

4G/3G/2G

CAT1 LORA COMBINATION SMD ANTENNA

   698-960 MHz | 1710-2690 MHz

Dimensions: 44.8x18.9x1.0mm

ClearanceArea: 70x25mm



Model: ADCP002
PN: M01-X4G4519P01





Table of Contents

1 FEATURES & BENEFITS..... 1

2 APPLICATIONS..... 1

3 ORDER INFORMATION..... 1

4 REFERENCE GUIDE..... 2

5 EVALUATION BOARD WITH THE ANTENNA..... 2

6 MATCHING NETWORK..... 3

7 RECOMMENDED LAYOUT..... 3

8 ELECTRICAL PERFORMANCE..... 4

 8.1 VSWR and Return Loss (dB)..... 4

 8.2 Gain (dBi) and Total Efficiency (%)..... 5

 8.3 Radiation Patterns (2.4-2.5 GHz)..... 7

9 SOLDERING CONDITIONS..... 10

10 PACKAGING..... 11

 10.1 Optimal Storage Conditions for Packaged Reels..... 11

 10.2 Packagings and Dimensions (Unit: mm)..... 11

11 ANTENNA CERTIFICATION..... 12

12 WELCOME ALL ANTENNA OEM/ODM PROJECTS..... 13

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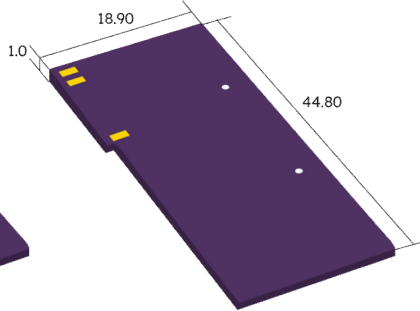


1 FEATURES & BENEFITS

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

2 APPLICATIONS

- 3G (UMTS) and 4G (LTE) Mobile Communication
- Networks
- Wireless Routers and Modems
- Internet of Things (IoT) Devices, M2M
- Remote Technology / Monitoring
- Consumer Tracking
- Smart Metering

Top  Bottom 	
Items	Dimensions (mm)
Length	44.8±0.2
Width	18.9±0.2
Thickness	1.0±0.1

3 ORDER INFORMATION

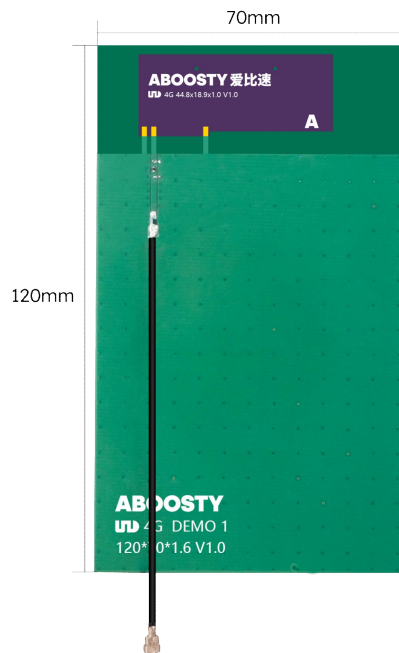
Product Name	4G/3G/2G, Cat 1, LoRa Combination SMD Antenna
Part Number	M01-X4G4519P01
Dimensions	44.8x 18.9 x 1.0mm
Mounting	SMT
Packaging	Tape & Reel
MOQ	1000 pcs/reel

4 REFERENCE GUIDE

Technical Features	698-960 MHz	1710-2690 MHz
VSWR	5.3:1	4.6:1
Max Efficiency	69%	
Peak Gain	2.52 dBi	
Polarization	Linear	
Input Impedance	50Ω	
Peak Gain	1.28 dBi	
Operating Temperature	-40°C to +85°C	
Power Capacity	3W	
Dimensions (L x W x H)	44.8 x 18.9 x 1.0 mm	
All data were measured in free space and on a reference ground plane of 120 mm length, 70 mm width, and 1.6 mm thickness. Application data might vary.		

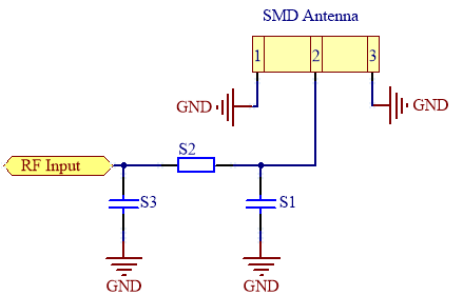
5 EVALUATION BOARD WITH THE ANTENNA

The evaluation board provides operation at 698-960, 1710-2690 MHz.
Evaluation Board dimension: 120 x 70 x 1.6 mm
Clearance Area: 25.0 x 70.0 mm

