

NCC 低功率射頻器材型式試驗報告

產 品 名 稱	Bluetooth USB Dongle
型 號	END050W
廠 牌	BlueParrott

申 請 者	GN Audio A/S
地 址	Lautrupbjerg 7, 2750 Ballerup, Denmark

受 理 日 期	108 年 12 月 11 日
報 告 發 行 日 期	110 年 11 月 23 日
報 告 號 碼	21B0690R-RFNAOTHV02-A
報 告 版 本	V1.0



本測試報告只針對受測樣品有效

本測試報告內之測試結果可藉由測試儀器設備之校正報告與本報告內所評估量測不確定度追溯至國家或國際標準不得使用本報告宣稱產品是由 TAF 或任何政府機構背書。

本測試報告非經德凱認證股份有限公司同意不可複製使用。

對各個測試系統與伴隨的連接設施，所執行的量測項目的量測不確定度，在此提供做為系統資訊的參考，符合性決定不考慮測試系統的不確定度而是基於符合性測試的結果決定。

低功率射頻器材量測報告

報告發行日期: 110 年 11 月 23 日

報告號碼 : 21B0690R-RFNAOTHV02-A



產品名稱	Bluetooth USB Dongle
申請者	GN Audio A/S
地 址	Lautrupbjerg 7, 2750 Ballerup, Denmark
製造廠商	GN Audio A/S
待測物額定電壓	DC 5V by USB
待測物測試電壓	DC 5V by USB
商標或廠牌	BlueParrott
型式號	END050W
試驗標準	低功率射頻器材技術規範(109 年 7 月)
試驗結果	符合

項次	量 測 項 目	標 稱 規 格	測試結果	量測設備	量測不確定度
1	電源線傳導干擾	低功率射頻器材技術規範 3.3 節	PASS	請參閱 2.2 節	請參閱 3.4 節
2	峰值輸出功率	低功率射頻器材技術規範 4.10.1.2 節	PASS		請參閱 4.4 節
3	天線之要求	低功率射頻器材技術規範 4.10.1.3、4 節	PASS	--	--
4	輻射干擾測試	低功率射頻器材技術規範 4.10.1.5 節及 3.6 節	PASS	請參閱 2.2 節	請參閱 6.4 節
5	混附發射之 RF 傳導干擾	低功率射頻器材技術規範 4.10.1.5 節	PASS		請參閱 7.4 節
6	使用頻率範圍外之 100 千赫雜訊	低功率射頻器材技術規範 4.10.1.5 節及 3.6 節	PASS		請參閱 8.4 節
7	載波頻率間隔	低功率射頻器材技術規範 4.10.1.6 節	PASS		請參閱 9.4 節
8	跳頻頻率數目	低功率射頻器材技術規範 4.10.1.6 節	PASS		請參閱 10.4 節
9	停留時間	低功率射頻器材技術規範 4.10.1.6 節	PASS		請參閱 11.4 節
10	佔用頻道寬度	低功率射頻器材技術規範 4.10.1.6 節	PASS		請參閱 12.4 節
11	發射電功率密度	低功率射頻器材技術規範 4.10.1.6 節	PASS		請參閱 13.4 節
12	Duty Cycle	--	--		請參閱 14.3 節
13	以下空白	--	--		--

報告製作者	:	陳秀婷
		高級報告專員 / 陳秀婷
測試工程師	:	莊駿朋
		高級工程師 / 莊駿朋
實驗室簽署人	:	陳文中
		高級工程師 / 陳文中

目 錄

項 目	頁數
1. 基本資料.....	6
1.1. 待測物裝置資料.....	6
1.2. 裝置驗證說明.....	7
1.3. 系統測試時之週邊裝置.....	9
1.4. 測試系統組合圖.....	10
1.5. 測試系統操作程序.....	10
2. 測試實驗室資料.....	11
2.1. 試驗單位與週遭環境.....	11
2.2. 測試設備明細.....	12
2.3. 量測不確定度.....	14
3. 電源端點干擾測試.....	15
3.1. 適用標準.....	15
3.2. 量測方法.....	15
3.3. 測試架構圖.....	15
3.4. 量測不確定度.....	16
3.5. 電源端點測試結果.....	17
4. 峰值輸出功率.....	31
4.1. 適用標準.....	31
4.2. 量測方法.....	31
4.3. 測試架構圖.....	31
4.4. 量測不確定度.....	31
4.5. 峰值輸出功率測試結果.....	32
5. 天線之要求.....	37
5.1. 適用標準.....	37
5.2. 天線樣式.....	37
6. 輻射干擾測試.....	38
6.1. 適用標準.....	38
6.2. 量測方法.....	39
6.3. 測試架構圖.....	40
6.4. 量測不確定度.....	40
6.5. 輻射干擾測試結果.....	41
7. 混附發射之 RF 傳導發射.....	115
7.1. 適用標準.....	115
7.2. 量測方法.....	115
7.3. 測試架構圖.....	115
7.4. 量測不確定度.....	115
7.5. 混附發射之 RF 傳導發射測試結果.....	116
8. 使用頻率範圍外之任意 100 千赫雜訊.....	131
8.1. 適用標準.....	131
8.2. 量測方法.....	132

8.3.	測試架構圖	133
8.4.	量測不確定度	133
8.5.	使用頻率範圍外之任意 100 千赫雜訊測試結果	134
9.	載波頻率間隔	174
9.1.	適用標準	174
9.2.	量測方法	174
9.3.	測試架構圖	174
9.4.	量測不確定度	174
9.5.	載波頻率間隔測試結果	175
10.	跳頻頻率數目	184
10.1.	適用標準	184
10.2.	量測方法	184
10.3.	測試架構圖	184
10.4.	量測不確定度	184
10.5.	跳頻頻率數目測試結果	185
11.	停留時間	194
11.1.	適用標準	194
11.2.	量測方法	194
11.3.	測試架構圖	194
11.4.	量測不確定度	194
11.5.	停留時間量測結果	195
12.	佔用頻道寬度	200
12.1.	適用標準	201
12.2.	量測方法	201
12.3.	測試架構圖	201
12.4.	量測不確定度	201
12.5.	佔用頻帶寬度測試結果	202
13.	發射電功率密度	208
13.1.	適用標準	208
13.2.	量測方法	208
13.3.	測試架構圖	208
13.4.	量測不確定度	208
13.5.	功率密度量測結果	209
14.	Duty Cycle	215
14.1.	量測方法	215
14.2.	測試架構圖	215
14.3.	量測不確定度	215
14.4.	Duty Cycle 測試結果	216
附件 1:	待測物測試擺設相片	
附件 2:	待測物內部相片	

Revision History

Report No.	Version	Description	Issued Date
21B0690R-RFNAOTHV02-A	V1.0	Initial issue of report.	2021-11-23

1. 基本資料

1.1. 待測物裝置資料

申請者(或公司)	GN Audio A/S
地址	Lautrupbjerg 7, 2750 Ballerup, Denmark
製造廠商	GN Audio A/S
產品名稱	Bluetooth USB Dongle
產品型號	END050W
商標	BlueParrott
頻率範圍	2402-2480MHz
工作頻道	V2.1+EDR: 共 79 個 V5.0: 共 40 個
調變方式	V2.1+EDR: GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps) V5.0: GFSK (2Mbps)
天線樣式	PIFA antenna
天線增益	Refer to the table “Antenna List”
頻道控制	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Jabra	END050W	PIFA antenna	1.6dBi for 2.4GHz

1.2. 裝置驗證說明

1. 待測裝置規格說明:

待測物為 Bluetooth USB Dongle，此報告為 Bluetooth 5.0 / V2.1 + EDR 的測試報告;其天線為 PIFA antenna，悉採 2.4GHz 為載波，利用跳頻展頻調變方式來傳送訊號，頻率 00、39、78 為 V2.1+EDR 測試頻道、頻率 00、19、39 為 V5.0 測試頻道，結果顯示於此份報告中。

本案經申請者切結器材不提供隨貨配件，配件由實驗室(或申請者)提供併同檢驗，及其廠牌型號資訊描述於 1.3 章。

本報告為複製報告，在原申請人(GN Audio A/S)的同意下，使用原始測試數據，原始報告編號為: 19C0207R-RFTWP01V00。

2. 發射體主要功能特性有:

<1> 待測裝置傳送訊號,使用 2.4GHz 為載波頻率，利用跳頻展頻調變方式來傳送訊號; 且其天線為天線為 PIFA antenna。

<2> 藍芽類型: Bluetooth 5.0 / V2.1 + EDR。

<3> 基本發射工作頻率範圍 2402 – 2480MHz。

<4> 共計 79 個工作頻道，工作頻道頻率為: (For V2.1+EDR)

頻道	頻率	頻道	頻率	頻道	頻率	頻道	頻率
Channel 00:	2402 MHz	Channel 20:	2422 MHz	Channel 40:	2442 MHz	Channel 60:	2462 MHz
Channel 01:	2403 MHz	Channel 21:	2423 MHz	Channel 41:	2443 MHz	Channel 61:	2463 MHz
Channel 02:	2404 MHz	Channel 22:	2424 MHz	Channel 42:	2444 MHz	Channel 62:	2464 MHz
Channel 03:	2405 MHz	Channel 23:	2425 MHz	Channel 43:	2445 MHz	Channel 63:	2465 MHz
Channel 04:	2406 MHz	Channel 24:	2426 MHz	Channel 44:	2446 MHz	Channel 64:	2466 MHz
Channel 05:	2407 MHz	Channel 25:	2427 MHz	Channel 45:	2447 MHz	Channel 65:	2467 MHz
Channel 06:	2408 MHz	Channel 26:	2428 MHz	Channel 46:	2448 MHz	Channel 66:	2468 MHz
Channel 07:	2409 MHz	Channel 27:	2429 MHz	Channel 47:	2449 MHz	Channel 67:	2469 MHz
Channel 08:	2410 MHz	Channel 28:	2430 MHz	Channel 48:	2450 MHz	Channel 68:	2470 MHz
Channel 09:	2411 MHz	Channel 29:	2431 MHz	Channel 49:	2451 MHz	Channel 69:	2471 MHz
Channel 10:	2412 MHz	Channel 30:	2432 MHz	Channel 50:	2452 MHz	Channel 70:	2472 MHz
Channel 11:	2413 MHz	Channel 31:	2433 MHz	Channel 51:	2453 MHz	Channel 71:	2473 MHz
Channel 12:	2414 MHz	Channel 32:	2434 MHz	Channel 52:	2454 MHz	Channel 72:	2474 MHz
Channel 13:	2415 MHz	Channel 33:	2435 MHz	Channel 53:	2455 MHz	Channel 73:	2475 MHz
Channel 14:	2416 MHz	Channel 34:	2436 MHz	Channel 54:	2456 MHz	Channel 74:	2476 MHz
Channel 15:	2417 MHz	Channel 35:	2437 MHz	Channel 55:	2457 MHz	Channel 75:	2477 MHz
Channel 16:	2418 MHz	Channel 36:	2438 MHz	Channel 56:	2458 MHz	Channel 76:	2478 MHz
Channel 17:	2419 MHz	Channel 37:	2439 MHz	Channel 57:	2459 MHz	Channel 77:	2479 MHz
Channel 18:	2420 MHz	Channel 38:	2440 MHz	Channel 58:	2460 MHz	Channel 78:	2480 MHz
Channel 19:	2421 MHz	Channel 39:	2441 MHz	Channel 59:	2461 MHz		

<5> 共計 40 個工作頻道, 工作頻道頻率為: (For V5.0)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 01:	2404 MHz	Channel 02:	2406 MHz	Channel 03:	2408 MHz
Channel 04:	2410 MHz	Channel 05:	2412 MHz	Channel 06:	2414 MHz	Channel 07:	2416 MHz
Channel 08:	2418 MHz	Channel 09:	2420 MHz	Channel 10:	2422 MHz	Channel 11:	2424 MHz
Channel 12:	2426 MHz	Channel 13:	2428 MHz	Channel 14:	2430 MHz	Channel 15:	2432 MHz
Channel 16:	2434 MHz	Channel 17:	2436 MHz	Channel 18:	2438 MHz	Channel 19:	2440 MHz
Channel 20:	2442 MHz	Channel 21:	2444 MHz	Channel 22:	2446 MHz	Channel 23:	2448 MHz
Channel 24:	2450 MHz	Channel 25:	2452 MHz	Channel 26:	2454 MHz	Channel 27:	2456 MHz
Channel 28:	2458 MHz	Channel 29:	2460 MHz	Channel 30:	2462 MHz	Channel 31:	2464 MHz
Channel 32:	2466 MHz	Channel 33:	2468 MHz	Channel 34:	2470 MHz	Channel 35:	2472 MHz
Channel 36:	2474 MHz	Channel 37:	2476 MHz	Channel 38:	2478 MHz	Channel 39:	2480 MHz

<6> 測試軟體: (原申請) Blue test3, Ver.3.2.0、(系列一) N/A。

<7> 頻道切換方式: 採自動切換控制方式。

<8> 調變方式: 採跳頻展頻調變。

<9> 測試電壓: DC 5V by USB。

3. 系列差異說明:

實驗室內部編號	19C0207R-RFTWP01V00	2181050R-RFNAOTHV02
型號說明	END050W	END050W
廠牌	Jabra	Jabra
證書編號	CCAH20LP1090T0	CCAH20LP1090T0
設備硬體功能	無變動	有變動
設備軟體功能	無變動	有變動
備註	原申請	系列一
實驗室內部編號	21B0690R-RFNAOTHV02-A	
型號說明	END050W	
廠牌	BlueParrott	
證書編號	--	
設備硬體功能	無變動	
設備軟體功能	無變動	
備註	系列二	

備註:

- (1) 此次申請系列二, 僅更換商標為 BlueParrott, 依工程判定不須重新檢測比對新器材設備之主波輸出功率/電場強度與原取得審驗案件器材設備於 $\pm 2\text{dB}$ 範圍內之要求, 其無線射頻模組、型號、設計及功能皆無其他改變, 與原申請認證之樣品皆完全符合。
- (2) 報告編號: 21B0690R-RFNAOTHV02-A 複製原始報告數據, 在原申請人(GN Audio A/S)的同意下, 使用原始測試數據, 原始報告編號為: 2181050R-RFNAOTHV02-A。
- (3) 該產品確符合同系列產品技術規格及射頻性能相同。

4. 待測裝置測試之試驗條件

待測裝置依功能特性, 執行測試。

測試模式:	Mode 1: 發射器 - 1Mbps (GFSK) Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK) Mode 1: 發射器 - 3Mbps (8DPSK) Mode 1: 發射器 - BLE Mode Mode 2: 接收器 - 3Mbps (8DPSK) Mode 2: 接收器 - BLE Mode
-------	--

1.3. 系統測試時之週邊裝置

待測裝置測試時，其搭配系統測試時之週邊裝置包括下列：

原申請:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	Latitude 5491	1PL56S2	Non-Shielded, 0.8m

Signal Cable Type		Manufacturer	Model No.	Signal cable Description
A	USB Cable	Benevo	BUSB0030AMCF	Shielded, 0.6m
B	USB Cable	Dekra	U-001	Shielded, 1.8m

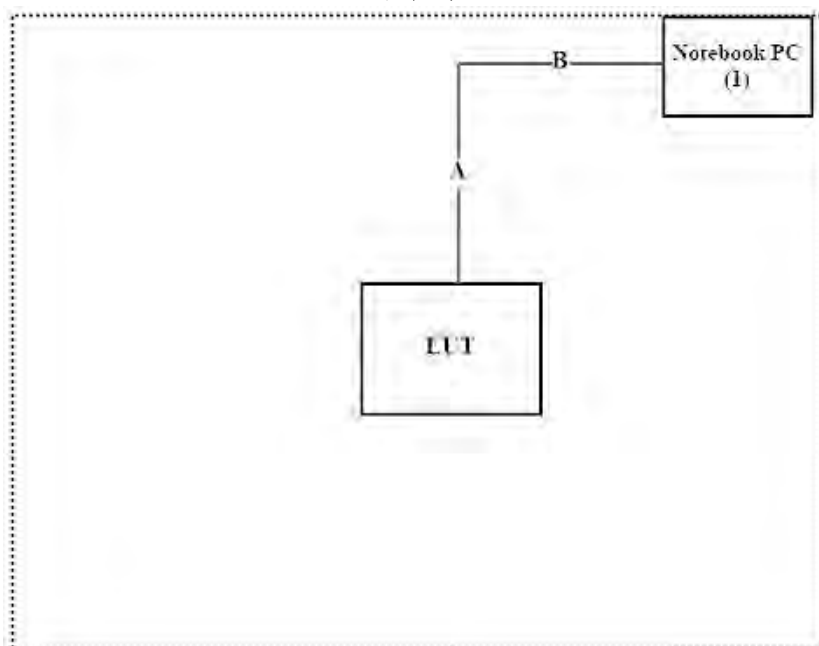
系列一:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	Latitude E5440	HG26TZ1	N/A

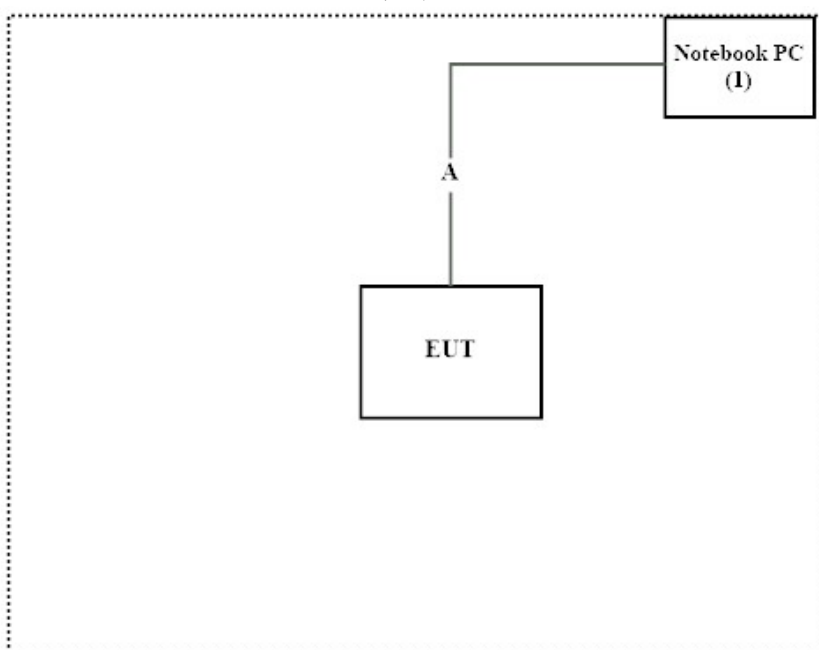
Signal Cable Type		Manufacturer	Model No.	Signal cable Description
A	USB Cable	DEKRA	USB Cable-03	Shielded, 3m

1.4. 測試系統組合圖

原申請:



系列一:



1.5. 測試系統操作程序

1.	測試配置如上圖 1.4 所示
2.	執行(原申請) Blue test3, Ver.3.2.0、(系列一) N/A 控制發射
3.	設定所要測試之模式、頻道及速率
4.	確認訊號是持續發射狀態模式，無誤後開始測試

2. 測試實驗室資料

2.1. 試驗單位與週遭環境

實驗室環境條件 (原申請):

Performed Item	Items	Required
Conducted Emission	Temperature (°C)	10~40 °C
	Humidity (%RH)	10~90 %
Radiated Emission	Temperature (°C)	10~40 °C
	Humidity (%RH)	10~90 %
Conductive	Temperature (°C)	10~40 °C
	Humidity (%RH)	10~90 %

財團法人全國認證基金會 認證

特定服務計畫：通訊傳播設備測試實驗室認證服務計畫

初次認證日期：一百零三年十月二十四日

認證有效期間：一百零九年十二月十三日起至一百一十二年十二月十二日止

認可測試領域：低功率射頻器材(工作頻率9kHz to 325GHz)

認可編號：3023

測試實驗室：德凱認證股份有限公司

測試實驗室地址：新北市林口區瑞平里瑞樹坑5-22號

電話號碼：886-2-8601-3788

傳真號碼：886-2-8601-3789

電子郵件信箱：info.tw@dekra.com

公司網站：<http://www.dekra.com.tw>

實驗室環境條件 (系列一):

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	10~40 °C	23.2 °C
	Humidity (%RH)	10~90 %	46.8 %
Radiated Emission	Temperature (°C)	10~40 °C	23 °C
	Humidity (%RH)	10~90 %	68.4 %

財團法人全國認證基金會 認證

特定服務計畫：通訊傳播設備測試實驗室認證服務計畫

初次認證日期：一百零三年十月二十四日

認證有效期間：一百零九年十二月十三日起至一百一十二年十二月十二日止

認可測試領域：低功率射頻器材(工作頻率9kHz to 325GHz)

認可編號：3023

測試實驗室地址：桃園市龜山區華亞一路26號

電話號碼：886-3-275-7255

傳真號碼：866-3-327-8031

電子郵件信箱：info.tw@dekra.com

公司網站：<http://www.dekra.com.tw>

2.2. 測試設備明細

For Conducted measurements /CB3/SR8 (原申請)

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due. Date
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2019/02/26	2020/02/25
X	Spectrum Analyzer	Agilent	N9010A	MY53470892	2019/09/25	2020/09/24
X	Peak Power Analyzer	Keysight	8990B	MY51000410	2019/07/30	2020/07/29
X	Wideband Power Sensor	Keysight	N1923A	MY56080003	2019/07/30	2020/07/29
X	Wideband Power Sensor	Keysight	N1923A	MY56080004	2019/07/30	2020/07/29
X	EMI Test Receiver	R&S	ESCS 30	100369	2019/11/19	2020/11/18
X	LISN	R&S	ENV216	101105	2019/04/10	2020/04/09
X	LISN	R&S	ESH3-Z5	836679/014	2019/04/10	2020/04/09
X	Coaxial Cable	DEKRA	RG 400	LC018-RG	2019/06/20	2020/06/19

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Conduction Test SystemV9.0.5.

For Radiated measurements /Site3/CB8 (原申請)

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due. Date
X	Spectrum Analyzer	R&S	FSP40	100170	2019/03/11	2020/03/10
X	Loop Antenna	Teseq	HLA6121	37133	2019/10/15	2021/10/14
X	Bilog Antenna	Schaffner Chase	CBL6112B	2794	2019/06/23	2020/06/22
X	Coaxial Cable	DEKRA	L1907-001C	280280.F141.1000D	2019/07/10	2020/07/09
X	Amplifier	EMCI	EMC001330	980254	2019/08/22	2020/08/21
X	Horn Antenna	ETS-LINDGREN	3117	00228113	2019/05/02	2020/05/01
X	Coaxial Cable	DEKRA	L1907-002C	280280.F141.1000D	2019/07/10	2020/07/09
X	Amplifier	EMCI	EMC05820SE	980362	2019/06/26	2020/06/25
X	Amplifier	EMCI	EMC051845SE	SN980632	2019/08/08	2020/08/07
	Horn Antenna	Com-Power	AH-1840	101101	2019/10/31	2020/10/30
	Amplifier + Cable	EMCI	EMC184045SE	980369	2019/04/16	2020/04/15
	Bilog Antenna	Schaffner Chase	CBL6112B	2916	2019/06/23	2020/06/22
	Coaxial Cable	DEKRA	L1907-003C	00100A1B3A120M	2019/07/10	2020/07/09
	Amplifier	EMCI	EMC001330	980255	2019/06/28	2020/06/27
X	Filter	MICRO-TRONICS	BRM50702	G270	2019/08/08	2020/08/07
	Filter	MICRO-TRONICS	BRM50716	G196	2019/08/08	2020/08/07

Note:

1. Loop Antenna is calibrated every two years, the other equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Test SystemV1.1.

For Conducted measurements /SH1 (系列一)

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due. Date
X	EMI Test Receiver	R&S	ESR7	102260	2020.12.28	2021.12.27
X	Two-Line V-Network	R&S	ENV216	101306	2021.04.08	2022.04.07
X	Two-Line V-Network	R&S	ENV216	101307	2021.05.04	2022.05.03
X	Coaxial Cable	DEKRA	RG400_BNC	RF001	2021.05.24	2022.05.23

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : AUDIX e3 V9

For Radiated measurements / 966-1 (系列一)

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due. Date
	Loop Antenna	AMETEK	HLA6121	56736	2021.04.14	2022.04.13
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-678	2021.09.23	2022.09.22
	Horn Antenna	ETS-Lindgren	3117	00201259	2021.11.09	2022.11.08
	Horn Antenna	Com-Power	AH-840	101087	2021.06.16	2022.06.15
X	Pre-Amplifier	EMCI	EMC001330	980302	2021.07.26	2022.07.25
	Pre-Amplifier	EMCI	EMC051835SE	980312	2021.02.24	2022.02.23
	Pre-Amplifier	EMCI	EMC05820SE	980310	2021.07.07	2022.07.06
	Pre-Amplifier	EMCI	EMC184045SE	980314	2021.06.24	2022.06.23
X	Filter	MICRO TRONICS	BRM50702	G251	2021.09.16	2022.09.15
	Filter	MICRO TRONICS	BRM50716	G188	2021.09.16	2022.09.15
X	EMI Test Receiver	R&S	ESR	102793	2020.12.17	2021.12.16
X	Spectrum Analyzer	R&S	FSV3044	101113	2021.02.03	2022.02.02
X	Coaxial Cable	SGH, EMCI	HA800, SGH18	HY2103-001C	2021.09.02	2022.09.01
	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2021.06.25	2022.06.24

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : AUDIX e3 V9.

2.3. 量測不確定度

不確定度已根據 DEKRA 內部文件進行了計算，並在本報告的每個測試章節中進行了描述。報告的擴展不確定性是基於標準不確定性乘以 $k = 2$ 的覆蓋因子得出的，置信度約為 95%。對各個測試系統與伴隨的連接設施，所執行的量測項目的量測不確定度，在此提供做為系統資訊的參考，符合性決定不考慮測試系統的不確定度而是基於符合性測試的結果。

3. 電源端點干擾測試

3.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範之第 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~30 百萬赫(MHz)之射頻電壓(在電源端子每一電源線對接地點)應小於或等於下表所列之限制值。測量時應經過 50 微亨利(uH)及 50 歐姆(Ω)之電源線阻抗穩定網路(Line Impedance Stabilization Network；LISN)。頻率重疊處，以較低限制值為準。

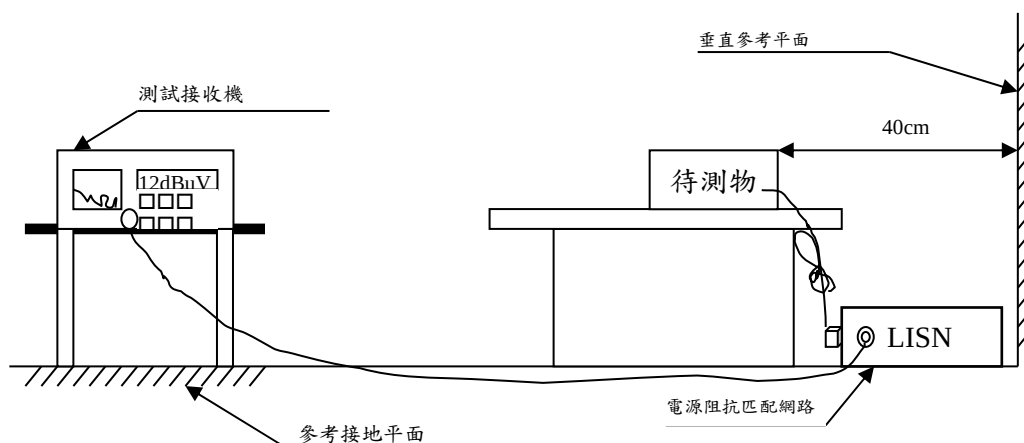
Frequency 頻率範圍 MHz	傳導限制值(dBuV)	
	準峰值	平均值
0.15 - 0.50	66-56 _(註)	56-46 _(註)
0.50-5.0	56	46
5.0 - 30	60	50

註:隨頻率之對數遞減

3.2. 量測方法

待測物置於高 80 公分之非導體桌面（落地型產品置於地上），將待測物之電源線接至電源阻抗網路器(LISN)，同時保持待測物至 LISN 距 80 公分，並將電源線多餘部份以 30 至 40 公分之八字形捆綁於電源線中央，於在正常工作狀態下，執行待測物之火線及地線各一次量測。電源端點場強之測量範圍由 0.15MHz – 30MHz，所量測之讀值皆為準尖峰值(Quasi-Peak Value)及平均值(Average Value)。場強接收機之解析頻寬為 10kHz。

3.3. 測試架構圖



3.4. 量測不確定度

(原申請) 此項測試之量測不確定度為 $\pm 2.26\text{dB}$ 。

(系列一) 此項測試之量測不確定度為 $\pm 3.42\text{ dB}$ 。

Note: 經初測驗證過，電源端點干擾測試對測試頻道數並無差異，因此檢附其中一個測試頻道之測試數據。

3.5. 電源端點測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

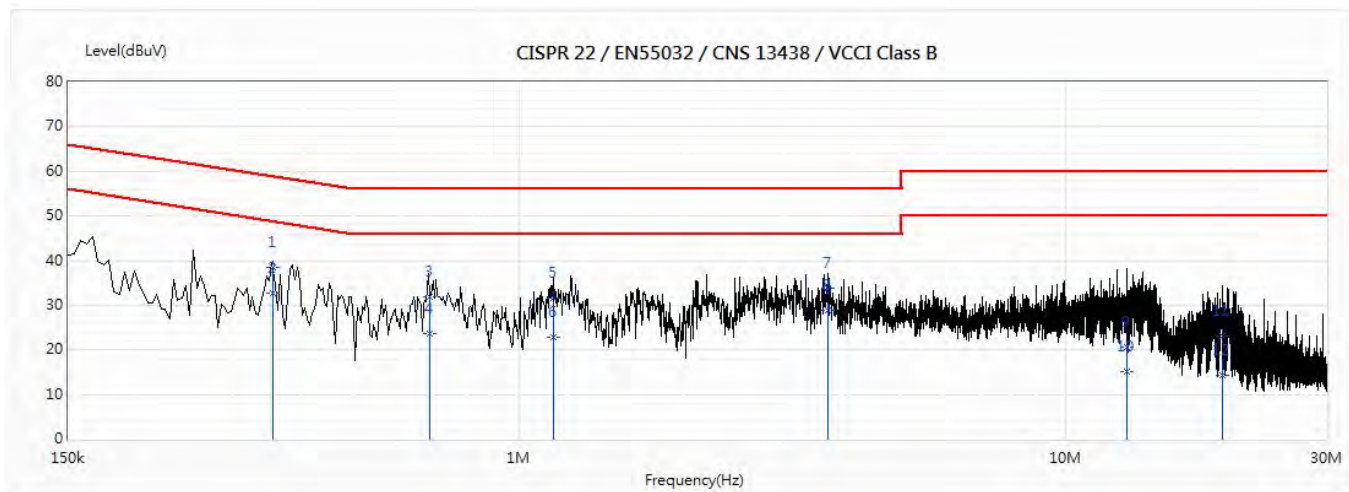
測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

試驗端點：Line 1

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.354	38.37	58.86	-20.49	28.67	9.70	QP
*2	0.354	32.74	48.86	-16.12	23.04	9.70	AV
3	0.686	31.77	56.00	-24.23	22.06	9.71	QP
4	0.686	23.74	46.00	-22.26	14.03	9.71	AV
5	1.156	31.74	56.00	-24.26	22.00	9.74	QP
6	1.156	22.72	46.00	-23.28	12.98	9.74	AV
7	3.671	33.87	56.00	-22.13	24.04	9.83	QP
8	3.671	28.85	46.00	-17.15	19.01	9.83	AV
9	12.941	20.66	60.00	-39.34	10.59	10.07	QP
10	12.941	15.14	50.00	-34.86	5.07	10.07	AV
11	19.353	22.97	60.00	-37.03	12.80	10.17	QP
12	19.353	14.32	50.00	-35.68	4.15	10.17	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH39 (2441MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

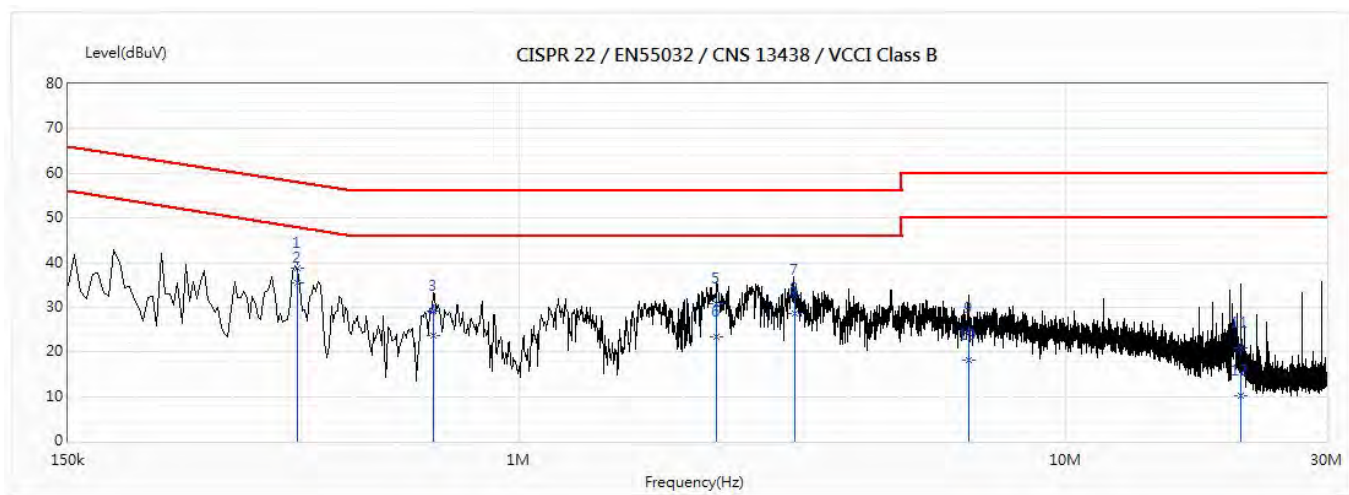
測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

試驗端點：Line 2

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.393	38.82	57.99	-19.17	29.10	9.73	QP
*2	0.393	35.60	47.99	-12.39	25.87	9.73	AV
3	0.696	29.14	56.00	-26.86	19.40	9.74	QP
4	0.696	23.51	46.00	-22.49	13.76	9.74	AV
5	2.303	30.70	56.00	-25.30	20.87	9.83	QP
6	2.303	23.28	46.00	-22.72	13.45	9.83	AV
7	3.189	32.72	56.00	-23.28	22.86	9.86	QP
8	3.189	28.50	46.00	-17.50	18.64	9.86	AV
9	6.644	24.19	60.00	-35.81	14.21	9.98	QP
10	6.644	18.17	50.00	-31.83	8.20	9.98	AV
11	20.904	20.85	60.00	-39.15	10.48	10.38	QP
12	20.904	10.20	50.00	-39.80	-0.18	10.38	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

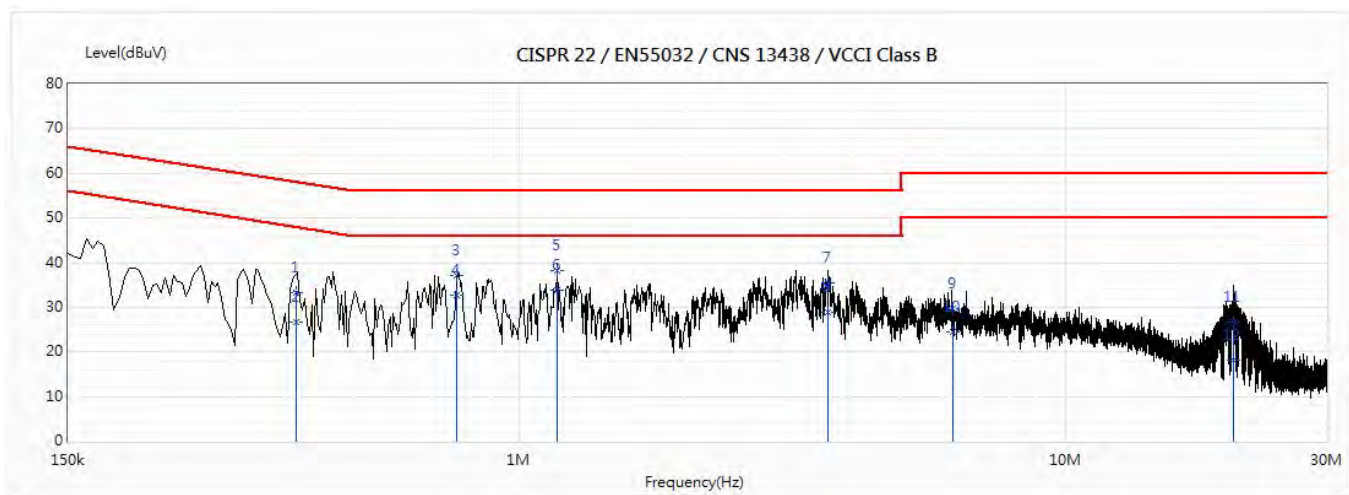
測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

試驗端點：Line 1

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.391	33.13	58.05	-24.92	23.44	9.70	QP
2	0.391	26.57	48.05	-21.48	16.88	9.70	AV
3	0.77	37.06	56.00	-18.94	27.35	9.72	QP
4	0.77	32.82	46.00	-13.18	23.10	9.72	AV
5	1.174	38.11	56.00	-17.89	28.37	9.74	QP
*6	1.174	33.68	46.00	-12.32	23.94	9.74	AV
7	3.679	35.52	56.00	-20.48	25.69	9.83	QP
8	3.679	28.88	46.00	-17.12	19.05	9.83	AV
9	6.205	29.75	60.00	-30.25	19.84	9.91	QP
10	6.205	24.38	50.00	-25.62	14.47	9.91	AV
11	20.32	26.75	60.00	-33.25	16.57	10.18	QP
12	20.32	18.04	50.00	-31.96	7.85	10.18	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

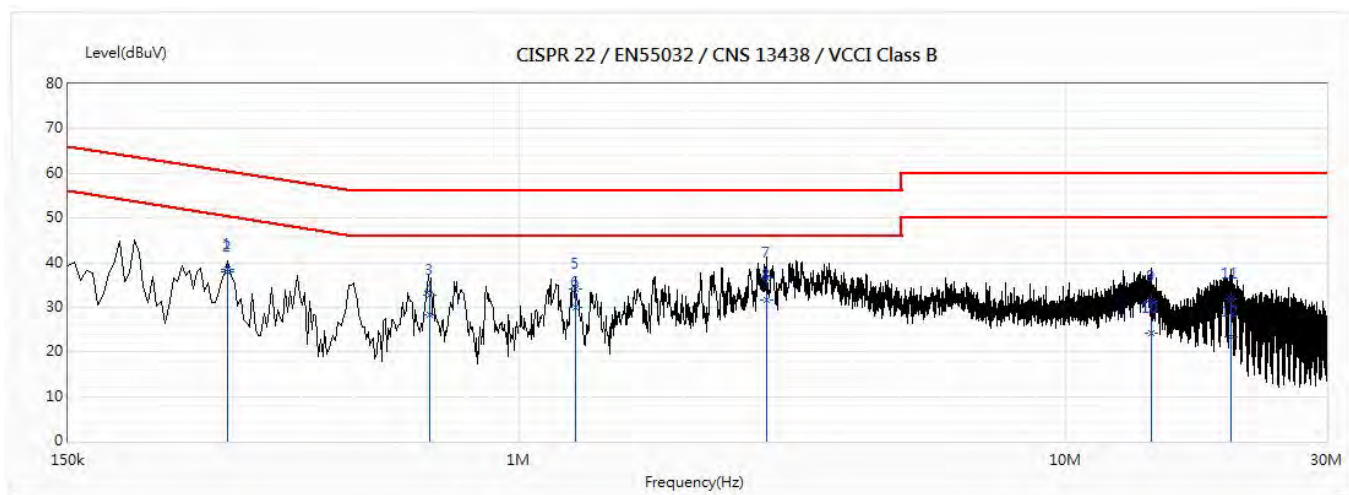
測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

試驗端點：Line 2

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.293	38.49	60.43	-21.94	28.77	9.72	QP
*2	0.293	37.84	50.43	-12.59	28.12	9.72	AV
3	0.688	32.68	56.00	-23.32	22.93	9.74	QP
4	0.688	28.41	46.00	-17.59	18.66	9.74	AV
5	1.271	34.16	56.00	-21.84	24.38	9.78	QP
6	1.271	29.84	46.00	-16.16	20.05	9.78	AV
7	2.836	36.52	56.00	-19.48	26.67	9.84	QP
8	2.836	31.50	46.00	-14.50	21.65	9.84	AV
9	14.376	31.43	60.00	-28.57	21.22	10.21	QP
10	14.376	24.13	50.00	-25.87	13.92	10.21	AV
11	20.039	31.85	60.00	-28.15	21.49	10.36	QP
12	20.039	23.32	50.00	-26.68	12.96	10.36	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

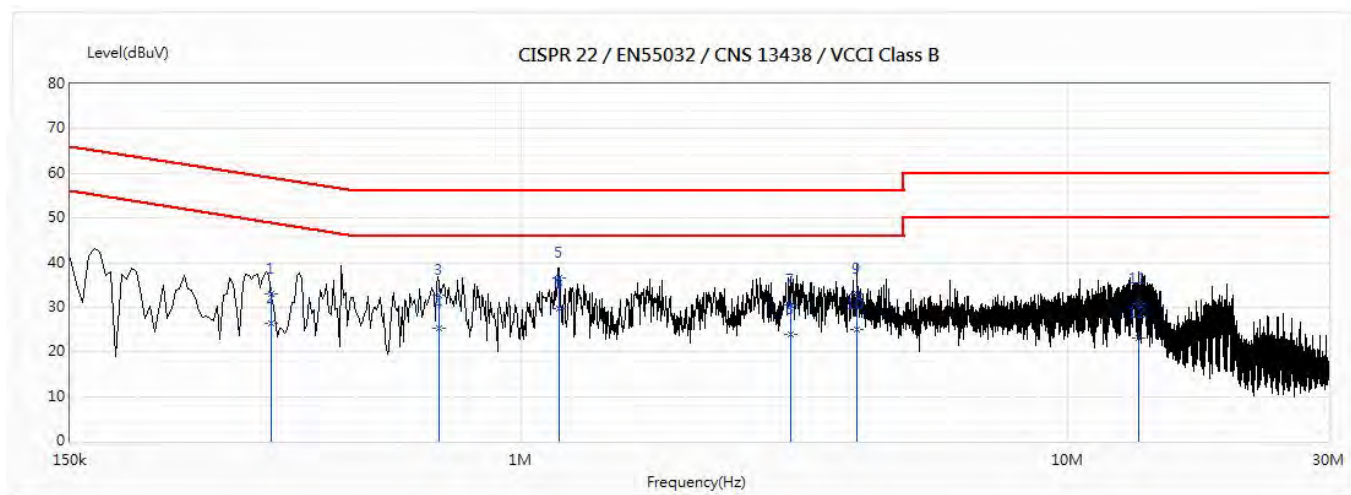
測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

試驗端點：Line 1

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.349	32.98	58.99	-26.01	23.29	9.70	QP
2	0.349	26.26	48.99	-22.73	16.56	9.70	AV
3	0.708	32.74	56.00	-23.26	23.03	9.71	QP
4	0.708	25.19	46.00	-20.81	15.48	9.71	AV
5	1.178	36.57	56.00	-19.43	26.83	9.74	QP
*6	1.178	29.75	46.00	-16.25	20.02	9.74	AV
7	3.114	30.39	56.00	-25.61	20.57	9.82	QP
8	3.114	24.05	46.00	-21.95	14.24	9.82	AV
9	4.124	32.86	56.00	-23.14	23.01	9.85	QP
10	4.124	25.13	46.00	-20.87	15.28	9.85	AV
11	13.486	30.92	60.00	-29.08	20.85	10.08	QP
12	13.486	23.20	50.00	-26.80	13.13	10.08	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

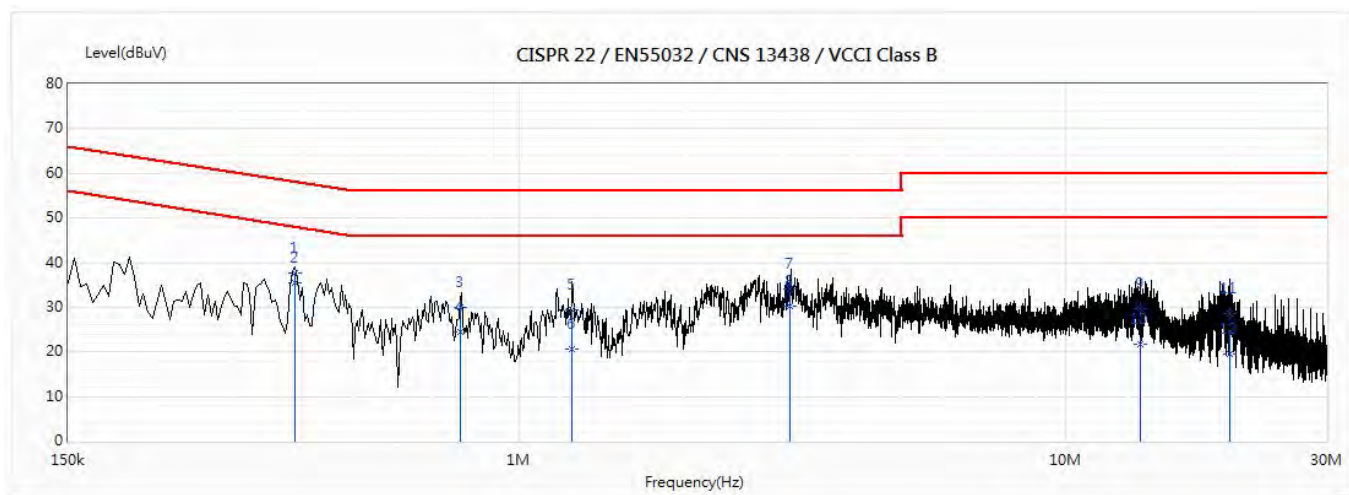
測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

試驗端點：Line 2

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.389	37.57	58.09	-20.52	27.84	9.73	QP
*2	0.389	35.44	48.09	-12.65	25.71	9.73	AV
3	0.782	30.08	56.00	-25.92	20.32	9.76	QP
4	0.782	24.33	46.00	-21.67	14.58	9.76	AV
5	1.253	29.45	56.00	-26.55	19.67	9.78	QP
6	1.253	20.60	46.00	-25.40	10.82	9.78	AV
7	3.139	34.17	56.00	-21.83	24.31	9.86	QP
8	3.139	30.29	46.00	-15.71	20.43	9.86	AV
9	13.73	29.65	60.00	-30.35	19.46	10.19	QP
10	13.73	21.63	50.00	-28.37	11.44	10.19	AV
11	19.957	28.48	60.00	-31.52	18.12	10.36	QP
12	19.957	19.53	50.00	-30.47	9.17	10.36	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

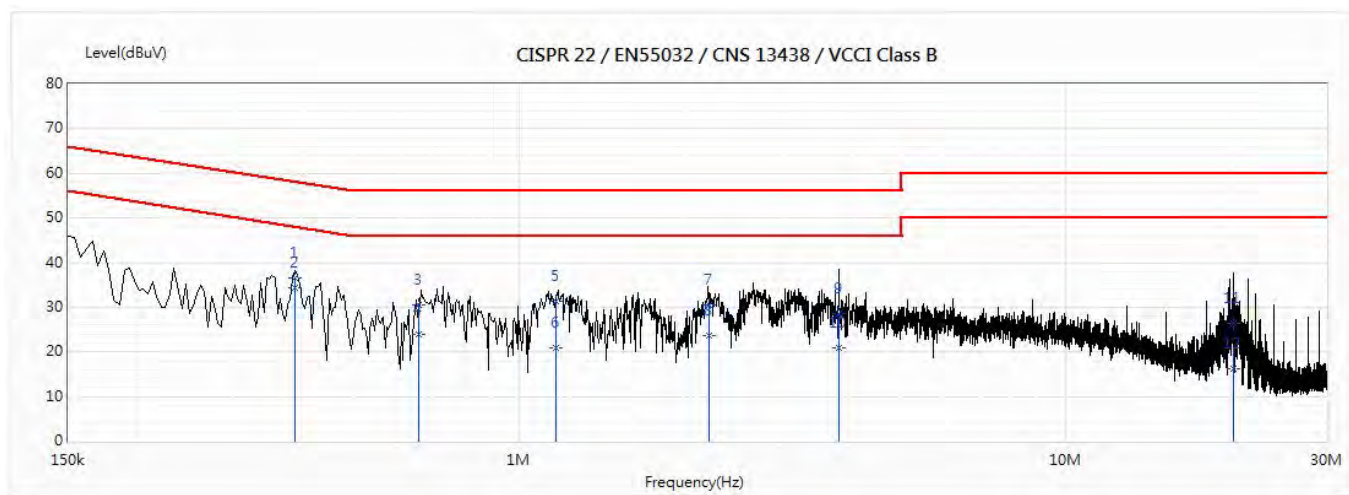
測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

試驗端點：Line 1

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.39	36.50	58.07	-21.57	26.80	9.70	QP
*2	0.39	34.28	48.07	-13.79	24.58	9.70	AV
3	0.656	30.39	56.00	-25.61	20.68	9.71	QP
4	0.656	23.91	46.00	-22.09	14.20	9.71	AV
5	1.171	31.35	56.00	-24.65	21.61	9.74	QP
6	1.171	21.00	46.00	-25.00	11.27	9.74	AV
7	2.23	30.42	56.00	-25.58	20.64	9.79	QP
8	2.23	23.77	46.00	-22.23	13.98	9.79	AV
9	3.848	28.66	56.00	-27.34	18.82	9.84	QP
10	3.848	20.87	46.00	-25.13	11.03	9.84	AV
11	20.229	26.50	60.00	-33.50	16.31	10.18	QP
12	20.229	16.35	50.00	-33.65	6.16	10.18	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH39 (2441MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

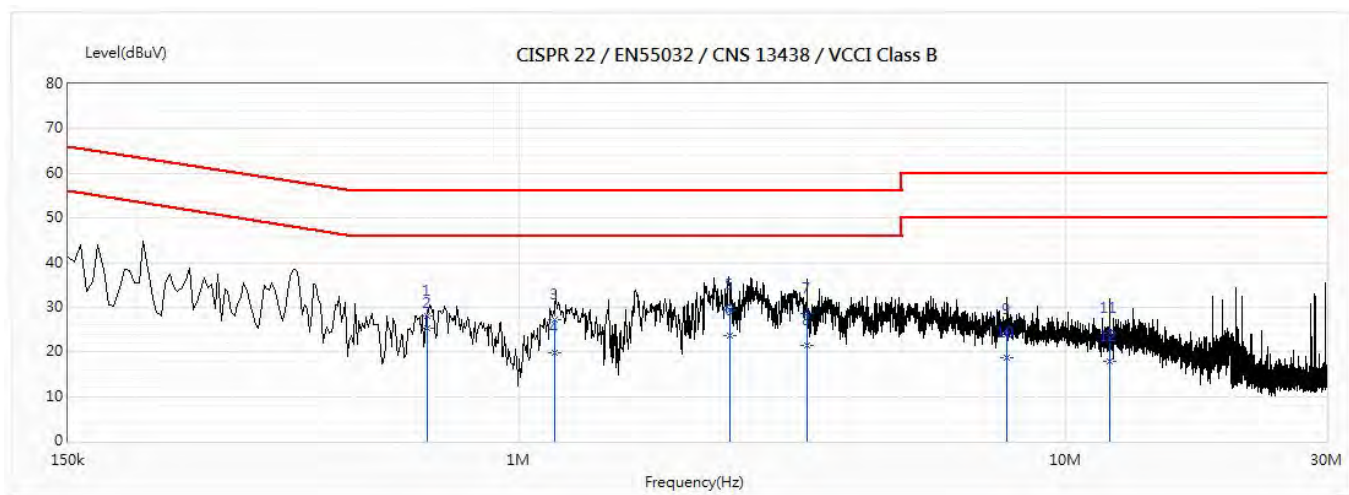
測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

試驗端點：Line 2

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.681	27.98	56.00	-28.02	18.23	9.74	QP
*2	0.681	25.40	46.00	-20.60	15.65	9.74	AV
3	1.162	27.32	56.00	-28.68	17.54	9.78	QP
4	1.162	19.66	46.00	-26.34	9.88	9.78	AV
5	2.427	29.28	56.00	-26.72	19.44	9.83	QP
6	2.427	23.63	46.00	-22.37	13.79	9.83	AV
7	3.361	28.59	56.00	-27.41	18.72	9.87	QP
8	3.361	21.58	46.00	-24.42	11.71	9.87	AV
9	7.801	23.92	60.00	-36.08	13.90	10.02	QP
10	7.801	18.80	50.00	-31.20	8.78	10.02	AV
11	12.02	24.22	60.00	-35.78	14.08	10.15	QP
12	12.02	17.95	50.00	-32.05	7.81	10.15	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

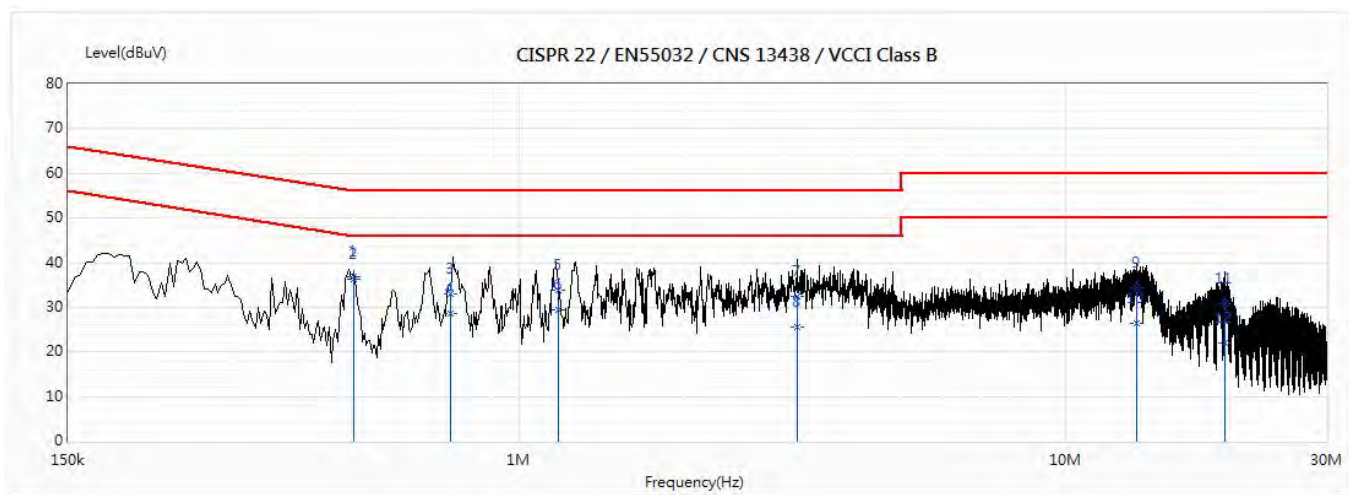
測試模式：Mode 2: 接收器 - BLE Mode_ 1Mbps

試驗端點：Line 1

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.499	36.87	56.02	-19.14	27.17	9.70	QP
*2	0.499	36.24	46.02	-9.78	26.54	9.70	AV
3	0.751	33.06	56.00	-22.94	23.35	9.72	QP
4	0.751	28.60	46.00	-17.40	18.89	9.72	AV
5	1.181	33.80	56.00	-22.20	24.06	9.74	QP
6	1.181	29.43	46.00	-16.57	19.69	9.74	AV
7	3.235	32.48	56.00	-23.52	22.66	9.82	QP
8	3.235	25.56	46.00	-20.44	15.74	9.82	AV
9	13.488	34.50	60.00	-25.50	24.43	10.08	QP
10	13.488	26.48	50.00	-23.52	16.40	10.08	AV
11	19.529	30.74	60.00	-29.26	20.57	10.17	QP
12	19.529	21.91	50.00	-28.09	11.73	10.17	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

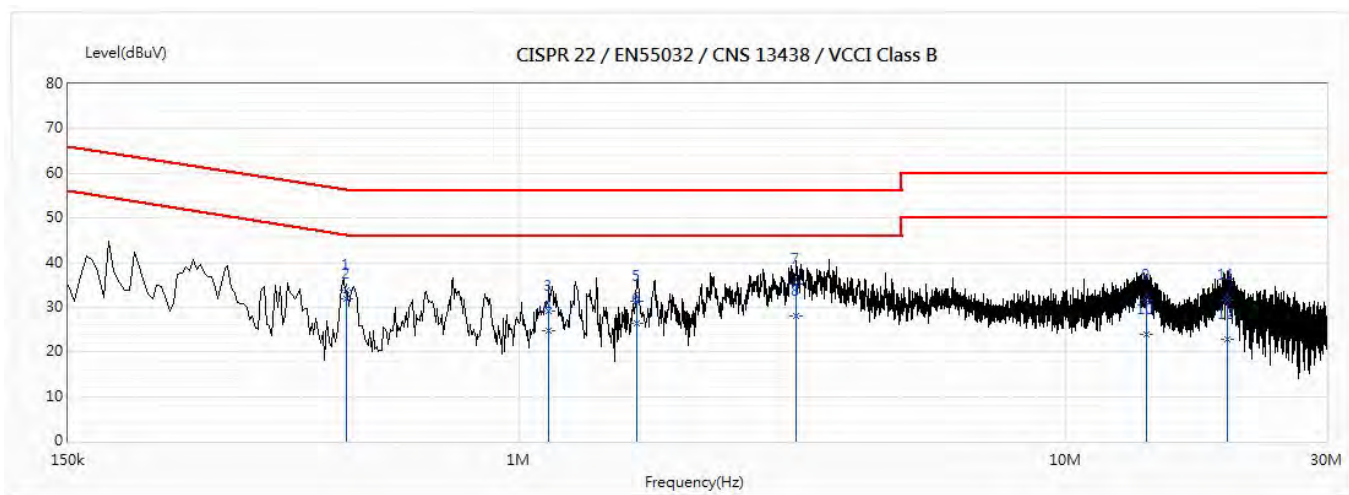
測試模式：Mode 2: 接收器 - BLE Mode_1Mbps

試驗端點：Line 2

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.484	33.70	56.28	-22.58	23.97	9.73	QP
*2	0.484	31.98	46.28	-14.30	22.25	9.73	AV
3	1.132	29.07	56.00	-26.93	19.30	9.78	QP
4	1.132	24.73	46.00	-21.27	14.96	9.78	AV
5	1.644	31.39	56.00	-24.61	21.58	9.81	QP
6	1.644	26.38	46.00	-19.62	16.58	9.81	AV
7	3.214	35.11	56.00	-20.89	25.25	9.86	QP
8	3.214	28.11	46.00	-17.89	18.25	9.86	AV
9	14.069	31.66	60.00	-28.34	21.46	10.20	QP
10	14.069	24.01	50.00	-25.99	13.81	10.20	AV
11	19.75	31.70	60.00	-28.30	21.35	10.36	QP
12	19.75	22.81	50.00	-27.19	12.46	10.36	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

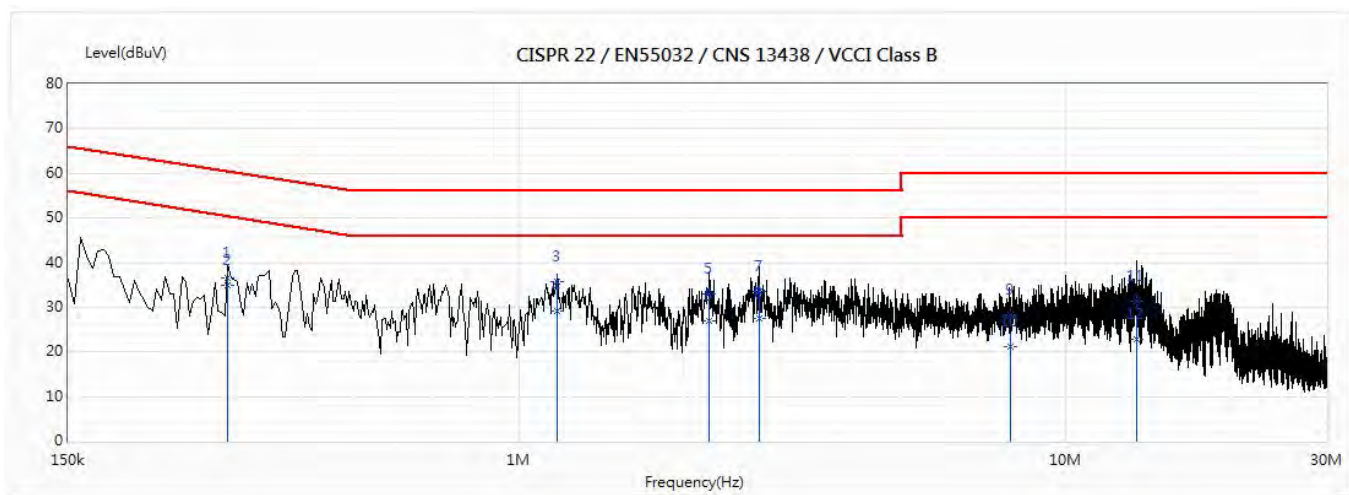
測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

試驗端點：Line 1

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.294	36.70	60.41	-23.71	27.01	9.69	QP
*2	0.294	34.95	50.41	-15.46	25.26	9.69	AV
3	1.177	35.85	56.00	-20.15	26.11	9.74	QP
4	1.177	29.22	46.00	-16.78	19.48	9.74	AV
5	2.228	32.99	56.00	-23.01	23.20	9.79	QP
6	2.228	26.87	46.00	-19.13	17.09	9.79	AV
7	2.755	33.47	56.00	-22.53	23.66	9.80	QP
8	2.755	27.47	46.00	-18.53	17.67	9.80	AV
9	7.909	28.43	60.00	-31.57	18.46	9.96	QP
10	7.909	21.27	50.00	-28.73	11.31	9.96	AV
11	13.467	31.28	60.00	-28.72	21.21	10.08	QP
12	13.467	22.90	50.00	-27.10	12.83	10.08	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH19 (2440MHz)

6 dB 頻寬：10 kHz

檢測器：準尖峰值 & 平均值

測試日期：109 年 01 月 30 日

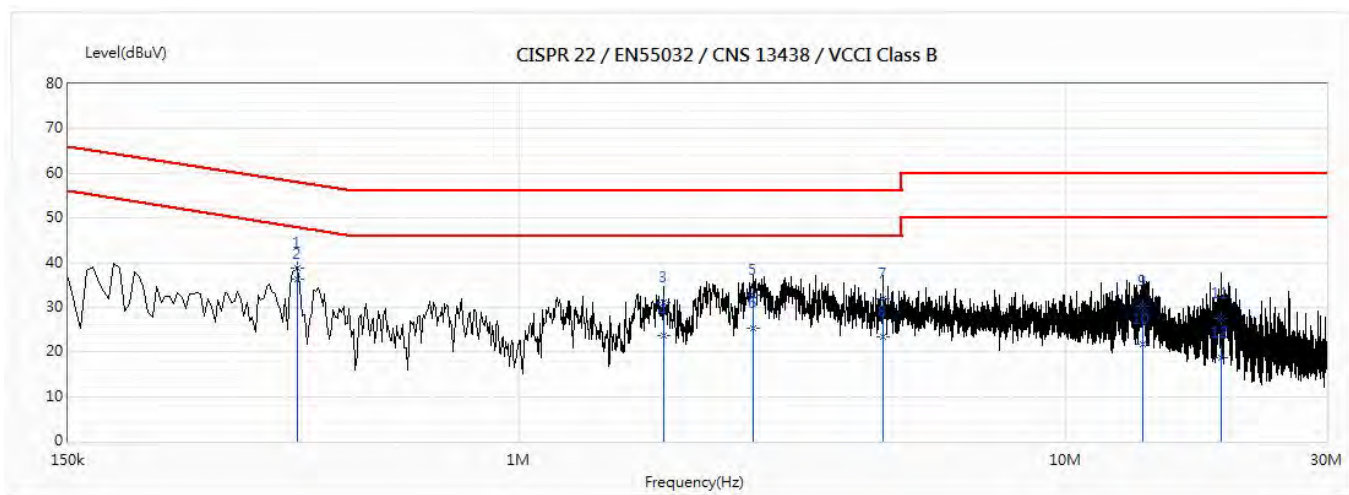
測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

