

NCC

低功率射頻電機型式試驗報告

產品名稱 : OmniAccess Stellar
型號 : OAW-AP1201
廠牌 : Alcatel-Lucent Enterprise
申請者 : 皇輝科技股份有限公司
申請者地址 : 臺北市內湖區民權東路6段11巷43之1號3樓
測試標準 : LP0002 (107 年版)
參考法規 : ANSI C63.10-2013
測試結果 : 符合
測試日期 : 2018.11.15 ~ 2018.11.30

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修訂紀錄

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1. 一般資訊

申請者	:	皇輝科技股份有限公司
申請者地址	:	臺北市內湖區民權東路 6 段 11 巷 43 之 1 號 3 樓
製造商	:	ALE International
實驗室	:	台灣曼瑞檢測科技有限公司
實驗室地址	:	33377 台灣桃園市龜山區復興二路 38 號
實驗室資訊	:	1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Film. 2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada. 3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.
實驗室測試環境條件	:	溫度 (°C) : 20-35 / 濕度 (%RH) : 30-65

2. 產品資訊

2.1. 待測物裝置資料

產品名稱	OmniAccess Stellar
產品型號	OAW-AP1201
廠牌	Alcatel-Lucent Enterprise
Wi-Fi 規格	802.11a/b/g/n/ac
調變模式	OFDM
頻率範圍	For 802.11a/n-HT20/ac-VHT20: 5180~5320 MHz, 5500~5720 MHz, 5745~5825 MHz For 802.11n-HT40/ac-VHT40: 5190~5310 MHz, 5510~5710 MHz, 5755~5795 MHz For 802.11ac-VHT80: 5210 MHz, 5290 MHz, 5530 MHz, 5610 MHz, 5690 MHz, 5775 MHz
傳輸速率	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps
配件(選配)	
充電器 1	Model No.: ADP-30HR B Input Power: 100 - 240V ~ 50/60Hz, 1.0A Output Power: 48VDC/0.66A
充電器 2	Model No.: PD-9001 GR/AT/AC Input Power: 100 - 240V ~ 50/60Hz, 0.67A Output Power: 55VDC/0.6A

2.2. 通道清單

802.11a/n-HT20/ac-VHT20

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

802.11n-HT40/ac-VHT40

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

802.11ac-VHT80

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

2.3. 測試模式

Test Mode	Mode 1: Transmit by 802.11a
	Mode 2: Transmit by 802.11ac-VHT20
	Mode 3: Transmit by 802.11ac-VHT40
	Mode 4: Transmit by 802.11ac-VHT80

Note: We have evaluated 802.11a/n/ac mode and only show the test data of 802.11a/ac mode.

Test Mode	Duty Cycle
802.11a	96.11 %
802.11ac-VHT20	98.24 %
802.11ac-VHT40	95.23 %
802.11ac-VHT80	92.48 %

2.4. 待測裝置測試時之典型操作程式

1.	Turn on the power of all equipment.
2.	Execute "QRCT Version 3.0.211.0" software in the notebook to control the EUT by LAN cable.
3.	Configure the test channel and the data rate.
4.	Start test.

2.5. 測試軟體描述

The test utility software used during testing was "QRCT", and the version was "3.0.211.0".

3. 量測不確定度

電源傳導量測-電源線 (Conducted Emission- Power Line)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 2.53dB
電源傳導量測-通訊埠 (Conducted Emission- Impedance Stabilization Network Measurement)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 3.96dB
輻射干擾量測 (Radiated Spurious Emission)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 3.92dB (Below 30M)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.25dB (30M~1G)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.40dB (1G~18G)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.45dB (18G~40G)
頻率誤差量測 (Frequency Error)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 78.4\text{Hz}$
傳導功率量測 (Conducted Power)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.84\text{dB}$
傳導干擾量測 (Conducted Spurious Emission)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 2.65\text{ dB}$

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

電源傳導 - SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTTWA00045	1 year	2019/03/16
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2019/03/23
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2019/03/23
Conducted Cable	Rosnol	N1C50-RG400-B1C50-500CM	MRTTWE00013	1 year	2019/05/20

輻射干擾 - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2019/03/02
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2019/03/16
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2019/04/06
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2019/04/06
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2019/04/06
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2019/04/06
Broadband Hornantenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2019/04/06
Breitband Hornantenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2019/04/06
Antenna Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2019/05/20
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2019/06/08

傳導量測 - SR1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2019/07/11
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTSUE06457	1 year	2019/7/19
X-Series USB Peak and Average Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2019/03/18
X-Series USB Peak and Average Power Sensor	KEYSIGHT	U2021XA	MRTTWA00015	1 year	2019/03/18
Programmable Temperature & Humidity Chamber	TEN BILLION	TTH-B3UP	MRTTWA00036	1 year	2019/03/16
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2019/06/08

測試軟體

Software	Version	Function
e3	Audix	9.160520a
EMI	Quietek	V3

5. 測試結果

產品名稱 OmniAccess Stellar
型號 OAW-AP1201

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	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
4.7.7	發射功率控制	至少具有 6dB 低於平均 EIRP 值 30dBm 的能力	符合	第 5.9 章節
4.7.7	頻率穩定性	操作頻帶	符合	第 5.10 章節

