

低功率射頻器材試驗報告

產品名稱 PERSONAL COMMUNICATION DEVICE

申請廠商 CRESTRON ELECTRONICS, INC.

廠 牌 CRESTRON

型式 (號) M202029001

系列型式 (號) M202029002

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

報告發行日期 Mar. 16, 2022

填發本型式認可報告之試驗機構 (認可代號)

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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

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報告修訂紀錄

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低功率射頻器材測試證明書

產品名稱 : PERSONAL COMMUNICATION DEVICE

廠 牌 : CRESTRON

型 號 : M202029001

系列型號 : M202029002

申請廠商 : CRESTRON ELECTRONICS, INC.

申請者地址 : 15 VOLVO DRIVE, ROCKLEIGH, NJ 07647, USA

製造廠商 : CRESTRON ELECTRONICS, INC.

量測規範 : 低功率射頻器材技術規範(LP0002) 109年7月1日

試驗實驗室 : 晶復科技股份有限公司(桃園市八德區長安街140-1號)

樣品接受日期 : Dec. 01, 2021

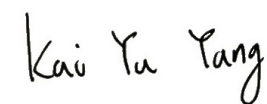
試驗日期 : Dec. 18, 2021 ~ Jan. 29, 2022

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 ！

Approved By :



(Kai Yu Yang)

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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	CRESTRON ELECTRONICS, INC.			
廠 牌	CRESTRON			
型 號	M202029001			
系 列 型 號	M202029002			
額 定 電 源	DC 48 V, 0.5 A from POE			
待測物電源類別	POE			
調 變 方 式	GFSK, $\pi/4$ -DQPSK, 8DPSK			
頻 率 使 用 範 圍	2402 MHz – 2480 MHz			
天 線 資 訊	廠牌	型號	型態	增益值(dBi)
	GRANDSTREAM	主型號: 118-00085-00	Dipole Antenna	4.5
		系列型號: 118-00080-00		
	Note：天線差異僅為型號不同，其他設計原理、天線型式、增益值均相同。			
RF 最大輸出功率	BR, GFSK:	7.99 dBm/	0.00630	W
	EDR, $\pi/4$ -DQPSK:	6.79 dBm/	0.00478	W
	EDR, 8DPSK:	6.89 dBm/	0.00489	W
	LE, GFSK:	3.71 dBm/	0.00235	W
	2LE, GFSK:	3.69 dBm/	0.00234	W

輸出/輸入埠說明：

輸 出 / 入 埠		數量	介面內容說明
1	USB Type-C Port	1	連接至耳機
2	RJ45 Port	2	連接至電腦 / 電源供應器 / Access Point
3	RJ9 Port	1	連接至手柄

附屬裝置表

裝置名稱		廠牌	型號	備註
(A)	電話線	CE-LINK/ EJE / Haoyuyong	T04130-0014 / 901-0Z16008/ 4C Black 3.5m P/ P Curve	RJ9 Port (phone)->RJ9 Port (handset)
(B)	手柄	CRESTRON	M202029002	---
(C)	網路線	DEHAO	DH-0592-038	RJ45 → RJ45

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

原機型 廠牌/型號	系列機型 廠牌/型號	差異敘述			
CRESTRON / M202029001	CRESTRON / M202029002	因市場銷售需求，增列一款系列機型，差異如下： (1) 外觀設計與螢幕尺寸不同 (2) 非射頻電路設計微調 (3) 天線型號不同，型態、增益皆相同 其餘射頻元件及其週邊電路設計、印刷電路板等等並無變更。			
		測試結果說明： 經工程判定其差異需驗證電源線傳導干擾測試與場強輻射其他不必要之訊號(1 GHz以下)、場強輻射(1 GHz以上)，結果請參考以下表格			
			電源線傳導 干擾	場強輻射其他 不必要之訊號 (1 GHz以下)	場強輻射 (1 GHz以上)
		主型號(有攝像頭)	V	V	V
		主型號(無攝像頭)			
		系列型號(有攝像頭)			
		系列型號(無攝像頭)			
		故以主型號(有攝像頭)完整測試並記錄其結果數據。			

2. 量測儀器及測試配置說明

2.1 量測設備

For Conducted Emission

Test Period: Dec. 18, 2021

Testing Engineer: Chi Chang

Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Test Receiver	R&S	ESCI	100367	May 21, 2021	1 year
☐	Test Receiver	R&S	ESCI	100722	Nov. 02, 2021	1 year
☐	Test Receiver	R&S	ESCI	101000	Nov. 26, 2021	1 year
☒	LISN	R&S	ENV216	101040	Mar. 29, 2021	1 year
☒	LISN	R&S	ENV216	101041	Apr. 08, 2021	1 year
☒	RF Cable	Woken	00100D1380194M	TE-02-03	May 28, 2021	1 year
☒	Software	EZ EMC	1.1.4.3	N/A	N.C.R.	---

Note: N.C.R. = No Calibration Request.

For Conducted

Test Period: Dec. 27 ~ Dec. 28, 2021

Testing Engineer: Brian Lin

Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Power Sensor	Anritsu	MA2411B	1126022	Sep. 03, 2021	1 year
☒	Power Meter	Anritsu	ML2495A	1135009	Sep. 03, 2021	1 year
☐	Power Sensor	Agilent	N1921A	MY45241957	Dec. 06, 2021	1 year
☐	Power Meter	Agilent	N1911A	MY45101619	Dec. 06, 2021	1 year
☒	Spectrum Analyzer (10 Hz~26.5 GHz)	Keysight	N9010B	MY59071418	Mar. 17, 2021	1 year
☐	Spectrum Analyzer (9 kHz~26.5 GHz)	Agilent	N9010A	MY48030518	Jul. 23, 2021	1 year
☐	Spectrum Analyzer (20 Hz~26.5 GHz)	Agilent	N9020A	US47520902	Sep. 09, 2021	1 year
☐	Spectrum Analyzer (3 Hz~50 GHz)	Agilent	N9030A	MY53120541	Jan. 08, 2021	1 year
☐	Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	Mar. 30, 2021	1 year
☐	Signal Generator	Keysight	N5182B	MY53052569	Apr. 20, 2021	1 year
☐	Signal Generator	Keysight	N5182BX07	MY59360221	Apr. 20, 2021	1 year
☐	Bluetooth Tester	R&S	CBT	100350	Mar. 17, 2021	2 years
☐	Wireless Connectivity Tester	R&S	CMW270	102208	Jun. 02, 2021	1 year
☐	Power Supply	KEITHLEY	2303	4045290	Feb. 01, 2021	1 year
☐	RF Communication Test Set	HP	8920A	3344A03297	Aug. 10, 2021	1 year

Note: N.C.R. = No Calibration Request.

For Radiated Emissions
Test Period: Jan. 29, 2022
Testing Engineer: Marc Yeh

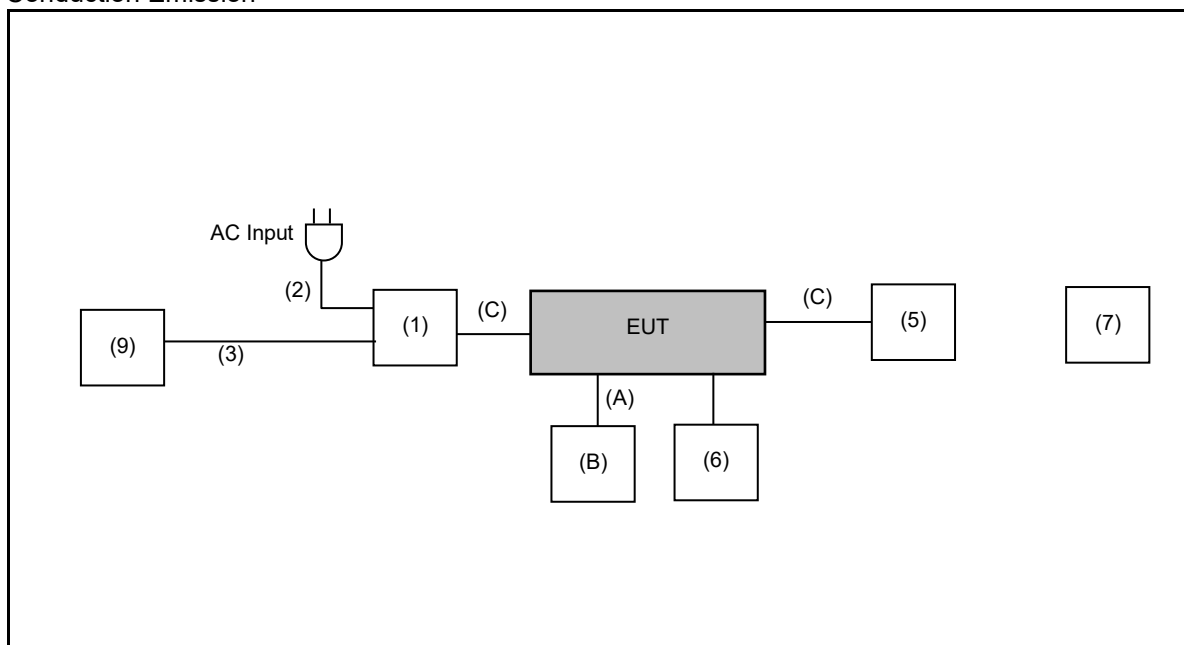
Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☐	Spectrum Analyzer (10 Hz~44 GHz)	Keysight	N9010A	MY52221312	Jan. 18, 2021	1 year
☐	Spectrum Analyzer (3 Hz~50 GHz)	Agilent	N9030A	MY53120541	Jan. 08, 2021	1 year
☒	Spectrum Analyzer (2 Hz~50 GHz)	Keysight	N9030B	MY57143537	Apr. 19, 2021	1 year
☒	Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A11119	Jan. 17, 2022	1 year
☐	Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A10961	Jul. 06, 2021	1 year
☐	Broadband Amplifier (100 kHz~1 GHz)	Titan	T0910E00014330A1F	001	Jul. 23, 2021	1 year
☐	Amplifier (1 GHz~26.5 GHz)	Agilent	8449B	3008A02237	Oct. 21, 2021	1 year
☒	Broadband Amplifier (1 GHz~26.5 GHz)	Titan	T0912E01263025A1F	002	Jul. 26, 2021	1 year
☐	Preamplifier (26.5 GHz~40 GHz)	EMCI	EMC2654045	980028	Aug. 19, 2021	1 year
☐	Loop Antenna (9 kHz~30 MHz)	COM-POWER CORPORATION	AL-130	121014	Apr. 07, 2021	1 year
☒	Trilog Broadband Antenna (30 kHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	01146	Jul. 19, 2021	1 year
☐	Trilog Broadband Antenna (30 kHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	416	Nov. 17, 2021	1 year
☒	Broadband Horn Antenna (1 GHz~18 GHz)	Schwarzbeck Mess-Elektronik	9120D	02207	Jul. 09, 2021	1 year
☐	Broadband Horn Antenna (1 GHz~18 GHz)	Schwarzbeck Mess-Elektronik	9120D	9120D-550	Aug. 24, 2021	1 year
☒	Broadband Horn Antenna (18 GHz~40 GHz)	Schwarzbeck Mess-Elektronik	9170	9170-320	Aug. 24, 2021	1 year
☐	Horn Antenna (18 GHz~40 GHz)	ETS	3116	00086467	Dec. 03, 2021	1 year

Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☐	RF Cable	EMCI	EMC104-N-N-6000	TE01-1	Feb. 19, 2021	1 year
☐	Microwave Cable	EMCI	EMC104-SM-SM-13000	170814	Feb. 19, 2021	1 year
☐	Microwave Cable	EMCI	EMC102-KM-KM-14000	151001	Feb. 19, 2021	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A100	J11005	Aug. 06, 2021	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A900	J11004	Aug. 06, 2021	1 year
☒	Coaxial Cable	Titan	CFD400NL-LW	001	Aug. 06, 2021	1 year
☐	Bluetooth Tester	R&S	CBT	100350	Mar. 17, 2021	2 years
☐	Wireless Connectivity Tester	R&S	CMW270	102208	Jun. 02, 2021	1 year
☐	Power Supply	KEITHLEY	2303	4045290	Feb. 01, 2021	1 year
☒	Software	EZ EMC	1.1.4.4	N/A	N.C.R.	---

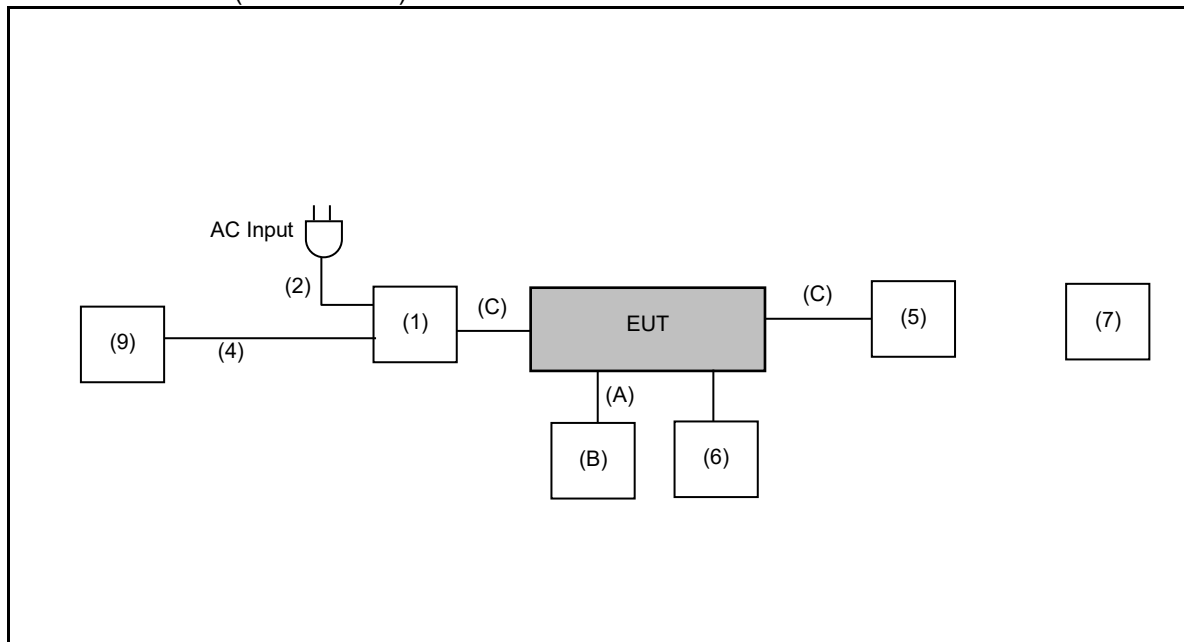
Note: N.C.R. = No Calibration Request.

2.2 檢驗系統示意圖

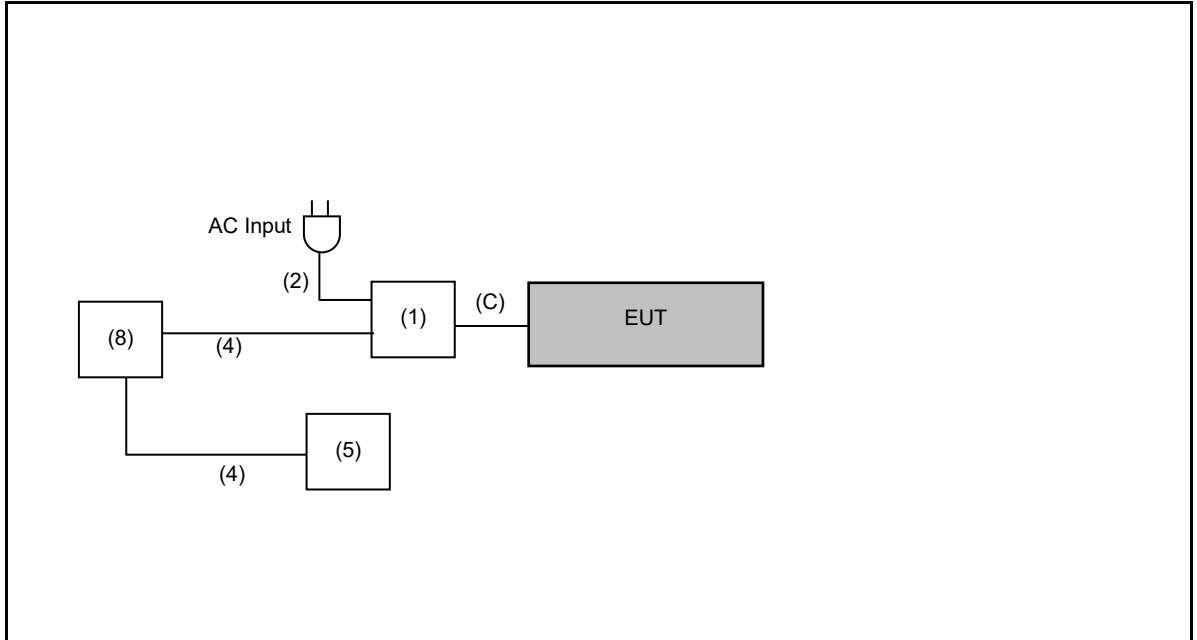
Conduction Emission



Radiation Emission(Below 1 GHz)



Radiation Emission(Above 1 GHz)



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)	電源供應器	GOSPELL	G0720-480-050	---	---	INPUT : AC 100-240 V, 50/60 Hz, 0.75 A OUTPUT : DC 48 V, 0.5 A (申請者提供)
(2)	電源線	潮州市朝輝電氣有限公司	CH-1902+CH-112 (7A C13)	---	---	長度 : 0.46 m (申請者提供)
(3)	LAN Cable	思普	CAT6	---	---	RJ45 → RJ45 長度 : 3 m (實驗室提供)
(4)	LAN Cable	TATUNG	CAT5E	---	---	RJ45 → RJ45 長度 : 7 m (實驗室提供)
(5)	Notebook	Acer	N19C1	---	---	(實驗室提供)
(6)	耳機	SAMSUNG	EO-IC100	---	---	(實驗室提供)
(7)	Portable Bluetooth Speaker	harman/kardon	HK NEO	---	---	NCC ID : CCAK19LP1150T7 (實驗室提供)
(8)	Access Point	ASUS	RT-AX88U	---	---	NCC ID : CCAF18LP1530T1 (實驗室提供)
(9)	Notebook	HP	5CG1116V9K	---	---	(實驗室提供)

測試組合：

EUT Configure Mode	CE	RE<1G	RE ≥ 1G	備註
電話線	V	V	V	附屬裝置(A)
手柄	V	V	V	附屬裝置(B)
網路線	V	V	V	附屬裝置(C)
電源供應器	V	V	V	測試週邊(1)
電源線	V	V	V	測試週邊(2)
LAN Cable	V	---	---	測試週邊(3)
LAN Cable	---	V	V	測試週邊(4)
Notebook	V	V	V	測試週邊(5)
耳機	V	V	---	測試週邊(6)
Portable Bluetooth Speaker	V	V	X	測試週邊(7) Normal Link
Access Point	X	X	V	測試週邊(8) Test Mode使用
Notebook	V	V	---	測試週邊(9)

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: 2LE, GFSK Continuous TX Mode
Mode 7: 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: 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	command line
		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	command line
	2440	Default	
	2480	Default	
Mode 6	2402	Default	
	2440	Default	
	2480	Default	

2.5 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	5.2 dB
	18000 MHz ~ 26500 MHz	4.6 dB
	26500 MHz ~ 40000 MHz	4.6 dB
Conducted Output Power	1.1 dB	
RF Bandwidth	4.7 %	
Power Spectral Density	1.1 dB	

2.6 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	請參閱 5.1 節	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	請參閱 5.2 節	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	請參閱 5.2 節	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	請參閱 5.2 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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
13	電波暴露量之評估	低功率射頻器材技術規範 6.20.2 節	N/A	N/A	不適用

* 此項目為在 RF 功能作動下進行

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	請參閱 5.1 節	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	請參閱 5.2 節	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	請參閱 5.2 節	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	請參閱 5.2 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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	請參閱 5.3 節	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
10	電波暴露量之評估	低功率射頻器材技術規範 6.20.2 節	N/A	N/A	不適用

* 此項目為在 RF 功能作動下進行

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。

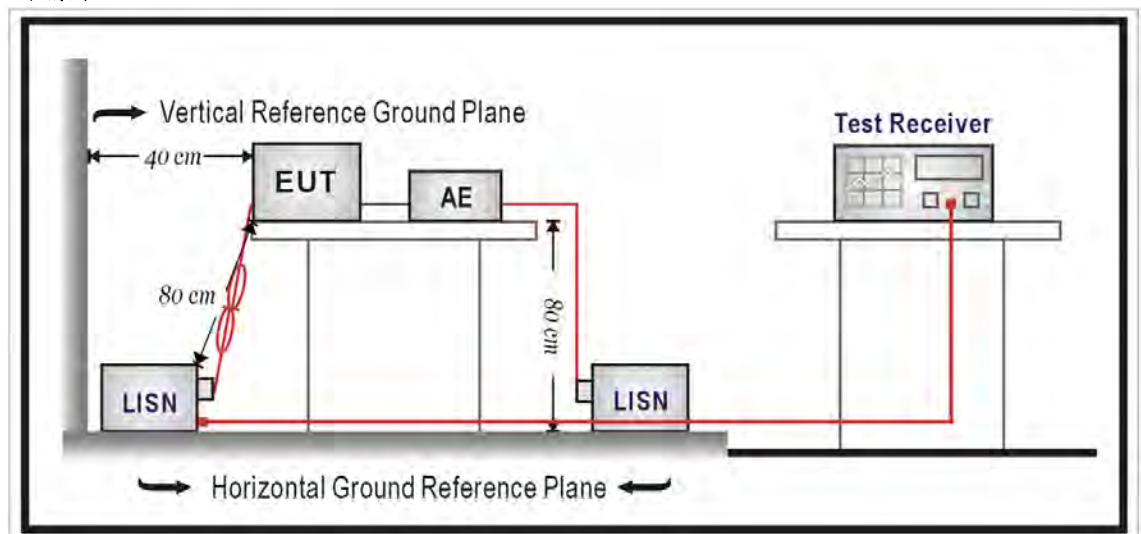
干擾值之計算

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。

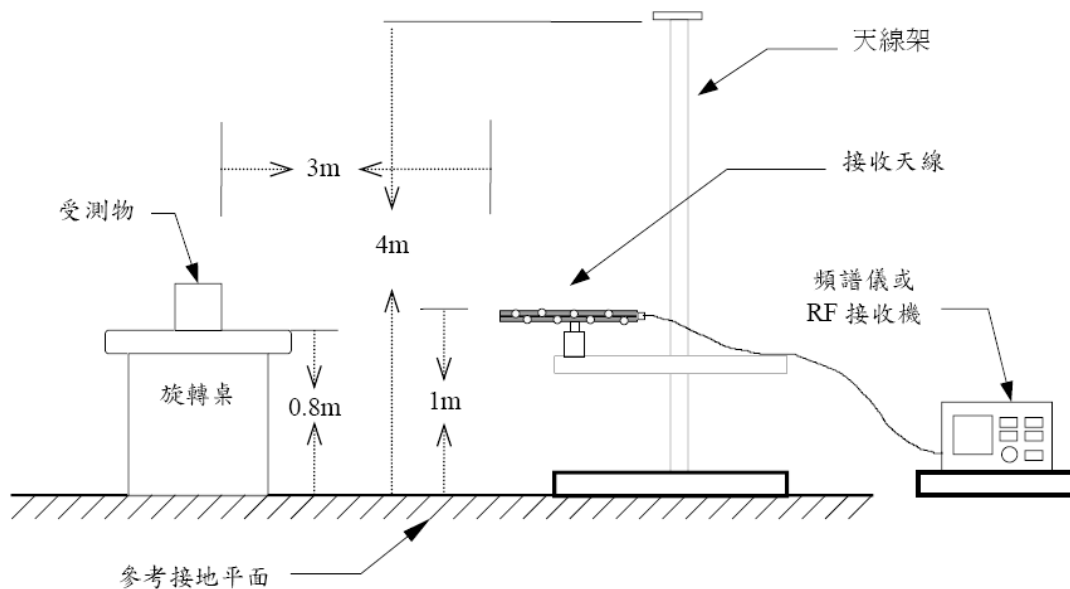
場強度之計算

場強之計算公式為：結果值 = 讀值 + 校正因子

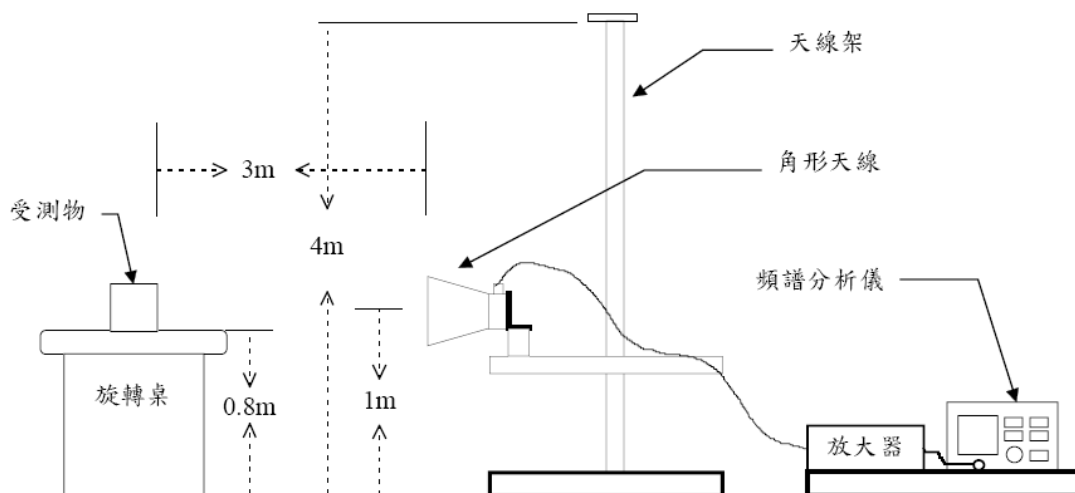
其中校正因子為：天線因子+ 饋線損失 + 濾波器損失（若有使用） - 放大器增益（若有使用）

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

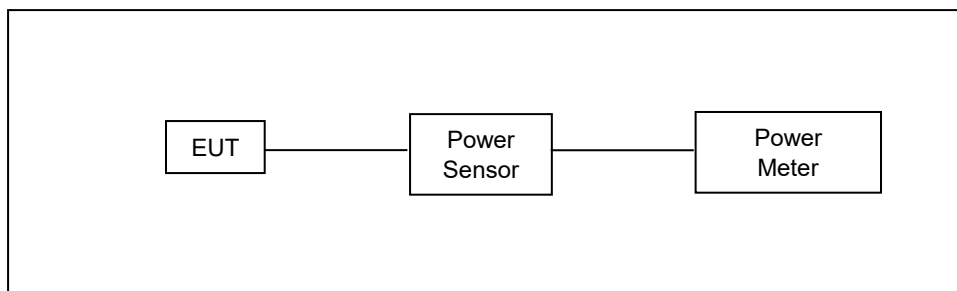
依據 NCC 低功率射頻器材技術規範(LP0002)之 4.10.1.2(1)(B)節之要求，所有操作於 2400-2483.5 兆赫且輸出功率應小於或等於 0.125 W。

LE/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：

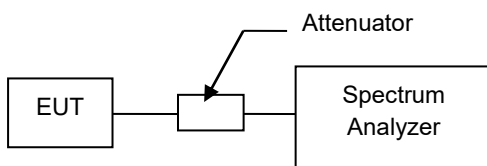


4.4 非必要頻帶之量測

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，BR/EDR 須衰減 20 分貝(dB) / LE/2LE 須衰減 30 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，BR/EDR 須衰減 20 分貝(dB)以上 / LE/2LE 須衰減 30 分貝(dB)以上，符合規定。

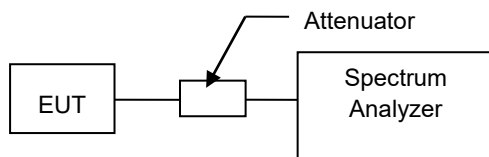
附註 2: 測試結果頻帶外之輻射雜訊 BR/EDR 皆小於主頻 TX 20 dB；LE/2LE 皆小於主頻 TX 30 dB。

