

NCC

低功率射頻電機型式試驗報告

產品名稱 : ACCESS POINT
型號 : APINP303
廠牌 :  
申請者 : 慧與科技股份有限公司
申請者地址 : 臺北市南港區經貿二路 66 號 10 樓之 1
測試標準 : LP0002 (107 年版)
參考法規 : ANSI C63.10-2013
測試結果 : 符合
測試日期 : 2017.10.16 ~ 2018.09.27
發行日期 : 2018.11.04

測試工程師 : 
(柯文凱)
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修訂紀錄

報告編號	版本	描述	發行日期
1810TW0101-T4	1.0	Original Report	2018-11-04

Note 1: The APINP303 is a variation on the existing APIN0303. The APIN0303 is currently NCC certified under NCC: CCAJ18LP0A90T9 (Brand Name: aruba) and NCC: CCAJ18LP0A91T1 (Brand Name: Hewlett Packard Enterprise).

The APINP303 differs from the APIN0303 in the following ways:

- A second Ethernet port was added (second port supports POE out).
- The BLE radio chip (previously from TI) was changed to a Nordic BLE/ZigBee IC.

To support the above, the above changes were to the design:

- A change to the metal bottom enclosure plate to allow for the second RJ45 port.
- A small daughter PCB was added for the POE output circuitry, located over the ethernet circuitry
- Circuitry and layout for the ethernet/POE operation.
- Wifi antennas were moved to allow routing of RF cable around daughter card. The antenna elements are unchanged. Minor antenna gain changes (see below).
- Layout changes for the Nordic BLE/Zigbee IC.

Antenna Gain (* mean uncorrelated array gain)		
Radio	APIN0303	APINP303
BLE	4.3 dBi	4.5 dBi
2.4GHz Wi-Fi	2.1 dBi*	2.1 dBi*
5GHz Wi-Fi	5.7 dBi*	5.9 dBi*

The following items were not changed:

- Circuitry and layout for the wifi radio; • RF shields over the wifi radio; • Wifi operation/RF software

Note 2: Some test items were spot-checked shown as below table, most test data refer to APIN0303 original test report no. 1711TW0103-T3.

Test	Worse Case Mode	Comment
UNII1 (5150-5250MHz)		
Radiated Spurious Emission	11a (Channel 44)	The data is coming from the original report
Radiated Band Edge	HT40 (CDD Mode)	The data is coming from the original report
Output Power	N/A	Increase of 0.2dB on antenna gain would not affect compliance. Results from APIN0303 still valid.

Power Density	N/A	Increase of 0.2dB on antenna gain would not affect compliance. Results from APIN0303 still valid.
Occupied Bandwidth	N/A (Changes would not affect results)	
UNII2a (5150-5250MHz)		
Radiated Spurious Emission	HT20 (BF Mode)	The data is coming from the original report
Radiated Band Edge	VHT80	The data is coming from the original report
Output Power	N/A	Limited power measurements performed to address 0.2dB increase in antenna gain.
Power Density	N/A	Limited PSD measurements performed to address 0.2dB increase in antenna gain.
Occupied Bandwidth	The data is coming from the original report	

Test	Worse Case Mode	Comment
UNII2c (5470-5725MHz)		
Radiated Spurious Emission	VHT20 (CDD Mode)	The data is coming from the original report
Radiated Band Edge	VHT80 (CDD Mode)	The data is coming from the original report
Output Power	N/A	Limited power measurements performed to address 0.2dB increase in antenna gain.
Power Density	N/A	Limited PSD measurements performed to address 0.2dB increase in antenna gain.
Occupied Bandwidth	The data is coming from the original report	
UNII3 (5725-5850MHz)		
Radiated Spurious Emission	HT20 (CDD mode)	N/A
Radiated Band Edge	VHT80 (BF mode)	N/A
Output Power	N/A	Increase of 0.2dB on antenna gain would not affect compliance. Results from APIN0303 still valid.
Power Density	N/A	Increase of 0.2dB on antenna gain would not affect compliance. Results from APIN0303 still valid.
Occupied Bandwidth	The data is coming from the original report	

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1. 一般資訊

申請者	慧與科技股份有限公司
申請者地址	臺北市南港區經貿二路 66 號 10 樓之 1
製造商	Hewlett Packard Enterprise Company
製造商地址	6280 America Center Drive, San Jose, CA 95002
認證實驗室	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
測試設備序列號	傳導樣品序列號: CNGHKGX006 (M/N: APINP303) 輻射樣品序列號: CNGHKGX00D (M/N: APINP303) 傳導樣品序列號: CNDVK9T00F(M/N: APIN0303) 輻射樣品序列號: CNDVK9T00J(M/N: APIN0303)
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 Film. 2. MRT facility is an IC registered (MRT Reg. No. 21723-1) 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.

2. 產品資訊

2.1. 待測物裝置資料

產品名稱	ACCESS POINT
產品型號	APINP303
天線樣式	Refer to the table "Antenna List"
天線規格	Refer to the table "Antenna List"
待測物額定電壓	POE input or AC adapter input
調變模式	802.11a/n/ac: OFDM
傳輸速率	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps
頻道控制	Auto
配件	
電源供應器	Part No.: SDI40-48-U-P7R-C2 Model No.: ATS048T-A480 Input Power: 100 - 240V ~ 50/60Hz, 1.2A Output Power: 48VDC/1A

Note: The applicant provide one POE adapter (Manufacturer: MICROSEMI) for approval testing, it is not for sale.

2.2. 通道清單

802.11a/n-HT20/ac-VHT20

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

802.11n-HT40/ac-VHT40

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

802.11ac-VHT80

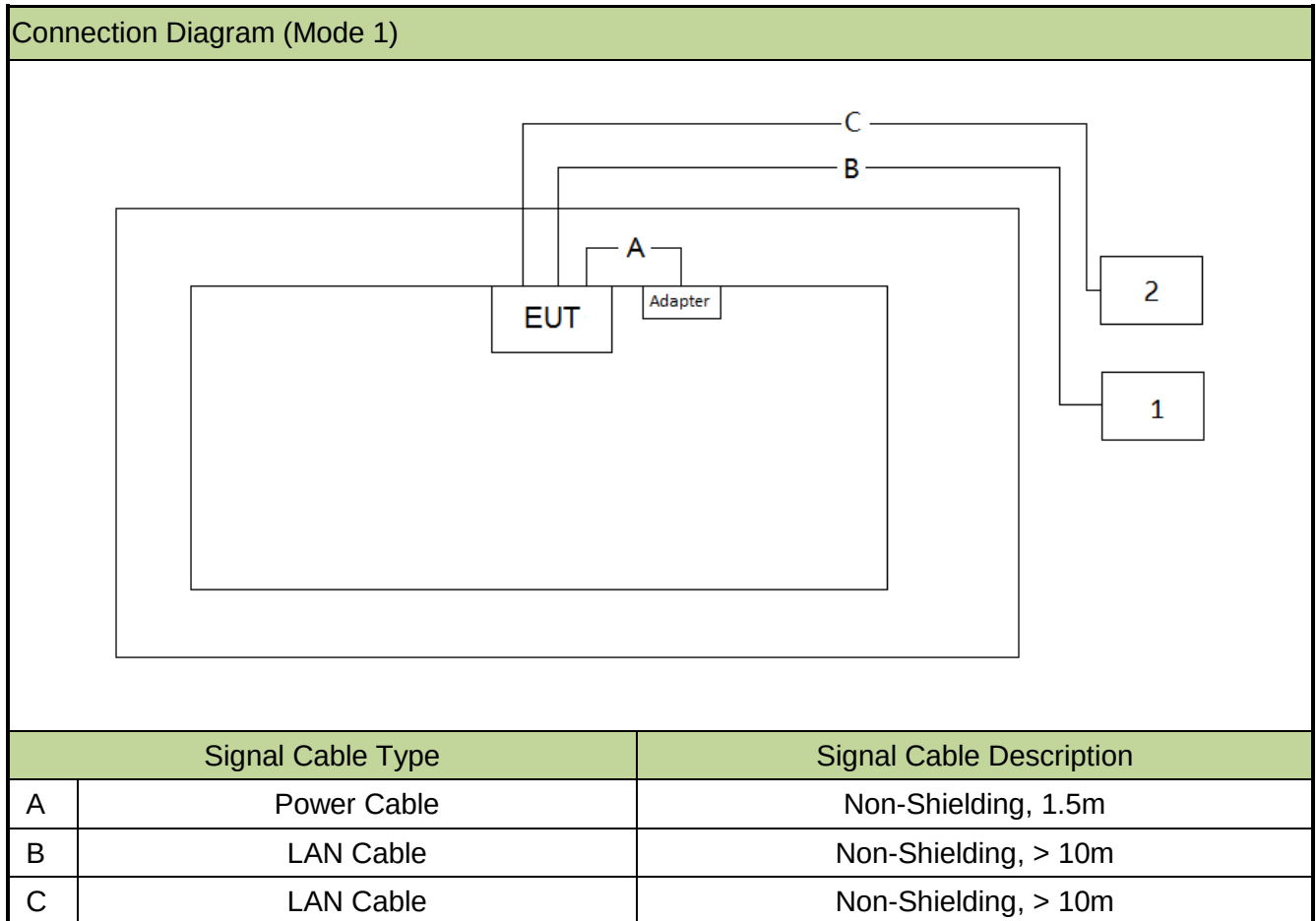
Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz	106	5530 MHz
122	5610 MHz	138	5690 MHz	155	5775 MHz

2.3. 測試模式

Mode 1: 發射器 802.11a (6Mbps)
Mode 2: 發射器 802.11n-HT20 (MCS0)
Mode 3: 發射器 802.11n-HT40 (MCS0)
Mode 4: 發射器 802.11ac-VHT20 (MCS0)
Mode 5: 發射器 802.11ac-VHT40 (MCS0)
Mode 6: 發射器 802.11ac-VHT80 (MCS0)

5GHz Test Mode	Ant 0 + 1	
	CDD	Beam-Forming
802.11a	√	×
802.11n-HT20	√	√
802.11n-HT40	√	√
802.11ac-VHT20	√	√
802.11ac-VHT40	√	√
802.11ac-VHT80	√	√

2.4. 測試系統組合圖



2.5. 測試周邊

Item	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Lenovo	E430c	N/A	Non-Shielded, 1.8m
2	Notebook	Lenovo	X230i	N/A	Non-Shielded, 1.8m

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 "QCARCT" program.
4.	Configure the test channel and the data rate.
5.	Start test.

3. 量測不確定度

AC Conducted Emission Measurement - SR2
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 150kHz~30MHz: 3.46dB
Radiated Emission Measurement - AC1
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 9kHz ~ 1GHz: 4.18dB 1GHz ~ 25GHz: 4.76dB
Spurious Emissions, Conducted - SR1
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.78dB
Output Power - SR1
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.13dB
Power Spectrum Density - SR1
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.15dB
Occupied Bandwidth - SR1
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.28%

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

M/N: APINP303

Conducted Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2019/03/20
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2019/03/20
EMI Test Receiver	R&S	ESR3	MRTTWA00045	1 year	2019/05/14
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2019/06/07

Radiated Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2019/04/24
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2019/05/22
Broadband Horn Antenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2019/04/24
Breitband Horn Antenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2019/04/23
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2019/04/23
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2019/04/23
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2019/03/19
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2019/07/30
Antenna Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2019/05/18
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00032	1 year	2019/05/21

Conducted Test Equipment

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2019/07/30
X-Series USB Peak and Average Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2019/04/24
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00032	1 year	2019/05/21

Software	Version	Function
e3	9.160520a	EMI Test Software

M/N: APIN0303

Conducted Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTTWA00045	1 year	2018/03/17
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2018/03/23
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2018/03/23
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2018/06/08

Radiated Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2018/03/02
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2018/03/16
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2018/04/06
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2018/04/06
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2018/04/06
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2018/04/06
Broadband Horn antenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2018/04/06
Breitband Horn antenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2018/04/06
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2018/06/08

Conducted Test Equipment

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2018/07/10
PSA Series Spectrum Analyzer	Agilent	E4447A	MRTTWA00060	1 year	2017/12/11
X-Series USB Peak and Average Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2018/03/18
X-Series USB Peak and Average Power Sensor	KEYSIGHT	U2021XA	MRTTWA00015	1 year	2018/03/18
Programmable Temperature & Humidity Chamber	TEN BILLION	TTH-B3UP	MRTTWA00036	1 year	2018/05/10
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2018/06/08

Software	Version	Function
e3	V 8.3.5	EMI Test Software

5. 測試結果

產品名稱 ACCESS POINT
型號 APINP303

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
4.7.3	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 5.4 章節
2.8 及 4.7.3	輻射電場強度	低功率射頻電機技術規範 2.8 節	符合	第 5.5 章節
4.7.5	26dB 佔用頻寬	N/A	符合	第 5.6 章節
4.7.5	6dB 佔用頻寬	$\geq 500\text{KHz}$	符合	第 5.7 章節
4.7.2(1)(2)(3)	功率頻譜密度	參考第 5.8 章節	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	符合	第 5.9 章節
4.7.7	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

