

低功率射頻器材 檢驗報告

申請者	台灣村田機械股份有限公司
申請者地址	臺北市大同區承德路1段17號18樓
製造廠商	silex technology, Inc.
受檢設備名稱	Wireless LAN Converter
廠牌	silex technology
型號	FBR-3250
檢驗依據標準	國家通訊傳播委員會低功率射頻器材 技術規範 (LP0002)
受理日期	109年04月22日
發行日期	109年11月17日
報告編號	20-04-MAS-061-02
檢驗結果	合格

財團法人台灣商品檢測驗證中心

33383桃園市龜山區文明路29巷8號

電話：(03)3276170~74

傳真：(03)3276188

實驗室認可編號及範圍: 0371 (9 kHz to 325 GHz)

實驗室認可證書有效期限: 110年10月31日



報告內容索引

1 一般資料	5
1.1 產品描述	5
1.2 產品特性	5
1.3 測試方法之依據	5
2 適用規範	6
2.1 規範要求	6
2.2 限制使用之頻帶	8
3 受測裝置之系統說明	9
3.1 受測裝置	9
3.2 測試模式說明	10
4 電源線傳導干擾之量測	18
5 天線增益之要求	19
5.1 適用標準	19
5.2 天線增益	19
5.3 結果判定	19
6 發射頻寬之量測	20
6.1 適用標準	20
6.2 測試配置	20
6.3 發射頻寬之量測儀器	20
6.4 量測結果	21
6.5 結果判定	36
7 最大傳導輸出功率之量測	39
7.1 最大傳導輸出功率適用標準	39
7.2 最大傳導輸出功率之測試配置	39
7.3 最大傳導輸出功率之量測儀器	39
7.4 最大傳導輸出功率之量測結果	40
7.5 結果判定	63
8 功率密度之量測	64
8.1 適用標準	64
8.2 量測功率密度之配置	64
8.3 量測功率密度之儀器	64
8.4 量測結果	65
8.5 結果判定	84

9 混附波發射限制之量測	85
9.1 適用標準.....	85
9.2 混附波發射限制之測試配置.....	85
9.3 量測混附波發射限制之儀器.....	85
9.4 混附波發射限制之量測結果 (傳導方式量測).....	85
9.5 結果判定.....	111
10 場強輻射之量測	116
10.1 適用標準.....	116
10.2 量測方法.....	116
10.3 量測場強輻射之儀器.....	116
10.4 場強度之計算.....	117
10.5 場強輻射之量測結果.....	118
10.6 頻帶外邊緣輻射場強之量測結果.....	144
10.7 頻帶外邊緣直接量測.....	145
10.8 輻射之測試配置.....	156
10.9 輻射量測之配置照片.....	157
11 量測之儀器	158

測試報告記錄

申請廠商：台灣村田機械股份有限公司
 製造廠商：silex technology, Inc.
 廠牌：silex technology
 品名：Wireless LAN Converter
 型號：FBR-3250
 檢驗依據標準：國家通訊傳播委員會低功率射頻器材技術規範(LP0002)
 規範修訂日期109年07月01日
 發射功率(電場強度)：15.99 dBm (發射功率)
 工作頻率及調變方式：5180 ~ 5240 MHz / DSSS + OFDM
 天線規格：廠牌/型號/天線增益:Unictron / H2B1PC1A1C0100/ 4.4dBi

- 備註：1. 本試驗報告中是描述本實驗室以最佳的知識和能力進行試驗，我們的責任僅限於合理與謹慎的試驗，並非確保賣方之法律和/或合同的義務。
 2. 本符合性試驗係依據適當的標準及試驗樣品進行測試，其中量測不確定度可符合國際標準要求不列入結果考量，本試驗報告的結果僅針對受試驗之樣品負責，無法確保產品生產過程中的品質與性能要求。
 3. 非經本中心同意，檢驗報告不得摘錄複印使用。（全部複製除外）。

項次	測試項目	適用規範	量測設備	測試結果	結果判定
1	電源線傳導干擾之要求	低功率射頻器材技術規範 3.3節	----	----	因使用直流電源故無需測試
2	天線增益之要求	低功率射頻器材技術規範 5.7.8節	----	請參閱5.2節	----
3	發射頻寬之量測	低功率射頻器材技術規範 5.7.3.4節	請參閱6.3節	請參閱6.4節	----
4	最大傳導輸出功率之要求	低功率射頻器材技術規範 5.7.3.1節(2)	請參閱7.3節	請參閱7.4節	合格
5	功率密度之要求	低功率射頻器材技術規範 5.7.3.1節(2)	請參閱8.3節	請參閱8.4節	合格
6	混附波發射限制之要求	低功率射頻器材技術規範 5.7.4.1節	請參閱9.3節	請參閱9.4節	合格
7	場強輻射之要求	低功率射頻器材技術規範 5.7.4.4 - 5.7.4.6節	請參閱10.3節	請參閱10.5節	合格
	以下空白				

測量實驗室負責人：鄭景敦 109.11.17 直接主管：黃毅珩 109.11.17 量測員：郭培培 109/11/17

1 一般資料

1.1 產品描述

- a) 產品型態 : Wireless LAN Converter
- b) 商 標 : silex technology
- c) 產品型號 : FBR-3250
- d) 供應電源 : DC 12V
- e) 產品類別 : ☐ (1) 供戶外操作使用 ☐ (2) 供室內操作使用
☐ (3) 供固定式點對點操作使用 ☒ (4) 供用戶端操作使用

備註：1. 本產品內含WLAN 無線技術，WLAN部份包含DTS與UNII頻帶。本報告僅記錄UNII Band 1 (5180 MHz 至 5240 MHz)部份，DTS部份請見ETC報告編號:20-04-MAS-061-01，UNII Band 2 (5260 至 5320 MHz)部份請見ETC報告編號:20-04-MAS-061-03，UNII Band 3 (5500至 5700 MHz) 部份請見ETC報告編號:20-04-MAS-061-04，UNII Band 4 (5725至 5850 MHz) 部份請見ETC報告編號:20-04-MAS-061-05。

2. 本器材不具備主控運作模式動態頻率選擇與Ad-hoc功能。

3. 本案經申請者切結器材不提供隨貨配件，配件由實驗室(或申請者)提供併同檢驗。

1.2 產品特性

此裝置為Wireless LAN Converter，其發射頻率落於 5180 至 5240 MHz，採用 IEEE 802.11a/n 直接序列展頻調變技術。其應用為區域網路無線傳輸。5180 ~ 5240 MHz主波發射功率為 15.99 dBm，即為 39.68 mW，其無線特性列表如下：

RF chain	2T2R	
Operating Frequency	IEEE802.11a/n 20: 5.18GHz ~5.24GHz, 4ch; IEEE 802.11n 40MHz 5.19GHz~5.230GHz, 2ch	
Modulation	IEEE 802.11a(OFDM/DSSS) 48/54 Mbps (QAM-64) 24/36 Mbps (QAM-64) 12/18 Mbps (QPSK) 6/19 Mbps (BPSK)	IEEE 802.11n(OFDM/DSSS) QAM-64 QAM-16 QPSK BPSK

1.3 測試方法之依據

本測試報告之所有項目皆依據國家通訊傳播委員會低功率射頻器材技術規範以及參考IEEE ANSI、歐盟ETSI EN與美國EIA、FCC 47 CFR PART 2、KDB及ARIB STD-T67 等有關檢驗之規定。

試驗室介紹：財團法人台灣商品檢測驗證中心電磁相容試驗室通過下列評鑑、認可、登錄與相互認可協議：

- ❶ ISO/IEC 17025 : TAF(0371), NVLAP(Lab code: 200133-0), CBTL(**TÜ V SÜ D**)
- ❷ Recognized : BSMI, NCC, FCC(TW0371, TW1112), ISED(Industry Canada Site # 2949A-2)
- ❸ Filing : VCCI (C-13518, R-13177, G-10098, T-11682)
- ❹ MRA : Australia, New Zealand, Singapore

2 適用規範

2.1 規範要求

(1) 傳導之規定

依據國家通訊傳播委員會低功率射頻器材技術規範之3.3節，電源傳導干擾之限制要求如下：

頻率範圍 MHz	傳導限制值(dB μ V)	
	準峰值(Quasi-peak)	平均值(Average)
0.15 – 0.5	66-56(註)	56-46(註)
0.5 – 5	56	46
5 – 30	60	50

註:隨頻率之對數遞減

(2) 天線增益之要求

國家通訊傳播委員會低功率射頻器材技術規範5.7.8節規定，天線之規格不受3.2 規定之限制。若使用超過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。

(3) 最大傳導輸出功率與功率密度之要求

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.3.1節(1)(2)(3)(4)之規定：

(1) 供戶外操作使用：

(A) 最大傳導輸出功率應小於或等於 1 W。

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 17 dBm。

(C) 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。

(D) 在水平面仰角超過 30 度時，其最大 EIRP 應小於或等於 21 dBm。

(2) 供室內操作使用：

(A) 最大傳導輸出功率應小於或等於 1 W。

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 17 dBm。

(C) 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。

(3) 供固定式點對點操作使用：

(A) 最大傳導輸出功率應小於或等於 1 W。

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 17 dBm。

(C) 使用超過 23 dBi 方向增益之指向性天線時，應依超過 23 dBi 天線方向增益的 dBi總量，等量減少最大傳導輸出功率及最大功率頻譜密度。

(D) 固定式點對點操作，不包括點對多點系統、全方向性應用及多台共站發射機傳送相同資訊。

(4) 供用戶端裝置(Client Device)操作使用：

(A) 最大傳導輸出功率應小於或等於 250 mW。

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 11 dBm。

(C) 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。

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.3.4節之規定：

- (1) 最大傳導輸出功率必須使用依據均方根等效電壓校準之儀器測量於任何連傳輸之時段，測量結果須依儀器限制(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測量，以符合本段落所提之發射定義。
- (2) 最大功率頻譜密度檢驗規定：
 - (A) 應將測試儀器直接連接待測物，以傳導方式執行。
 - (B) 5.15 GHz～5.25 GHz、5.25 GHz～5.35 GHz 及 5.470 GHz～5.725 GHz 頻段，測試儀器之頻寬應設定為 1 MHz 頻寬或待測物之 26 dB 發射頻寬，兩者取較小者。
 - (C) 5.725 GHz～5.850 GHz 頻段，測試儀器之頻寬應設定為 500 kHz 或待測物之 26 dB 發射頻寬，兩者取較小者。
 - (D). 解析頻寬小於 (B)或 (C)時，應以補償方式計算總功率頻譜密度

(4) 帶外發射限制之要求

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.4.1節之規定，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)≤-27 dBm/MHz。

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.4.3節之規定，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。

(5) 輻射之規定

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.4.5節之規定，在 1GHz 以下的非必要之發射，應符合第 3.6節之規定，任何使用交流市電為供應電之設備亦須符合第 3.3節之電源線傳導限制值。

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.4.6節之規定，不必要發射頻率屬3.5節 規定頻段者，應符合 3.6節之規定。

落於3.5節禁用頻段之輻射干擾需符合3.6節之一般限制要求：

頻率(f) MHz	電場強度 (微伏特/公尺， $\mu\text{V/m}$)	測距 (公尺)
$0.009 \leq f \leq 0.490$	$2400/f(\text{kHz})$	300
$0.490 < f \leq 1.705$	$24000/f(\text{kHz})$	30
$1.705 < f < 30$	30	30
$30 \leq f \leq 88$	100	3
$88 < f \leq 216$	150	3
$216 < f \leq 960$	200	3
$960 < f$	500	3

2.2 限制使用之頻帶

頻率 (MHz)	頻率 (MHz)
0.090~0.110	1660.0~1785.0
0.490~0.510	1805.0~1880.0
2.172~2.198	1885.0~1900.0
3.013~3.033	1905.0~1985.0
4.115~4.198	2010.0~2025.0
5.670~5.690	2110.0~2170.0
6.200~6.300	2200.0~2300.0
8.230~8.400	2310.0~2390.0
12.265~12.600	2483.5~2900.0
13.340~13.430	3260.0~3267.0
14.965~15.020	3332.0~3339.0
16.700~16.755	3345.8~3358.0
19.965~20.020	3500.0~4400.0
25.500~25.700	4500.0~5250.0
37.475~38.275	5350.0~5460.0
73.500~75.400	7250.0~7750.0
108.00~138.00	8025.0~8500.0
149.90~150.05	9000.0~9200.0
156.70~156.90	9300.0~9500.0
162.01~167.17	10600~12700
167.72~173.20	13250~13400
240.00~285.00	14470~14500
322.00~335.40	15350~16200
399.90~410.00	17700~21400
485.00~510.00	22010~23120
608.00~614.00	23600~24000
703.00~748.00	31200~31800
758.00~803.00	36430~36500
825.00~915.00	38600 以上
930.00~1240.0	
1300.0~1427.0	
1435.0~1626.5	

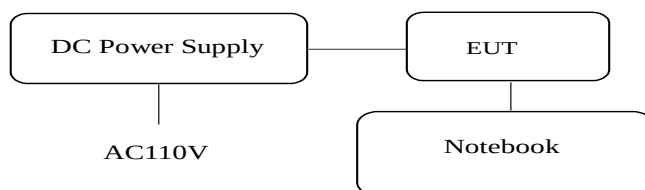
3 受測裝置之系統說明

3.1 受測裝置

裝置名稱	製造者/代理者	型 號	纜線說明
* Wireless LAN Converter	silex technology, Inc.	FBR-3250	----
Notebook	HP	650G1	----
DC Power Supply	GW	GPS-1850	非隔離電源線 2.0m*1 非隔離電源線 1.8m*1 (Volex/V1625)
LAN Cable	eje	N/A	非隔離信號線 1.0m * 1

註: 1.標記“*”表欲申請之受測物及配件。

2.測試配置：



3. 測試模式：

3.1 IEEE 802.11a, 802.11n HT20mode:

測試頻道如下：

Channel	Frequency (MHz)
Low = 36	5180
Middle = 40	5200
High = 48	5240

IEEE 802.11a mode: 6 Mbps, data rate is the worse case for full testing.

