



NCC

低功率射頻電機型式試驗報告

產品名稱 : ACCESS POINT
型號 : APEX0374
系列型號 : APEX0375, APEX0377
廠牌 : 
申請者 : Hewlett Packard Enterprise Company
申請者地址 : 3000 Hanover St. Palo Alto, CA 94304, USA
測試標準 : LP0002 (105 年版) 4.7 章節
參考法規 : ANSI C63.10-2013
測試結果 : 符合
測試日期 : 2017.08.05 ~ 2017.11.15
發行日期 : 2017.12.10

測試工程師 : 
(柯文凱)

報告審核人 : 
(陳柏均)

報告簽屬人 : 
(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
1710TW0108-T3	1.0	Original Report	2017-12-10

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	6
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	14
5.1.4. 電源端點測試結果	14
5.2. 天線之要求	15
5.2.1. 適用標準	15
5.2.2. 天線樣式	15
5.3. 功率限制值	16
5.3.1. 適用標準	16
5.3.2. 量測方法	16
5.3.3. 測試架構圖	16
5.3.4. 功率限制值測試結果	16
5.4. 26dB 佔用頻寬	17
5.4.1. 適用標準	17
5.4.2. 量測方法	17
5.4.3. 測試架構圖	17
5.4.4. 26dB 佔用頻寬測試結果	17
5.5. 6dB 佔用頻寬	18
5.5.1. 適用標準	18
5.5.2. 量測方法	18
5.5.3. 測試架構圖	18
5.5.4. 6dB 佔用頻寬測試結果	18

5.6.	最大功率頻譜密度	19
5.6.1.	適用標準	19
5.6.2.	量測方法	19
5.6.3.	測試架構圖	19
5.6.4.	峰值功率頻譜密度測試結果	19
5.7.	操作頻帶外的峰值發射	20
5.7.1.	適用標準	20
5.7.2.	量測方法	20
5.7.3.	測試架構圖	21
5.7.4.	操作頻帶外的峰值發射測試結果	21
5.8.	不必要之發射	22
5.8.1.	適用標準	22
5.8.2.	量測方法	22
5.8.3.	測試架構圖	23
5.8.4.	不必要之發射測試結果	25
5.9.	發射功率控制	26
5.9.1.	適用標準	26
5.9.2.	量測方法	26
5.9.3.	測試架構圖	26
5.9.4.	發射功率控制測試結果	26
5.10.	頻率穩定性	27
5.10.1.	適用標準	27
5.10.2.	量測方法	27
5.10.3.	測試架構圖	28
5.10.4.	頻率穩定性測試結果	28
附錄 A		
附錄 B		
附錄 C		

1. 一般資訊

申請者	Hewlett Packard Enterprise Company
申請者地址	3000 Hanover St. Palo Alto, CA 94304, USA
製造商	Hewlett Packard Enterprise Company
製造商地址	3000 Hanover St. Palo Alto, CA 94304, USA
認證實驗室	台灣曼瑞檢測科技有限公司
實驗室地址	臺灣桃園市龜山區復興二路 38 號
測試設備序列號	APEX0374 (傳導樣品序列號: CNDNK7Z002, 輻射樣品序列號: CNDNK7Z001)
	APEX0375 (傳導樣品序列號: CNDJK8001T, 輻射樣品序列號: CNDJK8001L)
	APEX0377 (傳導樣品序列號: CNDJK8001J, 輻射樣品序列號: CNDNK81002)

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Fuxing Rd., Taoyuan, Taiwan (R.O.C)

- MRT facility is a FCC registered (MRT Reg. No. 153292) test facility with the site description report on file and is designated by the FCC as an Accredited Test Film.
- MRT facility is an IC registered (MRT Reg. No. 21723-1) test laboratory with the site description on file at Industry Canada.
- 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	APEX0374, APEX0375, APEX0377
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 600Mbps 802.11ac: up to 1733.2Mbps
頻道控制	Auto

Note 1: The difference between three models is that the EUT use different antenna and appearance, other hardware and software are the same. Each model has its own power parameter value.

Note 2: The applicant provide one POE adapter (Manufacturer: MICROSEMI & Model: PD-9001GR/AT/AC) 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/ ac-VHT80+80 (Non-contiguous)

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

Note: For 802.11ac-VHT80+80 mode, Ant 0 & Ant 1 port work on one frequency of the above table, Ant 2 & Ant 3 port work on another frequency of the above table. E.g, channel 42 + 155 group, channel 42 will transmit by Ant 0+1 port and channel 155 will transmit by Ant 2+3 port.

802.11ac-VHT80+80 (Contiguous)

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

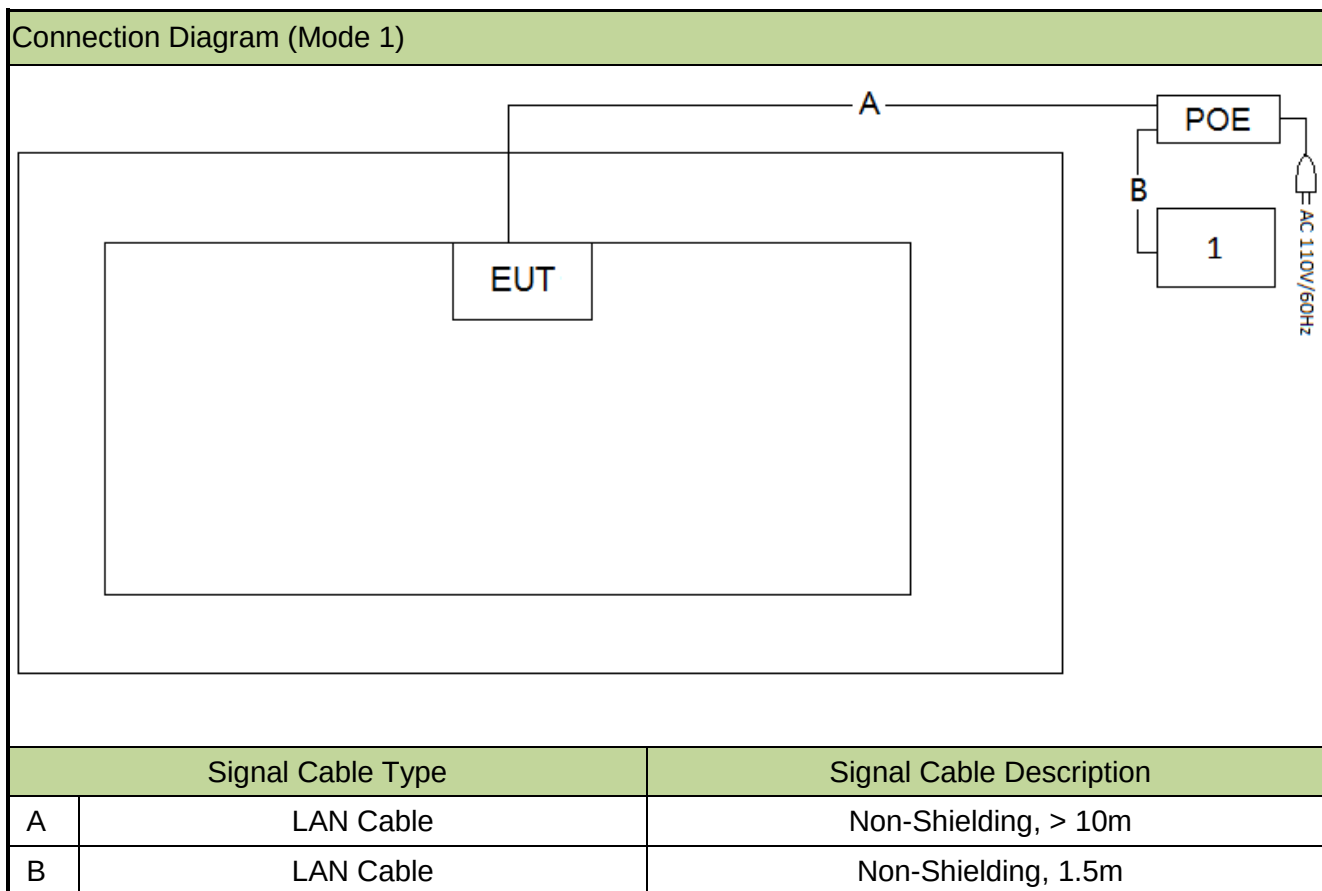
Note: For example, Ant 0 & 1 ports operate on one 80MHz channel 42, while Ant 2 & 3 ports operate on the adjacent 80MHz channel 58.

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)
Mode 7: 發射器 802.11ac-VHT80+80 Non-contiguous (MCS0)
Mode 8: 發射器 802.11ac-VHT80+80 Contiguous (MCS0)

5GHz Test Mode	Ant 0 + 1 + 2 + 3	
	CDD	Beam-Forming
802.11a	√	×
802.11n-HT20	√	√
802.11n-HT40	√	√
802.11ac-VHT20	√	√
802.11ac-VHT40	√	√
802.11ac-VHT80	√	√
802.11ac-VHT80+80 (Non-Contiguous)	√	√
802.11ac-VHT80+80 (Contiguous)	√	×

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

2.6. 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

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 Hornantenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2018/04/06
Breitband Hornantenna	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	2018/12/11
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

Test software

Software	Version	Function
e3	V 8.3.5	EMI Test Software
EMI	Quietek	V3

5. 測試結果

產品名稱

ACCESS POINT

型號

APEX0374,APEX0375,APEX0377

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

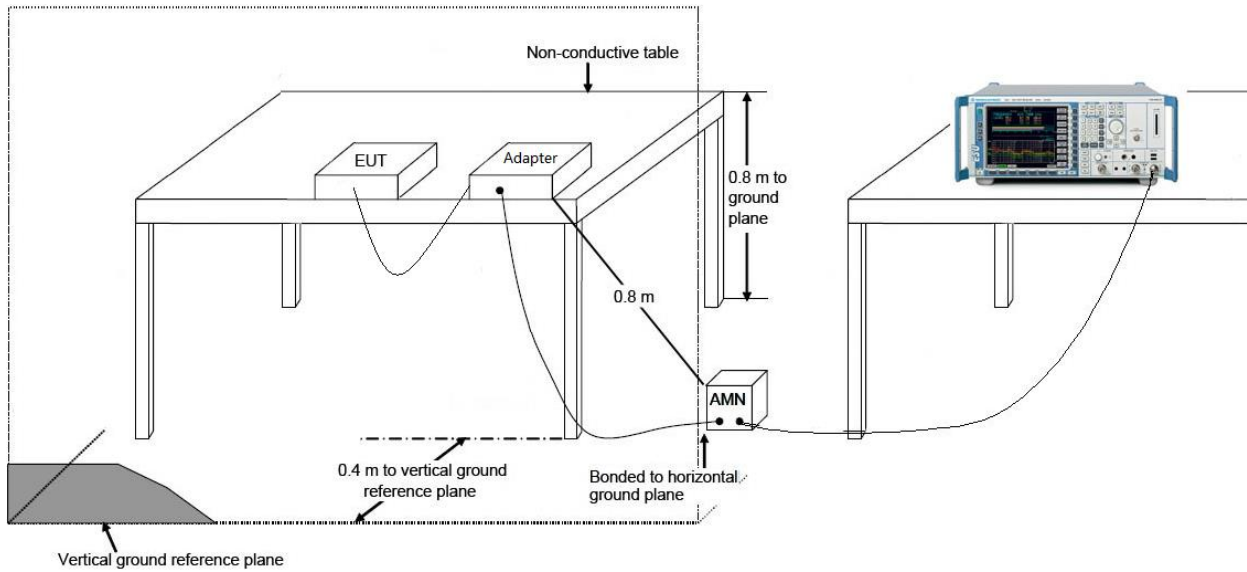
註:隨頻率之對數遞減

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

對於 APEX0374, 請參考附錄 D 章節 1;
 對於 APEX0375, 請參考附錄 E 章節 1;
 對於 APEX0377, 請參考附錄 F 章節 1。

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

對於 APEX0374, 請參考附錄 D 章節 2;

對於 APEX0375, 請參考附錄 E 章節 2;

對於 APEX0377, 請參考附錄 F 章節 2。

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。最大的 e.i.r.p. 在 30 度以上的任何仰角都不能超過 125mW(21 dBm)。

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 11dBm+10log B (B 是 26 dB 發射頻寬，單位 MHz)之較小者。

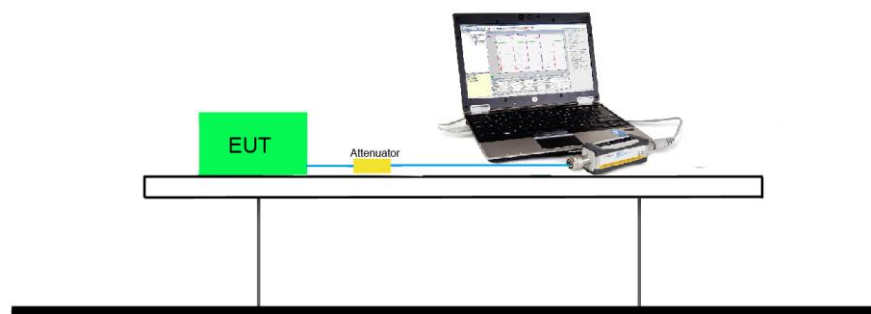
使用頻率於 5.725 GHz~5.850 GHz 頻段，最大傳導輸出功率應小於或等於 1 W。

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

對於 APEX0374, 請參考附錄 D 章節 3;

對於 APEX0375, 請參考附錄 E 章節 3;

對於 APEX0377, 請參考附錄 F 章節 3。

5.4. 26dB 佔用頻寬

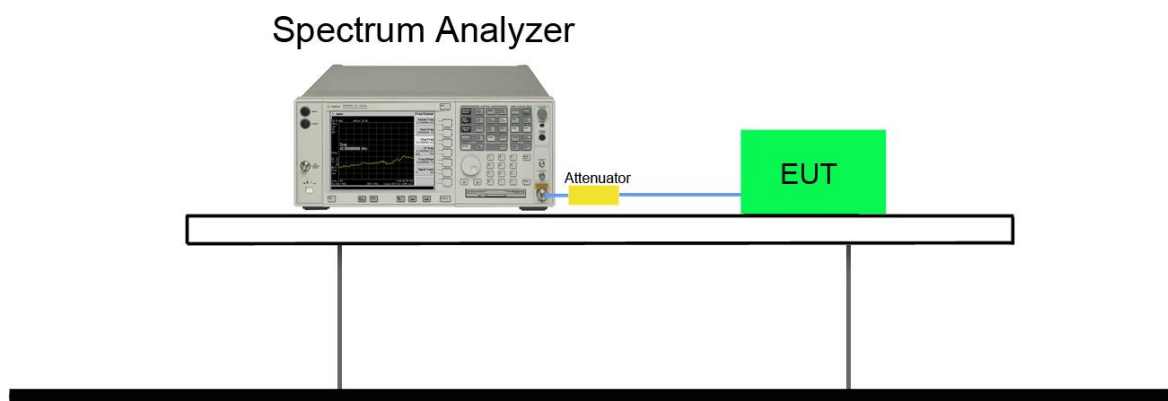
5.4.1. 適用標準

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

對於 APEX0374, 請參考附錄 D 章節 4;
對於 APEX0375, 請參考附錄 E 章節 4;
對於 APEX0377, 請參考附錄 F 章節 4。

5.5. 6dB 佔用頻寬

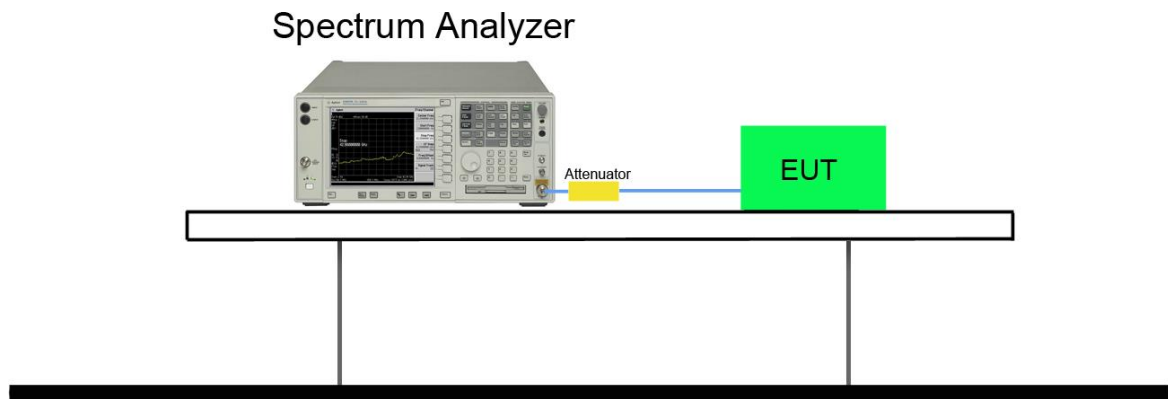
5.5.1. 適用標準

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

對於 APEX0374, 請參考附錄 D 章節 5;

對於 APEX0375, 請參考附錄 E 章節 5;

對於 APEX0377, 請參考附錄 F 章節 5。

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。

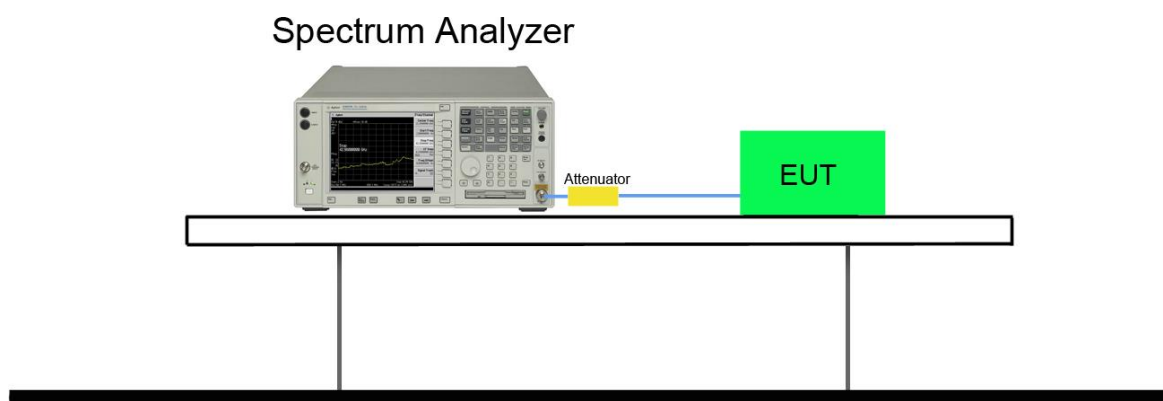
使用頻率於5.725 GHz~5.850 GHz 頻段，在任何500 kHz 頻帶中最大功率頻譜密度應小於或等於30 dBm。

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

對於 APEX0374, 請參考附錄 D 章節 6;

對於 APEX0375, 請參考附錄 E 章節 6;

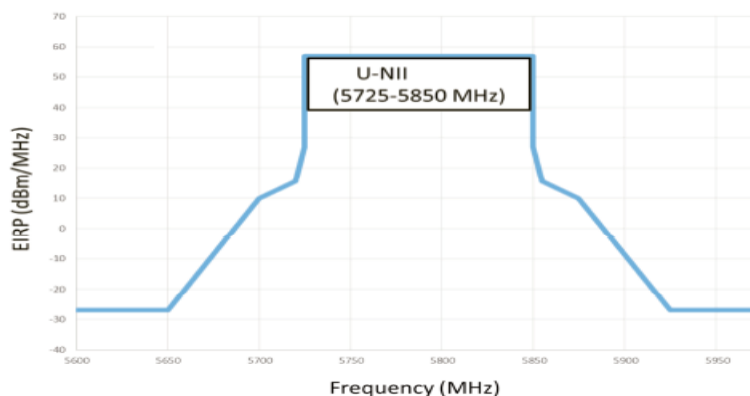
對於 APEX0377, 請參考附錄 F 章節 6。

5.7. 操作頻帶外的峰值發射

5.7.1. 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：

- (1) 在 5.15 GHz~5.35 GHz 及 5.470 GHz~5.725 GHz 頻段操作的發射器：帶外發射之有效等向輻射功率(EIRP) $\leq$ -27 dBm/MHz。
- (2) 在 5.725 GHz~5.850 GHz 的頻段操作之發射器：所有頻帶邊緣向外 5 MHz 內頻率之發射，有效等向輻射功率(EIRP) $\leq$ 27 dBm/MHz~15.6 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣向外 5 MHz~25 MHz，有效等向輻射功率(EIRP) $\leq$ 15.6 dBm/MHz~10 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外 25 MHz~75 MHz，有效等向輻射功率(EIRP) $\leq$ 10 dBm/MHz~-27 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外 $\geq$ 75 MHz 的頻率之發射，有效等向輻射功率(EIRP) $\leq$ -27 dBm/MHz；



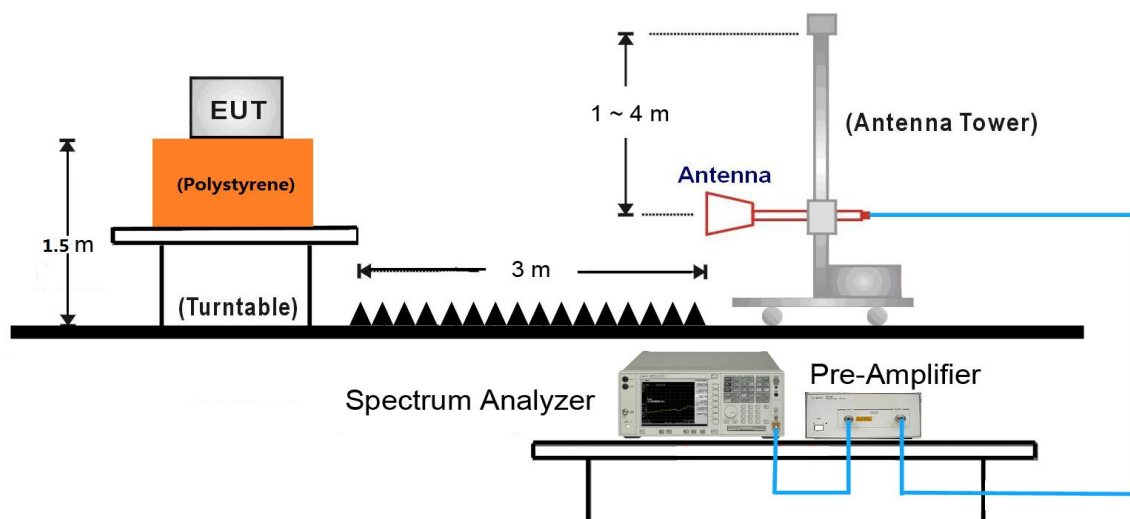
5.7.2. 量測方

法

高頻待測物置於高 150 公分之非導體桌面，受測物與配件設備之電源線無須束綁，桌面上受測設備的所有電源線由桌子的後緣垂下沿旋轉桌表面接至交流插座。落地型設備的交流電源線可以方便的型態走線。桌面可 360 度旋轉，接收天線置於距待測物 3m 距離，高度可在 1 至 4 公尺間變動，以量測待測物之最大輻射電場強度。接收天線並應於水準及垂直極化方向各量測一次。

5.7.3. 測試架構圖

1GHz ~ 18GHz Test Setup



5.7.4. 操作頻帶外的峰值發射測試結果

對於 APEX0374, 請參考附錄 D 章節 7;

對於 APEX0375, 請參考附錄 E 章節 7;

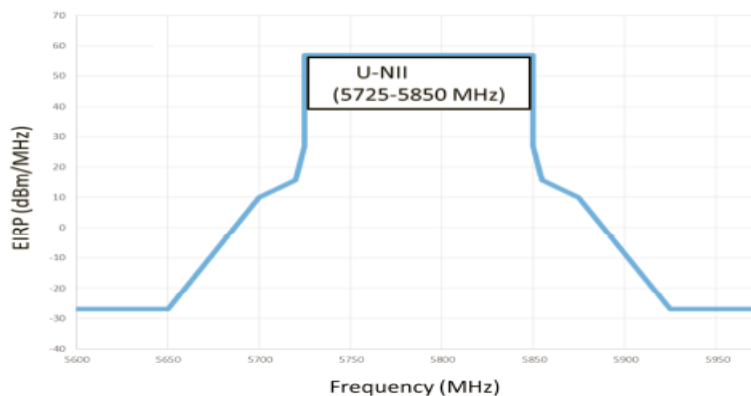
對於 APEX0377, 請參考附錄 F 章節 7。

5.8. 不必要之發射

5.8.1. 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：

在 5.725 GHz~5.850 GHz 的頻段操作之發射器：所有頻帶邊緣向外 5 MHz 內頻率之發射，有效等向輻射功率(EIRP) $\leq$ 27 dBm/MHz~15.6 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣向外 5 MHz~25 MHz，有效等向輻射功率(EIRP) $\leq$ 15.6 dBm/MHz~10 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外 25 MHz~75 MHz，有效等向輻射功率(EIRP) $\leq$ 10 dBm/MHz~-27 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外 $\geq$ 75 MHz 的頻率之發射，有效等向輻射功率(EIRP) $\leq$ -27 dBm/MHz；



測量不必要發射時，應使用之最低解析頻寬為 1 MHz。必要時，於頻帶邊緣附近可使用小於 1 MHz 之解析頻寬，並以補償方式計算其總值。

當測量不必要發射之限制值時，應將待測物的載波頻率調整到儘可能接近設備設計所允許的上、下頻帶邊緣。

在 1 GHz 以下不必要之發射，應符合 2.8 之規定，任何使用市電為供應電源之設備亦須符合 2.3 之電源線傳導限制值。

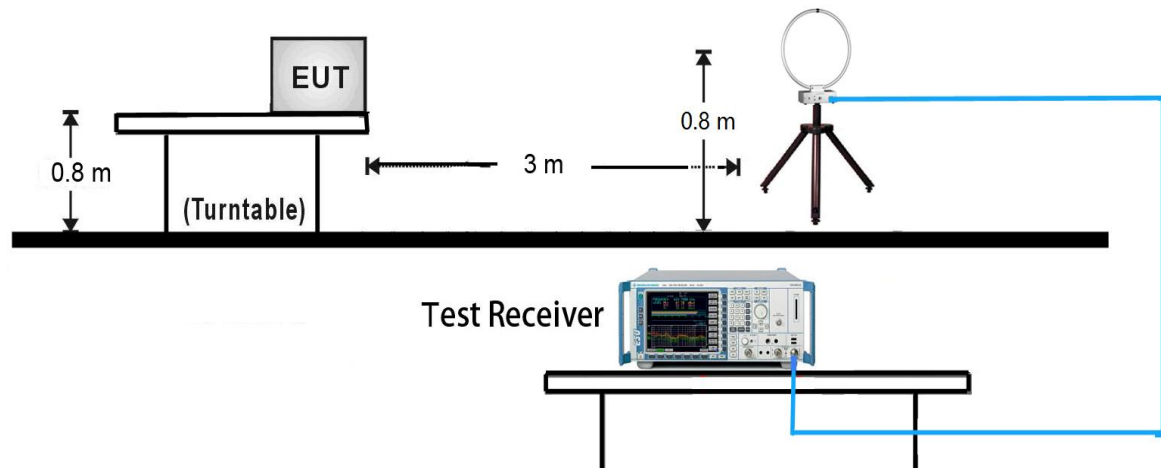
不必要發射頻率屬 2.7 規定頻段者，應符合 2.8 之規定。

5.8.2. 量測方法

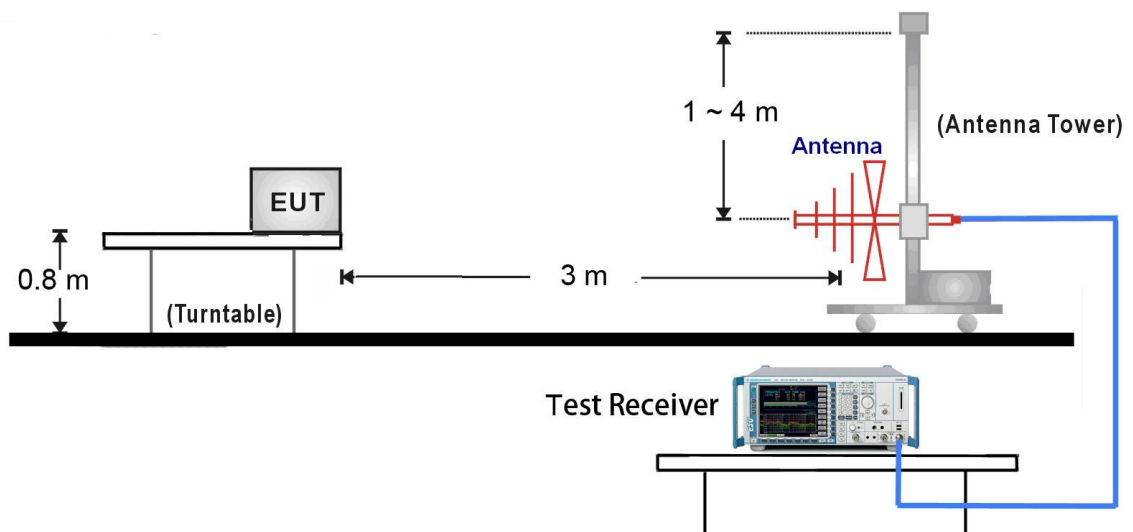
低頻待測物置於高 80 公分之非導體桌面（落地型產品置於地上），高頻待測物置於高 150 公分之非導體桌面，受測物與配件設備之電源線無須束綁，桌面上受測設備的所有電源線由桌子的後緣垂下沿旋轉桌表面接至交流插座。落地型設備的交流電源線可以方便的型態走線。桌面可 360 度旋轉，接收天線置於距待測物 3m 距離，高度可在 1 至 4 公尺間變動，以量測待測物之最大輻射電場強度。接收天線並應於水準及垂直極化方向各量測一次。

