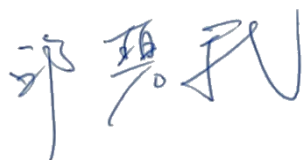


低功率射頻器材技術規範測試報告

報告編號.	RTBFRX-WTW-P21040777
申請者	u-blox AG
產品名稱	Bluetooth LE & Passive NFC tag module
型號	NINA-B400
系列型號	NINA-B410
製造廠商	u-blox AG
商標或廠牌	u-blox
該產品樣品試驗 依據之試驗標準	國家通訊傳播委員會低功率射頻器材技術規範 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 林口實驗室
日期 110 年 09 月 11 日

報告簽署人簽章:



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報告發行紀錄

Issue No.	Description	Date Issued
RTBFRX-WTW-P21040777	Original release	110 年 09 月 11 日

證 明 書

發行日期：110 年 09 月 11 日

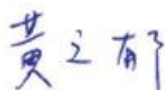
產 品 名 稱：Bluetooth LE & Passive NFC tag module
商 標：u-blox
型 號：NINA-B400
系 列 型 號：NINA-B410
申 請 者：u-blox AG
量 測 規 範：低功率射頻器材技術規範 LP0002 (訂定日期：109 年 7 月 1 日)
ANSI C63.10-2013

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一組(型號：NINA-B400、系列型號：NINA-B410)，收件日期 109 年 07 月 08 日，於 109 年 07 月 17 日至 110 年 08 月 25 日已在本公司的標準測試場地完成量測。型號: NINA-B400 與 NINA-B410 之差異請見本報告 2.1 章節註 1，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辦法”製作測試結果報告。

特 此 證 明 ！

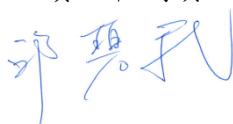
報告製作者：



黃之郁 / 專員

， 日 期： 110 年 09 月 11 日

審 核 者：



邱碧民 / 高級工程師

， 日 期： 110 年 09 月 11 日

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：新北市林口區嘉寶里 14 鄰 47-2 號

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: u-blox AG

製造廠商: u-blox AG

申請廠商地址: Zuercherstrasse 68, 8800 Thalwil, Switzerland

產品名稱: Bluetooth LE & Passive NFC tag module

廠牌: u-blox

型號: NINA-B400

系列型號: NINA-B410

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

林口實驗室華亞檢測部

量測單位地址: 桃園市龜山區文化里華亞二路 19 號

量測單位認可編號: TAF 2021 (9 kHz ~ 40 GHz)

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

Bluetooth LE 頻段概要

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 節	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	6 dB 頻寬	低功率射頻器材技術規範 4.10.1.6 節	合格
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	功率頻譜密度	低功率射頻器材技術規範 4.10.1.6 節	合格

ANT+頻段概要

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 節	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	6 dB 頻寬	低功率射頻器材技術規範 4.10.1.6 節	合格
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	功率頻譜密度	低功率射頻器材技術規範 4.10.1.6 節	合格

Zigbee 頻段概要

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 節	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	6 dB 頻寬	低功率射頻器材技術規範 4.10.1.6 節	合格
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	功率頻譜密度	低功率射頻器材技術規範 4.10.1.6 節	合格

Thread 頻段概要

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 節	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	6 dB 頻寬	低功率射頻器材技術規範 4.10.1.6 節	合格
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	功率頻譜密度	低功率射頻器材技術規範 4.10.1.6 節	合格

NFC 頻段概要 (Rx Only)

項次	量測項目	規 範	量測結果判定
1	不必要之發射	低功率射頻器材技術規範 3.6 節	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	天線之要求	低功率射頻器材技術規範 3.2 節	合格

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：		Bluetooth LE & Passive NFC tag module	
型 號：		NINA-B400	
系 列 型 號：		NINA-B410	
額 定 電 源：		1.7Vdc to 3.6Vdc (3.3V nominal)	
調 變 方 式：	NINA-B400	Bluetooth LE 4.0	GFSK
		Bluetooth LE 5.0	GFSK
		ANT+	GFSK
		Zigbee	O-QPSK
		Thread	O-QPSK
		NFC (Rx only)	ASK
	NINA-B410	Bluetooth LE 4.0	GFSK
		Bluetooth LE 5.0	GFSK
		NFC (Rx only)	ASK
傳 輸 速 率：	NINA-B400	Bluetooth LE 4.0	1 Mbps
		Bluetooth LE 5.0	2 Mbps
		ANT+	1 Mbps
		ANT+	2 Mbps
		Zigbee	250 kbps
		Thread	250 kbps
	NINA-B410	Bluetooth LE 4.0	1 Mbps
		Bluetooth LE 5.0	2 Mbps
	載 波 頻 率：	NINA-B400	Bluetooth LE 4.0
Bluetooth LE 5.0			2402 ~ 2480 MHz
ANT+			2403 ~ 2480 MHz
Zigbee			2405 ~ 2475
Thread			2405 ~ 2475
NFC (Rx only)			13.56 MHz
NINA-B410		Bluetooth LE 4.0	2402 ~ 2480 MHz
		Bluetooth LE 5.0	2402 ~ 2480 MHz
		NFC (Rx only)	13.56 MHz
頻 道 數：	NINA-B400	Bluetooth LE 4.0	40
		Bluetooth LE 5.0	40
		ANT+	78
		Zigbee	15
		Thread	15
		NFC (Rx only)	1
頻 道 數：	NINA-B410	Bluetooth LE 4.0	40
		Bluetooth LE 5.0	40
		NFC (Rx only)	1

發射功率：	NINA-B400	Bluetooth LE 4.0	7.83 dBm
		Bluetooth LE 5.0	7.79 dBm
		Zigbee	8.34 dBm
		Thread	8.34 dBm
		ANT+ (1M)	8.35 dBm
		ANT+ (2M)	8.33 dBm
	NINA-B410	Bluetooth LE 4.0	7.83 dBm
		Bluetooth LE 5.0	7.79 dBm
天線種類：	見註 0		
電源線類別：	N/A		
信號線類別：	見註 5		
配件：	見註 5		

註：

1. 此待測設備所有型號如下：

商標	型號	差異說明
u-blox	NINA-B400 (主型號)	Module SW with external antenna Support following wireless function: BLE IEEE 802.15.4 (Thread and Zigbee) ANT+ NFC (Rx only)
	NINA-B410 (系列型號)	OEM SW with external antenna Support following wireless function: BLE NFC (Rx only)
Note: 僅以NINA-B400做完整測試		

2. 此待測設備搭配測試的天線，其資料如下：

No.	Brand	Model	Antenna Gain(dBi)	Frequency range	Antenna Type	Connector Type
1	ProAnt	Ex-IT 2400 RP-SMA 70-002	3	2400~2485MHz	Monopole	RP-SMA
2	ProAnt	InSide-2400	3	2400~2485MHz	Patch	U.FL
3	ProAnt	FlatWhip-2400 RP-SMA	3	2400~2483MHz	Monopole	RP-SMA
4	ProAnt	Ex-IT 2400 28 RP-SMA	3	2400~2485MHz	Monopole	RP-SMA
5	u-blox	EMMY-W1 Rev.B	-	13.56MHz	Loop	N/A

*場強輻射量測使用天線1、天線2及天線5進行最終量測。

3. 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。

4. 此待測設備搭配使用之配件請參閱產品照編號: BFRX-WTW-P21040777，測試照片請參照BV CPS編號: BFRX-WTW-P21040777_TSup。

5. 輔助測試之週邊設備如下。非隨貨配件之照片請參閱附件 (BV CPS報告編號: BFRX-WTW-P21040777_SU)。

配件	廠牌	型號	規格
Test Fixture	Ublox	NA	Serial No.:UBXH60-000448
Adapter	ASUS	AD827M	I/P 100-240 Vac, 0.5A,50/60Hz O/P: 5 Vdc, 2A or 15Vdc, 1.2A
USB Cable	KYOCERA	KYO6750USB	0.95m non shielded without core

Note: 本案以實驗室提供的測試配件併同檢驗。

6. 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
2402 ~ 2480 MHz (Bluetooth LE 4.0)		
1 GHz 以上量測	天線型式: Monopole Ch 0, 19, 39 天線型式: Patch Ch 0, 19, 39	--
2402 ~ 2480 MHz (Bluetooth LE 5.0)		
1 GHz 以上量測	天線型式: Monopole Ch 0, 19, 39 天線型式: Patch Ch 0, 19, 39	天線型式: Monopole Ch 39 天線型式: Patch Ch 39
其它不必要之訊號	天線型式: Monopole Ch 39 天線型式: Patch Ch 39	天線型式: Monopole Ch 39 天線型式: Patch Ch 39
13.56 MHz (NFC)		
1 GHz 以上量測	--	--
其它不必要之訊號	--	Ch 1
ANT+ (1M)		
1 GHz 以上量測	天線型式: Monopole Ch 1, 39, 78 天線型式: Patch Ch 1, 39, 78	天線型式: Monopole Ch 1
其它不必要之訊號	天線型式: Monopole Ch 1	天線型式: Monopole Ch 1
ANT+ (2M)		
1 GHz 以上量測	天線型式: Monopole Ch 1, 39, 78 天線型式: Patch Ch 1, 39, 78	天線型式: Patch Ch 78
其它不必要之訊號	天線型式: Patch Ch 78	天線型式: Patch Ch 78
Zigbee		
1 GHz 以上量測	天線型式: Monopole Ch 11, 17, 25 天線型式: Patch Ch 11, 17, 25	天線型式: Monopole Ch 17 天線型式: Patch Ch 25
其它不必要之訊號	天線型式: Monopole Ch 17 天線型式: Patch Ch 25	天線型式: Monopole Ch 17 天線型式: Patch Ch 25
Thread		
1 GHz 以上量測	天線型式: Monopole Ch 11, 17, 25 天線型式: Patch Ch 11, 17, 25	天線型式: Monopole Ch 17 天線型式: Patch Ch 25
其它不必要之訊號	天線型式: Monopole Ch 17 天線型式: Patch Ch 25	天線型式: Monopole Ch 17 天線型式: Patch Ch 25

7. 電源線傳導干擾量測模式如下。

模式	測試狀態
1	TX/RX + BT LE + Adapter <Monopole Antenna>
2	TX/RX + BT LE + NB + Adapter <Monopole Antenna>
3	TX/RX + BT LE + Adapter <Patch Antenna>
4	TX/RX + BT LE + NB + Adapter <Patch Antenna>
5	TX/RX + ANT+ + Adapter <Monopole Antenna>
6	TX/RX + ANT+ + NB + Adapter <Monopole Antenna>
7	TX/RX + ANT+ + Adapter <Patch Antenna>
8	TX/RX + ANT+ + NB + Adapter <Patch Antenna>
9	TX/RX + Zigbee + Adapter <Monopole Antenna>
10	TX/RX + Zigbee + NB + Adapter <Monopole Antenna>
11	TX/RX + Zigbee + Adapter <Patch Antenna>
12	TX/RX + Zigbee + NB + Adapter <Patch Antenna>
13	RX + NFC + Adapter
14	RX + NFC + NB + Adapter
15	TX/RX + Thread + Adapter <Monopole Antenna>
16	TX/RX + Thread + NB + Adapter <Monopole Antenna>
17	TX/RX + Thread + Adapter <Patch Antenna>
18	TX/RX + Thread + NB + Adapter <Patch Antenna>

8. Bluetooth LE傳輸模式，場強輻射量測及電源線傳導干擾量測之外的測試項目，以GFSK調變技術進行測試並記錄最終量測結果於報告中。

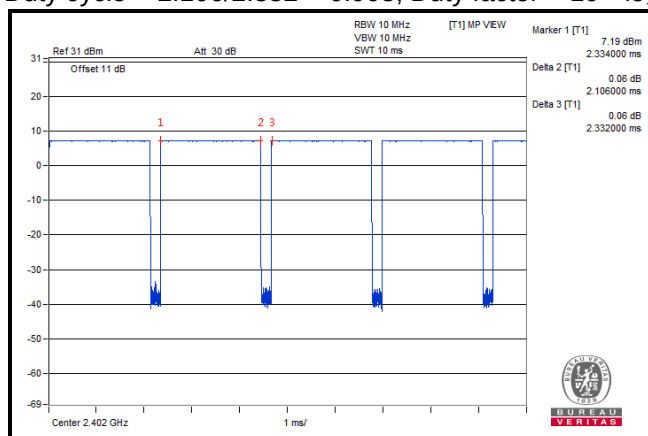
9. 此待測設備，經評估三個正交軸方位評估測試擺設方式：平躺、垂直、側放，其各擺放最大干擾值之位置如下表，故以此擺放方式進行最終量測，並將測試結果紀錄。

	Bluetooth LE	NFC	ANT+	Zigbee	Thread
擺放方式	側放(天線 2)	垂直	側放(天線 2)	側放(天線 2)	側放(天線 2)
	垂直(天線 1)		垂直(天線 1)	垂直(天線 1)	垂直(天線 1)

10. Duty cycle of test signal.

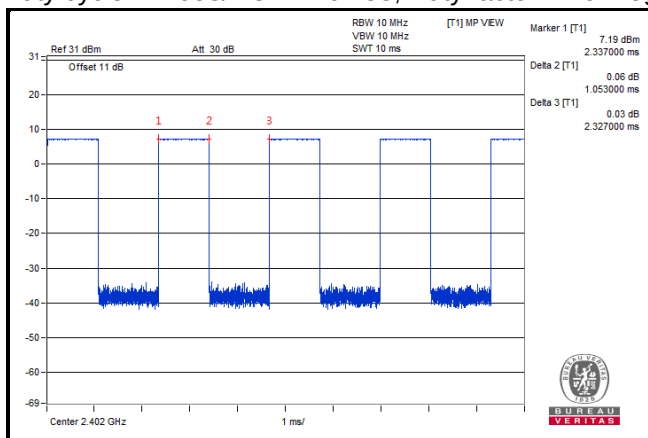
<LE 4.0>

Duty cycle = $2.106/2.332 = 0.903$, Duty factor = $10 * \log(1/0.903) = 0.44$



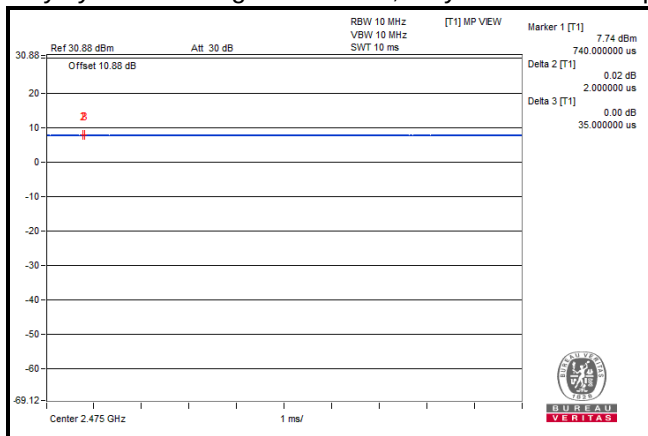
<LE 5.0>

Duty cycle = $1.053/2.327 = 0.453$, Duty factor = $10 * \log(1/0.453) = 3.44$



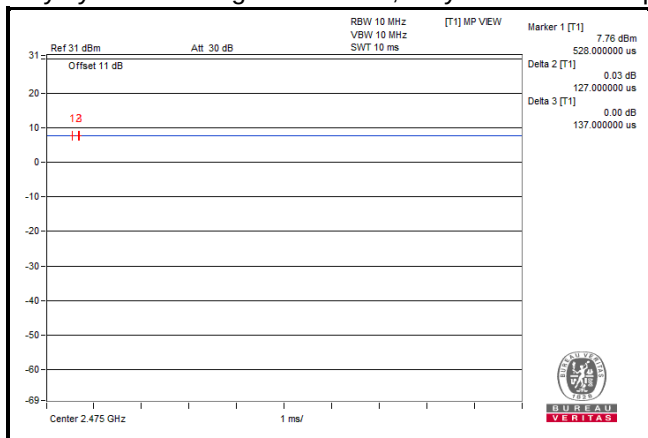
<Zigbee>

Duty cycle of test signal is 100 %, duty factor is not required.



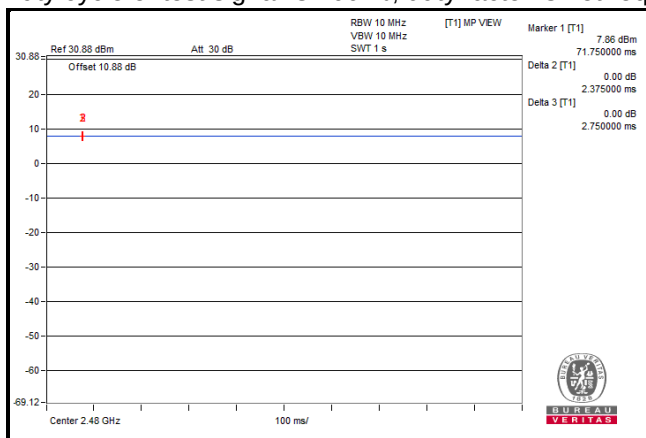
<Thread>

Duty cycle of test signal is 100 %, duty factor is not required.



<ANT+>

Duty cycle of test signal is 100 %, duty factor is not required.



此裝置各頻道的中心頻率如下：

Bluetooth LE 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)
0	2402	8	2418	16	2434	24	2450	32	2466
1	2404	9	2420	17	2436	25	2452	33	2468
2	2406	10	2422	18	2438	26	2454	34	2470
3	2408	11	2424	19	2440	27	2456	35	2472
4	2410	12	2426	20	2442	28	2458	36	2474
5	2412	13	2428	21	2444	29	2460	37	2476
6	2414	14	2430	22	2446	30	2462	38	2478
7	2416	15	2432	23	2448	31	2464	39	2480

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

Zigbee 頻段:

頻道	對應頻率 (MHz)	頻道	對應頻率 (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440		

Thread 頻段:

頻道	對應頻率 (MHz)	頻道	對應頻率 (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440		

NFC 頻段:

頻道	對應頻率 (MHz)
1	13.56

詳細之規格請參考使用說明書。

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。

No.	Product	Brand	Model No.	Serial No.	FCC ID
A	Test Fixture	Ublox	NA	UBXH60-000448	NA
B	Smart Phone	ASUS	Max Plus ZB570TL	N/A	MSQX018D
C	Adapter	ASUS	AD827M	NA	NA
D	Notebook	DELL	Inspiron 14R	8LRKKW1	NA

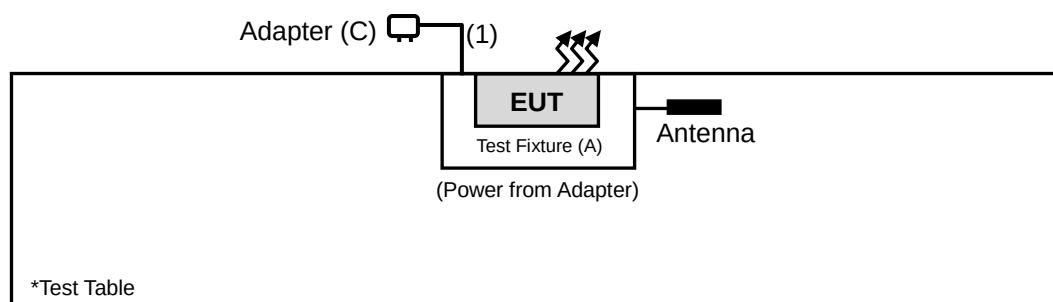
No.	Signal Cable Description Of The Above Support Units
1	USB Cable: 0.95m non shielded without core
2	Power Cable: 1.5m non shielded without core

2.3 測試架構圖

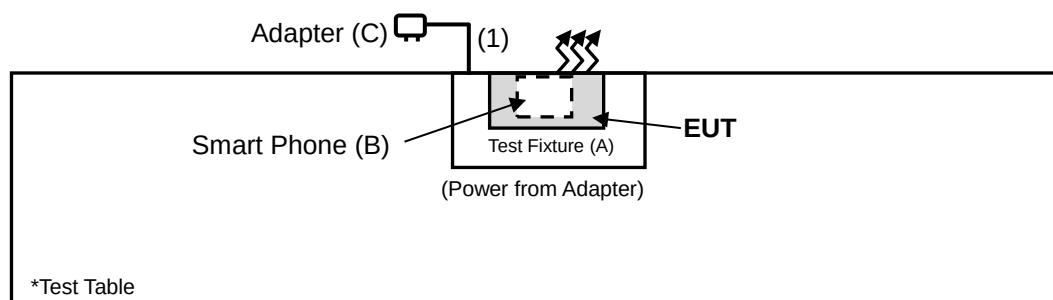
場強輻射量測

電源線傳導干擾量測

<Bluetooth LE / ANT+ / Zigbee / Thread>

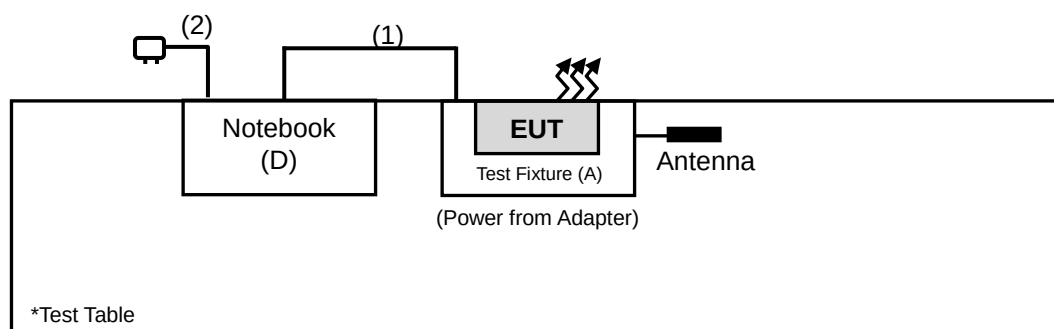


<NFC>

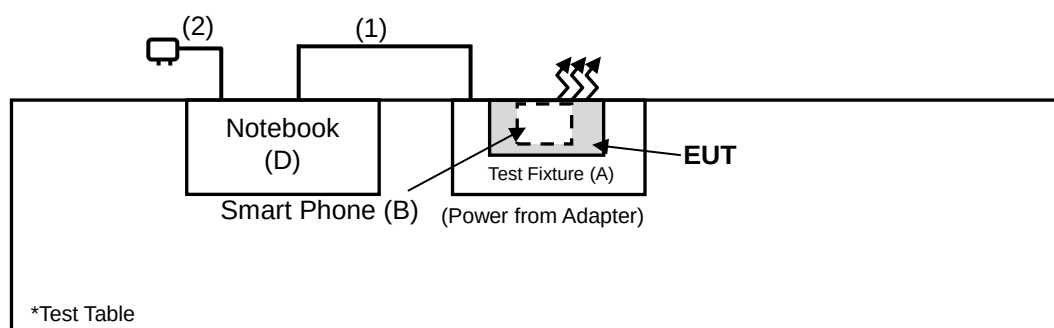


電源線傳導干擾量測

<Bluetooth LE / ANT+ / Zigbee / Thread>



<NFC>



3 適用規範

3.1 規範要求

► Bluetooth LE/ANT+/Zigbee/Thread 頻段部分：

(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) 6 dB 頻寬之要求

對使用數位調變技術(digital modulation techniques)系統之低功率發射機，依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.6 節之規定，6dB 頻寬至少應有 500kHz。

(6) 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：

數位調變技術系統：1 W(含)以下。

(7) 功率頻譜密度之要求

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.6 節之規定，在使用頻率範圍之任一 3 kHz 頻寬內，由發射機傳導至天線之功率頻譜密度在任意傳輸期間內，皆小於或等於 8 毫分貝(dBm)，且應依 4.10.1.3 之方式降低功率頻譜密度限制值。

►NFC 頻段部分：

(8) 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。

(9) 主波發射之規定

依據國家通訊傳播委員會低功率射頻器材技術規範 4.2.1.1 節之要求，距器材 30 公尺處之主波電場強度應小於或等於 15848 uV/m。

(10) 不必要之發射之規定

依據國家通訊傳播委員會低功率射頻器材技術規範 4.2.1.2 節之要求，應符合第 3.6 節之規定：

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(kHz)	300
$0.490 < f \leq 1.705$	24,000/f(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

(11) 頻率容許差度之規定

依據國家通訊傳播委員會低功率射頻器材技術規範 4.2.1.3 節之要求，應維持在主波頻率之 $\pm 0.01\%$ 以內。在正常供應電壓下，溫度在攝氏零下二十度至攝氏五十度間變化；及在攝氏二十度下，供應電壓在額定值之 $\pm 15\%$ 內變化時。以電池作業，應以新電池測試，須符合第 6.18 節之規定

(12) 天線之規定

低功率射頻器材之發射機或收發信機所使用之天線，除本規範章節中另有規定外，應為全固定、半固定式或以獨特之耦合(unique coupling)方式連接機體。製造者可設計供使用者因損壞而替換之天線，但不得設計或使用原認證以外之天線或可供引接各類電纜之標準天線插座或電氣連接頭，如：BNC、F type、N type、M type、UG type、RCA、SMA、SMB...等及其他各類工業或通訊標準接頭。

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	

BLUETOOTH LE 頻段測試紀錄結果

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。

Note: 對於 1 GHz 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。

發射諧波：

Peak 為 RBW = 1 MHz, VBW = 3 MHz；

Average 為 RBW = 1 MHz, VBW = 1 kHz

接收諧波：

Below 1 GHz

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

Above 1 GHz:

Peak 為 RBW = 1 MHz, VBW = 3 MHz；Average 為 RBW = 1 MHz, VBW = 3MHz (RMS)

其它不必要之訊號

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

4.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver Agilent	N9038A	MY55420137	Apr. 16, 2020	Apr. 15, 2021
			Apr. 09, 2021	Apr. 08, 2022
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 12, 2019	Dec. 11, 2020
			Dec. 07, 2020	Dec. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021
			Apr. 12, 2021	Apr. 11, 2022
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Nov. 08, 2019	Nov. 05, 2020
			Nov. 06, 2020	Nov. 05, 2021
Fixed Attenuator WORKEN	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
			Apr. 13, 2021	Apr. 12, 2022
Loop Antenna	HLA 6121	24745	Sep. 17, 2019	Sep. 16, 2020
			Sep. 17, 2020	Sep. 16, 2021
Preamplifier EMCI	EMC001340	980201	Oct. 21, 2019	Oct. 20, 2020
			Oct. 21, 2020	Oct. 20, 2021
Bluetooth Tester	CBT	100946	Aug. 09, 2018	Aug. 05, 2020
			Aug. 06, 2020	Aug. 05, 2022
Preamplifier EMCI	EMC 330H	980112	Oct. 08, 2019	Oct. 06, 2020
			Oct. 07, 2020	Oct. 06, 2021
Power Meter Anritsu	ML2495A	1012010	Sep. 04, 2019	Aug. 31, 2020
			Sep. 01, 2020	Aug. 31, 2021
Power Sensor Anritsu	MA2411B	1315050	Sep. 04, 2019	Aug. 31, 2020
			Sep. 01, 2020	Aug. 31, 2021
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-8000&3000	140811+170717	Oct. 08, 2019	Oct. 06, 2020
			Oct. 07, 2020	Oct. 06, 2021
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 08, 2019	Oct. 06, 2020
			Oct. 07, 2020	Oct. 06, 2021
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 08, 2019	Oct. 06, 2020
			Oct. 07, 2020	Oct. 06, 2021
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA

NOTE:

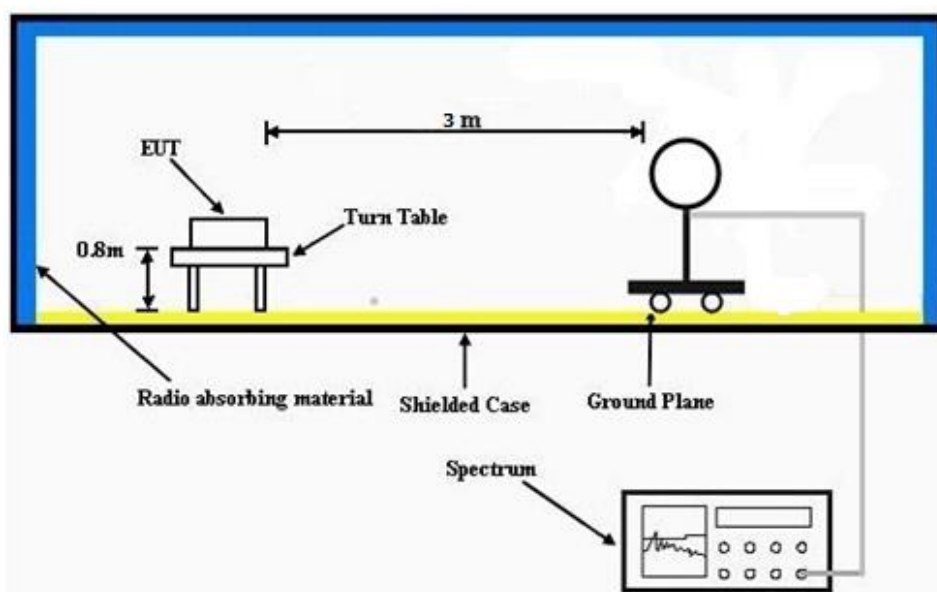
1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.

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 $k=2$.

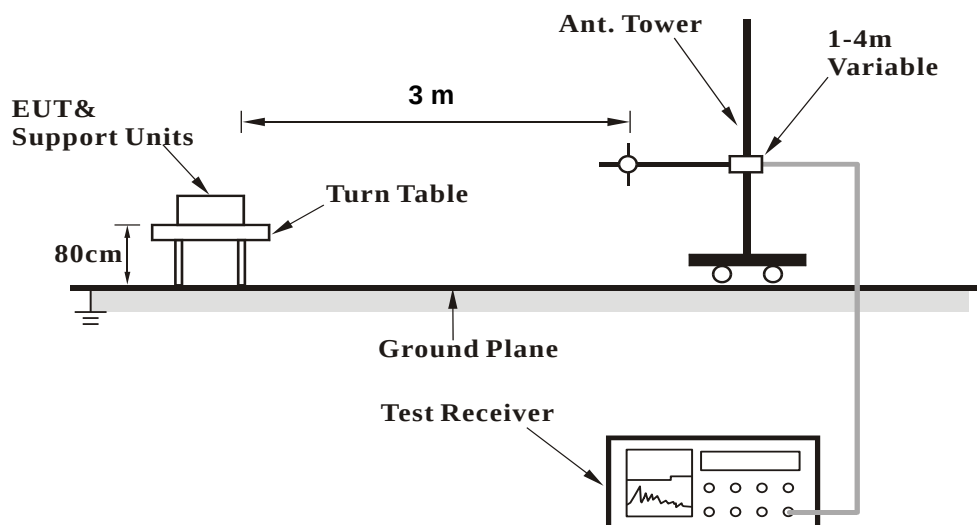
Measurement	Frequency	Uncertainty
Radiated emissions	9kHz~30MHz	2.44 dB
	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

4.4 測試配置

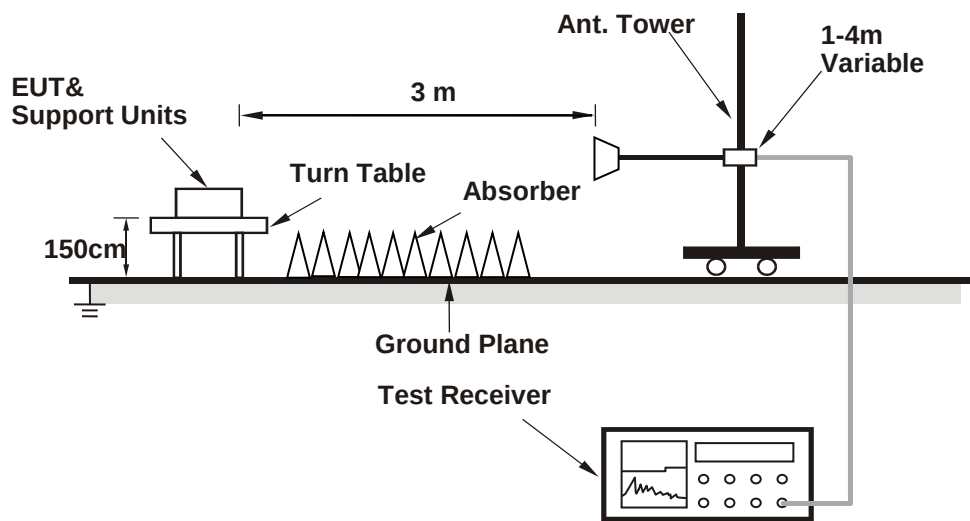
<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range below 1 GHz>



<Frequency Range above 1 GHz>



4.5 場強度之計算

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

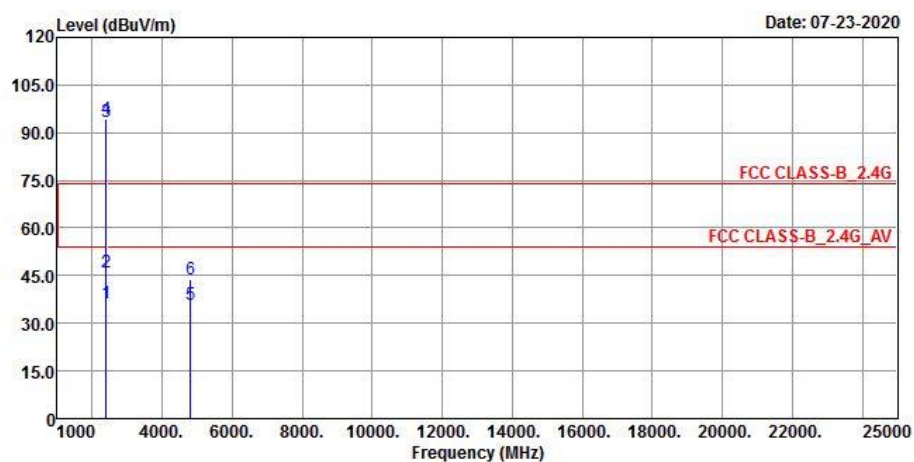
4.6.1 發射諧波

天線型式: Monopole

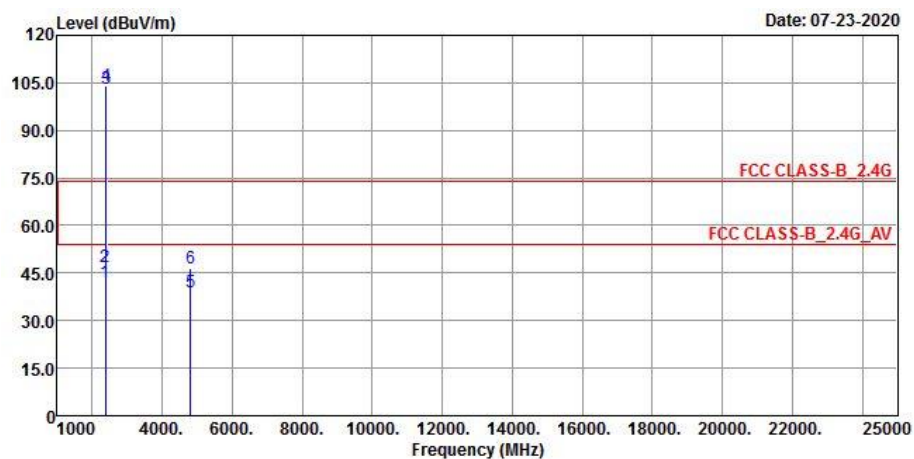
<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Horizontal



Vertical



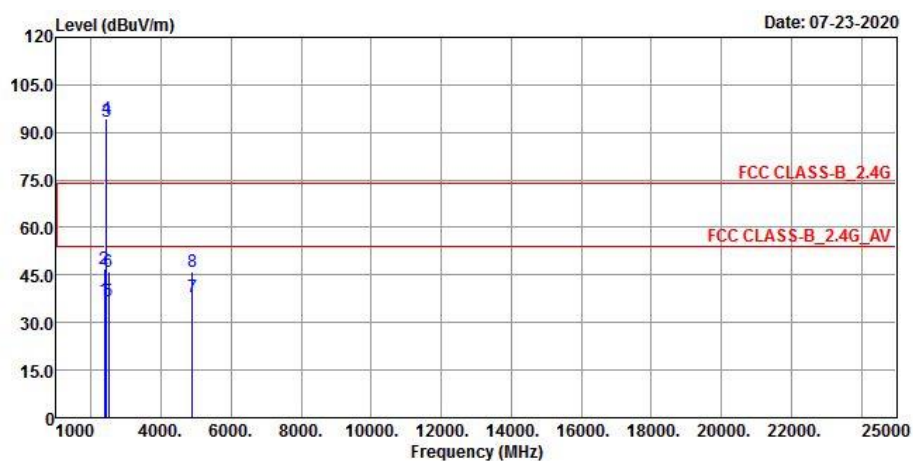
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2387.01	36.34	42.23	-5.89	54	-17.66	123	77	Average
2387.01	45.91	51.8	-5.89	74	-28.09	123	77	Peak
2402	93.25	99.19	-5.94	-----	-----	123	77	Average
2402	94.25	100.19	-5.94	-----	-----	123	77	Peak
4804	35.98	51.62	-15.64	54	-18.02	161	254	Average
4804	44	59.64	-15.64	74	-30	161	254	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2369.874	41.85	47.71	-5.86	54	-12.15	156	231	Average
2369.874	47.13	52.99	-5.86	74	-26.87	156	231	Peak
2402	103.08	108.65	-5.57	-----	-----	156	231	Average
2402	104.15	109.72	-5.57	-----	-----	156	231	Peak
4804	38.83	54.47	-15.64	54	-15.17	132	162	Average
4804	46.45	62.09	-15.64	74	-27.55	132	162	Peak

Remarks:

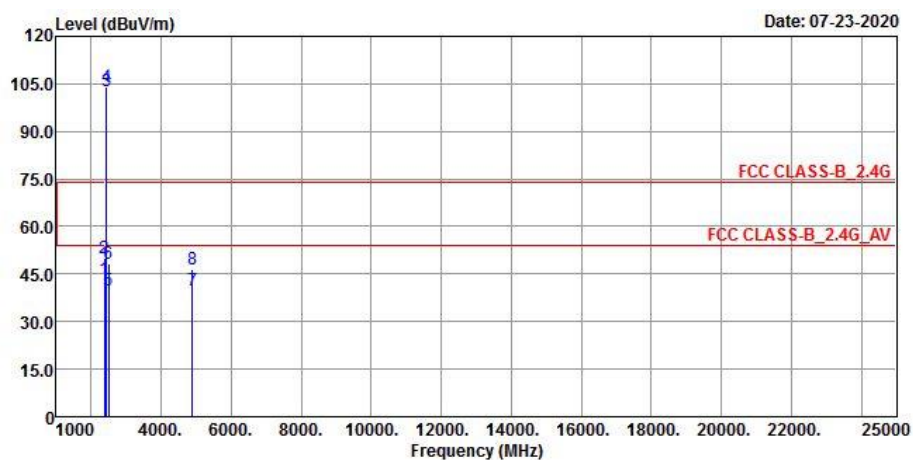
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2402 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 19	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyong Wang

Horizontal



Vertical



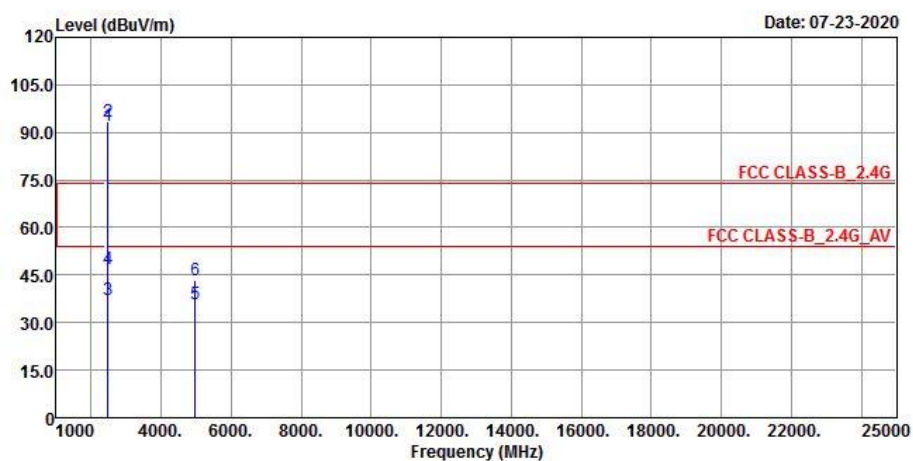
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2375.74	37.3	43.18	-5.88	54	-16.7	123	74	Average
2375.74	46.95	52.83	-5.88	74	-27.05	123	74	Peak
2440	93.35	99.23	-5.88	-----	-----	123	74	Average
2440	94.53	100.41	-5.88	-----	-----	123	74	Peak
2495.82	36.58	42.19	-5.61	54	-17.42	123	74	Average
2495.82	45.92	51.53	-5.61	74	-28.08	123	74	Peak
4880	38.06	53.62	-15.56	54	-15.94	126	145	Average
4880	46.16	61.72	-15.56	74	-27.84	126	145	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2376.12	43.61	49.49	-5.88	54	-10.39	135	232	Average
2376.12	49.94	55.82	-5.88	74	-24.06	135	232	Peak
2440	102.8	108.68	-5.88	-----	-----	135	232	Average
2440	103.88	109.76	-5.88	-----	-----	135	232	Peak
2488.79	39.95	45.63	-5.68	54	-14.05	135	232	Average
2488.79	48.25	53.93	-5.68	74	-25.75	135	232	Peak
4880	40.06	55.62	-15.56	54	-13.94	145	152	Average
4880	46.55	62.11	-15.56	74	-27.45	145	152	Peak

Remarks:

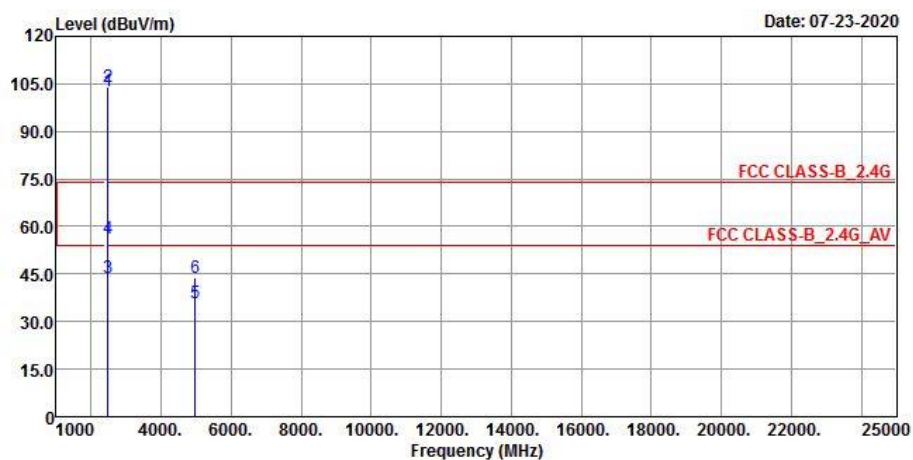
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2440 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyong Wang

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	92.04	97.74	-5.7	-----	-----	105	77	Average
2480	93.31	99.01	-5.7	-----	-----	105	77	Peak
2483.546	37.38	43.08	-5.7	54	-16.62	105	77	Average
2483.546	46.89	52.59	-5.7	74	-27.11	105	77	Peak
4960	35.87	51.32	-15.45	54	-18.13	162	145	Average
4960	43.58	59.03	-15.45	74	-30.42	162	145	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	102.82	108.52	-5.7	-----	-----	132	234	Average
2480	103.88	109.58	-5.7	-----	-----	132	234	Peak
2483.546	43.64	49.34	-5.7	54	-10.36	132	234	Average
2483.546	56.26	61.96	-5.7	74	-17.74	132	234	Peak
4960	35.8	51.25	-15.45	54	-18.2	261	145	Average
4960	43.9	59.35	-15.45	74	-30.1	261	145	Peak

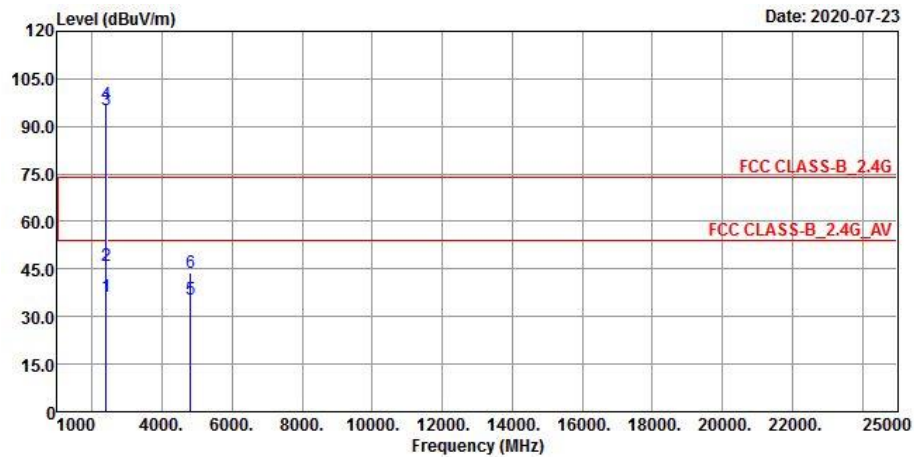
Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2480 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

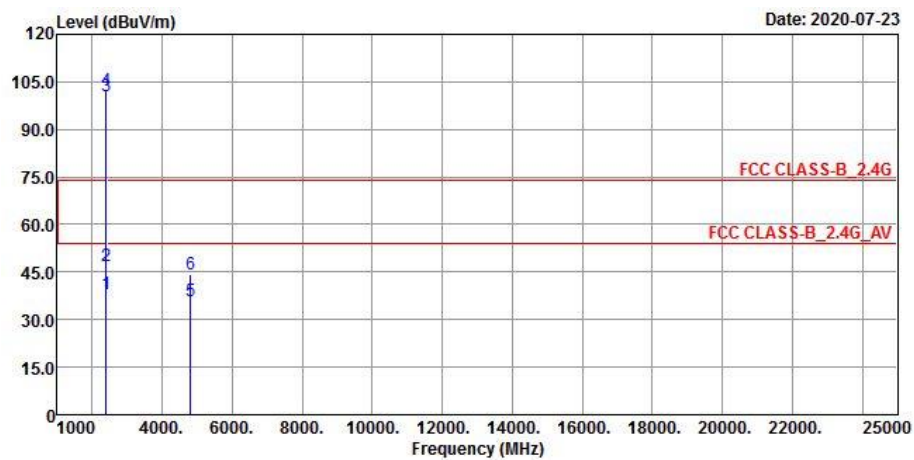
<LE 5.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cyril Chen

