

WIFI Antenna Test Report

Prepared for Mitac

【W701&A701】 Project

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Date 18th Mar 2014

Client Information

Client	Mitac
Engineer of Client	
Project Name	W701&A701
Project Stage	☐ 2D Drawing ☐ PCB ☐ Housing ☐ CNC(EVT) ☐ Soft Tooling ☒ Hot Tooling(DVT) ☐ PVT
Antenna Type	Linear Polarization
Antenna Band	2400-2500MHz
Antenna Engineer	Jeff

Tuning Note

Version	Date	Revision Description	Designer
01	2013/11/22	Version 1	Jeff
02	2014/01/08	Version 2	Jeff
03	2014/01/24	Version 3	Jeff
04	2014/03/18	Version 4	Jeff

Antenna Info

LNA Name	Material	Dimension	Feed-In Location	PIN Length

一.測試內容：

WIFI Antenna in **W701&A701** housing pattern measurement

二.測試項目：

S11 Return Loss 、 Efficiency 、 Radiation Pattern 、 Peak Gain 、
Average Gain

三.測試設定：

Network Analyzer : Agilent E5071C

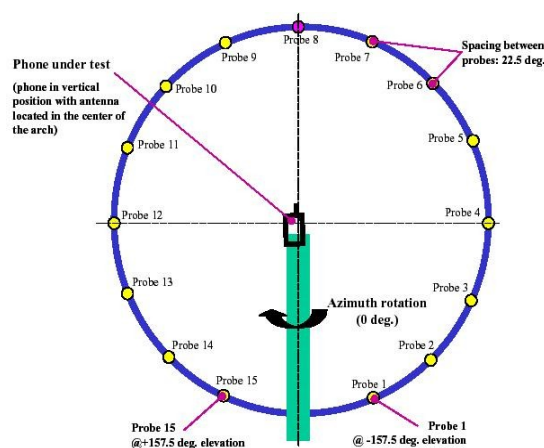
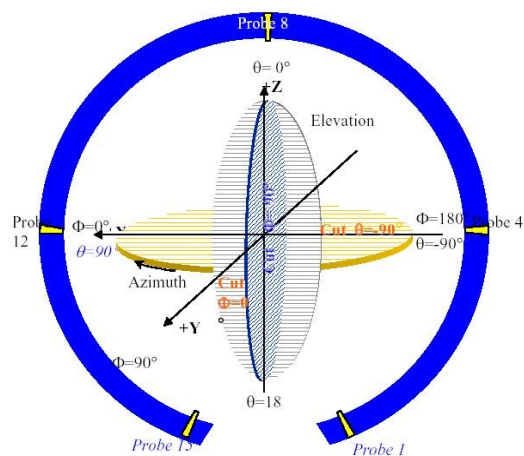
Source Antenna : TRAINING RESEARCH CO.,LTD

