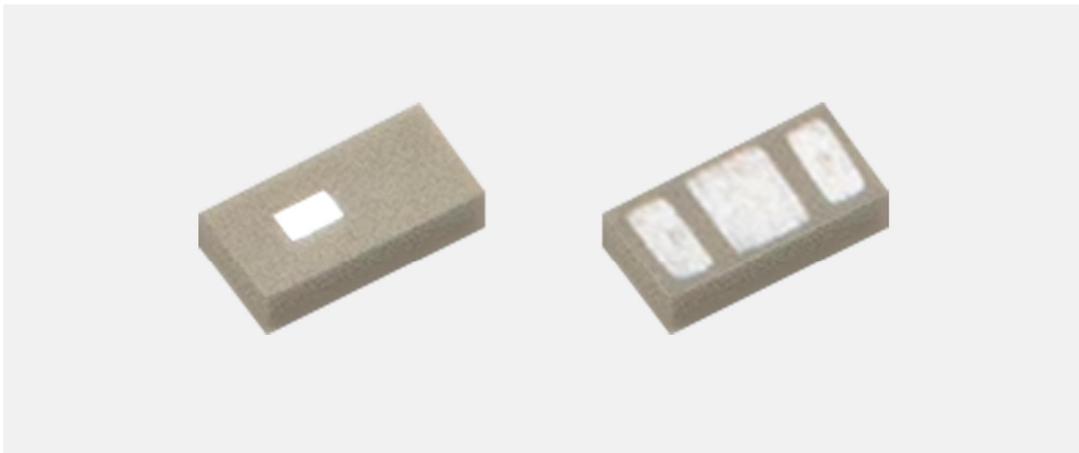


2.4G BLUETOOTH, WIFI

ZIGBEE CHIP ANTENNA

  2450±50MHz

Dimensions: 1.6x0.8x0.4mm
Clearance Area: 3.0x5.0mm OR 6.0x2.5mm



Model: ADWH008





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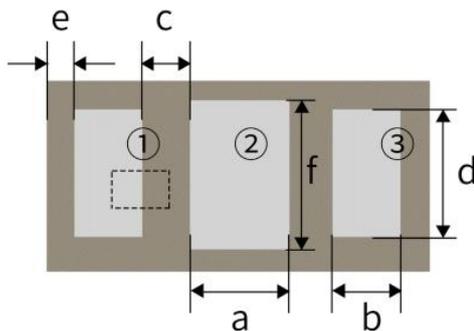
1 FEATURES & BENEFITS

- 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	1.6±0.1
Width	0.8±0.1
Thickness	0.4±0.1



Number	Terminal Name
①	INPUT+GND
②	NC
③	GND

Symbol	a	b	c	d	e	f
Dimension(mm)	0.5±0.1	0.25±0.1	0.18±0.05	0.55±0.1	0.12±0.05	0.6±0.1

3 ORDER INFORMATION

Product Name	2.4G Bluetooth, WIFI, ZigBee Chip Antenna
Part Number	M01-X100050R0A
Dimensions	1.6x0.8x0.4 mm
Mounting	SMT
Packaging	Tape & Reel
MOQ	6000 pcs/reel

4 REFERENCE GUIDE

Technical Features	2450±50 MHz
Input Impedance	50Ω
Peak Gain	-1.43 dBi
VSWR	<5.0
Operating Temperature	-40°C to +85°C
Power Capacity	3W
Dimensions (L x W x H)	1.6x0.8x0.4 mm

All data were measured in free space and on a reference ground plane of 90 mm length, 50 mm width, and 0.8 mm thickness. Application data might vary.

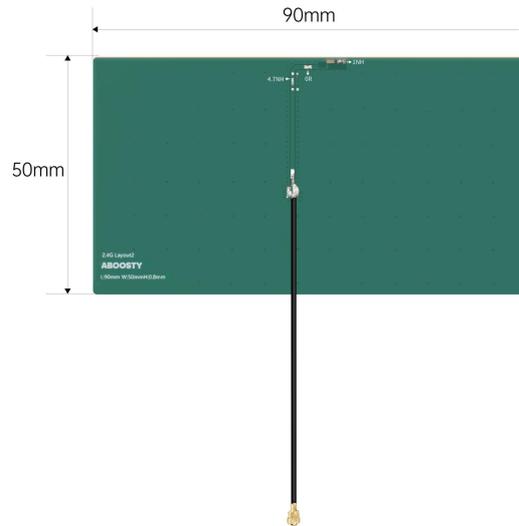
5 EVALUATION BOARD WITH THE ANTENNA

The evaluation board provides operation at 2450±50 MHz.