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：

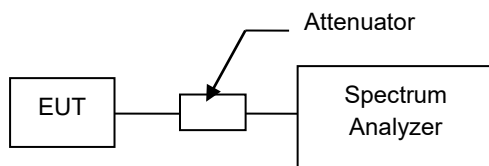
BR/EDR

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：

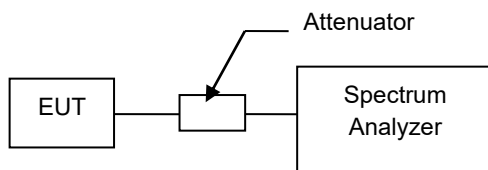


4.7 頻道數之要求

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：

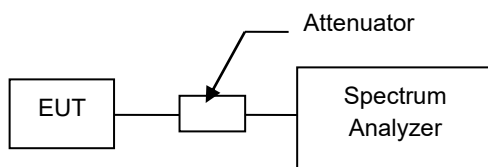


4.8 跳頻系統之載波頻率頻道間隔之量測

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：

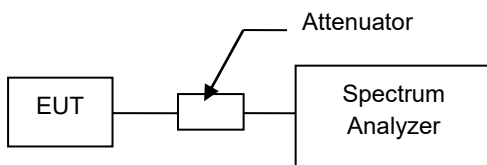


4.9 跳頻系統之任一頻率佔用之平均時間之量測

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：

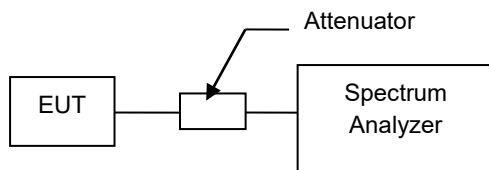


4.10 功率密度之要求

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。

4.12 電波暴露量之評估

合格標準：

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

6.20.2.1 職業性/可控制之暴露

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

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

6.20.2.2 一般人/不可控制之暴露

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

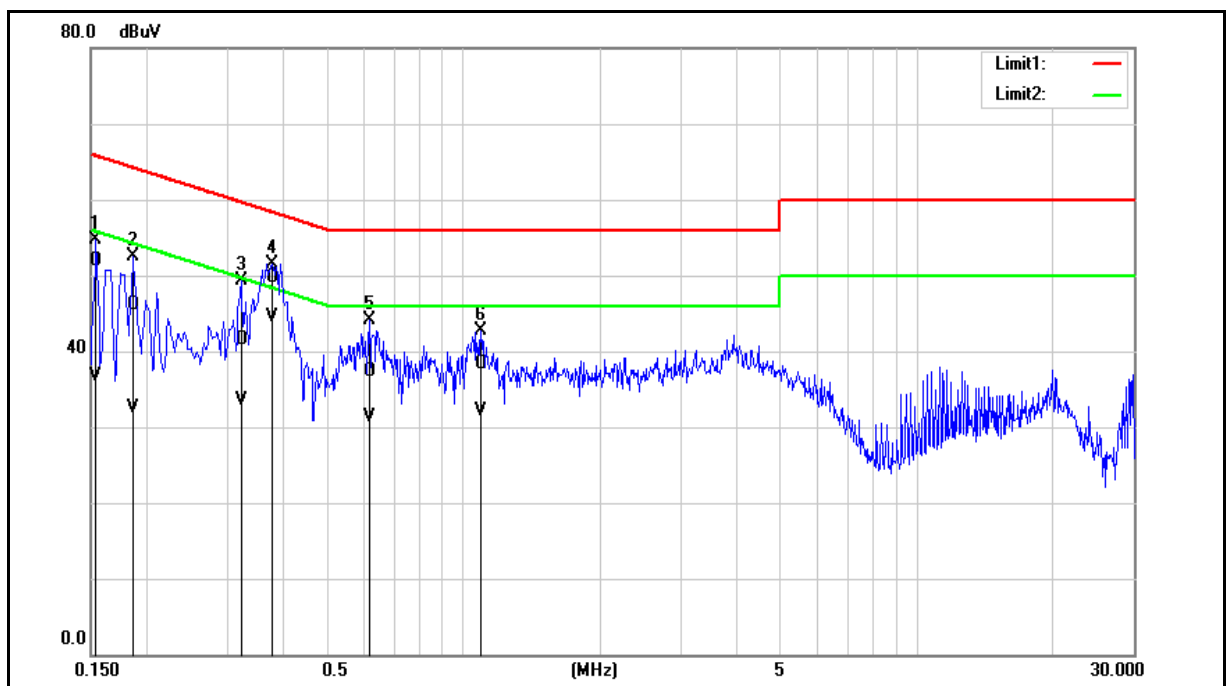
註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

5. Test Results

5.1 Conducted Emission

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

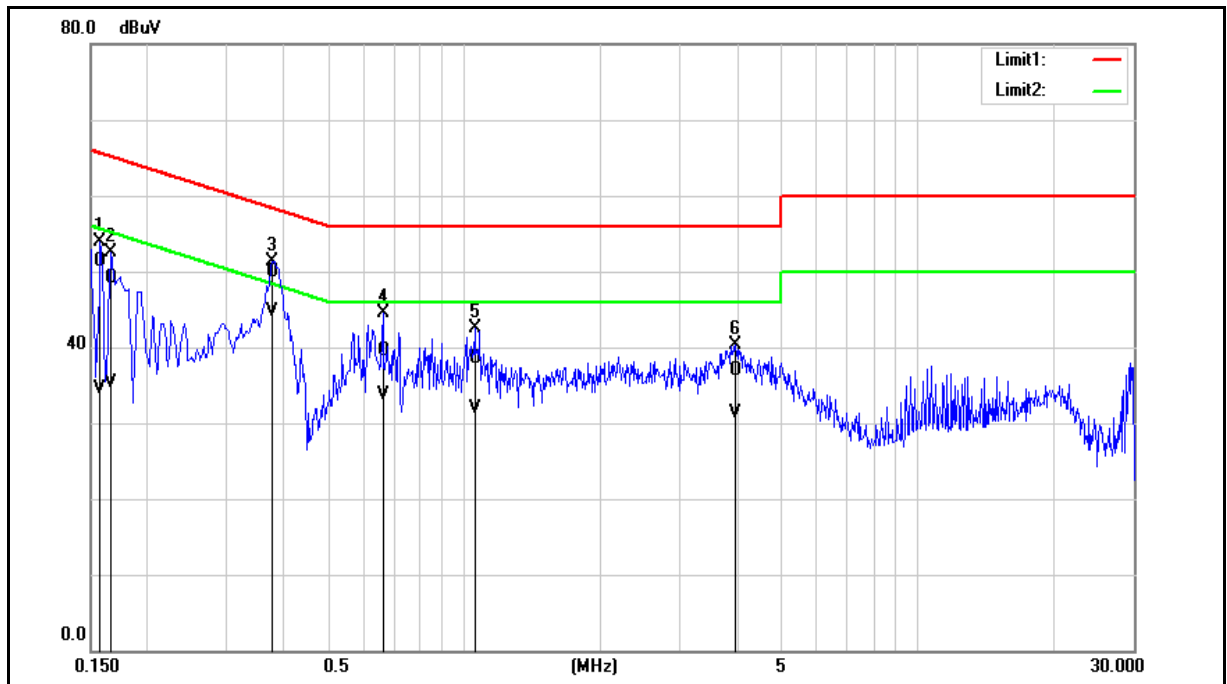


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1540	42.24	26.94	9.74	51.98	36.68	65.78	55.78	-13.80	-19.10	Pass
2	0.1860	36.40	22.83	9.74	46.14	32.57	64.21	54.21	-18.07	-21.64	Pass
3	0.3220	31.71	23.87	9.73	41.44	33.60	59.66	49.66	-18.22	-16.06	Pass
4	0.3780	40.06	34.83	9.74	49.80	44.57	58.32	48.32	-8.52	-3.75	Pass
5	0.6180	27.59	21.53	9.74	37.33	31.27	56.00	46.00	-18.67	-14.73	Pass
6	1.0900	28.63	22.34	9.76	38.39	32.10	56.00	46.00	-17.61	-13.90	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	0.1580	41.47	24.71	9.74	51.21	34.45	65.57	55.57	-14.36	-21.12	Pass
2	0.1660	39.40	25.60	9.74	49.14	35.34	65.16	55.16	-16.02	-19.82	Pass
3	0.3780	40.09	34.95	9.73	49.82	44.68	58.32	48.32	-8.50	-3.64	Pass
4	0.6620	29.79	23.97	9.74	39.53	33.71	56.00	46.00	-16.47	-12.29	Pass
5	1.0580	28.76	22.22	9.76	38.52	31.98	56.00	46.00	-17.48	-14.02	Pass
6	3.9700	27.07	21.45	9.85	36.92	31.30	56.00	46.00	-19.08	-14.70	Pass

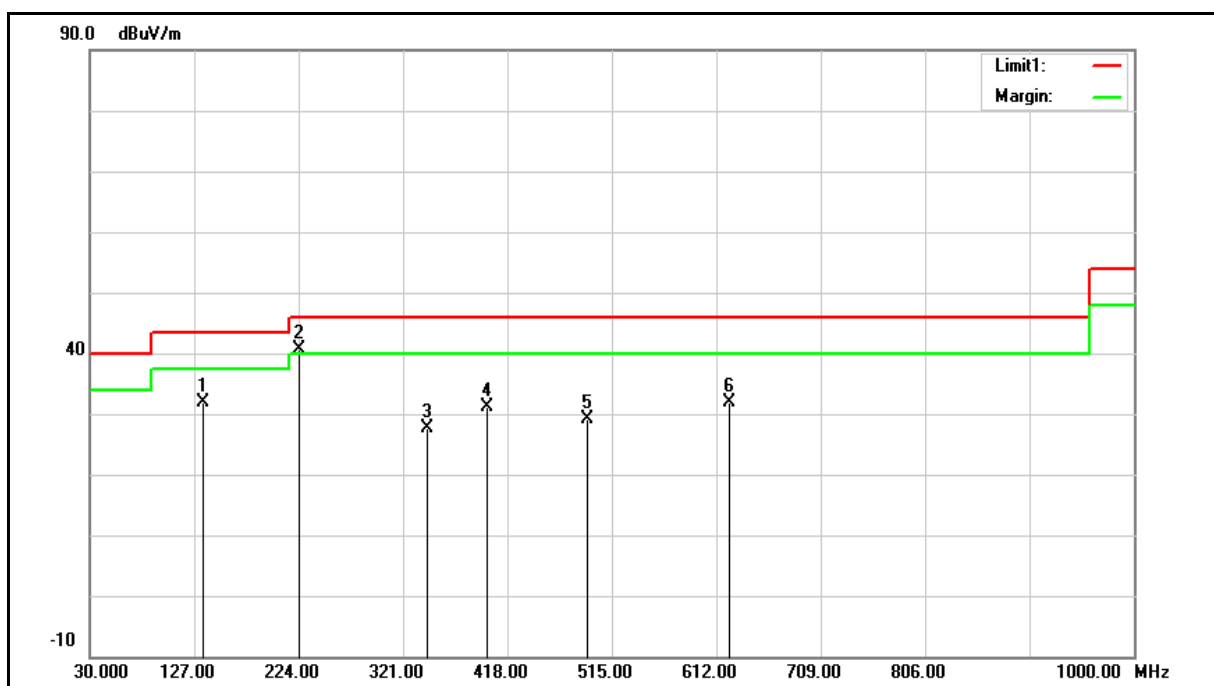
註：1. 干擾值(dBuV) = 校正係數(dB) + 讀值(dBuV)。

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)。

5.2 Radiated Emission Measurement

其它不必要之訊號 (1 GHz 以下)

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



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	134.7600	39.68	-7.75	31.93	43.50	-11.57	QP
2	224.0000	49.13	-8.39	40.74	46.00	-5.26	QP
3	343.3100	32.59	-5.08	27.51	46.00	-18.49	QP
4	398.6000	34.68	-3.43	31.25	46.00	-14.75	QP
5	491.7200	31.00	-1.96	29.04	46.00	-16.96	QP
6	623.6400	30.53	1.24	31.77	46.00	-14.23	QP

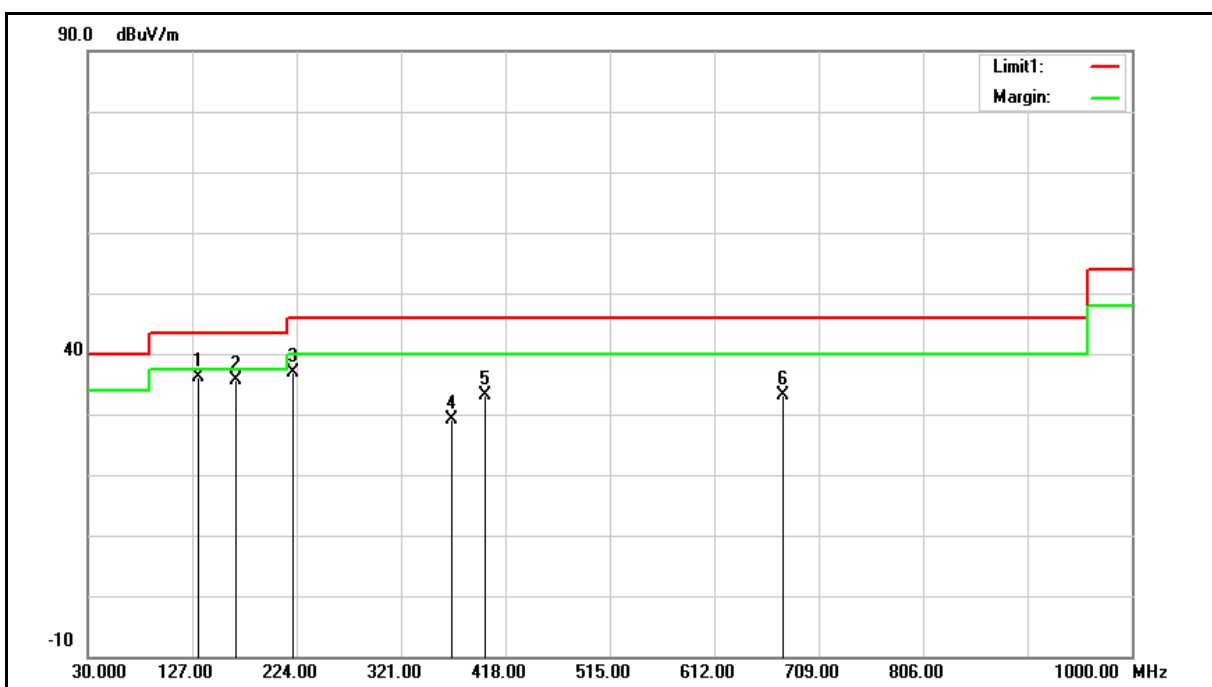
Note: 1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 31.93 = -7.75 + 39.68

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

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

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



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	132.8200	44.02	-7.98	36.04	43.50	-7.46	QP
2	167.7400	42.25	-6.61	35.64	43.50	-7.86	QP
3	221.0900	45.45	-8.57	36.88	46.00	-9.12	QP
4	367.5600	33.61	-4.39	29.22	46.00	-16.78	QP
5	398.6000	36.59	-3.43	33.16	46.00	-12.84	QP
6	676.0200	30.93	2.17	33.10	46.00	-12.90	QP

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

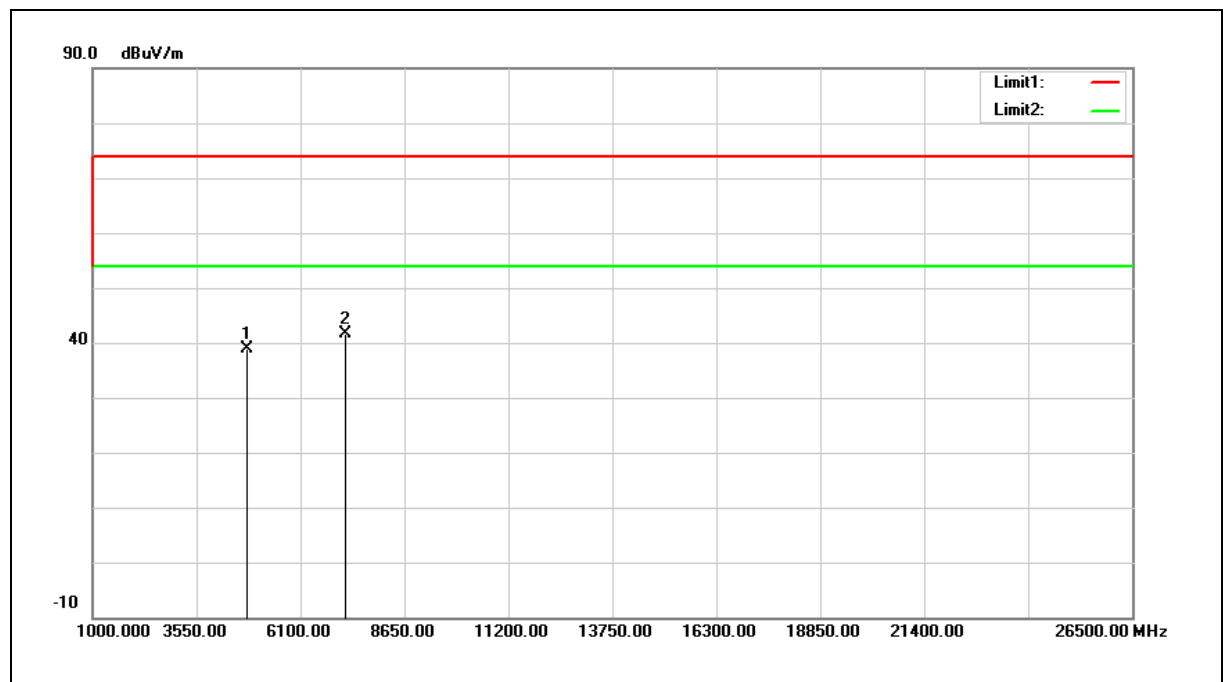
Example: $36.04 = -7.98 + 44.02$

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	39.82	-1.04	38.78	74.00	-35.22	peak
2	7206.000	35.60	6.04	41.64	74.00	-32.36	peak

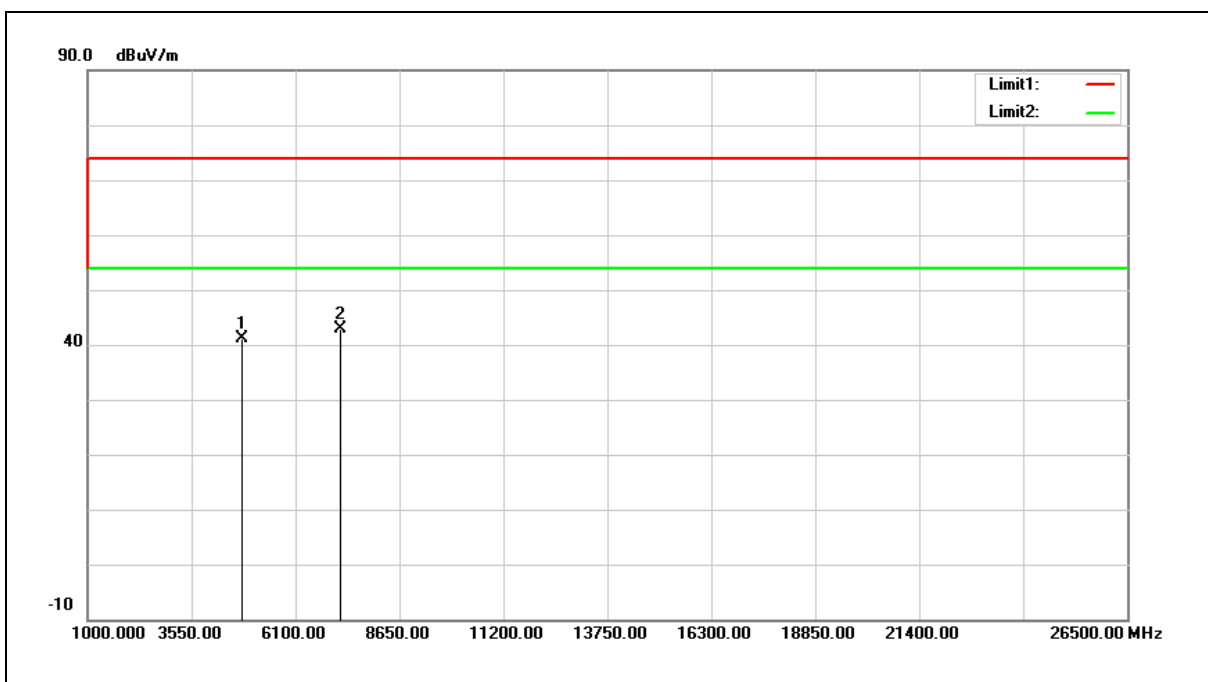
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $38.78 = -1.04 + 39.82$

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	42.25	-1.04	41.21	74.00	-32.79	peak
2	7206.000	36.77	6.04	42.81	74.00	-31.19	peak

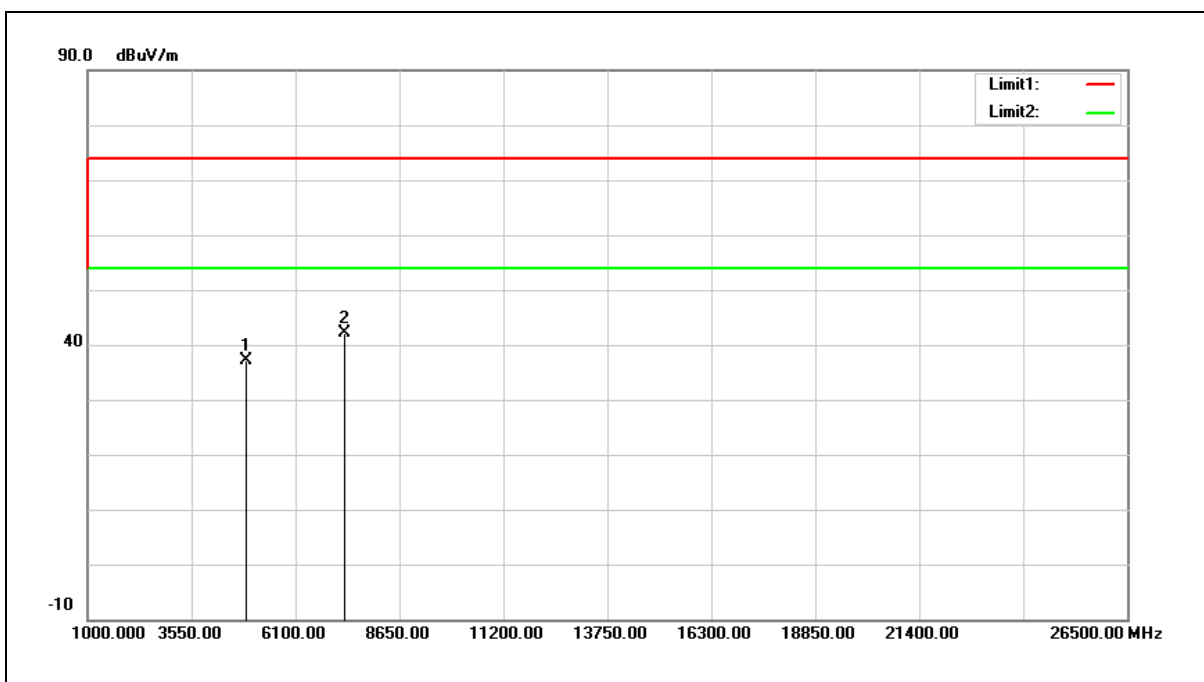
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $41.21 = -1.04 + 42.25$

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		



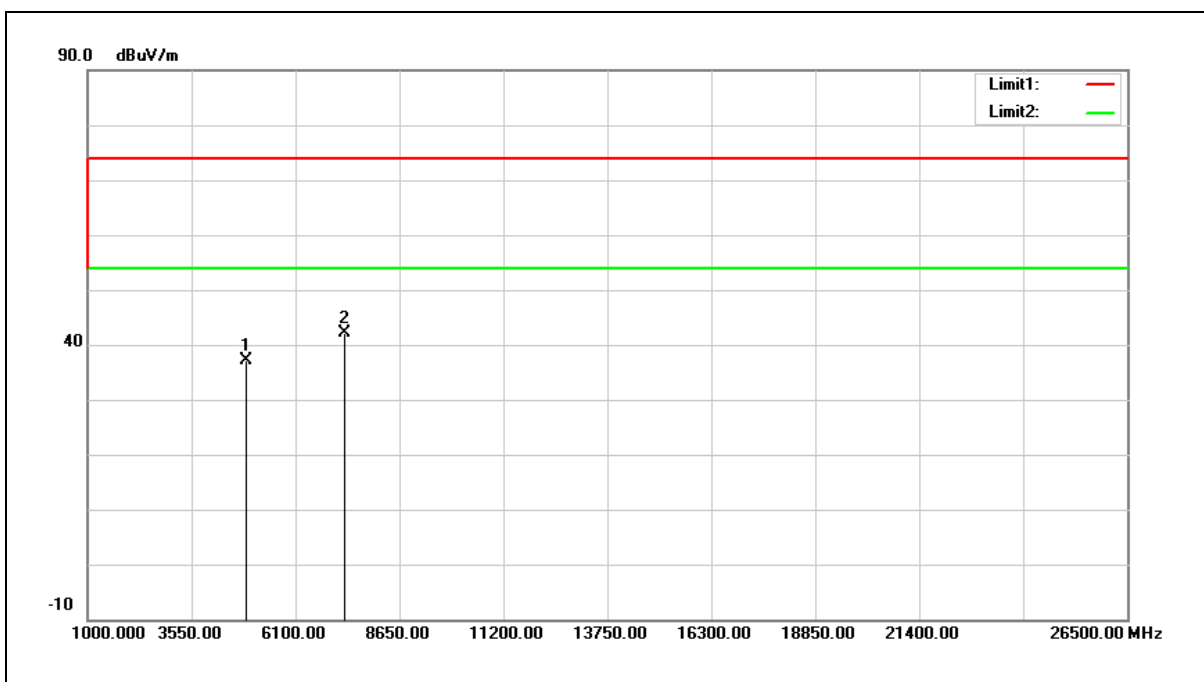
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	38.00	-0.77	37.23	74.00	-36.77	peak
2	7323.000	35.65	6.50	42.15	74.00	-31.85	peak

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



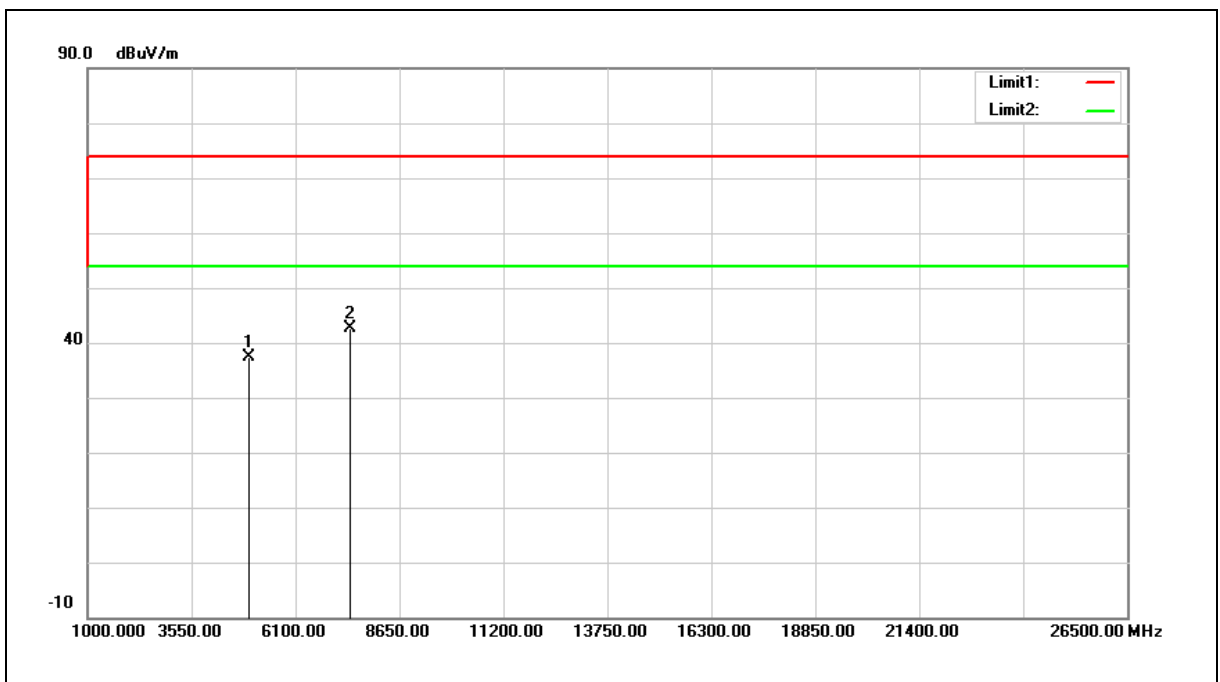
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	37.92	-0.77	37.15	74.00	-36.85	peak
2	7323.000	35.51	6.50	42.01	74.00	-31.99	peak

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 2		
Ant.Polar.:	Horizontal		



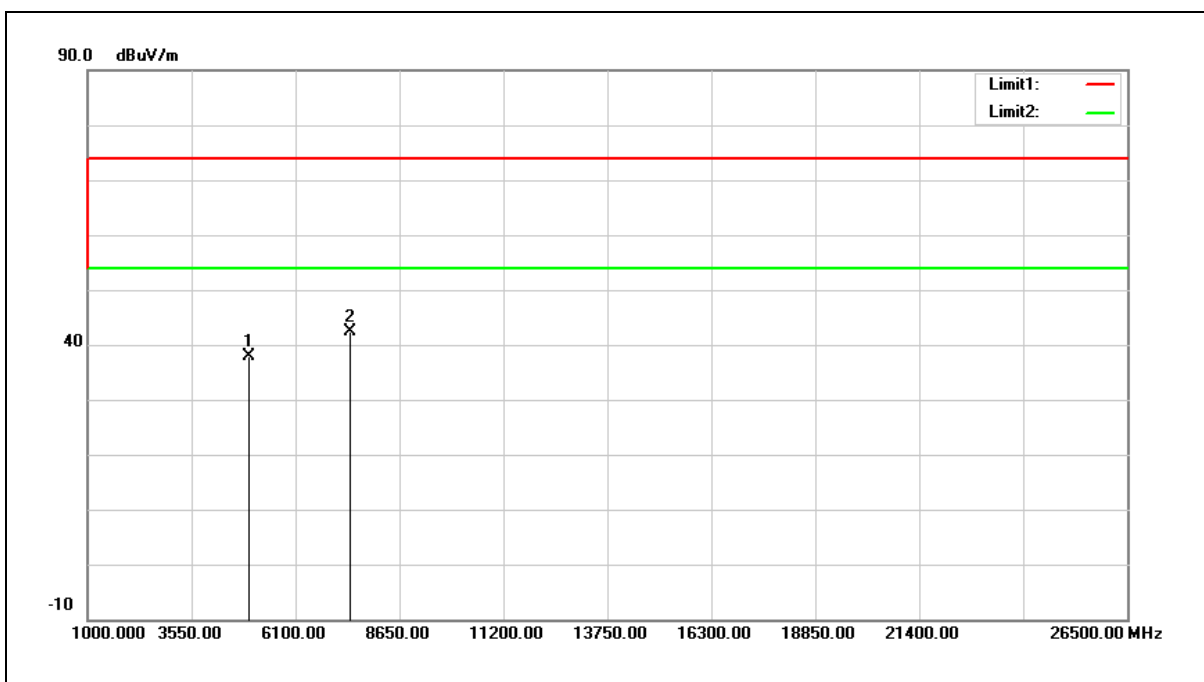
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.00	-0.50	37.50	74.00	-36.50	peak
2	7440.000	35.66	6.95	42.61	74.00	-31.39	peak

