

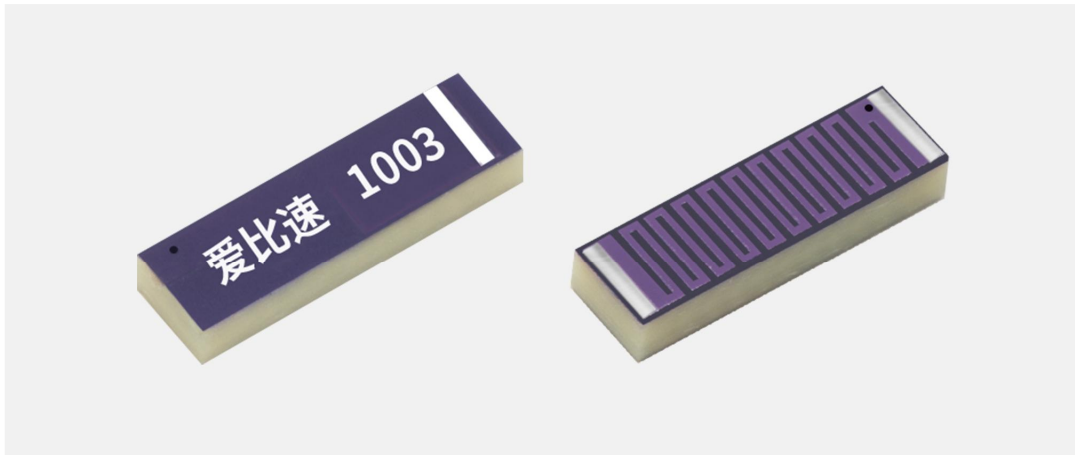
L1+B1+G1

SMD ANTENNA

GNSS  **1560-1605MHz**

Dimensions: 10.0 x 3.0 x 1.6 mm

Clearance Area: 15 x 27 mm



PN: M01-X031031G16





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1 FEATURES & BENEFITS

- Low Profile
- Light Weight
- Easy to Integrate
- Intended for SMD Mounting
- Reduced Cost and Time-to-Market
- Covering Bands: GPS (L1) / Galileo (E1) / BeiDou (B1)

2 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

Top

The image shows the top view of a purple rectangular antenna. It has a small black dot in the top-left corner and a white vertical bar on the right side. The text '爱比速 1003' is printed in white in the center. Dimension lines indicate a length of 10.0, a width of 3.0, and a thickness of 1.60.

Bottom

The image shows the bottom view of the antenna, which features a series of vertical gold-colored SMD mounting pads along the length of the device.

Items

Dimensions (mm)

Length

10.0±0.1

Width

3.0±0.1

Thickness

1.6±0.1

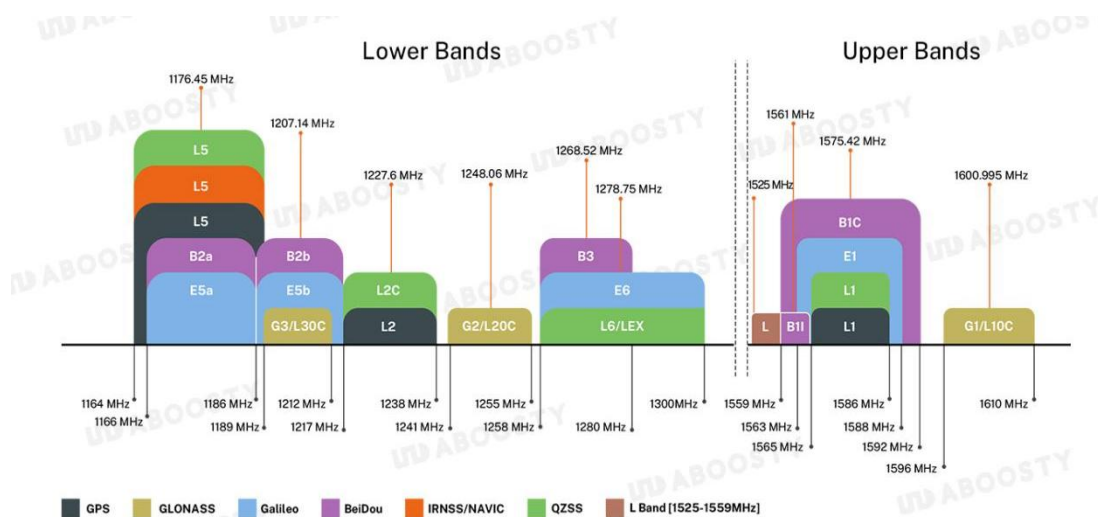
3 ORDER INFORMATION

Product Name	L1+B1+G1 SMD ANTENNA
Part Number	M01-X031031G16
Dimensions	10.0 x 3.0 x 1.6mm
Mounting	SMT
Packaging	Tape & Reel
MOQ	1000 pcs/reel

4 GNSS FREQUENCY BANDS

GNSS Frequency Bands Covered					
GPS	L1	L2	L5		
	●	○	○		
GLONASS	G1	G2	G3		
	○	○	○		
Galileo	E1	E5a	E5b	E6	
	●	○	○	○	
Bei Dou	B1I	B1C	B2a	B2b	B3
	●	●	○	○	○
QZSS (Regional)	L1	L2C	L5	L6	
	●	○	○	○	
IRNSS(Regional)	L5				
	○				
SBAS	L1/E1/B1	L5/B2a/E5a	G1	G2	G3
	●	○	○	○	○

*SBAS systems: WASS(L1/L5), EGNOS(E1/E5a), SDCM(G1/G2/G3), SNAS(B1,B2a), GAGAN(L1/L5), QZSS(L1/L5), KAZZ(L1/L5).



