



晶復科技股份有限公司

A Test Lab Techno Corp.

低功率射頻器材試驗報告

報告編號 2108DR43

版本(Rev.) 00

產品名稱 藍牙遙控器

申請廠商 台灣小米通訊有限公司

廠 牌 Xiaomi

型式 (號) XMRM-M2

產品試驗依據之標準 低功率射頻器材技術規範(LP0002) 109 年 7 月 1 日

報告發行日期 110 年 08 月 19 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 : 低功率射頻器材技術規範(LP0002) (頻率範圍:9 kHz to 40 GHz)

免責聲明

- 1.本測試報告所敘述之測試結果，僅對顧客所提供之測試樣品，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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報告修訂紀錄

版本 (Rev.)	發行日期	修訂內容	修訂者
00	110 年 08 月 19 日	初版發行	江玉

低功率射頻器材測試證明書

產品名稱：藍牙遙控器

廠牌：Xiaomi

型號：XM RM-M2

申請廠商：台灣小米通訊有限公司

申請者地址：臺北市中正區新生南路1段50號2樓之2

製造廠商：北京小米電子產品有限公司

製造商地址：中國北京市北京經濟技術開發區科創十街15號院5號樓8層802室

待測物電壓：DC 3 V * 2 (電池供電AAA battery * 2)

量測規範：低功率射頻器材技術規範(LP0002) 109年7月1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)

樣品接受日期：110 年 08 月 16 日

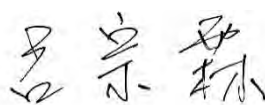
試驗日期：110 年 08 月 16 日 ~ 110 年 08 月 17 日

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器材技術規範(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	藍牙遙控器		
廠 牌	Xiaomi		
型 號	XMRM-M2		
額 定 電 源	DC 3 V * 2 (電池供電 AAA battery * 2)		
待測物電源類別	Battery		
調 變 方 式	GFSK		
頻 率 使 用 範 圍	2402 MHz – 2480 MHz		
天 線 廠 牌	Xiaomi		
天 線 型 號	XMRM-M2		
天 線 型 態	PCB Antenna		
天 線 增 益 值	-1 dBi		
RF 最大輸出功率	LE, GFSK:	-0.23 dBm/	0.00095 W
	2LE, GFSK:	-0.21 dBm/	0.00095 W

輸出/輸入埠說明：

輸 出 / 入 埠		數量	介面內容說明
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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 Conducted

Test Period: Aug. 16 ~ Aug. 17, 2021

測試者: 呂迪曄

名 稱	廠 牌	型 號	序 號	本次校驗日期	校驗年限
Power Sensor	Agilent	N1921A	MY45241957	12/09/2020	1 year
Power Meter	Agilent	N1911A	MY45101619	12/09/2020	1 year
Spectrum Analyzer (20 Hz~26.5 GHz)	Agilent	N9020A	US47520902	09/24/2020	1 year

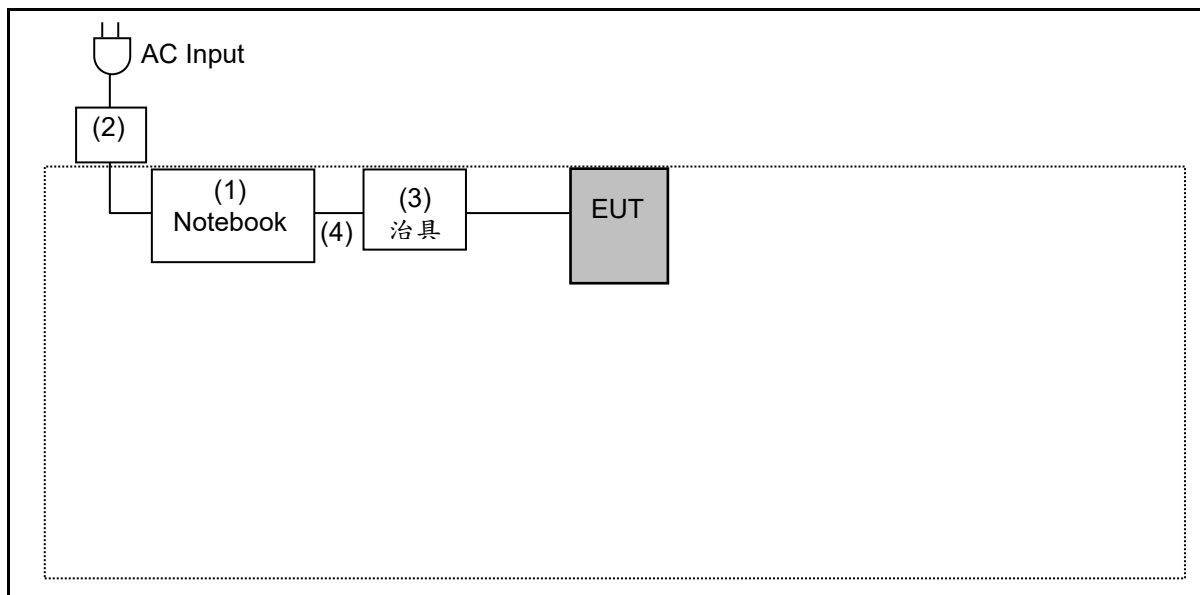
For Radiated Emissions

Test Period: Aug. 16, 2021

測試者: 周瑞鴻, 李怡華

名 稱	廠 牌	型 號	序 號	本次校驗日期	校驗年限
Spectrum Analyzer	Keysight	N9030B	MY57143537	04/19/2021	1 year
Amplifier	Agilent	8447D	2944A11119	01/15/2021	1 year
Amplifier	Titan	T0912E0126302 5A1F	002	07/26/2021	1 year
天線	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	01146	07/19/2021	1 year
天線(1~18 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	02207	07/09/2021	1 year
天線(18~40 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	08/18/2020	1 year

2.2 檢驗系統示意圖



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		廠 牌	型 號	序 號	電源線	備 註
(1)	Notebook	ASUS	P2430U	GANXCV04 H86940A	---	(實驗室提供)
(2)	AC Adapter	ASUS	ADP-65GD D	---	Non-Shielded, 0.8 m	INPUT : 100-240 VAC, 50/60 Hz, 1.5 A OUTPUT : 19 VDC, 3.42 A (實驗室提供)
(3)	治具	Telink	XMRM-M2	---	---	(申請者提供)
(4)	USB Cable	USBMAX	USB2.0 MINI 5pin	---	---	規格：STD-A to MINI-B 線長：0.75 m (實驗室提供)

測試組合：

EUT Configure Mode	RE<1G	RE $\geq$ 1G	備註
Notebook	V	V	測試週邊(1) Test Mode使用
AC Adapter	V	V	測試週邊(2) Test Mode使用
治具	V	V	測試週邊(3) Test Mode使用
USB Cable	V	V	測試週邊(4) Test Mode使用

RE $\geq$ 1 GHz : Radiated Emission above 1 GHz & Bandedge Measurement

RE<1 GHz : Radiated Emission below 1 GHz

V : Final mode

X : Non support

--- : No evaluation required

Blank Space : Pre-test mode

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

使用定頻模式量測

Test Mode
Mode 1: LE, GFSK Continuous TX Mode
Mode 2: 2LE, GFSK Continuous TX Mode
Mode 3: Receiver Mode

Test Mode	Frequency (MHz)	RF Power setting in Test Software	Test Software Version
Mode 1	2402	0.90	EMI_TEST_V1.5
	2440	0.50	
	2480	0.90	
Mode 2	2402	0.90	
	2440	0.50	
	2480	0.90	

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
Radiated Emission	9 kHz ~ 30 MHz	2.2 dB
	30 MHz ~ 1000 MHz	5.1 dB
	1000 MHz ~ 18000 MHz	5.1 dB
	18000 MHz ~ 26500 MHz	4.4 dB
	26500 MHz ~ 40000 MHz	4.6 dB
Conducted Output Power	1.1 dB	
RF Bandwidth	4.7 %	
Power Spectral Density	1.1 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	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 低功率射頻器材技術規範(LP0002)之檢驗法。

LE/2LE 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	電源線傳導干擾	低功率射頻器材技術規範 3.3節	N/A	N/A	不適用
2	場強輻射 (1 GHz以上)	低功率射頻器材技術規範 3.5節、3.6節、4.10.1.5節	Annex A.	請參閱2.1節	符合
3	場強輻射其它不必要之訊號 (1 GHz以下)	低功率射頻器材技術規範 3.5節、3.6節、4.10.1.5節	Annex A.	請參閱2.1節	符合
4	頻帶邊緣外之輻射發射	低功率射頻器材技術規範 4.10.1.5節	Annex A.	請參閱2.1節	符合
5	輸出峰值功率	低功率射頻器材技術規範 4.10.1.2(1)(C)節	Annex B.	請參閱2.1節	符合
6	非必要頻帶	低功率射頻器材技術規範 4.10.1.5(1)節	Annex B.	請參閱2.1節	符合
7	發射頻寬	低功率射頻器材技術規範 4.10.1.6(2)(A)節	Annex B.	請參閱2.1節	符合
8	功率密度	低功率射頻器材技術規範 4.10.1.6(2)(B)節	Annex B.	請參閱2.1節	符合
9	天線規格	低功率射頻器材技術規範 4.10.1.3(3)節、4.10.1.4節	請參閱4.7節	-----	符合

本產品透過預測測試確認 X、Y 和 Z 個軸中最差之結果軸向為 Z 軸，因此場強輻射完整測試 Z 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 低功率射頻器材技術規範(LP0002)之 3.3 節，以市電為電源之低功率射頻器材，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。

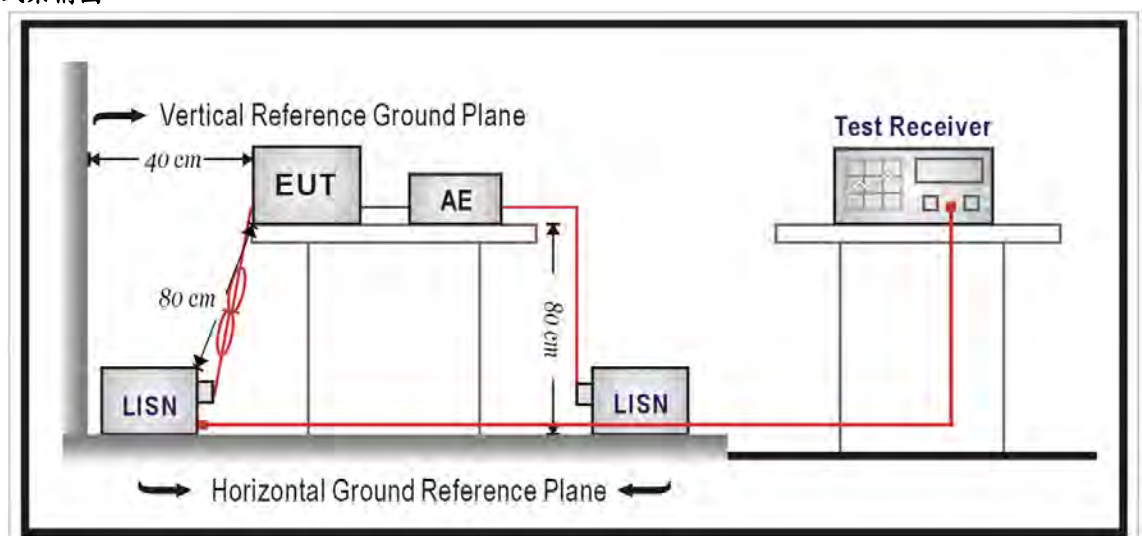
干擾值之計算

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，本產品透過市售電池供電。

4.2 場強輻射之量測

合格標準：

依據 NCC 低功率射頻器材技術規範(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 低功率射頻器材技術規範(LP0002)之 4.10.1.5(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 3.5 節禁用頻段之輻射發射，應符合第 3.6 節之規定。

依據 NCC 低功率射頻器材技術規範第 3.5 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 低功率射頻器材技術規範第 3.6 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。

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。

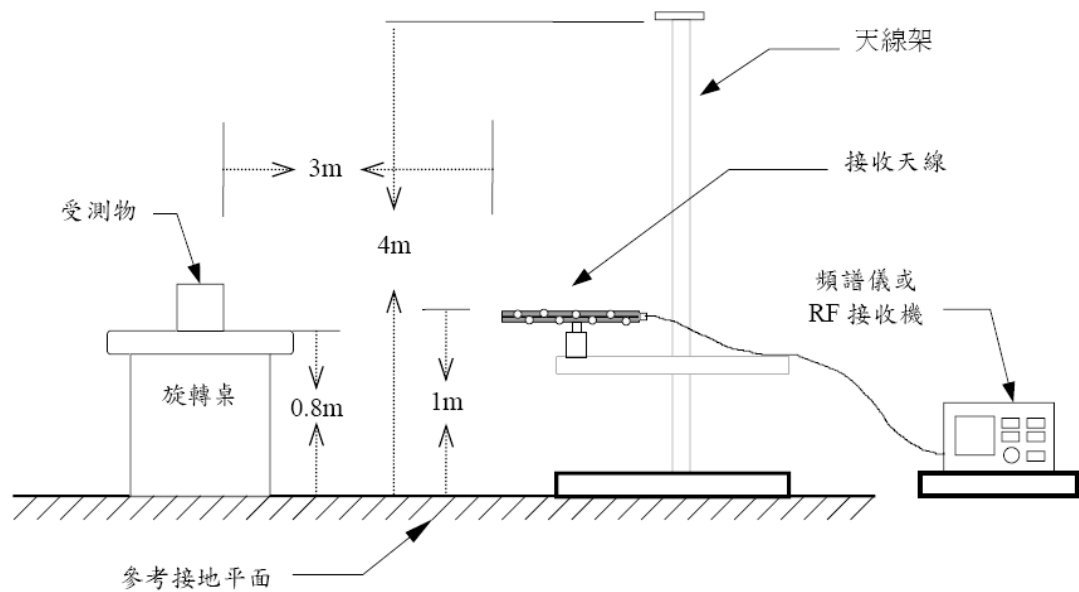
場強度之計算

場強之計算公式為：結果值 = 讀值 + 校正因子

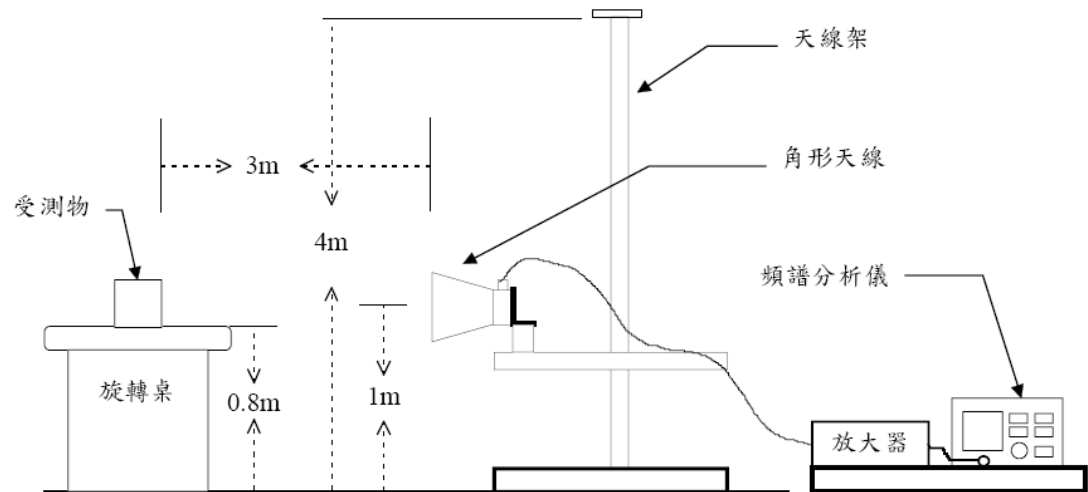
其中校正因子為：天線因子+ 饋線損失 + 濾波器損失（若有使用） - 放大器增益（若有使用）

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



4.3 輸出峰值功率之量測

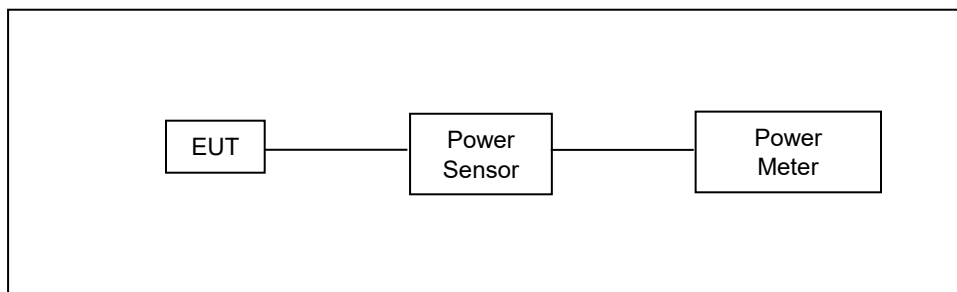
合格標準：

LE/2LE

依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.2(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：

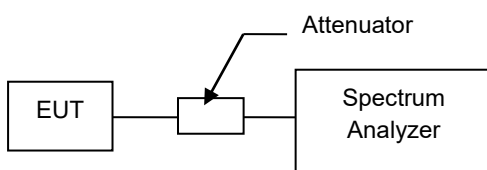


4.4 非必要頻帶之量測

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：



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。

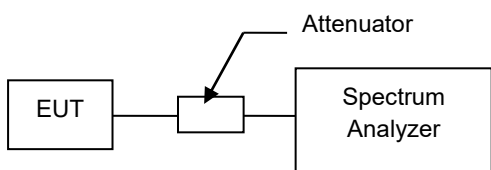
4.5 發射頻寬之要求

合格標準:

