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TITLE : **CHIP ANTENNA MEASUREMENT AND PERFORMANCE REPORT**

REPORT CUSTOMER : **旺輝**

PRODUCT NAME : **BT RECEIVER**

SAMPLE NO. : **920D07E15225013**

DESCRIPTION : **BLUETOOTH CHIP ANTENNA FOR BLUETOOTH BAND (2.4-2.483 GHz) APPLICATION**

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Outline

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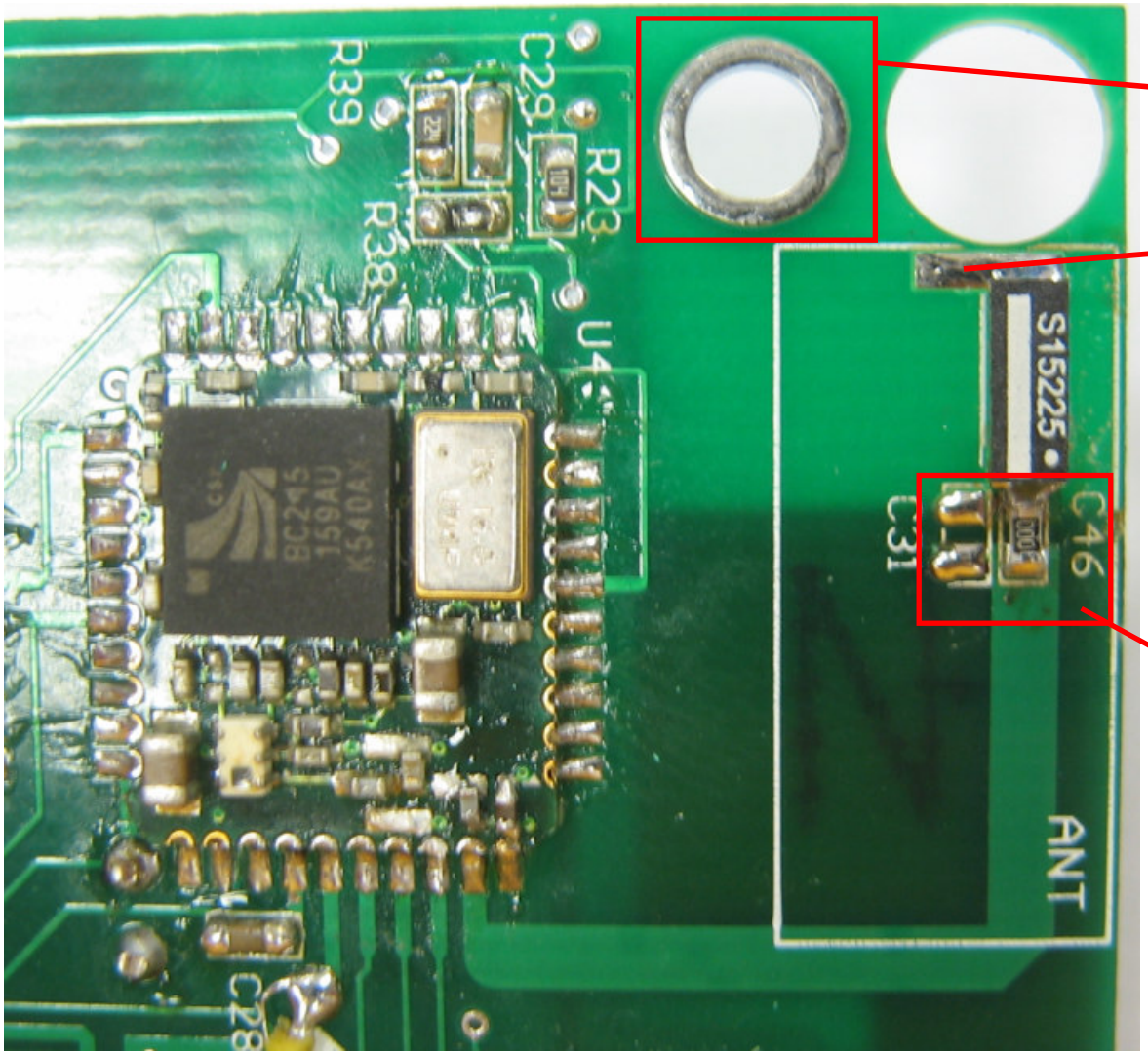
Summary

