

低功率射頻器材技術規範測試報告

報告編號:

RT200810E07-1

申請者

Honeywell International Inc.

產品名稱

資料收集電腦

型號

VM3AL0N

製造廠商

Honeywell International Inc.

商標或廠牌

Honeywell

該產品樣品試驗

國家通訊傳播委員會低功率射頻器材技術規範

依據之試驗標準

109 年 7 月 1 日訂定

試驗結果

合格

香港商立德國際商品試驗有限公司桃園分公司新竹實驗室

日期 110 年 02 月 05 日

報告簽署人簽章:

陳瓊美



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報告發行紀錄

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證 明 書

產 品 名 稱：資料收集電腦
商 標：Honeywell
型 號：VM3AL0N
申 請 者：Honeywell International Inc.
量 測 規 範：低功率射頻器材技術規範 LP0002 (訂定日期：109 年 7 月 1 日)
ANSI C63.10-2013

香港商立德國際商品試驗有限公司桃園分公司在此證明上述待測設備樣品(型號：VM3AL0N)，收件日期 109 年 08 月 10 日，於 109 年 11 月 23 日至 12 月 22 日，已在本公司的標準測試場地完成量測。報告中所描述之測試結果和待測設備的架構組合，均根據樣品實際的量測情況作詳實的記錄。

立德桃園分公司依“低功率射頻器材技術規範”及“電信管制射頻器材審驗管理辦法”製作測試結果報告。

特 此 證 明 ！

報告製作者： 卓 苾 辰 ， 日 期： 110 年 02 月 05 日
卓 苾 辰 / 專 員

審 核 者： 陳 瓊 美 ， 日 期： 110 年 02 月 05 日
陳 瓊 美 / 經 理

香港商立德國際商品試驗有限公司桃園分公司

實驗室地址：300 新竹市科學工業園區力行一路 1 號 E-2

此份報告不得摘錄複製，除全份複製外，需經實驗室書面同意。



1 低功率射頻器材量測記錄表

申請廠商: Honeywell International Inc.

製造廠商: Honeywell International Inc.

申請廠商地址: 9680 Old Bailes Road, Fort Mill, SC, 29707 USA

廠牌: Honeywell

產品名稱: 資料收集電腦

型號: VM3ALON

量測單位名稱: 香港商立德國際商品試驗有限公司桃園分公司 新竹實驗室

量測單位地址: 300 新竹市科學工業園區力行一路1號E-2

量測單位認可編號: TAF 2022

量測規範: 低功率射頻器材技術規範 LP0002 (訂定日期: 109 年 7 月 1 日)
ANSI C63.10-2013

項次	量測項目	規 範	量測結果判定
1	帶外發射	低功率射頻器材技術規範 4.10.1.5	合格
2	電源線傳導干擾	低功率射頻器材技術規範 3.3 節	合格
3	20 dB 頻寬	低功率射頻器材技術規範 4.10.1.6 節	註
4	峰值傳導輸出功率	低功率射頻器材技術規範 4.10.1.2 節	合格
5	跳頻頻道數之量測	低功率射頻器材技術規範 4.10.1.6 節	合格
6	跳頻頻道間隔之量測	低功率射頻器材技術規範 4.10.1.6 節	合格
7	每一頻道停留時間之量測	低功率射頻器材技術規範 4.10.1.6 節	合格

註:此頻寬測試值為跳頻頻道間隔之量測參考值。

最大暴露允許值(Maximum Permissible Exposure, MPE)

項次	量測項目	規 範	量測結果判定
1	電波暴露量	低功率射頻器材技術規範 6.20.2 節	合格 (註)

註: 電波暴露量值, 請參照BV報告編號: RT200810E07。

備註: 量測結果之判定不考慮量測不確定度的貢獻

2 一般敘述

2.1 待測設備

產品名稱：	資料收集電腦
型號：	VM3AL0N
額定電源：	DC Power Input: 10 ~ 60 Vdc 7.2 Vdc from battery
調變方式：	GFSK, $\pi/4$ -DQPSK, 8DPSK
傳輸速率：	Up to 3Mbps
載波頻率：	2402MHz ~ 2480MHz
頻道數：	79
發射功率：	12.23 dBm
天線種類：	見註
電源線類別：	Adapter AC cable x 1 (Unshielded, 2.2 m) (Brand: GlobTeck, Inc. / Model: NA) Adapter DC cable x 1 (Unshielded, 1.2 m with one core) (Brand: GlobTeck, Inc. / Model: GT-46600-6015-T3)
信號線類別：	NA
配件：	Adapter x1

註

1. 此待測設備同時具有 Bluetooth, WLAN 及 NFC 技術。
2. 同時發射條件如下：

Condition	Technology		
1	WLAN (2.4GHz)	Bluetooth	NFC
2	WLAN (5GHz)	Bluetooth	NFC

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

3. 此待測設備搭配測試的天線，其資料如下：

WLAN, Bluetooth Antenna										
Ant. Set.	RF Chain No.	Brand	Model No.	Ant. Net Gain (dBi)	Frequency Range (GHz)	Ant. Type	Ant. Connector Type	Cable Length / Connector		
1	Chain 0/1	Laird	WTSB2450-SMA	2.1	2.4~2.4835	Dipole	SMA			-
				2.6	5.15~5.725					
				3.4	5.725~5.85					
Ant. Set.	RF Chain No.	Brand	Model No.	Ant. Net Gain (dBi)	Frequency Range (GHz)	Ant. Type	Ant. Connector Type	Cable Length / Connector	Cable Loss (dB)	Excluding cable loss Ant. Gain (dBi)
2	Chain 0/1	Pulse	R380500314	0.6	2.4~2.4835	Dipole	RP-TNC	460 cm / RP-TNC to SMA	1	1.6
				4	5.15~5.85				1	5
Ant. Set.	RF Chain No.	Brand	Model No.	Ant. Net Gain (dBi)	Frequency Range (GHz)	Ant. Type	Ant. Connector Type	Cable Length / Connector	Ant. Connector Type	Cable Length / Connector
3	Chain 0 (Main)	VENTURE	FIT-VM3-ANT-21Y	3.9	2.4~2.4835	Printed	i-pex(MHF)			-
				5.6	5.15~5.35					
				3.1	5.47~5.725					
				3.6	5.725~5.85					
	Chain 1 (Aux)	VENTURE	FIT-VM3-ANT-028	3.3	2.4~2.4835	Printed	i-pex(MHF)			-
				5.3	5.15~5.35					
				3.7	5.47~5.725					
				3.9	5.725~5.85					

Note: Max. gain was selected for the final test, except for the radiated emissions test.

NFC Antenna					
Brand	Model No.	Ant. Gain (dBi)	Frequency (MHz)	Ant. Type	Ant. Connector Type
Amphenol	NA	NA	13.56	Loop	None

4. 上述天線的規格資訊由申請者聲明，實驗室不承擔任何責任。

5. 此待測設備所搭配使用之電源供應器及電池詳列如下：

Adapter		
Brand	Model	Spec.
GlobTeck, Inc.	GT-46600-6015-T3	AC input: 100-240 Vac, 50/60 Hz, 1.5 A DC output: 15 Vdc, 4 A
Battery		
Brand	Model	Spec.
Totex	OVT270L1R01	7.2V, 4500mAh, 33Wh

6. 此待測設備之電源線傳導干擾與場強輻射量測項目,以下列模式進行評估:

場強輻射量測	
Pre-test 模式	描述
A	Power from Adapter
B	12 Vdc power from DC power supply
C	24 Vdc power from DC power supply
D	36 Vdc power from DC power supply
E	48 Vdc power from DC power supply
F	Power from Battery

電源線傳導干擾量測	
Pre-test 模式	描述
G	Power from Adapter
H	12 Vdc power from DC power supply
I	24 Vdc power from DC power supply
J	36 Vdc power from DC power supply
K	48 Vdc power from DC power supply

註:

- 於場強輻射以模式 A 具較大干擾值,故以此測試模式進行最終量測,並將測試結果紀錄。
- 於電源線傳導干擾以模式 G 具較大干擾值,故以此測試模式進行最終量測,並將測試結果紀錄。

7. 此報告中場強輻射量測項目,以下列模式進行評估:

測試模式	描述
一	Internal Antenna (Antenna No.: 3)
二	External Antenna (Antenna No.: 2)

註: 於電源線傳導干擾量測項目,以**模式一**進行最終量測,其它測試項目以**模式一&模式二**進行最終量測,並將測試結果紀錄。

8. 此報告中,場強輻射量測經過評估後以下列測試模式進行最終量測。

量測項目	發射	接收
Bluetooth EDR		
1GHz 以上量測	GFSK: Ch 0, 39, 78 8DPSK: Ch 0, 39, 78	Ch 0
其它不必要之訊號	GFSK: Ch 0	Ch 0

*電源線傳導干擾量測經過評估後,以 GFSK: Ch 0 測試模式進行最終量測。

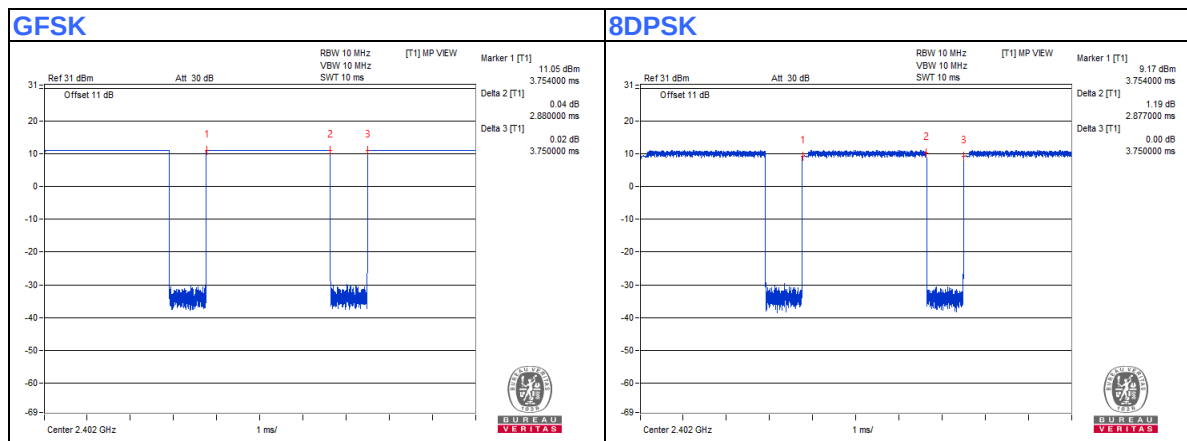
9. 此待測設備之 Internal 天線條件,經評估三個正交軸方位評估測試擺設方式:平躺、垂直、側放,其中場強輻射量測以側放擺放擁有最大干擾值,故以此擺放方式進行最終量測,並將測試結果紀錄。

10. Duty cycle of test signal

Duty cycle of test signal is < 98 %, duty factor shall be considered.

GFSK: Duty cycle = 2.88 ms/3.75 ms = 0.768, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 1.15\text{dB}$

8DPSK: Duty cycle = 2.877 ms/3.75 ms = 0.767, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 1.15\text{dB}$



此裝置各頻道的中心頻率如下：

Bluetooth EDR 頻段：

頻道	對應頻率 (MHz)	頻道	對應頻率 (MHz)	頻道	對應頻率 (MHz)	頻道	對應頻率 (MHz)	頻道	對應頻率 (MHz)	頻道	對應頻率 (MHz)
0	2402	14	2416	28	2430	42	2444	56	2458	70	2472
1	2403	15	2417	29	2431	43	2445	57	2459	71	2473
2	2404	16	2418	30	2432	44	2446	58	2460	72	2474
3	2405	17	2419	31	2433	45	2447	59	2461	73	2475
4	2406	18	2420	32	2434	46	2448	60	2462	74	2476
5	2407	19	2421	33	2435	47	2449	61	2463	75	2477
6	2408	20	2422	34	2436	48	2450	62	2464	76	2478
7	2409	21	2423	35	2437	49	2451	63	2465	77	2479
8	2410	22	2424	36	2438	50	2452	64	2466	78	2480
9	2411	23	2425	37	2439	51	2453	65	2467		
10	2412	24	2426	38	2440	52	2454	66	2468		
11	2413	25	2427	39	2441	53	2455	67	2469		
12	2414	26	2428	40	2442	54	2456	68	2470		
13	2415	27	2429	41	2443	55	2457	69	2471		

詳細之規格請參考使用說明書，產品的照片請參照 BV 編號：200810E07-2。

2.2 輔助測試之週邊設備描述

待測設備於受測時均接上其所屬的配件或一般用途之相關設備；下列輔助設備或配件測試中所使用的配備，以形成一個代表待測物實際運作的受測系統。

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	HYV4VY1	DoC	Provided by Lab
B.	Loopback Terminal	Honeywell	NA	NA	NA	Supplied by client
C.	iPod	Apple	MC749TA/A	CC4DM9M8DFDM	NA	Provided by Lab
D.	iPod	Apple	MC749TA/A	CC4DMFKUDFDM	NA	Provided by Lab
E.	iPod	Apple	MD778TA/A	CC4JMH7LF4T1	NA	Provided by Lab
F.	Keyboard	Honeywell	9000160KEYBRD	NA	NA	Supplied by client
G.	Scanner	Honeywell	Xenon 1900	NA	NA	Supplied by client
H.	Earphone	Honeywell	L3-40120508	NA	NA	Supplied by client

Note:

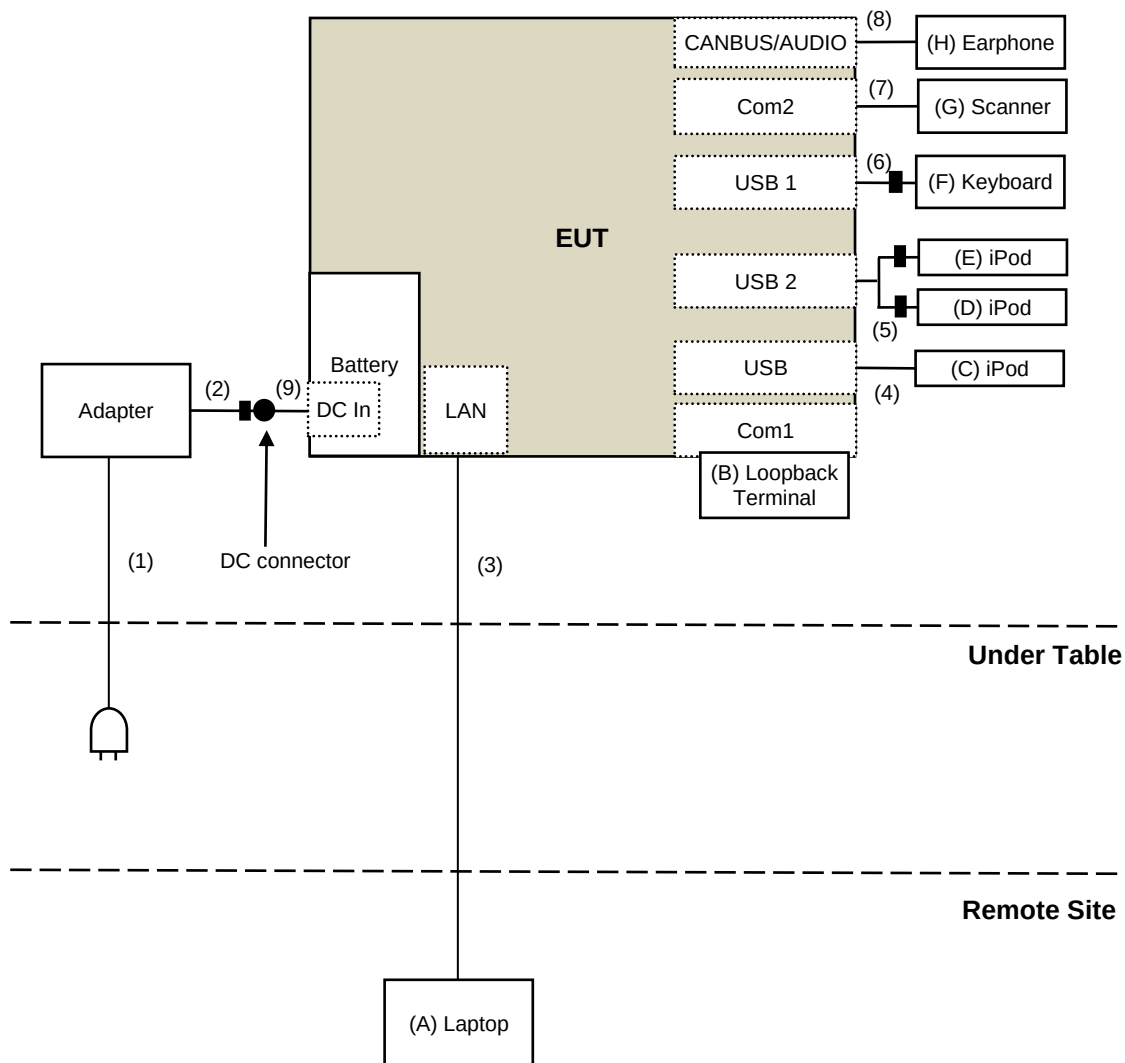
1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	AC Power Cable	1	2.2	No	0	Supplied by client
2.	DC Power Cable	1	1.2	No	1	Supplied by client
3.	RJ-45 Cable	1	10	No	0	Provided by Lab (Brand: Tatum / Model: E210587)
4.	USB Cable	1	0.1	No	0	Provided by Lab (Brand: Apple / Model: NA)
5.	USB Y cable	1	0.2	No	2	Supplied by client (Brand: Honeywell / Model: VM3052CABLE)
6.	RS232 Cable	1	1.8	No	1	Supplied by client (Brand: Honeywell / Model: 9000160KEYBRD)
7.	RS232 Cable	1	1	No	0	Supplied by client (Brand: Honeywell / Model: Xenon 1900)
8.	Audio Cable	1	0.7	No	0	Supplied by client (Brand: Honeywell / Model: L3-40120508)
9.	DC Connector Power Cable	1	0.6	No	1	Supplied by client (Brand: GlobTeck, Inc. / Model: NA)

Note: The core(s) is(are) originally attached to the cable(s).

註：待測物測試時依申請者提供的隨貨配件，及申請者(或實驗室)提供的非隨貨配件併同檢驗。

2.3 測試架構圖



3 適用規範

3.1 規範要求和參考

(1)傳導之規定

依據國家通訊傳播委員會低功率射頻器材技術規範之 3.3 節，電源傳導干擾之限制要求如下：

頻率 (MHz)	傳導限制值 (dBuV)	
	準峰值(Quasi-peak)	平均值(Average)
0.15-0.5	66-56(註)	56-46(註)
0.5-5	56	46
5-30	60	50

(註)：隨頻率之對數遞減。

(2)帶外發射之規定

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.5 節之要求，操作頻帶範圍外之任意 100 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 kHz 內的射頻功率，其衰減值限制如下：(1) 輸出功率以附件二之峰值輸出功率方式測量者，至少須衰減 20 dB，可使用射頻傳導或輻射方式測量。(2) 輸出功率以 4.10.1.2(1)(C)之最大傳導輸出功率測量方式者，至少須衰減 30 dB。此外，落於 3.5 禁用頻段之輻射發射，應符合 3.6 之規定。

頻率(MHz)	電場強度(微伏特/公尺, uV/m)	測距(公尺)
$0.009 \leq f \leq 0.490$	$2,400/f(\text{kHz})$	300
$0.490 < f \leq 1.705$	$24,000/f(\text{kHz})$	30
$1.705 < f < 30$	30	30
$30 \leq f \leq 88$	100	3
$88 < f \leq 216$	150	3
$216 < f \leq 960$	200	3
$960 < f$	500	3

(3)天線之規定

天線規格不受第 3.2 節規定之限制。

(4)天線增益之要求

低功率發射機，依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.3 節之規定如下：

- (A) 進行固定式點對點操作時，其發射天線之方向性增益超過 6 dBi，每超過 3 dBi，最大傳導輸出功率限制值應降低 1 dB。
- (B) 天線以多向波束發射方式(含同時發射或循序發射)將訊號導向多個接收機或接收機群組時，應符合下列規定：
 - (a) 非同時發射多向波束者，所有載波或頻道傳輸至所有天線陣列或陣列群之總和傳導輸出功率應符合 4.10.1.2 之功率限制值。如天線/天線陣列群之方向性增益超過 6 dBi，每超過 3 dBi，總和傳導輸出功率限制值應降低 1 dB。方向性增益值應計算如下：
 - (i) 方向性增益值 = $10 \log(\text{天線陣列之單元數目}) + \text{各單元中最高之方向性增益值}$ 。
 - (ii) 天線陣列間之遮蔽效應或波束干涉損失能充分佐證時，方向性增益得低於(i)計算數值。
 - (b) 同時發射多向波束於相同或不同頻道者，其每一波束功率應符合(a)之功率限制值。如發射波束有重疊現象，功率應降低，以確保總和傳導輸出功率符合(a)之限制值。同時發射的所有波束總和傳導輸出功率不大於(a)總和傳導輸出功率限制值加 8 dB。方向性增益值計算同(a)。
 - (c) 發射機之天線具備單向波束功能者，應符合(1)(A)及(3)後段之規定。

除(A)及(B)外，使用超過 6 dBi 方向增益之發射天線時，應依超過 6 dBi 天線方向增益的 dBi 總量，等量減少最大傳導輸出功率限制值。

(5)峰值傳導輸出功率之要求

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.2 節之規定：

操作於 2400 MHz～2483.5 MHz 者

- (a) 至少使用 75 個跳頻頻道之跳頻系統：1 W(含)以下。
 (b) 除(a)外，依 4.10.1.6 (1)(A)(a)之跳頻系統：0.125 W(含)以下。
 (c) 數位調變技術系統：1 W(含) 以下。

除使用附件二之峰值輸出功率測量方式外，並得使用以最大傳導輸出功率(Maximum Conducted Output Power)作為測量方式。

(6)跳頻頻道數之量測

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.6 節之規定，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。

(7)跳頻頻道間隔之量測

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.6 節之規定，跳頻系統之載波頻率頻道間隔應大於或等於 25 kHz 或跳頻頻道之 20 dB 頻寬，兩者取較寬者。但操作頻率為 2400 MHz~2483.5 MHz 頻段且輸出功率應小於或等於 125 mW 跳頻系統，其載波頻率頻道間隔不得小於 25 kHz 或跳頻頻道 20 dB 頻寬之三分之二，兩者取較寬者。系統之跳頻頻道應依虛擬亂數排列，在各頻率之跳頻頻道上跳躍。每一發射機必須均等的使用每一頻率。系統接收機應具有與發射機跳躍頻道頻寬相匹配之輸入頻寬，且應隨所發射之訊號同步偏移接收頻率。

(8)每一頻道停留時間之量測

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.6 節之規定，操作於 2400 MHz~2483.5 MHz 之展頻跳頻系統，須使用至少 15 個無重疊的頻道，在 0.4 秒乘以跳頻頻道數之週期內，任一頻率占用之平均時間應小於或等於 0.4 秒。應使用智慧型跳頻技術，以避免占用於特定跳頻頻道。

(9)電波暴露量之評估

依據國家通訊傳播委員會低功率射頻器材技術規範 6.20.2 節之規定，若受測物於正常操作模式下，其發射機距離人體 20 公分以上者，可測試最大暴露允許值(Maximum Permissible Exposure, MPE)以證明其符合電波暴露量之要求。

限制值如下：

(1) 職業性/可控制之暴露

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

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

(2) 一般人/不可控制之暴露

頻率範圍 (MHz)	電場強度 (V/m)	磁場強度 (A/m)	功率密度 (mW/cm ²)	平均時間 (minutes)
0.3 - 3.0	614	1.63	*100	30
3 - 30	1842/f	4.89/f	*180/f ²	30
30 - 300	27.5	0.073	1.0	30
300 - 1,500	---	---	f/1500	30
1,500 - 100,000	---	---	1.0	30

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

參考國際標準指南

KDB 558074

3.2 限制使用之頻帶

除本規範另有規定外，任何低功率射頻器材之主波皆不得使用下表所列各頻段之頻率；低功率射頻器材落於下表所列頻段之混附發射，其電場強度必須符合 3.6 之限制規定。

頻率(兆赫)	頻率(兆赫)	頻率(兆赫)
0.090~0.110	240.00~285.00	3332.0~3339.0
0.490~0.510	322.00~335.40	3345.8~3358.0
2.172~2.198	399.90~410.00	3500.0~4400.0
3.013~3.033	485.00~510.00	4500.0~5250.0
4.115~4.198	608.00~614.00	5350.0~5460.0
5.670~5.690	703.00~748.00	7250.0~7750.0
6.200~6.300	758.00~803.00	8025.0~8500.0
8.230~8.400	825.00~915.00	9000.0~9200.0
12.265~12.600	930.00~1240.0	9300.0~9500.0
13.340~13.430	1300.0~1427.0	10600~12700
14.965~15.020	1435.0~1626.5	13250~13400
16.700~16.755	1660.0~1785.0	14470~14500
19.965~20.020	1805.0~1880.0	15350~16200
25.500~25.700	1885.0~1900.0	17700~21400
37.475~38.275	1905.0~1985.0	22010~23120
73.500~75.400	2010.0~2025.0	23600~24000
108.00~138.00	2110.0~2170.0	31200~31800
149.90~150.05	2200.0~2300.0	36430~36500
156.70~156.90	2310.0~2390.0	38600 以上
162.01~167.17	2483.5~2900.0	
167.72~173.20	3260.0~3267.0	

4 帶外發射之量測

4.1 適用標準

請見本報告 3.1 節第 2 項的規定。

4.2 量測方法

在電波暗室，將待測物置於 0.8 米高的非金屬桌面，使其操作在工作狀態。接收天線置於 3 米距離。桌面要 360 度旋轉，另外接收天線從離地 1 米至 4 米升降變化，以找出最大的輻射電場強度，接收天線分別置於水平、垂直極化各執行測試一次。

備註：對於 1GHz 以上場強輻射的測試，待測物則置於 1.5 米高的非金屬桌面

4.3 量測儀器

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	Dec. 01, 2020	Nov. 30, 2021
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 06, 2020	Nov. 05, 2021
RF Cable	8D	966-4-1	Mar. 18, 2020	Mar. 17, 2021
RF Cable	8D	966-4-2	Mar. 18, 2020	Mar. 17, 2021
RF Cable	8D	966-4-3	Mar. 18, 2020	Mar. 17, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 24, 2020	Sep. 23, 2021
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 22, 2020	Nov. 21, 2021
Pre-Amplifier EMCI	EMC 12630 SE	980638	Apr. 08, 2020	Apr. 07, 2021
RF Cable	EMC104-SM-SM-1200	160923	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180502	Apr. 29, 2020	Apr. 28, 2021
RF Cable	EMC104-SM-SM-6000	180418	Apr. 29, 2020	Apr. 28, 2021
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 22, 2020	Nov. 21, 2021
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

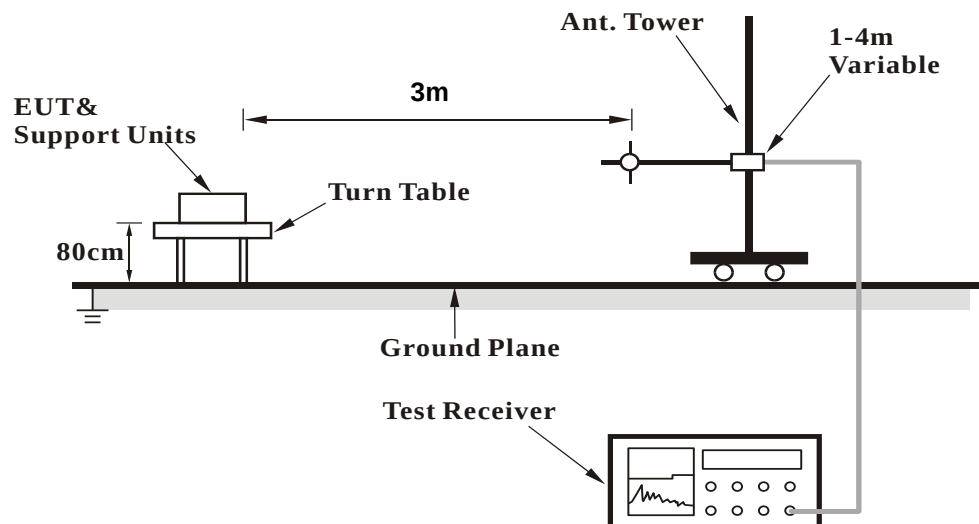
Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

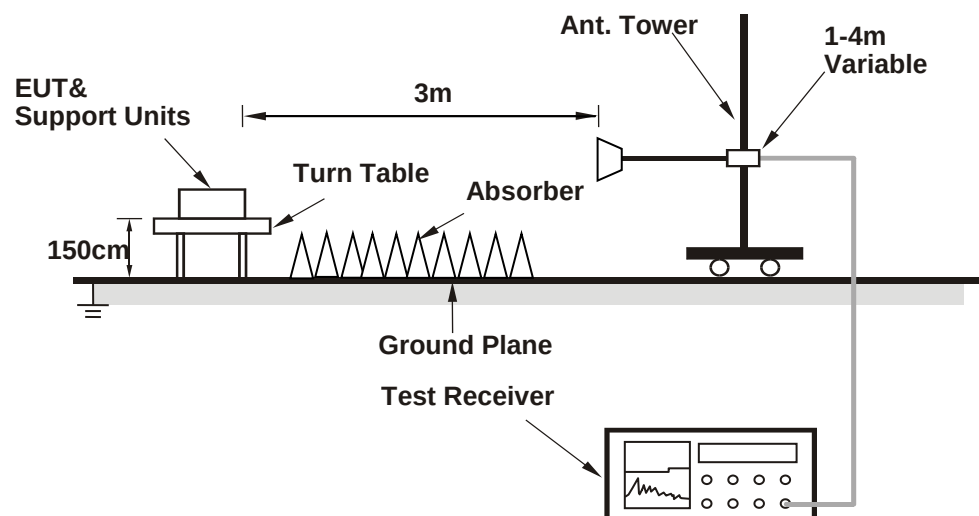
Measurement	Value
Radiated emissions (9kHz-30MHz)	3.1 dB
Radiated emissions (30MHz-1GHz)	5.5 dB
Radiated emissions (1GHz ~18GHz)	5.1 dB
Radiated emissions (18GHz ~40GHz)	5.3 dB

4.4 測試配置

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



4.5 場強度之計算

場強之計算公式如下：

結果值 Emission level (dBuV/m)=機器讀值 Raw Value (dBuV) +校正因子 Correction Factor (dB/m)

餘裕度 Margin(dB)= 結果值 Emission level (dBuV/m)-限制值 Limit value (dBuV/m)

量測結果請見下頁。

4.6 量測結果 (模式一)