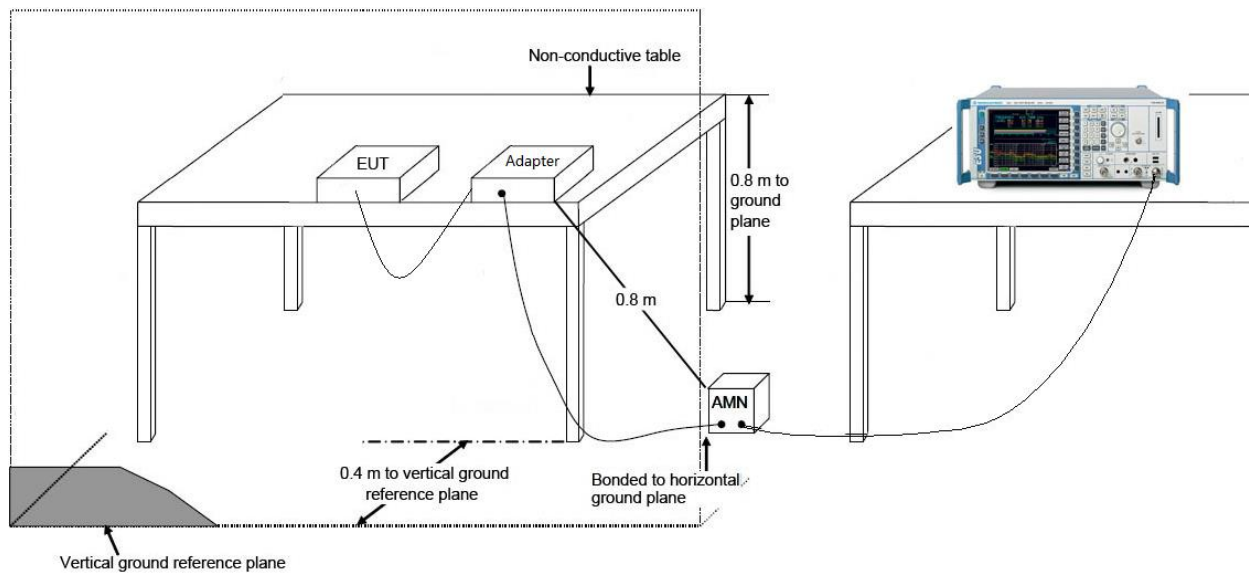
註:隨頻率之對數遞減

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。

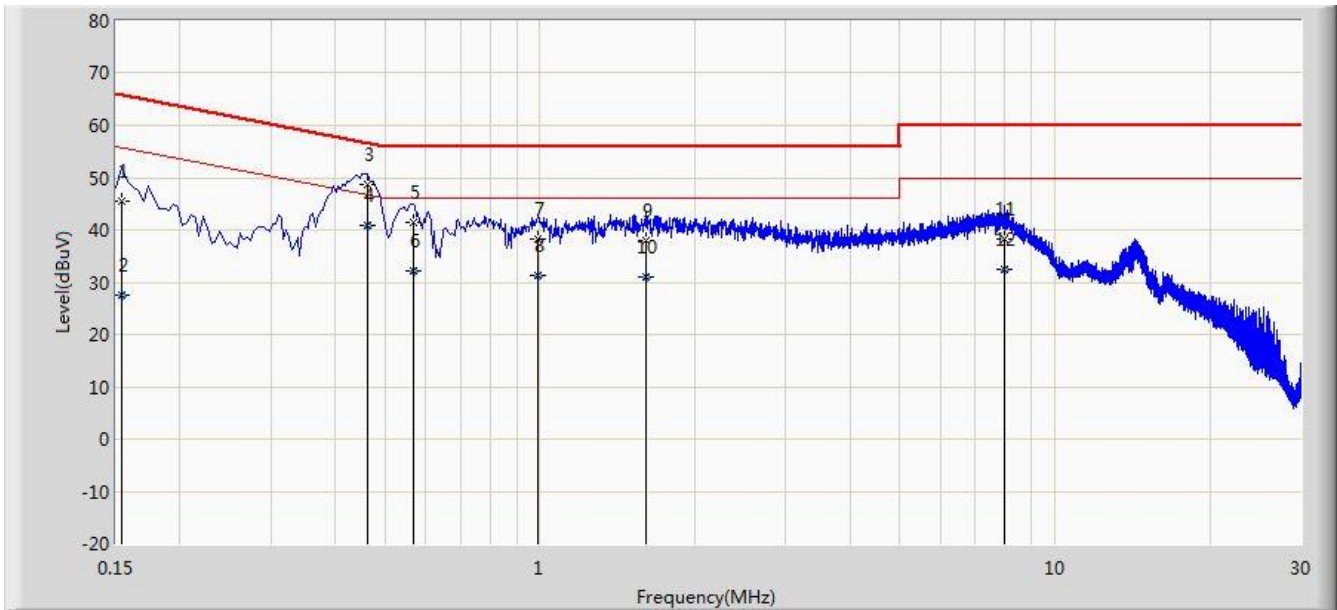
備註: 經初測驗證過，電源端點干擾測試對測試頻道數並無差異，因此檢附其中一個測試頻道之測試數。

5.1.3. 測試架構圖



5.1.4. 電源端點測試結果

Site: SR2	Time: 2018/09/23 - 12:45
Limit: FCC_Part15.207_CE	Engineer: Kevin Ker
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: ACCESS POINT	Power: AC 110V/60Hz
Worst Case Mode: Transmit by 802.11ac VHT40 at channel 5775MHz	

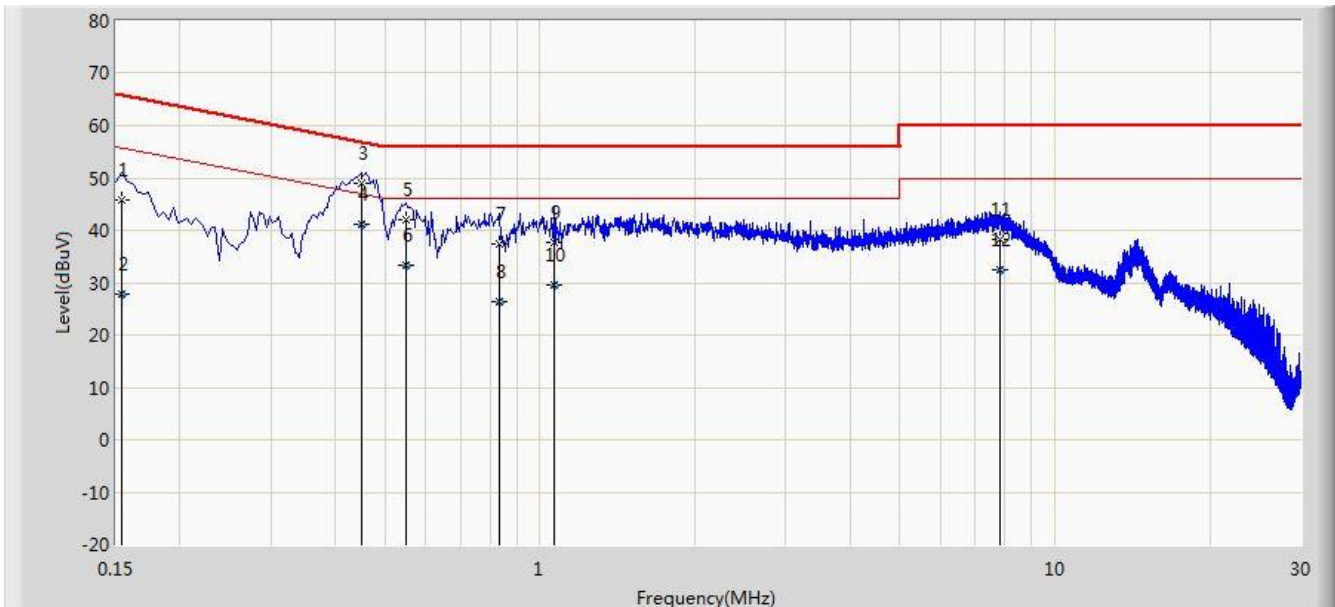


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.154	45.650	34.911	-20.131	65.781	10.740	QP
2			0.154	27.495	16.755	-28.287	55.781	10.740	AV
3			0.462	48.580	38.445	-8.076	56.657	10.136	QP
4		*	0.462	40.869	30.733	-5.788	46.657	10.136	AV
5			0.566	41.544	31.411	-14.456	56.000	10.132	QP
6			0.566	32.112	21.980	-13.888	46.000	10.132	AV
7			0.990	38.296	28.382	-17.704	56.000	9.914	QP
8			0.990	31.187	21.273	-14.813	46.000	9.914	AV
9			1.606	38.067	28.181	-17.933	56.000	9.886	QP
10			1.606	31.099	21.214	-14.901	46.000	9.886	AV
11			7.974	38.392	28.225	-21.608	60.000	10.167	QP
12			7.974	32.408	22.241	-17.592	50.000	10.167	AV

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

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

Site: SR2	Time: 2018/09/23 - 12:49
Limit: FCC_Part15.207_CE	Engineer: Kevin Ker
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: ACCESS POINT	Power: AC 110V/60Hz
Worst Case Mode: Transmit by 802.11ac VHT40 at channel 5775MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.154	45.690	34.974	-20.091	65.781	10.716	QP
2			0.154	27.785	17.069	-27.996	55.781	10.716	AV
3			0.450	48.982	38.832	-7.893	56.875	10.150	QP
4		*	0.450	41.190	31.040	-5.686	46.875	10.150	AV
5			0.550	41.907	31.748	-14.093	56.000	10.159	QP
6			0.550	33.233	23.074	-12.767	46.000	10.159	AV
7			0.834	37.316	27.315	-18.684	56.000	10.001	QP
8			0.834	26.352	16.351	-19.648	46.000	10.001	AV
9			1.066	37.789	27.882	-18.211	56.000	9.907	QP
10			1.066	29.652	19.746	-16.348	46.000	9.907	AV
11			7.846	38.329	28.139	-21.671	60.000	10.190	QP
12			7.846	32.395	22.205	-17.605	50.000	10.190	AV

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

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

5.2. 天線之要求

5.2.1. 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。

5.2.2. 天線樣式

M/N: APINP303

Antenna Type	Frequency Band (GHz)	TX Paths	Max Peak Gain (dBi)	Beam-Forming Directional Gain(dBi)	CDD Directional Gain(dBi)	
					For Power	For PSD
Wi-Fi Internal Antenna						
PCB	2.4	2	2.1	3.01	2.1	5.11
	5	2	5.9	3.01	5.9	8.91
Bluetooth Internal Antenna						
PCB	2.4	1	4.5	--		

M/N: APIN0303

Antenna Type	Frequency Band (GHz)	TX Paths	Max Peak Gain (dBi)	Beam-Forming Directional Gain (dBi)	CDD Directional Gain (dBi)	
					For Power	For PSD
Wi-Fi Internal Antenna						
PCB	2.4	2	2.1	3.01	2.1	5.11
	5	2	5.7	3.01	5.7	8.71
Bluetooth Internal Antenna						
PCB	2.4	1	4.5	--		

Note: 1. The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

For CDD transmissions, directional gain is calculated as follows, $N_{ANT} = 2$, $N_{SS} = 1$.

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

2. The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac, not include 802.11a/b/g.

5.3. 功率限制值

5.3.1. 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，供室外操作使用，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。

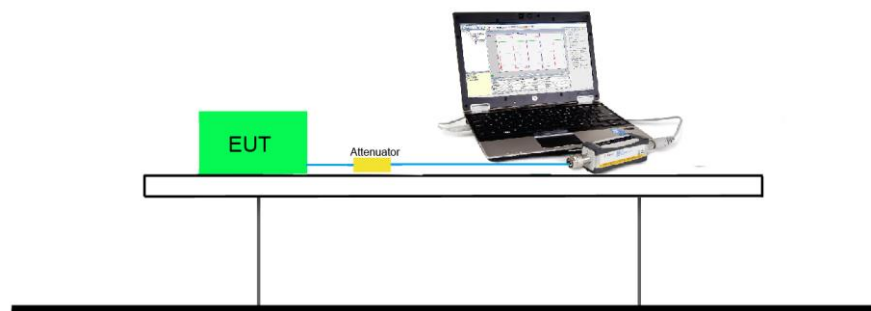
使用頻率於 5.725 GHz~5.850 GHz 頻段，最大傳導輸出功率應小於或等於 1 W。

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。

5.3.2. 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。

5.3.3. 測試架構圖



5.3.4. 功率限制值測試結果

Output Power - Spot Check Test Data (M/N: APINP303)

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11a	MCS0	36	5180	17.87	18.47	21.19	≤ 30.00	Pass
11a	MCS0	44	5220	17.95	18.26	21.12	≤ 30.00	Pass
11a	MCS0	48	5240	18.18	18.53	21.37	≤ 30.00	Pass
11n-HT20	MCS0	149	5745	17.87	18.54	21.23	≤ 30.00	Pass
11n-HT20	MCS0	157	5785	18.42	18.35	21.40	≤ 30.00	Pass
11n-HT20	MCS0	165	5825	18.49	18.27	21.39	≤ 30.00	Pass
11n-HT40	MCS0	38	5190	17.24	17.71	20.49	≤ 30.00	Pass
11ac-VHT20	MCS0	100	5500	16.09	16.25	19.18	≤ 23.93	Pass
11ac-VHT20	MCS0	120	5600	15.73	16.12	18.94	≤ 23.93	Pass
11ac-VHT20	MCS0	140	5700	16.44	16.69	19.58	≤ 23.93	Pass
11ac-VHT20	MCS0	144	5720	16.39	16.92	19.67	≤ 23.93	Pass
11ac-VHT80	MCS0	58	5290	14.71	15.42	18.09	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	16.07	16.6	19.35	≤ 23.98	Pass

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

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (Beam-Forming Mode)								
11n-HT20	MCS0	52	5260	16.04	16.52	19.30	≤ 21.07	Pass
11n-HT20	MCS0	60	5300	16.14	16.46	19.31	≤ 21.07	Pass
11n-HT20	MCS0	64	5320	16.34	16.82	19.60	≤ 21.07	Pass
11ac-VHT80	MCS0	155	5775	18.37	18.38	21.39	≤ 27.09	Pass

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

Note 2:

UNII-2, Average Power Limit (dBm) = 23.98dBm - (5.9dBi + 3.01dBi - 6dBi) = 21.07dBm.

