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	2108DR32
版本(Rev.)	00
產品名稱	True Wireless Earbuds
申請廠商	Kingstate Electronics(Dongguan)Co.,Ltd.
廠　　牌	YAMAHA
型式 (號)	TW-E5B
產品試驗依據之標準	低功率射頻器材技術規範(LP0002) 109 年 07 月 01 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
33465 桃園市八德區長安街 140-1 號
Tel：03-2710188 / Fax：03-2710190

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。

2.本測試報告未經晶復科技股份有限公司書面同意，不得部分複製本報告內容。

3.本測試報告內容之相關資訊皆由顧客提供，針對顧客所提供資訊之正確性、適當性或完整性，若有疑義或錯誤，並因此影響本測試報告結果有效性時，本實驗室不負其相關責任。

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	趙翊如

低功率射頻器材測試證明書

產 品 名 稱 ：True Wireless Earbuds

廠 牌 ：YAMAHA

型 號 ：TW-E5B

申 請 廠 商 ：Kingstate Electronics(Dongguan)Co.,Ltd.

申請者地址 ：Shichong Industrial Park, Shichong Avenue, XiangXi Village,Shipai Town, Dongguan City, Guangdong Province, China

製 造 廠 商 ：Kingstate Electronics(Dongguan)Co.,Ltd.

製造商地址 ：Shichong Industrial Park, Shichong Avenue, XiangXi Village,Shipai Town, Dongguan City, Guangdong Province, China

待測物電壓 ：DC 5 V, 0.5 A

量 測 規 範 ：低功率射頻器材技術規範(LP0002) 109年07月01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 03 日

試 驗 日 期 ：110 年 08 月 06 日 ~ 110 年 08 月 07 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：楊凱宇

(楊 凱 宇)

目 錄

名 稱 頁 次

低功率射頻器材測試證明書 3

1. 一般敘述 5

1.1 待測設備一般敘述 5
1.2 其他相關聲明 6

2. 量測儀器及測試配置說明 7

2.1 量測設備 7
2.2 檢驗系統示意圖 8
2.3 輔助測試之週邊設備描述 9
2.4 測試軟體版本 10
2.5 測試模式 10
2.6 量測不確定度 12
2.7 試驗環境 12

3. 測試項目與結果判定總表 13

4. 測試項目表列 15

4.1 電源線傳導干擾之量測 15
4.2 場強輻射之量測 16
4.3 輸出峰值功率之量測 19
4.4 非必要頻帶之量測 19
4.5 頻率範圍之要求 20
4.6 發射頻寬之要求 20
4.7 頻道數之要求 21
4.8 跳頻系統之載波頻率頻道間隔之量測 21
4.9 跳頻系統之任一頻率佔用之平均時間之量測 21
4.10 功率密度之要求 22
4.11 天線規格之要求 22

5. Test Results 23

Annex A. Conducted Emission 23
Annex B. Radiated Emission Measurement 25
Annex C. Conducted Test Results 85

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	True Wireless Earbuds
廠牌	YAMAHA
型號	TW-E5B
額定電源	DC 5 V, 0.5 A
待測物電源類別	Power Adapter / Battery / Notebook
調變方式	GFSK, π/4-DQPSK, 8DPSK
頻率使用範圍	2402 MHz – 2480 MHz
天線廠牌	思訊通信
天線型號	1330
天線型態	FPC Antenna
天線增益值	-0.85 dBi
RF 最大輸出功率	BR, GFSK: 4.75 dBm/ 0.00299 W EDR, π/4-DQPSK: 7.55 dBm/ 0.00569 W EDR, 8DPSK: 7.57 dBm/ 0.00571 W LE, GFSK: -0.45 dBm/ 0.00090 W 2LE, GFSK: -0.46 dBm/ 0.00090 W
註：此產品為右耳。	

輸出/輸入埠說明：

輸出/入埠		數量	介面內容說明
1	DC Power Port	1	連接至充電盒

附屬裝置表:

裝置名稱	廠牌	型號	備註
內建固定式電池	VDL	1254RB	DC 3.7 V, 55 mAh
充電盒	YAMAHA	TW-E5B	INPUT ：DC 5 V, 0.5 A OUTPUT：DC 5 V, 55 mA*2
True Wireless Earbuds (左耳耳機)	YAMAHA	TW-E5B	無線功能：Bluetooth
USB Cable	YAMAHA	TW-E5B	STD-A → Type-C Shielded, 0.25 m *FOR 充電盒

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. 07, 2021
測試者: 徐基哲

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
藍牙模擬基地台	R&S	CBT	100350	03/17/2021	2 years

For Conducted Emission
Test Period: Aug. 07, 2021
測試者: 申世傑

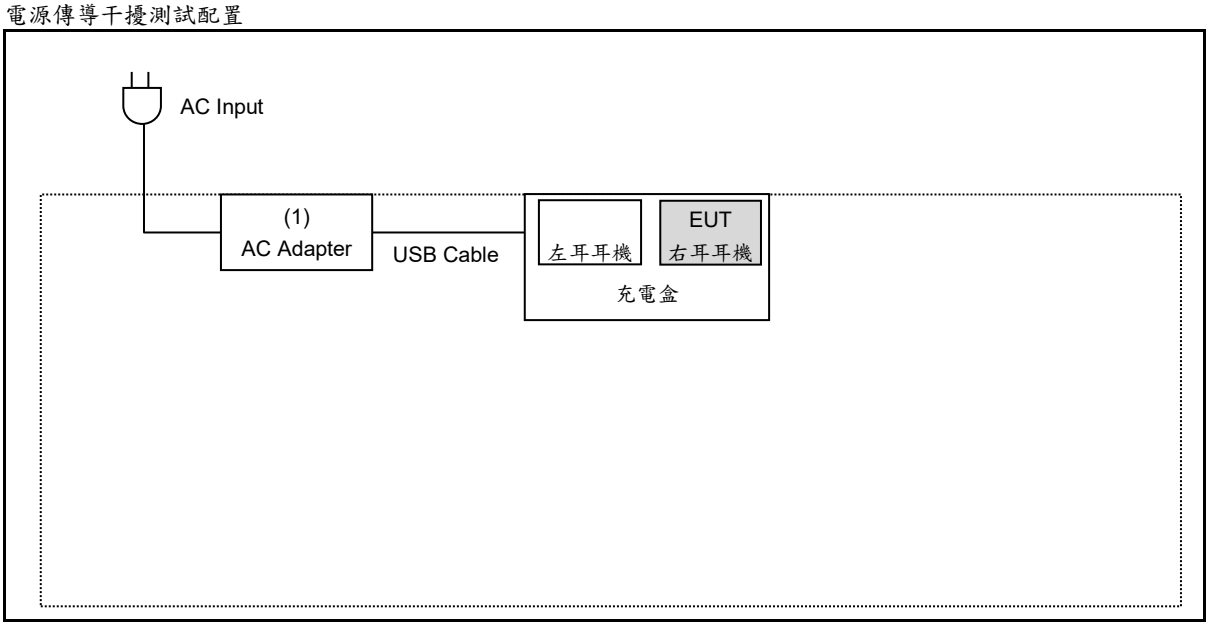
名 稱	廠 牌	型 號	序 號	本次校驗日期	校驗年限
測試接收機 (9 kHz~3 GHz)	R&S	ESCI	100367	05/21/2021	1 year
線性阻抗模擬網路	R&S	ENV216	101040	03/29/2021	1 year
線性阻抗模擬網路	R&S	ENV216	101041	04/08/2021	1 year

For Radiated Emissions
Test Period: Aug. 06, 2021
測試者:劉彥聖, 李怡華

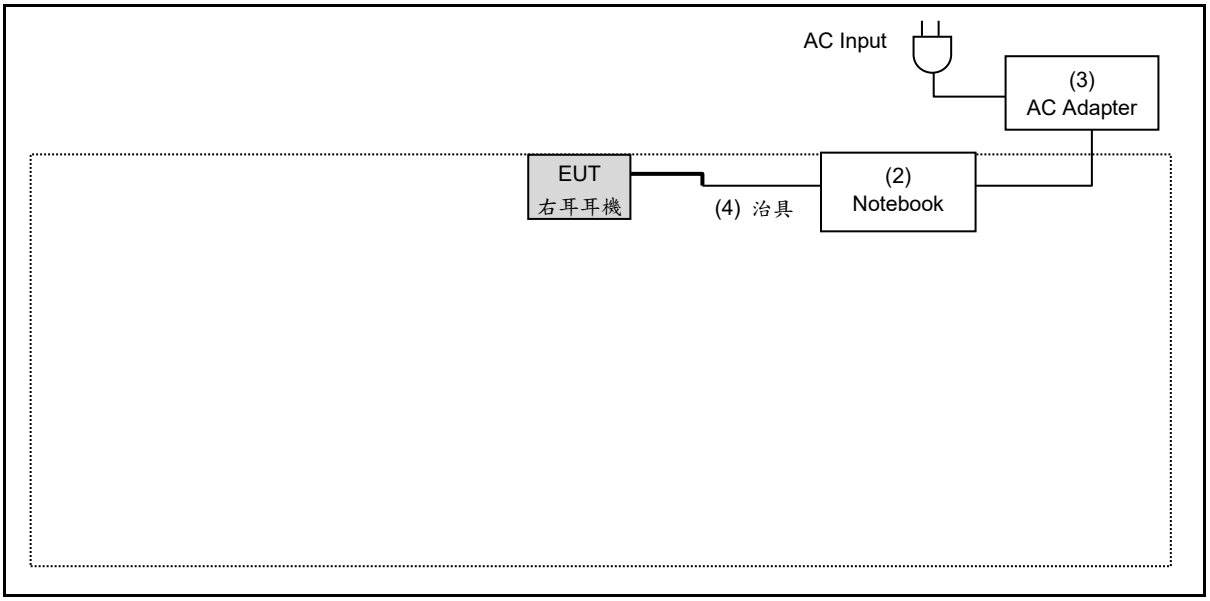
名 稱	廠 牌	型 號	序 號	本次校驗日期	校驗年限
Spectrum Analyzer	KEYSIGHT	N9030B	MY57143537	04/19/2021	1 year
Amplifier	Agilent	8447D	2944A11119	01/15/2021	1 year
Amplifier	Agilent	8449B	3008A02237	10/21/2020	1 year
天線	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	416	11/11/2020	1 year
天線(1~18 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	08/17/2020	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

電源傳導干擾測試配置



輻射干擾測試配置



2.3 輔助測試之週邊設備描述

下列輔助設備或配件為測試中所使用，以形成一個代表性的受測系統。

週邊名稱		廠 牌	型 號	序 號	電源線	備 註
(1)	AC Adapter	HUAWEI	HW-050100U01	---	---	INPUT : 100-240 VAC, 50/60 Hz, 0.2 A OUTPUT : 5 VDC, 1 A (實驗室提供)
(2)	Notebook	ASUS	P1448U	---	---	(實驗室提供)
(3)	AC Adapter	ASUS	PA-1650-78	---	Non-Shielded, 0.8 m	INPUT : 100-240 VAC, 50/60 Hz, 2.0 A OUTPUT : 19 VDC, 3.42 A (實驗室提供)
(4)	治具	YAMAHA	TW-E5B	---	---	(申請者提供)
(5)	Mobile Phone	SAMSUNG	SM-G960F/DS	---	---	NCC ID : CCAK184G0030T4 (實驗室提供)

測試組合：

EUT Configure Mode	CE	RE<1 GHz	RE≧1 GHz	備註	
內建固定式電池	V	V	V		
充電盒	V		X		
True Wireless Earbuds (左耳耳機)	V		X		
USB Cable	V		X		
AC Adapter	V		X	測試週邊(1)	
Notebook	X	V	V	測試週邊(2)	Test Mode使用
AC Adapter	X	V	V	測試週邊(3)	Test Mode使用
治具	X	V	V	測試週邊(4)	Test Mode使用
Mobile Phone	X		X	測試週邊(5)	Normal Link使用

RE≧1 GHz：Radiated Emission above 1 GHz & Bandedge Measurement
RE<1 GHz：Radiated Emission below 1 GHz
CE：Conducted Emission
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	Conducted Emission	EZ EMC	1.1.4.3
2	Radiated Emission	EZ EMC	1.1.4.4

2.5 測試模式

使用定頻模式量測

Pre-Test Mode
Mode 1: Standby Mode
Mode 2: BR, GFSK Continuous TX Mode
Mode 3: EDR, π/4-DQPSK Continuous TX Mode
Mode 4: EDR, 8DPSK Continuous TX Mode
Mode 5: LE, GFSK Continuous TX Mode
Mode 6: 2LE, GFSK Continuous TX Mode
Mode 7: Receiver Mode

Final-Test Mode
Mode 1: Standby Mode
Mode 2: BR, GFSK Continuous TX Mode
Mode 4: EDR, 8DPSK Continuous TX Mode
Mode 5: LE, GFSK Continuous TX Mode
Mode 6: 2LE, GFSK Continuous TX Mode
Mode 7: Receiver Mode

Test Mode	Frequency (MHz)	Packet Type	RF Power setting in Test Software	Test Software Version
Mode 2	2402	DH1	Default	Blue Test3 Version 3.3.3.604
		DH3	Default	
		DH5	Default	
	2441	DH1	Default	
		DH3	Default	
		DH5	Default	
	2480	DH1	Default	
		DH3	Default	
		DH5	Default	
Mode 3	2402	2DH1	Default	
		2DH3	Default	
		2DH5	Default	
	2441	2DH1	Default	
		2DH3	Default	
		2DH5	Default	
	2480	2DH1	Default	
		2DH3	Default	
		2DH5	Default	
Mode 4	2402	3DH1	Default	
		3DH3	Default	
		3DH5	Default	
	2441	3DH1	Default	
		3DH3	Default	
		3DH5	Default	
	2480	3DH1	Default	
		3DH3	Default	
		3DH5	Default	

Test Mode	Frequency (MHz)	RF Power setting in Test Software	Test Software Version
Mode 5	2402	Default	Blue Test3 Version 3.3.3.604
	2440	Default	
	2480	Default	
Mode 6	2402	Default	
	2440	Default	
	2480	Default	

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
Conducted Emission	150 kHz ~ 30 MHz	2.7 dB
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。

BR/EDR 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	Annex A.	請參閱2.1節	符合
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 B.	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 B.	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 B.	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)(B)節	Annex C.	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 C.	請參閱2.1節	符合
7	頻率範圍	低功率射頻器材技術規範 4.10.1.1節	Annex C.	請參閱2.1節	符合
8	發射頻寬	低功率射頻器材技術規範 4.10.1.6(1)(A)節	Annex C.	請參閱2.1節	符合
9	頻道數	低功率射頻器材技術規範 4.10.1.6(1)(A)(a)節	Annex C.	請參閱2.1節	符合
10	跳頻系統之載波頻率頻道間隔	低功率射頻器材技術規範 4.10.1.6(1)(A)節	Annex C.	請參閱2.1節	符合
11	跳頻系統之任一頻率佔用之平均時間	低功率射頻器材技術規範 4.10.1.6(1)(A)(a)節	Annex C.	請參閱2.1節	符合
12	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4.11節	-------	符合

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	Annex A.	請參閱2.1節	符合
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 B.	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 B.	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 B.	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 C.	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節	Annex C.	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 C.	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 C.	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4.11節	-------	符合

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 μH 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。

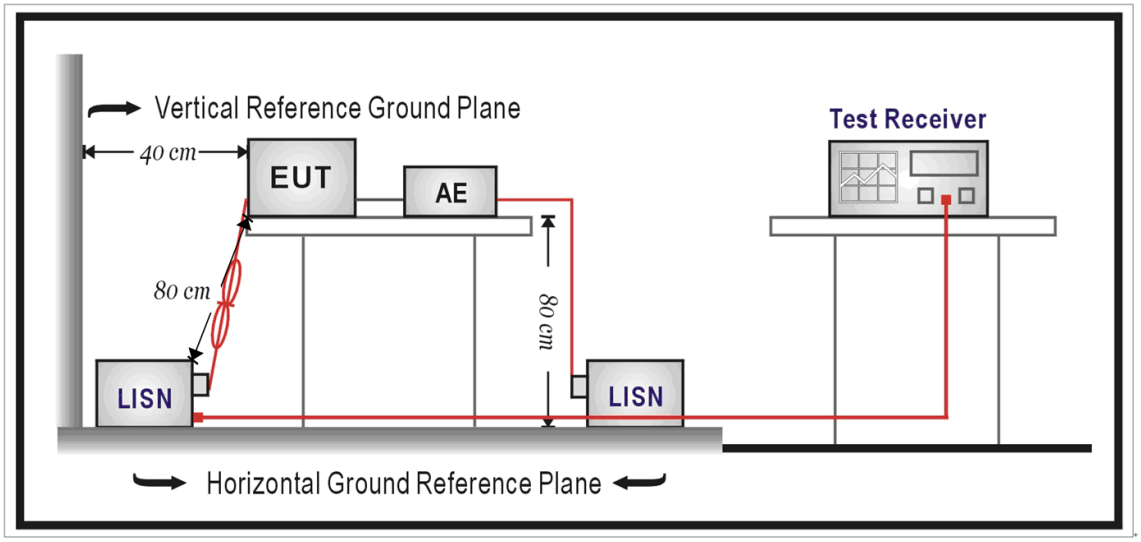
干擾值之計算

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 ：



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(μV/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。

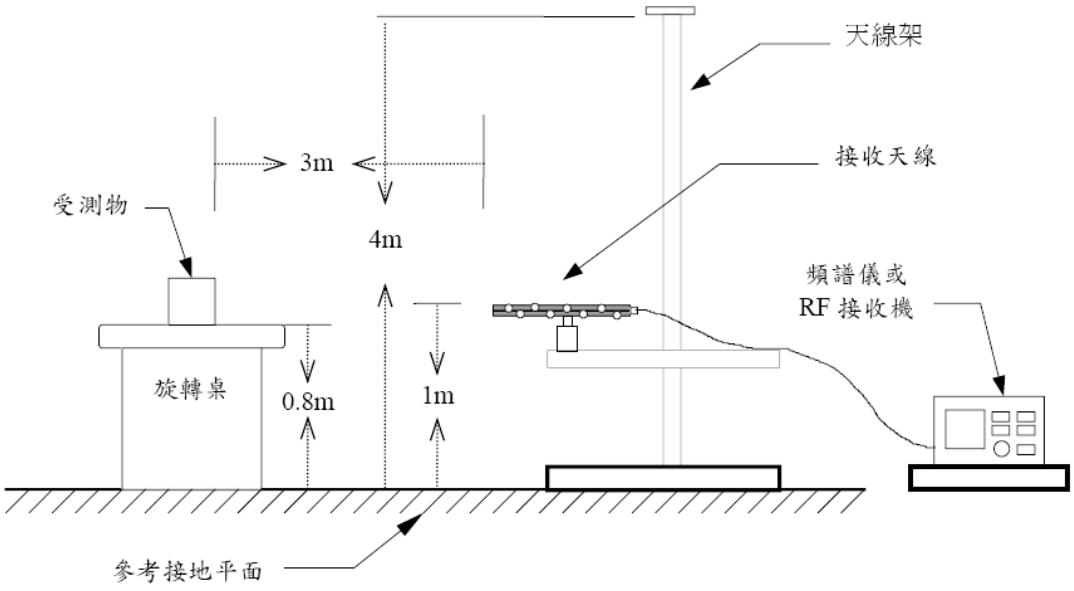
場強度之計算

場強之計算公式為：結果值 = 讀值 + 校正因子

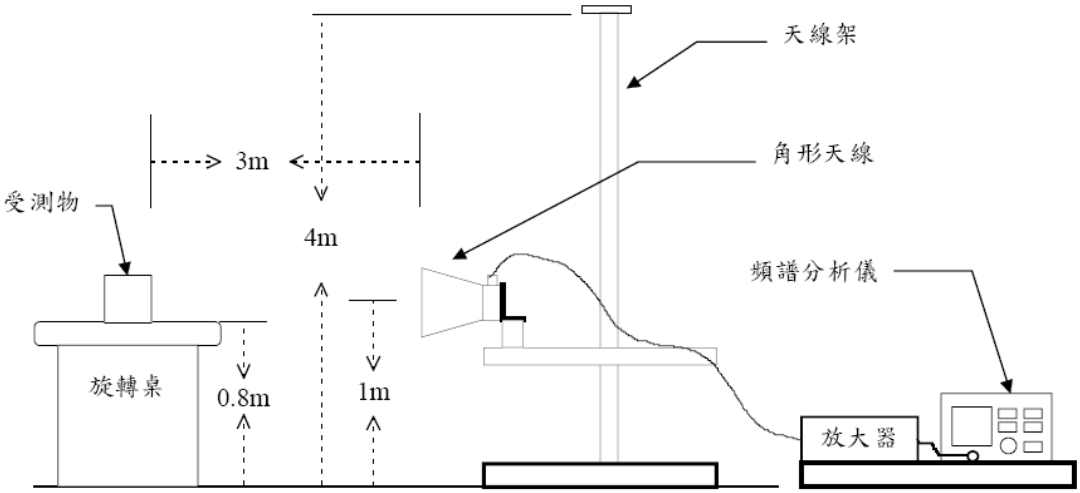
其中校正因子為： 天線因子+ 饋線損失 + 濾波器損失（若有使用） - 放大器增益（若有使用）

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:

BR/EDR

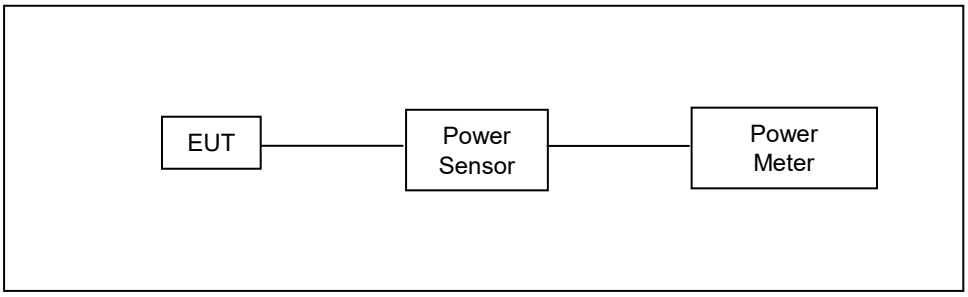
依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.2(1)(B)節之要求，所有操作於 2400-2483.5 兆赫且輸出功率應小於或等於 0.125 W 。

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 ：

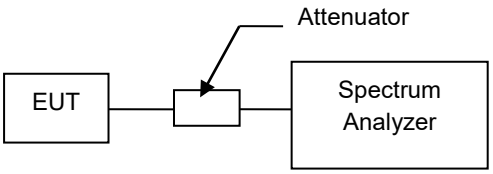


4.4 非必要頻帶之量測

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。

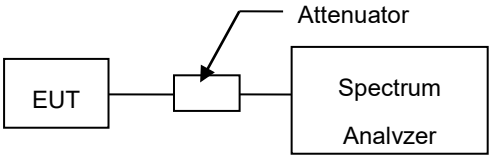
附註 2: 測試結果頻帶外之輻射雜訊皆小於主頻 TX 20 dB。

4.5 頻率範圍之要求

合格標準:

依據NCC低功率射頻器材技術規範(LP0002)之4.10.1.1節之要求,允許使用的頻率範圍為2400至2483.5 MHz。

測試架構圖 :



4.6 發射頻寬之要求

合格標準:

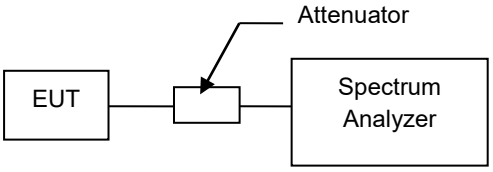
BR/EDR

對跳頻系統(Frequency Hopping System)而言,依據 NCC 低功率射頻器材技術規範 4.10.1.6(1)(A)節之要求,跳頻系統之載波頻率頻道間隔應至少 25 千赫(kHz)或跳頻頻道 20 dB 頻寬之三分之二,兩者取較寬者。系統之跳頻頻道應依虛擬亂數排列,在各頻率之跳頻頻道上跳躍。每一發射機必須均等的使用每一頻率。系統接收機應具有與發射機跳躍頻道頻寬相匹配之輸入頻寬,且應隨所發射的信號同步偏移接收頻率。

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 :

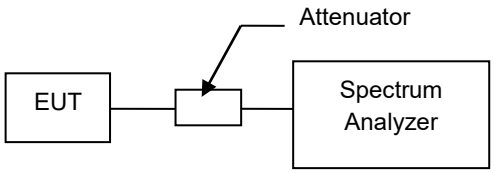


4.7 頻道數之要求

合格標準:

對跳頻系統(Frequency Hopping System)而言，依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.6(1)(A)(a)節之要求，至少使用 15 個無重疊之頻道(複合系統時，關閉數位調變作業狀態檢驗)。

測試架構圖 ：

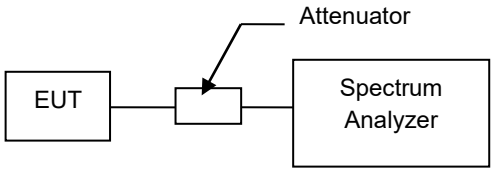


4.8 跳頻系統之載波頻率頻道間隔之量測

合格標準:

依據 NCC 低功率射頻器材技術規範(LP0002) 之 4.10.1.6(1)(A)節要求，應至少 25 kHz 或跳頻頻道之 20 dB 頻寬之三分之二，兩者取較寬者。

測試架構圖 ：

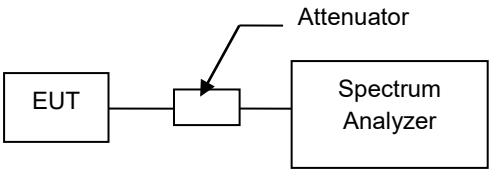


4.9 跳頻系統之任一頻率佔用之平均時間之量測

合格標準:

依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.6(1)(A)(a)節之要求，若使用 15 個無重疊之頻道，在 0.4 秒乘以跳頻頻道數之週期內，任一頻道佔用之平均時間不得超過 0.4 秒(複合系統時，關閉跳頻作業狀態檢驗)。

測試架構圖 ：

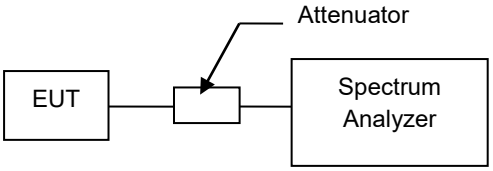


4.10 功率密度之要求

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 ：



4.11 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。

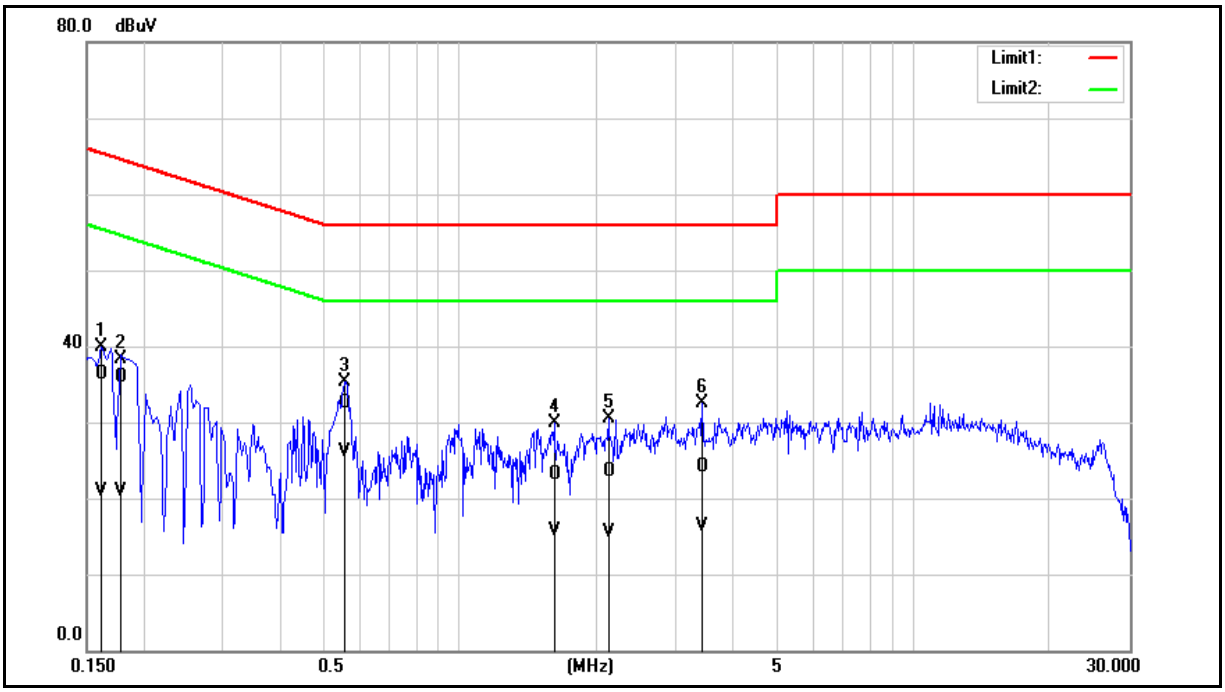
依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.4 節之要求，天線之規格不受第 3.2 節規定之限制

