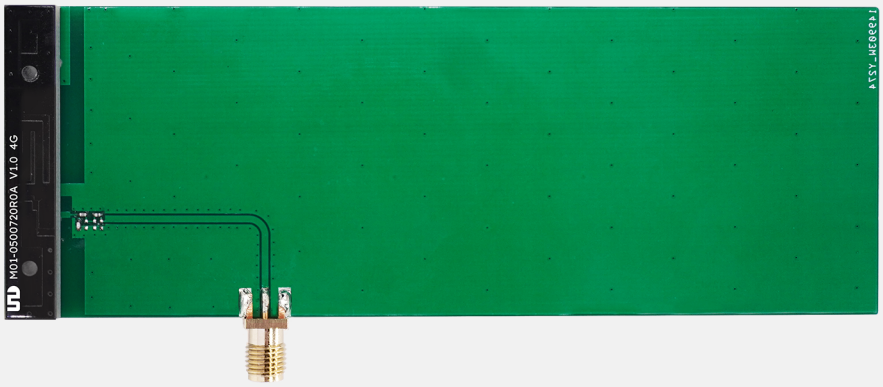
EVALUATION BOARD FOR

4G, LORA SMD ANTENNA

698-960 MHz | 1710-2690 MHZ

Dimensions: 150 x 50 x 1.6 mm



PN: M07-0100050R0A

RoHS COMPLIANT

Reach COMPLIANT

Table of Contents

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1 FEATURES & BENEFITS

- Compact Size
- Light Weight
- Easy to Integrate
- Intended for SMD Mounting
- Reduced Cost and Time-to-Market

2 APPLICATIONS

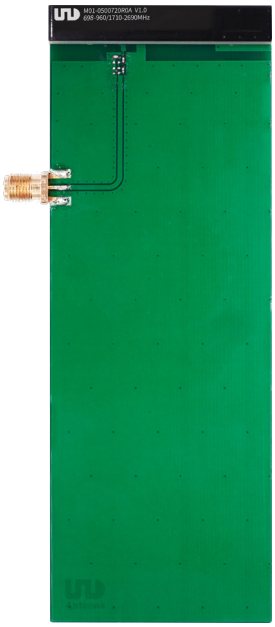
- Home Automation
- Wireless Routers and Modems
- Internet of Things (IoT) Devices, M2M
- Remote Technology / Monitoring
- Consumer Tracking
- Smart Metering

3 ORDER INFORMATION

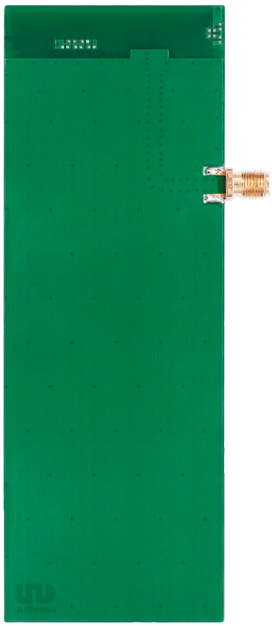
Product Name	Evaluation Board for 4G, LoRa SMD Antenna
Part Number	M07-0100050R0A
Dimensions	150 x 50 x 1.6 mm
Weight	27.1 g
Mounting	SMT
For Use With	ADCP001

4 EVALUATION BOARD

The evaluation board provides operation at 698-960, 1710-2690 MHz.
Evaluation Board dimension: 150 x 50 x 1.6 mm



Top View



Back View

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5 REFERENCE GUIDE

Technical Features	698-960 MHz	1710-2690 MHz
Max VSWR	6.9:1	2.5:1
Max Efficiency	78.9%	
Max Return Loss	-2.7 dB	
Peak Gain	Up to 3.01 dBi (Typ)	
Max Input Power	2 Watts CW	
Polarization	Linear	
Input Impedance	50 Ω	
Operating Temperature	-40°C to +80°C	
Relative Humidity	10 to 70%	
Board Dimensions (L x W x H)	150 x 50 x 1.6 mm	
All data were measured with an antenna of 49.6 mm length, 8.0 mm width, and 3.2 mm thickness. Application data might vary.		