UNII-3, Average Power Limit (dBm) = 30dBm - (5.9dBi + 3.01dBi - 6dBi) = 27.09dBm.

Reference Original Test Data

Note: Some test data (gray marker) was retested due to the antenna gain increase of 0.2dB and all test limits were also recalculated again.

Power output test was verified over all data rates of each mode shown as below table, and then choose the data rate that can cause maximum power output for final test of each channel.

For Ant 0 / Ant 0 + 1port:

Test Mode	Bandwidth	Channel	Frequency (MHz)	Data Rate/ MCS	Average Power (dBm)
802.11a	20	36	5180	6Mbps	18.08
				24Mbps	17.92
				54Mbps	17.84
802.11n	20	36	5180	MCS0	18.11
				MCS3	17.98
				MCS7	17.84
802.11n	40	38	5190	MCS0	17.34
				MCS3	17.28
				MCS7	17.16
802.11ac	20	36	5180	MCS0	18.10
				MCS4	18.02
				MCS8	17.96
802.11ac	40	38	5190	MCS0	17.28
				MCS4	17.19
				MCS9	17.11
802.11ac	80	42	5210	MCS0	16.71
				MCS4	16.63
				MCS9	16.57

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11a	MCS0	36	5180	18.08	18.55	21.33	≤ 30.00	Pass
11a	MCS0	44	5220	18.22	18.58	21.41	≤ 30.00	Pass
11a	MCS0	48	5240	18.22	18.72	21.49	≤ 30.00	Pass
11a	6Mbps	52	5260	15.77	16.29	19.05	≤ 23.72	Pass
11a	6Mbps	60	5300	15.42	16.05	18.76	≤ 23.72	Pass
11a	6Mbps	64	5320	16.02	16.33	19.19	≤ 23.72	Pass
11a	6Mbps	100	5500	16.07	16.26	19.18	≤ 23.72	Pass
11a	6Mbps	120	5600	15.55	15.34	18.46	≤ 23.72	Pass
11a	6Mbps	140	5700	16.26	16.41	19.35	≤ 23.72	Pass
11a	6Mbps	144	5720	16.24	16.50	19.38	≤ 23.72	Pass
11a	6Mbps	149	5745	18.23	18.62	21.44	≤ 30.00	Pass
11a	6Mbps	157	5785	18.58	18.59	21.60	≤ 30.00	Pass
11a	6Mbps	165	5825	18.57	18.48	21.54	≤ 30.00	Pass
11n-HT20	MCS0	36	5180	18.11	18.70	21.43	≤ 30.00	Pass
11n-HT20	MCS0	44	5220	18.25	18.74	21.51	≤ 30.00	Pass
11n-HT20	MCS0	48	5240	18.28	18.75	21.53	≤ 30.00	Pass
11n-HT20	MCS0	52	5260	16.46	16.52	19.50	≤ 23.98	Pass
11n-HT20	MCS0	60	5300	16.27	16.79	19.55	≤ 23.98	Pass
11n-HT20	MCS0	64	5320	16.53	16.92	19.74	≤ 23.98	Pass
11n-HT20	MCS0	100	5500	16.26	16.52	19.40	≤ 23.98	Pass
11n-HT20	MCS0	120	5600	16.14	16.22	19.19	≤ 23.98	Pass
11n-HT20	MCS0	140	5700	16.70	16.88	19.80	≤ 23.98	Pass
11n-HT20	MCS0	144	5720	16.67	16.88	19.79	≤ 23.98	Pass
11n-HT20	MCS0	149	5745	18.25	18.77	21.53	≤ 30.00	Pass
11n-HT20	MCS0	157	5785	18.56	18.57	21.58	≤ 30.00	Pass
11n-HT20	MCS0	165	5825	18.56	18.52	21.55	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11n-HT40	MCS0	38	5190	17.34	17.84	20.61	≤ 30.00	Pass
11n-HT40	MCS0	46	5230	18.25	18.68	21.48	≤ 30.00	Pass
11n-HT40	MCS0	54	5270	18.22	18.75	21.50	≤ 23.98	Pass
11n-HT40	MCS0	62	5310	16.64	17.42	20.06	≤ 23.98	Pass
11n-HT40	MCS0	102	5510	17.24	17.92	20.60	≤ 23.98	Pass
11n-HT40	MCS0	118	5590	18.06	18.78	21.45	≤ 23.98	Pass
11n-HT40	MCS0	134	5670	18.22	18.56	21.40	≤ 23.98	Pass
11n-HT40	MCS0	142	5710	18.20	18.71	21.47	≤ 23.98	Pass
11n-HT40	MCS0	151	5755	18.56	17.81	21.21	≤ 30.00	Pass
11n-HT40	MCS0	159	5795	18.68	18.64	21.67	≤ 30.00	Pass
11ac-VHT20	MCS0	36	5180	18.10	18.70	21.42	≤ 30.00	Pass
11ac-VHT20	MCS0	44	5220	18.19	18.70	21.46	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	18.27	18.77	21.54	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	16.22	16.62	19.43	≤ 23.93	Pass
11ac-VHT20	MCS0	60	5300	16.13	16.94	19.56	≤ 23.93	Pass
11ac-VHT20	MCS0	64	5320	16.07	16.42	19.26	≤ 23.93	Pass
11ac-VHT20	MCS0	100	5500	16.11	16.58	19.36	≤ 23.93	Pass
11ac-VHT20	MCS0	120	5600	16.13	16.28	19.22	≤ 23.93	Pass
11ac-VHT20	MCS0	140	5700	16.64	16.95	19.81	≤ 23.93	Pass
11ac-VHT20	MCS0	144	5720	16.63	17.02	19.84	≤ 23.93	Pass
11ac-VHT20	MCS0	149	5745	18.18	18.70	21.46	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	18.63	18.50	21.58	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	18.56	18.54	21.56	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11ac-VHT40	MCS0	38	5190	17.28	17.72	20.52	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	18.42	18.72	21.58	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	18.36	18.78	21.59	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	16.61	16.61	19.62	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	17.23	17.73	20.50	≤ 23.98	Pass
11ac-VHT40	MCS0	118	5590	18.06	18.73	21.42	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	18.20	18.41	21.32	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	18.06	18.57	21.33	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	18.43	18.65	21.55	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	18.61	18.51	21.57	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	16.23	16.52	19.39	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	14.89	15.60	18.27	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	16.40	16.86	19.65	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	17.84	18.13	21.00	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	17.85	18.08	20.98	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	18.44	18.60	21.53	≤ 30.00	Pass

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

Note 2: For 5250-5350MHz & 5470-5725MHz, the conducted power limit is as below.

802.11a: $11 + 10 \log_{10} (18.72\text{MHz}) = 23.72\text{dBm} < 23.98\text{dBm}$;

802.11n-HT20: $11 + 10 \log_{10} (19.86\text{MHz}) = 23.98\text{dBm} = 23.98\text{dBm}$;

802.11n-HT40: $11 + 10 \log_{10} B > 23.98\text{dBm}$;

802.11ac-VHT20: $11 + 10 \log_{10} (19.64\text{MHz}) = 23.93\text{dBm} < 23.98\text{dBm}$;

802.11ac-VHT40: $11 + 10 \log_{10} B > 23.98\text{dBm}$;

802.11ac-VHT80: $11 + 10 \log_{10} B > 23.98\text{dBm}$.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (Beam-Forming Mode)								
11n-HT20	MCS0	36	5180	18.11	18.70	21.43	≤ 27.09	Pass
11n-HT20	MCS0	44	5220	18.25	18.74	21.51	≤ 27.09	Pass
11n-HT20	MCS0	48	5240	18.28	18.75	21.53	≤ 27.09	Pass
11n-HT20	MCS0	52	5260	16.46	16.52	19.50	≤ 21.07	Pass
11n-HT20	MCS0	60	5300	16.27	16.79	19.55	≤ 21.07	Pass
11n-HT20	MCS0	64	5320	16.53	16.92	19.74	≤ 21.07	Pass
11n-HT20	MCS0	100	5500	16.26	16.52	19.40	≤ 21.07	Pass
11n-HT20	MCS0	120	5600	16.14	16.22	19.19	≤ 21.07	Pass
11n-HT20	MCS0	140	5700	16.70	16.88	19.80	≤ 21.07	Pass
11n-HT20	MCS0	144	5720	16.67	16.88	19.79	≤ 21.07	Pass
11n-HT20	MCS0	149	5745	18.25	18.77	21.53	≤ 27.09	Pass
11n-HT20	MCS0	157	5785	18.56	18.57	21.58	≤ 27.09	Pass
11n-HT20	MCS0	165	5825	18.56	18.52	21.55	≤ 27.09	Pass
11n-HT40	MCS0	38	5190	17.82	18.35	21.10	≤ 27.09	Pass
11n-HT40	MCS0	46	5230	18.02	18.41	21.23	≤ 27.09	Pass
11n-HT40	MCS0	54	5270	17.48	17.96	20.74	≤ 21.07	Pass
11n-HT40	MCS0	62	5310	17.88	18.44	21.18	≤ 21.07	Pass
11n-HT40	MCS0	102	5510	17.48	17.70	20.60	≤ 21.07	Pass
11n-HT40	MCS0	118	5590	17.68	18.23	20.97	≤ 21.07	Pass
11n-HT40	MCS0	134	5670	17.91	18.05	20.99	≤ 21.07	Pass
11n-HT40	MCS0	142	5710	17.86	18.22	21.05	≤ 21.07	Pass
11n-HT40	MCS0	151	5755	18.19	18.41	21.31	≤ 27.09	Pass
11n-HT40	MCS0	159	5795	18.78	18.54	21.67	≤ 27.09	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (Beam-Forming Mode)								
11ac-VHT20	MCS0	36	5180	18.10	18.70	21.42	≤ 27.09	Pass
11ac-VHT20	MCS0	44	5220	18.19	18.70	21.46	≤ 27.09	Pass
11ac-VHT20	MCS0	48	5240	18.27	18.77	21.54	≤ 27.09	Pass
11ac-VHT20	MCS0	52	5260	16.22	16.62	19.43	≤ 21.02	Pass
11ac-VHT20	MCS0	60	5300	16.13	16.94	19.56	≤ 21.02	Pass
11ac-VHT20	MCS0	64	5320	16.07	16.42	19.26	≤ 21.02	Pass
11ac-VHT20	MCS0	100	5500	16.11	16.58	19.36	≤ 21.02	Pass
11ac-VHT20	MCS0	120	5600	16.13	16.28	19.22	≤ 21.02	Pass
11ac-VHT20	MCS0	140	5700	16.64	16.95	19.81	≤ 21.02	Pass
11ac-VHT20	MCS0	144	5720	16.63	17.02	19.84	≤ 21.02	Pass
11ac-VHT20	MCS0	149	5745	18.18	18.70	21.46	≤ 27.09	Pass
11ac-VHT20	MCS0	157	5785	18.63	18.50	21.58	≤ 27.09	Pass
11ac-VHT20	MCS0	165	5825	18.56	18.54	21.56	≤ 27.09	Pass
11ac-VHT40	MCS0	38	5190	17.83	18.48	21.18	≤ 27.09	Pass
11ac-VHT40	MCS0	46	5230	18.03	18.47	21.27	≤ 27.09	Pass
11ac-VHT40	MCS0	54	5270	17.52	17.97	20.76	≤ 21.07	Pass
11ac-VHT40	MCS0	62	5310	17.43	17.86	20.66	≤ 21.07	Pass
11ac-VHT40	MCS0	102	5510	17.53	17.78	20.67	≤ 21.07	Pass
11ac-VHT40	MCS0	118	5590	17.66	18.21	20.95	≤ 21.07	Pass
11ac-VHT40	MCS0	134	5670	17.87	18.04	20.97	≤ 21.07	Pass
11ac-VHT40	MCS0	142	5710	17.83	18.22	21.04	≤ 21.07	Pass
11ac-VHT40	MCS0	151	5755	18.20	18.42	21.32	≤ 27.09	Pass
11ac-VHT40	MCS0	159	5795	18.82	18.57	21.71	≤ 27.09	Pass
11ac-VHT80	MCS0	42	5210	18.24	18.62	21.44	≤ 27.09	Pass
11ac-VHT80	MCS0	58	5290	17.68	18.06	20.88	≤ 21.07	Pass
11ac-VHT80	MCS0	106	5530	17.44	17.98	20.73	≤ 21.07	Pass
11ac-VHT80	MCS0	122	5610	17.83	18.03	20.94	≤ 21.07	Pass
11ac-VHT80	MCS0	138	5690	17.62	17.78	20.71	≤ 21.07	Pass
11ac-VHT80	MCS0	155	5775	18.68	18.58	21.64	≤ 27.09	Pass

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

Note 2: For UNII-1 & UNII-3, Average Power Limit (dBm) = 30dBm - (5.9dBi + 3.01dBi - 6dBi) = 27.09dBm.