LE/2LE

依據 NCC 低功率射頻器材技術規範 4.10.1.6(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：

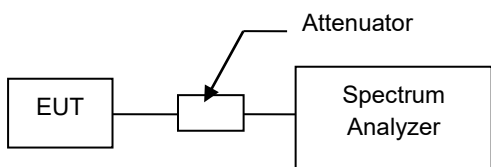


4.6 功率密度之要求

合格標準:

依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.6(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：



4.7 天線規格之要求

合格標準:

依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.3(3)節之要求，除 4.10.1.3(1)及 4.10.1.3(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 低功率射頻器材技術規範(LP0002)之 4.10.1.4 節之要求，天線之規格不受第 3.2 節規定之限制

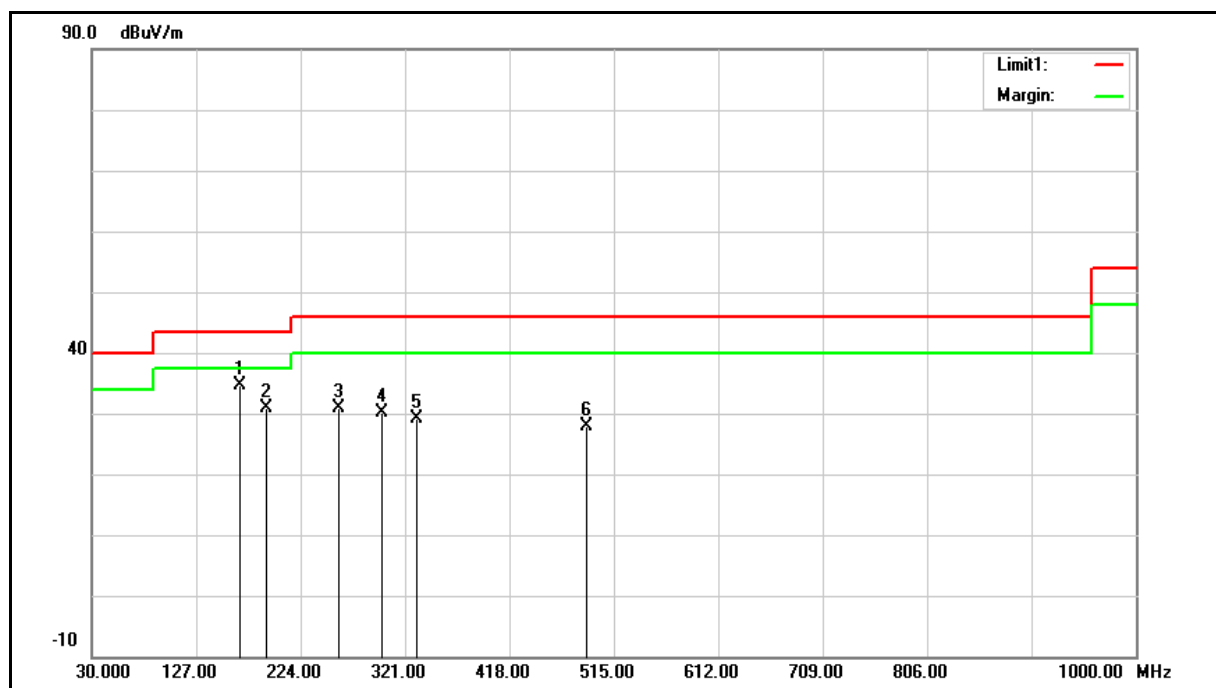
判定結果：符合。

5. Test Results

Annex A. Radiated Emission Measurement

其它不必要之訊號 (1 GHz 以下)

Standard:	LP0002	Test Distance:	3 m
Test item:	Radiated Emission		
Frequency:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	167.7400	41.34	-6.67	34.67	43.50	-8.83	QP
2	191.9900	39.52	-8.65	30.87	43.50	-12.63	QP
3	258.9200	37.52	-6.72	30.80	46.00	-15.20	QP
4	299.6600	35.64	-5.45	30.19	46.00	-15.81	QP
5	331.6700	34.10	-4.94	29.16	46.00	-16.84	QP
6	489.7800	29.81	-2.02	27.79	46.00	-18.21	QP

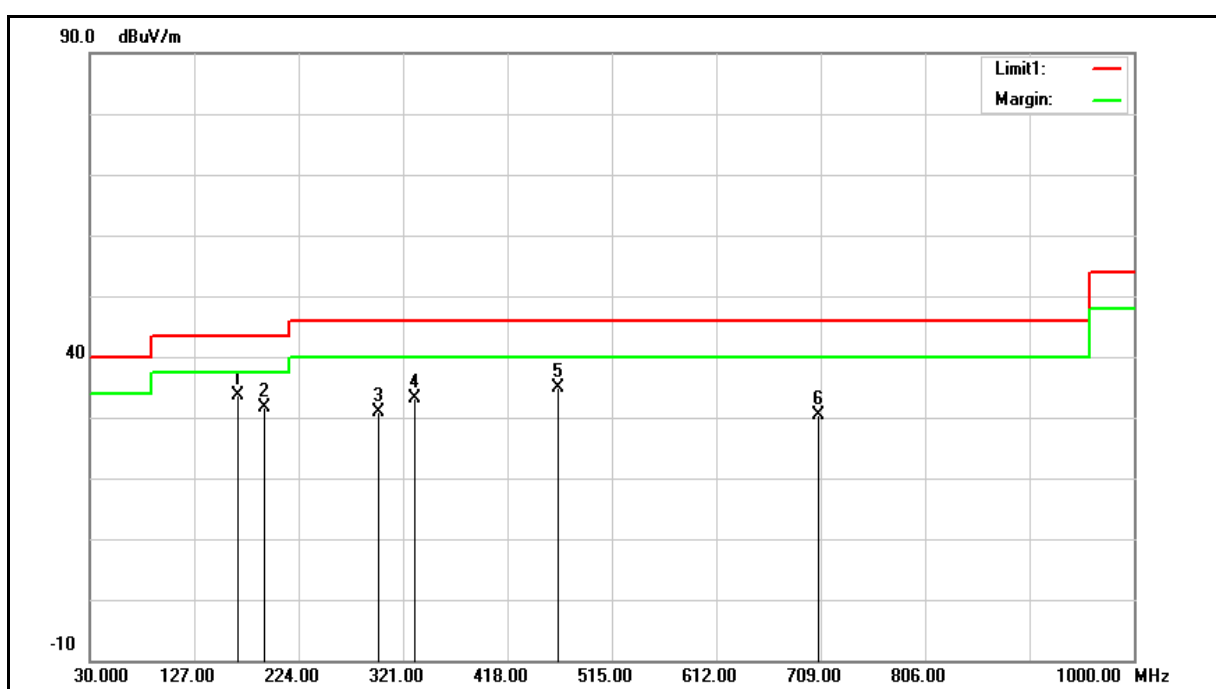
Note: 1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 34.67 = -6.67 + 41.34.

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:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	167.7400	40.18	-6.67	33.51	43.50	-9.99	QP
2	191.9900	40.28	-8.65	31.63	43.50	-11.87	QP
3	298.6900	36.33	-5.46	30.87	46.00	-15.13	QP
4	331.6700	38.05	-4.94	33.11	46.00	-12.89	QP
5	464.5600	37.16	-2.35	34.81	46.00	-11.19	QP
6	707.0600	28.10	2.32	30.42	46.00	-15.58	QP

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

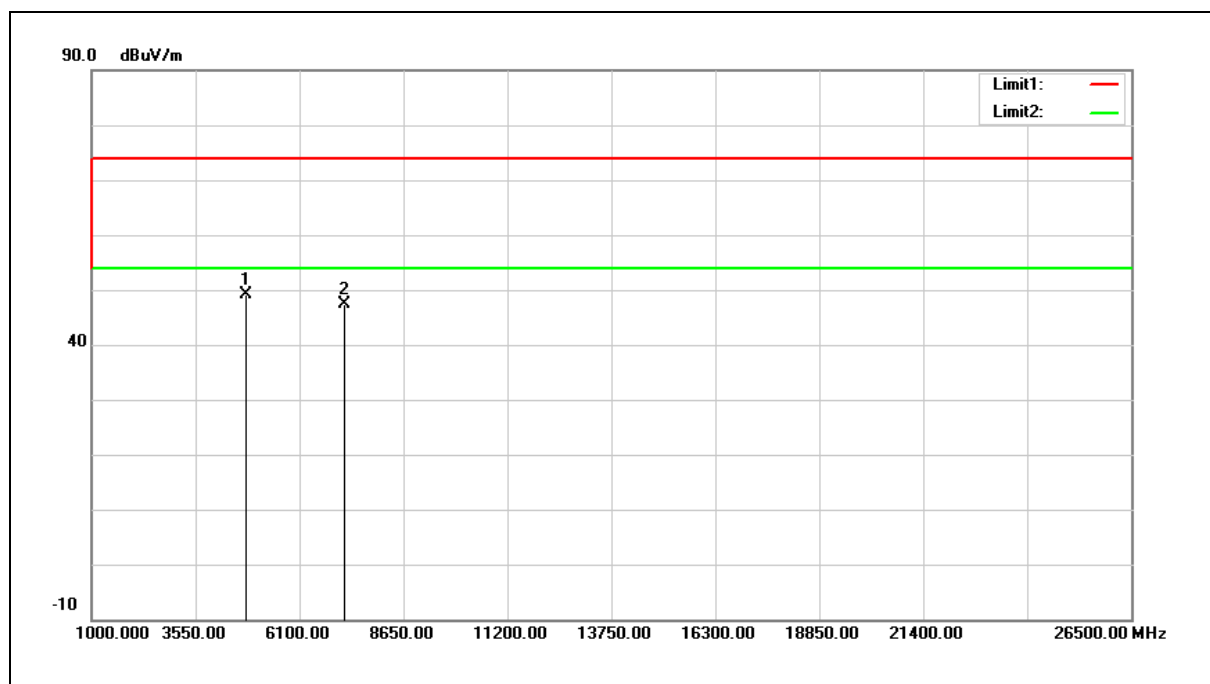
Example: $33.51 = -6.67 + 40.18$.

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.

場強輻射量測 (1 GHz 以上)

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	50.23	-1.04	49.19	74.00	-24.81	peak
2	7206.000	41.27	6.04	47.31	74.00	-26.69	peak

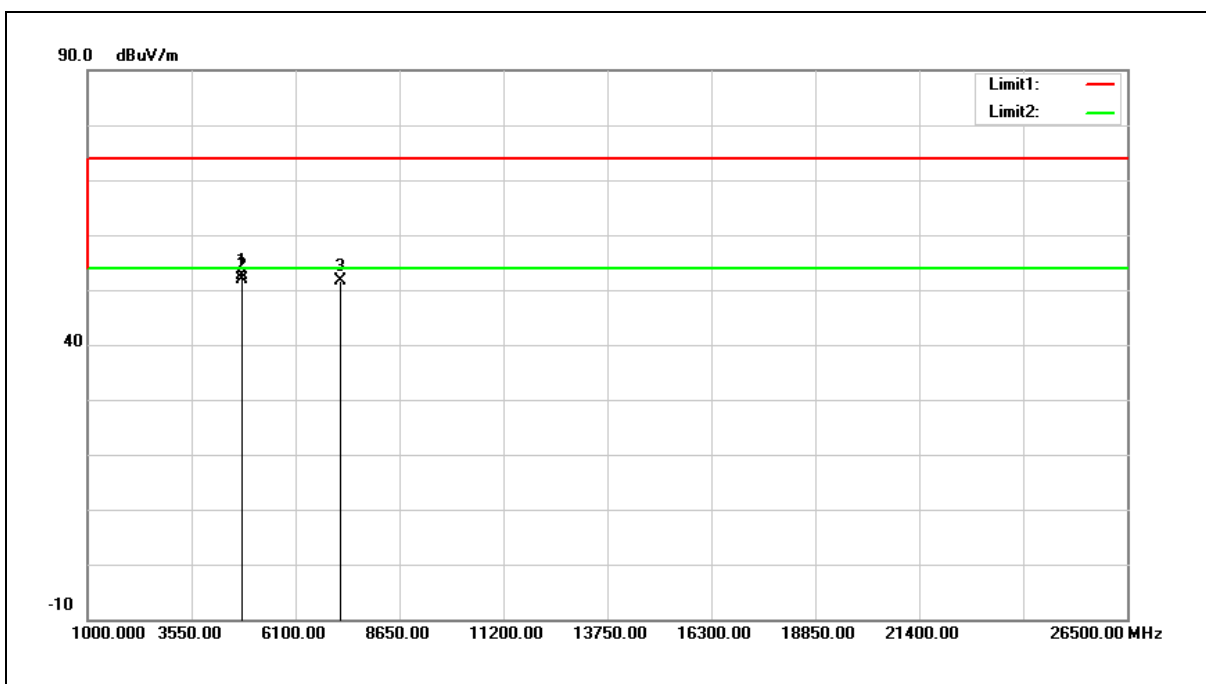
Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

Example: $49.19 = -1.04 + 50.23$.

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		
Frequency:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	53.73	-1.04	52.69	74.00	-21.31	peak
2	4804.000	53.01	-1.04	51.97	54.00	-2.03	AVG
3	7206.000	45.70	6.04	51.74	74.00	-22.26	peak

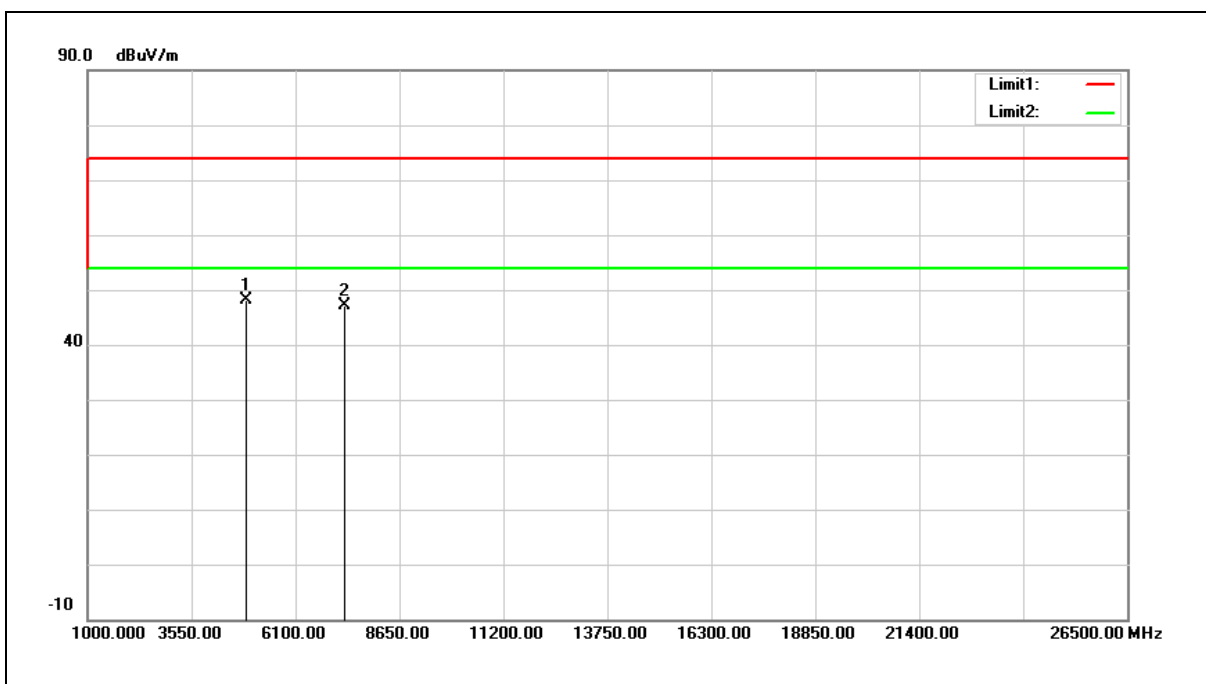
Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

Example: $52.69 = -1.04 + 53.73$.