5.1. 電源端點干擾測試

5.1.1. 適用標準

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

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

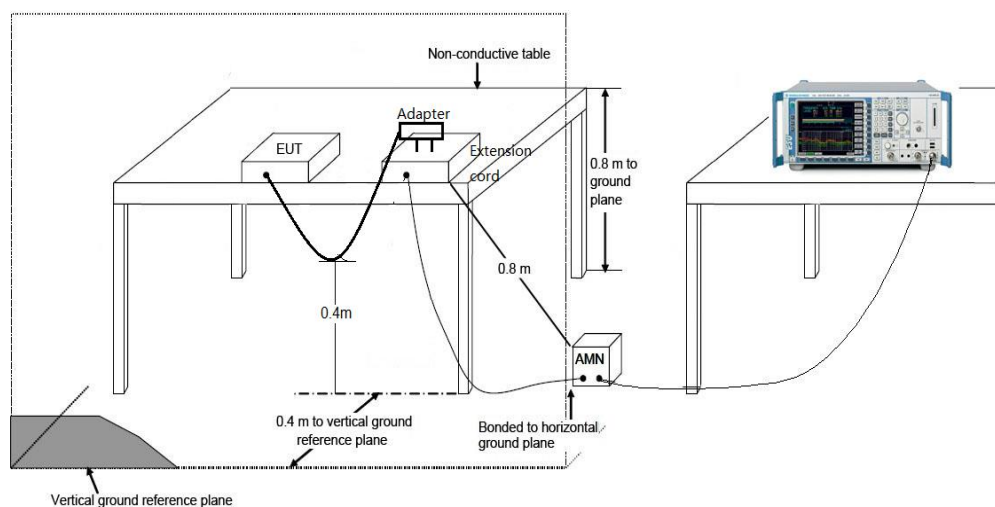
註:隨頻率之對數遞減

5.1.2. 量測方法

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

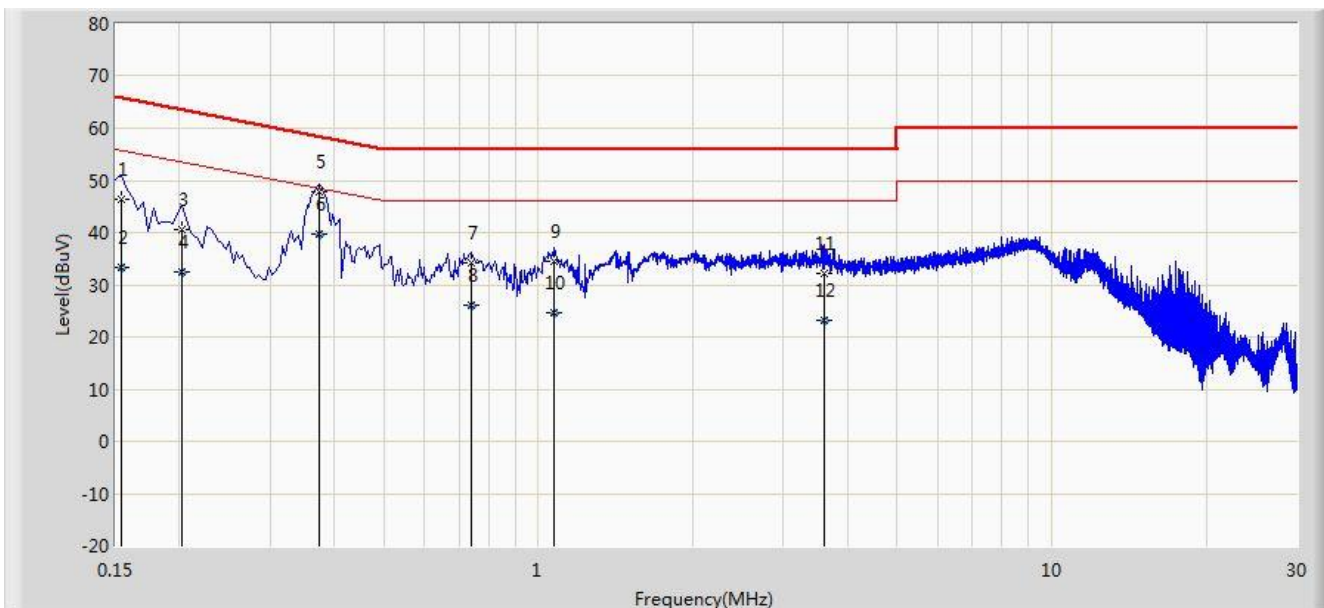
備 註: 經初測驗證過，電源端點干擾測試對測試頻道數並無差異，因此檢附其中一個測試頻道之測試數。

5.1.3. 測試架構圖



5.1.4. 電源端點測試結果

Site: SR2	Time: 2018/11/27 - 10:04
Limit: NCC LP0002_CE_0.15MHz-30MHz	Engineer: Kevin Ker
Probe: CE_ENV216-L1 (Filter ON)	Polarity: Neutral
EUT: OmniAccess Stellar	Power: AC 110V/60Hz
Test Mode 1	