判定結果: 符合。

5. Test Results

Annex A. Conducted Emission

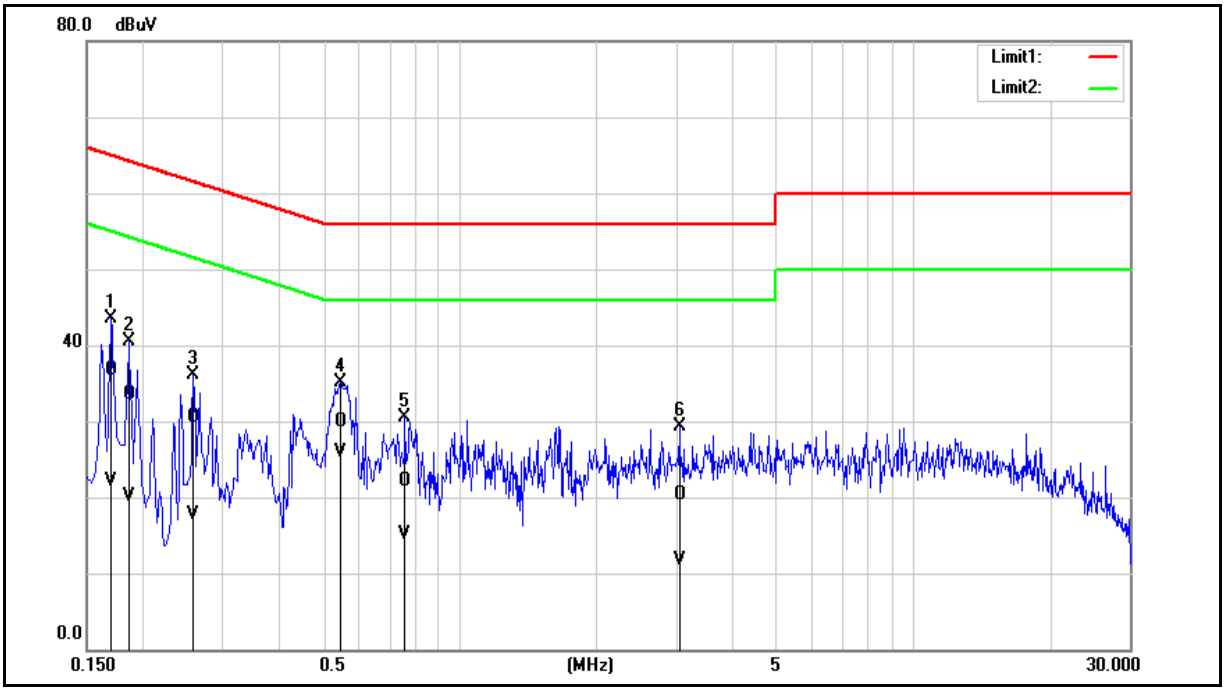
Standard:	LP0002	Line:	L1
Test item:	Conducted Emission	Power:	AC 110 V/60 Hz
Mode:	Mode 1		
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1620	26.55	11.19	9.74	36.29	20.93	65.36	55.36	-29.07	-34.43	Pass
2	0.1787	26.22	11.09	9.74	35.96	20.83	64.55	54.55	-28.59	-33.72	Pass
3	0.5580	22.73	16.40	9.74	32.47	26.14	56.00	46.00	-23.53	-19.86	Pass
4	1.6180	13.41	5.92	9.79	23.20	15.71	56.00	46.00	-32.80	-30.29	Pass
5	2.1300	13.71	5.62	9.80	23.51	15.42	56.00	46.00	-32.49	-30.58	Pass
6	3.4260	14.35	6.41	9.83	24.18	16.24	56.00	46.00	-31.82	-29.76	Pass

註：1. 干擾值(dBuV) = 校正係數(dB) + 讀值(dBuV)。
2. 校正係數(dB) = 量測信號線損失(dB) + 電源阻抗模擬網路係數(dB)。

Standard:	LP0002	Line:	N
Test item:	Conducted Emission	Power:	AC 110 V/60 Hz
Mode:	Mode 1		
Description:			



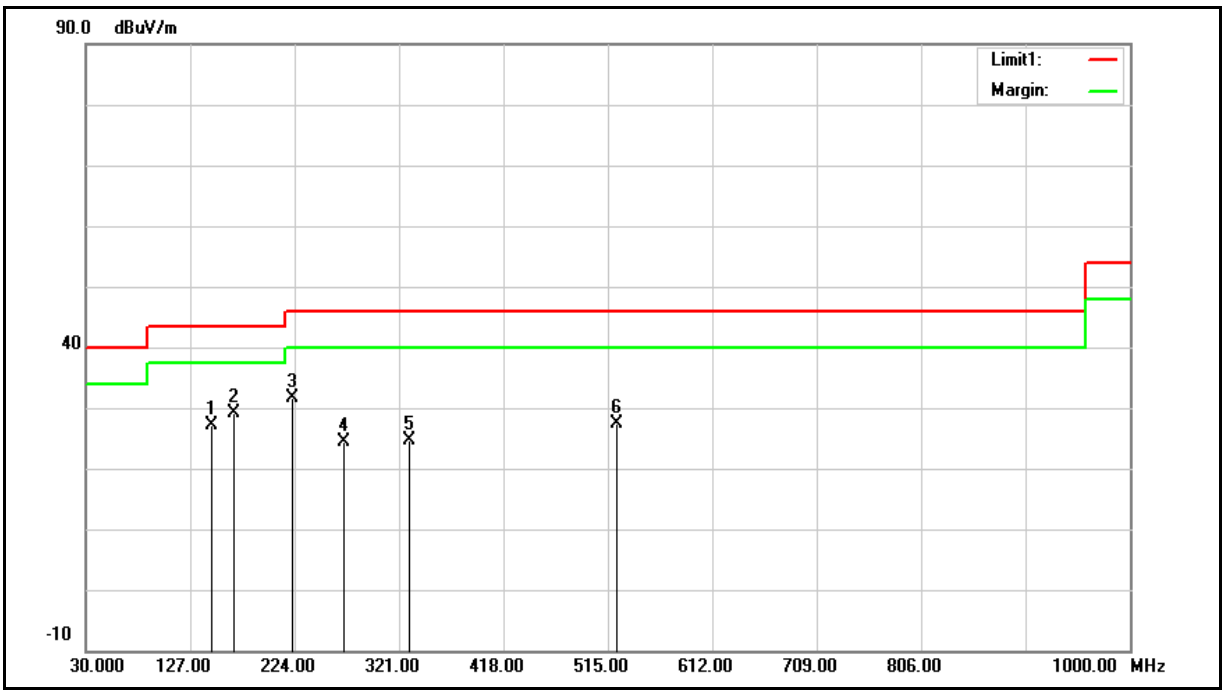
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1700	27.02	12.42	9.74	36.76	22.16	64.96	54.96	-28.20	-32.80	Pass
2	0.1860	23.86	10.37	9.73	33.59	20.10	64.21	54.21	-30.62	-34.11	Pass
3	0.2580	20.74	7.90	9.73	30.47	17.63	61.50	51.50	-31.03	-33.87	Pass
4	0.5460	20.09	16.13	9.73	29.82	25.86	56.00	46.00	-26.18	-20.14	Pass
5	0.7580	12.39	5.36	9.75	22.14	15.11	56.00	46.00	-33.86	-30.89	Pass
6	3.0500	10.57	1.90	9.83	20.40	11.73	56.00	46.00	-35.60	-34.27	Pass

註：1. 干擾值(dBuV) = 校正係數(dB) + 讀值(dBuV)。
2. 校正係數(dB) = 量測信號線損失(dB) + 電源阻抗模擬網路係數(dB)。

Annex B. 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 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	147.3700	34.49	-7.28	27.21	43.50	-16.29	QP
2	167.7400	36.33	-7.11	29.22	43.50	-14.28	QP
3	222.0600	40.45	-8.73	31.72	46.00	-14.28	QP
4	269.5900	31.22	-6.77	24.45	46.00	-21.55	QP
5	330.7000	29.85	-5.32	24.53	46.00	-21.47	QP
6	523.7300	29.49	-2.11	27.38	46.00	-18.62	QP

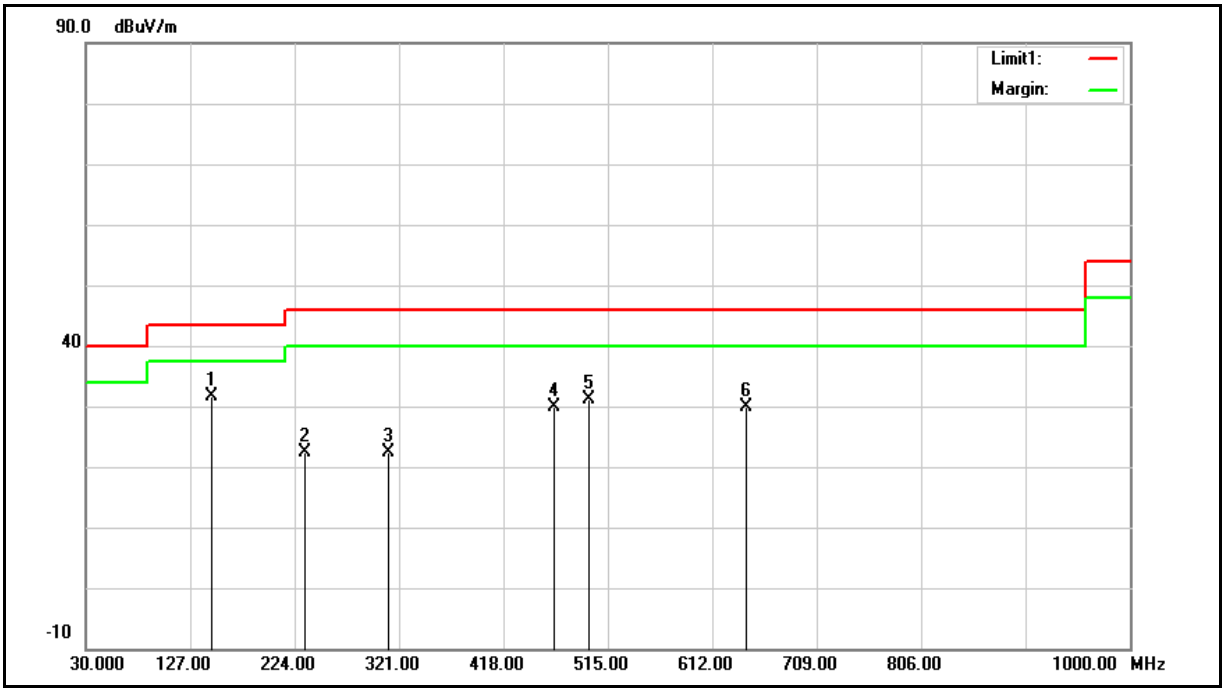
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 27.21 = -7.28 + 34.49

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Radiated Emission		
Frequency:	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	147.3700	38.98	-7.28	31.70	43.50	-11.80	QP
2	233.7000	30.35	-8.02	22.33	46.00	-23.67	QP
3	311.3000	27.94	-5.64	22.30	46.00	-23.70	QP
4	465.5300	32.91	-2.94	29.97	46.00	-16.03	QP
5	497.5400	33.66	-2.64	31.02	46.00	-14.98	QP
6	643.0400	29.78	0.11	29.89	46.00	-16.11	QP

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

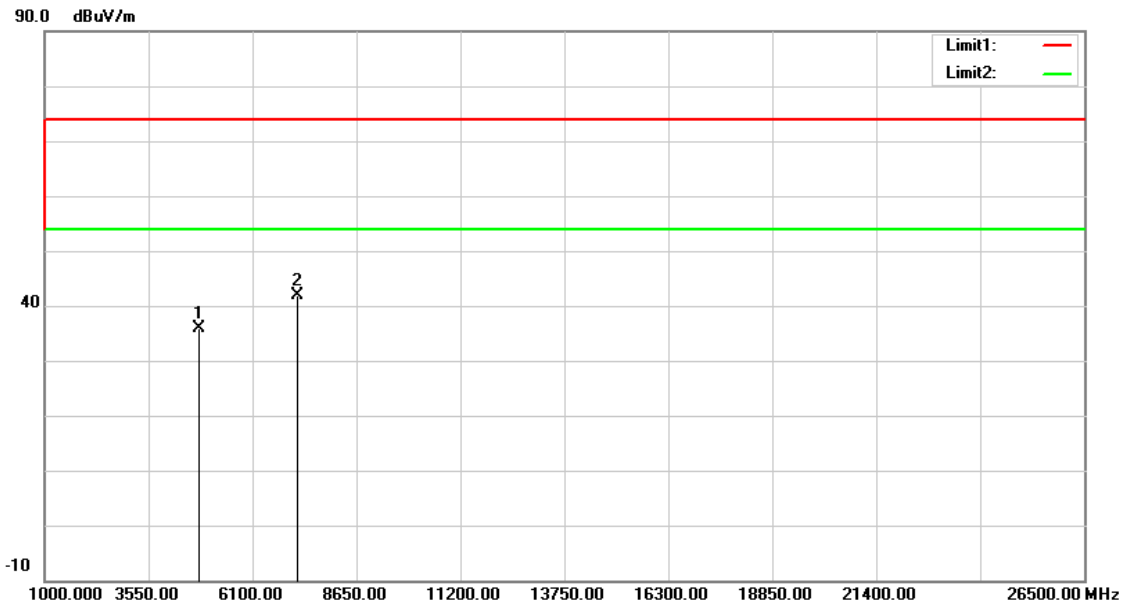
Example: 31.70 = -7.28 + 38.98

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 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	38.12	-2.15	35.97	74.00	-38.03	peak
2	7206.000	37.40	4.49	41.89	74.00	-32.11	peak

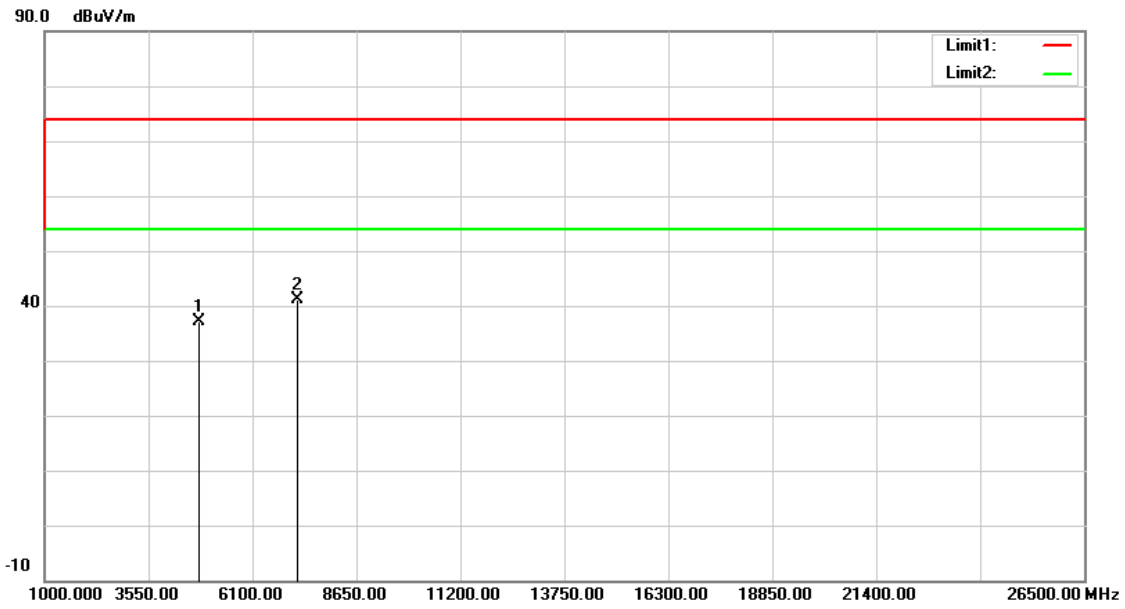
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 35.97 = -2.15 + 38.12

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		
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	39.17	-2.15	37.02	74.00	-36.98	peak
2	7206.000	36.66	4.49	41.15	74.00	-32.85	peak

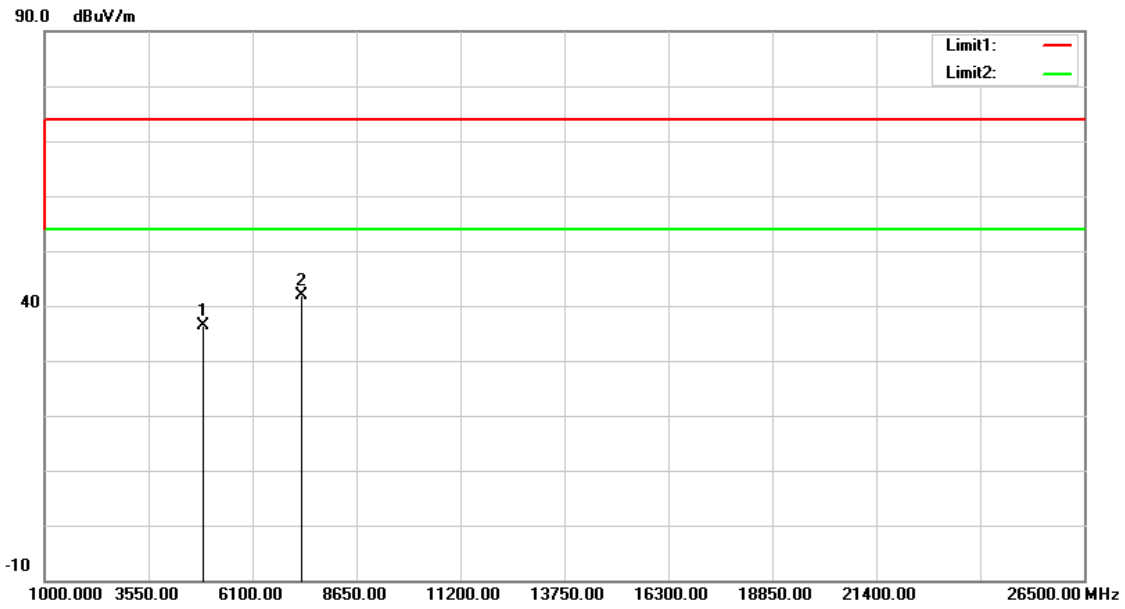
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 37.02 = -2.15 + 39.17

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:	2441 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



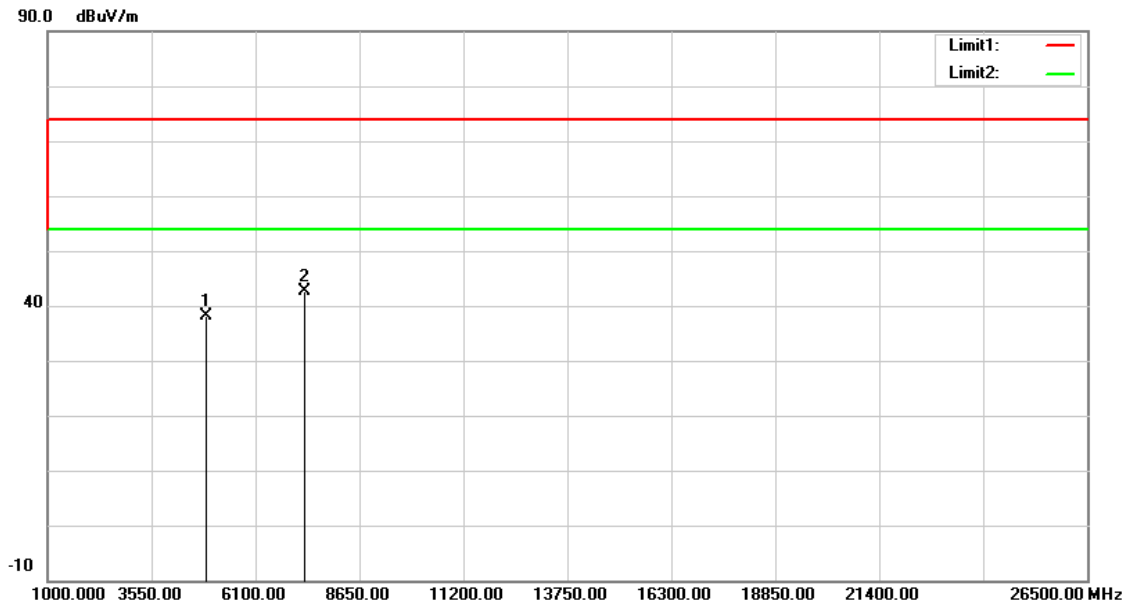
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	38.28	-1.95	36.33	74.00	-37.67	peak
2	7323.000	37.03	4.90	41.93	74.00	-32.07	peak

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:	2441 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



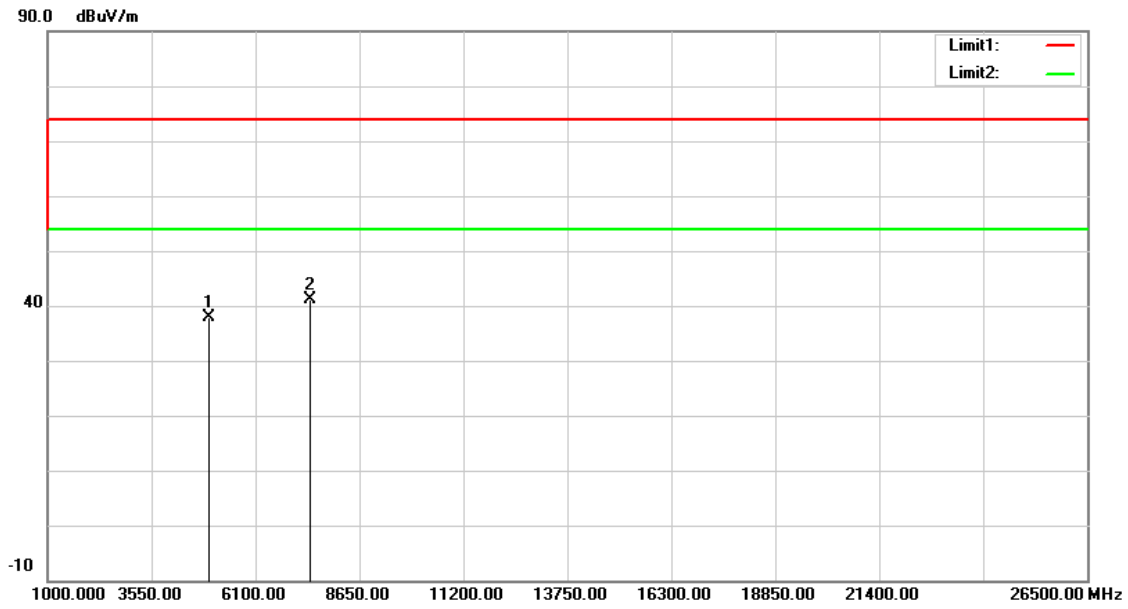
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	40.17	-1.95	38.22	74.00	-35.78	peak
2	7323.000	37.67	4.90	42.57	74.00	-31.43	peak

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 2		
Ant.Polar.:	Horizontal		



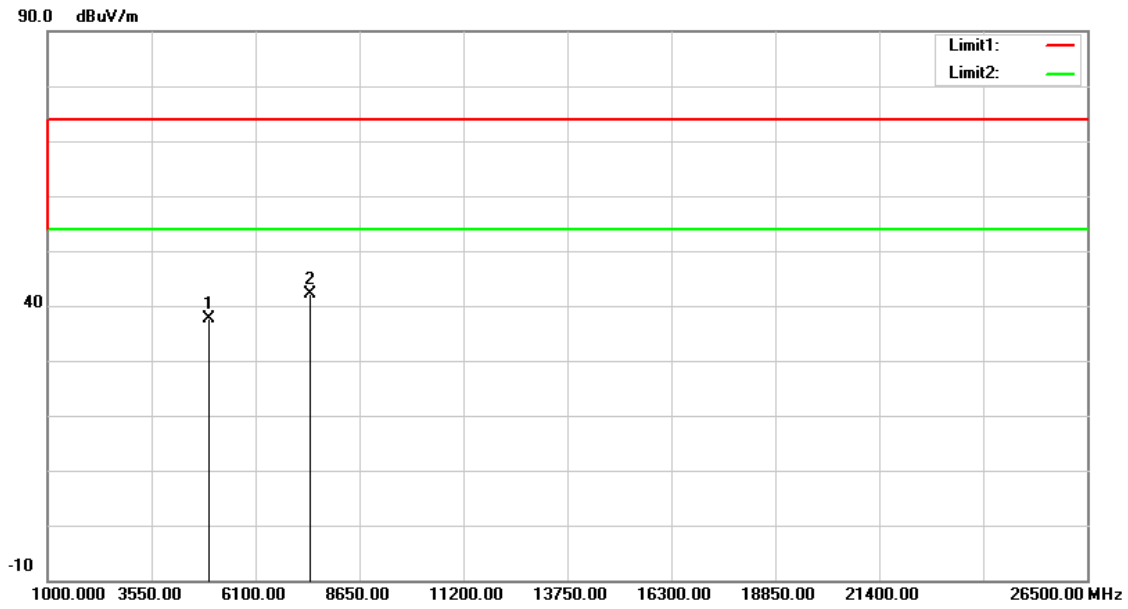
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.69	-1.74	37.95	74.00	-36.05	peak
2	7440.000	35.87	5.30	41.17	74.00	-32.83	peak

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		



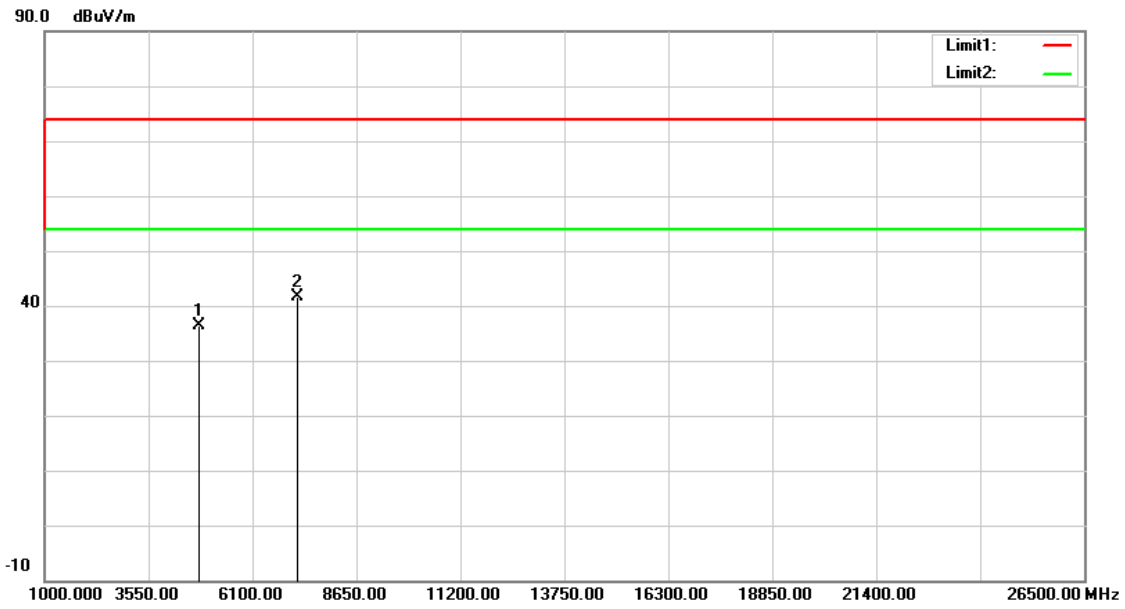
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.40	-1.74	37.66	74.00	-36.34	peak
2	7440.000	36.72	5.30	42.02	74.00	-31.98	peak

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:	Harmonic		
Frequency:	2402 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



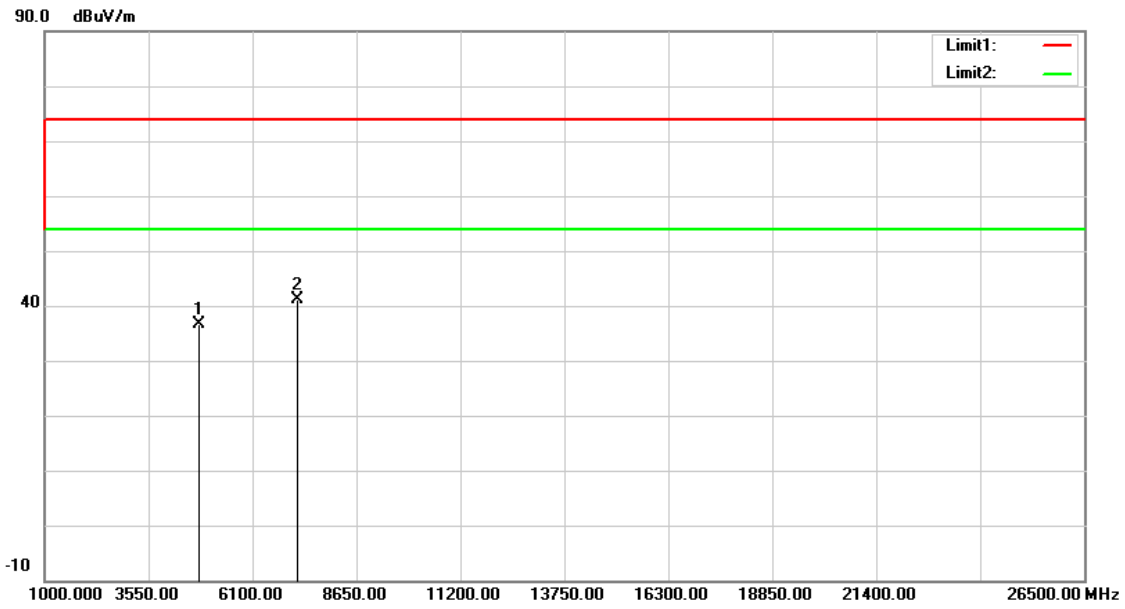
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.58	-2.15	36.43	74.00	-37.57	peak
2	7206.000	37.05	4.49	41.54	74.00	-32.46	peak

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		
Frequency:	2402 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



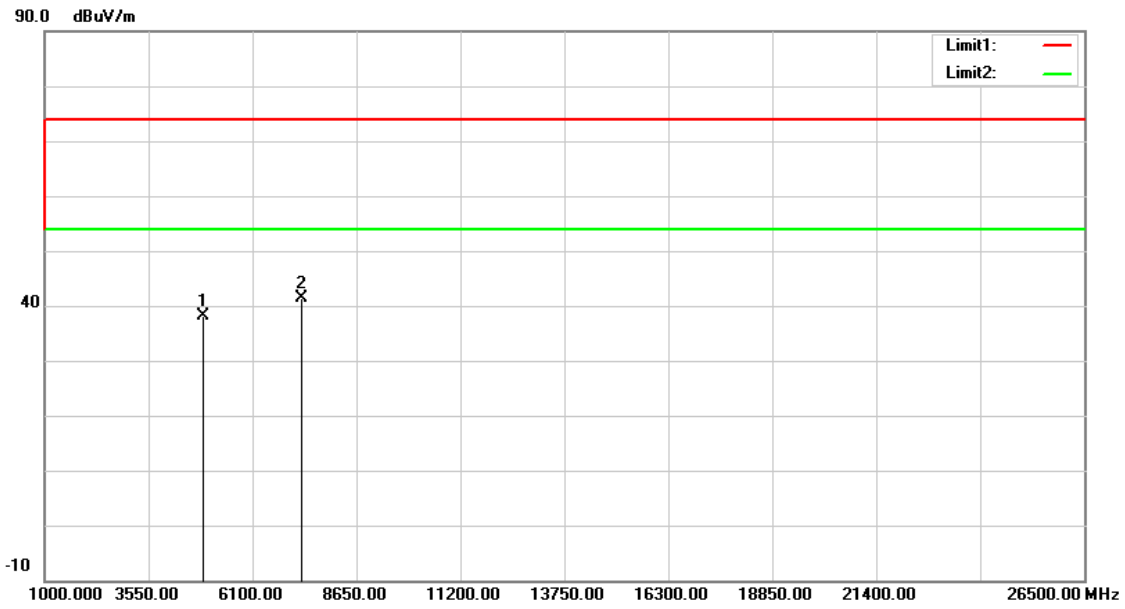
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.90	-2.15	36.75	74.00	-37.25	peak
2	7206.000	36.71	4.49	41.20	74.00	-32.80	peak

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.