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		
Frequency:	2440 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



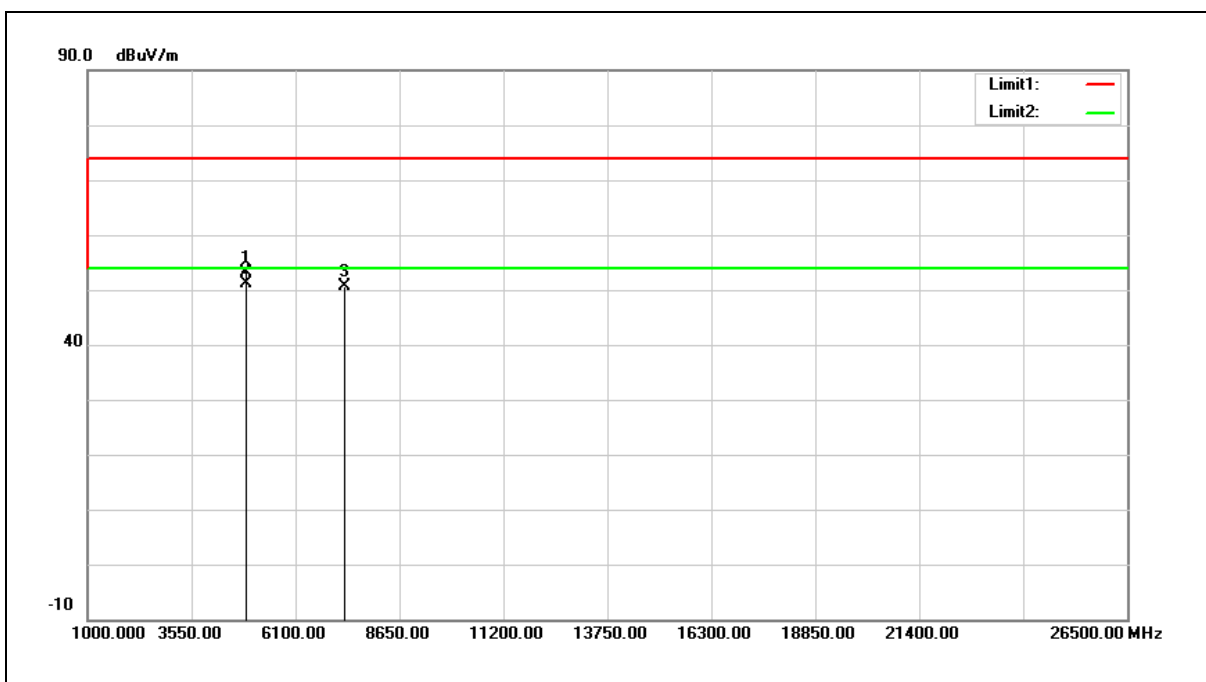
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	49.03	-0.78	48.25	74.00	-25.75	peak
2	7320.000	40.65	6.49	47.14	74.00	-26.86	peak

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		
Frequency:	2440 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



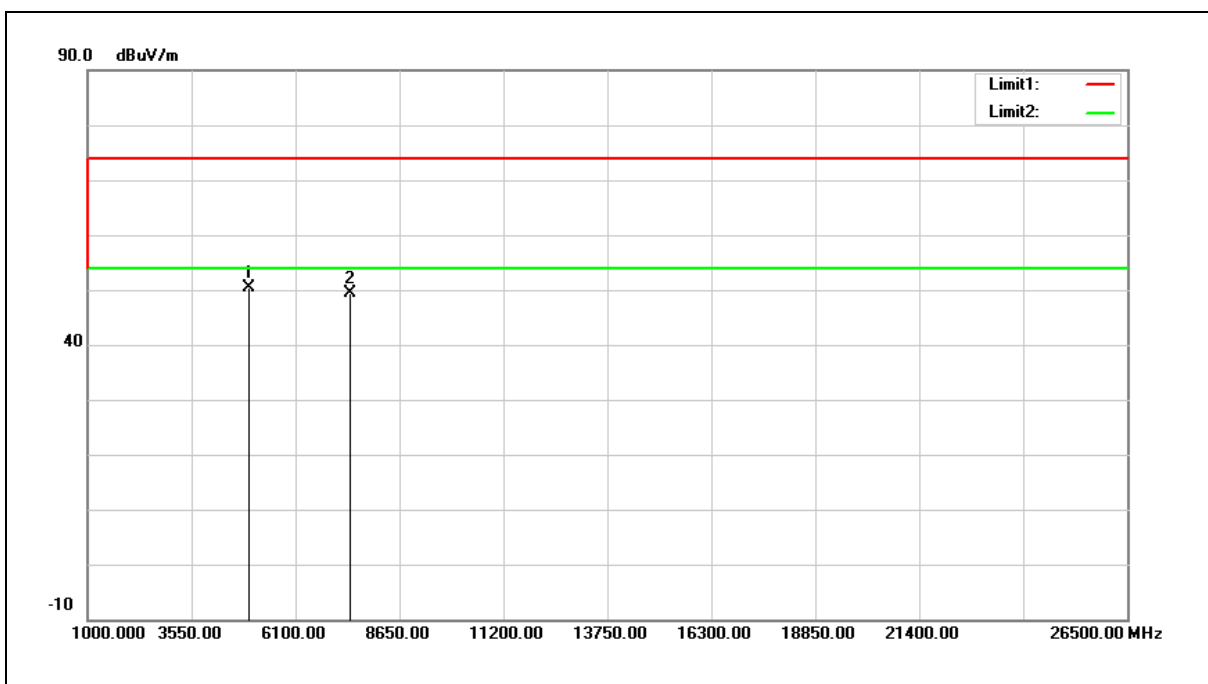
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	53.94	-0.78	53.16	74.00	-20.84	peak
2	4880.000	51.94	-0.78	51.16	54.00	-2.84	AVG
3	7320.000	44.08	6.49	50.57	74.00	-23.43	peak

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:	Harmonic		
Frequency:	2480 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



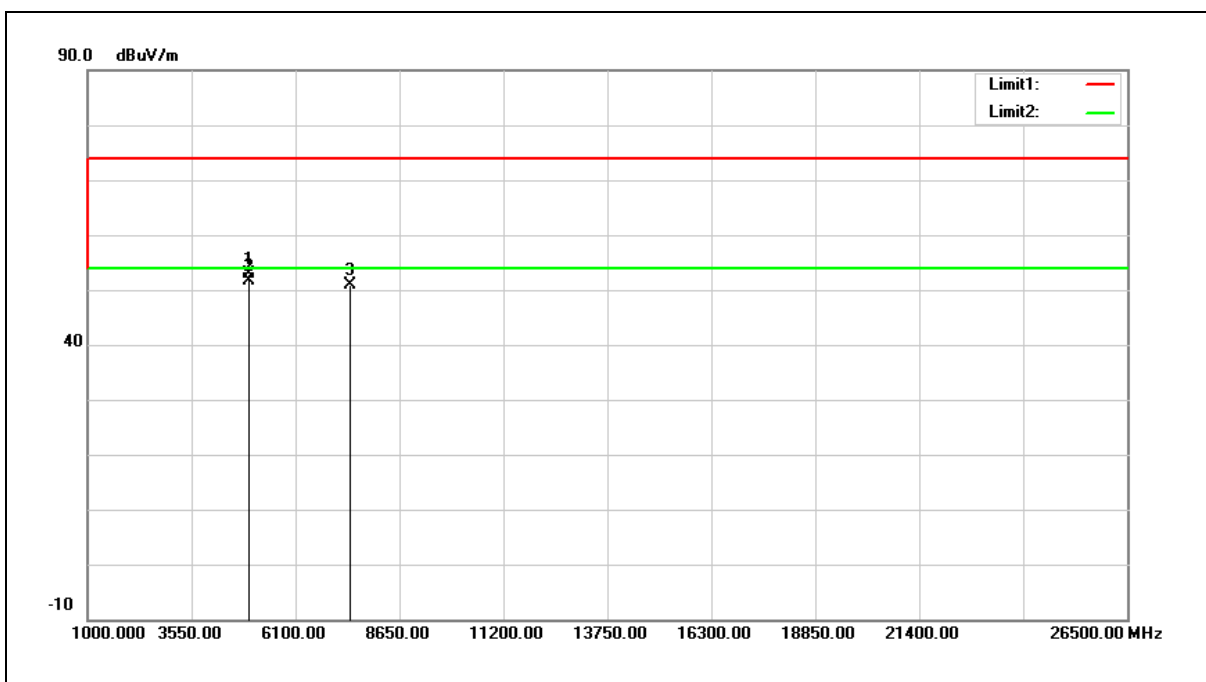
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	51.00	-0.50	50.50	74.00	-23.50	peak
2	7440.000	42.55	6.95	49.50	74.00	-24.50	peak

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		
Frequency:	2480 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



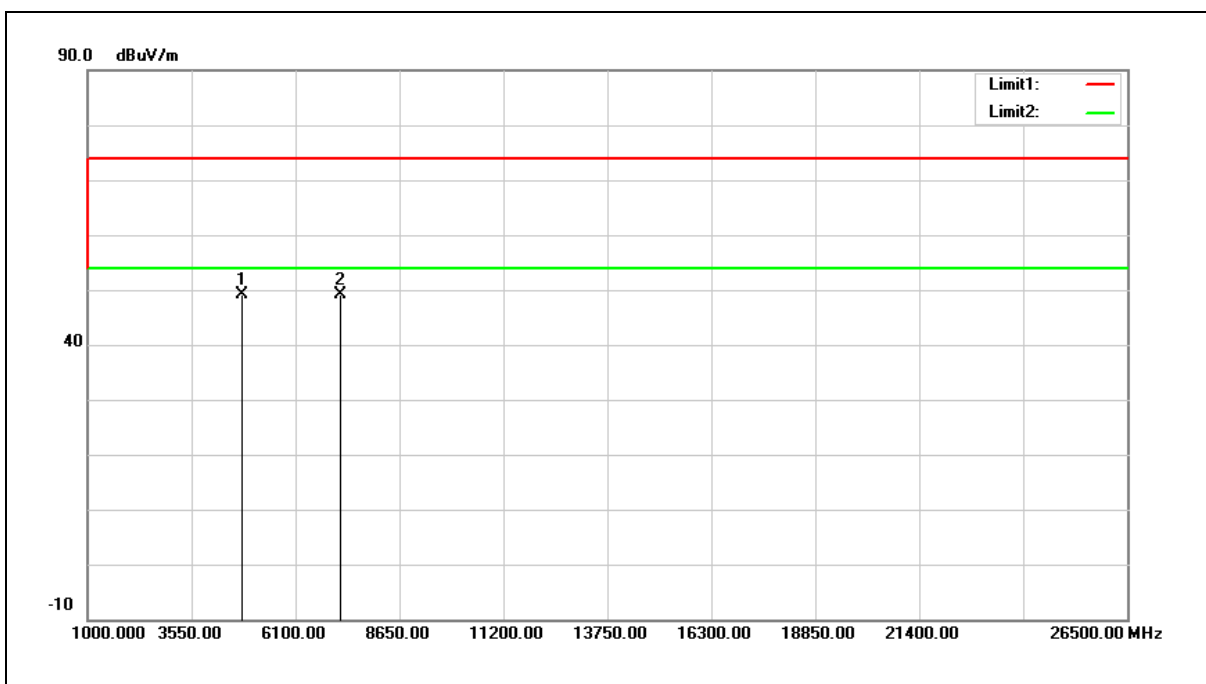
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	53.50	-0.50	53.00	74.00	-21.00	peak
2	4960.000	52.02	-0.50	51.52	54.00	-2.48	AVG
3	7440.000	43.88	6.95	50.83	74.00	-23.17	peak

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:	Harmonic		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



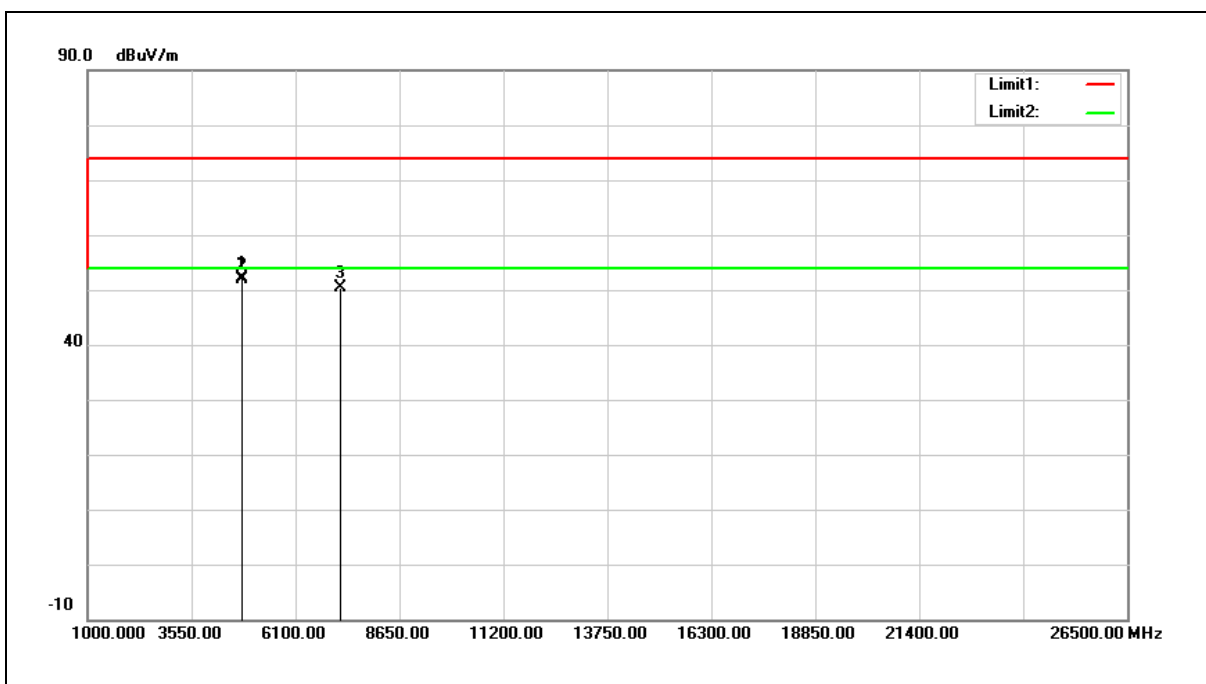
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	50.22	-1.04	49.18	74.00	-24.82	peak
2	7206.000	43.00	6.04	49.04	74.00	-24.96	peak

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		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



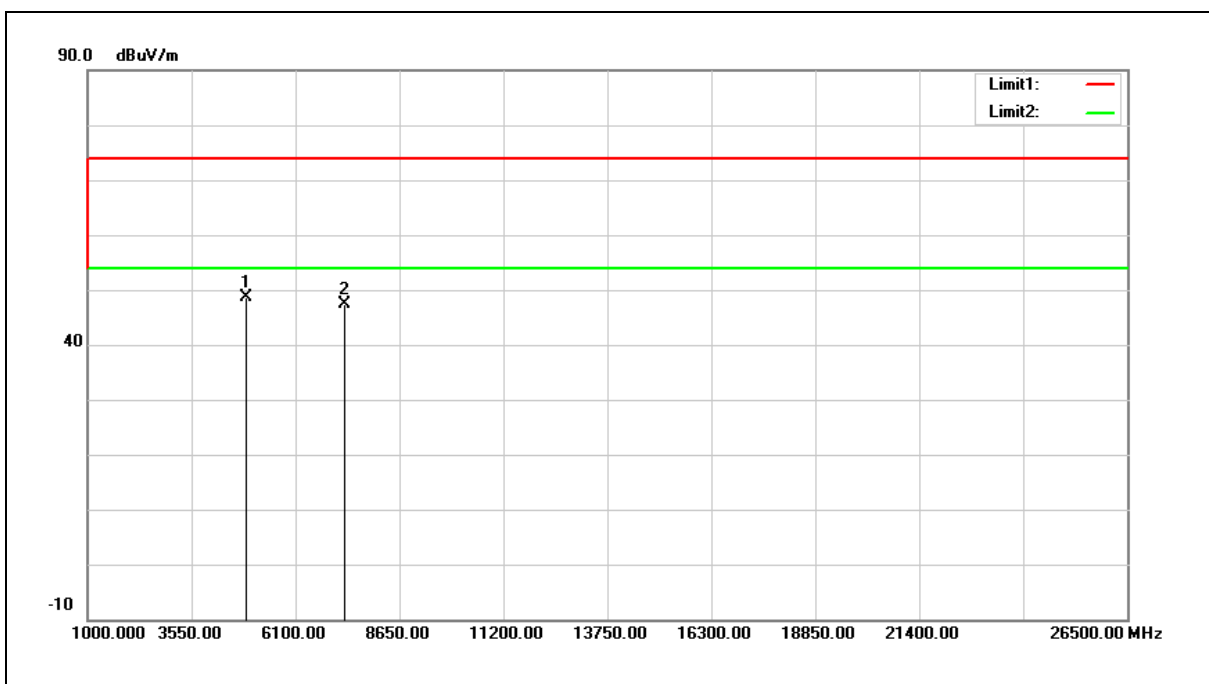
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	53.26	-1.04	52.22	74.00	-21.78	peak
2	4804.000	52.84	-1.04	51.80	54.00	-2.20	AVG
3	7206.000	44.22	6.04	50.26	74.00	-23.74	peak

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		
Frequency:	2440 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



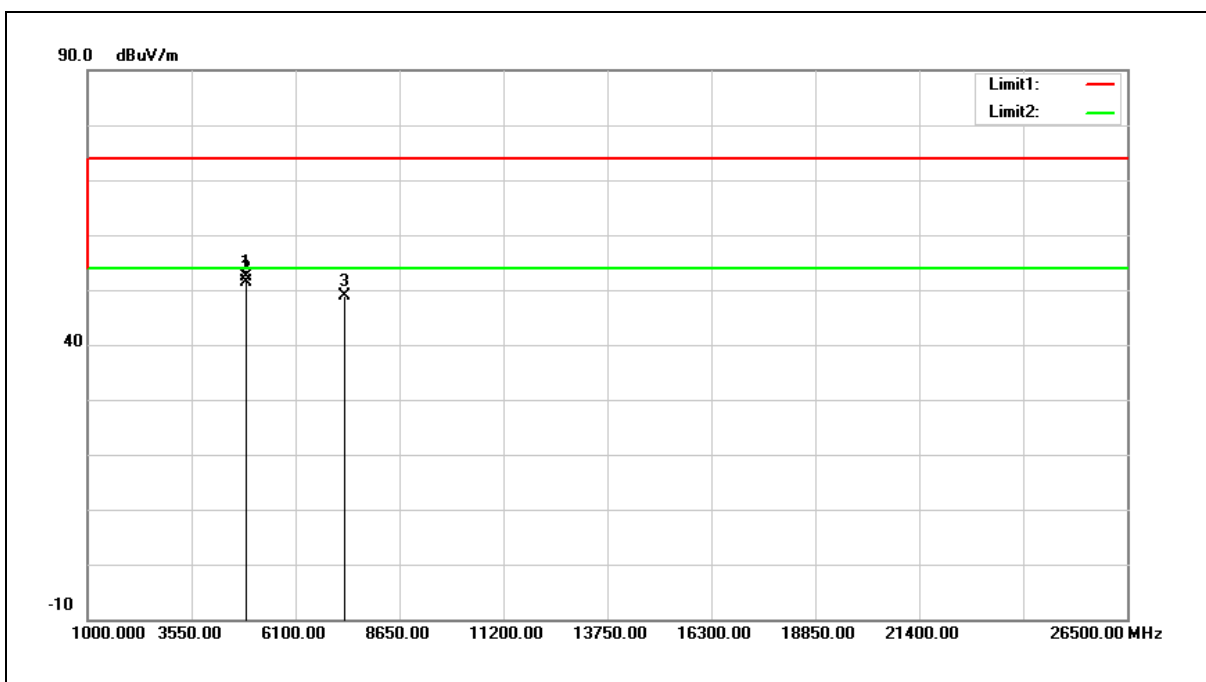
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	49.45	-0.78	48.67	74.00	-25.33	peak
2	7320.000	40.99	6.49	47.48	74.00	-26.52	peak

