



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	1903DR76
版本(Rev.)	01
產品名稱	WIFI BT Module
申請廠商	寶力數位有限公司
商標或廠牌	BONNIE
型式 (號)	CCS1001
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	108 年 05 月 03 日

填發本型式認可報告之試驗機構 (認可代號)

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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 : 105.09.06 ~ 108.09.05

認可能量範圍 : 低功率射頻電機技術規範(LP0002)

2.4 GHz 射頻電信終端設備技術規範(RTTE01)



實驗室聲明

本測試報告內之測試結果可藉由測試儀器設備之校正報告與本報告內所評估量測不確定度追溯至國家或國際標準。

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低功率射頻電機測試證明書

發行日期：108年05月03日

產品名稱：WIFI BT Module
商標：BONNIE
型號：CCS1001
申請廠商：寶力數位有限公司
申請者地址：高雄市前鎮區和平二路205號地下一樓
製造廠商：Redpine Signals Inc
製造商地址：2107 N.First Street, Suite 680, San Jose, California, 95131-2019, United States
待測物電壓：DC 1.8 V, 0.4 A / DC 3.3 V, 0.4 A
試驗電壓：DC 3.3 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：107 年 10 月 24 號
樣品接受日期：107 年 11 月 06 號
試驗完成日期：108 年 03 月 25 號

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！

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本測試報告所敘述之測試結果，僅對客戶所提供之測試樣品，在此測試報告所述及之測試條件下所實施之量測有效。

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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	WIFI BT Module				
商 標 或 廠 牌	BONNIE				
型 號	CCS1001				
額 定 電 源	DC 1.8 V, 0.4 A / DC 3.3 V, 0.4 A				
調 變 方 式	GFSK				
頻 率 使 用 範 圍	2402 MHz – 2480 MHz				
天 線 資 訊	廠牌	型號	型態	Connector	增益值 (dBi)
	Redpine	RSIA15	PCB Trace Antenna	Internal	0.99
	Taoglas	WS.01.B.305151	Heavy Duty Screw Mount Antenna	SMA Reverse	4.1
RF 最大輸出功率	Mode		Power		
	Power setting 1_Antenna Type: PCB Trace Antenna				
	LE, GFSK		18.98 dBm	0.07907 W	
	2LE, GFSK		19.58 dBm	0.09078 W	
	BLR C2, GFSK		18.96 dBm	0.07870 W	
	BLR C8, GFSK		18.97 dBm	0.07889 W	
	Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna				
	LE, GFSK		13.33 dBm	0.02153 W	
	2LE, GFSK		19.75 dBm	0.09441 W	
	BLR C2, GFSK		13.29 dBm	0.02133 W	
	BLR C8, GFSK		13.30 dBm	0.02138 W	

輸出/輸入埠說明：

輸 出 / 入 埠		數量	介面內容說明
1	Signal Port	1	連接至治具

待測設備外圍說明：

電 源 線 類 別	本產品透過治具供電
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■)

☒	新設計之機型,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 Conducted

Test Period: Nov. 08 ~ Dec. 04, 2018

名稱	廠牌	型號	序號	本次校驗日期	校驗年限
Power Sensor	Anritsu	MA2411B	1126022	08/29/2018	1 year
Power Meter	Anritsu	ML2495A	1135009	08/29/2018	1 year
Spectrum Analyzer (3 Hz~50 GHz)	Agilent	N9030A	MY53120541	01/02/2018	1 year
Microwave Cable	EMCI	EMC102-SM-SM 1500	001	11/22/2017	1 year
				11/21/2018	

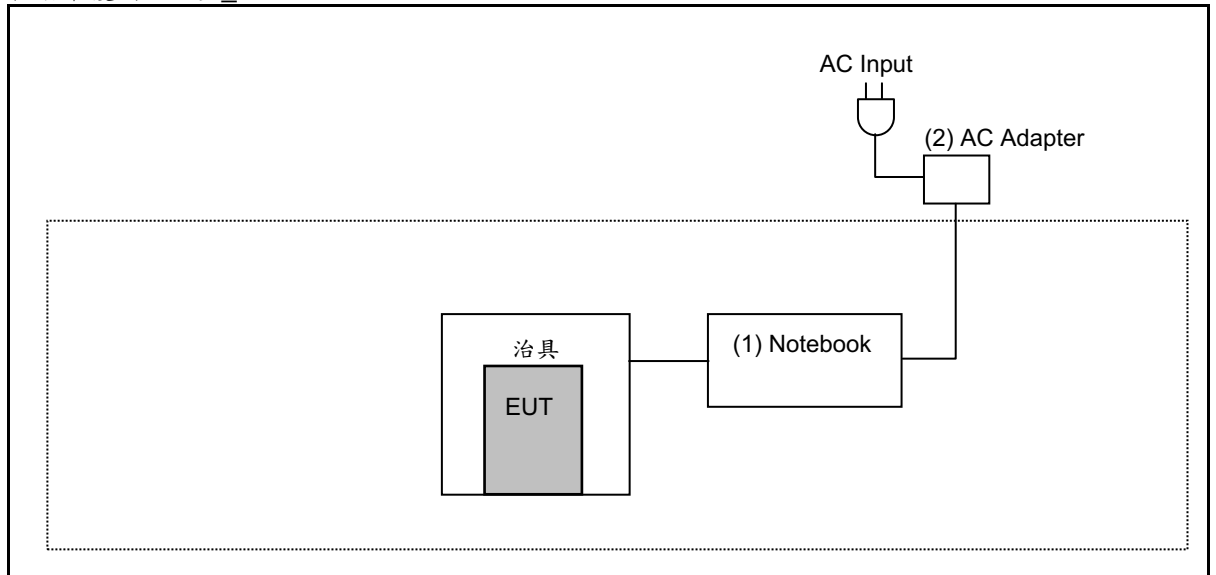
For Radiated Emissions

Test Period: Nov. 06 ~ Dec. 04, 2018 ~ Mar. 25, 2019

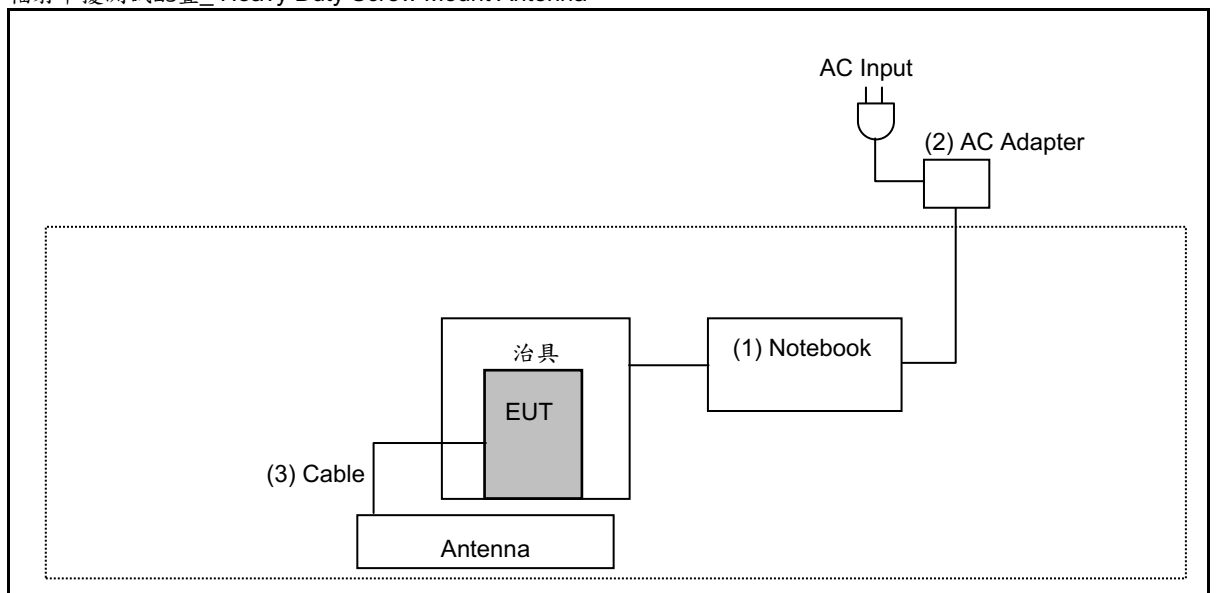
名稱	廠牌	型號	序號	本次校驗日期	校驗年限
Spectrum Analyzer (10 Hz~44 GHz)	Keysight	N9010A	MY52221312	01/15/2018	1 year
				01/14/2019	
Pre Amplifier (1~26.5 GHz)	Agilent	8449B	3008A02237	10/19/2018	1 year
Pre Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A11119	01/10/2018	1 year
				01/14/2019	
Trilog Broadband Antenna	SCHWARZBECK MESS-ELEKTRONIK	SB AC VULB	9168-0841	03/02/2018	1 year
				11/19/2018	
Horn Antenna (1~18 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	08/23/2018	1 year
Broadband Horn Antenna (18~ 40 GHz)	SCHWARZBECK MESS-ELEKTRONIK	9170	9170-320	08/07/2018	1 year
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	03/13/2018	1 year
Loop Antenna	Electro-Metrics	EMCI-LPA600	277	04/19/2018	1 year
RF Cable	EMCI	EMC104-N-N-60 00	TE01-1	02/20/2018	1 year
				02/20/2019	
Microwave Cable	EMCI	EMC102-KM-KM -14000	151001	02/20/2018	1 year
				02/20/2019	

2.2 檢驗系統示意圖

輻射干擾測試配置_PCB Trace Antenna



輻射干擾測試配置_Heavy Duty Screw Mount Antenna



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	Loss	備 註
(1) Notebook	DELL	Inspiron 15	726RWN2	---	---	---
(2) AC Adapter	DELL	HA65NM130	---	Non-Shielded, 0.8 m	---	INPUT: AC 100-240 V, 50/60 Hz, 1.7 A OUTPUT: DC 19.5 V, 3.34 A
(3) Cable	Amphenol RF	336314-12-01 00	---	---	0.38 dB	---

2.4 測試軟體版本

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

2.5 測試模式

Pre-Test Mode
Mode 1: Transmit Mode
Mode 2: LE, GFSK Continuous TX Mode
Mode 3: 2LE, GFSK Continuous TX Mode
Mode 4: BLR C2, GFSK Continuous TX Mode
Mode 5: BLR C8, GFSK Continuous TX Mode
Mode 6: Receiver Mode

Final-Test Mode
Mode 1: Transmit Mode
Mode 2: LE, GFSK Continuous TX Mode
Mode 3: 2LE, GFSK Continuous TX Mode
Mode 6: Receiver Mode

RF Power setting	Antenna Type	Antenna Max. Gain (dBi)	Test Mode	Antenna Delivery	Frequency (MHz)
1	PCB Trace Antenna	0.99	Mode 2	1TX	2402, 2440, 2480
			Mode 3	1TX	2402, 2440, 2480
			Mode 4	1TX	2402, 2440, 2480
			Mode 5	1TX	2402, 2440, 2480
2	Heavy Duty Screw Mount Antenna	4.1	Mode 2	1TX	2402, 2440, 2480
			Mode 3	1TX	2402, 2440, 2480
			Mode 4	1TX	2402, 2440, 2480
			Mode 5	1TX	2402, 2440, 2480

Note: Redpine software has antenna selection parameter which enables the user to select the antenna and it internally adjusts the gain parameters. Default antenna type will be Redpine PCB antenna.

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	9 kHz ~ 150 kHz	2.7
	150 kHz ~ 30 MHz	2.7
Radiated Emission	9 kHz ~ 30 MHz	1.7
	30 MHz ~ 1000 MHz	5.7
	1000 MHz ~ 18000 MHz	5.5
	18000 MHz ~ 26500 MHz	4.8
	26500 MHz ~ 40000 MHz	4.8
Conducted Output Power	+0.27 dB / -0.28 dB	
RF Bandwidth	4.96 %	
Power Spectral Density	+0.71 dB / -0.77 dB	

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	26
濕度 Humidity (%RH)		10 - 90	60

中華民國實驗室認證體系

認可編號: 1330

測試實驗室名稱：晶復科技股份有限公司

TEL: 886-3-2710188 / FAX: 886-3-2710190

傳導干擾電壓量測地點：桃園市八德區長安街 140-1 號.

輻射干擾場強量測地點：桃園市八德區長安街 140-1 號.

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。

LE/2LE/BLR C2/BLR C8 測試項目

項次	測試項目	適用規範	測試結果	量測設備	結果判定
1	輸出峰值功率	低功率射頻電機技術規範 3.10.1.2(1)(C)節	請參閱4.1節	請參閱2.1節	合格
2	電源線傳導干擾	低功率射頻電機技術規範 2.3節	請參閱4.2節	請參閱2.1節	不適用
3	場強輻射 (1 GHz以上)	低功率射頻電機技術規範 2.8節、2.9節、3.10.1.5節	請參閱4.3節	請參閱2.1節	合格
4	場強輻射其它不必要之訊號 (1 GHz以下)	低功率射頻電機技術規範 2.8節、2.9節、3.10.1.5節	請參閱4.3節	請參閱2.1節	合格
5	頻帶邊緣外之輻射發射	低功率射頻電機技術規範 3.10.1.5節	請參閱4.3節	請參閱2.1節	合格
6	非必要頻帶	低功率射頻電機技術規範 3.10.1.5節	請參閱4.4節	請參閱2.1節	合格
7	發射頻寬	低功率射頻電機技術規範 3.10.1.6(2)(A)節	請參閱4.5節	請參閱2.1節	合格
8	功率密度	低功率射頻電機技術規範 3.10.1.6(2)(B)節	請參閱4.6節	請參閱2.1節	合格
9	天線規格	低功率射頻電機技術規範 3.10.1.3(3)節、3.10.1.4節	請參閱4.7節	-----	合格
10	電波暴露量之評估	低功率射頻電機技術規範 5.20.2.1節、5.20.2.2節	請參閱4.8節	請參閱2.1節	合格

4. 測試項目表列

4.1 輸出峰值功率之量測

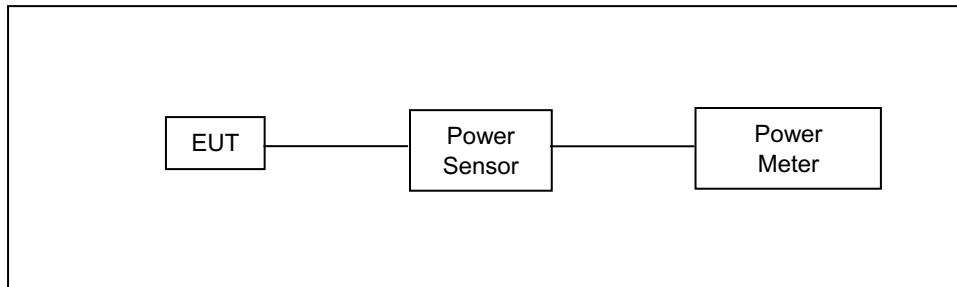
合格標準：

LE/2LE/BLR C2/BLR C8

依據 NCC 低功率射頻電機技術規範(LP0002)之 3.10.1.2(1)(C)節之要求，操作於 2400-2483.5 兆赫(MHz)之所有數位調變技術系統：1 瓦(W)以下。

除使用附件二之峰值輸出功率量測方式外，並得使用以最大傳導輸出功率(Maximum Conducted Output Power)作為量測方式。

測試架構圖：



測試結果:

Power setting 1_Antenna Type: PCB Trace Antenna

操作模式 : Mode 2: LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	17.08	0.05105	18.84	0.07656	≤ 1
中頻道	17.10	0.05129	18.98	0.07907	≤ 1
高頻道	13.70	0.02344	15.40	0.03467	≤ 1

操作模式 : Mode 3: 2LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	15.52	0.03565	18.50	0.07079	≤ 1
中頻道	16.53	0.04498	19.58	0.09078	≤ 1
高頻道	11.66	0.01466	14.66	0.02924	≤ 1

操作模式 : Mode 4: BLR C2, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	17.04	0.05058	18.81	0.07603	≤ 1
中頻道	17.07	0.05093	18.96	0.07870	≤ 1
高頻道	13.69	0.02339	15.38	0.03451	≤ 1

操作模式 : Mode 5: BLR C8, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	17.06	0.05082	18.78	0.07551	≤ 1
中頻道	17.08	0.05105	18.97	0.07889	≤ 1
高頻道	13.66	0.02323	15.37	0.03443	≤ 1

Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna

操作模式 : Mode 2: LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	11.36	0.01368	13.33	0.02153	≤ 1
中頻道	11.04	0.01271	12.88	0.01941	≤ 1
高頻道	9.21	0.00834	11.13	0.01297	≤ 1

操作模式 : Mode 3: 2LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	15.59	0.03622	18.53	0.07129	≤ 1
中頻道	16.68	0.04656	19.75	0.09441	≤ 1
高頻道	10.53	0.01130	13.51	0.02244	≤ 1

操作模式 : Mode 4: BLR C2, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	11.32	0.01355	13.29	0.02133	≤ 1
中頻道	11.00	0.01259	12.86	0.01932	≤ 1
高頻道	9.12	0.00817	11.08	0.01282	≤ 1

操作模式 : Mode 5: BLR C8, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	11.34	0.01361	13.30	0.02138	≤ 1
中頻道	11.01	0.01262	12.87	0.01936	≤ 1
高頻道	9.16	0.00824	11.07	0.01279	≤ 1

4.2 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。

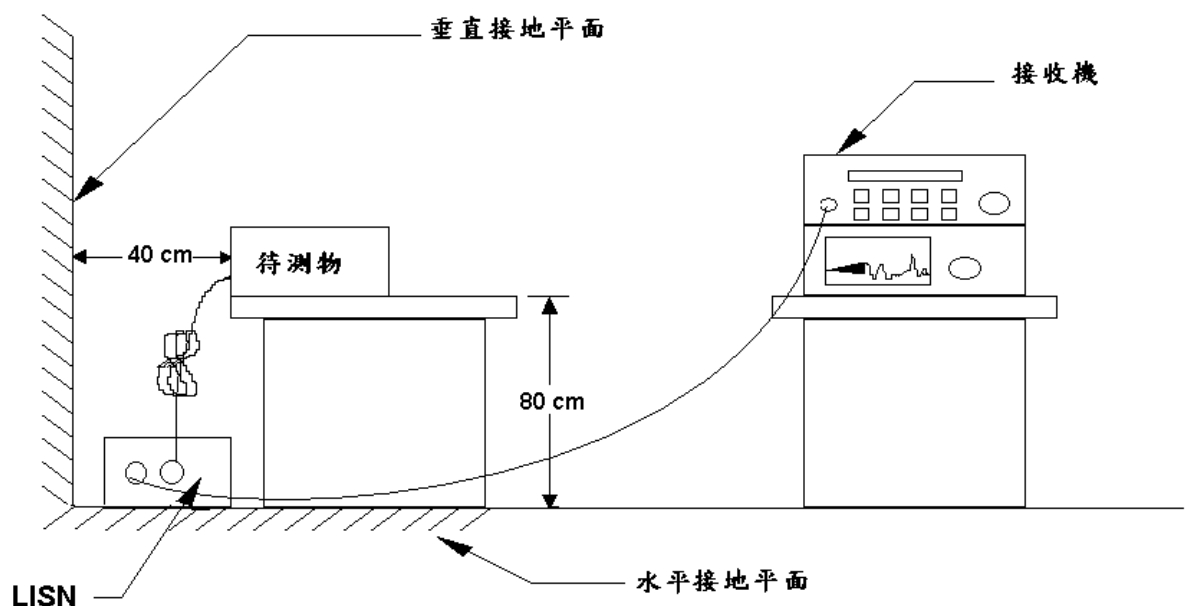
干擾值之計算

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: 不適用，本產品透過 DC 電源供電。

4.3 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)之使用頻帶範圍外之任意 100 千赫 (kHz)內，發射機所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之 100 千赫(kHz)內的射頻功率，至少須衰減 20 dB，以射頻傳導或輻射方式測量。如發射機以依據 NCC 低功率射頻電機技術規範(LP0002)之 3.10.1.5(2)之峰值傳導輸出功率量測方式者，至少須衰減 30 dB。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。

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 1.5 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。

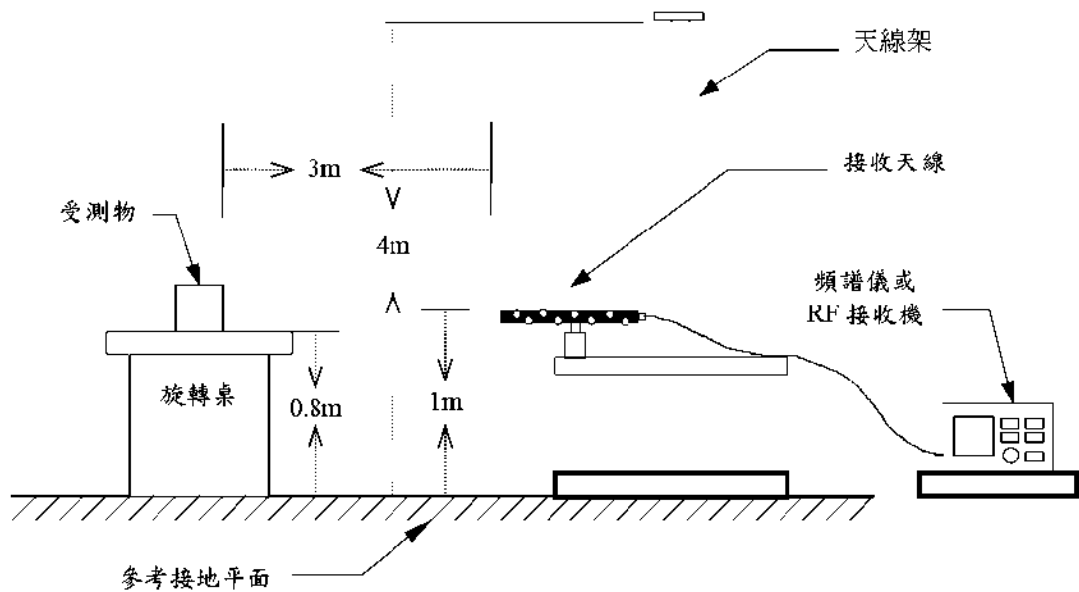
場強度之計算

場強之計算公式為：結果值 = 讀值 + 校正因子

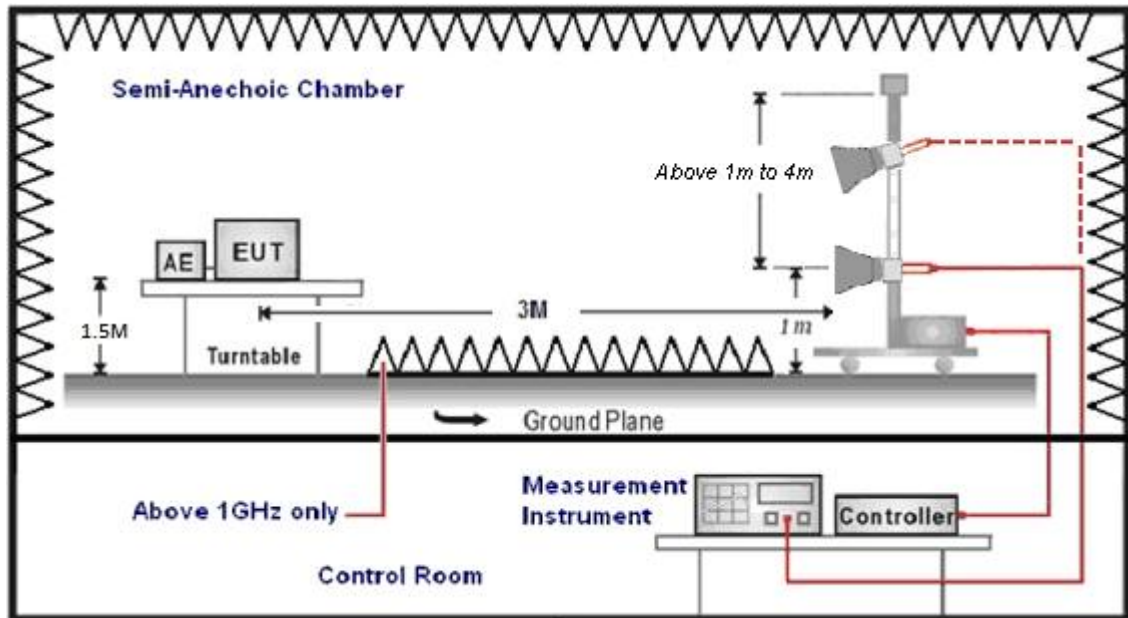
其中校正因子為：天線因子+ 饋線損失 + 濾波器損失（若有使用） - 放大器增益（若有使用）

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



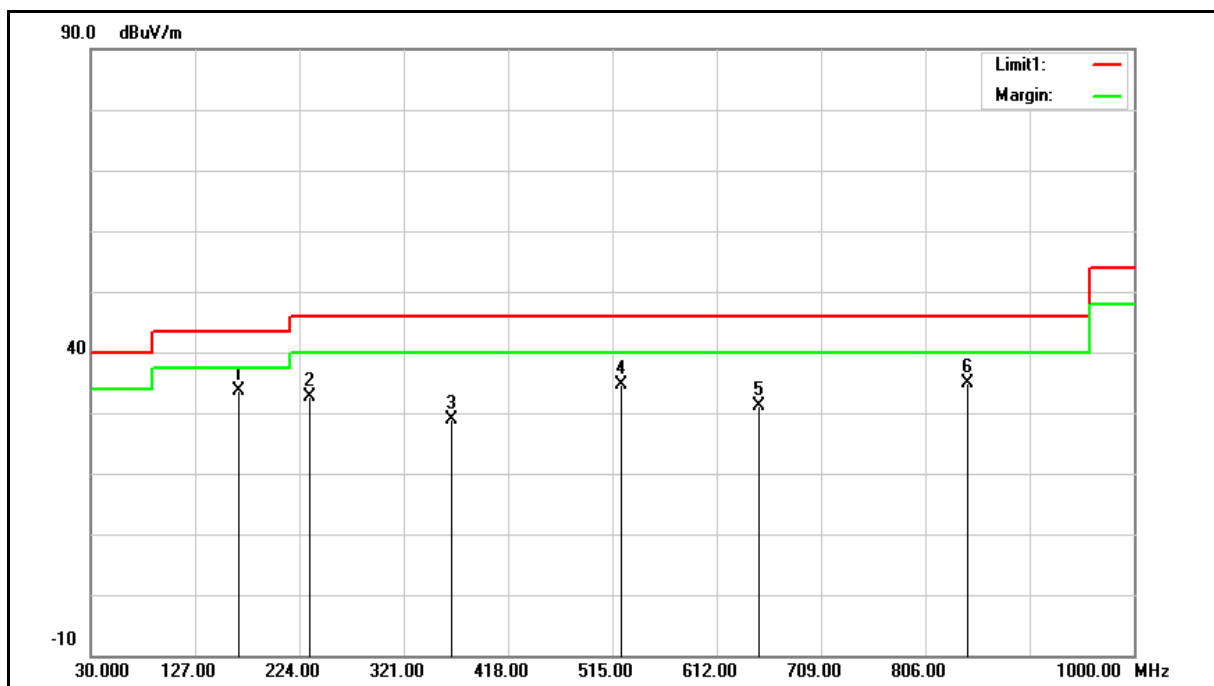
測試結果:

場強輻射之量測依據輸出峰值功率之量測結果取其最大值之操作模式為場強輻射測試模式。

Power setting 1_Antenna Type: PCB Trace Antenna

其它不必要之訊號 (1 GHz 以下)

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 1	Temp.(°C)/Hum. (%RH):	26(°C)/60 %RH
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	167.7400	40.15	-6.57	33.58	43.50	-9.92	QP
2	233.7000	40.12	-7.59	32.53	46.00	-13.47	QP
3	365.6200	32.45	-3.56	28.89	46.00	-17.11	QP
4	522.7600	35.05	-0.35	34.70	46.00	-11.30	QP
5	650.8000	29.01	2.16	31.17	46.00	-14.83	QP
6	845.7700	28.91	5.94	34.85	46.00	-11.15	QP

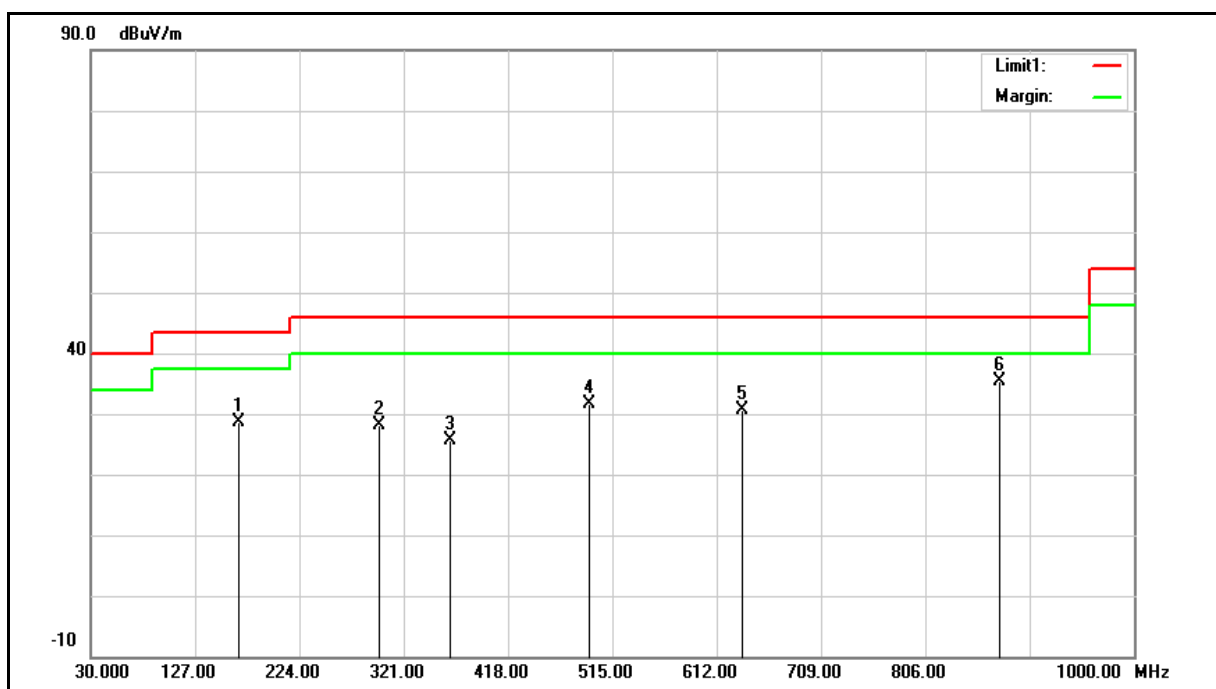
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 33.58 = -6.57 + 40.15.