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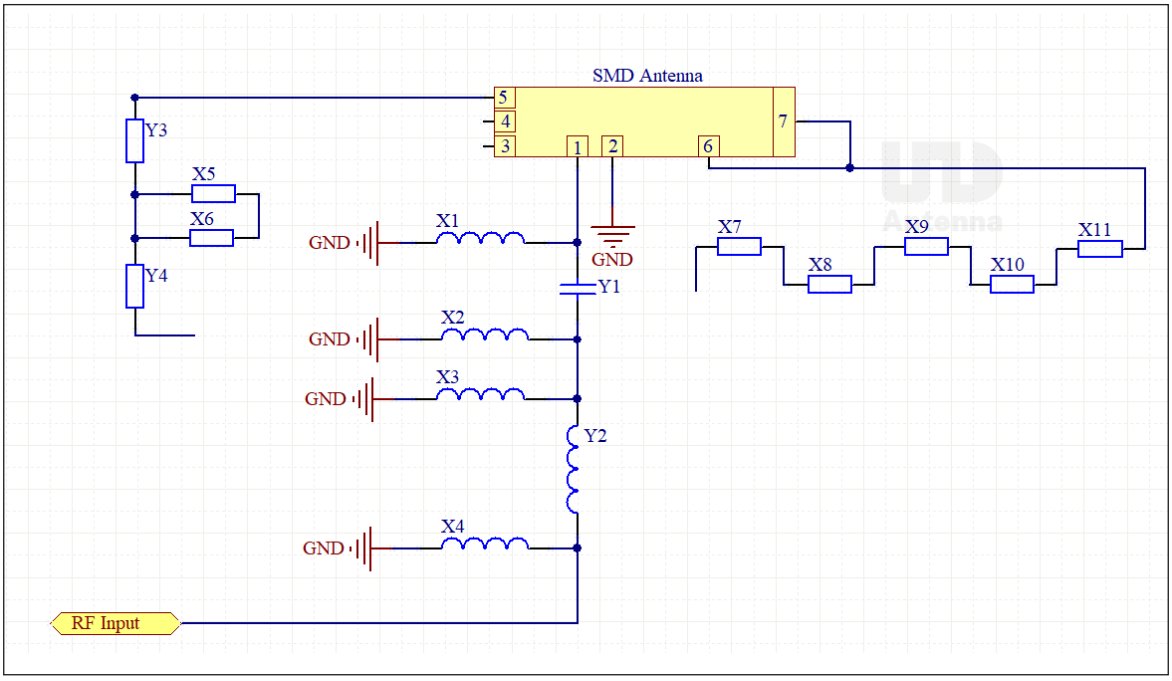
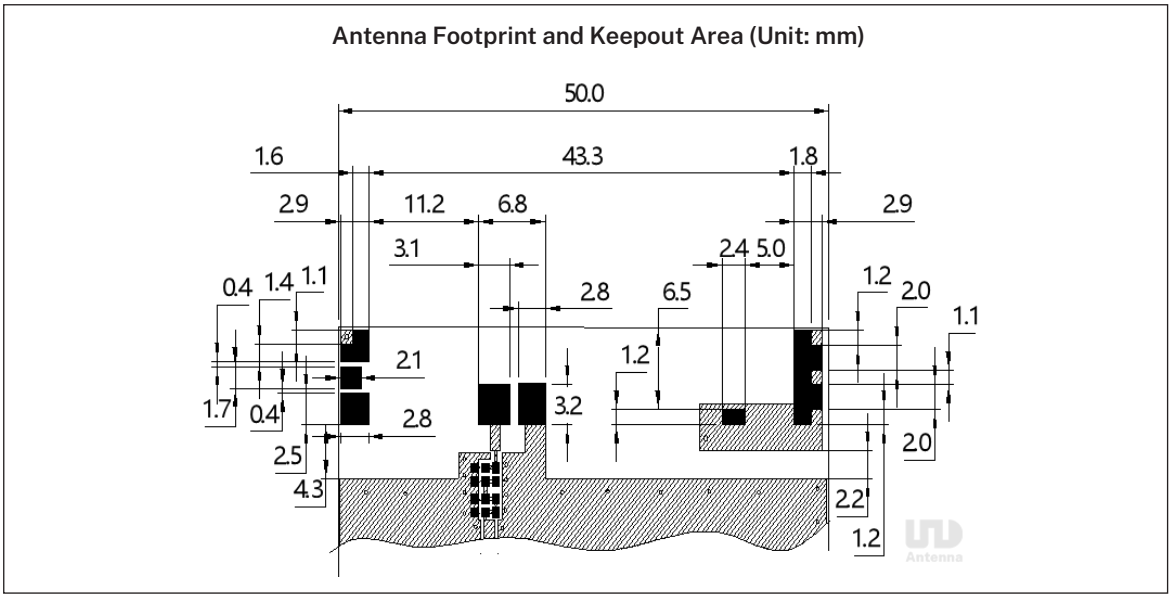
6 MATCHING NETWORK



