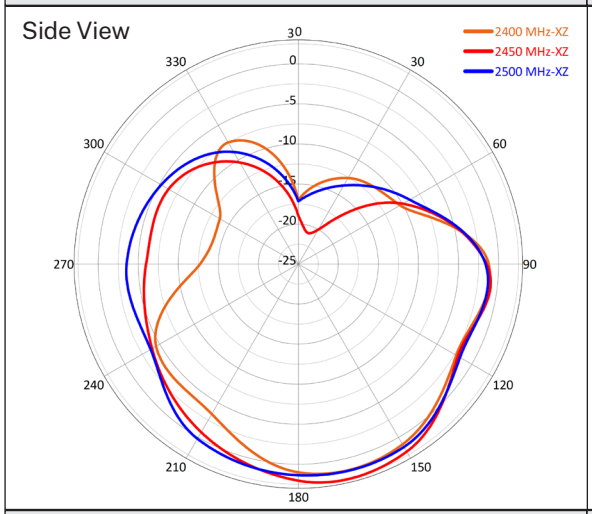
2D Radiation Patterns (2400-2500 MHz)



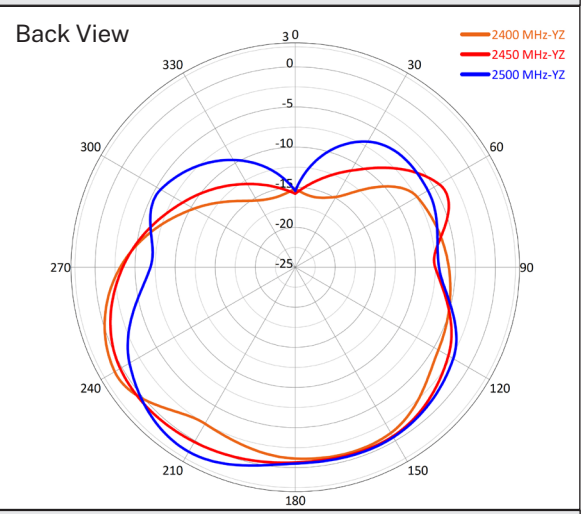
The Antenna in Abosty's Anechoic Chamber



