

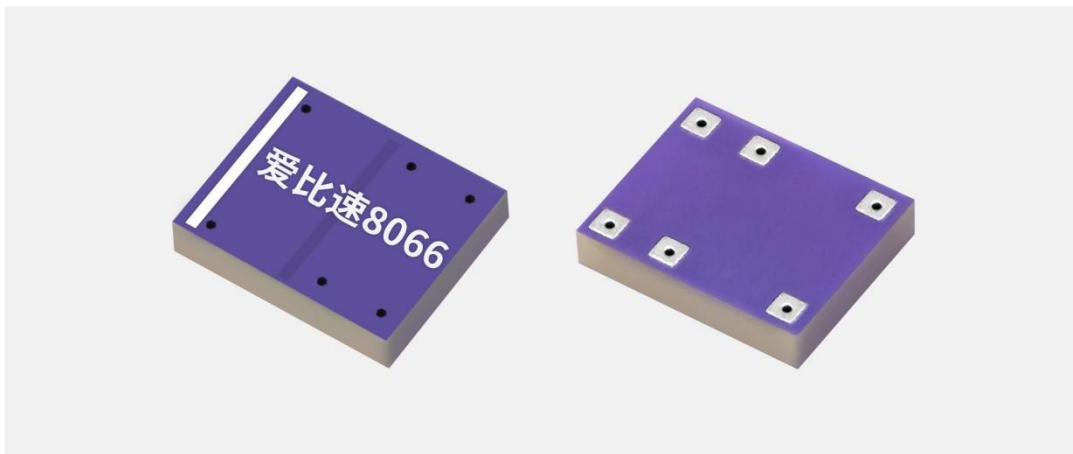
2.4G / 5G WIFI

SMD ANTENNA

 2400-2500MHz | 5100-5900MHz

Dimensions: 8.0 x 6.6 x 1.6 mm

Clearance Area: 60 x 50 mm



P N: M01-X020861W16





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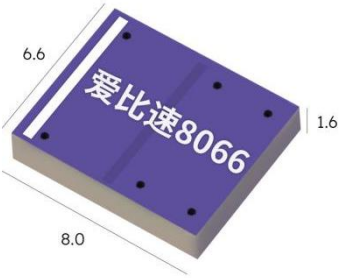
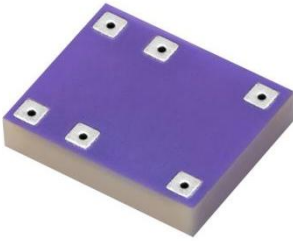


1 FEATURES & BENEFITS

- 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

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

3 ORDER INFORMATION

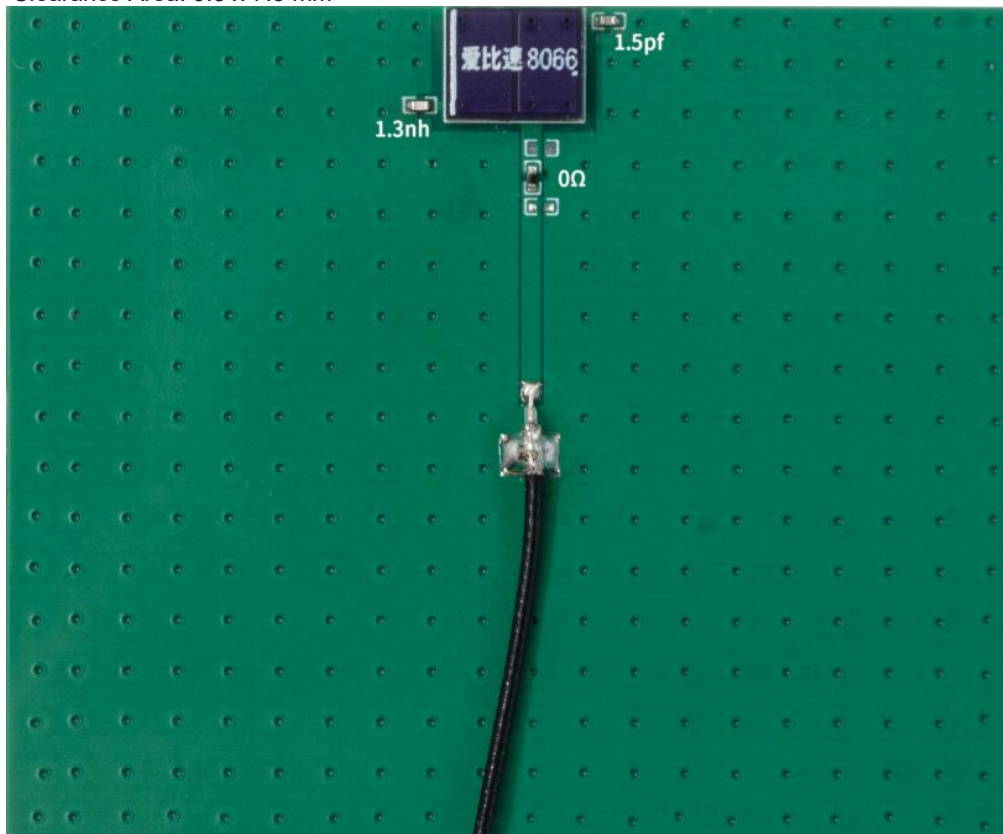
Product Name	2.4G/5G WIFI SMD ANTENNA
Part Number	M01-X020861W16
Dimensions	8.0 x 6.6 x 1.6mm
Mounting	SMT
Packaging	Tape & Reel
MOQ	2000 pcs/reel

4 REFERENCE GUIDE

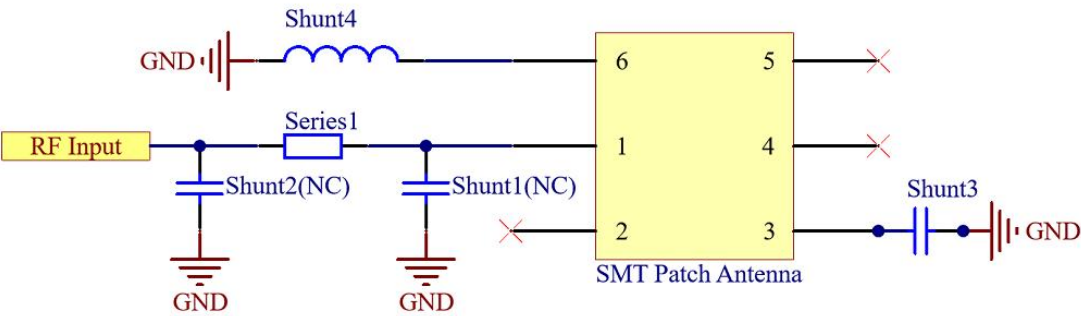
Technical Features	2400-2500 MHz	5100-5900 MHz
VSWR	2.5:1	1.5:1
Input Impedance	50Ω	
Peak Gain	2.89 dBi	
Operating Temperature	-40°C to +85°C	
Power Capacity	3W	
Dimensions (L x W x H)	8.0 x 6.6 x1.6 mm	
All data were measured in free space and on a reference ground plane of 50 mm length, 60 mm width,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

