



報告編號 : 4789508109-TW-R1-V0

頁碼 : 1 of 87

報告發行日期 : 2021/8/16

低功率射頻器材試驗報告

產品名稱 : Telematics GateWay

型號 : Telematics Gateway TGW3

申請廠商 : ACTIA Automotive

申請者地址 : 5, rue Jorge Semprun B.P. 74215 31432 TOULOUSE FRANCE

製造廠商 : ACTIA Automotive

製造商地址 : 5, rue Jorge Semprun B.P. 74215 31432 TOULOUSE FRANCE

實驗室名稱 : 優力國際安全認證有限公司

實驗室地址 : 新竹縣竹東鎮中興路四段 372-7 號 B 戶、E 戶

試驗受理日期 : 109 年 10 月 30 日

試驗完成日期 : 109 年 11 月 2 日 ~ 109 年 12 月 15 日

待測物接收日期 : 109 年 10 月 30 日

依據標準 : 低功率射頻器材技術規範 (LP0002) 109 年 7 月版



備註:

1. 此份報告未經優力國際安全認證有限公司書面同意，不得部分複製。
2. 本測試報告僅對受測之樣品負責。
3. 本測試報告需加負責人簽名始可生效。
4. 此案產品內外觀照請參考報告編號 4789508109-EP。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0
頁碼 : 2 of 87
報告發行日期 : 2021/8/16

認可報告之試驗機構

優力國際安全認證有限公司

實驗室地址：新竹縣竹東鎮中興路四段 372-7 號 B 戶，E 戶

測試場地：新竹縣竹東鎮中興路四段 372-7 號 B 戶，E 戶

Tel：886-2-7737-3000 Fax：886-3-583-7948

財團法人全國認證基金會

認證編號：3398

認證有效期間：2020.08.29 ~ 2023.08.28

認可能量範圍：低功率射頻器材技術規範(LP0002)

報告製作者：

呂思潔

, 日期： 110 年 8 月 16 日

審核與授權者：

蔡顯佳

, 日期： 110 年 8 月 16 日

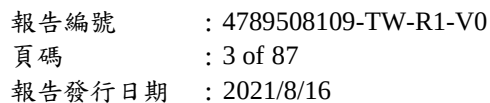
Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



原始報告編號: 4789508109-TW-R1-V0

[illegible]

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone :+886-2-7737-3000
Facsimile (FAX) :+886-3-583-7948 Doc No: 17-



目錄

1. 一般資料	6
1.1 產品描述	6
1.2 補助測試之週邊設備	11
1.3 測試架構圖	11
2. 量測儀器及測試配置說明	12
2.1 量測設備	12
2.2 測試應用參考標準	13
2.3 量測不確定度	14
2.4 試驗環境	14
3. 適用規範	15
3.1 規範要求	15
4. 測試紀錄結果	20
4.1 最大傳導輸出功率	20
4.2 6 dB 發射頻寬	25
4.3 最大功率頻譜密度	28
4.4 場強輻射	34
4.5 電源線傳導干擾	59
附錄 I 頻帶邊緣輻射與頻帶邊緣向外輻射量測	69
附錄 II 混附波輻射量測	78
附錄 III 場強輻射配置照片	84
附錄 IV 電源線傳導干擾配置照片	87



報告編號 : 4789508109-TW-R1-V0

頁碼 : 5 of 87

報告發行日期 : 2021/8/16

測試項目與結果判定總表

項次	測試項目	適用規範	結果判定
1	最大傳導輸出功率	低功率射頻器材技術規範 5.7.3.1 節、 5.7.3.3 節	合格
2	6dB 發射頻寬	低功率射頻器材技術規範 5.7.5 節	合格
3	最大功率頻譜密度	低功率射頻器材技術規範 5.7.3.1 節、 5.7.3.3 節	合格
4	場強輻射	低功率射頻器材技術規範 5.7.4 節	合格
5	電源線傳導干擾	低功率射頻器材技術規範 3.3 節	合格

Note:

1. 對於頻帶邊緣輻射與頻帶邊緣向外輻射之測試圖記錄在附錄 I，混附波輻射測試圖記錄在附錄 II。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



1. 一般資料

1.1 產品描述

產 品 名 稱	Telematics GateWay
廠 牌	Volvo
型 號	Telematics Gateway TGW3
額 定 電 壓	13.8 Vdc
調 變 方 式	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
傳 輸 速 率	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to MCS7 802.11ac: up to MCS9
頻 率 使 用 範 圍	5180 ~ 5240MHz, 5745 ~ 5825MHz
頻 道 數 量	5180 ~ 5240MHz 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2
發 射 功 率	5180 ~ 5240 MHz : 802.11a: 11.82 dBm 802.11ac (VHT20): 12.02 dBm 802.11ac (VHT40): 11.79 dBm 5745 ~ 5825MHz: 802.11a: 10.02 dBm 802.11ac (VHT20): 10.03 dBm 802.11ac (VHT40): 10.05 dBm
S/N	N/A
測 試 軟 體	TGW3 certification 1.0.0.12
天 線 型 態	見註 2

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

**註:**

1. 此待測物之射頻發射與接收技術的種類組合如下：

Modulation Mode	Tx,Rx Function
802.11a	1TX,1RX
802.11n (HT20)	1TX,1RX
802.11n (HT40)	1TX,1RX
802.11ac (VHT20)	1TX,1RX
802.11ac (VHT40)	1TX,1RX

* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for VHT20 / VHT40, therefore investigated worst case to representative mode in test report.

2. 此待測設備搭配測試的天線，其資料如下：

Ant. No.	天線型式	天線型號	商標	接頭型式	增益 (dBi)
1	PCB	Int WiFi Ant	ACTIA	N/A	2.89
2	PCB	920-447-011	TE connectivity	FAKRA	8
Note : 1. 適用規範請見本報告 3.1 節第 (5)、(6) 的規定。 2. 依據測試數據結果，符合低功率射頻器材技術規範之要求。 3. 此天線資訊由客戶提供，詳請參閱製造商的產品規格或使用手冊。					

3. 配件清單如下：

配件	廠牌	型號	規格
Antenna	TE connectivity	920-447-011	2.4GHz: 8 dBi 5GHz: 8 dBi LTE: 700~960 MHz: 5 dBi 1710~2170 MHz: 8 dBi 2500~2700 MHz: 6 dBi

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948



4. 此報告中待測物測試模式評估如下表：

模式	測試狀態
模式 1	802.11a TX_Ch36, 44, 48, 149, 157, 165
模式 2	802.11ac (VHT20) Ch36, 44, 48, 149, 157, 165
模式 3	802.11ac (VHT40) TX_Ch38, 46, 151, 159
模式 4	WiFi RX_Ch165

發射：

1 GHz以上之輻射量測以模式1,2,3,進行量測，1 GHz以下之輻射量測以模式2之測試通道165進行量測，電源線傳導干擾量測以模式2之測試通道165進行量測。

接收：

1 GHz以上與1 GHz以下之場強輻射量測與電源線傳導干擾量測以模式4進行量測。

5. 此報告中傳輸模式，場強輻射量測及電源線傳導干擾量測之外的測試項目，以OFDM調變技術進行測試並記錄最終量測結果於報告中。
6. 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，其中以平躺擁有最大場強輻射量測干擾值，故以此擺放方式進行最終量測，並將測試結果紀錄。

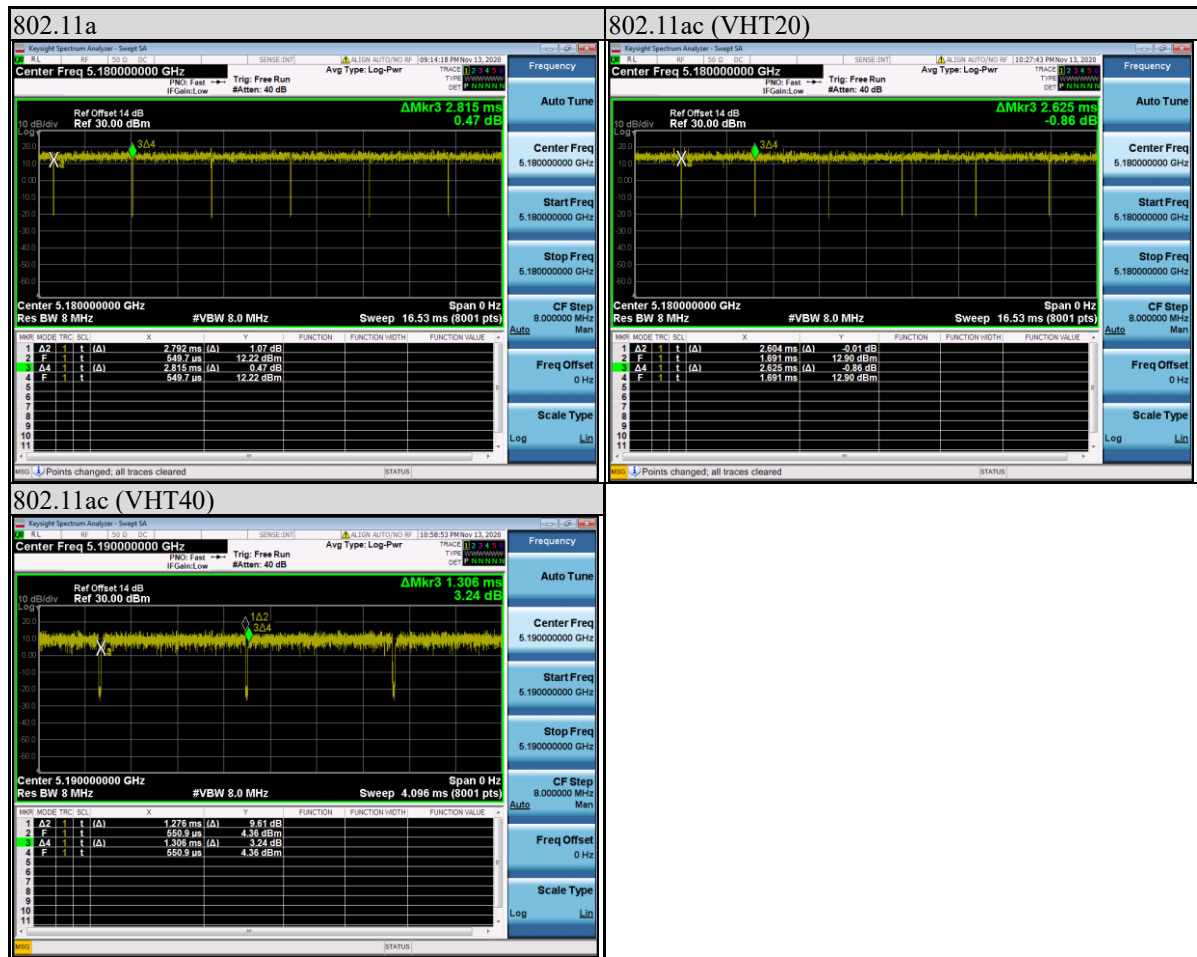


7. Duty cycle of test signal.

802.11a: Duty cycle of test signal is $\geq 98\%$, duty factor is not required.

802.11ac (VHT20): Duty cycle of test signal is $\geq 98\%$, duty factor is not required.

802.11ac (VHT40): Duty cycle = $1.276/1.306 = 0.977$, Duty factor = $10 * \log(1/0.977) = 0.1$



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



8. 此裝置各頻道的中心頻率如下：

802.11a, 802.11n (HT20), 802.11ac (VHT20)：

頻道	頻率(MHz)	頻道	頻率(MHz)
36	5180 MHz	153	5765 MHz
40	5200 MHz	157	5785 MHz
44	5220 MHz	161	5805 MHz
48	5240 MHz	165	5825 MHz
149	5745 MHz	-	-

802.11n (HT40), 802.11ac (VHT40)：

頻道	頻率(MHz)	頻道	頻率(MHz)
38	5190 MHz	151	5755 MHz
46	5230 MHz	159	5795 MHz

詳細之規格請參考使用說明書。

9. 此裝置的功率設置如下：

802.11a		802.11ac (VHT20)		802.11ac (VHT40)	
頻道	功率設置	頻道	功率設置	頻道	功率設置
36	15	36	15	38	15
44	15	44	15	46	15
48	15	48	15	151	15
149	15	149	15	159	15
157	15	157	15	-	-
165	15	165	15	-	-

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



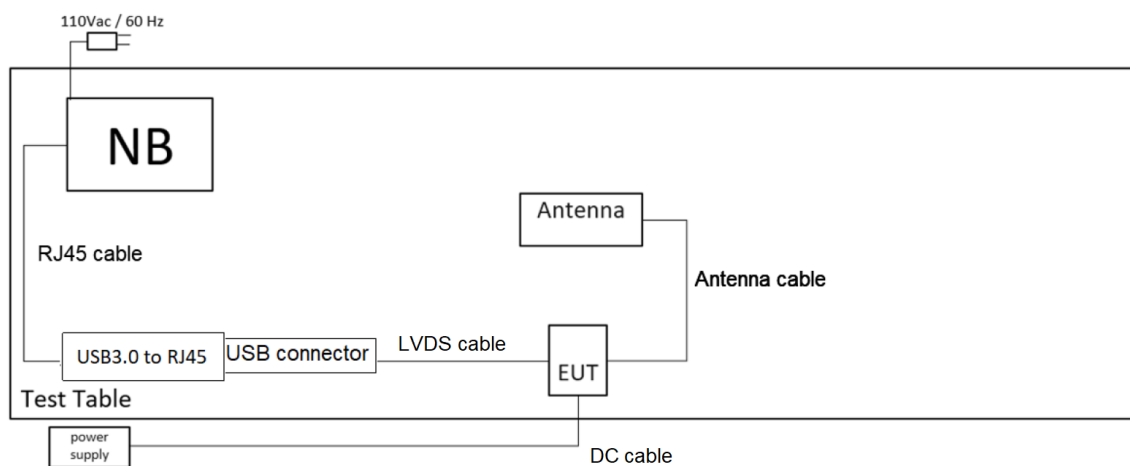
1.2 補助測試之週邊設備

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。

裝置名稱	廠牌	型號	序號	Remark
Notebook	Acer	N15Q1	NXEF9TA0075231BF8A7600	N/A
RJ45 cable	ACTIA	RJ45-1	NA	NA
USB3.0 to RJ45	Lenovo	RTL8153	DLA00N44	NA
USB connector	ACTIA	USB-C	NA	NA
LVDS Cable	LEONI Dacar®	LVDS-1	NA	NA
Antenna	TE connectivity	920-447-011	NA	NA
Antenna cable	ACTIA	Ant-1	NA	NA
Antenna Cable	ACTIA	Ant-1	NA	NA
DC power supply	GW Insrek	GPD-2303S	PS301	NA
DC cable	ACTIA	DC-C	NA	NA

1.3 測試架構圖

在測試筆電上開啟測試軟體（TGW3 certification 1.0.0.12）進行控制。該測試軟體用於啟用連續傳輸或接收模式，並根據需要選擇測試通道、數據速率、調變方式和功率設置。



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



2. 量測儀器及測試配置說明

2.1 量測設備

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
Radiated Spurious Emission					
Spectrum Analyzer	Keysight	N9010A	MY56070827	Nov. 13, 2019 Nov. 11, 2020	1 year
EMI Test Receiver	Rohde & Schwarz	ESR7	101754	Dec. 17, 2019	1 year
Loop Antenna	ETS lindgren	6502	00213440	Dec. 19, 2019	1 year
Trilog-Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMCI	VULB 9168 & N-6-05	774 & AT-N0538	Jan. 3, 2020	1 year
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	Jan. 3, 2020	1 year
Horn Antenna (18-40 GHz)	Schwarzbeck	BBHA 9170	781	Dec. 27, 2019	1 year
Preamplifier (30-1000 MHz)	EMCI	EMC330E	980405	Jun. 9, 2020	1 year
Preamplifier (1-18 GHz)	EMCI	EMC051835BE	980406	Feb. 4, 2020	1 year
Preamplifier (18-40GHz)	EMCI	EMC184040SEE	980426	May 19, 2020	1 year
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-4 & 170425-2	Jul. 2, 2020	1 year
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-1 & 170214-2	Jan. 8, 2020	1 year

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 13 of 87

報告發行日期 : 2021/8/16

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
Antenna Port Conducted Measurement					
Spectrum Analyzer	Keysight	N9010A	MY56070834	Nov. 6, 2019 Nov. 6, 2020	1 year
Pulse Power Sensor	Anritsu	MA2411B	1531202	Dec. 23, 2019	1 year
Power Meter	Anritsu	ML2495A	1645002	Dec. 23, 2019	1 year
Signal Generator	Keysight	N5182B	MY56200244	Jan. 6, 2020	1 year
AC power Line Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	Nov. 19, 2019 Nov. 17, 2020	1 year
Two-Line V-Network	Rohde & Schwarz	ENV216	102136	Aug. 19, 2020	1 year
Impuls-Begrenzer Pulse Limiter	Rohde & Schwarz	ESH3-Z2	102219-Qt	Aug. 12, 2020	1 year
Cables	HARBOUR INDUSTRIES	LL142	170205-5000-1	Feb. 5, 2020	1 year

UL Software

Software	Test Item	Version
EZ EMC	Radiated measurement	1.1.4.2
Keysight.TestSystem	Conducted measurement	1.0.0.0

2.2 測試應用參考標準

本報告中記錄的測試程序參照如下：

KDB 789033 D02 General UNII Test Procedure New Rules v02r01, KDB414788 D01 Radiated Test Site v01r01, ANSI C63.10-2013 and KDB 662911 D01 Multiple Transmitter Output v02r01.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



2.3 量測不確定度

此報告中關於量測之符合性聲明，採用 ISO Guide 98-4 的 8.2.4 與 8.2.5 章節中描述的準確度方法為判定規則。

下列量測不確定水準是參照量測儀器 CISPR 16-4-2 所規定之不確定度。

Test Item	Measurement Frequency Range	K	U(dB)
Conducted disturbance at mains terminals ports	0.15 MHz ~ 30 MHz	2	1.5
RF Conducted	9 kHz – 40 GHz	2	1.0
Radiated disturbance below 30MHz	9 kHz - 30 MHz	2	1.9
Radiated disturbance below 1 GHz	30 MHz ~ 1 GHz	2	5.4
Radiated disturbance above 1GHz	1 GHz ~ 40 GHz	2	4.7

2.4 試驗環境

產品測試時之環境條件如下：

測試項目	環境條件	輸入電壓	測試日期	測試人員
最大傳導輸出功率	22~26°C / 63~68%RH	13.8Vdc	2020/11/2 ~ 2020/12/11	陳正強
6dB 發射頻寬	22~26°C / 63~68%RH	13.8Vdc	2020/11/2 ~ 2020/12/11	陳正強
最大功率頻譜密度	22~26°C / 63~68%RH	13.8Vdc	2020/11/2 ~ 2020/12/11	陳正強
場強輻射	23~25°C / 64~68%RH	110Vac, 60 Hz	2020/11/2 ~ 2020/12/11	陳正強
電源線傳導干擾	22~26°C / 63~68%RH	110Vac, 60 Hz	2020/11/2 ~ 2020/12/15	陳正強

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948



3. 適用規範

3.1 規範要求

(1) 最大傳導輸出功率之要求

操作於 5.15 GHz~5.25 GHz 頻段:

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.3.1 節之要求:

(A) 供戶外操作使用/供室內操作使用/供固定式點對點操作使用: 最大傳導輸出功率應小於或等於 1 W。

(B) 供用戶端裝置(Client Device)操作使用: 最大傳導輸出功率應小於或等於 250mW。

操作於 5.725 GHz~5.850 GHz 頻段:

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.3.3 節之規定, 最大傳導輸出功率應小於或等於 1 W。

2) 6dB 發射頻寬之要求

操作於 5.725 GHz~5.850 GHz 頻段:

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.5 節之規定, 其 6dB 頻寬至少應有 500kHz。

(3) 功率頻譜密度之要求

操作於 5.15 GHz~5.25 GHz 頻段:

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.3.1 節之要求:

