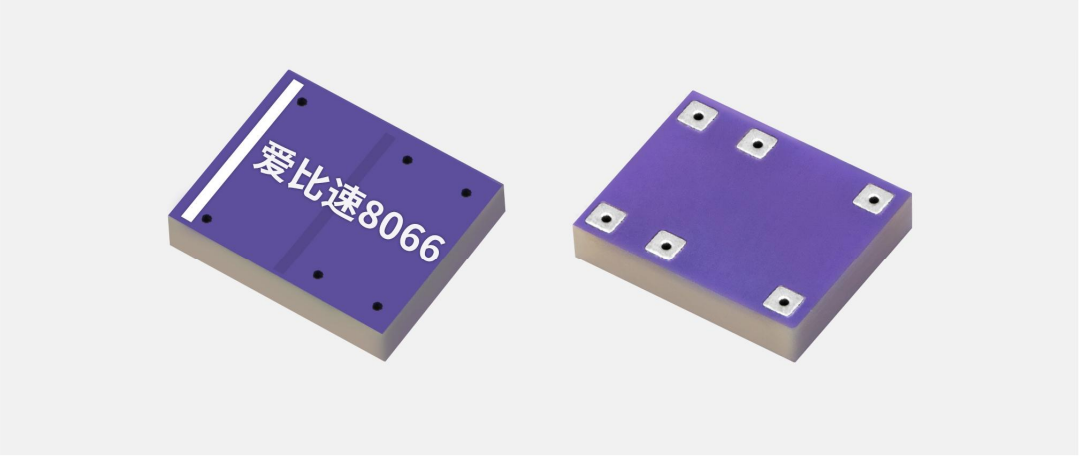
2.4G / 5G WIFI

SMD ANTENNA

2400-2500MHz | 5100-5900MHz

Dimensions: 8.0 x 6.6 x 1.6 mm

Clearance Area: 60 x 50 mm



P N: ADWH007

RoHS COMPLIANT

Reach COMPLIANT

Table of Contents

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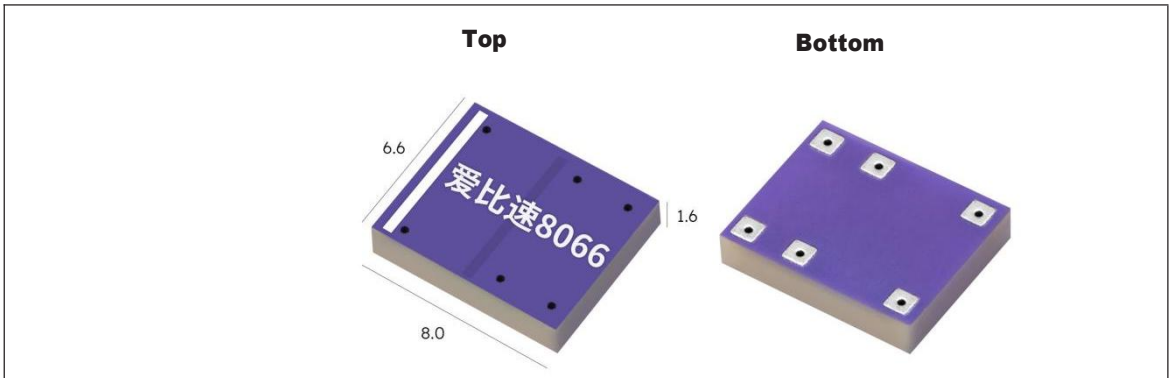
1 FEATURES & BENEFITS

- Low Profile
- Light Weight
- Easy to Integrate
- Intended for SMD Mounting
- Reduced Cost and Time-to-Market

2 APPLICATIONS

- Smartphones, tablets, laptops, and notebooks
- Smart home devices like home security systems
- Internet of Things (IoT), wearable devices, E-health devices
- Networking equipment like WiFi routers, WiFi extenders and repeaters
- Asset tracking, point of sale (POS) systems
- Automotive like V2X communication
- Smart city infrastructure like public WiFi hotspots, environmental monitoring



Items	Dimensions (mm)
Length	8.0±0.1
Width	6.6±0.1
Thickness	1.6±0.1

3 ORDER INFORMATION

Product Name	2.4G/5G WIFI SMD ANTENNA
Part Number	ADWH007
Dimensions	8.0 x 6.6 x 1.6mm
Mounting	SMT
Packaging	Tape & Reel
MOQ	2000 pcs/reel

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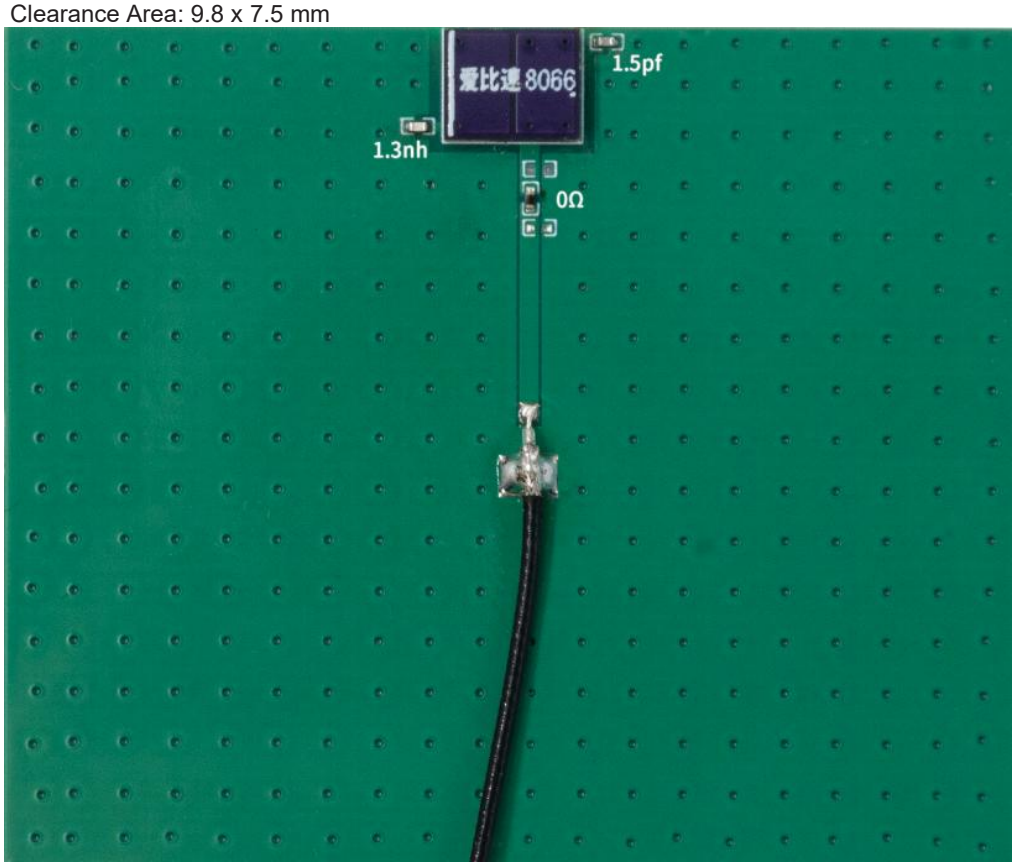
4 REFERENCE GUIDE

Technical Features	2400-2500 MHz	5100-5900 MHz
VSWR	2.5:1	1.5:1
Input Impedance	50Ω	
Peak Gain	2.89 dBi	
Operating Temperature	-40ºC to +85ºC	
Power Capacity	3W	
Dimensions (L x W x H)	8.0 x 6.6 x1.6 mm	
All data were measured in free space and on a reference ground plane of 50 mm length, 60 mm width, and 1.6 mm thickness. Application data might vary.		

