



Antenna Approval Sheet

For
M50 Project

Customer	EKEN INNOVA TION	Project	M50
Band	WiFi 2.4GHZ\433MHZ		
ZC PN	T21-031\AC020-XD-16		
Version	R:A	Data	2024-10-22

RF	
Checked By	
Confirmed By	
Cust Confirm	



1.Manufacturer information

Company name: Shenzhen Zhongcheng communication products Co., Ltd

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

Tel: 0755-29995224

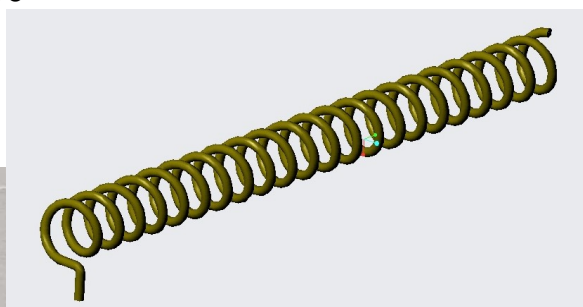
Fax: 0755-27863505

2. Summary of the DUT

M50 Picture



Antenna Picture



3. Electrical Specification:

Antenna types	Built-in WIFI Antenna\433M Antenna
Frequency	2400-2500 MHZ, 433MHZ
Impedance	50 Ω
VSWR	< 2.0
PeaK Gain	WIFI: 2.99dBi, 433MHZ 0.84dbi
Antenna Material	Copper pipe + coaxial line\Spring copper coil
Connector Type	1.13 MHF-1-Plug\Soldering



4. Test Condition

4.1	TEST ITEM	TESTING INSTRUMENT	REMARKS
ACTIVE TEST	1. Antenna Gain 2. S.W.R 3. Return Loss 4. Radiation Pattern	1. Network analyzer (R&S ZVL6) 2. Network analyzer (HP 8753D)	

4.2 Matching Circuit The matching circuit was Default

5.1 RF Performance-WIFI Antenna

5.1.1 Passive parameters

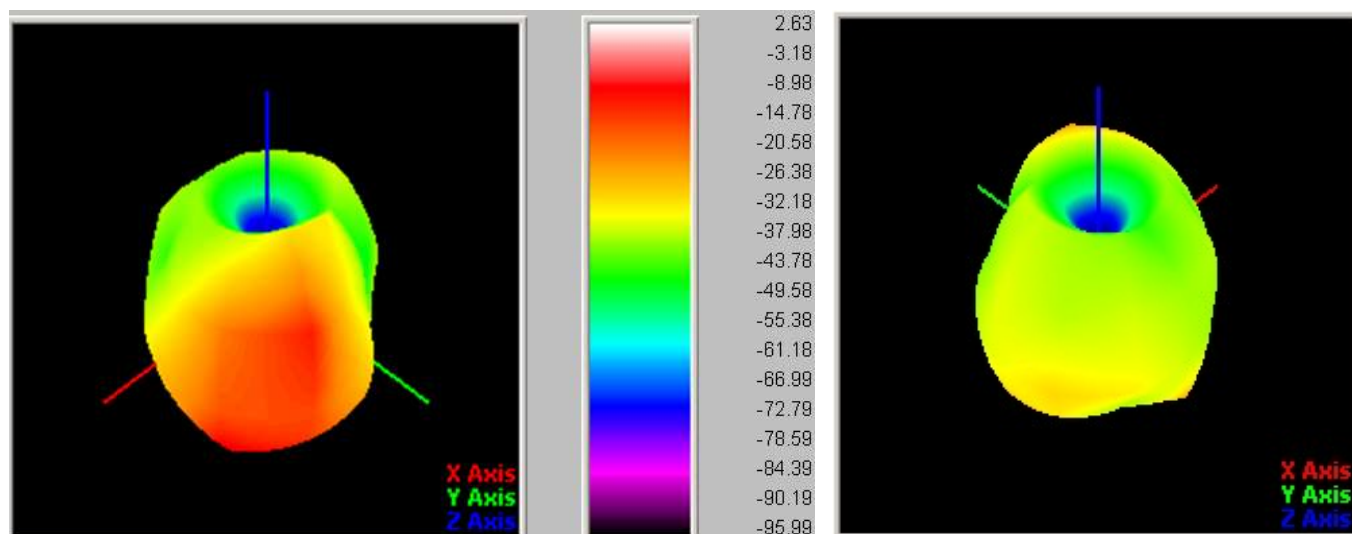
Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Gain (dBi)	2.63	2.68	2.71	2.99	2.6	2.23	2.6	2.49	1.96	1.77	1.7

