Antenna module Specification

（ ）Tentative Specification

（✓）Preliminary Specification

（ ）Approval Specification

The information described in this specification is preliminary and can be changed without prior notice.

Model No.	Dual band PCB Antenna
Part No.	5541000010
Date	2025-05-29

Prima			**Customer**
Prepared By	**Checked By**	**Approved By**	**Approved By**
Xiamen Prima Technology Inc. NO.333,Shangtang North Road,Xiang' an District, Xiamen, Fujian,China			

PRIMA 厦华

Table of Contents

Contents

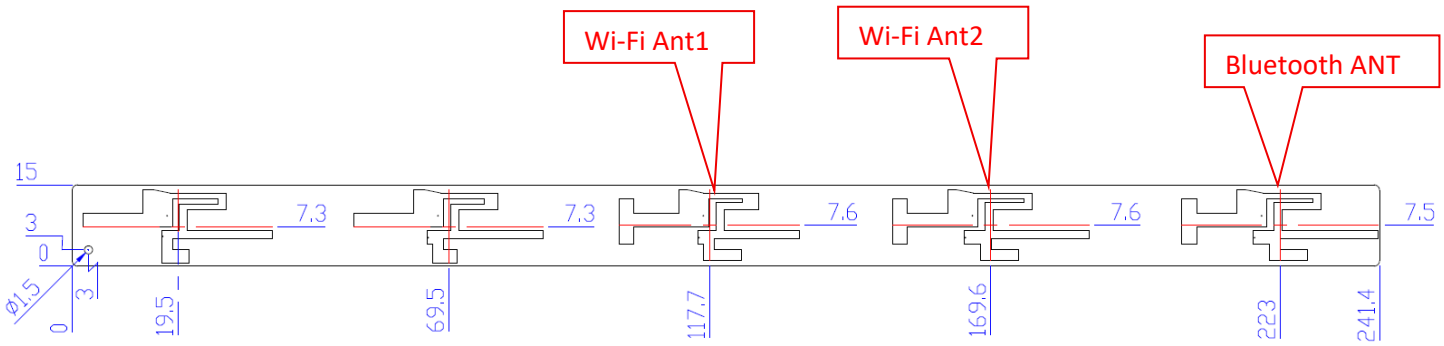
REVISION HISTORY

Version No	Date	Page	Description
0.0	2025-05-29	all	Preliminary Specification

Specification

A.Electrical Properties	
Frequency Rang	2.4~2.5GHz 5.15~5.85GHz
Impedance	50Ω Nominal
VSWR	2.0Max.
Return Loss	-10dB Max.
Out of roundness	3.0 dBi（Max.）
Radiation	Omni-Directional
Polarization	Linear Vertical
B.Physical Properties	
Antenna Radiator	PCB FR-4
Connector Type	I-PEX
Cable Type	OD:1.37mm CABLE
Antenna Plastic	
C.Environmental	
Operating Temp	-40℃ ~ +65℃
Storage Temp	-40℃ ~ +80℃