5 EVALUATION BOARD WITH THE ANTENNA

The evaluation board provides operation at 2400-2500 MHz, 5100-5900 MHz.
Evaluation Board dimension: 60.0 x 50.0 x 1.6 mm
Clearance Area: 9.8 x 7.5 mm



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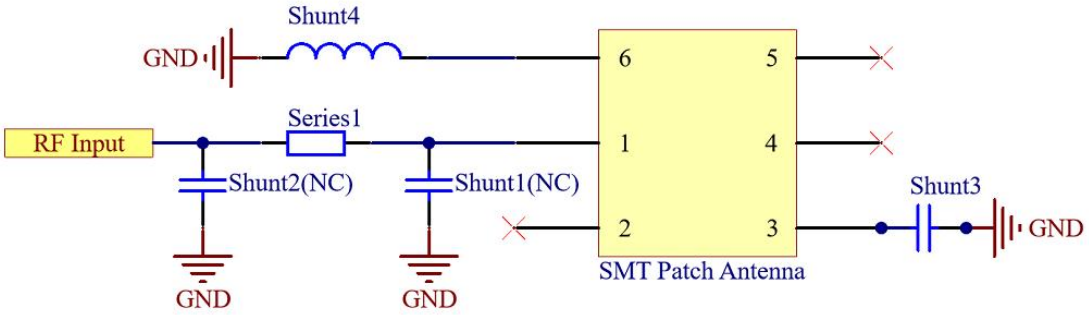
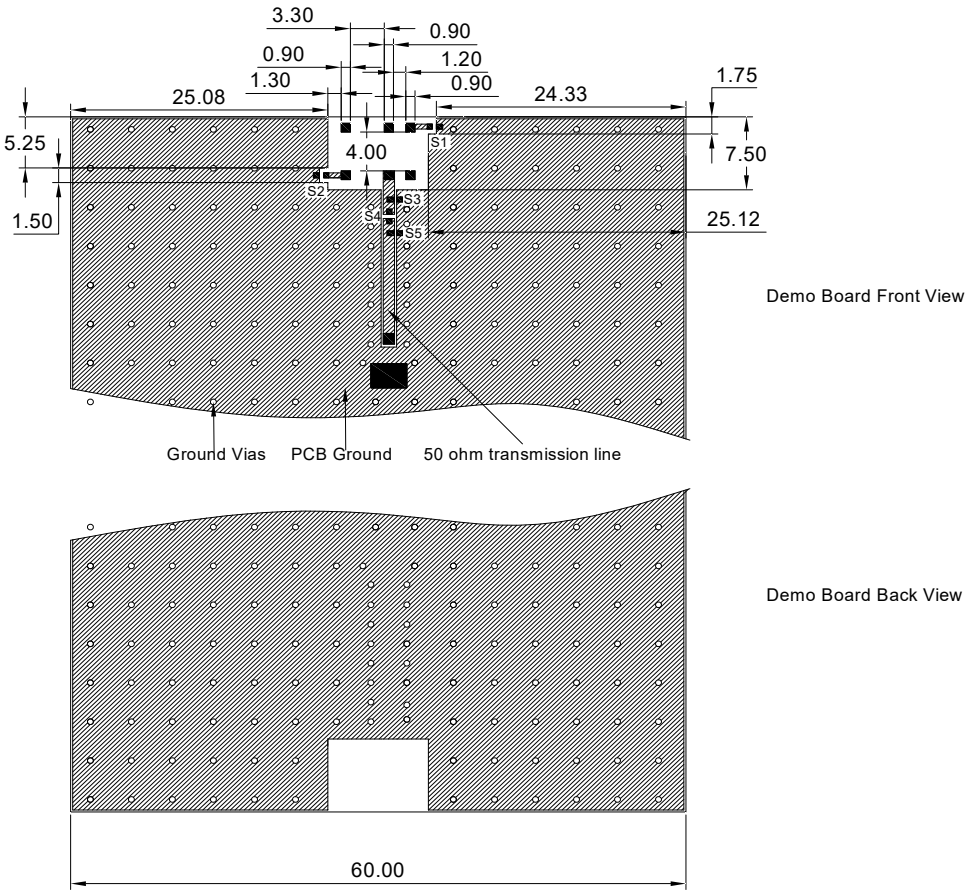
6 MATCHING NETWORK



7 RECOMMENDED LAYOUT



Demo Board Front View

Demo Board Back View

Tag Number	Value	Brand	PN
S1	CAP SMD 0402 NPO 1.5PF±0.1pF 50V	Murata	D03-0200510000
S2	SMD 0402 1.3nH LQG15HS1N3S02D	Murata	
S3	RES SMD 0402 0R ±1%	Murata	D03-0100010000
S4	NC		
S5	NC		

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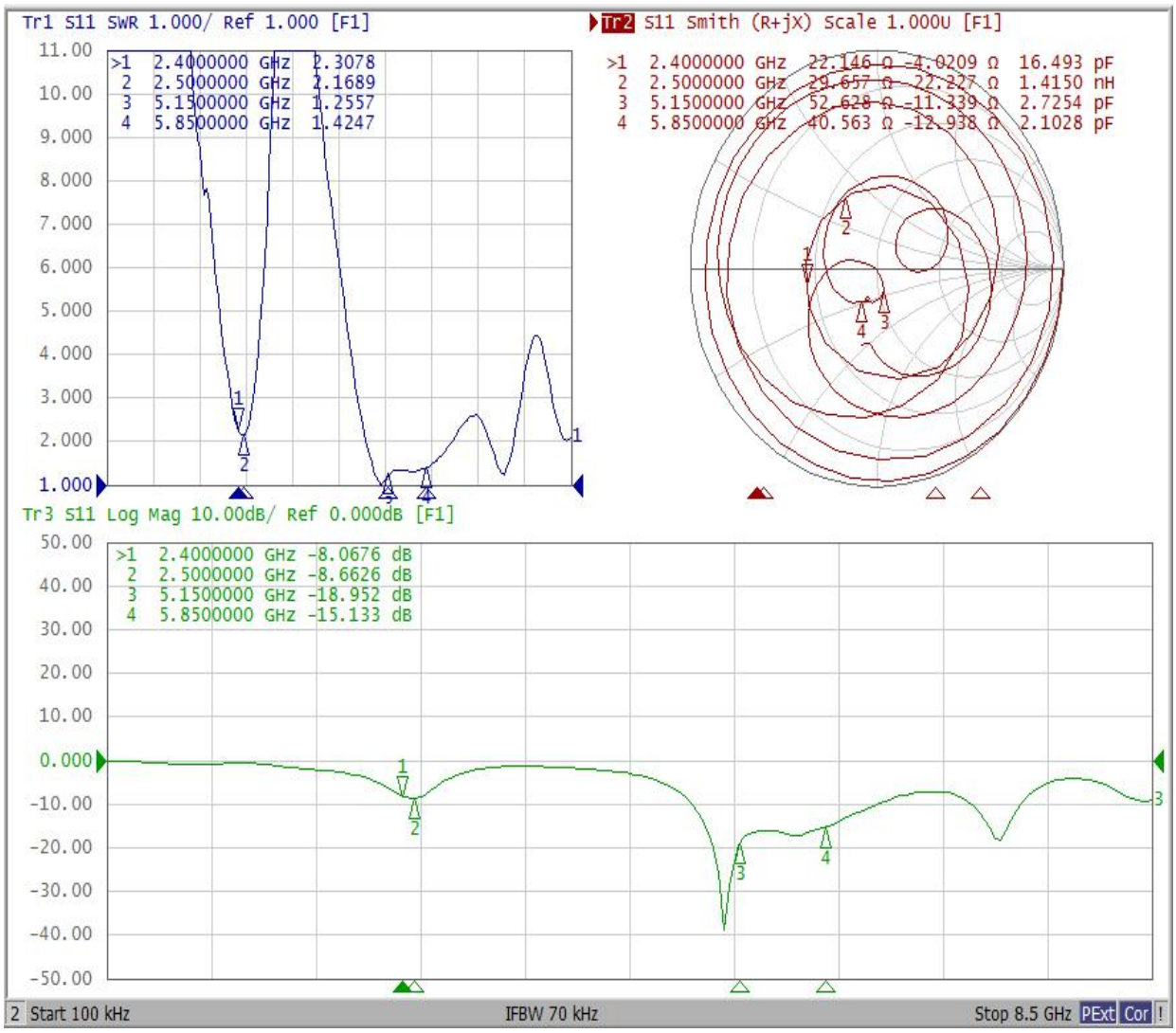
8 ELECTRICAL PERFORMANCE

◎ **Note**

The data displayed in Chapter 8 were measured in free space and on a reference ground plane of 60 mm length, 50 mm width, and 1.6 mm thickness.