試驗端點：Line 2

視頻頻寬：10 kHz

環境溫度：20.1 °C

環境濕度：33 %



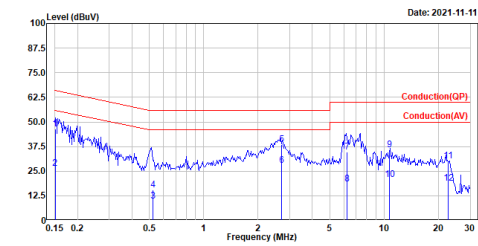
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.393	38.71	58.00	-19.29	28.98	9.73	QP
*2	0.393	36.21	48.00	-11.79	26.48	9.73	AV
3	1.837	30.97	56.00	-25.03	21.16	9.81	QP
4	1.837	23.53	46.00	-22.47	13.72	9.81	AV
5	2.683	32.61	56.00	-23.39	22.76	9.84	QP
6	2.683	25.38	46.00	-20.62	15.54	9.84	AV
7	4.634	31.95	56.00	-24.05	22.04	9.91	QP
8	4.634	23.42	46.00	-22.58	13.51	9.91	AV
9	13.825	30.27	60.00	-29.73	20.08	10.19	QP
10	13.825	21.62	50.00	-28.38	11.43	10.19	AV
11	19.261	27.59	60.00	-32.41	17.25	10.34	QP
12	19.261	18.64	50.00	-31.36	8.30	10.34	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

(系列一)

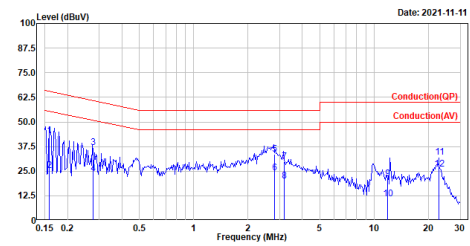
Site :SH1
Condition :Line
Mode :TX_BT3M_2441MHz
test by :James



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	0.150	46.35	65.97	-19.62	36.69	9.66	QP
2	0.150	26.40	55.97	-29.57	16.74	9.66	Average
3	0.523	9.66	56.00	-46.34	0.00	9.66	QP
4	0.523	15.37	46.00	-30.63	5.71	9.66	Average
5	2.707	38.60	56.00	-17.40	28.87	9.73	QP
6	2.707	27.93	46.00	-18.07	18.20	9.73	Average
7	6.215	34.85	60.00	-25.15	25.03	9.82	QP
8	6.215	18.65	50.00	-31.35	8.83	9.82	Average
9	10.657	35.70	60.00	-24.30	25.80	9.90	QP
10	10.657	20.78	50.00	-29.22	10.88	9.90	Average
11	22.553	30.13	60.00	-29.87	20.16	9.97	QP
12	22.553	18.82	50.00	-31.18	8.85	9.97	Average

Note:
1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

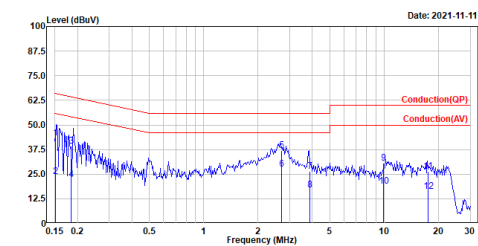
Site :SH1
Condition :Neutral
Mode :TX_BT3M_2441MHz
test by :James



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	0.159	43.14	65.53	-22.39	33.47	9.67	QP
2	0.159	25.43	55.53	-30.10	15.76	9.67	Average
3	0.277	37.14	60.92	-23.78	27.47	9.67	QP
4	0.277	23.92	50.92	-27.00	14.25	9.67	Average
5	2.803	33.58	56.00	-22.42	23.83	9.75	QP
6	2.803	24.23	46.00	-21.77	14.48	9.75	Average
7	3.188	29.69	56.00	-26.31	19.93	9.76	QP
8	3.188	19.84	46.00	-26.16	10.08	9.76	Average
9	11.904	21.03	60.00	-38.97	11.09	9.94	QP
10	11.904	10.97	50.00	-39.03	1.03	9.94	Average
11	22.872	32.16	60.00	-27.84	22.09	10.07	QP
12	22.872	25.93	50.00	-24.07	15.86	10.07	Average

Note:
1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

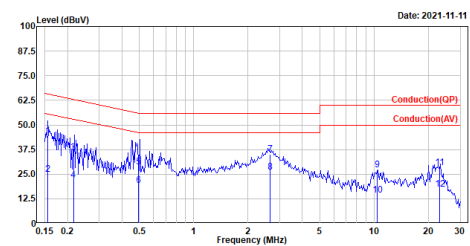
Site :SH1
Condition :Line
Mode :RX_BT3M_2441MHz
test by :James



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	0.152	43.45	65.91	-22.46	33.79	9.66	QP
2	0.152	23.79	55.91	-32.12	14.13	9.66	Average
3	0.185	39.16	64.27	-25.11	29.51	9.65	QP
4	0.185	22.45	54.27	-31.82	12.80	9.65	Average
5	2.693	37.11	56.00	-18.89	27.38	9.73	QP
6	2.693	27.73	46.00	-18.27	18.00	9.73	Average
7	3.866	26.59	56.00	-29.41	16.82	9.77	QP
8	3.866	16.90	46.00	-29.10	7.13	9.77	Average
9	9.921	30.54	60.00	-29.46	20.65	9.89	QP
10	9.921	18.74	50.00	-31.26	8.85	9.89	Average
11	17.443	26.39	60.00	-33.61	16.44	9.95	QP
12	17.443	16.16	50.00	-33.84	6.21	9.95	Average

Note:
1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

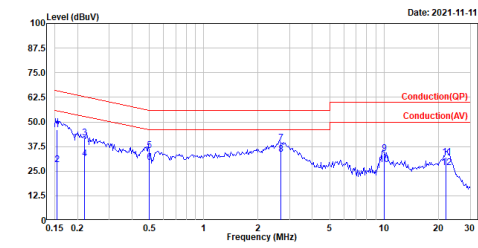
Site :SH1
Condition :Neutral
Mode :RX_BT3M_2441MHz
test by :James



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	0.156	44.48	65.67	-21.19	34.81	9.67	QP
2	0.156	25.02	55.67	-30.65	15.35	9.67	Average
3	0.216	35.84	62.98	-27.14	26.17	9.67	QP
4	0.216	21.79	52.98	-31.19	12.12	9.67	Average
5	0.497	28.74	56.06	-27.32	19.07	9.67	QP
6	0.497	19.14	46.06	-26.92	9.47	9.67	Average
7	2.647	35.00	56.00	-21.00	25.26	9.74	QP
8	2.647	26.14	46.00	-19.86	16.40	9.74	Average
9	10.369	27.25	60.00	-32.75	17.34	9.91	QP
10	10.369	14.36	50.00	-35.64	4.45	9.91	Average
11	22.979	28.39	60.00	-31.61	18.32	10.07	QP
12	22.979	17.40	50.00	-32.60	7.33	10.07	Average

Note:
1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

Site :SH1
Condition :Line
Mode :TX_BLE2M_2440MHz
test by :James

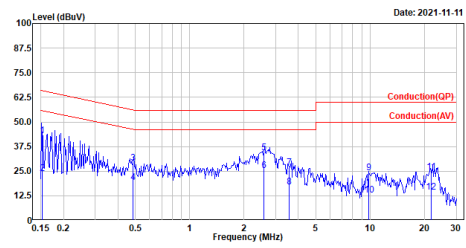


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	0.153	46.06	65.81	-19.75	36.40	9.66	QP
2	0.153	28.25	55.81	-27.56	18.59	9.66	Average
3	0.219	41.78	62.85	-21.07	32.13	9.65	QP
4	0.219	31.50	52.85	-21.35	21.85	9.65	Average
5	0.499	35.39	56.01	-20.62	25.73	9.66	QP
6	0.499	29.44	46.01	-16.57	19.78	9.66	Average
7	2.687	39.19	56.00	-16.81	29.46	9.73	QP
8	2.687	33.43	46.00	-12.57	23.70	9.73	Average
9	9.959	34.07	60.00	-25.93	24.18	9.89	QP
10	9.959	28.31	50.00	-21.69	18.42	9.89	Average
11	22.027	32.10	60.00	-27.90	22.14	9.96	QP
12	22.027	26.75	50.00	-23.25	16.79	9.96	Average

Note:

1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

Site :SH1
Condition :Neutral
Mode :TX_BLE2M_2440MHz
test by :James

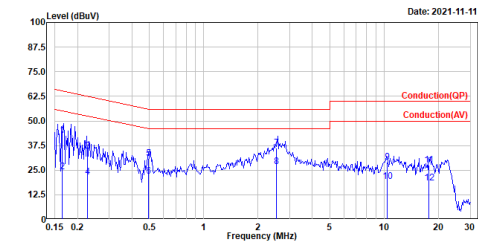


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	0.153	43.03	65.83	-22.80	33.36	9.67	QP
2	0.153	23.74	55.83	-32.09	14.07	9.67	Average
3	0.483	29.15	56.28	-27.13	19.48	9.67	QP
4	0.483	19.36	46.28	-26.92	9.69	9.67	Average
5	2.574	34.49	56.00	-21.51	24.75	9.74	QP
6	2.574	25.13	46.00	-20.87	15.39	9.74	Average
7	3.565	26.77	56.00	-29.23	17.00	9.77	QP
8	3.565	17.02	46.00	-28.98	7.25	9.77	Average
9	9.807	24.14	60.00	-35.86	14.23	9.91	QP
10	9.807	12.68	50.00	-37.32	2.77	9.91	Average
11	21.676	24.68	60.00	-35.32	14.62	10.06	QP
12	21.676	14.44	50.00	-35.56	4.38	10.06	Average

Note:

1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

Site :SH1
Condition :Line
Mode :RX_BLE2M_2440MHz
test by :James

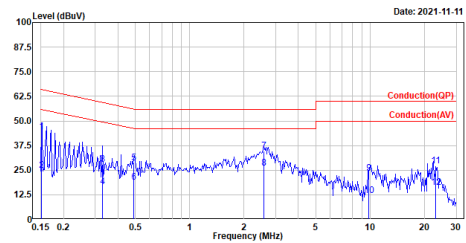


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	0.164	42.47	65.26	-22.79	32.81	9.66	QP
2	0.164	23.98	55.26	-31.28	14.32	9.66	Average
3	0.227	34.79	62.55	-27.76	25.14	9.65	QP
4	0.227	21.57	52.55	-30.98	11.92	9.65	Average
5	0.494	30.79	56.09	-25.30	21.13	9.66	QP
6	0.494	21.84	46.09	-24.25	12.18	9.66	Average
7	2.538	36.21	56.00	-19.79	26.48	9.73	QP
8	2.538	26.97	46.00	-19.03	17.24	9.73	Average
9	10.433	29.01	60.00	-30.99	19.11	9.90	QP
10	10.433	19.29	50.00	-30.71	9.39	9.90	Average
11	17.599	27.51	60.00	-32.49	17.55	9.96	QP
12	17.599	18.36	50.00	-31.64	8.40	9.96	Average

Note:

1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

Site :SH1
Condition :Neutral
Mode :RX_BLE2M_2440MHz
test by :James



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	0.152	44.67	65.91	-21.24	35.00	9.67	QP
2	0.152	24.86	55.91	-31.05	15.19	9.67	Average
3	0.330	28.08	59.44	-31.36	18.41	9.67	QP
4	0.330	16.69	49.44	-32.75	7.02	9.67	Average
5	0.491	28.61	56.14	-27.53	18.94	9.67	QP
6	0.491	18.97	46.14	-27.17	9.30	9.67	Average
7	2.581	34.78	56.00	-21.22	25.04	9.74	QP
8	2.581	25.90	46.00	-20.10	16.16	9.74	Average
9	9.817	23.22	60.00	-36.78	13.31	9.91	QP
10	9.817	12.18	50.00	-37.82	2.27	9.91	Average
11	23.011	27.22	60.00	-32.78	17.15	10.07	QP
12	23.011	16.34	50.00	-33.66	6.27	10.07	Average

Note:

1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

4. 峰值輸出功率

4.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.2 節，操作於 2400-2483.5 兆赫(MHz)之至少使用 75 個跳頻頻道之跳頻系統、數位調變技術系統與 5725-5850 兆赫(MHz)之所有跳頻系統：1 瓦(W)(含)以下。

依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.3，用於非固定式點對點操作時，若其發射天線之方向性增益超過 6dBi，應依所超過之 dB 數等量降低峰值輸出功率。如用於固定式點對點^(註)操作時，應符合下列情形之一：

操作於 2400-2483.5 兆赫(MHz)者，其發射天線之方向性增益超過 6dBi，應於每超過 3dB 降低 1dB 之峰值輸出功率。

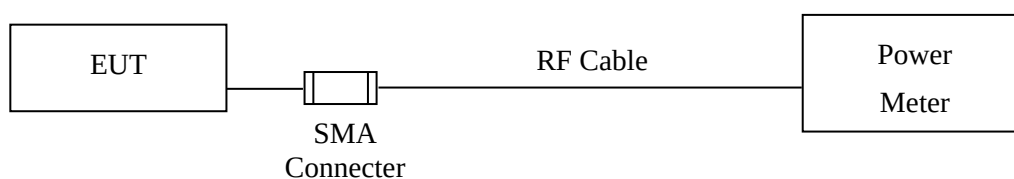
操作於 5725-5850 兆赫(MHz)者，其發射天線之方向性增益超過 6dBi，不需降低峰值輸出功率。

註：固定式點對點操作使用方式，並不包括使用點對多點之系統、全向性之應用以及發射相同資訊之共同安裝的多重發射機。展頻或數位調變之發射器需要專業安裝，該設備操作者或安裝者有責任確認該系統是限用於固定式、點對點之操作，隨機所附之使用手冊必須包含此訊息以告知使用者或安裝者須負之責任。

4.2. 量測方法

待測物之天線埠經由適當之衰減直接連至 Power Meter RF 輸入端。

4.3. 測試架構圖



4.4. 量測不確定度

此項測試之量測不確定度為 $\pm 1.19\text{dB}$ 。

4.5. 峰值輸出功率測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH39, CH78

6 dB 頻寬：20MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：峰值輸出功率

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

視頻頻寬：--

環境溫度：17.1 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
00	2402.00	9.12	1Watt= 30 dBm	Pass
39	2441.00	9.19	1Watt= 30 dBm	Pass
78	2480.00	9.18	1Watt= 30 dBm	Pass

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH39, CH78

6 dB 頻寬：20MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：峰值輸出功率

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

視頻頻寬：--

環境溫度：17.1 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
00	2402.00	11.20	1Watt= 30 dBm	Pass
39	2441.00	11.28	1Watt= 30 dBm	Pass
78	2480.00	11.25	1Watt= 30 dBm	Pass

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH39, CH78

6 dB 頻寬：20MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：峰值輸出功率

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

視頻頻寬：--

環境溫度：17.1 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
00	2402.00	11.63	1Watt= 30 dBm	Pass
39	2441.00	11.68	1Watt= 30 dBm	Pass
78	2480.00	11.67	1Watt= 30 dBm	Pass

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH19, CH39

6 dB 頻寬：20MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：峰值輸出功率

測試模式：Mode 1: 發射器 - BLE Mode_ 1Mbps

視頻頻寬：--

環境溫度：17.1 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
00	2402.00	9.05	1Watt= 30 dBm	Pass
19	2440.00	9.12	1Watt= 30 dBm	Pass
39	2480.00	9.11	1Watt= 30 dBm	Pass

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH19, CH39

6 dB 頻寬：20MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：峰值輸出功率

測試模式：Mode 1: 發射器 - BLE Mode_ 2Mbps

視頻頻寬：--

環境溫度：17.1 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
00	2402.00	9.00	1Watt= 30 dBm	Pass
19	2440.00	9.07	1Watt= 30 dBm	Pass
39	2480.00	9.05	1Watt= 30 dBm	Pass

峰值輸出功率測試結果:

PASS

5. 天線之要求

5.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.3，用於非固定式點對點操作時，若其發射天線之方向性增益超過 6dBi，應依所超過之 dB 數等量降低峰值輸出功率。如用於固定式點對點^(註)操作時，應符合下列情形之一：

操作於 2400-2483.5 兆赫(MHz)者，其發射天線之方向性增益超過 6dBi，應於每超過 3dB 降低 1dB 之峰值輸出功率。

操作於 5725-5850 兆赫(MHz)者，其發射天線之方向性增益超過 6dBi，不需降低峰值輸出功率。

註：固定式點對點操作使用方式，並不包括使用點對多點之系統、全向性之應用以及發射相同資訊之共同安裝的多重發射機。展頻或數位調變之發射器需要專業安裝，該設備操作者或安裝者有責任確認該系統是限用於固定式、點對點之操作，隨機所附之使用手冊必須包含此訊息以告知使用者或安裝者須負之責任。

依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.4 節規定，天線之規格不受 3.2 節規定之限制。

5.2. 天線樣式

此 Bluetooth USB Dongle 為半固定式 PIFA antenna, (檢附天線規格書)

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Jabra	END050W	PIFA antenna	1.6dBi for 2.4GHz

天線之要求判別結果:

PASS

6. 輻射干擾測試

6.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.5，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。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。

依據國家通訊傳播委員會低功率射頻器材技術規範之第 3.6 節，低功率射頻器材，除本規範各章節另有放寬規定者外，其電場強度不得超過下表之限值，且其不必要之發射皆不得大於主波發射強度。各頻段重疊處，以較嚴格之限制值為準。

頻 率 (兆赫)	電場強度(微伏/公尺)	測距(公尺)
0.009 - 0.490(含)	2400/f(kHz)	300
0.490(不含)~1.705(含)	24000/f(kHz)	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

上表規定之電場強度，頻率在 9-90kHz 千赫(kHz)、110-490 千赫(kHz)以及 1000 兆赫(MHz) 以上之發射，其量測以平均值檢波器為基準，且須符合第 6.15.2 節之規定；其他頻率之發射，應以 CISPR 準峰值(quasi-peak) 檢波器測量；非以上表所指定之距離測量時須符合第 6.5 節之規定，而輻射發射之量測頻率範圍須符合第 6.14 節之規定。

6.2. 量測方法

待測物置於高 80 公分(測試範圍低於 1GHz)或高 150 公分(測試範圍高於 1GHz)之非導體桌面 (落地型產品置於地上)，桌面可 360 度旋轉，接收天線置於距待測物 3m 距離，高度可在 1 至 4 公尺間變動，以量測待測物之最大輻射電場強度。接收天線並應於水平及垂直極化方向各量測一次。

待測物應在正常發射狀態下量測。

。

RBW and VBW Parameter setting:

According to KDB 558074 section 12.2.4. Peak power measurement procedure

RBW = as specified in Table 1.

VBW $\geq 3 \times$ RBW.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to KDB 558074 section 12.2.5. Average power measurement procedure

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq 98 \%$

VBW $\geq 1/T$, when duty cycle $< 98 \%$

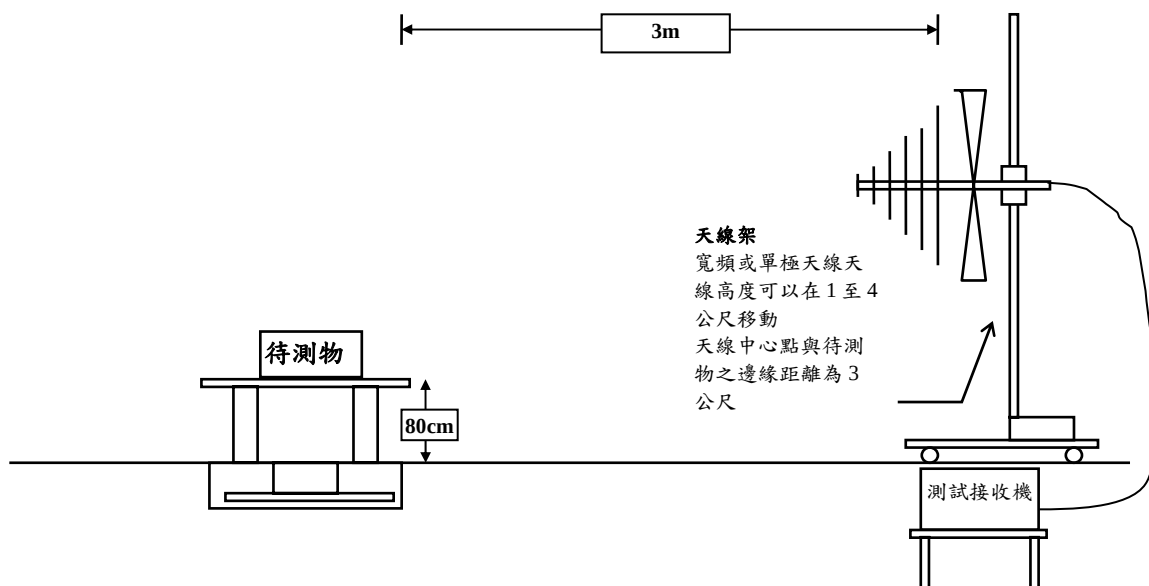
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
BLE 1M	84.97	2.1304	469	500
BLE 2M	57.51	1.0830	923	1000

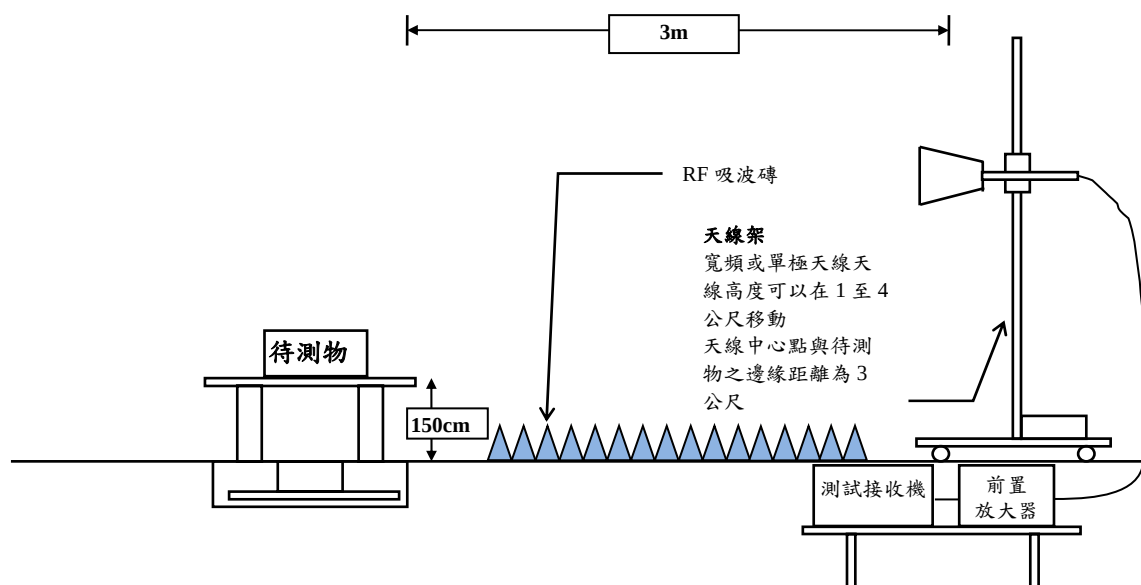
Note: Duty Cycle Refer to Section 14.

6.3. 測試架構圖

Under 1GHz Test Setup



Above 1GHz Test Setup



6.4. 量測不確定度

此項測試之量測不確定度

- 1GHz 以上為 $\pm 4.08\text{dB}$ (原申請)
- 1GHz 以下為 $\pm 4.22\text{dB}$ (原申請)
- 1GHz 以上為 $\pm 4.06\text{dB}$ (系列一)
- 1GHz 以下為 $\pm 3.73\text{dB}$ (系列一)

6.5. 輻射干擾測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

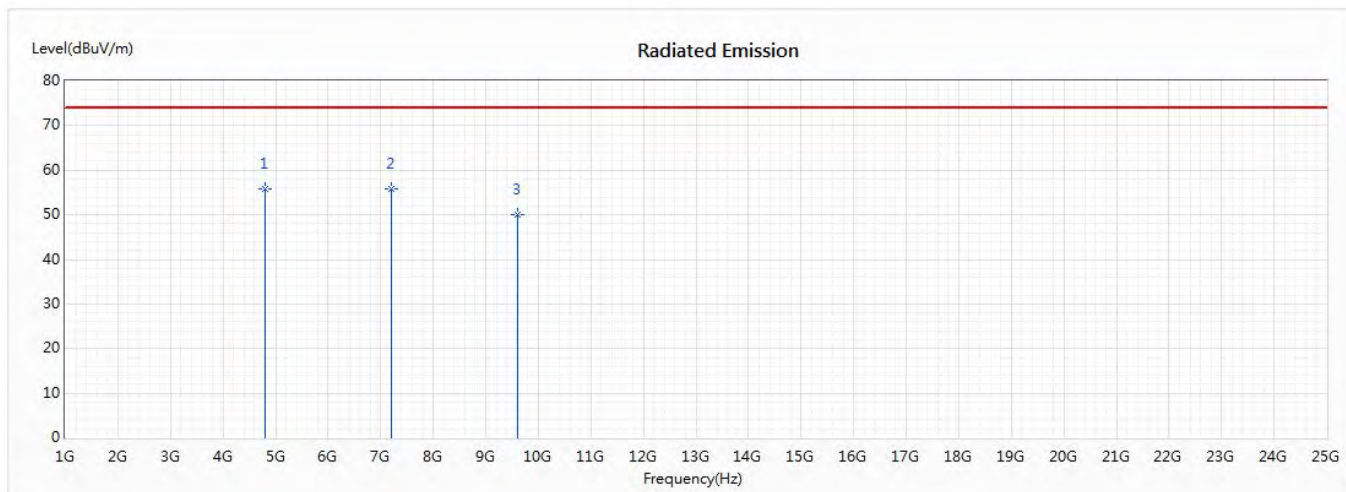
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	55.90	74.00	-18.10	68.05	-12.15	PK
2	7206	55.86	74.00	-18.14	69.00	-13.14	PK
3	9608	50.03	74.00	-23.97	63.45	-13.42	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4804	55.9	-30.458	25.442	-28.558	54.000
7206	55.86	-30.458	25.402	-28.598	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

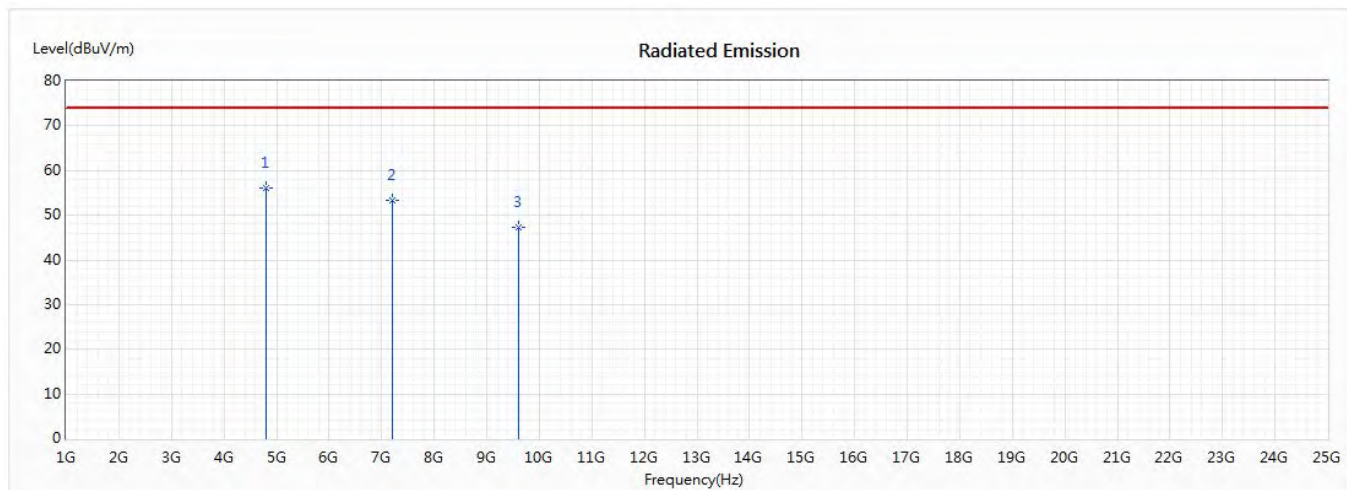
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	56.07	74.00	-17.93	68.22	-12.15	PK
2	7206	53.31	74.00	-20.69	66.45	-13.14	PK
3	9608	47.33	74.00	-26.67	60.75	-13.42	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4804	56.07	-30.458	25.612	-28.388	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

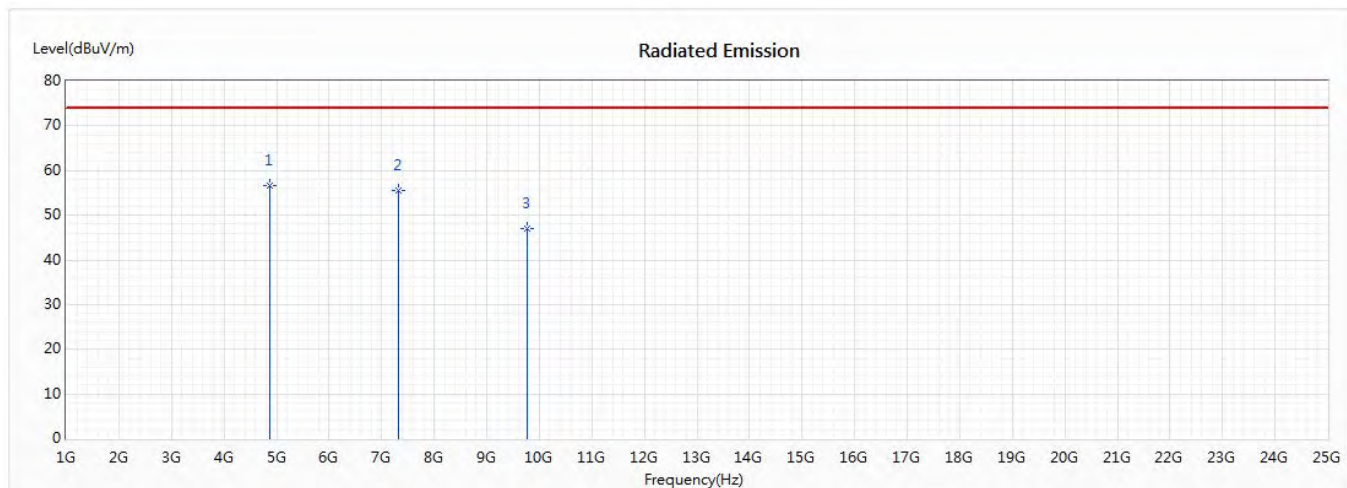
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4882	56.50	74.00	-17.50	68.09	-11.59	PK
2	7323	55.48	74.00	-18.52	69.05	-13.57	PK
3	9764	46.99	74.00	-27.01	59.51	-12.52	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4882	56.5	-30.458	26.042	-27.958	54.000
7323	55.48	-30.458	25.022	-28.978	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

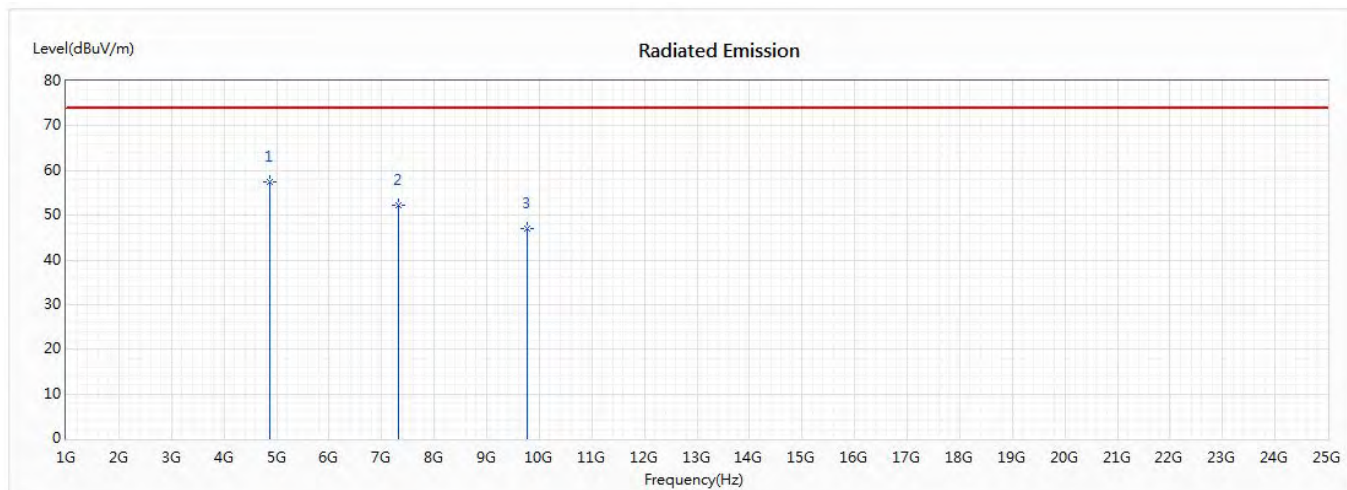
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4882	57.54	74.00	-16.46	69.13	-11.59	PK
2	7323	52.10	74.00	-21.90	65.67	-13.57	PK
3	9764	46.99	74.00	-27.01	59.51	-12.52	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4882	57.54	-30.458	27.082	-26.918	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

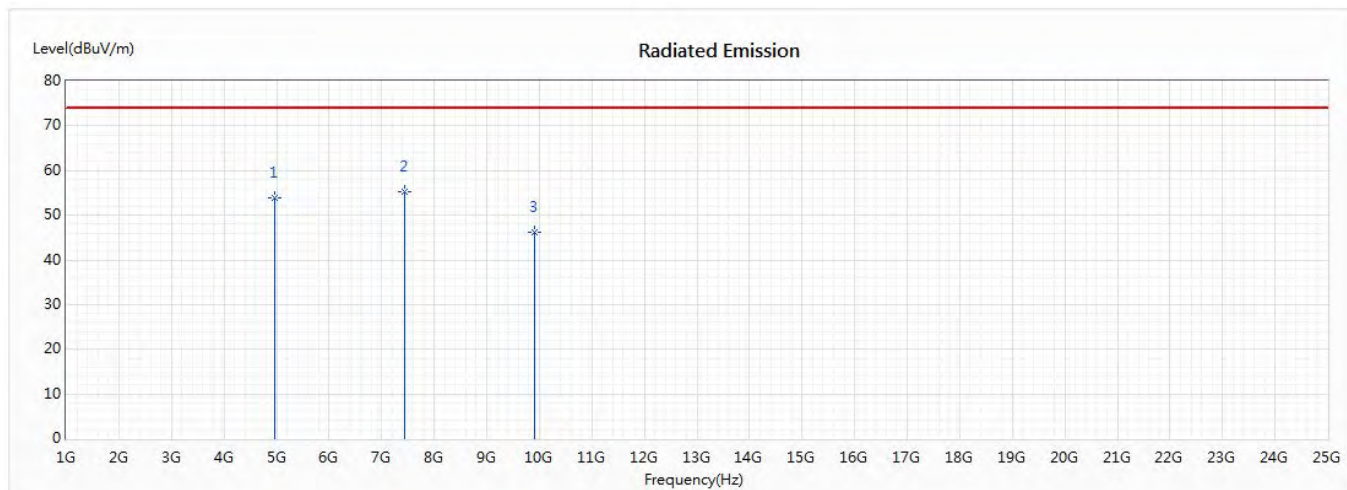
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4960	53.81	74.00	-20.19	64.70	-10.89	PK
* 2	7440	55.37	74.00	-18.63	69.99	-14.62	PK
3	9920	46.07	74.00	-27.93	60.30	-14.23	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
7440	55.37	-30.458	24.912	-29.088	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

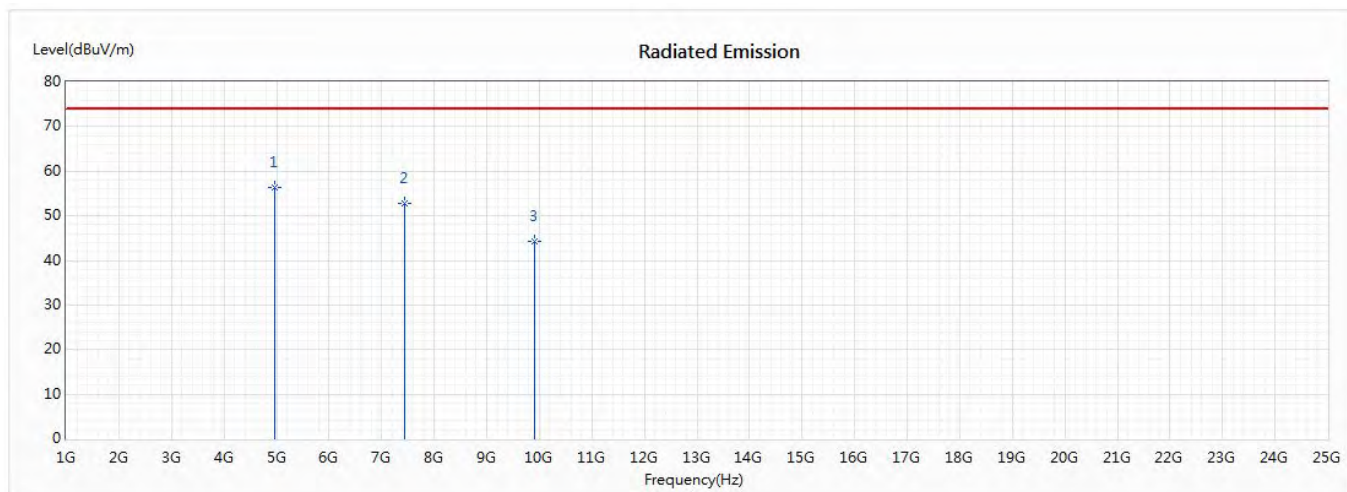
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	56.22	74.00	-17.78	67.11	-10.89	PK
2	7440	52.90	74.00	-21.10	67.52	-14.62	PK
3	9920	44.33	74.00	-29.67	58.56	-14.23	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4960	56.22	-30.458	25.762	-28.238	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

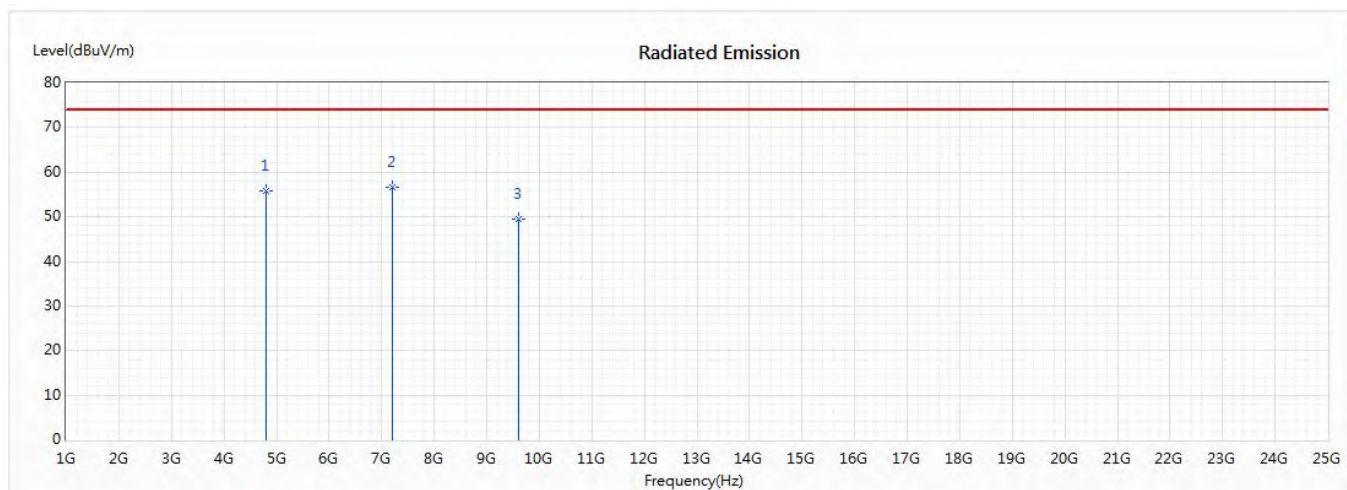
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4804	55.93	74.00	-18.07	68.08	-12.15	PK
* 2	7206	56.65	74.00	-17.35	69.79	-13.14	PK
3	9608	49.62	74.00	-24.38	63.04	-13.42	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4804	55.93	-31.057	24.873	-29.127	54.000
7206	56.65	-31.057	25.593	-28.407	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

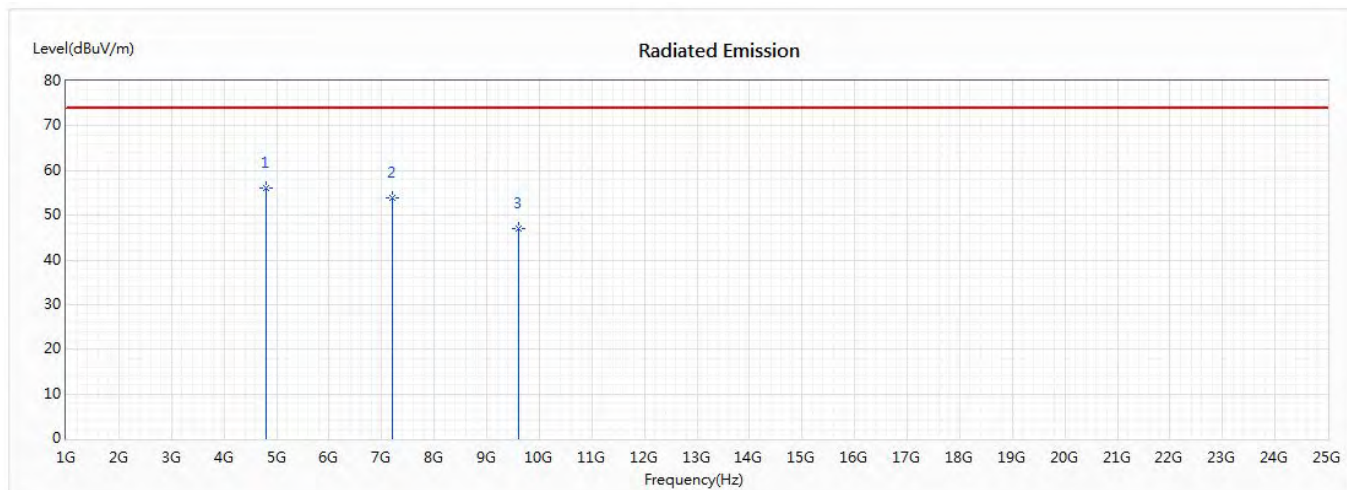
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	56.01	74.00	-17.99	68.16	-12.15	PK
2	7206	53.76	74.00	-20.24	66.90	-13.14	PK
3	9608	46.96	74.00	-27.04	60.38	-13.42	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4804	56.01	-31.057	24.953	-29.047	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

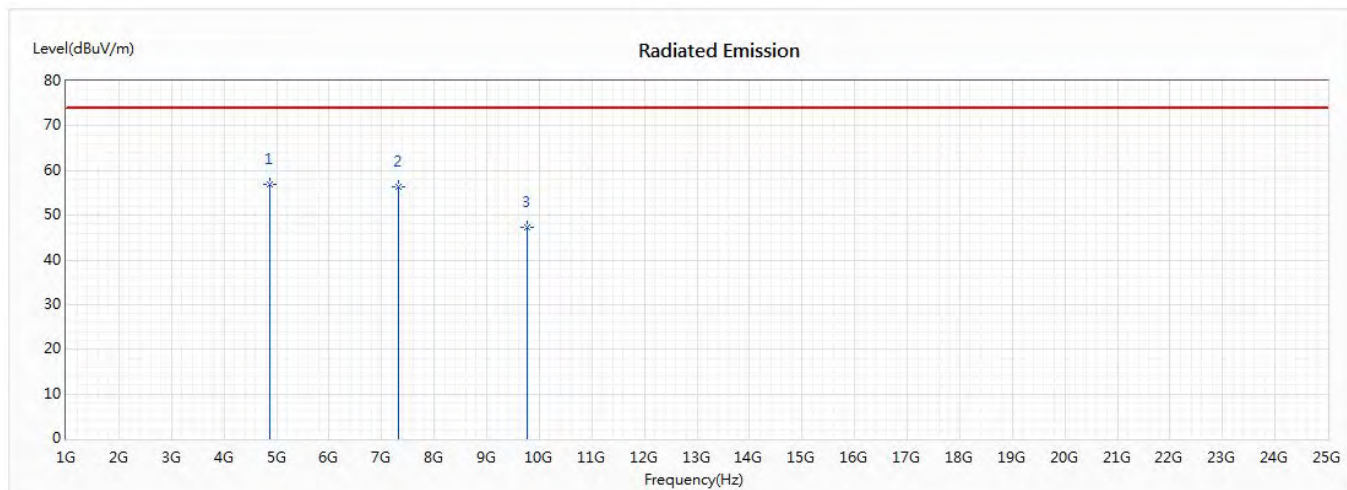
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4882	56.82	74.00	-17.18	68.41	-11.59	PK
2	7323	56.38	74.00	-17.62	69.95	-13.57	PK
3	9764	47.41	74.00	-26.59	59.93	-12.52	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4882	56.82	-31.057	25.763	-28.237	54.000
7323	56.38	-31.057	25.323	-28.677	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

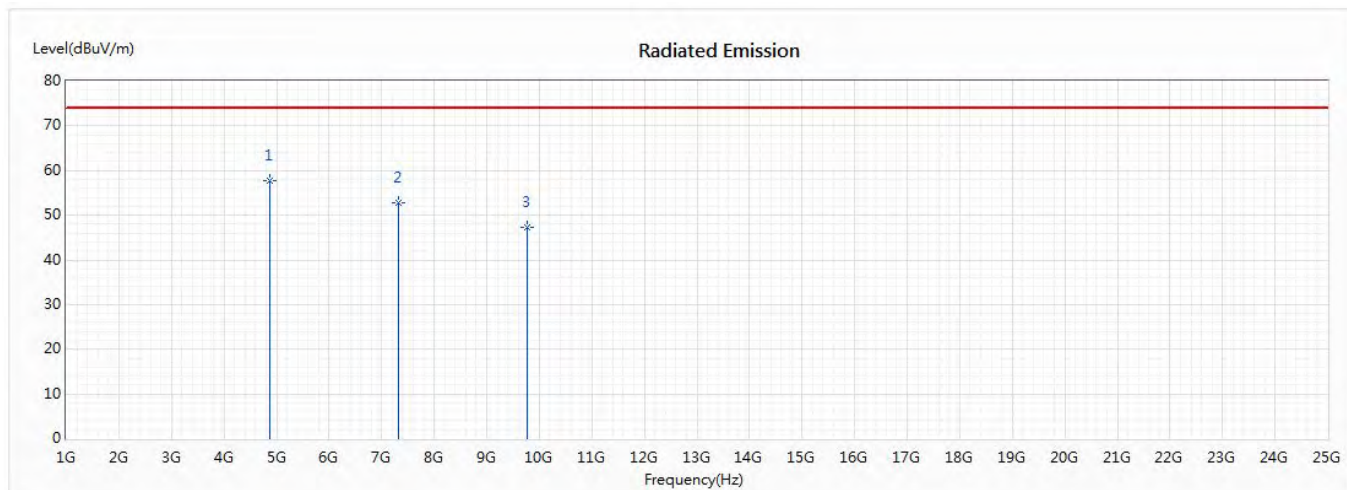
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4882	57.66	74.00	-16.34	69.25	-11.59	PK
2	7323	52.68	74.00	-21.32	66.25	-13.57	PK
3	9764	47.16	74.00	-26.84	59.68	-12.52	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4882	57.66	-31.057	26.603	-27.397	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

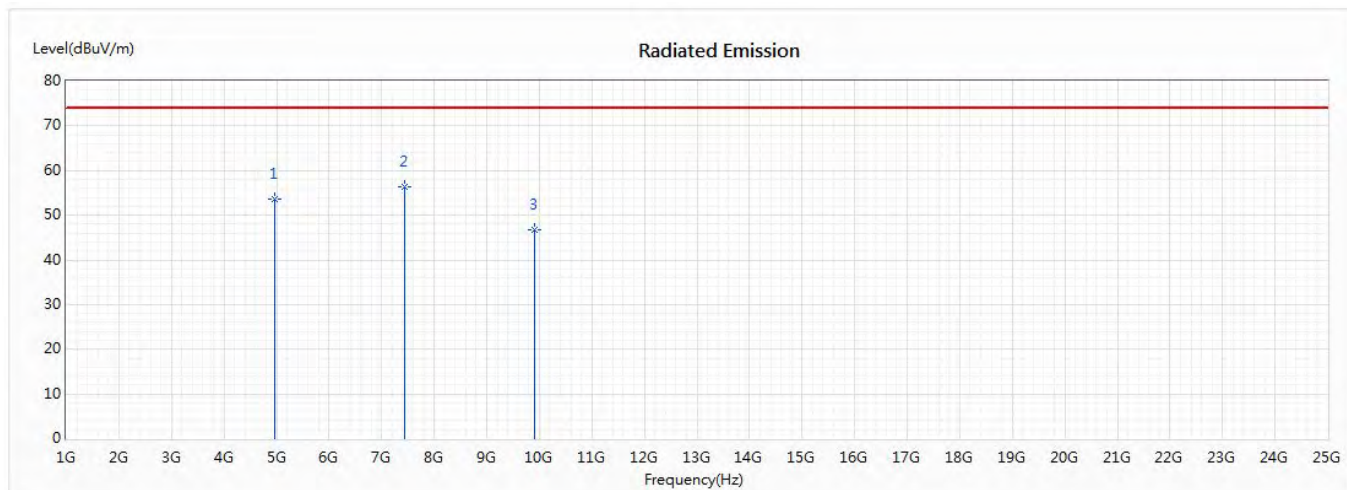
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4960	53.73	74.00	-20.27	64.62	-10.89	PK
* 2	7440	56.31	74.00	-17.69	70.93	-14.62	PK
3	9920	46.87	74.00	-27.13	61.10	-14.23	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
7440	56.31	-31.057	25.253	-28.747	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

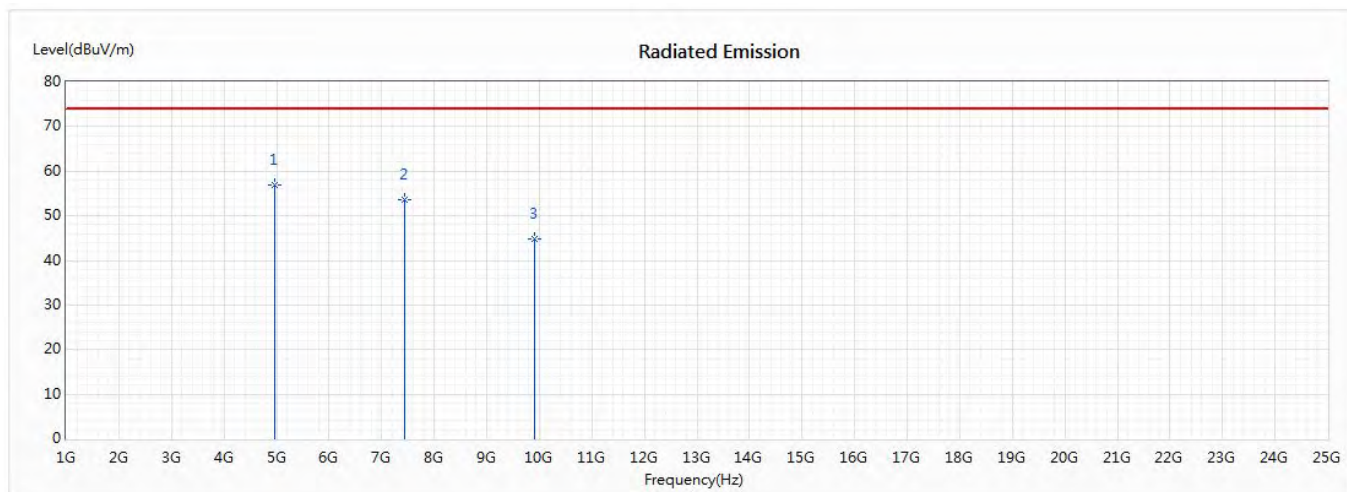
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	56.87	74.00	-17.13	67.76	-10.89	PK
2	7440	53.69	74.00	-20.31	68.31	-14.62	PK
3	9920	44.85	74.00	-29.15	59.08	-14.23	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4960	56.87	-31.057	25.813	-28.187	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

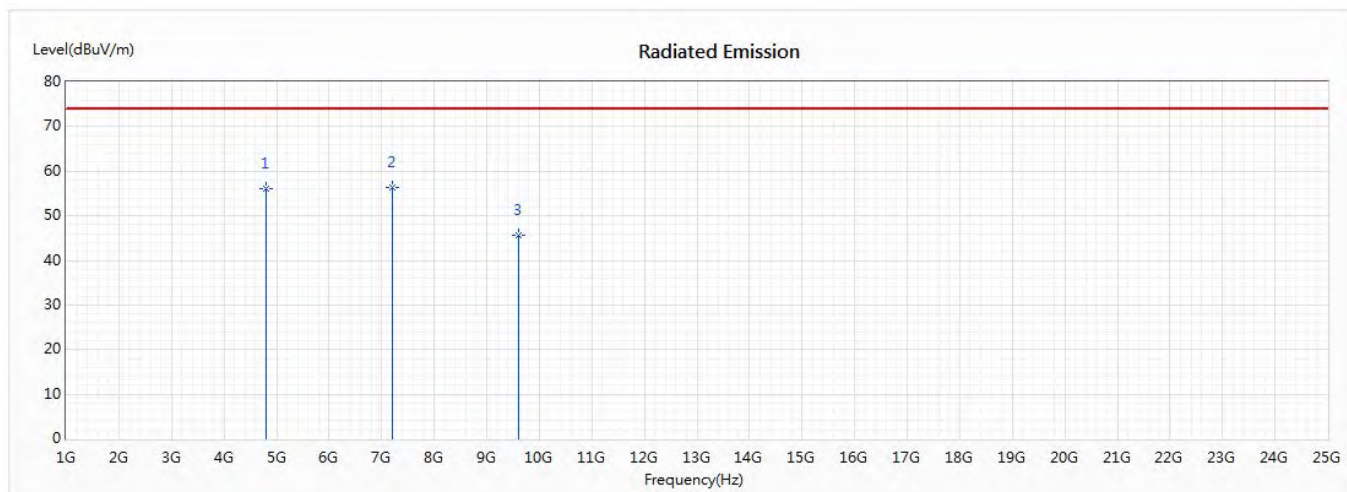
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4804	56.11	74.00	-17.89	68.26	-12.15	PK
* 2	7206	56.47	74.00	-17.53	69.61	-13.14	PK
3	9608	45.73	74.00	-28.27	59.15	-13.42	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4804	56.11	-30.458	25.652	-28.348	54.000
7206	56.47	-30.458	26.012	-27.988	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

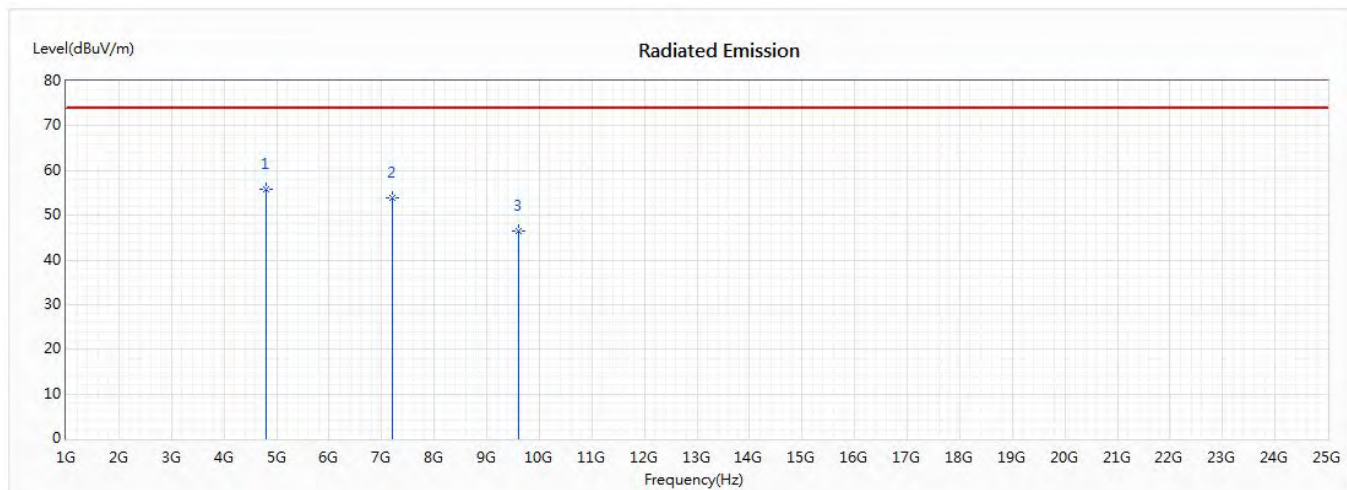
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	55.93	74.00	-18.07	68.08	-12.15	PK
2	7206	53.92	74.00	-20.08	67.06	-13.14	PK
3	9608	46.52	74.00	-27.48	59.94	-13.42	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4804	55.93	-30.458	25.472	-28.528	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

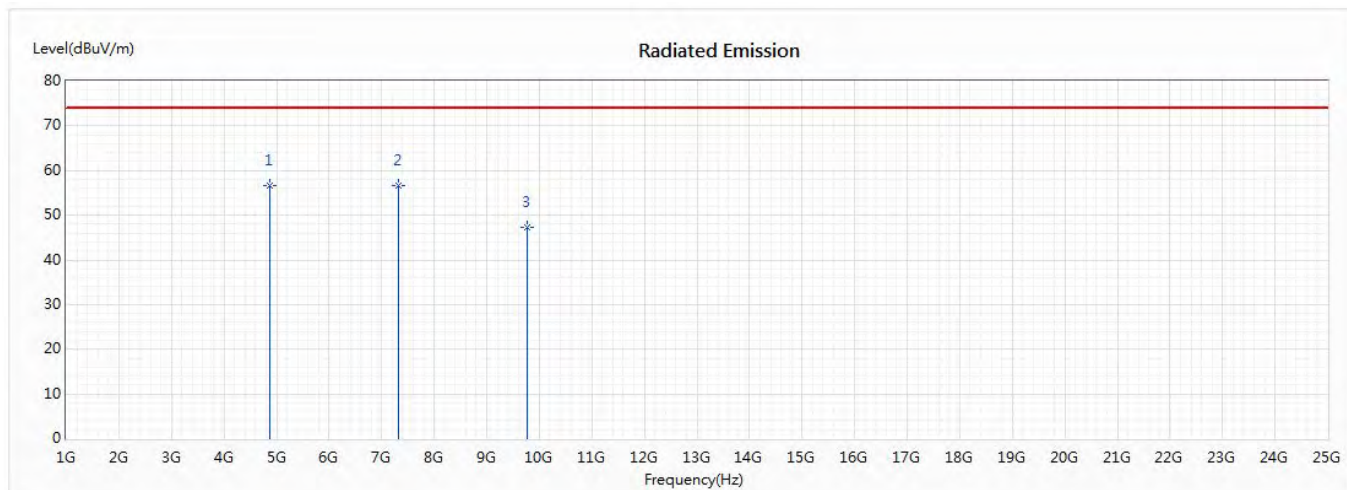
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4882	56.76	74.00	-17.24	68.35	-11.59	PK
2	7323	56.56	74.00	-17.44	70.13	-13.57	PK
3	9764	47.35	74.00	-26.65	59.87	-12.52	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4882	56.76	-30.458	26.302	-27.698	54.000
7323	56.56	-30.458	26.102	-27.898	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

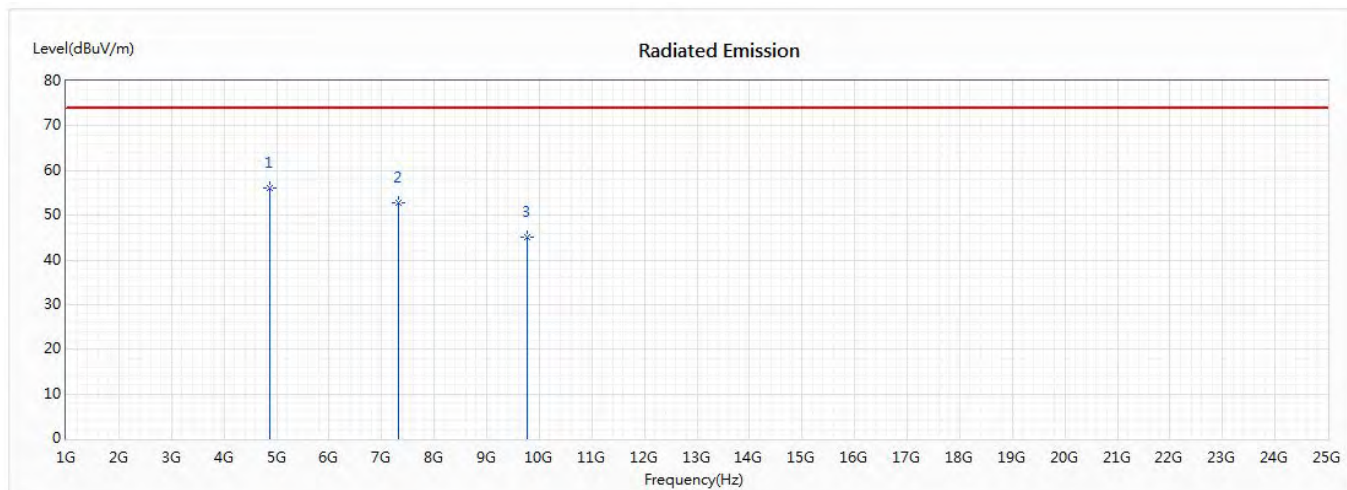
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4882	56.16	74.00	-17.84	67.75	-11.59	PK
2	7323	52.82	74.00	-21.18	66.39	-13.57	PK
3	9764	45.04	74.00	-28.96	57.56	-12.52	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4882	56.16	-30.458	25.702	-28.298	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

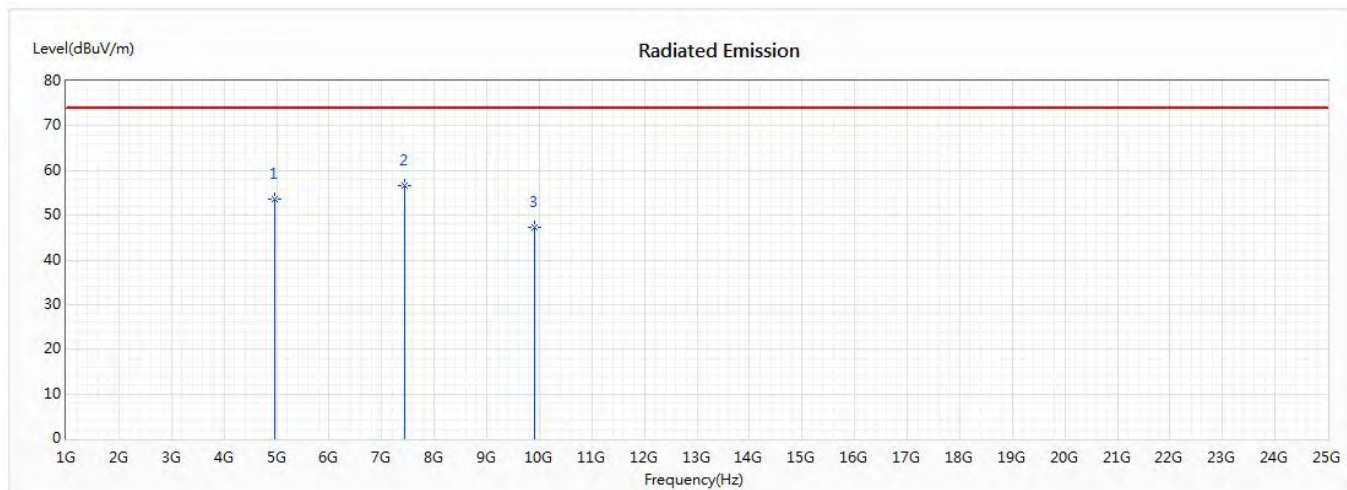
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4960	53.57	74.00	-20.43	64.46	-10.89	PK
* 2	7440	56.54	74.00	-17.46	71.16	-14.62	PK
3	9920	47.19	74.00	-26.81	61.42	-14.23	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
7440	56.54	-30.458	26.082	-27.918	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

