

PRODUCT SPECIFICATION

Product Name: TC451-WIFI antenna component

Customer Material Number: F-OG-UA-0054-000-KO

Versions: 0.3

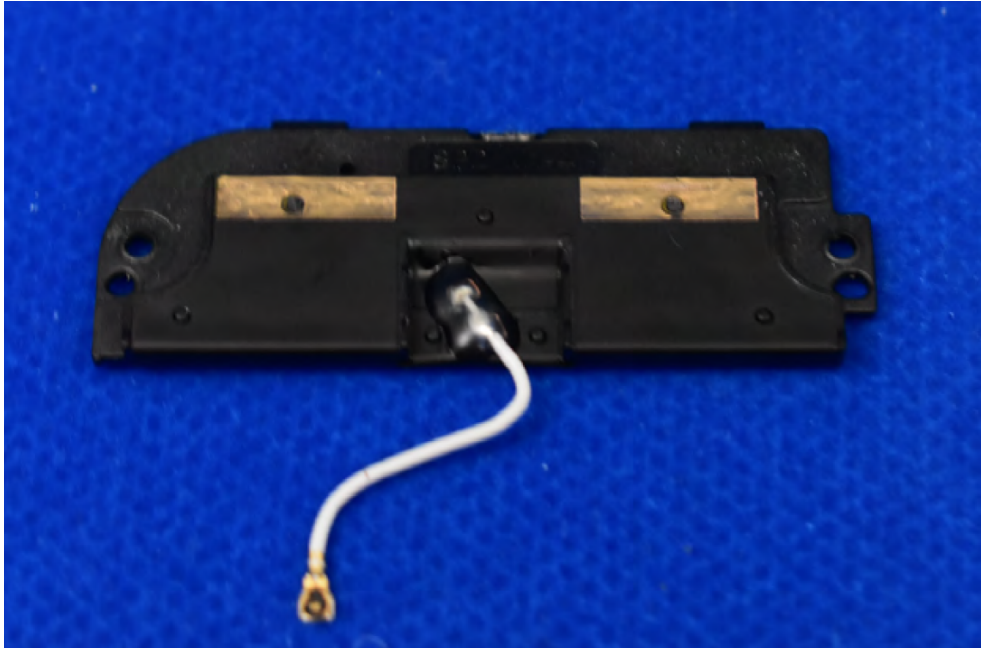
Checked by	ME	RF
	Yongbing.Xiao	Cheng.Zhao
	2025.12.8	2025.12.8
Checked by	ME	RF
	Jung.Wang	Xiangxiang.Sung
	2025.12.8	2025.12.8

Manufacturer: Huizhou Speed Wireless Technology Co.,Ltd
Address: No. SX-01-02, Shangxia District, Dongjiang High-Tech
Zone, Huizhou City, Guangdong Province

1. Antenna specification

Antenna Type	Cavity antenna
Frequency	2400MHz~2500MHz&5150MHz~5850MHz
VSWR	3.0 Max
Impedance	50Ω
Polarization	Linear
Radiation pattern	Omni-directional
Antenna size (mm)	44.5*30.4
Antenna Gain(2.4Gdbi)	-0.5
Antenna Gain(5.8Gdbi)	0.5
Working Temperature (℃)	-20~65
Storage Temperature (℃)	-20~85

Antenna Photo



3. Antenna Return loss

The Return loss test device is connected as follows: Keysight E5071C network analyzer → 50 ohm coaxial Cable → test fixture



4. Antenna OTA

Band	Chnnel	TRP	Chnnel	TIS
B(11/11M)	1	12.3	1	-80.3
	7	12.6	7	-79.0
	13	12.5	13	-81.6
A(6/54M)	36	12.3	36	-73.2
	48	12.2	48	-73.8
	64	12.5	64	-73.9
	149	12.3	149	-73.0
	157	12.5	157	-73.1
	165	12.4	165	-72.9
G(6/54M)	1	11.4	1	-67.9
	6	11.5	6	-67.5
	11	11.6	11	-69.1
GN	1	11.4	1	-65.3
	6	11.5	6	-65.8
	11	11.7	11	-66.1
AN	36	12.1	36	-69.1
	64	12.4	64	-69.9
	165	12.5	165	-68.9