8.1 VSWR and Return Loss (dB)



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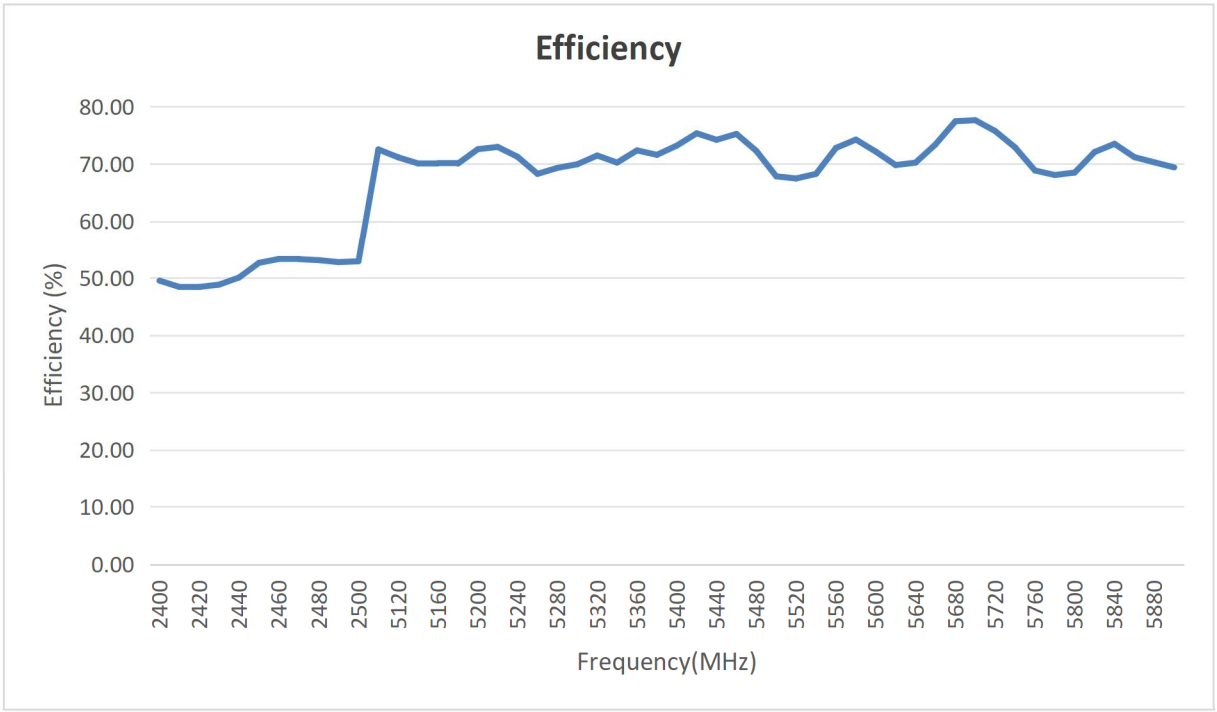
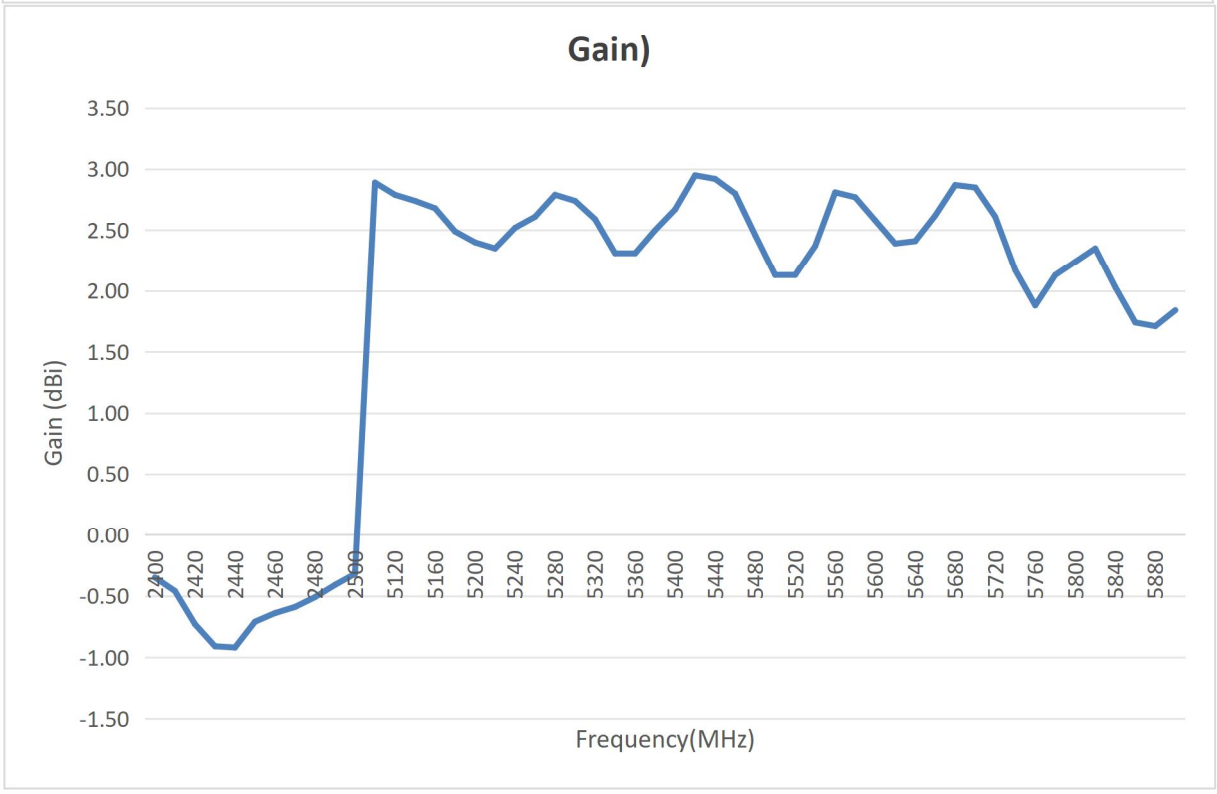
8.2 Gain (dBi) and Total Efficiency (%)





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Frequency(MHz)	Gain (dBi)	Efficiency (%)	Frequency(MHz)	Gain (dBi)	Efficiency (%)
2400	-0.35	49.53	**5400**	2.67	73.2
2410	-0.46	48.43	**5420**	2.95	75.34
2420	-0.73	48.43	**5440**	2.92	74.21
2430	-0.91	48.84	**5460**	2.8	75.23
2440	-0.92	50.08	**5480**	2.46	72.27
2450	-0.71	52.64	**5500**	2.13	67.86
2460	-0.64	53.32	**5520**	2.13	67.49
2470	-0.59	53.29	**5540**	2.37	68.29
2480	-0.51	53.11	**5560**	2.81	72.8
2490	-0.41	52.77	**5580**	2.77	74.25
2500	-0.32	52.91	**5600**	2.58	72.16
5100	2.89	72.54	**5620**	2.39	69.82
5120	2.79	71.16	**5640**	2.41	70.24
5140	2.74	70.1	**5660**	2.62	73.4
5160	2.68	70.16	**5680**	2.87	77.43
5180	2.49	70.07	**5700**	2.85	77.62
5200	2.4	72.58	**5720**	2.61	75.73
5220	2.35	72.97	**5740**	2.17	72.9
5240	2.52	71.25	**5760**	1.88	68.88
5260	2.61	68.29	**5780**	2.13	68.09
5280	2.79	69.33	**5800**	2.24	68.52
5300	2.74	69.96	**5820**	2.35	72.09
5320	2.59	71.48	**5840**	2.03	73.51
5340	2.31	70.25	**5860**	1.74	71.2
5360	2.31	72.37	**5880**	1.71	70.3
5380	2.5	71.6	**5900**	1.84	69.42