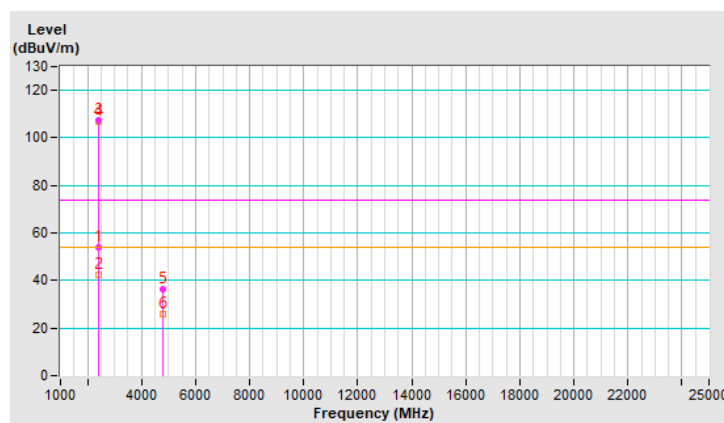
4.6.1 發射諧波

操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.0 PK	74.0	-20.0	2.20 H	12	58.2	-4.2
2	2390.00	42.3 AV	54.0	-11.7	2.20 H	12	46.5	-4.2
3	*2402.00	107.2 PK			2.20 H	12	111.4	-4.2
4	*2402.00	106.8 AV			2.20 H	12	111.0	-4.2
5	4804.00	36.3 PK	74.0	-37.7	2.15 H	318	36.0	0.3
6	4804.00	25.7 AV	54.0	-28.3	2.15 H	318	25.4	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

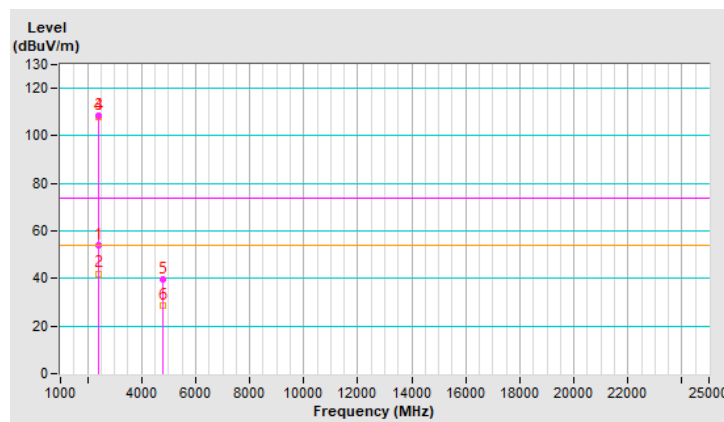


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.1 PK	74.0	-19.9	1.66 V	55	58.3	-4.2
2	2390.00	42.1 AV	54.0	-11.9	1.66 V	55	46.3	-4.2
3	*2402.00	108.6 PK			1.66 V	55	112.8	-4.2
4	*2402.00	108.2 AV			1.66 V	55	112.4	-4.2
5	4804.00	39.5 PK	74.0	-34.5	1.23 V	30	39.2	0.3
6	4804.00	28.8 AV	54.0	-25.2	1.23 V	30	28.5	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

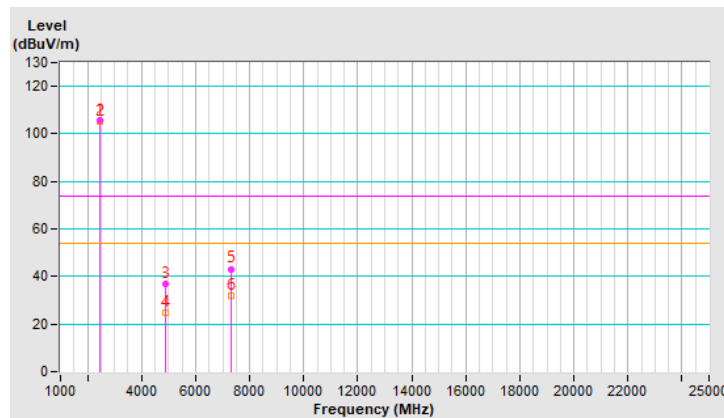


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	105.8 PK			2.15 H	10	110.0	-4.2
2	*2441.00	105.3 AV			2.15 H	10	109.5	-4.2
3	4882.00	36.7 PK	74.0	-37.3	2.02 H	320	36.3	0.4
4	4882.00	24.6 AV	54.0	-29.4	2.02 H	320	24.2	0.4
5	7323.00	43.2 PK	74.0	-30.8	2.37 H	16	36.6	6.6
6	7323.00	31.7 AV	54.0	-22.3	2.37 H	16	25.1	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

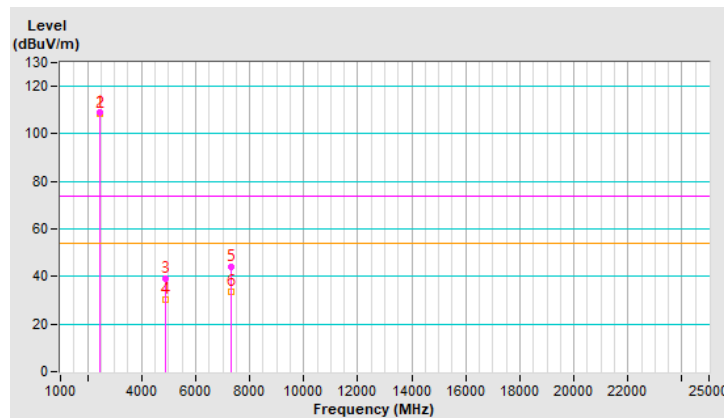


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	108.9 PK			1.54 V	46	113.1	-4.2
2	*2441.00	108.5 AV			1.54 V	46	112.7	-4.2
3	4882.00	39.0 PK	74.0	-35.0	1.04 V	1	38.6	0.4
4	4882.00	30.4 AV	54.0	-23.6	1.04 V	1	30.0	0.4
5	7323.00	44.1 PK	74.0	-29.9	1.40 V	69	37.5	6.6
6	7323.00	33.5 AV	54.0	-20.5	1.40 V	69	26.9	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

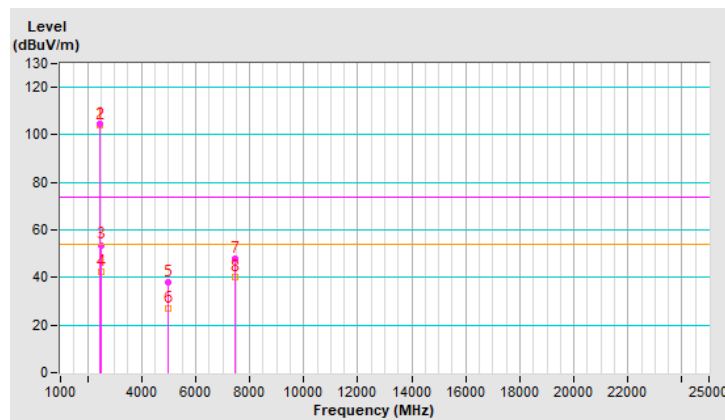


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	104.7 PK			1.90 H	8	109.0	-4.3
2	*2480.00	104.2 AV			1.90 H	8	108.5	-4.3
3	2483.50	53.7 PK	74.0	-20.3	1.90 H	8	58.0	-4.3
4	2483.50	42.2 AV	54.0	-11.8	1.90 H	8	46.5	-4.3
5	4960.00	38.2 PK	74.0	-35.8	1.32 H	24	37.3	0.9
6	4960.00	27.2 AV	54.0	-26.8	1.32 H	24	26.3	0.9
7	7440.00	47.8 PK	74.0	-26.2	1.35 H	20	40.8	7.0
8	7440.00	40.2 AV	54.0	-13.8	1.35 H	20	33.2	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

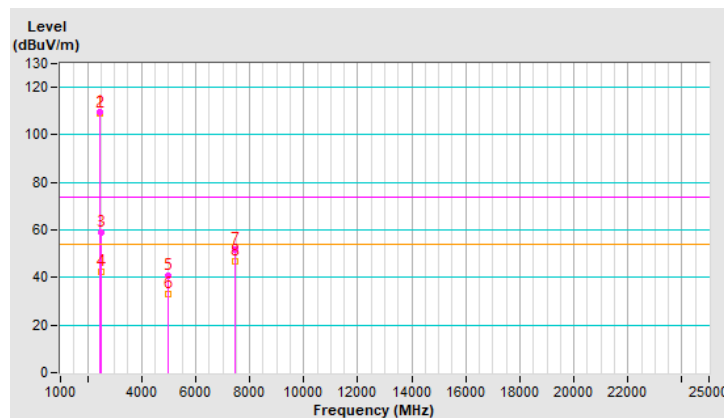


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	109.4 PK			1.27 V	44	113.7	-4.3
2	*2480.00	109.0 AV			1.27 V	44	113.3	-4.3
3	2483.50	58.9 PK	74.0	-15.1	1.27 V	44	63.2	-4.3
4	2483.50	42.6 AV	54.0	-11.4	1.27 V	44	46.9	-4.3
5	4960.00	40.6 PK	74.0	-33.4	1.00 V	3	39.7	0.9
6	4960.00	33.2 AV	54.0	-20.8	1.00 V	3	32.3	0.9
7	7440.00	52.0 PK	74.0	-22.0	1.00 V	64	45.0	7.0
8	7440.00	46.6 AV	54.0	-7.4	1.00 V	64	39.6	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

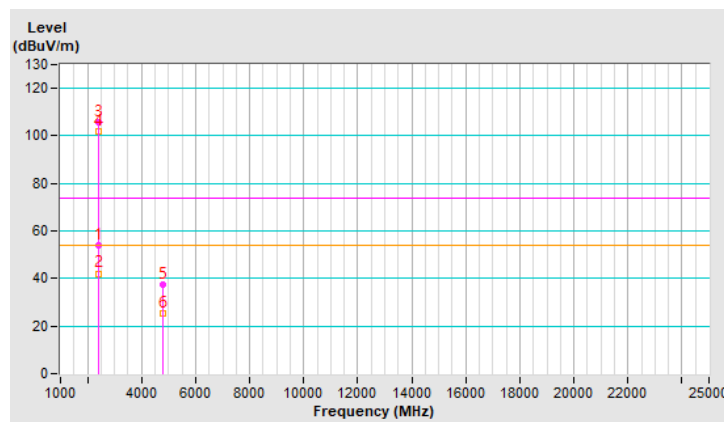


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.0 PK	74.0	-20.0	2.21 H	11	58.2	-4.2
2	2390.00	42.1 AV	54.0	-11.9	2.21 H	11	46.3	-4.2
3	*2402.00	105.8 PK			2.21 H	11	110.0	-4.2
4	*2402.00	102.1 AV			2.21 H	11	106.3	-4.2
5	4804.00	37.2 PK	74.0	-36.8	1.58 H	36	36.9	0.3
6	4804.00	25.1 AV	54.0	-28.9	1.58 H	36	24.8	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

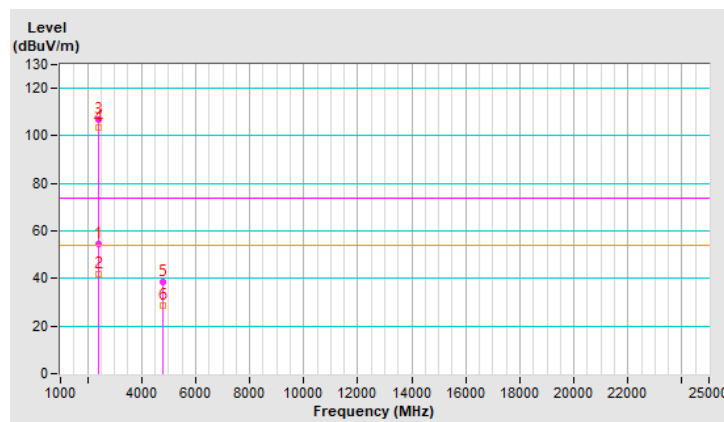


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.3 PK	74.0	-19.7	1.72 V	57	58.5	-4.2
2	2390.00	42.0 AV	54.0	-12.0	1.72 V	57	46.2	-4.2
3	*2402.00	107.0 PK			1.72 V	57	111.2	-4.2
4	*2402.00	103.3 AV			1.72 V	57	107.5	-4.2
5	4804.00	38.7 PK	74.0	-35.3	1.24 V	29	38.4	0.3
6	4804.00	28.8 AV	54.0	-25.2	1.24 V	29	28.5	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

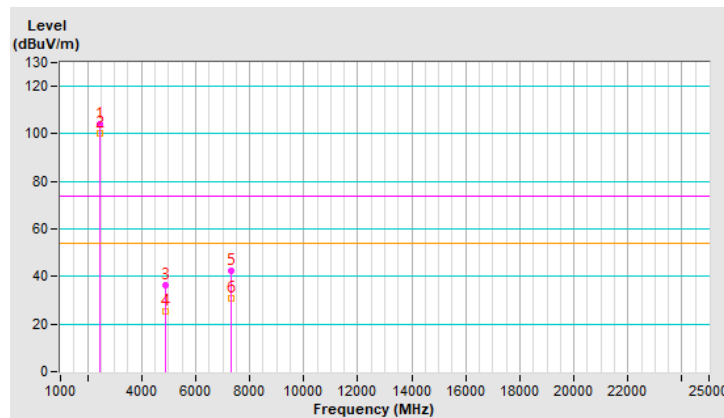


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	104.1 PK			2.07 H	10	108.3	-4.2
2	*2441.00	100.2 AV			2.07 H	10	104.4	-4.2
3	4882.00	36.4 PK	74.0	-37.6	1.55 H	38	36.0	0.4
4	4882.00	25.2 AV	54.0	-28.8	1.55 H	38	24.8	0.4
5	7323.00	42.3 PK	74.0	-31.7	1.46 H	48	35.7	6.6
6	7323.00	30.7 AV	54.0	-23.3	1.46 H	48	24.1	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

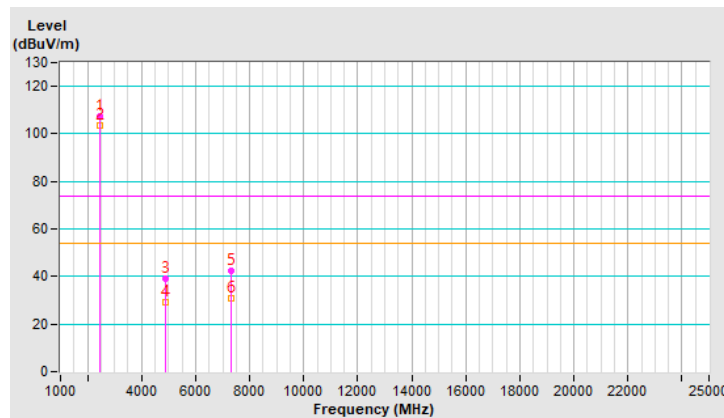


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	107.3 PK			1.56 V	46	111.5	-4.2
2	*2441.00	103.3 AV			1.56 V	46	107.5	-4.2
3	4882.00	39.2 PK	74.0	-34.8	1.03 V	30	38.8	0.4
4	4882.00	29.0 AV	54.0	-25.0	1.03 V	30	28.6	0.4
5	7323.00	42.5 PK	74.0	-31.5	1.15 V	65	35.9	6.6
6	7323.00	30.7 AV	54.0	-23.3	1.15 V	65	24.1	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