5.8.3. 測試架構圖

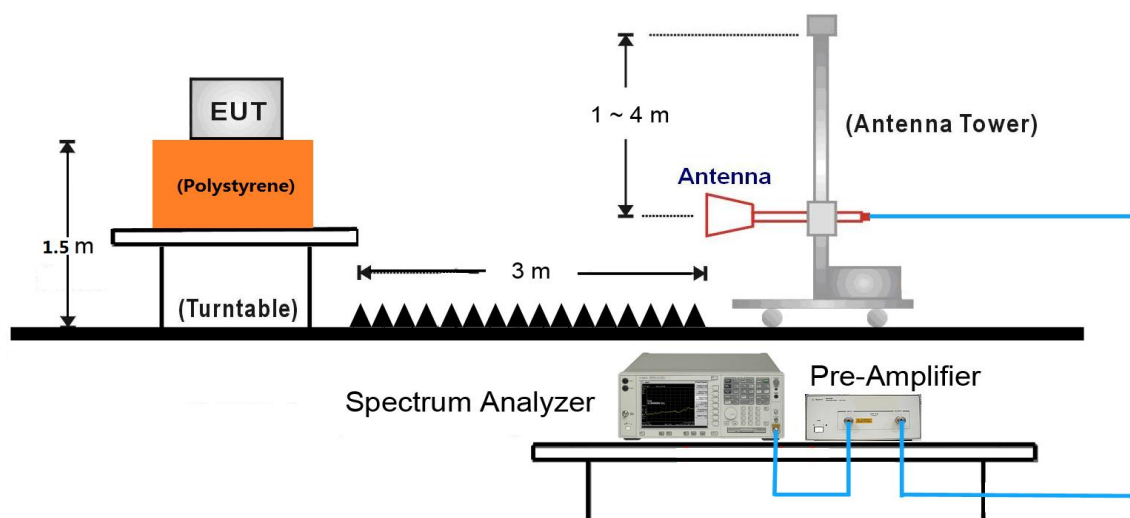
Under 30MHz Test Setup



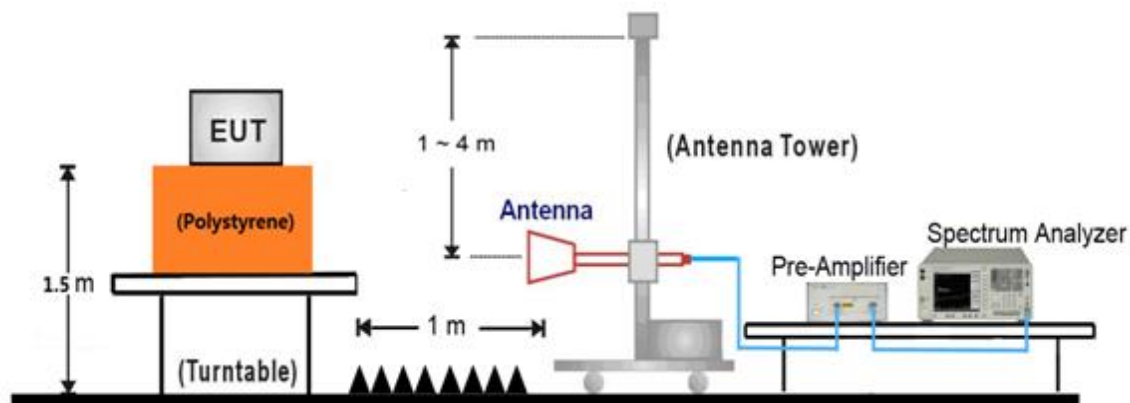
Under 1GHz Test Setup



1GHz ~ 18GHz Test Setup



18GHz ~40GHz Test Setup



5.8.4. 不必要之發射測試結果

對於 APEX0374, 請參考附錄 D 章節 8;

對於 APEX0375, 請參考附錄 E 章節 8;

對於 APEX0377, 請參考附錄 F 章節 8。

5.9. 發射功率控制

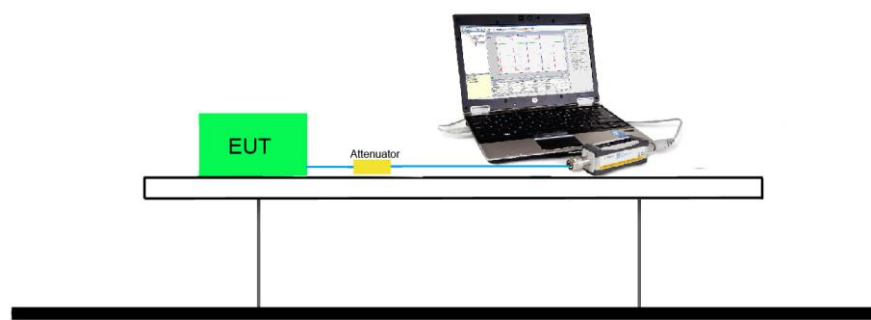
5.9.1. 適用標準

操作於5.250~5.350 及5.470~5.725 兆赫頻帶的設備，應具備發射功率控制機能。設備必須至少具有6dB 低於平均EIRP 值30dBm 的能力。

5.9.2. 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。

5.9.3. 測試架構圖



5.9.4. 發射功率控制測試結果

對於 APEX0374, 請參考附錄 D 章節 9;
對於 APEX0375, 請參考附錄 E 章節 9;
對於 APEX0377, 請參考附錄 F 章節 9。

5.10. 頻率穩定性

5.10.1. 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 4.7.7 節

無線資訊傳輸設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中。

5.10.2. 量測方法

(一) 測量對溫度之頻率穩定性

1. 將未供電之受測物置於環境溫櫃中，供應受測物標稱之交流電源或使用全新或充電完全之電池。若可行，則將天線連接至受測物之天線輸出接頭。使用假性負載會影響受測物之輸出頻率。若受測物具備或使用長度可調整式之天線，應使其完全伸出。

2. 供應受測物標稱之交流電源或裝入全新或完全充電之電池於受測物。啟動受測物並耦合其輸出至計頻器或其他具足夠精度之頻率量測裝置，依受測物所必須符合的頻率差度衡量。

註：位元元元元元此量測目的，可將測量天線近置於受測物（例如離 15cm）而以適當長度之同軸纜線連接至測量儀器。

諧調受測物至任何指定之頻率，調整測量天線之位置及測量儀器上之控制，以獲得合適之信號位準，以避免測量儀器過載而又有足夠強度測量受測物操作或主波頻率之位準。

3. 關閉受測物且置之於環境溫櫃中，設定至適用規範指定之最高溫度。對正常為持續操作之裝置，當置於溫櫃中時可使受測物運作。對具備震盪器加熱器之裝置，當置於溫櫃中時只可使加熱器線路運作。

4. 使溫櫃之溫度有足夠時間達到穩定，當溫櫃內維持在一定溫度時，啟動受測物，並於開始時、以及啟動後第 2 分鐘、第 5 分鐘與第 10 分鐘測量受測物之操作頻率，共作四次測量。

5. 若只有單一操作頻率須測量，請進行步驟(6)，否則關閉受測物且使其有足夠時間以回穩在環境溫度，將受測物連續設定於其他新增的操作頻率以重複步驟(4)。

6. 重複步驟(4)與(5) 但溫櫃設定至適用章節規定之最低溫度。在進行此測量之前須確定使溫櫃到達穩定。

(二) 測量對輸入電壓之頻率穩定性

1. 本測量可在環境室溫為+15 到+25 oC 範圍內進行，或者使用環境溫櫃設定為+20°C 。若可能的話，則將天線連接至受測物之天線輸出接頭，以避免假性負載影響受測物之輸出頻率。若受測物具備或使用長度可調整式之天線，應使其完全伸出。

2. 供應受測物標稱之交流電源或使用全新或充電完全之電池。啟動受測物並耦合其輸出至計頻器或其他具足夠精度之頻率量測裝置，依受測物所必須符合的頻率差度衡量。

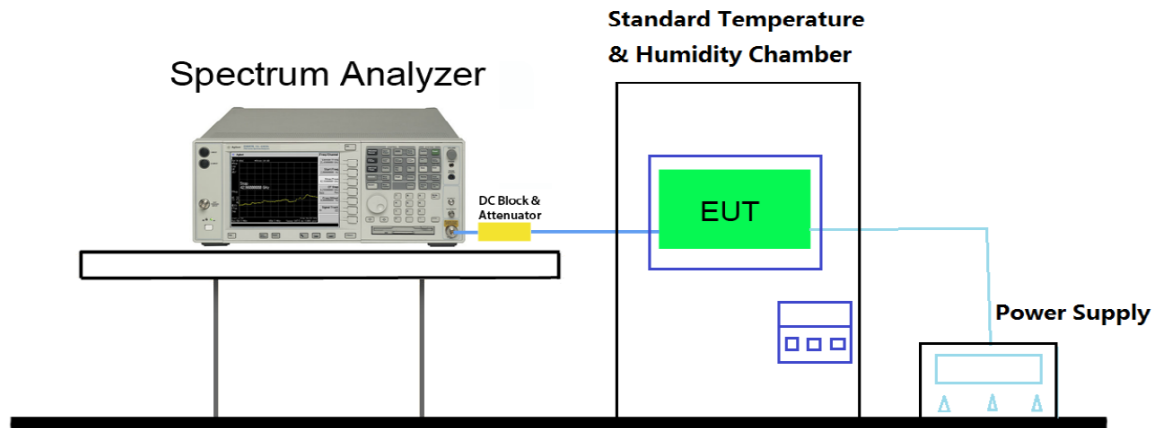
註：為達量測目的，可將測量天線近置於受測物（例如離 15cm）而以適當長度之同軸纜線連接至測量儀器。

3. 諧調受測物至任何規定之頻率，調整測量天線之位置及測量儀器上之控制以獲得合適之信號位準，以避免測量儀器過載而又有足夠強度測量受測物操作或主波頻率之位準。關閉受測物，而若有需要置

之於環境溫櫃中，在繼續進行之前使溫櫃穩定在+20°C，約須 30 分鐘。啟動受測物並於開始時、以及啟動後第 2 分鐘、第 5 分鐘與第 10 分鐘測量受測物之操作頻率，共作四次測量。

4. 若只有單一操作頻率須測量，請進行步驟(5)，否則關閉受測物且使其有足夠時間以回穩在環境溫度，將受測物連續設定於其他新增的操作頻率以重複步驟(3)。
5. 若受測物由交流電力線供電，供應其 85%的標稱交流電壓並重複步驟(3)與(4)。若受測物由電池供電，供應其標稱最低工作電壓。
6. 若受測物由交流電力線電，供應其 115%的標稱交流電壓並重複步驟(3)與(4)。

5.10.3. 測試架構圖



5.10.4. 頻率穩定性測試結果

對於 APEX0374, 請參考附錄 D 章節 10;
對於 APEX0375, 請參考附錄 E 章節 10
對於 APEX0377, 請參考附錄 F 章節 10。

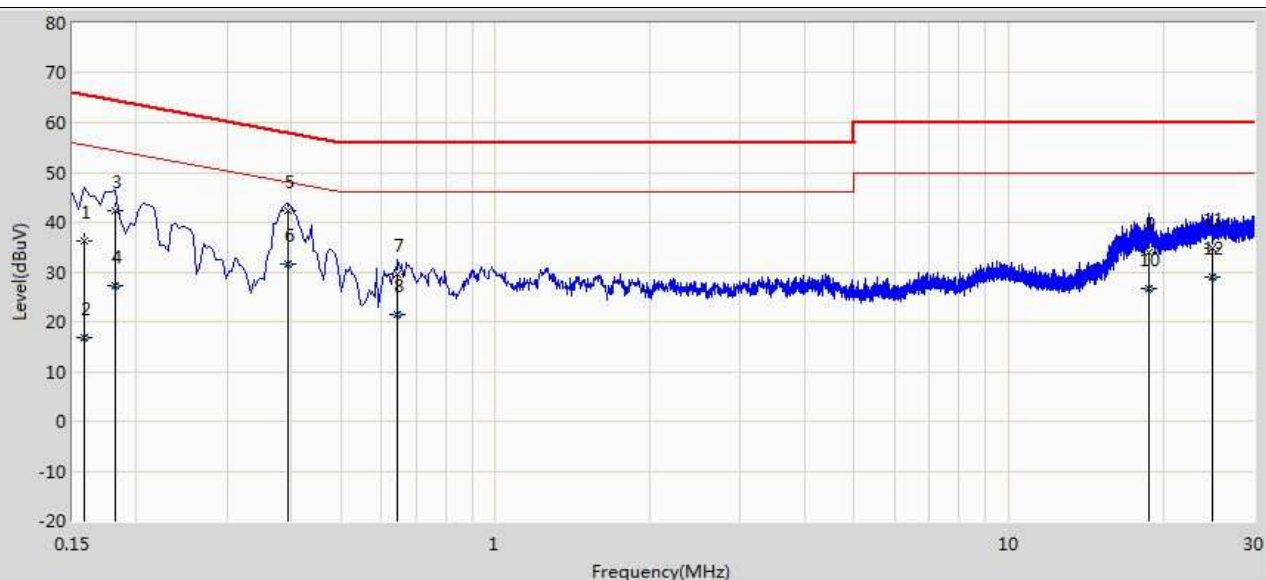
附錄 A

低功率射頻電機型式試驗測試結果

型號: APEX0374

1. 電源端點干擾測試結果

Site: SR2	Time: 2017/09/13 - 15:57
Limit: NCC LP0002_CE_0.15MHz-30MHz	Engineer: Kevin Ker
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: ACCESS POINT	Power: AC 110V/60Hz
Worse Case Mode: Transmit by 802.11ac-VHT20 at Channel 5180MHz Ant 0 + 1 + 2 + 3	



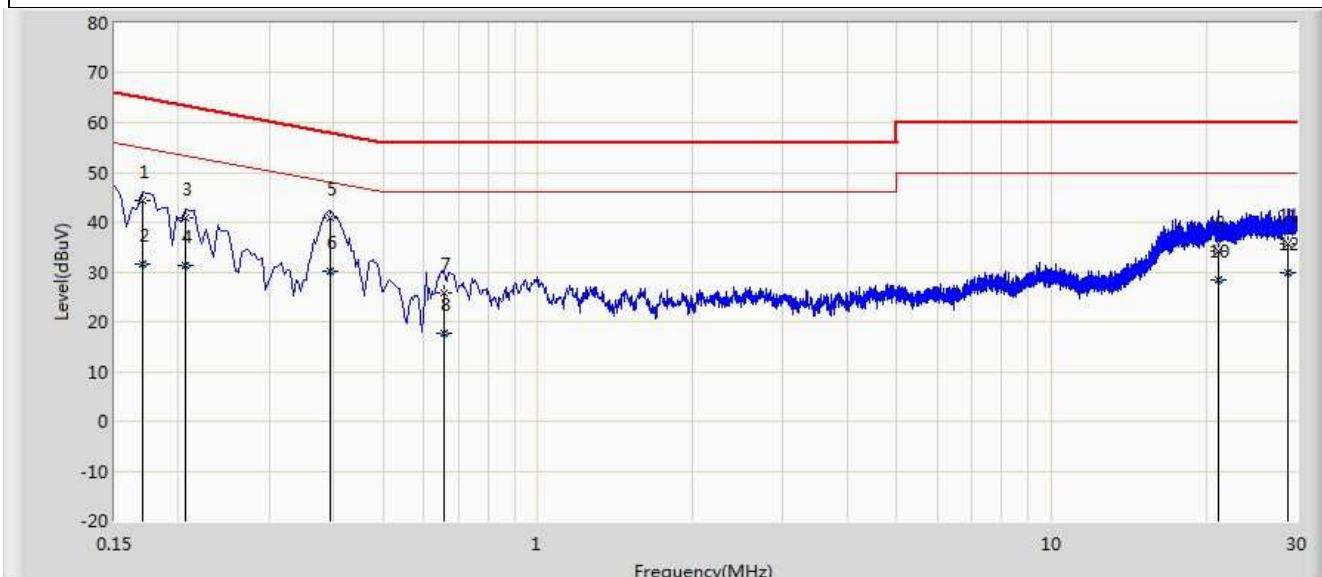
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.158	36.249	25.938	-29.320	65.568	10.311	QP
2			0.158	16.728	6.417	-38.841	55.568	10.311	AV
3			0.182	42.378	32.329	-22.016	64.394	10.048	QP
4			0.182	27.176	17.128	-27.217	54.394	10.048	AV
5		*	0.394	42.267	32.187	-15.712	57.979	10.080	QP
6			0.394	31.729	21.649	-16.249	47.979	10.080	AV
7			0.646	29.658	19.567	-26.342	56.000	10.091	QP
8			0.646	21.371	11.280	-24.629	46.000	10.091	AV

9			18.802	33.928	23.823	-26.072	60.000	10.105	QP
10			18.802	26.750	16.645	-23.250	50.000	10.105	AV
11			24.874	34.912	24.694	-25.088	60.000	10.218	QP
12			24.874	29.068	18.850	-20.932	50.000	10.218	AV

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

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

Site: SR2	Time: 2017/09/13 - 16:01
Limit: NCC LP0002_CE_0.15MHz-30MHz	Engineer: Kevin Ker
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: ACCESS POINT	Power: AC 110V/60Hz
Worse Case Mode: Transmit by 802.11ac-VHT20 at Channel 5180MHz Ant 0 + 1 + 2 + 3	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.170	44.236	34.172	-20.724	64.960	10.064	QP
2			0.170	31.585	21.521	-23.375	54.960	10.064	AV
3			0.206	40.760	30.759	-22.605	63.365	10.001	QP
4			0.206	31.344	21.343	-22.021	53.365	10.001	AV
5		*	0.394	40.858	30.750	-17.121	57.979	10.108	QP
6			0.394	30.209	20.102	-17.770	47.979	10.108	AV
7			0.658	25.901	15.803	-30.099	56.000	10.099	QP
8			0.658	17.659	7.560	-28.341	46.000	10.099	AV
9			21.158	34.247	24.060	-25.753	60.000	10.187	QP
10			21.158	28.401	18.215	-21.599	50.000	10.187	AV
11			28.898	35.714	25.281	-24.286	60.000	10.433	QP
12			28.898	29.945	19.512	-20.055	50.000	10.433	AV

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

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

2. 天線樣式

Antenna No.	Polarization	Frequency Band (GHz)	Model No.	Max Peak Gain (dBi)	30 Degree Antenna Gain (dBi)	BF Directional Gain (dBi)	CDD Directional Gain (dBi)	
							For Power	For PSD
Wi-Fi External Antenna List (2.4GHz 2*2 MIMO, 5GHz 4*4 MIMO)								
1 (Note 3)	Omni	2.4	ANT-2x2-2005	5.0	N/A	5.00	5.0	5.00
2 (Note 3)	Omni	5	ANT-2x2-5005	5.0	0	8.01	5.0	8.01
3 (Note 3)	Directional	2.4	ANT-2x2-2314	14.0	N/A	14.00	14.0	14.00
4 (Note 3)	Directional	5	ANT-3x3-5712	11.5	1.5	14.51	11.5	14.51
5 (Note 3)	Directional	5	ANT-4x4-5314	14.0	6.0	17.01	14.0	17.01
6 (Note 3)	Directional	5	MT-484052/NVH	16.0	3.0	19.01	16.0	19.01
7 (Note 3)	Directional	2.4	ANT-3x3-D608	7.5	N/A	10.51	7.5	10.51
		5		7.5	4.5	10.51	7.5	10.51
8 (Note 3)	Directional	2.4	ANT-3x3-D100	5.0	N/A	8.01	5.0	8.01
		5		5.0	4.0	8.01	5.0	8.01
Bluetooth Internal Antenna								
PCB		2.4	N2415AM4	3.0				

Note:

- 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 $N_{ANT} \leq 4$;
- The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac, not include 802.11a/b/g.
Directional gain = $G_{ANT} + \text{BF Gain}$, BF Gain was declared by the applicant.
- These antennas have Cross-Polarized design, the detail see the antenna specification.
- We selected the max peak gain antenna of each type to perform RF testing. (Omni antenna 1# and 2#, Directional antenna 3# and 6#)

3. 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 (gray marker) for final test of each channel.

For Ant 0 / Ant 0 + 1 + 2 + 3 port for Omni Antenna (ANT-2x2-5005):

Test Mode	Bandwidth	Channel	Frequency (MHz)	Data Rate/ MCS	Average Power (dBm)
802.11a	20	36	5180	6Mbps	14.48
				24Mbps	14.23
				54Mbps	14.11
802.11n	20	36	5180	MCS0	14.65
				MCS3	14.43
				MCS7	14.21
802.11n	40	38	5190	MCS0	14.51
				MCS3	14.34
				MCS7	14.16
802.11ac	20	36	5180	MCS0	14.57
				MCS4	14.24
				MCS8	14.04
802.11ac	40	38	5190	MCS0	14.41
				MCS4	14.21
				MCS9	14.02
802.11ac	80	42	5210	MCS0	14.31
				MCS4	14.25
				MCS9	14.03
802.11ac	80+80 Non-contiguous	42	5210	MCS0	17.52
				MCS4	17.34
				MCS9	17.12
802.11ac	80+80 Contiguous	42	5210	MCS0	17.76
				MCS4	17.53
				MCS9	17.32

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR2	Test Date	2017/08/15
Antenna Type	Omni Antenna (ANT-2x2-5005)		

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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max E.I.R.P.	Limit	
										Ant 0 + 1 + 2 + 3 (CDD Mode)		
11a	6Mbps	36	5180	14.48	14.33	15.11	14.41	20.61	≤ 30.00	20.61	≤ 21.00	Pass
11a	6Mbps	44	5220	14.49	14.26	14.62	14.31	20.44	≤ 30.00	20.44	≤ 21.00	Pass
11a	6Mbps	48	5240	14.77	14.21	14.71	14.34	20.53	≤ 30.00	20.53	≤ 21.00	Pass
11a	6Mbps	52	5260	13.56	13.53	13.92	13.78	19.72	≤ 23.86	--	--	Pass
11a	6Mbps	60	5300	13.08	13.25	13.58	13.48	19.37	≤ 23.86	--	--	Pass
11a	6Mbps	64	5320	13.18	13.21	13.52	13.44	19.36	≤ 23.86	--	--	Pass
11a	6Mbps	100	5500	12.86	13.02	13.24	13.19	19.10	≤ 23.86	--	--	Pass
11a	6Mbps	120	5600	12.96	13.04	13.36	13.24	19.17	≤ 23.86	--	--	Pass
11a	6Mbps	140	5700	13.11	13.01	13.45	13.53	19.30	≤ 23.86	--	--	Pass
11a	6Mbps	144	5720	13.16	13.02	13.36	13.49	19.28	≤ 23.86	--	--	Pass
11a	6Mbps	149	5745	22.15	22.31	22.03	22.09	28.17	≤ 30.00	--	--	Pass
11a	6Mbps	157	5785	22.31	22.50	22.23	22.41	28.38	≤ 30.00	--	--	Pass
11a	6Mbps	165	5825	22.36	22.20	22.17	22.29	28.28	≤ 30.00	--	--	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
				Ant 0	Ant 1	Ant 2	Ant 3	Total				
				Ant 0	Ant 1	Ant 2	Ant 3	Total				
Ant 0 + 1 + 2 + 3 (CDD Mode)												
11n-HT20	MCS0	36	5180	14.65	14.44	15.12	14.72	20.76	≤ 30.00	20.76	≤ 21.00	Pass
11n-HT20	MCS0	44	5220	14.61	14.99	14.83	14.31	20.71	≤ 30.00	20.71	≤ 21.00	Pass
11n-HT20	MCS0	48	5240	14.48	14.68	14.92	14.73	20.73	≤ 30.00	20.73	≤ 21.00	Pass
11n-HT20	MCS0	52	5260	14.03	14.21	14.49	14.32	20.29	≤ 23.98	--	--	Pass
11n-HT20	MCS0	60	5300	14.05	14.15	14.44	14.39	20.28	≤ 23.98	--	--	Pass
11n-HT20	MCS0	64	5320	14.16	14.02	14.52	14.37	20.29	≤ 23.98	--	--	Pass
11n-HT20	MCS0	100	5500	13.62	13.68	13.95	13.85	19.80	≤ 23.98	--	--	Pass
11n-HT20	MCS0	120	5600	13.75	13.54	13.91	13.82	19.78	≤ 23.98	--	--	Pass
11n-HT20	MCS0	140	5700	13.36	13.42	13.86	13.79	19.63	≤ 23.98	--	--	Pass
11n-HT20	MCS0	144	5720	13.41	13.56	13.91	13.82	19.70	≤ 23.98	--	--	Pass
11n-HT20	MCS0	149	5745	21.81	22.12	22.03	21.98	28.01	≤ 30.00	--	--	Pass
11n-HT20	MCS0	157	5785	22.11	22.36	22.04	22.17	28.19	≤ 30.00	--	--	Pass
11n-HT20	MCS0	165	5825	22.49	22.66	22.43	22.25	28.48	≤ 30.00	--	--	Pass
11n-HT40	MCS0	38	5190	14.51	14.43	14.98	14.78	20.70	≤ 30.00	20.70	≤ 21.00	Pass
11n-HT40	MCS0	46	5230	14.48	14.38	15.03	14.76	20.69	≤ 30.00	20.69	≤ 21.00	Pass
11n-HT40	MCS0	54	5270	16.49	16.58	16.97	16.85	22.75	≤ 23.98	--	--	Pass
11n-HT40	MCS0	62	5310	16.47	16.53	16.92	16.84	22.71	≤ 23.98	--	--	Pass
11n-HT40	MCS0	102	5510	15.68	15.78	16.15	16.00	21.93	≤ 23.98	--	--	Pass
11n-HT40	MCS0	118	5590	15.59	15.73	16.17	16.05	21.91	≤ 23.98	--	--	Pass
11n-HT40	MCS0	134	5670	15.89	15.91	16.49	16.35	22.19	≤ 23.98	--	--	Pass
11n-HT40	MCS0	142	5710	15.71	15.88	16.52	16.38	22.16	≤ 23.98	--	--	Pass
11n-HT40	MCS0	151	5755	22.58	22.54	22.35	22.34	28.47	≤ 30.00	--	--	Pass
11n-HT40	MCS0	159	5795	22.32	22.41	22.09	22.13	28.26	≤ 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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max	Limit	
										E.I.R.P.		
Ant 0 + 1 + 2 + 3 (CDD Mode)												
11ac-VHT20	MCS0	36	5180	14.57	14.40	15.01	14.62	20.68	≤ 30.00	20.68	≤ 21.00	Pass
11ac-VHT20	MCS0	44	5220	14.56	14.81	14.83	14.24	20.64	≤ 30.00	20.64	≤ 21.00	Pass
11ac-VHT20	MCS0	48	5240	14.43	14.60	14.78	14.72	20.66	≤ 30.00	20.66	≤ 21.00	Pass
11ac-VHT20	MCS0	52	5260	14.01	14.17	14.29	14.19	20.19	≤ 23.98	--	--	Pass
11ac-VHT20	MCS0	60	5300	14.00	14.02	14.28	14.25	20.16	≤ 23.98	--	--	Pass
11ac-VHT20	MCS0	64	5320	13.98	13.92	14.47	14.35	20.21	≤ 23.98	--	--	Pass
11ac-VHT20	MCS0	100	5500	13.59	13.59	13.84	13.82	19.73	≤ 23.98	--	--	Pass
11ac-VHT20	MCS0	120	5600	13.62	13.42	13.75	13.73	19.65	≤ 23.98	--	--	Pass
11ac-VHT20	MCS0	140	5700	13.35	13.37	13.75	13.71	19.57	≤ 23.98	--	--	Pass
11ac-VHT20	MCS0	144	5720	13.31	13.55	13.75	13.73	19.61	≤ 23.98	--	--	Pass
11ac-VHT20	MCS0	149	5745	22.29	22.57	22.21	22.29	28.36	≤ 30.00	--	--	Pass
11ac-VHT20	MCS0	157	5785	22.16	22.32	22.11	22.21	28.22	≤ 30.00	--	--	Pass
11ac-VHT20	MCS0	165	5825	22.34	22.60	22.35	22.53	28.48	≤ 30.00	--	--	Pass
11ac-VHT40	MCS0	38	5190	14.41	14.39	14.86	14.62	20.59	≤ 30.00	20.59	≤ 21.00	Pass
11ac-VHT40	MCS0	46	5230	14.36	14.32	14.84	14.72	20.59	≤ 30.00	20.59	≤ 21.00	Pass
11ac-VHT40	MCS0	54	5270	16.48	16.41	16.80	16.79	22.64	≤ 23.98	--	--	Pass
11ac-VHT40	MCS0	62	5310	16.40	16.48	16.88	16.78	22.66	≤ 23.98	--	--	Pass
11ac-VHT40	MCS0	102	5510	15.66	15.66	16.11	15.90	21.86	≤ 23.98	--	--	Pass
11ac-VHT40	MCS0	118	5590	15.56	15.63	16.03	15.87	21.80	≤ 23.98	--	--	Pass
11ac-VHT40	MCS0	134	5670	15.82	15.80	16.40	16.20	22.08	≤ 23.98	--	--	Pass
11ac-VHT40	MCS0	142	5710	15.55	15.78	16.40	16.33	22.05	≤ 23.98	--	--	Pass
11ac-VHT40	MCS0	151	5755	22.50	22.64	22.24	22.32	28.45	≤ 30.00	--	--	Pass
11ac-VHT40	MCS0	159	5795	22.46	22.40	22.10	22.18	28.31	≤ 30.00	--	--	Pass
11ac-VHT80	MCS0	42	5210	14.31	14.19	14.19	13.93	20.18	≤ 30.00	20.18	≤ 21.00	Pass
11ac-VHT80	MCS0	58	5290	17.54	17.30	17.76	17.36	23.51	≤ 23.98	--	--	Pass
11ac-VHT80	MCS0	106	5530	17.55	17.35	17.81	17.39	23.55	≤ 23.98	--	--	Pass
11ac-VHT80	MCS0	122	5610	17.61	17.42	17.85	17.44	23.60	≤ 23.98	--	--	Pass
11ac-VHT80	MCS0	138	5690	17.42	17.36	17.86	17.45	23.55	≤ 23.98	--	--	Pass
11ac-VHT80	MCS0	155	5775	20.52	20.35	20.60	20.44	26.50	≤ 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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max E.I.R.P.	Limit	
Non-contiguous 80+80 MHz mode fall within different UNII band												
11ac-VHT80+80	MCS0	42	5210	17.52	17.90	--	--	20.72	≤ 30.00	20.72	≤ 21.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	17.62	17.90	20.77	≤ 30.00	20.77	≤ 21.00	Pass
11ac-VHT80+80	MCS0	58	5290	20.72	20.94	--	--	23.84	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	20.59	20.95	23.78	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	20.80	20.86	--	--	23.84	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	20.81	20.75	23.79	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	20.52	20.90	--	--	23.72	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	20.51	20.48	23.51	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	20.86	20.89	--	--	23.89	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	20.50	20.56	23.54	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	155	5775	22.12	22.19	--	--	25.17	≤ 30.00	--	--	Pass
11ac-VHT80+80	MCS0	155	5775	--	--	22.32	22.20	25.27	≤ 30.00	--	--	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band												
11ac-VHT80+80	MCS0	106	5530	17.86	17.75	--	--	23.79	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	17.76	17.70					
11ac-VHT80+80	MCS0	106	5530	--	--	17.78	17.58	23.63	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	17.39	17.68	--	--					
11ac-VHT80+80 (Contiguous 80+80 MHz mode)												
11ac-VHT80+80	MCS0	42	5210	17.76	17.22	--	--	20.51	≤ 30.00	20.51	≤ 21.00	Pass
	MCS0	58	5290	--	--	18.09	17.55	20.84	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	17.74	17.67	--	--	23.63	≤ 23.98	--	--	Pass
	MCS0	122	5610	--	--	17.50	17.52					

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

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

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

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

For 802.11ac-VHT80+80 mode fall within same UNII band:

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

Note 3: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz fall within UNII-1: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$.

5290MHz fall within UNII-2A: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

5530MHz & 5610MHz Fall within UNII-2C: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

Note 4: Max EIRP (dBm) = Total Average Power (dBm) + 30 Degree Antenna Gain (dBi),

30 Degree Antenna Gain (dBi) = 0dBi.

Note 5: Average Power Limit Calculation as below:

For 5150-5250MHz & 5725-5850: Limit = 30.00dBm.

For 5250-5350MHz & 5470-5725MHz:

802.11a: Limit = $11 + 10 \cdot \log (19.33\text{MHz}) = 23.86\text{dBm}$

802.11n/ac: Limit = 23.98dBm.

EIRP Limit Calculation as below:

For 5150-5250MHz: Limit = 21.00dBm.