Note 3: For UNII-2A & UNII-2C, the conducted power limit is as below.

802.11ac-VHT20: $11 + 10 \log_{10} (19.64\text{MHz}) = 23.93\text{dBm} < 23.98\text{dBm}$.

Average Power Limit (dBm) = 23.93dBm - (5.9dBi + 3.01dBi - 6dBi) = 21.02dBm.

802.11n-HT20: $11 + 10 \log_{10} (19.86\text{MHz}) = 23.98\text{dBm} = 23.98\text{dBm}$.

802.11n-HT40: $11 + 10 \log_{10} B > 23.98\text{dBm}$.

802.11ac-VHT40: $11 + 10 \log_{10} B > 23.98\text{dBm}$.

802.11ac-VHT80: $11 + 10 \log_{10} B > 23.98\text{dBm}$.

Average Power Limit (dBm) = 23.98dBm - (5.9dBi + 3.01dBi - 6dBi) = 2

5.4. 26dB 佔用頻寬

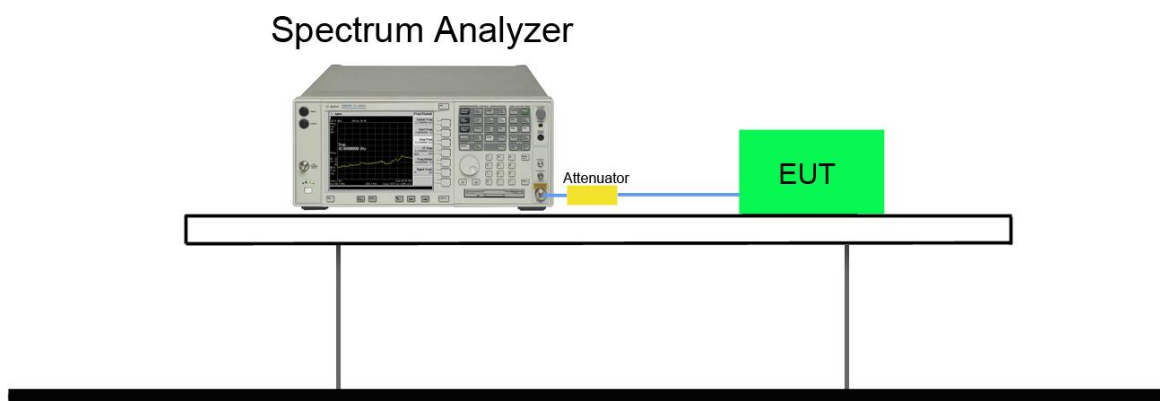
5.4.1. 適用標準

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

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	53%
Test Site	SR2	Test Date	2017/10/18

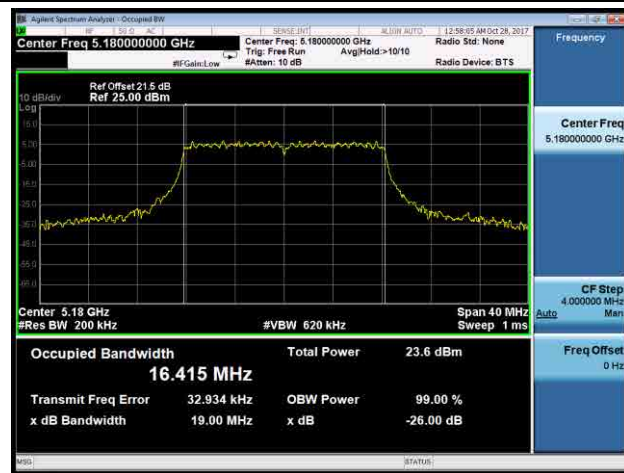
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 1 / Ant 0 + 1					
802.11a	6Mbps	36	5180	19.00	16.42
802.11a	6Mbps	44	5220	18.88	16.40
802.11a	6Mbps	48	5240	18.97	16.40
802.11a	6Mbps	52	5260	18.89	16.40
802.11a	6Mbps	60	5300	18.87	16.41
802.11a	6Mbps	64	5320	18.88	16.41
802.11a	6Mbps	100	5500	18.72	16.43
802.11a	6Mbps	120	5600	18.78	16.42
802.11a	6Mbps	140	5700	18.86	16.40
802.11a	6Mbps	144	5720	18.77	16.41
802.11a	6Mbps	149	5745	18.83	16.40
802.11a	6Mbps	157	5785	18.88	16.41
802.11a	6Mbps	165	5825	18.90	16.42
802.11n-HT20	MCS0	36	5180	19.84	17.60
802.11n-HT20	MCS0	44	5220	19.83	17.59
802.11n-HT20	MCS0	48	5240	19.67	17.59
802.11n-HT20	MCS0	52	5260	20.03	17.60
802.11n-HT20	MCS0	60	5300	19.86	17.59
802.11n-HT20	MCS0	64	5320	20.18	17.59
802.11n-HT20	MCS0	100	5500	20.08	17.59
802.11n-HT20	MCS0	120	5600	20.09	17.60
802.11n-HT20	MCS0	140	5700	20.01	17.61
802.11n-HT20	MCS0	144	5720	20.14	17.60
802.11n-HT20	MCS0	149	5745	20.17	17.60
802.11n-HT20	MCS0	157	5785	20.10	17.59
802.11n-HT20	MCS0	165	5825	20.27	17.61

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 1 / Ant 0 + 1					
802.11n-HT40	MCS0	38	5190	39.45	35.95
802.11n-HT40	MCS0	46	5230	39.53	35.92
802.11n-HT40	MCS0	54	5270	39.54	35.95
802.11n-HT40	MCS0	62	5310	39.22	35.93
802.11n-HT40	MCS0	102	5510	39.16	35.89
802.11n-HT40	MCS0	118	5590	39.53	35.88
802.11n-HT40	MCS0	134	5670	39.21	35.90
802.11n-HT40	MCS0	142	5710	39.50	35.90
802.11n-HT40	MCS0	151	5755	39.21	35.90
802.11n-HT40	MCS0	159	5795	39.53	35.88
802.11ac-VHT20	MCS0	36	5180	19.95	17.61
802.11ac-VHT20	MCS0	44	5220	19.89	17.62
802.11ac-VHT20	MCS0	48	5240	19.85	17.60
802.11ac-VHT20	MCS0	52	5260	19.85	17.61
802.11ac-VHT20	MCS0	60	5300	19.77	17.61
802.11ac-VHT20	MCS0	64	5320	19.75	17.60
802.11ac-VHT20	MCS0	100	5500	19.64	17.61
802.11ac-VHT20	MCS0	120	5600	19.96	17.61
802.11ac-VHT20	MCS0	140	5700	19.86	17.59
802.11ac-VHT20	MCS0	144	5720	20.00	17.60
802.11ac-VHT20	MCS0	149	5745	19.65	17.61
802.11ac-VHT20	MCS0	157	5785	19.99	17.62
802.11ac-VHT20	MCS0	165	5825	20.00	17.61
802.11ac-VHT40	MCS0	38	5190	39.68	35.93
802.11ac-VHT40	MCS0	46	5230	39.14	35.92
802.11ac-VHT40	MCS0	54	5270	39.31	35.95
802.11ac-VHT40	MCS0	62	5310	39.28	35.94
802.11ac-VHT40	MCS0	102	5510	38.92	35.91
802.11ac-VHT40	MCS0	118	5590	39.62	35.89
802.11ac-VHT40	MCS0	134	5670	39.13	35.95
802.11ac-VHT40	MCS0	142	5710	39.54	35.94
802.11ac-VHT40	MCS0	151	5755	39.52	35.93
802.11ac-VHT40	MCS0	159	5795	39.17	35.92

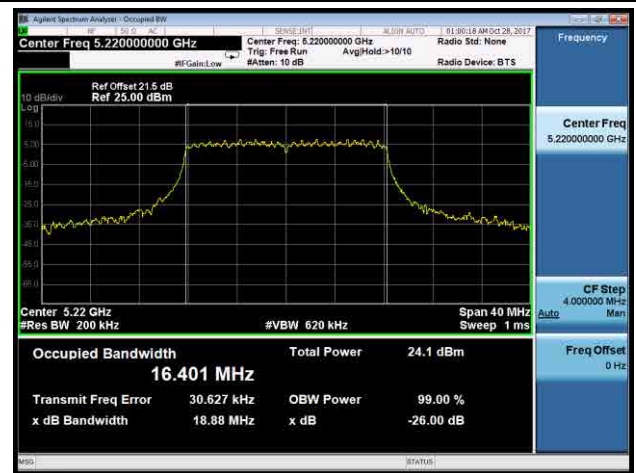
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 1 / Ant 0 + 1					
802.11ac-VHT80	MCS0	42	5210	83.03	75.66
802.11ac-VHT80	MCS0	58	5290	82.85	75.70
802.11ac-VHT80	MCS0	106	5530	82.45	75.61
802.11ac-VHT80	MCS0	122	5610	83.06	75.63
802.11ac-VHT80	MCS0	138	5690	82.87	75.66
802.11ac-VHT80	MCS0	155	5775	82.51	75.62

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

Channel 36 (5180MHz)



Channel 44 (5220MHz)



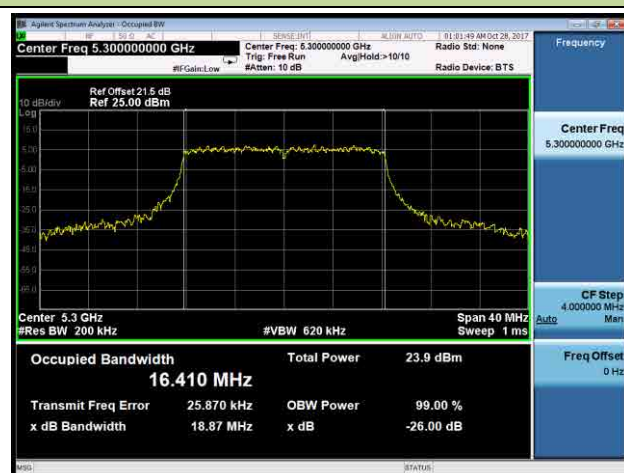
Channel 48 (5240MHz)



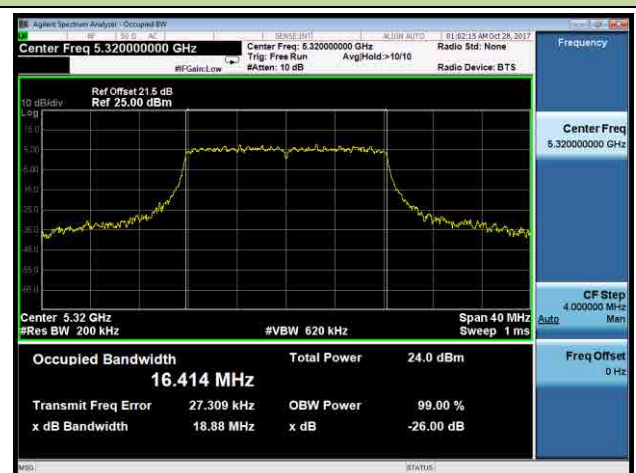
Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



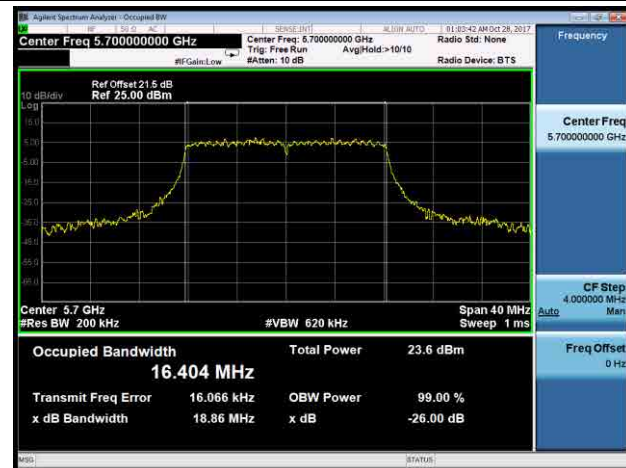
Channel 100 (5500MHz)



Channel 100 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

Channel 36 (5180MHz)



Channel 44 (5220MHz)