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:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 1	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	167.7400	35.18	-6.57	28.61	43.50	-14.89	QP
2	298.6900	32.76	-4.73	28.03	46.00	-17.97	QP
3	364.6500	29.16	-3.59	25.57	46.00	-20.43	QP
4	493.6600	32.62	-0.93	31.69	46.00	-14.31	QP
5	636.2500	28.69	1.94	30.63	46.00	-15.37	QP
6	874.8700	28.92	6.42	35.34	46.00	-10.66	QP

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

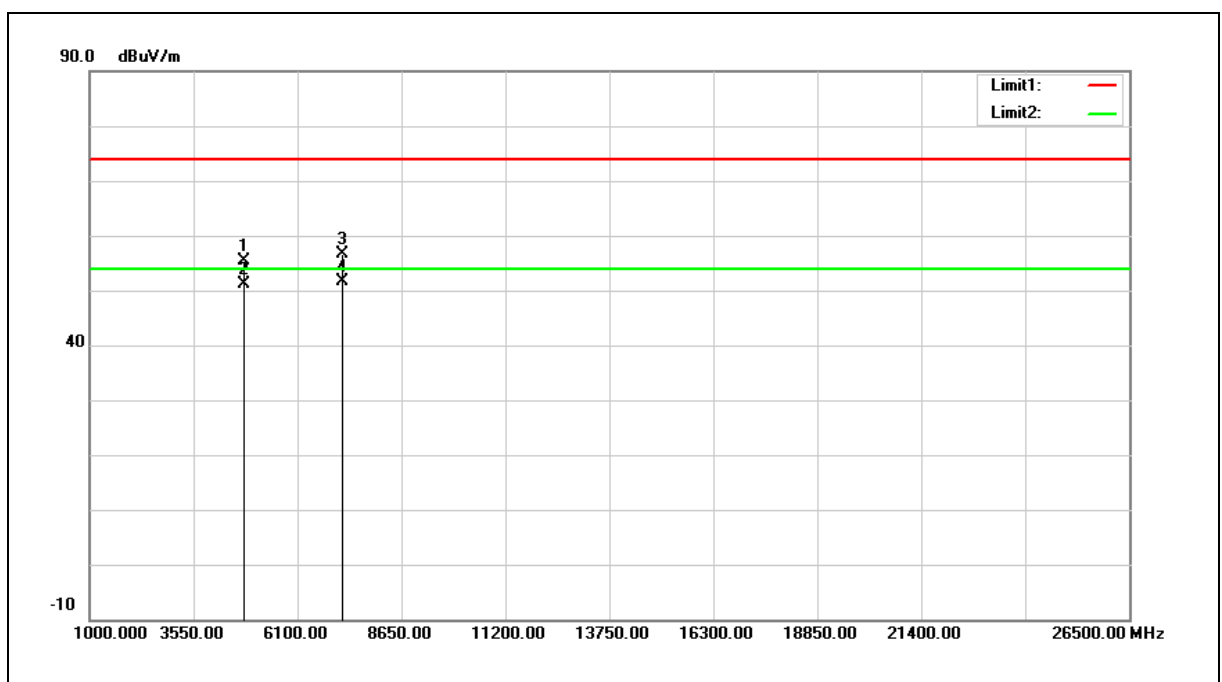
Example: $28.61 = -6.57 + 35.18$.

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.

場強輻射量側 (1 GHz 以上)

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
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	4804.000	60.29	-4.81	55.48	74.00	-18.52	peak
2	4804.000	55.89	-4.81	51.08	54.00	-2.92	AVG
3	7206.000	57.11	-0.51	56.60	74.00	-17.40	peak
4	7206.000	52.26	-0.51	51.75	54.00	-2.25	AVG

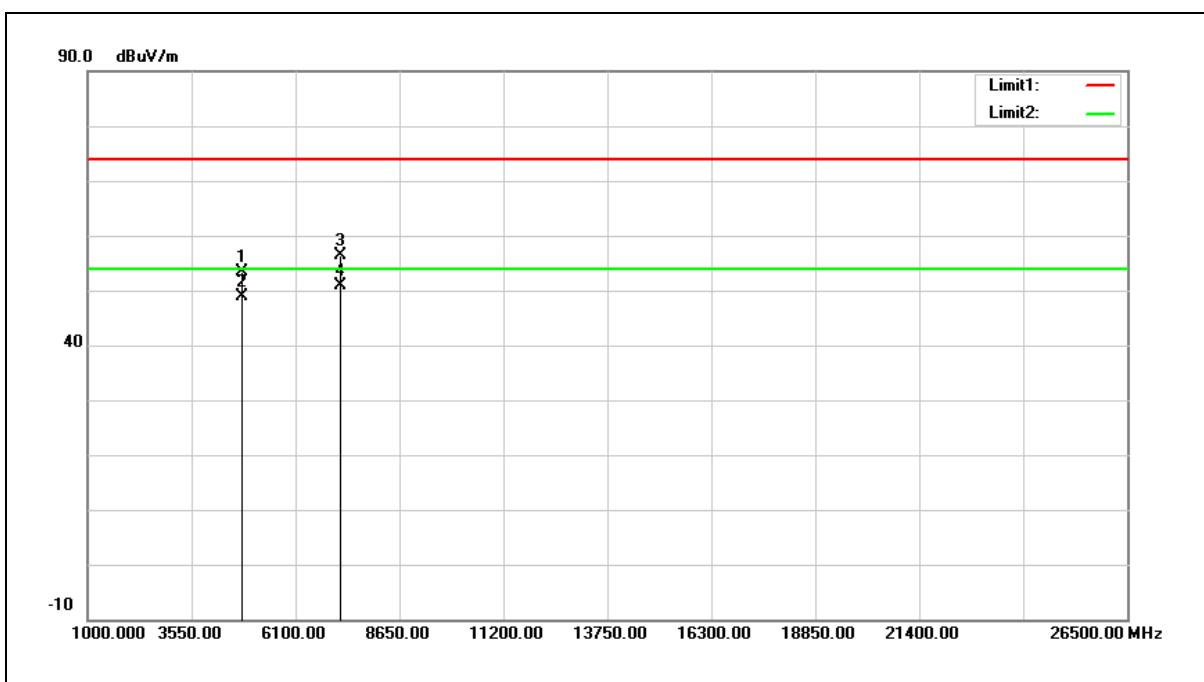
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 55.48 = -4.81 + 60.29.

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
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	4804.000	58.12	-4.81	53.31	74.00	-20.69	peak
2	4804.000	53.75	-4.81	48.94	54.00	-5.06	AVG
3	7206.000	56.95	-0.51	56.44	74.00	-17.56	peak
4	7206.000	51.38	-0.51	50.87	54.00	-3.13	AVG

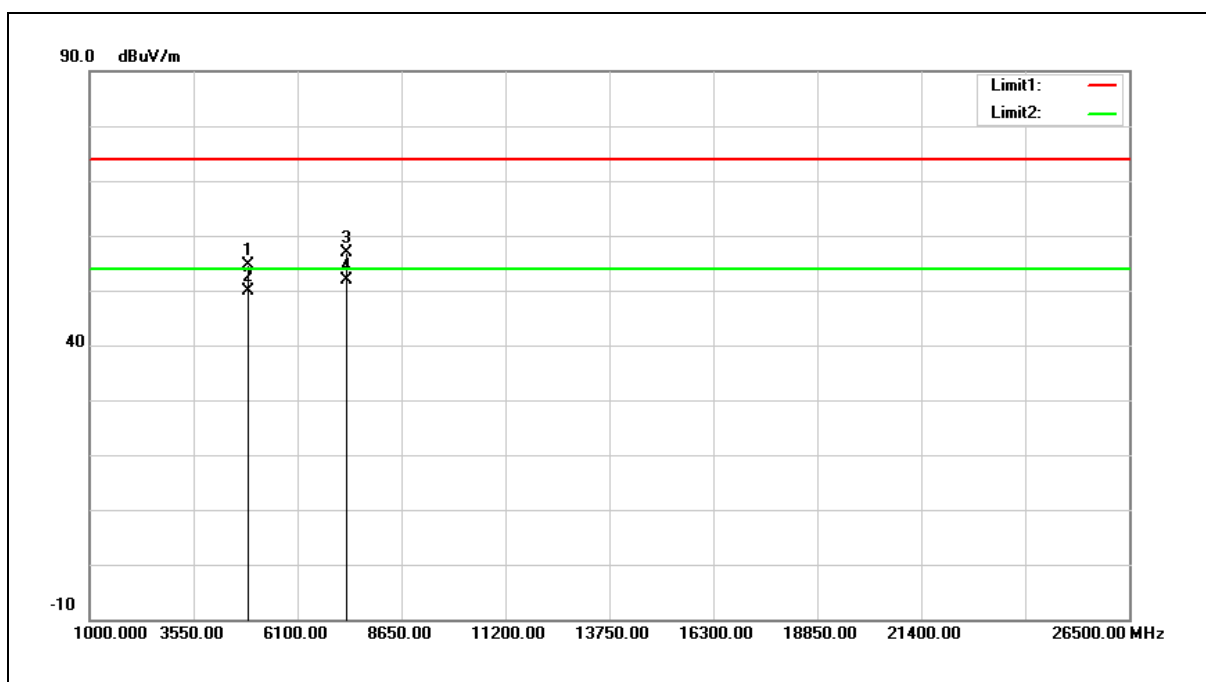
Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

Example: $53.31 = -4.81 + 58.12$.

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



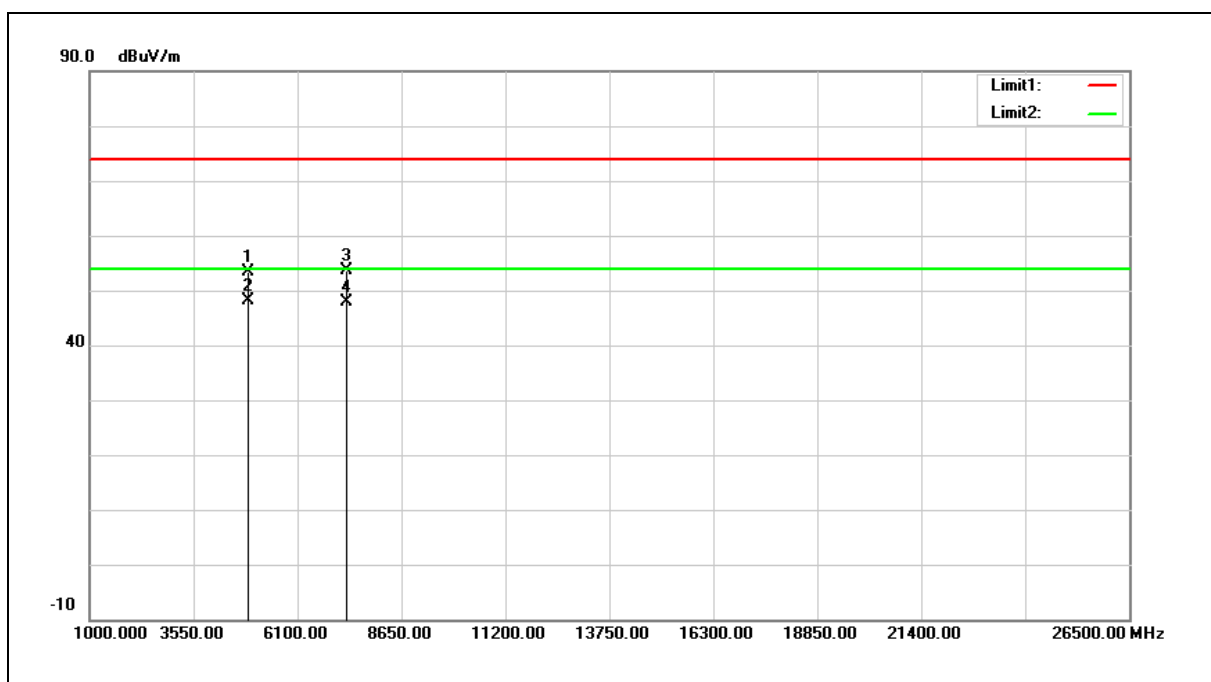
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	59.50	-4.85	54.65	74.00	-19.35	peak
2	4880.000	54.67	-4.85	49.82	54.00	-4.18	AVG
3	7320.000	57.11	-0.21	56.90	74.00	-17.10	peak
4	7320.000	52.19	-0.21	51.98	54.00	-2.02	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



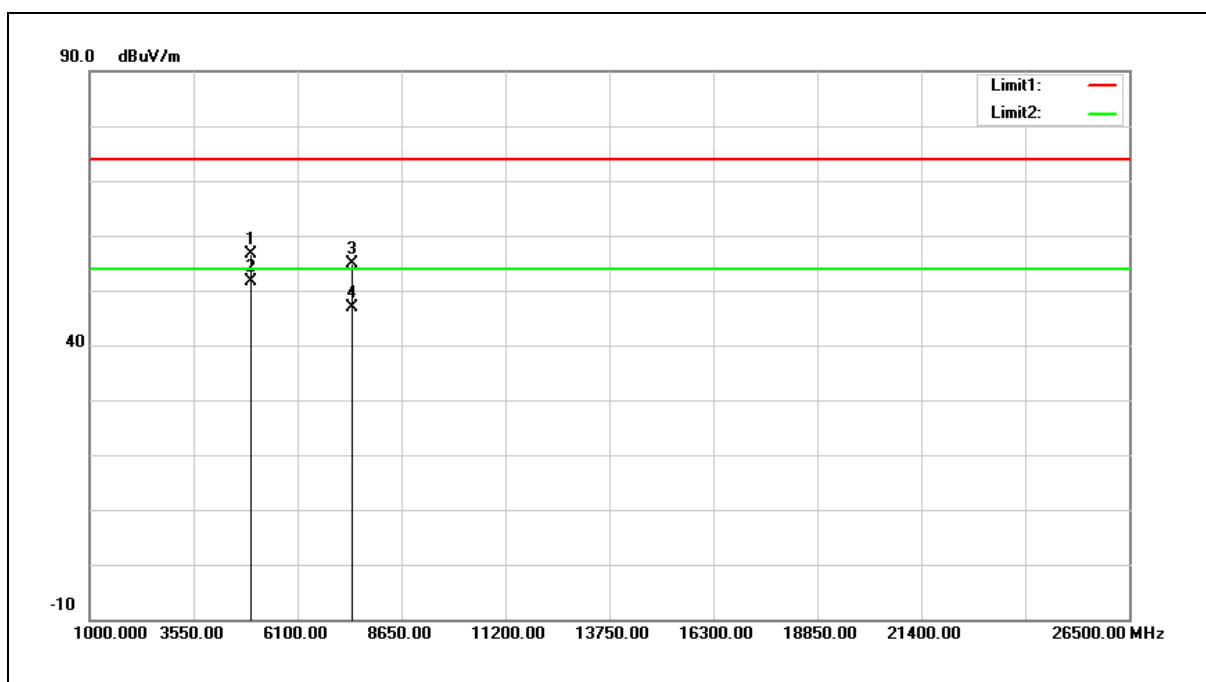
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	58.29	-4.85	53.44	74.00	-20.56	peak
2	4880.000	52.95	-4.85	48.10	54.00	-5.90	AVG
3	7320.000	53.84	-0.21	53.63	74.00	-20.37	peak
4	7320.000	47.99	-0.21	47.78	54.00	-6.22	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



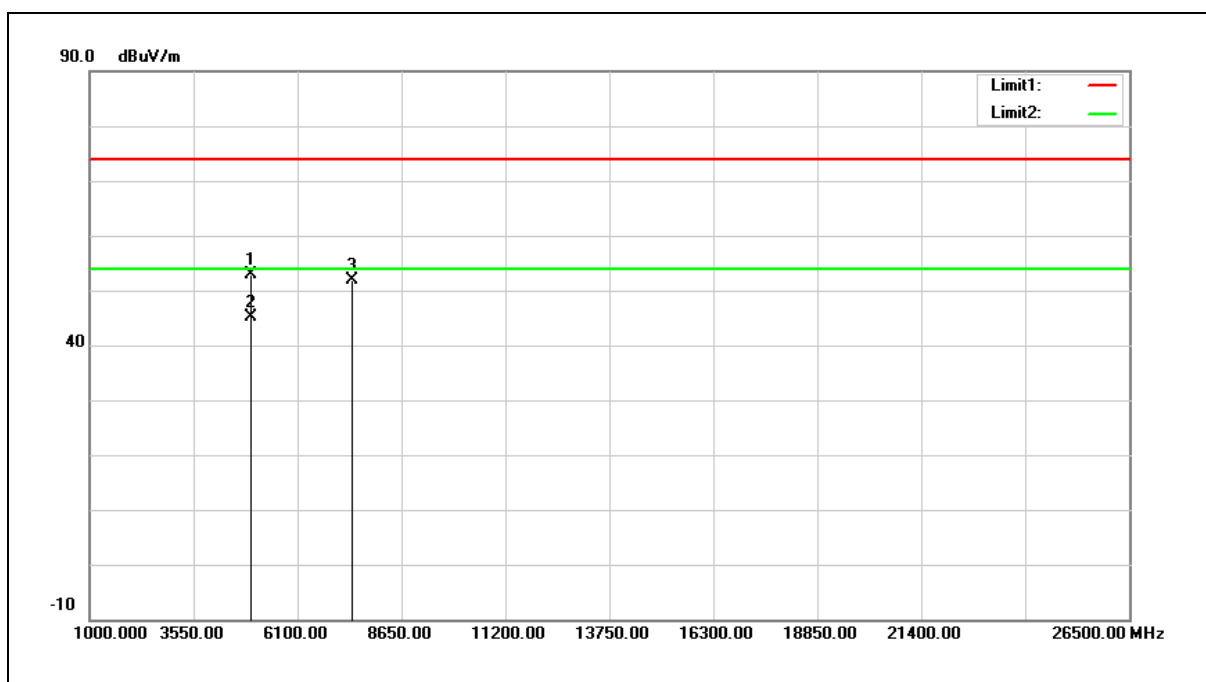
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	61.57	-4.89	56.68	74.00	-17.32	peak
2	4960.000	56.49	-4.89	51.60	54.00	-2.40	AVG
3	7440.000	54.86	0.06	54.92	74.00	-19.08	peak
4	7440.000	46.82	0.06	46.88	54.00	-7.12	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



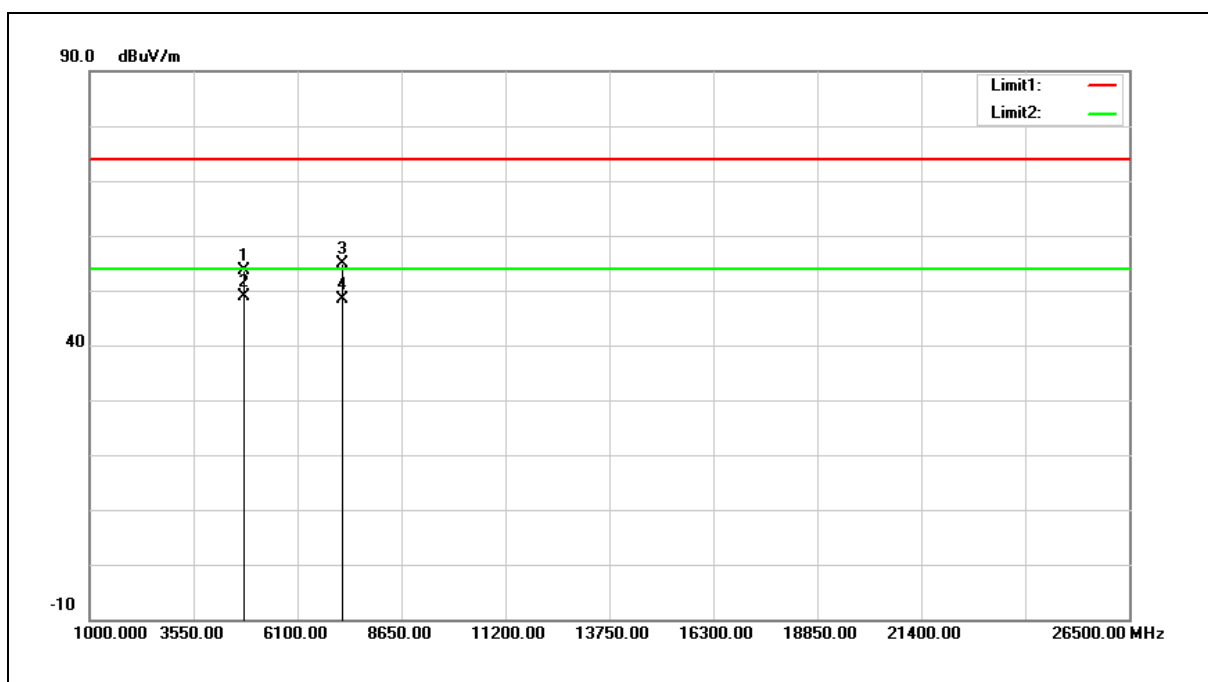
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	57.81	-4.89	52.92	74.00	-21.08	peak
2	4960.000	50.06	-4.89	45.17	54.00	-8.83	AVG
3	7443.000	51.82	0.06	51.88	74.00	-22.12	peak

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:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



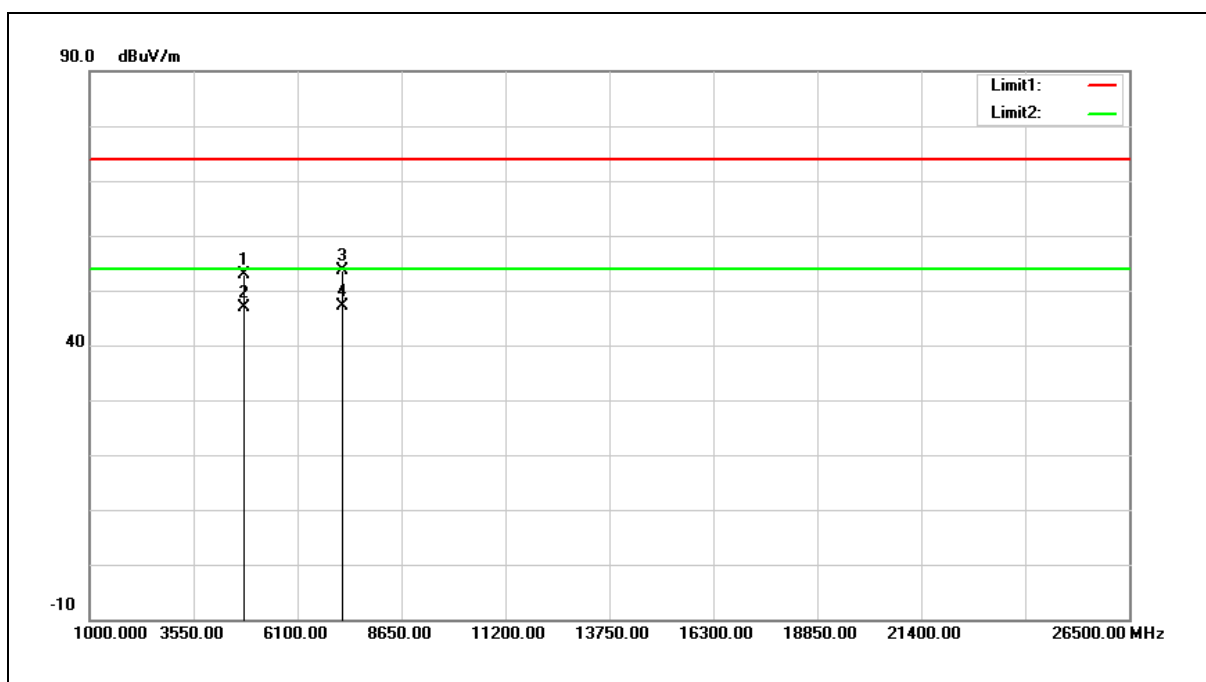
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	58.53	-4.81	53.72	74.00	-20.28	peak
2	4804.000	53.79	-4.81	48.98	54.00	-5.02	AVG
3	7206.000	55.37	-0.51	54.86	74.00	-19.14	peak
4	7206.000	48.82	-0.51	48.31	54.00	-5.69	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



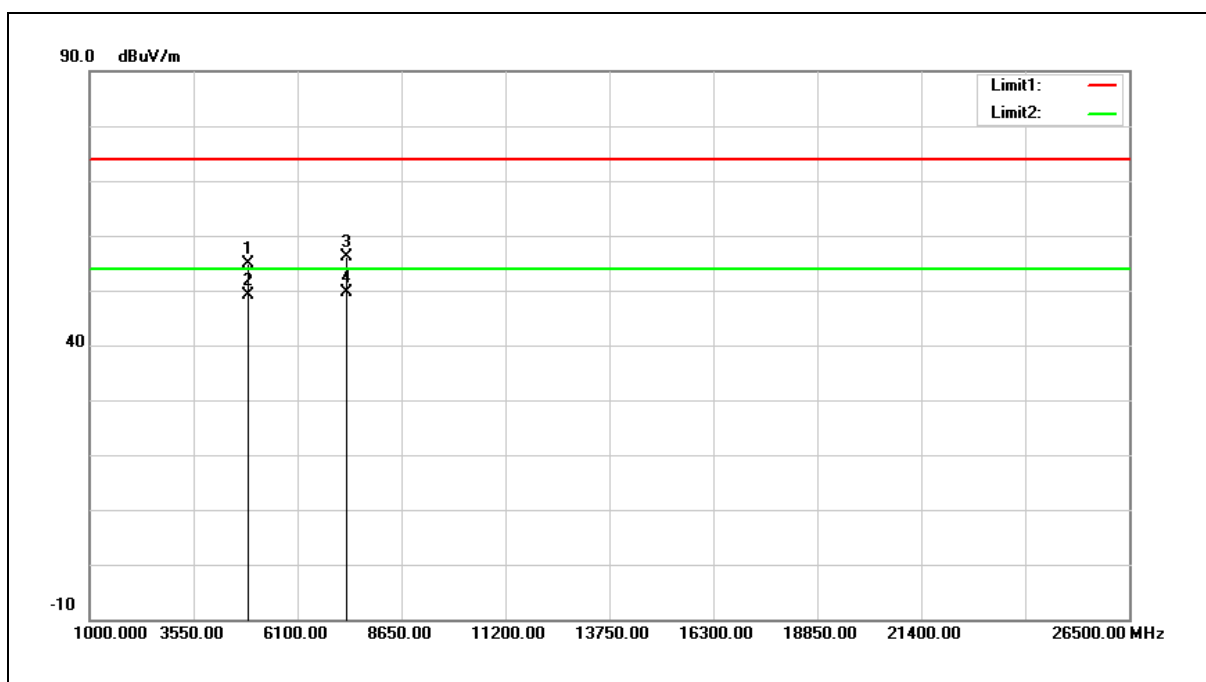
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	57.64	-4.81	52.83	74.00	-21.17	peak
2	4804.000	51.57	-4.81	46.76	54.00	-7.24	AVG
3	7206.000	54.12	-0.51	53.61	74.00	-20.39	peak
4	7206.000	47.54	-0.51	47.03	54.00	-6.97	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



