

天線客服報告書

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1.目的:

使用 AT1608-A2R4HAA 調試並量測場型。

Case1: 串聯 0.6pF

Case2: 串聯 0.7pF 並聯 5.6nH

2.結論與建議

2.1 天線增益如下表所示:

Gain Table

Unit in dBi	XY-plane		XZ-plane		YZ-plane		Efficiency
	Peak	Avg.	Peak	Avg.	Peak	Avg.	
Case1@2400MHz	-2.2	-7.2	2.0	-6.5	0.7	-6.7	22.0%
Case1@2450MHz	-2.1	-7.2	2.9	-5.7	0.9	-6.9	25.0%
Case1@2500MHz	-2.7	-8.1	2.3	-6.3	-0.3	-8.0	21.0%
Case2@2400MHz	-2.6	-6.9	1.0	-6.8	-0.1	-6.4	25.0%
Case2@2450MHz	-3.1	-7.8	0.7	-7.1	-0.7	-7.3	21.0%
Case2@2500MHz	-3.1	-8.4	0.8	-7.0	-1.5	-8.1	20.0%

2.2 結論:

AT1608-A2R4HAA 量測結果如上表所示，可能受金屬螺絲護套，導致場形變化效率降低，建議客戶先使用附件二的匹配值進行實測。

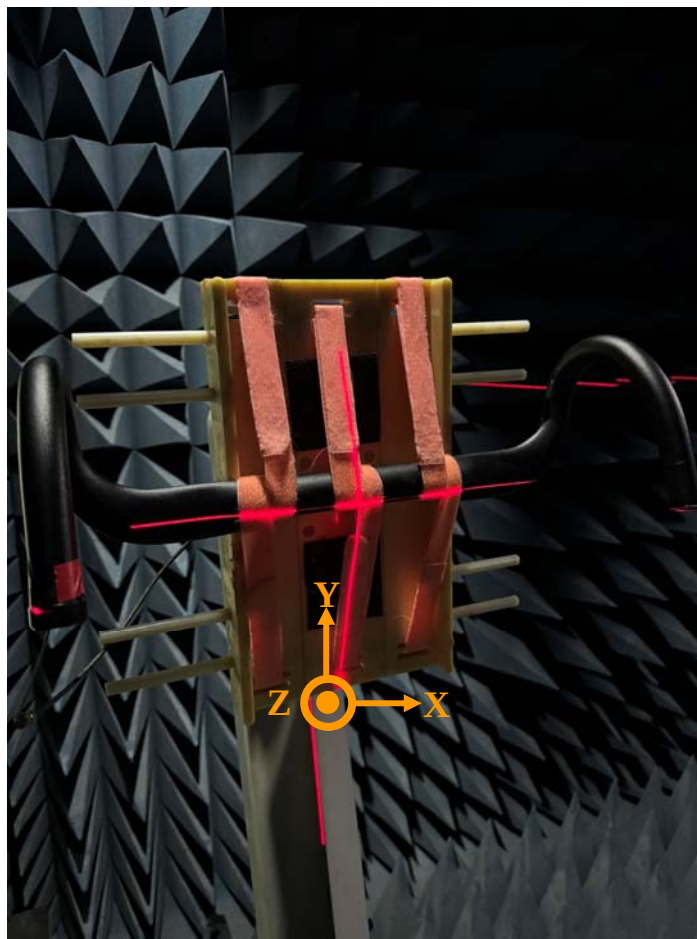
3.建議 Matching 值： 詳見附件 2

4.場形及各項量測方法、結果:詳見附件 3

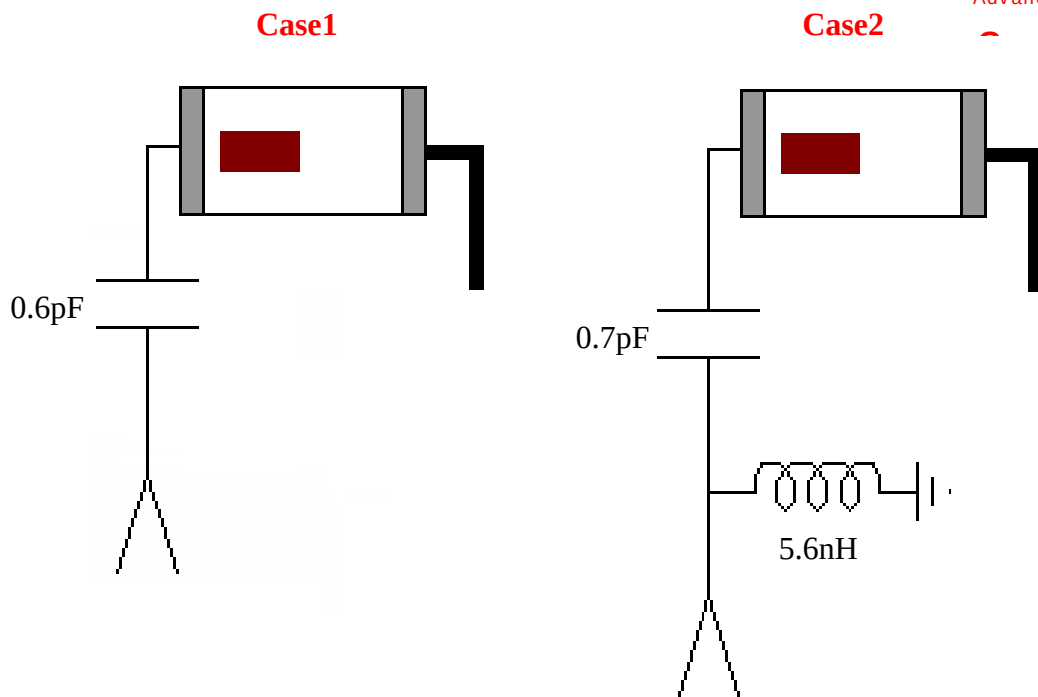
附件

1. PCB 和外殼結構圖:

AT1608-A2R4HAA



2. 天線匹配電路示意圖:



匹配電路使用之元件:

Case1	0.6pF	
	250R05L0R6BV4S	
Case2	0.7pF	5.6nH
	250R05L0R7BV4S	HI0603-1B5N6SHT

3. 場型及各項量測方法、結果

A. 儀器設定

▲返回損耗(Return Loss) / 駐波比(VSWR):