5. Antenna Efficiency

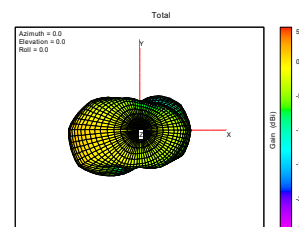
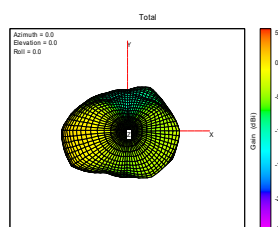
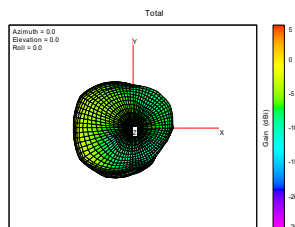
Frequency (MHz)	Efficiency (dB)	Gain (dBi)
2400	-5.56	-0.71
2420	-5.19	-0.65
2440	-5.08	-0.50
2460	-5.00	-0.63
2480	-5.42	-0.67
2500	-5.79	-0.57
5150	-4.50	0.38
5200	-4.73	0.43
5250	-4.26	0.30
5300	-4.66	0.47
5350	-4.57	0.46
5400	-4.78	0.33
5450	-4.23	0.41
5500	-4.20	0.50
5550	-4.42	0.37
5600	-4.23	0.33
5650	-4.31	0.45
5700	-4.38	0.47
5750	-4.33	0.39
5800	-4.69	0.32
5850	-4.43	0.35

6. Antenna Radiation Pattern

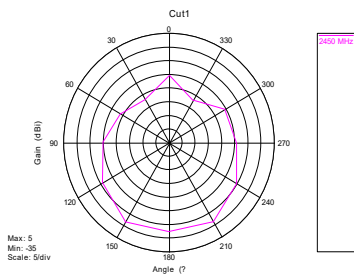
2450MHz

5200MHz

5800MHz

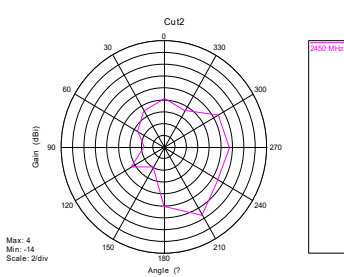


2450MHz



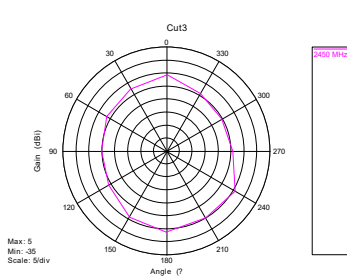
Theta90°

2450MHz



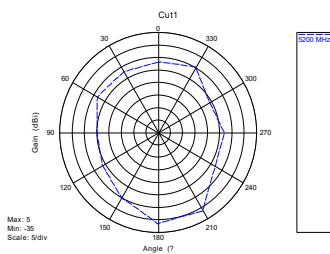
Phi0°

2450MHz



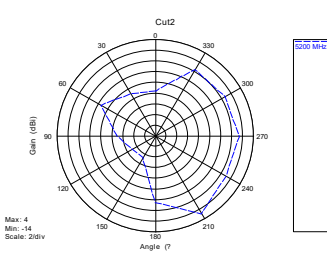
Phi90°

5200MHz



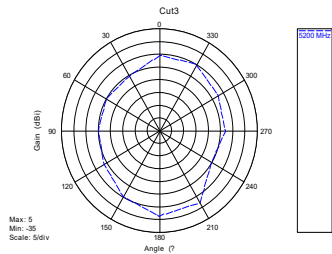
Theta90°

5200MHz



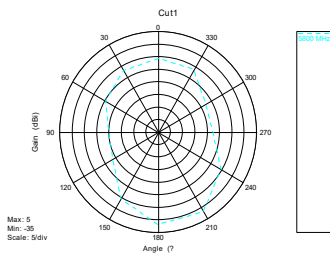
Phi0°

5200MHz



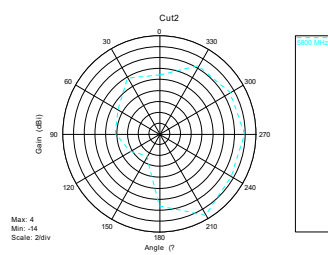
Phi90°

5800MHz



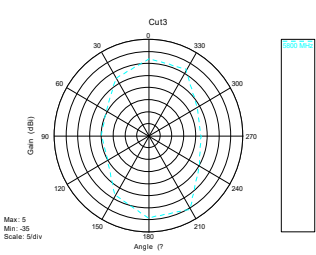
Theta90°

5800MHz



Phi0°

5800MHz



Phi90°