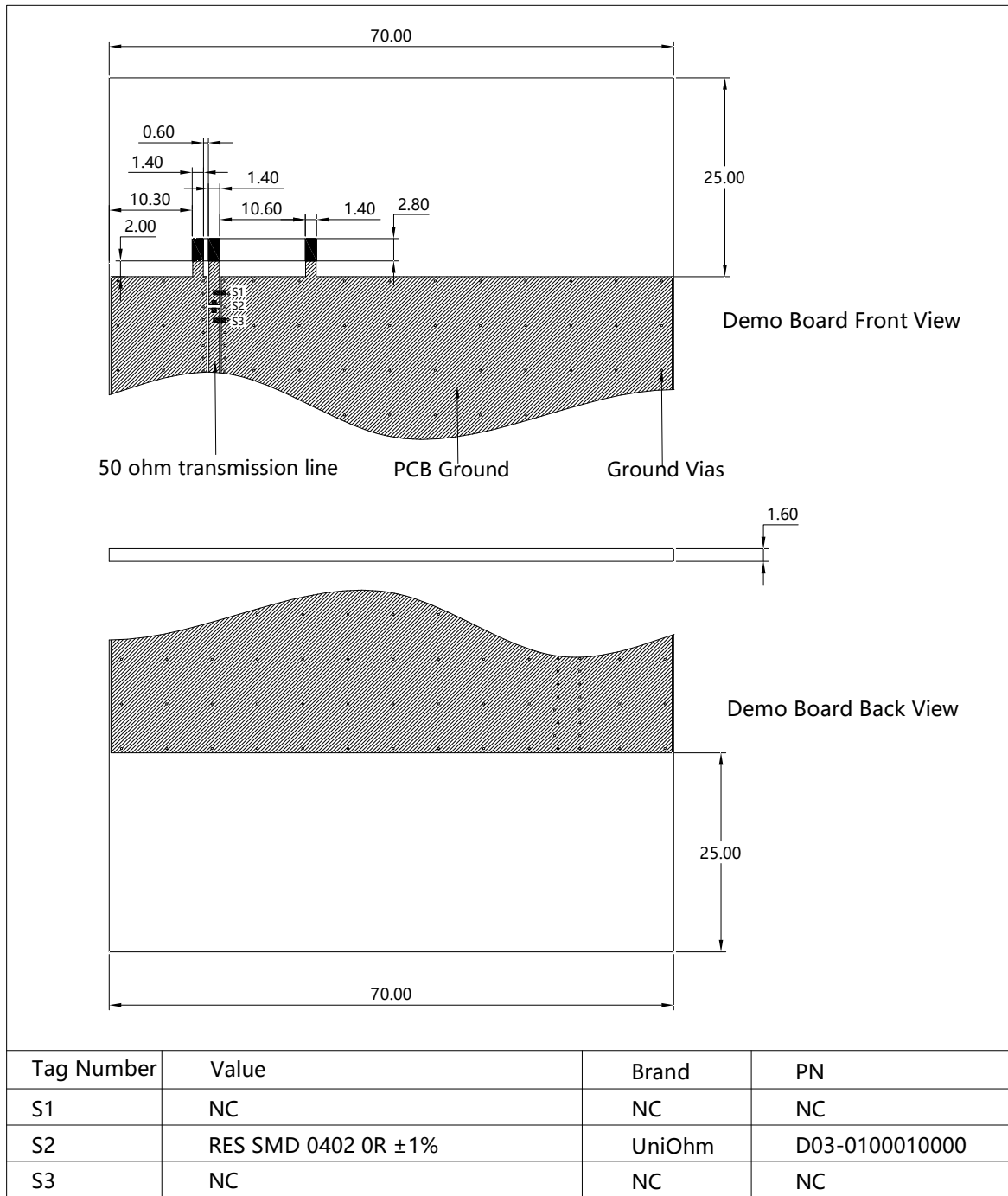




6 MATCHING NETWORK



7 RECOMMENDED LAYOUT

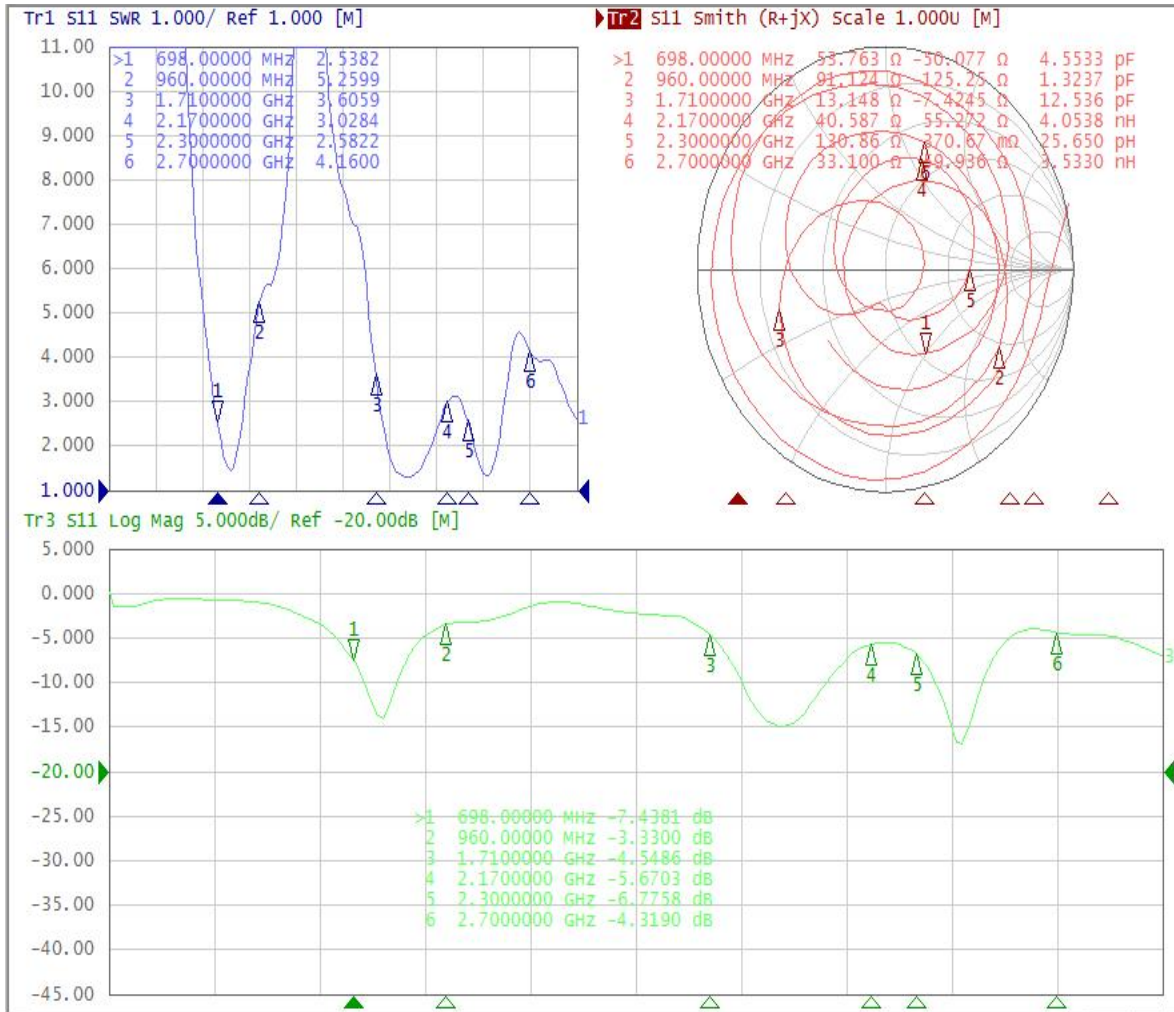


8 ELECTRICAL PERFORMANCE

© Note