5 EVALUATION BOARD WITH THE ANTENNA

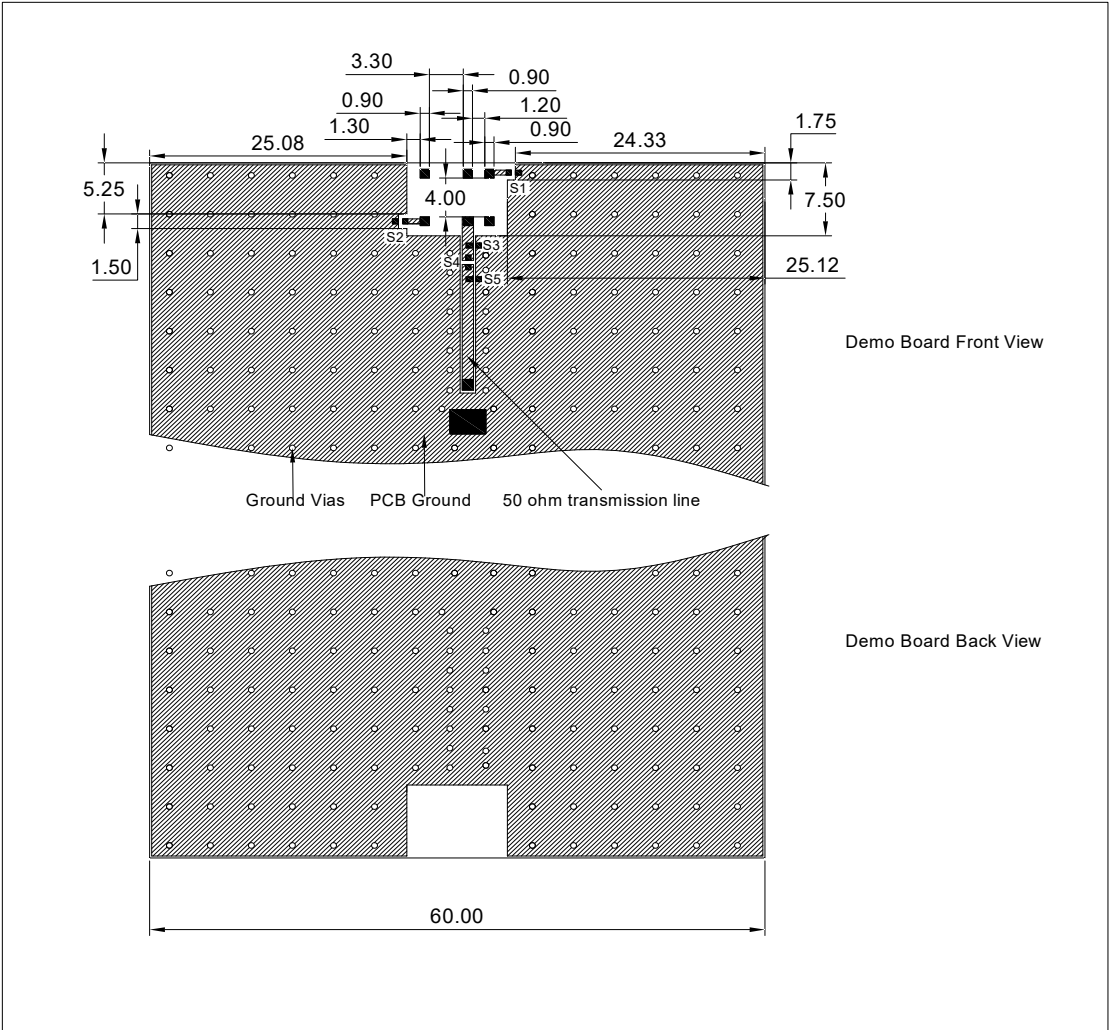
The evaluation board provides operation at 2400-2500 MHz, 5100-5900 MHz.
Evaluation Board dimension: 60.0 x 50.0 x 1.6 mm
Clearance Area: 9.8 x 7.5 mm



