



晶復科技股份有限公司

A Test Lab Techno Corp.

低功率射頻電機試驗報告

報告編號 2007DR49

版本(Rev.) 00

產品名稱 聲光學習小海狸

申請廠商 MATTEL ASIA PACIFIC SOURCING LIMITED

商標或廠牌 fisher-price

型式 (號) GTJ74

產品試驗依據之標準 低功率射頻電機技術規範(LP0002) 107 年 1 月 10 日

報告發行日期 109 年 07 月 24 日

填發本型式認可報告之試驗機構 (認可代號)

晶復科技股份有限公司
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財團法人全國認證基金會
認證編號 : 1330
認證有效期間 : 108.09.06 ~ 111.09.05
認可能量範圍 : 低功率射頻電機技術規範(LP0002) (頻率範圍:9 kHz to 40 GHz)
2.4 GHz 射頻電信終端設備技術規範(RTTE01)

免責聲明

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報告修訂紀錄

版本 (Rev.)	發行日期	修訂內容	修訂者
00	109 年 07 月 24 日	初版發行	江玉

低功率射頻電機測試證明書

產品名稱：聲光學習小海狸

商標：fisher-price

型號：GTJ74

申請廠商：MATTEL ASIA PACIFIC SOURCING LIMITED

申請者地址：6/F ALEXANDRA HOUSE 18 CHATER RD CENTRAL HONG KONG

製造廠商：MATTEL ASIA PACIFIC SOURCING LIMITED

製造商地址：6/F ALEXANDRA HOUSE 18 CHATER RD CENTRAL HONG KONG

待測物電壓：DC 4.5 V, 0.18 A (1.5 V x 3 "AA" Size Batteries)

試驗電壓：DC 4.5 V

量測規範：低功率射頻電機技術規範(LP0002) 107年1月10日

試驗實驗室：晶復科技股份有限公司(桃園市八德區長安街140-1號)

試驗受理日期：109 年 07 月 01 日

試驗日期：109 年 07 月 14 日

報告中所描述之測試結果與待測設備之架構組合，均根據實際量測情況作詳實的記錄。

由測試結果顯示，上述待測設備樣機確實已符合低功率射頻電機技術規範(LP0002)所規定的各項限制值。

特此證明！

審核者：



(呂 宗 霖)

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1. 一般敘述

1.1 待測設備一般敘述

本敘述僅針對產品簡單說明之，其他詳細之規格請參考使用說明書。

產 品 名 稱	聲光學習小海狸
商 標 或 廠 牌	fisher-price
型 號	GTJ74
額 定 電 源	DC 4.5 V, 0.18 A (1.5 V x 3 "AA" Size Batteries)
頻 率 使 用 範 圍	2409 - 2471 MHz
使 用 頻 道 數	3 CH
調 變 方 式	GFSK
天 線 製 造 商	COOLWAVE COMMUNICATION CO., LTD.
天 線 型 號	CW-ANT-001SK
天 線 型 態	Integral Antenna
天 線 增 益 值	3.42 dBi
主 波 電 場 強 度	Peak 94.87 dBuV/m @ 3 m

頻道表	
CH	MHz
01	2409
02	2428
03	2471

輸出/輸入埠說明：

輸 出 / 入 埠	數量	介面內容說明
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待測設備外圍說明：

電 源 線 類 別	無
附 屬 裝 置	無

1.2 其他相關聲明

本測試報告屬(以下選擇一種打■)

☒	申請新的型式檢驗認可的測試。
☐	已取得型式檢驗認可之商品,因設計變更而重新測試 (變更內容請參考產品概述)。 登錄號碼: XXXXXXXX

2. 量測儀器及測試配置說明

2.1 量測設備

For Radiated Emissions

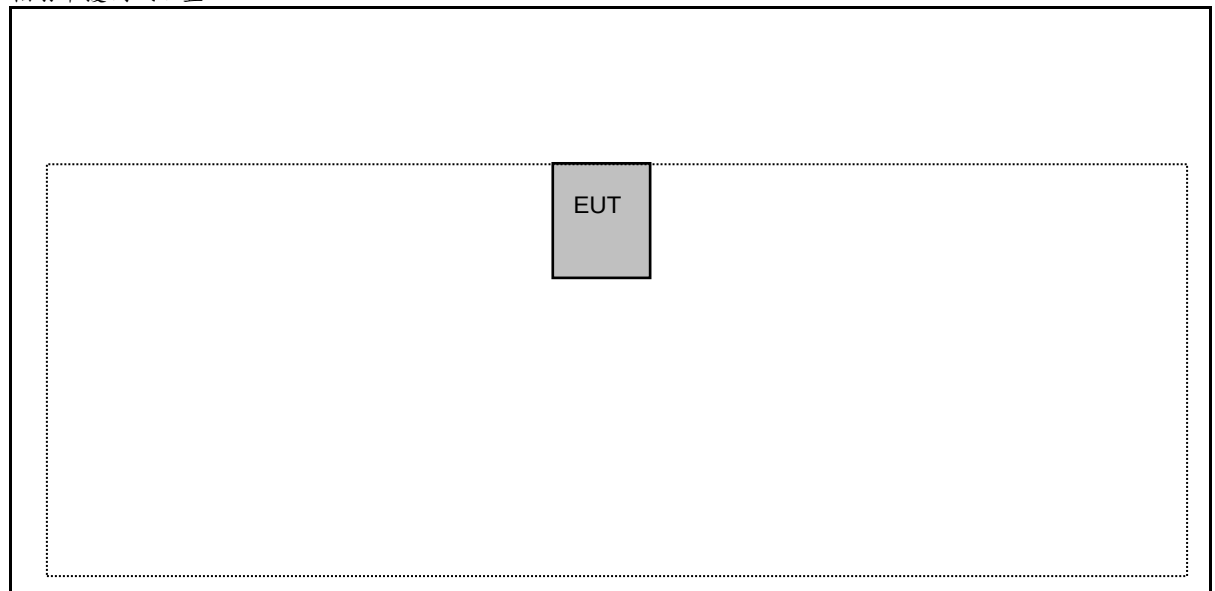
Test Period: Jul. 14, 2020

測試者: 葉佳原

名稱	廠牌	型號	序號	本次校驗日期	校驗年限
Spectrum Analyzer	Keysight	N9010A	MY52221312	01/13/2020	1 year
Pre Amplifier (1~26.5 GHz)	EMCI	EMC012645SE	980289	01/15/2020	1 year
Amplifier	Agilent	8447D	2944A11119	01/15/2020	1 year
天線	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	416	10/23/2019	1 year
天線(1~18 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	08/22/2019	1 year
天線(18~40 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	08/14/2019	1 year

2.2 檢驗系統示意圖

輻射干擾測試配置



2.3 輔助測試之週邊設備描述

下列輔助設備或配件為測試中所使用，以形成一個代表性的受測系統。

週邊名稱	商標	型號	序號	電源線	備註
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2.4 測試軟體版本

Measurement Software			
No.	Description	Software	Version
1	Conducted Emission	EZ EMC	1.1.4.3
2	Radiated Emission	EZ EMC	1.1.4.4

2.5 測試模式

Test Mode
Mode 1: Transmit Mode
Mode 2: Continuous TX Mode
Mode 3: Receive Mode

2.6 量測不確定度

下列量測不確定水準是參照量測儀器 CISPR 16-4-2 所規定之不確定度。

Test Item	Frequency Range	Uncertainty (dB)
Conducted Emission	150 kHz ~ 30 MHz	2.68
Radiated Emission	9 kHz ~ 30 MHz	2.14
	30 MHz ~ 1000 MHz	4.99
	1000 MHz ~ 18000 MHz	4.99
	18000 MHz ~ 26500 MHz	4.23
	26500 MHz ~ 40000 MHz	4.39

2.7 試驗環境

產品測試時之實驗室環境條件如下：

項目	測試項目	需求	實際
溫度 Temperature (°C)	LP0002	10 - 40	20 - 30
濕度 Humidity (%RH)		10 - 90	45 - 75

3. 測試項目與結果判定總表

本測試報告之所有項目皆依據 NCC 低功率射頻電機技術規範(LP0002)之檢驗法。

項次	測試項目	適用規範	測試結果	量測設備	結果判定
1	電源線傳導干擾	低功率射頻電機技術規範 2.3 節	請參閱 4.1 節	請參閱 2.1 節	不適用
2	場強輻射	低功率射頻電機技術規範 2.8 節、2.7 節、3.10.2.2 節	請參閱 4.2 節	請參閱 2.1 節	符合
3	諧波及指定頻帶外之發射	低功率射頻電機技術規範 3.10.2.2、3.10.2.4 節	請參閱 4.2 節	請參閱 2.1 節	符合
4	天線規格	低功率射頻電機技術規範 2.2 節	請參閱 4.3 節	-----	符合

本產品透過預測測試確認 X 和 Y 個軸中最差之結果軸向為 X 軸，因此場強輻射完整測試 X 軸並將其結果記錄於報告中。

Decision Rule

☒ Uncertainty is not included.

☐ Uncertainty is included.

4. 測試項目表列

4.1 電源線傳導干擾之量測

合格標準：

依據 NCC 低功率射頻電機技術規範(LP0002)之 2.3 節，以市電為電源之低功率射頻電機，其傳導回電源線上頻率自 150 kHz 至 30 MHz 之射頻電壓（在電源端子每一電源線對接地點）不得超過下表所列之限值。測量時應經過 50 Ω /50 μ H 之電源線阻抗模擬網路 (LISN)。頻率重疊處，以較低限值為準。

Frequency (MHz)	傳導限制值 (dBuV)	
	準峰值 (Quasi – peak)	平均值 (Average)
0.15 – 0.5	66 - 56 (註)	56 - 46 (註)
0.5 – 5	56	46
5 - 30	60	50

註：隨頻率之對數遞減。

測試方法：

測試場地為標準傳導測試場地。將待測物置於 0.8 米高的非金屬桌面，使其在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由 0.15 MHz 至 30 MHz 之間之電源線傳導放射強度。