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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max	Limit	
										E.I.R.P.		
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
11n-HT20	MCS0	36	5180	11.62	11.52	11.68	11.34	17.56	≤ 27.99	20.57	≤ 21.00	Pass
11n-HT20	MCS0	44	5220	11.60	11.33	11.63	11.25	17.48	≤ 27.99	20.49	≤ 21.00	Pass
11n-HT20	MCS0	48	5240	11.76	11.62	11.69	11.54	17.67	≤ 27.99	20.68	≤ 21.00	Pass
11n-HT20	MCS0	52	5260	14.03	14.21	14.49	14.32	20.29	≤ 21.97	--	--	Pass
11n-HT20	MCS0	60	5300	14.05	14.15	14.44	14.39	20.28	≤ 21.97	--	--	Pass
11n-HT20	MCS0	64	5320	14.16	14.02	14.52	14.37	20.29	≤ 21.97	--	--	Pass
11n-HT20	MCS0	100	5500	13.62	13.68	13.95	13.85	19.80	≤ 21.97	--	--	Pass
11n-HT20	MCS0	120	5600	13.75	13.54	13.91	13.82	19.78	≤ 21.97	--	--	Pass
11n-HT20	MCS0	140	5700	13.36	13.42	13.86	13.79	19.63	≤ 21.97	--	--	Pass
11n-HT20	MCS0	144	5720	13.41	13.56	13.91	13.82	19.70	≤ 21.97	--	--	Pass
11n-HT20	MCS0	149	5745	21.11	21.54	21.40	21.39	27.38	≤ 27.99	--	--	Pass
11n-HT20	MCS0	157	5785	21.68	21.84	21.38	21.73	27.68	≤ 27.99	--	--	Pass
11n-HT20	MCS0	165	5825	22.05	22.10	21.76	21.76	27.94	≤ 27.99	--	--	Pass
11n-HT40	MCS0	38	5190	11.59	11.64	11.67	11.51	17.62	≤ 27.99	20.63	≤ 21.00	Pass
11n-HT40	MCS0	46	5230	11.65	11.33	11.58	11.30	17.49	≤ 27.99	20.50	≤ 21.00	Pass
11n-HT40	MCS0	54	5270	15.68	15.53	15.59	15.59	21.62	≤ 21.97	--	--	Pass
11n-HT40	MCS0	62	5310	15.66	15.63	15.62	15.56	21.64	≤ 21.97	--	--	Pass
11n-HT40	MCS0	102	5510	15.59	15.39	15.39	15.49	21.49	≤ 21.97	--	--	Pass
11n-HT40	MCS0	118	5590	15.63	15.37	15.62	15.44	21.54	≤ 21.97	--	--	Pass
11n-HT40	MCS0	134	5670	15.31	15.21	16.63	15.53	21.73	≤ 21.97	--	--	Pass
11n-HT40	MCS0	142	5710	15.10	15.47	15.57	15.54	21.44	≤ 21.97	--	--	Pass
11n-HT40	MCS0	151	5755	21.89	21.89	21.69	22.13	27.92	≤ 27.99	--	--	Pass
11n-HT40	MCS0	159	5795	21.63	21.94	21.45	21.84	27.74	≤ 27.99	--	--	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0	Ant 1	Ant 2	Ant 3	Total	Average	E.I.R.P.		Result
				Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Power Limit (dBm)	Above 30 Degree Angle (dBm)		
										Max E.I.R.P.	Limit	
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
11ac-VHT20	MCS0	36	5180	11.54	11.41	11.64	11.32	17.50	≤ 27.99	20.51	≤ 21.00	Pass
11ac-VHT20	MCS0	44	5220	11.56	11.26	11.66	11.28	17.46	≤ 27.99	20.47	≤ 21.00	Pass
11ac-VHT20	MCS0	48	5240	11.74	11.68	11.59	11.42	17.63	≤ 27.99	20.64	≤ 21.00	Pass
11ac-VHT20	MCS0	52	5260	14.01	14.17	14.29	14.19	20.19	≤ 21.97	--	--	Pass
11ac-VHT20	MCS0	60	5300	14.00	14.02	14.28	14.25	20.16	≤ 21.97	--	--	Pass
11ac-VHT20	MCS0	64	5320	13.98	13.92	14.47	14.35	20.21	≤ 21.97	--	--	Pass
11ac-VHT20	MCS0	100	5500	13.59	13.59	13.84	13.82	19.73	≤ 21.97	--	--	Pass
11ac-VHT20	MCS0	120	5600	13.62	13.42	13.75	13.73	19.65	≤ 21.97	--	--	Pass
11ac-VHT20	MCS0	140	5700	13.35	13.37	13.75	13.71	19.57	≤ 21.97	--	--	Pass
11ac-VHT20	MCS0	144	5720	13.31	13.55	13.75	13.73	19.61	≤ 21.97	--	--	Pass
11ac-VHT20	MCS0	149	5745	21.65	22.16	21.58	21.56	27.77	≤ 27.99	--	--	Pass
11ac-VHT20	MCS0	157	5785	21.61	21.67	21.81	21.96	27.79	≤ 27.99	--	--	Pass
11ac-VHT20	MCS0	165	5825	21.87	21.92	21.65	21.63	27.79	≤ 27.99	--	--	Pass
11ac-VHT40	MCS0	38	5190	11.67	11.55	11.67	11.44	17.60	≤ 27.99	20.61	≤ 21.00	Pass
11ac-VHT40	MCS0	46	5230	11.61	11.35	11.65	11.32	17.51	≤ 27.99	20.52	≤ 21.00	Pass
11ac-VHT40	MCS0	54	5270	15.68	15.52	15.49	15.49	21.57	≤ 21.97	--	--	Pass
11ac-VHT40	MCS0	62	5310	15.59	15.71	15.51	15.47	21.59	≤ 21.97	--	--	Pass
11ac-VHT40	MCS0	102	5510	15.66	15.66	16.11	15.90	21.86	≤ 21.97	--	--	Pass
11ac-VHT40	MCS0	110	5550	15.60	15.52	16.02	15.87	21.78	≤ 21.97	--	--	Pass
11ac-VHT40	MCS0	118	5590	15.56	15.63	16.03	15.87	21.80	≤ 21.97	--	--	Pass
11ac-VHT40	MCS0	134	5670	15.48	15.27	15.58	15.32	21.43	≤ 21.97	--	--	Pass
11ac-VHT40	MCS0	142	5710	15.52	15.89	15.96	15.89	21.84	≤ 21.97	--	--	Pass
11ac-VHT40	MCS0	151	5755	21.76	21.81	21.67	21.60	27.73	≤ 27.99	--	--	Pass
11ac-VHT40	MCS0	159	5795	21.45	21.51	21.31	21.33	27.42	≤ 27.99	--	--	Pass
11ac-VHT80	MCS0	42	5210	11.76	11.61	11.82	11.63	17.73	≤ 27.99	20.74	≤ 21.00	Pass
11ac-VHT80	MCS0	58	5290	15.79	15.77	15.73	15.78	21.79	≤ 21.97	--	--	Pass
11ac-VHT80	MCS0	106	5530	15.69	15.70	15.68	15.53	21.67	≤ 21.97	--	--	Pass
11ac-VHT80	MCS0	122	5610	15.56	15.44	15.75	15.63	21.62	≤ 21.97	--	--	Pass
11ac-VHT80	MCS0	138	5690	15.51	15.38	15.77	15.57	21.58	≤ 21.97	--	--	Pass
11ac-VHT80	MCS0	155	5775	20.52	20.35	20.60	20.44	26.50	≤ 27.99	--	--	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
				Ant 0	Ant 1	Ant 2	Ant 3	Total				
				Ant 0	Ant 1	Ant 2	Ant 3	Total				
Non-contiguous 80+80 MHz mode fall within different UNII band												
11ac-VHT80+80	MCS0	42	5210	17.52	17.90	--	--	20.72	≤ 30.00	20.73	≤ 21.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	17.62	17.90	20.77	≤ 30.00	20.78	≤ 21.00	Pass
11ac-VHT80+80	MCS0	58	5290	20.72	20.94	--	--	23.84	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	20.59	20.95	23.78	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	20.80	20.86	--	--	23.84	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	20.81	20.75	23.79	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	20.52	20.90	--	--	23.72	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	20.51	20.48	23.51	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	20.86	20.89	--	--	23.89	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	20.50	20.56	23.54	≤ 23.98	--	--	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band												
11ac-VHT80+80	MCS0	106	5530	17.86	17.75	--	--	23.79	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	17.76	17.70					
11ac-VHT80+80	MCS0	106	5530	--	--	17.78	17.58	23.63	≤ 23.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	17.39	17.68	--	--					

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

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

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

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

For 802.11ac-VHT80+80 mode fall within same UNII band:

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

Note 3: Max EIRP (dBm) = Total Average Power (dBm) + 30 Degree Antenna Gain (dBi) + Beam-Forming Gain (dBi), 30 Degree Antenna Gain = 0dBi, Beam-Forming Gain (dBi) = 3.0 dBi.

Note 4: Average Power Limit Calculation as below:

For 5150-5250MHz & 5725-5850MHz:

Limit (dBm) = 30dBm - (5dBi + 3.01dBi - 6dBi) = 27.99 dBm

For 802.11ac-VHT80+80: Limit (dBm) = 30 dBm.

For 5250-5350MHz & 5470-5725MHz:

802.11n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

Limit = 23.98dBm - (5 dBi + 3.01 dBi - 6 dBi) = 21.97 dBm.

802.11ac-VHT80+80: Limit = 23.98 dBm.

EIRP Limit Calculation as below:

For 5150-5250MHz: Limit = 21.00dBm.

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR2	Test Date	2017/08/15
Antenna Type	Directional Antenna (MT-484052/NVH)		

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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max E.I.R.P.	Limit	
										Ant 0 + 1 + 2 + 3 (CDD Mode)		
11a	6Mbps	36	5180	9.32	8.95	8.35	8.68	14.86	≤ 20.00	20.86	≤ 21.00	Pass
11a	6Mbps	44	5220	8.88	8.71	8.52	8.76	14.74	≤ 20.00	20.74	≤ 21.00	Pass
11a	6Mbps	48	5240	8.82	8.57	8.51	8.81	14.70	≤ 20.00	20.70	≤ 21.00	Pass
11a	6Mbps	52	5260	3.25	3.12	3.84	3.91	9.56	≤ 13.86	--	--	Pass
11a	6Mbps	60	5300	3.44	3.10	3.45	3.25	9.33	≤ 13.86	--	--	Pass
11a	6Mbps	64	5320	3.30	2.95	3.32	3.42	9.27	≤ 13.86	--	--	Pass
11a	6Mbps	100	5500	3.14	3.04	3.18	3.17	9.15	≤ 13.86	--	--	Pass
11a	6Mbps	120	5600	3.18	3.02	3.21	3.27	9.19	≤ 13.86	--	--	Pass
11a	6Mbps	140	5700	3.30	3.15	3.32	3.40	9.31	≤ 13.86	--	--	Pass
11a	6Mbps	144	5720	3.21	3.12	3.02	3.30	9.18	≤ 13.86	--	--	Pass
11a	6Mbps	149	5745	13.78	13.88	13.75	13.28	19.70	≤ 20.00	--	--	Pass
11a	6Mbps	157	5785	14.04	13.89	13.74	13.65	19.85	≤ 20.00	--	--	Pass
11a	6Mbps	165	5825	14.08	13.55	13.66	13.44	19.71	≤ 20.00	--	--	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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max	Limit	
										E.I.R.P.		
Ant 0 + 1 + 2 + 3 (CDD Mode)												
11n-HT20	MCS0	36	5180	8.97	8.67	8.45	9.01	14.80	≤ 20.00	20.80	≤ 21.00	Pass
11n-HT20	MCS0	44	5220	8.67	8.77	8.94	8.74	14.80	≤ 20.00	20.80	≤ 21.00	Pass
11n-HT20	MCS0	48	5240	8.61	8.54	8.84	8.67	14.69	≤ 20.00	20.69	≤ 21.00	Pass
11n-HT20	MCS0	52	5260	3.74	3.69	3.99	3.81	9.83	≤ 13.98	--	--	Pass
11n-HT20	MCS0	60	5300	3.78	3.45	3.93	3.37	9.66	≤ 13.98	--	--	Pass
11n-HT20	MCS0	64	5320	3.66	3.51	3.85	3.45	9.64	≤ 13.98	--	--	Pass
11n-HT20	MCS0	100	5500	3.56	3.21	3.39	3.17	9.36	≤ 13.98	--	--	Pass
11n-HT20	MCS0	120	5600	2.63	2.70	2.97	2.84	8.81	≤ 13.98	--	--	Pass
11n-HT20	MCS0	140	5700	3.30	3.22	3.68	3.38	9.42	≤ 13.98	--	--	Pass
11n-HT20	MCS0	144	5720	3.20	3.16	3.63	2.90	9.25	≤ 13.98	--	--	Pass
11n-HT20	MCS0	149	5745	13.86	13.77	13.82	13.56	19.77	≤ 20.00	--	--	Pass
11n-HT20	MCS0	157	5785	14.12	13.69	13.48	13.77	19.79	≤ 20.00	--	--	Pass
11n-HT20	MCS0	165	5825	13.79	13.29	13.55	13.37	19.52	≤ 20.00	--	--	Pass
11n-HT40	MCS0	38	5190	8.35	8.59	8.96	8.43	14.61	≤ 20.00	20.61	≤ 21.00	Pass
11n-HT40	MCS0	46	5230	8.46	8.52	8.78	8.45	14.58	≤ 20.00	20.58	≤ 21.00	Pass
11n-HT40	MCS0	54	5270	6.68	6.76	6.89	6.55	12.74	≤ 13.98	--	--	Pass
11n-HT40	MCS0	62	5310	6.65	6.40	6.52	5.91	12.40	≤ 13.98	--	--	Pass
11n-HT40	MCS0	102	5510	6.97	6.41	6.36	6.12	12.50	≤ 13.98	--	--	Pass
11n-HT40	MCS0	118	5590	6.83	6.63	7.15	6.19	12.73	≤ 13.98	--	--	Pass
11n-HT40	MCS0	134	5670	6.08	5.89	6.11	5.94	12.03	≤ 13.98	--	--	Pass
11n-HT40	MCS0	142	5710	5.86	6.07	6.05	5.97	12.01	≤ 13.98	--	--	Pass
11n-HT40	MCS0	151	5755	13.62	13.42	13.89	13.12	19.54	≤ 20.00	--	--	Pass
11n-HT40	MCS0	159	5795	14.05	13.45	13.66	13.54	19.70	≤ 20.00	--	--	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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max	Limit	
										E.I.R.P.		
Ant 0 + 1 + 2 + 3 (CDD Mode)												
11ac-VHT20	MCS0	36	5180	8.44	8.57	8.91	8.44	14.61	≤ 20.00	20.61	≤ 21.00	Pass
11ac-VHT20	MCS0	44	5220	8.51	8.61	8.96	8.51	14.67	≤ 20.00	20.67	≤ 21.00	Pass
11ac-VHT20	MCS0	48	5240	8.49	8.56	8.94	8.46	14.64	≤ 20.00	20.64	≤ 21.00	Pass
11ac-VHT20	MCS0	52	5260	3.58	3.76	3.65	3.67	9.69	≤ 13.98	--	--	Pass
11ac-VHT20	MCS0	60	5300	3.41	3.73	3.64	3.60	9.62	≤ 13.98	--	--	Pass
11ac-VHT20	MCS0	64	5320	3.35	3.55	3.62	3.48	9.52	≤ 13.98	--	--	Pass
11ac-VHT20	MCS0	100	5500	3.22	3.27	3.32	3.35	9.31	≤ 13.98	--	--	Pass
11ac-VHT20	MCS0	120	5600	3.12	3.24	3.33	3.50	9.32	≤ 13.98	--	--	Pass
11ac-VHT20	MCS0	140	5700	3.16	3.45	3.54	3.35	9.40	≤ 13.98	--	--	Pass
11ac-VHT20	MCS0	144	5720	3.03	3.26	3.40	3.46	9.31	≤ 13.98	--	--	Pass
11ac-VHT20	MCS0	149	5745	13.88	13.44	13.56	13.44	19.60	≤ 20.00	--	--	Pass
11ac-VHT20	MCS0	157	5785	14.16	13.39	13.62	13.35	19.66	≤ 20.00	--	--	Pass
11ac-VHT20	MCS0	165	5825	13.65	13.28	13.35	13.78	19.54	≤ 20.00	--	--	Pass
11ac-VHT40	MCS0	38	5190	8.57	8.61	8.91	8.71	14.72	≤ 20.00	20.72	≤ 21.00	Pass
11ac-VHT40	MCS0	46	5230	8.62	8.45	8.84	8.66	14.67	≤ 20.00	20.67	≤ 21.00	Pass
11ac-VHT40	MCS0	54	5270	6.59	6.78	6.66	6.69	12.70	≤ 13.98	--	--	Pass
11ac-VHT40	MCS0	62	5310	6.69	6.83	6.63	6.67	12.73	≤ 13.98	--	--	Pass
11ac-VHT40	MCS0	102	5510	6.14	5.95	5.86	5.83	11.97	≤ 13.98	--	--	Pass
11ac-VHT40	MCS0	118	5590	5.93	6.03	6.05	5.91	12.00	≤ 13.98	--	--	Pass
11ac-VHT40	MCS0	134	5670	5.90	5.92	6.07	5.78	11.94	≤ 13.98	--	--	Pass
11ac-VHT40	MCS0	142	5710	5.71	5.85	6.13	6.01	11.95	≤ 13.98	--	--	Pass
11ac-VHT40	MCS0	151	5755	13.81	13.74	13.88	13.42	19.74	≤ 20.00	--	--	Pass
11ac-VHT40	MCS0	159	5795	13.82	13.68	13.56	13.34	19.62	≤ 20.00	--	--	Pass
11ac-VHT80	MCS0	42	5210	8.56	8.64	8.81	8.71	14.70	≤ 20.00	20.70	≤ 21.00	Pass
11ac-VHT80	MCS0	58	5290	7.42	7.32	7.60	7.17	13.40	≤ 13.98	--	--	Pass
11ac-VHT80	MCS0	106	5530	7.65	7.79	7.78	7.51	13.70	≤ 13.98	--	--	Pass
11ac-VHT80	MCS0	122	5610	7.65	7.31	7.65	7.43	13.53	≤ 13.98	--	--	Pass
11ac-VHT80	MCS0	138	5690	7.41	7.19	7.60	7.01	13.33	≤ 13.98	--	--	Pass
11ac-VHT80	MCS0	155	5775	13.84	13.51	13.56	13.62	19.65	≤ 20.00	--	--	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0	Ant 1	Ant 2	Ant 3	Total	Average	E.I.R.P.		Result
				Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Power Limit (dBm)	Above 30 Degree Angle (dBm)		
										Max E.I.R.P.	Limit	
Non-contiguous 80+80 MHz mode fall within different UNII band												
11ac-VHT80+80	MCS0	42	5210	11.66	11.41	--	--	14.55	≤ 20.00	20.55	≤ 21.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	11.52	11.71	14.63	≤ 20.00	20.63	≤ 21.00	Pass
11ac-VHT80+80	MCS0	58	5290	10.61	10.54	--	--	13.59	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	10.50	10.92	13.73	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	10.92	10.73	--	--	13.84	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	10.89	10.83	13.87	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	10.72	10.77	--	--	13.76	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	10.69	10.76	13.74	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	10.98	10.70	--	--	13.85	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	10.67	10.87	13.78	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	155	5775	16.93	16.84	--	--	19.90	≤ 20.00	--	--	Pass
11ac-VHT80+80	MCS0	155	5775	--	--	16.40	16.90	19.67	≤ 20.00	--	--	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band												
11ac-VHT80+80	MCS0	106	5530	7.90	7.82	--	--	13.82	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	7.79	7.69					
11ac-VHT80+80	MCS0	106	5530	--	--	7.59	7.66	13.66	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	7.63	7.68	--	--					
11ac-VHT80+80 (Contiguous 80+80 MHz mode)												
11ac-VHT80+80	MCS0	42	5210	10.98	10.45	--	--	13.73	≤ 20.00	19.73	≤ 21.00	Pass
	MCS0	58	5290	--	--	11.21	10.56	13.91	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	7.76	7.81	--	--	13.68	≤ 13.98	--	--	Pass
	MCS0	122	5610	--	--	7.51	7.54					

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

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

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

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

For 802.11ac-VHT80+80 mode fall within same UNII band:

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

Note 3: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz fall within UNII-1: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$.

5290MHz fall within UNII-2A: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

5530MHz & 5610MHz Fall within UNII-2C: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$.

Note 4: Max EIRP (dBm) = Total Average Power (dBm) + 30 Degree Antenna Gain (dBi), 30 Degree Antenna Gain (dBi) = 6 dBi

Note 5: Average Power Limit Calculation as below:

For 5150-5250MHz & 5725-5850MHz: Limit = 30.00dBm - (16dBi - 6dBi) = 20.00 dBm.

For 5250-5350MHz & 5470-5725MHz:

802.11a: Limit = $[11 + 10 \cdot \log (19.33\text{MHz})] - (16\text{dBi} - 6\text{dBi}) = 13.86\text{dBm}$

802.11n/ac: Limit = 23.98dBm - (16dBi - 6dBi) = 13.98 dBm.

EIRP Limit Calculation as below:

For 5150-5250MHz: Limit = 21.00 dBm.

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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max	Limit	
										E.I.R.P.		
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
11n-HT20	MCS0	36	5180	5.57	5.48	5.34	5.36	11.46	≤ 16.99	20.47	≤ 21.00	Pass
11n-HT20	MCS0	44	5220	6.03	5.80	5.69	5.66	11.82	≤ 16.99	20.83	≤ 21.00	Pass
11n-HT20	MCS0	48	5240	5.82	5.55	5.45	5.39	11.58	≤ 16.99	20.59	≤ 21.00	Pass
11n-HT20	MCS0	52	5260	3.74	3.69	3.99	3.81	9.83	≤ 10.97	--	--	Pass
11n-HT20	MCS0	60	5300	3.78	3.45	3.93	3.37	9.66	≤ 10.97	--	--	Pass
11n-HT20	MCS0	64	5320	3.66	3.51	3.85	3.45	9.64	≤ 10.97	--	--	Pass
11n-HT20	MCS0	100	5500	3.56	3.21	3.39	3.17	9.36	≤ 10.97	--	--	Pass
11n-HT20	MCS0	120	5600	2.63	2.70	2.97	2.84	8.81	≤ 10.97	--	--	Pass
11n-HT20	MCS0	140	5700	3.30	3.22	3.68	3.38	9.42	≤ 10.97	--	--	Pass
11n-HT20	MCS0	144	5720	3.20	3.16	3.63	2.90	9.25	≤ 10.97	--	--	Pass
11n-HT20	MCS0	149	5745	10.62	10.45	10.10	10.37	16.41	≤ 16.99	--	--	Pass
11n-HT20	MCS0	157	5785	10.55	10.92	10.31	10.55	16.61	≤ 16.99	--	--	Pass
11n-HT20	MCS0	165	5825	10.63	10.41	10.44	10.66	16.56	≤ 16.99	--	--	Pass
11n-HT40	MCS0	38	5190	5.56	5.56	5.31	5.40	11.48	≤ 16.99	20.49	≤ 21.00	Pass
11n-HT40	MCS0	46	5230	6.02	5.75	5.68	5.65	11.80	≤ 16.99	20.81	≤ 21.00	Pass
11n-HT40	MCS0	54	5270	4.47	4.46	4.49	4.45	10.49	≤ 10.97	--	--	Pass
11n-HT40	MCS0	62	5310	4.84	4.47	4.37	4.40	10.54	≤ 10.97	--	--	Pass
11n-HT40	MCS0	102	5510	4.85	4.89	4.58	4.76	10.79	≤ 10.97	--	--	Pass
11n-HT40	MCS0	118	5590	4.61	4.59	4.79	4.69	10.69	≤ 10.97	--	--	Pass
11n-HT40	MCS0	134	5670	4.78	4.66	4.81	4.72	10.76	≤ 10.97	--	--	Pass
11n-HT40	MCS0	142	5710	4.54	4.72	4.74	4.79	10.72	≤ 10.97	--	--	Pass
11n-HT40	MCS0	151	5755	10.45	11.16	10.45	10.36	16.64	≤ 16.99	--	--	Pass
11n-HT40	MCS0	159	5795	10.59	10.72	10.40	10.46	16.56	≤ 16.99	--	--	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)	E.I.R.P. Above 30 Degree Angle (dBm)		Result
										Max	Limit	
										E.I.R.P.		
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
11ac-VHT20	MCS0	36	5180	5.92	5.86	5.71	5.77	11.84	≤ 16.99	20.85	≤ 21.00	Pass
11ac-VHT20	MCS0	44	5220	5.91	5.59	5.50	5.47	11.64	≤ 16.99	20.65	≤ 21.00	Pass
11ac-VHT20	MCS0	48	5240	5.72	5.45	5.38	5.25	11.47	≤ 16.99	20.48	≤ 21.00	Pass
11ac-VHT20	MCS0	52	5260	3.58	3.76	3.65	3.67	9.69	≤ 10.97	--	--	Pass
11ac-VHT20	MCS0	60	5300	3.41	3.73	3.64	3.60	9.62	≤ 10.97	--	--	Pass
11ac-VHT20	MCS0	64	5320	3.35	3.55	3.62	3.48	9.52	≤ 10.97	--	--	Pass
11ac-VHT20	MCS0	100	5500	3.22	3.27	3.32	3.35	9.31	≤ 10.97	--	--	Pass
11ac-VHT20	MCS0	120	5600	3.12	3.24	3.33	3.50	9.32	≤ 10.97	--	--	Pass
11ac-VHT20	MCS0	140	5700	3.16	3.45	3.54	3.35	9.40	≤ 10.97	--	--	Pass
11ac-VHT20	MCS0	144	5720	3.03	3.26	3.40	3.46	9.31	≤ 10.97	--	--	Pass
11ac-VHT20	MCS0	149	5745	10.95	11.03	10.73	10.78	16.89	≤ 16.99	--	--	Pass
11ac-VHT20	MCS0	157	5785	10.56	10.68	10.31	10.46	16.53	≤ 16.99	--	--	Pass
11ac-VHT20	MCS0	165	5825	10.58	10.49	10.58	10.43	16.54	≤ 16.99	--	--	Pass
11ac-VHT40	MCS0	38	5190	5.94	6.02	5.62	5.86	11.88	≤ 16.99	20.90	≤ 21.00	Pass
11ac-VHT40	MCS0	46	5230	5.96	5.80	5.67	5.78	11.82	≤ 16.99	20.84	≤ 21.00	Pass
11ac-VHT40	MCS0	54	5270	4.72	4.62	4.51	4.53	10.62	≤ 10.97	--	--	Pass
11ac-VHT40	MCS0	62	5310	4.64	4.58	4.32	4.53	10.54	≤ 10.97	--	--	Pass
11ac-VHT40	MCS0	102	5510	4.70	4.48	4.32	4.26	10.46	≤ 10.97	--	--	Pass
11ac-VHT40	MCS0	118	5590	4.58	4.43	4.57	4.66	10.58	≤ 10.97	--	--	Pass
11ac-VHT40	MCS0	134	5670	4.36	4.43	4.50	4.57	10.49	≤ 10.97	--	--	Pass
11ac-VHT40	MCS0	142	5710	4.52	4.57	4.59	4.62	10.60	≤ 10.97	--	--	Pass
11ac-VHT40	MCS0	151	5755	10.59	10.56	10.46	10.62	16.58	≤ 16.99	--	--	Pass
11ac-VHT40	MCS0	159	5795	10.84	10.86	10.65	10.73	16.79	≤ 16.99	--	--	Pass
11ac-VHT80	MCS0	42	5210	5.74	5.66	5.54	5.43	11.61	≤ 16.99	20.62	≤ 21.00	Pass
11ac-VHT80	MCS0	58	5290	4.45	4.61	4.35	4.41	10.48	≤ 10.97	--	--	Pass
11ac-VHT80	MCS0	106	5530	4.75	4.71	4.67	4.81	10.76	≤ 10.97	--	--	Pass
11ac-VHT80	MCS0	122	5610	4.66	4.69	4.56	4.77	10.69	≤ 10.97	--	--	Pass
11ac-VHT80	MCS0	138	5690	4.65	4.73	4.80	4.71	10.74	≤ 10.97	--	--	Pass
11ac-VHT80	MCS0	155	5775	10.33	10.56	10.45	10.48	16.48	≤ 16.99	--	--	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0	Ant 1	Ant 2	Ant 3	Total	Average	E.I.R.P.		Result
				Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Power Limit (dBm)	Above 30 Degree Angle (dBm)		
										Max E.I.R.P.	Limit	
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
Non-contiguous 80+80 MHz mode fall within different UNII band												
11ac-VHT80+80	MCS0	42	5210	11.66	11.41	--	--	14.55	≤ 20.00	20.55	≤ 21.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	11.52	11.71	14.63	≤ 20.00	20.63	≤ 21.00	Pass
11ac-VHT80+80	MCS0	58	5290	10.61	10.54	--	--	13.59	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	10.50	10.92	13.73	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	10.92	10.73	--	--	13.84	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	10.89	10.83	13.87	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	10.72	10.77	--	--	13.76	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	10.69	10.76	13.74	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	10.98	10.70	--	--	13.85	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	10.67	10.87	13.78	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	155	5775	16.93	16.84	--	--	19.90	≤ 20.00	--	--	Pass
11ac-VHT80+80	MCS0	155	5775	--	--	16.40	16.90	19.67	≤ 20.00	--	--	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band												
11ac-VHT80+80	MCS0	106	5530	7.90	7.82	--	--	13.82	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	7.79	7.69					
11ac-VHT80+80	MCS0	106	5530	--	--	7.59	7.66	13.66	≤ 13.98	--	--	Pass
11ac-VHT80+80	MCS0	138	5690	7.63	7.68	--	--					

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

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

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

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

For 802.11ac-VHT80+80 mode fall within same UNII band:

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

Note 3: Max EIRP (dBm) = Total Average Power (dBm) + 30 Degree Antenna Gain (dBi) + Beam-Forming Gain (dBi), 30 Degree Antenna Gain (dBi) = 6dBi

Note 4: Average Power Limit Calculation as below:

For 5150-5250MHz, 5725-5850MHz:

802.11n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

Limit (dBm) = 30dBm - (16dBi + 3.01dBi - 6dBi) = 16.99dBm.

For 802.11ac-VHT80+80: Limit (dBm) = 30dBm - (16dBi - 6dBi) = 20dBm.

For 5250-5350MHz, 5470-5725MHz:

802.11n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

Limit = 23.98dBm - (16dBi + 3.01dBi - 6dBi) = 10.97dBm.

802.11ac-VHT80+80: Limit = 23.98dBm - (16dBi - 6dBi) = 13.98dBm.

EIRP Limit Calculation as below:

For 5150-5250MHz: Limit = 21.00 dBm.

