

NCC

低功率射頻電機型式試驗報告

產品名稱: 無線基地台
英文名稱: Omni Access Stellar
型號: OAW-AP1321, OAW-AP1322
廠牌: Alcatel-Lucent 
Enterprise
申請者: 皇輝科技股份有限公司
申請者地址: 台北市內湖區民權東路六段 11 巷 43 之 1 號 3 樓
測試標準: LP0002 (107 年版) 4.7 章節
參考法規: ANSI C63.10-2013
測試結果: 符合
接收日期: 2020.03.10
測試日期: 2020.03.13 ~ 2020.04.24

測試工程師:

許丞哲

(許丞哲)

報告審核人:

陳柏均

(陳柏均)

報告簽屬人:

柯承志

(柯承志)



本測試報告僅對實驗室所受測之樣品負責

本測試報告非經本公司同意不可局部複製使用

修訂紀錄

報告編號	版本	描述	發行日期
2004TW0006-T3	1.0	Original Report	2020-05-02

CONTENTS

Description	Page
1. 一般資訊	5
2. 產品資訊	6
2.1. 待測物裝置資料	6
2.2. 通道清單	7
2.3. 測試模式	8
2.4. 測試系統組合圖	9
2.5. 測試周邊	9
2.6. 待測裝置測試時之典型操作程式	9
3. 量測不確定度	10
4. 測試設備明細	11
5. 測試結果	12
5.1. 電源端點干擾測試	13
5.1.1. 適用標準	13
5.1.2. 量測方法	13
5.1.3. 測試架構圖	13
5.1.4. 電源端點測試結果	14
5.2. 功率限制值	16
5.2.1. 適用標準	16
5.2.2. 量測方法	16
5.2.3. 測試架構圖	16
5.2.4. 功率限制值測試結果	17
5.3. 天線之要求	31
5.3.1. 適用標準	31
5.3.2. 天線樣式	31
5.4. 26dB 佔用頻寬	33
5.4.1. 適用標準	33
5.4.2. 量測方法	33
5.4.3. 測試架構圖	33
5.4.4. 26dB 佔用頻寬測試結果	34
5.5. 6dB 佔用頻寬	50
5.5.1. 適用標準	50
5.5.2. 量測方法	50
5.5.3. 測試架構圖	50
5.5.4. 6dB 佔用頻寬測試結果	51
5.6. 最大功率頻譜密度	57

5.6.1.	適用標準	57
5.6.2.	量測方法	57
5.6.3.	測試架構圖	57
5.6.4.	峰值功率頻譜密度測試結果	58
5.7.	操作頻帶外的峰值發射	175
5.7.1.	適用標準	175
5.7.2.	量測方法	176
5.7.3.	測試架構圖	176
5.7.4.	操作頻帶外的峰值發射測試結果	177
5.8.	不必要之發射	509
5.8.1.	適用標準	509
5.8.2.	量測方法	509
5.8.3.	測試架構圖	510
5.8.4.	不必要之發射測試結果	511
5.9.	發射功率控制	901
5.9.1.	適用標準	901
5.9.2.	量測方法	901
5.9.3.	測試架構圖	901
5.9.4.	發射功率控制測試結果	902
5.10.	頻率穩定性	903
5.10.1.	適用標準	903
5.10.2.	量測方法	903
5.10.3.	測試架構圖	904
5.10.4.	頻率穩定性測試結果	905

1. 一般資訊

申請者	皇輝科技股份有限公司
申請者地址	台北市內湖區民權東路六段 11 巷 43 之 1 號 3 樓
製造商	ALE International
製造商地址	26801 WEST AGOURA ROAD, CALABASAS, CA 91301, USA
實驗室	台灣曼瑞檢測科技有限公司
實驗室地址	33377 台灣桃園市龜山區復興二路 38 號
實驗室資訊	1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm. 2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada. 3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC, Industry Taiwan, EU and TELEC Rules.
實驗室測試環境條件	溫度 (°C) : 20-35 / 濕度 (%RH) : 30-65

2. 產品資訊

2.1. 待測物裝置資料

產品名稱	無線基地台
產品型號	OAW-AP1321, OAW-AP1322
待測物額定電壓	PoE input or AC adapter input
無線規格	802.11a/n/ac/ax
頻率範圍	For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5180~5240MHz, 5260~5320MHz, 5500~5720MHz , 5745~5825MHz 802.11n-HT40/ac-VHT40/ax-HE40: 5190~5230MHz, 5270~5310MHz, 5510~5710MHz , 5755~5795MHz For 802.11ac-VHT80/ax-HE80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5690MHz, 5775MHz For 802.11ac-VHT80 + 80/ax-HE80 + 80: 5210MHz, 5290MHz, 5530MHz, 5610MHz
調變模式	802.11a/n/ac: OFDM; 802.11ax: OFDMA
傳輸速率	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 600Mbps 802.11ac: up to 1733.3Mbps 802.11ax: up to 2402Mbps
Scan Antenna	
Frequency Range	For 802.11a: 5180~5240MHz, 5745~5825MHz
Type of Modulation	802.11a: OFDM
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps
頻道控制	Auto

備註:

不同機型的區別在於使用不同的 Wi-Fi 天線和外觀，其他硬體都是一樣的，故僅針對產品型號 OAW-AP1321 評估射頻傳導測試，並分別針對 OAW-AP1321& OAW-AP1322 的輻射部份執行評估。

2.2. 通道清單

802.11a/n-HT20/ac-VHT20/ax-HE20

Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	40	5200MHz	44	5220MHz
48	5240MHz	52	5260MHz	56	5280MHz
60	5300MHz	64	5320MHz	100	5500MHz
104	5520MHz	108	5540MHz	112	5560MHz
116	5580MHz	120	5600MHz	124	5620MHz
128	5640MHz	132	5660MHz	136	5680MHz
140	5700MHz	144	5720MHz	149	5745MHz
153	5765MHz	157	5785MHz	161	5805MHz
165	5825MHz	--	--	--	--

802.11n-HT40/ac-VHT40/ax-HE40

Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz	54	5270MHz
62	5310MHz	102	5510MHz	110	5550MHz
118	5590MHz	126	5630MHz	134	5670MHz
142	5710MHz	151	5755MHz	159	5795MHz

802.11ac-VHT80/ax-HE80

Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210MHz	58	5290MHz	106	5530MHz
122	5610MHz	138	5690MHz	155	5775MHz

802.11ac-VHT80 + 80/ax-HE80 + 80

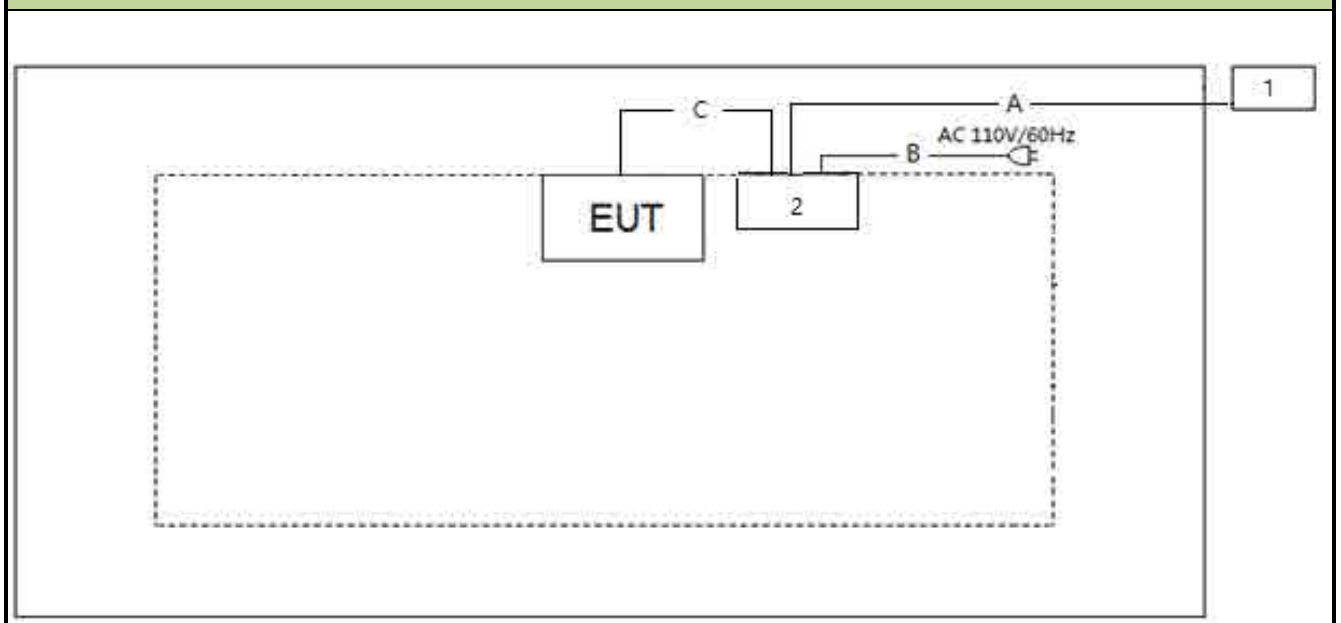
Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210MHz	58	5290MHz	106	5530MHz
122	5610MHz	--	--	--	--

2.3. 測試模式

Mode 1: 發射器 802.11a (6Mbps) (CDD Mode)
Mode 2: 發射器 802.11n-HT20 (MCS0) (CDD Mode)
Mode 3: 發射器 802.11n-HT40 (MCS0) (CDD Mode)
Mode 4: 發射器 802.11ax-HE20 (MCS0) (CDD Mode)
Mode 5: 發射器 802.11 ax-HE40 (MCS0) (CDD Mode)
Mode 6: 發射器 802.11 ax-HE80 (MCS0) (CDD Mode)
Mode 7: 發射器 802.11 ax-HE80 + 80 (MCS0) (CDD Mode)
Mode 8: 發射器 802.11a (6Mbps) (Scan Antenna)
Mode 9: 發射器 802.11n-HT20 (MCS0) (Beamforming Mode)
Mode 10: 發射器 802.11n-HT40 (MCS0) (Beamforming Mode)
Mode 11: 發射器 802.11ax-HE20 (MCS0) (Beamforming Mode)
Mode 12: 發射器 802.11 ax-HE40 (MCS0) (Beamforming Mode)
Mode 13: 發射器 802.11 ax-HE80 (MCS0) (Beamforming Mode)
Mode 14: 發射器 802.11 ax-HE80 + 80 (MCS0) (Beamforming Mode)

2.4. 測試系統組合圖

待測物測試配置圖



Signal Cable Type		Signal Cable Description
A	LAN Cable	Non-Shielding, >10m
B	Power Cable	Non-Shielding, 1.5m
C	LAN Cable	Non-Shielding, >10m

2.5. 測試周邊

No.	周邊名稱	廠牌	型號	序號	檢磁	電源線
1	Notebook	ASUS	PRO45V	N/A	N/A	Non-Shielded, 1.8m
2	PoE Adapter	Microsemi	PD-9001	N/A	N/A	Non- Shielded, 1.5m

2.6. 待測裝置測試時之典型操作程式

1.	Setup the EUT and simulators as shown on 2.4
2.	Turn on the power of all equipment.
3.	Execute "QRCT" program.
4.	Configure the test channel and the data rate.
5.	Start test.