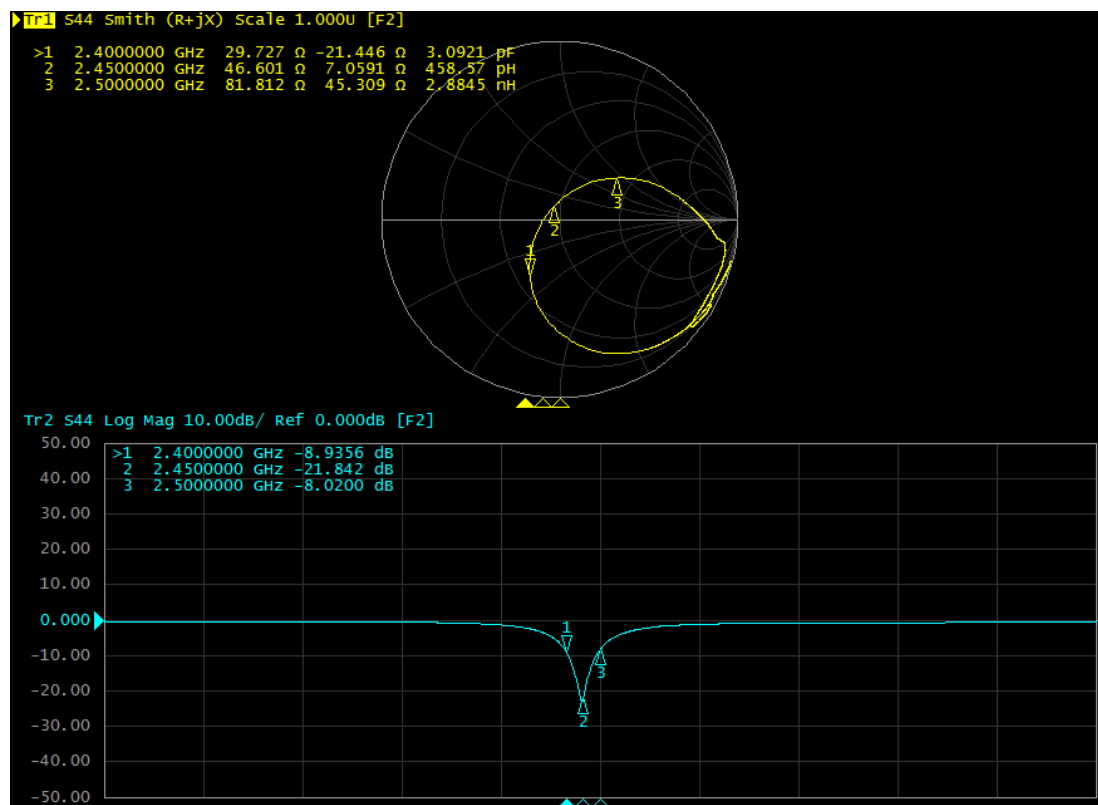
◆量測儀器 : vector network analyzer - AG

◆校正方法 : open/short/load -Cal. Kit 85052D

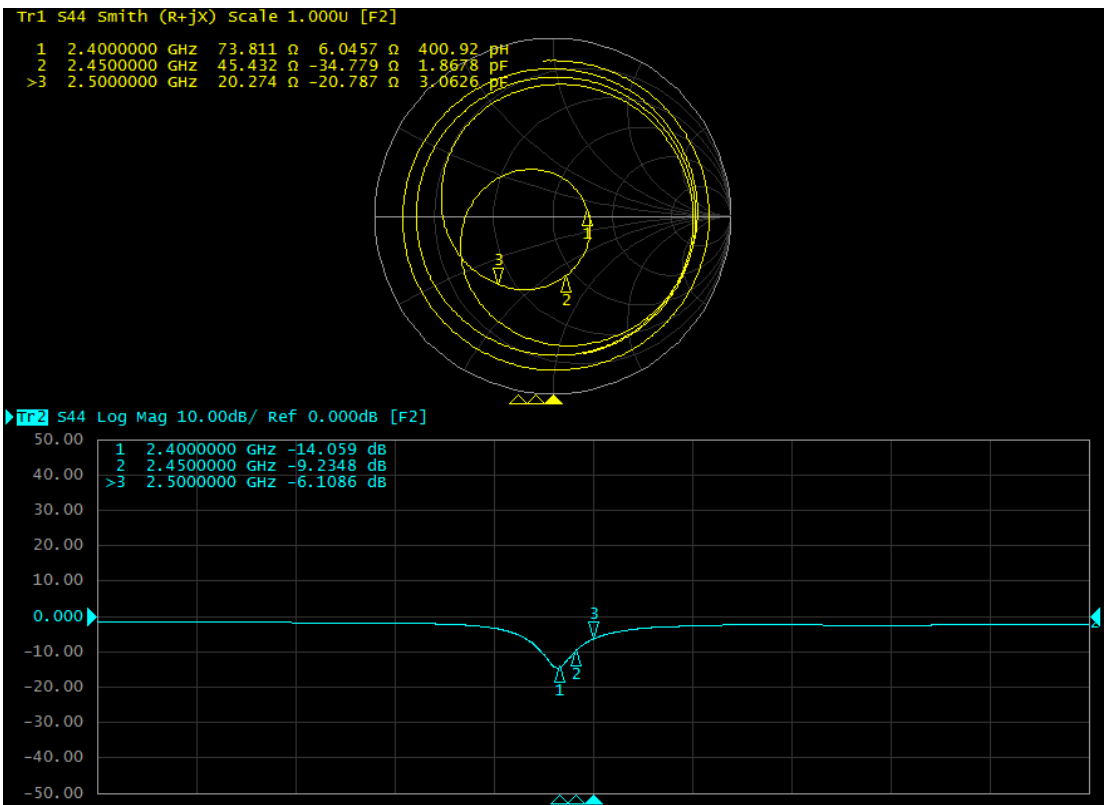
▲3D Radiation Pattern :

