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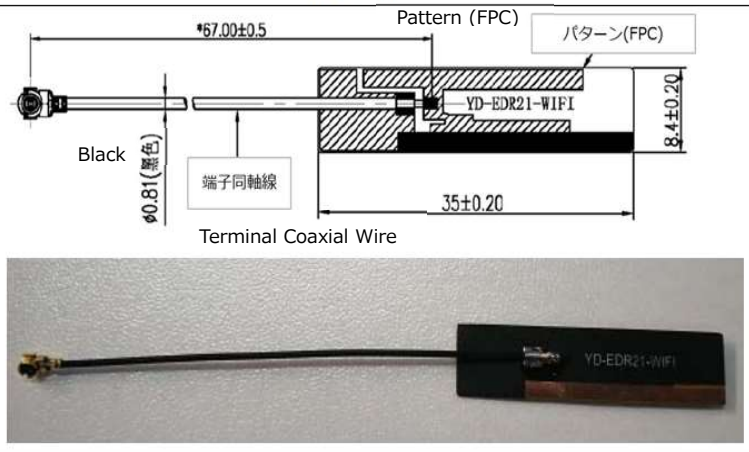
【Catalog】

【Wi-Fi Module Antenna Overview】

Item	Contents
Antenna Model	136-0009A-005【Mark YD-EDR21-WIFI】, FPC PCBA 1Layer
Model Name	2.4G WIFI Antenna
Antenna Gain (Peak)	0.5 dBi
Frequency Range	2400-2480MHz
Connector Type	IPEX-SMA
External view Photo attached for reference.	

1 Specifications

This report provides the test status of each electrical and structural performance parameter of the antenna EDR21 -BT.

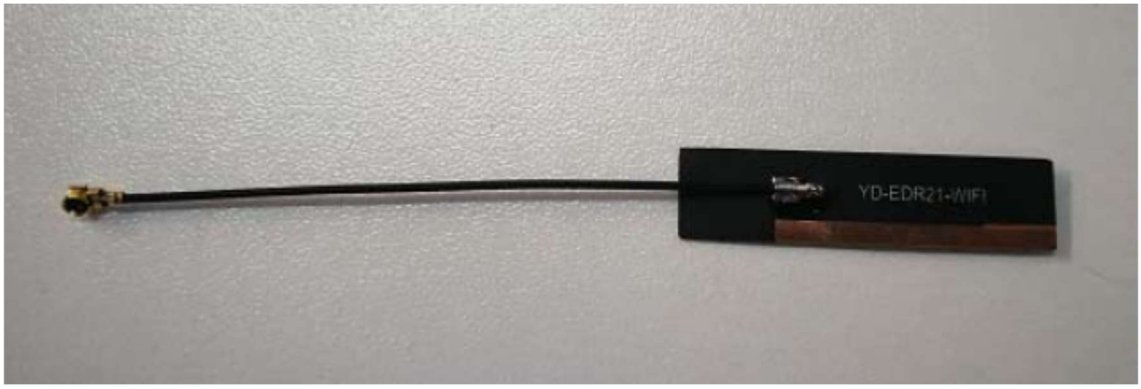


Figure 1 Antenna

Figure 2 Conductive Sponge

1.1 Electrical Specifications

1.1.1 Electrical Specifications

The antenna works in the frequency band of 2400-2480MHz.

The following table shows the electrical performance index of our antenna design.

Antenna : BT Antenna

Frequency band : 2400-2480MHz

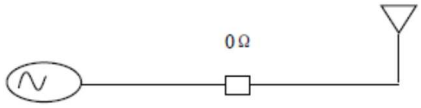
VSWR : < 1.5

Efficiency : > 50%

Impedance : 50 ohm

Polarization Method : Line Polarization

1.1.2 Matching circuit diagram



2 Test

The antenna is debugged and tested with the prototype provided by the customer.

2.1 Test of Passive S11

2.1.1 Test connection

The passive S11 test device is connected as follows: network analyzer → test line → test fixture.