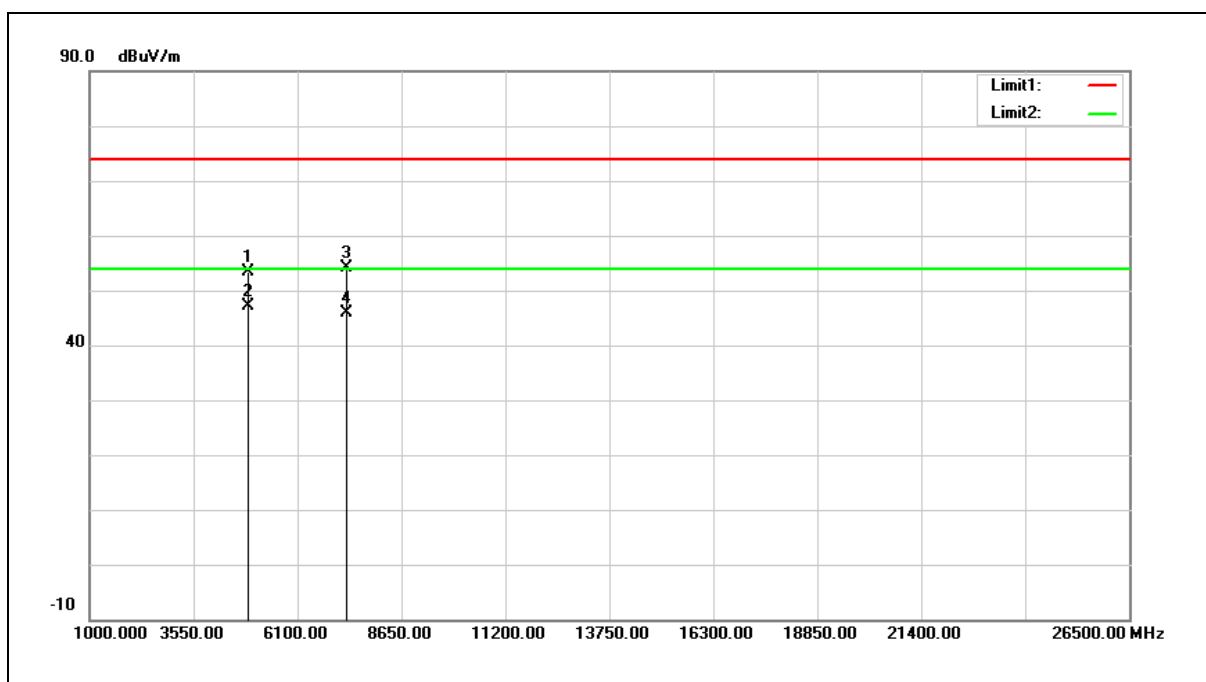
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	59.82	-4.85	54.97	74.00	-19.03	peak
2	4880.000	53.89	-4.85	49.04	54.00	-4.96	AVG
3	7320.000	56.43	-0.21	56.22	74.00	-17.78	peak
4	7320.000	49.81	-0.21	49.60	54.00	-4.40	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



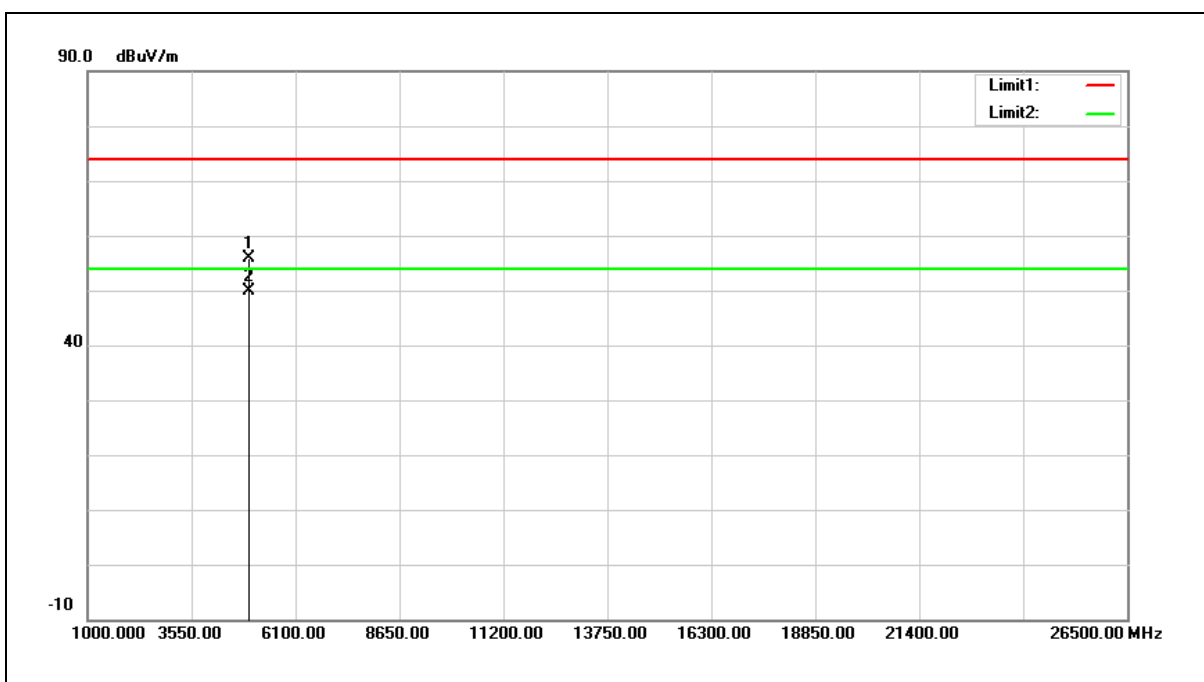
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	58.19	-4.85	53.34	74.00	-20.66	peak
2	4880.000	51.91	-4.85	47.06	54.00	-6.94	AVG
3	7320.000	54.29	-0.21	54.08	74.00	-19.92	peak
4	7320.000	46.04	-0.21	45.83	54.00	-8.17	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



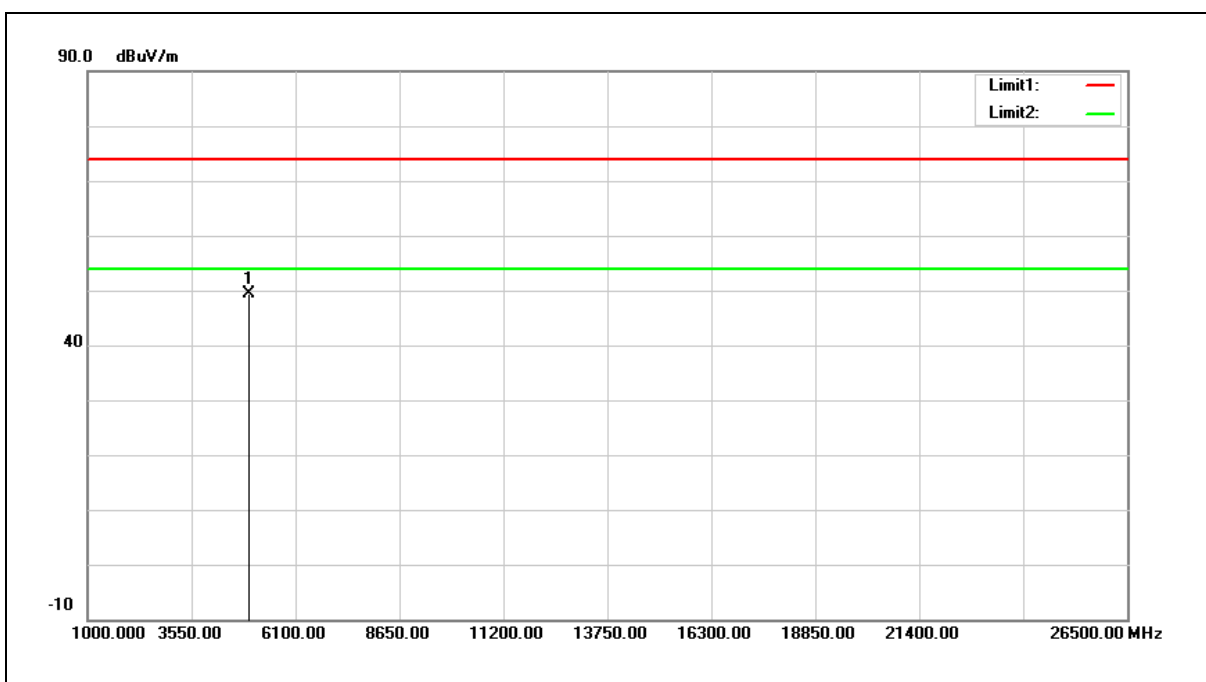
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	60.73	-4.89	55.84	74.00	-18.16	peak
2	4960.000	54.86	-4.89	49.97	54.00	-4.03	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



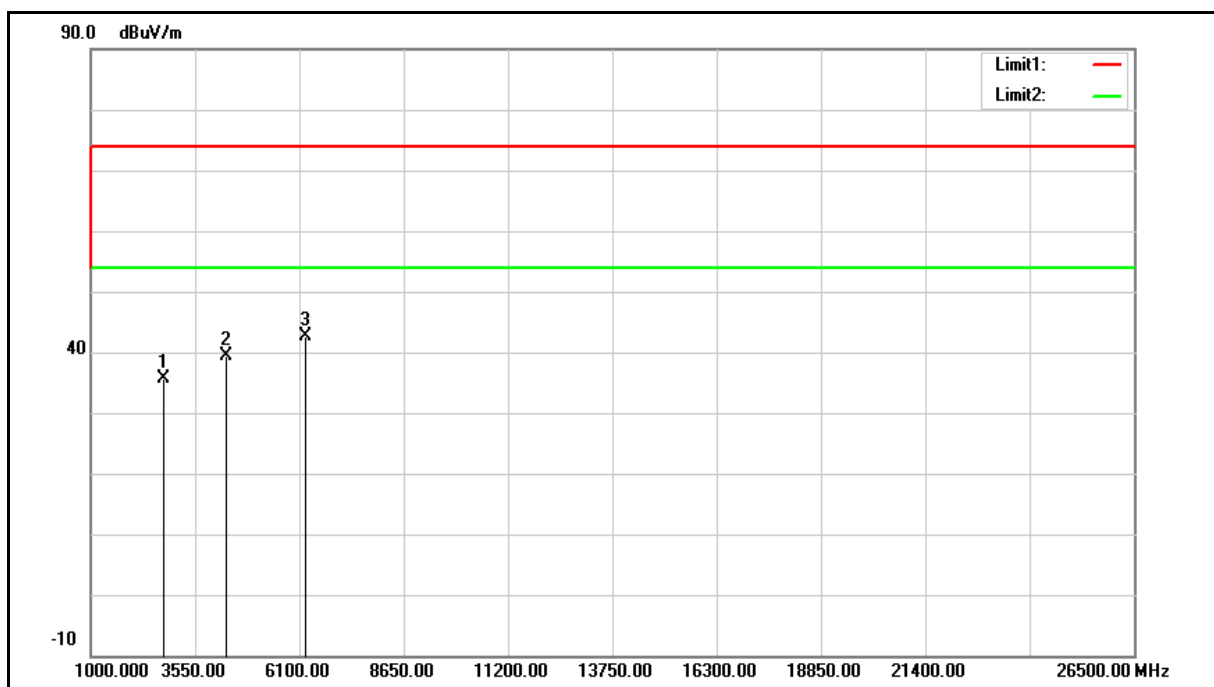
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	54.22	-4.89	49.33	74.00	-24.67	peak

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:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 6	Temp.(°C)/Hum. (%RH):	26(°C)/60 %RH
Ant.Polar.:	Horizontal		



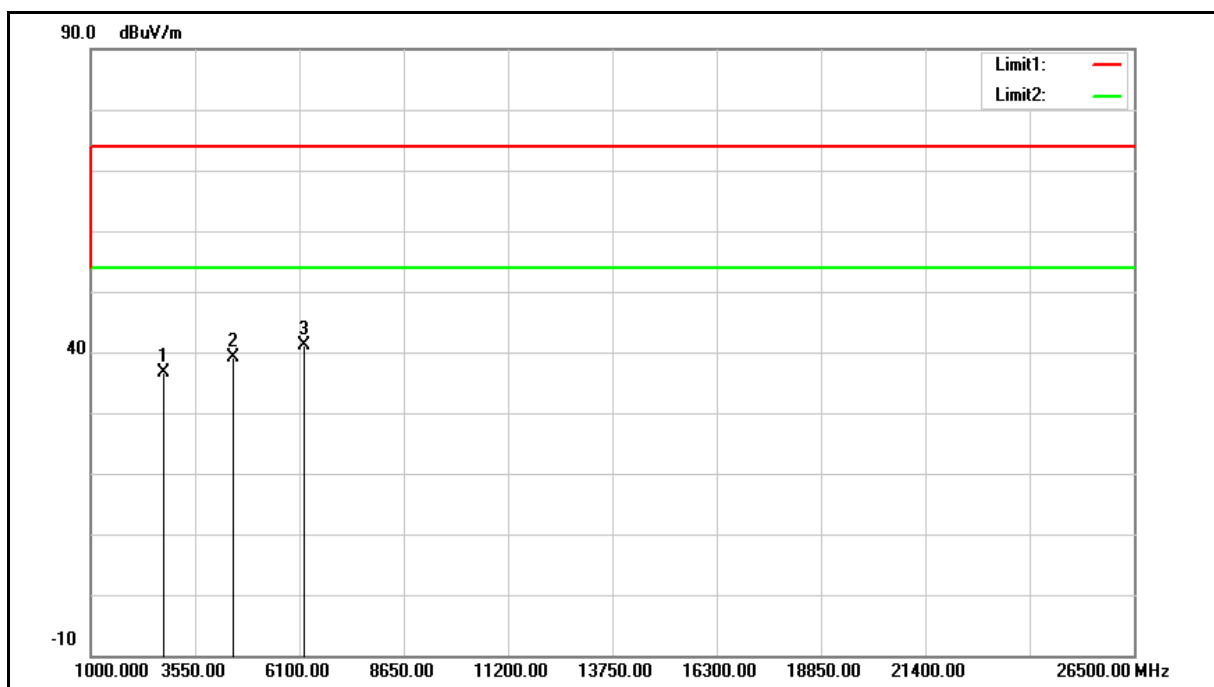
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	35.52	0.07	35.59	74.00	-38.41	peak
2	4298.000	35.46	4.02	39.48	74.00	-34.52	peak
3	6253.000	33.70	8.94	42.64	74.00	-31.36	peak

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:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 6	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	36.61	0.07	36.68	74.00	-37.32	peak
2	4485.000	34.38	4.65	39.03	74.00	-34.97	peak
3	6219.000	32.22	8.79	41.01	74.00	-32.99	peak

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

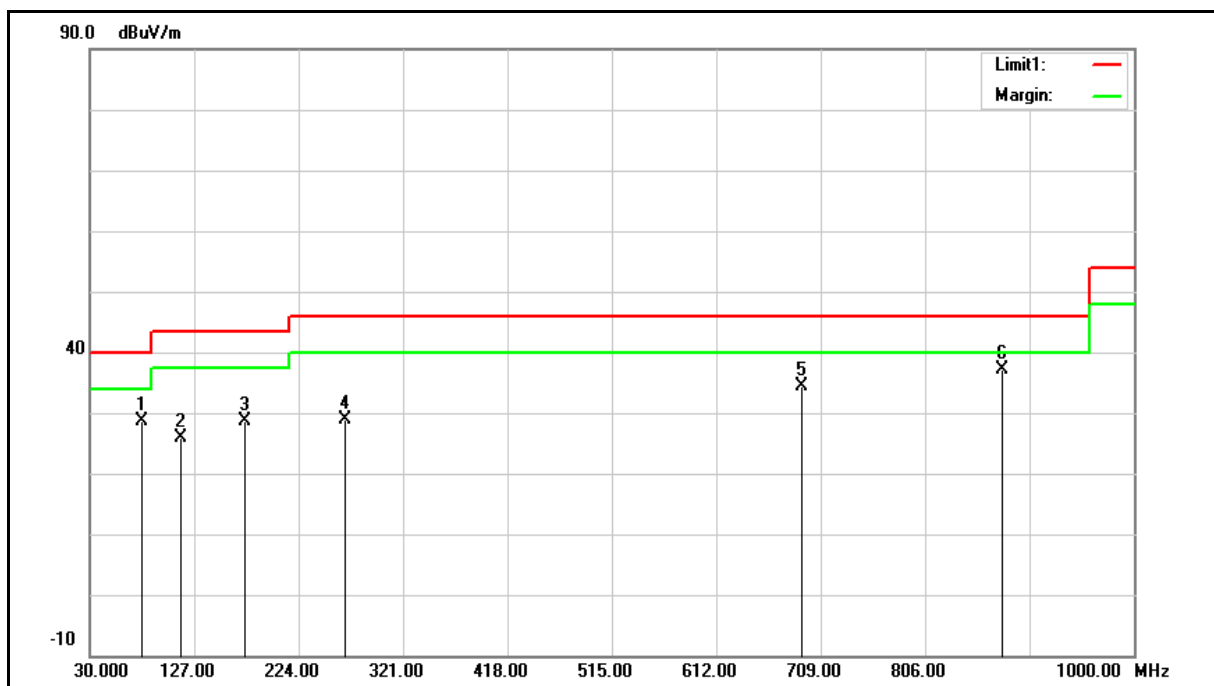
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

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

Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna

其它不必要之訊號 (1 GHz 以下)

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 1	Temp.(°C)/Hum. (%RH):	26(°C)/60 %RH
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	78.5000	43.21	-14.53	28.68	40.00	-11.32	QP
2	114.3900	39.54	-13.62	25.92	43.50	-17.58	QP
3	174.5300	39.46	-10.74	28.72	43.50	-14.78	QP
4	267.6500	40.20	-11.35	28.85	46.00	-17.15	QP
5	691.5400	36.38	-1.99	34.39	46.00	-11.61	QP
6	877.7800	35.99	1.09	37.08	46.00	-8.92	QP

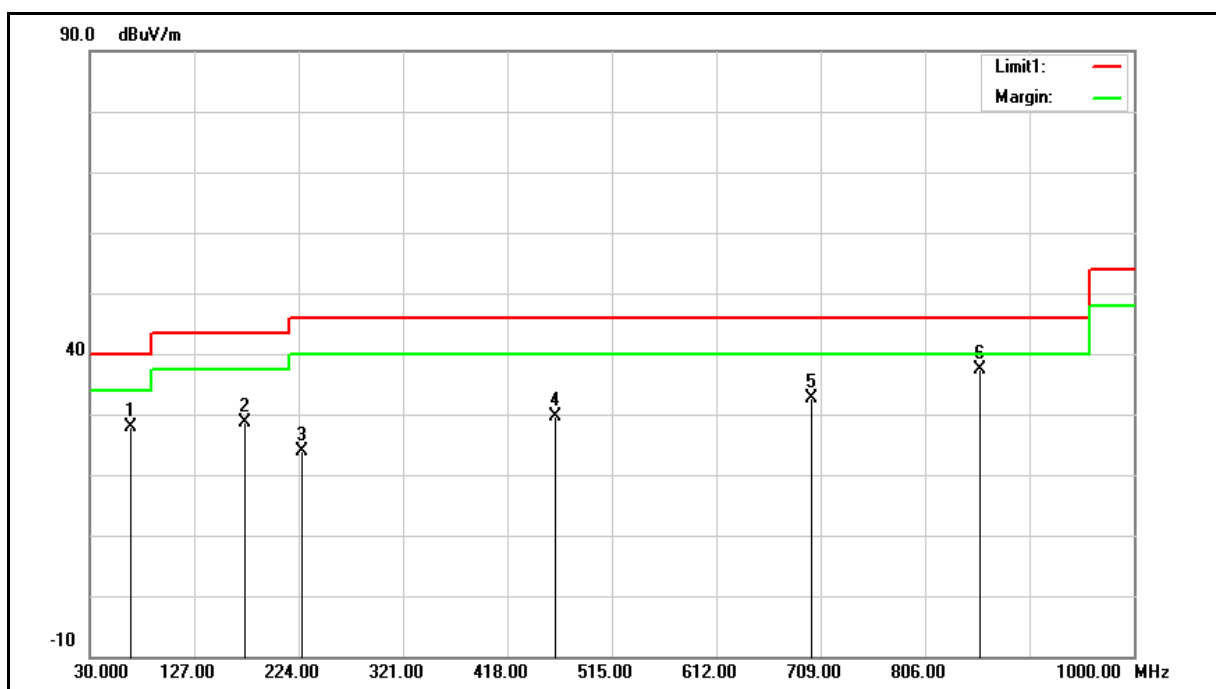
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 28.68 = -14.53 + 43.21.

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:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 1	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	67.8300	40.57	-12.59	27.98	40.00	-12.02	QP
2	174.5300	39.35	-10.74	28.61	43.50	-14.89	QP
3	226.9100	36.79	-12.85	23.94	46.00	-22.06	QP
4	462.6200	35.59	-5.95	29.64	46.00	-16.36	QP
5	700.2700	34.71	-1.98	32.73	46.00	-13.27	QP
6	857.4100	36.47	0.94	37.41	46.00	-8.59	QP

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

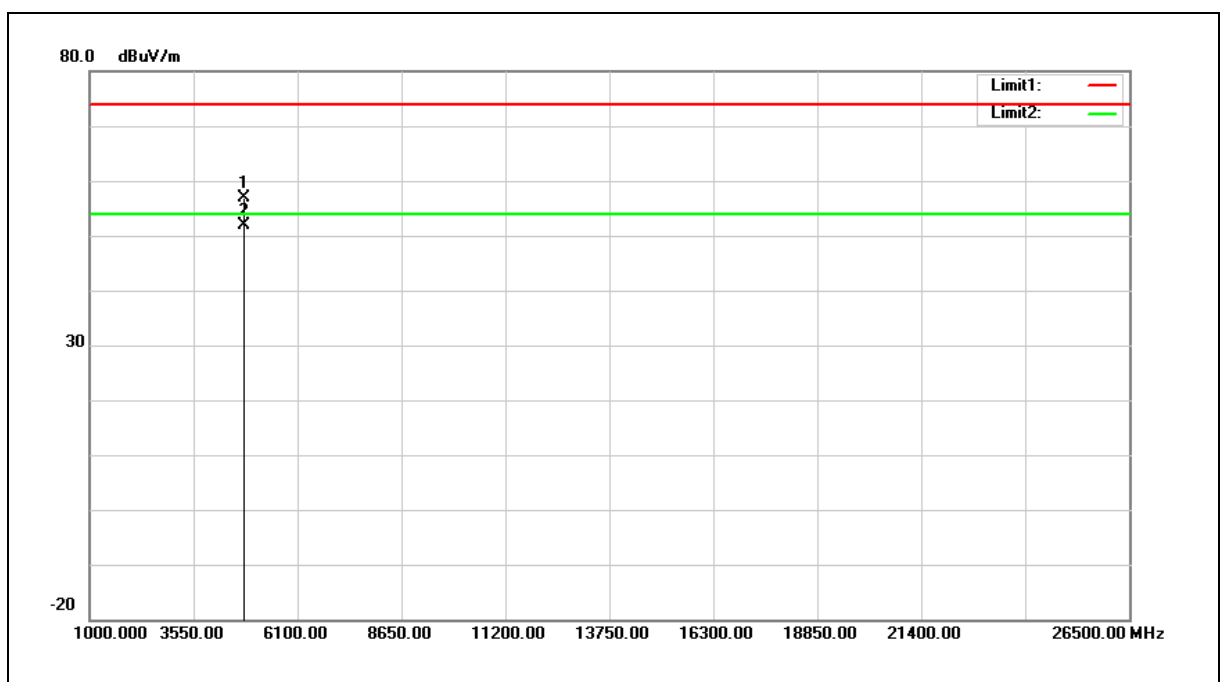
Example: 27.98 = -12.59 + 40.57.

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.

場強輻射量側 (1 GHz 以上)

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
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	4804.000	61.57	-4.81	56.76	74.00	-17.24	peak
2	4804.000	56.67	-4.81	51.86	54.00	-2.14	AVG

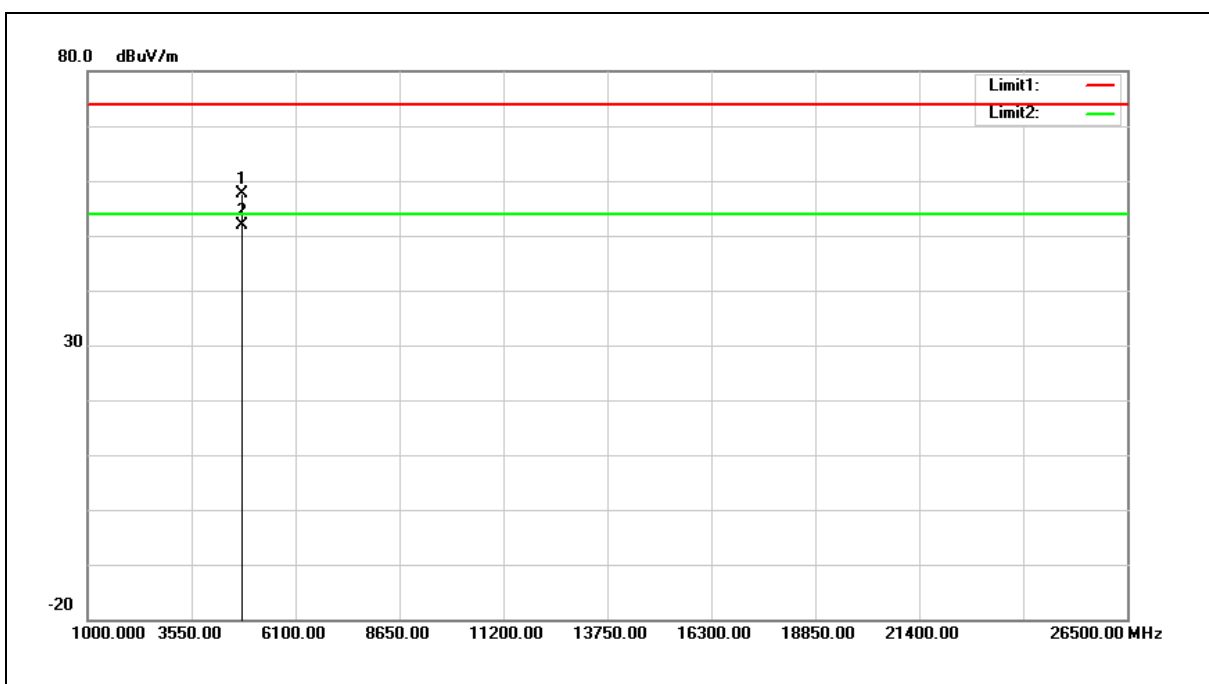
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 56.76 = -4.81 + 61.57.

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
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	4804.000	62.38	-4.81	57.57	74.00	-16.43	peak
2	4804.000	56.59	-4.81	51.78	54.00	-2.22	AVG

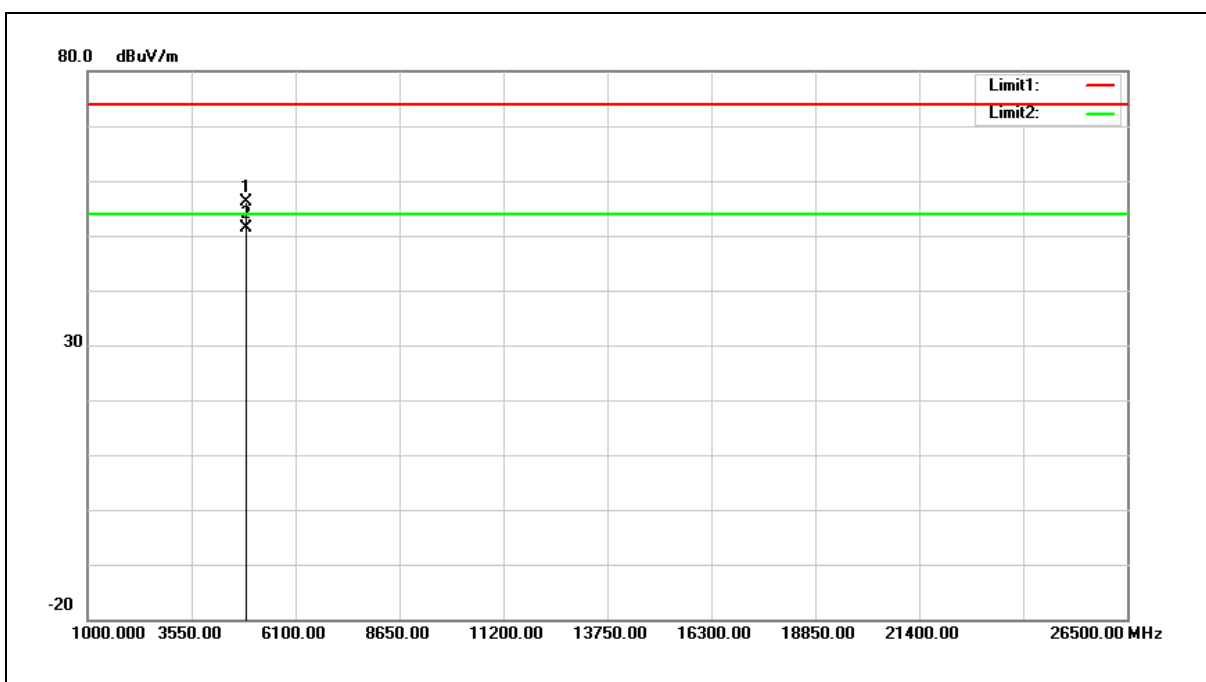
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $57.57 = -4.81 + 62.38$.