3. 量測不確定度

電源傳導量測-電源線 (Conducted Emission- Power Line)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 2.53dB
電源傳導量測-通訊埠 (Conducted Emission- Impedance Stabilization Network Measurement)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 3.96dB
輻射干擾量測 (Radiated Spurious Emission)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 3.92dB (Below 30M)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.25dB (30M~1G)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.40dB (1G~18G)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.45dB (18G~40G)
頻率誤差量測 (Frequency Error)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 78.4\text{Hz}$
傳導功率量測 (Conducted Power)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.84\text{dB}$
傳導干擾量測 (Conducted Spurious Emission)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 2.65\text{ dB}$
佔用頻寬量測 (Occupied Bandwidth)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 3.3%
溫度 / 濕度 (Temp. / Humidity)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.82^\circ\text{C} / \pm 3\%$
直流電源 (DC Voltage)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.3\%$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

4. 測試設備明細

Conducted Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2021/03/25
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2020/04/25
8-Wire ISN (T8)	R&S	ENY81	MRTTWA00018	1 year	2021/04/23
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2021/03/25

Radiated Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2020/04/29
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2020/05/22
Broadband Hornantenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2021/04/22
Breitband Hornantenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2021/04/23
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2021/04/24
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2021/04/24
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2021/03/26
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2021/03/25
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2020/07/29
Antenna Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2020/06/17

Conducted Test Equipment

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
X-Series USB Peak and Average Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2021/04/22
Wideband Radio Communication Taster	R&S	CMW 500	MRTTWA00041	1 year	2021/01/28
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2020/07/29
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTSUE06457	1 year	2020/07/18
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2021/03/26

Software	Version	Function
EMI	Quietek	V3

5. 測試結果

產品名稱 無線基地台
型號 OAW-AP1321, OAW-AP1322

章節	量測項目	限制值	測試結果	測試數據
2.3	電源傳導	低功率射頻電機技術規範 2.3 節	符合	第 5.1 章節
4.7.2(1)(2)(3)	峰值傳導輸出功率	參考第 5.2 章節	符合	第 5.2 章節
2.2 及 4.7.8	天線之要求	低功率射頻電機技術規範 2.2 節及 4.7.8 節	符合	第 5.3 章節
4.7.5	26dB 佔用頻寬	N/A	符合	第 5.4 章節
4.7.5	6dB 佔用頻寬	$\geq 500\text{KHz}$	符合	第 5.5 章節
4.7.2(1)(2)(3)	功率頻譜密度	參考第 5.6 章節	符合	第 5.6 章節
4.7.3	操作頻帶外的峰值發射	低功率射頻電機技術規範 4.7.3 節	符合	第 5.7 章節
2.8 及 4.7.3	不必要之發射	低功率射頻電機技術規範 2.8 節	符合	第 5.8 章節
4.7.4	發射功率控制	至少具有 6dB 低於平均 EIRP 值 30dBm 的能力	N/A	第 5.9 章節
N/A	頻率穩定性	操作頻帶	符合	第 5.10 章節

5.1. 電源端點干擾測試

5.1.1. 適用標準

依據國家通訊傳播委員會低功率射頻電機技術規範之第 2.3 節，以市電為電源之低功率射頻電機，其傳導回電源線上頻率自 150kHz 至 30MHz 之射頻電壓(在電源端子每一電源線對接地點)應小於或等於下表所列之限值。測量時應經過 50 微亨利(μH)及 50 歐姆(Ω)之電源線阻抗模擬網路(LISN)。頻率重疊處，以較低限值為準。

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

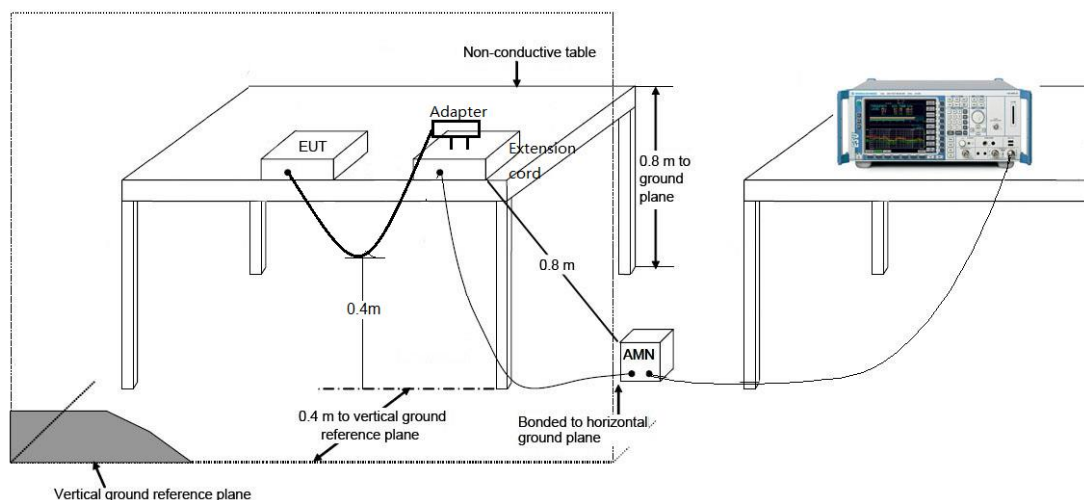
註:隨頻率之對數遞減

5.1.2. 量測方法

待測物置於高 80 公分之非導體桌面（落地型產品置於地上），將待測物之電源線接至電源阻抗網路器(LISN)，同時保持待測物至 LISN 距 80 公分，並將電源線多餘部份以 30 至 40 公分之八字形捆綁於電源線中央並離地 40cm，於在正常工作狀態下，執行待測物之火線(Line)及地線(neutral)各一次量測。電源端點場強之測量範圍由 0.15MHz –30MHz，所量測之讀值皆為準尖峰值(Quasi-Peak Value)及平均值(Average Value)。場強接收機之解析頻寬為 9kHz。

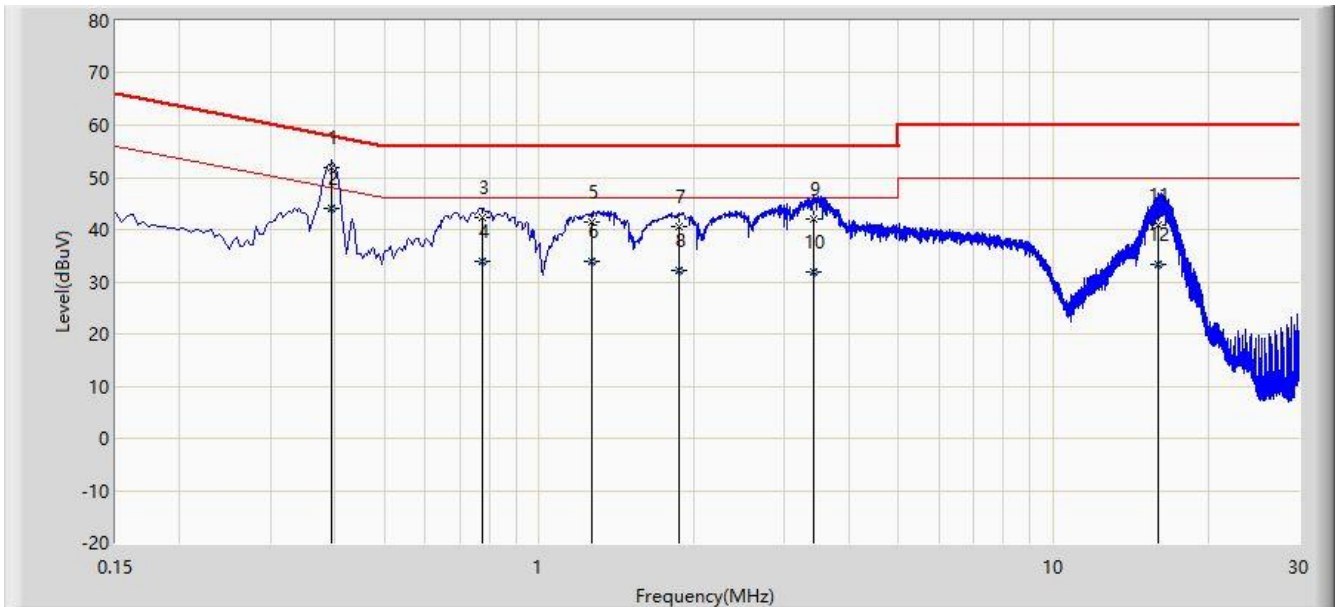
備 註: 經初測驗證過，電源端點干擾測試對測試頻道數並無差異，因此檢附其中一個測試頻道之測試數。

5.1.3. 測試架構圖



5.1.4. 電源端點測試結果

Site: SR2	Time: 2020/04/21 - 17:46
Limit: NCC LP0002_CE_0.15MHz-30MHz	Engineer: Peter Syu
Probe: CE_ENV216-L1 (Filter ON)	Polarity: Line
EUT: 無線基地台	Power: Power by POE
Test Mode: Transmit by 802.11a at Channel 5180MHz	

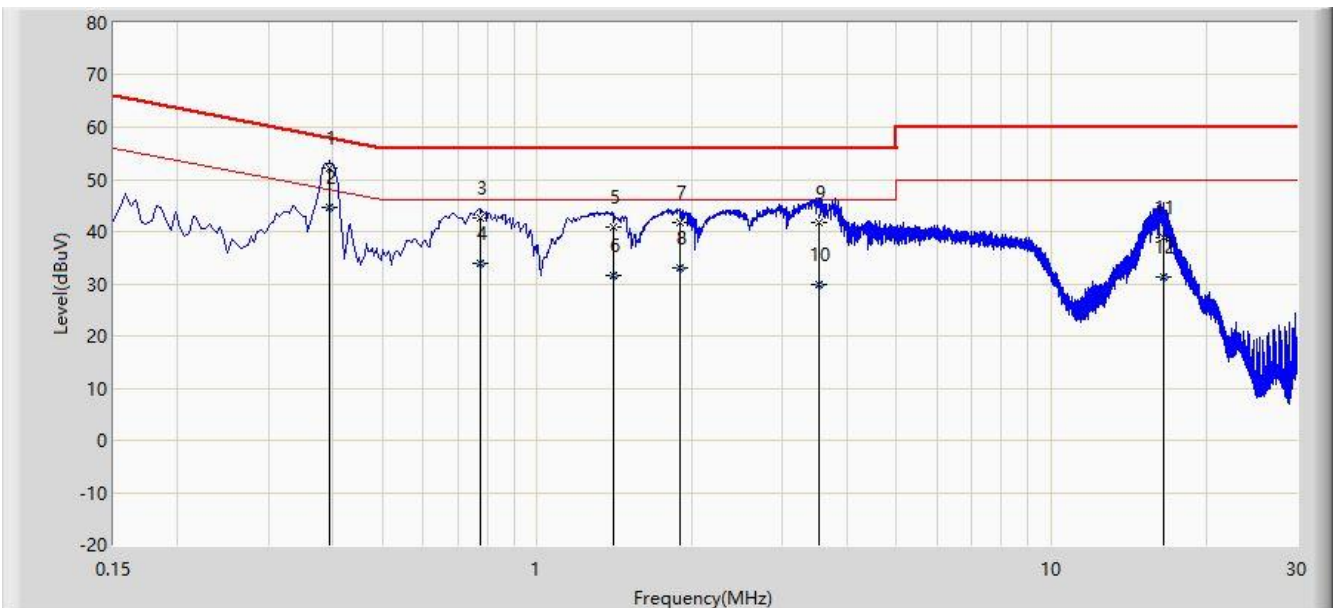


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.394	51.744	41.624	-6.235	57.979	10.120	QP
2		*	0.394	44.154	34.034	-3.825	47.979	10.120	AV
3			0.774	42.372	32.300	-13.628	56.000	10.071	QP
4			0.774	33.921	23.850	-12.079	46.000	10.071	AV
5			1.266	41.421	31.466	-14.579	56.000	9.955	QP
6			1.266	33.850	23.895	-12.150	46.000	9.955	AV
7			1.870	40.534	30.584	-15.466	56.000	9.950	QP
8			1.870	32.272	22.322	-13.728	46.000	9.950	AV
9			3.426	42.140	32.224	-13.860	56.000	9.916	QP
10			3.426	31.890	21.974	-14.110	46.000	9.916	AV
11			16.022	40.764	30.700	-19.236	60.000	10.064	QP
12			16.022	33.321	23.258	-16.679	50.000	10.064	AV