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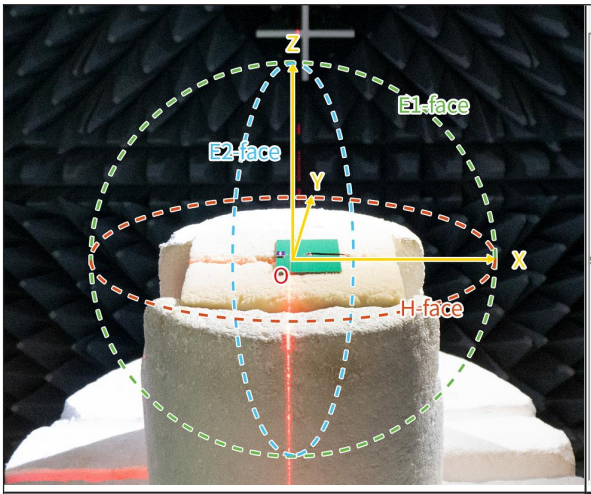
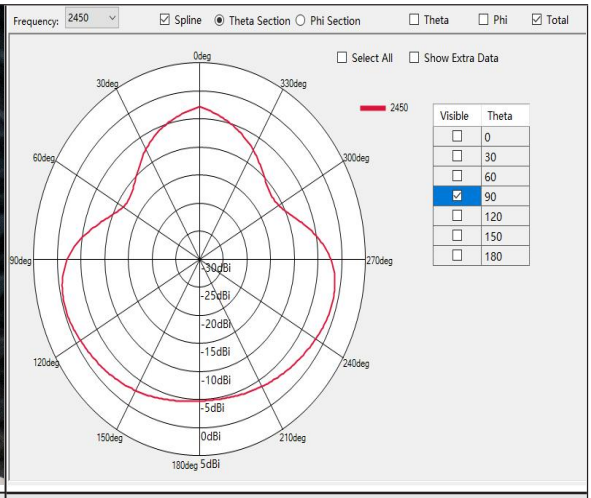
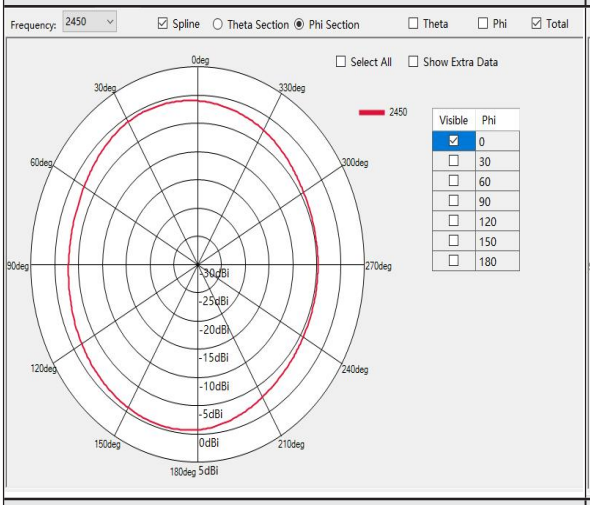
8.3 Radiation Patterns



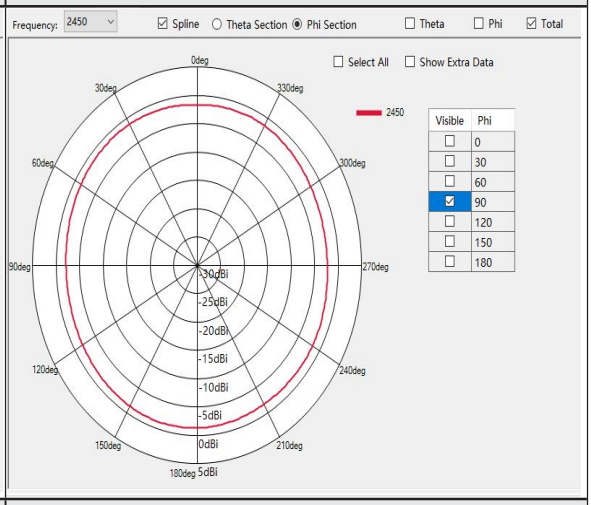
PCB board size: 60 mm x 50 mm x 1.6mm



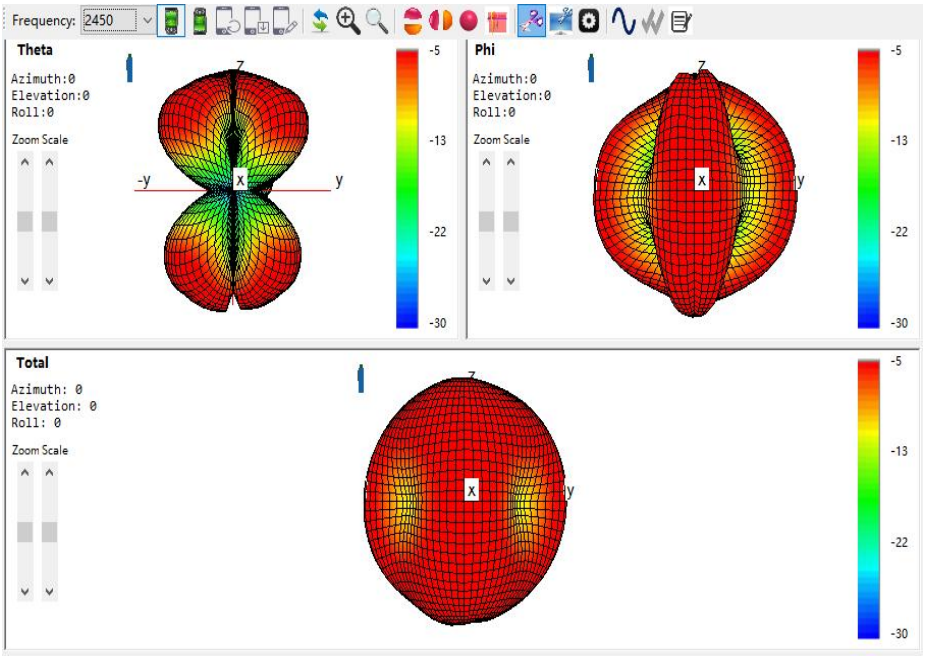
θ = 90° Plane XY at 2450 MHz, Gain -0.71 dBi



Φ = 0° Plane XZ at 2450 MHz, Gain -0.71 dBi



Φ = 90° Plane YZ at 2450 MHz, Gain -0.71 dBi



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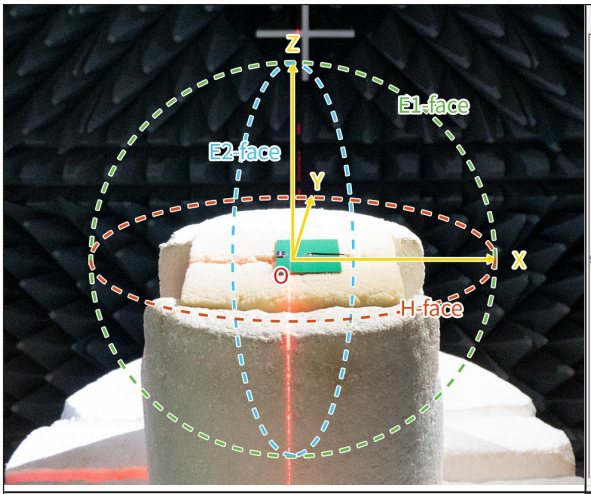
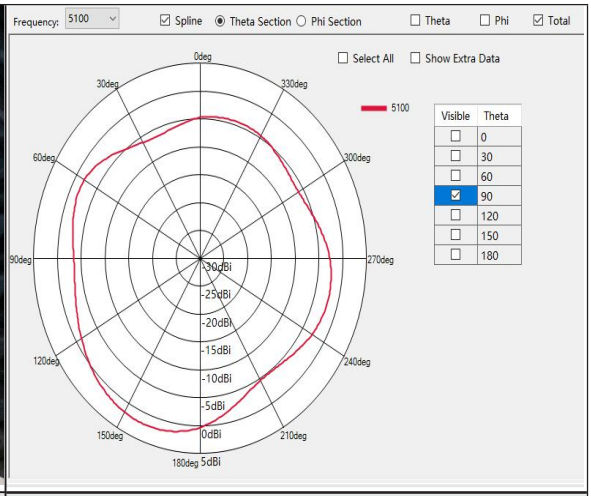
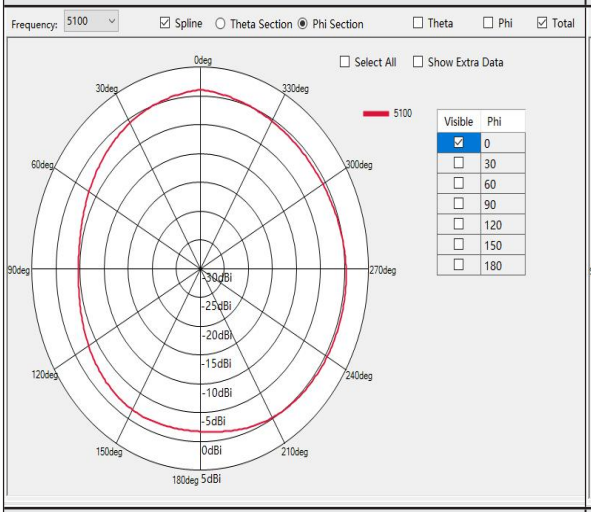