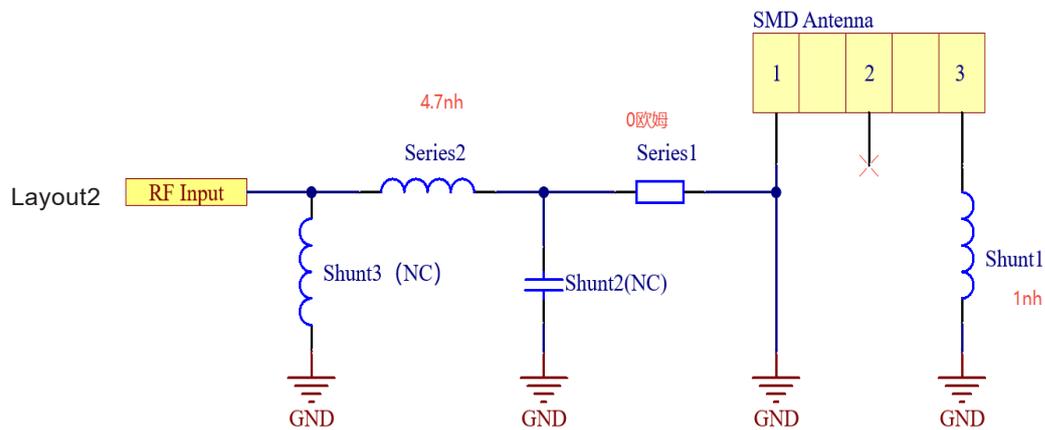
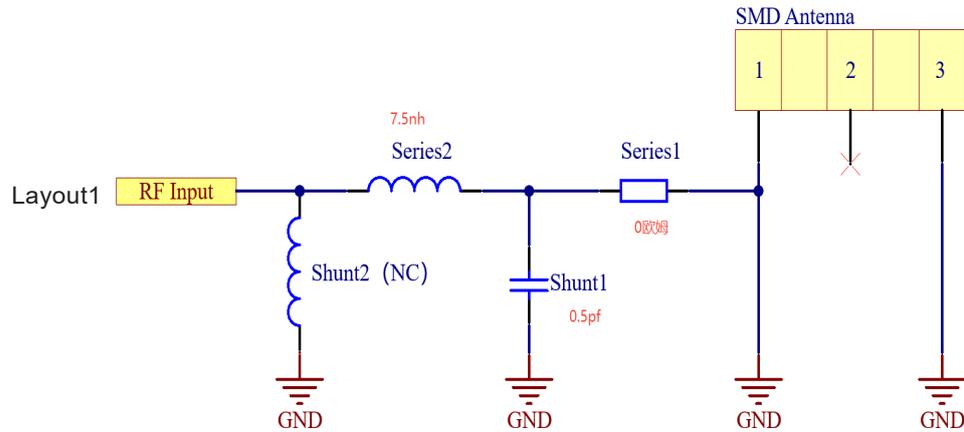
Evaluation Board dimension: 90 x 50 x 0.8 mm