(A) 供戶外操作使用/供室內操作使用/供固定式點對點操作使用: 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 17 dBm。

(B) 供用戶端裝置(Client Device)操作使用: 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 11 dBm。

操作於 5.725 GHz~5.850 GHz 頻段:

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.3.3 節之規定, 在任何 500 kHz 頻帶中最大功率頻譜密度應小於或等於 30 dBm。



(4) 帶外發射之要求

操作於 5.15 GHz~5.35 GHz 及 5.470 GHz ~5.725 GHz 頻段:

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.4.1 節之要求，帶外發射之有效等向輻射功率(EIRP) ≤ -27 dBm/MHz。

操作於 5.725 GHz~5.850 GHz 頻段:

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.4.2 節之要求，所有頻帶邊緣向外 5 MHz 內頻率之發射，有效等向輻射功率(EIRP) ≤ 27 dBm/MHz ~ 15.6 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣向外 5 MHz~25 MHz，有效等向輻射功率 35(EIRP) ≤ 15.6 dBm/MHz ~ 10 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外 25 MHz~75 MHz，有效等向輻射功率(EIRP) ≤ 10 dBm/MHz ~ -27 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外 ≥ 75 MHz 的頻率之發射，有效等向輻射功率(EIRP) ≤ -27 dBm/MHz；有關遮罩限制值詳圖 1。

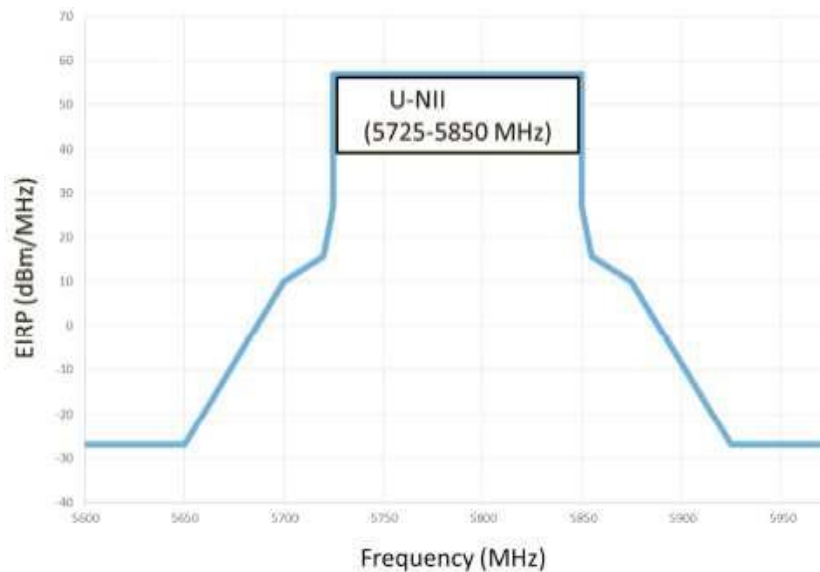


圖 1



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(f) (MHz)	電場強度 (微伏特/公尺，uV/m)	測距(公尺)
0.009 - 0.490 (含)	2,400/f(kHz)	300
0.490 (不含) - 1.705 (含)	24,000/f(kHz)	30
1.705 (不含) - 30 (不含)	30	30
30 (含) - 88 (含)	100	3
88 (不含)- 216 (含)	150	3
216 (不含)- 960 (含)	200	3
960 (不含)以上	500	3

(5) 天線之規定

天線規格不受第 3.2 節規定之限制。

(6) 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 5.7.3 節之規定如下：

操作於 5.15 GHz~5.25 GHz 頻段：

(A) 供戶外操作使用: 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及最大功率頻譜密度。在水平面仰角超過 30 度時，其最大 EIRP 應小於或等於 21 dBm。

(B) 供室內操作使用: 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及最大功率頻譜密度。

(C) 供固定式點對點操作使用: 使用超過 23 dBi 方向增益之指向性天線時，應依超過 23 dBi 天線方向增益的 dBi 總量，等量減少最大傳導輸出功率及最大功率頻譜密度。固定式點對點操作，不包括點對多點系統、全方向性應用及多台共站發射機傳送相同資訊。

(D) 供用戶端裝置(Client Device)操作使用: 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及最大功率頻譜密度。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



操作於 5.725 GHz~5.850 GHz 頻段:

(A) 供固定式點對點操作時，使用方向增益超過 6 dBi 之發射天線，可不需對應減少發射器之傳導輸出功率限制值。

(B) 除(A)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及最大功率頻譜密度。

(7) 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。

(8) 無線資訊傳輸設備必須擁有安全功能之要求

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.7.3 節之規定，無線資訊傳輸設備必須擁有安全功能，以保護未經授權之一方更改軟體。製造商應提出符合本節規定之相關證明文件或符合性聲明。

(9) 依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.7.4 節之規定，製造商必須在操作於 U-NII 頻段上之數位調變系統中提供安全功能，使第三方團體無法重寫程式，使其操作於非經認證之設定。該軟體必須避免發射機操作於非經認證之頻率、輸出功率、調變形式或其他射頻參數。製造商可使用私有網路，只有經授權的用戶能下載軟體、進行軟體式電子簽章或硬體式的韌體更新，新的軟體可以被合法的載入到設備中，同時又能符合上述事項，並於應用程式中描述設備授權的方法。



(10) 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(MHz)	頻率(MHz)	頻率(MHz)
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	-

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



4. 測試紀錄結果

4.1 最大傳導輸出功率

4.1.1 適用標準

請見本報告 3.1 節第 (1)、(6) 的規定。

4.1.2 測試方法

最大傳導輸出功率量測：

For 802.11a, 802.11ac (VHT20), 802.11ac (VHT40)

- a) 將待測物之天線埠經由適當之衰減器接到功率計上。
- b) 設定待測物處於連續發射狀態。
- c) 計算其最大傳導輸出功率。

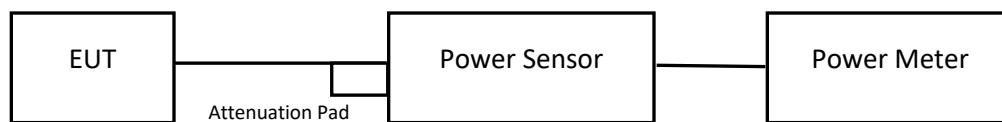
發射頻寬量測：

- a) 將待測物之天線埠經由適當之衰減器接到頻譜分析儀上。
- b) 設定待測物處於連續發射狀態。
- c) 最大輸出功率峰值減 26dB 的最大頻率範圍。



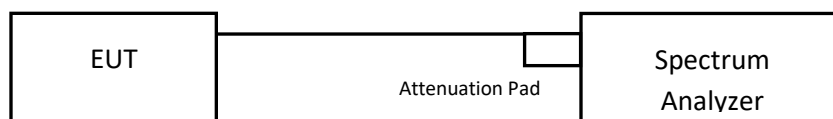
4.1.3 測試配置圖

最大傳導輸出功率量測：



The loss between RF output port of the EUT and the input port of the Power Meter has been taken into consideration.

發射頻寬量測：



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.



4.1.4 測試結果

802.11a

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	15.205	11.82	28	PASS
40	5200	14.223	11.53	28	PASS
48	5240	12.972	11.13	28	PASS
149	5745	10.046	10.02	28	PASS
157	5785	9.036	9.56	28	PASS
165	5825	8.69	9.39	28	PASS

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	15.922	12.02	28	PASS
40	5200	14.723	11.68	28	PASS
48	5240	15.241	11.83	28	PASS
149	5745	10.069	10.03	28	PASS
157	5785	8.851	9.47	28	PASS
165	5825	8.551	9.32	28	PASS

802.11ac (VHT40)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
38	5190	15.101	11.79	28	PASS
46	5230	14.158	11.51	28	PASS
151	5755	10.116	10.05	28	PASS
159	5795	8.851	9.47	28	PASS

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



發射頻寬:

802.11a

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)
36	5180	21.59
40	5200	21.61
48	5240	21.57

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)
36	5180	21.66
40	5200	21.87
48	5240	21.68

802.11ac (VHT40)

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)
38	5190	40.58
46	5230	39.61

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948

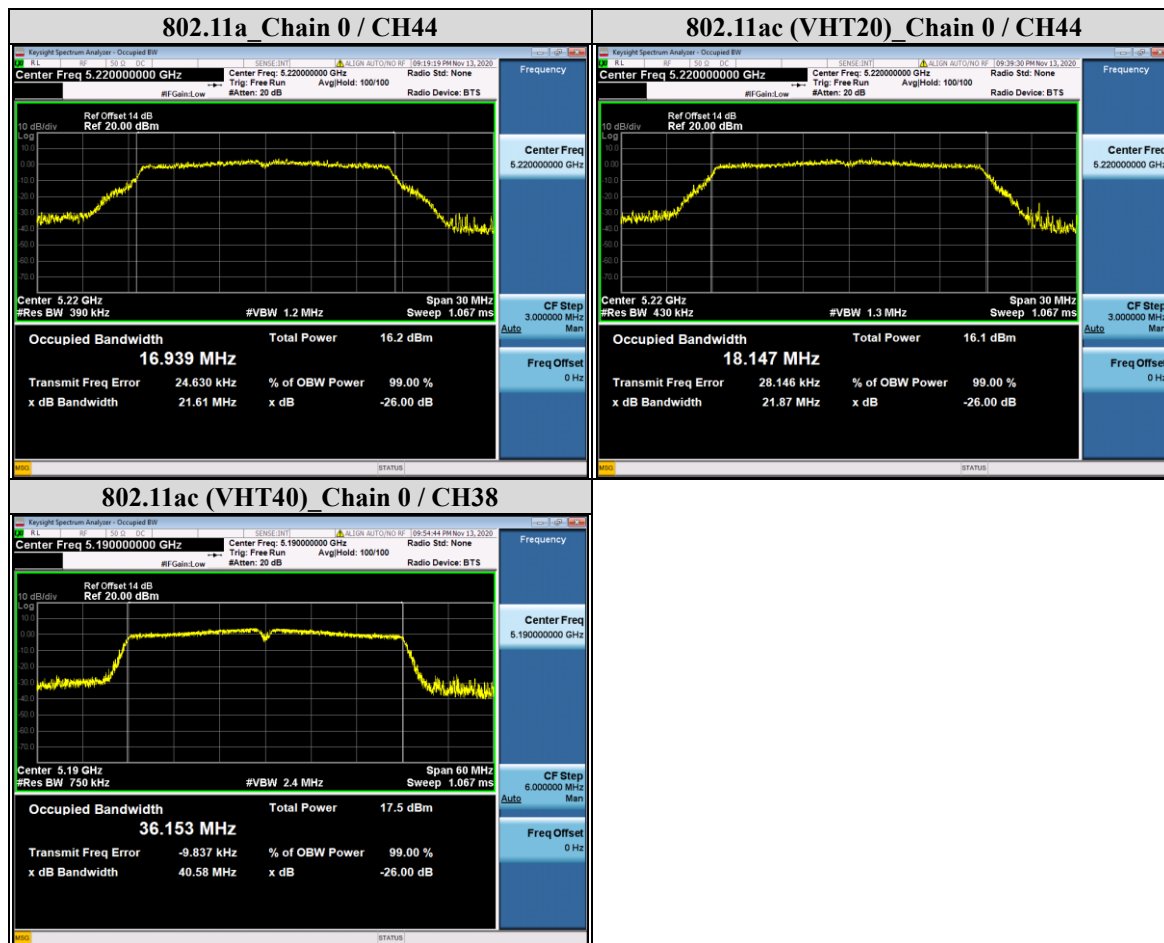


報告編號 : 4789508109-TW-R1-V0

頁碼 : 24 of 87

報告發行日期 : 2021/8/16

此測試圖僅放測試結果最差的頻道



4.1.5 測試結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



4.2 6 dB 發射頻寬

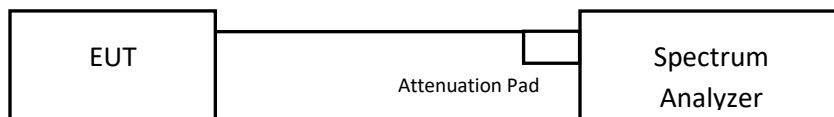
4.2.1 適用標準

請見本報告 3.1 節第 (2) 的規定。

4.2.2 測試方法

- 將待測物之天線埠經由適當之衰減器接到頻譜分析儀上。
- 設定待測物處於連續發射狀態。
- 計算最大輸出功率峰值減 6 dB 的最大頻率範圍。

4.2.3 測試配置圖



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.



4.2.4 測試結果

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.293	0.5	PASS
157	5785	16.32	0.5	PASS
165	5825	16.327	0.5	PASS

802.11ac (VHT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.591	0.5	PASS
157	5785	17.535	0.5	PASS
165	5825	17.55	0.5	PASS

802.11ac (VHT40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.392	0.5	PASS
159	5795	35.302	0.5	PASS

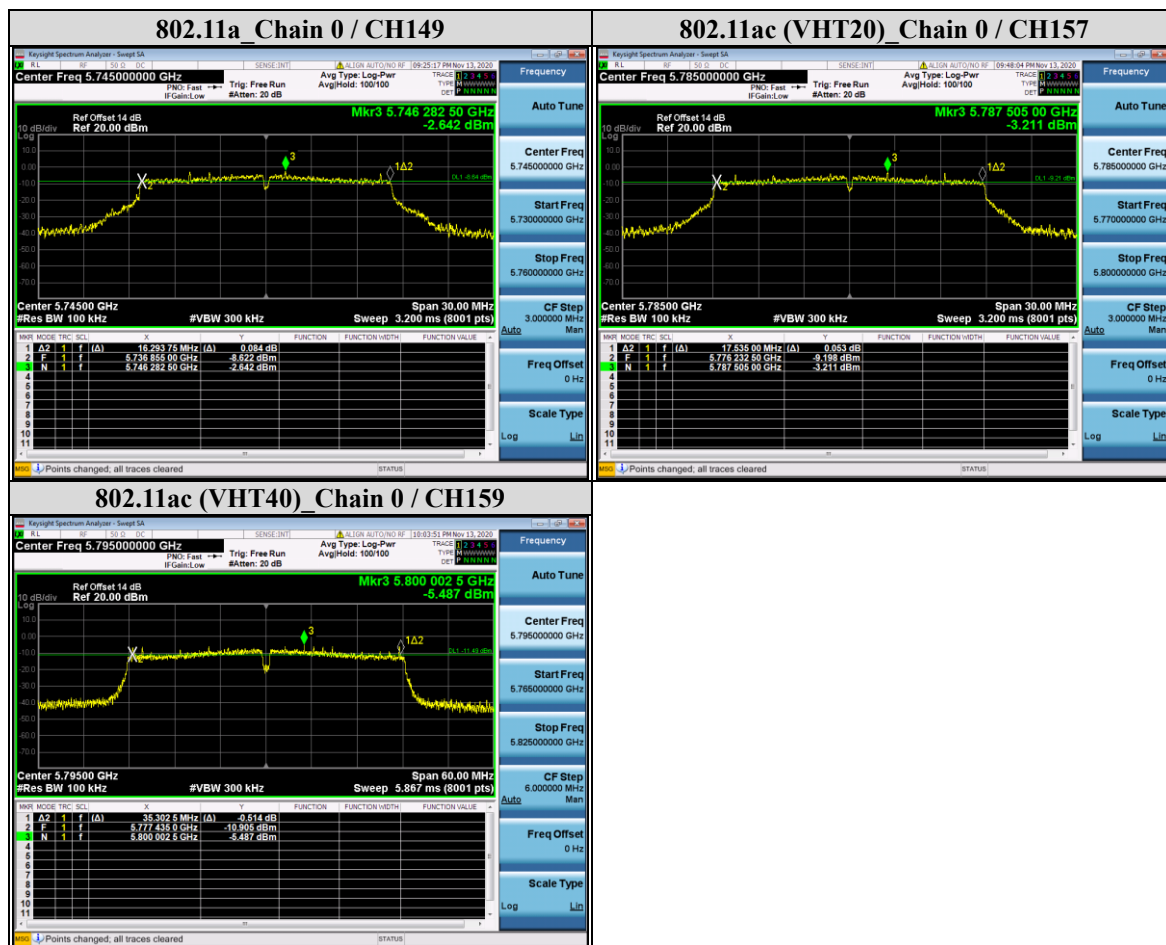
Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



報告編號 : 4789508109-TW-R1-V0
頁碼 : 27 of 87
報告發行日期 : 2021/8/16

此測試圖僅放測試結果最差的頻道



4.2.5 測試結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



4.3 最大功率頻譜密度

4.3.1 適用標準

請見本報告 3.1 節第 (3) 、 (6) 的規定。

4.3.2 測試方法

For U-NII-1 band:

Refer as FCC KDB 789033

Using method SA-1_Duty cycle >98 % (802.11a 、 802.11ac (VHT20))

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW $\geq$ 3 RBW, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

Using method SA-2_Duty cycle <98 % (802.11ac (VHT40))

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW $\geq$ 3 RBW, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and add 10 log (1/duty cycle)

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



For U-NII-3 band:

Refer as FCC KDB 789033

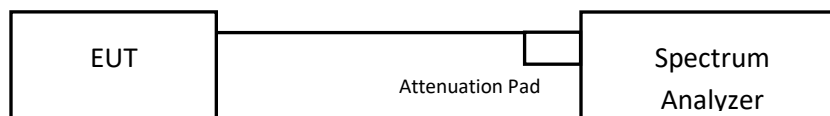
Duty cycle >98 % (802.11a 、802.11ac (VHT20))

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW $\geq$ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz}/300\text{kHz})$
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value.