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.

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



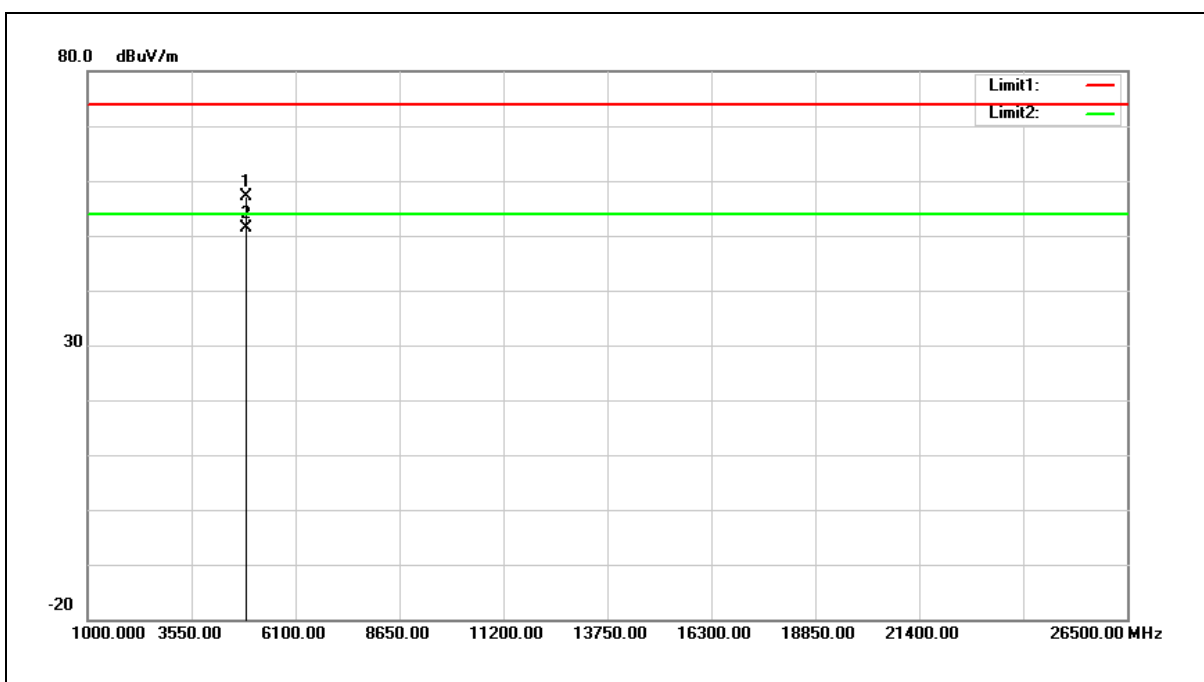
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	61.10	-4.85	56.25	74.00	-17.75	peak
2	4880.000	56.18	-4.85	51.33	54.00	-2.67	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



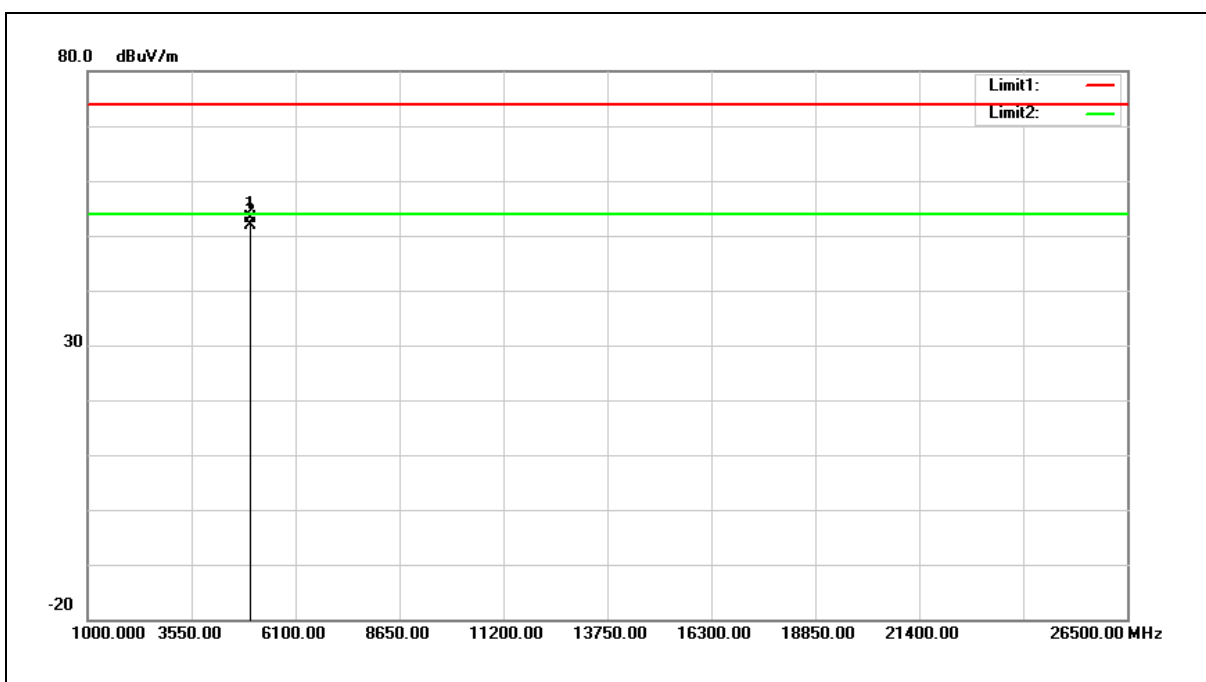
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	61.92	-4.85	57.07	74.00	-16.93	peak
2	4880.000	56.12	-4.85	51.27	54.00	-2.73	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



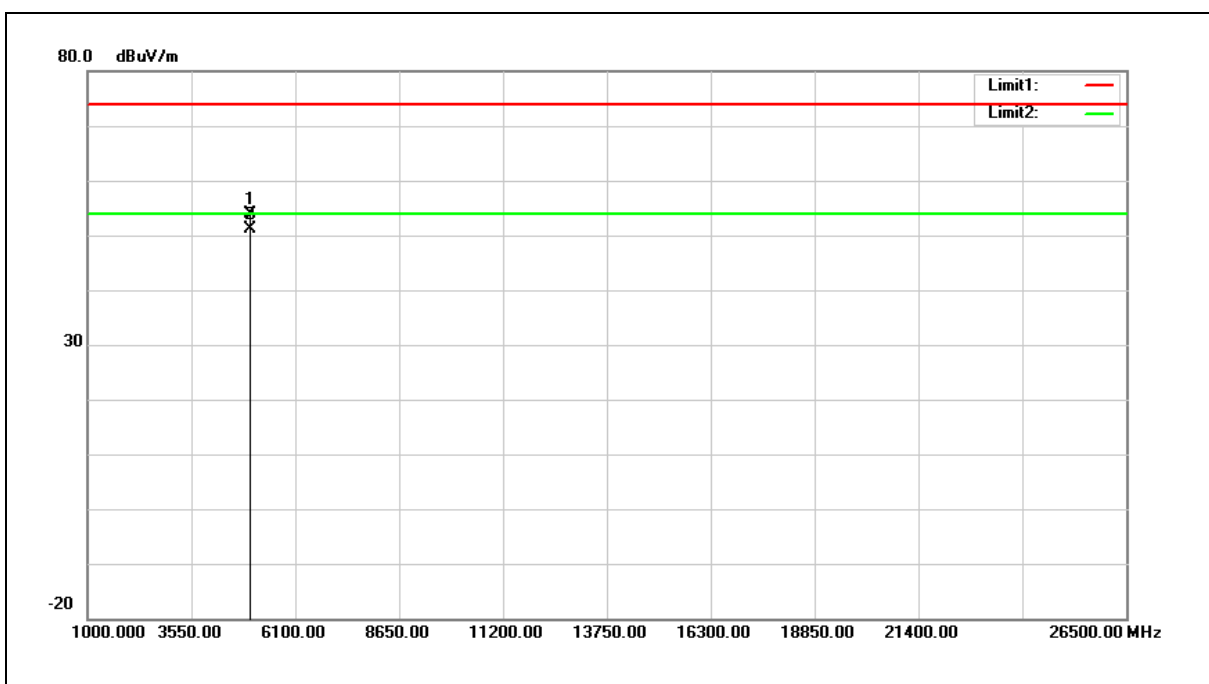
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	57.99	-4.89	53.10	74.00	-20.90	peak
2	4960.000	56.79	-4.89	51.90	54.00	-2.10	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



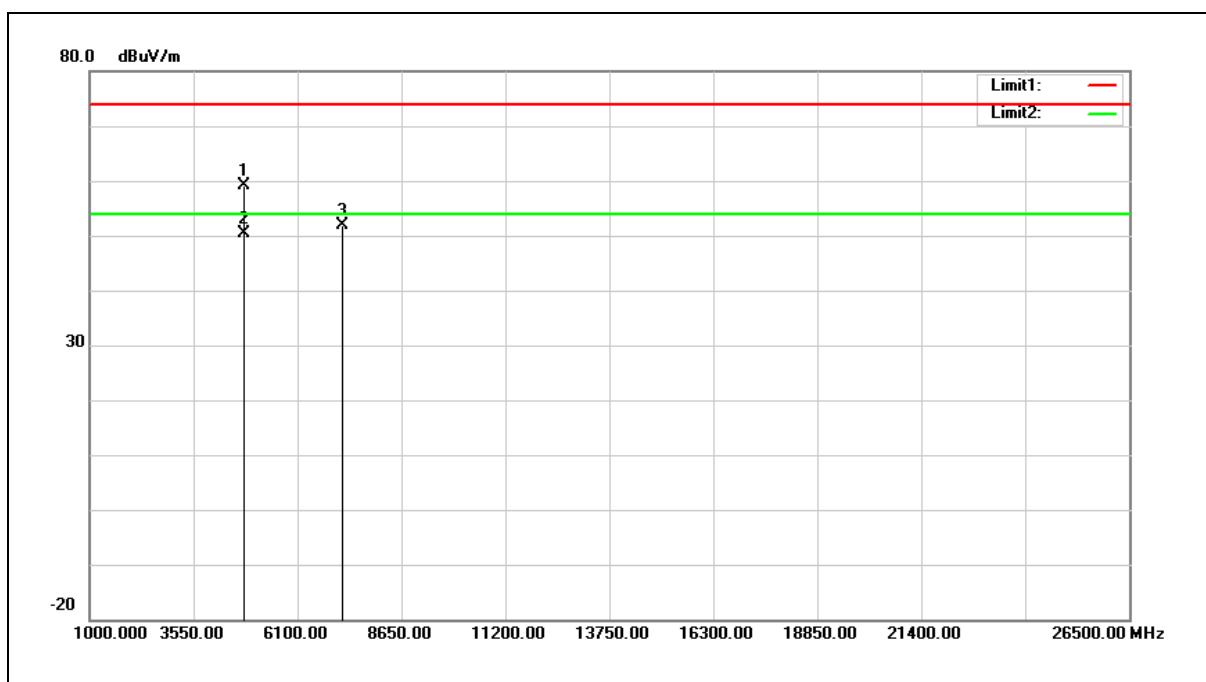
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	58.75	-4.89	53.86	74.00	-20.14	peak
2	4960.000	55.95	-4.89	51.06	54.00	-2.94	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



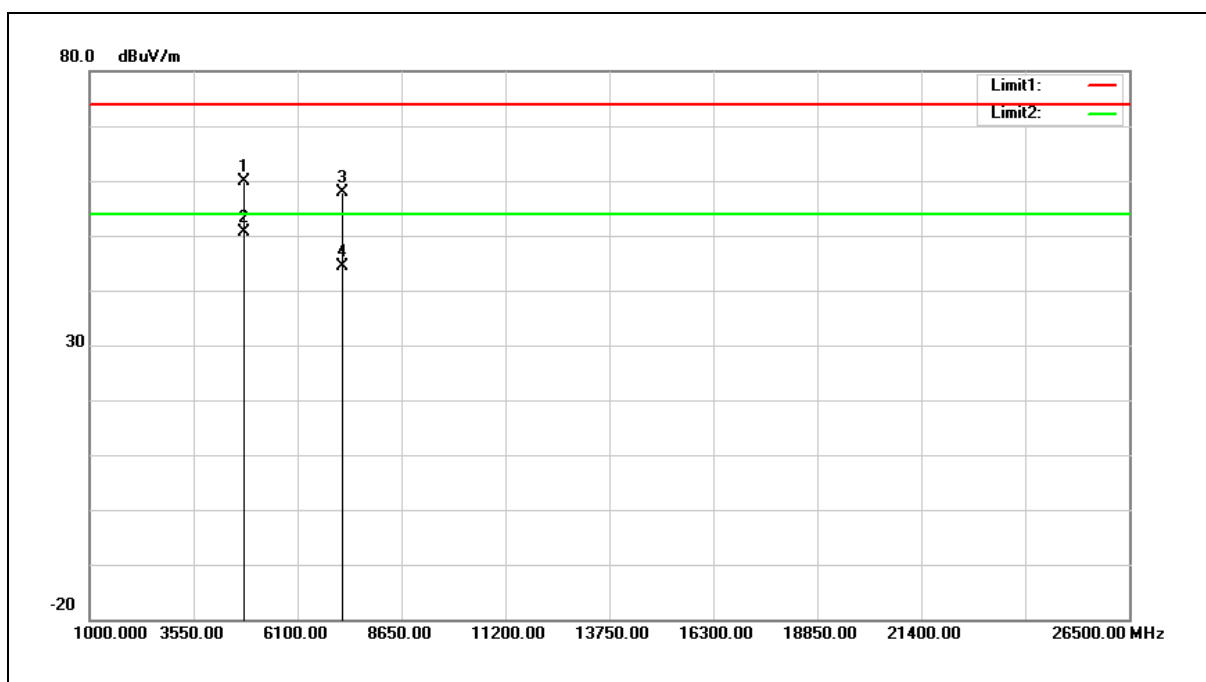
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	64.03	-4.81	59.22	74.00	-14.78	peak
2	4804.000	55.29	-4.81	50.48	54.00	-3.52	AVG
3	7206.000	52.32	-0.51	51.81	74.00	-22.19	peak

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:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



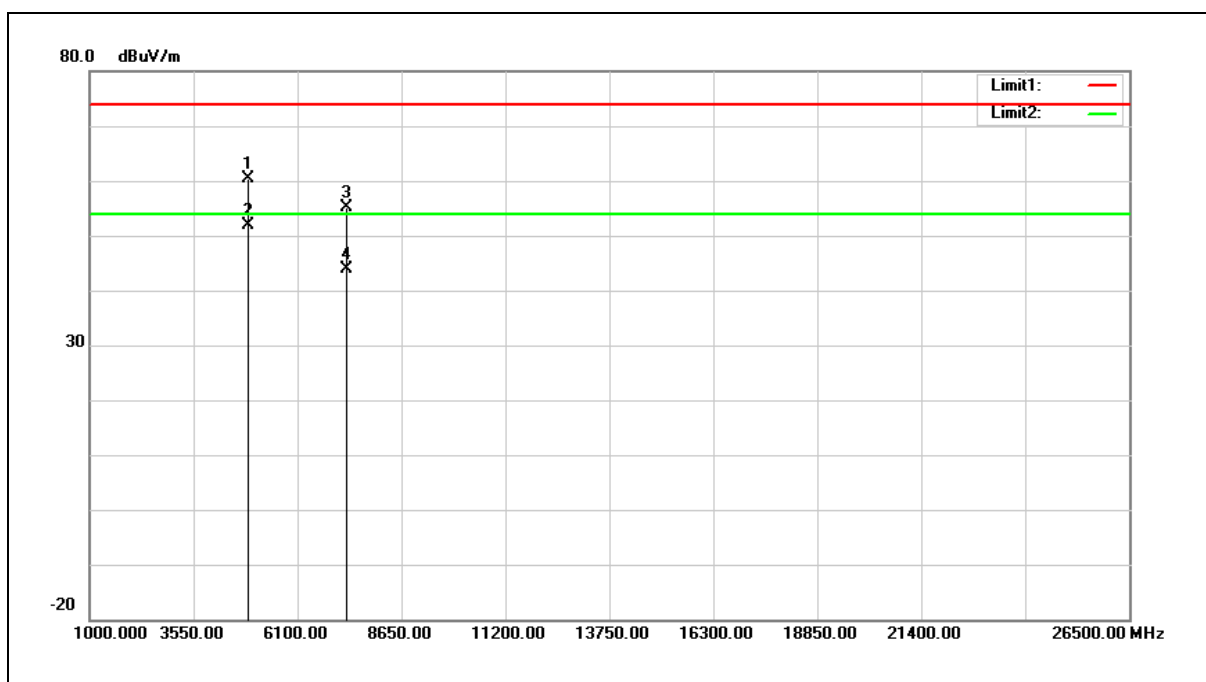
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	64.69	-4.81	59.88	74.00	-14.12	peak
2	4804.000	55.39	-4.81	50.58	54.00	-3.42	AVG
3	7206.000	58.28	-0.51	57.77	74.00	-16.23	peak
4	7206.000	44.94	-0.51	44.43	54.00	-9.57	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



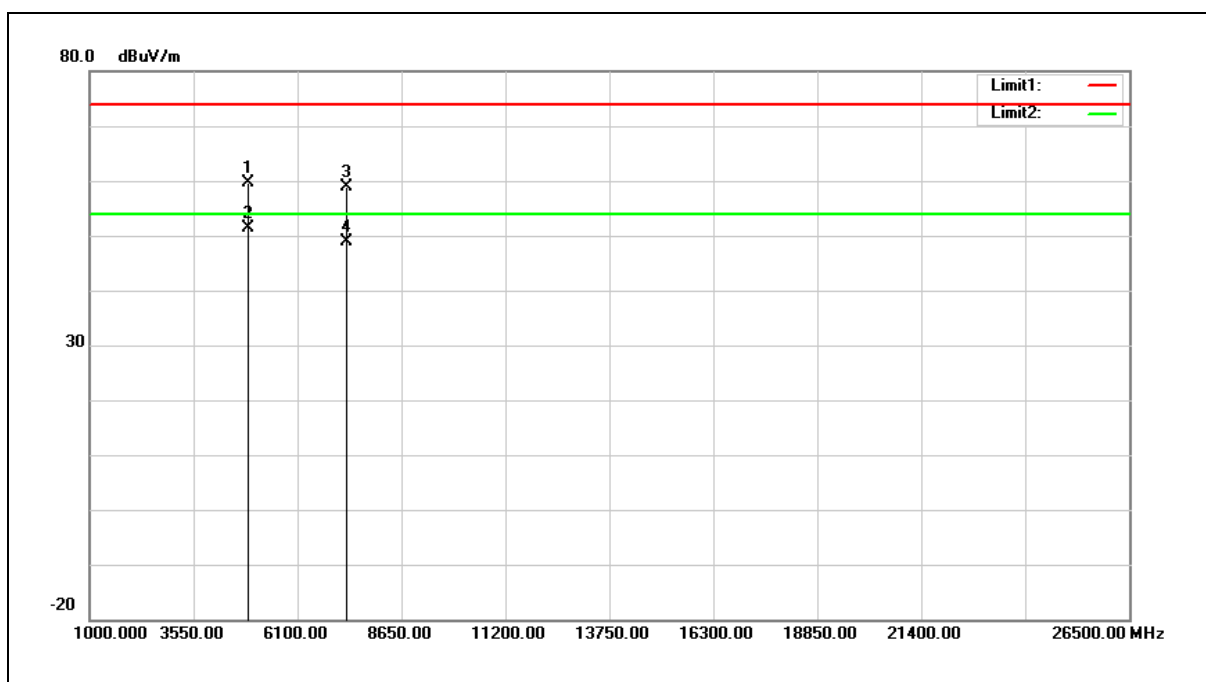
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	65.31	-4.85	60.46	74.00	-13.54	peak
2	4880.000	56.73	-4.85	51.88	54.00	-2.12	AVG
3	7320.000	55.30	-0.21	55.09	74.00	-18.91	peak
4	7320.000	44.01	-0.21	43.80	54.00	-10.20	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2440 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



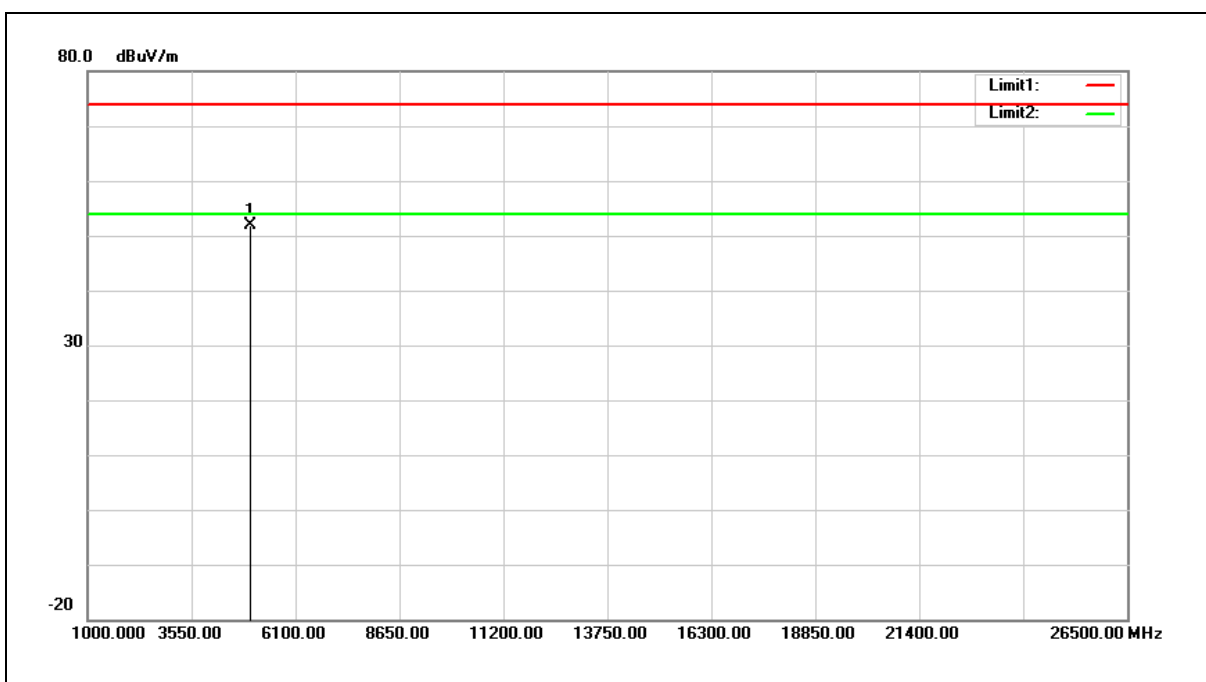
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	64.40	-4.85	59.55	74.00	-14.45	peak
2	4880.000	56.13	-4.85	51.28	54.00	-2.72	AVG
3	7320.000	59.14	-0.21	58.93	74.00	-15.07	peak
4	7320.000	49.01	-0.21	48.80	54.00	-5.20	AVG

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:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



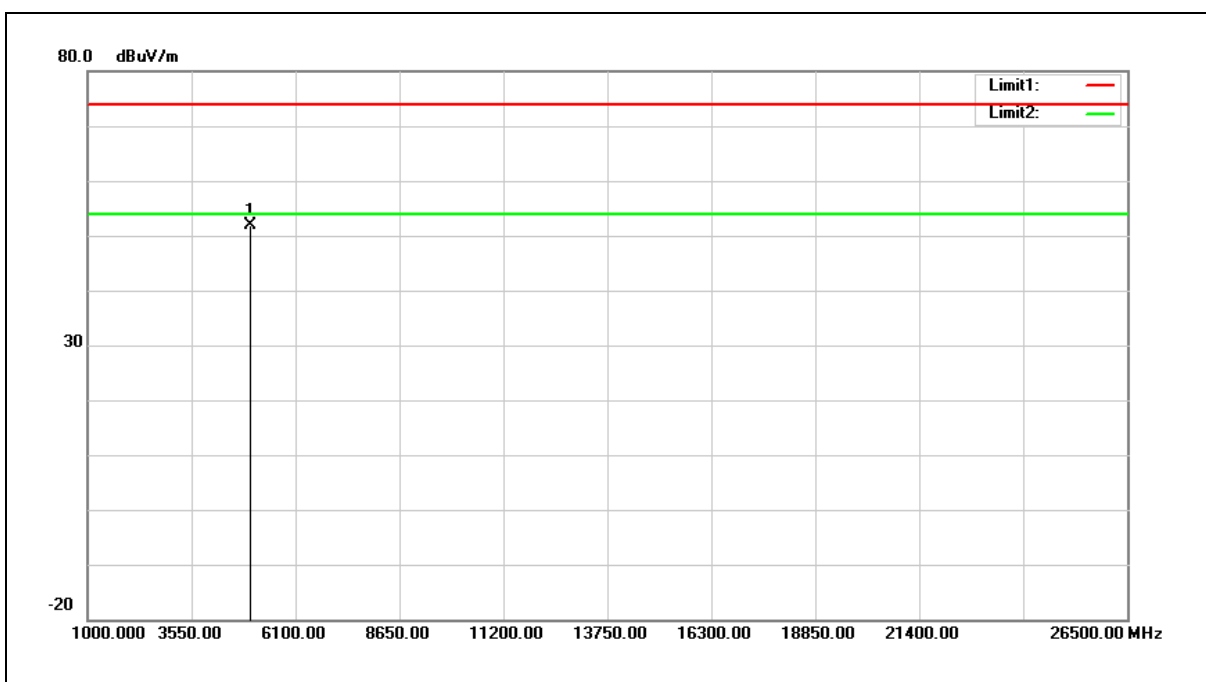
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	56.66	-4.89	51.77	74.00	-22.23	peak

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:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



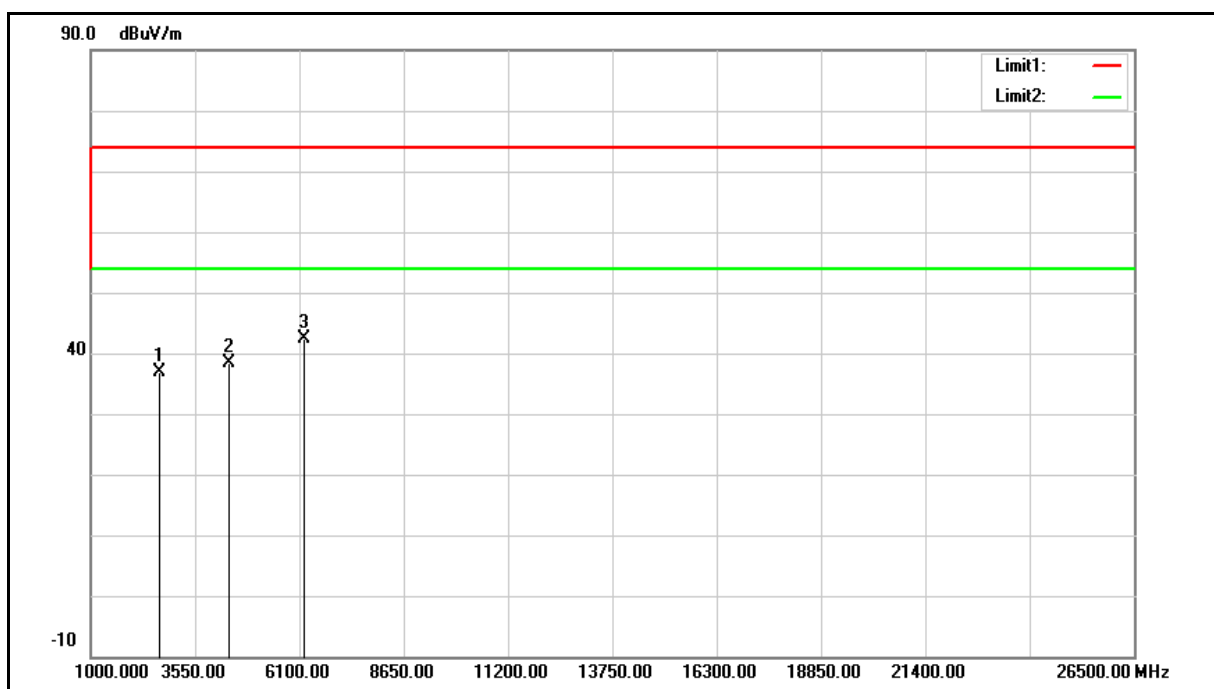
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	56.68	-4.89	51.79	74.00	-22.21	peak

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:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 6	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Ant.Polar.:	Horizontal		



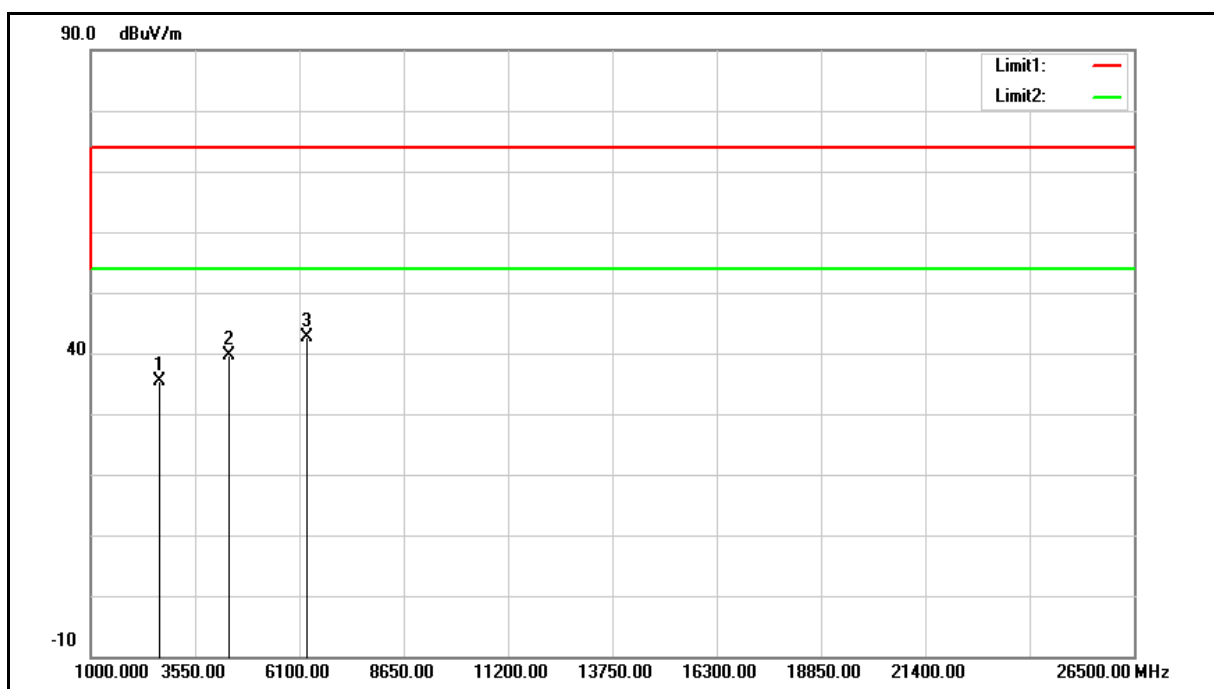
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2666.000	37.15	-0.28	36.87	74.00	-37.13	peak
2	4383.000	34.18	4.31	38.49	74.00	-35.51	peak
3	6202.000	33.55	8.74	42.29	74.00	-31.71	peak

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:	3 m
Test item:	Harmonic	Power:	DC 3.3 V
Mode:	Mode 6	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2683.000	35.59	-0.22	35.37	74.00	-38.63	peak
2	4383.000	35.21	4.31	39.52	74.00	-34.48	peak
3	6287.000	33.45	9.08	42.53	74.00	-31.47	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).

