



Antenna Approval Sheet

For
E312WHB Project

Customer	Fowke Innovation	Project	E312WHB
Band	WiFi 2.4G/BT		
ZC PN	FD017-CA-93/FD017-CB-93		
Version	R:A	Data	2025-10-15

RF		ME	
Checked By			
Confirmed By			
Cust Confirm			



1.Manufacturer information

Company name: Shenzhen Zhongxinrui communication products Co., Ltd

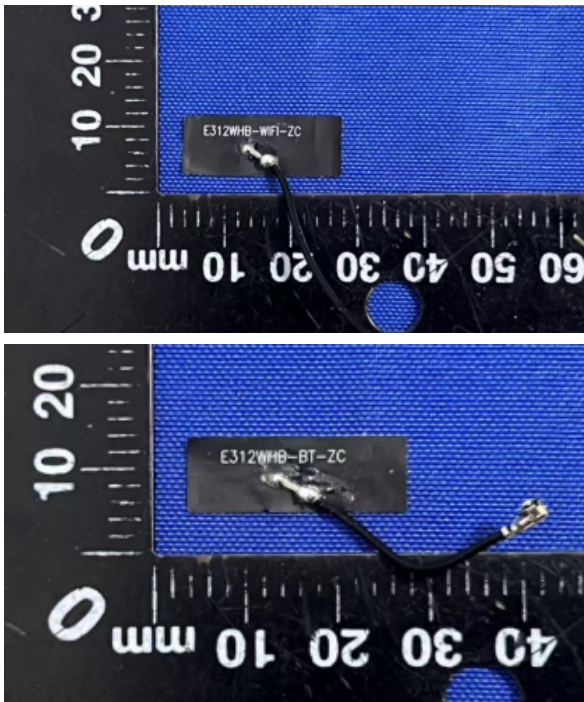
Address: 5th floor, building C, Huafeng Industrial Zone, Liuxian Road, 71 District, Bao' an, Shenzhen

2. Summary of the DUT

E312WHB Picture



Antenna Picture



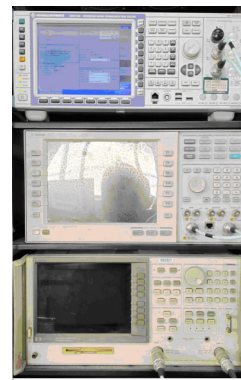
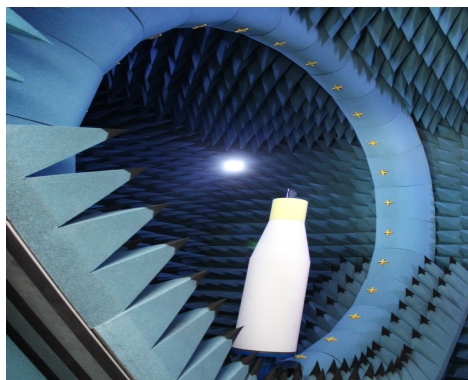
3. Electrical Specification:

Antenna types	Built-in WIFI/BT antenna
Frequency	2400-2500 MHz
Impedance	50 Ω
VSWR	< 2.0
Peak Gain	1.73dBi
Antenna Material	FPCB+Coaxial Cable
Connector Type	1.13 MHF-1-Plug



4. Test Condition

4.1	TEST ITEM	TESTING INSTRUMENT	REMARKS
PASSIVE TEST	1. Radiation Pattern 2. Antenna Gain 3. Return Loss 4. S.W.R	1. Satimo SG24(3D) 2. Agilent 8960 E5515C 3. R&S ZVL6	