6 MATCHING NETWORK



7 RECOMMENDED LAYOUT



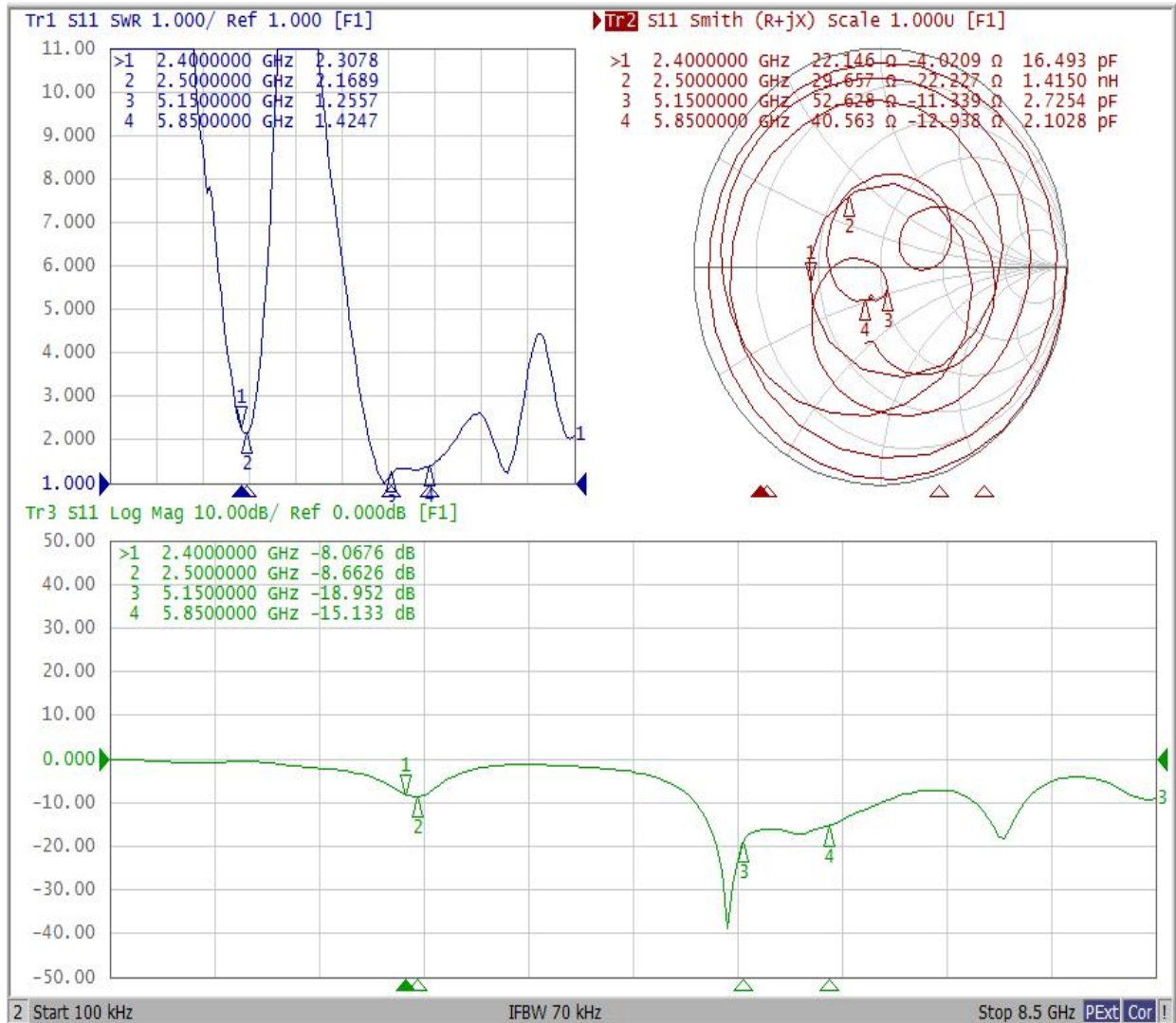
Tag Number	Value	Brand	PN
S1	CAP SMD 0402 NPO 1.5PF±0.1pF 50V	Murata	D03-0200510000
S2	SMD 0402 1.3nH LQG15HS1N3S02D	Murata	
S3	RES SMD 0402 0R ±1%	Murata	D03-0100010000
S4	NC		
S5	NC		

8 ELECTRICAL PERFORMANCE

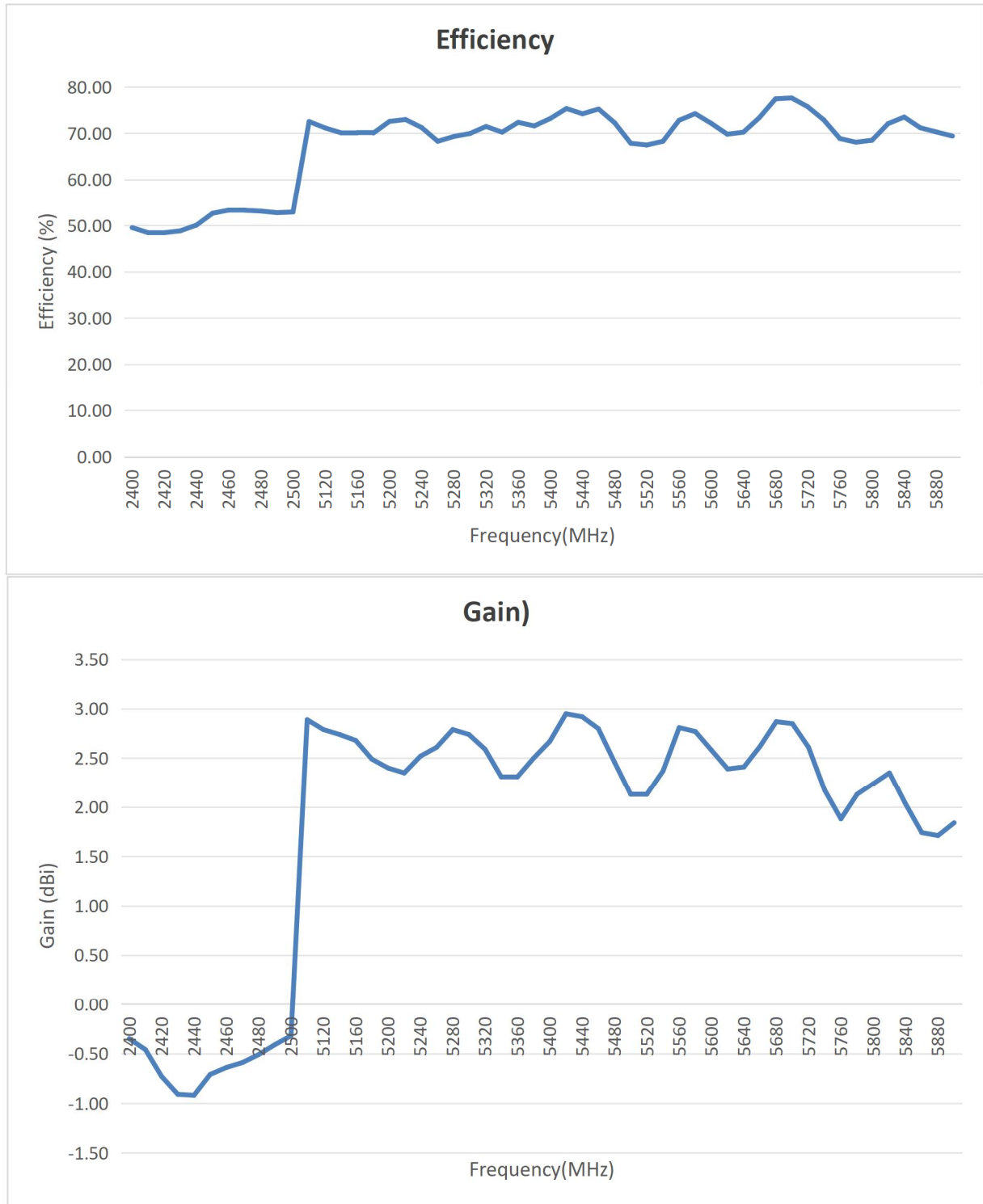
© Note

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)