5.1.2 S Parameter

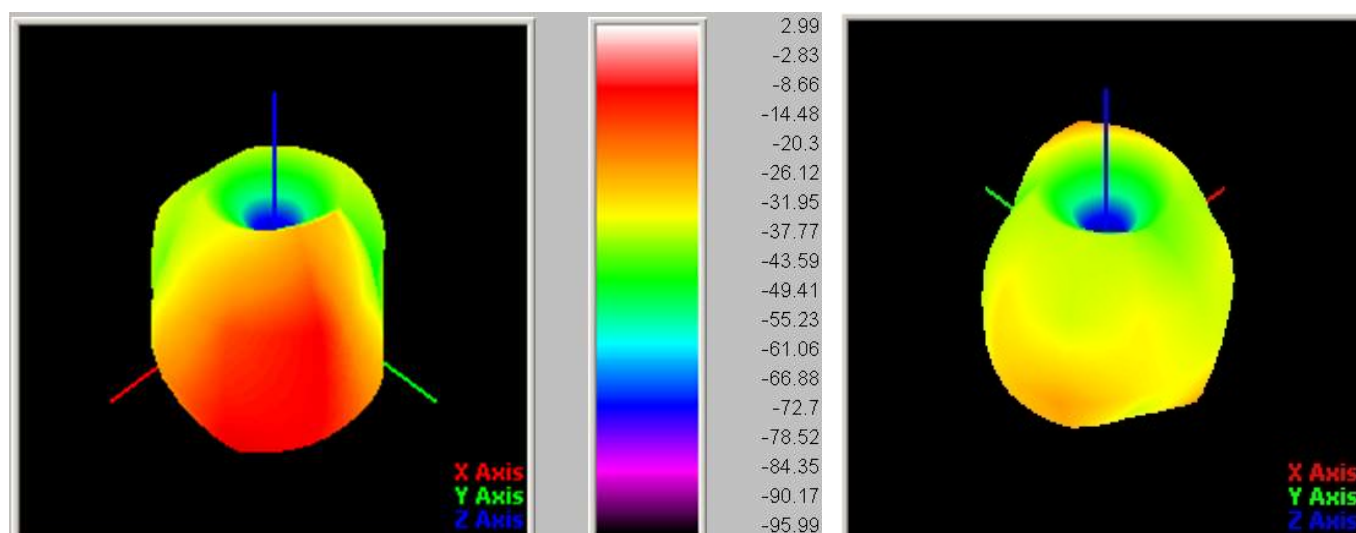
Frequency (MHz)	2400	2450	2480
Return Loss (dB)	-22	-18	-16.9
VSWR	1.25	1.32	1.36



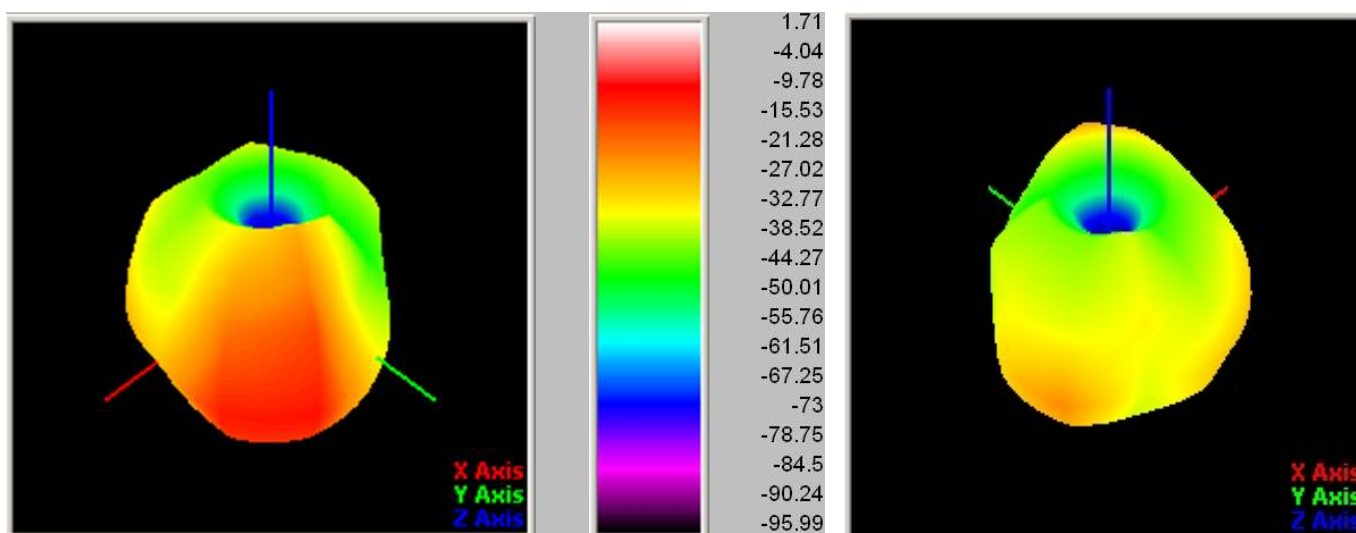
5.1.3 Antenna 3D Radiation Pattern (Unit:dbi)