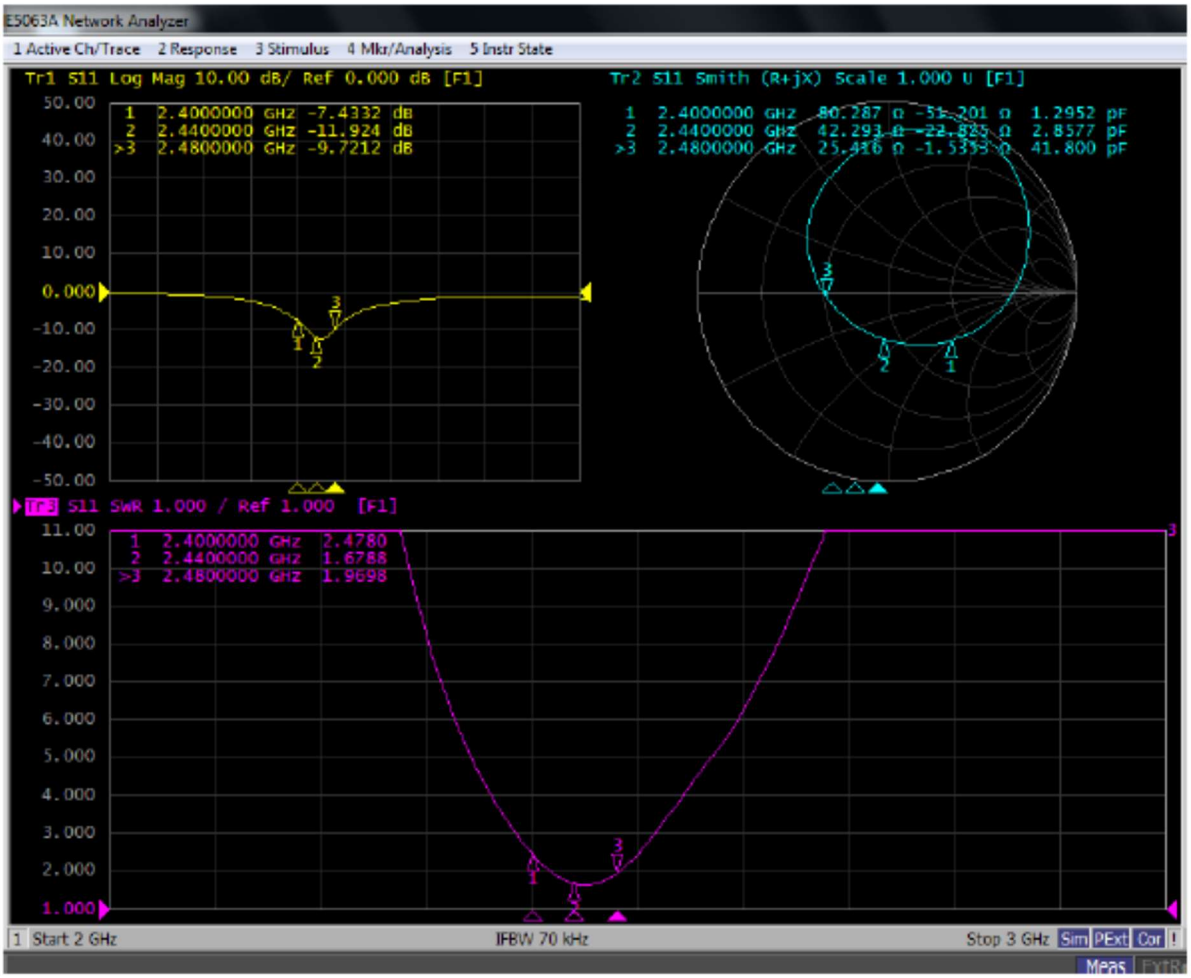
2.1.2 Passive S11

The following table shows the VSWR values at the edge of the antenna's operating band.

The Return Loss, VSWR related waveforms obtained from the test are shown below.

The figure below shows the VSWR values at the edge of the antenna operating band.

S11			
Frequency (MHz)	2400	2440	2480
VSWR	2.47	1.67	1.96
Return Loss	-7.43	-11.92	-9.7



2.2 Gain and Efficiency Tests

2.2.1 Test Site

Faraday Microwave Darkroom: Test frequency range is 400MHz-6GHz.

2.2.2 Test Instruments

Network analyzer, standard horn antenna, multi-probe near-field antenna test system, test computer, etc.