◆NSI 800F-10 Far Field antenna measurement system

B. Case1 之 Return Loss 量測值

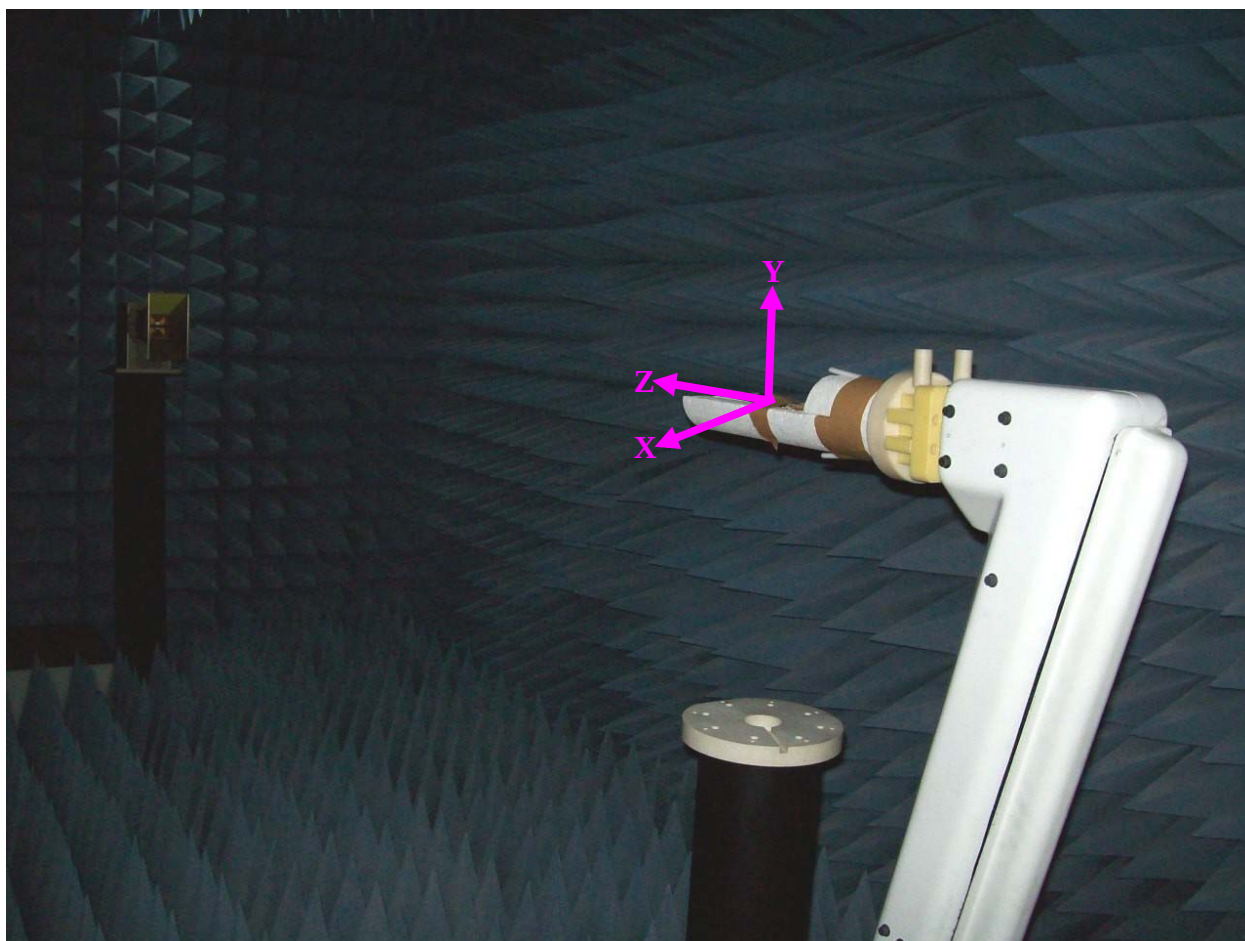


C. Case2 之 Return Loss 量測值



D. 輻射場型圖

◆量測座標圖



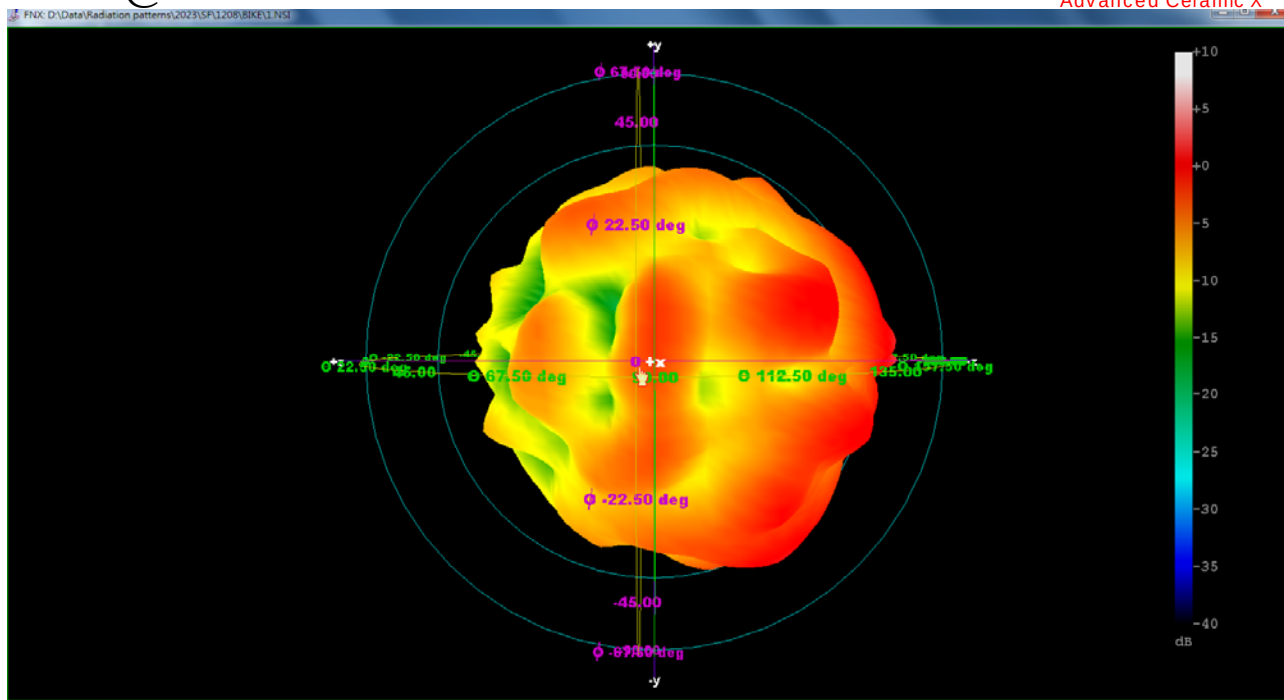
◆各平面定義

XY-plane	Theta=90°
XZ-plane	Phi=0°
YZ-plane	Phi=90°

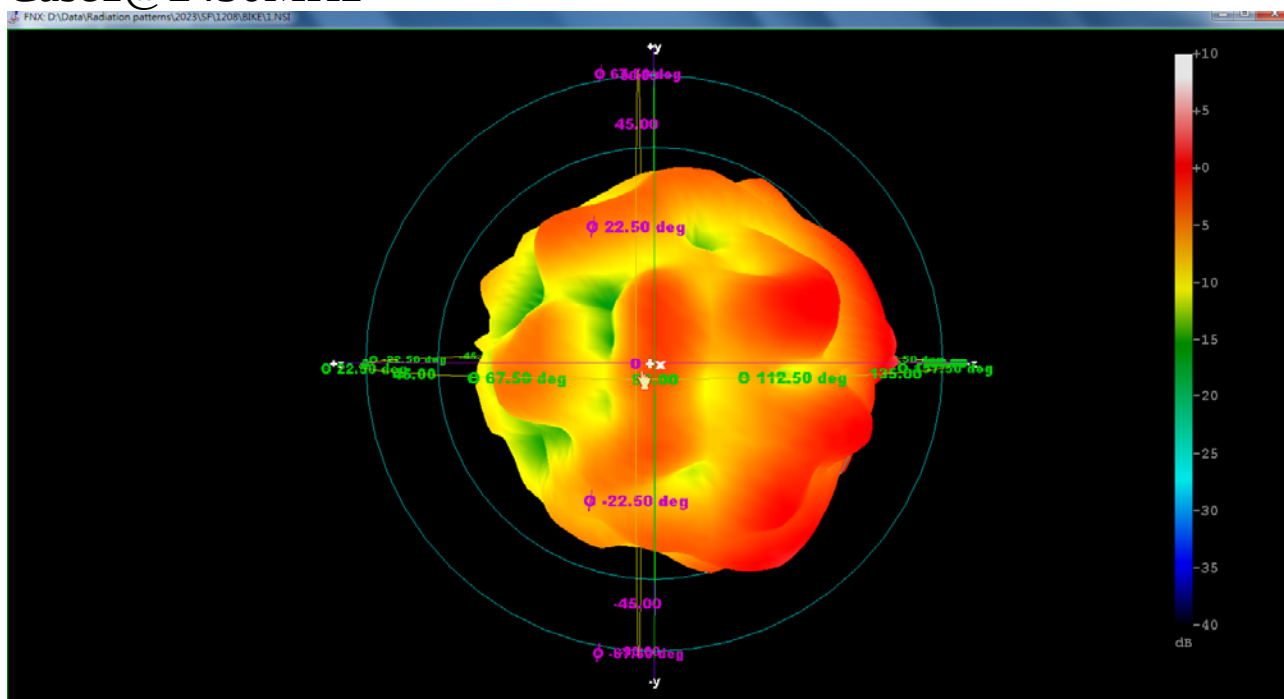
◆3D 輻射場型圖

Case1@2400MHz

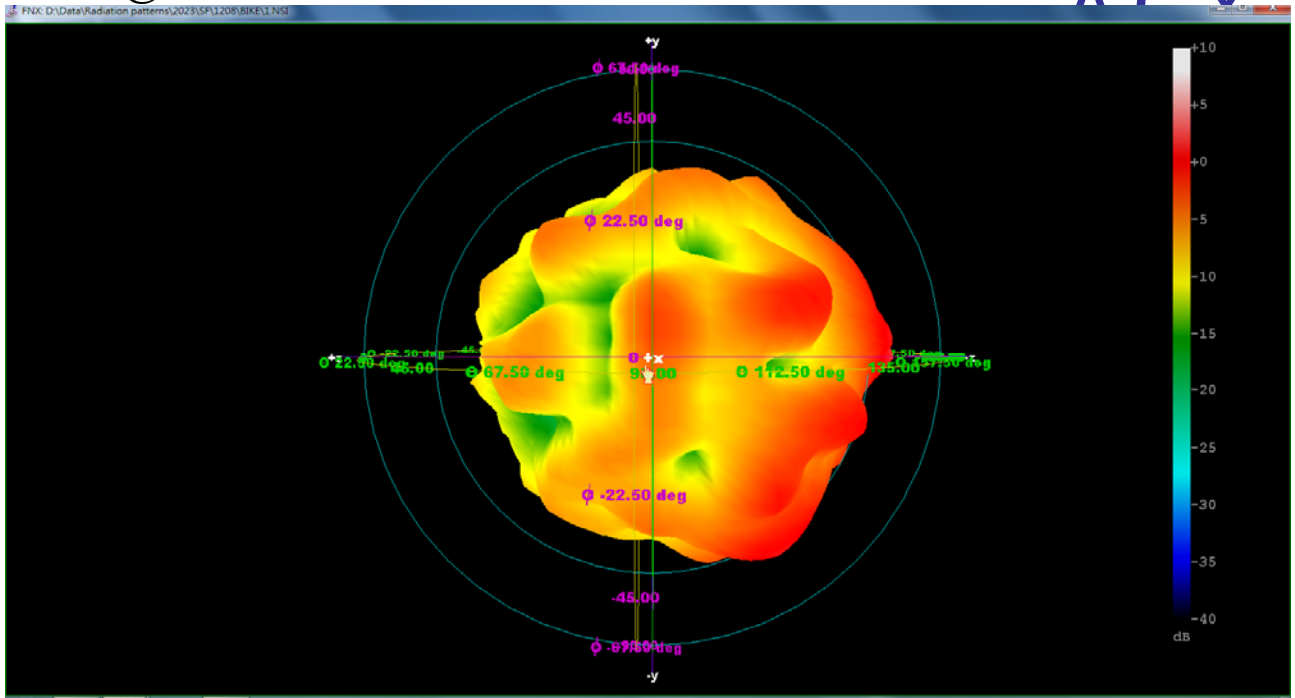
ACX
Advanced Ceramic X