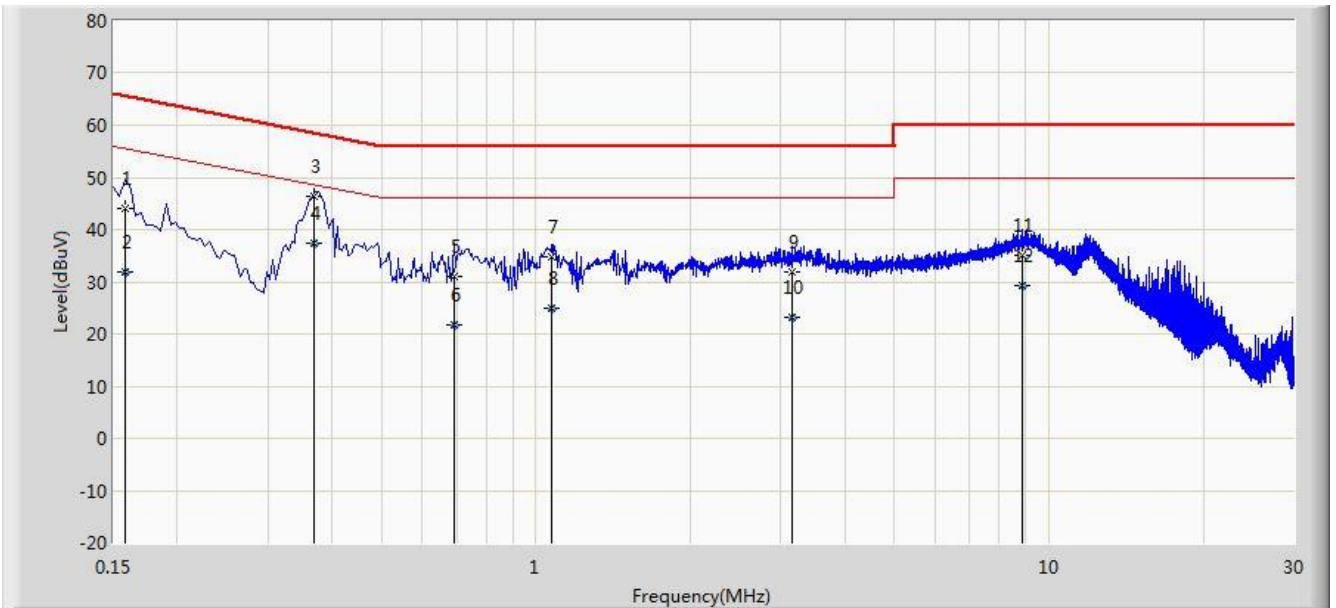


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.154	46.379	35.639	-19.403	65.781	10.740	QP
2			0.154	33.399	22.660	-22.382	55.781	10.740	AV
3			0.202	40.648	30.655	-22.880	63.528	9.993	QP
4			0.202	32.424	22.431	-21.104	53.528	9.993	AV
5			0.374	47.801	37.737	-10.610	58.412	10.064	QP
6		*	0.374	39.765	29.701	-8.646	48.412	10.064	AV
7			0.738	34.245	24.202	-21.755	56.000	10.044	QP
8			0.738	25.959	15.915	-20.041	46.000	10.044	AV
9			1.074	34.624	24.719	-21.376	56.000	9.906	QP
10			1.074	24.511	14.605	-21.489	46.000	9.906	AV
11			3.594	32.144	22.228	-23.856	56.000	9.916	QP
12			3.594	23.295	13.379	-22.705	46.000	9.916	AV

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

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

Site: SR2	Time: 2018/11/27 - 10:08
Limit: NCC LP0002_CE_0.15MHz-30MHz	Engineer: Kevin Ker
Probe: CE_ENV216-L1 (Filter ON)	Polarity: Line
EUT: OmniAccess Stellar	Power: AC 110V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.158	43.947	33.657	-21.622	65.568	10.290	QP
2			0.158	31.742	21.453	-23.826	55.568	10.290	AV
3			0.370	46.345	36.255	-12.156	58.501	10.090	QP
4		*	0.370	37.448	27.358	-11.053	48.501	10.090	AV
5			0.694	31.122	21.044	-24.878	56.000	10.078	QP
6			0.694	21.757	11.678	-24.243	46.000	10.078	AV
7			1.074	34.710	24.804	-21.290	56.000	9.906	QP
8			1.074	24.860	14.954	-21.140	46.000	9.906	AV
9			3.150	31.836	21.974	-24.164	56.000	9.862	QP
10			3.150	23.213	13.351	-22.787	46.000	9.862	AV
11			8.878	35.089	24.918	-24.911	60.000	10.171	QP
12			8.878	29.402	19.231	-20.598	50.000	10.171	AV

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

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

5.2. 天線之要求

5.2.1. 適用標準

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

5.2.2. 天線樣式

Antenna Type	Frequency Band (GHz)	TX Paths	Per Chain Max Antenna Gain (dBi)		Beam-Forming Directional Gain (dBi)	CDD Directional Gain(dBi)	
			Ant 0	Ant 1		For Power	For PSD
Wi-Fi Internal Antenna							
PCB	2412 ~ 2462	2	4.70	3.70	7.22	4.70	7.71
	5150 ~ 5250	2	3.80	3.00	6.42	3.80	6.81
	5250 ~ 5350	2	3.80	3.00	6.42	3.80	6.81
	5470 ~ 5725	2	4.60	3.80	7.22	4.60	7.61
	5725 ~ 5850	2	4.60	3.00	6.85	4.60	7.61
Bluetooth Internal Antenna							
PCB	2402 ~ 2480	1	3.70		--		

Note:

- The EUT supports SISO technology for 802.11b mode only.
- 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. The Beam-Forming Directional Gain (dBi) = 3.0 dBi.

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

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

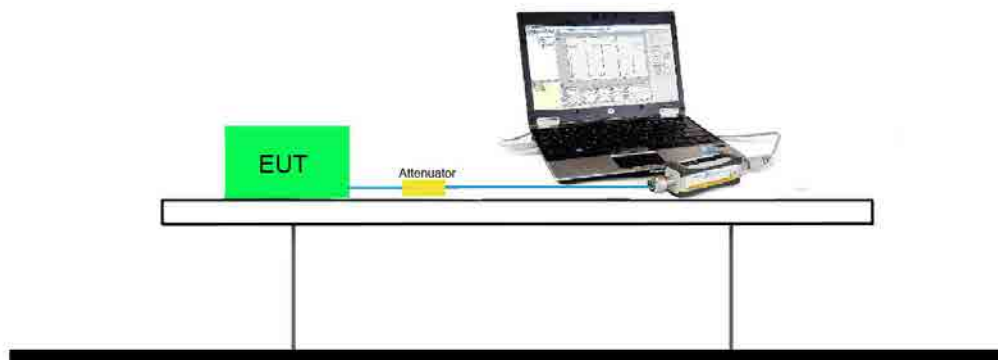
使用頻率於 5.725 GHz ~ 5.850 GHz 頻段，最大傳導輸出功率應小於或等於 1 W。

使用超過 6 dBi 方向增益之發射天線時，應依超過 6 dBi 天線方向增益的 dBi 總量，等量減少最大傳導輸出功率及最大功率頻譜密度。

5.3.2. 量測方法

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

5.3.3. 測試架構圖



5.3.4. 功率限制值測試結果

待測物名稱	OmniAccess Stellar	溫度	24°C
測試工程師	Kevin Ker	濕度	58%
測試場地	SR1	測試日期	2018/11/15

Output power at various data rates for Ant 0 / Ant 0 + 1 port:

Test Mode	Bandwidth	Channel	Frequency (MHz)	Data Rate/ MCS	Average Power (dBm)
802.11a	20	36	5180	6Mbps	20.17
				24Mbps	19.74
				54Mbps	19.23
802.11ac	20	36	5180	MCS0	17.57
				MCS4	17.06
				MCS8	16.58
802.11ac	40	38	5190	MCS0	16.44
				MCS4	16.03
				MCS9	15.58
802.11ac	80	42	5210	MCS0	14.89
				MCS4	14.40
				MCS9	13.91