- 天線端的匹配電路為串聯0歐姆電阻短路，天線末端的延伸導體維持原長度，位於天線左上方的金屬圓孔若可以請將移除，在Pi電路方面，並串聯的pad請分開一些距離，以利於銲接被動元件，距離以0402的被動元件為主。

- 天線頻寬約為390MHz，對於外在環境的干擾所造成的頻率偏移，亦能有效的涵蓋所使用的頻帶，另外，在輻射場型部分，其量測的頻率點效率皆可達約30-40%，已有較佳的輻射效率表現。

Product Feature



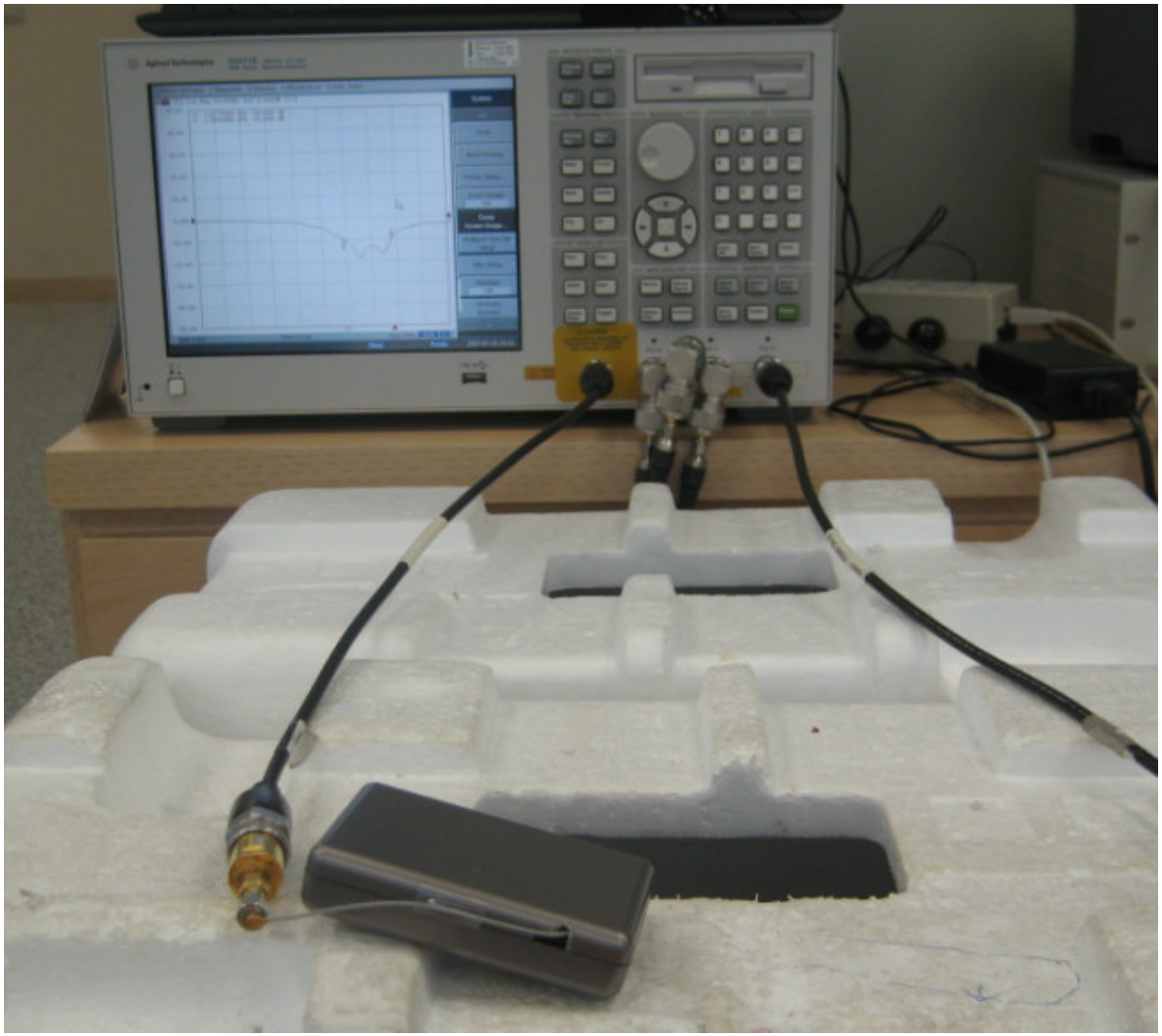
將此金屬孔移除

保持原本的延伸長度

串聯 0 歐姆，並聯與串聯的Pad點需分開一些距離，並且Layout成0402的被動元件尺寸。

S Parameter Measurement

Measurement Environment： (Agilent E5071B ENA, 300KHz~8.5GHz)