4. 26dB 佔用頻寬測試結果

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR2	Test Date	2017/08/29

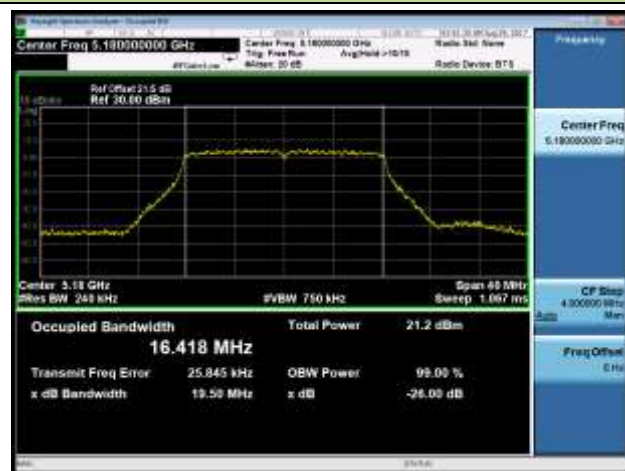
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1 + 2 + 3					
802.11a	6Mbps	36	5180	19.50	16.42
802.11a	6Mbps	44	5220	19.40	16.41
802.11a	6Mbps	48	5240	19.61	16.42
802.11a	6Mbps	52	5260	19.86	16.45
802.11a	6Mbps	60	5300	19.65	16.43
802.11a	6Mbps	64	5320	19.38	16.43
802.11a	6Mbps	100	5500	19.33	16.42
802.11a	6Mbps	120	5600	19.59	16.42
802.11a	6Mbps	140	5700	19.36	16.42
802.11a	6Mbps	144	5720	19.35	16.43
802.11a	6Mbps	149	5745	19.96	16.47
802.11a	6Mbps	157	5785	20.22	16.50
802.11a	6Mbps	165	5825	20.18	16.50
802.11n-HT20	MCS0	36	5180	20.55	17.62
802.11n-HT20	MCS0	44	5220	20.42	17.60
802.11n-HT20	MCS0	48	5240	20.28	17.61
802.11n-HT20	MCS0	52	5260	20.49	17.63
802.11n-HT20	MCS0	60	5300	20.51	17.62
802.11n-HT20	MCS0	64	5320	20.32	17.61
802.11n-HT20	MCS0	100	5500	20.65	17.59
802.11n-HT20	MCS0	120	5600	20.61	17.61
802.11n-HT20	MCS0	140	5700	20.36	17.61
802.11n-HT20	MCS0	144	5720	20.51	17.60
802.11n-HT20	MCS0	149	5745	20.58	17.64
802.11n-HT20	MCS0	157	5785	20.86	17.68
802.11n-HT20	MCS0	165	5825	21.06	17.70

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1 + 2 + 3					
802.11n-HT40	MCS0	38	5190	38.96	35.91
802.11n-HT40	MCS0	46	5230	39.40	35.91
802.11n-HT40	MCS0	54	5270	39.46	35.94
802.11n-HT40	MCS0	62	5310	39.16	35.95
802.11n-HT40	MCS0	102	5510	39.18	35.97
802.11n-HT40	MCS0	118	5590	39.74	35.96
802.11n-HT40	MCS0	134	5670	39.48	35.96
802.11n-HT40	MCS0	142	5710	39.41	35.93
802.11n-HT40	MCS0	151	5755	39.47	35.98
802.11n-HT40	MCS0	159	5795	39.59	35.90
802.11ac-VHT20	MCS0	36	5180	20.46	17.60
802.11ac-VHT20	MCS0	44	5220	20.46	17.61
802.11ac-VHT20	MCS0	48	5240	20.77	17.63
802.11ac-VHT20	MCS0	52	5260	20.43	17.62
802.11ac-VHT20	MCS0	60	5300	20.32	17.61
802.11ac-VHT20	MCS0	64	5320	20.71	17.64
802.11ac-VHT20	MCS0	100	5500	20.10	17.60
802.11ac-VHT20	MCS0	120	5600	20.44	17.64
802.11ac-VHT20	MCS0	140	5700	20.64	17.60
802.11ac-VHT20	MCS0	144	5720	20.36	17.62
802.11ac-VHT20	MCS0	149	5745	20.75	17.65
802.11ac-VHT20	MCS0	157	5785	20.62	17.66
802.11ac-VHT20	MCS0	165	5825	21.31	17.67
802.11ac-VHT40	MCS0	38	5190	39.31	35.93
802.11ac-VHT40	MCS0	46	5230	39.15	35.88
802.11ac-VHT40	MCS0	54	5270	39.24	35.88
802.11ac-VHT40	MCS0	62	5310	39.41	35.88
802.11ac-VHT40	MCS0	102	5510	39.94	35.96
802.11ac-VHT40	MCS0	118	5590	39.61	35.96
802.11ac-VHT40	MCS0	134	5670	39.22	35.97
802.11ac-VHT40	MCS0	142	5710	39.47	35.95
802.11ac-VHT40	MCS0	151	5755	40.03	35.98
802.11ac-VHT40	MCS0	159	5795	39.56	35.86

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1 + 2 + 3					
802.11ac-VHT80	MCS0	42	5210	82.60	75.78
802.11ac-VHT80	MCS0	58	5290	82.78	75.70
802.11ac-VHT80	MCS0	106	5530	83.24	75.84
802.11ac-VHT80	MCS0	122	5610	82.17	75.76
802.11ac-VHT80	MCS0	138	5690	82.17	75.73
802.11ac-VHT80	MCS0	155	5775	82.39	75.75
Ant 0 / Ant 0 + 1 (Ant 0 + 1 + 2 + 3)					
802.11ac-VHT80+80	MCS0	42	5210	83.98	75.90
802.11ac-VHT80+80	MCS0	58	5290	84.11	75.88
802.11ac-VHT80+80	MCS0	106	5530	84.25	76.00
802.11ac-VHT80+80	MCS0	122	5610	84.06	76.00
802.11ac-VHT80+80	MCS0	138	5690	84.48	75.88
802.11ac-VHT80+80	MCS0	155	5775	83.80	75.80
Ant 3 / Ant 2 + 3 (Ant 0 + 1 + 2 + 3)					
802.11ac-VHT80+80	MCS0	42	5210	83.35	75.91
802.11ac-VHT80+80	MCS0	58	5290	83.48	75.94
802.11ac-VHT80+80	MCS0	106	5530	81.96	75.55
802.11ac-VHT80+80	MCS0	122	5610	82.07	75.58
802.11ac-VHT80+80	MCS0	138	5690	82.92	75.65
802.11ac-VHT80+80	MCS0	155	5775	82.75	75.65
Ant 0 + 1 + 2 + 3					
802.11ac-VHT80+80 Contiguous	MCS0	42	5210	163.22	155.66
	MCS0	58	5290		
802.11ac-VHT80+80 Contiguous	MCS0	106	5530	163.47	155.81
	MCS0	122	5610		
Note: The detail calculation see page 43.					

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

Channel 36 (5180MHz)



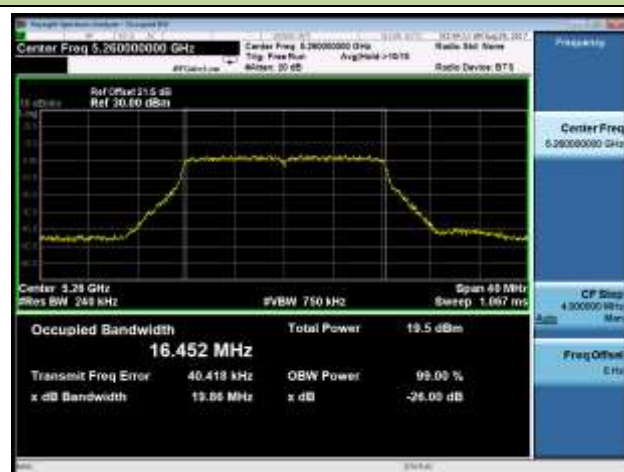
Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



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

Channel 100 (5500MHz)



Channel 100 (5600MHz)



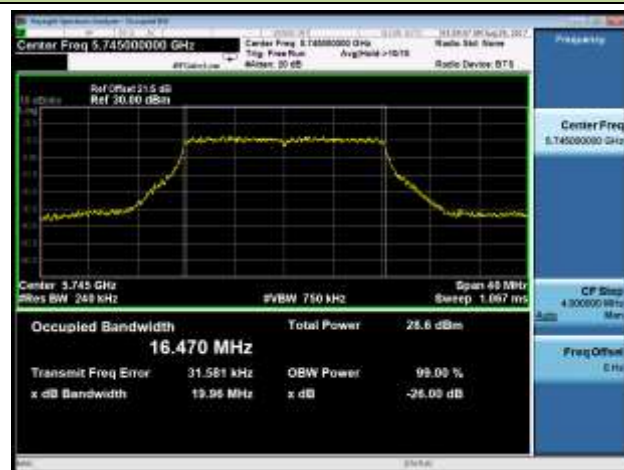
Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



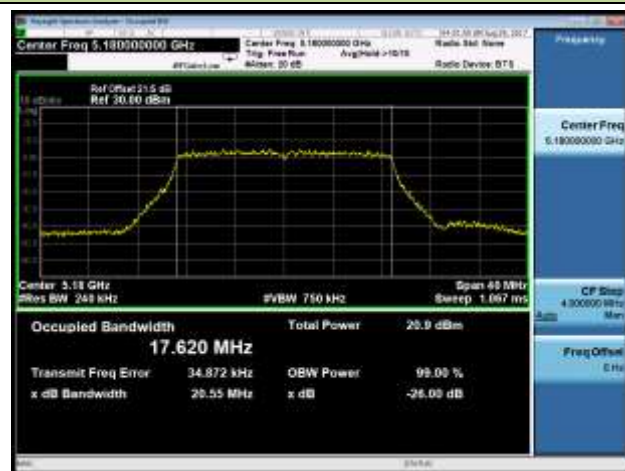
802.11a 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 165 (5825MHz)

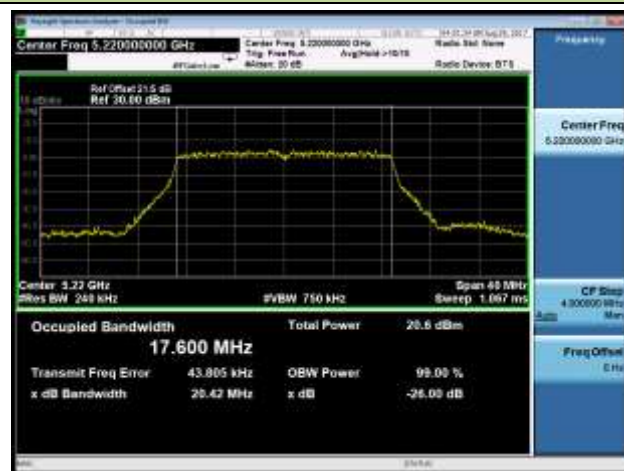


802.11n-HT20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

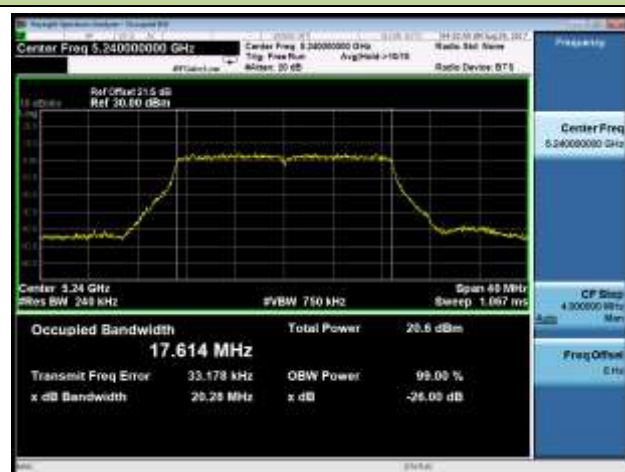
Channel 36 (5180MHz)



Channel 44 (5220MHz)



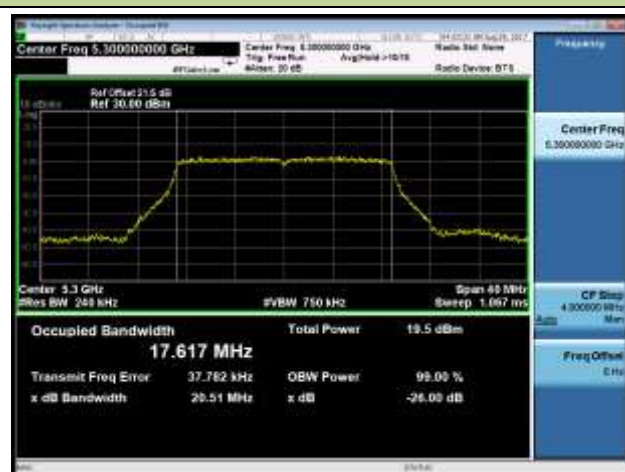
Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)

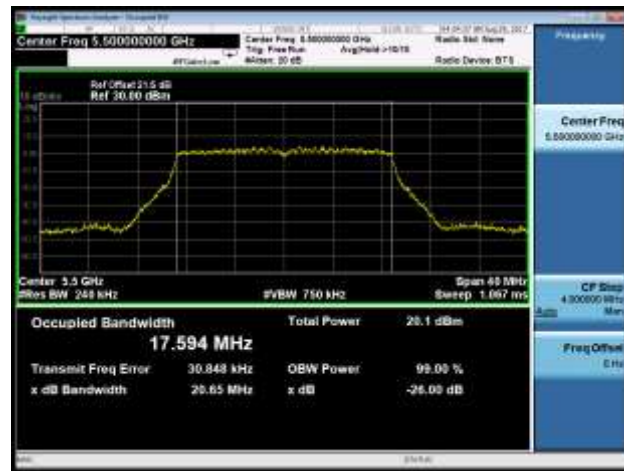


Channel 64 (5320MHz)

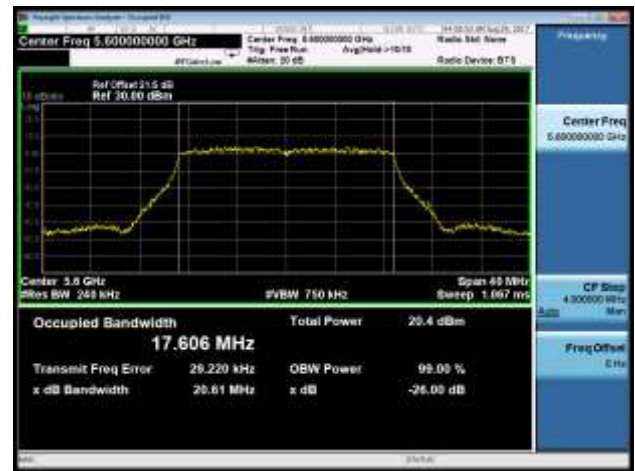


802.11n-HT20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 100 (5500MHz)



Channel 120 (5600MHz)



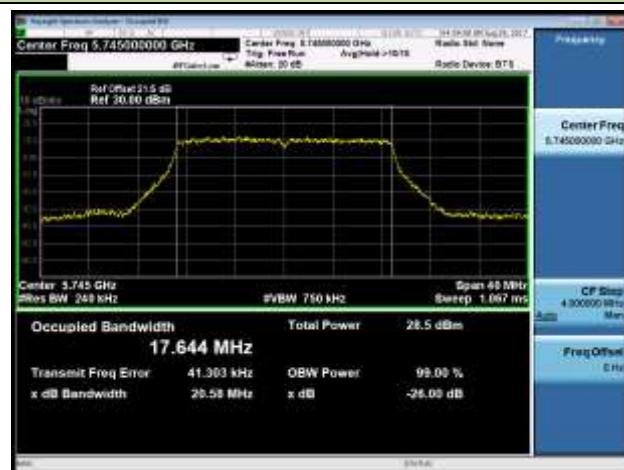
Channel 140 (5700MHz)



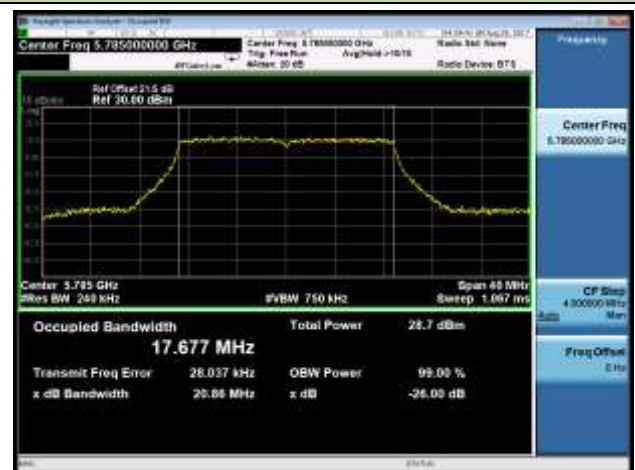
Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



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

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)



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

Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ac-VHT20 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)

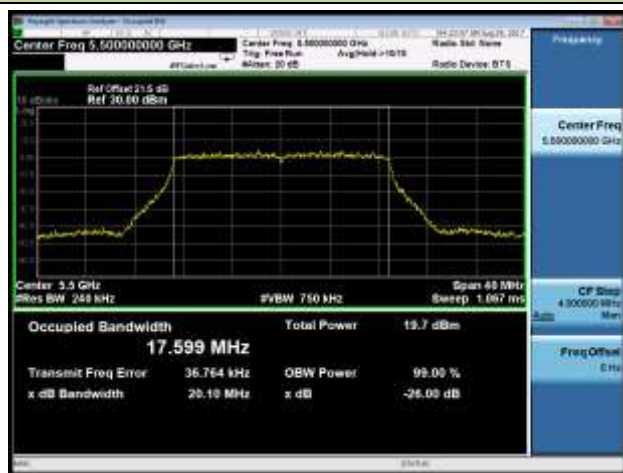


Channel 64 (5320MHz)



802.11ac-VHT20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

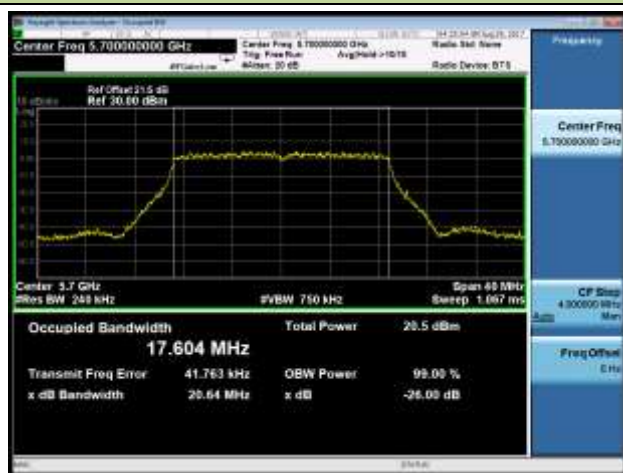
Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)

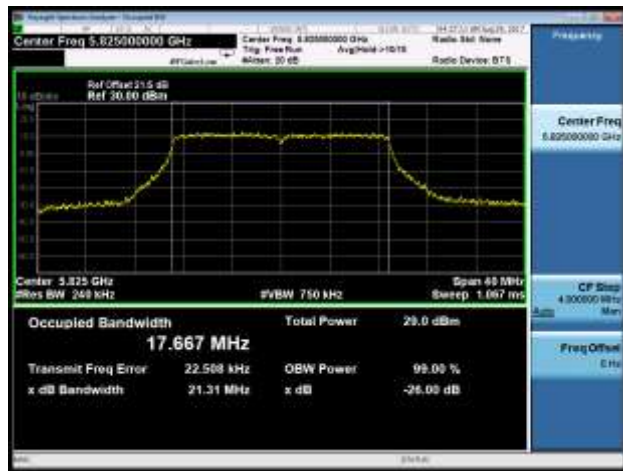


Channel 157 (5785MHz)



802.11ac-VHT20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 165 (5825MHz)



802.11ac-VHT40 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 38 (5190MHz)



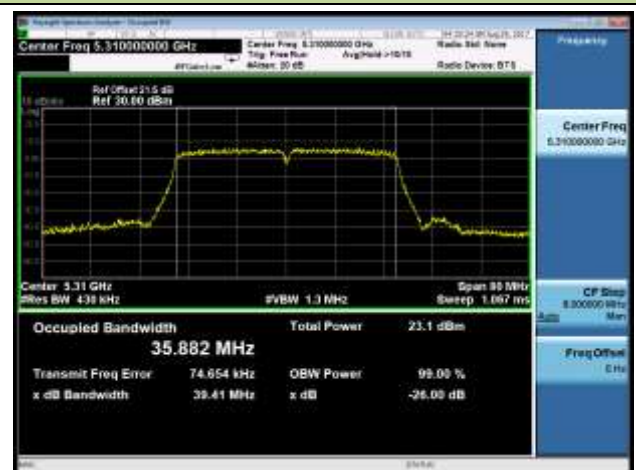
Channel 46 (5230MHz)



Channel 54 (5270MHz)



Channel 62 (5310MHz)



Channel 102 (5510MHz)



Channel 118 (5590MHz)



802.11ac-VHT40 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ac-VHT80 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 42 (5210MHz)



Channel 58 (5290MHz)



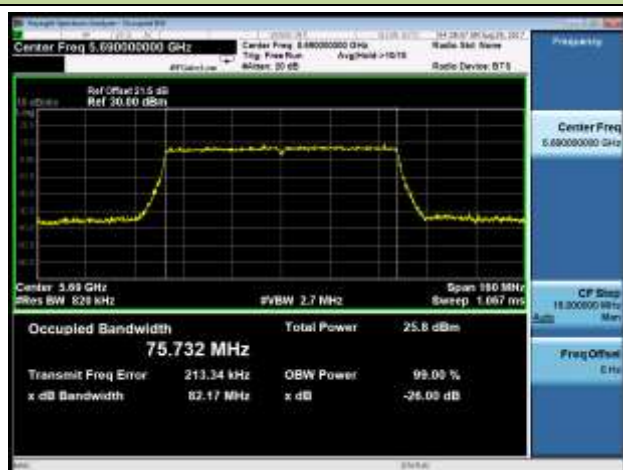
Channel 106 (5530MHz)



Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



802.11ac-VHT80+80 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 (Ant 0 + 1 + 2 + 3)

Channel 42 (5210MHz)



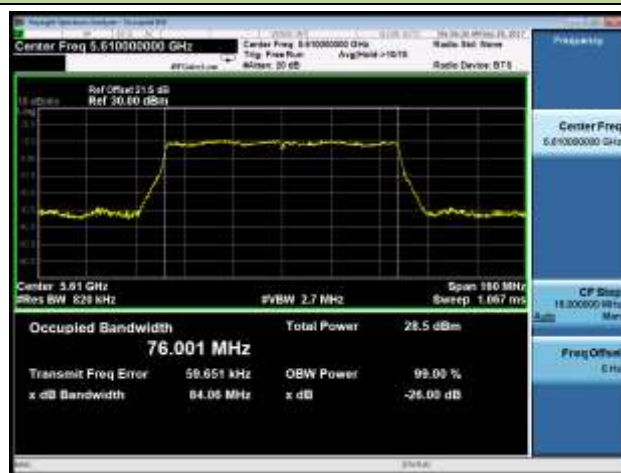
Channel 58 (5290MHz)



Channel 106 (5530MHz)



Channel 122 (5610MHz)



Channel 138 (5690MHz)

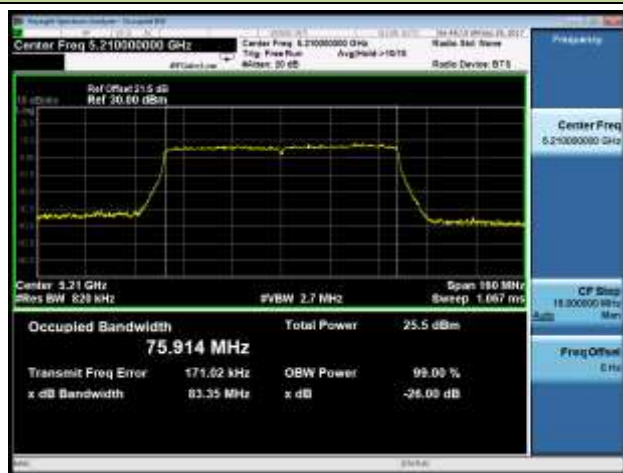


Channel 155 (5775MHz)



802.11ac-VHT80+80 26dB Bandwidth & 99% Bandwidth - Ant 3 / Ant 2 + 3 (Ant 0 + 1 + 2 + 3)

Channel 42 (5210MHz)



Channel 58 (5290MHz)



Channel 106 (5530MHz)



Channel 122 (5610MHz)



Channel 138 (5690MHz)

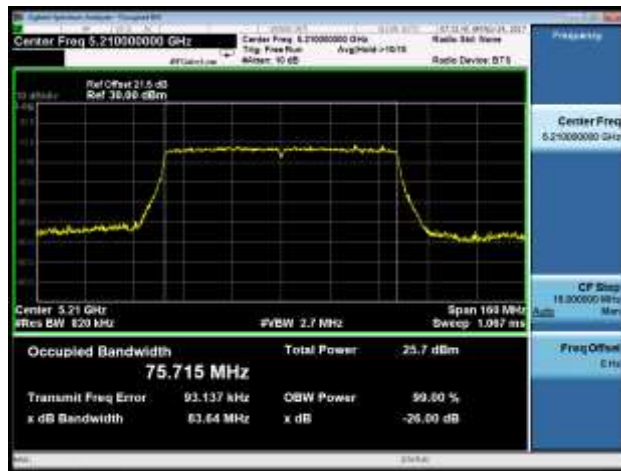


Channel 155 (5775MHz)

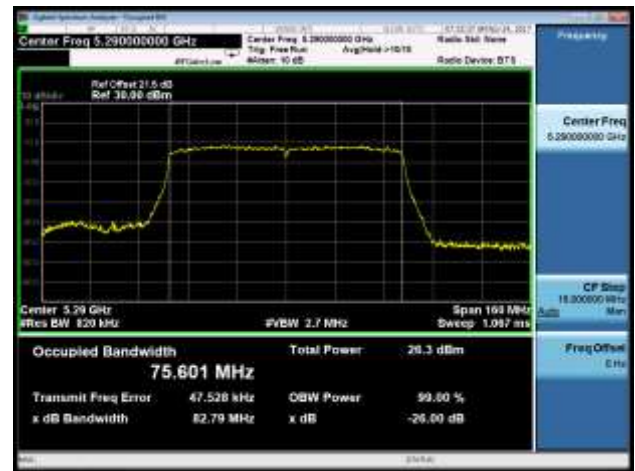


802.11ac-VHT80+80 Contiguous 26dB Bandwidth & 99% Bandwidth - Ant 0 + 1 + 2 + 3

Channel 42 (5210MHz)



Channel 58 (5290MHz)



Note: 26dB OCW = $[5290 + (82.79/2)] - [5210 - (83.64/2)] = 163.215$ MHz

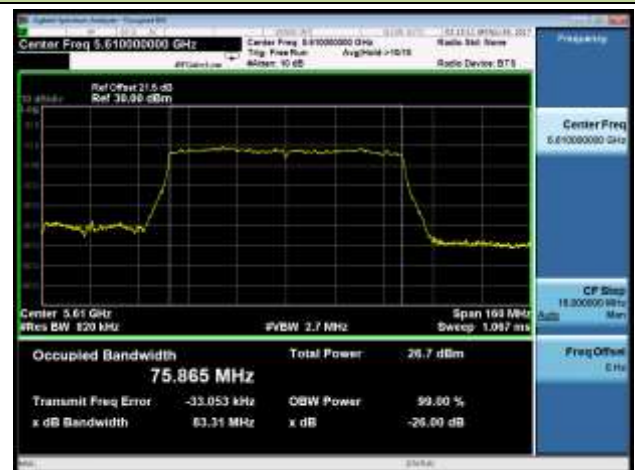
99% OCW = $[5290 + (75.715/2)] - [5210 - (75.601/2)] = 155.658$ MHz

802.11ac-VHT80+80 Contiguous 26dB Bandwidth & 99% Bandwidth - Ant 0 + 1 + 2 + 3

Channel 106 (5530MHz)



Channel 122 (5610MHz)



Note: 26dB OCW = $[5610 + (83.31/2)] - [5530 - (83.62/2)] = 163.465$ MHz

99% OCW = $[5610 + (75.865/2)] - [5530 - (75.753/2)] = 155.809$ MHz

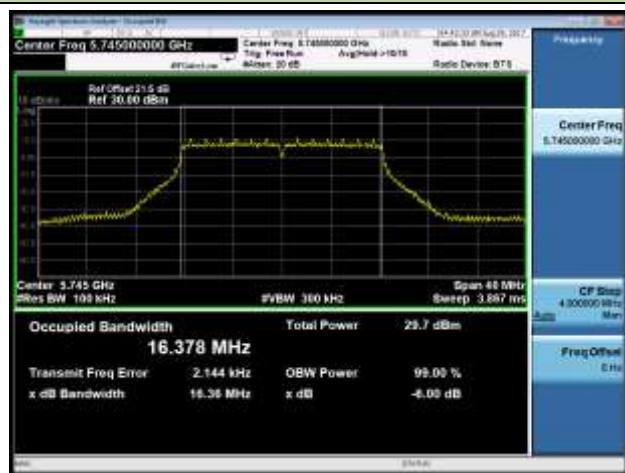
5. 6dB 佔用頻寬測試結果

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR2	Test Date	2017/08/29

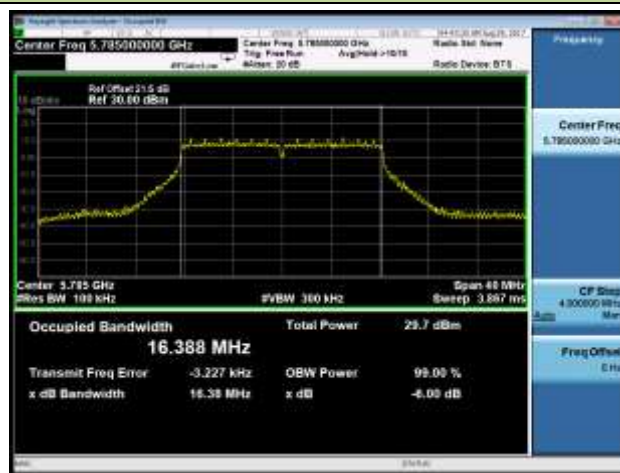
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 0 / Ant 0 + 1 + 2 + 3						
802.11a	6Mbps	149	5745	16.36	≥0.5	Pass
802.11a	6Mbps	157	5785	16.38	≥0.5	Pass
802.11a	6Mbps	165	5825	16.37	≥0.5	Pass
802.11n-HT20	MCS0	149	5745	17.60	≥0.5	Pass
802.11n-HT20	MCS0	157	5785	17.60	≥0.5	Pass
802.11n-HT20	MCS0	165	5825	17.60	≥0.5	Pass
802.11n-HT40	MCS0	151	5755	35.14	≥0.5	Pass
802.11n-HT40	MCS0	159	5795	35.12	≥0.5	Pass
802.11ac-VHT20	MCS0	149	5745	17.58	≥0.5	Pass
802.11ac-VHT20	MCS0	157	5785	17.60	≥0.5	Pass
802.11ac-VHT20	MCS0	165	5825	17.60	≥0.5	Pass
802.11ac-VHT40	MCS0	151	5755	35.07	≥0.5	Pass
802.11ac-VHT40	MCS0	159	5795	35.10	≥0.5	Pass
802.11ac-VHT80	MCS0	155	5775	76.34	≥0.5	Pass
Ant 0 / Ant 0 + 1 (Ant 0 + 1 + 2 + 3)						
802.11ac-VHT80+80	MCS0	155	5775	75.25	≥0.5	Pass
Ant 3 / Ant 2 + 3 (Ant 0 + 1 + 2 + 3)						
802.11ac-VHT80+80	MCS0	155	5775	75.18	≥0.5	Pass