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		
Frequency:	2440 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



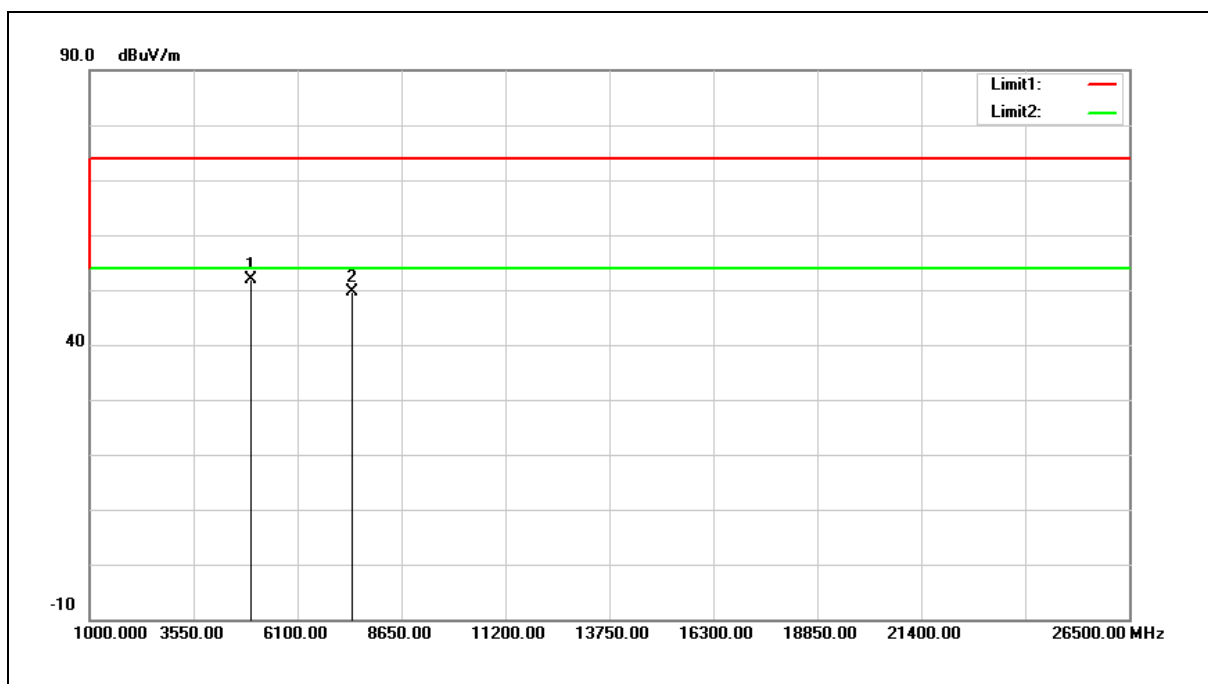
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	53.13	-0.78	52.35	74.00	-21.65	peak
2	4880.000	52.05	-0.78	51.27	54.00	-2.73	AVG
3	7320.000	42.36	6.49	48.85	74.00	-25.15	peak

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		
Frequency:	2480 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



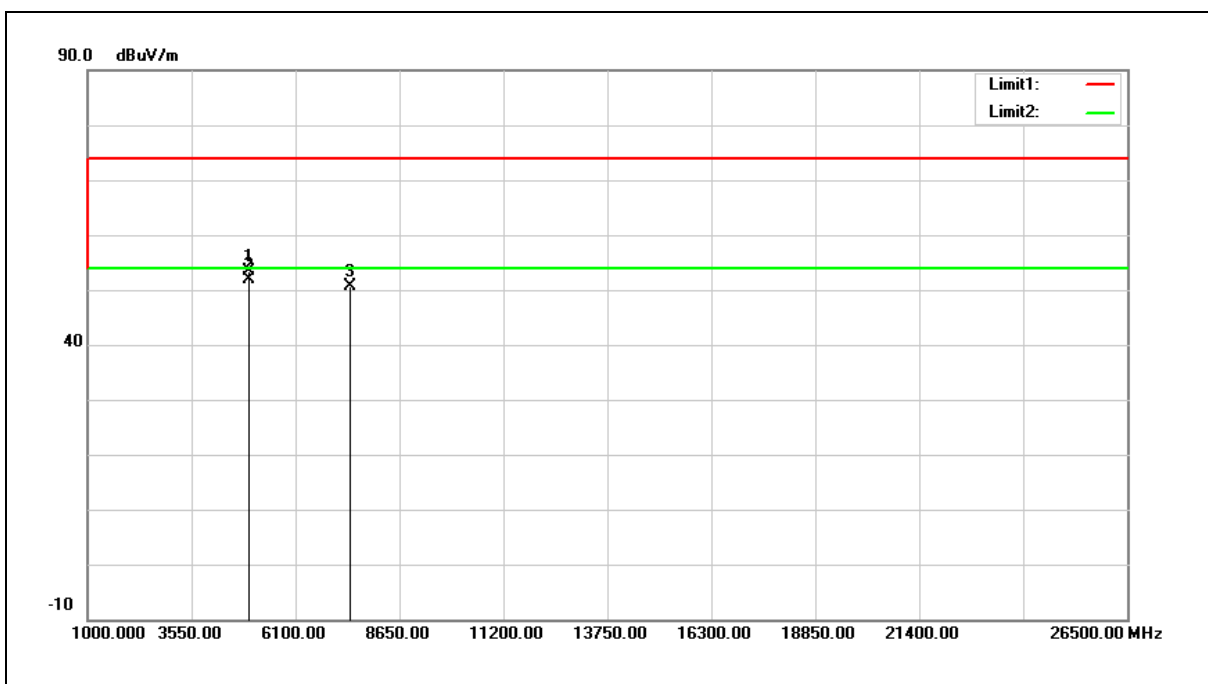
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	52.30	-0.50	51.80	74.00	-22.20	peak
2	7440.000	42.73	6.95	49.68	74.00	-24.32	peak

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		
Frequency:	2480 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



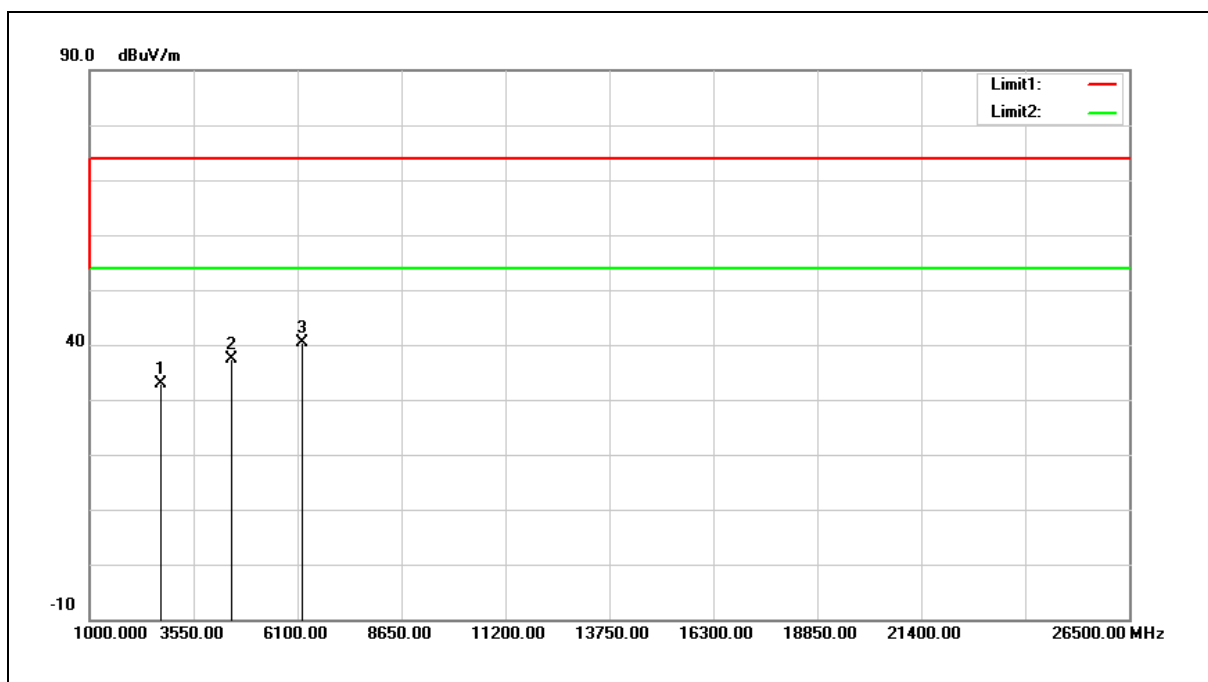
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	53.95	-0.50	53.45	74.00	-20.55	peak
2	4960.000	52.43	-0.50	51.93	54.00	-2.07	AVG
3	7440.000	43.59	6.95	50.54	74.00	-23.46	peak

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		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		
Description:			



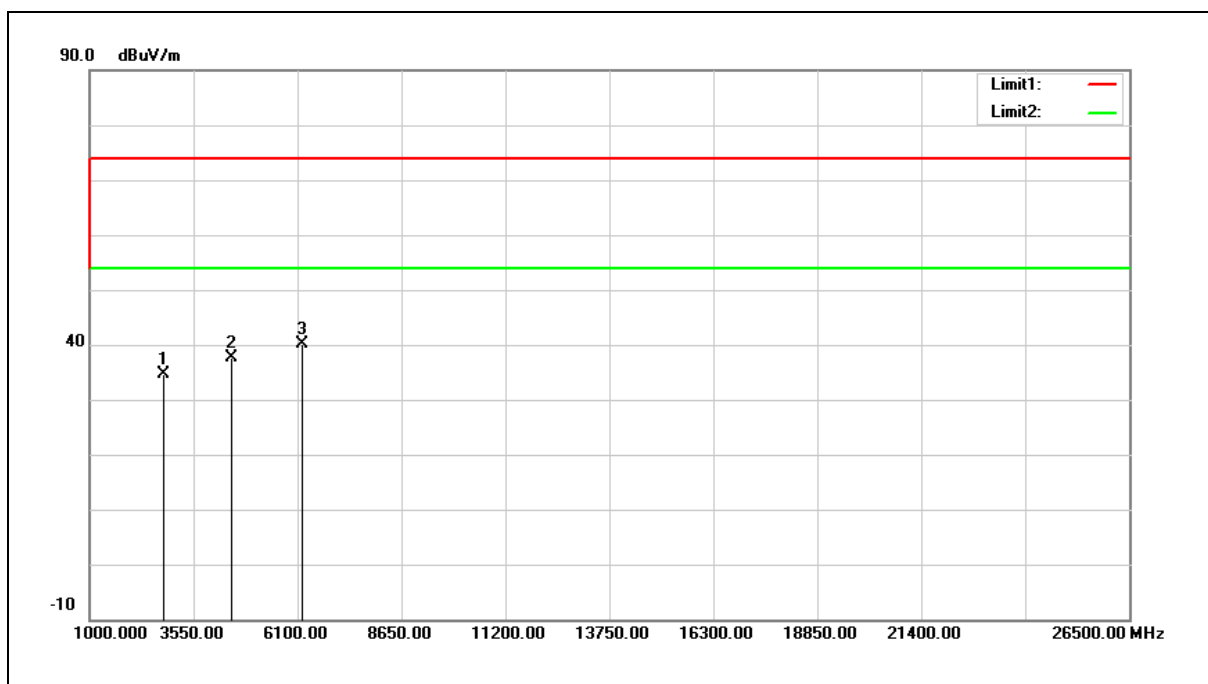
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2751.000	38.98	-6.10	32.88	74.00	-41.12	peak
2	4485.000	39.46	-2.15	37.31	74.00	-36.69	peak
3	6185.000	37.77	2.64	40.41	74.00	-33.59	peak

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		
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	2802.000	40.46	-5.94	34.52	74.00	-39.48	peak
2	4485.000	39.74	-2.15	37.59	74.00	-36.41	peak
3	6185.000	37.56	2.64	40.20	74.00	-33.80	peak

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

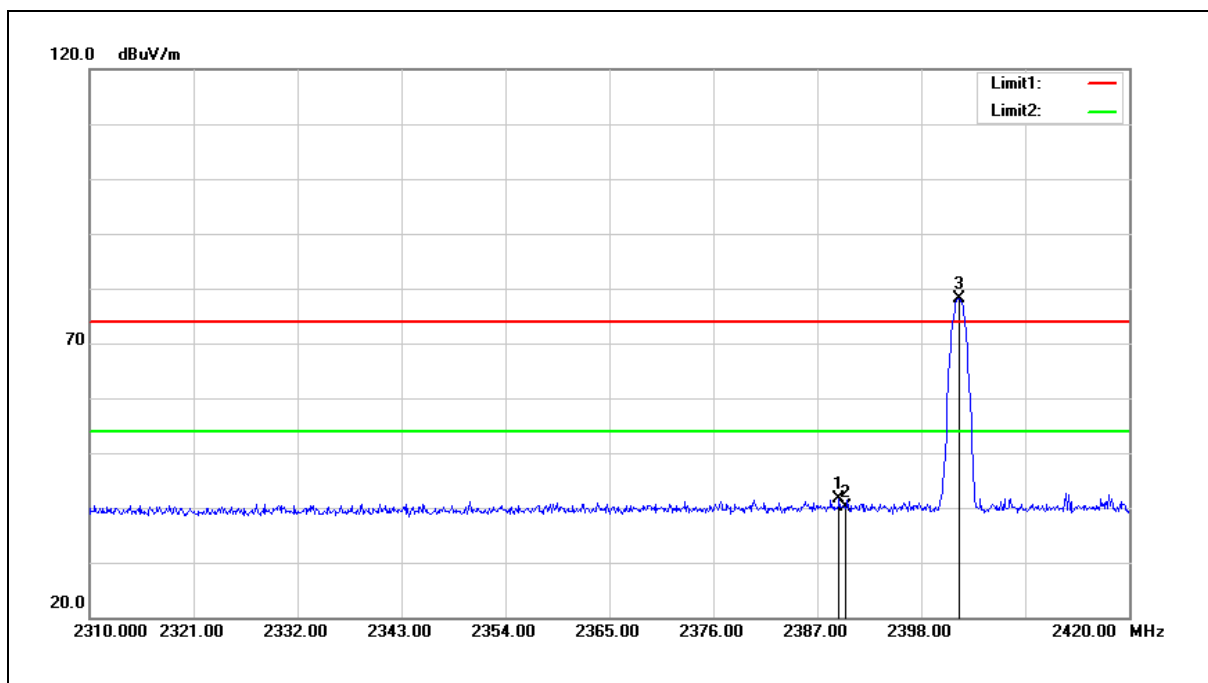
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

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

頻帶邊緣

Peak

Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



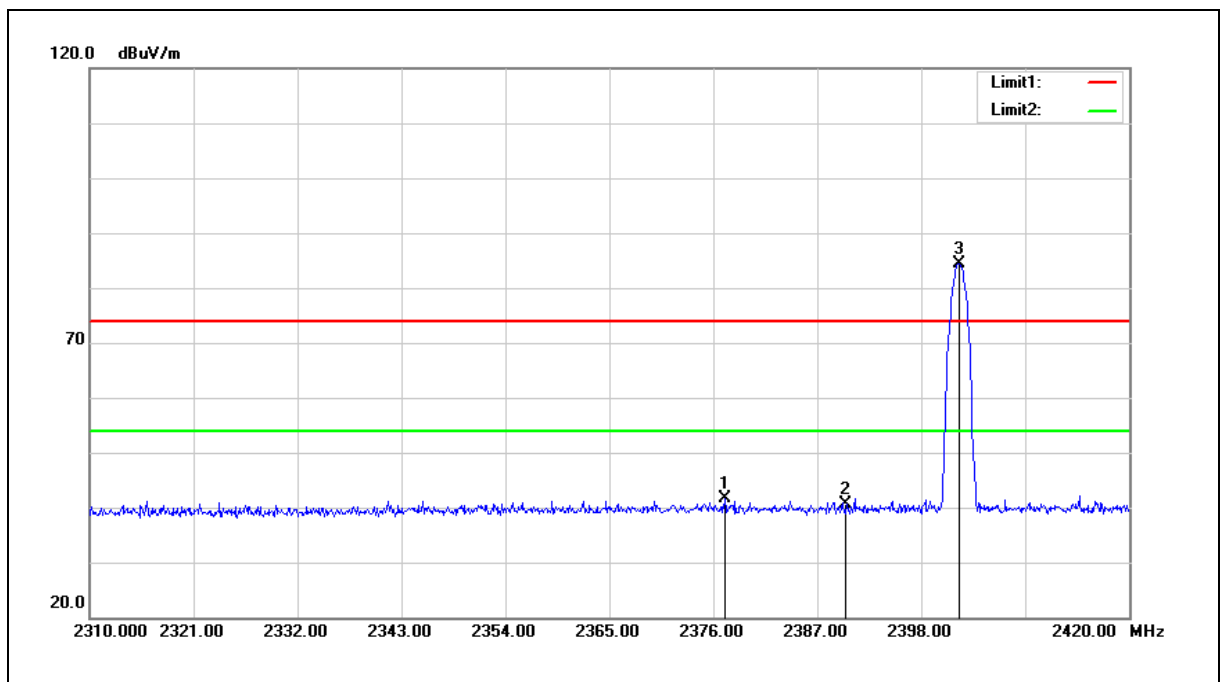
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.310	48.95	-7.30	41.65	74.00	-32.35	peak
2	2390.000	47.55	-7.30	40.25	74.00	-33.75	peak
3	2401.960	85.50	-7.25	78.25	--	--	peak