Test Frequency : 2400-2500MHz

四.測試環境：

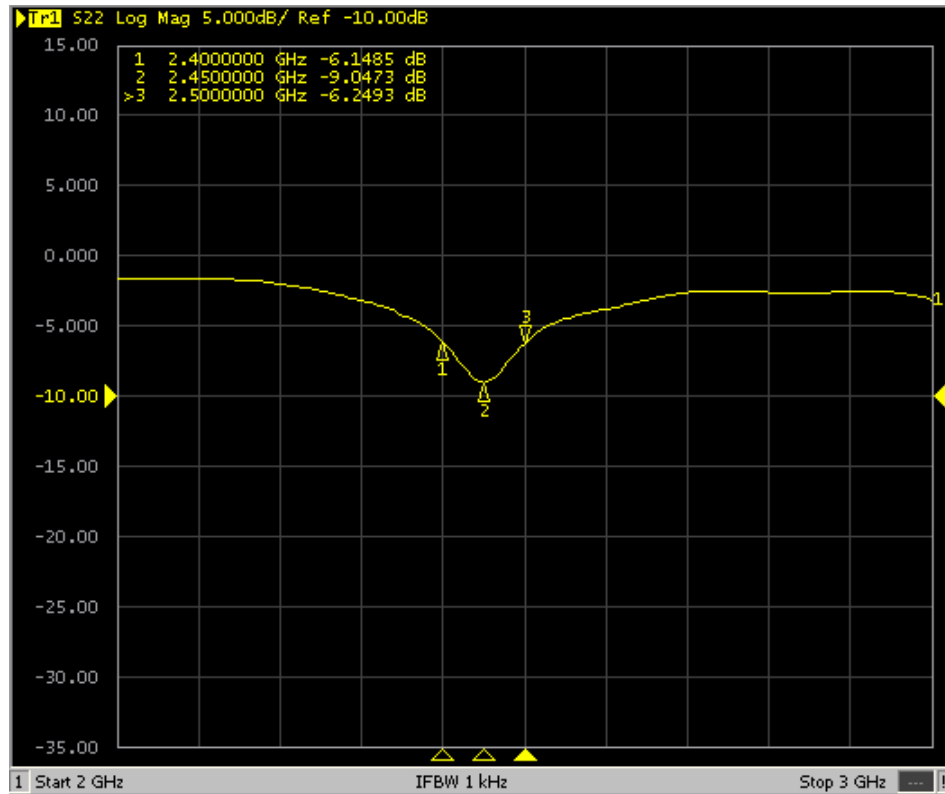
Room temperature : 23°C Humidity : 32%

五.測試設定示意圖：



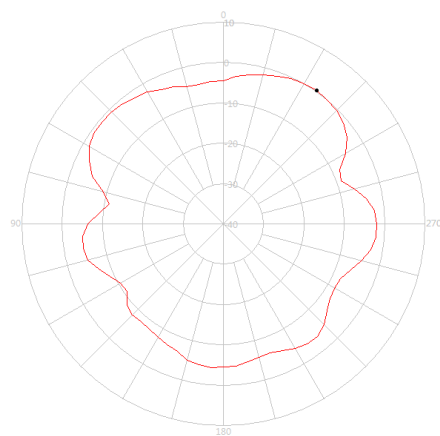
六.測試數據：

WIFI Antenna in W701 housing S11 Return Loss Measurement