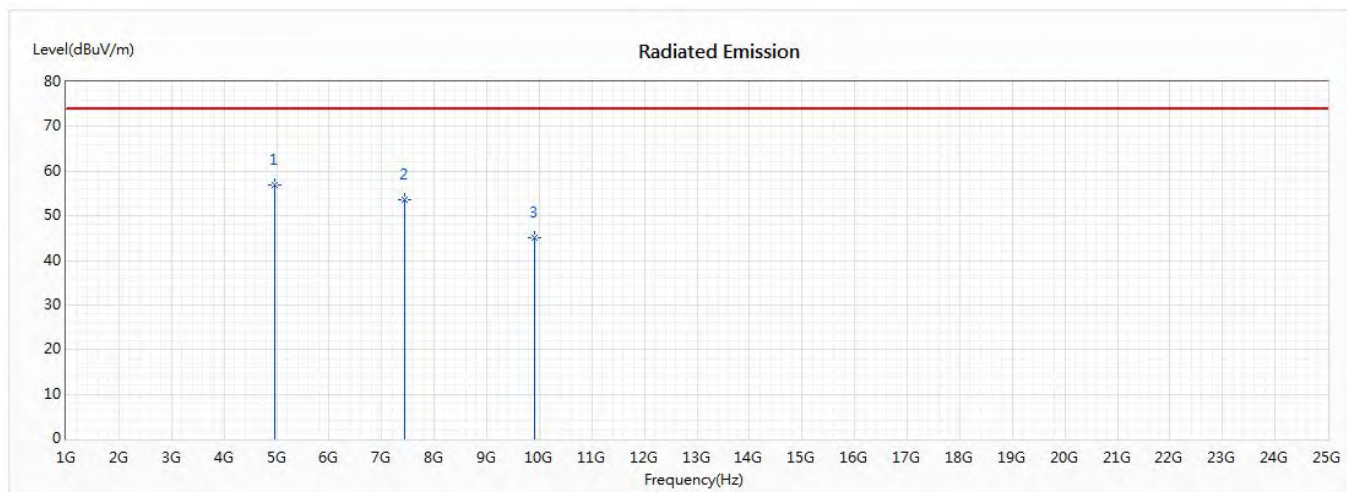
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	56.84	74.00	-17.16	67.73	-10.89	PK
2	7440	53.51	74.00	-20.49	68.13	-14.62	PK
3	9920	45.11	74.00	-28.89	59.34	-14.23	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
4960	56.84	-30.458	26.382	-27.618	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

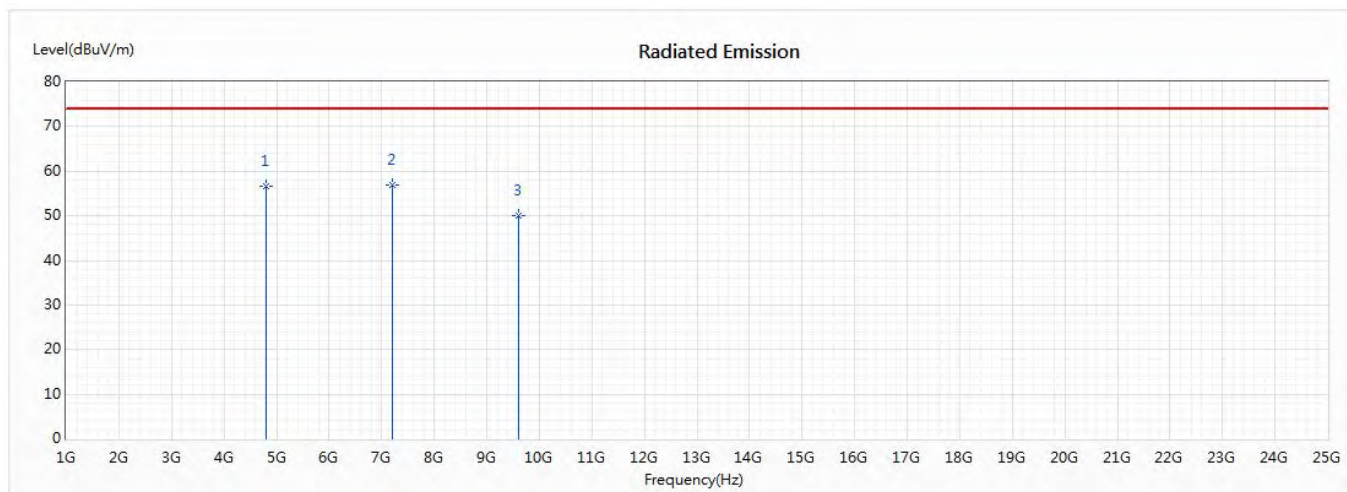
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_ 1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4804	56.54	74.00	-17.46	68.69	-12.15	PK
* 2	7206	56.81	74.00	-17.19	69.95	-13.14	PK
3	9608	50.12	74.00	-23.88	63.54	-13.42	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

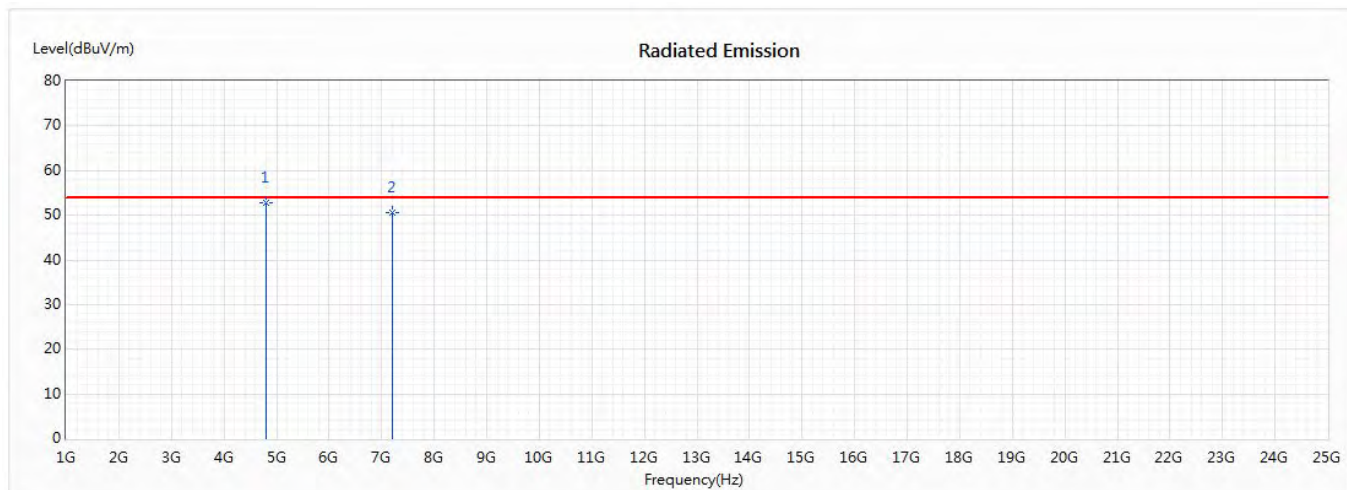
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	52.88	54.00	-1.12	65.03	-12.15	AV
2	7206	50.55	54.00	-3.45	63.69	-13.14	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

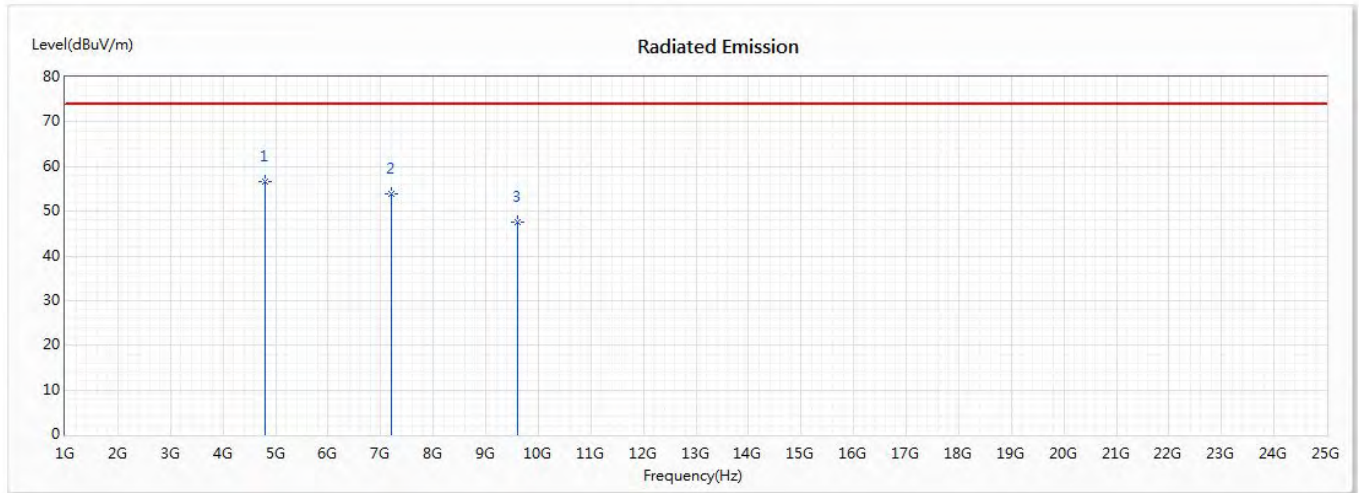
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	56.51	74.00	-17.49	68.66	-12.15	PK
2	7206	53.97	74.00	-20.03	67.11	-13.14	PK
3	9608	47.46	74.00	-26.54	60.88	-13.42	AV

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

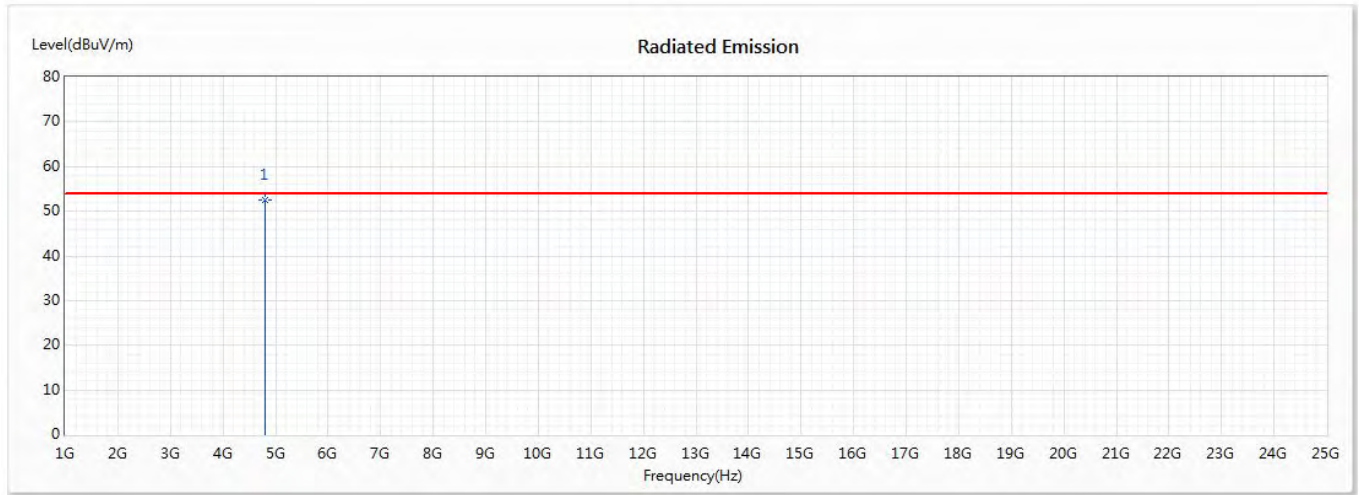
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	52.60	54.00	-1.40	64.75	-12.15	AV

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

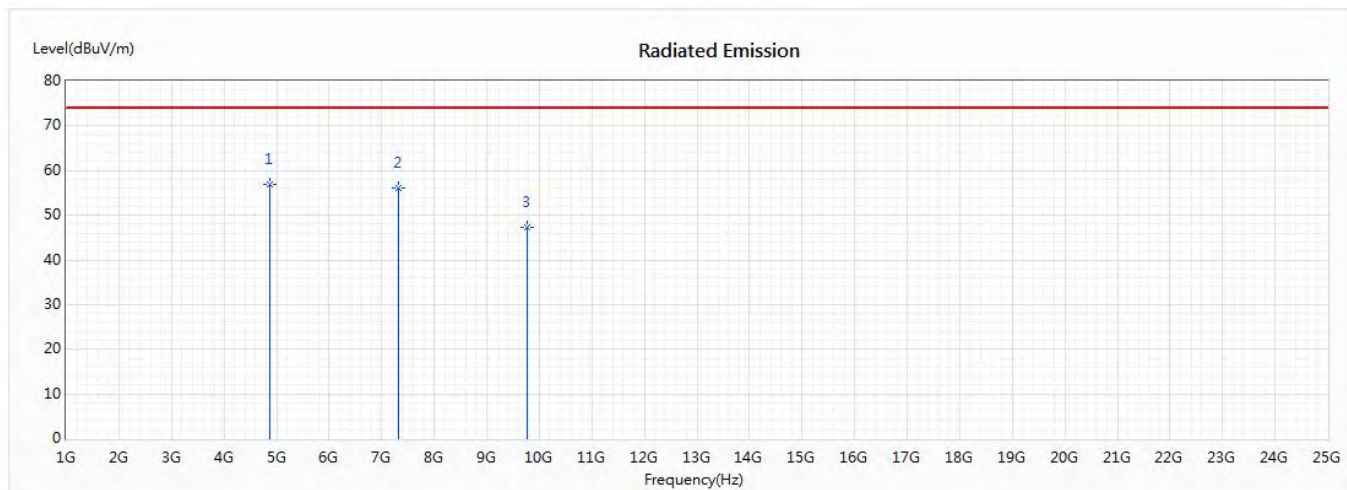
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	57.03	74.00	-16.97	68.63	-11.60	PK
2	7320	56.03	74.00	-17.97	69.58	-13.55	PK
3	9760	47.37	74.00	-26.63	59.85	-12.48	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

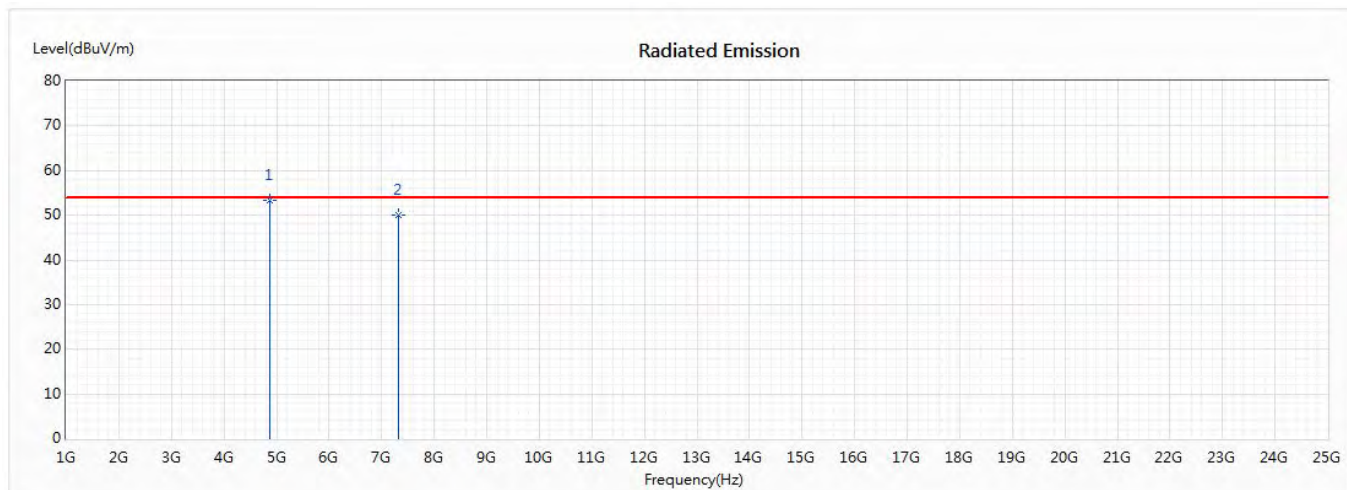
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	53.26	54.00	-0.74	64.86	-11.60	AV
2	7320	49.90	54.00	-4.10	63.45	-13.55	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

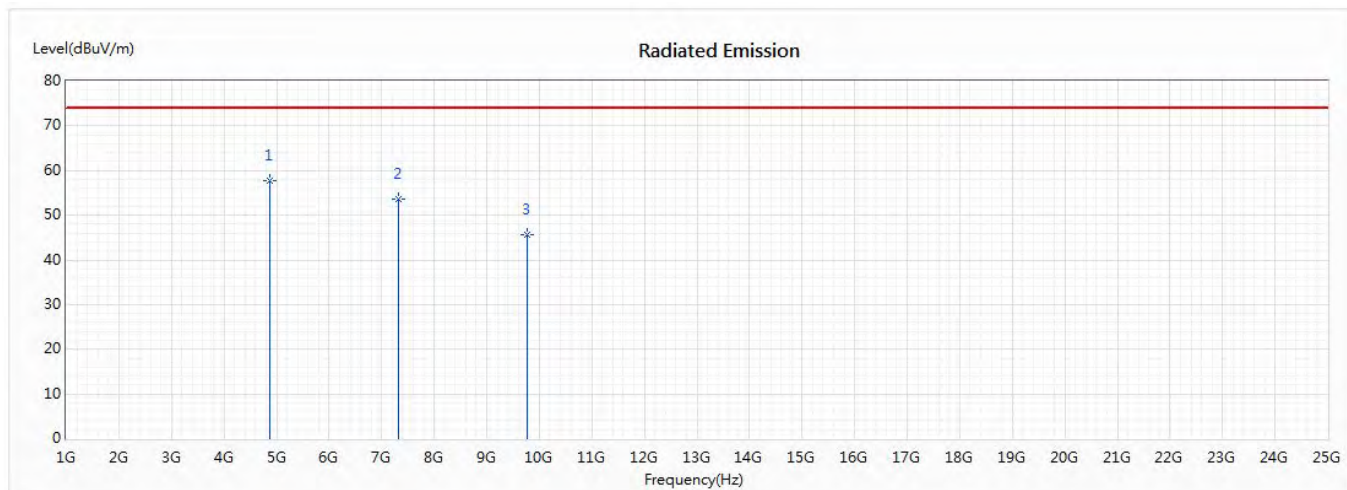
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	57.66	74.00	-16.34	69.26	-11.60	PK
2	7320	53.56	74.00	-20.44	67.11	-13.55	PK
3	9760	45.63	74.00	-28.37	58.11	-12.48	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

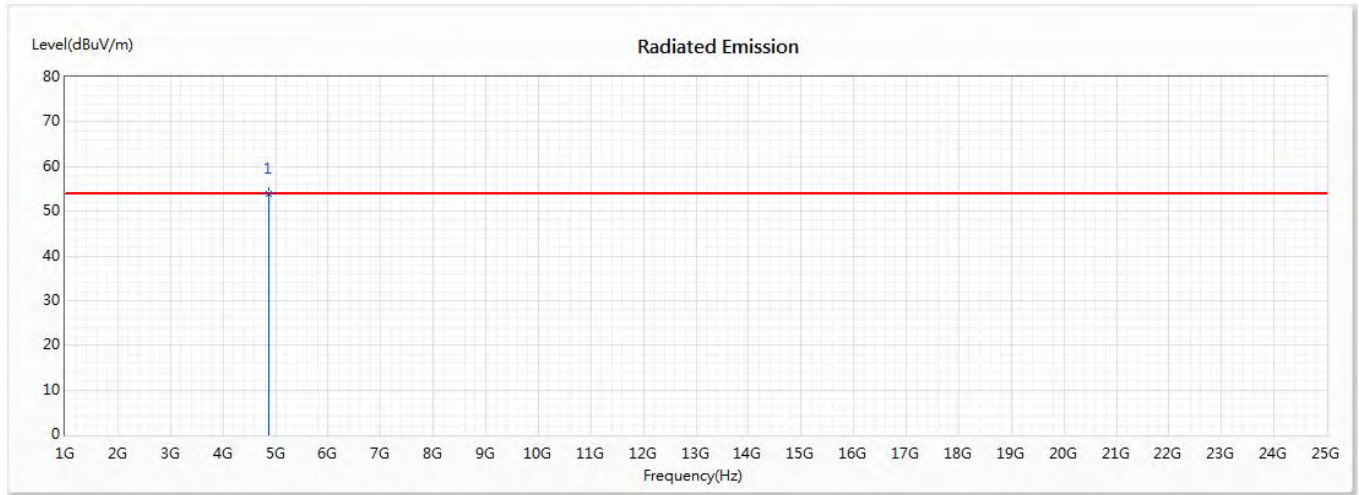
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	53.86	54.00	-0.14	65.46	-11.60	AV

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

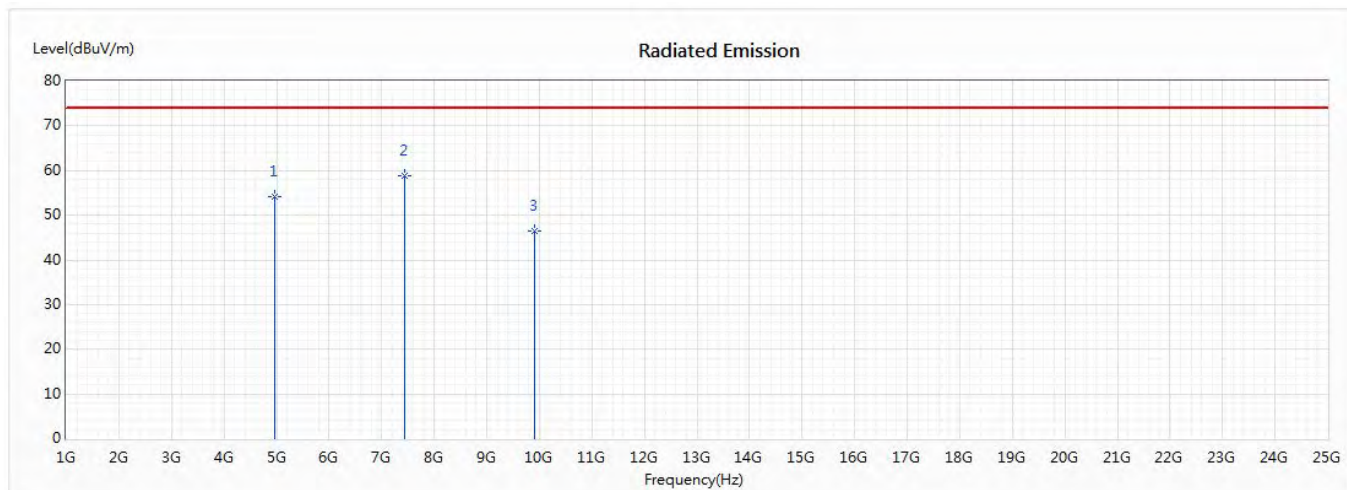
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4960	54.24	74.00	-19.76	65.13	-10.89	PK
* 2	7440	58.70	74.00	-15.30	73.32	-14.62	PK
3	9920	46.53	74.00	-27.47	60.76	-14.23	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

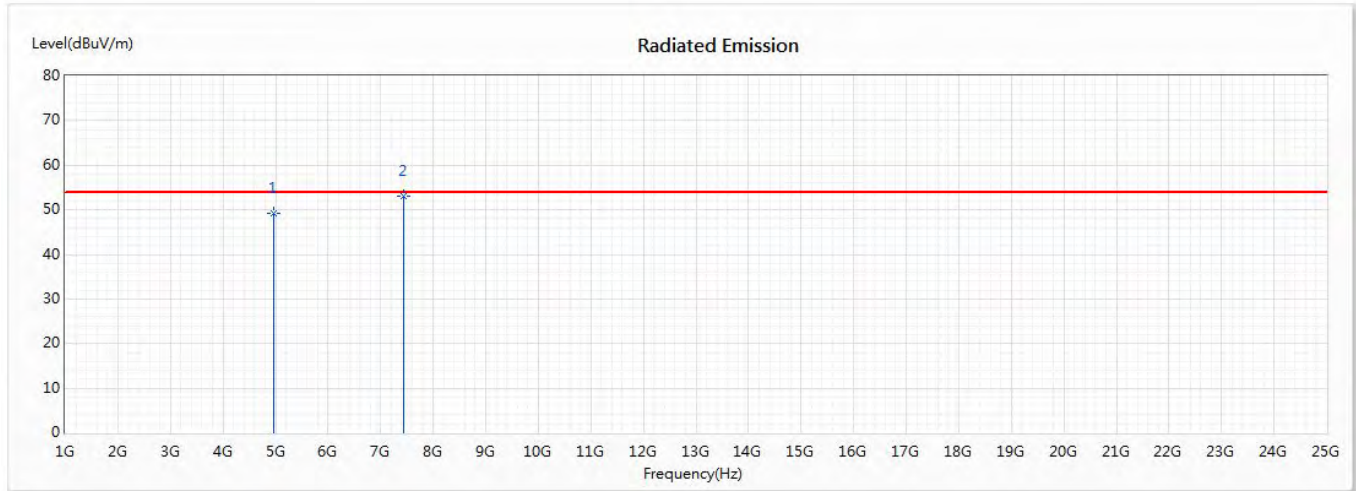
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_ 1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4960	49.31	54.00	-4.69	60.20	-10.89	AV
* 2	7440	53.16	54.00	-0.84	67.78	-14.62	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

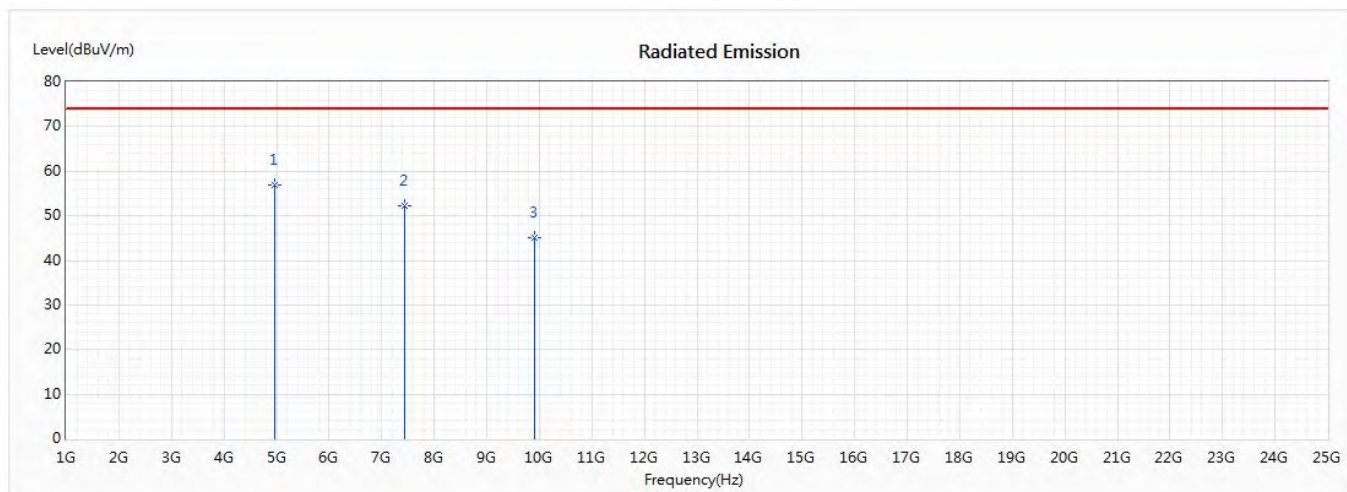
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	56.95	74.00	-17.05	67.84	-10.89	PK
2	7440	52.26	74.00	-21.74	66.88	-14.62	PK
3	9920	45.19	74.00	-28.81	59.42	-14.23	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

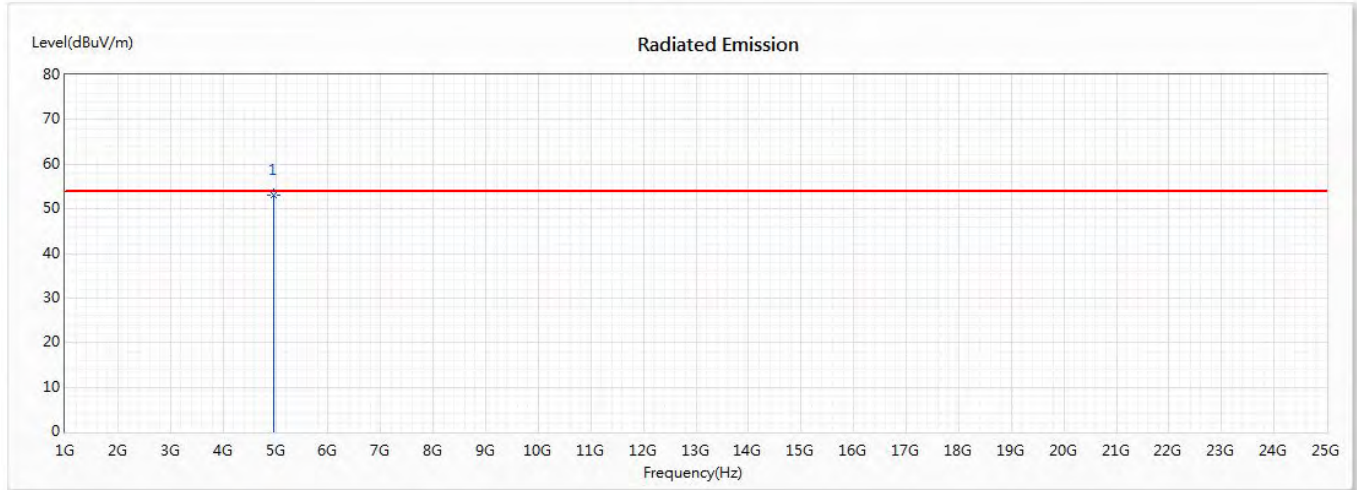
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	53.07	54.00	-0.93	63.96	-10.89	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

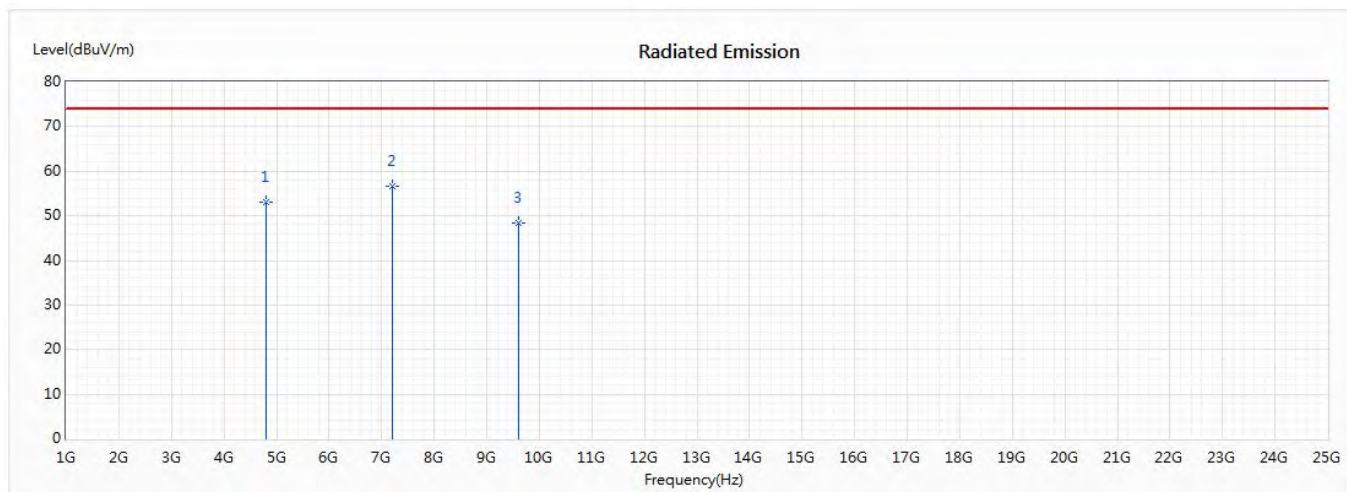
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4804	53.15	74.00	-20.85	65.30	-12.15	PK
* 2	7206	56.54	74.00	-17.46	69.68	-13.14	PK
3	9608	48.34	74.00	-25.66	61.76	-13.42	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

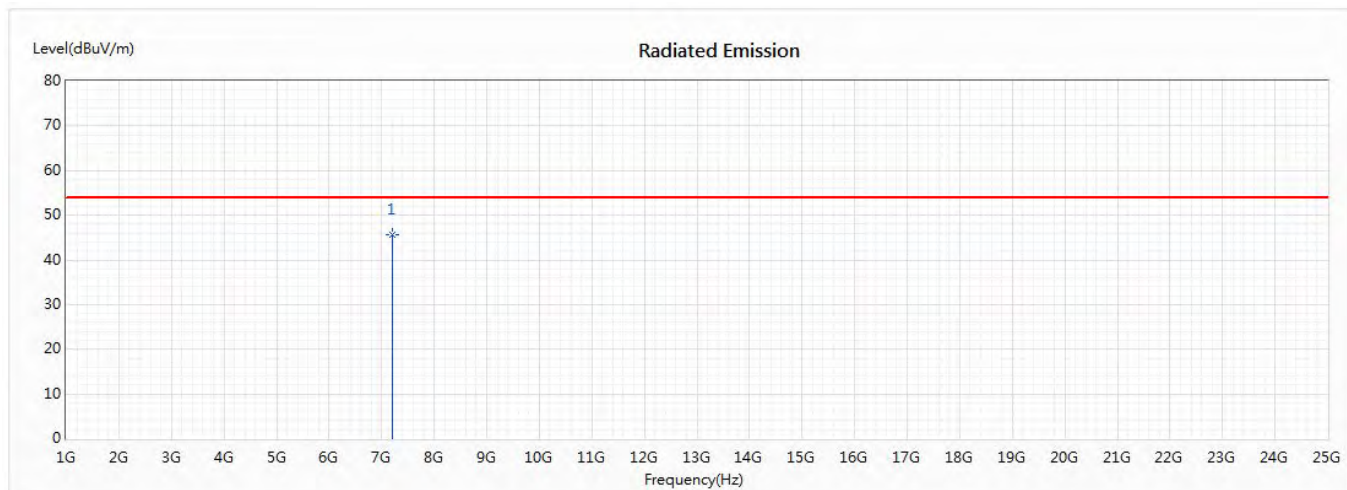
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	7206	45.55	54.00	-8.45	58.69	-13.14	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

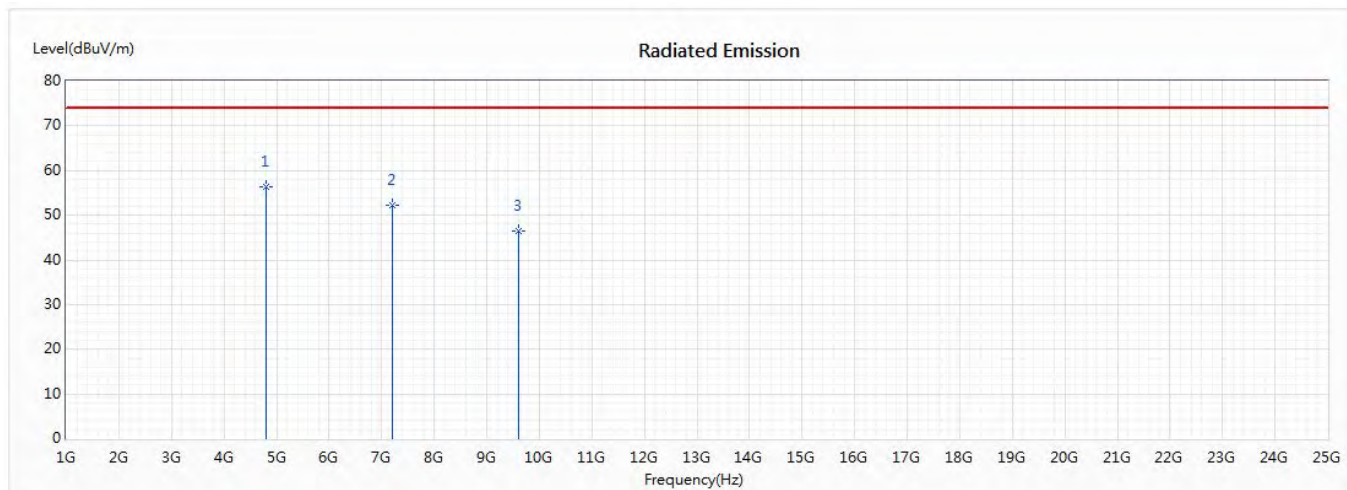
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	56.41	74.00	-17.59	68.56	-12.15	PK
2	7206	52.13	74.00	-21.87	65.27	-13.14	PK
3	9608	46.54	74.00	-27.46	59.96	-13.42	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

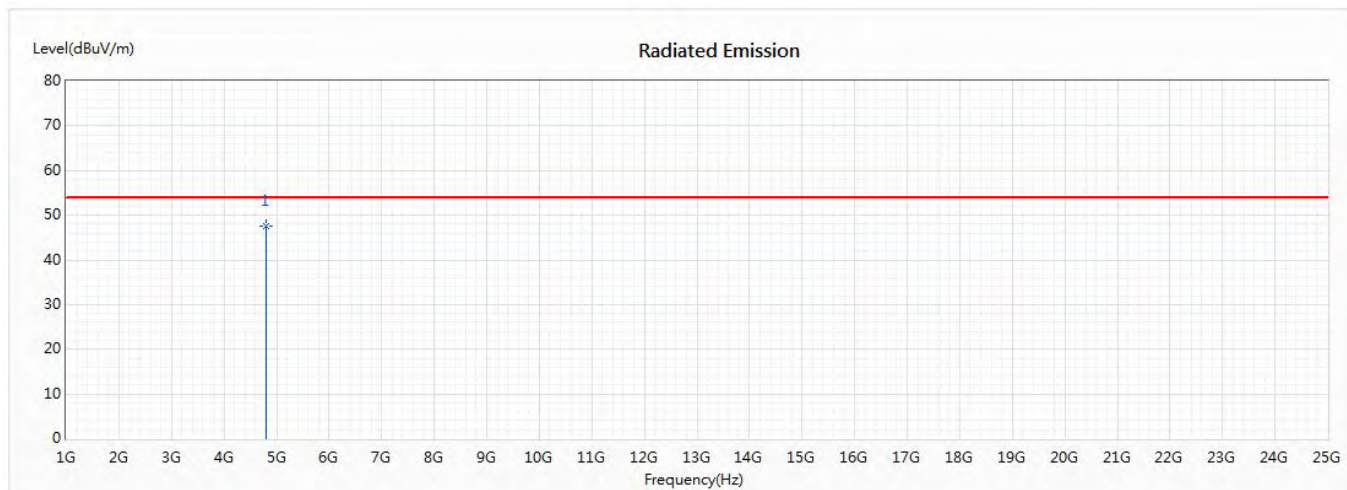
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4804	47.54	54.00	-6.46	59.69	-12.15	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

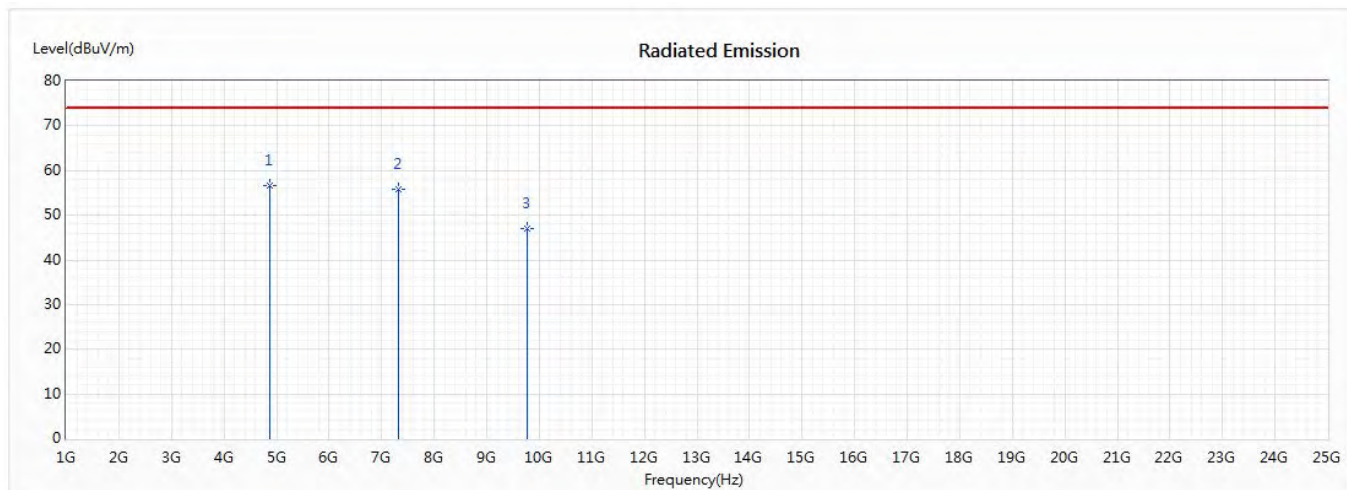
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	56.73	74.00	-17.27	68.33	-11.60	PK
2	7320	55.91	74.00	-18.09	69.46	-13.55	PK
3	9760	46.95	74.00	-27.05	59.43	-12.48	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

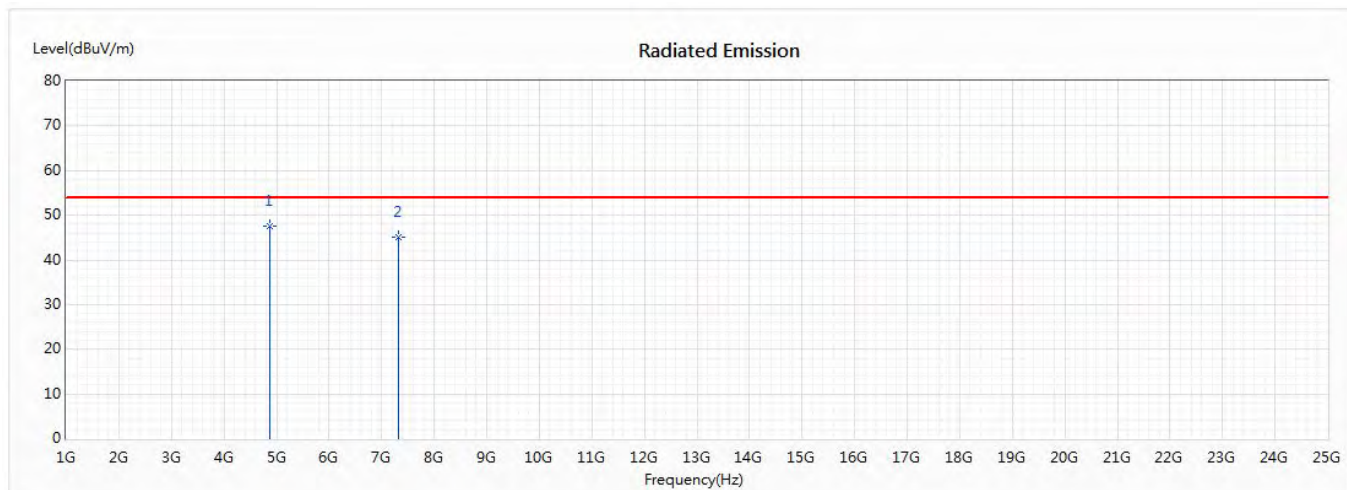
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	47.61	54.00	-6.39	59.21	-11.60	AV
2	7320	45.00	54.00	-9.00	58.55	-13.55	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

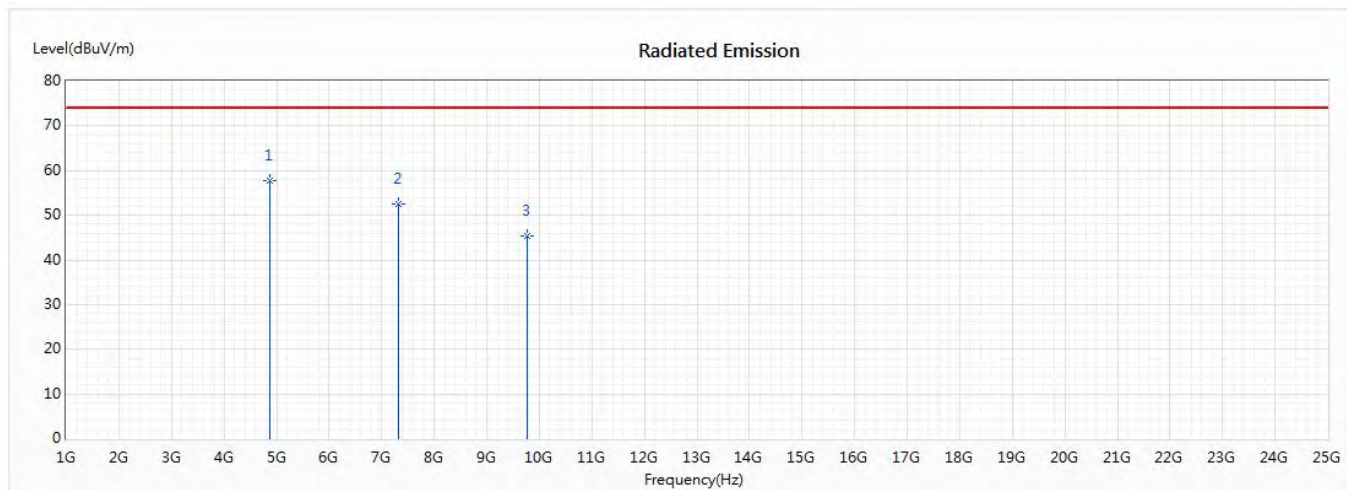
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	57.62	74.00	-16.38	69.22	-11.60	PK
2	7320	52.50	74.00	-21.50	66.05	-13.55	PK
3	9760	45.39	74.00	-28.61	57.87	-12.48	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

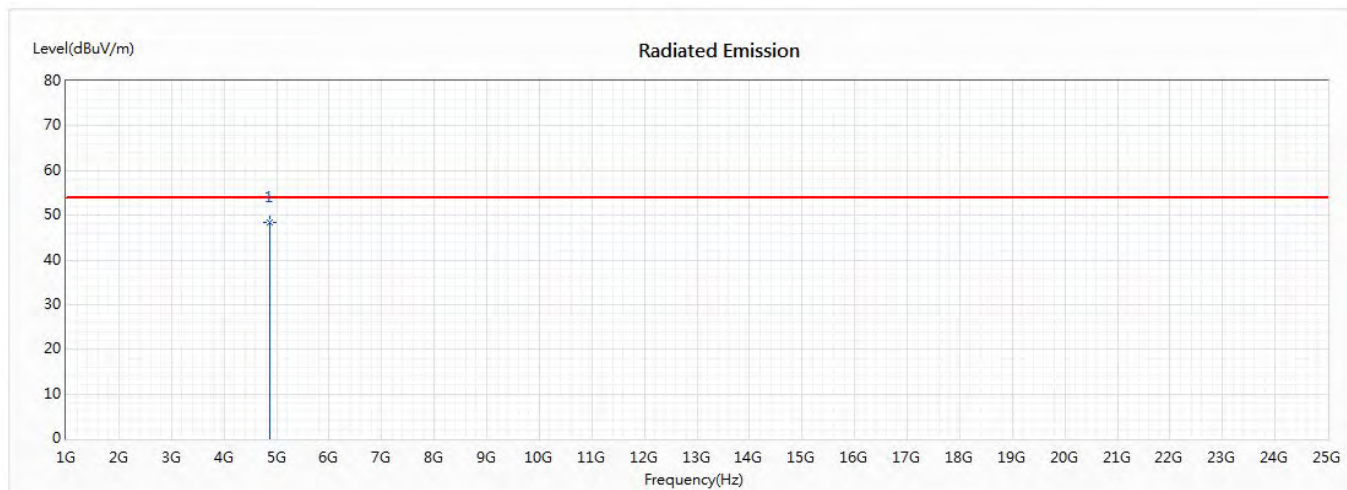
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4880	48.28	54.00	-5.72	59.88	-11.60	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

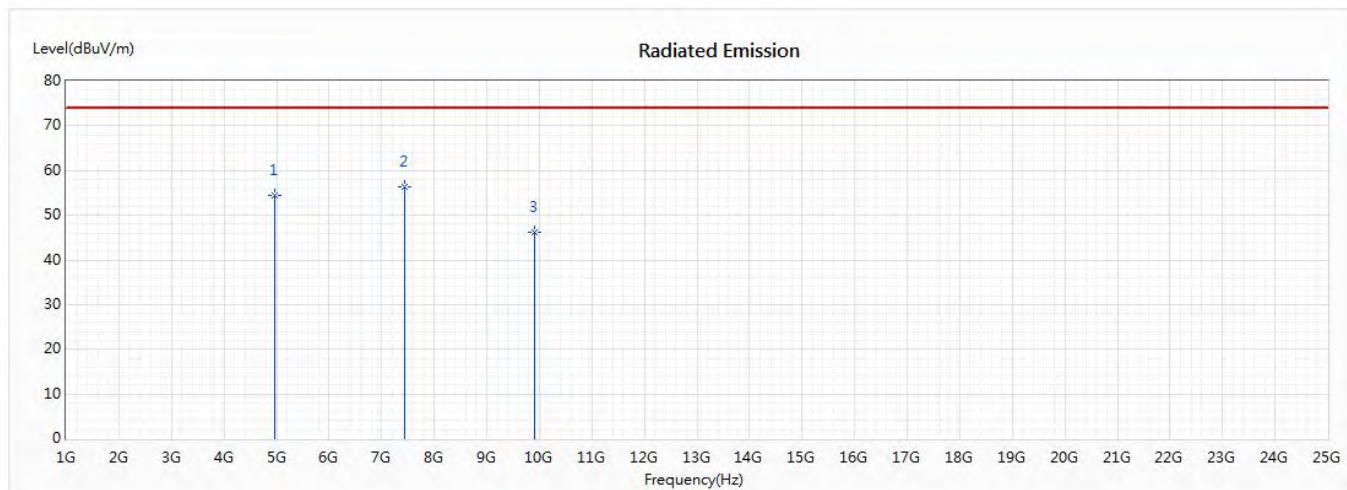
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	4960	54.32	74.00	-19.68	65.21	-10.89	PK
* 2	7440	56.41	74.00	-17.59	71.03	-14.62	PK
3	9920	46.30	74.00	-27.70	60.53	-14.23	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

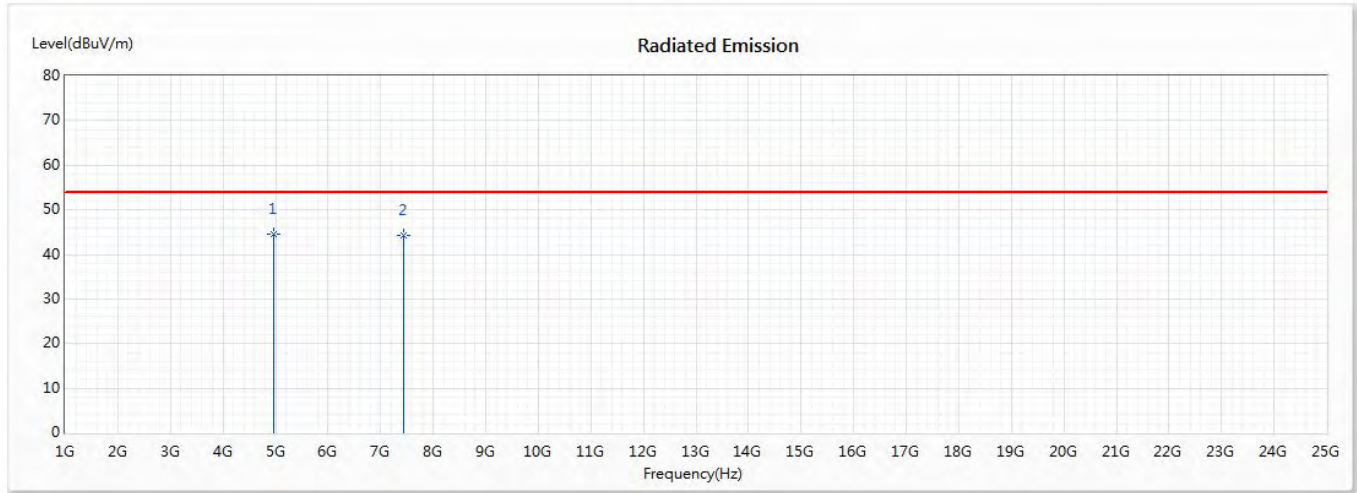
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	44.60	54.00	-9.40	55.49	-10.89	AV
2	7440	44.31	54.00	-9.69	58.93	-14.62	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

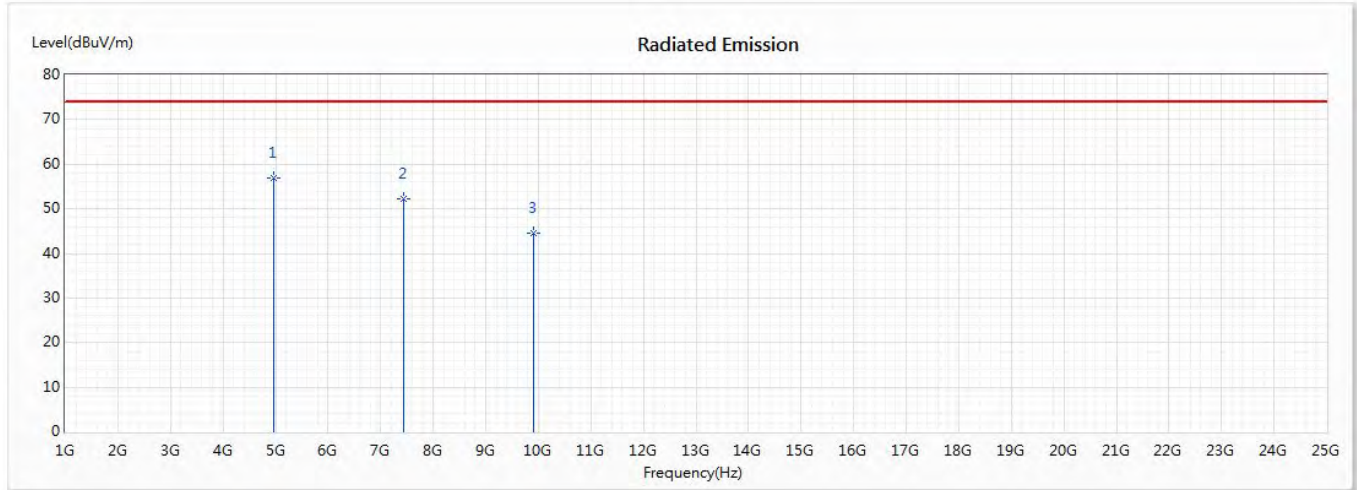
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	56.88	74.00	-17.12	67.77	-10.89	PK
2	7440	52.12	74.00	-21.88	66.74	-14.62	PK
3	9920	44.49	74.00	-29.51	58.72	-14.23	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

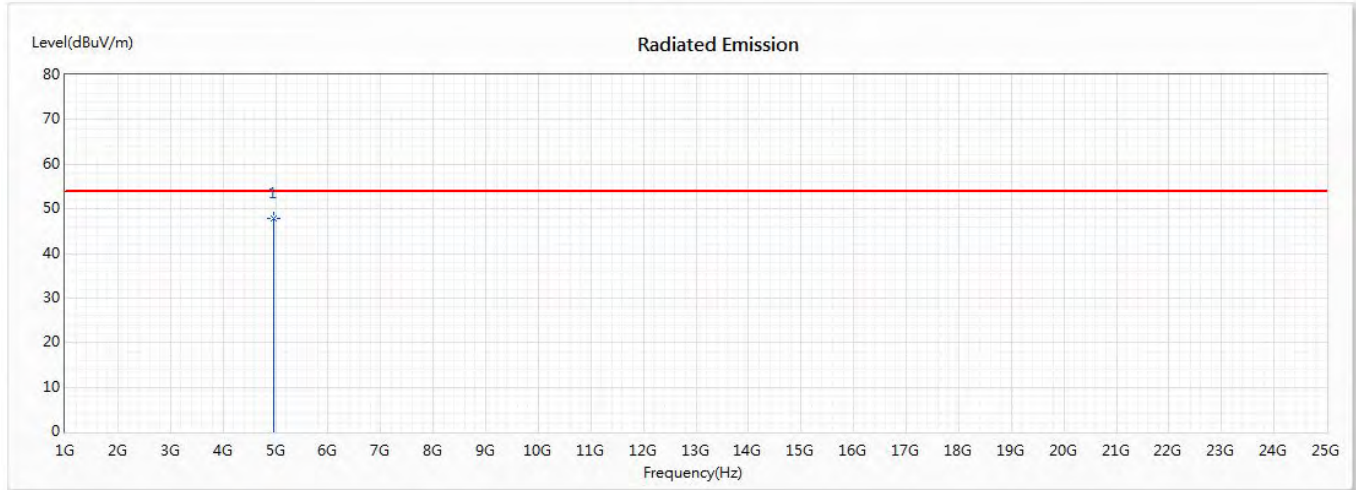
測試項目：不必要的輻射強度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	4960	47.78	54.00	-6.22	58.67	-10.89	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 30 日

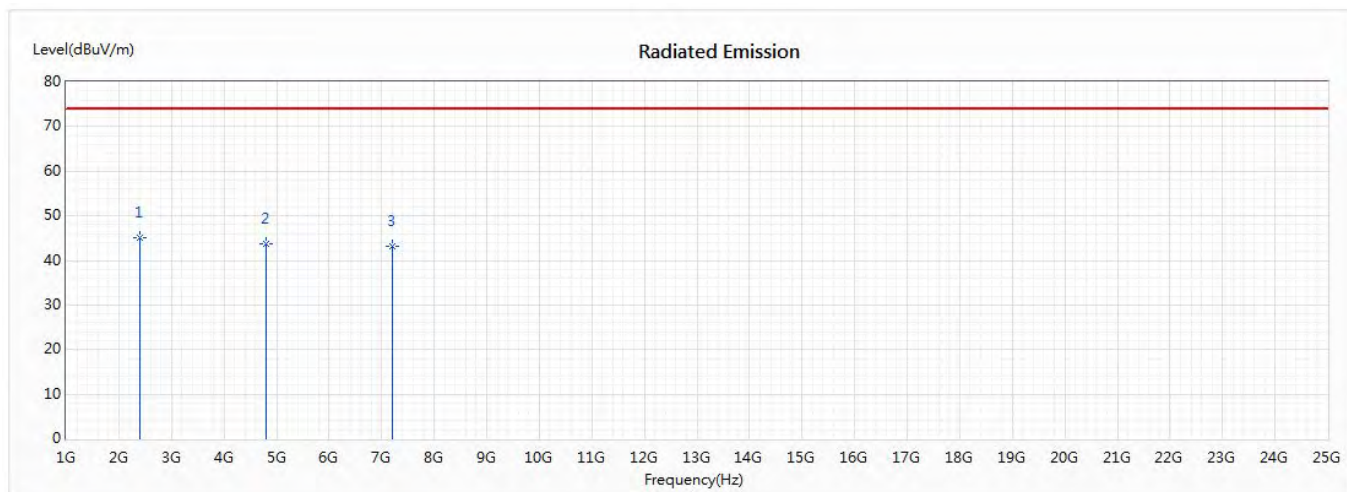
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	2402	45.12	74.00	-28.88	59.86	-14.74	PK
2	4804	43.66	74.00	-30.34	55.81	-12.15	PK
3	7206	43.18	74.00	-30.82	56.32	-13.14	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 30 日

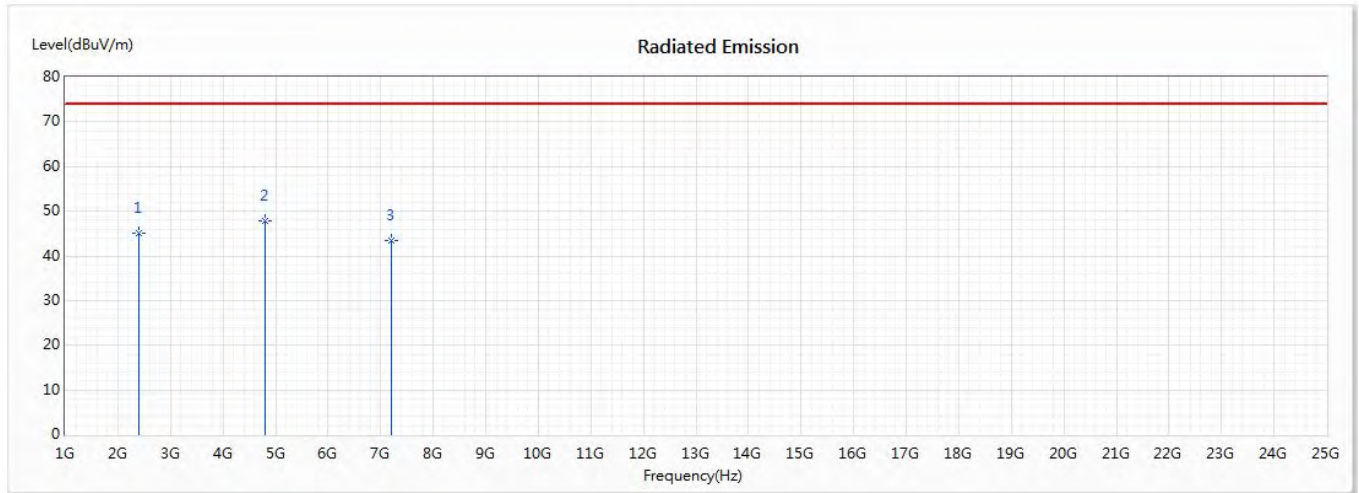
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2402	45.03	74.00	-28.97	59.77	-14.74	PK
* 2	4804	47.72	74.00	-26.28	59.87	-12.15	PK
3	7206	43.49	74.00	-30.51	56.63	-13.14	PK

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 30 日

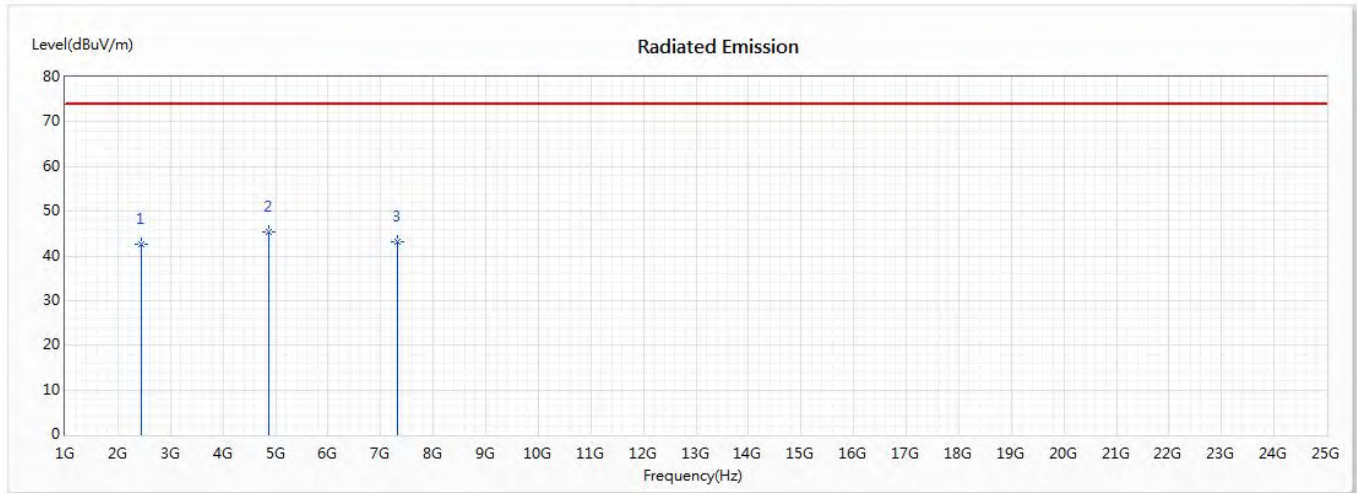
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2441	42.55	74.00	-31.45	57.02	-14.47	PK
* 2	4882	45.31	74.00	-28.69	56.90	-11.59	PK
3	7323	43.06	74.00	-30.94	56.63	-13.57	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 30 日