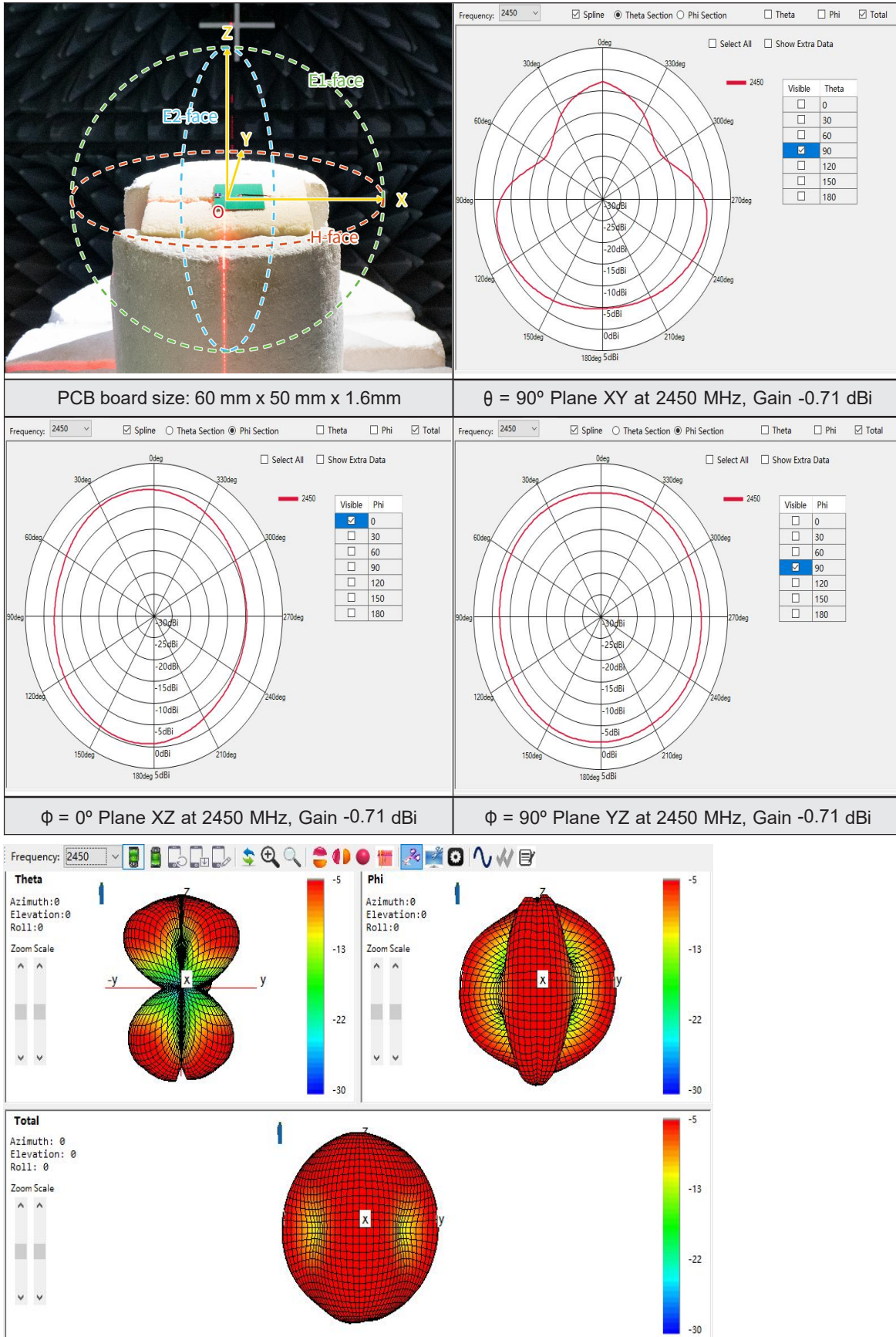
8.2 Gain (dBi) and Total Efficiency (%)

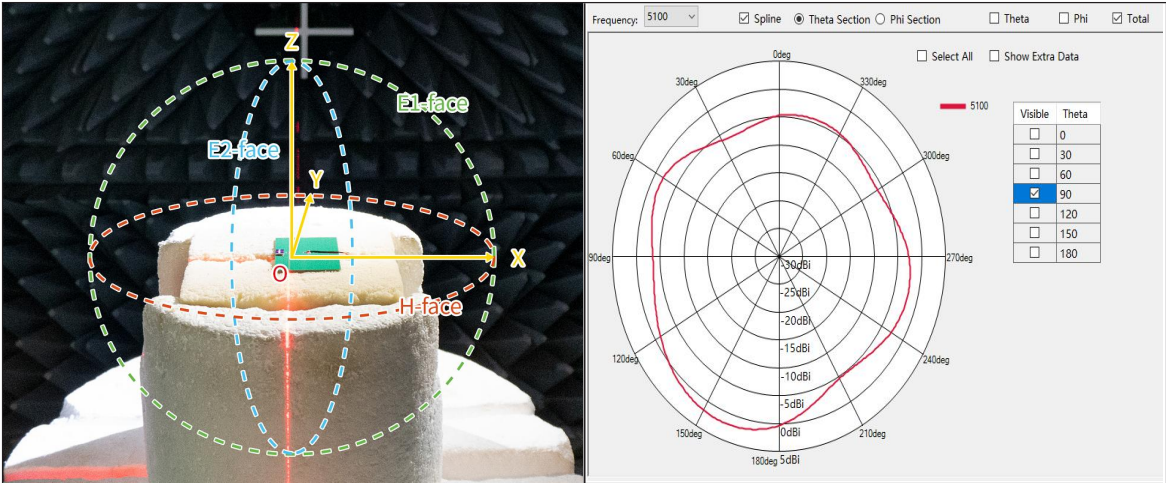




Frequency(MHz)	Gain (dBi)	Efficiency (%)	Frequency(MHz)	Gain (dBi)	Efficiency (%)
2400	-0.35	49.53	5400	2.67	73.2
2410	-0.46	48.43	5420	2.95	75.34
2420	-0.73	48.43	5440	2.92	74.21
2430	-0.91	48.84	5460	2.8	75.23
2440	-0.92	50.08	5480	2.46	72.27
2450	-0.71	52.64	5500	2.13	67.86
2460	-0.64	53.32	5520	2.13	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

