

KunShan Innowave Communication Technology CO.,Ltd.

ANTENNA SPECIFICATION

Customer: _____

Material: KA39 Amgregated antenna finished product
(English silk screen printing)

Innowave P/N: F062G2413181000

Version: A1

Date: August 13, 2025

Supplier Signature

Audit	Confirmation	Approval

Customer Signature

Audit	Confirmation	Approval

KunShan Innowave Communication Technology CO.,Ltd.

Add: Building H, Jindi Zhizao Park, Shengchuang Road, Yushan Town, Kunshan City, Suzhou City, Jiangsu Province

Version Revision Record:

Ver.	Reviser	Revision Date	Revision Record
A0	Guan Jiahao	2025/6/13	First release

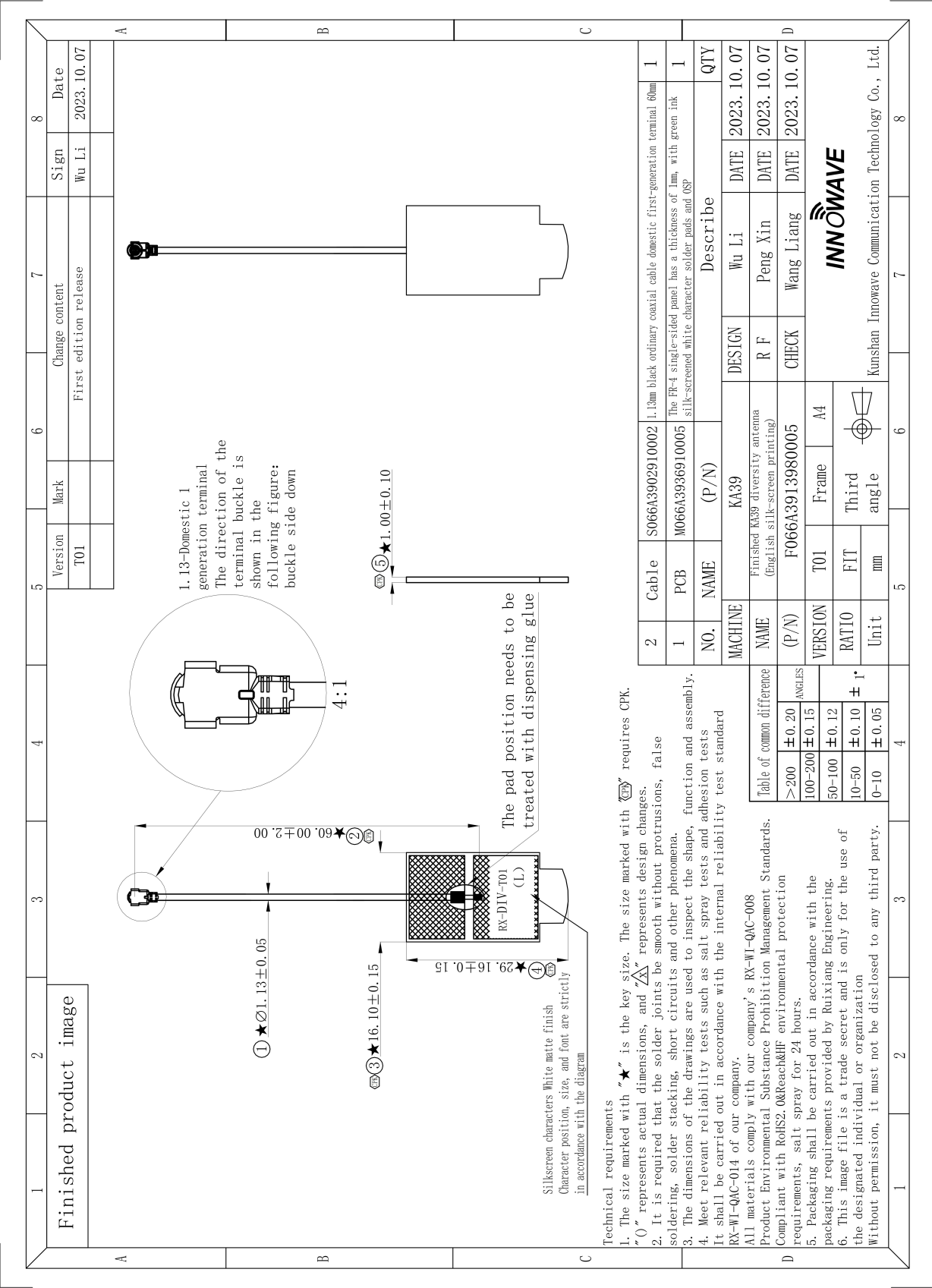
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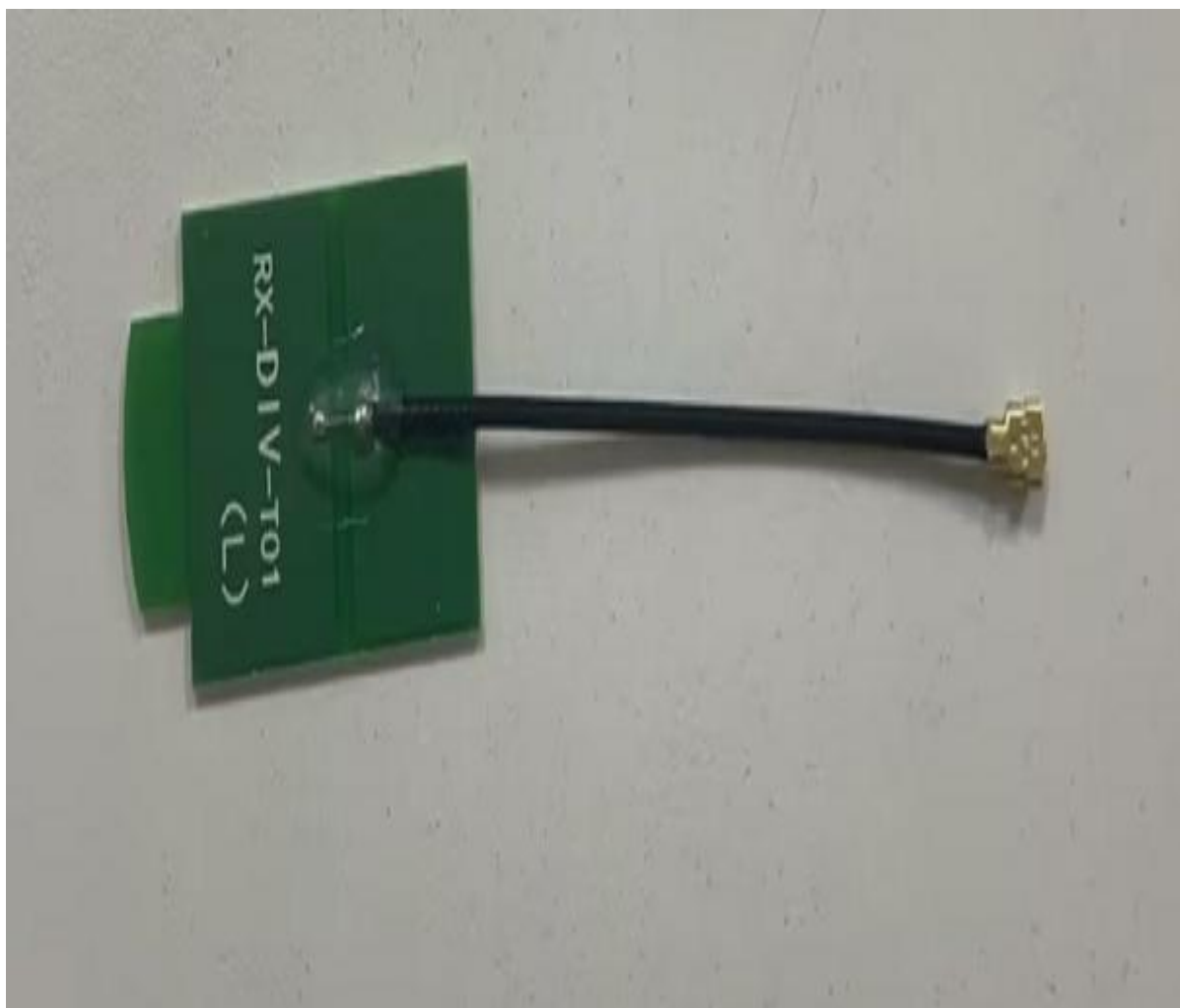
1 Specification Sheet