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		
Frequency:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



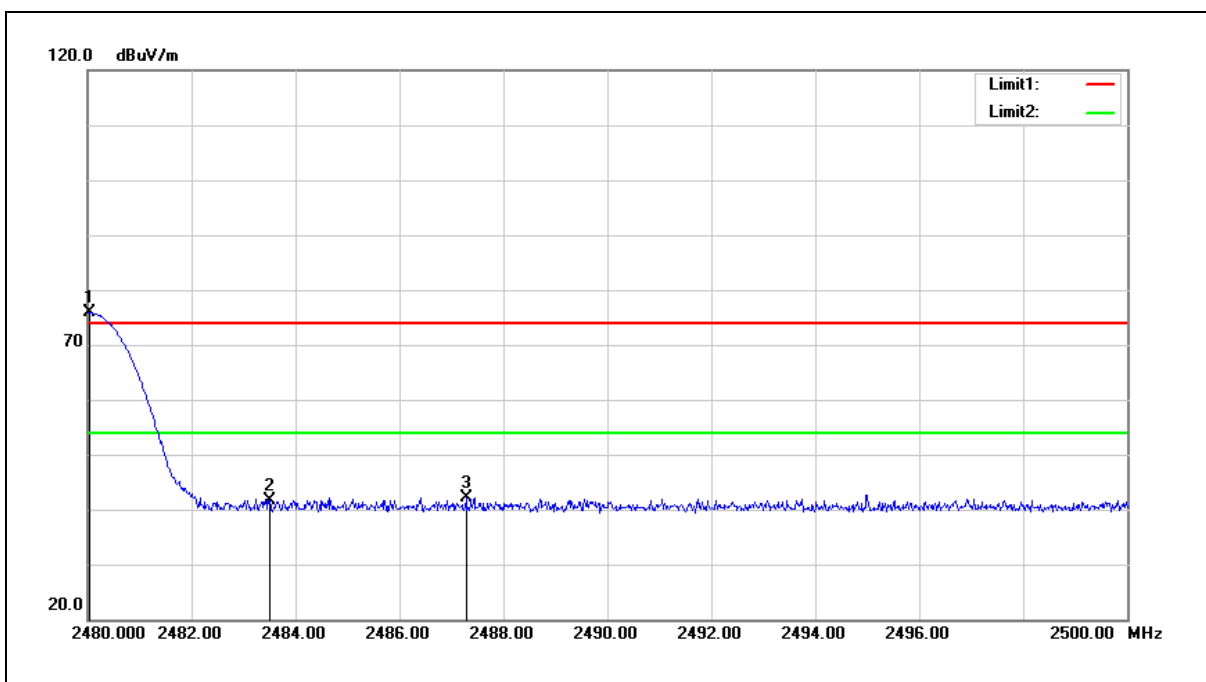
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2377.210	48.96	-7.36	41.60	74.00	-32.40	peak
2	2390.000	47.97	-7.30	40.67	74.00	-33.33	peak
3	2401.960	91.59	-7.25	84.34	--	--	peak

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		
Frequency:	2480 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



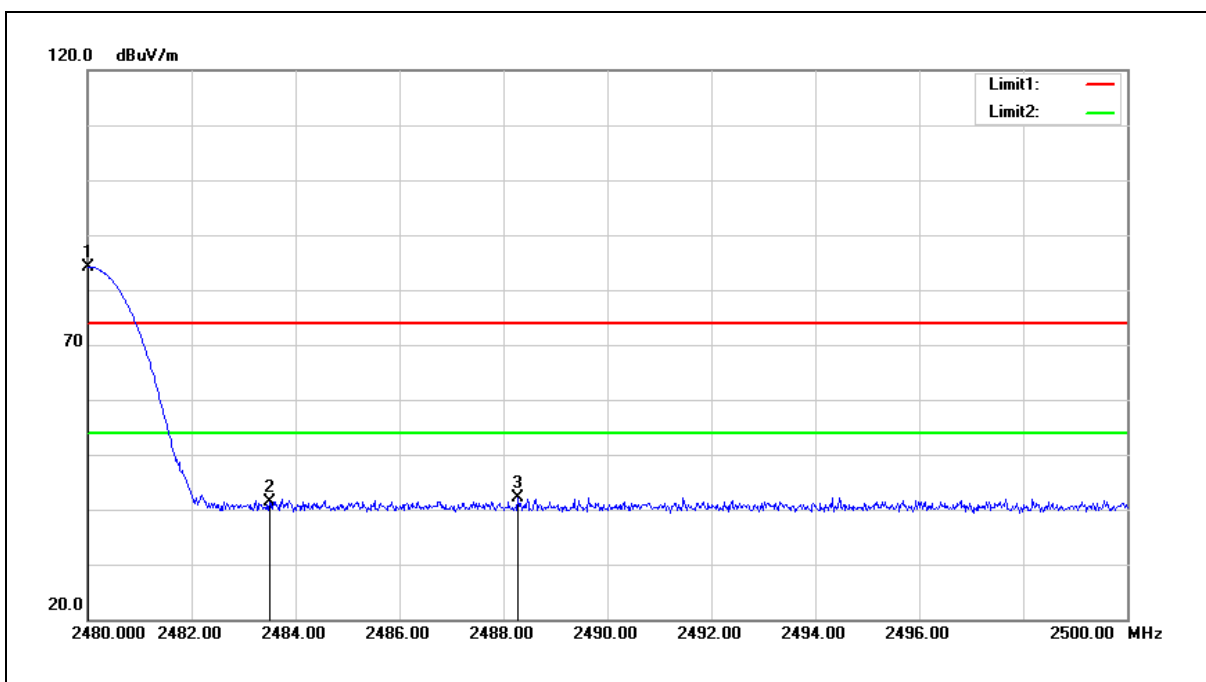
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.040	82.81	-6.95	75.86	--	--	peak
2	2483.500	48.53	-6.94	41.59	74.00	-32.41	peak
3	2487.280	49.06	-6.92	42.14	74.00	-31.86	peak

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		
Frequency:	2480 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



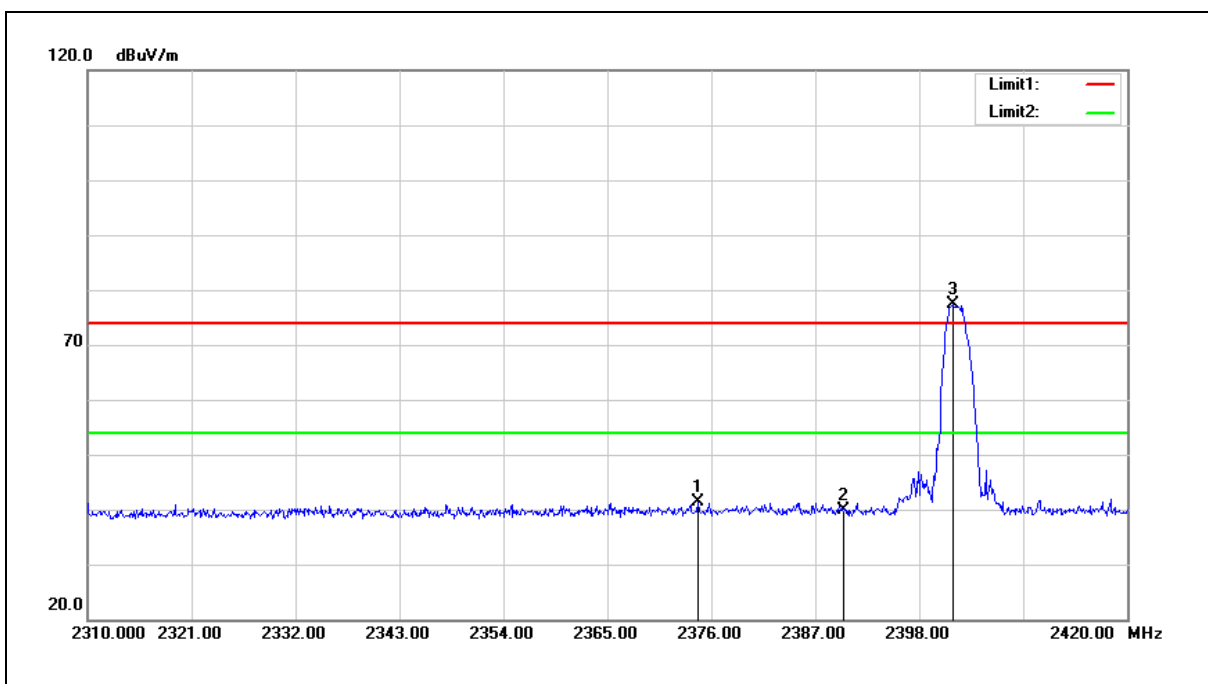
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.000	91.15	-6.95	84.20	--	--	peak
2	2483.500	48.29	-6.94	41.35	74.00	-32.65	peak
3	2488.280	49.02	-6.91	42.11	74.00	-31.89	peak

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		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



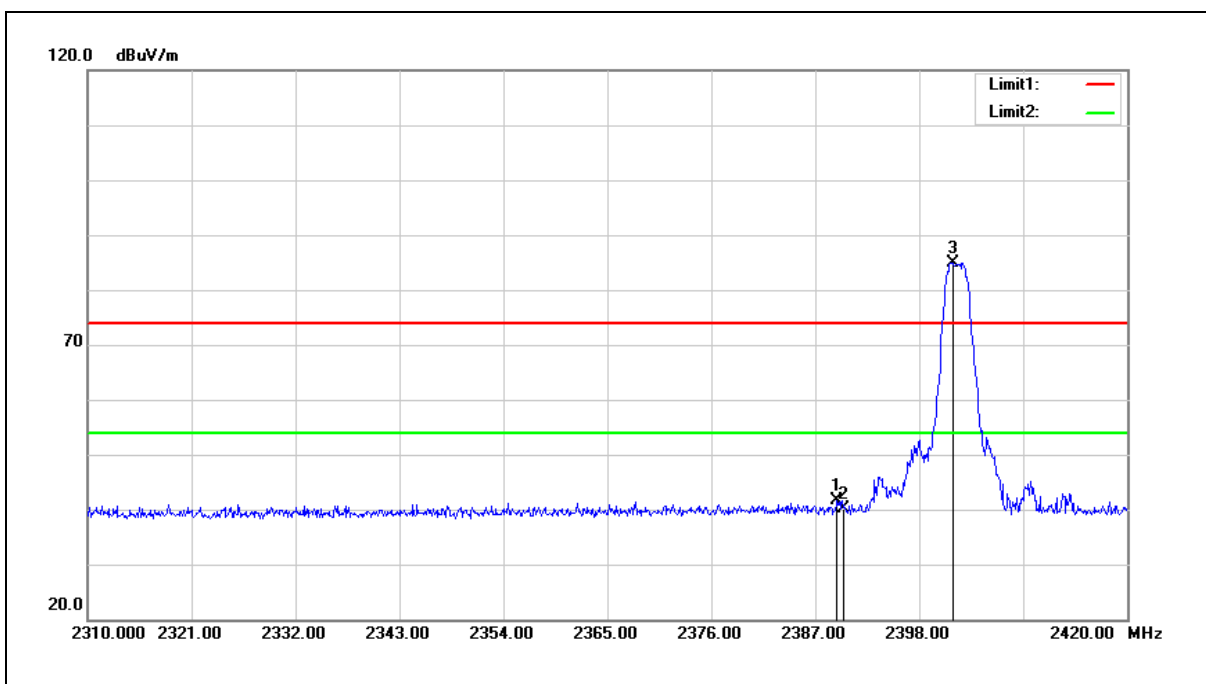
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.570	48.69	-7.37	41.32	74.00	-32.68	peak
2	2390.000	47.28	-7.30	39.98	74.00	-34.02	peak
3	2401.520	84.54	-7.26	77.28	--	--	peak

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		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



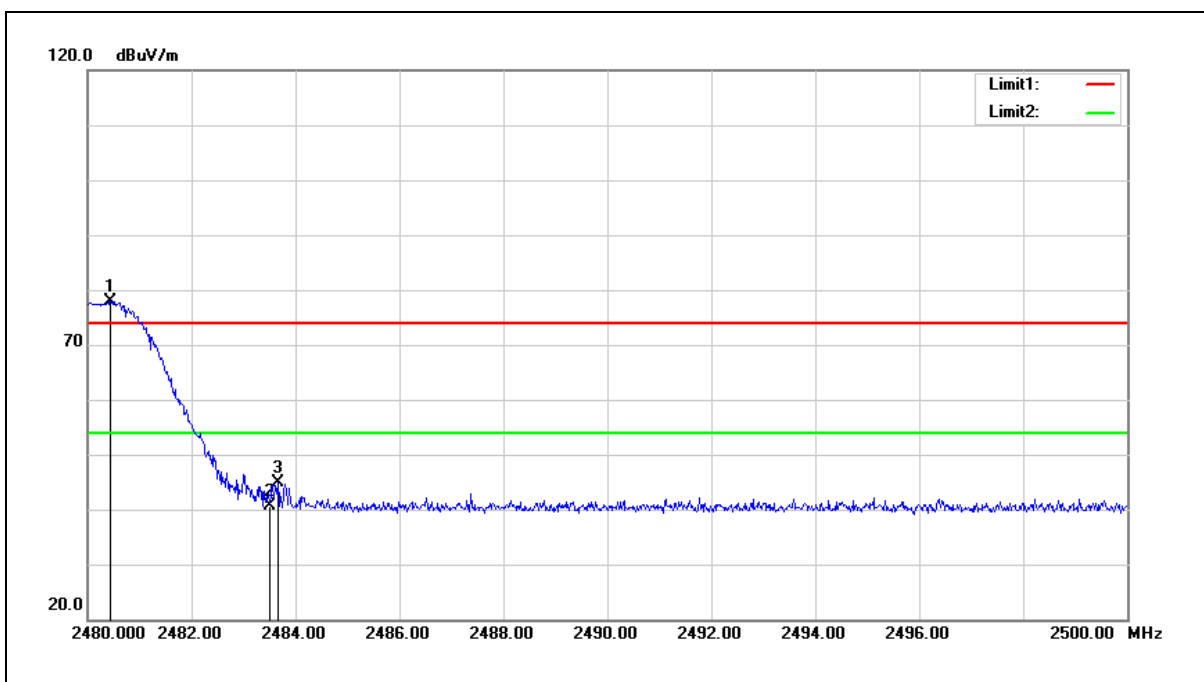
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.310	48.90	-7.30	41.60	74.00	-32.40	peak
2	2390.000	47.46	-7.30	40.16	74.00	-33.84	peak
3	2401.520	92.23	-7.26	84.97	--	--	peak

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		
Frequency:	2480 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



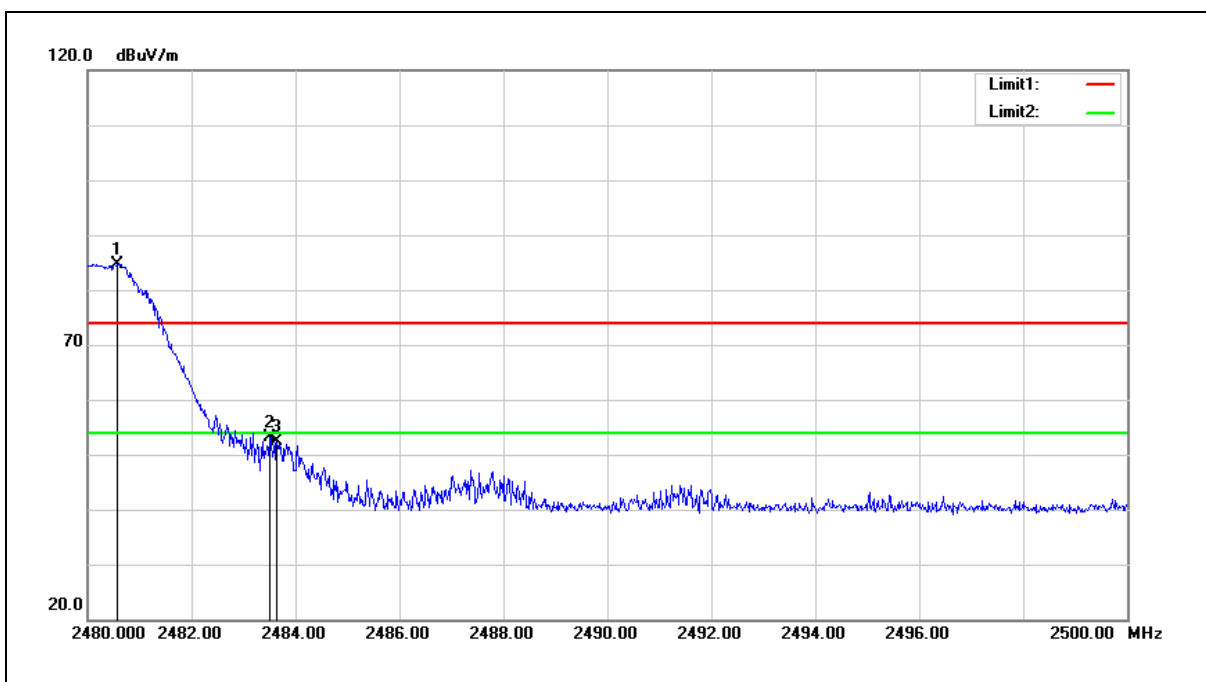
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.440	84.91	-6.94	77.97	--	--	peak
2	2483.500	47.61	-6.94	40.67	74.00	-33.33	peak
3	2483.660	51.74	-6.94	44.80	74.00	-29.20	peak