Note: Measure Level (dBuV) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Site: SR2	Time: 2020/04/21 - 17:41
Limit: NCC LP0002_CE_0.15MHz-30MHz	Engineer: Peter Syu
Probe: CE_ENV216-N (Filter ON)	Polarity: Neutral
EUT: 無線基地台	Power: Power by POE
Test Mode: Transmit by 802.11a at Channel 5180MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.394	52.298	42.202	-5.681	57.979	10.096	QP
2		*	0.394	44.684	34.588	-3.294	47.979	10.096	AV
3			0.774	42.521	32.469	-13.479	56.000	10.052	QP
4			0.774	34.029	23.977	-11.971	46.000	10.052	AV
5			1.410	40.791	30.845	-15.209	56.000	9.945	QP
6			1.410	31.625	21.679	-14.375	46.000	9.945	AV
7			1.894	41.607	31.672	-14.393	56.000	9.934	QP
8			1.894	33.000	23.066	-13.000	46.000	9.934	AV
9			3.526	41.613	31.725	-14.387	56.000	9.888	QP
10			3.526	29.725	19.837	-16.275	46.000	9.888	AV
11			16.494	38.923	28.874	-21.077	60.000	10.050	QP
12			16.494	31.402	21.352	-18.598	50.000	10.050	AV

Note: Measure Level (dBuV) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

5.2. 功率限制值

5.2.1. 適用標準

依據國家通訊傳播委員會低功率射頻電機技術規範之第 4.7.3 節：

使用於 5.15 GHz~5.25 GHz 頻段，供室內操作使用，最大傳導輸出功率應小於或等於 1 W。

使用頻率於 5.25 GHz~5.35 GHz 與 5.470 GHz~5.725 GHz 頻段，最大傳導輸出功率應小於或等於 250 mW 或 $11\text{dBm} + 10\log B$ (B 是 26 dB 發射頻寬，單位 MHz) 之較小者。

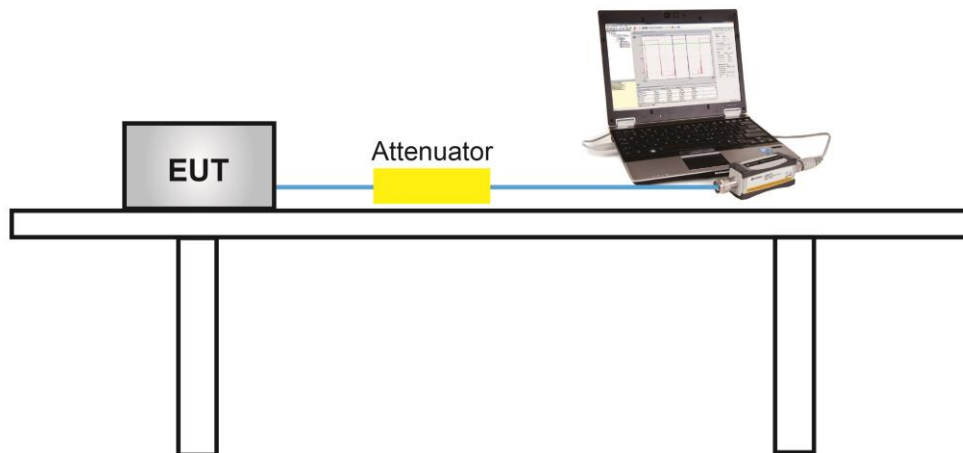
使用頻率於 5.725 GHz~5.850 GHz 頻段，最大傳導輸出功率應小於或等於 1 W。

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。

5.2.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，峰值發射功率必須使用依據均方根等效電壓校準之儀器量測於任何連續傳輸之時段，量測結果須依儀器限制(如偵測器反應時間、相較於發射頻寬有限之解析頻寬能力，靈敏度等)調整得出正確之峰值量測或使用峰值功率表。

5.2.3. 測試架構圖



5.2.4. 功率限制值測試結果

Power output test was verified over all data rates of each mode shown as below table, and then choose the maximum power output (grey marker) for final test of each channel.

For Ant 0 / Ant 0 + 1 + 2 + 3 port:

Test Mode	Bandwidth	Channel	Frequency (MHz)	Data Rate/ Mbps	Average Power (dBm)
802.11a	20	36	5180	6Mbps	16.65
				24Mbps	16.41
				54Mbps	16.19
802.11n	20	36	5180	MCS0	17.11
				MCS3	16.89
				MCS7	16.61
802.11n	40	38	5190	MCS0	14.36
				MCS3	14.16
				MCS7	13.91
802.11ax	20	36	5180	MCS0	16.56
				MCS4	16.32
				MCS8	16.04
802.11ax	40	38	5190	MCS0	13.68
				MCS4	13.37
				MCS9	13.11
802.11ax	80	42	5210	MCS0	11.57
				MCS4	11.31
				MCS9	11.04
802.11ax	80 + 80	42	5210	MCS0	13.29
				MCS4	13.03
				MCS9	12.80

待測物名稱	無線基地台	溫度	25°C
測試工程師	Peter Syu	濕度	56%
測試場地	SR1	測試日期	2020/03/14
Model No.	OAW-AP1321 (CDD Mode)	Test Item	Output Power

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11a	6Mbps	36	5180	16.65	16.56	16.33	15.32	22.27	≤ 30.00	Pass
11a	6Mbps	44	5220	16.20	16.56	16.55	13.79	21.93	≤ 30.00	Pass
11a	6Mbps	48	5240	15.83	15.95	16.55	14.33	21.76	≤ 30.00	Pass
11a	6Mbps	52	5260	11.10	10.73	10.86	9.30	16.57	≤ 23.98	Pass
11a	6Mbps	60	5300	11.02	11.03	10.87	10.55	16.89	≤ 23.98	Pass
11a	6Mbps	64	5320	10.87	11.27	11.02	10.91	17.04	≤ 23.98	Pass
11a	6Mbps	100	5500	11.35	11.30	11.86	10.76	17.36	≤ 23.98	Pass
11a	6Mbps	120	5600	12.04	12.11	12.47	10.75	17.91	≤ 23.98	Pass
11a	6Mbps	140	5700	11.50	11.18	11.76	9.21	17.04	≤ 23.98	Pass
11a	6Mbps	144	5720	11.04	11.24	11.47	9.88	16.97	≤ 23.98	Pass
11a	6Mbps	149	5745	18.27	18.96	18.94	18.42	24.68	≤ 30.00	Pass
11a	6Mbps	157	5785	17.89	18.40	19.05	17.36	24.24	≤ 30.00	Pass
11a	6Mbps	165	5825	18.16	18.14	18.87	16.98	24.11	≤ 30.00	Pass
11n-HT20	MCS0	36	5180	17.11	17.19	17.22	14.89	22.73	≤ 30.00	Pass
11n-HT20	MCS0	44	5220	16.09	17.01	16.41	14.71	22.15	≤ 30.00	Pass
11n-HT20	MCS0	48	5240	16.40	16.85	16.15	14.42	22.07	≤ 30.00	Pass
11n-HT20	MCS0	52	5260	10.86	10.00	11.30	8.55	16.32	≤ 23.98	Pass
11n-HT20	MCS0	60	5300	12.17	13.59	12.75	11.50	18.59	≤ 23.98	Pass
11n-HT20	MCS0	64	5320	11.56	10.71	12.14	12.37	17.76	≤ 23.98	Pass
11n-HT20	MCS0	100	5500	11.70	11.99	11.93	11.50	17.81	≤ 23.98	Pass
11n-HT20	MCS0	120	5600	11.43	11.81	11.69	9.27	17.18	≤ 23.98	Pass
11n-HT20	MCS0	140	5700	12.67	12.81	12.83	10.45	18.32	≤ 23.98	Pass
11n-HT20	MCS0	144	5720	11.81	12.23	11.74	11.67	17.89	≤ 23.98	Pass
11n-HT20	MCS0	149	5745	18.72	18.81	19.25	17.66	24.67	≤ 30.00	Pass
11n-HT20	MCS0	157	5785	17.85	18.74	18.22	17.63	24.15	≤ 30.00	Pass

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11n-HT20	MCS0	165	5825	18.33	18.69	18.65	16.86	24.21	≤ 30.00	Pass
11n-HT40	MCS0	38	5190	14.36	14.43	14.68	12.17	20.04	≤ 30.00	Pass
11n-HT40	MCS0	46	5230	18.14	18.55	18.64	16.11	23.99	≤ 30.00	Pass
11n-HT40	MCS0	54	5270	12.84	12.76	12.87	11.28	18.51	≤ 23.98	Pass
11n-HT40	MCS0	62	5310	12.49	12.64	12.56	12.36	18.54	≤ 23.98	Pass
11n-HT40	MCS0	102	5510	12.95	13.14	13.51	11.50	18.86	≤ 23.98	Pass
11n-HT40	MCS0	118	5590	13.80	13.79	13.42	11.72	19.28	≤ 23.98	Pass
11n-HT40	MCS0	134	5670	13.41	13.68	13.37	11.08	19.02	≤ 23.98	Pass
11n-HT40	MCS0	142	5710	14.22	14.39	14.39	12.15	19.90	≤ 23.98	Pass
11n-HT40	MCS0	151	5755	17.69	18.29	18.33	17.23	23.93	≤ 30.00	Pass
11n-HT40	MCS0	159	5795	17.58	18.35	18.29	17.18	23.90	≤ 30.00	Pass
11ax-HE20	MCS0	36	5180	16.56	16.71	16.56	14.64	22.21	≤ 30.00	Pass
11ax-HE20	MCS0	44	5220	16.94	17.18	17.18	15.90	22.85	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	16.89	16.86	17.11	15.21	22.60	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	10.63	10.32	10.57	8.71	16.14	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	10.51	11.00	10.43	10.06	16.53	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	10.22	10.14	9.95	10.81	16.31	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	10.33	10.66	10.23	10.21	16.39	≤ 23.98	Pass
11ax-HE20	MCS0	120	5600	10.99	11.57	10.68	9.12	16.70	≤ 23.98	Pass
11ax-HE20	MCS0	140	5700	10.96	10.88	10.07	9.08	16.33	≤ 23.98	Pass
11ax-HE20	MCS0	144	5720	11.13	11.71	11.66	10.82	17.36	≤ 23.98	Pass
11ax-HE20	MCS0	149	5745	17.88	18.57	18.42	17.00	24.03	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	17.48	18.06	17.77	16.89	23.59	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	17.60	17.91	18.58	17.40	23.92	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11ax-HE40	MCS0	38	5190	13.68	13.83	13.96	11.52	19.37	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	17.94	18.50	17.81	16.22	23.71	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	12.95	12.93	13.07	10.81	18.55	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	13.15	13.03	12.94	12.67	18.97	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	13.73	13.79	13.91	12.66	19.57	≤ 23.98	Pass
11ax-HE40	MCS0	118	5590	14.10	14.44	14.05	12.77	19.90	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	14.74	14.95	15.01	12.99	20.52	≤ 23.98	Pass
11ax-HE40	MCS0	142	5710	14.25	14.81	14.26	12.72	20.09	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	17.73	18.38	18.01	16.77	23.78	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	17.56	18.32	18.72	17.42	24.06	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	11.57	11.68	11.82	9.27	17.22	≤ 30.00	Pass
11ax-HE80	MCS0	58	5290	14.51	14.75	14.27	13.84	20.37	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	12.82	12.89	12.44	12.29	18.64	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	17.75	18.12	17.17	16.91	23.53	≤ 23.98	Pass
11ax-HE80	MCS0	138	5690	17.27	18.00	17.92	16.43	23.47	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	17.30	17.54	17.77	16.04	23.23	≤ 30.00	Pass
11ax-HE80 +80	MCS0	42	5210	13.29	13.02			18.90	≤ 23.98	Pass
		58	5290			12.68	12.46			
11ax-HE80 +80	MCS0	106	5530	13.85	14.00			19.91	≤ 23.98	Pass
		122	5610			13.43	14.25			