Horizontal



Vertical



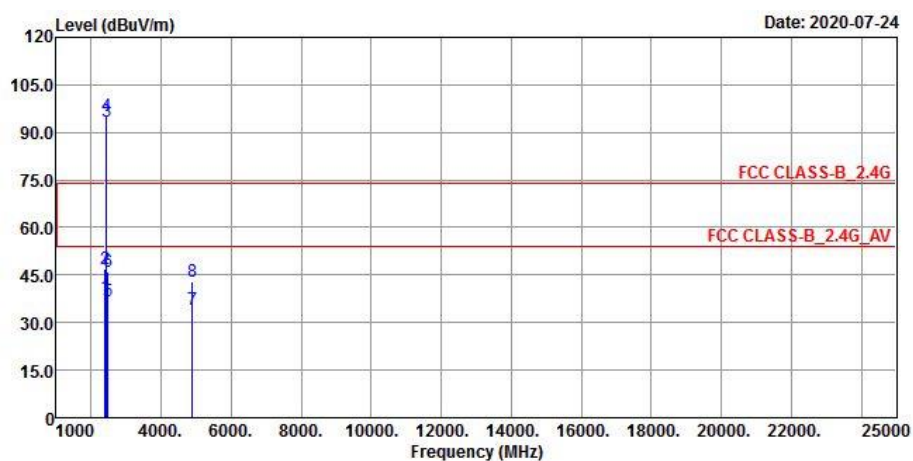
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	36.34	42.26	-5.92	54	-17.66	316	305	Average
2390	45.99	51.91	-5.92	74	-28.01	316	305	Peak
2402	95.12	101.06	-5.94	-----	-----	316	305	Average
2402	97.12	103.06	-5.94	-----	-----	316	305	Peak
4804	35.42	51.06	-15.64	54	-18.58	187	211	Average
4804	43.84	59.48	-15.64	74	-30.16	187	211	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	37.92	43.84	-5.92	54	-16.08	123	215	Average
2390	47.02	52.94	-5.92	74	-26.98	123	215	Peak
2402	100.46	106.4	-5.94	-----	-----	123	215	Average
2402	102.46	108.4	-5.94	-----	-----	123	215	Peak
4804	35.91	51.55	-15.64	54	-18.09	152	253	Average
4804	44.36	60	-15.64	74	-29.64	152	253	Peak

Remarks:

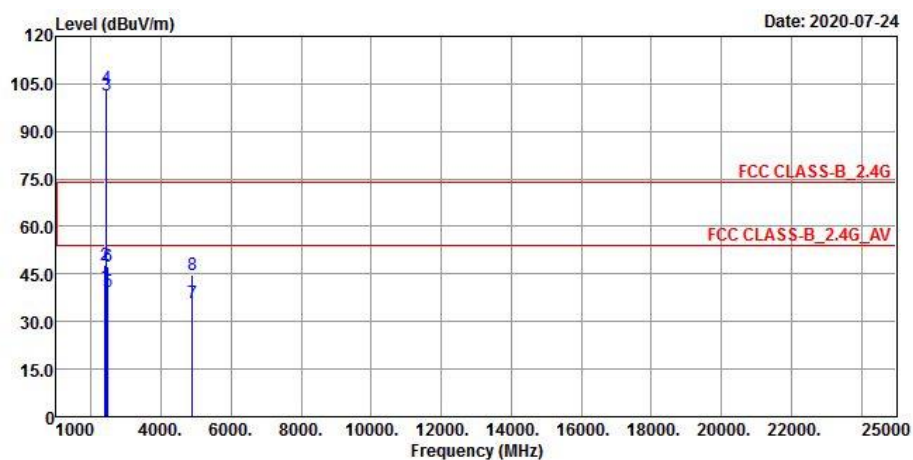
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2402 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 19	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cyril Chen

Horizontal



Vertical



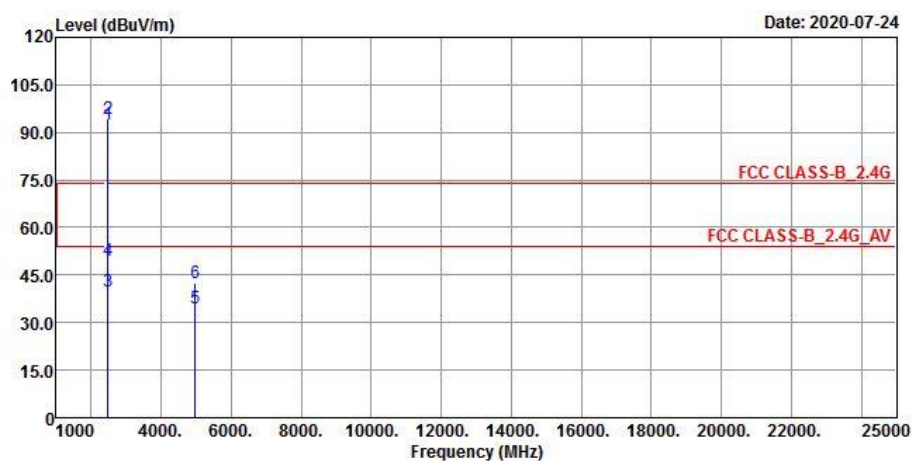
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	38.02	43.94	-5.92	54	-15.98	100	242	Average
2390	46.73	52.65	-5.92	74	-27.27	100	242	Peak
2440	93.34	99.22	-5.88	-----	-----	100	242	Average
2440	95.2	101.08	-5.88	-----	-----	100	242	Peak
2483.5	36.82	42.52	-5.7	54	-17.18	100	242	Average
2483.5	46.23	51.93	-5.7	74	-27.77	100	242	Peak
4880	34.28	49.84	-15.56	54	-19.72	123	15	Average
4880	42.76	58.32	-15.56	74	-31.24	123	15	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	41.25	47.17	-5.92	54	-12.75	126	207	Average
2390	47.83	53.75	-5.92	74	-26.17	126	207	Peak
2440	101.61	107.49	-5.88	-----	-----	126	207	Average
2440	103.47	109.35	-5.88	-----	-----	126	207	Peak
2483.5	39.37	45.07	-5.7	54	-14.63	126	207	Average
2483.5	47.57	53.27	-5.7	74	-26.43	126	207	Peak
4880	35.67	51.23	-15.56	54	-18.33	107	256	Average
4880	44.83	60.39	-15.56	74	-29.17	107	256	Peak

Remarks:

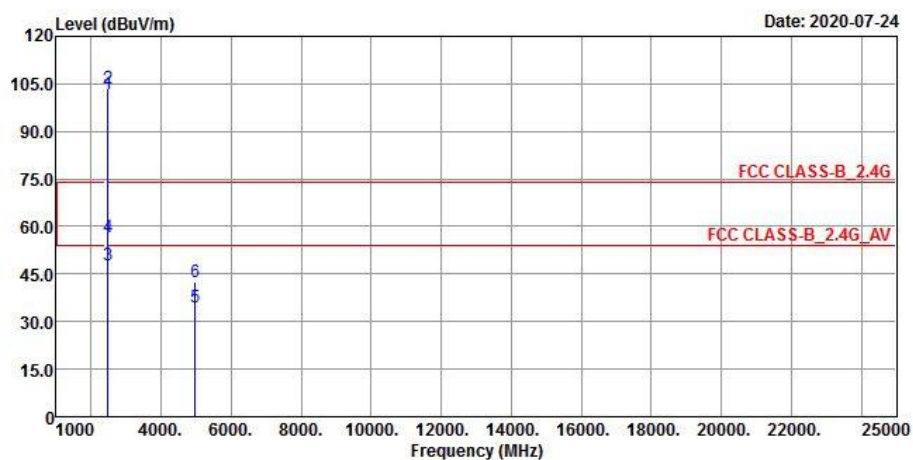
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2440 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cyril Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	92.58	98.28	-5.7	-----	-----	100	242	Average
2480	94.42	100.12	-5.7	-----	-----	100	242	Peak
2483.5	39.71	45.41	-5.7	54	-14.29	100	242	Average
2483.5	49.66	55.36	-5.7	74	-24.34	100	242	Peak
4960	34.39	49.84	-15.45	54	-19.61	156	231	Average
4960	42.49	57.94	-15.45	74	-31.51	156	231	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	101.79	107.49	-5.7	-----	-----	120	293	Average
2480	103.69	109.39	-5.7	-----	-----	120	293	Peak
2483.5	47.76	53.46	-5.7	54	-6.24	120	293	Average
2483.5	56.83	62.53	-5.7	74	-17.17	120	293	Peak
4960	34.59	50.04	-15.45	54	-19.41	124	273	Average
4960	42.57	58.02	-15.45	74	-31.43	124	273	Peak

Remarks:

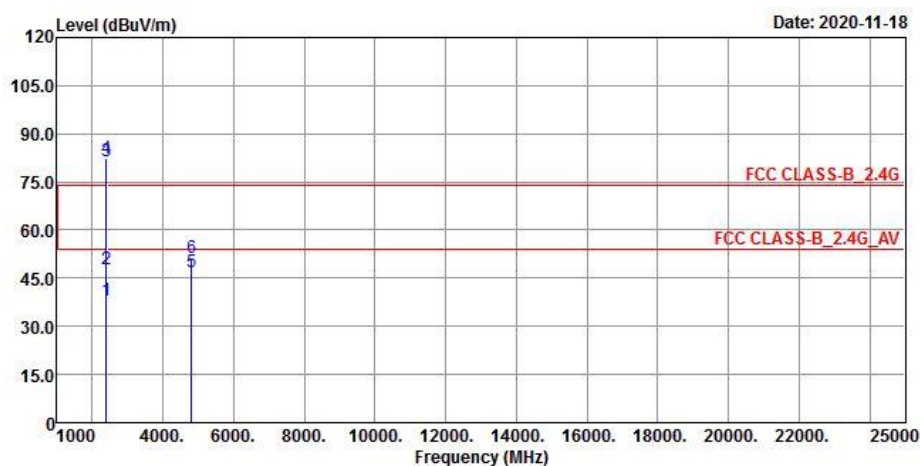
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2480 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

天線型式: Patch

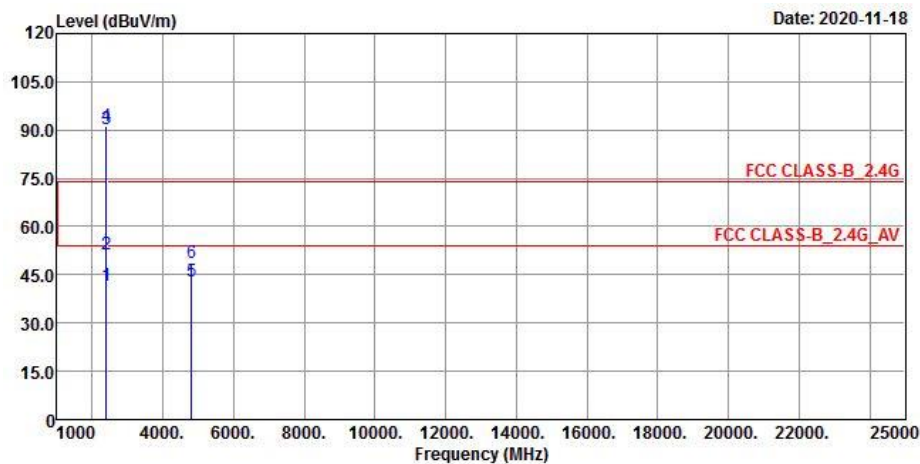
<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



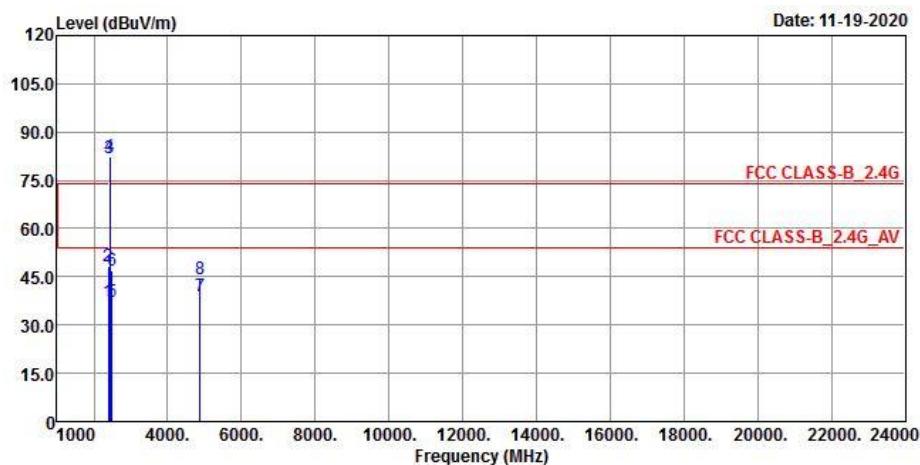
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	38.17	44.09	-5.92	54	-15.83	388	266	Average
2390	47.61	53.53	-5.92	74	-26.39	388	266	Peak
2402	81.35	87.29	-5.94	-----	-----	388	266	Average
2402	82.42	88.36	-5.94	-----	-----	388	266	Peak
4804	47.01	62.65	-15.64	54	-6.99	135	237	Average
4804	51.42	67.06	-15.64	74	-22.58	135	237	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	41.83	47.75	-5.92	54	-12.17	181	354	Average
2390	51.31	57.23	-5.92	74	-22.69	181	354	Peak
2402	90.22	96.16	-5.94	-----	-----	181	354	Average
2402	91.14	97.08	-5.94	-----	-----	181	354	Peak
4804	42.84	58.48	-15.64	54	-11.16	400	322	Average
4804	48.65	64.29	-15.64	74	-25.35	400	322	Peak

Remarks:

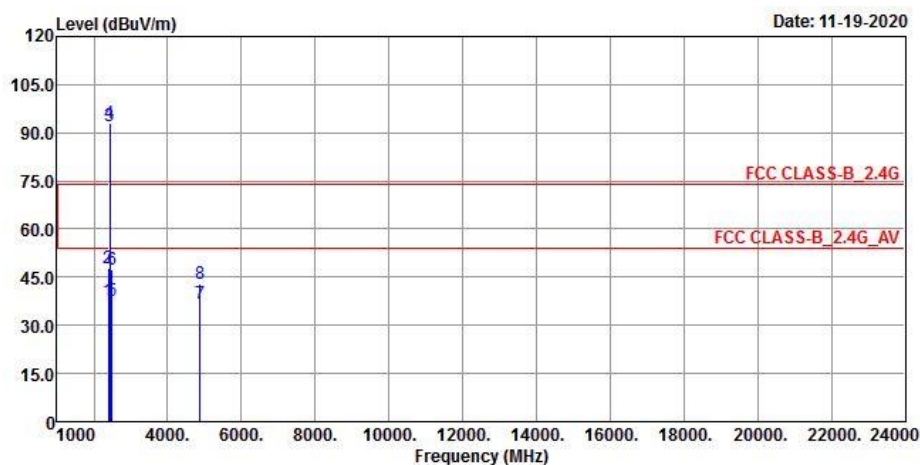
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2402 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 19	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



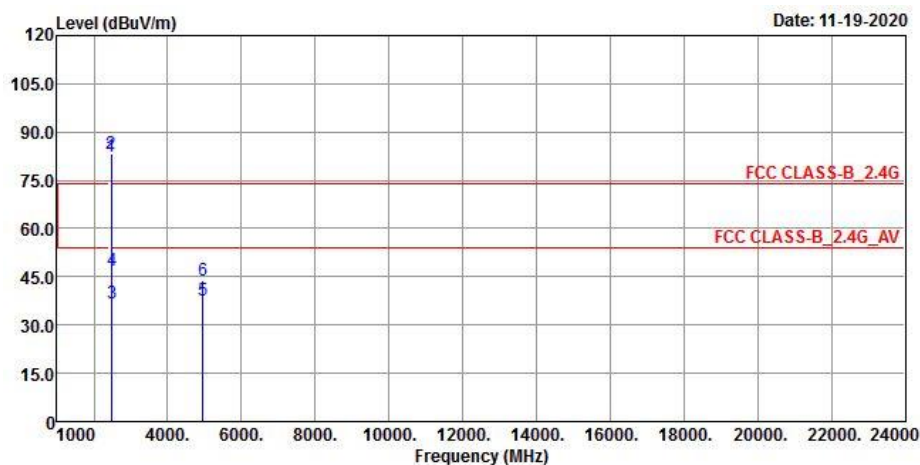
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	37.09	43.01	-5.92	54	-16.91	149	165	Average
2390	48.08	54	-5.92	74	-25.92	149	165	Peak
2440	81.9	87.78	-5.88	-----	-----	149	165	Average
2440	82.26	88.14	-5.88	-----	-----	149	165	Peak
2483.5	37.16	42.86	-5.7	54	-16.84	149	165	Average
2483.5	47.09	52.79	-5.7	74	-26.91	149	165	Peak
4880	39.07	54.63	-15.56	54	-14.93	129	183	Average
4880	44.44	60	-15.56	74	-29.56	129	183	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	37.67	43.59	-5.92	54	-16.33	128	251	Average
2390	47.91	53.83	-5.92	74	-26.09	128	251	Peak
2440	91.94	97.82	-5.88	-----	-----	128	251	Average
2440	92.82	98.7	-5.88	-----	-----	128	251	Peak
2483.5	37.48	43.18	-5.7	54	-16.52	128	251	Average
2483.5	47.44	53.14	-5.7	74	-26.56	128	251	Peak
4880	36.56	52.12	-15.56	54	-17.44	175	155	Average
4880	42.86	58.42	-15.56	74	-31.14	175	155	Peak

Remarks:

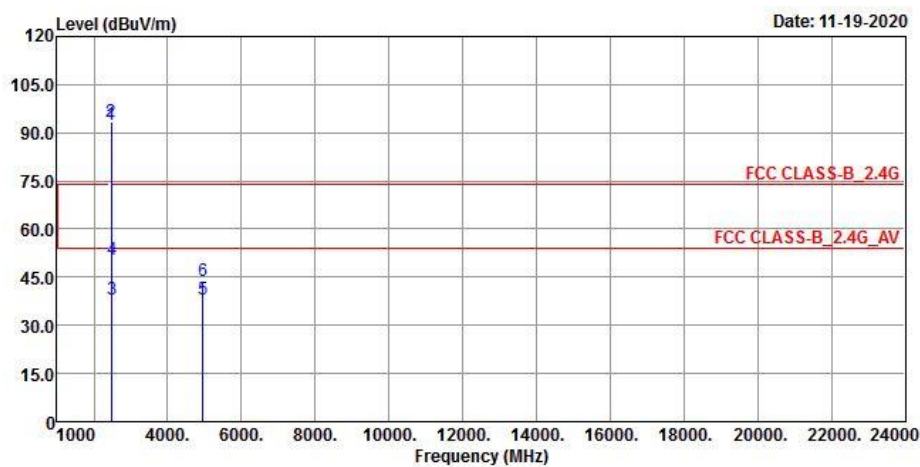
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2440 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	82.3	88	-5.7	-----	-----	162	167	Average
2480	83.3	89	-5.7	-----	-----	162	167	Peak
2483.5	36.81	42.51	-5.7	54	-17.19	162	167	Average
2483.5	47.11	52.81	-5.7	74	-26.89	162	167	Peak
4960	37.52	52.97	-15.45	54	-16.48	179	128	Average
4960	43.86	59.31	-15.45	74	-30.14	179	128	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	92.63	98.33	-5.7	-----	-----	126	252	Average
2480	93.46	99.16	-5.7	-----	-----	126	252	Peak
2483.5	37.94	43.64	-5.7	54	-16.06	126	252	Average
2483.5	50.52	56.22	-5.7	74	-23.48	126	252	Peak
4960	37.87	53.32	-15.45	54	-16.13	172	166	Average
4960	43.64	59.09	-15.45	74	-30.36	172	166	Peak

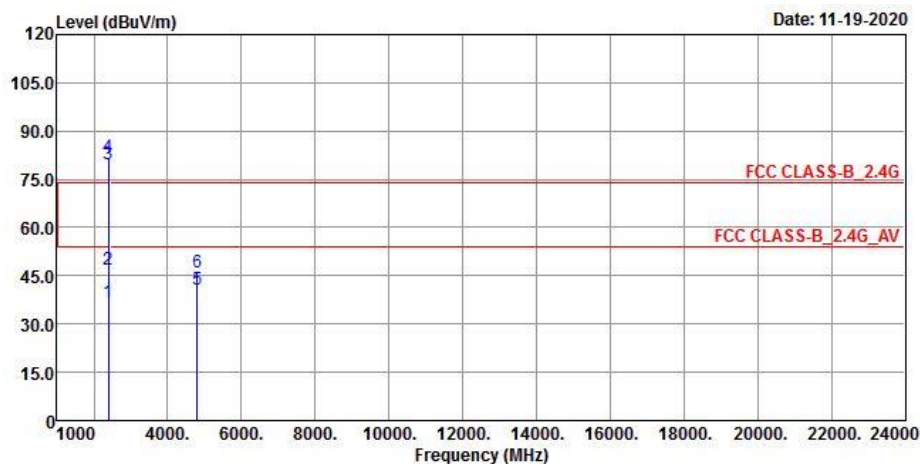
Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2480 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

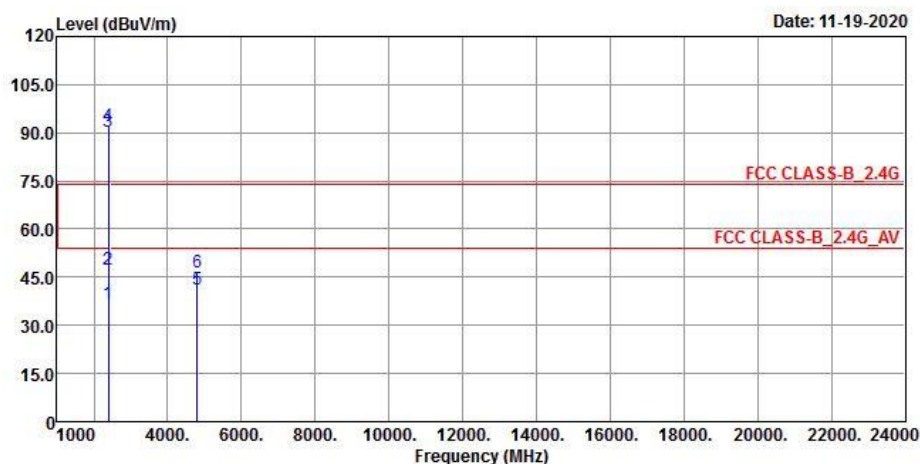
<LE 5.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cyril Chen

Horizontal



Vertical



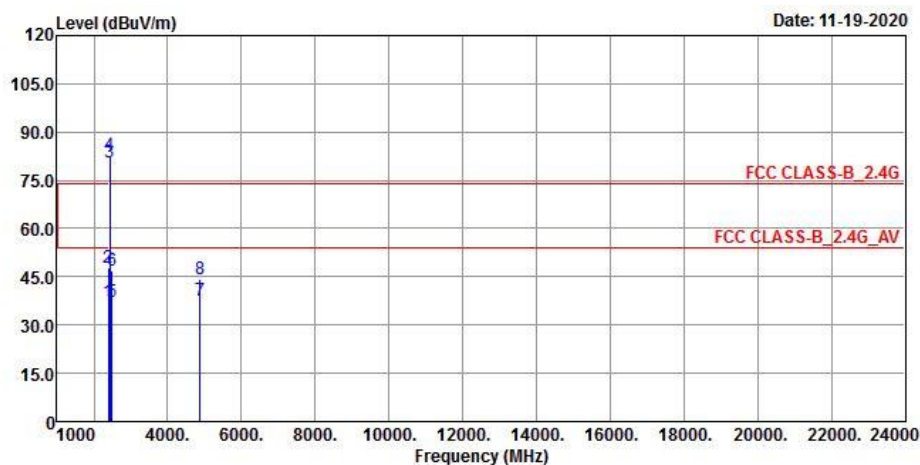
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	36.81	42.73	-5.92	54	-17.19	156	160	Average
2390	47.02	52.94	-5.92	74	-26.98	156	160	Peak
2402	79.72	85.66	-5.94	-----	-----	156	160	Average
2402	81.88	87.82	-5.94	-----	-----	156	160	Peak
4804	40.52	56.16	-15.64	54	-13.48	150	191	Average
4804	46.18	61.82	-15.64	74	-27.82	150	191	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	36.92	42.84	-5.92	54	-17.08	109	250	Average
2390	47.32	53.24	-5.92	74	-26.68	109	250	Peak
2402	90.27	96.21	-5.94	-----	-----	109	250	Average
2402	92.13	98.07	-5.94	-----	-----	109	250	Peak
4804	41.17	56.81	-15.64	54	-12.83	153	165	Average
4804	46.64	62.28	-15.64	74	-27.36	153	165	Peak

Remarks:

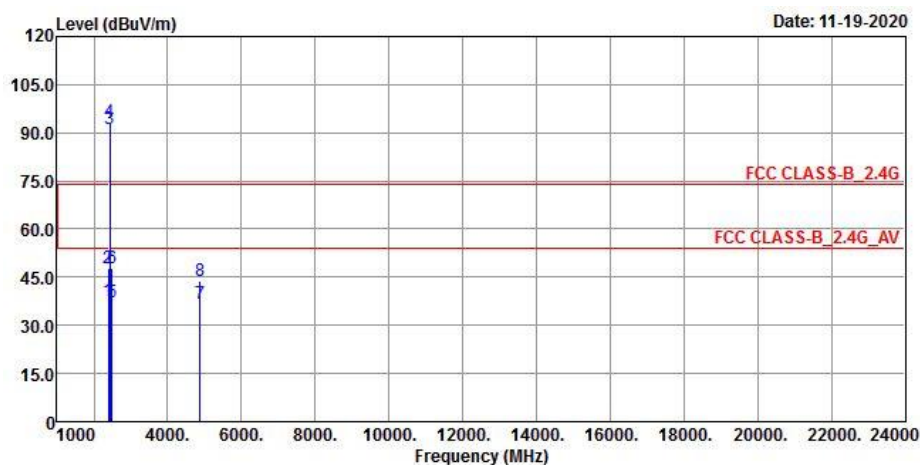
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2402 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 19	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cyril Chen

Horizontal



Vertical



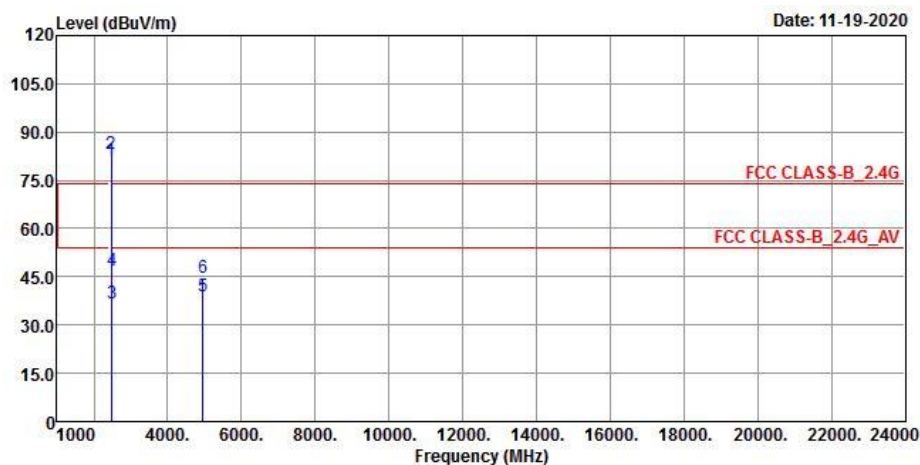
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	37.08	43	-5.92	54	-16.92	152	161	Average
2390	47.72	53.64	-5.92	74	-26.28	152	161	Peak
2440	80.52	86.4	-5.88	-----	-----	152	161	Average
2440	82.65	88.53	-5.88	-----	-----	152	161	Peak
2483.5	37.09	42.79	-5.7	54	-16.91	152	161	Average
2483.5	47	52.7	-5.7	74	-27	152	161	Peak
4880	37.63	53.19	-15.56	54	-16.37	132	178	Average
4880	44.4	59.96	-15.56	74	-29.6	132	178	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	37.72	43.64	-5.92	54	-16.28	126	252	Average
2390	47.99	53.91	-5.92	74	-26.01	126	252	Peak
2440	91.38	97.26	-5.88	-----	-----	126	252	Average
2440	93.25	99.13	-5.88	-----	-----	126	252	Peak
2483.5	37.33	43.03	-5.7	54	-16.67	126	252	Average
2483.5	48	53.7	-5.7	74	-26	126	252	Peak
4880	36.58	52.14	-15.56	54	-17.42	156	160	Average
4880	43.96	59.52	-15.56	74	-30.04	156	160	Peak

Remarks:

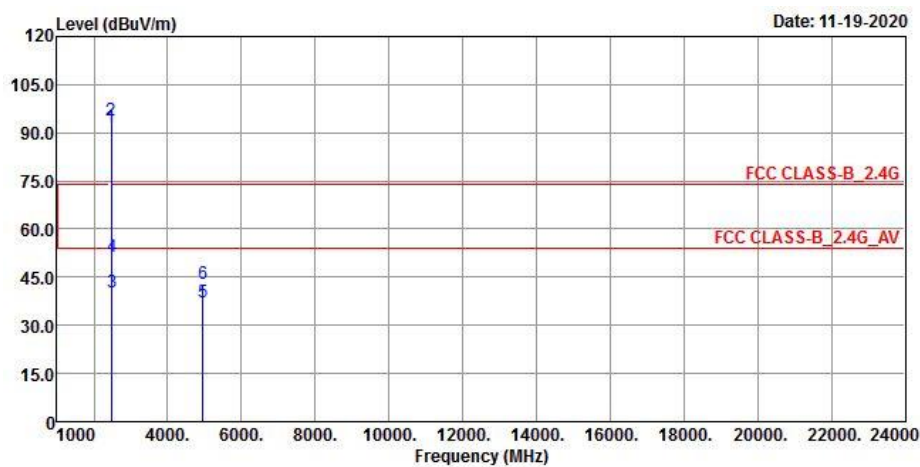
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2440 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cyril Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	81.17	86.87	-5.7	-----	-----	133	172	Average
2480	83.12	88.82	-5.7	-----	-----	133	172	Peak
2483.5	36.74	42.44	-5.7	54	-17.26	133	172	Average
2483.5	46.91	52.61	-5.7	74	-27.09	133	172	Peak
4960	39.08	54.53	-15.45	54	-14.92	142	180	Average
4960	44.57	60.02	-15.45	74	-29.43	142	180	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	91.69	97.39	-5.7	-----	-----	127	252	Average
2480	93.72	99.42	-5.7	-----	-----	127	252	Peak
2483.5	40.15	45.85	-5.7	54	-13.85	127	252	Average
2483.5	51.51	57.21	-5.7	74	-22.49	127	252	Peak
4960	37.17	52.62	-15.45	54	-16.83	147	159	Average
4960	42.84	58.29	-15.45	74	-31.16	147	159	Peak

Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2480 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

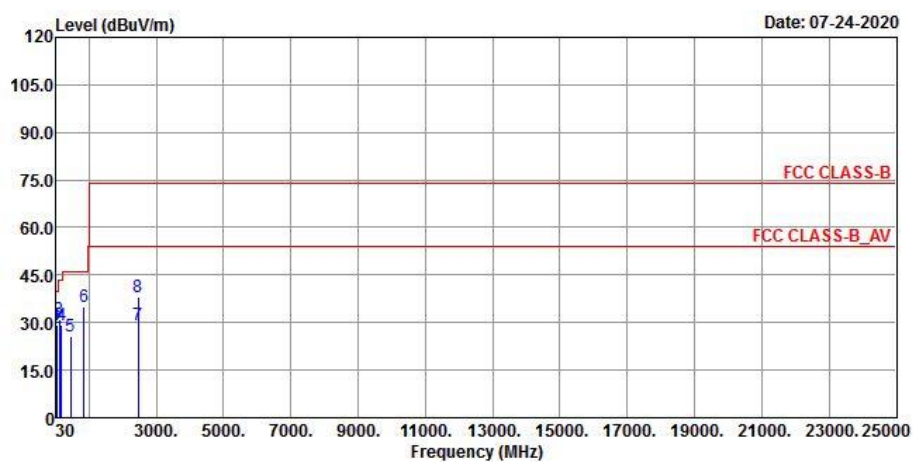
4.6.2 接收諧波

天線型式: Monopole

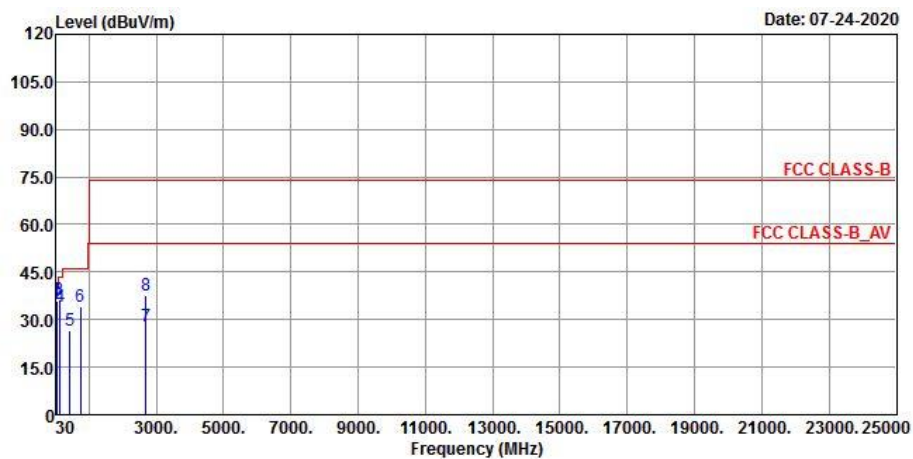
<LE 5.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
43.58	29.27	41.19	-11.92	40	-10.73	165	231	QP
51.34	28.18	39.97	-11.79	40	-11.82	147	152	QP
118.27	30.89	44.84	-13.95	43.5	-12.61	195	285	QP
177.44	29.21	42.29	-13.08	43.5	-14.29	165	231	QP
457.77	25.57	31.84	-6.27	46	-20.43	111	145	QP
859.35	35.01	32.42	2.59	46	-10.99	102	265	QP
2471.135	29.38	50.43	-21.05	54	-24.62	126	199	Average
2471.135	37.95	59	-21.05	74	-36.05	126	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
31.94	35.98	48.89	-12.91	40	-4.02	147	152	QP
48.43	34.77	46.48	-11.71	40	-5.23	165	295	QP
118.27	36.11	50.06	-13.95	43.5	-7.39	102	231	QP
145.43	34.1	45.9	-11.8	43.5	-9.4	165	285	QP
431.58	26.78	33.81	-7.03	46	-19.22	113	125	QP
756.53	34.09	33.06	1.03	46	-11.91	192	258	QP
2694.387	28.04	48.18	-20.14	54	-25.96	186	203	Average
2694.387	37.58	57.72	-20.14	74	-36.42	186	203	Peak

Remarks:

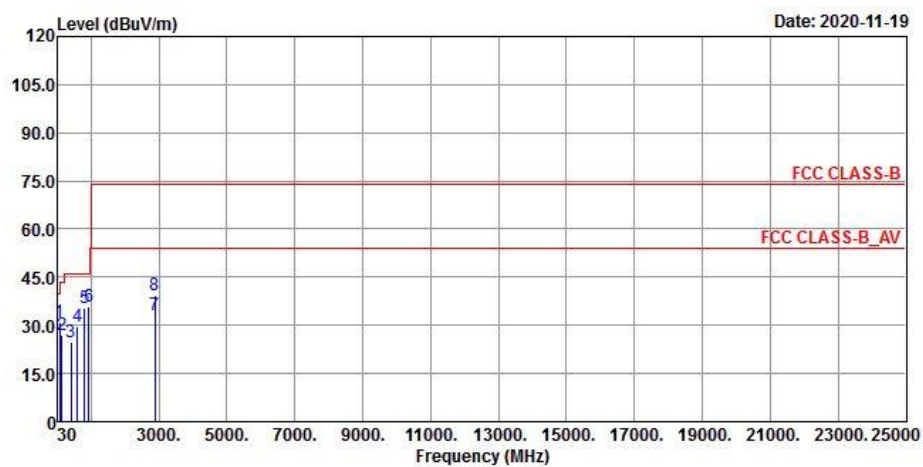
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

天線型式: Patch

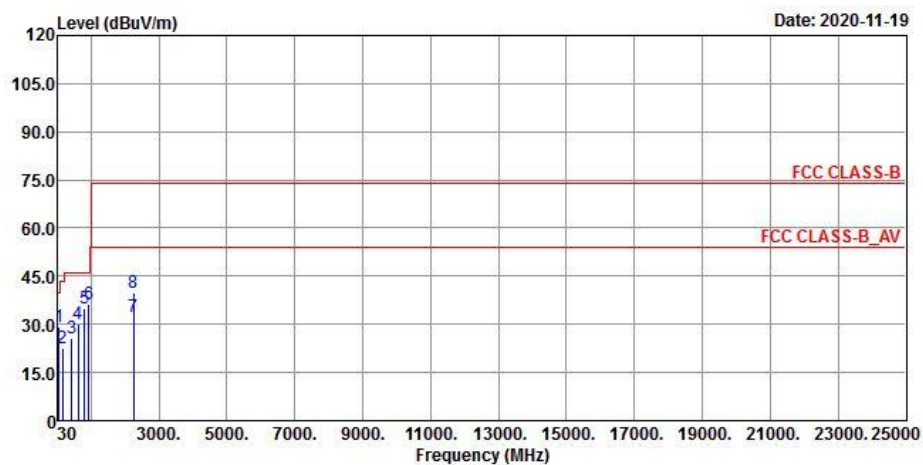
<LE 5.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
71.71	31.19	45.49	-14.3	40	-8.81	122	40	QP
132.82	27	39.58	-12.58	43.5	-16.5	143	184	QP
418.97	24.83	32.41	-7.58	46	-21.17	105	34	QP
601.33	29.76	32.45	-2.69	46	-16.24	111	233	QP
816.67	35.36	33.28	2.08	46	-10.64	212	352	QP
937.92	35.84	32.38	3.46	46	-10.16	222	283	QP
2871.53	33.36	53.64	-20.28	54	-20.64	161	42	Average
2871.53	39.25	59.53	-20.28	74	-34.75	161	42	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
51.34	29.05	40.84	-11.79	40	-10.95	126	227	QP
161.92	22.79	34.57	-11.78	43.5	-20.71	196	333	QP
440.31	25.55	32.2	-6.65	46	-20.45	108	48	QP
621.7	30.04	32.04	-2	46	-15.96	148	241	QP
809.88	34.88	32.98	1.9	46	-11.12	122	83	QP
938.89	36.22	32.75	3.47	46	-9.78	115	313	QP
2257.83	32.19	53.13	-20.94	54	-21.81	124	207	Average
2257.83	40.01	60.95	-20.94	74	-33.99	124	207	Peak

Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

4.6.3 其它不必要之訊號

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

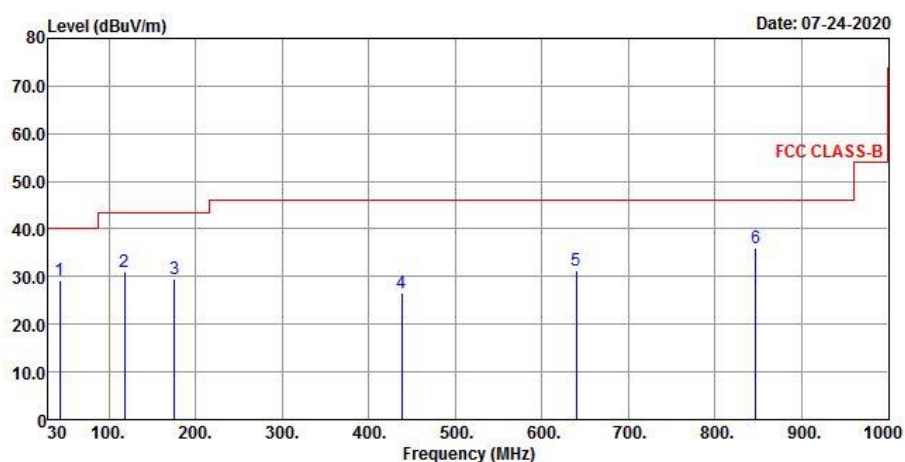
30 MHz ~ 1 GHz Data:

天線型式: Monopole

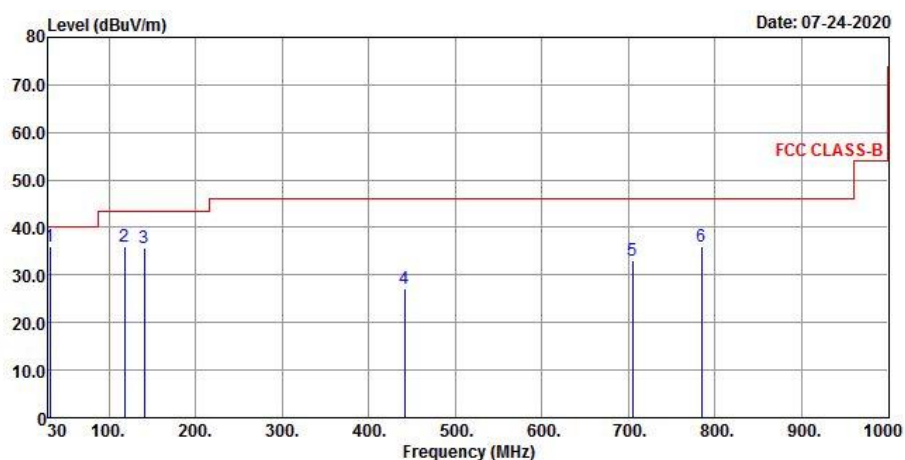
<LE 5.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyong Wang

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
43.58	29.27	41.19	-11.92	40	-10.73	145	132	QP
118.27	30.89	44.84	-13.95	43.5	-12.61	195	285	QP
175.5	29.43	42.27	-12.84	43.5	-14.07	147	162	QP
438.37	26.6	33.32	-6.72	46	-19.4	132	265	QP
640.13	31.4	33.1	-1.7	46	-14.6	111	152	QP
846.74	36.02	33.59	2.43	46	-9.98	162	285	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
31.94	35.98	48.89	-12.91	40	-4.02	165	231	QP
118.27	36.11	50.06	-13.95	43.5	-7.39	147	185	QP
140.58	35.62	47.74	-12.12	43.5	-7.88	102	265	QP
441.28	27.1	33.73	-6.63	46	-18.9	132	214	QP
705.12	32.92	33.42	-0.5	46	-13.08	165	295	QP
784.66	36.09	34.54	1.55	46	-9.91	145	152	QP

Remarks:

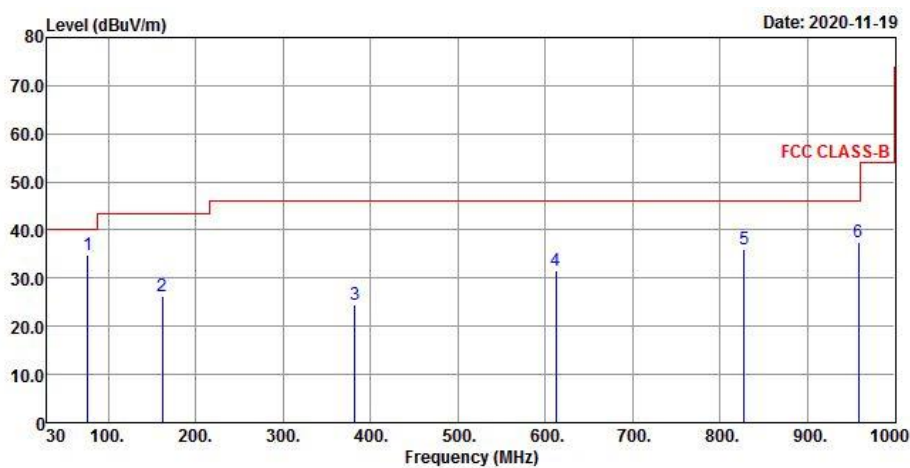
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

天線型式: Patch

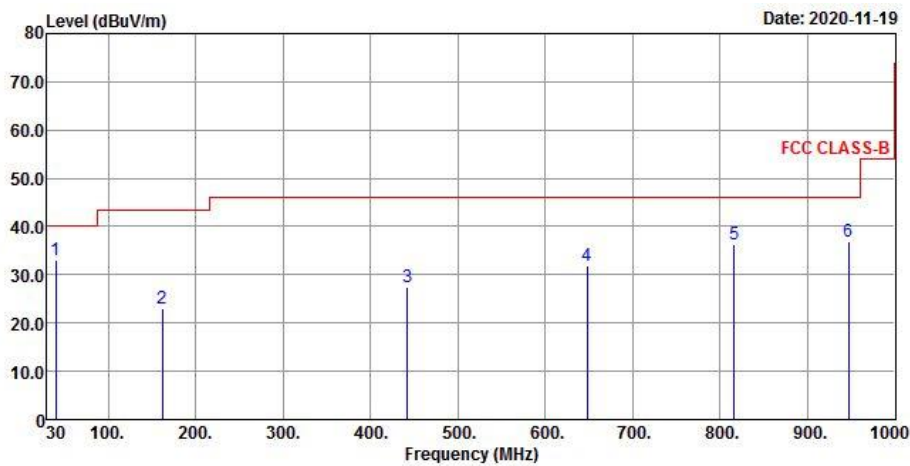
<LE 5.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