Duty cycle <98 % (802.11ac (VHT40))

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW $\geq$ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz}/300\text{kHz})$
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add $10 \log (1/\text{duty cycle})$

4.3.3 測試配置圖



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



4.3.4 測試結果

For U-NII-1 Band

802.11a

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass/Fail
36	5180	2.44	15	PASS
44	5220	2.38	15	PASS
48	5240	2.14	15	PASS

802.11ac (VHT20)

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass/Fail
36	5180	2.12	15	PASS
44	5220	1.71	15	PASS
48	5240	1.90	15	PASS

802.11ac (VHT40)

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass/Fail
38	5190	-0.39	15	PASS
46	5230	-0.77	15	PASS

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

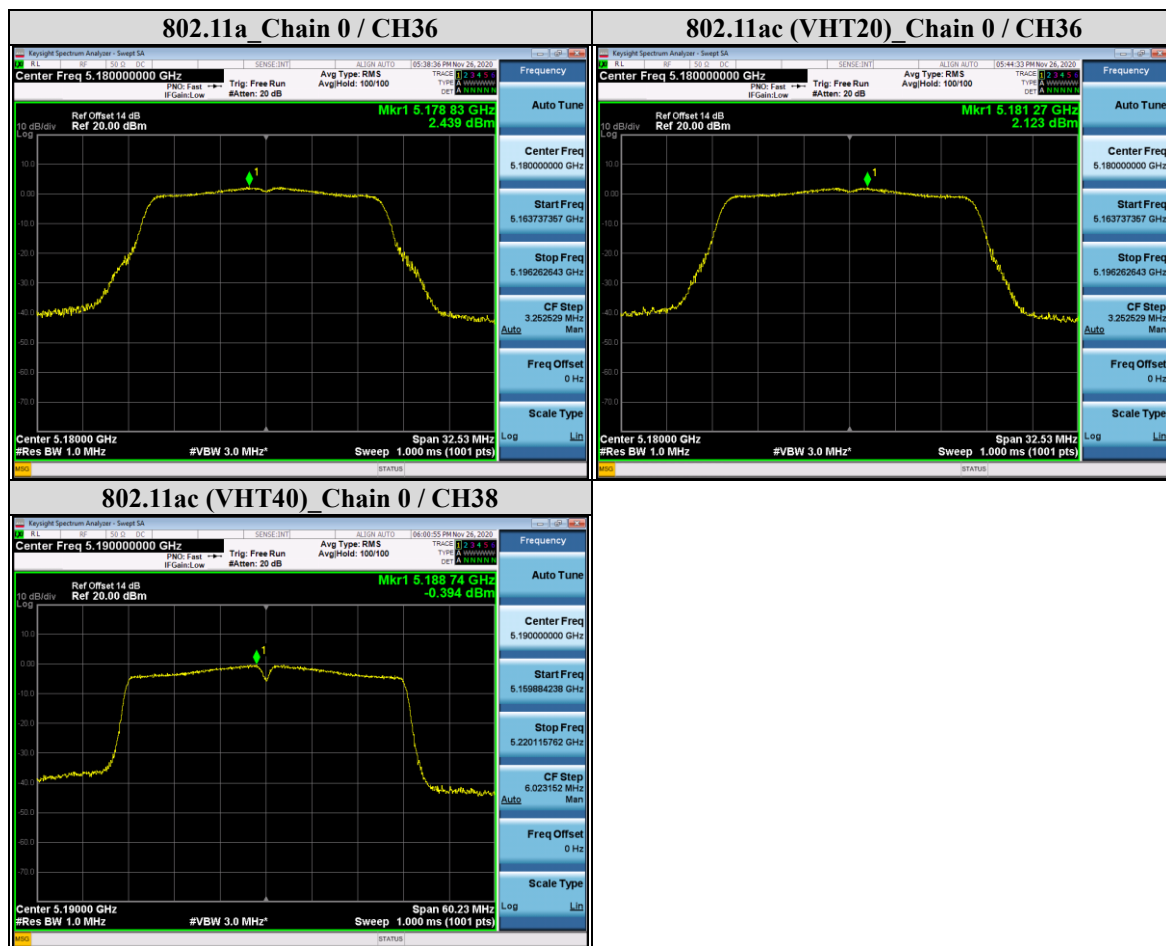
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0
頁碼 : 31 of 87
報告發行日期 : 2021/8/16

**此測試圖僅放測試結果最差的頻道



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

**For U-NII-3 Band****802.11a**

Channel	Freq. (MHz)	PSD w/o duty factor (dBm/300 kHz)	PSD w/o duty factor (dBm/500 kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-4.033	-1.81	28	PASS
157	5785	-4.463	-2.24	28	PASS
165	5825	-5.271	-3.05	28	PASS

802.11ac (VHT20)

Channel	Freq. (MHz)	PSD w/o duty factor (dBm/300 kHz)	PSD w/o duty factor (dBm/500 kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-4.567	-2.35	28	PASS
157	5785	-4.498	-2.28	28	PASS
165	5825	-5.394	-3.17	28	PASS

802.11ac (VHT40)

Channel	Freq. (MHz)	PSD w/o duty factor (dBm/300 kHz)	PSD w/o duty factor (dBm/500 kHz)	Limit (dBm/500kHz)	Pass /Fail
151	5755	-6.795	-4.58	28	PASS
159	5795	-7.209	-4.99	28	PASS

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

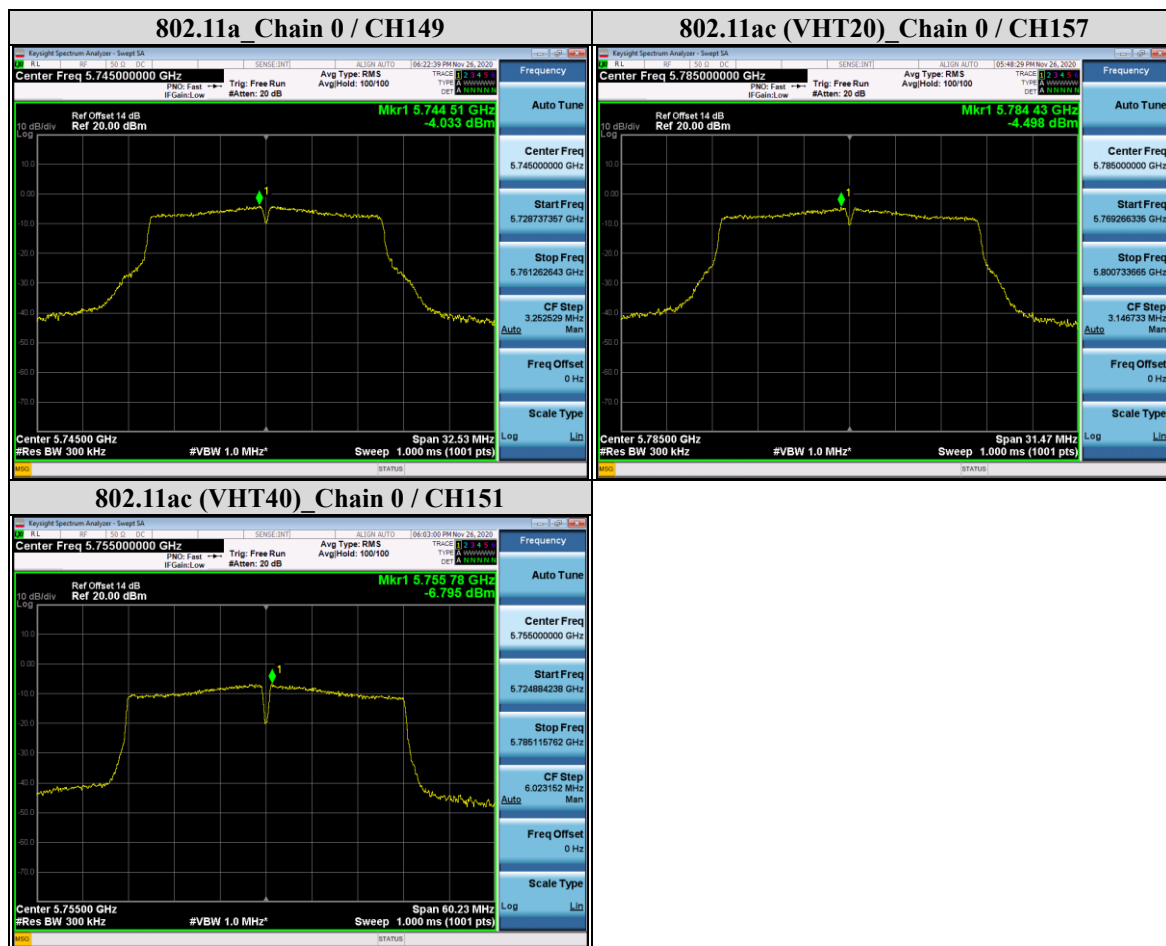
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0
頁碼 : 33 of 87
報告發行日期 : 2021/8/16

**此測試圖僅放測試結果最差的頻道



4.3.5 測試結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



4.4 場強輻射

4.4.1 適用標準

請見本報告 3.1 節第 (4)、(12) 的規定。

4.4.2 測試方法

在半電波暗室，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
頻譜設定如下：

Peak

頻率範圍	RBW	VBW
9 kHz~150 kHz	200 Hz	600 Hz
150 kHz~30 MHz	10 kHz	30 kHz
30 MHz~1 GHz	120 kHz	360 kHz
Above 1GHz	1 MHz	3 MHz

Average

調變方式	RBW	VBW
802.11a	1 MHz	10 Hz
802.11ac (VHT20)	1 MHz	10 Hz
802.11ac (VHT40)	1 MHz	1 kHz

Note:

- Quasi-Peak RBW = 120 kHz
- The 802.11a: Duty cycle $\geq 98\%$, Therefore VBW configuration is 10 Hz for testing.
- The 802.11ac (VHT20): Duty cycle $\geq 98\%$, Therefore VBW configuration is 10 Hz for testing.
- The 802.11ac (VHT40): Duty cycle = $(1.276/1.306) \times 100\% = 97.7\% < 98\%$, so video bandwidth is $1/1.276 = 0.784$ kHz. Therefore VBW configuration is 1 kHz for testing.
- Refer to section 1.1 for duty cycle.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

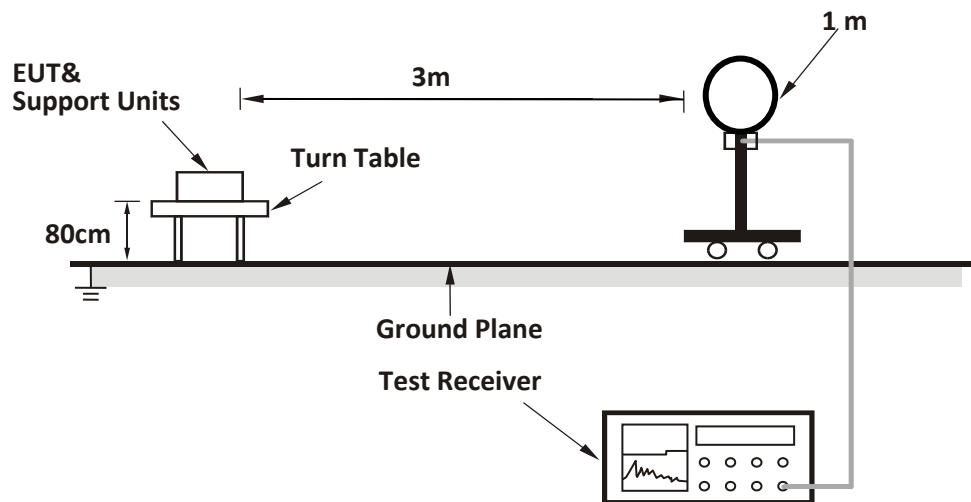
Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

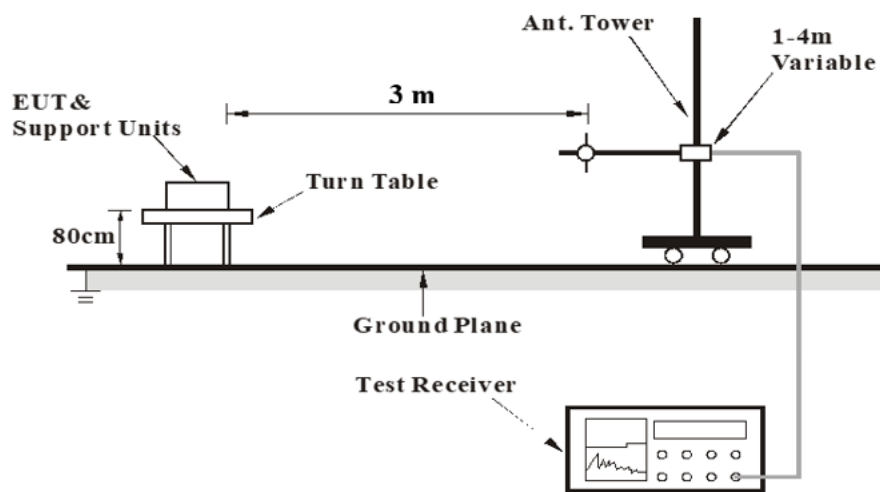
Doc No: 17-EM-F0880 / 6.0

4.4.3 測試配置圖

<Frequency Range 9 kHz ~ 30 MHz>



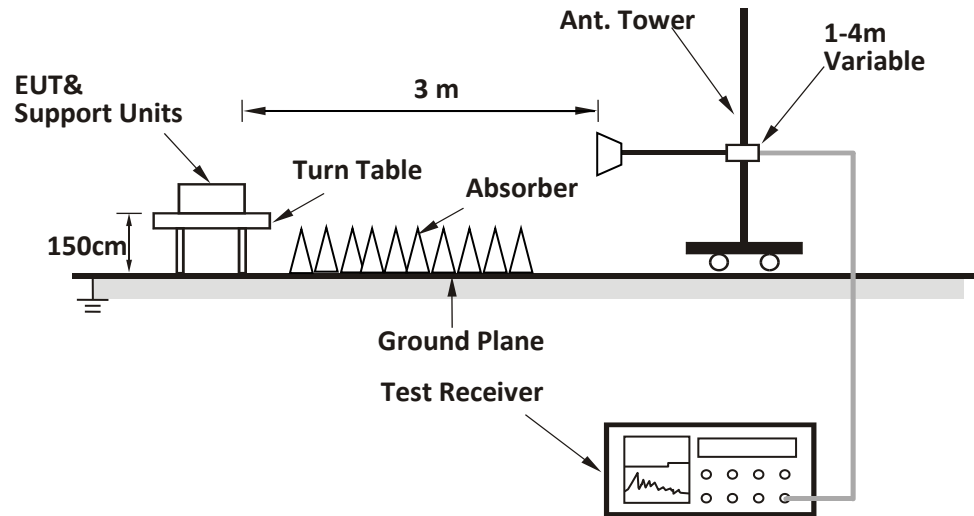
<Frequency Range 30 MHz ~ 1 GHz >



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
 Telephone : +886-2-7737-3000
 Facsimile (FAX) : +886-3-583-7948

<Frequency Range above 1 GHz>



For the actual test configuration, please refer to the Appendix III.

4.4.4 場強之計算公式

結果值 Result value (dBuV/m) = 機器讀值 Reading value (dBuV/m) + 校正因子
 Correction Factor (dB/m)

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



4.4.5 測試結果

發射模式

Above 1GHz Data :

EUT Test Condition		Measurement Detail	
Mode 1	Channel 36	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5071.7	42.45	14.26	56.71	74	-17.29	Peak
@	5180	84.64	14.55	99.19	-	-	Peak
-	5148.8	30.28	14.57	44.85	54	-9.15	Average
@	5180	74.1	14.55	88.65	-	-	Average
-	10360	28.07	18.92	46.99	68.2	-21.21	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5149.4	45.77	14.57	60.34	74	-13.66	Peak
@	5180	87.12	14.55	101.67	-	-	Peak
-	5149.4	31.4	14.57	45.97	54	-8.03	Average
@	5180	78	14.55	92.55	-	-	Average
-	10360	29.57	18.92	48.49	68.2	-19.71	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 38 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 1	Channel 44	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5109.2	41.98	14.44	56.42	74	-17.58	Peak
@	5220	83.39	14.36	97.75	-	-	Peak
-	5110.1	30.35	14.43	44.78	54	-9.22	Average
@	5220	74.23	14.36	88.59	-	-	Average
-	10440	28.08	19.23	47.31	68.2	-20.89	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5117	42.87	14.45	57.32	74	-16.68	Peak
@	5220	87.01	14.36	101.37	-	-	Peak
-	5104.1	30.23	14.42	44.65	54	-9.35	Average
@	5220	78.82	14.36	93.18	-	-	Average
-	10440	27.88	19.23	47.11	68.2	-21.09	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 39 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 1	Channel 48	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5115.5	42.11	14.45	56.56	74	-17.44	Peak
@	5240	81.71	14.18	95.89	-	-	Peak
-	5097.5	30.2	14.39	44.59	54	-9.41	Average
@	5240	73.6	14.18	87.78	-	-	Average
-	10480	28.98	19.37	48.35	68.2	-19.85	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5091.8	42.1	14.36	56.46	74	-17.54	Peak
@	5240	85.36	14.18	99.54	-	-	Peak
-	5074.1	30.45	14.27	44.72	54	-9.28	Average
@	5240	76.55	14.18	90.73	-	-	Average
-	10480	28.76	19.37	48.13	68.2	-20.07	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 40 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 1	Channel 149	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5595	40.35	15.06	55.41	68.2	-12.79	Peak
-	5725	48.85	15.41	64.26	122.2	-57.94	Peak
@	5745	66.98	15.57	82.55	-	-	Average
@	5745	75.86	15.57	91.43	-	-	Peak
*	11490	28.77	20.73	49.5	74	-24.5	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5618.5	40.51	15.1	55.61	68.2	-12.59	Peak
-	5725	46.83	15.41	62.24	122.2	-59.96	Peak
@	5745	72.06	15.57	87.63	-	-	Average
@	5745	81.4	15.57	96.97	-	-	Peak
*	11490	31.3	20.73	52.03	74	-21.97	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 41 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 1	Channel 157	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5645	41.03	15.13	56.16	68.2	-12.04	Peak
-	5697.5	41.42	15.21	56.63	103.36	-46.73	Peak
@	5785	70.4	15.65	86.05	-	-	Average
@	5785	80.91	15.65	96.56	-	-	Peak
-	5888.5	40.73	16.24	56.97	95.18	-38.21	Peak
-	5972	41.11	16.39	57.5	68.2	-10.7	Peak
*	11570	28.99	20.51	49.5	74	-24.5	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5621.5	40.44	15.1	55.54	68.2	-12.66	Peak
-	5706	40.97	15.27	56.24	106.88	-50.64	Peak
@	5785	72.7	15.65	88.35	-	-	Average
@	5785	82.65	15.65	98.3	-	-	Peak
-	5871.5	41.01	16.11	57.12	106.18	-49.06	Peak
-	5951.5	40.94	16.4	57.34	68.2	-10.86	Peak
*	11570	30.75	20.51	51.26	74	-22.74	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 42 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 1	Channel 165	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5825	69.64	15.81	85.45	-	-	Average
@	5825	78.63	15.81	94.44	-	-	Peak
-	5882.5	41.34	16.19	57.53	99.63	-42.1	Peak
-	5987	41.06	16.38	57.44	68.2	-10.76	Peak
*	11650	28.53	20.28	48.81	74	-25.19	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5825	72.66	15.81	88.47	-	-	Average
@	5825	81.5	15.81	97.31	-	-	Peak
-	5908	40.92	16.34	57.26	80.74	-23.48	Peak
-	6001.5	40.42	16.37	56.79	68.2	-11.41	Peak
*	11650	29.7	20.28	49.98	74	-24.02	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 43 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 2	Channel 36	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5145.5	42.51	14.55	57.06	74	-16.94	Peak
@	5180	82.05	14.55	96.6	-	-	Peak
-	5148.8	29.57	14.57	44.14	54	-9.86	Average
@	5180	70.88	14.55	85.43	-	-	Average
-	10360	29.19	18.92	48.11	68.2	-20.09	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5146.1	46.81	14.55	61.36	74	-12.64	Peak
@	5180	86.31	14.55	100.86	-	-	Peak
-	5148.2	30.04	14.57	44.61	54	-9.39	Average
@	5180	76.24	14.55	90.79	-	-	Average
-	10360	28.42	18.92	47.34	68.2	-20.86	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 44 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 2	Channel 44	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5110.1	42.21	14.43	56.64	74	-17.36	Peak
@	5220	82.4	14.36	96.76	-	-	Peak
-	5087.3	29.62	14.34	43.96	54	-10.04	Average
@	5220	71.59	14.36	85.95	-	-	Average
-	10440	27.65	19.23	46.88	68.2	-21.32	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5146.1	41.8	14.55	56.35	74	-17.65	Peak
@	5220	87.04	14.36	101.4	-	-	Peak
-	5094.2	29.58	14.38	43.96	54	-10.04	Average
@	5220	77.38	14.36	91.74	-	-	Average
-	10440	27.69	19.23	46.92	68.2	-21.28	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 45 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 2	Channel 48	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5095.7	43.21	14.38	57.59	74	-16.41	Peak
@	5240	81.93	14.18	96.11	-	-	Peak
-	5115.5	29.54	14.45	43.99	54	-10.01	Average
@	5240	71.22	14.18	85.4	-	-	Average
-	10480	28.14	19.37	47.51	68.2	-20.69	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5138.3	41.73	14.54	56.27	74	-17.73	Peak
@	5240	86.3	14.18	100.48	-	-	Peak
-	5082.8	29.66	14.31	43.97	54	-10.03	Average
@	5240	75.03	14.18	89.21	-	-	Average
-	10480	28.65	19.37	48.02	68.2	-20.18	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 46 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 2	Channel 149	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5588	41.39	15.05	56.44	68.2	-11.76	Peak
-	5722.5	41.93	15.39	57.32	116.5	-59.18	Peak
@	5745	66.69	15.57	82.26	-	-	Average
@	5745	74.68	15.57	90.25	-	-	Peak
*	11490	29.6	20.73	50.33	74	-23.67	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5541.5	40.55	14.97	55.52	68.2	-12.68	Peak
-	5725	46.38	15.41	61.79	122.2	-60.41	Peak
@	5745	72.87	15.57	88.44	-	-	Average
@	5745	80.88	15.57	96.45	-	-	Peak
*	11490	30.91	20.73	51.64	74	-22.36	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 47 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 2	Channel 157	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5565.5	39.66	15.02	54.68	68.2	-13.52	Peak
-	5650.5	40.51	15.14	55.65	68.57	-12.92	Peak
@	5785	70.35	15.65	86	-	-	Average
@	5785	78.02	15.65	93.67	-	-	Peak
-	5901	40.91	16.33	57.24	85.92	-28.68	Peak
-	5961.5	39.9	16.4	56.3	68.2	-11.9	Peak
*	11570	29.13	20.51	49.64	74	-24.36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5645	40.34	15.13	55.47	68.2	-12.73	Peak
-	5651.5	39.97	15.15	55.12	69.31	-14.19	Peak
@	5785	73.93	15.65	89.58	-	-	Average
@	5785	82.54	15.65	98.19	-	-	Peak
-	5871	40.7	16.11	56.81	106.32	-49.51	Peak
-	5957.5	40.06	16.39	56.45	68.2	-11.75	Peak
*	11570	30.4	20.51	50.91	74	-23.09	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 48 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 2	Channel 165	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5825	81.3	15.81	97.11	-	-	Average
@	5825	78.49	15.81	94.3	-	-	Peak
-	5925	40.61	16.36	56.97	68.2	-11.23	Peak
-	5953	40.88	16.39	57.27	68.2	-10.93	Peak
*	11650	27.9	20.28	48.18	74	-25.82	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5825	72.7	15.81	88.51	-	-	Average
@	5825	80.82	15.81	96.63	-	-	Peak
-	5864	41.31	16.05	57.36	108.28	-50.92	Peak
-	5929.5	40.59	16.36	56.95	68.2	-11.25	Peak
*	11650	32.4	20.28	52.68	74	-21.32	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 49 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 3	Channel 38	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5146.7	43.81	14.55	58.36	74	-15.64	Peak
@	5190	79.89	14.54	94.43	-	-	Peak
-	5150	31.65	14.57	46.22	54	-7.78	Average
@	5190	68.77	14.54	83.31	-	-	Average
-	10380	28.16	18.99	47.15	68.2	-21.05	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5143.7	47.19	14.55	61.74	74	-12.26	Peak
@	5190	83.89	14.54	98.43	-	-	Peak
-	5149.7	34.21	14.57	48.78	54	-5.22	Average
@	5190	73.03	14.54	87.57	-	-	Average
-	10380	28.52	18.99	47.51	68.2	-20.69	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 50 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 3	Channel 46	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5085.2	43	14.32	57.32	74	-16.68	Peak
@	5230	80.87	14.28	95.15	-	-	Peak
-	5096.9	29.62	14.39	44.01	54	-9.99	Average
@	5230	69.7	14.28	83.98	-	-	Average
-	10460	28.7	19.29	47.99	68.2	-20.21	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5099.6	42.38	14.41	56.79	74	-17.21	Peak
@	5230	84.89	14.28	99.17	-	-	Peak
-	5121.8	29.69	14.47	44.16	54	-9.84	Average
@	5230	73.79	14.28	88.07	-	-	Average
-	10460	29.24	19.29	48.53	68.2	-19.67	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 51 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 3	Channel 151	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5619	41.41	15.1	56.51	68.2	-11.69	Peak
-	5718	51.55	15.36	66.91	110.24	-43.33	Peak
@	5755	66.09	15.6	81.69	-	-	Average
@	5755	74.21	15.6	89.81	-	-	Peak
*	11510	29.23	20.72	49.95	74	-24.05	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5561.5	40.88	15.01	55.89	68.2	-12.31	Peak
-	5725	52.97	15.41	68.38	122.2	-53.82	Peak
@	5755	81.36	15.6	96.96	-	-	Average
@	5755	79.75	15.6	95.35	-	-	Peak
*	11510	30.74	20.72	51.46	74	-22.54	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "* * ": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 52 of 87