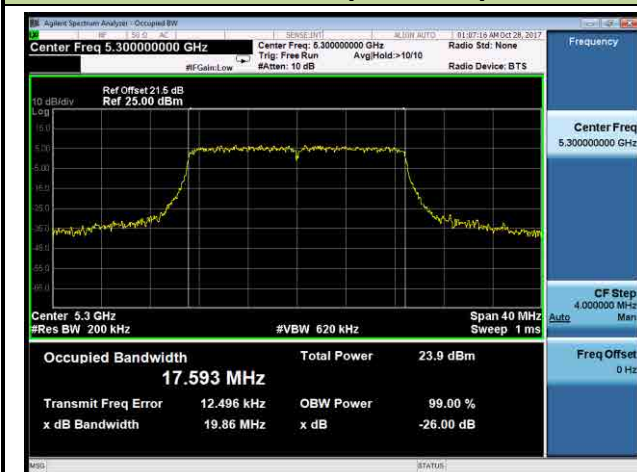
Channel 48 (5240MHz)



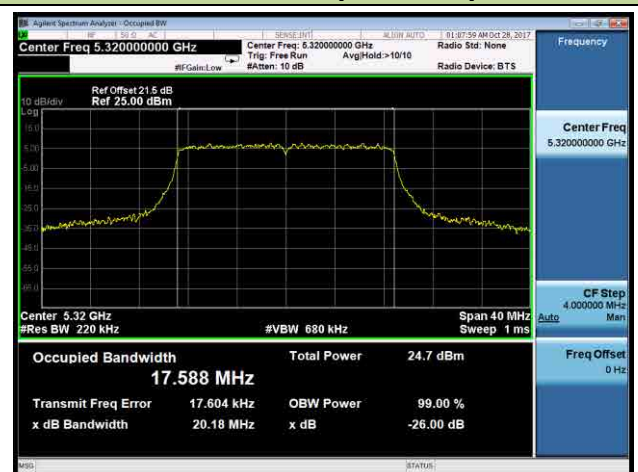
Channel 52 (5260MHz)



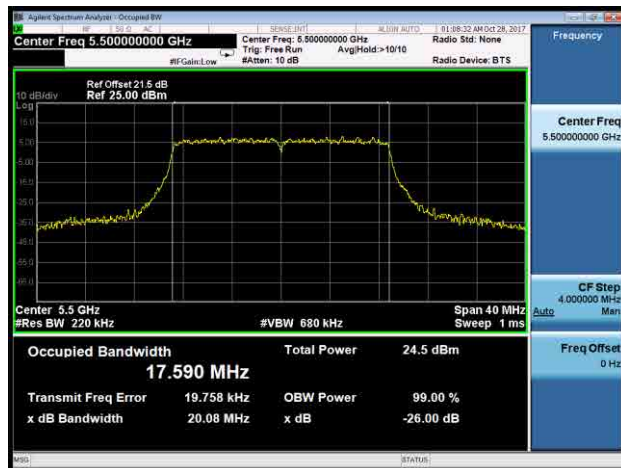
Channel 60 (5300MHz)



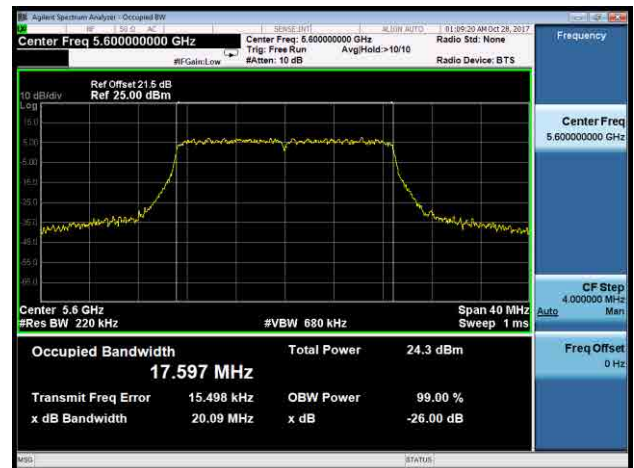
Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)

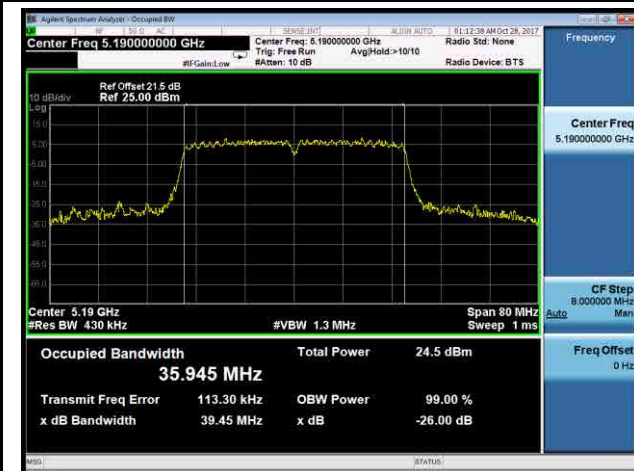


Channel 165 (5825MHz)

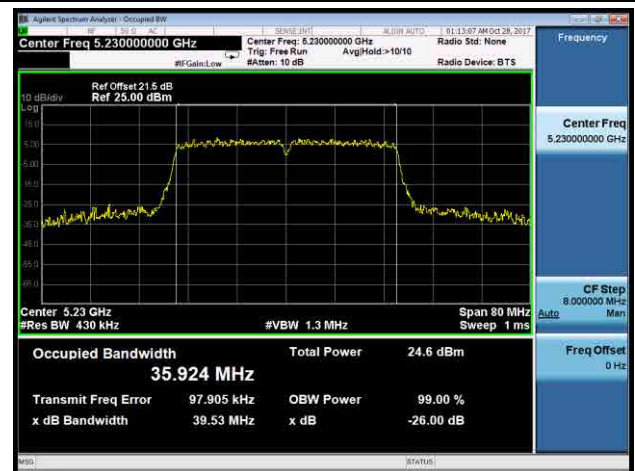


802.11n-HT40 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 + 1

Channel 38 (5190MHz)



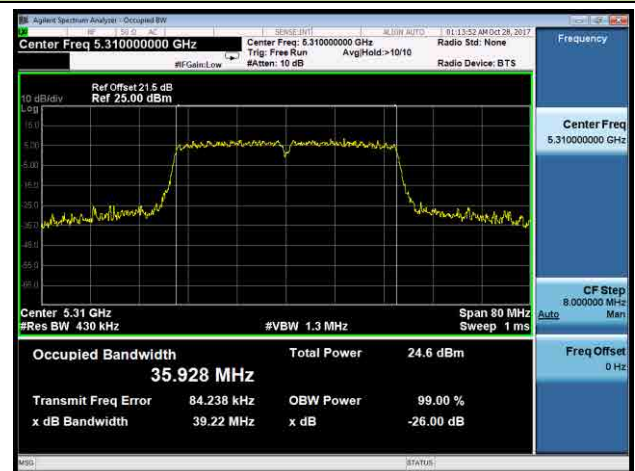
Channel 46 (5230MHz)



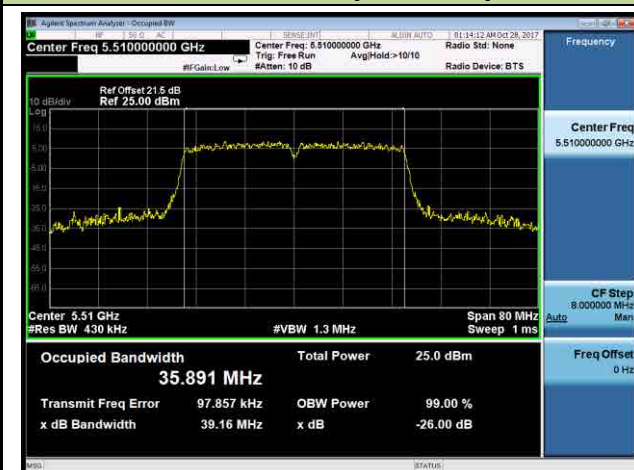
Channel 54 (5270MHz)



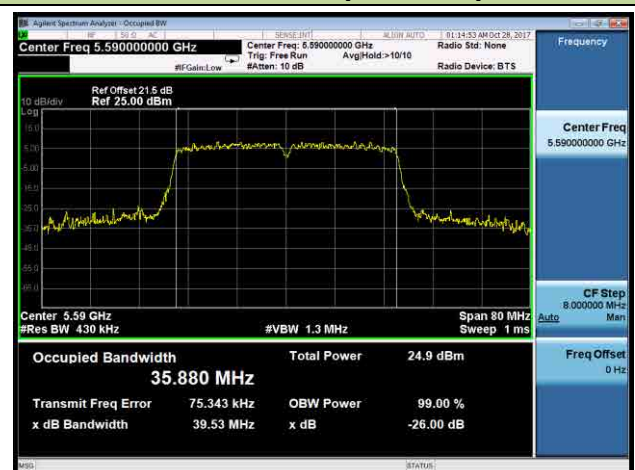
Channel 62 (5310MHz)



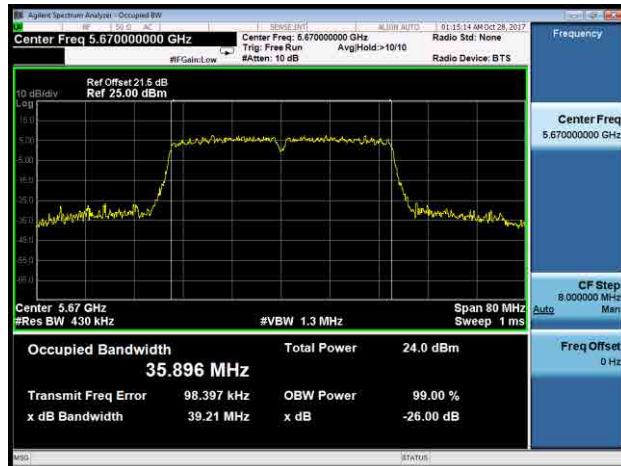
Channel 102 (5510MHz)



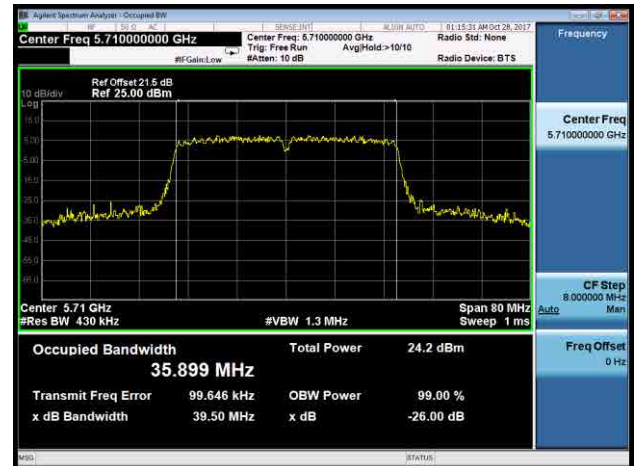
Channel 118 (5590MHz)



Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)

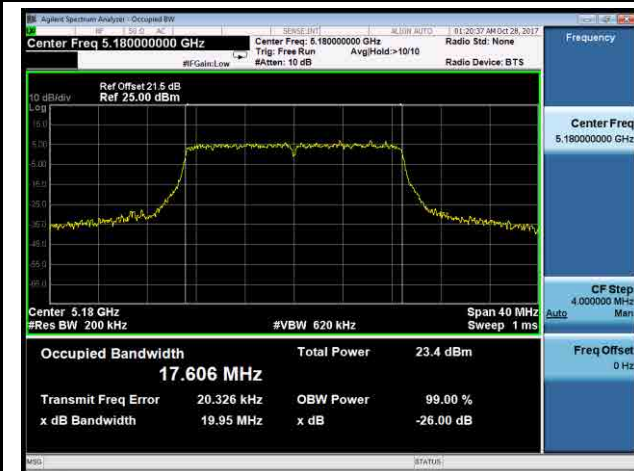


Channel 159 (5795MHz)

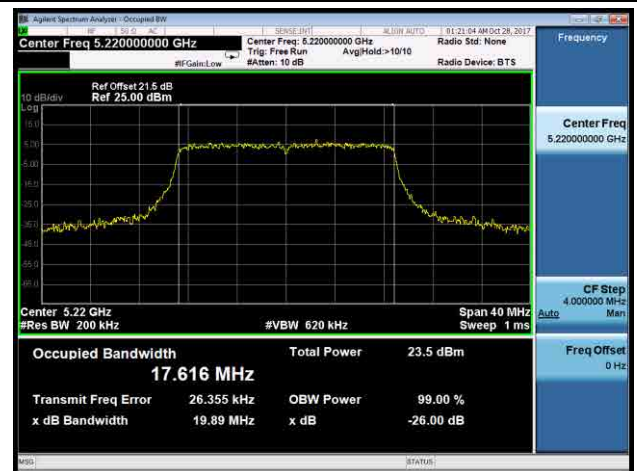


802.11ac-VHT20 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 + 1

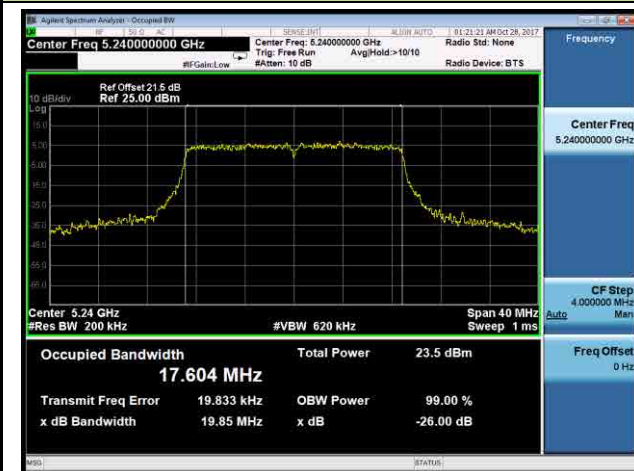
Channel 36 (5180MHz)