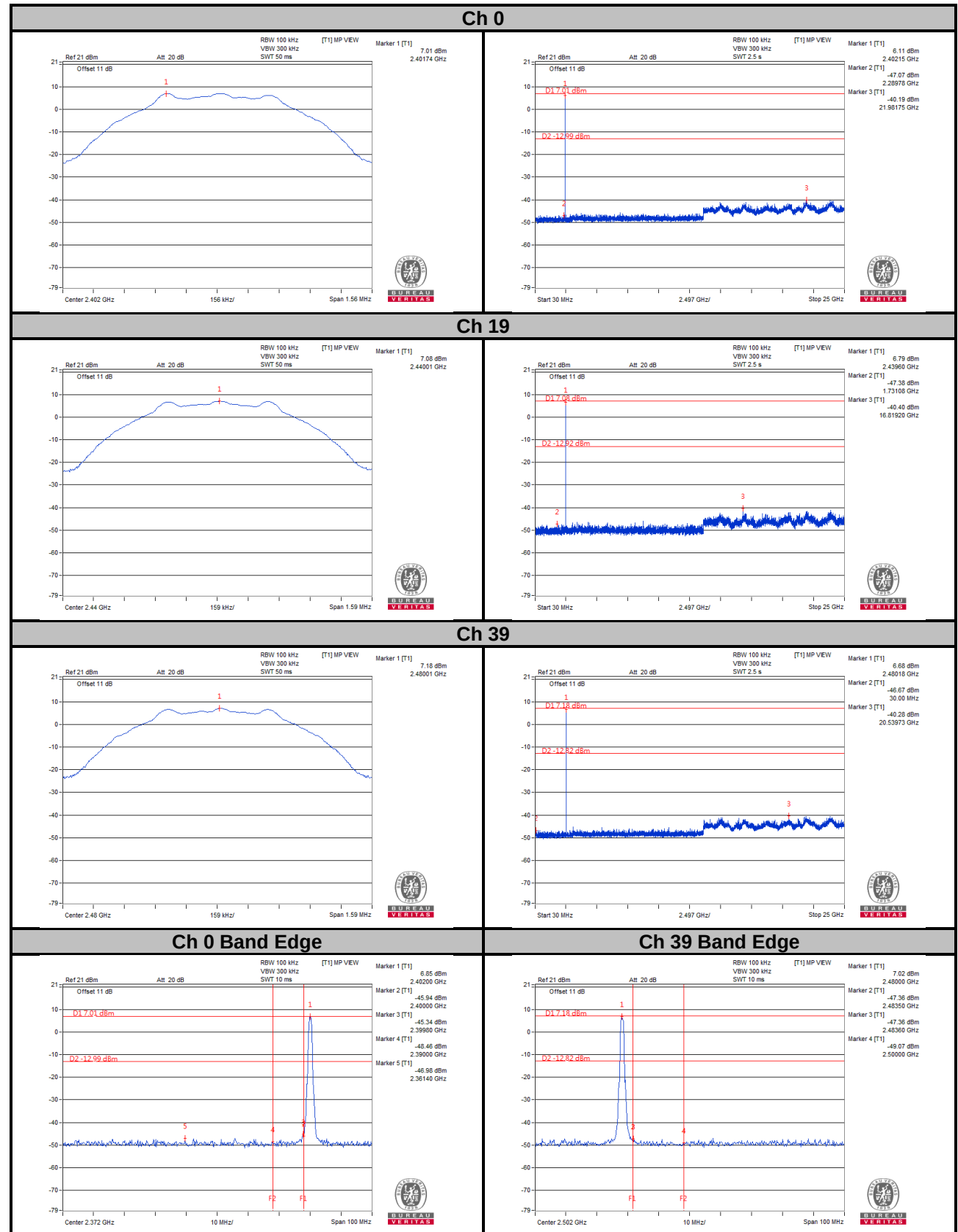
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
76.56	34.97	50.6	-15.63	40	-5.03	271	25	QP
161.92	26.22	38	-11.78	43.5	-17.28	186	71	QP
382.11	24.62	33.32	-8.7	46	-21.38	132	331	QP
612	31.55	33.89	-2.34	46	-14.45	194	225	QP
827.34	35.94	33.71	2.23	46	-10.06	162	204	QP
958.29	37.58	33.88	3.7	46	-8.42	155	141	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
39.7	33.05	45.3	-12.25	40	-6.95	216	211	QP
161.92	22.96	34.74	-11.78	43.5	-20.54	116	32	QP
442.25	27.34	33.95	-6.61	46	-18.66	211	126	QP
647.89	31.75	33.36	-1.61	46	-14.25	104	358	QP
815.7	36.3	34.25	2.05	46	-9.7	104	193	QP
946.65	37.02	33.36	3.66	46	-8.98	103	193	QP

Remarks:

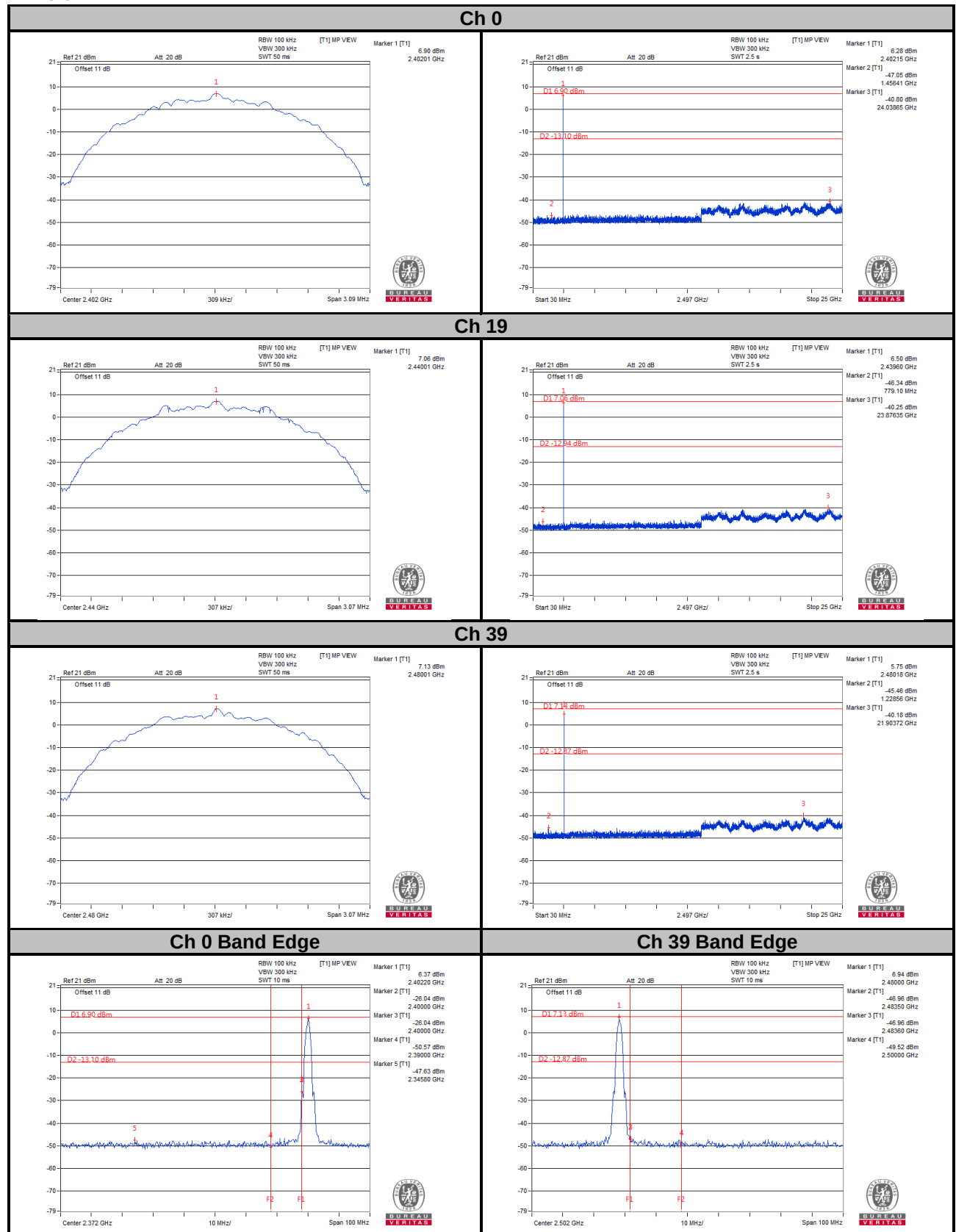
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

4.7 帶外發射之量測 (傳導)

<LE 4.0>



<LE 5.0>



4.8 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 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

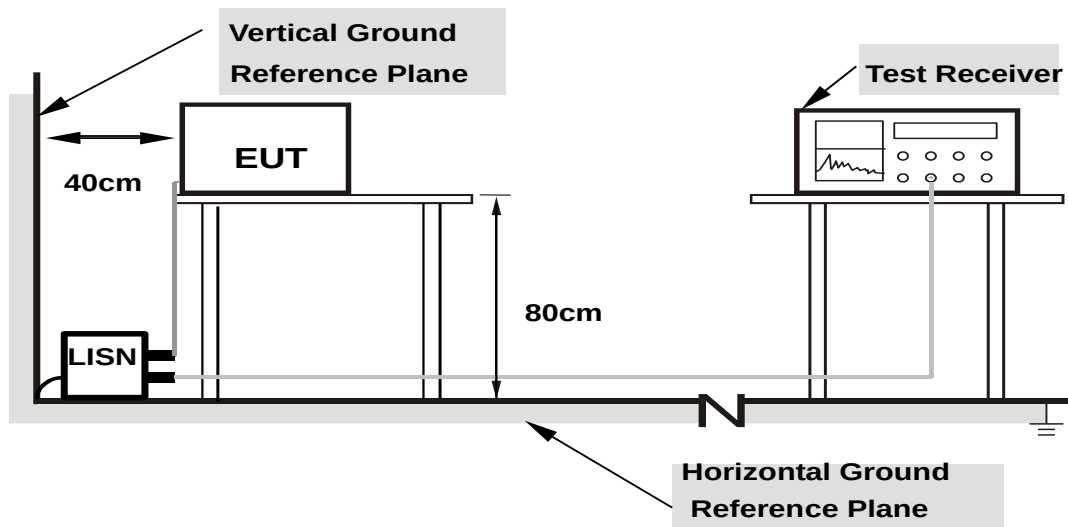
將待測物置於0.8米高的非金屬桌面，使其操作在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由0.15MHz至30MHz之間之電源線傳導放射強度。

5.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 11, 2019	Dec. 10, 2020
			Dec. 04, 2020	Dec. 03, 2021
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2019	Sep. 04, 2020
			Sep. 05, 2020	Sep. 04, 2021
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 20, 2020	Feb. 19, 2021
			Feb. 25, 2021	Feb. 24, 2022
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 22, 2019	Aug. 21, 2020
			Aug. 22, 2020	Aug. 21, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	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 HwaYa Shielded Room 1.
3. The VCCI Site Registration No. is C-2040.
4. The measurement uncertainty is 2.79 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. Test Date: 2020/07/21 ~ 2021/4/13

5.4 測試配置



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

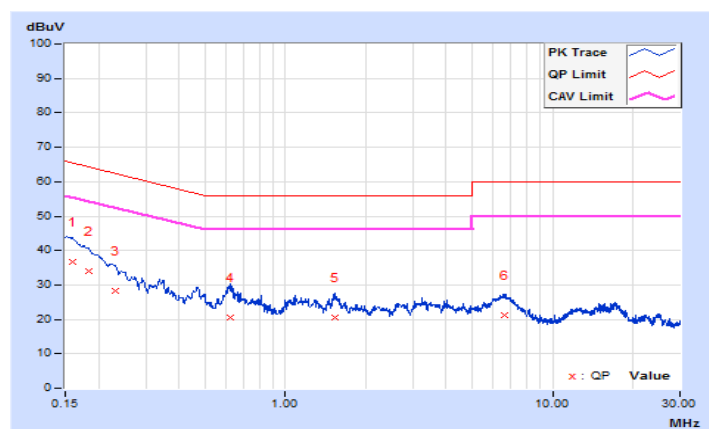
天線型式: Monopole

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Jisyong Wang	測試日期	2020/7/21
測試模式	Mode 1		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15900	10.15	26.70	20.20	36.85	30.35	65.52	55.52	-28.67	-25.17
2	0.18375	10.16	23.81	20.50	33.97	30.66	64.31	54.31	-30.34	-23.65
3	0.23100	10.17	18.06	12.83	28.23	23.00	62.41	52.41	-34.18	-29.41
4	0.62475	10.22	10.38	8.81	20.60	19.03	56.00	46.00	-35.40	-26.97
5	1.53825	10.28	10.16	8.84	20.44	19.12	56.00	46.00	-35.56	-26.88
6	6.59175	10.43	10.87	8.90	21.30	19.33	60.00	50.00	-38.70	-30.67

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) - 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

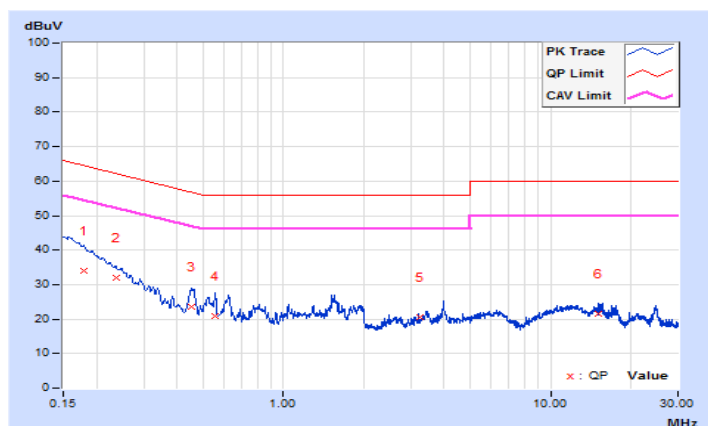


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Jisyong Wang	測試日期	2020/7/21
測試模式	Mode 1		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.17886	10.13	23.85	20.37	33.98	30.50	64.54	54.54	-30.56	-24.04
2	0.23550	10.14	21.71	20.58	31.85	30.72	62.25	52.25	-30.40	-21.53
3	0.45150	10.19	13.31	11.66	23.50	21.85	56.85	46.85	-33.35	-25.00
4	0.55500	10.20	10.58	9.05	20.78	19.25	56.00	46.00	-35.22	-26.75
5	3.23700	10.35	10.34	8.95	20.69	19.30	56.00	46.00	-35.31	-26.70
6	15.09000	10.67	10.74	8.01	21.41	18.68	60.00	50.00	-38.59	-31.32

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

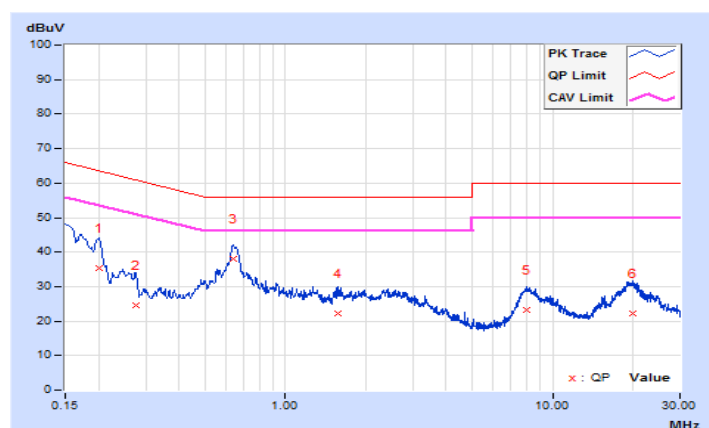


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Jisyong Wang	測試日期	2020/7/21
測試模式	Mode 2		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.20142	10.17	25.15	20.22	35.32	30.39	63.55	53.55	-28.23	-23.16
2	0.27600	10.18	14.32	11.99	24.50	22.17	60.94	50.94	-36.44	-28.77
3	0.63857	10.22	27.96	19.64	38.18	29.86	56.00	46.00	-17.82	-16.14
4	1.57650	10.28	11.94	5.33	22.22	15.61	56.00	46.00	-33.78	-30.39
5	8.05200	10.45	12.76	7.07	23.21	17.52	60.00	50.00	-36.79	-32.48
6	19.89375	10.62	11.76	6.01	22.38	16.63	60.00	50.00	-37.62	-33.37

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

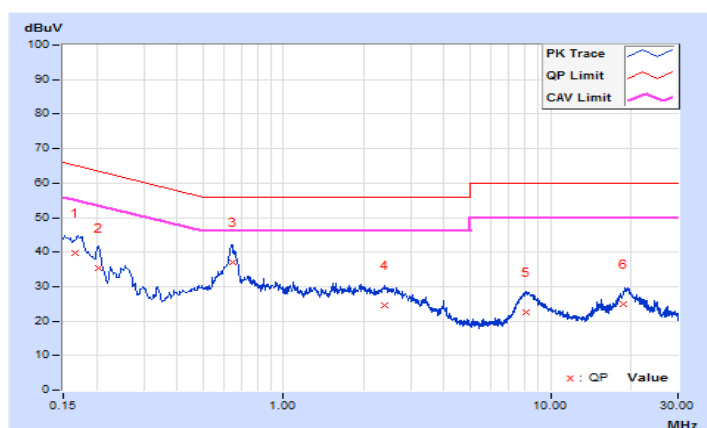


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Jisyong Wang	測試日期	2020/7/21
測試模式	Mode 2		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16524	10.12	29.50	20.04	39.62	30.16	65.20	55.20	-25.58	-25.04
2	0.20356	10.13	25.37	20.10	35.50	30.23	63.46	53.46	-27.96	-23.23
3	0.64275	10.20	26.80	20.65	37.00	30.85	56.00	46.00	-19.00	-15.15
4	2.40225	10.30	14.18	10.51	24.48	20.81	56.00	46.00	-31.52	-25.19
5	8.06100	10.51	12.15	10.38	22.66	20.89	60.00	50.00	-37.34	-29.11
6	18.67200	10.78	14.17	10.46	24.95	21.24	60.00	50.00	-35.05	-28.76

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) - 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



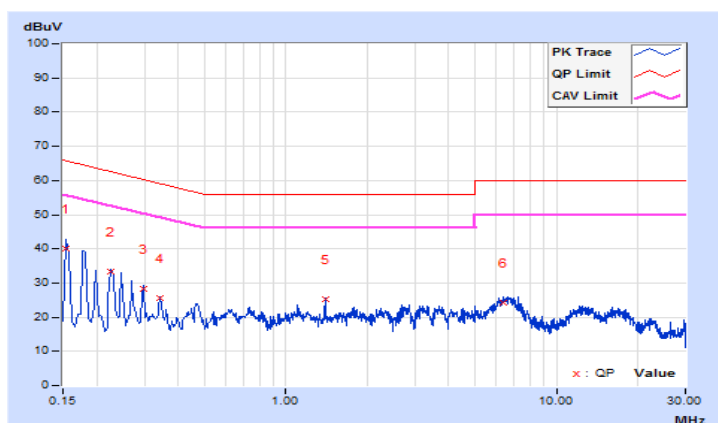
天線型式: Patch

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 65%RH
測試者	Jisyong Wang	測試日期	2020/11/18
測試模式	Mode 3		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15400	9.65	30.49	25.00	40.14	34.65	65.78	55.78	-25.64	-21.13
2	0.22600	9.66	23.75	18.24	33.41	27.90	62.60	52.60	-29.19	-24.70
3	0.29800	9.66	18.58	12.06	28.24	21.72	60.30	50.30	-32.06	-28.58
4	0.34200	9.66	15.90	10.37	25.56	20.03	59.15	49.15	-33.59	-29.12
5	1.39800	9.68	15.49	10.21	25.17	19.89	56.00	46.00	-30.83	-26.11
6	6.39400	9.76	14.40	7.03	24.16	16.79	60.00	50.00	-35.84	-33.21

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

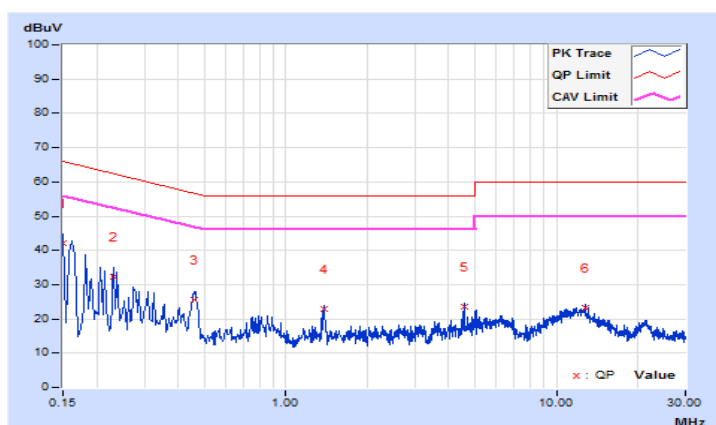


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 65%RH
測試者	Jisyong Wang	測試日期	2020/11/18
測試模式	Mode 3		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15000	9.68	32.35	25.27	42.03	34.95	66.00	56.00	-23.97	-21.05
2	0.23000	9.68	22.63	16.21	32.31	25.89	62.45	52.45	-30.14	-26.56
3	0.46079	9.68	15.85	9.63	25.53	19.31	56.68	46.68	-31.15	-27.37
4	1.37800	9.71	13.28	6.19	22.99	15.90	56.00	46.00	-33.01	-30.10
5	4.59000	9.78	13.74	7.72	23.52	17.50	56.00	46.00	-32.48	-28.50
6	12.84200	9.89	13.20	5.54	23.09	15.43	60.00	50.00	-36.91	-34.57

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

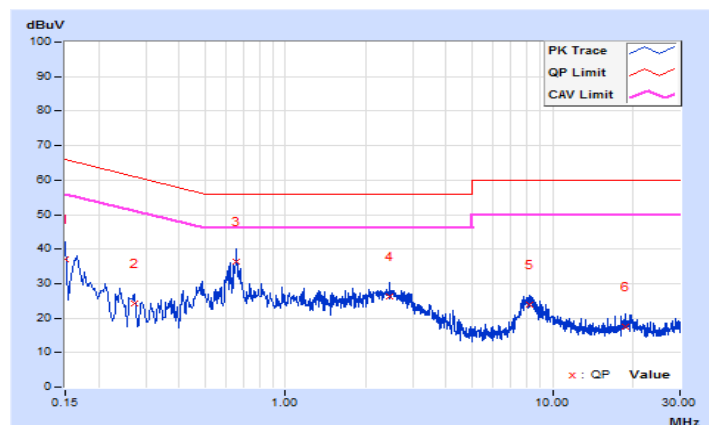


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/4/13
測試模式	Mode 4		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15000	9.71	27.21	13.21	36.92	22.92	66.00	56.00	-29.08	-33.08
2	0.27120	9.72	14.37	5.50	24.09	15.22	61.08	51.08	-36.99	-35.86
3	0.65439	9.74	26.47	12.94	36.21	22.68	56.00	46.00	-19.79	-23.32
4	2.44908	9.77	16.61	8.98	26.38	18.75	56.00	46.00	-29.62	-27.25
5	8.16941	9.84	14.03	5.37	23.87	15.21	60.00	50.00	-36.13	-34.79
6	18.78506	9.82	7.69	0.42	17.51	10.24	60.00	50.00	-42.49	-39.76

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

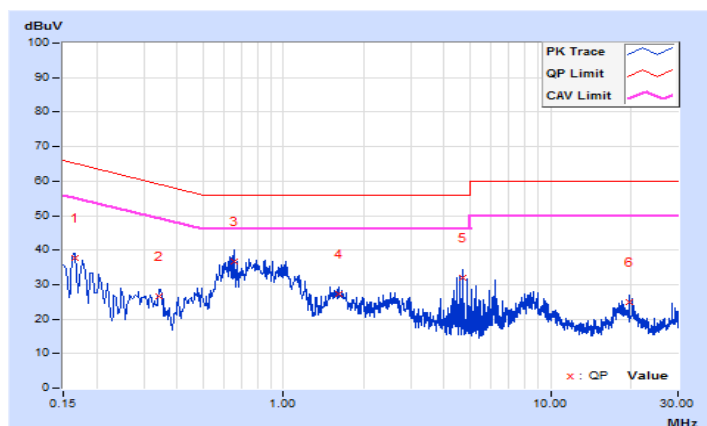


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/4/13
測試模式	Mode 4		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16526	9.77	27.84	17.76	37.61	27.53	65.20	55.20	-27.59	-27.67
2	0.34469	9.78	16.81	14.34	26.59	24.12	59.09	49.09	-32.50	-24.97
3	0.65830	9.80	26.83	15.44	36.63	25.24	56.00	46.00	-19.37	-20.76
4	1.60843	9.83	17.56	8.63	27.39	18.46	56.00	46.00	-28.61	-27.54
5	4.66605	9.86	22.05	7.13	31.91	16.99	56.00	46.00	-24.09	-29.01
6	19.70782	9.99	14.97	12.23	24.96	22.22	60.00	50.00	-35.04	-27.78

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



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。

6 6 dB 頻寬之要求

6.1 適用標準

請見本報告 3.1 節第(5)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 6 dB 的最大頻率範圍。

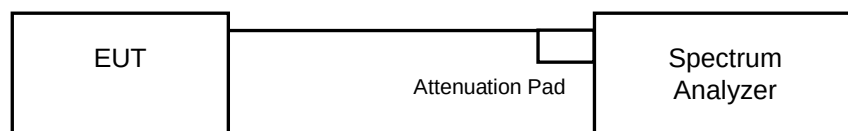
6.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.

6.4 測試配置



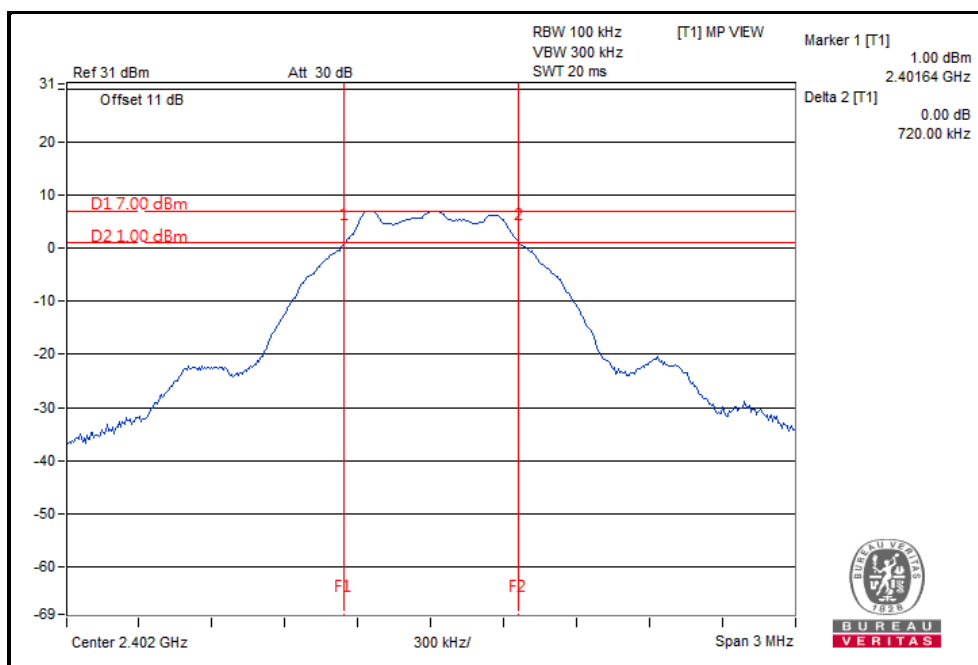
6.5 量測結果

<LE 4.0>

操作模式	發射	測試日期	109 年 07 月 17 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	0.72	0.5	Pass
19	2440	0.72	0.5	Pass
39	2480	0.74	0.5	Pass

**此測試圖僅放測試結果最差的頻道。

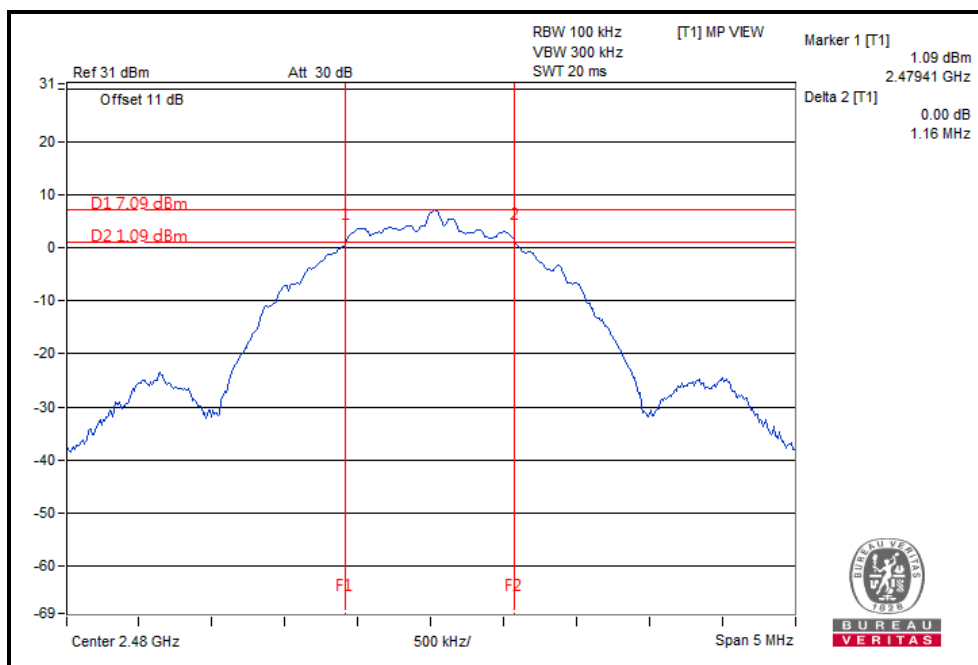


<LE 5.0>

操作模式	發射	測試日期	109 年 07 月 17 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	1.21	0.5	Pass
19	2440	1.18	0.5	Pass
39	2480	1.16	0.5	Pass

**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，符合低功率射頻器材技術規範之要求。

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(4)及(6)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。
- 計算其輸出功率峰值。

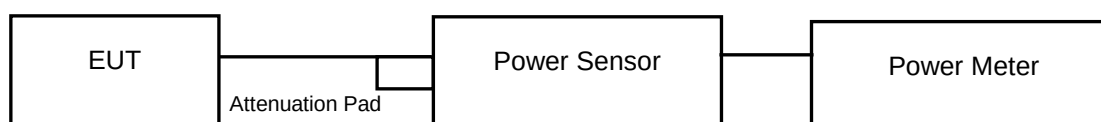
7.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Power Meter Anritsu	ML2495A	1232002	Dec. 10, 2019	Dec. 09, 2020
Power Sensor Anritsu	MA2411B	1207325	Dec. 10, 2019	Dec. 09, 2020

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 1.393 dB, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of $k=2$.
- Measurement Bandwidth of ML2495A is 65 MHz greater than 6 dB bandwidth of emission.

7.4 測試配置



7.5 量測結果

<LE 4.0>

操作模式	發射	測試日期	109 年 07 月 17 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
0	2402	5.689	7.55	30	Pass
19	2440	6.067	7.83	30	Pass
39	2480	5.957	7.75	30	Pass

<LE 5.0>

操作模式	發射	測試日期	109 年 07 月 17 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
0	2402	5.715	7.57	30	Pass
19	2440	6.012	7.79	30	Pass
39	2480	5.916	7.72	30	Pass

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 功率頻譜密度之量測

8.1 適用標準

請見本報告 3.1 節第(7)項的規定。

8.2 量測方法

- 將待測物之天線埠經由適當之衰減直接連至測試儀器。
- 設定解析頻寬為 3 kHz，視訊頻寬為 10 kHz，掃描時間為 auto。
- 掃描頻寬設於足夠觀察發射機所產生的主頻信號，並找到最大的峰值準位。
- 其峰值位準必須不大於 8 dBm。

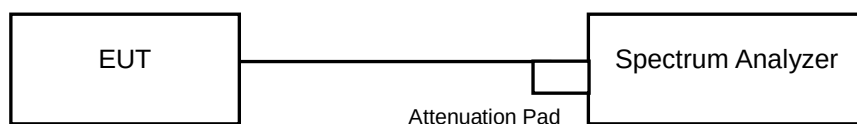
8.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.

8.4 測試配置



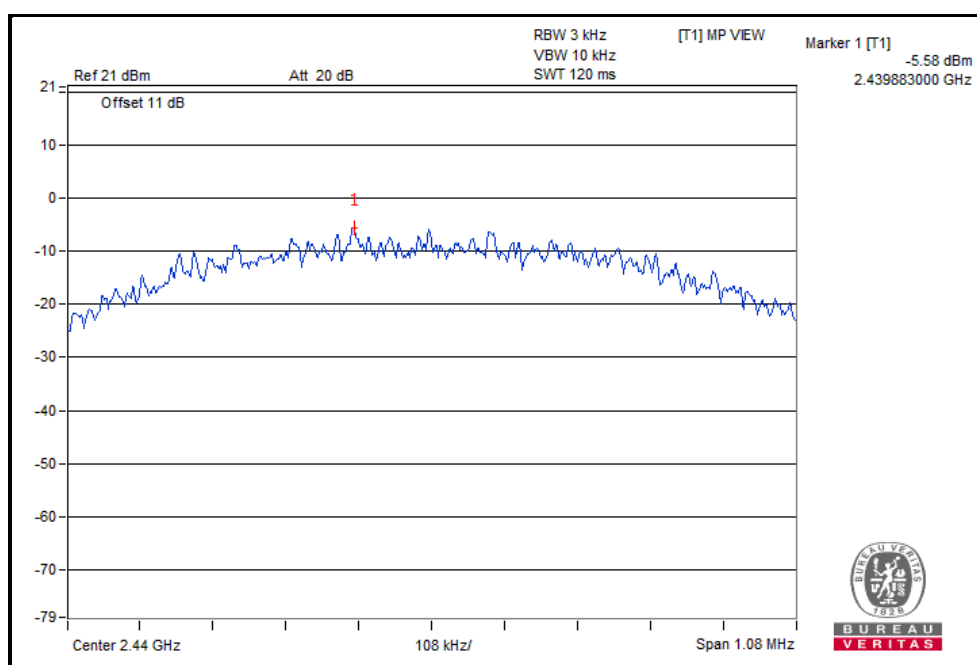
8.5 量測結果

<LE 4.0>

操作模式	發射	測試日期	109 年 07 月 17 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
0	2402	-5.97	8	Pass
19	2440	-5.58	8	Pass
39	2480	-6.44	8	Pass

**此測試圖僅放測試結果最差的頻道。

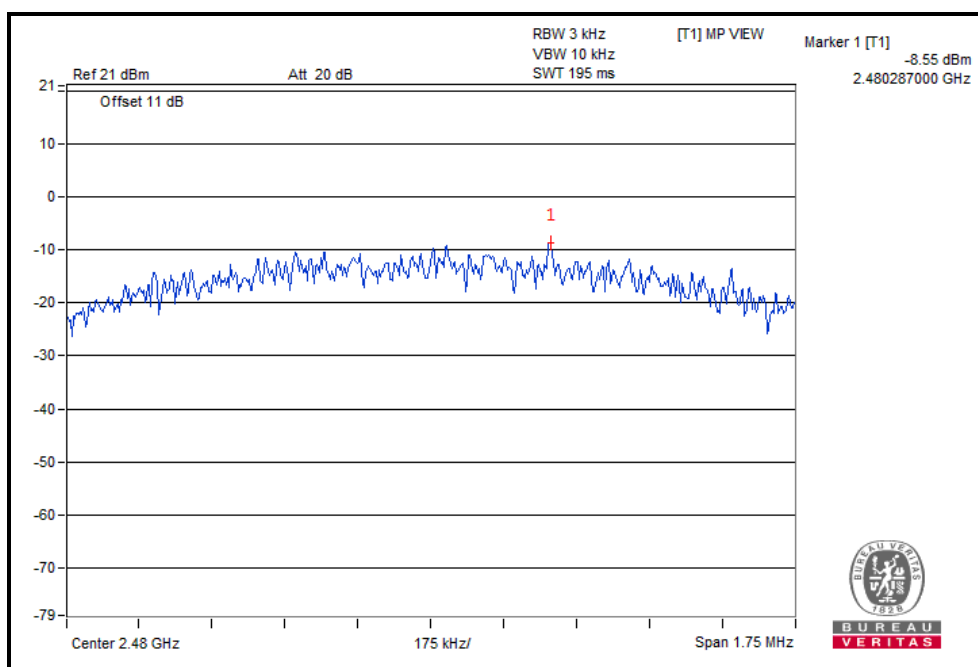


<LE 5.0>

操作模式	發射	測試日期	109 年 07 月 17 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
0	2402	-8.72	8	Pass
19	2440	-9.23	8	Pass
39	2480	-8.55	8	Pass

**此測試圖僅放測試結果最差的頻道。



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。

ANT+頻段測試紀錄結果

9 場強輻射及開放頻帶邊緣之量測

9.1 適用標準

請見本報告 3.1 節第(2)項的規定。

9.2 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。

Note: 對於 1 GHz 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。

發射諧波：

Peak 為 RBW = 1 MHz, VBW = 3 MHz；

Average 為 RBW = 1 MHz, VBW = 10 Hz

接收諧波：

Below 1 GHz

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

Above 1 GHz:

Peak 為 RBW = 1 MHz, VBW = 3 MHz；Average 為 RBW = 1 MHz, VBW = 1 kHz

其它不必要之訊號

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

9.3 量測儀器

同 4.3 節

9.4 測試配置

同 4.4 節

9.5 場強度之計算

同 4.5 節

量測結果請見下頁。

9.6 量測結果

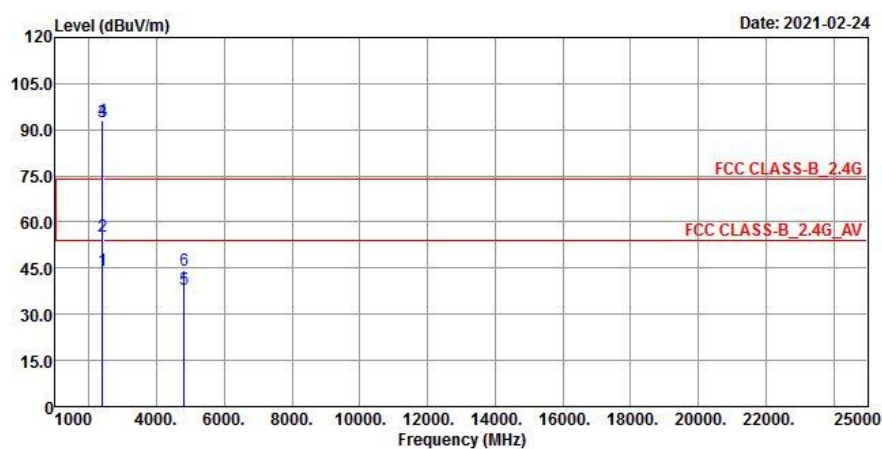
9.6.1 發射諧波

天線型式: Monopole

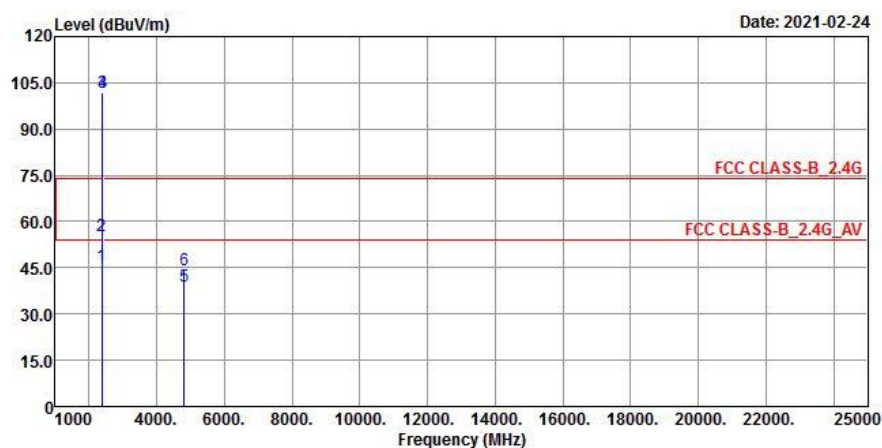
1M

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



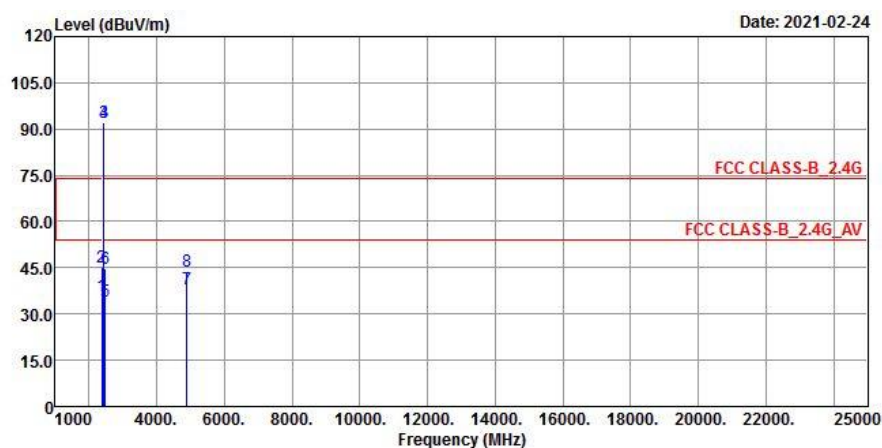
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	44.28	51.33	-7.05	54	-9.72	300	333	Average
2390	55.48	62.53	-7.05	74	-18.52	300	333	Peak
2403	92.56	99.61	-7.05	-----	-----	300	333	Average
2403	92.93	99.98	-7.05	-----	-----	300	333	Peak
4806	38.05	53.86	-15.81	54	-15.95	261	186	Average
4806	44.16	59.97	-15.81	74	-29.84	261	186	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2371	45.51	52.51	-7	54	-8.49	106	262	Average
2371	55.23	62.23	-7	74	-18.77	106	262	Peak
2403	101.63	108.68	-7.05	-----	-----	106	262	Average
2403	101.89	108.94	-7.05	-----	-----	106	262	Peak
4806	38.95	54.76	-15.81	54	-15.05	171	302	Average
4806	44.28	60.09	-15.81	74	-29.72	171	302	Peak

Remarks:

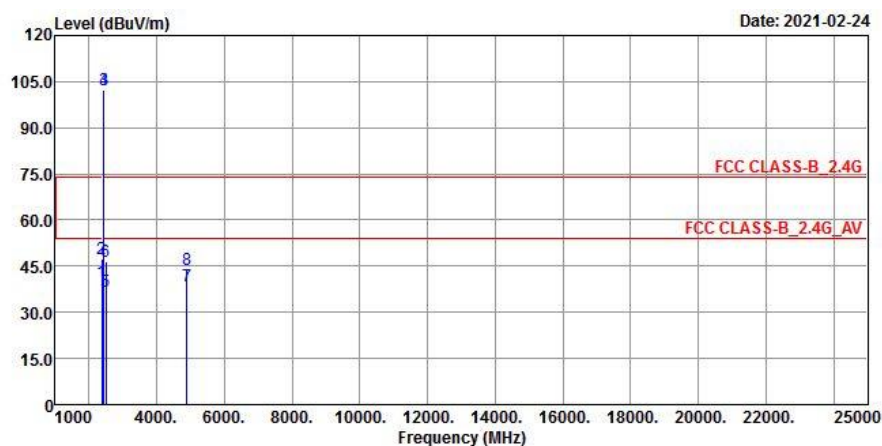
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2403 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



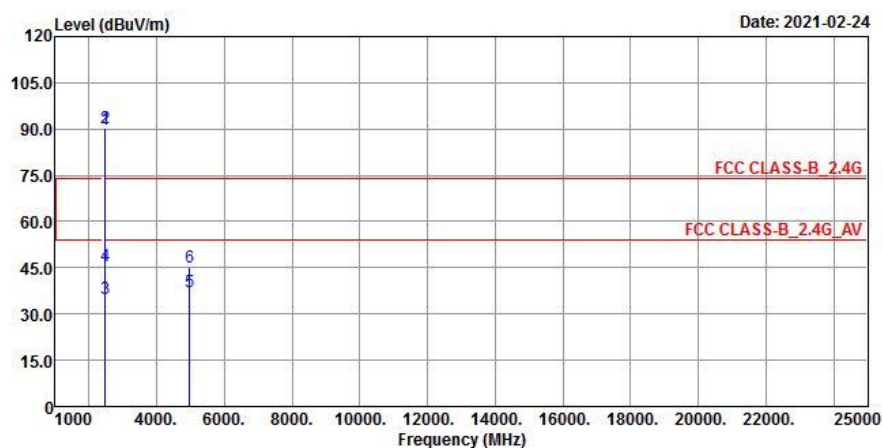
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2377	35.91	42.91	-7	54	-18.09	300	333	Average
2377	44.96	51.96	-7	74	-29.04	300	333	Peak
2441	91.92	98.85	-6.93	-----	-----	300	333	Average
2441	92.2	99.13	-6.93	-----	-----	300	333	Peak
2483.5	34.2	41.06	-6.86	54	-19.8	300	333	Average
2483.5	44.93	51.79	-6.86	74	-29.07	300	333	Peak
4882	38.09	54.03	-15.94	54	-15.91	213	107	Average
4882	43.87	59.81	-15.94	74	-30.13	213	107	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2377	40.05	47.05	-7	54	-13.95	123	263	Average
2377	47.33	54.33	-7	74	-26.67	123	263	Peak
2441	102.21	109.14	-6.93	-----	-----	123	263	Average
2441	102.45	109.38	-6.93	-----	-----	123	263	Peak
2490	36.83	43.7	-6.87	54	-17.17	123	263	Average
2490	46.71	53.58	-6.87	74	-27.29	123	263	Peak
4882	38.37	54.31	-15.94	54	-15.63	179	302	Average
4882	43.69	59.63	-15.94	74	-30.31	179	302	Peak

Remarks:

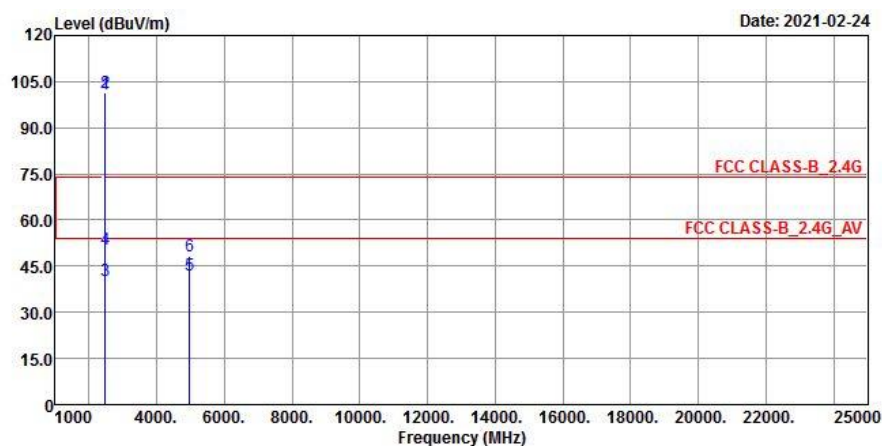
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2441 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 78	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	89.93	96.79	-6.86	-----	-----	144	301	Average
2480	90.33	97.19	-6.86	-----	-----	144	301	Peak
2483.5	34.82	41.68	-6.86	54	-19.18	144	301	Average
2483.5	45.82	52.68	-6.86	74	-28.18	144	301	Peak
4960	37.14	52.84	-15.7	54	-16.86	120	326	Average
4960	45.28	60.98	-15.7	74	-28.72	120	326	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	101.01	107.87	-6.86	-----	-----	207	356	Average
2480	101.29	108.15	-6.86	-----	-----	207	356	Peak
2483.5	40.25	47.11	-6.86	54	-13.75	207	356	Average
2483.5	50.66	57.52	-6.86	74	-23.34	207	356	Peak
4960	42.1	57.8	-15.7	54	-11.9	112	61	Average
4960	48.39	64.09	-15.7	74	-25.61	112	61	Peak