7 RECOMMENDED FOOTPRINT AND LAYOUT



It's strongly recommended to place the antenna near the edge of the board. Maximum antenna performance is achieved by placing the antenna towards one of the corners of the PCB and with the feed point of the antenna as close to same corner of the PCB as possible.

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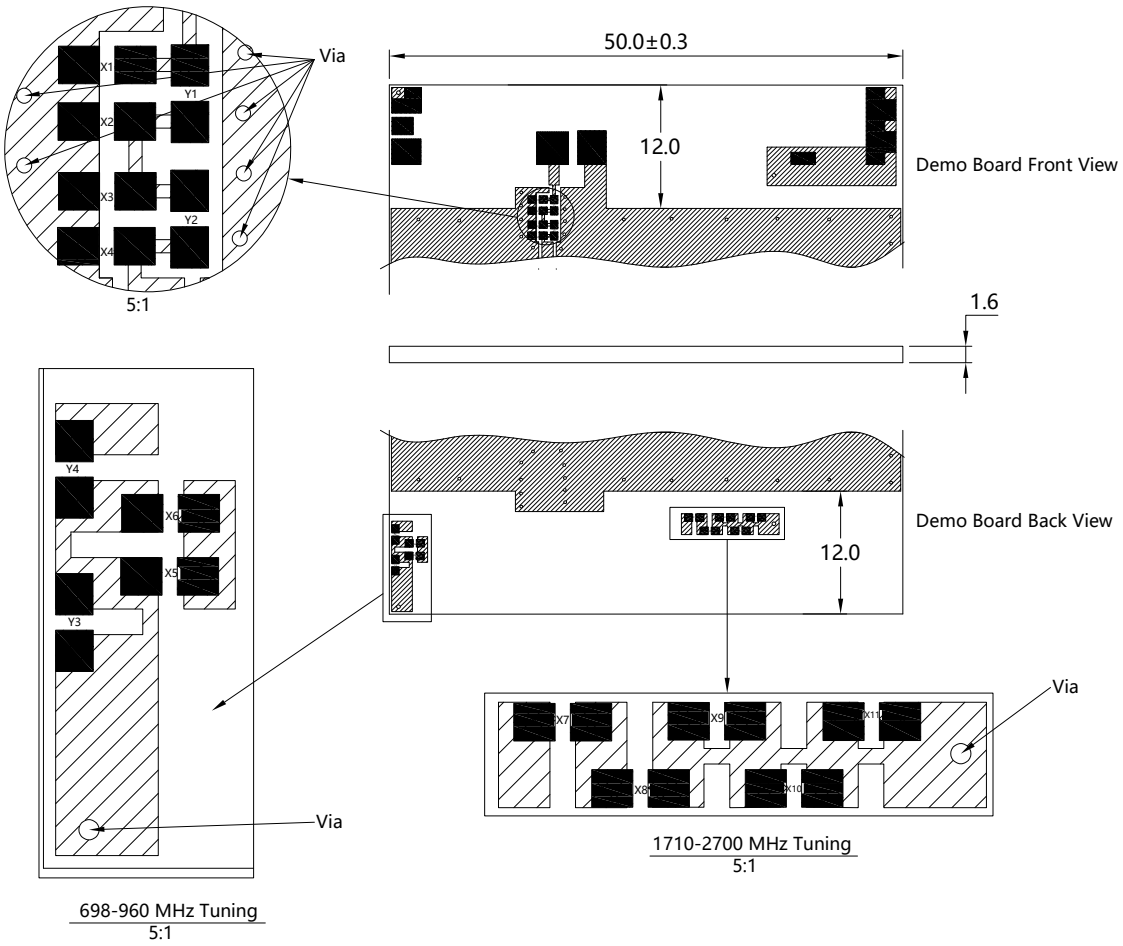
Recommended Matching Circut



