

WIFI 6E WIFI7

ONBOARD SMD STAMPED METAL ANTENNA

2400-2500 MHz | 5100-7125 MHz



Dimensions: 12.0 x 10.46 x 3.0 mm

Clearance Area: 45.0 x 15.7 mm



Model: ADWM002
PN: M01-X01210W232





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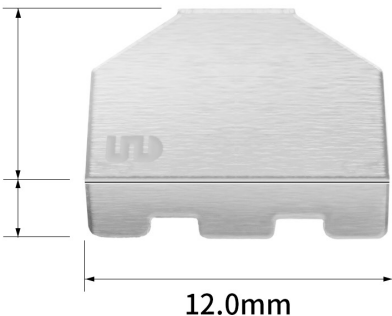
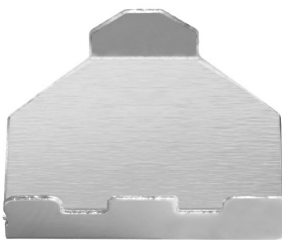


1 FEATURES & BENEFITS

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

2 APPLICATIONS

- Wireless Routers and Modems
- Internet of Things (IoT) Devices, M2M
- Indoor Location Tracking and Positioning
- Consumer Tracking
- Smart Metering
- Virtual Reality (VR) and Augmented Reality (AR)

Top  Bottom 	
Items	Dimensions (mm)
Length	12.0±0.1
Width	10.46±0.1
Thickness	3.0±0.1

3 ORDER INFORMATION

Product Name	WIFI 6E WIFI7 OnBoard SMD Stamped Metal Antenna
Model	ADWM002
Part Number	M01-X01210W232
Dimensions	12.0 x 10.46 x 3.0 mm
Weight	0.35 g
Mounting	SMT
Packaging	Tape & Reel
MOQ	1200 pcs/reel



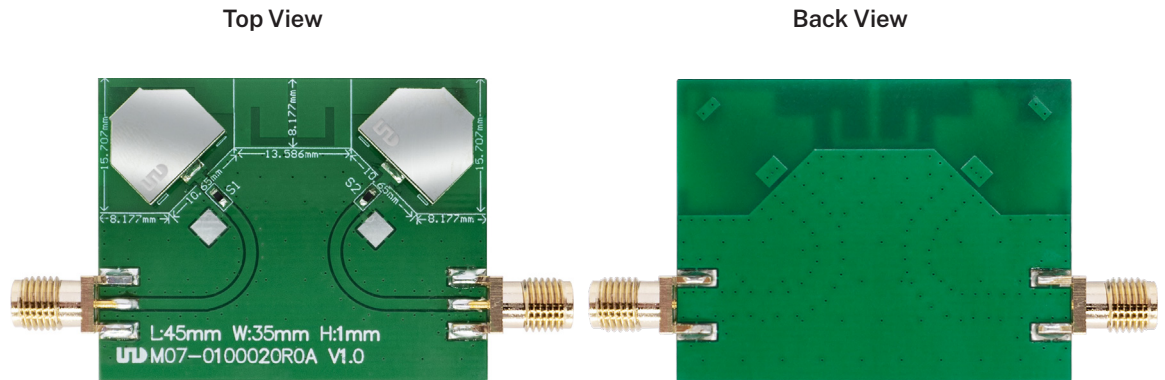
4 REFERENCE GUIDE

Antenna	Antenna-Left (ANT 1)		Antenna-Right (ANT 2)	
Technical Features (MHz)	2400-2500	5100-7125	2400-2500	5100-7125
Max VSWR	1.22:1	1.96:1	1.21:1	1.80:1
Max Efficiency	88.43%		92.17%	
Peak Gain	Up to 4.49 dBi (Typ)		Up to 5.64 dBi (Typ)	
Max Return Loss	-11.38 dB		-10.26 dB	
Max Input Power	2 Watts CW			
Polarization	Linear			
Input Impedance	50 Ω			
Operating Temperature	-40°C to +80°C			
Relative Humidity	10 to 70%			
Dimensions (L x W x H)	12.0 x 10.46 x 3.0 mm			

All data were measured in free space and on a reference wground plane of 45 mm length, 35 mm width, and 1.0 mm thickness. Application data might vary.

5 EVALUATION BOARD WITH ANTENNA

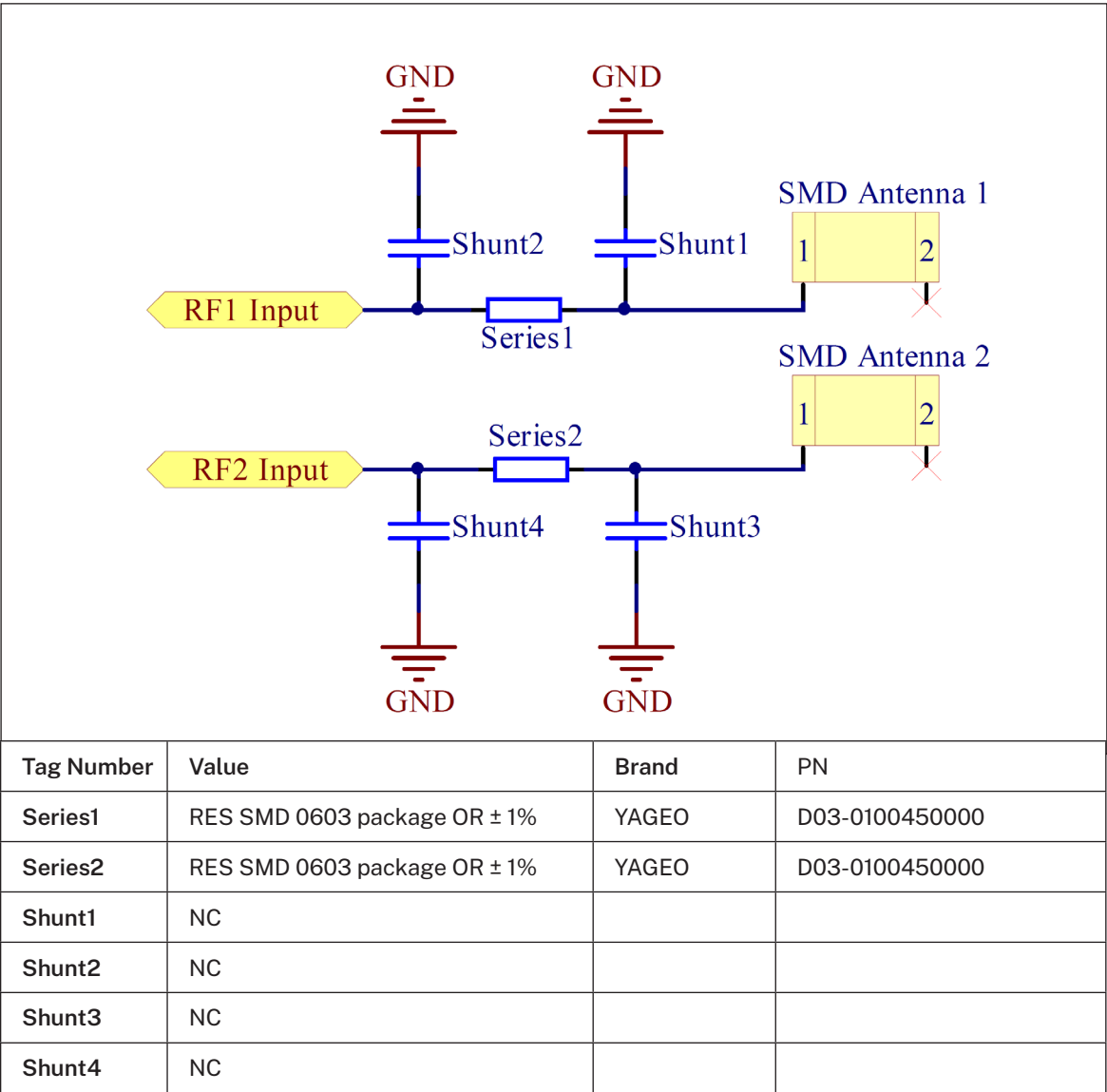
The evaluation board provides operation at 2.2-8.5 GHz.
Evaluation Board dimension: 45.0 x 35.0 x 1.0 mm