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



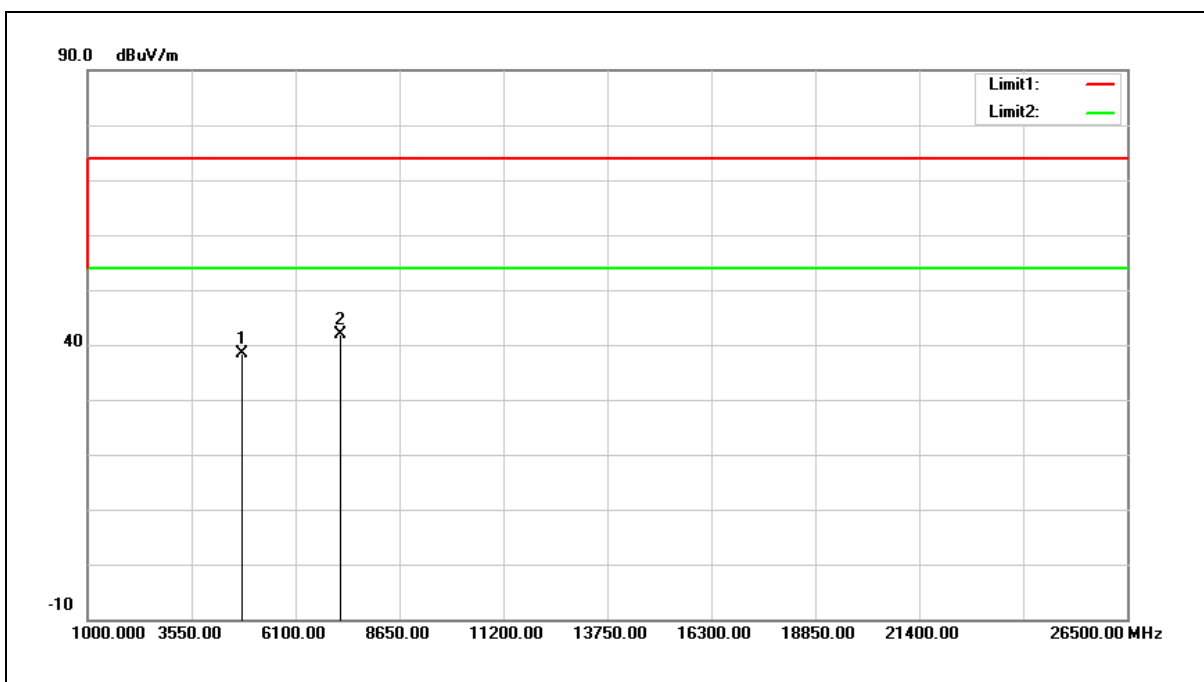
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.27	-0.50	37.77	74.00	-36.23	peak
2	7440.000	35.35	6.95	42.30	74.00	-31.70	peak

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



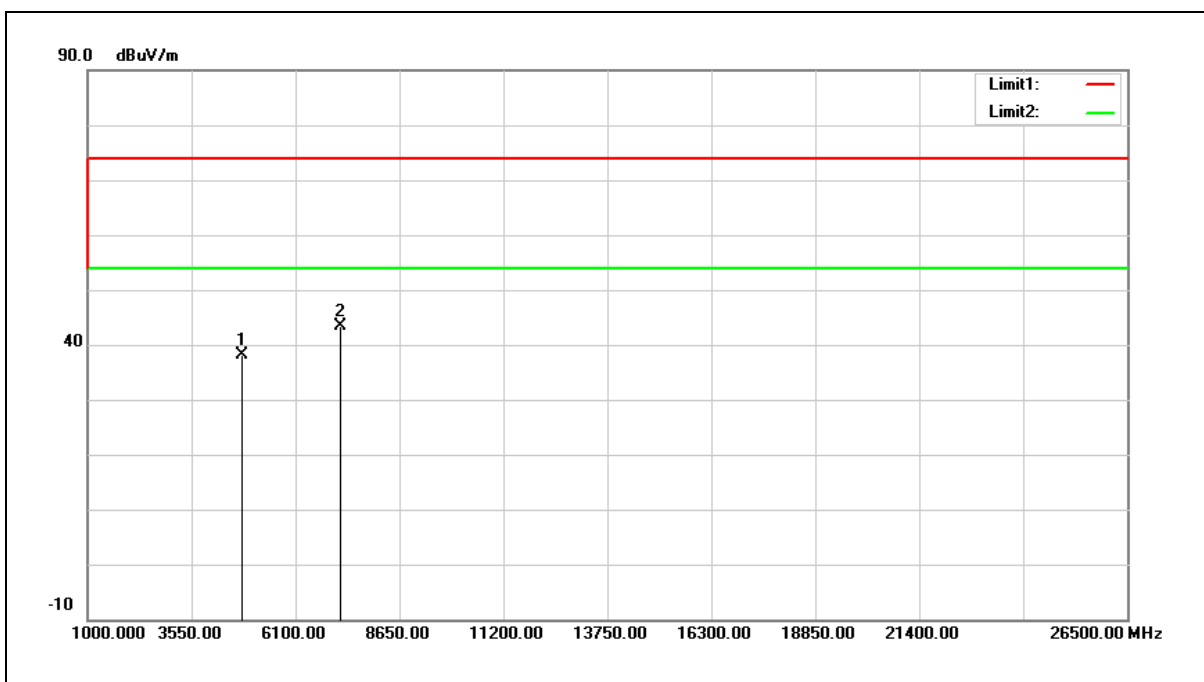
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	39.40	-1.04	38.36	74.00	-35.64	peak
2	7206.000	35.90	6.04	41.94	74.00	-32.06	peak

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



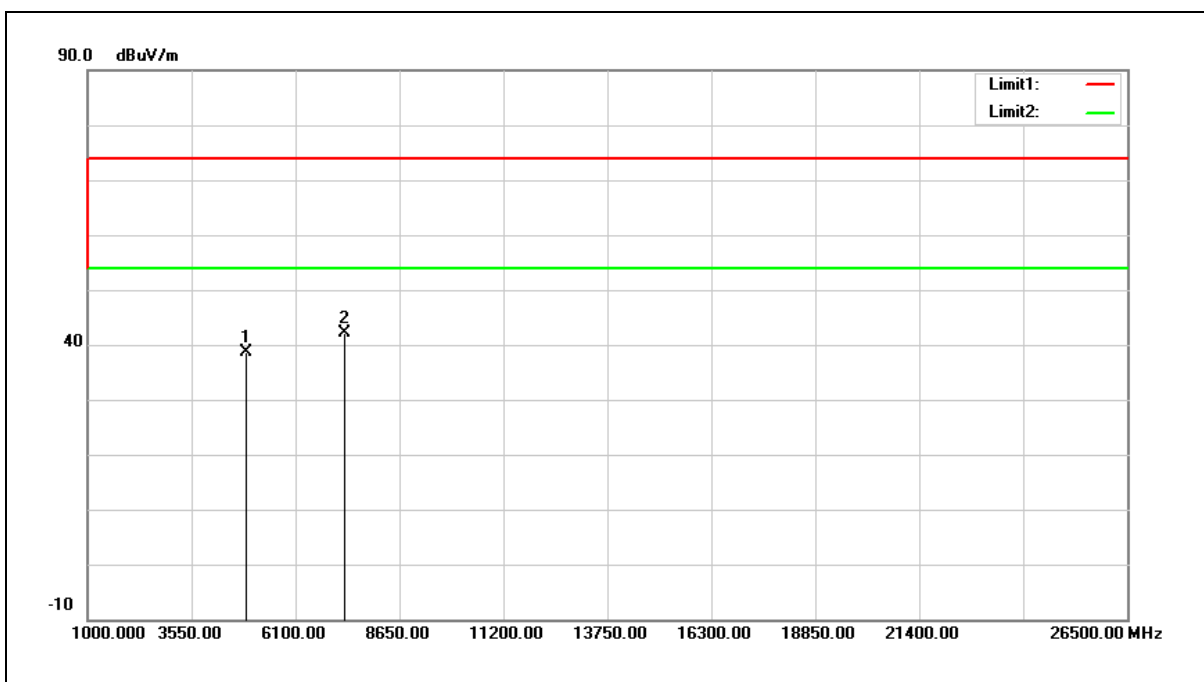
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	39.26	-1.04	38.22	74.00	-35.78	peak
2	7206.000	37.37	6.04	43.41	74.00	-30.59	peak

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

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

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

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



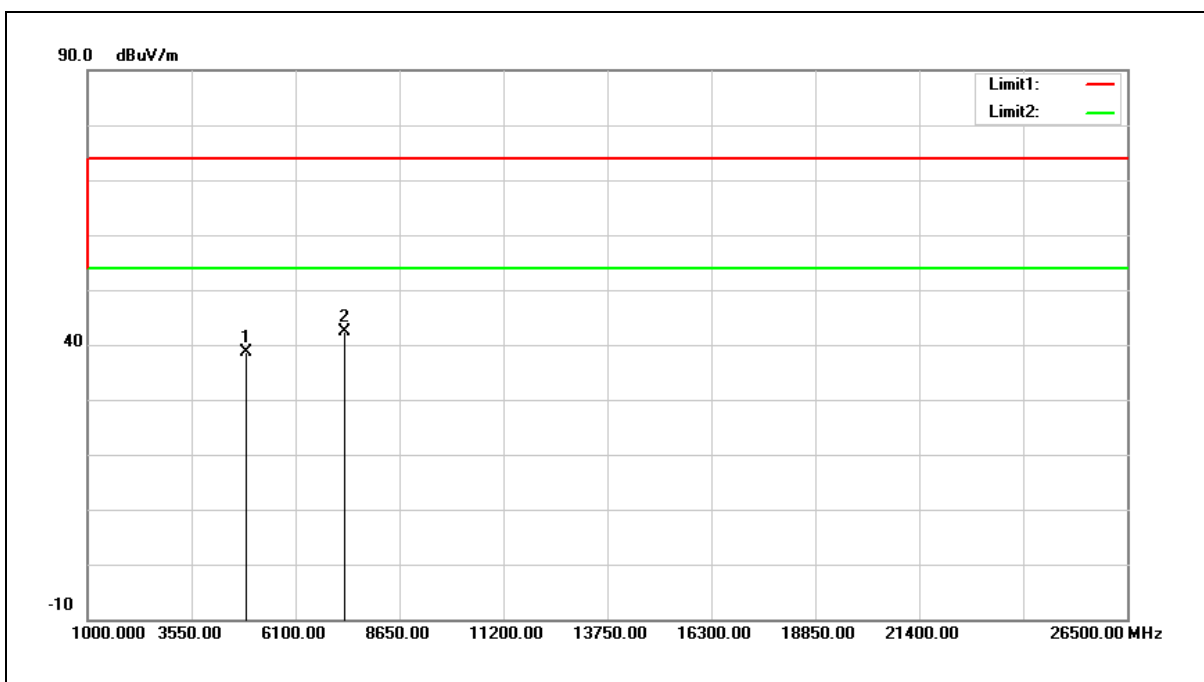
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	39.48	-0.77	38.71	74.00	-35.29	peak
2	7323.000	35.74	6.50	42.24	74.00	-31.76	peak

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

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

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

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



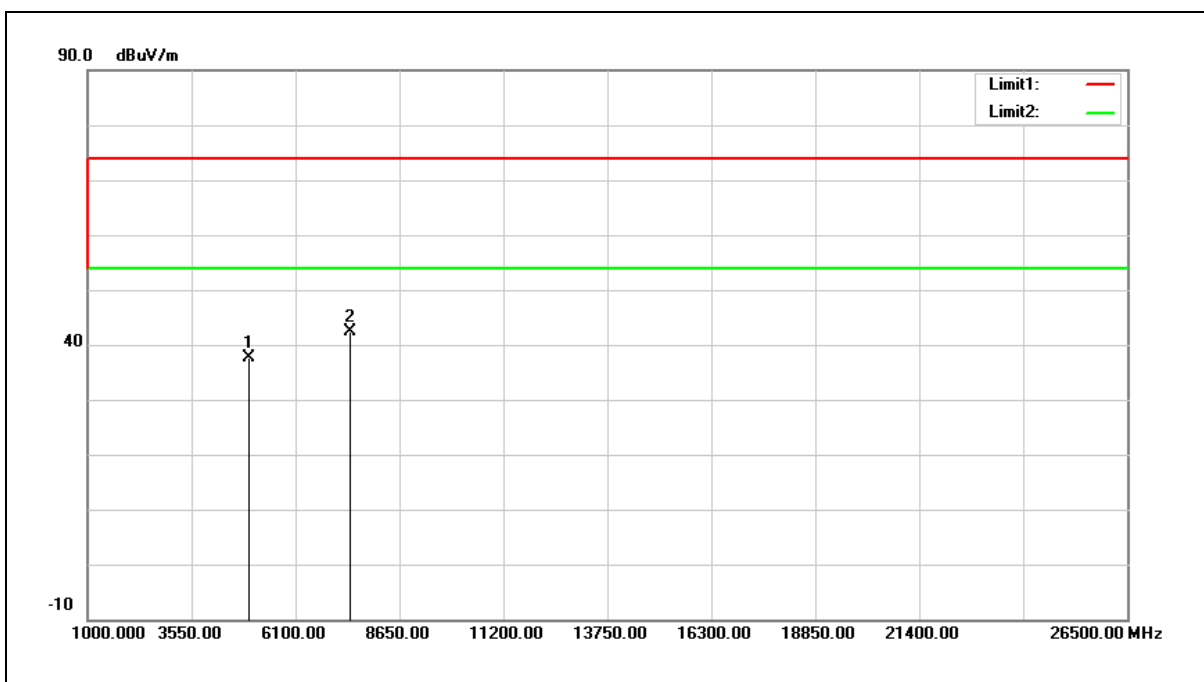
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	39.34	-0.77	38.57	74.00	-35.43	peak
2	7323.000	35.90	6.50	42.40	74.00	-31.60	peak

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

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

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

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



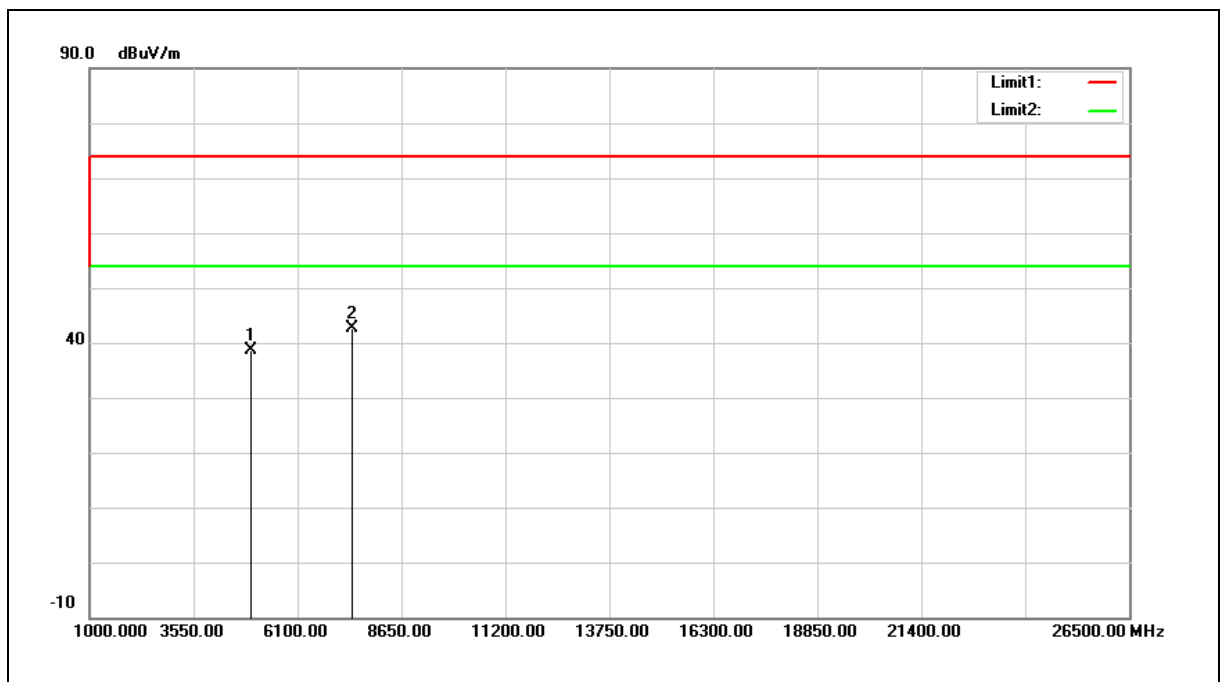
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.21	-0.50	37.71	74.00	-36.29	peak
2	7440.000	35.45	6.95	42.40	74.00	-31.60	peak

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

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

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

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



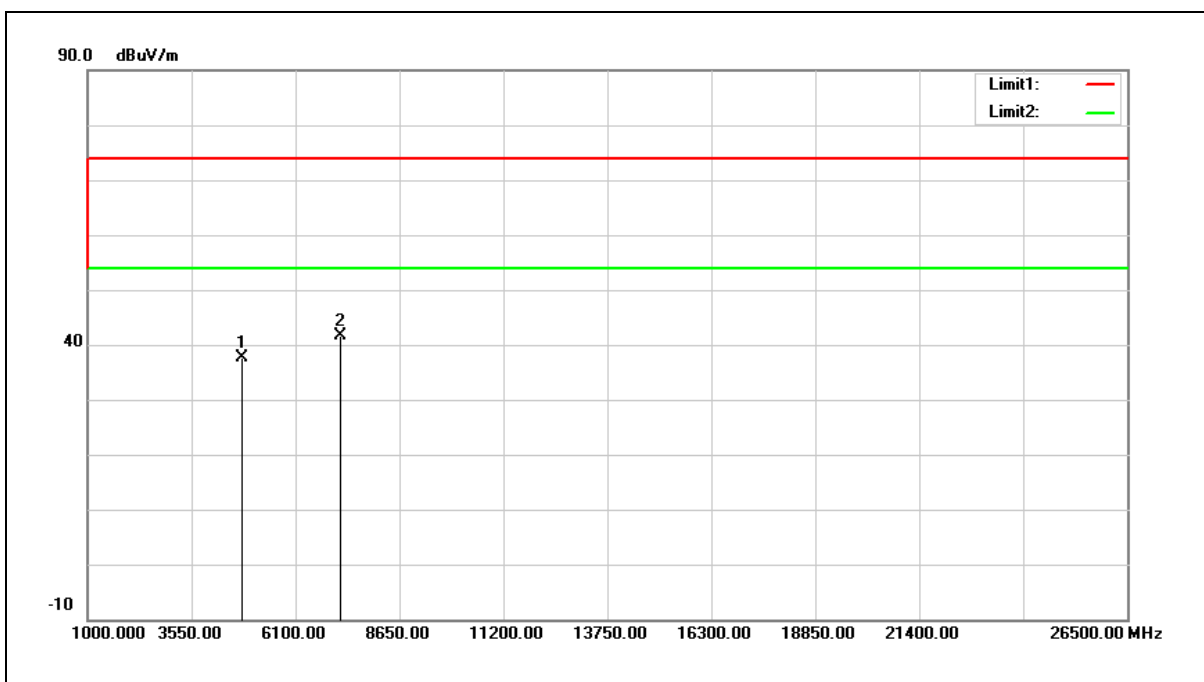
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	39.22	-0.50	38.72	74.00	-35.28	peak
2	7440.000	35.77	6.95	42.72	74.00	-31.28	peak

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



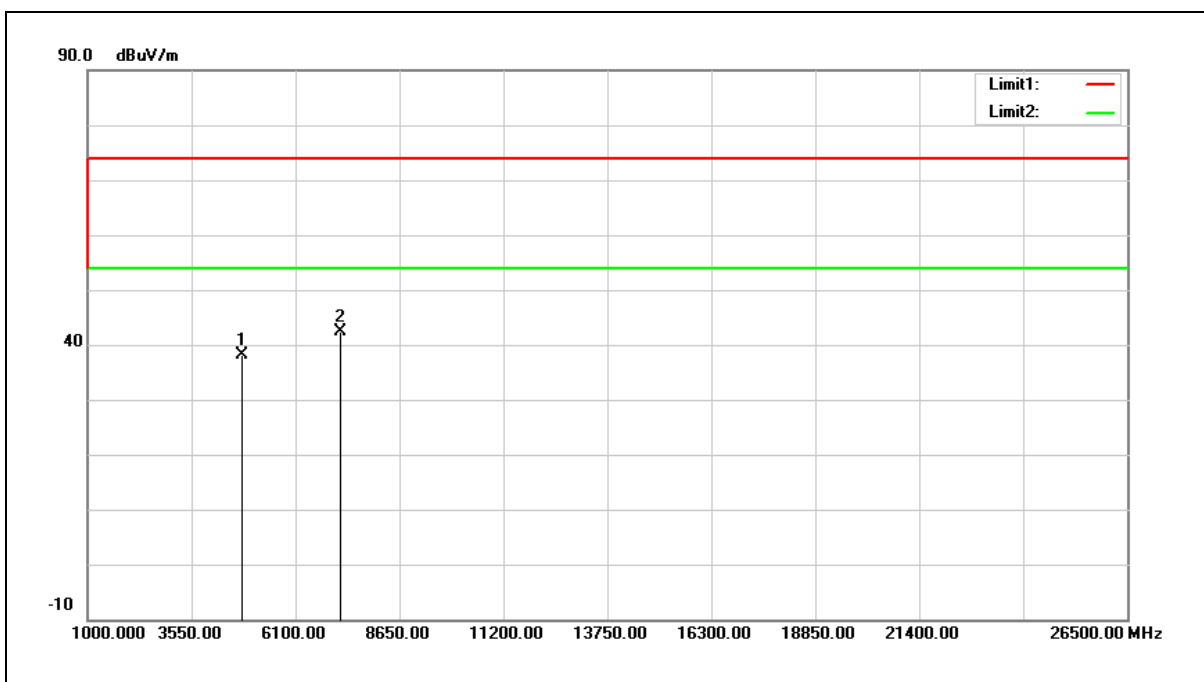
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.72	-1.04	37.68	74.00	-36.32	peak
2	7206.000	35.56	6.04	41.60	74.00	-32.40	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2402 MHz		
Mode:	Mode 5		
Ant.Polar.:	Vertical		



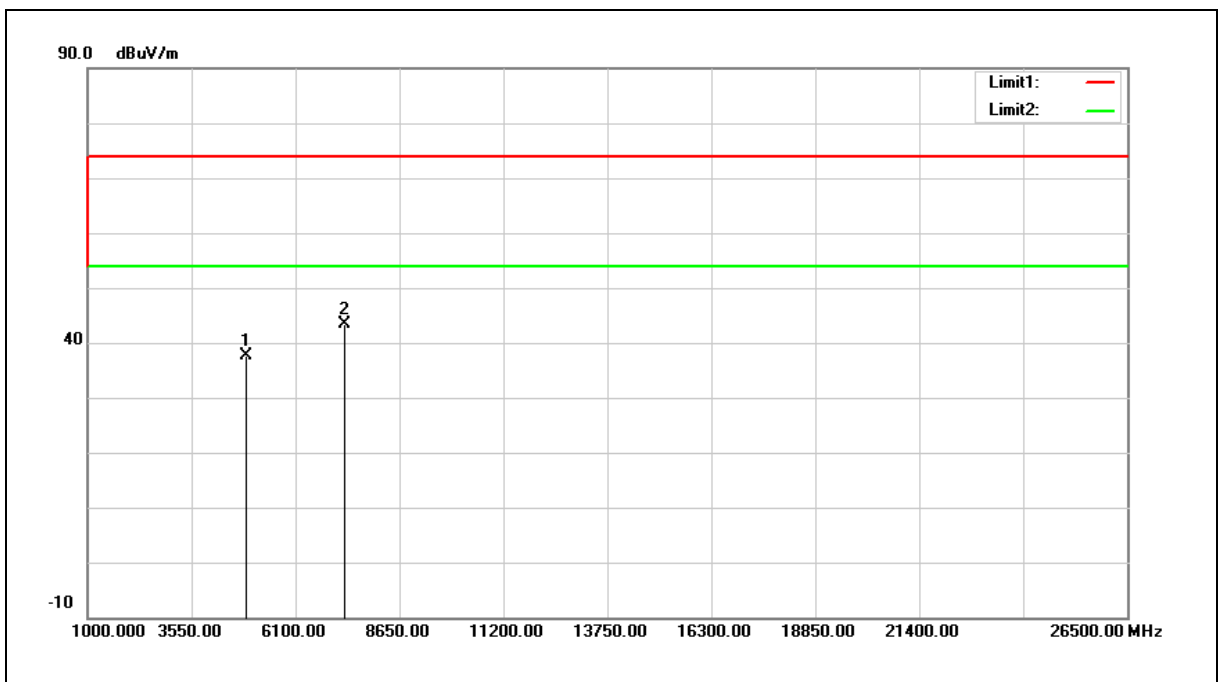
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	39.07	-1.04	38.03	74.00	-35.97	peak
2	7206.000	36.32	6.04	42.36	74.00	-31.64	peak

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:	2440 MHz		
Mode:	Mode 5		
Ant.Polar.:	Horizontal		



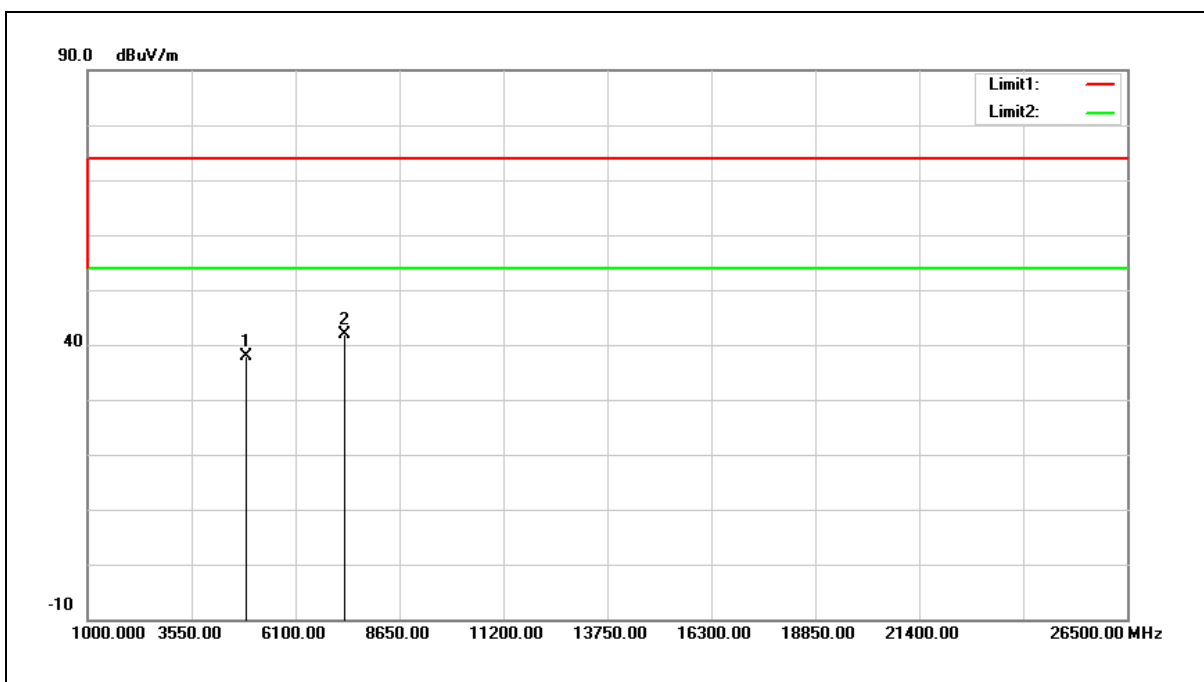
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	38.46	-0.78	37.68	74.00	-36.32	peak
2	7320.000	37.01	6.49	43.50	74.00	-30.50	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2440 MHz		
Mode:	Mode 5		
Ant.Polar.:	Vertical		