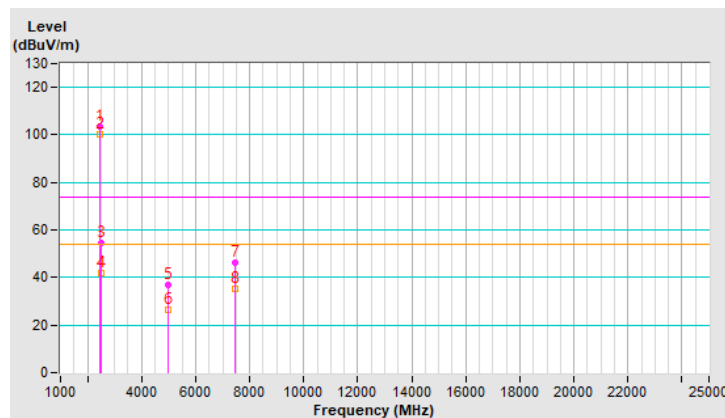


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	103.3 PK			1.90 H	8	107.6	-4.3
2	*2480.00	100.2 AV			1.90 H	8	104.5	-4.3
3	2483.50	54.4 PK	74.0	-19.6	1.90 H	8	58.7	-4.3
4	2483.50	42.0 AV	54.0	-12.0	1.90 H	8	46.3	-4.3
5	4960.00	37.1 PK	74.0	-36.9	1.52 H	24	36.2	0.9
6	4960.00	26.6 AV	54.0	-27.4	1.52 H	24	25.7	0.9
7	7440.00	46.0 PK	74.0	-28.0	1.36 H	20	39.0	7.0
8	7440.00	35.4 AV	54.0	-18.6	1.36 H	20	28.4	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

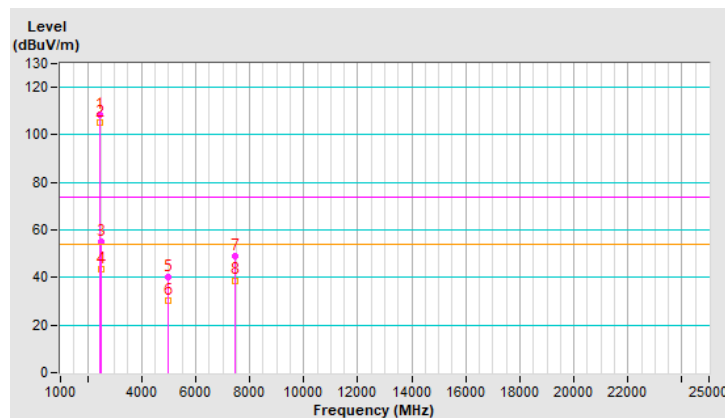


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	108.5 PK			1.35 V	42	112.8	-4.3
2	*2480.00	105.1 AV			1.35 V	42	109.4	-4.3
3	2483.50	54.9 PK	74.0	-19.1	1.35 V	42	59.2	-4.3
4	2483.50	43.4 AV	54.0	-10.6	1.35 V	42	47.7	-4.3
5	4960.00	40.3 PK	74.0	-33.7	1.00 V	3	39.4	0.9
6	4960.00	30.3 AV	54.0	-23.7	1.00 V	3	29.4	0.9
7	7440.00	48.8 PK	74.0	-25.2	1.98 V	35	41.8	7.0
8	7440.00	38.8 AV	54.0	-15.2	1.98 V	35	31.8	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.



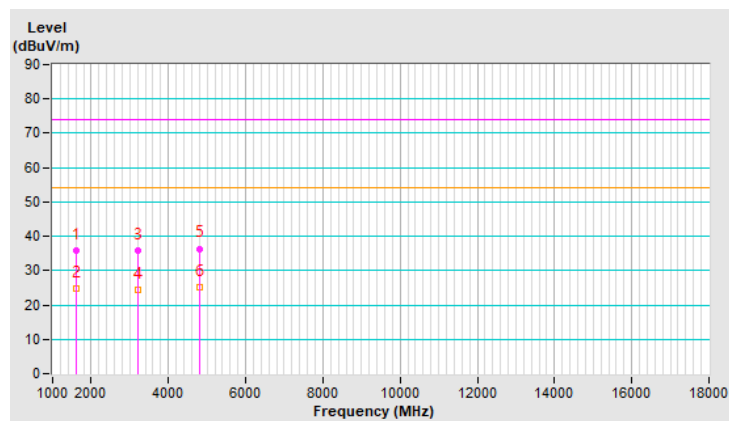
4.6.2 接收諧波

操作模式：	接收		
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=3MHz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1601.33	35.9 PK	74.0	-38.1	1.53 H	33	43.5	-7.6
2	1601.33	24.7 AV	54.0	-29.3	1.53 H	33	32.3	-7.6
3	3202.67	35.7 PK	74.0	-38.3	1.52 H	33	38.8	-3.1
4	3202.67	24.5 AV	54.0	-29.5	1.52 H	33	27.6	-3.1
5	4804.00	36.4 PK	74.0	-37.6	1.48 H	20	36.1	0.3
6	4804.00	25.2 AV	54.0	-28.8	1.48 H	20	24.9	0.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

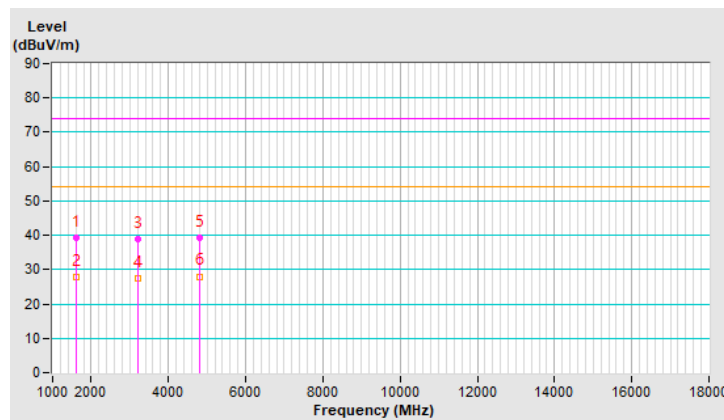


操作模式：	接收		
基本波頻率：	CH 0 : 2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=3MHz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 15 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1601.33	39.1 PK	74.0	-34.9	1.27 V	38	46.7	-7.6
2	1601.33	27.9 AV	54.0	-26.1	1.27 V	38	35.5	-7.6
3	3202.67	38.8 PK	74.0	-35.2	1.30 V	23	41.9	-3.1
4	3202.67	27.6 AV	54.0	-26.4	1.30 V	23	30.7	-3.1
5	4804.00	39.1 PK	74.0	-34.9	1.30 V	36	38.8	0.3
6	4804.00	28.0 AV	54.0	-26.0	1.30 V	36	27.7	0.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.



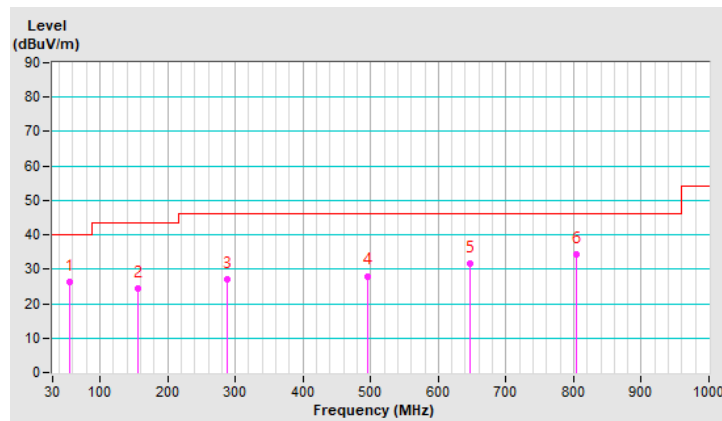
4.6.3 其它不必要之訊號

操作模式：	發射接收 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(QP) RB=120kHz
量測場地溫度：	25.0℃	量測場地濕度：	65.0%RH
測試日期：	109 年 12 月 13 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	55.41	26.2 QP	40.0	-13.8	1.00 H	203	35.0	-8.8
2	155.64	24.3 QP	43.5	-19.2	1.50 H	134	32.5	-8.2
3	288.00	26.9 QP	46.0	-19.1	1.50 H	201	34.6	-7.7
4	495.38	28.0 QP	46.0	-18.0	1.00 H	257	30.1	-2.1
5	647.60	31.6 QP	46.0	-14.4	1.00 H	360	30.2	1.4
6	804.23	34.2 QP	46.0	-11.8	1.50 H	247	30.1	4.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



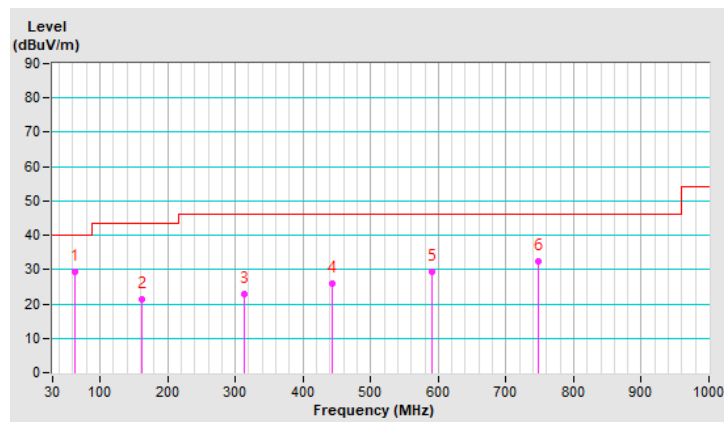
操作模式：	發射接收 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(QP) RB=120kHz
量測場地溫度：	25.0°C	量測場地濕度：	65.0%RH
測試日期：	109 年 12 月 13 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	63.73	29.2 QP	40.0	-10.8	1.50 V	167	39.0	-9.8
2	161.19	21.5 QP	43.5	-22.0	1.50 V	316	29.8	-8.3
3	313.80	22.8 QP	46.0	-23.2	1.00 V	40	29.7	-6.9
4	443.03	25.8 QP	46.0	-20.2	1.50 V	205	28.9	-3.1
5	589.86	29.2 QP	46.0	-16.8	1.00 V	46	29.0	0.2
6	747.22	32.5 QP	46.0	-13.5	1.00 V	352	29.2	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.7 量測結果 (模式二)

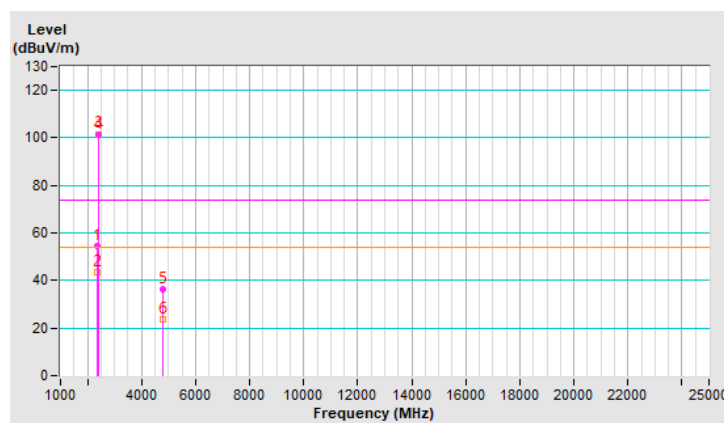
4.7.1 發射諧波

操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2362.04	54.7 PK	74.0	-19.3	1.44 H	17	58.9	-4.2
2	2362.04	43.4 AV	54.0	-10.6	1.44 H	17	47.6	-4.2
3	*2402.00	101.6 PK			1.44 H	17	105.8	-4.2
4	*2402.00	101.2 AV			1.44 H	17	105.4	-4.2
5	4804.00	36.1 PK	74.0	-37.9	2.18 H	333	35.8	0.3
6	4804.00	23.8 AV	54.0	-30.2	2.18 H	333	23.5	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

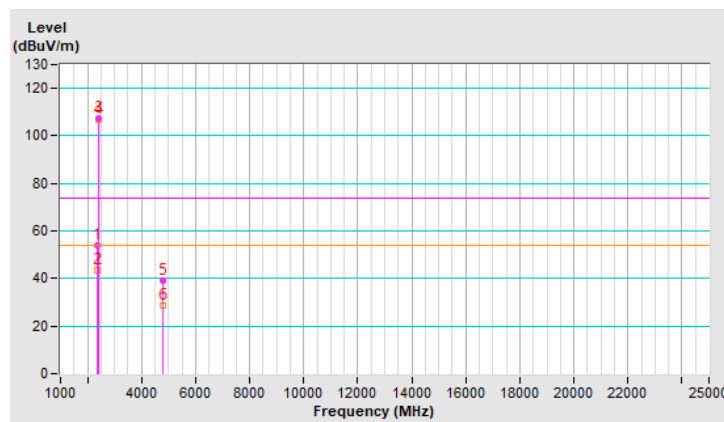


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2375.85	54.0 PK	74.0	-20.0	1.80 V	234	58.2	-4.2
2	2375.85	43.6 AV	54.0	-10.4	1.80 V	234	47.8	-4.2
3	*2402.00	107.4 PK			1.80 V	234	111.6	-4.2
4	*2402.00	107.0 AV			1.80 V	234	111.2	-4.2
5	4804.00	39.3 PK	74.0	-34.7	1.25 V	16	39.0	0.3
6	4804.00	28.8 AV	54.0	-25.2	1.25 V	16	28.5	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

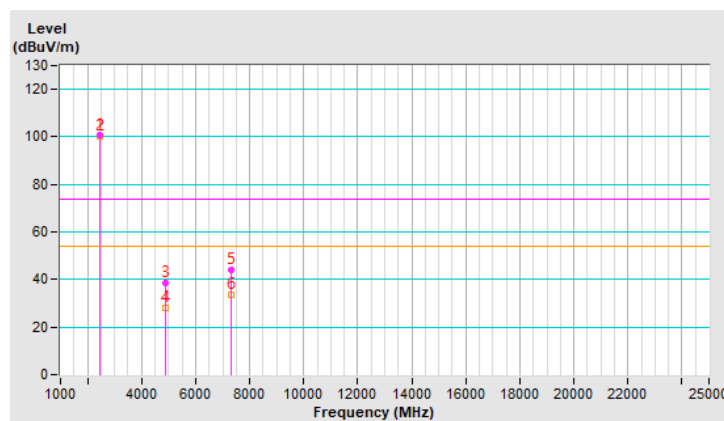


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	100.8 PK			1.43 H	21	105.0	-4.2
2	*2441.00	100.1 AV			1.43 H	21	104.3	-4.2
3	4882.00	38.6 PK	74.0	-35.4	1.24 H	19	38.2	0.4
4	4882.00	28.1 AV	54.0	-25.9	1.24 H	19	27.7	0.4
5	7323.00	43.8 PK	74.0	-30.2	1.29 H	67	37.2	6.6
6	7323.00	33.5 AV	54.0	-20.5	1.29 H	67	26.9	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

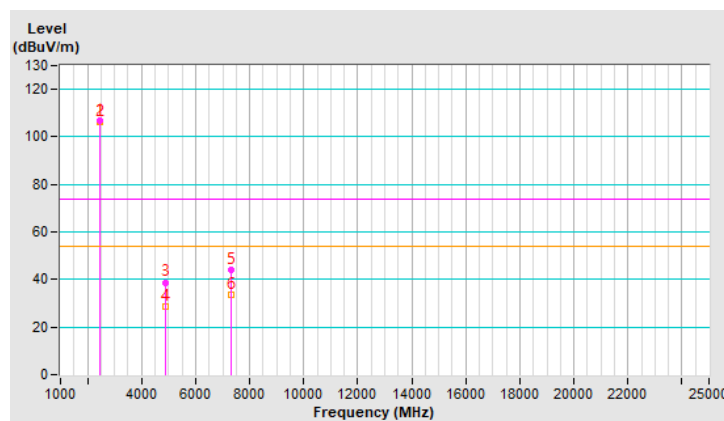


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	106.8 PK			1.74 V	222	111.0	-4.2
2	*2441.00	106.5 AV			1.74 V	222	110.7	-4.2
3	4882.00	38.8 PK	74.0	-35.2	1.26 V	24	38.4	0.4
4	4882.00	28.4 AV	54.0	-25.6	1.26 V	24	28.0	0.4
5	7323.00	43.9 PK	74.0	-30.1	1.35 V	61	37.3	6.6
6	7323.00	33.6 AV	54.0	-20.4	1.35 V	61	27.0	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