Clearance Area: 45.0 x 15.7 mm

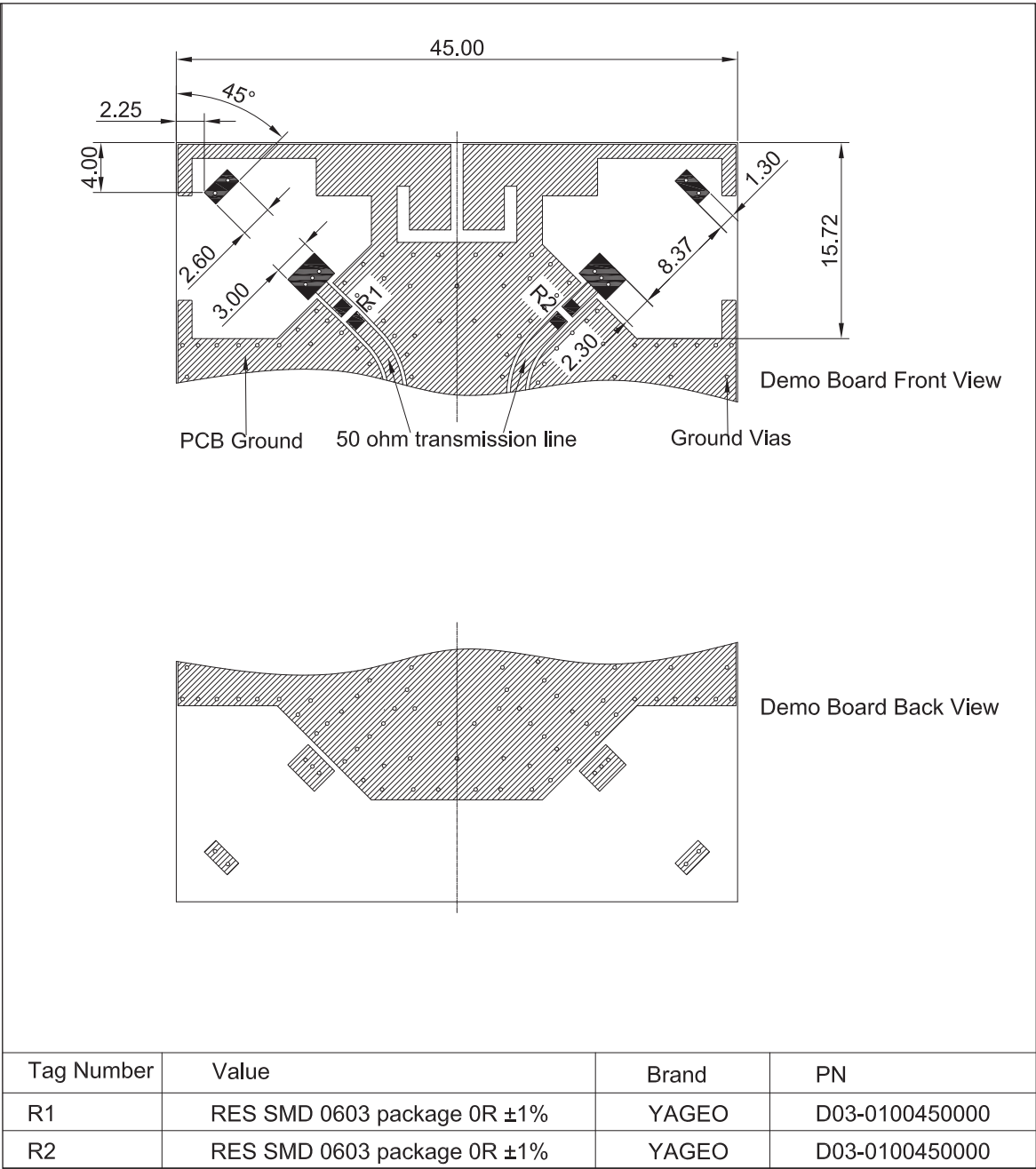


6 MATCHING NETWORK





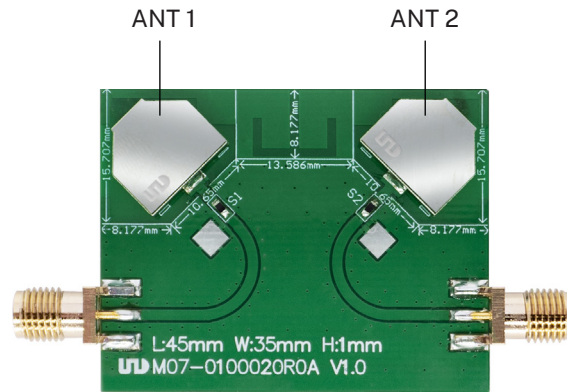
7 RECOMMENDED FOOTPRINT AND LAYOUT



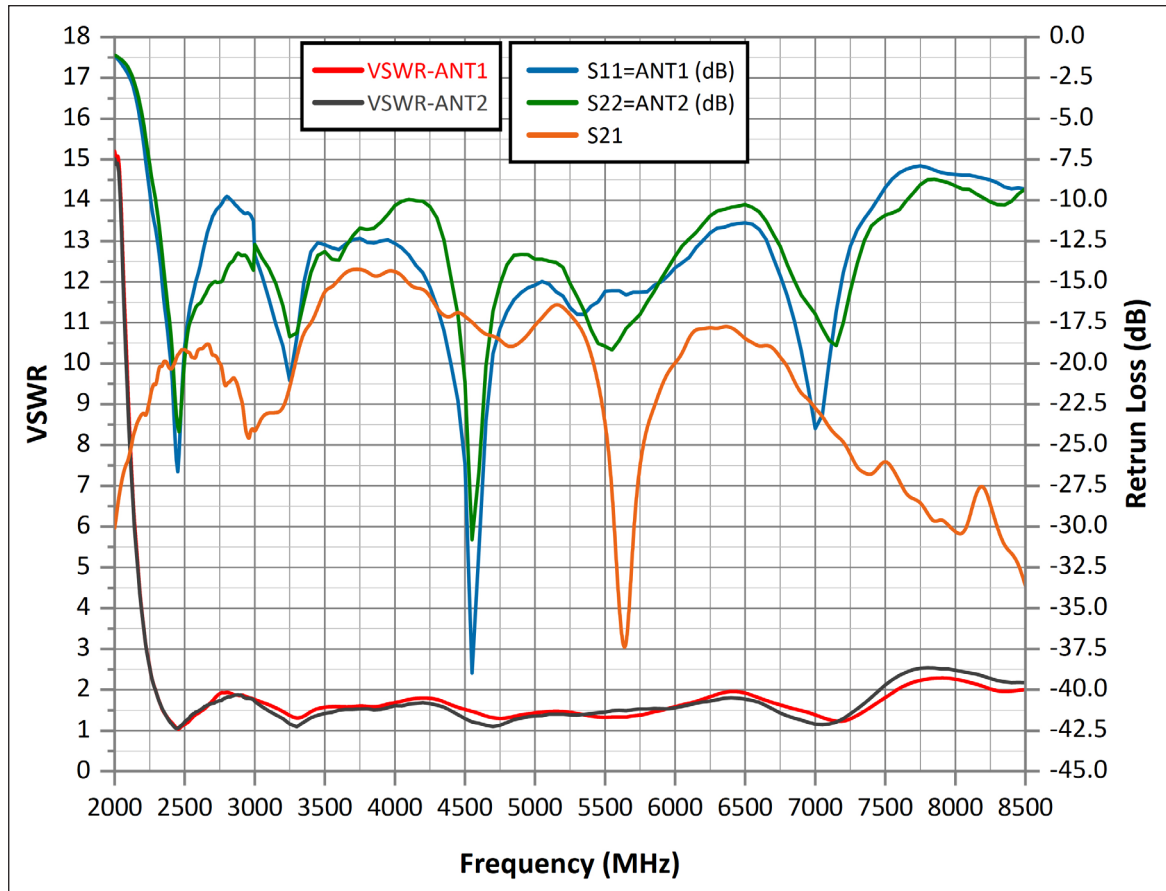
8 ELECTRICAL PERFORMANCE

© Note

All data displayed in Chapter 8 were measured in free space and on a reference ground plane of 45 mm length, 35 mm width, and 1.0 mm thickness.