Remarks:

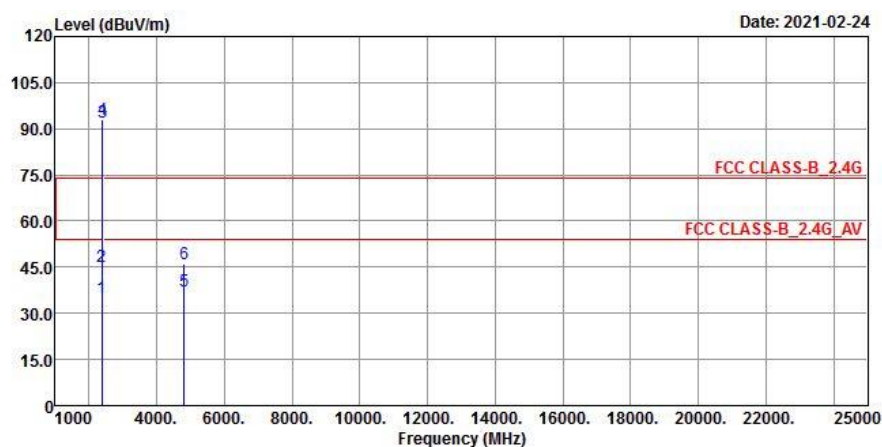
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2480 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

天線型式: Monopole

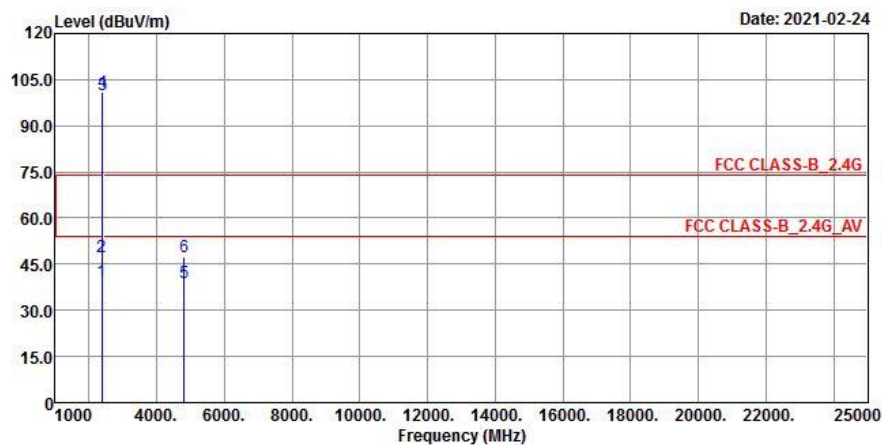
2M

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



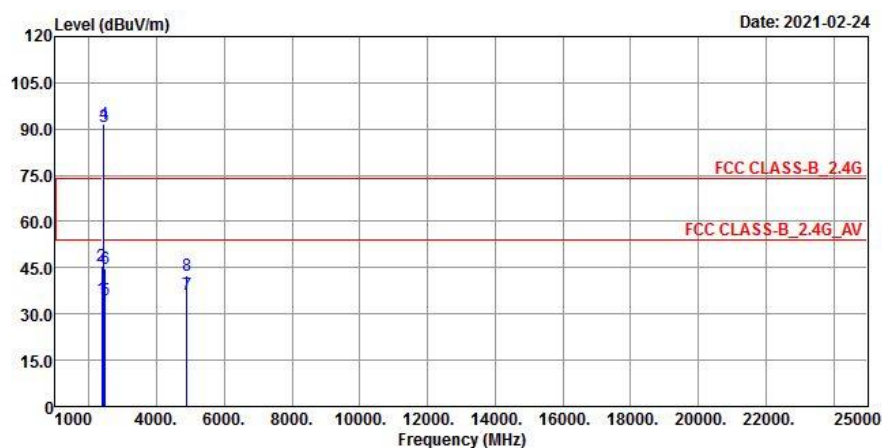
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2371.098	35.13	42.13	-7	54	-18.87	147	304	Average
2371.098	45.33	52.33	-7	74	-28.67	147	304	Peak
2403	91.96	99.01	-7.05	-----	-----	147	304	Average
2403	92.77	99.82	-7.05	-----	-----	147	304	Peak
4806	36.98	52.79	-15.81	54	-17.02	106	327	Average
4806	46.23	62.04	-15.81	74	-27.77	106	327	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2370.996	39.41	46.41	-7	54	-14.59	243	307	Average
2370.996	47.47	54.47	-7	74	-26.53	243	307	Peak
2403	100.18	107.23	-7.05	-----	-----	243	307	Average
2403	101	108.05	-7.05	-----	-----	243	307	Peak
4806	38.82	54.63	-15.81	54	-15.18	100	124	Average
4806	47.2	63.01	-15.81	74	-26.8	100	124	Peak

Remarks:

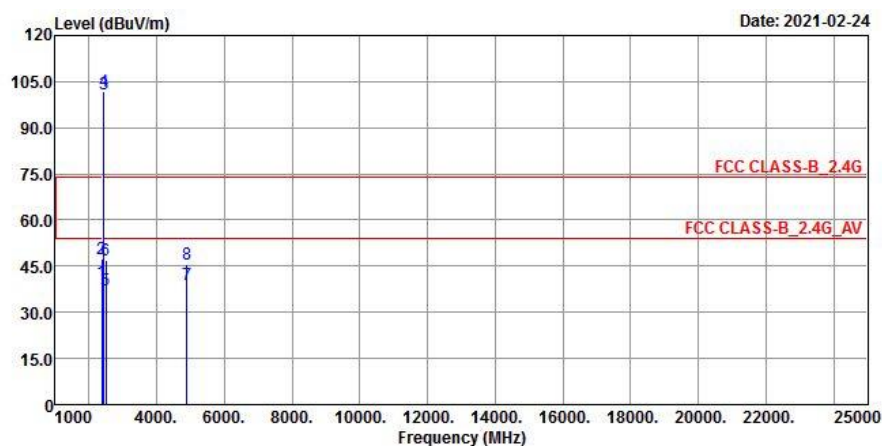
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2403 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



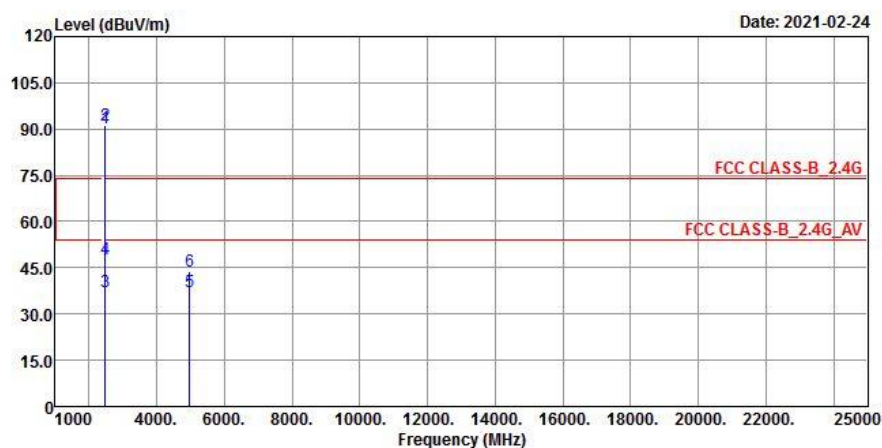
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2376.88	35.2	42.2	-7	54	-18.8	167	232	Average
2376.88	45.7	52.7	-7	74	-28.3	167	232	Peak
2441	90.74	97.67	-6.93	-----	-----	167	232	Average
2441	91.82	98.75	-6.93	-----	-----	167	232	Peak
2483.5	34.41	41.27	-6.86	54	-19.59	167	232	Average
2483.5	44.84	51.7	-6.86	74	-29.16	167	232	Peak
4882	36.22	52.16	-15.94	54	-17.78	135	241	Average
4882	42.69	58.63	-15.94	74	-31.31	135	241	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2377.07	39.89	46.89	-7	54	-14.11	148	187	Average
2377.07	47.41	54.41	-7	74	-26.59	148	187	Peak
2441	100.75	107.68	-6.93	-----	-----	148	187	Average
2441	101.67	108.6	-6.93	-----	-----	148	187	Peak
2489.74	37.29	44.16	-6.87	54	-16.71	148	187	Average
2489.74	46.92	53.79	-6.87	74	-27.08	148	187	Peak
4882	39.09	55.03	-15.94	54	-14.91	102	161	Average
4882	45.4	61.34	-15.94	74	-28.6	102	161	Peak

Remarks:

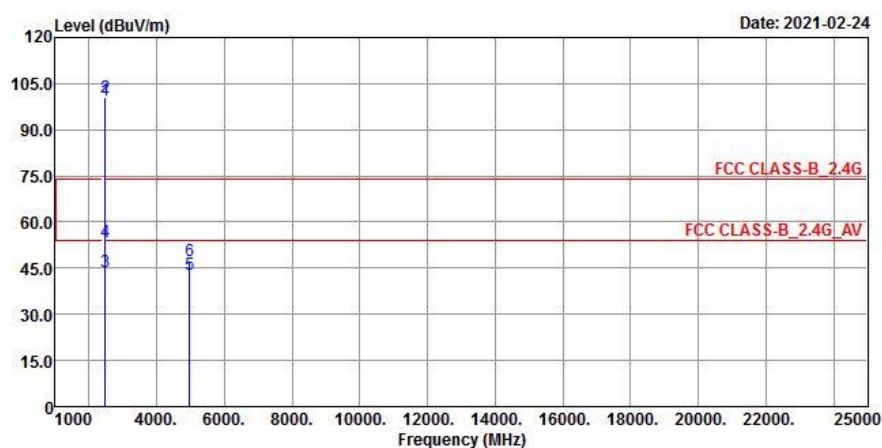
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2441 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 78	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	90.24	97.1	-6.86	-----	-----	127	125	Average
2480	91.27	98.13	-6.86	-----	-----	127	125	Peak
2483.5	37.23	44.09	-6.86	54	-16.77	127	125	Average
2483.5	47.92	54.78	-6.86	74	-26.08	127	125	Peak
4960	37.12	52.82	-15.7	54	-16.88	162	24	Average
4960	43.66	59.36	-15.7	74	-30.34	162	24	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	99.7	106.56	-6.86	-----	-----	210	340	Average
2480	100.38	107.24	-6.86	-----	-----	210	340	Peak
2483.5	43.83	50.69	-6.86	54	-10.17	210	340	Average
2483.5	53.75	60.61	-6.86	74	-20.25	210	340	Peak
4960	43.03	58.73	-15.7	54	-10.97	143	196	Average
4960	47.5	63.2	-15.7	74	-26.5	143	196	Peak

Remarks:

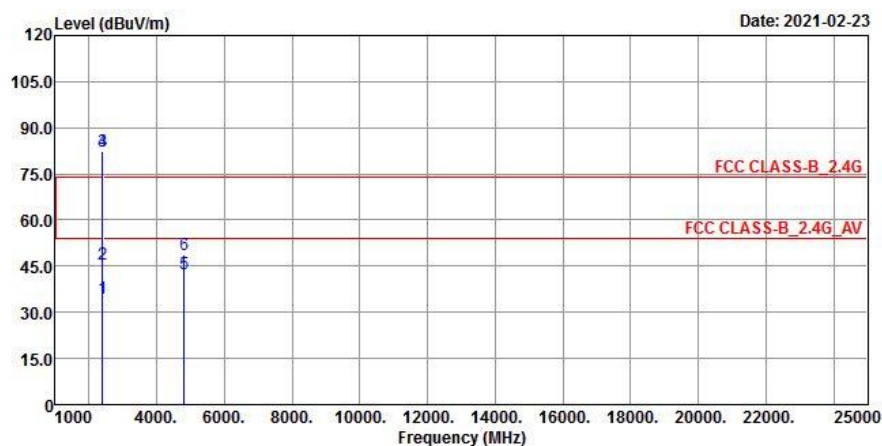
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2480 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

天線型式: Patch

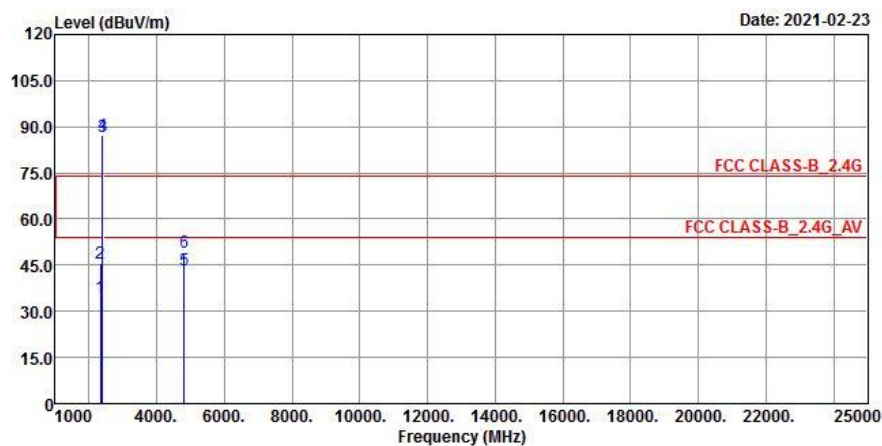
1M

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



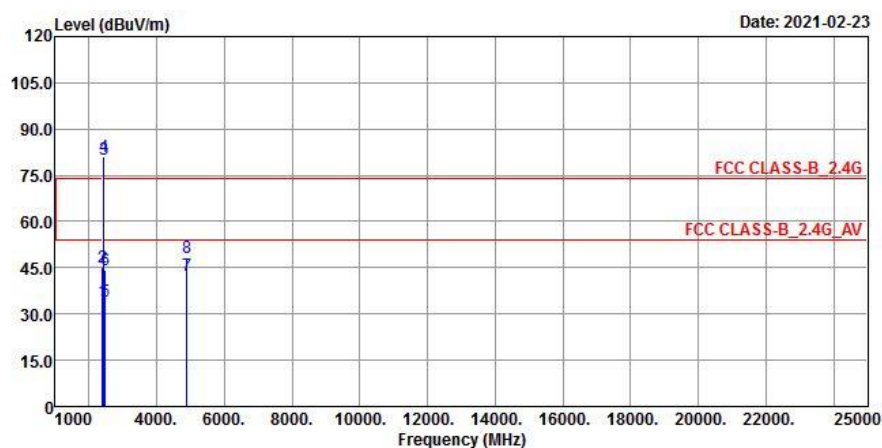
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.61	41.66	-7.05	54	-19.39	135	138	Average
2390	45.6	52.65	-7.05	74	-28.4	135	138	Peak
2403	82.17	89.22	-7.05	-----	-----	135	138	Average
2403	82.44	89.49	-7.05	-----	-----	135	138	Peak
4806	42.5	58.31	-15.81	54	-11.5	286	208	Average
4806	48.64	64.45	-15.81	74	-25.36	286	208	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2339.376	34.66	41.59	-6.93	54	-19.34	317	360	Average
2339.376	45.45	52.38	-6.93	74	-28.55	317	360	Peak
2403	86.65	93.7	-7.05	-----	-----	317	360	Average
2403	87.08	94.13	-7.05	-----	-----	317	360	Peak
4806	43.55	59.36	-15.81	54	-10.45	142	353	Average
4806	49.08	64.89	-15.81	74	-24.92	142	353	Peak

Remarks:

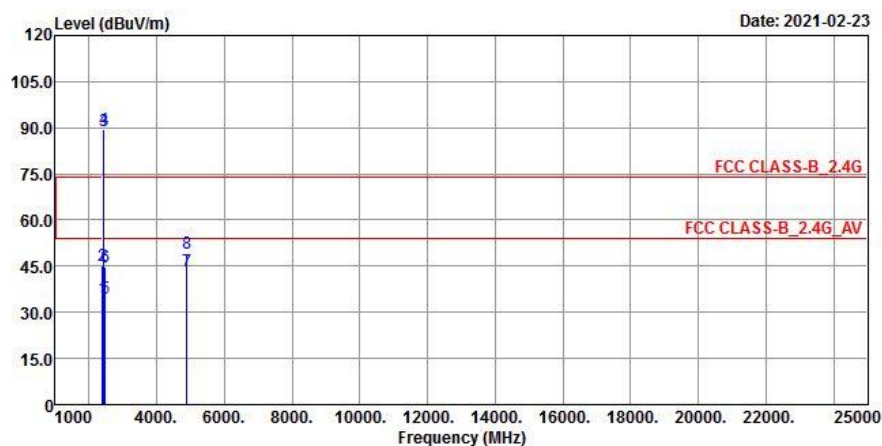
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2403 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



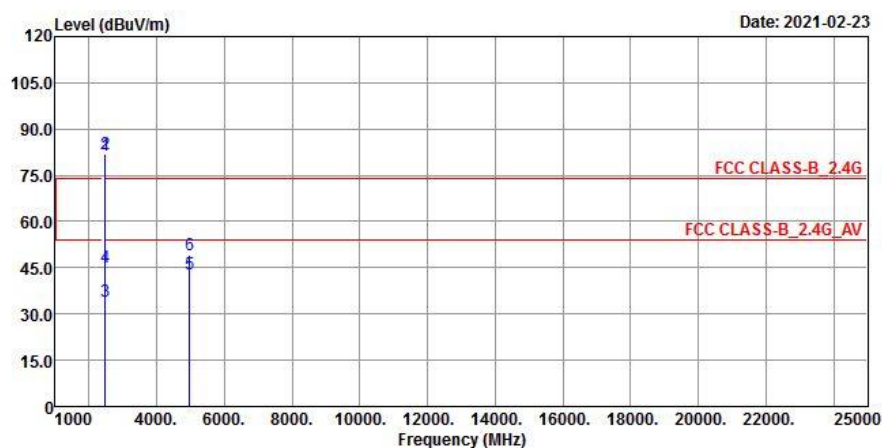
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.07	41.12	-7.05	54	-19.93	160	204	Average
2390	45.31	52.36	-7.05	74	-28.69	160	204	Peak
2441	80.14	87.07	-6.93	-----	-----	160	204	Average
2441	81.2	88.13	-6.93	-----	-----	160	204	Peak
2483.5	34.04	40.9	-6.86	54	-19.96	160	204	Average
2483.5	44.44	51.3	-6.86	74	-29.56	160	204	Peak
4882	42.39	58.33	-15.94	54	-11.61	285	207	Average
4882	48.37	64.31	-15.94	74	-25.63	285	207	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.73	41.78	-7.05	54	-19.27	147	360	Average
2390	45.18	52.23	-7.05	74	-28.82	147	360	Peak
2441	89.04	58.58	30.46	-----	-----	147	360	Average
2441	89.44	58.98	30.46	-----	-----	147	360	Peak
2483.5	34.43	41.29	-6.86	54	-19.57	147	360	Average
2483.5	44.83	51.69	-6.86	74	-29.17	147	360	Peak
4882	43.57	59.51	-15.94	54	-10.43	144	351	Average
4882	49.09	65.03	-15.94	74	-24.91	144	351	Peak

Remarks:

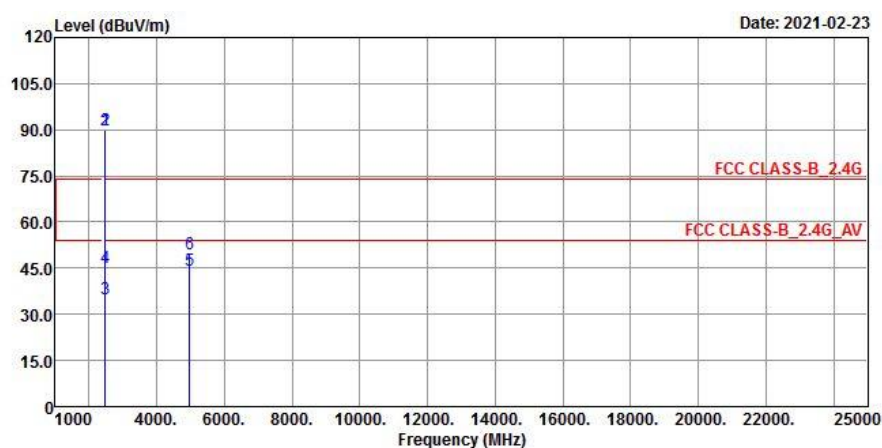
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2441 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 78	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	81.42	88.28	-6.86	-----	-----	153	203	Average
2480	81.9	88.76	-6.86	-----	-----	153	203	Peak
2483.5	34.26	41.12	-6.86	54	-19.74	153	203	Average
2483.5	45.38	52.24	-6.86	74	-28.62	153	203	Peak
4960	42.97	58.67	-15.7	54	-11.03	289	211	Average
4960	49.18	64.88	-15.7	74	-24.82	289	211	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	89.67	96.53	-6.86	-----	-----	300	2	Average
2480	90.04	96.9	-6.86	-----	-----	300	2	Peak
2483.5	34.96	41.82	-6.86	54	-19.04	300	2	Average
2483.5	45.01	51.87	-6.86	74	-28.99	300	2	Peak
4960	44.32	60.02	-15.7	54	-9.68	147	351	Average
4960	49.61	65.31	-15.7	74	-24.39	147	351	Peak

Remarks:

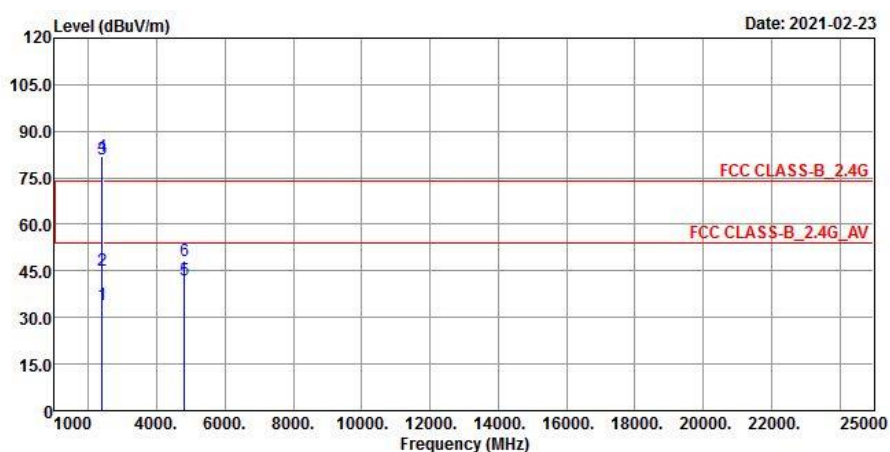
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2480 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

天線型式: Patch

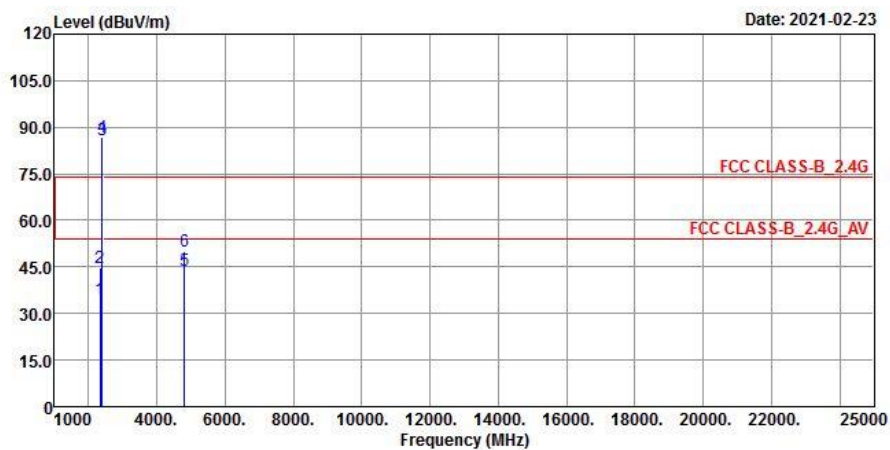
2M

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



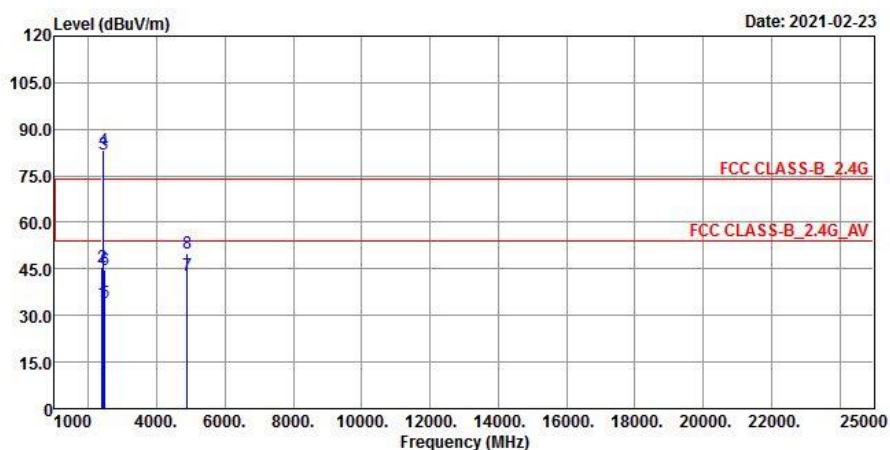
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.01	41.06	-7.05	54	-19.99	166	139	Average
2390	45.31	52.36	-7.05	74	-28.69	166	139	Peak
2403	80.9	87.95	-7.05	-----	-----	166	139	Average
2403	81.91	88.96	-7.05	-----	-----	166	139	Peak
4806	42.02	57.83	-15.81	54	-11.98	291	193	Average
4806	48.17	63.98	-15.81	74	-25.83	291	193	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2339.172	34.46	41.39	-6.93	54	-19.54	315	15	Average
2339.172	44.93	51.86	-6.93	74	-29.07	315	15	Peak
2403	85.68	92.73	-7.05	-----	-----	315	15	Average
2403	86.65	93.7	-7.05	-----	-----	315	15	Peak
4806	43.87	59.68	-15.81	54	-10.13	139	351	Average
4806	50	65.81	-15.81	74	-24	139	351	Peak

Remarks:

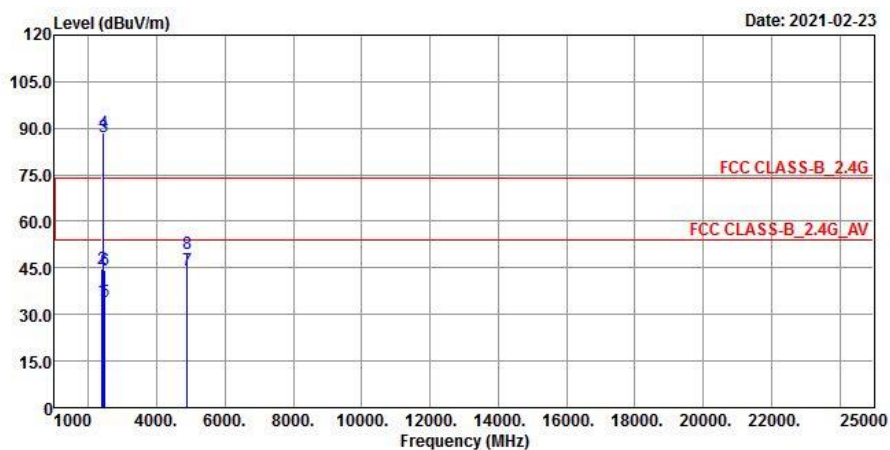
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2403 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



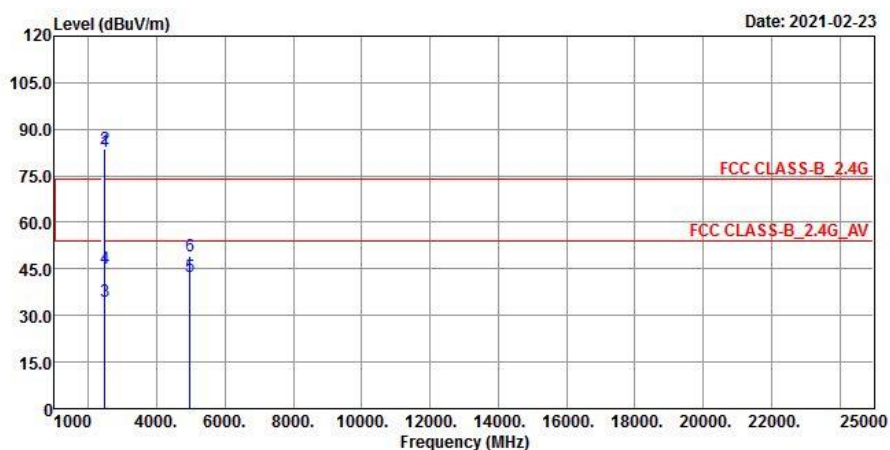
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.11	41.16	-7.05	54	-19.89	141	135	Average
2390	45.49	52.54	-7.05	74	-28.51	141	135	Peak
2441	82.12	89.05	-6.93	-----	-----	141	135	Average
2441	83.15	90.08	-6.93	-----	-----	141	135	Peak
2483.5	34.05	40.91	-6.86	54	-19.95	141	135	Average
2483.5	44.73	51.59	-6.86	74	-29.27	141	135	Peak
4882	42.97	58.91	-15.94	54	-11.03	283	212	Average
4882	49.92	65.86	-15.94	74	-24.08	283	212	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.36	41.41	-7.05	54	-19.64	298	40	Average
2390	44.9	51.95	-7.05	74	-29.1	298	40	Peak
2441	87.44	94.37	-6.93	-----	-----	298	40	Average
2441	88.44	95.37	-6.93	-----	-----	298	40	Peak
2483.5	34.2	41.06	-6.86	54	-19.8	298	40	Average
2483.5	44.48	51.34	-6.86	74	-29.52	298	40	Peak
4882	44.09	60.03	-15.94	54	-9.91	153	342	Average
4882	49.48	65.42	-15.94	74	-24.52	153	342	Peak

Remarks:

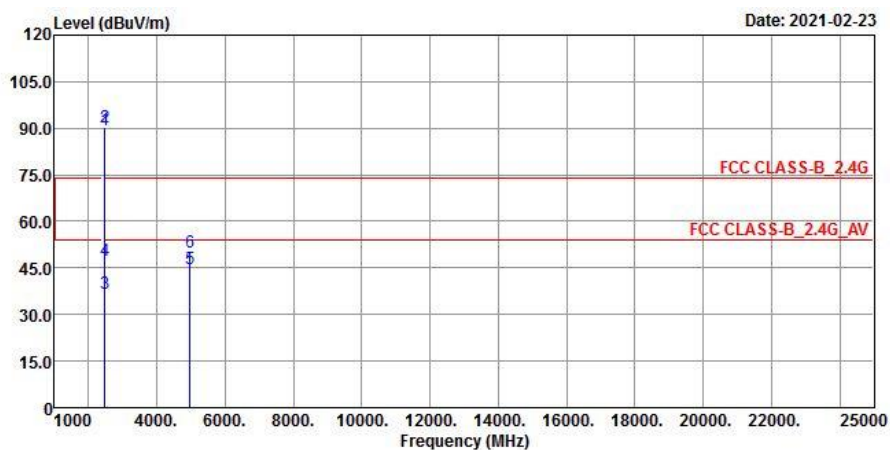
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2441 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 78	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	82.68	89.54	-6.86	-----	-----	136	138	Average
2480	83.8	90.66	-6.86	-----	-----	136	138	Peak
2483.5	34.72	41.58	-6.86	54	-19.28	136	138	Average
2483.5	45.3	52.16	-6.86	74	-28.7	136	138	Peak
4960	42.63	58.33	-15.7	54	-11.37	282	204	Average
4960	49.37	65.07	-15.7	74	-24.63	282	204	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2480	89.34	96.2	-6.86	-----	-----	334	14	Average
2480	90.33	97.19	-6.86	-----	-----	334	14	Peak
2483.5	36.59	43.45	-6.86	54	-17.41	334	14	Average
2483.5	47.21	54.07	-6.86	74	-26.79	334	14	Peak
4960	44.65	60.35	-15.7	54	-9.35	151	357	Average
4960	49.89	65.59	-15.7	74	-24.11	151	357	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2480 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

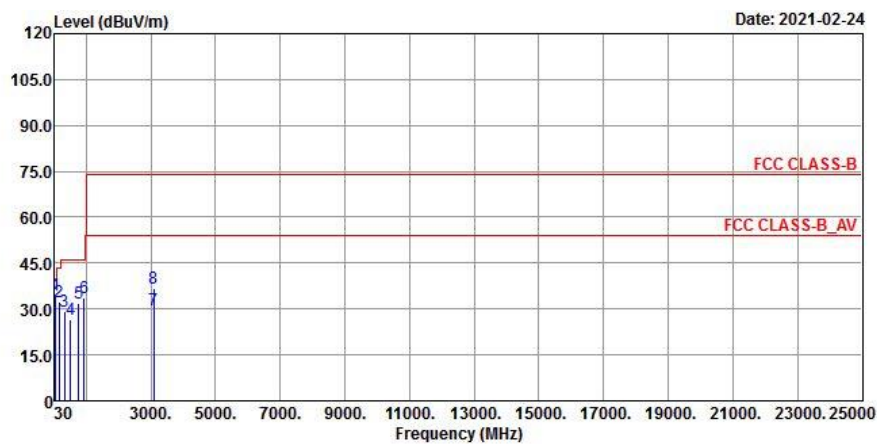
9.6.2 接收諧波

天線型式: Monopole

1M

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
49.4	34.51	46.99	-12.48	40	-5.49	125	360	QP
157.07	32.2	44.84	-12.64	43.5	-11.3	155	239	QP
335.55	29.19	39.54	-10.35	46	-16.81	178	45	QP
518.88	26.78	31.87	-5.09	46	-19.22	229	181	QP
761.38	32.03	31.77	0.26	46	-13.97	258	33	QP
935.98	33.51	30.51	3	46	-12.49	195	47	QP
3091	29.47	50.01	-20.54	54	-24.53	111	306	Average
3091	36.68	57.22	-20.54	74	-37.32	111	306	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
54.25	34.86	47.74	-12.88	40	-5.14	104	233	QP
140.58	35.27	48.02	-12.75	43.5	-8.23	189	56	QP
321	30.03	40.73	-10.7	46	-15.97	165	230	QP
532.46	29.31	34	-4.69	46	-16.69	228	161	QP
729.37	33.11	33.61	-0.5	46	-12.89	220	346	QP
932.1	34.09	31.07	3.02	46	-11.91	284	122	QP
3380	30.17	50.88	-20.71	54	-23.83	102	331	Average
3380	37.64	58.35	-20.71	74	-36.36	102	331	Peak

Remarks:

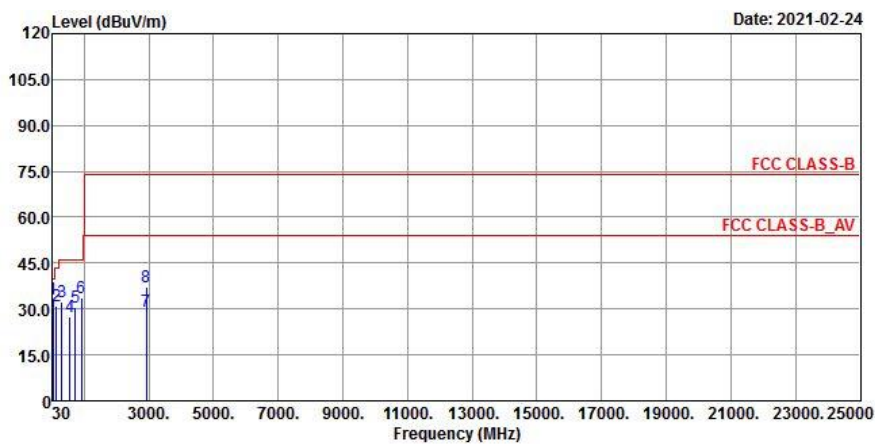
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

天線型式: Patch

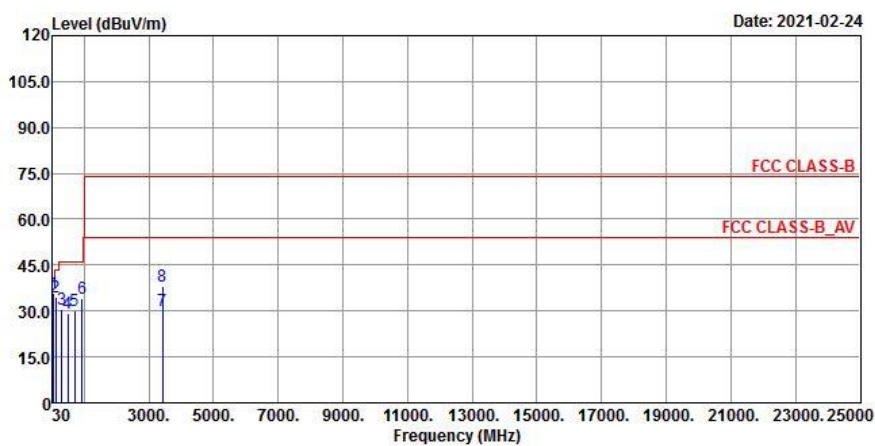
2M

EUT Test Condition		Measurement Detail	
Channel	Channel 78	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
40.67	33.13	45.83	-12.7	40	-6.87	121	235	QP
140.58	31.06	43.81	-12.75	43.5	-12.44	183	279	QP
299.66	32.18	43.57	-11.39	46	-13.82	147	265	QP
550.89	27.51	31.85	-4.34	46	-18.49	365	41	QP
734.22	30.72	30.94	-0.22	46	-15.28	123	69	QP
916.58	33.86	31.15	2.71	46	-12.14	189	256	QP
2923.15	29.24	50.28	-21.04	54	-24.76	111	167	Average
2923.15	37.17	58.21	-21.04	74	-36.83	111	167	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
50.37	35.85	48.41	-12.56	40	-4.15	111	235	QP
119.24	34.43	48.23	-13.8	43.5	-9.07	178	339	QP
308.39	30.4	41.53	-11.13	46	-15.6	210	37	QP
498.51	29.08	34.76	-5.68	46	-16.92	284	76	QP
709.97	30.27	31.37	-1.1	46	-15.73	218	62	QP
927.25	34.31	31.33	2.98	46	-11.69	349	115	QP
3429.51	30.29	50.6	-20.31	54	-23.71	102	239	Average
3429.51	37.97	58.28	-20.31	74	-36.03	102	239	Peak

Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

9.6.3 其它不必要之訊號

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

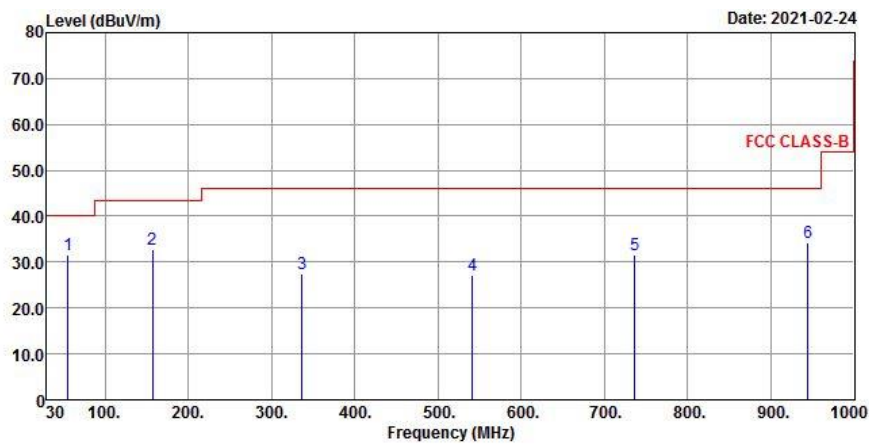
30 MHz ~ 1 GHz Data:

天線型式: Monopole

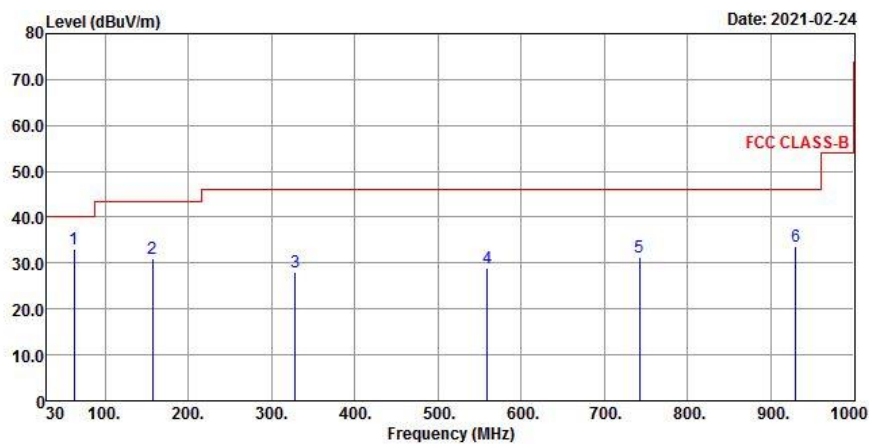
1M

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
55.22	31.59	44.37	-12.78	40	-8.41	138	215	QP
157.07	32.82	45.46	-12.64	43.5	-10.68	166	274	QP
336.52	27.37	37.7	-10.33	46	-18.63	288	49	QP
541.19	27.24	31.75	-4.51	46	-18.76	172	288	QP
736.16	31.49	31.63	-0.14	46	-14.51	223	101	QP
944.71	34.21	30.96	3.25	46	-11.79	126	311	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
62.98	33	46.42	-13.42	40	-7	148	89	QP
157.07	31.13	43.77	-12.64	43.5	-12.37	106	235	QP
328.76	28.13	38.6	-10.47	46	-17.87	273	128	QP
559.62	28.87	32.93	-4.06	46	-17.13	165	144	QP
741.98	31.42	31.4	0.02	46	-14.58	109	283	QP
930.16	33.68	30.65	3.03	46	-12.32	147	121	QP

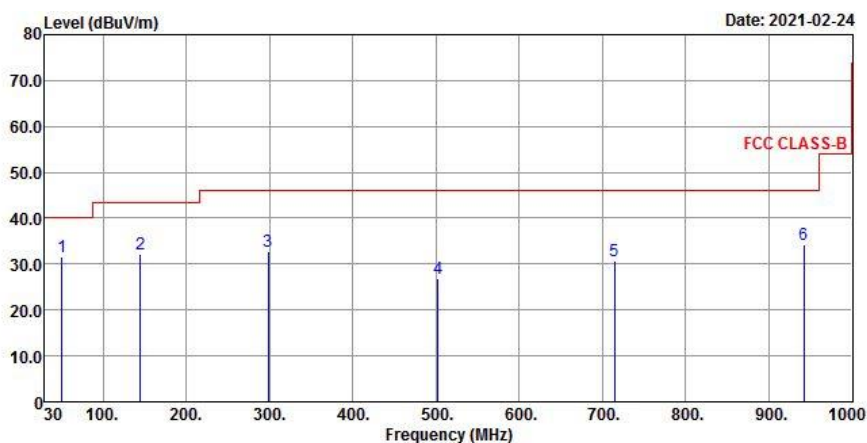
Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- The other emission levels were very low against the limit.

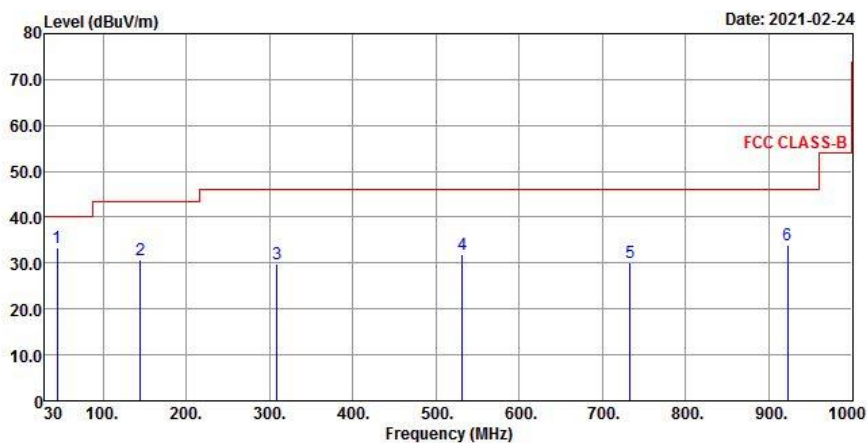
天線型式: Patch
2M

EUT Test Condition		Measurement Detail	
Channel	Channel 78	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
50.37	31.64	44.2	-12.56	40	-8.36	121	236	QP
144.46	32.19	44.71	-12.52	43.5	-11.31	194	307	QP
298.69	32.91	44.34	-11.43	46	-13.09	146	258	QP
502.39	26.8	32.39	-5.59	46	-19.2	344	85	QP
714.82	30.69	31.63	-0.94	46	-15.31	210	113	QP
941.8	34.31	31.17	3.14	46	-11.69	145	298	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
44.55	33.34	45.91	-12.57	40	-6.66	206	177	QP
144.46	30.74	43.26	-12.52	43.5	-12.76	159	261	QP
309.36	29.72	40.82	-11.1	46	-16.28	234	155	QP
531.49	31.87	36.58	-4.71	46	-14.13	129	351	QP
733.25	30.19	30.47	-0.28	46	-15.81	228	137	QP
922.4	34	31.14	2.86	46	-12	169	301	QP

Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- The other emission levels were very low against the limit.

