



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 2103DR53

版本(Rev.) 01

產品名稱 金融交易終端機 EFTPOS

申請廠商 虹堡科技股份有限公司

廠牌 CASTLES 

型式 (號) SATURN1000

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 06 月 08 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 04 月 20 日	初版發行	趙翊如
01	110 年 06 月 08 日	更新封面(P.1) 更新證明書(P.3) 更新 1.1 章節(P.5~P.6) 更新 2.1 章節(P.7) 更新 2.3 章節(P.9)	趙翊如

低功率射頻器材測試證明書

產品名稱：金融交易終端機EFTPOS

廠牌：CASTLES 

型號：SATURN1000

申請廠商：虹堡科技股份有限公司

申請者地址：新北市新店區北新路3段207-5號6樓

製造廠商：虹堡科技股份有限公司

製造商地址：新北市新店區北新路3段207-5號6樓

待測物電壓：DC 5 V, 2 A & 9 V, 3.3 A

試驗電壓：110 Vac, 60 Hz

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：109 年 10 月 21 日

試驗日期：109 年 12 月 10 日 ~ 110 年 06 月 05 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	金融交易終端機EFTPOS		
廠 牌	CASTLES		
型 號	SATURN1000		
額 定 電 源	DC 5 V, 2 A & 9 V, 3.3 A		
I M E I N o .	IMEI1: 863130040171440 IMEI2: 863130040171457		
調 變 方 式	GFSK, π/4-DQPSK, 8DPSK		
頻 率 使 用 範 圍	2402 MHz – 2480 MHz		
天 線 廠 牌	ARISTOTLE		
天 線 型 號	RFA-25-JP169-70B-105		
天 線 型 態	Dipole antenna		
天 線 增 益 值	0.74 dBi		
RF 最大輸出功率	BR, GFSK:	8.43 dBm/	0.00697 W
	EDR, π/4-DQPSK:	8.50 dBm/	0.00708 W
	EDR, 8DPSK:	8.66 dBm/	0.00735 W
	LE, GFSK:	-1.17 dBm/	0.00076 W

輸出/輸入埠說明：

輸 出 / 入 埠		數量	介面內容說明
1	Smart Card Port	1	連接至 Smart Card
2	SAM Port	2	連接至 SAM Card
3	SIM Port	2	連接至 SIM Card
4	Micro SD Card Port	1	連接至 Micro SD Card
5	Audio Port	1	連接至耳機麥克風
6	USB Type-C Port	1	連接至 Notebook/電源供應器
7	DC Power Port	1	連接至電源供應器
8	磁卡 Port	1	連接至磁卡(此 Port 動作為刷取磁卡)
9	充電 Port	1	連接至座充(座充尚待開發中)

附屬裝置表:

裝置名稱	廠牌	型號	備註
電池	CASTLES	SATURN1000	DC 3.65 V, 5840 mAh
內建固定式電池	MITSUBISHI	CR2032	DC 3 V, 225 mAh
交換式電源供應器(1)	LUCENT TRANS	1A52-SR52A	INPUT : 100-240 VAC, 50-60 Hz, 0.3 A OUTPUT : 5.0 VDC, 2.0 A Cable out : Non-Shielded, 1.5 m
交換式電源供應器(2)	CASTLES	PW04-945A	INPUT : 100-240 VAC, 50/60 Hz, 1 A OUTPUT : 9.0 VDC, 4.5 A Cable out : Non-Shielded, 1.5 m *選配
電源線	PHINO	PHP-301+PHS-301 (7A C13)	Non-Shielded, 1.7 m *選配，與交換式電源供應器(2)搭配出貨。

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: Jan. 12, 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	Anritsu	MA2411B	1126022	09/01/2020	1 year
Power Meter	Anritsu	ML2495A	1135009	09/01/2020	1 year
Spectrum Analyzer (20 Hz~26.5 GHz)	Agilent	N9020A	US47520902	09/24/2020	1 year
Bluetooth Tester	R&S	CBT	100350	03/27/2019	2 years

For Conducted Emission

Test Period: Dec. 11, 2020 ~ Jun. 05, 2021

測試者: 呂迪曄, 林佳禾, 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	05/25/2020	1 year
線性阻抗模擬網路	R&S	ENV216	101040	03/23/2020 03/29/2021	1 year
線性阻抗模擬網路	R&S	ENV216	101041	04/06/2020 04/08/2021	1 year

For Radiated Emissions

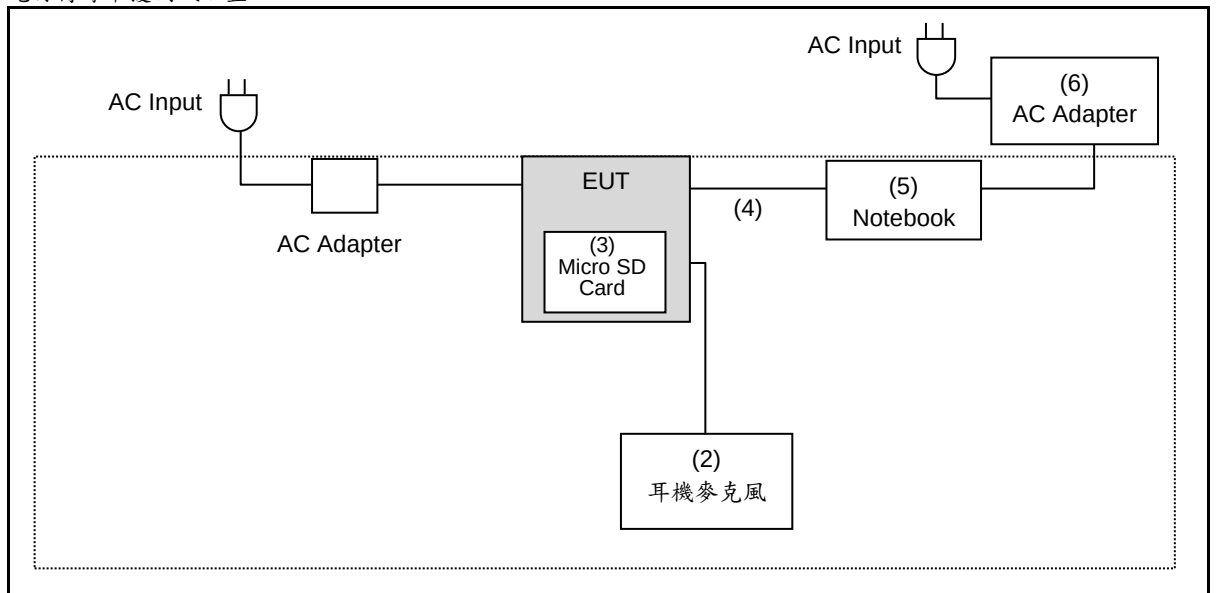
Test Period: Dec. 10, 2020 ~ Mar. 23, 2021

測試者: 劉彥聖, 李亭衛, 周瑞鴻, 葉佳原

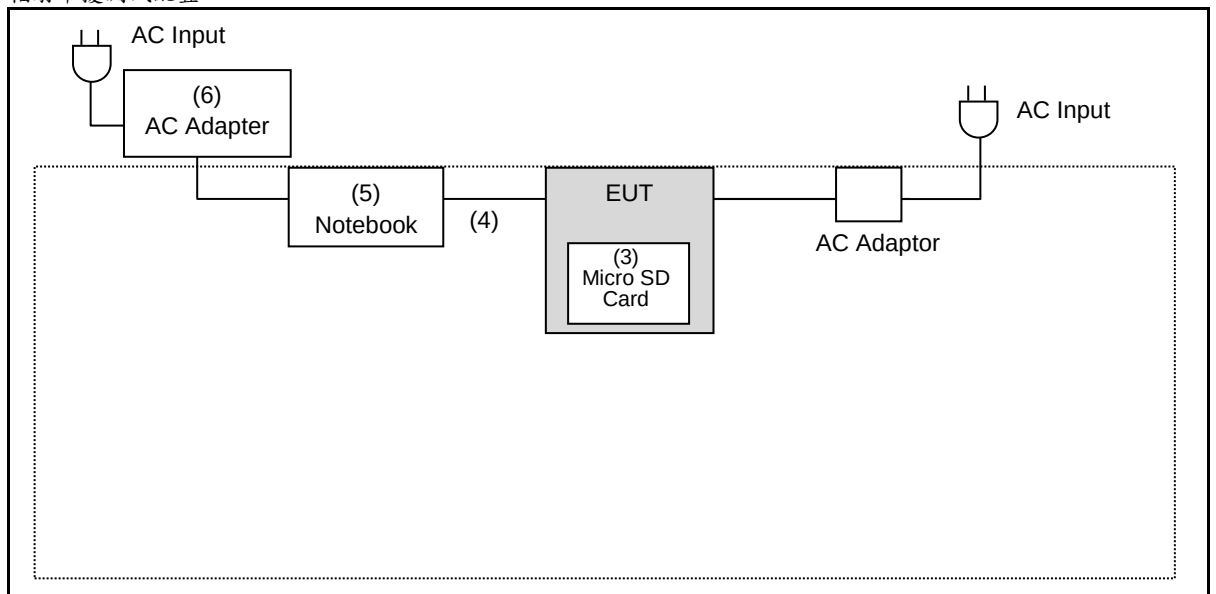
名 稱	廠 牌	型 號	序 號	本次校驗日期	校驗年限
Spectrum Analyzer	KEYSIGHT	N9030B	MY57143537	04/14/2020	1 year
Amplifier	Titan	T0910E0001433 0A1F	001	07/23/2020	1 year
Amplifier	Titan	T0912E0126302 5A1F	002	07/23/2020	1 year
Amplifier	Agilent	8447D	2944A11119	01/15/2020 01/15/2021	1 year
天線	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	01146	07/03/2020	1 year
天線(1~18 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	02207	06/30/2020	1 year
天線(18~40 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	08/18/2020	1 year
藍芽模擬基地台	R & S	CBT	100350	03/27/2019	2 years

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-100400U00	---	---	INPUT : 100-240 VAC, 50/60 Hz, 1.2 A OUTPUT : 5 VDC, 2 A or 9 VDC, 2 A or 10 VDC, 4 A (實驗室提供)
(2)	耳機麥克風	HUAWEI	22040296	---	---	(實驗室提供)
(3)	Micro SD card	Transcend	9153BA 8G 07DS1	---	---	容量 : 8 GB (實驗室提供)
(4)	USB Cable	HUAWEI	04071121	---	---	規格 : STD-A → Type-C 長度 : 1 m (實驗室提供)
(5)	Notebook	ASUS	P1448U	K7NXC10 P87329A	---	(實驗室提供)
(6)	AC Adapter	ASUS	EXA1203YH	---	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)

測試組合：

EUT Configure Mode	CE	RE<1 GHz	RE≥1 GHz	備註	
電池	V	V	V		
內建固定式電池	V	V	V		
交換式電源供應器(1)	V	V	V		
交換式電源供應器(2)			---		
電源線			---		
AC Adapter			---	測試週邊(1)	
耳機麥克風	V		---	測試週邊(2)	
Micro SD card	V	V	V	測試週邊(3)	
USB Cable	V	V	V	測試週邊(4)	
Notebook	V	V	V	測試週邊(5)	Test Mode使用
AC Adapter	V	V	V	測試週邊(6)	Test Mode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: Transmit Mode
Mode 2: BR,GFSK Continuous TX Mode
Mode 3: EDR, $\pi/4$ -DQPSK Continuous TX Mode
Mode 4: EDR, 8DPSK Continuous TX Mode
Mode 5: LE, GFSK Continuous TX Mode
Mode 6: Receiver Mode

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

Test Mode	Frequency (MHz)	Packet Type	RF Power setting in Test Software	Test Software Version
Mode 2	2402	DH1	Default	Qualcomm Version 3.0.244.0
		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	Qualcomm Version 3.0.244.0
	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 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 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。

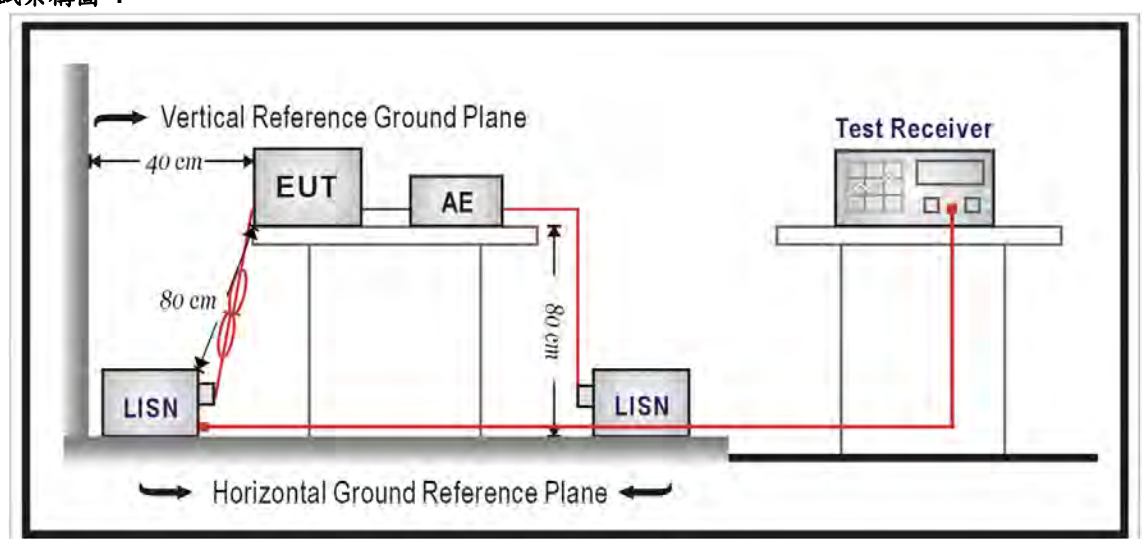
干擾值之計算

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：



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。

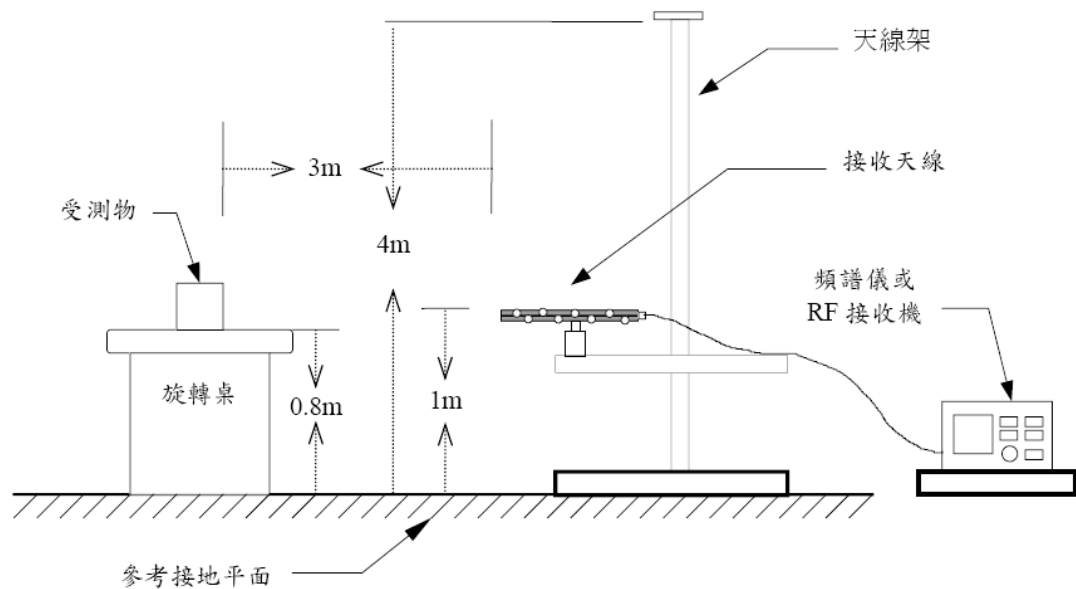
場強度之計算

場強之計算公式為：結果值 = 讀值 + 校正因子

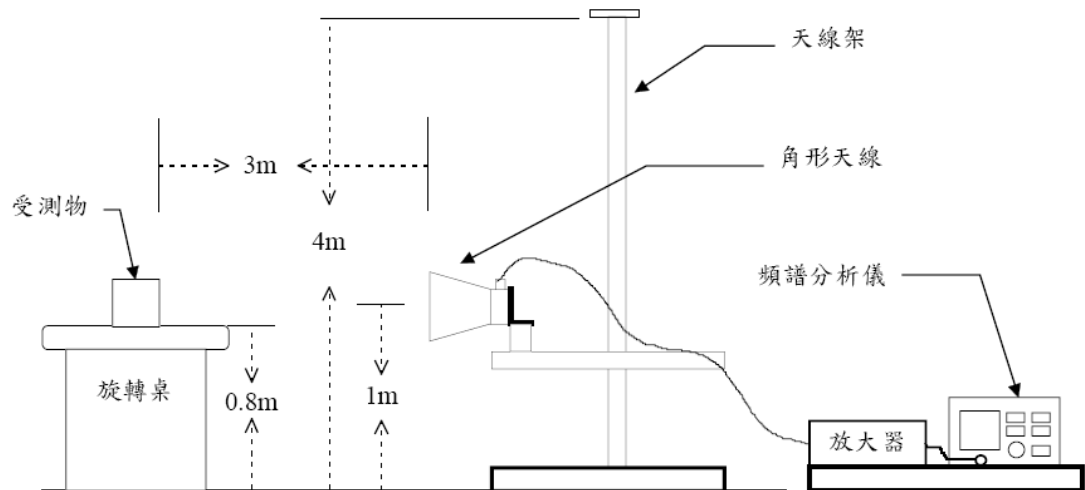
其中校正因子為：天線因子 + 饋線損失 + 濾波器損失（若有使用） - 放大器增益（若有使用）

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：

BR/EDR

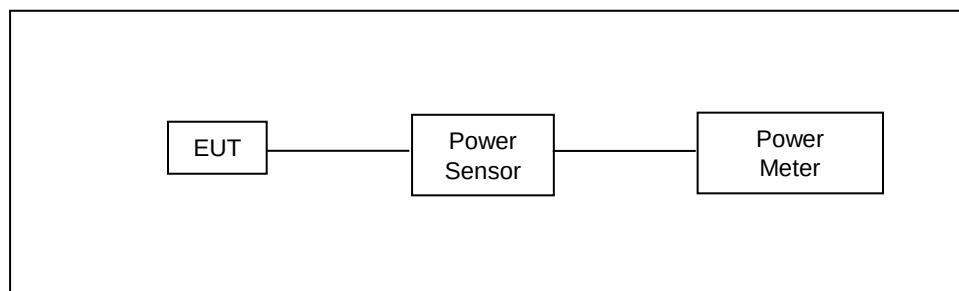
依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.2(1)(B)節之要求，所有操作於 2400-2483.5 兆赫且輸出功率應小於或等於 0.125 W。

LE

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：

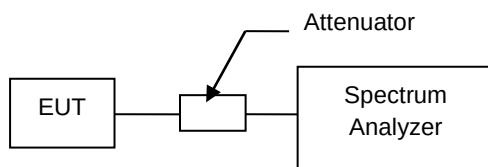


4.4 非必要頻帶之量測

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。

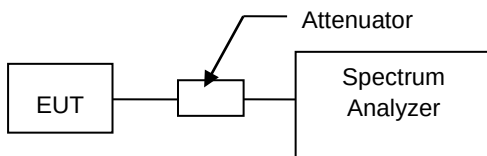
附註 2: 測試結果頻帶外之輻射雜訊皆小於主頻 TX 20 dB。

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:

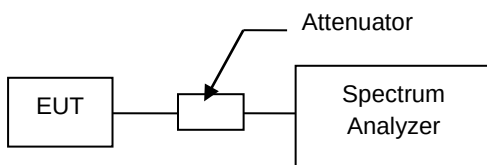
BR/EDR

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

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：

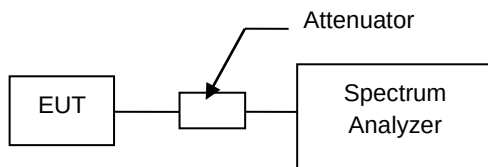


4.7 頻道數之要求

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：

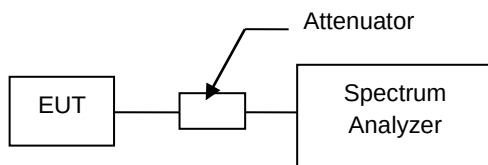


4.8 跳頻系統之載波頻率頻道間隔之量測

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：

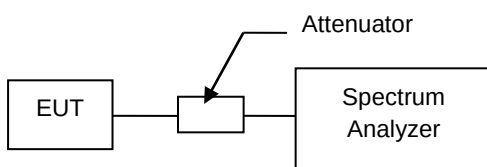


4.9 跳頻系統之任一頻率佔用之平均時間之量測

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：

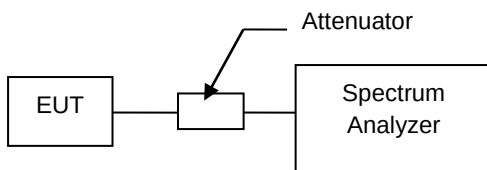


4.10 功率密度之要求

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。

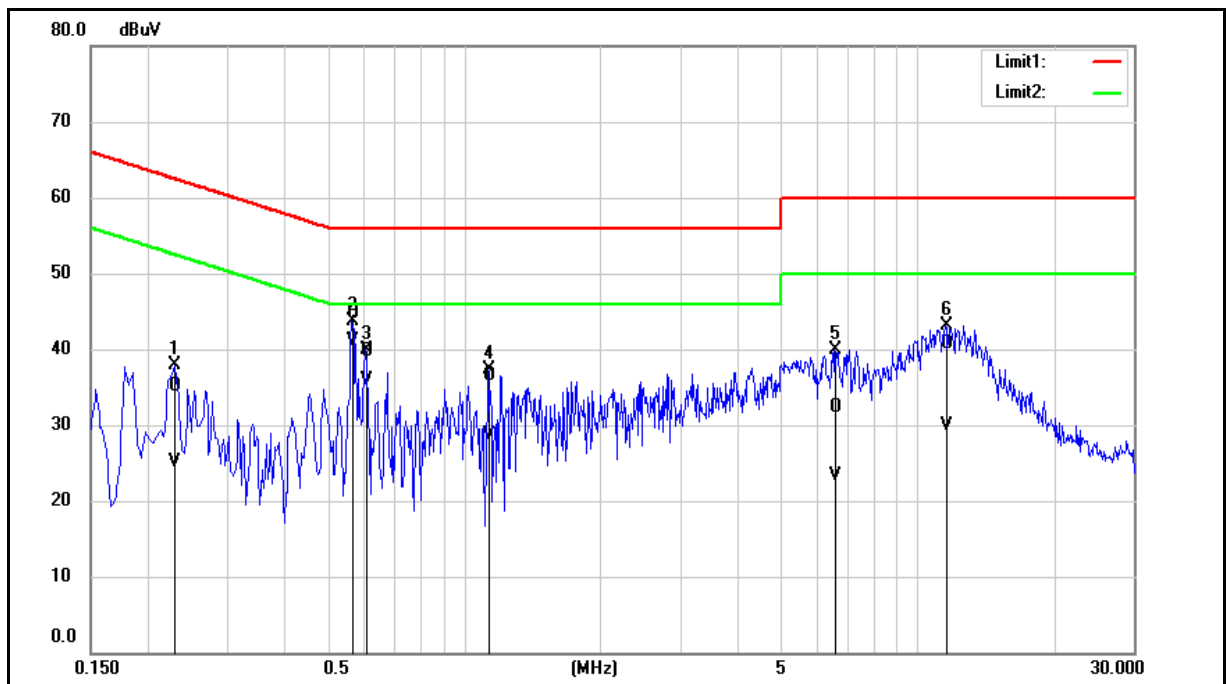
依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.4 節之要求，天線之規格不受第 3.2 節規定之限制