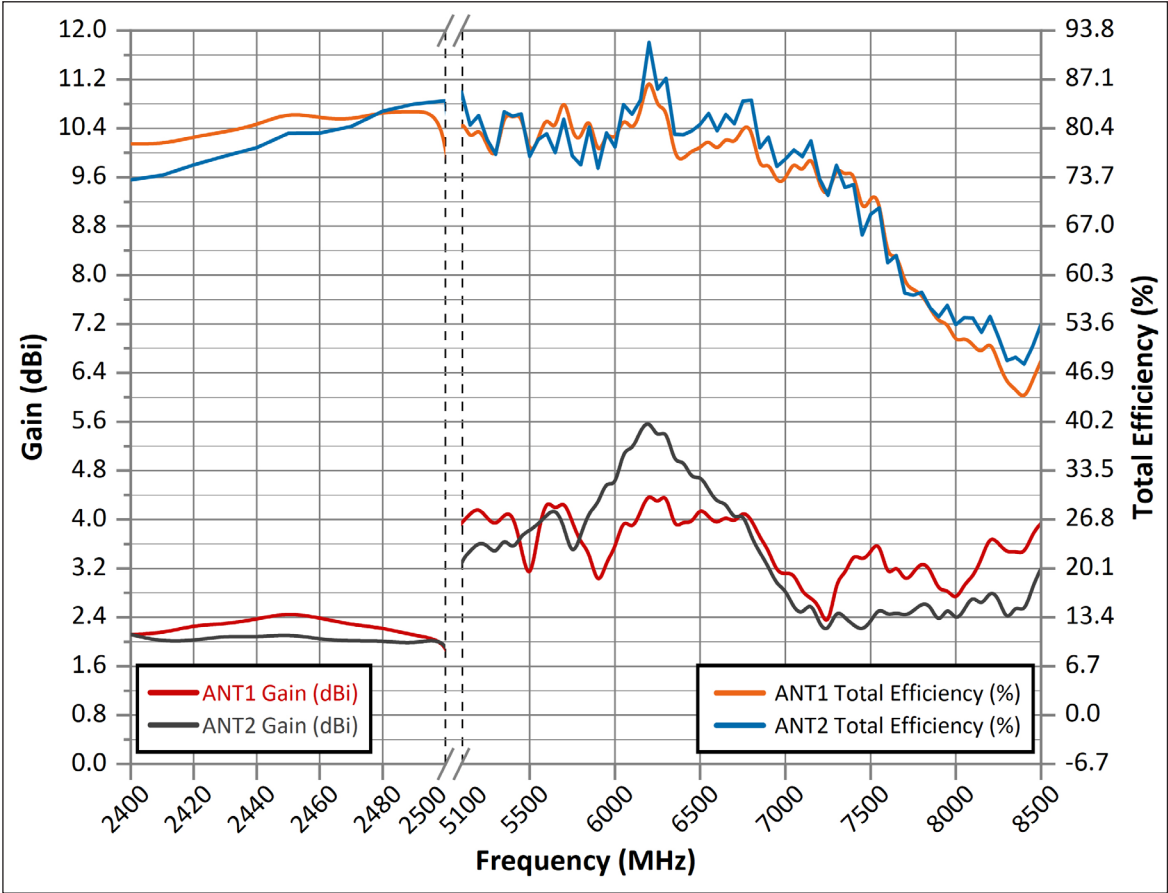


8.1 VSWR, Return Loss(S11, S22) and Isolation(S21)





8.2 Gain and Total Efficiency

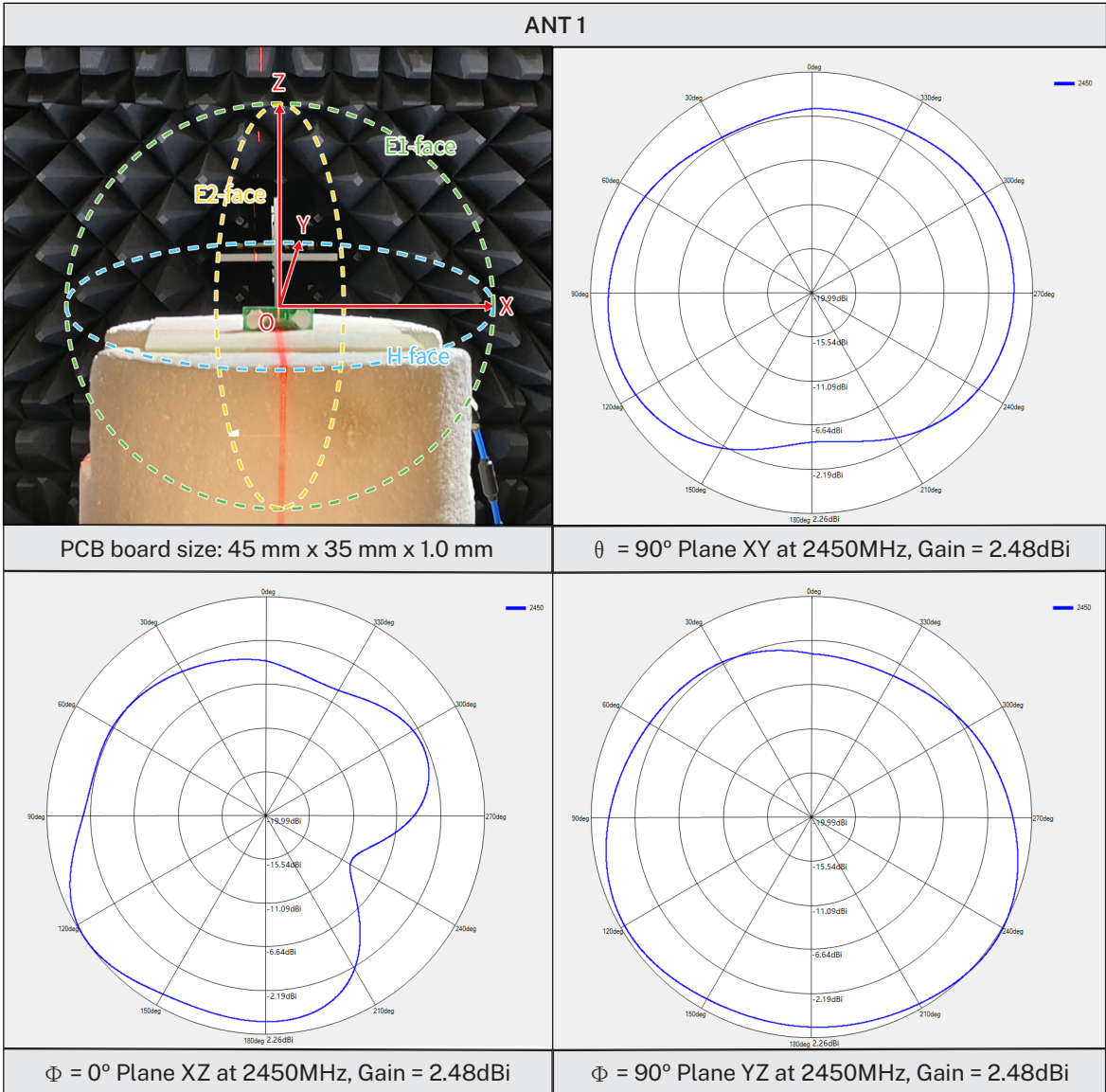


ANT 1 Data					
Freq (MHz)	Gain (dBi)	Efficiency (%)	Freq (MHz)	Gain (dBi)	Efficiency (%)
2400	2.12	78.27	5100	3.94	82.21
2410	2.14	78.24	5300	3.89	75.65
2420	2.27	79.23	5500	2.89	76.31
2430	2.29	79.93	5700	4.34	85.81
2440	2.37	80.84	5900	2.85	75.76
2450	2.48	82.66	6150	4.13	82.47
2460	2.39	81.83	6350	3.81	76.15
2470	2.28	81.53	6550	4.04	79.03
2480	2.23	82.72	6750	4.15	80.62
2490	2.1	82.66	6950	3.13	72.82
2500	2.04	82.77	7150	2.72	77.33