9.7 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。

10 電源線傳導干擾之量測

10.1 適用標準

請見本報告3.1節第(1)項的規定。

10.2 量測方法

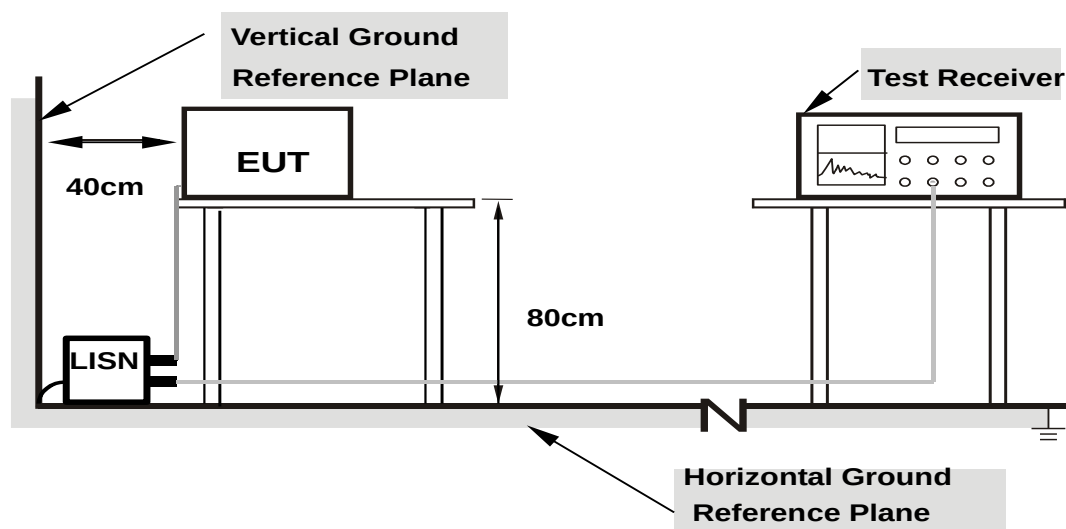
將待測物置於0.8米高的非金屬桌面，使其操作在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由0.15MHz至30MHz之間之電源線傳導放射強度。

10.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102783	Jan. 06, 2021	Jan. 05, 2022
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2020	Sep. 03, 2021
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 18, 2021	Jan. 17, 2022
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Aug. 18, 2020	Aug. 17, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.
4. The measurement uncertainty is 2.79 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. Test Date: 2021/02/24 ~ 2021/02/25

10.4 測試配置



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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

10.5 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

10.6 量測結果

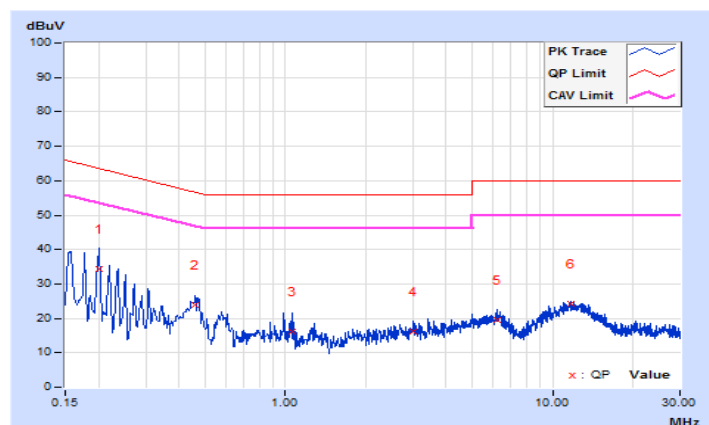
天線型式: Monopole

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 5		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.20083	10.12	24.12	3.22	34.24	13.34	63.58	53.58	-29.34	-40.24
2	0.45889	10.19	13.69	2.83	23.88	13.02	56.71	46.71	-32.83	-33.69
3	1.06103	10.26	5.92	0.39	16.18	10.65	56.00	46.00	-39.82	-35.35
4	3.01994	10.33	5.98	0.17	16.31	10.50	56.00	46.00	-39.69	-35.50
5	6.23396	10.41	9.26	1.23	19.67	11.64	60.00	50.00	-40.33	-38.36
6	11.66495	10.51	13.62	2.60	24.13	13.11	60.00	50.00	-35.87	-36.89

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) - 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

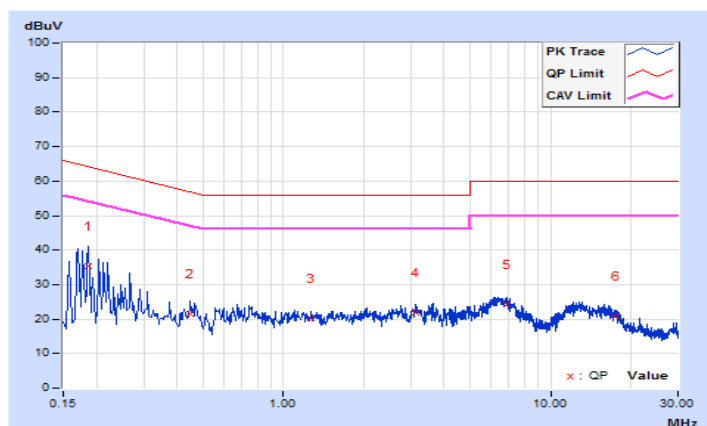


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 5		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.18519	10.11	25.12	3.48	35.23	13.59	64.25	54.25	-29.02	-40.66
2	0.44716	10.21	11.26	0.81	21.47	11.02	56.93	46.93	-35.46	-35.91
3	1.27608	10.29	9.94	2.78	20.23	13.07	56.00	46.00	-35.77	-32.93
4	3.11378	10.38	11.45	1.24	21.83	11.62	56.00	46.00	-34.17	-34.38
5	6.85174	10.51	13.83	1.02	24.34	11.53	60.00	50.00	-35.66	-38.47
6	17.63552	10.83	9.95	1.36	20.78	12.19	60.00	50.00	-39.22	-37.81

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

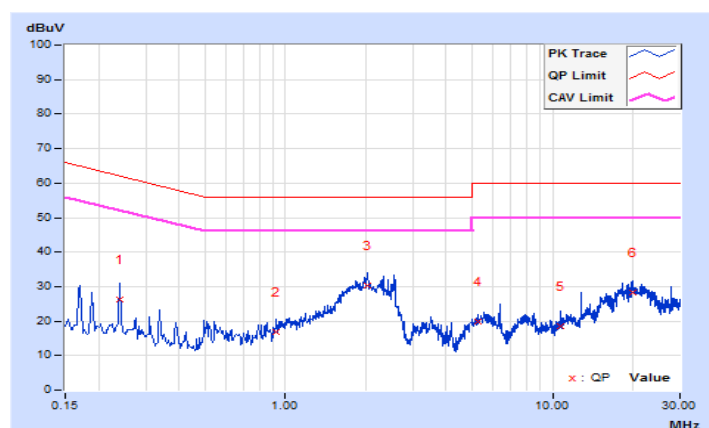


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 6		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.23993	10.08	16.20	8.20	26.28	18.28	62.10	52.10	-35.82	-33.82
2	0.92418	10.13	6.80	0.39	16.93	10.52	56.00	46.00	-39.07	-35.48
3	2.03853	10.16	20.12	13.51	30.28	23.67	56.00	46.00	-25.72	-22.33
4	5.25255	10.24	9.63	2.41	19.87	12.65	60.00	50.00	-40.13	-37.35
5	10.73046	10.33	8.25	0.73	18.58	11.06	60.00	50.00	-41.42	-38.94
6	19.89159	10.45	17.90	12.31	28.35	22.76	60.00	50.00	-31.65	-27.24

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

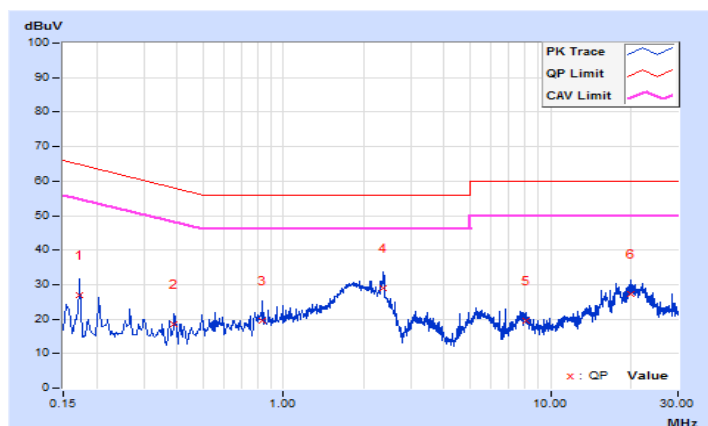


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 6		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.17346	10.08	16.69	5.75	26.77	15.83	64.79	54.79	-38.02	-38.96
2	0.38851	10.10	8.32	1.95	18.42	12.05	58.10	48.10	-39.68	-36.05
3	0.83816	10.14	9.54	1.80	19.68	11.94	56.00	46.00	-36.32	-34.06
4	2.37479	10.19	18.78	9.93	28.97	20.12	56.00	46.00	-27.03	-25.88
5	8.06384	10.36	9.17	0.84	19.53	11.20	60.00	50.00	-40.47	-38.80
6	19.89159	10.65	16.60	10.87	27.25	21.52	60.00	50.00	-32.75	-28.48

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



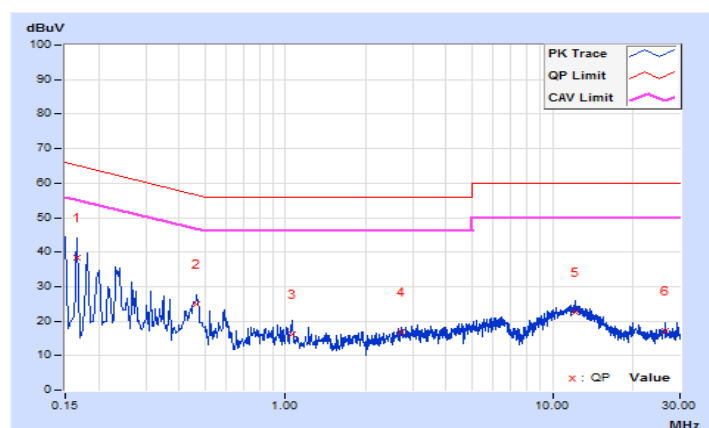
天線型式: Patch

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 7		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16564	10.10	28.19	5.87	38.29	15.97	65.18	55.18	-26.89	-39.21
2	0.46669	10.19	14.83	3.97	25.02	14.16	56.57	46.57	-31.55	-32.41
3	1.06103	10.26	5.89	0.46	16.15	10.72	56.00	46.00	-39.85	-35.28
4	2.71496	10.32	6.47	0.03	16.79	10.35	56.00	46.00	-39.21	-35.65
5	12.21235	10.52	11.90	0.29	22.42	10.81	60.00	50.00	-37.58	-39.19
6	26.35482	10.54	6.76	0.39	17.30	10.93	60.00	50.00	-42.70	-39.07

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

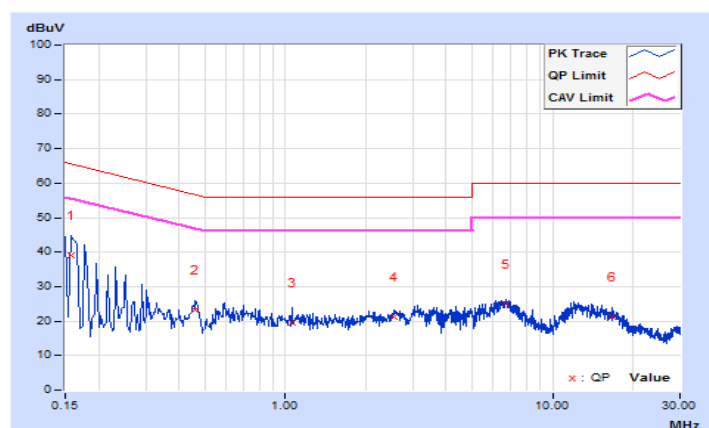


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 7		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15782	10.10	28.83	6.23	38.93	16.33	65.58	55.58	-26.65	-39.25
2	0.45889	10.21	13.17	1.80	23.38	12.01	56.71	46.71	-33.33	-34.70
3	1.06103	10.28	9.13	0.86	19.41	11.14	56.00	46.00	-36.59	-34.86
4	2.56638	10.35	10.94	1.31	21.29	11.66	56.00	46.00	-34.71	-34.34
5	6.70316	10.51	14.27	1.55	24.78	12.06	60.00	50.00	-35.22	-37.94
6	16.73622	10.80	10.35	1.28	21.15	12.08	60.00	50.00	-38.85	-37.92

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

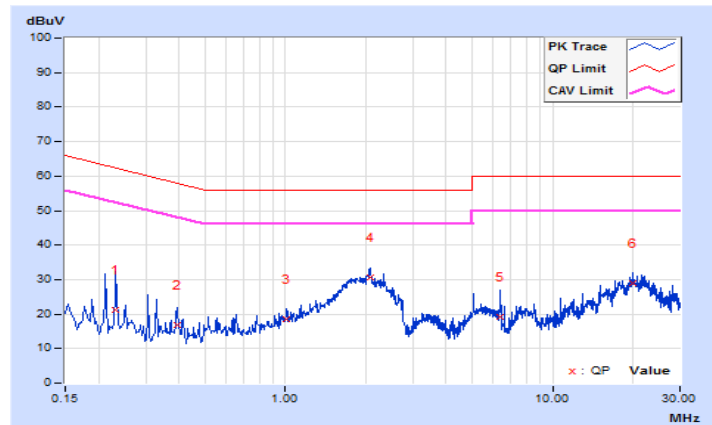


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 8		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.23211	10.08	11.20	2.71	21.28	12.79	62.37	52.37	-41.09	-39.58
2	0.39242	10.09	6.64	1.14	16.73	11.23	58.01	48.01	-41.28	-36.78
3	1.00629	10.14	8.37	0.94	18.51	11.08	56.00	46.00	-37.49	-34.92
4	2.08936	10.16	20.39	12.85	30.55	23.01	56.00	46.00	-25.45	-22.99
5	6.40209	10.26	9.00	2.07	19.26	12.33	60.00	50.00	-40.74	-37.67
6	20.02062	10.45	18.47	11.99	28.92	22.44	60.00	50.00	-31.08	-27.56

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

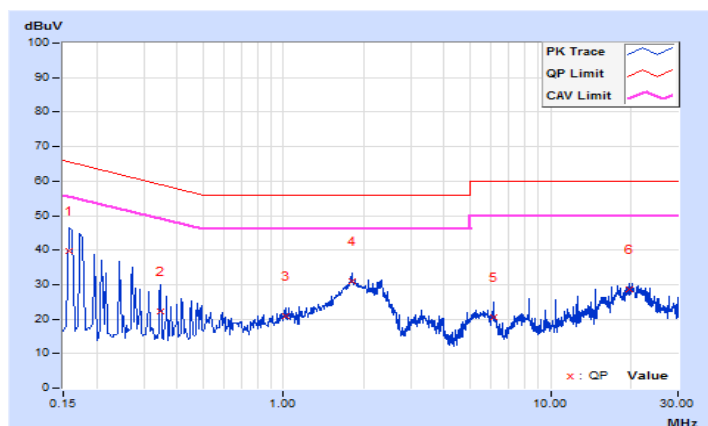


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 8		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15782	10.08	29.64	4.16	39.72	14.24	65.58	55.58	-25.86	-41.34
2	0.34550	10.09	12.24	3.19	22.33	13.28	59.07	49.07	-36.74	-35.79
3	1.01799	10.15	10.77	2.66	20.92	12.81	56.00	46.00	-35.08	-33.19
4	1.80393	10.17	20.68	14.31	30.85	24.48	56.00	46.00	-25.15	-21.52
5	6.11666	10.31	10.36	1.09	20.67	11.40	60.00	50.00	-39.33	-38.60
6	19.72737	10.64	17.84	10.22	28.48	20.86	60.00	50.00	-31.52	-29.14

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



11 6 dB 頻寬之要求

11.1 適用標準

請見本報告 3.1 節第(5)項的規定。

11.2 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 6 dB 的最大頻率範圍。

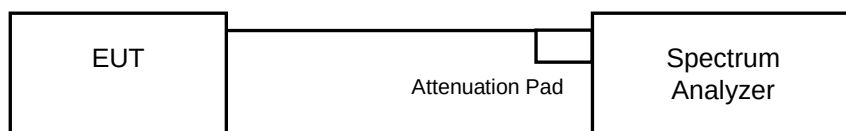
11.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.

11.4 測試配置



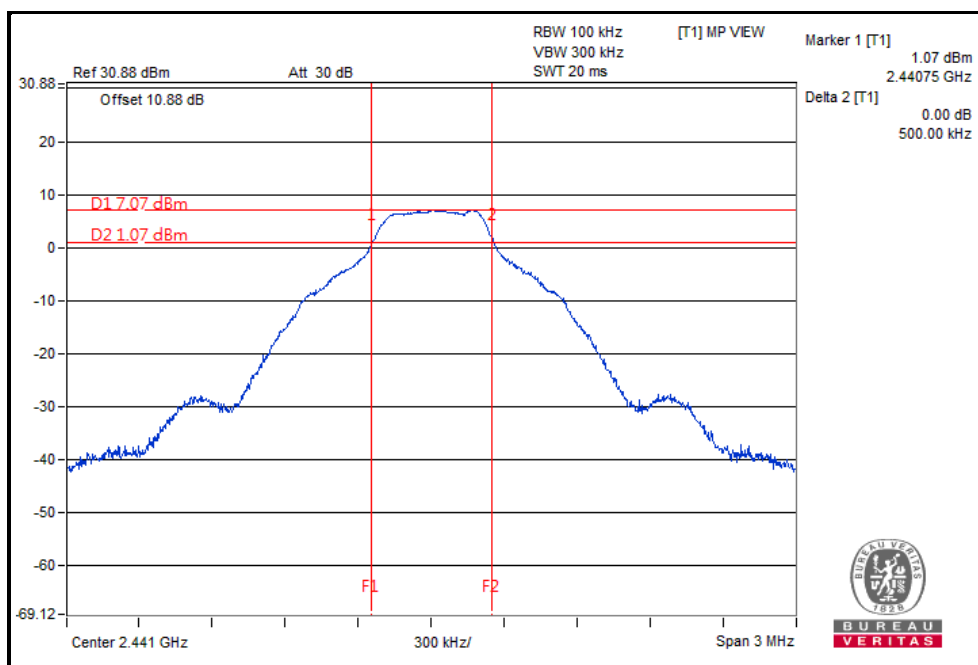
11.5 量測結果

<1M>

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2403	0.50	0.5	Pass
39	2441	0.50	0.5	Pass
78	2480	0.50	0.5	Pass

**此測試圖僅放測試結果最差的頻道。

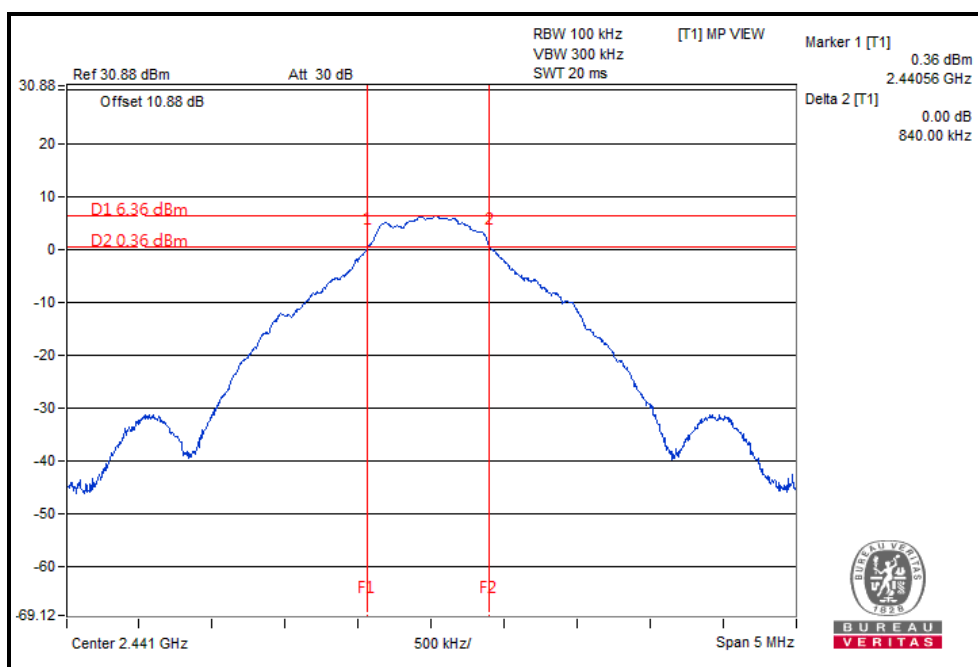


<2M>

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2403	0.92	0.5	Pass
39	2441	0.84	0.5	Pass
78	2480	0.88	0.5	Pass

**此測試圖僅放測試結果最差的頻道。



11.6 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。

12 峰值傳導輸出功率之量測

12.1 適用標準

請見本報告 3.1 節第(4)及(6)項的規定。

12.2 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。
- 計算其輸出功率峰值。

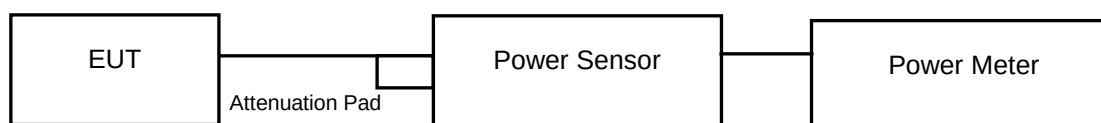
12.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Power Meter Anritsu	ML2495A	1232002	Dec. 09, 2020	Dec. 08, 2021
Power Sensor Anritsu	MA2411B	1207325	Dec. 09, 2020	Dec. 08, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 1.393 dB, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.
- Measurement Bandwidth of ML2495A is 65 MHz greater than 6 dB bandwidth of emission.
- Test date: 2021/03/02

12.4 測試配置



12.5 量測結果

<1M>

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2403	6.839	8.35	30	Pass
39	2441	6.823	8.34	30	Pass
78	2480	6.776	8.31	30	Pass

<2M>

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2403	6.808	8.33	30	Pass
39	2441	6.792	8.32	30	Pass
78	2480	6.776	8.31	30	Pass

12.6 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。

13 功率頻譜密度之量測

13.1 適用標準

請見本報告 3.1 節第(7)項的規定。

13.2 量測方法

- 將待測物之天線埠經由適當之衰減直接連至測試儀器。
- 設定解析頻寬為 3 kHz，視訊頻寬為 10 kHz，掃描時間為 auto。
- 掃描頻寬設於足夠觀察發射機所產生的主頻信號，並找到最大的峰值準位。
- 其峰值位準必須不大於 8 dBm。

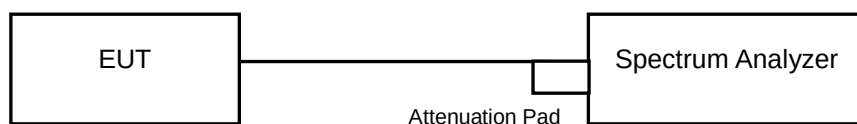
13.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.

13.4 測試配置



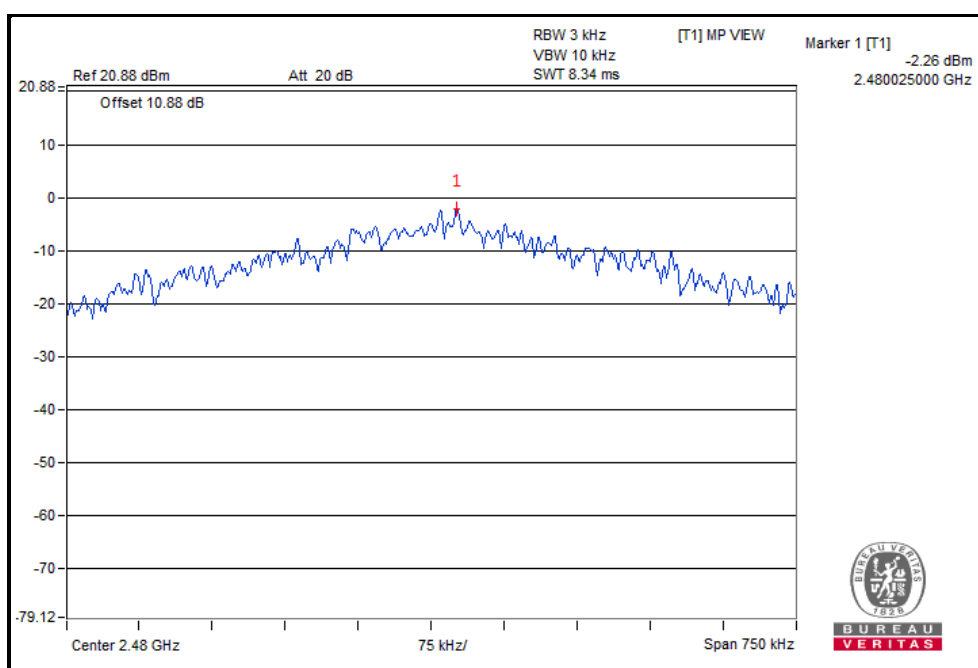
13.5 量測結果

<1M>

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2403	-2.72	8	Pass
39	2441	-3.03	8	Pass
78	2480	-2.26	8	Pass

**此測試圖僅放測試結果最差的頻道。

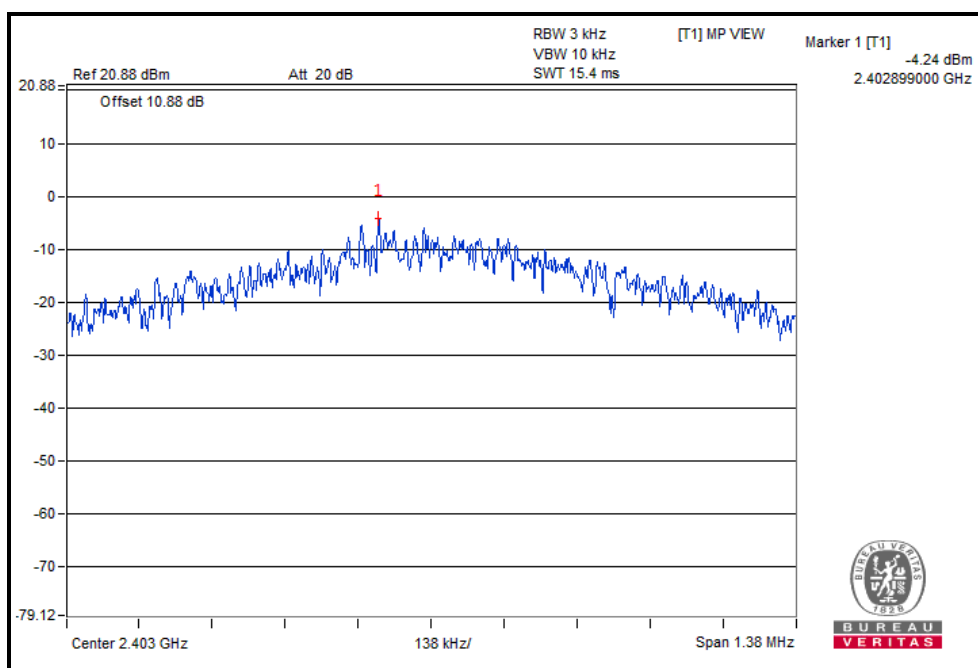


<2M>

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	Wayne Lin		

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2403	-4.24	8	Pass
39	2441	-4.65	8	Pass
78	2480	-4.72	8	Pass

**此測試圖僅放測試結果最差的頻道。



13.6 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。

Zigbee 頻段測試紀錄結果

14 帶外發射之量測

14.1 適用標準

請見本報告 3.1 節第(2)項的規定。

14.2 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。

Note: 對於 1 GHz 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。

發射諧波：

Peak 為 RBW = 1 MHz, VBW = 3 MHz；

Average 為 RBW = 1 MHz, VBW = 1 kHz

接收諧波：

Below 1 GHz

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

Above 1 GHz:

Peak 為 RBW = 1 MHz, VBW = 3 MHz；Average 為 RBW = 1 MHz, VBW = 3 MHz (RMS)

其它不必要之訊號

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

14.3 量測儀器

同 4.3 節

14.4 測試配置

同 4.4 節

14.5 場強度之計算

同 4.5 節

量測結果請見下頁。

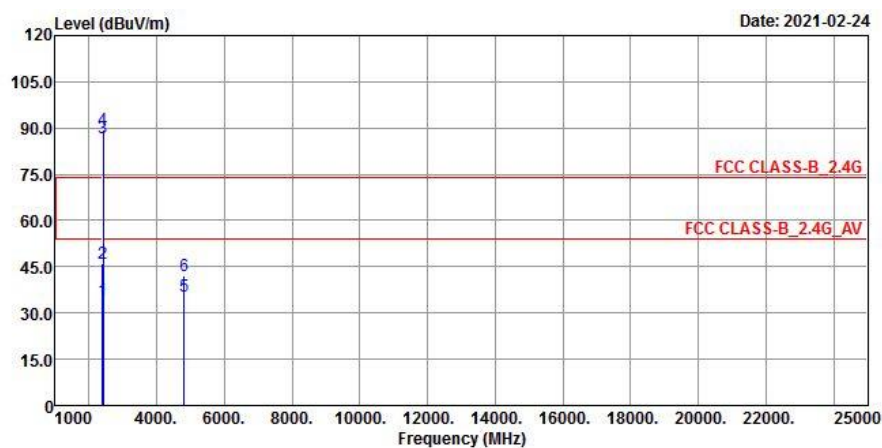
14.6 量測結果

14.6.1 發射諧波

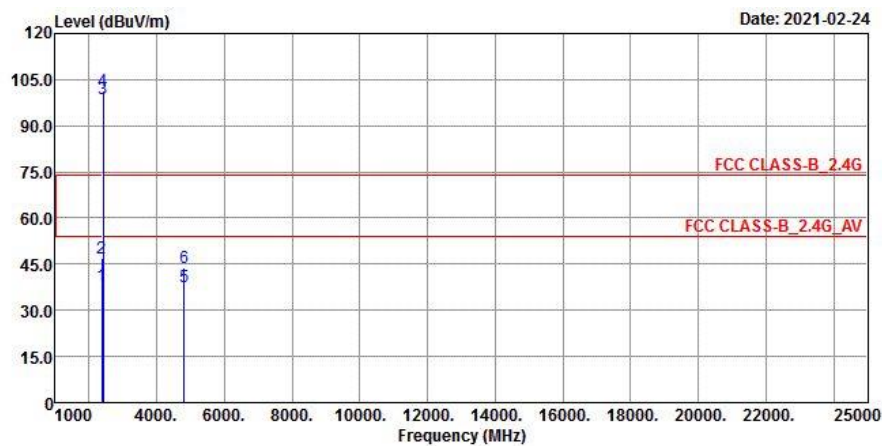
天線型式: Monopole

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



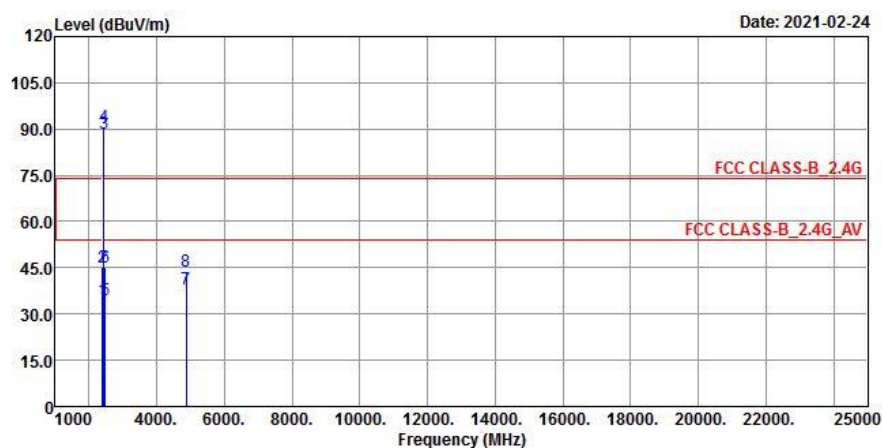
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.17	41.22	-7.05	54	-19.83	400	209	Average
2390	46.18	53.23	-7.05	74	-27.82	400	209	Peak
2405	86.8	93.85	-7.05	-----	-----	400	209	Average
2405	89.25	96.3	-7.05	-----	-----	400	209	Peak
4810	35.39	51.2	-15.81	54	-18.61	152	217	Average
4810	41.86	57.67	-15.81	74	-32.14	152	217	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2373	37.96	44.96	-7	54	-16.04	104	260	Average
2373	46.84	53.84	-7	74	-27.16	104	260	Peak
2405	98.78	105.83	-7.05	-----	-----	104	260	Average
2405	101.24	108.29	-7.05	-----	-----	104	260	Peak
4810	37.56	53.37	-15.81	54	-16.44	255	132	Average
4810	44	59.81	-15.81	74	-30	255	132	Peak

Remarks:

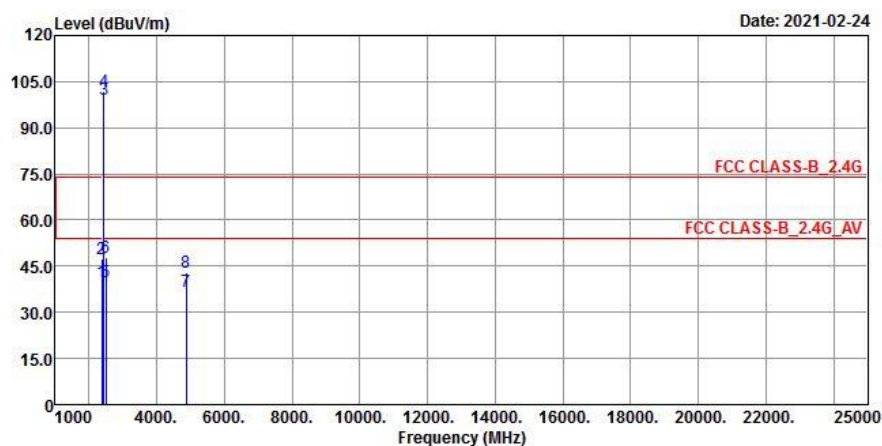
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2405 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



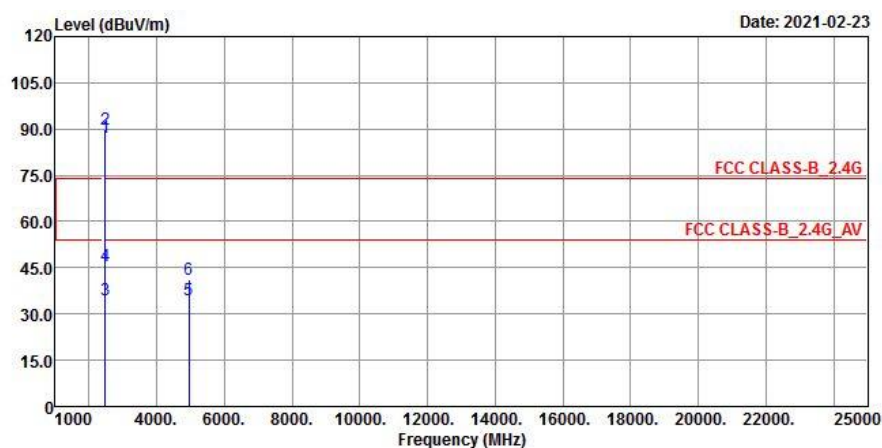
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.52	41.57	-7.05	54	-19.48	400	321	Average
2390	45.32	52.37	-7.05	74	-28.68	400	321	Peak
2435	88.38	95.37	-6.99	-----	-----	400	321	Average
2435	90.89	97.88	-6.99	-----	-----	400	321	Peak
2483.5	34.74	41.6	-6.86	54	-19.26	400	321	Average
2483.5	45.35	52.21	-6.86	74	-28.65	400	321	Peak
4870	38.23	54.17	-15.94	54	-15.77	199	234	Average
4870	43.87	59.81	-15.94	74	-30.13	199	234	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2371	39.69	46.69	-7	54	-14.31	103	263	Average
2371	47.46	54.46	-7	74	-26.54	103	263	Peak
2435	99.25	106.24	-6.99	-----	-----	103	263	Average
2435	101.68	108.67	-6.99	-----	-----	103	263	Peak
2499	39.7	46.5	-6.8	54	-14.3	103	263	Average
2499	47.89	54.69	-6.8	74	-26.11	103	263	Peak
4870	36.58	52.52	-15.94	54	-17.42	172	46	Average
4870	42.99	58.93	-15.94	74	-31.01	172	46	Peak

Remarks:

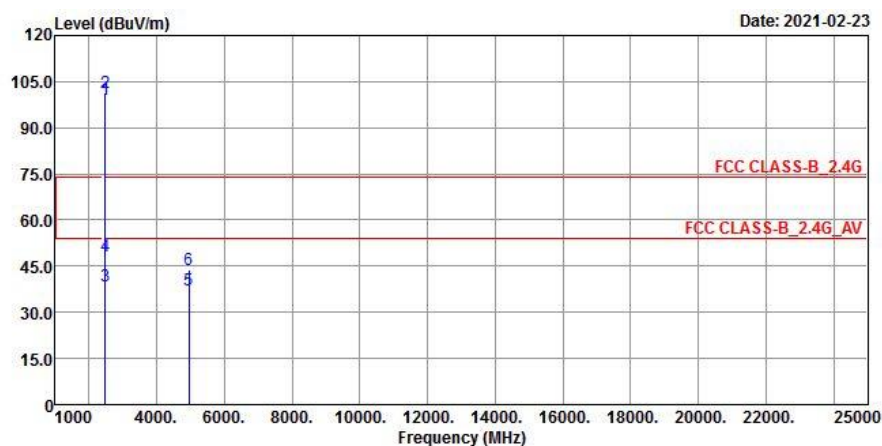
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2435 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	87.35	94.21	-6.86	-----	-----	400	143	Average
2475	89.87	96.73	-6.86	-----	-----	400	143	Peak
2483.5	34.55	41.41	-6.86	54	-19.45	400	143	Average
2483.5	45.46	52.32	-6.86	74	-28.54	400	143	Peak
4950	34.49	50.28	-15.79	54	-19.51	142	268	Average
4950	41.32	57.11	-15.79	74	-32.68	142	268	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	99.18	106.04	-6.86	-----	-----	100	263	Average
2475	101.55	108.41	-6.86	-----	-----	100	263	Peak
2483.5	38.62	45.48	-6.86	54	-15.38	100	263	Average
2483.5	48.43	55.29	-6.86	74	-25.57	100	263	Peak
4950	37.03	52.82	-15.79	54	-16.97	215	84	Average
4950	43.89	59.68	-15.79	74	-30.11	215	84	Peak

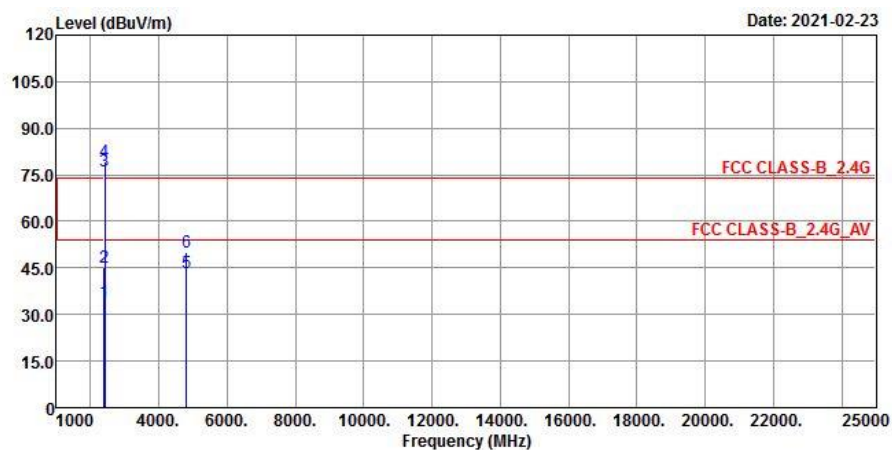
Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2475 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

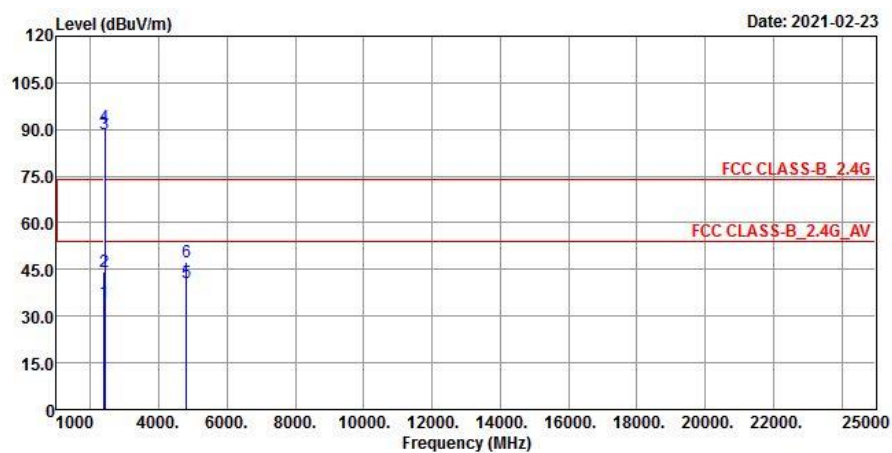
天線型式: Patch

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



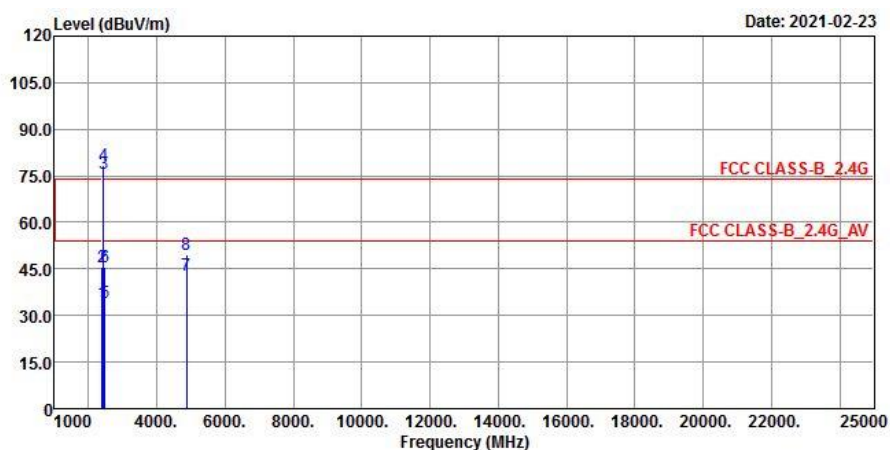
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.12	41.17	-7.05	54	-19.88	106	141	Average
2390	45.18	52.23	-7.05	74	-28.82	106	141	Peak
2405	76.3	83.35	-7.05	-----	-----	106	141	Average
2405	79.06	86.11	-7.05	-----	-----	106	141	Peak
4810	43.56	59.37	-15.81	54	-10.44	126	230	Average
4810	50	65.81	-15.81	74	-24	126	230	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.71	41.76	-7.05	54	-19.29	104	262	Average
2390	44.49	51.54	-7.05	74	-29.51	104	262	Peak
2405	88.42	95.47	-7.05	-----	-----	104	262	Average
2405	90.92	97.97	-7.05	-----	-----	104	262	Peak
4810	40.76	56.57	-15.81	54	-13.24	227	105	Average
4810	47.38	63.19	-15.81	74	-26.62	227	105	Peak

Remarks:

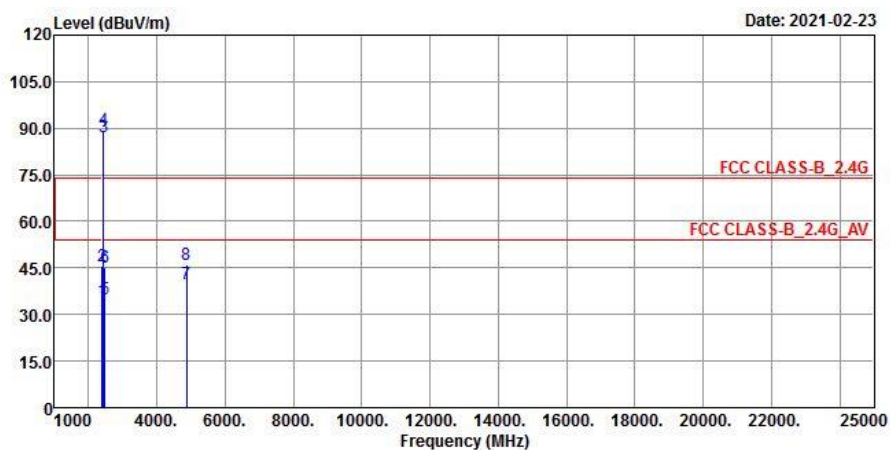
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2405 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



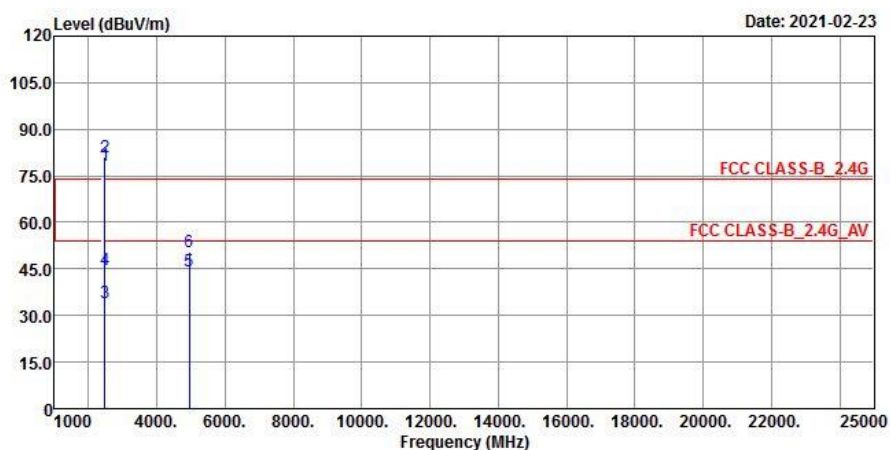
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	33.98	41.03	-7.05	54	-20.02	123	144	Average
2390	45.49	52.54	-7.05	74	-28.51	123	144	Peak
2435	75.57	82.56	-6.99	-----	-----	123	144	Average
2435	78.17	85.16	-6.99	-----	-----	123	144	Peak
2483.5	34.11	40.97	-6.86	54	-19.89	123	144	Average
2483.5	45.54	52.4	-6.86	74	-28.46	123	144	Peak
4870	42.78	58.72	-15.94	54	-11.22	138	145	Average
4870	49.44	65.38	-15.94	74	-24.56	138	145	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.55	41.6	-7.05	54	-19.45	130	263	Average
2390	45.8	52.85	-7.05	74	-28.2	130	263	Peak
2435	87.08	94.07	-6.99	-----	-----	130	263	Average
2435	89.51	96.5	-6.99	-----	-----	130	263	Peak
2483.5	35.16	42.02	-6.86	54	-18.84	130	263	Average
2483.5	44.96	51.82	-6.86	74	-29.04	130	263	Peak
4870	39.73	55.67	-15.94	54	-14.27	163	259	Average
4870	46.14	62.08	-15.94	74	-27.86	163	259	Peak