Main Product Parameters	
Manufacturer Model	F066A3913980005
Frequency Band	2400~2500MHz; 5100~5800MHz
Antenna Technology	Monopole
Polarization	PCB+CABLE
Antenna Size	29.16*16.1mm
Antenna Appearance	Green PCB, black cable
Characteristic Impedance	50 Ω
SWR	<2.5@2400~2500MHz; <8@5150~5850MHz
Axial ratio	Not have
Efficiency	>16%@2400~2500MHz; >4%@5150~5850MHz
Gain(MAX)	-1.0dBi @2400~2500MHz; 2.31dBi @5150~5850MHz
Directional Diagram	See the data of the specification
Active input	Not involved
Housing material	Domestic 1st generation terminal
Cable Specifications	1.13 line, length 98mm, black
Connection	Conventional wear and tear
Operating Temperature	-40 to 80℃
Storage Temperature	15 to 28℃
Salt spray level	24h
Remarks	Not involved

2 Product 2D Diagram



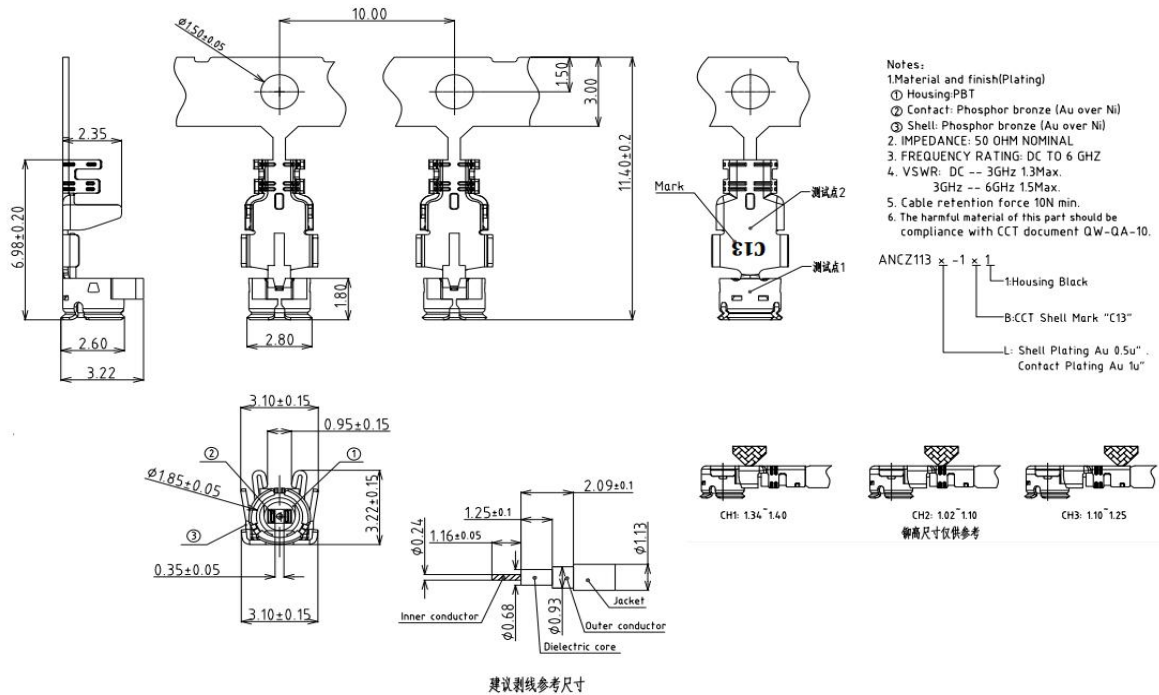
3 Antenna Physical drawing



4 Description of key items

4.1 IPEX connector

4.1.1 Specific models and sizes



4.2 1.13mm coaxial cable

4.2.1 Structure



4.2.2 Structural parameters

Item	Material	NOM.O.D.(mm)
Inner conductor	Tinned copper wire	0.24 ± 0.02