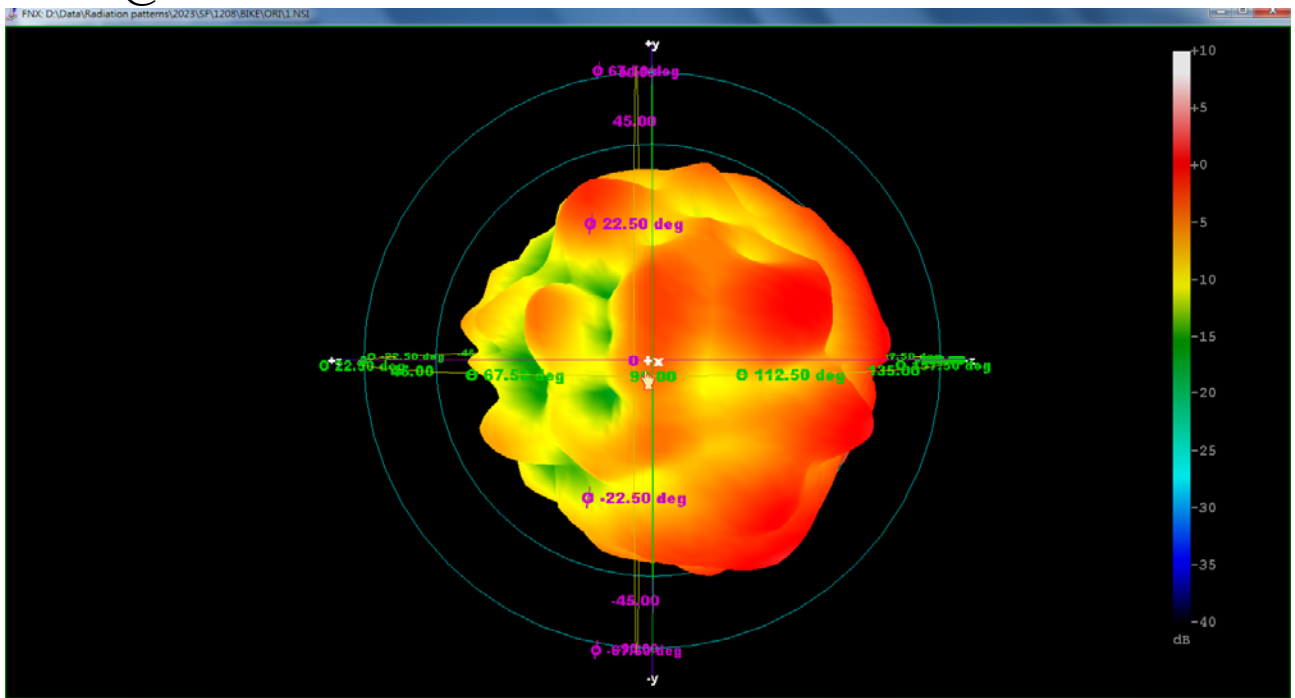
Case1@2450MHz



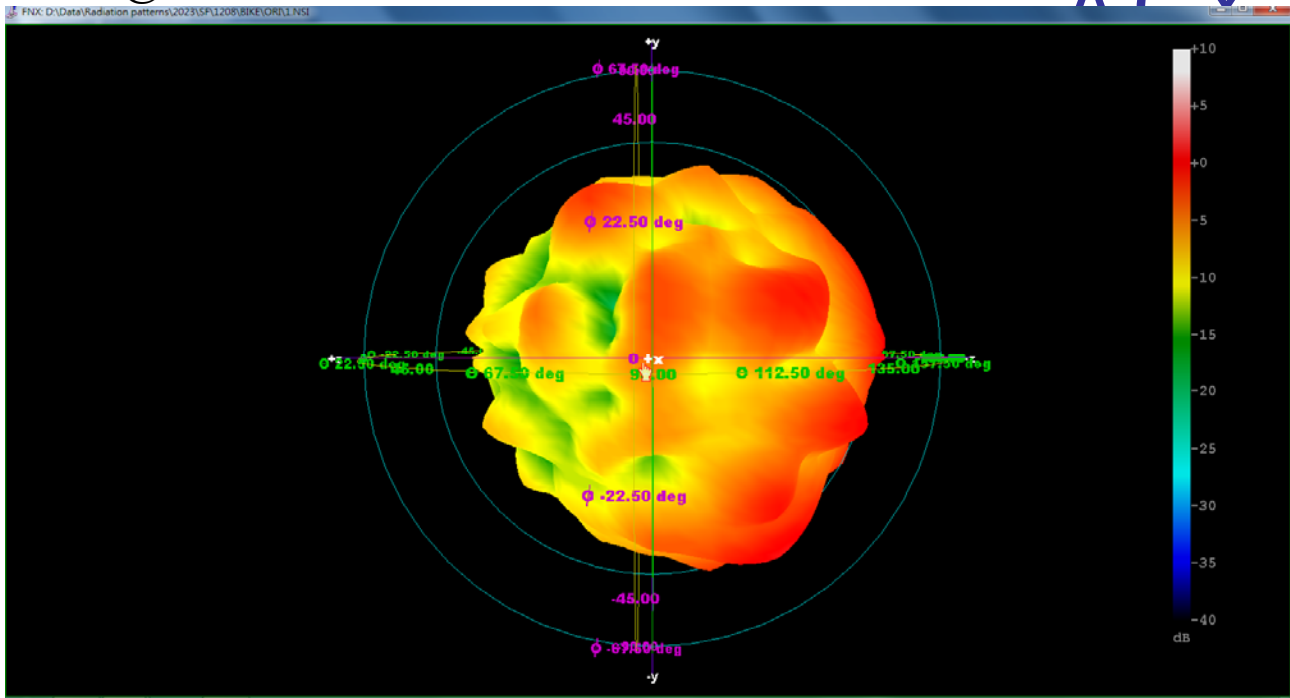
Case1@2500MHz



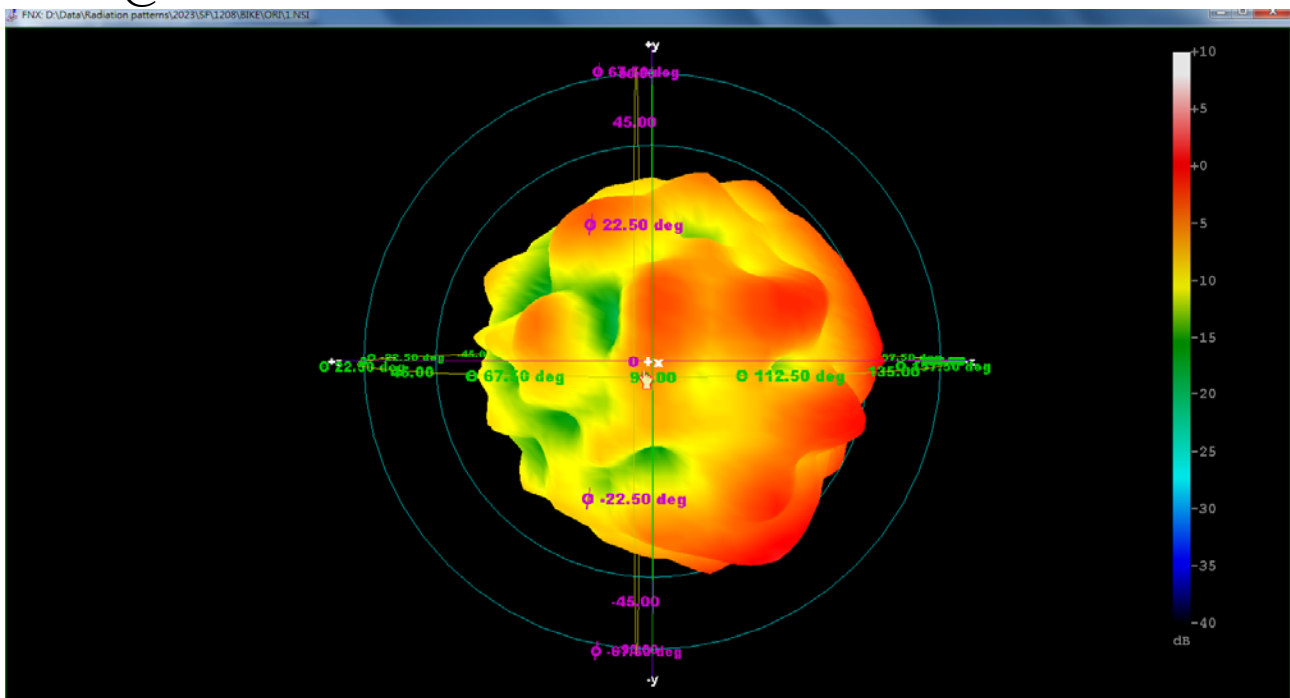
Case2@2400MHz



Case2@2450MHz

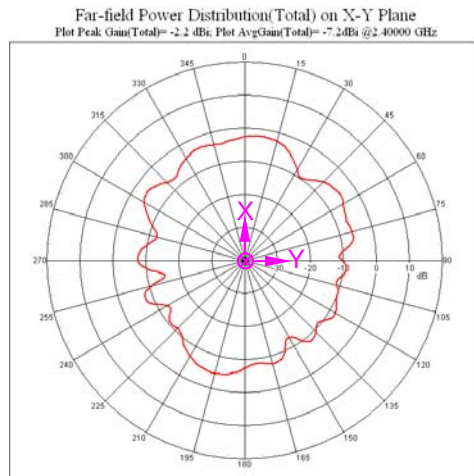


Case2@2500MHz



Case1@2400MHz 之輻射場型圖

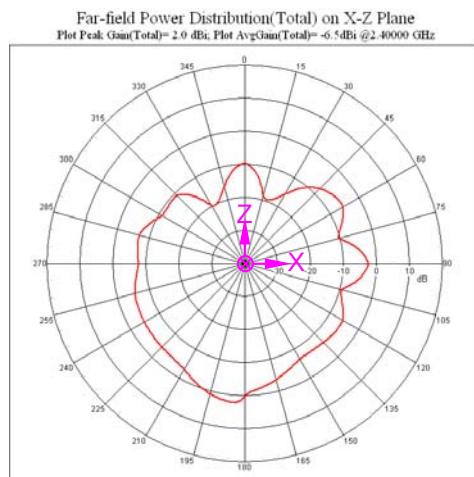
◆XY-plane



Unit : dBi

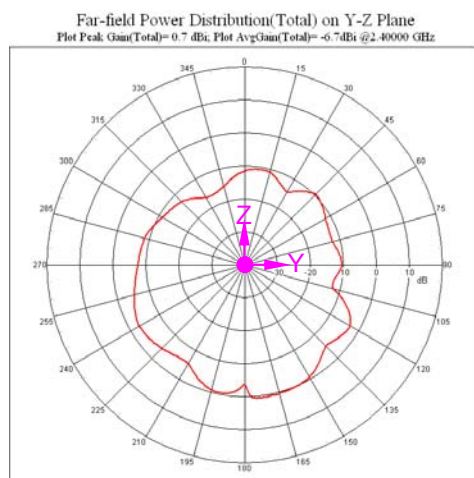
	Peak gain	Avg. gain
XY-plane	-2.2	-7.2

◆XZ-plane