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2441 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



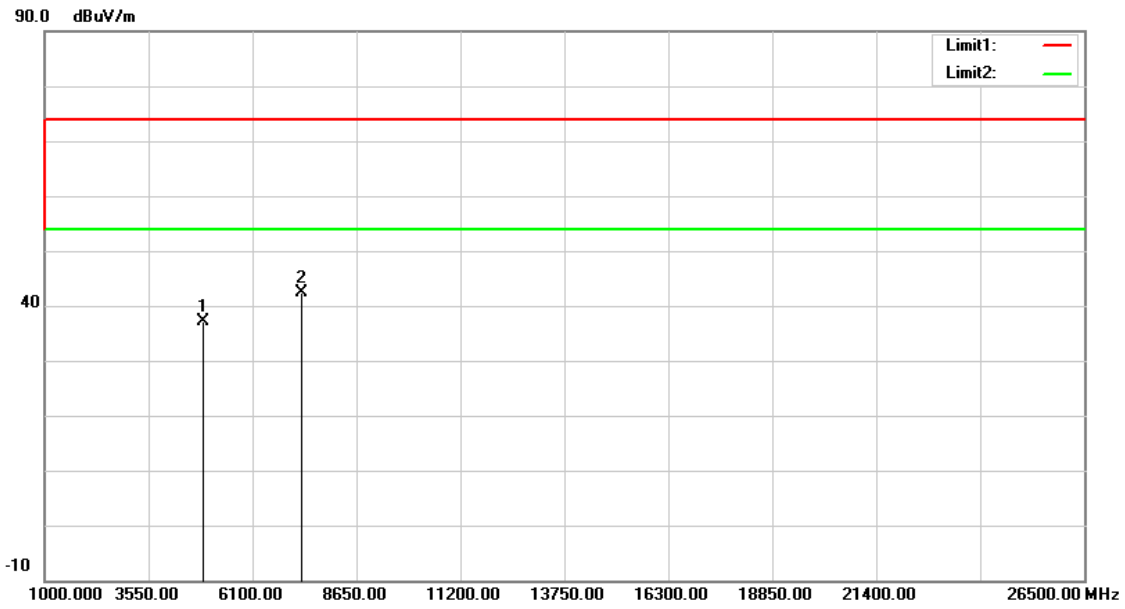
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	40.20	-1.95	38.25	74.00	-35.75	peak
2	7323.000	36.49	4.90	41.39	74.00	-32.61	peak

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:	2441 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



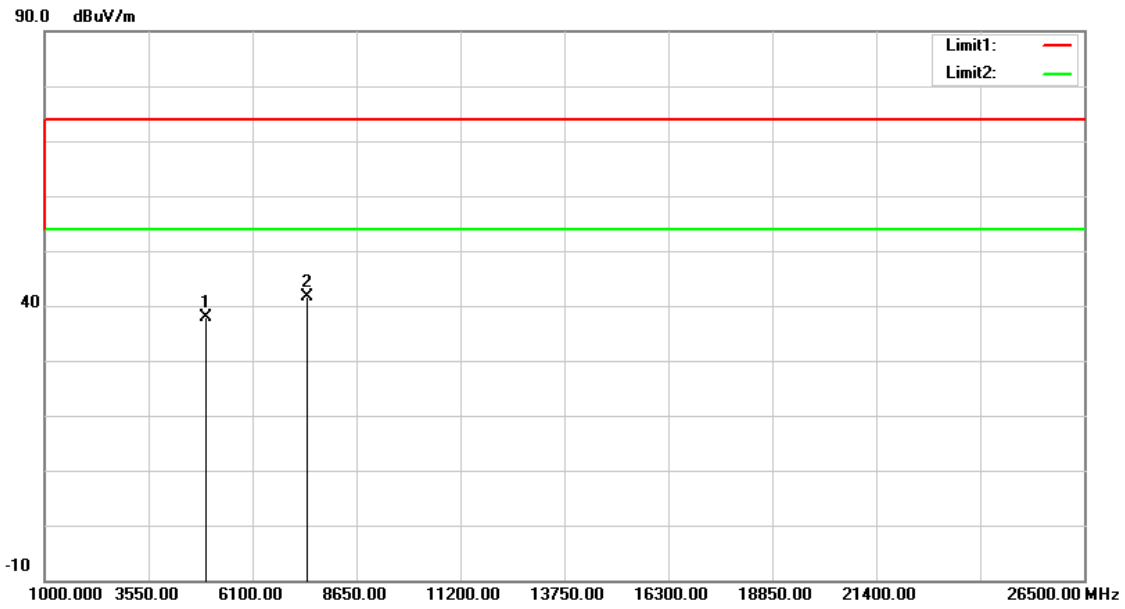
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	39.12	-1.95	37.17	74.00	-36.83	peak
2	7323.000	37.46	4.90	42.36	74.00	-31.64	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2480 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



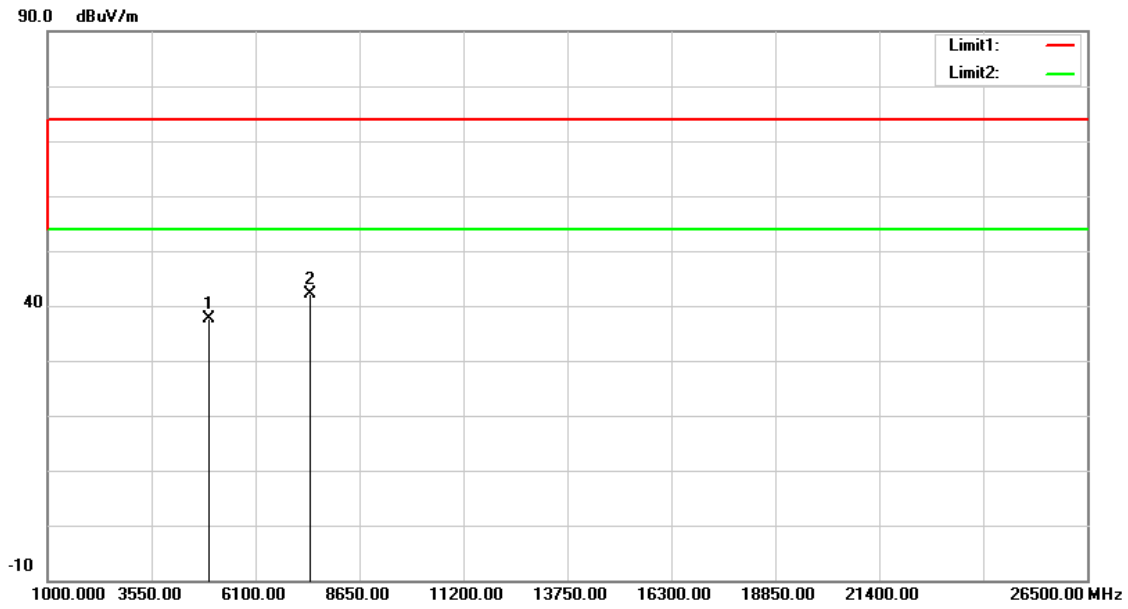
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.54	-1.74	37.80	74.00	-36.20	peak
2	7440.000	36.43	5.30	41.73	74.00	-32.27	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2480 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



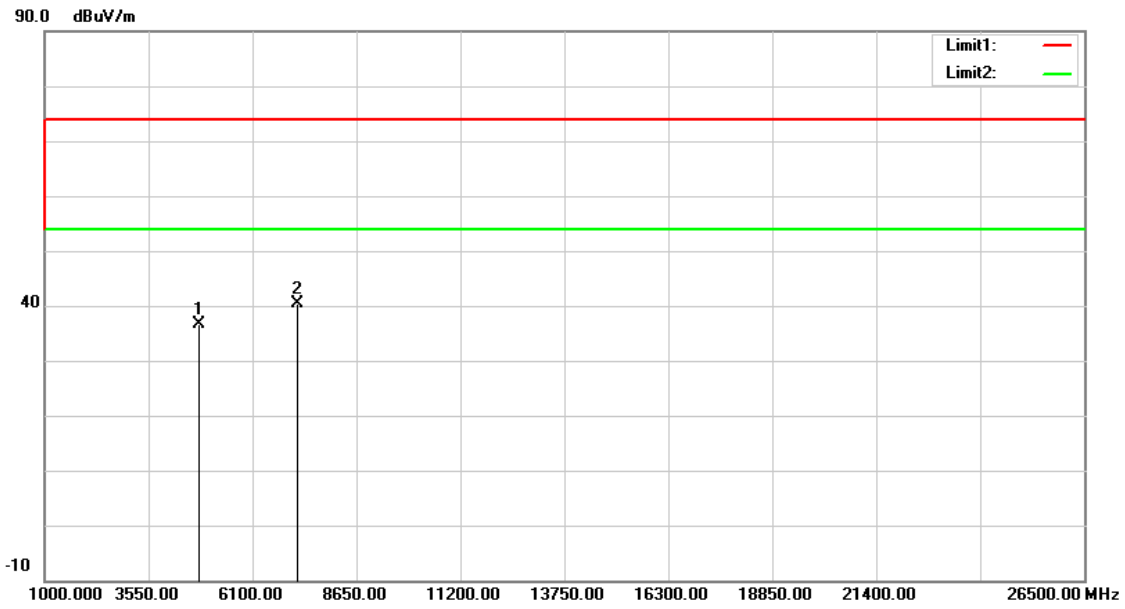
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.34	-1.74	37.60	74.00	-36.40	peak
2	7440.000	36.82	5.30	42.12	74.00	-31.88	peak

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 5		
Ant.Polar.:	Horizontal		



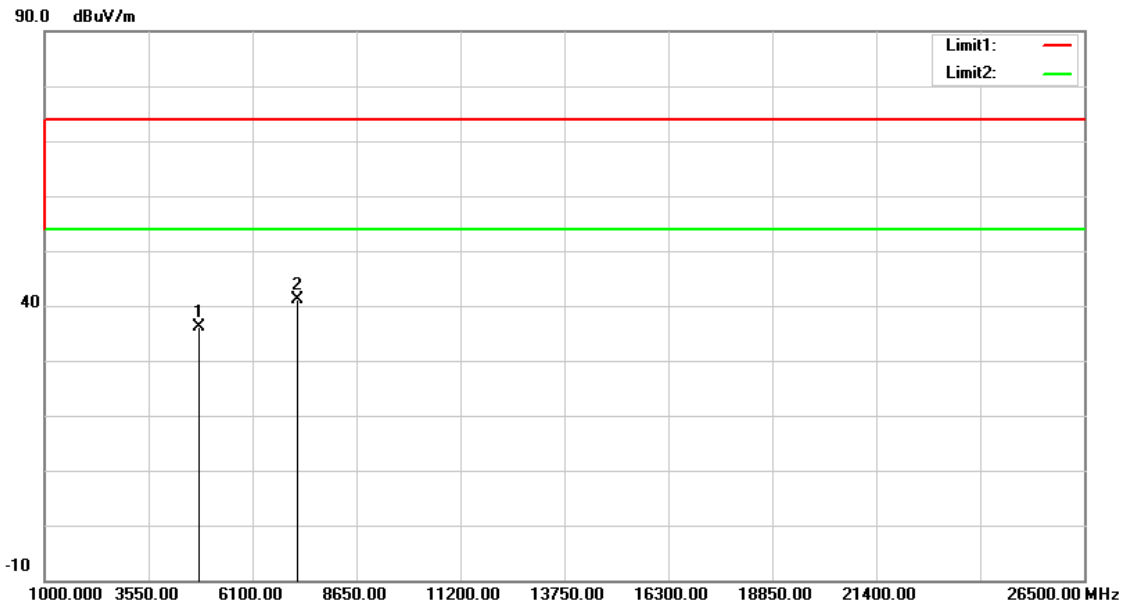
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.86	-2.15	36.71	74.00	-37.29	peak
2	7206.000	35.93	4.49	40.42	74.00	-33.58	peak

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 5		
Ant.Polar.:	Vertical		



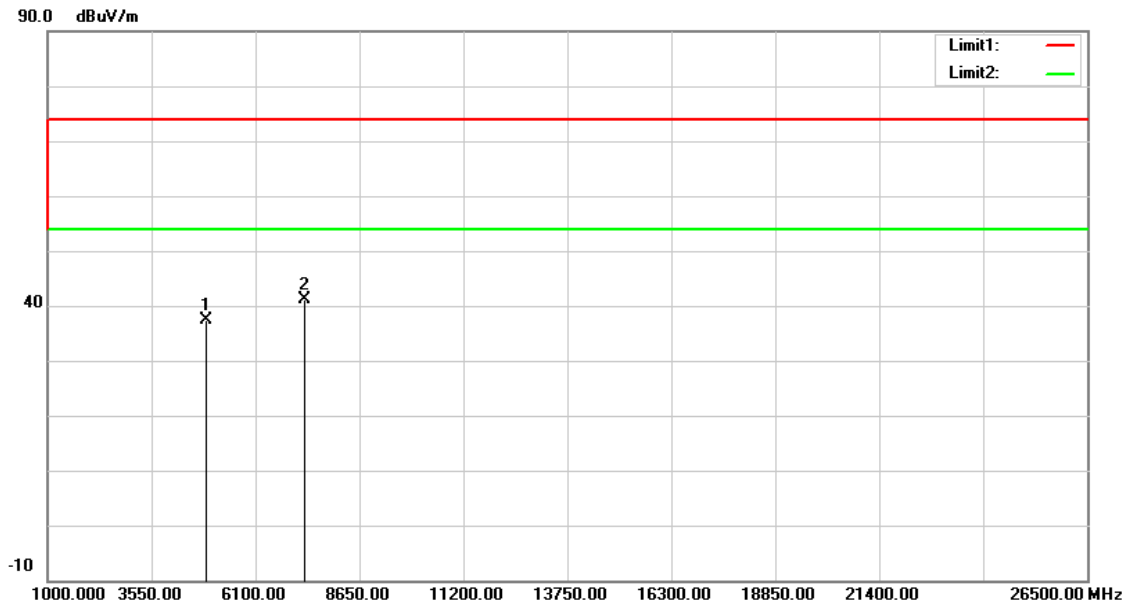
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.36	-2.15	36.21	74.00	-37.79	peak
2	7206.000	36.66	4.49	41.15	74.00	-32.85	peak

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 5		
Ant.Polar.:	Horizontal		



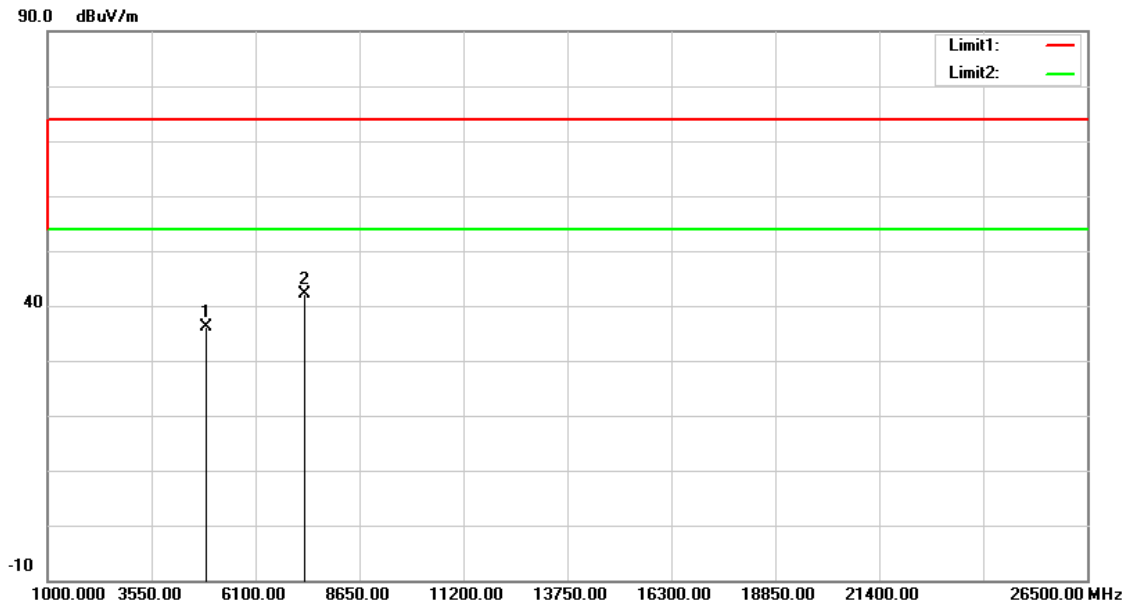
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	39.35	-1.96	37.39	74.00	-36.61	peak
2	7320.000	36.18	4.90	41.08	74.00	-32.92	peak

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 5		
Ant.Polar.:	Vertical		



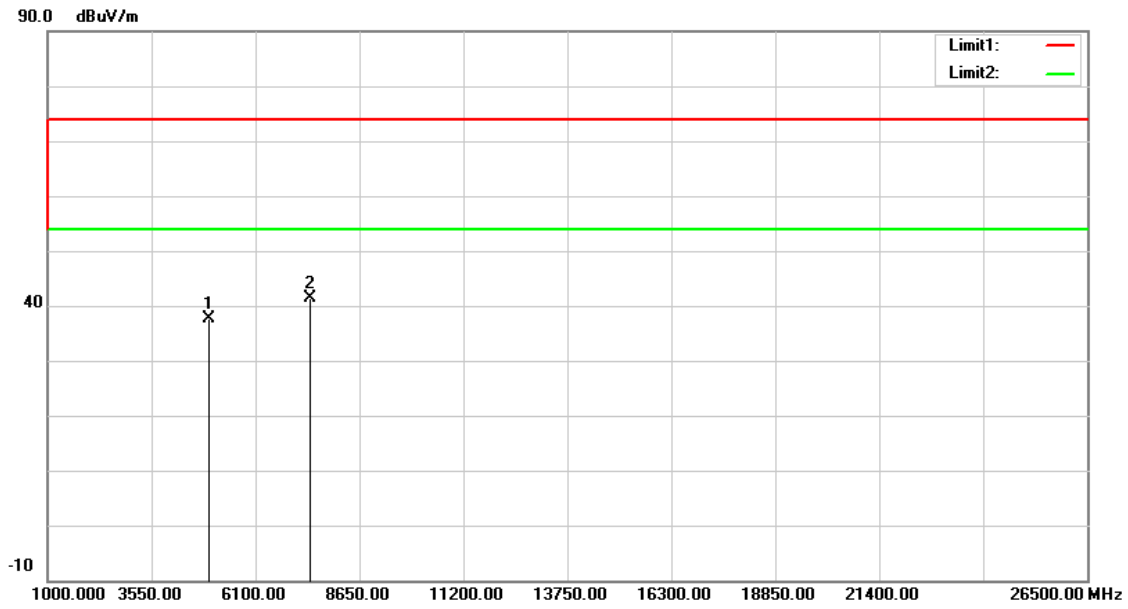
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	38.21	-1.96	36.25	74.00	-37.75	peak
2	7320.000	37.32	4.90	42.22	74.00	-31.78	peak

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 5		
Ant.Polar.:	Horizontal		



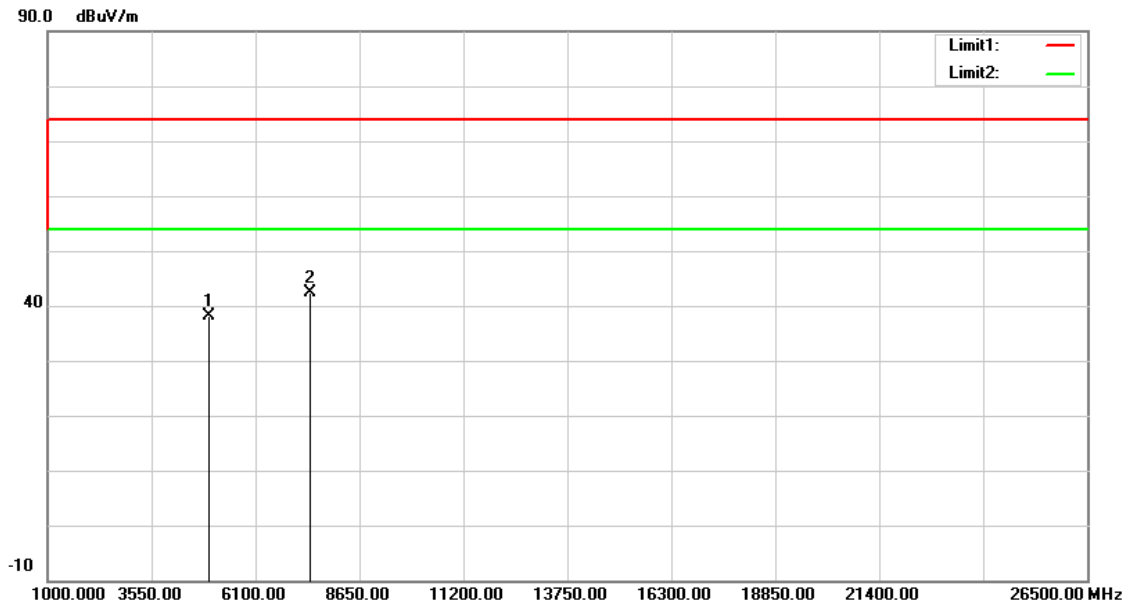
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.30	-1.74	37.56	74.00	-36.44	peak
2	7440.000	36.05	5.30	41.35	74.00	-32.65	peak

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:	Harmonic		
Frequency:	2480 MHz		
Mode:	Mode 5		
Ant.Polar.:	Vertical		



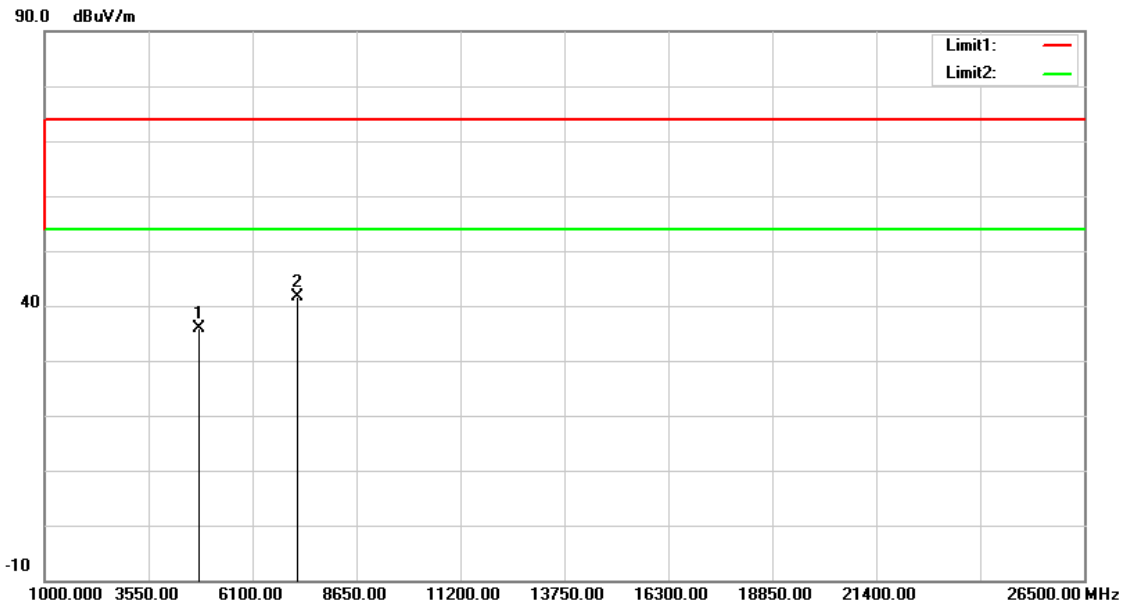
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.75	-1.74	38.01	74.00	-35.99	peak
2	7440.000	37.06	5.30	42.36	74.00	-31.64	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2402 MHz		
Mode:	Mode 6		
Ant.Polar.:	Horizontal		



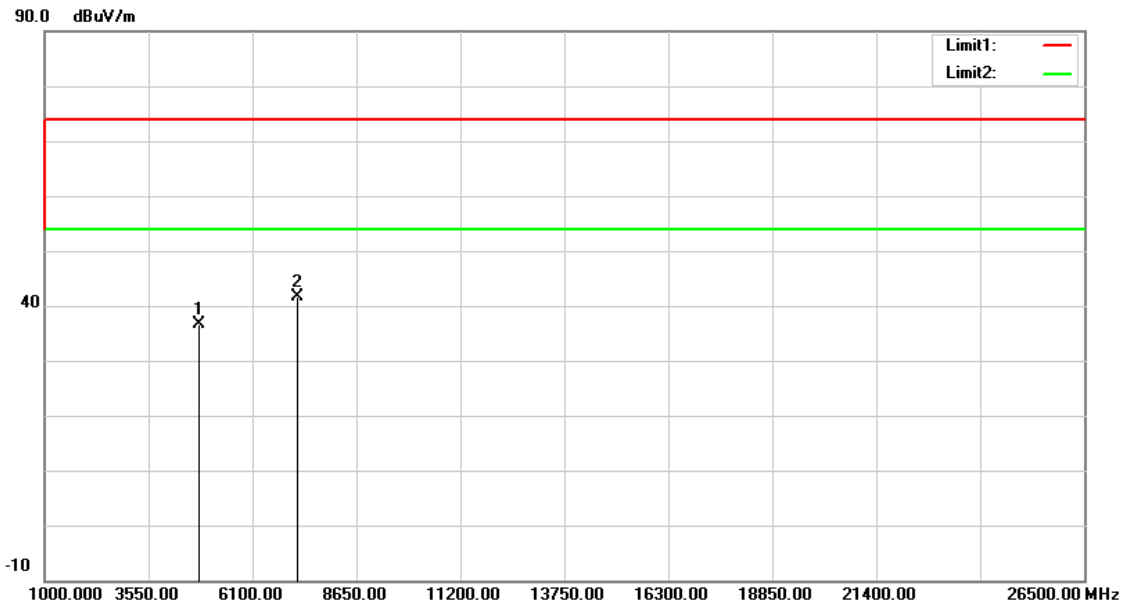
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	37.96	-2.15	35.81	74.00	-38.19	peak
2	7206.000	37.10	4.49	41.59	74.00	-32.41	peak

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 6		
Ant.Polar.:	Vertical		



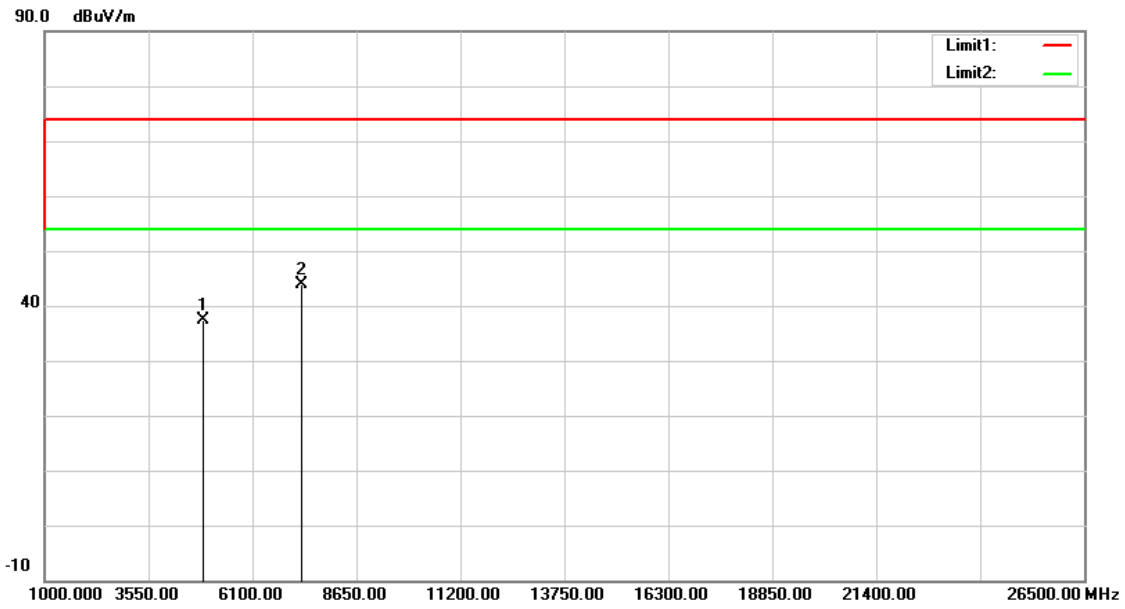
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.85	-2.15	36.70	74.00	-37.30	peak
2	7206.000	37.13	4.49	41.62	74.00	-32.38	peak

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 6		
Ant.Polar.:	Horizontal		



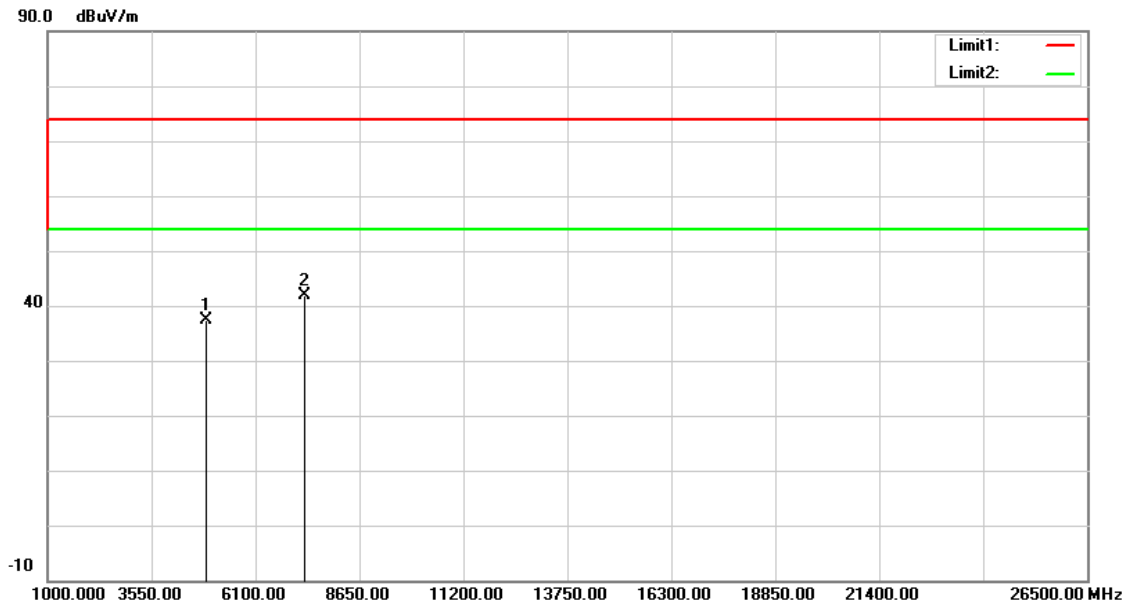
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	39.45	-1.96	37.49	74.00	-36.51	peak
2	7320.000	39.05	4.90	43.95	74.00	-30.05	peak