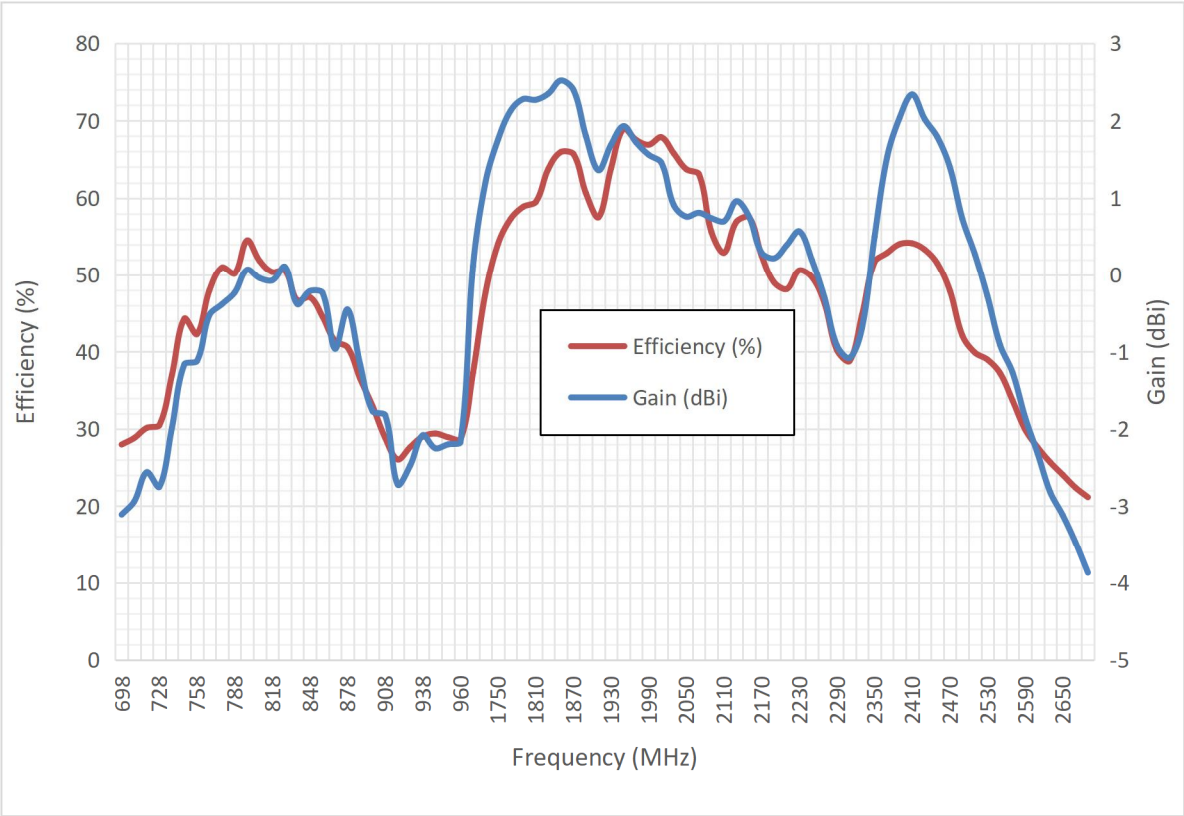
The data displayed in Chapter 8 were measured in free space and on a reference ground plane of 120 mm length, 70 mm width, and 1.6 mm thickness.