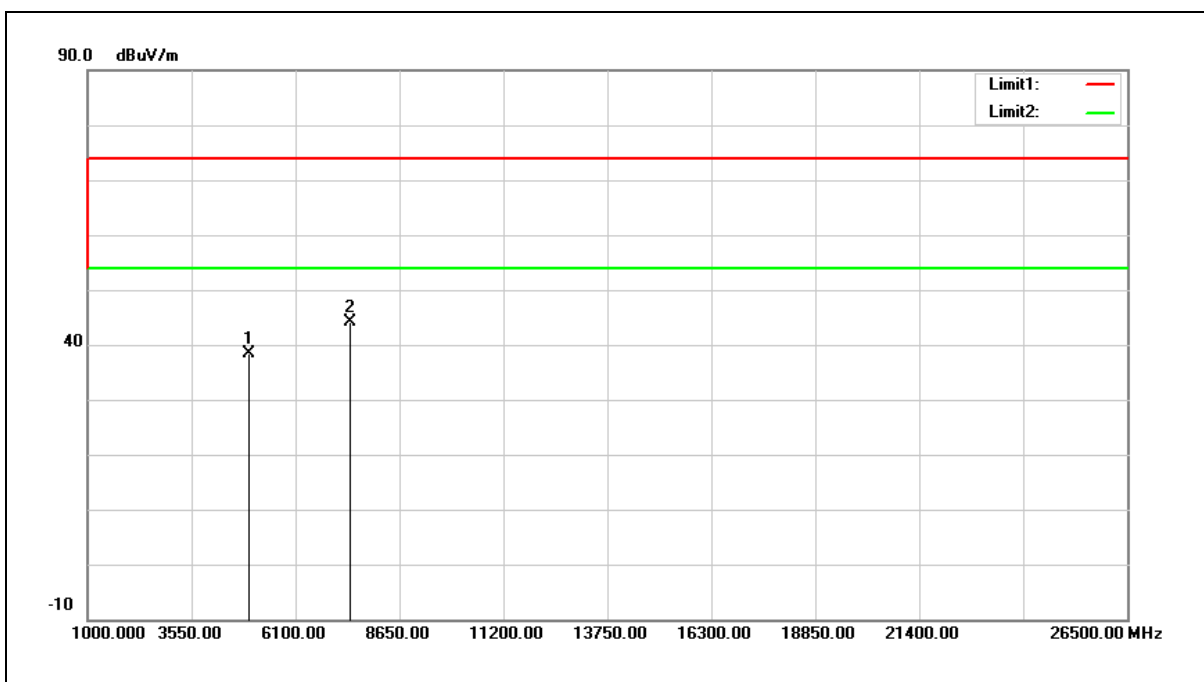
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	38.56	-0.78	37.78	74.00	-36.22	peak
2	7320.000	35.44	6.49	41.93	74.00	-32.07	peak

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



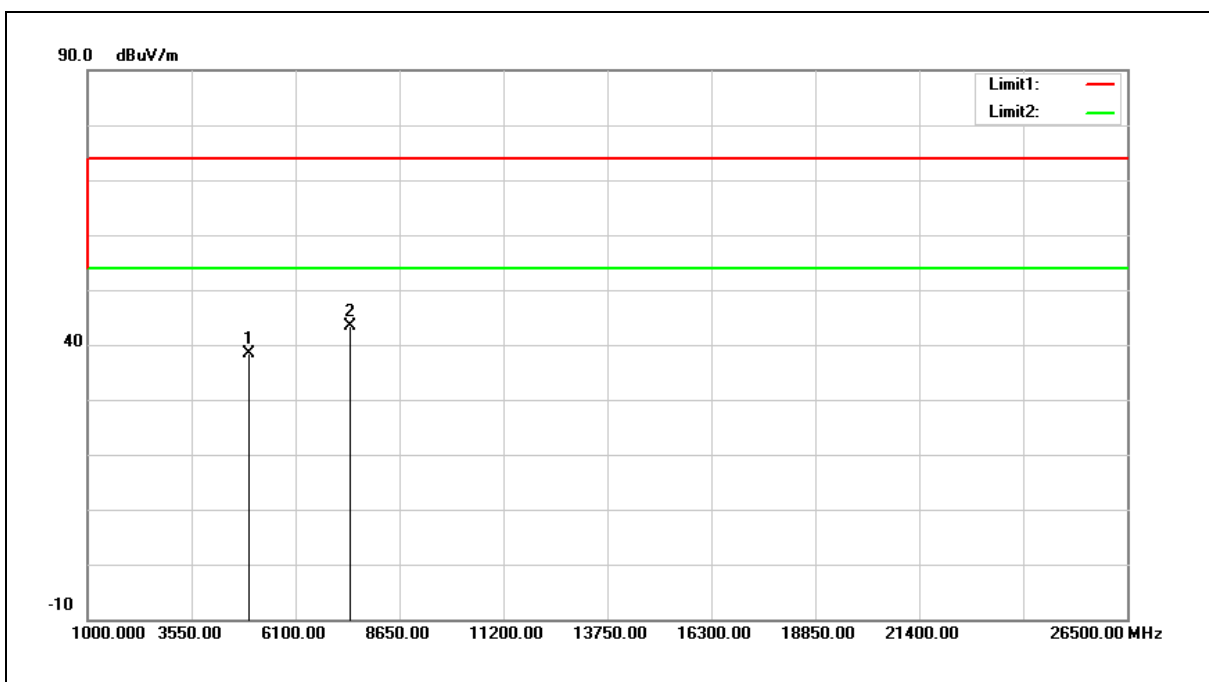
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.77	-0.50	38.27	74.00	-35.73	peak
2	7440.000	37.25	6.95	44.20	74.00	-29.80	peak

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 5		
Ant.Polar.:	Vertical		



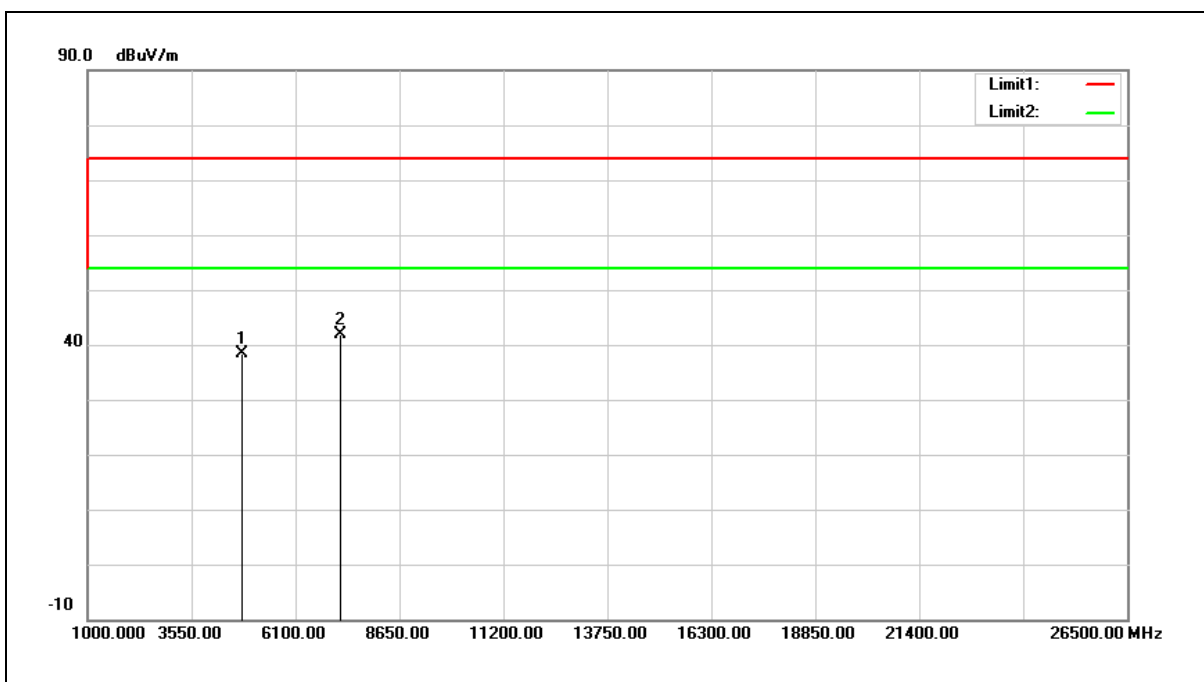
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.81	-0.50	38.31	74.00	-35.69	peak
2	7440.000	36.32	6.95	43.27	74.00	-30.73	peak

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:	2402 MHz		
Mode:	Mode 6		
Ant.Polar.:	Horizontal		



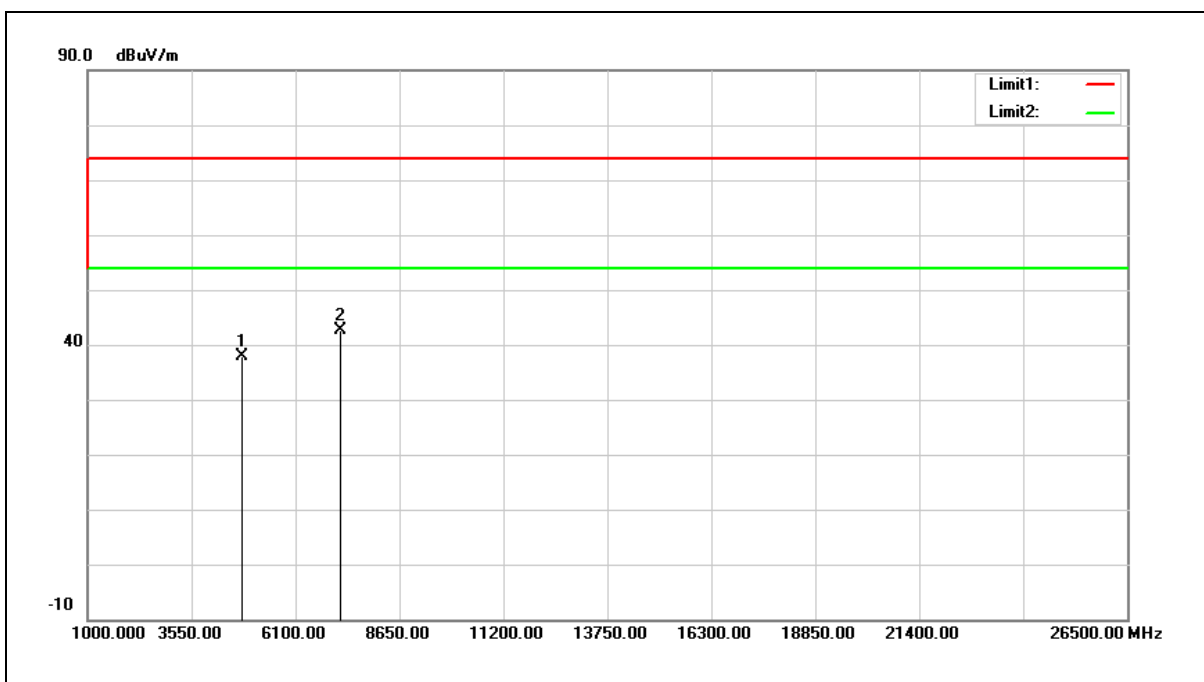
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	39.39	-1.04	38.35	74.00	-35.65	peak
2	7206.000	35.95	6.04	41.99	74.00	-32.01	peak

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:	Harmonic		
Frequency:	2402 MHz		
Mode:	Mode 6		
Ant.Polar.:	Vertical		



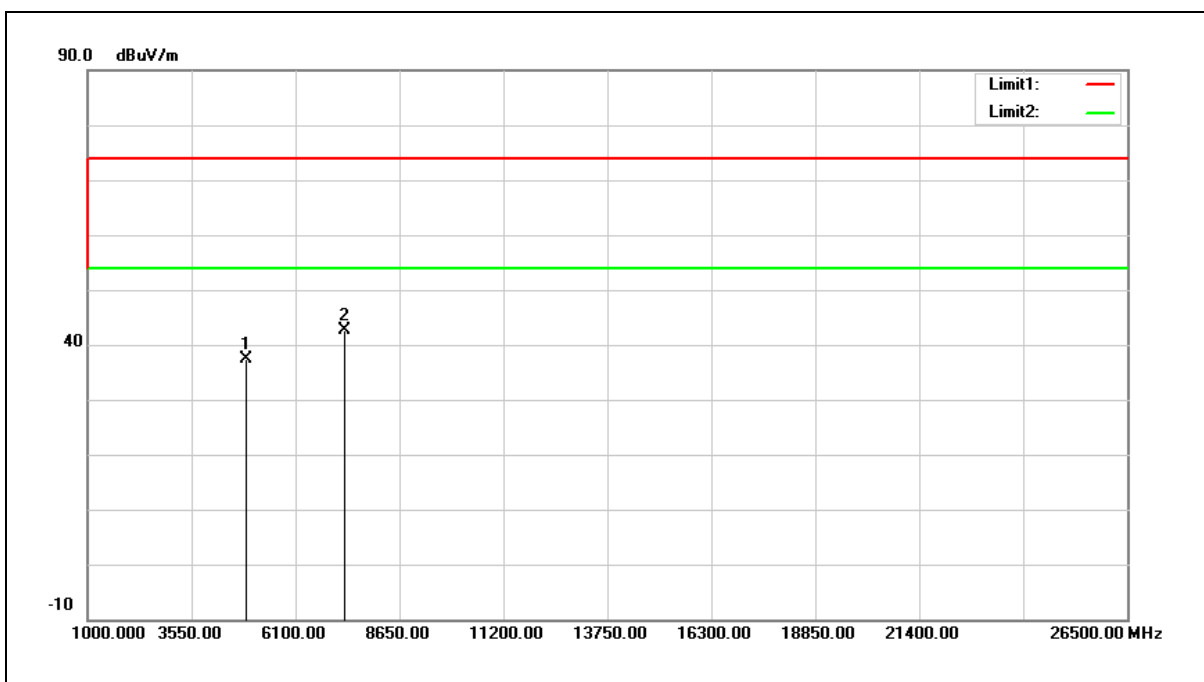
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	38.96	-1.04	37.92	74.00	-36.08	peak
2	7206.000	36.58	6.04	42.62	74.00	-31.38	peak

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		



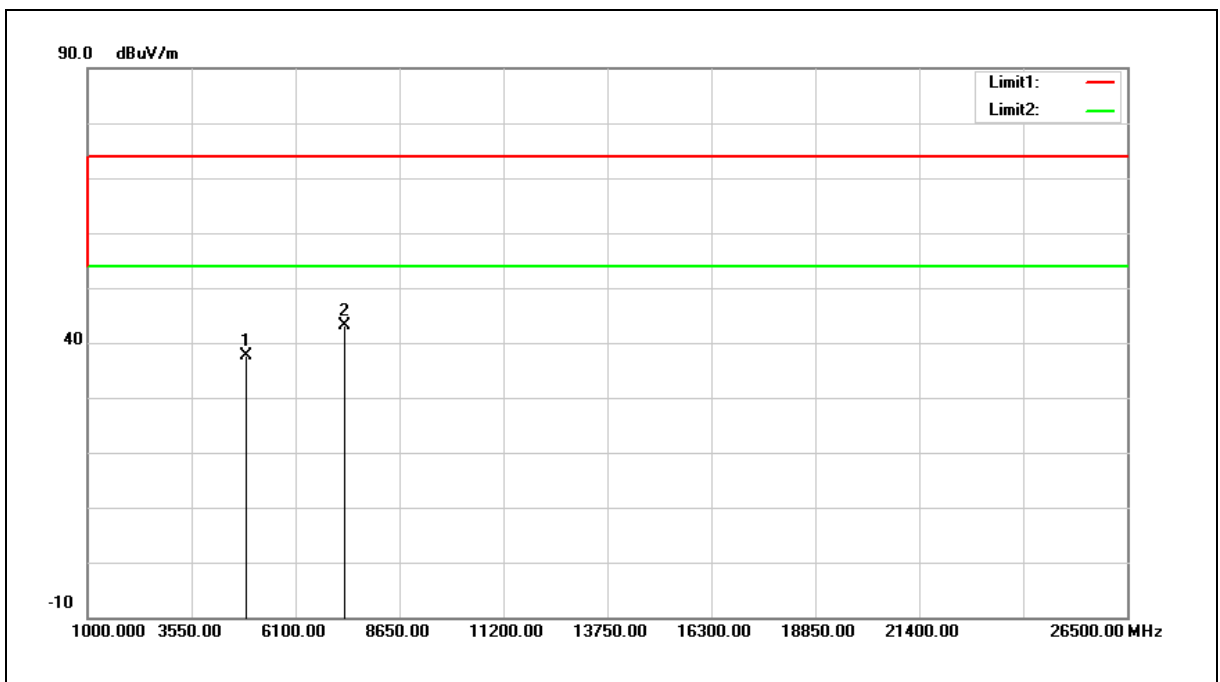
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	38.09	-0.78	37.31	74.00	-36.69	peak
2	7320.000	36.04	6.49	42.53	74.00	-31.47	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2440 MHz		
Mode:	Mode 6		
Ant.Polar.:	Vertical		



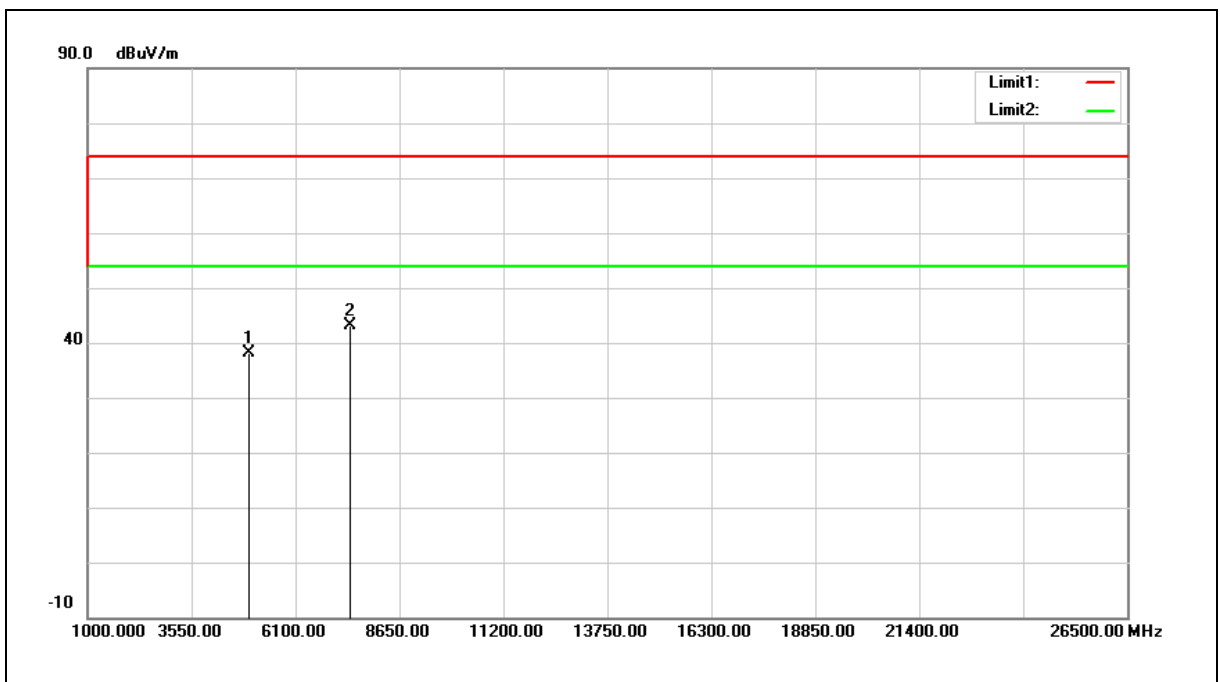
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	38.43	-0.78	37.65	74.00	-36.35	peak
2	7320.000	36.75	6.49	43.24	74.00	-30.76	peak

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

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

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

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



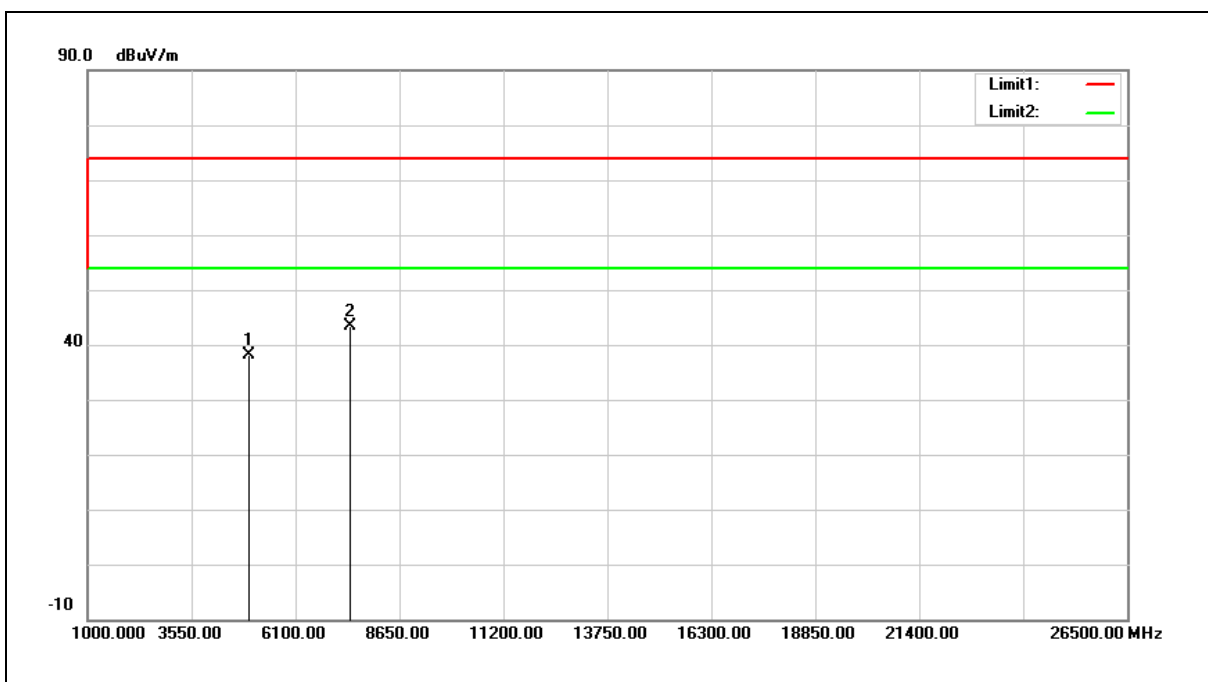
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.58	-0.50	38.08	74.00	-35.92	peak
2	7440.000	36.24	6.95	43.19	74.00	-30.81	peak

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

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

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

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



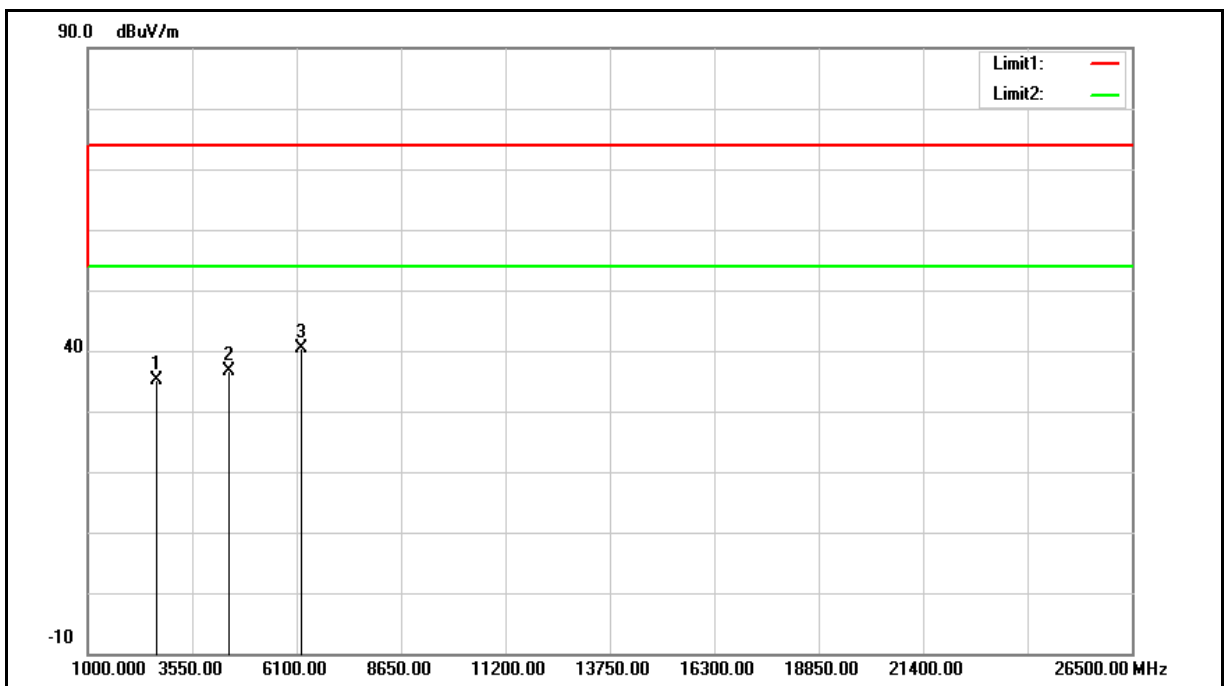
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	38.60	-0.50	38.10	74.00	-35.90	peak
2	7440.000	36.53	6.95	43.48	74.00	-30.52	peak

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



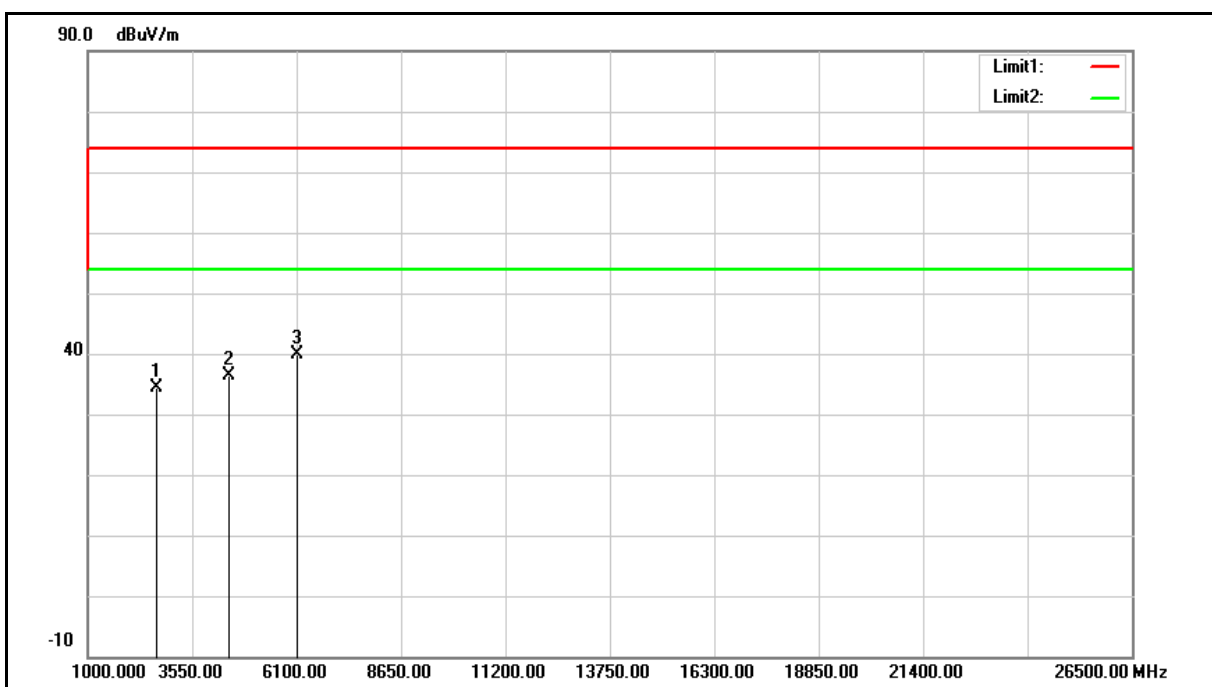
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2683.000	41.36	-6.31	35.05	74.00	-38.95	peak
2	4451.000	38.89	-2.25	36.64	74.00	-37.36	peak
3	6185.000	37.83	2.64	40.47	74.00	-33.53	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Mode:	Simultaneous Transmitting (WLAN 2.4 GHz + Bluetooth)		
Ant.Polar.:	Vertical		



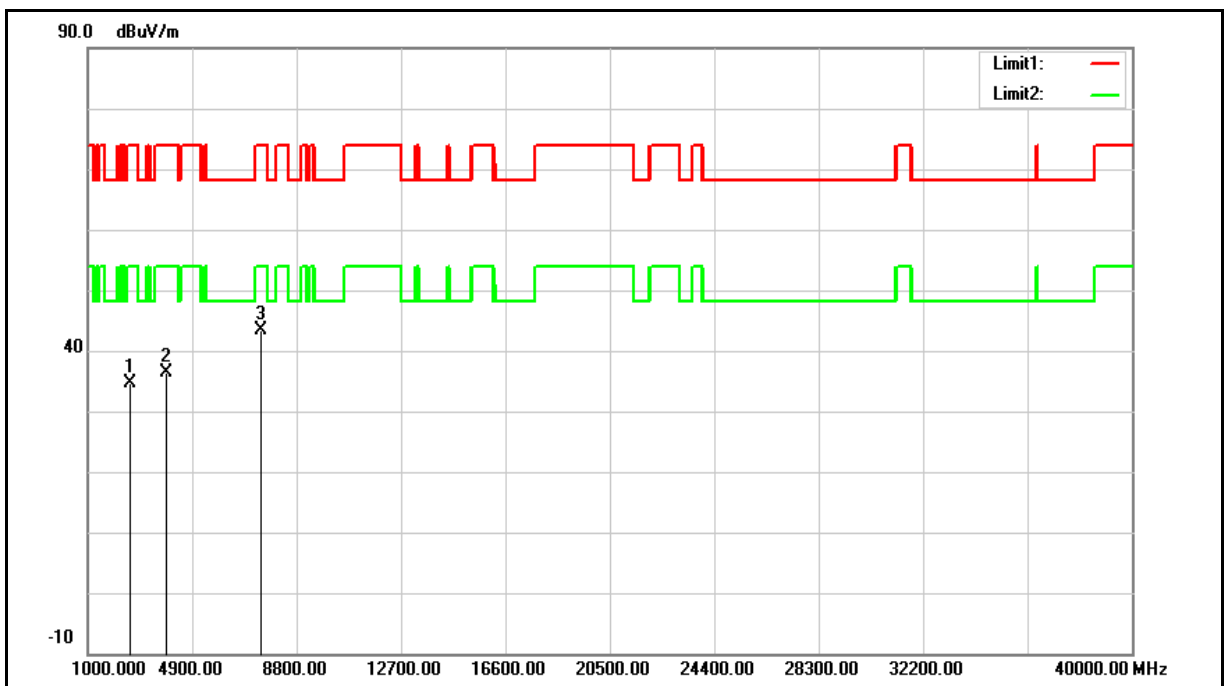
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2683.000	40.80	-6.31	34.49	74.00	-39.51	peak
2	4434.000	38.70	-2.30	36.40	74.00	-37.60	peak
3	6083.000	37.66	2.24	39.90	74.00	-34.10	peak