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:			

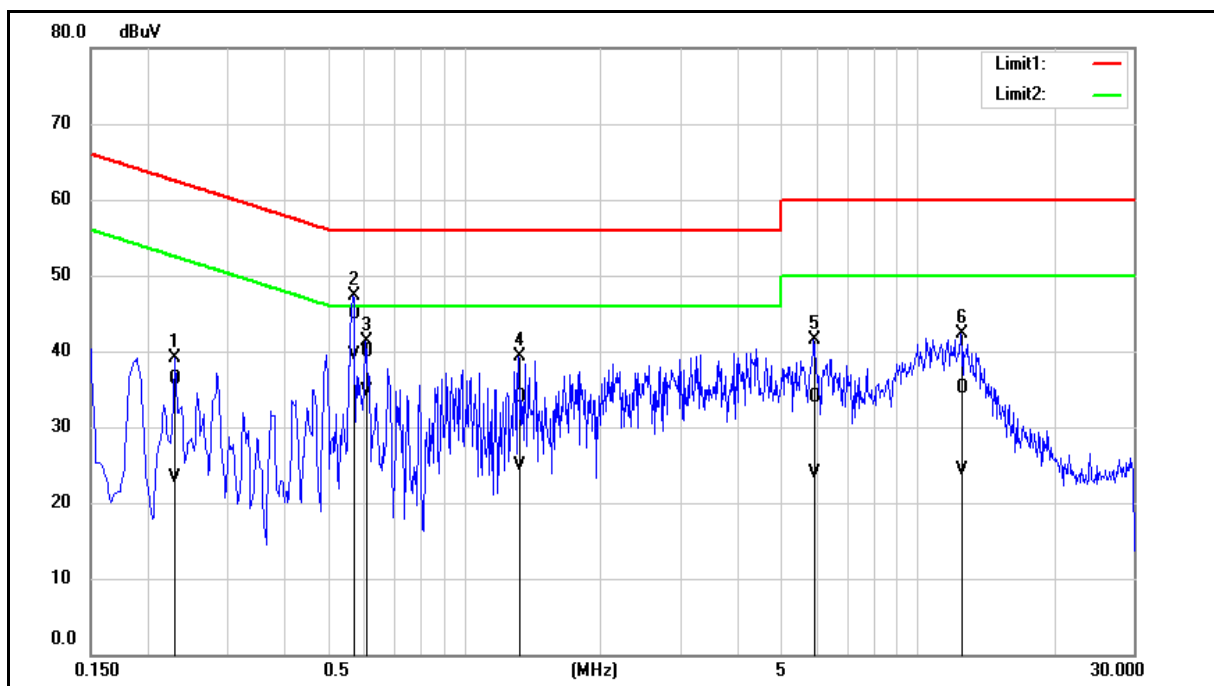


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2300	25.35	15.34	9.70	35.05	25.04	62.45	52.45	-27.40	-27.41	Pass
2	0.5660	35.03	31.30	9.71	44.74	41.01	56.00	46.00	-11.26	-4.99	Pass
3	0.6060	29.97	26.17	9.71	39.68	35.88	56.00	46.00	-16.32	-10.12	Pass
4	1.1340	26.76	18.98	9.72	36.48	28.70	56.00	46.00	-19.52	-17.30	Pass
5	6.5700	22.37	13.56	9.84	32.21	23.40	60.00	50.00	-27.79	-26.60	Pass
6	11.5180	30.83	20.07	9.91	40.74	29.98	60.00	50.00	-19.26	-20.02	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	0.2300	26.61	13.59	9.69	36.30	23.28	62.45	52.45	-26.15	-29.17	Pass
2	0.5700	35.28	29.76	9.70	44.98	39.46	56.00	46.00	-11.02	-6.54	Pass
3	0.6060	30.25	24.99	9.70	39.95	34.69	56.00	46.00	-16.05	-11.31	Pass
4	1.3220	24.20	15.22	9.71	33.91	24.93	56.00	46.00	-22.09	-21.07	Pass
5	5.9100	24.12	14.16	9.83	33.95	23.99	60.00	50.00	-26.05	-26.01	Pass
6	12.4540	25.09	14.36	9.93	35.02	24.29	60.00	50.00	-24.98	-25.71	Pass

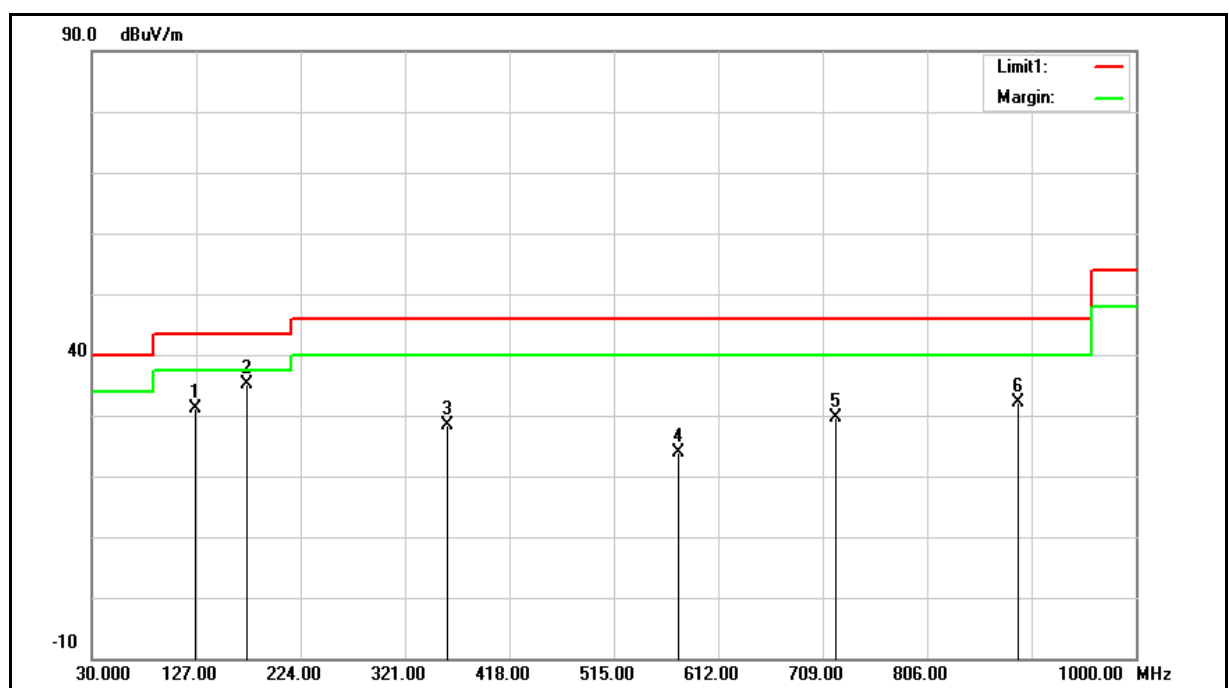
註：1. 干擾值(dBuV) = 校正係數(dB) + 讀值(dBuV)。

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	126.0300	56.99	-25.90	31.09	43.50	-12.41	QP
2	174.5300	60.23	-25.17	35.06	43.50	-8.44	QP
3	359.8000	50.61	-22.23	28.38	46.00	-17.62	QP
4	575.1400	41.72	-17.75	23.97	46.00	-22.03	QP
5	721.6100	45.36	-15.68	29.68	46.00	-16.32	QP
6	890.3900	45.30	-13.29	32.01	46.00	-13.99	QP

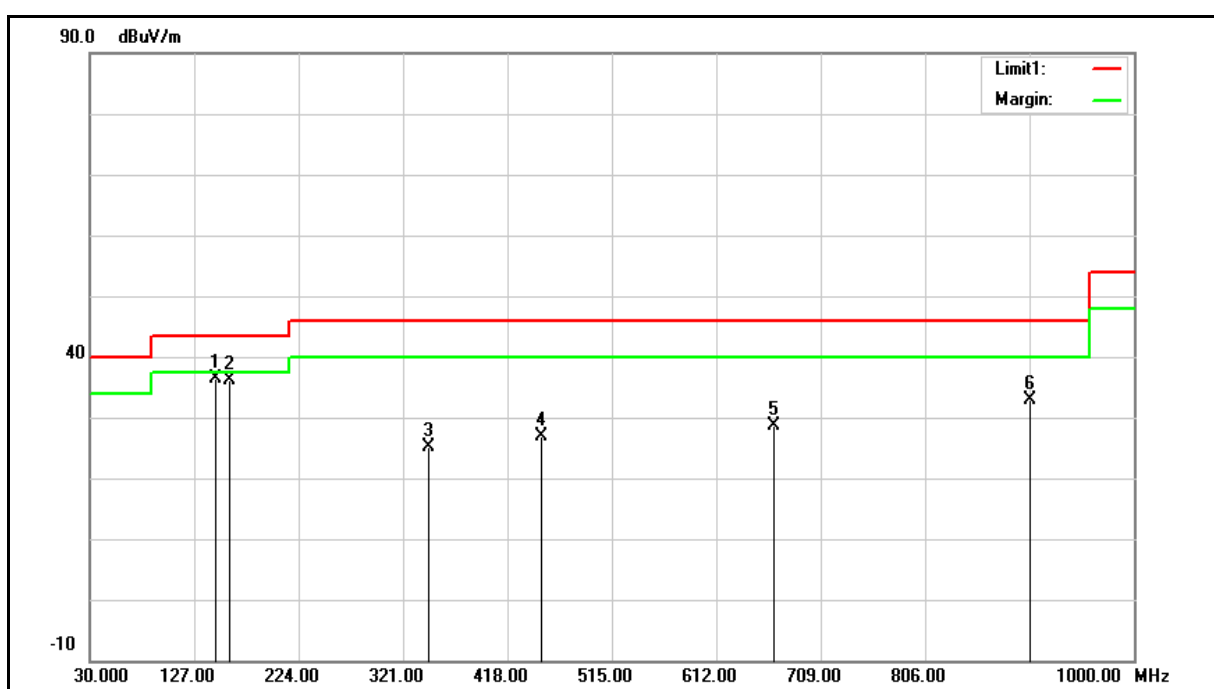
Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

Example: $31.09 = 25.90 + 56.99$

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	60.74	-24.47	36.27	43.50	-7.23	QP
2	159.9800	60.34	-24.33	36.01	43.50	-7.49	QP
3	345.2500	47.76	-22.57	25.19	46.00	-20.81	QP
4	449.0400	47.06	-20.20	26.86	46.00	-19.14	QP
5	665.3500	45.04	-16.46	28.58	46.00	-17.42	QP
6	903.9700	45.91	-13.07	32.84	46.00	-13.16	QP

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

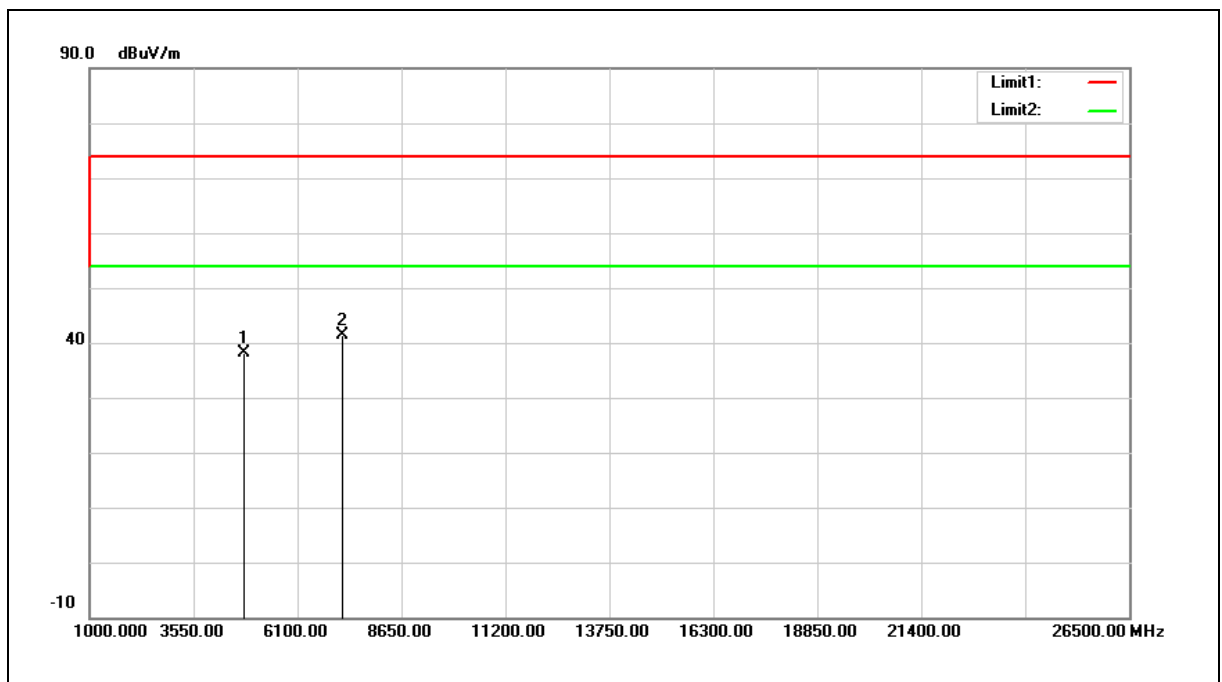
Example: $36.27 = -24.47 + 60.74$

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	39.35	-1.30	38.05	74.00	-35.95	peak
2	7206.000	35.73	5.74	41.47	74.00	-32.53	peak

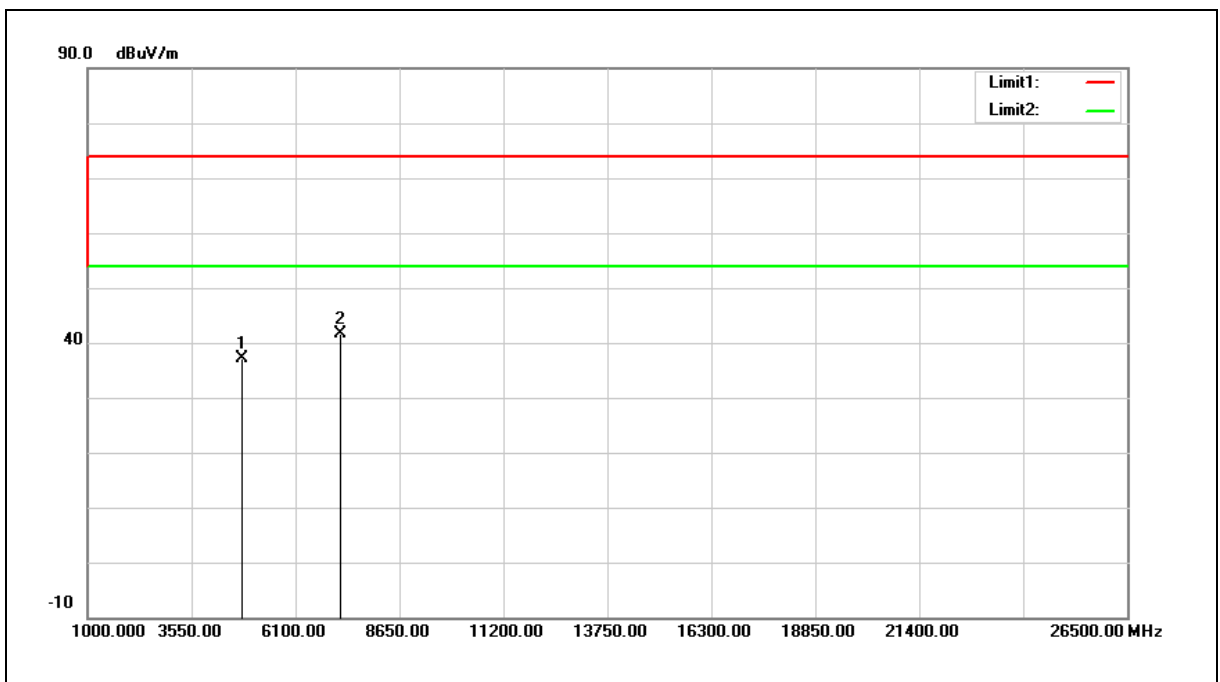
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $38.05 = -1.30 + 39.35$

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	38.43	-1.30	37.13	74.00	-36.87	peak
2	7206.000	35.95	5.74	41.69	74.00	-32.31	peak

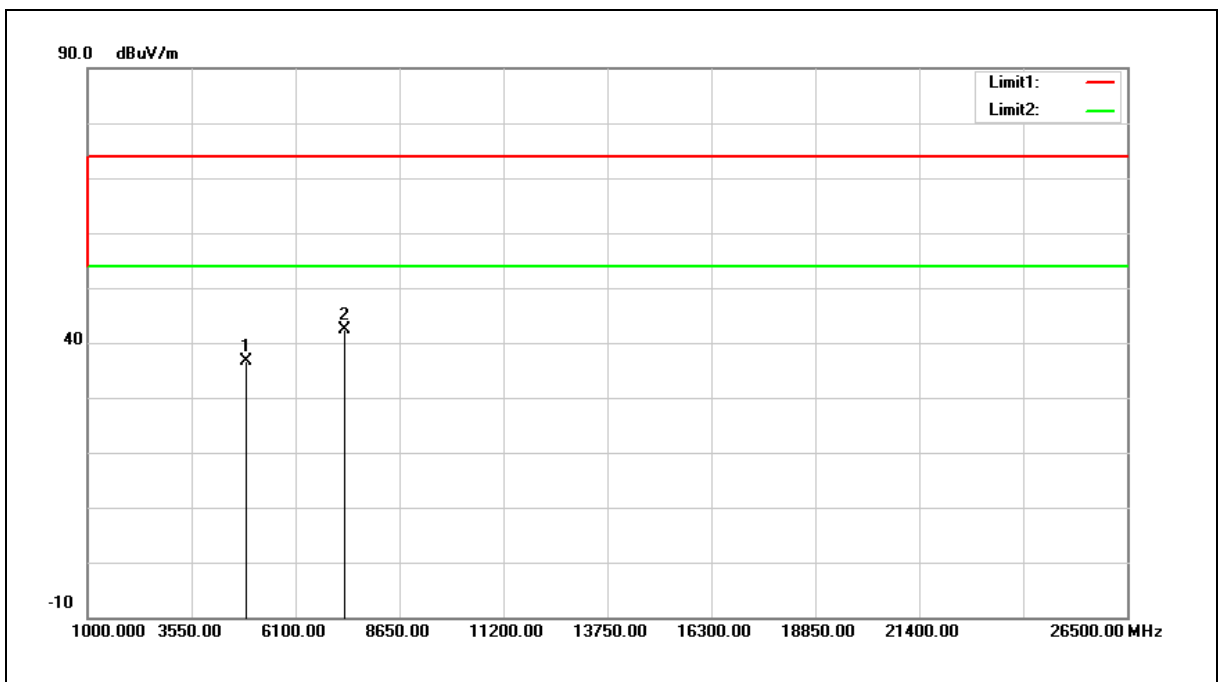
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $37.13 = -1.30 + 38.43$

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		



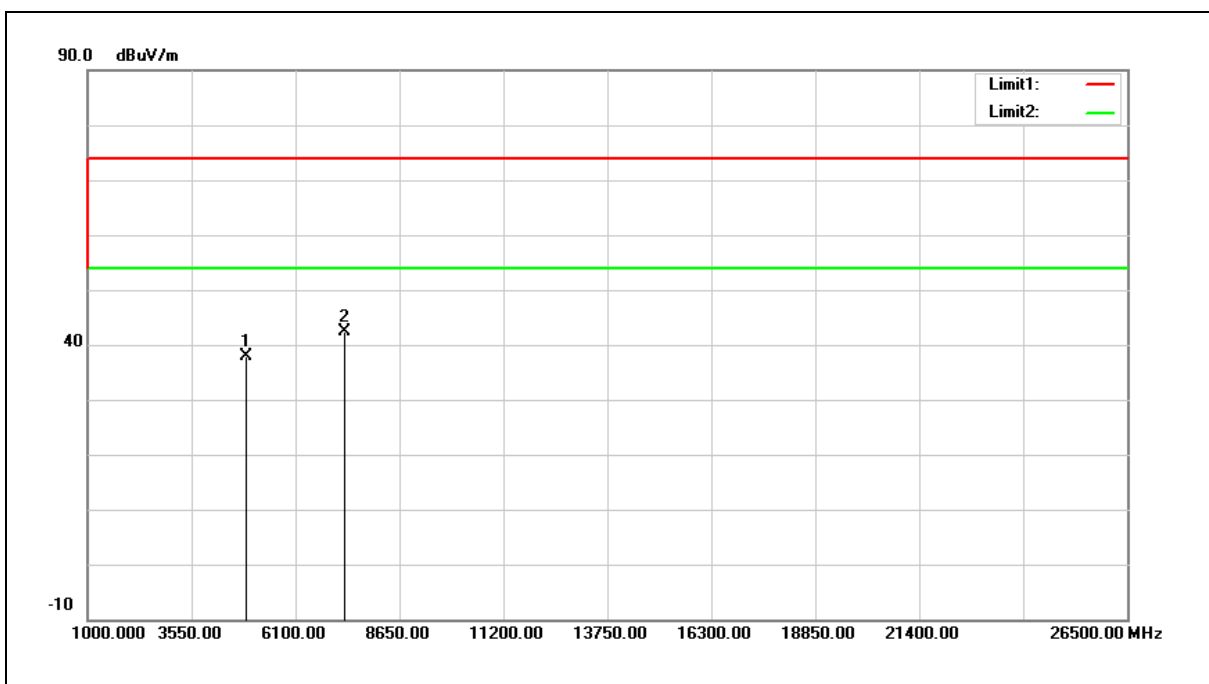
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	37.81	-1.10	36.71	74.00	-37.29	peak
2	7323.000	36.13	6.15	42.28	74.00	-31.72	peak

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		



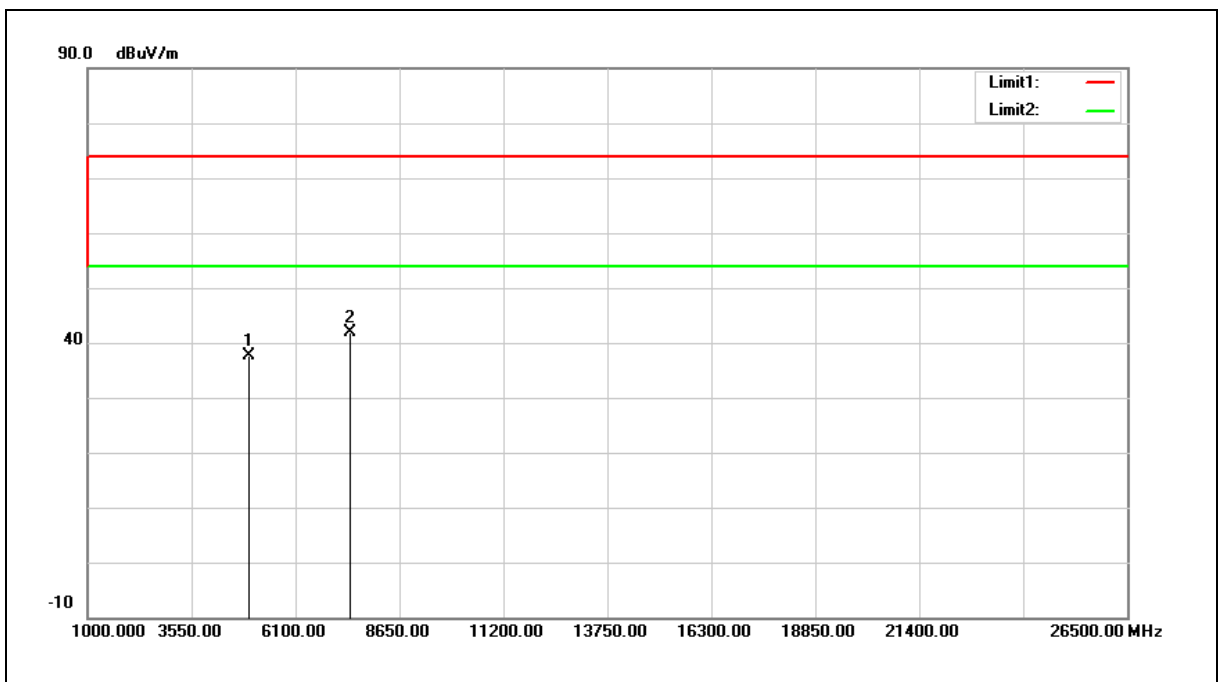
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	38.87	-1.10	37.77	74.00	-36.23	peak
2	7323.000	36.33	6.15	42.48	74.00	-31.52	peak