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)

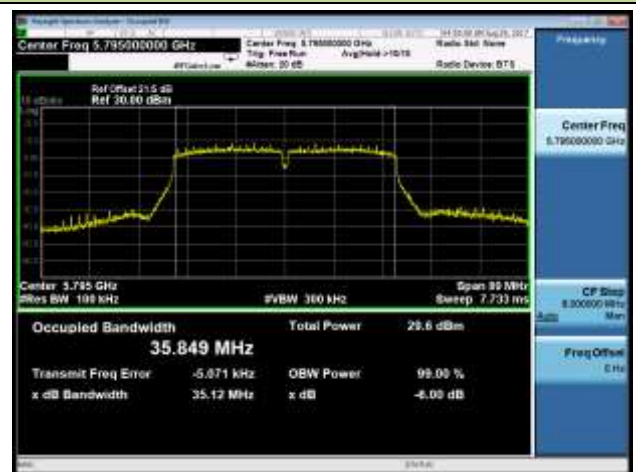


802.11n-HT40 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ac-VHT20 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



802.11ac-VHT40 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 151 (5755MHz)

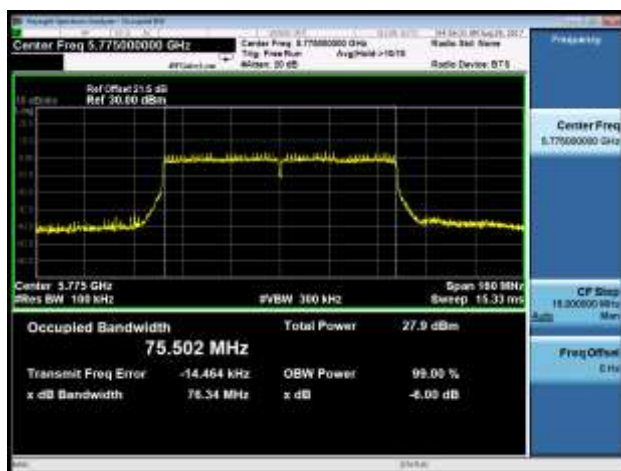


Channel 159 (5795MHz)



802.11ac-VHT80 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 155 (5775MHz)



802.11ac-VHT80+80 6dB Bandwidth - Ant 0 / Ant 0 + 1 (Ant 0 + 1 + 2 + 3)

Channel 155 (5775MHz)



802.11ac-VHT80+80 6dB Bandwidth - Ant 3 / Ant 2 + 3 (Ant 0 + 1 + 2 + 3)

Channel 155 (5775MHz)



6. 最大功率頻譜密度測試結果

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR2	Test Date	2017/08/27
Test Item	Power Spectral Density (UNII-Band 1 & UNII-Band 1 & UNII-2A & UNII-2C)		
Antenna Type	Omin Antenna (ANT-2x2-5005)		

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 (CDD Mode)											
11a	6Mbps	36	5180	3.58	2.76	3.71	2.54	97.08	9.33	≤ 14.99	Pass
11a	6Mbps	44	5220	3.20	3.53	3.10	3.19	97.08	9.41	≤ 14.99	Pass
11a	6Mbps	48	5240	3.04	3.07	3.23	2.89	97.08	9.21	≤ 14.99	Pass
11a	6Mbps	52	5260	2.67	2.90	2.63	2.52	97.08	8.83	≤ 8.99	Pass
11a	6Mbps	60	5300	2.64	2.49	2.62	2.09	97.08	8.61	≤ 8.99	Pass
11a	6Mbps	64	5320	2.32	2.34	2.19	1.95	97.08	8.35	≤ 8.99	Pass
11a	6Mbps	100	5500	1.97	2.40	2.42	2.26	97.08	8.42	≤ 8.99	Pass
11a	6Mbps	120	5600	1.70	2.98	2.23	2.04	97.08	8.41	≤ 8.99	Pass
11a	6Mbps	140	5700	2.34	3.10	2.50	2.64	97.08	8.80	≤ 8.99	Pass
11a	6Mbps	144	5720	2.24	3.11	2.43	2.92	97.08	8.84	≤ 8.99	Pass
11n-HT20	MCS0	36	5180	2.36	2.56	2.96	2.65	98.80	8.66	≤ 14.99	Pass
11n-HT20	MCS0	44	5220	2.28	3.02	3.16	2.92	98.80	8.88	≤ 14.99	Pass
11n-HT20	MCS0	48	5240	2.08	3.54	2.64	2.57	98.80	8.76	≤ 14.99	Pass
11n-HT20	MCS0	52	5260	2.05	2.39	2.64	2.20	98.80	8.35	≤ 8.99	Pass
11n-HT20	MCS0	60	5300	2.25	2.40	2.63	2.64	98.80	8.50	≤ 8.99	Pass
11n-HT20	MCS0	64	5320	2.27	2.91	2.80	2.54	98.80	8.66	≤ 8.99	Pass
11n-HT20	MCS0	100	5500	2.06	3.15	3.02	2.71	98.80	8.78	≤ 8.99	Pass
11n-HT20	MCS0	120	5600	2.02	2.58	3.30	2.92	98.80	8.75	≤ 8.99	Pass
11n-HT20	MCS0	140	5700	2.29	2.02	2.76	2.71	98.80	8.48	≤ 8.99	Pass
11n-HT20	MCS0	144	5720	1.92	2.50	2.33	2.32	98.80	8.29	≤ 8.99	Pass

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 (CDD Mode)											
11n-HT40	MCS0	38	5190	-0.31	-0.17	0.39	-0.31	96.95	6.06	≤ 14.99	Pass
11n-HT40	MCS0	46	5230	-0.04	0.13	0.31	0.13	96.95	6.29	≤ 14.99	Pass
11n-HT40	MCS0	54	5270	2.29	3.44	2.65	2.34	96.95	8.86	≤ 8.99	Pass
11n-HT40	MCS0	62	5310	2.24	2.62	2.62	2.36	96.95	8.62	≤ 8.99	Pass
11n-HT40	MCS0	102	5510	2.64	2.41	2.48	2.17	96.95	8.58	≤ 8.99	Pass
11n-HT40	MCS0	118	5590	2.05	2.98	2.29	2.29	96.95	8.57	≤ 8.99	Pass
11n-HT40	MCS0	134	5670	2.18	2.40	2.24	2.14	96.95	8.40	≤ 8.99	Pass
11n-HT40	MCS0	142	5710	2.11	2.21	2.18	2.88	96.95	8.51	≤ 8.99	Pass
11ac-VHT20	MCS0	36	5180	2.13	2.60	3.61	2.62	98.80	8.79	≤ 14.99	Pass
11ac-VHT20	MCS0	44	5220	2.74	2.87	2.60	2.82	98.80	8.78	≤ 14.99	Pass
11ac-VHT20	MCS0	48	5240	2.39	3.07	2.87	3.47	98.80	8.99	≤ 14.99	Pass
11ac-VHT20	MCS0	52	5260	2.20	2.54	3.20	2.80	98.80	8.72	≤ 8.99	Pass
11ac-VHT20	MCS0	60	5300	2.42	2.60	3.01	2.87	98.80	8.75	≤ 8.99	Pass
11ac-VHT20	MCS0	64	5320	2.11	2.49	2.64	2.74	98.80	8.52	≤ 8.99	Pass
11ac-VHT20	MCS0	100	5500	2.36	2.46	3.27	2.78	98.80	8.75	≤ 8.99	Pass
11ac-VHT20	MCS0	120	5600	2.32	2.58	2.77	2.72	98.80	8.62	≤ 8.99	Pass
11ac-VHT20	MCS0	140	5700	2.03	3.27	2.39	2.68	98.80	8.64	≤ 8.99	Pass
11ac-VHT20	MCS0	144	5720	2.01	2.59	2.77	2.34	98.80	8.46	≤ 8.99	Pass
11ac-VHT40	MCS0	38	5190	-0.31	-0.16	-0.05	-0.43	96.98	5.92	≤ 14.99	Pass
11ac-VHT40	MCS0	46	5230	-0.17	-0.06	0.11	-0.12	96.98	6.10	≤ 14.99	Pass
11ac-VHT40	MCS0	54	5270	2.02	3.01	3.32	2.50	96.98	8.89	≤ 8.99	Pass
11ac-VHT40	MCS0	62	5310	2.16	2.62	2.70	2.20	96.98	8.58	≤ 8.99	Pass
11ac-VHT40	MCS0	102	5510	2.13	2.32	2.60	2.17	96.98	8.46	≤ 8.99	Pass
11ac-VHT40	MCS0	118	5590	2.07	3.19	2.53	2.47	96.98	8.74	≤ 8.99	Pass
11ac-VHT40	MCS0	134	5670	1.98	2.68	2.51	2.49	96.98	8.58	≤ 8.99	Pass
11ac-VHT40	MCS0	142	5710	1.76	2.32	2.22	2.45	96.98	8.35	≤ 8.99	Pass
11ac-VHT80	MCS0	42	5210	-3.44	-3.18	-3.30	-3.36	94.67	2.94	≤ 14.99	Pass
11ac-VHT80	MCS0	58	5290	-0.11	-0.28	-0.45	-0.57	94.67	5.91	≤ 8.99	Pass
11ac-VHT80	MCS0	106	5530	0.52	0.94	0.45	0.48	94.67	6.86	≤ 8.99	Pass
11ac-VHT80	MCS0	122	5610	0.08	0.28	0.23	0.07	94.67	6.42	≤ 8.99	Pass
11ac-VHT80	MCS0	138	5690	-0.24	-0.02	0.29	0.23	94.67	6.33	≤ 8.99	Pass

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 (CDD Mode)											
Non-contiguous 80+80 MHz mode fall within different UNII band											
11ac-VHT80+80	MCS0	42	5210	-0.41	-0.88	--	--	94.67	2.61	≤ 17.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	-0.39	-0.70	94.67	2.71	≤ 17.00	Pass
11ac-VHT80+80	MCS0	58	5290	3.06	3.25	--	--	94.67	6.40	≤ 11.00	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	2.35	2.81	94.67	5.83	≤ 11.00	Pass
11ac-VHT80+80	MCS0	106	5530	3.67	3.46	--	--	94.67	6.81	≤ 11.00	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	3.15	3.45	94.67	6.55	≤ 11.00	Pass
11ac-VHT80+80	MCS0	122	5610	2.43	3.20	--	--	94.67	6.08	≤ 11.00	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	2.13	2.53	94.67	5.58	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	2.61	2.66	--	--	94.67	5.88	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	2.20	2.42	94.67	5.56	≤ 11.00	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band											
11ac-VHT80+80	MCS0	106	5530	1.06	1.51	--	--	94.67	7.18	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	0.23	0.79				
11ac-VHT80+80	MCS0	106	5530	--	--	0.90	1.55	94.67	7.01	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	0.08	0.32	--	--				
11ac-VHT80+80 (Contiguous 80+80 MHz mode)											
11ac-VHT80+80	MCS0	42	5210	0.43	1.64	--	--	97.17	4.21	≤ 17.00	Pass
	MCS0	58	5290	--	--	1.01	1.29	97.17	4.29	≤ 11.00	Pass
11ac-VHT80+80	MCS0	106	5530	0.03	0.50	--	--	97.17	6.47	≤ 11.00	Pass
	MCS0	122	5610	--	--	0.06	0.68				

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz).

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 4: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz Fall within UNII-1: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$.

5290MHz Fall within UNII-2A: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$.

5530MHz & 5610MHz Fall within UNII-2C: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} +$

$$10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}.$$

Note 5: PSD Limit Calculation as below:

For 5150-5250MHz & 5725-5850MHz:

802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

$$\text{Limit} = 17\text{dBm/MHz} - (8.01\text{dBi} - 6\text{dBi}) = 14.99 \text{ dBm/MHz}.$$

$$\text{For 802.11ac-VHT80+80: Limit (dBm/MHz)} = 17\text{dBm/MHz}.$$

For 5250-5350MHz & 5470-5725MHz:

802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

$$\text{Limit} = 11\text{dBm/MHz} - (8.01\text{dBi} - 6\text{dBi}) = 8.99 \text{ dBm/MHz}.$$

$$802.11ac-VHT80+80: \text{Limit} = 11.00 \text{ dBm/MHz}.$$

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 (Beam-Forming Mode)											
11n-HT20	MCS0	36	5180	-0.16	-0.24	-0.02	-0.16	98.80	5.88	≤ 14.99	Pass
11n-HT20	MCS0	44	5220	-0.48	-0.53	-0.33	-0.41	98.80	5.58	≤ 14.99	Pass
11n-HT20	MCS0	48	5240	-0.31	-0.46	-0.33	-0.40	98.80	5.65	≤ 14.99	Pass
11n-HT20	MCS0	52	5260	2.05	2.39	2.64	2.20	98.80	8.35	≤ 8.99	Pass
11n-HT20	MCS0	60	5300	2.25	2.40	2.63	2.64	98.80	8.50	≤ 8.99	Pass
11n-HT20	MCS0	64	5320	2.27	2.91	2.80	2.54	98.80	8.66	≤ 8.99	Pass
11n-HT20	MCS0	100	5500	2.06	3.15	3.02	2.71	98.80	8.78	≤ 8.99	Pass
11n-HT20	MCS0	120	5600	2.02	2.58	3.30	2.92	98.80	8.75	≤ 8.99	Pass
11n-HT20	MCS0	140	5700	2.29	2.02	2.76	2.71	98.80	8.48	≤ 8.99	Pass
11n-HT20	MCS0	144	5720	1.92	2.50	2.33	2.32	98.80	8.29	≤ 8.99	Pass
11n-HT40	MCS0	38	5190	-3.03	-2.97	-2.99	-2.86	96.95	3.19	≤ 14.99	Pass
11n-HT40	MCS0	46	5230	-3.17	-2.77	-2.91	-3.33	96.95	3.12	≤ 14.99	Pass
11n-HT40	MCS0	54	5270	1.11	1.68	1.39	1.49	96.95	7.58	≤ 8.99	Pass
11n-HT40	MCS0	62	5310	0.97	1.50	1.47	1.24	96.95	7.46	≤ 8.99	Pass
11n-HT40	MCS0	102	5510	1.72	1.80	1.37	1.92	96.95	7.86	≤ 8.99	Pass
11n-HT40	MCS0	118	5590	1.62	2.15	1.76	2.14	96.95	8.08	≤ 8.99	Pass
11n-HT40	MCS0	134	5670	1.17	2.02	1.66	1.90	96.95	7.85	≤ 8.99	Pass
11n-HT40	MCS0	142	5710	1.27	1.75	1.63	1.91	96.95	7.80	≤ 8.99	Pass
11ac-VHT20	MCS0	36	5180	-0.31	-0.27	-0.12	-0.13	98.80	5.81	≤ 14.99	Pass
11ac-VHT20	MCS0	44	5220	-0.61	-0.44	-0.37	-0.76	98.80	5.48	≤ 14.99	Pass
11ac-VHT20	MCS0	48	5240	-0.18	-0.34	-0.40	-0.22	98.80	5.74	≤ 14.99	Pass
11ac-VHT20	MCS0	52	5260	2.20	2.54	3.20	2.80	98.80	8.72	≤ 8.99	Pass
11ac-VHT20	MCS0	60	5300	2.42	2.60	3.01	2.87	98.80	8.75	≤ 8.99	Pass
11ac-VHT20	MCS0	64	5320	2.11	2.49	2.64	2.74	98.80	8.52	≤ 8.99	Pass
11ac-VHT20	MCS0	100	5500	2.36	2.46	3.27	2.78	98.80	8.75	≤ 8.99	Pass
11ac-VHT20	MCS0	120	5600	2.32	2.58	2.77	2.72	98.80	8.62	≤ 8.99	Pass
11ac-VHT20	MCS0	140	5700	2.03	3.27	2.39	2.69	98.80	8.64	≤ 8.99	Pass
11ac-VHT20	MCS0	144	5720	2.01	2.59	2.77	2.34	98.80	8.46	≤ 8.99	Pass

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 (Beam-Forming Mode)											
11ac-VHT40	MCS0	38	5190	-2.98	-2.59	-2.72	-3.34	96.98	3.26	≤ 14.99	Pass
11ac-VHT40	MCS0	46	5230	-3.15	-3.56	-3.33	-3.57	96.98	2.75	≤ 14.99	Pass
11ac-VHT40	MCS0	54	5270	1.11	0.95	1.15	1.43	96.98	7.32	≤ 8.99	Pass
11ac-VHT40	MCS0	62	5310	0.94	1.15	1.13	0.91	96.98	7.19	≤ 8.99	Pass
11ac-VHT40	MCS0	102	5510	2.13	2.32	2.60	2.17	96.98	8.46	≤ 8.99	Pass
11ac-VHT40	MCS0	118	5590	2.07	3.19	2.53	2.47	96.98	8.74	≤ 8.99	Pass
11ac-VHT40	MCS0	134	5670	1.13	1.57	1.74	2.49	96.98	7.91	≤ 8.99	Pass
11ac-VHT40	MCS0	142	5710	1.85	2.19	2.21	2.22	96.98	8.27	≤ 8.99	Pass
11ac-VHT80	MCS0	42	5210	-6.38	-6.78	-6.61	-6.68	94.67	-0.35	≤ 14.99	Pass
11ac-VHT80	MCS0	58	5290	-2.10	-2.23	-2.28	-2.06	94.67	4.09	≤ 8.99	Pass
11ac-VHT80	MCS0	106	5530	-2.15	-1.40	-1.70	-1.34	94.67	4.62	≤ 8.99	Pass
11ac-VHT80	MCS0	122	5610	-1.86	-1.59	-1.52	-1.17	94.67	4.73	≤ 8.99	Pass
11ac-VHT80	MCS0	138	5690	-2.35	-1.90	-1.55	-1.41	94.67	4.47	≤ 8.99	Pass
Non-contiguous 80+80 MHz mode fall within different UNII band											
11ac-VHT80+80	MCS0	42	5210	-0.41	-0.88	--	--	94.67	2.61	≤ 17.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	-0.39	-0.70	94.67	2.71	≤ 17.00	Pass
11ac-VHT80+80	MCS0	58	5290	3.06	3.25	--	--	94.67	6.40	≤ 11.00	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	2.35	2.81	94.67	5.83	≤ 11.00	Pass
11ac-VHT80+80	MCS0	106	5530	3.67	3.46	--	--	94.67	6.81	≤ 11.00	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	3.15	3.45	94.67	6.55	≤ 11.00	Pass
11ac-VHT80+80	MCS0	122	5610	2.43	3.20	--	--	94.67	6.08	≤ 11.00	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	2.13	2.53	94.67	5.58	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	2.61	2.66	--	--	94.67	5.88	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	2.20	2.42	94.67	5.56	≤ 11.00	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band											
11ac-VHT80+80	MCS0	106	5530	1.06	1.51	--	--	94.67	7.18	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	0.23	0.79				
11ac-VHT80+80	MCS0	106	5530	--	--	0.90	1.55	94.67	7.01	≤ 11.00	Pass
11ac-VHT80+80	MCS0	138	5690	0.08	0.32	--	--				

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz).

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

+ $10^{(\text{Ant } 3 \text{ PSD}/10)}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant } 0 \text{ PSD}/10)} + 10^{(\text{Ant } 1 \text{ PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant } 2 \text{ PSD}/10)} + 10^{(\text{Ant } 3 \text{ PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 4: PSD Limit Calculation as below:

For 5150-5250MHz

Limit (dBm/MHz) = 17dBm/MHz - (5dBi + 3.01dBi - 6dBi) = 14.99dBm/MHz.

802.11ac-VHT80+80: PSD Limit (dBm/MHz) = 17dBm/MHz.

For 5250-5350MHz, 5470-5725MHz

802.11n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

Limit = 11dBm/MHz - (5dBi + 3.01dBi - 6dBi) = 8.99 dBm/MHz.

802.11ac-VHT80+80: Limit = 11.00 dBm/MHz.

Product	ACCESS POINT	Temperature	22°C
Test Engineer	Kevin Ker	Relative Humidity	54%
Test Site	SR2	Test Date	2017/08/27
Test Item	Power Spectral Density (UNII-Band 3)		
Antenna Type	Omin Antenna (ANT-2x2-5005)		

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Ant 2 PSD (dBm/100kHz)	Ant 3 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 + 2 + 3 (CDD Mode)												
11a	6Mbps	149	5745	2.75	2.83	2.29	2.59	97.08	6.99	15.76	≤ 27.99	Pass
11a	6Mbps	157	5785	2.60	3.05	2.66	2.73	97.08	6.99	15.90	≤ 27.99	Pass
11a	6Mbps	165	5825	2.03	2.87	2.79	2.38	97.08	6.99	15.67	≤ 27.99	Pass
11n-HT20	MCS0	149	5745	1.78	2.39	1.87	1.71	98.80	6.99	14.96	≤ 27.99	Pass
11n-HT20	MCS0	157	5785	2.10	2.26	2.12	1.93	98.80	6.99	15.11	≤ 27.99	Pass
11n-HT20	MCS0	165	5825	2.48	2.58	2.02	1.98	98.80	6.99	15.28	≤ 27.99	Pass
11n-HT40	MCS0	151	5755	-0.43	0.14	-0.14	-0.03	96.95	6.99	13.04	≤ 27.99	Pass
11n-HT40	MCS0	159	5795	-0.31	-0.61	-0.93	-0.42	96.95	6.99	12.58	≤ 27.99	Pass
11ac-VHT20	MCS0	149	5745	2.05	2.42	2.65	2.35	98.80	6.99	15.38	≤ 27.99	Pass
11ac-VHT20	MCS0	157	5785	1.98	2.86	1.95	1.82	98.80	6.99	15.18	≤ 27.99	Pass
11ac-VHT20	MCS0	165	5825	2.29	2.51	2.13	2.17	98.80	6.99	15.29	≤ 27.99	Pass
11ac-VHT40	MCS0	151	5755	-0.29	-0.58	-0.76	-0.45	96.98	6.99	12.63	≤ 27.99	Pass
11ac-VHT40	MCS0	159	5795	-0.81	-0.65	-0.70	-0.88	96.98	6.99	12.38	≤ 27.99	Pass
11ac-VHT80	MCS0	155	5775	-7.03	-6.07	-6.45	-5.78	94.67	6.99	6.94	≤ 27.99	Pass
11ac-VHT80+80	MCS0	155	5775	-4.85	-4.77	--	--	94.67	6.99	5.43	≤ 30.00	Pass
11ac-VHT80+80	MCS0	155	5775	--	--	-4.61	-4.93	94.67	6.99	5.47	≤ 30.00	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 4: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (8.01dBi - 6dBi) = 27.99dBm/500kHz.

For 802.11ac-VHT80+80: PSD Limit (dBm/500kHz) = 30dBm/500kHz.

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Ant 2 PSD (dBm/100kHz)	Ant 3 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
11n-HT20	MCS0	149	5745	1.53	1.17	0.77	1.20	98.80	6.99	14.19	≤ 27.99	Pass
11n-HT20	MCS0	157	5785	1.25	1.80	1.31	1.31	98.80	6.99	14.43	≤ 27.99	Pass
11n-HT20	MCS0	165	5825	1.90	1.71	1.42	1.24	98.80	6.99	14.59	≤ 27.99	Pass
11n-HT40	MCS0	151	5755	-1.09	-0.91	-1.23	-0.95	96.95	6.99	12.10	≤ 27.99	Pass
11n-HT40	MCS0	159	5795	-1.53	-1.15	-1.21	-1.46	96.95	6.99	11.81	≤ 27.99	Pass
11ac-VHT20	MCS0	149	5745	1.36	1.61	1.40	1.54	98.80	6.99	14.49	≤ 27.99	Pass
11ac-VHT20	MCS0	157	5785	1.65	1.56	0.92	1.38	98.80	6.99	14.40	≤ 27.99	Pass
11ac-VHT20	MCS0	165	5825	0.90	1.34	1.24	0.81	98.80	6.99	14.09	≤ 27.99	Pass
11ac-VHT40	MCS0	151	5755	-1.92	-1.62	-1.71	-1.55	96.98	6.99	11.45	≤ 27.99	Pass
11ac-VHT40	MCS0	159	5795	-1.84	-1.82	-2.31	-1.98	96.98	6.99	11.16	≤ 27.99	Pass
11ac-VHT80	MCS0	155	5775	-7.03	-6.07	-6.45	-5.78	94.67	6.99	6.94	≤ 27.99	Pass
11ac-VHT80+80	MCS0	155	5775	-4.85	-4.77	--	--	94.67	6.99	5.43	≤ 30.00	Pass
11ac-VHT80+80	MCS0	155	5775	--	--	-4.61	-4.93	94.67	6.99	5.47	≤ 30.00	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 4: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (5dBi + 3.01dBi - 6dBi) = 27.99dBm/500kHz.

For 802.11ac-VHT80+80: PSD Limit (dBm/500kHz) = 30dBm/500kHz.

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR2	Test Date	2017/08/27
Test Item	Power Spectral Density (UNII-Band 1 & UNII-2A & UNII-2C)		
Antenna Type	Directional Antenna (MT-484052/NVH)		

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 (CDD Mode)											
11a	6Mbps	36	5180	-2.67	-2.58	-1.99	-2.08	97.08	3.83	≤ 3.99	Pass
11a	6Mbps	44	5220	-2.16	-2.33	-2.43	-2.22	97.08	3.87	≤ 3.99	Pass
11a	6Mbps	48	5240	-2.63	-2.76	-2.48	-2.61	97.08	3.53	≤ 3.99	Pass
11a	6Mbps	52	5260	-7.98	-8.38	-8.37	-8.00	97.08	-2.03	≤ -2.01	Pass
11a	6Mbps	60	5300	-8.26	-8.31	-8.26	-8.36	97.08	-2.15	≤ -2.01	Pass
11a	6Mbps	64	5320	-8.31	-8.52	-8.25	-8.36	97.08	-2.21	≤ -2.01	Pass
11a	6Mbps	100	5500	-8.55	-8.68	-8.58	-8.37	97.08	-2.39	≤ -2.01	Pass
11a	6Mbps	120	5600	-8.83	-8.06	-8.22	-7.94	97.08	-2.10	≤ -2.01	Pass
11a	6Mbps	140	5700	-8.33	-8.56	-8.77	-8.50	97.08	-2.39	≤ -2.01	Pass
11a	6Mbps	144	5720	-8.73	-8.45	-8.49	-8.12	97.08	-2.29	≤ -2.01	Pass
11n-HT20	MCS0	36	5180	-2.47	-2.31	-2.13	-2.43	98.80	3.69	≤ 3.99	Pass
11n-HT20	MCS0	44	5220	-2.64	-2.68	-2.31	-2.53	98.80	3.48	≤ 3.99	Pass
11n-HT20	MCS0	48	5240	-2.73	-2.46	-2.37	-2.59	98.80	3.49	≤ 3.99	Pass
11n-HT20	MCS0	52	5260	-8.36	-8.53	-8.78	-8.57	98.80	-2.54	≤ -2.01	Pass
11n-HT20	MCS0	60	5300	-8.87	-8.99	-8.17	-8.52	98.80	-2.60	≤ -2.01	Pass
11n-HT20	MCS0	64	5320	-8.69	-8.94	-8.90	-8.89	98.80	-2.83	≤ -2.01	Pass
11n-HT20	MCS0	100	5500	-8.74	-8.69	-8.41	-8.02	98.80	-2.43	≤ -2.01	Pass
11n-HT20	MCS0	120	5600	-8.86	-8.47	-8.88	-8.25	98.80	-2.59	≤ -2.01	Pass
11n-HT20	MCS0	140	5700	-8.95	-8.41	-8.49	-8.41	98.80	-2.54	≤ -2.01	Pass
11n-HT20	MCS0	144	5720	-8.73	-8.29	-8.44	-8.50	98.80	-2.47	≤ -2.01	Pass

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 (CDD Mode)											
11n-HT40	MCS0	38	5190	-6.20	-6.58	-5.69	-6.46	96.95	-0.06	≤ 3.99	Pass
11n-HT40	MCS0	46	5230	-5.85	-5.87	-5.98	-5.95	96.95	0.24	≤ 3.99	Pass
11n-HT40	MCS0	54	5270	-8.56	-8.42	-8.38	-8.60	96.95	-2.33	≤ -2.01	Pass
11n-HT40	MCS0	62	5310	-8.54	-8.33	-8.21	-8.33	96.95	-2.20	≤ -2.01	Pass
11n-HT40	MCS0	102	5510	-8.90	-8.53	-8.70	-8.39	96.95	-2.47	≤ -2.01	Pass
11n-HT40	MCS0	118	5590	-8.71	-8.15	-8.20	-8.25	96.95	-2.17	≤ -2.01	Pass
11n-HT40	MCS0	134	5670	-8.64	-8.46	-8.53	-8.83	96.95	-2.46	≤ -2.01	Pass
11n-HT40	MCS0	142	5710	-8.72	-8.08	-8.40	-8.54	96.95	-2.27	≤ -2.01	Pass
11ac-VHT20	MCS0	36	5180	-2.19	-2.46	-2.09	-2.22	98.80	3.78	≤ 3.99	Pass
11ac-VHT20	MCS0	44	5220	-2.54	-2.66	-2.61	-2.59	98.80	3.42	≤ 3.99	Pass
11ac-VHT20	MCS0	48	5240	-2.69	-2.80	-2.67	-2.28	98.80	3.42	≤ 3.99	Pass
11ac-VHT20	MCS0	52	5260	-8.94	-8.73	-8.73	-8.25	98.80	-2.63	≤ -2.01	Pass
11ac-VHT20	MCS0	60	5300	-8.86	-8.64	-8.42	-8.29	98.80	-2.53	≤ -2.01	Pass
11ac-VHT20	MCS0	64	5320	-8.76	-8.96	-8.14	-8.70	98.80	-2.61	≤ -2.01	Pass
11ac-VHT20	MCS0	100	5500	-8.78	-8.39	-8.43	-8.14	98.80	-2.41	≤ -2.01	Pass
11ac-VHT20	MCS0	120	5600	-8.81	-8.07	-8.25	-7.77	98.80	-2.19	≤ -2.01	Pass
11ac-VHT20	MCS0	140	5700	-8.67	-8.28	-8.35	-8.52	98.80	-2.43	≤ -2.01	Pass
11ac-VHT20	MCS0	144	5720	-8.20	-8.56	-8.46	-8.37	98.80	-2.37	≤ -2.01	Pass
11ac-VHT40	MCS0	38	5190	-6.45	-6.05	-5.96	-6.26	96.98	-0.02	≤ 3.99	Pass
11ac-VHT40	MCS0	46	5230	-6.01	-6.05	-6.00	-6.16	96.98	0.10	≤ 3.99	Pass
11ac-VHT40	MCS0	54	5270	-8.77	-8.56	-8.33	-8.46	96.98	-2.37	≤ -2.01	Pass
11ac-VHT40	MCS0	62	5310	-8.68	-8.57	-8.12	-8.58	96.98	-2.33	≤ -2.01	Pass
11ac-VHT40	MCS0	102	5510	-8.63	-8.26	-8.45	-8.57	96.98	-2.32	≤ -2.01	Pass
11ac-VHT40	MCS0	118	5590	-8.09	-8.22	-8.52	-8.25	96.98	-2.11	≤ -2.01	Pass
11ac-VHT40	MCS0	134	5670	-8.84	-8.13	-8.57	-8.45	96.98	-2.34	≤ -2.01	Pass
11ac-VHT40	MCS0	142	5710	-8.89	-8.48	-8.48	-8.54	96.98	-2.44	≤ -2.01	Pass
11ac-VHT80	MCS0	42	5210	-9.32	-9.15	-9.10	-9.58	94.67	-3.03	≤ 3.99	Pass
11ac-VHT80	MCS0	58	5290	-8.50	-8.46	-8.43	-8.85	94.67	-2.30	≤ -2.01	Pass
11ac-VHT80	MCS0	106	5530	-8.86	-8.23	-8.63	-8.62	94.67	-2.32	≤ -2.01	Pass
11ac-VHT80	MCS0	122	5610	-8.43	-8.30	-8.26	-8.57	94.67	-2.13	≤ -2.01	Pass
11ac-VHT80	MCS0	138	5690	-8.85	-8.69	-8.15	-8.23	94.67	-2.21	≤ -2.01	Pass

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 (CDD Mode)											
Non-contiguous 80+80 MHz mode fall within different UNII band											
11ac-VHT80+80	MCS0	42	5210	-6.52	-7.26	--	--	94.67	-3.63	≤ 7.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	-6.26	-7.18	94.67	-3.45	≤ 7.00	Pass
11ac-VHT80+80	MCS0	58	5290	-7.88	-7.44	--	--	94.67	-4.41	≤ 1.00	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	-7.90	-7.60	94.67	-4.50	≤ 1.00	Pass
11ac-VHT80+80	MCS0	106	5530	-6.98	-6.32	--	--	94.67	-3.39	≤ 1.00	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	-7.11	-7.07	94.67	-3.84	≤ 1.00	Pass
11ac-VHT80+80	MCS0	122	5610	-7.36	-7.03	--	--	94.67	-3.94	≤ 1.00	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	-7.73	-7.21	94.67	-4.21	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	-7.67	-7.92	--	--	94.67	-4.55	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	-7.55	-8.18	94.67	-4.61	≤ 1.00	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band											
11ac-VHT80+80	MCS0	106	5530	-8.87	-8.49	--	--	94.67	-2.90	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	-9.67	-9.73				
11ac-VHT80+80	MCS0	106	5530	--	--	-9.39	-8.77	94.67	-3.14	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	-10.11	-9.41	--	--				
11ac-VHT80+80 (Contiguous 80+80 MHz mode)											
11ac-VHT80+80	MCS0	42	5210	-5.84	-5.20	--	--	97.17	-2.37	≤ 7.00	Pass
	MCS0	58	5290	--	--	-5.83	-5.37	97.17	-2.46	≤ 1.00	Pass
11ac-VHT80+80	MCS0	106	5530	-9.46	-9.32	--	--	97.17	-3.45	≤ 1.00	Pass
	MCS0	122	5610	--	--	-10.08	-9.55				

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz).