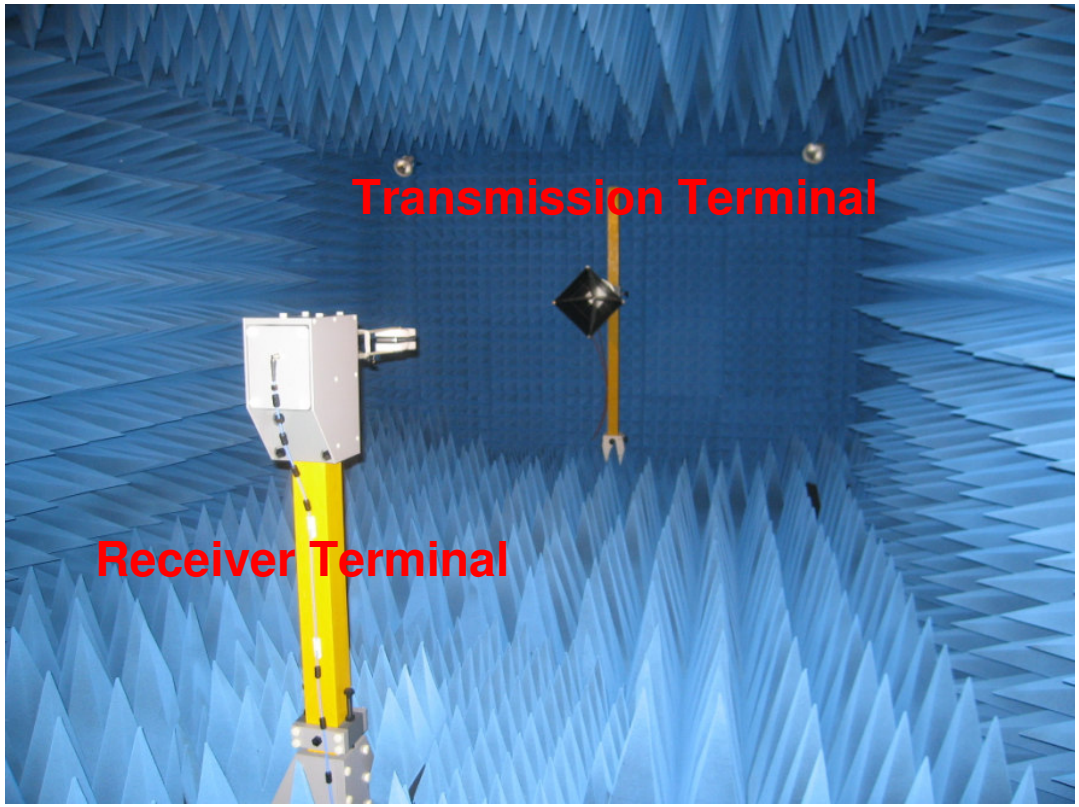
S Parameter Measurement

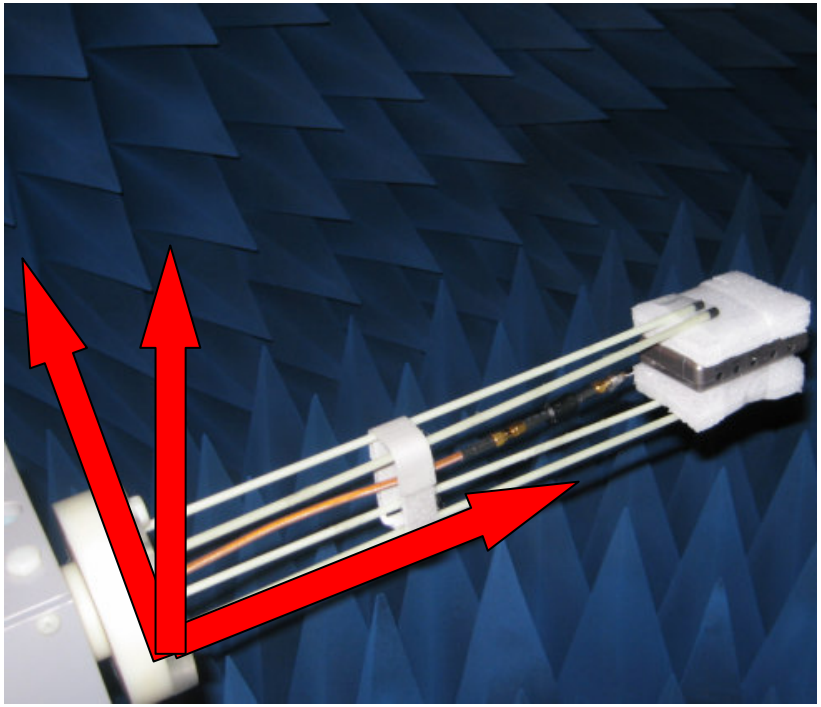
Return loss (S11) Test Report for Bluetooth Chip Antenna

Measurement Instrument	(Agilent E5071B ENA, 300KHz~8.5GHz)