θ = 90° Plane XY at 2400, 2450, 2500 MHz



Φ = 0° Plane XZ at 2400, 2450, 2500 MHz



Φ = 90° Plane YZ at 2400, 2450, 2500 MHz

Gain = 4.31 dBi @2400 MHz; 5.18 dBi @2450 MHz; 5.30 dBi @2500 MHz

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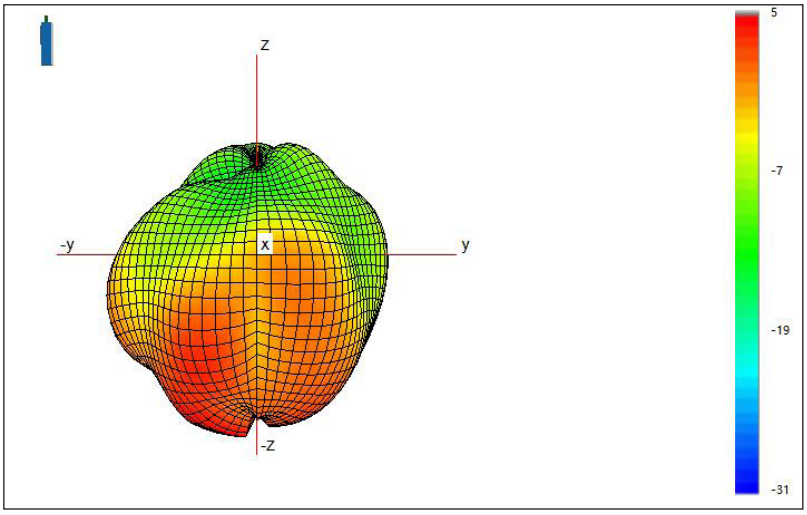
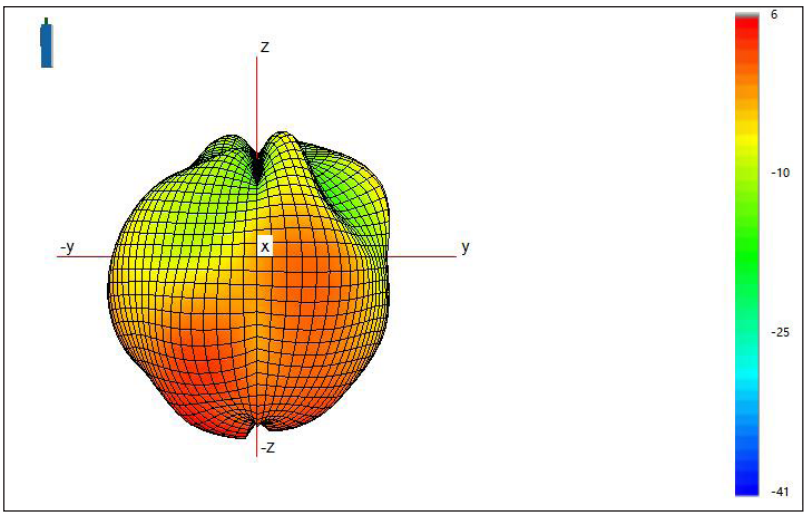
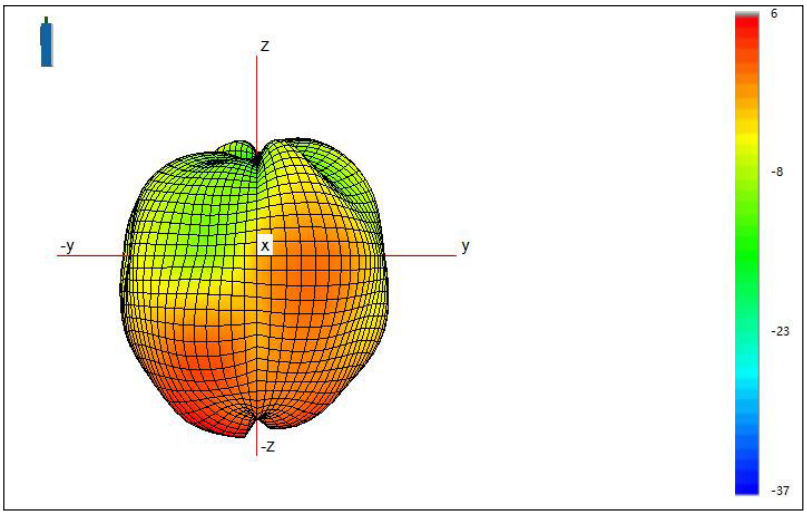
3D Radiation Patterns (2400-2500 MHz)