報告發行日期 : 2021/8/16

EUT Test Condition		Measurement Detail	
Mode 3	Channel 159	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5795	70.48	15.67	86.15	-	-	Average
@	5795	78.29	15.67	93.96	-	-	Peak
-	5853	40.04	15.98	56.02	115.36	-59.34	Peak
-	5943	40.76	16.39	57.15	68.2	-11.05	Peak
*	11590	29.36	20.44	49.8	74	-24.2	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5795	72.1	15.67	87.77	-	-	Average
@	5795	80.81	15.67	96.48	-	-	Peak
-	5882.5	40.36	16.19	56.55	99.63	-43.08	Peak
-	5958	40.76	16.39	57.15	68.2	-11.05	Peak
*	11590	29.85	20.44	50.29	74	-23.71	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



其他不必要之訊號

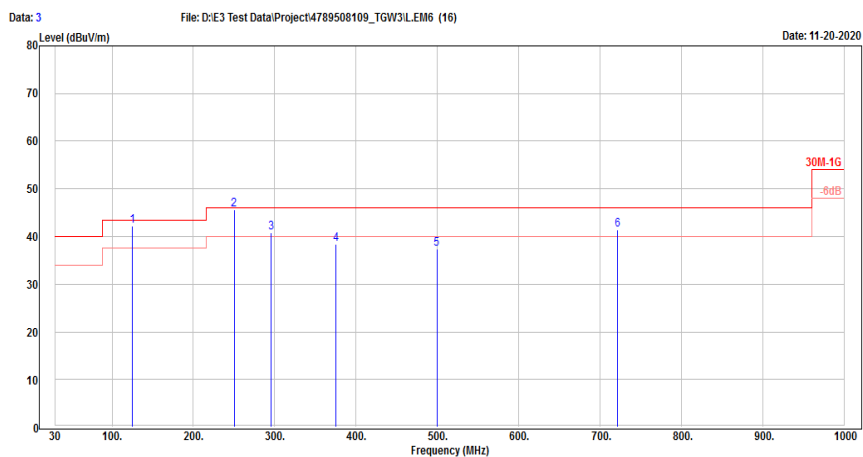
9 kHz ~ 30 MHz Data

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

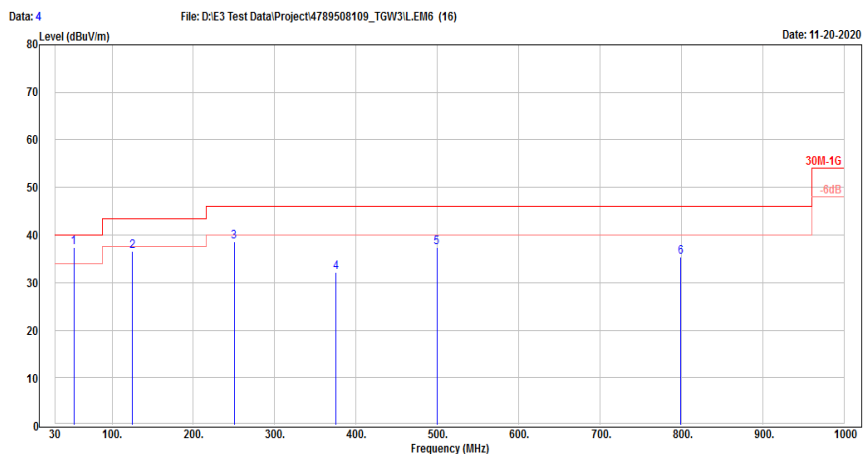
30 MHz ~ 1 GHz Data

EUT Test Condition		Measurement Detail	
Mode 2	Channel 165	Frequency Range	30 MHz ~ 1 GHz

Horizontal



Vertical



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



報告編號 : 4789508109-TW-R1-V0

頁碼 : 54 of 87

報告發行日期 : 2021/8/16

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	125.06	55.66	-13.51	42.15	43.5	-1.35	Peak
-	250.19	57.38	-11.84	45.54	46	-0.46	Peak
-	295.78	50.98	-10.21	40.77	46	-5.23	Peak
-	375.32	46.16	-7.69	38.47	46	-7.53	Peak
-	499.48	42.03	-4.57	37.46	46	-8.54	Peak
-	721.61	41.45	-0.13	41.32	46	-4.68	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	53.28	48.9	-11.47	37.43	40	-2.57	Peak
-	125.06	50.16	-13.51	36.65	43.5	-6.85	Peak
-	250.19	50.36	-11.84	38.52	46	-7.48	Peak
-	375.32	39.79	-7.69	32.1	46	-13.9	Peak
-	499.48	42.02	-4.57	37.45	46	-8.55	Peak
-	799.21	34.55	0.93	35.48	46	-10.52	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. The peak result complies with QP limit, QP result is deemed to comply with QP limit.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

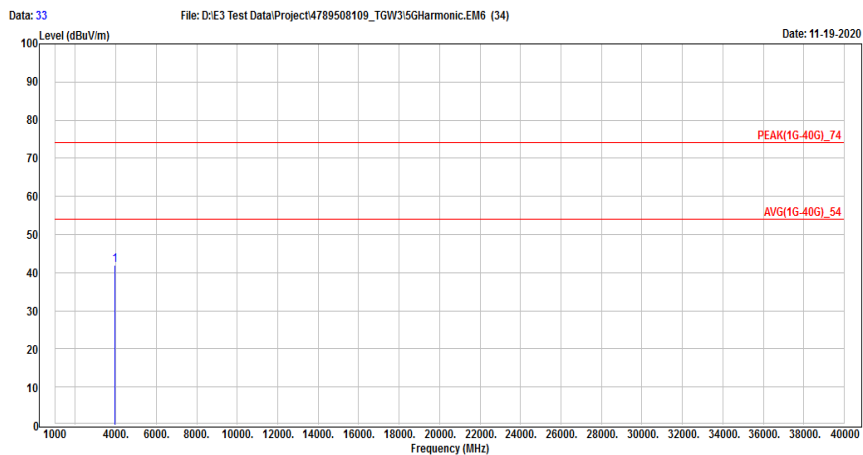


接收模式

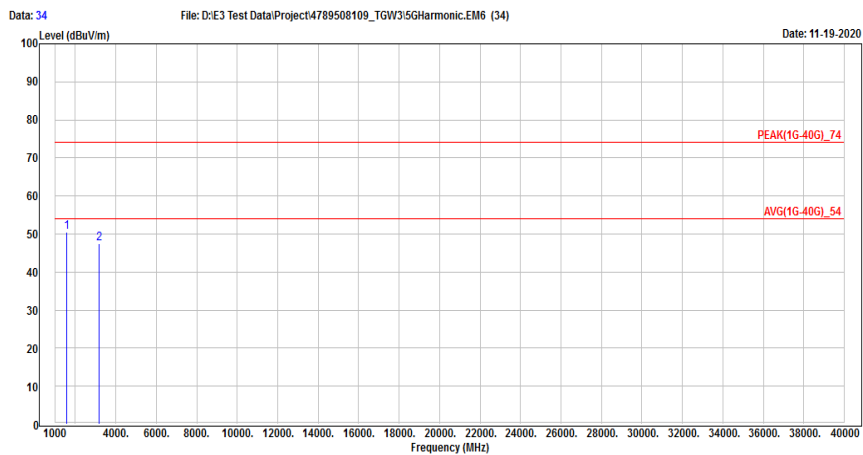
Above 1GHz Data

EUT Test Condition		Measurement Detail	
Mode 4	WiFi RX	Frequency Range	1 GHz ~ 40 GHz

Horizontal



Vertical



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



報告編號 : 4789508109-TW-R1-V0

頁碼 : 56 of 87

報告發行日期 : 2021/8/16

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	3975	41	1.06	42.06	74	-31.94	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	1595	58.37	-7.77	50.6	74	-23.4	Peak
*	3193	48.2	-0.74	47.46	74	-26.54	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. " * ": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
5. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



其他不必要之訊號

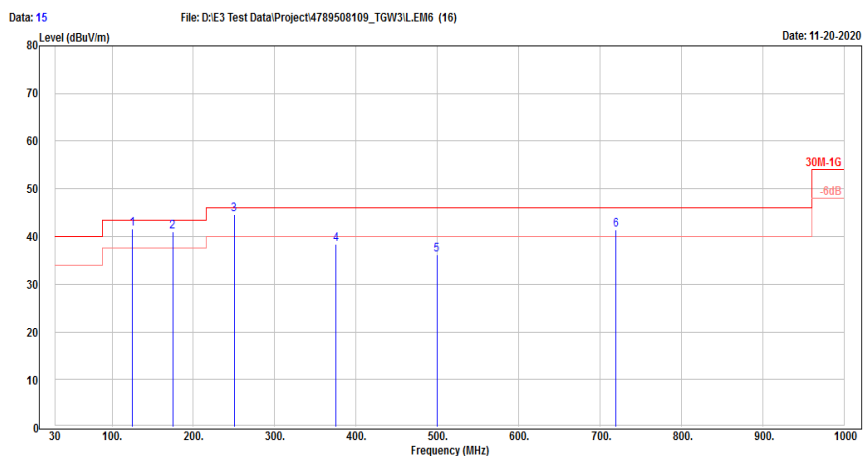
9 kHz ~ 30 MHz Data

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

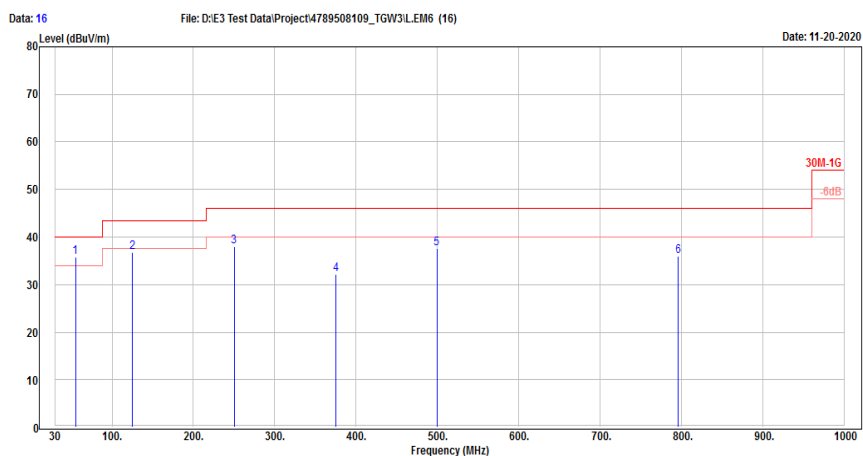
30 MHz ~ 1 GHz Data

EUT Test Condition		Measurement Detail	
Mode 4	WiFi RX	Frequency Range	30 MHz ~ 1 GHz

Horizontal



Vertical



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



報告編號 : 4789508109-TW-R1-V0

頁碼 : 58 of 87

報告發行日期 : 2021/8/16

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	125.06	55.07	-13.51	41.56	43.5	-1.94	Peak
-	174.53	52.53	-11.51	41.02	43.5	-2.48	Peak
-	250.19	56.5	-11.84	44.66	46	-1.34	Peak
-	375.32	46.09	-7.69	38.4	46	-7.6	Peak
-	499.48	40.75	-4.57	36.18	46	-9.82	Peak
-	719.67	41.65	-0.2	41.45	46	-4.55	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	55.22	47.39	-11.55	35.84	40	-4.16	Peak
-	125.06	50.32	-13.51	36.81	43.5	-6.69	Peak
-	250.19	49.88	-11.84	38.04	46	-7.96	Peak
-	375.32	39.88	-7.69	32.19	46	-13.81	Peak
-	499.48	42.08	-4.57	37.51	46	-8.49	Peak
-	796.3	35.08	0.87	35.95	46	-10.05	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. The peak result complies with QP limit, QP result is deemed to comply with QP limit.
5. The other emission levels were very low against the limit.

4.4.6 測試結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

4.5 電源線傳導干擾

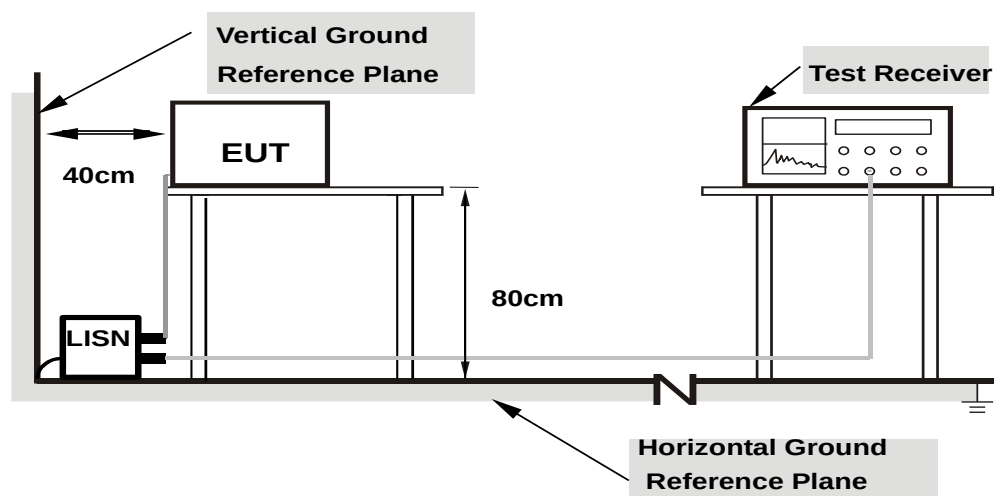
4.5.1 適用標準

請見本報告 3.1 節第 (7) 的規定。

4.5.2 測試方法

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 0.15 MHz 至 30 MHz 之間之電源線傳導放射強度。

4.5.3 測試配置圖



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

For the actual test configuration, please refer to the Appendix IV.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone :+886-2-7737-3000
Facsimile (FAX) :+886-3-583-7948 Doc No: 17-



4.5.4 電源傳導干擾電壓值之計算

結果值 Result value (dBuV) = 機器讀值 Reading value (dBuV) + 校正因子 Correction Factor (dB)

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

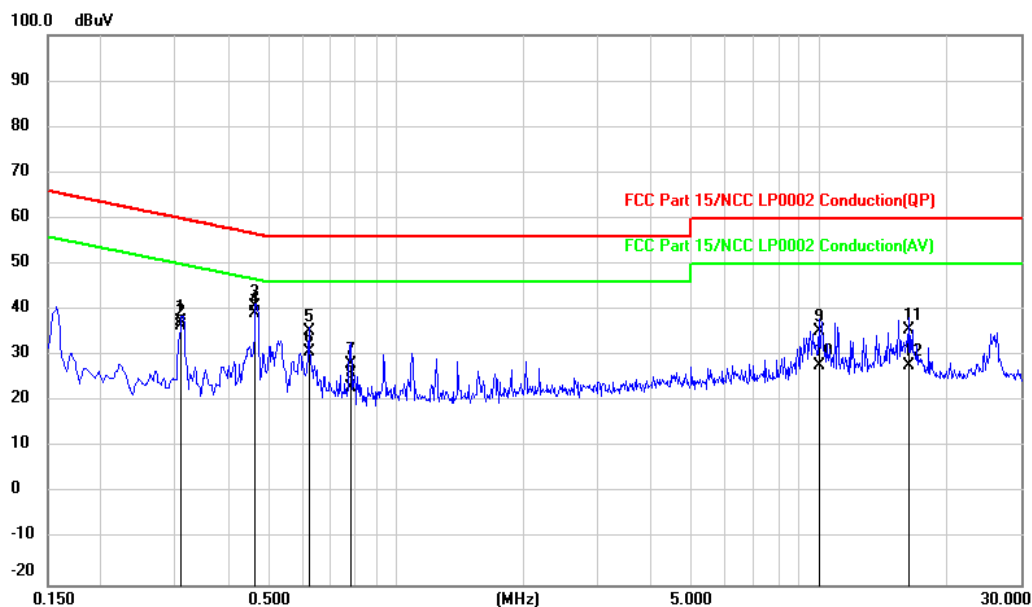


4.5.5 測試結果

發射模式

EUT Test Condition		Measurement Detail	
Mode 2	Channel 165	Frequency Range	150 kHz ~ 30 MHz

Phase of Power : Line (L)