Tag Number	Value	Brand	PN
Y1	CAP SMD 0402 NPO 2.2pF ±0.25p 50V	muRata	D03-0200490000
Y2	SMD 0402 1nH ±0.3nH	muRata	D03-0800220000
X1	SMD 0402 18nH ±5%	muRata	D03-0800230000
X2-X11	NC		
Y3-Y4	NC		

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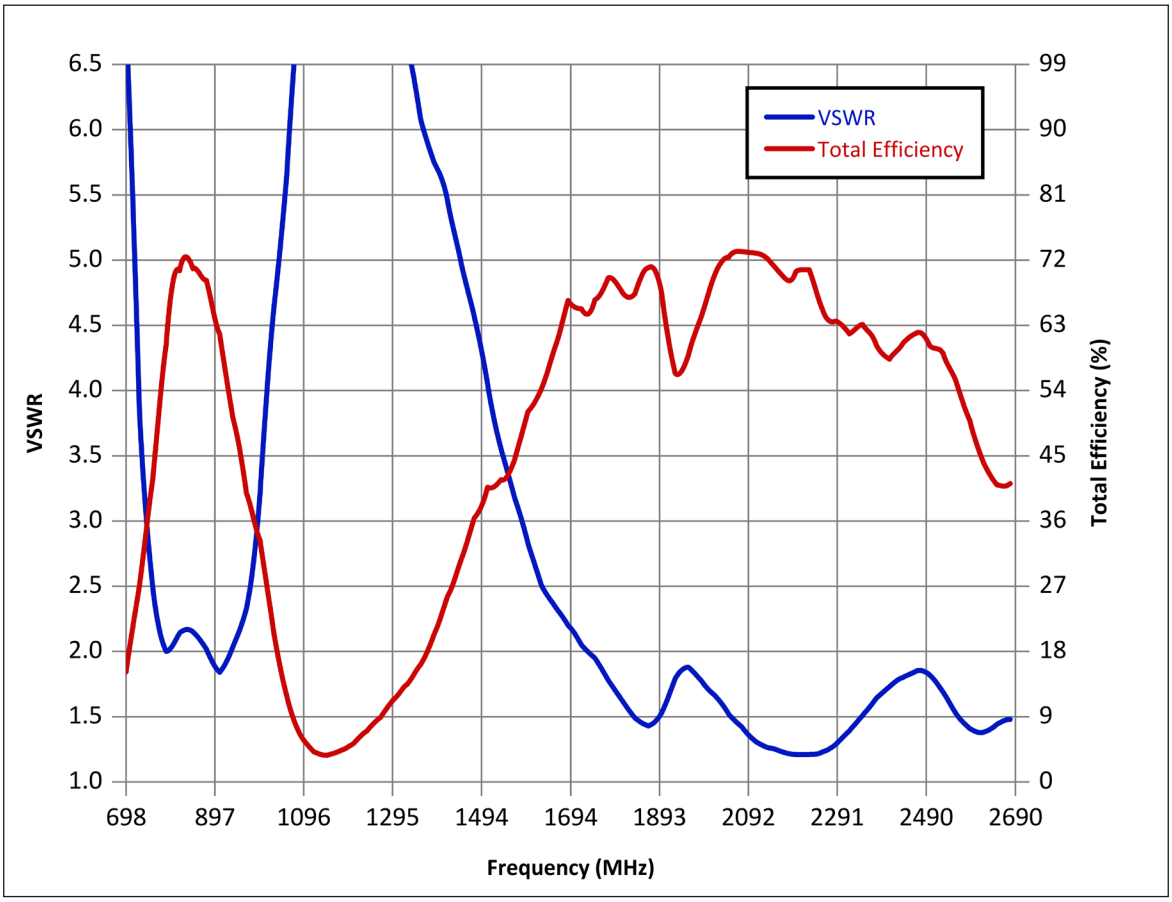
8 ELECTRICAL PERFORMANCE

◎ **Note**

All data displayed in Chapter 8 were measured with Antenna ADCP001 and on a reference ground plane of 150 mm length, 50 mm width, and 1.6 mm thickness.