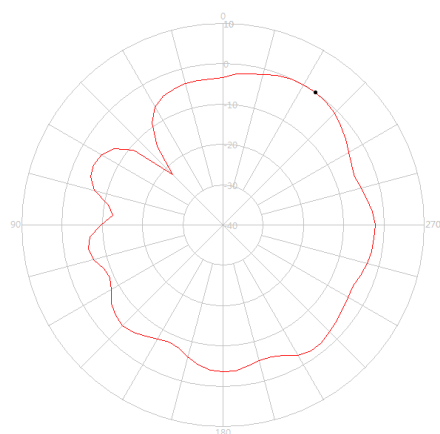


Frequency (MHZ)	2400	2450	2500
Return Loss(dB)	-6.14	-9.04	-6.24

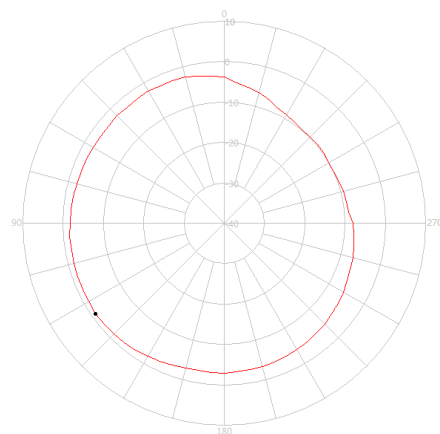
XZ-Plane 2450MHz



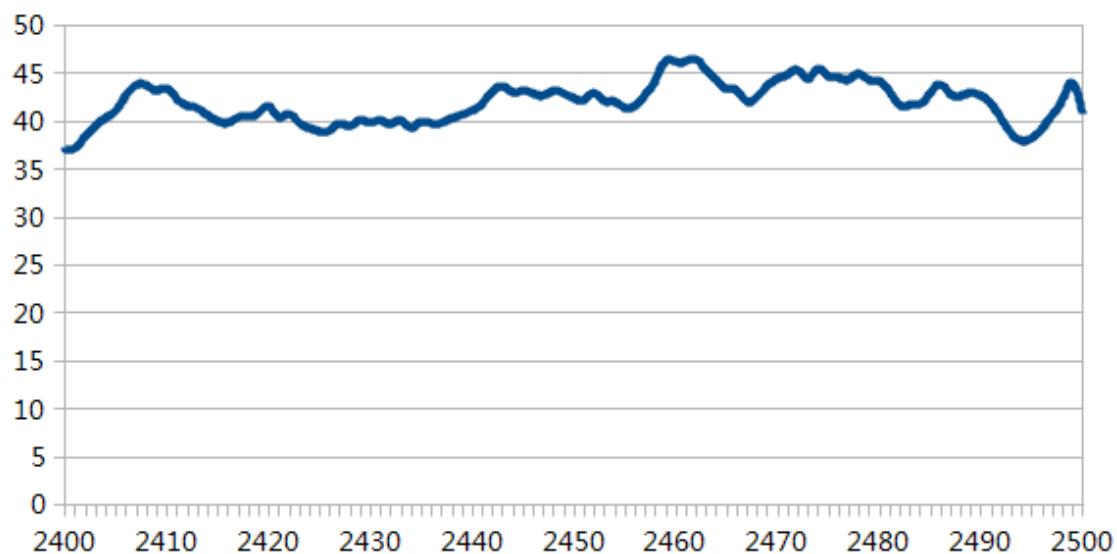