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 4: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz Fall within UNII-1: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$.

5290MHz Fall within UNII-2A: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$.

5530MHz & 5610MHz Fall within UNII-2C: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} +$

$$10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}.$$

Note 5: PSD Limit Calculation as below:

For 5150-5250MHz:

802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

$$17\text{dBm/MHz} - (19.01\text{dBi} - 6\text{dBi}) = 3.99\text{ dBm/MHz}.$$

$$802.11ac-VHT80+80: 17\text{dBm/MHz} - (16\text{dBi} - 6\text{dBi}) = 7.00\text{dBm/MHz}.$$

For 5250-5350MHz, 5470-5725MHz:

802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

$$11\text{dBm/MHz} - (19.01\text{dBi} - 6\text{dBi}) = -2.01\text{dBm/MHz}.$$

$$802.11ac-VHT80+80: 11\text{dBm/MHz} - (16\text{dBi} - 6\text{dBi}) = 1.00\text{ dBm/MHz}.$$

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 (Beam-Forming Mode)											
11n-HT20	MCS0	36	5180	-6.56	-6.12	-6.53	-6.02	98.80	-0.28	≤ 3.99	Pass
11n-HT20	MCS0	44	5220	-6.70	-6.37	-6.62	-6.35	98.80	-0.49	≤ 3.99	Pass
11n-HT20	MCS0	48	5240	-6.55	-6.71	-6.83	-6.56	98.80	-0.64	≤ 3.99	Pass
11n-HT20	MCS0	52	5260	-8.36	-8.53	-8.78	-8.57	98.80	-2.54	≤ -2.01	Pass
11n-HT20	MCS0	60	5300	-8.87	-8.99	-8.17	-8.52	98.80	-2.60	≤ -2.01	Pass
11n-HT20	MCS0	64	5320	-8.69	-8.94	-8.90	-8.89	98.80	-2.83	≤ -2.01	Pass
11n-HT20	MCS0	100	5500	-8.74	-8.69	-8.41	-8.02	98.80	-2.43	≤ -2.01	Pass
11n-HT20	MCS0	120	5600	-8.86	-8.47	-8.88	-8.25	98.80	-2.59	≤ -2.01	Pass
11n-HT20	MCS0	140	5700	-8.95	-8.41	-8.49	-8.41	98.80	-2.54	≤ -2.01	Pass
11n-HT20	MCS0	144	5720	-8.73	-8.29	-8.44	-8.50	98.80	-2.47	≤ -2.01	Pass
11n-HT40	MCS0	38	5190	-9.19	-8.80	-9.76	-9.39	96.95	-3.12	≤ 3.99	Pass
11n-HT40	MCS0	46	5230	-9.08	-9.04	-9.11	-9.24	96.95	-2.96	≤ 3.99	Pass
11n-HT40	MCS0	54	5270	-9.50	-9.15	-9.19	-9.41	96.95	-3.15	≤ -2.01	Pass
11n-HT40	MCS0	62	5310	-9.50	-9.20	-9.43	-9.57	96.95	-3.27	≤ -2.01	Pass
11n-HT40	MCS0	102	5510	-8.53	-7.89	-8.93	-8.60	96.95	-2.32	≤ -2.01	Pass
11n-HT40	MCS0	118	5590	-8.49	-7.99	-8.63	-8.14	96.95	-2.15	≤ -2.01	Pass
11n-HT40	MCS0	134	5670	-8.62	-8.40	-8.69	-8.55	96.95	-2.41	≤ -2.01	Pass
11n-HT40	MCS0	142	5710	-8.93	-8.69	-8.76	-8.68	96.95	-2.61	≤ -2.01	Pass
11ac-VHT20	MCS0	36	5180	-5.86	-5.60	-6.58	-6.23	98.80	-0.03	≤ 3.99	Pass
11ac-VHT20	MCS0	44	5220	-6.50	-6.51	-6.90	-6.70	98.80	-0.63	≤ 3.99	Pass
11ac-VHT20	MCS0	48	5240	-6.72	-6.89	-7.08	-6.96	98.80	-0.89	≤ 3.99	Pass
11ac-VHT20	MCS0	52	5260	-8.94	-8.73	-8.73	-8.25	98.80	-2.63	≤ -2.01	Pass
11ac-VHT20	MCS0	60	5300	-8.86	-8.64	-8.42	-8.29	98.80	-2.53	≤ -2.01	Pass
11ac-VHT20	MCS0	64	5320	-8.76	-8.96	-8.14	-8.70	98.80	-2.61	≤ -2.01	Pass
11ac-VHT20	MCS0	100	5500	-8.78	-8.39	-8.43	-8.14	98.80	-2.41	≤ -2.01	Pass
11ac-VHT20	MCS0	120	5600	-8.81	-8.07	-8.25	-7.77	98.80	-2.19	≤ -2.01	Pass
11ac-VHT20	MCS0	140	5700	-8.67	-8.28	-8.35	-8.52	98.80	-2.43	≤ -2.01	Pass
11ac-VHT20	MCS0	144	5720	-8.20	-8.56	-8.46	-8.37	98.80	-2.37	≤ -2.01	Pass

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 (Beam-Forming Mode)											
11ac-VHT40	MCS0	38	5190	-9.29	-8.70	-9.46	-8.83	96.98	-2.90	≤ 3.99	Pass
11ac-VHT40	MCS0	46	5230	-9.18	-9.16	-9.51	-9.20	96.98	-3.11	≤ 3.99	Pass
11ac-VHT40	MCS0	54	5270	-10.05	-10.07	-9.59	-9.71	96.98	-3.70	≤ -2.01	Pass
11ac-VHT40	MCS0	62	5310	-9.95	-9.97	-9.94	-10.17	96.98	-3.85	≤ -2.01	Pass
11ac-VHT40	MCS0	102	5510	-9.51	-9.21	-9.84	-9.38	96.98	-3.33	≤ -2.01	Pass
11ac-VHT40	MCS0	118	5590	-9.54	-8.80	-9.41	-9.22	96.98	-3.08	≤ -2.01	Pass
11ac-VHT40	MCS0	134	5670	-9.92	-9.25	-9.92	-9.82	96.98	-3.56	≤ -2.01	Pass
11ac-VHT40	MCS0	142	5710	-9.72	-9.42	-9.71	-9.68	96.98	-3.48	≤ -2.01	Pass
11ac-VHT80	MCS0	42	5210	-12.59	-12.68	-13.15	-12.96	94.67	-6.58	≤ 3.99	Pass
11ac-VHT80	MCS0	58	5290	-13.73	-13.31	-13.51	-13.60	94.67	-7.28	≤ -2.01	Pass
11ac-VHT80	MCS0	106	5530	-13.04	-12.44	-13.22	-12.89	94.67	-6.63	≤ -2.01	Pass
11ac-VHT80	MCS0	122	5610	-12.86	-12.51	-12.67	-12.67	94.67	-6.42	≤ -2.01	Pass
11ac-VHT80	MCS0	138	5690	-13.26	-12.73	-12.57	-13.15	94.67	-6.66	≤ -2.01	Pass
Non-contiguous 80+80 MHz mode fall within different UNII band											
11ac-VHT80+80	MCS0	42	5210	-6.52	-7.26	--	--	94.67	-3.63	≤ 7.00	Pass
11ac-VHT80+80	MCS0	42	5210	--	--	-6.26	-7.18	94.67	-3.45	≤ 7.00	Pass
11ac-VHT80+80	MCS0	58	5290	--	--	-7.90	-7.60	94.67	-4.50	≤ 1.00	Pass
11ac-VHT80+80	MCS0	106	5530	-6.98	-6.32	--	--	94.67	-3.39	≤ 1.00	Pass
11ac-VHT80+80	MCS0	106	5530	--	--	-7.11	-7.07	94.67	-3.84	≤ 1.00	Pass
11ac-VHT80+80	MCS0	122	5610	-7.36	-7.03	--	--	94.67	-3.94	≤ 1.00	Pass
11ac-VHT80+80	MCS0	122	5610	--	--	-7.73	-7.21	94.67	-4.21	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	-7.67	-7.92	--	--	94.67	-4.55	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	-7.55	-8.18	94.67	-4.61	≤ 1.00	Pass
Non-contiguous 80+80 MHz mode fall within same UNII band											
11ac-VHT80+80	MCS0	106	5530	-8.87	-8.49	--	--	94.67	-2.90	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	--	--	-9.67	-9.73				
11ac-VHT80+80	MCS0	106	5530	--	--	-9.39	-8.77	94.67	-3.14	≤ 1.00	Pass
11ac-VHT80+80	MCS0	138	5690	-10.11	-9.41	--	--				

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz).

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 4: PSD Limit Calculation as below:

For 5150-5250MHz:

802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

17dBm/MHz - (16dBi +3.01dBi - 6dBi) = 3.99dBm/MHz.

802.11ac-VHT80+80: 17dBm/MHz - (16dBi - 6dBi) = 7.00dBm/MHz.

For 5250-5350MHz, 5470-5725MHz:

802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80:

11dBm/MHz - (16dBi +3.01dBi - 6dBi) = -2.01 dBm/MHz.

802.11ac-VHT80+80: 11dBm/MHz - (16dBi - 6dBi) = 1.00 dBm/MHz.

Product	ACCESS POINT	Temperature	22°C
Test Engineer	Kevin Ker	Relative Humidity	54%
Test Site	SR2	Test Date	2017/08/27
Test Item	Power Spectral Density (UNII-Band 3)		
Antenna Type	Directional Antenna (MT-484052/NVH)		

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Ant 2 PSD (dBm/100kHz)	Ant 3 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 + 2 + 3 (CDD Mode)												
11a	6Mbps	149	5745	-5.90	-6.65	-6.68	-6.87	97.08	6.99	6.63	≤ 16.99	Pass
11a	6Mbps	157	5785	-6.23	-6.57	-6.46	-6.72	97.08	6.99	6.65	≤ 16.99	Pass
11a	6Mbps	165	5825	-5.36	-5.30	-5.69	-5.21	97.08	6.99	7.75	≤ 16.99	Pass
11n-HT20	MCS0	149	5745	-7.36	-7.56	-7.38	-7.61	98.80	6.99	5.53	≤ 16.99	Pass
11n-HT20	MCS0	157	5785	-7.04	-6.82	-7.29	-6.90	98.80	6.99	6.00	≤ 16.99	Pass
11n-HT20	MCS0	165	5825	-7.37	-7.36	-7.18	-7.08	98.80	6.99	5.76	≤ 16.99	Pass
11n-HT40	MCS0	151	5755	-10.26	-9.69	-9.95	-9.85	96.95	6.99	3.21	≤ 16.99	Pass
11n-HT40	MCS0	159	5795	-9.98	-9.59	-9.86	-9.67	96.95	6.99	3.37	≤ 16.99	Pass
11ac-VHT20	MCS0	149	5745	-7.65	-7.48	-7.61	-7.17	98.80	6.99	5.54	≤ 16.99	Pass
11ac-VHT20	MCS0	157	5785	-6.98	-7.39	-6.98	-6.64	98.80	6.99	6.02	≤ 16.99	Pass
11ac-VHT20	MCS0	165	5825	-7.31	-7.10	-7.58	-7.27	98.80	6.99	5.70	≤ 16.99	Pass
11ac-VHT40	MCS0	151	5755	-10.33	-9.95	-10.10	-10.01	96.98	6.99	3.05	≤ 16.99	Pass
11ac-VHT40	MCS0	159	5795	-10.07	-9.56	-9.86	-9.56	96.98	6.99	3.39	≤ 16.99	Pass
11ac-VHT80	MCS0	155	5775	-13.22	-13.29	-13.26	-12.85	94.67	6.99	0.10	≤ 16.99	Pass
11ac-VHT80+80	MCS0	155	5775	-11.00	-10.62	--	--	94.67	6.99	-0.57	≤ 20.00	Pass
11ac-VHT80+80	MCS0	155	5775	--	--	-10.65	-10.53	94.67	6.99	-0.35	≤ 20.00	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 4: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (19.01dBi - 6dBi) = 16.99dBm/500kHz.

For 802.11ac-VHT80+80: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (16dBi - 6dBi) = 20.00dBm/500kHz.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Ant 2 PSD (dBm/100kHz)	Ant 3 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
11n-HT20	MCS0	149	5745	-9.51	-9.29	-10.01	-9.73	98.80	6.99	3.38	≤ 16.99	Pass
11n-HT20	MCS0	157	5785	-9.98	-9.28	-9.77	-9.27	98.80	6.99	3.45	≤ 16.99	Pass
11n-HT20	MCS0	165	5825	-9.83	-9.74	-9.70	-9.60	98.80	6.99	3.29	≤ 16.99	Pass
11n-HT40	MCS0	151	5755	-12.24	-11.42	-11.81	-11.83	96.95	6.99	1.33	≤ 16.99	Pass
11n-HT40	MCS0	159	5795	-12.25	-11.65	-12.07	-11.86	96.95	6.99	1.19	≤ 16.99	Pass
11ac-VHT20	MCS0	149	5745	-9.41	-8.79	-9.52	-9.08	98.80	6.99	3.82	≤ 16.99	Pass
11ac-VHT20	MCS0	157	5785	-9.77	-9.54	-9.86	-9.46	98.80	6.99	3.36	≤ 16.99	Pass
11ac-VHT20	MCS0	165	5825	-9.81	-9.85	-10.13	-10.08	98.80	6.99	3.05	≤ 16.99	Pass
11ac-VHT40	MCS0	151	5755	-12.46	-12.46	-12.40	-12.43	96.98	6.99	0.71	≤ 16.99	Pass
11ac-VHT40	MCS0	159	5795	-12.48	-12.12	-12.41	-12.26	96.98	6.99	0.83	≤ 16.99	Pass
11ac-VHT80	MCS0	155	5775	-16.43	-15.62	-16.04	-16.19	94.67	6.99	-2.81	≤ 16.99	Pass
11ac-VHT80+80	MCS0	155	5775	-11.00	-10.62	--	--	94.67	6.99	-0.57	≤ 20.00	Pass
11ac-VHT80+80	MCS0	155	5775	--	--	-10.65	-10.53	94.67	6.99	-0.35	≤ 20.00	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = $10 \cdot \log \{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100kHz) + Constant Factor + $10 \cdot \log (1/\text{Duty Cycle})$.

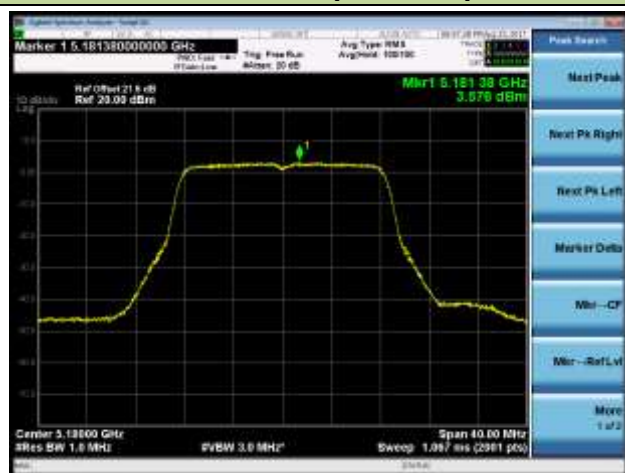
Note 4: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (16dBi + 3.01dBi - 6dBi) = 16.99dBm/500kHz.

For 802.11ac-VHT80+80: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (16dBi - 6dBi) = 20.00dBm/500kHz.

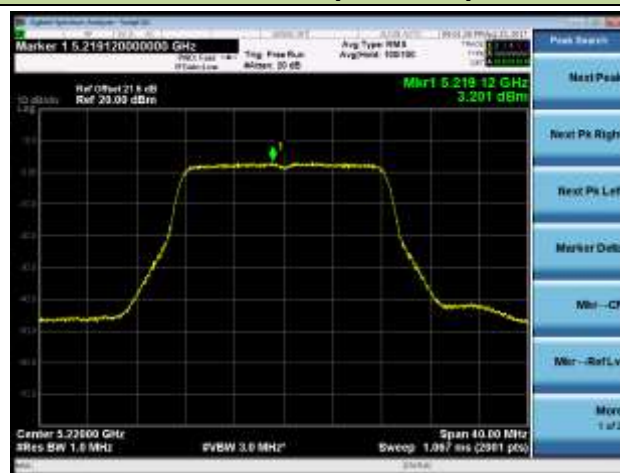
Product	ACCESS POINT	Temperature	22°C
Test Engineer	Kevin Ker	Test Date	2017/08/23
Antenna Type	Omin Antenna (ANT-2x2-5005)		

802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

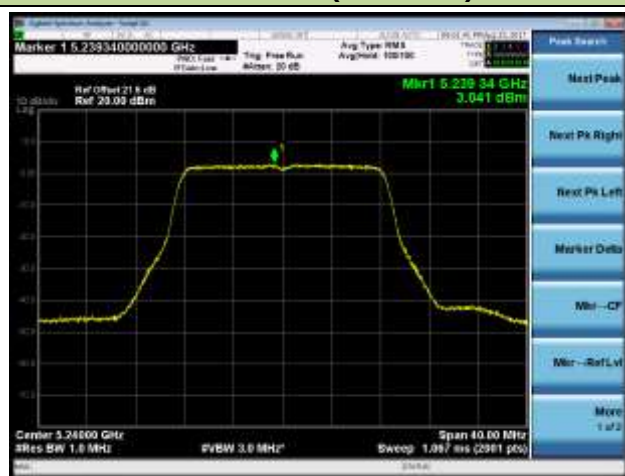
Channel 36 (5180MHz)



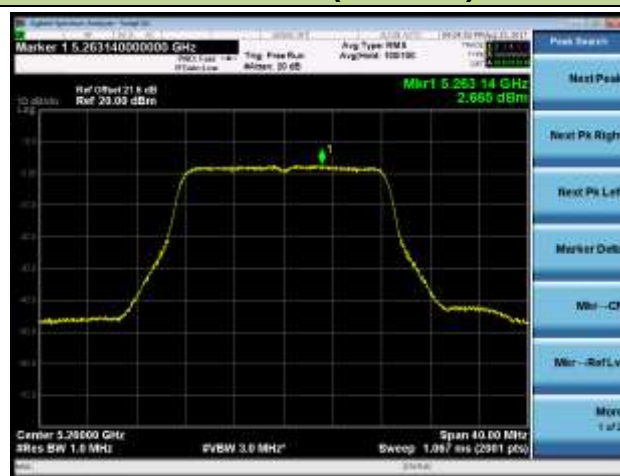
Channel 44 (5220MHz)



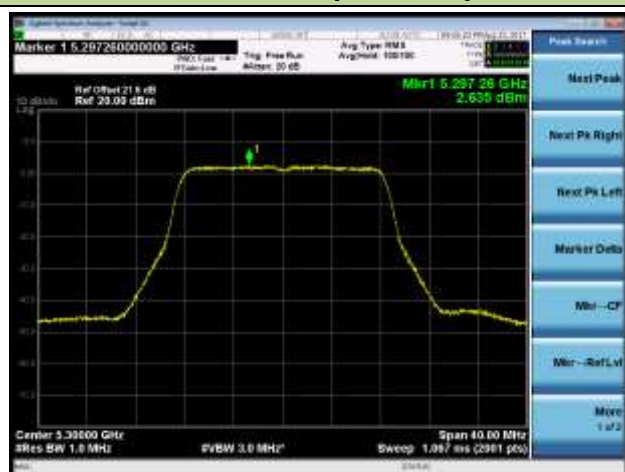
Channel 48 (5240MHz)



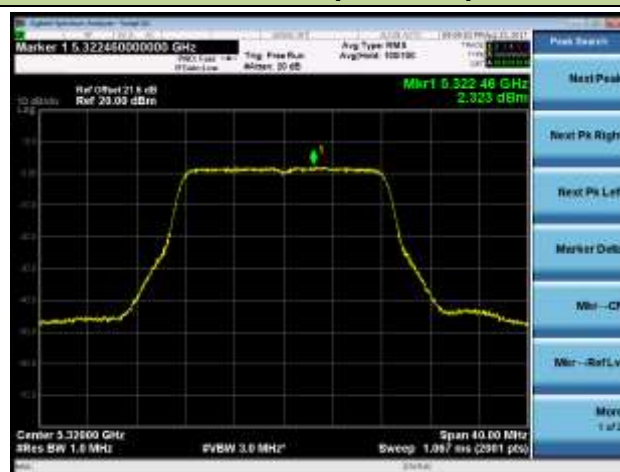
Channel 52 (5260MHz)



Channel 60 (5300MHz)

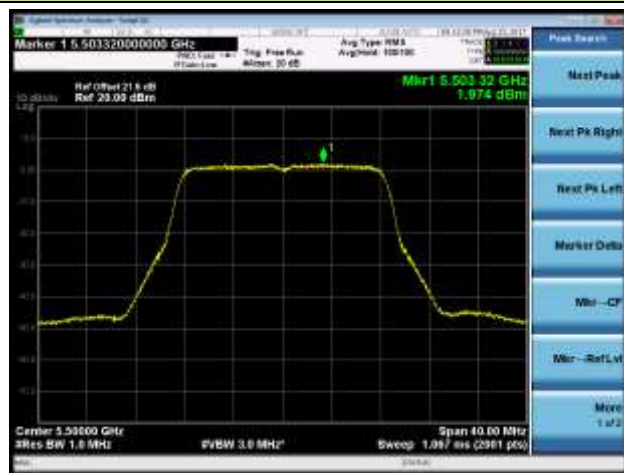


Channel 64 (5320MHz)

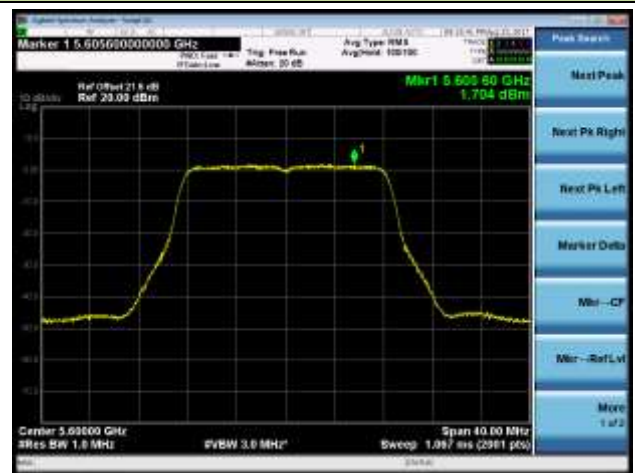


802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 100 (5500MHz)



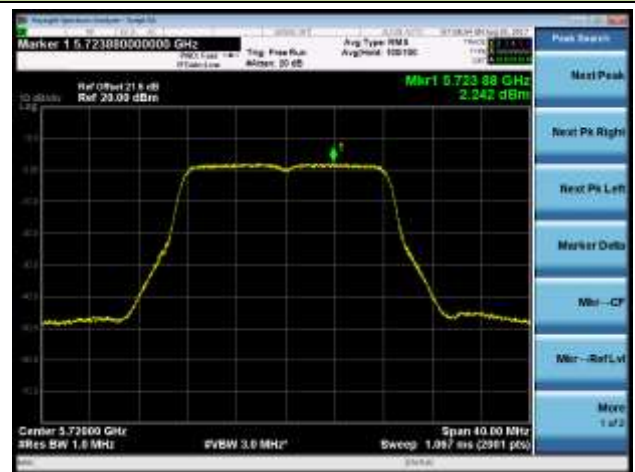
Channel 120 (5600MHz)



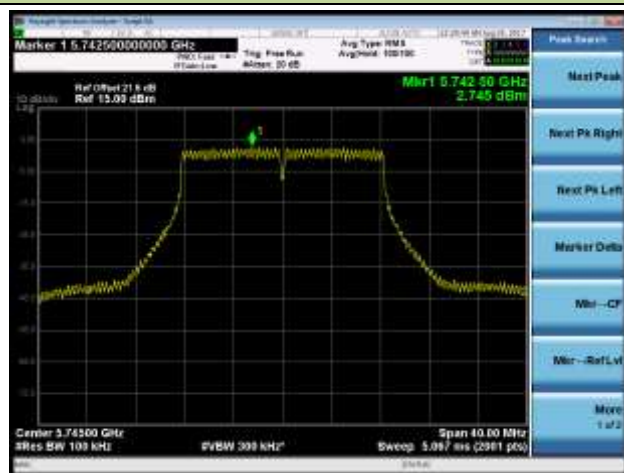
Channel 140 (5700MHz)



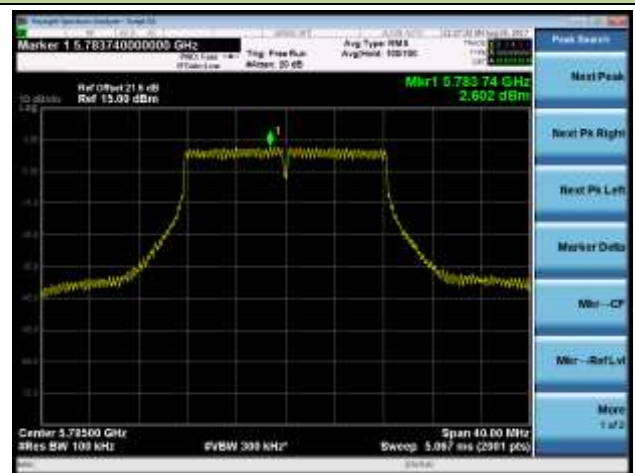
Channel 144 (5720MHz)



Channel 149 (5745MHz)

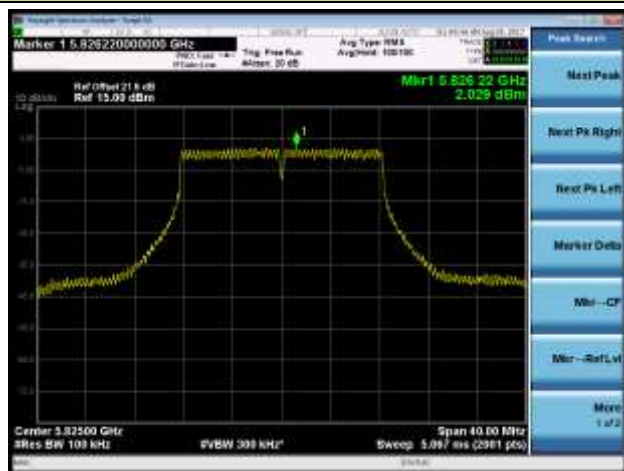


Channel 157 (5785MHz)



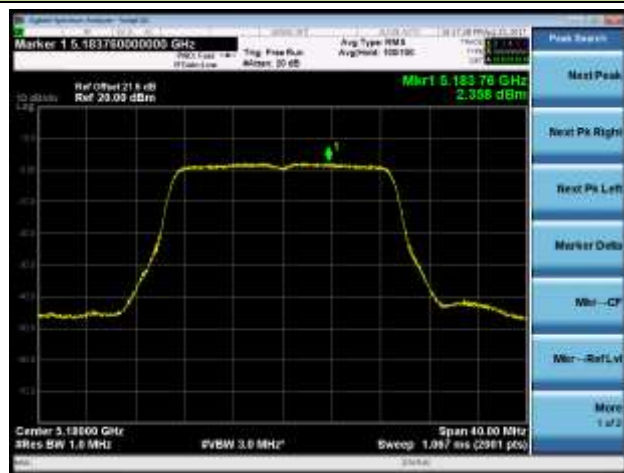
802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 165 (5825MHz)

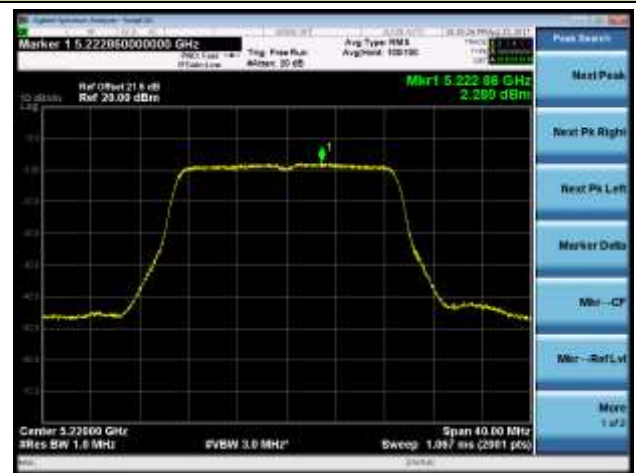


802.11n-HT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 36 (5180MHz)