4.2 Antenna installation diagram:



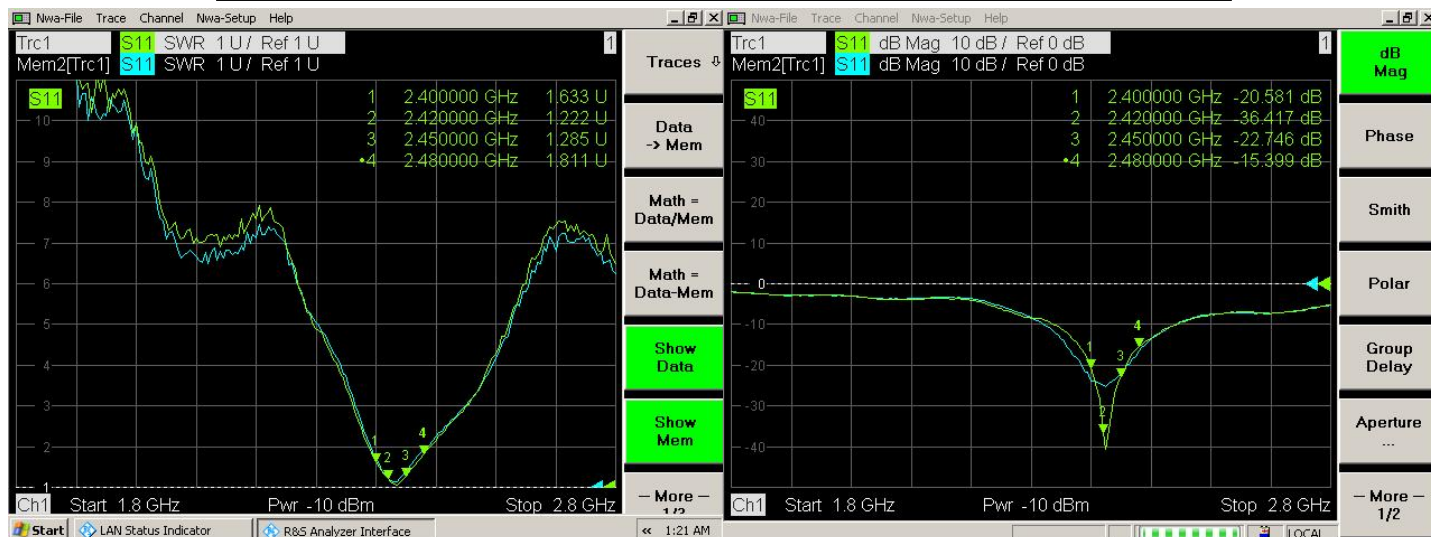
5. RF Performance

5.1 Passive parameters

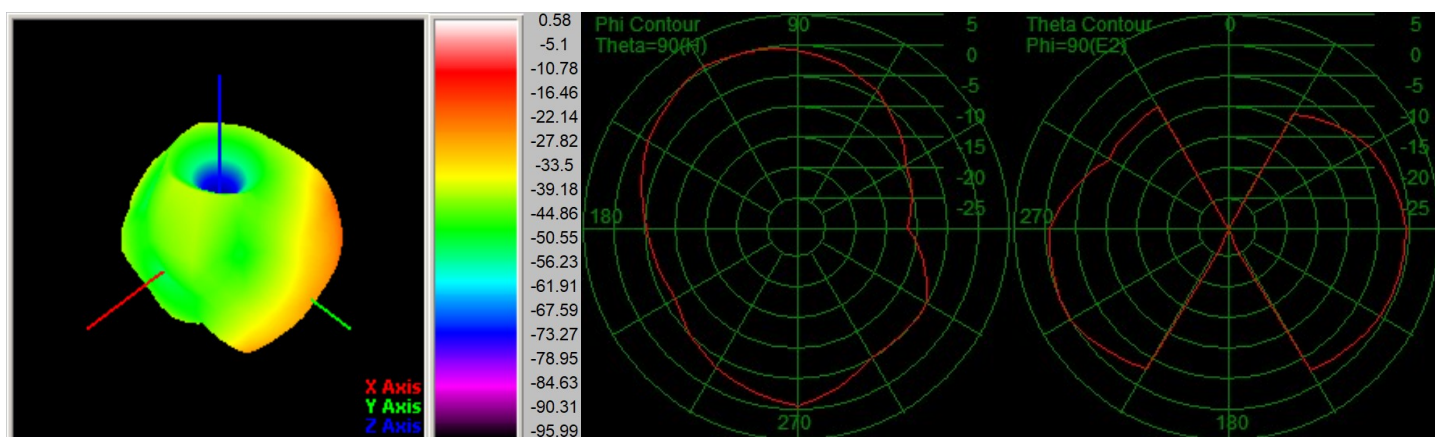
Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Gain (dBi)	0.58	0.66	1.1	1.02	1.17	1.59	0.72	0.08	0.72	1.19	1.73