Remarks:

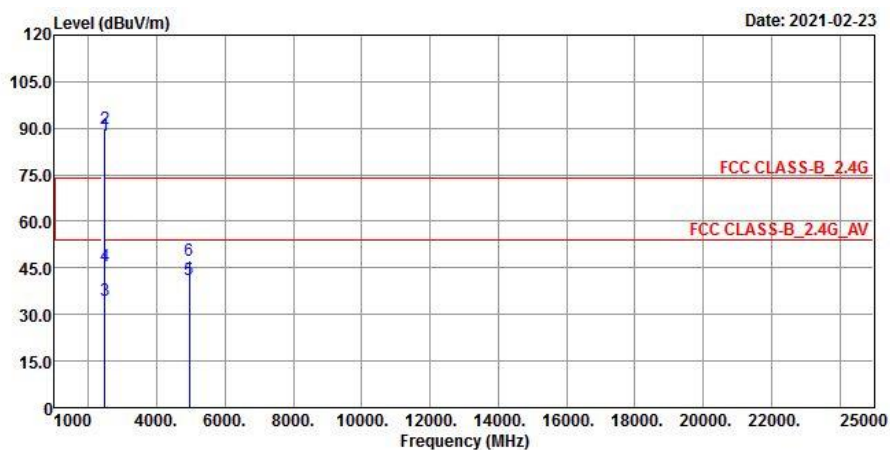
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2435 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	78.21	85.07	-6.86	-----	-----	100	240	Average
2475	80.93	87.79	-6.86	-----	-----	100	240	Peak
2483.5	34.1	40.96	-6.86	54	-19.9	100	240	Average
2483.5	44.81	51.67	-6.86	74	-29.19	100	240	Peak
4950	44.12	59.91	-15.79	54	-9.88	221	342	Average
4950	50.64	66.43	-15.79	74	-23.36	221	342	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	87.51	94.37	-6.86	-----	-----	100	263	Average
2475	90.09	96.95	-6.86	-----	-----	100	263	Peak
2483.5	34.66	41.52	-6.86	54	-19.34	100	263	Average
2483.5	45.64	52.5	-6.86	74	-28.36	100	263	Peak
4950	41.03	56.82	-15.79	54	-12.97	184	246	Average
4950	47.56	63.35	-15.79	74	-26.44	184	246	Peak

Remarks:

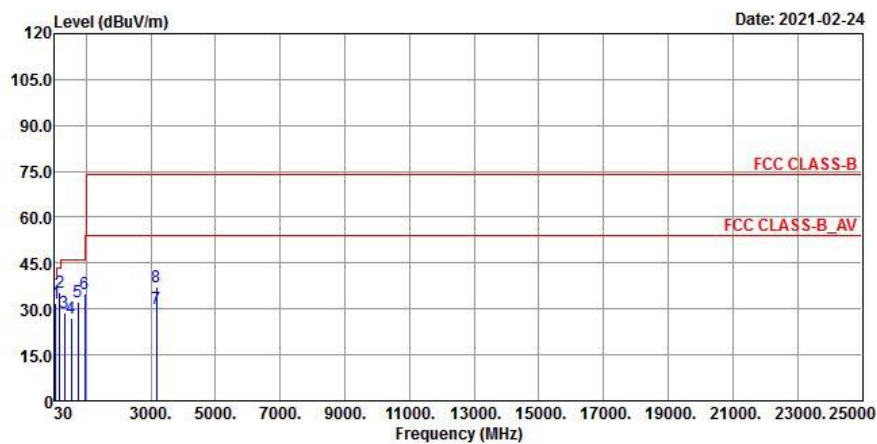
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2475 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

14.6.2 接收諧波

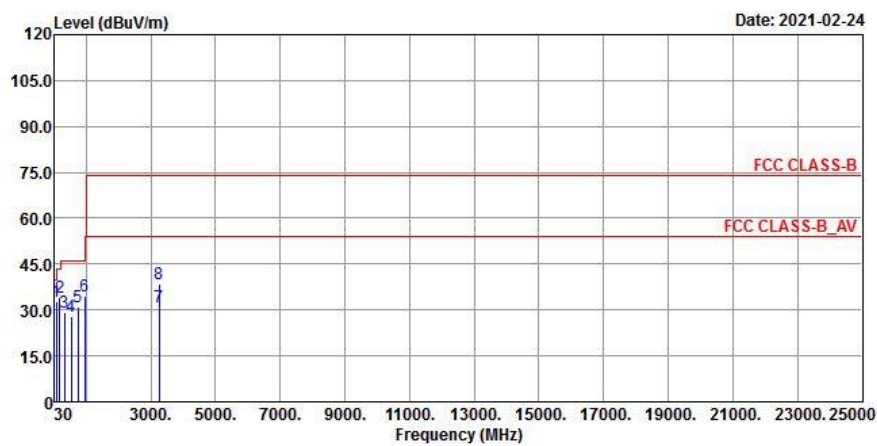
天線型式: Monopole

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
62.98	31.77	45.19	-13.42	40	-8.23	129	265	QP
186.17	35.58	50.85	-15.27	43.5	-7.92	148	320	QP
336.52	28.59	38.92	-10.33	46	-17.41	189	65	QP
540.22	27.14	31.67	-4.53	46	-18.86	111	236	QP
757.5	32.18	31.95	0.23	46	-13.82	227	48	QP
957.32	35.18	31.81	3.37	46	-10.82	154	301	QP
3176	29.98	50.32	-20.34	54	-24.02	180	221	Average
3176	37.19	57.53	-20.34	74	-36.81	180	221	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
71.71	32.92	48.12	-15.2	40	-7.08	101	256	QP
186.17	34.22	49.49	-15.27	43.5	-9.28	196	331	QP
332.64	29.12	39.52	-10.4	46	-16.88	178	44	QP
545.07	28.06	32.49	-4.43	46	-17.94	245	178	QP
743.92	31.05	30.99	0.06	46	-14.95	136	242	QP
955.38	34.71	31.37	3.34	46	-11.29	271	68	QP
3261	31.11	51.84	-20.73	54	-22.89	145	307	Average
3261	38.37	59.1	-20.73	74	-35.63	145	307	Peak

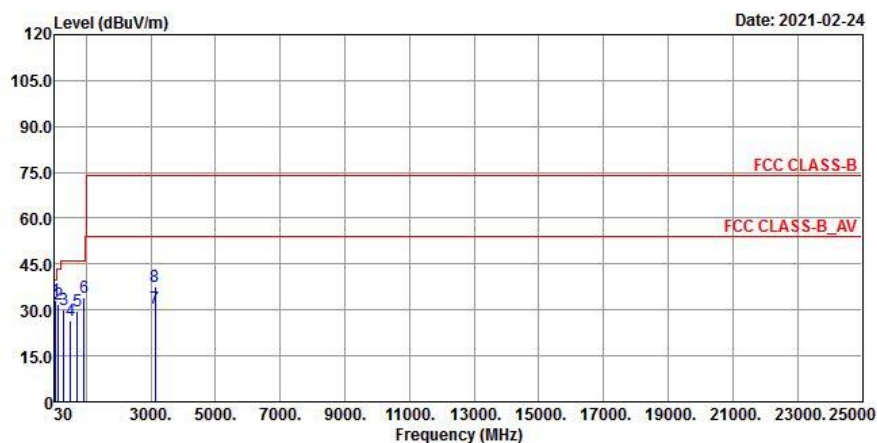
Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

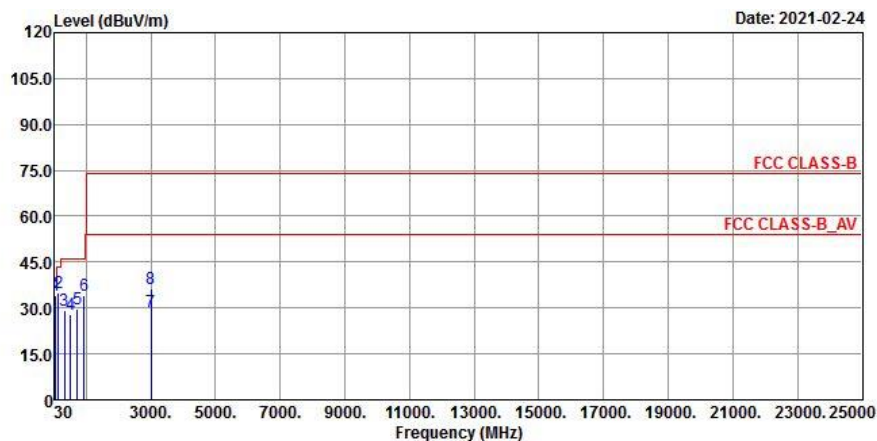
天線型式: Patch

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
54.25	33.3	46.18	-12.88	40	-6.7	125	203	QP
144.46	31.85	44.37	-12.52	43.5	-11.65	178	59	QP
314.21	30.16	41.07	-10.91	46	-15.84	169	233	QP
518.88	26.47	31.56	-5.09	46	-19.53	204	360	QP
723.55	29.61	30.36	-0.75	46	-16.39	244	121	QP
935.98	34.06	31.06	3	46	-11.94	201	342	QP
3142	30.47	50.67	-20.2	54	-23.53	166	307	Average
3142	37.72	57.92	-20.2	74	-36.28	166	307	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
48.43	34.17	46.65	-12.48	40	-5.83	258	169	QP
144.46	35.12	47.64	-12.52	43.5	-8.38	104	233	QP
332.64	29.12	39.52	-10.4	46	-16.88	111	294	QP
520.82	27.99	33.01	-5.02	46	-18.01	225	238	QP
717.73	29.88	30.82	-0.94	46	-16.12	247	199	QP
926.28	34.25	31.28	2.97	46	-11.75	103	46	QP
3006	28.77	49.85	-21.08	54	-25.23	157	264	Average
3006	36.1	57.18	-21.08	74	-37.9	157	264	Peak

Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

14.6.3 其它不必要之訊號

9 kHz ~ 30 MHz Data:

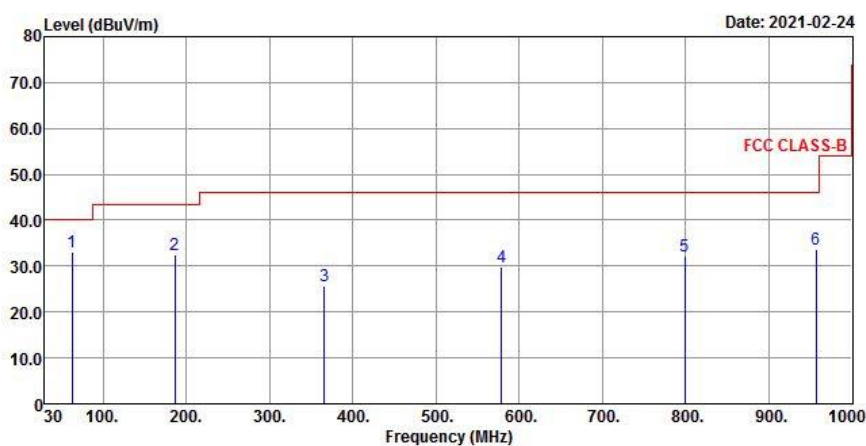
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Data:

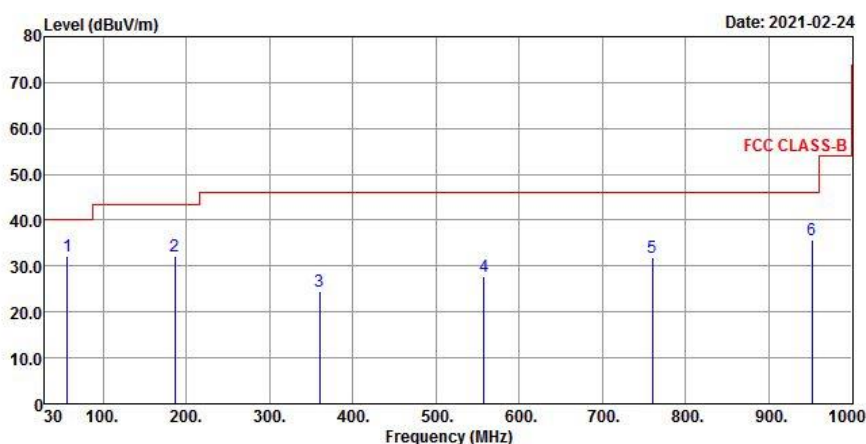
天線型式: Monopole

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
62.98	33.2	46.62	-13.42	40	-6.8	122	315	QP
186.17	32.44	47.71	-15.27	43.5	-11.06	251	321	QP
365.62	25.66	35.16	-9.5	46	-20.34	108	229	QP
579.02	29.86	33.28	-3.42	46	-16.14	185	278	QP
799.21	32.15	31.81	0.34	46	-13.85	116	230	QP
956.35	33.54	30.19	3.35	46	-12.46	329	48	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
57.16	32.18	45.28	-13.1	40	-7.82	126	31	QP
186.17	32.17	47.44	-15.27	43.5	-11.33	186	255	QP
359.8	24.56	34.29	-9.73	46	-21.44	198	304	QP
557.68	27.81	31.93	-4.12	46	-18.19	226	87	QP
760.41	32.03	31.79	0.24	46	-13.97	187	263	QP
951.5	35.74	32.44	3.3	46	-10.26	287	67	QP

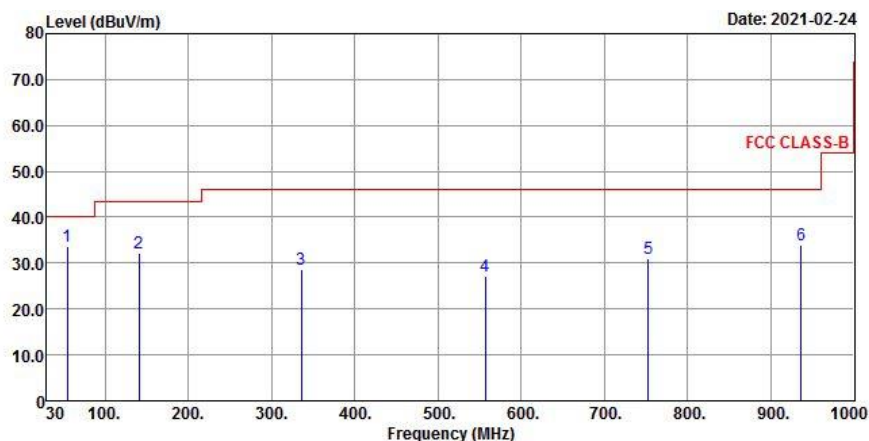
Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- The other emission levels were very low against the limit.

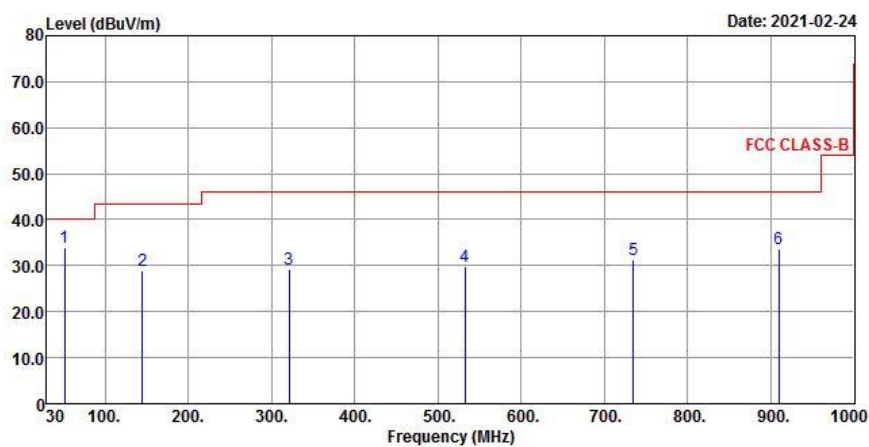
天線型式: Patch

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

Horizontal



Vertical

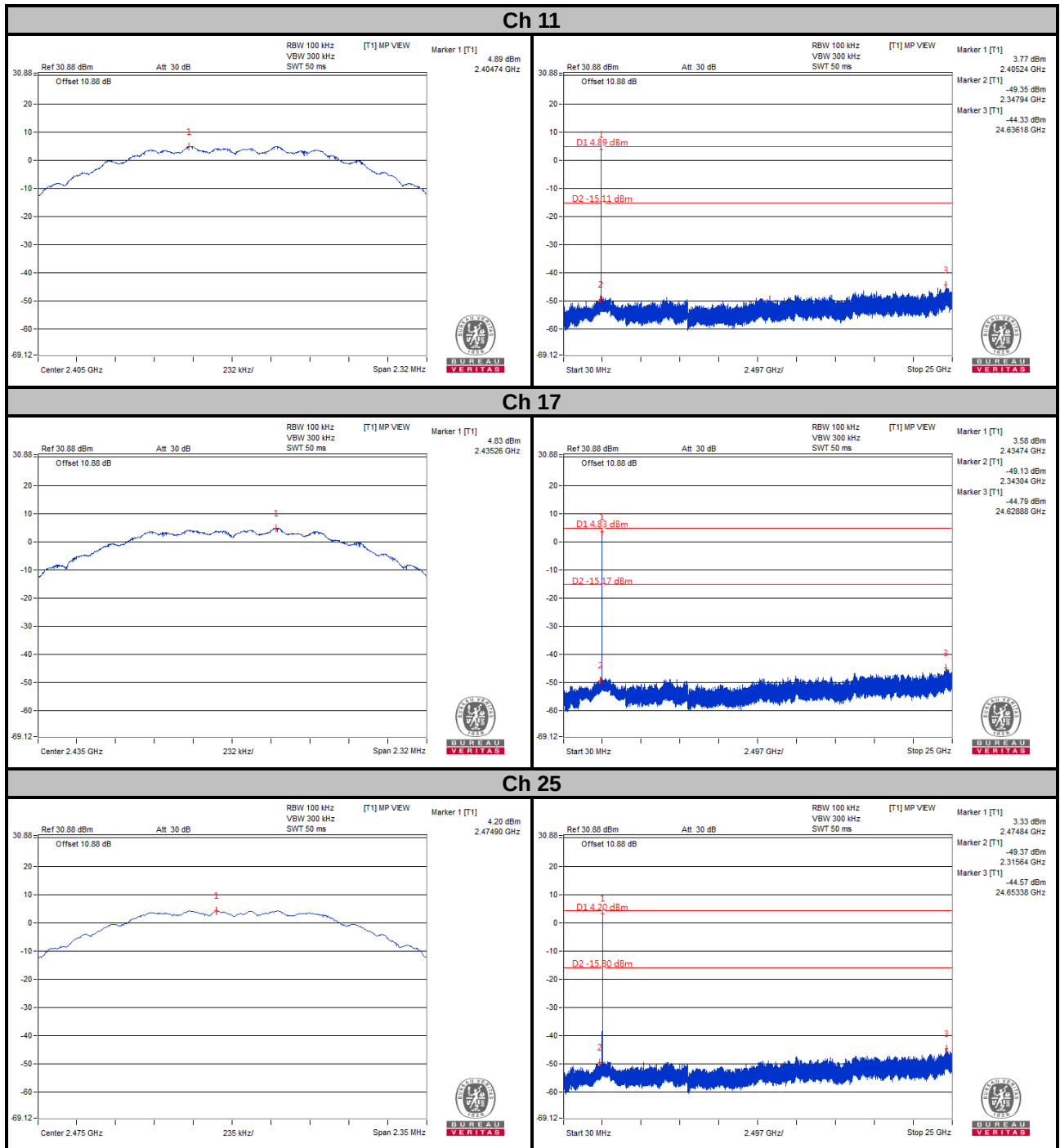


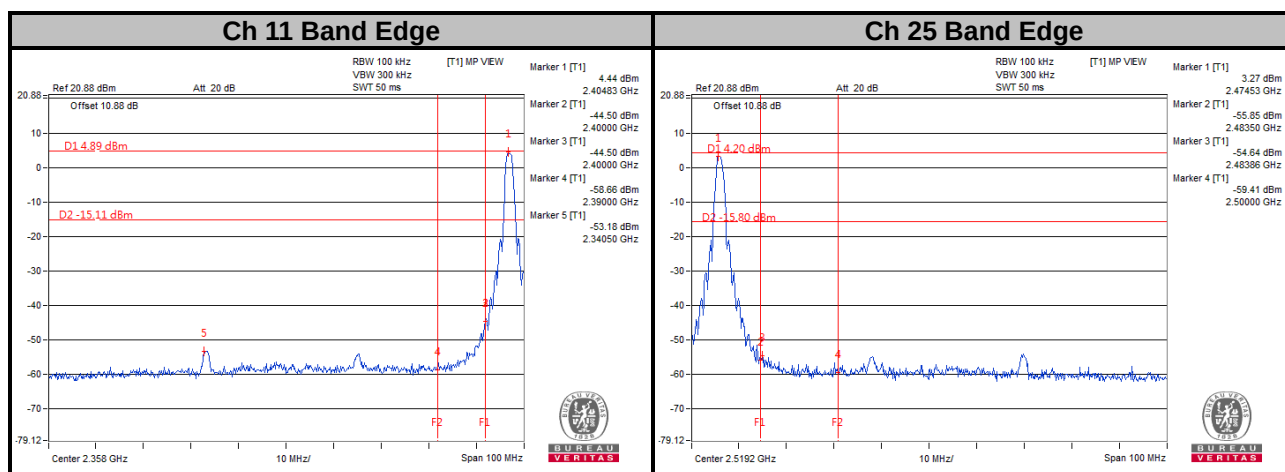
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
54.25	33.65	46.53	-12.88	40	-6.35	107	236	QP
140.58	32.19	44.94	-12.75	43.5	-11.31	158	220	QP
335.55	28.54	38.89	-10.35	46	-17.46	142	313	QP
556.71	27.26	31.42	-4.16	46	-18.74	169	258	QP
752.65	30.92	30.72	0.2	46	-15.08	225	181	QP
935.98	34.01	31.01	3	46	-11.99	263	177	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
51.34	34.01	46.56	-12.55	40	-5.99	115	56	QP
144.46	29.02	41.54	-12.52	43.5	-14.48	264	113	QP
321	29.29	39.99	-10.7	46	-16.71	351	222	QP
532.46	29.82	34.51	-4.69	46	-16.18	150	274	QP
735.19	31.18	31.35	-0.17	46	-14.82	305	194	QP
909.79	33.59	31.1	2.49	46	-12.41	183	26	QP

Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- The other emission levels were very low against the limit.

14.7 帶外發射之量測 (傳導)





14.8 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。

15 電源線傳導干擾之量測

15.1 適用標準

請見本報告3.1節第(1)項的規定。

15.2 量測方法

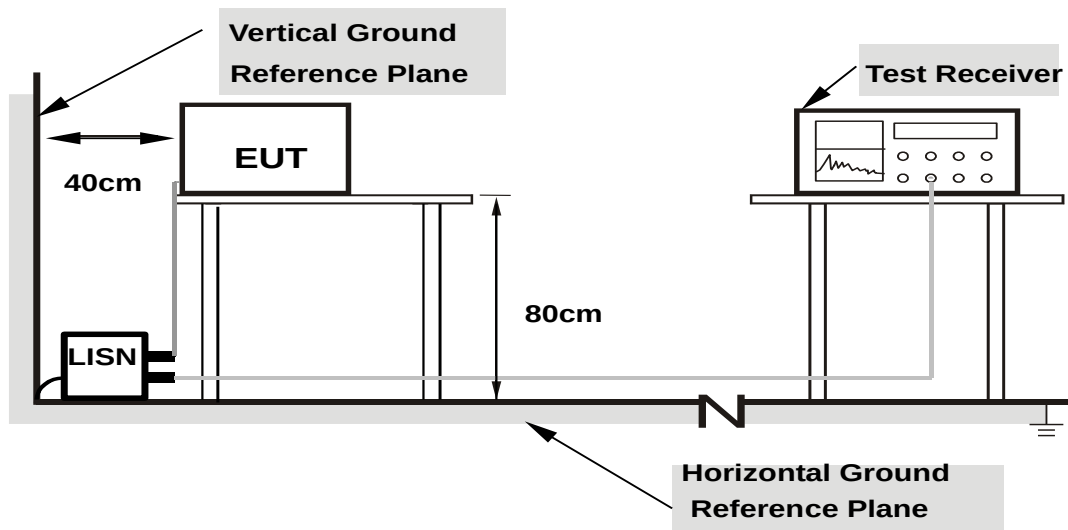
將待測物置於0.8米高的非金屬桌面，使其操作在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由0.15MHz至30MHz之間之電源線傳導放射強度。

15.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102783	Jan. 06, 2021	Jan. 05, 2022
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2020	Sep. 03, 2021
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 18, 2021	Jan. 17, 2022
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Aug. 18, 2020	Aug. 17, 2021
Software ADT	BV ADT_Conf_ V7.3.7.4	NA	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.
4. The measurement uncertainty is 2.79 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. Test Date: 2021/02/24 ~ 2021/02/25

15.4 測試配置



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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

15.5 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

15.6 量測結果

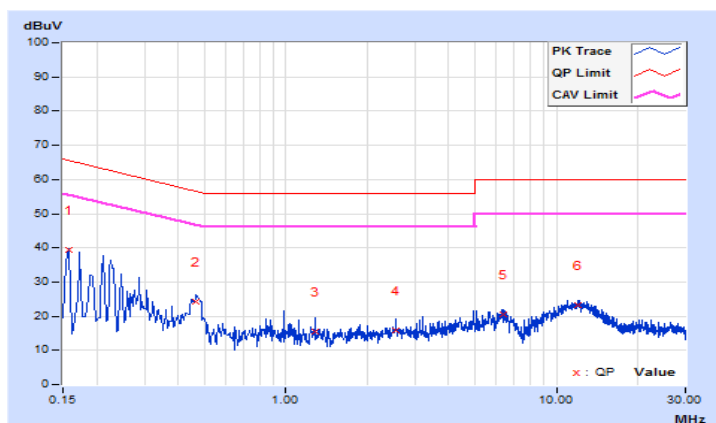
天線型式: Monopole

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 9		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15760	10.09	29.35	6.59	39.44	16.68	65.59	55.59	-26.15	-38.91
2	0.46301	10.19	13.96	3.66	24.15	13.85	56.64	46.64	-32.49	-32.79
3	1.27999	10.27	5.21	0.62	15.48	10.89	56.00	46.00	-40.52	-35.11
4	2.54664	10.31	5.41	0.59	15.72	10.90	56.00	46.00	-40.28	-35.10
5	6.33171	10.42	10.26	1.20	20.68	11.62	60.00	50.00	-39.32	-38.38
6	12.08332	10.52	12.84	1.52	23.36	12.04	60.00	50.00	-36.64	-37.96

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) - 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

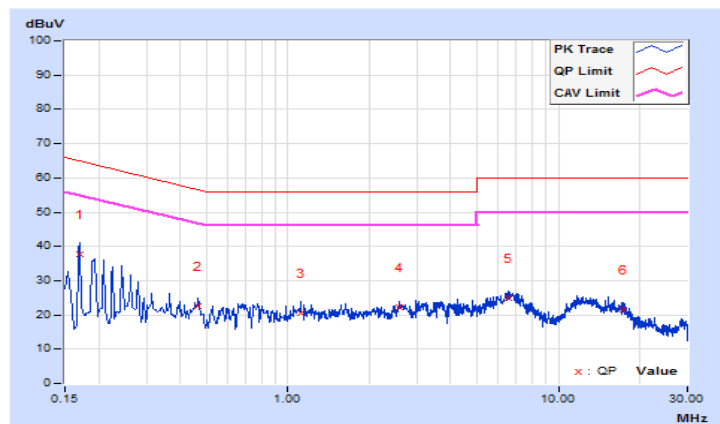


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 9		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16955	10.10	27.46	5.34	37.56	15.44	64.98	54.98	-27.42	-39.54
2	0.46669	10.21	12.41	2.05	22.62	12.26	56.57	46.57	-33.95	-34.31
3	1.11186	10.28	10.40	2.12	20.68	12.40	56.00	46.00	-35.32	-33.60
4	2.57029	10.35	11.83	1.62	22.18	11.97	56.00	46.00	-33.82	-34.03
5	6.49202	10.50	14.31	1.44	24.81	11.94	60.00	50.00	-35.19	-38.06
6	17.29926	10.82	10.58	1.94	21.40	12.76	60.00	50.00	-38.60	-37.24

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

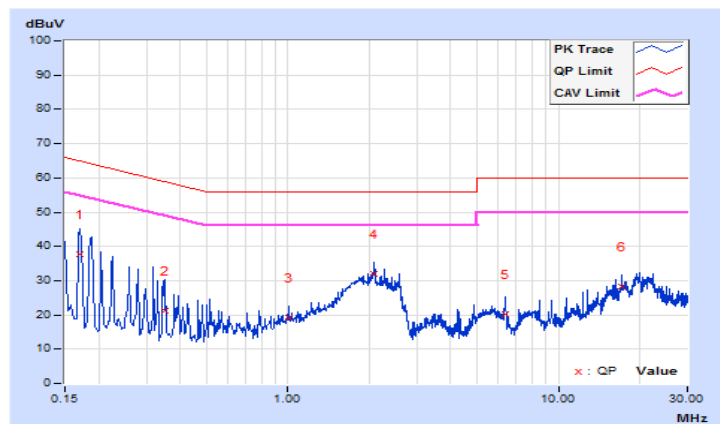


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 10		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16955	10.07	27.62	3.39	37.69	13.46	64.98	54.98	-27.29	-41.52
2	0.35332	10.09	11.17	2.19	21.26	12.28	58.88	48.88	-37.62	-36.60
3	1.01020	10.14	9.13	0.69	19.27	10.83	56.00	46.00	-36.73	-35.17
4	2.08936	10.16	21.90	13.33	32.06	23.49	56.00	46.00	-23.94	-22.51
5	6.37081	10.26	9.98	2.08	20.24	12.34	60.00	50.00	-39.76	-37.66
6	17.17023	10.41	17.75	8.21	28.16	18.62	60.00	50.00	-31.84	-31.38

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

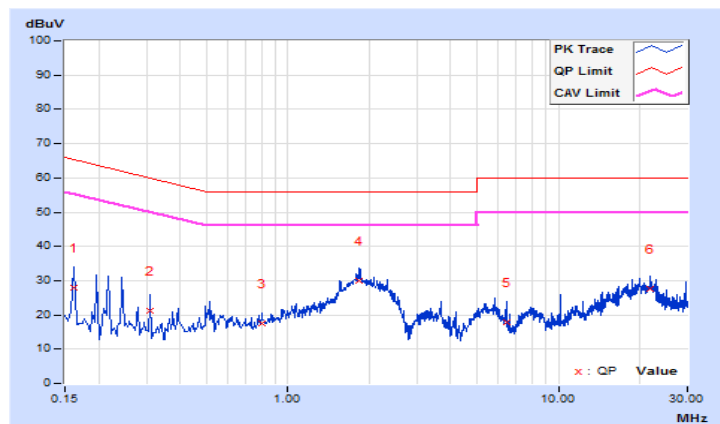


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 10		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16173	10.08	17.96	0.16	28.04	10.24	65.37	55.37	-37.33	-45.13
2	0.31031	10.09	10.98	3.37	21.07	13.46	59.96	49.96	-38.89	-36.50
3	0.80297	10.13	7.46	1.50	17.59	11.63	56.00	46.00	-38.41	-34.37
4	1.84303	10.17	19.76	14.41	29.93	24.58	56.00	46.00	-26.07	-21.42
5	6.44119	10.32	7.47	3.58	17.79	13.90	60.00	50.00	-42.21	-36.10
6	21.75666	10.60	17.14	10.26	27.74	20.86	60.00	50.00	-32.26	-29.14

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



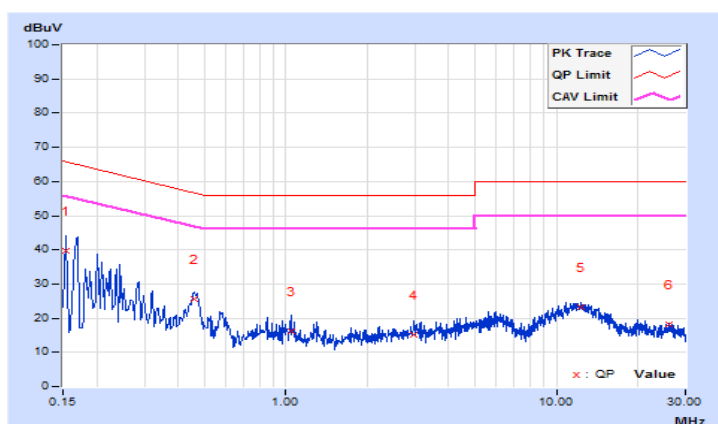
天線型式: Patch

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 11		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15391	10.09	29.73	7.53	39.82	17.62	65.79	55.79	-25.97	-38.17
2	0.45816	10.19	15.49	2.73	25.68	12.92	56.73	46.73	-31.05	-33.81
3	1.04539	10.26	5.94	5.95	16.20	16.21	56.00	46.00	-39.80	-29.79
4	2.97693	10.33	4.96	6.45	15.29	16.78	56.00	46.00	-40.71	-29.22
5	12.31010	10.52	12.72	0.59	23.24	11.11	60.00	50.00	-36.76	-38.89
6	26.25316	10.54	7.72	7.43	18.26	17.97	60.00	50.00	-41.74	-32.03

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) - 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

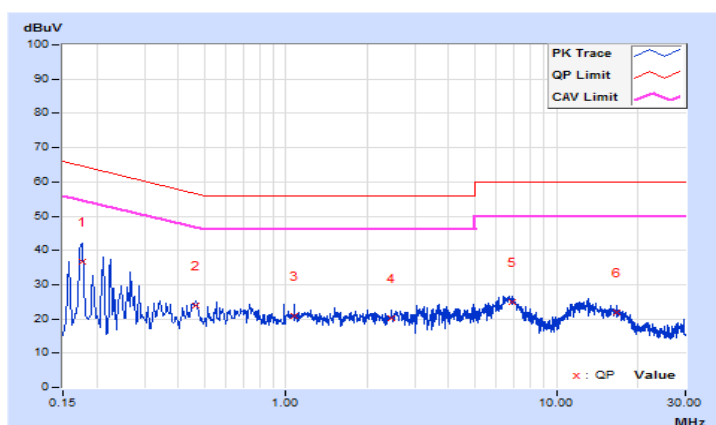


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/24
測試模式	Mode 11		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.17605	10.11	26.45	4.98	36.56	15.09	64.67	54.67	-28.11	-39.58
2	0.46280	10.21	13.64	2.31	23.85	12.52	56.64	46.64	-32.79	-34.12
3	1.07667	10.28	10.53	1.62	20.81	11.90	56.00	46.00	-35.19	-34.10
4	2.45690	10.35	9.84	1.71	20.19	12.06	56.00	46.00	-35.81	-33.94
5	6.91039	10.51	14.36	0.72	24.87	11.23	60.00	50.00	-35.13	-38.77
6	16.73622	10.80	11.22	3.23	22.02	14.03	60.00	50.00	-37.98	-35.97

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

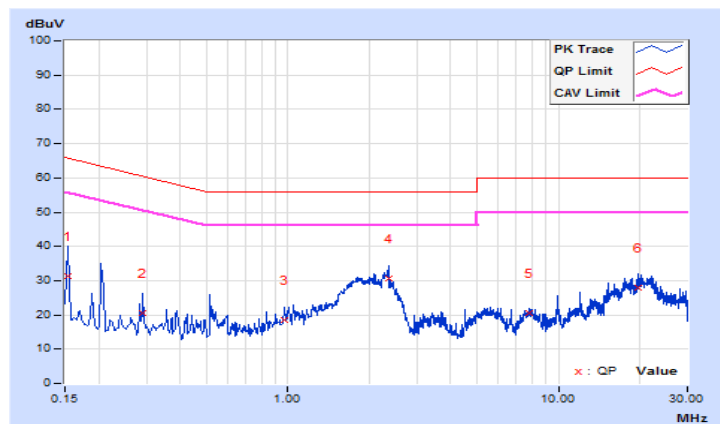


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 12		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15391	10.07	21.10	3.59	31.17	13.66	65.79	55.79	-34.62	-42.13
2	0.29076	10.08	10.62	1.87	20.70	11.95	60.50	50.50	-39.80	-38.55
3	0.97501	10.14	8.40	1.61	18.54	11.75	56.00	46.00	-37.46	-34.25
4	2.35524	10.17	20.34	12.05	30.51	22.22	56.00	46.00	-25.49	-23.78
5	7.78232	10.28	10.25	1.39	20.53	11.67	60.00	50.00	-39.47	-38.33
6	19.62571	10.44	17.51	10.93	27.95	21.37	60.00	50.00	-32.05	-28.63

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

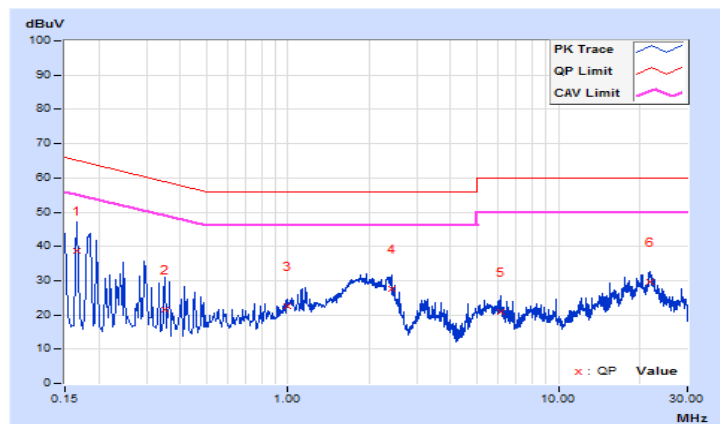


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	24°C, 65%RH
測試者	Tim Chen	測試日期	2021/2/25
測試模式	Mode 12		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16564	10.08	28.61	2.96	38.69	13.04	65.18	55.18	-26.49	-42.14
2	0.34941	10.09	11.48	2.40	21.57	12.49	58.98	48.98	-37.41	-36.49
3	0.99847	10.15	12.57	2.71	22.72	12.86	56.00	46.00	-33.28	-33.14
4	2.40955	10.19	17.31	9.48	27.50	19.67	56.00	46.00	-28.50	-26.33
5	6.12839	10.31	10.61	0.14	20.92	10.45	60.00	50.00	-39.08	-39.55
6	21.90915	10.60	18.91	7.30	29.51	17.90	60.00	50.00	-30.49	-32.10

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



16 6 dB 頻寬之要求

16.1 適用標準

請見本報告 3.1 節第(5)項的規定。

16.2 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 6 dB 的最大頻率範圍。

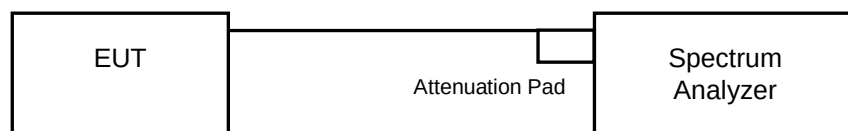
16.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.

16.4 測試配置

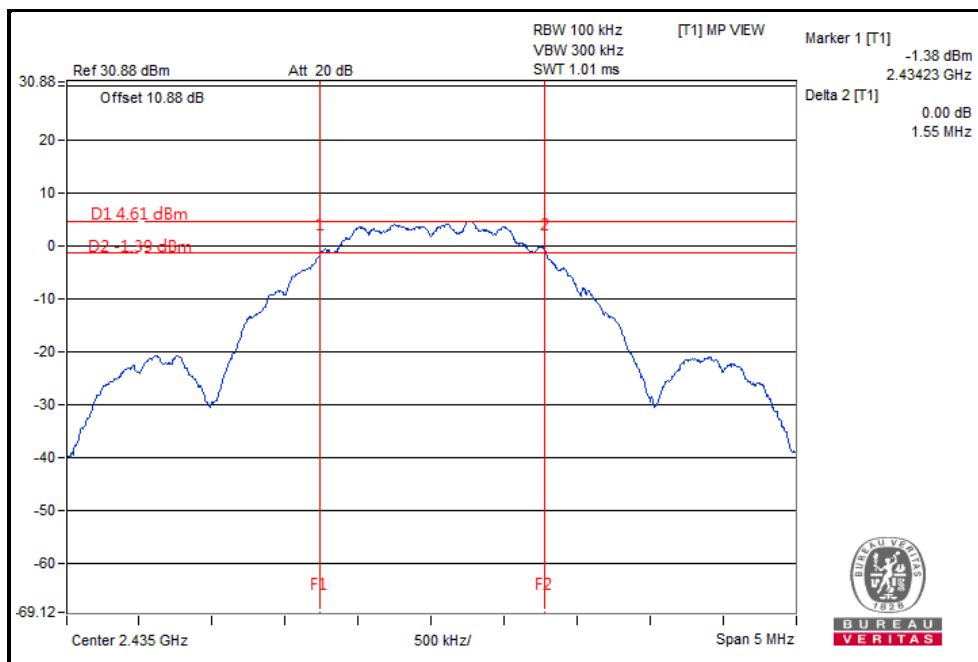


16.5 量測結果

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	黃震宇		

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
11	2405	1.55	0.5	Pass
17	2435	1.55	0.5	Pass
25	2475	1.57	0.5	Pass

**此測試圖僅放測試結果最差的頻道。



16.6 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。

17 峰值傳導輸出功率之量測

17.1 適用標準

請見本報告 3.1 節第(4)及(6)項的規定。

17.2 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。
- 計算其輸出功率峰值。

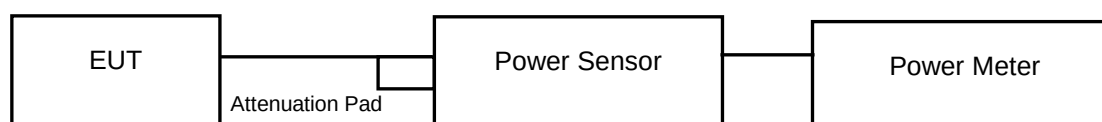
17.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Power Meter Anritsu	ML2495A	1232002	Dec. 09, 2020	Dec. 08, 2021
Power Sensor Anritsu	MA2411B	1207325	Dec. 09, 2020	Dec. 08, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 1.393 dB, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.
- Test date: 2021/03/02

17.4 測試配置



17.5 量測結果

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	黃震宇		

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
11	2405	6.792	8.32	30	Pass
17	2435	6.808	8.33	30	Pass
25	2475	6.823	8.34	30	Pass

17.6 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。

18 功率頻譜密度之量測

18.1 適用標準

請見本報告 3.1 節第(7)項的規定。

18.2 量測方法

- 將待測物之天線埠經由適當之衰減直接連至測試儀器。
- 設定解析頻寬為 3 kHz，視訊頻寬為 10 kHz，掃描時間為 auto。
- 掃描頻寬設於足夠觀察發射機所產生的主頻信號，並找到最大的峰值準位。
- 其峰值位準必須不大於 8 dBm / per 3kHz。

18.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.