IEEE 802.11n (20 MHz) mode: MCS0 data rate is the worse case for full testing.

3.2 IEEE 802.11n HT40 mode:

測試頻道如下：

Channel	Frequency (MHz)
38	5190
46	5230

IEEE 802.11n (40 MHz) mode: MCS0 data rate is the worse case for full testing.

4. 軟體設定:Detector Assittnt 1.1

		Power Setting
IEEE 802.11a	5180	12.5
	5200	12.5
	5240	12.5
IEEE 802.11n HT20	5180	13.5
	5200	13.5
	5240	13.5
IEEE 802.11n HT40	5190	11.5
	5230	11.5

3.2 測試模式說明

3.2.1 調變方式及模式

Test Mode	Modulation	Note
A	IEEE 802.11a	-
B	IEEE 802.11n HT20	-
C	IEEE 802.11n HT40	-

Mode	IEEE 802.11a/n20 (20MHz)	IEEE 802.11n40 (40MHz)
Test Channel	Frequency (MHz)	Frequency (MHz)
Channel Low (L)	5180	5190
Channel Mid (M)	5200	-
Channel High (H)	5240	5230

3.2.2 測試項目及模式

Item	測試項目	測試模式	測試頻率(MHz)
1	電源線傳導干擾之量測	-	-
2	發射頻寬之量測	A, B, C (註3)	L, M, H
3	最大傳導輸出功率之量測	A, B, C (註3)	L, M, H
4	功率密度之量測	A, B, C (註3)	L, M, H
5	混附波發射限制之量測	A, B, C (註3)	L, M, H
6	場強輻射之量測(主諧波)	A, B, C (註3)	L, M, H
6.1	場強輻射之量測(1GHz以下)	B (註1)	M (註2)
6.2	場強輻射之量測(1GHz以上)	A, B, C (註3)	L, M, H

註: 1. 以上調變方式預掃時無差異，擇一作最終測試並記錄之。

2. 高，中，低頻道預掃時無差異，擇中間頻道作最終測試並記錄之。

3. 本產品內含雙天線，802.11n模式下有MIMO之功能，故對兩隻天線分別進行測試再加總並記錄之。802.11a無MIMO之功能，以最大傳導輸出功率較大者做為Worse Case，進行其他項目之量測。

4. 量測場強輻射時，應對其三個正交軸(X、Y、Z)的方位評估測試，並分別測試以找出最大輻射電場強度軸向，以最差軸模式測試，並記錄其值與軸向放置。

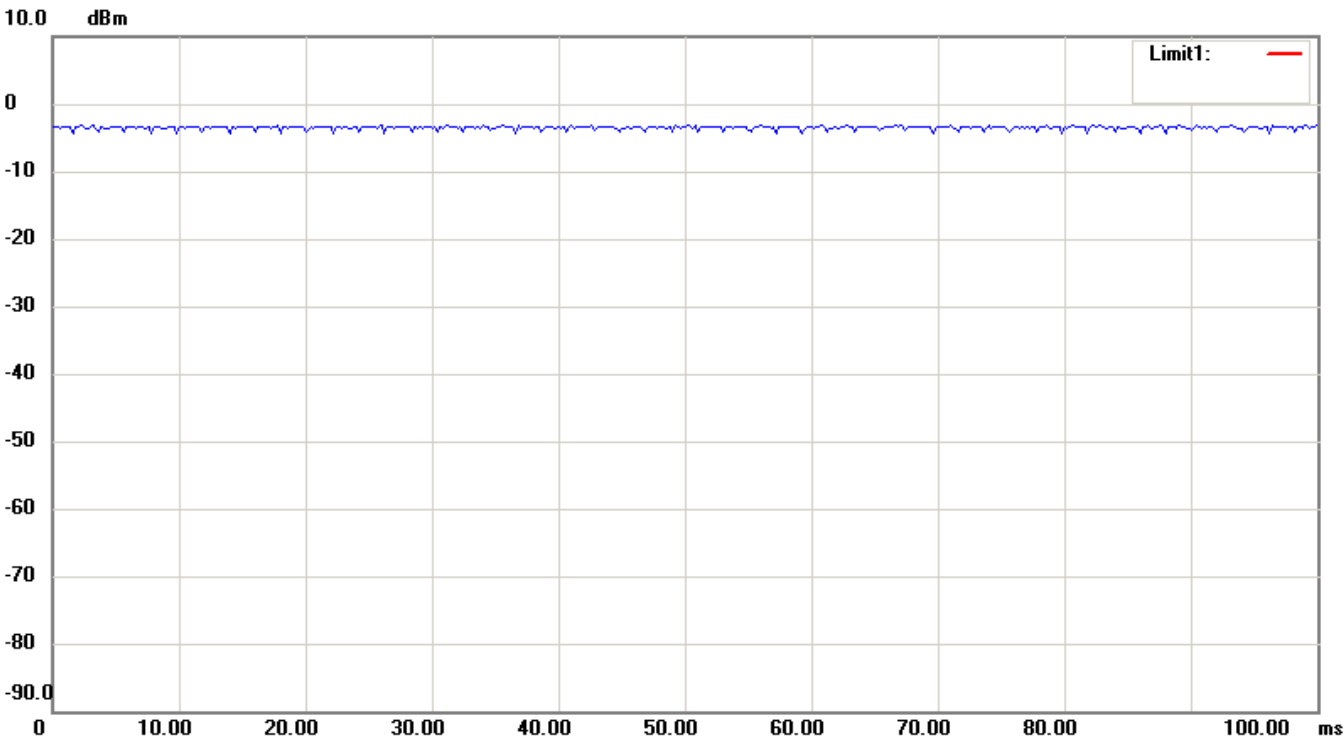
5. 依 NCC 74 次一致性會議：審驗時不具一般正常使用模式者，得不包括一般正常使用模式。

3.2.3 測試場地

項次	測 試 場 地
1	☒ RE02 — EMC B1 — N2 第一大樓地下二樓 3m 半電波暗室(N2)
2	☐ CE04 — 10M 2F 第三大樓二樓傳導測試室(10m 大樓)
3	☒ RF — Cond01 第一大樓地下一樓直量測試區
4	☐ RF — Cond02 第一大樓地下二樓直量測試區

3.2.4 Duty cycle
IEEE 802.11a

File:	20-04-MAS-061_5-2a_Ant1	#21	Date:	2020/5/20	Temperature:	25 °C
Site:	RF-Cond01				Humidity:	63 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 15dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a Duty-1		

File: 20-04-MAS-061_5-2a_Ant1

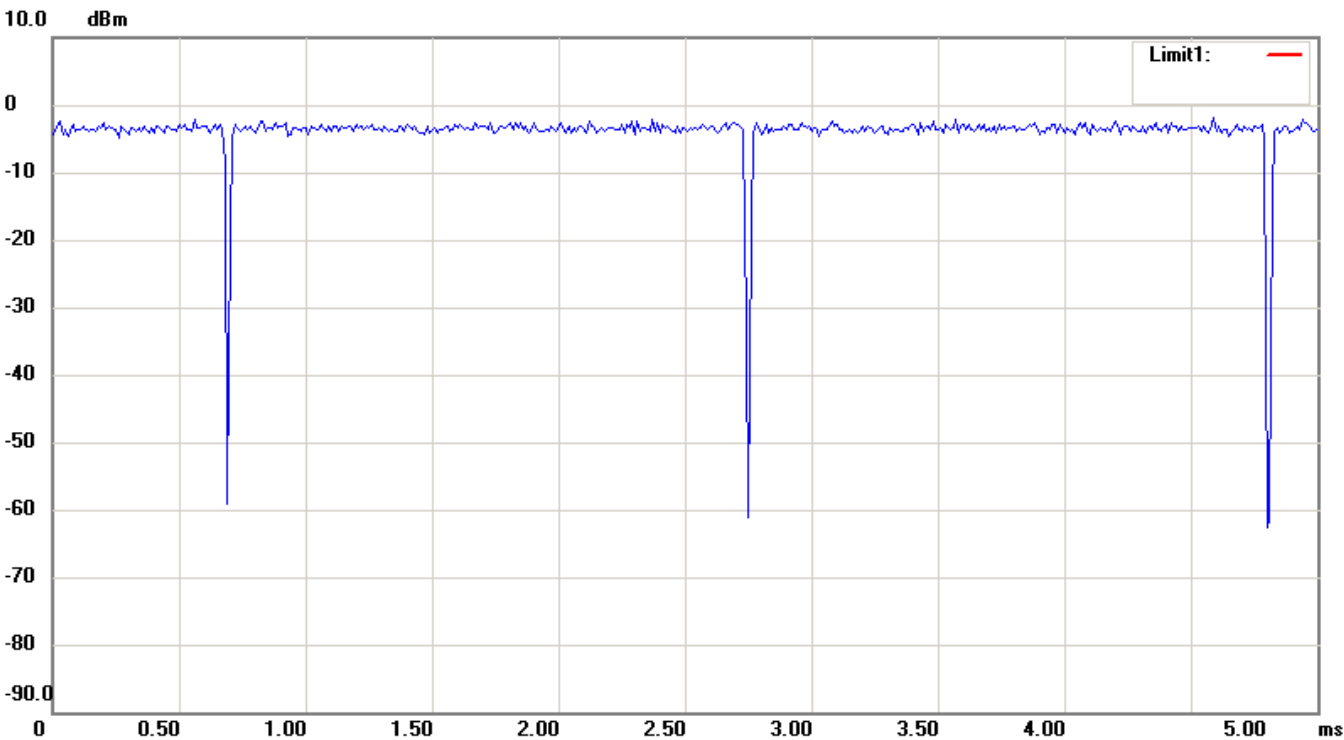
#22

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 5ms	Att.: 15dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a Duty-2 (Duty Cycle > 98%)		