Channel 44 (5220MHz)



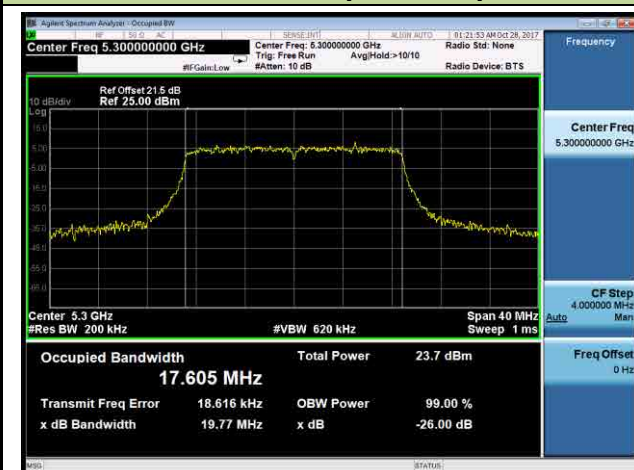
Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)

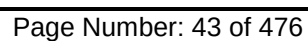
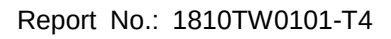


Channel 149 (5745MHz)



Channel 157 (5785MHz)





802.11ac-VHT40 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 + 1

Channel 38 (5190MHz)



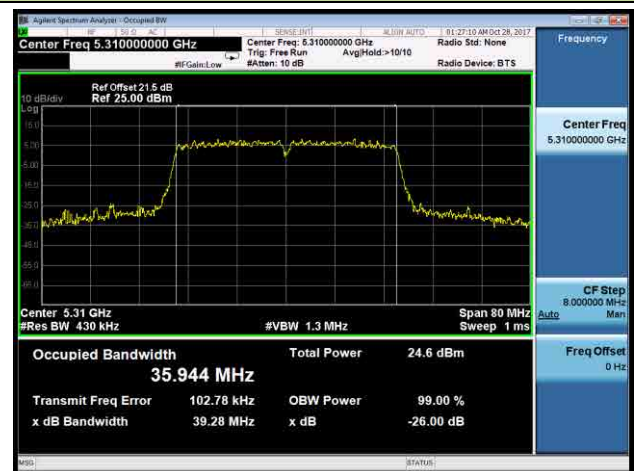
Channel 46 (5230MHz)



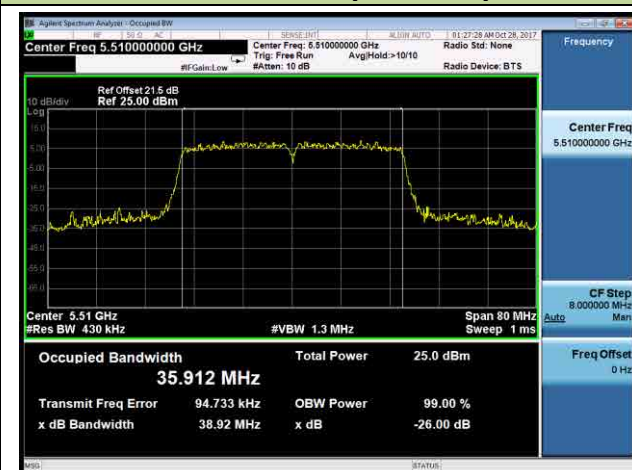
Channel 54 (5270MHz)



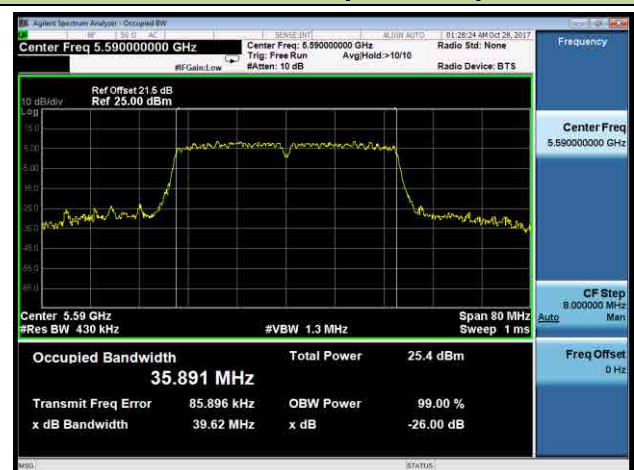
Channel 62 (5310MHz)



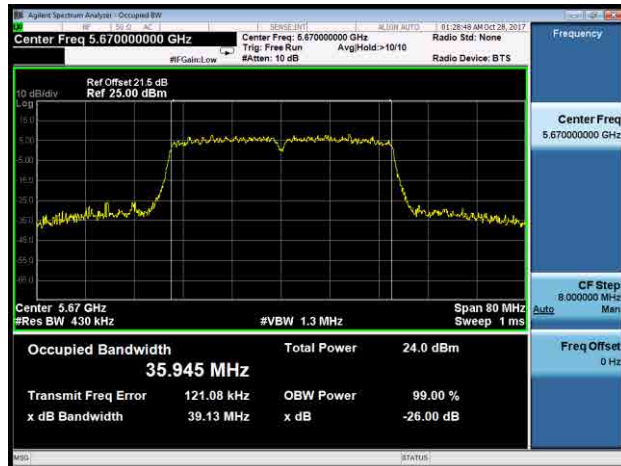
Channel 102 (5510MHz)



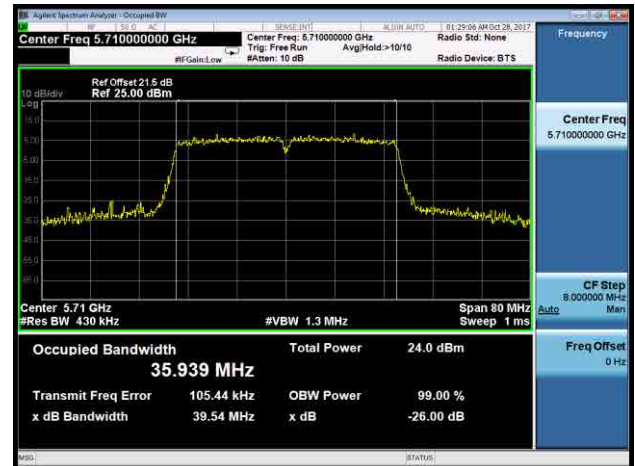
Channel 118 (5590MHz)



Channel 134 (5670MHz)



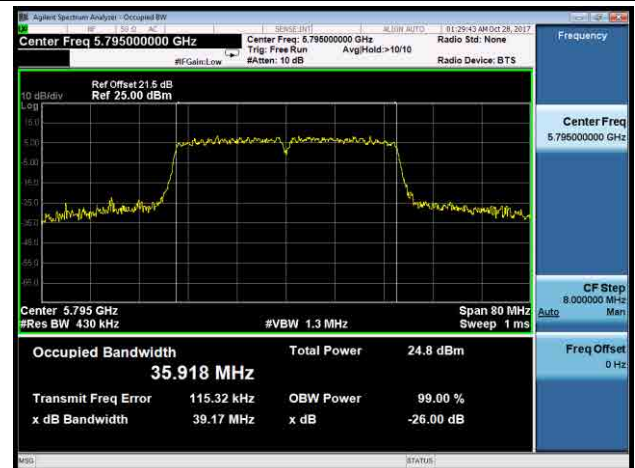
Channel 142 (5710MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ac-VHT80 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 + 1

Channel 42 (5210MHz)



Channel 58 (5290MHz)



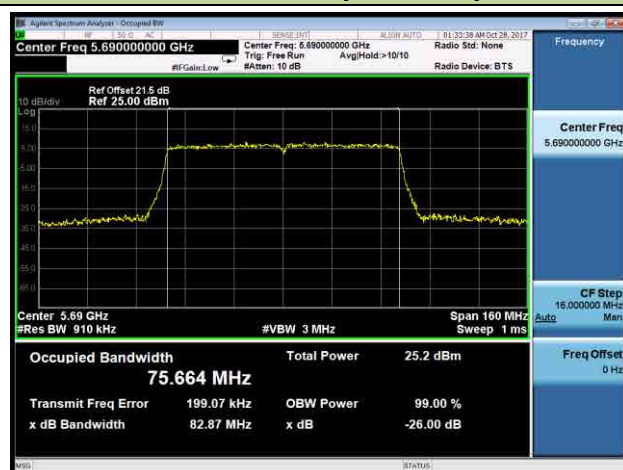
Channel 106 (5530MHz)



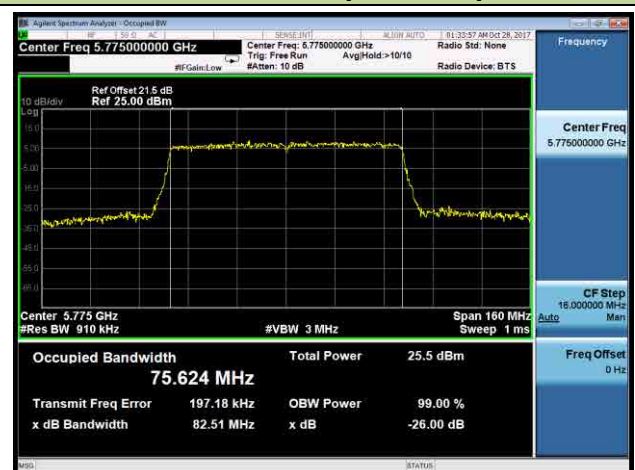
Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



5.5. 6dB 佔用頻寬

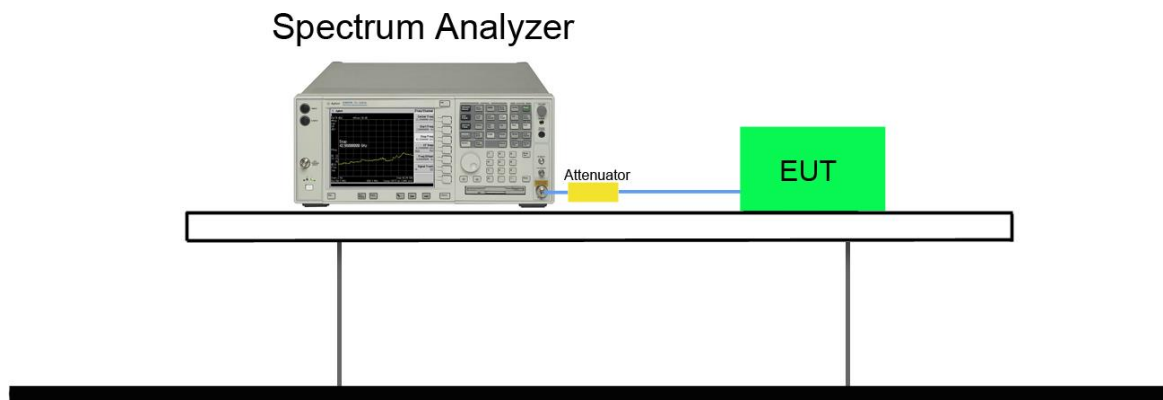
5.5.1. 適用標準

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



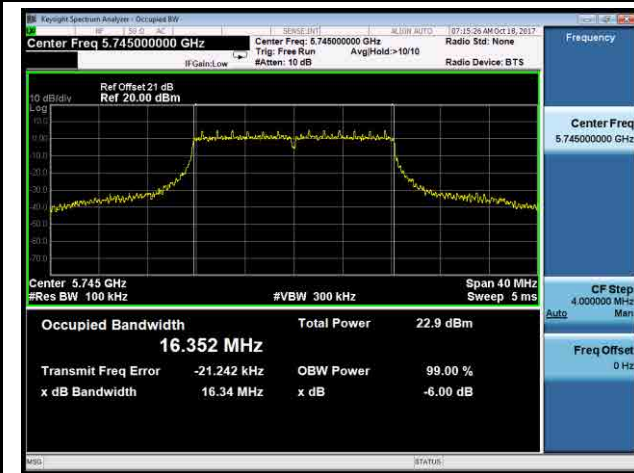
5.5.4. 6dB 佔用頻寬測試結果

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	53%
Test Site	SR2	Test Date	2017/10/18