	Peak gain	Avg. gain
XZ-plane	2.0	-6.5

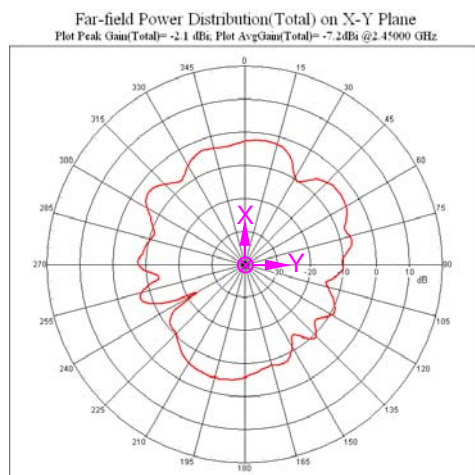
◆YZ-plane



	Peak gain	Avg. gain
YZ-plane	0.7	-6.7

Case1@2450MHz 之輻射場型圖

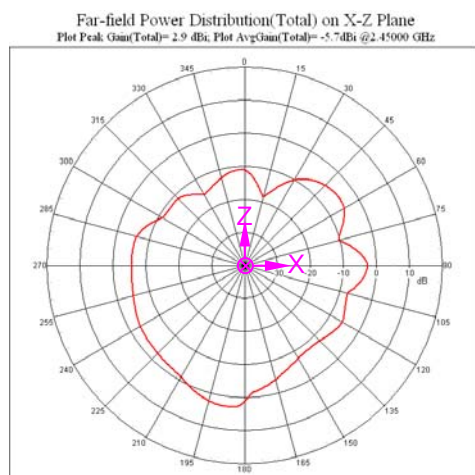
◆XY-plane



Unit : dBi

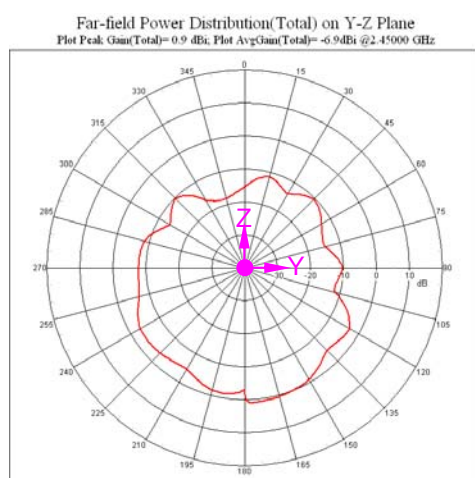
	Peak gain	Avg. gain
XY-plane	-2.1	-7.2

◆XZ-plane



	Peak gain	Avg. gain
XZ-plane	2.9	-5.7

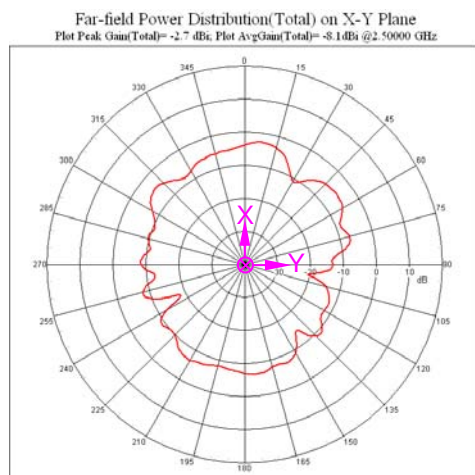
◆YZ-plane