Layout1: Clearance Area: 3.0x5.0 mm

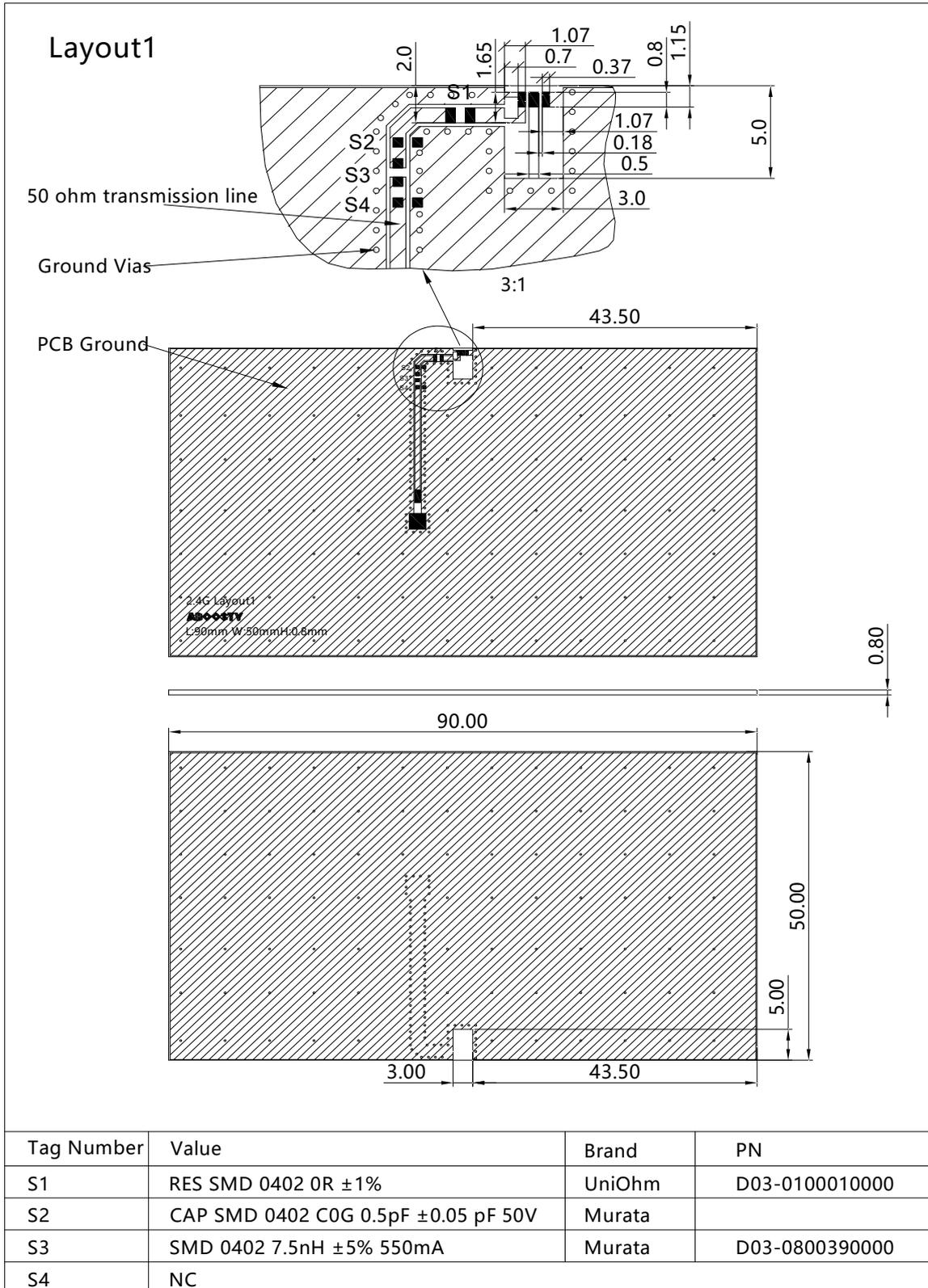
Layout2: Clearance Area: 6.0x2.5 mm

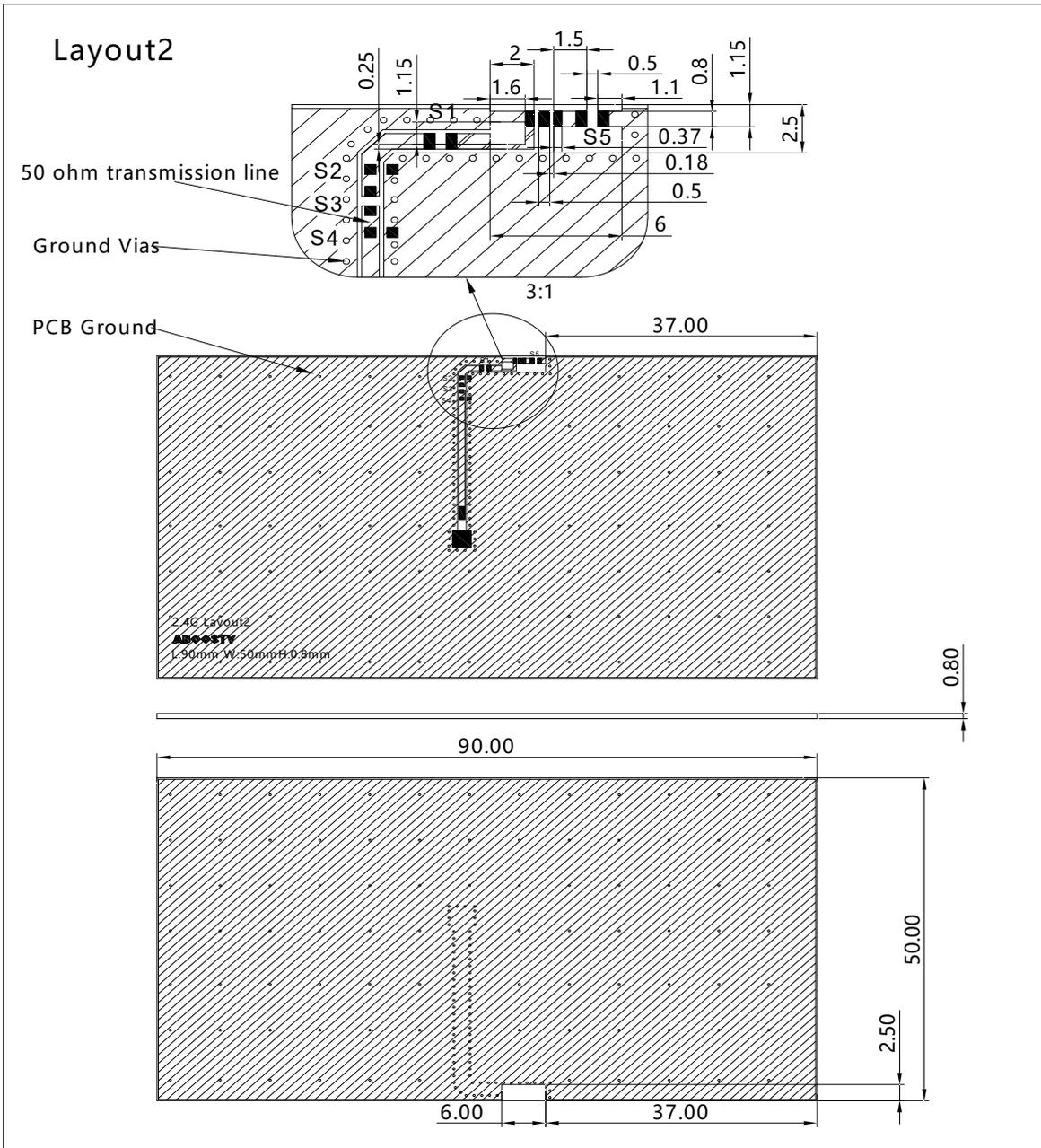


6 MATCHING NETWORK



7 RECOMMENDED LAYOUT





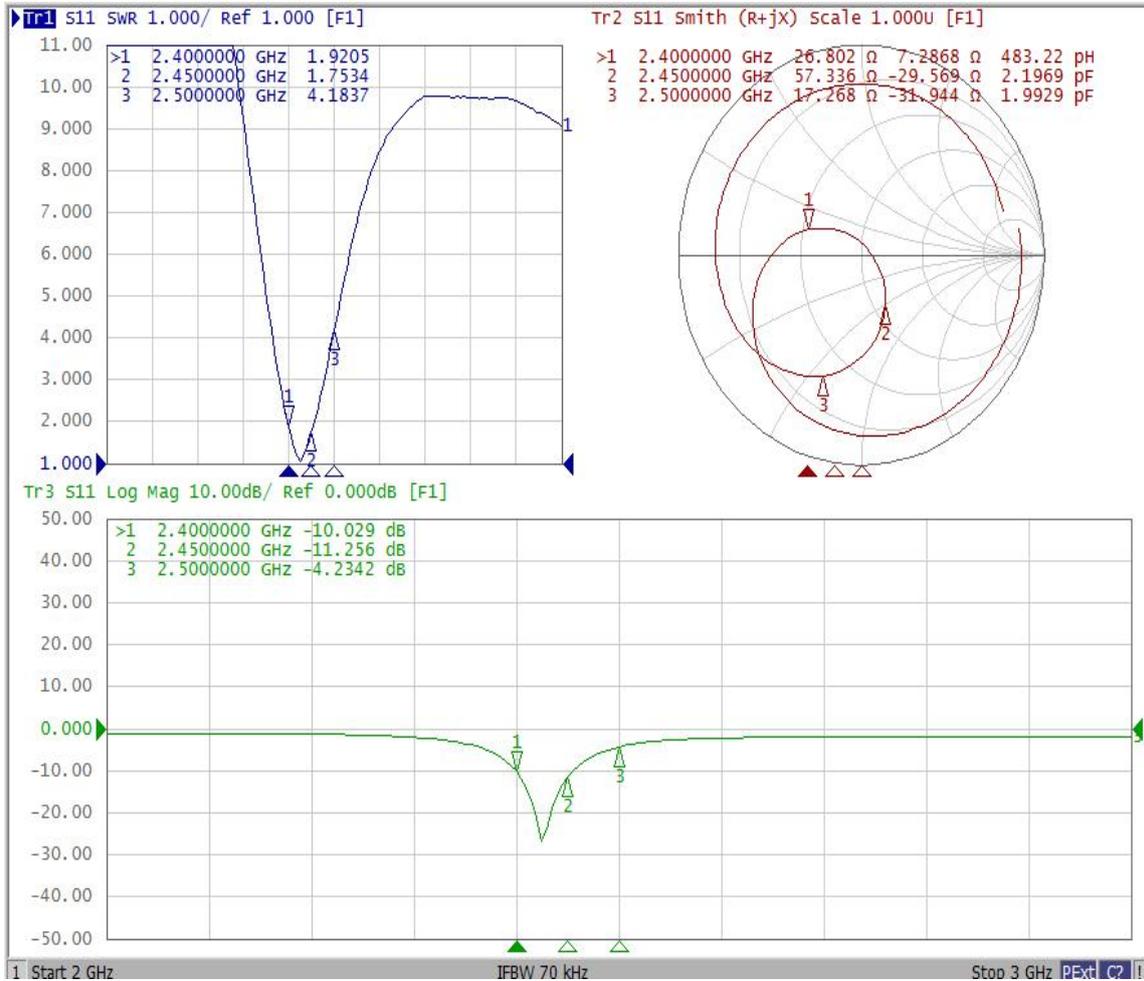
Tag Number	Value	Brand	PN
S1	RES SMD 0402 0R $\pm 1\%$	UniOhm	D03-0100010000