IEEE 802.11n HT20

File: 20-04-MAS-061_5-2n20_Ant0

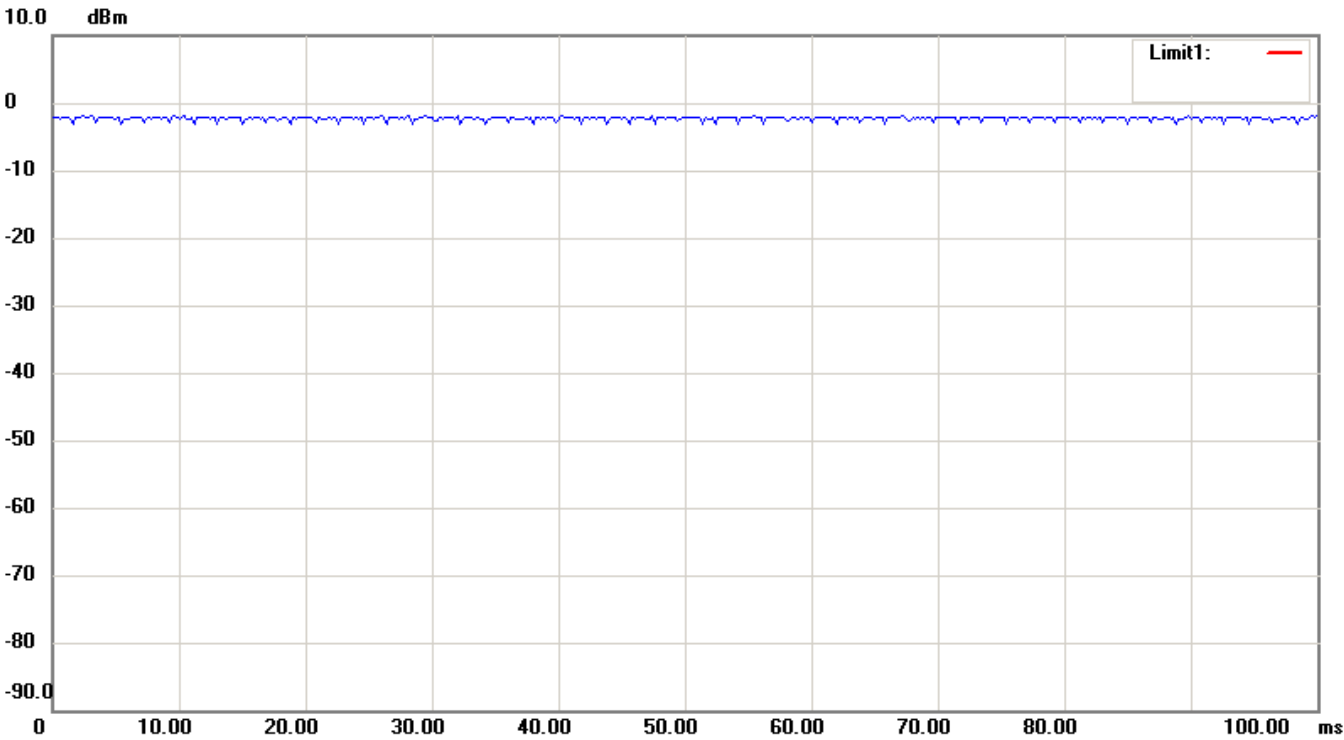
Site: RF-Cond01

#21

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 15dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20 Duty-1		

File: 20-04-MAS-061_5-2n20_Ant0

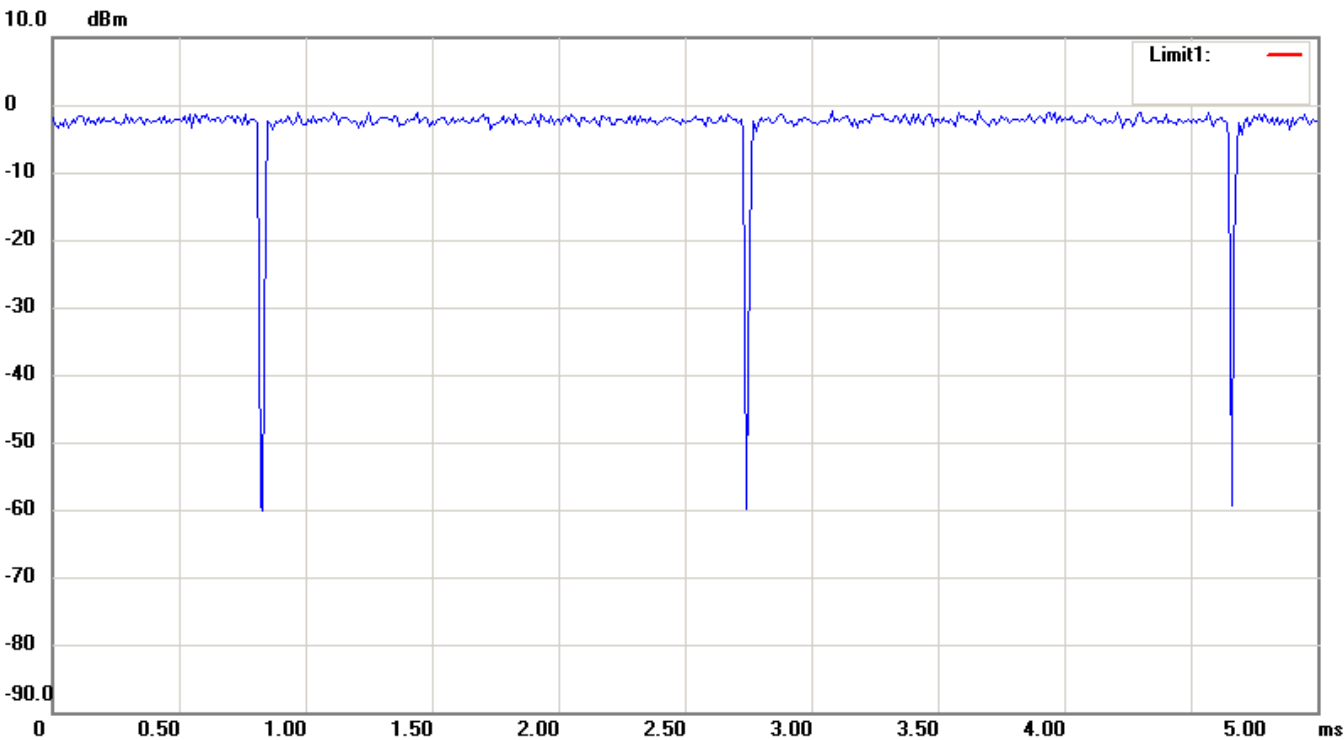
#22

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 5ms	Att.: 15dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20 Duty-2 (Duty Cycle > 98%)		

IEEE 802.11n HT40

File: 20-04-MAS-061_5-2n40_Ant0

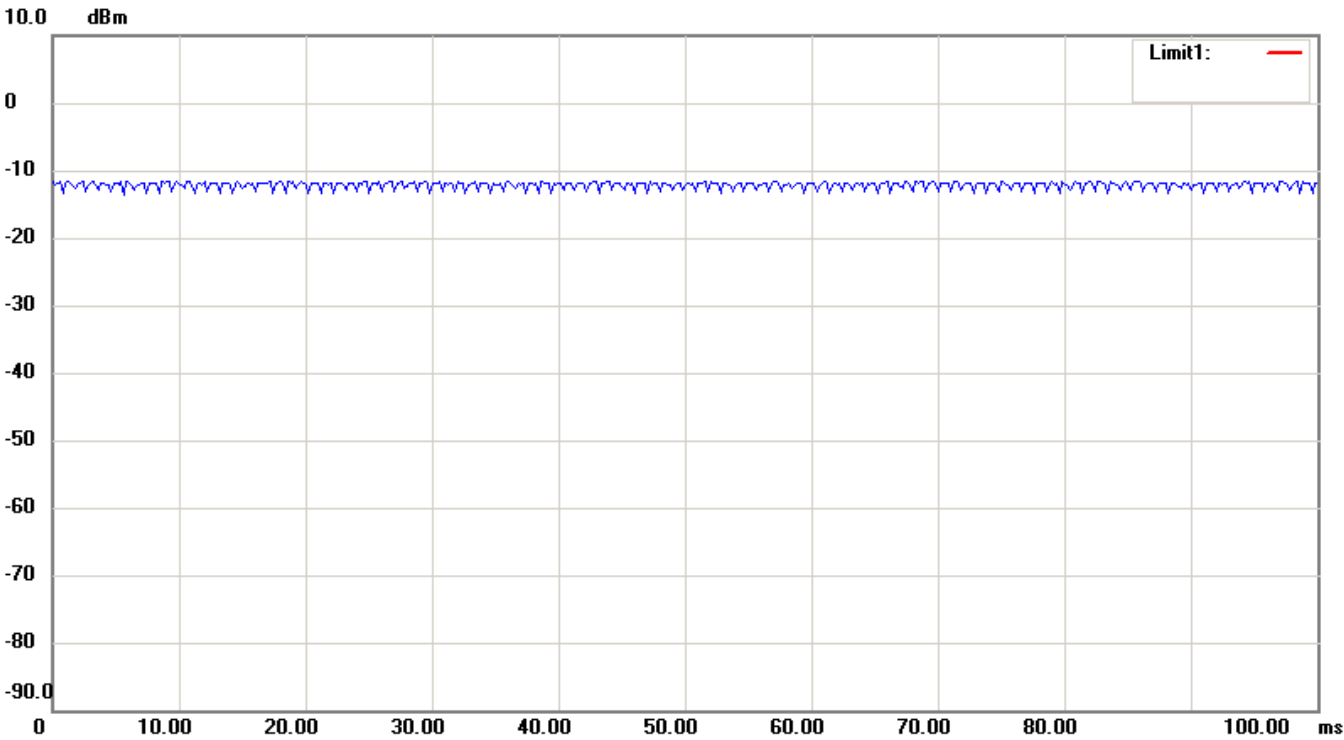
Site: RF-Cond01

#15

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 15dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n40 Duty-1		

File: 20-04-MAS-061_5-2n40_Ant0

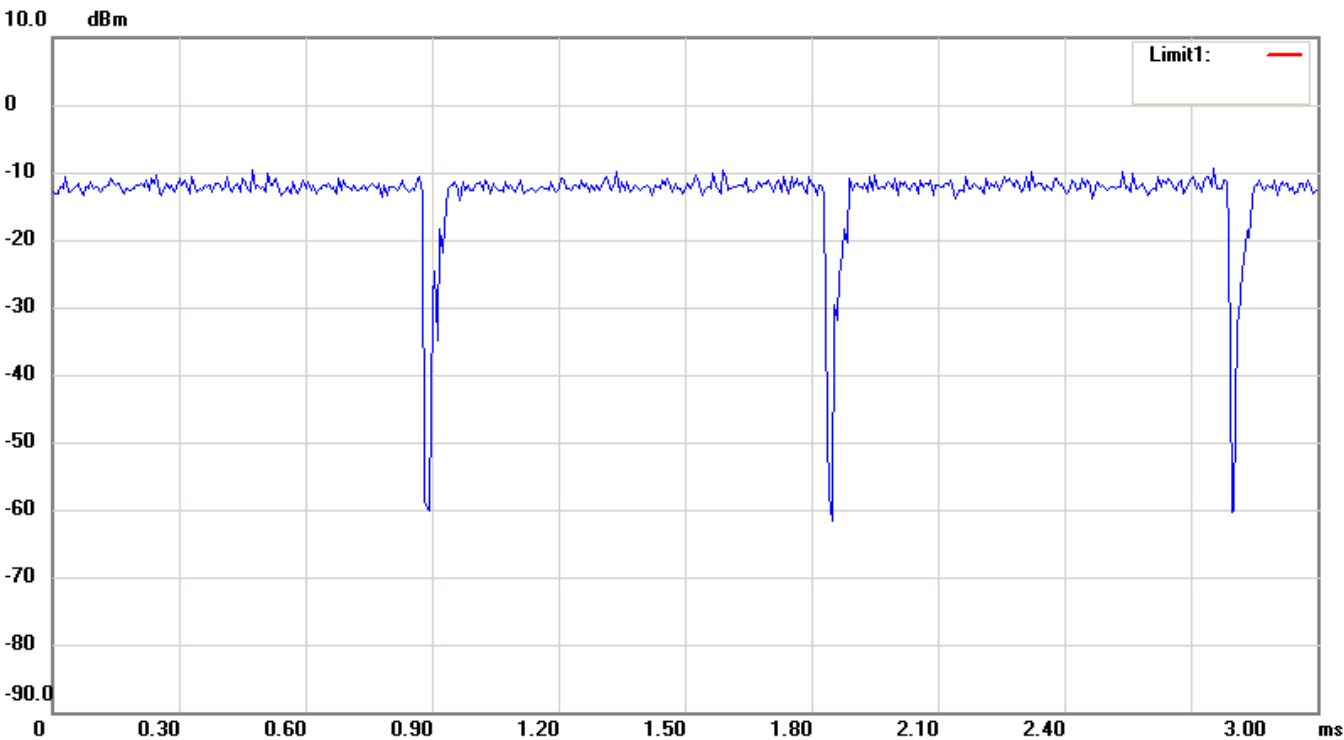
#16

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 3ms	Att.: 15dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n40 Duty-2 (Duty Cycle = 93.7%)		

4 電源線傳導干擾之量測

本產品使用電源為直流電源，故無須對其電源傳導干擾部份進行測試。

5 天線增益之要求

5.1 適用標準

國家通訊傳播委員會低功率射頻器材技術規範 5.7.8 節規定，天線之規格不受 3.2 規定之限制。若使用超過 6 dBi 方向增益之發射天線時，應依超過 6 dBi 天線方向增益的 dBi 總量，等量減少最大傳導輸出功率及最大功率頻譜密度。