5 REFERENCE GUIDE

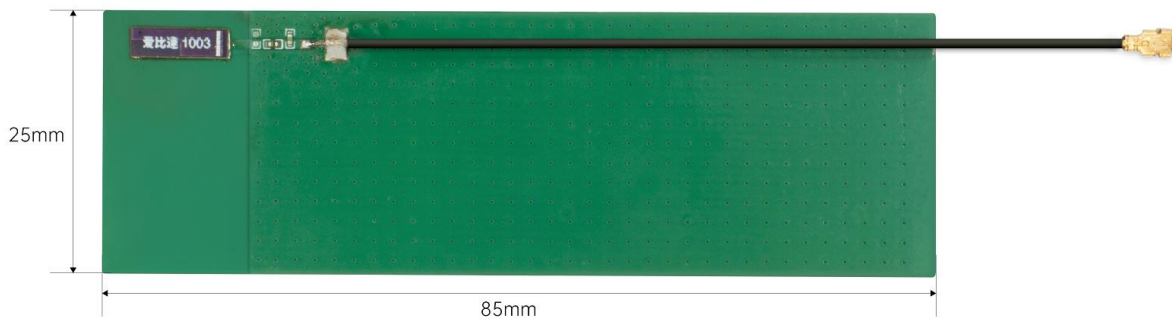
Frequency	1560-1605 MHz
VSWR	1.5 : 1
Peak Gain (dBi)	0.33
Peak Efficiency(%)	49.31
Polarization	Linear
Radiation Pattern	Omnidirectional
Input Impedance	50 Ω
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Material Substance Compliance	REACH/RoHs Compliant
All data were measured in free space and on a reference ground plane of 85 mm length, 27 mm width, and 1.0 mm thickness. Application data might vary.	

6 EVALUATION BOARD WITH THE ANTENNA

The evaluation board provides operation at 1560-1605 MHz.

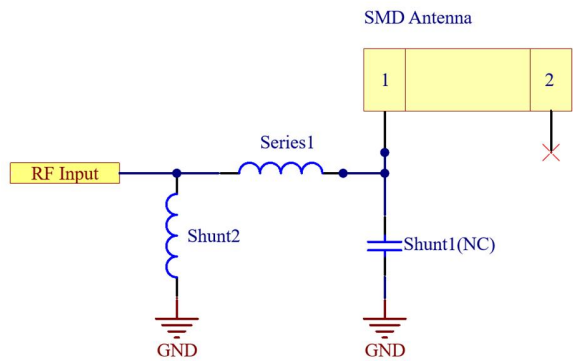
Evaluation Board dimension: 85.0 x 27.0 x 1.0 mm