Note: Total Average Power (dBm) = $10 \cdot \log\{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

待測物名稱	無線基地台	溫度	25°C
測試工程師	Peter Syu	濕度	56%
測試場地	SR1	測試日期	2020/03/14
Model No.	OAW-AP1321 (Beam-Forming Mode)	Test Item	Output Power

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11n-HT20	MCS0	36	5180	17.11	17.19	17.22	14.89	22.73	≤ 26.28	Pass
11n-HT20	MCS0	44	5220	16.09	17.01	16.41	14.71	22.15	≤ 26.28	Pass
11n-HT20	MCS0	48	5240	16.40	16.85	16.15	14.42	22.07	≤ 26.28	Pass
11n-HT20	MCS0	52	5260	10.86	10.00	11.30	8.55	16.32	≤ 20.26	Pass
11n-HT20	MCS0	60	5300	12.17	13.59	12.75	11.50	18.59	≤ 20.26	Pass
11n-HT20	MCS0	64	5320	11.56	10.71	12.14	12.37	17.76	≤ 20.26	Pass
11n-HT20	MCS0	100	5500	11.70	11.99	11.93	11.50	17.81	≤ 20.26	Pass
11n-HT20	MCS0	120	5600	11.43	11.81	11.69	9.27	17.18	≤ 20.26	Pass
11n-HT20	MCS0	140	5700	12.67	12.81	12.83	10.45	18.32	≤ 20.26	Pass
11n-HT20	MCS0	144	5720	11.81	12.23	11.74	11.67	17.89	≤ 20.26	Pass
11n-HT20	MCS0	149	5745	18.72	18.81	19.25	17.66	24.67	≤ 26.28	Pass
11n-HT20	MCS0	157	5785	17.85	18.74	18.22	17.63	24.15	≤ 26.28	Pass
11n-HT20	MCS0	165	5825	18.33	18.69	18.65	16.86	24.21	≤ 26.28	Pass
11n-HT40	MCS0	38	5190	14.36	14.43	14.68	12.17	20.04	≤ 26.28	Pass
11n-HT40	MCS0	46	5230	18.14	18.55	18.64	16.11	23.99	≤ 26.28	Pass
11n-HT40	MCS0	54	5270	12.84	12.76	12.87	11.28	18.51	≤ 20.26	Pass
11n-HT40	MCS0	62	5310	12.49	12.64	12.56	12.36	18.54	≤ 20.26	Pass
11n-HT40	MCS0	102	5510	12.95	13.14	13.51	11.50	18.86	≤ 20.26	Pass
11n-HT40	MCS0	118	5590	13.80	13.79	13.42	11.72	19.28	≤ 20.26	Pass
11n-HT40	MCS0	134	5670	13.41	13.68	13.37	11.08	19.02	≤ 20.26	Pass
11n-HT40	MCS0	142	5710	14.22	14.39	14.39	12.15	19.90	≤ 20.26	Pass
11n-HT40	MCS0	151	5755	17.69	18.29	18.33	17.23	23.93	≤ 26.28	Pass
11n-HT40	MCS0	159	5795	17.58	18.35	18.29	17.18	23.90	≤ 26.28	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11ax-HE20	MCS0	36	5180	16.56	16.71	16.56	14.64	22.21	≤ 26.28	Pass
11ax-HE20	MCS0	44	5220	16.94	17.18	17.18	15.90	22.85	≤ 26.28	Pass
11ax-HE20	MCS0	48	5240	16.89	16.86	17.11	15.21	22.60	≤ 26.28	Pass
11ax-HE20	MCS0	52	5260	10.63	10.32	10.57	8.71	16.14	≤ 20.26	Pass
11ax-HE20	MCS0	60	5300	10.51	11.00	10.43	10.06	16.53	≤ 20.26	Pass
11ax-HE20	MCS0	64	5320	10.22	10.14	9.95	10.81	16.31	≤ 20.26	Pass
11ax-HE20	MCS0	100	5500	10.33	10.66	10.23	10.21	16.39	≤ 20.26	Pass
11ax-HE20	MCS0	120	5600	10.99	11.57	10.68	9.12	16.70	≤ 20.26	Pass
11ax-HE20	MCS0	140	5700	10.96	10.88	10.07	9.08	16.33	≤ 20.26	Pass
11ax-HE20	MCS0	144	5720	11.13	11.71	11.66	10.82	17.36	≤ 20.26	Pass
11ax-HE20	MCS0	149	5745	17.88	18.57	18.42	17.00	24.03	≤ 26.28	Pass
11ax-HE20	MCS0	157	5785	17.48	18.06	17.77	16.89	23.59	≤ 26.28	Pass
11ax-HE20	MCS0	165	5825	17.60	17.91	18.58	17.40	23.92	≤ 26.28	Pass
11ax-HE40	MCS0	38	5190	13.68	13.83	13.96	11.52	19.37	≤ 26.28	Pass
11ax-HE40	MCS0	46	5230	17.94	18.50	17.81	16.22	23.71	≤ 26.28	Pass
11ax-HE40	MCS0	54	5270	12.95	12.93	13.07	10.81	18.55	≤ 20.26	Pass
11ax-HE40	MCS0	62	5310	13.15	13.03	12.94	12.67	18.97	≤ 20.26	Pass
11ax-HE40	MCS0	102	5510	13.73	13.79	13.91	12.66	19.57	≤ 20.26	Pass
11ax-HE40	MCS0	118	5590	14.10	14.44	14.05	12.77	19.90	≤ 20.26	Pass
11ax-HE40	MCS0	134	5670	14.74	14.95	15.01	12.99	20.52	≤ 20.26	Pass
11ax-HE40	MCS0	142	5710	14.25	14.81	14.26	12.72	20.09	≤ 20.26	Pass
11ax-HE40	MCS0	151	5755	17.73	18.38	18.01	16.77	23.78	≤ 26.28	Pass
11ax-HE40	MCS0	159	5795	17.56	18.32	18.72	17.42	24.06	≤ 26.28	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11ax-HE80	MCS0	42	5210	11.57	11.68	11.82	9.27	17.22	≤ 26.28	Pass
11ax-HE80	MCS0	58	5290	14.51	14.75	14.27	13.84	20.37	≤ 20.26	Pass
11ax-HE80	MCS0	106	5530	12.82	12.89	12.44	12.29	18.64	≤ 20.26	Pass
11ax-HE80	MCS0	122	5610	17.75	18.12	17.17	16.91	23.53	≤ 20.26	Pass
11ax-HE80	MCS0	138	5690	17.27	18.00	17.92	16.43	23.47	≤ 20.26	Pass
11ax-HE80	MCS0	155	5775	17.30	17.54	17.77	16.04	23.23	≤ 26.28	Pass
11ax-HE80 +80	MCS0	42	5210	13.29	13.02			18.90	≤ 20.26	Pass
		58	5290			12.68	12.46			
11ax-HE80 +80	MCS0	106	5530	13.85	14.00			19.91	≤ 20.26	Pass
		122	5610			13.43	14.25			

Note: Total Average Power (dBm) = $10 \cdot \log\{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

待測物名稱	無線基地台	溫度	25°C
測試工程師	Peter Syu	濕度	56%
測試場地	SR1	測試日期	2020/03/14
Model No.	OAW-AP1321	Test Item	Output Power
Antenna Model No	Scan Antenna		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)	Limit (dBm)	Result
11a	6Mbps	36	5180	10.44	≤ 30.00	Pass
11a	6Mbps	44	5220	10.11	≤ 30.00	Pass
11a	6Mbps	48	5240	9.98	≤ 30.00	Pass
11a	6Mbps	149	5745	9.91	≤ 30.00	Pass
11a	6Mbps	157	5785	9.67	≤ 30.00	Pass
11a	6Mbps	165	5825	10.58	≤ 30.00	Pass

待測物名稱	無線基地台	溫度	25°C
測試工程師	Peter Syu	濕度	56%
測試場地	SR1	測試日期	2020/03/15
Model No.	OAW-AP1322 (CDD Mode)	Test Item	Output Power

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11a	6Mbps	36	5180	15.46	14.29	14.53	13.90	20.60	≤ 30.00	Pass
11a	6Mbps	44	5220	15.59	14.75	15.13	14.36	21.00	≤ 30.00	Pass
11a	6Mbps	48	5240	15.58	14.70	15.24	14.63	21.08	≤ 30.00	Pass
11a	6Mbps	52	5260	9.76	9.21	9.59	9.22	15.47	≤ 23.98	Pass
11a	6Mbps	60	5300	9.19	8.31	9.31	8.36	14.84	≤ 23.98	Pass
11a	6Mbps	64	5320	10.02	8.93	10.12	9.20	15.62	≤ 23.98	Pass
11a	6Mbps	100	5500	8.61	8.42	9.26	8.80	14.81	≤ 23.98	Pass
11a	6Mbps	120	5600	9.41	8.61	9.51	9.15	15.20	≤ 23.98	Pass
11a	6Mbps	140	5700	9.59	8.42	8.87	9.04	15.02	≤ 23.98	Pass
11a	6Mbps	144	5720	9.48	8.71	8.97	8.82	15.03	≤ 23.98	Pass
11a	6Mbps	149	5745	16.66	16.36	16.27	16.48	22.46	≤ 30.00	Pass
11a	6Mbps	157	5785	16.46	16.39	16.70	16.55	22.55	≤ 30.00	Pass
11a	6Mbps	165	5825	16.12	16.52	16.19	16.55	22.37	≤ 30.00	Pass
11n-HT20	MCS0	36	5180	16.49	15.24	15.84	15.26	21.76	≤ 30.00	Pass
11n-HT20	MCS0	44	5220	15.61	15.12	15.19	15.02	21.26	≤ 30.00	Pass
11n-HT20	MCS0	48	5240	15.90	15.48	15.49	14.56	21.41	≤ 30.00	Pass
11n-HT20	MCS0	52	5260	10.34	9.98	10.04	9.54	16.01	≤ 23.98	Pass
11n-HT20	MCS0	60	5300	10.03	9.53	9.58	9.53	15.69	≤ 23.98	Pass
11n-HT20	MCS0	64	5320	11.15	10.38	10.75	10.11	16.64	≤ 23.98	Pass
11n-HT20	MCS0	100	5500	10.28	10.18	10.68	10.32	16.39	≤ 23.98	Pass
11n-HT20	MCS0	120	5600	10.46	9.17	10.25	10.34	16.10	≤ 23.98	Pass
11n-HT20	MCS0	140	5700	10.90	10.15	10.26	10.18	16.40	≤ 23.98	Pass
11n-HT20	MCS0	144	5720	11.13	9.92	10.52	10.21	16.49	≤ 23.98	Pass
11n-HT20	MCS0	149	5745	16.76	15.94	16.38	16.49	22.42	≤ 30.00	Pass
11n-HT20	MCS0	157	5785	16.40	15.99	16.49	16.33	22.33	≤ 30.00	Pass