3D Far-Field Radiation Pattern Test

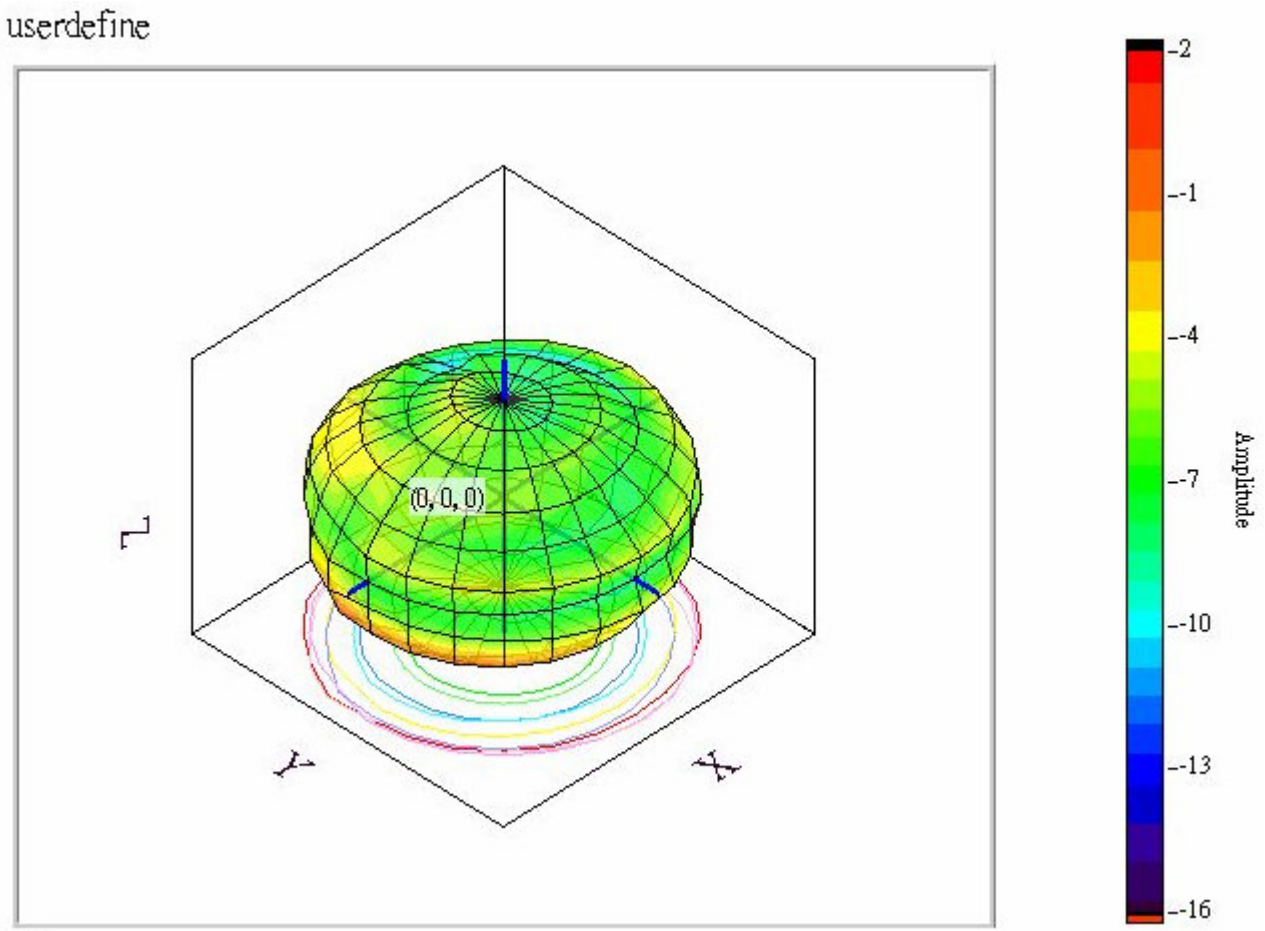
Measurement Environment：3D Far-field Anechoic Chamber