5.2 天線增益

此裝置使用兩隻相同的內接式天線，其天線資料如下：

廠牌：Unictron

型號：H2B1PC1A1C0100

Antenna Type	PCB Antenna
Operation Frequency Range	5150~5850 MHz
Antenna Gain	4.4 dBi

(參照天線規格資料)

操作於MIMO模式下，Antenna1(CHAIN 0)+Antenna2(CHAIN 1) = 7.41 dBi，天線之方向性增益高於 6dBi。

5.3 結果判定

CHAIN 0 及 CHAIN 1 之方向性增益皆未超過 6 dBi，因此不需減少最大傳導輸出功率及功率密度之限制值。

操作在MIMO模式下，CHAIN 0 + CHAIN 1 之天線增益為 7.41 dBi 高於6dBi，因此需減少最大傳導輸出功率及功率密度之限制值。

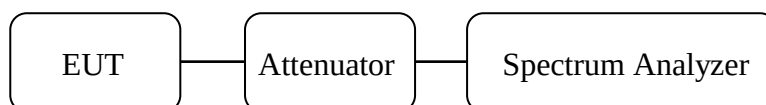
6 發射頻寬之量測

6.1 適用標準

國家通訊傳播委員會低功率射頻器材技術規範5.7節無規定限制值，僅提供數據參考計算用。

6.2 測試配置

圖 1：發射頻寬之測試配置



6.3 發射頻寬之量測儀器

儀器名稱	製造者	型 號
Spectrum Analyzer	R&S	FSV
Attenuator	WEINSCHL	56-10

測試軟體: LZ-RF (Ver. ETC-3A2)

6.4 量測結果

測試工程師: 羅世勇

6.4.1 調變技術: IEEE 802.11a

測試日期: May 20, 2020

環境溫度 : 25°C

環境濕度: 63%

Channel	26dB Bndwidth (MHz)	Chart
L	22.8734	Page 22
M	22.7106	Page 23
H	22.7106	Page 24

註：繪圖資料請參考第 22-24 頁。

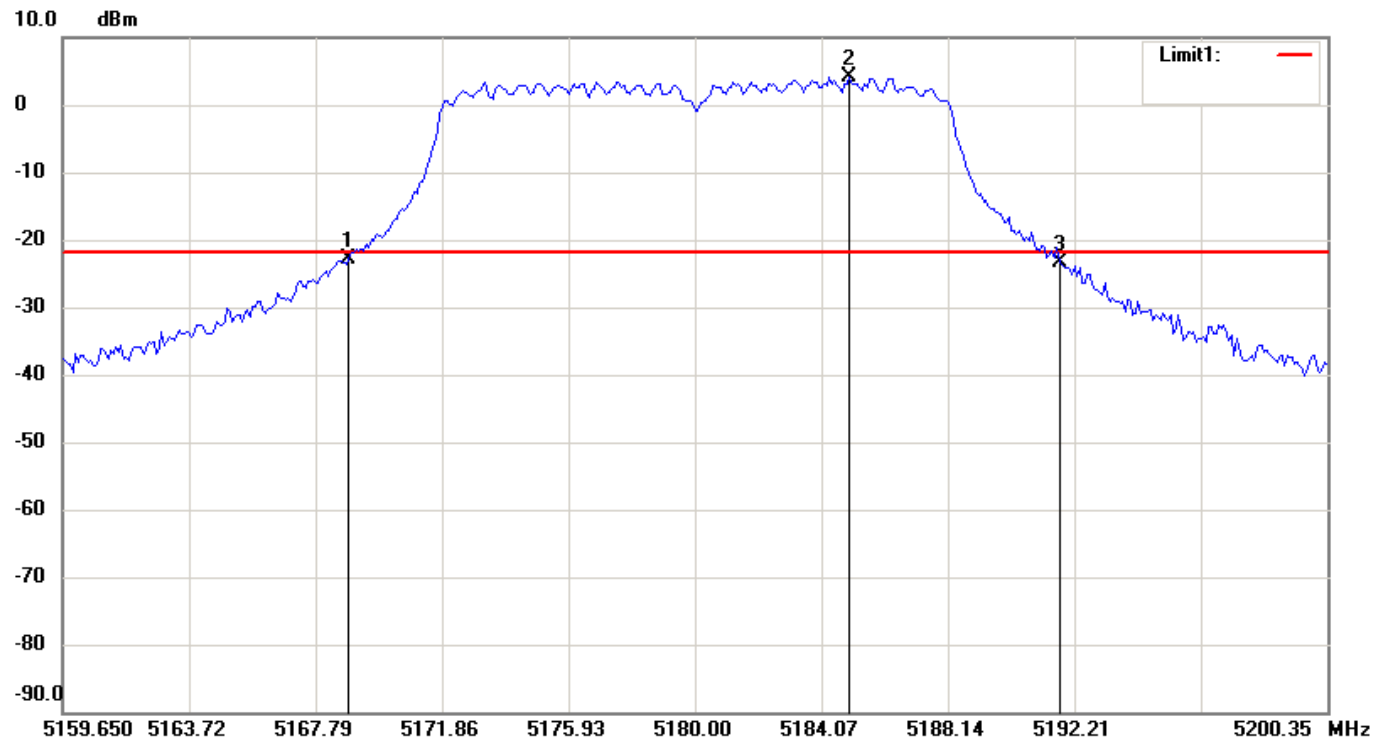
File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#2

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -21.78dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11a Channel 36_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5168.84820	-22.86
2	5184.96540	4.22
3	5191.72160	-23.43

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	22.8734	-0.57

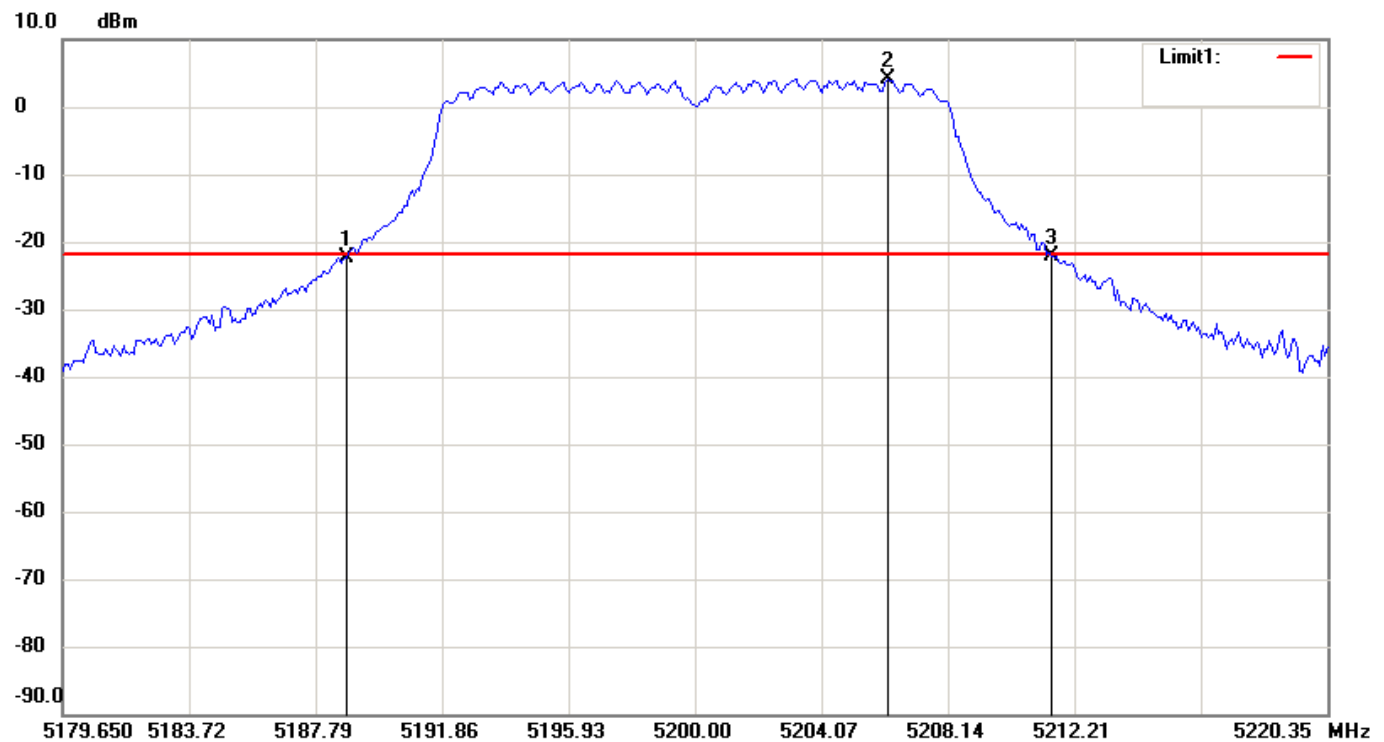
File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#9

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -21.98dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11a Channel 40_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5188.76680	-22.26
2	5206.18640	4.02
3	5211.47740	-22.03

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	22.7106	0.23

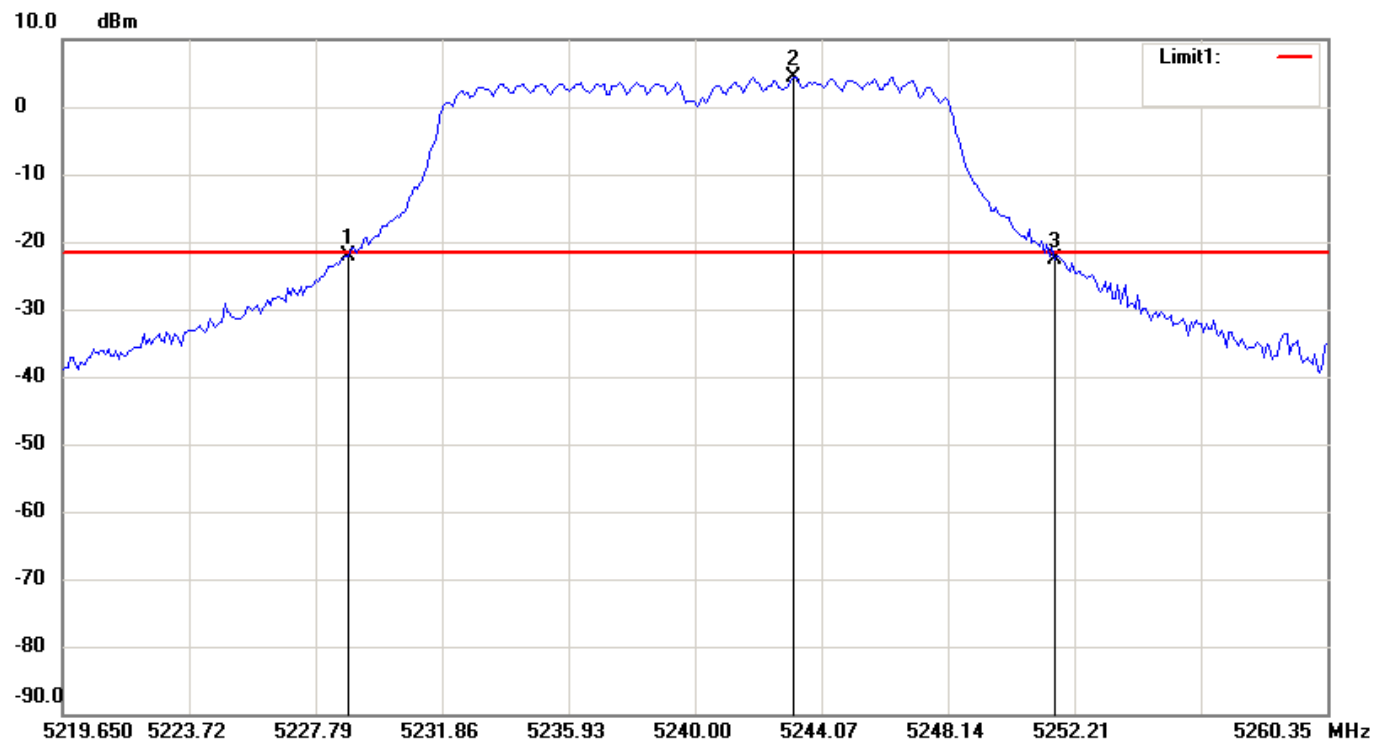
File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#15