18.4 測試配置

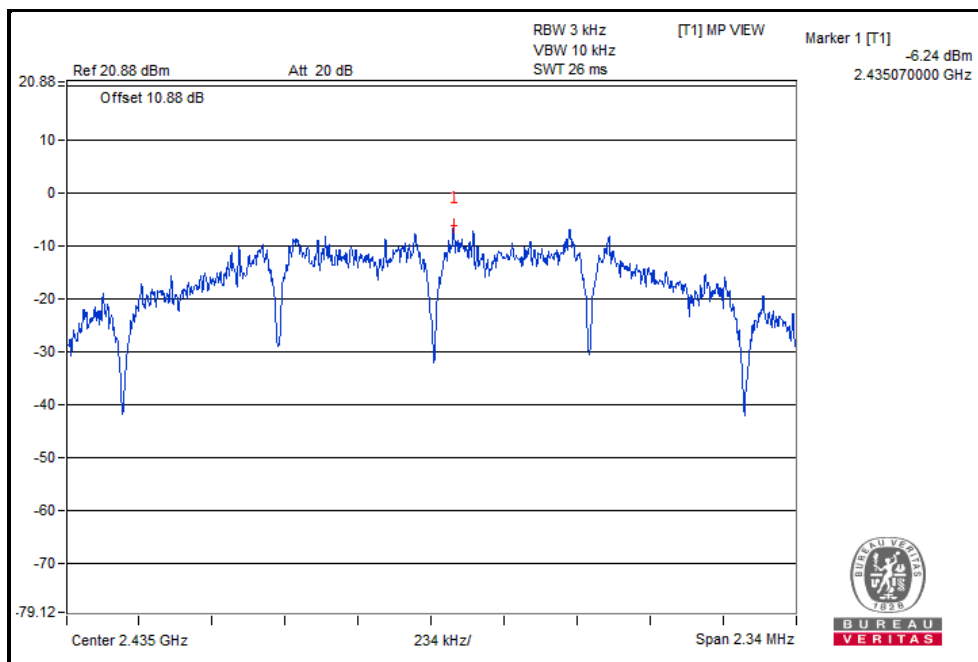


18.5 量測結果

操作模式	發射	測試日期	110 年 03 月 02 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	黃震宇		

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
11	2405	-6.95	8	Pass
17	2435	-6.24	8	Pass
25	2475	-6.41	8	Pass

**此測試圖僅放測試結果最差的頻道。



18.6 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。

Thread 頻段測試紀錄結果

19 帶外發射之量測

19.1 適用標準

請見本報告 3.1 節第(2)項的規定。

19.2 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。

Note: 對於 1 GHz 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。

發射諧波：

Peak 為 RBW = 1 MHz, VBW = 3 MHz；

Average 為 RBW = 1 MHz, VBW = 1 kHz

接收諧波：

Below 1 GHz

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

Above 1 GHz:

Peak 為 RBW = 1 MHz, VBW = 3 MHz；Average 為 RBW = 1 MHz, VBW = 3 MHz (RMS)

其它不必要之訊號

Peak 為 RBW = 120 kHz, VBW = 360 kHz；Quasi-Peak 為 RBW = 120 kHz, VBW = 120 kHz

19.3 量測儀器

同 4.3 節

19.4 測試配置

同 4.4 節

19.5 場強度之計算

同 4.5 節

量測結果請見下頁。

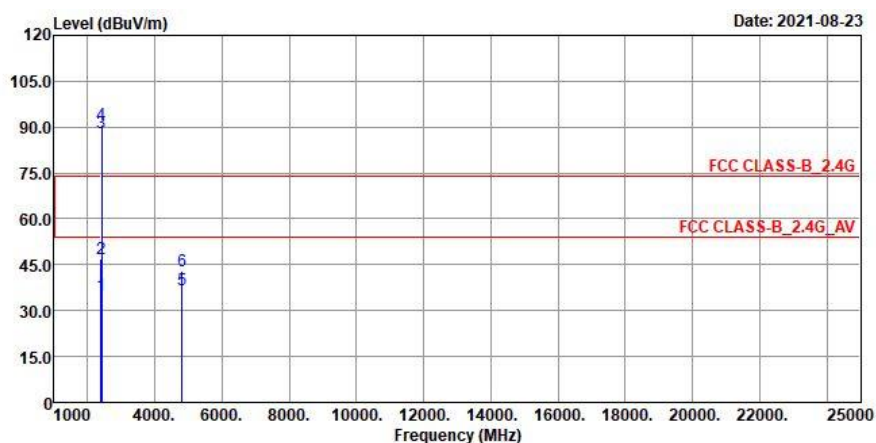
19.6 量測結果

19.6.1 發射諧波

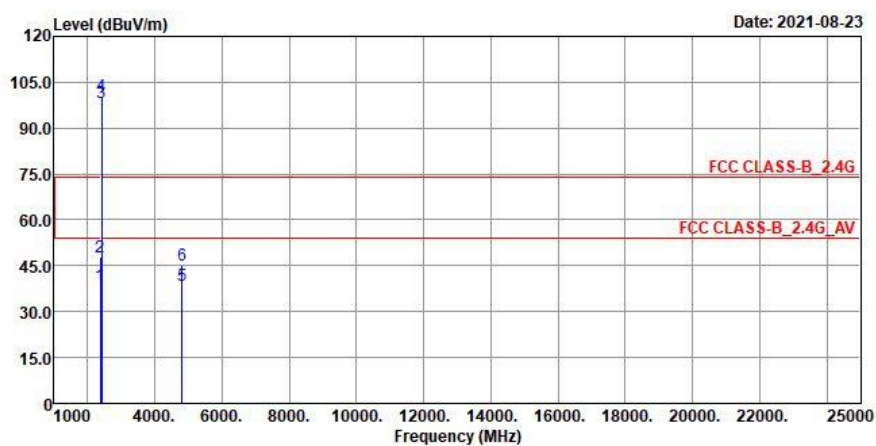
天線型式: Monopole

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



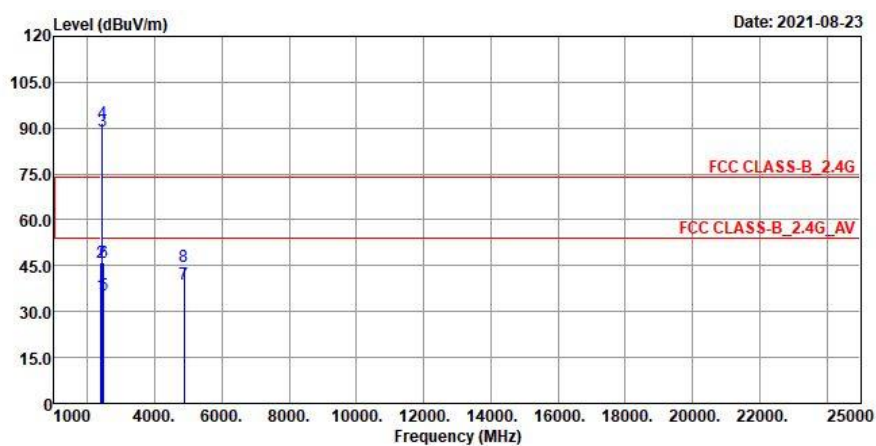
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.84	41.89	-7.05	54	-19.16	375	211	Average
2390	47.02	54.07	-7.05	74	-26.98	375	211	Peak
2405	88.03	95.08	-7.05	-----	-----	375	211	Average
2405	90.57	97.62	-7.05	-----	-----	375	211	Peak
4810	36.62	52.43	-15.81	54	-17.38	133	201	Average
4810	43.07	58.88	-15.81	74	-30.93	133	201	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2373	38.61	45.61	-7	54	-15.39	120	289	Average
2373	47.64	54.64	-7	74	-26.36	120	289	Peak
2405	98.27	105.32	-7.05	-----	-----	120	289	Average
2405	100.68	107.73	-7.05	-----	-----	120	289	Peak
4810	38.52	54.33	-15.81	54	-15.48	226	117	Average
4810	44.99	60.8	-15.81	74	-29.01	226	117	Peak

Remarks:

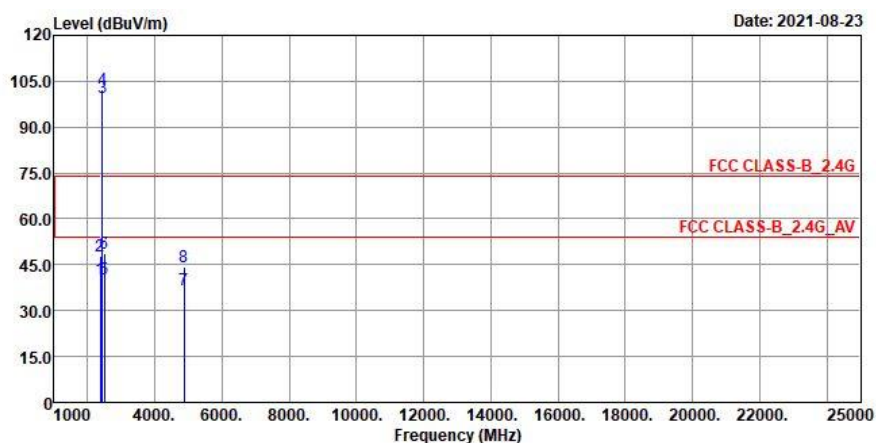
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2405 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



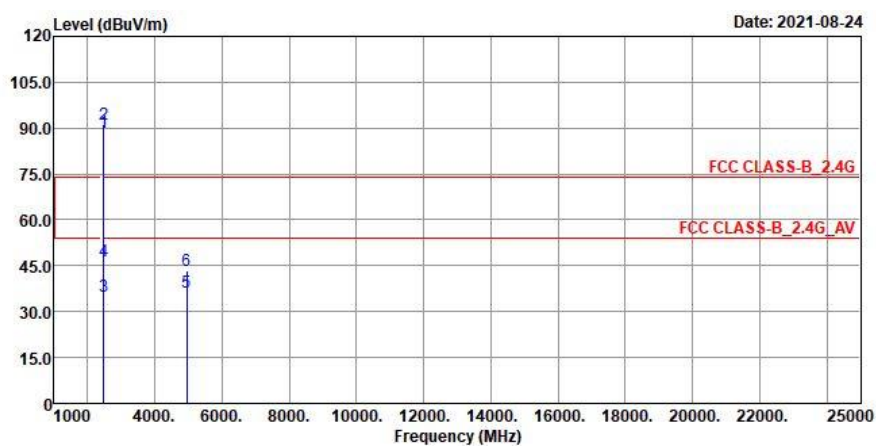
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	35.47	42.52	-7.05	54	-18.53	356	297	Average
2390	46.17	53.22	-7.05	74	-27.83	356	297	Peak
2435	89.14	96.13	-6.99	-----	-----	356	297	Average
2435	91.7	98.69	-6.99	-----	-----	356	297	Peak
2483.5	35.4	42.26	-6.86	54	-18.6	356	297	Average
2483.5	46.14	53	-6.86	74	-27.86	356	297	Peak
4870	39.09	55.03	-15.94	54	-14.91	184	225	Average
4870	44.78	60.72	-15.94	74	-29.22	184	225	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2371	40.31	47.31	-7	54	-13.69	110	253	Average
2371	48.02	55.02	-7	74	-25.98	110	253	Peak
2435	99.8	106.79	-6.99	-----	-----	110	253	Average
2435	102.18	109.17	-6.99	-----	-----	110	253	Peak
2499	40.35	47.15	-6.8	54	-13.65	110	253	Average
2499	48.89	55.69	-6.8	74	-25.11	110	253	Peak
4870	36.96	52.9	-15.94	54	-17.04	189	62	Average
4870	44.44	60.38	-15.94	74	-29.56	189	62	Peak

Remarks:

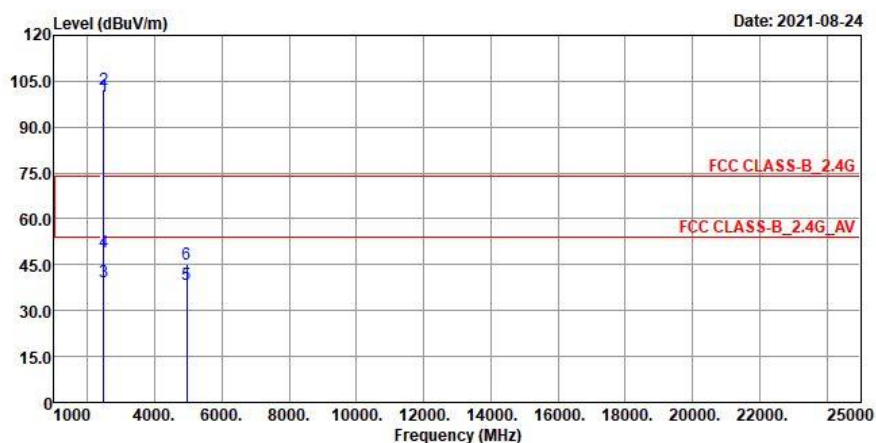
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2435 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	88.56	95.42	-6.86	-----	-----	360	125	Average
2475	91.13	97.99	-6.86	-----	-----	360	125	Peak
2483.5	35.18	42.04	-6.86	54	-18.82	360	125	Average
2483.5	46.35	53.21	-6.86	74	-27.65	360	125	Peak
4950	36.49	52.28	-15.79	54	-17.51	137	240	Average
4950	43.32	59.11	-15.79	74	-30.68	137	240	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	100	106.86	-6.86	-----	-----	100	250	Average
2475	102.5	109.36	-6.86	-----	-----	100	250	Peak
2483.5	39.23	46.09	-6.86	54	-14.77	100	250	Average
2483.5	49.3	56.16	-6.86	74	-24.7	100	250	Peak
4950	38.37	54.16	-15.79	54	-15.63	189	114	Average
4950	45.27	61.06	-15.79	74	-28.73	189	114	Peak

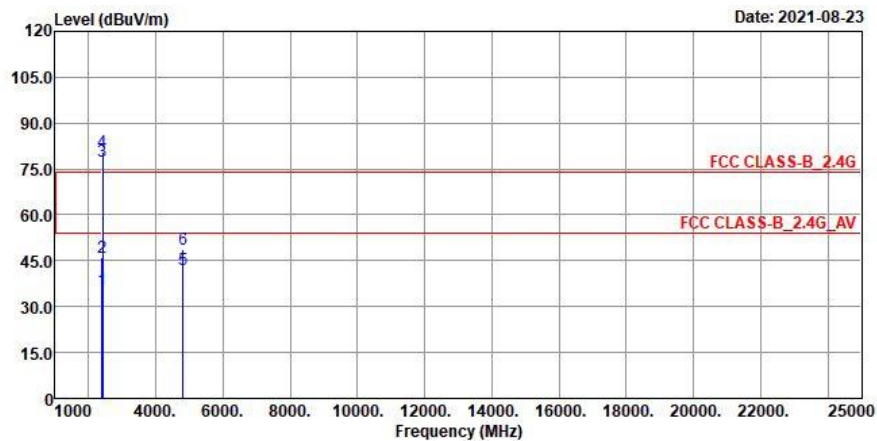
Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2475 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

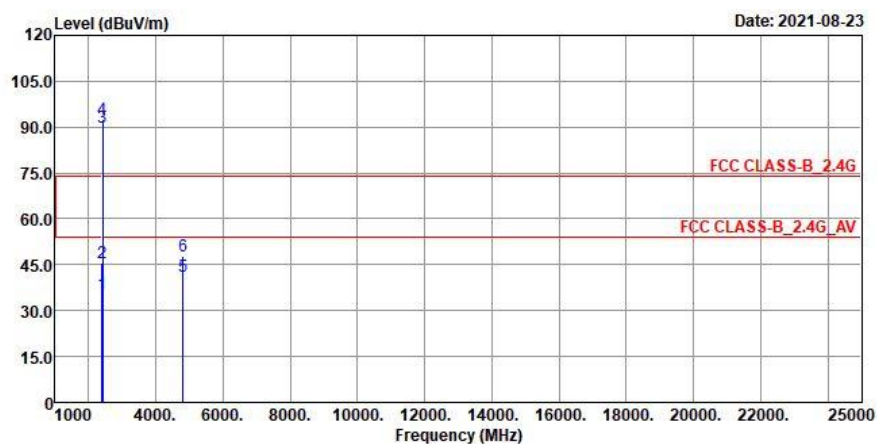
天線型式: Patch

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



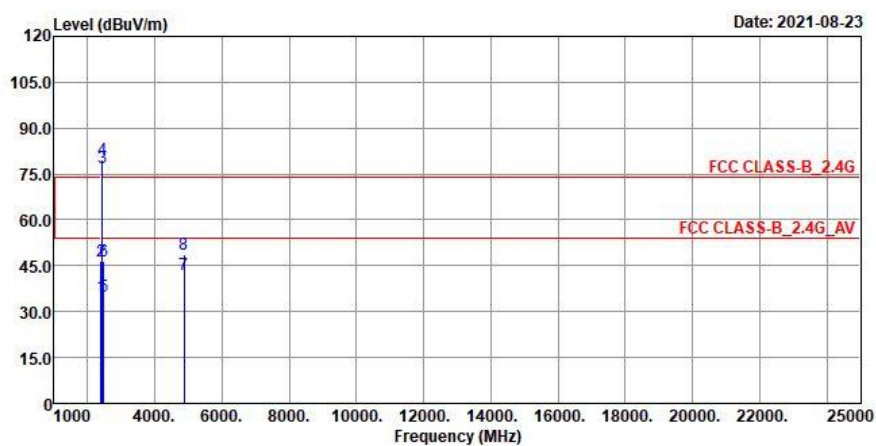
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	35.6	42.65	-7.05	54	-18.4	117	169	Average
2390	46.13	53.18	-7.05	74	-27.87	117	169	Peak
2405	77.67	84.72	-7.05	-----	-----	117	169	Average
2405	80.51	87.56	-7.05	-----	-----	117	169	Peak
4810	42.22	58.03	-15.81	54	-11.78	138	225	Average
4810	48.69	64.5	-15.81	74	-25.31	138	225	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	35.44	42.49	-7.05	54	-18.56	110	251	Average
2390	45.54	52.59	-7.05	74	-28.46	110	251	Peak
2405	89.97	97.02	-7.05	-----	-----	110	251	Average
2405	92.63	99.68	-7.05	-----	-----	110	251	Peak
4810	41.25	57.06	-15.81	54	-12.75	235	91	Average
4810	47.93	63.74	-15.81	74	-26.07	235	91	Peak

Remarks:

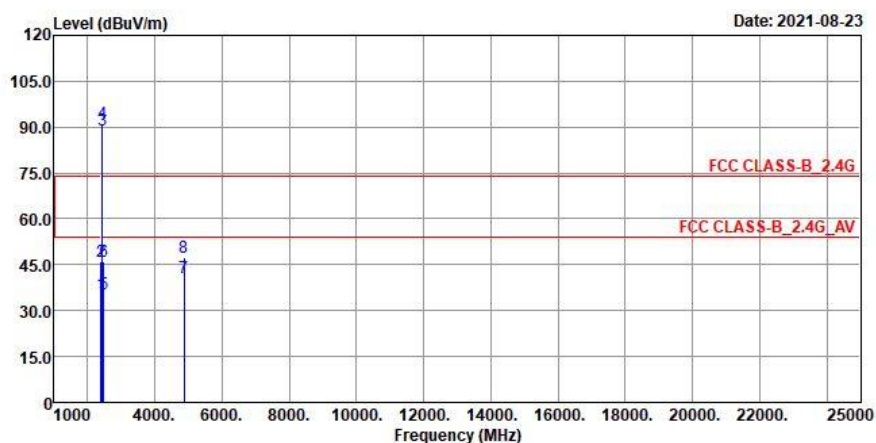
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2405 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



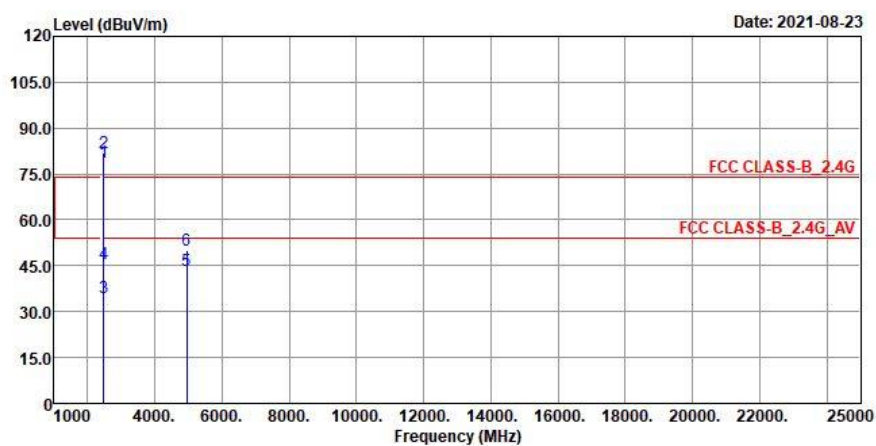
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	34.83	41.88	-7.05	54	-19.17	137	125	Average
2390	46.59	53.64	-7.05	74	-27.41	137	125	Peak
2435	76.96	83.95	-6.99	-----	-----	137	125	Average
2435	79.64	86.63	-6.99	-----	-----	137	125	Peak
2483.5	34.82	41.68	-6.86	54	-19.18	137	125	Average
2483.5	46.56	53.42	-6.86	74	-27.44	137	125	Peak
4870	41.94	57.88	-15.94	54	-12.06	159	132	Average
4870	48.63	64.57	-15.94	74	-25.37	159	132	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	35.5	42.55	-7.05	54	-18.5	128	255	Average
2390	45.9	52.95	-7.05	74	-28.1	128	255	Peak
2435	88.81	95.8	-6.99	-----	-----	128	255	Average
2435	91.32	98.31	-6.99	-----	-----	128	255	Peak
2483.5	35.47	42.33	-6.86	54	-18.53	128	255	Average
2483.5	45.86	52.72	-6.86	74	-28.14	128	255	Peak
4870	40.66	56.6	-15.94	54	-13.34	182	231	Average
4870	47.22	63.16	-15.94	74	-26.78	182	231	Peak

Remarks:

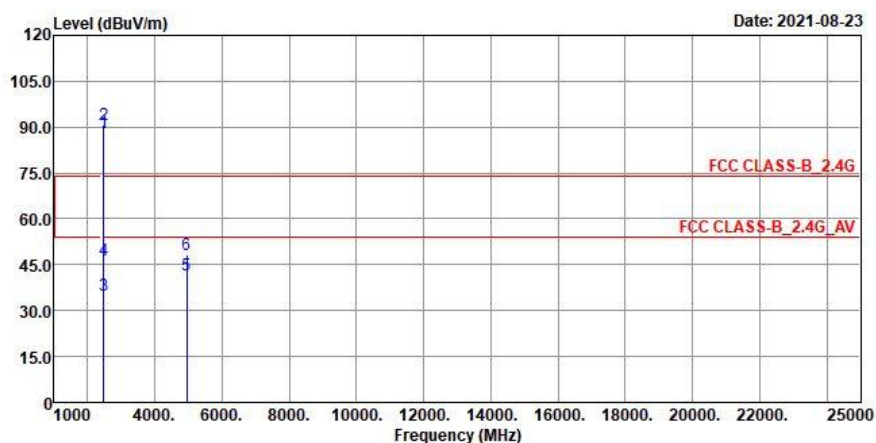
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 2435 MHz: Fundamental Frequency.
3. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	1 GHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	79.04	85.9	-6.86	-----	-----	106	223	Average
2475	81.81	88.67	-6.86	-----	-----	106	223	Peak
2483.5	34.55	41.41	-6.86	54	-19.45	106	223	Average
2483.5	45.55	52.41	-6.86	74	-28.45	106	223	Peak
4950	43.56	59.35	-15.79	54	-10.44	221	342	Average
4950	50.02	65.81	-15.79	74	-23.98	221	342	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2475	88.32	95.18	-6.86	-----	-----	100	251	Average
2475	90.98	97.84	-6.86	-----	-----	100	251	Peak
2483.5	35.08	41.94	-6.86	54	-18.92	100	251	Average
2483.5	46.44	53.3	-6.86	74	-27.56	100	251	Peak
4950	41.58	57.37	-15.79	54	-12.42	173	200	Average
4950	48.15	63.94	-15.79	74	-25.85	173	200	Peak

Remarks:

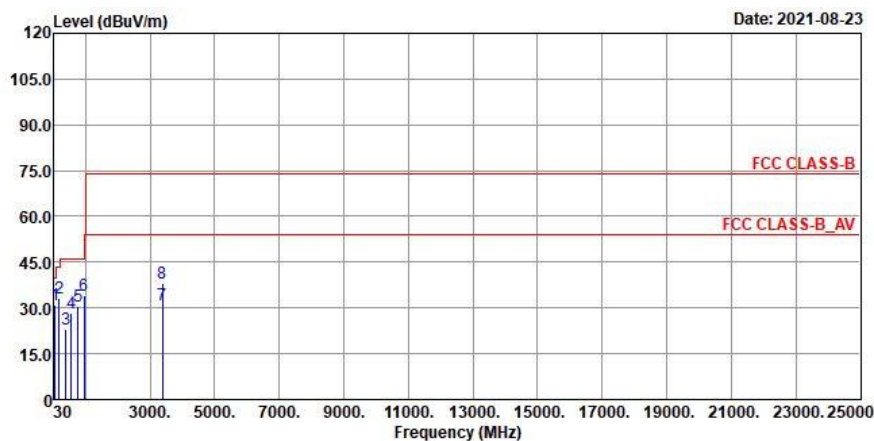
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 2475 MHz: Fundamental Frequency.
- The other emission levels were very low against the limit.

19.6.2 接收諧波

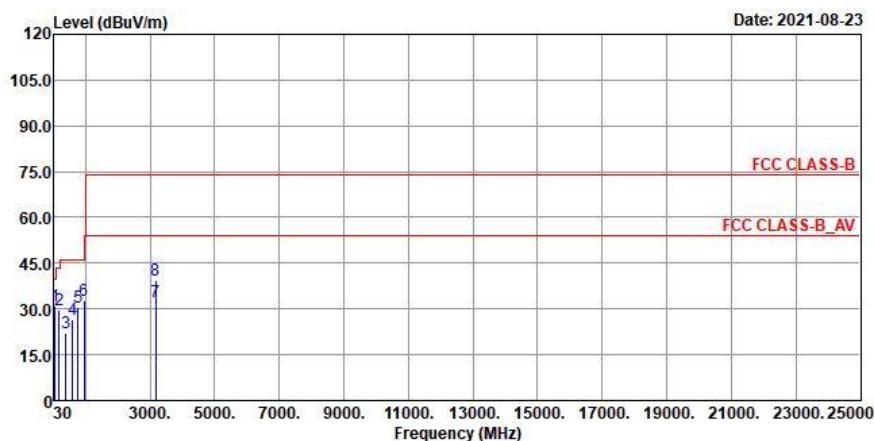
天線型式: Monopole

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
52.31	31.09	43.72	-12.63	40	-8.91	127	246	QP
191.99	33.43	49.23	-15.8	43.5	-10.07	183	225	QP
385.99	23.14	32	-8.86	46	-22.86	196	301	QP
569.32	28.46	32.23	-3.77	46	-17.54	145	307	QP
768.17	30.65	30.25	0.4	46	-15.35	252	189	QP
955.38	33.95	30.61	3.34	46	-12.05	136	72	QP
3380	30.87	51.58	-20.71	54	-23.13	137	74	Average
3380	38.03	58.74	-20.71	74	-35.97	137	74	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
52.31	30.8	43.43	-12.63	40	-9.2	147	226	QP
191.99	29.77	45.57	-15.8	43.5	-13.73	138	315	QP
388.9	22.05	30.88	-8.83	46	-23.95	199	256	QP
592.6	26.72	29.77	-3.05	46	-19.28	134	258	QP
777.87	30.54	30.07	0.47	46	-15.46	210	63	QP
948.59	32.59	29.31	3.28	46	-13.41	143	28	QP
3176	32.21	52.55	-20.34	54	-21.79	124	231	Average
3176	39.38	59.72	-20.34	74	-34.62	124	231	Peak

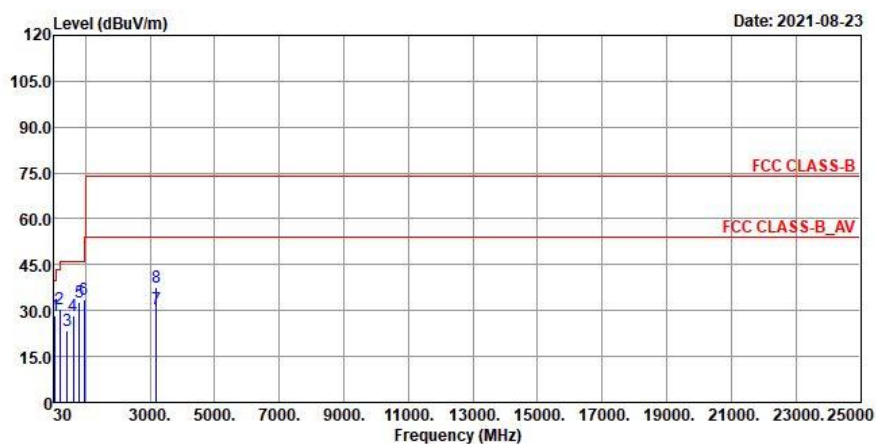
Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

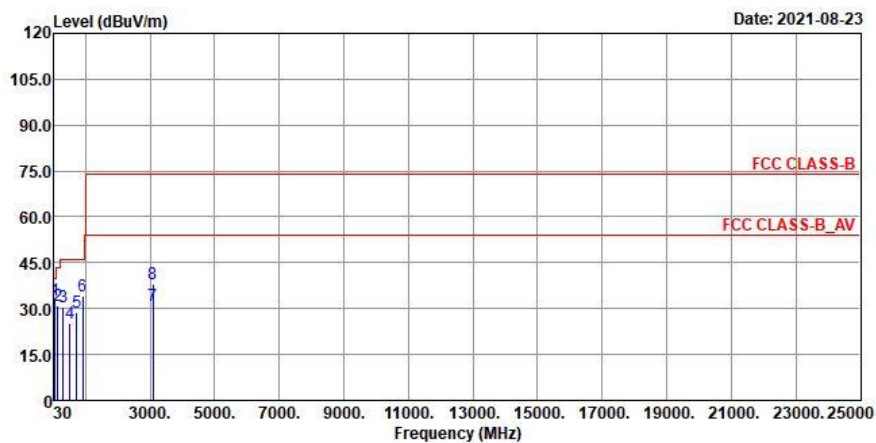
天線型式: Patch

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	30 MHz ~ 25 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Above 1 GHz: Peak (PK) & Average (AV) Below 1 GHz: Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
55.22	28.27	41.05	-12.78	40	-11.73	145	48	QP
208.48	30.56	46.36	-15.8	43.5	-12.94	110	162	QP
427.7	23.37	31.19	-7.82	46	-22.63	238	107	QP
624.61	28.13	30.29	-2.16	46	-17.87	225	93	QP
812.79	32.95	32.03	0.92	46	-13.05	128	169	QP
954.41	33.53	30.2	3.33	46	-12.47	213	114	QP
3193	30.56	50.96	-20.4	54	-23.44	125	89	Average
3193	37.71	58.11	-20.4	74	-36.29	125	89	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
53.28	32.66	45.23	-12.57	40	-7.34	148	255	QP
141.55	31.08	43.68	-12.6	43.5	-12.42	196	301	QP
305.48	30.76	41.98	-11.22	46	-15.24	184	225	QP
517.91	25.04	30.16	-5.12	46	-20.96	236	97	QP
724.52	28.89	29.6	-0.71	46	-17.11	151	113	QP
912.7	34.31	31.71	2.6	46	-11.69	218	56	QP
3091	30.85	51.39	-20.54	54	-23.15	174	261	Average
3091	37.99	58.53	-20.54	74	-36.01	174	261	Peak

Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

19.6.3 其它不必要之訊號

9 kHz ~ 30 MHz Data:

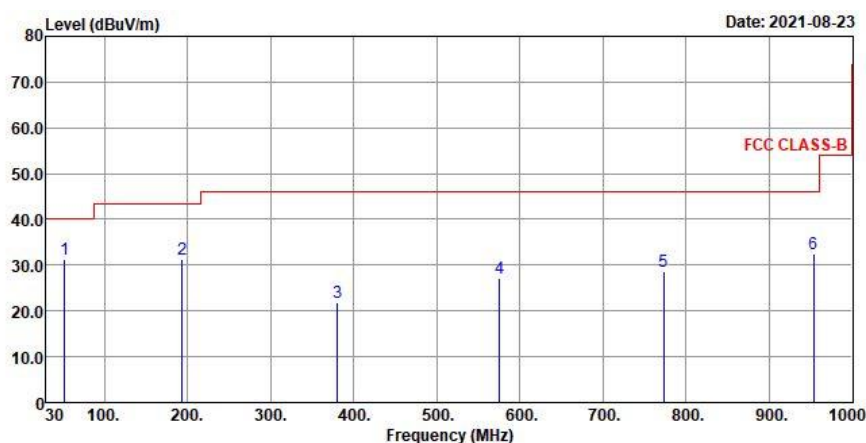
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Data:

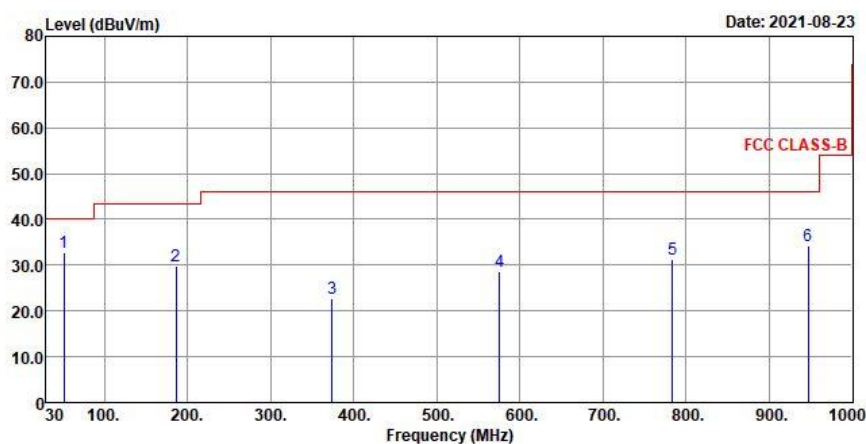
天線型式: Monopole

EUT Test Condition		Measurement Detail	
Channel	Channel 17	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
52.31	31.21	43.84	-12.63	40	-8.79	138	245	QP
193.93	31.22	47.06	-15.84	43.5	-12.28	156	283	QP
380.17	21.79	30.77	-8.98	46	-24.21	171	49	QP
575.14	27.25	30.82	-3.57	46	-18.75	145	302	QP
773.02	28.74	28.31	0.43	46	-17.26	128	153	QP
953.44	32.41	29.08	3.33	46	-13.59	243	92	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
51.34	32.63	45.18	-12.55	40	-7.37	154	201	QP
186.17	29.79	45.06	-15.27	43.5	-13.71	139	331	QP
374.35	22.77	31.92	-9.15	46	-23.23	148	205	QP
575.14	28.54	32.11	-3.57	46	-17.46	196	74	QP
783.69	31.18	30.75	0.43	46	-14.82	126	135	QP
946.65	34.32	31.06	3.26	46	-11.68	264	38	QP

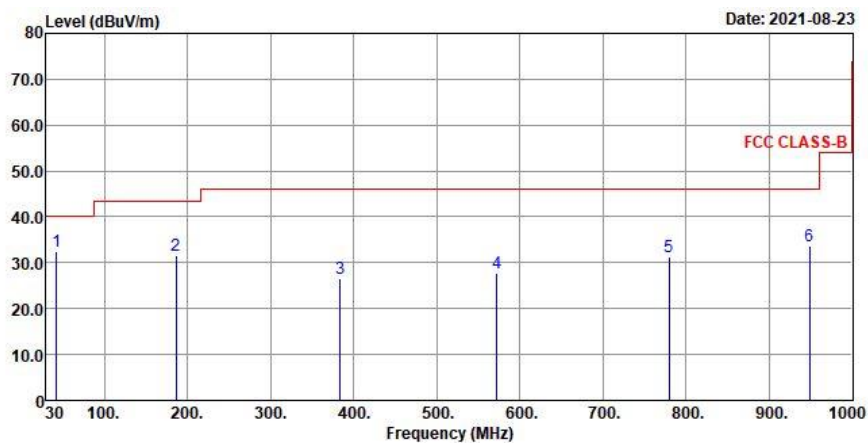
Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- The other emission levels were very low against the limit.

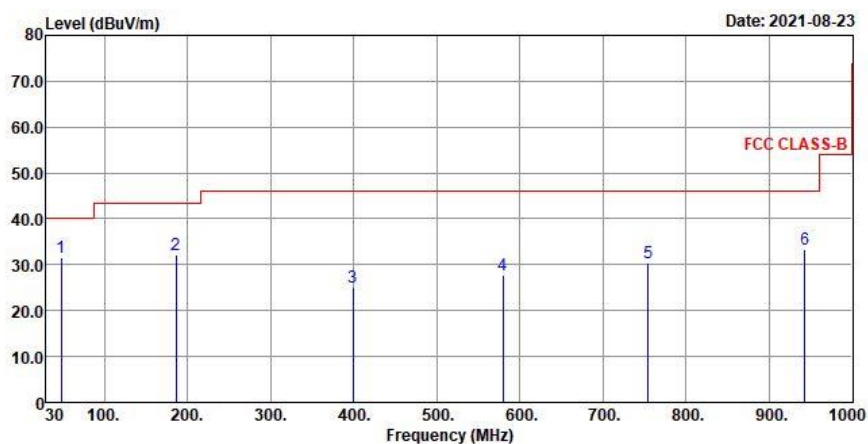
天線型式: Patch

EUT Test Condition		Measurement Detail	
Channel	Channel 25	Frequency Range	30 MHz ~ 1 GHz
Input Power	110 Vac, 60 Hz	Detector Function	Peak (PK) or Quasi-Peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Cookie Ku

Horizontal



Vertical

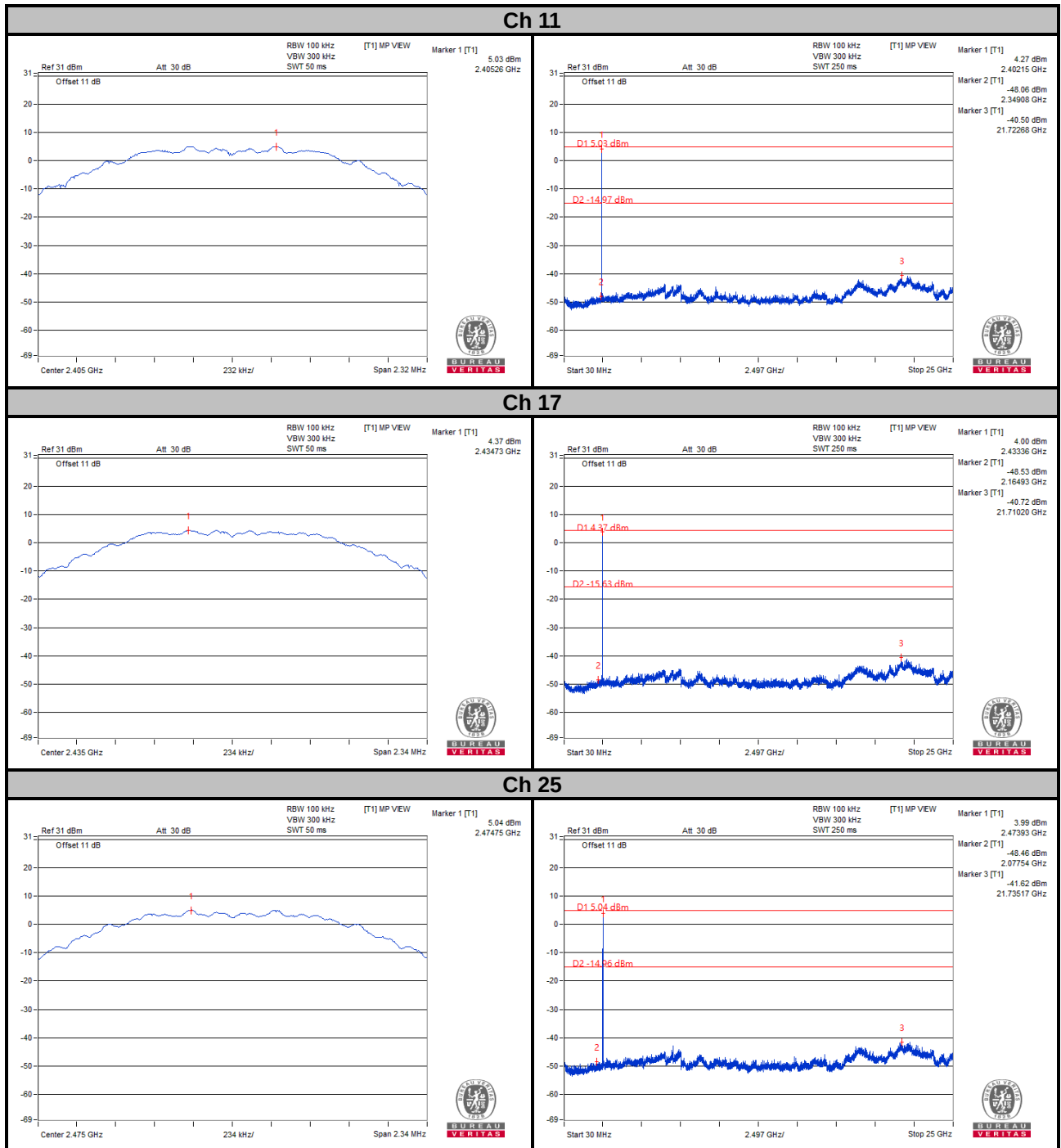


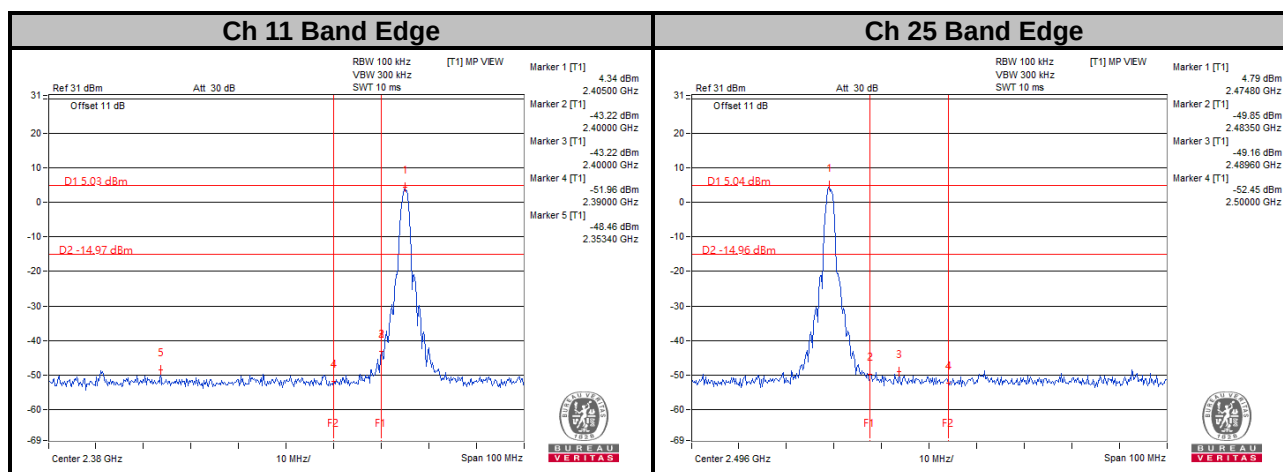
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
42.61	32.45	45.14	-12.69	40	-7.55	128	237	QP
186.17	31.44	46.71	-15.27	43.5	-12.06	154	302	QP
384.05	26.56	35.47	-8.91	46	-19.44	187	221	QP
572.23	27.74	31.42	-3.68	46	-18.26	149	76	QP
779.81	31.19	30.68	0.51	46	-14.81	235	183	QP
948.59	33.72	30.44	3.28	46	-12.28	176	88	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
48.43	31.63	44.11	-12.48	40	-8.37	184	226	QP
186.17	32.17	47.44	-15.27	43.5	-11.33	139	307	QP
399.57	25.19	33.88	-8.69	46	-20.81	158	46	QP
579.99	27.85	31.22	-3.37	46	-18.15	232	109	QP
754.59	30.55	30.33	0.22	46	-15.45	157	114	QP
942.77	33.35	30.16	3.19	46	-12.65	215	93	QP

Remarks:

- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- The other emission levels were very low against the limit.