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11n-HT20	MCS0	165	5825	16.45	16.01	16.48	16.58	22.41	≤ 30.00	Pass
11n-HT40	MCS0	38	5190	10.49	9.75	10.23	10.00	16.15	≤ 30.00	Pass
11n-HT40	MCS0	46	5230	18.13	17.98	17.67	17.36	23.81	≤ 30.00	Pass
11n-HT40	MCS0	54	5270	12.85	12.31	11.98	12.84	18.53	≤ 23.98	Pass
11n-HT40	MCS0	62	5310	13.04	12.63	10.83	12.87	18.45	≤ 23.98	Pass
11n-HT40	MCS0	102	5510	12.69	12.38	12.89	12.50	18.64	≤ 23.98	Pass
11n-HT40	MCS0	118	5590	12.68	12.48	12.67	12.76	18.67	≤ 23.98	Pass
11n-HT40	MCS0	134	5670	12.83	12.47	12.60	12.73	18.68	≤ 23.98	Pass
11n-HT40	MCS0	142	5710	12.96	12.52	12.35	12.93	18.72	≤ 23.98	Pass
11n-HT40	MCS0	151	5755	16.77	16.30	16.60	16.18	22.49	≤ 30.00	Pass
11n-HT40	MCS0	159	5795	16.68	16.33	16.45	15.85	22.36	≤ 30.00	Pass
11ax-HE20	MCS0	36	5180	15.26	14.28	14.72	13.83	20.58	≤ 30.00	Pass
11ax-HE20	MCS0	44	5220	15.45	14.79	15.01	14.93	21.07	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	16.04	15.41	15.37	15.26	21.55	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	9.98	9.48	9.72	9.50	15.70	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	9.84	9.18	9.64	9.39	15.54	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	10.08	9.56	10.06	9.60	15.85	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	9.99	8.98	9.82	9.70	15.66	≤ 23.98	Pass
11ax-HE20	MCS0	120	5600	10.16	8.93	10.05	9.94	15.82	≤ 23.98	Pass
11ax-HE20	MCS0	140	5700	9.77	8.77	9.48	9.54	15.42	≤ 23.98	Pass
11ax-HE20	MCS0	144	5720	10.14	8.99	9.82	9.77	15.72	≤ 23.98	Pass
11ax-HE20	MCS0	149	5745	16.85	15.75	16.54	17.03	22.59	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	16.55	15.96	16.55	16.76	22.49	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	16.66	15.71	16.48	16.52	22.38	≤ 30.00	Pass

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11ax-HE40	MCS0	38	5190	11.04	10.47	11.04	9.26	16.53	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	18.21	17.65	18.05	17.04	23.78	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	13.11	12.24	12.82	11.97	18.58	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	12.57	11.74	12.42	11.44	18.09	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	12.75	11.86	12.82	11.38	18.26	≤ 23.98	Pass
11ax-HE40	MCS0	118	5590	12.52	11.53	12.61	12.29	18.28	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	12.54	11.42	12.40	12.52	18.27	≤ 23.98	Pass
11ax-HE40	MCS0	142	5710	12.75	11.68	12.03	12.67	18.33	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	16.31	15.88	16.00	15.86	22.04	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	16.85	16.12	16.62	15.93	22.41	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	9.33	8.67	8.91	7.57	14.69	≤ 30.00	Pass
11ax-HE80	MCS0	58	5290	15.89	15.28	15.84	14.96	21.53	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	15.57	15.44	15.77	15.79	21.67	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	15.76	15.18	15.13	15.59	21.45	≤ 23.98	Pass
11ax-HE80	MCS0	138	5690	15.39	15.22	15.05	15.74	21.38	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	15.76	15.45	15.69	15.88	21.72	≤ 30.00	Pass
11ax-HE80 +80	MCS0	42	5210	12.94	12.12			18.00	≤ 23.98	Pass
		58	5290			12.41	9.85			
11ax-HE80 +80	MCS0	106	5530	13.19	12.74			18.87	≤ 23.98	Pass
		122	5610			13.07	12.36			

Note: Total Average Power (dBm) = $10 \cdot \log\{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

待測物名稱	無線基地台	溫度	25°C
測試工程師	Peter Syu	濕度	56%
測試場地	SR1	測試日期	2020/03/15
Model No.	OAW-AP1322 (Beam-Forming Mode)	Test Item	Output Power

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11n-HT20	MCS0	36	5180	16.49	15.24	15.84	15.26	21.76	≤ 23.98	Pass
11n-HT20	MCS0	44	5220	15.61	15.12	15.19	15.02	21.26	≤ 23.98	Pass
11n-HT20	MCS0	48	5240	15.90	15.48	15.49	14.56	21.41	≤ 23.98	Pass
11n-HT20	MCS0	52	5260	10.34	9.98	10.04	9.54	16.00	≤ 17.96	Pass
11n-HT20	MCS0	60	5300	10.03	9.53	9.58	9.53	15.69	≤ 17.96	Pass
11n-HT20	MCS0	64	5320	11.15	10.38	10.75	10.11	16.64	≤ 17.96	Pass
11n-HT20	MCS0	100	5500	10.28	10.18	10.68	10.32	16.39	≤ 17.96	Pass
11n-HT20	MCS0	120	5600	10.46	9.17	10.25	10.34	16.10	≤ 17.96	Pass
11n-HT20	MCS0	140	5700	10.90	10.15	10.26	10.18	16.40	≤ 17.96	Pass
11n-HT20	MCS0	144	5720	11.13	9.92	10.52	10.21	16.49	≤ 17.96	Pass
11n-HT20	MCS0	149	5745	16.76	15.94	16.38	16.49	22.42	≤ 23.98	Pass
11n-HT20	MCS0	157	5785	16.40	15.99	16.49	16.33	22.33	≤ 23.98	Pass
11n-HT20	MCS0	165	5825	16.45	16.01	16.48	16.58	22.41	≤ 23.98	Pass
11n-HT40	MCS0	38	5190	10.49	9.75	10.23	10.00	16.15	≤ 23.98	Pass
11n-HT40	MCS0	46	5230	18.13	17.98	17.67	17.36	23.82	≤ 23.98	Pass
11n-HT40	MCS0	54	5270	11.59	11.26	10.54	11.49	17.26	≤ 17.96	Pass
11n-HT40	MCS0	62	5310	11.94	11.09	9.33	11.53	17.10	≤ 17.96	Pass
11n-HT40	MCS0	102	5510	11.34	11.11	11.63	11.44	17.40	≤ 17.96	Pass
11n-HT40	MCS0	118	5590	11.65	11.22	11.65	11.36	17.49	≤ 17.96	Pass
11n-HT40	MCS0	134	5670	11.48	11.07	11.21	11.50	17.34	≤ 17.96	Pass
11n-HT40	MCS0	142	5710	11.83	11.17	10.97	11.59	17.42	≤ 17.96	Pass
11n-HT40	MCS0	151	5755	16.77	16.30	16.60	16.18	22.49	≤ 23.98	Pass
11n-HT40	MCS0	159	5795	16.68	16.33	16.45	15.85	22.36	≤ 23.98	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11ax-HE20	MCS0	36	5180	15.26	14.28	14.72	13.83	20.58	≤ 23.98	Pass
11ax-HE20	MCS0	44	5220	15.45	14.79	15.01	14.93	21.07	≤ 23.98	Pass
11ax-HE20	MCS0	48	5240	16.04	15.41	15.37	15.26	21.55	≤ 23.98	Pass
11ax-HE20	MCS0	52	5260	9.98	9.48	9.72	9.50	15.70	≤ 17.96	Pass
11ax-HE20	MCS0	60	5300	9.84	9.18	9.64	9.39	15.54	≤ 17.96	Pass
11ax-HE20	MCS0	64	5320	10.08	9.56	10.06	9.60	15.85	≤ 17.96	Pass
11ax-HE20	MCS0	100	5500	9.99	8.98	9.82	9.70	15.66	≤ 17.96	Pass
11ax-HE20	MCS0	120	5600	10.16	8.93	10.05	9.94	15.82	≤ 17.96	Pass
11ax-HE20	MCS0	140	5700	9.77	8.77	9.48	9.54	15.43	≤ 17.96	Pass
11ax-HE20	MCS0	144	5720	10.14	8.99	9.82	9.77	15.72	≤ 17.96	Pass
11ax-HE20	MCS0	149	5745	16.85	15.75	16.54	17.03	22.59	≤ 23.98	Pass
11ax-HE20	MCS0	157	5785	16.55	15.96	16.55	16.76	22.49	≤ 23.98	Pass
11ax-HE20	MCS0	165	5825	16.66	15.71	16.48	16.52	22.38	≤ 23.98	Pass
11ax-HE40	MCS0	38	5190	11.04	10.47	11.04	9.26	16.53	≤ 23.98	Pass
11ax-HE40	MCS0	46	5230	18.21	17.65	18.05	17.04	23.78	≤ 23.98	Pass
11ax-HE40	MCS0	54	5270	11.93	10.71	11.33	10.54	17.18	≤ 17.96	Pass
11ax-HE40	MCS0	62	5310	11.43	10.43	11.35	10.40	16.95	≤ 17.96	Pass
11ax-HE40	MCS0	102	5510	11.62	10.62	11.30	10.28	17.01	≤ 17.96	Pass
11ax-HE40	MCS0	118	5590	11.16	10.41	11.42	10.90	17.01	≤ 17.96	Pass
11ax-HE40	MCS0	134	5670	11.48	10.23	11.22	11.33	17.11	≤ 17.96	Pass
11ax-HE40	MCS0	142	5710	11.71	10.44	10.98	11.56	17.22	≤ 17.96	Pass
11ax-HE40	MCS0	151	5755	16.31	15.88	16.00	15.86	22.04	≤ 23.98	Pass
11ax-HE40	MCS0	159	5795	16.85	16.12	16.62	15.93	22.42	≤ 23.98	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
11ax-HE80	MCS0	42	5210	9.33	8.67	8.91	7.57	14.69	≤ 23.98	Pass
11ax-HE80	MCS0	58	5290	11.77	11.36	11.92	11.03	17.55	≤ 17.96	Pass
11ax-HE80	MCS0	106	5530	11.41	11.44	11.81	11.45	17.55	≤ 17.96	Pass
11ax-HE80	MCS0	122	5610	11.60	11.15	10.88	11.45	17.30	≤ 17.96	Pass
11ax-HE80	MCS0	138	5690	11.22	10.96	11.05	11.82	17.30	≤ 17.96	Pass
11ax-HE80	MCS0	155	5775	15.76	15.45	15.69	15.88	21.72	≤ 23.98	Pass
11ax-HE80 +80	MCS0	42	5210	11.67	11.78			17.74	≤ 17.96	Pass
		58	5290			11.86	11.55			
11ax-HE80 +80	MCS0	106	5530	11.69	11.53			17.68	≤ 17.96	Pass
		122	5610			11.77	11.66			