Insulation	FEP	0.7 ± 0.03
Outer conductor	Tinned copper wire	0.92 ± 0.05
Jacket	FEP	1.13 ± 0.05

4.2.3 Electrical performance parameters

Capacitance(pF/m)	98 ± 4
Impedance(Ω)	$50 \pm 2 @ 1\text{ns}$
Velocity(%)	70 ± 2
Operating frequency(GHz)	0~6G
Max operating voltage(Vrms)	1000

4.2.4 Mechanical and environmental properties

Operating temperature($^{\circ}\text{C}$)	-55 to +125
Min.bending radius(mm)	4
ROHS	pass

4.2.5 Attenuation

Frequency(GHz)	Standard value(dB/m@20 $^{\circ}\text{C}$)
1.0	≤ 2.32
2.0	≤ 3.27
3.0	≤ 4.01
4.0	≤ 4.64
5.0	≤ 5.17
6.0	≤ 5.69

5 Performance Test Report

5.1 Test Steps

NA

5.2 Device List

Device	Manufacturer	Model number	S/N	Calibration date	Expiration date
Microwave darkroom	GTS	RayZone 1800	CT10114450A2045	7/10/2023	7/11/2023
Network analyzer	Keysirht	E5071C	MY46528315	7/10/2023	7/11/2023

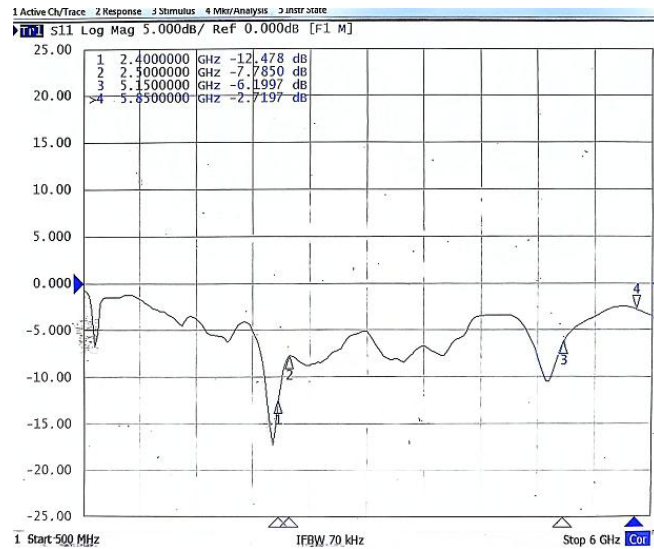
5.3 Equipment layout diagram



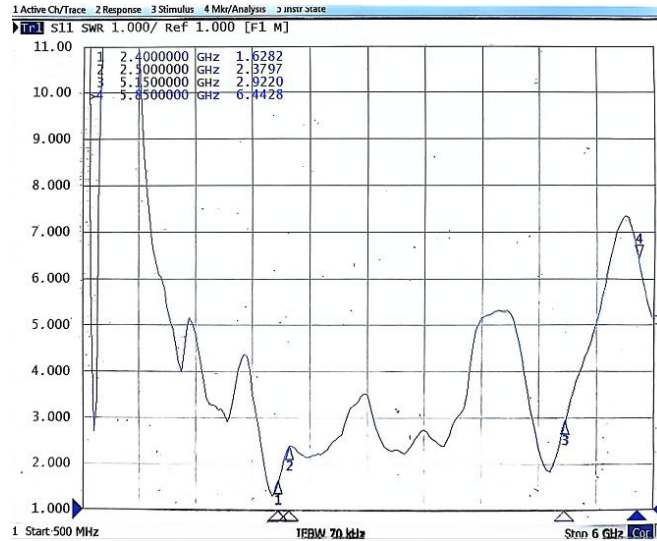
5.4 Passive Test

5.4.1 Antenna Return Loss & SWR

S11 (The whole machine) :