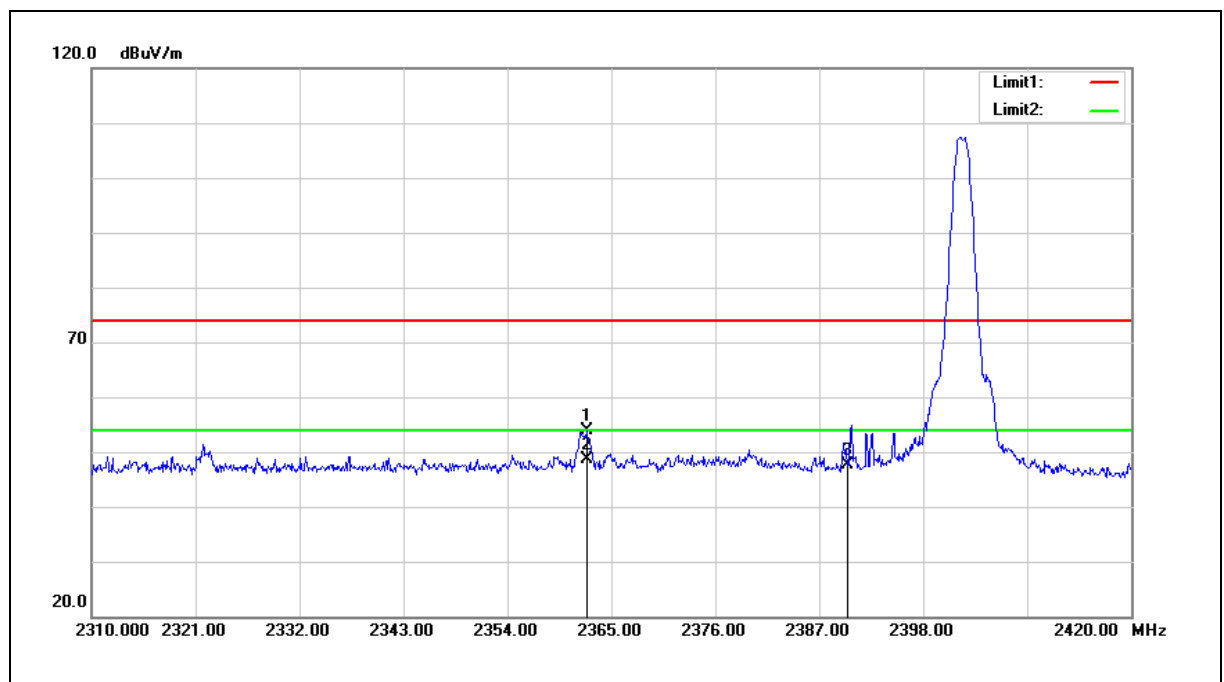
3.When the peak results are less than average limit, so not need to evaluate the average.

頻帶邊緣

附註：其上下邊緣落於低功率射頻電機第 2.7 節所列頻帶內之混附發射，其電場強度必須符合第 2.8 節的限制規定。

Power setting 1_Antenna Type: PCB Trace Antenna

Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



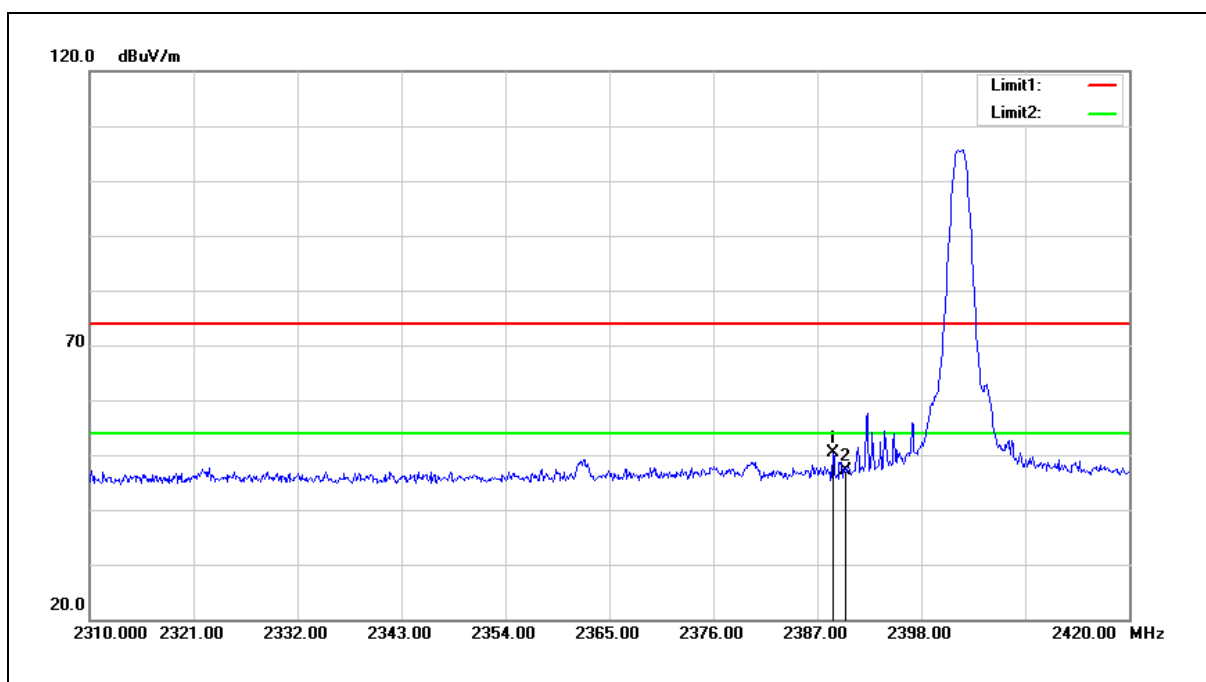
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2362.360	63.60	-9.73	53.87	74.00	-20.13	peak
2	2362.360	58.25	-9.73	48.52	54.00	-5.48	AVG
3	2390.000	57.19	-9.62	47.57	74.00	-26.43	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



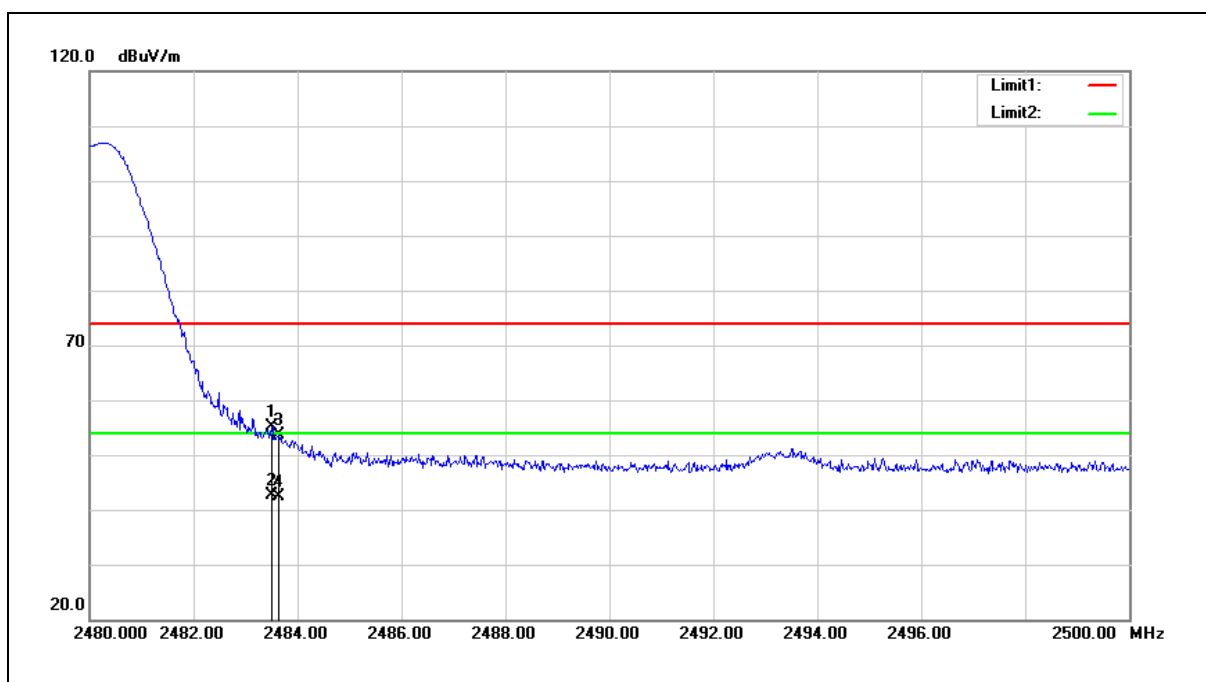
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.650	60.10	-9.63	50.47	74.00	-23.53	peak
2	2390.000	56.86	-9.62	47.24	74.00	-26.76	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



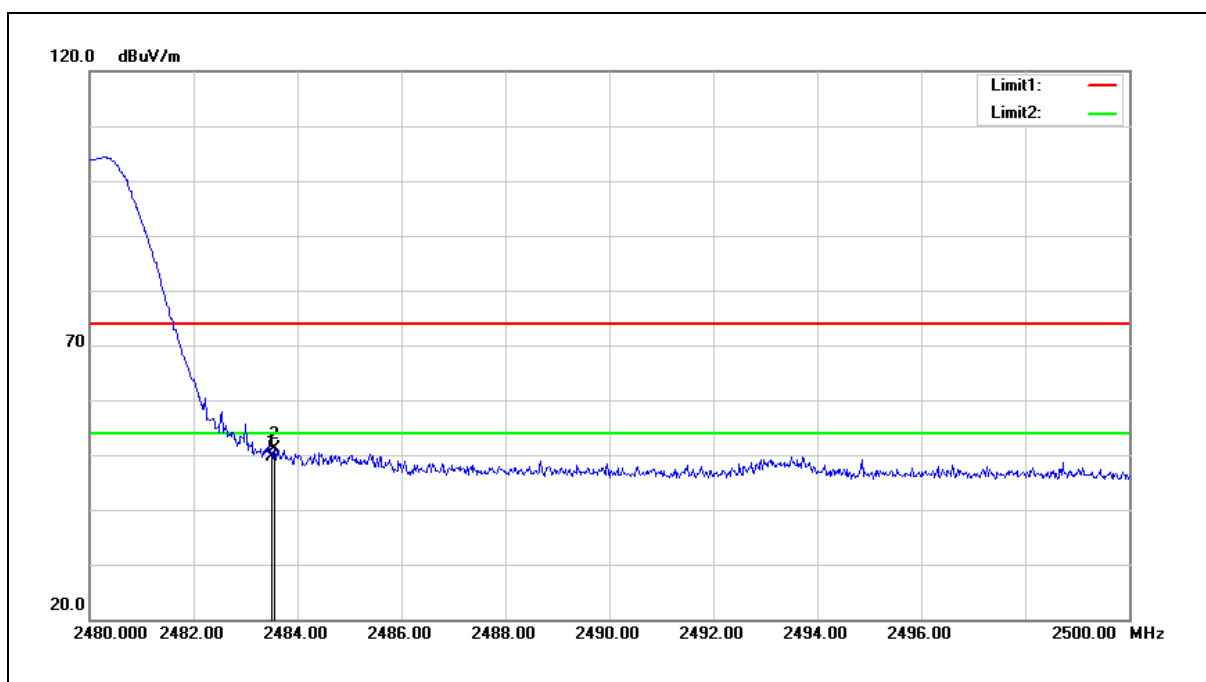
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	64.39	-9.37	55.02	74.00	-18.98	peak
2	2483.500	51.89	-9.37	42.52	54.00	-11.48	AVG
3	2483.640	62.88	-9.37	53.51	74.00	-20.49	peak
4	2483.640	51.65	-9.37	42.28	54.00	-11.72	AVG

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:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



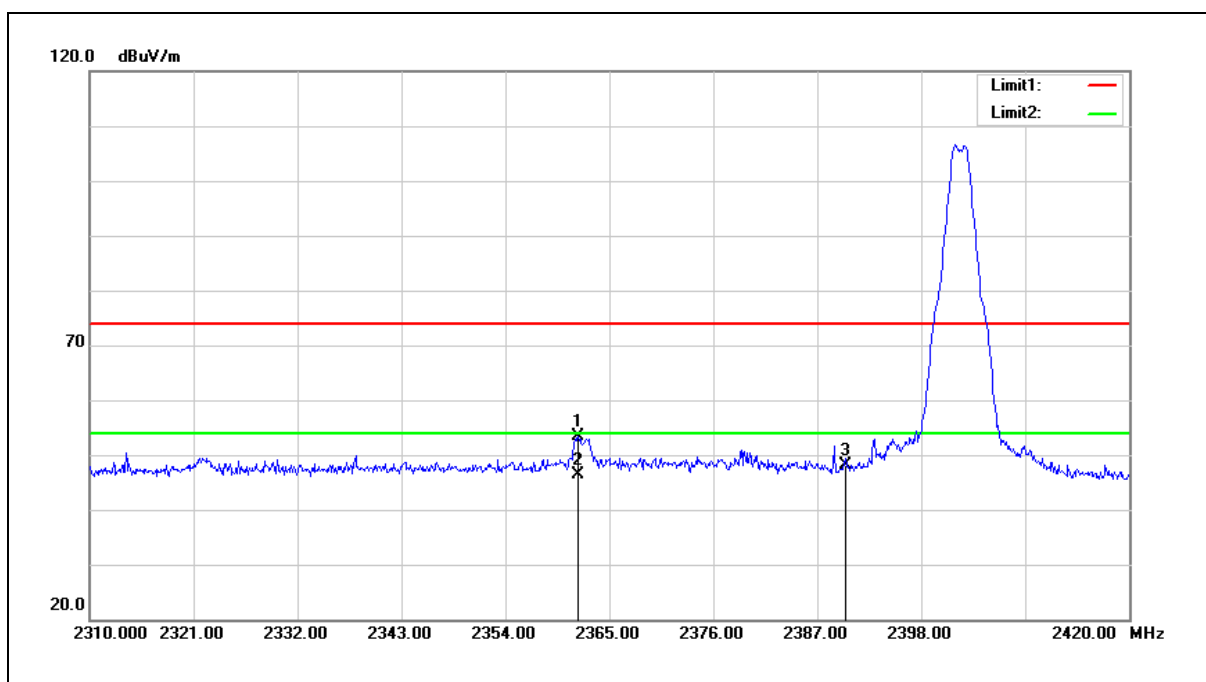
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	58.96	-9.37	49.59	74.00	-24.41	peak
2	2483.560	60.44	-9.37	51.07	74.00	-22.93	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



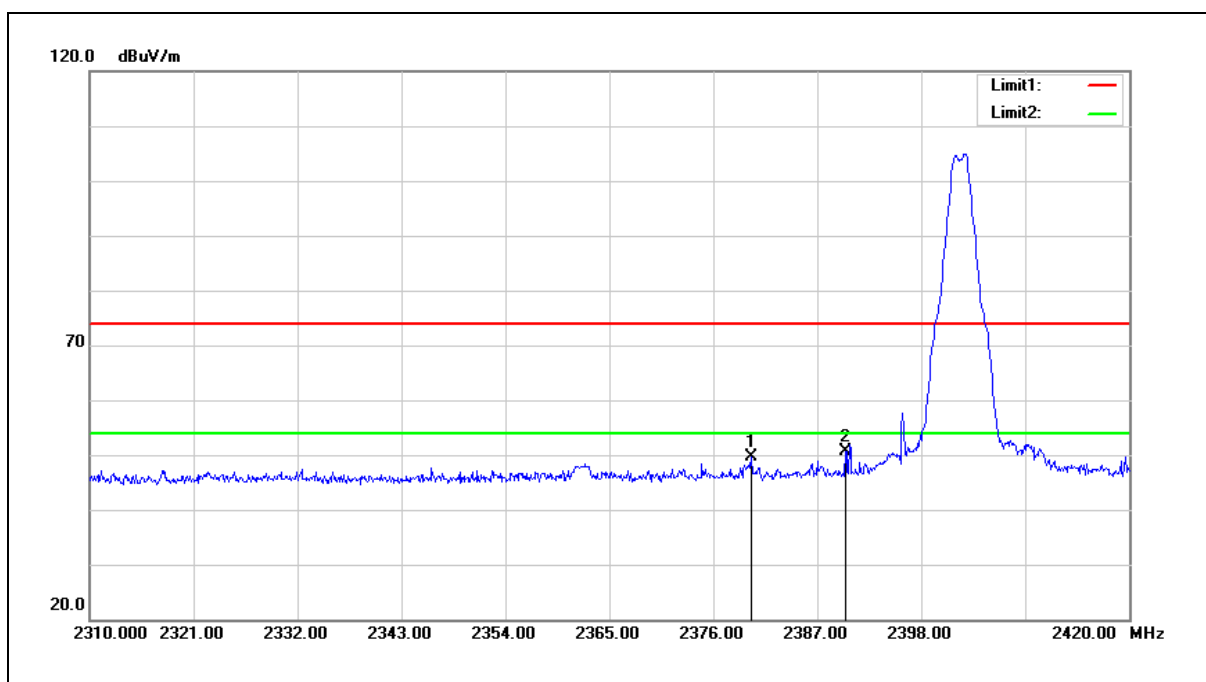
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2361.700	63.07	-9.73	53.34	74.00	-20.66	peak
2	2361.700	56.11	-9.73	46.38	54.00	-7.62	AVG
3	2390.000	57.71	-9.62	48.09	74.00	-25.91	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



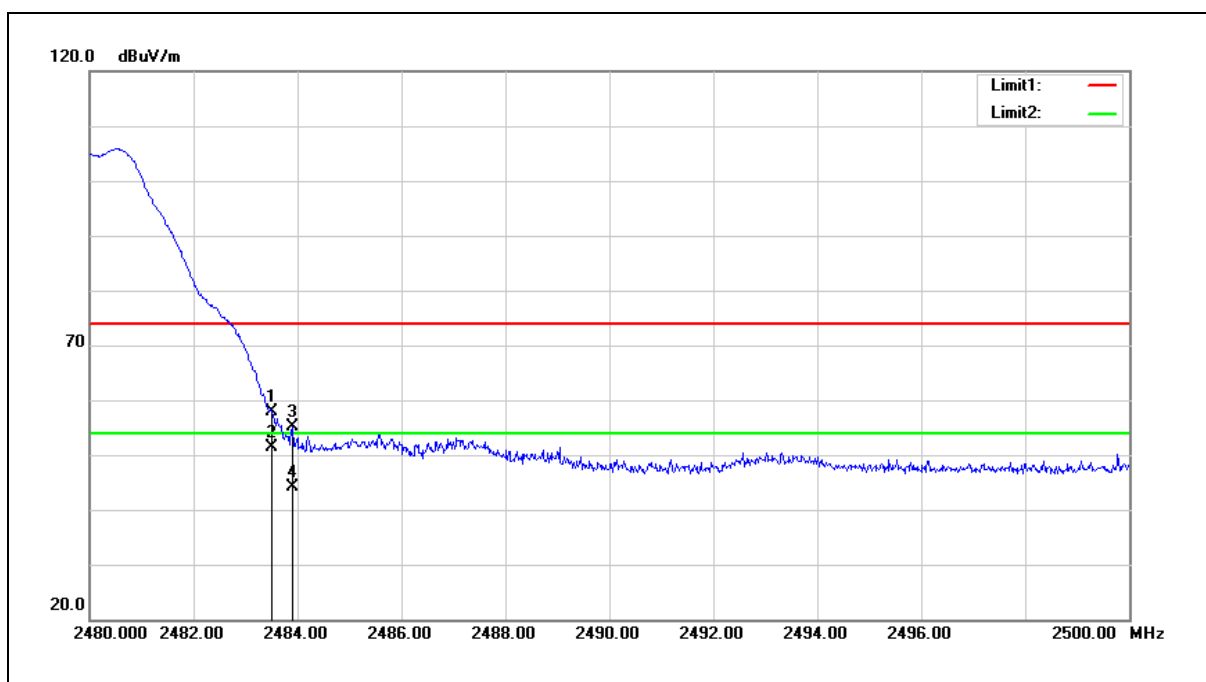
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2379.960	59.32	-9.66	49.66	74.00	-24.34	peak
2	2390.000	60.29	-9.62	50.67	74.00	-23.33	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



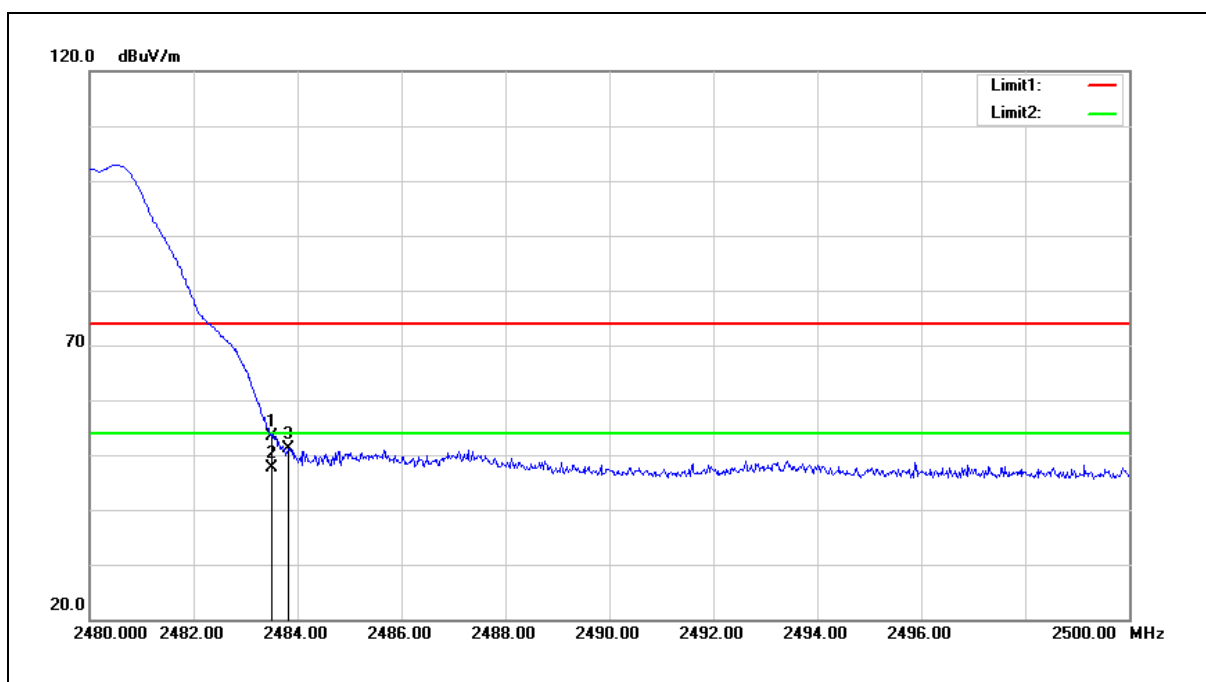
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	67.15	-9.37	57.78	74.00	-16.22	peak
2	2483.500	60.78	-9.37	51.41	54.00	-2.59	AVG
3	2483.900	64.49	-9.37	55.12	74.00	-18.88	peak
4	2483.900	53.56	-9.37	44.19	54.00	-9.81	AVG

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:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	62.70	-9.37	53.33	74.00	-20.67	peak
2	2483.500	56.88	-9.37	47.51	54.00	-6.49	AVG
3	2483.820	60.44	-9.37	51.07	74.00	-22.93	peak

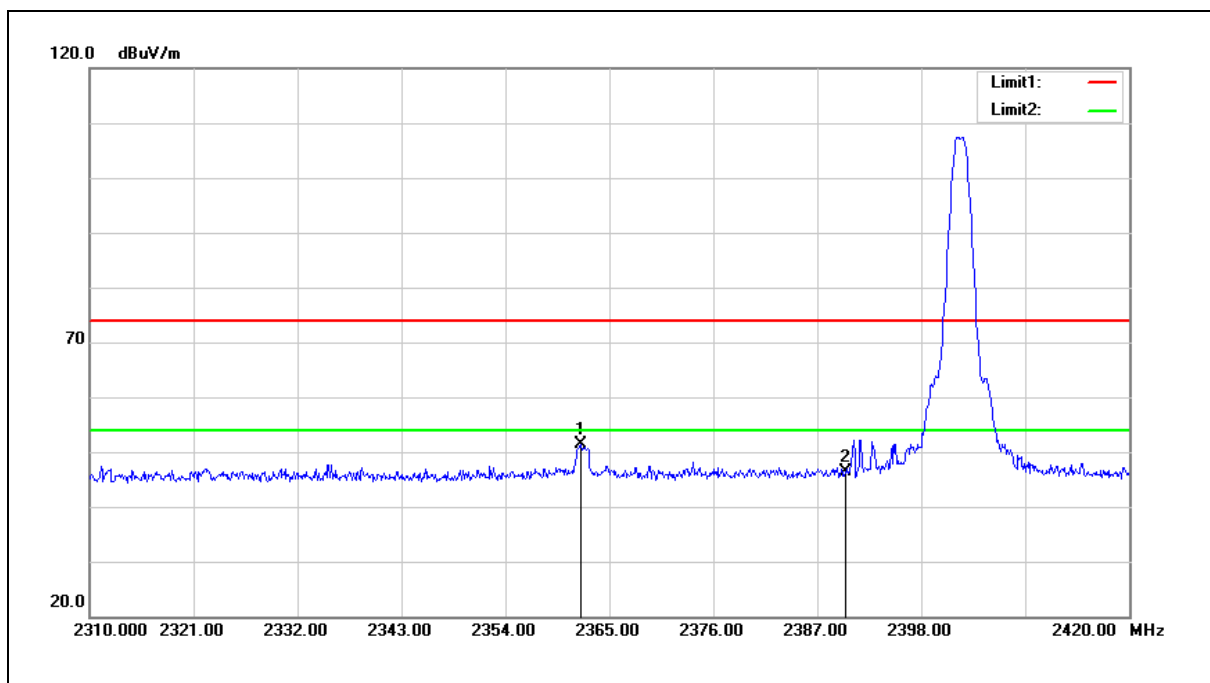
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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.

Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna

Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



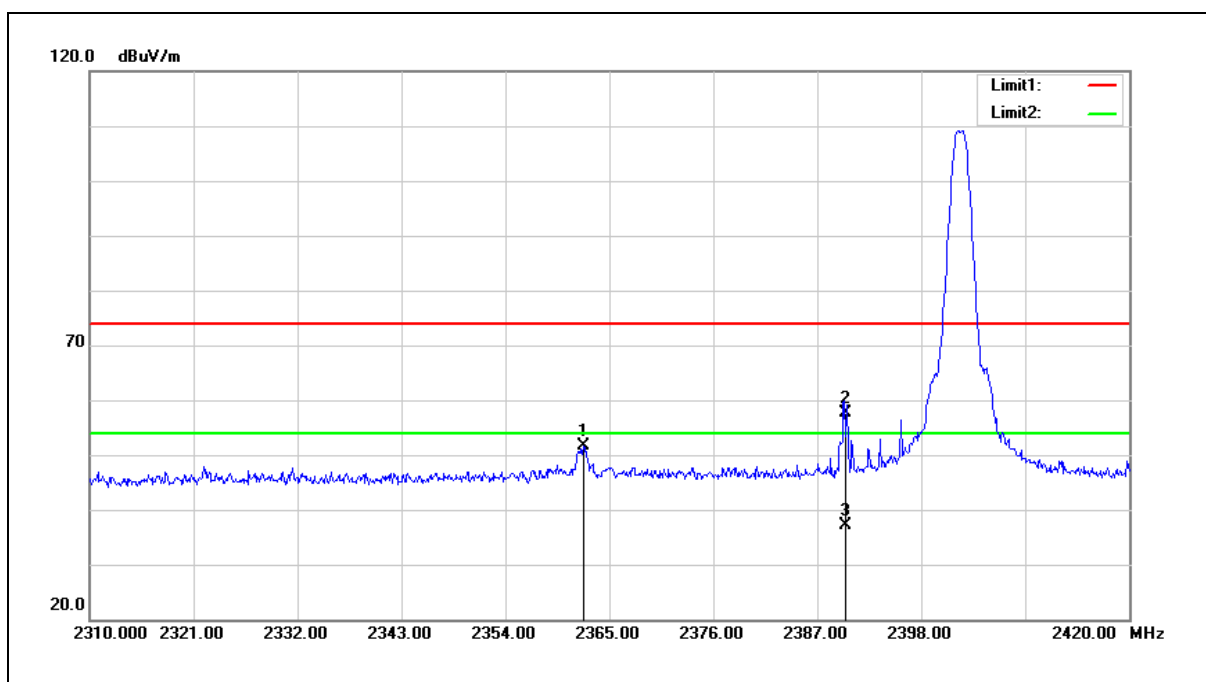
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2361.920	61.21	-9.73	51.48	74.00	-22.52	peak
2	2390.000	55.97	-9.62	46.35	74.00	-27.65	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



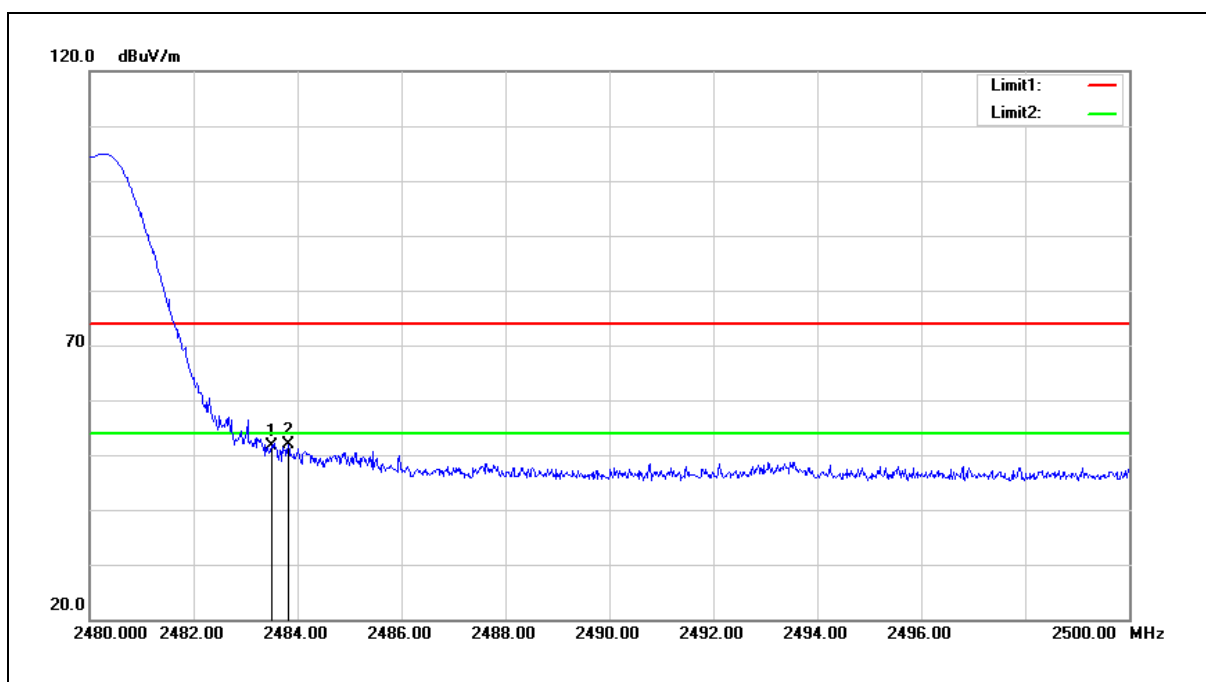
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2362.250	61.30	-9.73	51.57	74.00	-22.43	peak
2	2390.000	67.22	-9.62	57.60	74.00	-16.40	peak
3	2390.000	46.66	-9.62	37.04	54.00	-16.96	AVG

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:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



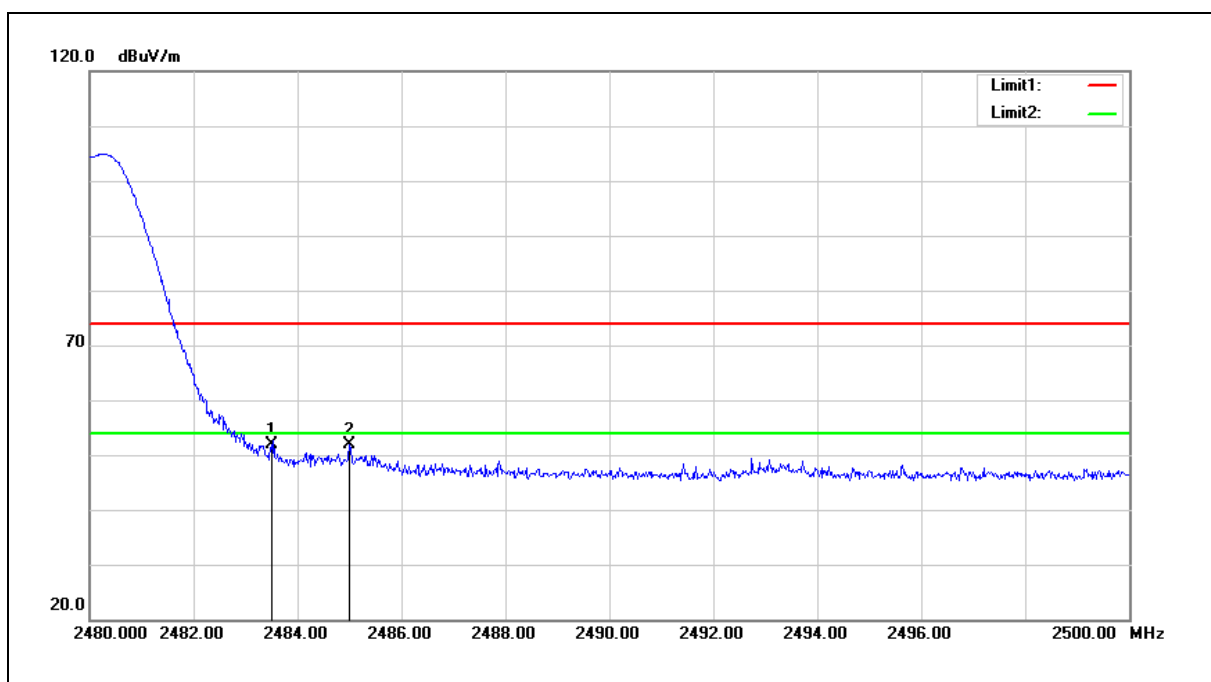
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	60.92	-9.37	51.55	74.00	-22.45	peak
2	2483.820	61.14	-9.37	51.77	74.00	-22.23	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



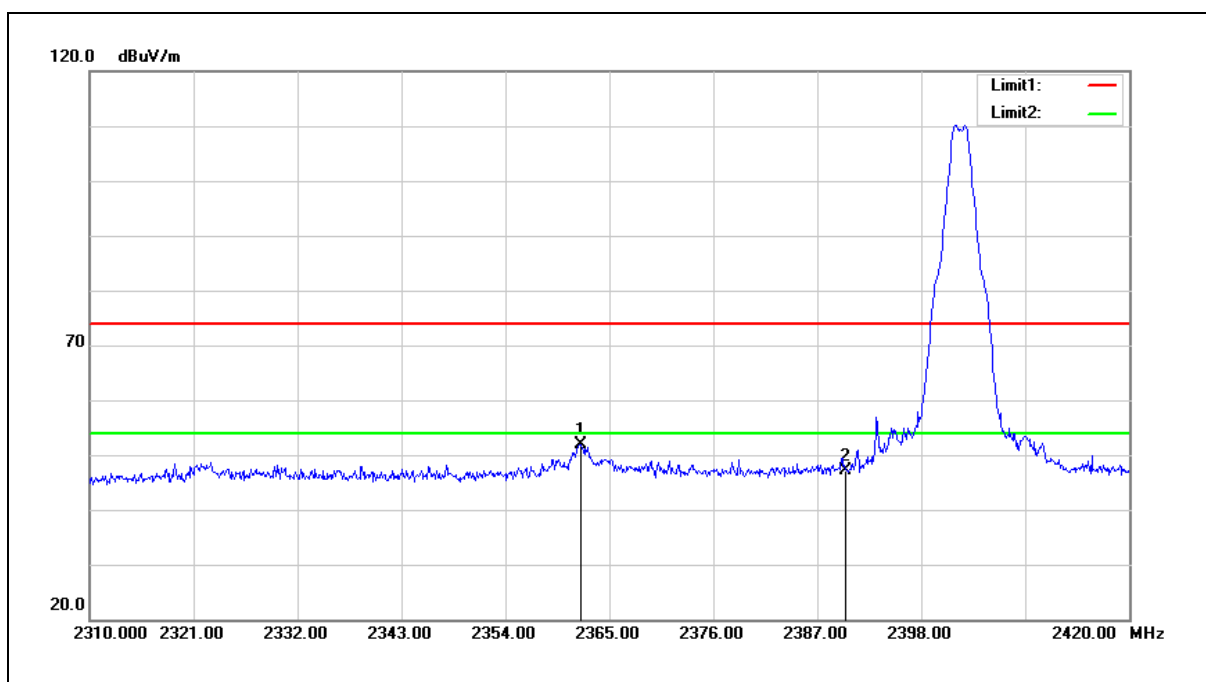
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	61.27	-9.37	51.90	74.00	-22.10	peak
2	2485.000	61.15	-9.37	51.78	74.00	-22.22	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



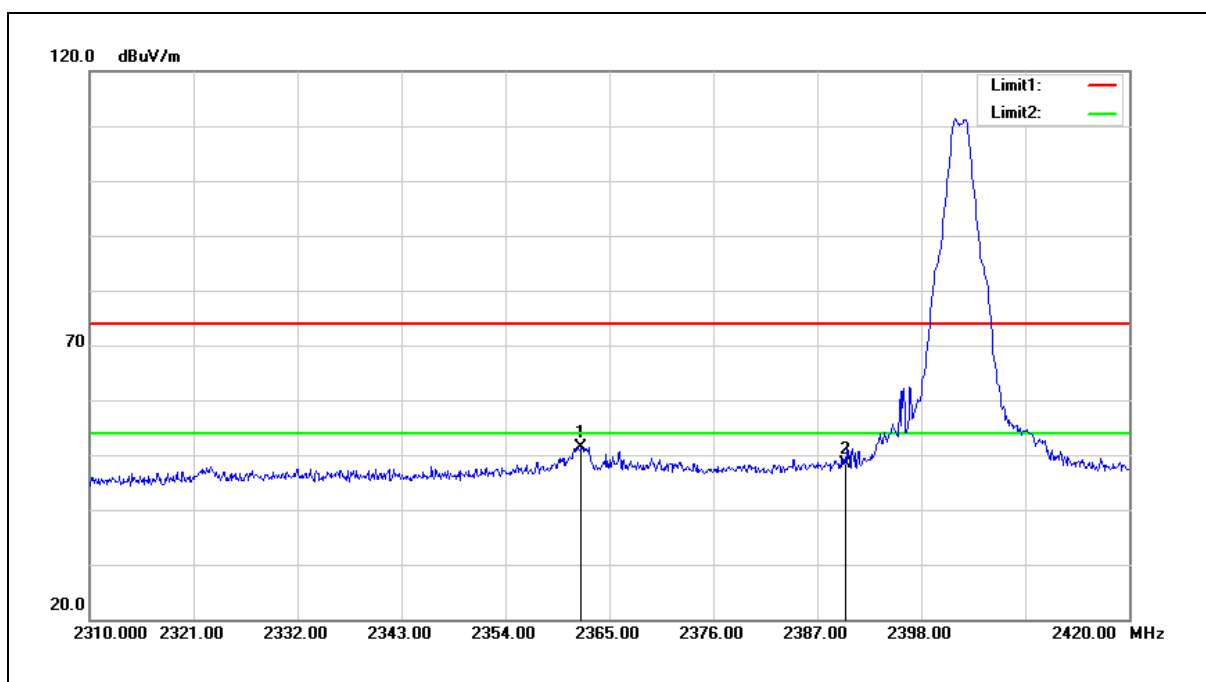
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2361.920	61.68	-9.73	51.95	74.00	-22.05	peak
2	2390.000	56.64	-9.62	47.02	74.00	-26.98	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2402 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



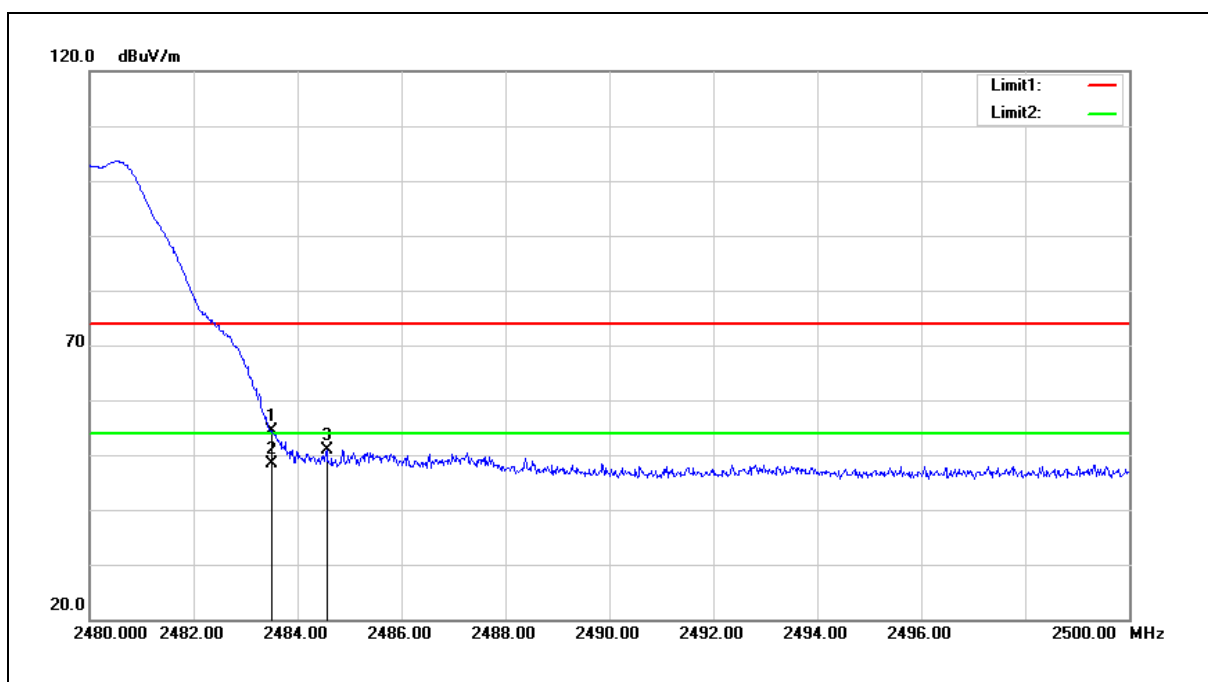
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2362.030	61.13	-9.73	51.40	74.00	-22.60	peak
2	2390.000	58.09	-9.62	48.47	74.00	-25.53	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



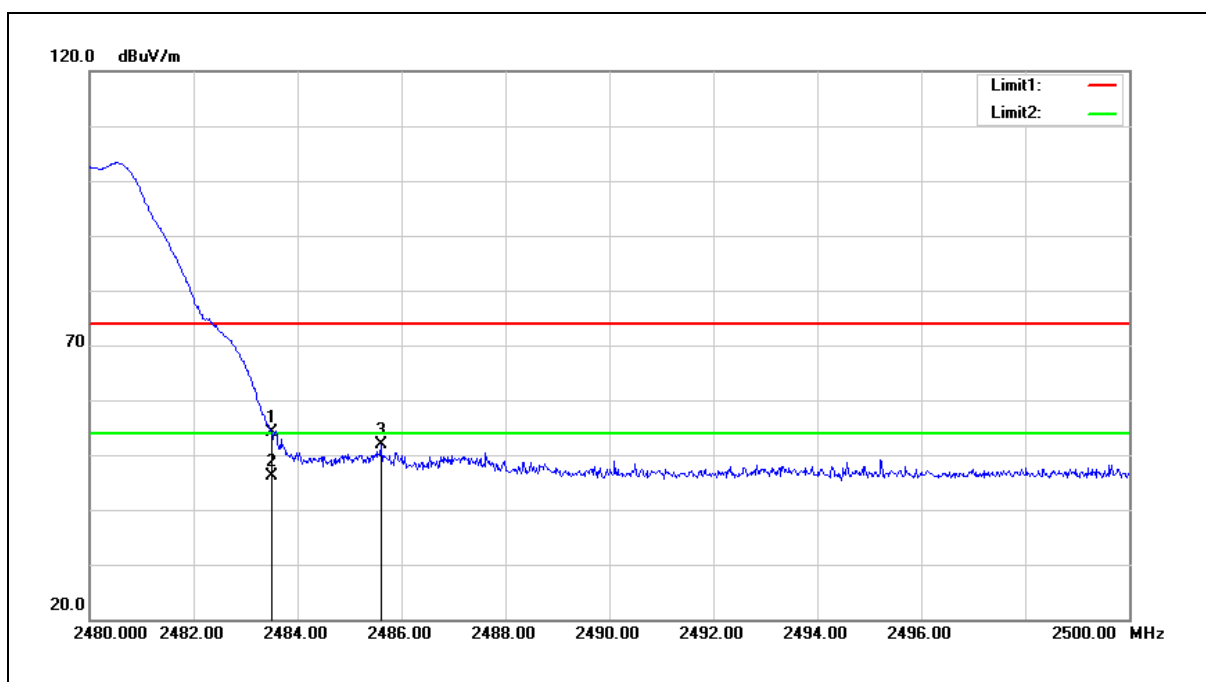
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	63.85	-9.37	54.48	74.00	-19.52	peak
2	2483.500	57.67	-9.37	48.30	54.00	-5.70	AVG
3	2484.560	60.20	-9.37	50.83	74.00	-23.17	peak

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:	3 m
Test item:	Band edge	Power:	DC 3.3 V
Frequency:	2480 MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Mode:	Mode 3		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	63.38	-9.37	54.01	74.00	-19.99	peak
2	2483.500	55.57	-9.37	46.20	54.00	-7.80	AVG
3	2485.600	61.33	-9.37	51.96	74.00	-22.04	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).

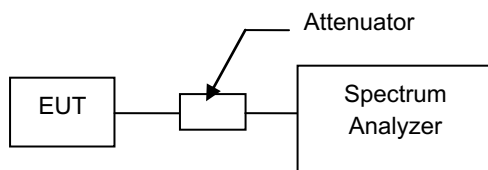
3.When the peak results are less than average limit, so not need to evaluate the average.

4.4 非必要頻帶之量測

合格標準：

發射限制： 使用頻帶範圍外之任意 100 千赫 (kHz)內，發射器所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之 100 千赫 (kHz)內的射頻功率，須衰減 20 分貝(dB)，以射頻傳導或輻射方式測量。

測試架構圖：



測試結果：

操作模式	: Mode 2: LE, GFSK Continuous TX Mode Mode 3: 2LE, GFSK Continuous TX Mode
測試結果	: 合格
量測之結果掃圖如下頁所示	

附註 1: 於使用頻帶範圍之任意 100 千赫 (kHz)內，發射器所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之 100 千赫 (kHz)內的射頻功率，衰減 20 分貝(dB)以上，符合規定。