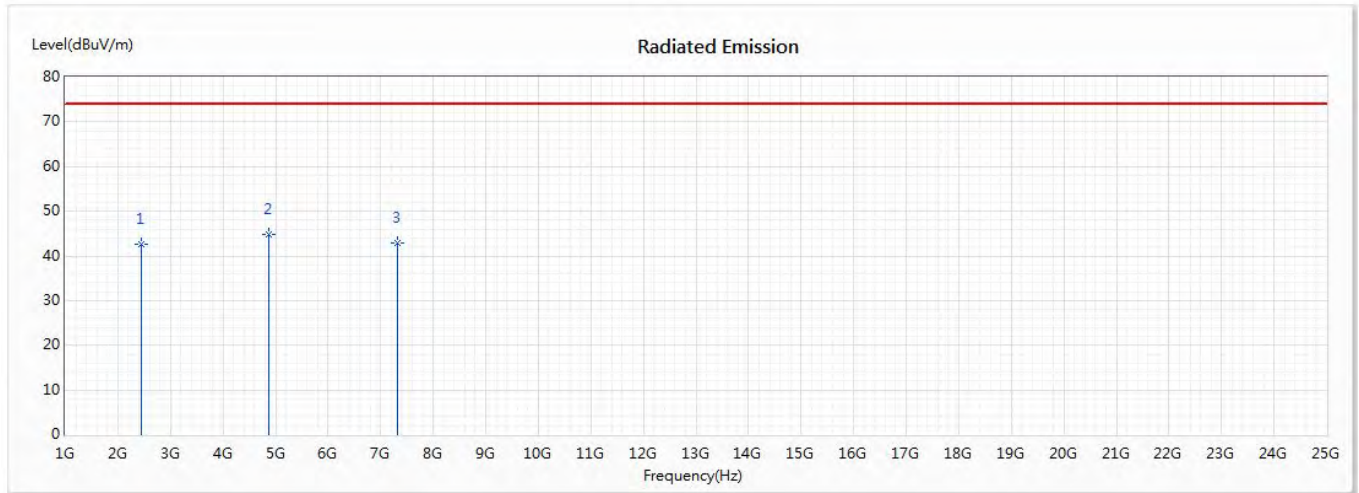
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2441	42.67	74.00	-31.33	57.14	-14.47	PK
* 2	4882	44.85	74.00	-29.15	56.44	-11.59	PK
3	7323	43.00	74.00	-31.00	56.57	-13.57	PK

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 30 日

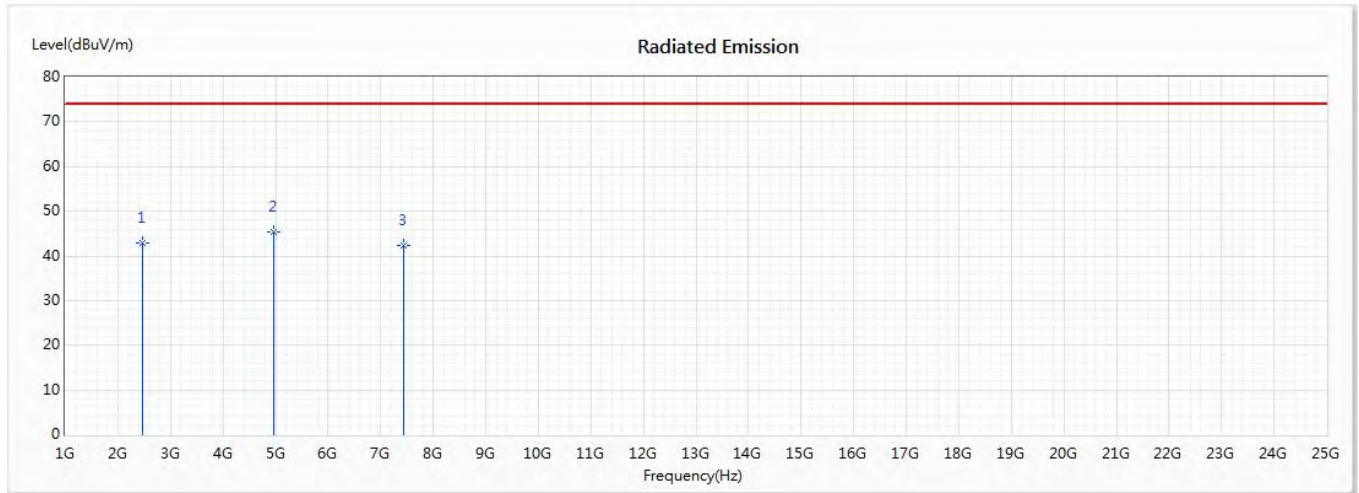
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480	42.76	74.00	-31.24	57.14	-14.38	PK
* 2	4960	45.49	74.00	-28.51	56.38	-10.89	PK
3	7440	42.32	74.00	-31.68	56.94	-14.62	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 30 日

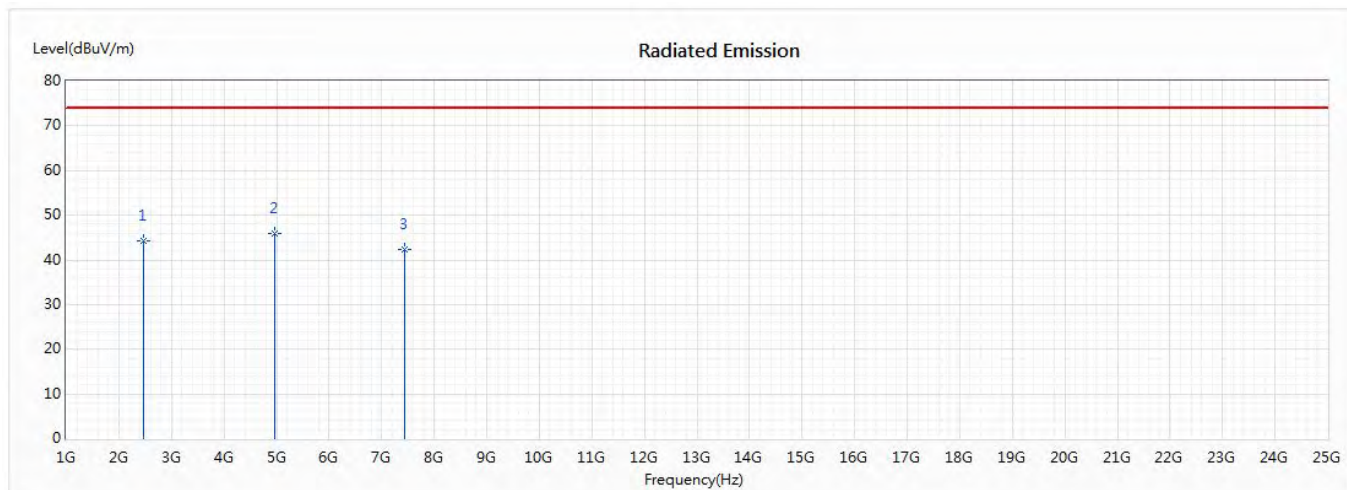
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480	44.37	74.00	-29.63	58.75	-14.38	PK
* 2	4960	45.85	74.00	-28.15	56.74	-10.89	PK
3	7440	42.40	74.00	-31.60	57.02	-14.62	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

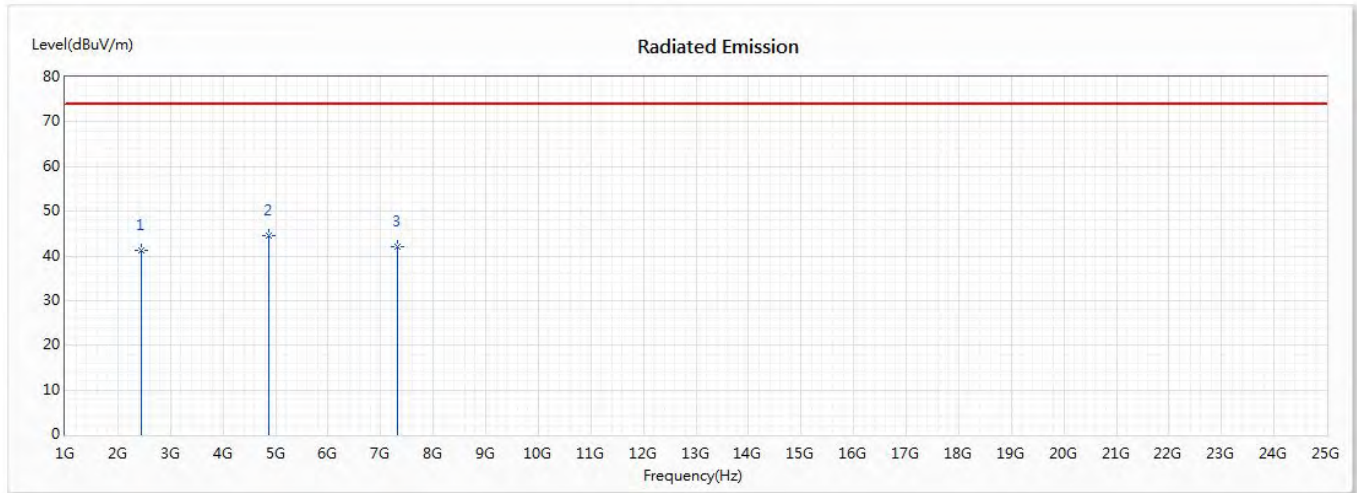
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2440	41.19	74.00	-32.81	55.66	-14.47	PK
* 2	4880	44.46	74.00	-29.54	56.06	-11.60	PK
3	7320	42.02	74.00	-31.98	55.57	-13.55	PK

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 21 日

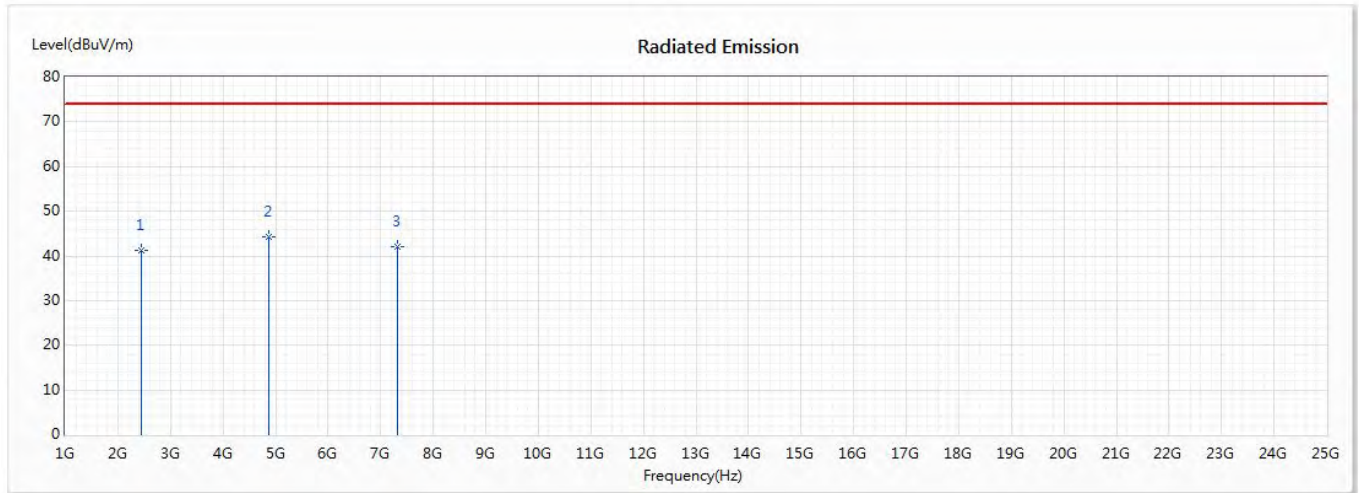
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2440	41.18	74.00	-32.82	55.65	-14.47	PK
* 2	4880	44.25	74.00	-29.75	55.85	-11.60	PK
3	7320	42.10	74.00	-31.90	55.65	-13.55	PK

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

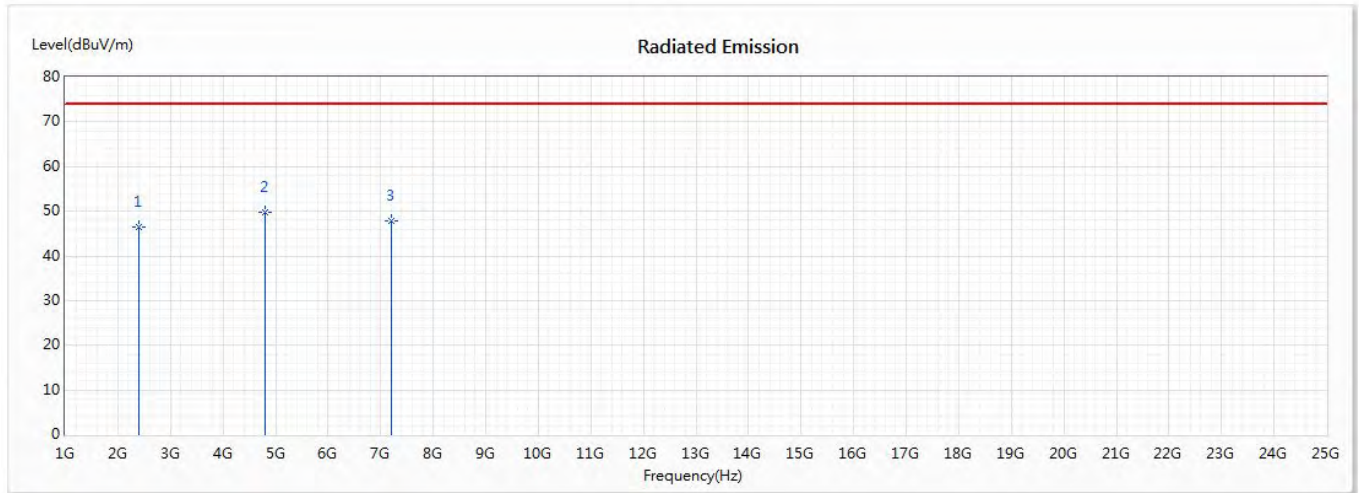
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2402	46.47	74.00	-27.53	61.21	-14.74	PK
* 2	4804	49.78	74.00	-24.22	61.93	-12.15	PK
3	7206	47.79	74.00	-26.21	60.93	-13.14	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

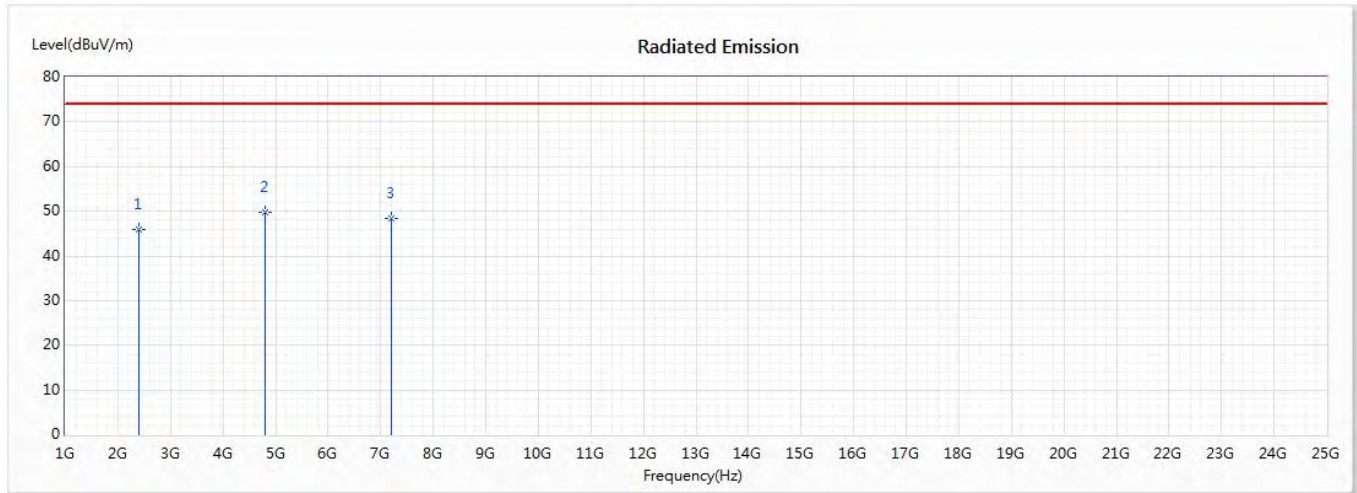
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2402	45.81	74.00	-28.19	60.55	-14.74	PK
* 2	4804	49.87	74.00	-24.13	62.02	-12.15	PK
3	7206	48.39	74.00	-25.61	61.53	-13.14	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report..

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

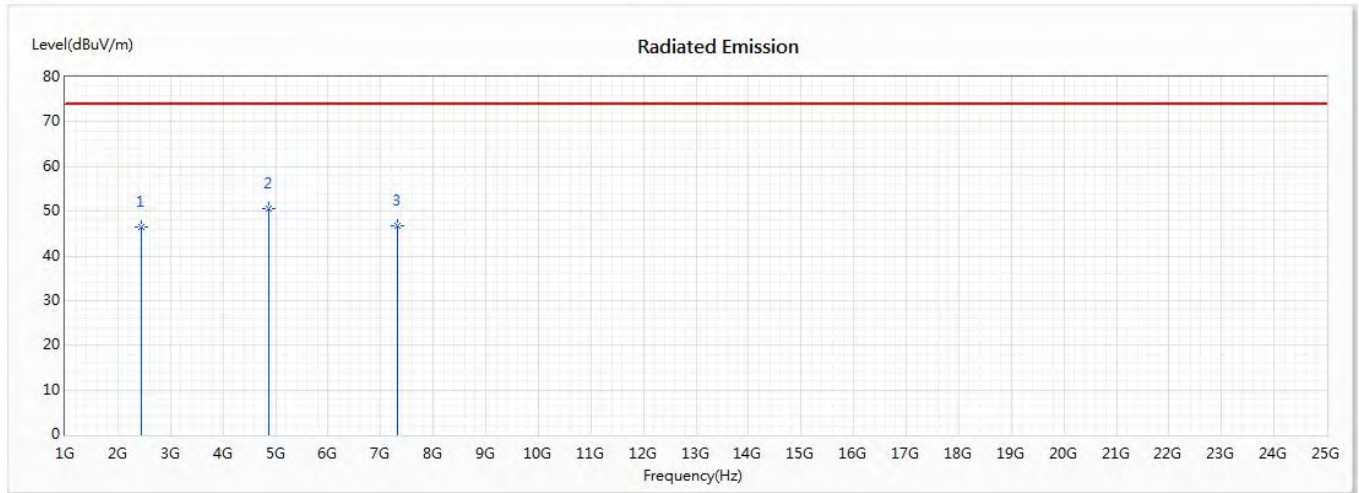
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2440	46.39	74.00	-27.61	60.86	-14.47	PK
* 2	4880	50.57	74.00	-23.43	62.17	-11.60	PK
3	7320	46.76	74.00	-27.24	60.31	-13.55	PK

- Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.
 3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
 4. The average measurement was not performed when the peak measured data under the limit of average detection.
 5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

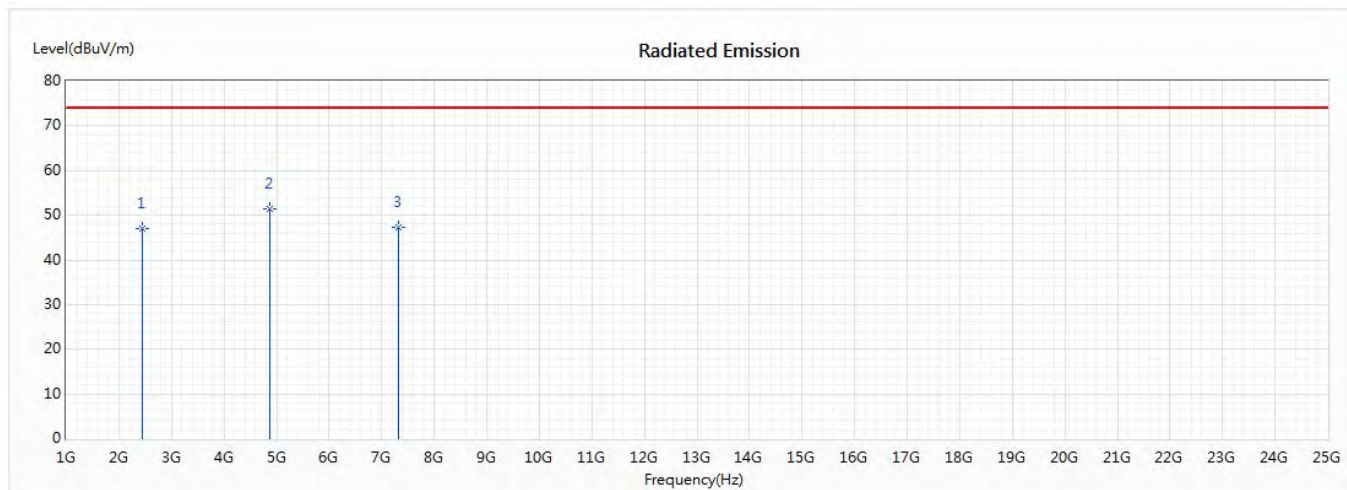
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

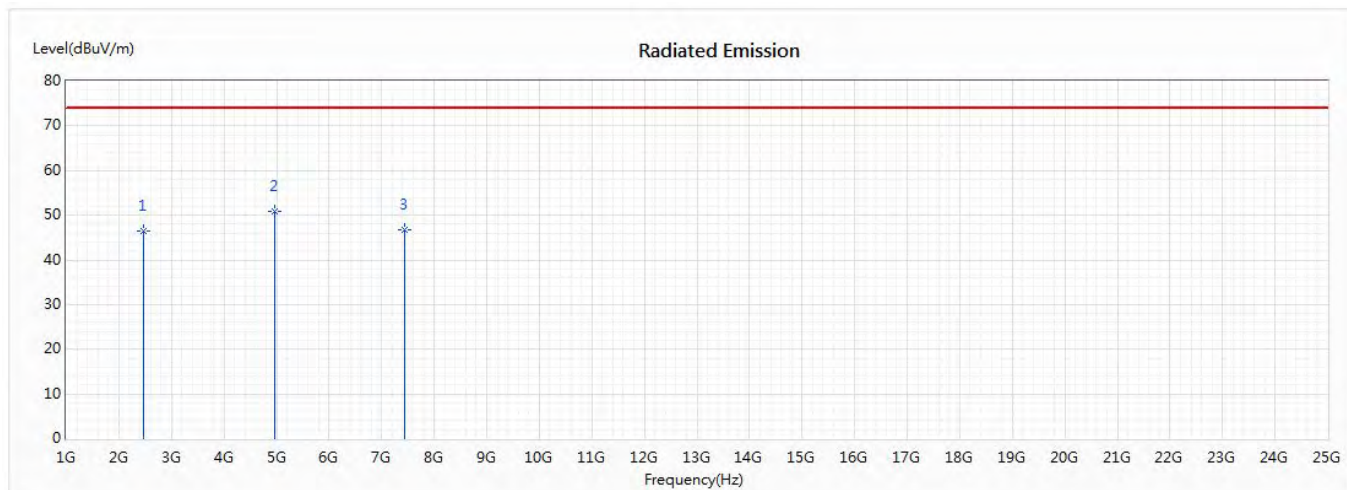
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480	46.53	74.00	-27.47	60.91	-14.38	PK
* 2	4960	50.89	74.00	-23.11	61.78	-10.89	PK
3	7440	46.67	74.00	-27.33	61.29	-14.62	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 22 日

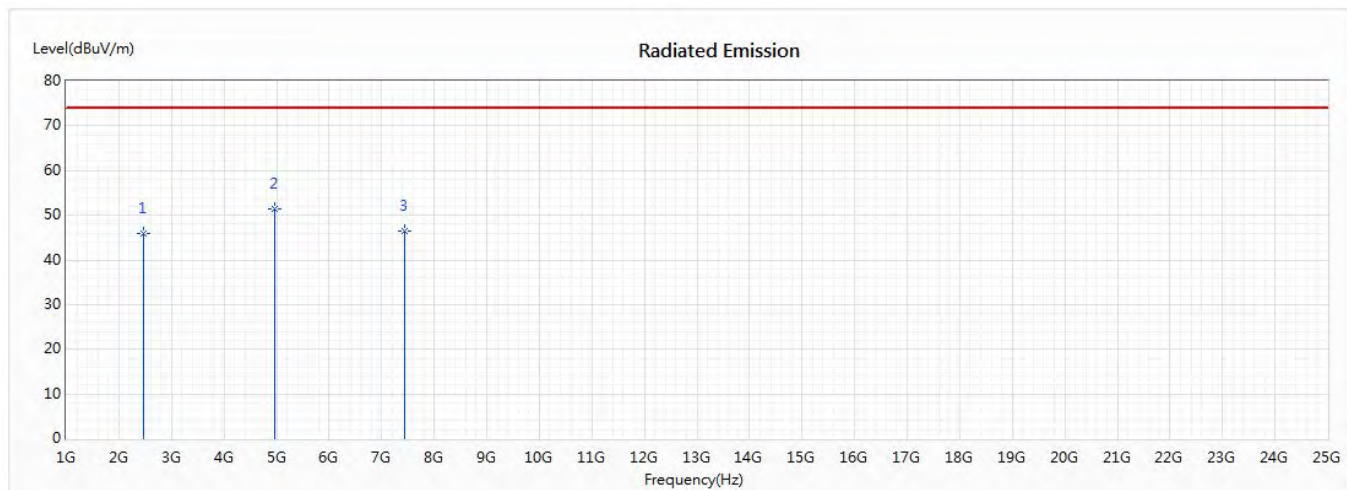
測試項目：不必要的輻射強度

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

環境溫度：15 °C

環境濕度：61 %

Vertical



Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：準尖峰值

測試日期：109 年 01 月 30 日

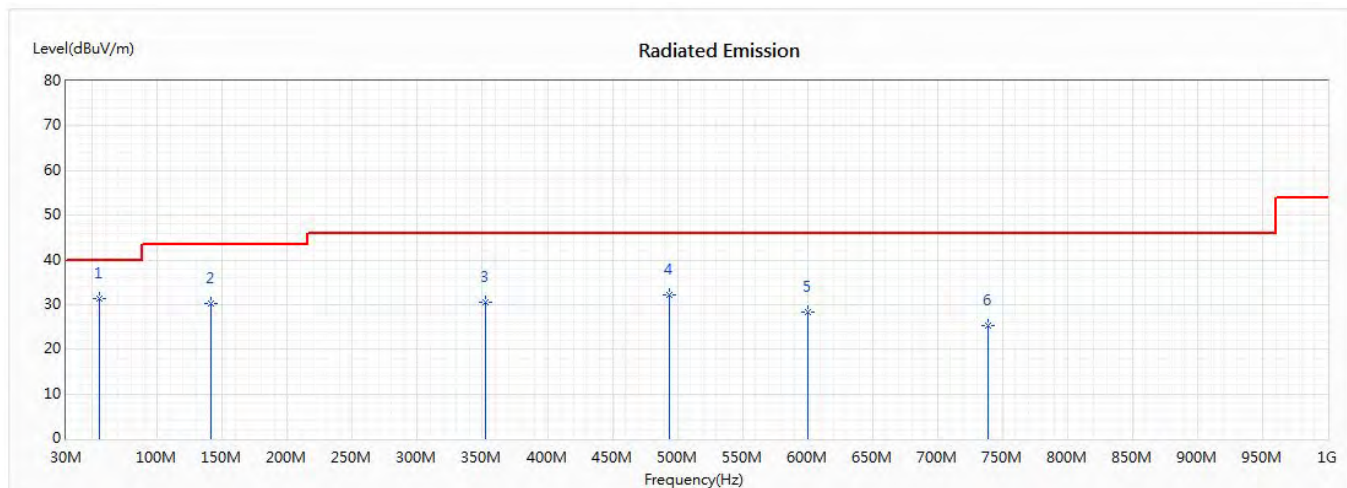
測試項目：一般不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15.8 °C

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	55.304	31.29	40.00	-8.71	49.00	-17.71	QP
2	141.058	30.19	43.50	-13.31	48.04	-17.85	QP
3	351.928	30.48	46.00	-15.52	43.69	-13.21	QP
4	493.913	32.21	46.00	-13.79	43.46	-11.25	QP
5	600.754	28.28	46.00	-17.72	34.94	-6.66	QP
6	738.522	25.23	46.00	-20.77	30.98	-5.75	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss - Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：準尖峰值

測試日期：109年01月30日

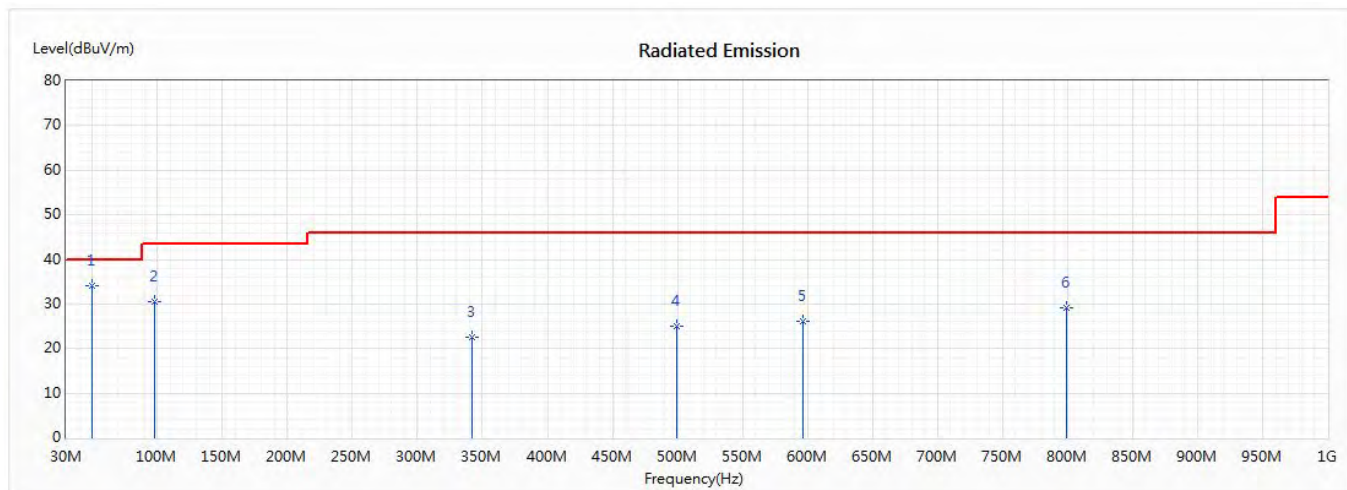
測試項目：一般不必要的輻射強度

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：15.8 °C

環境濕度：59 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	49.681	33.98	40.00	-6.02	51.97	-17.99	QP
2	97.478	30.44	43.50	-13.06	47.00	-16.56	QP
3	342.087	22.68	46.00	-23.32	36.51	-13.83	QP
4	499.536	25.11	46.00	-20.89	35.97	-10.86	QP
5	596.536	26.17	46.00	-19.83	32.93	-6.76	QP
6	798.971	29.12	46.00	-16.88	38.03	-8.91	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：準尖峰值

測試日期：109 年 01 月 30 日

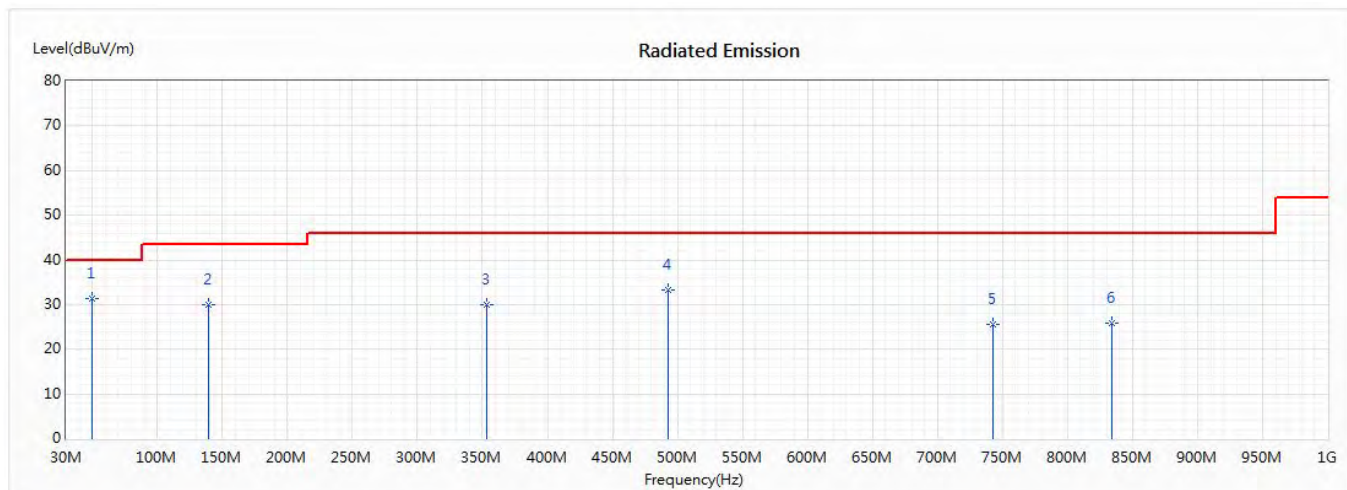
測試項目：一般不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：15.8 °C

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	49.681	31.44	40.00	-8.56	49.43	-17.99	QP
2	139.652	29.85	43.50	-13.65	47.41	-17.56	QP
3	353.333	29.91	46.00	-16.09	43.04	-13.13	QP
4	492.507	33.27	46.00	-12.73	44.61	-11.34	QP
5	742.739	25.65	46.00	-20.35	31.47	-5.82	QP
6	834.116	25.92	46.00	-20.08	34.51	-8.59	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：準尖峰值

測試日期：109 年 01 月 22 日

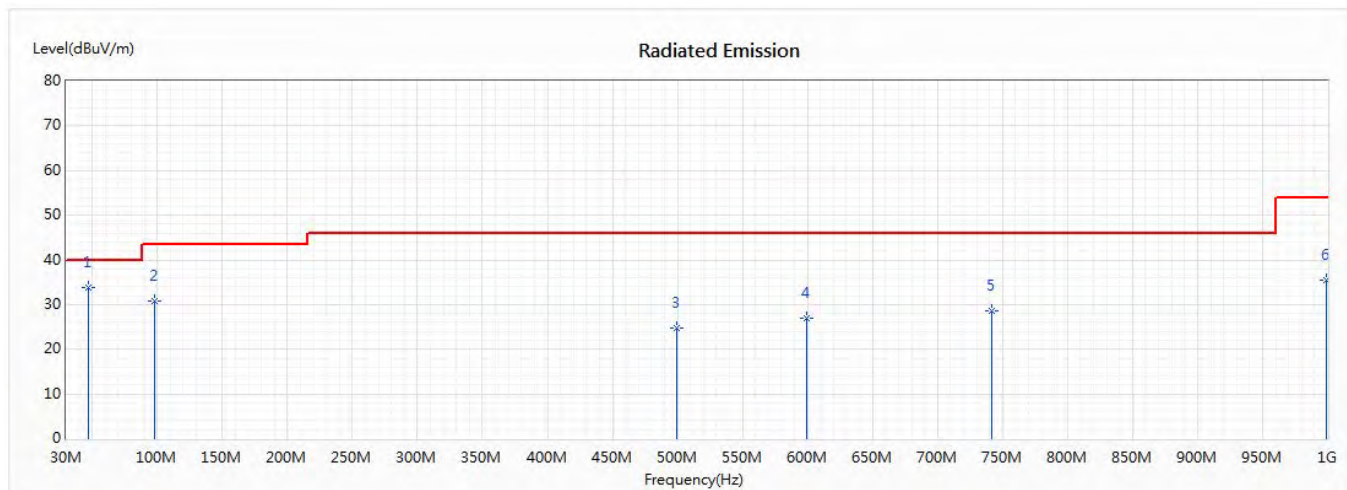
測試項目：一般不必要的輻射強度

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：22 °C

環境濕度：63 %

Vertical



Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss - Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：準尖峰值

測試日期：109 年 01 月 30 日

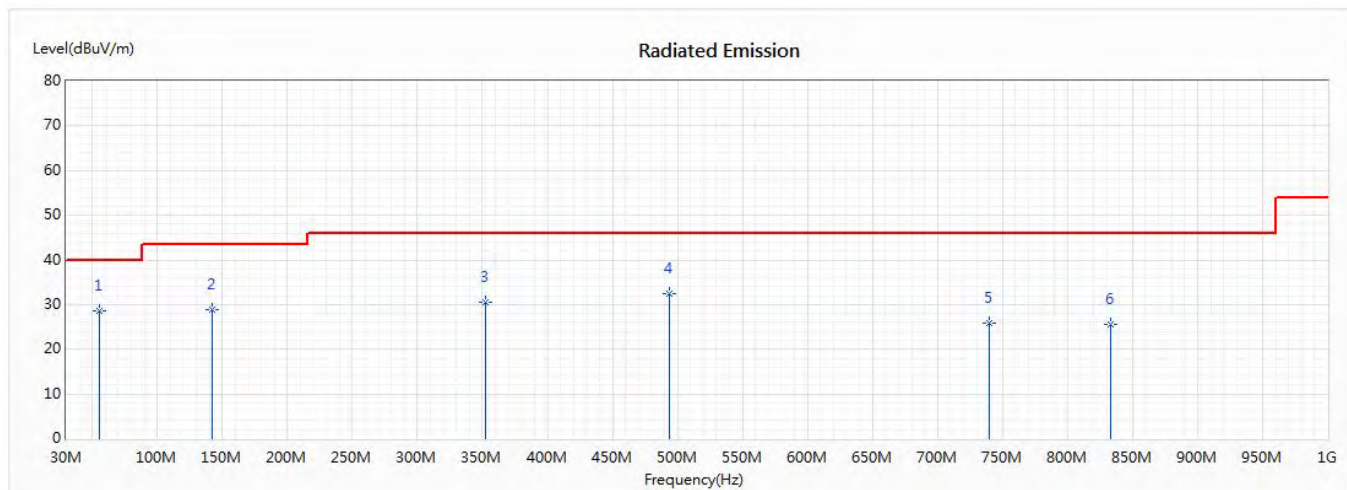
測試項目：一般不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15.8 °C

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	55.304	28.53	40.00	-11.47	46.24	-17.71	QP
2	142.464	28.80	43.50	-14.70	46.97	-18.17	QP
3	351.928	30.46	46.00	-15.54	43.67	-13.21	QP
4	493.913	32.35	46.00	-13.65	43.60	-11.25	QP
5	739.928	25.73	46.00	-20.27	31.25	-5.52	QP
6	832.71	25.43	46.00	-20.57	34.06	-8.63	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

檢測器：準尖峰值

測試日期：109 年 01 月 30 日

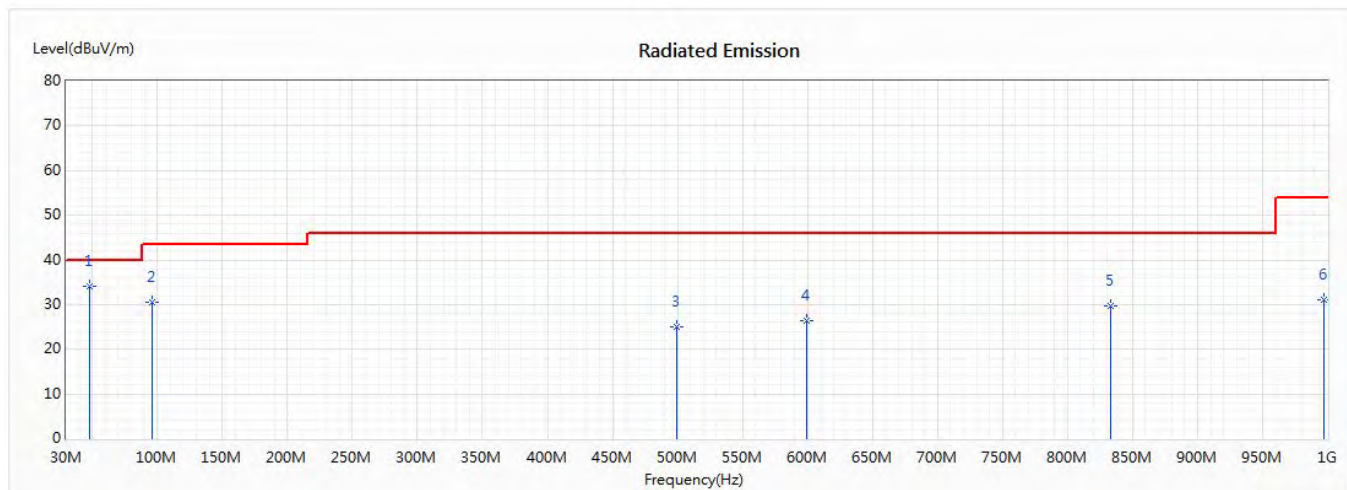
測試項目：一般不必要的輻射強度

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：15.8 °C

環境濕度：59 %

Vertical



Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss - Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 1: 發射器 - BLE Mode _ 1Mbps

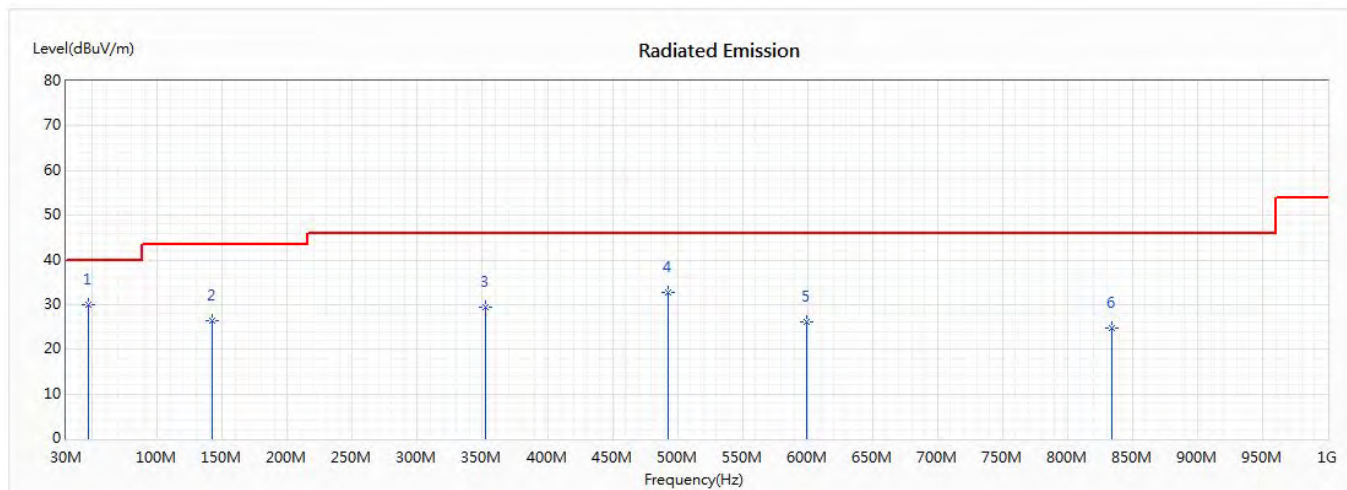
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	46.87	29.99	40.00	-10.01	48.12	-18.13	QP
2	142.464	26.35	43.50	-17.15	44.52	-18.17	QP
3	351.928	29.49	46.00	-16.51	42.70	-13.21	QP
4	492.507	32.71	46.00	-13.29	44.05	-11.34	QP
5	599.348	26.15	46.00	-19.85	32.78	-6.63	QP
6	834.116	24.78	46.00	-21.22	33.37	-8.59	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

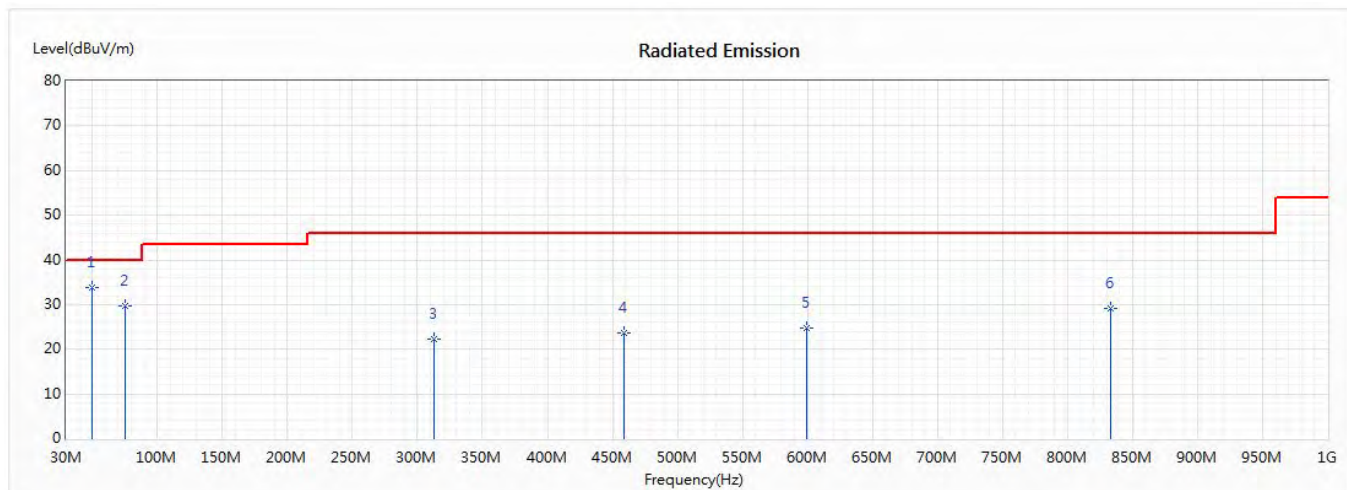
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	49.681	33.89	40.00	-6.11	51.88	-17.99	QP
2	74.986	29.76	40.00	-10.24	50.11	-20.35	QP
3	312.565	22.16	46.00	-23.84	36.44	-14.28	QP
4	458.768	23.59	46.00	-22.41	34.05	-10.46	QP
5	599.348	24.82	46.00	-21.18	31.45	-6.63	QP
6	832.71	29.21	46.00	-16.79	37.84	-8.63	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 1: 發射器 - BLE Mode _ 2Mbps

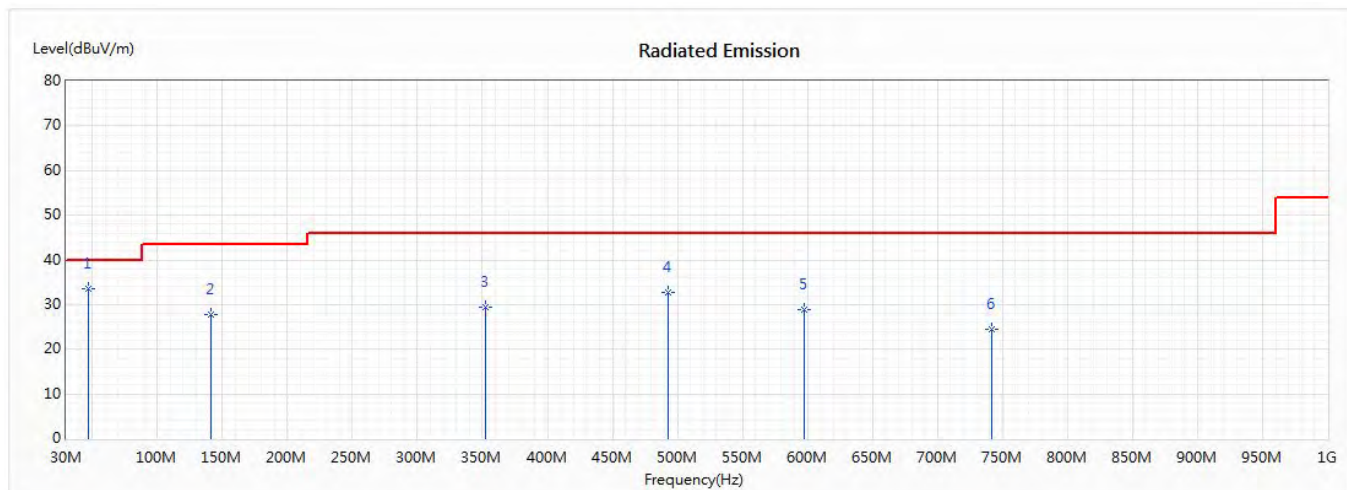
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	46.87	33.41	40.00	-6.59	51.54	-18.13	QP
2	141.058	27.87	43.50	-15.63	45.72	-17.85	QP
3	351.928	29.44	46.00	-16.56	42.65	-13.21	QP
4	492.507	32.72	46.00	-13.28	44.06	-11.34	QP
5	597.942	28.85	46.00	-17.15	35.55	-6.70	QP
6	741.333	24.54	46.00	-21.46	30.21	-5.67	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

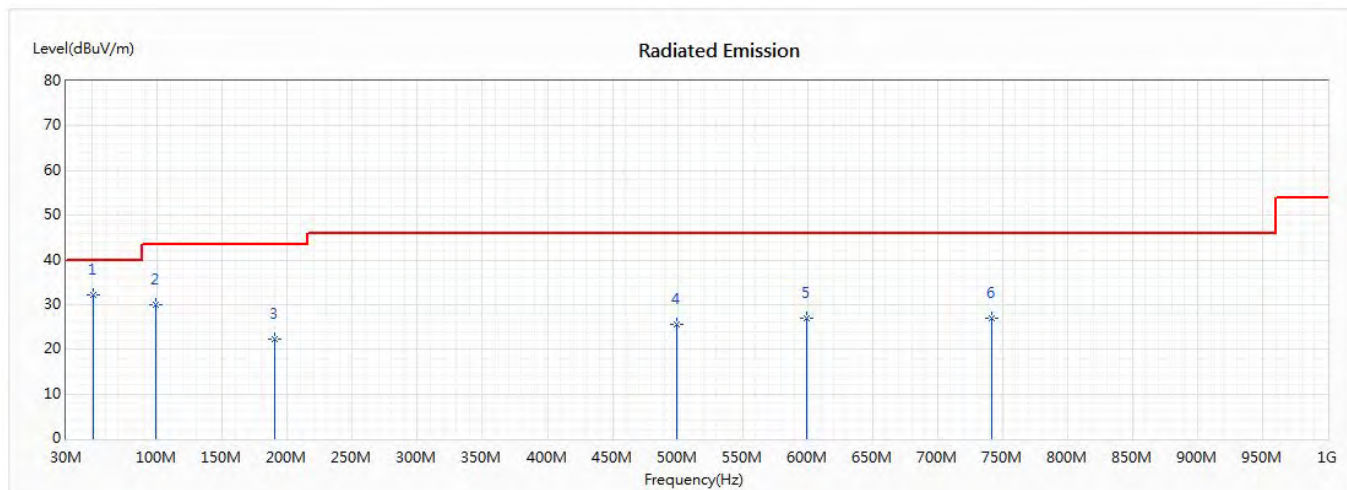
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	51.087	32.14	40.00	-7.86	50.03	-17.89	QP
2	98.884	30.05	43.50	-13.45	46.31	-16.26	QP
3	190.261	22.30	43.50	-21.20	41.03	-18.73	QP
4	499.536	25.65	46.00	-20.35	36.51	-10.86	QP
5	599.348	26.90	46.00	-19.10	33.53	-6.63	QP
6	741.333	26.86	46.00	-19.14	32.53	-5.67	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 39 (2441MHz)

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

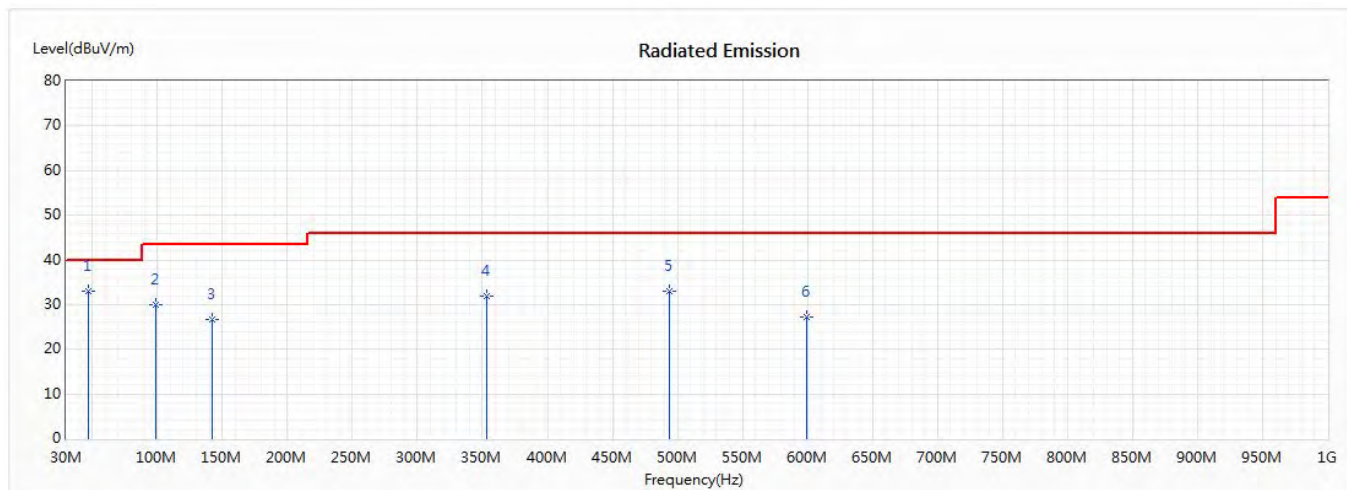
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	46.87	33.11	40.00	-6.89	51.24	-18.13	QP
2	98.884	30.02	43.50	-13.48	46.28	-16.26	QP
3	142.464	26.70	43.50	-16.80	44.87	-18.17	QP
4	353.333	31.76	46.00	-14.24	44.89	-13.13	QP
5	493.913	32.93	46.00	-13.07	44.18	-11.25	QP
6	599.348	27.22	46.00	-18.78	33.85	-6.63	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 39 (2441MHz)

測試模式：Mode 2: 接收器 - 3Mbps (8DPSK)

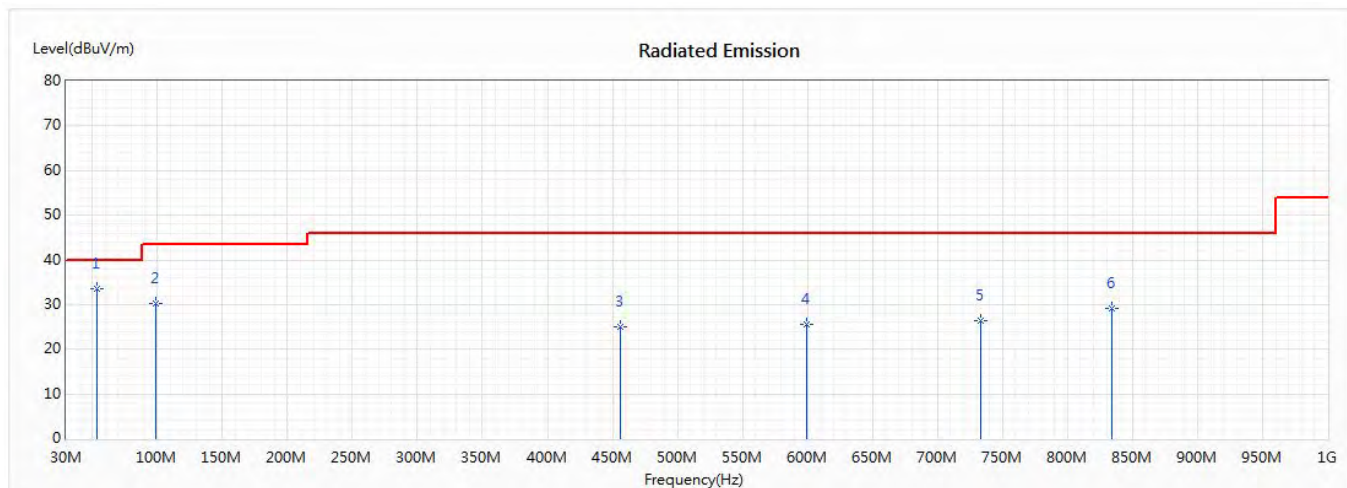
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	53.899	33.61	40.00	-6.39	51.29	-17.68	QP
2	98.884	30.33	43.50	-13.17	46.59	-16.26	QP
3	455.957	25.02	46.00	-20.98	35.37	-10.35	QP
4	599.348	25.65	46.00	-20.35	32.28	-6.63	QP
5	732.899	26.43	46.00	-19.57	33.15	-6.72	QP
6	834.116	29.07	46.00	-16.93	37.66	-8.59	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 2: 接收器 - BLE Mode_ 1Mbps

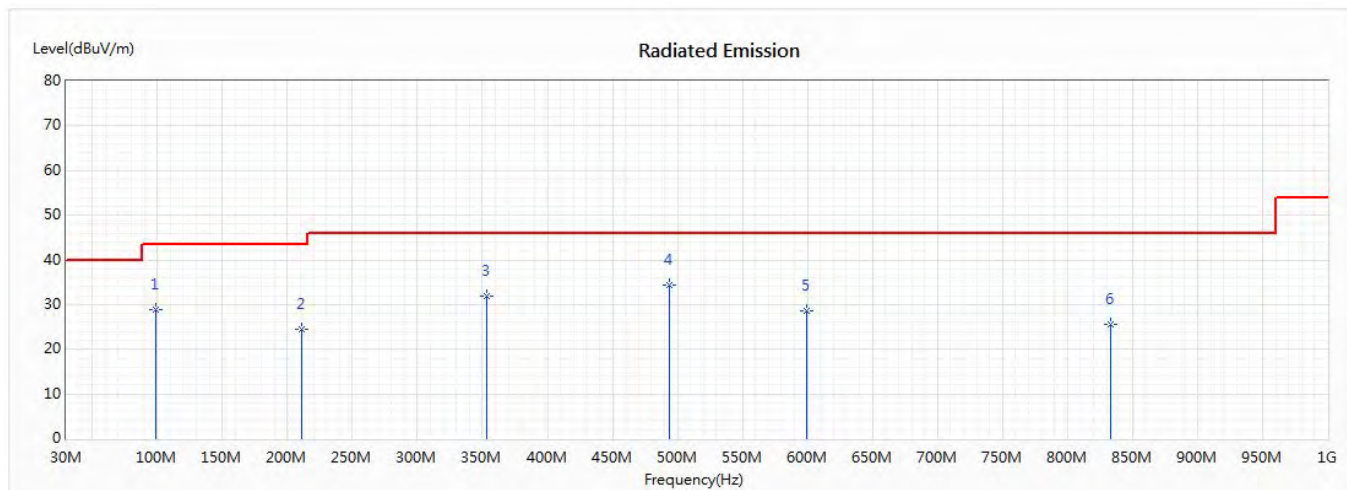
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	98.884	28.92	43.50	-14.58	45.18	-16.26	QP
2	211.348	24.38	43.50	-19.12	42.58	-18.20	QP
3	353.333	31.94	46.00	-14.06	45.07	-13.13	QP
* 4	493.913	34.27	46.00	-11.73	45.52	-11.25	QP
5	599.348	28.61	46.00	-17.39	35.24	-6.63	QP
6	832.71	25.43	46.00	-20.57	34.06	-8.63	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 2: 接收器 - BLE Mode_ 1Mbps

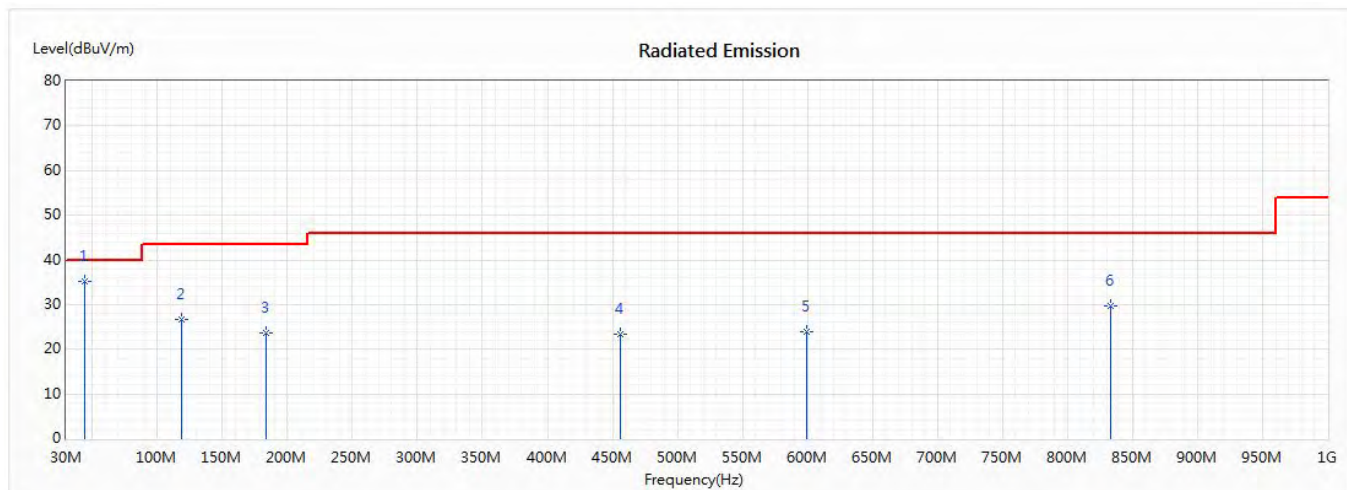
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	44.058	35.29	40.00	-4.71	53.58	-18.29	QP
2	118.565	26.60	43.50	-16.90	43.50	-16.90	QP
3	183.232	23.77	43.50	-19.73	42.89	-19.12	QP
4	455.957	23.29	46.00	-22.71	33.64	-10.35	QP
5	599.348	23.81	46.00	-22.19	30.44	-6.63	QP
6	832.71	29.73	46.00	-16.27	38.36	-8.63	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

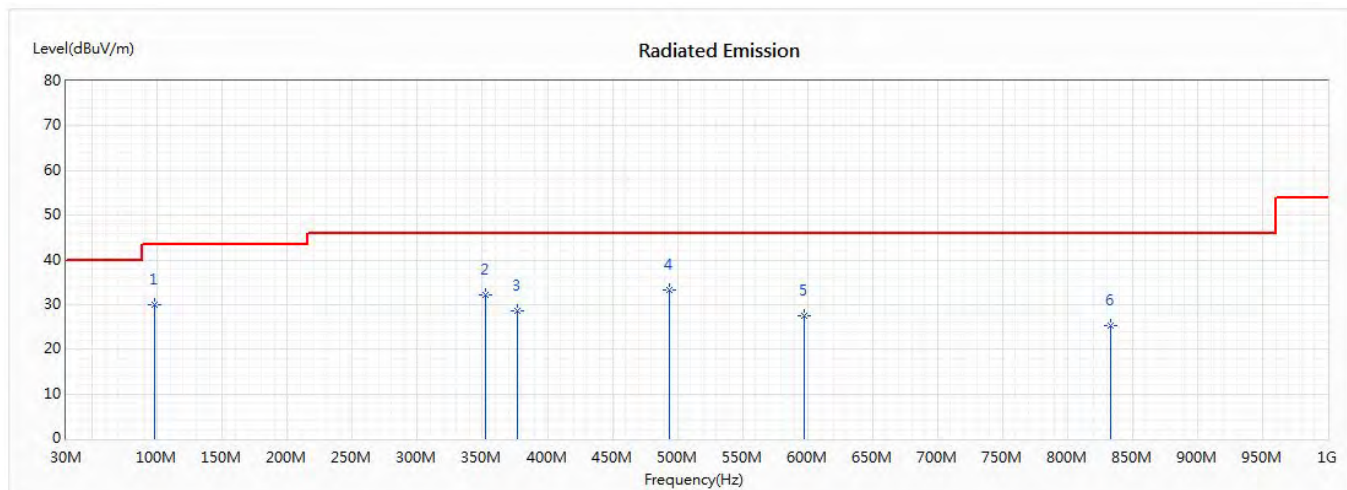
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	97.478	29.83	43.50	-13.67	46.39	-16.56	QP
2	351.928	32.07	46.00	-13.93	45.28	-13.21	QP
3	377.232	28.70	46.00	-17.30	40.83	-12.13	QP
* 4	493.913	33.37	46.00	-12.63	44.62	-11.25	QP
5	597.942	27.62	46.00	-18.38	34.32	-6.70	QP
6	832.71	25.25	46.00	-20.75	33.88	-8.63	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：一般不必要的輻射強度