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 6		
Ant.Polar.:	Vertical		



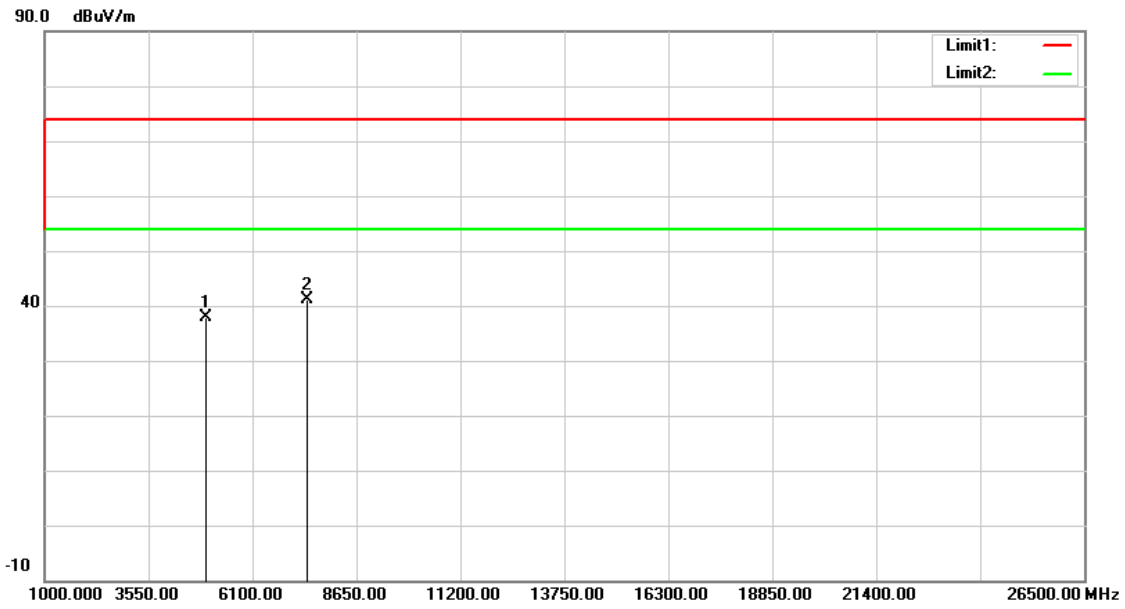
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	39.34	-1.96	37.38	74.00	-36.62	peak
2	7320.000	37.07	4.90	41.97	74.00	-32.03	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2480 MHz		
Mode:	Mode 6		
Ant.Polar.:	Horizontal		



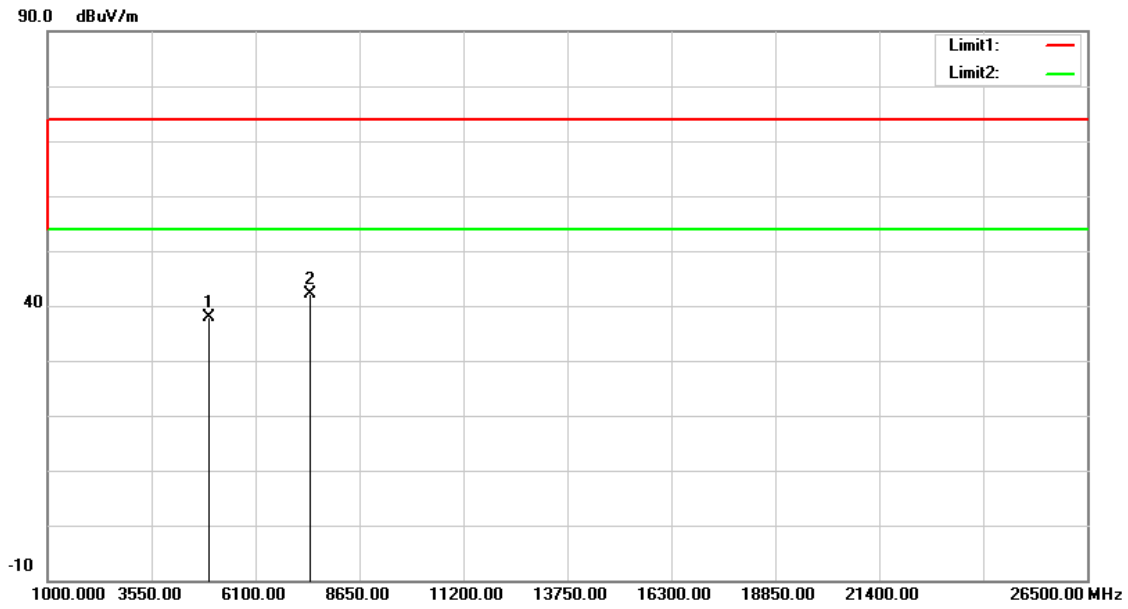
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.50	-1.74	37.76	74.00	-36.24	peak
2	7440.000	35.90	5.30	41.20	74.00	-32.80	peak

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.

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2480 MHz		
Mode:	Mode 6		
Ant.Polar.:	Vertical		



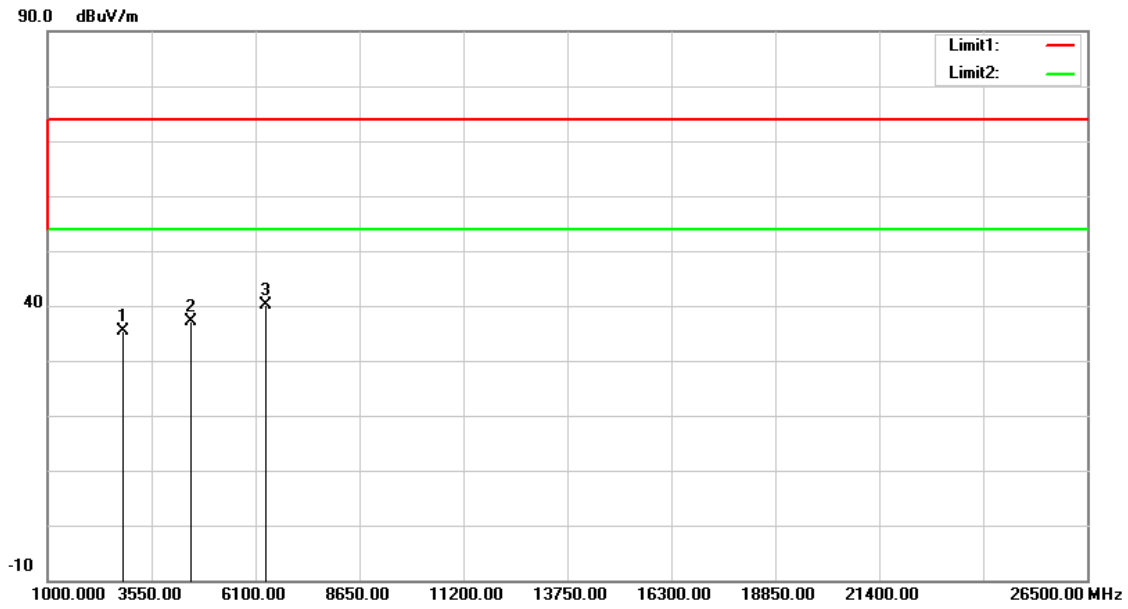
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.54	-1.74	37.80	74.00	-36.20	peak
2	7440.000	36.78	5.30	42.08	74.00	-31.92	peak

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.

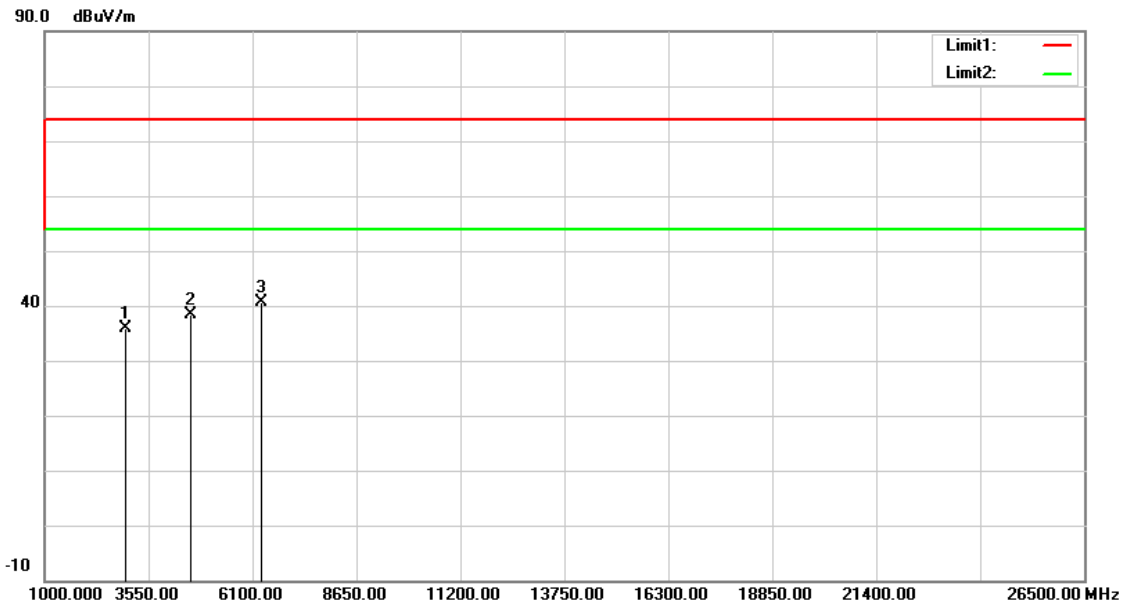
Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Mode:	Mode 7		
Ant.Polar.:	Horizontal		
Description:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2853.000	41.94	-6.67	35.27	74.00	-38.73	peak
2	4502.000	40.21	-2.97	37.24	74.00	-36.76	peak
3	6355.000	38.23	1.84	40.07	74.00	-33.93	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:	Harmonic		
Mode:	Mode 7		
Ant.Polar.:	Vertical		
Description:			



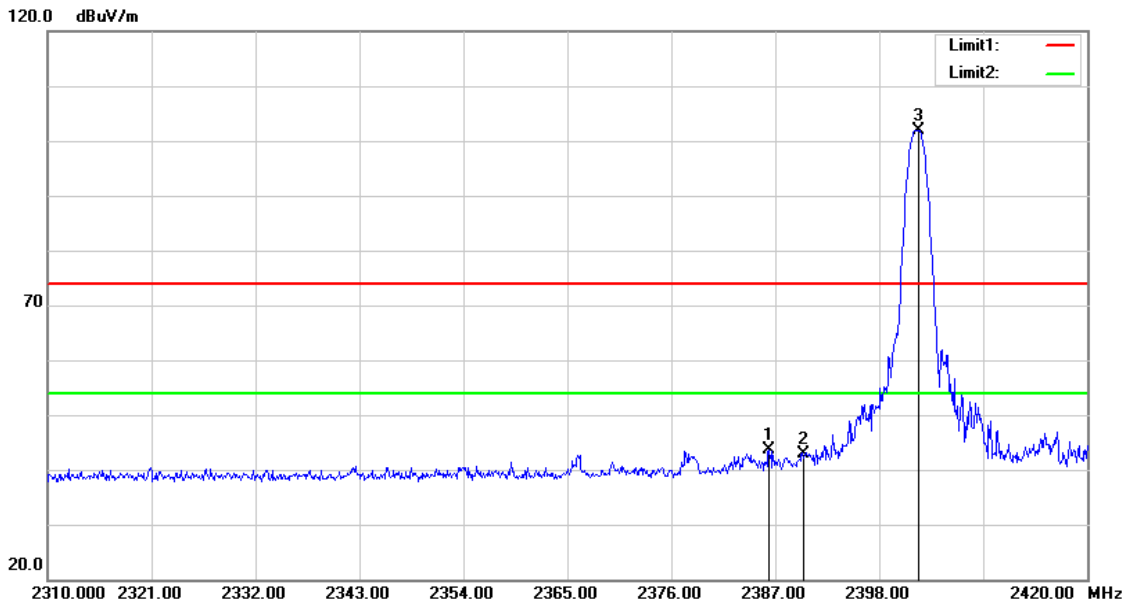
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2989.000	42.03	-6.23	35.80	74.00	-38.20	peak
2	4553.000	41.16	-2.82	38.34	74.00	-35.66	peak
3	6321.000	38.81	1.70	40.51	74.00	-33.49	peak

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

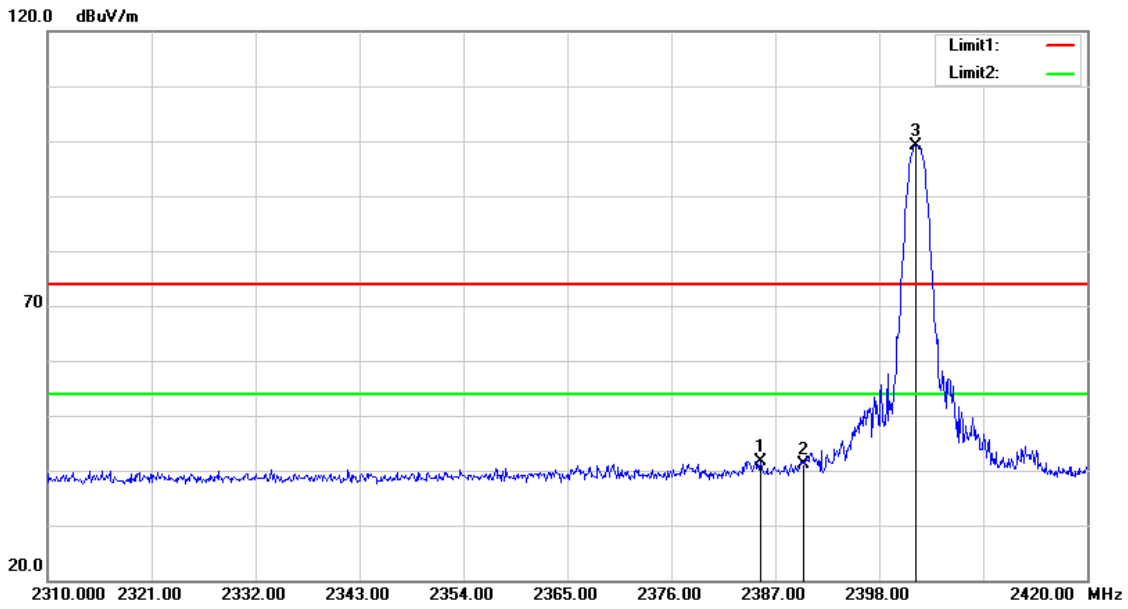
Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.340	51.85	-8.23	43.62	74.00	-30.38	peak
2	2390.000	51.03	-8.21	42.82	74.00	-31.18	peak
3	2402.180	109.98	-8.16	101.82	--	--	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.

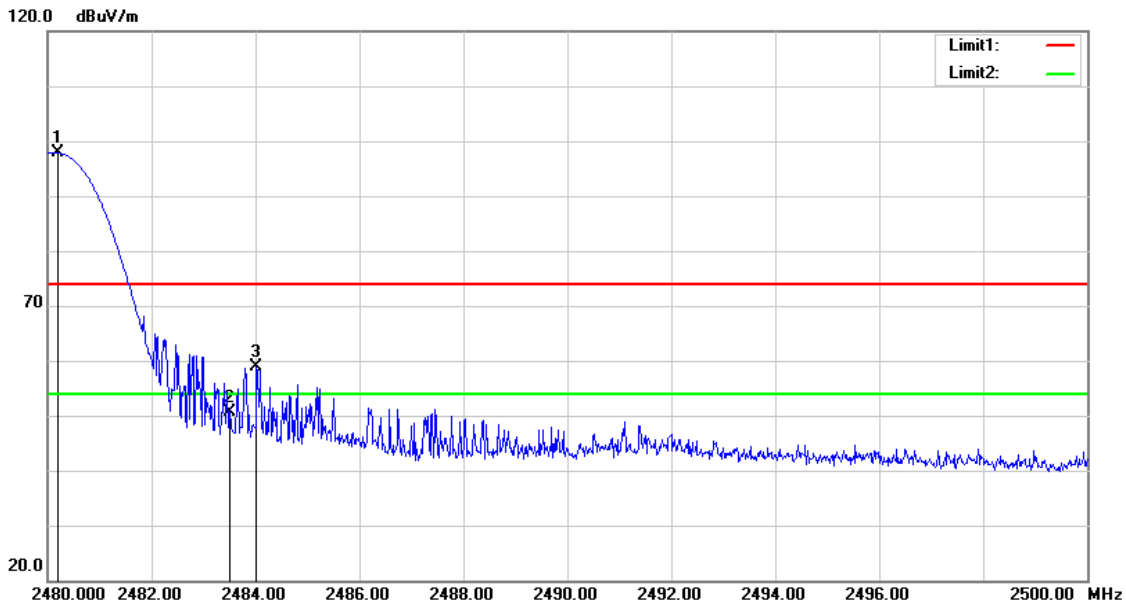
Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.460	49.90	-8.23	41.67	74.00	-32.33	peak
2	2390.000	49.22	-8.21	41.01	74.00	-32.99	peak
3	2401.850	107.32	-8.16	99.16	--	--	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		



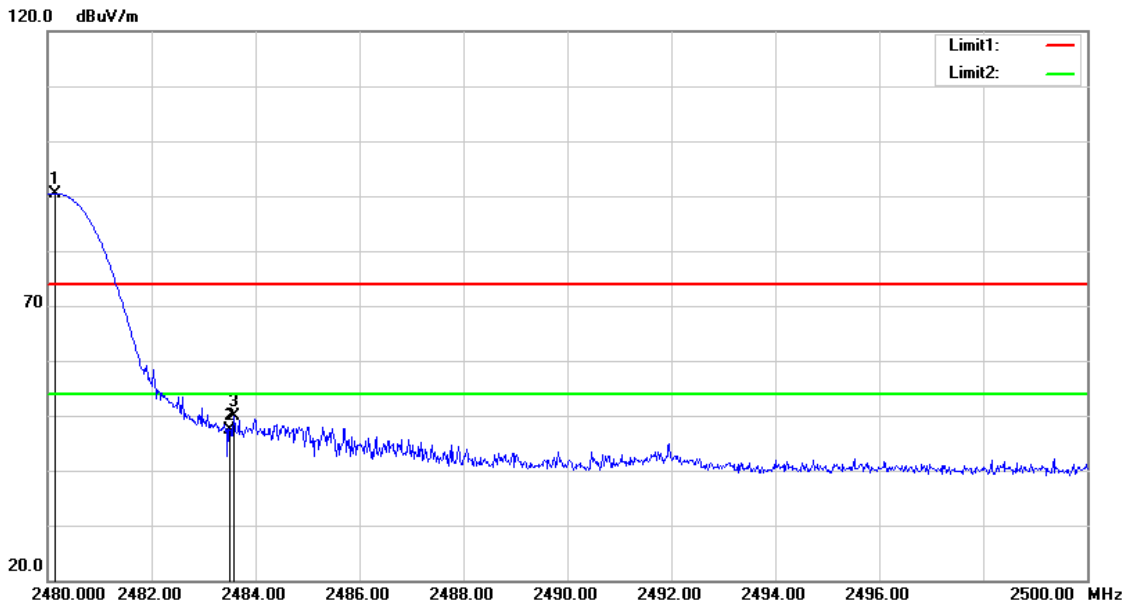
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.200	105.72	-7.87	97.85	--	--	peak
2	2483.500	58.37	-7.86	50.51	74.00	-23.49	peak
3	2484.020	66.75	-7.85	58.90	74.00	-15.10	peak

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		



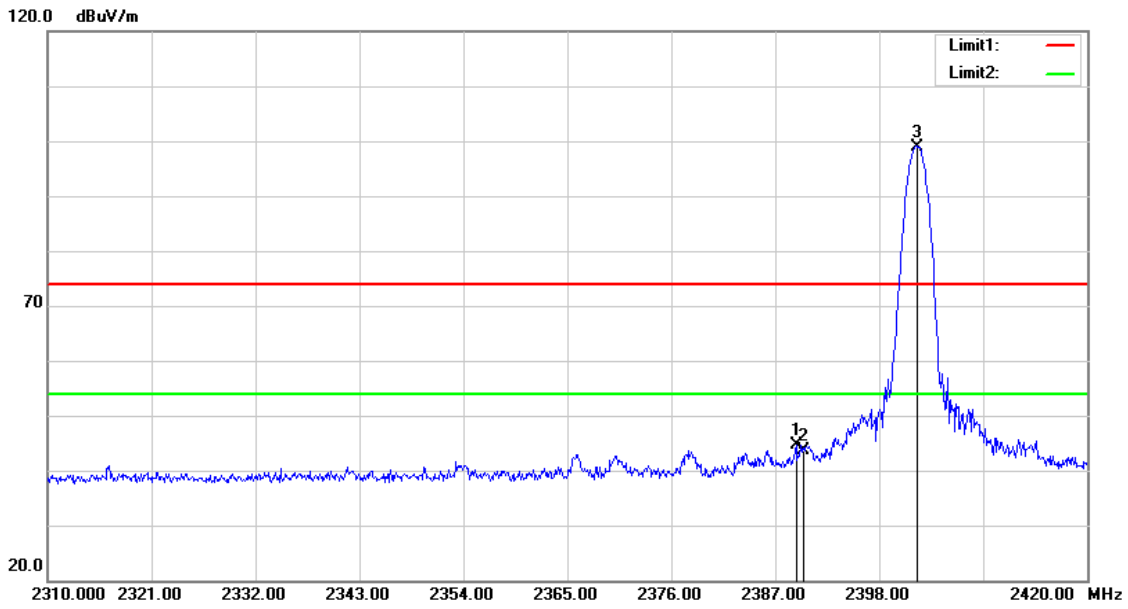
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.140	98.32	-7.87	90.45	--	--	peak
2	2483.500	55.35	-7.86	47.49	74.00	-26.51	peak
3	2483.580	57.80	-7.86	49.94	74.00	-24.06	peak

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 4		
Ant.Polar.:	Horizontal		



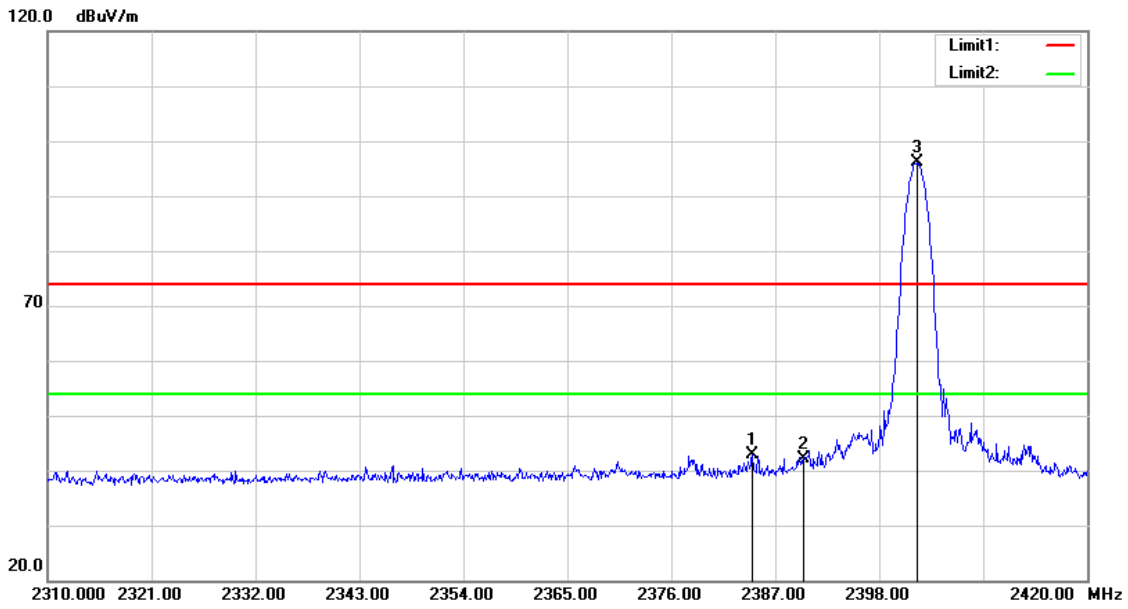
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.200	52.80	-8.21	44.59	74.00	-29.41	peak
2	2390.000	51.92	-8.21	43.71	74.00	-30.29	peak
3	2402.070	107.16	-8.16	99.00	--	--	peak

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 4		
Ant.Polar.:	Vertical		



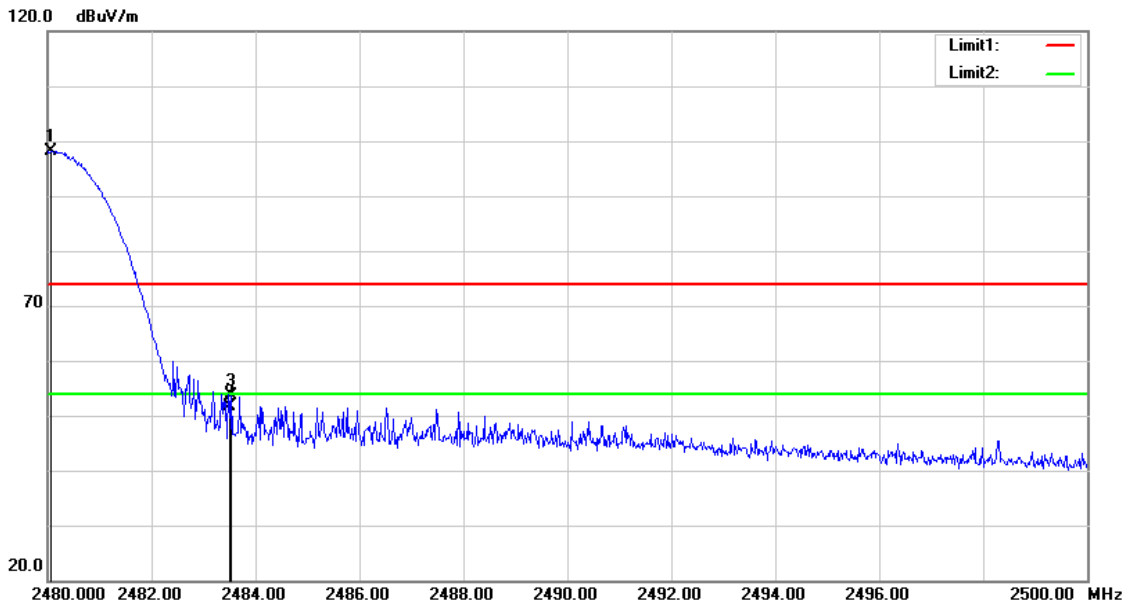
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.580	51.11	-8.24	42.87	74.00	-31.13	peak
2	2390.000	50.32	-8.21	42.11	74.00	-31.89	peak
3	2402.070	104.17	-8.16	96.01	--	--	peak

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 4		
Ant.Polar.:	Horizontal		



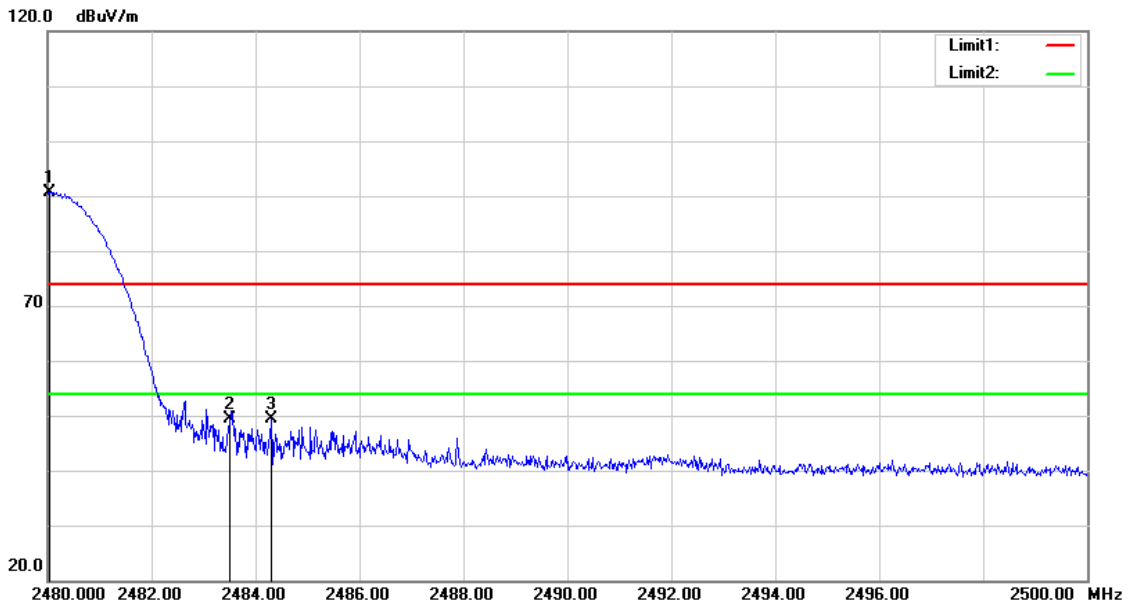
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.060	106.10	-7.87	98.23	--	--	peak
2	2483.500	59.46	-7.86	51.60	74.00	-22.40	peak
3	2483.540	61.40	-7.86	53.54	74.00	-20.46	peak

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:	Band edge		
Frequency:	2480 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



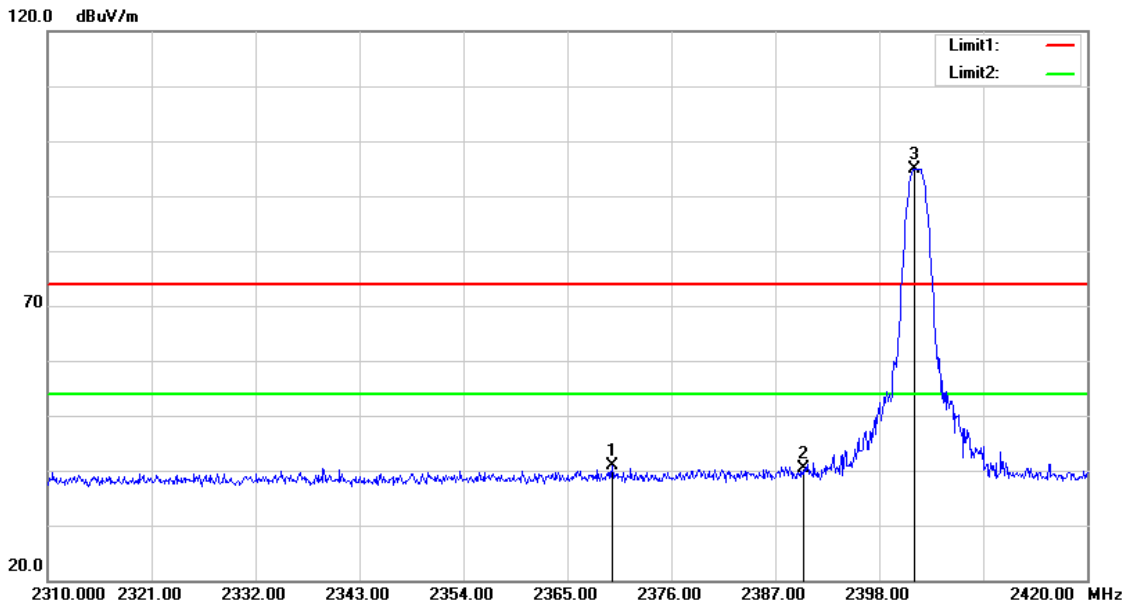
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.040	98.47	-7.87	90.60	--	--	peak
2	2483.500	57.24	-7.86	49.38	74.00	-24.62	peak
3	2484.300	57.23	-7.85	49.38	74.00	-24.62	peak

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.