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



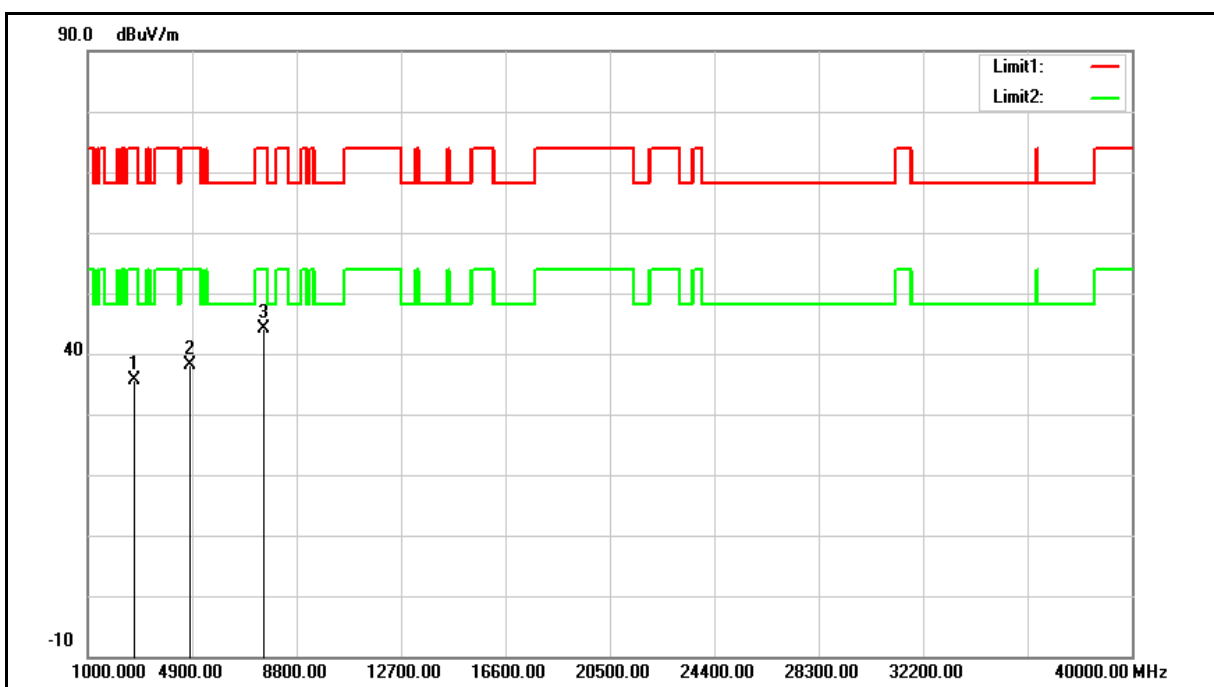
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2598.000	41.16	-6.56	34.60	74.00	-39.40	peak
2	3958.000	40.11	-3.67	36.44	74.00	-37.56	peak
3	7443.000	36.43	6.97	43.40	74.00	-30.60	peak

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

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

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

Standard:	LP0002	Test Distance:	3 m
Test item:	Harmonic		
Mode:	Simultaneous Transmitting (WLAN 5 GHz + Bluetooth)		
Ant.Polar.:	Vertical		



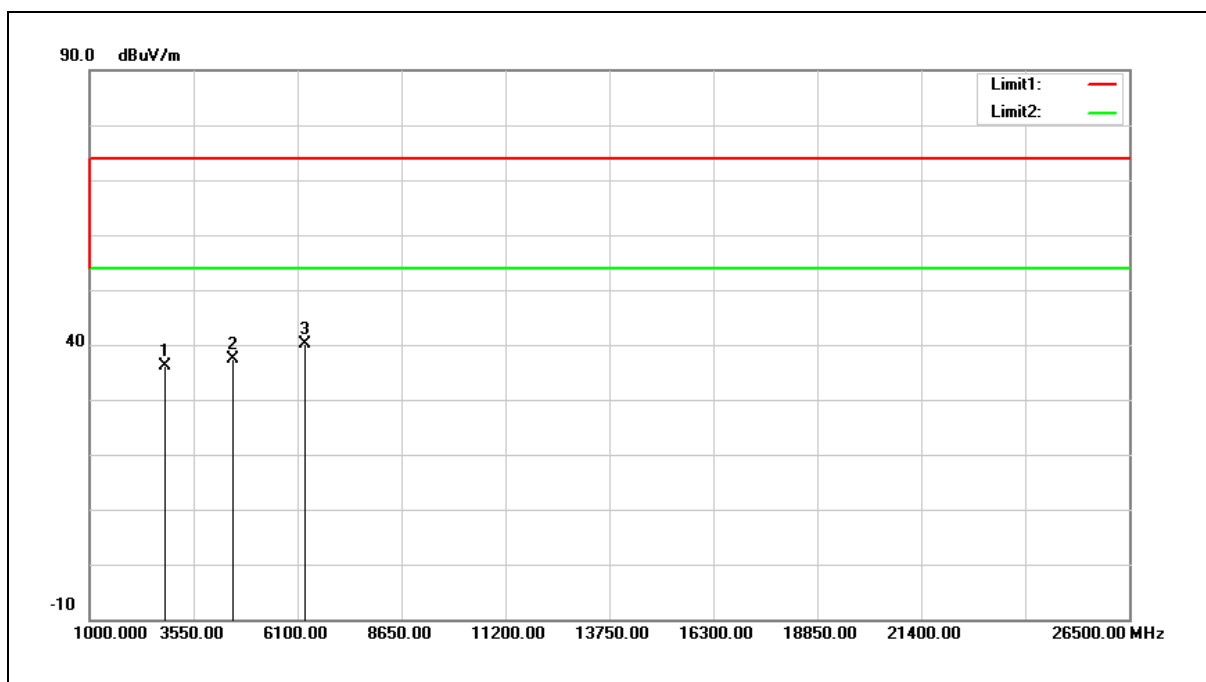
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2717.000	41.90	-6.21	35.69	74.00	-38.31	peak
2	4791.000	39.17	-1.09	38.08	74.00	-35.92	peak
3	7562.000	36.79	7.33	44.12	74.00	-29.88	peak

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:	Mode 7		
Ant.Polar.:	Horizontal		
Description:			



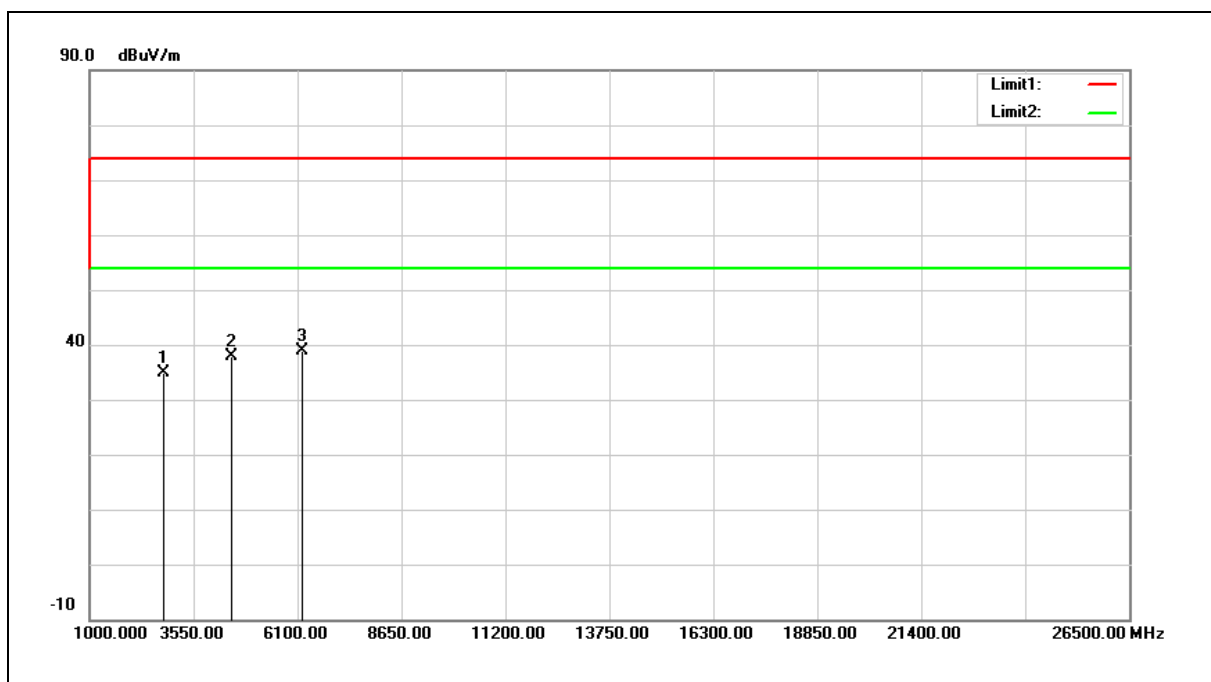
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2836.000	42.05	-5.84	36.21	74.00	-37.79	peak
2	4519.000	39.54	-2.04	37.50	74.00	-36.50	peak
3	6270.000	37.13	2.95	40.08	74.00	-33.92	peak

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.:	Vertical		
Description:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2802.000	40.76	-5.94	34.82	74.00	-39.18	peak
2	4451.000	40.14	-2.25	37.89	74.00	-36.11	peak
3	6185.000	36.26	2.64	38.90	74.00	-35.10	peak

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

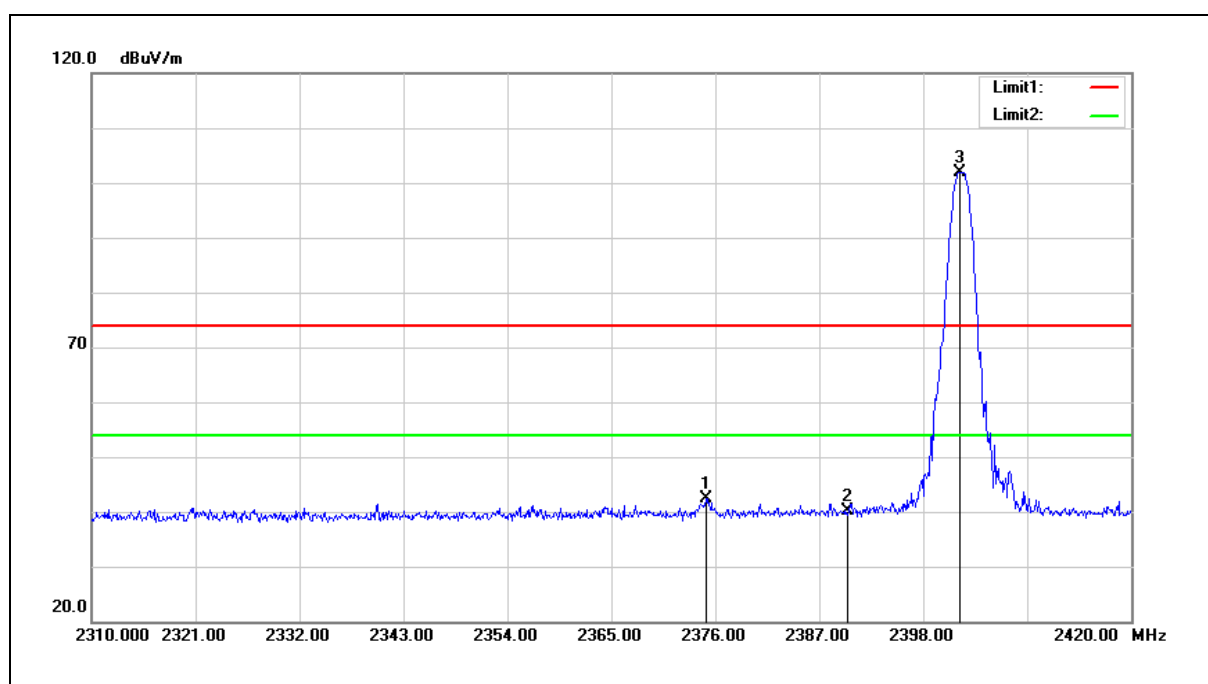
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

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

頻帶邊緣

Peak

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



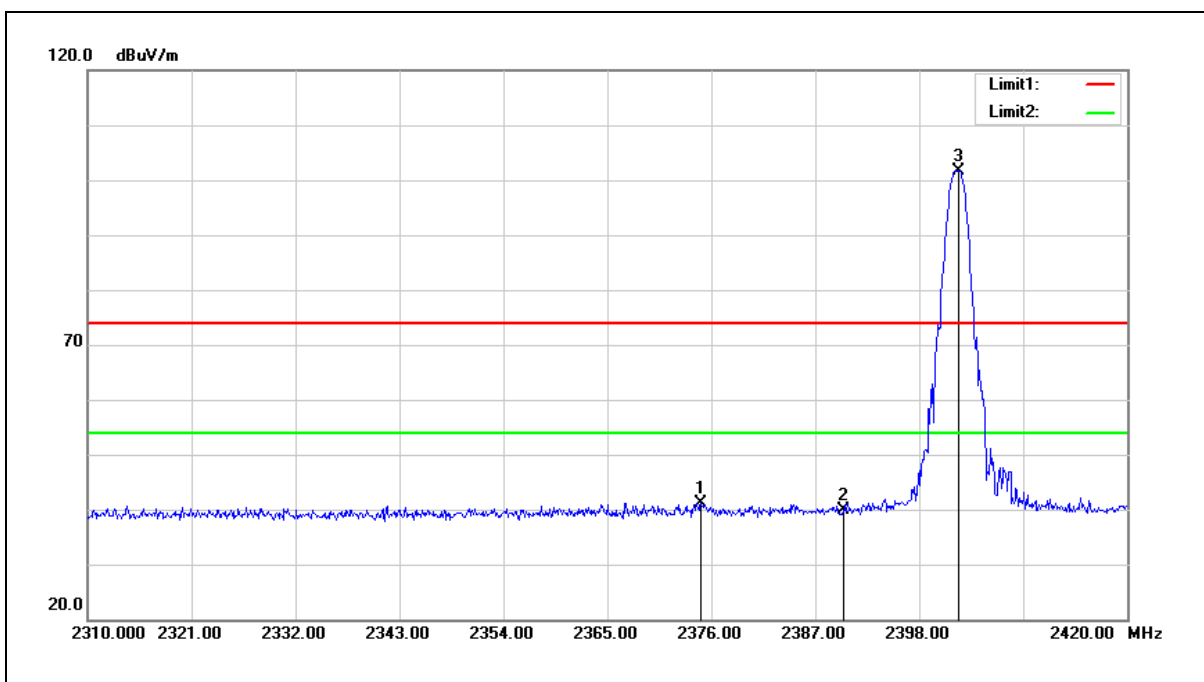
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2375.010	49.84	-7.37	42.47	74.00	-31.53	peak
2	2390.000	47.49	-7.30	40.19	74.00	-33.81	peak
3	2401.850	109.23	-7.25	101.98	74.00	27.98	peak

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

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

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

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



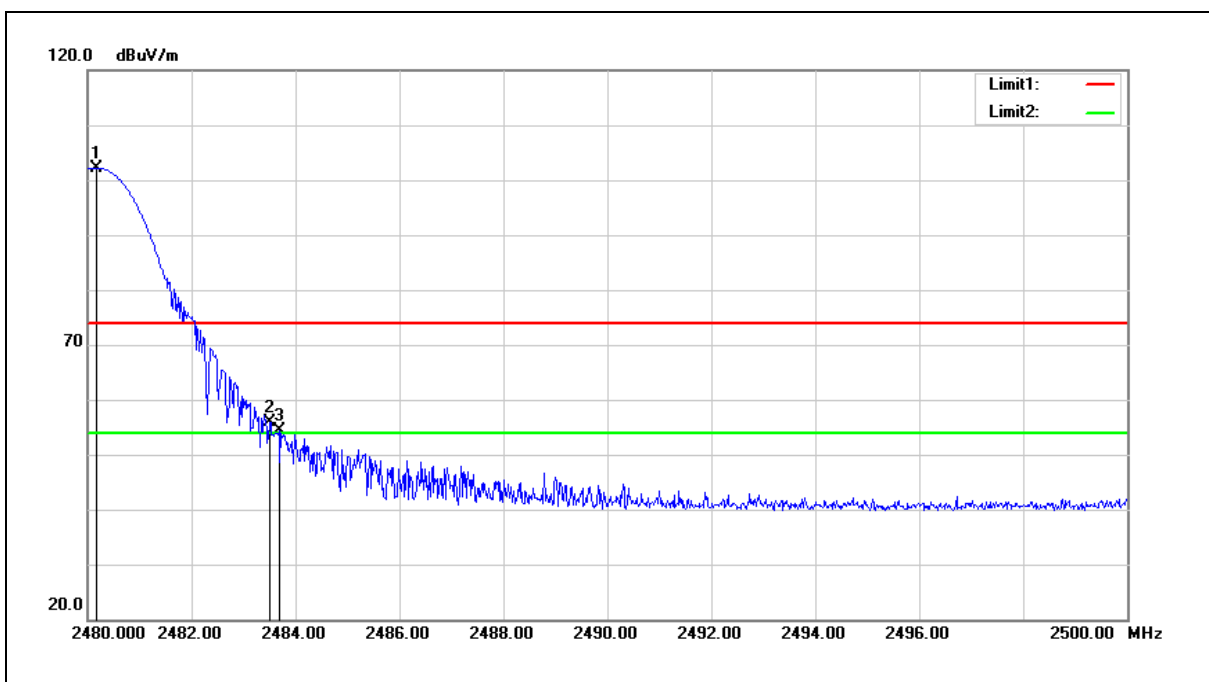
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.900	48.53	-7.37	41.16	74.00	-32.84	peak
2	2390.000	47.29	-7.30	39.99	74.00	-34.01	peak
3	2402.180	108.97	-7.25	101.72	74.00	27.72	peak

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



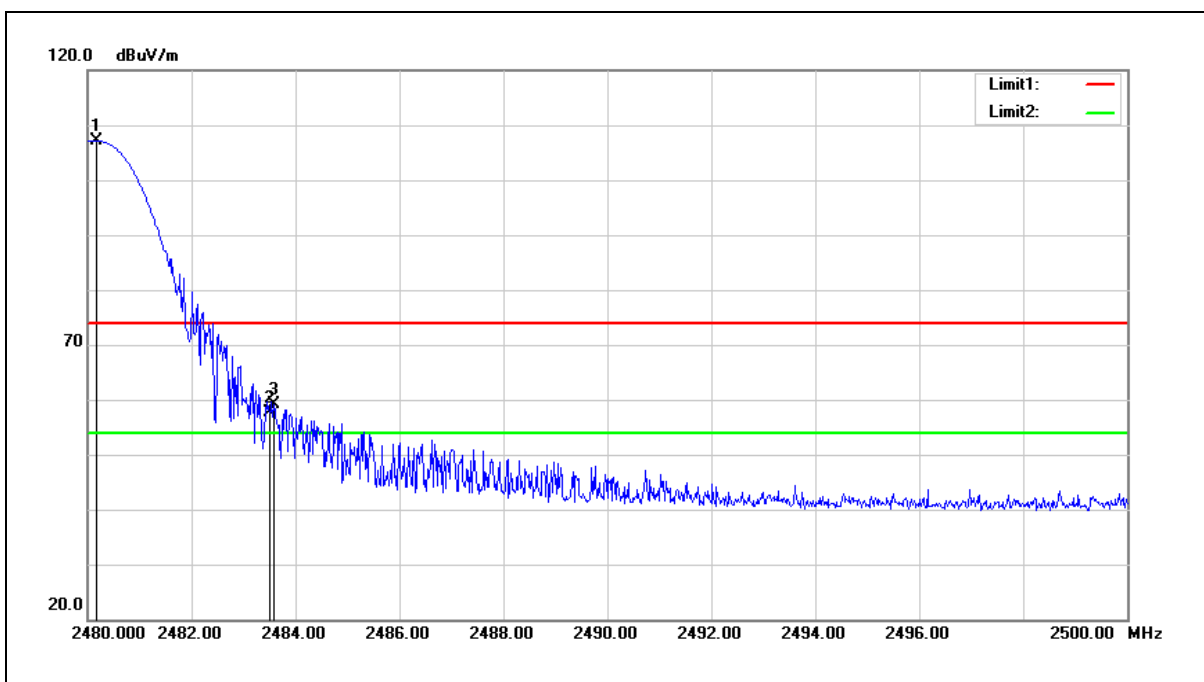
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.180	109.11	-6.95	102.16	74.00	28.16	peak
2	2483.500	62.89	-6.94	55.95	74.00	-18.05	peak
3	2483.680	61.20	-6.94	54.26	74.00	-19.74	peak

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

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

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

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



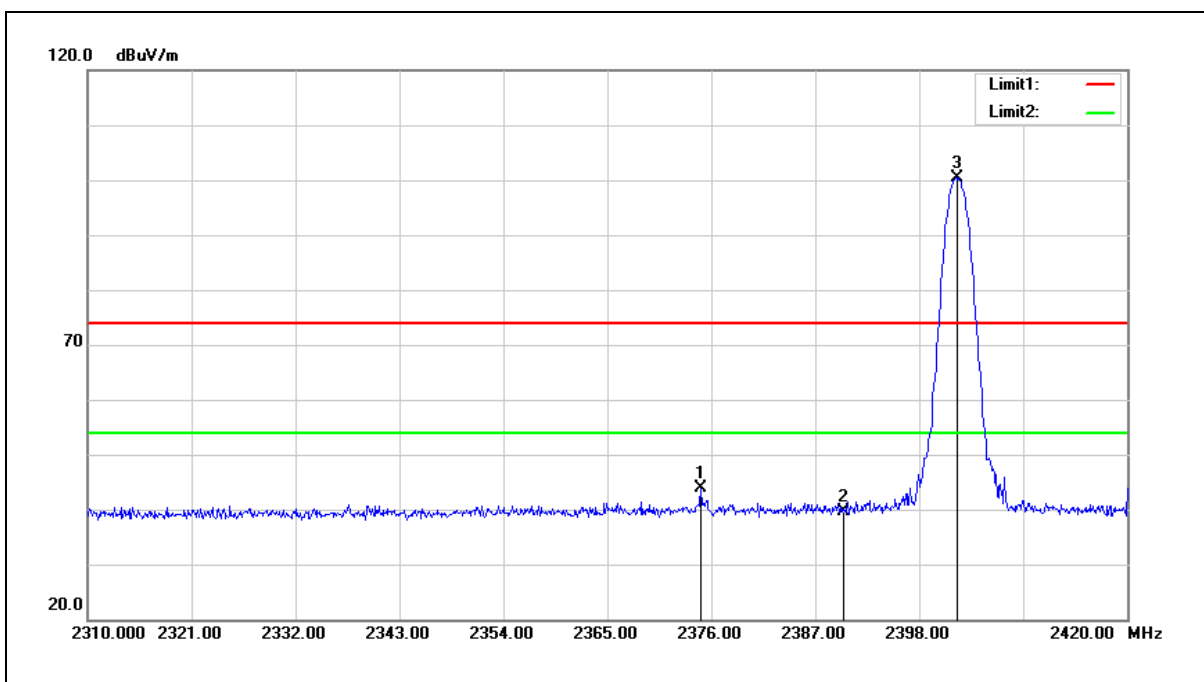
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.180	114.06	-6.95	107.11	74.00	33.11	peak
2	2483.500	64.62	-6.94	57.68	74.00	-16.32	peak
3	2483.580	66.00	-6.94	59.06	74.00	-14.94	peak

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		



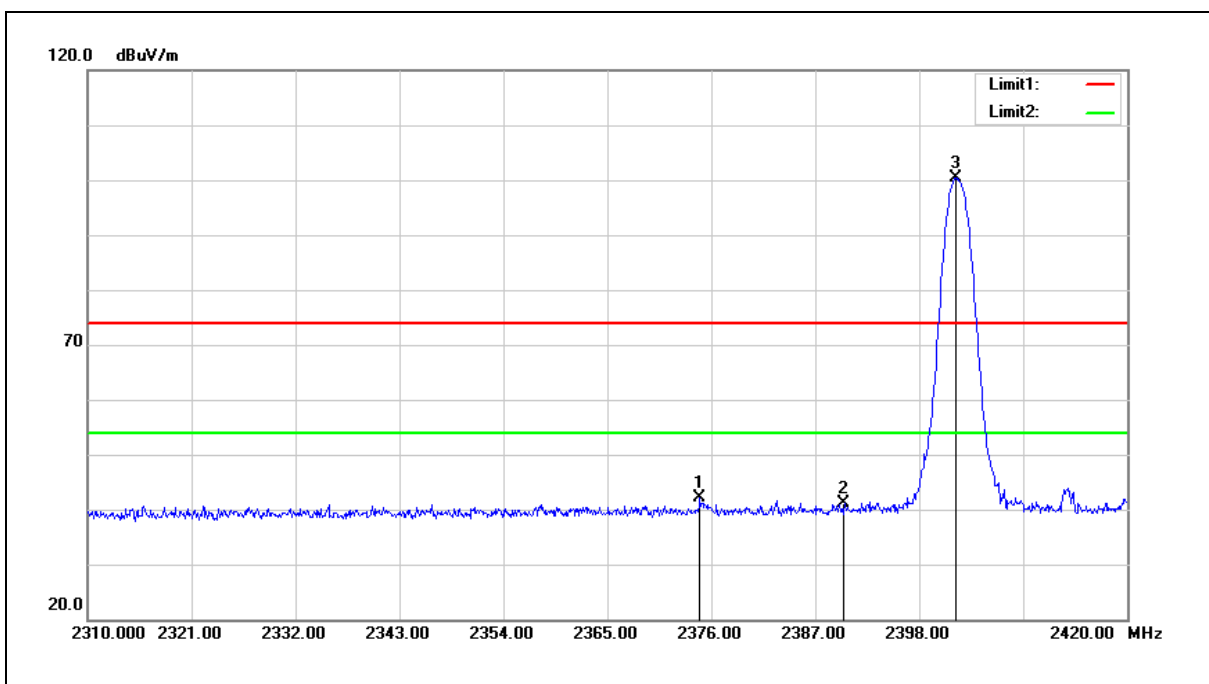
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.900	51.23	-7.37	43.86	74.00	-30.14	peak
2	2390.000	46.99	-7.30	39.69	74.00	-34.31	peak
3	2401.960	107.64	-7.25	100.39	74.00	26.39	peak

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



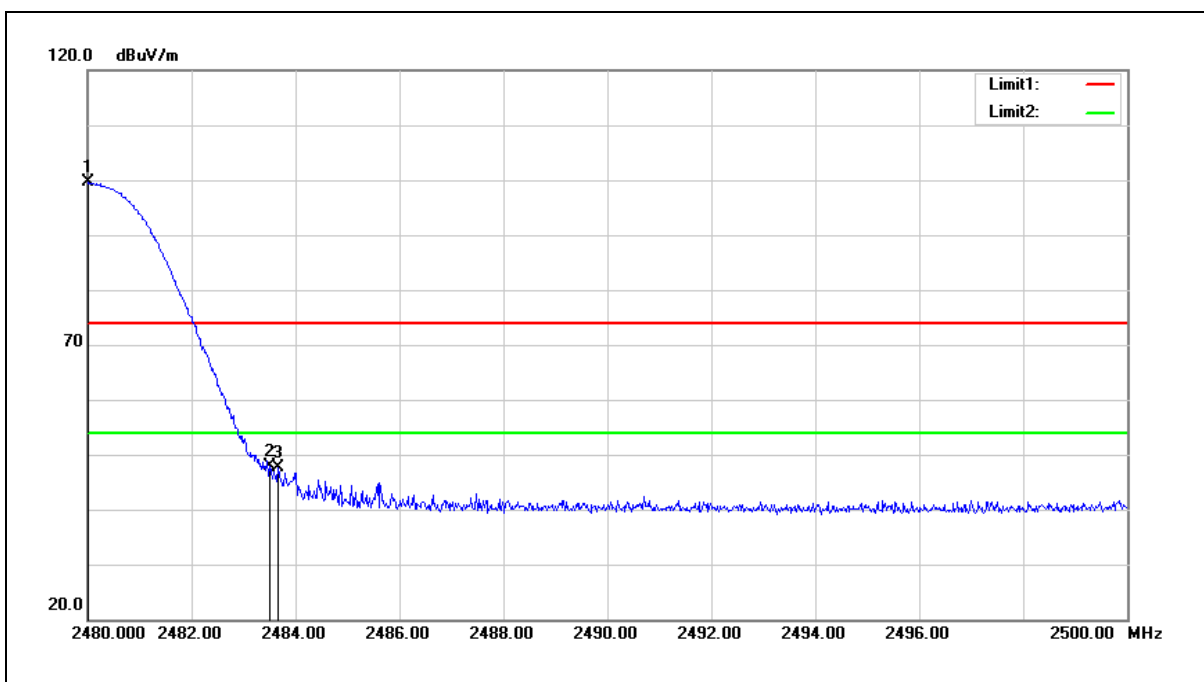
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.790	49.46	-7.37	42.09	74.00	-31.91	peak
2	2390.000	48.48	-7.30	41.18	74.00	-32.82	peak
3	2401.850	107.62	-7.25	100.37	74.00	26.37	peak