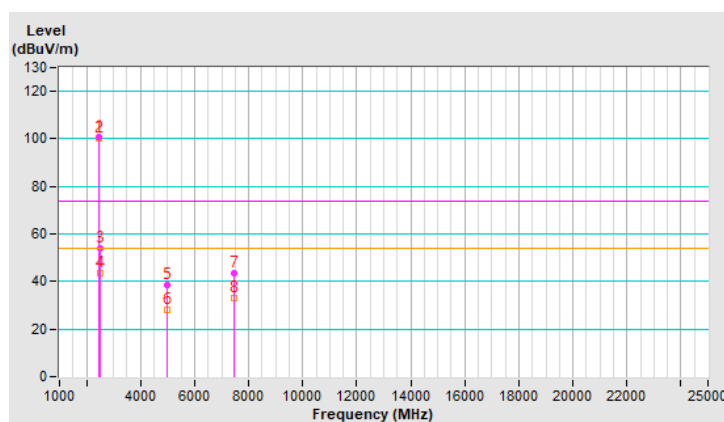


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	100.9 PK			1.45 H	19	105.2	-4.3
2	*2480.00	100.4 AV			1.45 H	19	104.7	-4.3
3	2496.18	54.2 PK	74.0	-19.8	1.45 H	19	58.4	-4.2
4	2496.18	43.5 AV	54.0	-10.5	1.45 H	19	47.7	-4.2
5	4960.00	38.3 PK	74.0	-35.7	1.26 H	23	37.4	0.9
6	4960.00	28.0 AV	54.0	-26.0	1.26 H	23	27.1	0.9
7	7440.00	43.7 PK	74.0	-30.3	1.36 H	69	36.7	7.0
8	7440.00	33.2 AV	54.0	-20.8	1.36 H	69	26.2	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

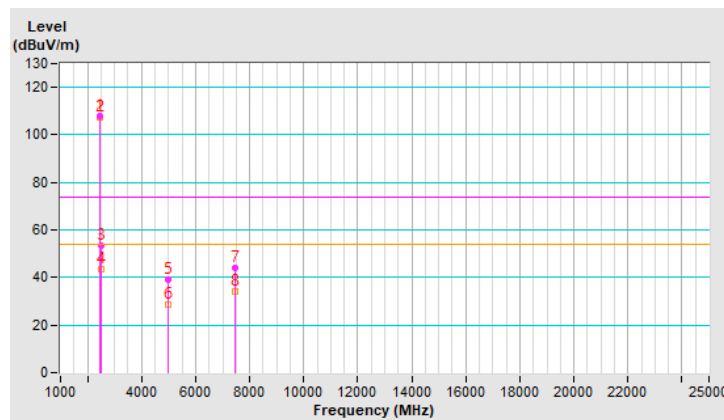


操作模式：	發射 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	107.7 PK			2.04 V	14	112.0	-4.3
2	*2480.00	107.2 AV			2.04 V	14	111.5	-4.3
3	2486.15	53.4 PK	74.0	-20.6	2.04 V	14	57.7	-4.3
4	2486.15	43.4 AV	54.0	-10.6	2.04 V	14	47.7	-4.3
5	4960.00	38.9 PK	74.0	-35.1	1.27 V	22	38.0	0.9
6	4960.00	28.8 AV	54.0	-25.2	1.27 V	22	27.9	0.9
7	7440.00	43.9 PK	74.0	-30.1	1.33 V	53	36.9	7.0
8	7440.00	33.9 AV	54.0	-20.1	1.33 V	53	26.9	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

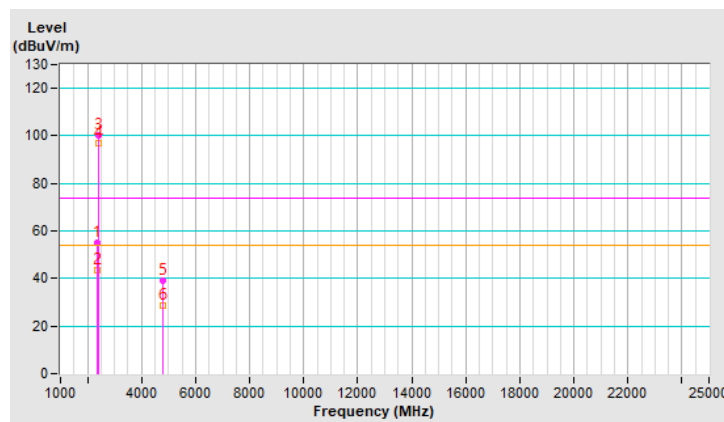


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.88	54.9 PK	74.0	-19.1	1.41 H	18	59.1	-4.2
2	2368.88	43.5 AV	54.0	-10.5	1.41 H	18	47.7	-4.2
3	*2402.00	100.0 PK			1.41 H	18	104.2	-4.2
4	*2402.00	97.0 AV			1.41 H	18	101.2	-4.2
5	4804.00	38.9 PK	74.0	-35.1	1.31 H	13	38.6	0.3
6	4804.00	28.5 AV	54.0	-25.5	1.31 H	13	28.2	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

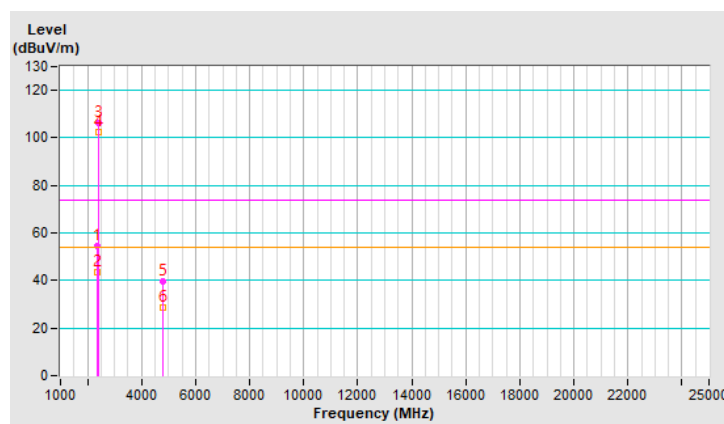


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2380.71	54.5 PK	74.0	-19.5	2.02 V	1	58.6	-4.1
2	2380.71	43.4 AV	54.0	-10.6	2.02 V	1	47.5	-4.1
3	*2402.00	106.5 PK			2.02 V	1	110.7	-4.2
4	*2402.00	102.4 AV			2.02 V	1	106.6	-4.2
5	4804.00	39.5 PK	74.0	-34.5	1.33 V	38	39.2	0.3
6	4804.00	28.7 AV	54.0	-25.3	1.33 V	38	28.4	0.3
7	#7206.00	-	-	-	-	-	-	-
8	#9608.00	-	-	-	-	-	-	-
9	12010.00	-	-	-	-	-	-	-
10	#14412.00	-	-	-	-	-	-	-
11	#16814.00	-	-	-	-	-	-	-
12	19216.00	-	-	-	-	-	-	-
13	#21618.00	-	-	-	-	-	-	-
14	#24020.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

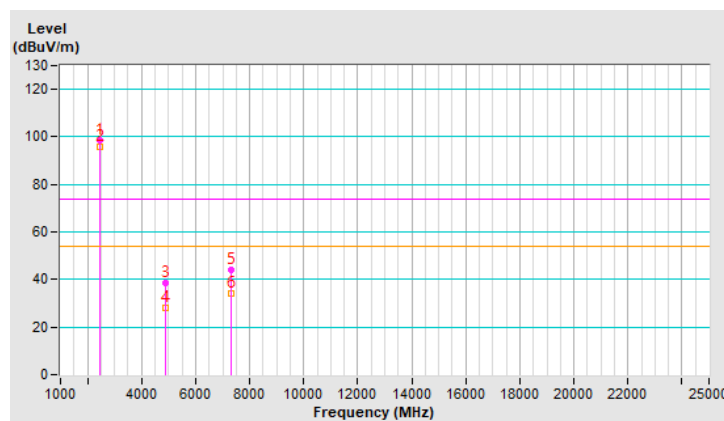


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	98.7 PK			1.46 H	12	102.9	-4.2
2	*2441.00	95.9 AV			1.46 H	12	100.1	-4.2
3	4882.00	38.4 PK	74.0	-35.6	1.31 H	12	38.0	0.4
4	4882.00	28.1 AV	54.0	-25.9	1.31 H	12	27.7	0.4
5	7323.00	44.3 PK	74.0	-29.7	1.41 H	61	37.7	6.6
6	7323.00	33.9 AV	54.0	-20.1	1.41 H	61	27.3	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

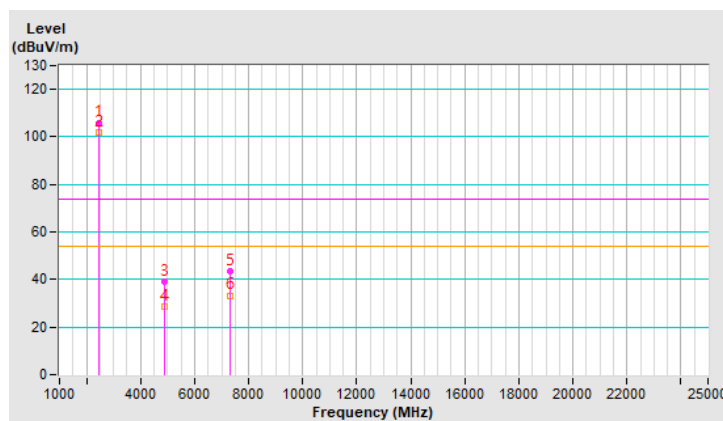


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 39：2441 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	106.0 PK			2.07 V	10	110.2	-4.2
2	*2441.00	102.0 AV			2.07 V	10	106.2	-4.2
3	4882.00	39.1 PK	74.0	-34.9	1.27 V	15	38.7	0.4
4	4882.00	28.7 AV	54.0	-25.3	1.27 V	15	28.3	0.4
5	7323.00	43.4 PK	74.0	-30.6	1.32 V	74	36.8	6.6
6	7323.00	33.3 AV	54.0	-20.7	1.32 V	74	26.7	6.6
7	#9764.00	-	-	-	-	-	-	-
8	12205.00	-	-	-	-	-	-	-
9	#14646.00	-	-	-	-	-	-	-
10	#17087.00	-	-	-	-	-	-	-
11	19528.00	-	-	-	-	-	-	-
12	#21969.00	-	-	-	-	-	-	-
13	#24410.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

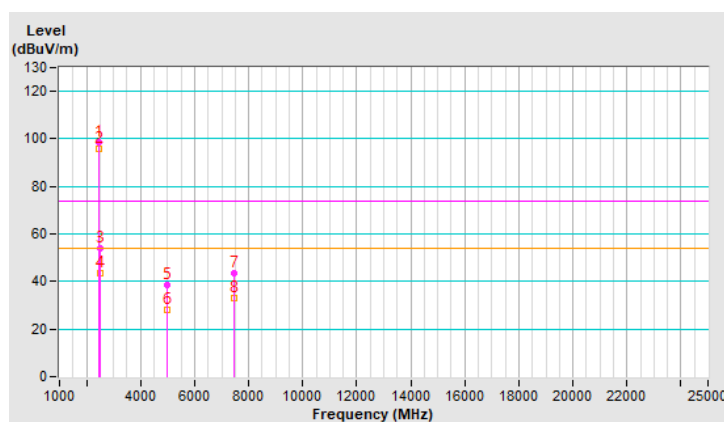


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	98.6 PK			1.40 H	18	102.9	-4.3
2	*2480.00	96.0 AV			1.40 H	18	100.3	-4.3
3	2499.18	54.2 PK	74.0	-19.8	1.40 H	18	58.4	-4.2
4	2499.18	43.6 AV	54.0	-10.4	1.40 H	18	47.8	-4.2
5	4960.00	38.7 PK	74.0	-35.3	1.27 H	8	37.8	0.9
6	4960.00	28.3 AV	54.0	-25.7	1.27 H	8	27.4	0.9
7	7440.00	43.5 PK	74.0	-30.5	1.28 H	79	36.5	7.0
8	7440.00	33.1 AV	54.0	-20.9	1.28 H	79	26.1	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.

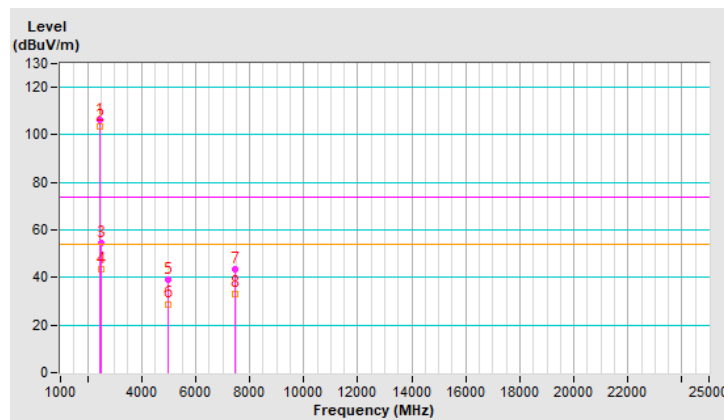


操作模式：	發射 BT_8DPSK	調變技術：	BT_8DPSK
基本波頻率：	CH 78：2480 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=510Hz
量測場地溫度：	25.0°C	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	106.5 PK			2.01 V	26	110.8	-4.3
2	*2480.00	103.5 AV			2.01 V	26	107.8	-4.3
3	2487.39	54.3 PK	74.0	-19.7	2.01 V	26	58.6	-4.3
4	2487.39	43.7 AV	54.0	-10.3	2.01 V	26	48.0	-4.3
5	4960.00	39.0 PK	74.0	-35.0	1.25 V	2	38.1	0.9
6	4960.00	28.9 AV	54.0	-25.1	1.25 V	2	28.0	0.9
7	7440.00	43.7 PK	74.0	-30.3	1.29 V	65	36.7	7.0
8	7440.00	33.3 AV	54.0	-20.7	1.29 V	65	26.3	7.0
9	#9920.00	-	-	-	-	-	-	-
10	12400.00	-	-	-	-	-	-	-
11	#14880.00	-	-	-	-	-	-	-
12	#17360.00	-	-	-	-	-	-	-
13	19840.00	-	-	-	-	-	-	-
14	22320.00	-	-	-	-	-	-	-
15	#24800.00	-	-	-	-	-	-	-

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency (主頻).
6. " # ": The radiated frequency is out of the restricted band.
7. " - ": The emission levels were too low to be detected.
8. The blank is not available, the limit of fundamental frequency was restricted at the output power.