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 1 / Ant 0 + 1						
802.11a	6Mbps	149	5745	16.34	≥0.5	Pass
802.11a	6Mbps	157	5785	16.34	≥0.5	Pass
802.11a	6Mbps	165	5825	16.34	≥0.5	Pass
802.11n-HT20	MCS0	149	5745	17.61	≥0.5	Pass
802.11n-HT20	MCS0	157	5785	17.60	≥0.5	Pass
802.11n-HT20	MCS0	165	5825	17.59	≥0.5	Pass
802.11n-HT40	MCS0	151	5755	35.30	≥0.5	Pass
802.11n-HT40	MCS0	159	5795	35.26	≥0.5	Pass
802.11ac-VHT20	MCS0	149	5745	17.60	≥0.5	Pass
802.11ac-VHT20	MCS0	157	5785	17.60	≥0.5	Pass
802.11ac-VHT20	MCS0	165	5825	17.58	≥0.5	Pass
802.11ac-VHT40	MCS0	151	5755	35.15	≥0.5	Pass
802.11ac-VHT40	MCS0	159	5795	35.13	≥0.5	Pass
802.11ac-VHT80	MCS0	155	5775	76.42	≥0.5	Pass

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

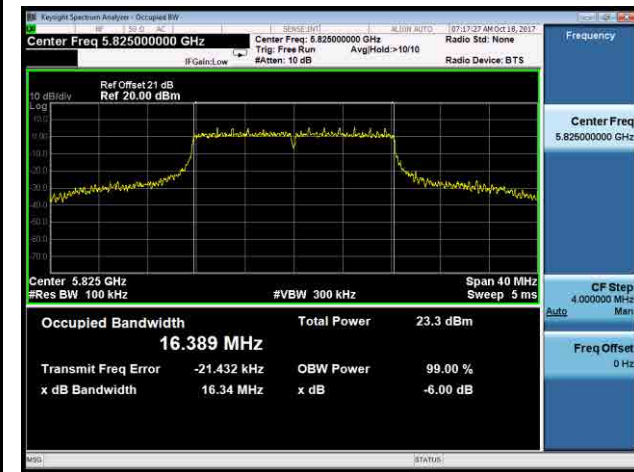
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

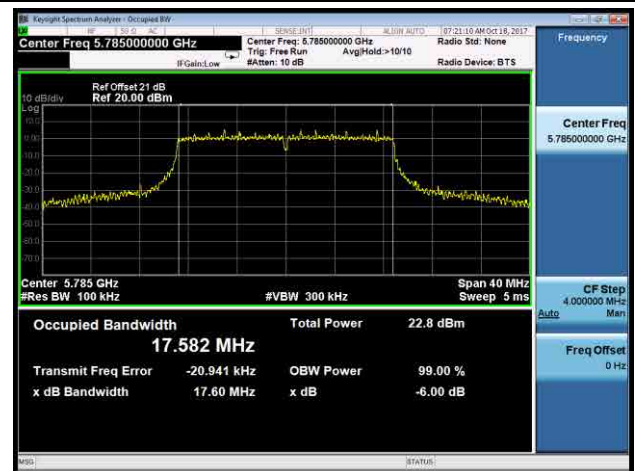


802.11n-HT20 6dB Bandwidth - Ant 1 / Ant 0 + 1

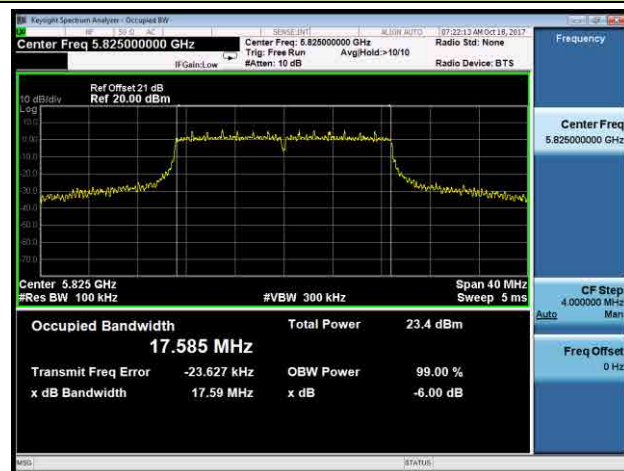
Channel 149 (5745MHz)



Channel 157 (5785MHz)

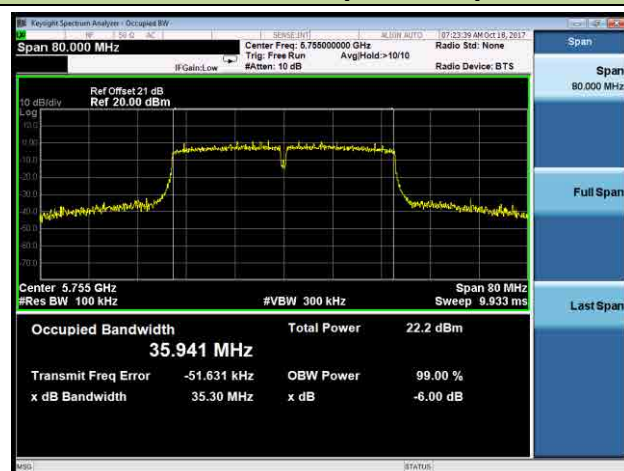


Channel 165 (5825MHz)

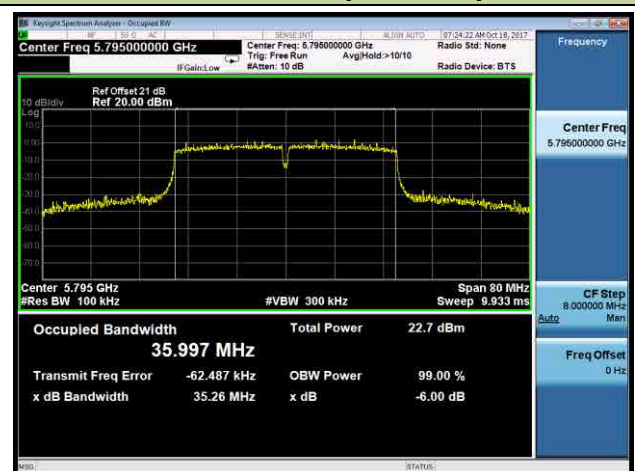


802.11n-HT40 6dB Bandwidth - Ant 1 / Ant 0 + 1

Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ac-VHT20 6dB Bandwidth - Ant 1 / Ant 0 + 1

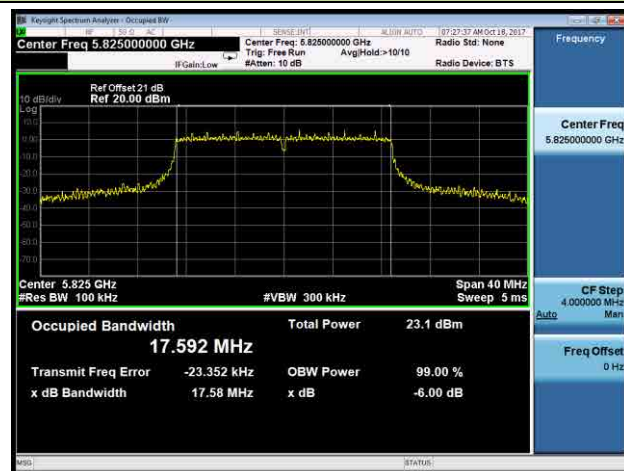
Channel 149 (5745MHz)



Channel 157 (5785MHz)

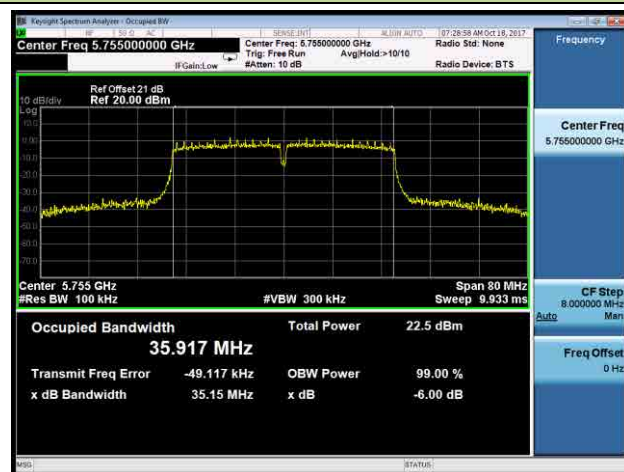


Channel 165 (5825MHz)



802.11ac-VHT40 6dB Bandwidth - Ant 1 / Ant 0 + 1

Channel 151 (5755MHz)

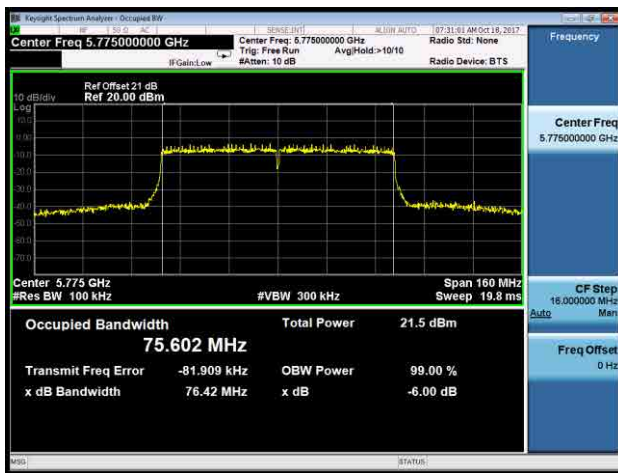


Channel 159 (5795MHz)



802.11ac-VHT80 6dB Bandwidth - Ant 1 / Ant 0 + 1

Channel 155 (5775MHz)



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。

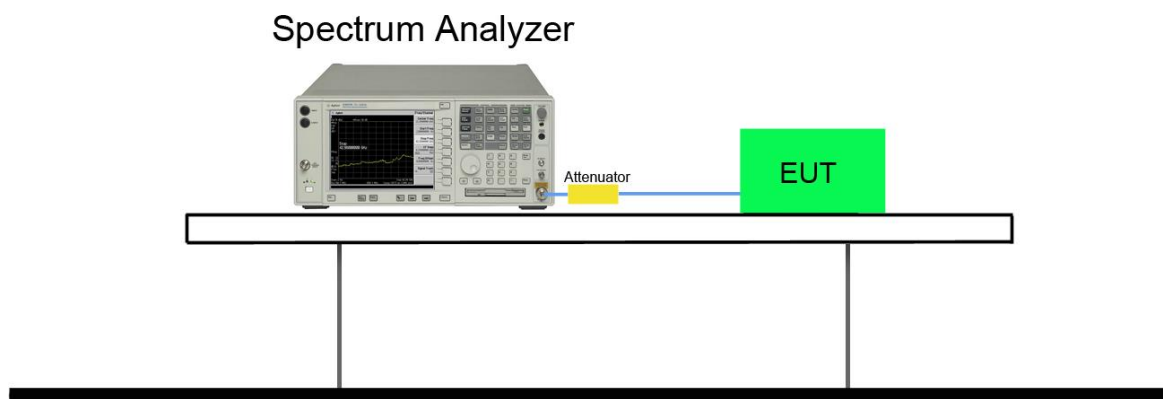
使用頻率於5.725 GHz~5.850 GHz 頻段，在任何500 kHz 頻帶中最大功率頻譜密度應小於或等於30 dBm。