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -21.55dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11a Channel 48_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5228.84820	-22.02
2	5243.17460	4.45
3	5251.55880	-22.57

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	22.7106	-0.55

6.4.2 調變技術: IEEE 802.11n HT20

6.4.2.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Channel	26dB Bndwidth (MHz)	Chart
L	24.5014	Page 26
M	24.0944	Page 27
H	23.9316	Page 28

註：繪圖資料請參考第 26-28 頁。

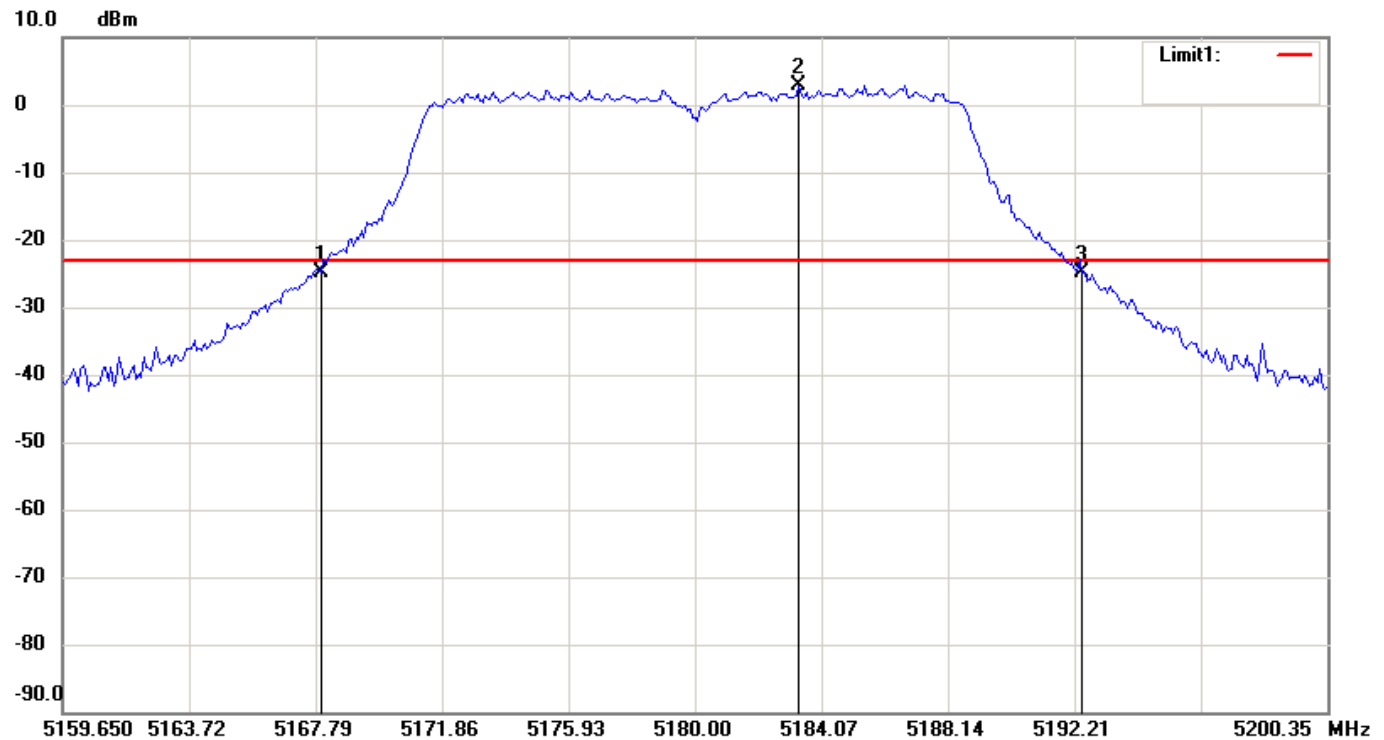
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#2

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -23.01dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20 Channel 36_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5167.95280	-24.98
2	5183.33740	2.99
3	5192.45420	-24.89

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	24.5014	0.09

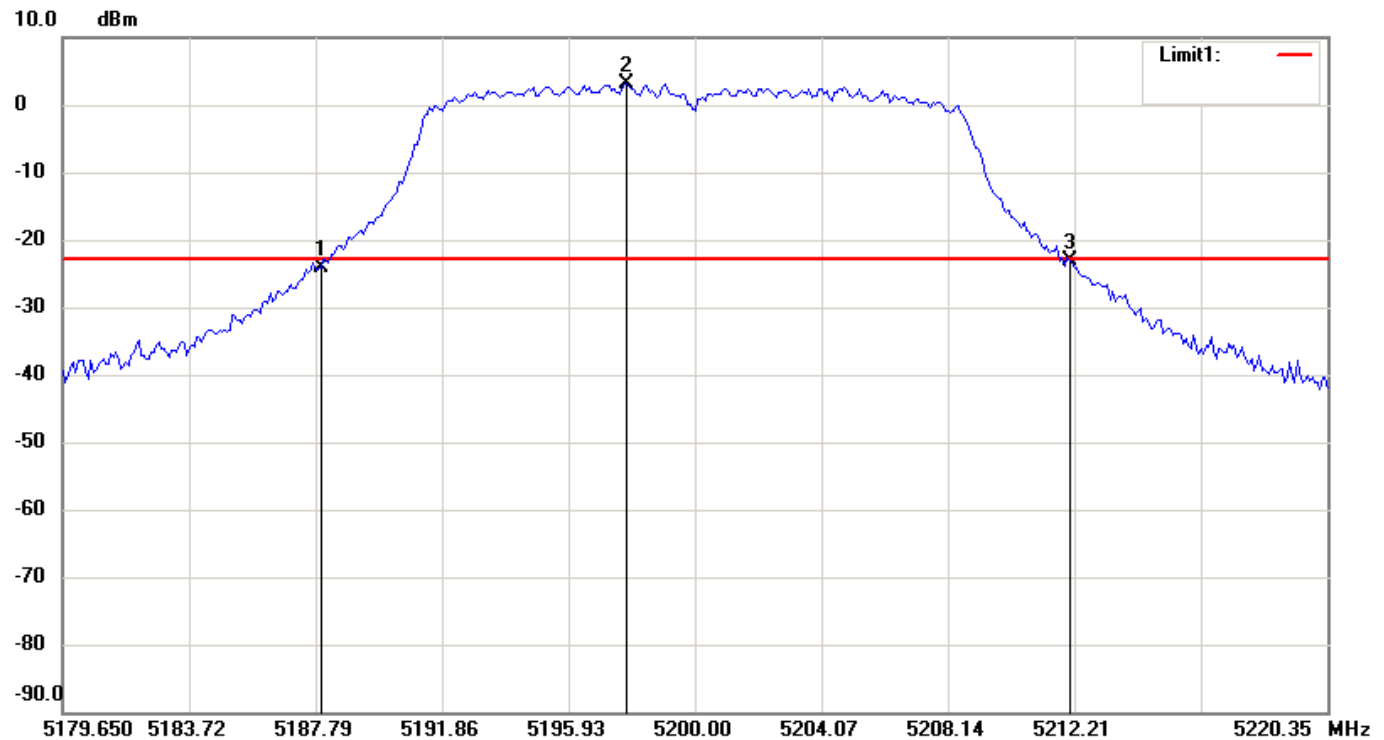
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#9

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -22.95dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20 Channel 40_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5187.95280	-24.11
2	5197.80220	3.05
3	5212.04720	-23.00

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	24.0944	1.11

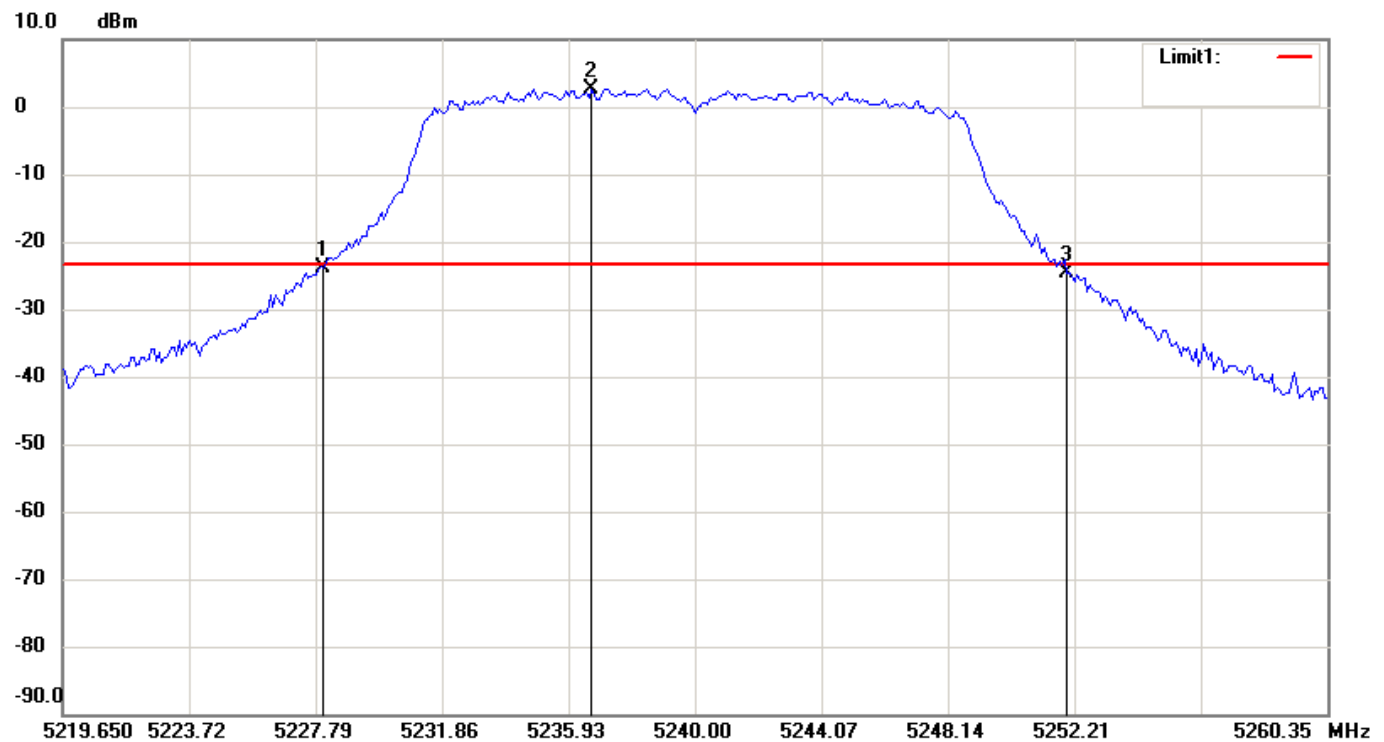
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#15

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -23.35dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20 Channel 48_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5228.03420	-23.90
2	5236.66260	2.65
3	5251.96580	-24.60

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	23.9316	-0.7

6.4.2.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Channel	26dB Bndwidth (MHz)	Chart
L	23.8502	Page 30
M	25.1526	Page 31
H	24.0130	Page 32