Clearance Area: 15 x 27 mm

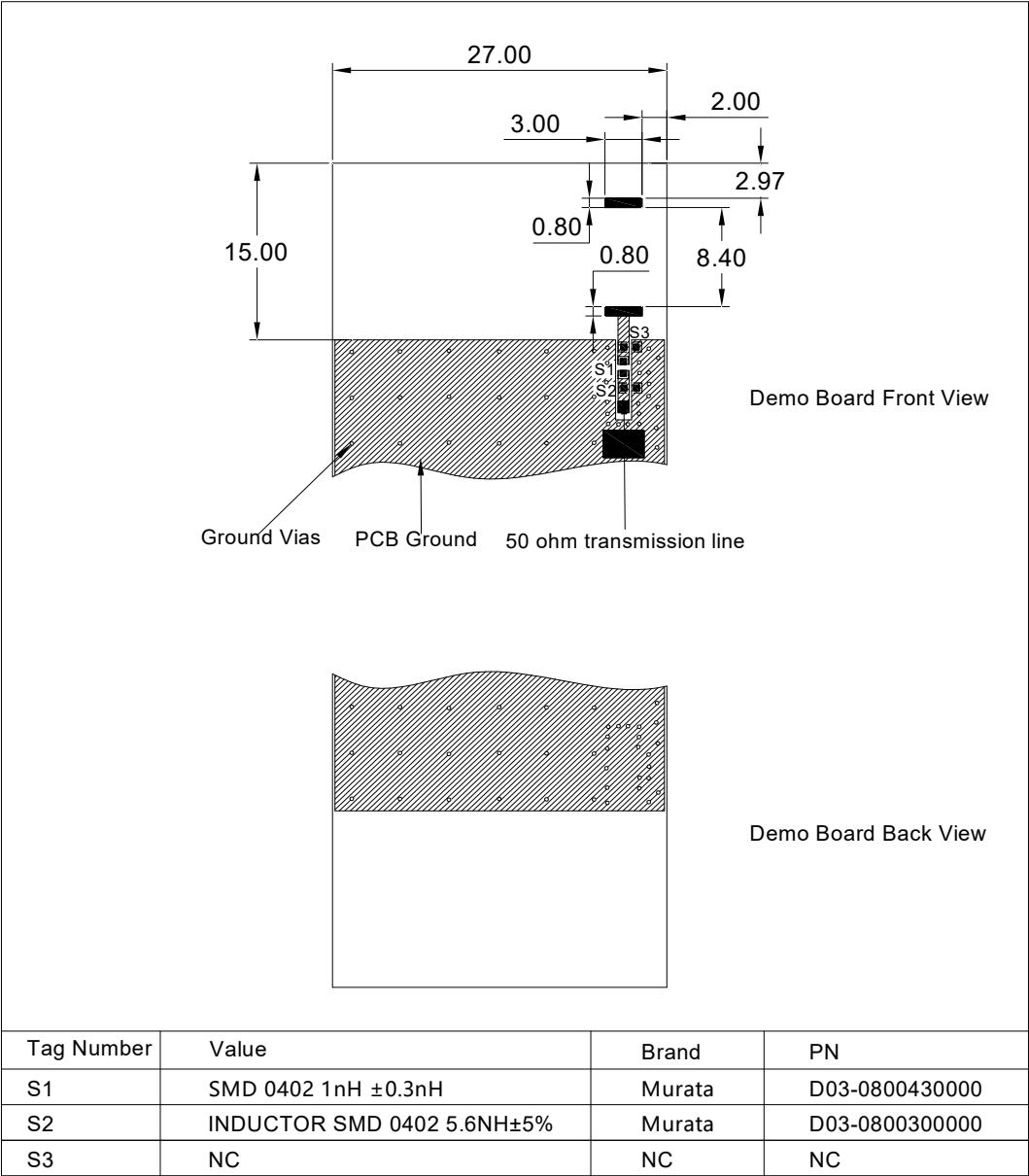




7 MATCHING NETWORK



8 RECOMMENDED LAYOUT

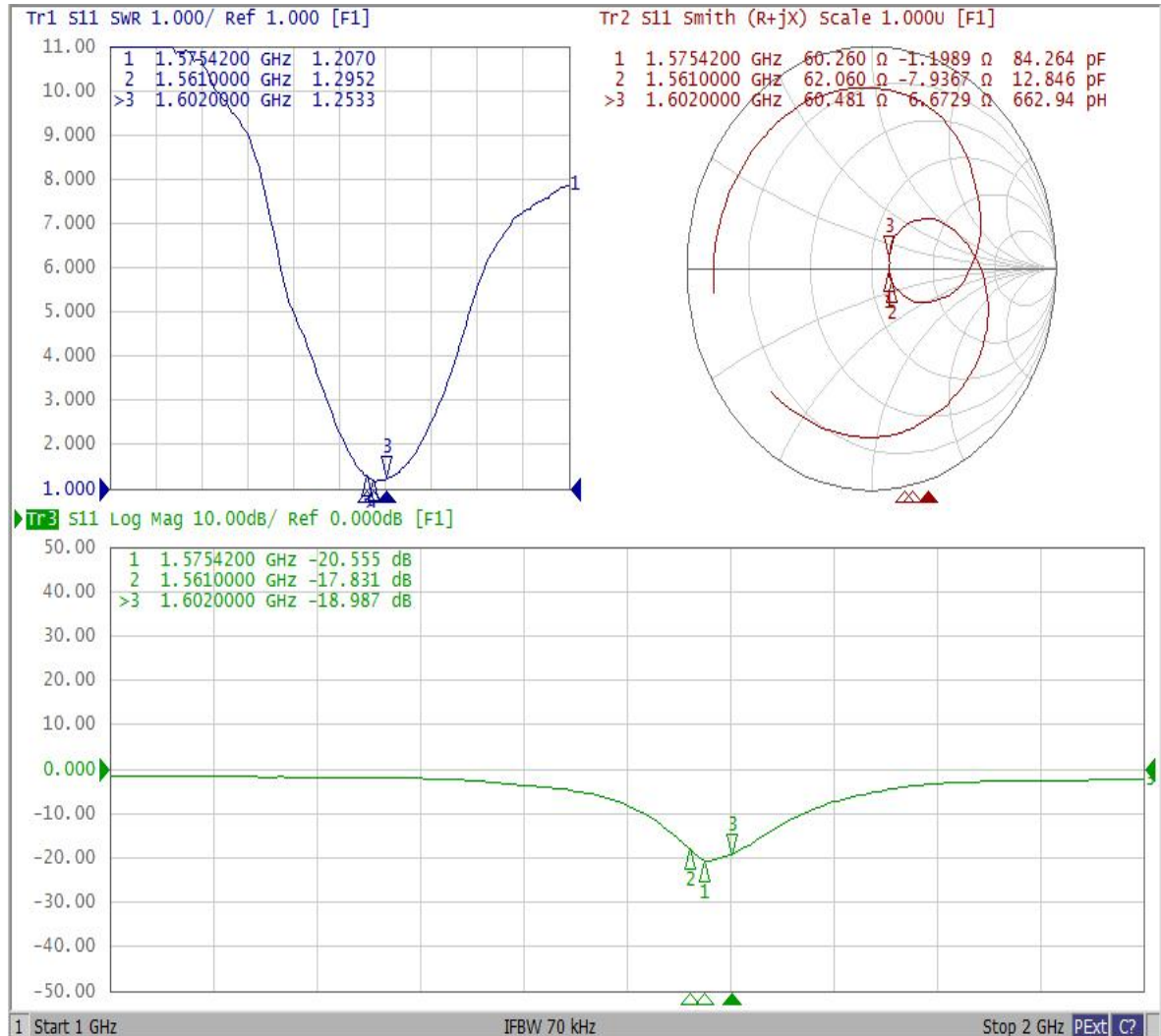


9 ELECTRICAL PERFORMANCE