8.1 VSWR and Return Loss (dB)





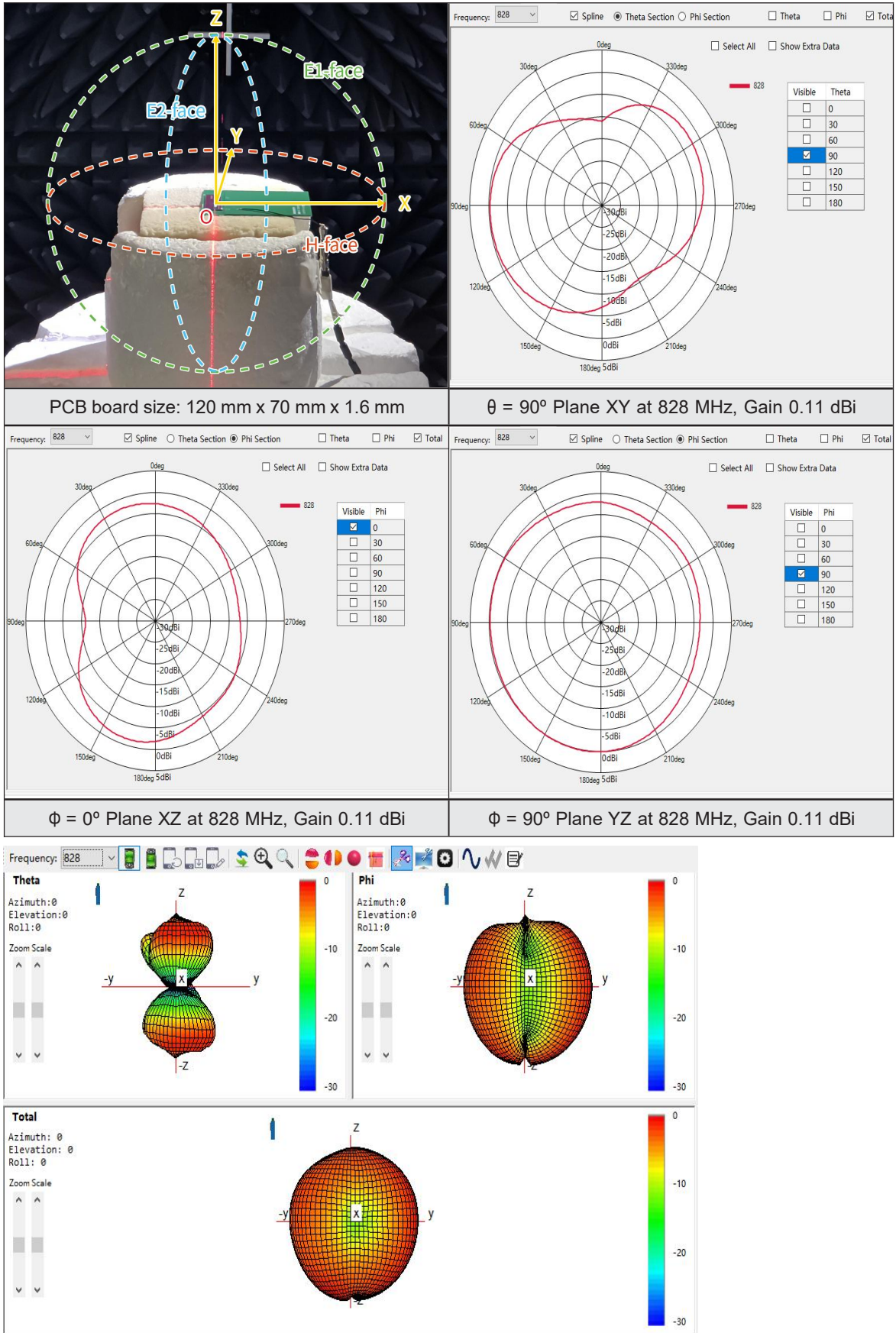
8.2 Gain (dBi) and Total Efficiency (%)