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11a	6Mbps	36	5180	20.17	20.25	23.22	≤ 30.00	Pass
11a	6Mbps	44	5220	20.27	20.17	23.23	≤ 30.00	Pass
11a	6Mbps	48	5240	20.44	20.52	23.49	≤ 30.00	Pass
11a	6Mbps	52	5260	17.40	17.24	20.33	≤ 23.98	Pass
11a	6Mbps	60	5300	17.27	17.17	20.23	≤ 23.98	Pass
11a	6Mbps	64	5320	17.41	17.15	20.29	≤ 23.98	Pass
11a	6Mbps	100	5500	16.44	15.52	19.01	≤ 23.98	Pass
11a	6Mbps	120	5600	16.21	15.25	18.77	≤ 23.98	Pass
11a	6Mbps	140	5700	16.49	15.73	19.14	≤ 23.98	Pass
11a	6Mbps	144	5720	16.52	15.81	19.19	≤ 23.98	Pass
11a	6Mbps	149	5745	20.13	19.27	22.73	≤ 30.00	Pass
11a	6Mbps	157	5785	20.13	19.29	22.74	≤ 30.00	Pass
11a	6Mbps	165	5825	20.12	19.47	22.82	≤ 30.00	Pass
11ac-VHT20	MCS0	36	5180	17.57	17.56	20.58	≤ 30.00	Pass
11ac-VHT20	MCS0	44	5220	19.68	19.51	22.61	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	19.47	19.53	22.51	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	17.31	16.78	20.06	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	17.62	17.13	20.39	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	17.68	16.79	20.27	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	16.46	15.53	19.03	≤ 23.98	Pass
11ac-VHT20	MCS0	120	5600	15.68	15.33	18.52	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	16.28	15.66	18.99	≤ 23.98	Pass
11ac-VHT20	MCS0	144	5720	16.05	16.03	19.05	≤ 23.98	Pass
11ac-VHT20	MCS0	149	5745	19.18	18.67	21.94	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	19.15	18.48	21.84	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	19.72	19.38	22.56	≤ 30.00	Pass

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

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11ac-VHT40	MCS0	38	5190	16.44	16.45	19.46	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	19.33	19.25	22.30	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	20.56	20.23	23.41	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	17.11	16.03	19.61	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	16.16	15.63	18.91	≤ 23.98	Pass
11ac-VHT40	MCS0	118	5590	19.11	18.56	21.85	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	18.43	17.91	21.19	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	19.70	19.13	22.43	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	19.54	18.39	22.01	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	19.47	18.52	22.03	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	14.89	14.53	17.72	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	14.65	14.11	17.40	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	13.51	12.89	16.22	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	17.79	17.51	20.66	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	19.18	18.26	21.75	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	16.76	16.66	19.72	≤ 30.00	Pass

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

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (Beam-Forming Mode)								
11ac-VHT20	MCS0	36	5180	21.16	20.81	24.00	≤ 29.58	Pass
11ac-VHT20	MCS0	44	5220	21.44	21.13	24.30	≤ 29.58	Pass
11ac-VHT20	MCS0	48	5240	21.66	21.18	24.44	≤ 29.58	Pass
11ac-VHT20	MCS0	52	5260	17.17	16.71	19.96	≤ 23.56	Pass
11ac-VHT20	MCS0	60	5300	17.77	17.15	20.48	≤ 23.56	Pass
11ac-VHT20	MCS0	64	5320	17.66	16.88	20.30	≤ 23.56	Pass
11ac-VHT20	MCS0	100	5500	16.42	15.58	19.03	≤ 22.76	Pass
11ac-VHT20	MCS0	120	5600	15.76	15.35	18.57	≤ 22.76	Pass
11ac-VHT20	MCS0	140	5700	16.32	15.57	18.97	≤ 22.76	Pass
11ac-VHT20	MCS0	144	5720	16.21	16.18	19.21	≤ 22.76	Pass
11ac-VHT20	MCS0	149	5745	20.74	20.26	23.52	≤ 29.15	Pass
11ac-VHT20	MCS0	157	5785	21.17	20.36	23.79	≤ 29.15	Pass
11ac-VHT20	MCS0	165	5825	21.21	20.47	23.87	≤ 29.15	Pass
11ac-VHT40	MCS0	38	5190	20.15	20.23	23.20	≤ 29.58	Pass
11ac-VHT40	MCS0	46	5230	21.17	20.77	23.98	≤ 29.58	Pass
11ac-VHT40	MCS0	54	5270	20.52	20.23	23.39	≤ 23.56	Pass
11ac-VHT40	MCS0	62	5310	17.16	15.86	19.57	≤ 23.56	Pass
11ac-VHT40	MCS0	102	5510	16.31	15.49	18.93	≤ 22.76	Pass
11ac-VHT40	MCS0	118	5590	19.13	18.57	21.87	≤ 22.76	Pass
11ac-VHT40	MCS0	134	5670	18.44	17.88	21.18	≤ 22.76	Pass
11ac-VHT40	MCS0	142	5710	19.70	19.15	22.44	≤ 22.76	Pass
11ac-VHT40	MCS0	151	5755	20.35	19.88	23.13	≤ 29.15	Pass
11ac-VHT40	MCS0	159	5795	20.71	20.32	23.53	≤ 29.15	Pass
11ac-VHT80	MCS0	42	5210	20.24	19.87	23.07	≤ 29.58	Pass
11ac-VHT80	MCS0	58	5290	14.66	14.13	17.41	≤ 23.56	Pass
11ac-VHT80	MCS0	106	5530	13.52	12.86	16.21	≤ 22.76	Pass
11ac-VHT80	MCS0	122	5610	17.78	17.51	20.66	≤ 22.76	Pass
11ac-VHT80	MCS0	138	5690	19.31	18.28	21.84	≤ 22.76	Pass
11ac-VHT80	MCS0	155	5775	20.11	19.78	22.96	≤ 29.15	Pass

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

Note 2: For 5150 ~ 5250MHz Band, Average Power Limit (dBm) = 30dBm - (6.42dBi - 6dBi) = 29.58dBm.

For 5250 ~ 5350MHz Band, Average Power Limit (dBm) = 23.98dBm - (6.42dBi - 6dBi) = 23.56dBm.