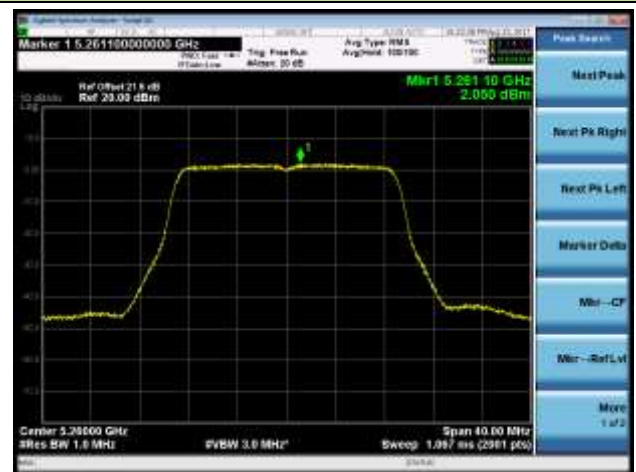
Channel 44 (5220MHz)



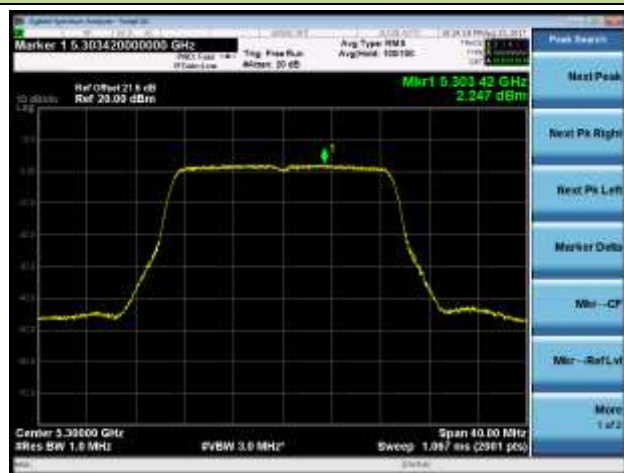
Channel 48 (5240MHz)



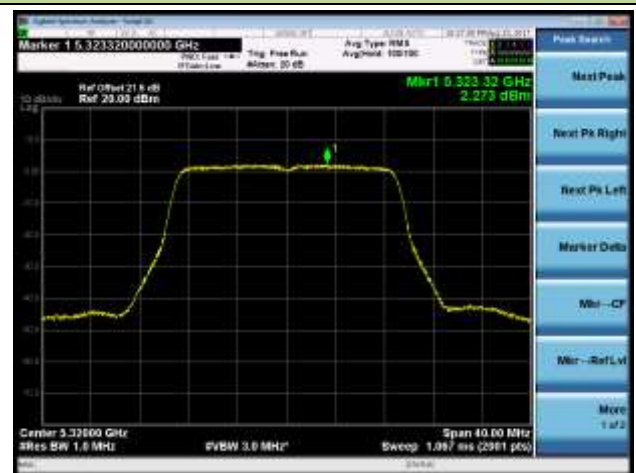
Channel 52 (5260MHz)



Channel 60 (5300MHz)

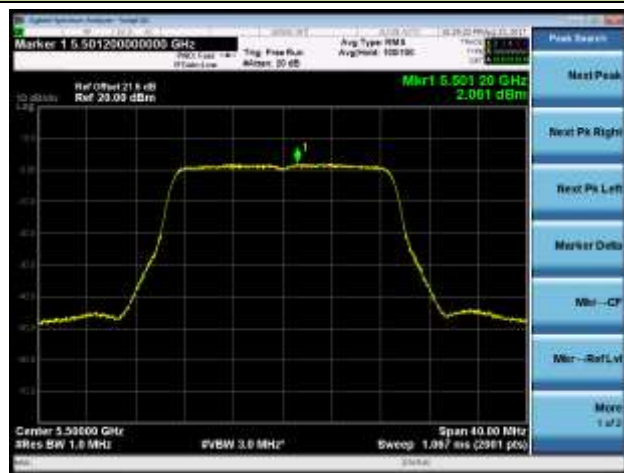


Channel 64 (5320MHz)

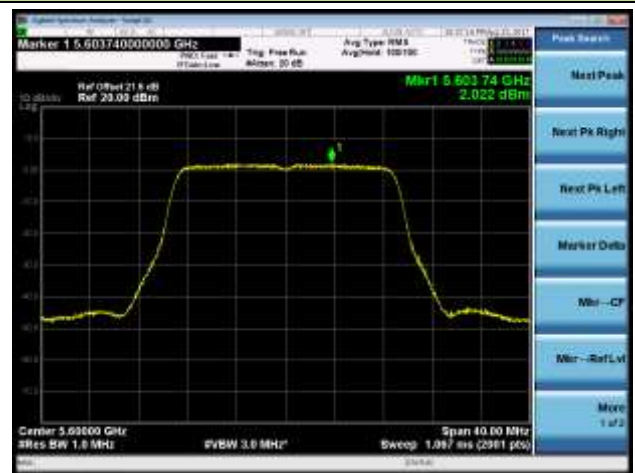


802.11n-HT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

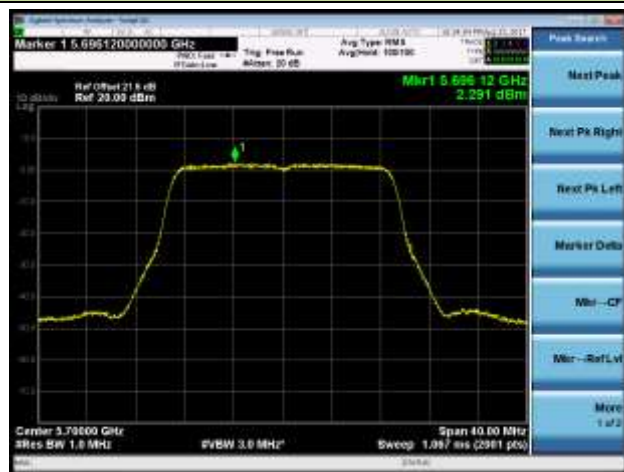
Channel 100 (5500MHz)



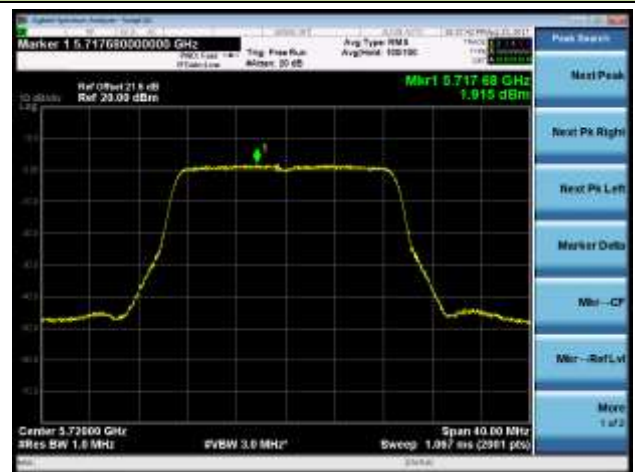
Channel 120 (5600MHz)



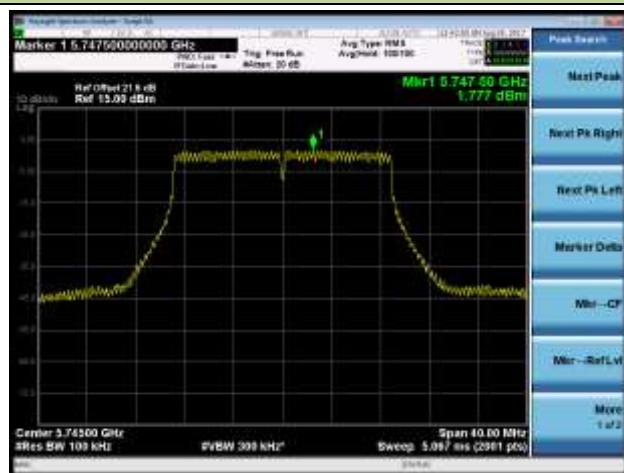
Channel 140 (5700MHz)



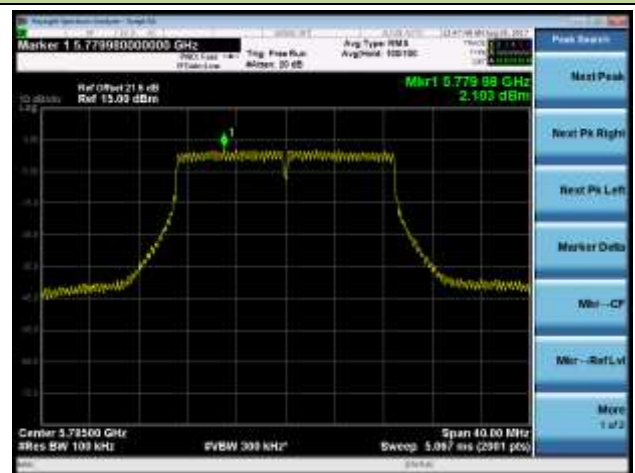
Channel 144 (5720MHz)



Channel 149 (5745MHz)

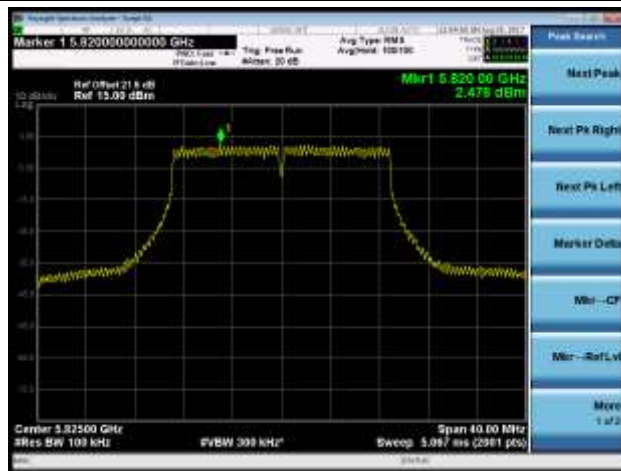


Channel 157 (5785MHz)



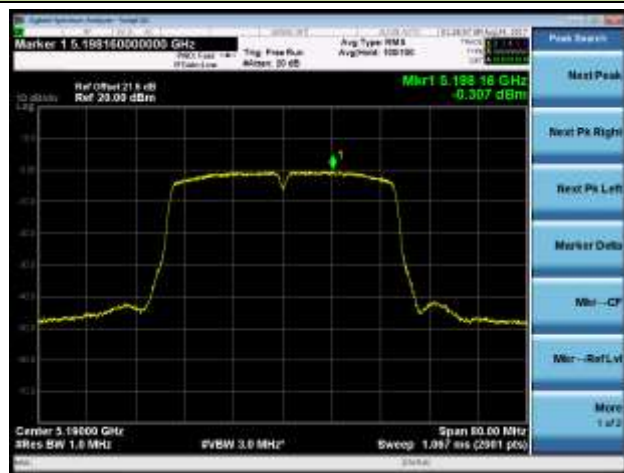
802.11n-HT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 165 (5825MHz)



802.11n-HT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

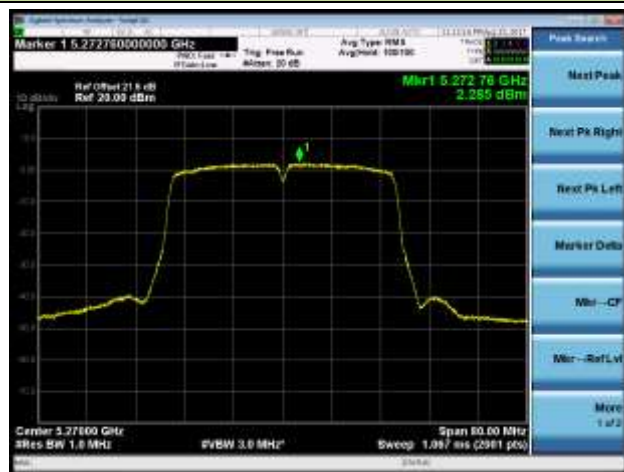
Channel 38 (5190MHz)



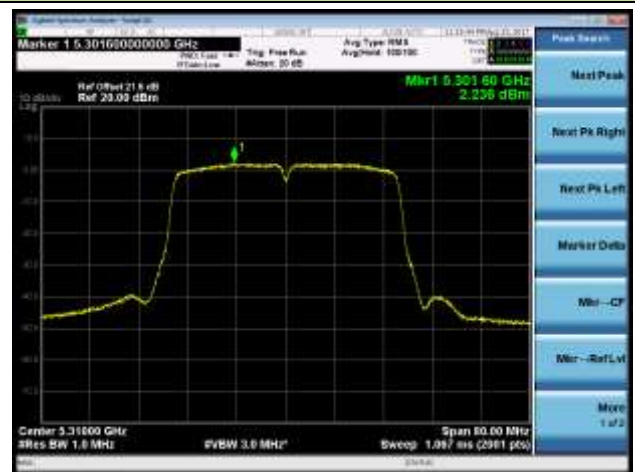
Channel 46 (5230MHz)



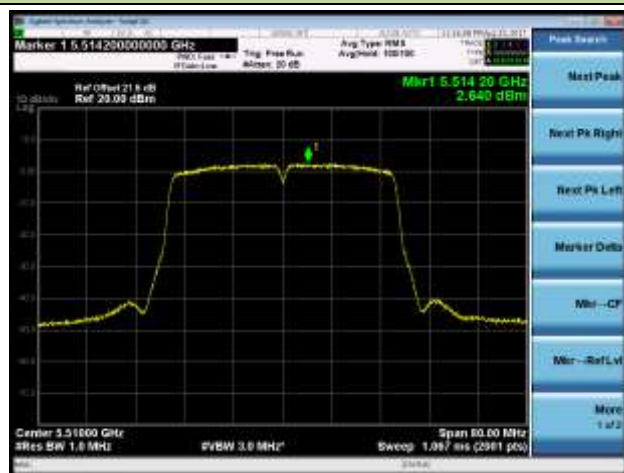
Channel 54 (5270MHz)



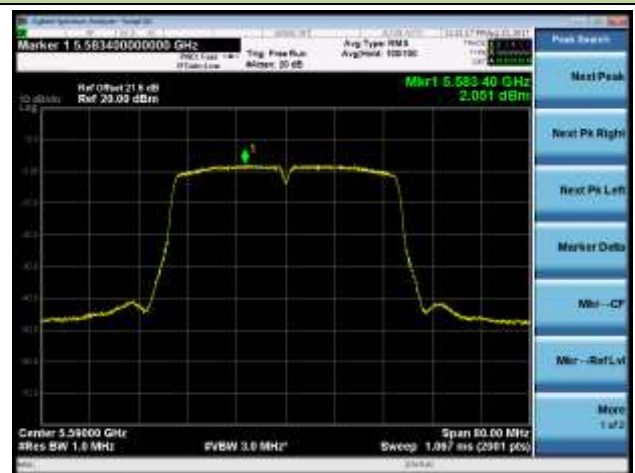
Channel 62 (5310MHz)



Channel 102 (5510MHz)

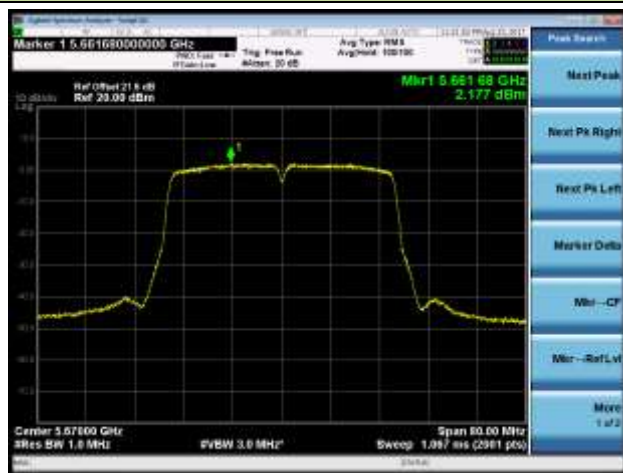


Channel 118 (5590MHz)

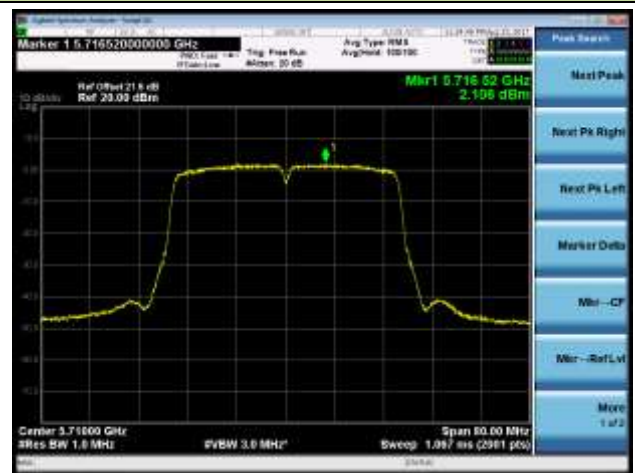


802.11n-HT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

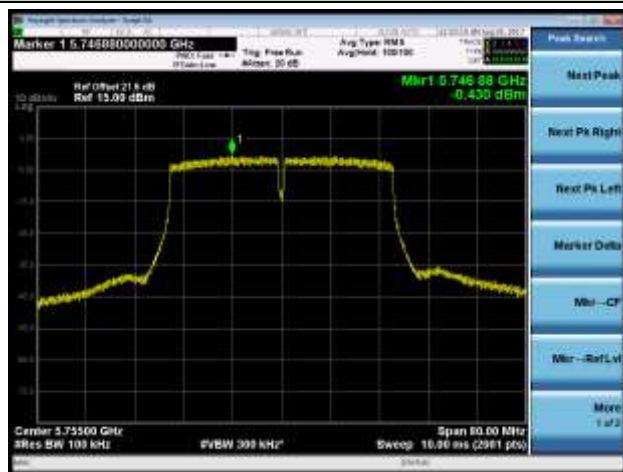
Channel 134 (5670MHz)



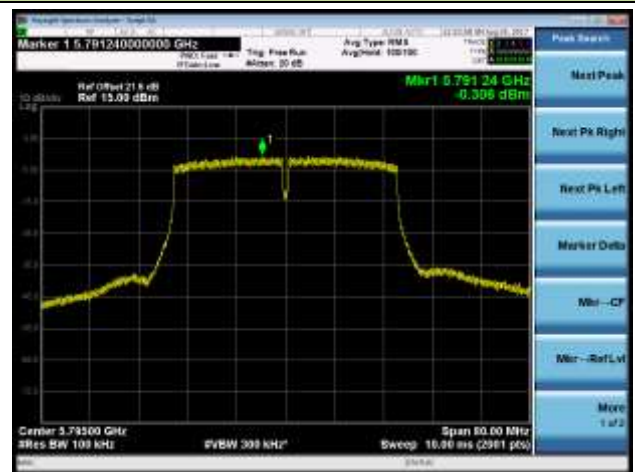
Channel 142 (5710MHz)



Channel 151 (5755MHz)

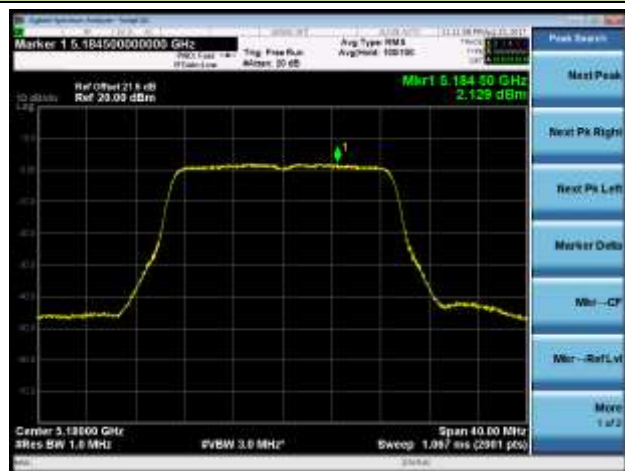


Channel 159 (5795MHz)

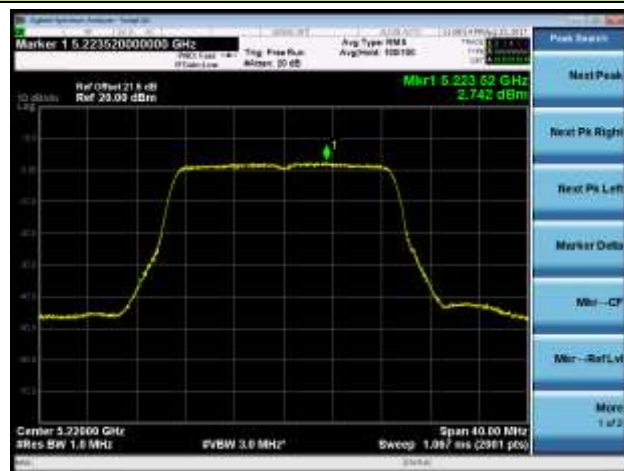


802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

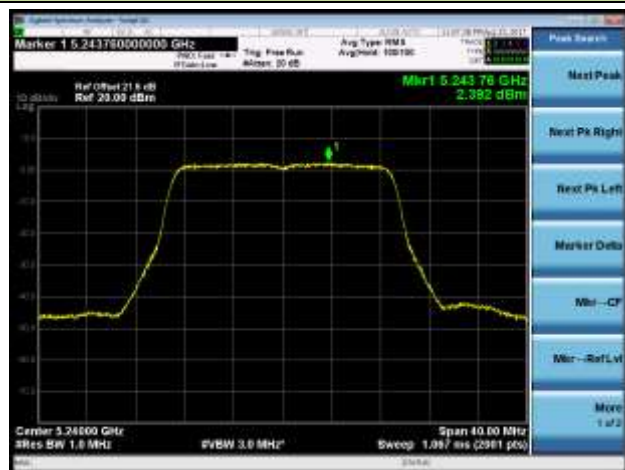
Channel 36 (5180MHz)



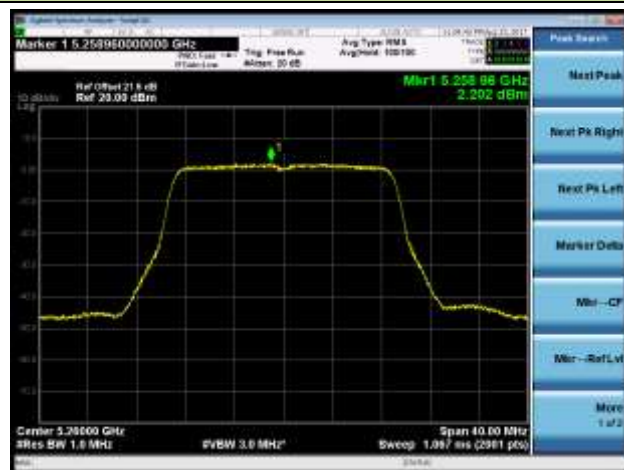
Channel 44 (5220MHz)



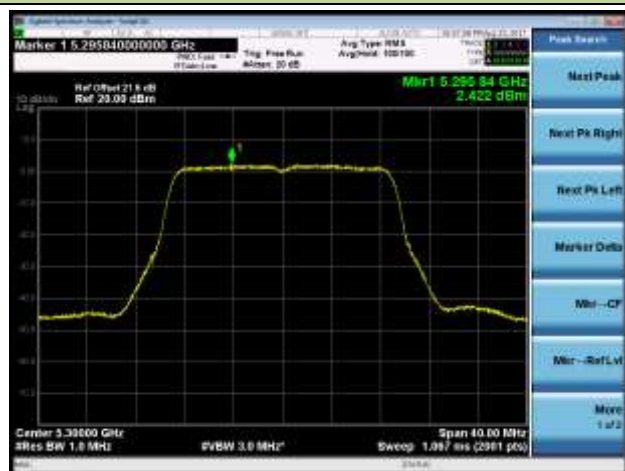
Channel 48 (5240MHz)



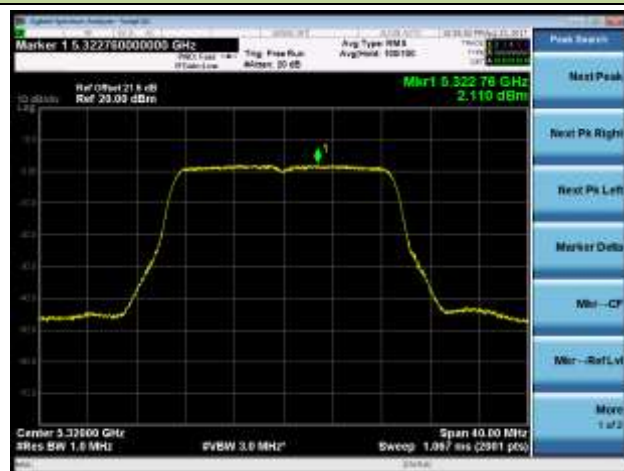
Channel 52 (5260MHz)



Channel 60 (5300MHz)

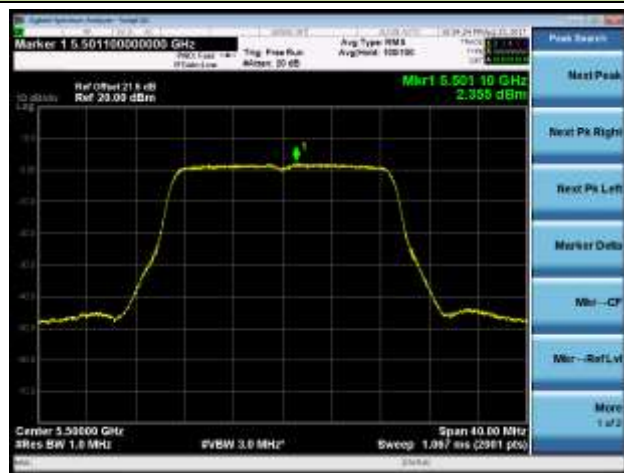


Channel 64 (5320MHz)



802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

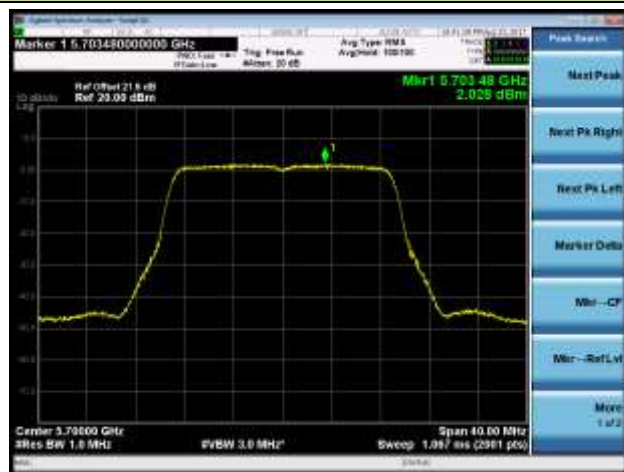
Channel 100 (5500MHz)



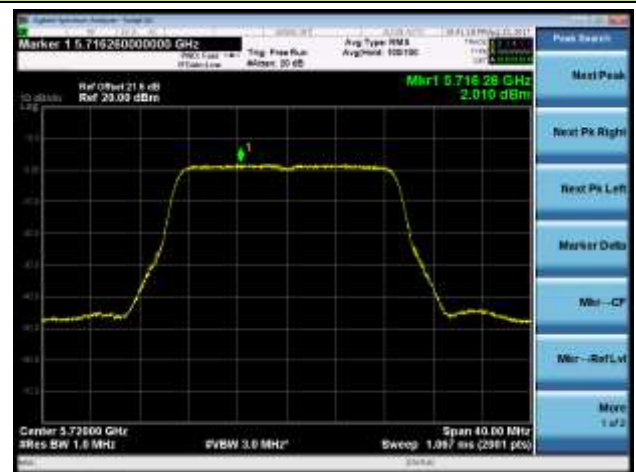
Channel 120 (5600MHz)



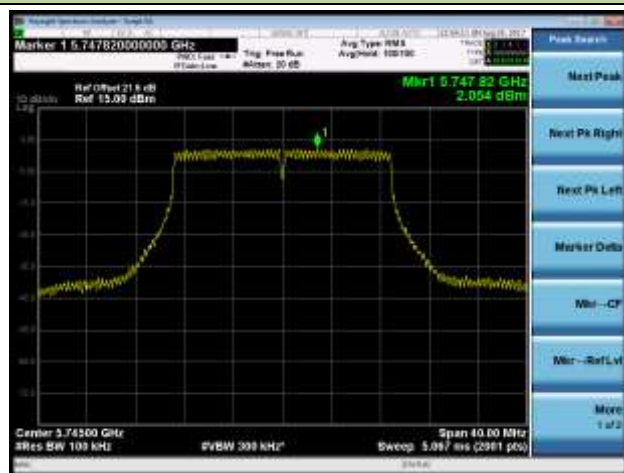
Channel 140 (5700MHz)



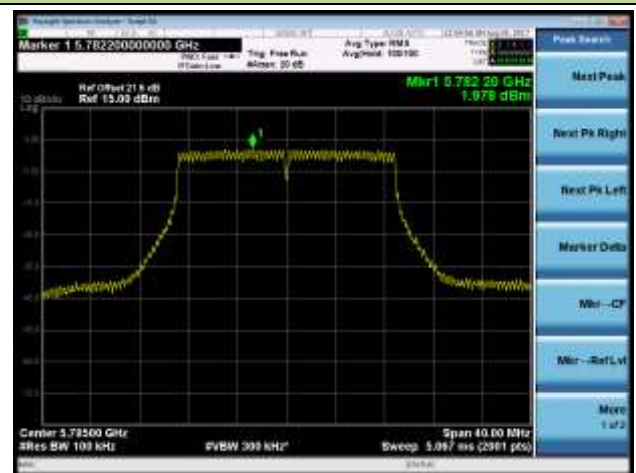
Channel 144 (5720MHz)



Channel 149 (5745MHz)

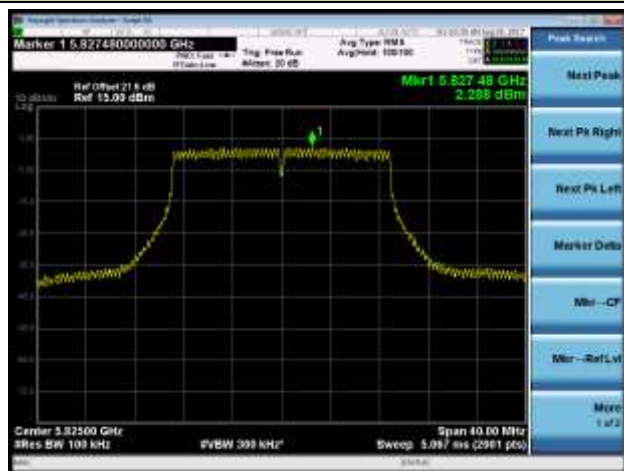


Channel 157 (5785MHz)



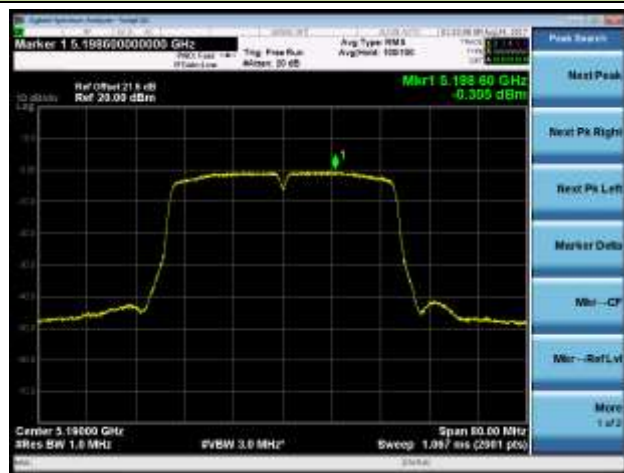
802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 165 (5825MHz)