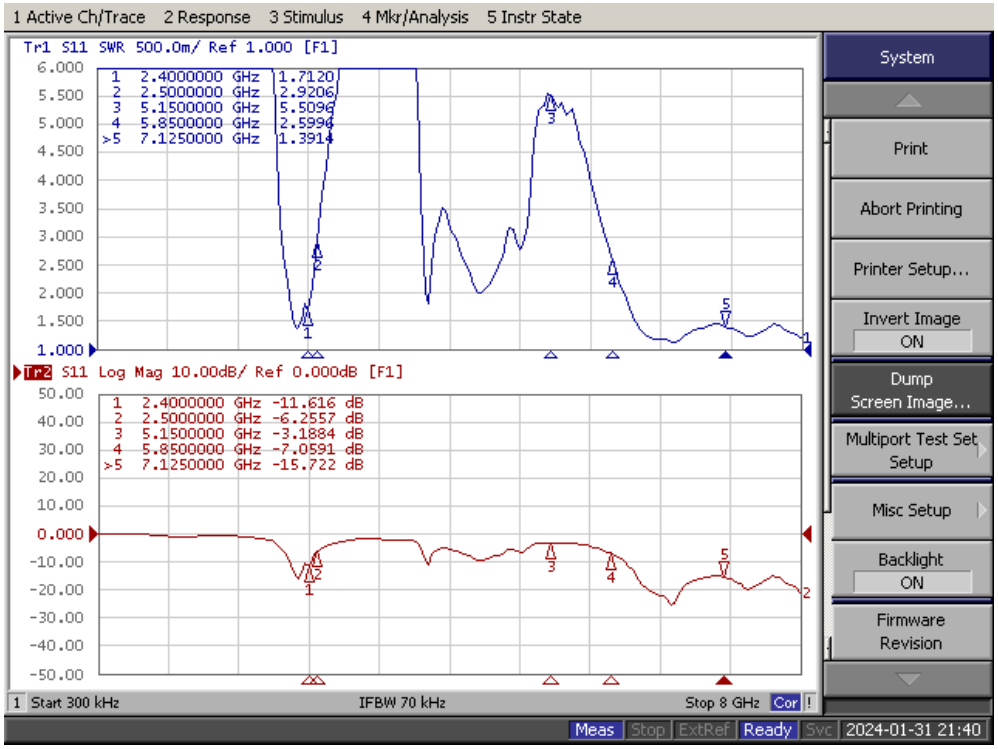
PCB Dimensions （Unit： mm）



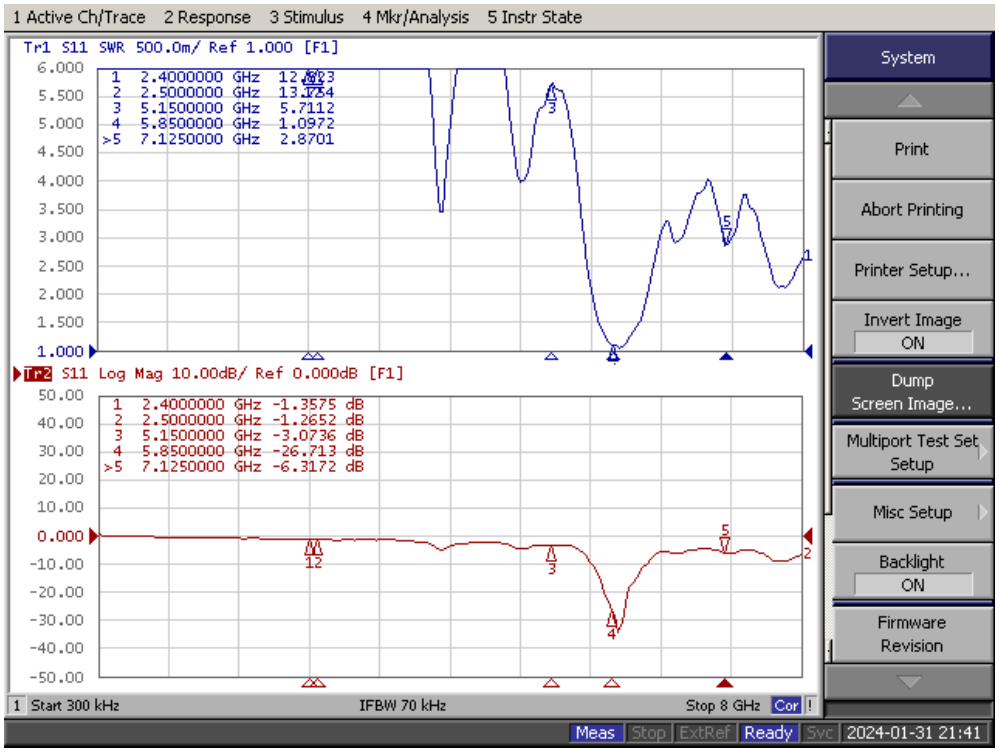
Electrical Test Report

VSWR：

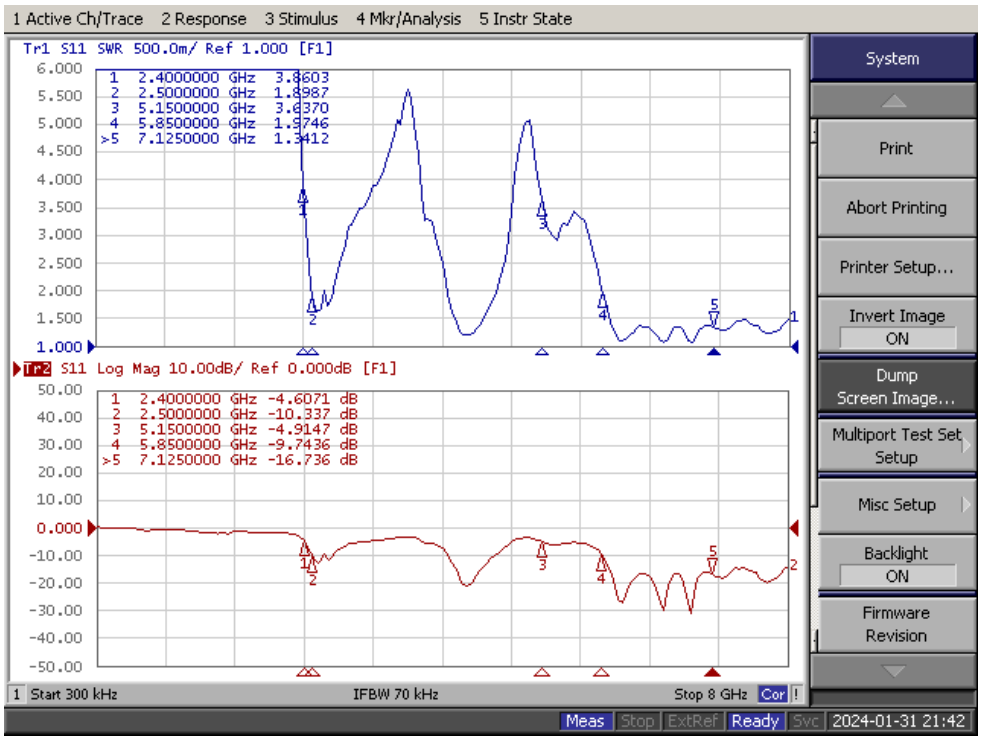
Wi-Fi Ant1



Wi-Fi Ant2