8.1 VSWR and Total Efficiency



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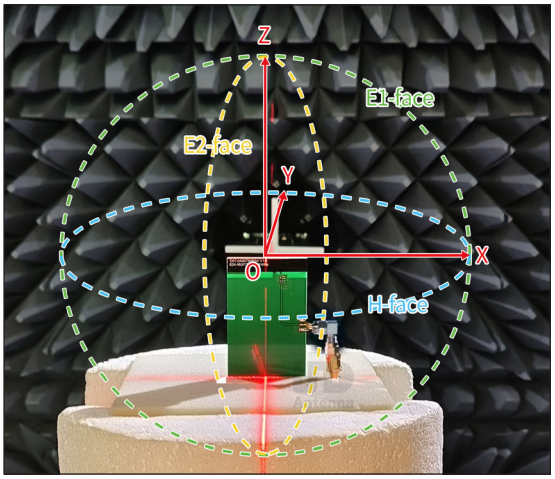
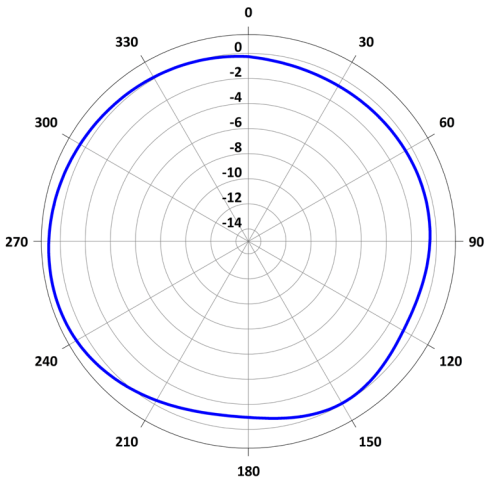
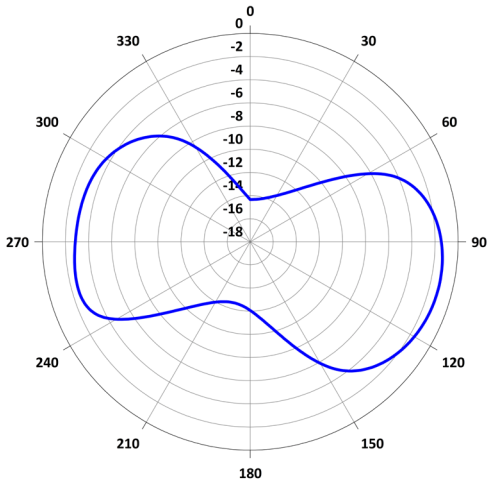
8.2 Radiation Patterns (698-960 MHz), Efficiency (%) and Gain (dBi)



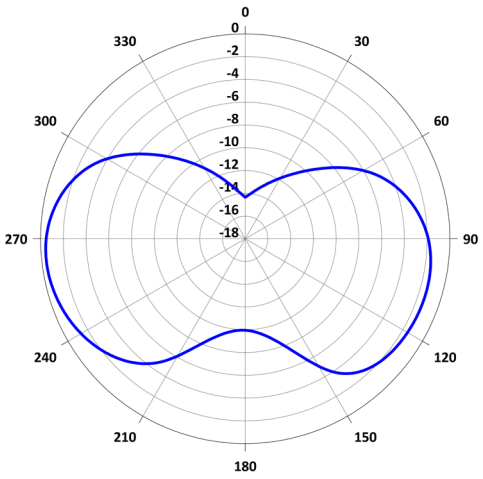
PCB board size: 150 mm x 50 mm x 1.6 mm



θ = 90° Plane XY at 868MHz



Φ = 0° Plane XZ at 868MHz



Φ = 90° Plane YZ at 868MHz

Gain	Peak Gain	1.2 dBi
	Average Gain across the band	-0.4 dBi
	Gain Range across the band (min, max)	-7.2 to 1.2 dBi
Efficiency	Peak Efficiency	73.5%
	Average Efficiency across the band	53.4%
	Efficiency Range across the band (min, max)	15.2 to 73.5%