For 5470 ~ 5725MHz Band, Average Power Limit (dBm) = 23.98dBm - (7.22dBi - 6dBi) = 22.76dBm.

For 5725 ~ 5850MHz Band, Average Power Limit (dBm) = 30dBm - (6.85dBi - 6dBi) = 29.15dBm.

5.4. 6dB 佔用頻寬

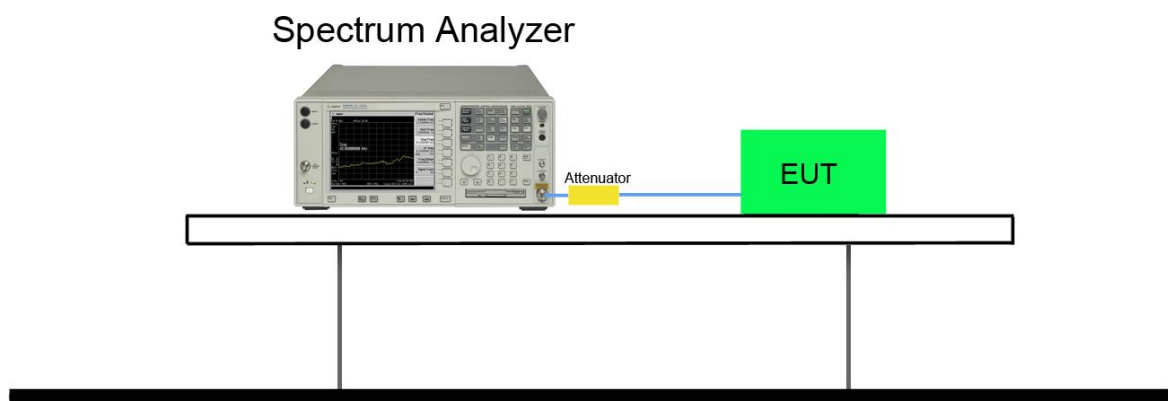
5.4.1. 適用標準

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。

5.4.2. 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. 6dB 佔用頻寬測試結果

待測物名稱	OmniAccess Stellar	溫度	24°C
測試工程師	Kevin Ker	濕度	58%
測試場地	SR1	測試日期	2018/11/16

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 0 / Ant 0 + 1						
802.11a	6Mbps	149	5745	16.37	≥ 0.5	Pass
802.11a	6Mbps	157	5785	16.33	≥ 0.5	Pass
802.11a	6Mbps	165	5825	16.37	≥ 0.5	Pass
802.11ac-VHT20	MCS0	149	5745	17.71	≥ 0.5	Pass
802.11ac-VHT20	MCS0	157	5785	17.68	≥ 0.5	Pass
802.11ac-VHT20	MCS0	165	5825	17.65	≥ 0.5	Pass
802.11ac-VHT40	MCS0	151	5755	36.36	≥ 0.5	Pass
802.11ac-VHT40	MCS0	159	5795	36.39	≥ 0.5	Pass
802.11ac-VHT80	MCS0	155	5775	76.44	≥ 0.5	Pass

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

Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

Channel 151 (5755MHz)



Channel 159 (5795MHz)



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

Channel 155 (5775MHz)



5.5. 最大功率頻譜密度

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

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。

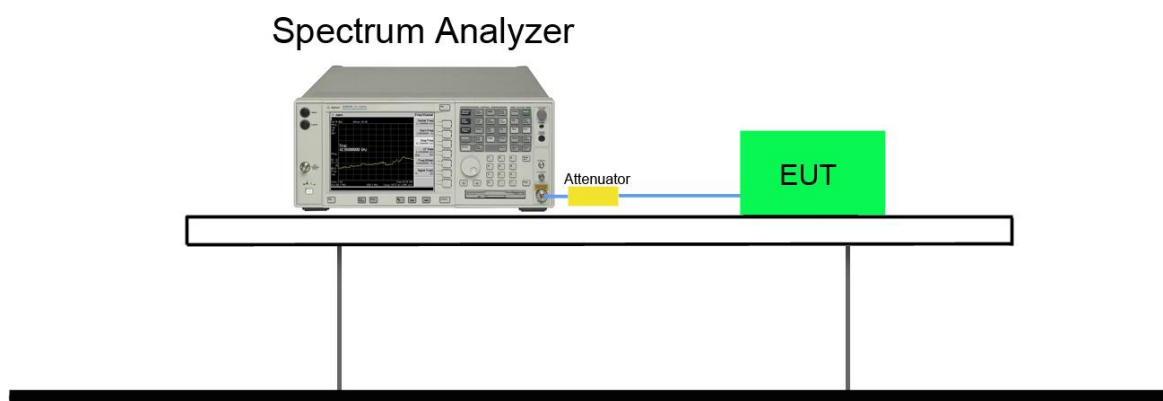
使用頻率於5.725 GHz ~ 5.850 GHz 頻段，在任何500 kHz 頻帶中最大功率頻譜密度應小於或等於30 dBm。

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。

5.5.2. 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，量測定於1MHz/500kHz頻寬。

5.5.3. 測試架構圖



5.5.4. 峰值功率頻譜密度測試結果

待測物名稱	OmniAccess Stellar	溫度	24°C
測試工程師	Kevin Ker	濕度	58%
測試場地	SR1	測試日期	2018/11/18
測試項目	Power Spectral Density (UNII-Band 1 & UNII-2A & UNII-2C)		