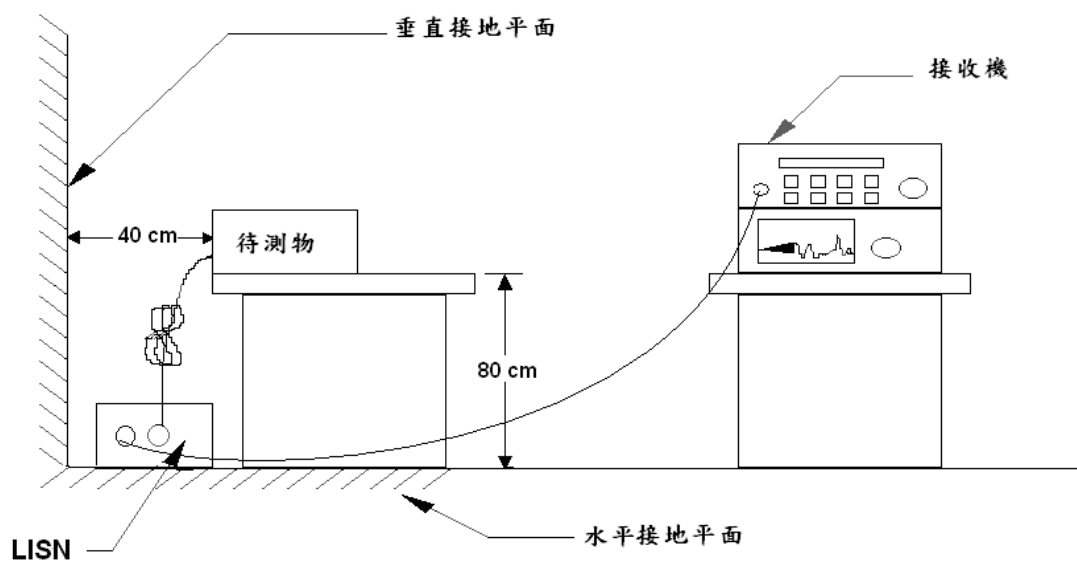
干擾值之計算

電源傳導干擾電壓之計算公式如下

結果值 = 儀器讀值(QP/AV) + 校正因子

其中校正因子為：饋線損失 + 電源阻抗模擬網路損失

測試架構圖：



測試結果：此產品透過 Battery 供電。

4.2 場強輻射之量測

合格標準:

依據 NCC 低功率射頻電機技術規範(LP0002)之 3.10.2.2 節主波發射距 3 公尺處其場強度限值如下表，3.10.2.4 除諧波外，指定頻帶外之發射應比主波低 50 dB 以上或依 2.8 節之發射限制，兩者取其較鬆者，本節之所有發設限制值係以平均值檢測儀量測，且須符合第 5.15.2 節之峰值規定。

此外，落於第 2.7 節禁用頻段之輻射發射，應符合第 2.8 節之規定。

主波頻率(MHz)	主波電場強度(mV/m)	諧波電場強度(μ V/m)
2400-2483.5	50	500

依據 NCC 低功率射頻電機技術規範第 2.7 節之規定,禁用頻段如下：

頻率(MHz)	頻率(MHz)	頻率(MHz)	頻率(MHz)
0.090~0.110	108.00~138.00	1660.0~1785.0	8025.0~8500.0
0.490~0.510	149.90~150.05	1805.0~1888.0	9000.0~9200.0
2.172~2.198	156.70~156.90	1885.0~1900.0	9300.0~9500.0
3.013~3.033	162.01~167.17	1905.0~1985.0	10600~12700
4.115~4.198	167.72~173.20	2010.0~2025.0	13250~13400
5.670~5.690	240.00~285.00	2110.0~2170.0	14470~14500
6.200~6.300	322.00~335.40	2200.0~2300.0	15350~16200
8.230~8.400	399.90~410.00	2310.0~2390.0	17700~21400
12.265~12.600	485.00~510.00	2483.5~2900.0	22010~23120
13.340~13.430	608.00~614.00	3260.0~3267.0	23600~24000
14.965~15.020	703.00~748.00	3332.0~3339.0	31200~31800
16.700~16.755	758.00~803.00	3345.8~3358.0	36430~36500
19.965~20.020	825.00~915.00	3500.0~4400.0	38600 以上
25.500~25.700	930.00~1240.0	4500.0~5250.0	
37.475~38.275	1300.0~1427.0	5350.0~5460.0	
73.500~75.400	1435.0~1626.5	7250.0~7750.0	

依據 NCC 低功率射頻電機技術規範第 2.8 節之規定,除本規範各章節另有放寬規定者外，其電場強度不得超過下表之限值，且其不必要之發射皆不得大於主波發射強度。各頻段重疊處，以較嚴格之限制值為準。

頻 率 (MHz)	電場強度 (μ V/m)	測距(m)
0.009 - 0.490(含)	2,400/頻率(千赫)	300
0.490 (不含) – 1.705 (含)	24,000/頻率(千赫)	30
1.705(不含) – 30 (不含)	30	30
30 (含) – 88 (含)	100	3
88 (不含)- 216 (含)	150	3
216 (不含)- 960 (含)	200	3
960 (不含)以上	500	3

測試方法：

測試場地為開放測試場,將待測物置於 0.8 米高的非金屬桌面,使其在工作狀態,接收天線置於 3 米外相同的高度。待測物分別要垂直或水平放置,而且桌面要 360 度旋轉,另外接收天線也要從 1.0 米至 4.0 米升降變化,以找出最大的輻射電場強度,接收天線置於水平、垂直極向各執行測試一次。

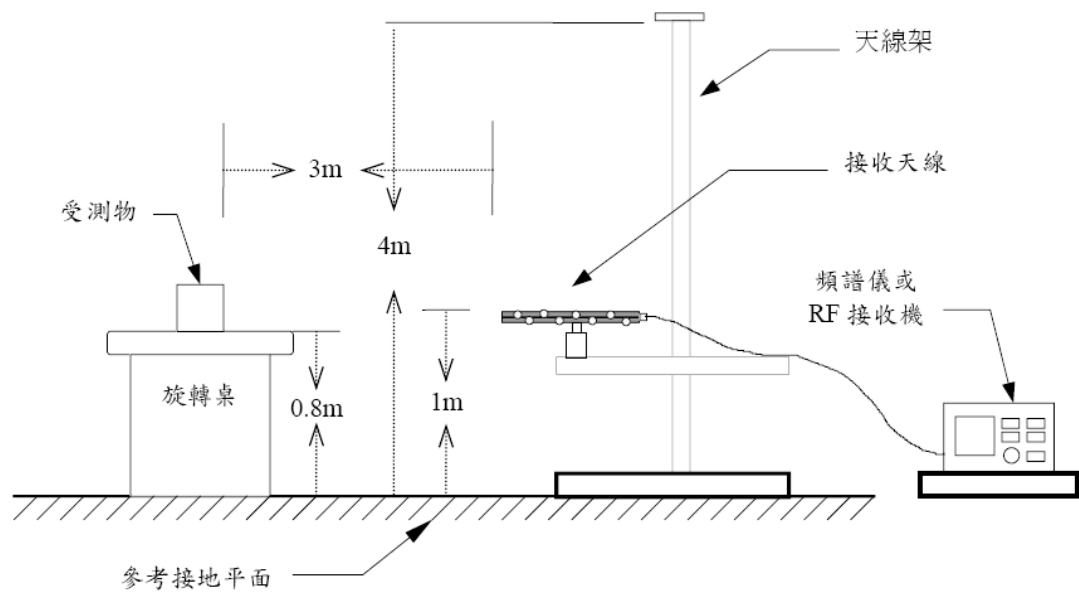
場強度之計算

場強之計算公式為：結果值 = 讀值 + 校正因子

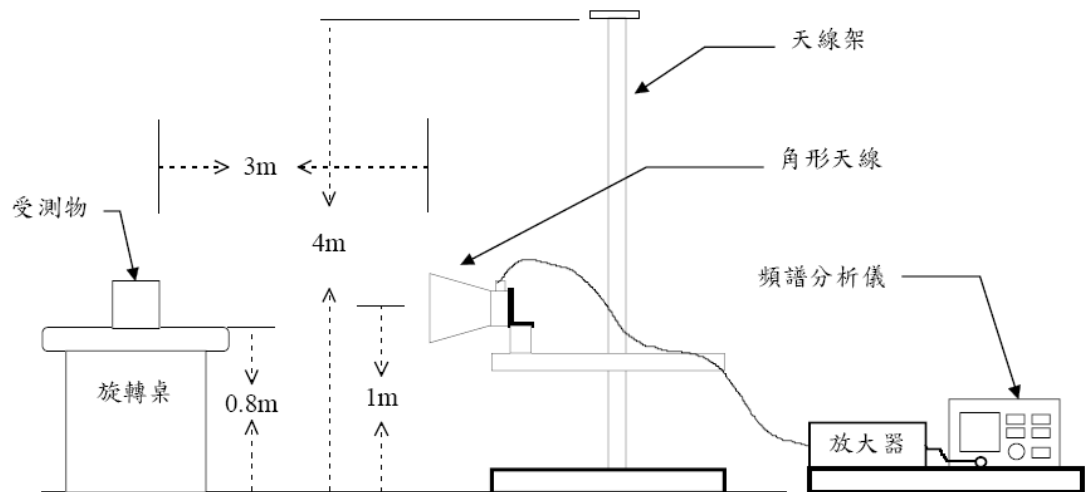
其中校正因子為：天線因子+ 饋線損失 + 濾波器損失（若有使用） - 放大器增益（若有使用）

測試架構圖：

量測頻率低於 1 GHz 以下之測試配置

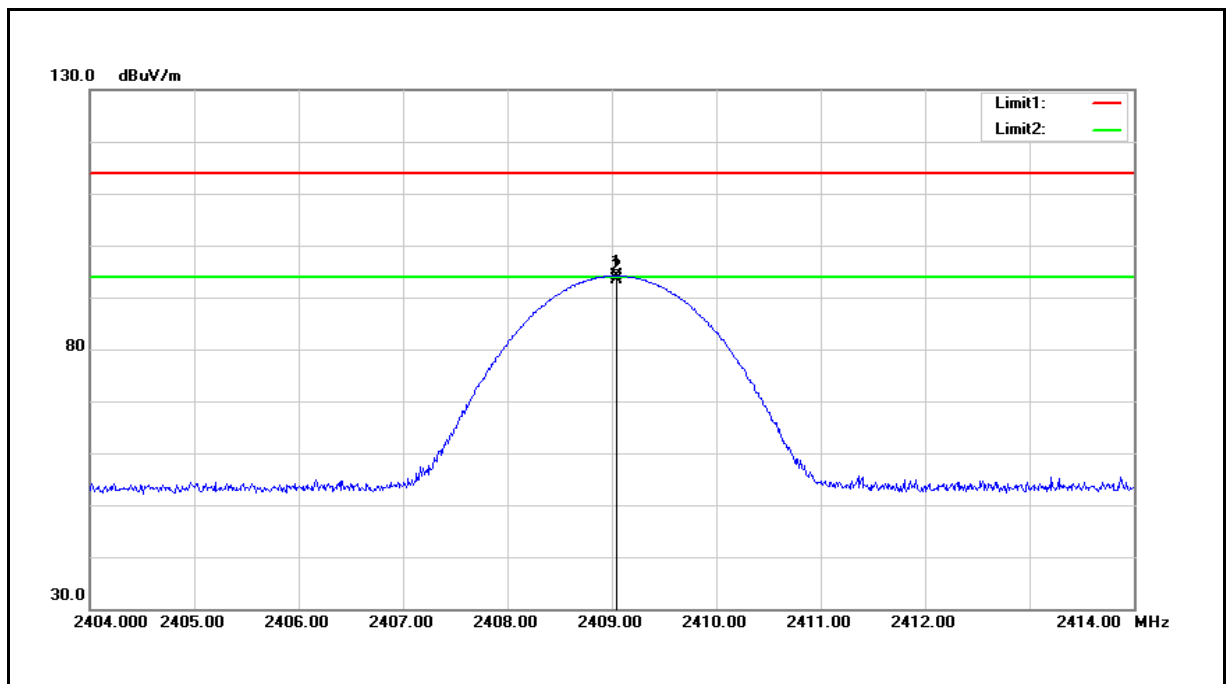


量測頻率高於 1 GHz 以上之測試配置



主波電場強度之測試結果:

Standard:	LP0002	Test Distance:	3 m
Test item:	Fundamental		
Mode:	Mode 2		
Frequency:	2409 MHz		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2409.040	108.55	-14.39	94.16	114.00	-19.84	peak
2	2409.040	107.65	-14.39	93.26	94.00	-0.74	AVG

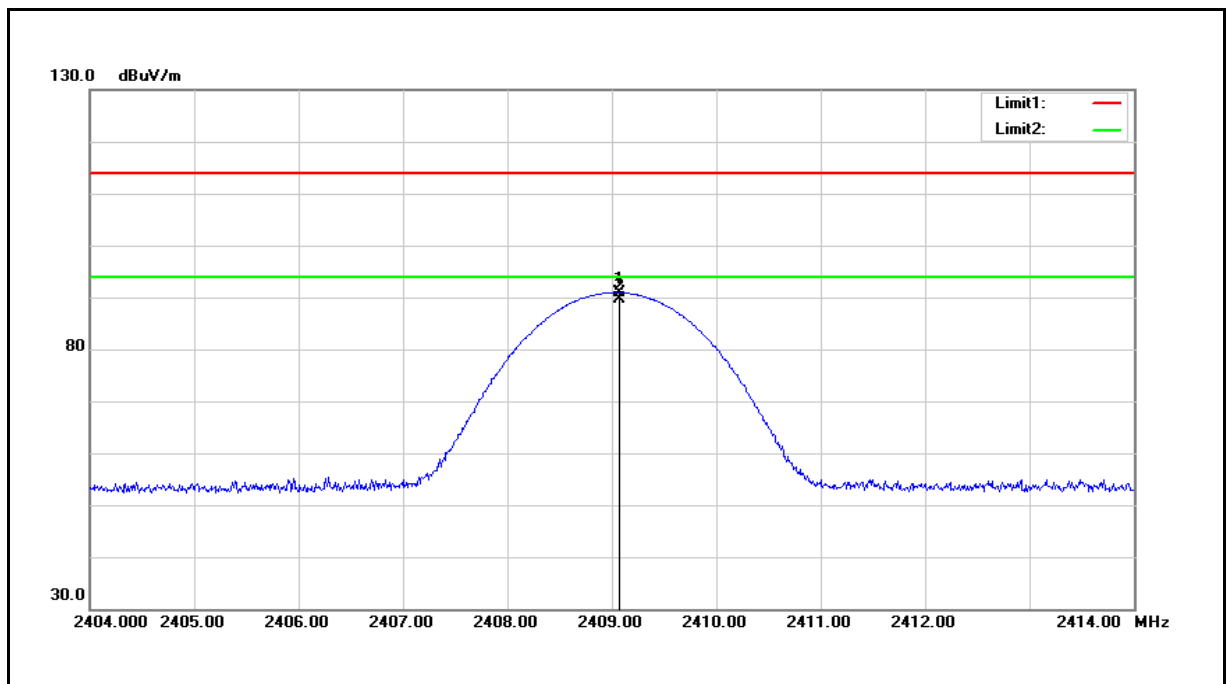
Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $94.16 = -14.39 + 108.55$

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3 m
Test item:	Fundamental		
Mode:	Mode 2		
Frequency:	2409 MHz		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2409.070	105.37	-14.39	90.98	114.00	-23.02	peak
2	2409.070	104.12	-14.39	89.73	94.00	-4.27	AVG

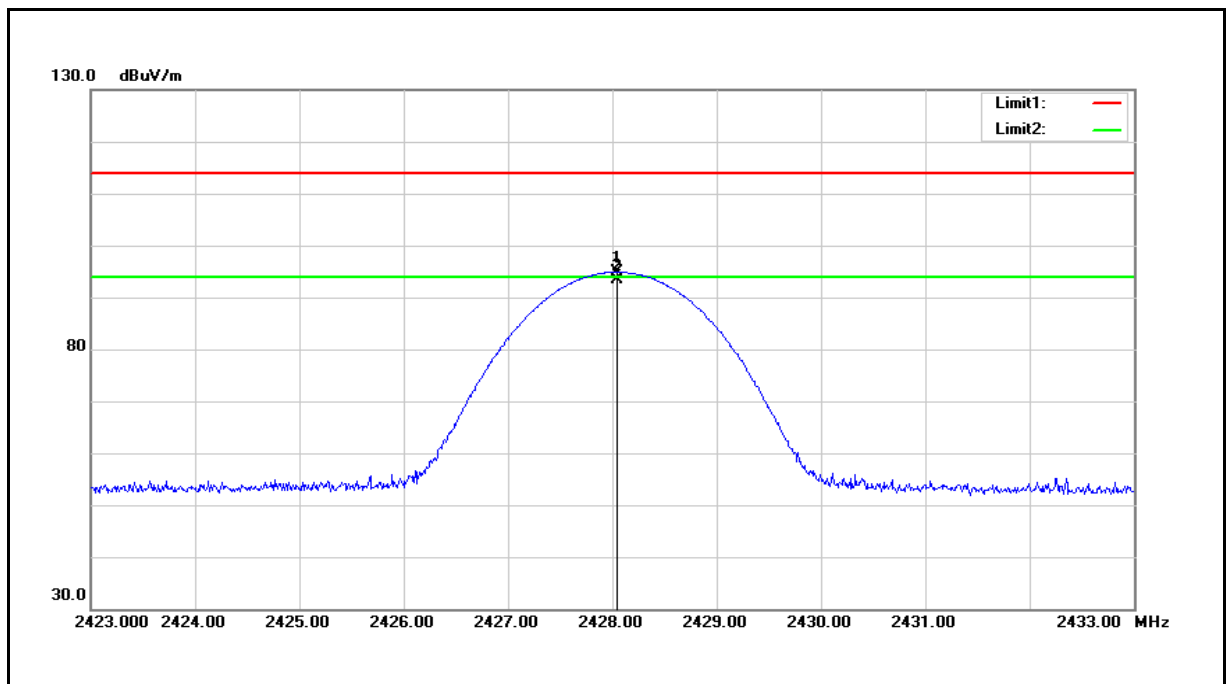
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $90.98 = -14.39 + 105.37$

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3 m
Test item:	Fundamental		
Mode:	Mode 2		
Frequency:	2428 MHz		
Ant.Polar.:	Horizontal		



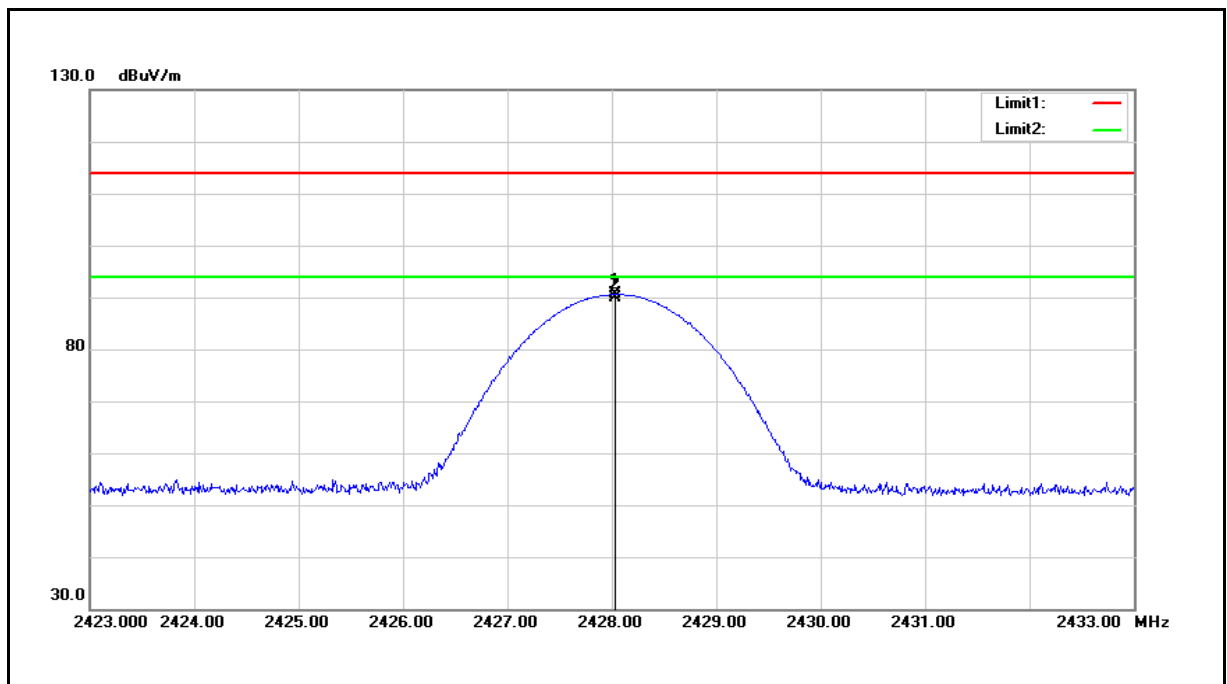
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2428.040	109.15	-14.28	94.87	114.00	-19.13	peak
2	2428.040	107.60	-14.28	93.32	94.00	-0.68	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3 m
Test item:	Fundamental		
Mode:	Mode 2		
Frequency:	2428 MHz		
Ant.Polar.:	Vertical		