Note: Total Average Power (dBm) = $10 \cdot \log\{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

5.3. 天線之要求

5.3.1. 適用標準

低功率射頻電機之發射機或收發信機所使用之天線，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。

5.3.2. 天線樣式

Model No.: OAW-AP1321

Antenna Type	Frequency Band (GHz)	Tx Paths	Bandwidth (MHz)	Max Peak Gain (dBi)				Directional Gain (dBi)	
				Ant 0	Ant 1	Ant 2	Ant 3	CDD	Beamforming
Wi-Fi Internal Antenna List (2.4GHz 2*2 MIMO, 5GHz 4*4 MIMO)									
Omni Antenna	2400 ~ 2483.5	2	20, 40	3.5	3.5	--	--	3.5	6.51
	5150 ~ 5850	4	20	3.2	3.6	3.7	3.5	3.7	9.72
			40						
			80						
Bluetooth Internal Antenna									
Antenna Type		Frequency Band (GHz)				Max Peak Gain (dBi)			
Omni Antenna		2400 ~ 2483.5				3.2			
Scan Internal Antenna									
Antenna Type		Frequency Band (GHz)				Max Peak Gain (dBi)			
Omni Antenna		2400 ~ 2483.5				3.5			
		5150 ~ 5850				3.5			

Model No.: OAW-AP1322

Antenna Type	Frequency Band (GHz)	T _x Paths	Bandwidth (MHz)	Max Peak Gain (dBi)	Directional Gain (dBi)	
					CDD	Beamforming
Wi-Fi Internal Antenna List (2.4GHz 2*2 MIMO, 5GHz 4*4 MIMO)						
Dipole	2400 ~ 2483.5	2	20, 40	3.5	3.5	6.51
	5150 ~ 5850	4	20	6	6	12.02
			40			
			80			
Bluetooth Internal Antenna						
Antenna Type		Frequency Band (GHz)			Max Peak Gain (dBi)	
Omni Antenna		2400 ~ 2483.5			3.2	
Scan Internal Antenna						
Antenna Type		Frequency Band (GHz)			Max Peak Gain (dBi)	
Omni Antenna		2400 ~ 2483.5			3.5	
		5150 ~ 5850			3.5	

Note 1: The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11a/b/g/n/ac/ax mode.

Note 2: The EUT also supports Beam Forming technology for 802.11n/ac/ax.

Note 3: The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

If all antennas have the same gain, G_{ANT} , Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,
Array Gain = $10 \log (N_{ANT} / N_{SS})$ dB = 3.01;
- For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB for $N_{ANT} \leq 4$;

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

Note 4: The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac/ax, not include 802.11a/b/g. The directional gain = $10 \cdot \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$ dBi.

Note 5: Here is the same scan antenna, so this report has assessed the scan antenna with OAW-AP1321.

5.4. 26dB 佔用頻寬

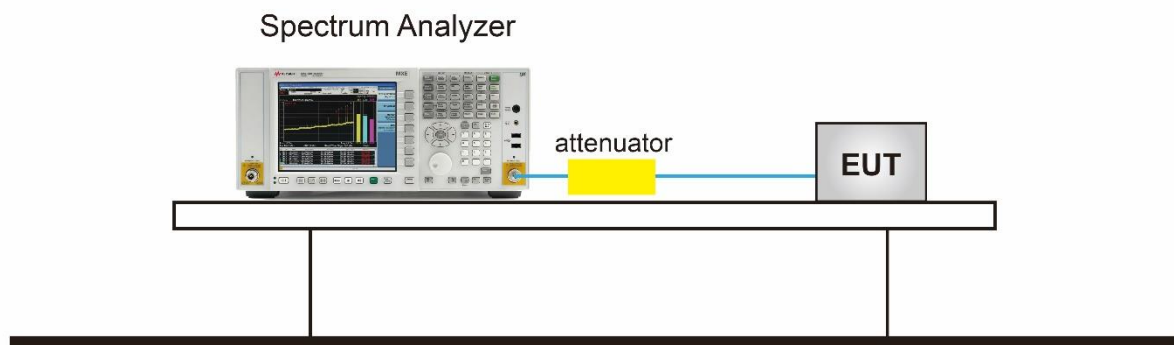
5.4.1.適用標準

N/A

5.4.2.量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀RF輸入端，峰值發射功率必須使用依據均方根等效電壓校準之儀器量測於任何連續傳輸之時段，量測結果須依儀器限制(如偵測器反應時間、相較於發射頻寬有限之解析頻寬能力，靈敏度等)調整得出正確之峰值量測或使用峰值功率表。

5.4.3.測試架構圖



5.4.4.26dB 佔用頻寬測試結果

待測物名稱	無線基地台	溫度	24°C
測試工程師	Peter Syu	濕度	56%
測試場地	SR1	測試日期	2020/03/15

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)
Ant 0 / Ant 0 + 1 + 2 + 3				
802.11a	6Mbps	36	5180	19.14
802.11a	6Mbps	44	5220	18.86
802.11a	6Mbps	48	5240	18.86
802.11a	6Mbps	52	5260	19.09
802.11a	6Mbps	60	5300	18.85
802.11a	6Mbps	64	5320	19.10
802.11a	6Mbps	100	5500	19.20
802.11a	6Mbps	120	5600	18.88
802.11a	6Mbps	140	5700	19.00
802.11a	6Mbps	144	5720	19.40
802.11a	6Mbps	149	5745	18.84
802.11a	6Mbps	157	5785	19.06
802.11a	6Mbps	165	5825	18.82
802.11n-HT20	MCS0	36	5180	20.49
802.11n-HT20	MCS0	44	5220	20.15
802.11n-HT20	MCS0	48	5240	20.17
802.11n-HT20	MCS0	52	5260	20.21
802.11n-HT20	MCS0	60	5300	20.31
802.11n-HT20	MCS0	64	5320	20.35
802.11n-HT20	MCS0	100	5500	19.91
802.11n-HT20	MCS0	120	5600	19.91
802.11n-HT20	MCS0	140	5700	19.95
802.11n-HT20	MCS0	144	5720	20.00
802.11n-HT20	MCS0	149	5745	20.33
802.11n-HT20	MCS0	157	5785	21.09
802.11n-HT20	MCS0	165	5825	20.80

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)
Ant 0 / Ant 0 + 1 + 2 + 3				
802.11n-HT40	MCS0	38	5190	39.63
802.11n-HT40	MCS0	46	5230	39.62
802.11n-HT40	MCS0	54	5270	39.81
802.11n-HT40	MCS0	62	5310	39.38
802.11n-HT40	MCS0	102	5510	39.78
802.11n-HT40	MCS0	118	5590	40.04
802.11n-HT40	MCS0	134	5670	39.12
802.11n-HT40	MCS0	142	5710	39.38
802.11n-HT40	MCS0	151	5755	39.73
802.11n-HT40	MCS0	159	5795	39.53
802.11ax-HE20	MCS0	36	5180	20.72
802.11ax-HE20	MCS0	44	5220	20.78
802.11ax-HE20	MCS0	48	5240	21.00
802.11ax-HE20	MCS0	52	5260	20.65
802.11ax-HE20	MCS0	60	5300	20.87
802.11ax-HE20	MCS0	64	5320	21.18
802.11ax-HE20	MCS0	100	5500	21.05
802.11ax-HE20	MCS0	120	5600	20.64
802.11ax-HE20	MCS0	140	5700	20.94
802.11ax-HE20	MCS0	144	5720	20.41
802.11ax-HE20	MCS0	149	5745	21.12
802.11ax-HE20	MCS0	157	5785	20.70
802.11ax-HE20	MCS0	165	5825	21.72
802.11ax-HE40	MCS0	38	5190	40.47
802.11ax-HE40	MCS0	46	5230	40.60
802.11ax-HE40	MCS0	54	5270	40.13
802.11ax-HE40	MCS0	62	5310	39.99
802.11ax-HE40	MCS0	102	5510	40.89
802.11ax-HE40	MCS0	118	5590	40.20
802.11ax-HE40	MCS0	134	5670	40.13
802.11ax-HE40	MCS0	142	5710	39.72
802.11ax-HE40	MCS0	151	5755	40.59
802.11ax-HE40	MCS0	159	5795	40.56

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)
Ant 0 / Ant 0 + 1 + 2 + 3				
802.11ax-HE80	MCS0	42	5210	81.17
802.11ax-HE80	MCS0	58	5290	81.28
802.11ax-HE80	MCS0	106	5530	80.58
802.11ax-HE80	MCS0	122	5610	81.30
802.11ax-HE80	MCS0	138	5690	81.25
802.11ax-HE80	MCS0	155	5775	81.43
802.11ax-HE80 + 80	MCS0	42	5210	102.50
		58	5290	124.60
802.11ax-HE80 + 80	MCS0	106	5530	116.60
		122	5610	125.90
Scan Antenna				
802.11a	6Mbps	36	5180	24.70
802.11a	6Mbps	44	5220	25.89
802.11a	6Mbps	48	5240	25.98
802.11a	6Mbps	149	5745	23.55
802.11a	6Mbps	157	5785	23.51
802.11a	6Mbps	165	5825	23.76

802.11a 26dB Bandwidth & 99% Bandwidth -Ant 0 / Ant 0 + 1 + 2 + 3

Channel 36 (5180MHz)



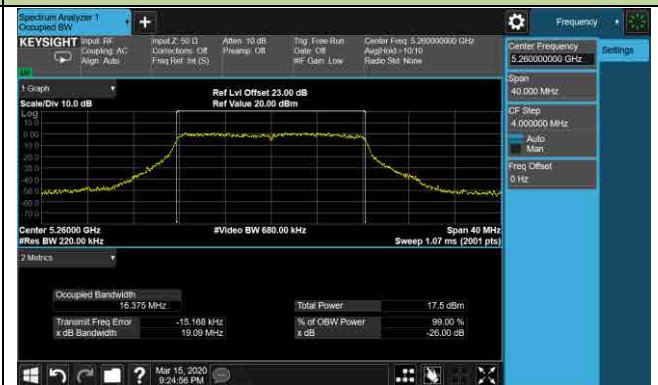
Channel 44 (5220MHz)



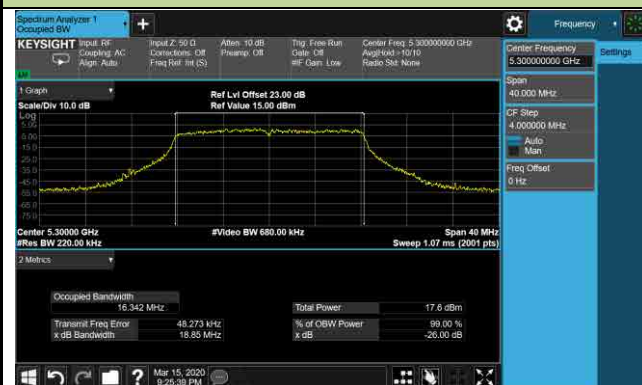
Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



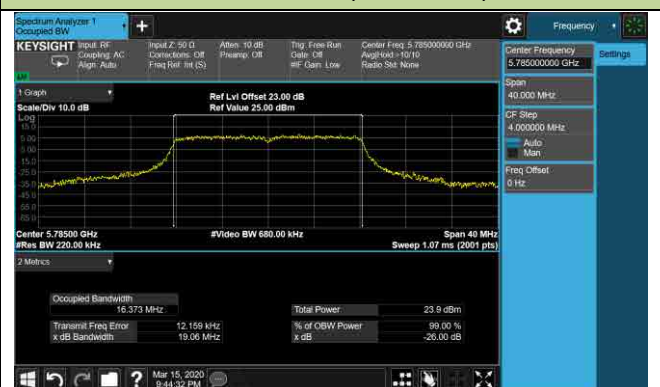
Channel 144 (5720MHz)