註：繪圖資料請參考第 30-32 頁。

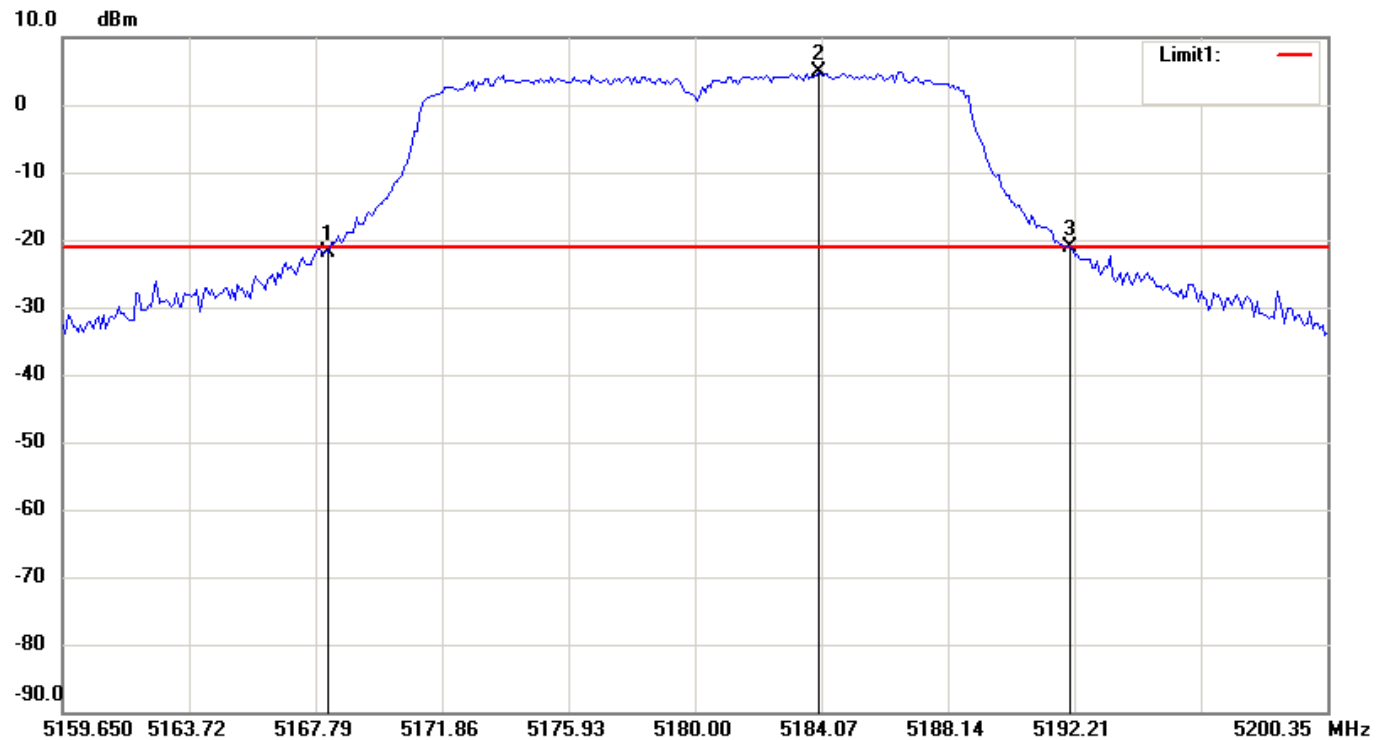
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#2

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -21.07dBm

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 36_-26dB EBW

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 300 KHz

Operator:

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5168.19700	-21.78
2	5183.98860	4.93
3	5192.04720	-21.11

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	23.8502	0.67

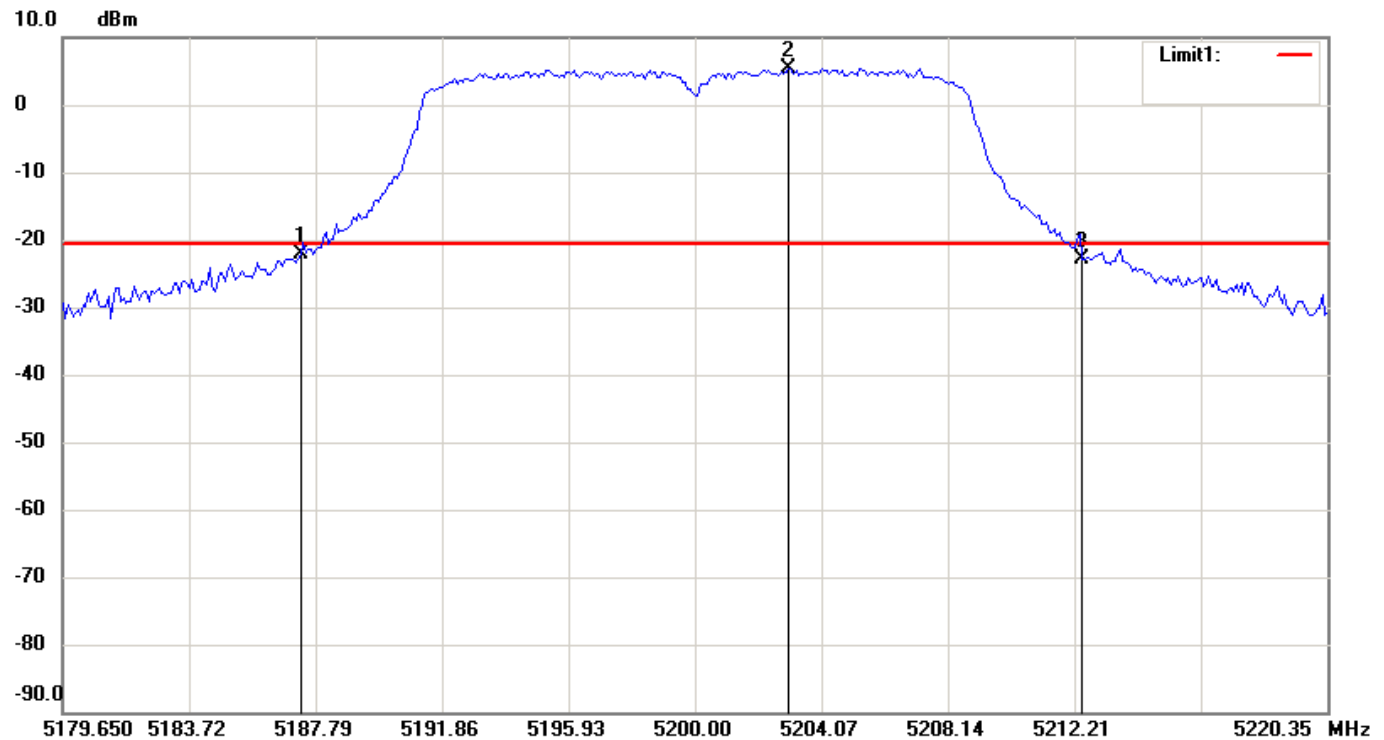
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#9

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -20.5dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20 Channel 40_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5187.30160	-22.21
2	5203.01180	5.50
3	5212.45420	-22.78

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	25.1526	-0.57

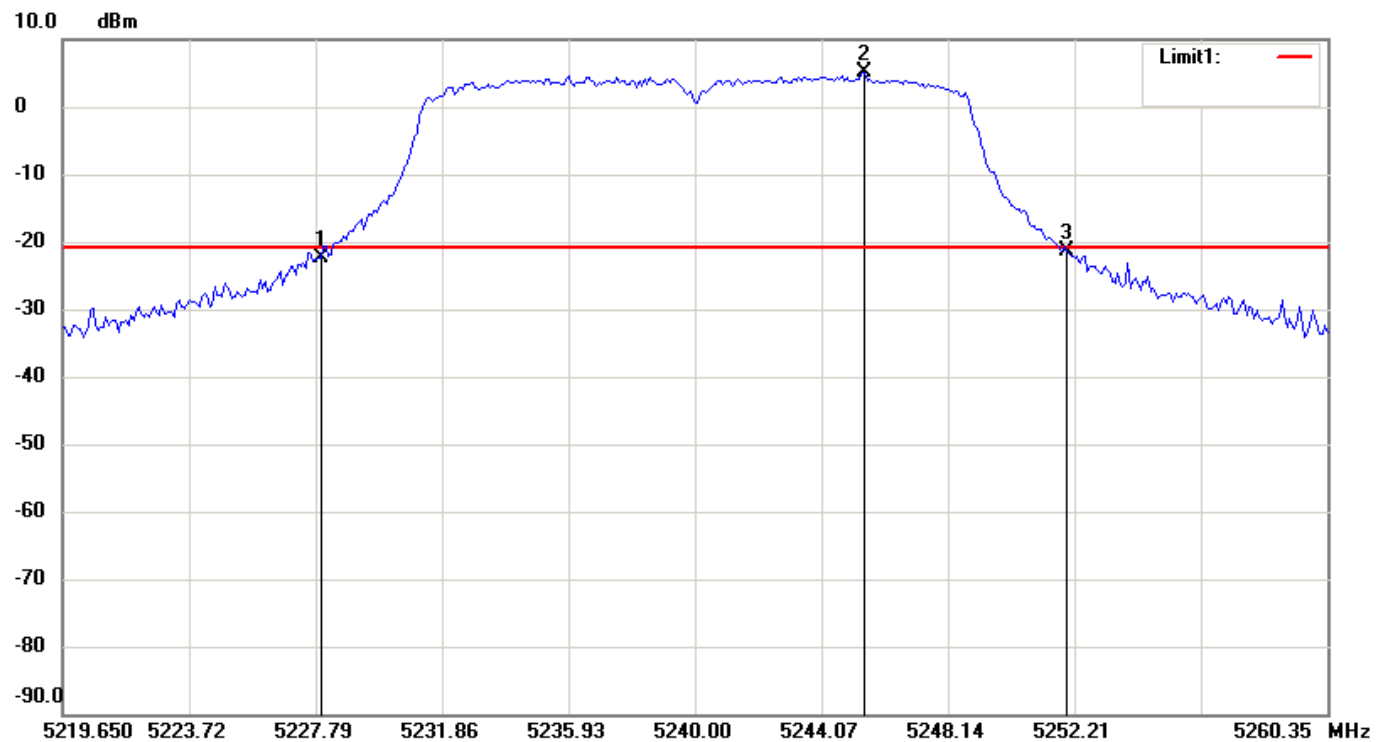
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#15

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -20.82dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20 Channel 48_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 300 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5227.95280	-22.47
2	5245.45380	5.18
3	5251.96580	-21.46

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	24.013	1.01

6.4.3 調變技術: IEEE 802.11n HT40

6.4.3.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Channel	26dB Bndwidth (MHz)	Chart
L	47.6418	Page 34
H	46.6662	Page 35

註：繪圖資料請參考第 34-35 頁。

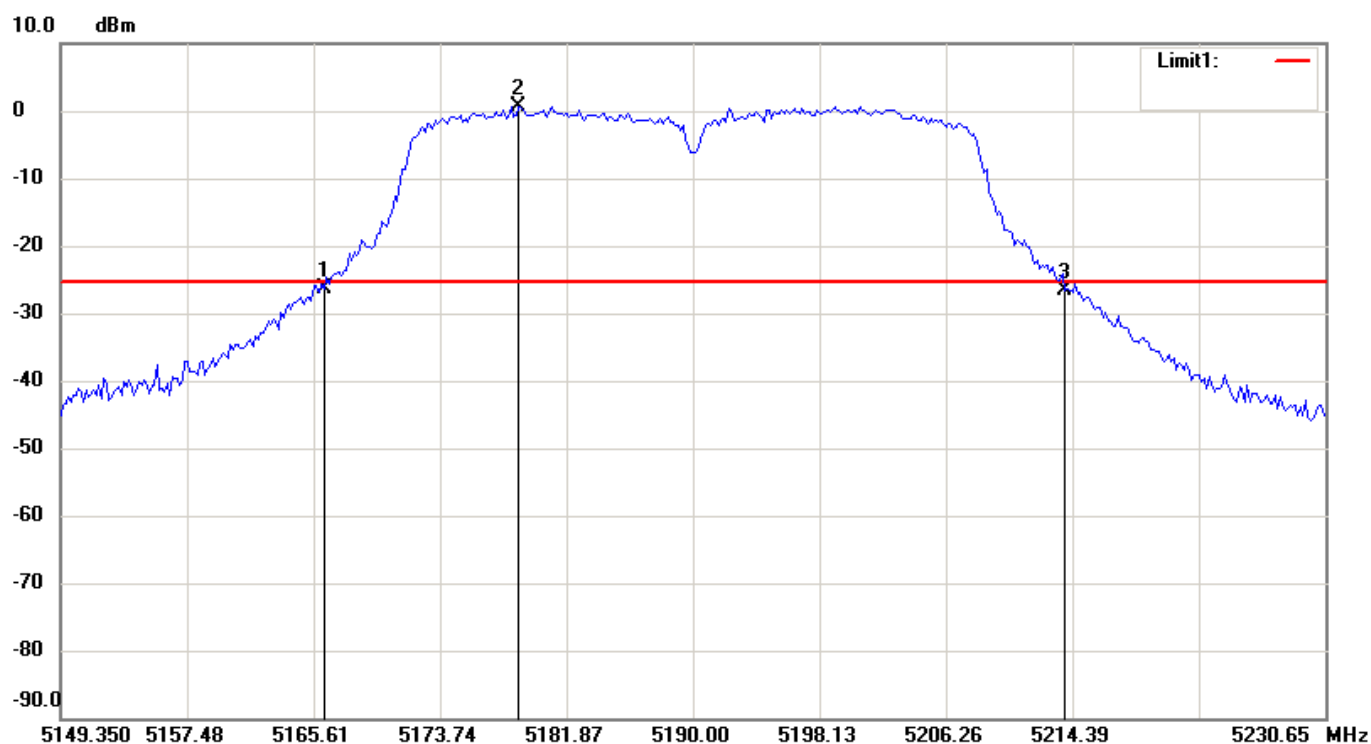
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#2