Freq2400.00MHZ



Freq2430.00MHZ



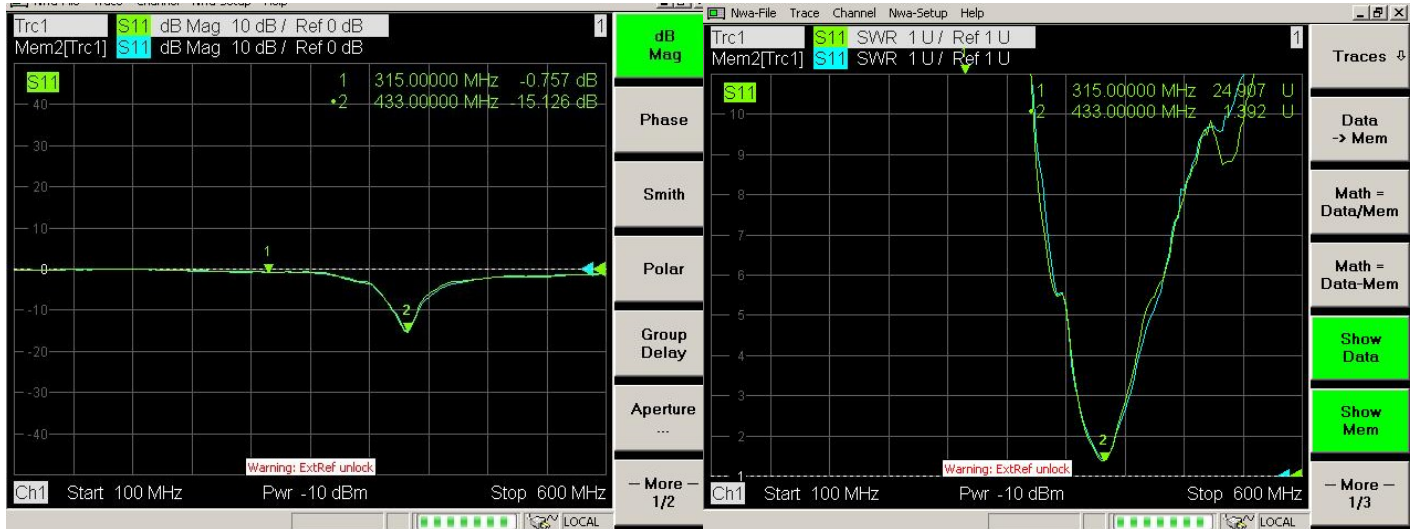
Freq2500.00MHZ



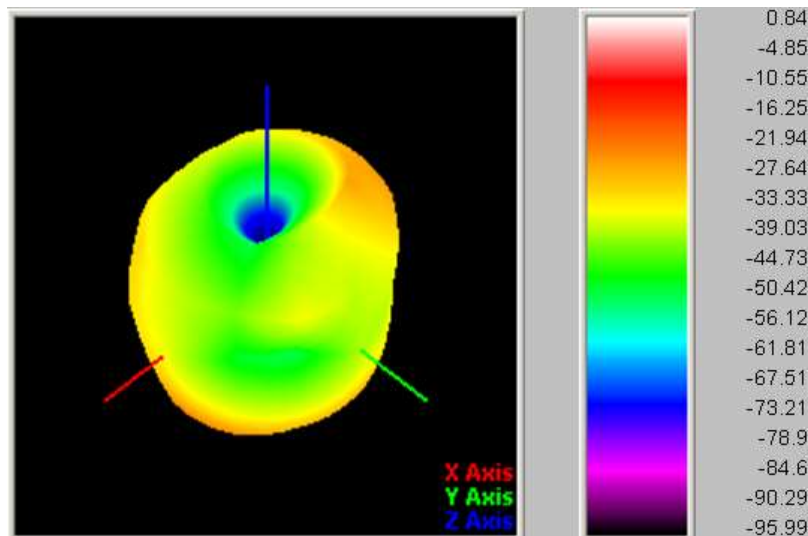
5.2 RF Performance-433 Antenna

5.1.1 Passive parameters

Frequency (MHz)	Return Loss (dB)	VSWR	Gain (dBi)
433	-15.12	1.39	0.84



5.2.2 Radiation Pattern (Unit:dBi)





6. ME Drawing for the antenna