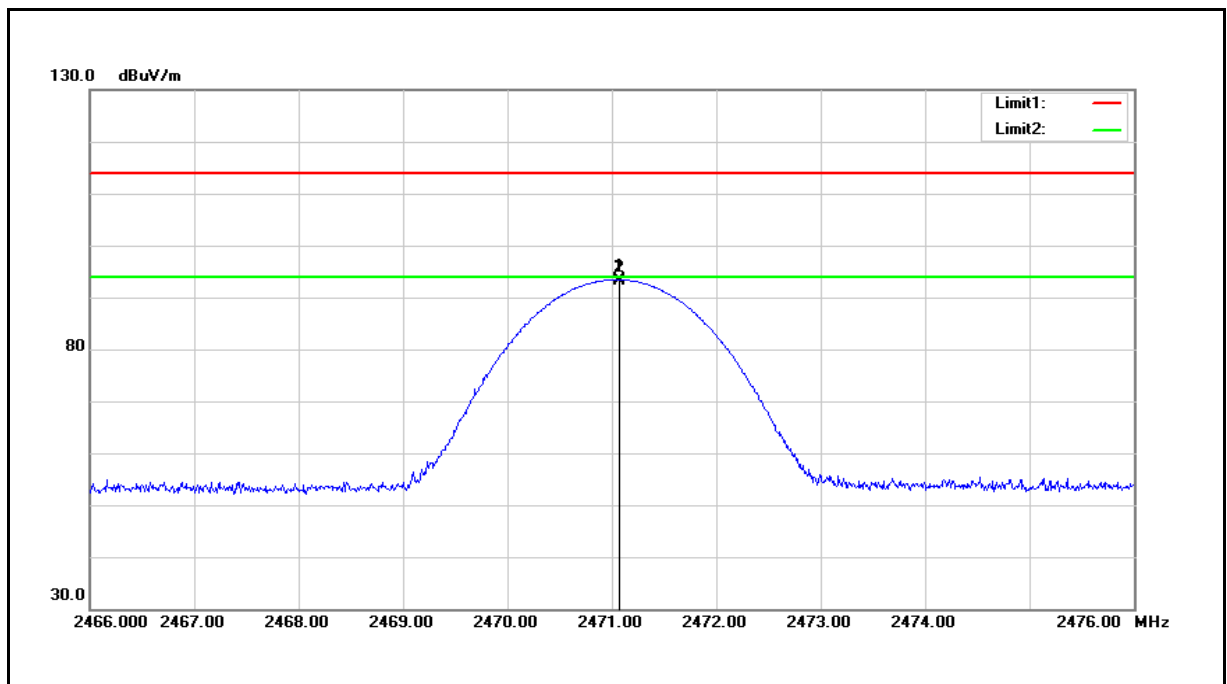
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2428.030	104.84	-14.28	90.56	114.00	-23.44	peak
2	2428.030	104.07	-14.28	89.79	94.00	-4.21	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3 m
Test item:	Fundamental		
Mode:	Mode 2		
Frequency:	2471 MHz		
Ant.Polar.:	Horizontal		



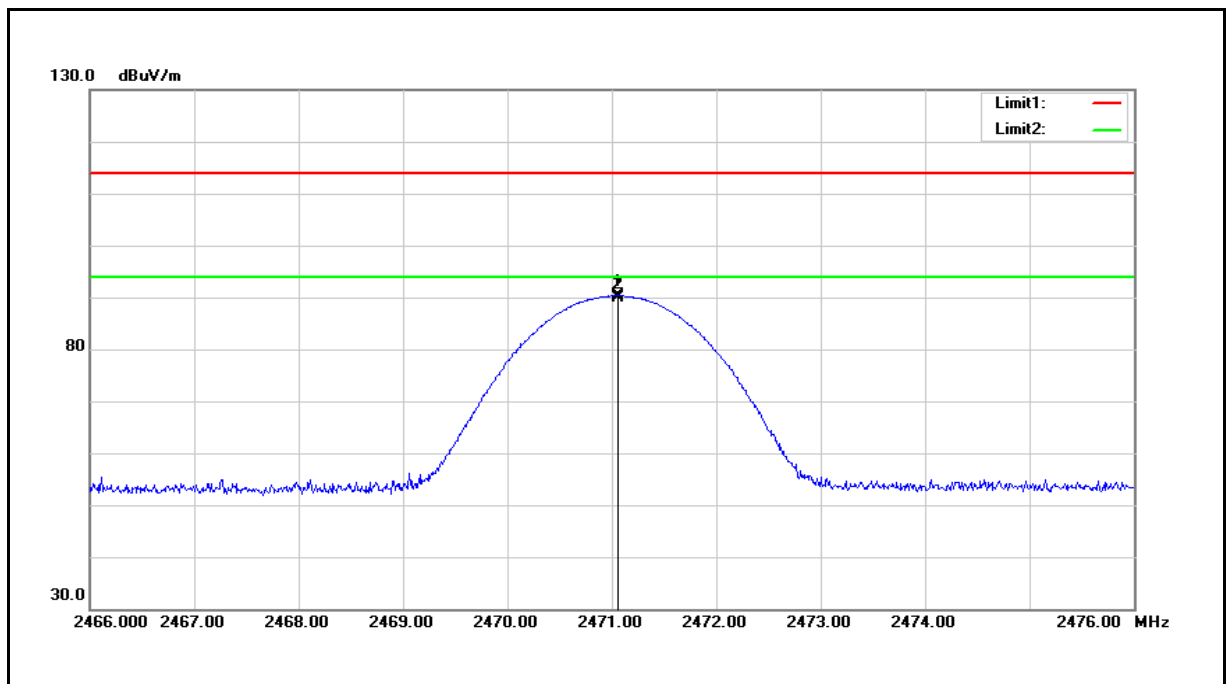
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2471.070	107.50	-14.07	93.43	114.00	-20.57	peak
2	2471.070	107.15	-14.07	93.08	94.00	-0.92	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3 m
Test item:	Fundamental		
Mode:	Mode 2		
Frequency:	2471 MHz		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2471.060	104.40	-14.07	90.33	114.00	-23.67	peak
2	2471.060	103.92	-14.07	89.85	94.00	-4.15	AVG

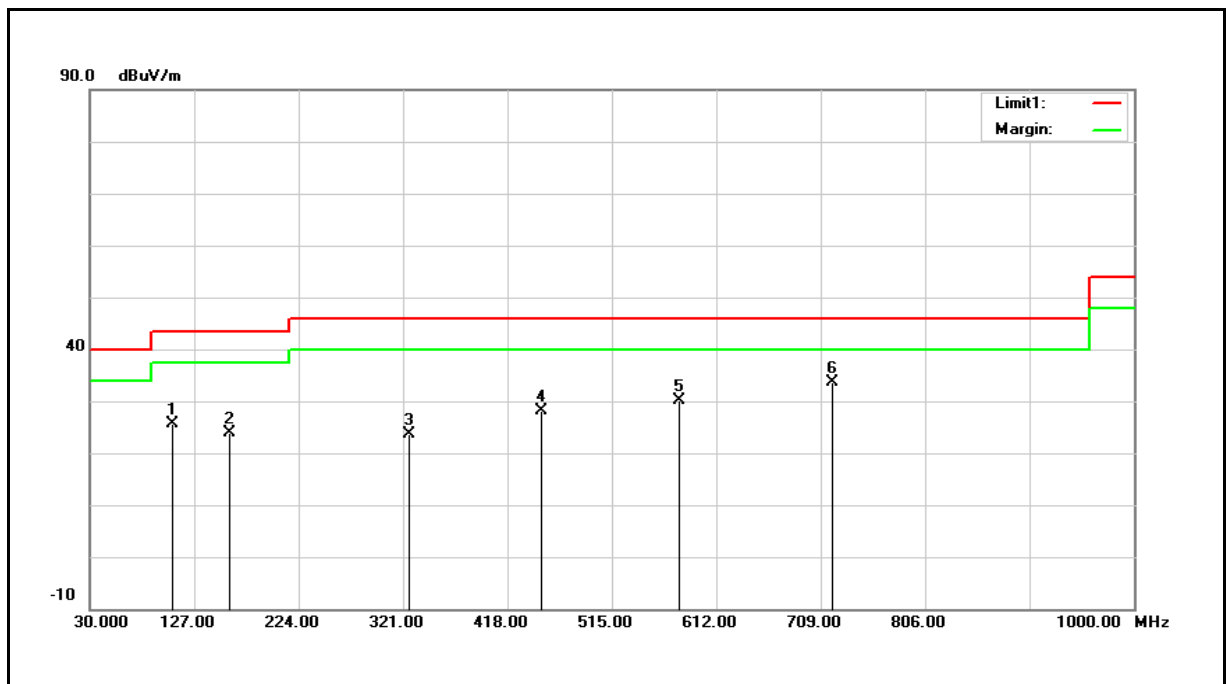
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

其它不必要之訊號(1 GHz 以下)測試結果:

Standard:	LP0002	Test Distance:	3 m
Test item:	Radiated Emission		
Frequency:	2409 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	106.6300	35.49	-9.74	25.75	43.50	-17.75	QP
2	159.9800	29.30	-5.41	23.89	43.50	-19.61	QP
3	326.8200	27.37	-3.77	23.60	46.00	-22.40	QP
4	450.0100	28.72	-0.70	28.02	46.00	-17.98	QP
5	578.0500	28.36	1.86	30.22	46.00	-15.78	QP
6	719.6700	29.10	4.43	33.53	46.00	-12.47	QP

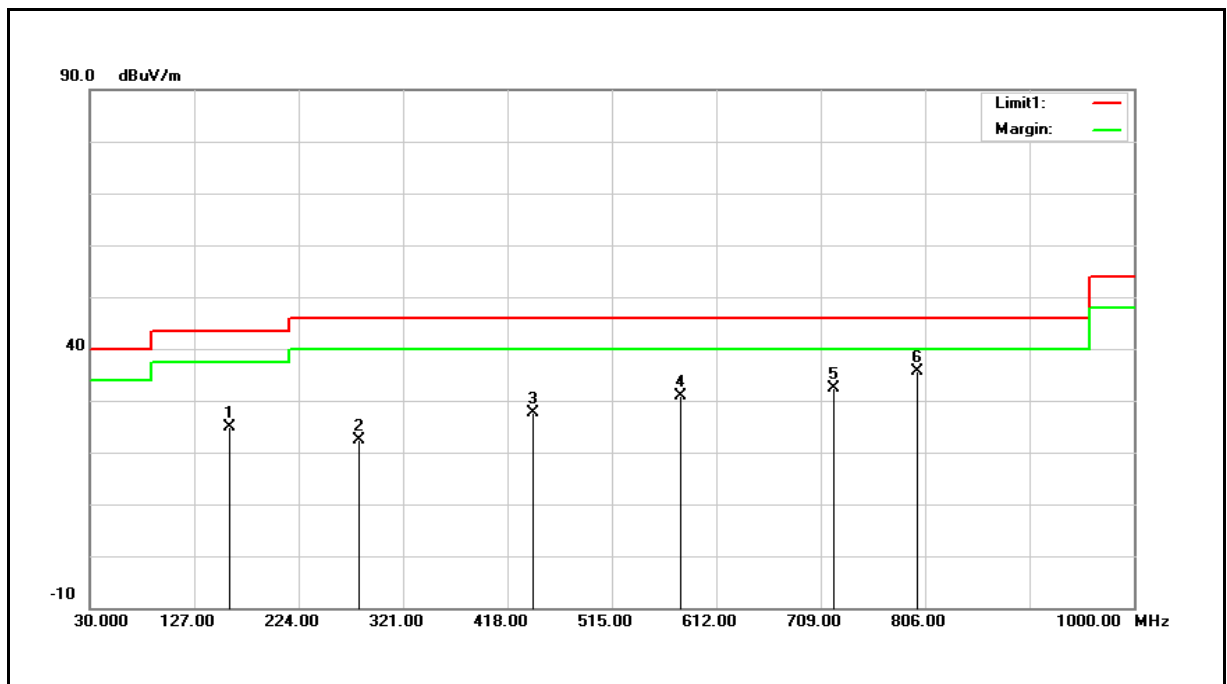
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 25.75= -9.74+35.49