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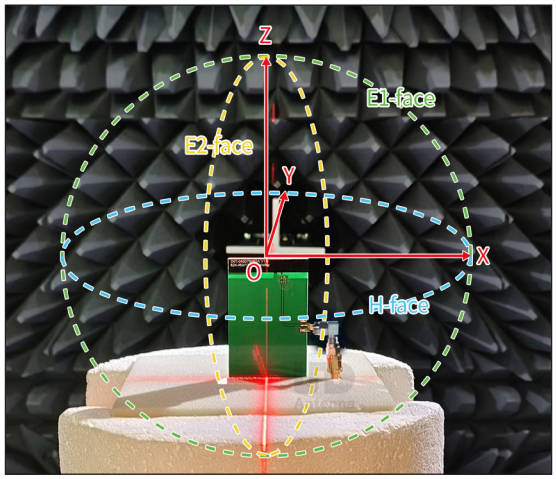
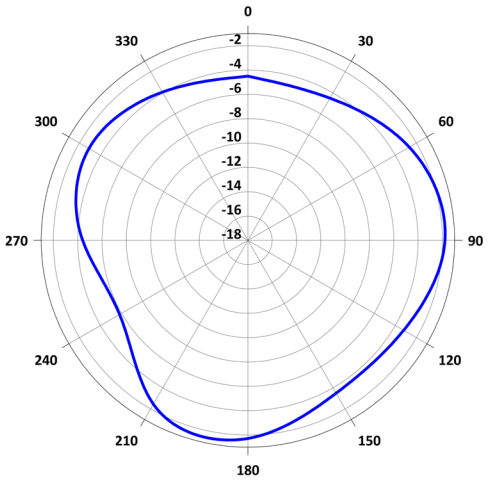
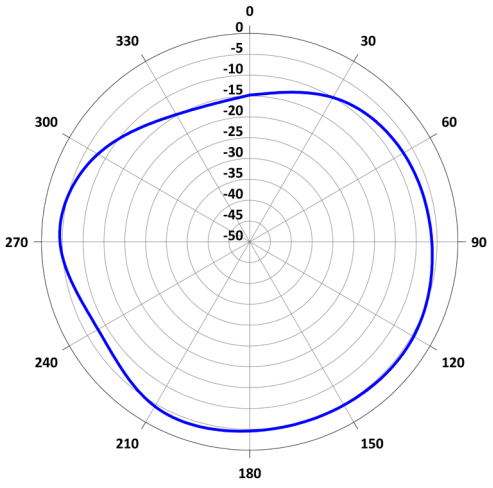
8.3 Radiation Patterns (1710-2690 MHz), Efficiency (%) and Gain (dBi)



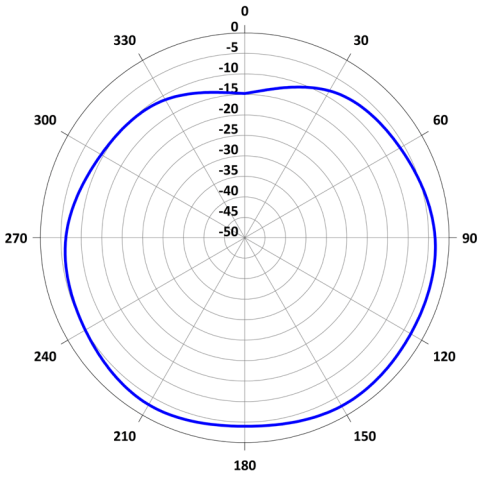
PCB board size: 150 mm x 50 mm x 1.6 mm



θ = 90° Plane XY at 2510 MHz



Φ = 0° Plane XZ at 2510 MHz



Φ = 90° Plane YZ at 2510 MHz

Gain	Peak Gain	3.0 dBi
	Average Gain across the band	1.5 dBi
	Gain Range across the band (min, max)	-0.01-3.0 dBi
Efficiency	Peak Efficiency	78.9%
	Average Efficiency across the band	62.6%
	Efficiency Range across the band (min, max)	35.2 to 78.9%