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -25.25dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40 Channel 38_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 500 KHz VBW: 3000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5166.26040	-26.39
2	5178.78060	0.75
3	5213.90220	-26.63

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	47.6418	-0.24

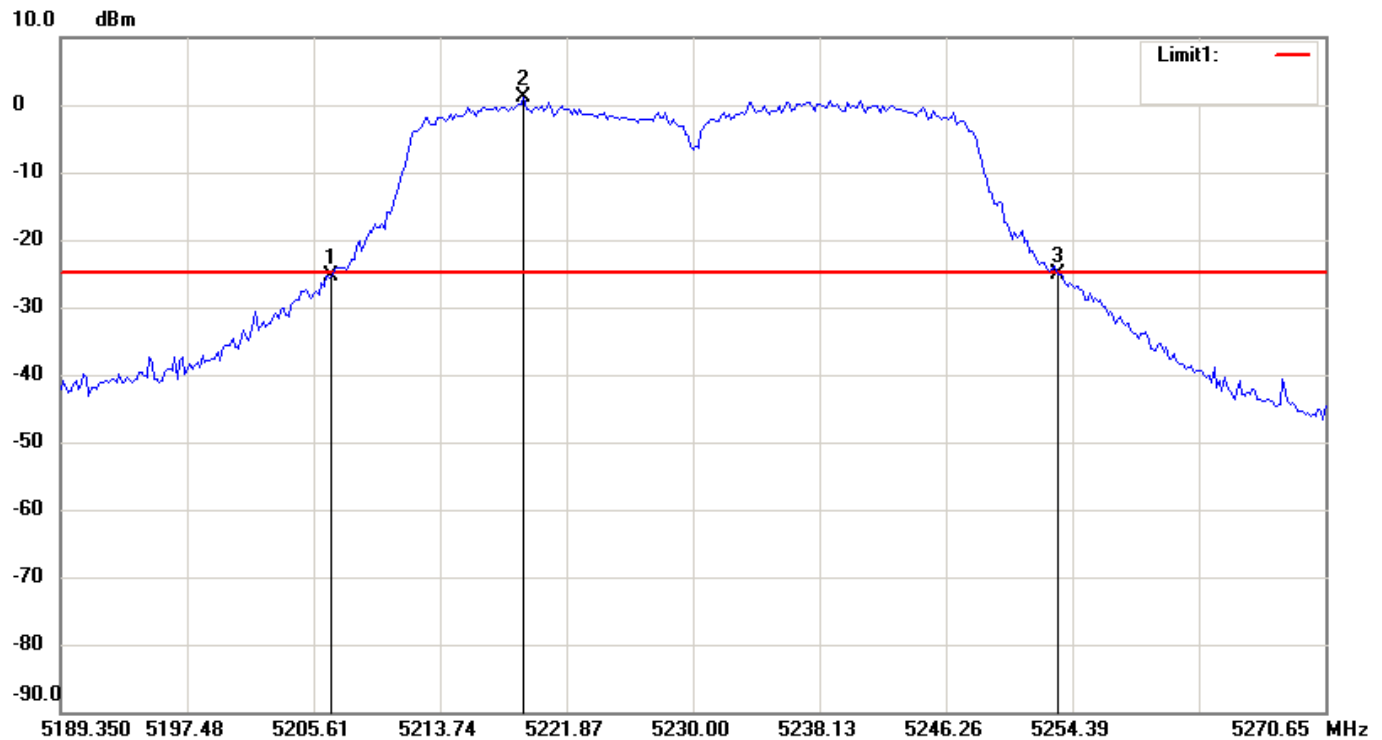
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#9

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -24.8dBm
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40 Channel 46_-26dB EBW

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 500 KHz VBW: 3000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5206.74820	-25.44
2	5219.10580	1.20
3	5253.41440	-25.13

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	46.6662	0.31

6.4.3.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Channel	26dB Bndwidth (MHz)	Chart
L	46.6662	Page 37
H	46.8288	Page 38

註：繪圖資料請參考第 37-38 頁。

6.5 結果判定

僅提供數據，無須判定。

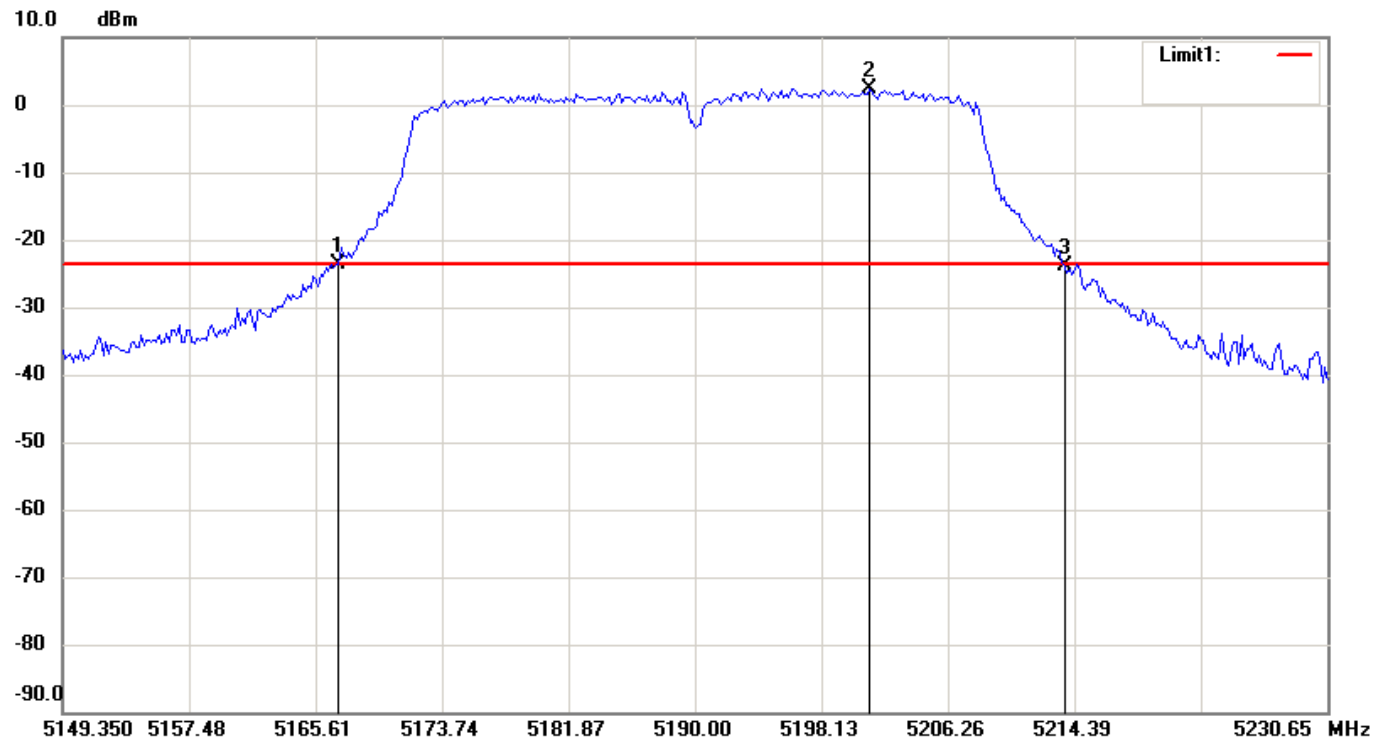
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#2

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -23.55dBm

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 38_-26dB EBW

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5167.07340	-23.63
2	5201.21940	2.45
3	5213.73960	-23.95

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	46.6662	-0.32

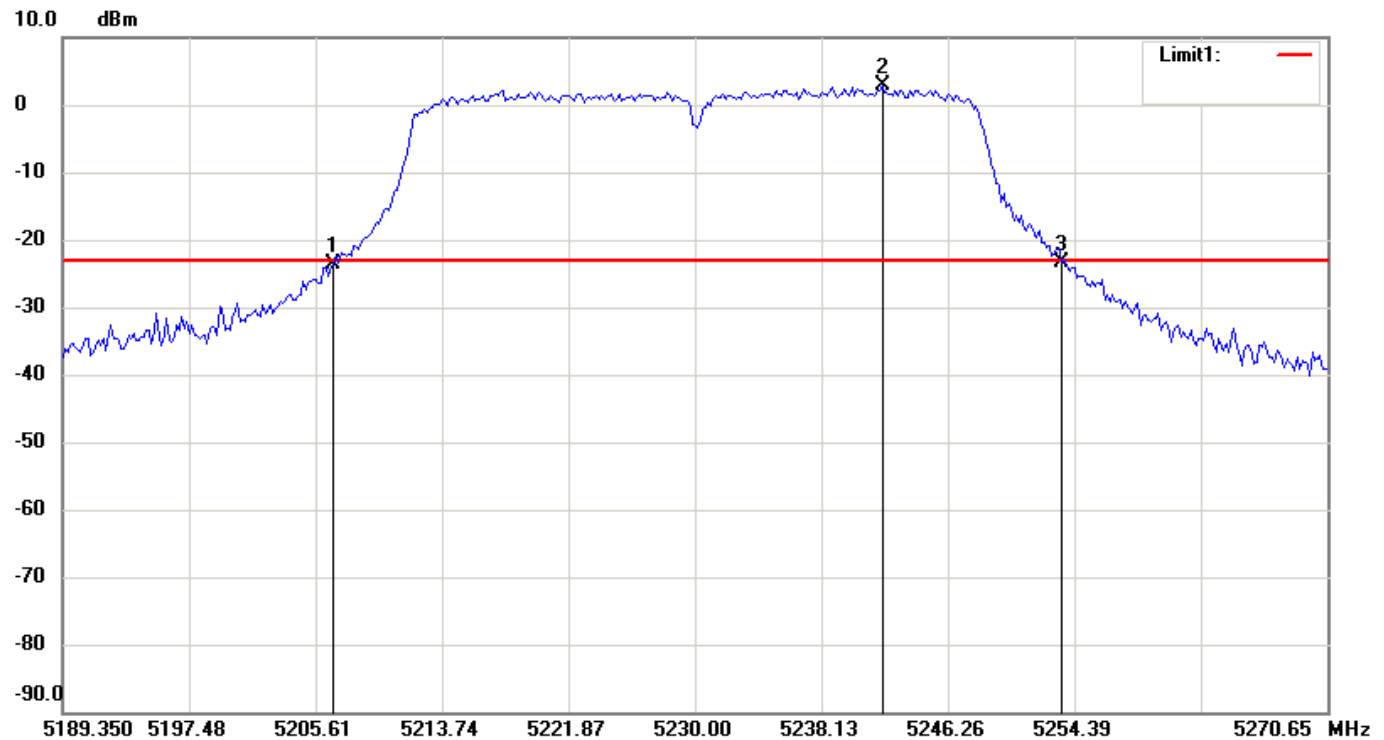
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#9

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: -23.14dBm

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 46_-26dB EBW

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5206.74820	-23.61
2	5242.03240	2.86
3	5253.57700	-23.42

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	46.8288	0.19

7 最大傳導輸出功率之量測

7.1 最大傳導輸出功率適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.3.1節(1)(2)(3)(4)之規定，其中相關法規如下：

(1) 供戶外操作使用：

(A) 最大傳導輸出功率應小於或等於 1 W。

(C) 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。

(D) 在水平面仰角超過 30 度時，其最大 EIRP 應小於或等於 21 dBm。

(2) 供室內操作使用：

(A) 最大傳導輸出功率應小於或等於 1 W。

(C) 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。

(3) 供固定式點對點操作使用：

(A) 最大傳導輸出功率應小於或等於 1 W。

(C) 使用超過 23 dBi 方向增益之指向性天線時，應依超過 23 dBi 天線方向增益的 dBi總量，等量減少最大傳導輸出功率及最大功率頻譜密度。

(D) 固定式點對點操作，不包括點對多點系統、全方向性應用及多台共站發射機傳送相同資訊。

(4) 供用戶端裝置(Client Device)操作使用：

(A) 最大傳導輸出功率應小於或等於 250 mW

(C) 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 量，等量減少最大傳導輸出功率及最大功率頻譜密度。

7.2 最大傳導輸出功率之測試配置

如圖 1 所示。

7.3 最大傳導輸出功率之量測儀器

儀器名稱	製造者	型 號
Spectrum Analyzer	R&S	FSV
Attenuator	WEINSCHEL	56-10

測試軟體: LZ-RF (Ver. ETC-3A2)

