



天線規格書

Antenna specification

客戶/專案 Customer/Project			頻段 Frequency Band		2.4-2.48G WIFI 5.1-5.9G
SCT P/N		RQAC-WIFI-15-A	版本 Version		
日期 Date		2021.12.15			
檢查 Checked by	RF	謝征蘭	設計 Design by	RF	任樹權
	ME	楊水榮		ME	苗利臺
			備註 Remark		

1 簡介 Introduction

This Specification summarizes the electrical performance results of the proposed antenna to support the WIFI antenna project. The antenna covers the band: 2400-2483.5MHz , 5150-5850MHz). (Figure1).

這份規格書主要介紹了 WIFI 天線的電氣性能。天線頻段 2400-2483.5MHz, 5150-5850MHz.



Figure 1: Proposed Antenna

天線照片



2 電氣性能 Electrical Performance

2.1 電氣規格 Specification

天線無源性能 Antenna Passive Performance

天線頻段 Antenna Band			
1	天線尺寸 Antenna Size	6*3*3mm	
2	頻率 Frequency	2400-2483.5MHz	5150-5850MHz
3	駐波 VSWR	<3	
5	阻抗 Impedance	50ohm	
6	效率 Efficiency	>55%(AVG)	

天線結構及環境特性 Antenna Mechanical and Environment Performance

1	天線尺寸 Antenna Size	6*3*3mm
2	工作溫度 Working Temperature	-40°C~+85°C
3	存儲溫度 Storage Temperature	-55°C~+85°C

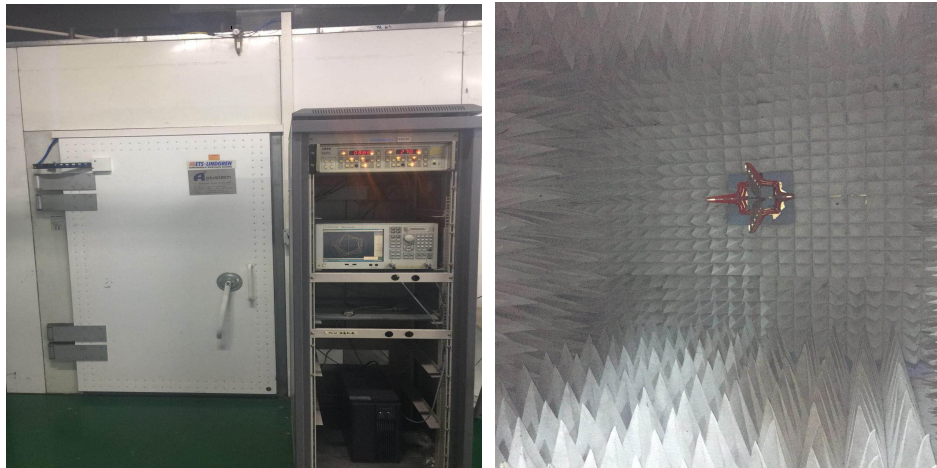
2.2 測試設備 Test Set-up

天線反射係數和駐波測試使用安捷倫的 E5071C 向量網路分析儀。

The return loss and VSWR were measured with Agilent E5071C.