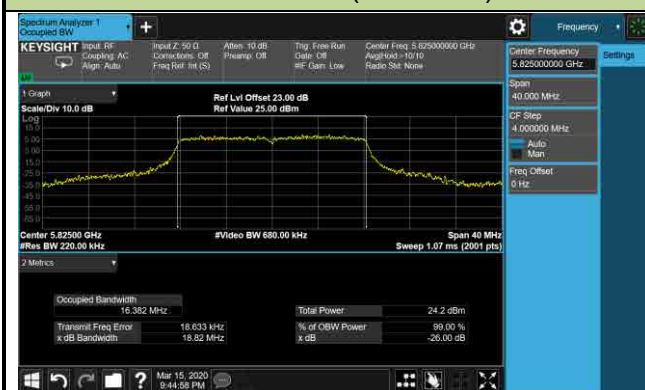
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



802.11n-HT20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



802.11n-HT40 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 38 (5190MHz)



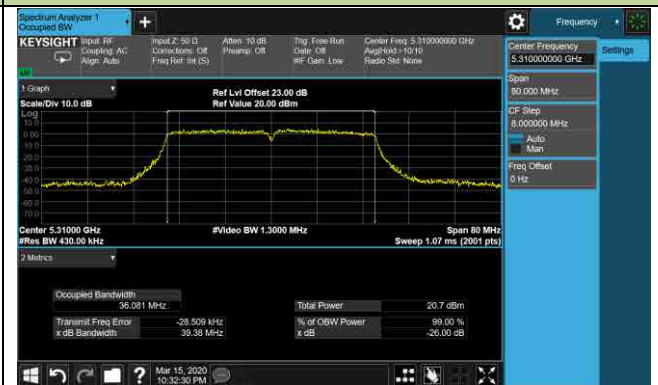
Channel 46 (5230MHz)



Channel 54 (5270MHz)



Channel 62 (5310MHz)



Channel 102 (5510MHz)



Channel 118 (5590MHz)

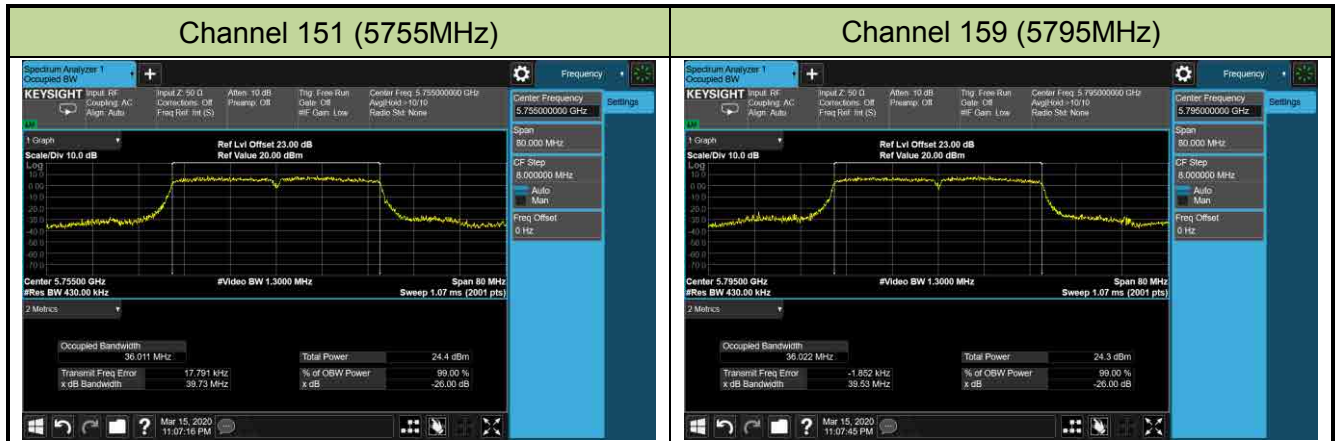


Channel 134 (5670MHz)



Channel 142 (5710MHz)





802.11ax-HE20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



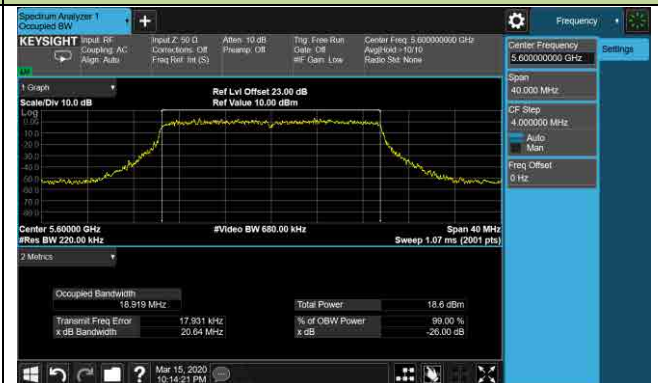
Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



802.11ax-HE40 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 38 (5190MHz)



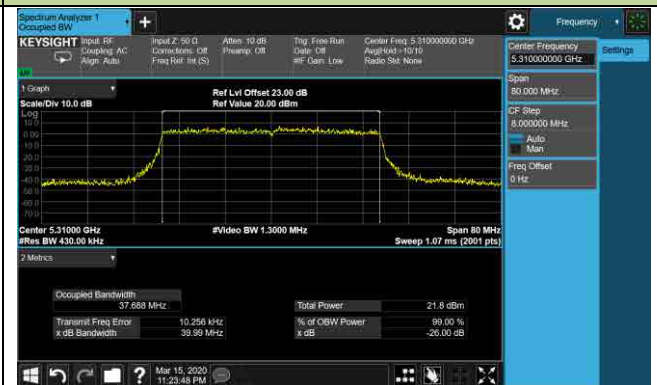
Channel 46 (5230MHz)



Channel 54 (5270MHz)



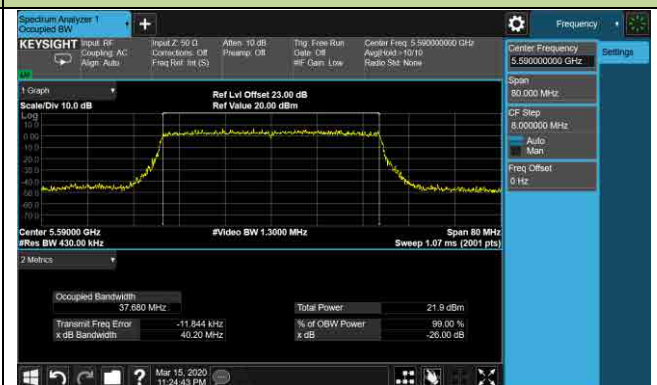
Channel 62 (5310MHz)



Channel 102 (5510MHz)



Channel 118 (5590MHz)

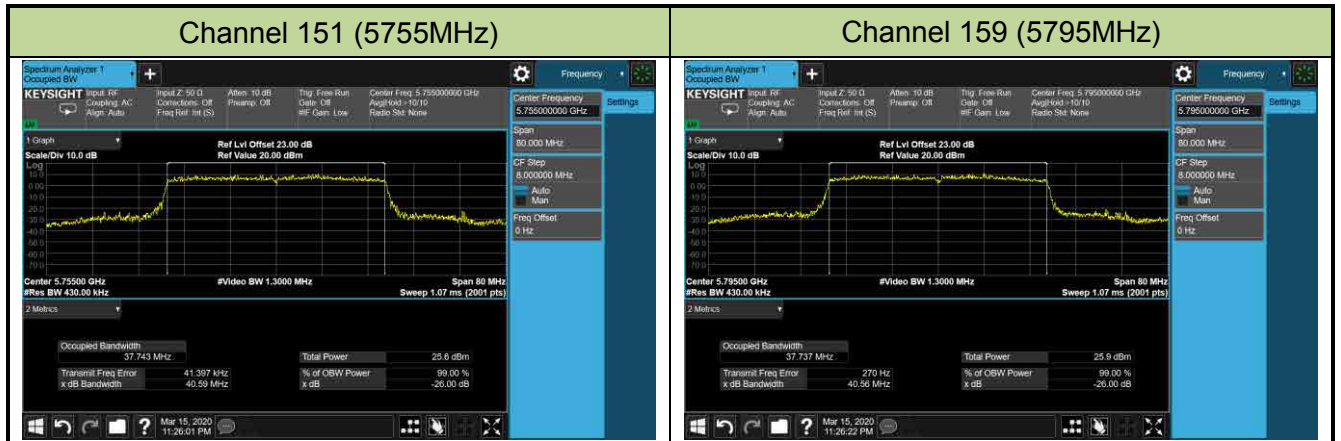


Channel 134 (5670MHz)



Channel 142 (5710MHz)





802.11ax-HE80 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 42 (5210MHz)



Channel 58 (5290MHz)



Channel 106 (5530MHz)



Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



802.11ax-HE80+80 26dB & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 42 (5210MHz)



Channel 58 (5290MHz)



Channel 106 (5530MHz)



Channel 122 (5610MHz)



Scan Antenna

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



5.5. 6dB 佔用頻寬

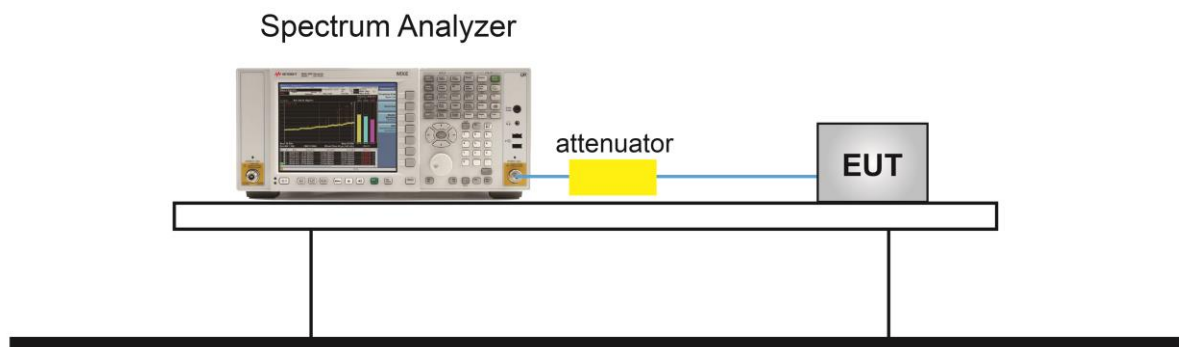
5.5.1.適用標準

在 5.725 GHz~5.850 GHz 頻段操作之設備，其 6 dB 頻寬至少應有 500 kHz。

5.5.2.量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀RF輸入端，峰值發射功率必須使用依據均方根等效電壓校準之儀器量測於任何連續傳輸之時段，量測結果須依儀器限制(如偵測器反應時間、相較於發射頻寬有限之解析頻寬能力，靈敏度等)調整得出正確之峰值量測或使用峰值功率表。