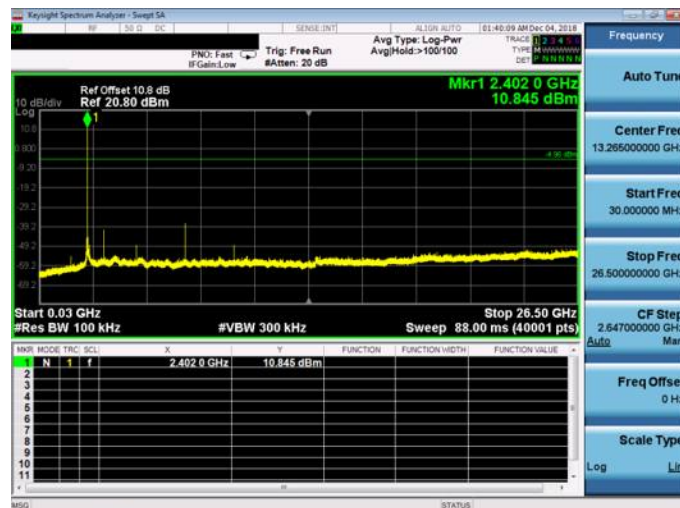
附註 2: 測試結果頻帶外之輻射雜訊皆小於主頻 TX 20 dB。

Power setting 1_Antenna Type: PCB Trace Antenna

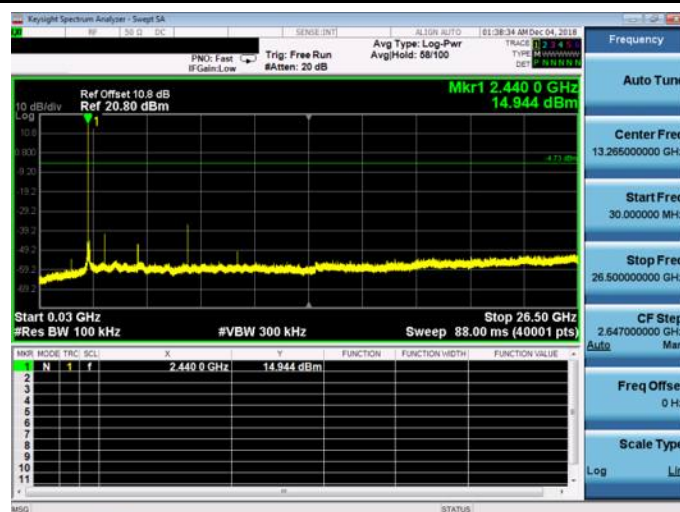
Out of Band Conducted Spurious Emission

Mode 2: LE, GFSK Continuous TX Mode

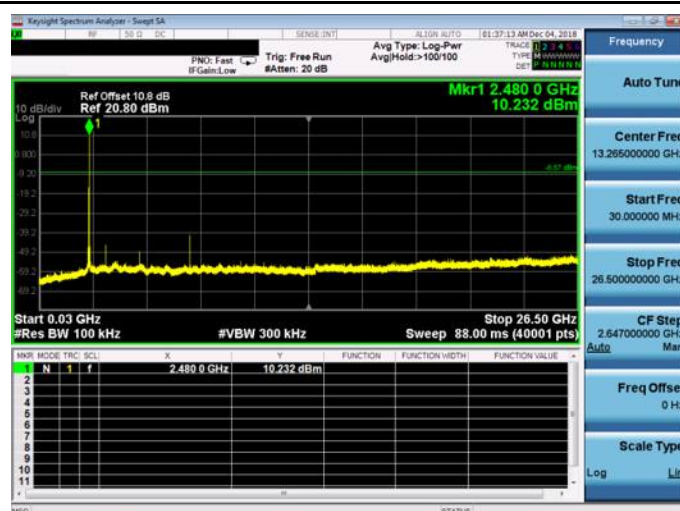
低頻道

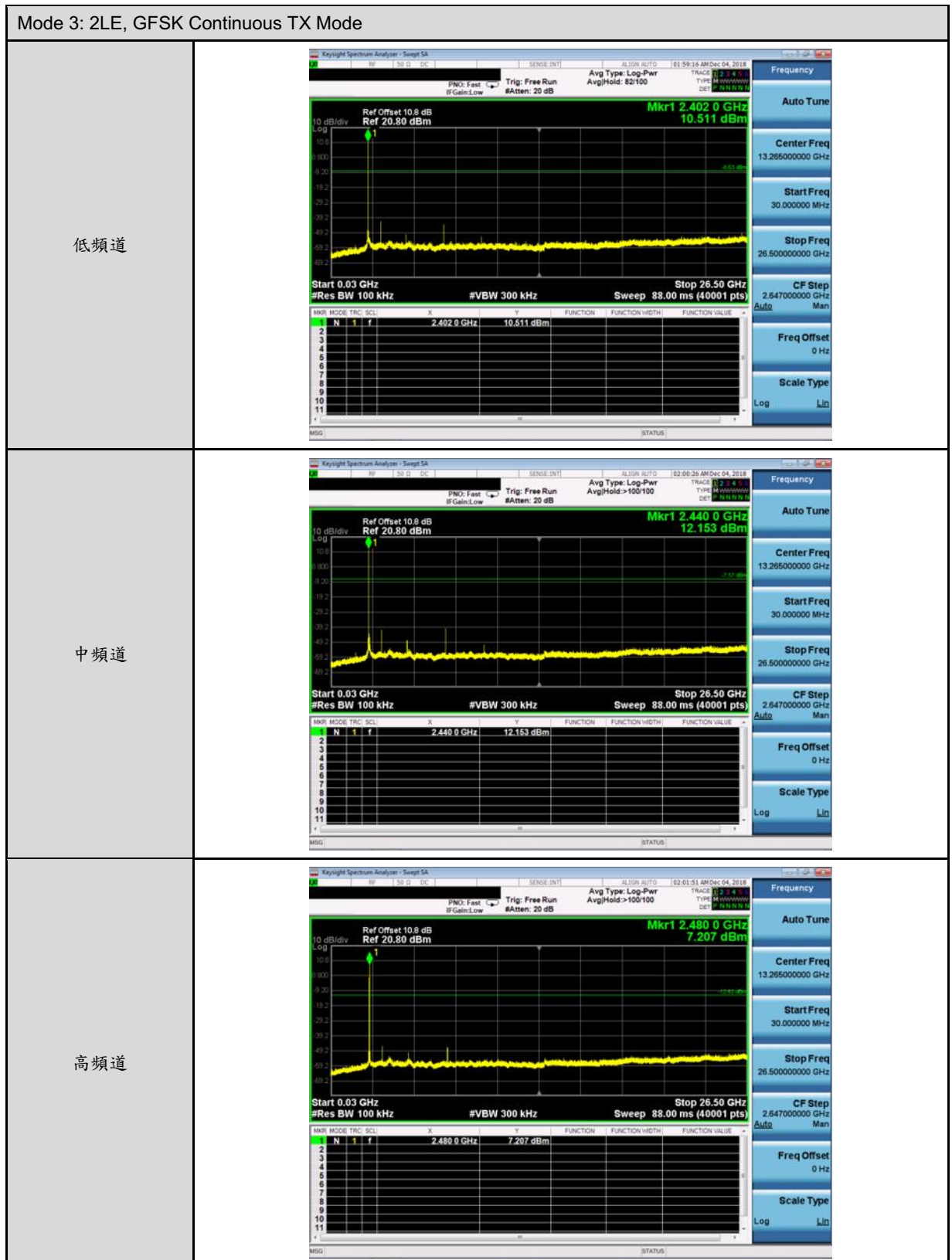


中頻道

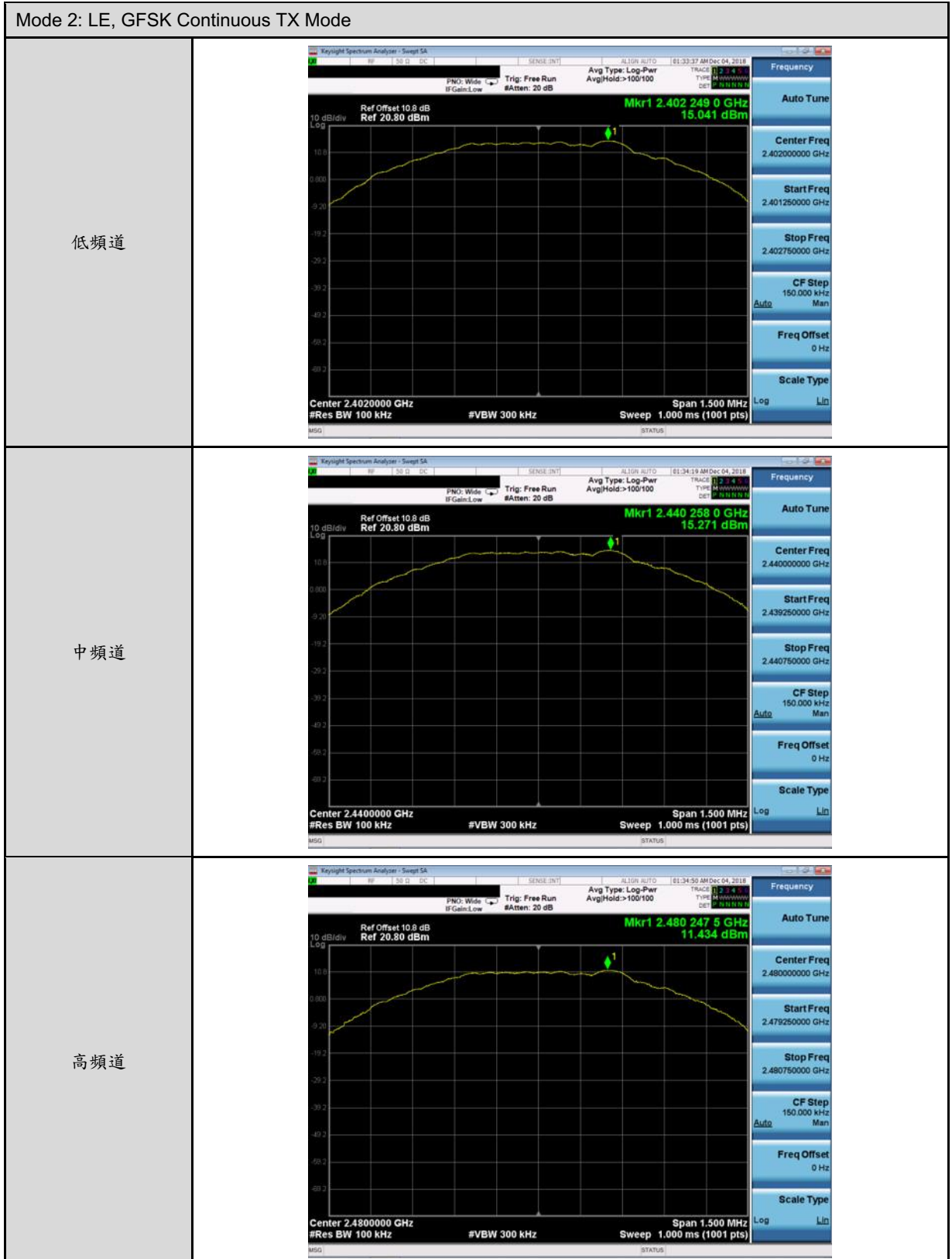


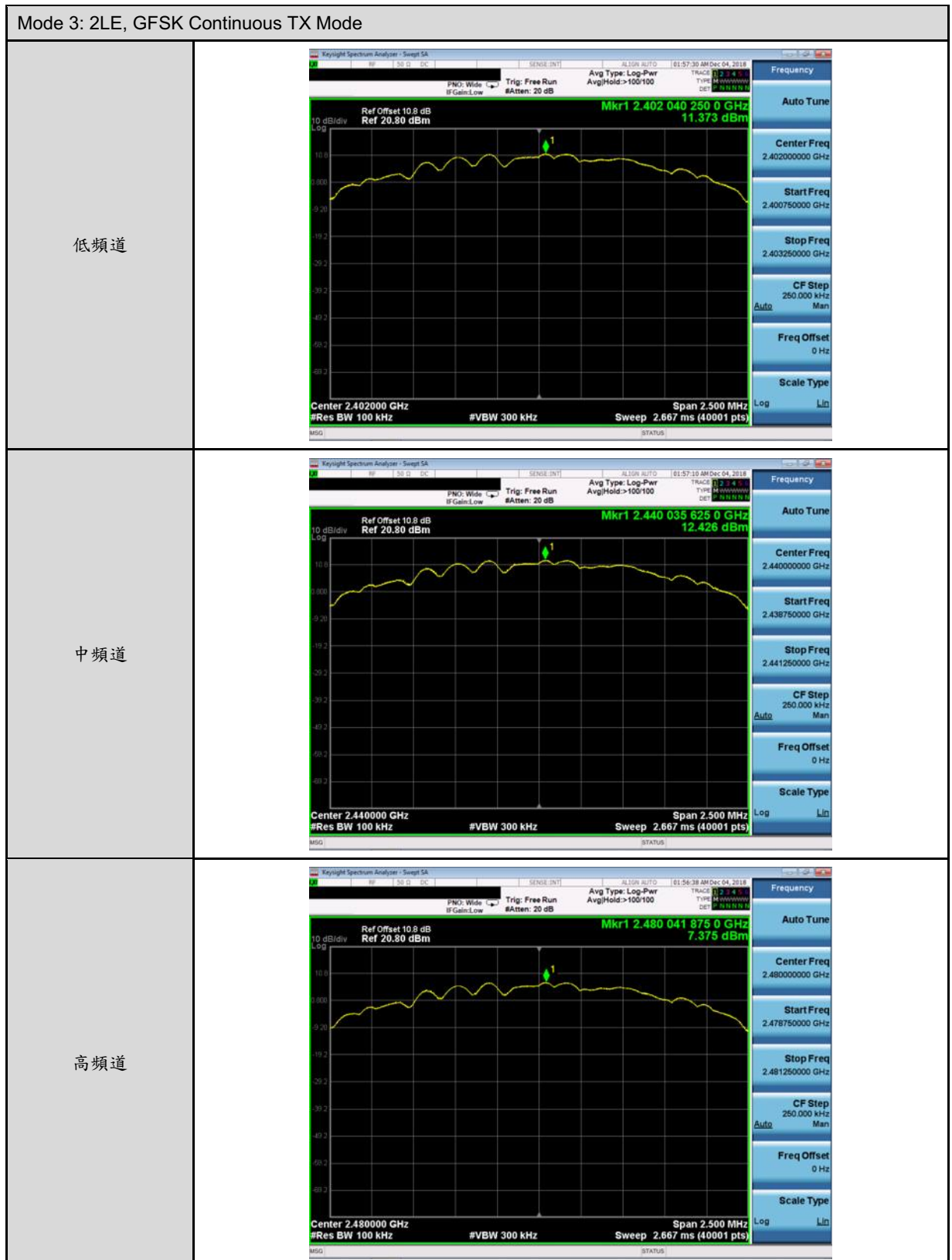
高頻道





Reference level

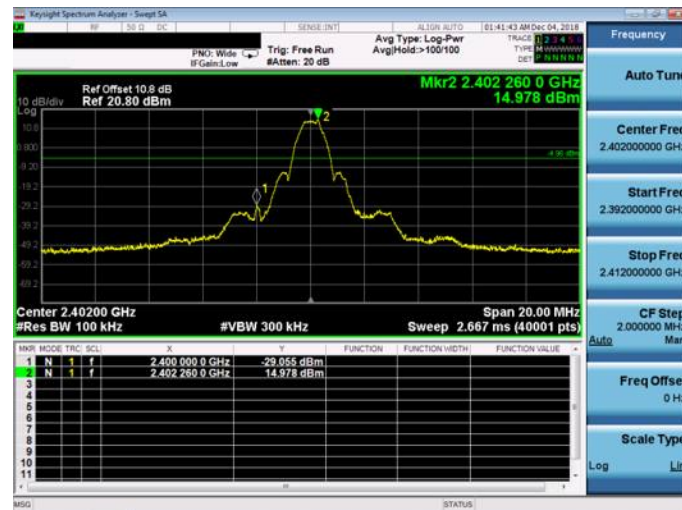




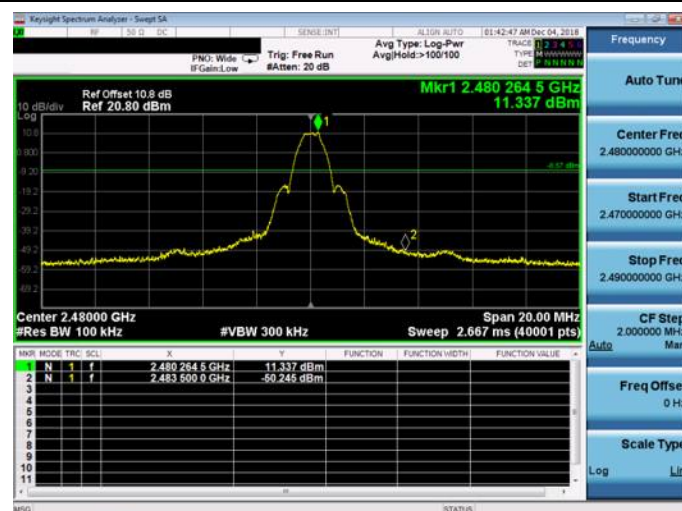
Conducted Band Edge

Mode 2: LE, GFSK Continuous TX Mode

低頻道



高頻道



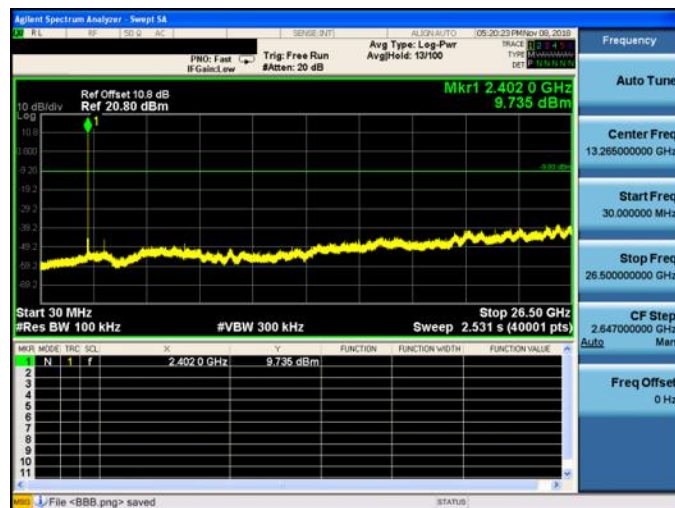


Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna

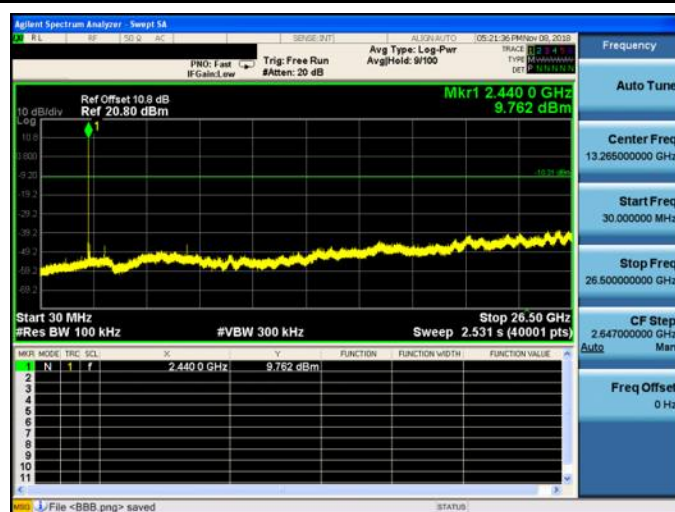
Out of Band Conducted Spurious Emission

Mode 2: LE, GFSK Continuous TX Mode

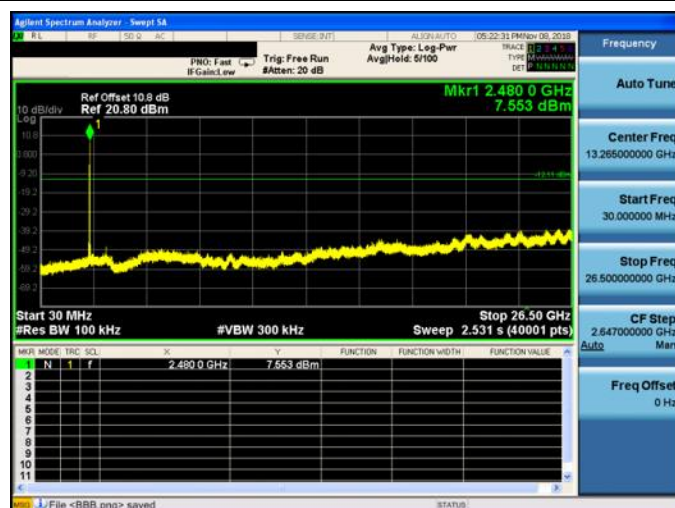
低頻道

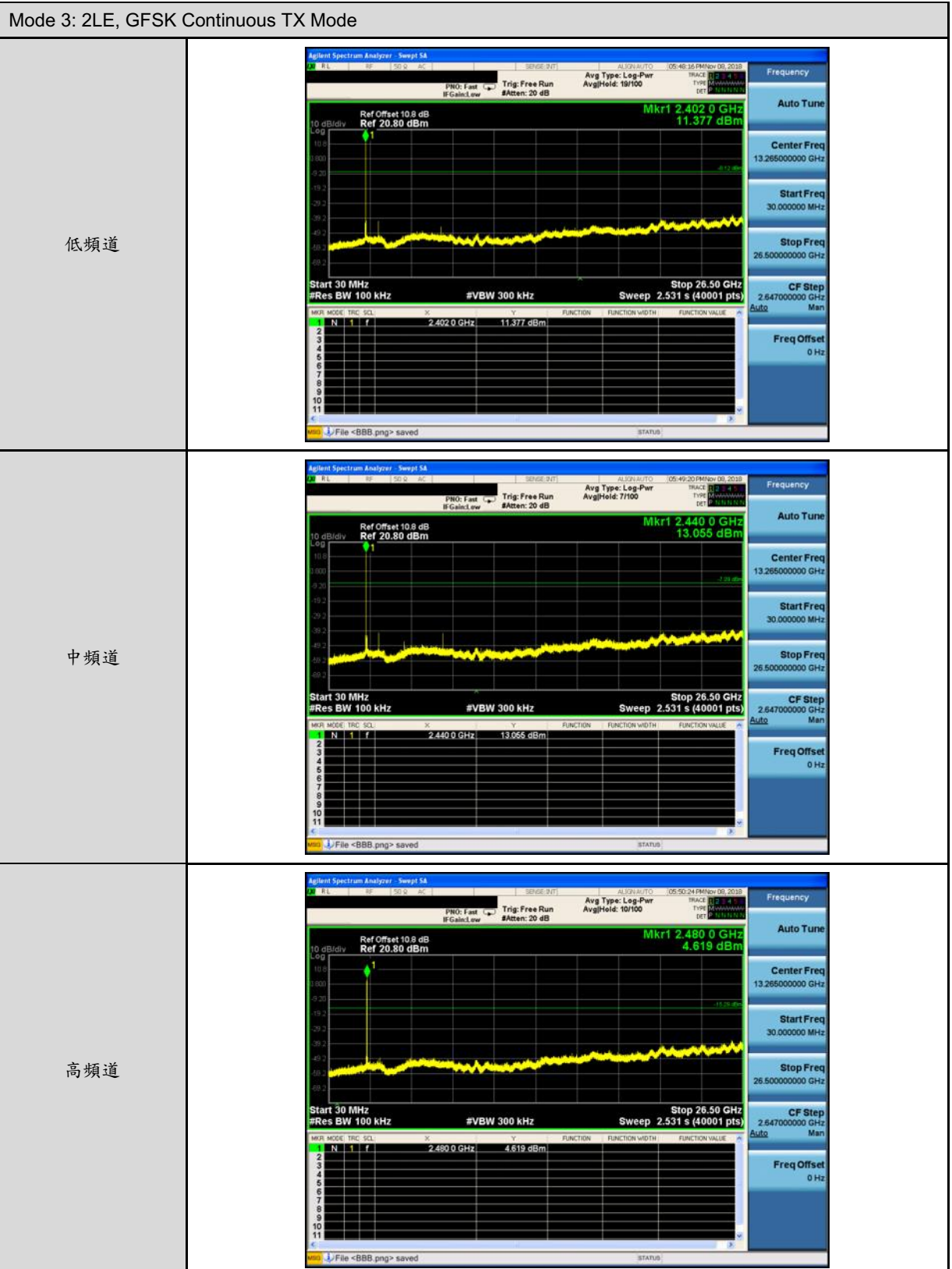


中頻道

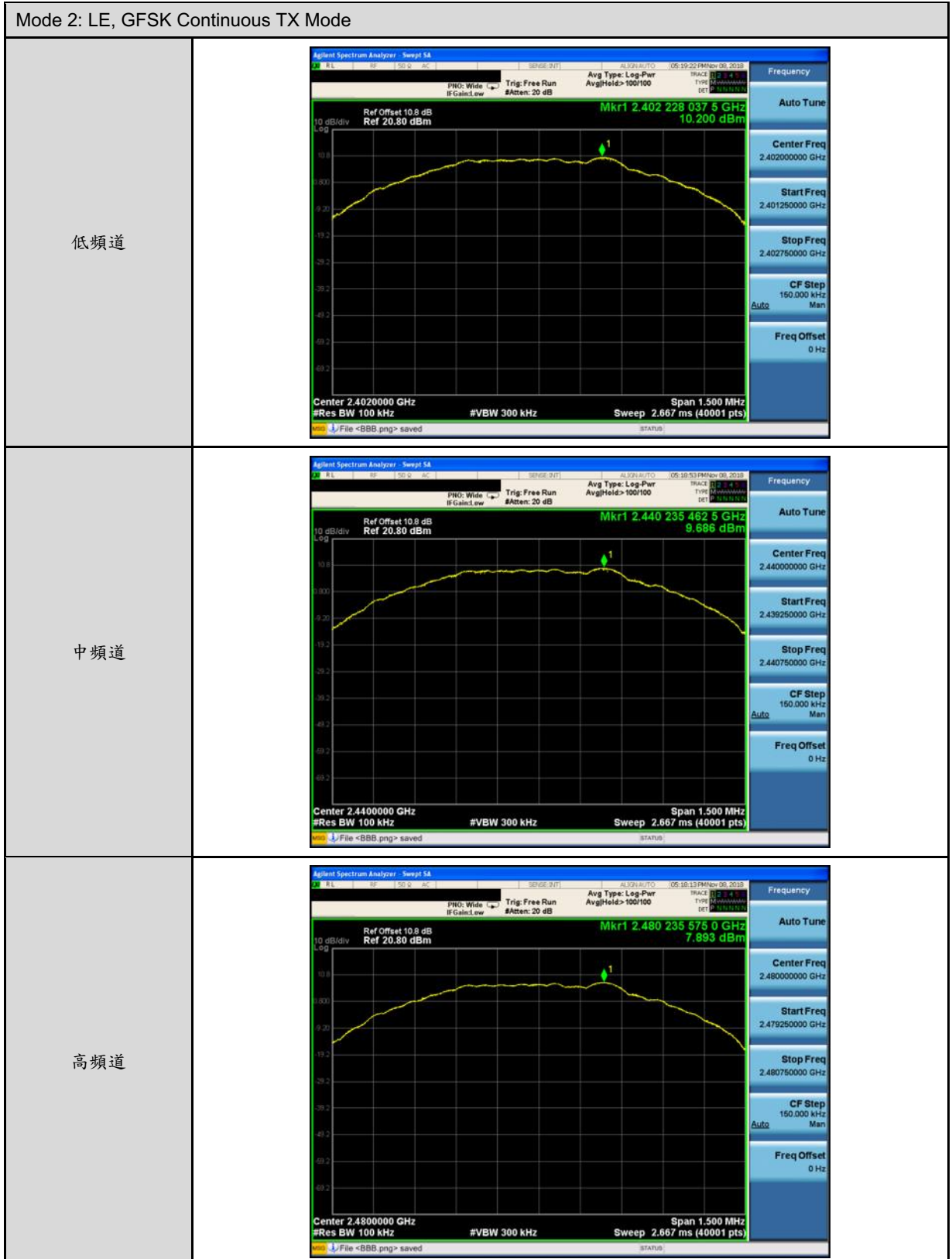


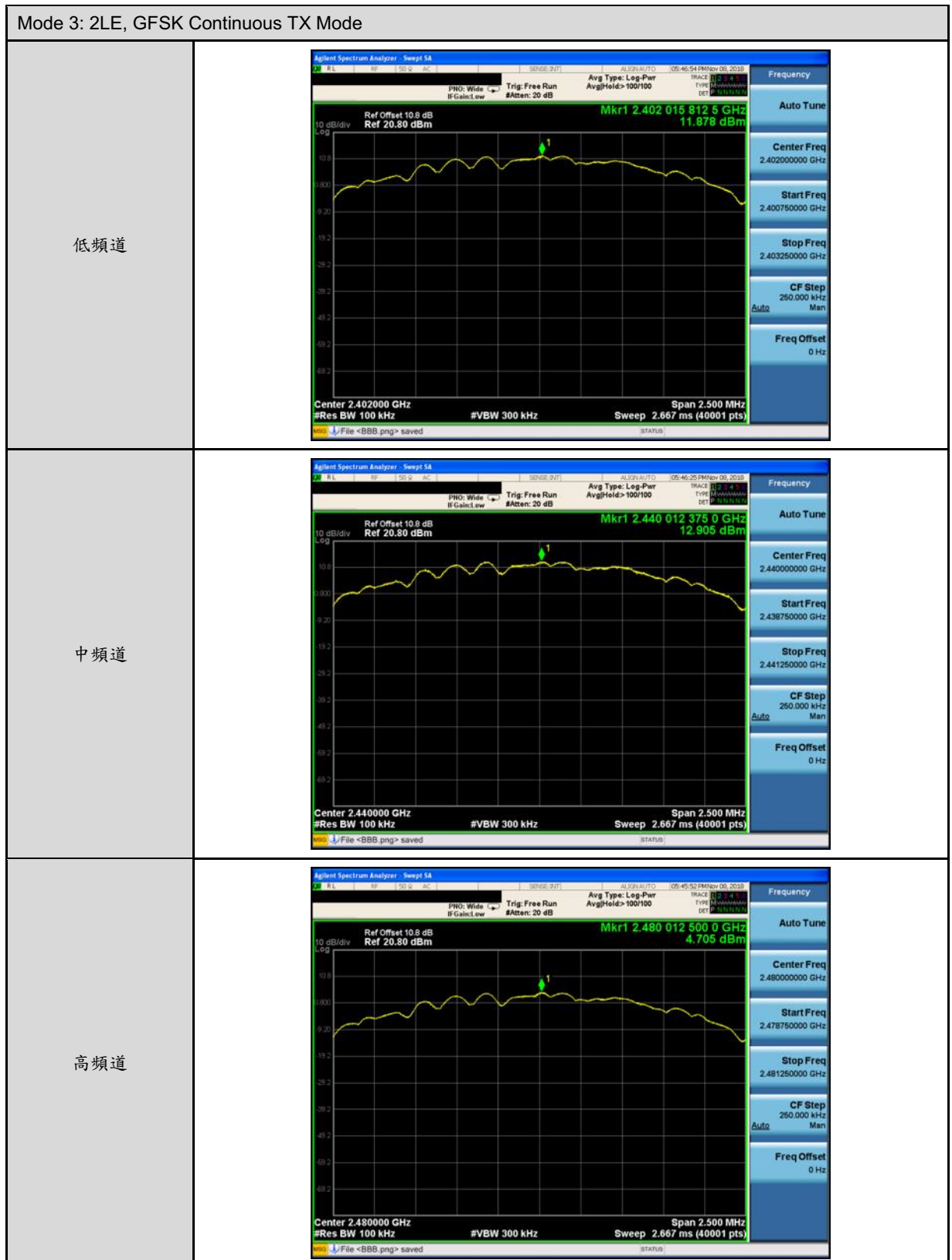
高頻道





Reference level

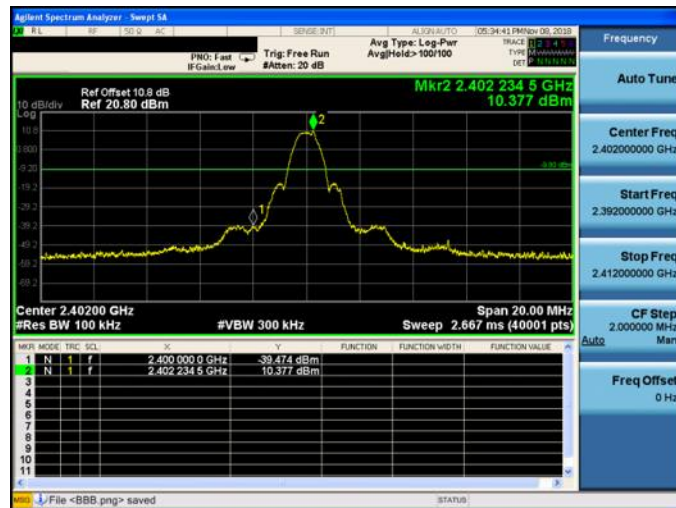




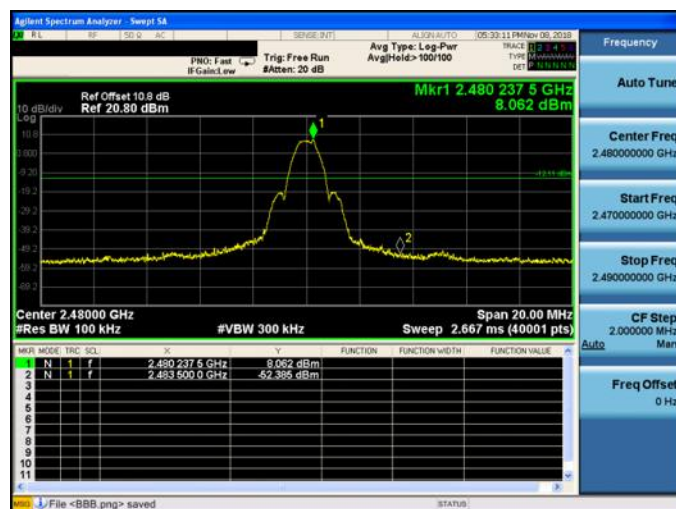
Conducted Band Edge

Mode 2: LE, GFSK Continuous TX Mode

低頻道



高頻道





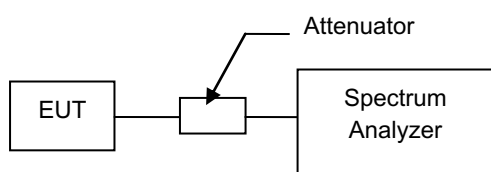
4.5 發射頻寬之要求

合格標準:

LE/2LE

依據 NCC 低功率射頻電機技術規範 3.10.1.6(2)(A)節之要求，對使用數位調變技術(Digital Modulation Techniques)系統而言，6 dB 頻寬至少應有 500 千赫(kHz)。