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		



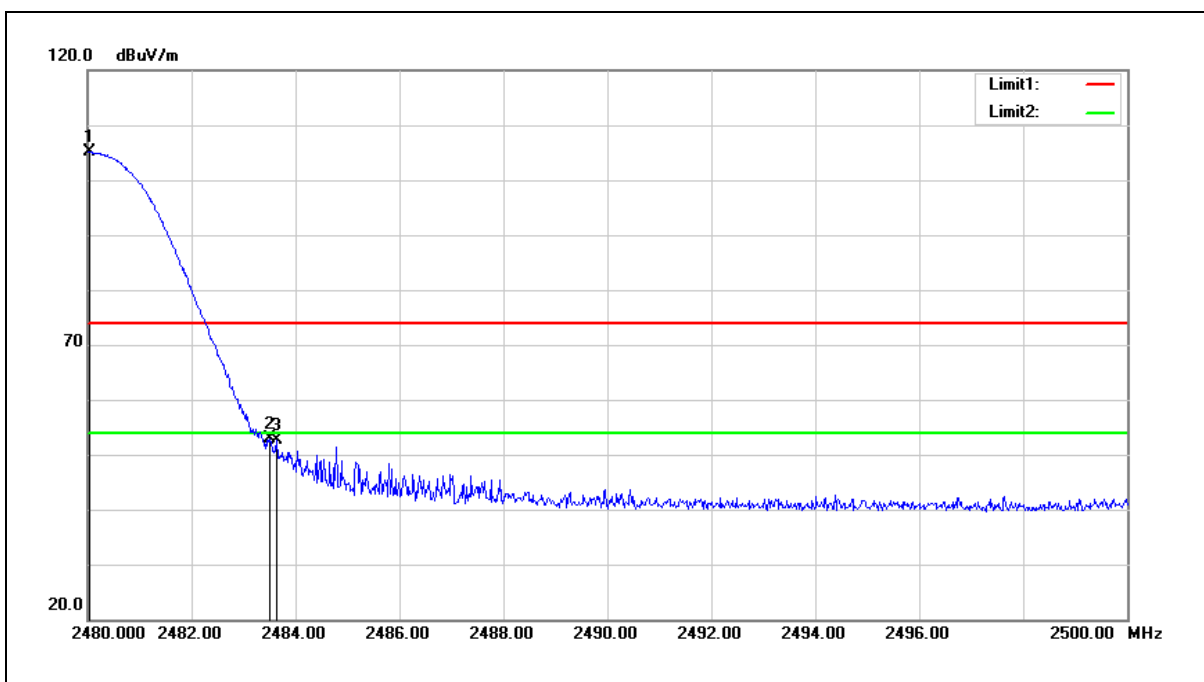
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.000	106.53	-6.95	99.58	74.00	25.58	peak
2	2483.500	54.79	-6.94	47.85	74.00	-26.15	peak
3	2483.660	54.54	-6.94	47.60	74.00	-26.40	peak

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

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

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

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



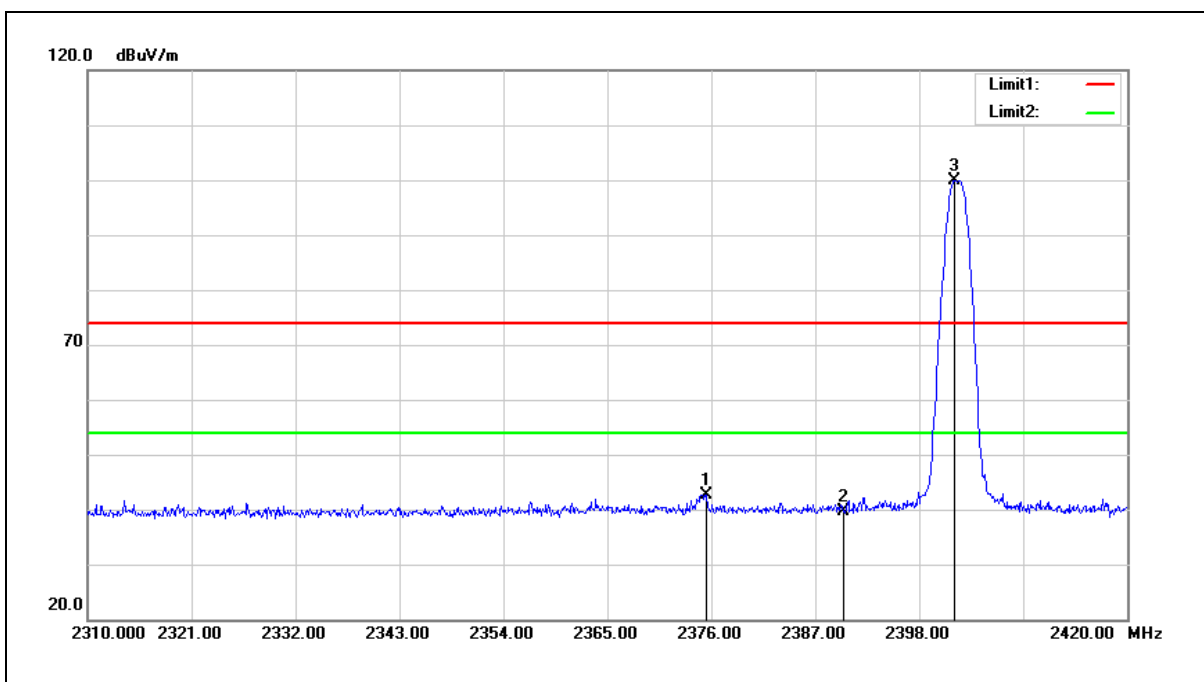
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.040	112.16	-6.95	105.21	74.00	31.21	peak
2	2483.500	59.76	-6.94	52.82	74.00	-21.18	peak
3	2483.640	59.57	-6.94	52.63	74.00	-21.37	peak

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		



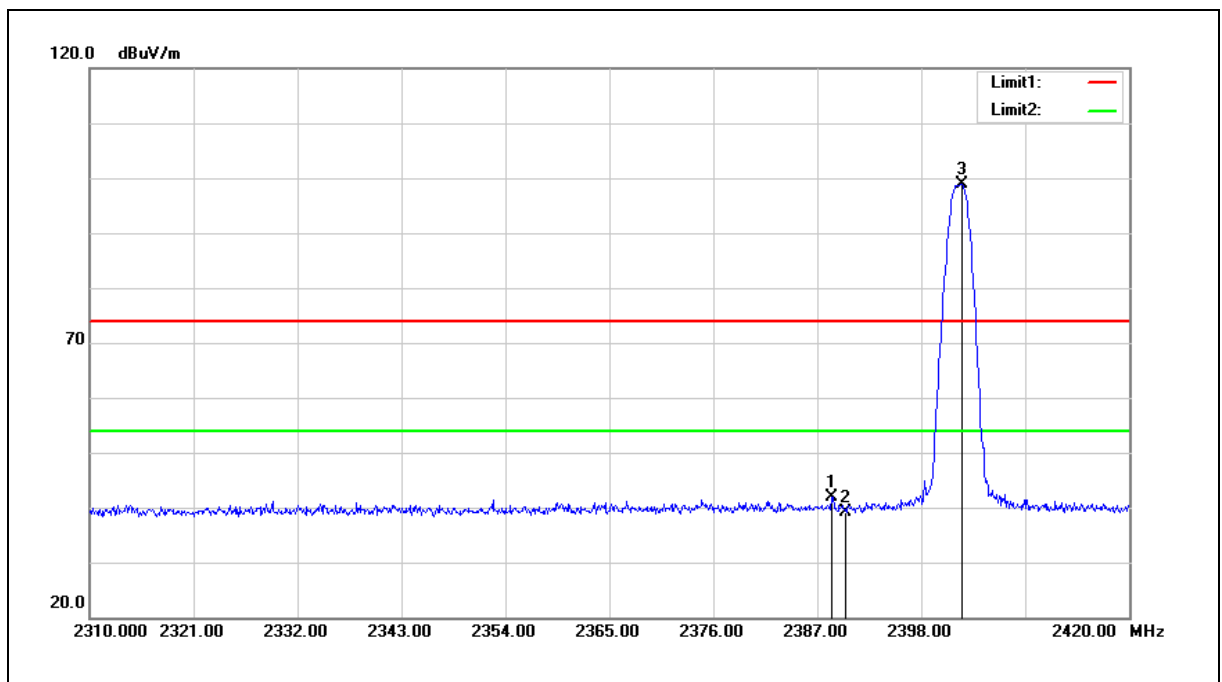
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2375.450	50.04	-7.37	42.67	74.00	-31.33	peak
2	2390.000	46.86	-7.30	39.56	74.00	-34.44	peak
3	2401.740	107.12	-7.26	99.86	74.00	25.86	peak

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

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

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

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



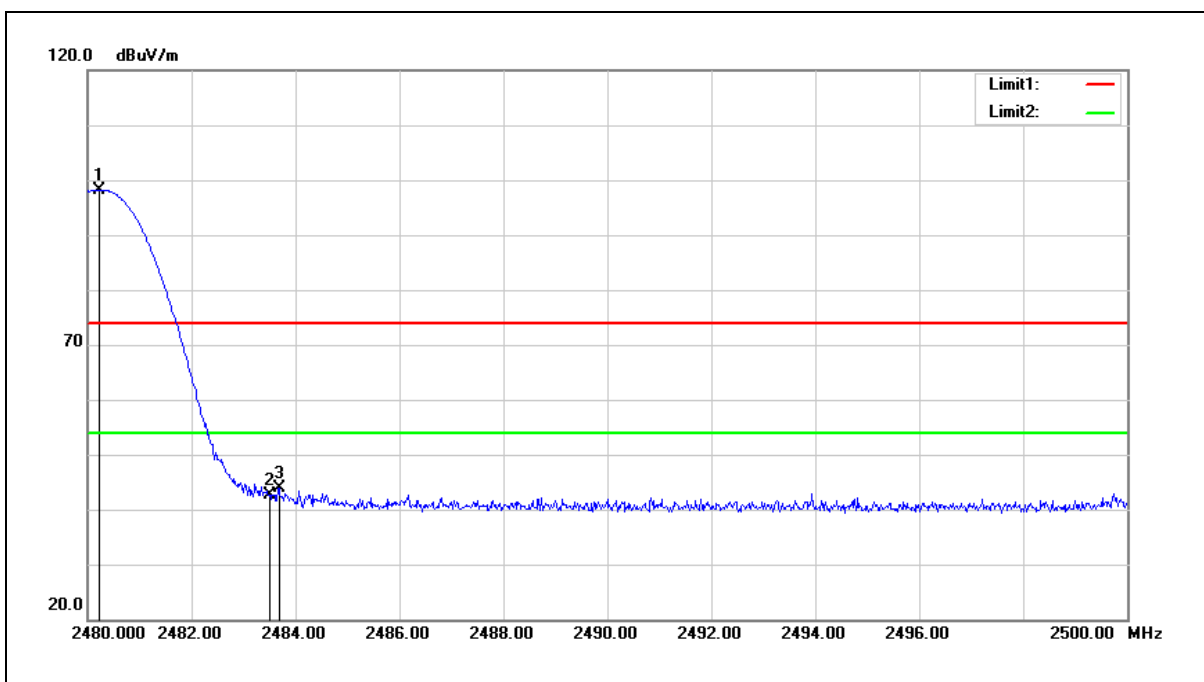
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.540	49.14	-7.31	41.83	74.00	-32.17	peak
2	2390.000	46.42	-7.30	39.12	74.00	-34.88	peak
3	2402.290	106.05	-7.25	98.80	74.00	24.80	peak

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



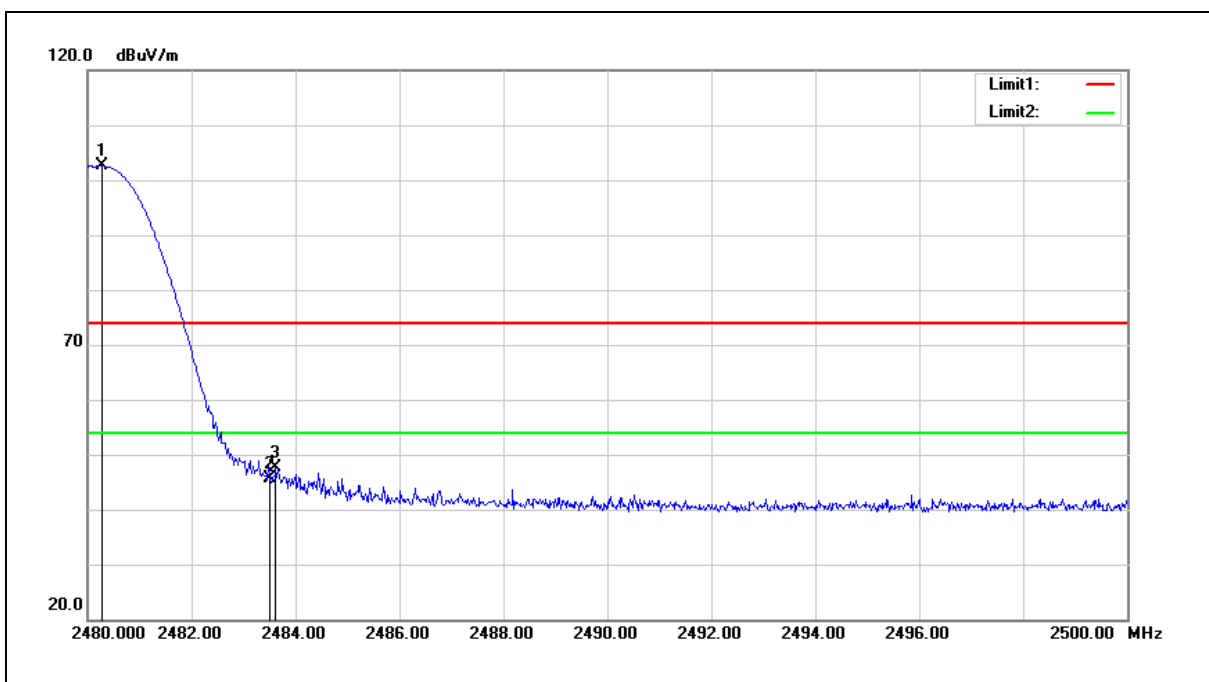
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.220	105.13	-6.95	98.18	74.00	24.18	peak
2	2483.500	49.64	-6.94	42.70	74.00	-31.30	peak
3	2483.680	50.89	-6.94	43.95	74.00	-30.05	peak

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:	Band edge		
Frequency:	2480 MHz		
Mode:	Mode 5		
Ant.Polar.:	Vertical		



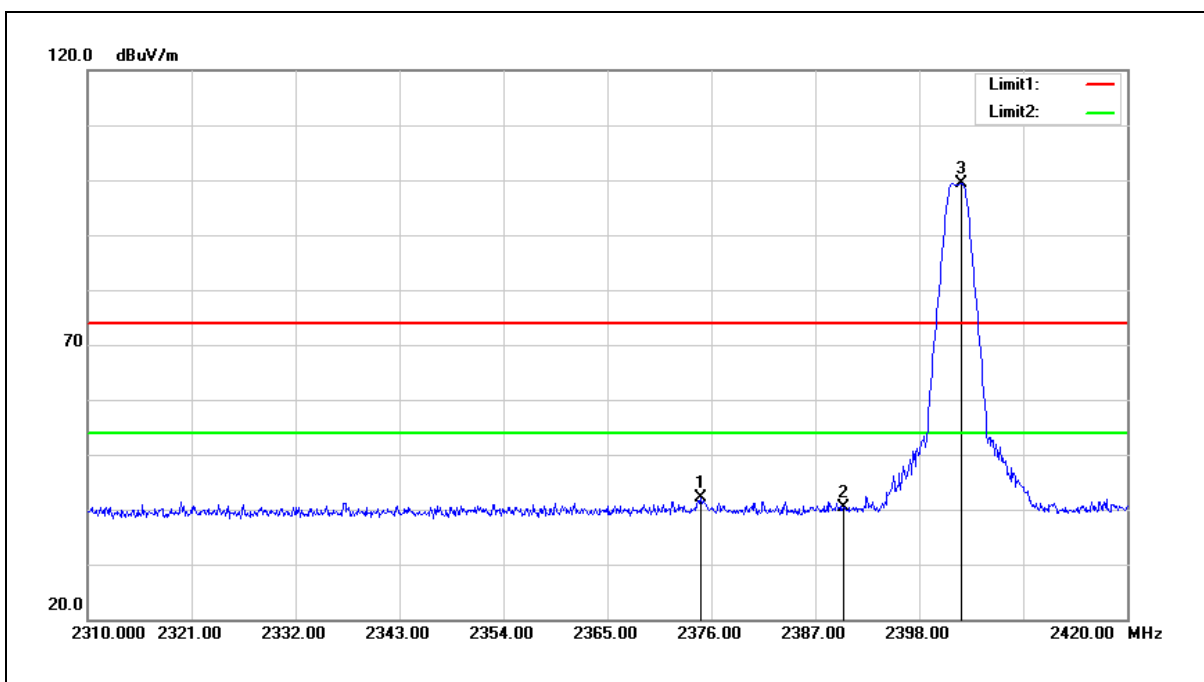
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.280	109.52	-6.95	102.57	74.00	28.57	peak
2	2483.500	52.60	-6.94	45.66	74.00	-28.34	peak
3	2483.620	54.61	-6.94	47.67	74.00	-26.33	peak

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

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

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

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



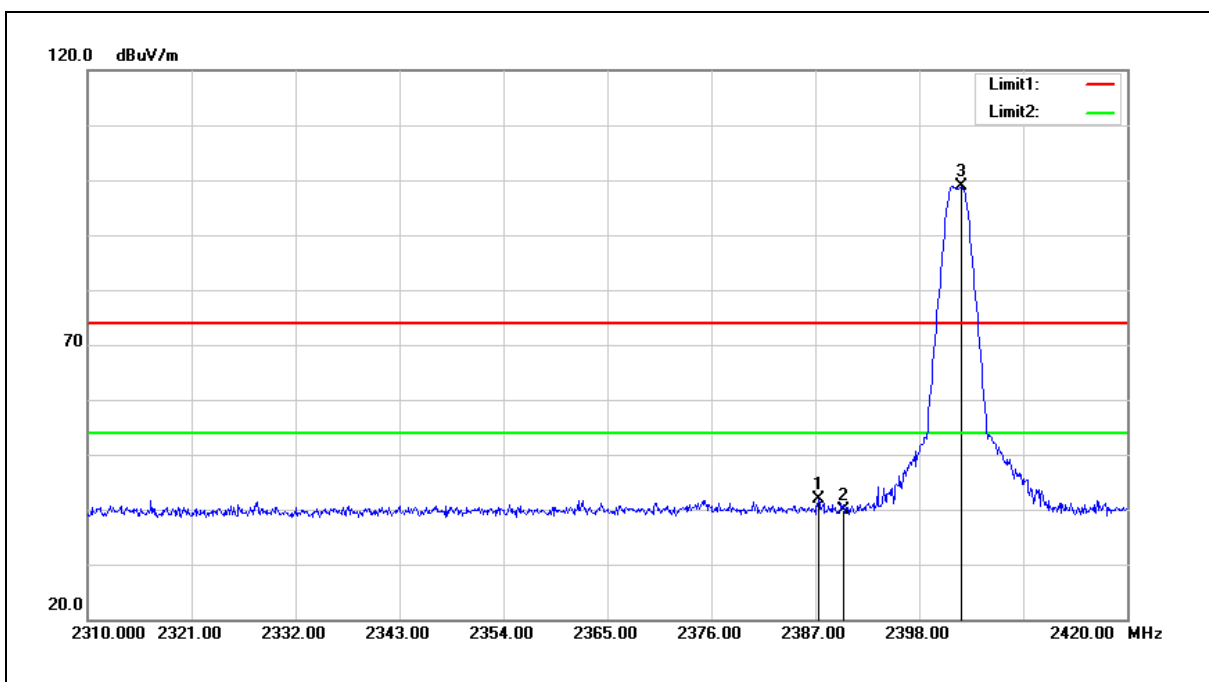
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.900	49.52	-7.37	42.15	74.00	-31.85	peak
2	2390.000	47.63	-7.30	40.33	74.00	-33.67	peak
3	2402.510	106.74	-7.25	99.49	74.00	25.49	peak

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.

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



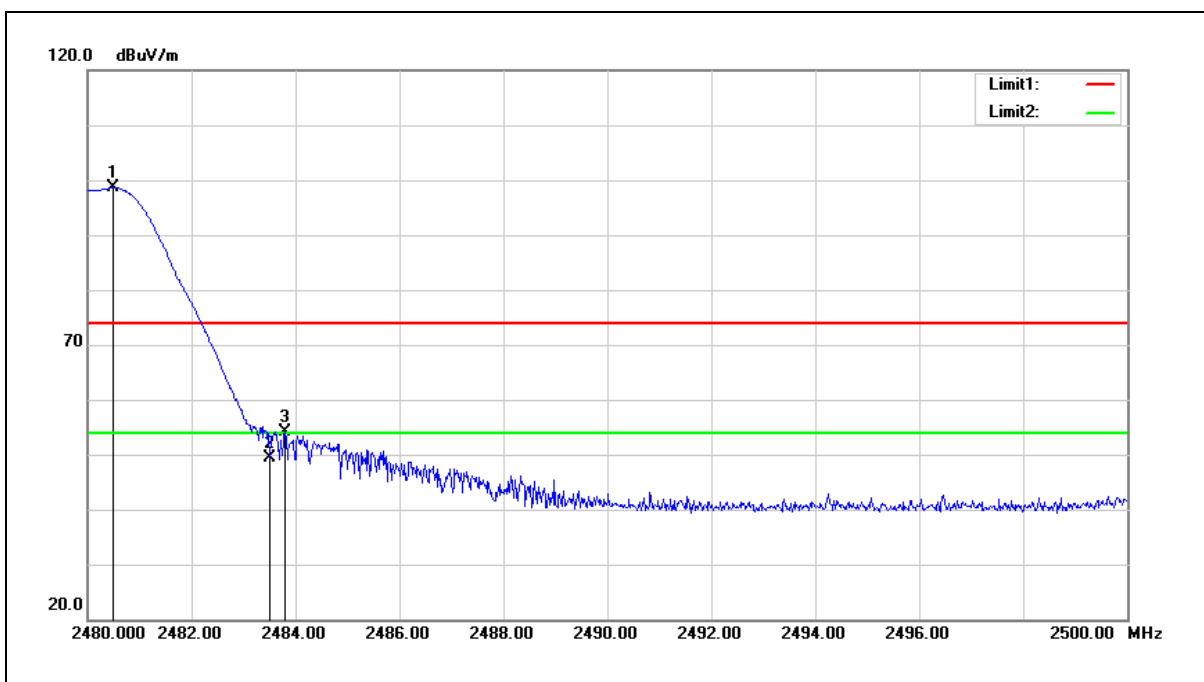
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.330	49.30	-7.33	41.97	74.00	-32.03	peak
2	2390.000	47.16	-7.30	39.86	74.00	-34.14	peak
3	2402.510	106.11	-7.25	98.86	74.00	24.86	peak

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

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

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

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



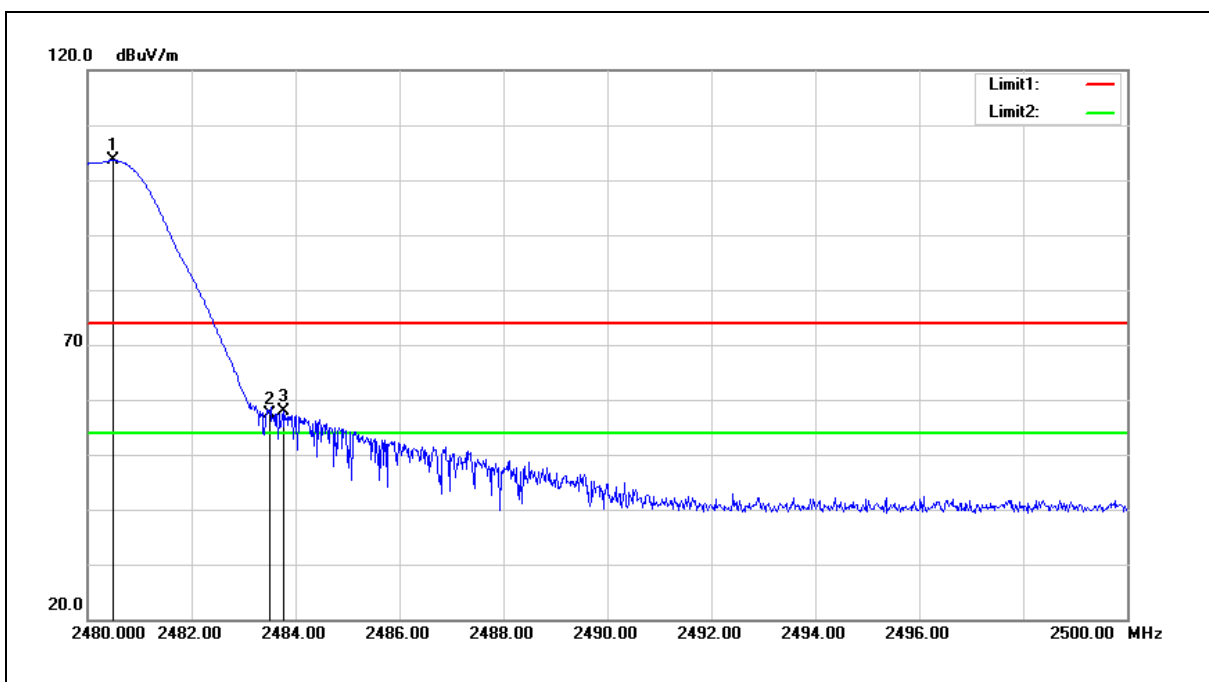
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.500	105.57	-6.94	98.63	74.00	24.63	peak
2	2483.500	56.33	-6.94	49.39	74.00	-24.61	peak
3	2483.800	60.99	-6.94	54.05	74.00	-19.95	peak

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:	3m
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	2480.480	110.51	-6.94	103.57	74.00	29.57	peak
2	2483.500	64.33	-6.94	57.39	74.00	-16.61	peak
3	2483.760	64.85	-6.94	57.91	74.00	-16.09	peak

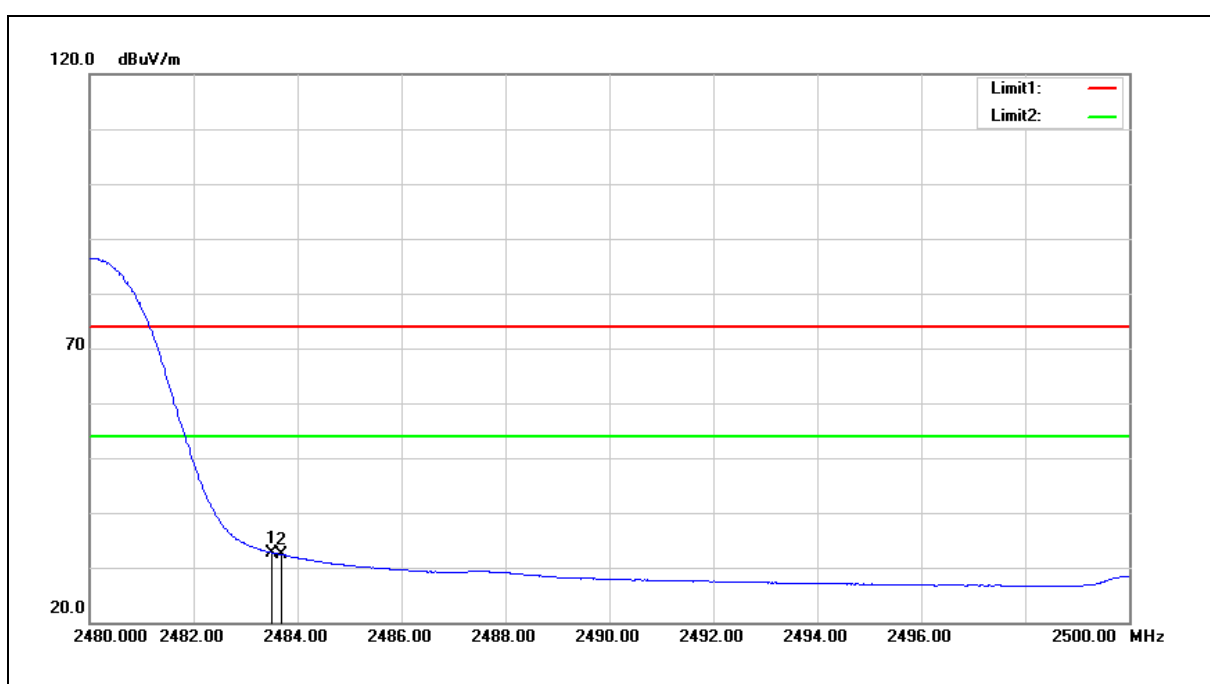
Note: 1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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.