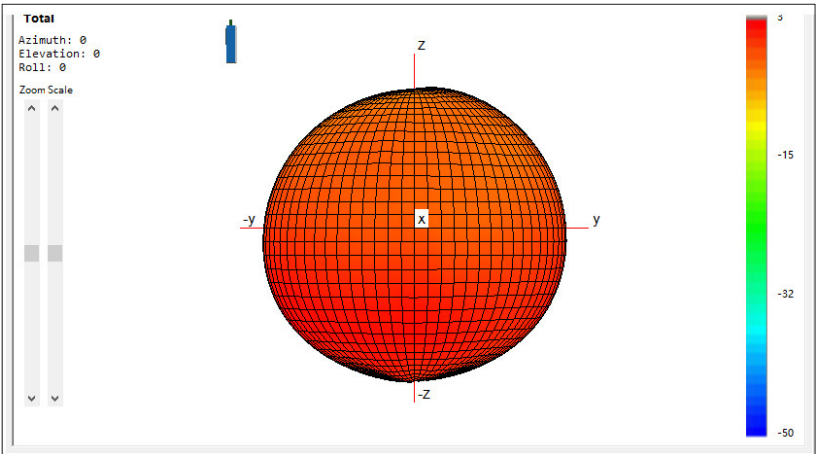


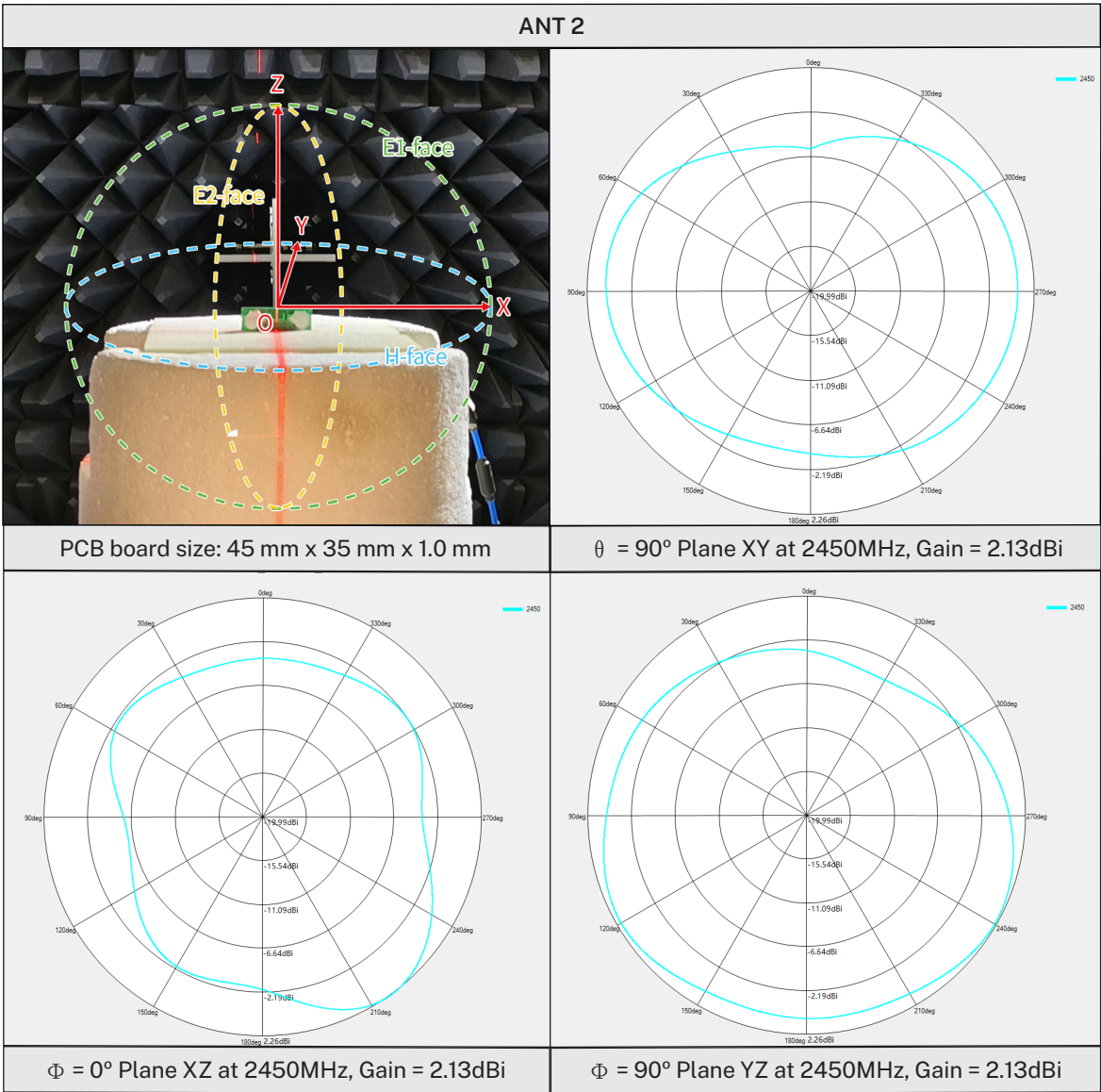
ANT 2 Data					
Freq (MHz)	Gain (dBi)	Efficiency (%)	Freq (MHz)	Gain (dBi)	Efficiency (%)
2400	2.12	73.36	5100	3.34	85.42
2410	2	73.98	5300	3.41	76.84
2420	2.02	75.41	5500	3.82	76.56
2430	2.1	76.62	5700	3.92	81.66
2440	2.07	77.75	5900	4.24	74.95
2450	2.13	79.71	6150	5.47	84.26
2460	2.04	79.76	6350	4.89	79.61
2470	2.01	80.67	6550	4.49	82.46
2480	2.02	82.76	6750	4.13	84.13
2490	1.96	83.73	6950	2.93	75.17
2500	2.09	84.18	7150	2.68	78.69

8.3 2D and 3D Radiation Patterns (2400-2500 MHz)