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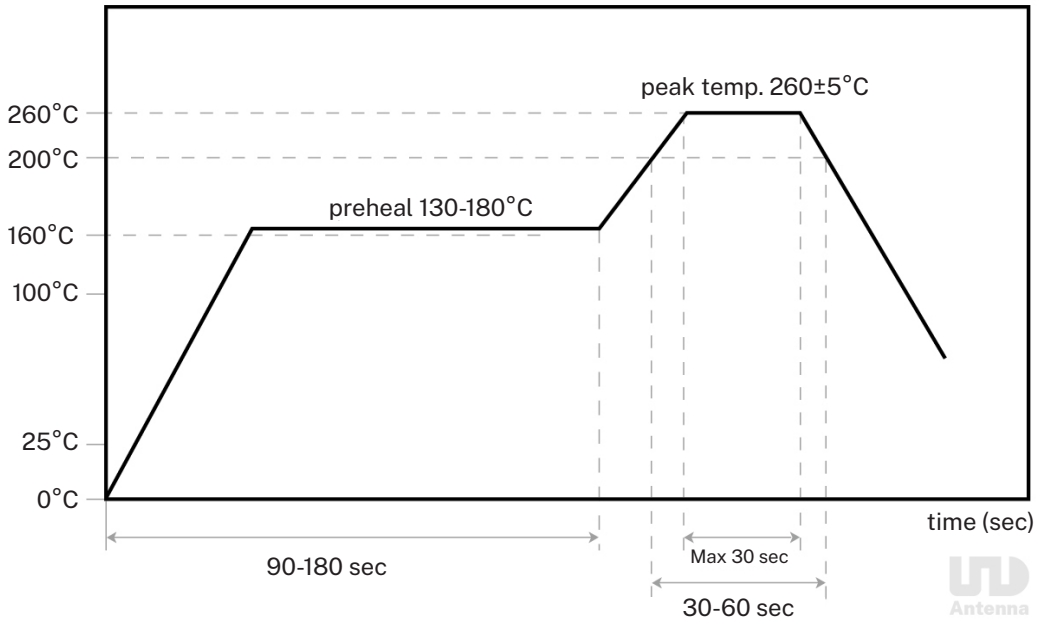
9 SOLDERING CONDITIONS

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 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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11 WELCOME ALL ANTENNA OEM/ODM PROJECTS