YZ-Plane 2450MHz



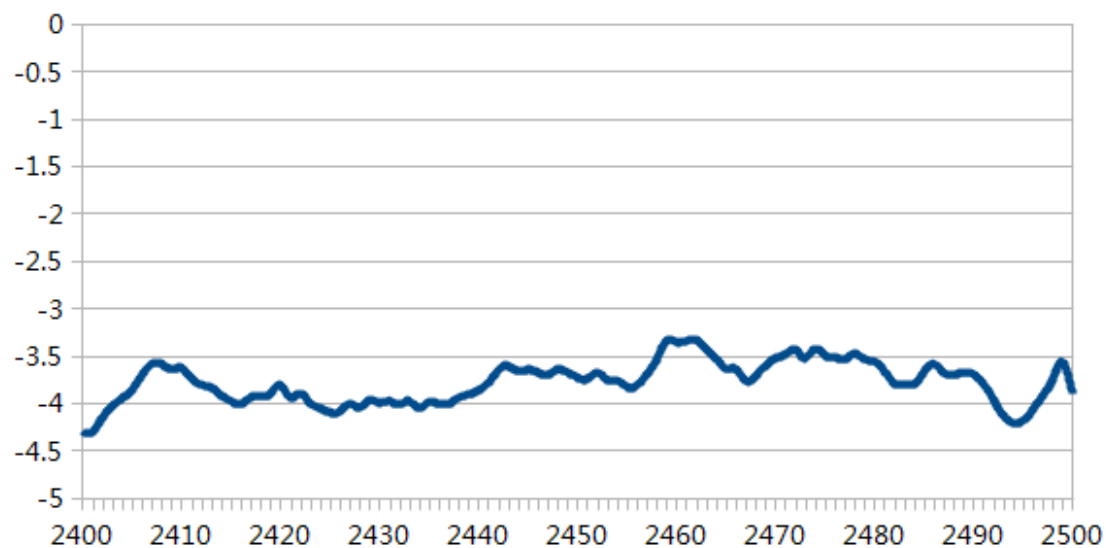
XY-Plane 2450MHz



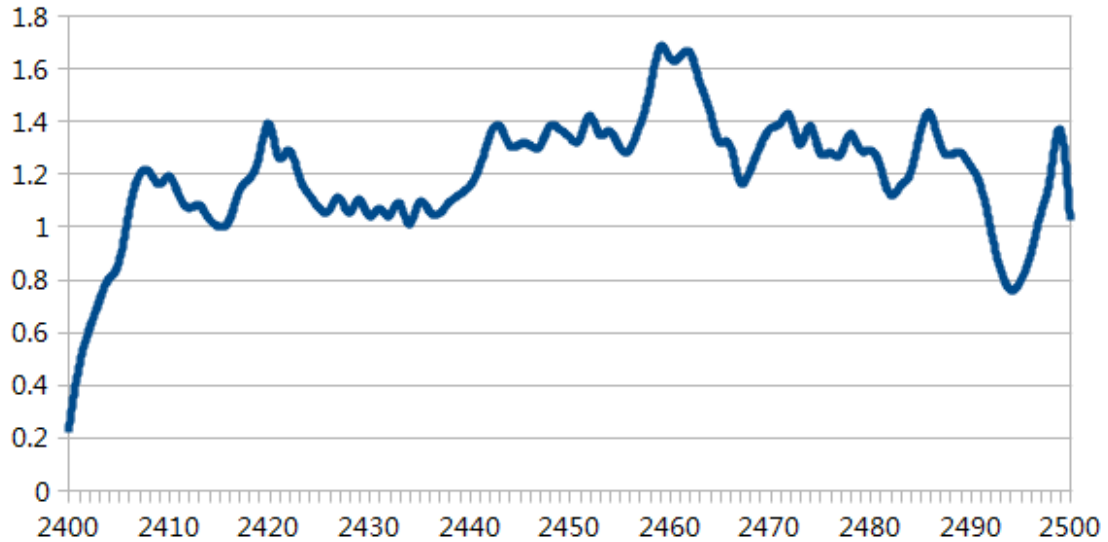
Efficiency :



Average Gain :

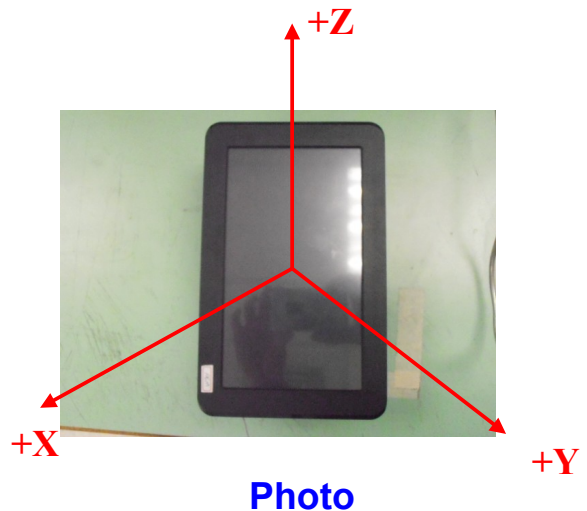
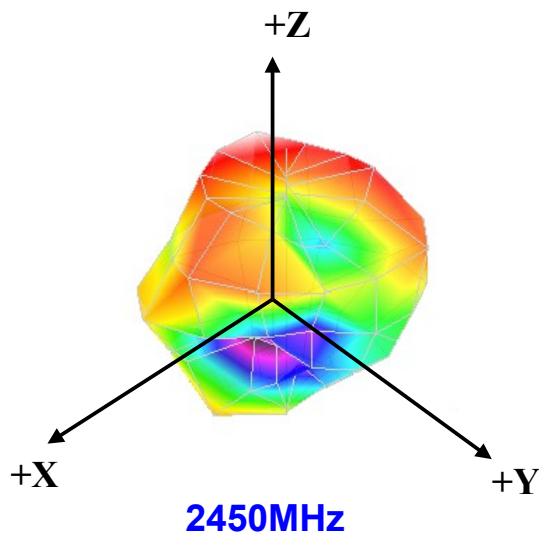