測試頻道：CH 19 (2440MHz)

測試模式：Mode 2: 接收器 - BLE Mode_2Mbps

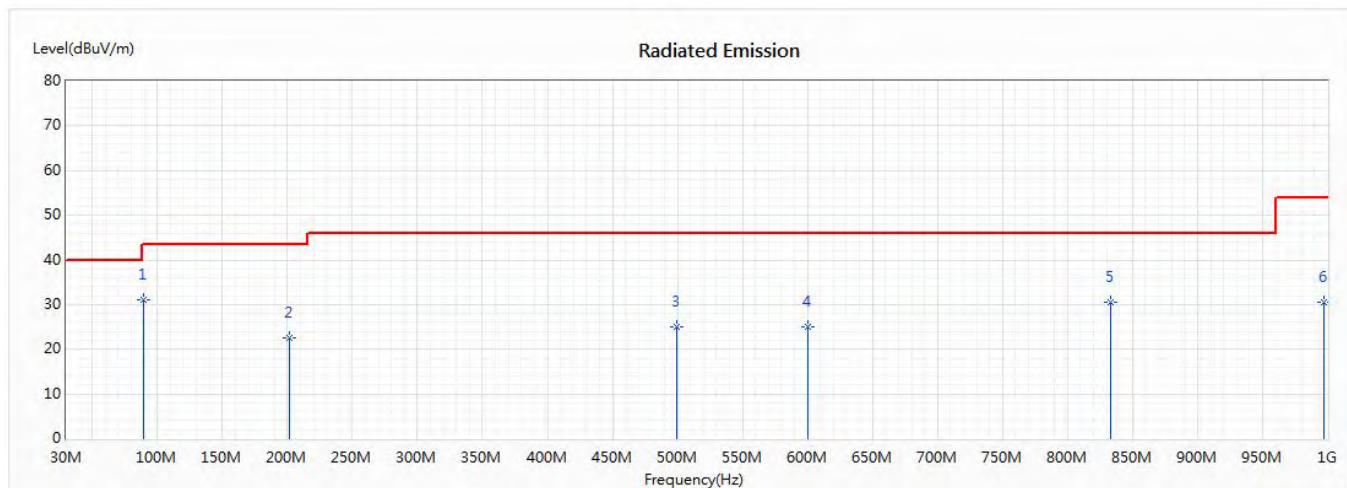
檢測器：準尖峰值

環境溫度：15.8 °C

測試日期：109 年 01 月 30 日

環境濕度：59 %

Vertical



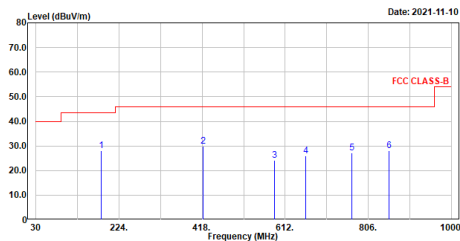
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	89.043	31.16	43.50	-12.34	48.45	-17.29	QP
2	201.507	22.58	43.50	-20.92	40.73	-18.15	QP
3	499.536	24.88	46.00	-21.12	35.74	-10.86	QP
4	600.754	25.12	46.00	-20.88	31.78	-6.66	QP
5	832.71	30.43	46.00	-15.57	39.06	-8.63	QP
6	997.188	30.58	54.00	-23.42	38.58	-8.00	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

(系列一)

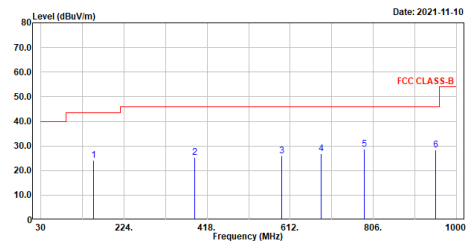
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_bt3M_2441MHz
TEST BY :Johnny



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	183.260	28.20	43.50	-15.30	41.49	-13.29	QP
2	419.940	29.94	46.00	-16.06	38.47	-8.53	QP
3	586.780	24.06	46.00	-21.94	28.79	-4.73	QP
4	660.500	26.01	46.00	-19.99	29.57	-3.56	QP
5	768.170	27.16	46.00	-18.84	29.22	-2.06	QP
6	854.500	27.93	46.00	-18.07	29.18	-1.25	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

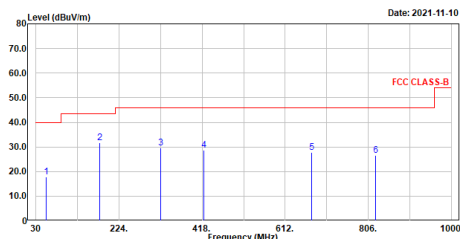
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_bt3M_2441MHz
TEST BY :Johnny



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	153.190	24.08	43.50	-19.42	35.75	-11.67	QP
2	380.900	25.25	46.00	-20.75	34.38	-9.13	QP
3	592.600	25.83	46.00	-20.17	30.34	-4.51	QP
4	683.700	26.98	46.00	-19.02	30.33	-3.35	QP
5	784.660	28.68	46.00	-17.32	30.50	-1.82	QP
6	951.500	28.45	46.00	-17.55	28.58	-0.13	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

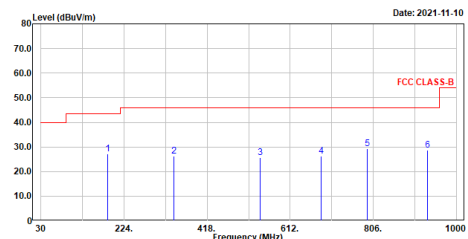
Site :966-1
Condition :3m ,HORIZONTAL
Mode :RX_bt3M_2441MHz
TEST BY :Johnny



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	53.280	17.83	40.00	-22.17	29.93	-12.10	QP
2	179.380	31.66	43.50	-11.84	44.50	-12.84	QP
3	321.970	29.69	46.00	-16.31	40.11	-10.42	QP
4	421.880	28.55	46.00	-17.45	37.00	-8.45	QP
5	673.110	27.64	46.00	-18.36	31.17	-3.53	QP
6	823.460	26.49	46.00	-19.51	28.08	-1.59	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

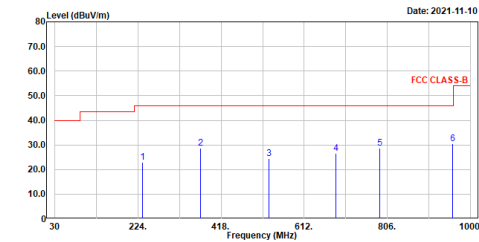
Site :966-1
Condition :3m ,VERTICAL
Mode :RX_bt3M_2441MHz
TEST BY :Johnny



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	186.170	27.24	43.50	-16.26	40.91	-13.67	QP
2	340.400	26.25	46.00	-19.75	36.37	-10.12	QP
3	541.190	25.70	46.00	-20.30	31.66	-5.96	QP
4	684.750	26.41	46.00	-19.59	29.70	-3.29	QP
5	791.450	29.33	46.00	-16.67	30.98	-1.65	QP
6	933.070	28.66	46.00	-17.34	29.06	-0.40	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

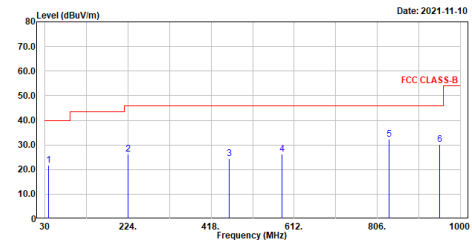
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_b1e2M_2440MHz
TEST BY :Johnny



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	234.670	22.81	46.00	-23.19	36.01	-13.20	QP
2	369.500	28.67	46.00	-17.33	38.21	-9.54	QP
3	529.550	24.45	46.00	-21.55	30.46	-6.01	QP
4	685.720	26.49	46.00	-19.51	29.76	-3.27	QP
5	788.540	28.73	46.00	-17.27	30.42	-1.69	QP
6	959.260	30.41	46.00	-15.59	30.36	0.05	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

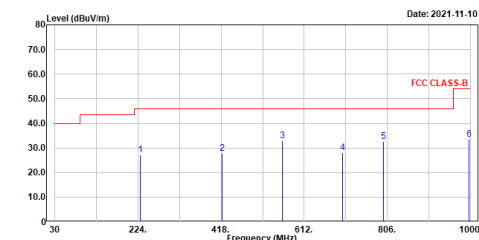
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_b1e2M_2440MHz
TEST BY :Johnny



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	38.730	21.88	46.00	-18.12	34.05	-12.17	QP
2	224.000	26.35	46.00	-19.65	40.47	-14.12	QP
3	460.680	24.55	46.00	-21.45	31.76	-7.21	QP
4	583.870	26.19	46.00	-19.81	31.01	-4.82	QP
5	833.160	32.42	46.00	-13.58	33.93	-1.51	QP
6	952.470	30.04	46.00	-15.96	30.15	-0.11	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

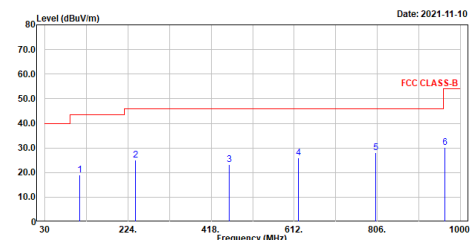
Site :966-1
Condition :3m ,HORIZONTAL
Mode :RX_b1e2M_2440MHz
TEST BY :Johnny



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	229.820	27.26	46.00	-18.74	40.95	-13.69	QP
2	419.940	27.70	46.00	-18.30	36.23	-8.53	QP
3	560.590	33.01	46.00	-12.99	30.60	-5.59	QP
4	701.240	28.02	46.00	-17.98	30.97	-2.95	QP
5	797.270	32.56	46.00	-13.44	34.34	-1.78	QP
6	996.120	33.42	54.00	-20.58	33.25	0.17	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

Site :966-1
Condition :3m ,VERTICAL
Mode :RX_b1e2M_2440MHz
TEST BY :Johnny



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	111.480	19.02	43.50	-24.48	33.83	-14.81	QP
2	241.460	24.92	46.00	-21.08	37.83	-12.91	QP
3	459.710	23.30	46.00	-22.70	30.52	-7.22	QP
4	621.700	26.04	46.00	-19.96	30.30	-4.26	QP
5	803.090	28.02	46.00	-17.98	29.77	-1.75	QP
6	963.140	30.20	54.00	-23.80	30.13	0.07	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

7. 混附發射之 RF 傳導發射

7.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.5，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。如發射機以本節 4.10.1.2(1)(C) 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。

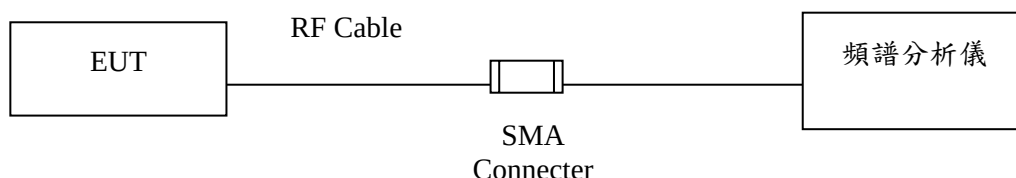
7.2. 量測方法

依據國家通訊傳播委員會低功率射頻器材技術規範之附件三，頻率跳頻展頻系統檢測之參考程序(七) 混附發射之 RF 傳導發射：

(一) 頻譜分析儀設定如下：

1. 頻率掃描範圍足以檢測頻帶內的發射波峰位準以及由受測物產生之最低頻率到第 10 次諧波的所有混附發射，通常需要分幾段以涵蓋全部頻率範圍。
2. 解析頻寬為 100kHz，視訊頻寬不小於解析頻寬。
3. 掃描時間為自動，檢波功能為峰值，訊號軌跡為最大保留(Max Hold)。
4. 將標記設定於任何欲紀錄之波峰上，所顯示之位準值必須符合指定之限制值。

7.3. 測試架構圖



7.4. 量測不確定度

此項測試之量測不確定度為 $\pm 1.20\text{dB}$

7.5. 混附發射之 RF 傳導發射測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

6 dB 頻寬：100KHz

檢測器：峰值

測試日期：109 年 01 月 31 日

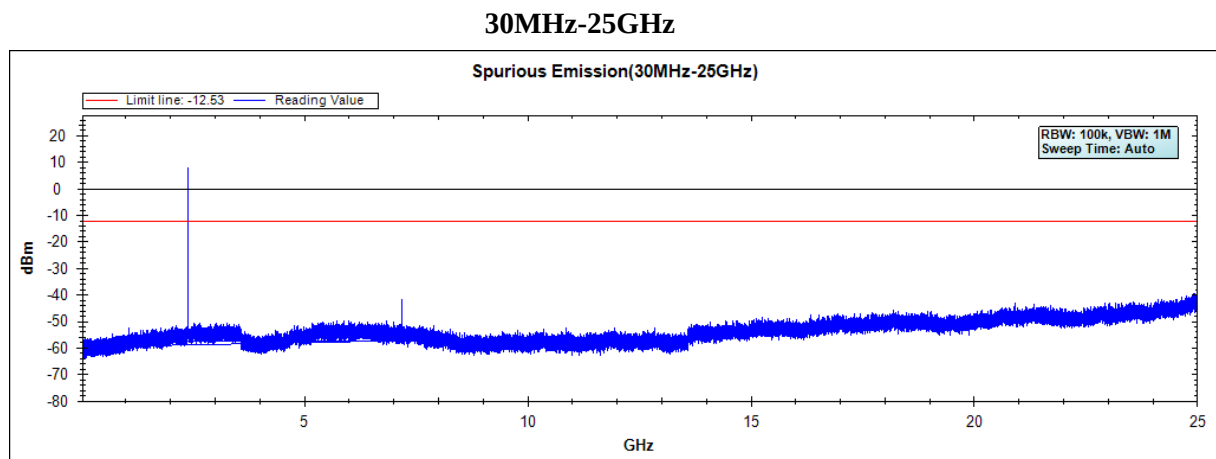
測試項目：混附發射之 RF 傳導發射

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

視頻頻寬：1MHz

環境溫度：20 °C

環境濕度：52 %



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 39 (2441MHz)

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

6 dB 頻寬：100KHz

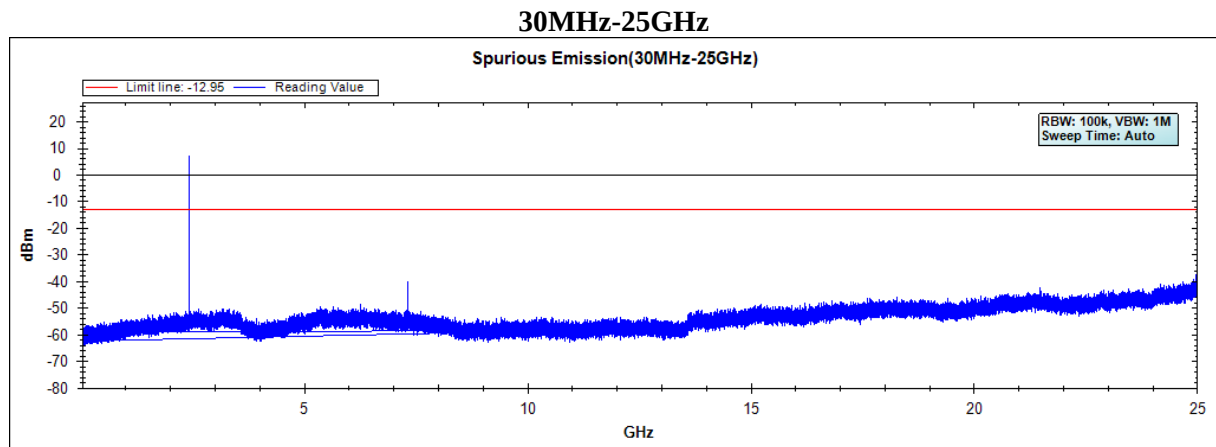
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 78 (2480MHz)

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

6 dB 頻寬：100KHz

視頻頻寬：1MHz

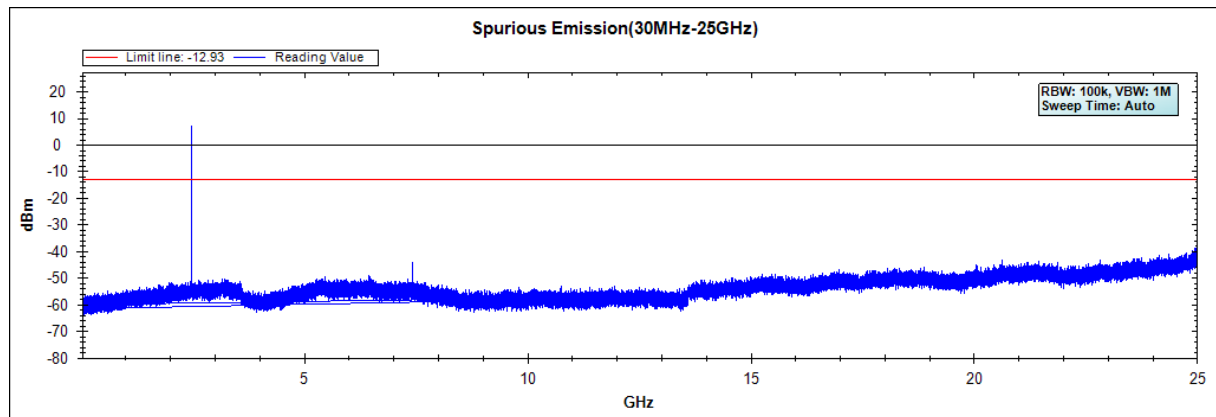
檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 00 (2402MHz)

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

6 dB 頻寬：100KHz

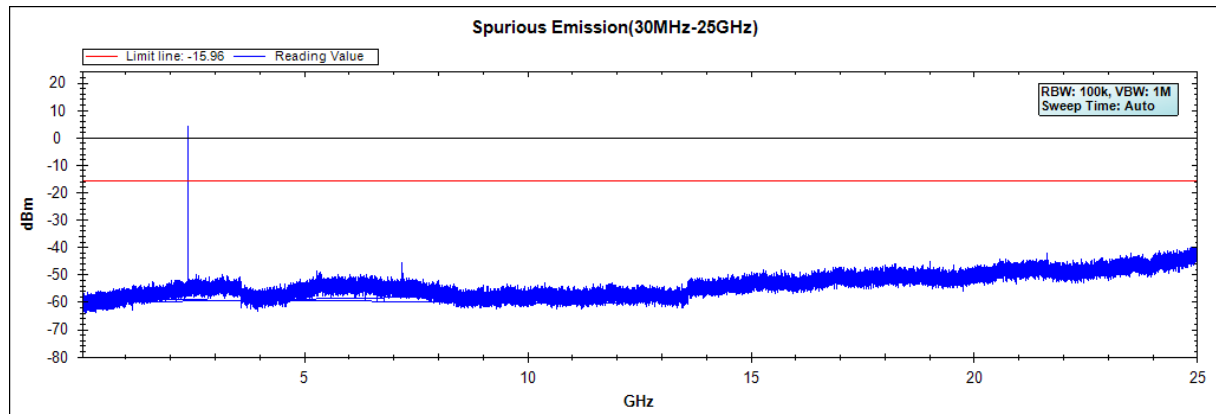
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 39 (2441MHz)

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

6 dB 頻寬：100KHz

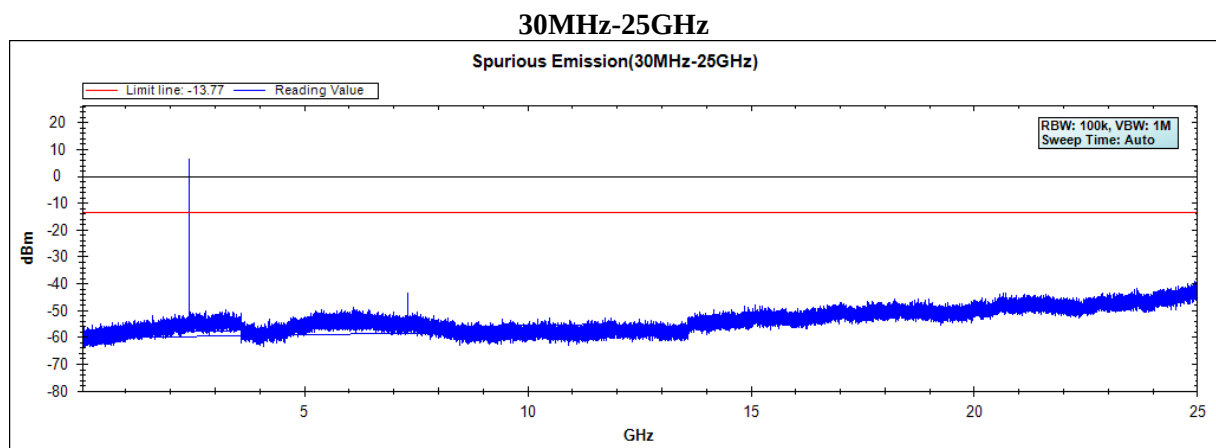
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 78 (2480MHz)

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

6 dB 頻寬：100KHz

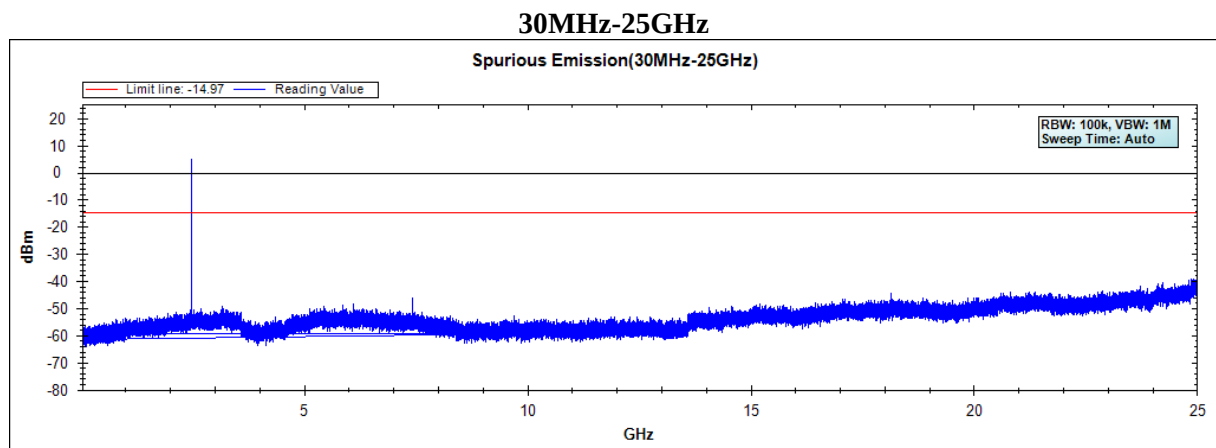
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 00 (2402MHz)

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

6 dB 頻寬：100KHz

視頻頻寬：1MHz

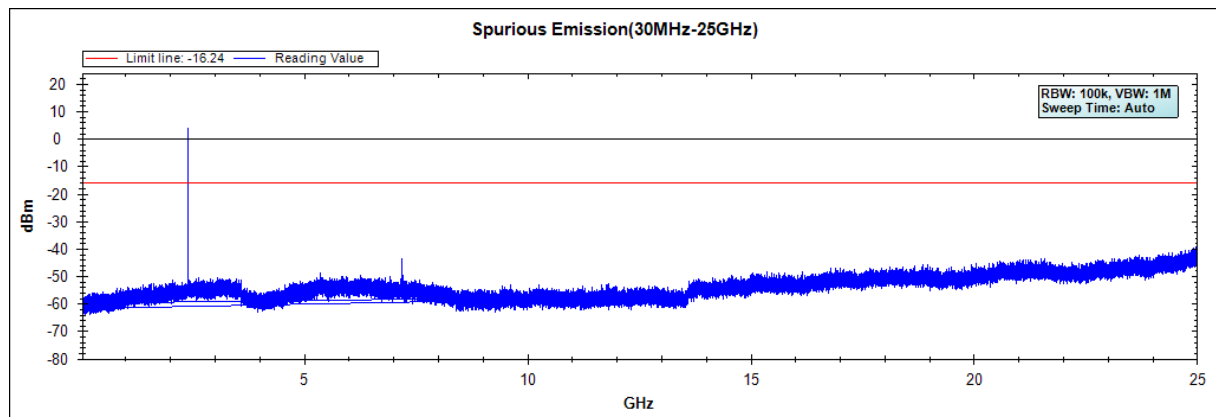
檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 39 (2441MHz)

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

6 dB 頻寬：100KHz

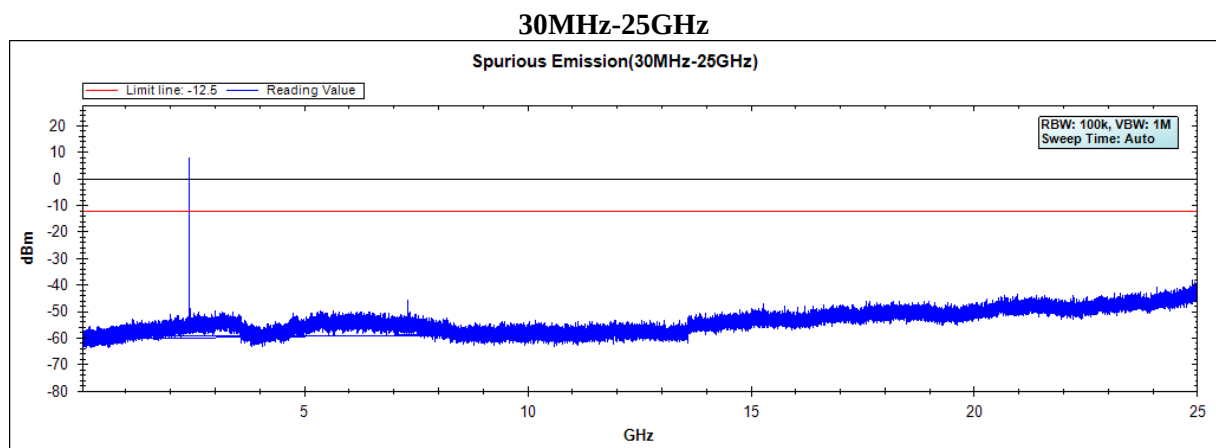
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 78 (2480MHz)

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

6 dB 頻寬：100KHz

視頻頻寬：1MHz

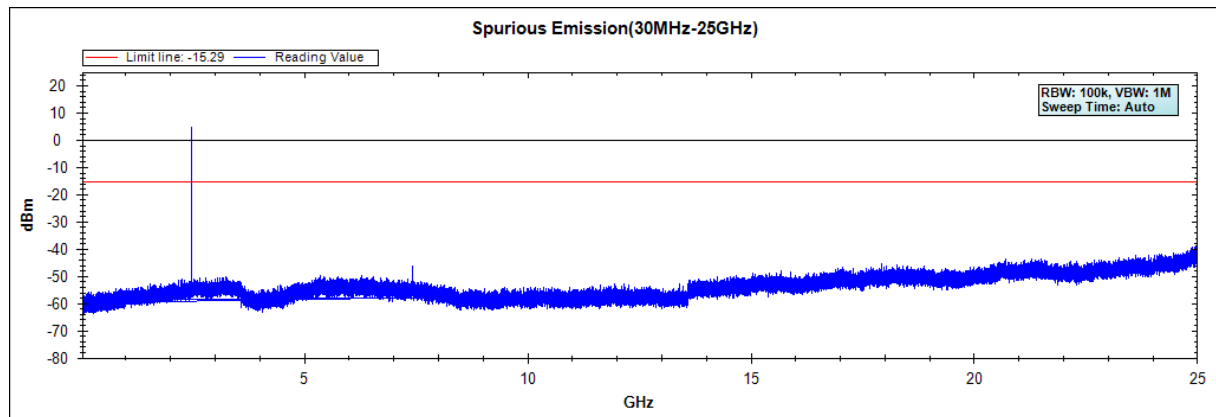
檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 00 (2402MHz)

測試模式：Mode 1: 發射器 - BLE Mode_ 1Mbps

6 dB 頻寬：100KHz

視頻頻寬：1MHz

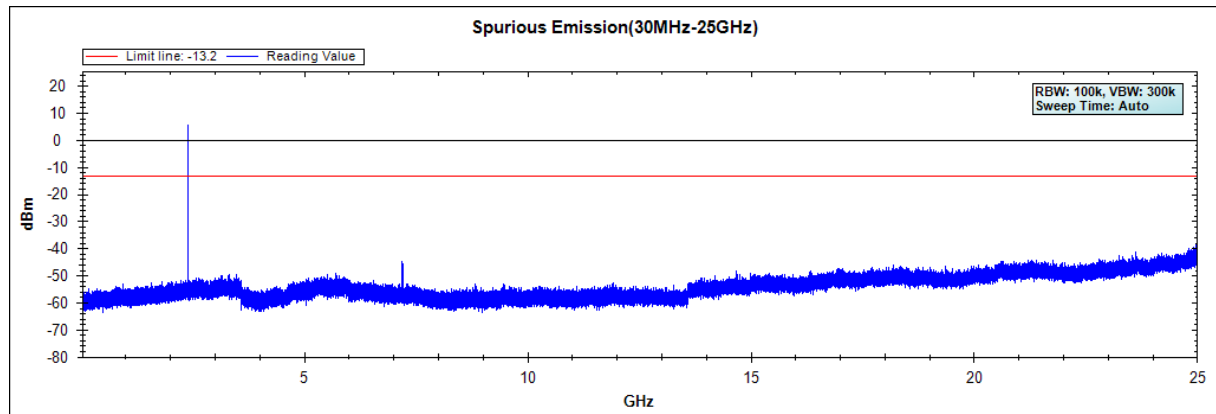
檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 19 (2440MHz)

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

6 dB 頻寬：100KHz

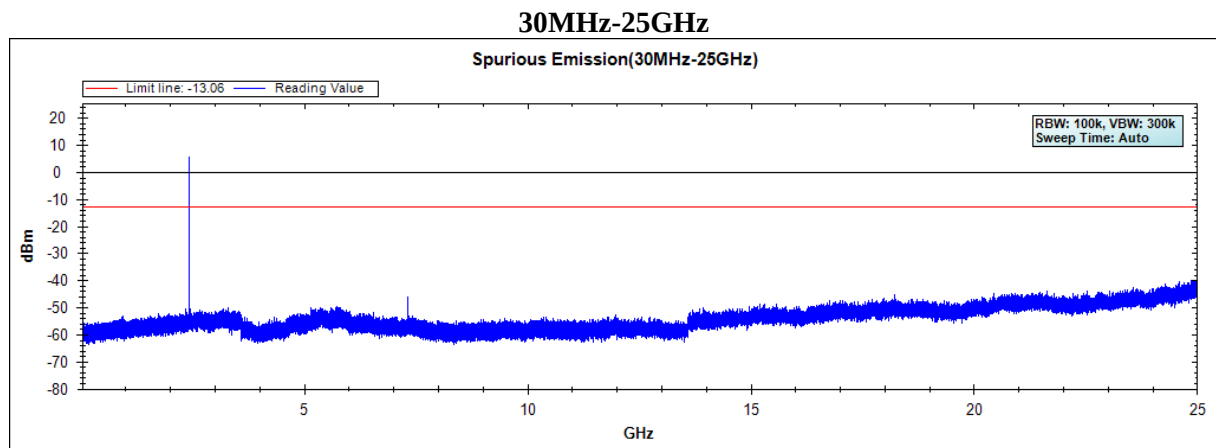
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 39 (2480MHz)

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

6 dB 頻寬：100KHz

視頻頻寬：1MHz

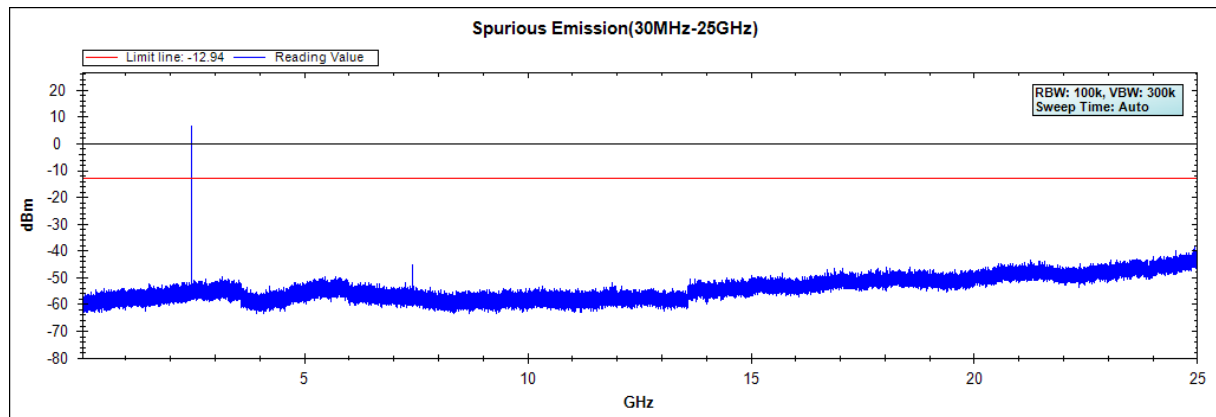
檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 00 (2402MHz)

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

6 dB 頻寬：100KHz

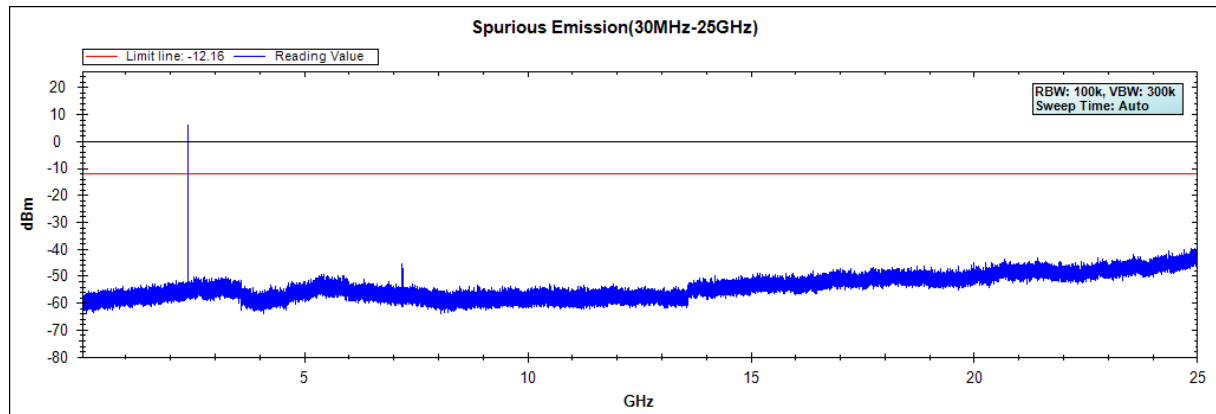
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 19 (2440MHz)

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

6 dB 頻寬：100KHz

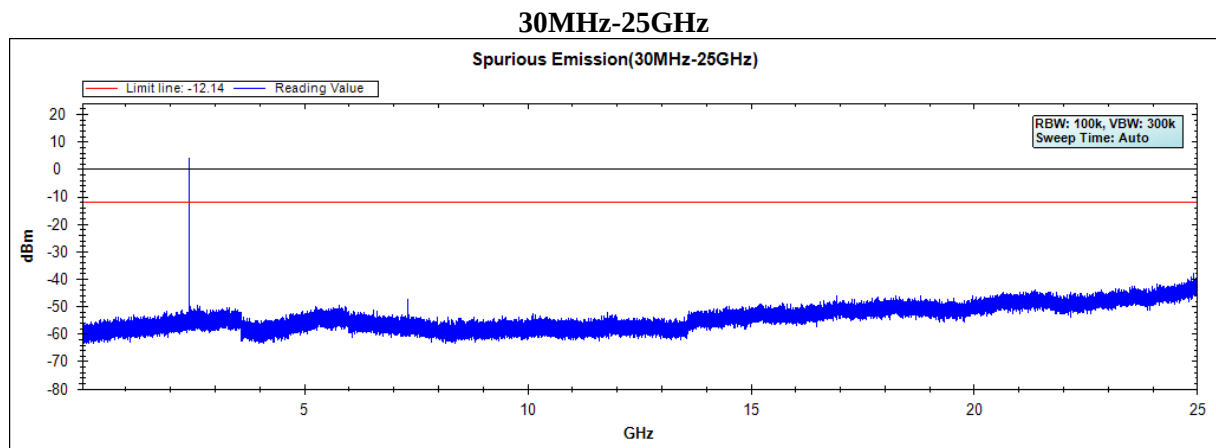
視頻頻寬：1MHz

檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試項目：混附發射之 RF 傳導發射

測試頻道：CH 39 (2480MHz)

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

6 dB 頻寬：100KHz

視頻頻寬：1MHz

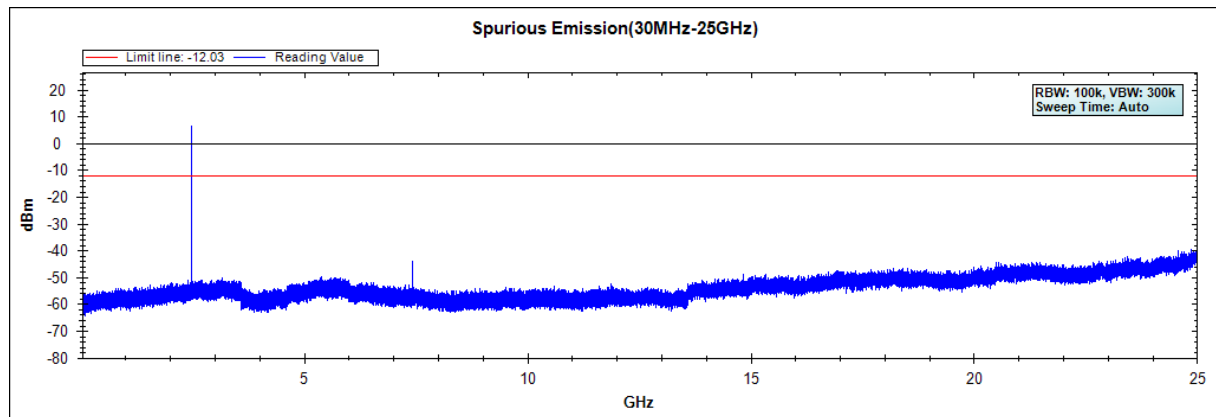
檢測器：峰值

環境溫度：20 °C

測試日期：109 年 01 月 31 日

環境濕度：52 %

30MHz-25GHz



8. 使用頻率範圍外之任意 100 千赫雜訊

8.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.5，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。如發射機以本節 4.10.1.2 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。

依據國家通訊傳播委員會低功率射頻器材技術規範之第 3.6 節輻射電場強度之限制要求如下：

發射依據國家通訊傳播委員會低功率射頻器材技術規範之第 3.6 節，低功率射頻器材，除本規範各章節另有放寬規定者外，其電場強度不得超過下表之限值，且其不必要之發射皆不得大於主波發射強度。各頻段重疊處，以較嚴格之限制值為準。

頻 率(兆赫)	電場強度(微伏/公尺)	測距(公尺)
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

上表規定之電場強度，頻率在 9-90kHz 千赫(kHz)、110-490 千赫(kHz)以及 1000 兆赫(MHz) 以上之發射，其量測以平均值檢波器為基準，且須符合第 6.14 節之規定；其他頻率之發射，應以 CISPR 準峰值(quasi-peak) 檢波器測量；非以上表所指定之距離測量時須符合第 6.5 節之規定，而輻射發射之量測頻率範圍須符合第 6.12 節之規定。

8.2. 量測方法

RF Conducted Measurement:

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，設定頻譜分析儀之解析度頻寬為 100kHz，視訊頻寬大於解析度頻寬。

待測物應在正常發射狀態下量測。

RF Radiated Measurement:

待測物置於高 150 公分之非導體桌面（落地型產品置於地上），桌面可 360 度旋轉，接收天線置於距待測物 3m 距離，高度可在 1 至 4 公尺間變動，以量測待測物之最大輻射電場強度。接收天線並應於水平及垂直極化方向各量測一次。

待測物應在正常發射狀態下量測。

RBW and VBW Parameter setting:

According to KDB 558074 section 12.2.4. Peak power measurement procedure

RBW = as specified in Table 1.

VBW $\geq 3 \times$ RBW.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to KDB 558074 section 12.2.5. Average power measurement procedure

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq 98\%$

VBW $\geq 1/T$, when duty cycle $< 98\%$

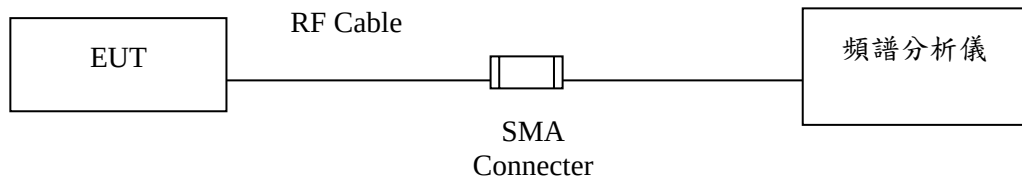
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
BLE 1M	84.97	2.1304	469	500
BLE 2M	57.51	1.0830	923	1000

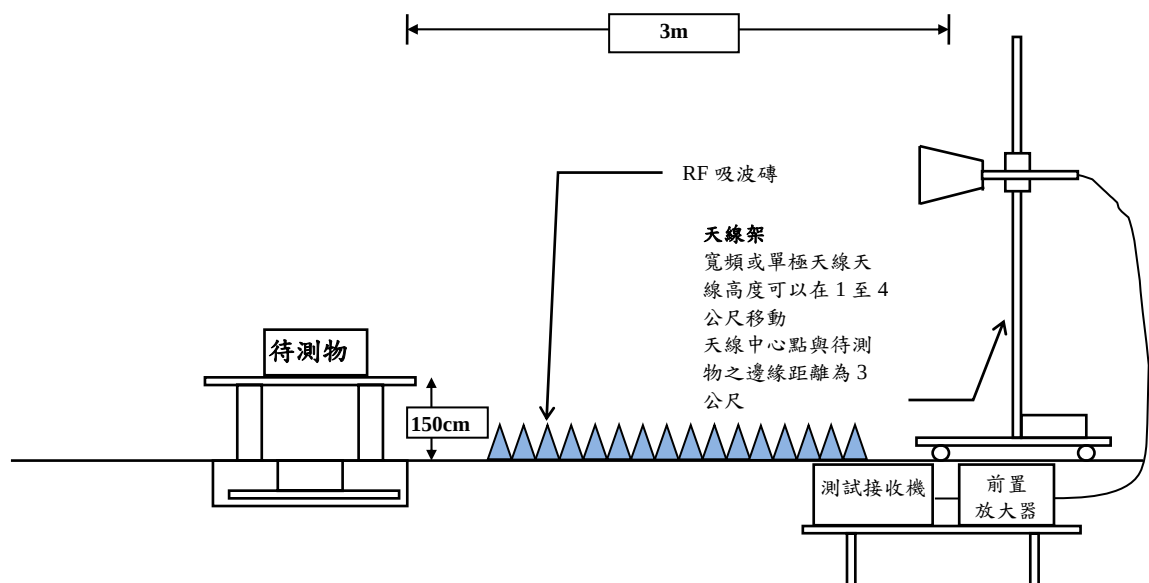
Note: Duty Cycle Refer to Section 14.

8.3. 測試架構圖

RF Conducted Measurement:



RF Radiated Measurement:



8.4. 量測不確定度

此項測試之量測不確定度 1GHz 以上為 $\pm 4.08\text{dB}$

1GHz 以下為 $\pm 4.22\text{dB}$

Note: 使用頻率範圍外之任意 100 千赫雜訊，使用輻射方式測量，6 dB 頻寬使用 1MHz 遠大於 100kHz 仍可 PASS，檢附其測試數據。

8.5. 使用頻率範圍外之任意 100 千赫雜訊測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

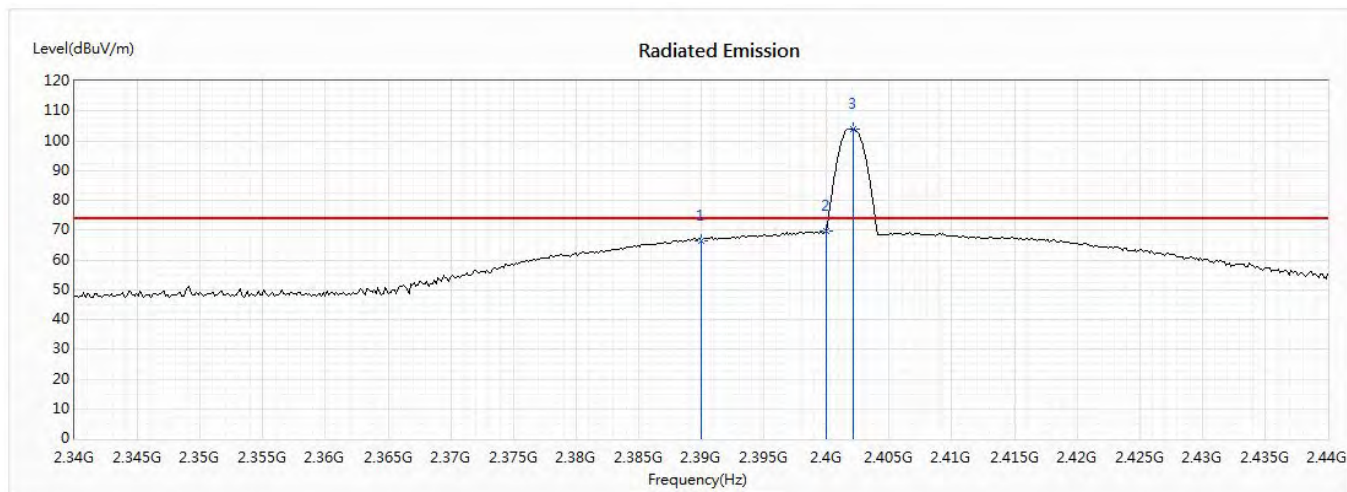
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	66.39	74.00	-7.61	53.50	12.89	PK
2	2400	69.73	--	--	56.77	12.96	PK
3	2402.174	103.74	--	--	90.77	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2390	66.39	-30.458	35.932	-18.068	54.000
2400	69.73	-30.458	39.272	--	--
2402.174	103.74	-30.458	73.282	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

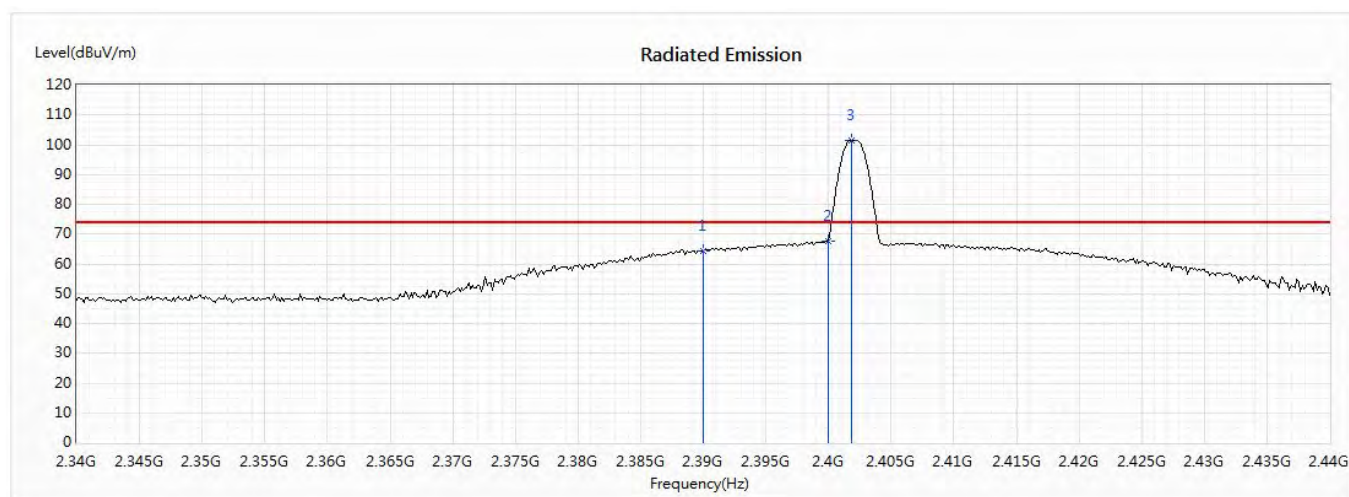
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：20.3 °C

環境濕度：66 %

Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	64.49	74.00	-9.51	51.60	12.89	PK
2	2400	67.47	--	--	54.51	12.96	PK
3	2401.884	101.59	--	--	88.62	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2390	64.49	-30.458	34.032	-19.968	54.000
2400	67.47	-30.458	37.012	--	--
2401.884	101.59	-30.458	71.132	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

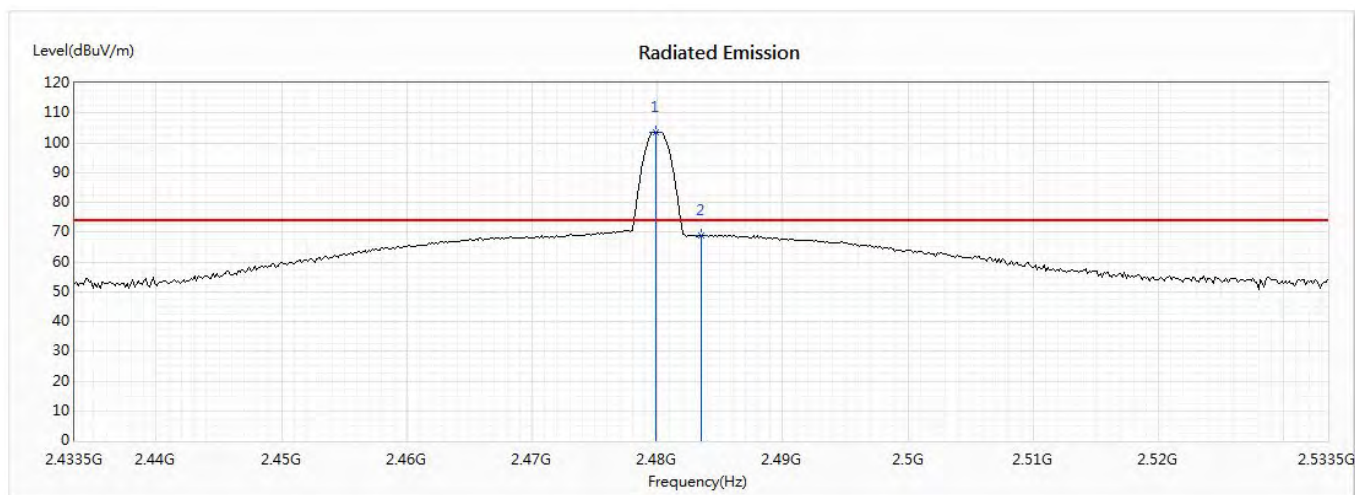
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：20.3 °C

環境濕度：66 %

Horizontal

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.877	103.62	--	--	90.25	13.37	PK
2	2483.5	68.66	74.00	-5.34	55.28	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2479.877	103.62	-30.458	73.162	--	--
2483.5	68.66	-30.458	38.202	-15.798	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

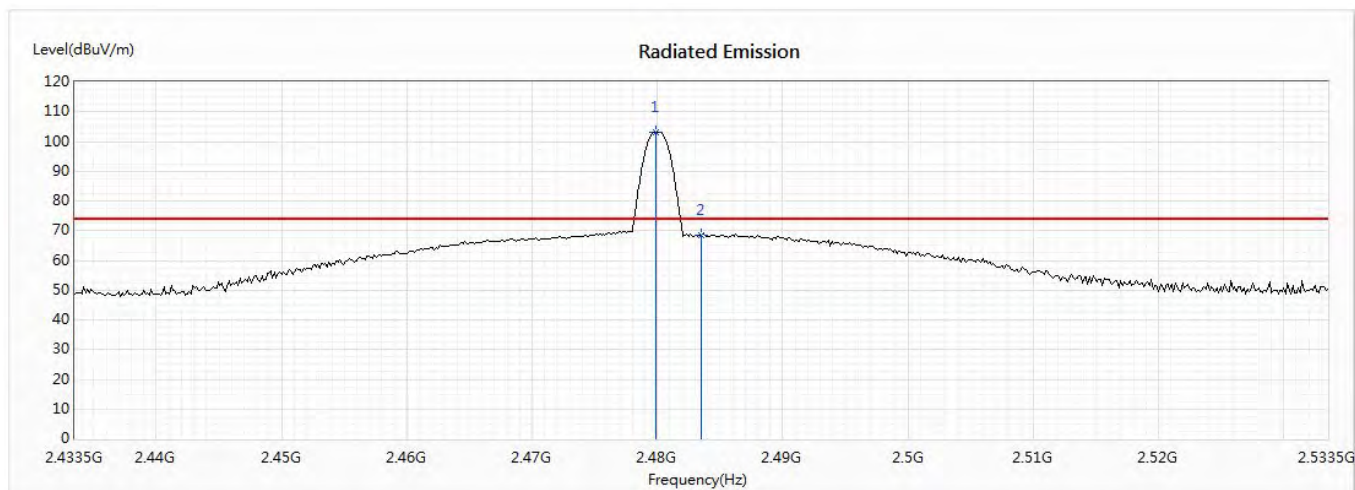
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.877	103.06	--	--	89.69	13.37	PK
2	2483.5	68.54	74.00	-5.46	55.16	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2479.877	103.06	-30.458	72.602	--	--
2483.5	68.54	-30.458	38.082	-15.918	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

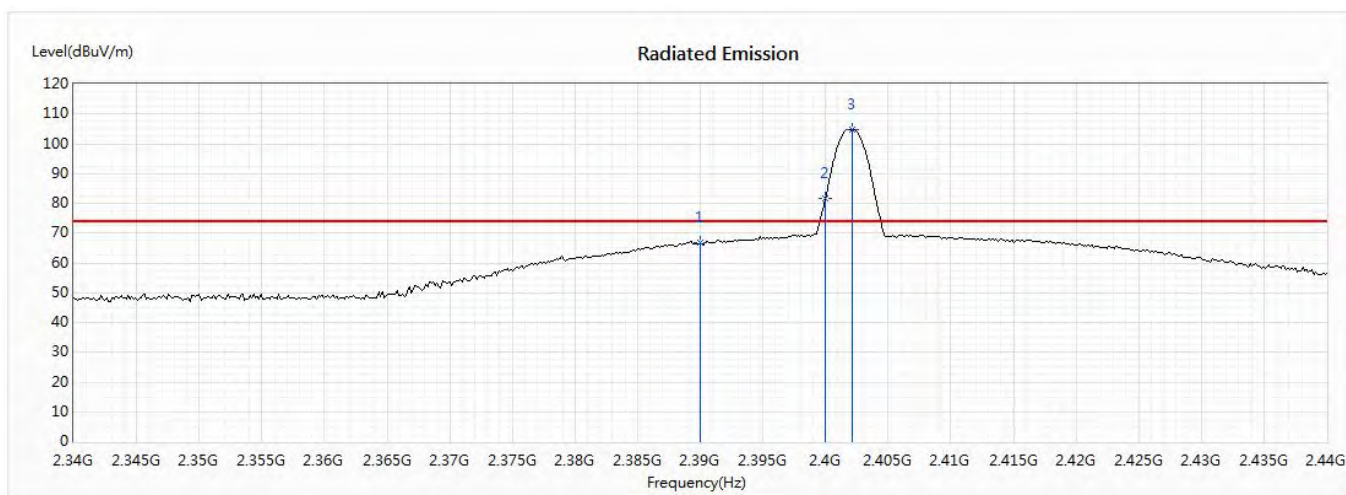
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	66.67	74.00	-7.33	53.78	12.89	PK
2	2400	81.83	--	--	68.87	12.96	PK
3	2402.174	104.86	--	--	91.89	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dB μ V/m)	Duty Cycle Factor (dB)	Measurement (dB μ V/m)	Margin (dB)	Limit (dBuV/m)
2390	66.67	-31.057	35.613	-18.387	54.000
2400	81.83	-31.057	50.773	--	--
2402.174	104.86	-31.057	73.803	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

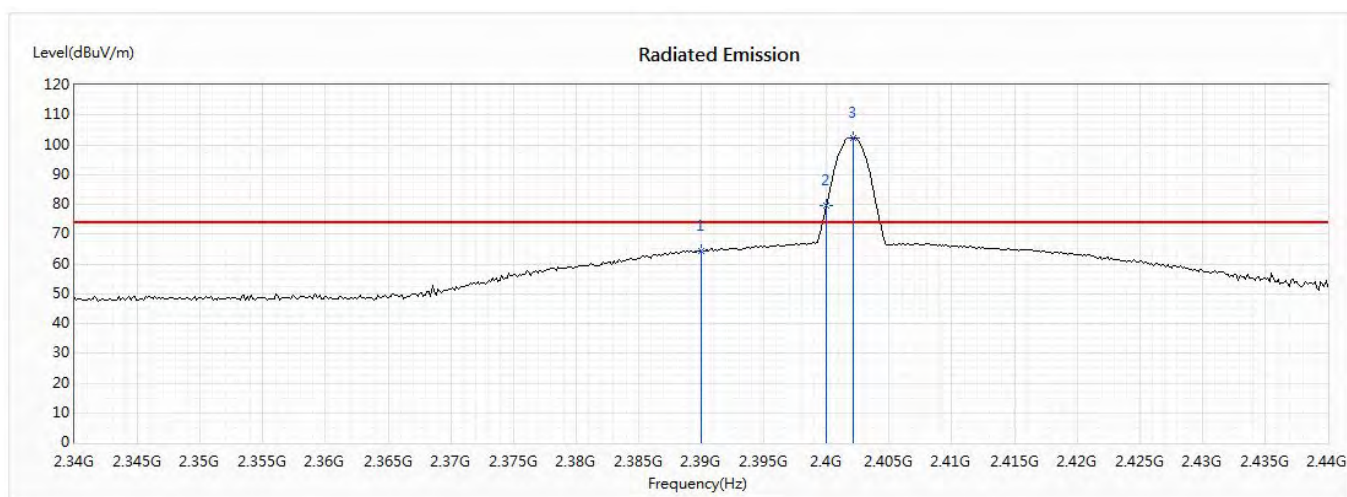
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：20.3 °C

環境濕度：66 %

Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	64.15	74.00	-9.85	51.26	12.89	PK
2	2400	79.41	--	--	66.45	12.96	PK
3	2402.174	102.34	--	--	89.37	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2390	64.15	-31.057	33.093	-20.907	54.000
2400	79.41	-31.057	48.353	--	--
2402.174	102.34	-31.057	71.283	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

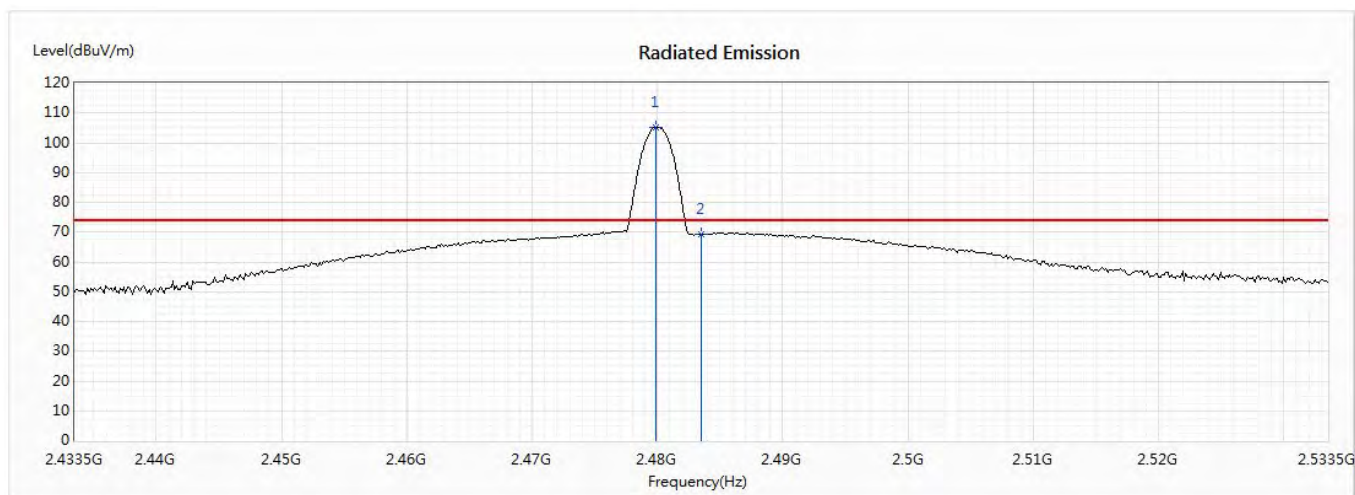
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：20.3 °C

環境濕度：66 %

Horizontal

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.877	105.01	--	--	91.64	13.37	PK
2	2483.5	69.26	74.00	-4.74	55.88	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2479.877	105.01	-31.057	73.953	--	--
2483.5	69.26	-31.057	38.203	-15.797	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

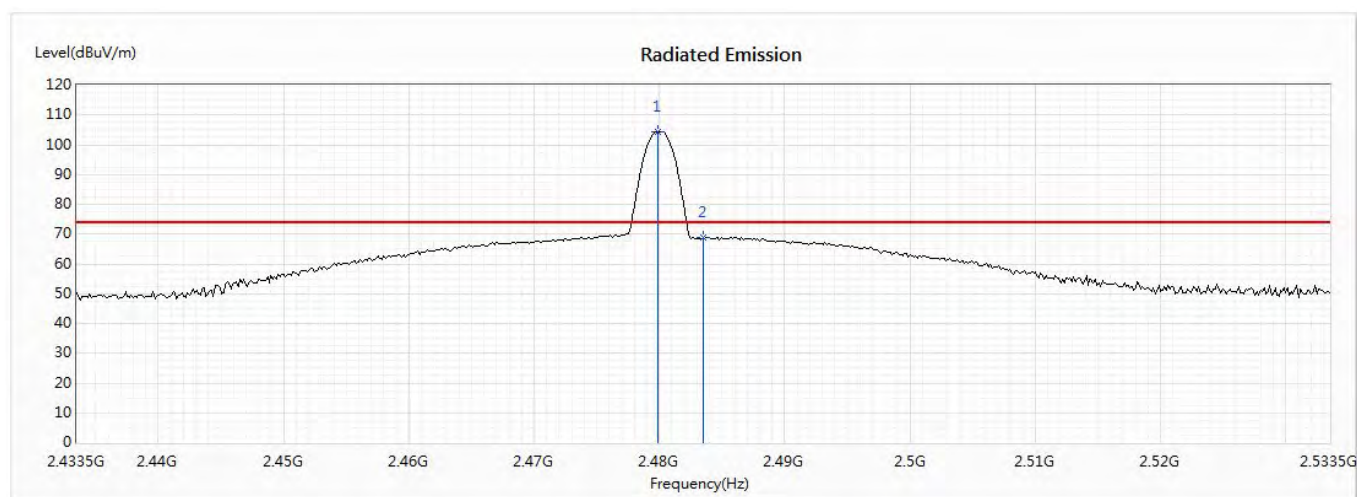
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

環境溫度：20.3 °C

環境濕度：66 %

Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.877	104.47	--	--	91.10	13.37	PK
2	2483.5	68.71	74.00	-5.29	55.33	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dB μ V/m)	Duty Cycle Factor (dB)	Measurement (dB μ V/m)	Margin (dB)	Limit (dBuV/m)
2479.877	104.47	-31.057	73.413	--	--
2483.5	68.71	-31.057	37.653	-16.347	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