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3 m
Test item:	Radiated Emission		
Frequency:	2409 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	159.9800	30.38	-5.41	24.97	43.50	-18.53	QP
2	280.2600	26.99	-4.67	22.32	46.00	-23.68	QP
3	442.2500	28.55	-0.92	27.63	46.00	-18.37	QP
4	579.0200	29.11	1.88	30.99	46.00	-15.01	QP
5	720.6400	28.01	4.46	32.47	46.00	-13.53	QP
6	798.2400	29.90	5.81	35.71	46.00	-10.29	QP

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

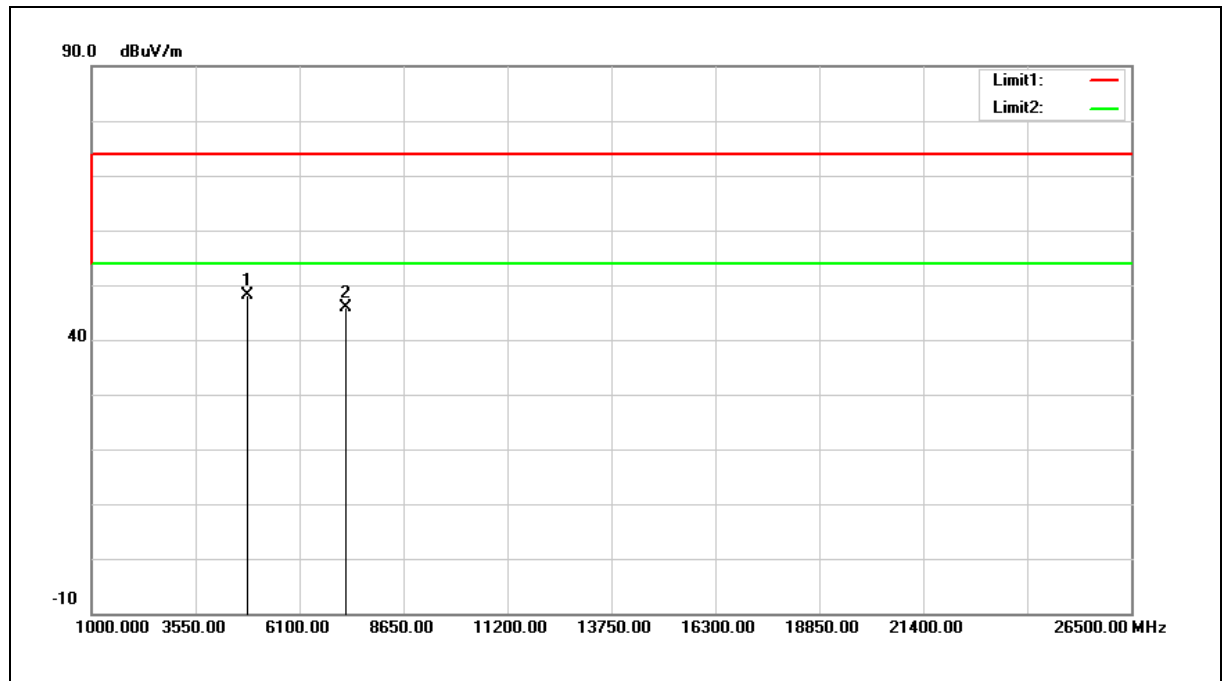
Example: $24.97 = -5.41 + 30.38$

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

場強輻射(1 GHz 以上)測試結果:

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Frequency:	2409 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4818.000	56.87	-8.63	48.24	74.00	-25.76	peak
2	7227.000	47.04	-1.10	45.94	74.00	-28.06	peak

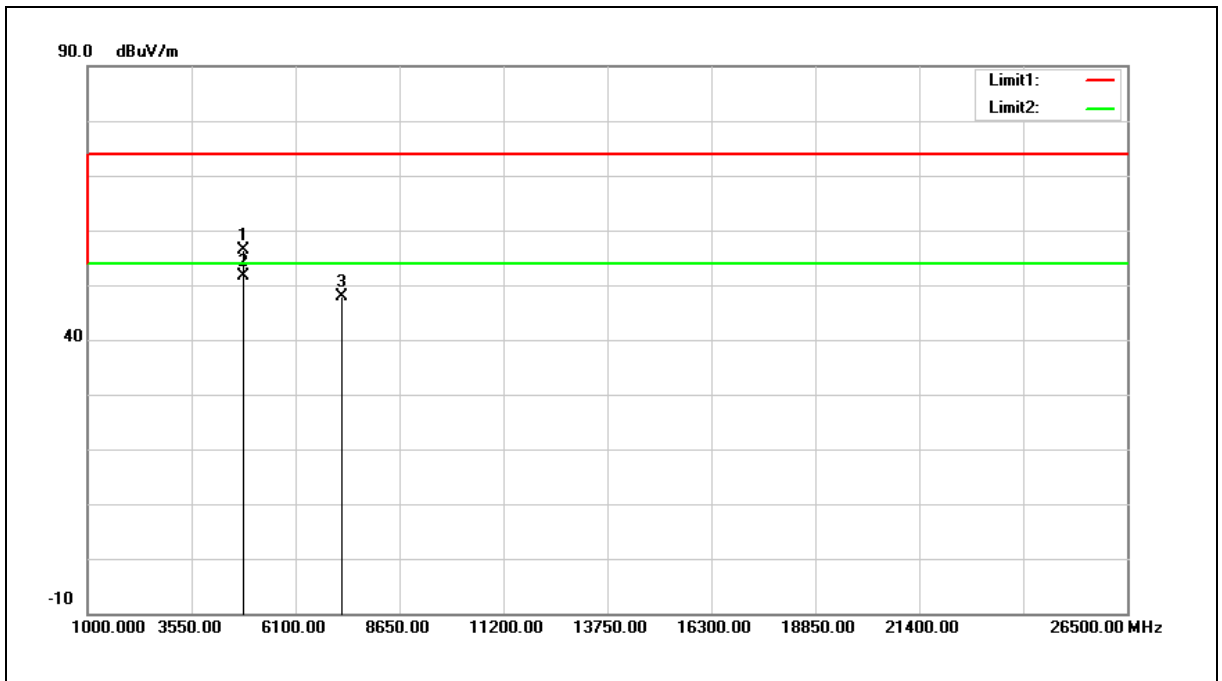
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 48.24= -8.63+56.87

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Frequency:	2409 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4818.000	64.96	-8.63	56.33	74.00	-17.67	peak
2	4818.000	60.37	-8.63	51.74	54.00	-2.26	AVG
3	7227.000	48.91	-1.10	47.81	74.00	-26.19	peak

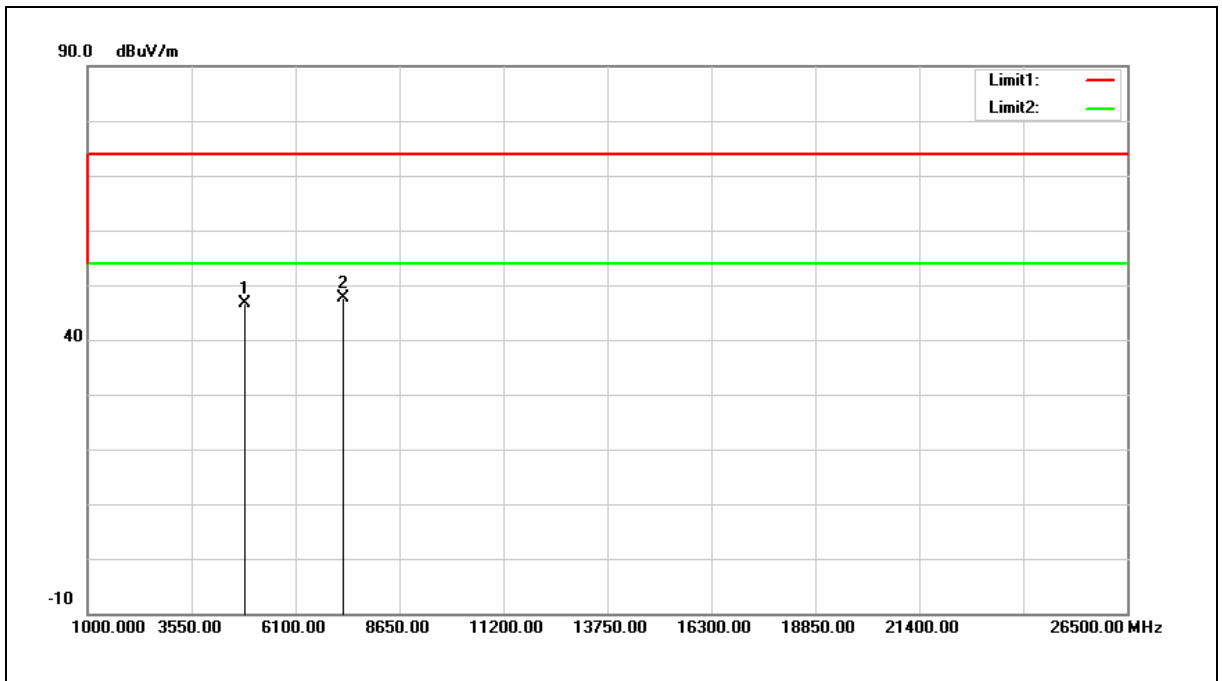
Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

Example: $56.33 = -8.63 + 64.96$

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Frequency:	2428 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