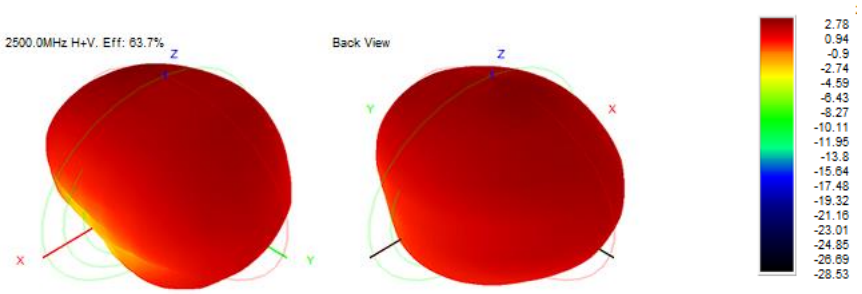
Bluetooth ANT



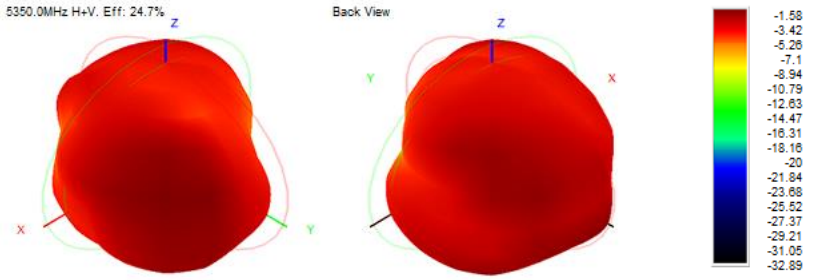
GAIN：

Frequency(GHz)	Peak Gain (dBi)		
	Wi-Fi Ant1	Wi-Fi Ant2	Bluetooth ANT
2.49	/	/	2.09
2.5	2.78	-4.56	/
5.35	-1.58	-2.38	/
5.85	3.35	5.85	/