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		
Frequency:	2480 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	2480.560	91.64	-6.94	84.70	---	--	peak
2	2483.500	60.10	-6.94	53.16	74.00	-20.84	peak
3	2483.640	59.43	-6.94	52.49	74.00	-21.51	peak

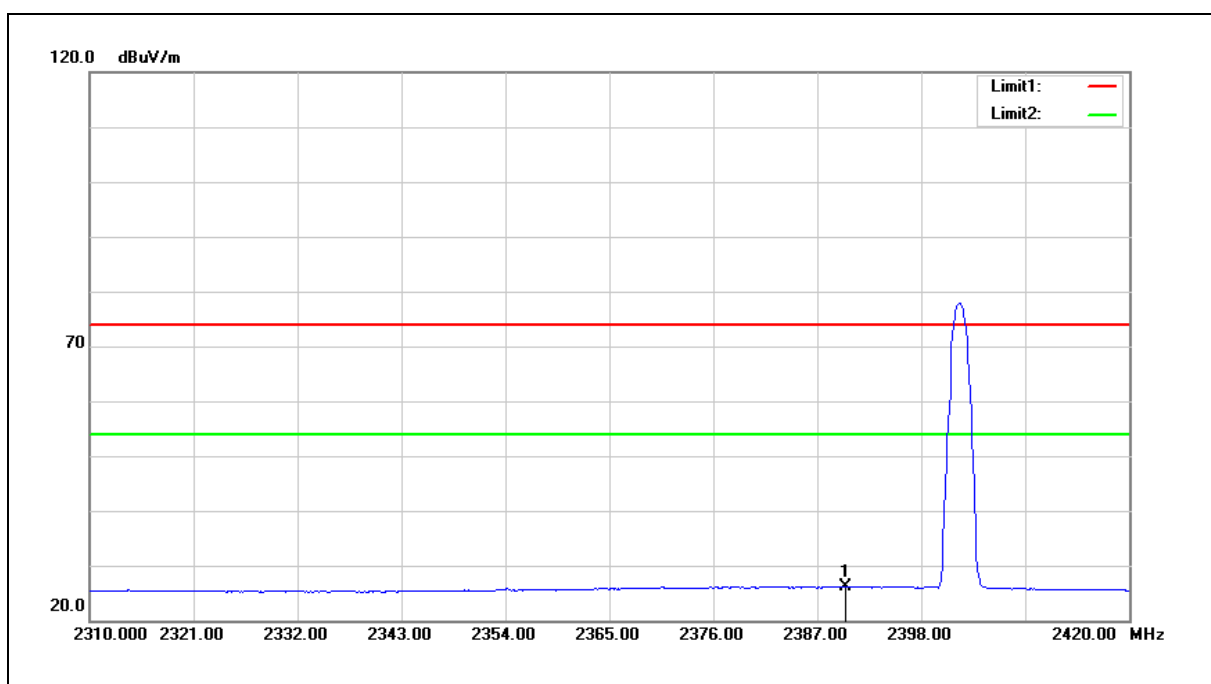
Note: 1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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.

Average

Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



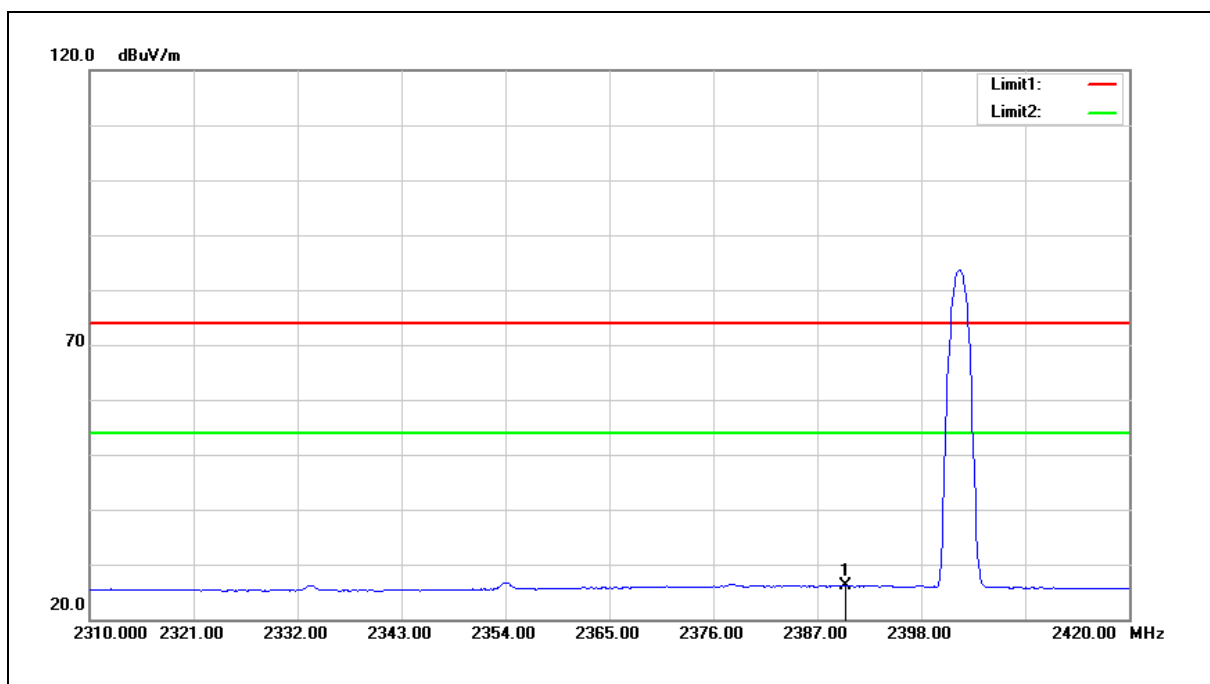
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	33.40	-7.30	26.10	54.00	-27.90	AVG

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		
Frequency:	2402 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



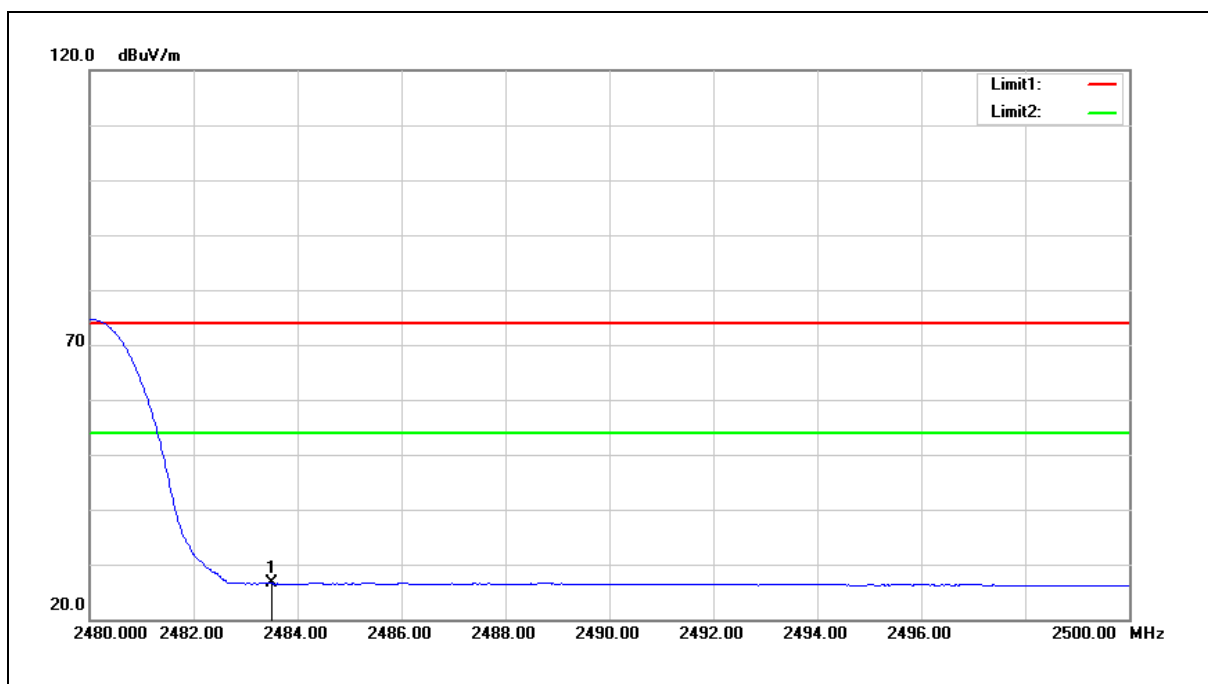
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	33.32	-7.30	26.02	54.00	-27.98	AVG

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		
Frequency:	2480 MHz		
Mode:	Mode 1		
Ant.Polar.:	Horizontal		



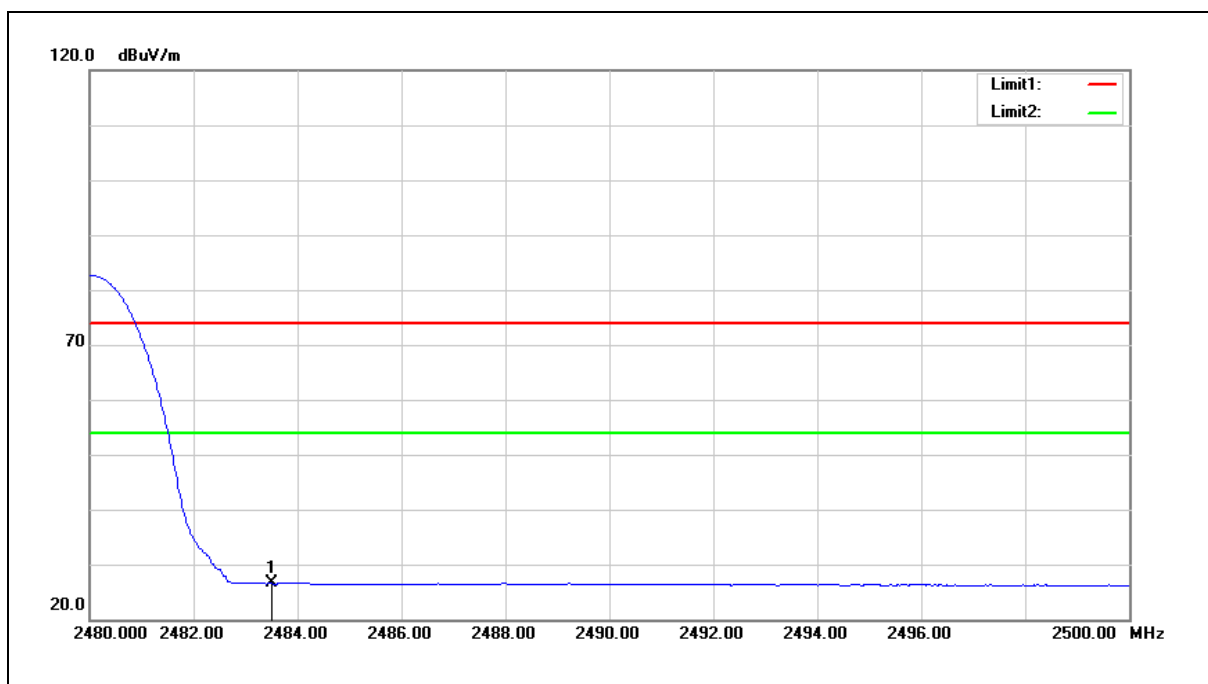
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	33.49	-6.94	26.55	54.00	-27.45	AVG

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		
Frequency:	2480 MHz		
Mode:	Mode 1		
Ant.Polar.:	Vertical		



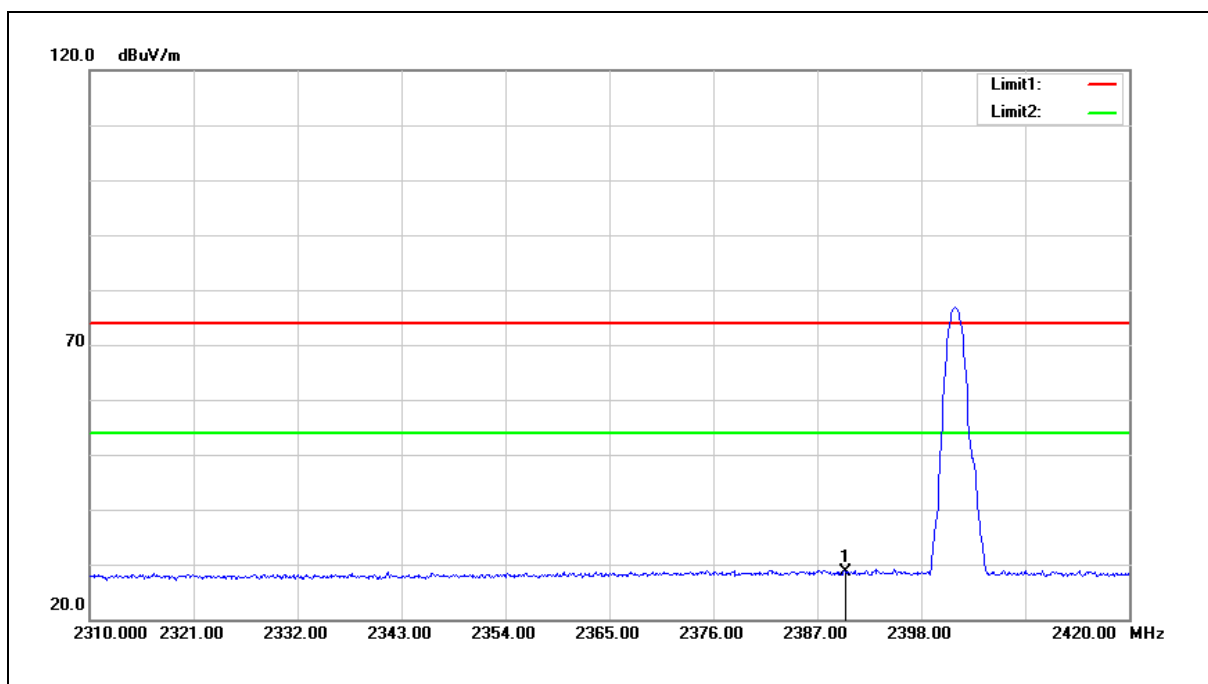
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	33.45	-6.94	26.51	54.00	-27.49	AVG

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		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



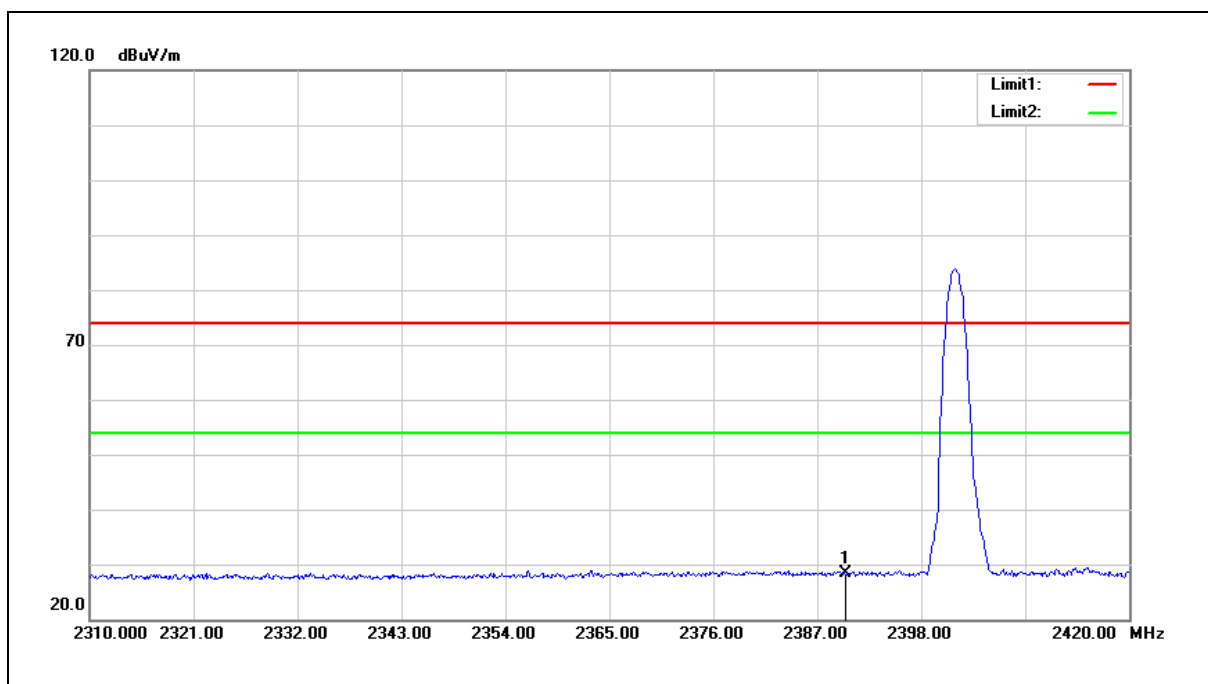
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	35.81	-7.30	28.51	54.00	-25.49	AVG

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		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