Test Mode	Data Rate / MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
CDD Mode									
11a	6Mbps	36	5180	9.88	9.53	96.10	12.89	≤ 16.19	Pass
11a	6Mbps	44	5220	10.34	10.47	96.10	13.59	≤ 16.19	Pass
11a	6Mbps	48	5240	10.64	10.64	96.10	13.82	≤ 16.19	Pass
11a	6Mbps	52	5260	6.76	6.56	96.10	9.85	≤ 10.19	Pass
11a	6Mbps	60	5300	6.71	6.57	96.10	9.83	≤ 10.19	Pass
11a	6Mbps	64	5320	6.83	6.35	96.10	9.78	≤ 10.19	Pass
11a	6Mbps	100	5500	6.15	5.45	96.10	9.00	≤ 9.39	Pass
11a	6Mbps	120	5600	6.05	5.53	96.10	8.98	≤ 9.39	Pass
11a	6Mbps	140	5700	5.90	5.80	96.10	9.03	≤ 9.39	Pass
11a	6Mbps	144	5720	6.18	5.45	96.10	9.02	≤ 9.39	Pass
11ac-VHT20	MCS0	36	5180	6.92	7.11	98.24	10.03	≤ 16.19	Pass
11ac-VHT20	MCS0	44	5220	10.25	10.24	98.24	13.26	≤ 16.19	Pass
11ac-VHT20	MCS0	48	5240	10.76	10.07	98.24	13.44	≤ 16.19	Pass
11ac-VHT20	MCS0	52	5260	6.43	5.85	98.24	9.16	≤ 10.19	Pass
11ac-VHT20	MCS0	60	5300	6.79	6.26	98.24	9.54	≤ 10.19	Pass
11ac-VHT20	MCS0	64	5320	6.90	5.85	98.24	9.41	≤ 10.19	Pass
11ac-VHT20	MCS0	100	5500	6.01	5.30	98.24	8.68	≤ 9.39	Pass
11ac-VHT20	MCS0	120	5600	5.64	5.68	98.24	8.67	≤ 9.39	Pass
11ac-VHT20	MCS0	140	5700	5.76	5.45	98.24	8.62	≤ 9.39	Pass
11ac-VHT20	MCS0	144	5720	5.72	5.69	98.24	8.71	≤ 9.39	Pass

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

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

Note 3: For 5150 - 5250MHz Band: PSD Limit (dBm/MHz) = 17dBm/MHz - (6.81dBi - 6dBi) = 16.19dBm/MHz.

For 5250 - 5350MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (6.81dBi - 6dBi) = 10.19dBm/MHz.

For 5470 - 5725MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (7.61dBi - 6dBi) = 9.39dBm/MHz.

Test Mode	Data Rate / MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
CDD Mode									
11ac-VHT40	MCS0	38	5190	2.46	2.46	95.23	5.68	≤ 16.19	Pass
11ac-VHT40	MCS0	46	5230	7.16	6.99	95.23	10.30	≤ 16.19	Pass
11ac-VHT40	MCS0	54	5270	6.85	6.16	95.23	9.74	≤ 10.19	Pass
11ac-VHT40	MCS0	62	5310	3.90	2.93	95.23	6.66	≤ 10.19	Pass
11ac-VHT40	MCS0	102	5510	3.73	2.94	95.23	6.58	≤ 9.39	Pass
11ac-VHT40	MCS0	118	5590	5.86	5.40	95.23	8.86	≤ 9.39	Pass
11ac-VHT40	MCS0	134	5670	5.43	4.86	95.23	8.38	≤ 9.39	Pass
11ac-VHT40	MCS0	142	5710	6.19	5.63	95.23	9.14	≤ 9.39	Pass
11ac-VHT80	MCS0	42	5210	-1.96	-1.58	92.48	1.58	≤ 16.19	Pass
11ac-VHT80	MCS0	58	5290	-2.11	-1.74	92.48	1.43	≤ 10.19	Pass
11ac-VHT80	MCS0	106	5530	-2.46	-2.34	92.48	0.95	≤ 9.39	Pass
11ac-VHT80	MCS0	122	5610	1.99	1.46	92.48	5.08	≤ 9.39	Pass
11ac-VHT80	MCS0	138	5690	3.73	3.00	92.48	6.73	≤ 9.39	Pass

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

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

Note 3: For 5150 - 5250MHz Band: PSD Limit (dBm/MHz) = 17dBm/MHz - (6.81dBi - 6dBi) = 16.19dBm/MHz.

For 5250 - 5350MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (6.81dBi - 6dBi) = 10.19dBm/MHz.

For 5470 - 5725MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (7.61dBi - 6dBi) = 9.39dBm/MHz.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/ MHz)	Result
Beam-Forming Mode									
11ac-VHT20	MCS0	36	5180	10.13	10.21	98.24	13.18	≤ 16.58	Pass
11ac-VHT20	MCS0	44	5220	10.97	10.47	98.24	13.74	≤ 16.58	Pass
11ac-VHT20	MCS0	48	5240	11.20	10.47	98.24	13.86	≤ 16.58	Pass
11ac-VHT20	MCS0	52	5260	7.67	6.89	98.24	10.31	≤ 10.58	Pass
11ac-VHT20	MCS0	60	5300	7.66	6.69	98.24	10.21	≤ 10.58	Pass
11ac-VHT20	MCS0	64	5320	7.66	6.47	98.24	10.11	≤ 10.58	Pass
11ac-VHT20	MCS0	100	5500	7.15	5.84	98.24	9.56	≤ 9.78	Pass
11ac-VHT20	MCS0	120	5600	6.70	6.06	98.24	9.40	≤ 9.78	Pass
11ac-VHT20	MCS0	140	5700	6.38	6.14	98.24	9.27	≤ 9.78	Pass
11ac-VHT20	MCS0	144	5720	6.62	6.50	98.24	9.57	≤ 9.78	Pass
11ac-VHT40	MCS0	38	5190	6.37	6.08	95.23	9.45	≤ 16.58	Pass
11ac-VHT40	MCS0	46	5230	7.49	7.10	95.23	10.52	≤ 16.58	Pass
11ac-VHT40	MCS0	54	5270	7.18	6.37	95.23	10.02	≤ 10.58	Pass
11ac-VHT40	MCS0	62	5310	7.06	6.51	95.23	10.01	≤ 10.58	Pass
11ac-VHT40	MCS0	102	5510	6.74	6.16	95.23	9.68	≤ 9.78	Pass
11ac-VHT40	MCS0	118	5590	6.40	5.85	95.23	9.36	≤ 9.78	Pass
11ac-VHT40	MCS0	134	5670	6.62	5.82	95.23	9.46	≤ 9.78	Pass
11ac-VHT40	MCS0	142	5710	6.59	5.50	95.23	9.30	≤ 9.78	Pass
11ac-VHT80	MCS0	42	5210	3.74	3.63	92.48	7.04	≤ 16.58	Pass
11ac-VHT80	MCS0	58	5290	1.22	0.68	92.48	4.31	≤ 10.58	Pass
11ac-VHT80	MCS0	106	5530	1.79	1.16	92.48	4.83	≤ 9.78	Pass
11ac-VHT80	MCS0	122	5610	5.05	4.21	92.48	8.00	≤ 9.78	Pass
11ac-VHT80	MCS0	138	5690	3.80	3.41	92.48	6.96	≤ 9.78	Pass

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

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

Note 3: For 5150 - 5250MHz Band: PSD Limit (dBm/MHz) = 17dBm/MHz - (6.42dBi - 6dBi) = 16.58dBm/MHz.