Average

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



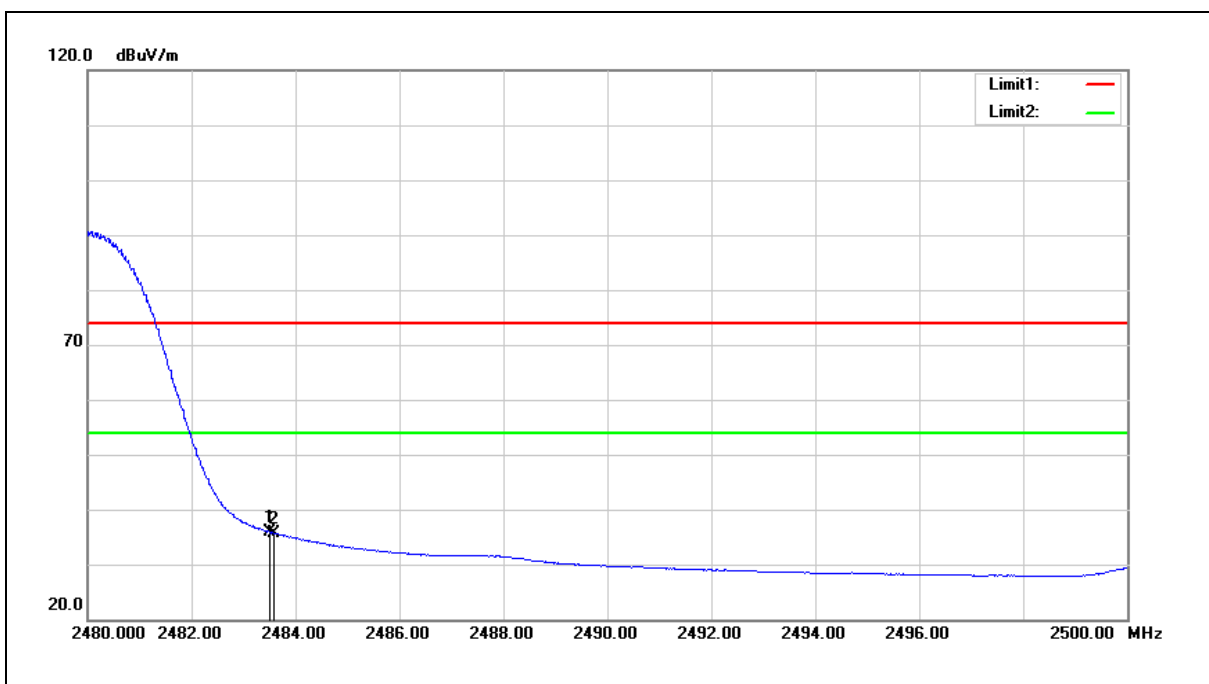
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	39.67	-6.94	32.73	54.00	-21.27	AVG
2	2483.680	39.35	-6.94	32.41	54.00	-21.59	AVG

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

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

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

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



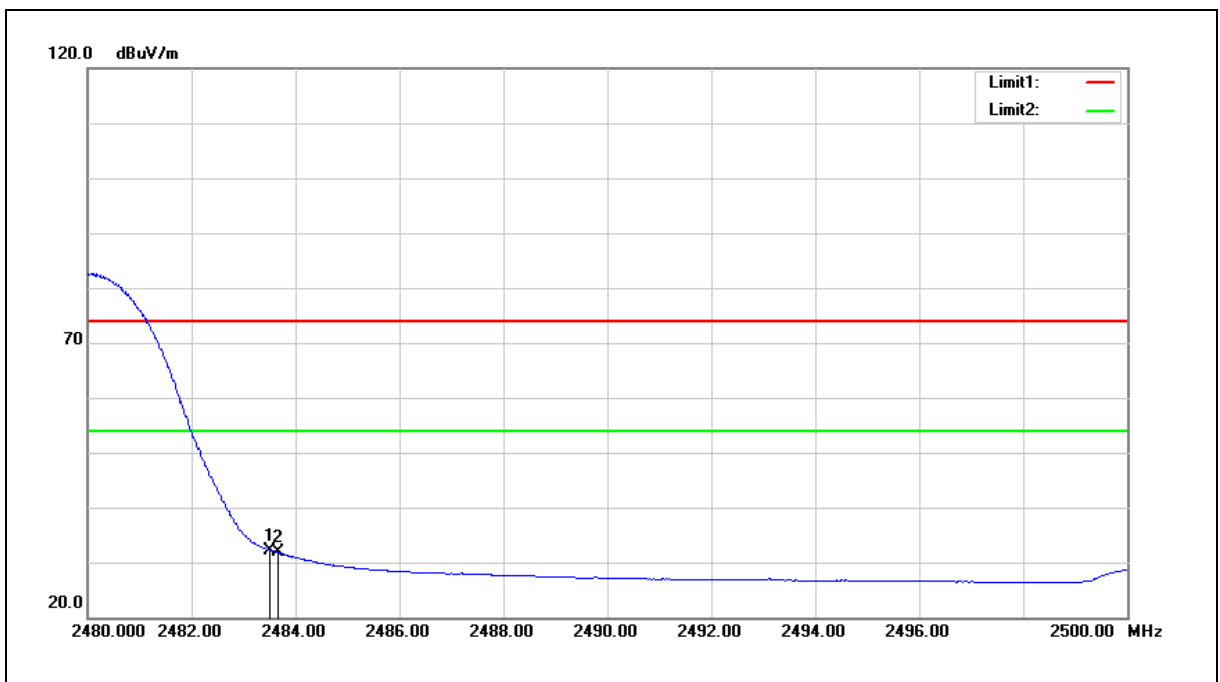
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	42.85	-6.94	35.91	54.00	-18.09	AVG
2	2483.580	42.57	-6.94	35.63	54.00	-18.37	AVG

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		



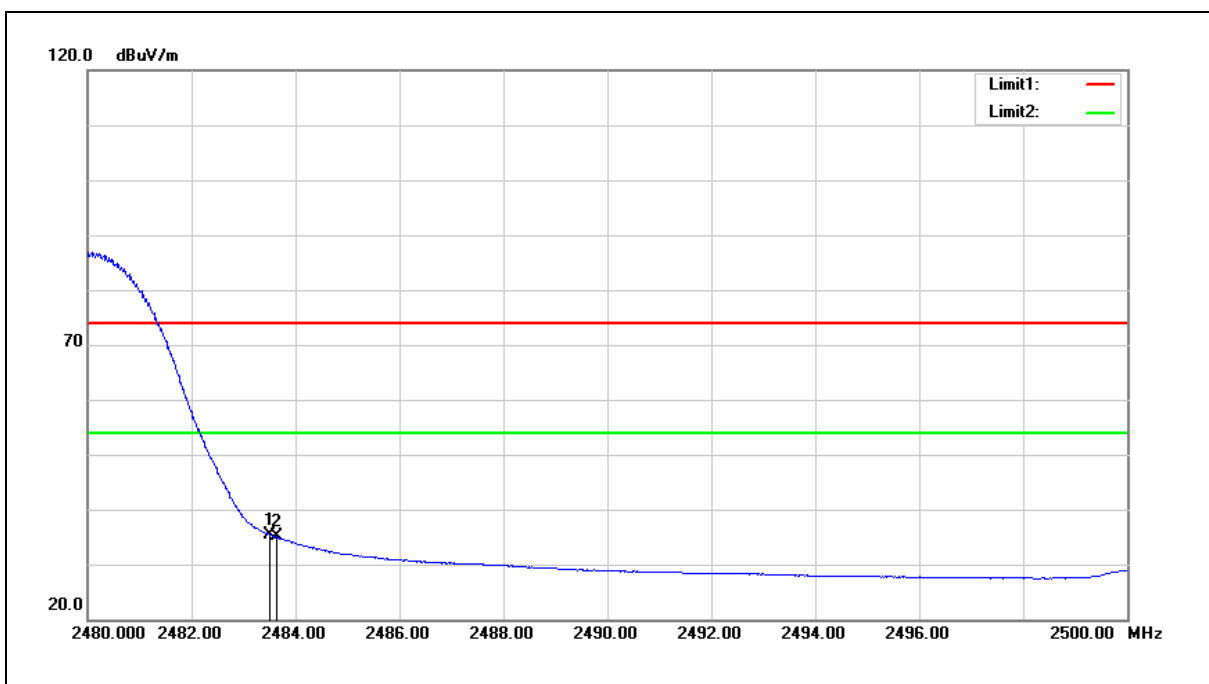
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	39.14	-6.94	32.20	54.00	-21.80	AVG
2	2483.660	38.76	-6.94	31.82	54.00	-22.18	AVG

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		



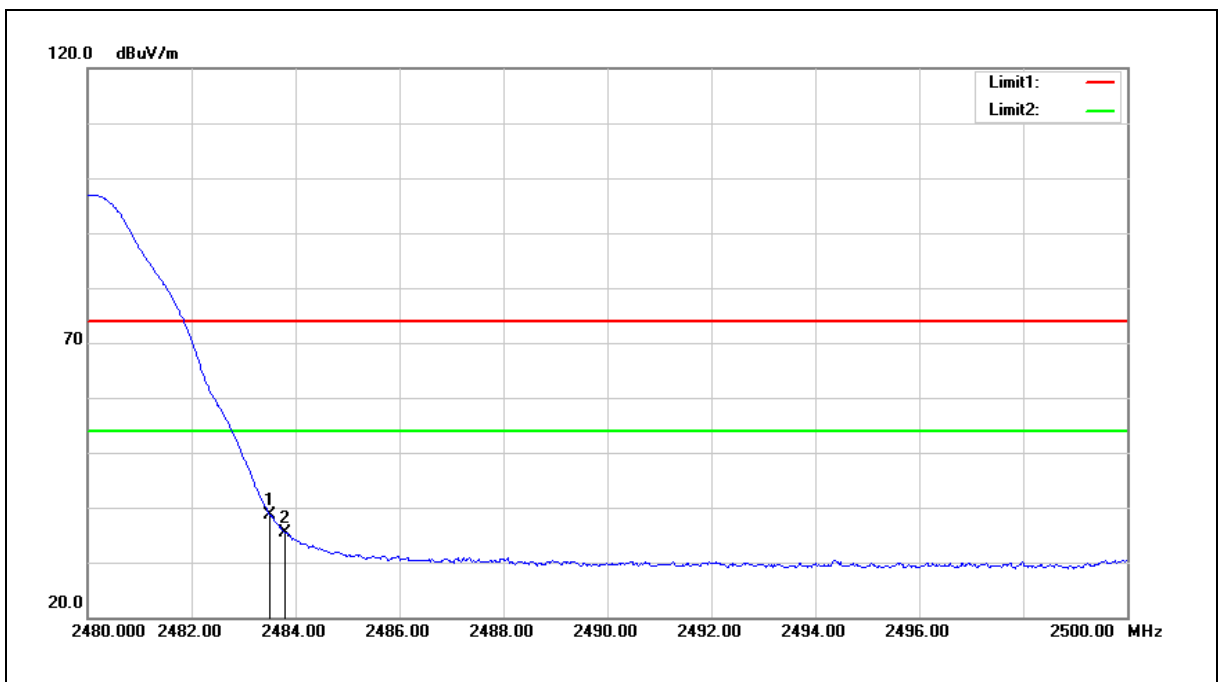
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	42.38	-6.94	35.44	54.00	-18.56	AVG
2	2483.640	41.97	-6.94	35.03	54.00	-18.97	AVG

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:	2480 MHz		
Mode:	Mode 6		
Ant.Polar.:	Horizontal		



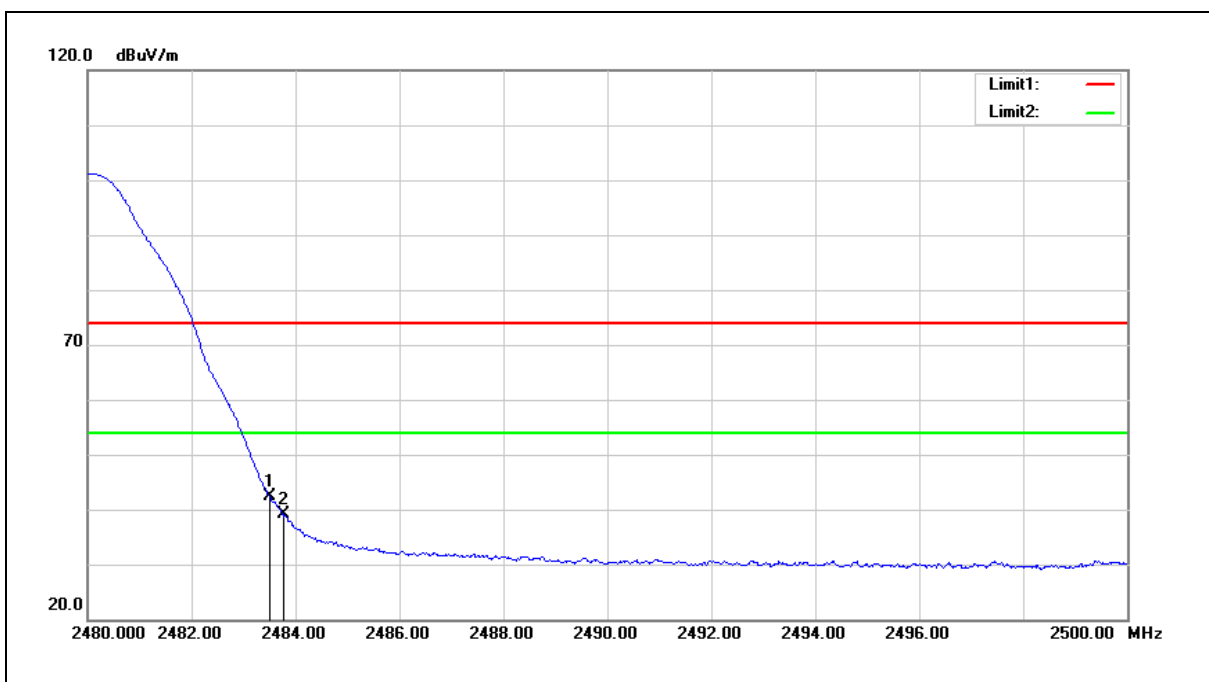
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	45.64	-6.94	38.70	54.00	-15.30	AVG
2	2483.800	42.42	-6.94	35.48	54.00	-18.52	AVG

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	49.38	-6.94	42.44	54.00	-11.56	AVG
2	2483.760	46.06	-6.94	39.12	54.00	-14.88	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.

5.3 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	5.64	0.00366	5.78	0.00378	≤0.125
	DH3	5.65	0.00367	5.79	0.00379	≤0.125
	DH5	5.66	0.00368	5.80	0.00380	≤0.125
中頻道	DH1	7.42	0.00552	7.55	0.00569	≤0.125
	DH3	7.43	0.00553	7.57	0.00571	≤0.125
	DH5	7.45	0.00556	7.59	0.00574	≤0.125
高頻道	DH1	7.81	0.00604	7.93	0.00621	≤0.125
	DH3	7.83	0.00607	7.95	0.00624	≤0.125
	DH5	7.85	0.00610	7.99	0.00630	≤0.125

操作模式 : Mode 3: EDR, $\pi/4$ -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	2.50	0.00178	4.67	0.00293	≤0.125
	2DH3	2.55	0.00180	4.69	0.00294	≤0.125
	2DH5	2.58	0.00181	4.73	0.00297	≤0.125
中頻道	2DH1	6.01	0.00399	6.35	0.00432	≤0.125
	2DH3	6.06	0.00404	6.45	0.00442	≤0.125
	2DH5	6.09	0.00406	6.58	0.00455	≤0.125
高頻道	2DH1	6.07	0.00405	6.73	0.00471	≤0.125
	2DH3	6.12	0.00409	6.76	0.00474	≤0.125
	2DH5	6.16	0.00413	6.79	0.00478	≤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	2.58	0.00181	4.78	0.00301	≤0.125
	3DH3	2.61	0.00182	4.82	0.00303	≤0.125
	3DH5	2.63	0.00183	4.85	0.00305	≤0.125
中頻道	3DH1	6.09	0.00406	6.59	0.00456	≤0.125
	3DH3	6.11	0.00408	6.65	0.00462	≤0.125
	3DH5	6.13	0.00410	6.78	0.00476	≤0.125
高頻道	3DH1	6.40	0.00437	6.82	0.00481	≤0.125
	3DH3	6.43	0.00440	6.85	0.00484	≤0.125
	3DH5	6.45	0.00442	6.89	0.00489	≤0.125

操作模式 : Mode 5: LE, GFSK Continuous TX Mode			
頻道	輸出功率(Average)		限制值
	dBm	W	W
低頻道	2.10	0.00162	≤ 1
中頻道	3.59	0.00229	≤ 1
高頻道	3.71	0.00235	≤ 1

操作模式 : Mode 6: 2LE, GFSK Continuous TX Mode			
頻道	輸出功率(Average)		限制值
	dBm	W	W
低頻道	2.00	0.00158	≤ 1
中頻道	3.51	0.00224	≤ 1
高頻道	3.69	0.00234	≤ 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



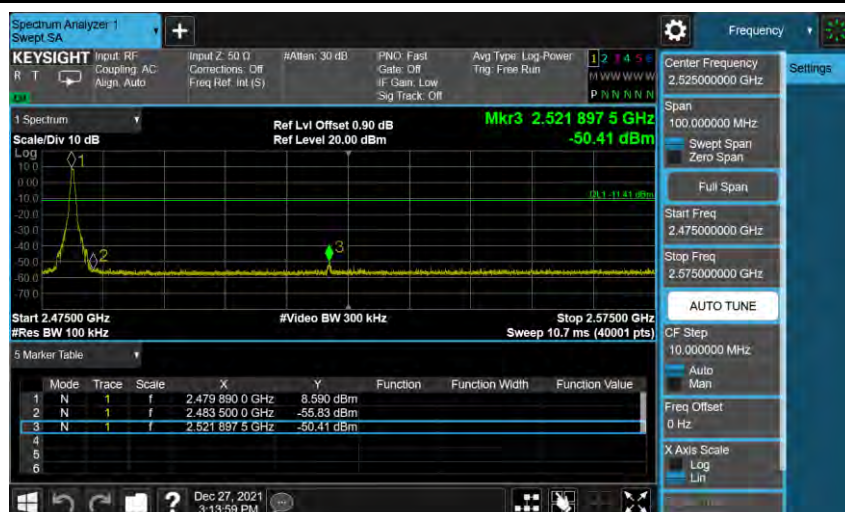
Conducted Band Edge

Mode 2: BR, GFSK Continuous TX Mode_Un-hopping

低頻道

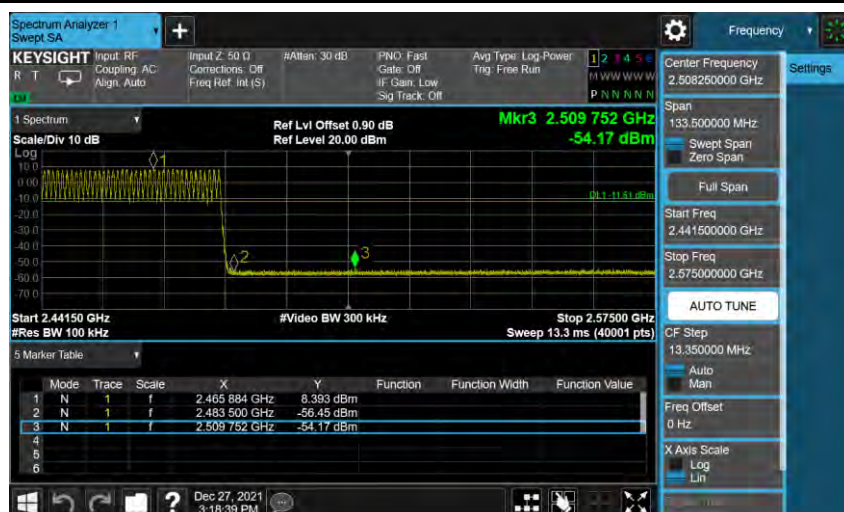
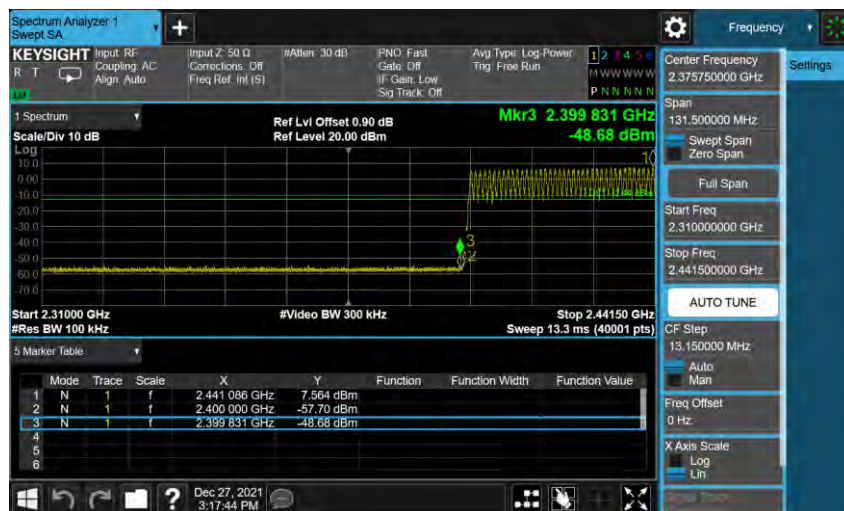


高頻道



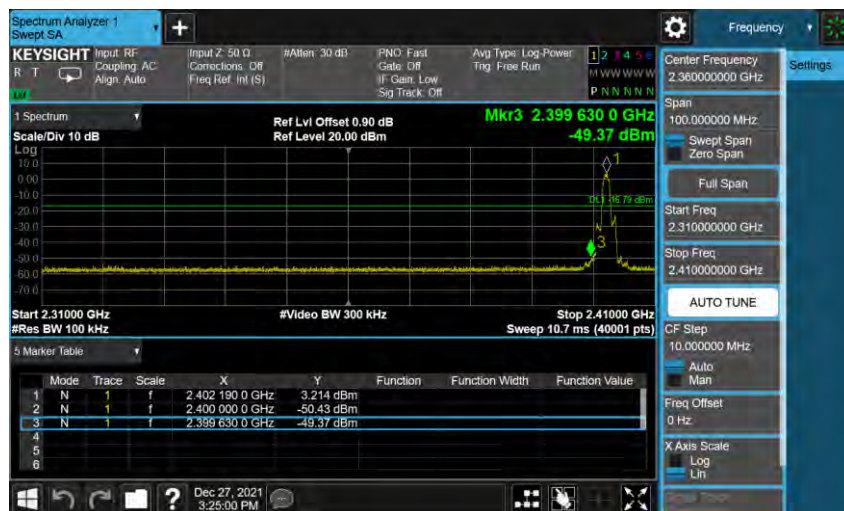
Mode 2: BR, GFSK Continuous TX Mode_Hopping

低頻道-高頻道

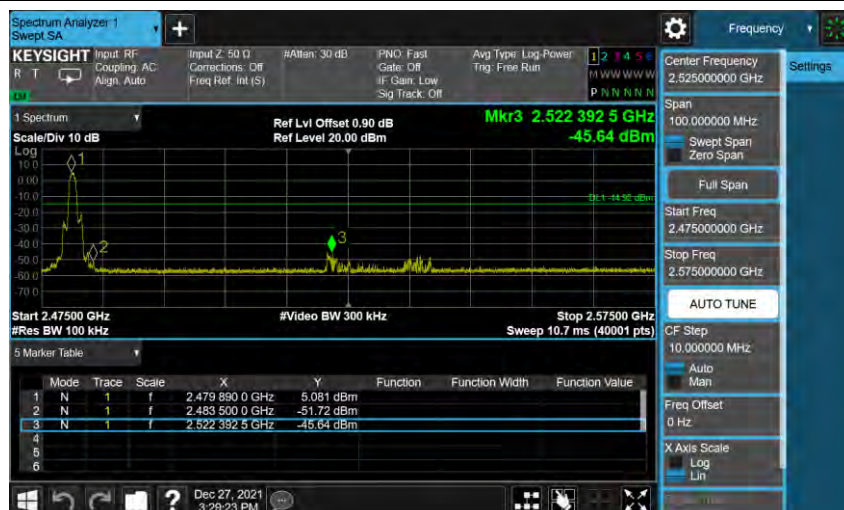


Mode 4: EDR, 8DPSK Continuous TX Mode_Un-hopping

低頻道

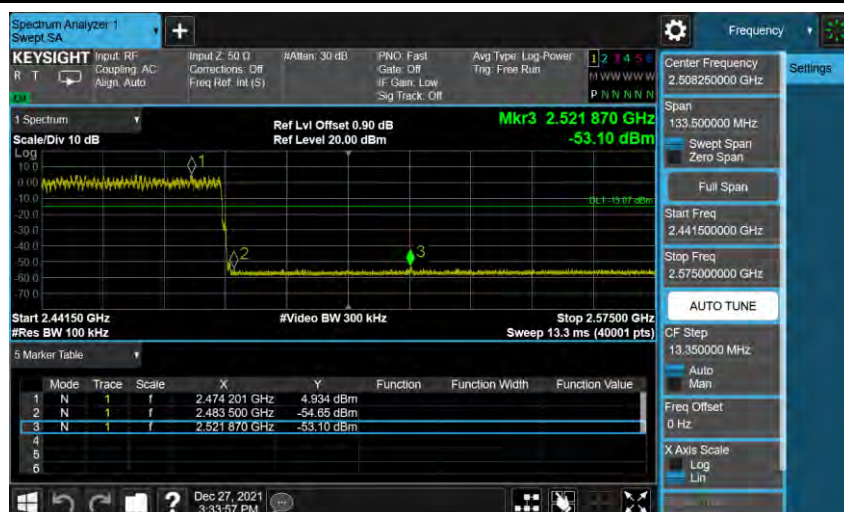
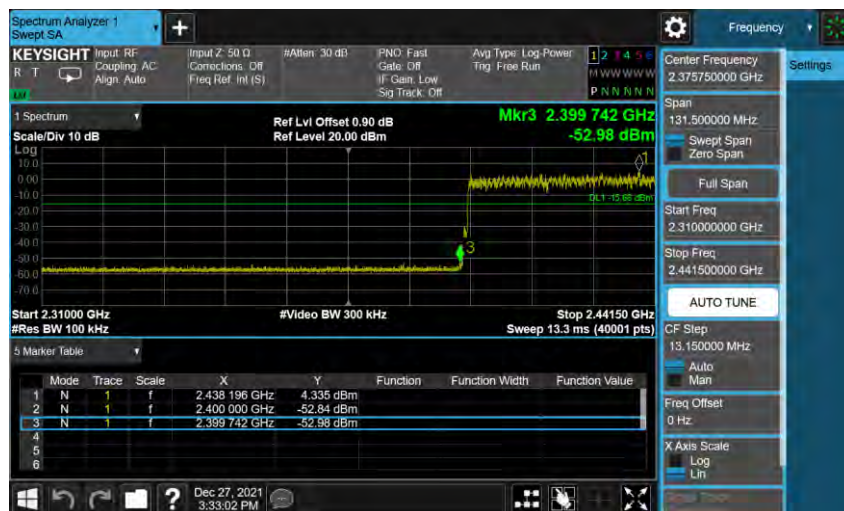