Peak Gain :

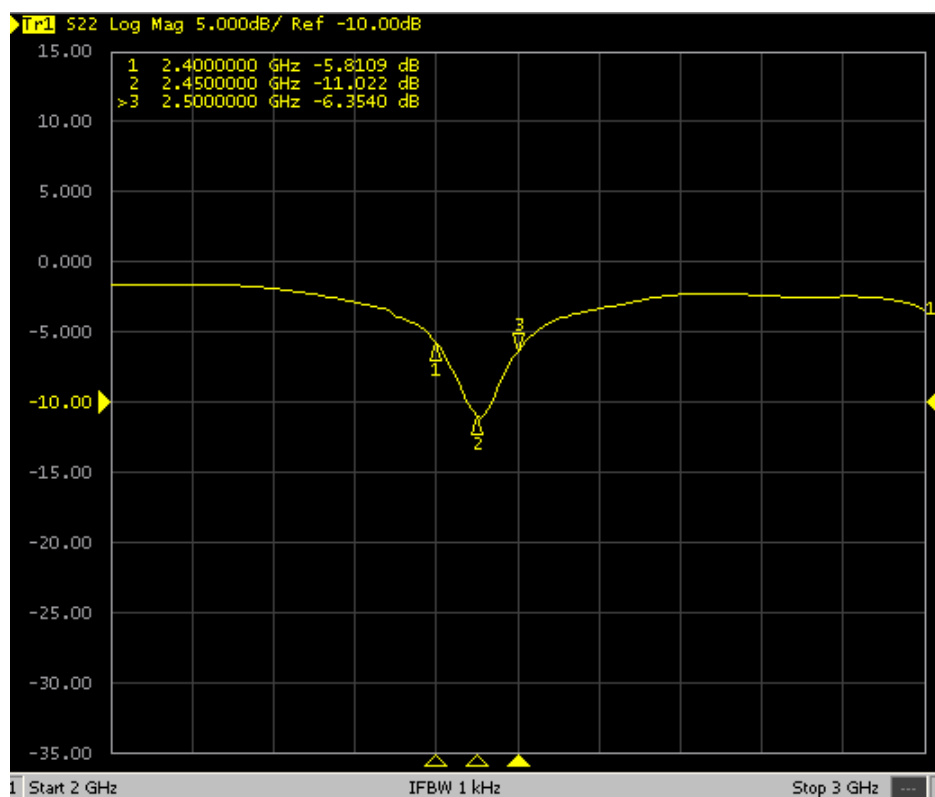


Frequency (MHz)	2400	2450	2500
Efficiency (%)	37.09	42.33	40.73
Average Gain(dBi)	-4.30	-3.73	-3.90
Peak Gain(dBi)	0.22	1.34	1.02

