



**Huizhou Speed Wireless Technology Co.,Ltd**

## F-NR300 WIFI2 Antenna Specification

Customer/Project	F-NR300		Frequency Band	2400-2500MHz, 5.15-5.85GHz	
SCT P/N	F-0Y-4X-0084-007-00		Version	S01	
Date	2022.08.31				
SPEED					
Checked by	RF	汤小俊	Designed by	RF	高俊健
	ME	徐 雷		ME	栗茗亮
	QC		Remark		
Customer					
Date					
Confirmed by	RF				
	ME				
Remark					

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## 1 Summary

This document is the F-NR300 wifi1 antenna specification. The antenna scheme is a PCB+Cable cable. The antenna is fed directly through the coaxial line. Its installation location is shown in Figure 1:

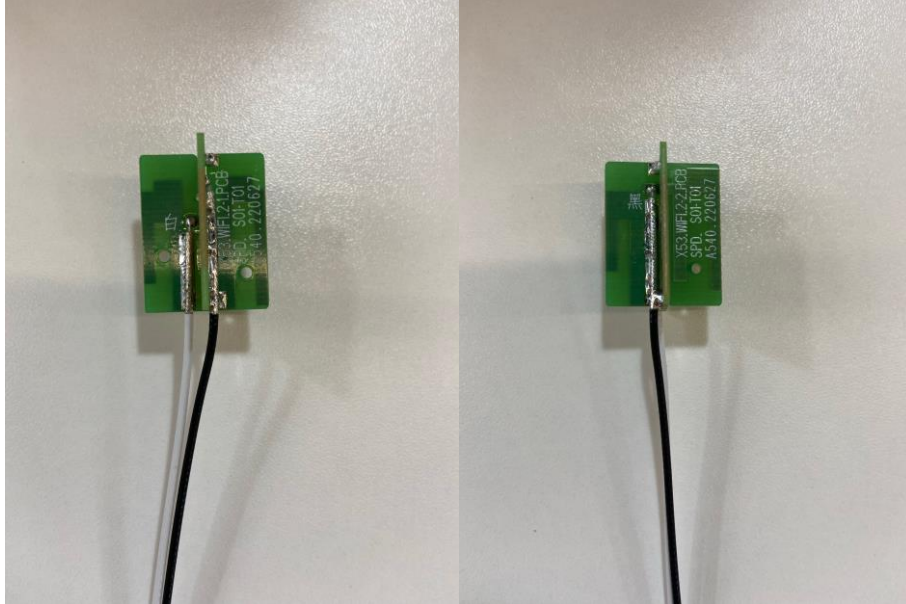


Fig. 1 Antenna Picture

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## 2 Antenna Specification

Electrical performance technical indicators

Antenna Form	PCB+Cable
Frequency	2400-2500MHz, 5.15-5.85GHz
Ant. Isolation	2400-2500MHz <-25dB 5.15-5.85GHz <-25dB
Ant. Efficiency	2400-2500MHz>40% 5.15-5.85GHz>50%
Return Loss	2400-2500MHz<-10dB 5.15-5.85GHz<-10dB
Input Impedance	50ohm
Polarization	Linear polarization
Axial ratio	N/A
Radiation pattern	omnidirectional
Feed type	Direct Feed
Antenna Size	See drawing
Weight	No Requirement
Work Temp.	-40 °C to +80 °C
Storage Temp.	-40 °C to +80 °C

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### 3 Antenna Test Environment

The test equipment for antenna return loss, VSWR and isolation is Keysight E5071C vector network analyzer. As shown in the figure below:



Fig.3 Keysight E5071C Vector network analyzer

The efficiency, gain and pattern of the antenna were measured in the French Satimo anechoic chamber. The anechoic chamber uses 64 probes to electronically scan the radiation performance of the antenna, collect data, and then analyze and sort out the data by computer, which can provide antenna testing in the 400MHz to 6GHz frequency band.