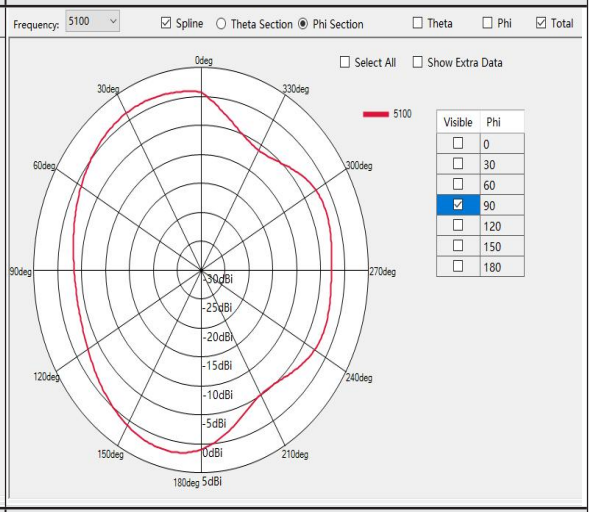
PCB board size: 60 mm x 50 mm x 1.6mm



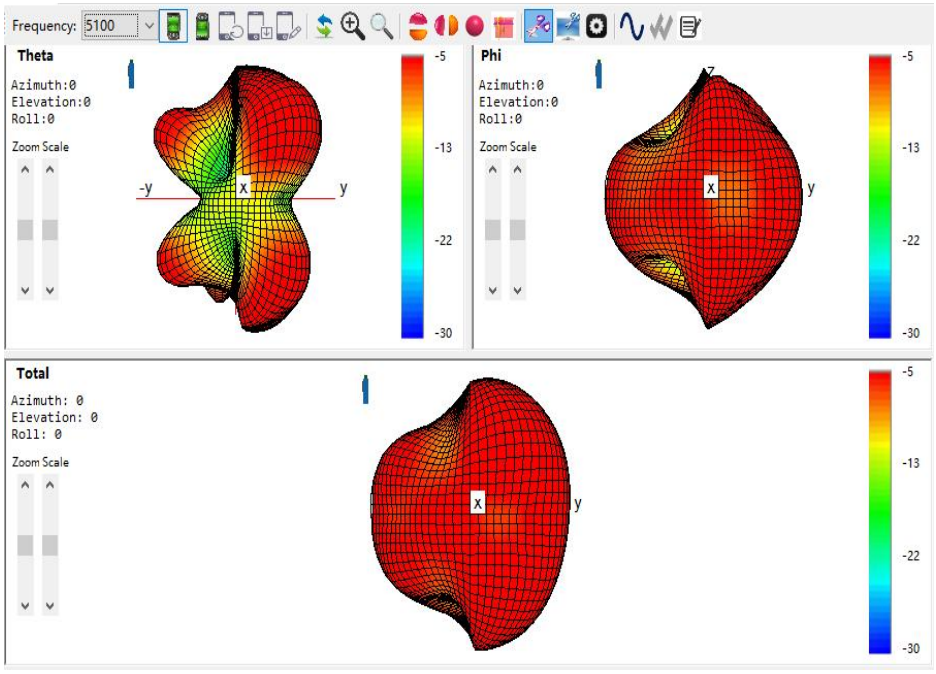
θ = 90º Plane XY at 5100 MHz, Gain 2.89 dBi



ϕ = 0º Plane XZ at 5100 MHz, Gain 2.89 dBi



ϕ = 90º Plane YZ at 5100 MHz, Gain 2.89 dBi



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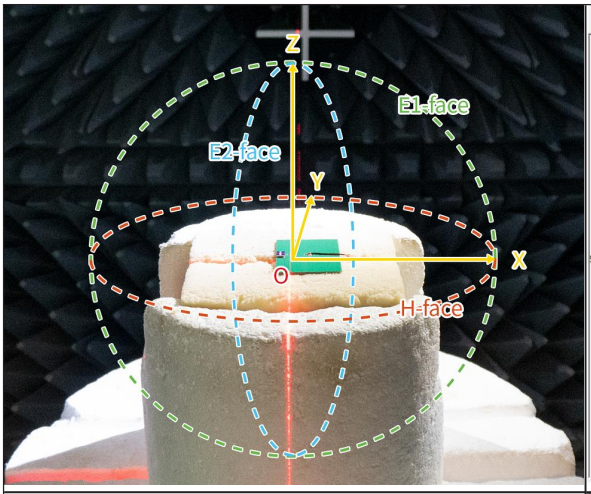
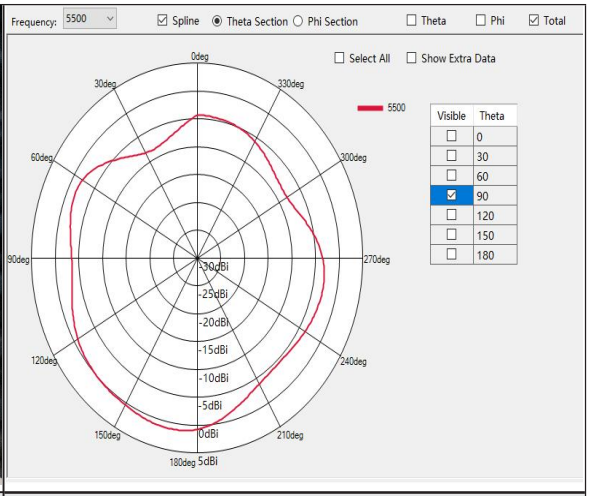
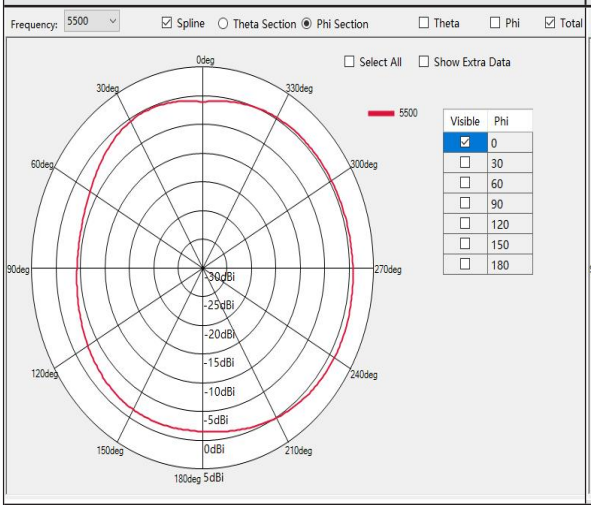