© Note

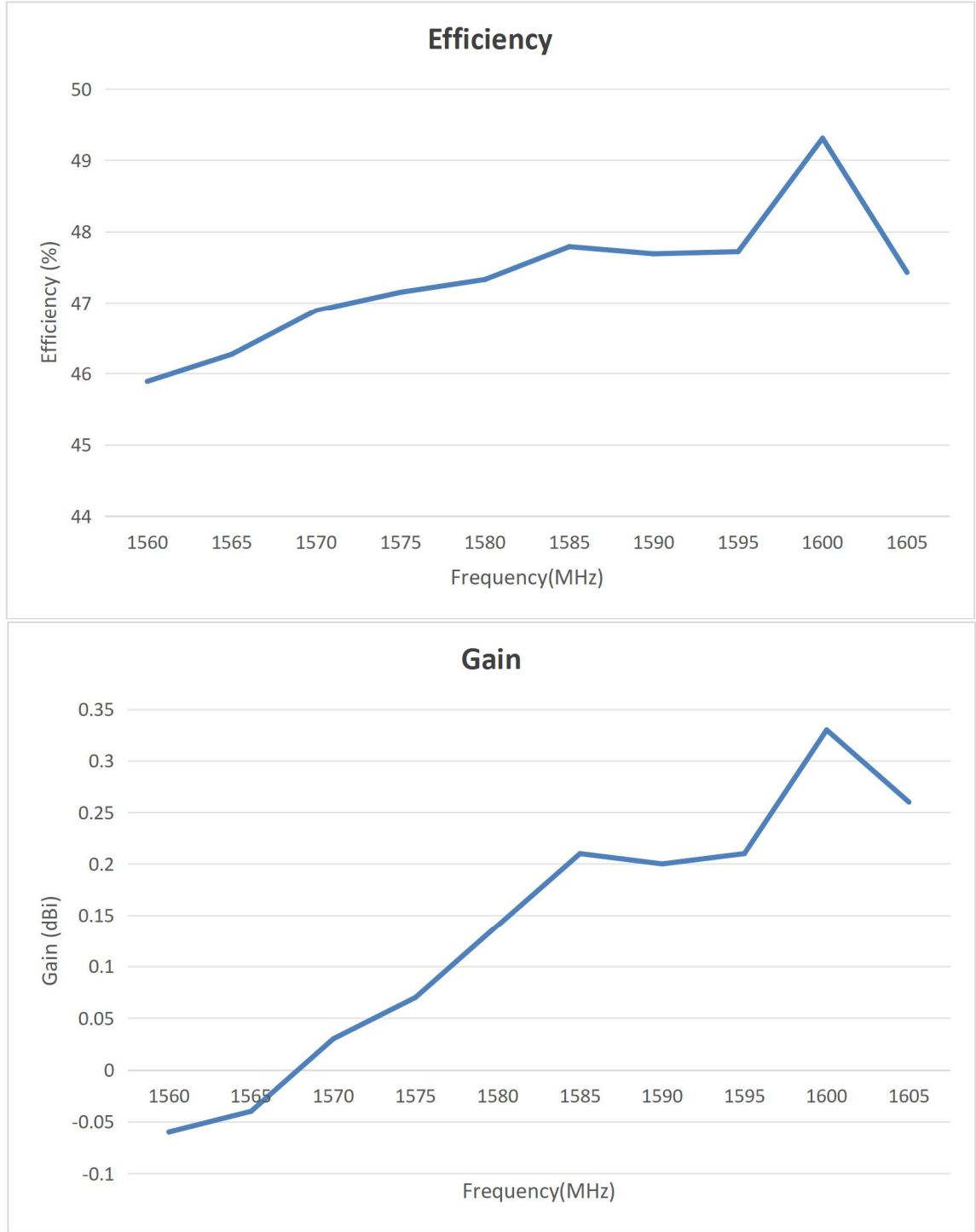
The data displayed in Chapter 8 were measured in free space and on a reference ground plane of 85 mm length, 27 mm width, and 1.0 mm thickness.