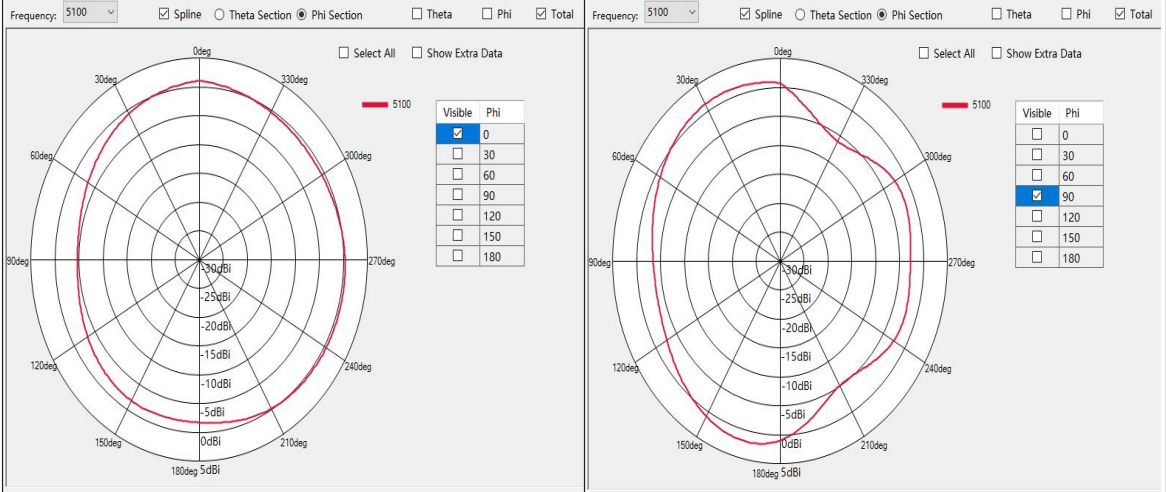
8.3 Radiation Patterns





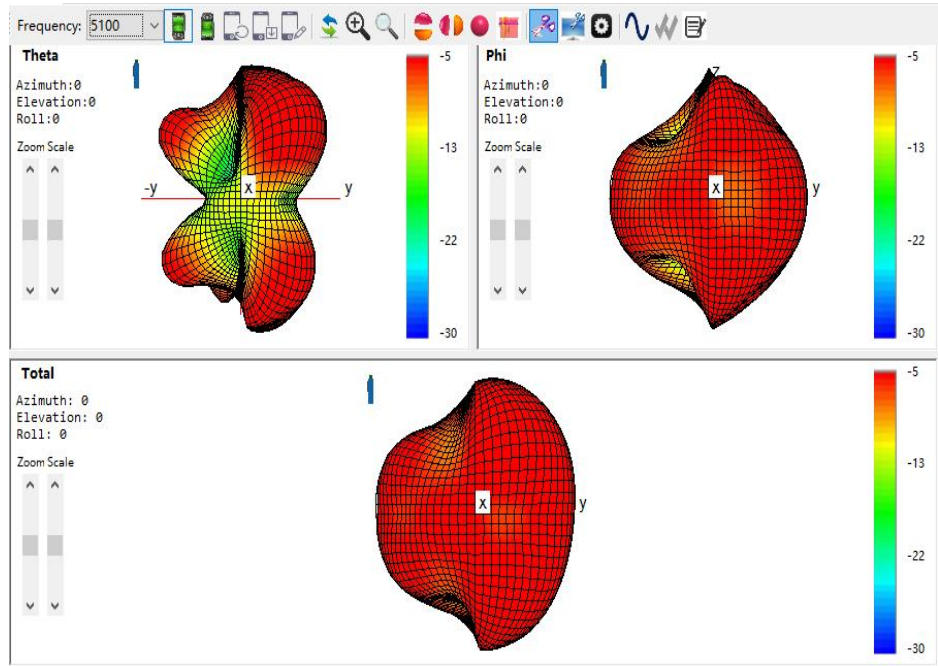
PCB board size: 60 mm x 50 mm x 1.6mm

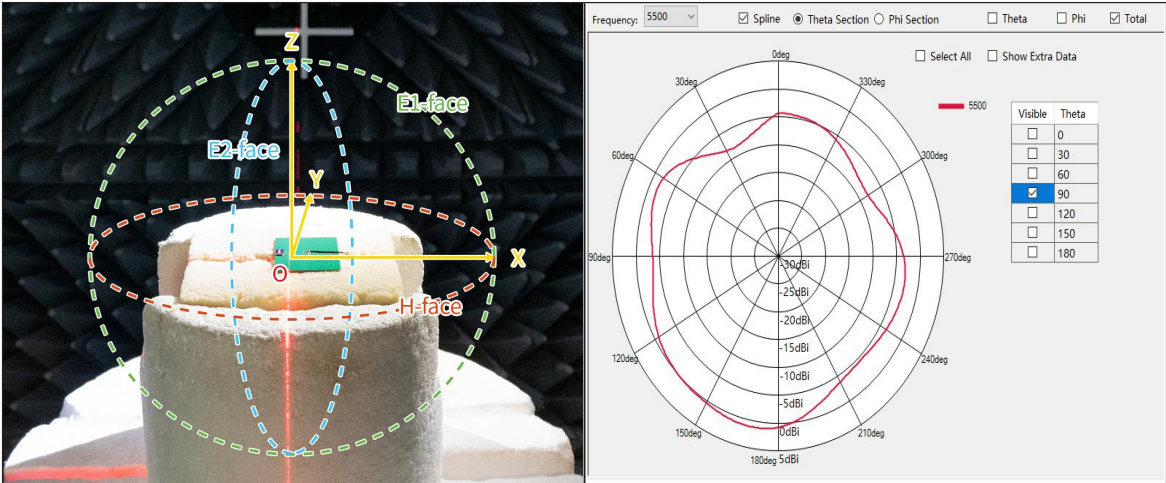
$\theta = 90^\circ$ Plane XY at 5100 MHz, Gain 2.89 dBi