@2400 MHz, Gain = 4.31 dBi



@2450 MHz, Gain = 5.18 dBi



@2500 MHz, Gain = 5.30 dBi

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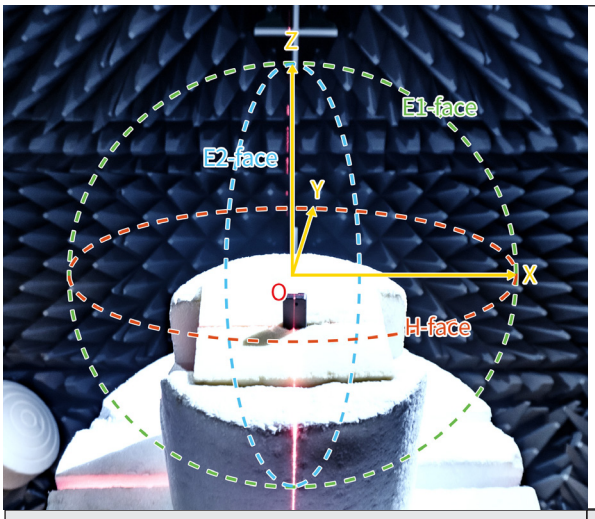
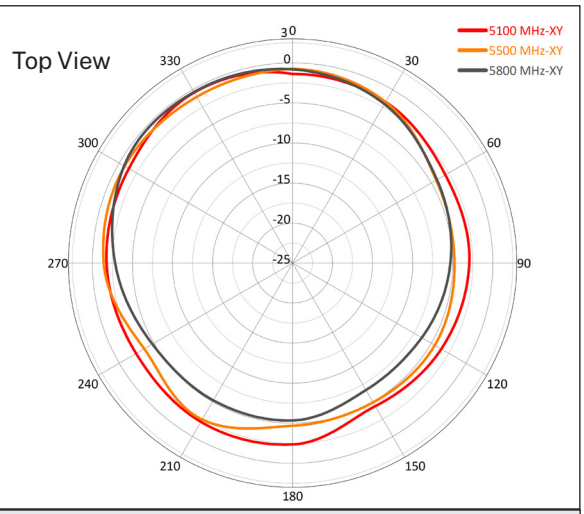
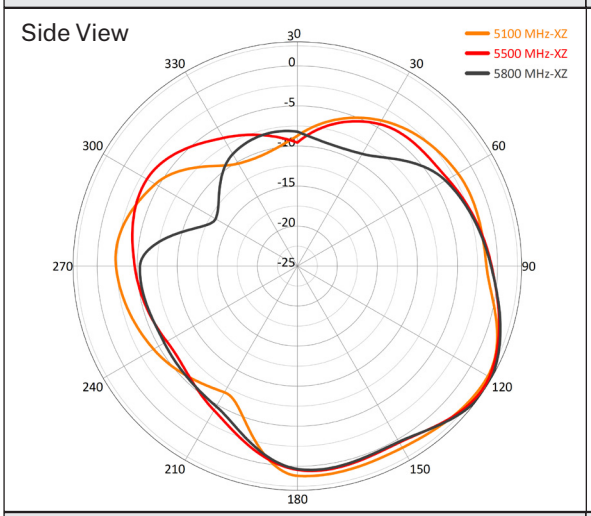
2D Radiation Patterns (5100-5900 MHz)



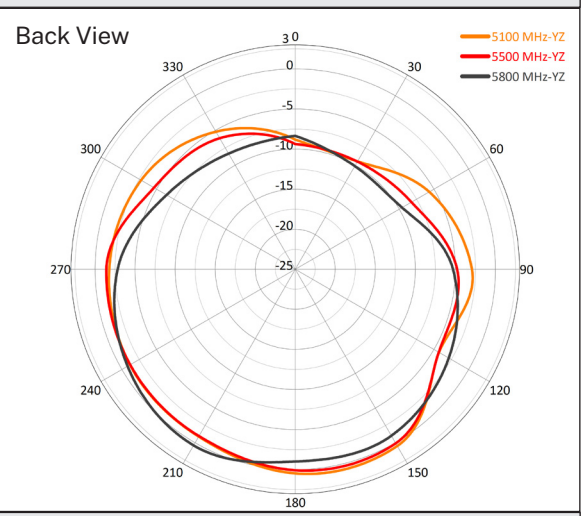
The Antenna in Aboosty's Anechoic Chamber