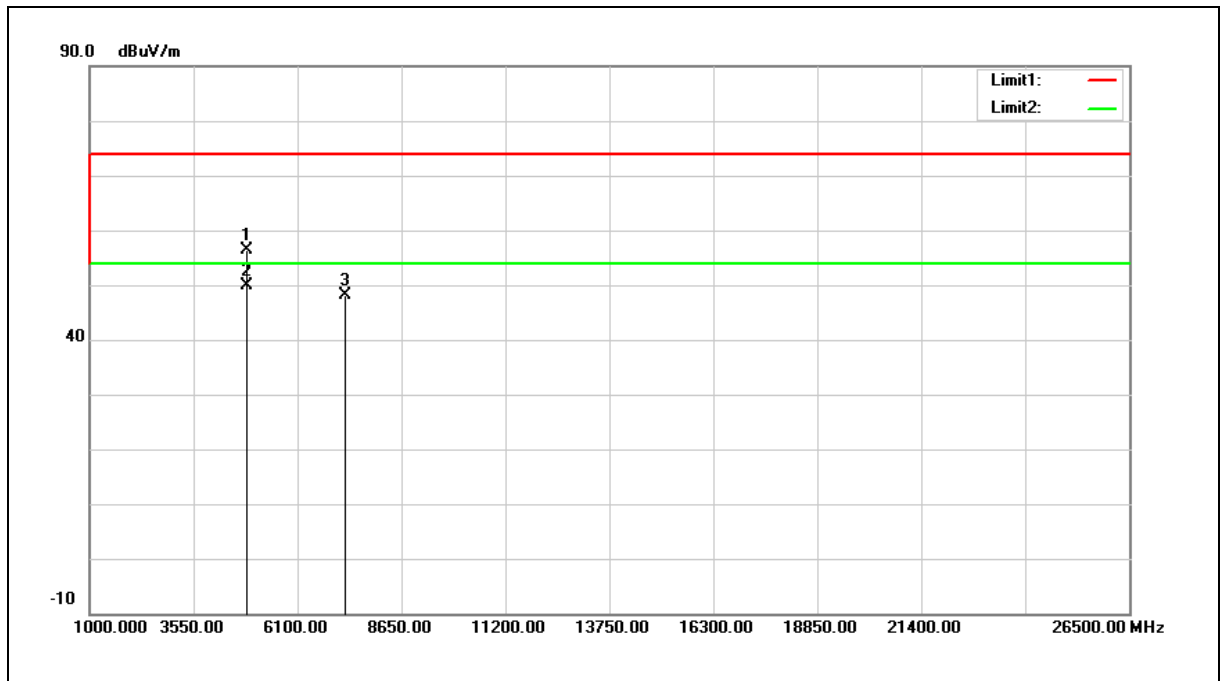
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4856.000	55.16	-8.53	46.63	74.00	-27.37	peak
2	7284.000	48.45	-0.85	47.60	74.00	-26.40	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Frequency:	2428 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



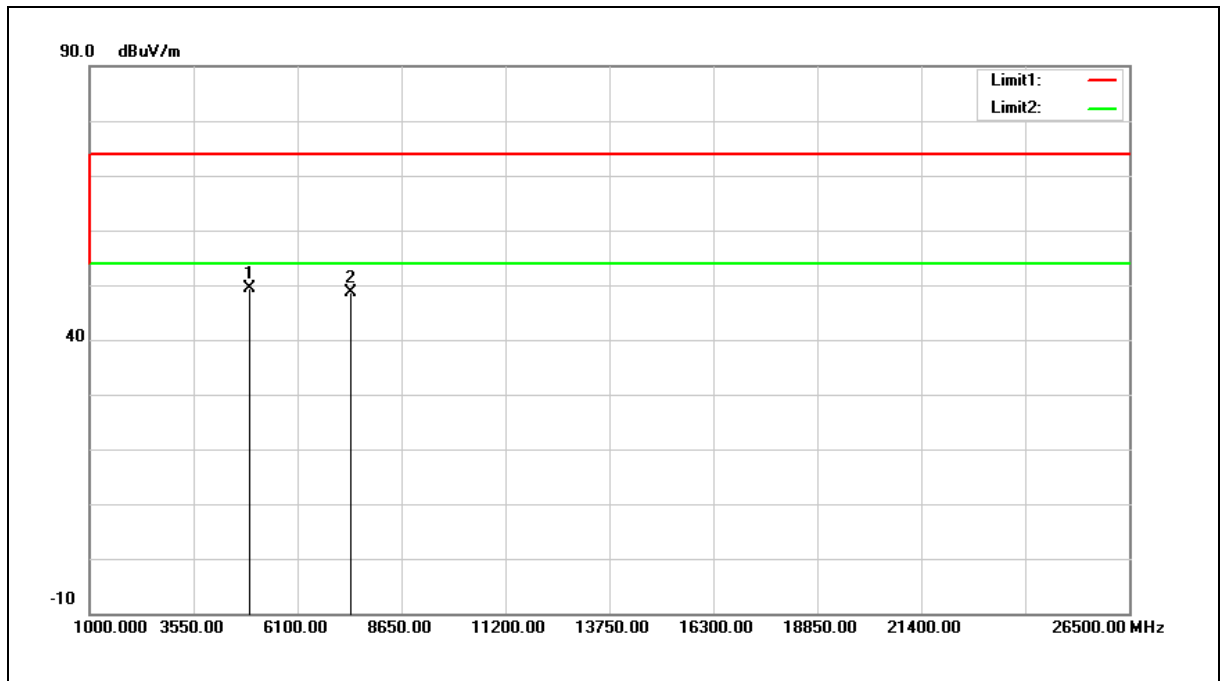
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4856.000	64.98	-8.53	56.45	74.00	-17.55	peak
2	4856.000	58.43	-8.53	49.90	54.00	-4.10	AVG
3	7284.000	48.86	-0.85	48.01	74.00	-25.99	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Frequency:	2471 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



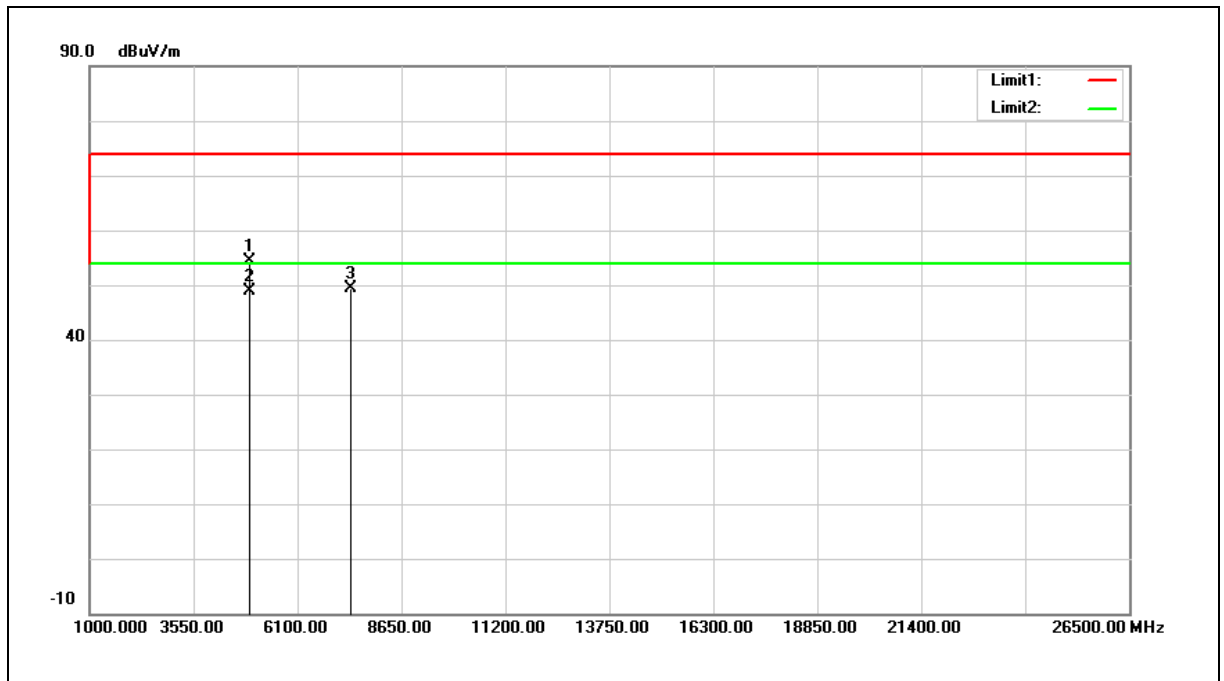
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4942.000	57.58	-8.30	49.28	74.00	-24.72	peak
2	7413.000	48.99	-0.26	48.73	74.00	-25.27	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Frequency:	2471 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



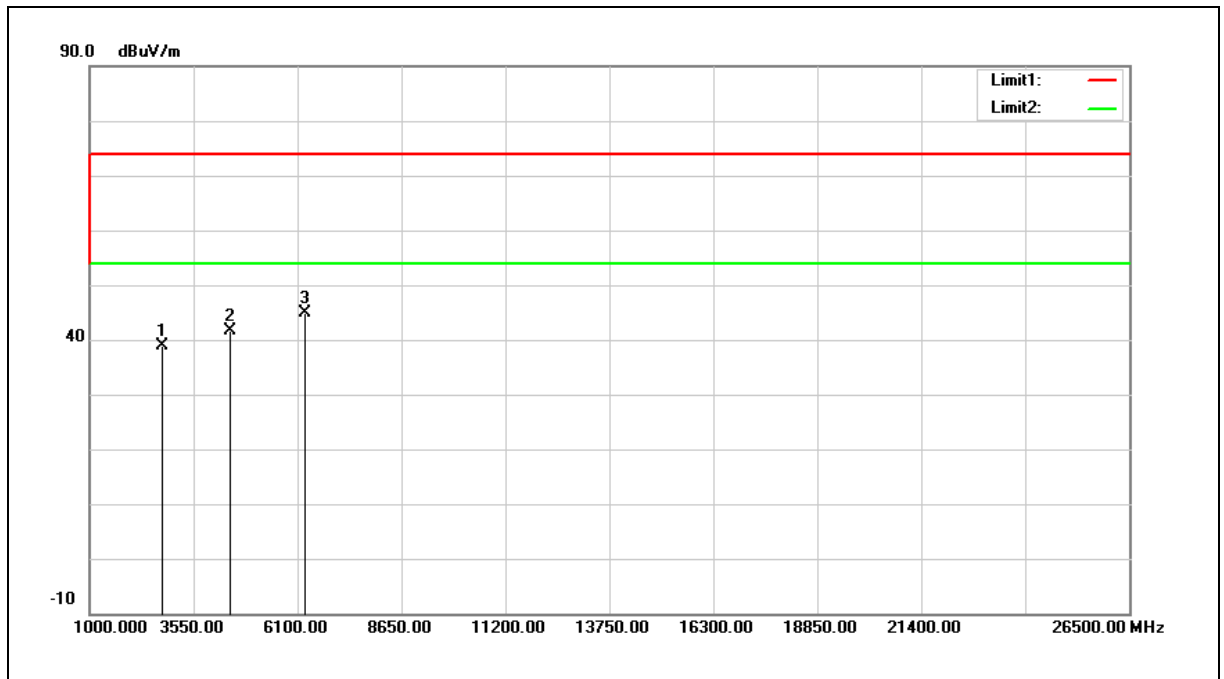
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4942.000	62.71	-8.30	54.41	74.00	-19.59	peak
2	4942.000	57.08	-8.30	48.78	54.00	-5.22	AVG
3	7413.000	49.66	-0.26	49.40	74.00	-24.60	Peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		
Description:			