S2	NC		
S3	SMD 0402 4.7nH $\pm 3nH$	Murata	
S4	NC		
S5	SMD 0402 1nH $\pm 0.3nH$	Murata	D03-0800430000

8 ELECTRICAL PERFORMANCE

© Note

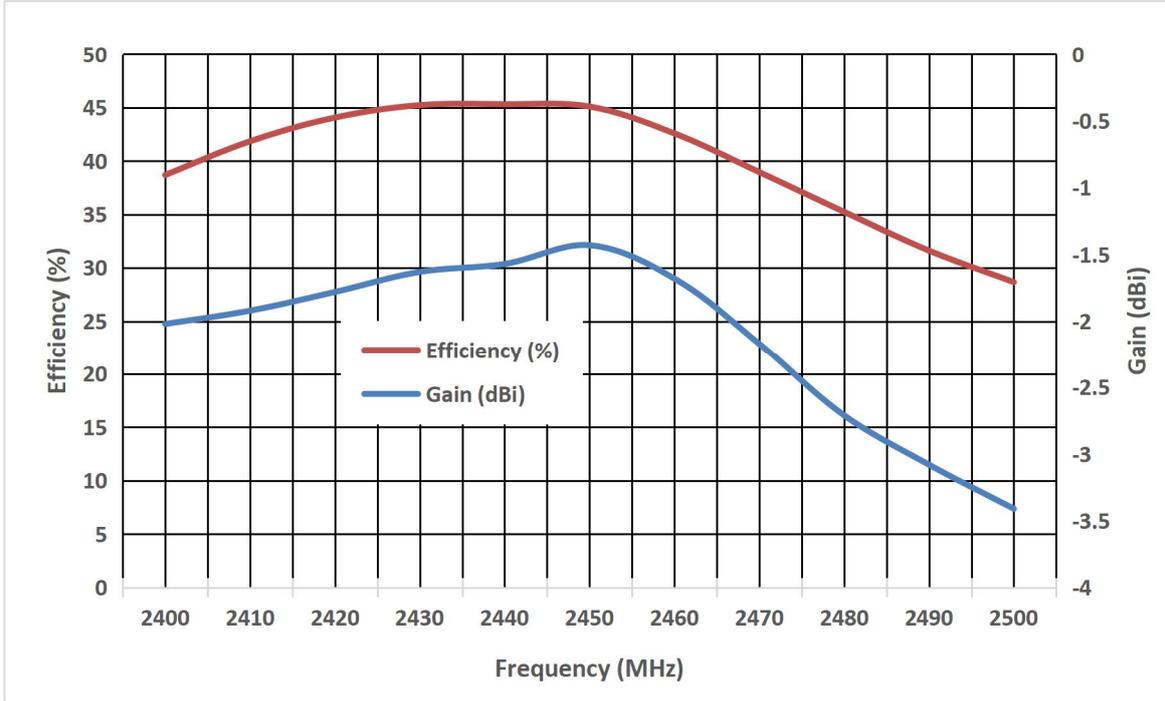
The data displayed in Chapter 8 were measured in free space and on a reference ground plane of 90 mm length, 50 mm width, and 0.8 mm thickness.