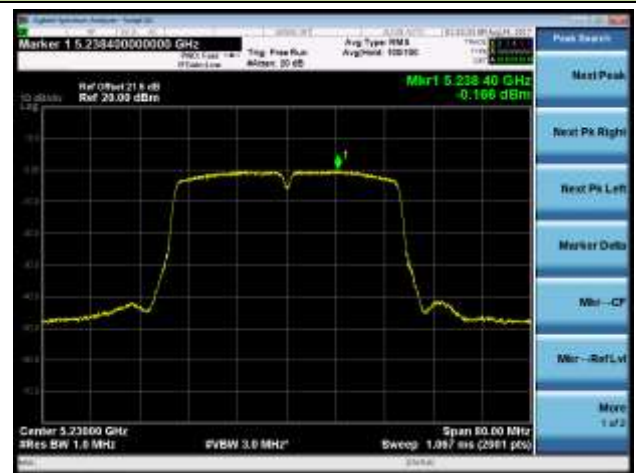


802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

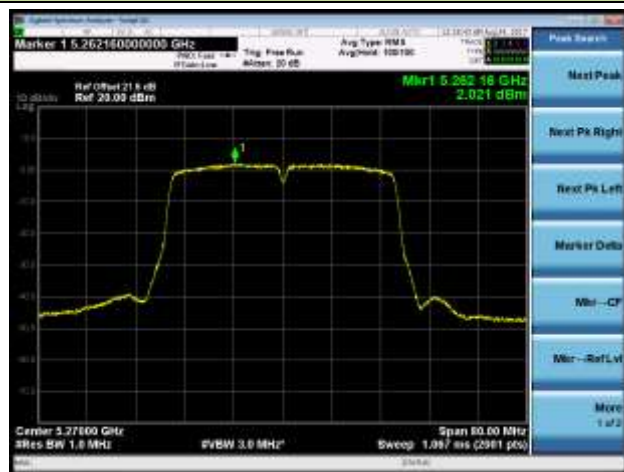
Channel 38 (5190MHz)



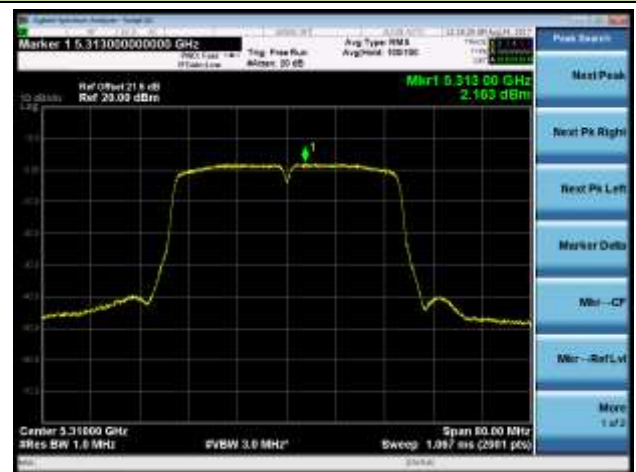
Channel 46 (5230MHz)



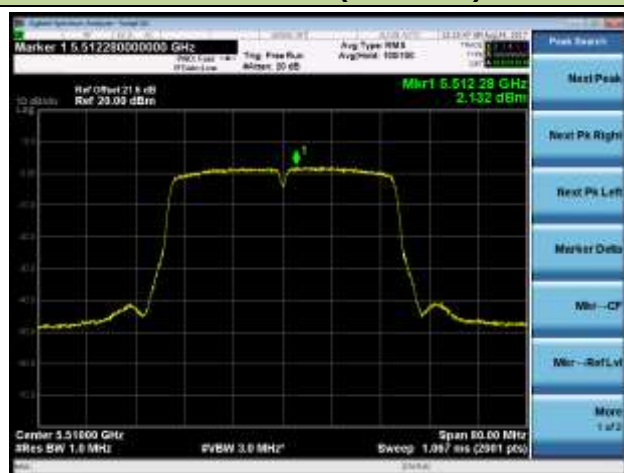
Channel 54 (5270MHz)



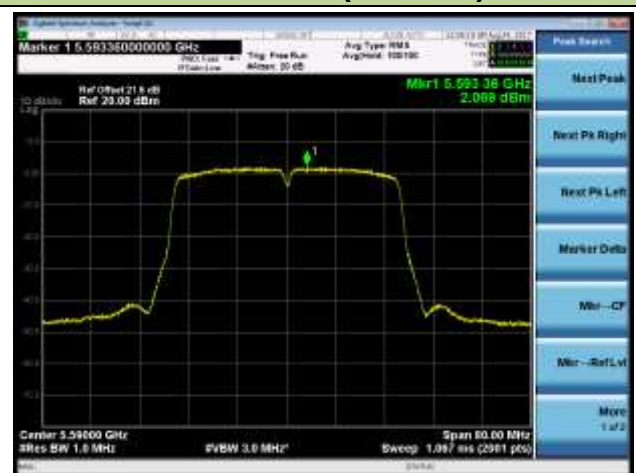
Channel 62 (5310MHz)



Channel 102 (5510MHz)

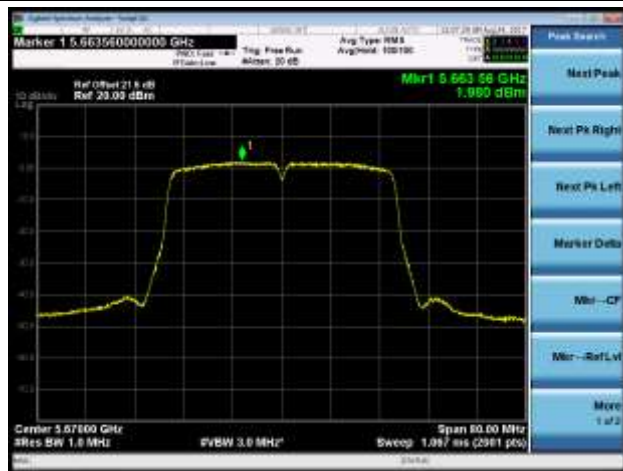


Channel 118 (5590MHz)

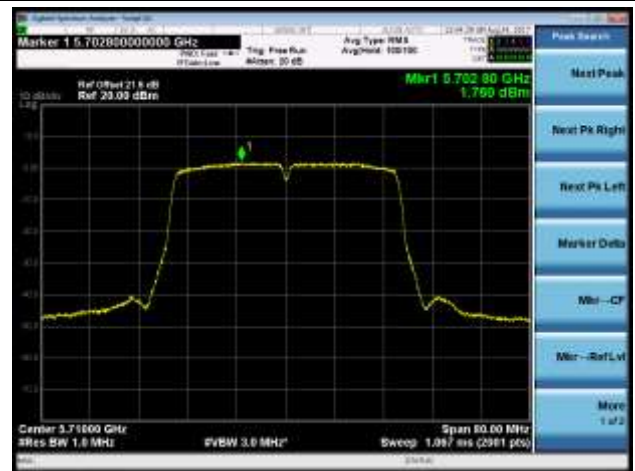


802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

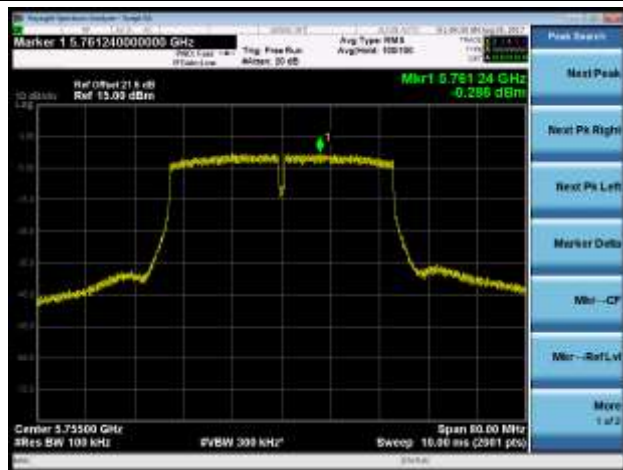
Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)

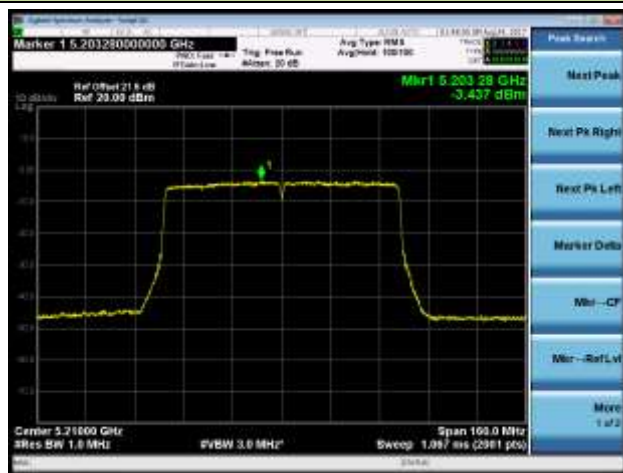


Channel 159 (5795MHz)

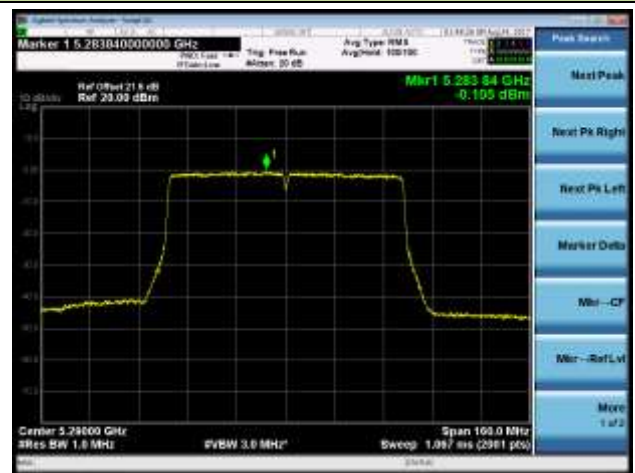


802.11ac-VHT80 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

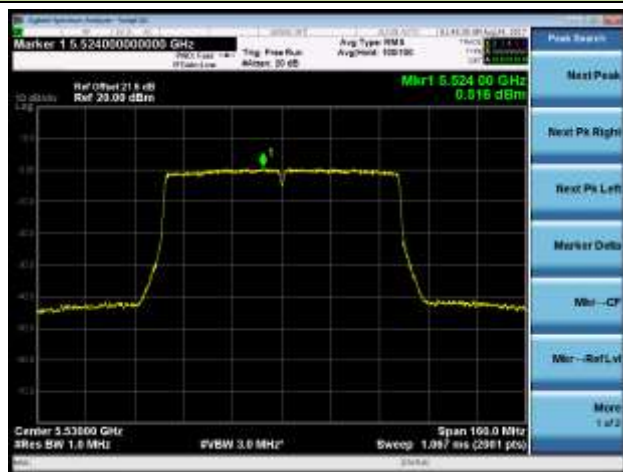
Channel 42 (5210MHz)



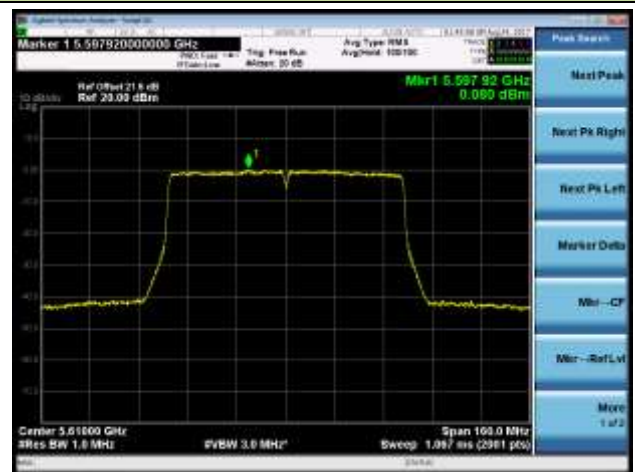
Channel 58 (5290MHz)



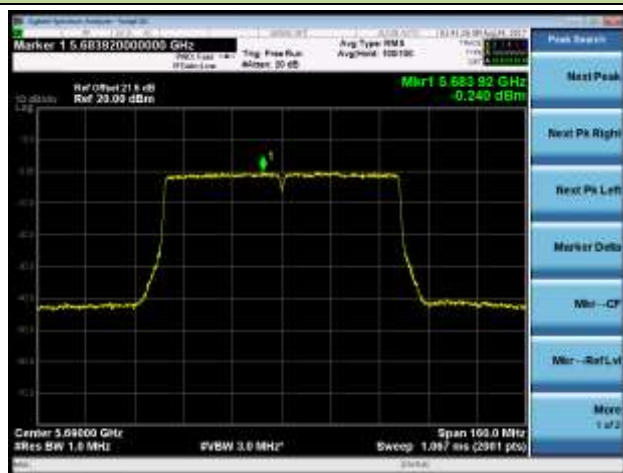
Channel 106 (5530MHz)



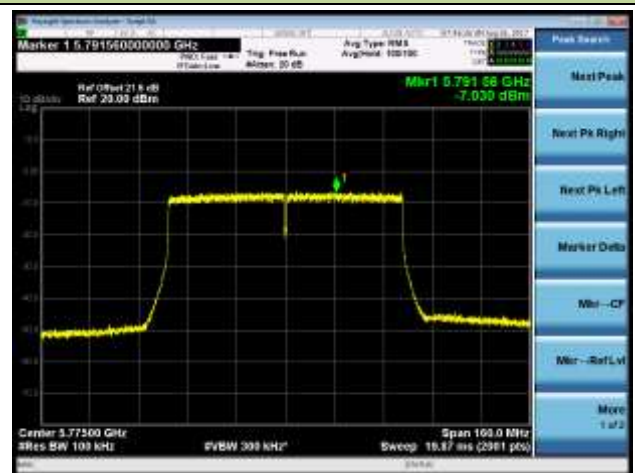
Channel 122 (5610MHz)



Channel 138 (5690MHz)

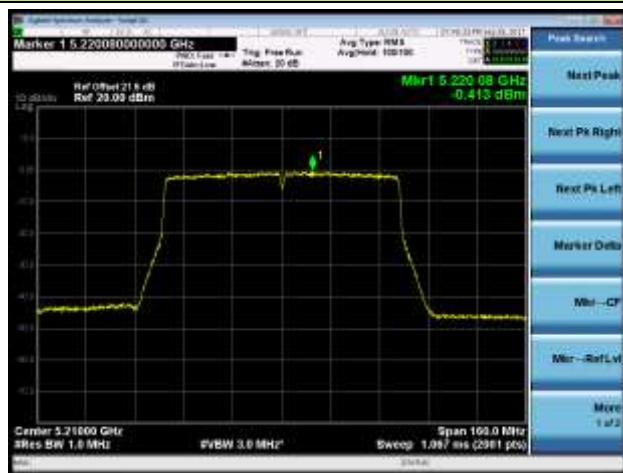


Channel 155 (5775MHz)

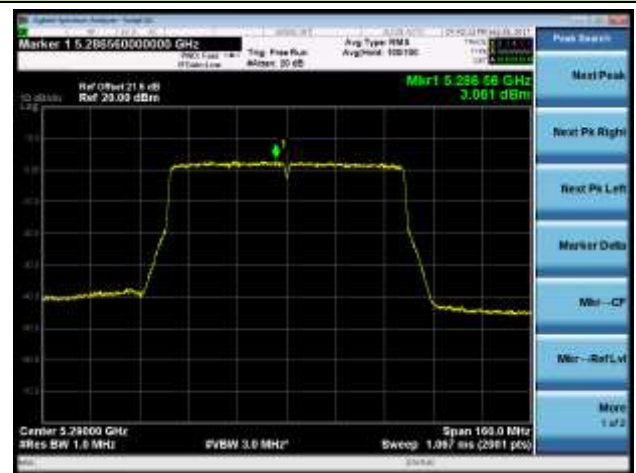


802.11ac-VHT80+80 Power Spectral Density - Ant 0 / Ant 0 + 1 (Ant 0 + 1 + 2 + 3) (CDD Mode)

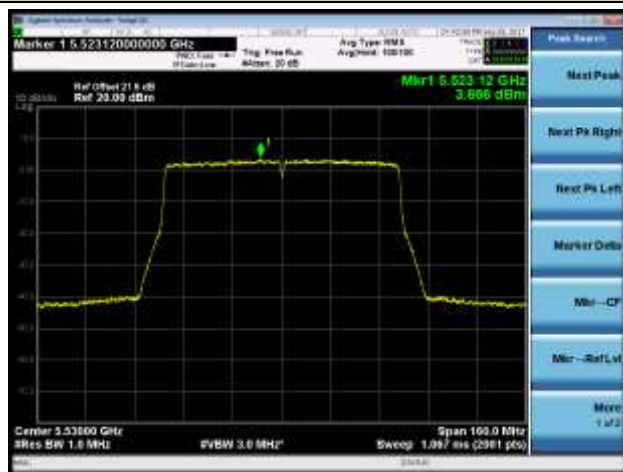
Channel 42 (5210MHz)



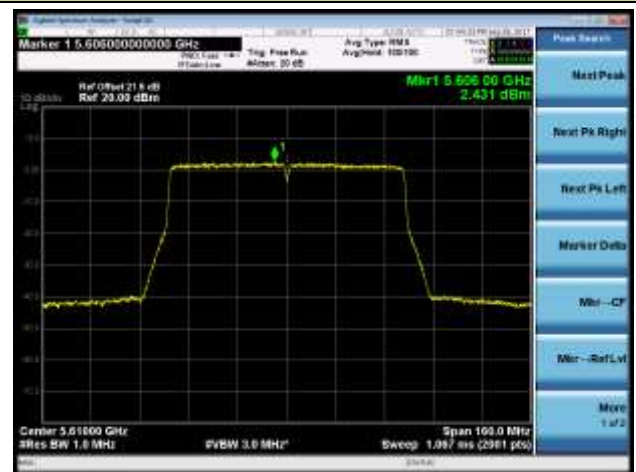
Channel 58 (5290MHz)



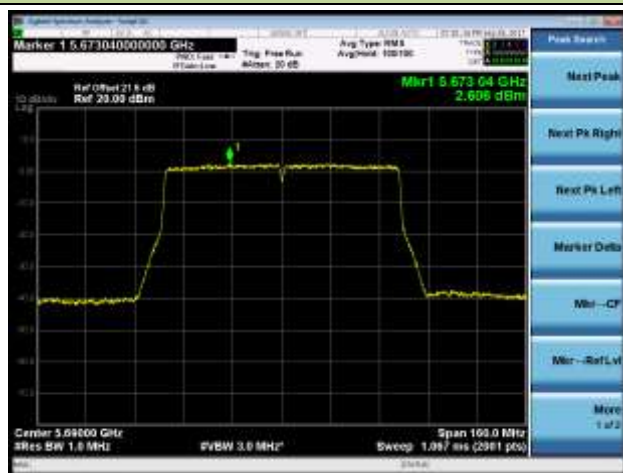
Channel 106 (5530MHz)



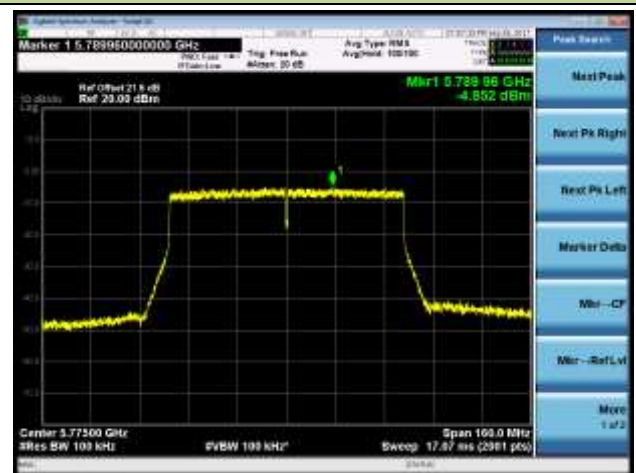
Channel 122 (5610MHz)



Channel 138 (5690MHz)

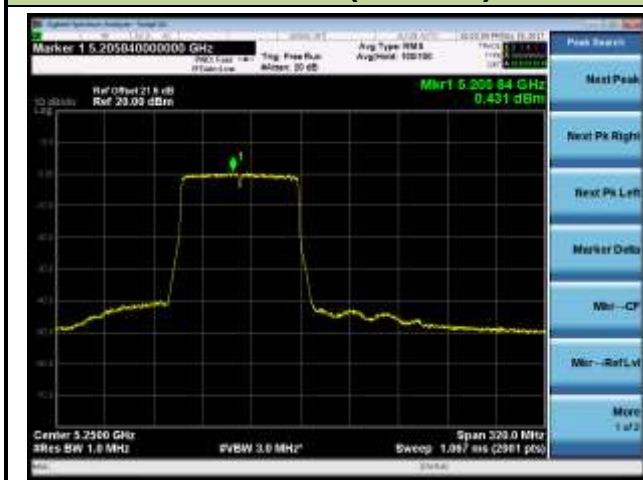


Channel 155 (5775MHz)



802.11ac-VHT80+80 Contiguous Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 42 (5210MHz)

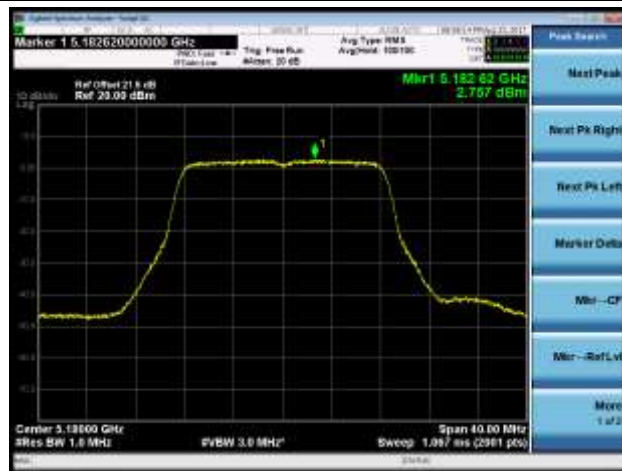


Channel 106 (5530MHz)



802.11a Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3 (CDD Mode)

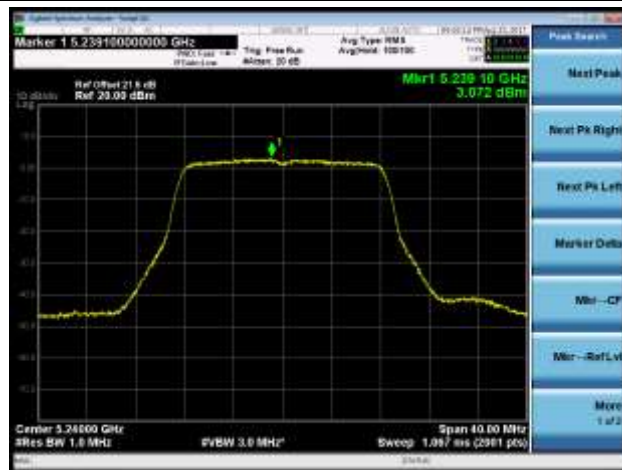
Channel 36 (5180MHz)



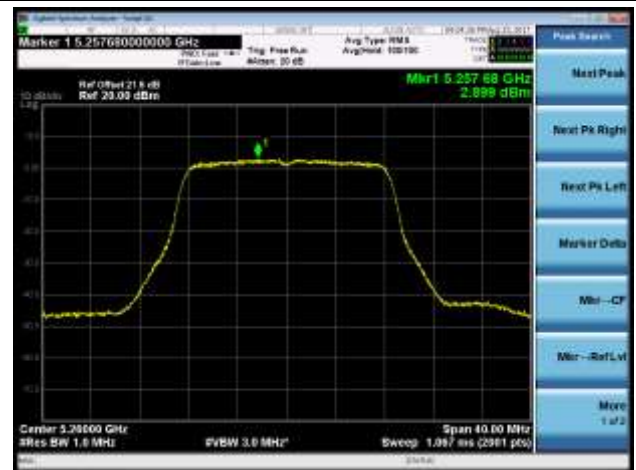
Channel 44 (5220MHz)



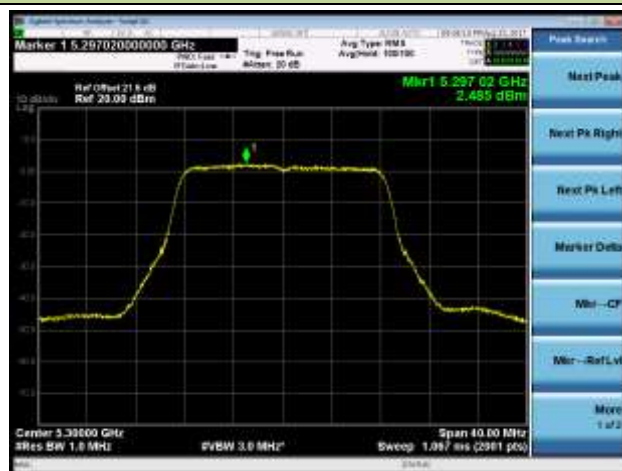
Channel 48 (5240MHz)



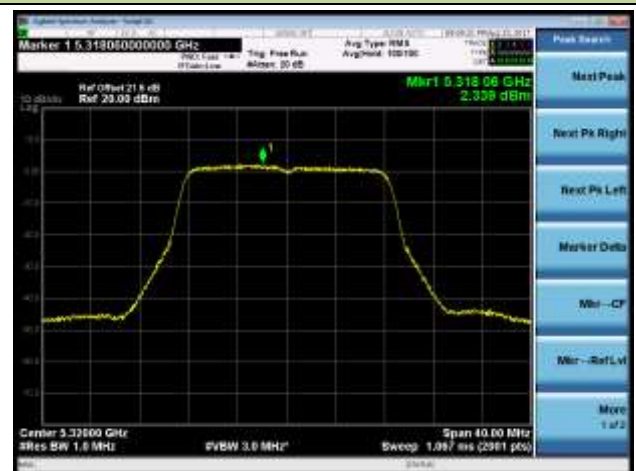
Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)

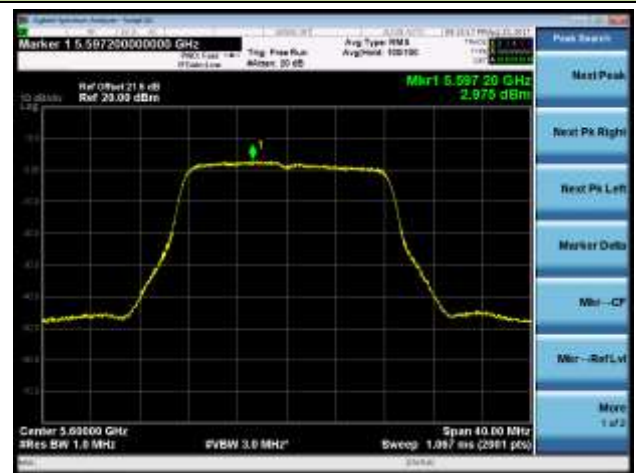


802.11a Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3 (CDD Mode)

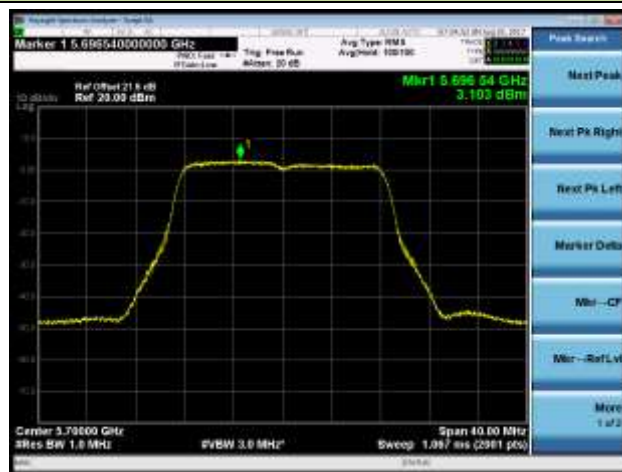
Channel 100 (5500MHz)



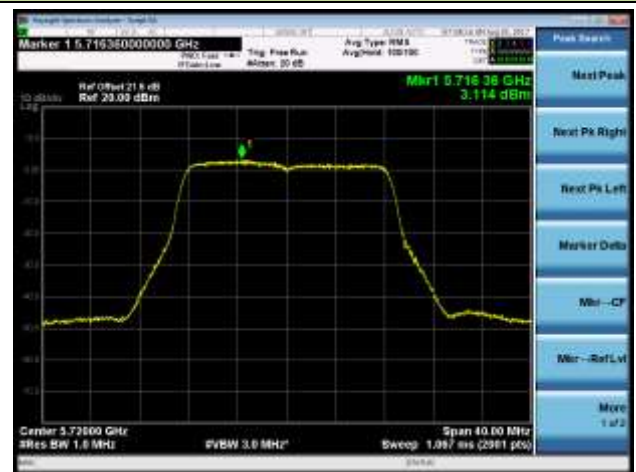
Channel 120 (5600MHz)



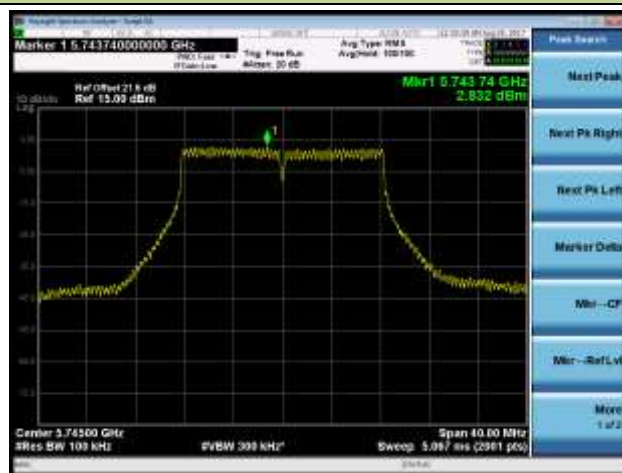
Channel 140 (5700MHz)



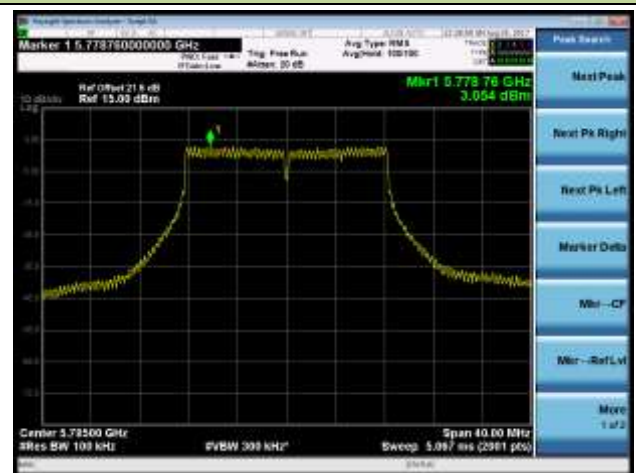
Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



802.11a Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 165 (5825MHz)