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



報告編號 : 4789508109-TW-R1-V0

頁碼 : 62 of 87

報告發行日期 : 2021/8/16

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.3100	17.93	19.51	37.44	59.97	-22.53	QP
2	0.3100	17.13	19.51	36.64	49.97	-13.33	AVG
3	0.4660	21.16	19.51	40.67	56.58	-15.91	QP
4	0.4660	19.73	19.51	39.24	46.58	-7.34	AVG
5	0.6220	15.88	19.52	35.40	56.00	-20.60	QP
6	0.6220	11.27	19.52	30.79	46.00	-15.21	AVG
7	0.7820	8.47	19.54	28.01	56.00	-27.99	QP
8	0.7820	3.65	19.54	23.19	46.00	-22.81	AVG
9	9.9980	15.62	19.67	35.29	60.00	-24.71	QP
10	9.9980	8.09	19.67	27.76	50.00	-22.24	AVG
11	16.3660	15.91	19.73	35.64	60.00	-24.36	QP
12	16.3660	8.18	19.73	27.91	50.00	-22.09	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

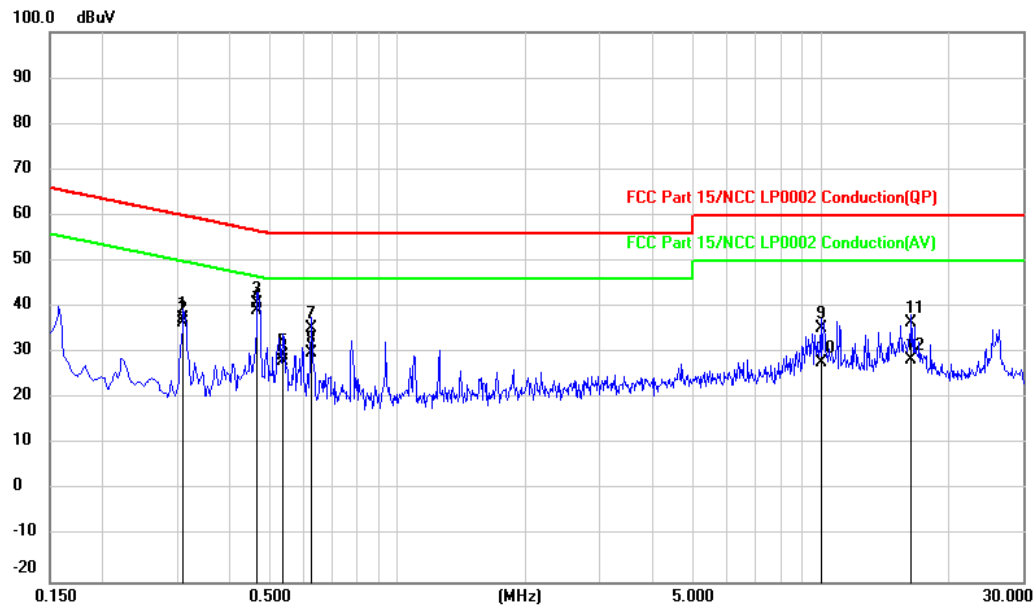


報告編號 : 4789508109-TW-R1-V0

頁碼 : 63 of 87

報告發行日期 : 2021/8/16

Phase of Power : Neutral (N)



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 64 of 87

報告發行日期 : 2021/8/16

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.3100	17.96	19.51	37.47	59.97	-22.50	QP
2	0.3100	17.12	19.51	36.63	49.97	-13.34	AVG
3	0.4660	21.14	19.51	40.65	56.58	-15.93	QP
4	0.4660	19.70	19.51	39.21	46.58	-7.37	AVG
5	0.5340	9.90	19.52	29.42	56.00	-26.58	QP
6	0.5340	8.59	19.52	28.11	46.00	-17.89	AVG
7	0.6260	15.85	19.52	35.37	56.00	-20.63	QP
8	0.6260	10.34	19.52	29.86	46.00	-16.14	AVG
9	10.0020	15.57	19.68	35.25	60.00	-24.75	QP
10	10.0020	8.11	19.68	27.79	50.00	-22.21	AVG
11	16.3620	16.71	19.78	36.49	60.00	-23.51	QP
12	16.3620	8.66	19.78	28.44	50.00	-21.56	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

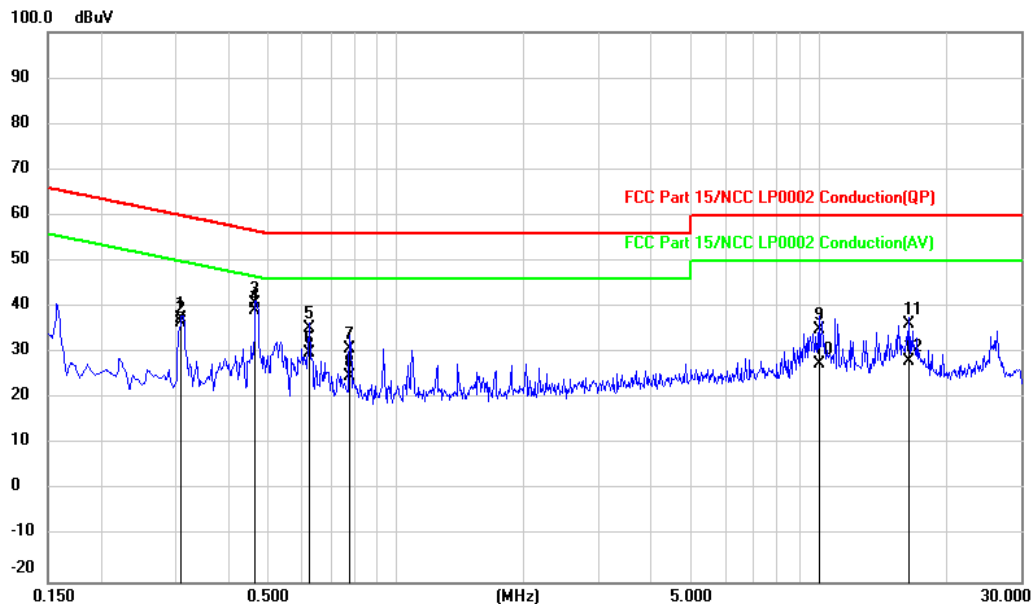
Doc No: 17-EM-F0880 / 6.0



接收模式

EUT Test Condition		Measurement Detail	
Mode 5	WiFi RX	Frequency Range	150 kHz ~ 30 MHz

Phase of Power : Line (L)



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948



報告編號 : 4789508109-TW-R1-V0

頁碼 : 66 of 87

報告發行日期 : 2021/8/16

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.3100	17.93	19.51	37.44	59.97	-22.53	QP
2	0.3100	17.16	19.51	36.67	49.97	-13.30	AVG
3	0.4660	21.13	19.51	40.64	56.58	-15.94	QP
4	0.4660	19.67	19.51	39.18	46.58	-7.40	AVG
5	0.6260	15.90	19.52	35.42	56.00	-20.58	QP
6	0.6260	10.40	19.52	29.92	46.00	-16.08	AVG
7	0.7780	11.18	19.54	30.72	56.00	-25.28	QP
8	0.7780	5.43	19.54	24.97	46.00	-21.03	AVG
9	10.0020	15.42	19.67	35.09	60.00	-24.91	QP
10	10.0020	8.02	19.67	27.69	50.00	-22.31	AVG
11	16.3620	16.42	19.73	36.15	60.00	-23.85	QP
12	16.3620	8.35	19.73	28.08	50.00	-21.92	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

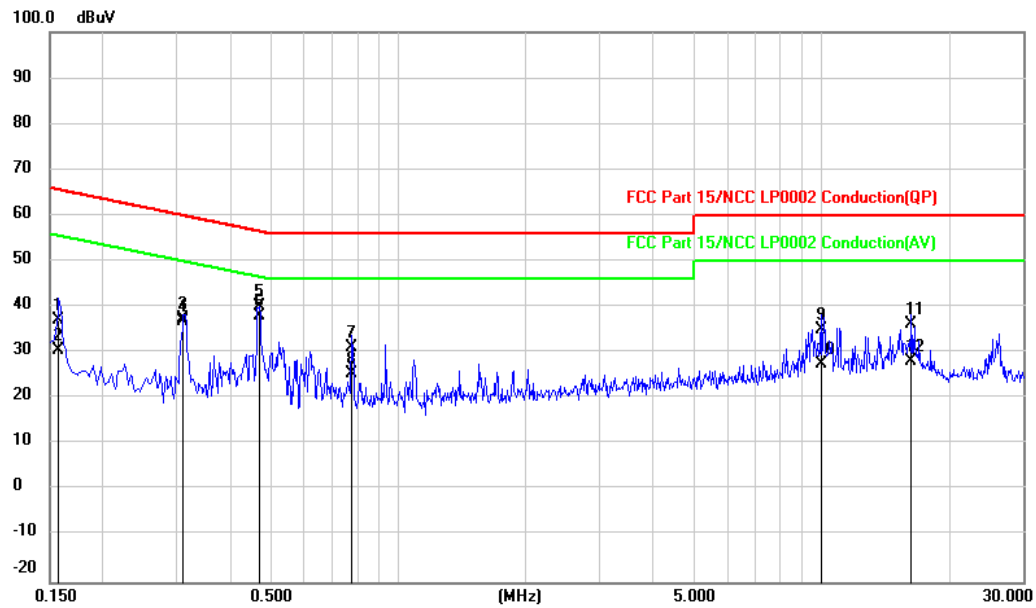


報告編號 : 4789508109-TW-R1-V0

頁碼 : 67 of 87

報告發行日期 : 2021/8/16

Phase of Power : Neutral (N)



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0

頁碼 : 68 of 87

報告發行日期 : 2021/8/16

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.1580	17.75	19.54	37.29	65.57	-28.28	QP
2	0.1580	11.08	19.54	30.62	55.57	-24.95	AVG
3	0.3100	18.02	19.51	37.53	59.97	-22.44	QP
4	0.3100	17.25	19.51	36.76	49.97	-13.21	AVG
5	0.4700	20.64	19.51	40.15	56.51	-16.36	QP
6	0.4700	18.52	19.51	38.03	46.51	-8.48	AVG
7	0.7780	11.74	19.53	31.27	56.00	-24.73	QP
8	0.7780	6.03	19.53	25.56	46.00	-20.44	AVG
9	10.0020	15.36	19.68	35.04	60.00	-24.96	QP
10	10.0020	7.99	19.68	27.67	50.00	-22.33	AVG
11	16.3620	16.48	19.78	36.26	60.00	-23.74	QP
12	16.3620	8.38	19.78	28.16	50.00	-21.84	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