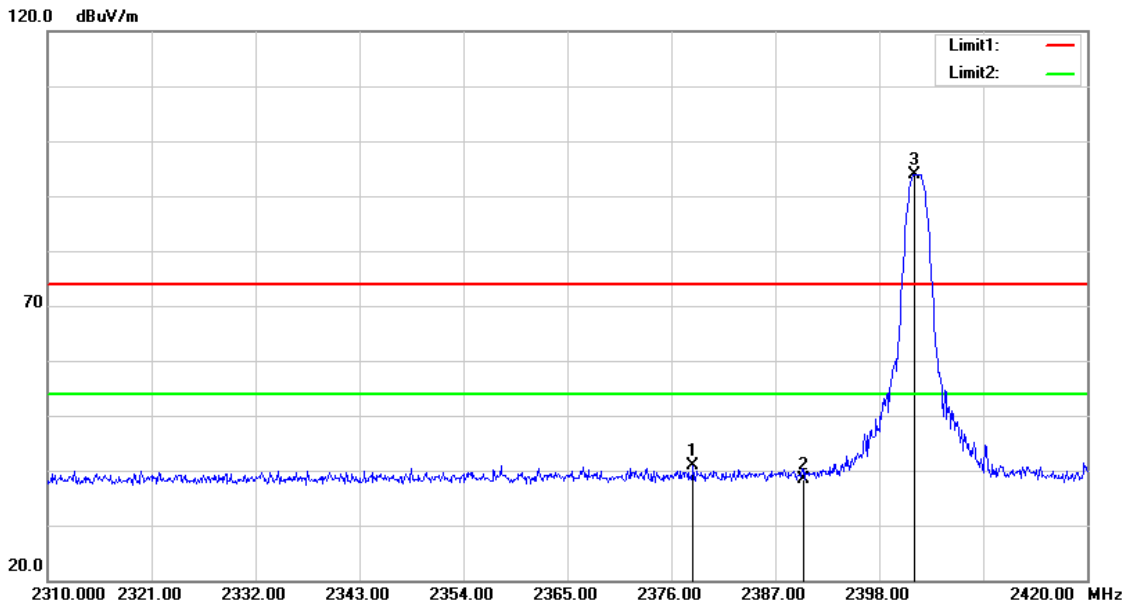
Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 5		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2369.730	49.07	-8.29	40.78	74.00	-33.22	peak
2	2390.000	48.47	-8.21	40.26	74.00	-33.74	peak
3	2401.740	103.05	-8.17	94.88	--	--	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 5		
Ant.Polar.:	Vertical		



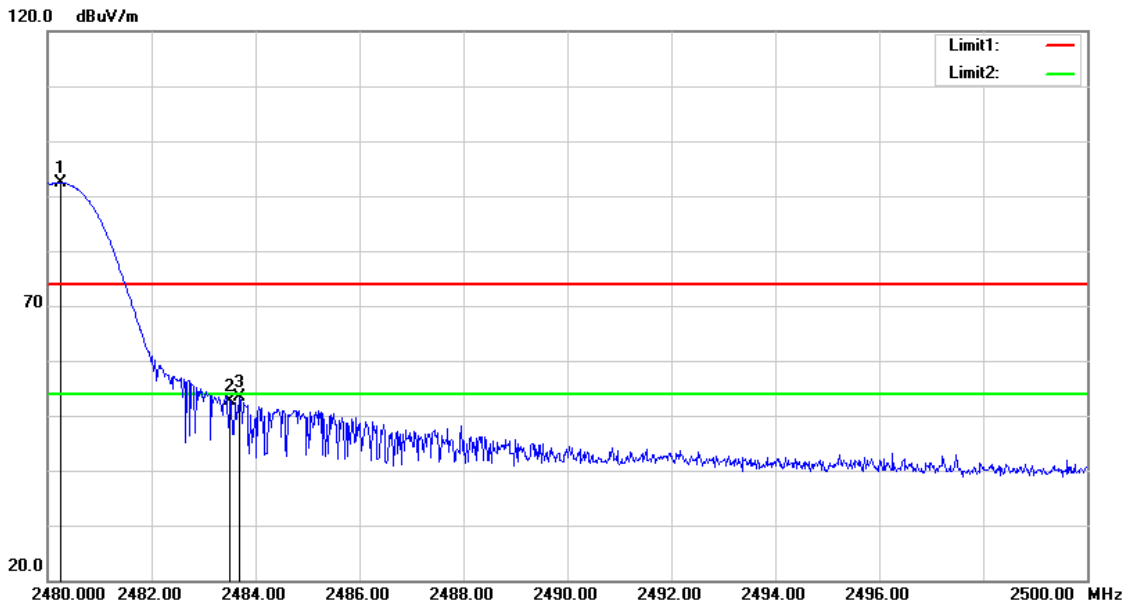
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2378.310	49.14	-8.26	40.88	74.00	-33.12	peak
2	2390.000	46.66	-8.21	38.45	74.00	-35.55	peak
3	2401.740	102.10	-8.17	93.93	--	--	peak

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		
Frequency:	2480 MHz		
Mode:	Mode 5		
Ant.Polar.:	Horizontal		



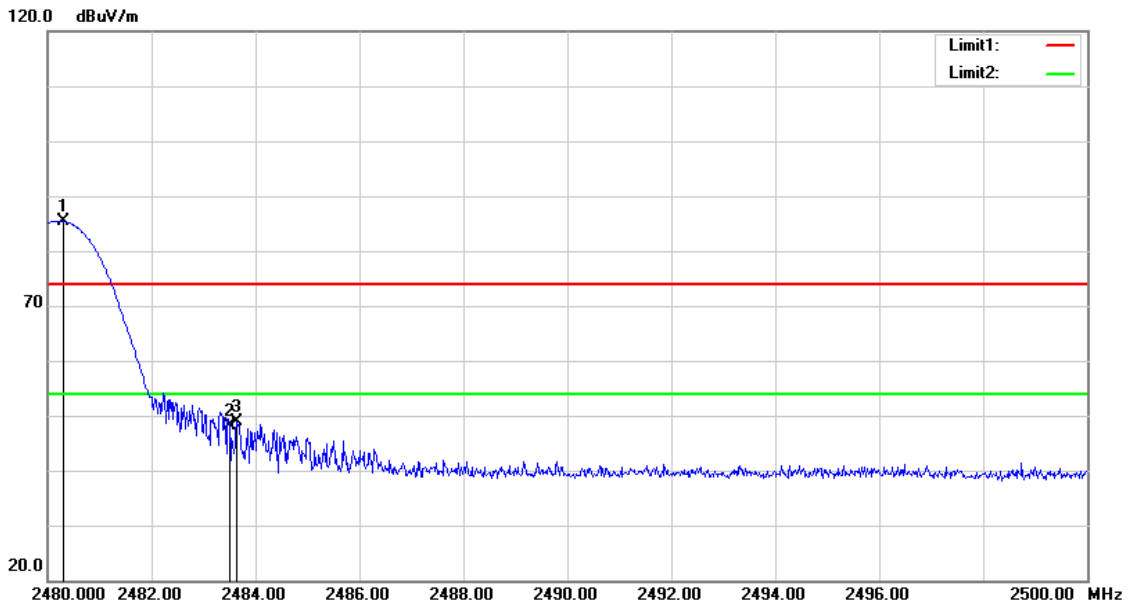
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.260	100.22	-7.87	92.35	--	--	peak
2	2483.500	60.56	-7.86	52.70	74.00	-21.30	peak
3	2483.700	61.24	-7.86	53.38	74.00	-20.62	peak

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 5		
Ant.Polar.:	Vertical		



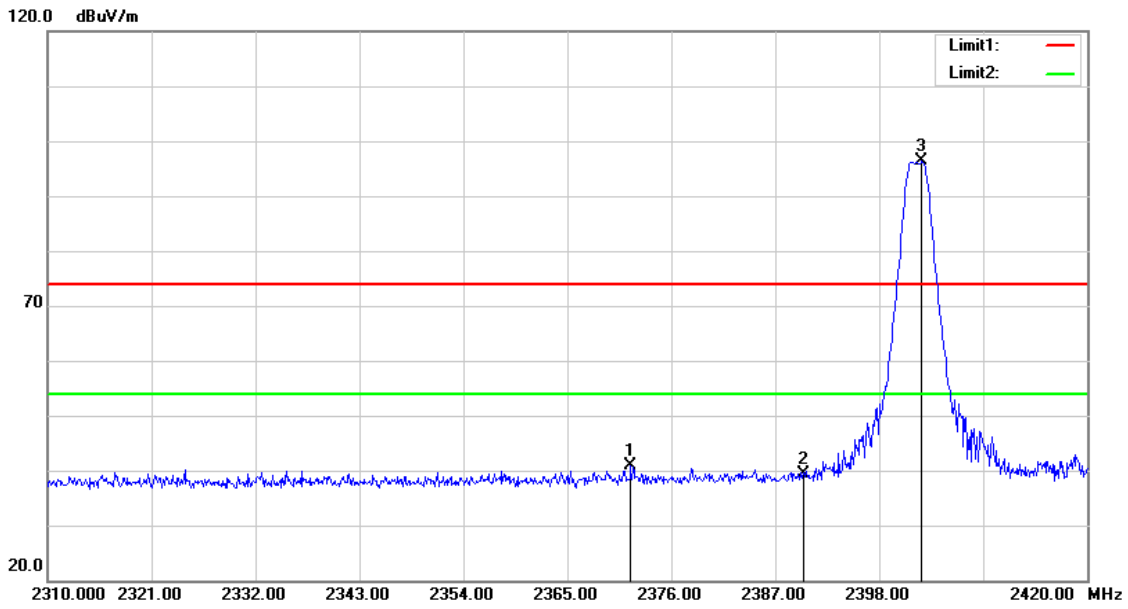
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.300	93.23	-7.87	85.36	--	--	peak
2	2483.500	55.87	-7.86	48.01	74.00	-25.99	peak
3	2483.640	56.75	-7.86	48.89	74.00	-25.11	peak

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.

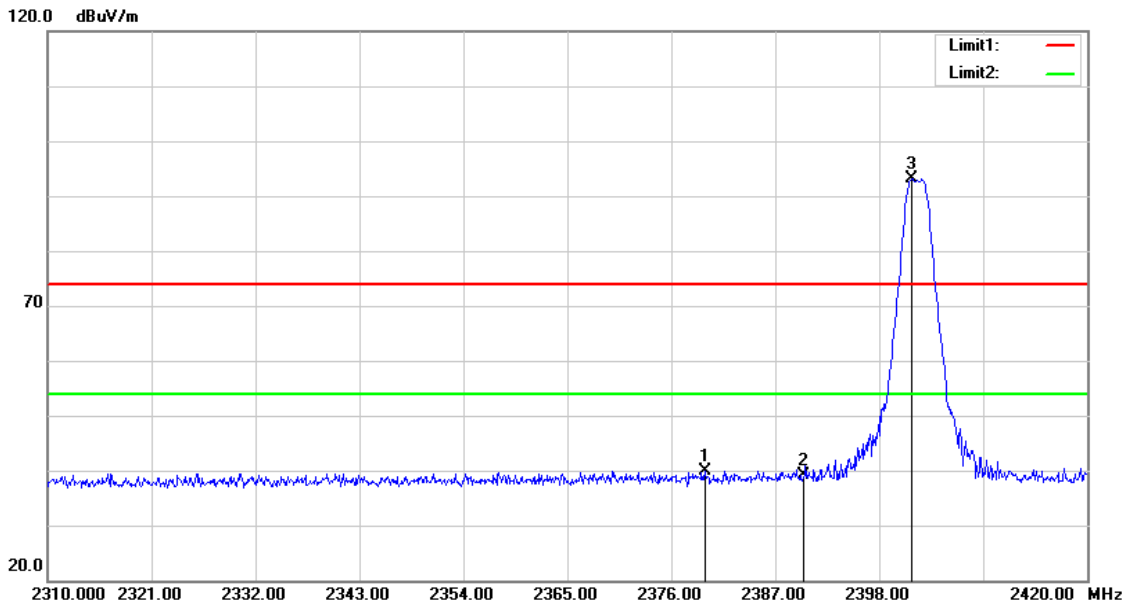
Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 6		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2371.710	49.06	-8.28	40.78	74.00	-33.22	peak
2	2390.000	47.58	-8.21	39.37	74.00	-34.63	peak
3	2402.510	104.42	-8.16	96.26	--	--	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.

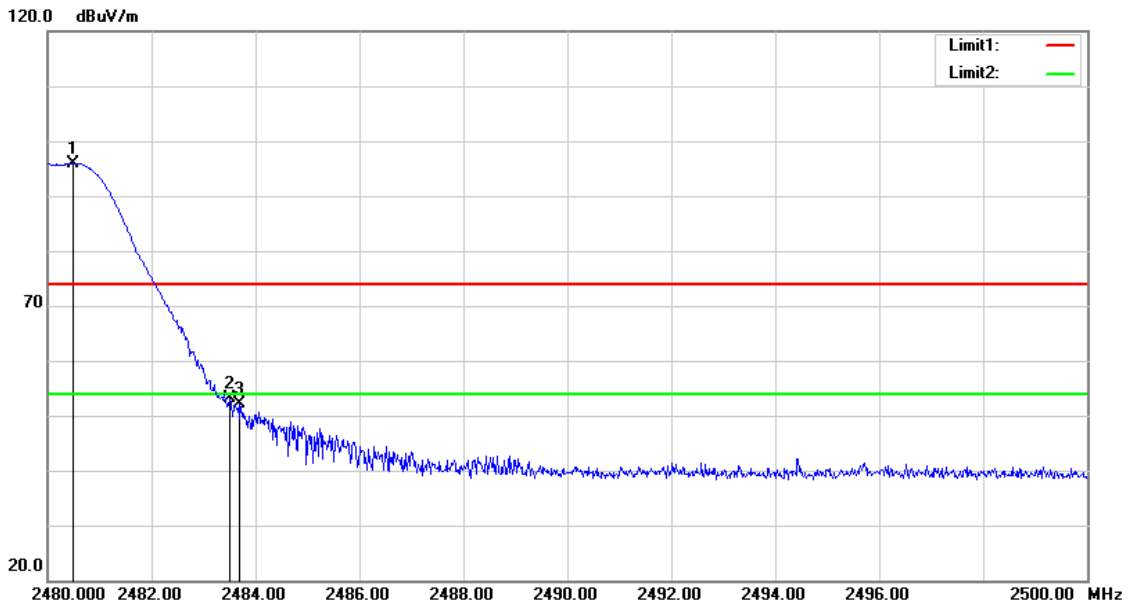
Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 6		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2379.520	48.22	-8.26	39.96	74.00	-34.04	peak
2	2390.000	47.27	-8.21	39.06	74.00	-34.94	peak
3	2401.410	101.23	-8.17	93.06	--	--	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 6		
Ant.Polar.:	Horizontal		



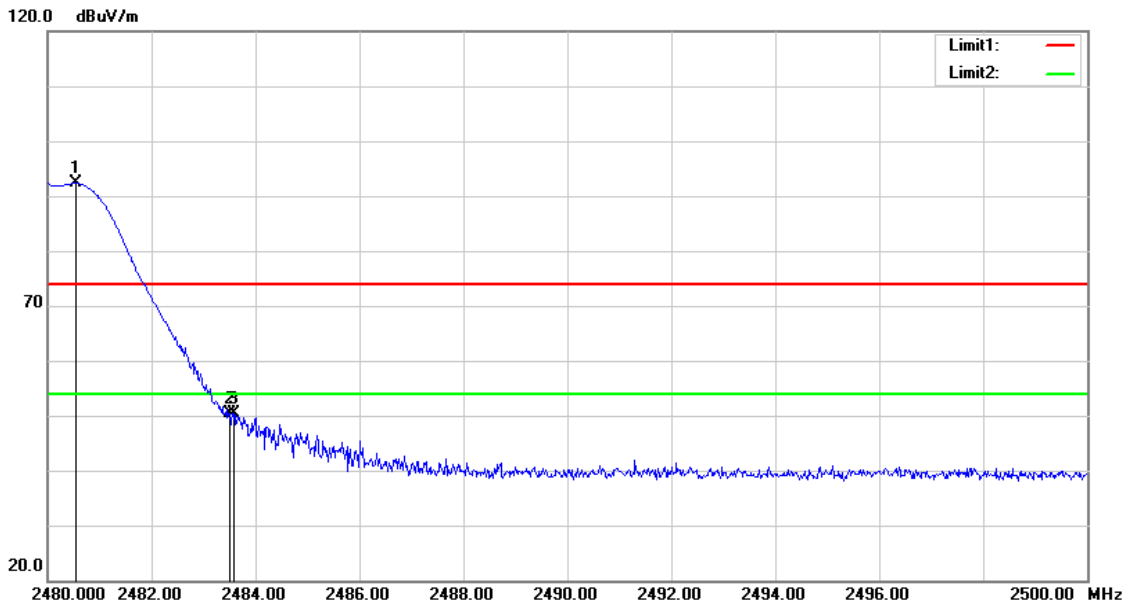
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.480	103.84	-7.86	95.98	--	--	peak
2	2483.500	60.92	-7.86	53.06	74.00	-20.94	peak
3	2483.680	60.01	-7.86	52.15	74.00	-21.85	peak

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 6		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.540	100.18	-7.86	92.32	--	--	peak
2	2483.500	58.30	-7.86	50.44	74.00	-23.56	peak
3	2483.580	58.13	-7.86	50.27	74.00	-23.73	peak

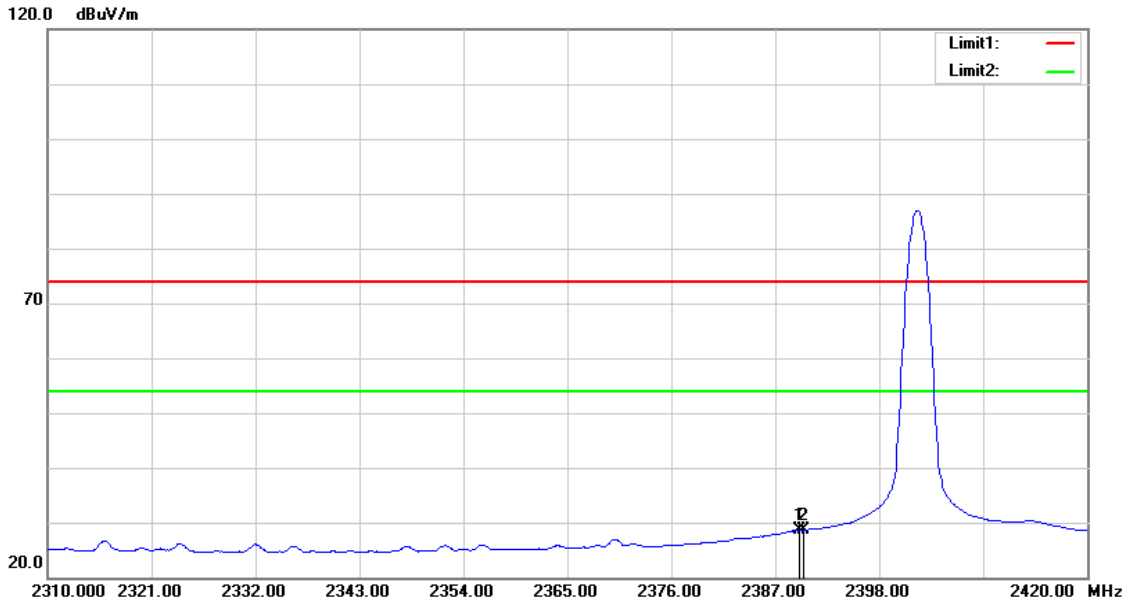
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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.

AVG

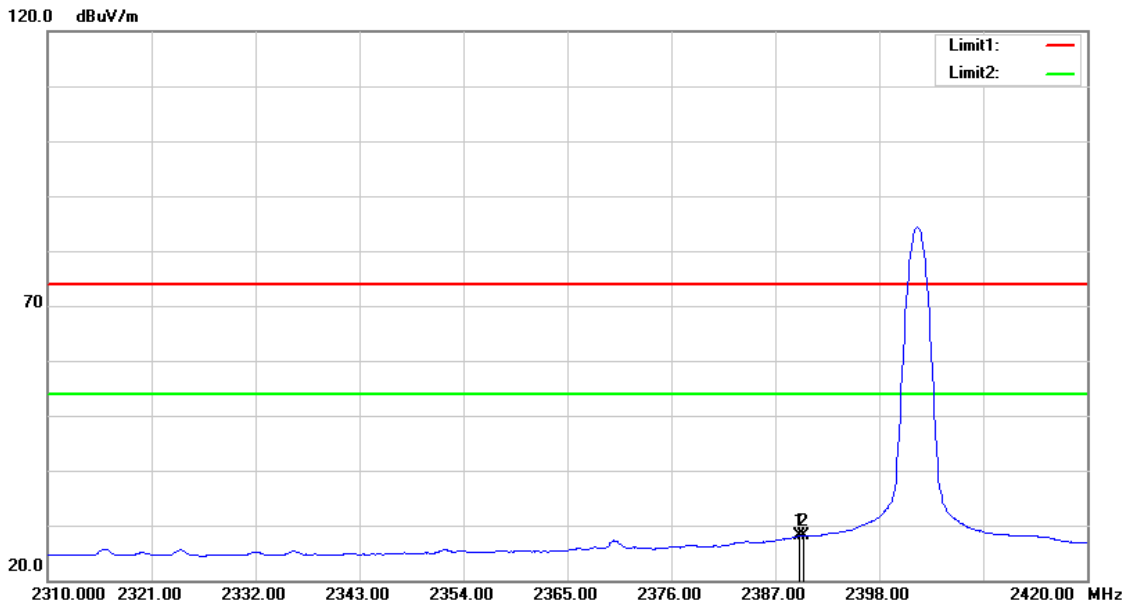
Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.530	36.81	-8.21	28.60	54.00	-25.40	AVG
2	2390.000	36.87	-8.21	28.66	54.00	-25.34	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		



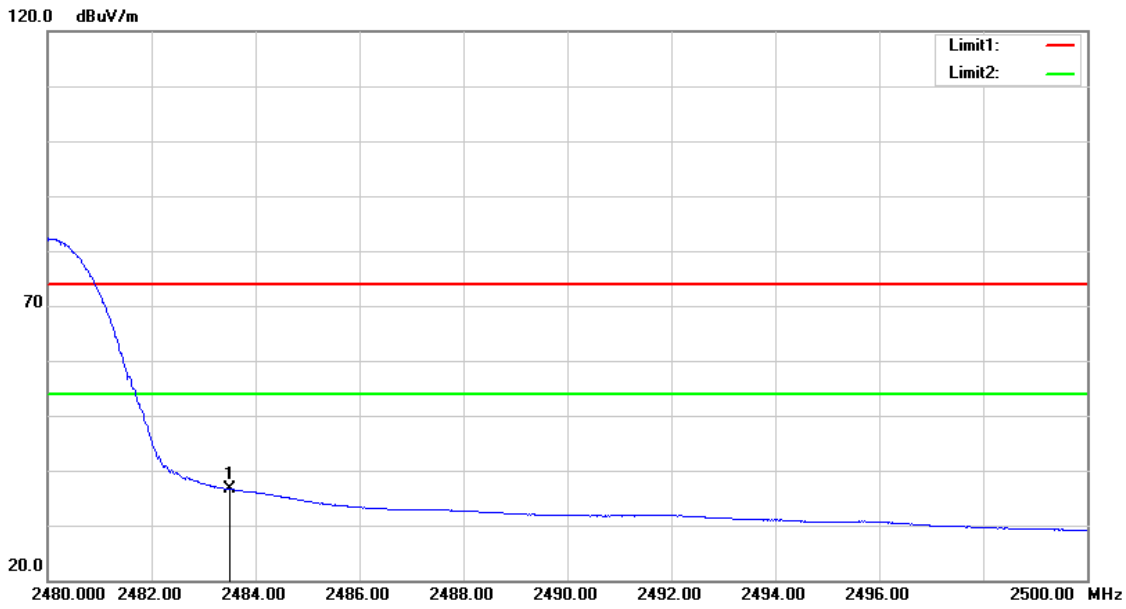
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.530	36.24	-8.21	28.03	54.00	-25.97	AVG
2	2390.000	36.40	-8.21	28.19	54.00	-25.81	AVG

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



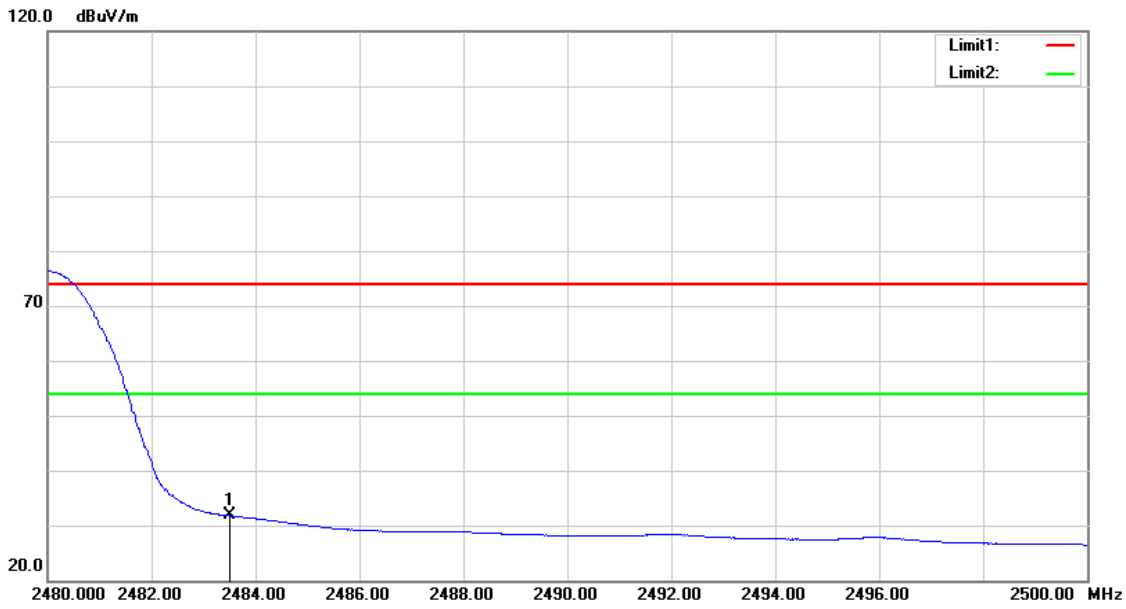
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	44.44	-7.86	36.58	74.00	-37.42	peak

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		



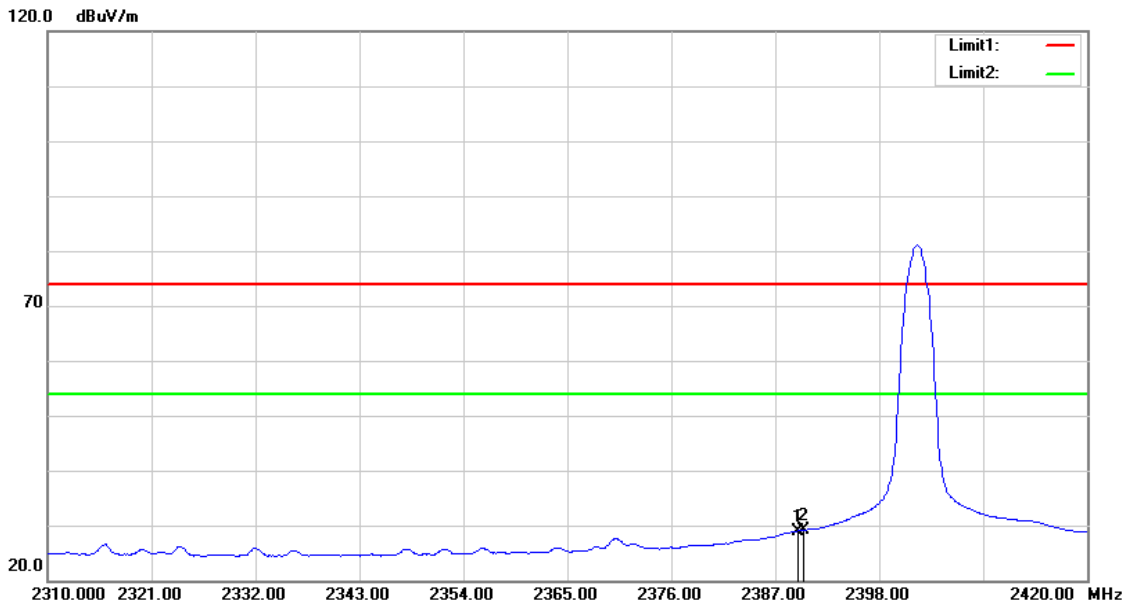
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	39.63	-7.86	31.77	74.00	-42.23	peak

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		
Frequency:	2402 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



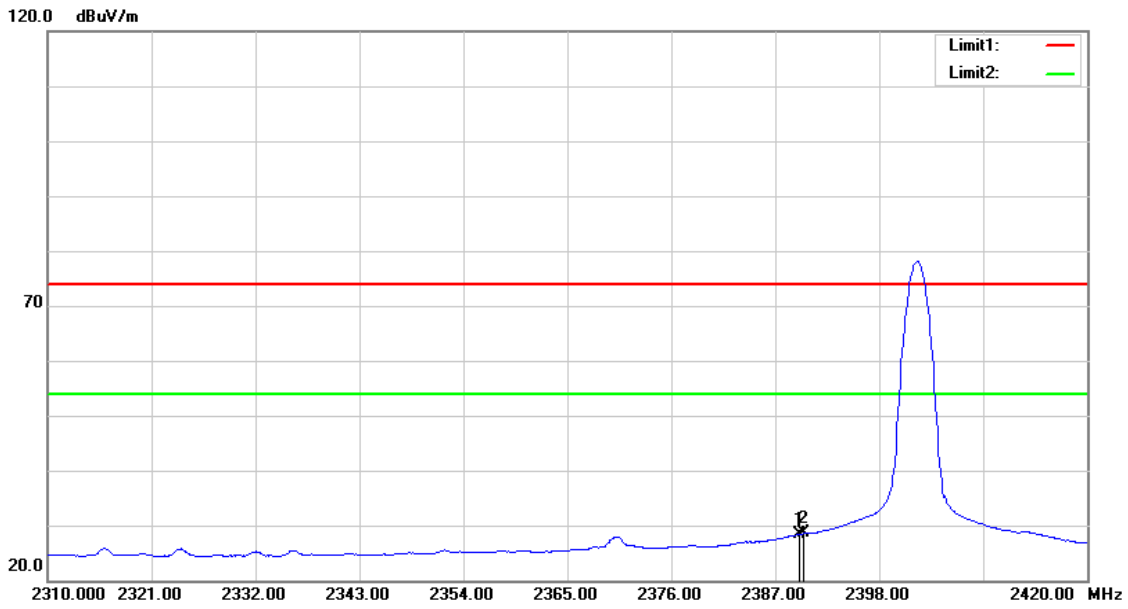
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.420	37.21	-8.21	29.00	54.00	-25.00	AVG
2	2390.000	37.39	-8.21	29.18	54.00	-24.82	AVG