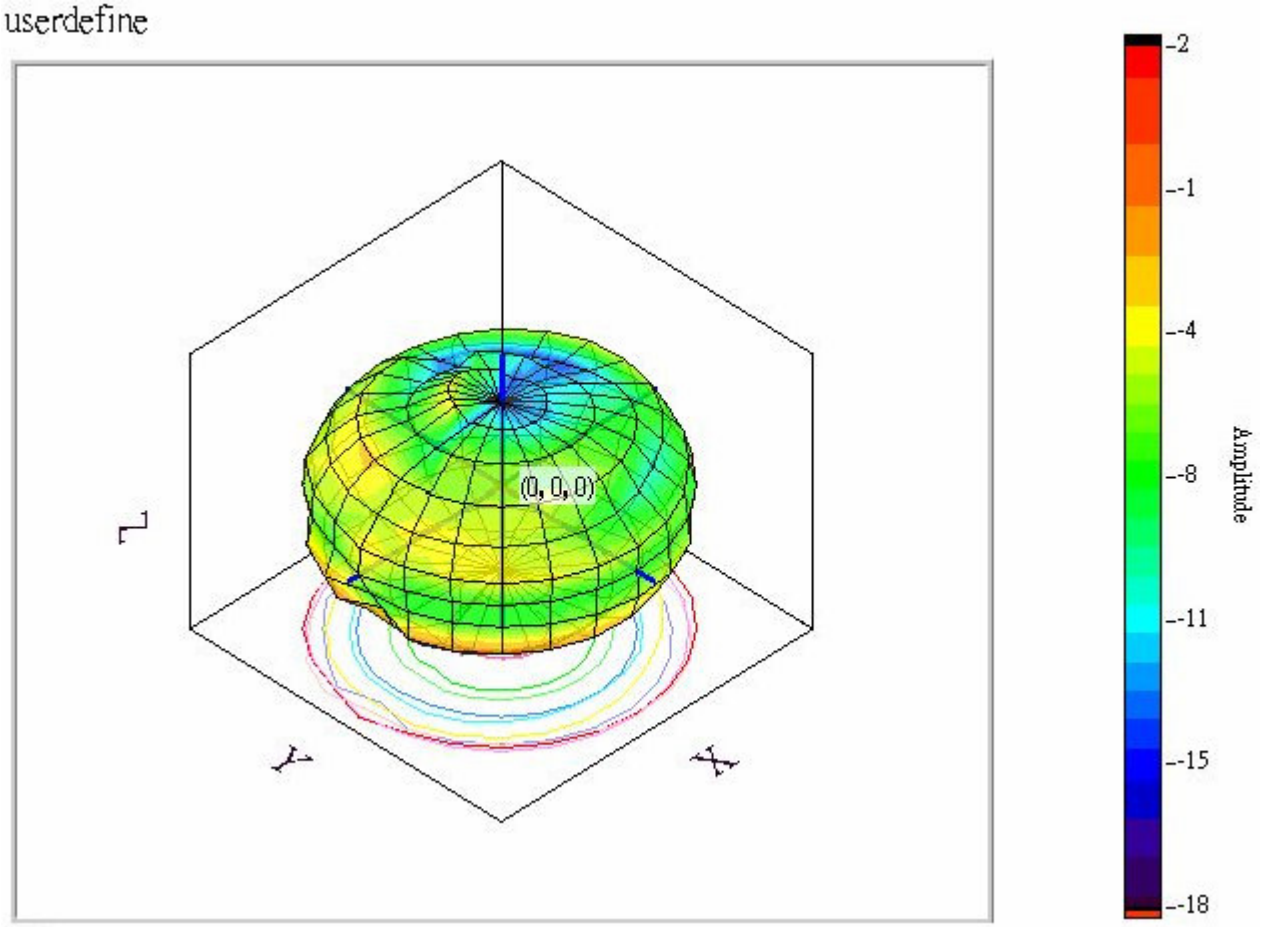
AUT setup condition

3D Far-Field Radiation Pattern Test



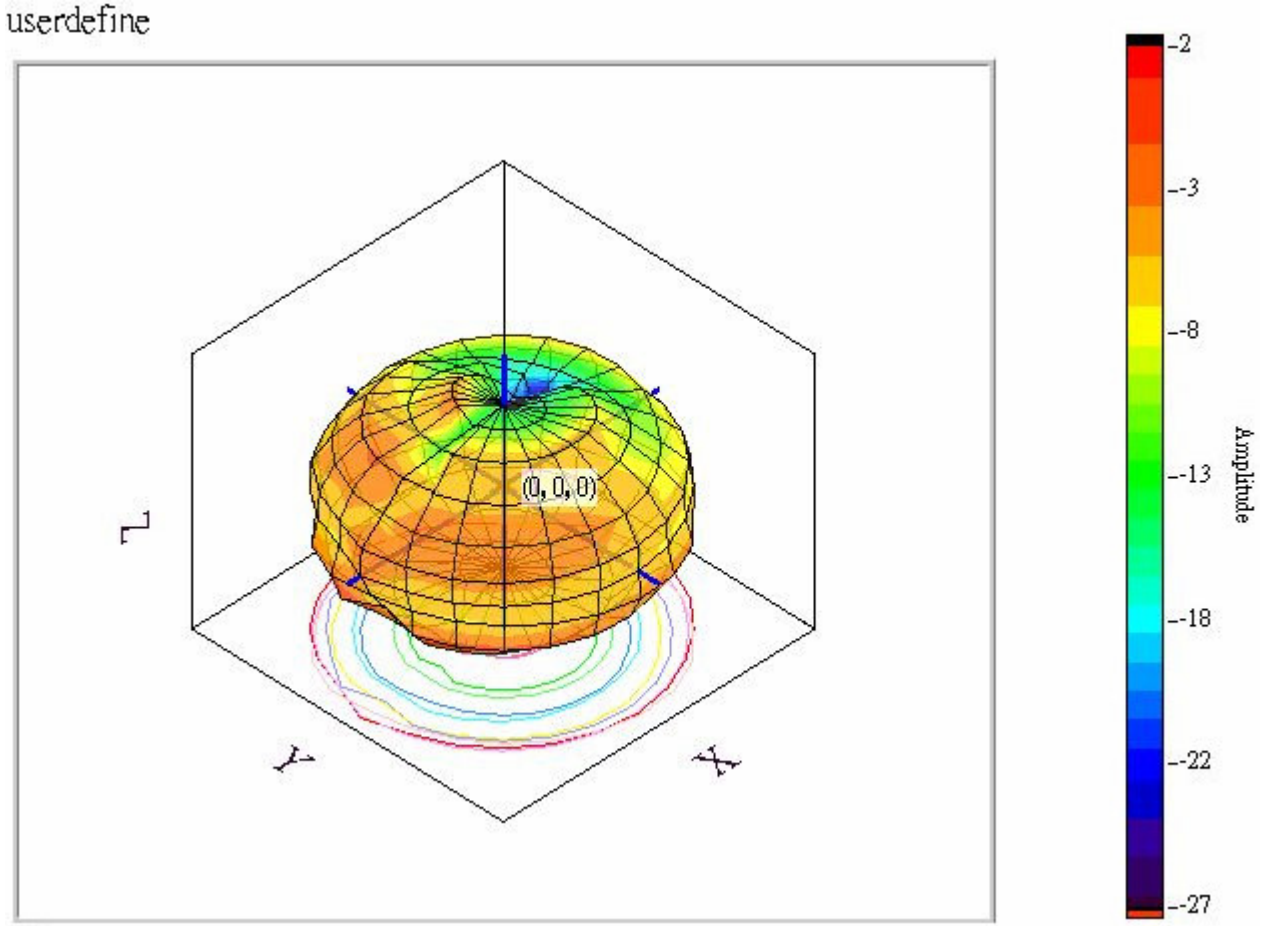
f = 2400MHz

3D Far-Field Radiation Pattern Test



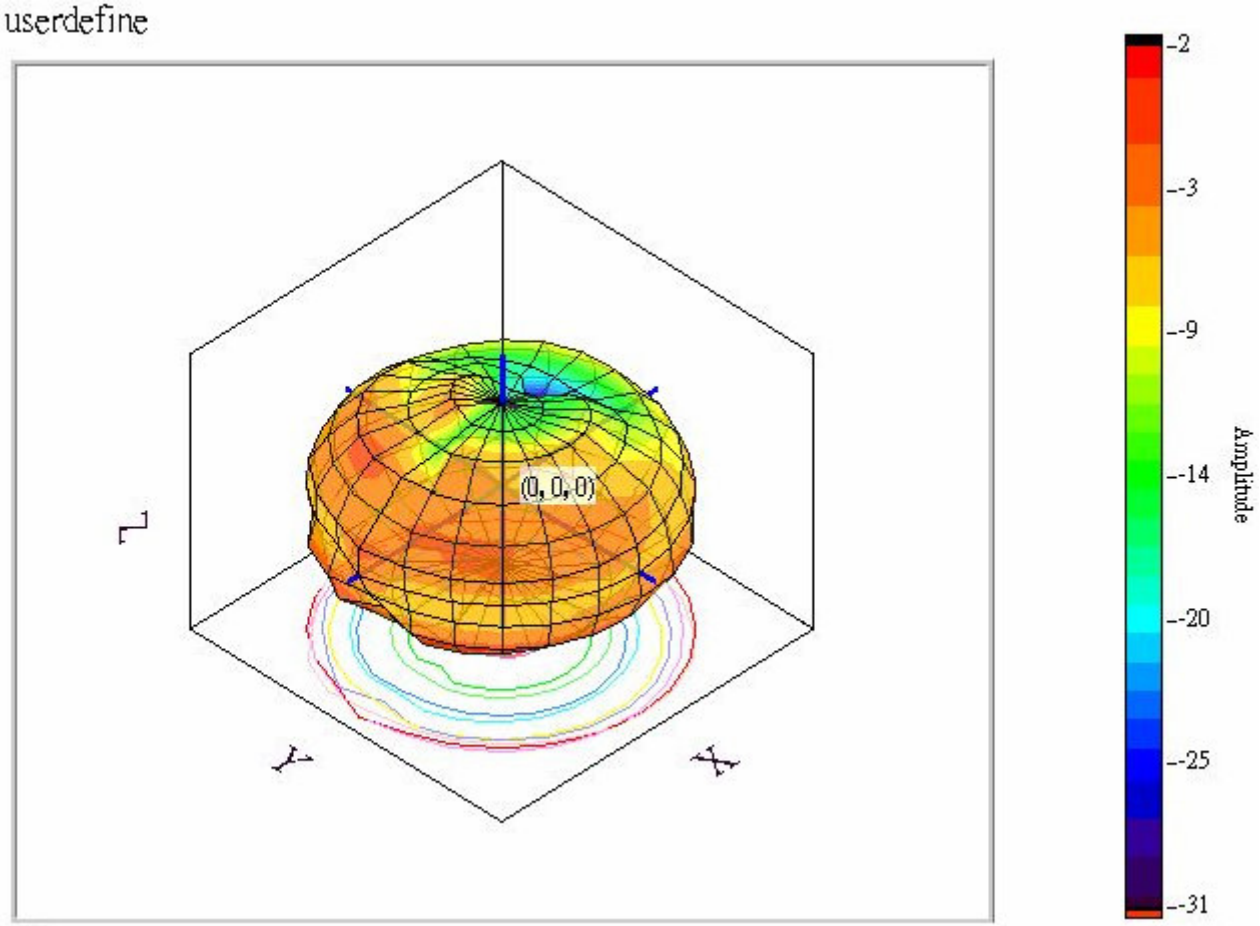
f = 2450MHz

3D Far-Field Radiation Pattern Test



f = 2483MHz