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



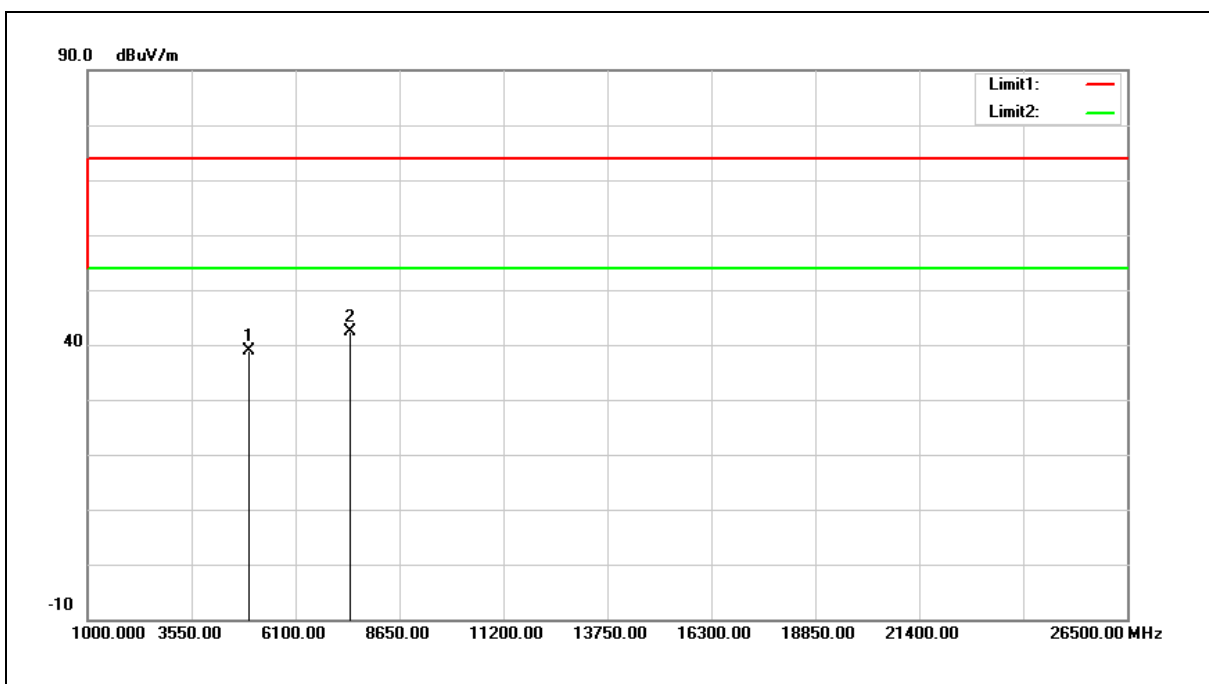
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.58	-0.88	37.70	74.00	-36.30	peak
2	7440.000	35.29	6.56	41.85	74.00	-32.15	peak

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.:	Vertical		



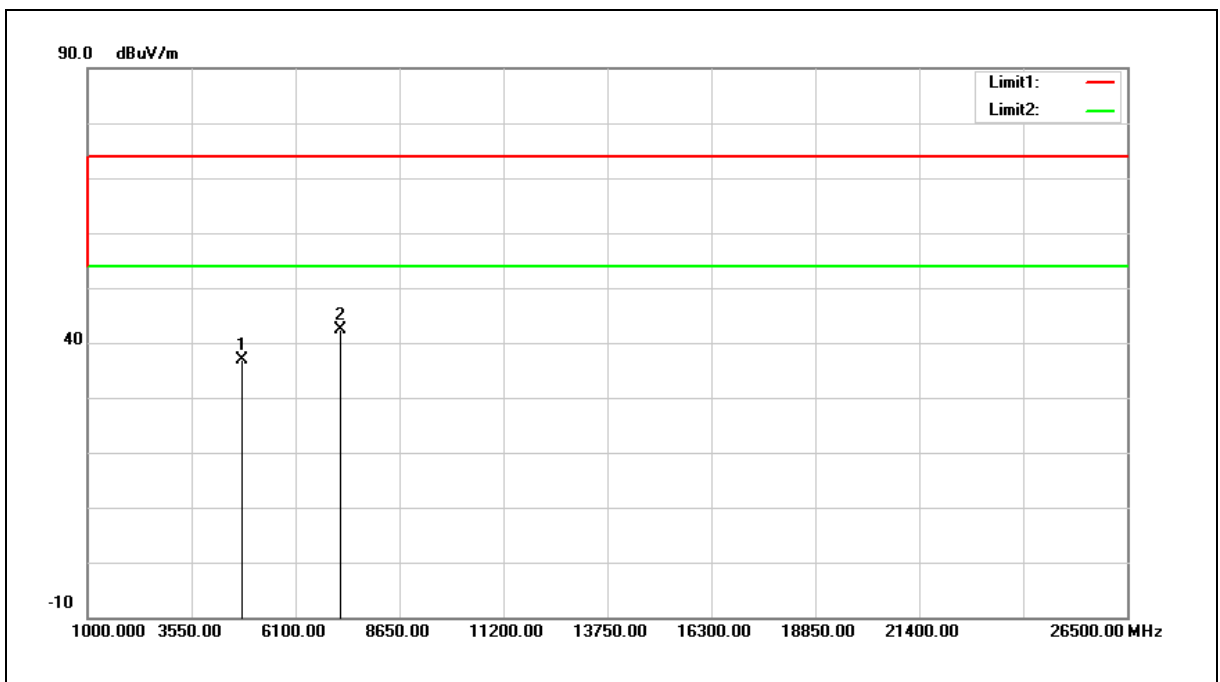
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.81	-0.88	38.93	74.00	-35.07	peak
2	7440.000	35.71	6.56	42.27	74.00	-31.73	peak

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.

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2402 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



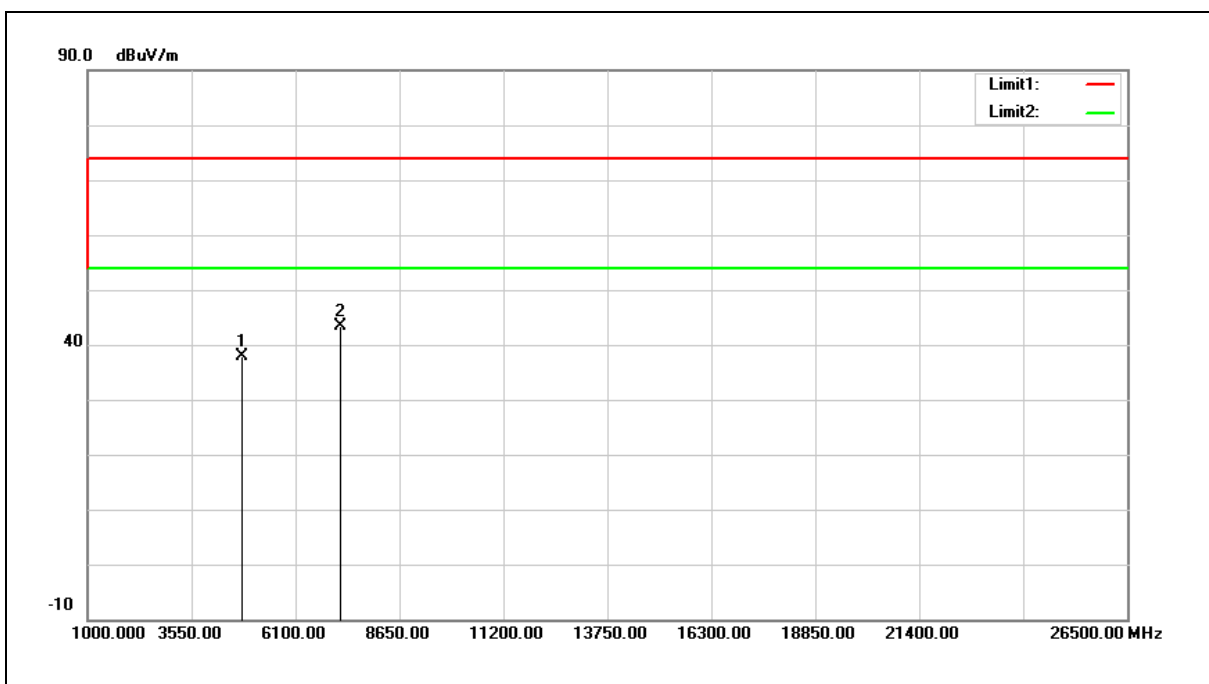
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.15	-1.30	36.85	74.00	-37.15	peak
2	7206.000	36.57	5.74	42.31	74.00	-31.69	peak

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		



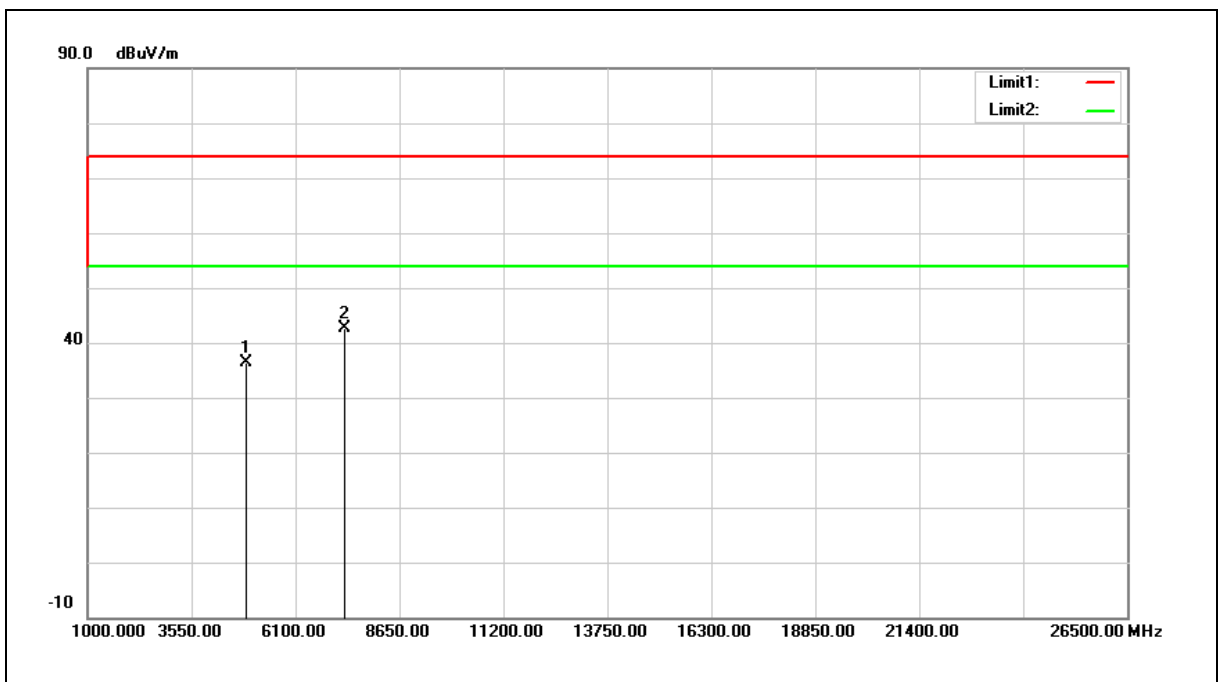
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	39.18	-1.30	37.88	74.00	-36.12	peak
2	7206.000	37.53	5.74	43.27	74.00	-30.73	peak

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.

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



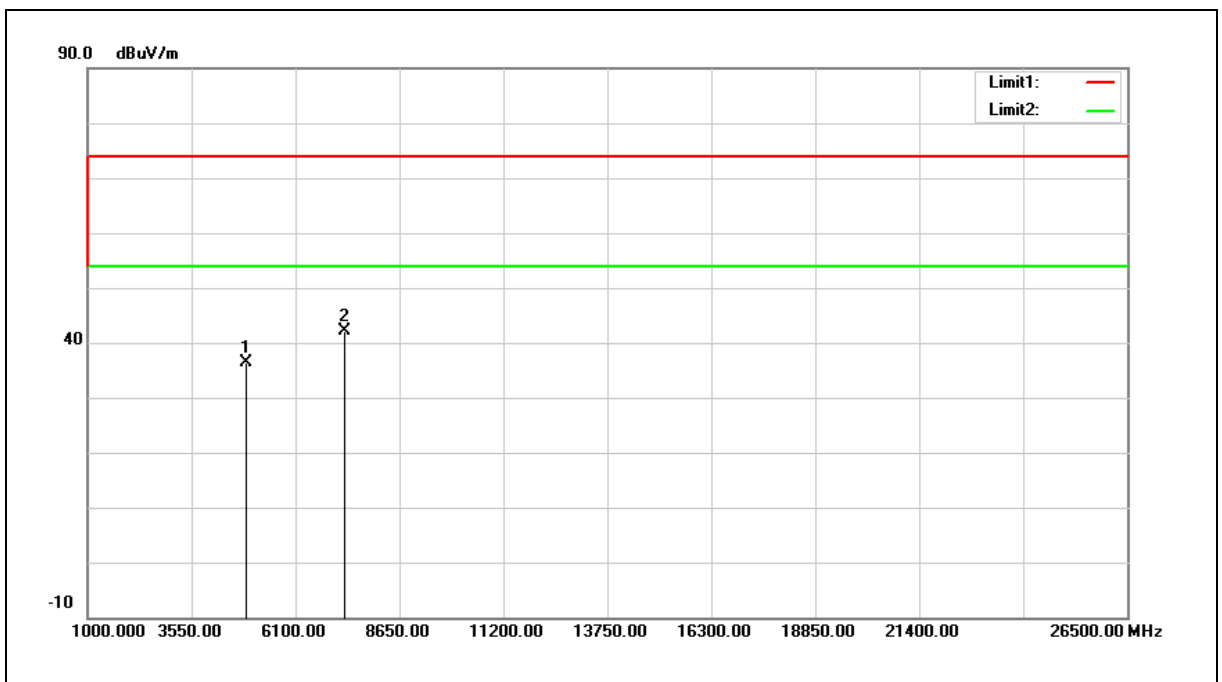
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	37.52	-1.10	36.42	74.00	-37.58	peak
2	7323.000	36.57	6.15	42.72	74.00	-31.28	peak

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



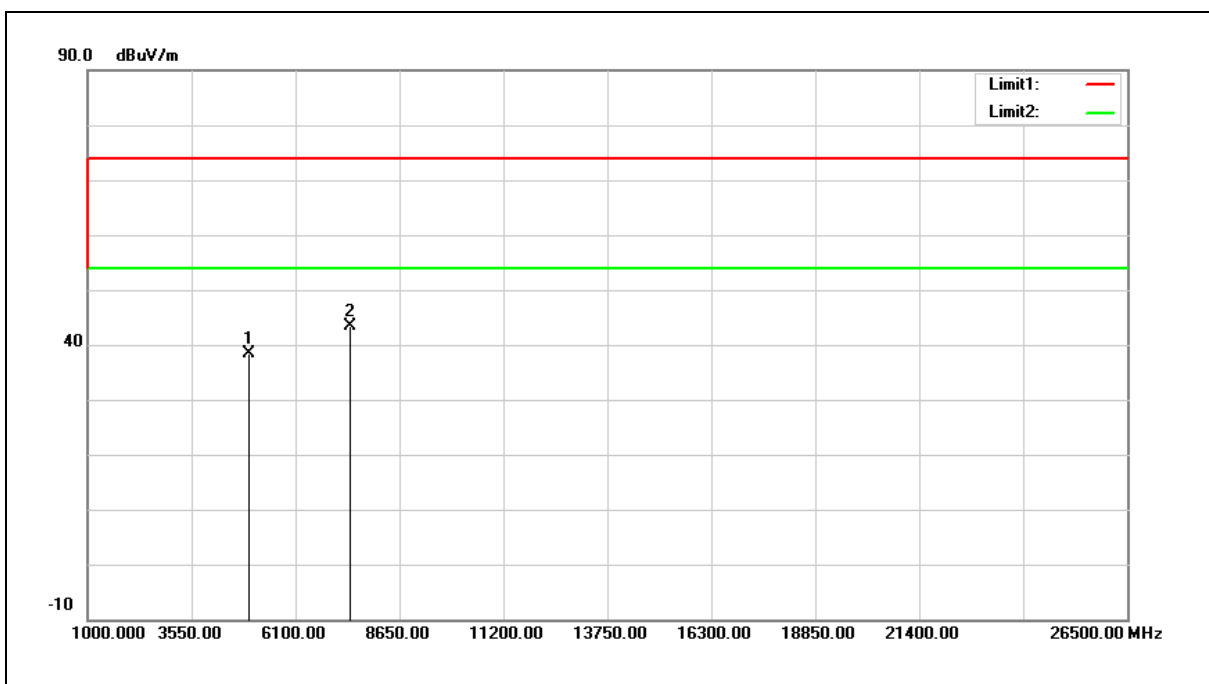
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	37.55	-1.10	36.45	74.00	-37.55	peak
2	7323.000	35.86	6.15	42.01	74.00	-31.99	peak

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

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

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

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



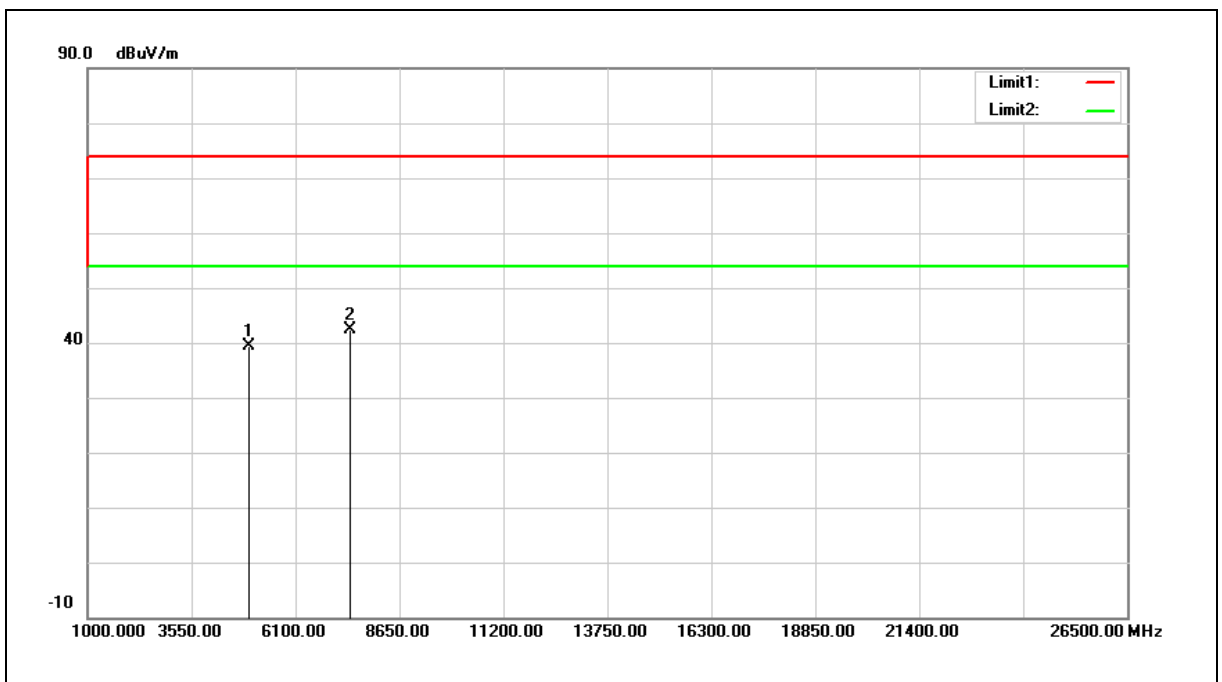
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.14	-0.88	38.26	74.00	-35.74	peak
2	7440.000	36.75	6.56	43.31	74.00	-30.69	peak

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		



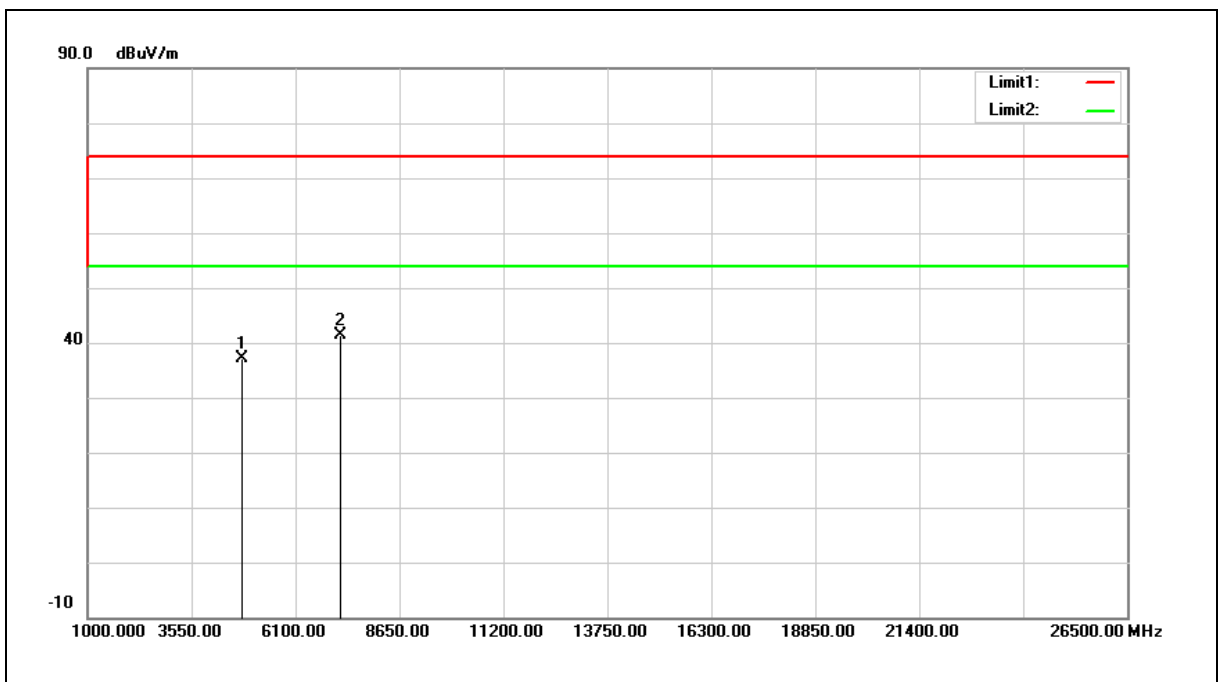
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	40.16	-0.88	39.28	74.00	-34.72	peak
2	7440.000	35.90	6.56	42.46	74.00	-31.54	peak