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 4		
Ant.Polar.:	Vertical		



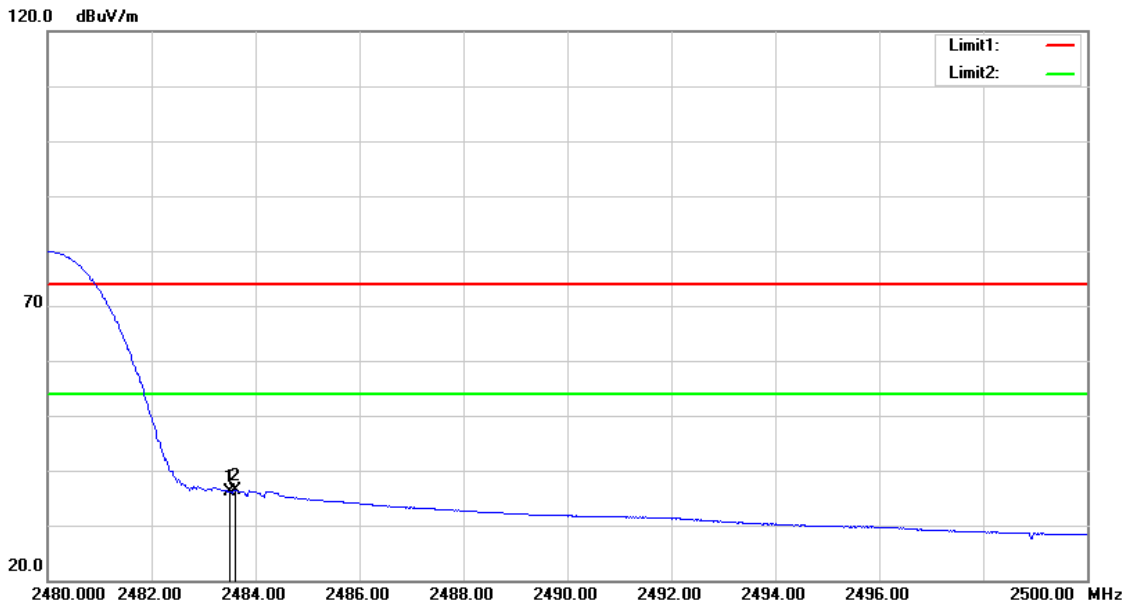
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.530	36.65	-8.21	28.44	54.00	-25.56	AVG
2	2390.000	36.74	-8.21	28.53	54.00	-25.47	AVG

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 4		
Ant.Polar.:	Horizontal		



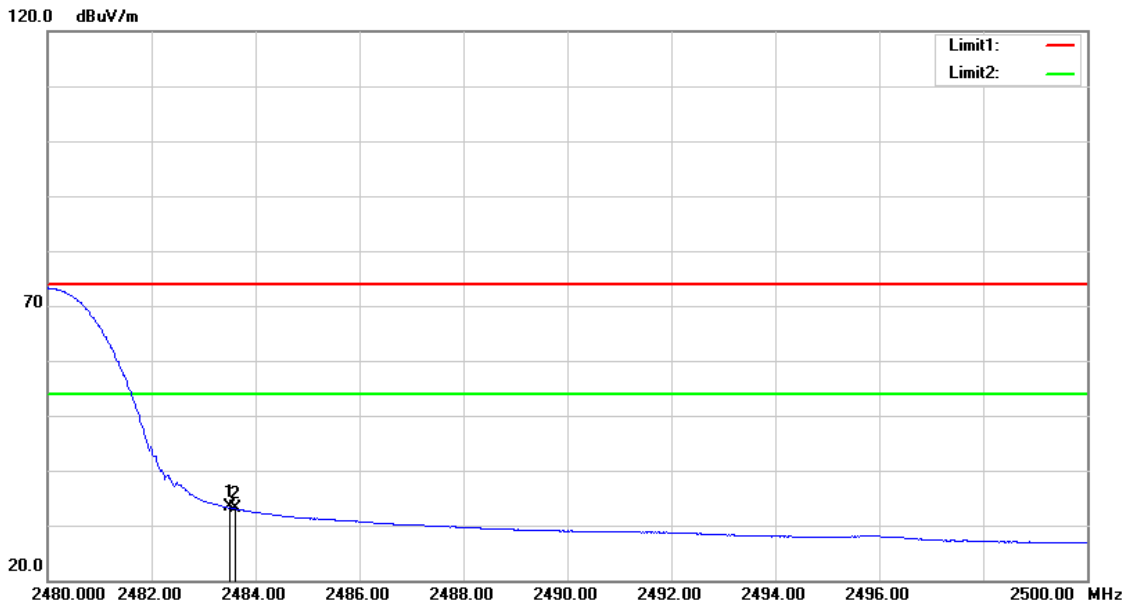
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	44.03	-7.86	36.17	54.00	-17.83	AVG
2	2483.600	44.30	-7.86	36.44	54.00	-17.56	AVG

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 4		
Ant.Polar.:	Vertical		



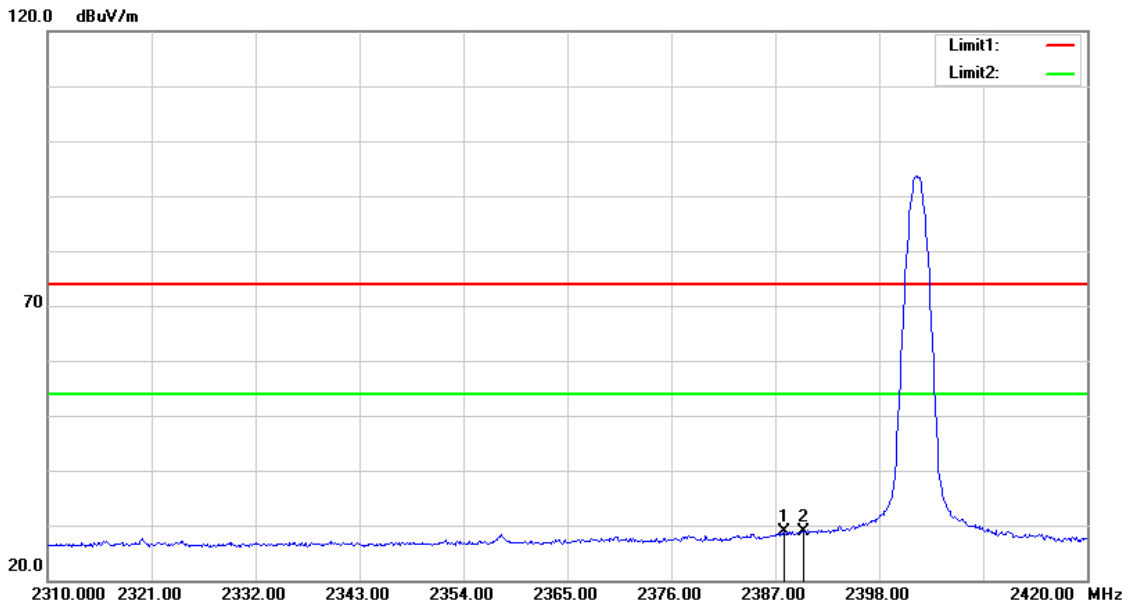
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	41.12	-7.86	33.26	54.00	-20.74	AVG
2	2483.620	40.89	-7.86	33.03	54.00	-20.97	AVG

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:	Band edge		
Frequency:	2402 MHz		
Mode:	Mode 5		
Ant.Polar.:	Horizontal		



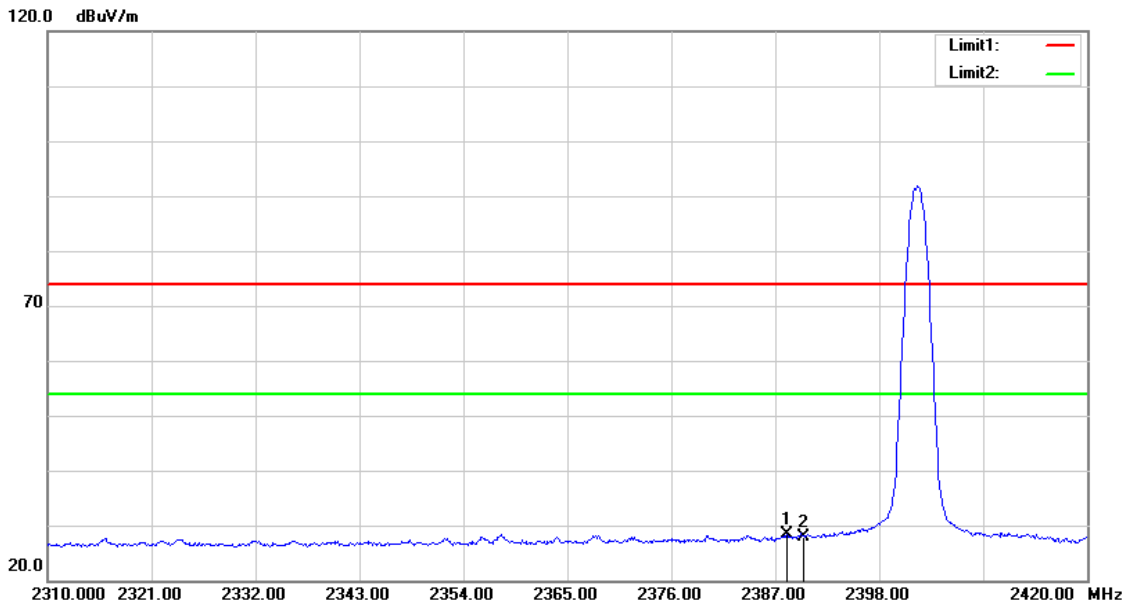
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.880	37.21	-8.22	28.99	54.00	-25.01	AVG
2	2390.000	37.02	-8.21	28.81	54.00	-25.19	AVG

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 5		
Ant.Polar.:	Vertical		



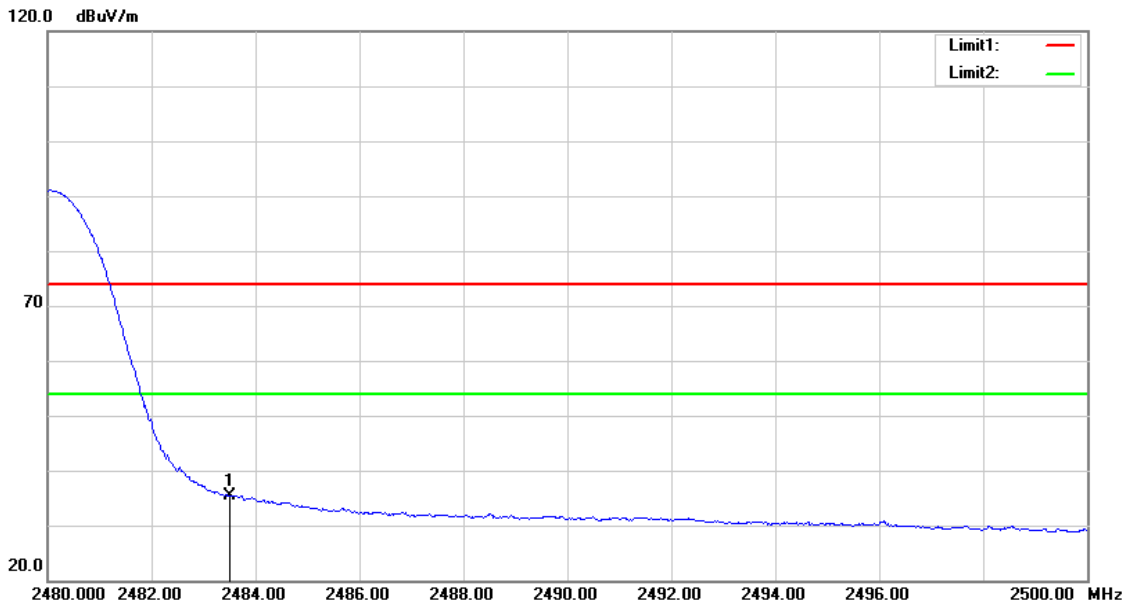
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.210	36.54	-8.22	28.32	54.00	-25.68	AVG
2	2390.000	36.20	-8.21	27.99	54.00	-26.01	AVG

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 5		
Ant.Polar.:	Horizontal		



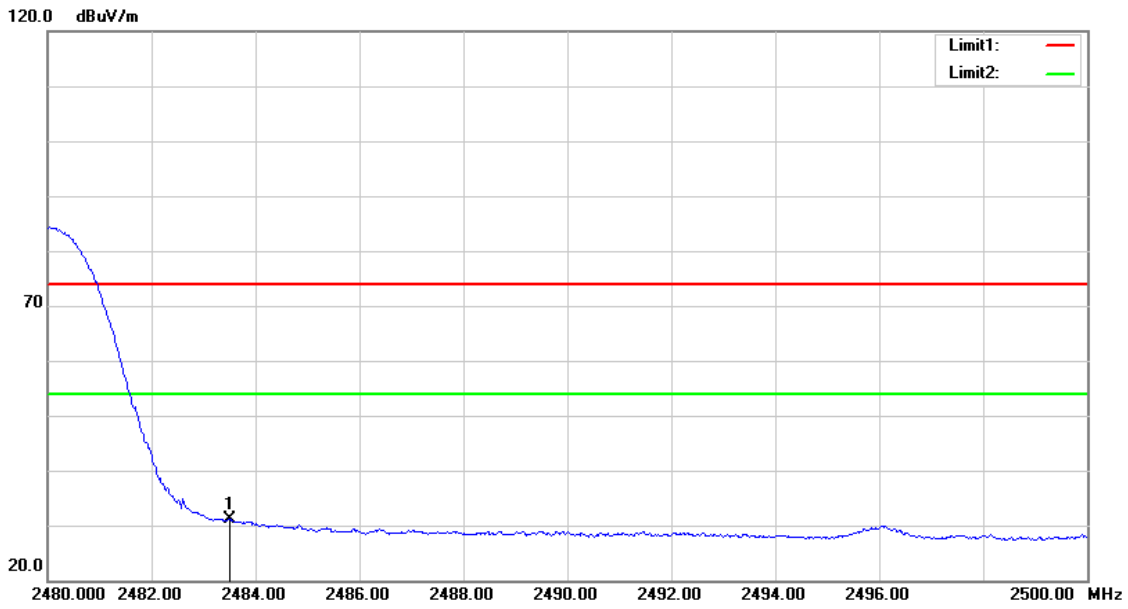
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	43.30	-7.86	35.44	54.00	-18.56	AVG

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 5		
Ant.Polar.:	Vertical		



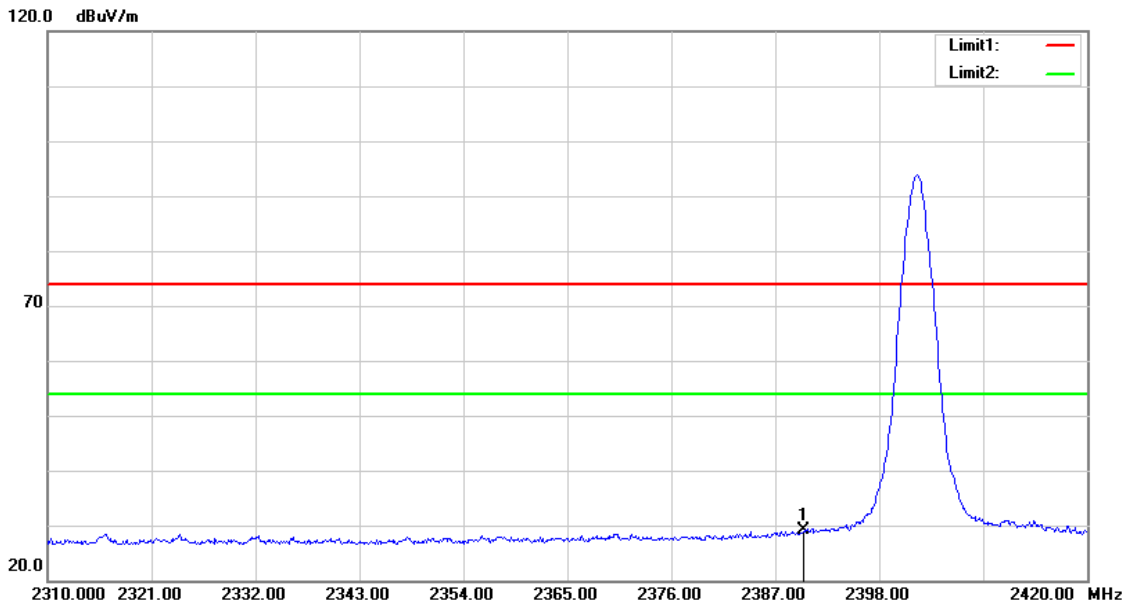
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	38.99	-7.86	31.13	54.00	-22.87	AVG

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 6		
Ant.Polar.:	Horizontal		



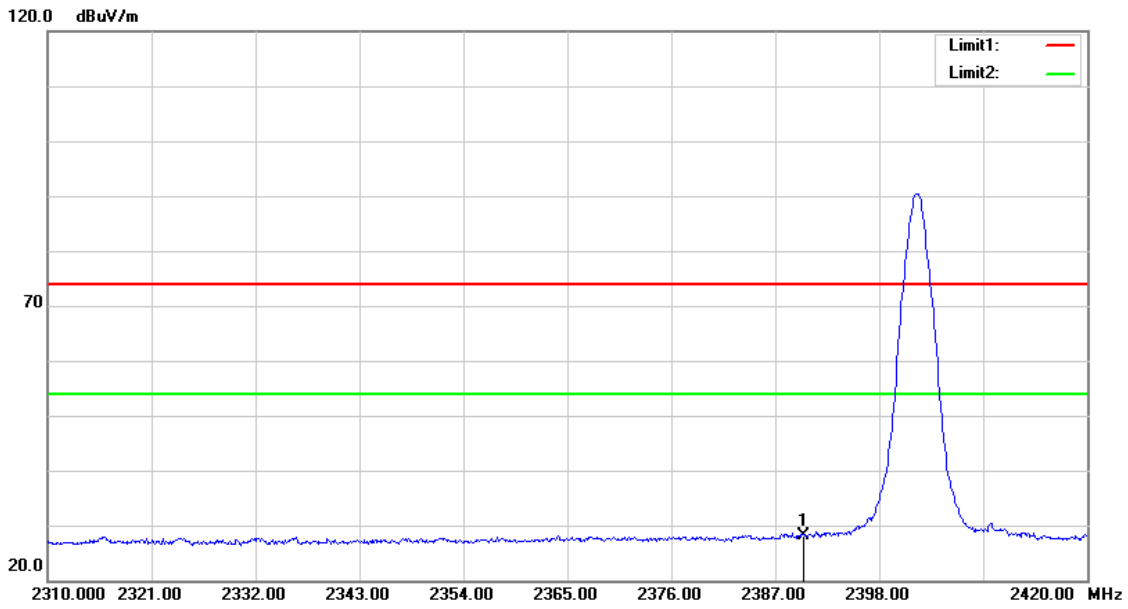
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	37.30	-8.21	29.09	54.00	-24.91	AVG

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 6		
Ant.Polar.:	Vertical		



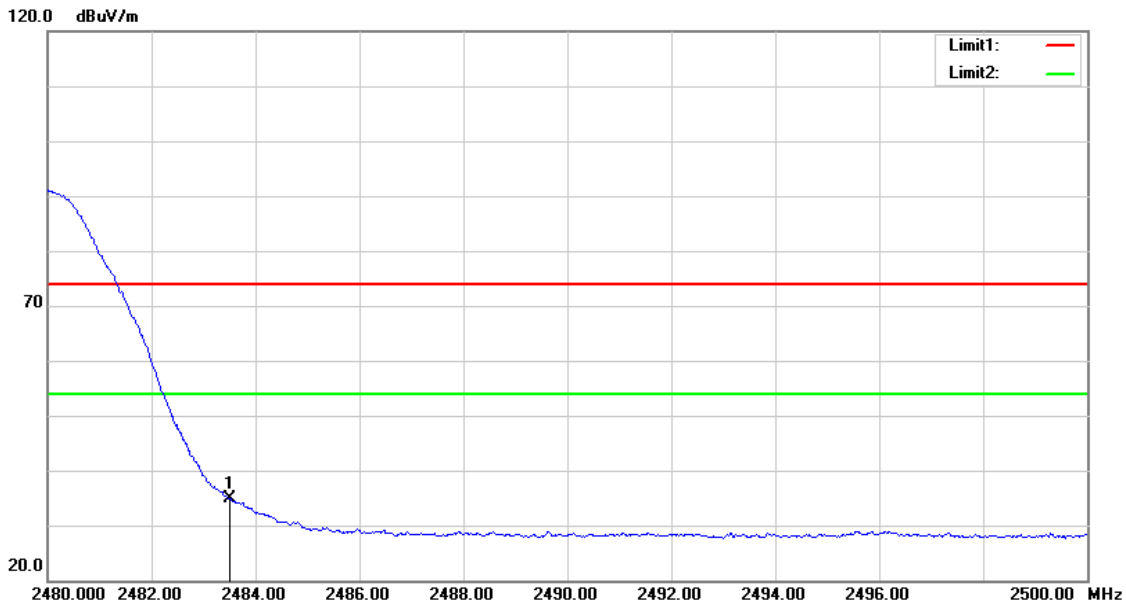
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	36.42	-8.21	28.21	54.00	-25.79	AVG

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 6		
Ant.Polar.:	Horizontal		



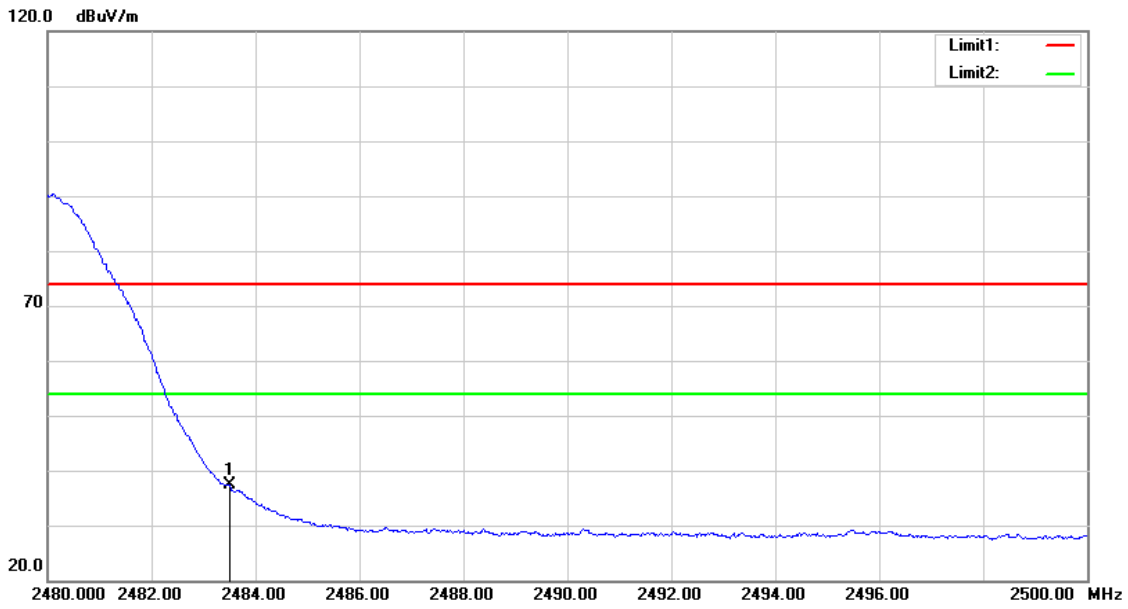
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	42.82	-7.86	34.96	54.00	-19.04	AVG

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 6		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	45.15	-7.86	37.29	54.00	-16.71	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.

Annex C. Conducted Test Results

輸出峰值功率之量測

操作模式	： Mode 2: BR,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	DH1	4.52	0.00283	4.73	0.00297	≦0.125
	DH3	4.53	0.00284	4.74	0.00298	≦0.125
	DH5	4.54	0.00284	**4.75**	**0.00299**	≦0.125
中頻道	DH1	3.90	0.00245	4.15	0.00260	≦0.125
	DH3	3.91	0.00246	4.17	0.00261	≦0.125
	DH5	3.92	0.00247	4.18	0.00262	≦0.125
高頻道	DH1	3.76	0.00238	4.00	0.00251	≦0.125
	DH3	3.77	0.00238	4.01	0.00252	≦0.125
	DH5	3.78	0.00239	4.02	0.00252	≦0.125

操作模式	： Mode 3: EDR, π/4-DQPSK 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	2DH1	4.56	0.00286	7.48	0.00560	≦0.125
	2DH3	4.57	0.00286	7.50	0.00562	≦0.125
	2DH5	4.58	0.00287	**7.55**	**0.00569**	≦0.125
中頻道	2DH1	3.87	0.00244	6.77	0.00475	≦0.125
	2DH3	3.90	0.00245	6.80	0.00479	≦0.125
	2DH5	3.91	0.00246	6.82	0.00481	≦0.125
高頻道	2DH1	3.73	0.00236	6.45	0.00442	≦0.125
	2DH3	3.76	0.00238	6.48	0.00445	≦0.125
	2DH5	3.77	0.00238	6.50	0.00447	≦0.125

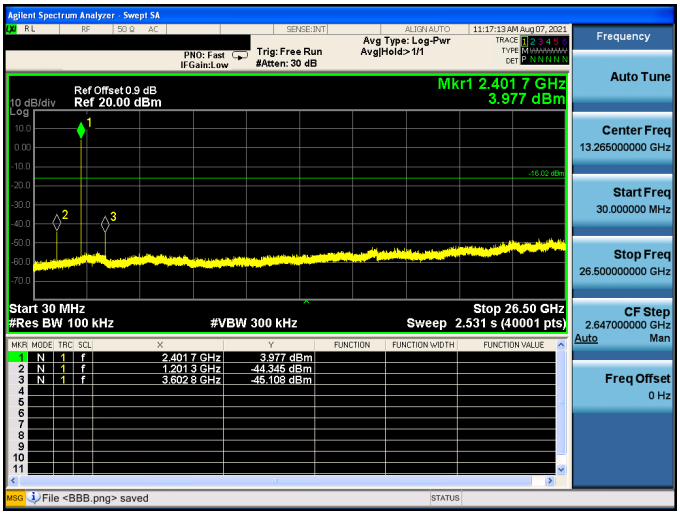
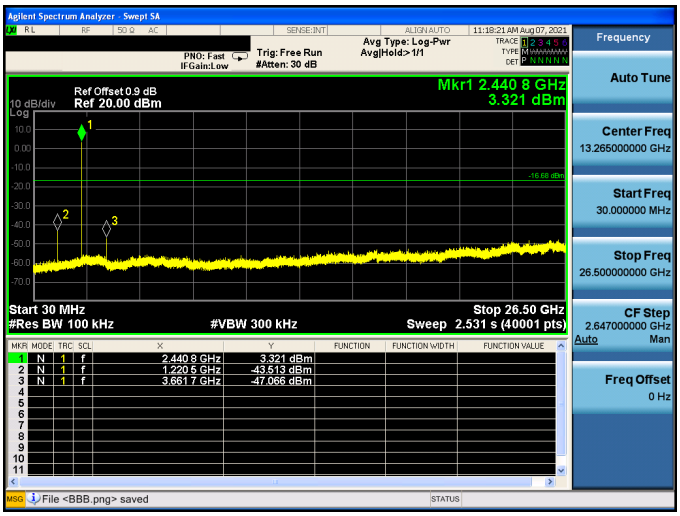
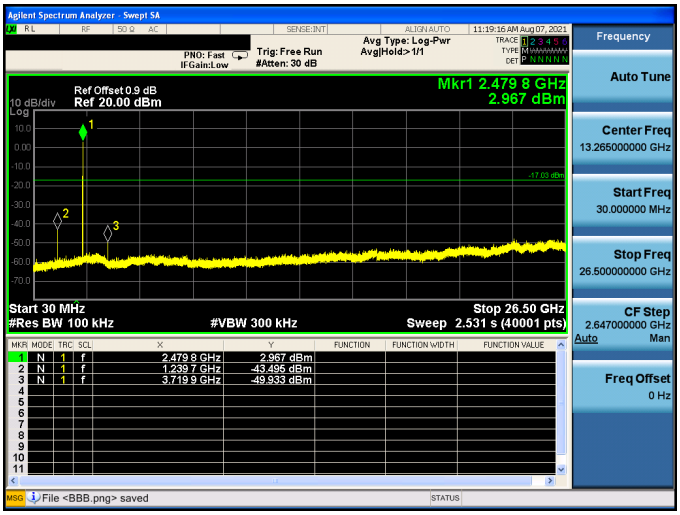
操作模式	： Mode 4:EDR, 8DPSK Continuous TX Mode					
頻道		輸出功率(Average)		輸出功率(Peak)		限制值
		dBm	W	dBm	W	W
低頻道	3DH1	4.62	0.00290	7.51	0.00564	≦0.125
	3DH3	4.63	0.00290	7.53	0.00566	≦0.125
	3DH5	4.64	0.00291	**7.57**	**0.00571**	≦0.125
中頻道	3DH1	3.92	0.00247	6.80	0.00479	≦0.125
	3DH3	3.94	0.00248	6.82	0.00481	≦0.125
	3DH5	3.95	0.00248	6.86	0.00485	≦0.125
高頻道	3DH1	3.78	0.00239	6.49	0.00446	≦0.125
	3DH3	3.80	0.00240	6.50	0.00447	≦0.125
	3DH5	3.81	0.00240	6.52	0.00449	≦0.125