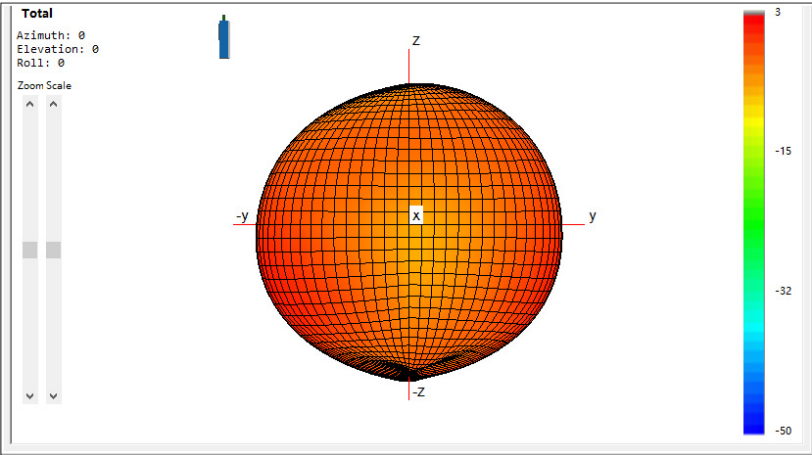


ANT 1 3D radiation patterns
@ 2450 MHz

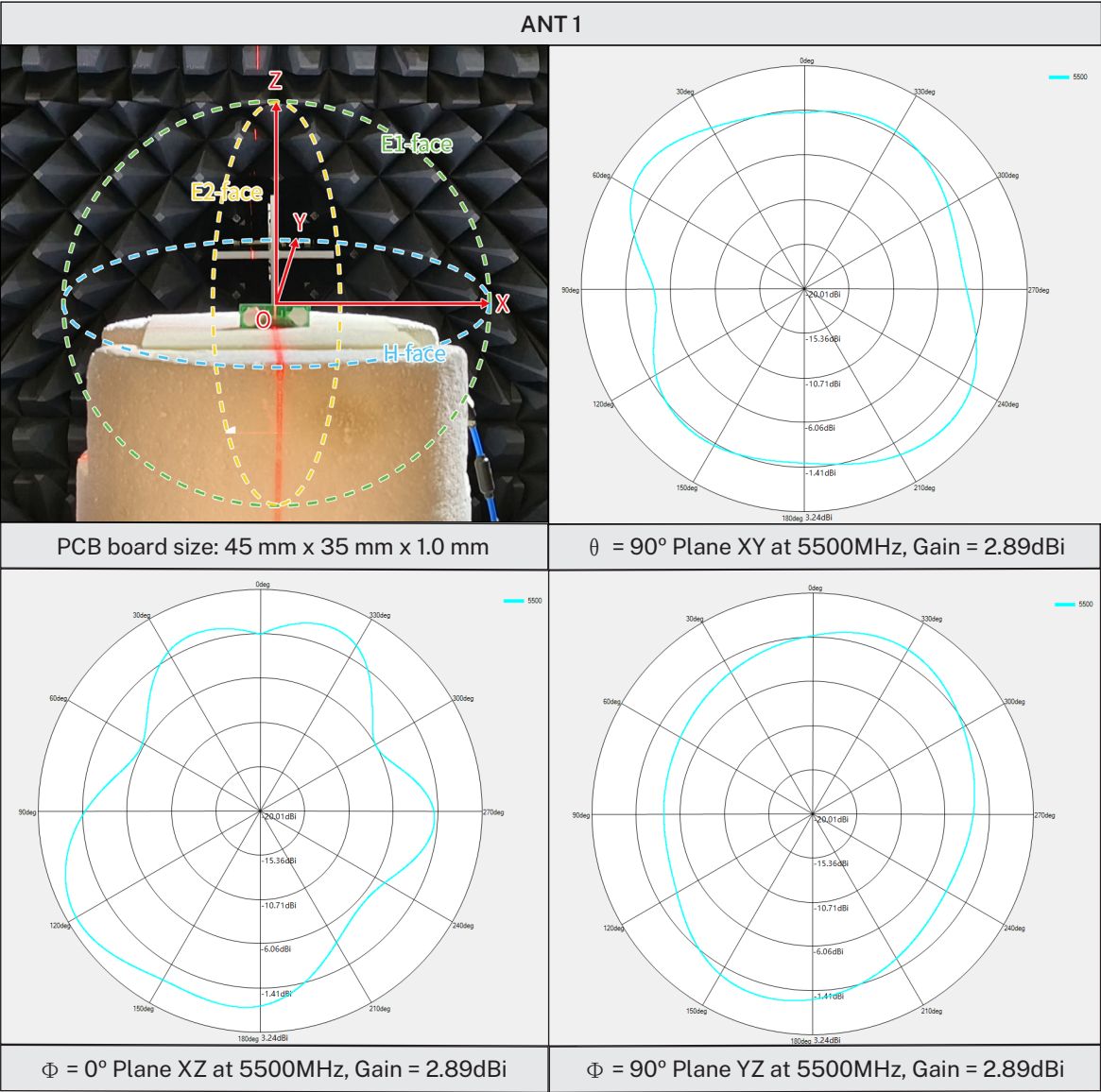




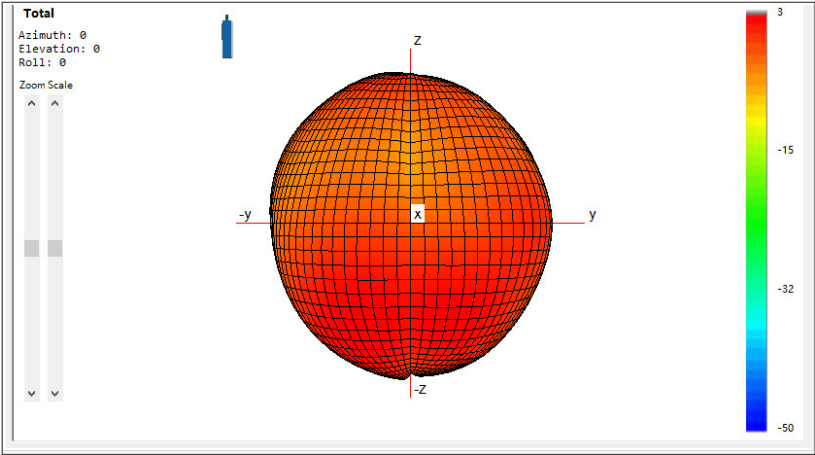
ANT 2 3D radiation patterns
@ 2450 MHz

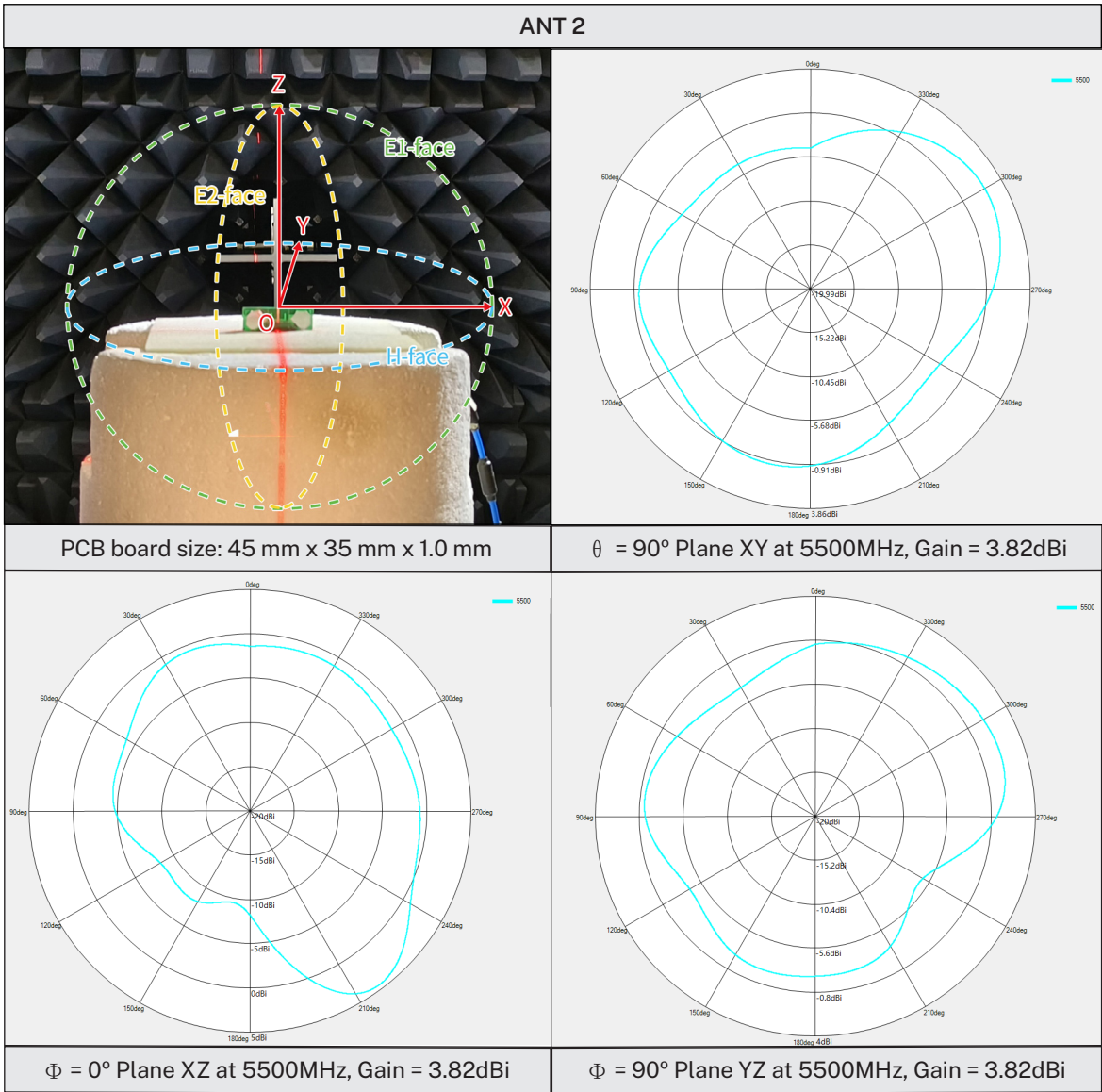


8.4 2D and 3D Radiation Patterns (5100-5800 MHz)