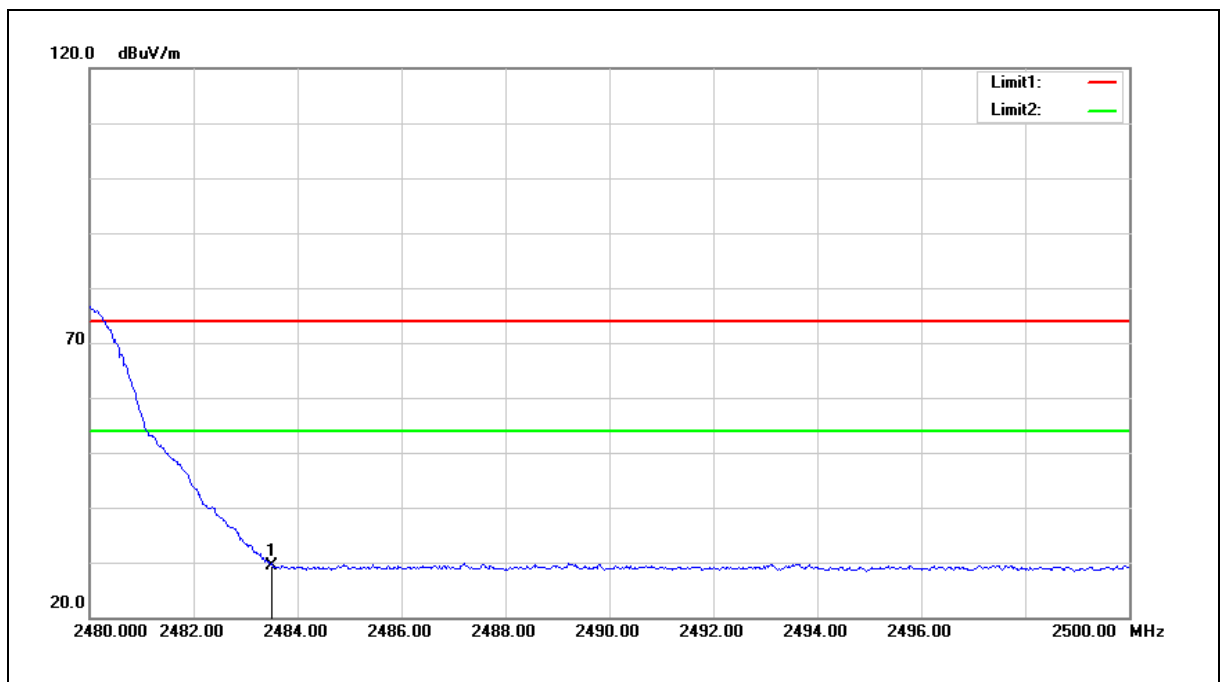
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	35.61	-7.30	28.31	54.00	-25.69	AVG

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:	Band edge		
Frequency:	2480 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



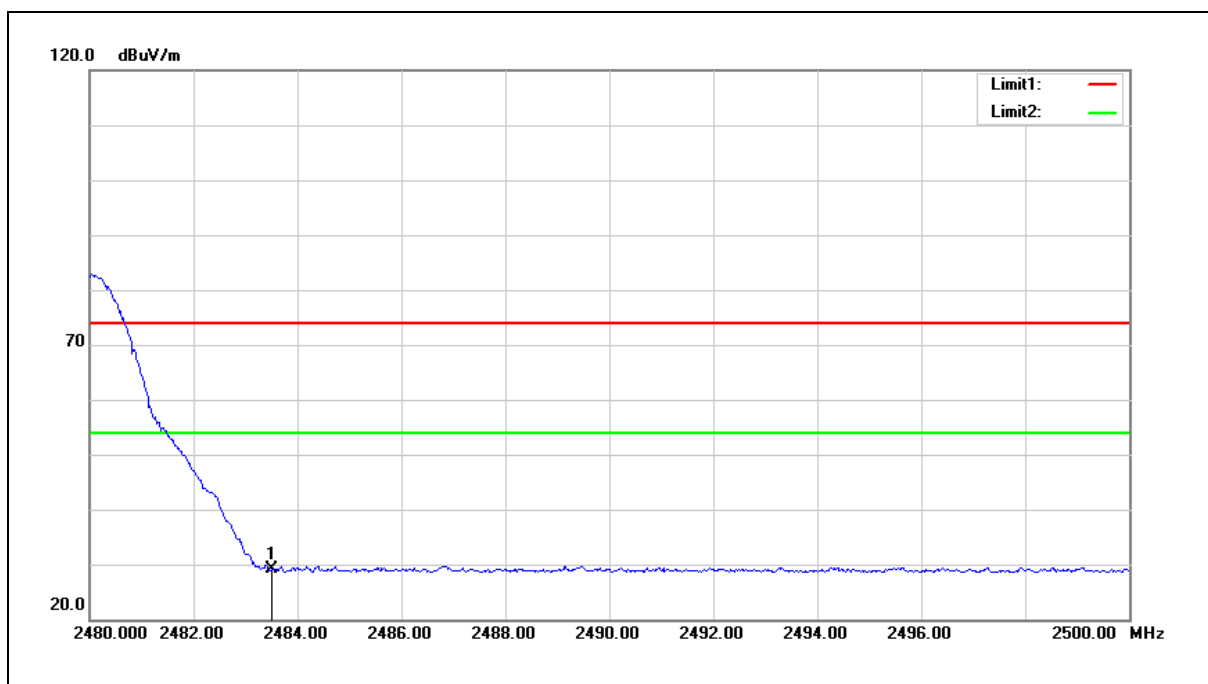
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	36.23	-6.94	29.29	54.00	-24.71	AVG

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		
Frequency:	2480 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	2483.500	36.04	-6.94	29.10	54.00	-24.90	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.

Annex B. Conducted Test Results

輸出峰值功率之量測

操作模式 : Mode 1: 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	-0.28	0.00094	-0.23	0.00095	≤ 1
中頻道	-0.64	0.00086	-0.58	0.00087	≤ 1
高頻道	-0.40	0.00091	-0.35	0.00092	≤ 1

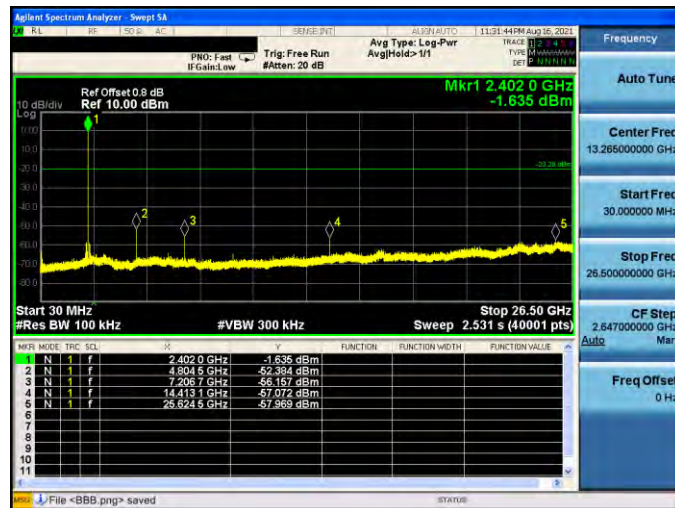
操作模式 : Mode 2: 2LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	-0.28	0.00094	-0.21	0.00095	≤ 1
中頻道	-0.65	0.00086	-0.58	0.00087	≤ 1
高頻道	-0.39	0.00091	-0.34	0.00092	≤ 1