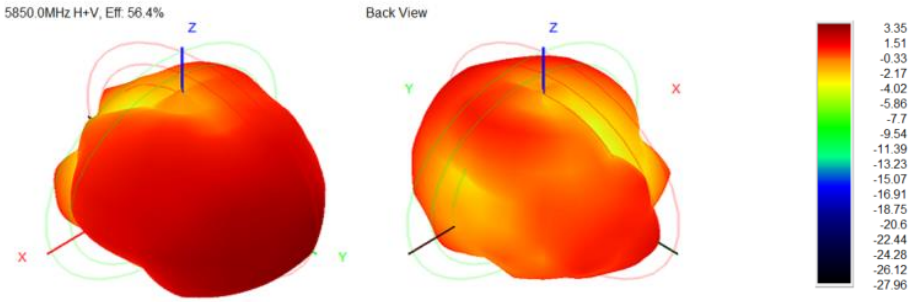
Wi-Fi Ant1　2.5GHz



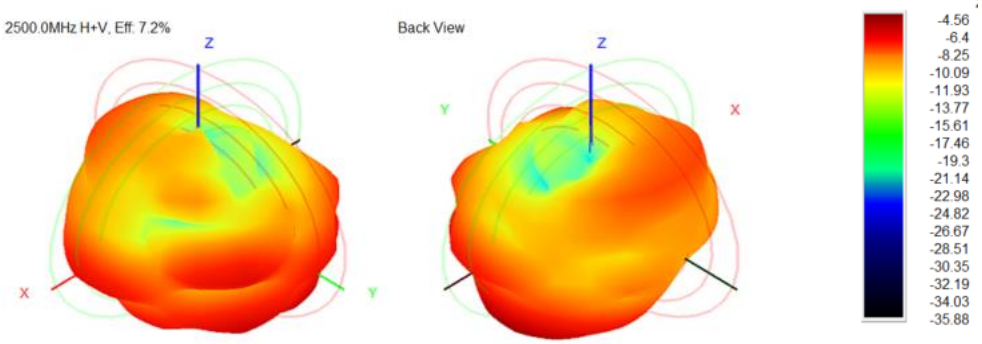
Wi-Fi Ant1　5.35GHz



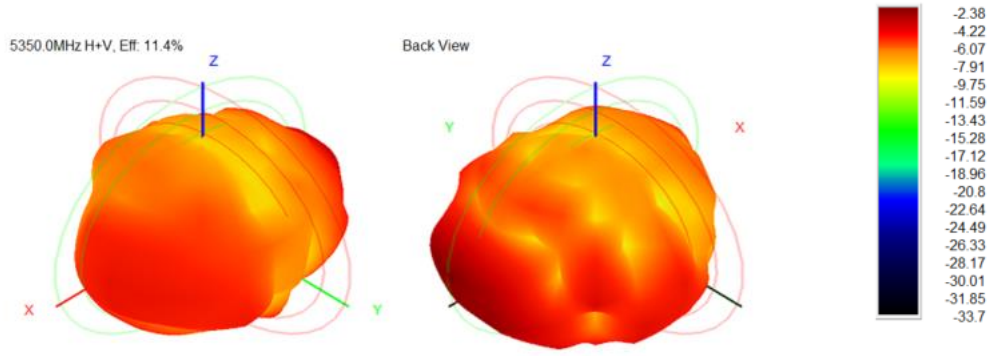
Wi-Fi Ant1　5.85GHz



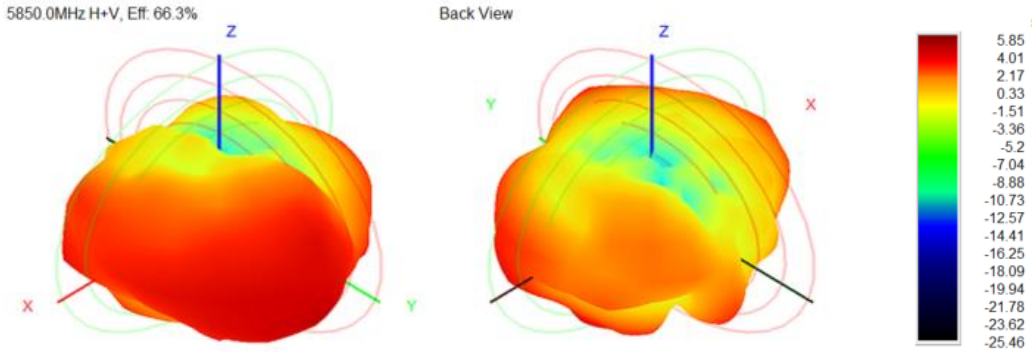
Wi-Fi Ant2　2.5GHz



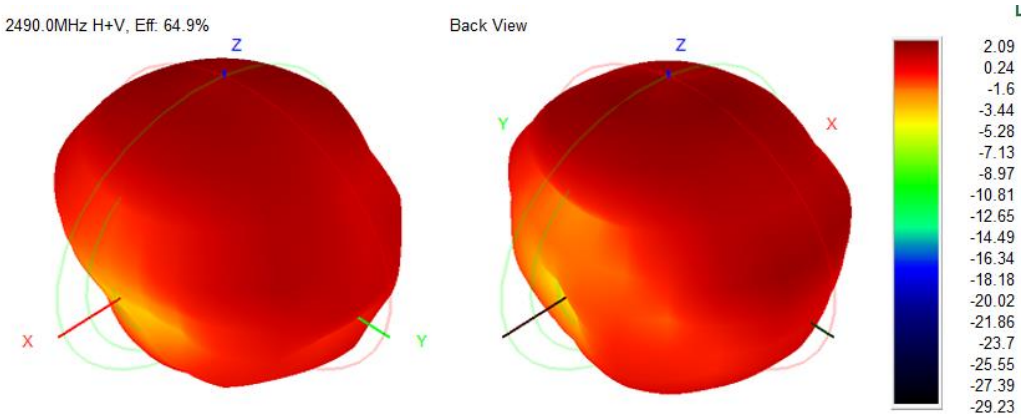
Wi-Fi Ant2　5.35GHz



Wi-Fi Ant2　5.85GHz



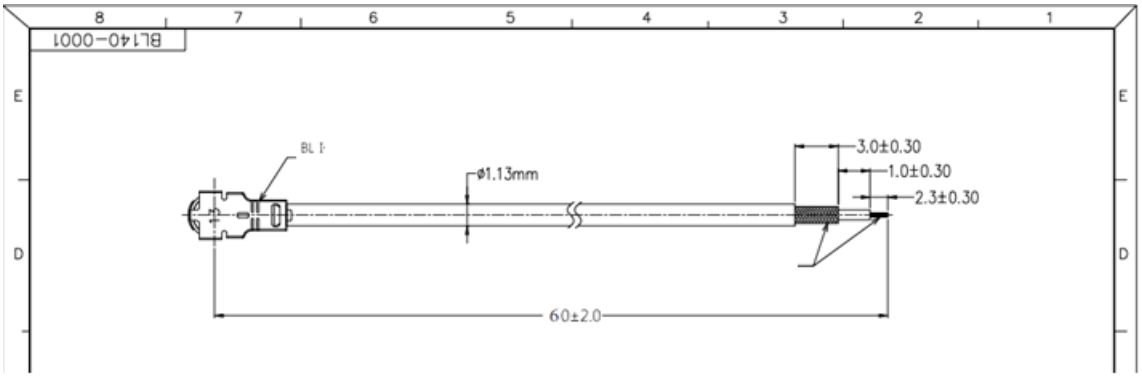
Bluetooth ANT　2.49GHz



Environmental and reliability experiment

Test Items	Test Condition and Procedure	Requirements	Test equipment
Vibration	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.≤5%	NA
Random Drop	GB / T2423.8-1995 Single：Height: 1.0 Meter; 3 directions; 1 time for each direction Packing：Height: 0.76 Meter; 1 corner, 3 edges, 6 surface Antenna+Machine:Height: 0.76 Meter; 1 corner, 3 edges, 6 surface.	1. No parts separated、fracture 2. Frequency Tol.≤5%	NA
Solderability	GB / T2423.28-2005 Temp: 260±5°C;Duration: 5 seconds	Tin evenly on full	
Pull Test	Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.≤5%	
Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.≤ 5% 3.扭力要求小于 1.5kg	torsion meter
Salt Spray	GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 8H	1. No Visual Damage 2. Frequency Tol.≤5%	Salt spray testing machine
Temperature and Humidity Chamber	GB / T 2423.3-2006 Temp: 80° C / 12 H; -40° C / 12H RH: ≥ 90%; Time: 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5%	Constant temperature and humidity testing machine