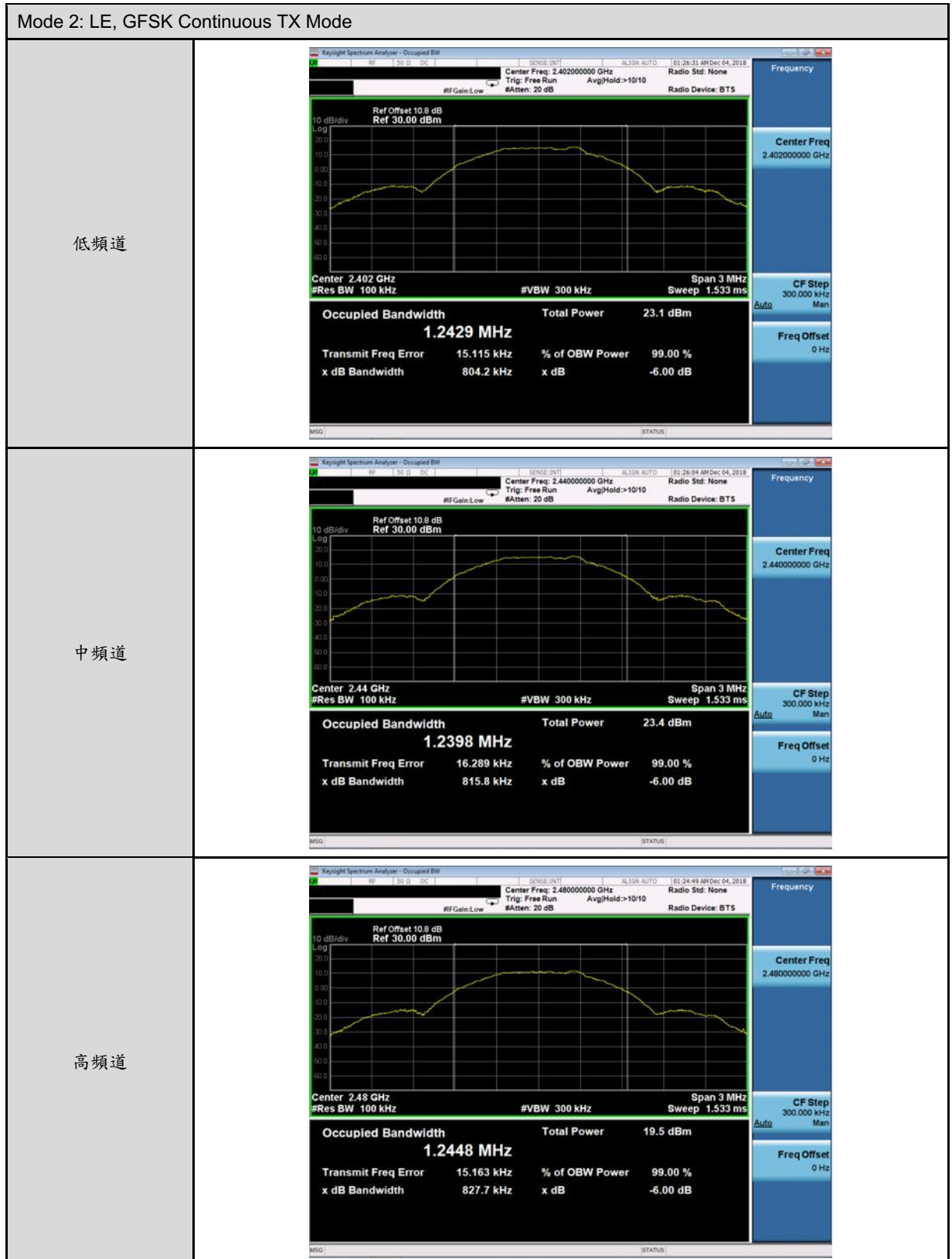
測試架構圖：

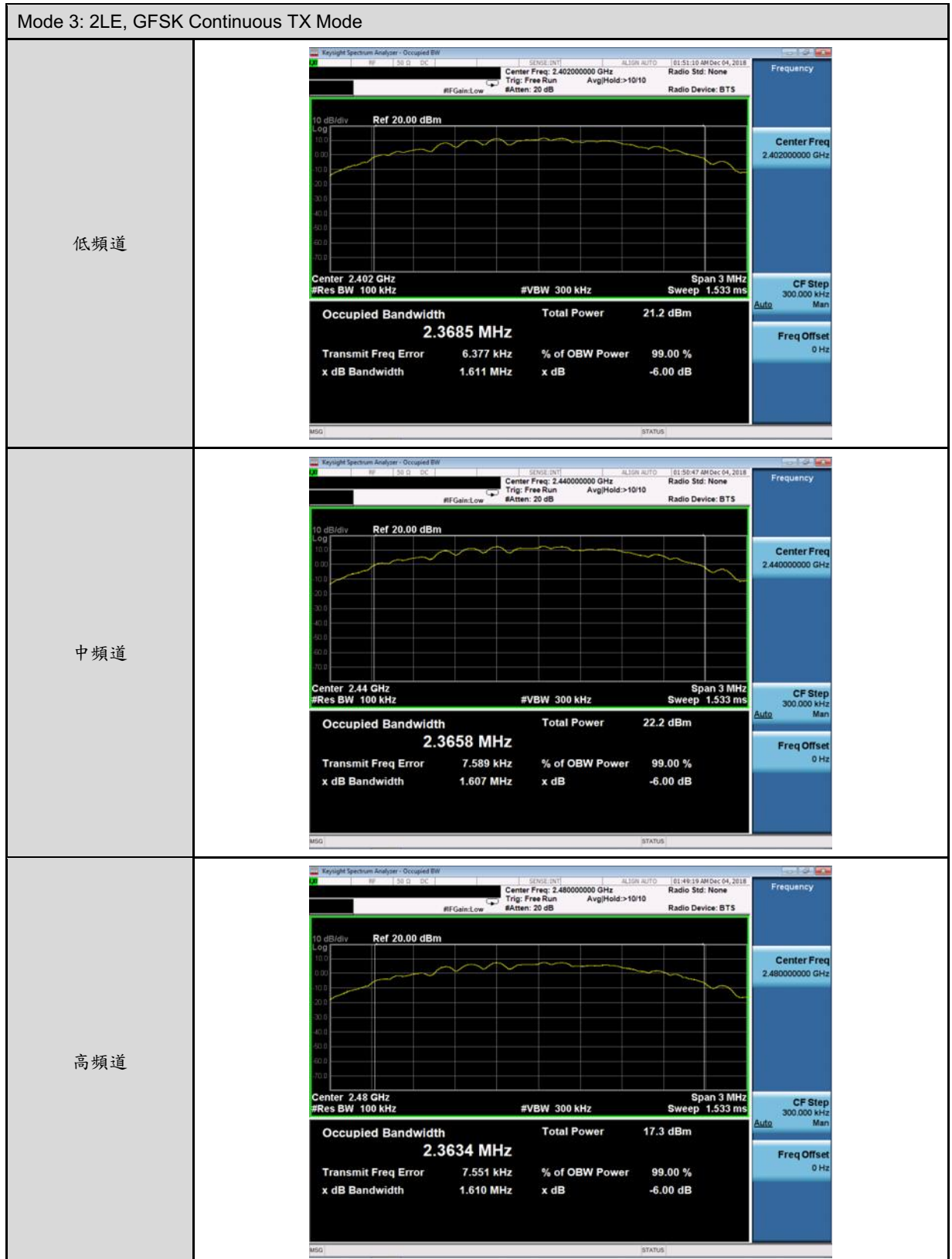


測試結果:

Power setting 1_Antenna Type: PCB Trace Antenna

操作模式 : Mode 2: LE, GFSK Continuous TX Mode Mode 3: 2LE, GFSK Continuous TX Mode			
操作模式	頻道	發射頻寬(6dB)	
		量測值 (kHz)	限制值 (kHz)
Mode 2	低頻道	804.200	≥ 500
	中頻道	815.800	≥ 500
	高頻道	827.700	≥ 500
Mode 3	低頻道	1611.000	≥ 500
	中頻道	1607.000	≥ 500
	高頻道	1610.000	≥ 500
測試掃描圖請參考下頁。			





Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna

操作模式 : Mode 2: LE, GFSK Continuous TX Mode Mode 3: 2LE, GFSK Continuous TX Mode			
操作模式	頻道	發射頻寬(6dB)	
		量測值 (kHz)	限制值 (kHz)
Mode 2	低頻道	808.700	≥ 500
	中頻道	812.300	≥ 500
	高頻道	803.400	≥ 500
Mode 3	低頻道	1605.000	≥ 500
	中頻道	1580.000	≥ 500
	高頻道	1595.000	≥ 500
測試掃描圖請參考下頁。			



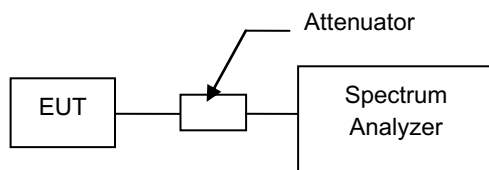
Mode 3: 2LE, GFSK Continuous TX Mode	
低頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.402000000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref 30.00 dBm Center 2.402 GHz Res BW 100 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 2.3726 MHz Total Power 21.9 dBm Transmit Freq Error -13.892 kHz OBW Power 99.00 % x dB Bandwidth 1.605 MHz x dB -6.00 dB File <BBB.png> saved
中頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.440000000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref 30.00 dBm Center 2.44 GHz Res BW 100 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 2.3649 MHz Total Power 22.8 dBm Transmit Freq Error -13.851 kHz OBW Power 99.00 % x dB Bandwidth 1.580 MHz x dB -6.00 dB File <BBB.png> saved
高頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.480000000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref 30.00 dBm Center 2.48 GHz Res BW 100 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 2.3588 MHz Total Power 14.5 dBm Transmit Freq Error -15.556 kHz OBW Power 99.00 % x dB Bandwidth 1.595 MHz x dB -6.00 dB File <BBB.png> saved

4.6 功率密度之要求

合格標準:

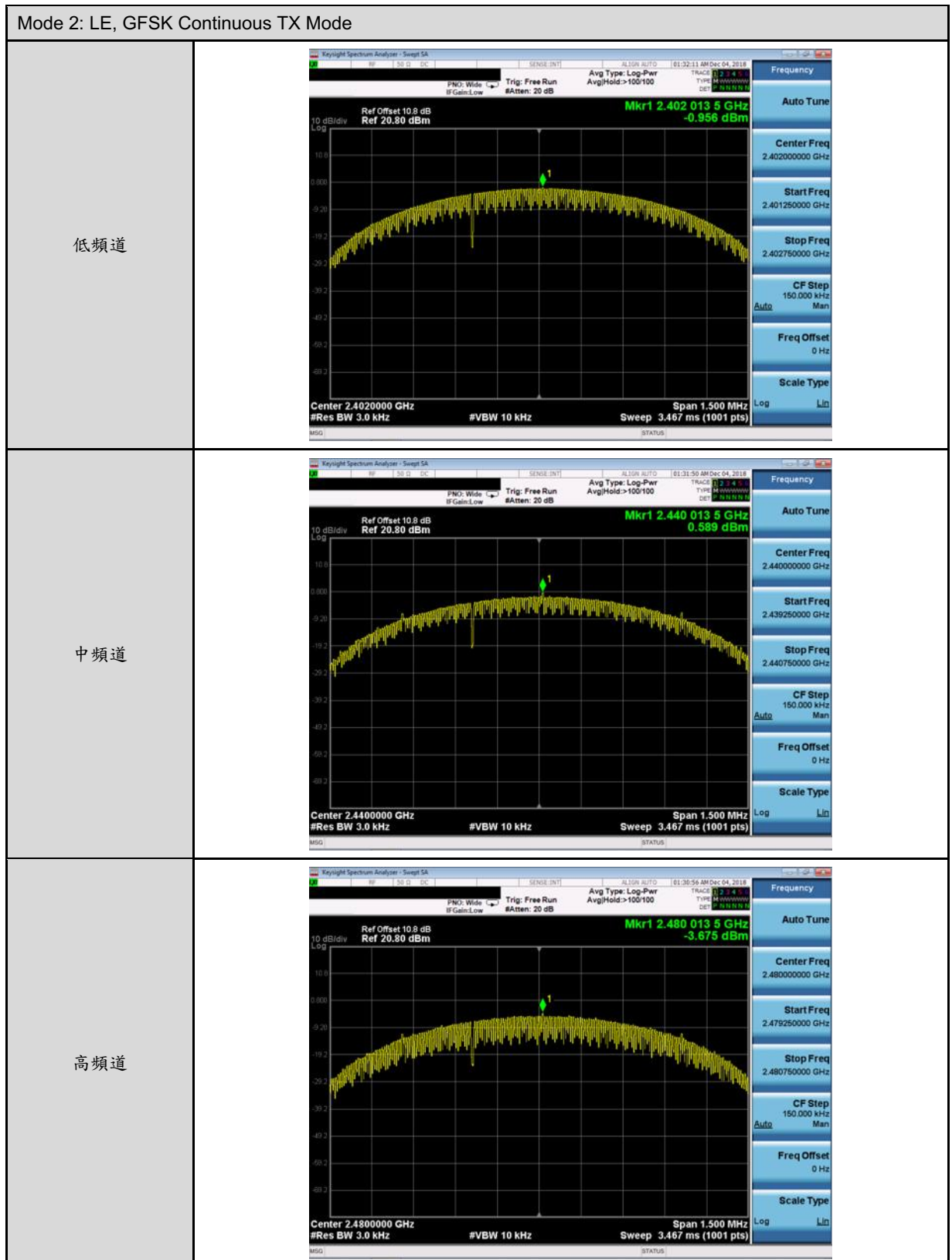
依據NCC低功率射頻電機技術規範(LP0002)之3.10.1.6(2)(B)節之要求,數位調變技術(Digital Modulation Techniques)系統之功率密度,再使用頻率範圍之任意 3 kHz 頻寬內,由發射機傳導至天線之峰值發射電功率密度在任意期間內,皆不得大於 8 dBm(複合系統時,關閉跳頻作業狀態檢驗)。

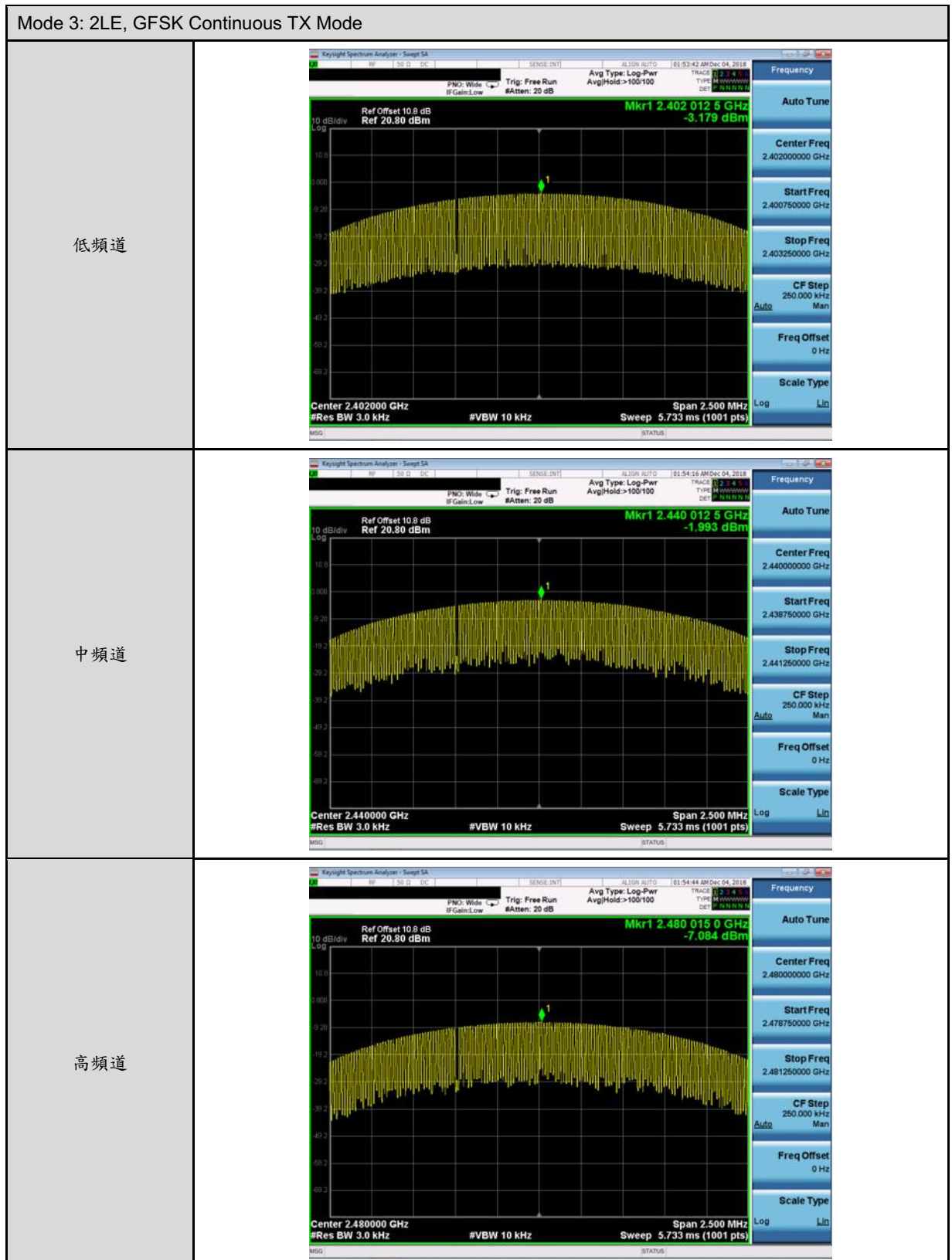
測試架構圖:



測試結果:

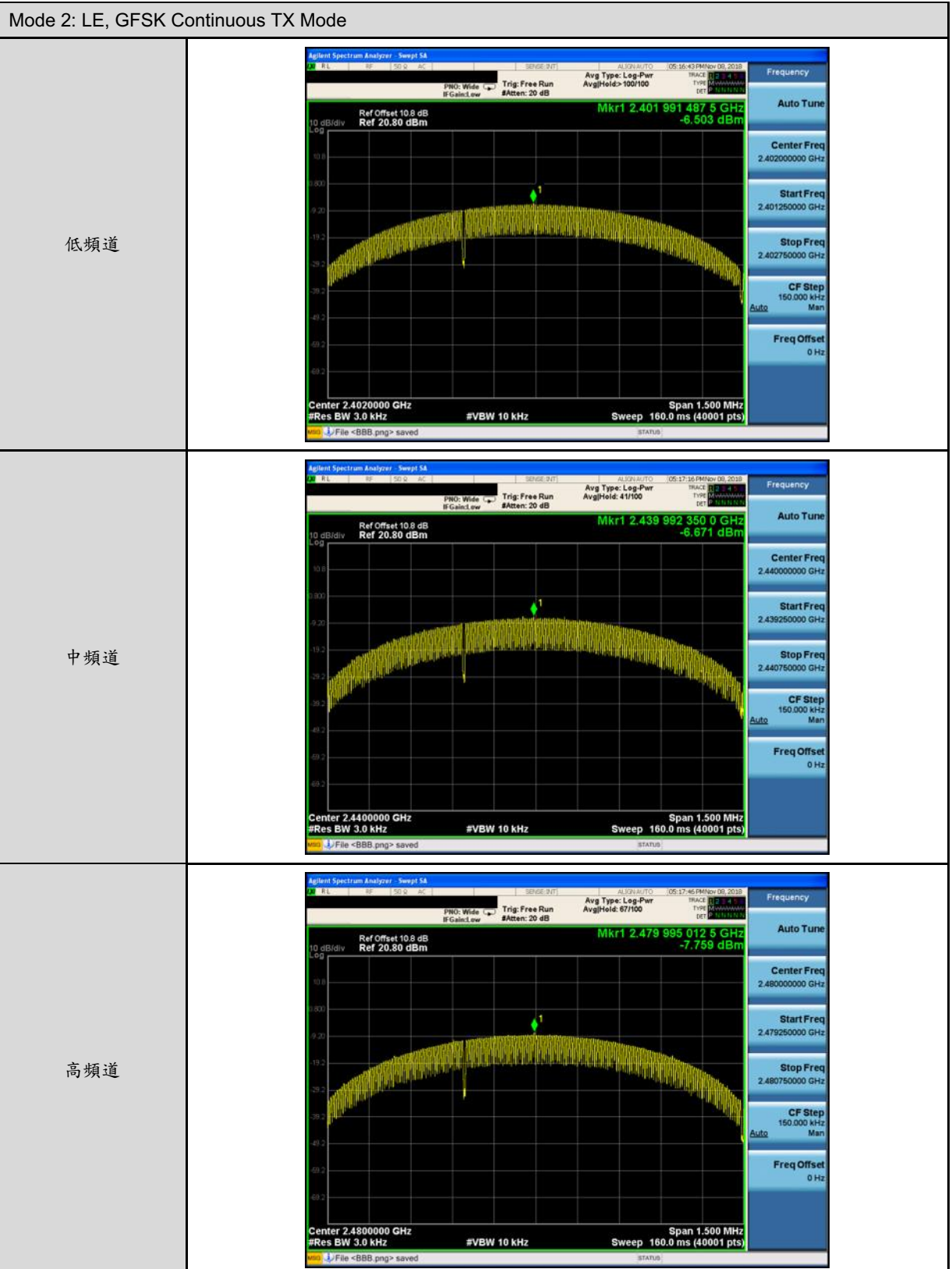
Power setting 1_Antenna Type: PCB Trace Antenna			
操作模式 : Mode 2: LE, GFSK Continuous TX Mode Mode 3: 2LE, GFSK Continuous TX Mode			
測試結果 : 合格			
操作模式	頻道	量測值 (dBm/3 kHz)	限制值 (dBm/3 kHz)
Mode 2	低頻道	-0.956	≤ 8
	中頻道	0.589	≤ 8
	高頻道	-3.675	≤ 8
Mode 3	低頻道	-3.179	≤ 8
	中頻道	-1.993	≤ 8
	高頻道	-7.084	≤ 8





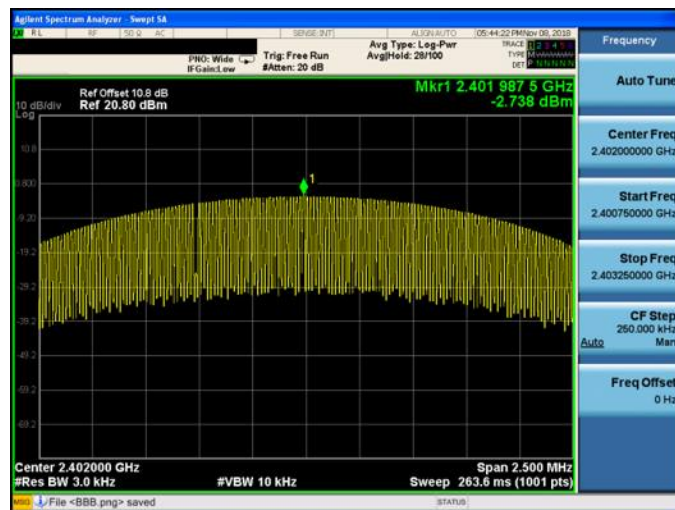
Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna

操作模式 : Mode 2: LE, GFSK Continuous TX Mode Mode 3: 2LE, GFSK Continuous TX Mode			
測試結果 : 合格			
操作模式	頻道	量測值 (dBm/3 kHz)	限制值 (dBm/3 kHz)
Mode 2	低頻道	-6.503	≤ 8
	中頻道	-6.671	≤ 8
	高頻道	-7.759	≤ 8
Mode 3	低頻道	-2.738	≤ 8
	中頻道	-1.729	≤ 8
	高頻道	-9.864	≤ 8

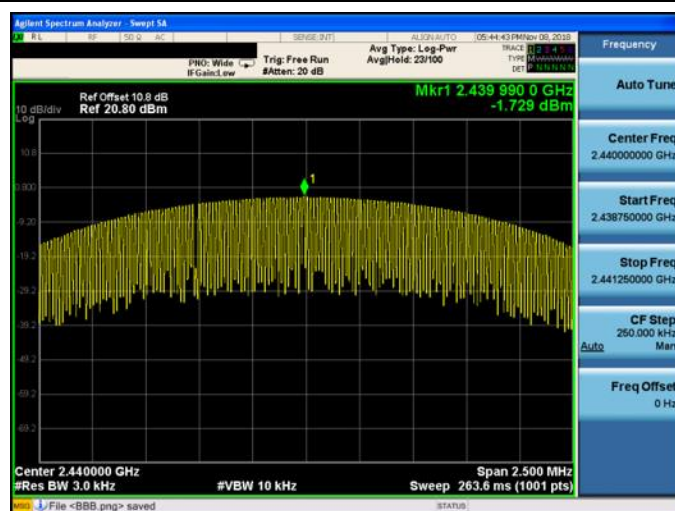


Mode 3: 2LE, GFSK Continuous TX Mode

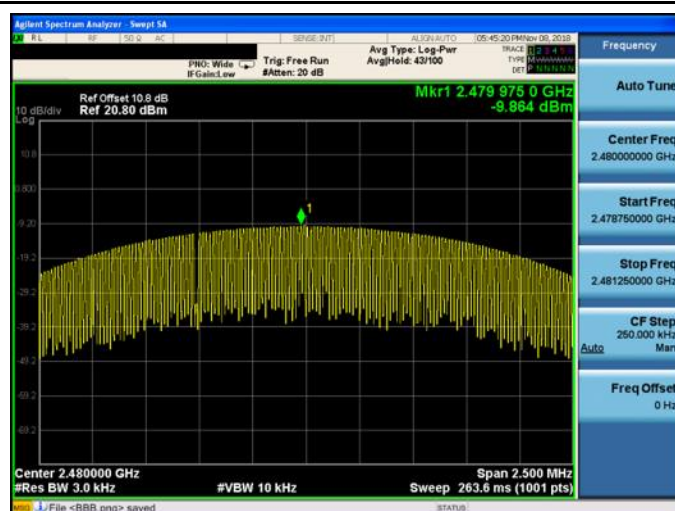
低頻道



中頻道



高頻道



4.7 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 3.10.1.3(3)節之要求，除 3.10.1.3(1)及 3.10.1.3(2)外，使用超過 6 dBi 方向增益之發射天線時，應依超過 6 dBi 天線方向增益的 dBi 總量，等量減少最大傳導輸出功率限制值。

依據 NCC 低功率射頻電機技術規範(LP0002)之 3.10.1(4)節之要求，天線之規格不受第 2.2 節規定之限制

判定結果:

符合。

廠牌	型號	型態	Connector	增益值 (dBi)
Redpine	RSIA15	PCB Trace Antenna	Internal	0.99
Taoglas	WS.01.B.305151	Heavy Duty Screw Mount Antenna	SMA Reverse	4.1

4.8 電波暴露量之評估

合格標準：

若受測物於正常操作模式下，其發射機距離人體 20 公分以上者，可測試最大暴露允許值(Maximum Permissible Exposure, MPE)以證明其符合電波暴露量之要求。限制值如下：

5.20.2.1 職業性/可控制之暴露

頻率範圍 (MHz)	電場強度 (V/m)	磁場強度 (A/m)	功率密度 (mW/cm ²)	平均時間 (minutes)
0.3~3.0	614	1.63	*100	6
3~30	1842/f	4.89/f	*900/f ²	6
30~300	61.4	0.163	1.0	6
300~1,500	-----	-----	f/300	6
1,500~100,000	-----	-----	5.0	6

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

5.20.2.2 一般人/不可控制之暴露

頻率範圍 (MHz)	電場強度 (V/m)	磁場強度 (A/m)	功率密度 (mW/cm ²)	平均時間 (minutes)
0.3~1.34	614	1.63	*100	30
1.34~30	824/f	2.19/f	*180/f ²	30
30~300	27.5	0.073	0.2	30
300~1,500	-----	-----	f/1500	30
1,500~100,000	-----	-----	1.0	30

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

判定結果:

Power setting 1_Antenna Type: PCB Trace Antenna

Band	Frequency (MHz)	Limit (mW/cm ²)	Distance [R] (cm)	Power [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G] (dBi)	Duty Cycle	With Duty cycle [P] x [G] (mW)	Power Density [S] (mW/cm ²)
LE	2402	1	20	17.08	0.99	1.26	1	64.324	0.0128
	2440	1	20	17.10	0.99	1.26	1	64.621	0.0129
	2480	1	20	13.70	0.99	1.26	1	29.537	0.0059

Power setting 2_Antenna Type: Heavy Duty Screw Mount Antenna

Band	Frequency (MHz)	Limit (mW/cm ²)	Distance [R] (cm)	Power [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G] (dBi)	Duty Cycle	With Duty cycle [P] x [G] (mW)	Power Density [S] (mW/cm ²)
2LE	2402	1	20	15.59	4.1	2.57	1	93.096	0.0185
	2440	1	20	16.68	4.1	2.57	1	119.656	0.0238
	2480	1	20	10.53	4.1	2.57	1	29.036	0.0058