9.1 VSWR and Return Loss (dB)





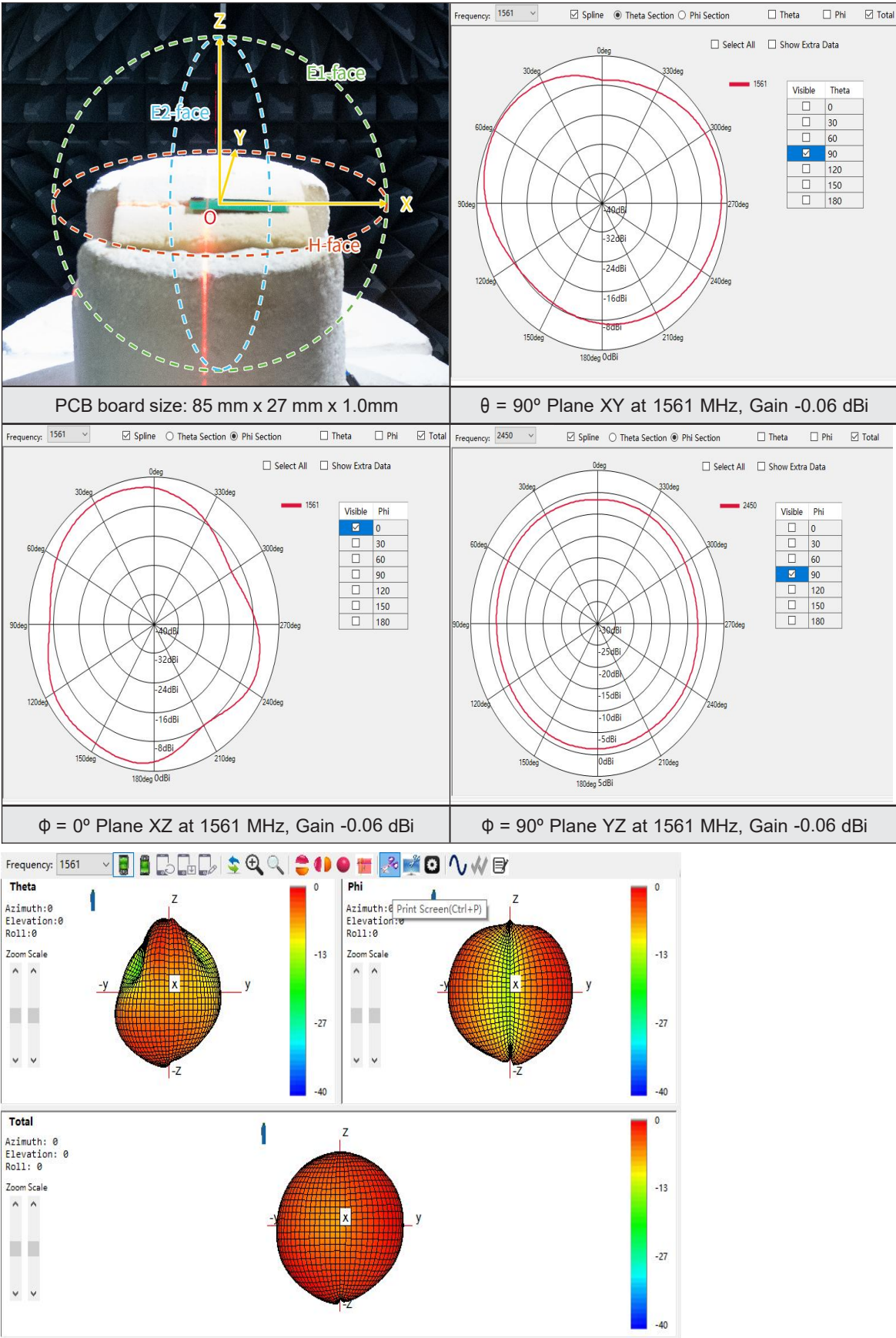
9.2 Gain (dBi) and Total Efficiency (%)

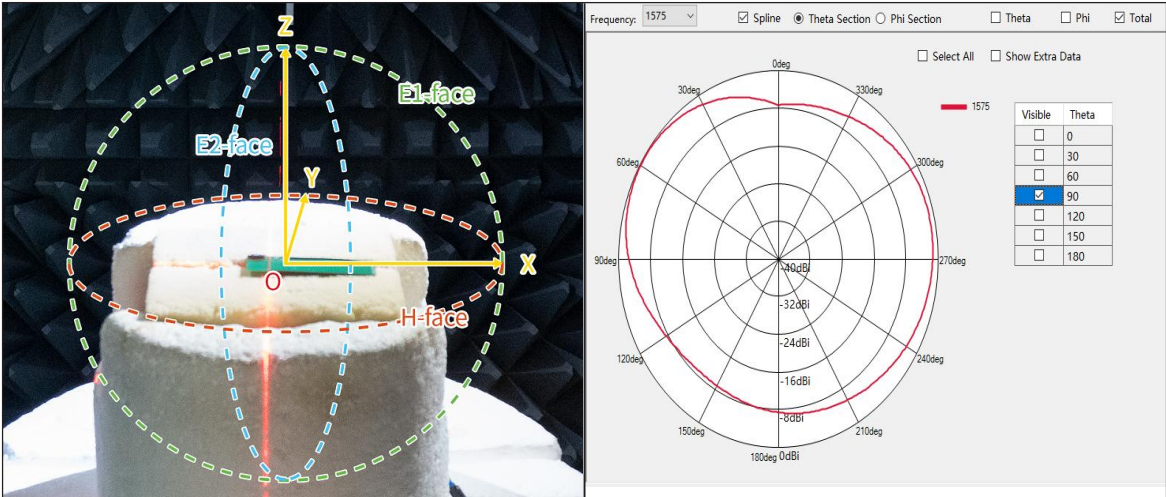




Frequency(MHz)	Gain (dBi)	Efficiency (%)
1560	-0.06	45.89
1565	-0.04	46.27
1570	0.03	46.89
1575	0.07	47.15
1580	0.14	47.33
1585	0.21	47.79
1590	0.2	47.69
1595	0.21	47.72
1600	0.33	49.31
1605	0.26	47.43