4.5.6 測試結果判定

依據測試數據結果，符合低功率射頻器材技術規範之要求。

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-3-583-7948

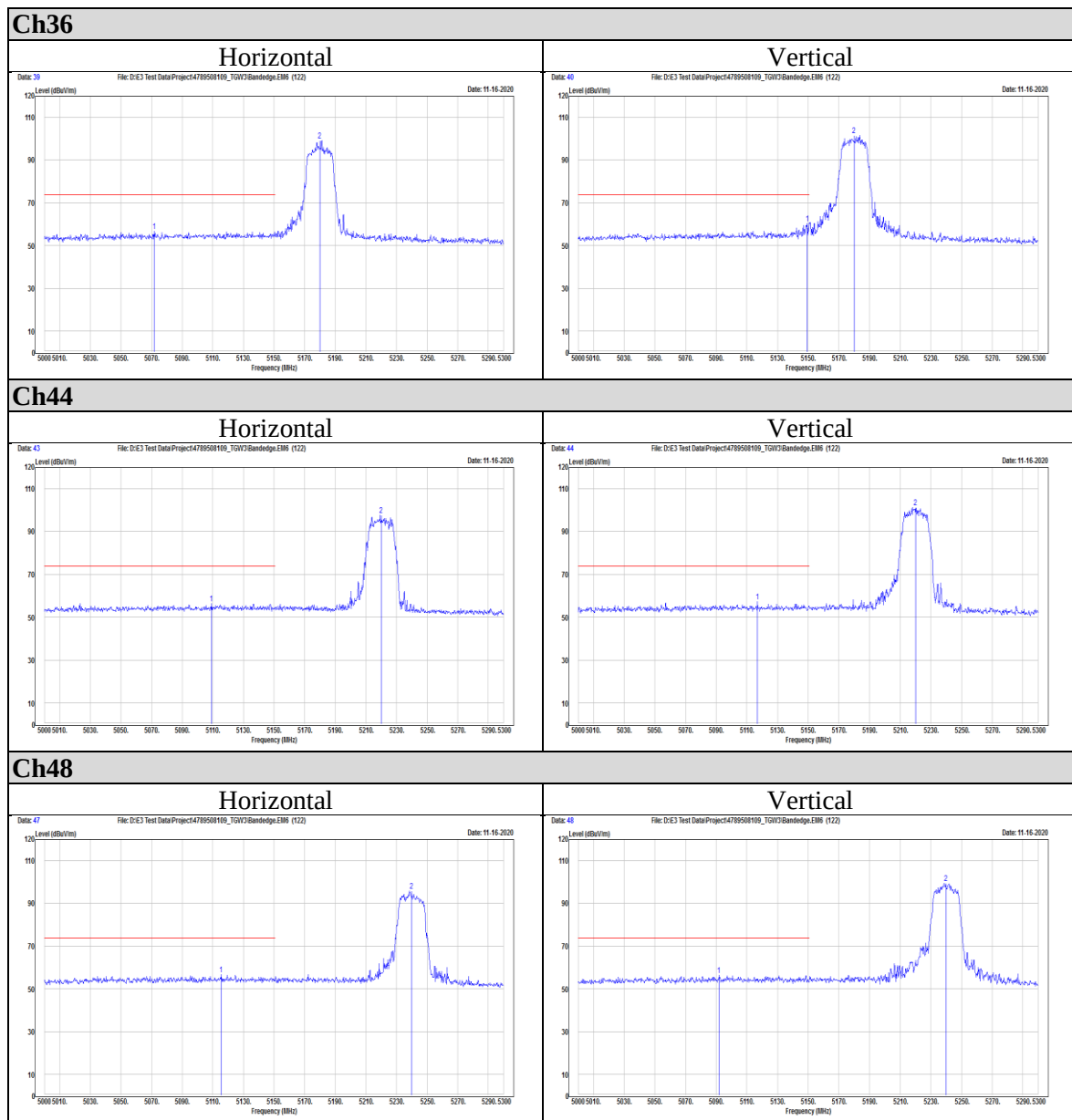
Doc No: 17-EM-F0880 / 6.0



附錄 I 頻帶邊緣輻射與頻帶邊緣向外輻射量測

802.11a

Peak



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

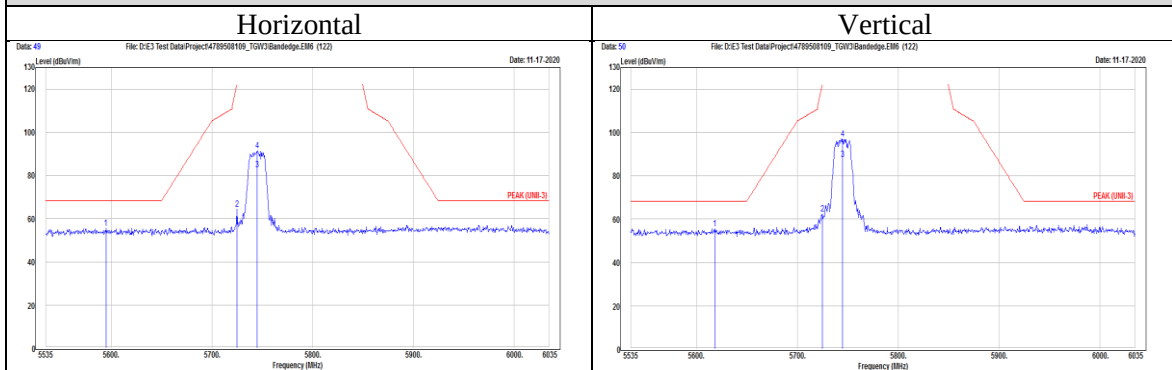


報告編號 : 4789508109-TW-R1-V0

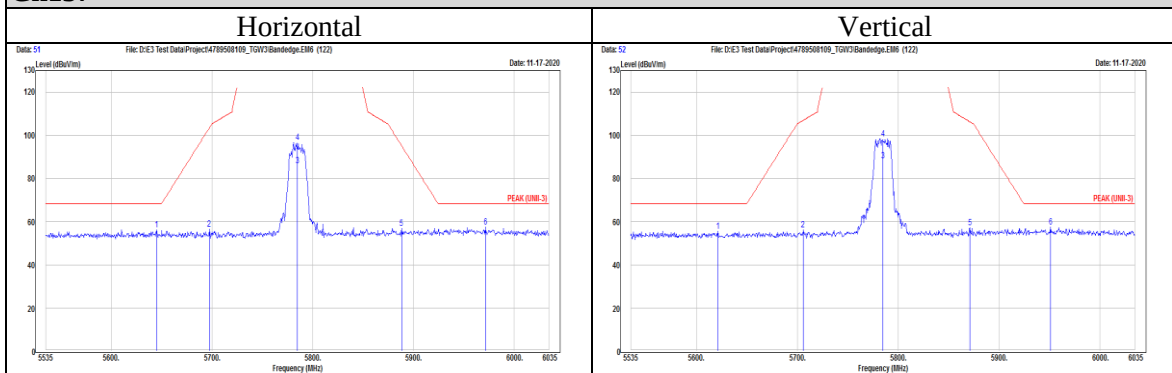
頁碼 : 70 of 87

報告發行日期 : 2021/8/16

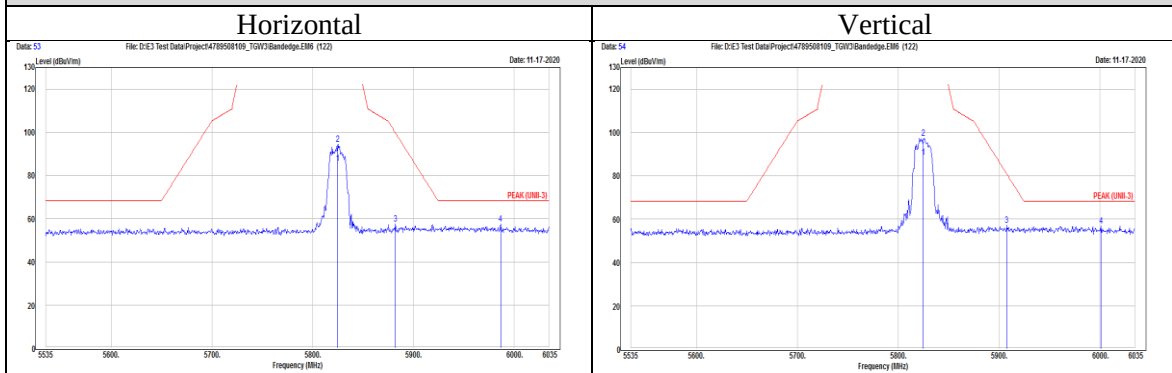
Ch149



Ch157



Ch165



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

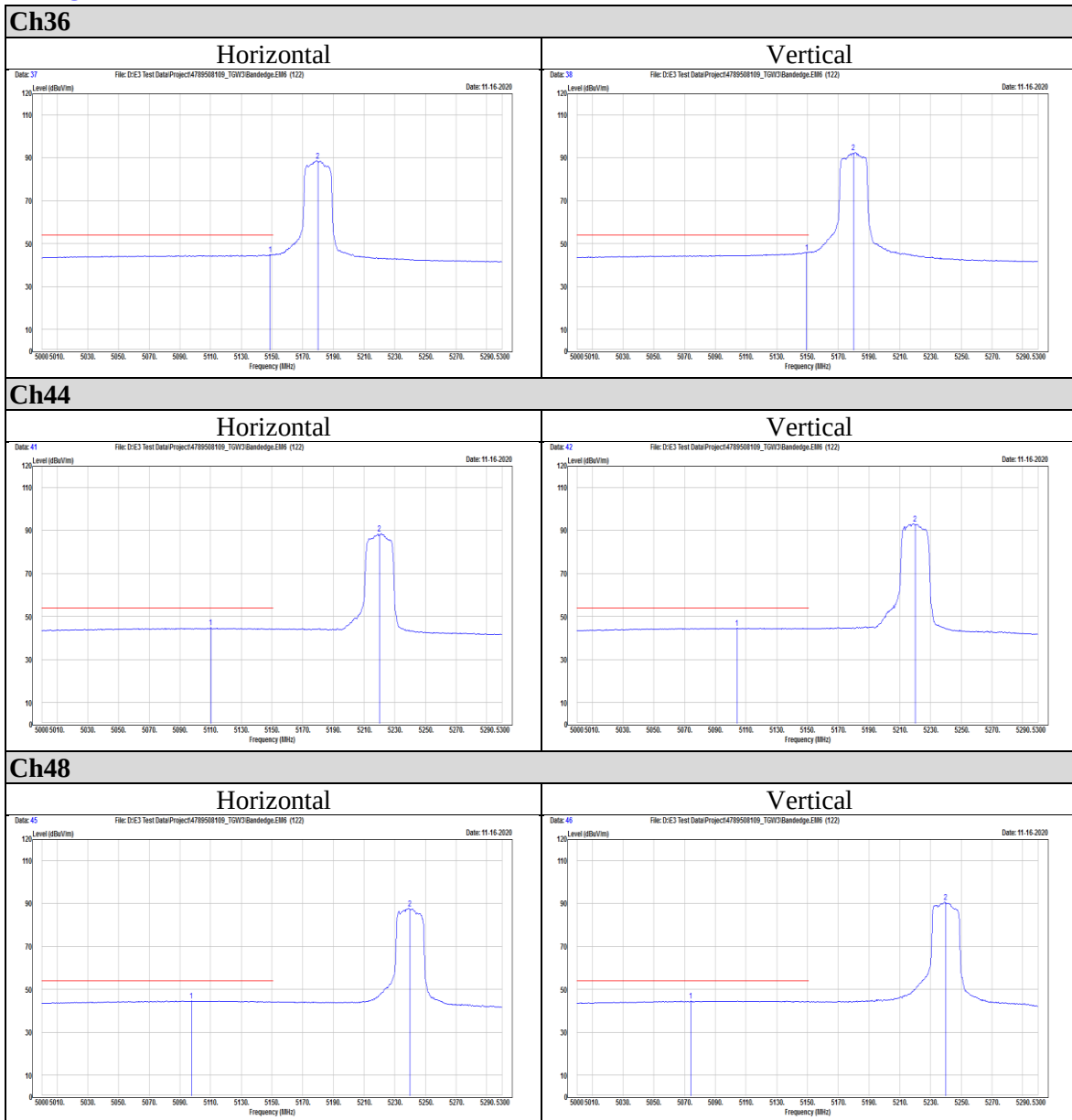


報告編號 : 4789508109-TW-R1-V0

頁碼 : 71 of 87

報告發行日期 : 2021/8/16

Average



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

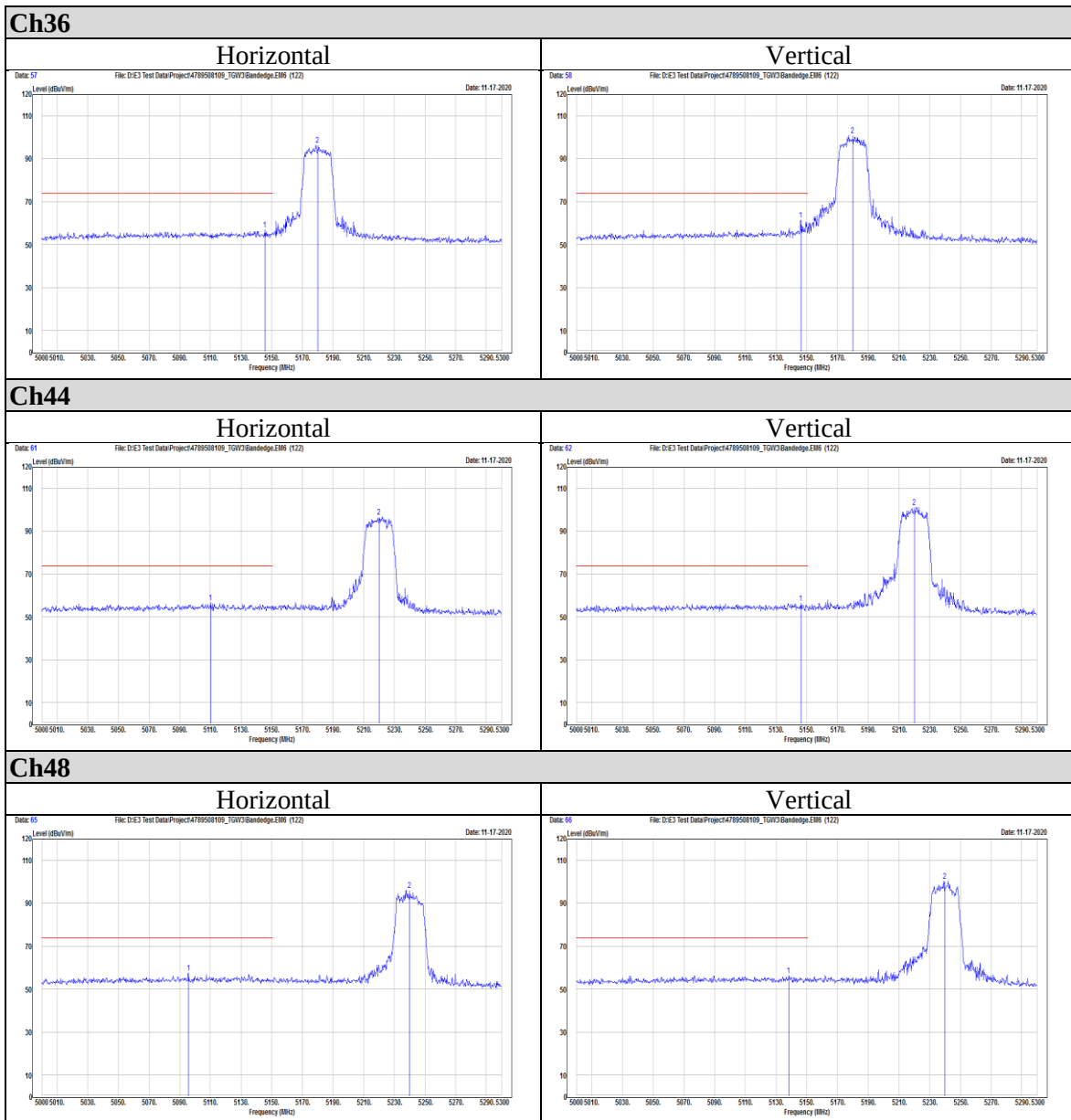
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



802.11ac (VHT20)

Peak



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

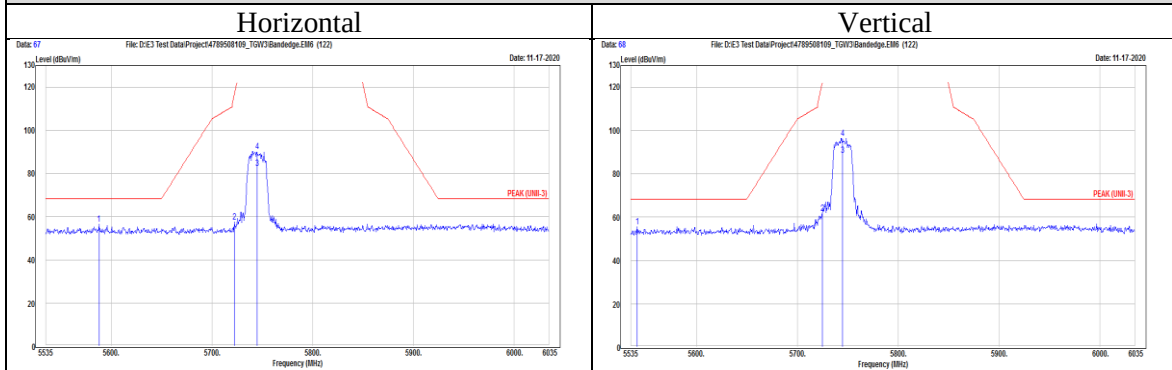


報告編號 : 4789508109-TW-R1-V0

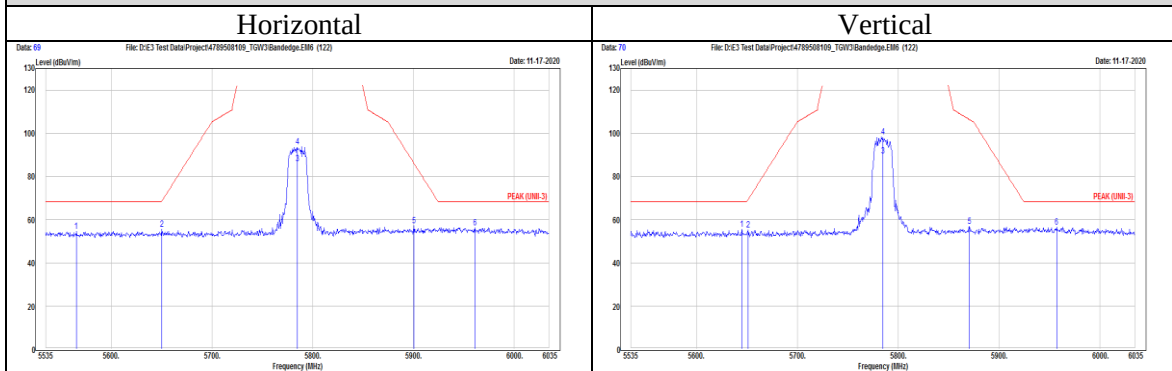
頁碼 : 73 of 87

報告發行日期 : 2021/8/16

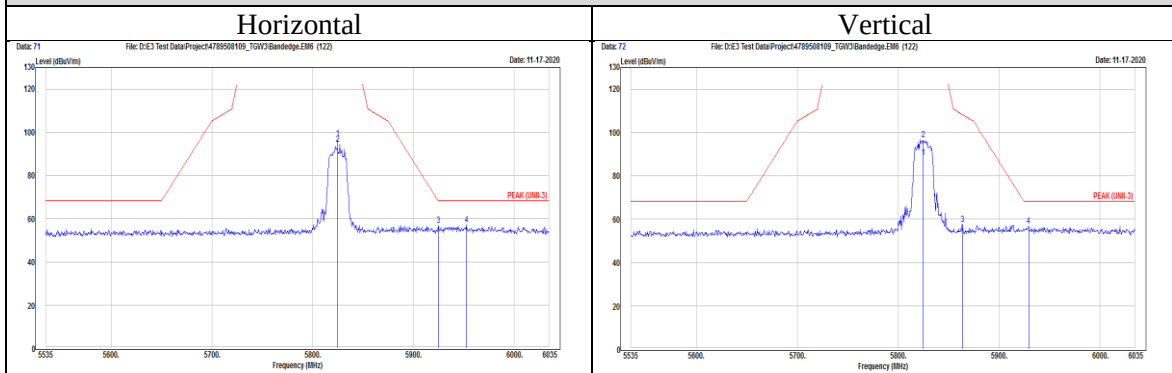
Ch149



Ch157



Ch165



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

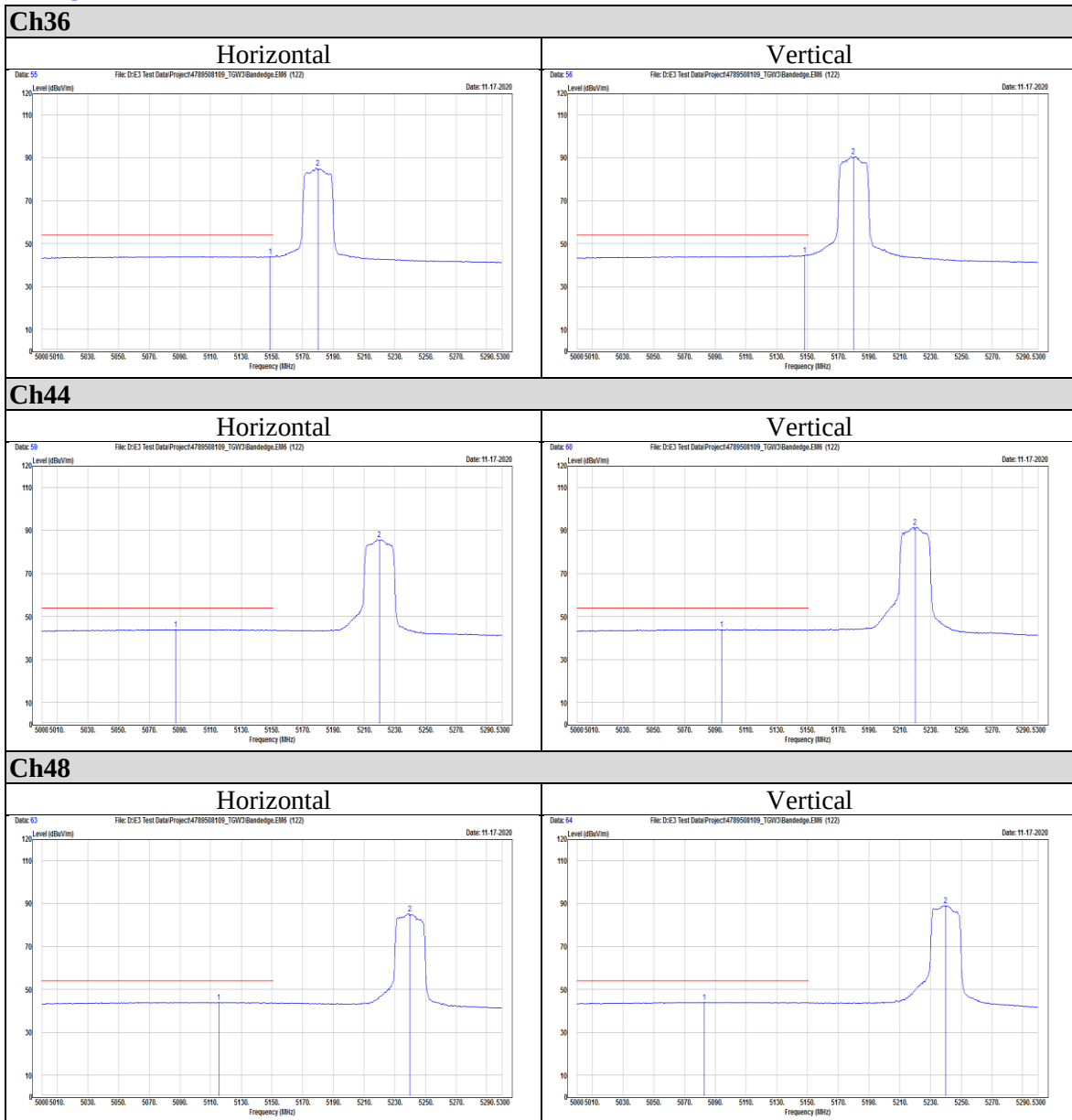


報告編號 : 4789508109-TW-R1-V0

頁碼 : 74 of 87

報告發行日期 : 2021/8/16

Average



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

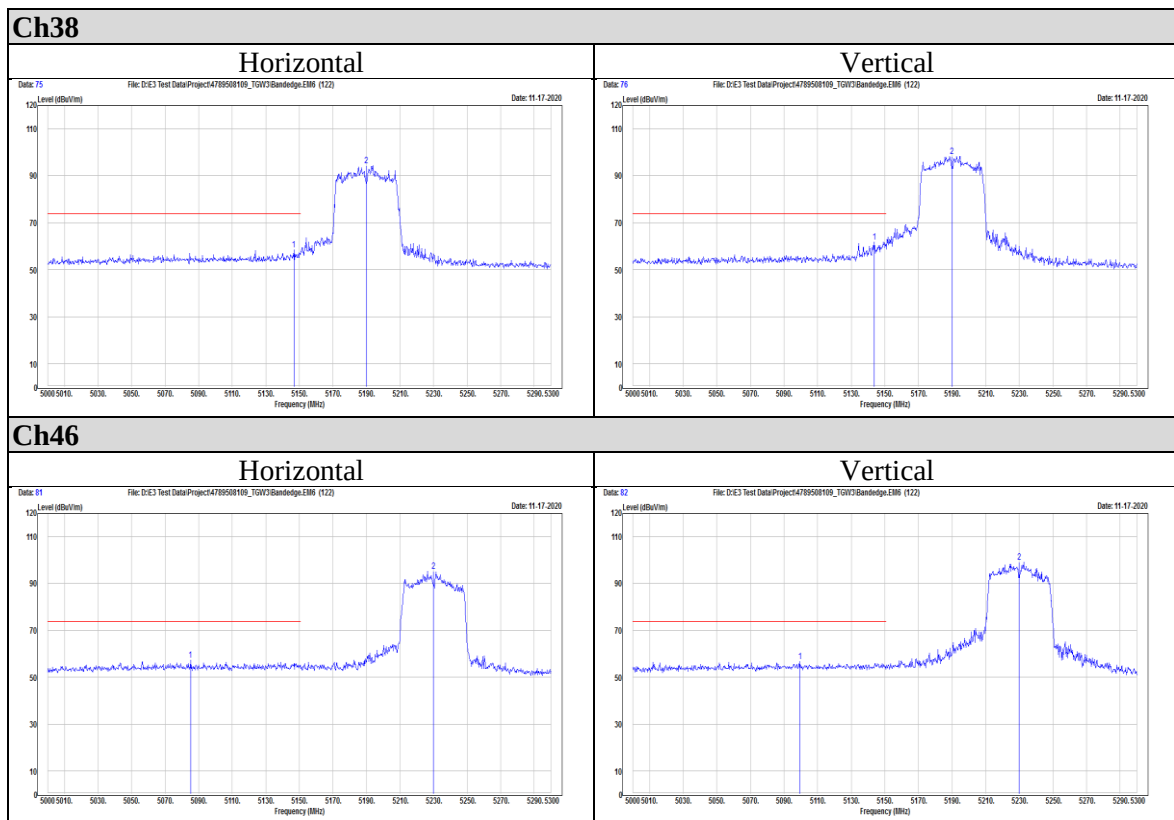
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



802.11ac (VHT40)