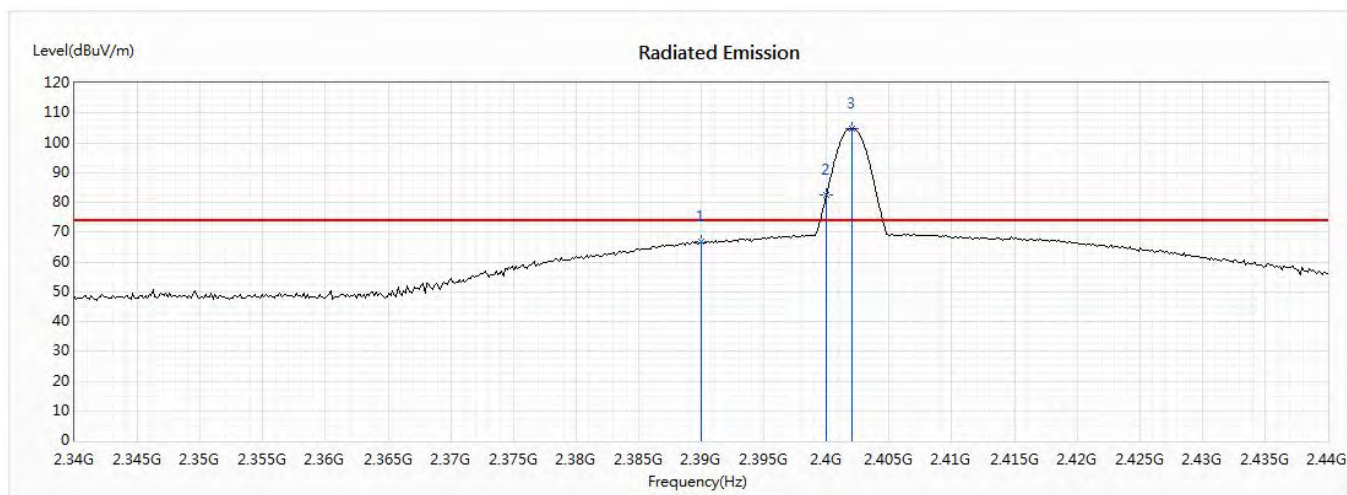
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：20.3 °C

環境濕度：66 %

Horizontal

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	66.61	74.00	-7.39	53.72	12.89	PK
2	2400	82.57	--	--	69.61	12.96	PK
3	2402.029	104.86	--	--	91.89	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2390	66.61	-30.458	36.152	-17.848	54.000
2400	82.57	-30.458	52.112	--	--
2402.029	104.86	-30.458	74.402	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

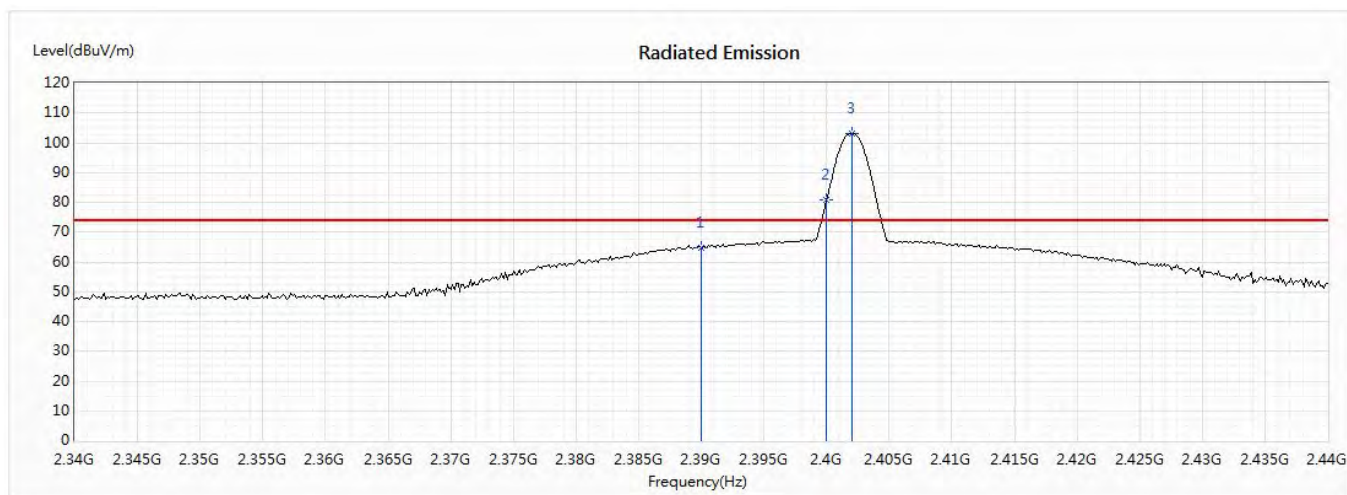
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：20.3 °C

環境濕度：66 %

Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	64.91	74.00	-9.09	52.02	12.89	PK
2	2400	80.74	--	--	67.78	12.96	PK
3	2402.029	102.97	--	--	90.00	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2390	64.91	-30.458	34.452	-19.548	54.000
2400	80.74	-30.458	50.282	--	--
2402.029	102.97	-30.458	72.512	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

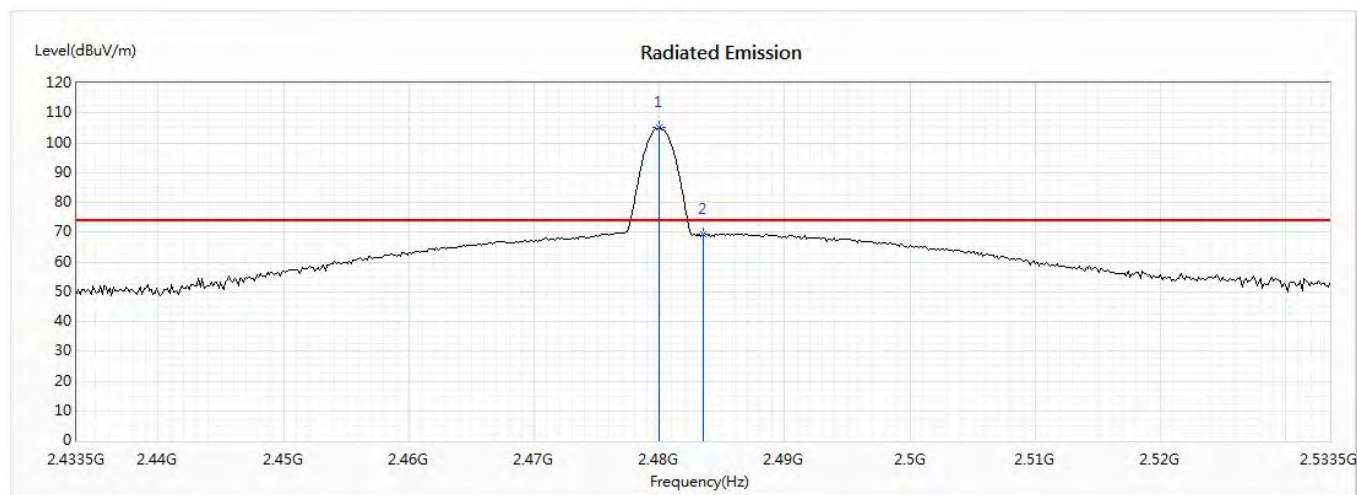
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：20.3 °C

環境濕度：66 %

Horizontal

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480.022	104.97	--	--	91.60	13.37	PK
2	2483.5	69.08	74.00	-4.92	55.70	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2480.022	104.97	-30.458	74.512	--	--
2483.5	69.08	-30.458	38.622	-15.378	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

檢測器：峰值 & 平均值

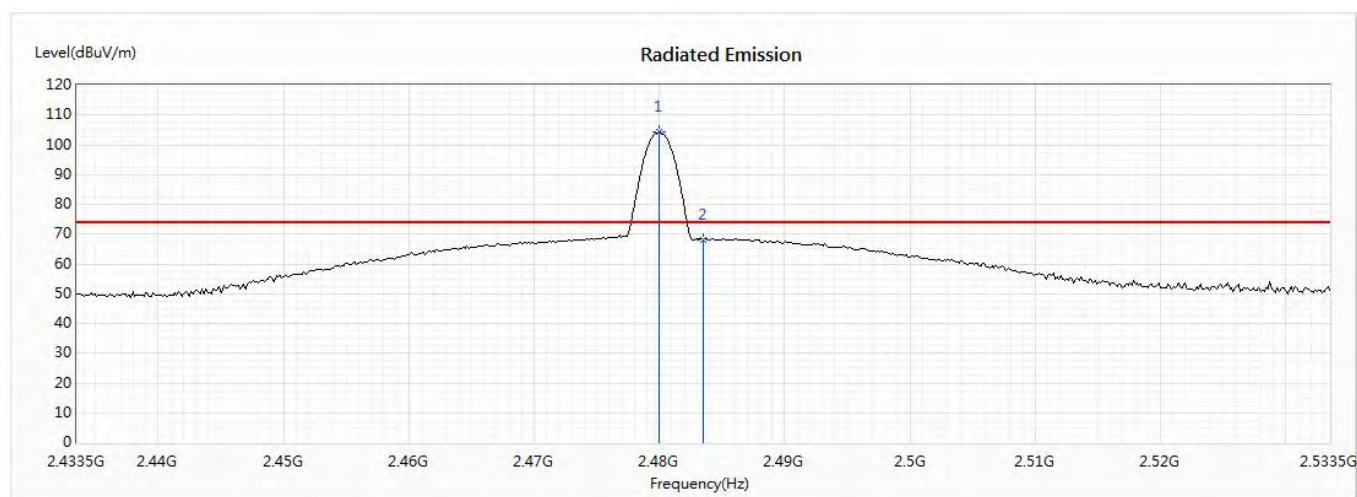
測試日期：109 年 01 月 20 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

環境溫度：20.3 °C

環境濕度：66 %

Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480.022	104.13	--	--	90.76	13.37	PK
2	2483.5	68.09	74.00	-5.91	54.71	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Measurement (dBμV/m)	Margin (dB)	Limit (dBuV/m)
2480.022	104.13	-30.458	73.672	--	--
2483.5	68.09	-30.458	37.632	-16.368	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 14.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 17 日

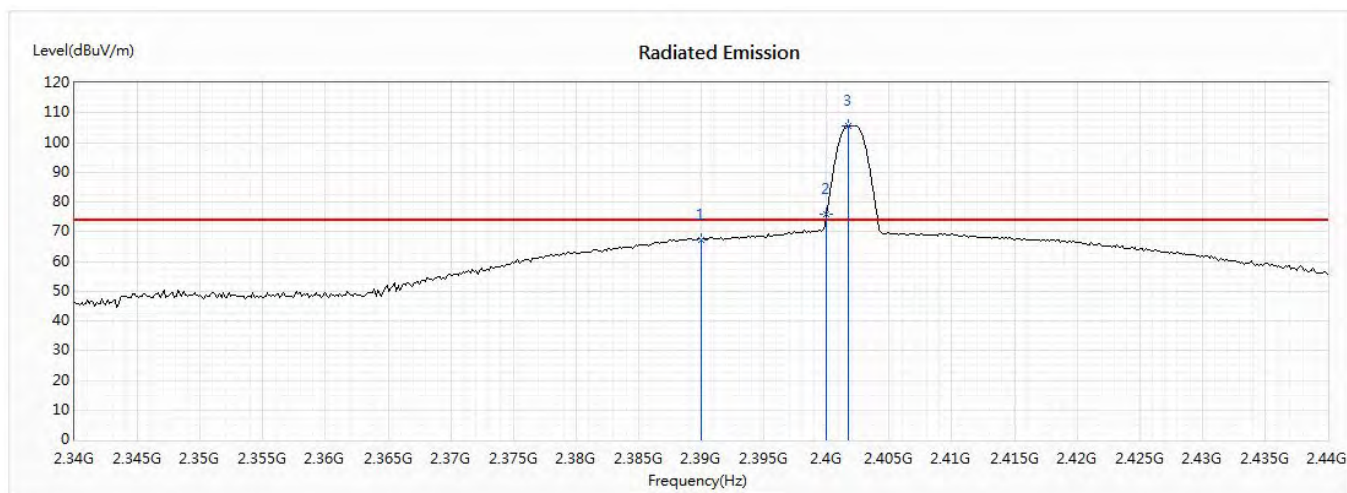
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：22.1 °C

環境濕度：56 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	67.35	74.00	-6.65	54.46	12.89	PK
2	2400	75.68	--	--	62.72	12.96	PK
3	2401.739	105.70	--	--	92.73	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 17 日

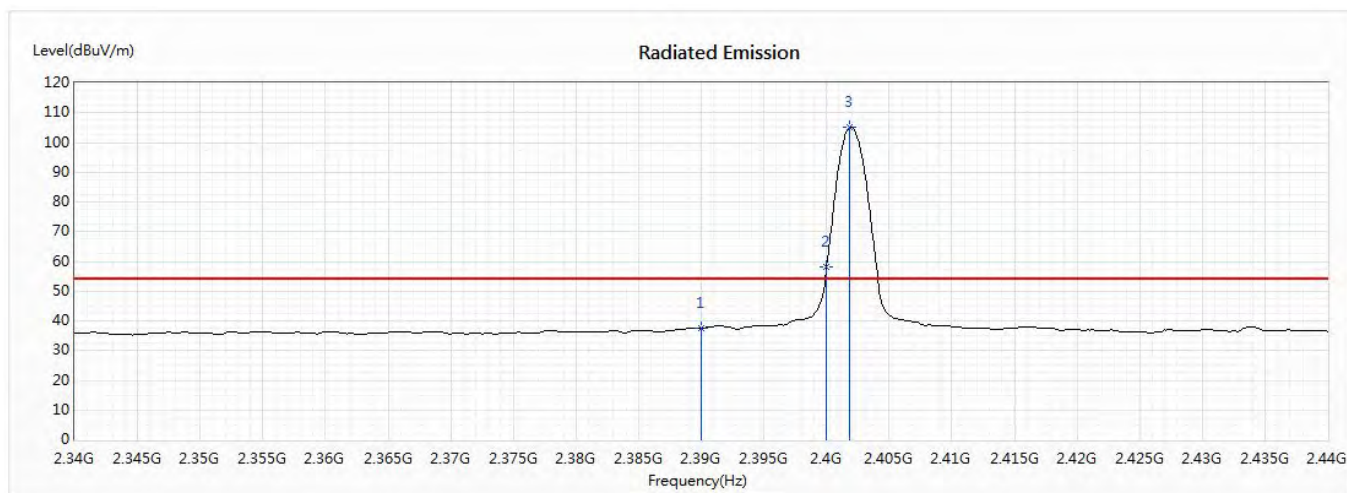
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：22.1 °C

環境濕度：56 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	37.67	54.00	-16.33	24.78	12.89	AV
2	2400	58.31	--	--	45.35	12.96	AV
3	2401.884	105.01	--	--	92.04	12.97	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

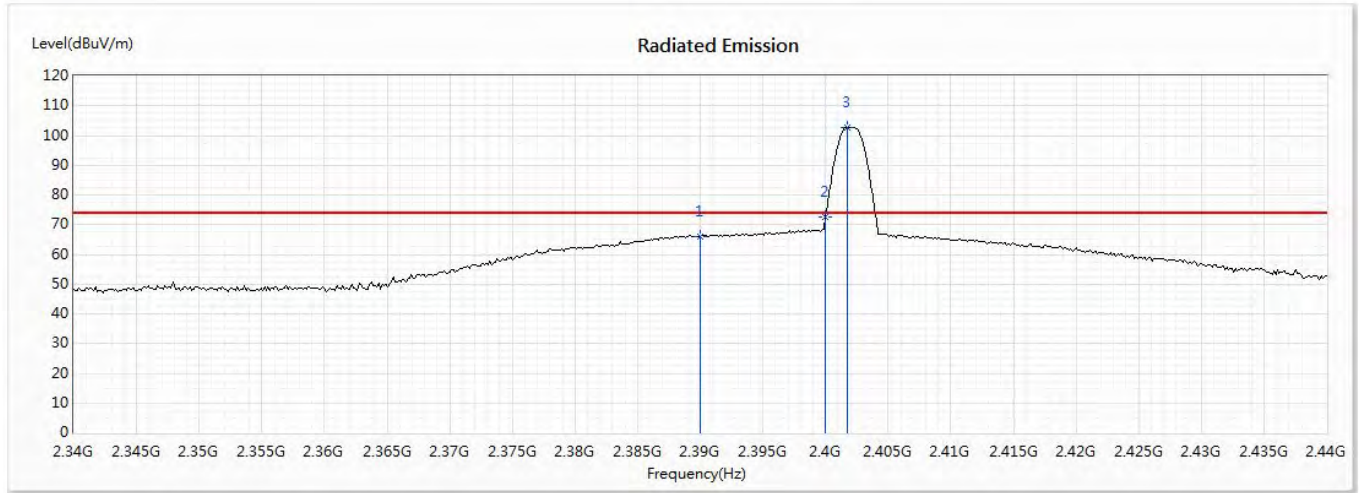
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	65.86	74.00	-8.14	52.97	12.89	PK
2	2400	72.70	--	--	59.74	12.96	PK
3	2401.739	102.65	--	--	89.68	12.97	PK

- Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

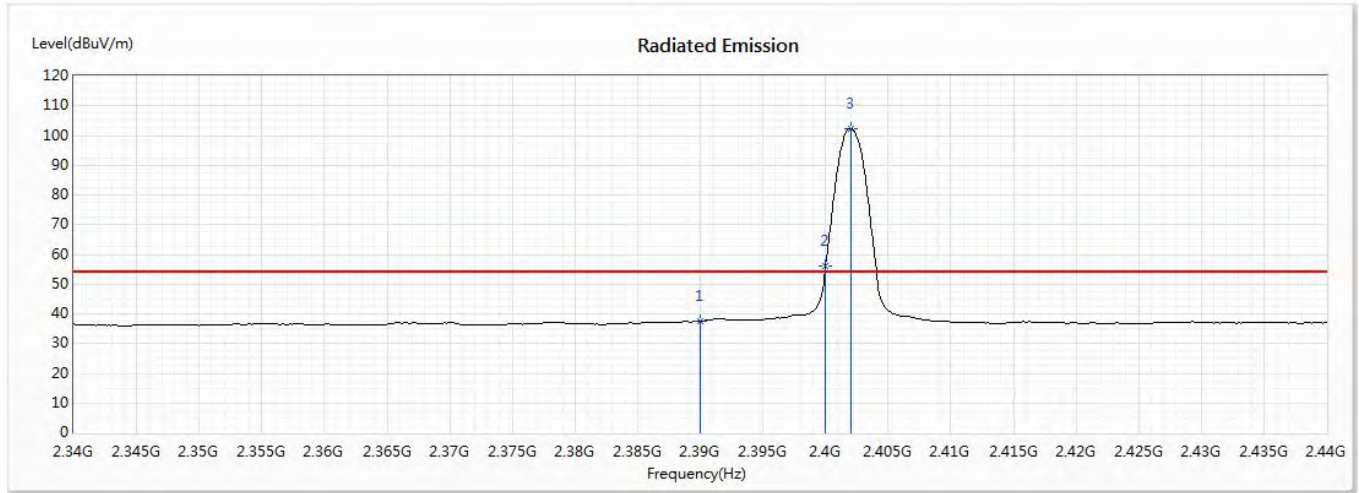
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	37.39	54.00	-16.61	24.50	12.89	AV
2	2400	55.94	--	--	42.98	12.96	AV
3	2402.029	102.33	--	--	89.36	12.97	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

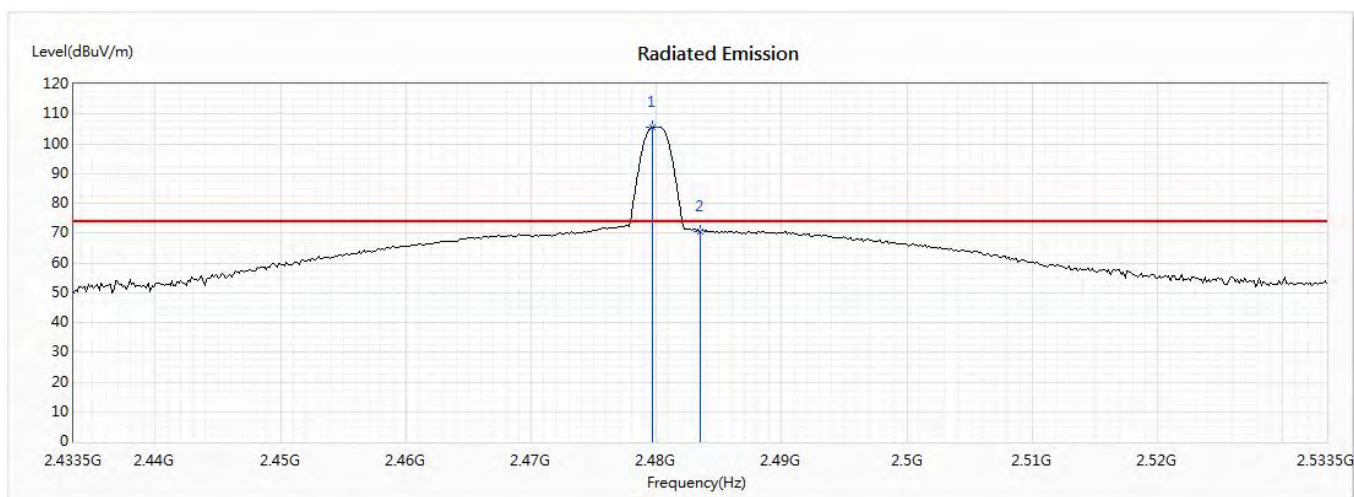
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.732	105.52	--	--	92.15	13.37	PK
2	2483.5	70.46	74.00	-3.54	57.08	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

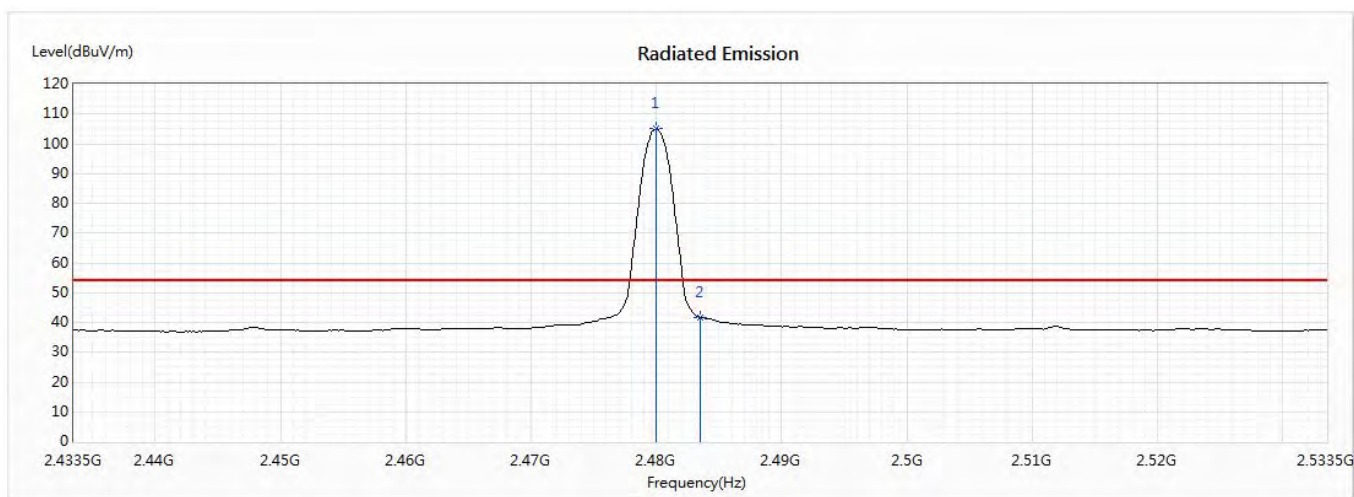
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480.022	104.96	--	--	91.59	13.37	AV
2	2483.5	41.67	54.00	-12.33	28.29	13.38	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

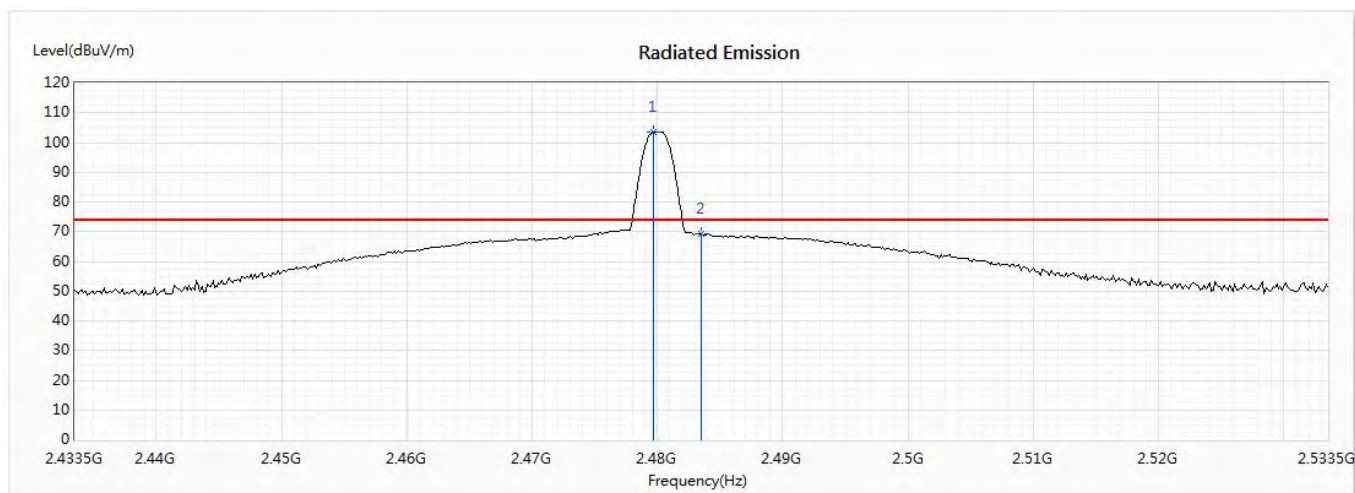
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.732	103.70	--	--	90.33	13.37	PK
2	2483.5	69.48	74.00	-4.52	56.10	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

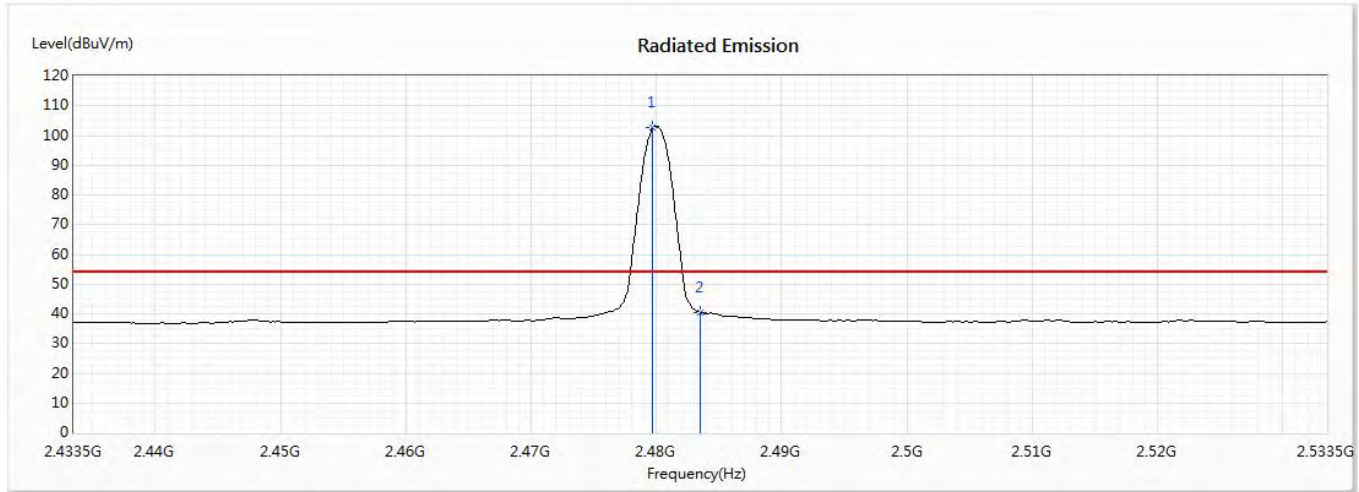
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

環境溫度：20.3 °C

環境濕度：66 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.732	102.55	--	--	89.18	13.37	AV
2	2483.5	40.48	54.00	-13.52	27.10	13.38	AV

- Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

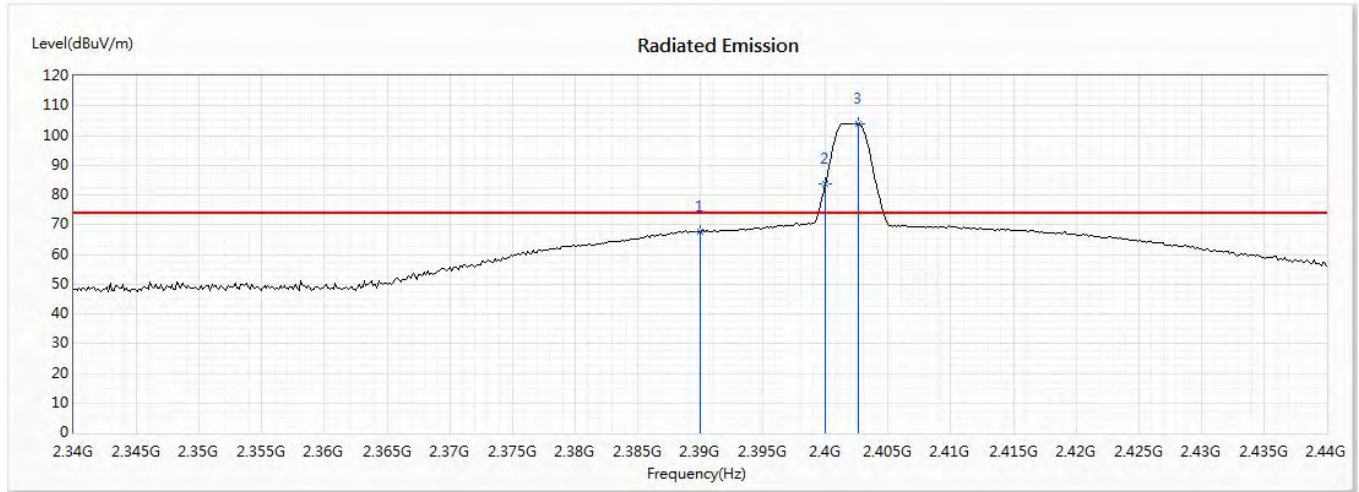
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	67.69	74.00	-6.31	54.80	12.89	PK
2	2400	83.80	--	--	70.84	12.96	PK
3	2402.609	104.07	--	--	91.09	12.98	PK

- Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

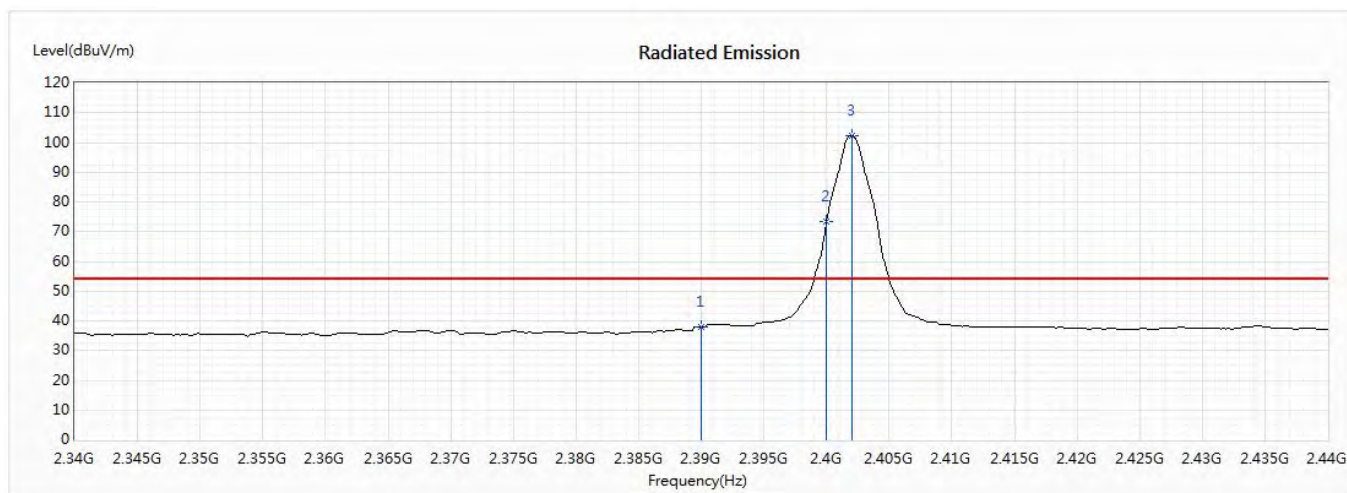
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	37.96	54.00	-16.04	25.07	12.89	AV
2	2400	73.58	--	--	60.62	12.96	AV
3	2402.029	102.27	--	--	89.30	12.97	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

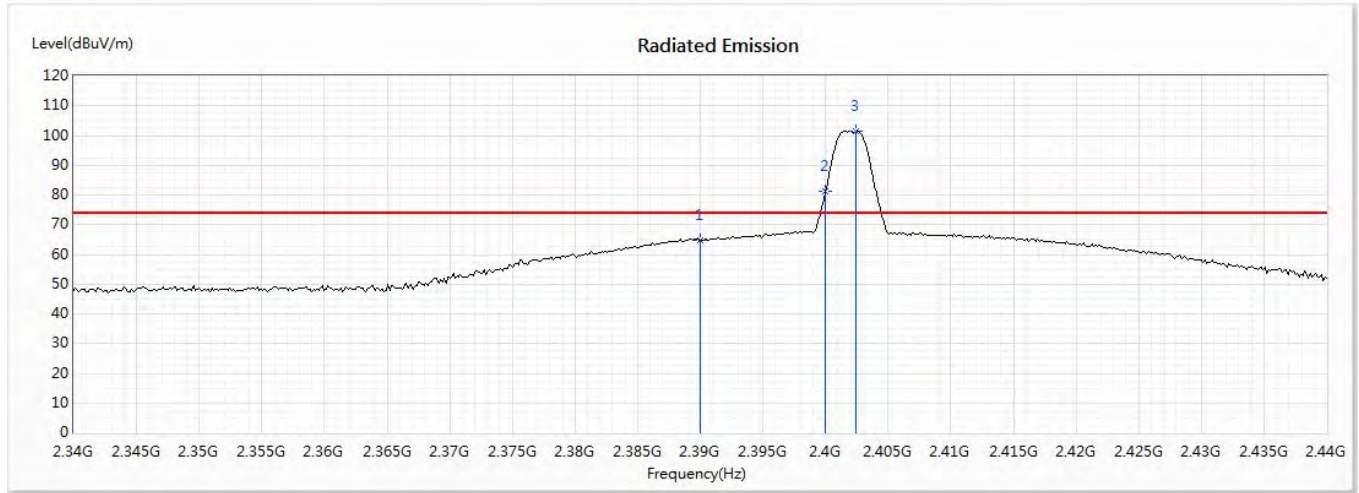
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	64.67	74.00	-9.33	51.78	12.89	PK
2	2400	81.09	--	--	68.13	12.96	PK
3	2402.464	101.36	--	--	88.39	12.97	PK

- Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

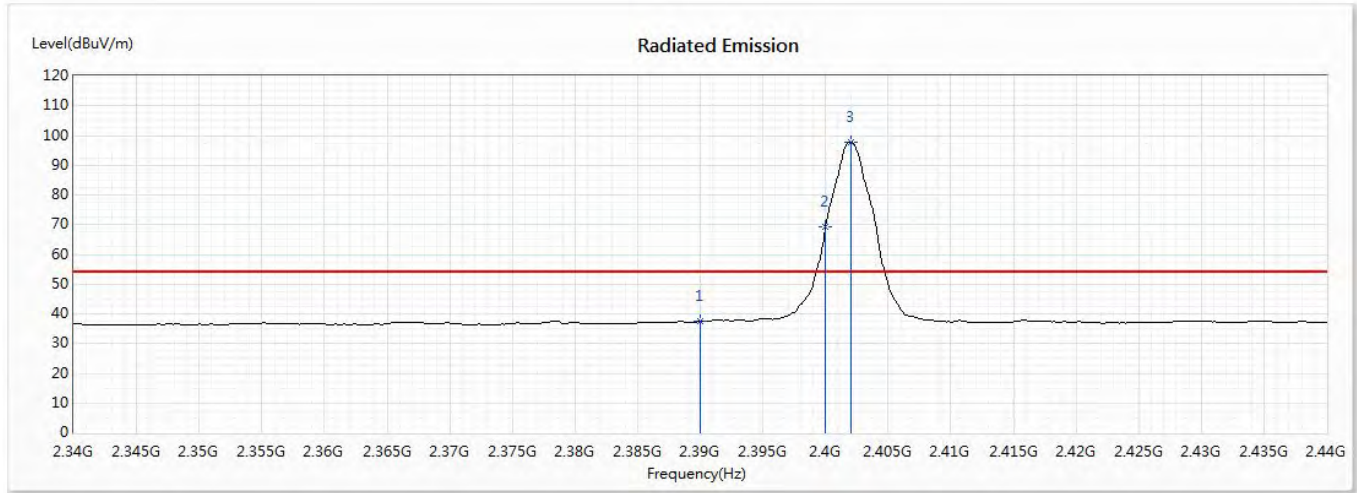
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	37.45	54.00	-16.55	24.56	12.89	AV
2	2400	69.22	--	--	56.26	12.96	AV
3	2402.029	97.84	--	--	84.87	12.97	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

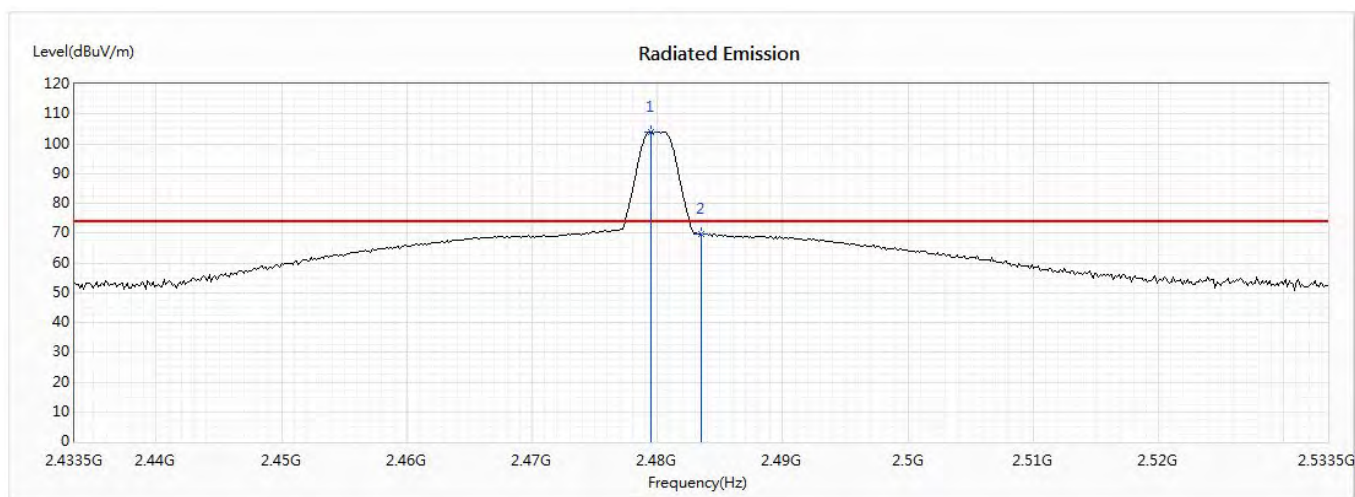
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.442	103.97	--	--	90.60	13.37	PK
2	2483.5	69.63	74.00	-4.37	56.25	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

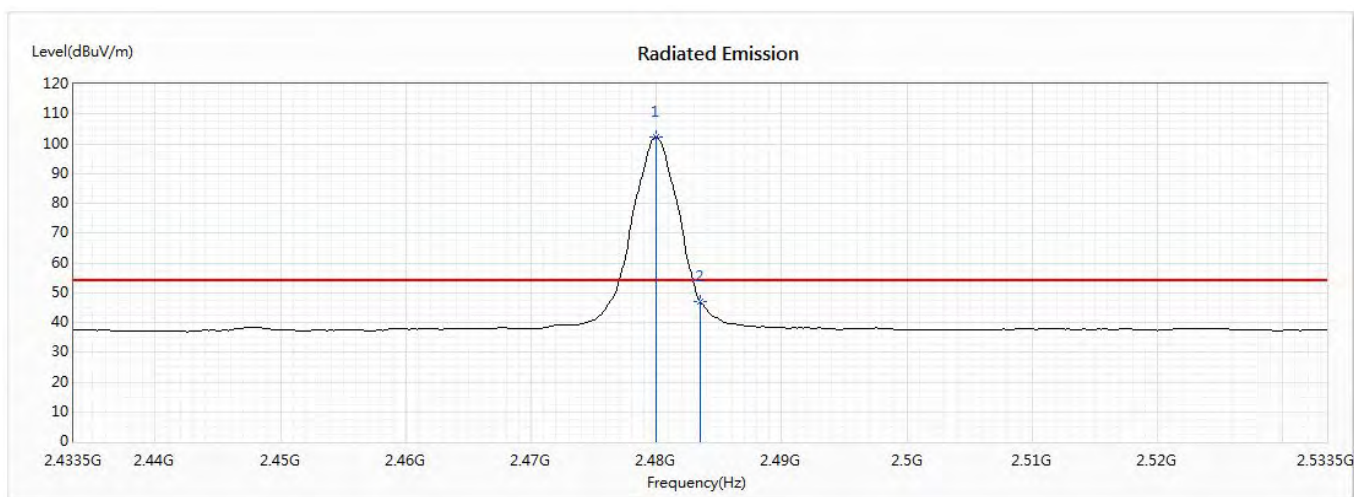
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480.022	102.16	--	--	88.79	13.37	AV
2	2483.5	46.98	54.00	-7.02	33.60	13.38	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

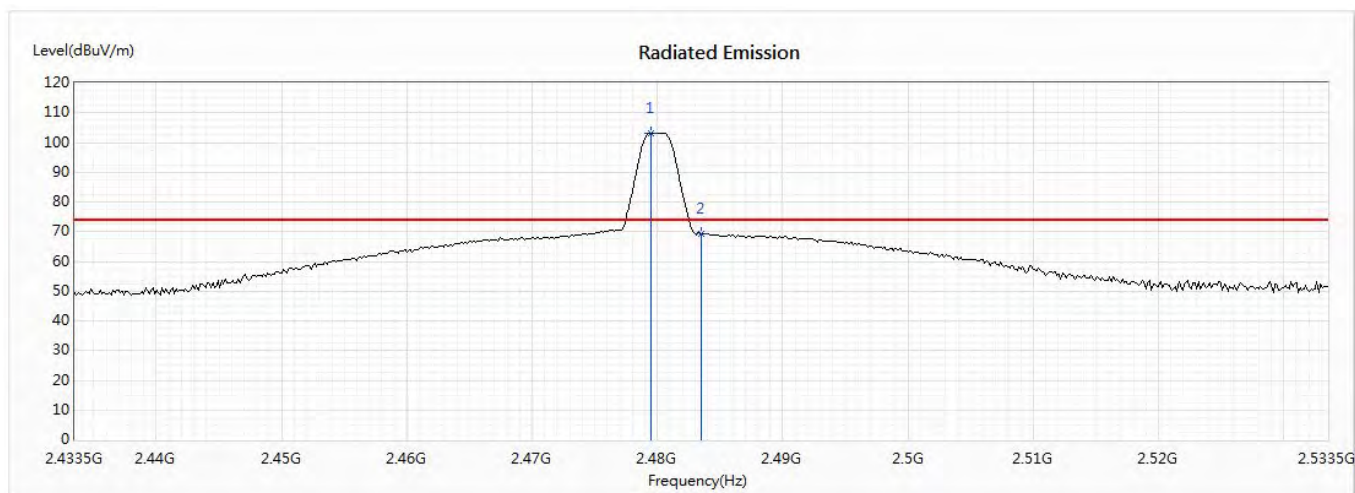
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2479.442	103.25	--	--	89.88	13.37	PK
2	2483.5	69.32	74.00	-4.68	55.94	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

檢測器：峰值 & 平均值

測試日期：109 年 01 月 20 日

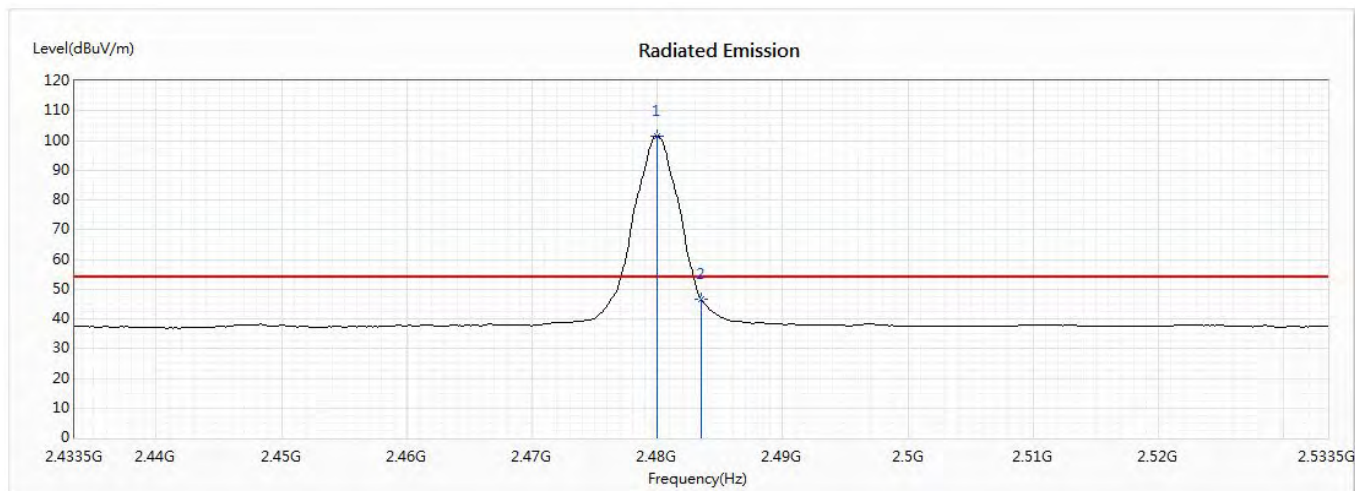
測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

環境溫度：22.2 °C

環境濕度：60 %

Vertical



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

CH 78 (2480MHz)

6 dB 頻寬：100KHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)_

Hopping off Bandedge

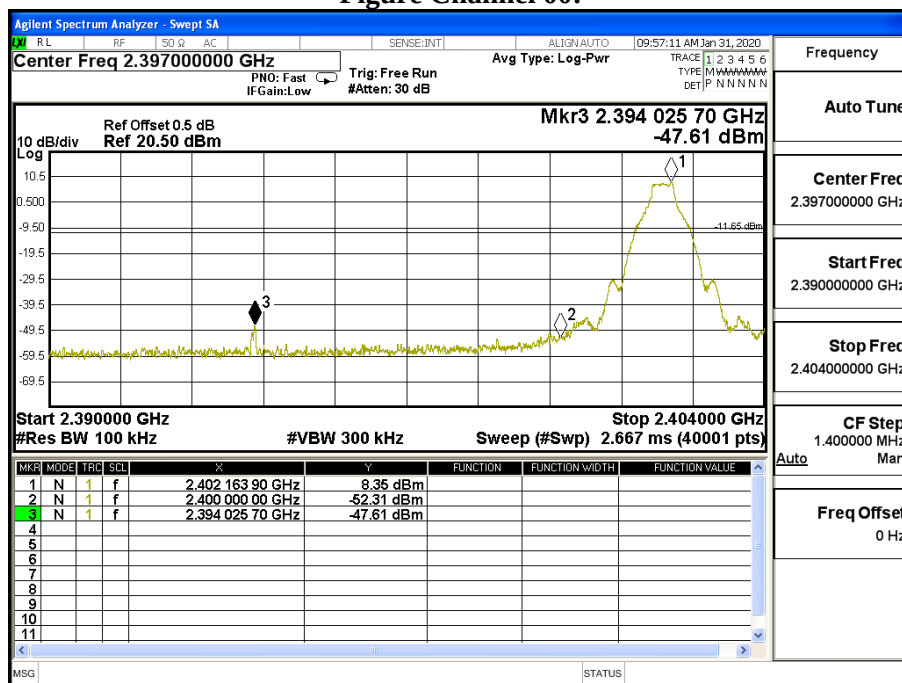
視頻頻寬：300KHz

環境溫度：23.5 °C

環境濕度：63.6 %

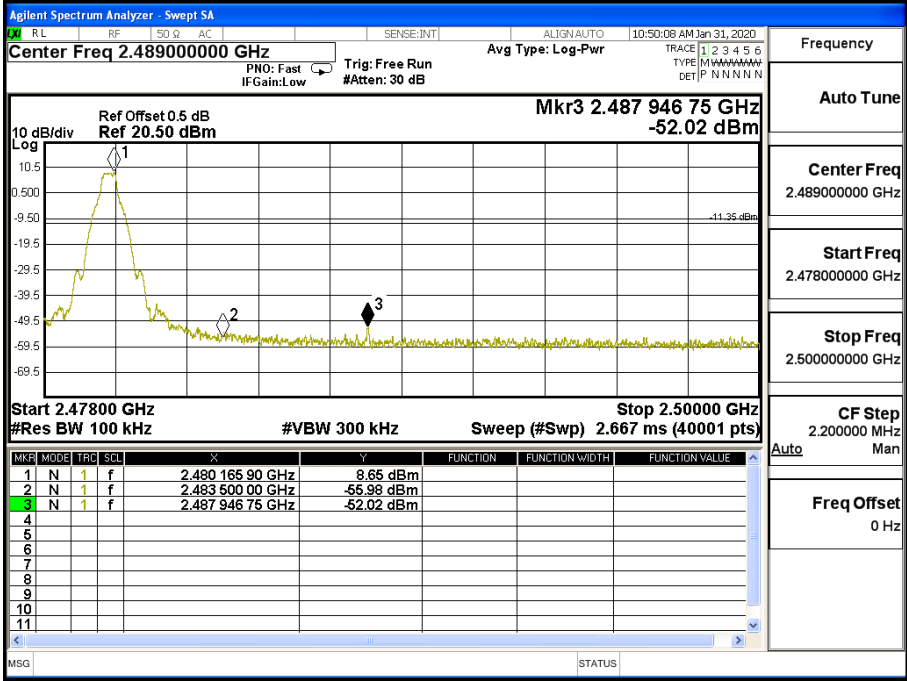
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00:



Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 78:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

CH 78 (2480MHz)

6 dB 頻寬：100KHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)_
Hopping off Bandedge

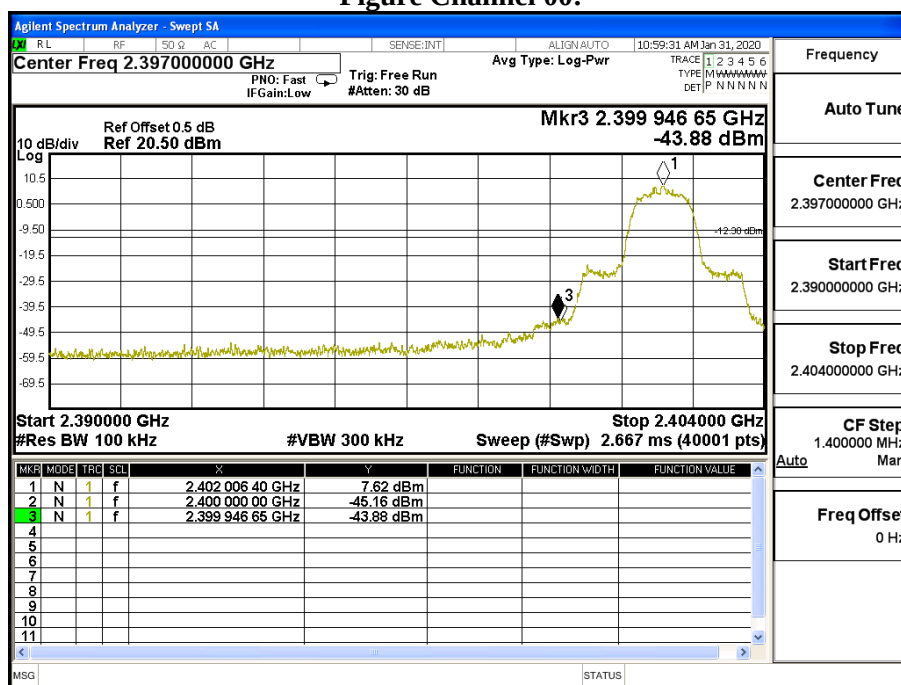
視頻頻寬：300KHz

環境溫度：23.5 °C

環境濕度：63.6 %

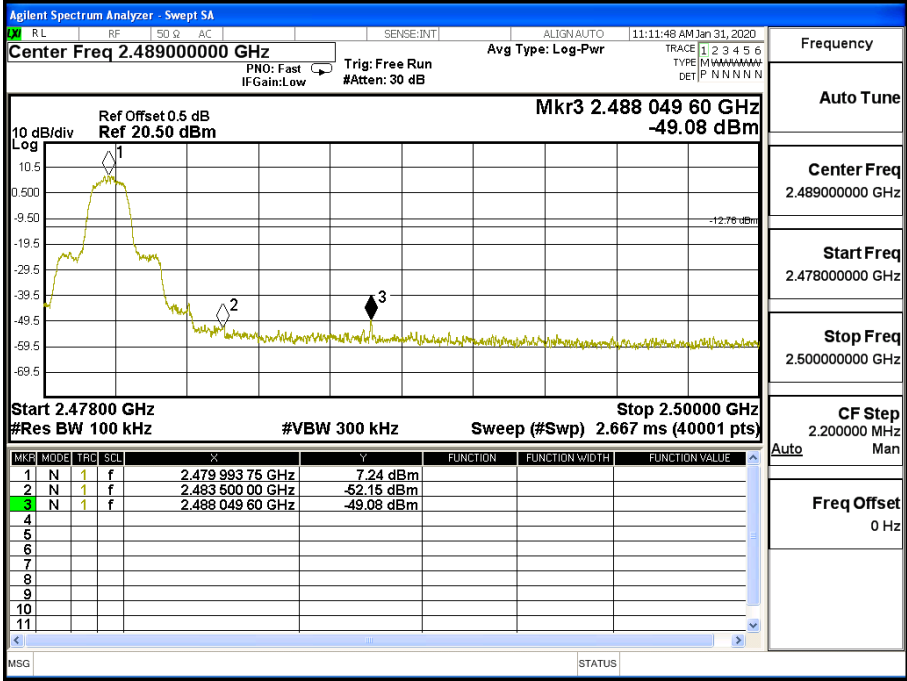
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00:



Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 78:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

CH 78 (2480MHz)

6 dB 頻寬：100KHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK) _
Hopping off Bandedge

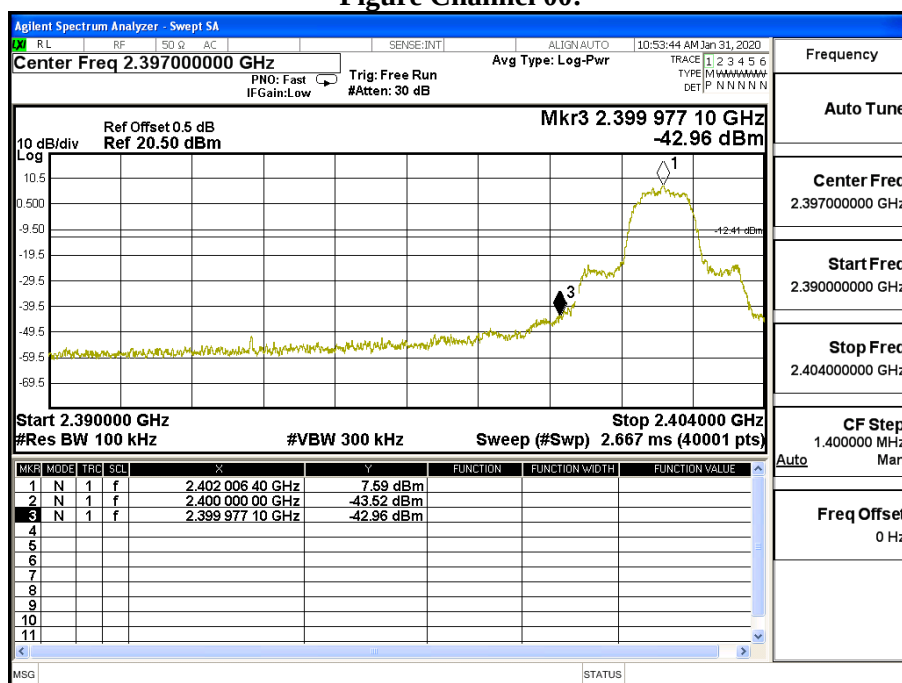
視頻頻寬：300KHz

環境溫度：23.5 °C

環境濕度：63.6 %

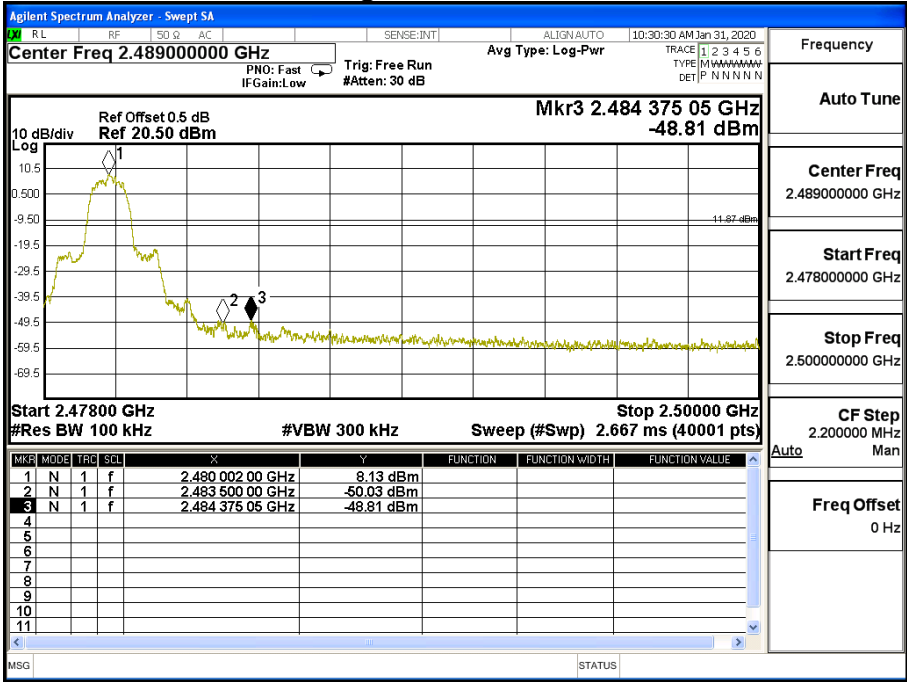
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00:



Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 78:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 1Mbps (GFSK) _
Hopping on Bandedge

6 dB 頻寬：100KHz

視頻頻寬：300KHz

檢測器：峰值

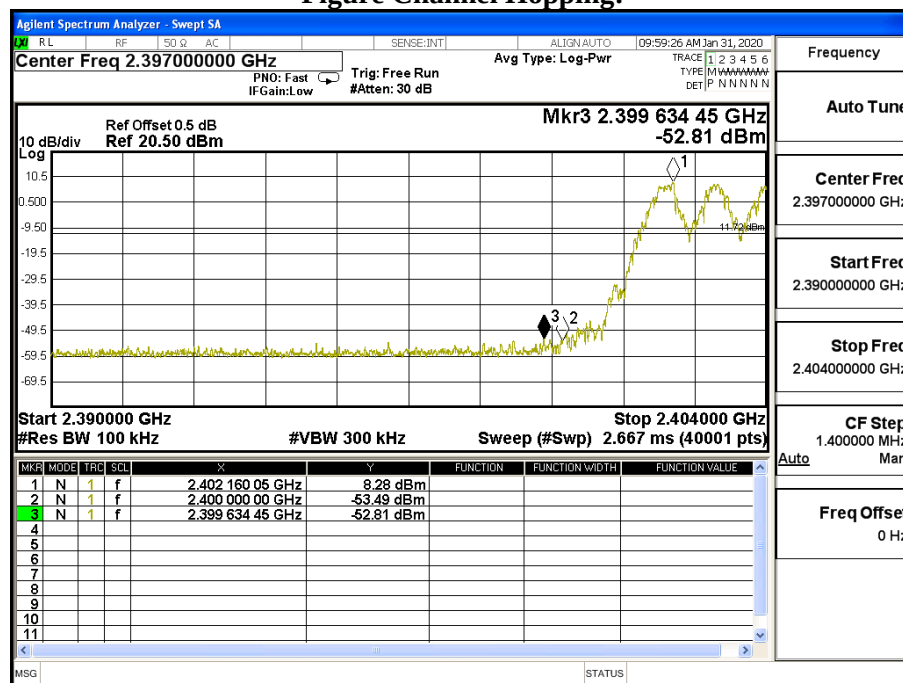
環境溫度：23.5 °C

測試日期：109 年 01 月 31 日

環境濕度：63.6 %

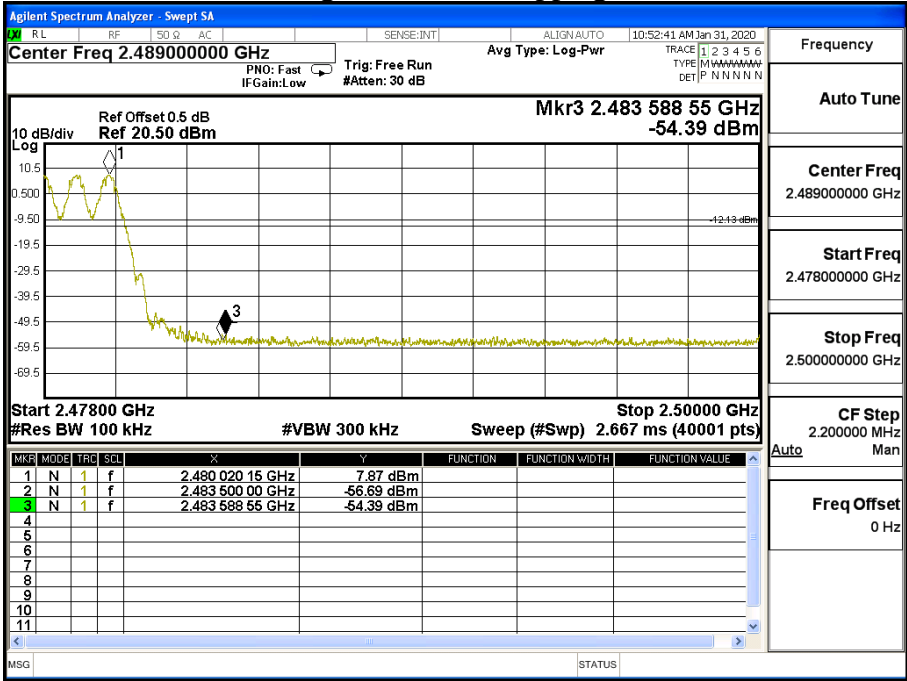
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel Hopping:



Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel Hopping:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK) _
Hopping on Bandedge