Fig. 4 Satimo anechoic chamber test system

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## 4 Antenna Test Result

### 4.1 Antenna Return Loss and Isolation

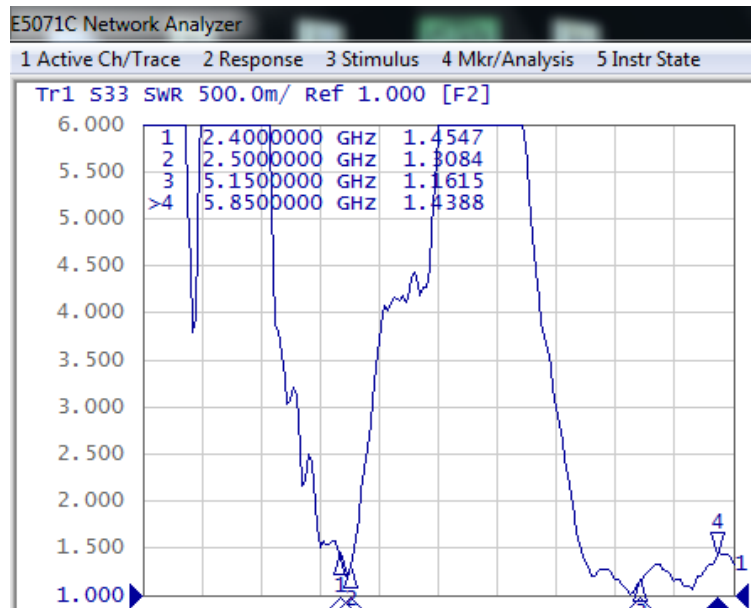


Fig. 5 WIFI2-1 Antenna Return Loss

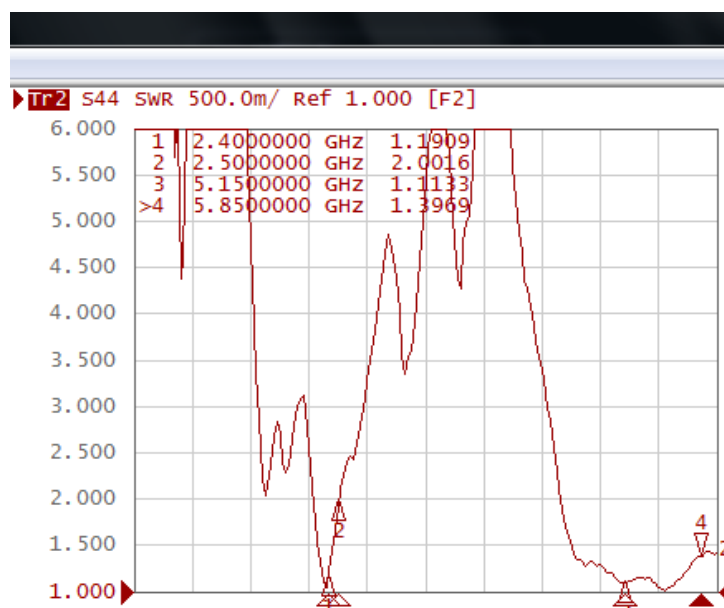


Fig. 6 WIFI2-2 Return Loss

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## 4.2 Antenna Efficiency and Max. Gain

Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	54	1.42
2410	54	1.73
2420	54	1.83
2430	55	1.96
2440	55	2.2
2450	56	2.47
2460	55	2.46
2470	56	2.61
2480	55	2.53
2490	54	2.39
2500	53	2.26
5150	60	2.86
5200	55	2.14
5250	54	1.72
5300	57	1.86
5350	55	1.64
5400	61	2.42
5450	64	2.79
5500	60	2.15
5550	65	2.79
5600	59	2.63
5650	54	2.69
5700	51	2.35
5750	50	1.64
5800	49	1.72
5850	51	2.38

### WIFI2-1 Ant. Efficiency and Gain

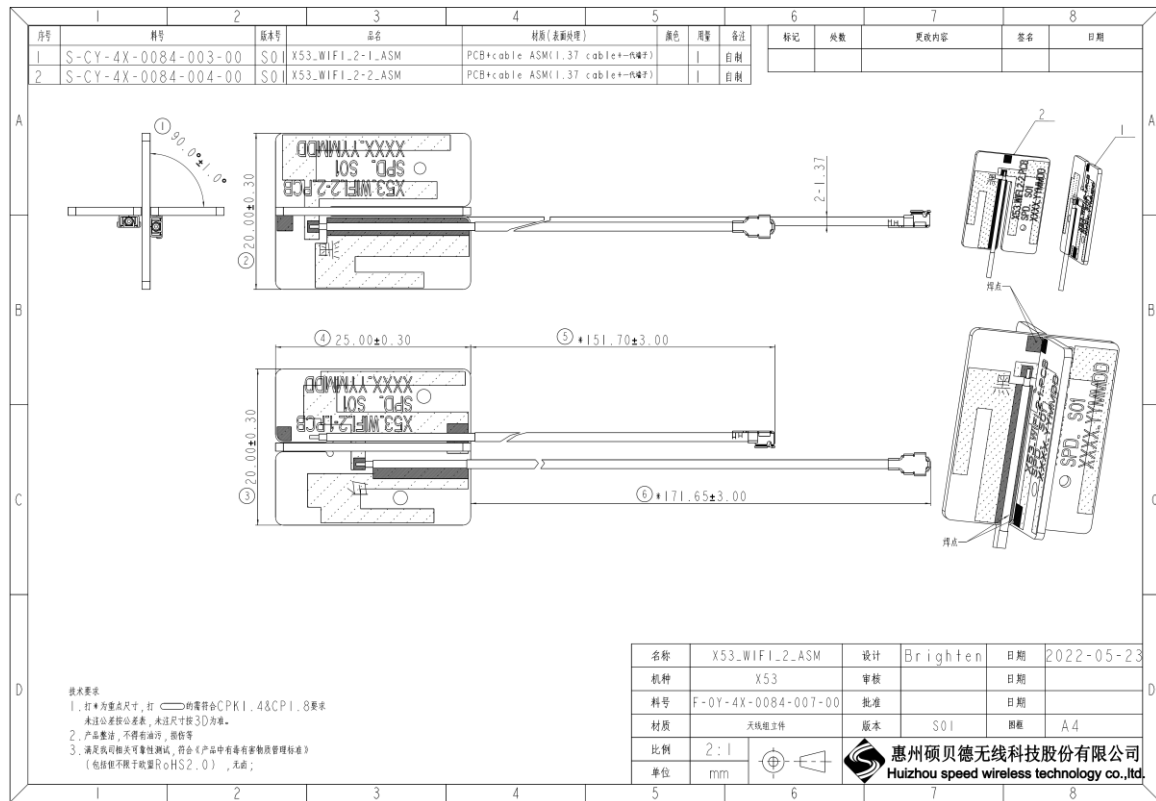
Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	55	1.88
2410	56	1.78
2420	56	1.58
2430	57	1.74
2440	58	1.85
2450	59	1.88
2460	59	2
2470	60	1.99
2480	60	1.87
2490	59	1.84
2500	59	1.77
5150	51	1.66
5200	52	1.89
5250	55	2.68
5300	60	3.08
5350	58	3.06
5400	60	3.06
5450	56	2.98
5500	52	3.11
5550	57	3.04
5600	54	2.77
5650	57	2.91
5700	63	2.93
5750	62	2.38
5800	68	3.05
5850	63	3.02

### WIFI2-2 Ant. Efficiency and Gain

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## 5 Antenna Structure Diagram



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