	Peak gain	Avg. gain
YZ-plane	0.9	-6.9

Case1@2500MHz 之輻射場型圖

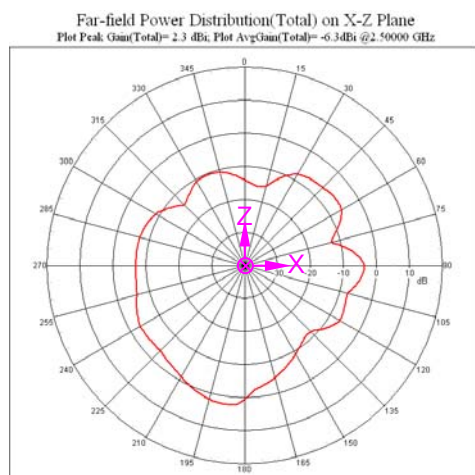
◆XY-plane



Unit : dBi

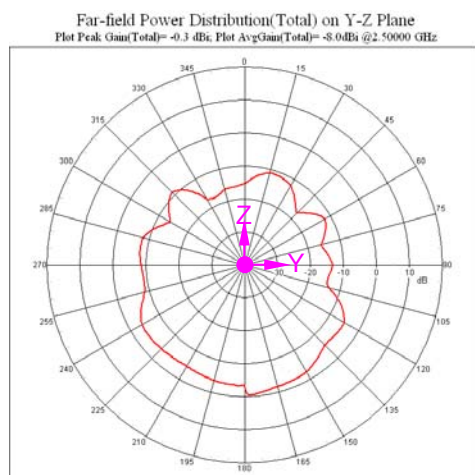
	Peak gain	Avg. gain
XY-plane	-2.7	-8.1

◆XZ-plane



	Peak gain	Avg. gain
XZ-plane	2.3	-6.3

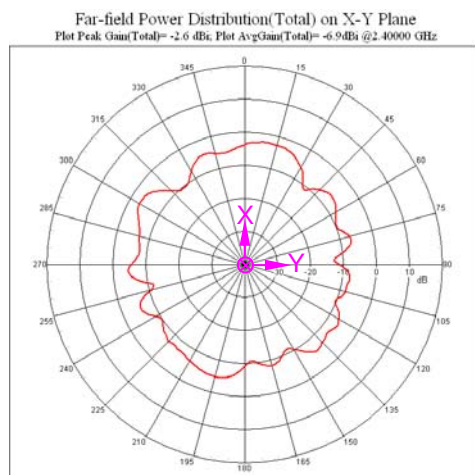
◆YZ-plane



	Peak gain	Avg. gain
YZ-plane	-0.3	-8.0

Case2@2400MHz 之輻射場型圖

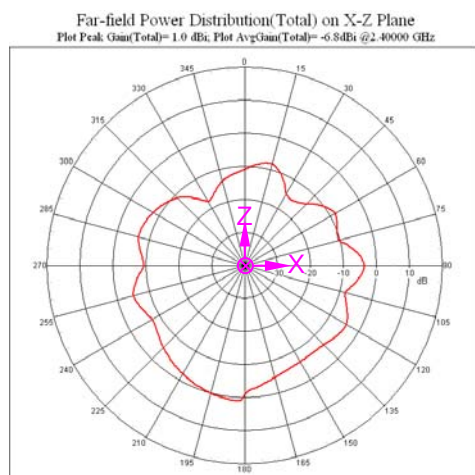
◆XY-plane