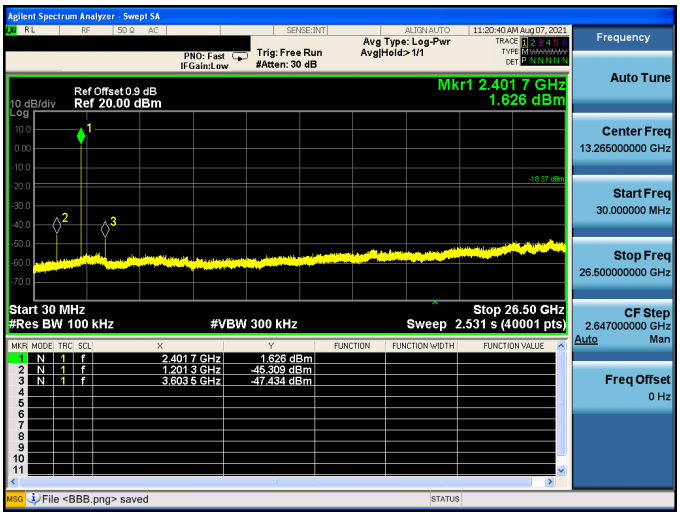
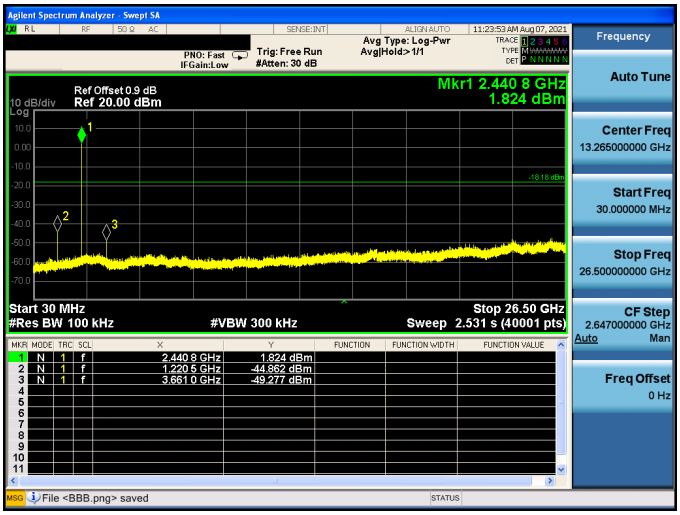
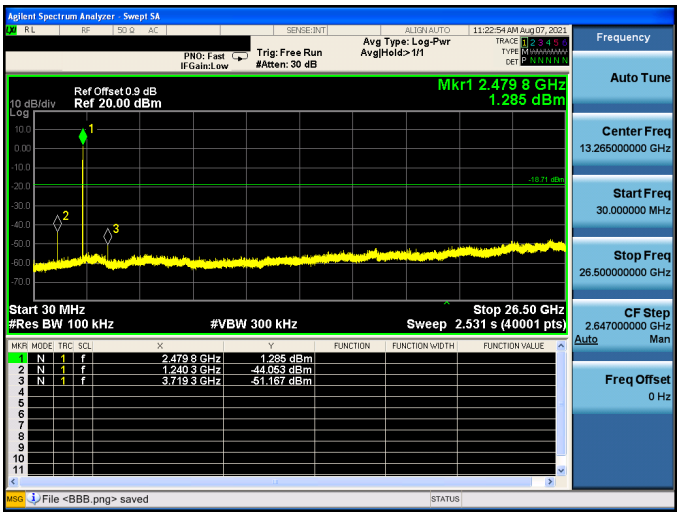
操作模式 ： Mode 5: LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	-0.58	0.00087	**-0.45**	**0.00090**	≦1
中頻道	-1.22	0.00076	-1.09	0.00078	≦1
高頻道	-1.53	0.00070	-1.40	0.00072	≦1

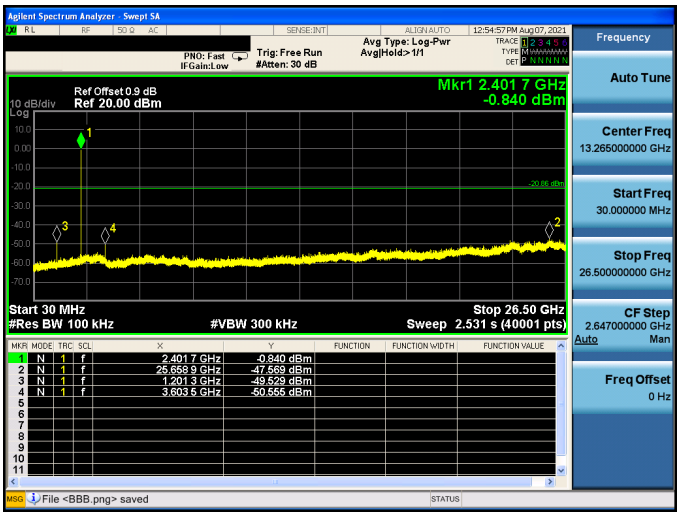
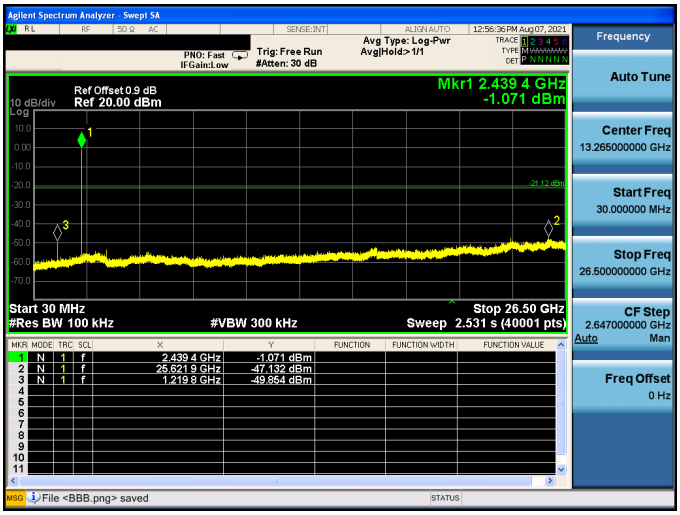
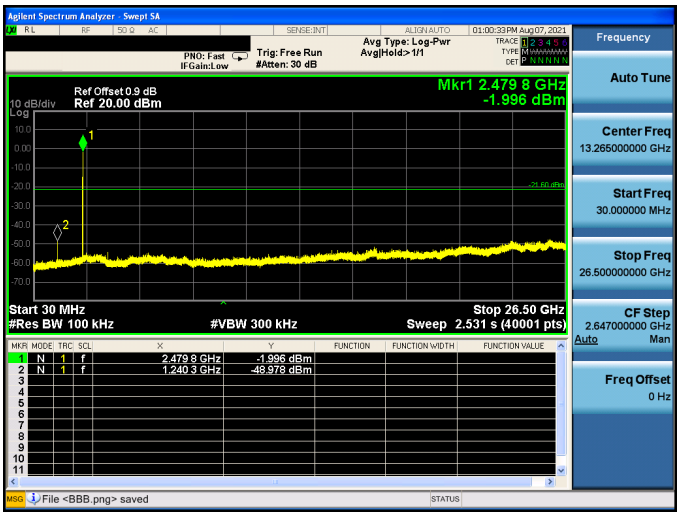
操作模式 ： Mode 6: 2LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	-0.59	0.00087	**-0.46**	**0.00090**	≦1
中頻道	-1.21	0.00076	-1.09	0.00078	≦1
高頻道	-1.52	0.00070	-1.39	0.00073	≦1

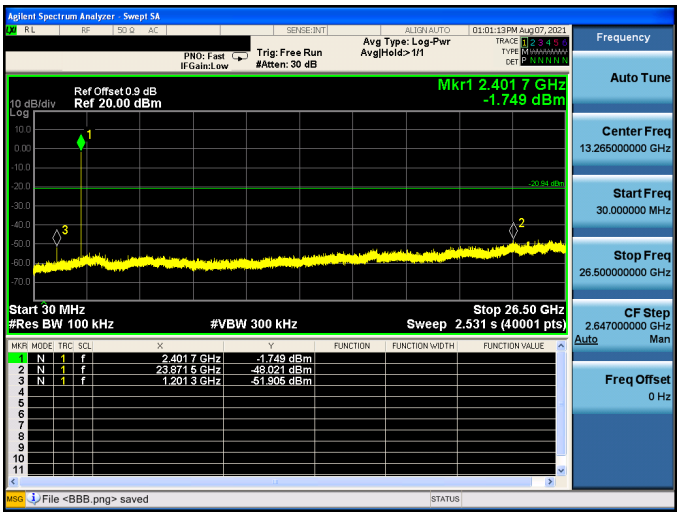
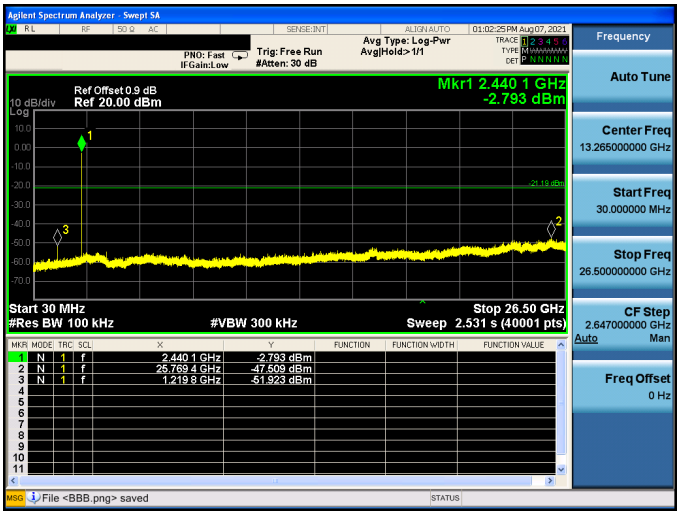
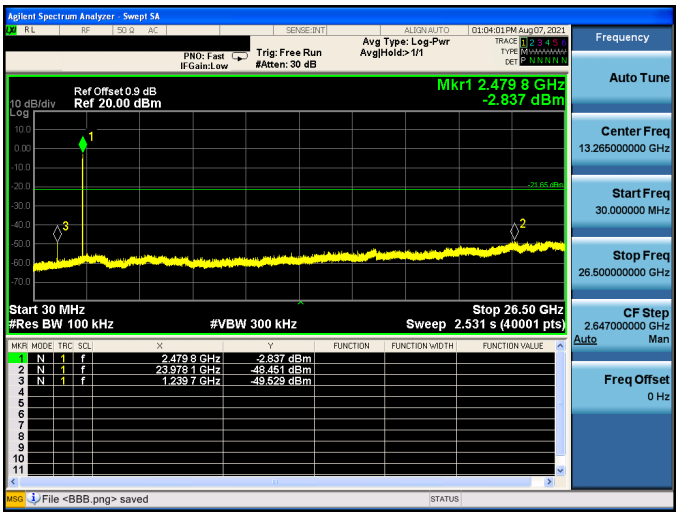
非必要頻帶之量測

Out of Band Conducted Spurious Emission

Mode 2: BR, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

Mode 4: EDR, 8DPSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

Mode 5: LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

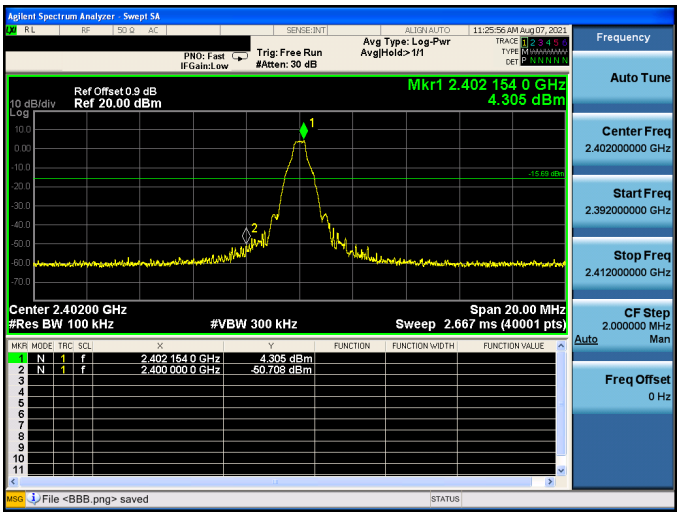
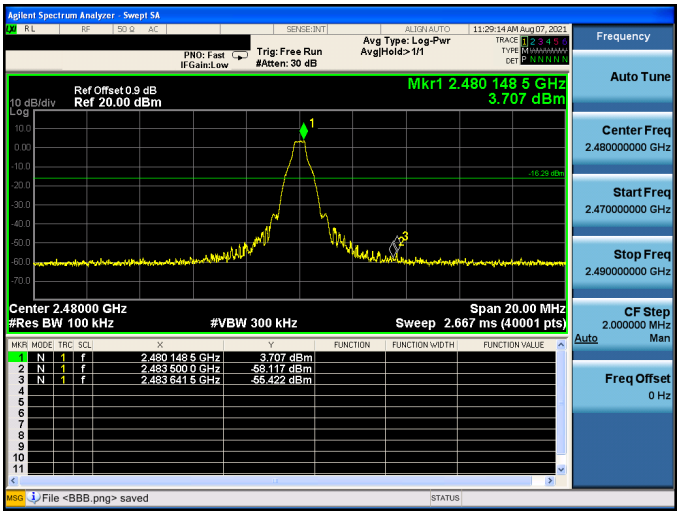
Mode 6: 2LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

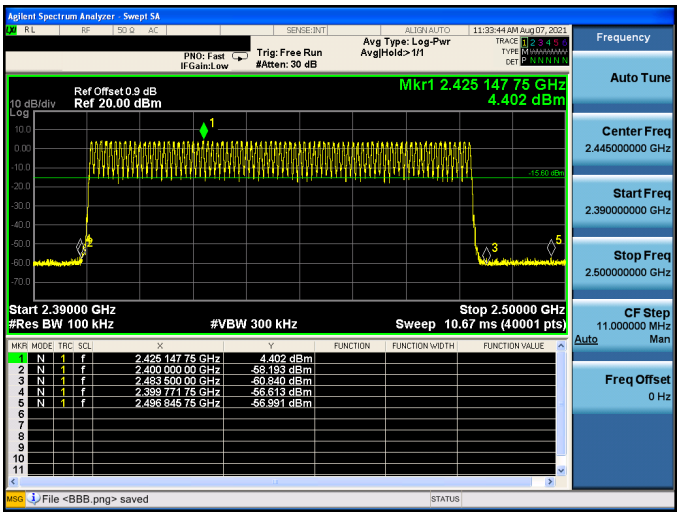
Reference level

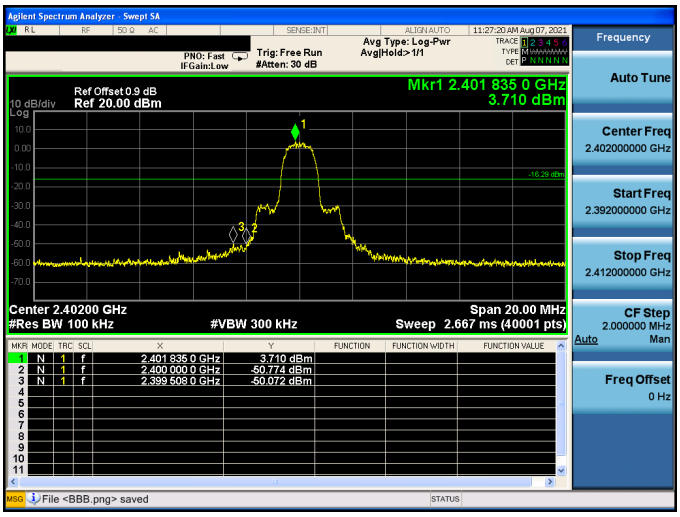
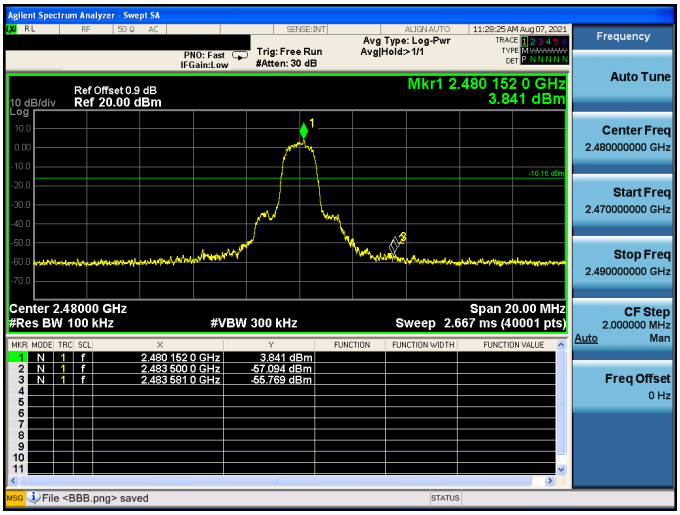
Mode 5: LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

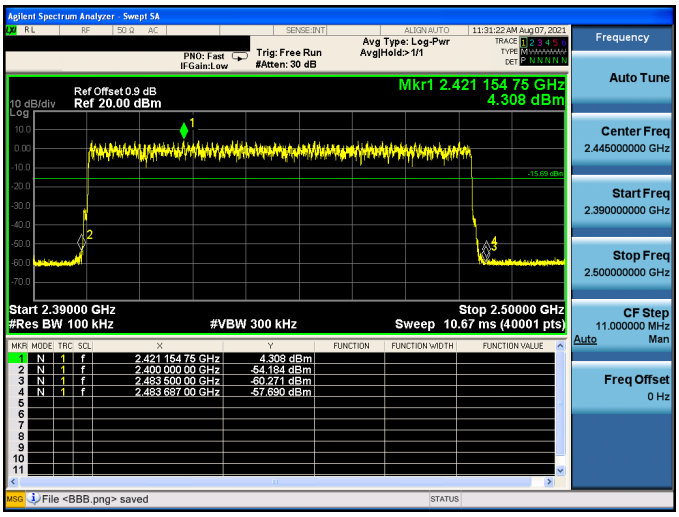
Mode 6: 2LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

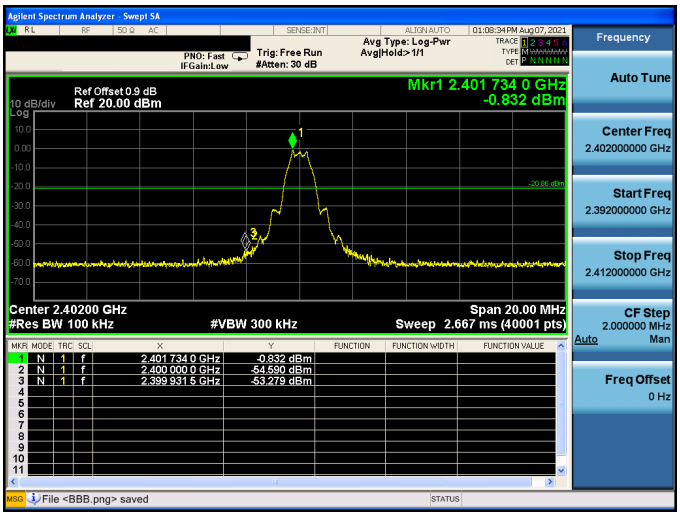
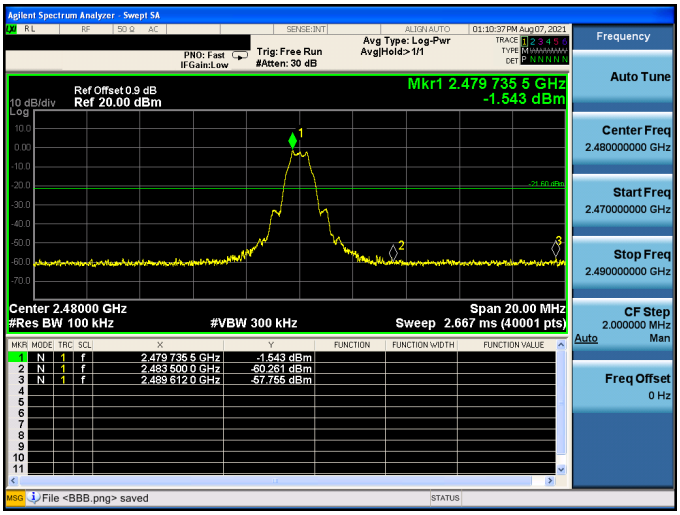
Conducted Band Edge

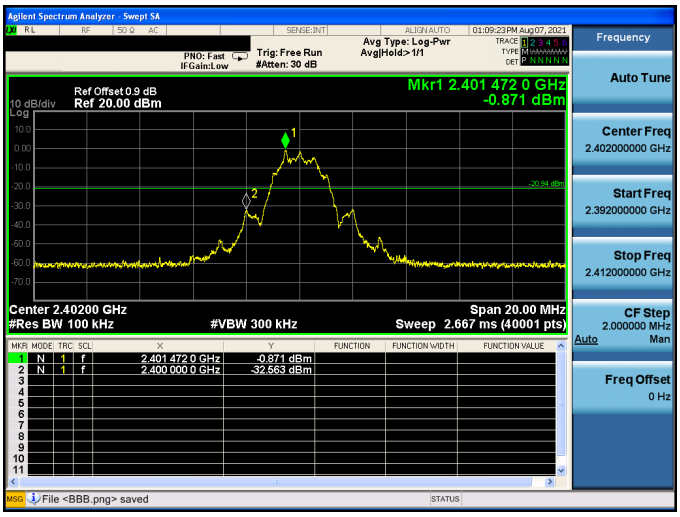
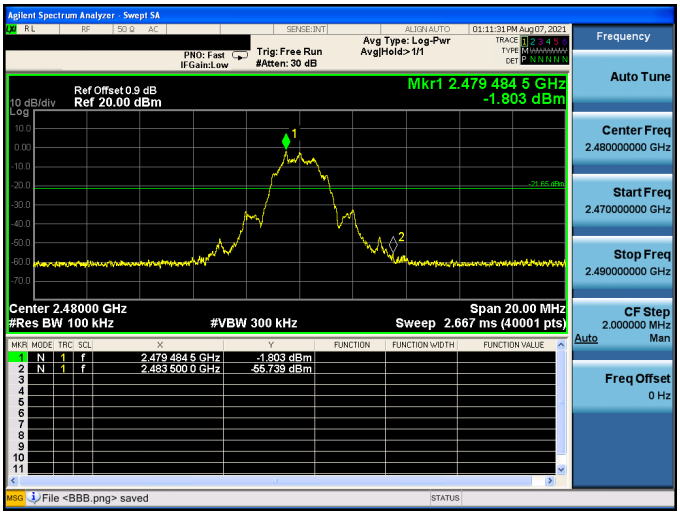
Mode 2: BR, GFSK Continuous TX Mode_Un-hopping	
低頻道	
高頻道	

Mode 2: BR, GFSK Continuous TX Mode_Hopping	
低頻道-高頻道	

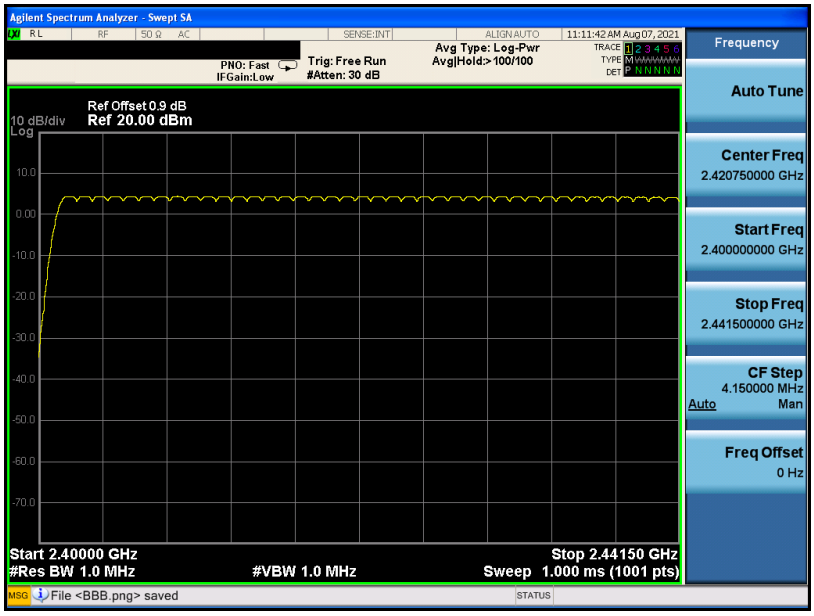
Mode 4: EDR, 8DPSK Continuous TX Mode_Un-hopping	
低頻道	
高頻道	

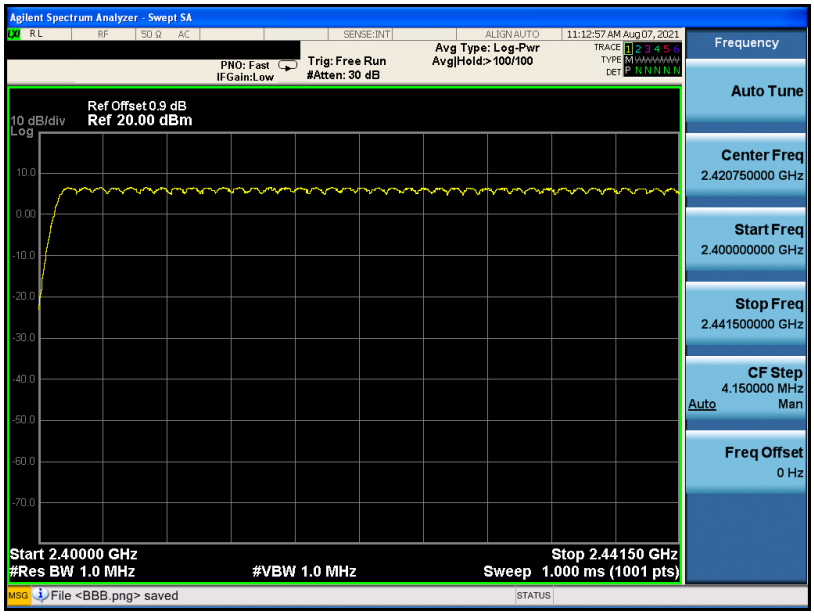
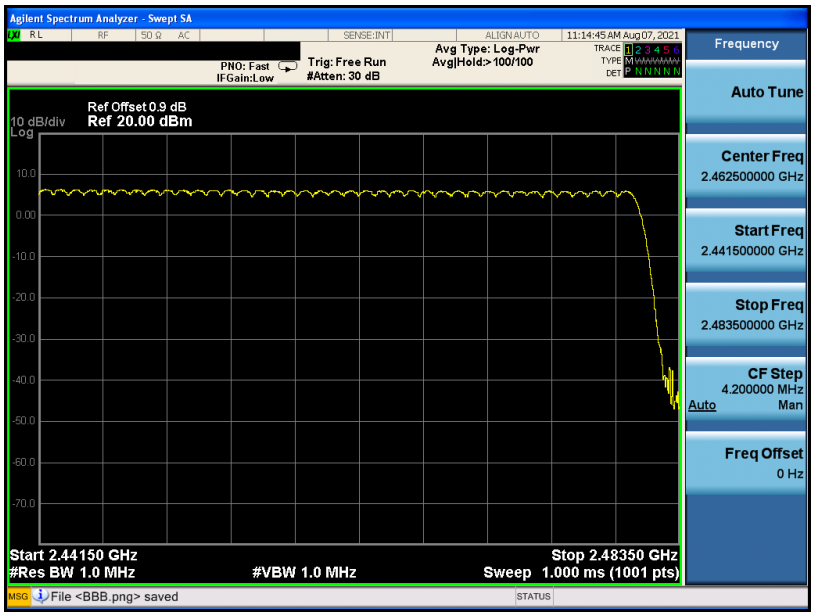
Mode 4: EDR, 8DPSK Continuous TX Mode_Hopping	
低頻道-高頻道	

Mode 5: LE, GFSK Continuous TX Mode	
低頻道	
高頻道	

Mode 6: 2LE, GFSK Continuous TX Mode	
低頻道	
高頻道	

頻率範圍及頻道數之要求

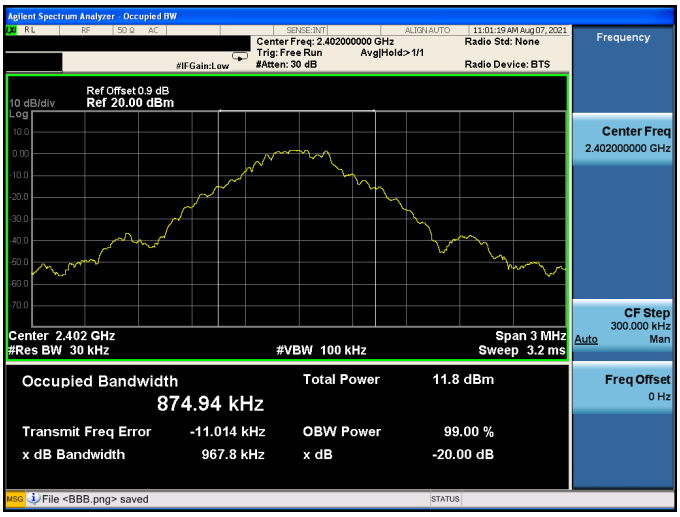
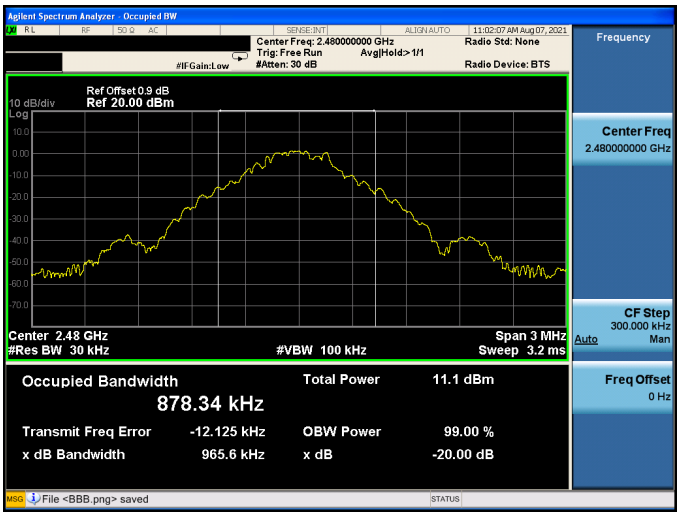
Mode 2: BR, GFSK Continuous TX Mode	
CH00 - CH39	
CH39- CH78	