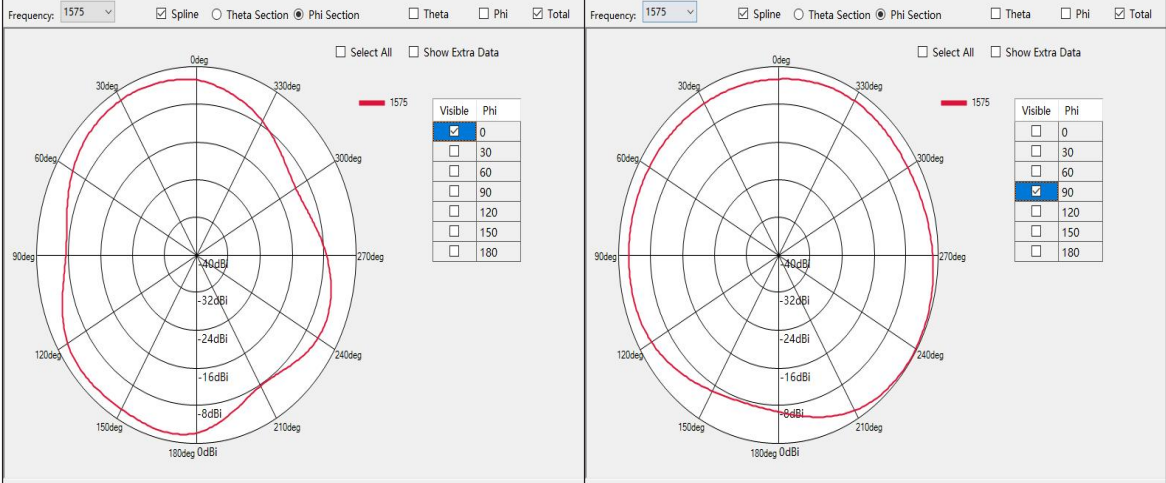
9.3 Radiation Patterns





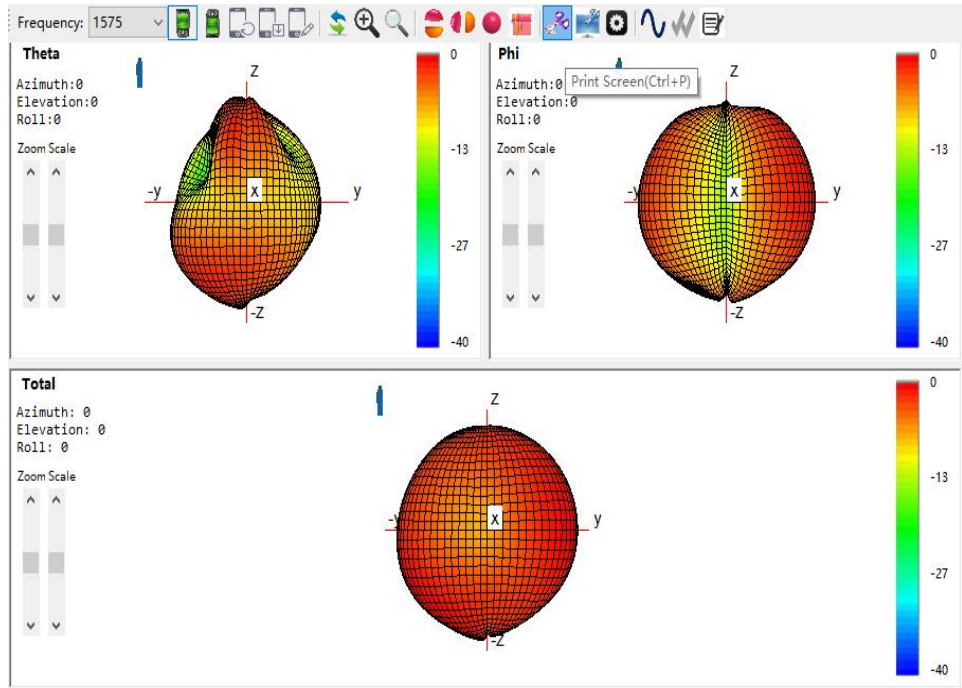
PCB board size: 85 mm x 27 mm x 1.0mm

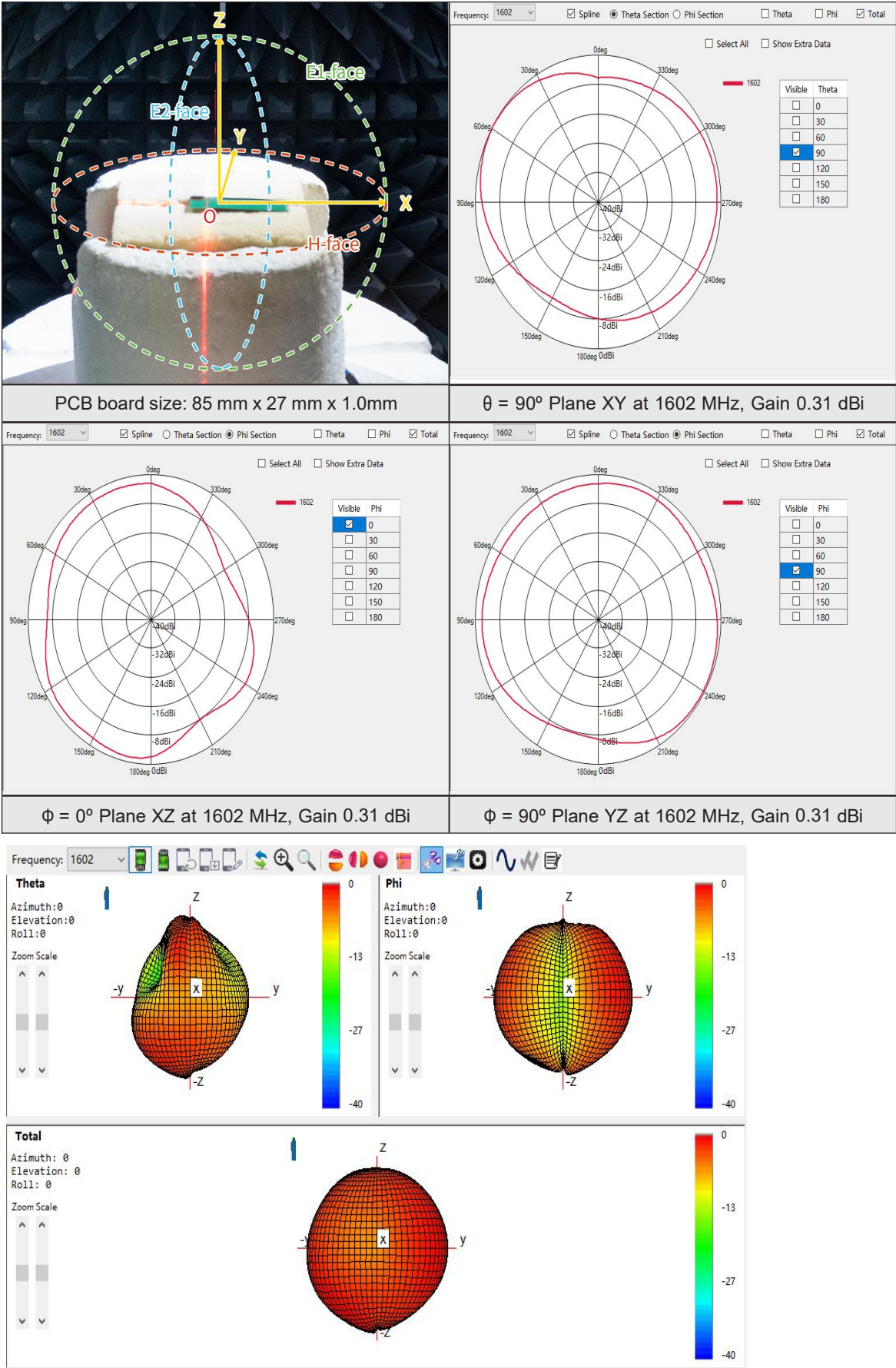
$\theta = 90^\circ$ Plane XY at 1575 MHz, Gain 0.07 dBi