Unit : dBi

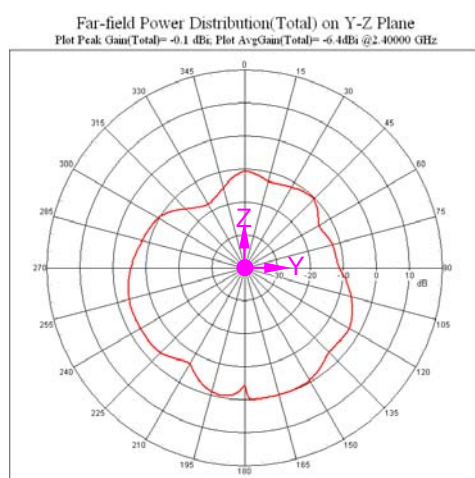
	Peak gain	Avg. gain
XY-plane	-2.6	-6.9

◆XZ-plane



	Peak gain	Avg. gain
XZ-plane	1.0	-6.8

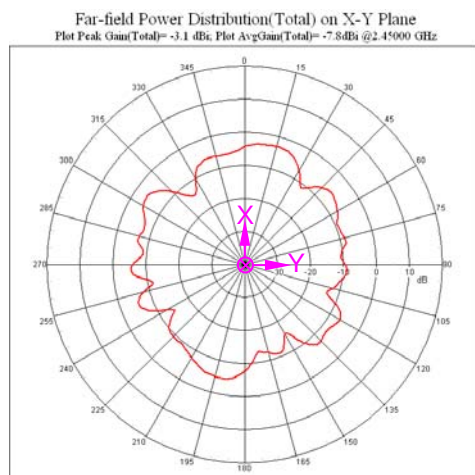
◆YZ-plane



	Peak gain	Avg. gain
YZ-plane	-0.1	-6.4

Case2@2450MHz 之輻射場型圖

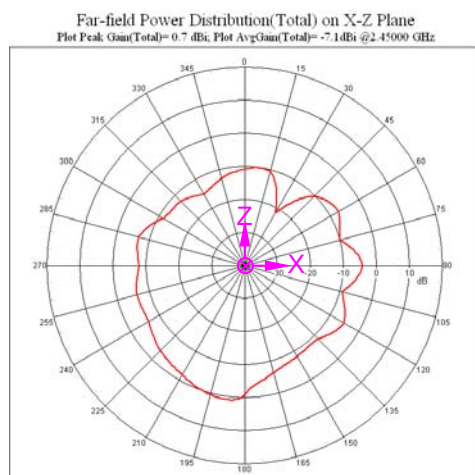
◆XY-plane



Unit : dBi

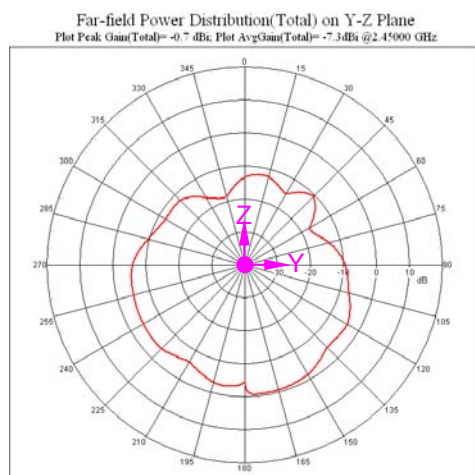
	Peak gain	Avg. gain
XY-plane	-3.1	-7.8