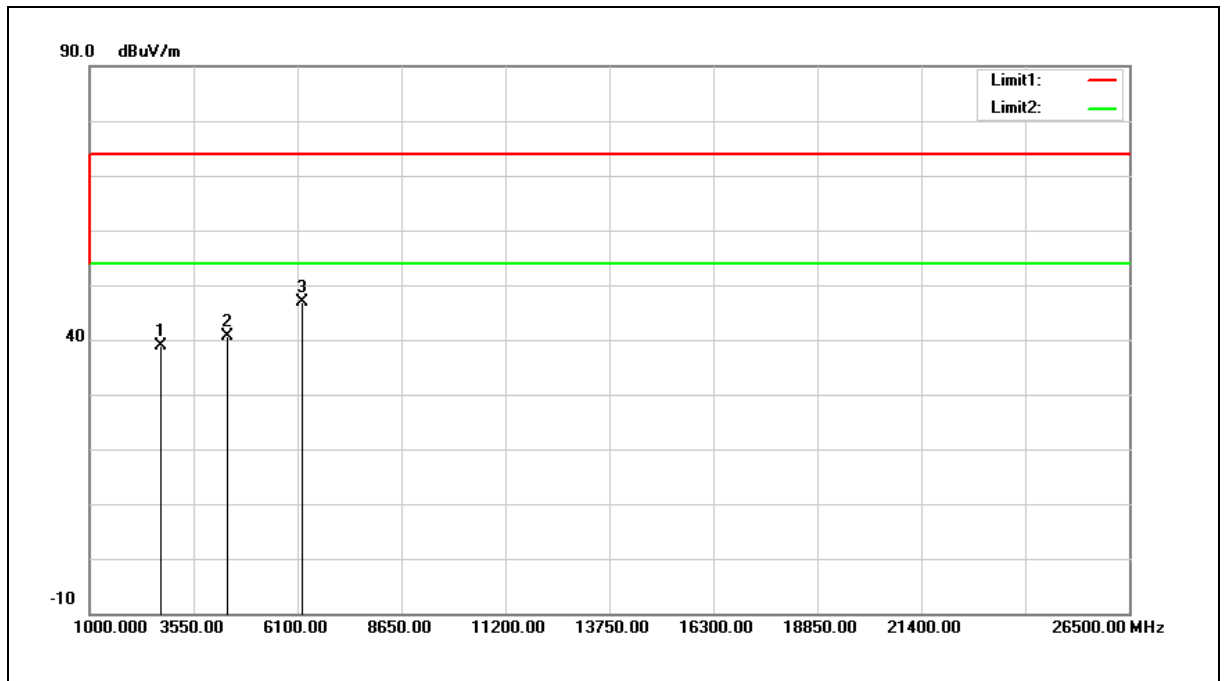
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	51.95	-13.12	38.83	74.00	-35.17	Peak
2	4451.000	51.28	-9.53	41.75	74.00	-32.25	Peak
3	6270.000	49.44	-4.58	44.86	74.00	-29.14	Peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Harmonic		
Mode:	Mode 3		
Ant.Polar.:	Vertical		
Description:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2734.000	52.11	-13.26	38.85	74.00	-35.15	Peak
2	4383.000	50.27	-9.64	40.63	74.00	-33.37	Peak
3	6219.000	51.73	-4.76	46.97	74.00	-27.03	Peak

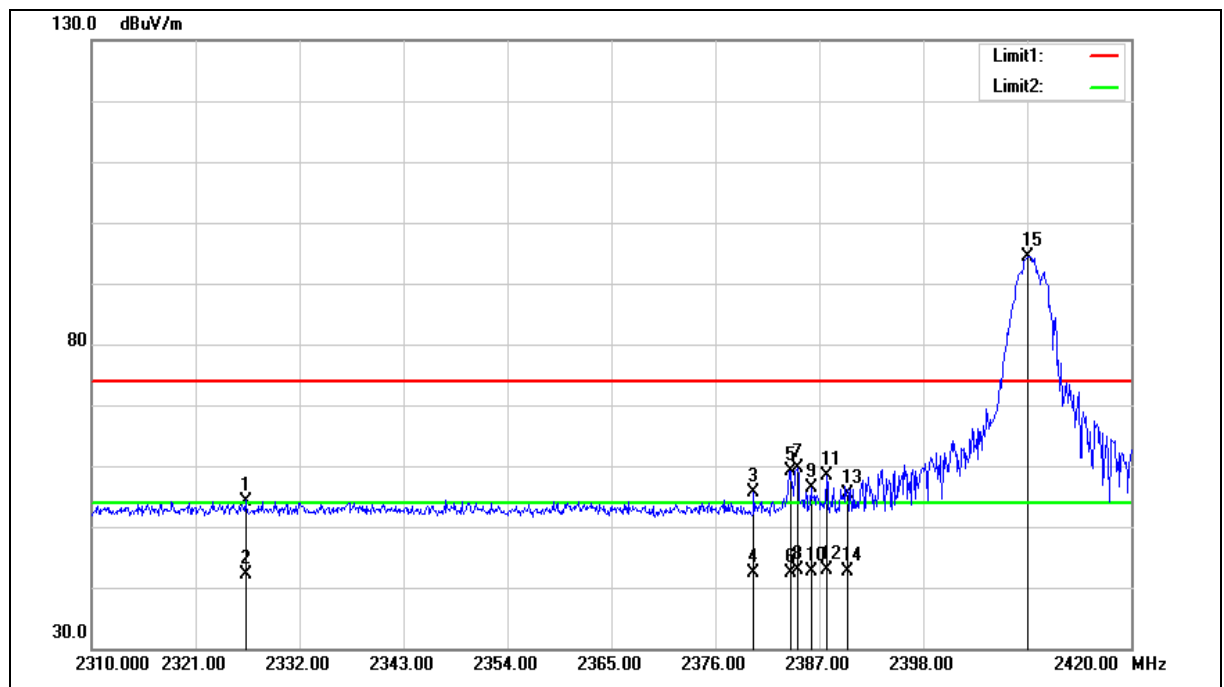
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

頻帶邊緣測試結果:

Standard:	LP0002	Test Distance:	3m
Test item:	Band edge		
Frequency:	2409 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2326.280	69.06	-14.81	54.25	74.00	-19.75	peak
2	2326.280	56.91	-14.81	42.10	54.00	-11.90	AVG
3	2380.070	70.25	-14.54	55.71	74.00	-18.29	peak
4	2380.070	56.85	-14.54	42.31	54.00	-11.69	AVG
5	2383.920	73.62	-14.51	59.11	74.00	-14.89	peak
6	2383.920	56.78	-14.51	42.27	54.00	-11.73	AVG
7	2384.690	74.12	-14.51	59.61	74.00	-14.39	peak
8	2384.690	57.31	-14.51	42.80	54.00	-11.20	AVG
9	2386.120	70.87	-14.51	56.36	74.00	-17.64	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Band edge		
Frequency:	2409 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		

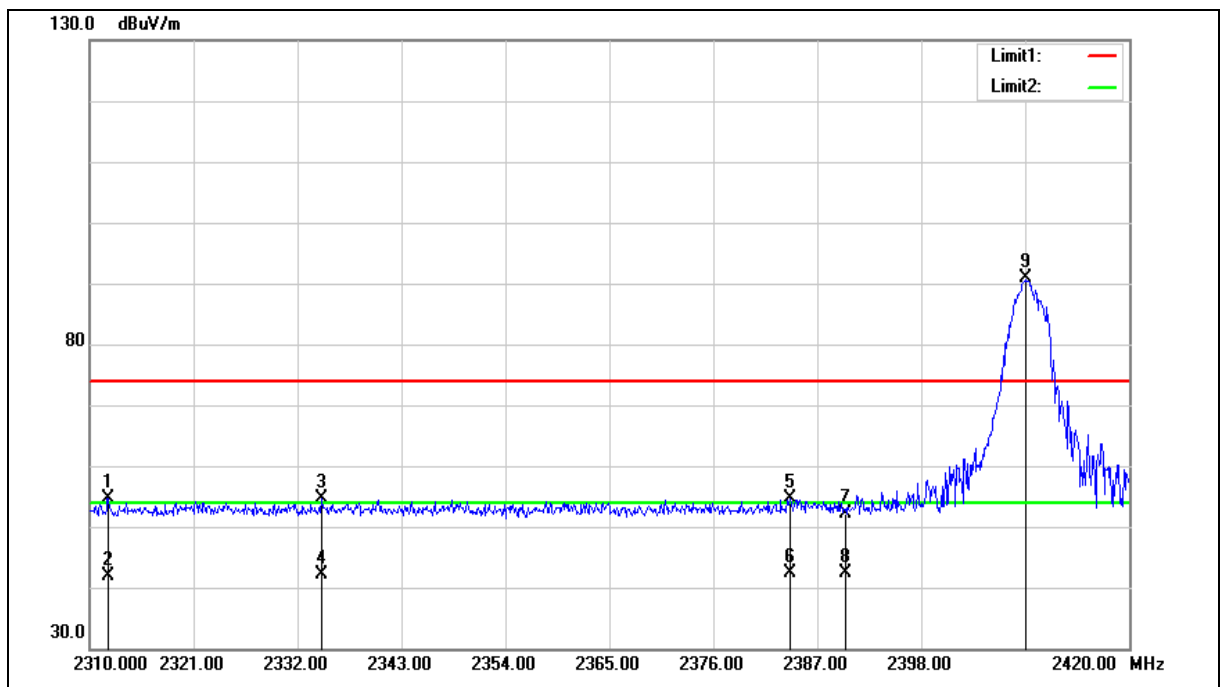
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10	2386.120	57.14	-14.51	42.63	54.00	-11.37	AVG
11	2387.770	72.93	-14.49	58.44	74.00	-15.56	peak
12	2387.770	57.44	-14.49	42.95	54.00	-11.05	AVG
13	2390.000	69.86	-14.48	55.38	74.00	-18.62	peak
14	2390.000	57.20	-14.48	42.72	54.00	-11.28	AVG
15	2409.000	108.72	-14.39	94.33	--	--	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Band edge		
Frequency:	2409 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