Peak



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

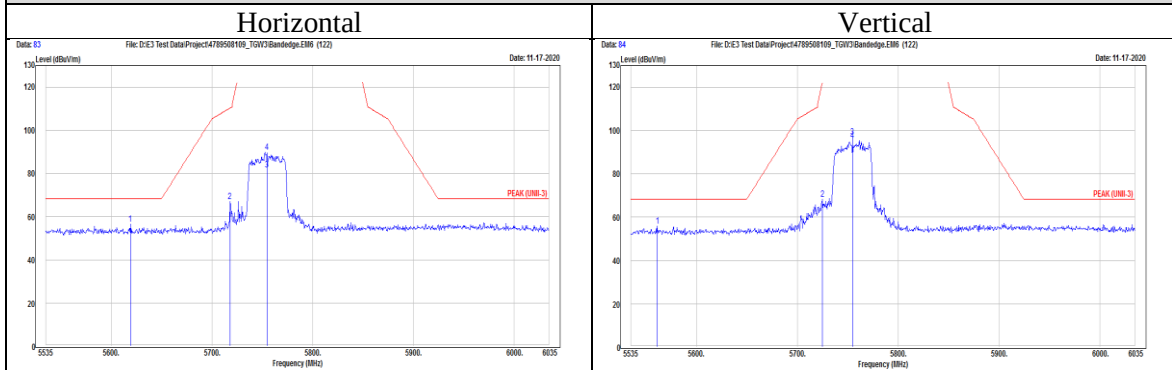


報告編號 : 4789508109-TW-R1-V0

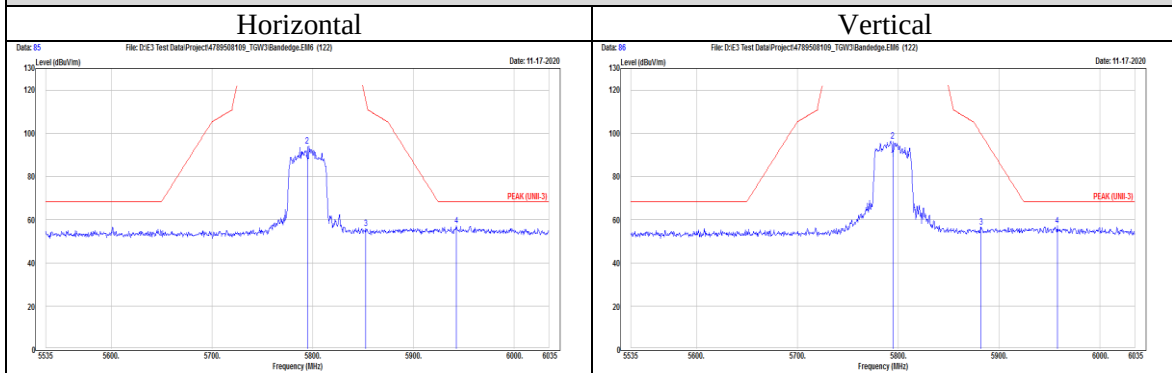
頁碼 : 76 of 87

報告發行日期 : 2021/8/16

Ch151



Ch159



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

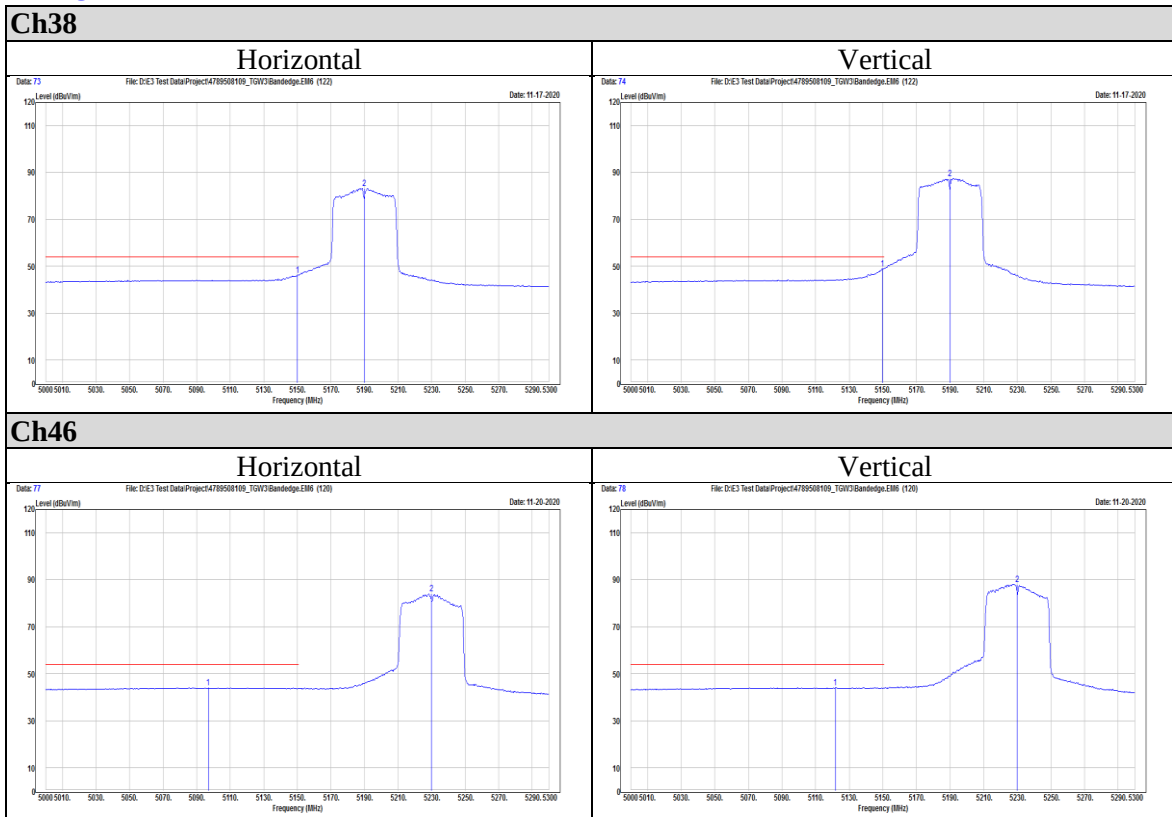


報告編號 : 4789508109-TW-R1-V0

頁碼 : 77 of 87

報告發行日期 : 2021/8/16

Average



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

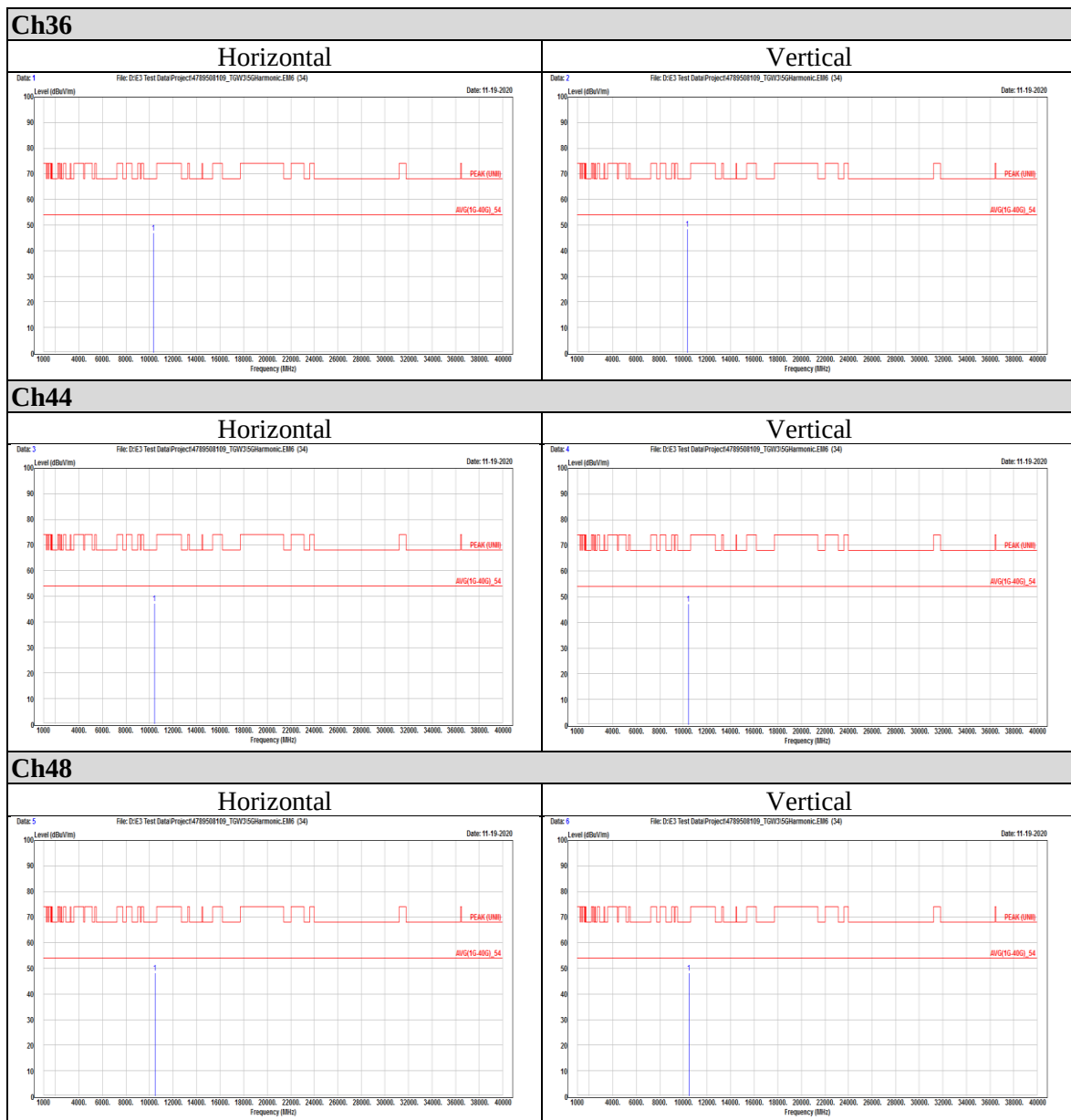
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



附錄 II 混附波輻射量測

802.11a



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

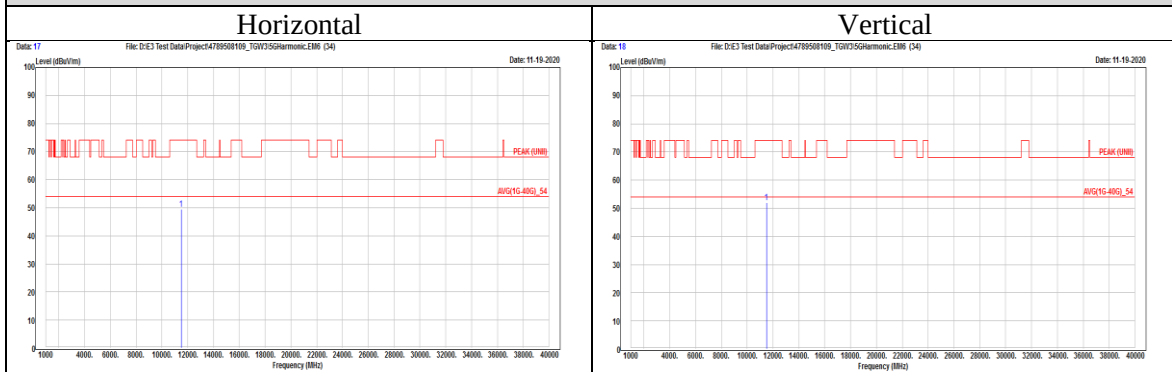
Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

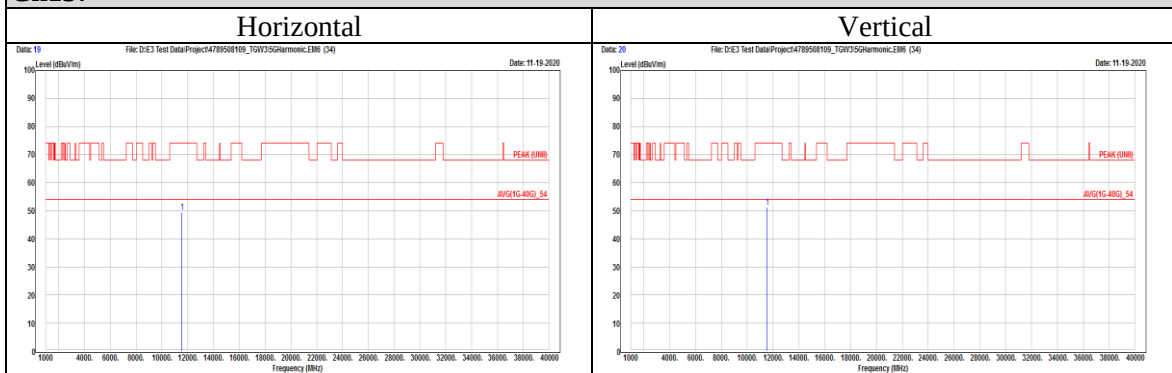
Doc No: 17-EM-F0880 / 6.0



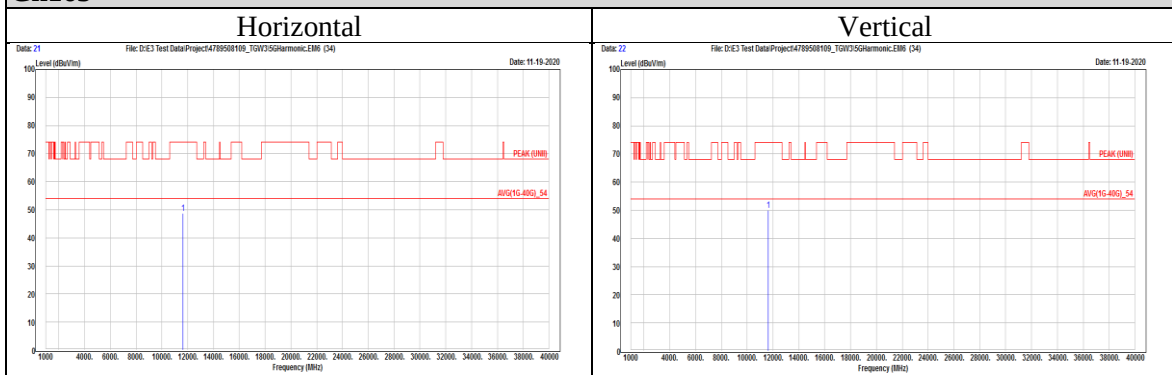
Ch149



Ch157



Ch165



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

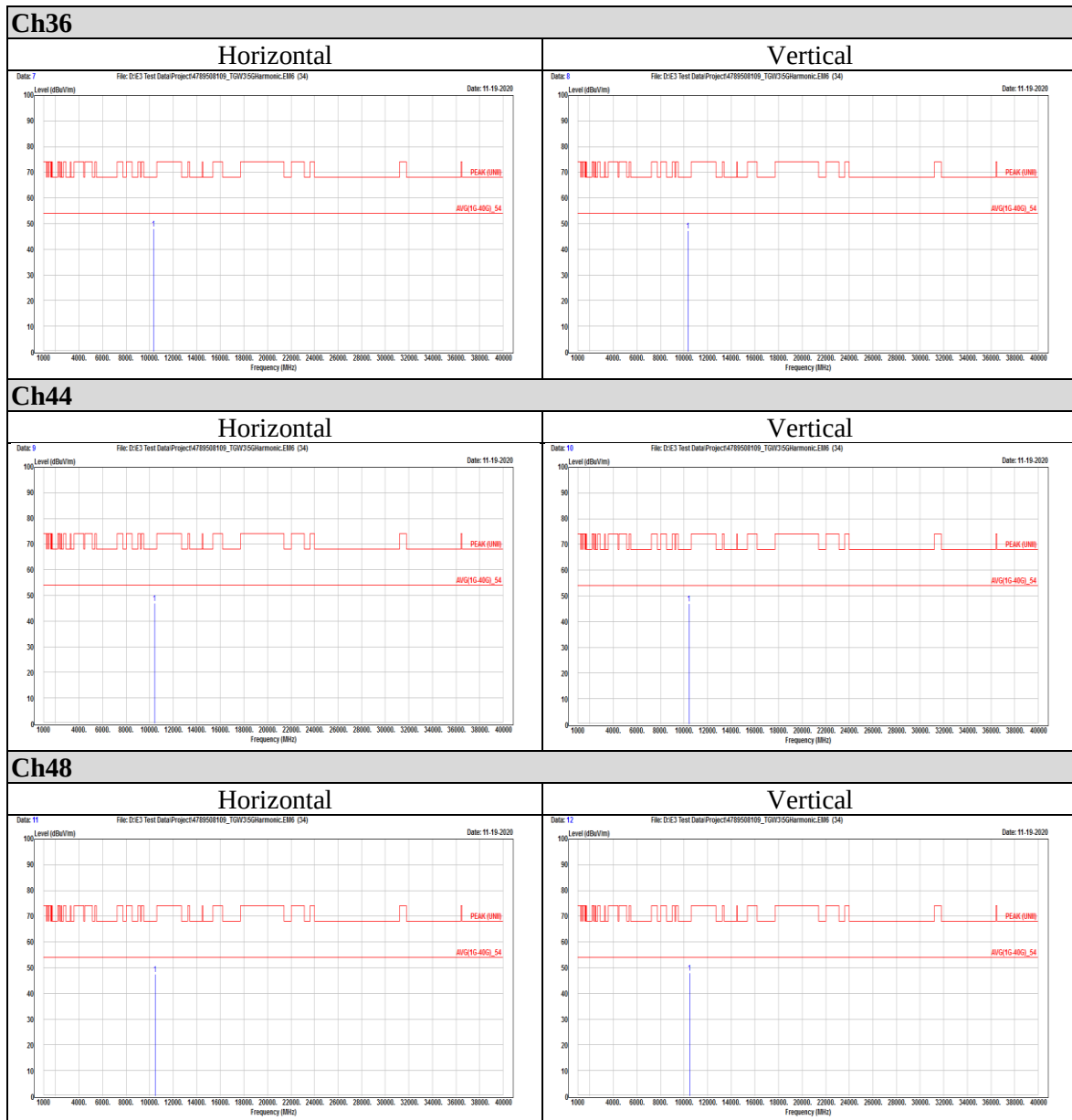
Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



802.11ac (VHT20)