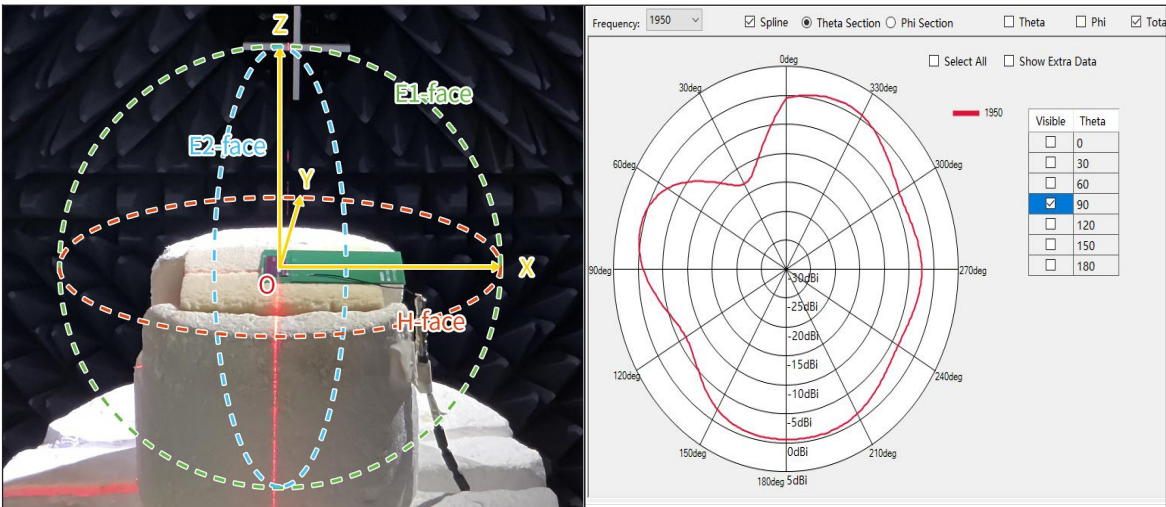




Frequency (MHz)	Gain (dBi)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (%)
698	-3.11	27.99	958	-2.20	28.94	2190	0.22	49.01
708	-2.94	28.83	960	-2.17	28.64	2210	0.39	48.16
718	-2.56	30.14	1710	0.12	37.31	2230	0.57	50.62
728	-2.75	30.48	1730	1.21	47.71	2250	0.20	49.74
738	-1.99	36.95	1750	1.76	54.12	2270	-0.29	46.36
748	-1.16	44.31	1770	2.13	57.32	2290	-0.92	40.23
758	-1.12	42.30	1790	2.28	58.88	2310	-1.08	38.80
768	-0.52	48.03	1810	2.27	59.50	2330	-0.69	44.78
778	-0.38	51.00	1830	2.35	63.77	2350	0.50	51.73
788	-0.23	50.20	1850	2.52	65.96	2370	1.53	52.90
798	0.07	54.52	1870	2.40	65.71	2390	2.04	54.05
808	-0.04	51.85	1890	1.80	60.63	2410	2.34	54.15
818	-0.07	50.40	1910	1.36	57.53	2430	2.02	53.32
828	0.11	50.61	1930	1.69	63.85	2450	1.79	51.53
838	-0.38	46.67	1950	1.93	69.00	2470	1.40	47.96
848	-0.21	47.11	1970	1.72	67.52	2490	0.73	42.10
858	-0.23	44.59	1990	1.56	66.90	2510	0.27	39.89
868	-0.96	41.42	2010	1.46	67.87	2530	-0.28	38.99
878	-0.45	40.59	2030	0.91	65.78	2550	-0.91	37.24
888	-1.16	36.55	2050	0.76	63.73	2570	-1.27	33.68
898	-1.77	32.94	2070	0.81	63.11	2590	-1.85	29.94
908	-1.82	28.85	2090	0.74	55.62	2610	-2.32	27.60
918	-2.72	26.05	2110	0.70	52.92	2630	-2.82	25.68
928	-2.47	27.66	2130	0.96	56.96	2650	-3.12	24.06
938	-2.08	29.02	2150	0.76	57.54	2670	-3.47	22.42
948	-2.25	29.41	2170	0.29	52.54	2690	-3.87	21.16