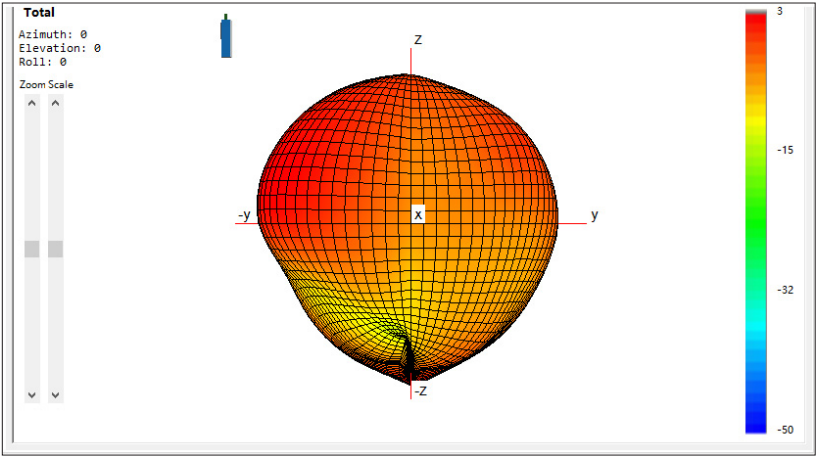


ANT 1 3D radiation patterns
@ 5500 MHz

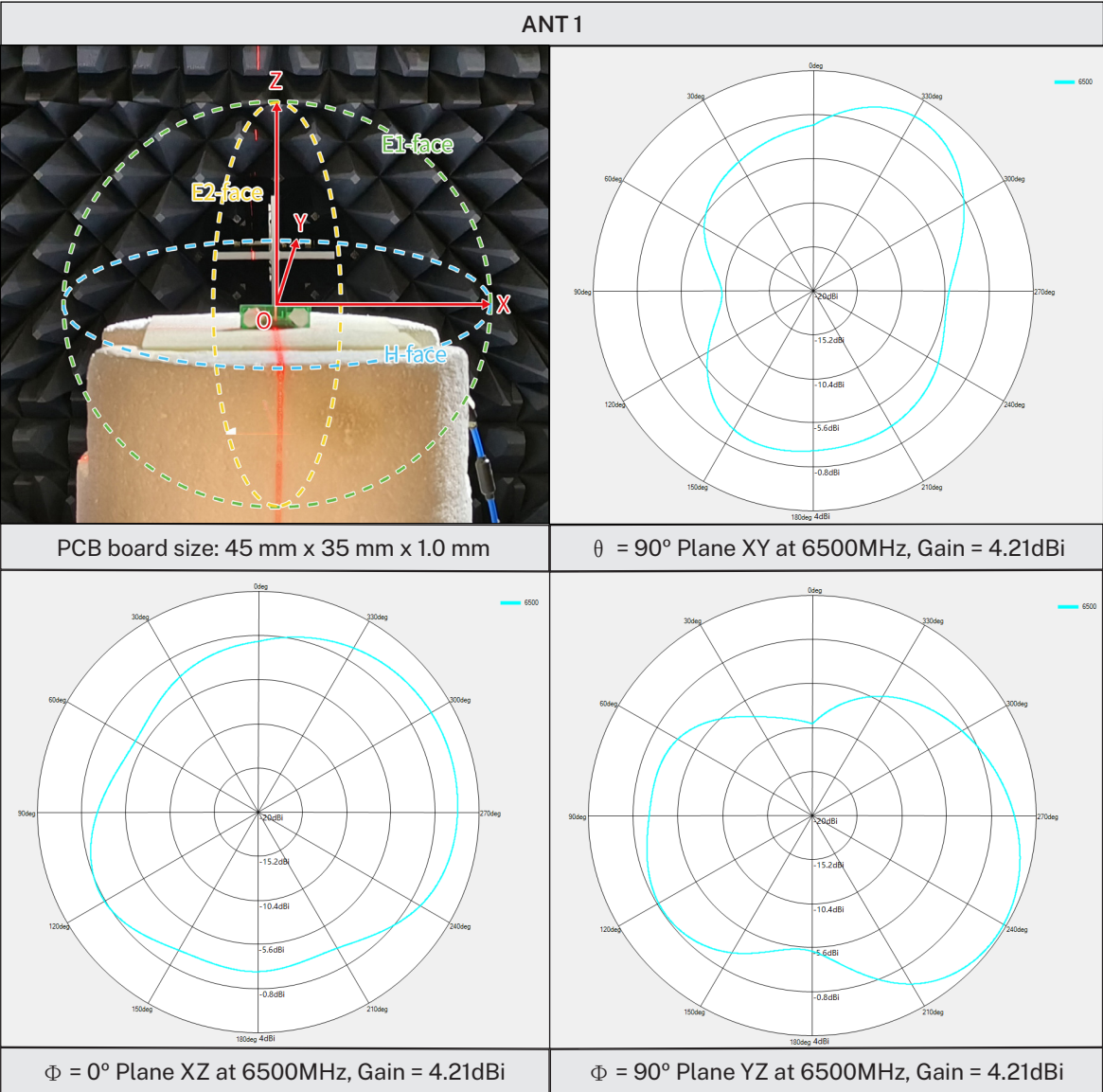




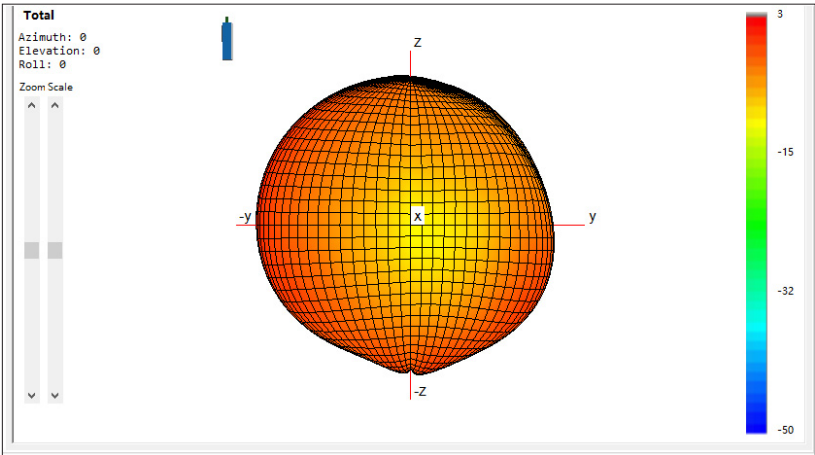
ANT 2 3D radiation patterns
@ 5500 MHz

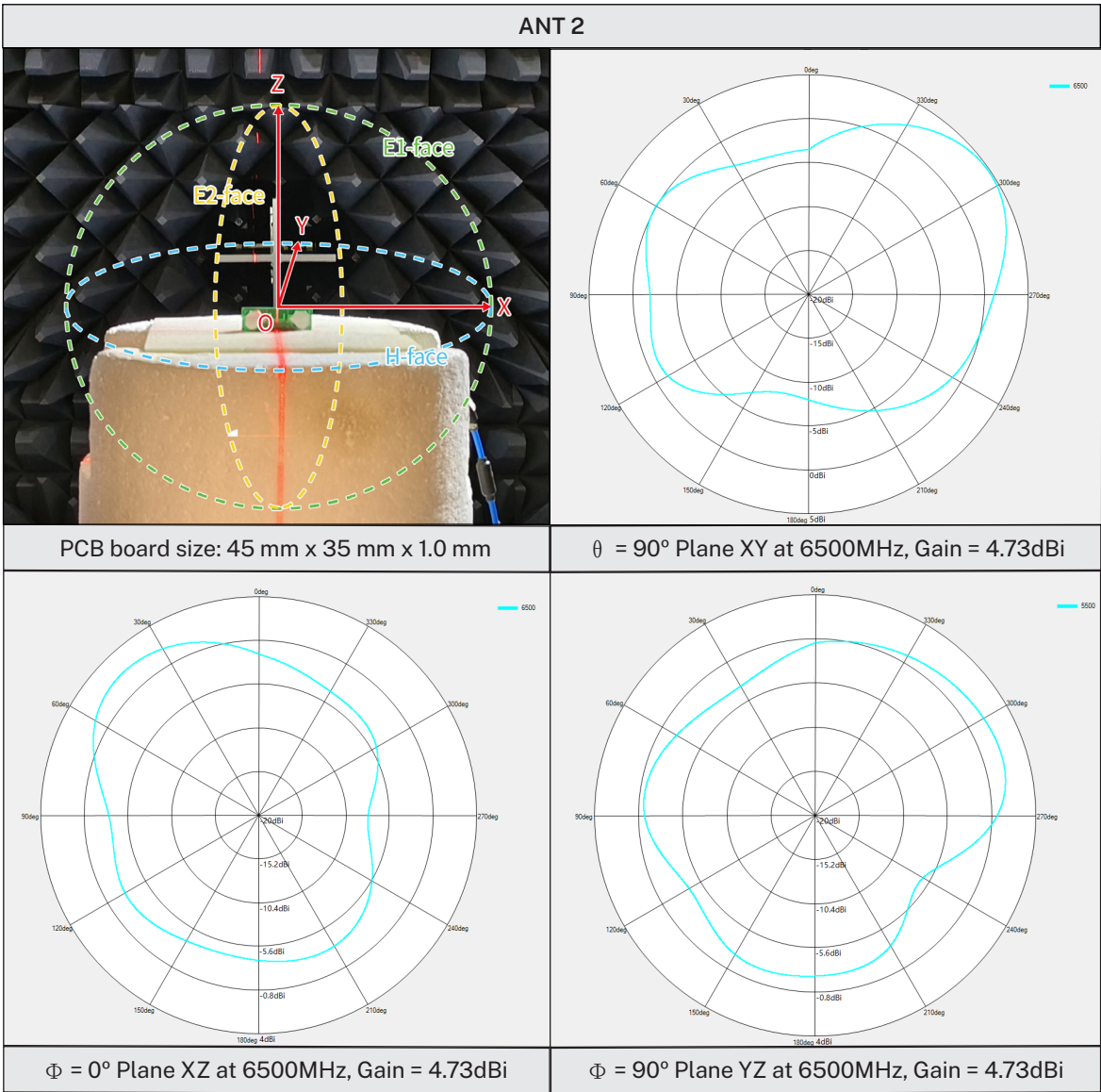


8.5 2D and 3D Radiation Patterns (5925-7125 MHz)