For 5250 - 5350MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (6.42dBi - 6dBi) = 10.58dBm/MHz.

For 5470 - 5725MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (7.22dBi - 6dBi) = 9.78dBm/MHz.

Product	OmniAccess Stellar	Temperature	22°C
Test Engineer	Messiah Li	Relative Humidity	54%
Test Site	TR3	Test Date	2018/11/18
Test Item	Power Spectral Density (Band 3)		

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD(dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 (CDD Mode)										
11a	6Mbps	149	5745	1.31	1.37	96.10	6.99	11.51	≤ 28.39	Pass
11a	6Mbps	157	5785	1.20	1.25	96.10	6.99	11.40	≤ 28.39	Pass
11a	6Mbps	165	5825	1.66	1.37	96.10	6.99	11.69	≤ 28.39	Pass
11ac-VHT20	MCS0	149	5745	0.68	1.56	98.24	6.99	11.14	≤ 28.39	Pass
11ac-VHT20	MCS0	157	5785	0.97	0.81	98.24	6.99	10.89	≤ 28.39	Pass
11ac-VHT20	MCS0	165	5825	1.38	1.71	98.24	6.99	11.55	≤ 28.39	Pass
11ac-VHT40	MCS0	151	5755	-2.24	-2.49	95.23	6.99	7.85	≤ 28.39	Pass
11ac-VHT40	MCS0	159	5795	-2.70	-2.57	95.23	6.99	7.57	≤ 28.39	Pass
11ac-VHT80	MCS0	155	5775	-8.45	-8.66	92.48	6.99	1.78	≤ 28.39	Pass

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

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

Note 3: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (7.61dBi - 6dBi) = 28.39dBm/500kHz.

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 (Beam-Forming Mode)										
11ac-VHT20	MCS0	149	5745	1.34	1.51	98.24	6.99	11.43	≤ 29.15	Pass
11ac-VHT20	MCS0	157	5785	1.20	1.05	98.24	6.99	11.12	≤ 29.15	Pass
11ac-VHT20	MCS0	165	5825	1.60	2.35	98.24	6.99	11.99	≤ 29.15	Pass
11ac-VHT40	MCS0	151	5755	-2.19	-2.08	95.23	6.99	8.08	≤ 29.15	Pass
11ac-VHT40	MCS0	159	5795	-2.28	-1.93	95.23	6.99	8.11	≤ 29.15	Pass
11ac-VHT80	MCS0	155	5775	-5.81	-5.84	92.48	6.99	4.52	≤ 29.15	Pass

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

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

Note 3: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (6.85dBi - 6dBi) = 29.15dBm/500kHz.

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

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



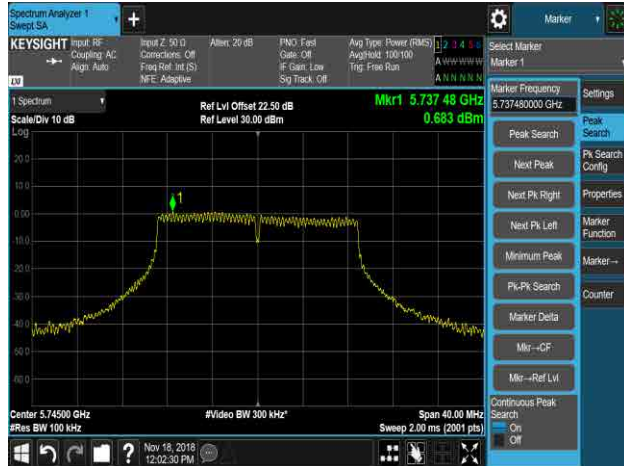
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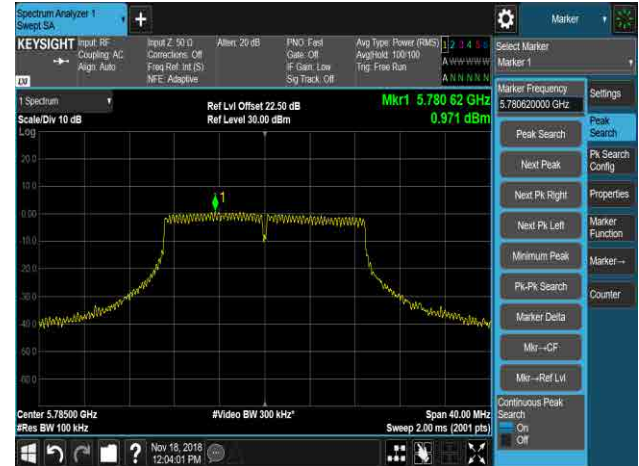
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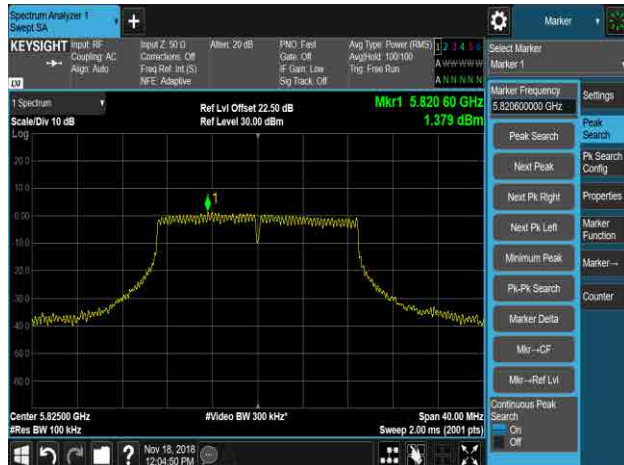
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

Channel 38 (5190MHz)



Channel 46 (5230MHz)