$\phi = 0^\circ$ Plane XZ at 1575 MHz, Gain 0.07 dBi

$\phi = 90^\circ$ Plane YZ at 1575 MHz, Gain 0.07 dBi



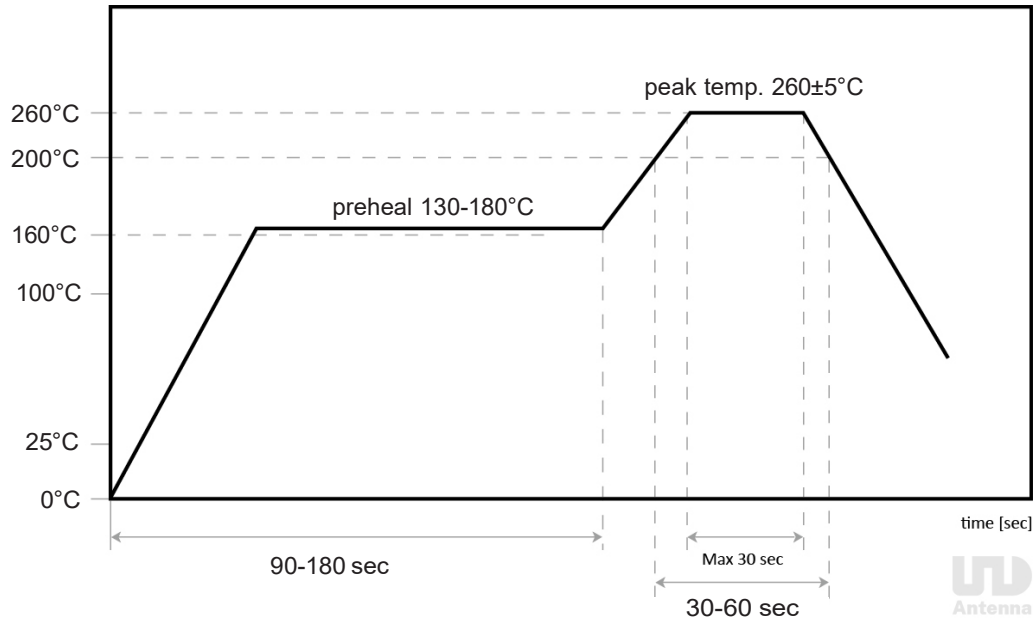


10 SOLDERING CONDITIONS

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.