6 dB 頻寬：100KHz

視頻頻寬：300KHz

檢測器：峰值

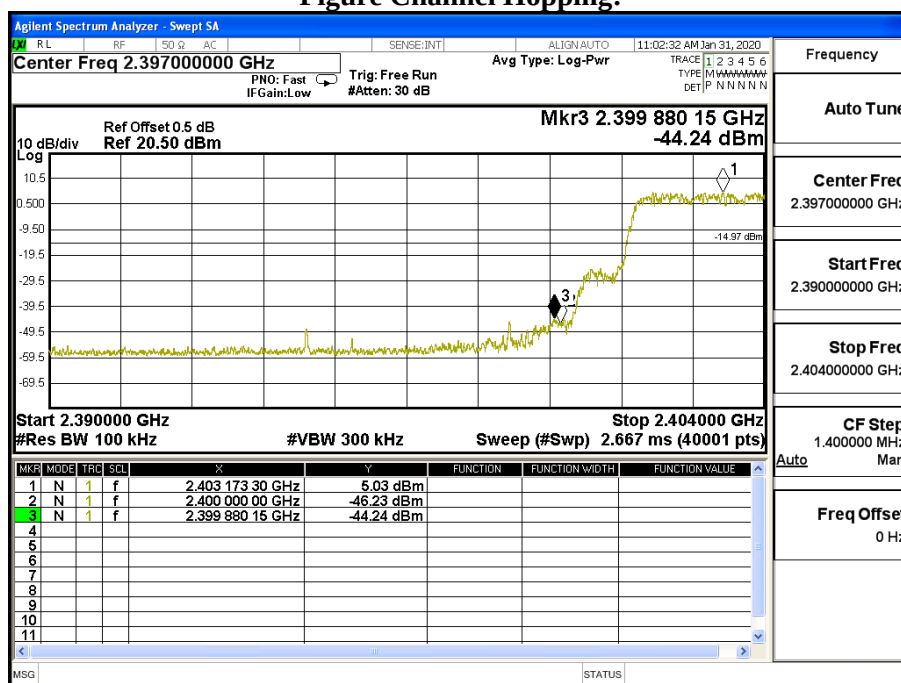
環境溫度：23.5 °C

測試日期：109 年 01 月 31 日

環境濕度：63.6 %

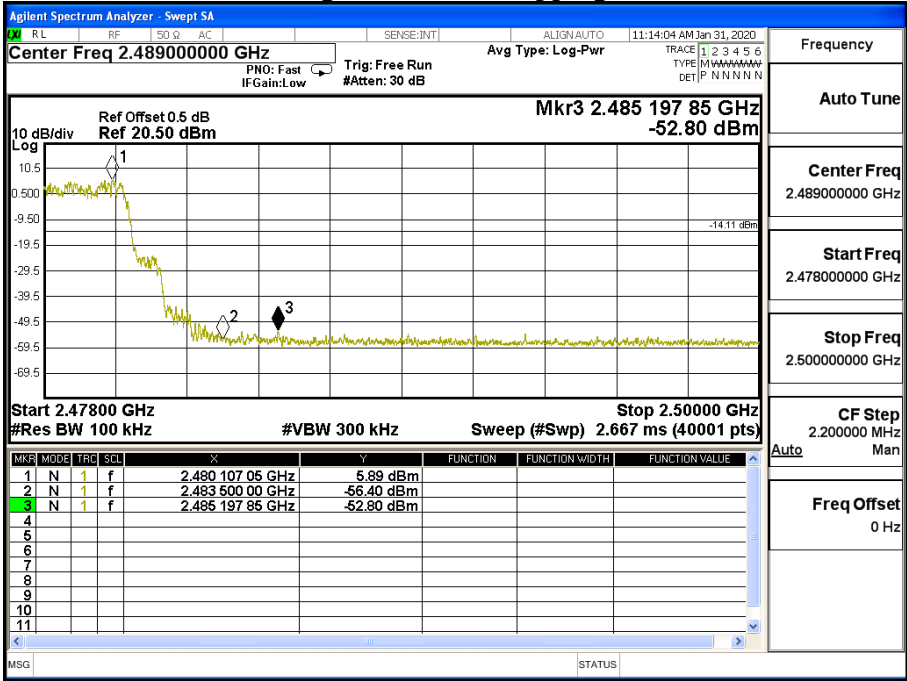
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel Hopping:



Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel Hopping:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

測試項目：使用頻率範圍外之任意 100 千赫雜訊

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK) _
Hopping on Bandedge

6 dB 頻寬：100KHz

視頻頻寬：300KHz

檢測器：峰值

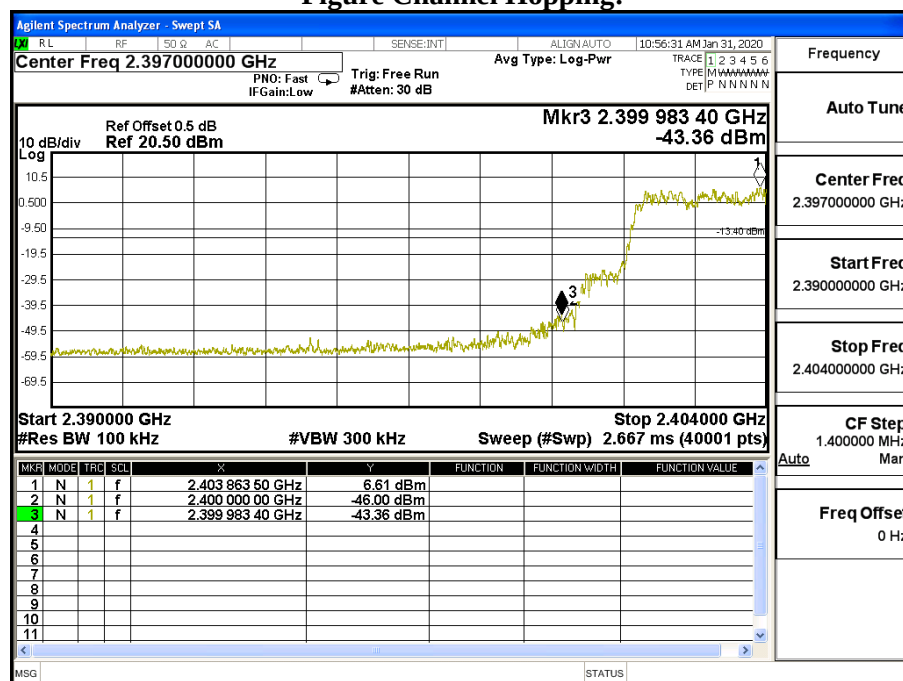
環境溫度：23.5 °C

測試日期：109 年 01 月 31 日

環境濕度：63.6 %

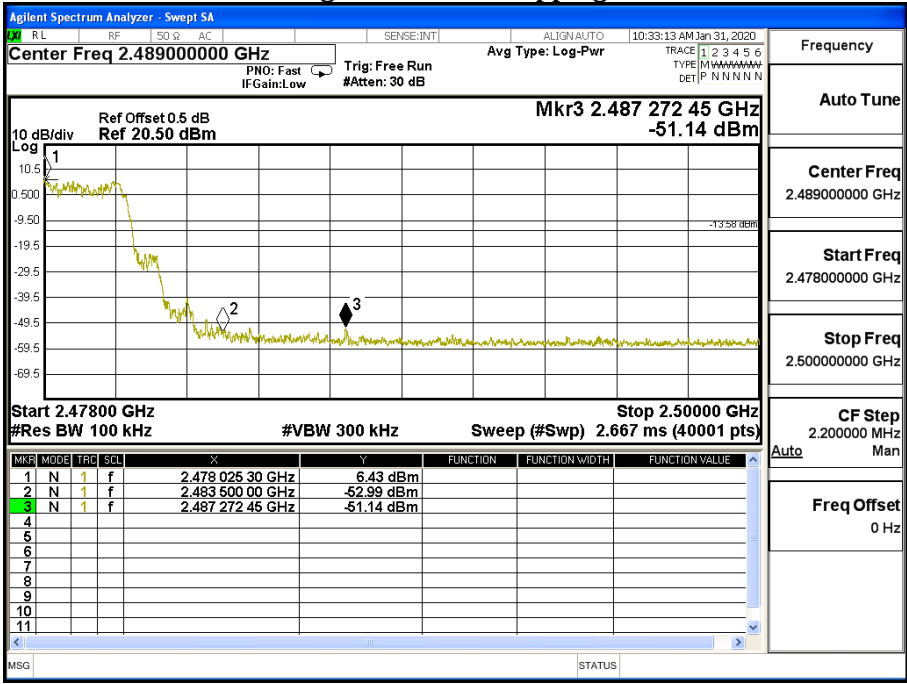
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel Hopping:



Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel Hopping:



使用頻率範圍外之任意 100 千赫雜訊測試結果:

PASS

9. 載波頻率間隔

9.1. 適用標準

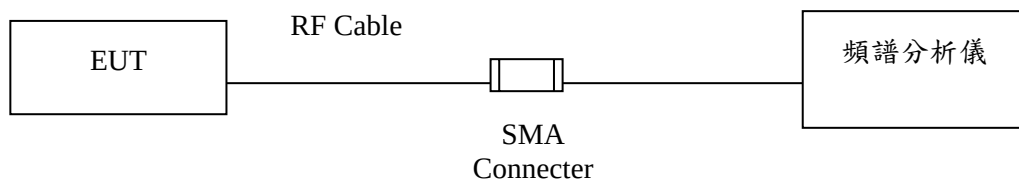
依據國家通訊傳播委員會低功率射頻器材技術規範之第4.10.1.6之要求，跳頻系統之載波頻率頻道間隔應至少25千赫(kHz)或跳頻頻道之20dB頻寬，兩者取較寬者。

9.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，啟動待測物之跳頻功能。設定頻譜分析儀之解析度頻寬不小於 1% 的頻率掃描範圍，視訊頻寬不小於解析度頻寬，掃描時間為自動，檢波功能為峰值，利用差值記號功能以決定兩鄰近頻道波峰之間隔。

待測物應在正常發射狀態下量測。

9.3. 測試架構圖



9.4. 量測不確定度

此項測試之量測不確定度為 $\pm 283\text{Hz}$

9.5. 載波頻率間隔測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109年01月31日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

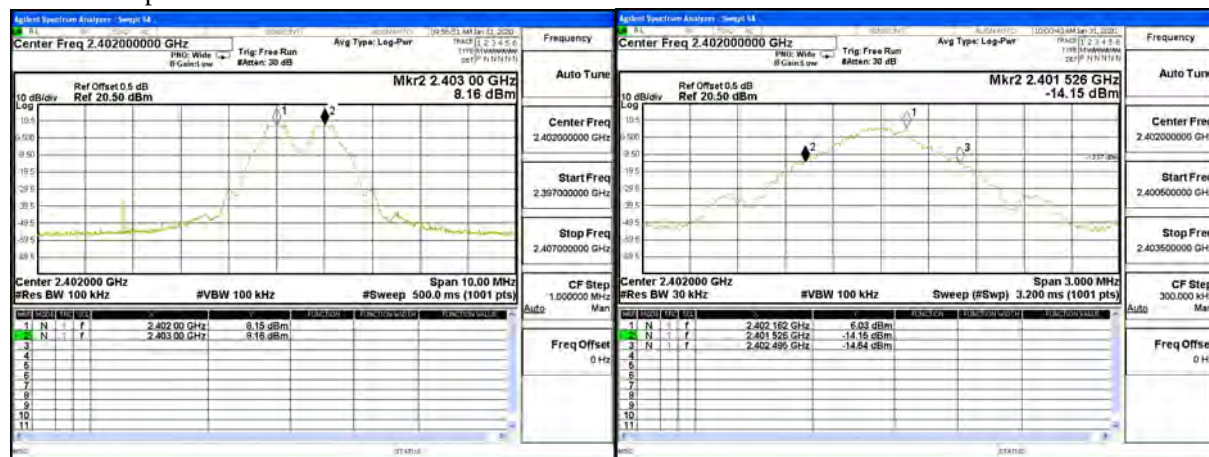
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2402	1000	>25 kHz	646.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

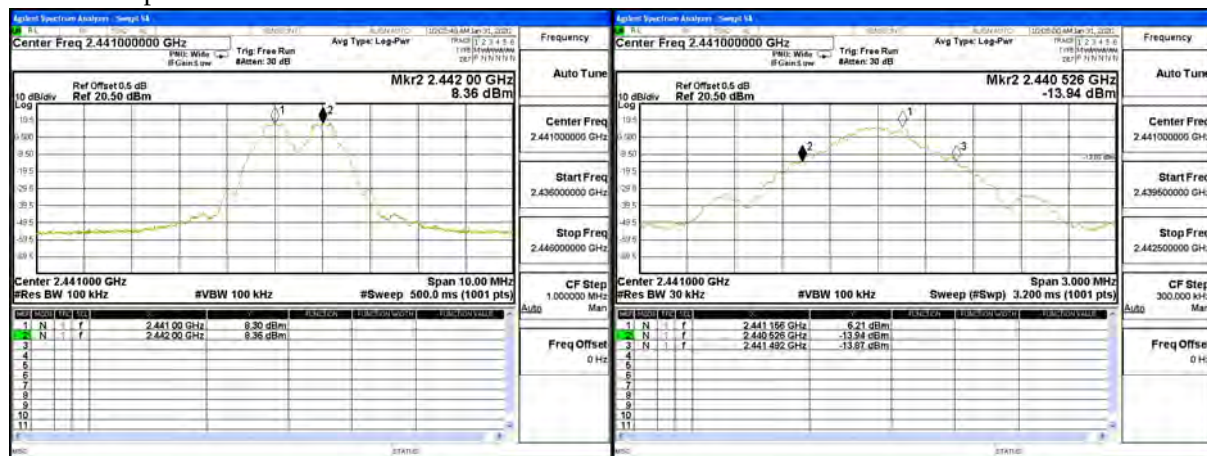
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2441	1000	>25 kHz	644.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

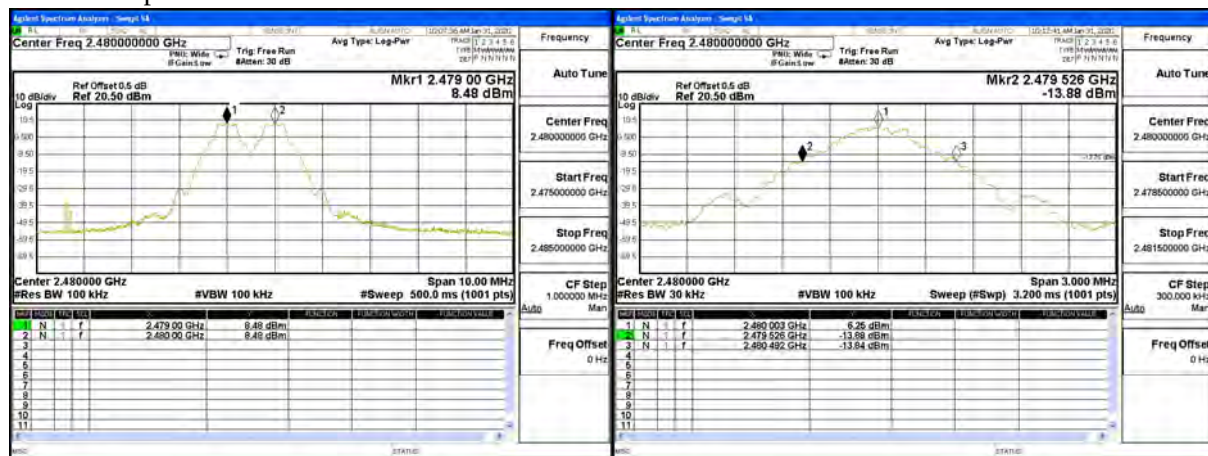
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2480	1000	>25 kHz	644.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

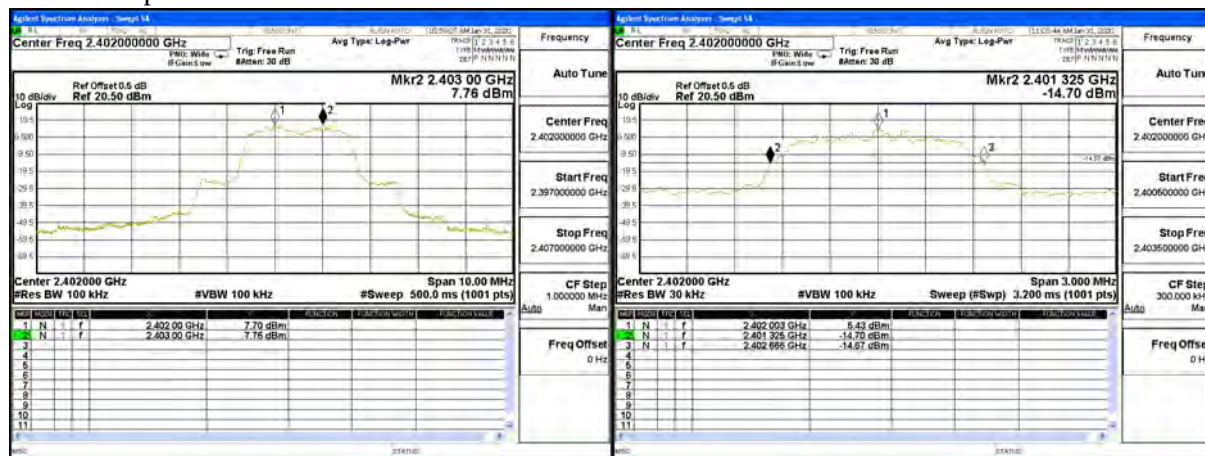
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2402	1000	>25 kHz	894.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

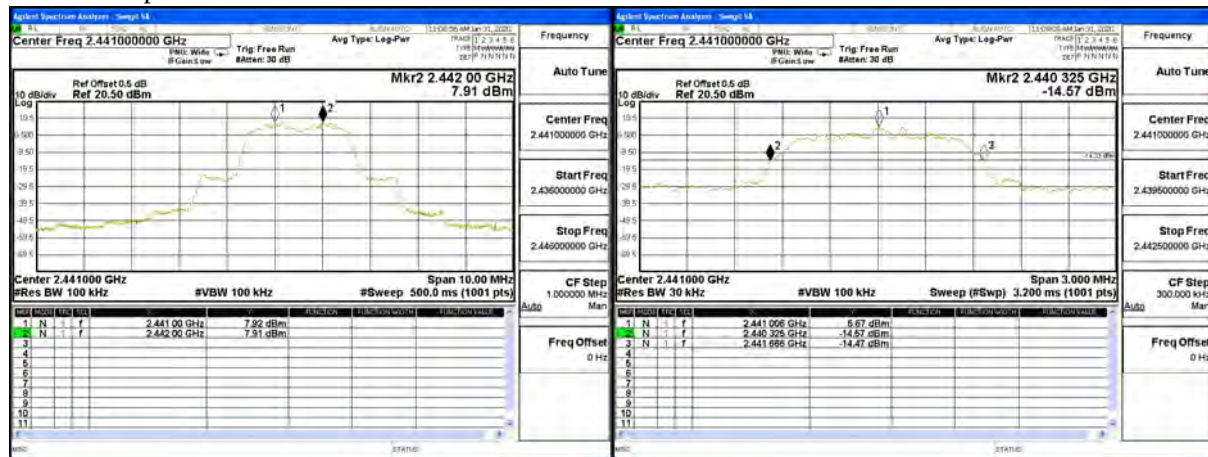
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2441	1000	>25 kHz	894.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

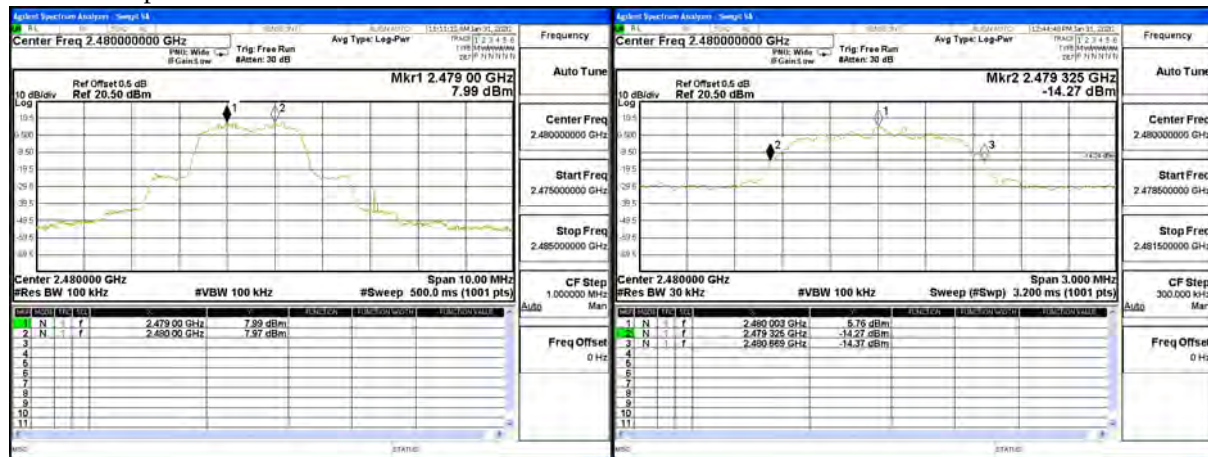
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2480	1000	>25 kHz	896.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

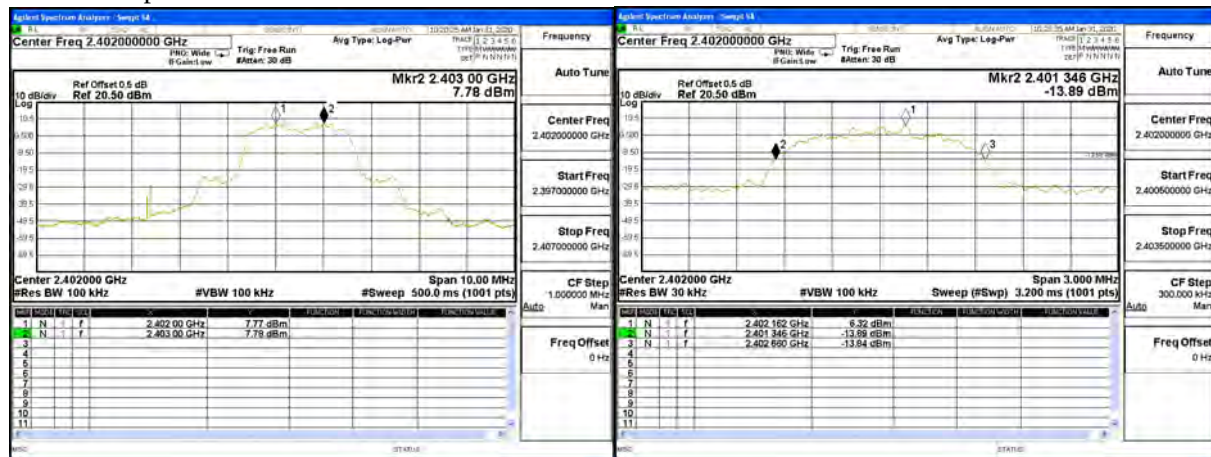
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2402	1000	>25 kHz	876.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2441MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

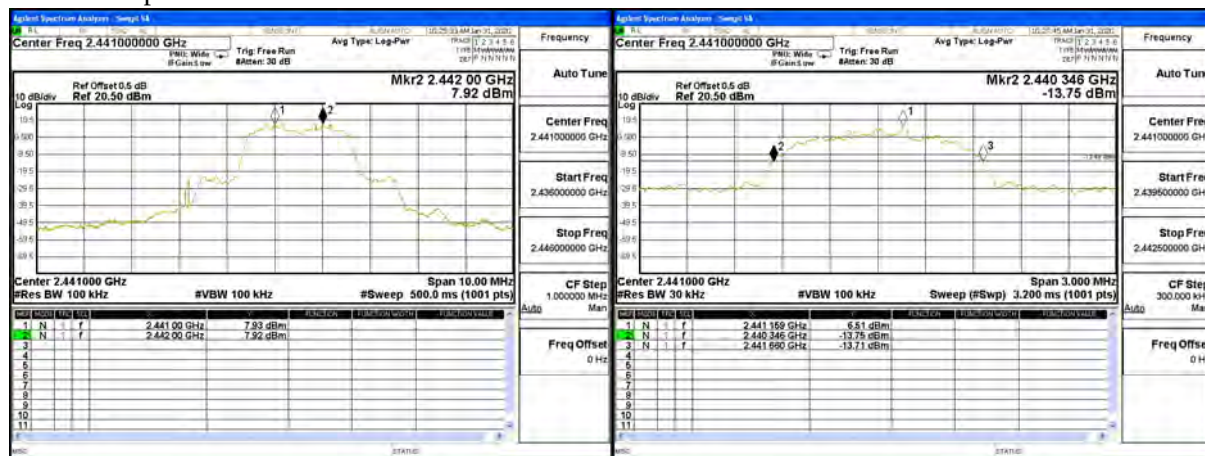
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2441	1000	>25 kHz	876.0	Pass

Figure:

Channel Separation

20dB Bandwidth



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 78 (2480MHz)

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：載波頻率間隔

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

視頻頻寬：100kHz

環境溫度：17.1 °C

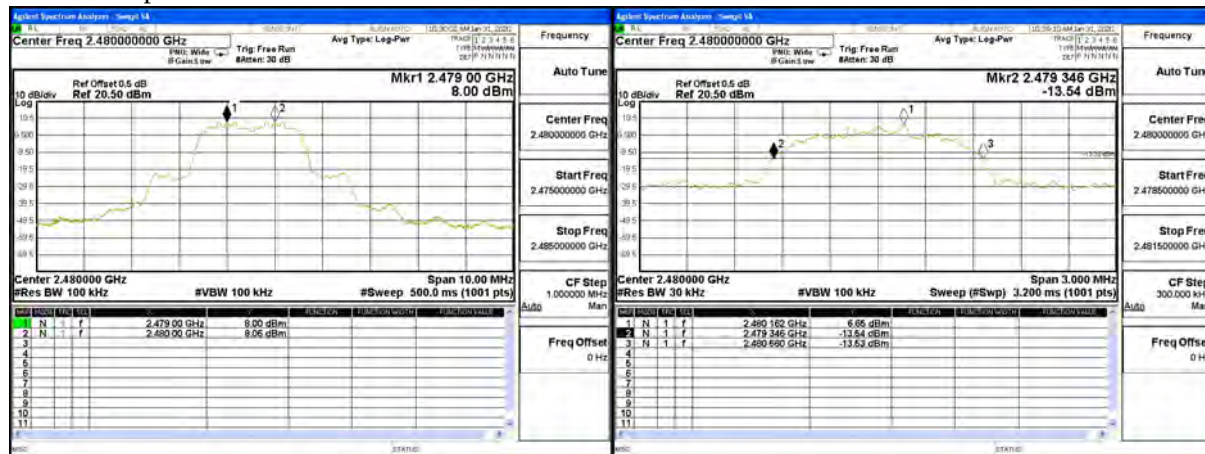
環境濕度：56 %

Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
2480	1000	>25 kHz	876.0	Pass

Figure:

Channel Separation

20dB Bandwidth



載波頻率間隔測試結果:

PASS

10. 跳頻頻率數目

10.1. 適用標準

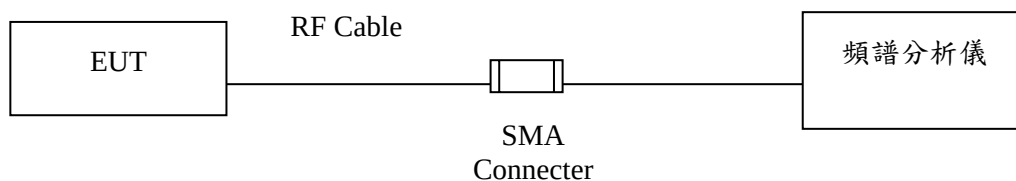
依據國家通訊傳播委員會低功率射頻器材技術規範之第4.10.1.6節，操作於2400-2483.5 MHz之展頻跳頻系統，須使用至少15個無重疊的頻道。應使用智慧型跳頻技術，以避免占用於特定跳頻頻道。

10.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，啟動待測物之跳頻功能。設定頻譜分析儀之解析度頻寬不小於 1% 的頻率掃瞄範圍，頻率掃瞄範圍為待測物之操作頻帶，視訊頻寬不小於解析度頻寬，掃瞄時間為自動，檢波功能為峰值。

待測物應在正常發射狀態下量測。

10.3. 測試架構圖



10.4. 量測不確定度

N/A

10.5. 跳頻頻率數目測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00-78

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：跳頻頻率數目

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

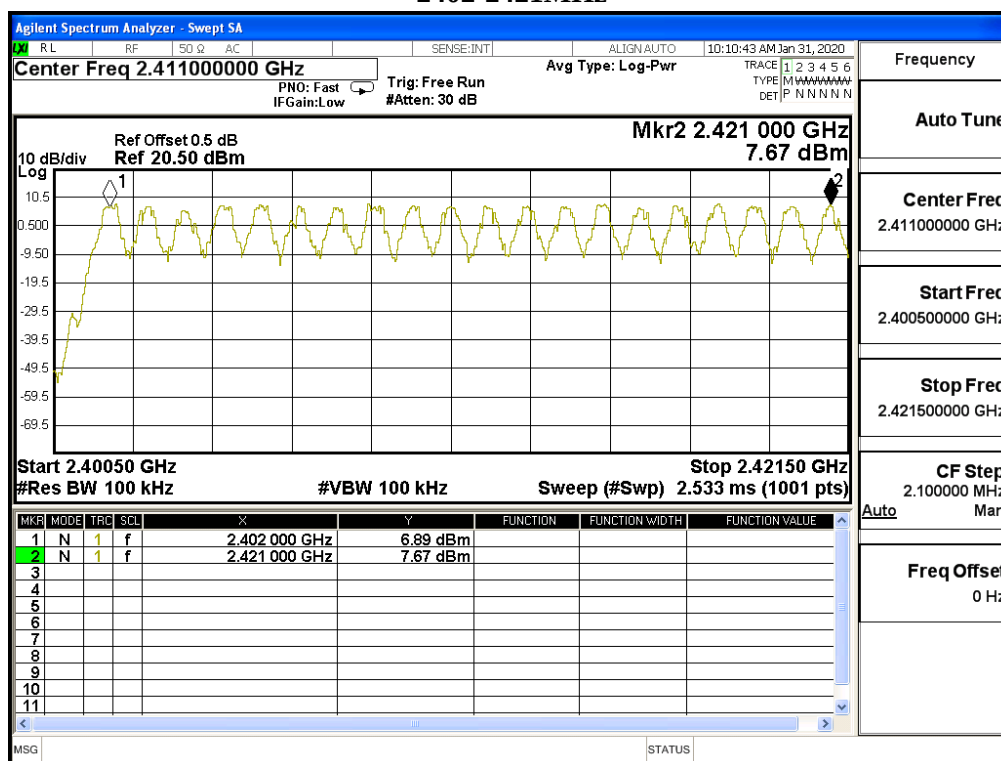
視頻頻寬：100kHz

環境溫度：17 °C

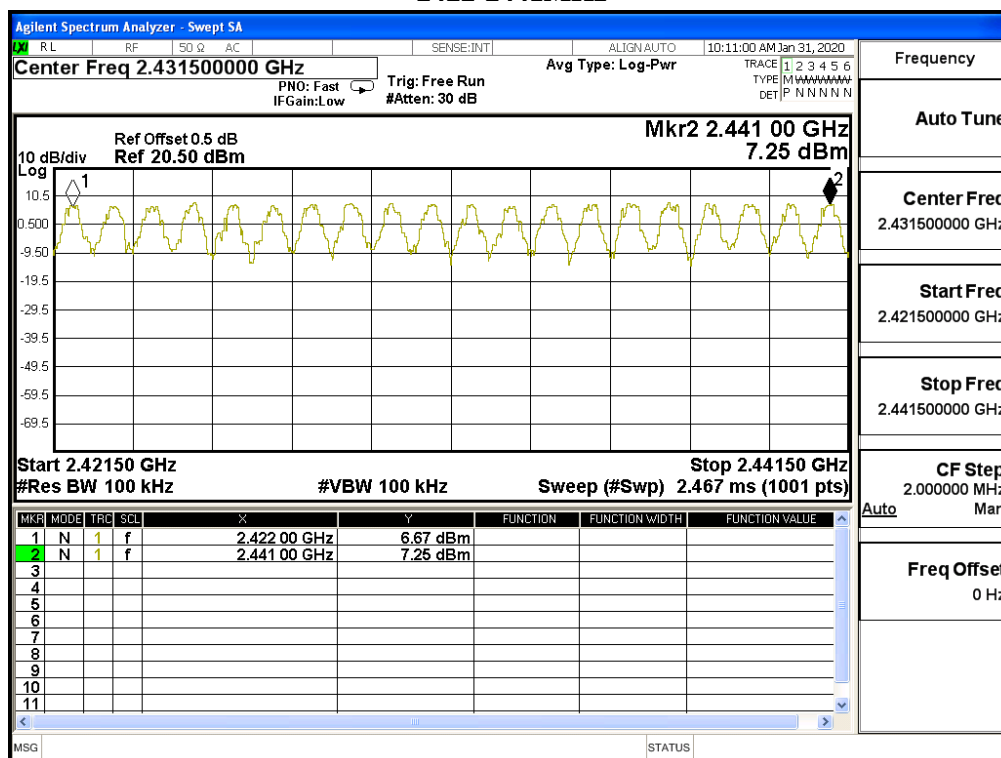
環境濕度：56 %

Measure Level (Channel)	Limit (Channel)	Result
79	> 75	Pass

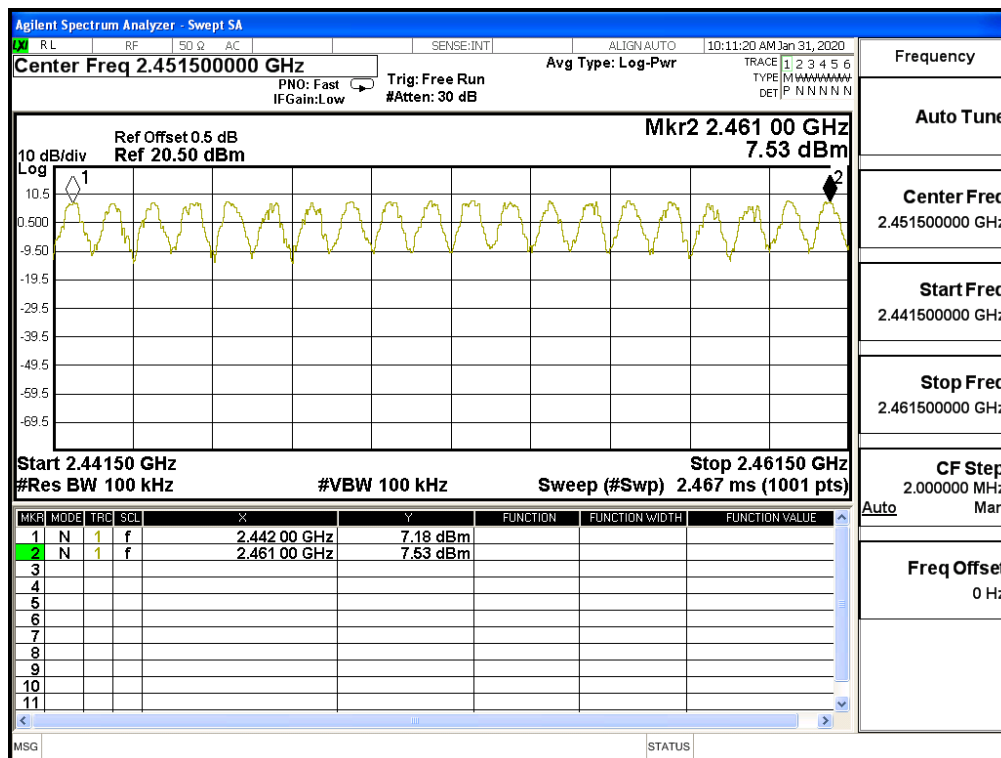
2402-2421MHz



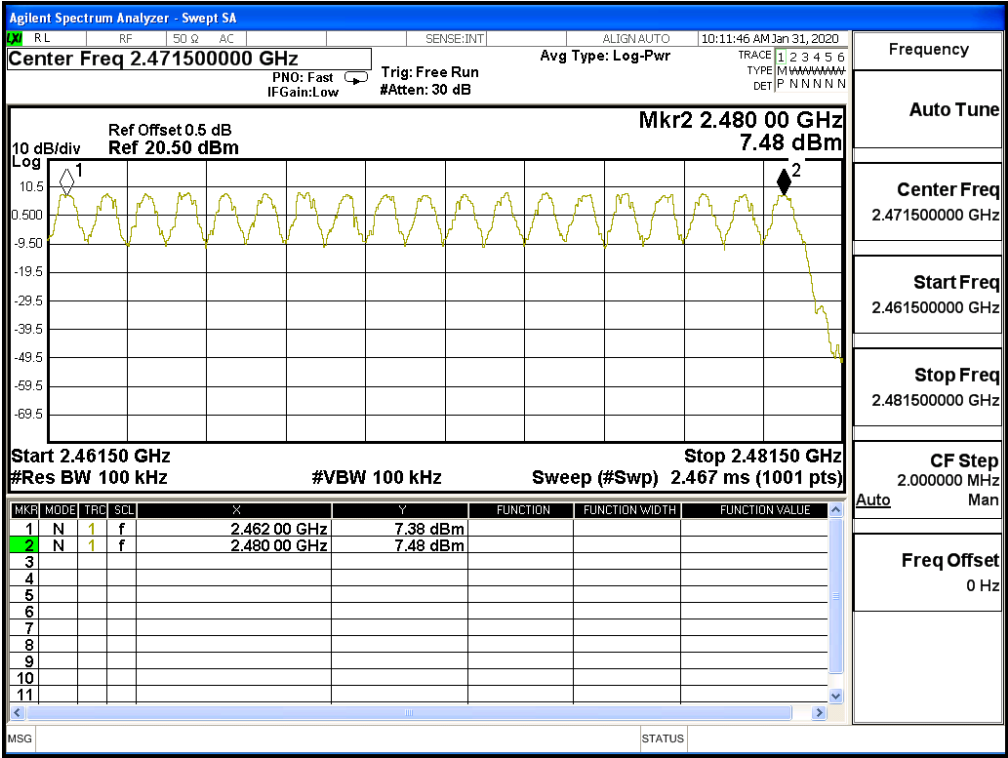
2422-2441MHz



2442-2461MHz



2462-2480MHz



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00-78

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：跳頻頻率數目

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

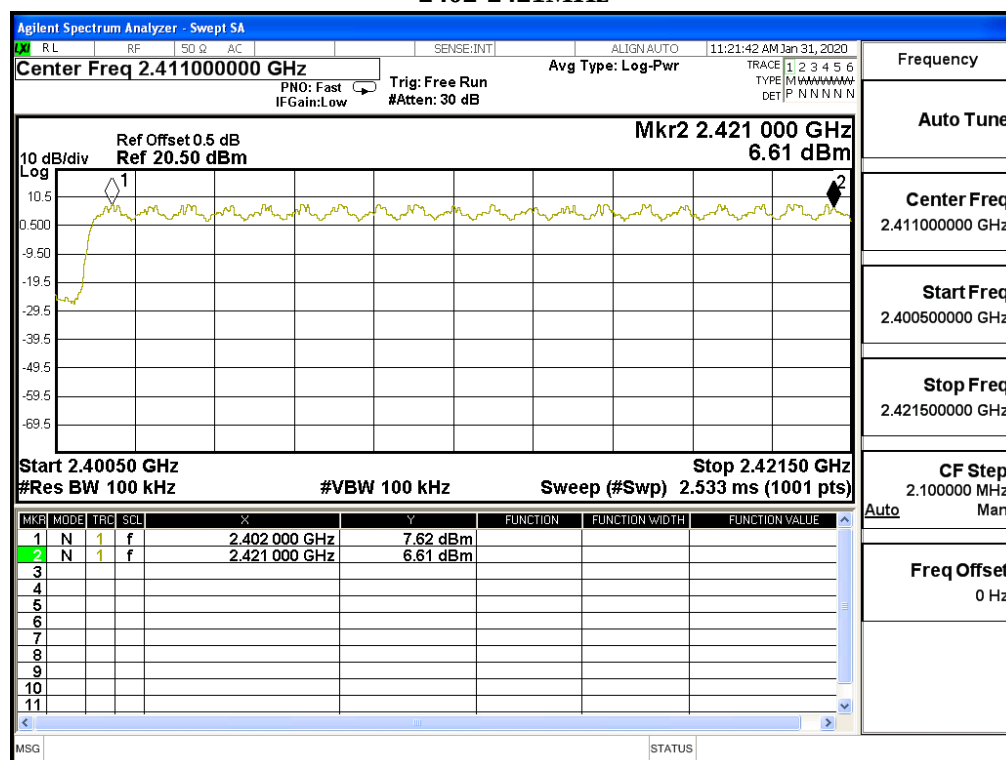
視頻頻寬：100kHz

環境溫度：17 °C

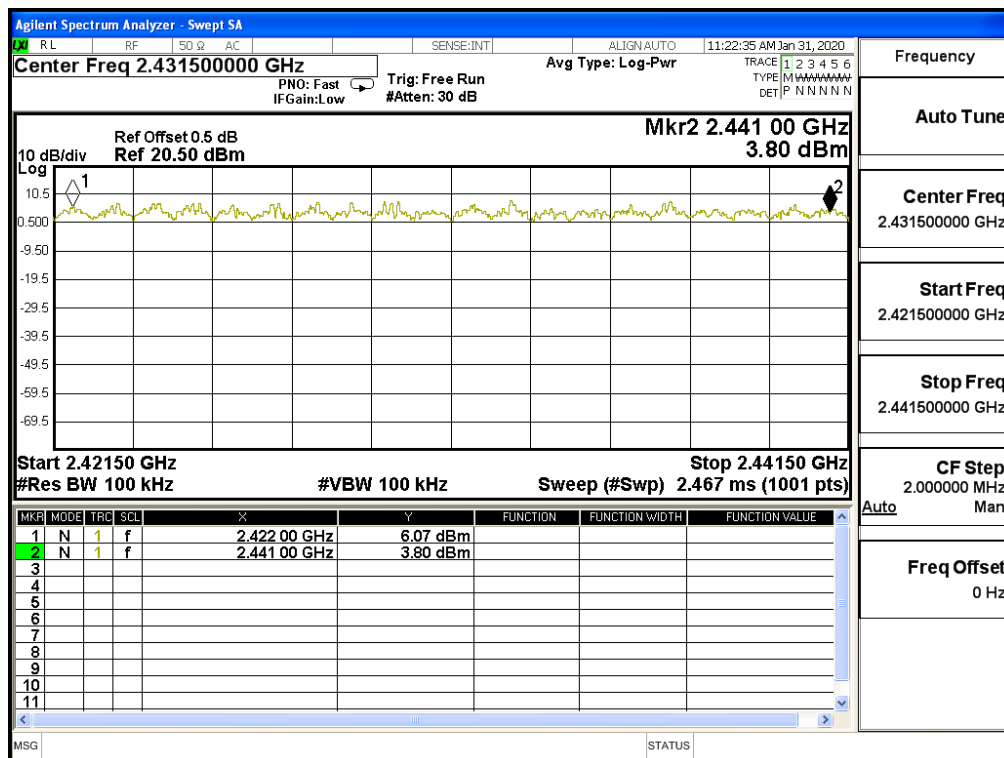
環境濕度：56 %

Measure Level (Channel)	Limit (Channel)	Result
79	> 75	Pass

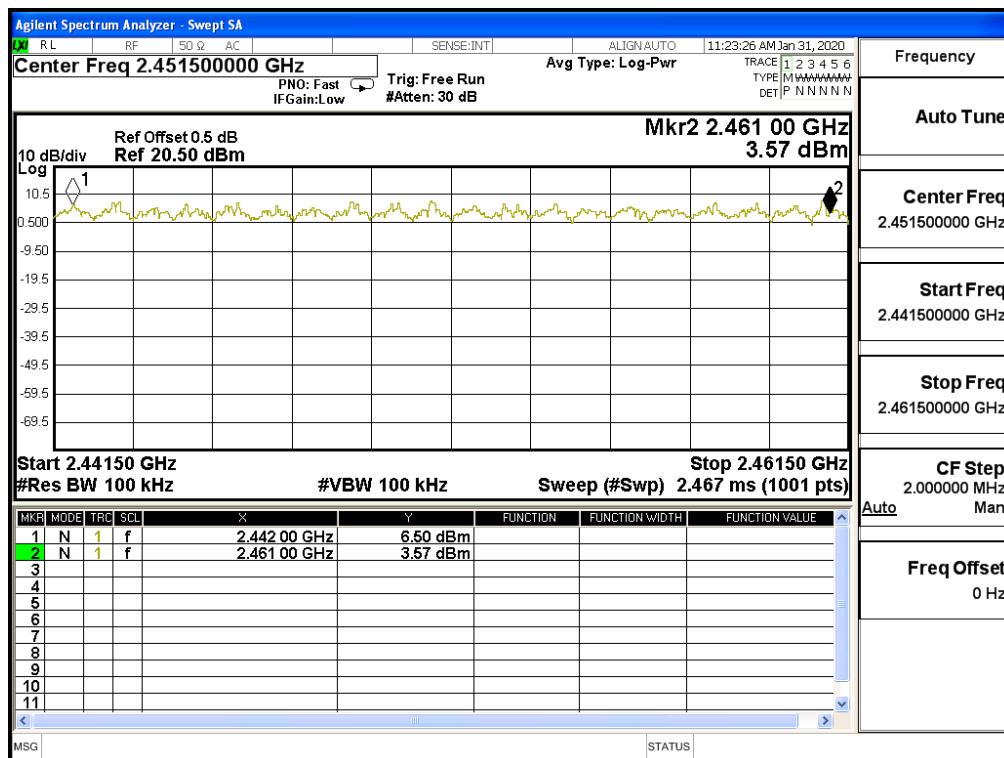
2402-2421MHz



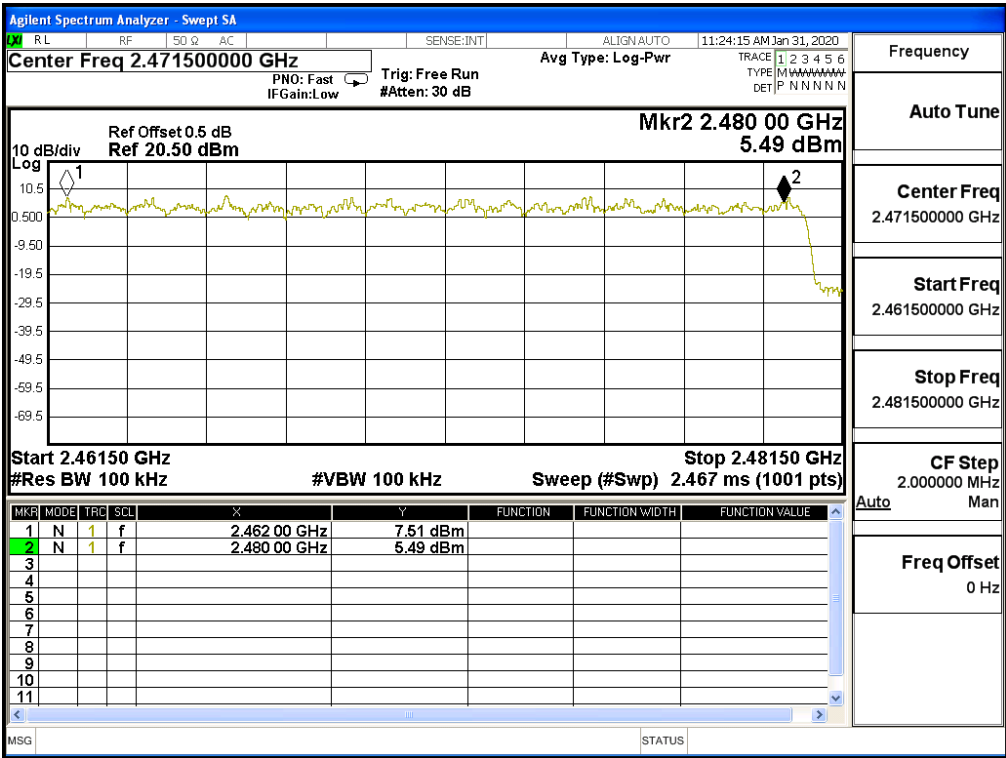
2422-2441MHz



2442-2461MHz



2462-2480MHz



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00-78

6 dB 頻寬：100kHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：跳頻頻率數目

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

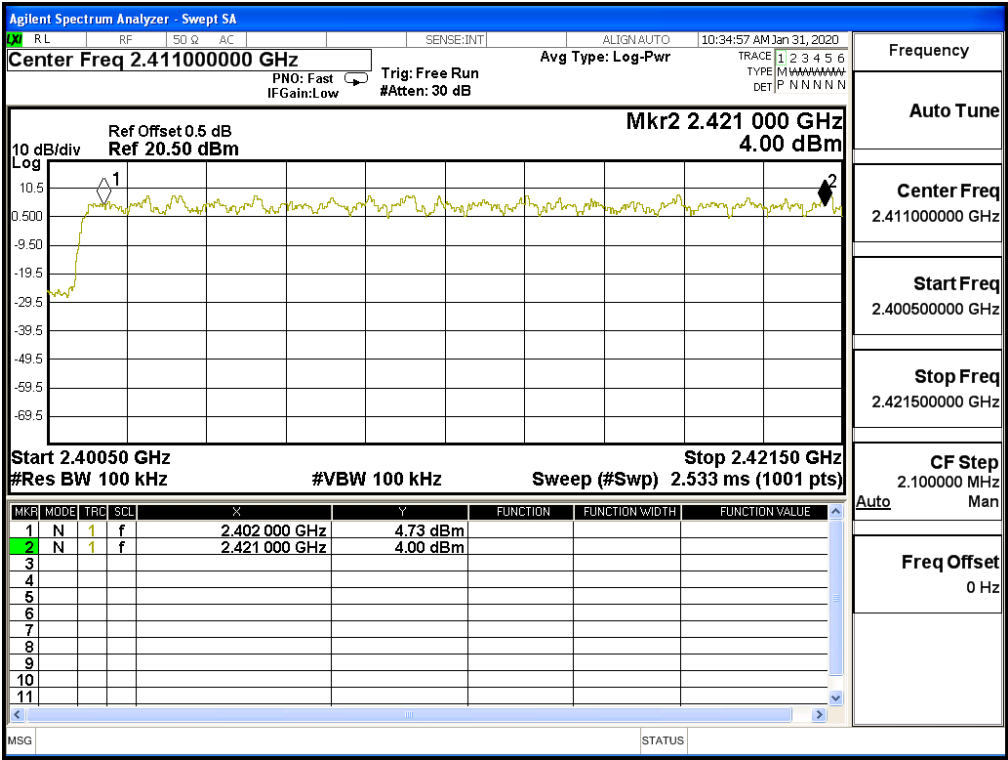
視頻頻寬：100kHz

環境溫度：17 °C

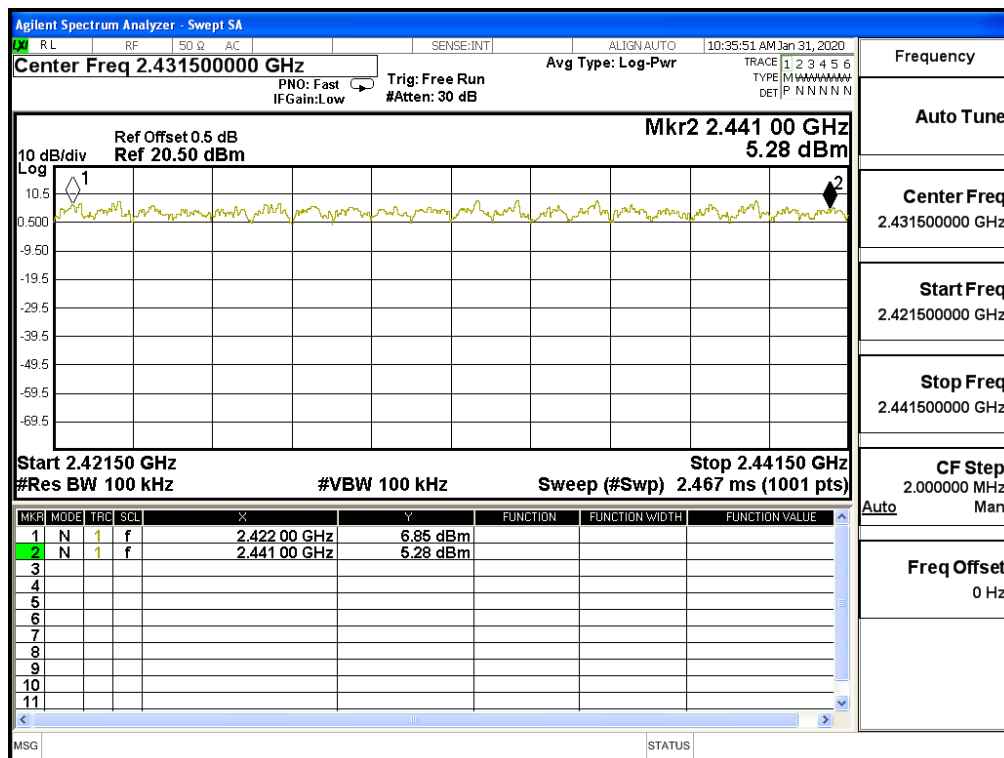
環境濕度：56 %

Measure Level (Channel)	Limit (Channel)	Result
79	> 75	Pass

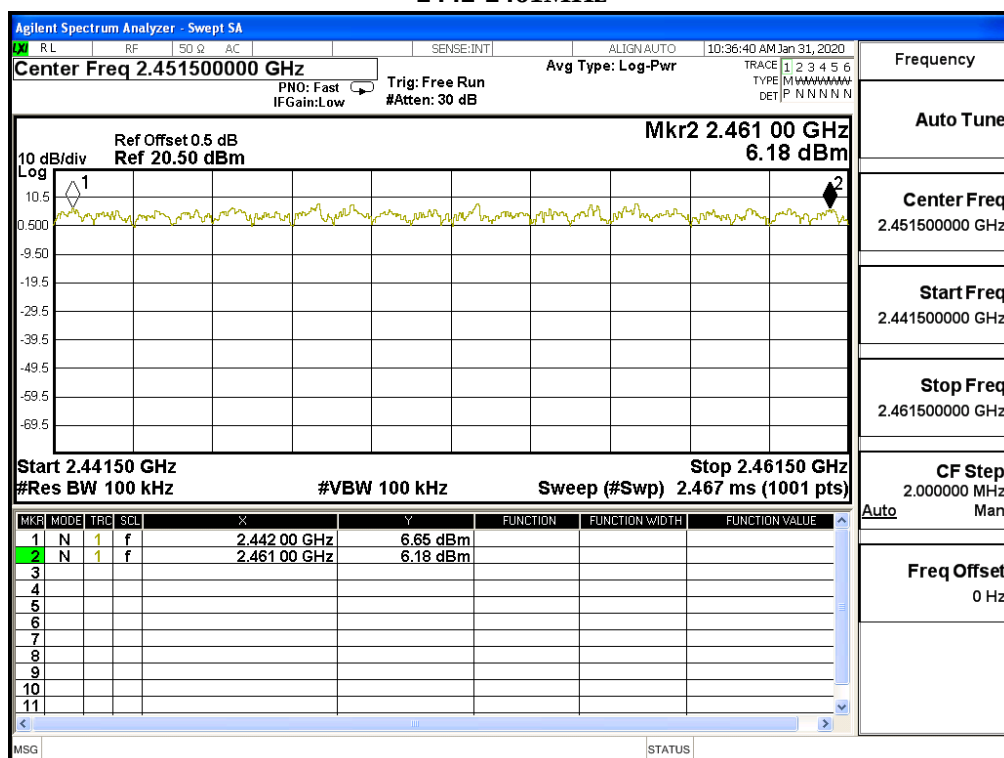
2402-2421MHz



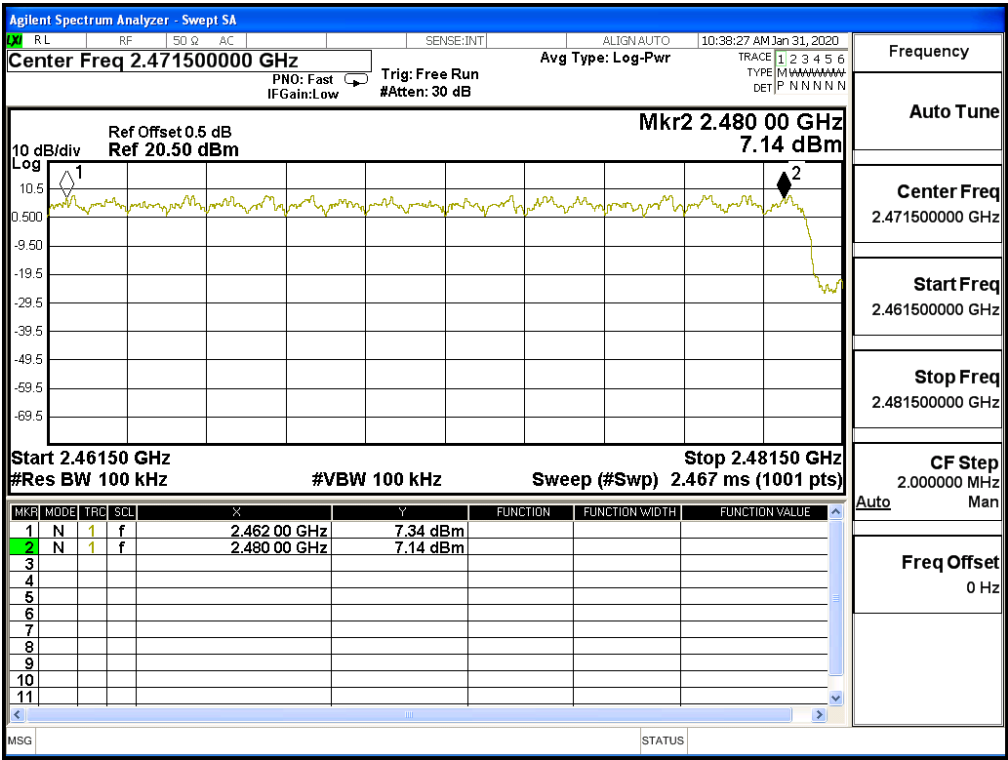
2422-2441MHz



2442-2461MHz



2462-2480MHz



11. 停留時間

11.1. 適用標準

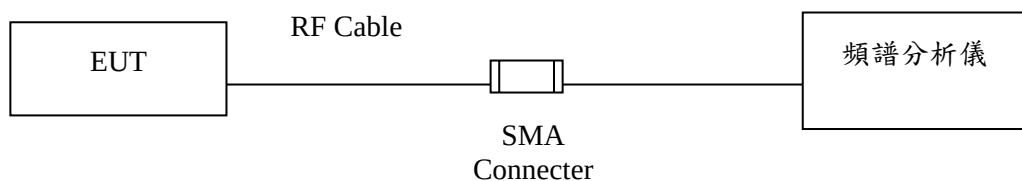
依據國家通訊傳播委員會低功率射頻器材技術規範之 4.10.1.6，操作於 2400-2483.5 MHz 之展頻跳頻系統，在 0.4 秒乘以跳頻頻道數之週期內，任一頻率佔用之平均時間不得超過 0.4 秒。

11.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，啟動待測物之跳頻功能。設定頻譜分析儀之解析度頻寬為 1MHz，視訊頻寬不小於解析度頻寬，頻率掃瞄範圍為零，中心頻率為跳頻頻道，掃瞄時間為足以測得每一個跳頻頻道之所有停留時間，檢波功能為峰值，利用差值記號功能以決定停留時間。

待測物應在正常發射狀態下量測。

11.3. 測試架構圖



11.4. 量測不確定度

此項測試之量測不確定度為 $\pm 2.31\text{msec}$

11.5. 停留時間量測結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH39, CH78

6 dB 頻寬：1MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：停留時間

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

視頻頻寬：1MHz

環境溫度：17 °C

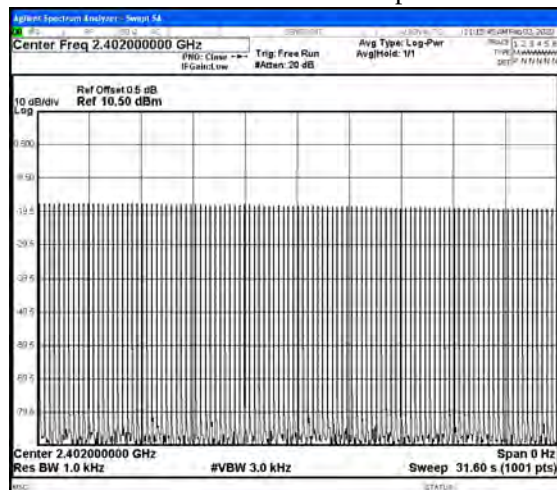
環境濕度：56 %

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.880	113	31600	325.440	400	Pass
2441	2.880	105	31600	302.400	400	Pass
2480	2.880	106	31600	305.280	400	Pass

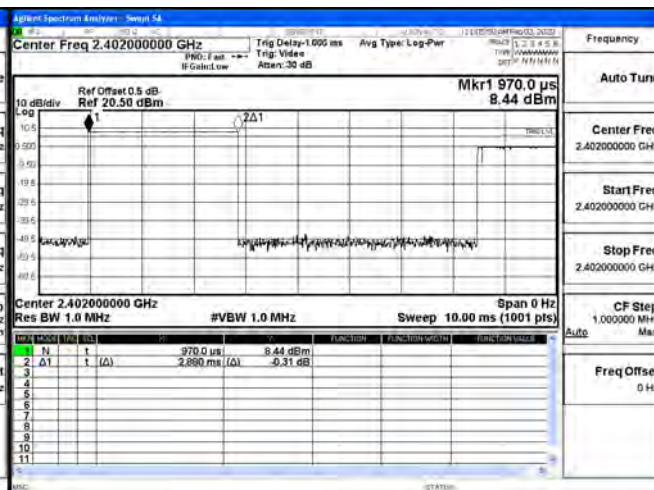
Dwell time = Time slot length*Hopping of number

Sweep time= 79 CHannel * 0.4

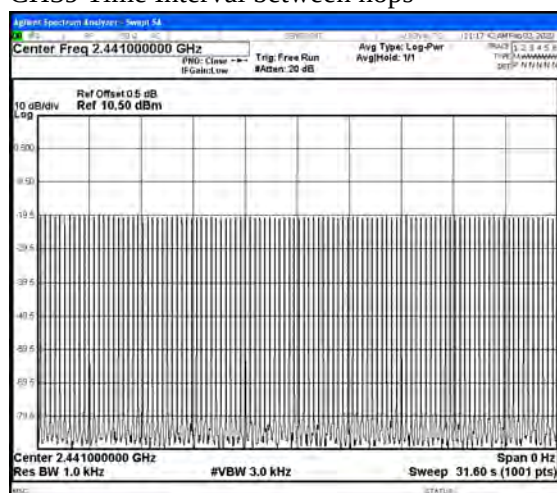
CH 00 Time Interval between hops



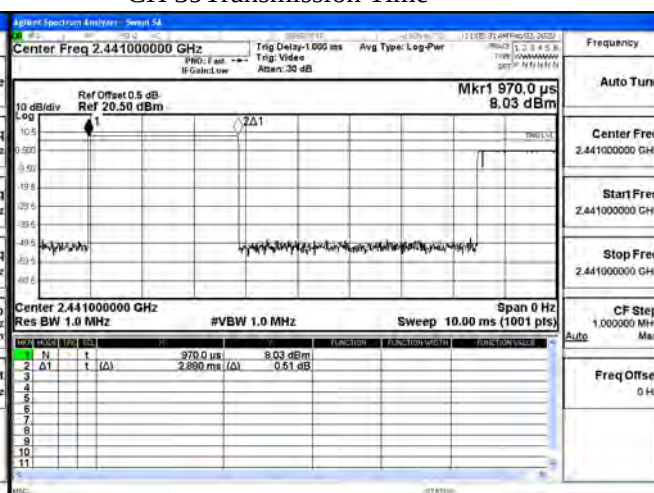
CH 00 Transmission Time



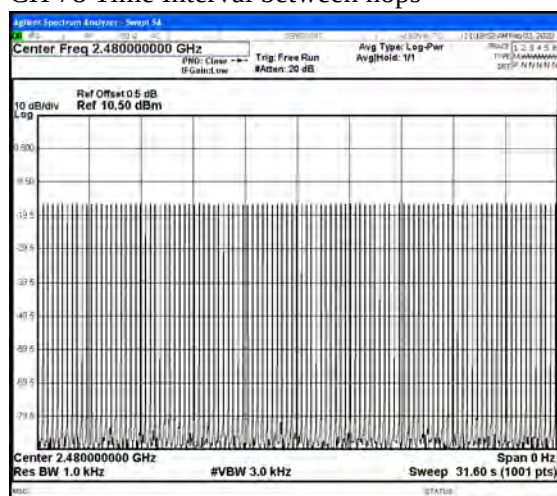
CH39 Time Interval between hops



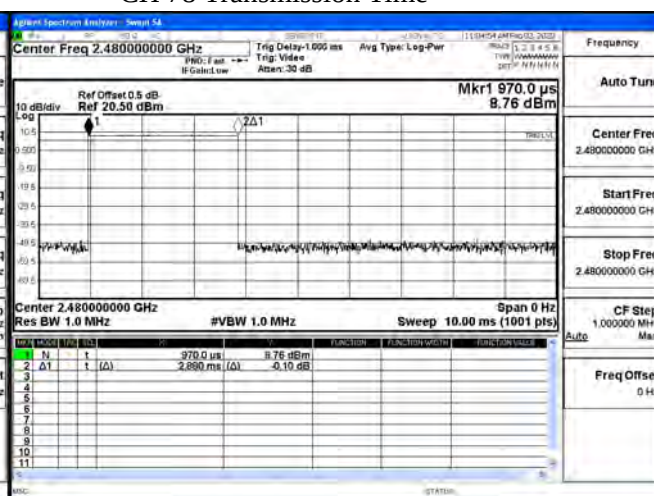
CH 39Transmission Time



CH 78 Time Interval between hops



CH 78 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH39, CH78

6 dB 頻寬：1MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：停留時間

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

視頻頻寬：1MHz

環境溫度：17 °C

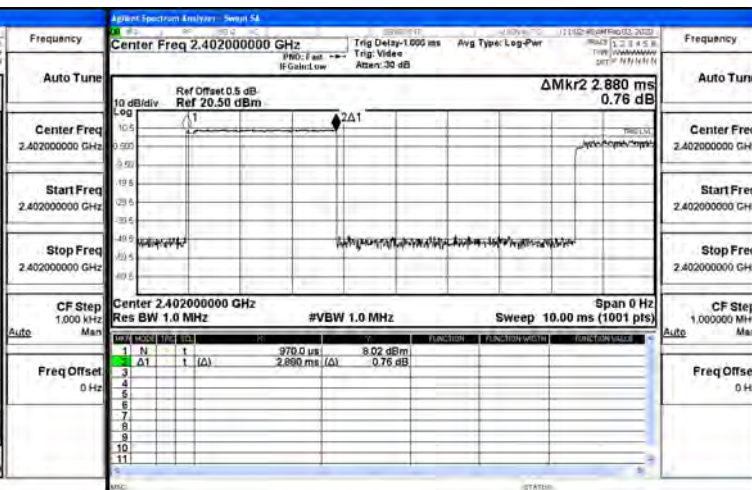
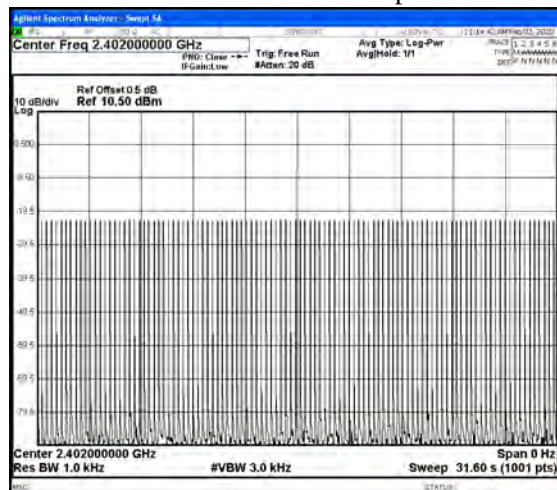
環境濕度：56 %