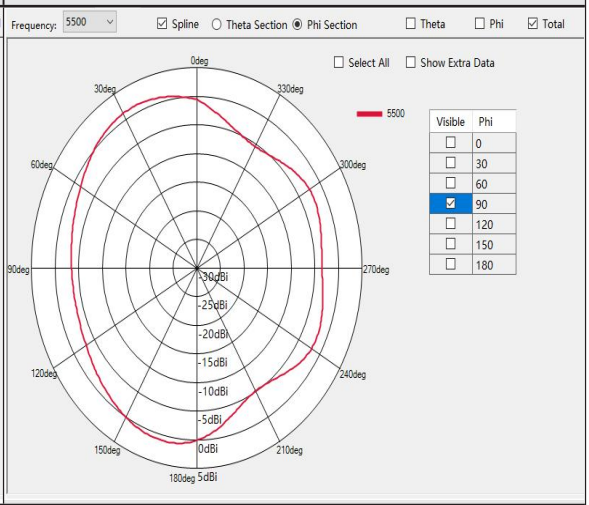
PCB board size: 60 mm x 50 mm x 1.6mm



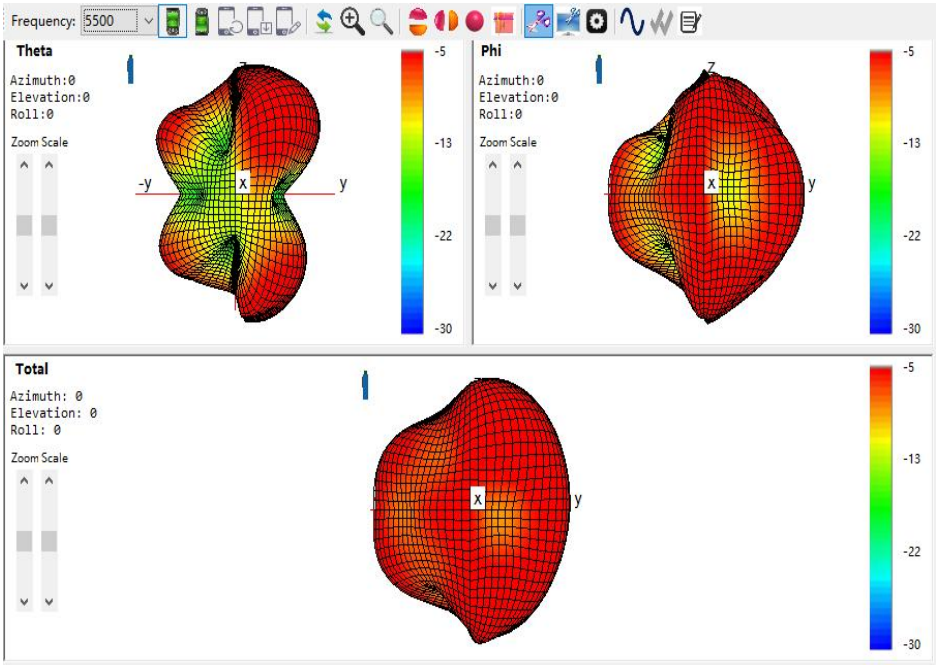
θ = 90º Plane XY at 5500 MHz, Gain 2.13 dBi



ϕ = 0º Plane XZ at 5500 MHz, Gain 2.13 dBi



ϕ = 90º Plane YZ at 5500 MHz, Gain 2.13 dBi



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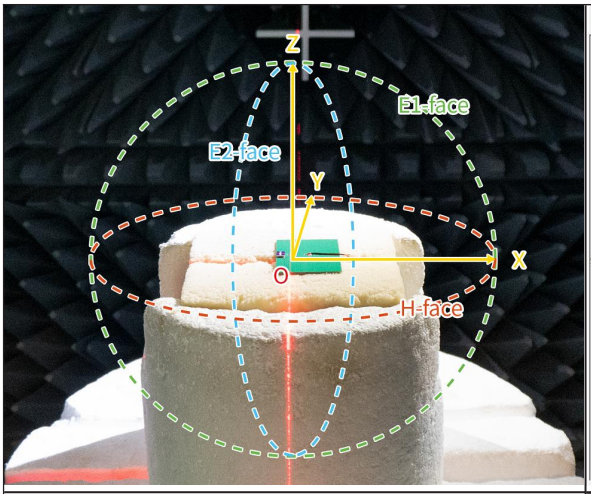
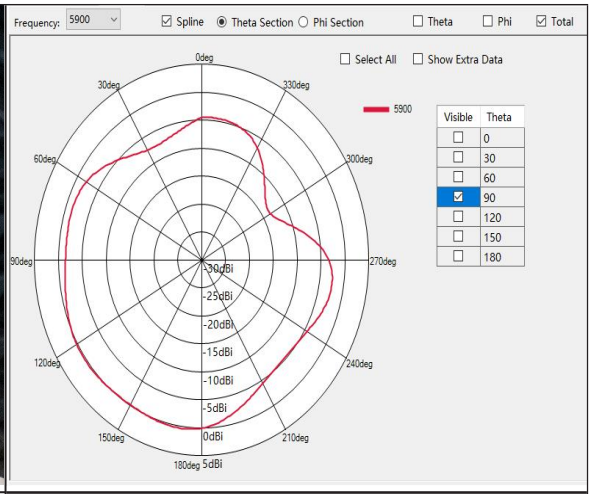
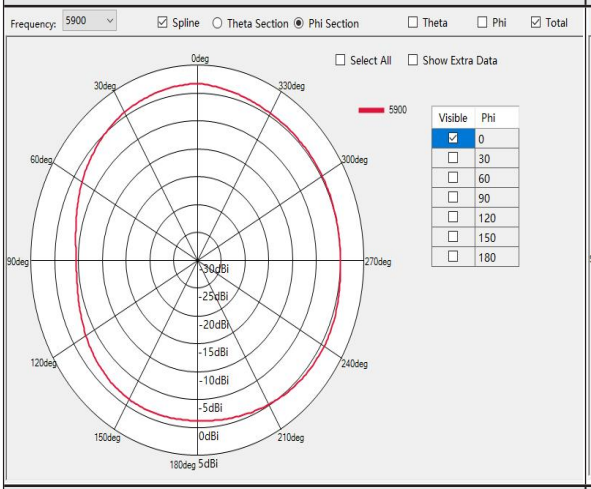