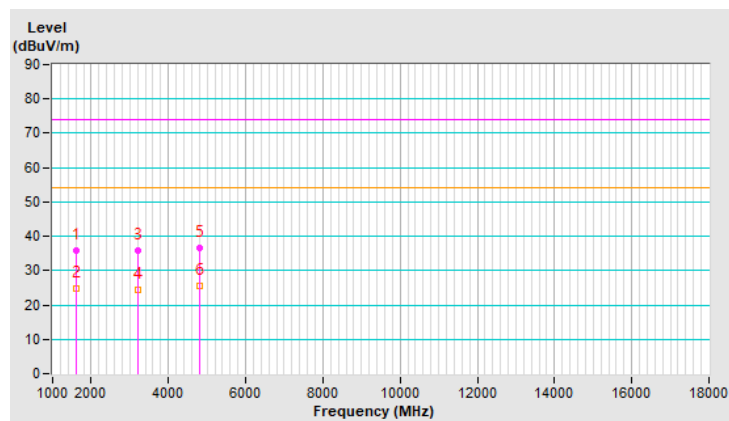
4.7.2 接收諧波

操作模式：	接收		
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=3MHz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1601.33	35.9 PK	74.0	-38.1	2.21 H	322	43.5	-7.6
2	1601.33	24.6 AV	54.0	-29.4	2.21 H	322	32.2	-7.6
3	3202.67	35.9 PK	74.0	-38.1	2.13 H	320	39.0	-3.1
4	3202.67	24.4 AV	54.0	-29.6	2.13 H	320	27.5	-3.1
5	4804.00	36.6 PK	74.0	-37.4	2.21 H	322	36.3	0.3
6	4804.00	25.6 AV	54.0	-28.4	2.21 H	322	25.3	0.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

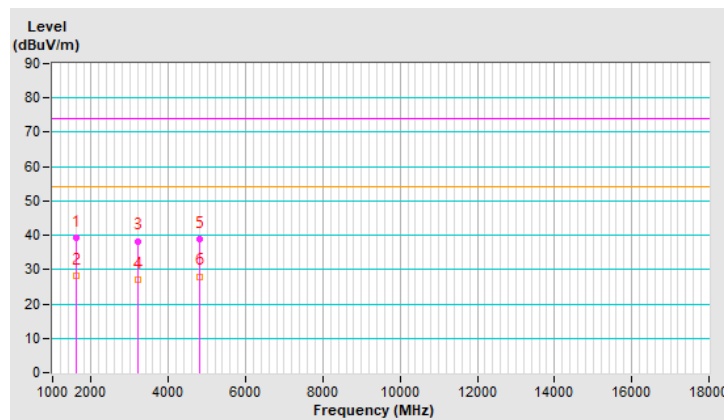


操作模式：	接收		
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(PK) RB=1MHz, VB=3MHz (AV) RB=1MHz, VB=3MHz
量測場地溫度：	25.0℃	量測場地濕度：	75.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1601.33	39.4 PK	74.0	-34.6	1.26 V	14	47.0	-7.6
2	1601.33	28.2 AV	54.0	-25.8	1.26 V	14	35.8	-7.6
3	3202.67	38.3 PK	74.0	-35.7	1.21 V	17	41.4	-3.1
4	3202.67	27.1 AV	54.0	-26.9	1.21 V	17	30.2	-3.1
5	4804.00	38.8 PK	74.0	-35.2	1.32 V	18	38.5	0.3
6	4804.00	28.0 AV	54.0	-26.0	1.32 V	18	27.7	0.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.



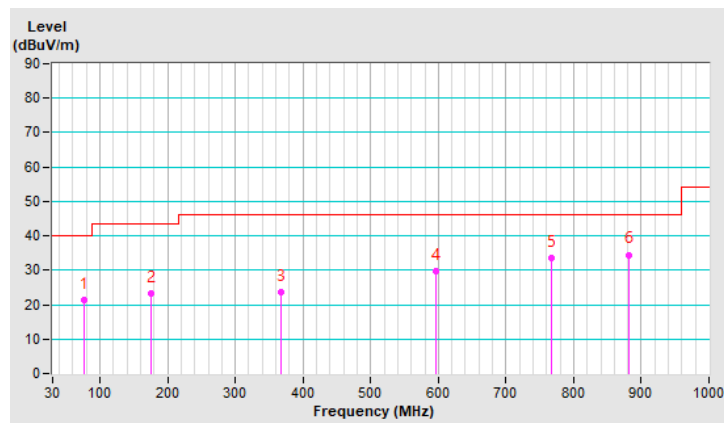
4.7.3 其它不必要之訊號

操作模式：	發射接收 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(QP) RB=120kHz
量測場地溫度：	25.0℃	量測場地濕度：	65.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	76.73	21.3 QP	40.0	-18.7	1.00 H	234	5.9	15.4
2	174.53	23.2 QP	43.5	-20.3	1.00 H	278	4.2	19.0
3	368.51	23.7 QP	46.0	-22.3	1.50 H	223	0.9	22.8
4	595.92	29.8 QP	46.0	-16.2	1.00 H	351	1.3	28.5
5	766.88	33.5 QP	46.0	-12.5	1.50 H	360	2.0	31.5
6	882.05	34.5 QP	46.0	-11.5	1.00 H	307	1.3	33.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



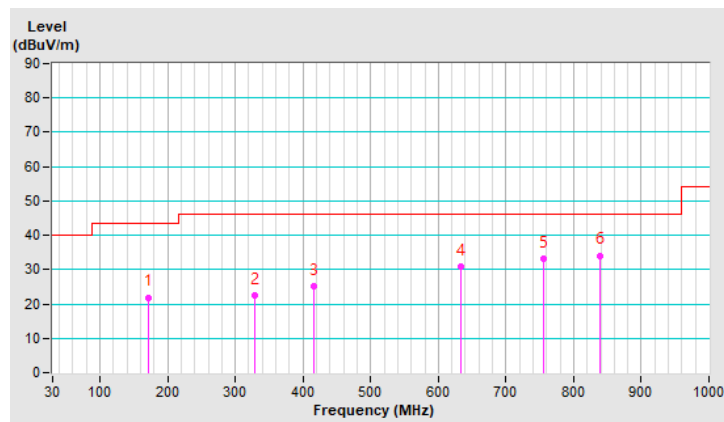
操作模式：	發射接收 BT_GFSK	調變技術：	BT_GFSK
基本波頻率：	CH 0：2402 MHz	檢測器與頻寬：	(QP) RB=120kHz
量測場地溫度：	25.0°C	量測場地濕度：	65.0%RH
測試日期：	109 年 12 月 22 日	測試者：	林至中

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	171.94	21.9 QP	43.5	-21.6	1.00 V	86	2.7	19.2
2	329.22	22.4 QP	46.0	-23.6	1.50 V	62	0.7	21.7
3	416.62	25.3 QP	46.0	-20.7	1.00 V	334	1.2	24.1
4	633.66	31.0 QP	46.0	-15.0	1.00 V	194	1.7	29.3
5	755.83	33.0 QP	46.0	-13.0	1.00 V	197	1.6	31.4
6	839.90	34.1 QP	46.0	-11.9	1.50 V	338	1.6	32.5

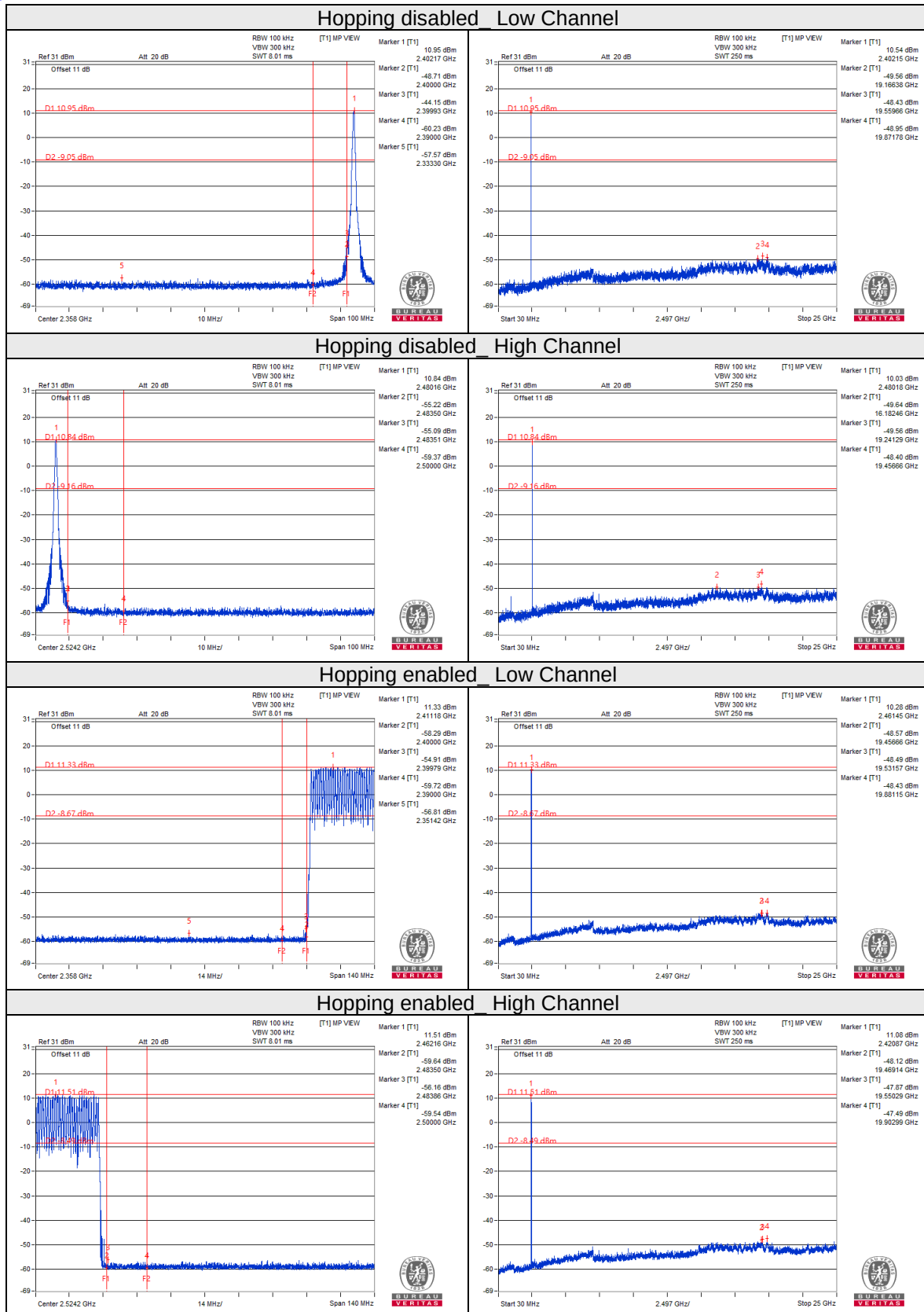
Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



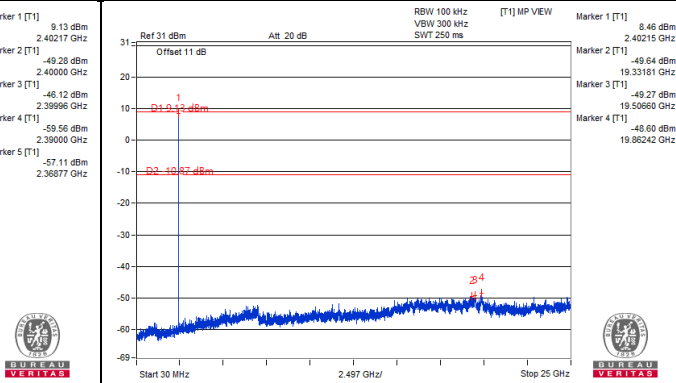
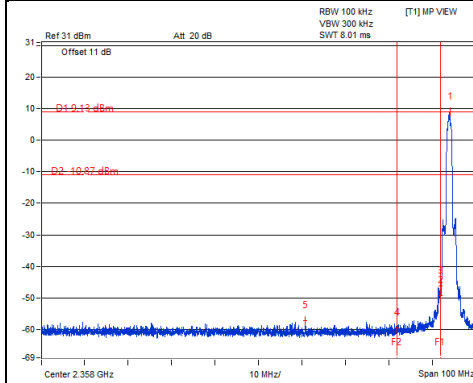
4.8 帶外發射之量測 (傳導)

GFSK

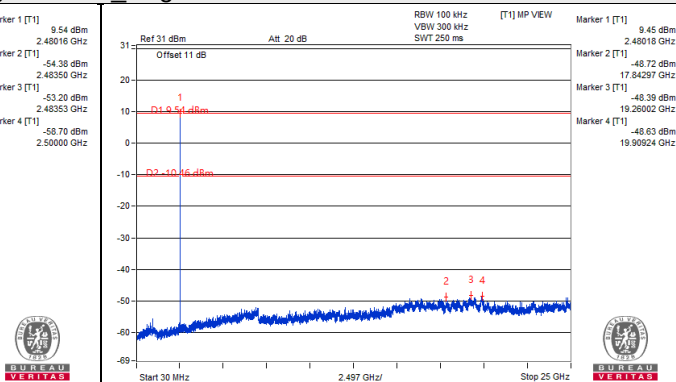
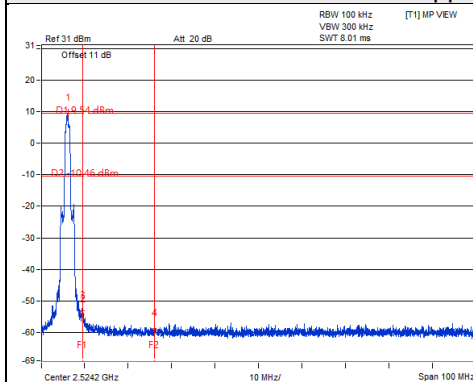


8DPSK

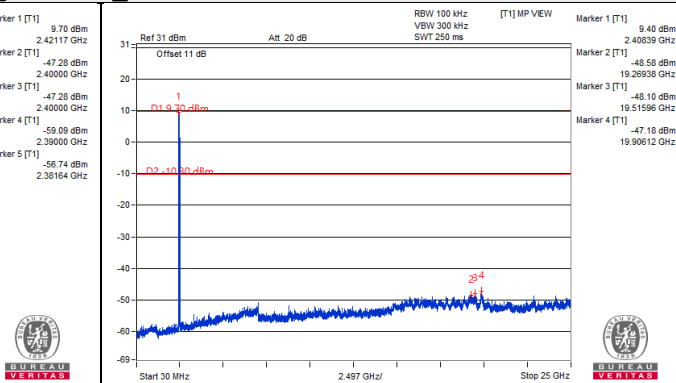
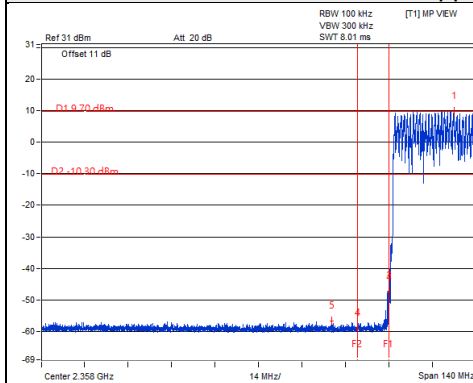
Hopping disabled Low Channel



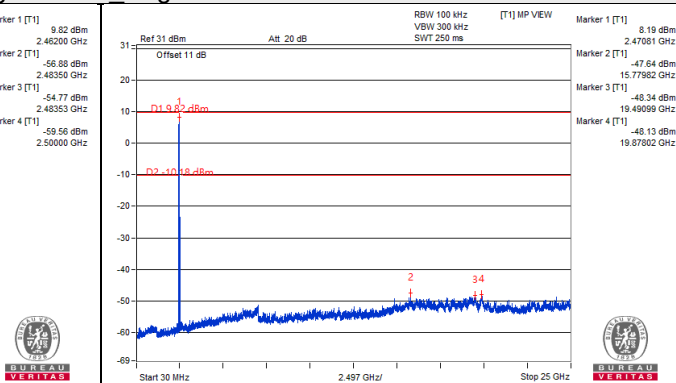
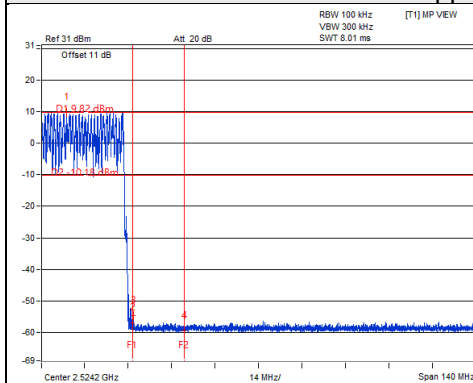
Hopping disabled High Channel