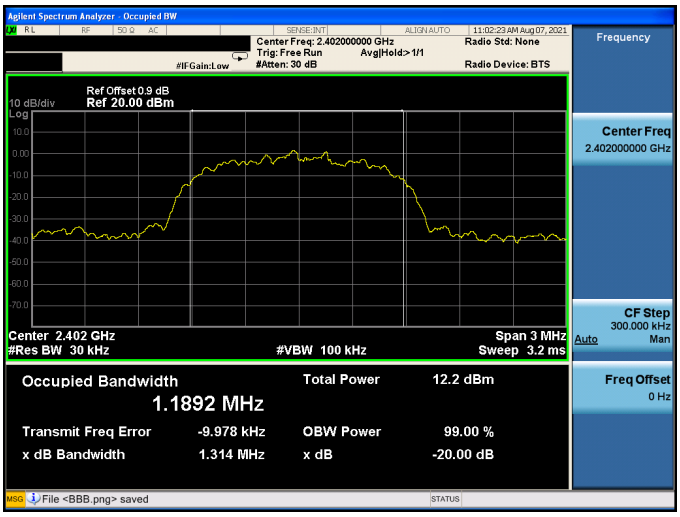
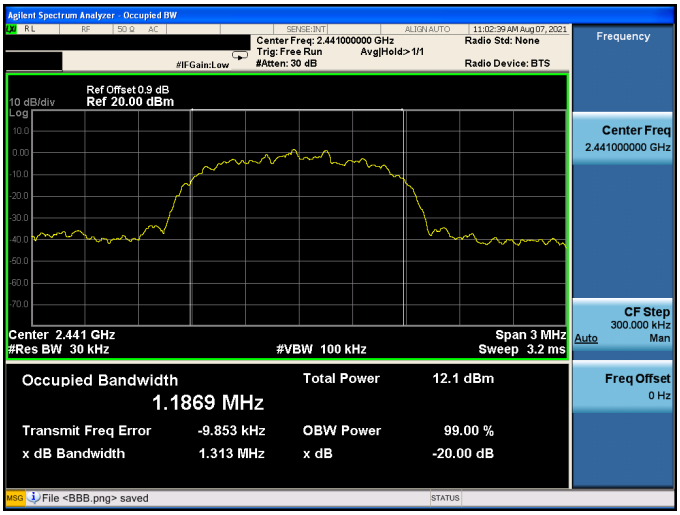
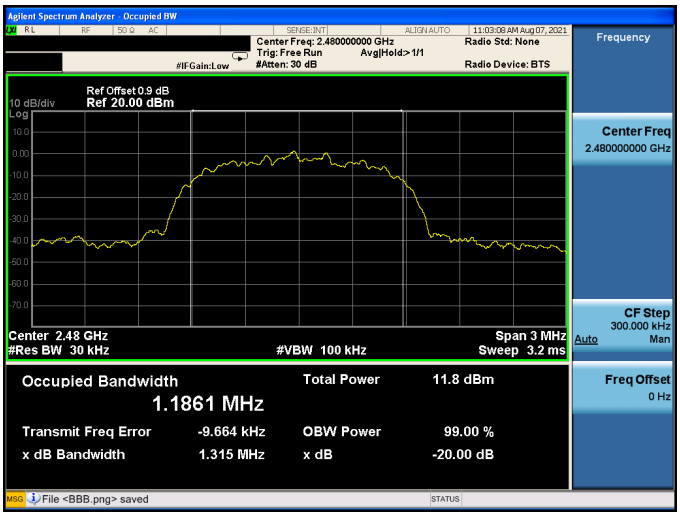
Mode 4: EDR, 8DPSK Continuous TX Mode	
CH00 - CH39	
CH39- CH78	

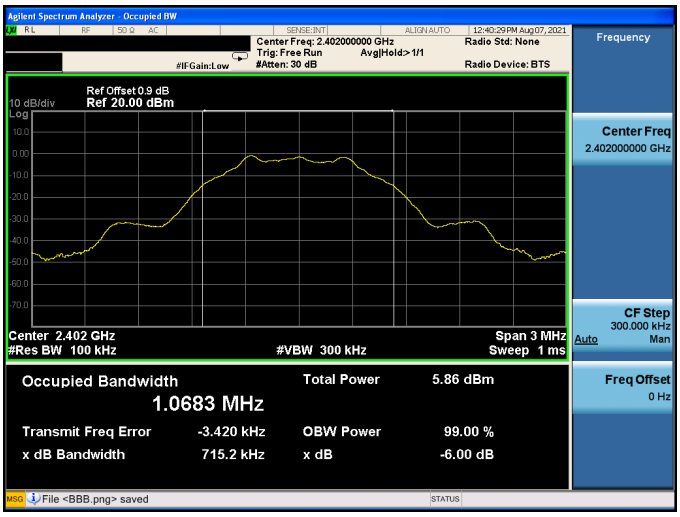
發射頻寬之要求

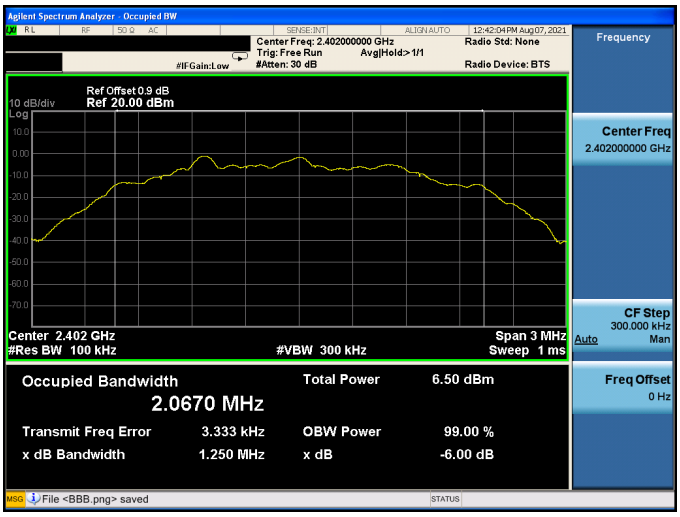
操作模式	:	Mode 2: BR, GFSK Continuous TX Mode Mode 4: EDR, 8DPSK Continuous TX Mode		
操作模式	頻道	發射頻寬(20 dB)		
		量測值 (MHz)	2/3 量測值 (MHz)	限制值 (MHz)
Mode 2	低頻道	0.968	0.645	-----
	中頻道	0.966	0.644	-----
	高頻道	0.966	0.644	-----
Mode 4	低頻道	1.314	0.876	-----
	中頻道	1.313	0.875	-----
	高頻道	1.315	0.877	-----
註: 發射頻寬(20 dB) 之 2/3 量測值 = 量測值 x 2 / 3				

操作模式	:	Mode 5: LE, GFSK Continuous TX Mode Mode 6: 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 5	低頻道	715.200	≥ 500
	中頻道	718.500	≥ 500
	高頻道	698.600	≥ 500
Mode 6	低頻道	1250.000	≥ 500
	中頻道	1258.000	≥ 500
	高頻道	1258.000	≥ 500

Mode 2: BR, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

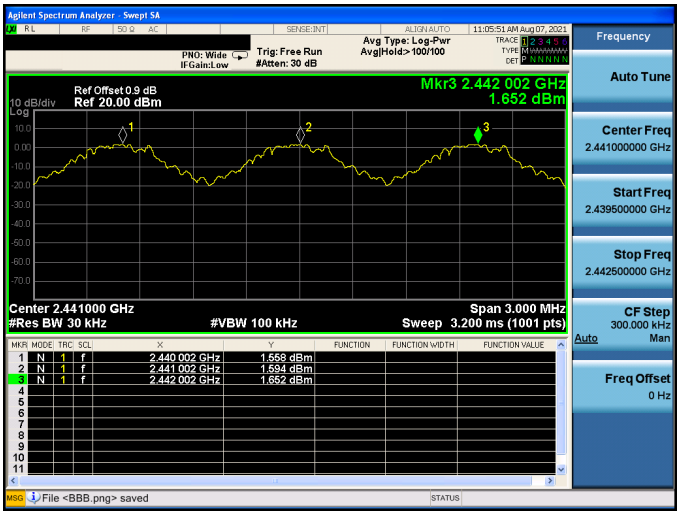
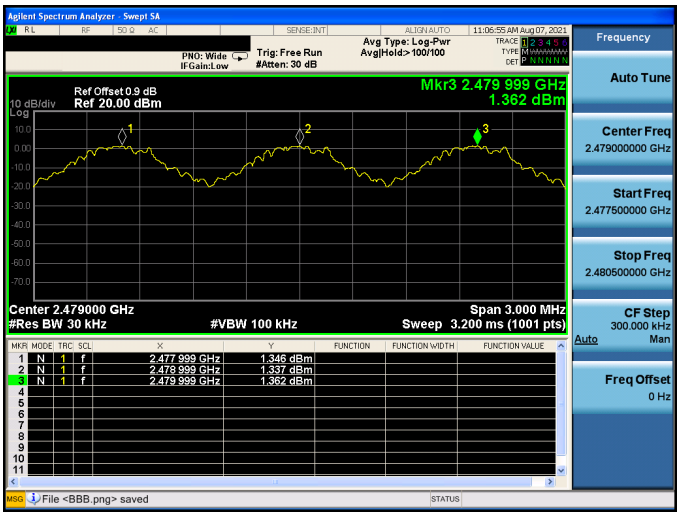
Mode 4: EDR,8DPSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

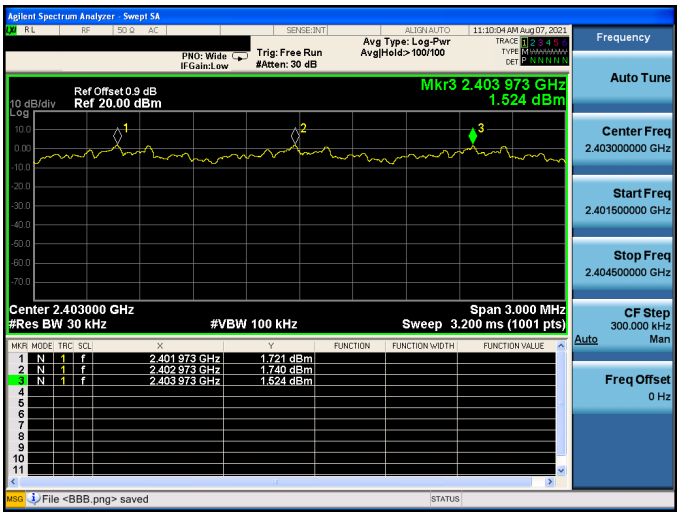
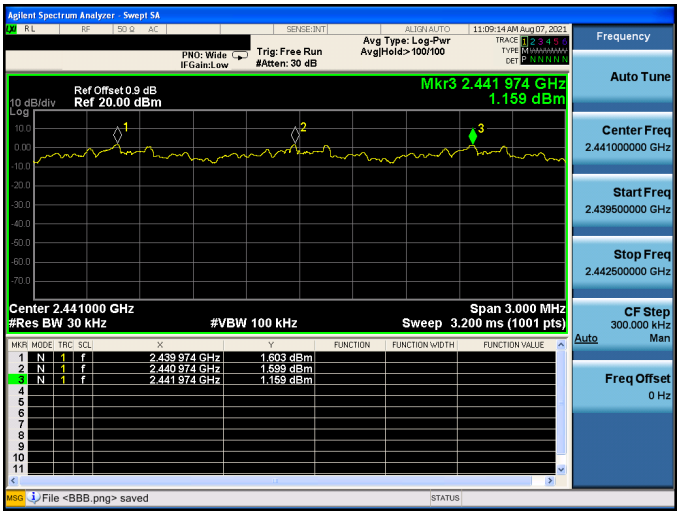
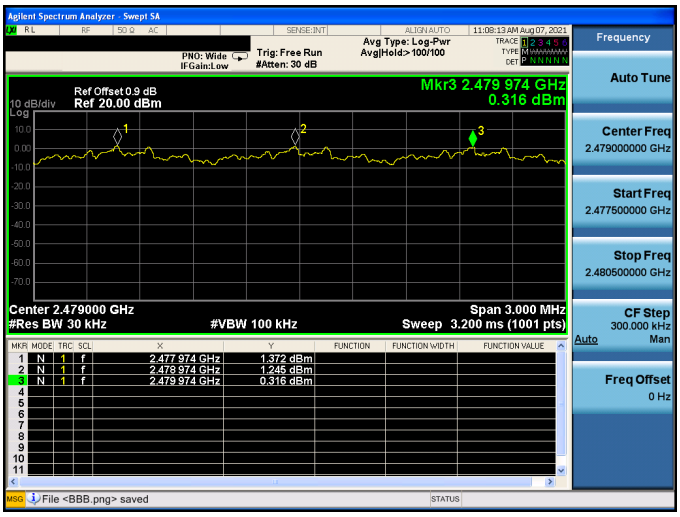
Mode 5: LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

Mode 6: 2LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

跳頻系統之載波頻率頻道間隔之量測

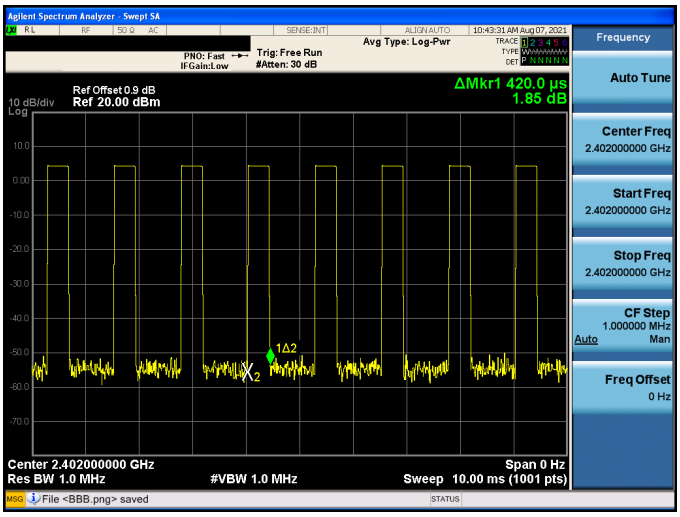
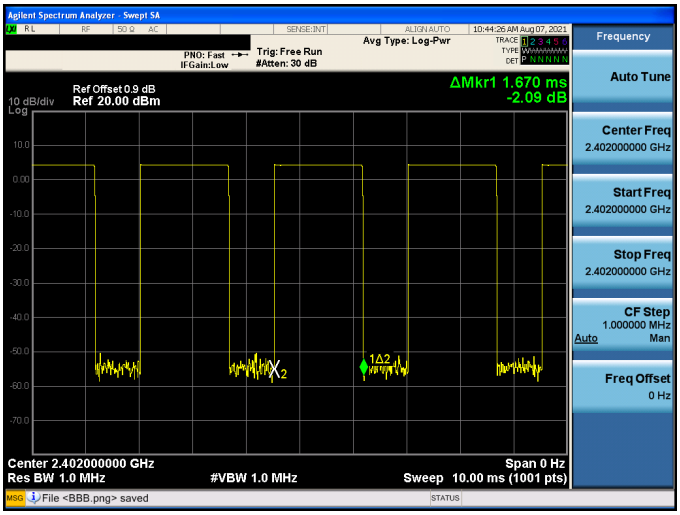
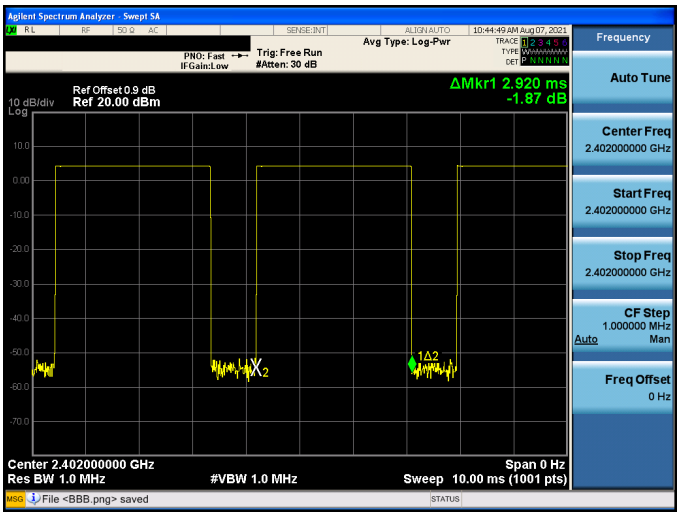
操作模式	:	Mode 2: BR, GFSK Continuous TX Mode Mode 4: EDR, 8DPSK Continuous TX Mode	
操作模式	頻道	相鄰頻道載波間隔	
		量測值 (MHz)	限制值 (MHz)
Mode 2	低頻道	1.000	≥ 0.645
	中頻道	1.000	≥ 0.644
	高頻道	1.000	≥ 0.644
Mode 4	低頻道	1.000	≥ 0.876
	中頻道	1.000	≥ 0.875
	高頻道	1.000	≥ 0.877

Mode 2: BR, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

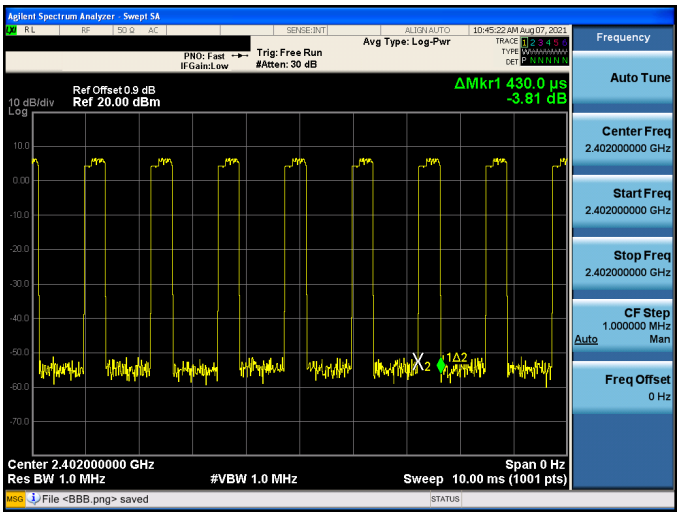
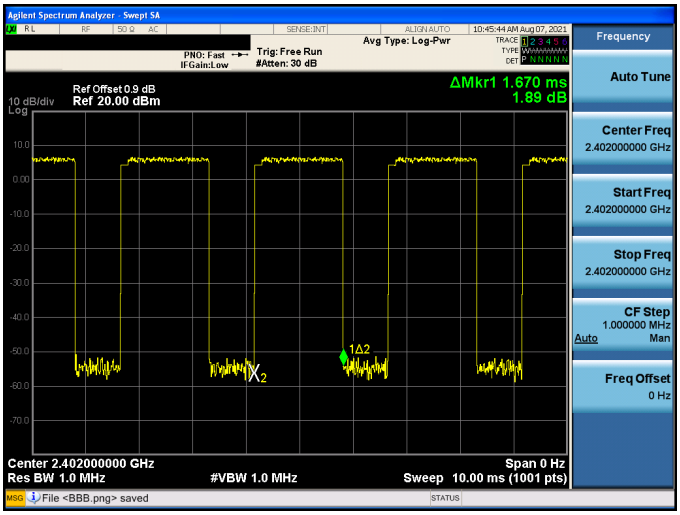
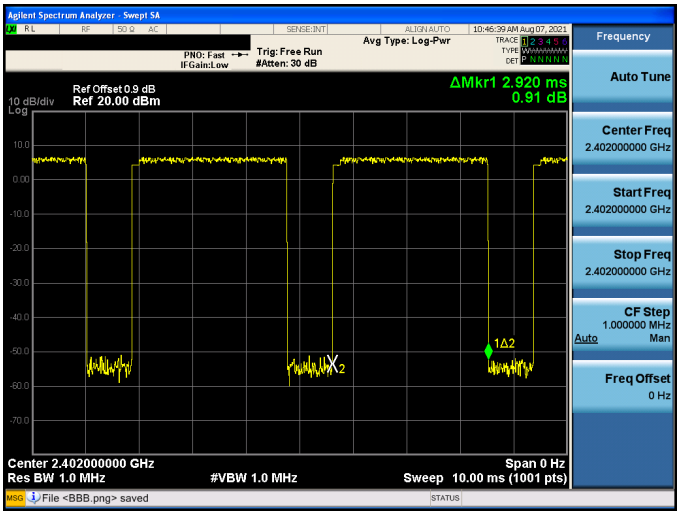
Mode 4: EDR, 8DPSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

跳頻系統之任一頻率佔用之平均時間之量測

Mode 2: BR, GFSK Continuous TX Mode	
DH1 模式	
需量測之週期(秒)	79CH * 0.4 = 31.6 (秒)
待測物每秒跳頻之總次數	1600(藍牙通訊協定標準)
頻道每秒佔用之次數	800/79CH = 10.13(次/秒)
頻道每次佔用之時間(1)	0.420 ms (秒)
週期內頻道佔用之總次數(2)	31.6 * 10.13 = 320.108(次)
週期內佔用的平均時間(1) * (2)	134.445 ms (秒)
LIMIT(msec)	< = 400
DH3 模式	
需量測之週期(秒)	79CH * 0.4 = 31.6 (秒)
待測物每秒跳頻之總次數	1600(藍牙通訊協定標準)
頻道每秒佔用之次數	400/79CH = 5.06(次/秒)
頻道每次佔用之時間(1)	1.670 ms (秒)
週期內頻道佔用之總次數(2)	31.6 * 5.06 = 159.896(次)
週期內佔用的平均時間(1) * (2)	267.026 ms (秒)
LIMIT(msec)	< = 400
DH5 模式	
需量測之週期(秒)	79CH * 0.4 = 31.6 (秒)
待測物每秒跳頻之總次數	1600(藍牙通訊協定標準)
頻道每秒佔用之次數	266.7/79CH = 3.38(次/秒)
頻道每次佔用之時間(1)	2.920 ms (秒)
週期內頻道佔用之總次數(2)	31.6 * 3.38 = 106.808(次)
週期內佔用的平均時間(1) * (2)	311.879 ms (秒)
LIMIT(msec)	< = 400

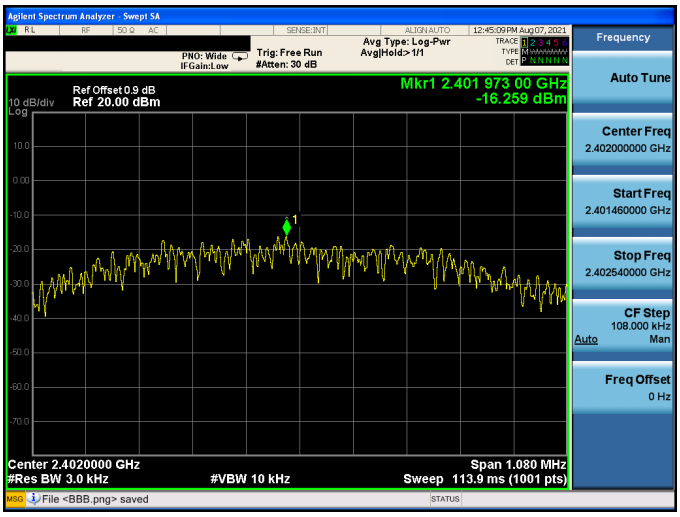
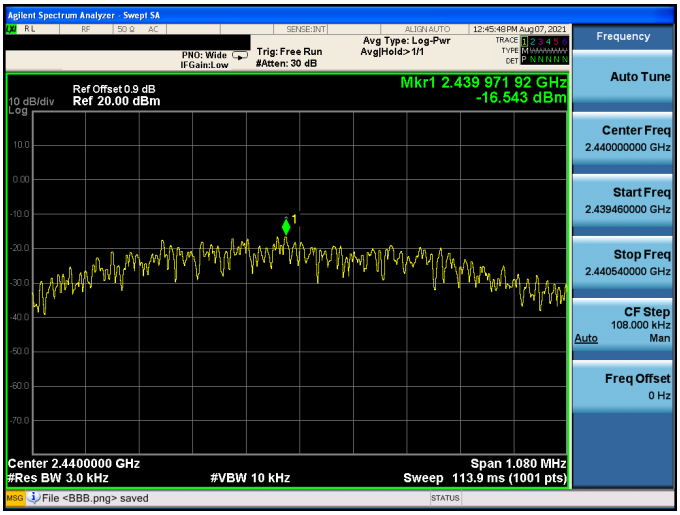
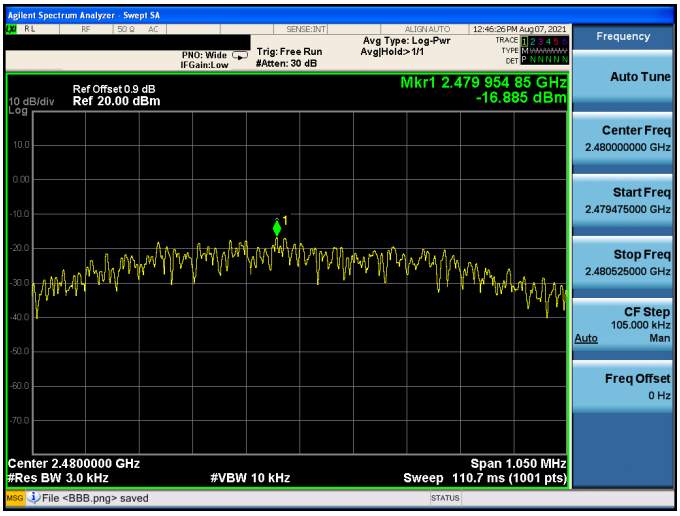
Mode 2: BR, GFSK Continuous TX Mode	
DH1	
DH3	
DH5	

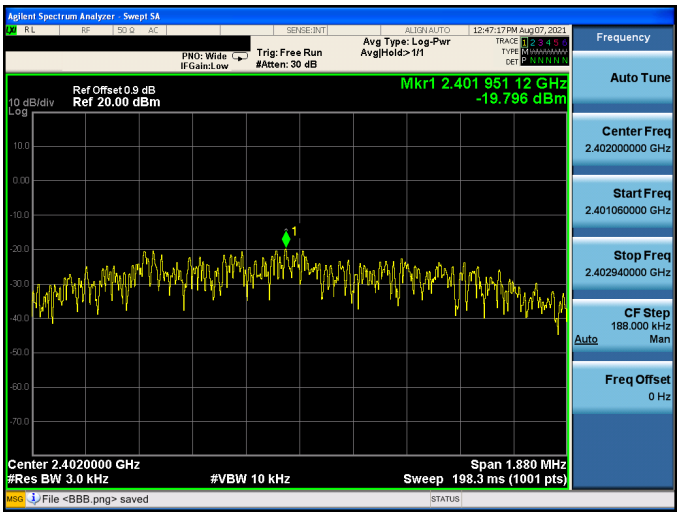
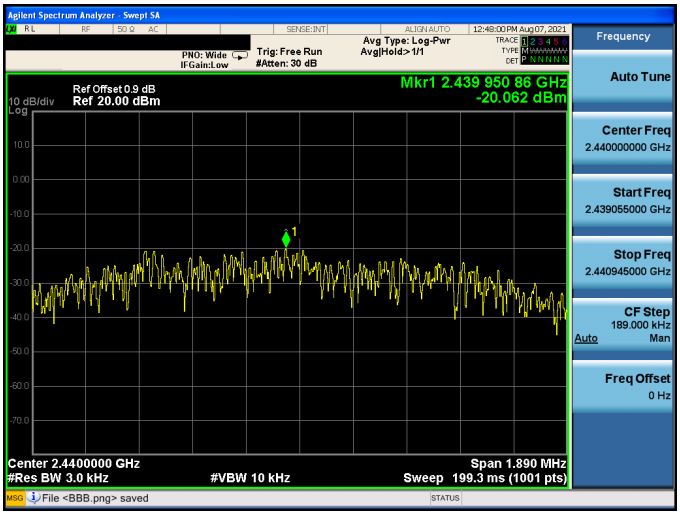
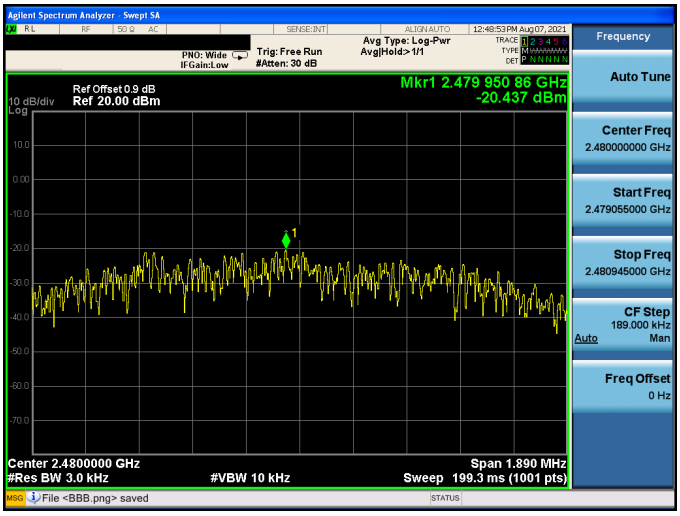
Mode 4: EDR, 8DPSK Continuous TX Mode	
3DH1 模式	
需量測之週期(秒)	79CH * 0.4 = 31.6 (秒)
待測物每秒跳頻之總次數	1600(藍牙通訊協定標準)
頻道每秒佔用之次數	800/79CH = 10.13(次/秒)
頻道每次佔用之時間(1)	0.430 ms (秒)
週期內頻道佔用之總次數(2)	31.6 * 10.13 = 320.108(次)
週期內佔用的平均時間(1) * (2)	137.646 ms (秒)
LIMIT(msec)	< = 400
3DH3 模式	
需量測之週期(秒)	79CH * 0.4 = 31.6 (秒)
待測物每秒跳頻之總次數	1600(藍牙通訊協定標準)
頻道每秒佔用之次數	400/79CH = 5.06(次/秒)
頻道每次佔用之時間(1)	1.670 ms (秒)
週期內頻道佔用之總次數(2)	31.6 * 5.06 = 159.896(次)
週期內佔用的平均時間(1) * (2)	267.026 ms (秒)
LIMIT(msec)	< = 400
3DH5 模式	
需量測之週期(秒)	79CH * 0.4 = 31.6 (秒)
待測物每秒跳頻之總次數	1600(藍牙通訊協定標準)
頻道每秒佔用之次數	266.7/79CH = 3.38(次/秒)
頻道每次佔用之時間(1)	2.920 ms (秒)
週期內頻道佔用之總次數(2)	31.6 * 3.38 = 106.808(次)
週期內佔用的平均時間(1) * (2)	311.879 ms (秒)
LIMIT(msec)	< = 400

Mode 4: EDR, 8DPSK Continuous TX Mode	
3DH1	
3DH3	
3DH5	

功率密度之要求

操作模式	:	Mode 5: LE, GFSK Continuous TX Mode Mode 6: 2LE, GFSK Continuous TX Mode	
操作模式	頻道	量測值 (dBm/3 kHz)	限制值 (dBm/3 kHz)
Mode 5	低頻道	-16.259	≤ 8
	中頻道	-16.543	≤ 8
	高頻道	-16.885	≤ 8
Mode 6	低頻道	-19.796	≤ 8
	中頻道	-20.062	≤ 8
	高頻道	-20.437	≤ 8

Mode 5: LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

Mode 6: 2LE, GFSK Continuous TX Mode	
低頻道	
中頻道	
高頻道	

---END---