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		



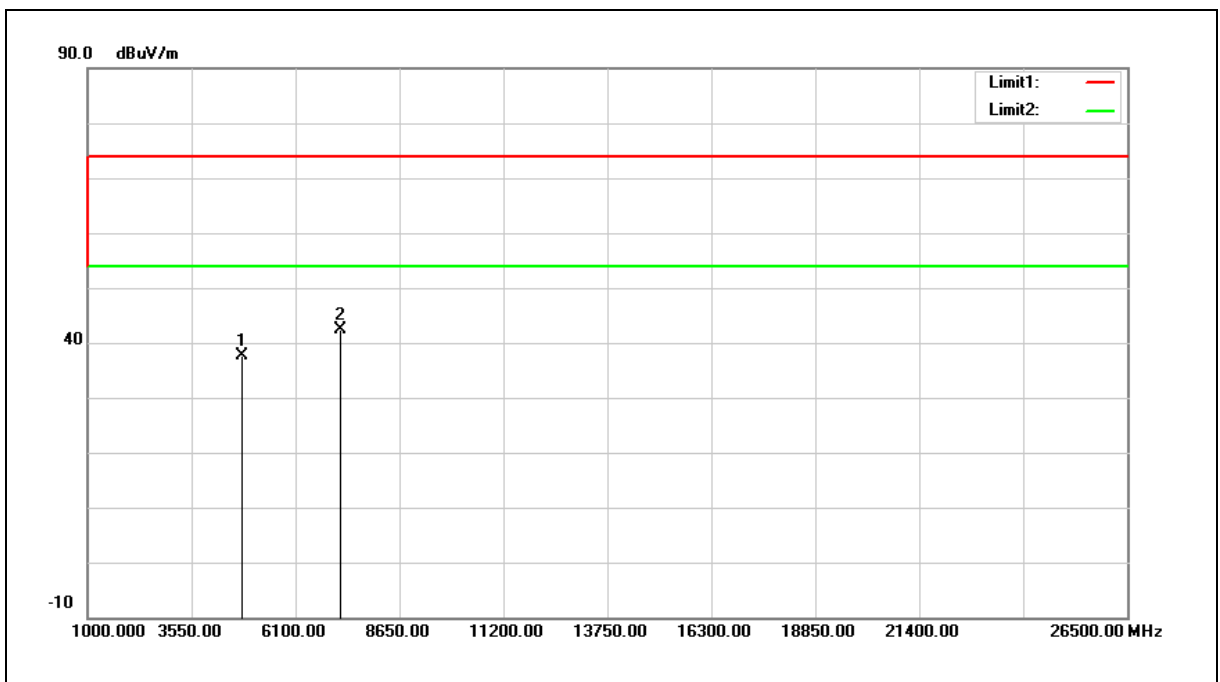
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.49	-1.30	37.19	74.00	-36.81	peak
2	7206.000	35.61	5.74	41.35	74.00	-32.65	peak

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:	2402 MHz		
Mode:	Mode 5		
Ant.Polar.:	Vertical		



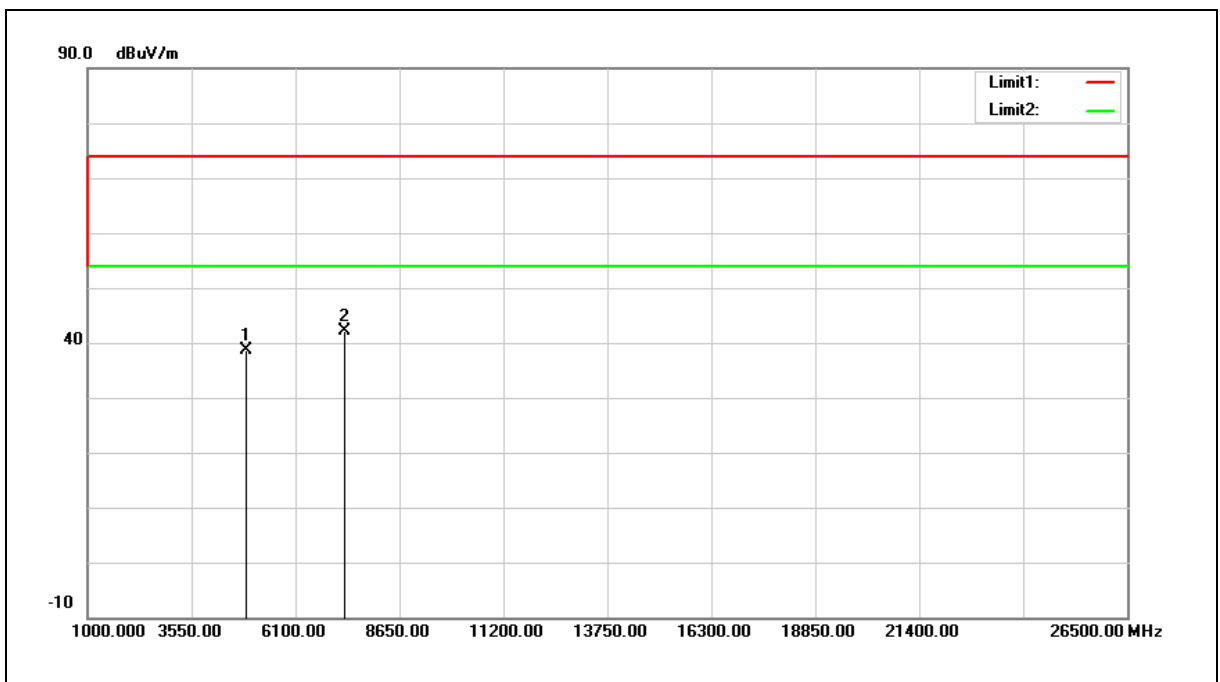
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	39.00	-1.30	37.70	74.00	-36.30	peak
2	7206.000	36.58	5.74	42.32	74.00	-31.68	peak

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		



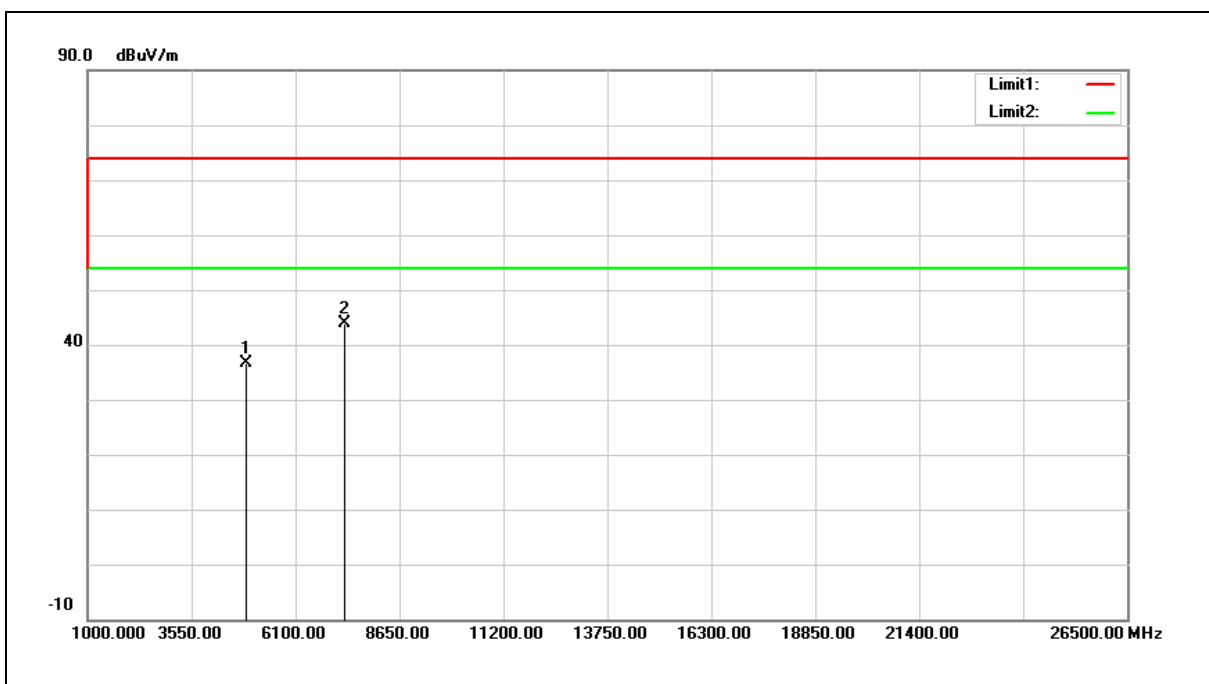
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	39.65	-1.11	38.54	74.00	-35.46	peak
2	7320.000	36.01	6.15	42.16	74.00	-31.84	peak

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		



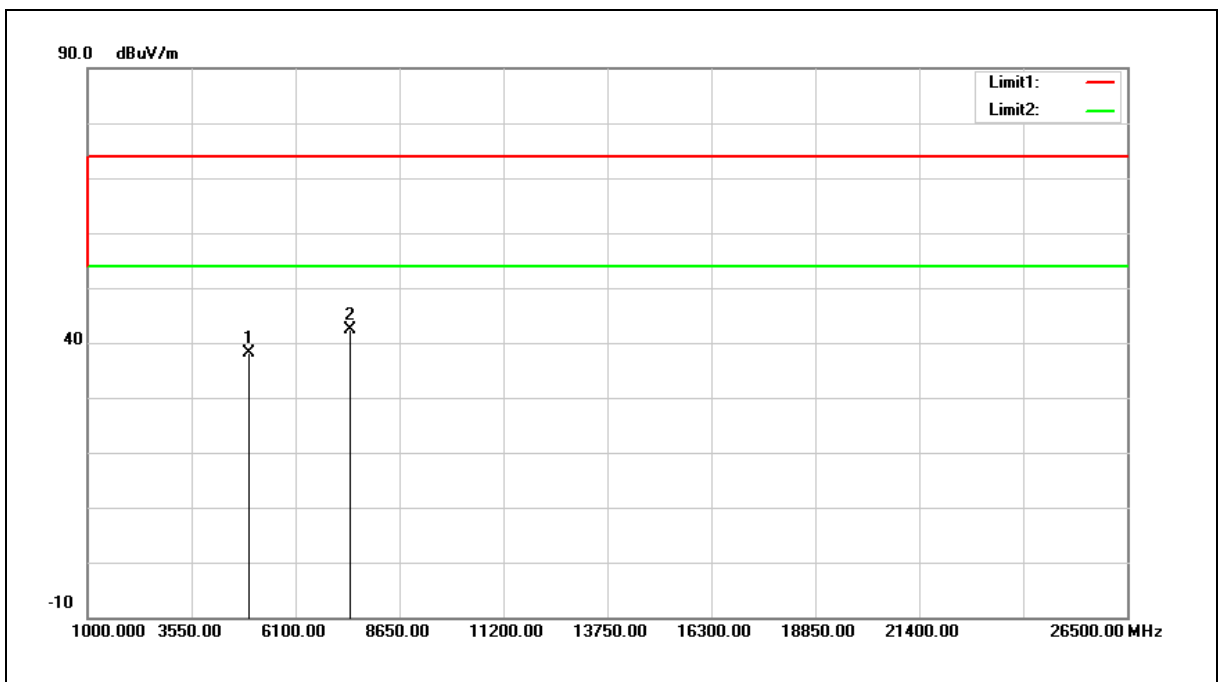
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	37.71	-1.11	36.60	74.00	-37.40	peak
2	7320.000	37.61	6.15	43.76	74.00	-30.24	peak

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		



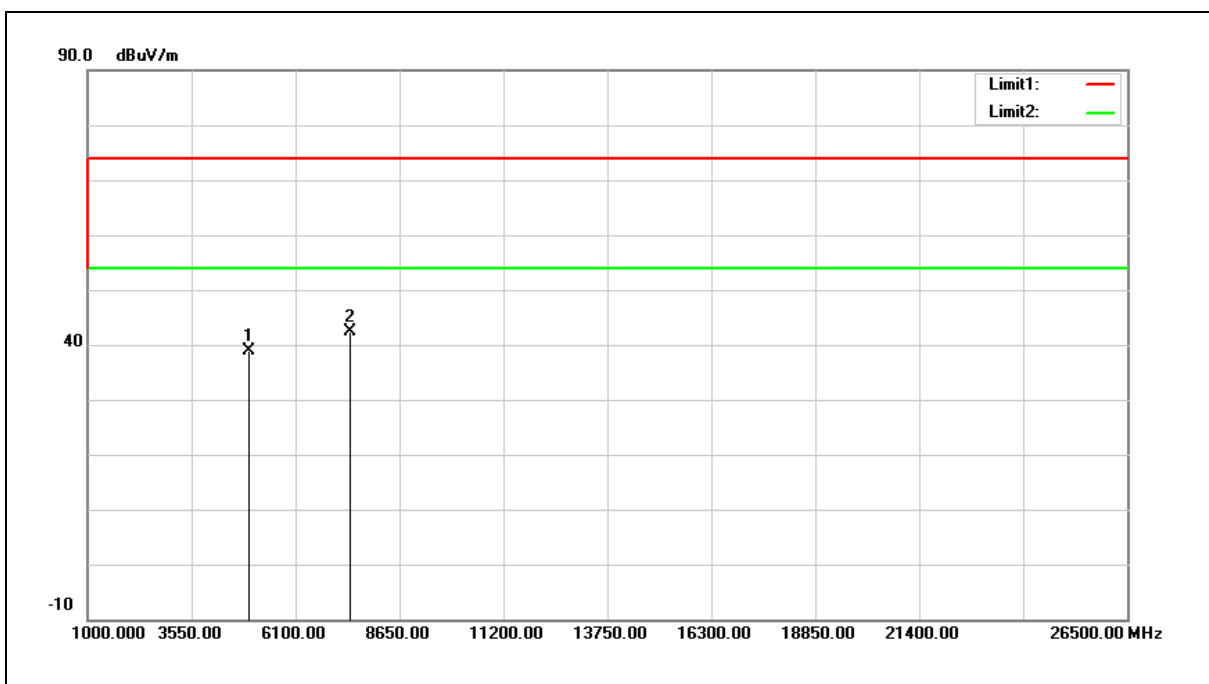
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.99	-0.88	38.11	74.00	-35.89	peak
2	7440.000	35.87	6.56	42.43	74.00	-31.57	peak

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		



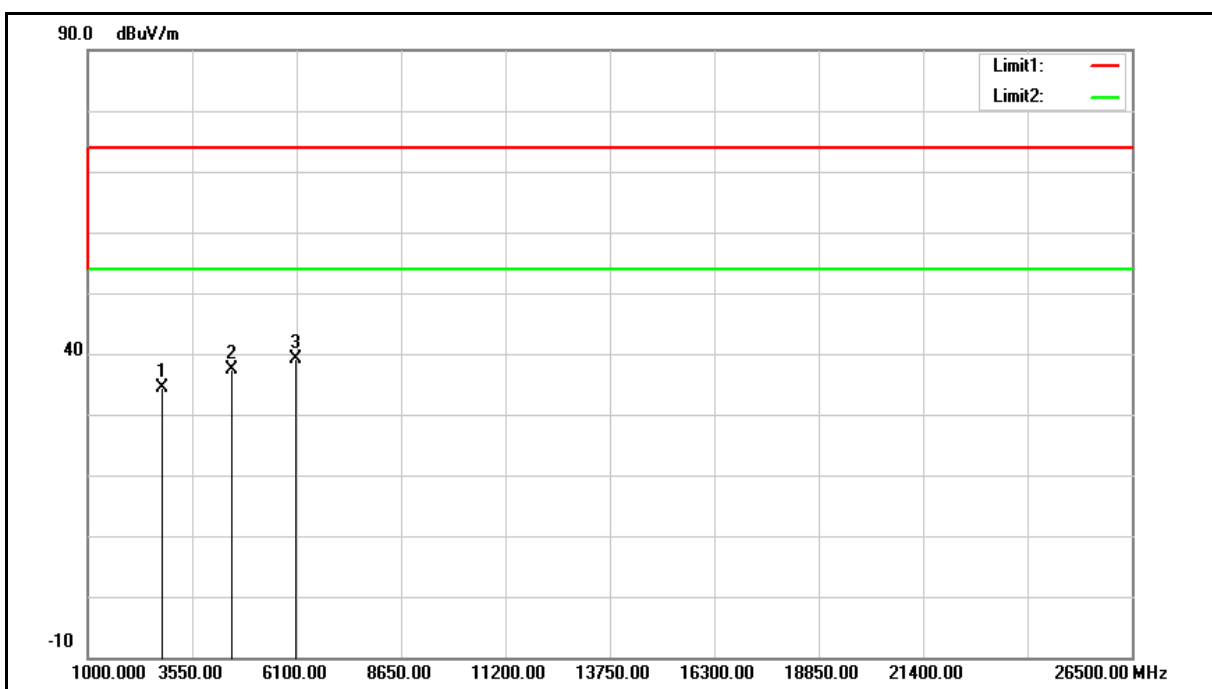
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.82	-0.88	38.94	74.00	-35.06	peak
2	7440.000	35.74	6.56	42.30	74.00	-31.70	peak

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:	Simultaneous Transmitting		
	(Bluetooth + WLAN 2.4 GHz)		
Ant.Polar.:	Horizontal		



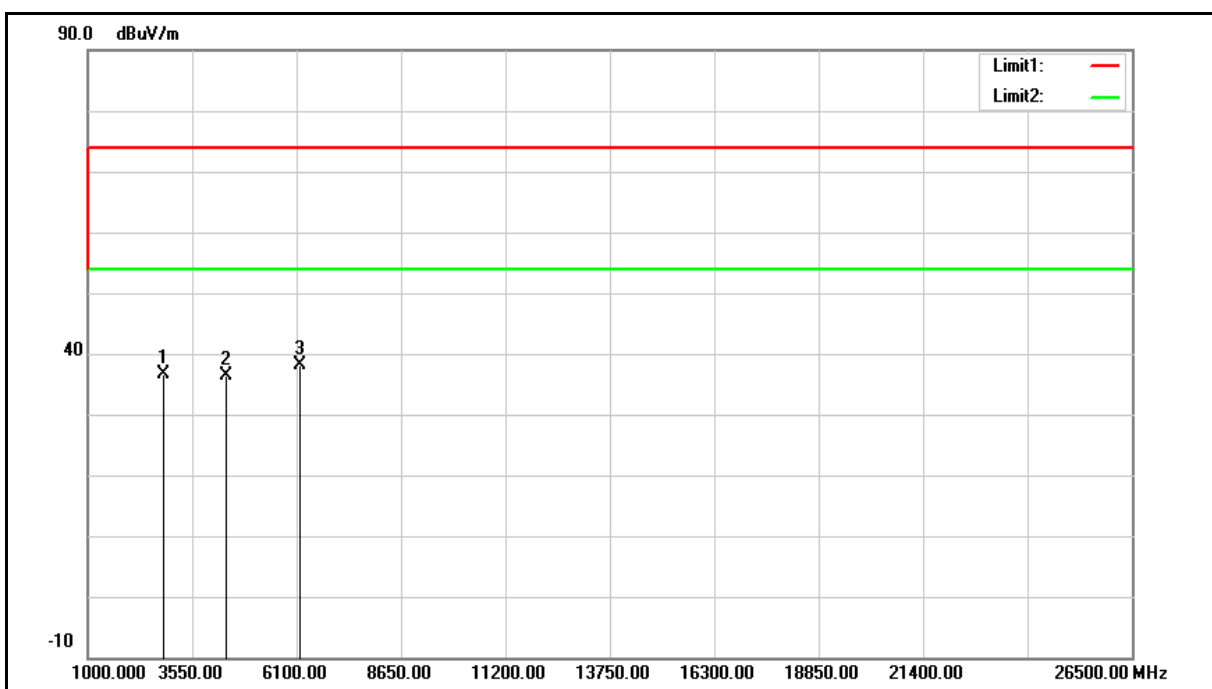
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2802.000	40.51	-6.04	34.47	74.00	-39.53	peak
2	4502.000	39.47	-2.14	37.33	74.00	-36.67	peak
3	6066.000	37.25	1.80	39.05	74.00	-34.95	peak

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:	Simultaneous Transmitting		
	(Bluetooth + WLAN 2.4 GHz)		
Ant.Polar.:	Vertical		



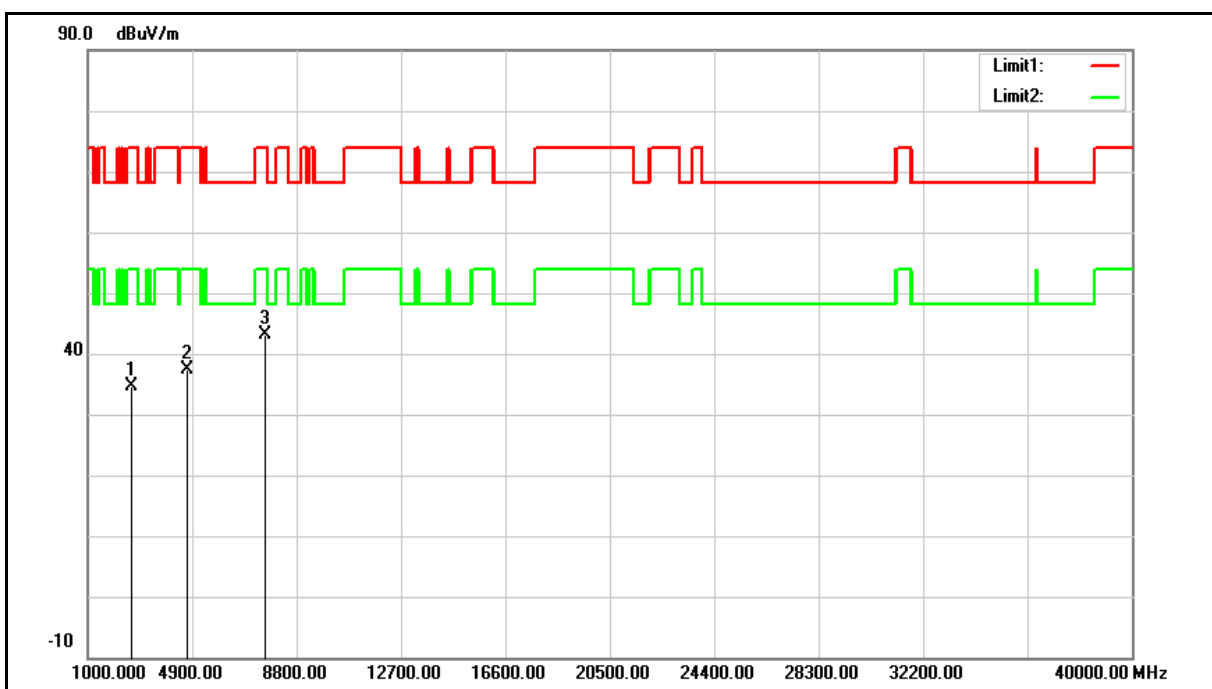
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2853.000	42.39	-5.84	36.55	74.00	-37.45	peak
2	4366.000	38.99	-2.50	36.49	74.00	-37.51	peak
3	6185.000	35.89	2.23	38.12	74.00	-35.88	peak

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		
Mode:	Simultaneous Transmitting (Bluetooth + WLAN 5 GHz)		
Ant.Polar.:	Horizontal		