8.1 VSWR and Return Loss (dB)



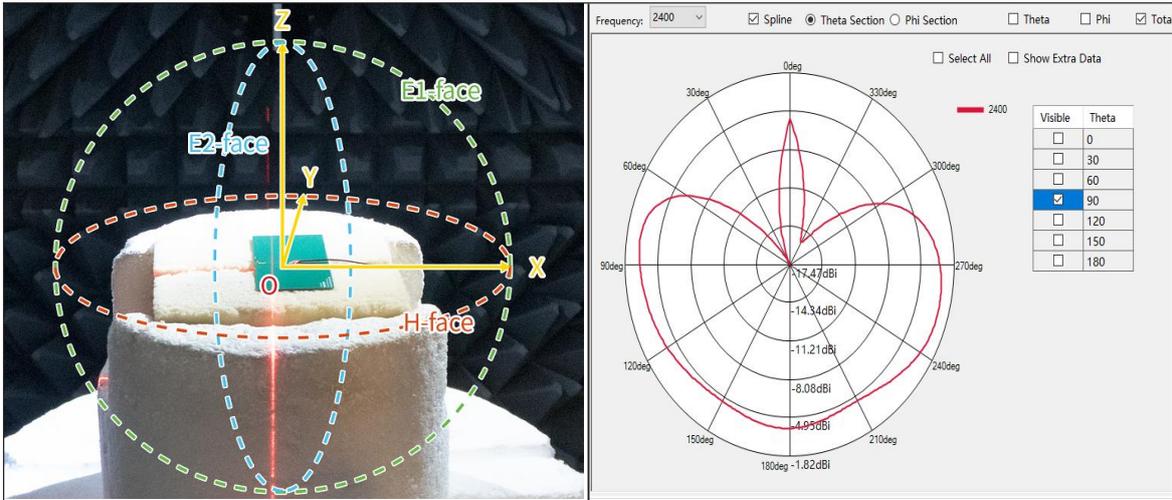


8.2 Gain (dBi) and Total Efficiency (%)



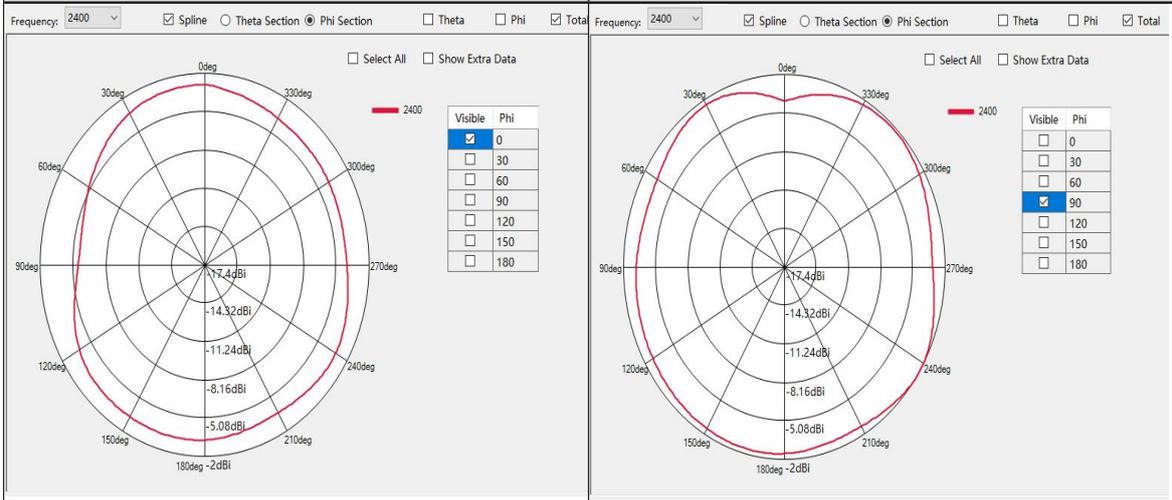
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	-2.02	38.7
2410	-1.92	41.85
2420	-1.78	44.07
2430	-1.63	45.23
2440	-1.57	45.32
2450	-1.43	45.1
2460	-1.68	42.59
2470	-2.17	38.97
2480	-2.71	35.25
2490	-3.08	31.62
2500	-3.41	28.67