About ABOOSTY

10+ years in antenna R&D, production, and OEM/ODM

House of Aboosty: 50M+ 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

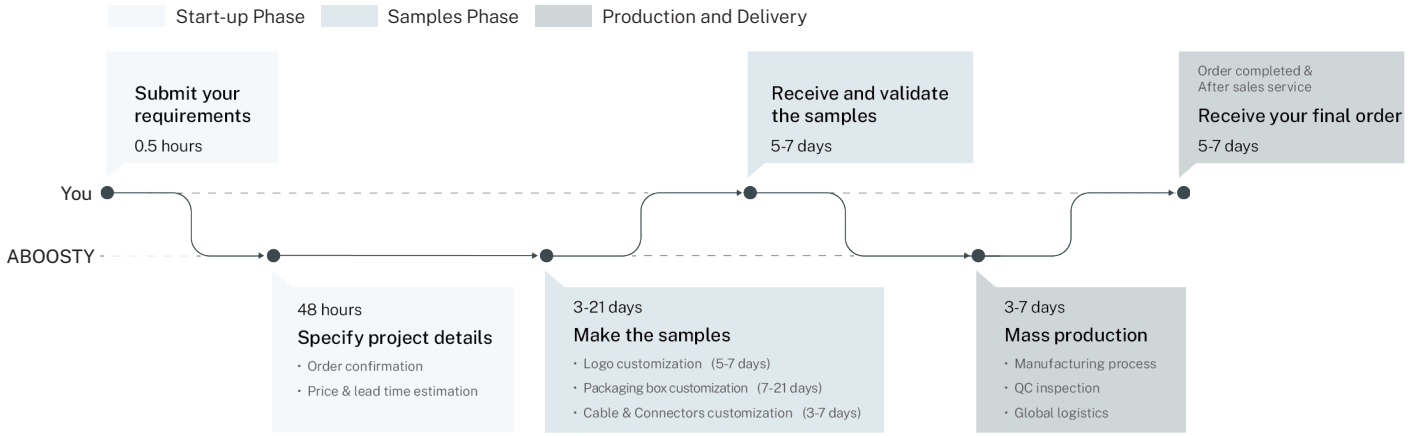
Prompt reply within 24h

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



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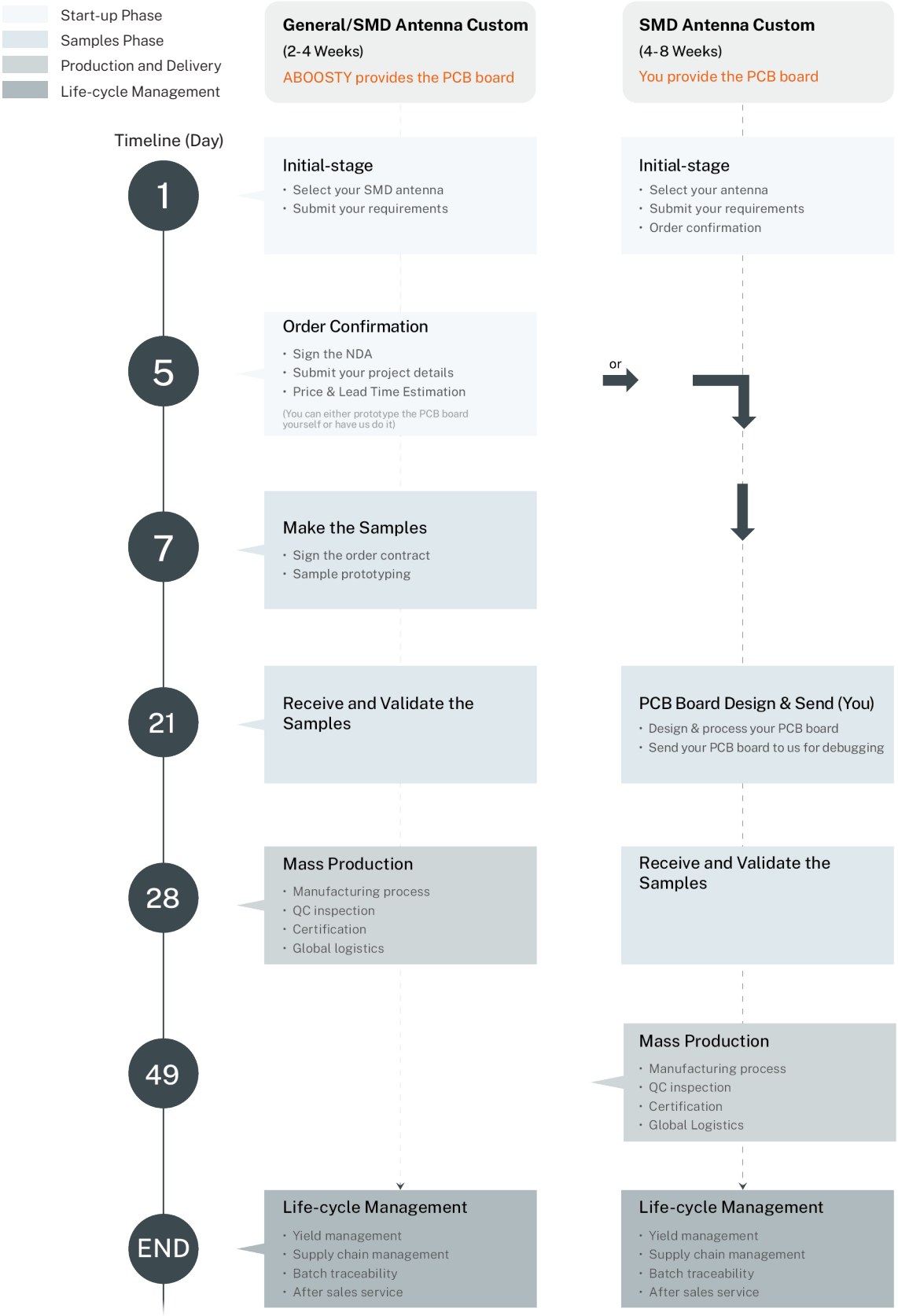
Deep Customization Process



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