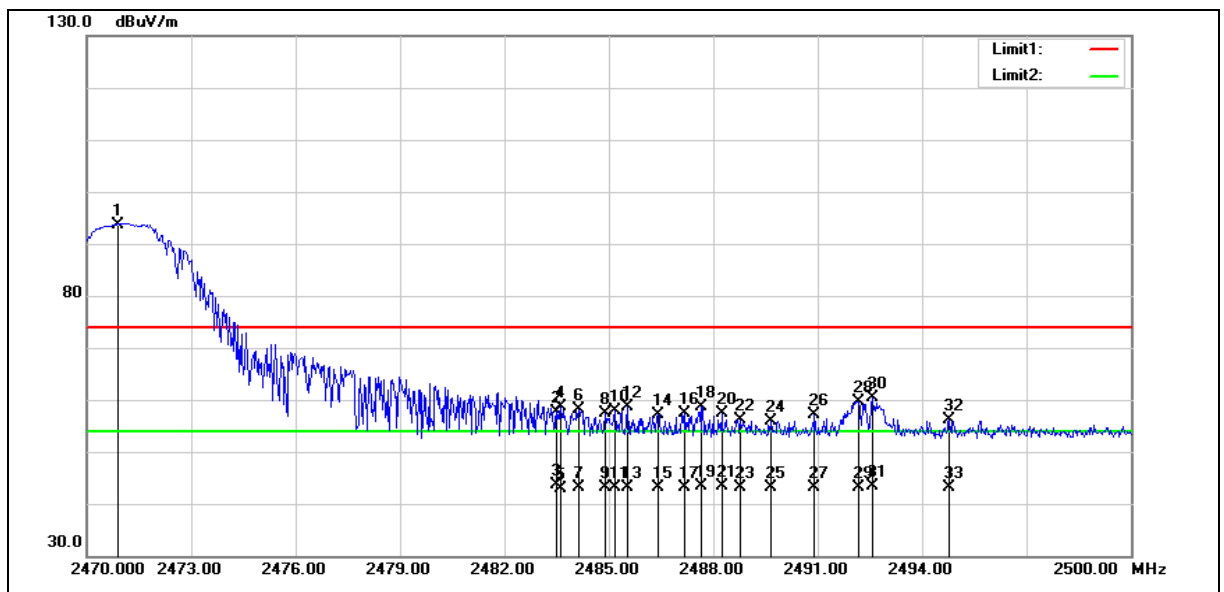
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2311.980	69.56	-14.88	54.68	74.00	-19.32	peak
2	2311.980	56.78	-14.88	41.90	54.00	-12.10	AVG
3	2334.530	69.41	-14.76	54.65	74.00	-19.35	peak
4	2334.530	56.84	-14.76	42.08	54.00	-11.92	AVG
5	2384.140	69.03	-14.51	54.52	74.00	-19.48	peak
6	2384.140	56.82	-14.51	42.31	54.00	-11.69	AVG
7	2390.000	66.63	-14.48	52.15	74.00	-21.85	peak
8	2390.000	56.74	-14.48	42.26	54.00	-11.74	AVG
9	2409.110	105.20	-14.39	90.81	--	--	peak

Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) - Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Band edge		
Frequency:	2471 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2470.900	107.63	-14.07	93.56	--	--	peak
2	2483.500	71.60	-14.01	57.59	74.00	-16.41	peak
3	2483.500	57.54	-14.01	43.53	54.00	-10.47	AVG
4	2483.620	72.54	-14.01	58.53	74.00	-15.47	peak
5	2483.620	56.99	-14.01	42.98	54.00	-11.02	AVG
6	2484.130	72.02	-14.00	58.02	74.00	-15.98	peak
7	2484.130	57.09	-14.00	43.09	54.00	-10.91	AVG
8	2484.910	71.38	-14.00	57.38	74.00	-16.62	peak
9	2484.910	57.12	-14.00	43.12	54.00	-10.88	AVG
10	2485.180	71.91	-14.00	57.91	74.00	-16.09	peak
11	2485.180	57.20	-14.00	43.20	54.00	-10.80	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Band edge		
Frequency:	2471 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		

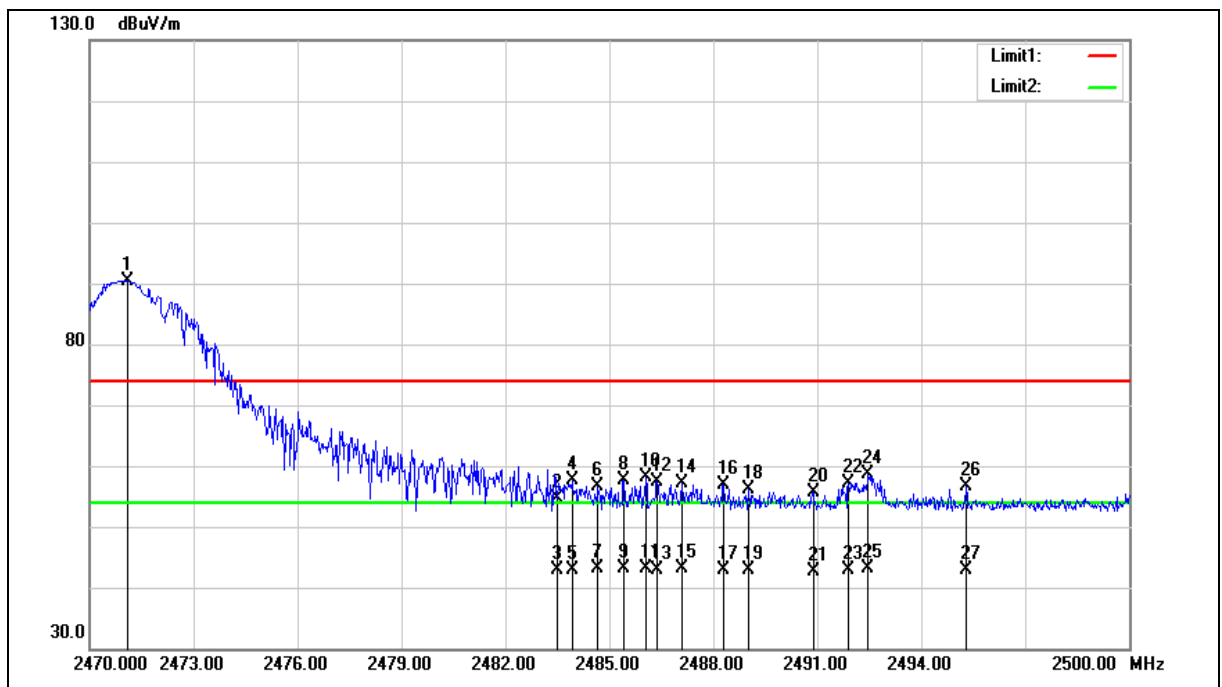
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
12	2485.540	72.57	-13.99	58.58	74.00	-15.42	peak
13	2485.540	57.11	-13.99	43.12	54.00	-10.88	AVG
14	2486.410	71.22	-13.99	57.23	74.00	-16.77	peak
15	2486.410	57.10	-13.99	43.11	54.00	-10.89	AVG
16	2487.190	71.43	-13.98	57.45	74.00	-16.55	peak
17	2487.190	57.15	-13.98	43.17	54.00	-10.83	AVG
18	2487.670	72.55	-13.98	58.57	74.00	-15.43	peak
19	2487.670	57.25	-13.98	43.27	54.00	-10.73	AVG
20	2488.240	71.29	-13.98	57.31	74.00	-16.69	peak
21	2488.240	57.33	-13.98	43.35	54.00	-10.65	AVG
22	2488.780	70.05	-13.98	56.07	74.00	-17.93	peak
23	2488.780	57.02	-13.98	43.04	54.00	-10.96	AVG
24	2489.650	69.97	-13.98	55.99	74.00	-18.01	peak
25	2489.650	57.08	-13.98	43.10	54.00	-10.90	AVG
26	2490.910	71.19	-13.97	57.22	74.00	-16.78	peak
27	2490.910	57.04	-13.97	43.07	54.00	-10.93	AVG
28	2492.170	73.57	-13.96	59.61	74.00	-14.39	peak
29	2492.170	57.03	-13.96	43.07	54.00	-10.93	AVG
30	2492.560	74.38	-13.96	60.42	74.00	-13.58	peak
31	2492.560	57.26	-13.96	43.30	54.00	-10.70	AVG
32	2494.780	70.07	-13.95	56.12	74.00	-17.88	peak
33	2494.780	57.06	-13.95	43.11	54.00	-10.89	AVG

Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Band edge		
Frequency:	2471 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2471.080	104.43	-14.07	90.36	--	--	peak
2	2483.500	68.64	-14.01	54.63	74.00	-19.37	peak
3	2483.500	56.94	-14.01	42.93	54.00	-11.07	AVG
4	2483.920	71.54	-14.00	57.54	74.00	-16.46	peak
5	2483.920	56.90	-14.00	42.90	54.00	-11.10	AVG
6	2484.670	70.57	-14.00	56.57	74.00	-17.43	peak
7	2484.670	57.19	-14.00	43.19	54.00	-10.81	AVG
8	2485.420	71.69	-14.00	57.69	74.00	-16.31	peak
9	2485.420	57.05	-14.00	43.05	54.00	-10.95	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

Standard:	LP0002	Test Distance:	3m
Test item:	Band edge		
Frequency:	2471 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10	2486.050	72.10	-13.99	58.11	74.00	-15.89	peak
11	2486.050	57.12	-13.99	43.13	54.00	-10.87	AVG
12	2486.380	71.36	-13.99	57.37	74.00	-16.63	peak
13	2486.380	56.86	-13.99	42.87	54.00	-11.13	AVG
14	2487.100	71.14	-13.98	57.16	74.00	-16.84	peak
15	2487.100	57.00	-13.98	43.02	54.00	-10.98	AVG
16	2488.300	70.86	-13.98	56.88	74.00	-17.12	peak
17	2488.300	56.90	-13.98	42.92	54.00	-11.08	AVG
18	2489.020	70.09	-13.98	56.11	74.00	-17.89	peak
19	2489.020	56.80	-13.98	42.82	54.00	-11.18	AVG
20	2490.880	69.71	-13.97	55.74	74.00	-18.26	peak
21	2490.880	56.72	-13.97	42.75	54.00	-11.25	AVG
22	2491.900	71.16	-13.96	57.20	74.00	-16.80	peak
23	2491.900	56.93	-13.96	42.97	54.00	-11.03	AVG
24	2492.470	72.56	-13.96	58.60	74.00	-15.40	peak
25	2492.470	57.08	-13.96	43.12	54.00	-10.88	AVG
26	2495.290	70.63	-13.95	56.68	74.00	-17.32	peak
27	2495.290	56.74	-13.95	42.79	54.00	-11.21	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3.When the peak results are less than average limit, so not need to evaluate the average.

4.3 天線規格之要求

合格標準:

依據 NCC 低功率射頻電機技術規範(LP0002)之 2.2 節之要求，低功率射頻電機之發射機或收發信機所使用之天線，除 NCC 低功率射頻電機技術規範(LP0002)中另有規定外，應為全固定、半固定式或以獨特之耦合(unique coupling)方式連接機體。製造者可設計供使用者因損壞而替換之天線，但不得設計或使用原認證以外之天線或可供引接各類電纜之標準天線插座或電氣連接頭，如：BNC、F type、N type、M type、UG type、RCA、SMA、SMB...等及其他各類工業或通訊標準接頭。

判定結果:

符合。

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