$\phi = 0^\circ$ Plane XZ at 5100 MHz, Gain 2.89 dBi

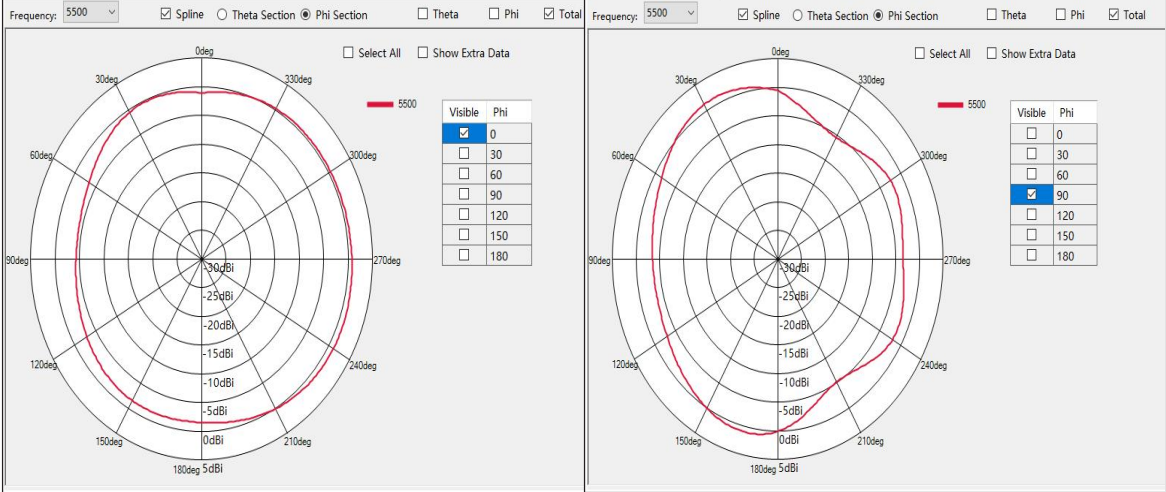
$\phi = 90^\circ$ Plane YZ at 5100 MHz, Gain 2.89 dBi





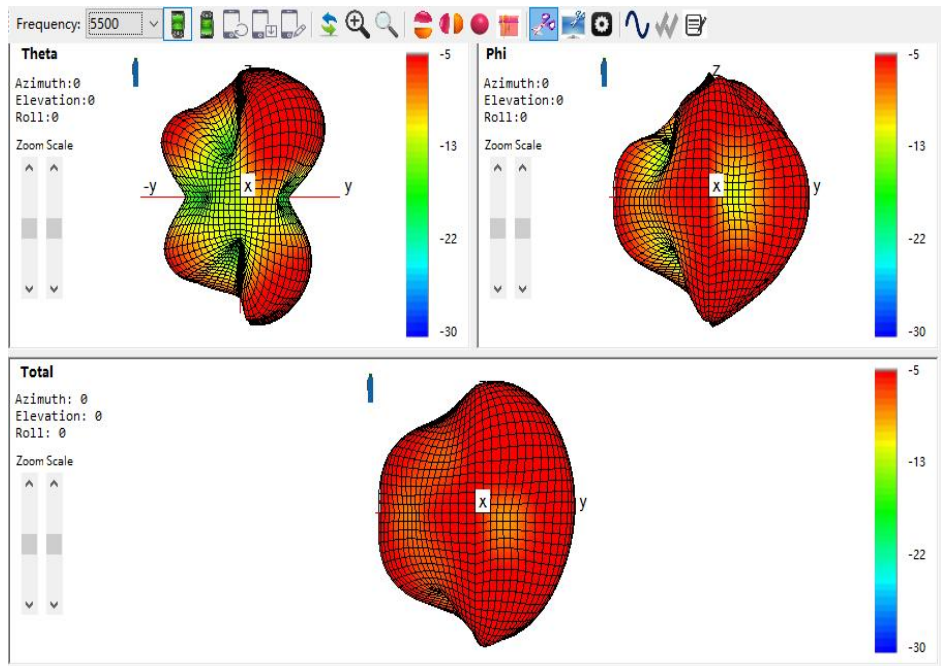
PCB board size: 60 mm x 50 mm x 1.6mm

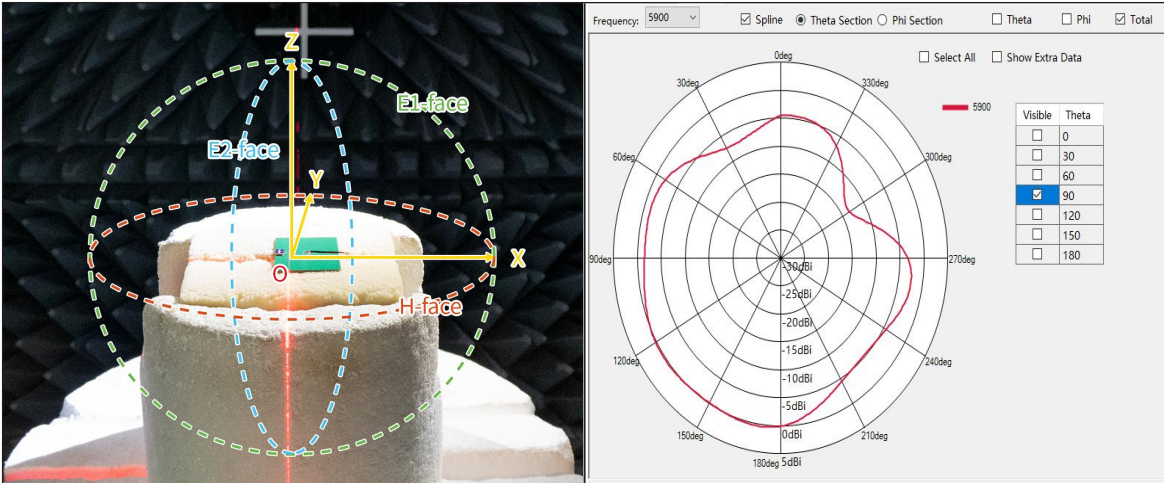
$\theta = 90^\circ$ Plane XY at 5500 MHz, Gain 2.13 dBi