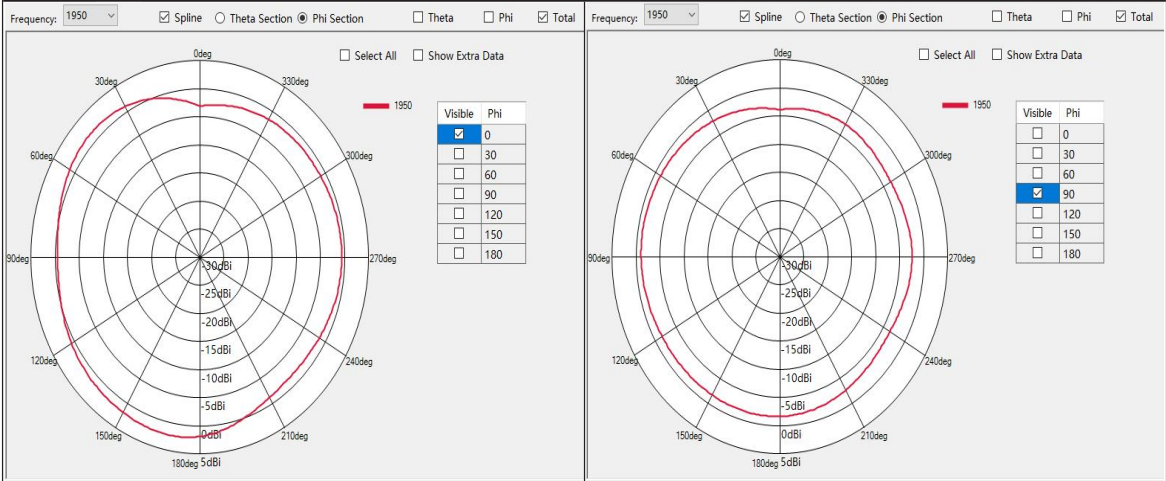
8.3 Radiation Patterns





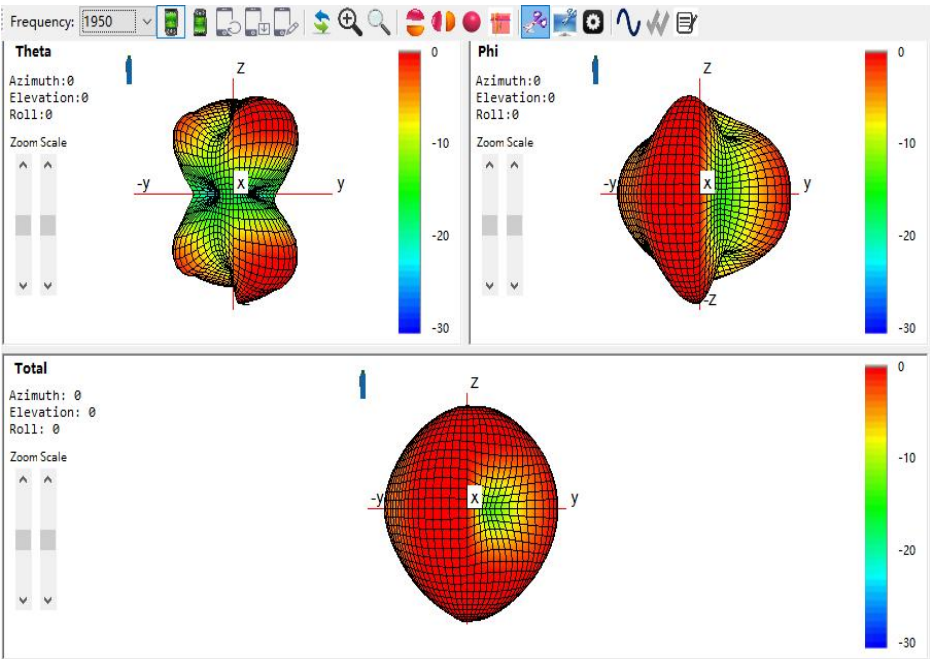
PCB board size: 120 mm x 70 mm x 1.6 mm

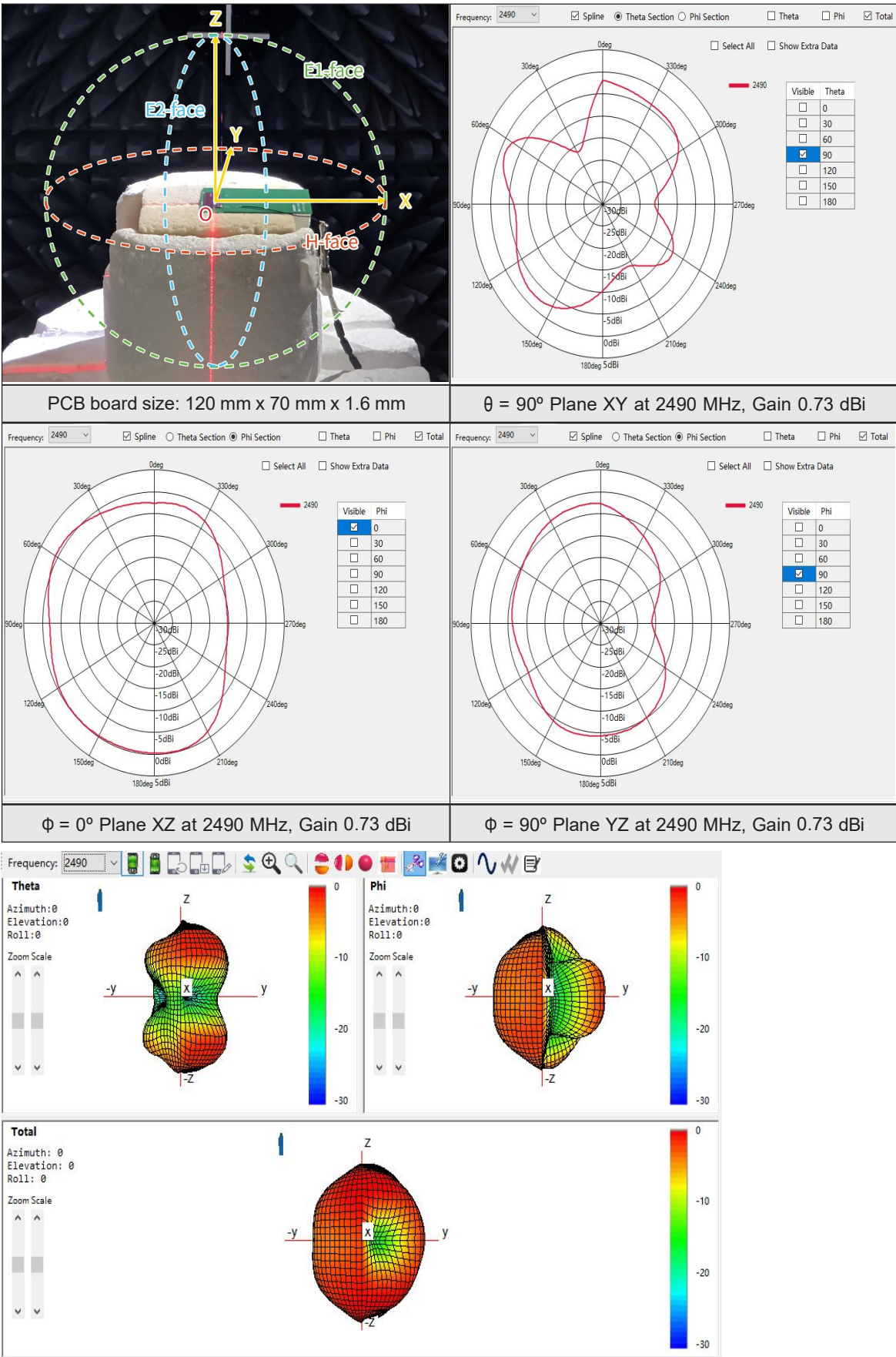
$\theta = 90^\circ$ Plane XY at 1950 MHz, Gain 1.93 dBi