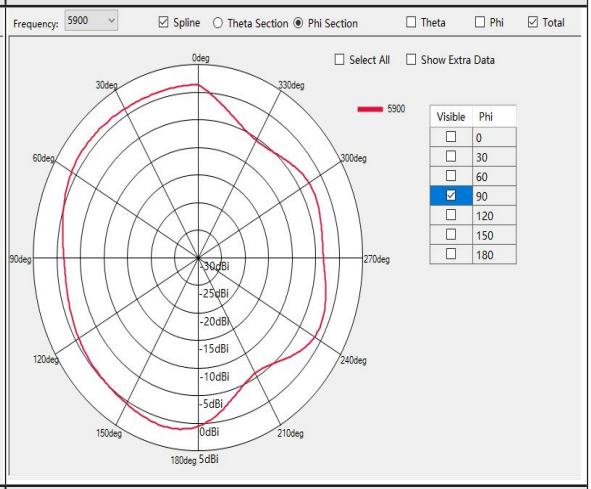
PCB board size: 60 mm x 50 mm x 1.6mm



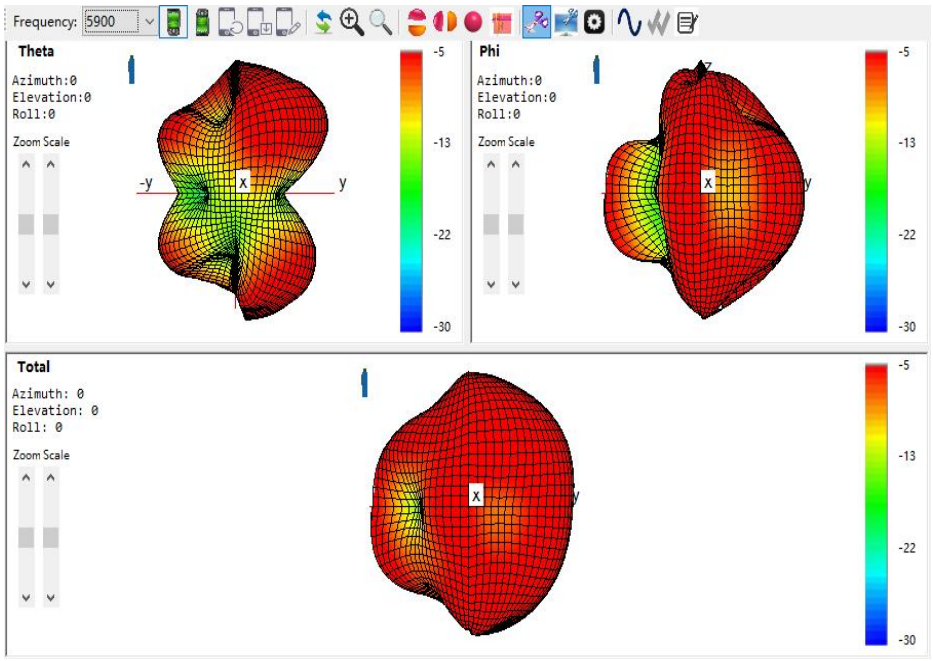
θ = 90° Plane XY at 5900 MHz, Gain 1.84 dBi



ϕ = 0° Plane XZ at 5900 MHz, Gain 1.84 dBi



ϕ = 90° Plane YZ at 5900 MHz, Gain 1.84 dBi



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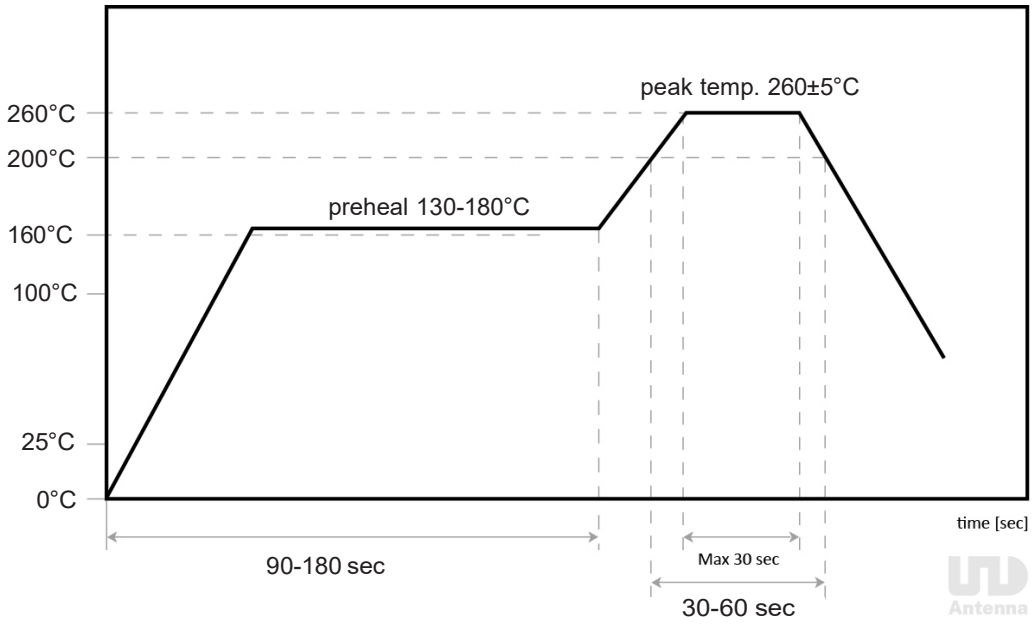
9 SOLDERING CONDITIONS

This antenna is suitable for lead free soldering.
The reflow duration should be adjusted to create good solder joints without raising the antenna temperature beyond the allowed maximum of 260ºC.
The figure below shows the temperature profile for soldering.



10 PACKAGING

10.1 Optimal Storage Conditions for Packaged Reels

Temperature	-5ºC to 40ºC
Humidity	Less than 70% RH
Shelf life	18 months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Reels should be stored in unopened sealed manufacturer's plastic packaging.

◎ **Note**
Storage of open reels of antennas is not recommended due to possible oxidization of pads on antennas. If short-term storage is necessary, then it is highly recommended that the bag containing the antenna reel is re-sealed and stored in like storage conditions as in the above table.

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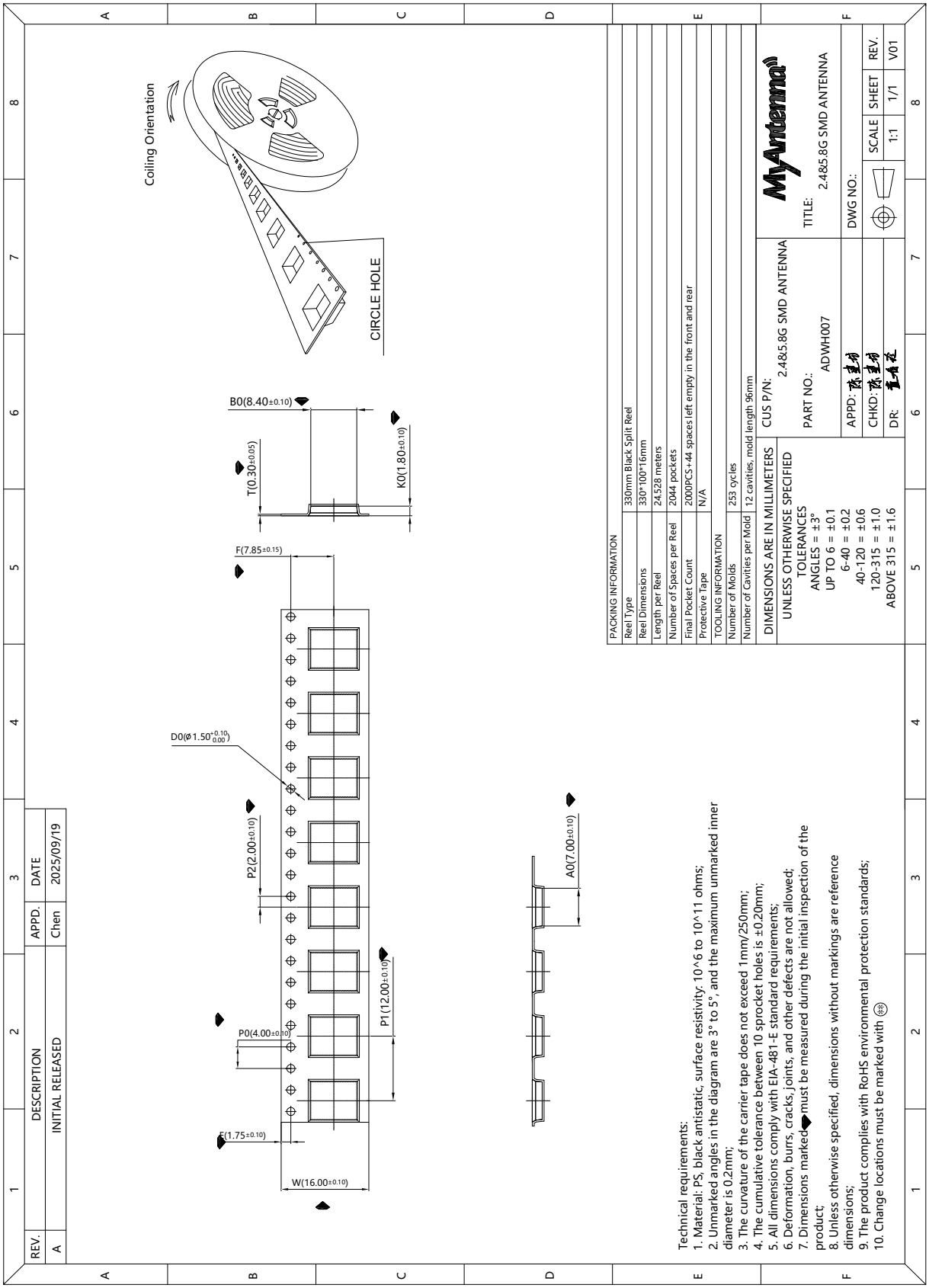
10.2Packagings and Dimensions (Unit: mm)