$\phi = 0^\circ$ Plane XZ at 5500 MHz, Gain 2.13 dBi

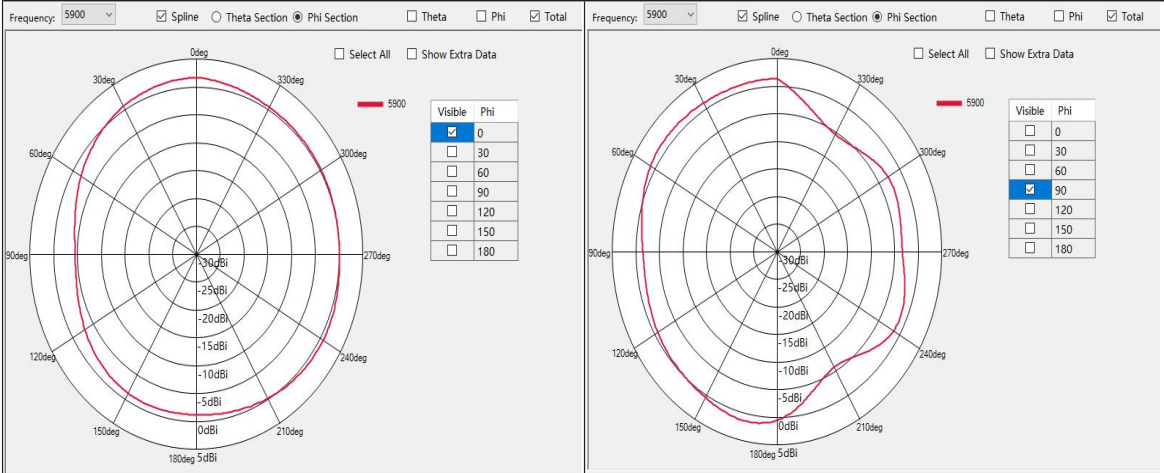
$\phi = 90^\circ$ Plane YZ at 5500 MHz, Gain 2.13 dBi





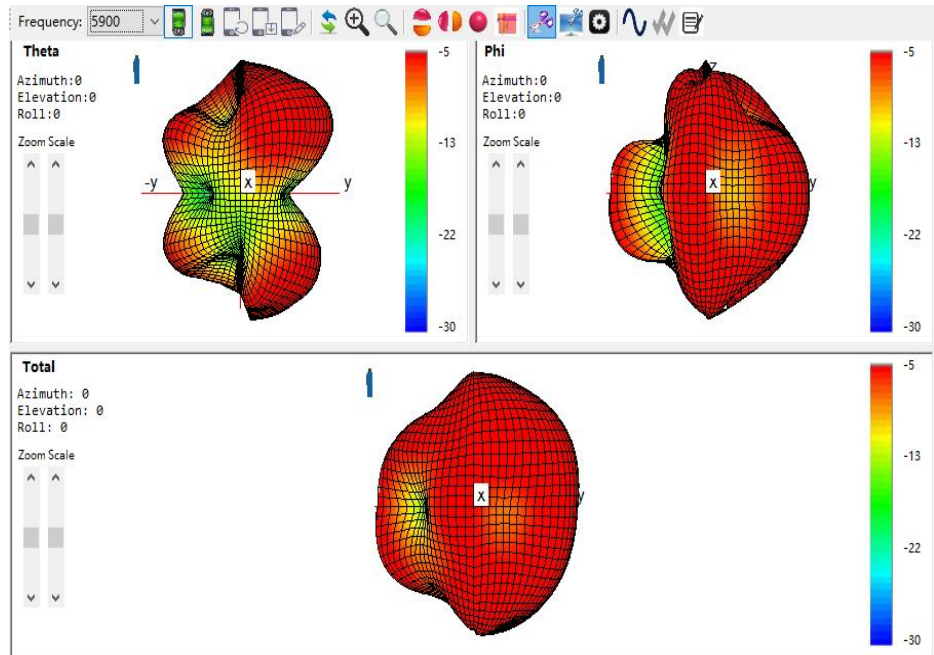
PCB board size: 60 mm x 50 mm x 1.6mm

$\theta = 90^\circ$ Plane XY at 5900 MHz, Gain 1.84 dBi



$\phi = 0^\circ$ Plane XZ at 5900 MHz, Gain 1.84 dBi

$\phi = 90^\circ$ Plane YZ at 5900 MHz, Gain 1.84 dBi

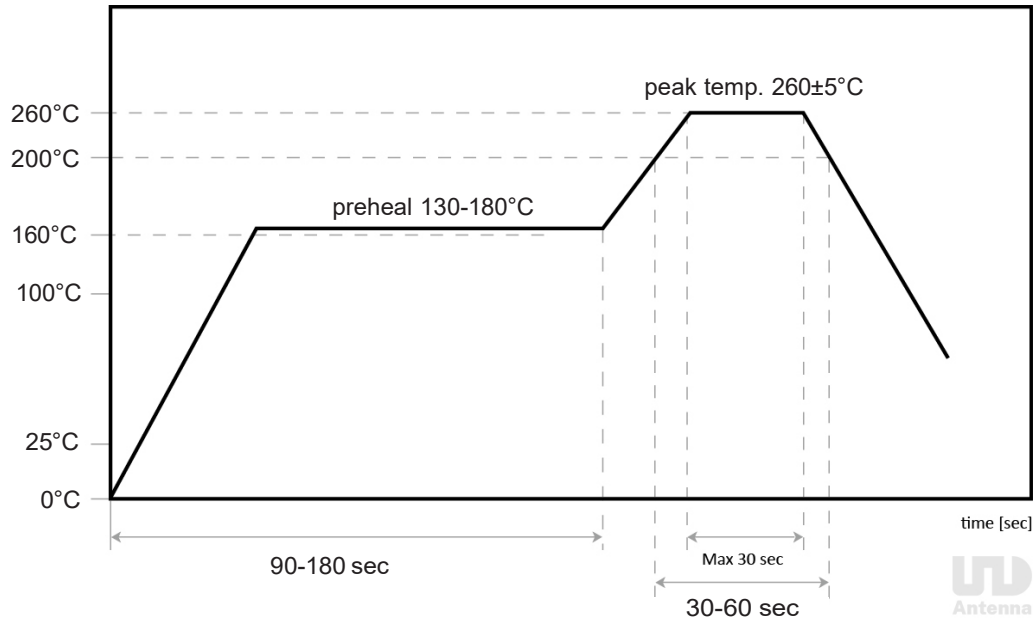


9 SOLDERING CONDITIONS

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 260°C.

The figure below shows the temperature profile for soldering.