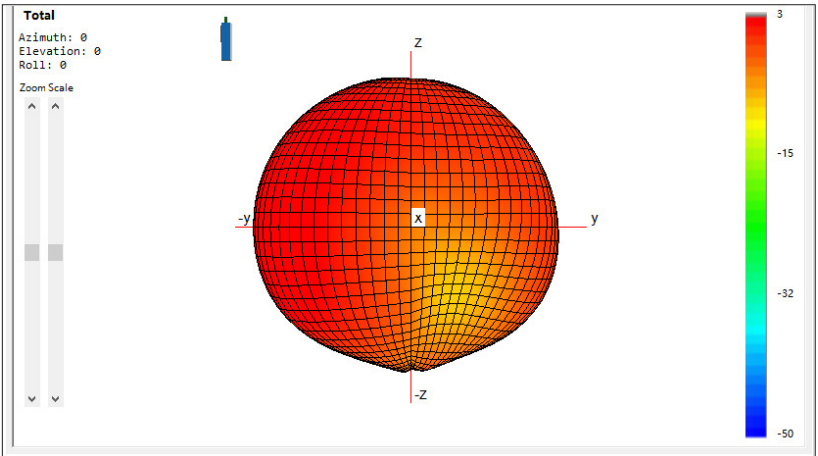


ANT 13D radiation patterns
@ 6500 MHz





ANT 2 3D radiation patterns
@ 6500 MHz

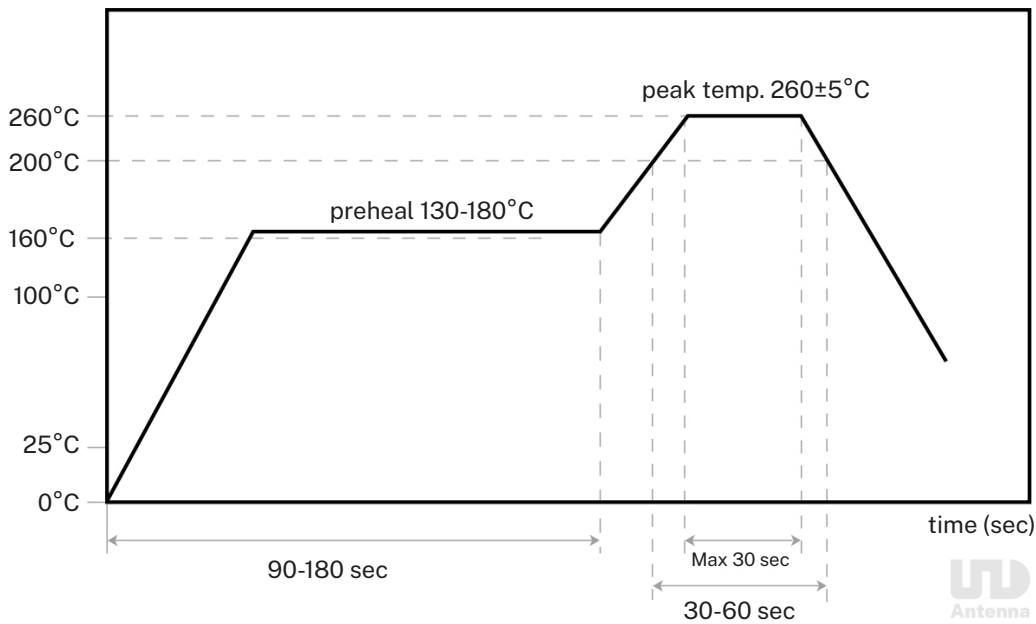


9 SOLDERING CONDITIONS

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

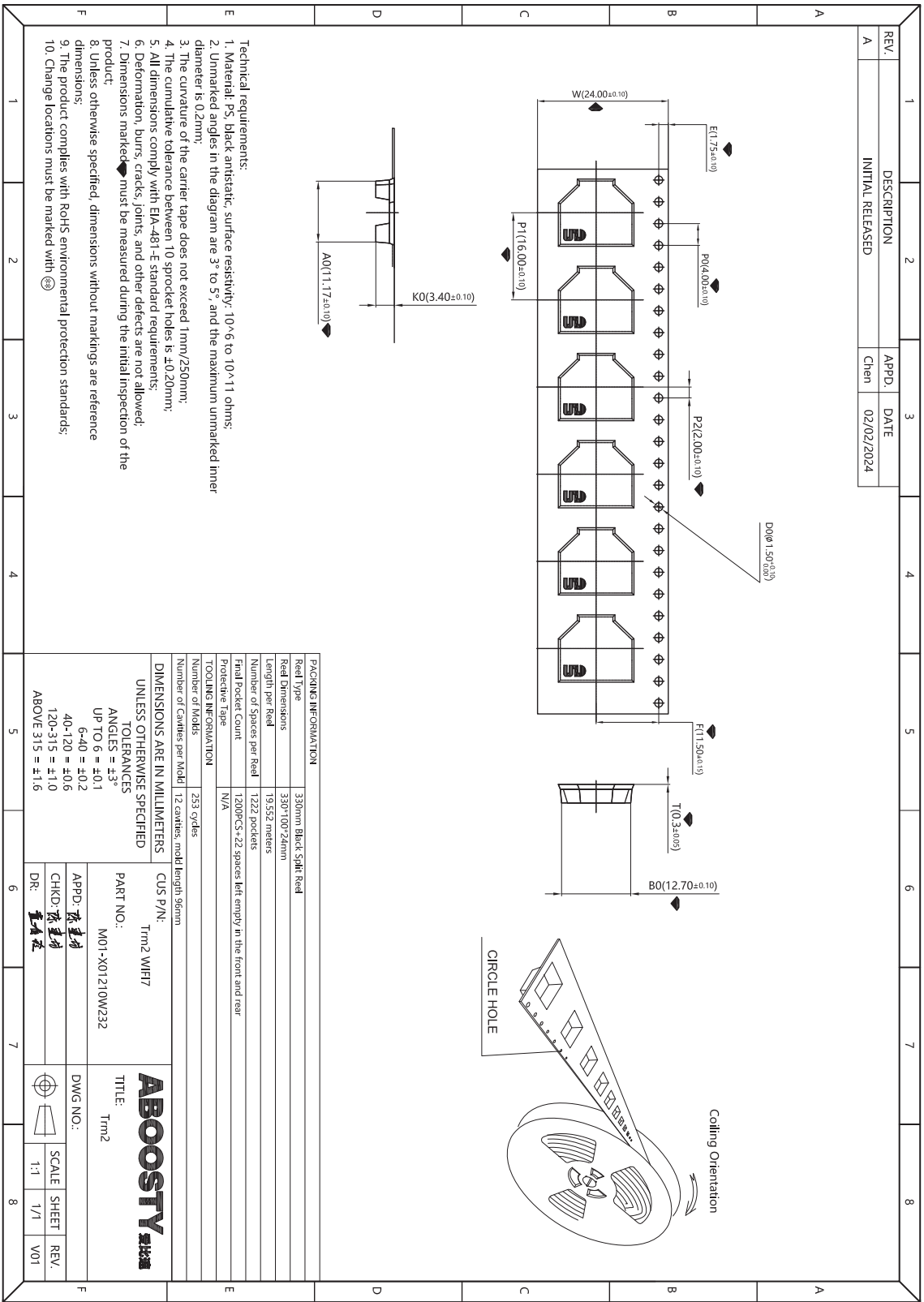
Temperature	-5°C to 40°C
Humidity	Less than 70% RH
Shelf life	18 months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Reels should be stored in unopened sealed manufacturer's plastic packaging.

© Note

Storage of open reels of antennas is not recommended due to possible oxidation 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.



10.2 Packagings 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.	