8.3 Radiation Patterns (2.4-2.5 GHz)



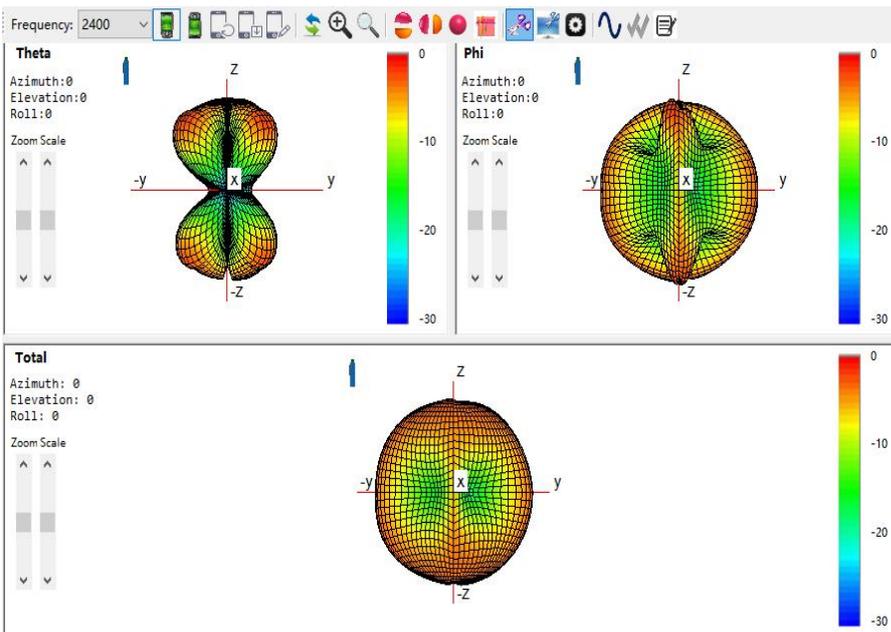
PCB board size: 90 mm x 50 mm x 0.8 mm

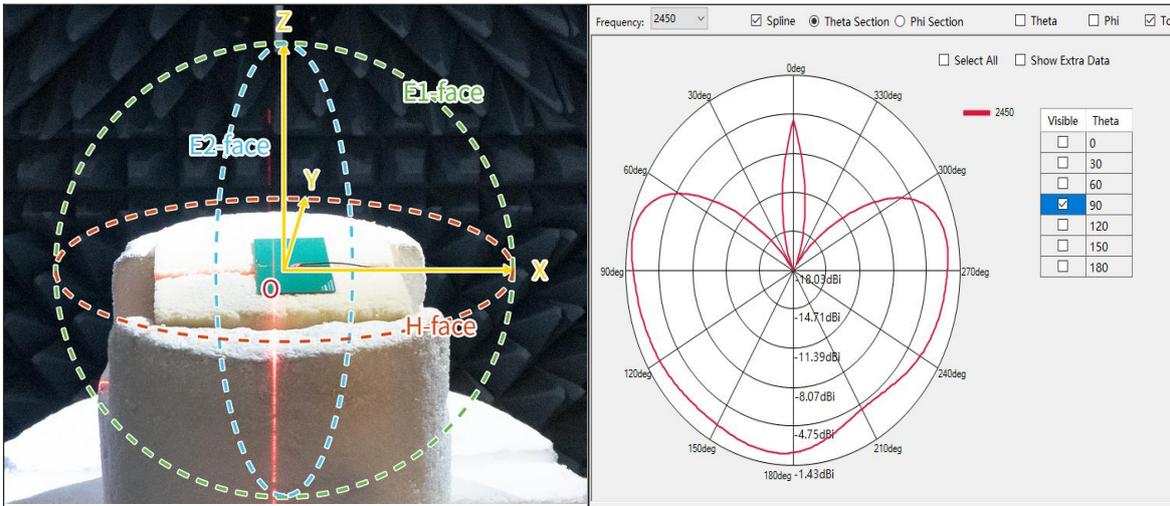
$\theta = 90^\circ$ Plane XY at 2400 MHz, Gain -2.02 dBi



$\phi = 0^\circ$ Plane XZ at 2400 MHz, Gain -2.02 dBi

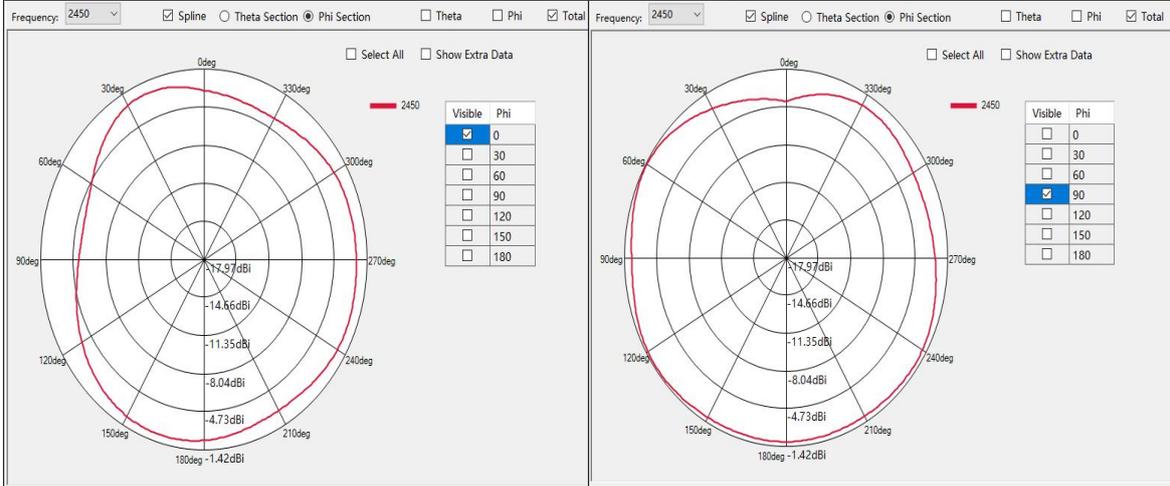
$\phi = 90^\circ$ Plane YZ at 2400 MHz, Gain -2.02 dBi