◆XZ-plane



	Peak gain	Avg. gain
XZ-plane	0.7	-7.1

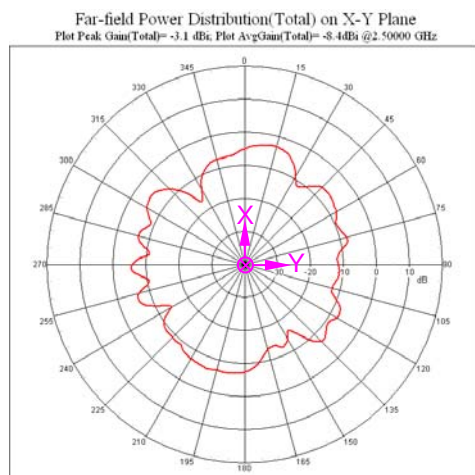
◆YZ-plane



	Peak gain	Avg. gain
YZ-plane	-0.7	-7.3

Case2@2500MHz 之輻射場型圖

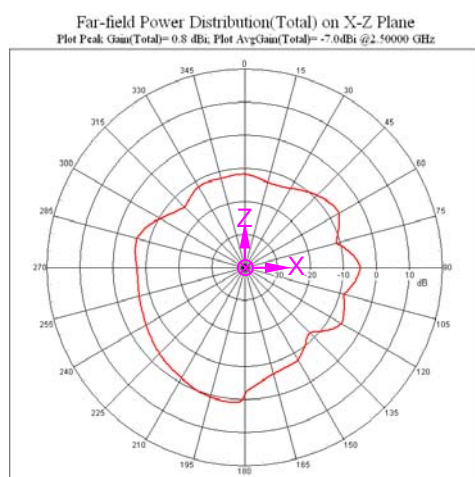
◆XY-plane



Unit : dBi

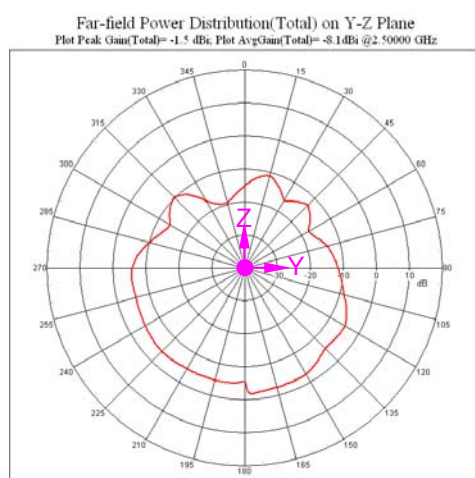
	Peak gain	Avg. gain
XY-plane	-3.1	-8.4

◆XZ-plane



	Peak gain	Avg. gain
XZ-plane	0.8	-7.0

◆YZ-plane



	Peak gain	Avg. gain
YZ-plane	-1.5	-8.1