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.880	106	31600	305.280	400	Pass
2441	2.880	109	31600	313.920	400	Pass
2480	2.880	106	31600	305.280	400	Pass

Dwell time = Time slot length*Hopping of number

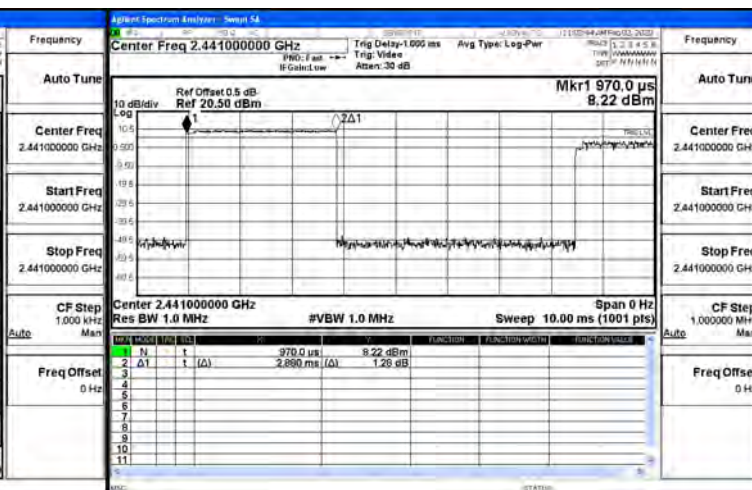
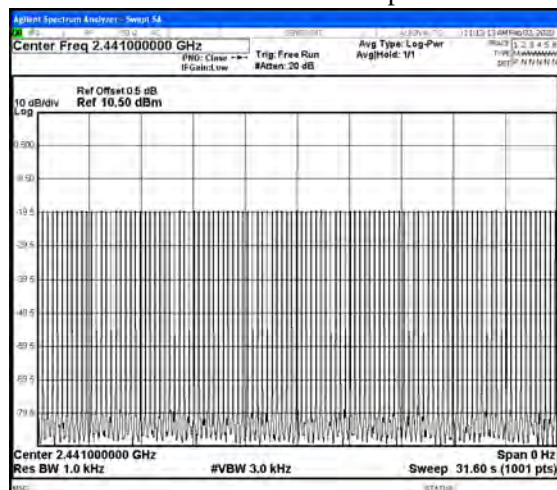
Sweep time= 79 CHannel * 0.4

CH 00 Time Interval between hops



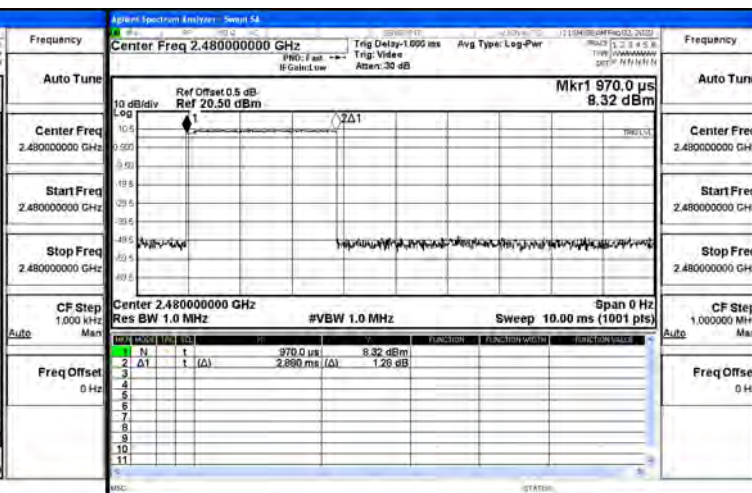
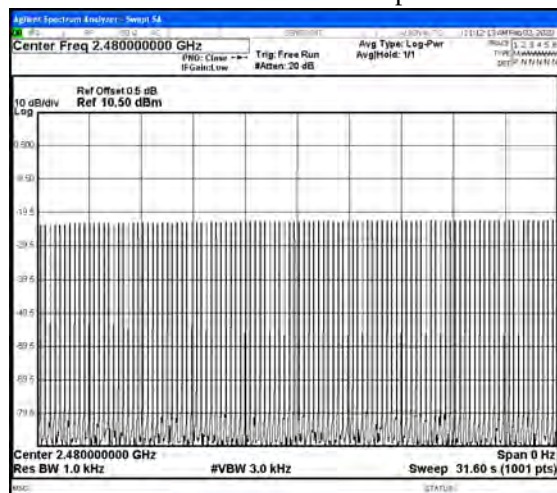
CH 00 Transmission Time

CH39 Time Interval between hops



CH 39Transmission Time

CH 78 Time Interval between hops



CH 78 Transmission Time

Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00, CH39, CH78

6 dB 頻寬：1MHz

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：停留時間

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

視頻頻寬：1MHz

環境溫度：17 °C

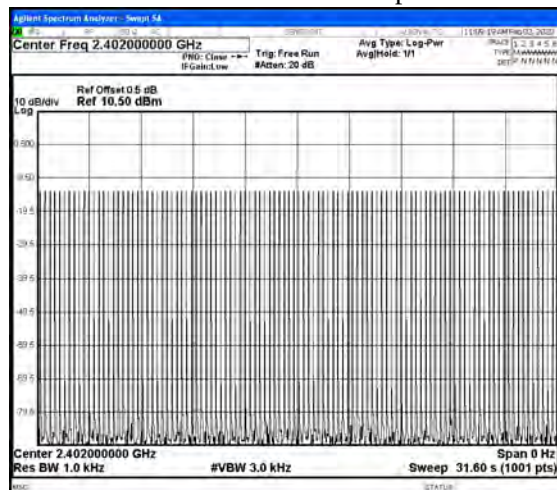
環境濕度：56 %

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.890	106	31600	306.340	400	Pass
2441	2.890	106	31600	306.340	400	Pass
2480	2.890	106	31600	306.340	400	Pass

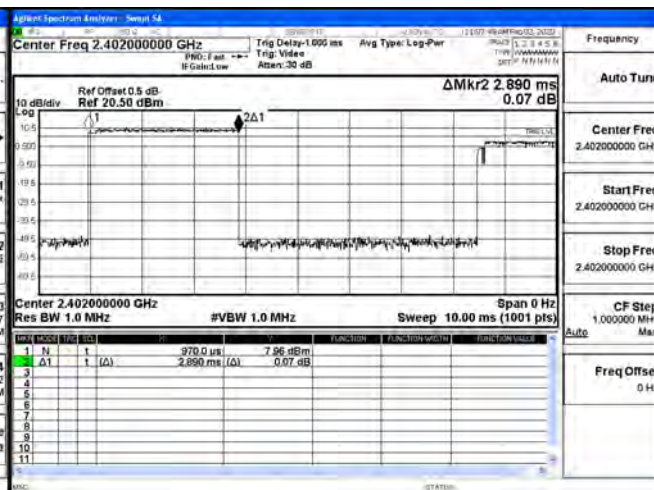
Dwell time = Time slot length*Hopping of number

Sweep time= 79 CHannel * 0.4

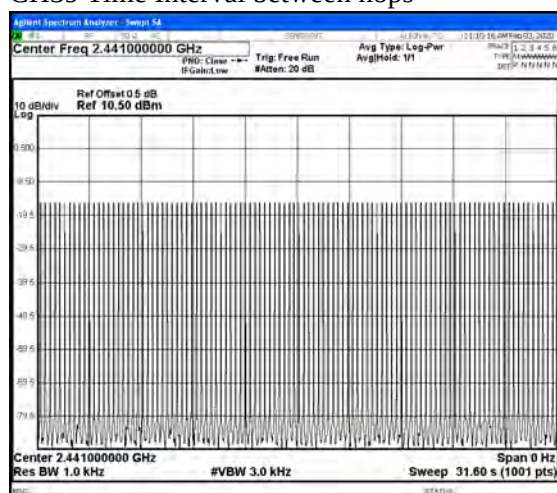
CH 00 Time Interval between hops



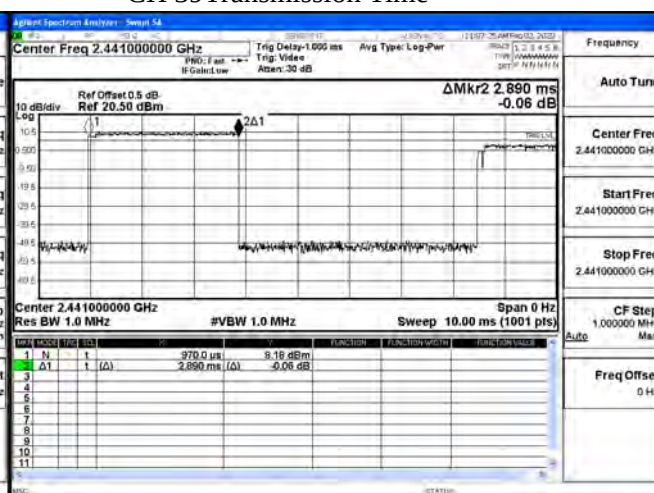
CH 00 Transmission Time



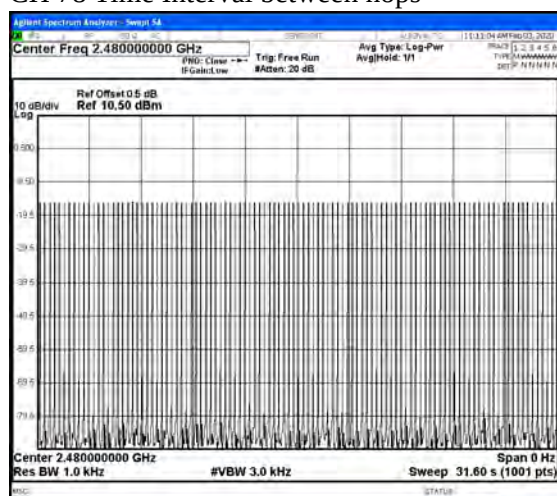
CH39 Time Interval between hops



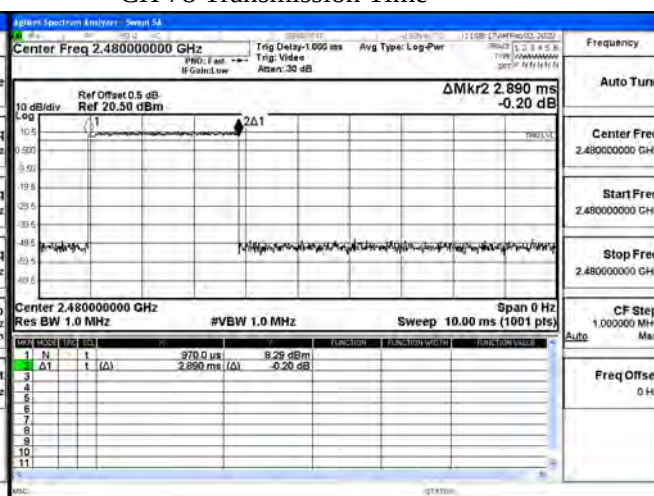
CH 39Transmission Time



CH 78 Time Interval between hops



CH 78 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

12. 佔用頻道寬度

12.1. 適用標準

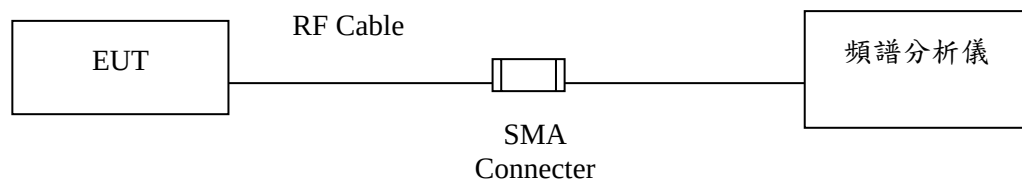
依據國家通訊傳播委員會低功率射頻器材技術規範之第4.10.1.6之要求，6dB寬至少應有500千赫(kHz)。

12.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，設定頻譜分析儀之解析度頻寬為 300kHz，視訊頻寬不小於解析度頻寬，頻率掃描範圍(SPAN)遠大於解析度頻寬。

待測物應在正常發射狀態下量測。

12.3. 測試架構圖



12.4. 量測不確定度

此項測試之量測不確定度為 $\pm 283\text{Hz}$

12.5. 佔用頻帶寬度測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

6 dB 頻寬：100kHz

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：佔用頻帶寬度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

視頻頻寬：300kHz

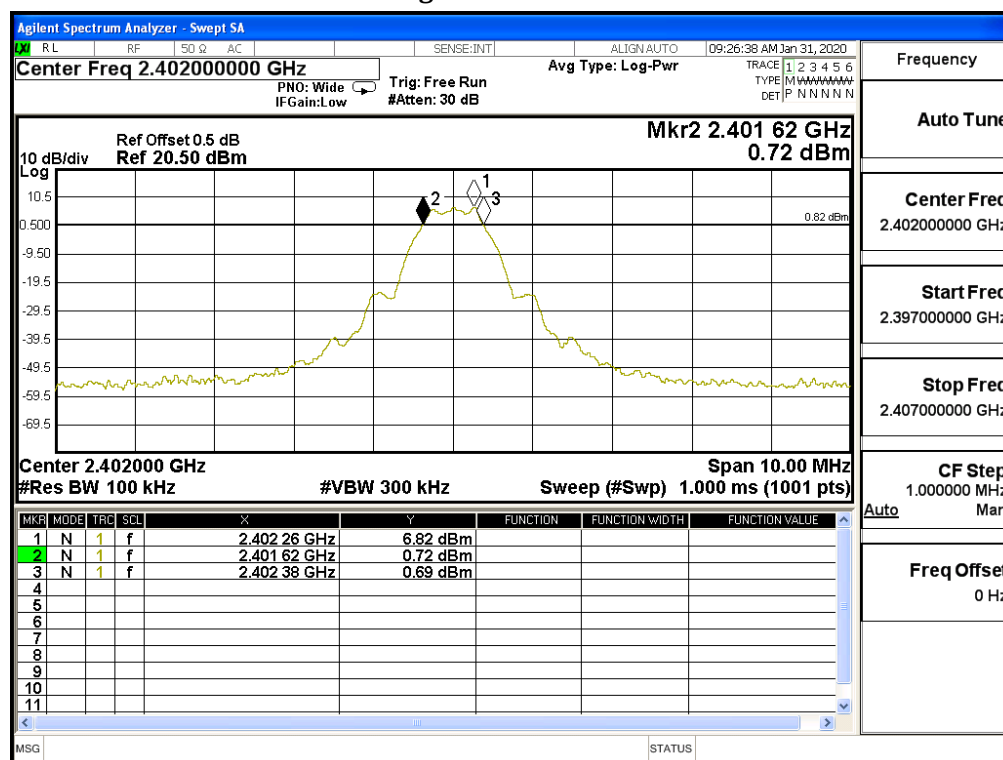
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
00	2402	760	>500	Pass

Figure Channel 00:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

6 dB 頻寬：100kHz

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：佔用頻帶寬度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

視頻頻寬：300kHz

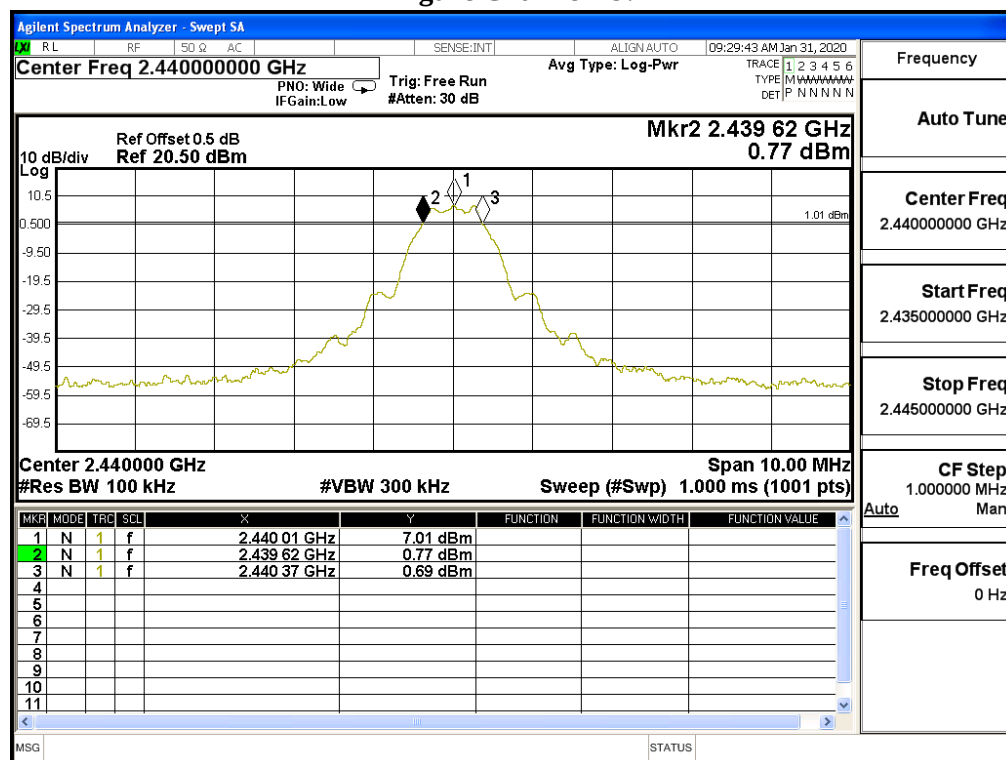
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
19	2440	750	>500	Pass

Figure Channel 19:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

6 dB 頻寬：100kHz

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：佔用頻帶寬度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

視頻頻寬：300kHz

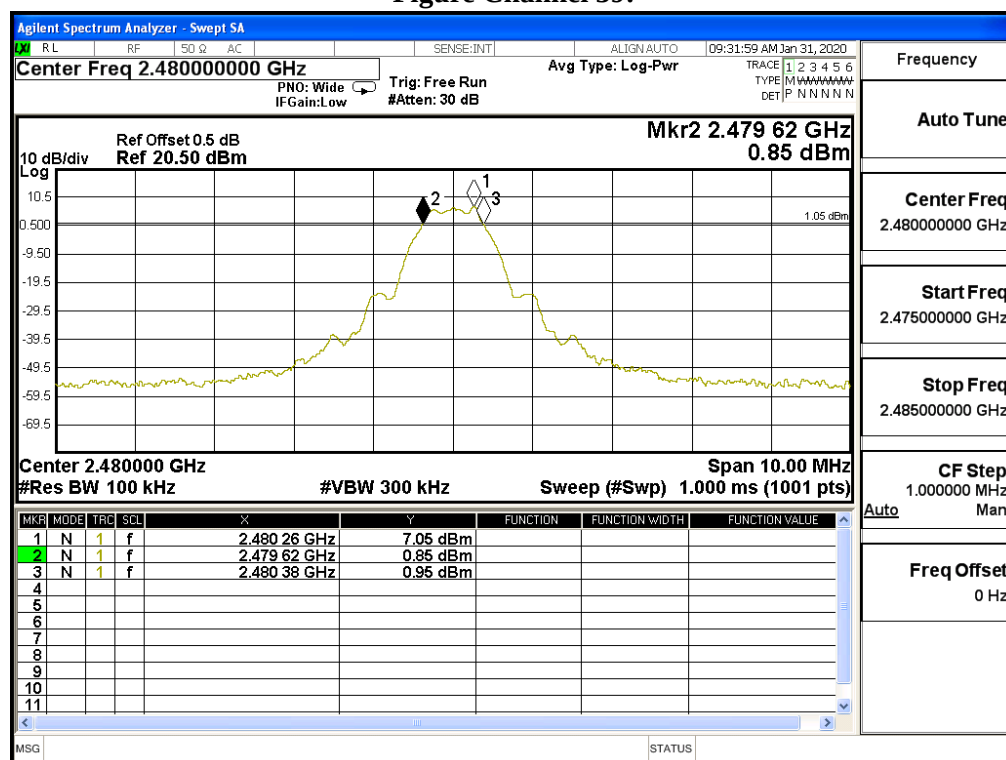
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
39	2480	760	>500	Pass

Figure Channel 39:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

6 dB 頻寬：100kHz

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：佔用頻帶寬度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

視頻頻寬：300kHz

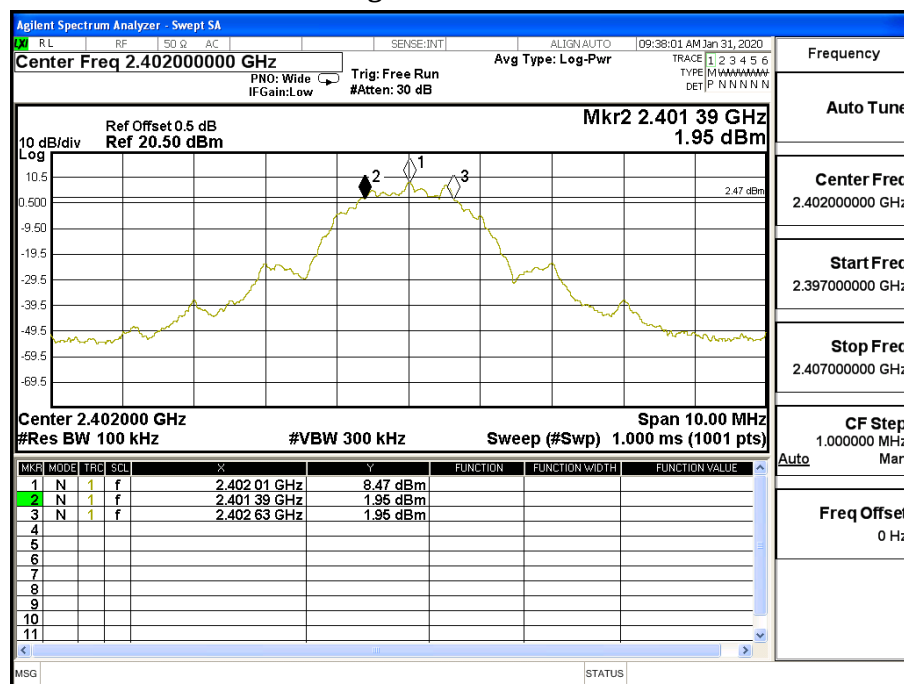
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
00	2402	1240	>500	Pass

Figure Channel 00:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

6 dB 頻寬：100kHz

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：佔用頻帶寬度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

視頻頻寬：300kHz

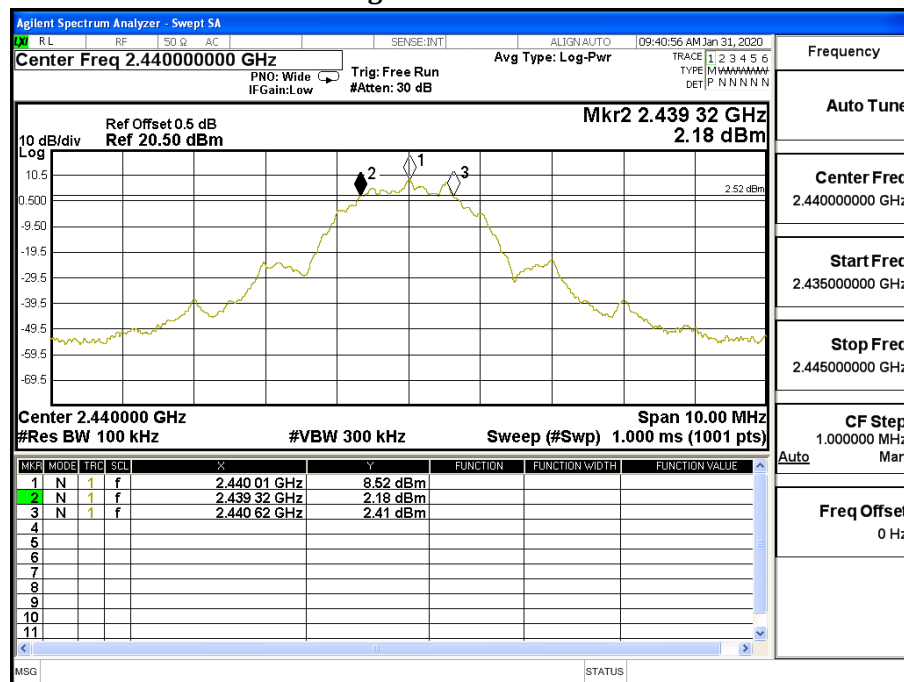
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
19	2440	1300	>500	Pass

Figure Channel 19:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

6 dB 頻寬：100kHz

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：佔用頻帶寬度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

視頻頻寬：300kHz

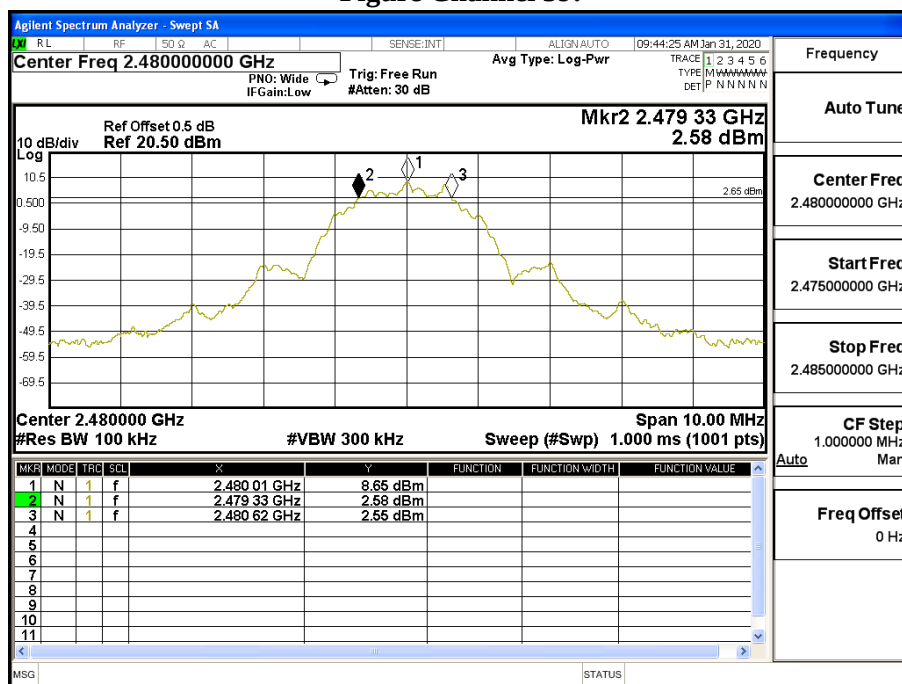
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
39	2480	1290	>500	Pass

Figure Channel 39:



佔用頻道寬度測試結果:

PASS

13. 發射電功率密度

13.1. 適用標準

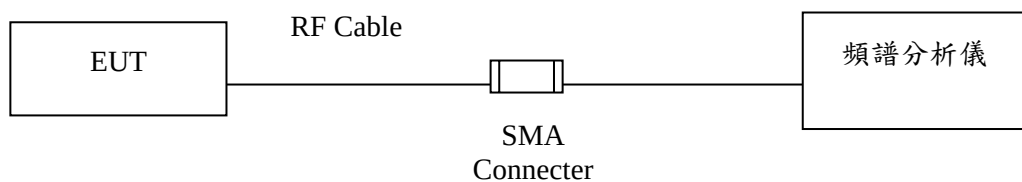
依據國家通訊傳播委員會低功率射頻器材技術規範之第 4.10.1.6 節，在使用頻率範圍之任意 3 千赫(kHz)頻寬內，由發射機傳導至天線之峰值發射電功率密度在任意期間內，皆不得大於 8dBm，且應依 4.10.1.3 之方式降低功率頻譜密度限制值。

13.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端。找出發射峰值並擴展於通帶內，設定頻譜分析儀之解析度頻寬為 3kHz，視訊頻寬大於解析度頻寬，掃瞄時間為頻率掃瞄範圍除以 100kHz。(SWEEP TIME = SPAN/3kHz)。

待測物應在正常發射狀態下量測。

13.3. 測試架構圖



13.4. 量測不確定度

此項測試之量測不確定度為 $\pm 1.20\text{dB}$ 。

13.5. 功率密度量測結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：功率密度

測試模式：Mode 1: 發射器 - BLE Mode_ 1Mbps

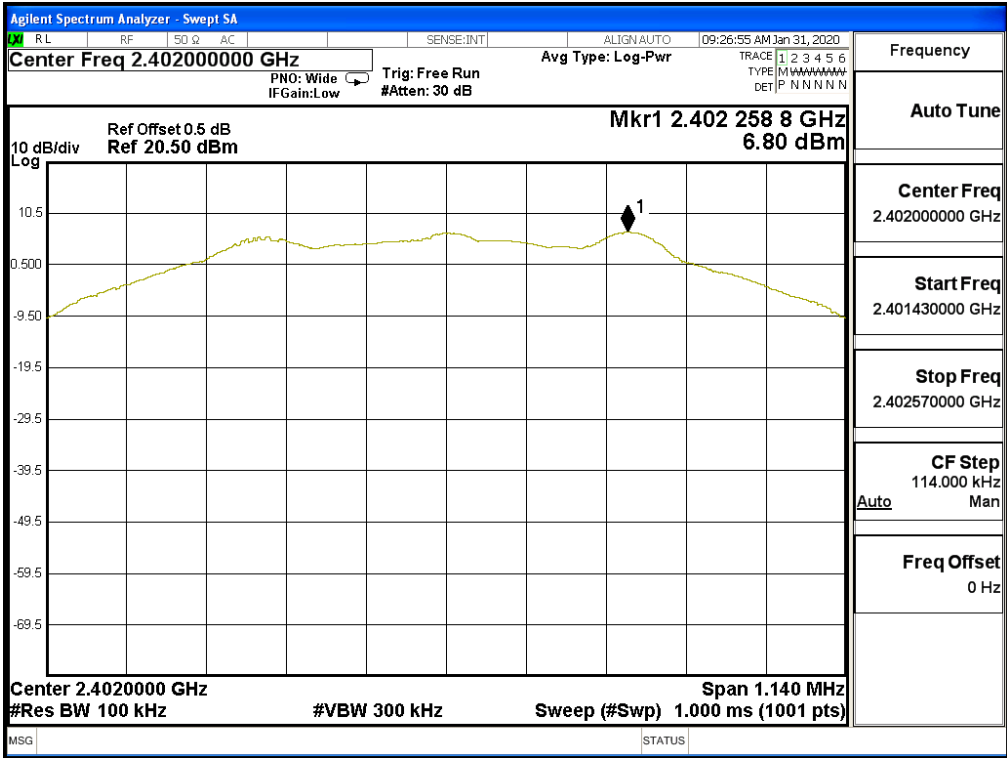
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402.00	6.8	< 8dBm	Pass

Figure Channel 00:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：功率密度

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

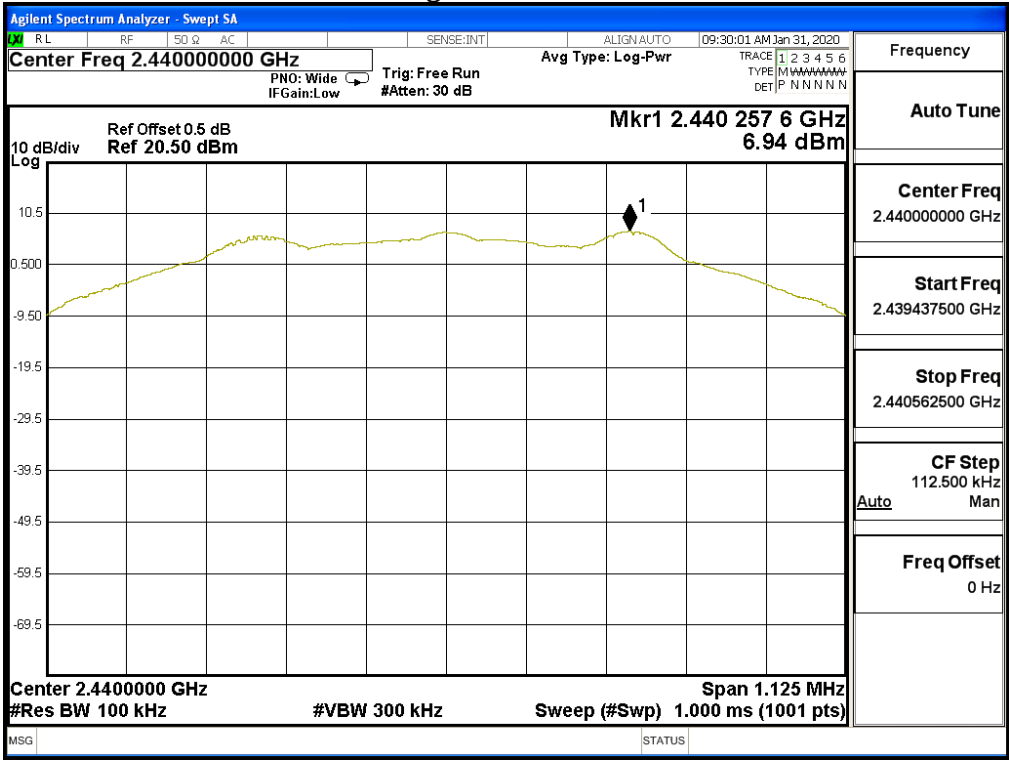
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
19	2440.000	6.94	< 8dBm	Pass

Figure Channel 19:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：功率密度

測試模式：Mode 1: 發射器 - BLE Mode_ 1Mbps

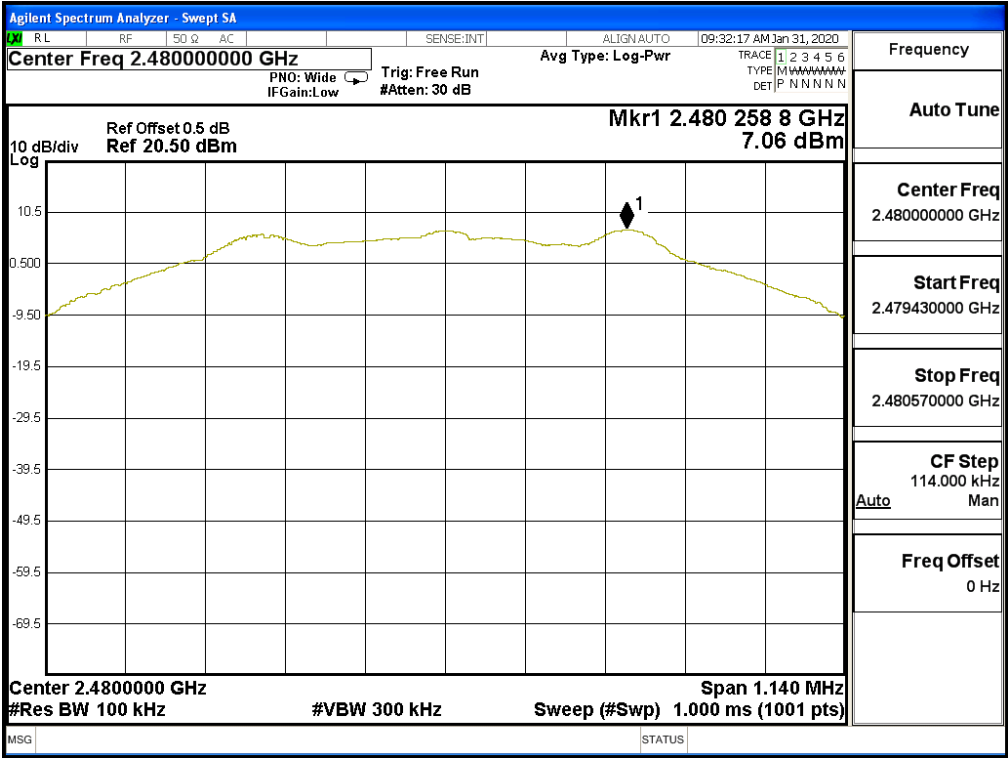
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2480.00	7.06	< 8dBm	Pass

Figure Channel 39:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 00 (2402MHz)

量測天線：--

檢測器：峰值

測試日期：109年01月31日

測試項目：功率密度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

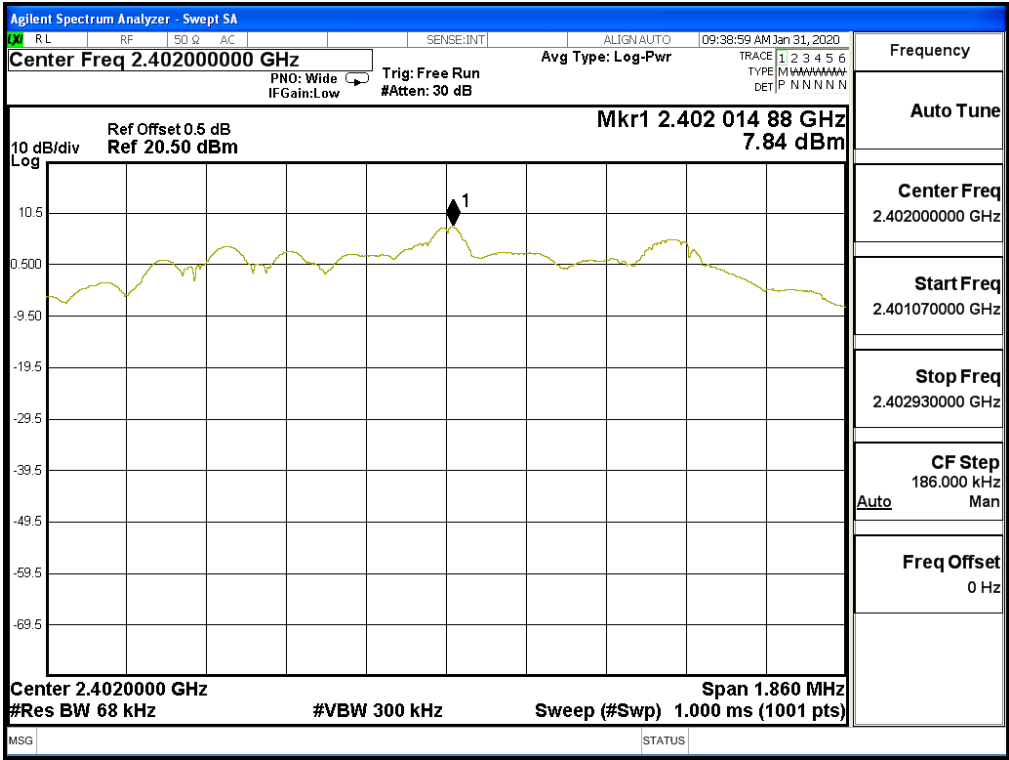
測試距離：Conducted

環境溫度：17℃

環境濕度：56%

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402.00	7.84	< 8dBm	Pass

Figure Channel 00:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 19 (2440MHz)

量測天線：--

檢測器：峰值

測試日期：109年01月31日

測試項目：功率密度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

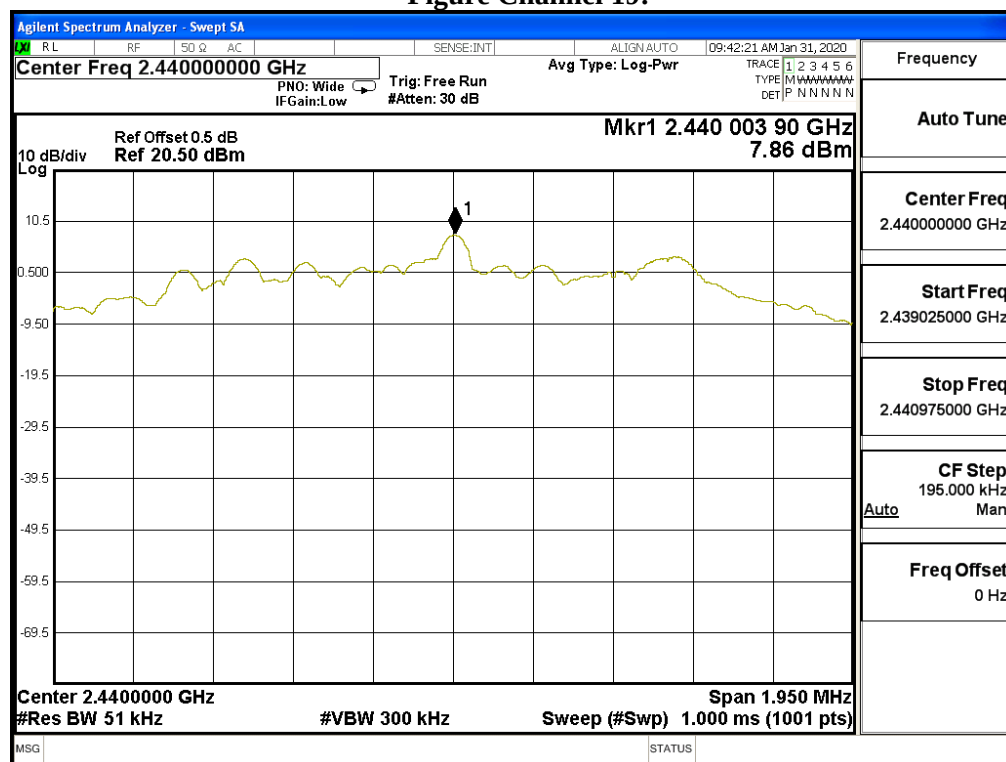
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
19	2440.000	7.86	< 8dBm	Pass

Figure Channel 19:



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：CH 39 (2480MHz)

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：功率密度

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

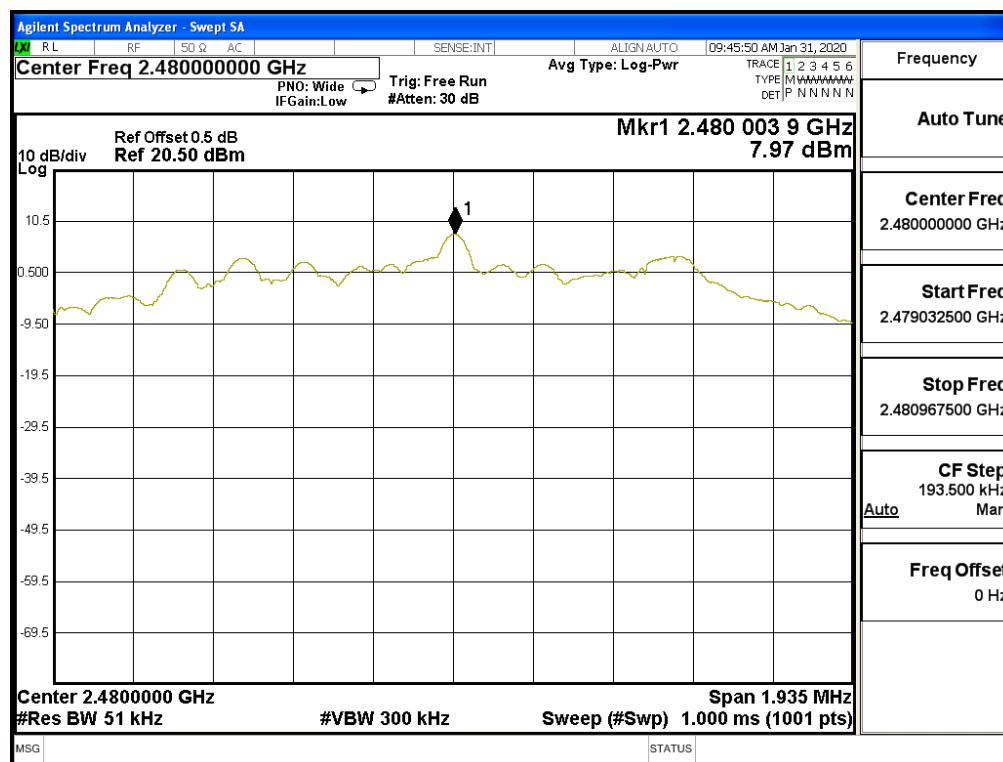
測試距離：Conducted

環境溫度：17 °C

環境濕度：56 %

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2480.00	7.97	< 8dBm	Pass

Figure Channel 39:



功率密度測試結果:

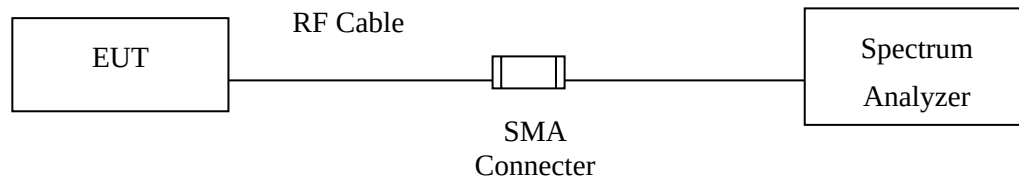
PASS

14. Duty Cycle

14.1. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀RF輸入端，
待測物應在正常發射狀態下量測。

14.2. 測試架構圖



14.3. 量測不確定度

此項測試之量測不確定度為 $\pm 2.31\text{msec}$

14.4. Duty Cycle 測試結果

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

測試項目：Duty Cycle

測試模式：Mode 1: 發射器 - BLE Mode_1Mbps

測試距離：Conducted

環境溫度：20 °C

環境濕度：44 %

Duty Cycle Formula:

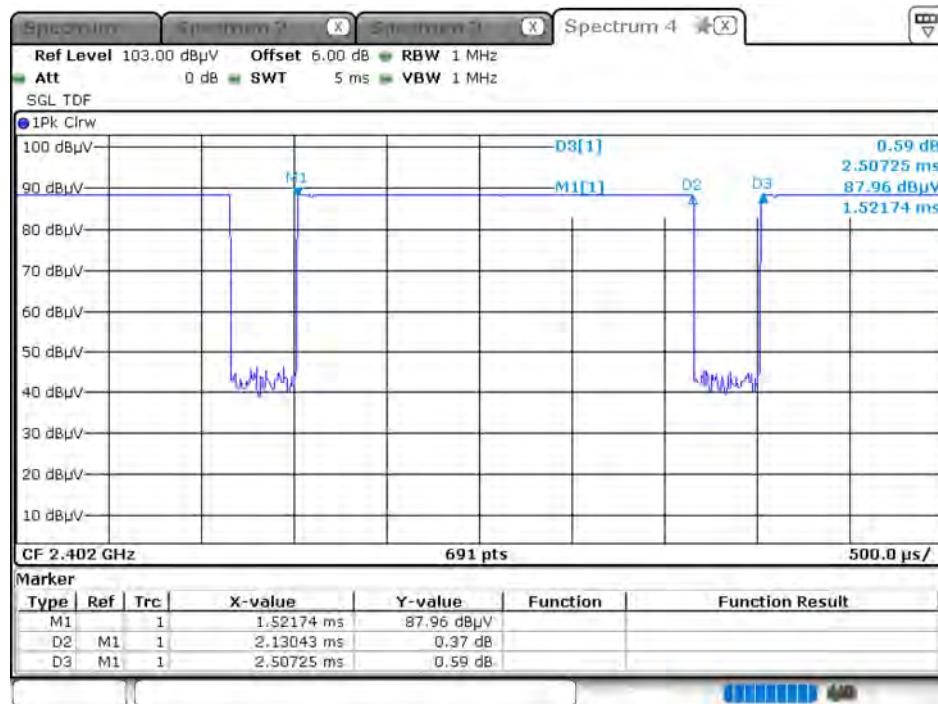
Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

Results:

2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
BLE	2.1304	2.5073	84.97	0.71

BLE



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

量測天線：--

檢測器：峰值

測試日期：109年01月31日

測試項目：Duty Cycle

測試模式：Mode 1: 發射器 - BLE Mode_2Mbps

測試距離：Conducted

環境溫度：20 °C

環境濕度：44 %

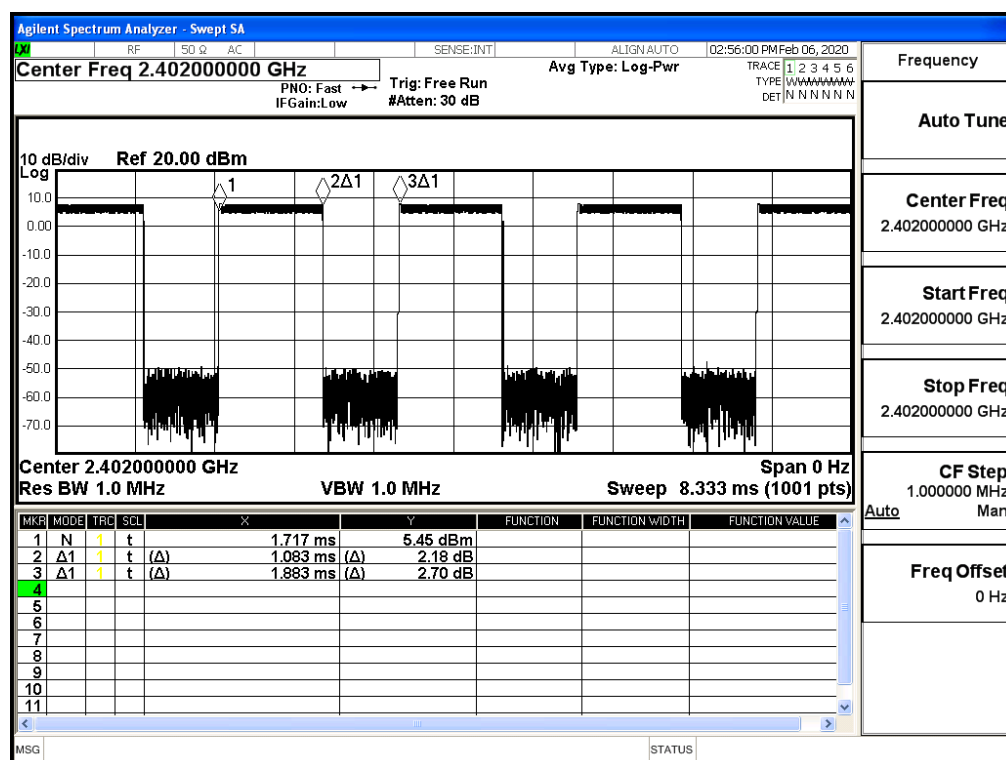
Duty Cycle Formula:

Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

Results:

2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
BLE	1.0830	1.8830	57.51	2.40



待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

量測天線：--

檢 測 器：峰值

測試日期：109 年 01 月 31 日

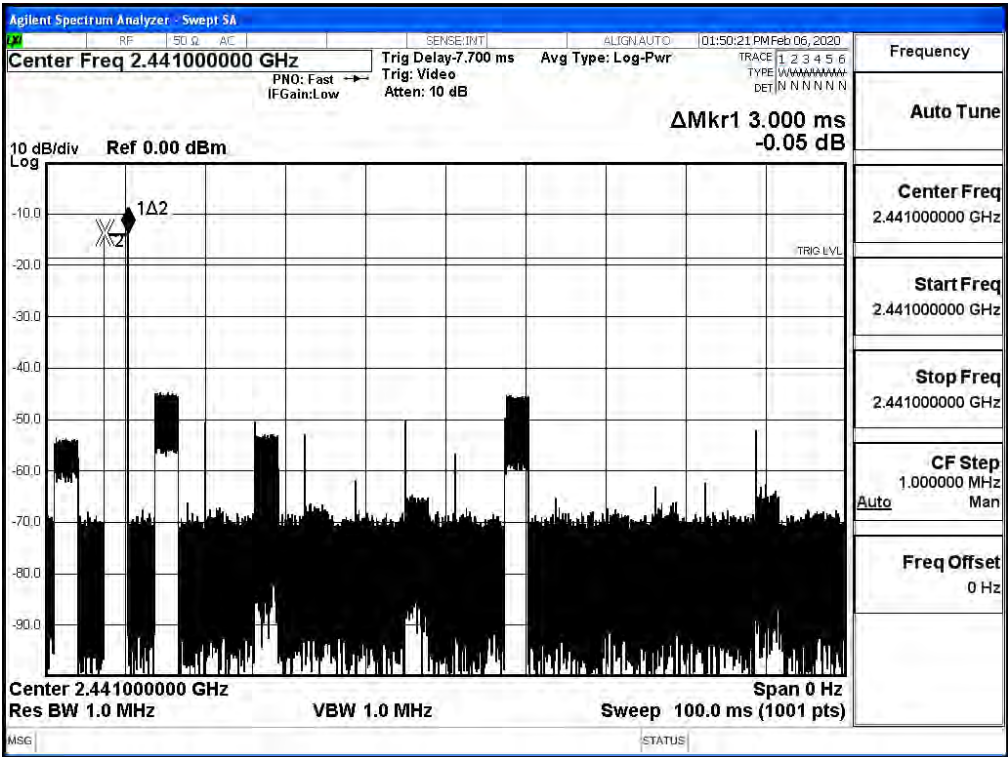
測試項目：Duty Cycle

測試模式：Mode 1: 發射器 - 1Mbps (GFSK)

測試距離：Conducted

環境溫度：20 °C

環境濕度：44 %



Time on of 100ms=3.000ms
Duty Cycle=3.000 / 100ms=0.03
Duty Cycle correction factor= 20 LOG 0.03= -30.458 dB

Duty Cycle correction factor	-30.458	dB
------------------------------	---------	----

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

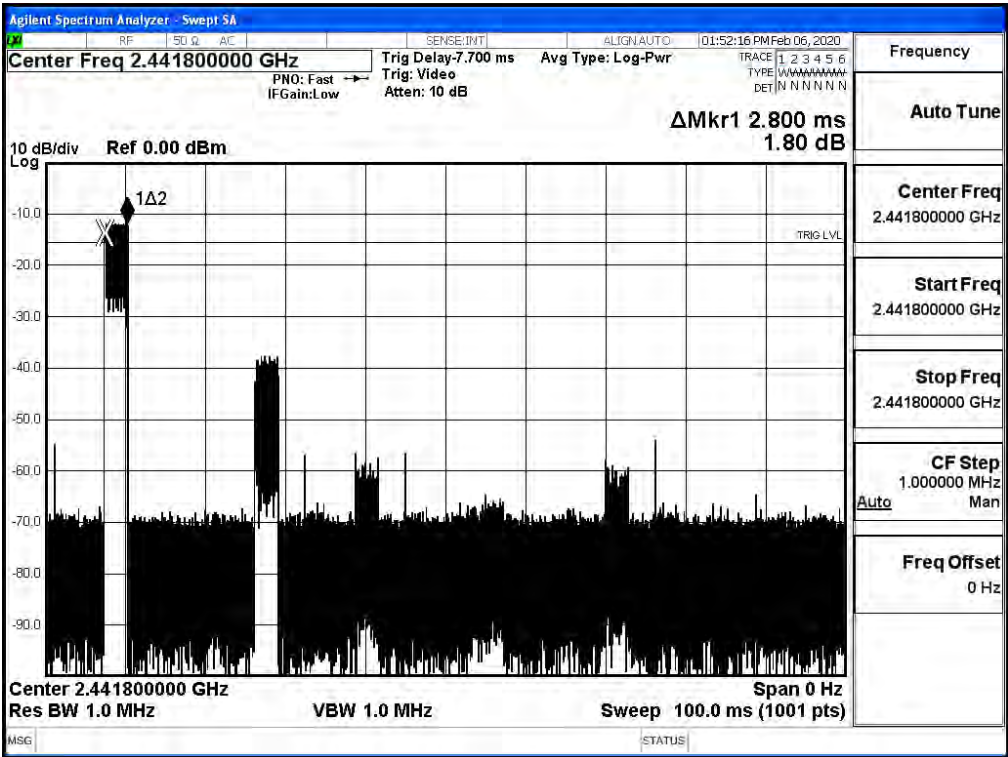
測試項目：Duty Cycle

測試模式：Mode 1: 發射器 - 2Mbps ($\pi/4$ DQPSK)

測試距離：Conducted

環境溫度：20 °C

環境濕度：44 %



Time on of 100ms=2.800ms
Duty Cycle=2.800 / 100ms=0.028
Duty Cycle correction factor= 20 LOG 0.028= -31.057 dB

Duty Cycle correction factor	-31.057	dB
------------------------------	---------	----

待測物名稱：Bluetooth USB Dongle

待測物型號：END050W

測試頻道：--

量測天線：--

檢測器：峰值

測試日期：109 年 01 月 31 日

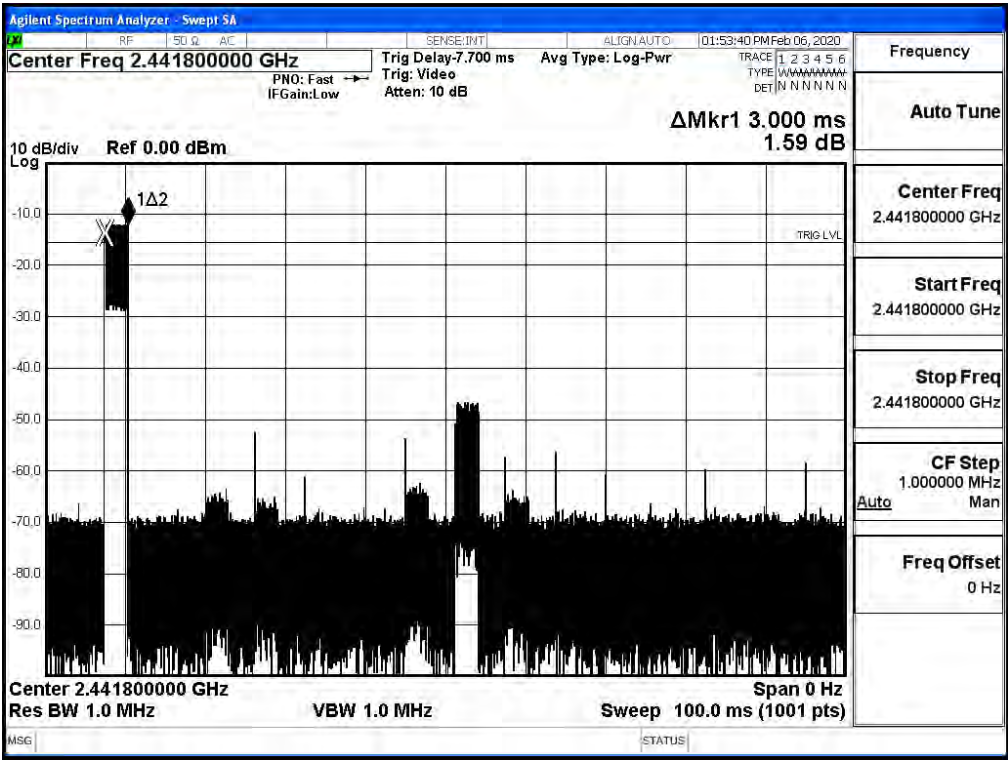
測試項目：Duty Cycle

測試模式：Mode 1: 發射器 - 3Mbps (8DPSK)

測試距離：Conducted

環境溫度：20 °C

環境濕度：44 %



Time on of 100ms=3.000ms

Duty Cycle=3.000 / 100ms=0.03

Duty Cycle correction factor= 20 LOG 0.03= -30.458 dB

Duty Cycle correction factor	-30.458	dB
------------------------------	---------	----

附件 1: 待測物測試擺設相片

測試相片：電源端點測試 正面相片 (原申請)



測試相片：電源端點測試 背面相片 (原申請)



測試相片：電源端點測試 正面相片 (系列一)



測試相片：電源端點測試 背面相片 (系列一)



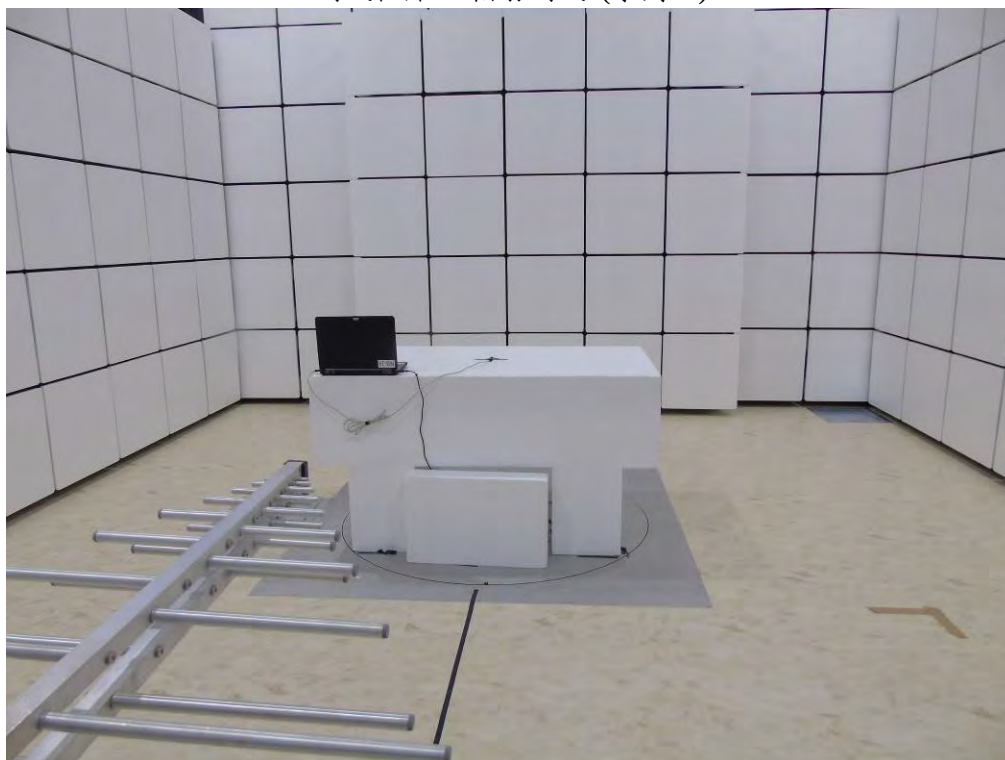
測試相片：輻射測試 正面相片 (原申請)



測試相片：輻射測試 背面相片 (原申請)



測試相片：輻射測試 (系列一)



測試相片：輻射測試 正面相片(Horn)(原申請)



測試相片：輻射測試 背面相片(Horn) (原申請)