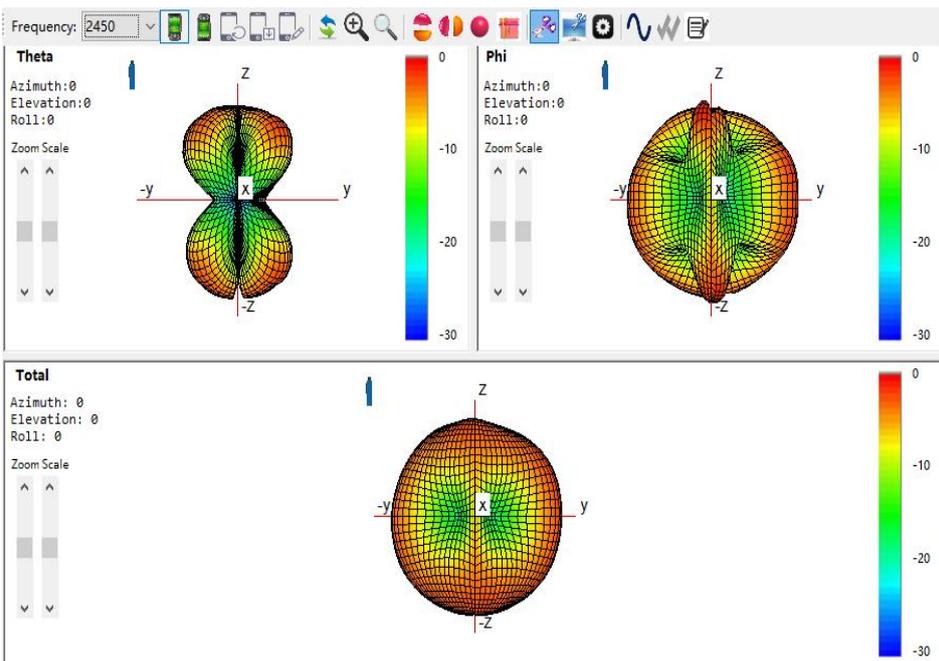
PCB board size: 90 mm x 50 mm x 0.8 mm

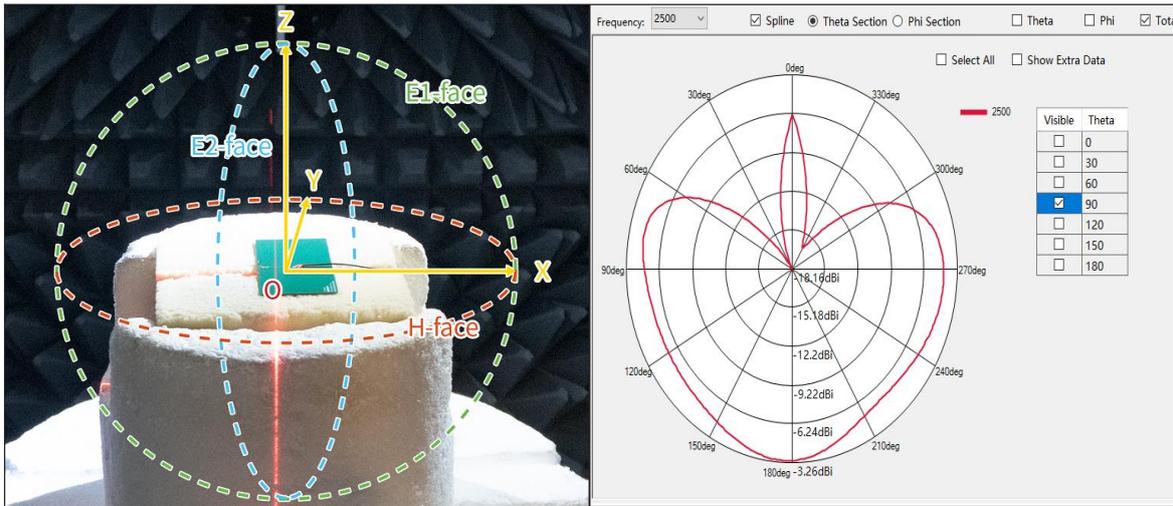
$\theta = 90^\circ$ Plane XY at 2450 MHz, Gain -1.43 dBi



$\phi = 0^\circ$ Plane XZ at 2450 MHz, Gain -1.42 dBi

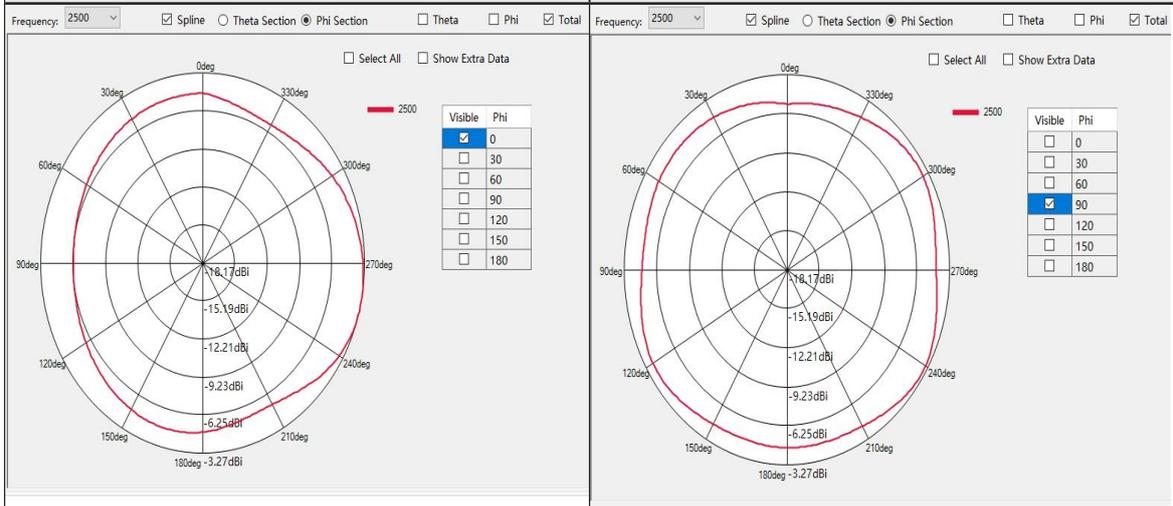
$\phi = 90^\circ$ Plane YZ at 2450 MHz, Gain -1.42 dBi