Thermal Shock	GB / T 2423.22 - 2008 - 40° C (30 minutes) to + 80° C (30 minutes); Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5%	Thermal Shock testing machine
Aging test	GB /T 2423.2 - 2008 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5%	Aging tester

Cable structure parameters, and electrical characteristics



PRIMA 厦华

Type	RF-1.13/50	P/N	SY113/50-139(Gray)
Structure drawing			

Structure characteristics

Structure	Item	Standard value
① Inner conductor	Material	Tinned copper wire
	Makeup:total / O.D. of every wire(mm)	7/0.08
	(Intertwist)NOM.O.D.(mm)	0.24±0.02
② Insulation	Material	FEP
	Color	Clarity
	NOM.O.D.(mm)	0.7±0.03
③ Outer conductor	Material	Tinned copper wire
	Makeup:total / O.D. of every wire(mm)	4/0.05
	NOM.O.D.(mm)	0.92±0.05
	Coverage ratio(%)	90±5
④ Jacket	Material	FEP
	Color	Gray
	NOM.O.D.(mm)	1.13±0.05

Electrical characteristics

Item	Standard value	Item	Frequency	Standard value Unit:dBm
Capacitance(pF/m)	98	Attenuation	1GHz	≤2.2
Velocity(%)	70		2GHz	≤3.1
Impedance(Ω)	50±2		3GHz	≤3.8
Standing wave ratio	≤1.3@0~6GHz		4GHz	≤4.4
Max.operating voltage(V)	1000		5GHz	≤4.9
			6GHz	≤5.4

Dependability

Item	Unit	Standard value
Min.bending radius static	mm	4
Min.bending radius repeated	mm	—
Operating temperature	℃	-55~+200

Packing

Item	Unit	Standard value
Packing mode	/	Papery plate
The length of each plate	m	500
Each connector plate number	/	≤3
The shortest length of each root	m	≥10