2.2.3 Test Results

The values related to efficiency and gain tested in the microwave darkroom are shown in the table below

Frequency band	Test Item	Frequency point (MHz)	Test value
2.4-2.5GHz		2400	28.7

	Efficiency (%)	2440	30.9
		2480	29.7
	Gain (dbi)	2400	0.75
		2440	0.25
		2480	0.8

2.2.4 Passive Radiation Direction Map

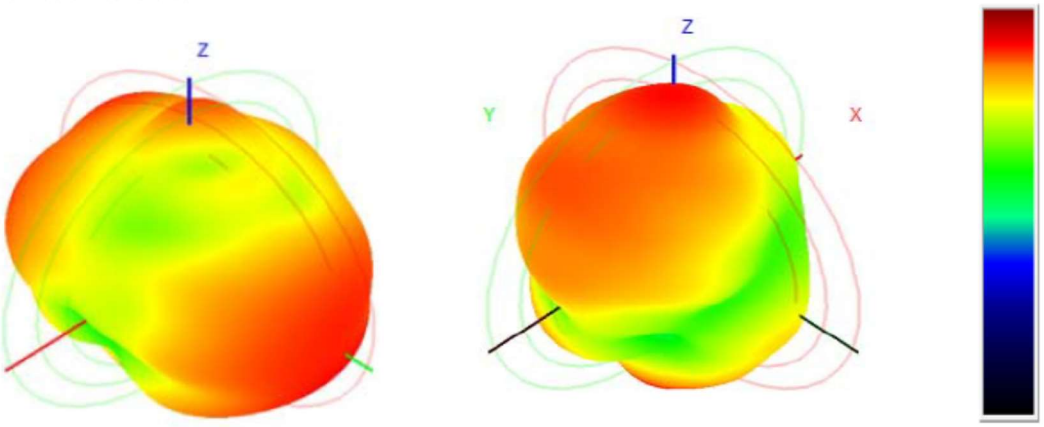


Fig. 3 Passive efficiency direction plot

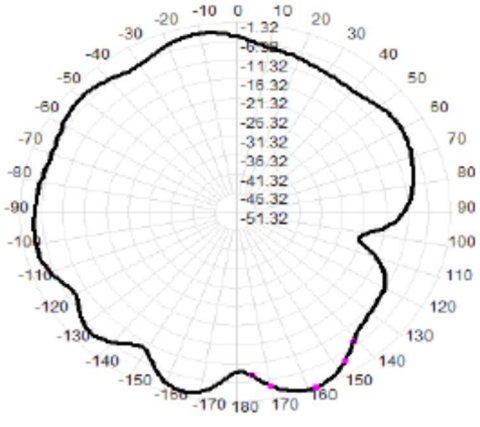


Fig. 4 E1 surface-total gain direction

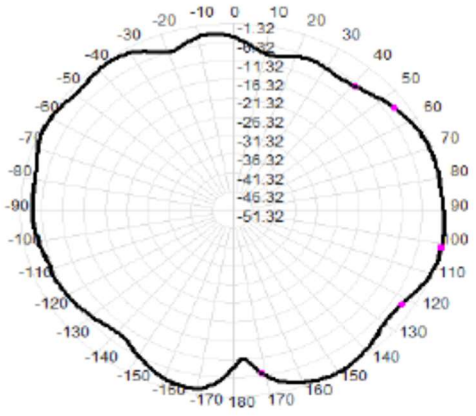


Fig. 5 E2 surface - total gain direction plot

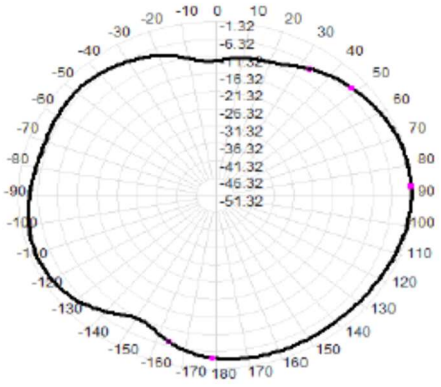


Fig. 6 H-plane - total gain direction

3、Conclusion

This antenna is designed on the basis of the prototype provided by the customer, and the above electrical performance parameters are based on the test prototype environment and processing conditions.

The above electrical performance parameters are based on the test prototype environment and processing conditions, the electrical parameters and structural performance have reached the technical requirements, please confirm!