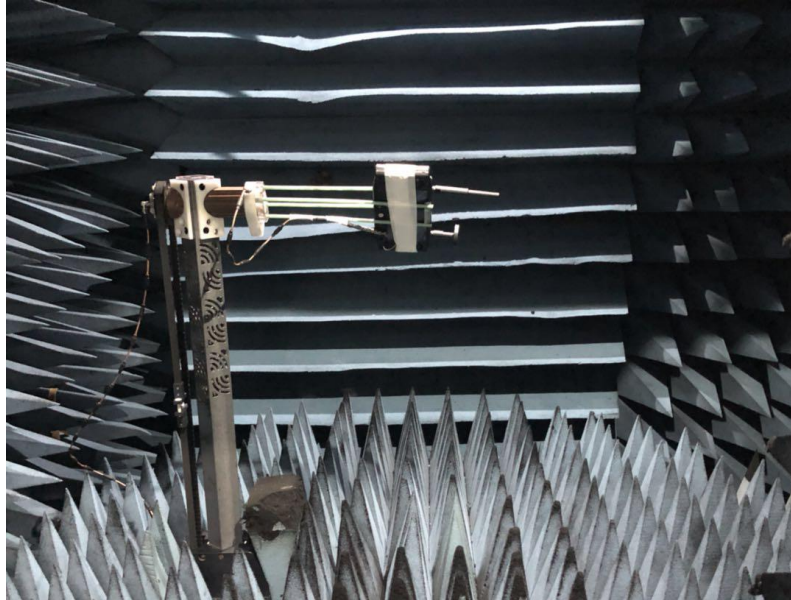
天線效率和輻射增益測試使用 ETS 遠場暗室測試。

The efficiency and gain were measured in ETS Chamber lab in picture2.



ETS 暗室及測試系統

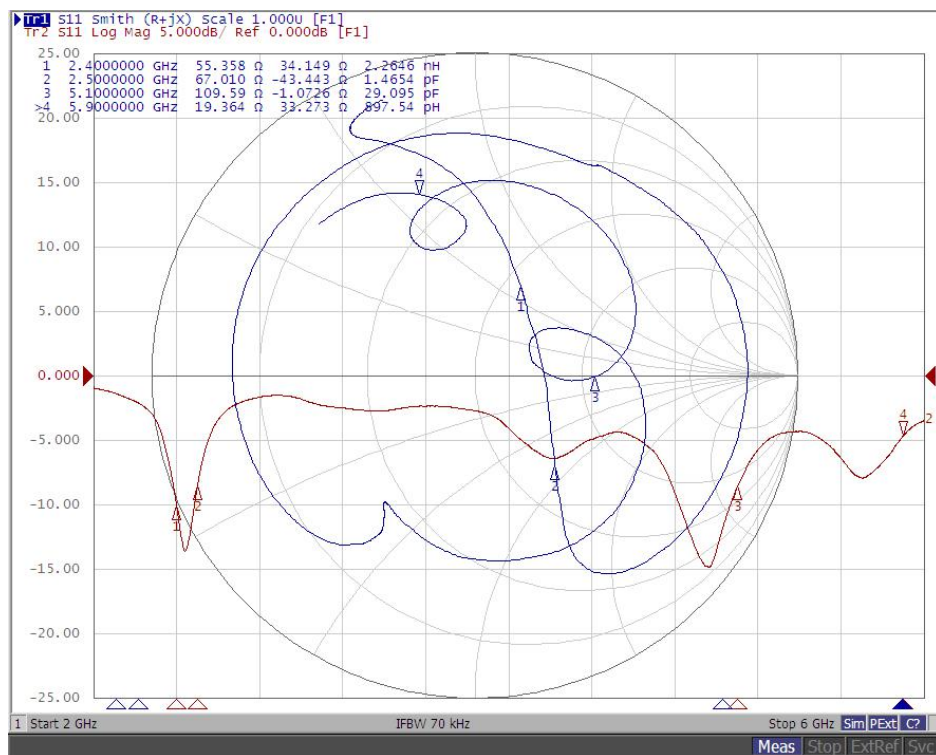
Figure 2: ETS chamber and measurement system