Channel 54 (5270MHz)



Channel 62 (5310MHz)



Channel 102 (5510MHz)



Channel 118 (5590MHz)



Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



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

Channel 42 (5210MHz)



Channel 58 (5290MHz)



Channel 106 (5530MHz)



Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



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

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

Channel 36 (5180MHz)



Channel 44 (5220MHz)



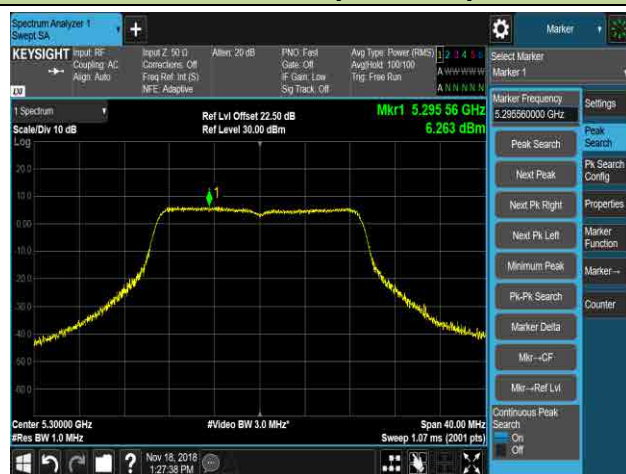
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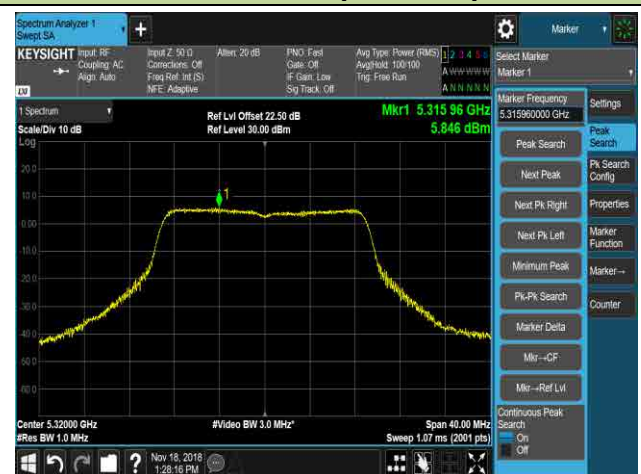
Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

Channel 38 (5190MHz)



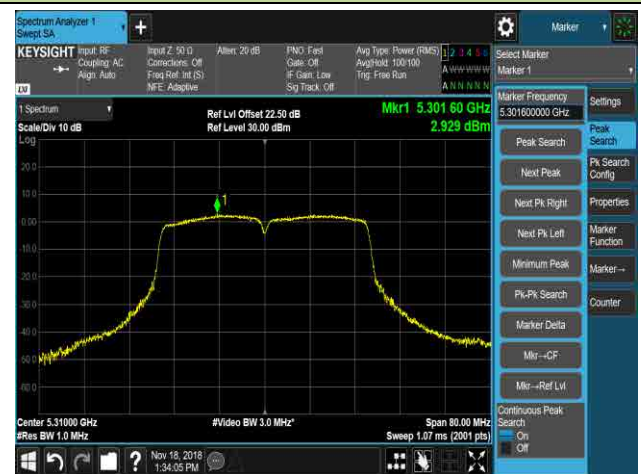
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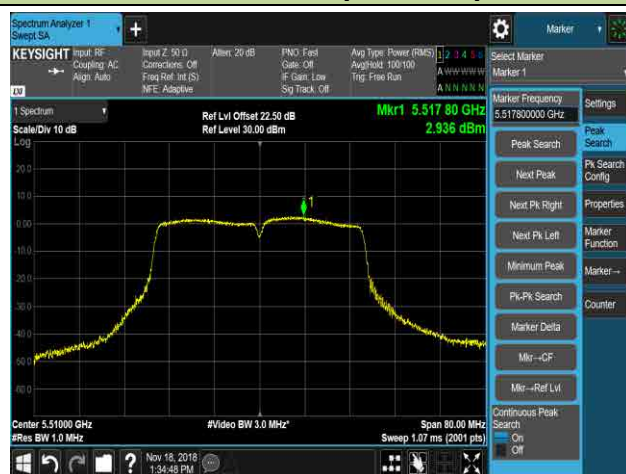
Channel 54 (5270MHz)



Channel 62 (5310MHz)



Channel 102 (5510MHz)



Channel 118 (5590MHz)



Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



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

Channel 42 (5210MHz)



Channel 58 (5290MHz)



Channel 106 (5530MHz)



Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 (Beam-Forming Mode)

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 (Beam-Forming Mode)

Channel 38 (5190MHz)



Channel 46 (5230MHz)



Channel 54 (5270MHz)



Channel 62 (5310MHz)



Channel 102 (5510MHz)



Channel 118 (5590MHz)



Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ac-VHT80 Power Spectral Density - Ant 0 / Ant 0 + 1 (Beam-Forming Mode)

Channel 42 (5210MHz)



Channel 58 (5290MHz)



Channel 106 (5530MHz)



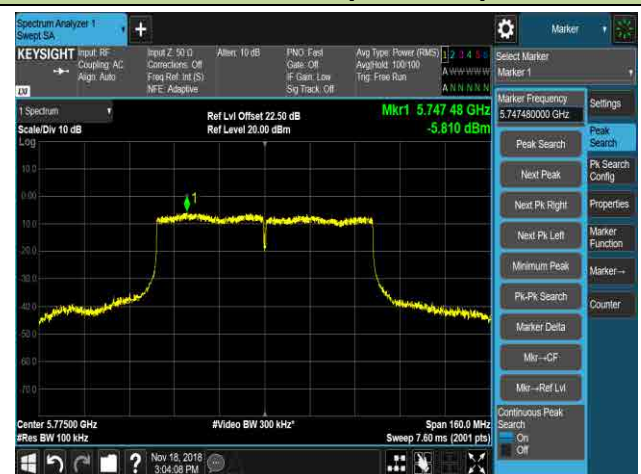
Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



802.11ac-VHT20 Power Spectral Density - Ant 1 / Ant 0 + 1 (Beam-Forming Mode)

Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)