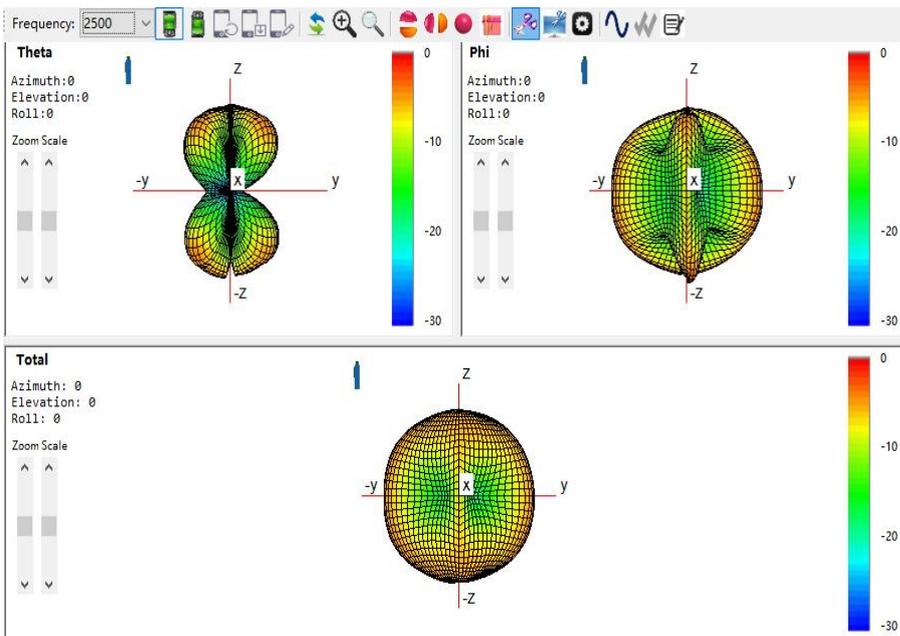
PCB board size: 90 mm x 50 mm x 0.8 mm

$\theta = 90^\circ$ Plane XY at 2500 MHz, Gain -3.41 dBi



$\phi = 0^\circ$ Plane XZ at 2500 MHz, Gain -3.41 dBi

$\phi = 90^\circ$ Plane YZ at 2450 MHz, Gain -3.41 dBi

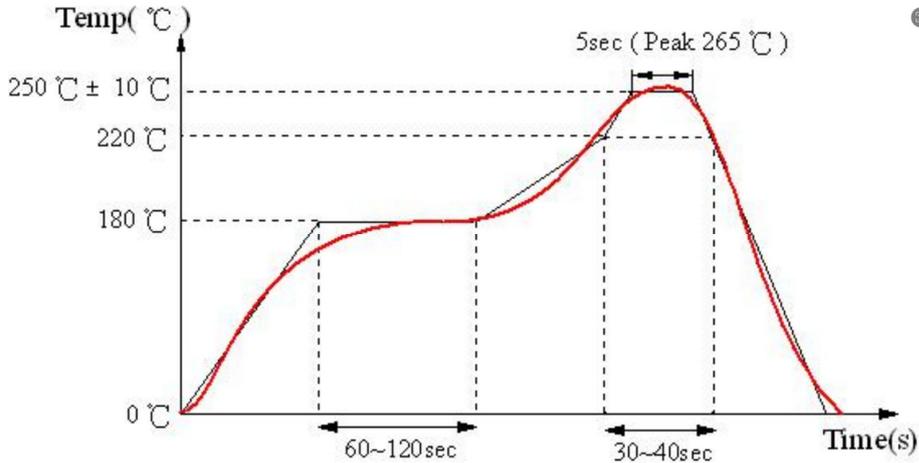


9 SOLDERING CONDITIONS

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 250°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.



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



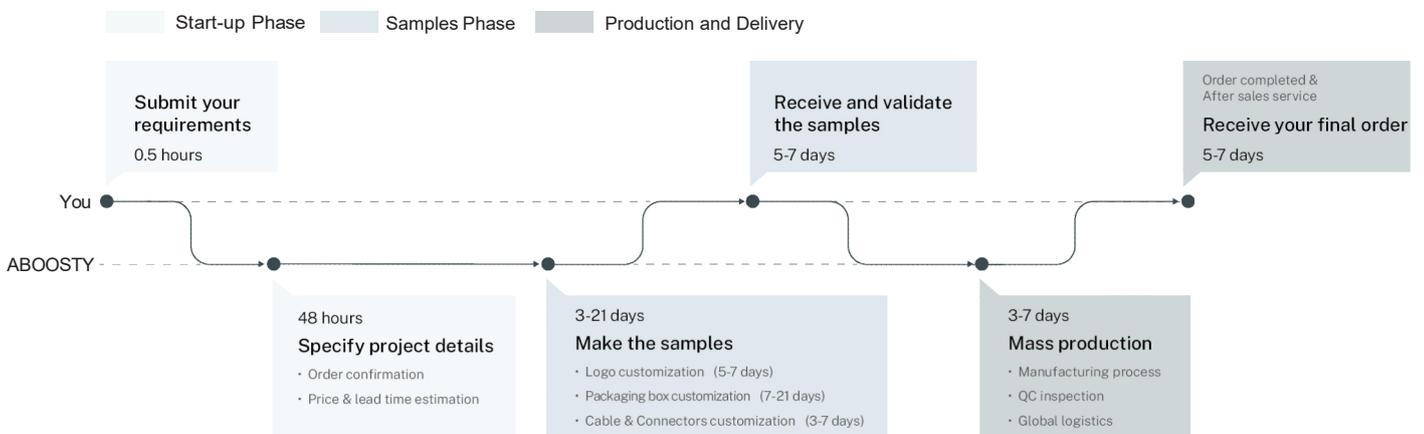
Prompt reply within 24h

What We Provide

OEM/ODM Services	
Light Customization	Deep Customization
<ul style="list-style-type: none"> • Logo • Packaging • Cables&Connectors 	<ul style="list-style-type: none"> • In-depth tailoring for specific applications • Functional enhancements • Environmental adaptations • Vertical certifications • ...

Custom Process

Light Customization Process



Deep Customization Process