11 PACKAGING

11.1 Optimal Storage Conditions for Packaged Reels

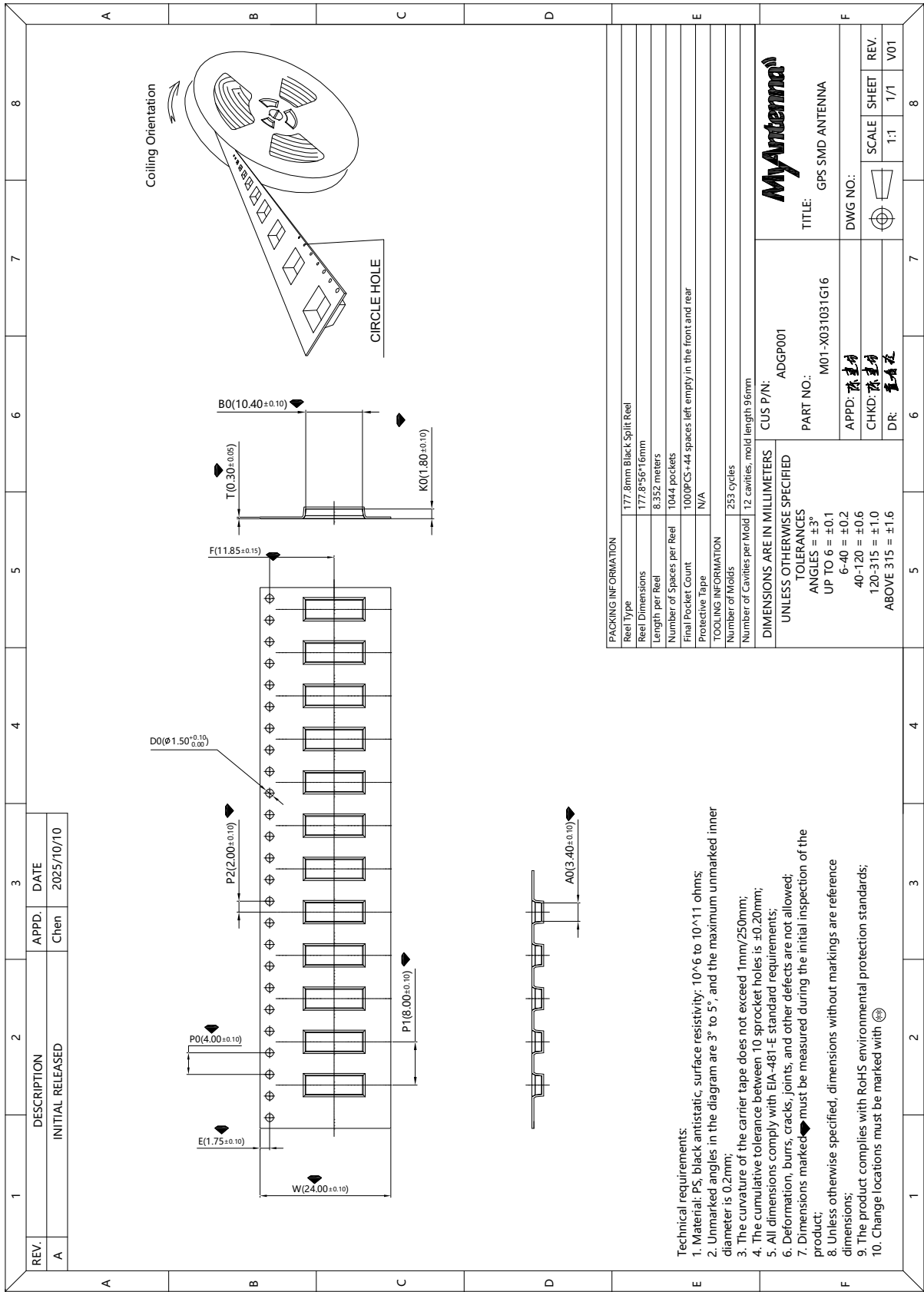
Temperature	-5°C to 40°C
Humidity	Less than 70% RH
Shelf life	18 months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Reels should be stored in unopened sealed manufacturer's plastic packaging.

© 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)



- 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 ± 0.20 mm;
 5. All dimensions comply with EIA-481-E standard requirements;
 6. Deformation, burrs, cracks, joints, and other defects are not allowed;
 7. Dimensions marked with 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 .



12 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.	



13 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



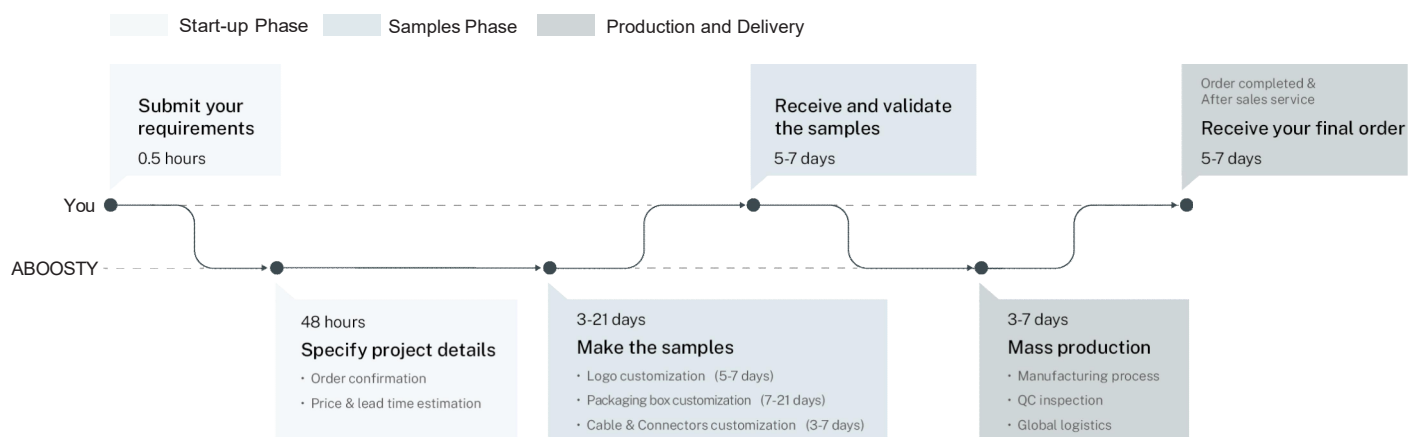
Prompt reply within 24h

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