19.7 帶外發射之量測 (傳導)





19.8 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。

20 電源線傳導干擾之量測

20.1 適用標準

請見本報告3.1節第(1)項的規定。

20.2 量測方法

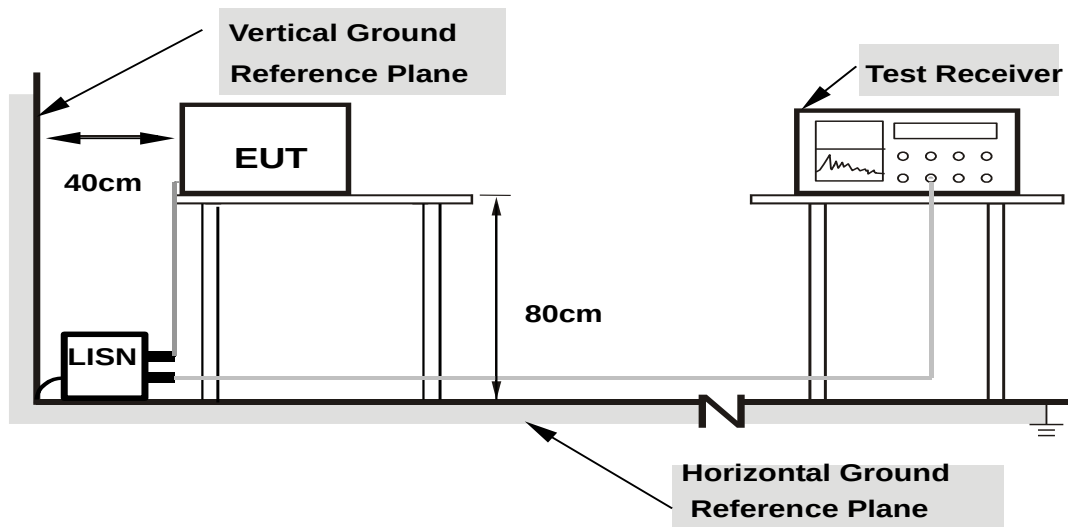
將待測物置於0.8米高的非金屬桌面，使其操作在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由0.15MHz至30MHz之間之電源線傳導放射強度。

20.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102783	Jan. 06, 2021	Jan. 05, 2022
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2020	Sep. 03, 2021
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 18, 2021	Jan. 17, 2022
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ENV216	101196	Apr. 26, 2021	Apr. 25, 2022
Software ADT	BV ADT_Conf_ V7.3.7.4	NA	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.
4. The measurement uncertainty is 2.79 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. Test Date: 2021/08/24

20.4 測試配置



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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

20.5 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

20.6 量測結果

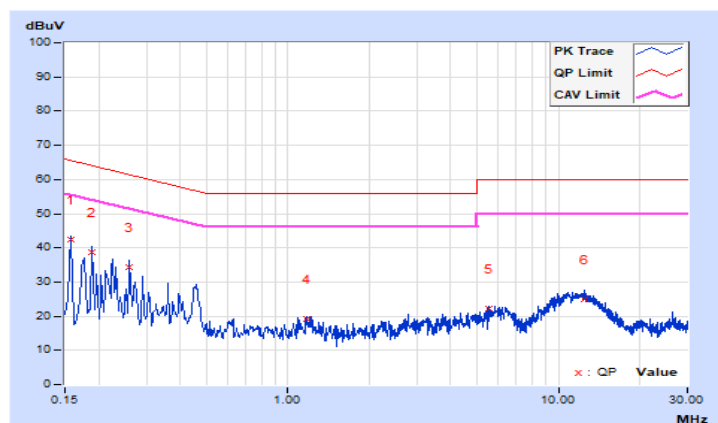
天線型式: Monopole

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 15		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15782	10.09	32.31	5.72	42.40	15.81	65.58	55.58	-23.18	-39.77
2	0.18910	10.11	28.61	3.81	38.72	13.92	64.08	54.08	-25.36	-40.16
3	0.25948	10.14	24.27	1.17	34.41	11.31	61.45	51.45	-27.04	-40.14
4	1.17365	10.27	8.97	1.64	19.24	11.91	56.00	46.00	-36.76	-34.09
5	5.51452	10.40	11.68	1.42	22.08	11.82	60.00	50.00	-37.92	-38.18
6	12.47823	10.53	14.29	1.42	24.82	11.95	60.00	50.00	-35.18	-38.05

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) - 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

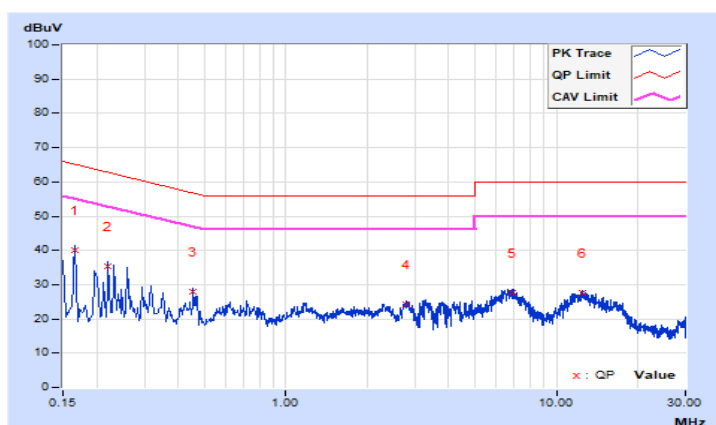


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 15		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16564	10.10	29.87	4.14	39.97	14.24	65.18	55.18	-25.21	-40.94
2	0.22038	10.13	25.35	1.72	35.48	11.85	62.80	52.80	-27.32	-40.95
3	0.45498	10.21	17.63	1.10	27.84	11.31	56.78	46.78	-28.94	-35.47
4	2.78531	10.36	13.86	1.66	24.22	12.02	56.00	46.00	-31.78	-33.98
5	6.84783	10.51	17.23	1.44	27.74	11.95	60.00	50.00	-32.26	-38.05
6	12.41958	10.67	16.95	1.54	27.62	12.21	60.00	50.00	-32.38	-37.79

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

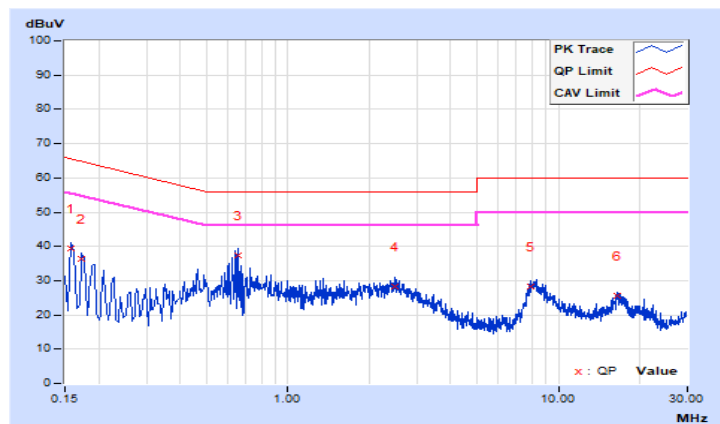


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 16		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15782	10.07	29.30	17.72	39.37	27.79	65.58	55.58	-26.21	-27.79
2	0.17346	10.07	26.33	14.10	36.40	24.17	64.79	54.79	-28.39	-30.62
3	0.65830	10.11	27.29	14.41	37.40	24.52	56.00	46.00	-18.60	-21.48
4	2.48818	10.17	18.13	10.29	28.30	20.46	56.00	46.00	-27.70	-25.54
5	7.89962	10.28	18.11	7.17	28.39	17.45	60.00	50.00	-31.61	-32.55
6	16.46252	10.40	15.25	2.42	25.65	12.82	60.00	50.00	-34.35	-37.18

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

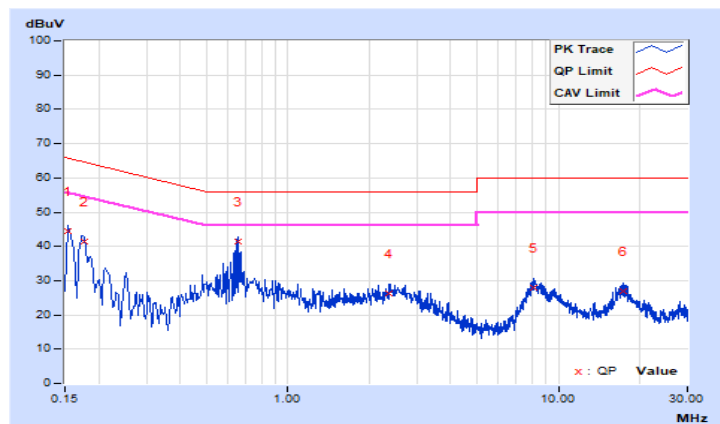


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 16		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15391	10.08	34.38	20.10	44.46	30.18	65.79	55.79	-21.33	-25.61
2	0.17737	10.08	31.43	15.57	41.51	25.65	64.61	54.61	-23.10	-28.96
3	0.65388	10.12	31.38	14.65	41.50	24.77	56.00	46.00	-14.50	-21.23
4	2.36697	10.19	16.10	8.11	26.29	18.30	56.00	46.00	-29.71	-27.70
5	8.06384	10.36	17.42	8.72	27.78	19.08	60.00	50.00	-32.22	-30.92
6	17.43220	10.59	16.26	6.79	26.85	17.38	60.00	50.00	-33.15	-32.62

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



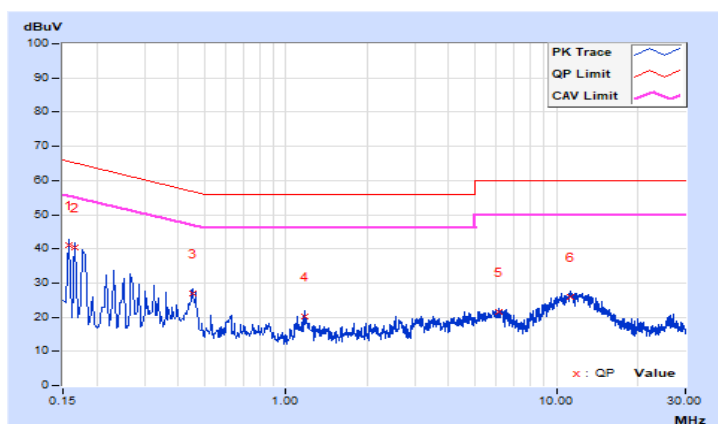
天線型式: Patch

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 17		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15782	10.09	31.09	7.14	41.18	17.23	65.58	55.58	-24.40	-38.35
2	0.16564	10.10	30.21	5.29	40.31	15.39	65.18	55.18	-24.87	-39.79
3	0.45097	10.19	16.63	3.52	26.82	13.71	56.86	46.86	-30.04	-33.15
4	1.17051	10.27	10.06	2.96	20.33	13.23	56.00	46.00	-35.67	-32.77
5	6.13621	10.41	11.07	3.21	21.48	13.62	60.00	50.00	-38.52	-36.38
6	11.28568	10.51	15.38	1.67	25.89	12.18	60.00	50.00	-34.11	-37.82

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

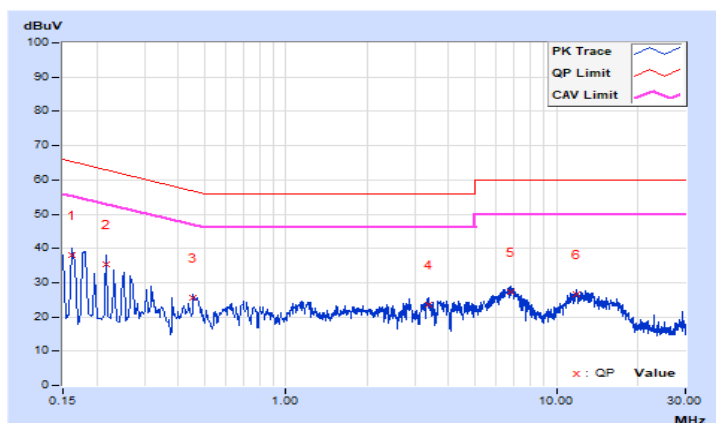


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 17		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16173	10.10	27.83	3.73	37.93	13.83	65.37	55.37	-27.44	-41.54
2	0.21647	10.13	25.07	1.58	35.20	11.71	62.95	52.95	-27.75	-41.24
3	0.45498	10.21	15.23	1.33	25.44	11.54	56.78	46.78	-31.34	-35.24
4	3.39139	10.40	13.16	1.77	23.56	12.17	56.00	46.00	-32.44	-33.83
5	6.75790	10.51	16.78	1.17	27.29	11.68	60.00	50.00	-32.71	-38.32
6	11.87609	10.65	16.07	1.10	26.72	11.75	60.00	50.00	-33.28	-38.25

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

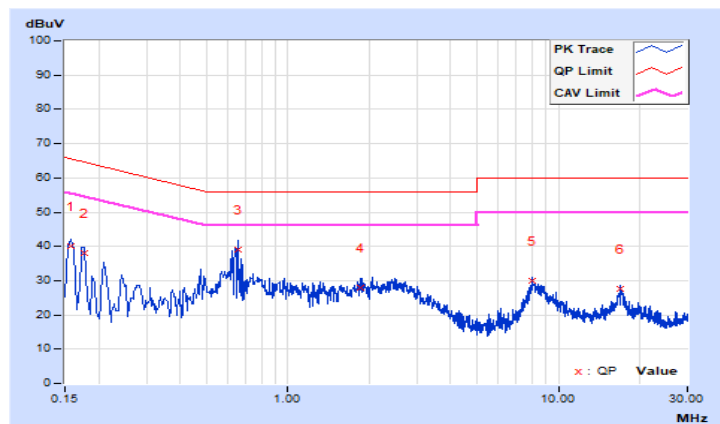


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 18		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15782	10.07	30.03	16.98	40.10	27.05	65.58	55.58	-25.48	-28.53
2	0.17737	10.07	28.05	15.70	38.12	25.77	64.61	54.61	-26.49	-28.84
3	0.65439	10.11	28.93	14.88	39.04	24.99	56.00	46.00	-16.96	-21.01
4	1.85085	10.16	17.63	9.27	27.79	19.43	56.00	46.00	-28.21	-26.57
5	8.04820	10.29	19.61	9.09	29.90	19.38	60.00	50.00	-30.10	-30.62
6	17.03729	10.41	17.05	5.58	27.46	15.99	60.00	50.00	-32.54	-34.01

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

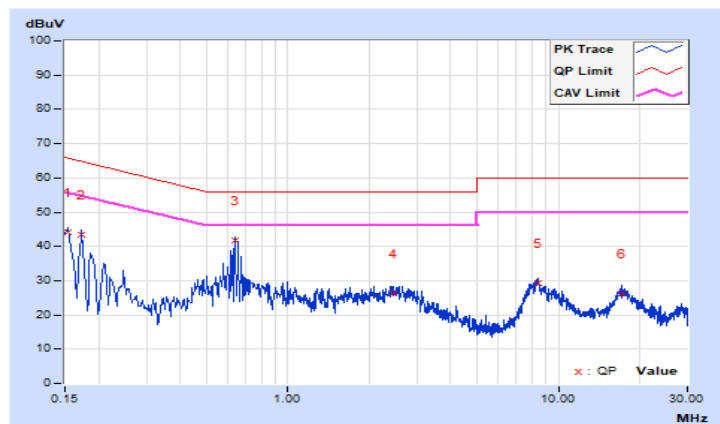


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	23°C, 66%RH
測試者	Cookie Ku	測試日期	2021/8/24
測試模式	Mode 18		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.15391	10.08	34.07	20.04	44.15	30.12	65.79	55.79	-21.64	-25.67
2	0.17346	10.08	33.36	14.83	43.44	24.91	64.79	54.79	-21.35	-29.88
3	0.63484	10.12	31.51	14.46	41.63	24.58	56.00	46.00	-14.37	-21.42
4	2.44126	10.19	15.96	8.13	26.15	18.32	56.00	46.00	-29.85	-27.68
5	8.36882	10.37	18.92	8.10	29.29	18.47	60.00	50.00	-30.71	-31.53
6	17.22888	10.58	15.74	6.26	26.32	16.84	60.00	50.00	-33.68	-33.16

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



21 6 dB 頻寬之要求

21.1 適用標準

請見本報告 3.1 節第(5)項的規定。

21.2 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 6 dB 的最大頻率範圍。

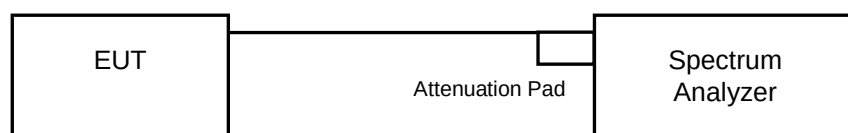
21.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 12, 2021	Apr. 11, 2022

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.
- Test date: 2021/08/25

21.4 測試配置

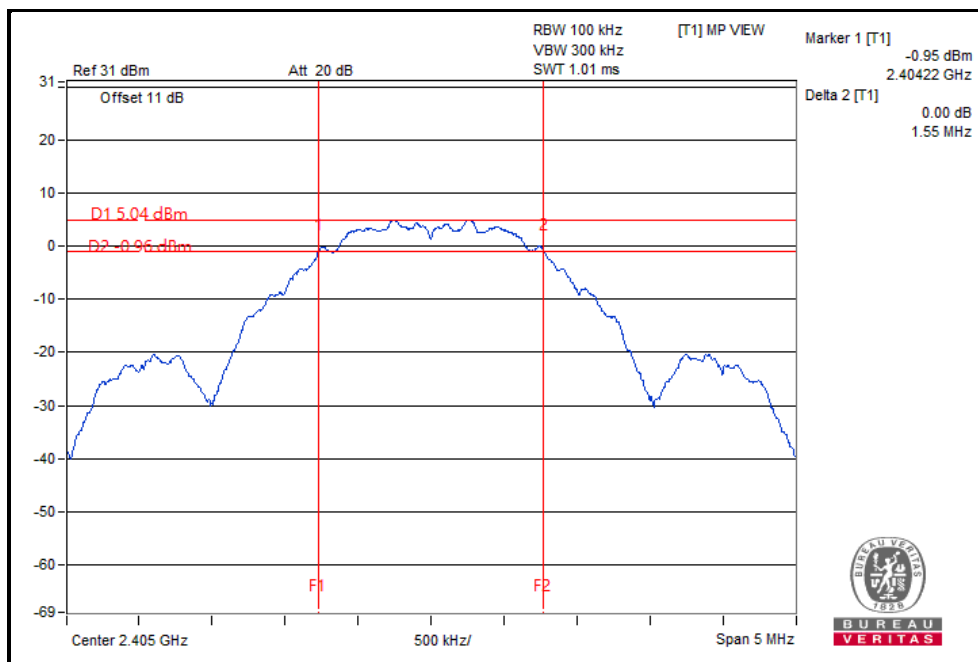


21.5 量測結果

操作模式	發射	測試日期	110 年 08 月 25 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	吳佳衡		

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
11	2405	1.55	0.5	Pass
17	2435	1.56	0.5	Pass
25	2475	1.56	0.5	Pass

**此測試圖僅放測試結果最差的頻道。



21.6 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。

22 峰值傳導輸出功率之量測

22.1 適用標準

請見本報告 3.1 節第(4)及(6)項的規定。

22.2 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。
- 計算其輸出功率峰值。

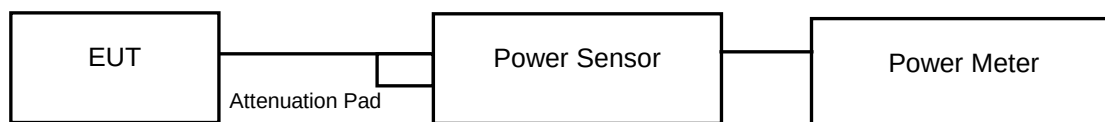
22.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Power Meter Anritsu	ML2495A	1232002	Dec. 09, 2020	Dec. 08, 2021
Power Sensor Anritsu	MA2411B	1207325	Dec. 09, 2020	Dec. 08, 2021

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 1.393 dB, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.
- Test date: 2021/08/25

22.4 測試配置



22.5 量測結果

操作模式	發射	測試日期	110 年 08 月 25 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	吳佳衡		

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
11	2405	6.792	8.32	30	Pass
17	2435	6.808	8.33	30	Pass
25	2475	6.823	8.34	30	Pass

22.6 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。

23 功率頻譜密度之量測

23.1 適用標準

請見本報告 3.1 節第(7)項的規定。

23.2 量測方法

- 將待測物之天線埠經由適當之衰減直接連至測試儀器。
- 設定解析頻寬為 3 kHz，視訊頻寬為 10 kHz，掃描時間為 auto。
- 掃描頻寬設於足夠觀察發射機所產生的主頻信號，並找到最大的峰值準位。
- 其峰值位準必須不大於 8 dBm / per 3kHz。

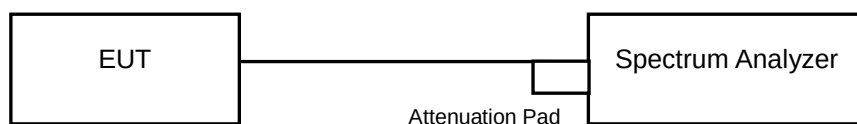
23.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer R&S	FSU43	101261	Apr. 12, 2021	Apr. 11, 2022

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- The measurement uncertainty is 207 Hz, which is calculated as per the document ETSI TR 100 028. This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.
- Test date: 2021/08/25

23.4 測試配置

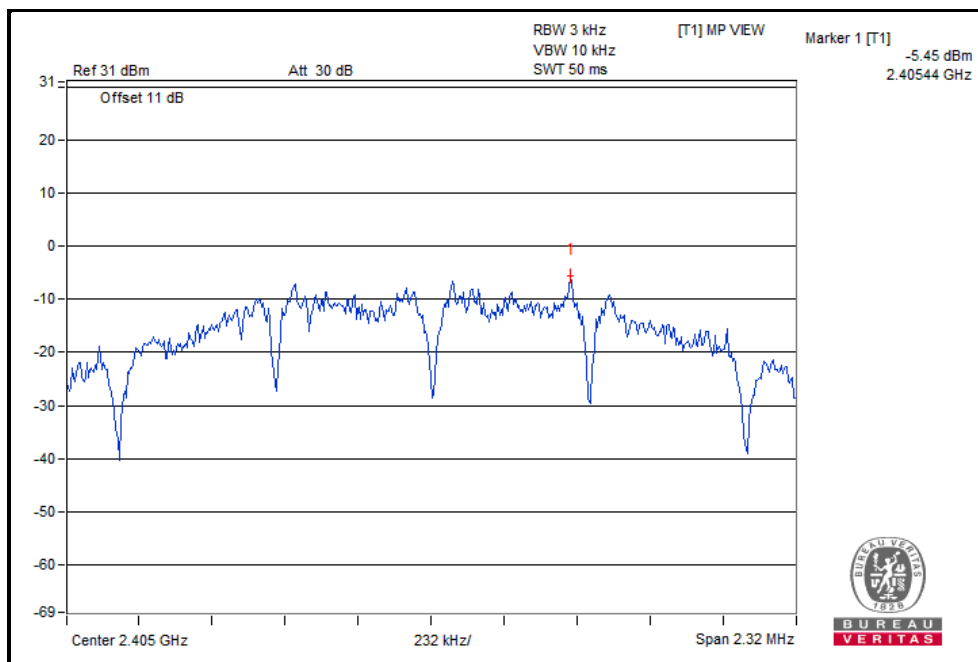


23.5 量測結果

操作模式	發射	測試日期	110 年 08 月 25 日
量測場地溫度	25 °C	量測場地濕度	60 % RH
測試者	吳佳衡		

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
11	2405	-5.45	8	Pass
17	2435	-6.63	8	Pass
25	2475	-6.71	8	Pass

**此測試圖僅放測試結果最差的頻道。



23.6 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。

NFC 頻段測試紀錄結果

24 不必要之發射量測

24.1 適用標準

請見本報告 3.1 節第(13)項規定。

24.2 量測方法

9 kHz ~ 30 MHz 量測：

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，另外接收天線分別置於 PARALLEL、PERPENDICULAR、GROUND-PARALLEL 極化各執行測試一次，以紀錄最大場強值。

30 MHz ~ 1 GHz 量測：

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。

Measurement Instrument Setting

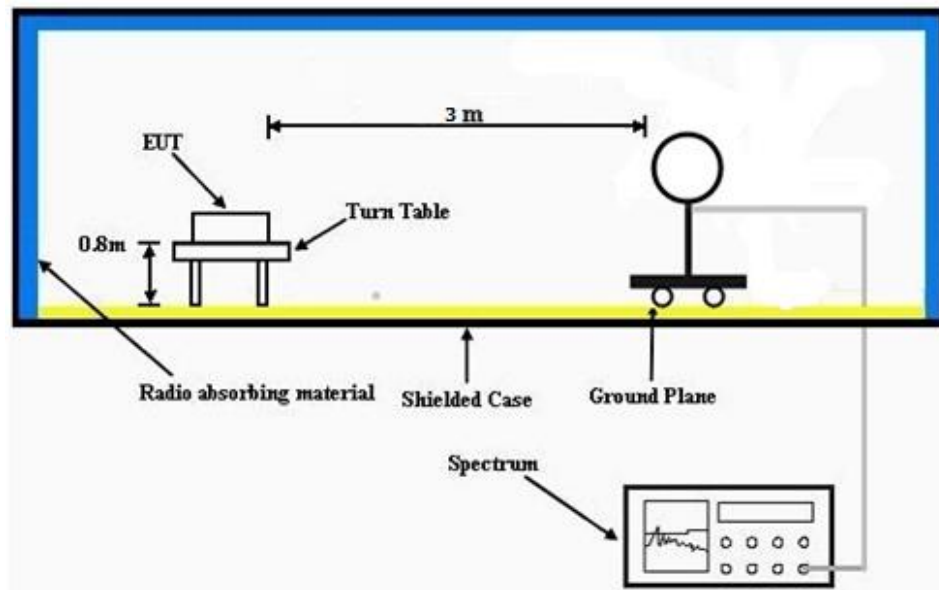
The following table is the setting of receiver

Frequency Range	Setting
9 kHz ~ 150 kHz	Quasi-Peak: RBW = 200 Hz
150 kHz ~ 30 MHz	Quasi-Peak: RBW = 9 kHz or 10 kHz
30 MHz ~ 1000 MHz	Peak: RBW = 120 kHz; Quasi-Peak: RBW = 120 kHz

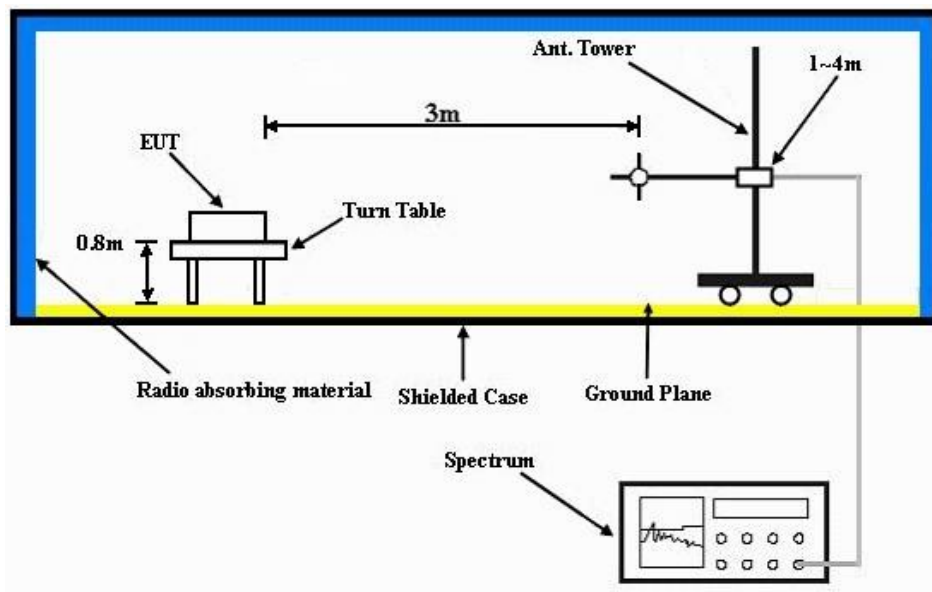
24.3 量測儀器

同 4.3 節

24.4 測試配置



9 kHz ~ 30 MHz



30 MHz ~ 1 GHz

24.5 場強度之計算

場強之計算公式如下：

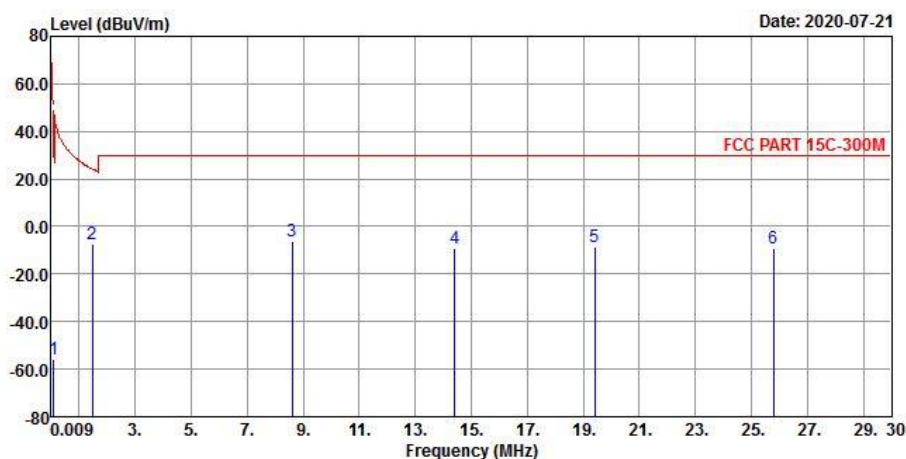
結果值 Emission level (dBuV/m) = 機器讀值 Raw Value (dBuV) + 校正因子 Correction Factor (dB/m)

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。

24.6 量測結果

EUT Test Condition		Measurement Detail	
Input Power	110 Vac, 60 Hz	Operating Method	Receiver
Environmental Conditions	25 deg. C, 65 % RH	Detector Function	(QP) RB=10kHz, VB=30kHz
Tested By	Tim Chen		

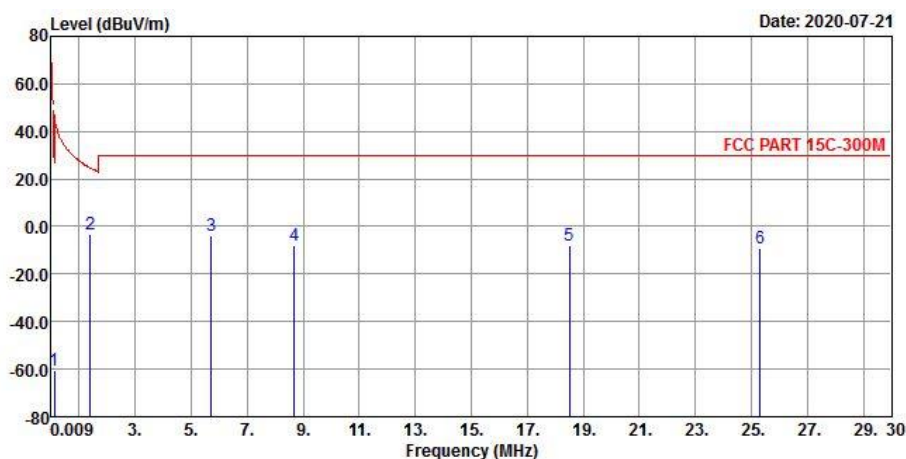


Antenna Polarity & Test Distance: Loop Antenna PARALLEL at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
0.09247	-55.99	4.59	-60.58	28.28	-84.27	100	148	QP
1.463	-7.17	13.2	-20.37	24.29	-31.46	100	266	QP
8.598	-5.93	13.11	-19.04	29.54	-35.47	100	185	QP
14.418	-9.15	9.44	-18.59	29.54	-38.69	100	89	QP
19.403	-8.29	10.13	-18.42	29.54	-37.83	100	346	QP
25.791	-9.42	8.86	-18.28	29.54	-38.96	100	236	QP

Note:

- Emission level (dBuV/m) = Read Level (dBuV) + Factor (dB/m)
- The other emission levels were very low against the limit.
- Margin value = Emission level - Limit value
- For 0.009 ~ 0.49MHz, the measured field strength was extrapolated to distance 300 meters Distance factor@3m = $40 \cdot \log(3/300) = -80\text{dB}$
For 0.49 ~ 30MHz, the measured field strength was extrapolated to distance 30 meters Distance factor@3m = $40 \cdot \log(3/30) = -40\text{dB}$
- Parallel: loop antenna 面向 EUT
Perpendicular: loop antenna 與 EUT 垂直
Ground-parallel: loop antenna 與地面平行

EUT Test Condition		Measurement Detail	
Input Power	110 Vac, 60 Hz	Operating Method	Receiver
Environmental Conditions	25 deg. C, 65 % RH	Detector Function	(QP) RB=10kHz, VB=30kHz
Tested By	Tim Chen		

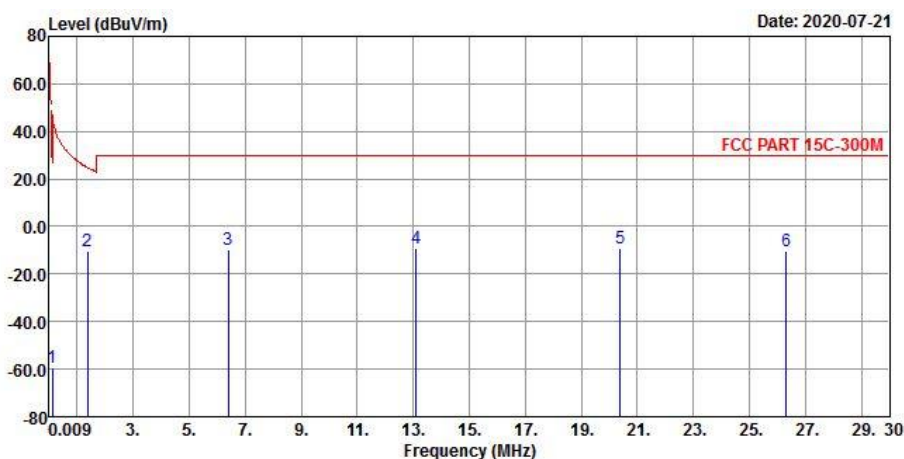


Antenna Polarity & Test Distance: Loop Antenna PERPENDICULAR at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
0.10671	-60.37	0.3	-60.67	27.03	-87.4	100	148	QP
1.404	-3.05	17.31	-20.36	24.65	-27.7	100	193	QP
5.732	-3.85	15.83	-19.68	29.54	-33.39	100	280	QP
8.687	-7.86	11.17	-19.03	29.54	-37.4	100	107	QP
18.508	-7.76	10.69	-18.45	29.54	-37.3	100	284	QP
25.314	-9.21	9.07	-18.28	29.54	-38.75	100	321	QP

Note:

- Emission level (dBuV/m) = Read Level (dBuV) + Factor (dB/m)
- The other emission levels were very low against the limit.
- Margin value = Emission level - Limit value
- For 0.009 ~ 0.49MHz, the measured field strength was extrapolated to distance 300 meters Distance factor@3m = $40 \cdot \log(3/300) = -80\text{dB}$
For 0.49 ~ 30MHz, the measured field strength was extrapolated to distance 30 meters Distance factor@3m = $40 \cdot \log(3/30) = -40\text{dB}$
- Parallel: loop antenna 面向 EUT
Perpendicular: loop antenna與EUT垂直
Ground-parallel: loop antenna與地面平行

EUT Test Condition		Measurement Detail	
Input Power	110 Vac, 60 Hz	Operating Method	Receiver
Environmental Conditions	25 deg. C, 65 % RH	Detector Function	(QP) RB=10kHz, VB=30kHz
Tested By	Tim Chen		



Antenna Polarity & Test Distance: Loop Antenna Ground-parallel at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
0.10742	-59.53	1.14	-60.67	26.98	-86.51	100	184	QP
1.374	-10.3	10.04	-20.34	24.84	-35.14	100	100	QP
6.389	-9.78	9.74	-19.52	29.54	-39.32	100	254	QP
13.105	-9.34	9.3	-18.64	29.54	-38.88	100	83	QP
20.388	-9.07	9.32	-18.39	29.54	-38.61	100	199	QP
26.328	-10.28	7.98	-18.26	29.54	-39.82	100	164	QP

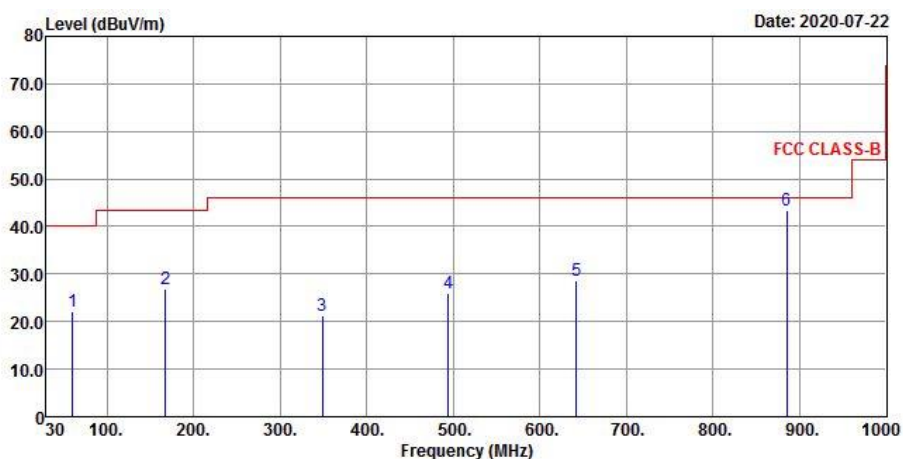
Note:

- Emission level (dBuV/m) = Read Level (dBuV) + Factor (dB/m)
- The other emission levels were very low against the limit.
- Margin value = Emission level - Limit value
- For 0.009 ~ 0.49MHz, the measured field strength was extrapolated to distance 300 meters Distance factor@3m = $40 \cdot \log(3/300) = -80\text{dB}$
For 0.49 ~ 30MHz, the measured field strength was extrapolated to distance 30 meters Distance factor@3m = $40 \cdot \log(3/30) = -40\text{dB}$
- Parallel: loop antenna 面向 EUT
Perpendicular: loop antenna與EUT垂直
Ground-parallel: loop antenna與地面平行

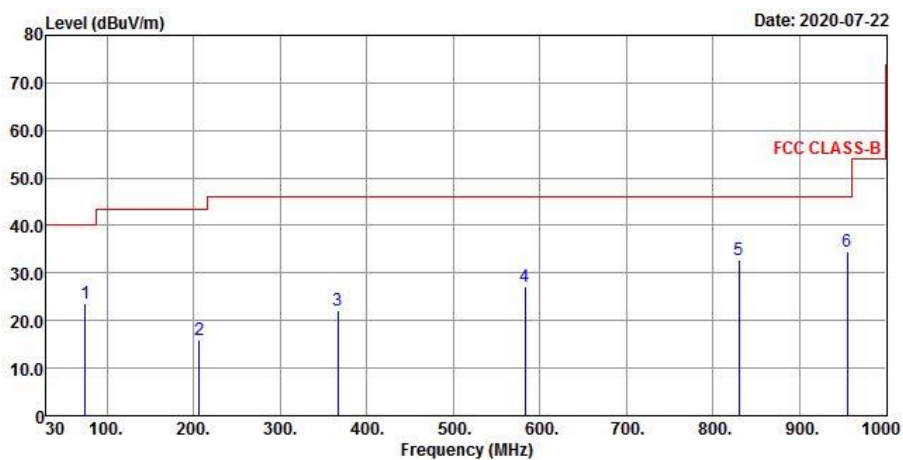
<Above 30 MHz>

EUT Test Condition		Measurement Detail	
Input Power	110 Vac, 60 Hz	Operating Method	Receiver
Environmental Conditions	25 deg. C, 65 % RH	Detector Function	(QP) RB=VB=120kHz
Tested By	Tim Chen		

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
60.07	22.09	34.65	-12.56	40	-17.91	200	119	Peak
167.74	26.95	39.11	-12.16	43.5	-16.55	200	275	Peak
349.13	21.39	31.19	-9.8	46	-24.61	200	342	QP
494.63	25.87	31.45	-5.58	46	-20.13	200	197	QP
642.07	28.53	30.2	-1.67	46	-17.47	200	204	QP
885.54	43.48	40.73	2.75	46	-2.52	200	148	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
74.62	23.51	38.54	-15.03	40	-16.49	100	179	QP
206.54	16.08	31.21	-15.13	43.5	-27.42	100	264	QP
366.59	22.09	31.25	-9.16	46	-23.91	100	299	QP
582.9	27.21	30.5	-3.29	46	-18.79	100	113	QP
830.25	32.65	30.42	2.23	46	-13.35	100	187	QP
955.38	34.57	30.86	3.71	46	-11.43	100	204	QP

Remarks:

1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

24.7 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。

25 天線之要求

25.1 適用標準

請見本報告 3.1 節第(15)項的規定。

25.2 天線規格

此待測物 Bluetooth LE / ANT+ / Zigbee / Thread 介面使用(1) Monopole 天線及 RP-SMA 天線接頭 (2) Patch 天線及 U.FL 天線接頭；NFC 介面使用 Loop 天線，無使用天線接頭。

25.3 結果判定

符合低功率射頻器材技術規範之要求。

26 電源線傳導干擾之量測

26.1 適用標準

請見本報告3.1節第(1)項的規定。

26.2 量測方法

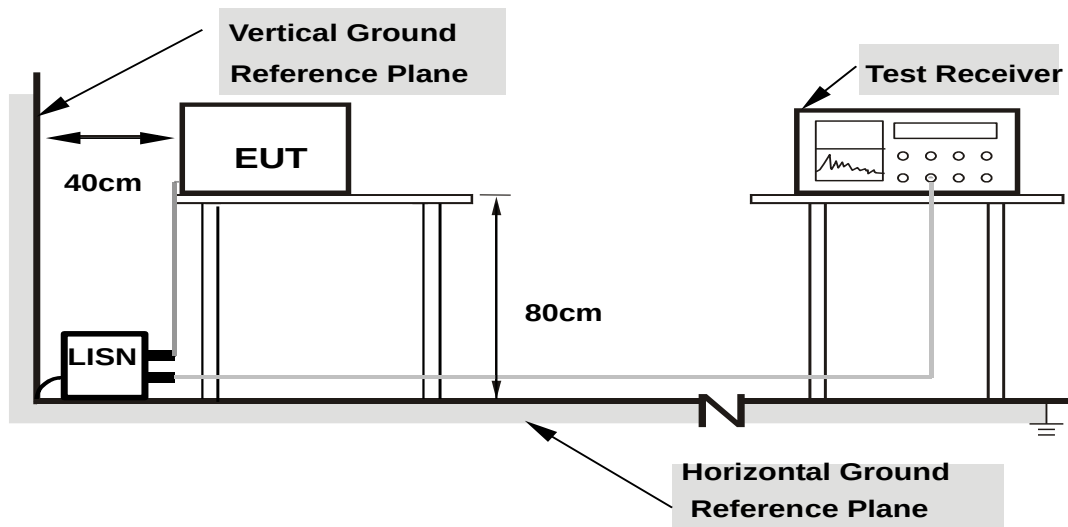
將待測物置於0.8米高的非金屬桌面，使其操作在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由0.15MHz至30MHz之間之電源線傳導放射強度。

26.3 量測儀器

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102412	Feb. 17, 2020	Feb. 16, 2021
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 05, 2019	Sep. 04, 2020
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 20, 2020	Jan. 19, 2021
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Aug. 13, 2019	Aug. 12, 2020
Software ADT	BV ADT_Conf_ V7.3.7.4	NA	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.
4. The measurement uncertainty is 2.79 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. Test Date: 2020/07/21

26.4 測試配置



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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

26.5 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

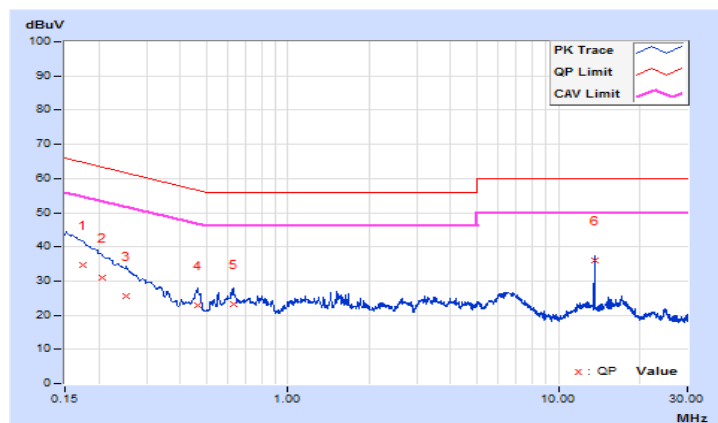
26.6 量測結果

量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Tim Chen	測試日期	2020/7/21
測試模式	Mode 13		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.17374	10.16	24.66	20.22	34.82	30.38	64.78	54.78	-29.96	-24.40
2	0.20625	10.17	20.95	13.56	31.12	23.73	63.35	53.35	-32.23	-29.62
3	0.25344	10.18	15.34	12.92	25.52	23.10	61.64	51.64	-36.12	-28.54
4	0.46393	10.21	12.68	10.49	22.89	20.70	56.62	46.62	-33.73	-25.92
5	0.62687	10.22	12.95	10.44	23.17	20.66	56.00	46.00	-32.83	-25.34
6	13.56000	10.51	25.47	23.48	35.98	33.99	60.00	50.00	-24.02	-16.01

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

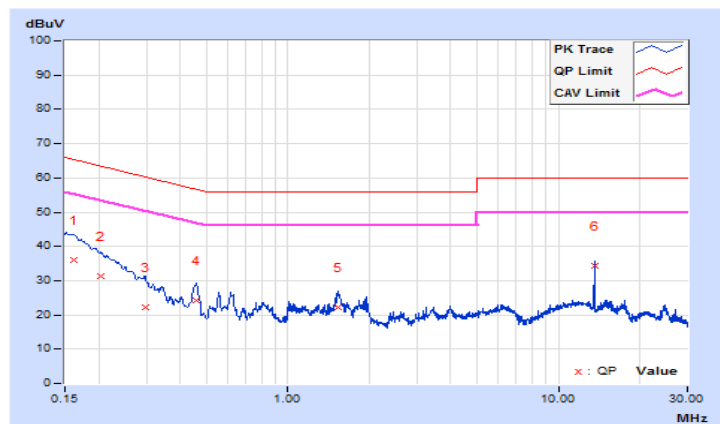


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Tim Chen	測試日期	2020/7/21
測試模式	Mode 13		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.16125	10.12	25.99	20.98	36.11	31.10	65.40	55.40	-29.29	-24.30
2	0.20356	10.13	21.20	20.56	31.33	30.69	63.46	53.46	-32.13	-22.77
3	0.29616	10.15	12.07	10.64	22.22	20.79	60.35	50.35	-38.13	-29.56
4	0.45825	10.19	14.02	10.48	24.21	20.67	56.72	46.72	-32.51	-26.05
5	1.53600	10.26	12.12	10.37	22.38	20.63	56.00	46.00	-33.62	-25.37
6	13.56000	10.64	23.67	20.65	34.31	31.29	60.00	50.00	-25.69	-18.71

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

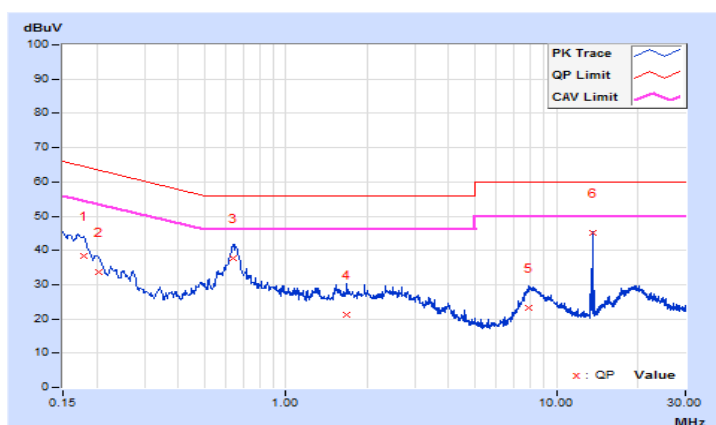


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Tim Chen	測試日期	2020/7/21
測試模式	Mode 14		

量測電源端點：火線 (L1)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.17886	10.16	28.13	21.33	38.29	31.49	64.54	54.54	-26.25	-23.05
2	0.20400	10.17	23.58	15.52	33.75	25.69	63.45	53.45	-29.70	-27.76
3	0.64195	10.22	27.54	21.08	37.76	31.30	56.00	46.00	-18.24	-14.70
4	1.68675	10.29	10.87	8.87	21.16	19.16	56.00	46.00	-34.84	-26.84
5	7.94625	10.45	12.70	8.08	23.15	18.53	60.00	50.00	-36.85	-31.47
6	13.56000	10.51	34.66	31.69	45.17	42.20	60.00	50.00	-14.83	-7.80

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)

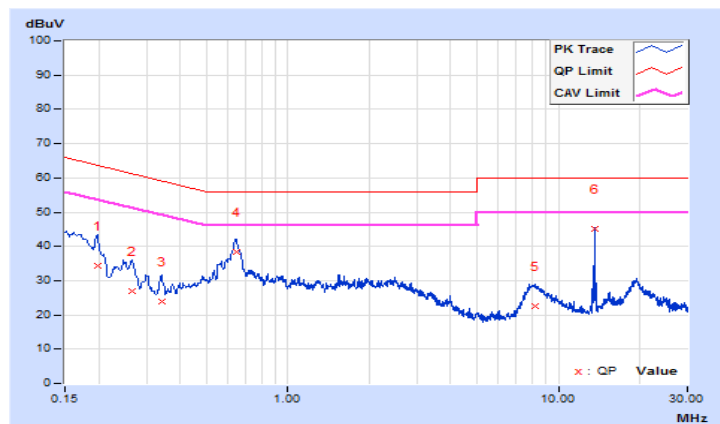


量測頻率範圍	150kHz ~ 30MHz	檢測器與頻寬	準峰值 (QP) / 平均值 (AV), 9kHz
量測電壓值	110Vac, 60Hz	量測場地溫濕度	25°C, 65%RH
測試者	Tim Chen	測試日期	2020/7/21
測試模式	Mode 14		

量測電源端點：中性線 (N)										
No	頻率 (MHz)	修正因子 (dB)	量測讀值 (dBuV)		干擾值 (dBuV)		限制值 (dBuV)		餘裕 (dB)	
			準峰值	平均值	準峰值	平均值	準峰值	平均值	準峰值	平均值
1	0.19721	10.13	24.34	20.92	34.47	31.05	63.73	53.73	-29.26	-22.68
2	0.26700	10.15	16.93	11.35	27.08	21.50	61.21	51.21	-34.13	-29.71
3	0.34125	10.17	13.84	7.54	24.01	17.71	59.17	49.17	-35.16	-31.46
4	0.64364	10.20	28.28	22.60	38.48	32.80	56.00	46.00	-17.52	-13.20
5	8.18925	10.52	12.19	10.42	22.71	20.94	60.00	50.00	-37.29	-29.06
6	13.56000	10.64	34.38	31.41	45.02	42.05	60.00	50.00	-14.98	-7.95

附註：

1. 其它頻率的干擾值對限制值而言非常低，所以未記錄。
2. 餘裕值(dB) = 干擾值(dBuV) – 限制值(dBuV)
3. 干擾值(dBuV) = 修正因子(dB) + 量測讀值(dBuV)



27 待測物照片

請參照 BV CPS 報告編號：BFRX-WTW-P21040777

28 檢測實驗室基本資料

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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

您也可以在我們的網站內找到各實驗室的地圖。

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