非必要頻帶之量測

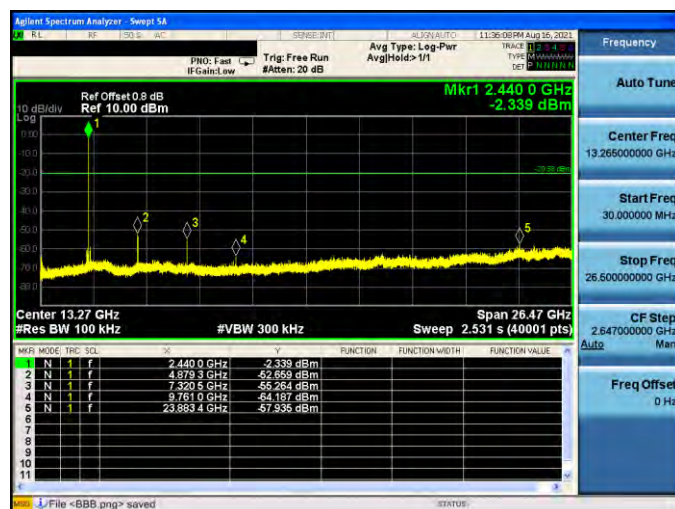
Out of Band Conducted Spurious Emission

Mode 1: LE, GFSK Continuous TX Mode

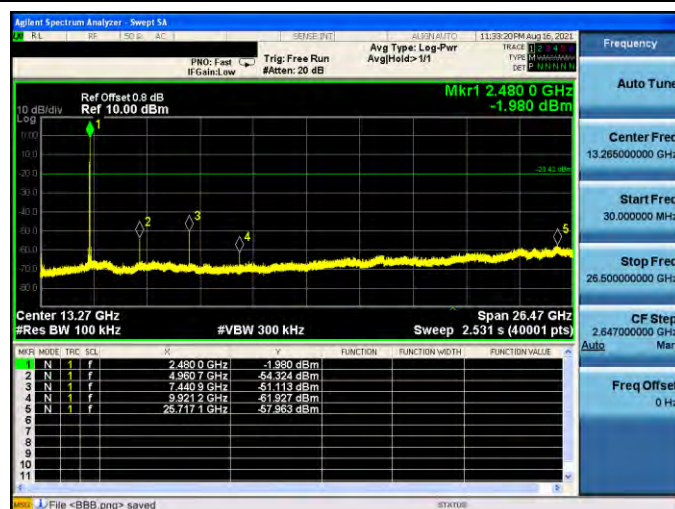
低頻道



中頻道

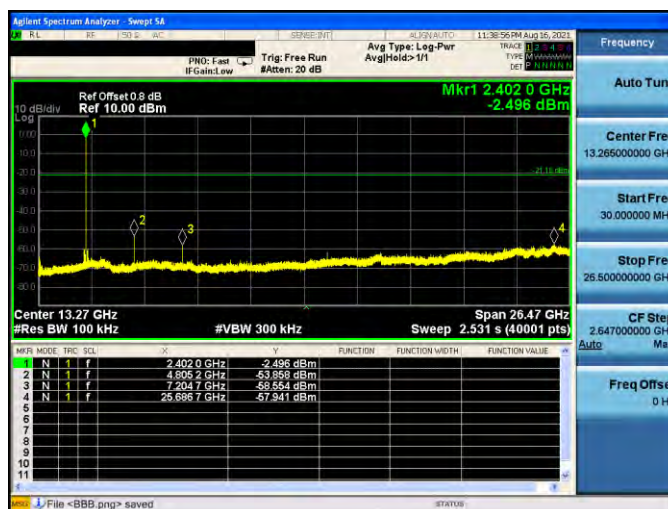


高頻道

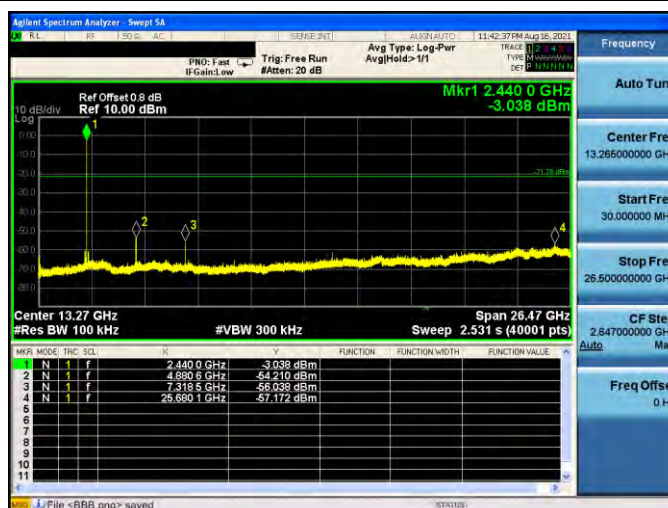


Mode 2: 2LE, GFSK Continuous TX Mode

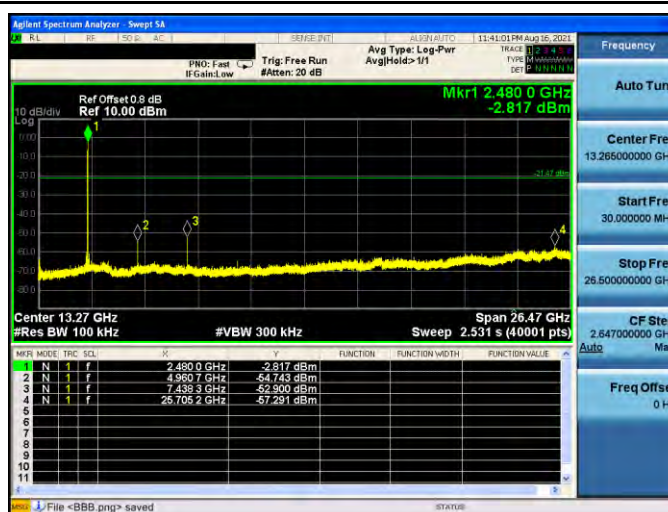
低頻道



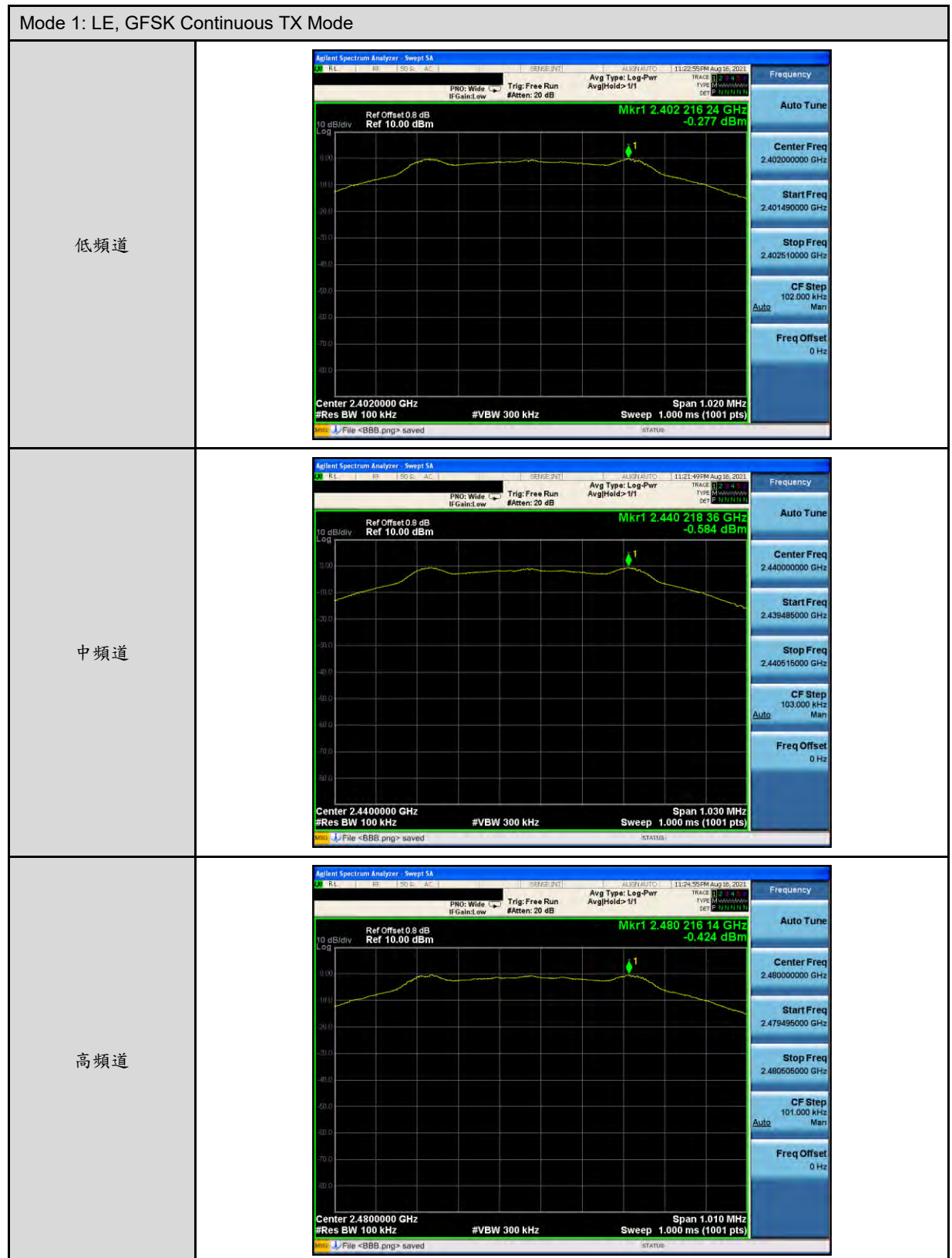
中頻道

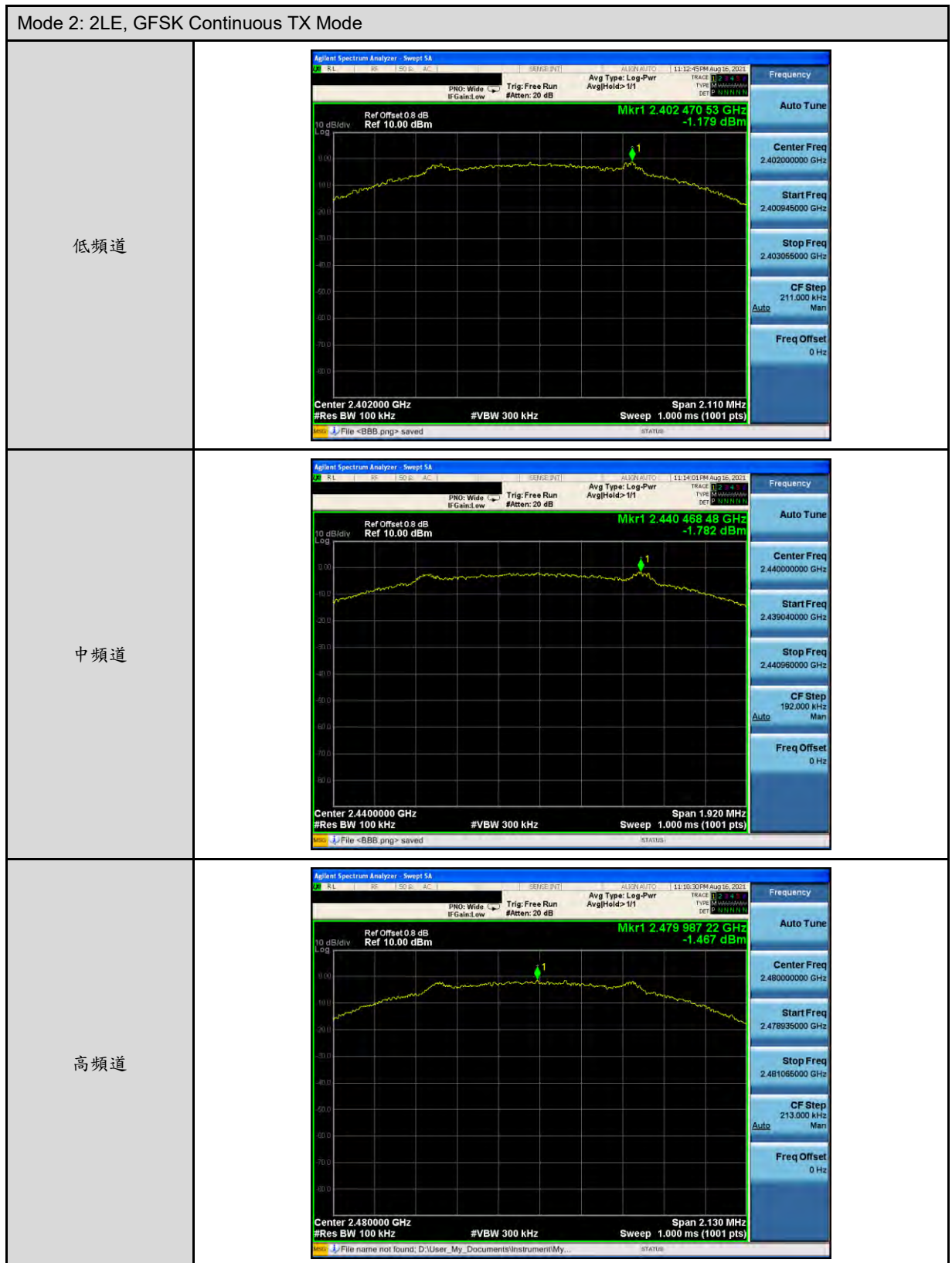


高頻道



Reference level

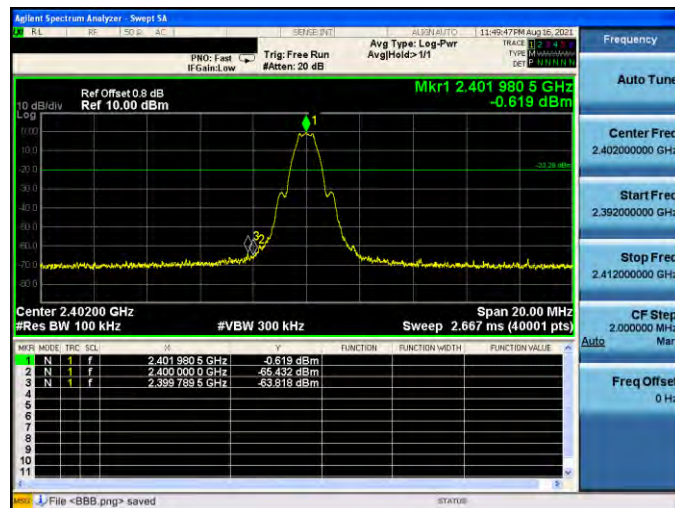




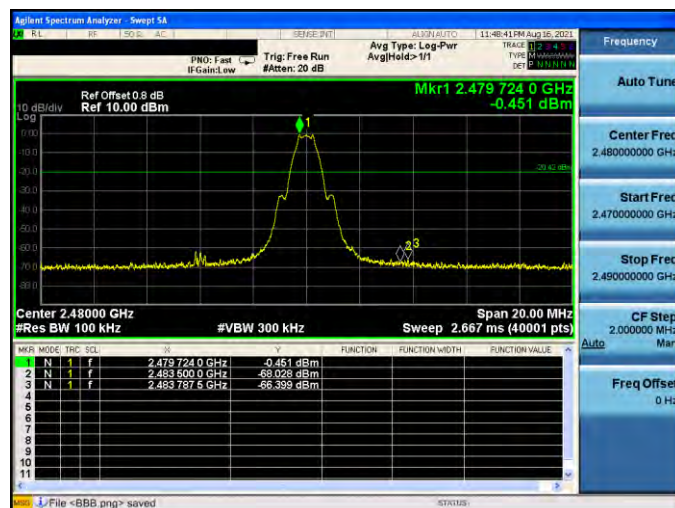
Conducted Band Edge

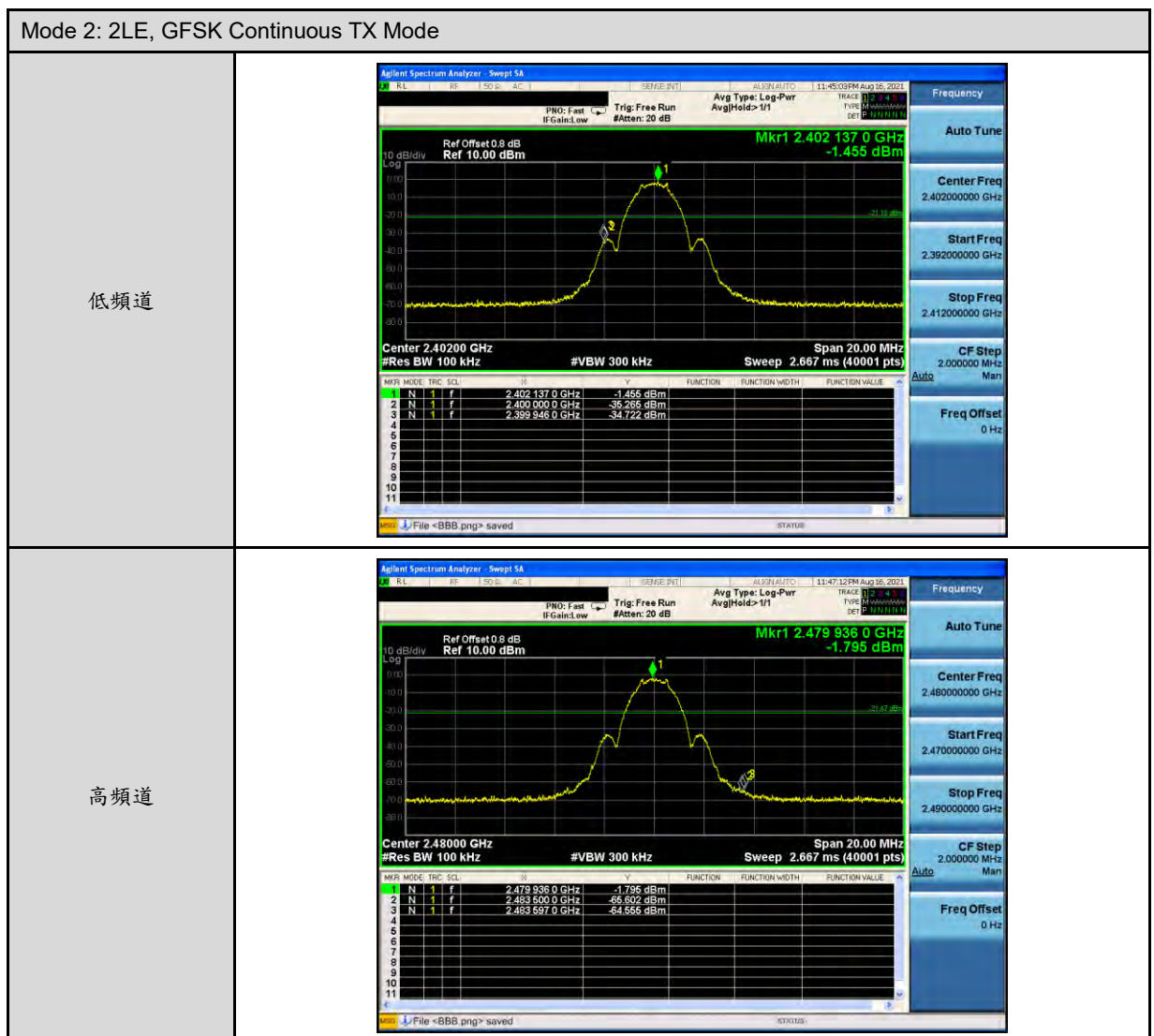
Mode 1: LE, GFSK Continuous TX Mode

低頻道



高頻道

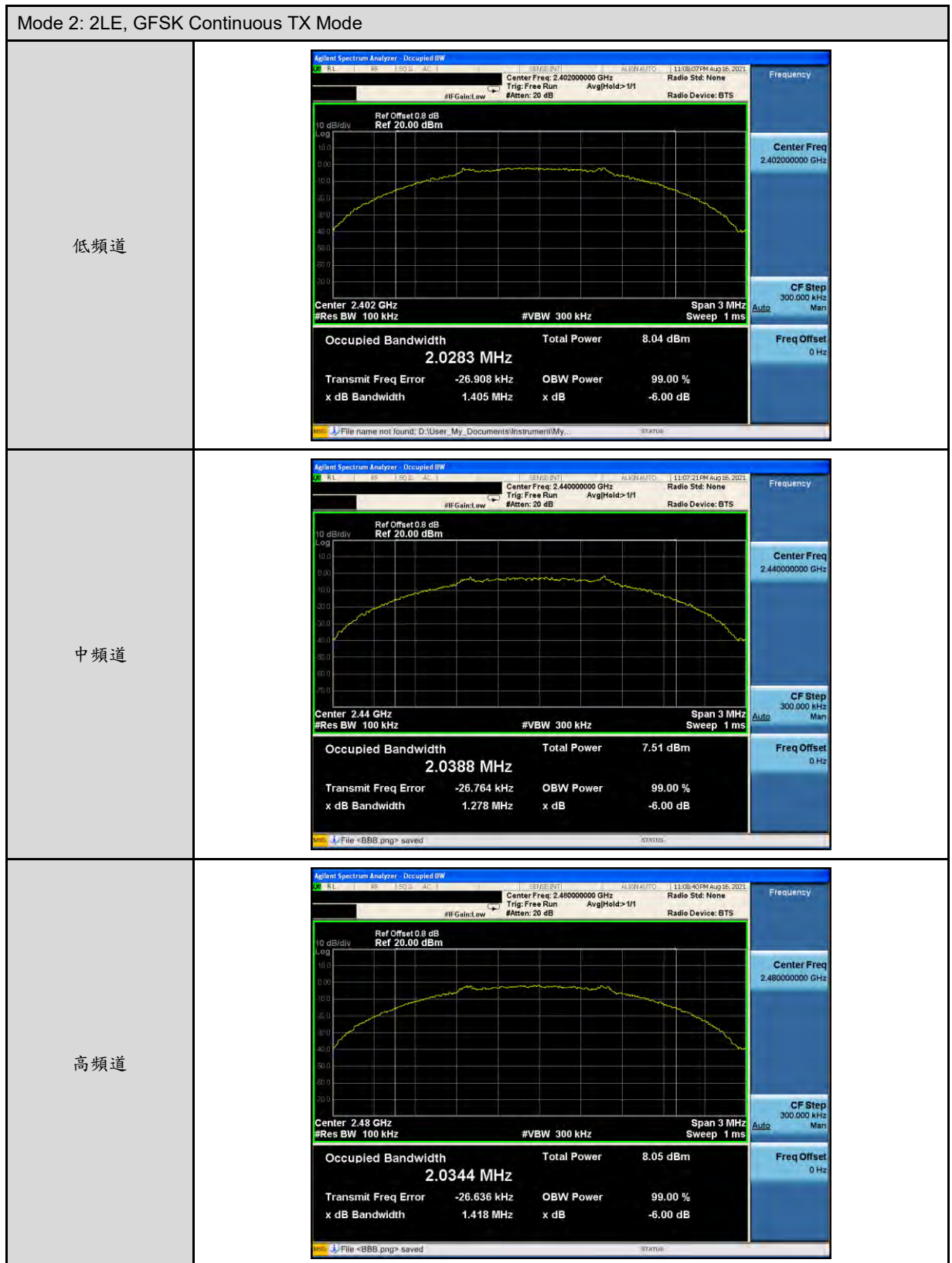




發射頻寬之要求

操作模式 : Mode 1: LE, GFSK Continuous TX Mode Mode 2: 2LE, GFSK Continuous TX Mode			
操作模式	頻道	發射頻寬(6 dB)	
		量測值 (kHz)	限制值 (kHz)
Mode 1	低頻道	675.000	≥ 500
	中頻道	686.300	≥ 500
	高頻道	668.700	≥ 500
Mode 2	低頻道	1405.000	≥ 500
	中頻道	1278.000	≥ 500
	高頻道	1418.000	≥ 500





功率密度之要求

操作模式 : Mode 1: LE, GFSK Continuous TX Mode Mode 2: 2LE, GFSK Continuous TX Mode			
操作模式	頻道	量測值 (dBm/3 kHz)	限制值 (dBm/3 kHz)
Mode 1	低頻道	-9.499	≤ 8
	中頻道	-9.807	≤ 8
	高頻道	-9.748	≤ 8
Mode 2	低頻道	-12.235	≤ 8
	中頻道	-13.090	≤ 8
	高頻道	-12.705	≤ 8

Mode 1: LE, GFSK Continuous TX Mode

低頻道

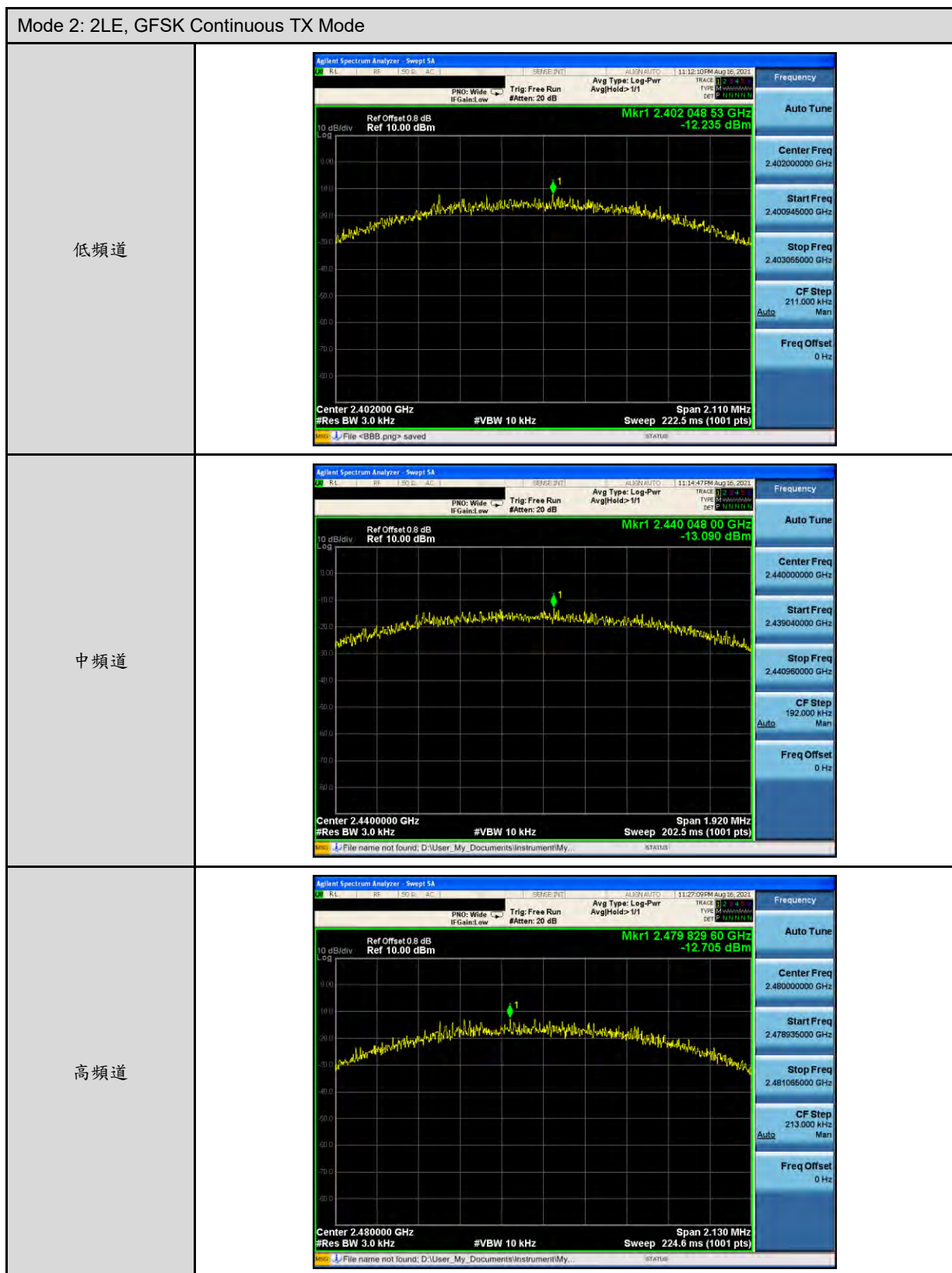


中頻道



高頻道





---END---