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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



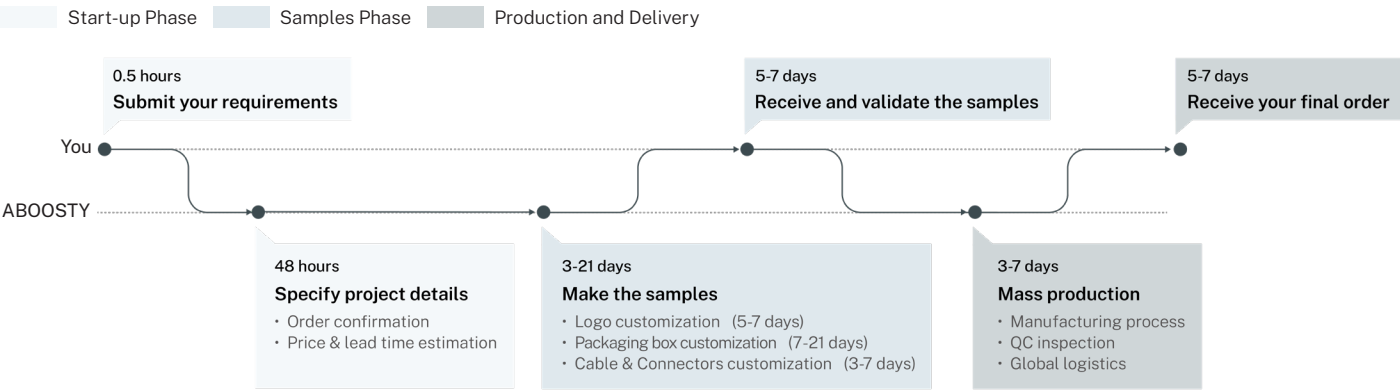
Professional team support & prompt reply within 24h

What We Provide

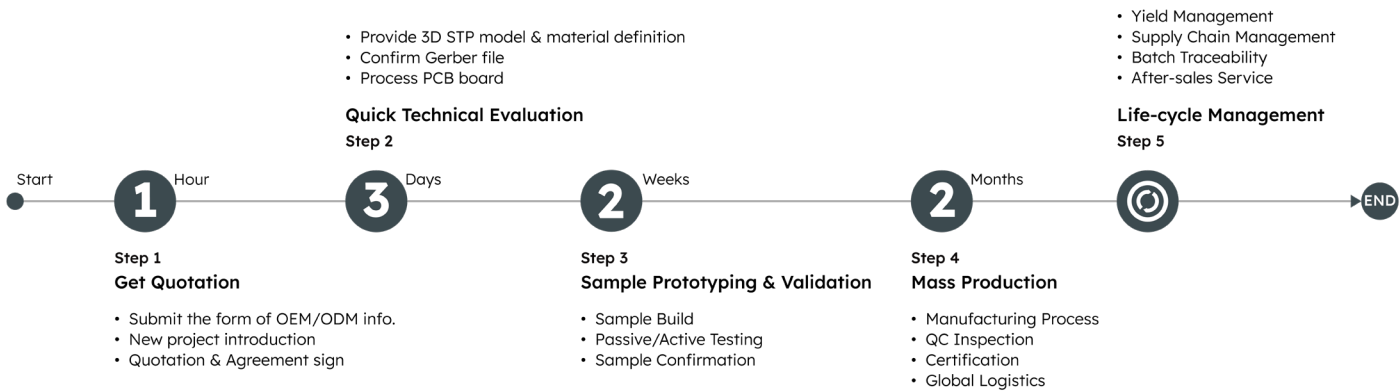
OEM/ODM Services	Light Customization	Deep Customization
	• Logo • Packaging • Cables&Connectors	• In-depth tailoring for specific applications • Functional enhancements • Environmental adaptations • Vertical certifications • ...

Custom Process

Light Customization Process



Deep Customization Process



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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