高頻道



Mode 4: EDR, 8DPSK Continuous TX Mode_Hopping

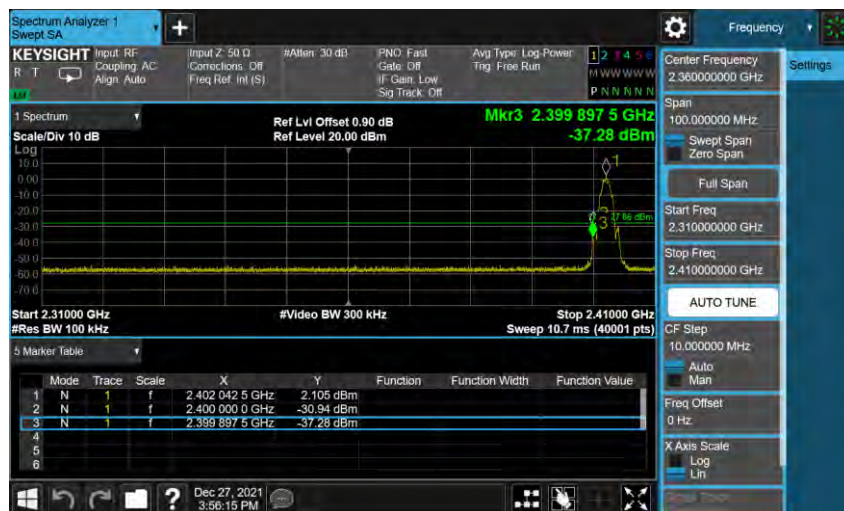
低頻道-高頻道



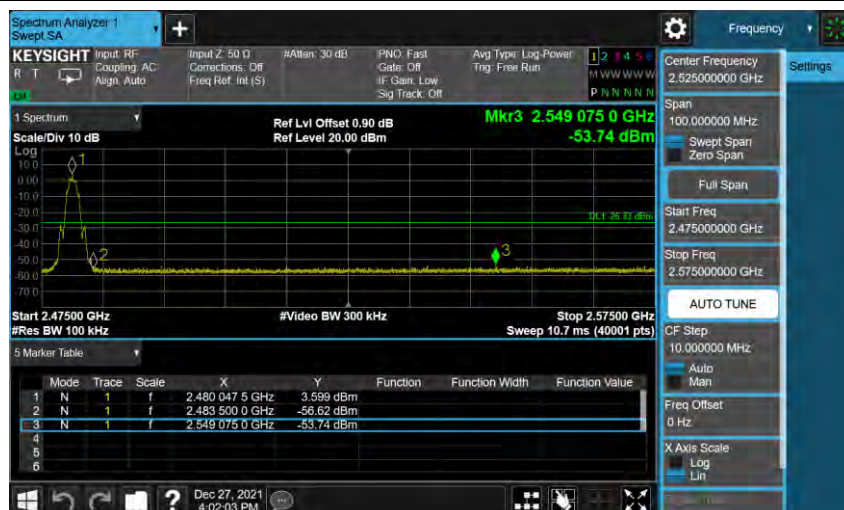


Mode 6: 2LE, GFSK Continuous TX Mode

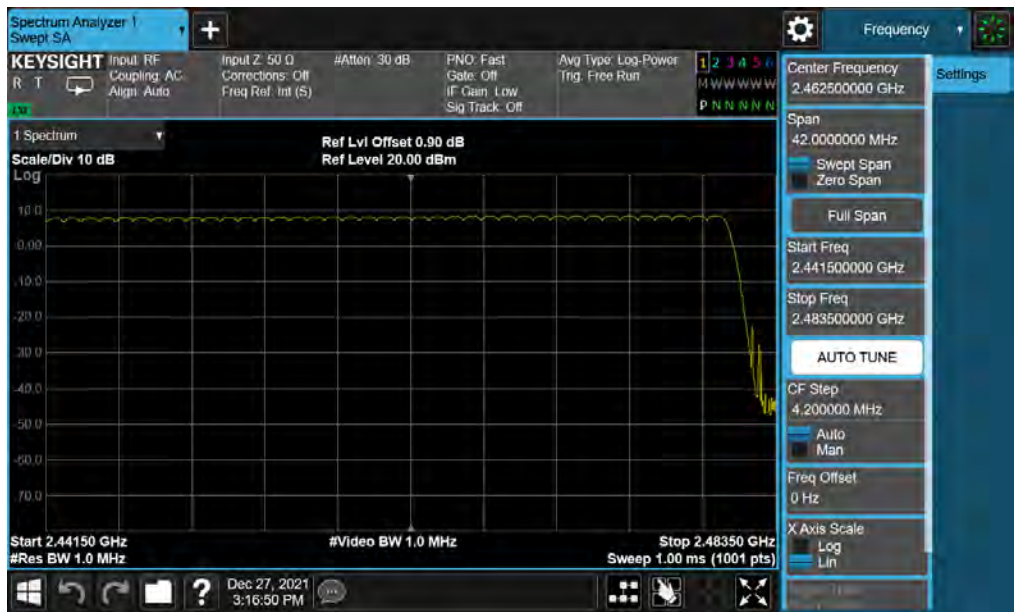
低頻道



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	



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	0.980	0.653	-----
	中頻道	0.977	0.652	-----
	高頻道	0.984	0.656	-----
Mode 4	低頻道	1.319	0.879	-----
	中頻道	1.323	0.882	-----
	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				

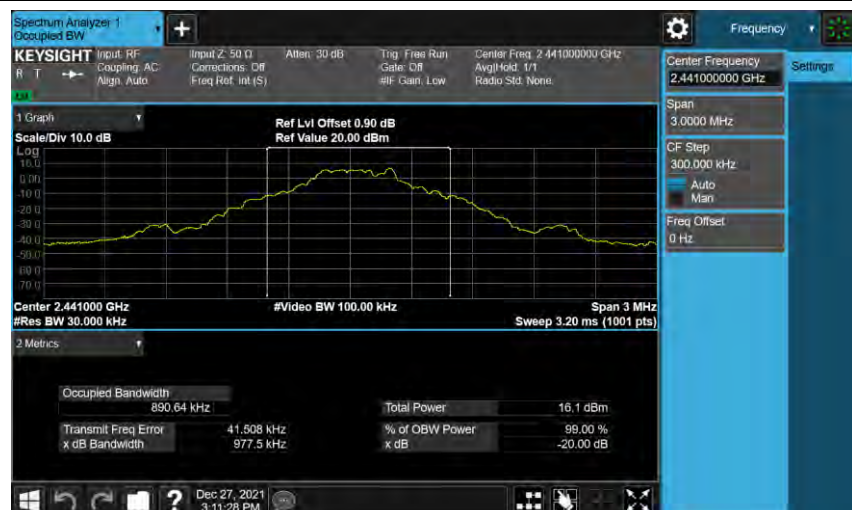
操作模式 : Mode 5: LE, GFSK Continuous TX Mode Mode 6: 2LE, GFSK Continuous TX Mode			
操作模式	頻道	發射頻寬(6 dB)	
		量測值 (kHz)	限制值 (kHz)
Mode 5	低頻道	719.400	≥ 500
	中頻道	717.300	≥ 500
	高頻道	717.300	≥ 500
Mode 6	低頻道	1127.000	≥ 500
	中頻道	1129.000	≥ 500
	高頻道	1131.000	≥ 500

Mode 2: BR, GFSK Continuous TX Mode

低頻道



中頻道



高頻道

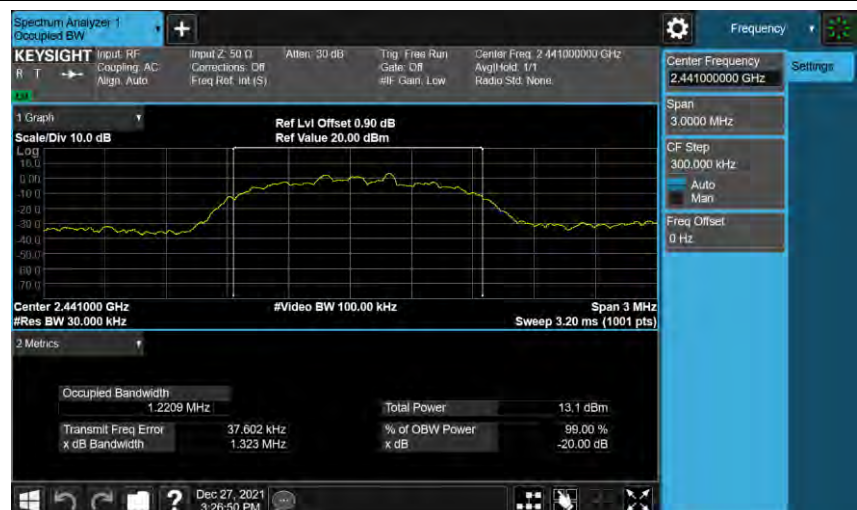


Mode 4: EDR,8DPSK Continuous TX Mode

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

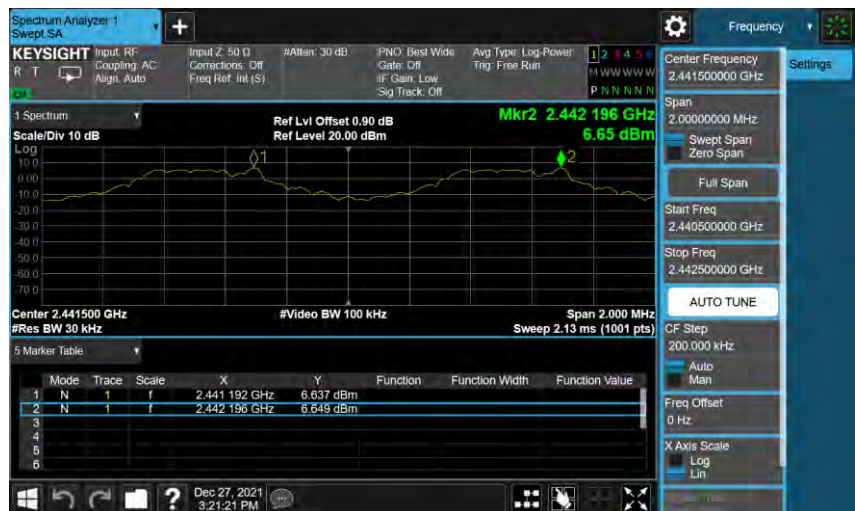
操作模式 : Mode 2: BR, GFSK Continuous TX Mode Mode 4: EDR, 8DPSK Continuous TX Mode			
操作模式	頻道	鄰頻道載波間隔	
		量測值 (MHz)	限制值 (MHz)
Mode 2	低頻道	1.002	≥ 0.653
	中頻道	1.004	≥ 0.652
	高頻道	1.002	≥ 0.656
Mode 4	低頻道	0.998	≥ 0.879
	中頻道	0.998	≥ 0.882
	高頻道	0.998	≥ 0.882

Mode 2: BR, GFSK Continuous TX Mode

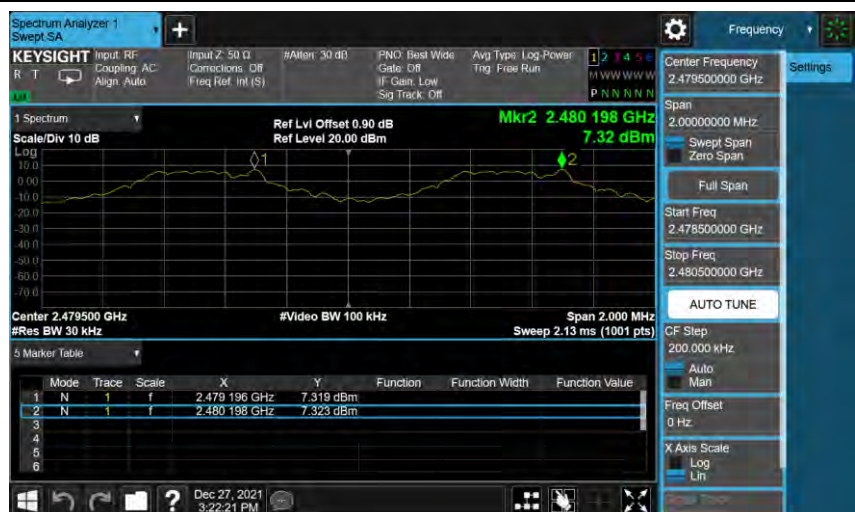
低頻道



中頻道



高頻道

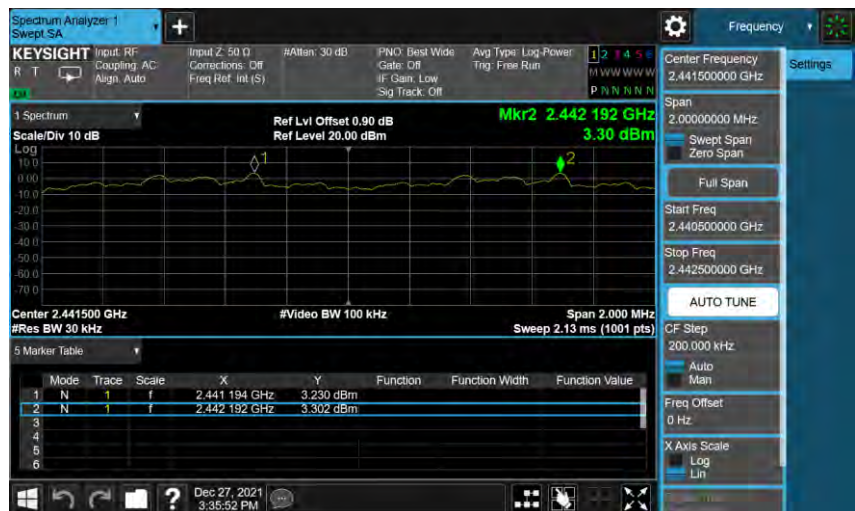


Mode 4: EDR, 8DPSK Continuous TX Mode

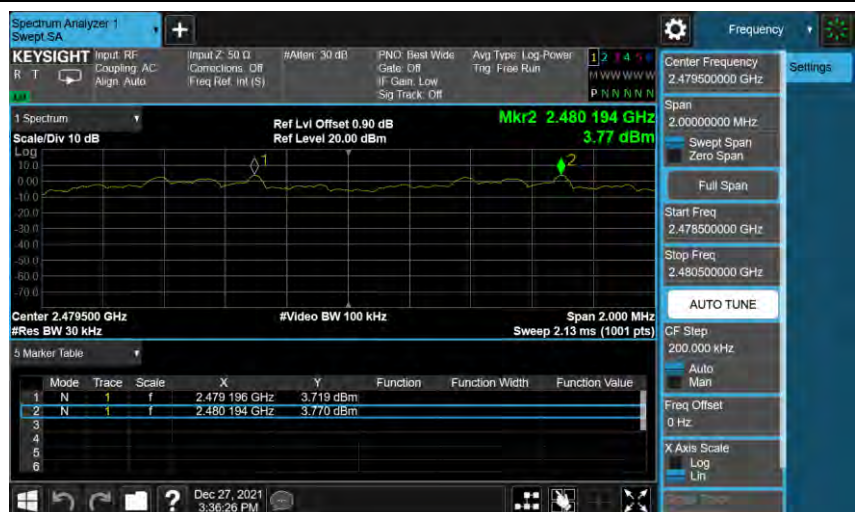
低頻道



中頻道



高頻道

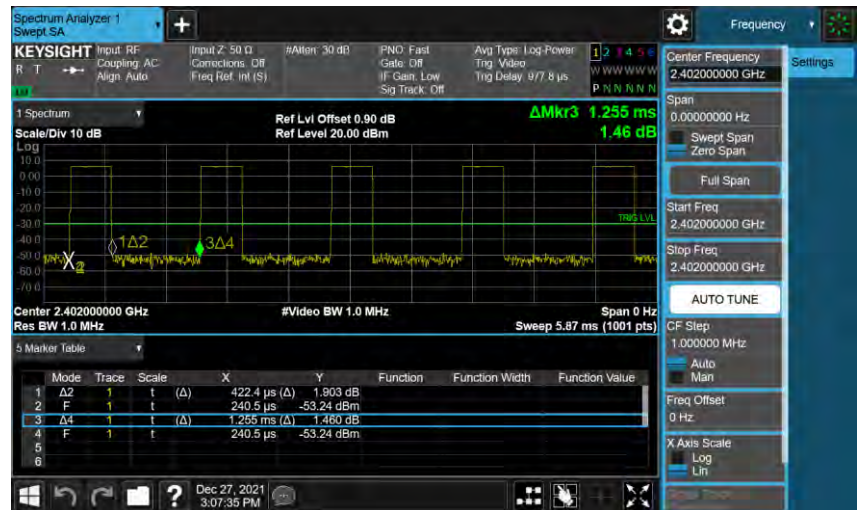


跳頻系統之任一頻率佔用之平均時間之量測

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)	0.422 ms
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)	135.214 ms
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)	1.683 ms
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)	269.158 ms
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)	2.933 ms
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)	313.247 ms
LIMIT(msec)	≤ 400

Mode 2: BR, GFSK Continuous TX Mode

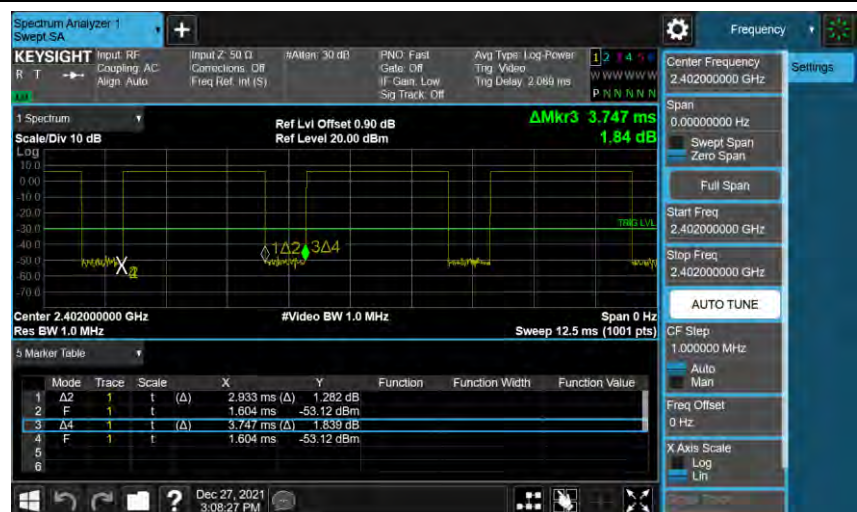
DH1



DH3



DH5



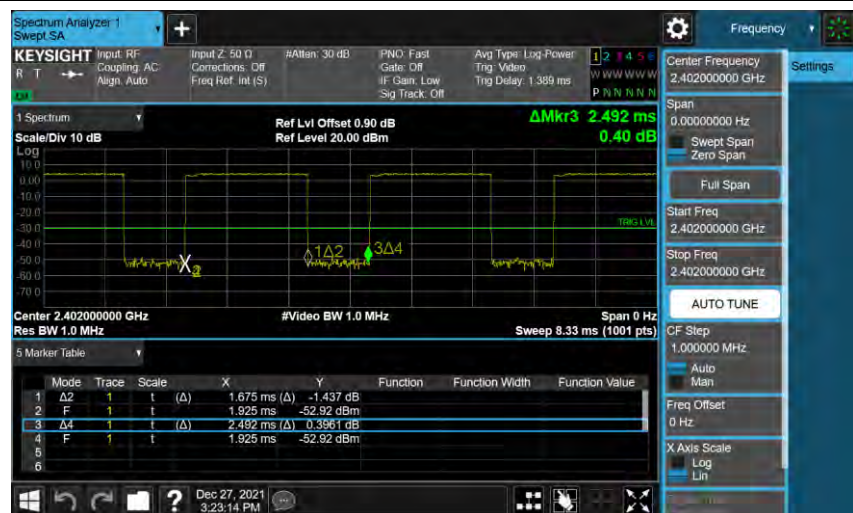
Mode 4: EDR, 8DPSK Continuous TX Mode	
3DH1 模式	
需量測之週期(秒)	$79CH * 0.4 = 31.6$ (秒)
待測物每秒跳頻之總次數	1600(藍牙通訊協定標準)
頻道每秒佔用之次數	$800/79CH = 10.13$ (次/秒)
頻道每次佔用之時間(1)	0.428 ms
週期內頻道佔用之總次數(2)	$31.6 * 10.13 = 320.108$ (次)
週期內佔用的平均時間(1) * (2)	137.092 ms
LIMIT(msec)	≤ 400
3DH3 模式	
需量測之週期(秒)	$79CH * 0.4 = 31.6$ (秒)
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)	1.675 ms
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)	267.826 ms
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)	2.933 ms
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)	313.247 ms
LIMIT(msec)	≤ 400

Mode 4: EDR, 8DPSK Continuous TX Mode

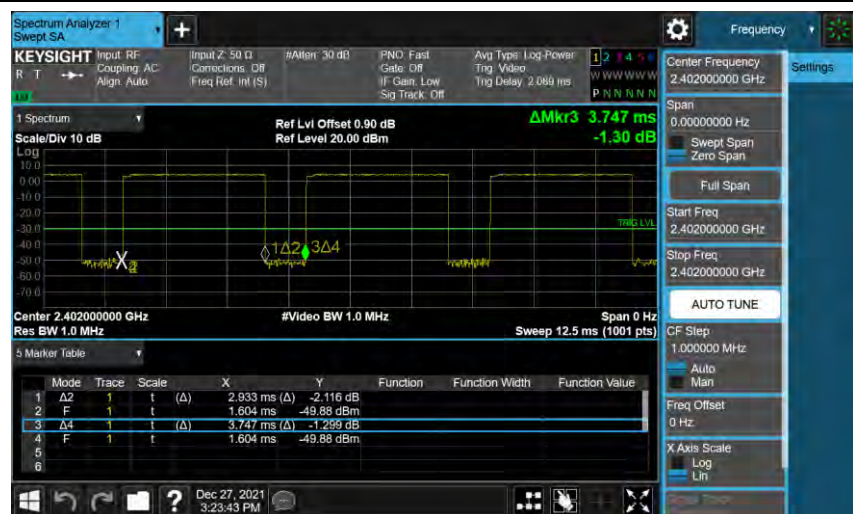
3DH1



3DH3



3DH5

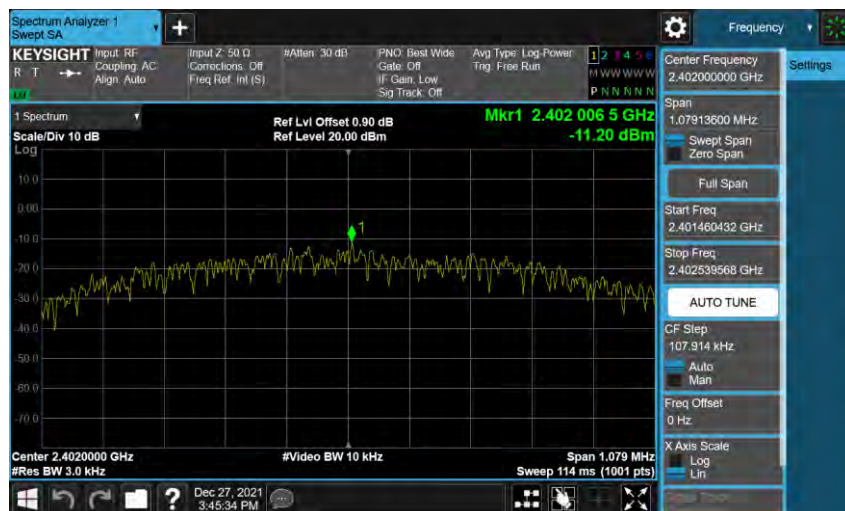


功率密度之要求

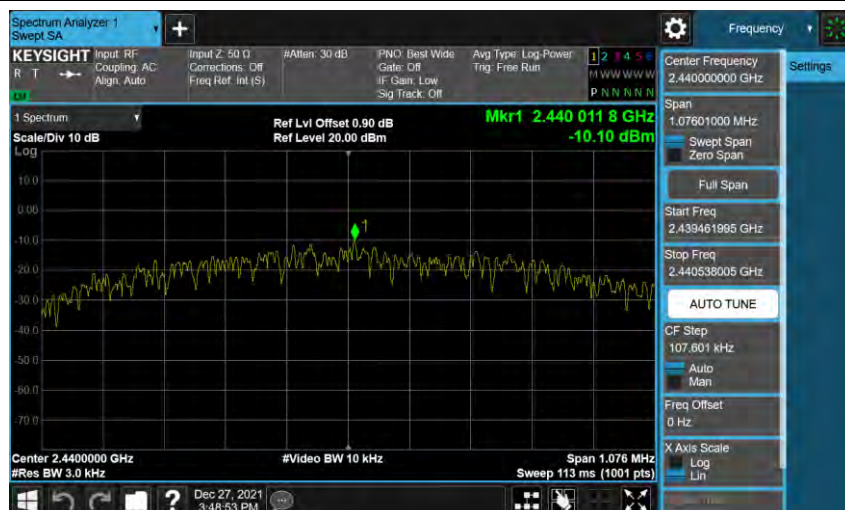
操作模式 : Mode 5: LE, GFSK Continuous TX Mode			
Mode 6: 2LE, GFSK Continuous TX Mode			
操作模式	頻道	量測值 (dBm/3 kHz)	限制值 (dBm/3 kHz)
Mode 5	低頻道	-11.200	≤ 8
	中頻道	-10.100	≤ 8
	高頻道	-9.800	≤ 8
Mode 6	低頻道	-14.080	≤ 8
	中頻道	-12.810	≤ 8
	高頻道	-12.700	≤ 8

Mode 5: LE, GFSK Continuous TX Mode

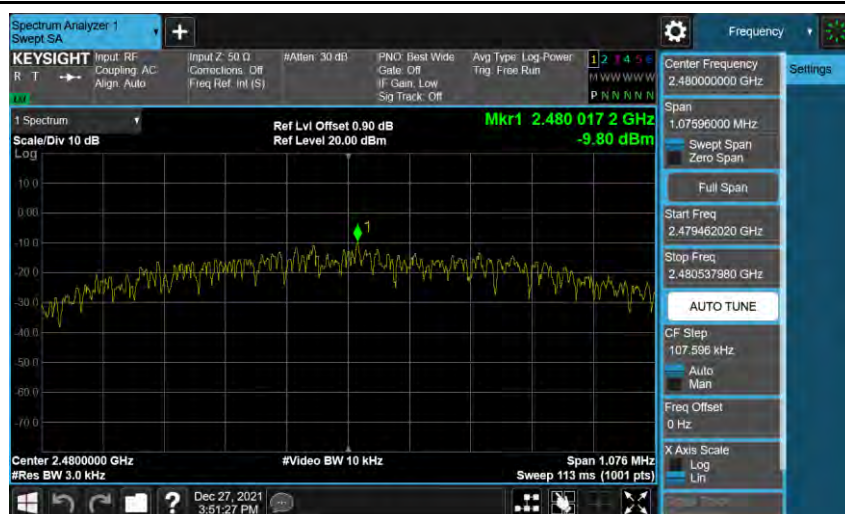
低頻道



中頻道

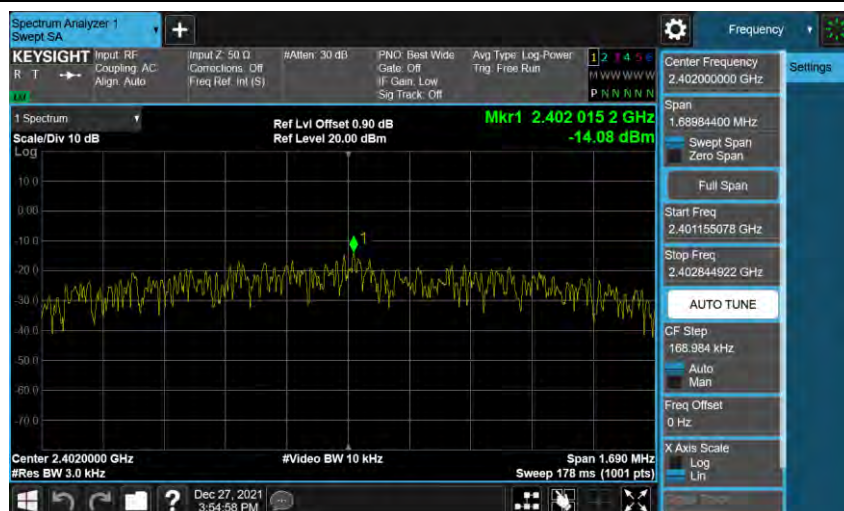


高頻道

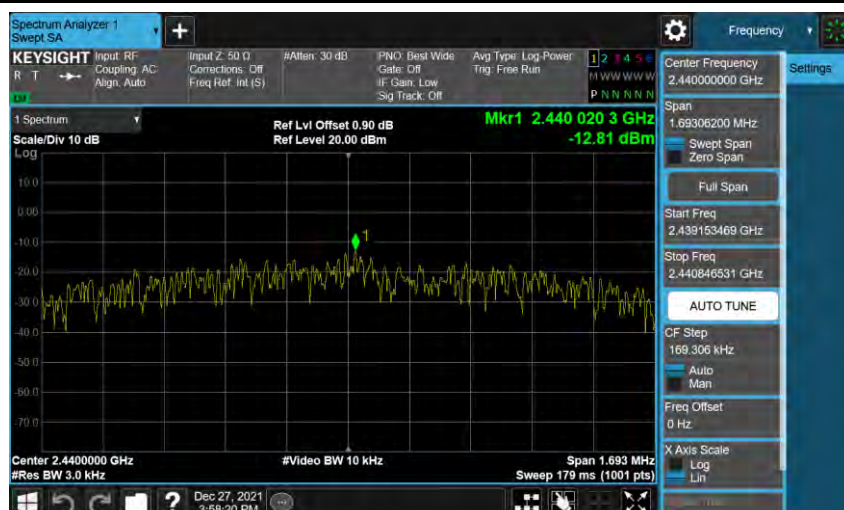


Mode 6: 2LE, GFSK Continuous TX Mode

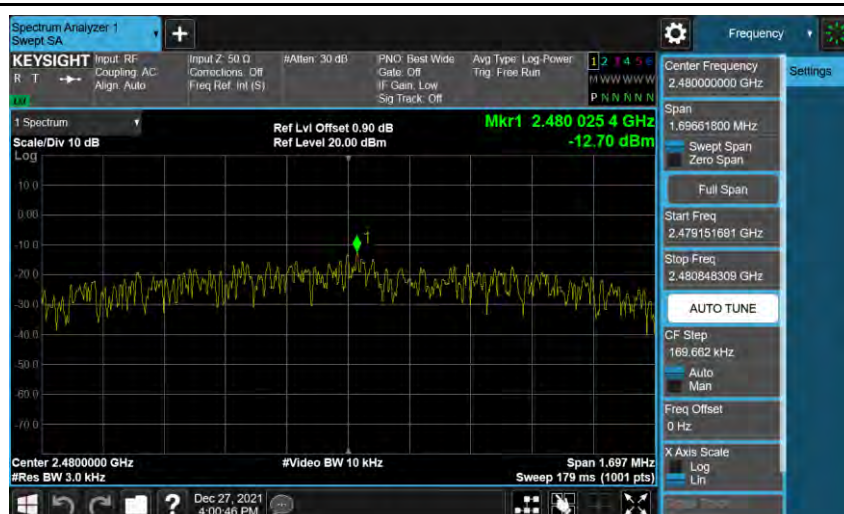
低頻道



中頻道



高頻道



6. EUT Photos

請參照 文件編號: 21-1759_EUT External Photos 和 21-1759_EUT Internal Photos 。

---END---