SWR (The whole machine) :



Frequency (MHz)	2400	2500	5150	5850
Echo loss (dB)	-12.47	-7.78	-6.19	-2.71
VSWR	1.62	2.37	2.92	6.44

5.4.2 Antenna Efficiency & Gain

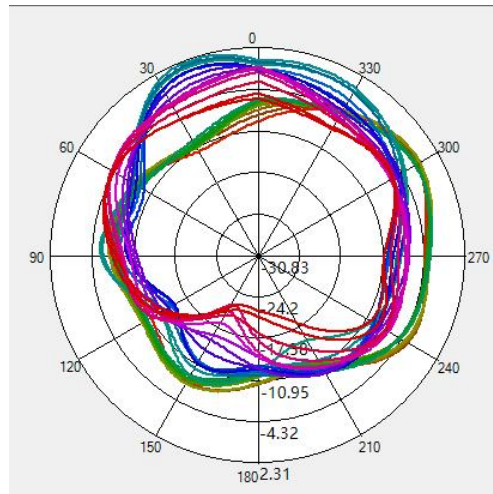
Frequency/MHz	Efficiency/dB	Efficiency/%	Gain/dBi
2400	-6.99	20.02	-1.52
2410	-6.70	21.38	-1.30
2420	-6.57	22.01	-1.09
2430	-6.53	22.22	-1.00
2440	-6.64	21.66	-1.06
2450	-7.30	18.63	-1.60
2460	-7.36	18.36	-1.60
2470	-7.67	17.11	-1.80
2480	-7.70	17.00	-1.71
2490	-7.91	16.18	-1.90
2500	-7.72	16.92	-1.84
5150	-5.45	28.54	2.13
5200	-5.32	29.40	2.31
5250	-5.81	26.23	1.66
5300	-6.79	20.94	0.64
5350	-7.08	19.58	0.39
5400	-6.82	20.78	0.32
5450	-7.10	19.51	-0.15
5500	-7.17	19.17	-0.25

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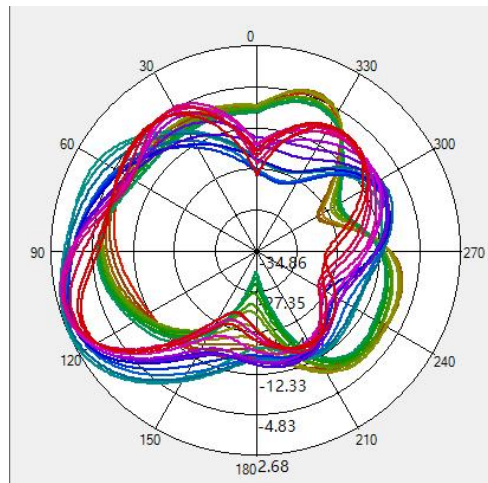
5550	-7.16	19.23	-0.10
5600	-7.37	18.31	-0.71
5650	-8.96	12.69	-2.88
5700	-10.72	8.46	-4.69
5750	-11.95	6.39	-5.74
5800	-13.05	4.96	-7.34
5850	-13.33	4.64	-8.25