10 PACKAGING

10.1 Optimal Storage Conditions for Packaged Reels

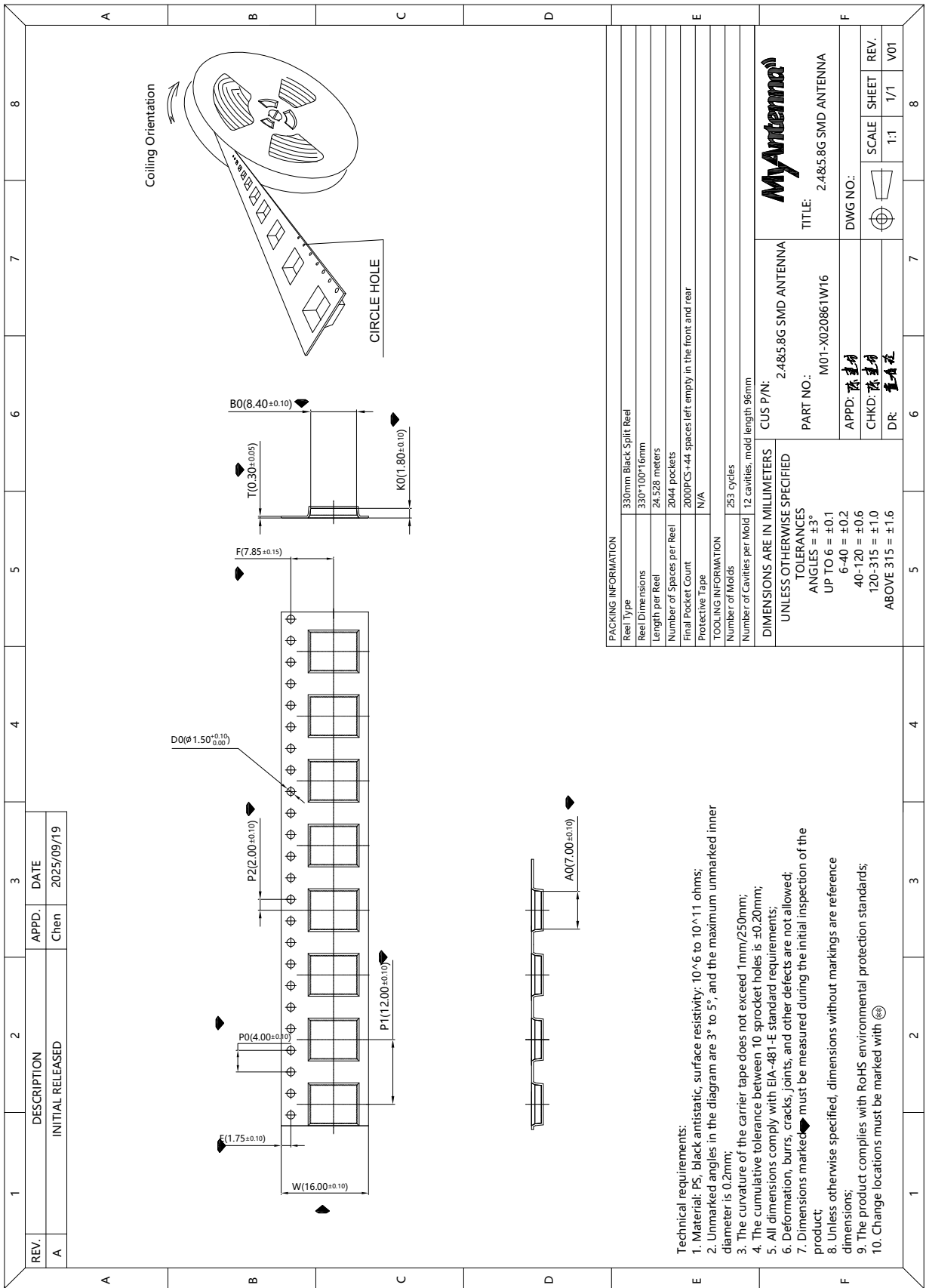
Temperature	-5°C to 40°C
Humidity	Less than 70% RH
Shelf life	18 months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Reels should be stored in unopened sealed manufacturer's plastic packaging.

© 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.



10.2Packagings and Dimensions (Unit: mm)





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.	

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



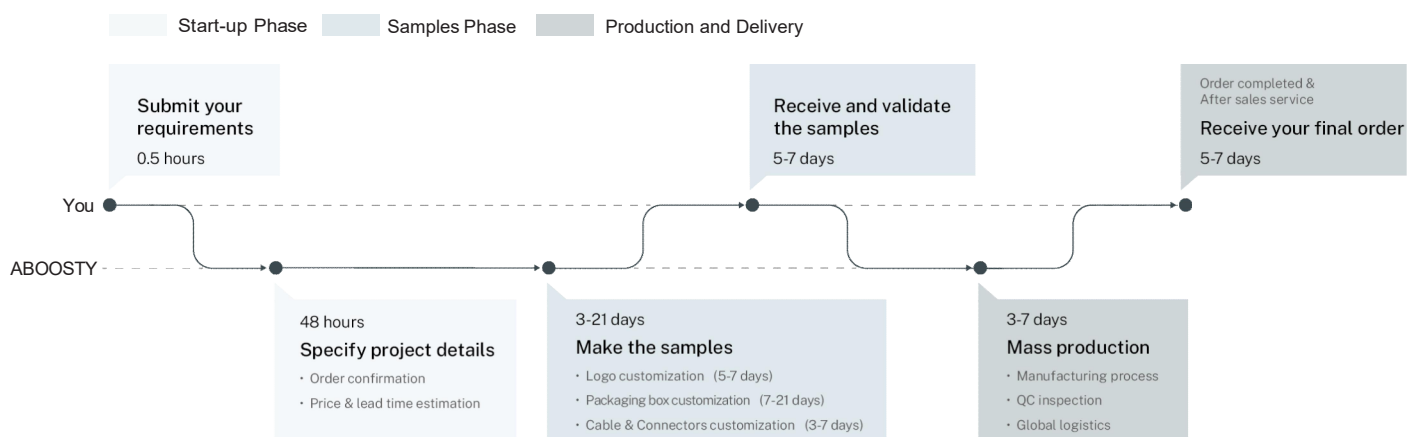
Prompt reply within 24h

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





Deep Customization Process