$\phi = 0^\circ$ Plane XZ at 1950 MHz, Gain 1.93 dBi

$\phi = 90^\circ$ Plane YZ at 1950 MHz, Gain 1.93 dBi



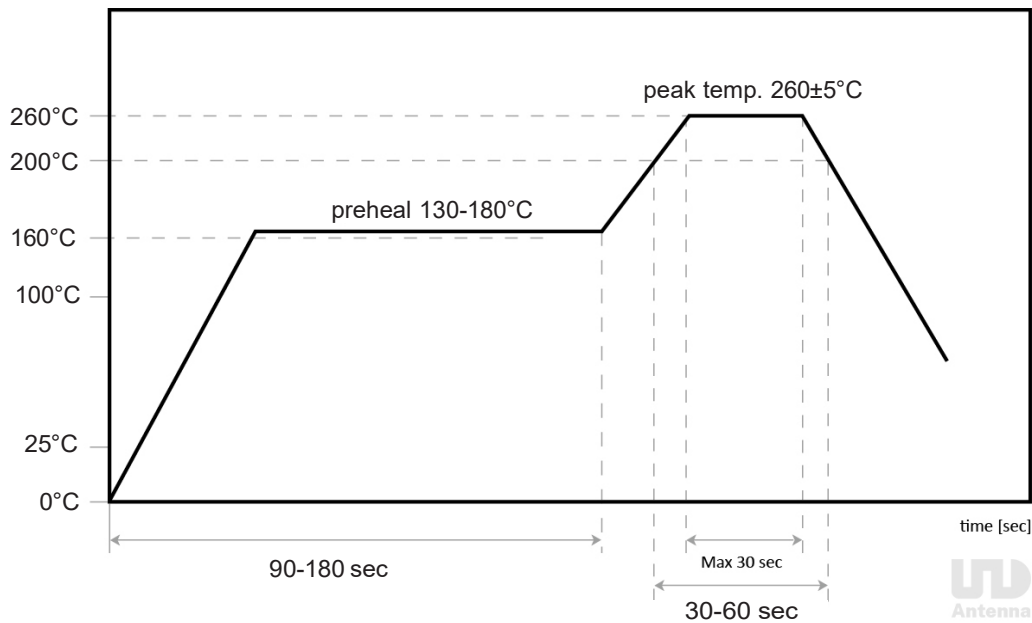


9 SOLDERING CONDITIONS

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

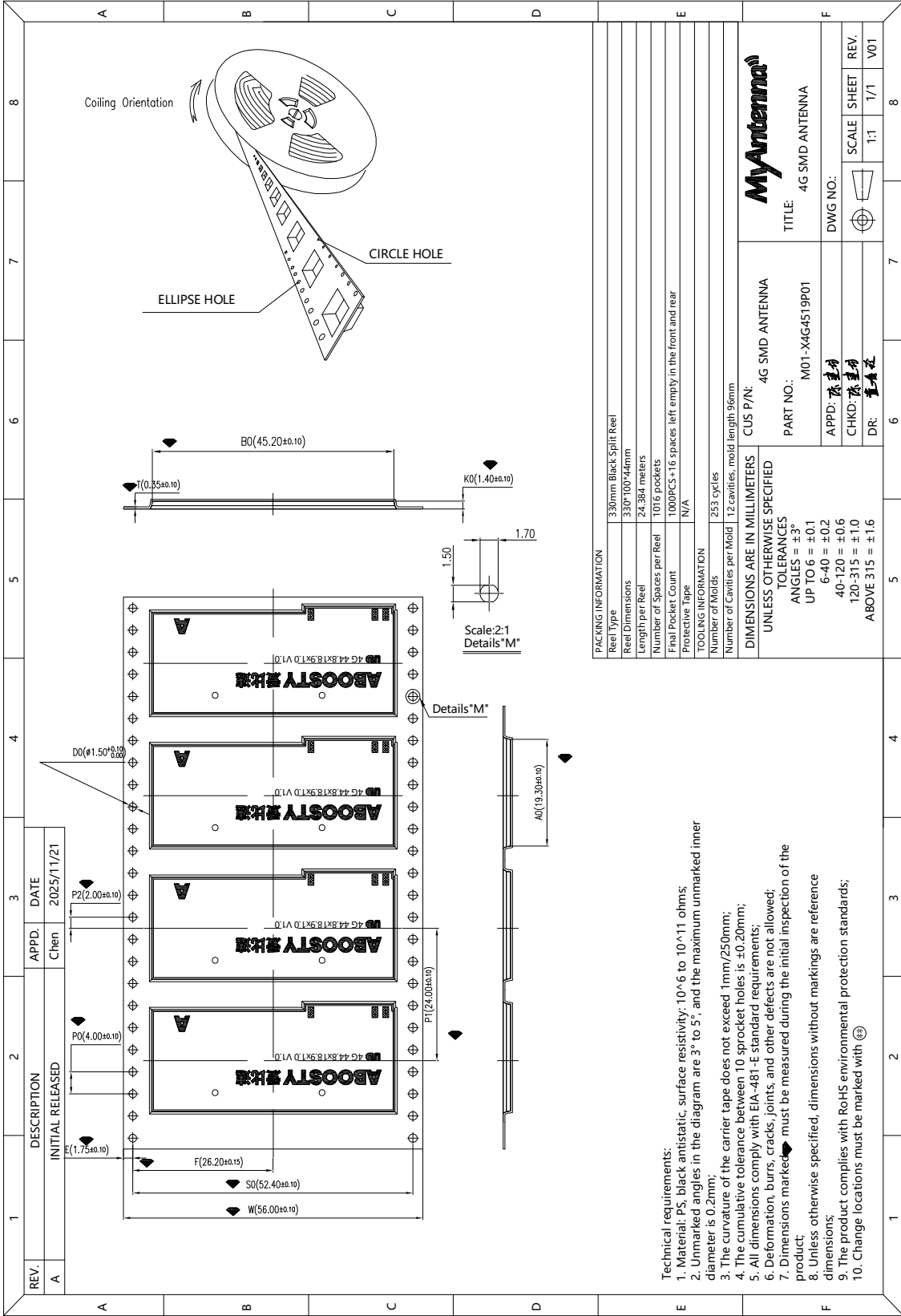
Temperature	-5°C to 40°C
Humidity	Less than 70% RH