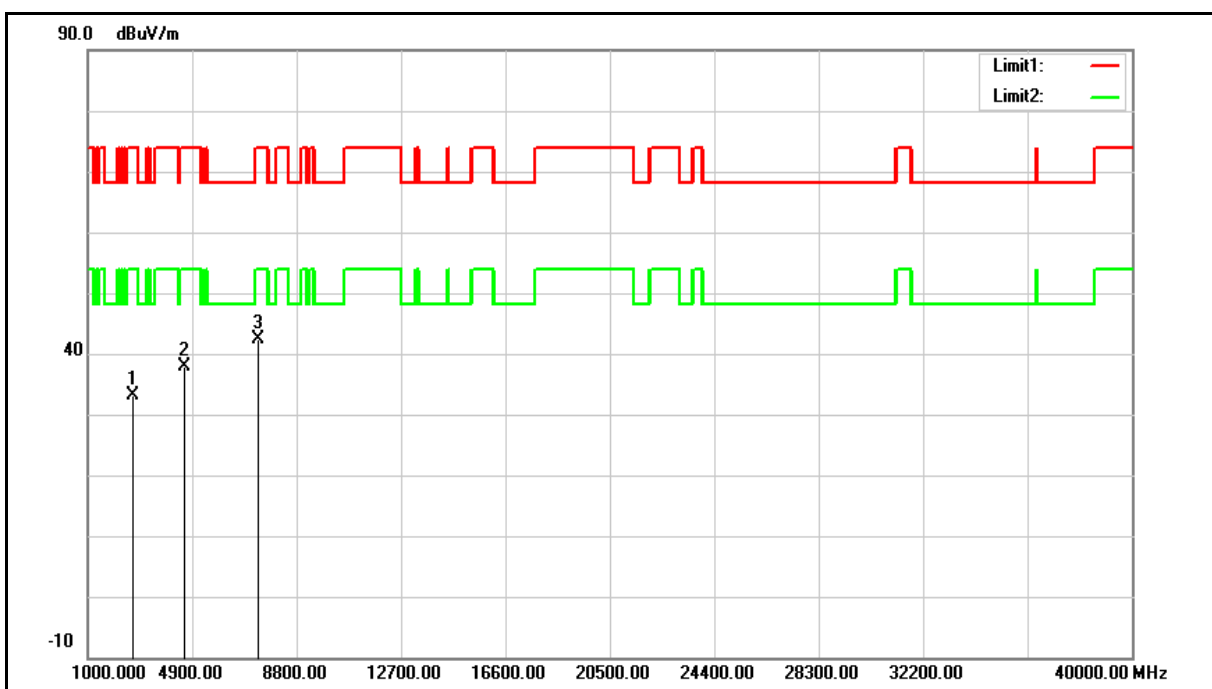
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2615.000	41.50	-6.80	34.70	74.00	-39.30	peak
2	4723.000	38.98	-1.53	37.45	74.00	-36.55	peak
3	7613.000	36.08	6.94	43.02	74.00	-30.98	peak

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		
Mode:	Simultaneous Transmitting (Bluetooth + WLAN 5 GHz)		
Ant.Polar.:	Vertical		



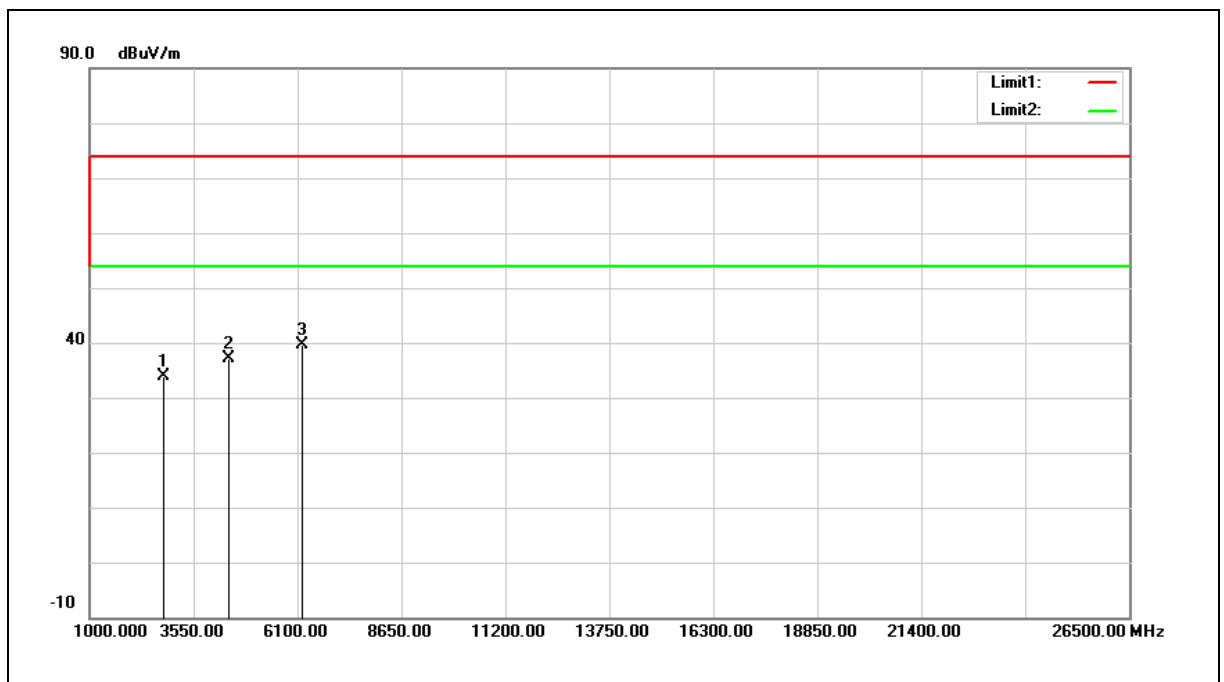
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2649.000	39.82	-6.66	33.16	74.00	-40.84	peak
2	4587.000	39.77	-1.90	37.87	74.00	-36.13	peak
3	7375.000	36.17	6.33	42.50	74.00	-31.50	peak

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		
Mode:	Mode 6		
Ant.Polar.:	Horizontal		
Description:			



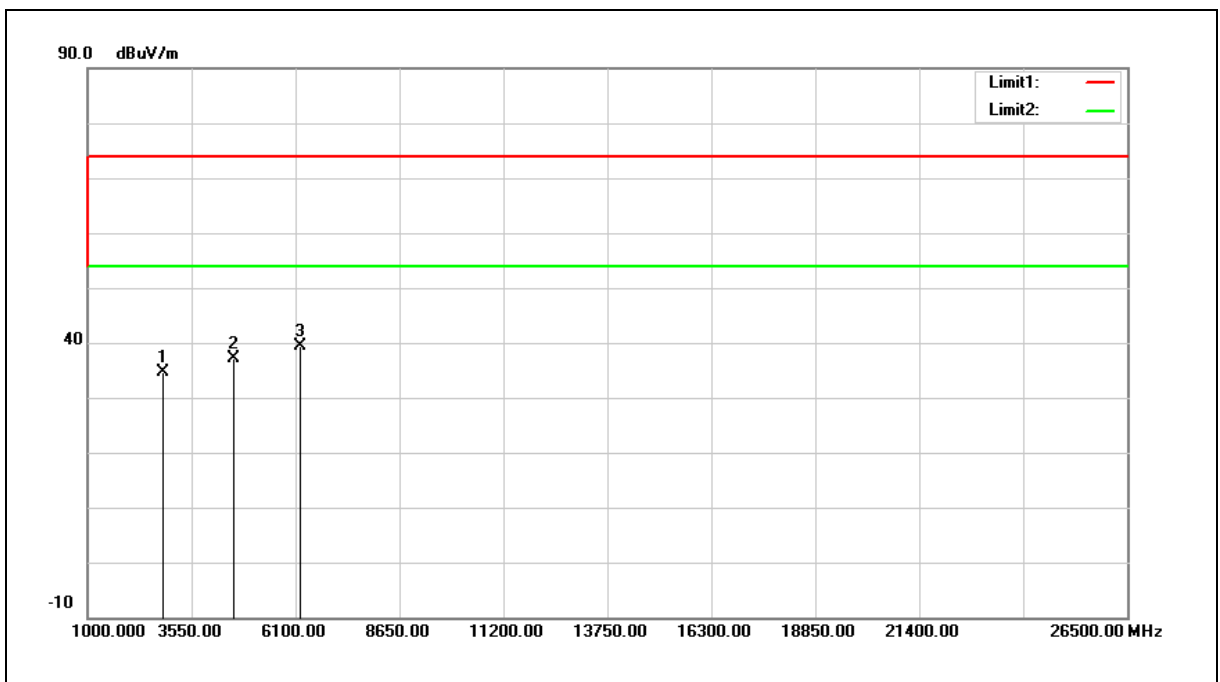
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2802.000	39.93	-6.04	33.89	74.00	-40.11	peak
2	4417.000	39.41	-2.36	37.05	74.00	-36.95	peak
3	6202.000	37.32	2.29	39.61	74.00	-34.39	peak

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 6		
Ant.Polar.:	Vertical		
Description:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2853.000	40.41	-5.84	34.57	74.00	-39.43	peak
2	4570.000	39.20	-1.95	37.25	74.00	-36.75	peak
3	6185.000	37.08	2.23	39.31	74.00	-34.69	peak

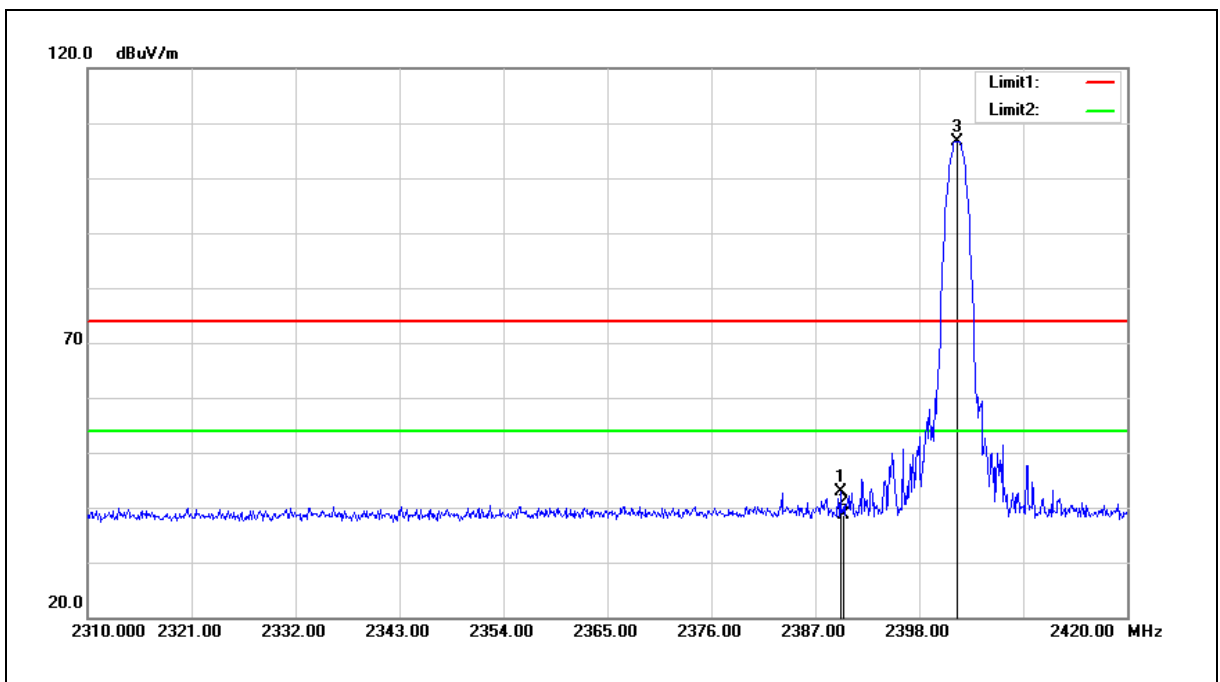
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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.

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



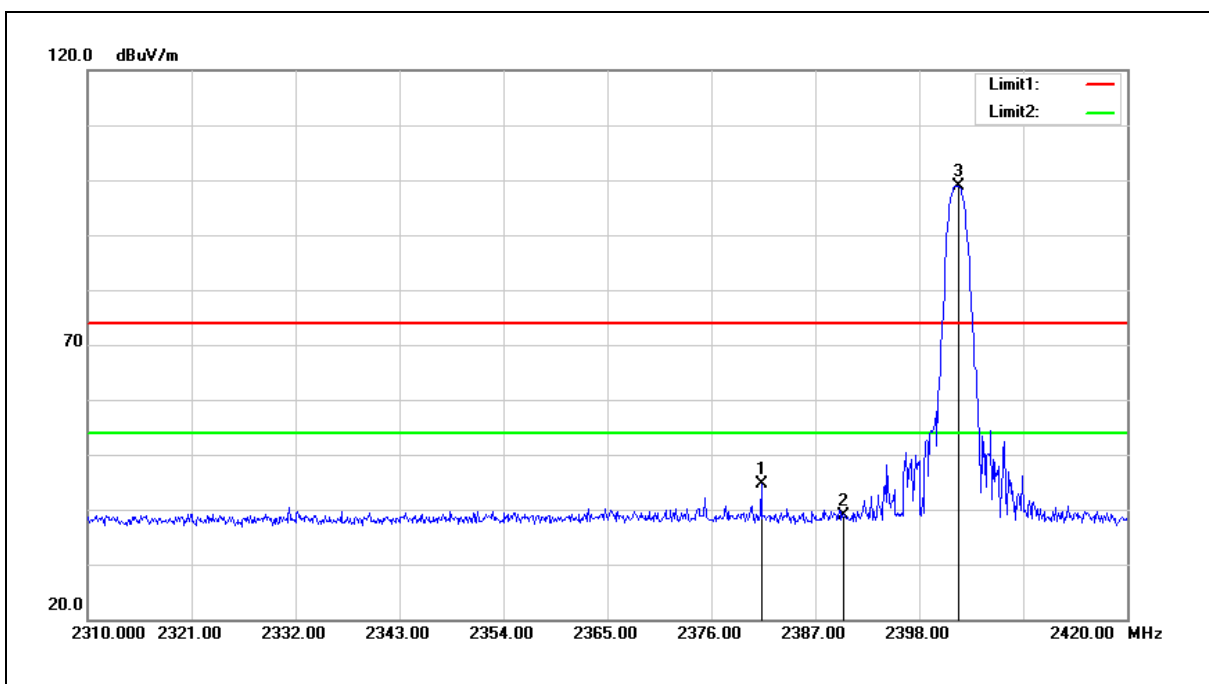
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.640	50.64	-7.72	42.92	74.00	-31.08	peak
2	2390.000	46.34	-7.72	38.62	74.00	-35.38	peak
3	2402.070	114.39	-7.66	106.73	--	--	peak

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.

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



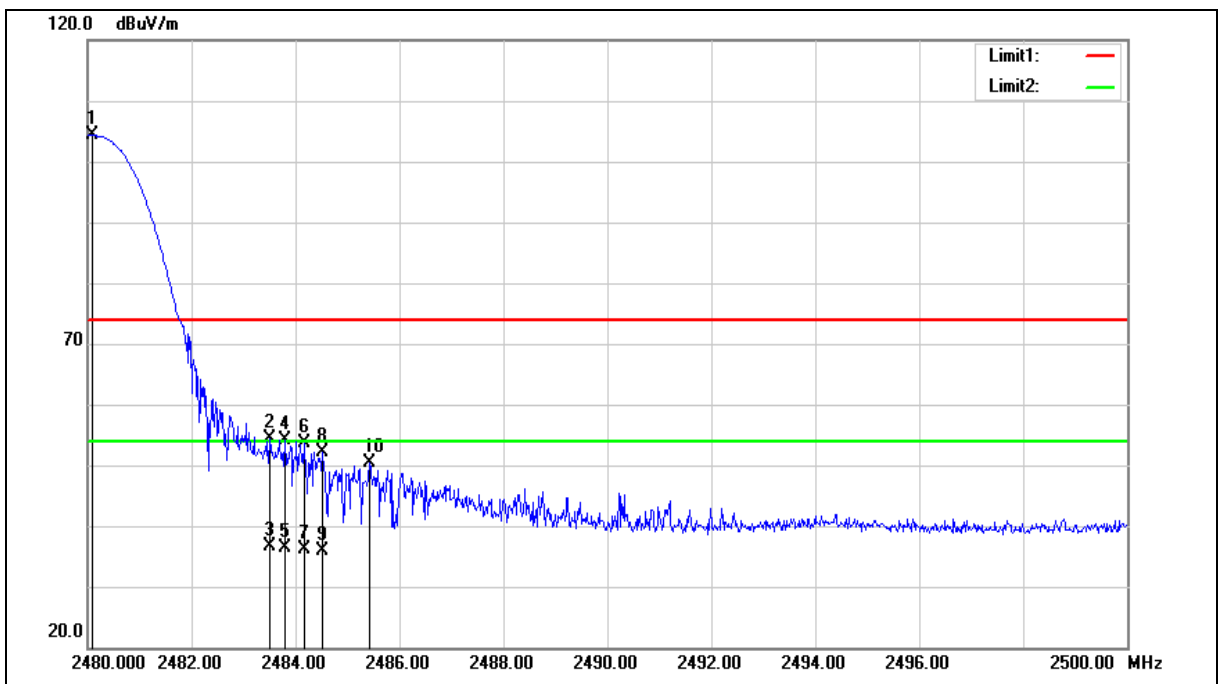
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2381.280	52.38	-7.76	44.62	74.00	-29.38	peak
2	2390.000	46.50	-7.72	38.78	74.00	-35.22	peak
3	2402.180	106.53	-7.66	98.87	--	--	peak

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		



Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2480 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		

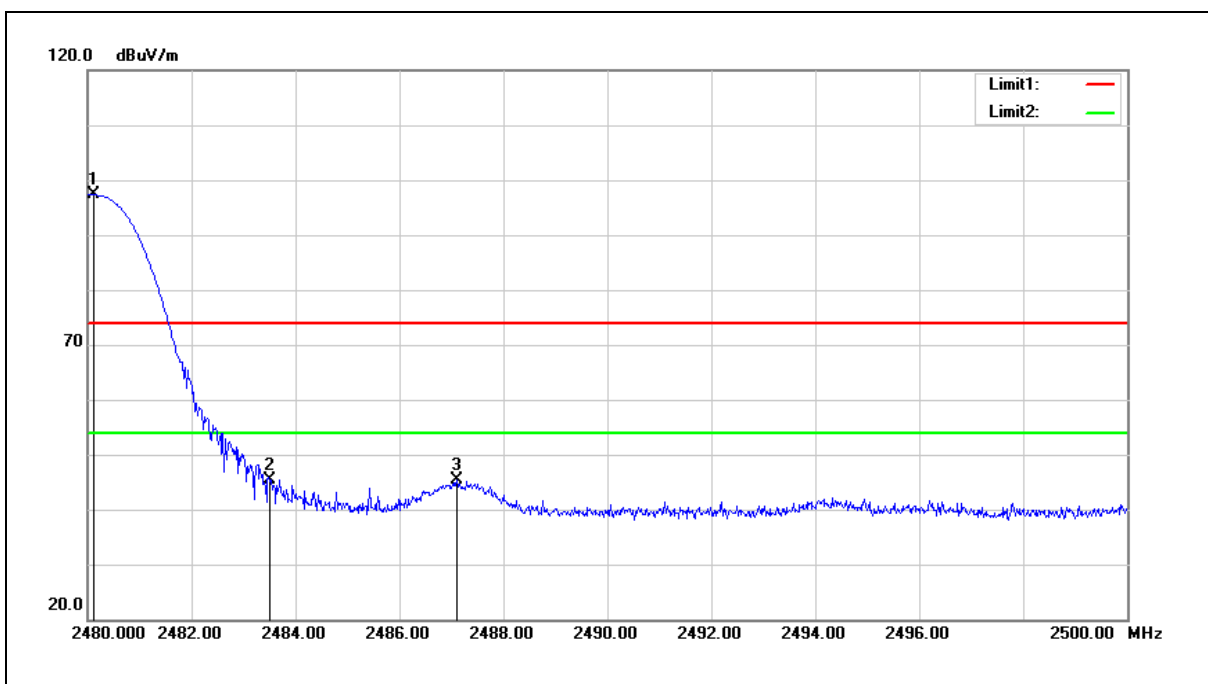
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.100	111.62	-7.35	104.27	--	--	peak
2	2483.500	61.62	-7.34	54.28	74.00	-19.72	peak
3	2483.500	44.05	-7.34	36.71	54.00	-17.29	AVG
4	2483.800	61.54	-7.34	54.20	74.00	-19.80	peak
5	2483.800	43.74	-7.34	36.40	54.00	-17.60	AVG
6	2484.160	60.94	-7.34	53.60	74.00	-20.40	peak
7	2484.160	43.39	-7.34	36.05	54.00	-17.95	AVG
8	2484.520	59.41	-7.34	52.07	74.00	-21.93	peak
9	2484.520	43.15	-7.34	35.81	54.00	-18.19	AVG
10	2485.420	57.59	-7.32	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.

Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2480 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



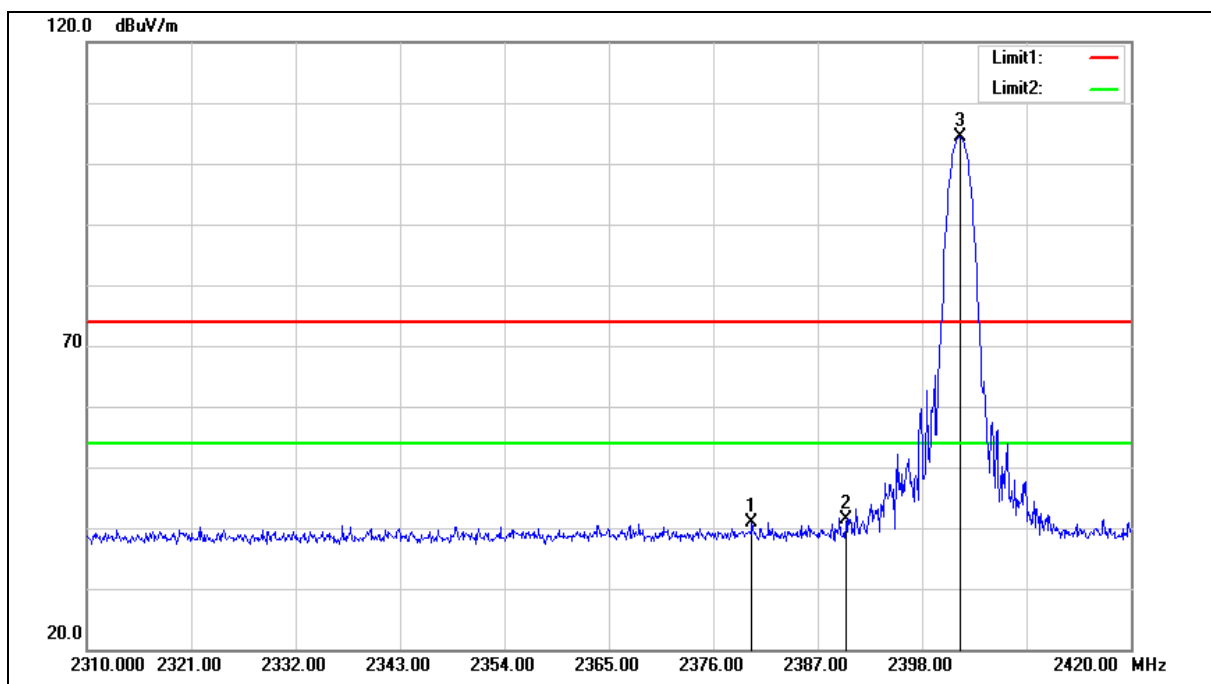
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.120	104.64	-7.35	97.29	--	--	peak
2	2483.500	52.64	-7.34	45.30	74.00	-28.70	peak
3	2487.100	52.60	-7.32	45.28	74.00	-28.72	peak

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		



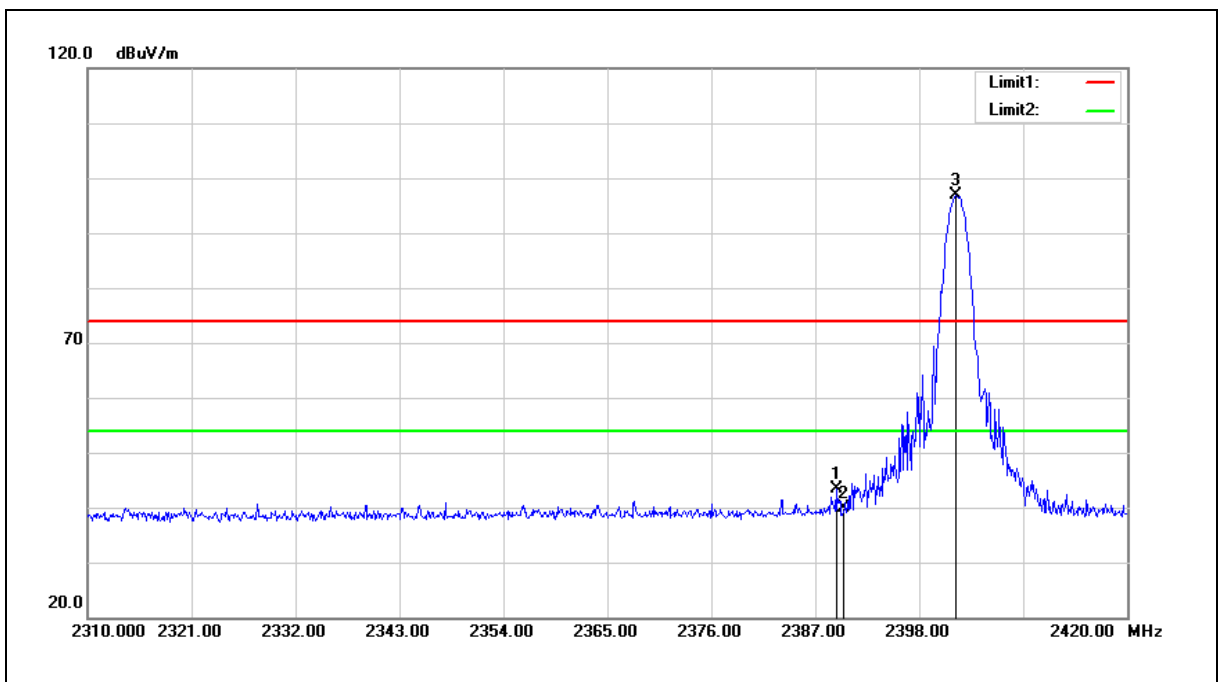
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2380.070	48.57	-7.76	40.81	74.00	-33.19	peak
2	2390.000	49.22	-7.72	41.50	74.00	-32.50	peak
3	2401.960	112.10	-7.66	104.44	--	--	peak

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		



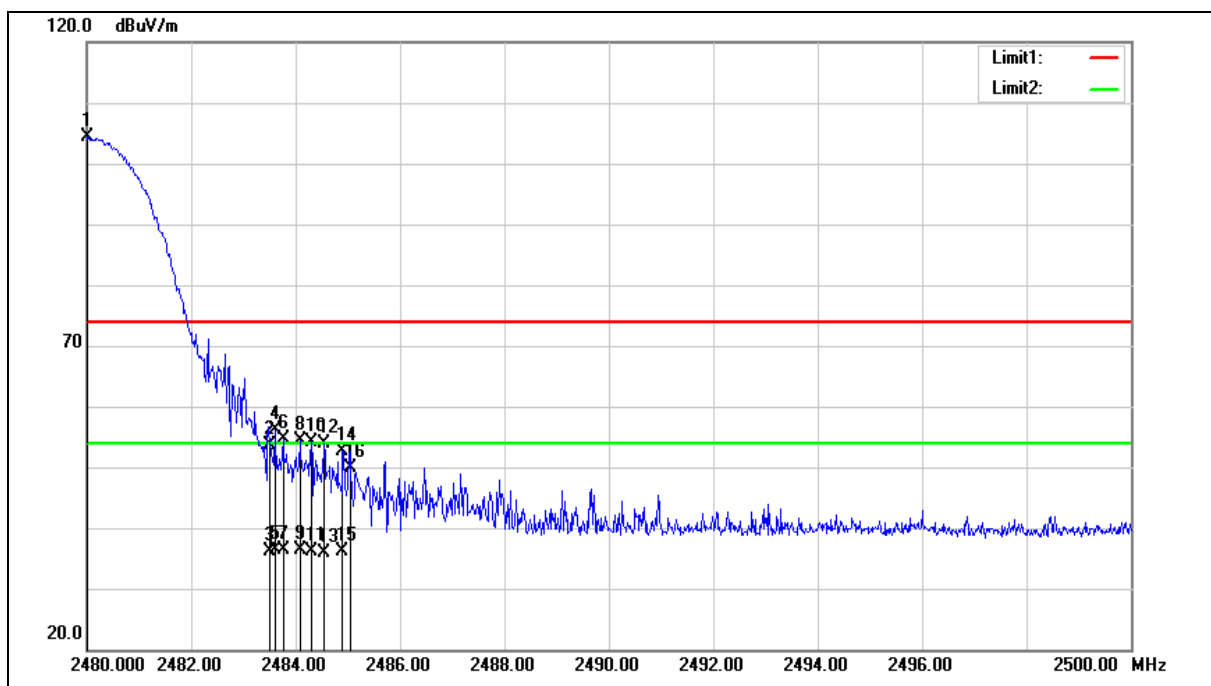
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.200	51.02	-7.72	43.30	74.00	-30.70	peak
2	2390.000	47.58	-7.72	39.86	74.00	-34.14	peak
3	2401.850	104.48	-7.66	96.82	--	--	peak

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:	2480 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



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

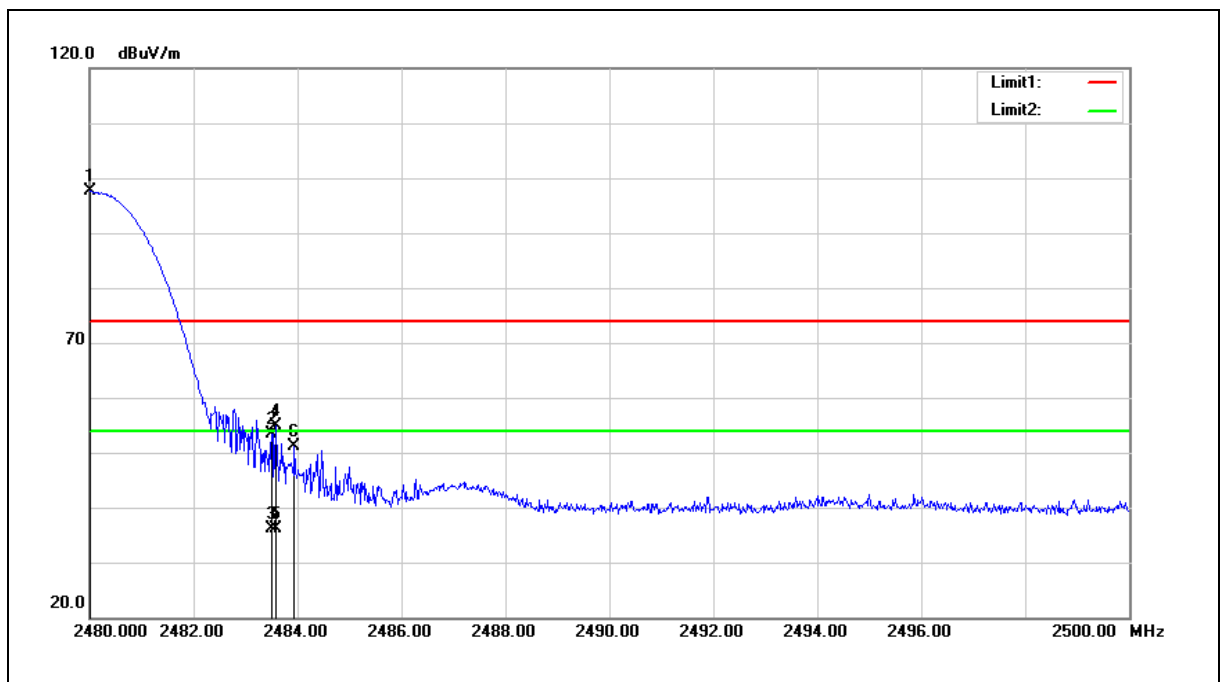
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.020	111.68	-7.35	104.33	--	--	peak
2	2483.500	61.06	-7.34	53.72	74.00	-20.28	peak
3	2483.500	43.59	-7.34	36.25	54.00	-17.75	AVG
4	2483.600	63.41	-7.34	56.07	74.00	-17.93	peak
5	2483.600	43.80	-7.34	36.46	54.00	-17.54	AVG
6	2483.760	61.95	-7.34	54.61	74.00	-19.39	peak
7	2483.760	43.67	-7.34	36.33	54.00	-17.67	AVG
8	2484.080	61.79	-7.34	54.45	74.00	-19.55	peak
9	2484.080	43.63	-7.34	36.29	54.00	-17.71	AVG
10	2484.300	61.36	-7.34	54.02	74.00	-19.98	peak
11	2484.300	43.39	-7.34	36.05	54.00	-17.95	AVG
12	2484.540	61.11	-7.34	53.77	74.00	-20.23	peak
13	2484.540	43.25	-7.34	35.91	54.00	-18.09	AVG
14	2484.900	60.07	-7.34	52.73	74.00	-21.27	peak
15	2484.900	43.39	-7.34	36.05	54.00	-17.95	AVG
16	2485.060	57.24	-7.33	49.91	74.00	-24.09	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		



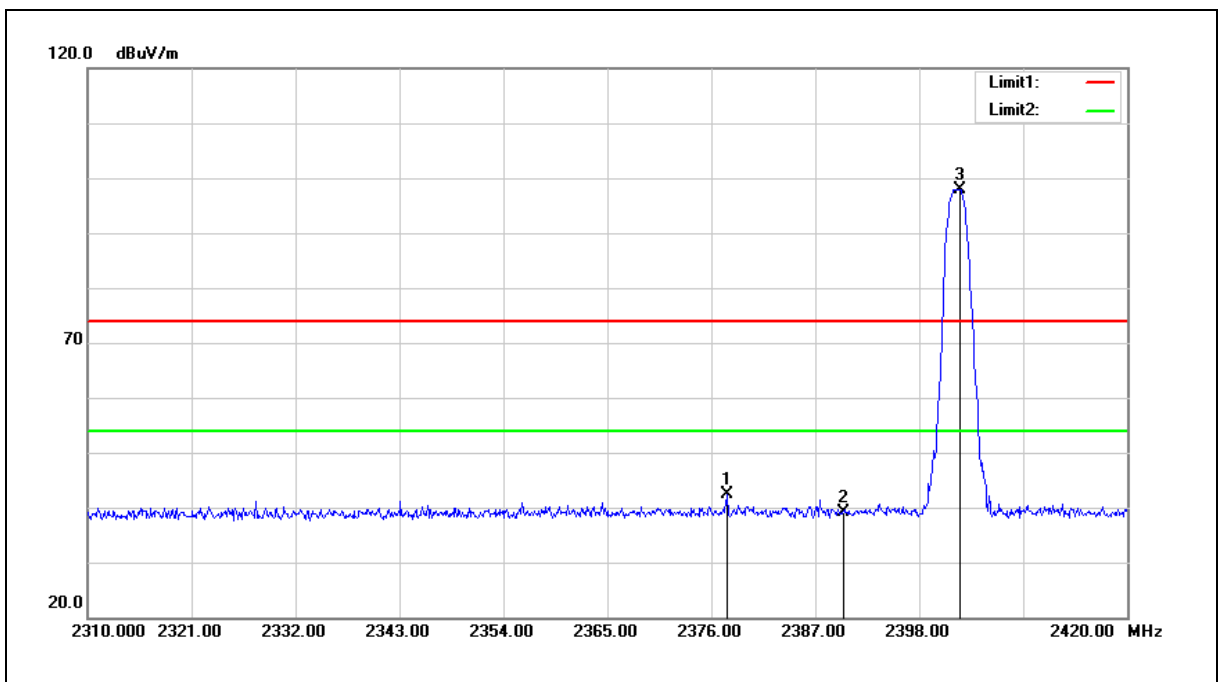
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.000	104.91	-7.35	97.56	--	--	peak
2	2483.500	60.74	-7.34	53.40	74.00	-20.60	peak
3	2483.500	43.37	-7.34	36.03	54.00	-17.97	AVG
4	2483.580	62.27	-7.34	54.93	74.00	-19.07	peak
5	2483.580	43.45	-7.34	36.11	54.00	-17.89	AVG
6	2483.940	58.49	-7.34	51.15	74.00	-22.85	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:	2402 MHz		
Mode:	Mode 5		
Ant.Polar.:	Horizontal		



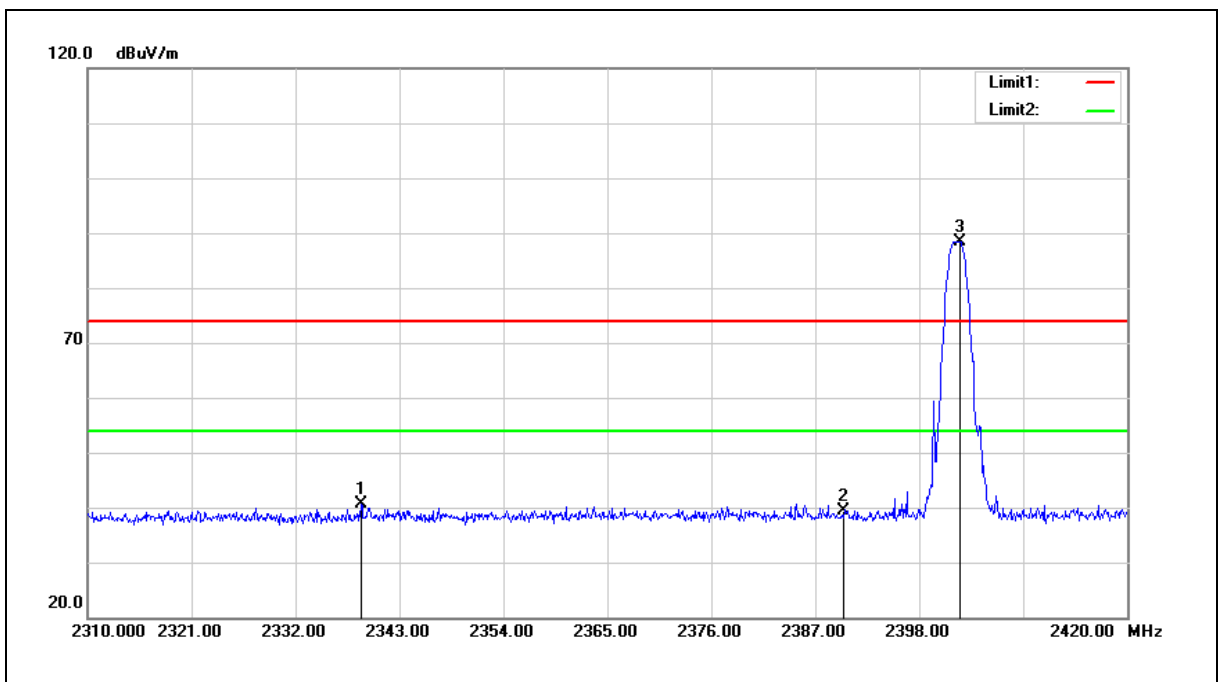
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2377.650	50.20	-7.77	42.43	74.00	-31.57	peak
2	2390.000	46.87	-7.72	39.15	74.00	-34.85	peak
3	2402.290	105.59	-7.66	97.93	--	--	peak

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:	2402 MHz		
Mode:	Mode 5		
Ant.Polar.:	Vertical		



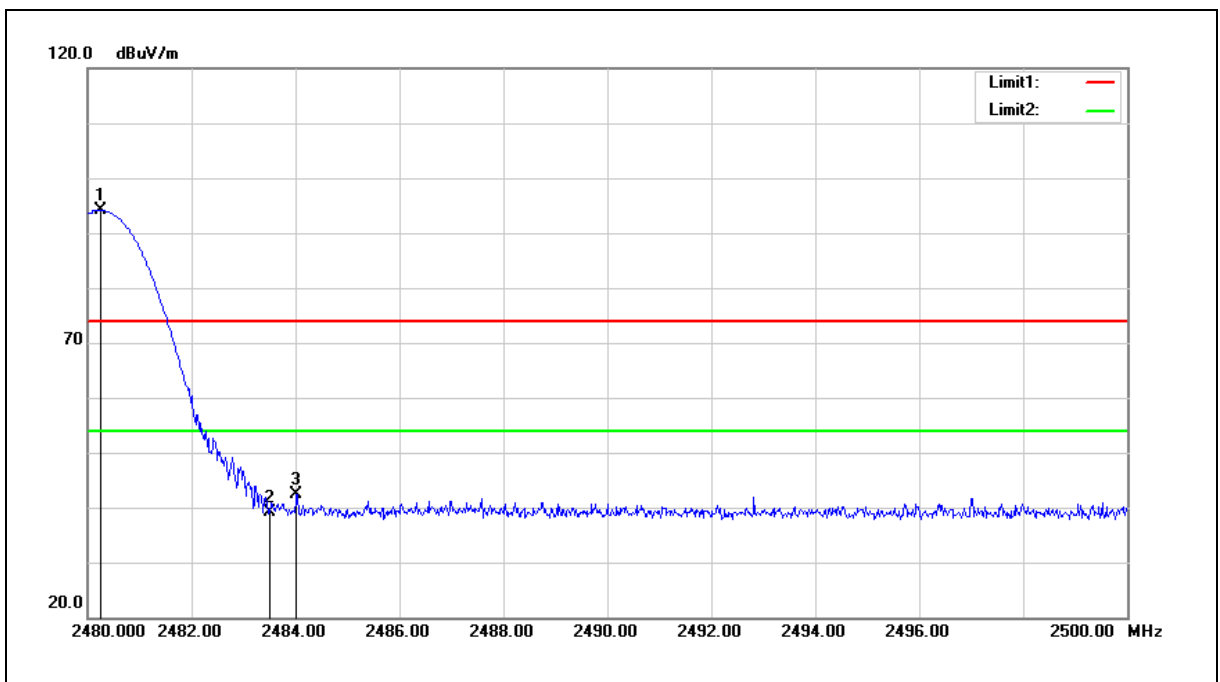
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2338.930	48.44	-7.92	40.52	74.00	-33.48	peak
2	2390.000	47.02	-7.72	39.30	74.00	-34.70	peak
3	2402.290	96.13	-7.66	88.47	--	--	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2480 MHz		
Mode:	Mode 5		
Ant.Polar.:	Horizontal		



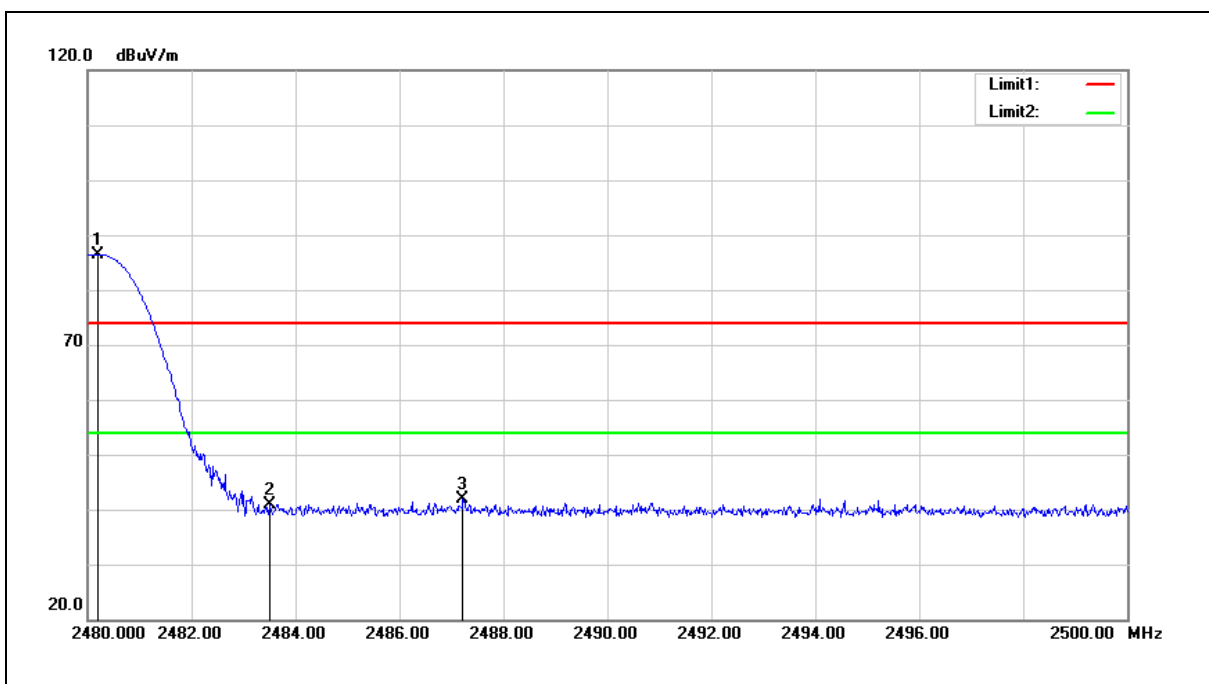
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.240	101.50	-7.35	94.15	--	--	peak
2	2483.500	46.41	-7.34	39.07	74.00	-34.93	peak
3	2484.020	49.84	-7.34	42.50	74.00	-31.50	peak

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:	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	2480.200	93.83	-7.35	86.48	--	--	peak
2	2483.500	48.16	-7.34	40.82	74.00	-33.18	peak
3	2487.220	49.14	-7.32	41.82	74.00	-32.18	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.