5.4.3 Antenna 2D Direction Diagram (in the figure, the gain unit is dBi)

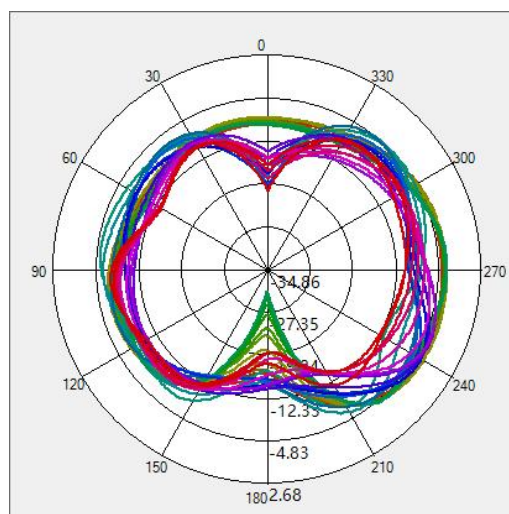
$T=90^\circ$:



$P=0^\circ$:

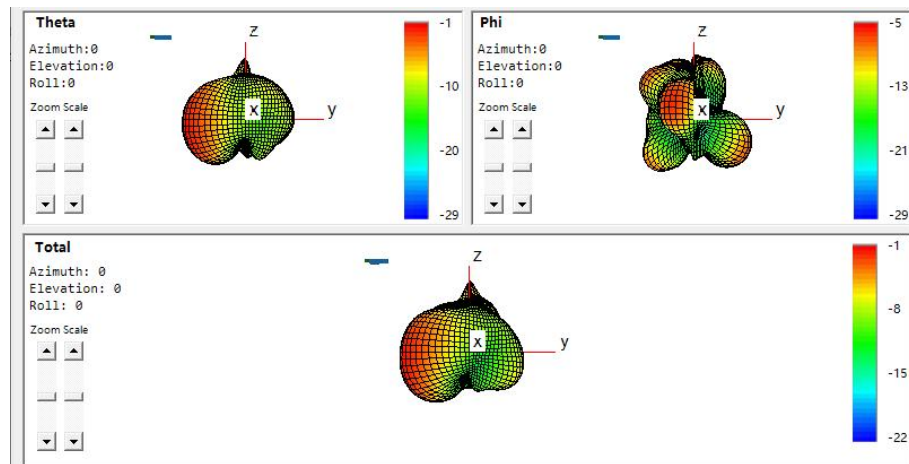


$P=90^\circ$:

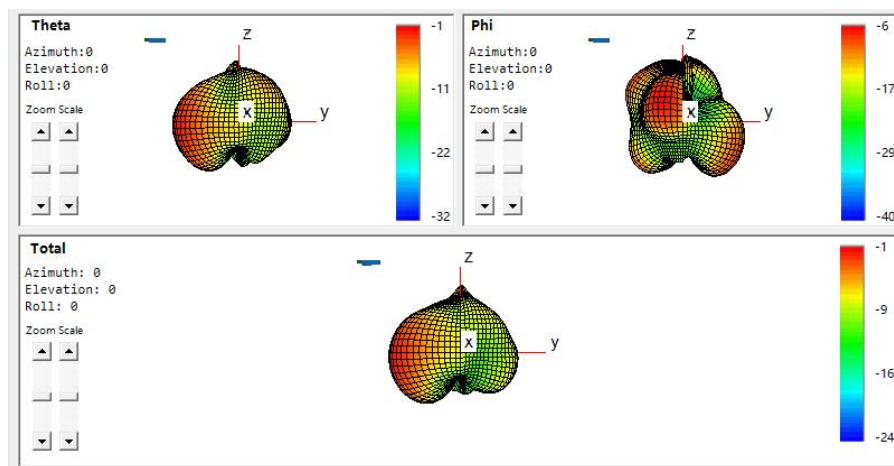


5.4.4 Antenna 3D Direction Diagram

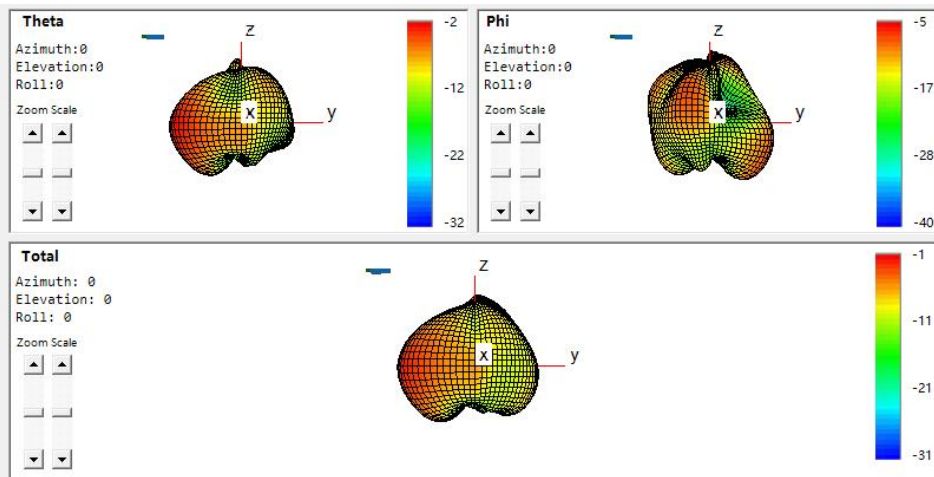
2400MHz:



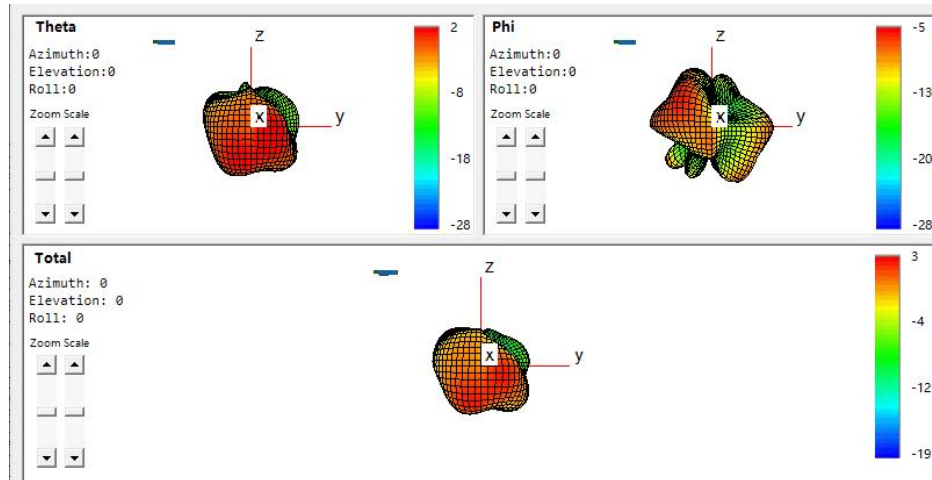
2450MHz:



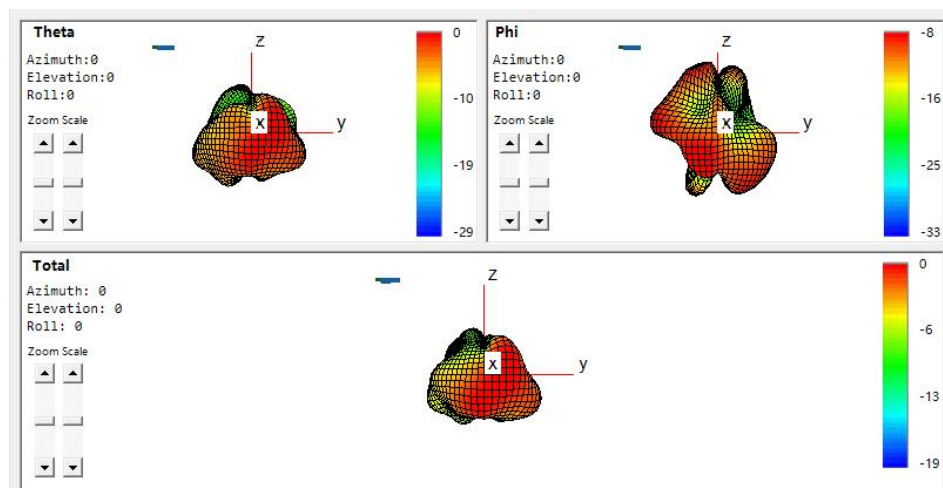
2500MHz:



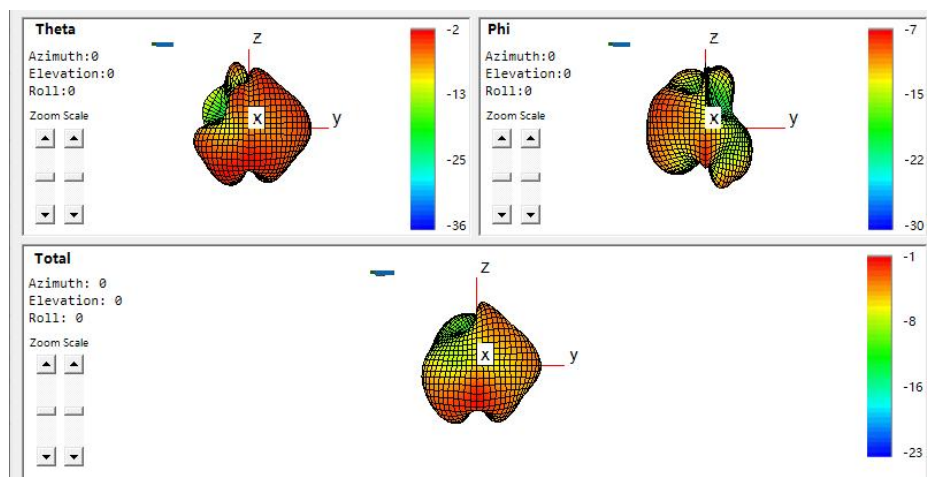
5150MHz:



5450MHz:



5850MHz:



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Material code	1.2.20.01.10557-001	Manufacturer's material number	F066A3913980005	
Test items	The test condition determination table is accurate	Judgment criteria	Number of experiments	Decide
Salt spray test	Product: in the environment of 35±3℃: PH in 6.5-7.2 Inside: salt water concentration is 5%±1%, continuous spray 48H: take out Place the sample indoors for natural drying before cleaning. 0.5-1h: Then use clean flowing water with a temperature not higher than 40℃. Salt spray test Lightly clean and remove the salt spray solution left on the surface of the sample: then at the distance The air pressure does not exceed about 300mm from the sample. 200kPa air is dried immediately: wipe it clean and check the sample. View.	There is no abnormal appearance.	5Pcs	OK
High temperature test	Clean and dry the surface of the product: put the sample into the high-temperature box: temperature High temperature test 85℃ duration: 48H, restore 2H at room temperature after the test:	There is no abnormal appearance.	5Pcs	OK
Temperature shock	Take the product: place it at a low temperature of -40℃ for 30 minutes, and turn it within 5 minutes Change the temperature impact to 80℃ and put it for 30min. There are a total of 48 cycles: samples Take it out at -40℃: Resume the 2H check at room temperature.	There is no abnormal appearance.	5Pcs	OK
Terminal pull force test	Fix the sample terminal on the fixture: pull up the wire at the other end: Terminal pull force test start the tension test machine: until the terminal and wire fall off: view The maximum tensile value displayed on the tension machine instrument	>15N	5Pcs	OK

Pack			
Customer material number:	1. 2. 20. 01. 10557-001	Product Name:	KA39 Split Antenna
Product specification:	F066A3913980005	Packaging materials:	carton + PE bag
Packing quantity:	1箱	Packaging method:	PE bag packaging method
Packing quantity:	10000PCS		

Figure 1: Single or other forms of packaging Pack



Figure 3: Packing view

Figure 2: PE bag packaging method



Figure 4: B outer box label pasting method



Remarks:

1.1 small PE bags containing 50 products, 1000 products in 1 large PE bag, each box containing 10,000 products.

2. The quantity per box is based on the actual shipment quantity.

Proposed: Yuan Linhai

Audit: Party non-non-non