3D Pattern

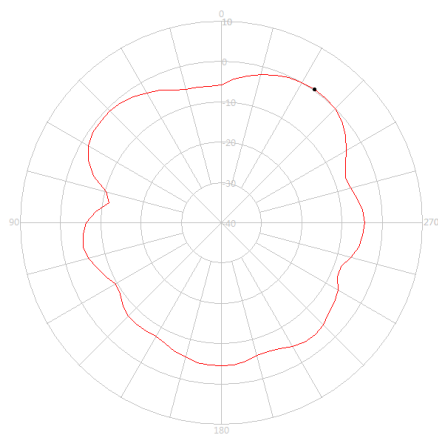


WIFI Antenna in A701 housing S11 Return Loss Measurement

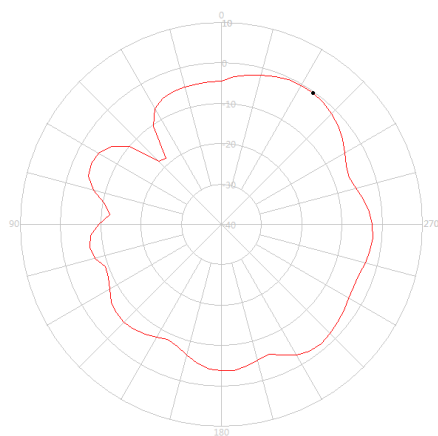


Frequency (MHZ)	2400	2450	2500
Return Loss(dB)	-5.81	-11.02	-6.35