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	8.29	0.00675	8.41	0.00693	≤0.125
	DH3	8.31	0.00678	8.42	0.00695	≤0.125
	DH5	8.32	0.00679	8.43	0.00697	≤0.125
中頻道	DH1	6.19	0.00416	6.25	0.00422	≤0.125
	DH3	6.20	0.00417	6.27	0.00424	≤0.125
	DH5	6.21	0.00418	6.28	0.00425	≤0.125
高頻道	DH1	7.94	0.00622	8.01	0.00632	≤0.125
	DH3	7.95	0.00624	8.02	0.00634	≤0.125
	DH5	7.96	0.00625	8.03	0.00635	≤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	6.63	0.00460	8.47	0.00703	≤0.125
	2DH3	6.65	0.00462	8.48	0.00705	≤0.125
	2DH5	6.67	0.00465	8.50	0.00708	≤0.125
中頻道	2DH1	4.61	0.00289	6.40	0.00437	≤0.125
	2DH3	4.63	0.00290	6.44	0.00441	≤0.125
	2DH5	4.64	0.00291	6.45	0.00442	≤0.125
高頻道	2DH1	6.20	0.00417	8.16	0.00655	≤0.125
	2DH3	6.22	0.00419	8.19	0.00659	≤0.125
	2DH5	6.24	0.00421	8.20	0.00661	≤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	6.67	0.00465	8.61	0.00726	≤0.125
	3DH3	6.68	0.00466	8.64	0.00731	≤0.125
	3DH5	6.69	0.00467	8.66	0.00735	≤0.125
中頻道	3DH1	4.64	0.00291	6.50	0.00447	≤0.125
	3DH3	4.66	0.00292	6.52	0.00449	≤0.125
	3DH5	4.67	0.00293	6.53	0.00450	≤0.125
高頻道	3DH1	6.22	0.00419	8.28	0.00673	≤0.125
	3DH3	6.24	0.00421	8.30	0.00676	≤0.125
	3DH5	6.25	0.00422	8.31	0.00678	≤0.125

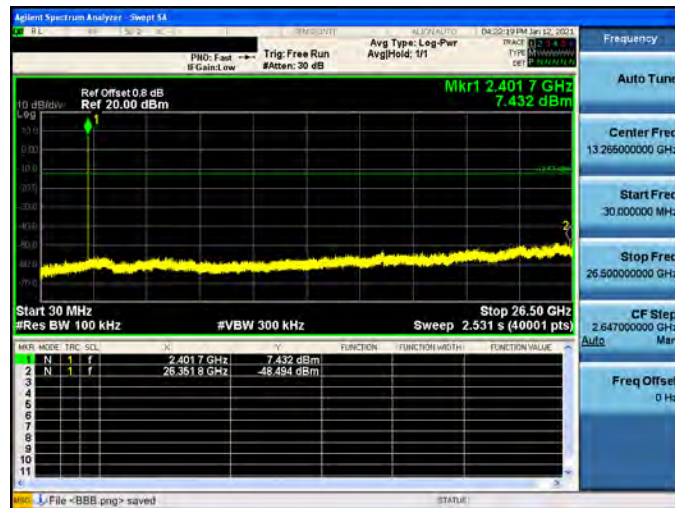
操作模式 : Mode 5: LE, GFSK Continuous TX Mode					
頻道	輸出功率(Average)		輸出功率(Peak)		限制值
	dBm	W	dBm	W	W
低頻道	-1.29	0.00074	-1.17	0.00076	≤ 1
中頻道	-3.21	0.00048	-3.09	0.00049	≤ 1
高頻道	-1.35	0.00073	-1.25	0.00075	≤ 1

非必要頻帶之量測

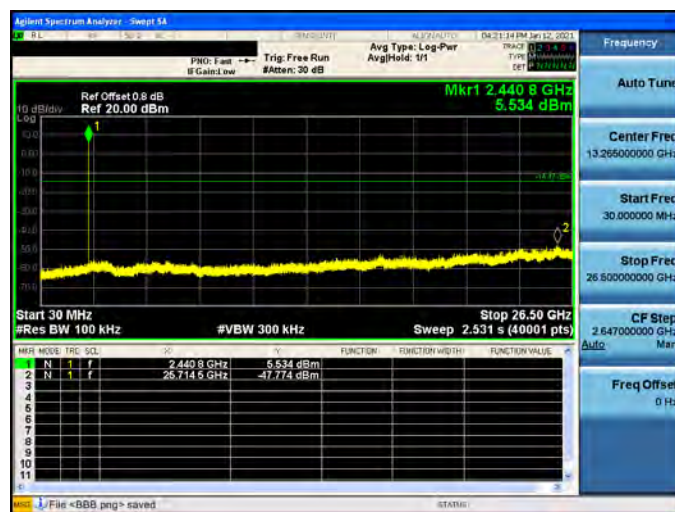
Out of Band Conducted Spurious Emission

Mode 2: BR,GFSK Continuous TX Mode

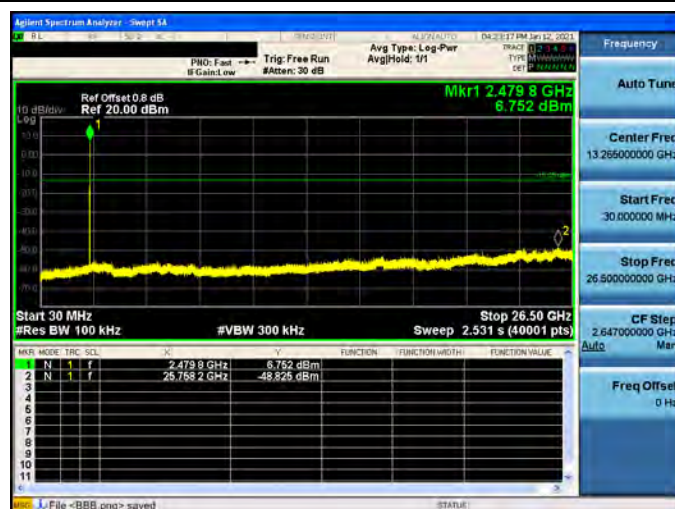
低頻道

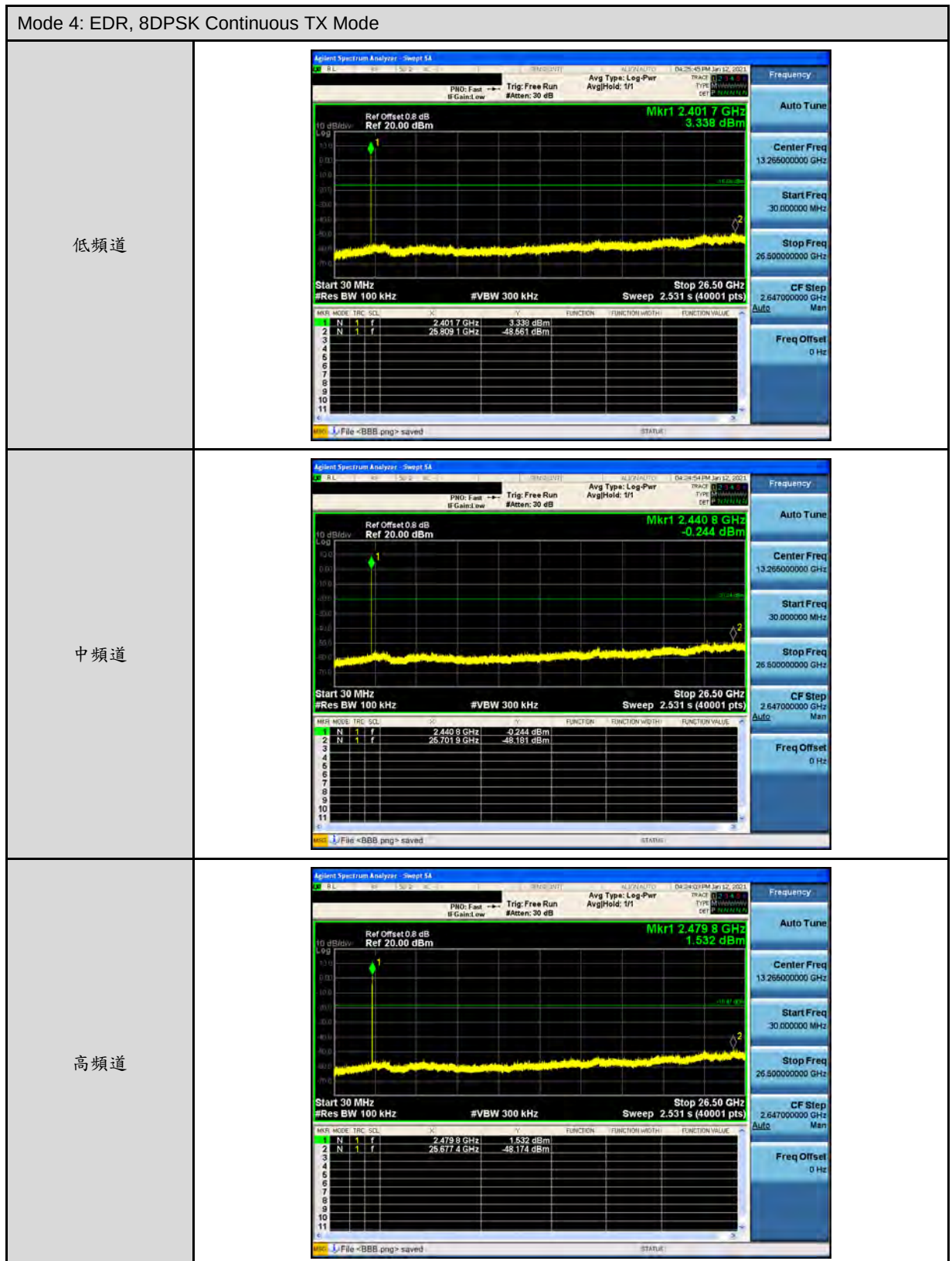


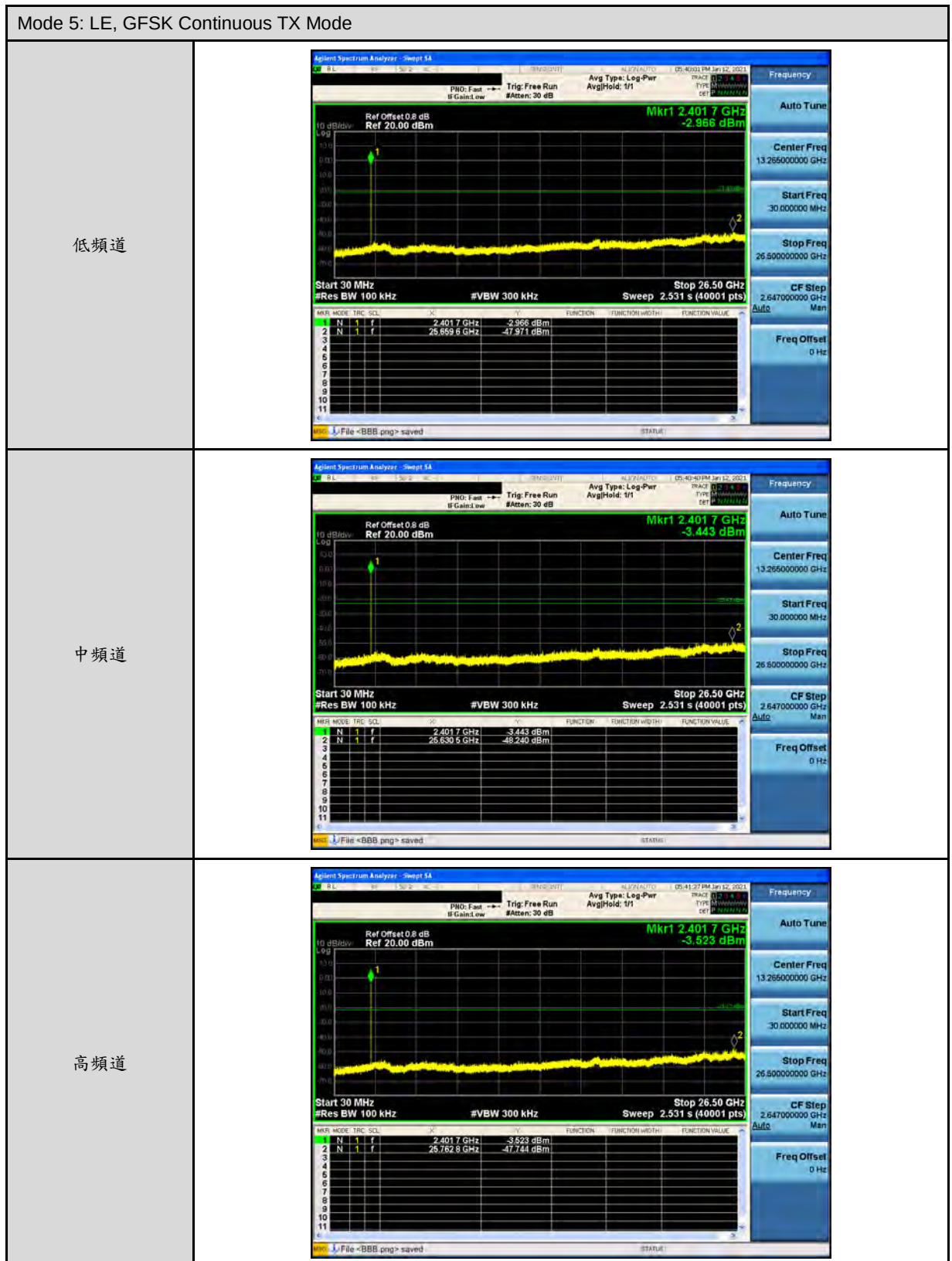
中頻道



高頻道







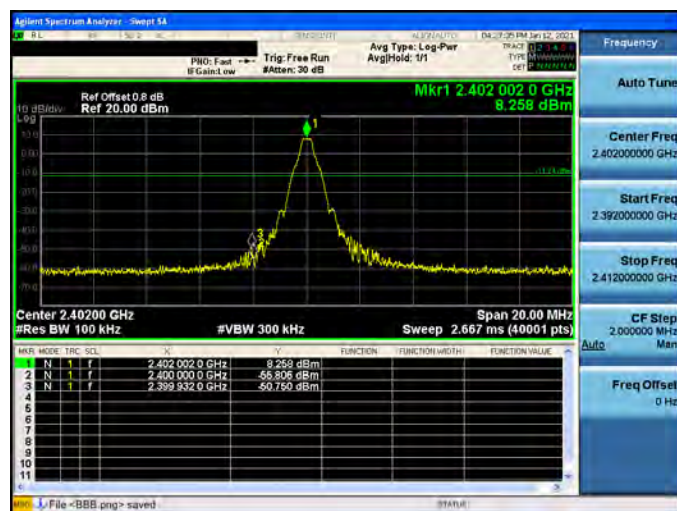
Reference level

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

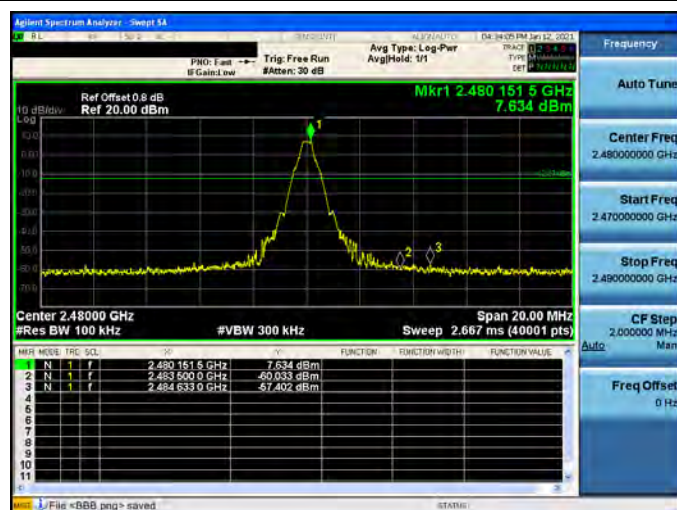
Conducted Band Edge

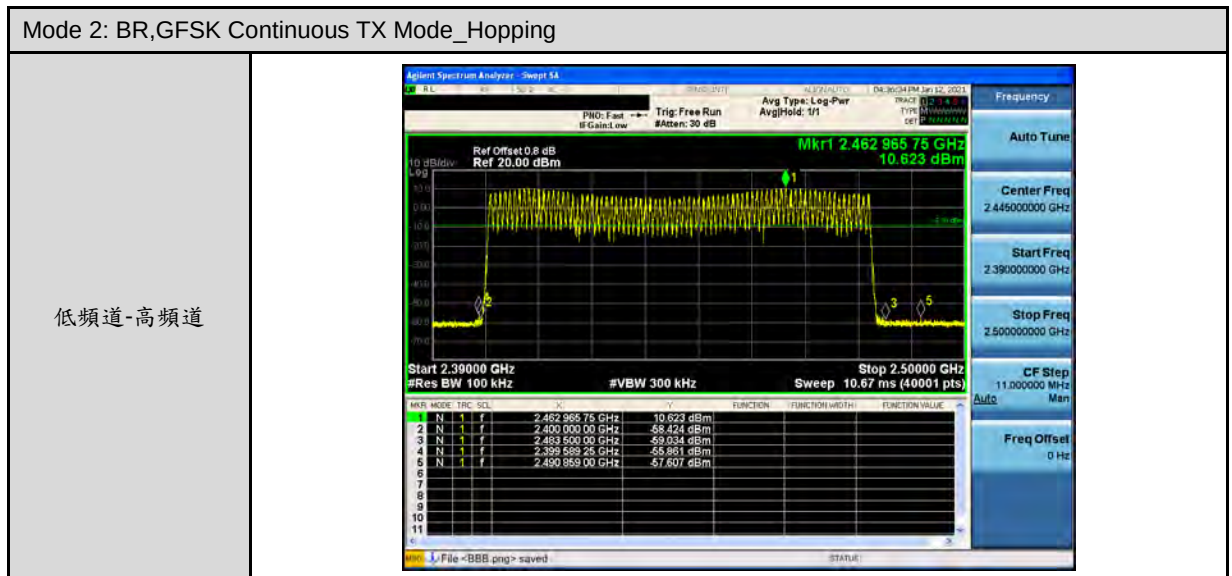
Mode 2: BR,GFSK Continuous TX Mode_Un-hopping