天線測試實際擺放圖

Antenna test actual layout diagram

2.3 回波損耗 Return Loss



2400-2500MHz, WIFI:5150-5850MHz



2.4 效率及增益 Efficiency and Gain

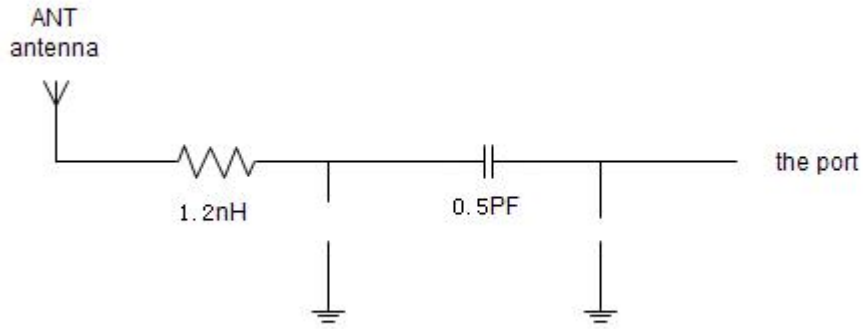
	頻率 Frequency(MHz)	增益 Gain (dBi)	效率 Efficiency(dB)	效率 Efficiency(%)
2.4-2.5GHz	2400	2.66	-1.81	65.87
	2410	3.27	-1.67	68.13
	2420	3.85	-1.58	69.48
	2430	4.25	-1.63	68.69
	2440	4.46	-1.62	68.80
	2450	4.55	-1.72	67.36
	2460	4.46	-1.70	67.63
	2470	4.18	-1.77	66.51
	2480	3.81	-1.84	65.43
	2490	3.42	-1.87	64.96
	2500	2.97	-1.98	63.32
5.1-5.9GHz	5100	4.62	-1.14	75.15
	5120	4.83	-1.60	69.49
	5140	5.03	-1.83	66.24
	5160	5.23	-2.15	61.89
	5180	5.27	-2.25	60.61
	5200	4.99	-2.51	57.40
	5220	4.92	-2.78	54.20
	5240	4.87	-2.90	52.85
	5260	4.98	-2.99	51.88
	5280	5.00	-2.96	52.25
	5300	5.16	-2.70	55.10
	5320	5.33	-2.70	55.16
	5340	5.24	-2.91	52.72
	5360	5.25	-2.92	52.61
	5380	5.09	-3.13	50.36
	5400	4.93	-3.16	50.09
	5420	4.87	-3.23	49.34
	5440	4.94	-3.36	48.01
	5460	5.04	-3.30	48.61
	5480	5.11	-3.08	50.89
	5500	5.21	-2.99	51.92
	5520	5.21	-2.77	54.31
	5540	5.10	-2.72	54.87
	5560	4.88	-2.92	52.68
	5580	4.69	-2.70	55.08
	5600	4.33	-2.79	54.11
	5620	3.99	-2.80	53.98
	5640	3.96	-2.57	56.68
	5660	4.04	-2.59	56.39
	5680	3.84	-2.47	57.86



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	5700	3.81	-2.44	58.22
	5720	3.67	-2.55	56.86
	5740	3.42	-2.61	56.12
	5760	3.36	-2.88	53.04
	5780	3.11	-2.86	53.33
	5800	2.91	-2.78	54.25
	5820	2.79	-2.96	52.23
	5840	2.71	-3.07	50.98
	5860	2.71	-3.33	48.32
	5880	2.73	-3.64	45.38
	5900	2.60	-3.80	43.93

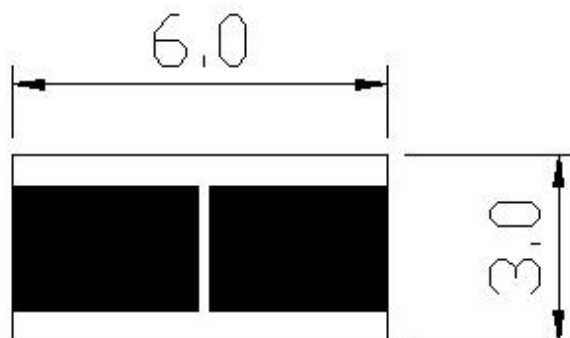
2.5 天線匹配電路Antenna matching circuit



天線端匹配電路Antenna matching circuit

3 工程圖紙 Mechanical Drawing (單位: mm)

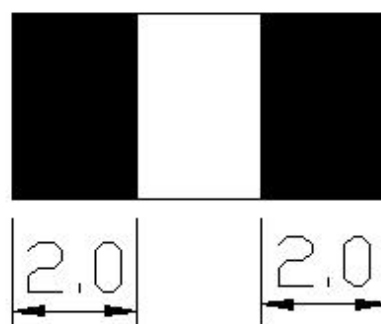
TOP VIEW



FRONT VIEW



BOTTOM VIEW



未注公差 ± 0.2 mm