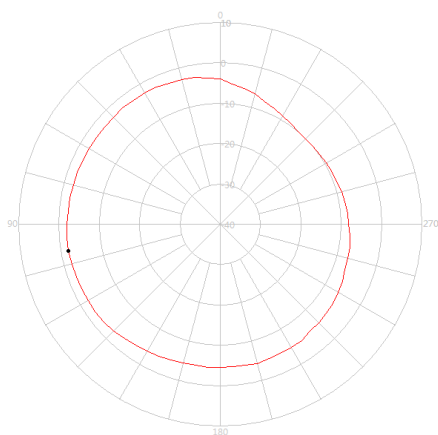
XZ-Plane 2450MHz



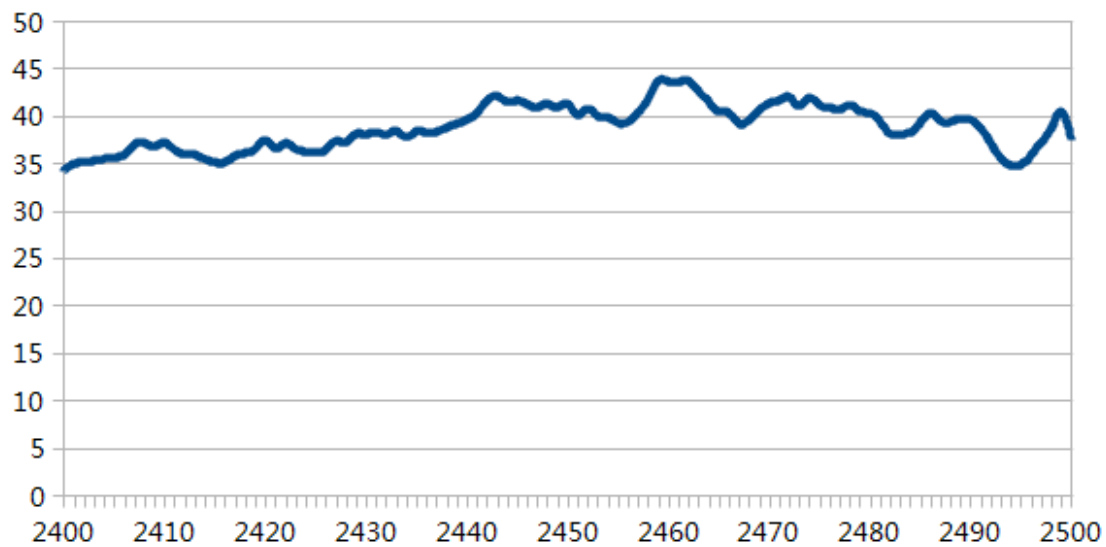
YZ-Plane 2450MHz



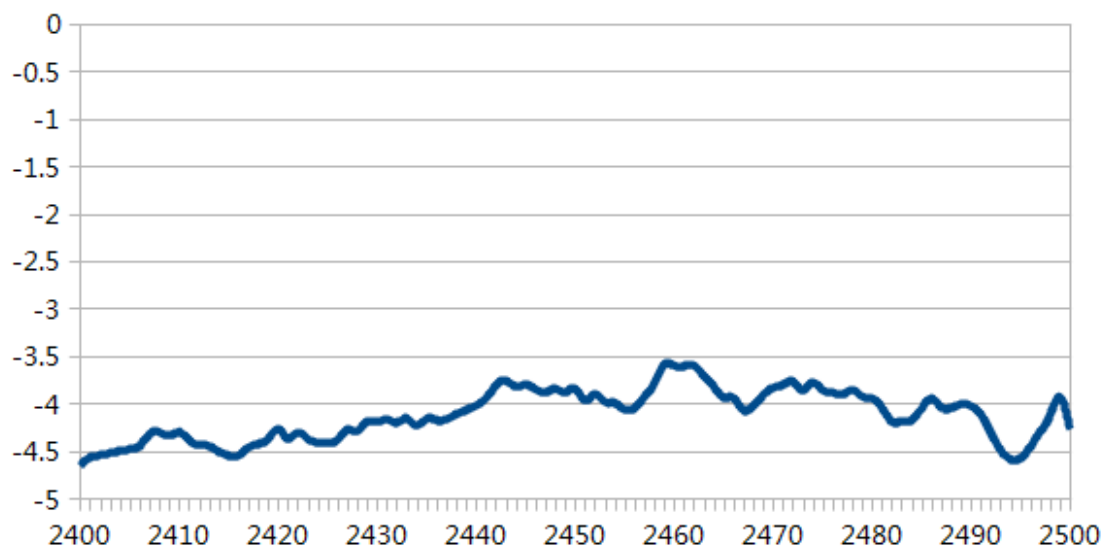
XY-Plane 2450MHz



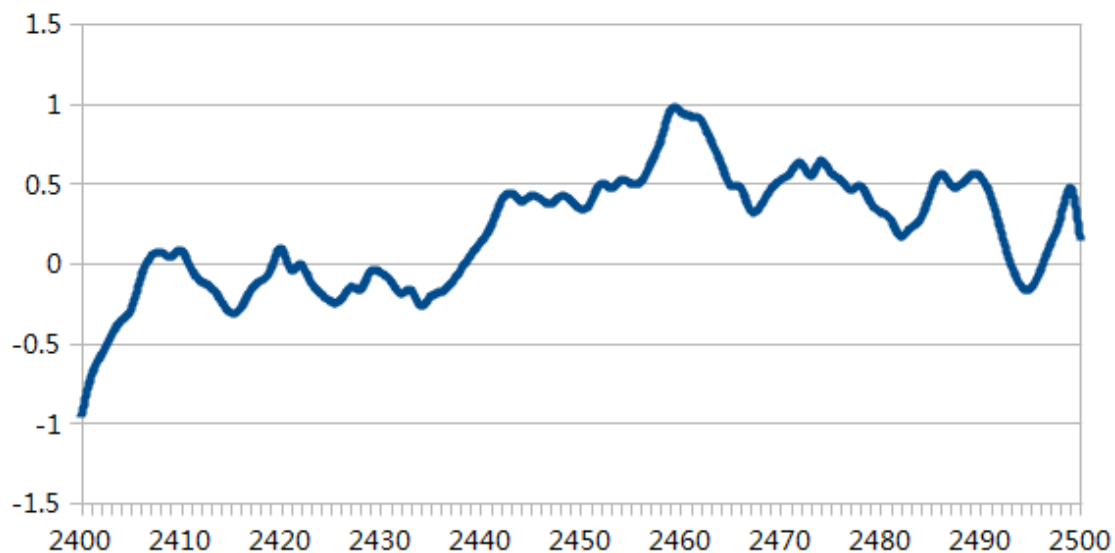
Efficiency :



Average Gain :