Shelf life	18 months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Reels should be stored in unopened sealed manufacturer's plastic packaging.

© 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



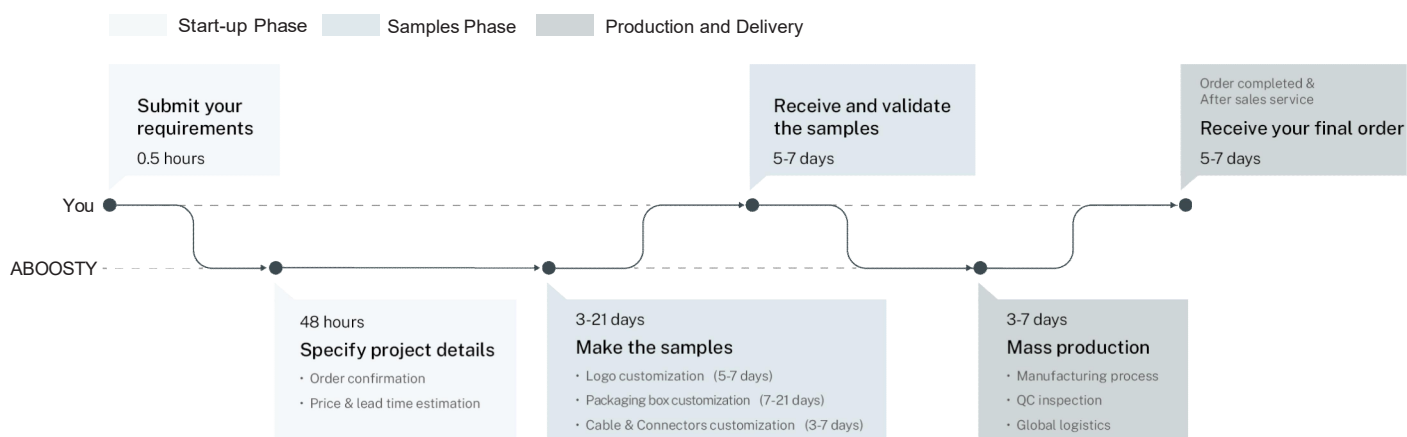
Prompt reply within 24h

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