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

Some test data (gray marker) was retested due to the antenna gain increase of 0.2dB and all test limits were also recalculated again.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (CDD Mode)									
11a	6Mbps	36	5180	6.38	6.28	95.80	9.53	≤ 14.29	Pass
11a	6Mbps	44	5220	6.89	7.08	95.80	10.18	≤ 14.29	Pass
11a	6Mbps	48	5240	7.21	7.33	95.80	10.47	≤ 14.29	Pass
11a	6Mbps	52	5260	4.46	4.88	95.80	7.87	≤ 8.09	Pass
11a	6Mbps	60	5300	4.50	4.59	95.80	7.74	≤ 8.09	Pass
11a	6Mbps	64	5320	4.38	5.06	95.80	7.93	≤ 8.09	Pass
11a	6Mbps	100	5500	4.43	5.03	95.80	7.94	≤ 8.09	Pass
11a	6Mbps	120	5600	4.56	4.53	95.80	7.74	≤ 8.09	Pass
11a	6Mbps	140	5700	4.67	4.64	95.80	7.85	≤ 8.09	Pass
11a	6Mbps	144	5720	4.50	4.68	95.80	7.79	≤ 8.09	Pass
11n-HT20	MCS0	36	5180	6.20	6.61	98.21	9.42	≤ 14.29	Pass
11n-HT20	MCS0	44	5220	6.74	7.31	98.21	10.04	≤ 14.29	Pass
11n-HT20	MCS0	48	5240	6.89	7.36	98.21	10.14	≤ 14.29	Pass
11n-HT20	MCS0	52	5260	4.89	4.99	98.21	7.95	≤ 8.09	Pass
11n-HT20	MCS0	60	5300	4.77	5.34	98.21	8.07	≤ 8.09	Pass
11n-HT20	MCS0	64	5320	4.75	5.25	98.21	8.02	≤ 8.09	Pass
11n-HT20	MCS0	100	5500	4.61	5.15	98.21	7.90	≤ 8.09	Pass
11n-HT20	MCS0	120	5600	4.87	4.85	98.21	7.87	≤ 8.09	Pass
11n-HT20	MCS0	140	5700	4.95	4.99	98.21	7.98	≤ 8.09	Pass
11n-HT20	MCS0	144	5720	5.15	4.88	98.21	8.03	≤ 8.09	Pass
11n-HT40	MCS0	38	5190	2.82	3.10	95.21	6.19	≤ 14.29	Pass
11n-HT40	MCS0	46	5230	4.20	4.63	95.21	7.64	≤ 14.29	Pass
11n-HT40	MCS0	54	5270	4.30	4.39	95.21	7.57	≤ 8.09	Pass
11n-HT40	MCS0	62	5310	2.43	2.68	95.21	5.78	≤ 8.09	Pass
11n-HT40	MCS0	102	5510	3.09	3.55	95.21	6.55	≤ 8.09	Pass
11n-HT40	MCS0	118	5590	3.93	4.69	95.21	7.55	≤ 8.09	Pass
11n-HT40	MCS0	134	5670	3.40	3.72	95.21	6.79	≤ 8.09	Pass
11n-HT40	MCS0	142	5710	3.72	4.02	95.21	7.10	≤ 8.09	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (CDD Mode)									
11ac-VHT20	MCS0	36	5180	6.36	6.71	98.04	9.55	≤ 14.09	Pass
11ac-VHT20	MCS0	44	5220	6.77	7.25	98.04	10.03	≤ 14.09	Pass
11ac-VHT20	MCS0	48	5240	7.13	7.54	98.04	10.35	≤ 14.09	Pass
11ac-VHT20	MCS0	52	5260	4.88	5.03	98.04	7.97	≤ 8.09	Pass
11ac-VHT20	MCS0	60	5300	4.88	5.10	98.04	8.00	≤ 8.09	Pass
11ac-VHT20	MCS0	64	5320	4.64	4.91	98.04	7.79	≤ 8.09	Pass
11ac-VHT20	MCS0	100	5500	4.77	4.95	98.04	7.87	≤ 8.09	Pass
11ac-VHT20	MCS0	120	5600	4.56	4.91	98.04	7.75	≤ 8.09	Pass
11ac-VHT20	MCS0	140	5700	4.75	5.12	98.04	7.95	≤ 8.09	Pass
11ac-VHT20	MCS0	144	5720	5.05	5.02	98.04	8.05	≤ 8.09	Pass
11ac-VHT40	MCS0	38	5190	2.53	3.22	95.24	6.11	≤ 14.09	Pass
11ac-VHT40	MCS0	46	5230	4.33	4.71	95.24	7.75	≤ 14.09	Pass
11ac-VHT40	MCS0	54	5270	4.17	4.36	95.24	7.49	≤ 8.09	Pass
11ac-VHT40	MCS0	62	5310	2.54	2.85	95.24	5.92	≤ 8.09	Pass
11ac-VHT40	MCS0	102	5510	2.96	3.67	95.24	6.55	≤ 8.09	Pass
11ac-VHT40	MCS0	118	5590	3.81	4.35	95.24	7.31	≤ 8.09	Pass
11ac-VHT40	MCS0	134	5670	3.65	3.93	95.24	7.01	≤ 8.09	Pass
11ac-VHT40	MCS0	142	5710	3.69	3.99	95.24	7.06	≤ 8.09	Pass
11ac-VHT80	MCS0	42	5210	-0.74	-0.63	92.21	2.68	≤ 14.09	Pass
11ac-VHT80	MCS0	58	5290	-2.72	-2.29	92.21	0.86	≤ 8.09	Pass
11ac-VHT80	MCS0	106	5530	-0.71	-0.37	92.21	2.83	≤ 8.09	Pass
11ac-VHT80	MCS0	122	5610	0.26	0.43	92.21	3.71	≤ 8.09	Pass
11ac-VHT80	MCS0	138	5690	-0.07	0.24	92.21	3.45	≤ 8.09	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + 10 \cdot \log (1/\text{duty cycle})$.

Note 3: For UNII-1 band, PSD Limit (dBm/MHz) = 17dBm/MHz - (8.91dBi - 6dBi) = 14.09dBm/MHz.

For UNII-2A and UNII-2C bands, PSD Limit (dBm/MHz) = 11dBm/MHz - (8.91dBi - 6dBi) = 8.09dBm/MHz.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (Beam-Forming Mode)									
11n-HT20	MCS0	36	5180	6.20	6.61	98.21	9.42	≤ 14.09	Pass
11n-HT20	MCS0	44	5220	6.74	7.31	98.21	10.04	≤ 14.09	Pass
11n-HT20	MCS0	48	5240	6.89	7.36	98.21	10.14	≤ 14.09	Pass
11n-HT20	MCS0	52	5260	4.89	4.99	98.21	7.95	≤ 8.09	Pass
11n-HT20	MCS0	60	5300	4.77	5.34	98.21	8.07	≤ 8.09	Pass
11n-HT20	MCS0	64	5320	4.75	5.25	98.21	8.02	≤ 8.09	Pass
11n-HT20	MCS0	100	5500	4.61	5.15	98.21	7.90	≤ 8.09	Pass
11n-HT20	MCS0	120	5600	4.87	4.85	98.21	7.87	≤ 8.09	Pass
11n-HT20	MCS0	140	5700	4.95	4.99	98.21	7.98	≤ 8.09	Pass
11n-HT20	MCS0	144	5720	5.15	4.88	98.21	8.03	≤ 8.09	Pass
11n-HT40	MCS0	38	5190	3.49	3.99	95.21	6.97	≤ 14.09	Pass
11n-HT40	MCS0	46	5230	3.63	3.75	95.21	6.91	≤ 14.09	Pass
11n-HT40	MCS0	54	5270	2.83	3.22	95.21	6.25	≤ 8.09	Pass
11n-HT40	MCS0	62	5310	3.21	3.56	95.21	6.61	≤ 8.09	Pass
11n-HT40	MCS0	102	5510	3.58	4.08	95.21	7.06	≤ 8.09	Pass
11n-HT40	MCS0	118	5590	3.61	4.28	95.21	7.18	≤ 8.09	Pass
11n-HT40	MCS0	134	5670	3.78	3.96	95.21	7.09	≤ 8.09	Pass
11n-HT40	MCS0	142	5710	4.01	4.08	95.21	7.27	≤ 8.09	Pass
11ac-VHT20	MCS0	36	5180	6.36	6.71	98.04	9.55	≤ 14.09	Pass
11ac-VHT20	MCS0	44	5220	6.77	7.25	98.04	10.03	≤ 14.09	Pass
11ac-VHT20	MCS0	48	5240	7.13	7.54	98.04	10.35	≤ 14.09	Pass
11ac-VHT20	MCS0	52	5260	4.88	5.03	98.04	7.97	≤ 8.09	Pass
11ac-VHT20	MCS0	60	5300	4.88	5.10	98.04	8.00	≤ 8.09	Pass
11ac-VHT20	MCS0	64	5320	4.64	4.91	98.04	7.79	≤ 8.09	Pass
11ac-VHT20	MCS0	100	5500	4.77	4.95	98.04	7.87	≤ 8.09	Pass
11ac-VHT20	MCS0	120	5600	4.56	4.91	98.04	7.75	≤ 8.09	Pass
11ac-VHT20	MCS0	140	5700	4.75	5.12	98.04	7.95	≤ 8.09	Pass
11ac-VHT20	MCS0	144	5720	5.05	5.02	98.04	8.05	≤ 8.09	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (Beam-Forming Mode)									
11ac-VHT40	MCS0	38	5190	3.64	4.15	95.24	7.12	≤ 14.09	Pass
11ac-VHT40	MCS0	46	5230	3.58	4.02	95.24	7.03	≤ 14.09	Pass
11ac-VHT40	MCS0	54	5270	2.92	3.28	95.24	6.33	≤ 8.09	Pass
11ac-VHT40	MCS0	62	5310	2.78	3.23	95.24	6.23	≤ 8.09	Pass
11ac-VHT40	MCS0	102	5510	3.73	3.98	95.24	7.08	≤ 8.09	Pass
11ac-VHT40	MCS0	118	5590	3.93	4.48	95.24	7.44	≤ 8.09	Pass
11ac-VHT40	MCS0	134	5670	3.77	3.75	95.24	6.98	≤ 8.09	Pass
11ac-VHT40	MCS0	142	5710	3.86	4.20	95.24	7.26	≤ 8.09	Pass
11ac-VHT80	MCS0	42	5210	0.37	0.73	92.21	3.92	≤ 14.09	Pass
11ac-VHT80	MCS0	58	5290	-0.25	0.10	92.21	3.29	≤ 8.09	Pass
11ac-VHT80	MCS0	106	5530	-0.24	0.34	92.21	3.42	≤ 8.09	Pass
11ac-VHT80	MCS0	122	5610	0.85	0.88	92.21	4.23	≤ 8.09	Pass
11ac-VHT80	MCS0	138	5690	0.29	0.21	92.21	3.61	≤ 8.09	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + 10 \cdot \log (1/\text{duty cycle})$.

Note 3: For UNII-1 band, PSD Limit (dBm/MHz) = 17dBm/MHz - (8.91dBi - 6dBi) = 14.09dBm/MHz.

For UNII-2A and UNII-2C bands, PSD Limit (dBm/MHz) = 11dBm/MHz - (8.91dBi - 6dBi) = 8.09dBm/MHz.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 (CDD Mode)										
11a	6Mbps	149	5745	-2.15	-2.02	95.80	6.99	8.10	≤ 27.09	Pass
11a	6Mbps	157	5785	-1.36	-1.86	95.80	6.99	8.58	≤ 27.09	Pass
11a	6Mbps	165	5825	-1.80	-1.82	95.80	6.99	8.38	≤ 27.09	Pass
11n-HT20	MCS0	149	5745	-2.41	-1.87	98.21	6.99	7.87	≤ 27.09	Pass
11n-HT20	MCS0	157	5785	-1.54	-1.51	98.21	6.99	8.48	≤ 27.09	Pass
11n-HT20	MCS0	165	5825	-2.09	-1.63	98.21	6.99	8.15	≤ 27.09	Pass
11n-HT40	MCS0	151	5755	-4.90	-4.53	95.21	6.99	5.50	≤ 27.09	Pass
11n-HT40	MCS0	159	5795	-4.79	-4.95	95.21	6.99	5.34	≤ 27.09	Pass
11ac-VHT20	MCS0	149	5745	-2.24	-1.89	98.04	6.99	7.94	≤ 27.09	Pass
11ac-VHT20	MCS0	157	5785	-1.56	-1.44	98.04	6.99	8.50	≤ 27.09	Pass
11ac-VHT20	MCS0	165	5825	-1.98	-1.68	98.04	6.99	8.17	≤ 27.09	Pass
11ac-VHT40	MCS0	151	5755	-4.71	-4.60	95.24	6.99	5.56	≤ 27.09	Pass
11ac-VHT40	MCS0	159	5795	-4.62	-4.72	95.24	6.99	5.54	≤ 27.09	Pass
11ac-VHT80	MCS0	155	5775	-8.35	-8.59	92.21	6.99	1.88	≤ 27.09	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + \text{Constant Factor}$.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + 10 \cdot \log (1/\text{duty cycle}) + \text{Constant Factor}$.

Note 3: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (8.91dBi - 6dBi) = 27.09dBm/500kHz.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 (Beam-Forming Mode)										
11n-HT20	MCS0	149	5745	-2.41	-1.87	98.21	6.99	7.87	≤ 27.09	Pass
11n-HT20	MCS0	157	5785	-1.54	-1.51	98.21	6.99	8.48	≤ 27.09	Pass
11n-HT20	MCS0	165	5825	-2.09	-1.63	98.21	6.99	8.15	≤ 27.09	Pass
11n-HT40	MCS0	151	5755	-5.25	-4.72	95.21	6.99	5.24	≤ 27.09	Pass
11n-HT40	MCS0	159	5795	-4.47	-4.72	95.21	6.99	5.62	≤ 27.09	Pass
11ac-VHT20	MCS0	149	5745	-2.24	-1.89	98.04	6.99	7.94	≤ 27.09	Pass
11ac-VHT20	MCS0	157	5785	-1.56	-1.44	98.04	6.99	8.50	≤ 27.09	Pass
11ac-VHT20	MCS0	165	5825	-1.98	-1.68	98.04	6.99	8.17	≤ 27.09	Pass
11ac-VHT40	MCS0	151	5755	-5.00	-4.80	95.24	6.99	5.31	≤ 27.09	Pass
11ac-VHT40	MCS0	159	5795	-4.37	-4.54	95.24	6.99	5.76	≤ 27.09	Pass
11ac-VHT80	MCS0	155	5775	-8.25	-7.57	92.21	6.99	2.46	≤ 27.09	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + \text{Constant Factor}$.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + 10 \cdot \log (1/\text{duty cycle}) + \text{Constant Factor}$.

Note 3: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (5.9dBi + 3.01dBi - 6dBi) = 27.09dBm/500kHz.