θ = 90° Plane XY at 5100, 5500, 5800 MHz



Φ = 0° Plane XZ at 5100, 5500, 5800 MHz



Φ = 90° Plane YZ at 5100, 5500, 5800 MHz

Gain = 4.59 dBi @5100 MHz; 3.22 dBi @5500 MHz; 2.99 dBi @5800 MHz

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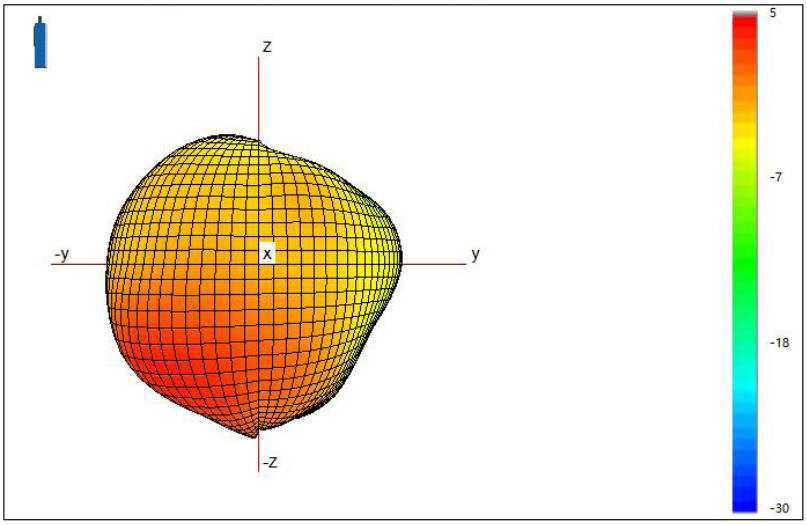
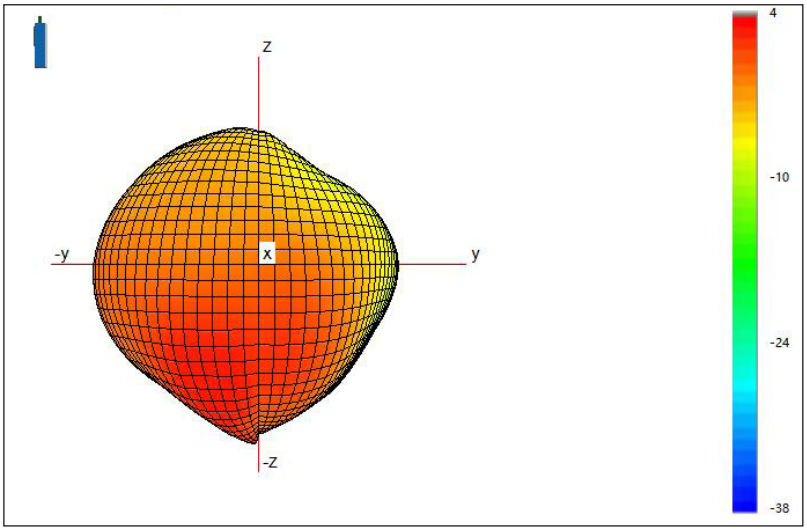
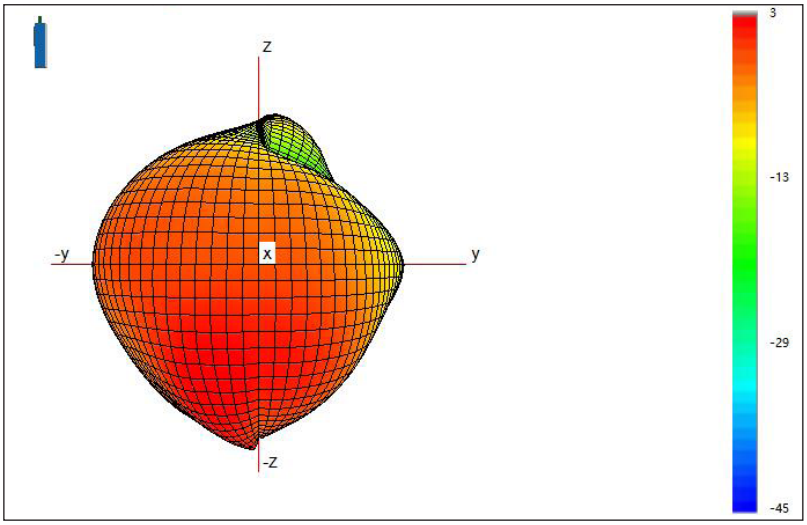
3D Radiation Patterns (5100-5900 MHz)



@5100 MHz, Gain = 4.31 dBi



@5500 MHz, Gain = 5.18 dBi



@5800 MHz, Gain = 5.30 dBi

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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