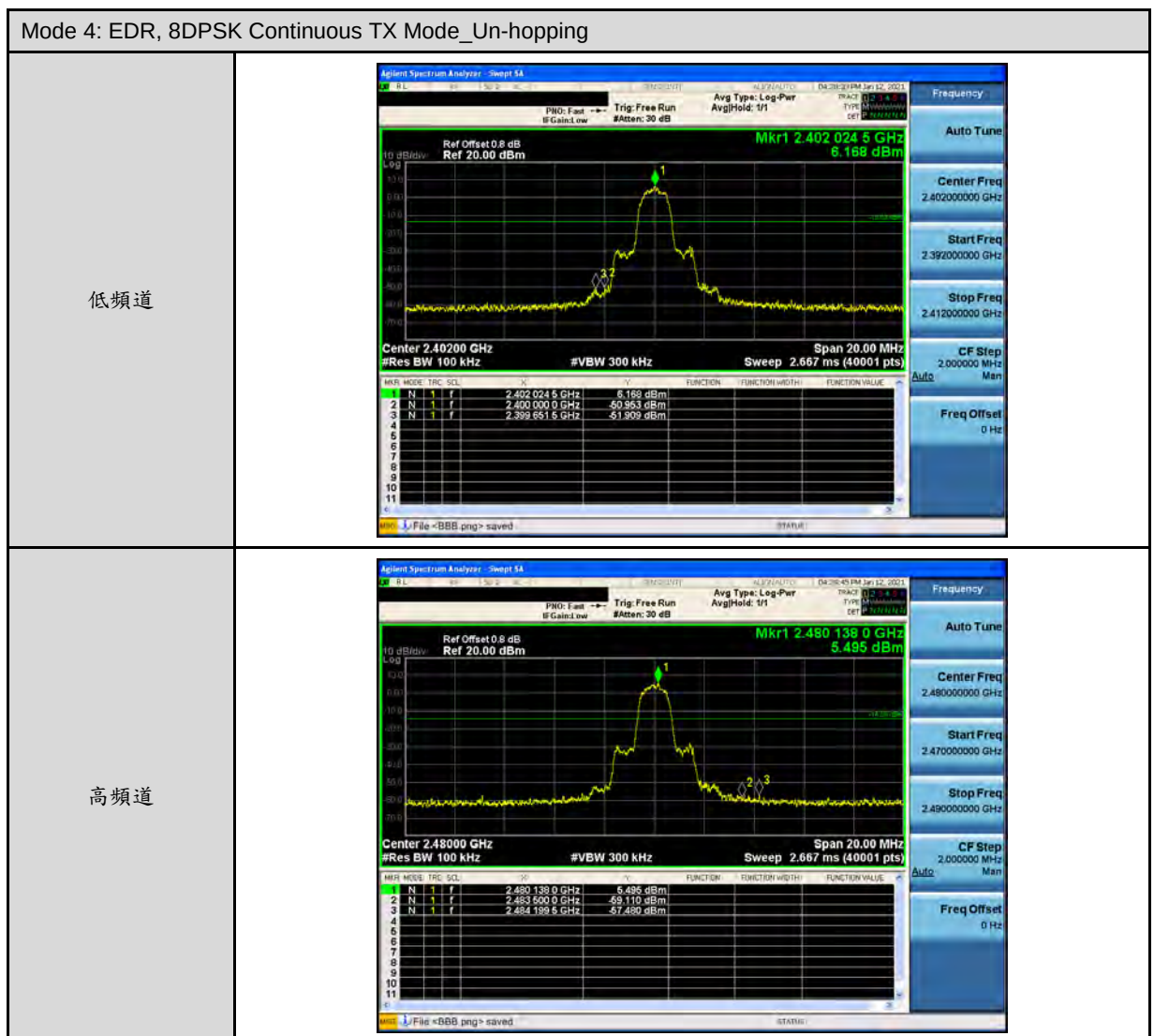
低頻道

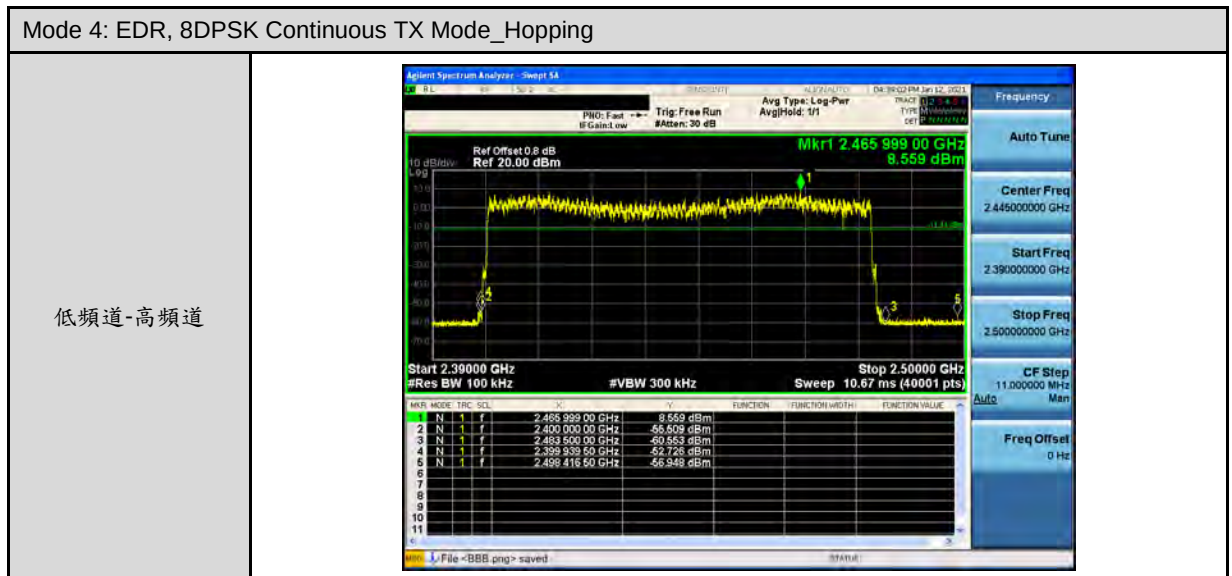


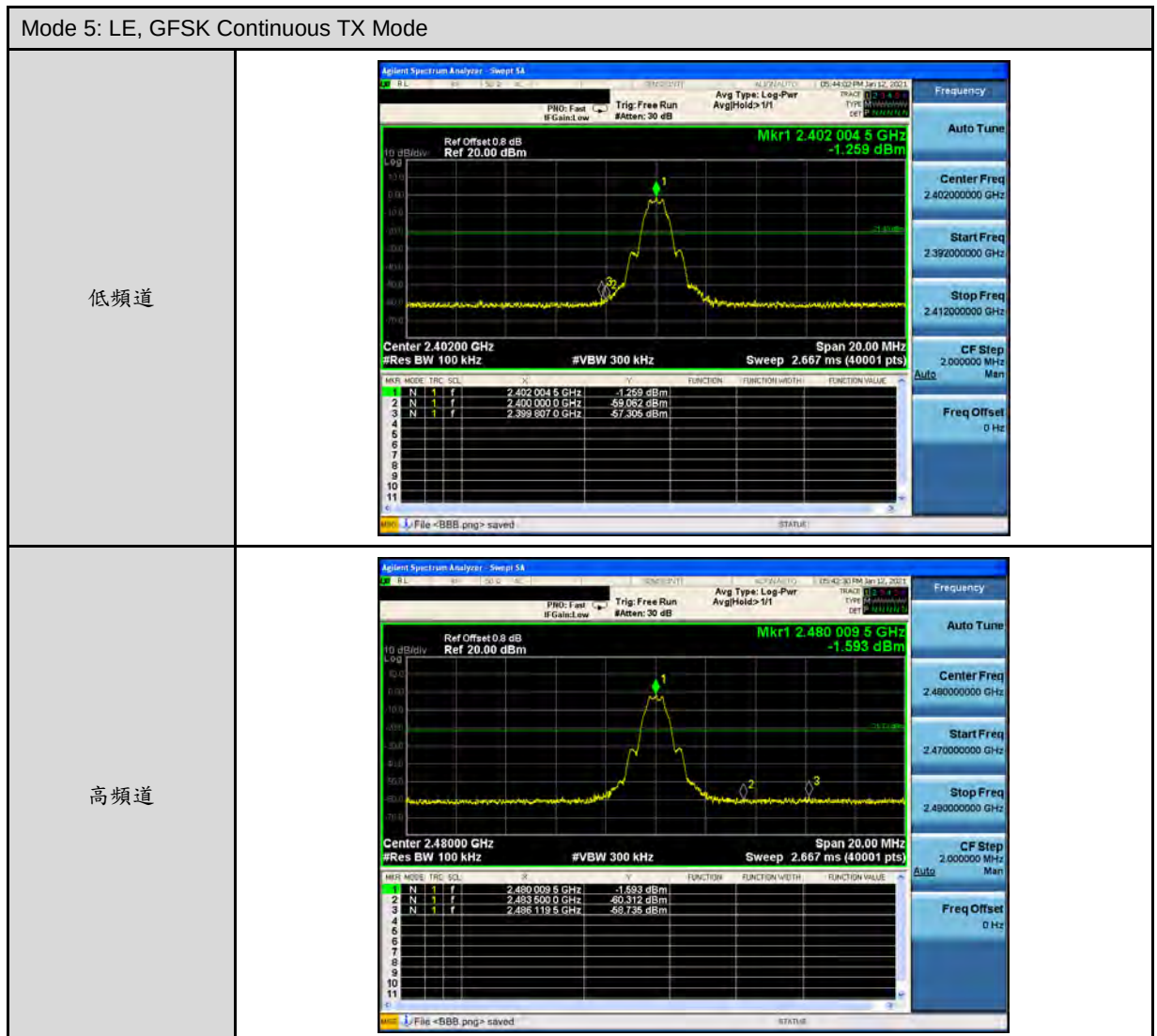
高頻道





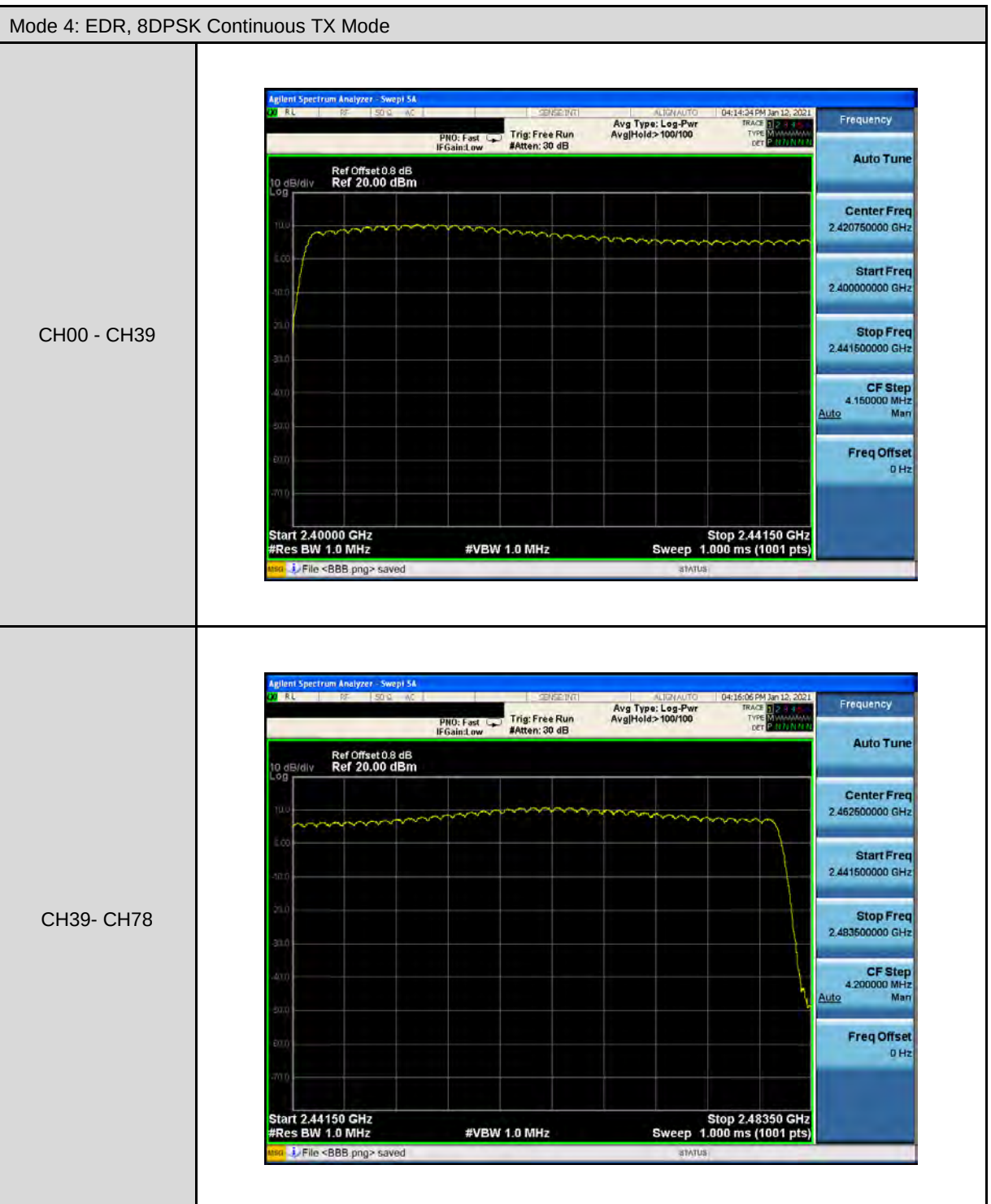






頻率範圍及頻道數之要求

Mode 2: BR, GFSK Continuous TX Mode	
CH00 - CH39	 Agilent Spectrum Analyzer - Swept SA Ref Offset 0.8 dB Ref 20.00 dBm Start 2.40000 GHz #Res BW 1.0 MHz #VBW 1.0 MHz Sweep 1.000 ms (1001 pts) Stop 2.44150 GHz Frequency Auto Tune Center Freq 2.420750000 GHz Start Freq 2.400000000 GHz Stop Freq 2.441500000 GHz CF Step 4.150000 MHz Freq Offset 0 Hz
CH39- CH78	 Agilent Spectrum Analyzer - Swept SA Ref Offset 0.8 dB Ref 20.00 dBm Start 2.44150 GHz #Res BW 1.0 MHz #VBW 1.0 MHz Sweep 1.000 ms (1001 pts) Stop 2.48350 GHz Frequency Auto Tune Center Freq 2.462500000 GHz Start Freq 2.441500000 GHz Stop Freq 2.483500000 GHz CF Step 4.200000 MHz Freq Offset 0 Hz



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	1.034	0.689	---
	中頻道	1.051	0.701	---
	高頻道	1.027	0.685	---
Mode 4	低頻道	1.309	0.873	---
	中頻道	1.310	0.873	---
	高頻道	1.323	0.882	---
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			
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	676.500	≥ 500
	中頻道	672.600	≥ 500
	高頻道	668.500	≥ 500

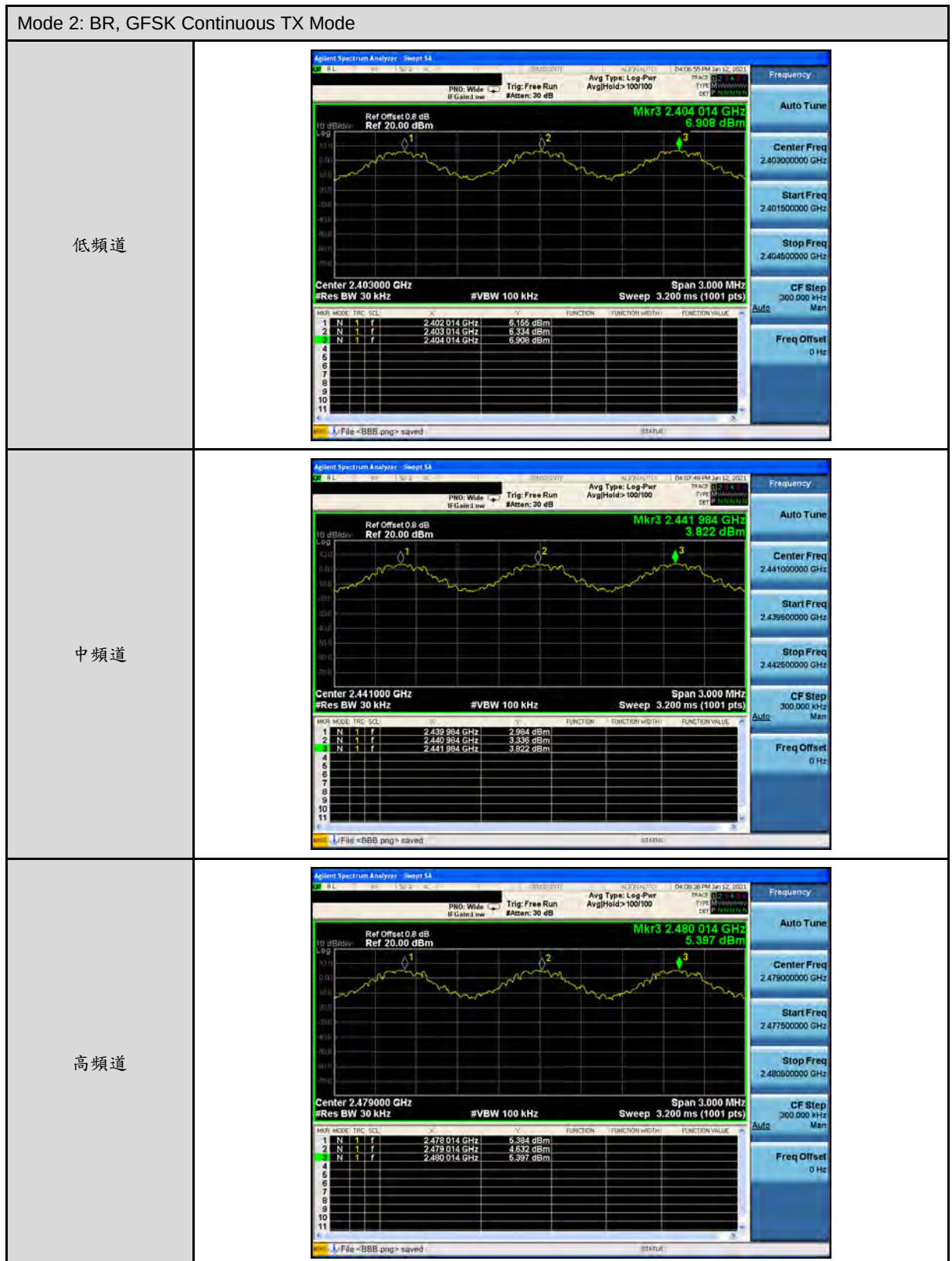


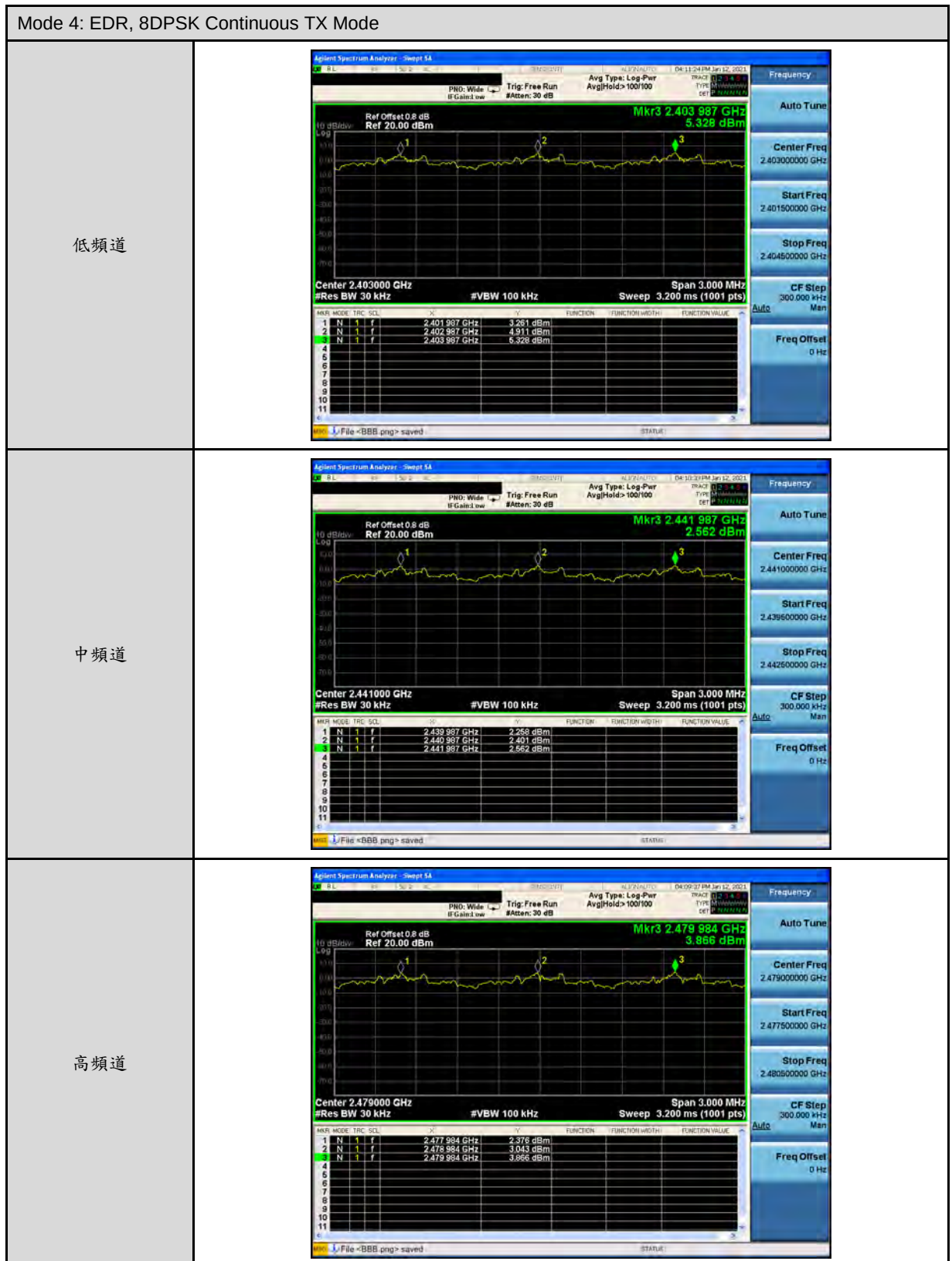
Mode 4: EDR,8DPSK Continuous TX Mode	
低頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.40200000 GHz Trig: Free Run AvgHold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.402 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.1844 MHz Total Power 14.2 dBm Transmit Freq Error 95 Hz OBW Power 99.00 % x dB Bandwidth 1.309 MHz x dB -20.00 dB File <BBS.png> saved
中頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.441000000 GHz Trig: Free Run AvgHold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.441 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.1915 MHz Total Power 12.0 dBm Transmit Freq Error -2.343 kHz OBW Power 99.00 % x dB Bandwidth 1.310 MHz x dB -20.00 dB File <BBS.png> saved
高頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Trig: Free Run AvgHold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.48 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.1874 MHz Total Power 13.4 dBm Transmit Freq Error -2.837 kHz OBW Power 99.00 % x dB Bandwidth 1.323 MHz x dB -20.00 dB File <BBS.png> saved

Mode 5: LE, GFSK Continuous TX Mode	
低頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.40200000 GHz Trig: Free Run AvgHold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm 10 dB/div Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 1.0861 MHz Total Power 5.23 dBm Transmit Freq Error 6.482 kHz OBW Power 99.00 % x dB Bandwidth 676.5 kHz x dB -6.00 dB File <BBS.png> saved
中頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Trig: Free Run AvgHold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm 10 dB/div Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 1.0870 MHz Total Power 3.20 dBm Transmit Freq Error 4.924 kHz OBW Power 99.00 % x dB Bandwidth 672.6 kHz x dB -6.00 dB File <BBS.png> saved
高頻道	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Trig: Free Run AvgHold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm 10 dB/div Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 1.0868 MHz Total Power 5.01 dBm Transmit Freq Error 3.448 kHz OBW Power 99.00 % x dB Bandwidth 668.5 kHz x dB -6.00 dB File <BBS.png> saved

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	鄰頻道載波間隔	
		量測值 (MHz)	限制值 (MHz)
Mode 2	低頻道	1.000	≥ 0.689
	中頻道	1.000	≥ 0.701
	高頻道	1.000	≥ 0.685
Mode 4	低頻道	1.000	≥ 0.873
	中頻道	1.000	≥ 0.873
	高頻道	1.000	≥ 0.882





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)	$79\text{CH} * 0.4 = 31.6$ (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	$800/79\text{CH} = 10.13$ (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)	$79\text{CH} * 0.4 = 31.6$ (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	$400/79\text{CH} = 5.06$ (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)	$79\text{CH} * 0.4 = 31.6$ (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	$266.7/79\text{CH} = 3.38$ (次/秒)
頻道每次佔用之時間(1)	2.930 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)	312.947 ms (秒)
LIMIT(msec)	≤ 400

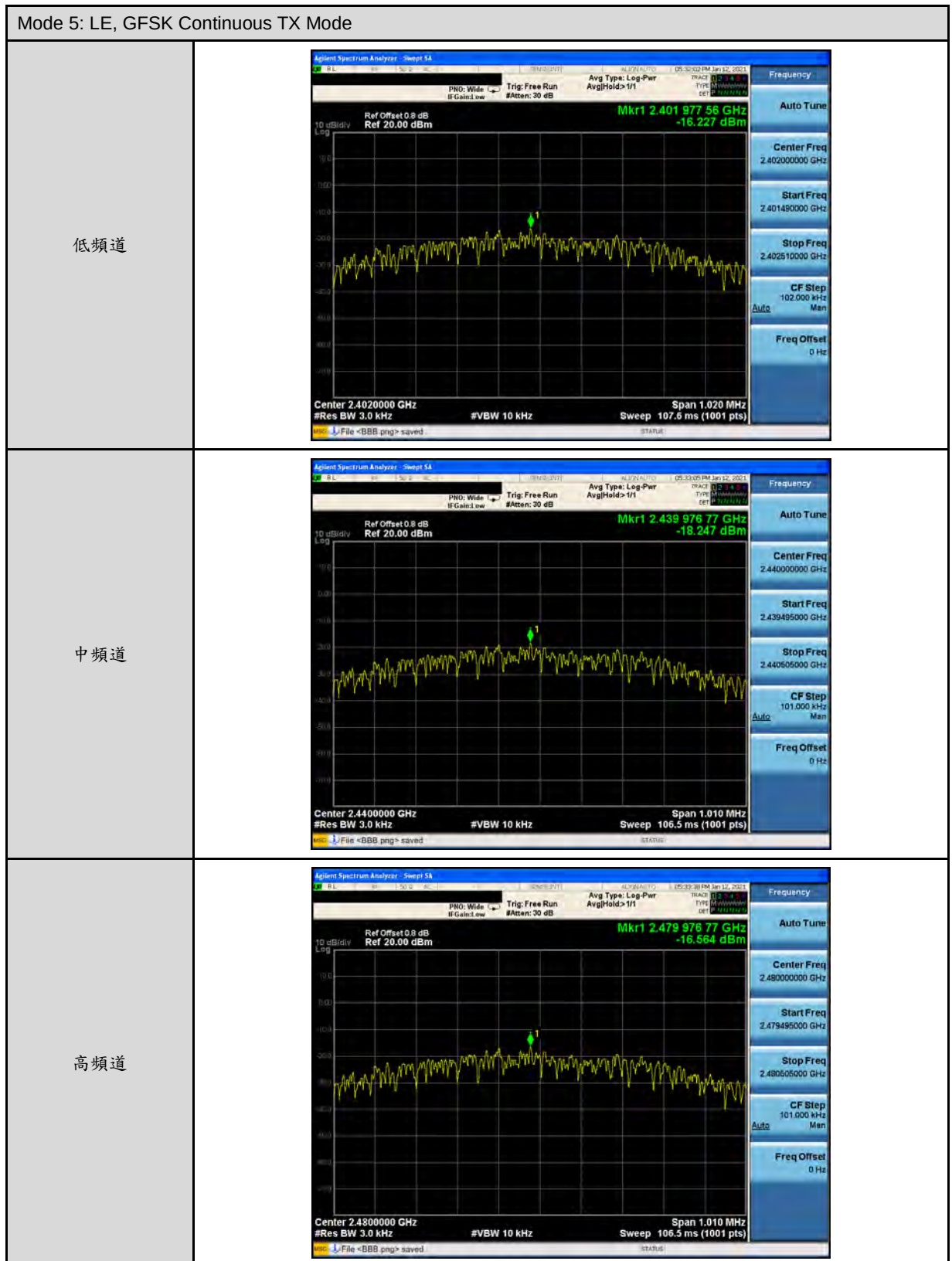
Mode 2: BR, GFSK Continuous TX Mode	
DH1	Agilent Spectrum Analyzer - Sweep 54 Ref Offset: 0.8 dB Ref: 20.00 dBm ΔMkr1 420.0 μs -3.52 dB Center 2.402000000 GHz Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (1001 pts) Span 0 Hz File <BBB.png> saved
DH3	Agilent Spectrum Analyzer - Sweep 54 Ref Offset: 0.8 dB Ref: 20.00 dBm ΔMkr1 1.670 ms -0.34 dB Center 2.402000000 GHz Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (1001 pts) Span 0 Hz File <BBB.png> saved
DH5	Agilent Spectrum Analyzer - Sweep 54 Ref Offset: 0.8 dB Ref: 20.00 dBm ΔMkr1 2.930 ms -4.13 dB Center 2.402000000 GHz Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (1001 pts) Span 0 Hz File <BBB.png> saved

Mode 4: EDR, 8DPSK Continuous TX Mode	
3DH1 模式	
需量測之週期(秒)	$79\text{CH} * 0.4 = 31.6$ (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	$800/79\text{CH} = 10.13$ (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
3DH3 模式	
需量測之週期(秒)	$79\text{CH} * 0.4 = 31.6$ (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	$400/79\text{CH} = 5.06$ (次/秒)
頻道每次佔用之時間(1)	1.680 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)	268.625 ms (秒)
LIMIT(msec)	≤ 400
3DH5 模式	
需量測之週期(秒)	$79\text{CH} * 0.4 = 31.6$ (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	$266.7/79\text{CH} = 3.38$ (次/秒)
頻道每次佔用之時間(1)	2.930 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)	312.947 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			
操作模式	頻道	量測值 (dBm/3 kHz)	限制值 (dBm/3 kHz)
Mode 5	低頻道	-16.227	≤ 8
	中頻道	-18.247	≤ 8
	高頻道	-16.564	≤ 8



---END---