Hopping enabled Low Channel



Hopping enabled High Channel



4.9 量測結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

4.10 配置照片

請參照 Test Setup Photos (BV 編號: 200810E07) 。

5 電源線傳導干擾之量測

5.1 適用標準

請見本報告 3.1 節第 1 項的規定。

5.2 量測方法

將待測物置於 0.8 米高的非金屬桌面，使其操作在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由 0.15MHz 至 30MHz 之間之電源線傳導放射強度。

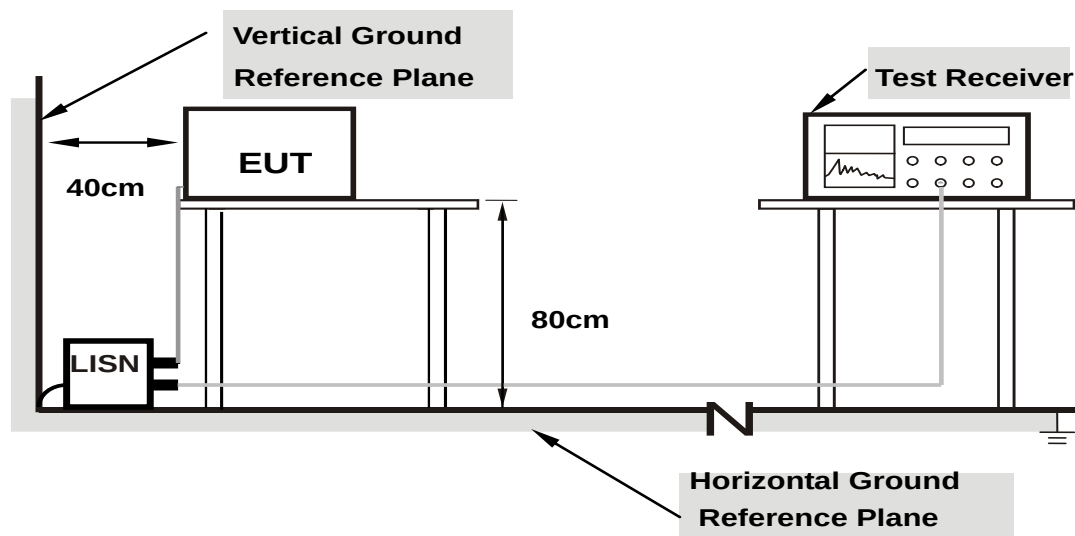
5.3 量測儀器

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 20, 2020	Oct. 19, 2021
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 27, 2020	Oct. 26, 2021
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 19, 2020	Mar. 18, 2021
50 ohms Terminator	50	3	Oct. 26, 2020	Oct. 25, 2021
RF Cable	5D-FB	COCCAB-001	Sep. 26, 2020	Sep. 25, 2021
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 29, 2020	Aug. 28, 2021
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3. The measurement uncertainty is 1.9 dB, which is calculated as per the document CISPR 16-4-2 This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5.4 測試配置



Note: 1.Support units were connected to second LISN.

5.5 干擾值之計算

餘裕度 Margin(dB)= 結果值 Emission level (dBuV)-限制值 Limit value (dBuV)

電源傳導干擾電壓之計算公式如下

結果值 Emission level (dBuV)=校正因子 Correction Factor (dB)+儀器讀值 Reading value (dBuV)

其中校正因子 Correction Factor (dB)為：

饋線損失+電源阻抗模擬網路損失

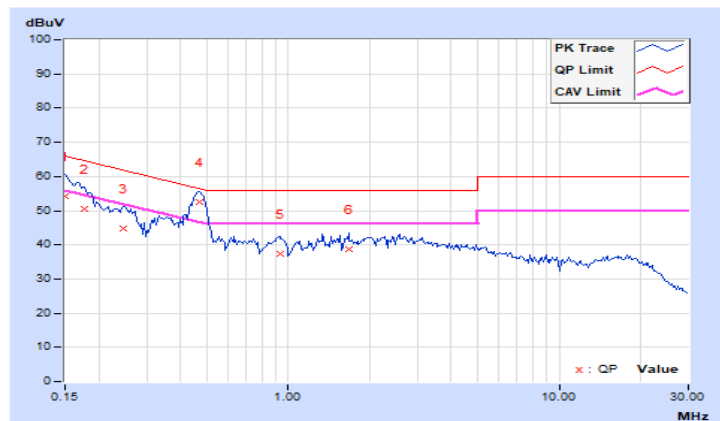
5.6 量測結果

操作模式	發射/ 接收	測試日期	109 年 12 月 15 日
基本波頻率	CH 0 : 2402 MHz	量測場地溫度	25°C
調變技術	GFSK	量測場地濕度	75%RH
測試者	楊立豪		

		6 dB Bandwidth: 9kHz				PHASE: LINE (L)			
輻射頻率	校正因子	儀器讀值		結果值		限制值		餘裕度	
[MHz]	[dB]	[dB (uV)]		[dB (uV)]		[dB (uV)]		[dB]	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.15000	9.95	44.30	27.57	54.25	37.52	66.00	56.00	-11.75	-18.48
0.17734	9.96	40.63	27.22	50.59	37.18	64.61	54.61	-14.02	-17.43
0.24766	9.97	34.71	27.84	44.68	37.81	61.84	51.84	-17.16	-14.03
0.47031	9.99	42.39	36.45	52.38	46.44	56.51	46.51	-4.13	-0.07
0.93125	10.03	27.46	22.70	37.49	32.73	56.00	46.00	-18.51	-13.27
1.66797	10.06	28.60	24.12	38.66	34.18	56.00	46.00	-17.34	-11.82

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

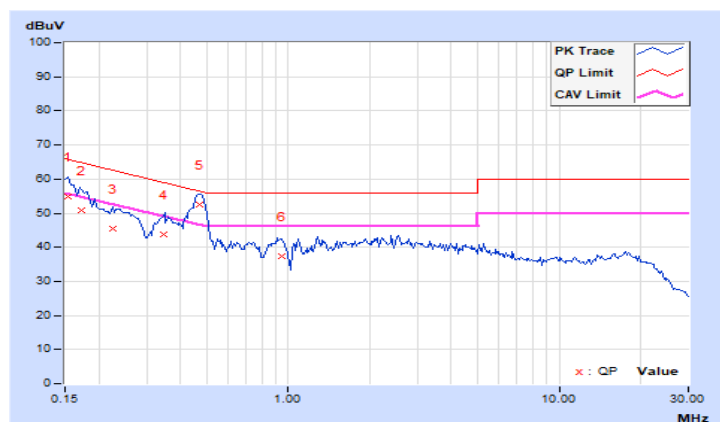


操作模式	發射/ 接收	測試日期	109 年 12 月 15 日
基本波頻率	CH 0 : 2402 MHz	量測場地溫度	25°C
調變技術	GFSK	量測場地濕度	75%RH
測試者	楊立豪		

		6 dB Bandwidth: 9kHz				PHASE: NEUTRAL (N)			
輻射頻率	校正因子	儀器讀值		結果值		限制值		餘裕度	
[MHz]	[dB]	[dB (uV)]		[dB (uV)]		[dB (uV)]		[dB]	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.15391	9.92	45.02	30.58	54.94	40.50	65.79	55.79	-10.85	-15.29
0.17344	9.93	40.75	27.26	50.68	37.19	64.79	54.79	-14.11	-17.60
0.22422	9.95	35.63	27.43	45.58	37.38	62.66	52.66	-17.08	-15.28
0.34531	9.96	33.73	28.39	43.69	38.35	59.07	49.07	-15.38	-10.72
0.47031	9.96	42.53	36.47	52.49	46.43	56.51	46.51	-4.02	-0.08
0.94688	10.00	27.37	21.85	37.37	31.85	56.00	46.00	-18.63	-14.15

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



5.7 量測結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

5.8 配置照片

請參照 Test Setup Photos (BV 編號：200810E07) 。

6 20 dB 頻寬之量測

6.1 適用標準

請見本報告 3.1 節第 7 項的規定。

6.2 量測方法

- 將待測物輸出經由衰減器接到頻譜分析儀上。
- 設定待測物處於連續發射狀態。
- 計算由最大輸出功率峰值減 20dB 的最大頻率範圍。

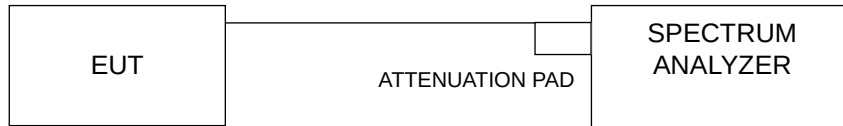
6.3 量測儀器

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021

NOTE:

- The test was performed in Oven room 2.
- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

6.4 測試配置



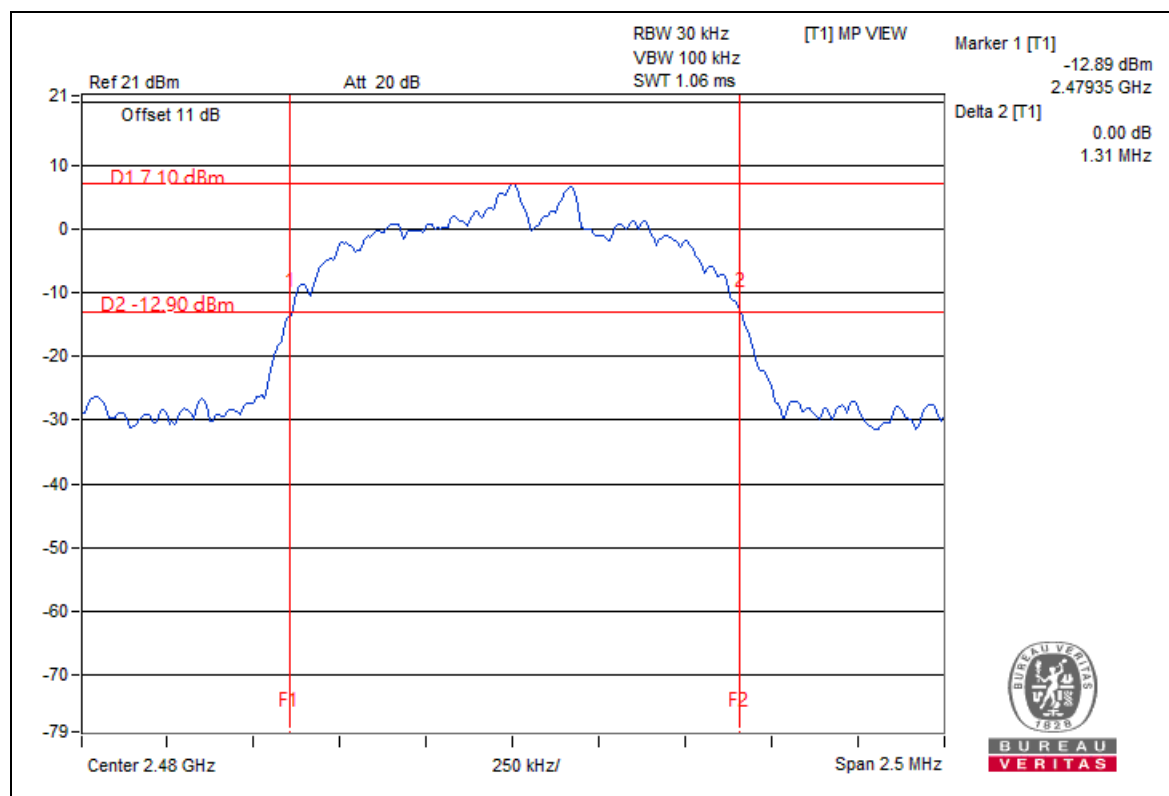
6.5 量測結果

操作模式	發射	測試日期	109 年 11 月 23 日
量測場地溫度	25°C	量測場地濕度	60%RH
測試者	柯其宗		

Channel	Channel Frequency (MHz)	20 dB Bandwidth (MHz)		>= 25kHz
		GFSK	8DPSK	
0	2402	0.96	1.3	YES
39	2441	0.96	1.3	YES
78	2480	0.95	1.31	YES

註：依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.6 節之規定，跳頻系統之載波頻率頻道間隔應大於或等於 25 kHz 或跳頻頻道之 20 dB 頻寬，兩者取較寬者。但操作頻率為 2400 MHz~2483.5 MHz 頻段且輸出功率應小於或等於 125 mW 跳頻系統，其載波頻率頻道間隔不得小於 25 kHz 或跳頻頻道 20 dB 頻寬之三分之二，兩者取較寬者。

**此測試圖僅放測試結果最差的頻道。



6.6 量測結果判定

依據測試數據結果，三分之二 20dB 頻寬值乃為此產品之載波頻率頻道間隔的判定限制值。

7 峰值傳導輸出功率之量測

7.1 適用標準

請見本報告 3.1 節第 5 項的規定。

7.2 量測方法

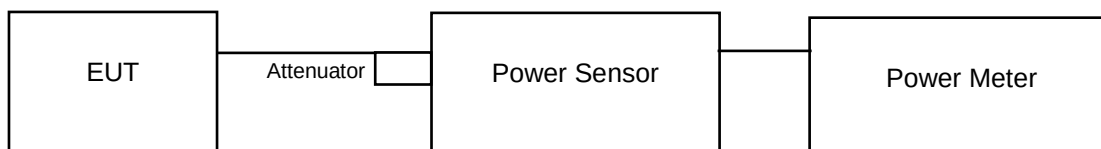
- 將待測物輸出經由衰減器接到功率計上。
- 設定待測物處於連續發射狀態。
- 計算其峰值傳導輸出功率。

7.3 量測儀器

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

7.4 測試配置



7.5 量測結果

操作模式	發射	測試日期	109 年 11 月 23 日
量測場地溫度	25°C	量測場地濕度	60%RH
測試者	柯其宗		

FOR PEAK POWER

GFSK

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	16.711	12.23	21	Pass
39	2441	14.322	11.56	21	Pass
78	2480	16.032	12.05	21	Pass

8DPSK

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	15.453	11.89	21	Pass
39	2441	13.397	11.27	21	Pass
78	2480	15.596	11.93	21	Pass

FOR AVERAGE POWER

GFSK

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	16.368	12.14
39	2441	13.996	11.46
78	2480	15.776	11.98

8DPSK

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	9.141	9.61
39	2441	7.063	8.49
78	2480	10.162	10.07

7.6 量測結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

8 跳頻頻道數之量測

8.1 適用標準

請見本報告 3.1 節第 6 項的規定。

8.2 量測方法

- 將待測物輸出接到頻譜分析儀上。
- 設定待測物處於正常傳輸跳頻模式下。
- 設定 RBW= 100 kHz，VBW=300 kHz，量測跳頻頻道數。

8.3 量測儀器

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021

NOTE:

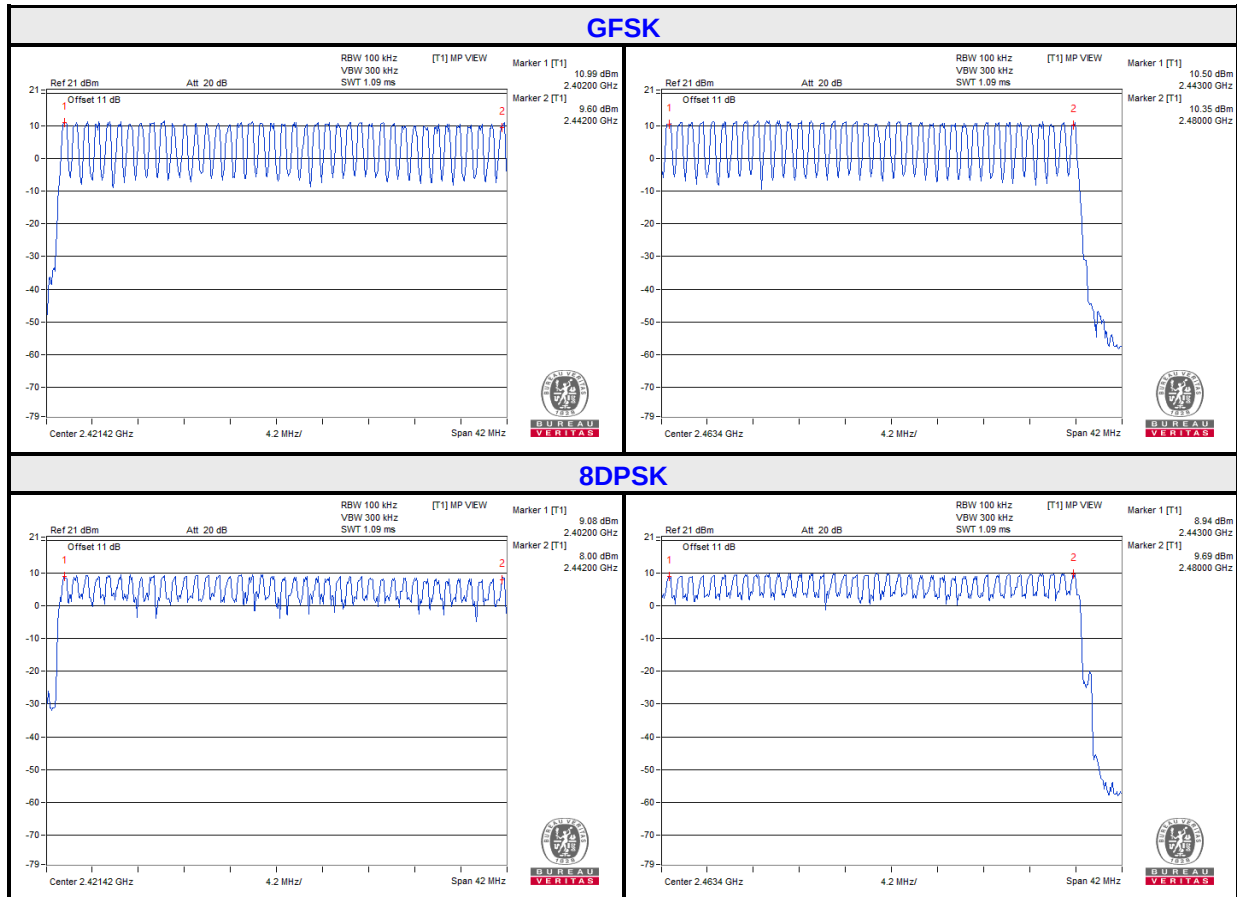
- The test was performed in Oven room 2.
- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

8.4 測試配置



8.5 量測結果

其掃描圖請參閱下圖。跳頻頻道數共有 79 個，符合至少 15 個的規定。



8.6 量測結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

9 跳頻頻道間隔之量測

9.1 適用標準

請見本報告 3.1 節第 7 項規定。

9.2 量測方法

- 將待測物輸出接到頻譜分析儀上。
- 設定待測物處於連續發射狀態。
- 設定 RBW= 30 kHz, VBW=100 kHz，量測相鄰兩個頻道間的間隔。

9.3 量測儀器

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021

NOTE:

- The test was performed in Oven room 2.
- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

9.4 測試配置



10 每一頻道停留時間之量測

10.1 適用標準

請見本報告 3.1 節第 8 項的規定。

10.2 量測方法

- 將待測物輸出接到頻譜分析儀上。
- 設定待測物處於正常傳輸跳頻模式下。
- 設定 RBW= 100kHz, VBW=300kHz, 量測在不同傳輸模式下的頻道停留時間。

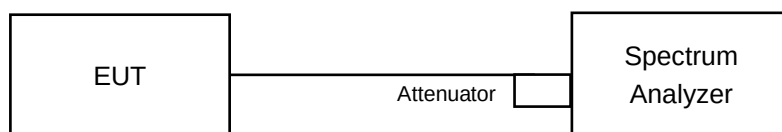
10.3 量測儀器

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021

NOTE:

- The test was performed in Oven room 2.
- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

10.4 測試配置



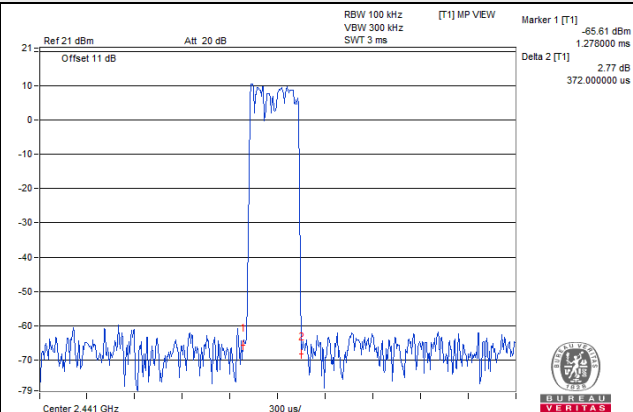
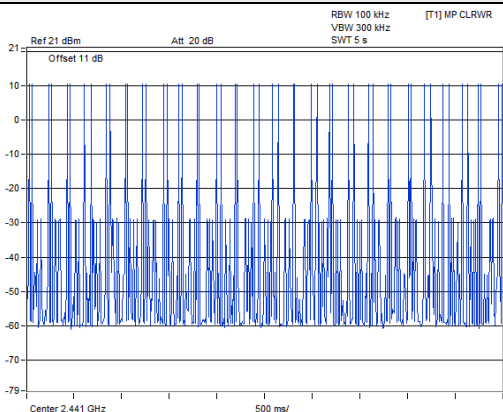
10.5 量測結果

調變方式: GFSK

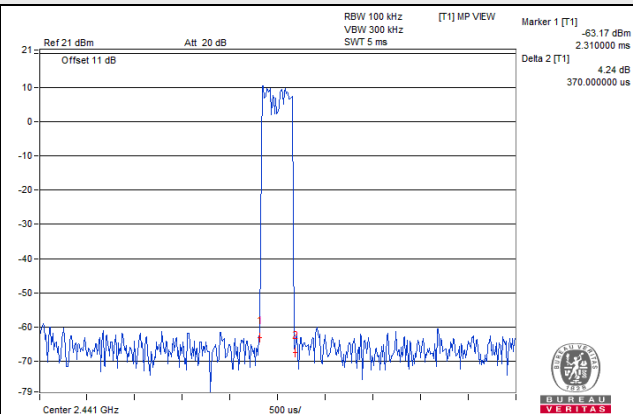
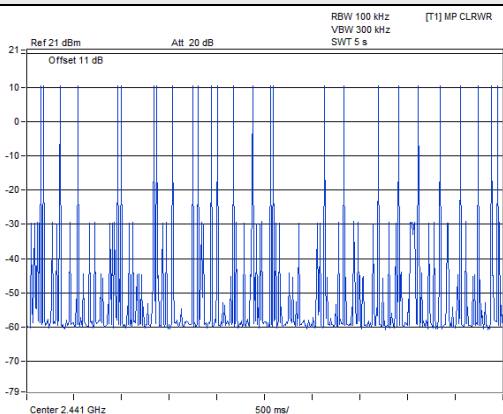
Mode	Number of transmission in a 31.6 (79Hopping*0.4)	Length of transmission time (msec)	Result (msec)	Limit (msec)
DH1	50 (times / 5 sec) * 6.32 = 316 times	0.372	117.6	400
DH3	27 (times / 5 sec) * 6.32 = 171 times	0.37	63.27	400
DH5	18 (times / 5 sec) * 6.32 = 114 times	0.448	51.07	400

註：因為 Bluetooth 每秒跳 1600 次，會平均落在每個頻道，所以僅測試 Ch39 作為代表。
其掃描圖請參閱次頁

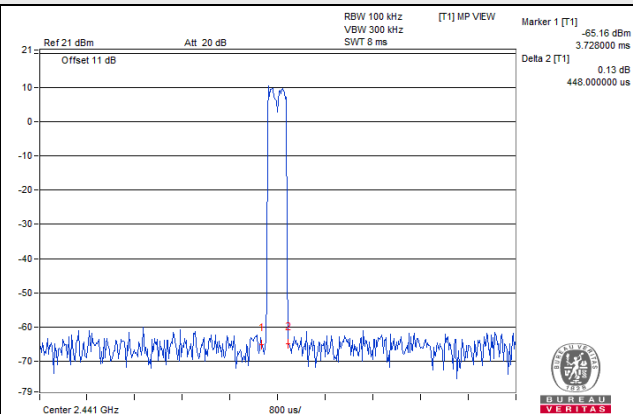
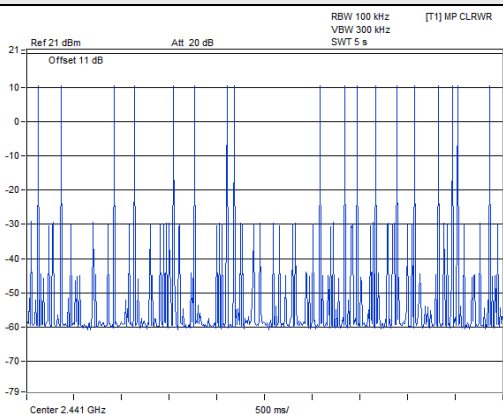
DH1



DH3



DH5

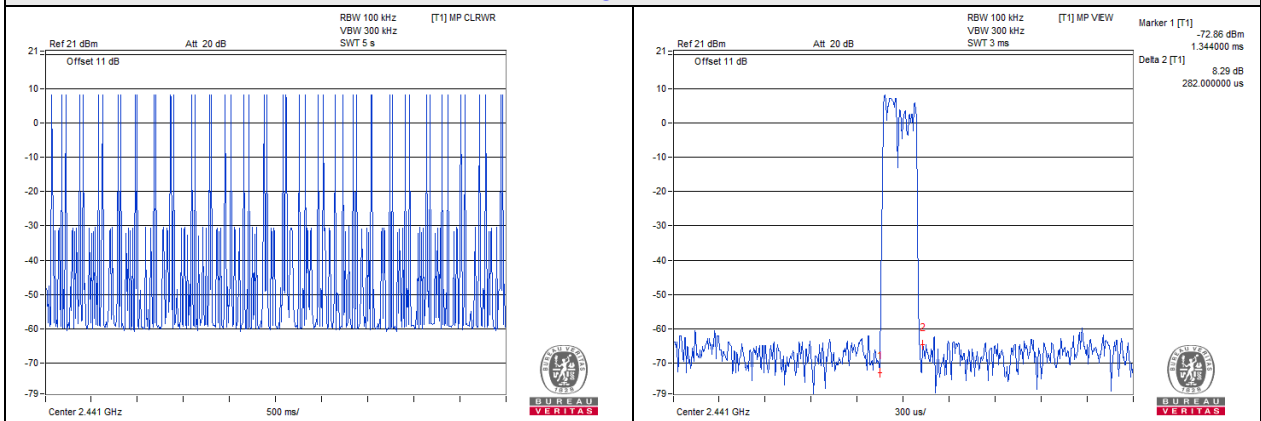


調變方式: 8DPSK

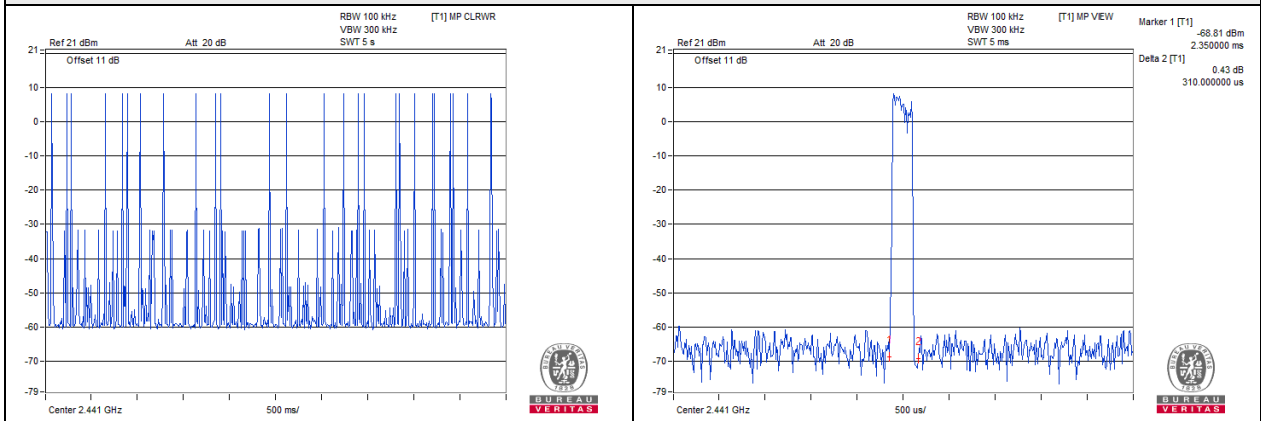
Mode	Number of transmission in a 31.6 (79Hopping*0.4)	Length of transmission time (msec)	Result (msec)	Limit (msec)
3DH1	50 (times / 5 sec) * 6.32 = 316 times	0.282	89.11	400
3DH3	26 (times / 5 sec) * 6.32 = 165 times	0.31	51.15	400
3DH5	18 (times / 5 sec) * 6.32 = 114 times	0.368	41.95	400

註：因為 Bluetooth 每秒跳 1600 次，會平均落在每個頻道，所以僅測試 Ch39 作為代表。
 其掃描圖請參閱次頁

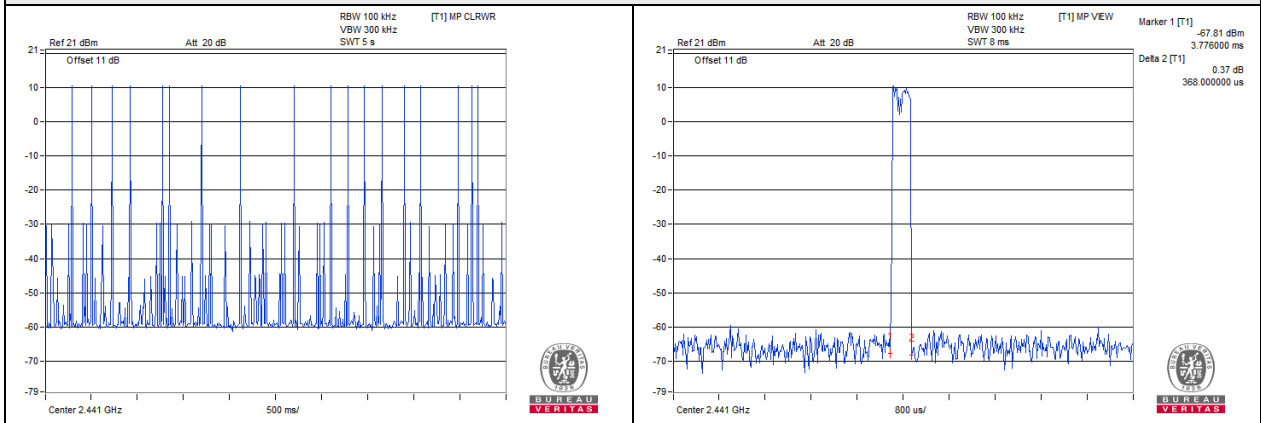
3DH1



3DH3



3DH5



10.6 量測結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

11 檢測實驗室基本資料

立德國際商品試驗有限公司桃園分公司提供產業界最佳的檢測以及諮詢服務。
本公司為 ISO/IEC 17025 認可實驗室。

如您有任何問題或建議，請與下列實驗室聯絡：

林口 EMC / RF 實驗室：

Tel: 886-2-26052180

Fax: 886-2-26051924

新竹 EMC / RF 及通訊實驗室：

Tel: 886-3-6668565

Fax: 886-3-6668323

華亞 EMC / RF / Safety 實驗室：

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

您也可以在我们的網站內找到各實驗室的地圖。

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