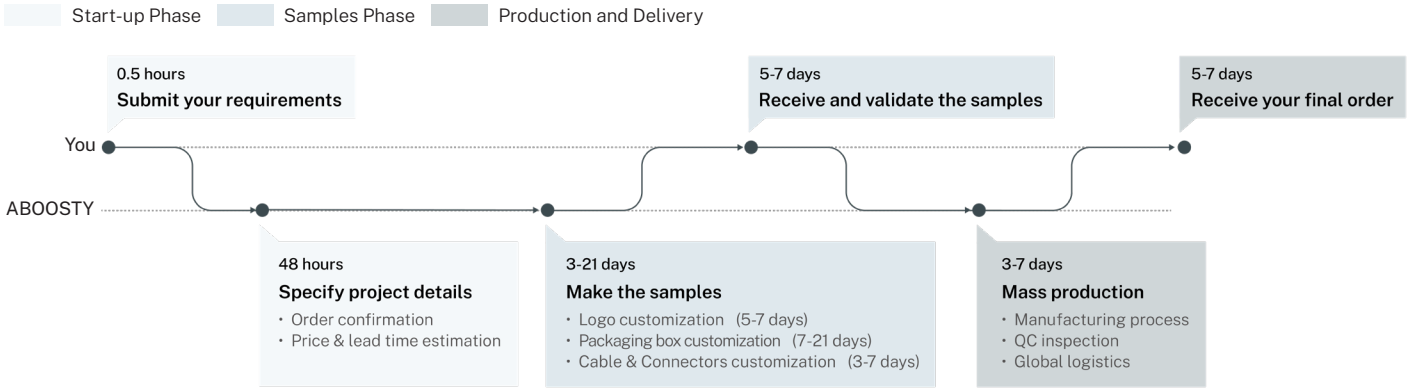
Professional team support & prompt reply within 24h

What We Provide

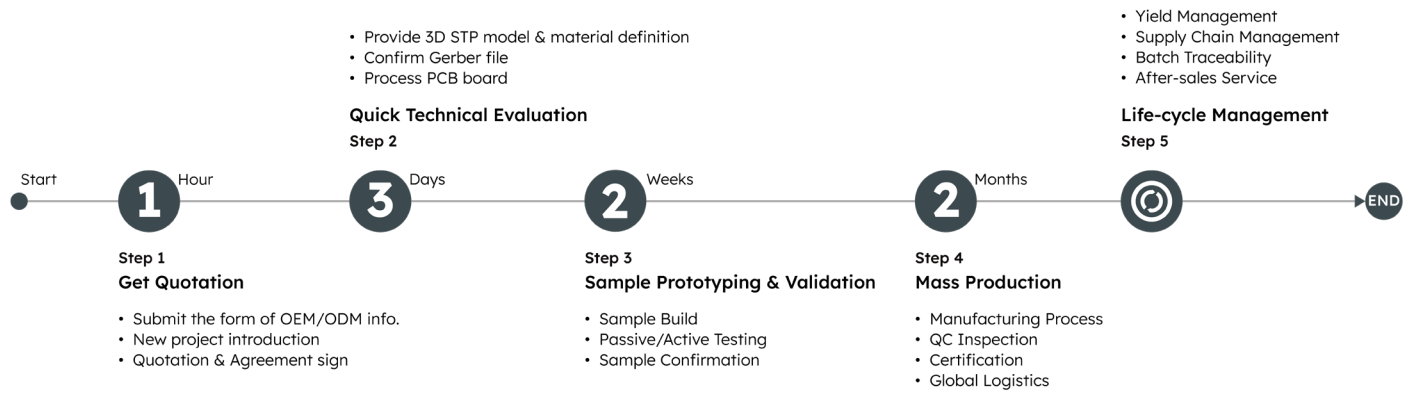
	Light Customization	Deep Customization
OEM/ODM Services	• Logo • Packaging • Cables&Connectors	• In-depth tailoring for specific applications • Functional enhancements • Environmental adaptations • Vertical certifications • ...

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.

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with Our Antennas

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