3D Far-Field Radiation Pattern Test



f = 2500MHz

Antenna Efficiency Summarization Table

Frequency (MHz)	2400	2450	2483	2500
Ant. Port Input Pwr. (dBm)	0	0	0	0
Tot. Rad. Pwr. (dBm)	-4.081	-4.862	-4.431	-4.732
Peak EIRP (dBm)	2.365	2.31	2.295	2.043
Directivity (dBi)	6.446	7.172	6.726	6.776
Efficiency (dB)	-4.081	-4.862	-4.431	-4.732
Efficiency (%)	39.075	32.642	36.053	33.635
Gain (dBi)	2.365	2.31	2.295	2.043
Boresight Phi (°)	0	0	360	360
Boresight Th. (°)	150	165	135	135
Maximum Power (dBm)	2.365	2.31	2.295	2.043
Minimum Power (dBm)	-16.395	-18.075	-27.362	-30.502
Average Power (dBm)	-4.666	-5.751	-5.679	-6.195
Max/Min Ratio (dB)	18.76	20.385	29.658	32.545
Max/Avg Ratio (dB)	6.446	7.172	6.726	6.776
Min/Avg Ratio (dB)	-12.314	-13.213	-22.932	-25.769
Average Gain (dB)	-4.081	-4.862	-4.431	-4.732
Upper Hem. PRP (dBm)	-8.043	-9.199	-8.635	-9.004
Lower Hem. PRP (dBm)	-6.857	-7.408	-6.898	-7.182
Efficiency (%)	39.075	32.642	36.053	33.635