5.2 S Parameter

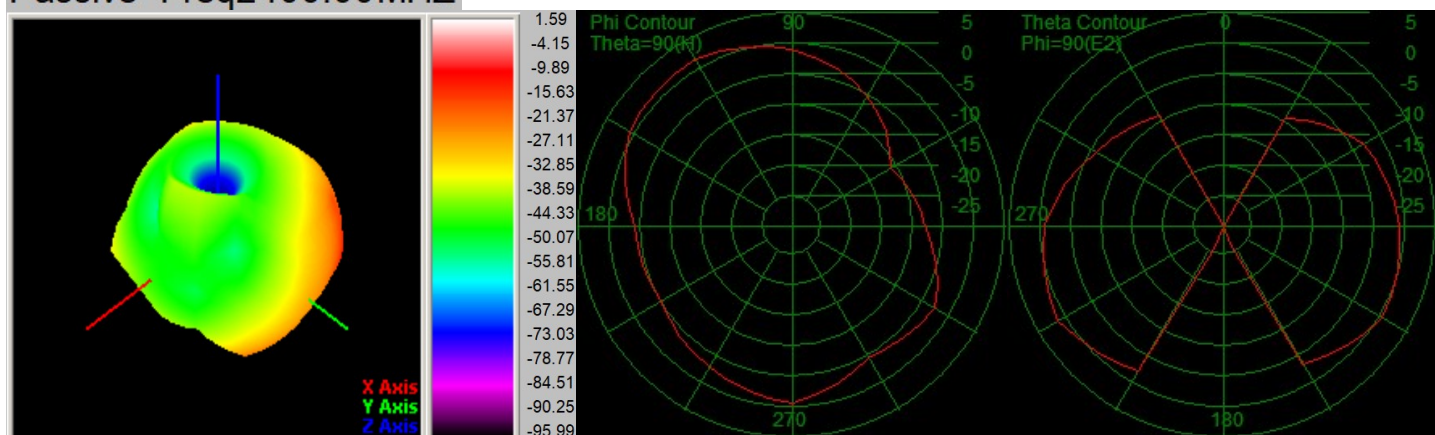
Frequency (MHz)	2400	2450	2480
Return Loss (dB)	-20.58	-22.74	-15.39
VSWR	1.63	1.28	1.81



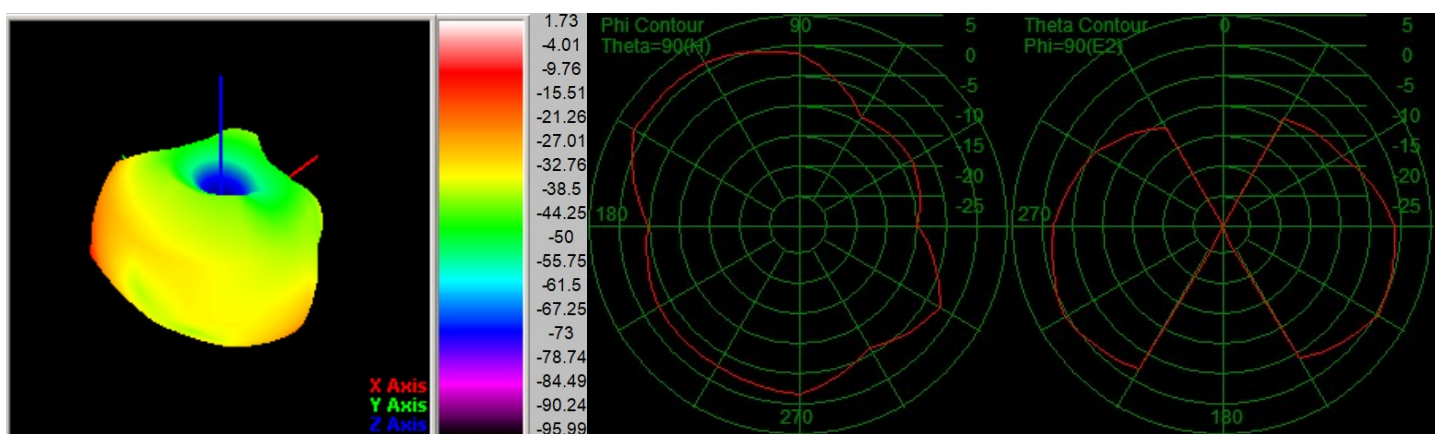
5.3 Antenna 3D Radiation Pattern (Unit:dbi)



Passive -Freq2400.00MHZ



Passive -Freq2450.00MHZ



Passive -Freq2500.00MHZ



REV		Description of change	BY	DATE
T:A	New drawings	CUO		2025-10-13

Back adhesive

61-C/LS-SF

24.20±0.2

E312MB-M/F-ZC

9.10

Tin solder

65.00±2

Ø1.13

first generation connectors

Technical note:

1. The total length of the coaxial cable is 65 mm.

2. Can not burn FPC, can not cause FPC deformation, wrinkle, indentation,

3. Stripping wire can not be deformed or broken.

4. Add "x" size as the important dimensions, add "0" as the reference dimension

No.

Product Name

Part NO.

Material

Color

1

Cable

T13-213

TC4EP

Black

2

FPC

FD017-F4-13

PI

Third Angle:

Unit: mm

General Tolerance:

X ±0.5

.X ±0.3

.XX ±0.20

.XXX ±0.10

ANGULAR ∠±1°

NAME: Antenna

DATE: 2025-10-13

PART NO. FD017-QA-93-TA

DRWN:

MATERIAL:

CHD:

SURFACE:

APPD:

COLOR:

SCALE: 1:5:1

REV: T:A

Page6