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

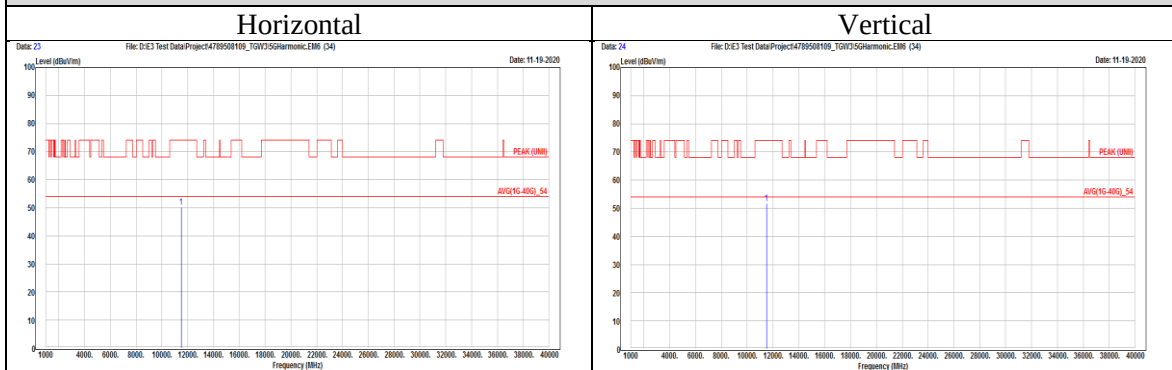


報告編號 : 4789508109-TW-R1-V0

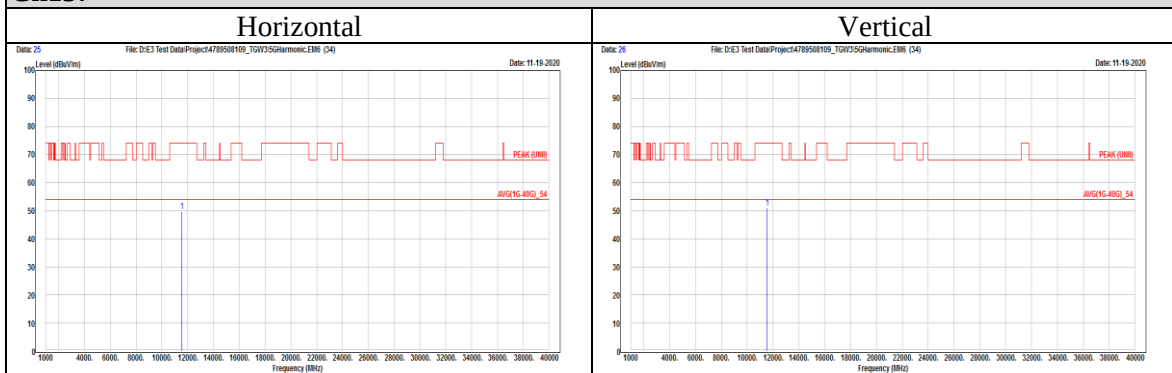
頁碼 : 81 of 87

報告發行日期 : 2021/8/16

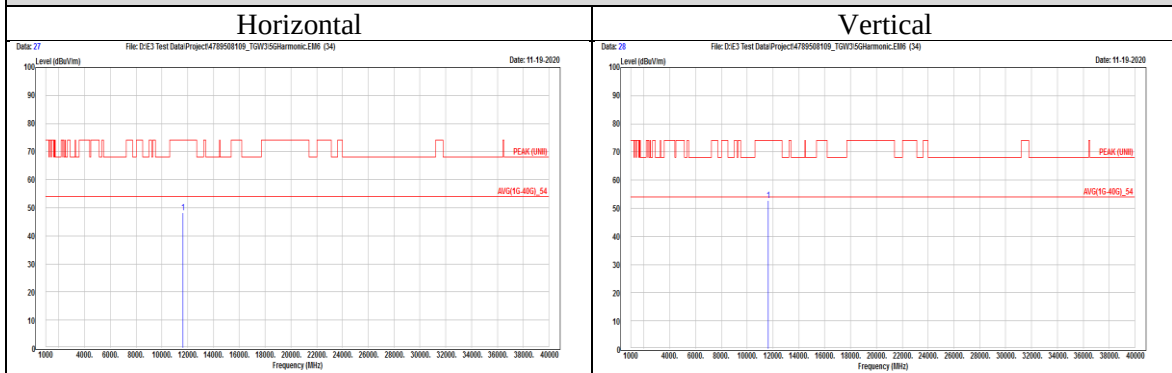
Ch149



Ch157



Ch165



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

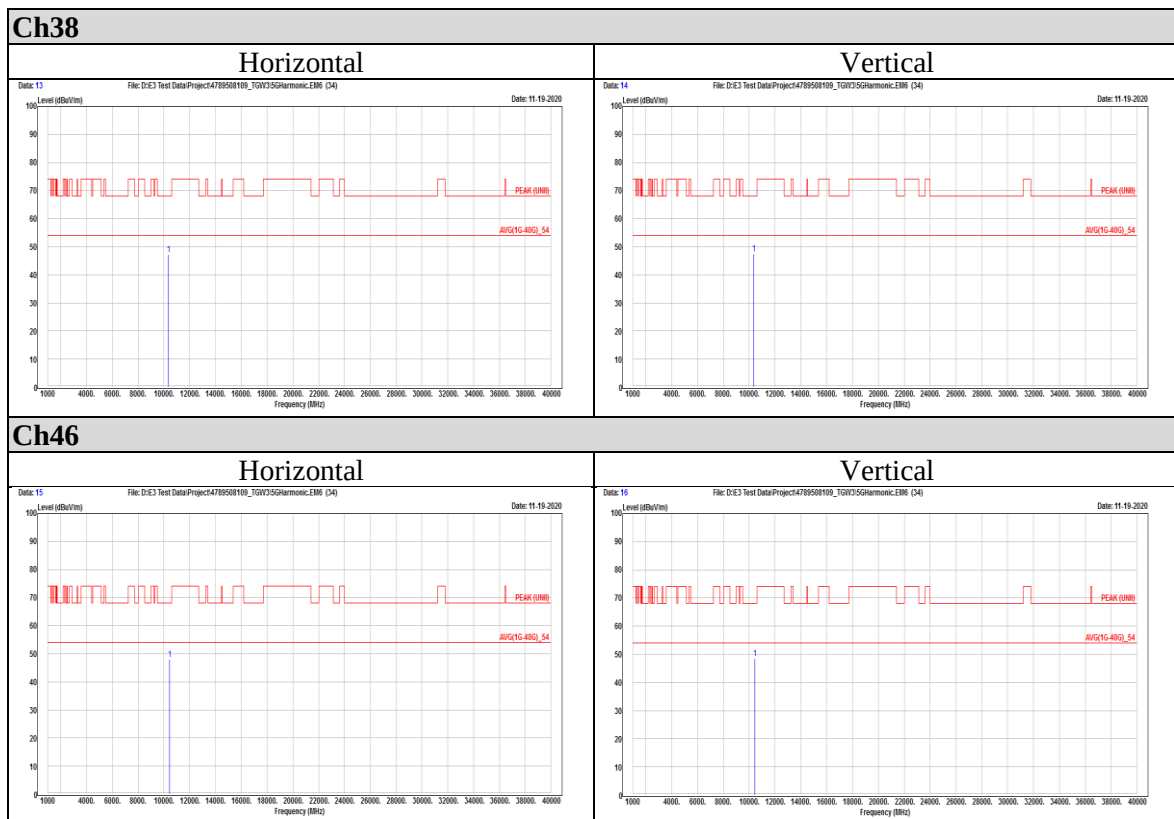
Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



802.11ac (VHT40)



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0

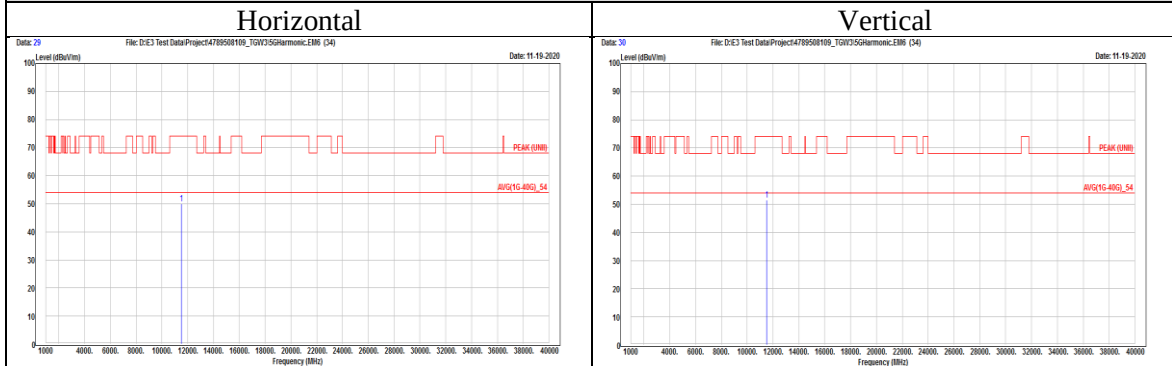


報告編號 : 4789508109-TW-R1-V0

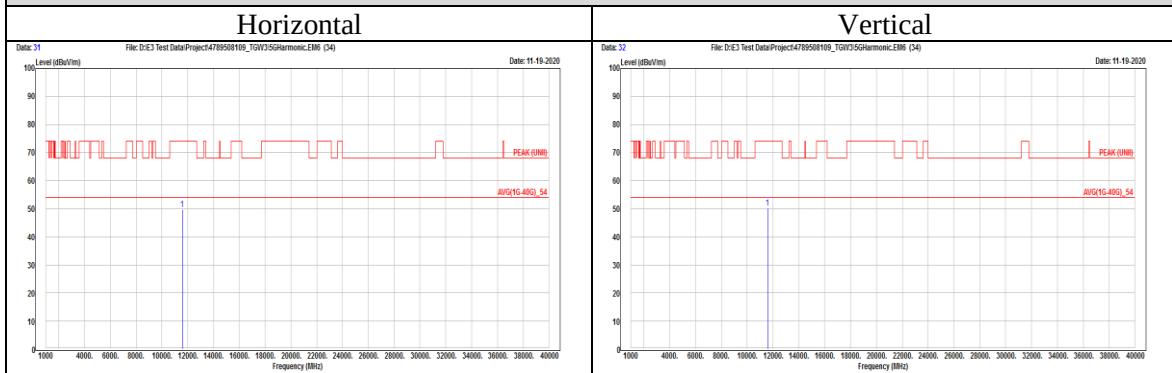
頁碼 : 83 of 87

報告發行日期 : 2021/8/16

Ch151



Ch159



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

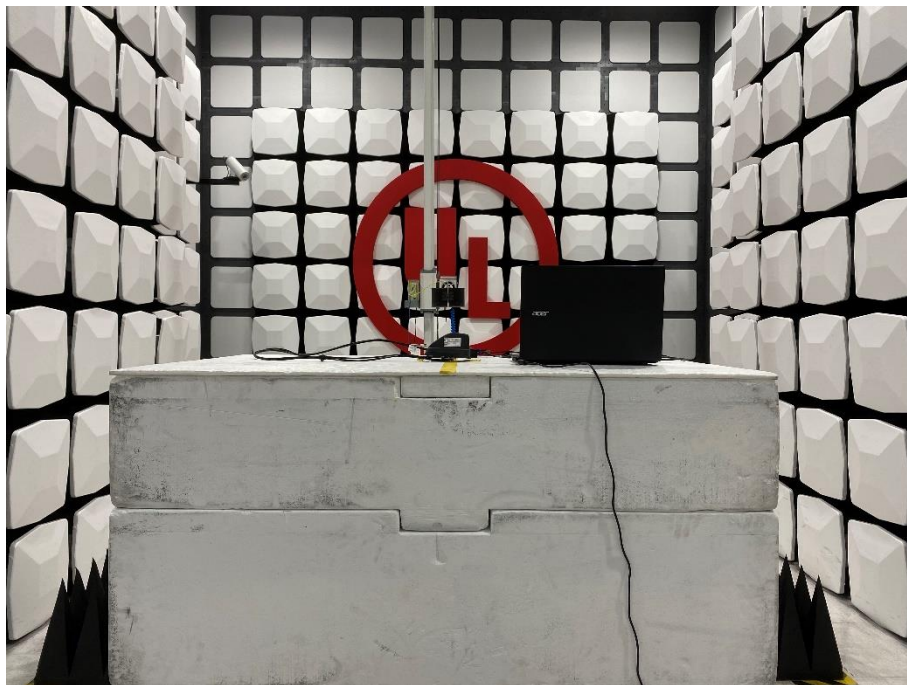
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



附錄 III 場強輻射配置照片

Above 1GHz



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000

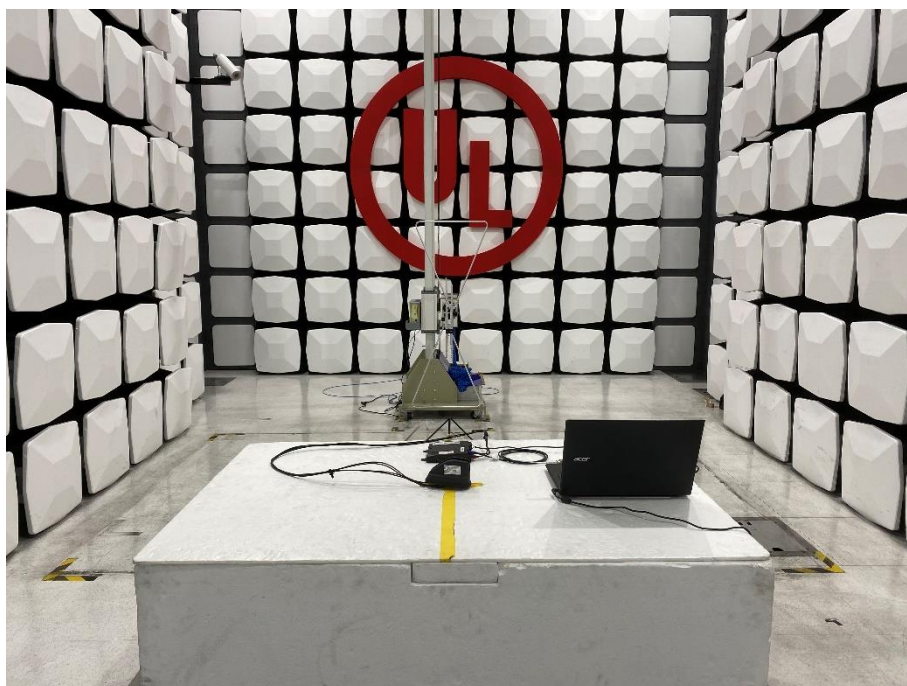
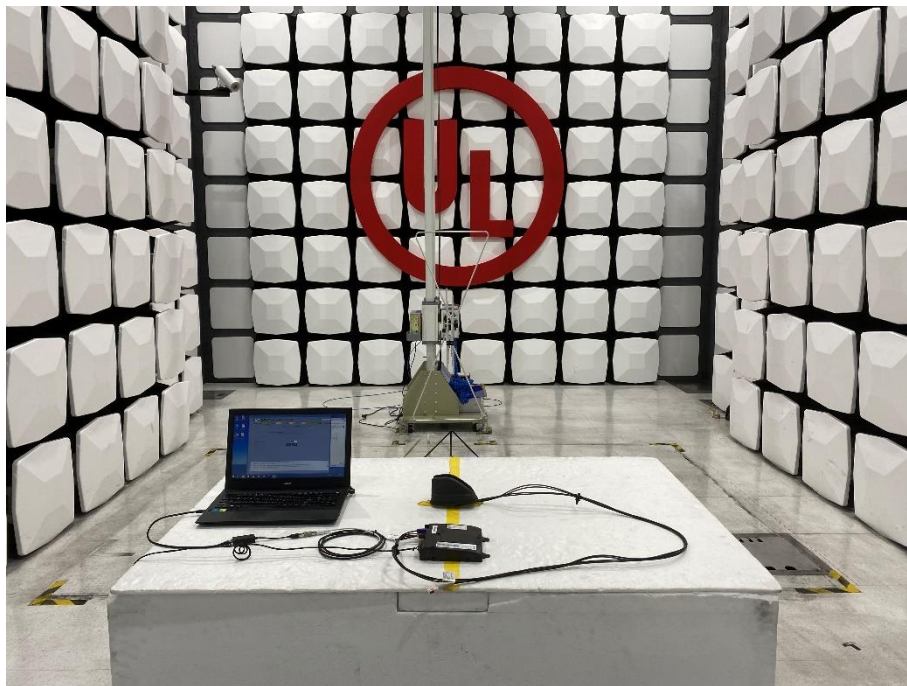
Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0
頁碼 : 85 of 87
報告發行日期 : 2021/8/16

30MHz ~ 1GHz



Underwriters Laboratories Taiwan Co., Ltd.

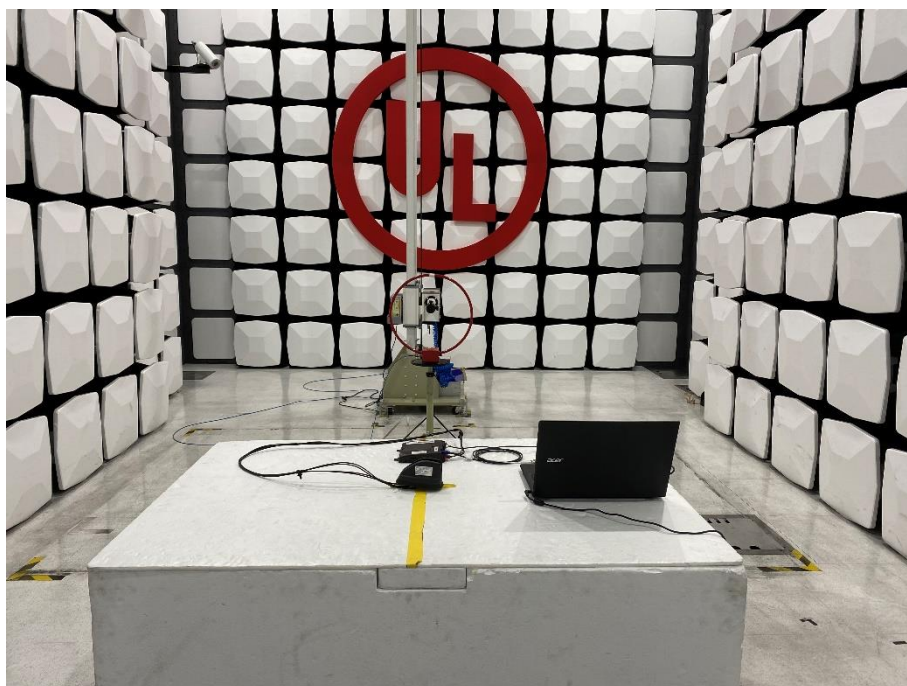
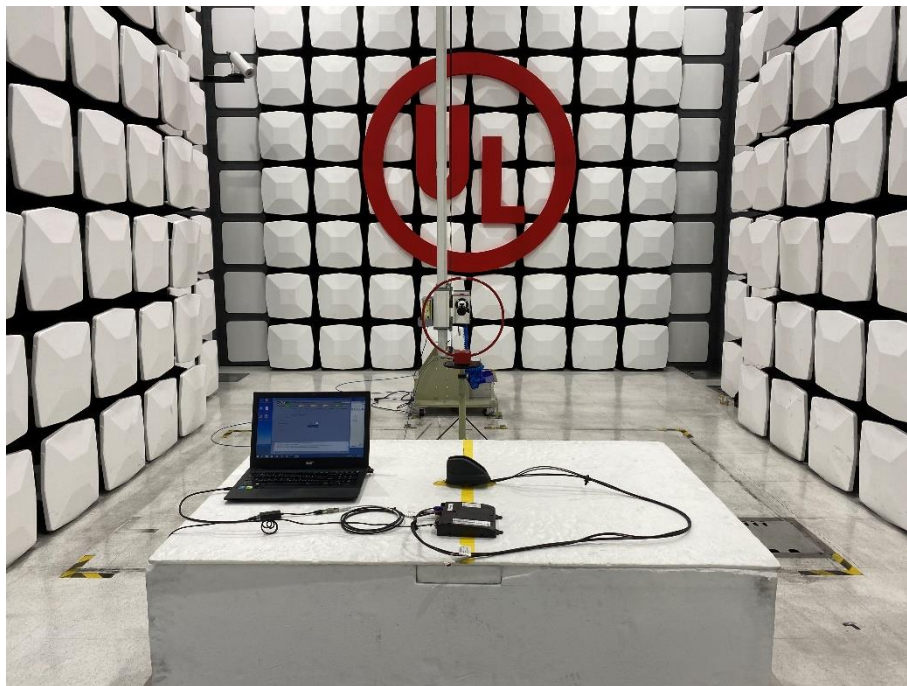
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



報告編號 : 4789508109-TW-R1-V0
頁碼 : 86 of 87
報告發行日期 : 2021/8/16

9kHz ~ 30MHz



Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

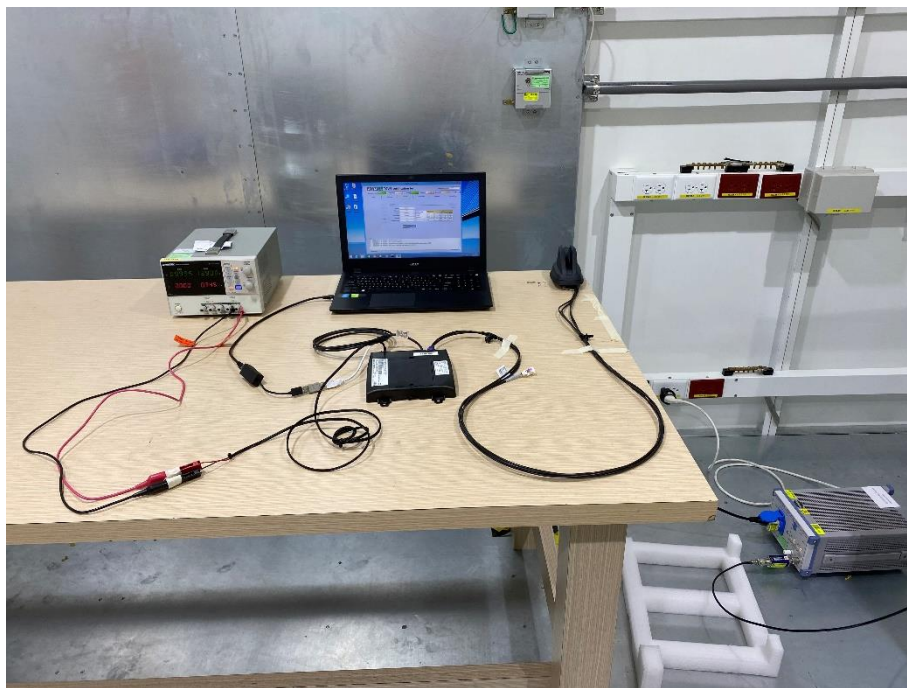
Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0



附錄 IV 電源線傳導干擾配置照片



END OF REPORT

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0880 / 6.0