REV.	DESCRIPTION	APPD.	DATE
A	INITIAL RELEASED	Chen	2025/09/19

PACKING INFORMATION	
Reel Type	330mm Black Split Reel
Reel Dimensions	330*100*16mm
Length per Reel	24.528 meters
Number of Spaces per Reel	2044 pockets
Final Pocket Count	2000PCS+44 spaces left empty in the front and rear
Protective Tape	N/A
TOOLING INFORMATION	
Number of Molds	253 cycles
Number of Cavities per Mold	12 cavities, mold length 96mm

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: 2.4&5.8G SMD ANTENNA
PART NO.: ADWH007
APPD: 陈生初
CHKD: 陈生初
DR: 王林花

MyAntenna
TITLE: 2.4&5.8G SMD ANTENNA
DWG NO.:
SCALE 1:1 | SHEET 1/1 | REV. V01

Technical requirements:
1. Material: PS, black antistatic, surface resistivity: 10^6 to 10^11 ohms;
2. Unmarked angles in the diagram are 3° to 5°, and the maximum unmarked inner diameter is 0.2mm;
3. The curvature of the carrier tape does not exceed 1mm/250mm;
4. The cumulative tolerance between 10 sprocket holes is ±0.20mm;
5. All dimensions comply with EIA-481-E standard requirements;
6. Deformation, burrs, cracks, joints, and other defects are not allowed;
7. Dimensions marked ◆ must be measured during the initial inspection of the product;
8. Unless otherwise specified, dimensions without markings are reference dimensions;
9. The product complies with RoHS environmental protection standards;
10. Change locations must be marked with ㊣

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11 ANTENNA CERTIFICATION

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.	

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12 WELCOME ALL ANTENNA OEM/ODM PROJECTS

About ABOOSTY

- 10+ years in antenna R&D, production, and OEM/ODM
- House of Aboosty: 1 M+ 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

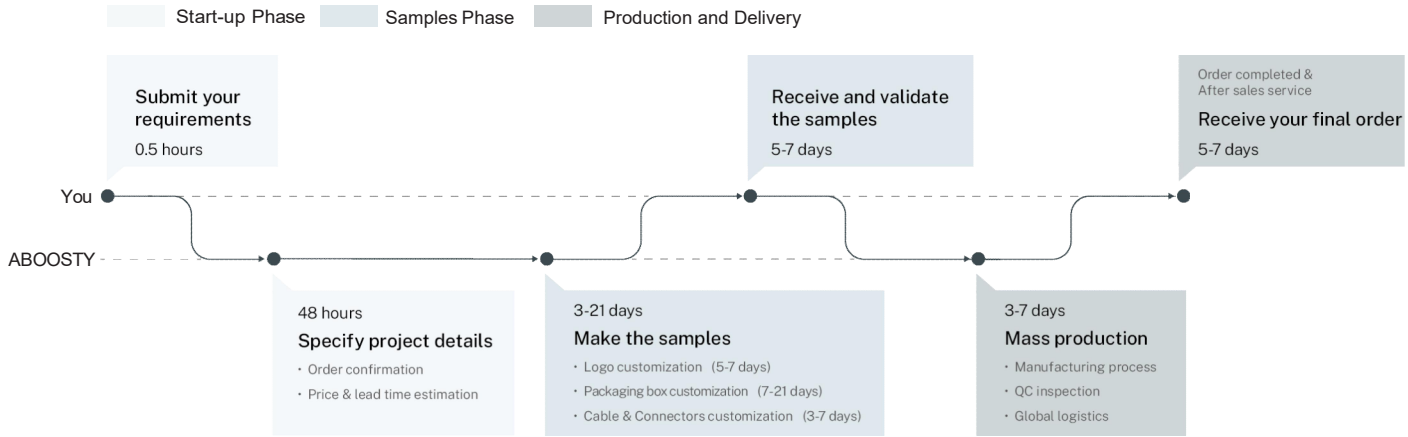
- Innovative and patented design solutions
- Full terminal devices anechoic chamber test
- Co-location with its custom
- Competitive price
- Strict inspection
- Prompt reply within 24h

What We Provide

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

Custom Process

Light Customization Process



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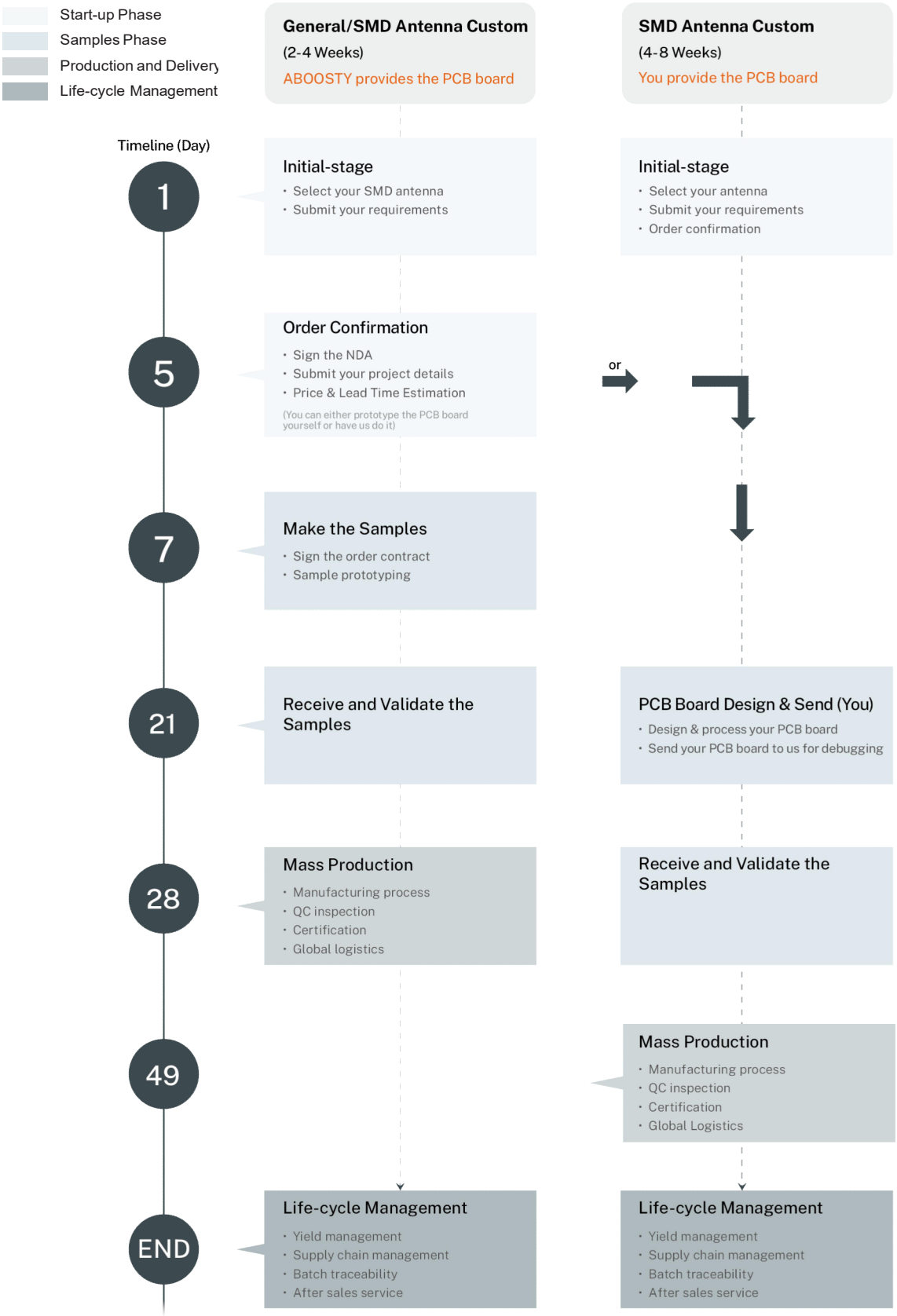
Deep Customization Process



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