5.5.3.測試架構圖



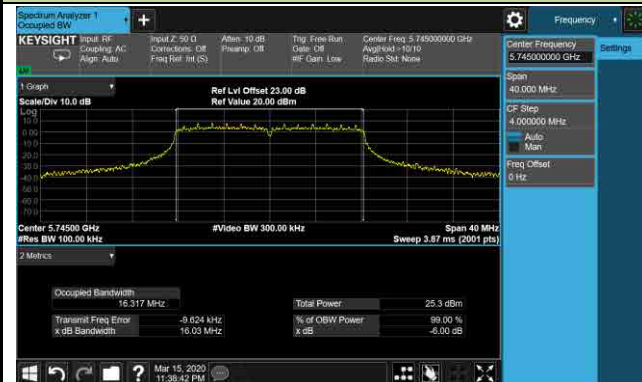
5.5.4.6dB 佔用頻寬測試結果

Product	無線基地台	Temperature	24 ~ 25°C
Test Engineer	Eric Xu	Relative Humidity	48 ~ 56%
Test Site	SR1	Test Date	2020/03/15 ~2020/03/23
Model No.	OAW-AP1321	Test Item	6dB Bandwidth

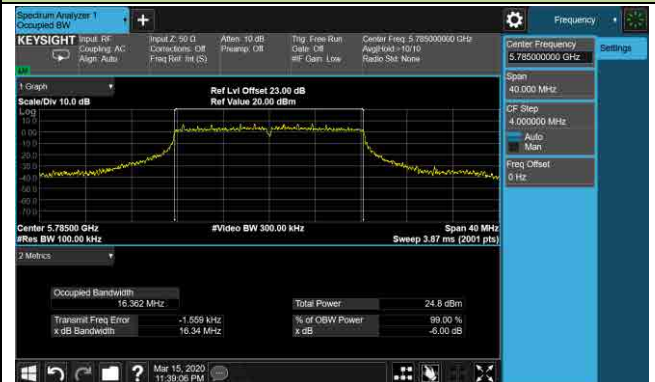
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)
Ant 1 / Ant 0 + 1 + 2 + 3				
802.11a	6Mbps	149	5745	16.03
802.11a	6Mbps	157	5785	16.34
802.11a	6Mbps	165	5825	16.35
802.11n-HT20	MCS0	149	5745	17.56
802.11n-HT20	MCS0	157	5785	16.93
802.11n-HT20	MCS0	165	5825	16.95
802.11n-HT40	MCS0	151	5755	34.72
802.11n-HT40	MCS0	159	5795	35.12
802.11ax-HE20	MCS0	149	5745	18.38
802.11ax-HE20	MCS0	157	5785	18.99
802.11ax-HE20	MCS0	165	5825	17.58
802.11ax-HE40	MCS0	151	5755	37.67
802.11ax-HE40	MCS0	159	5795	36.55
802.11ax-HE80	MCS0	155	5775	75.56
Scan Antenna				
802.11a	6Mbps	149	5745	16.34
802.11a	6Mbps	157	5785	16.38
802.11a	6Mbps	165	5825	16.35

802.11a 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

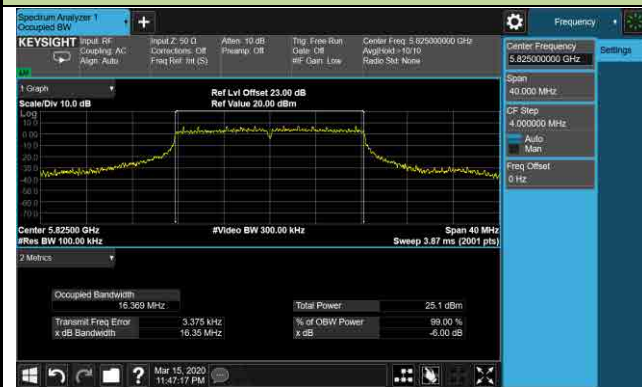
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

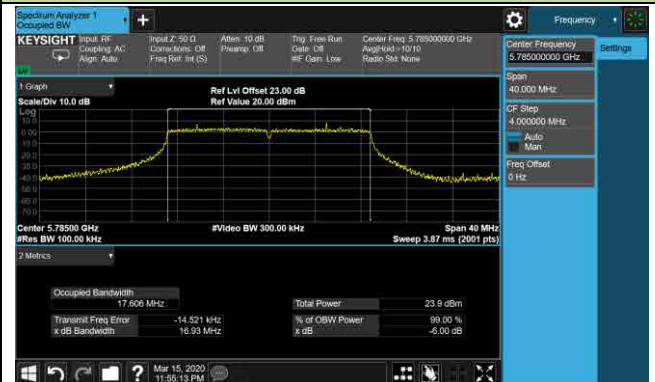


802.11n-HT20 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



802.11n-HT40 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ax-HE20 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

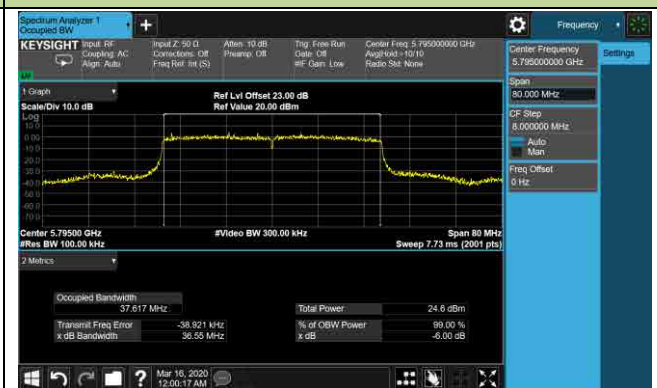


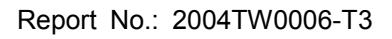
802.11ax-HE40 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 151 (5755MHz)



Channel 159 (5795MHz)





802.11a 6dB Bandwidth - Scan Antenna

Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



5.6. 最大功率頻譜密度

5.6.1. 適用標準

依據國家通訊傳播委員會低功率射頻電機技術規範之第4.7.2(1)(2)(3)節

使用於5.15 GHz~5.25 GHz 頻段，供室內操作使用，在任何1 MHz 頻帶中最大功率頻譜密度應小於或等於17 dBm。

使用頻率於5.25 GHz~5.35 GHz 與5.470 GHz~5.725 GHz 頻段，最大功率頻譜密度在任何1 MHz 頻帶中應小於或等於11 dBm。

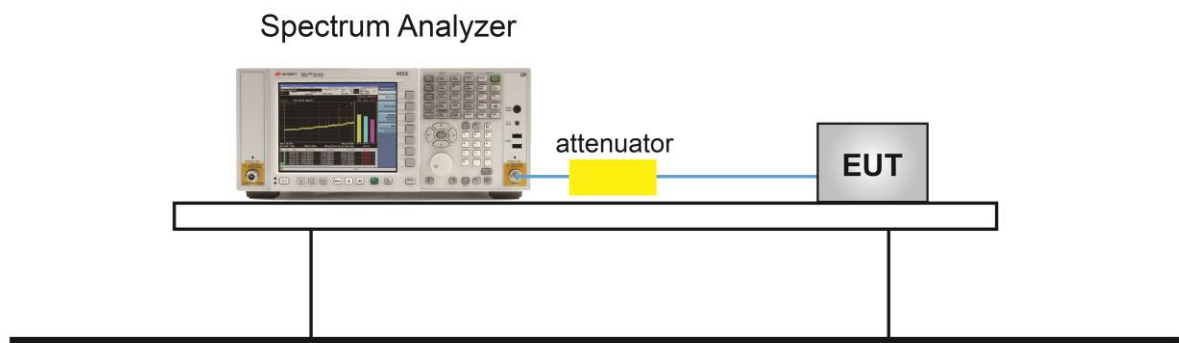
使用頻率於5.725 GHz~5.850 GHz 頻段，在任何500 kHz 頻帶中最大功率頻譜密度應小於或等於30 dBm。

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，等量減少最大功率頻譜密度。

5.6.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀RF輸入端，量測定於1MHz/500kHz頻寬。

5.6.3. 測試架構圖



5.6.4.峰值功率頻譜密度測試結果

待測物名稱	無線基地台	溫度	24°C
測試工程師	Peter Syu	濕度	56%
測試場地	SR1	測試日期	2020/03/15 ~ 2020/03/26
Model No.	OAW-AP1321	Test Item	Power Spectral Density

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Ant 2 PSD (dBm/MHz)	Ant 3 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
Ant 0 + 1 + 2 + 3											
11a	6Mbps	36	5180	6.47	6.71	6.08	4.10	91.91	12.34	≤ 13.48	Pass
11a	6Mbps	44	5220	6.14	5.71	6.19	3.54	91.91	11.91	≤ 13.48	Pass
11a	6Mbps	48	5240	6.77	5.96	6.47	4.08	91.91	12.32	≤ 13.48	Pass
11a	6Mbps	52	5260	0.22	-0.09	0.31	-2.28	91.91	6.05	≤ 7.48	Pass
11a	6Mbps	60	5300	0.22	-0.45	0.38	-1.24	91.91	6.16	≤ 7.48	Pass
11a	6Mbps	64	5320	0.68	0.13	0.62	-0.49	91.91	6.65	≤ 7.48	Pass
11a	6Mbps	100	5500	0.61	1.14	0.77	0.02	91.91	7.04	≤ 7.48	Pass
11a	6Mbps	120	5600	1.28	1.92	0.11	-0.47	91.91	7.20	≤ 7.48	Pass
11a	6Mbps	140	5700	0.16	1.33	0.55	0.32	91.91	7.00	≤ 7.48	Pass
11a	6Mbps	144	5720	0.68	-0.54	0.05	0.24	91.91	6.51	≤ 7.48	Pass
11n-HT20	MCS0	36	5180	7.16	6.25	7.01	4.44	94.50	12.61	≤ 13.48	Pass
11n-HT20	MCS0	44	5220	6.73	5.87	6.39	4.27	94.50	12.18	≤ 13.48	Pass
11n-HT20	MCS0	48	5240	6.87	5.56	6.84	4.32	94.50	12.29	≤ 13.48	Pass
11n-HT20	MCS0	52	5260	0.17	-0.46	0.61	-1.97	94.50	5.96	≤ 7.48	Pass
11n-HT20	MCS0	60	5300	1.21	0.40	1.78	-0.30	94.50	7.11	≤ 7.48	Pass
11n-HT20	MCS0	64	5320	1.48	0.21	1.61	0.33	94.50	7.22	≤ 7.48	Pass
11n-HT20	MCS0	100	5500	1.20	1.03	0.16	0.83	94.50	7.09	≤ 7.48	Pass
11n-HT20	MCS0	120	5600	1.58	1.33	0.07	0.87	94.50	7.27	≤ 7.48	Pass
11n-HT20	MCS0	140	5700	0.72	1.41	0.63	0.59	94.50	7.12	≤ 7.48	Pass
11n-HT20	MCS0	144	5720	0.24	0.68	0.56	1.63	94.50	7.07	≤ 7.48	Pass
11n-HT40	MCS0	38	5190	-0.04	-1.09	0.56	-1.86	90.20	5.96	≤ 13.48	Pass
11n-HT40	MCS0	46	5230	4.77	3.77	4.58	2.46	90.20	10.45	≤ 13.48	Pass
11n-HT40	MCS0	54	5270	-0.30	-1.34	0.43	0.43	90.20	6.33	≤ 7.48	Pass
11n-HT40	MCS0	62	5310	-0.26	-1.65	-0.50	-0.32	90.20	5.82	≤ 7.48	Pass
11n-HT40	MCS0	102	5510	0.24	0.24	1.36	-0.69	90.20	6.82	≤ 7.48	Pass
11n-HT40	MCS0	118	5590	1.12	1.32	0.14	0.37	90.20	7.23	≤ 7.48	Pass