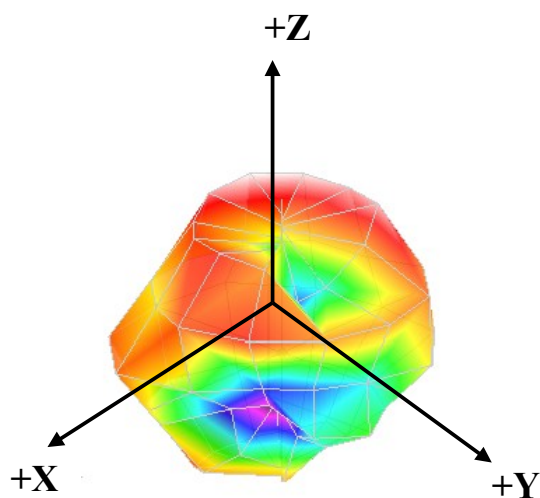


Peak Gain :

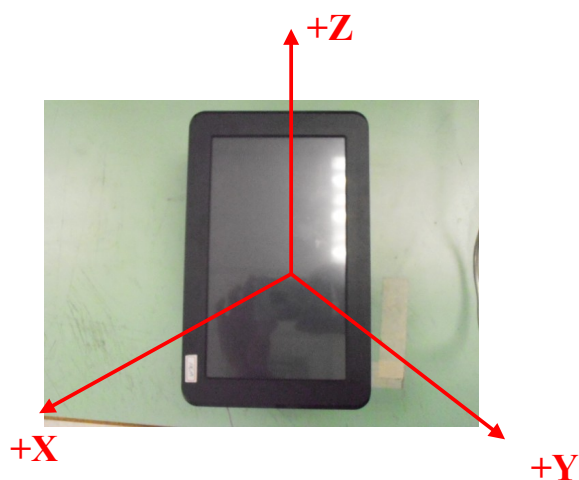


Frequency (MHz)	2400	2450	2500
Efficiency (%)	34.18	41.26	37.49
Average Gain(dBi)	-4.66	-3.84	-4.26
Peak Gain(dBi)	-0.97	0.34	0.14

3D Pattern

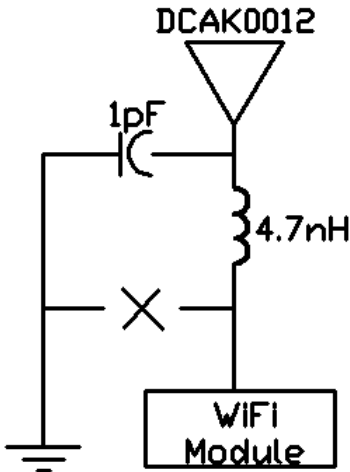
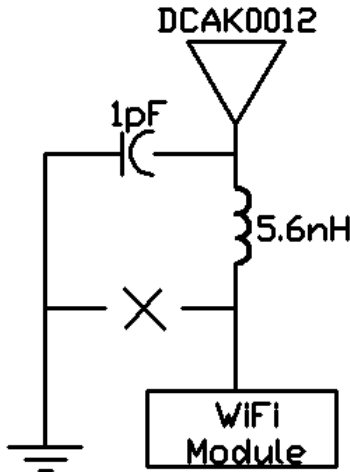


2450MHz



Photo

Photo :

Antenna Electric Circuit Matching- W701	Antenna Electric Circuit Matching- A701
	

七.測試結果：

依客戶需求及客戶所提供之匹配值分別針對 W701 及 A701 兩台樣機進行 2.4G WIFI 天線量測，經量測後，A701 樣機有些微頻偏現象產生，故我司即針對此樣機重新進行匹配，匹配後兩台樣機目前皆為準頻，匹配值如上圖所示。

上述兩台樣機於 2.4G WIFI 應用頻段內之天線效率經量測後約為 35-45%，其中 W701 於中心頻率 2450MHz 時效率為 42.33%，而 A701 於中心頻率 2450MHz 時效率則為 41.26%。

其餘天線各頻段之 Return Loss、Antenna Efficiency、Radiation Pattern、Average Gain 以及 Peak Gain 等特性皆如上所述，均可符合客戶於 2.4G WIFI 應用之設計，供客戶參考評估。