7.4 最大傳導輸出功率之量測結果

測試工程師：羅世勇

7.4.1 調變技術: IEEE 802.11a

7.4.1.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi，NCC Limit 如下表所示：

Channel	Output Power (dBm)	NCC Limit (dBm)	Chart
L	10.28	24	Page 41
M	10.13	24	Page 42
H	9.90	24	Page 43

註：1. 繪圖資料請參考第 41-43 頁。

2. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。

3. Limit = 24 dBm

4. If antenna gain $\leq$ 6dBi, NCC Limit = (Limit) dBm

5. If antenna gain > 6dBi, NCC Limit = (Fixed Limit) dBm – (highest antenna gain – 6 dBi)

6. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 20-04-MAS-061_5-2a_Ant0

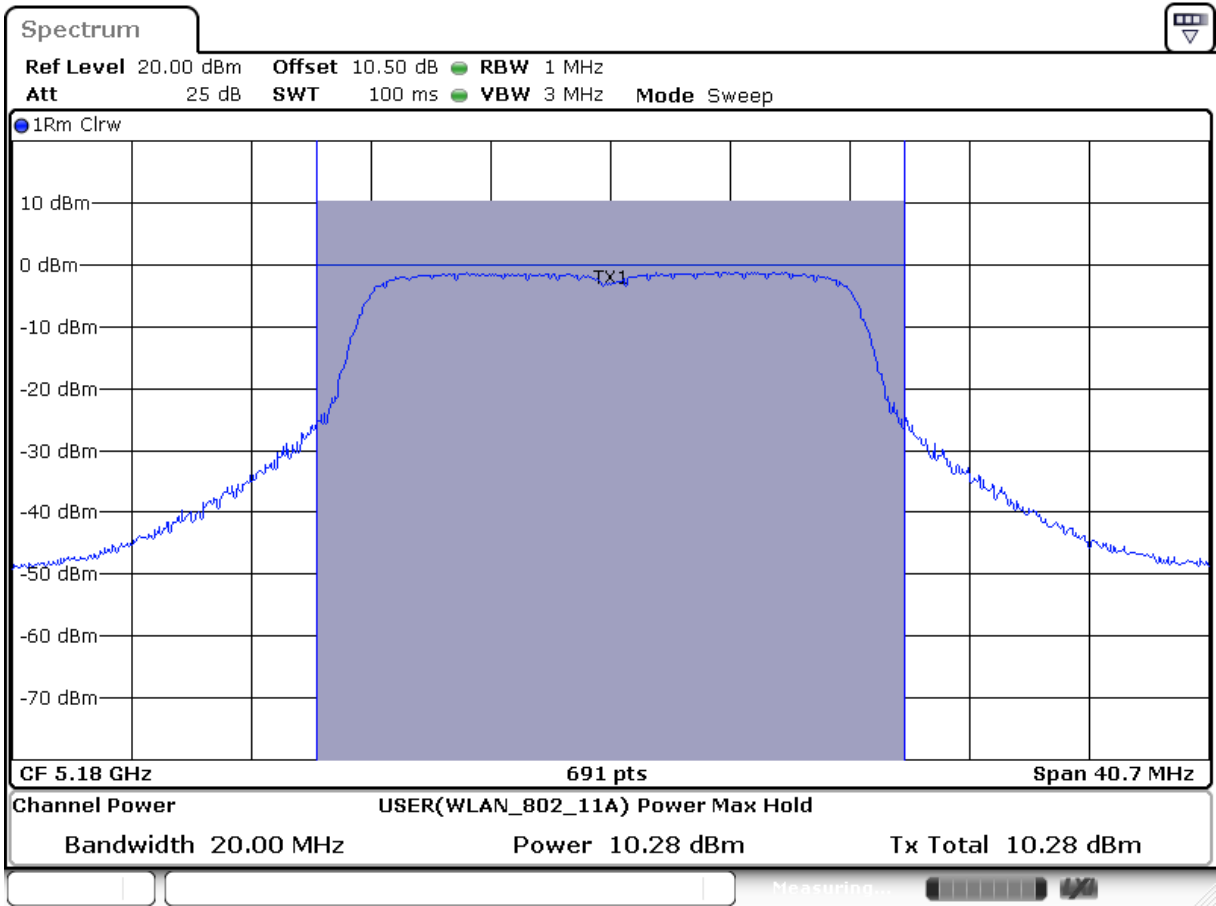
#1

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a_Channel 36_Output power		

File: 20-04-MAS-061_5-2a_Ant0

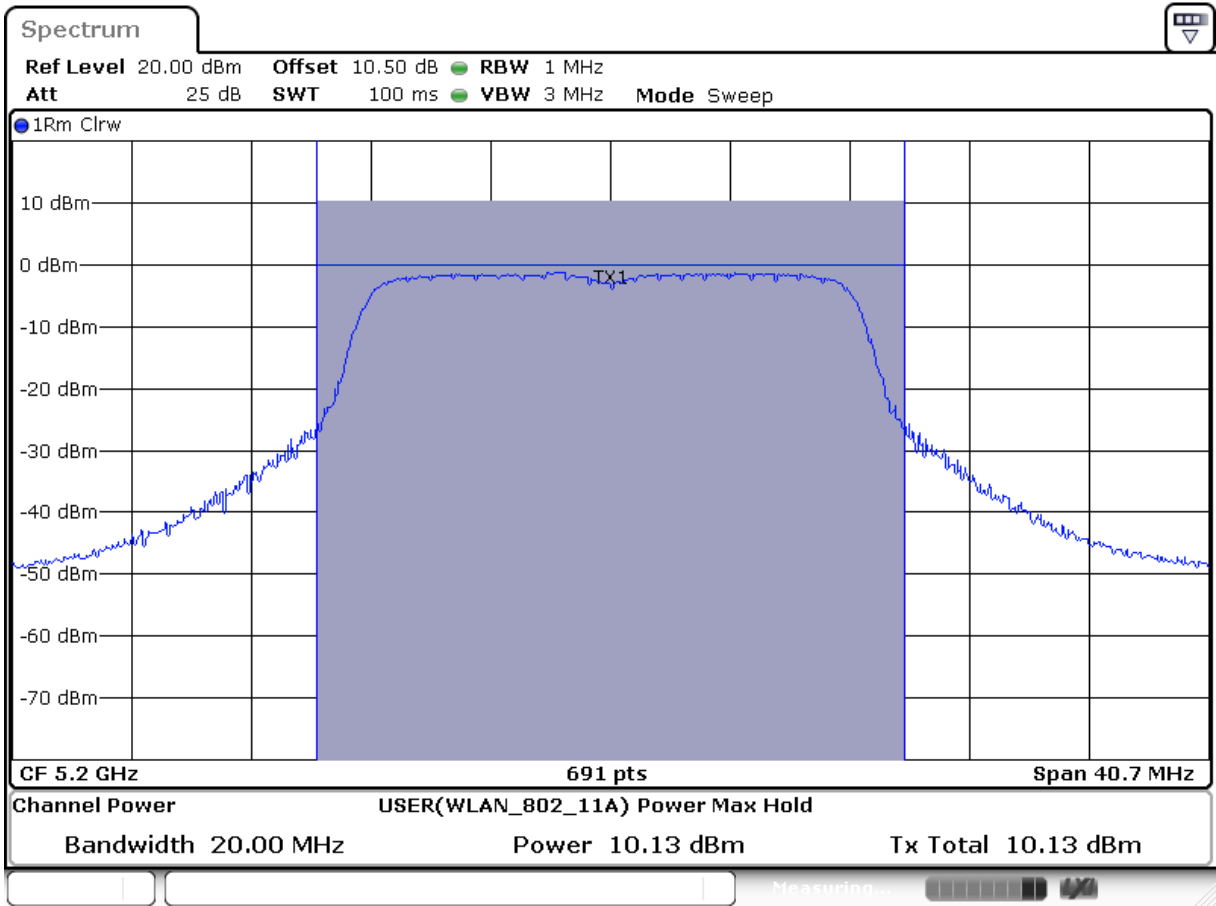
#8

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 40_Output power

RF Conducted

Sweep Time: 100ms

RBW: 1000 KHz

Operator:

Att.: 25dB

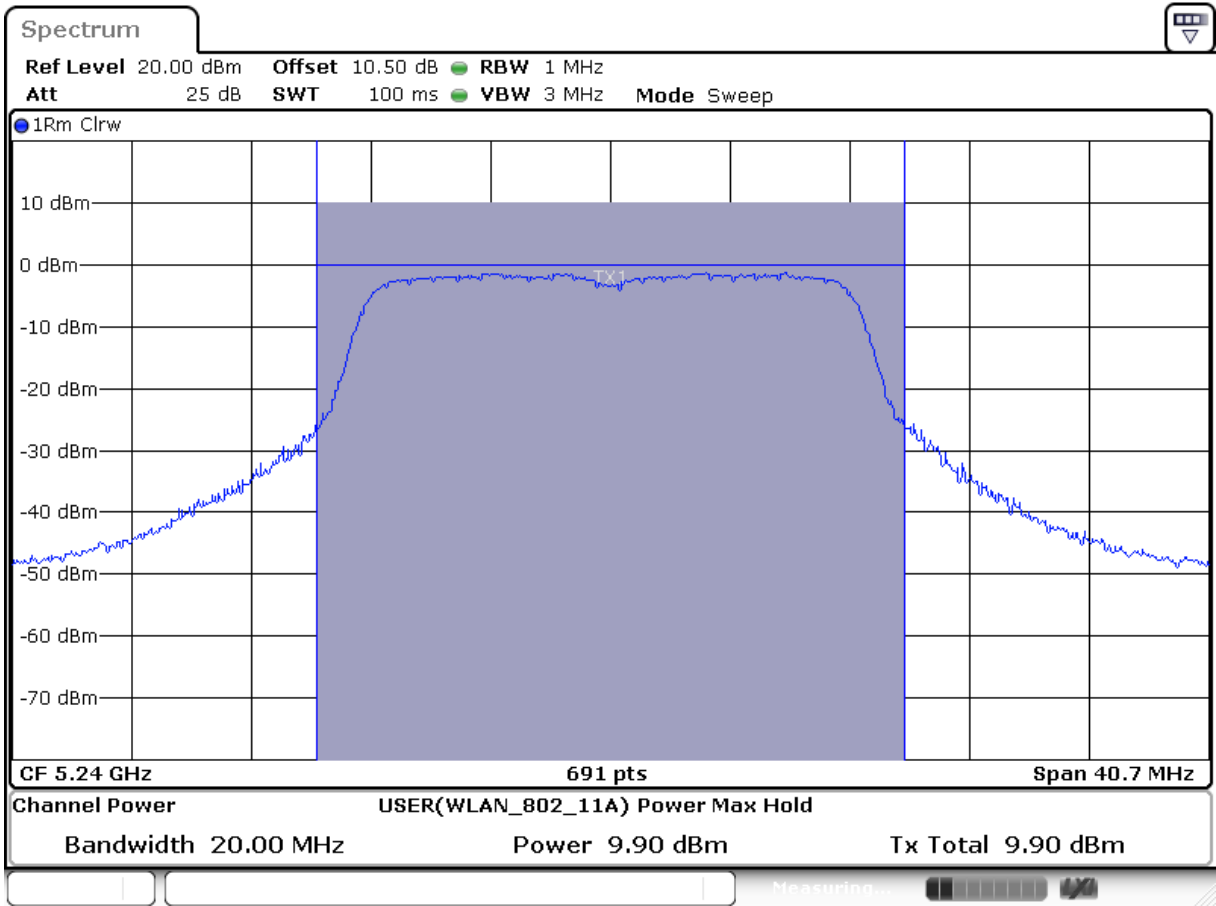
VBW: 3000 KHz

Phillip

File: 20-04-MAS-061_5-2a_Ant0
Site: RF-Cond01

#14 Date: 2020/5/20

Temperature: 25 °C
Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a_Channel 48_Output power		

7.4.1.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi，NCC Limit 如下表所示：

Channel	Output Power (dBm)	NCC Limit (dBm)	Chart
L	11.85	24	Page 45
M	12.20	24	Page 46
H	12.11	24	Page 47

註：1. 繪圖資料請參考第 45-47 頁。

2. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。

3. Limit = 24 dBm

4. If antenna gain $\leq$ 6dBi, NCC Limit = (Limit) dBm

5. If antenna gain > 6dBi, NCC Limit = (Fixed Limit) dBm – (highest antenna gain – 6 dBi)

6. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 20-04-MAS-061_5-2a_Ant1

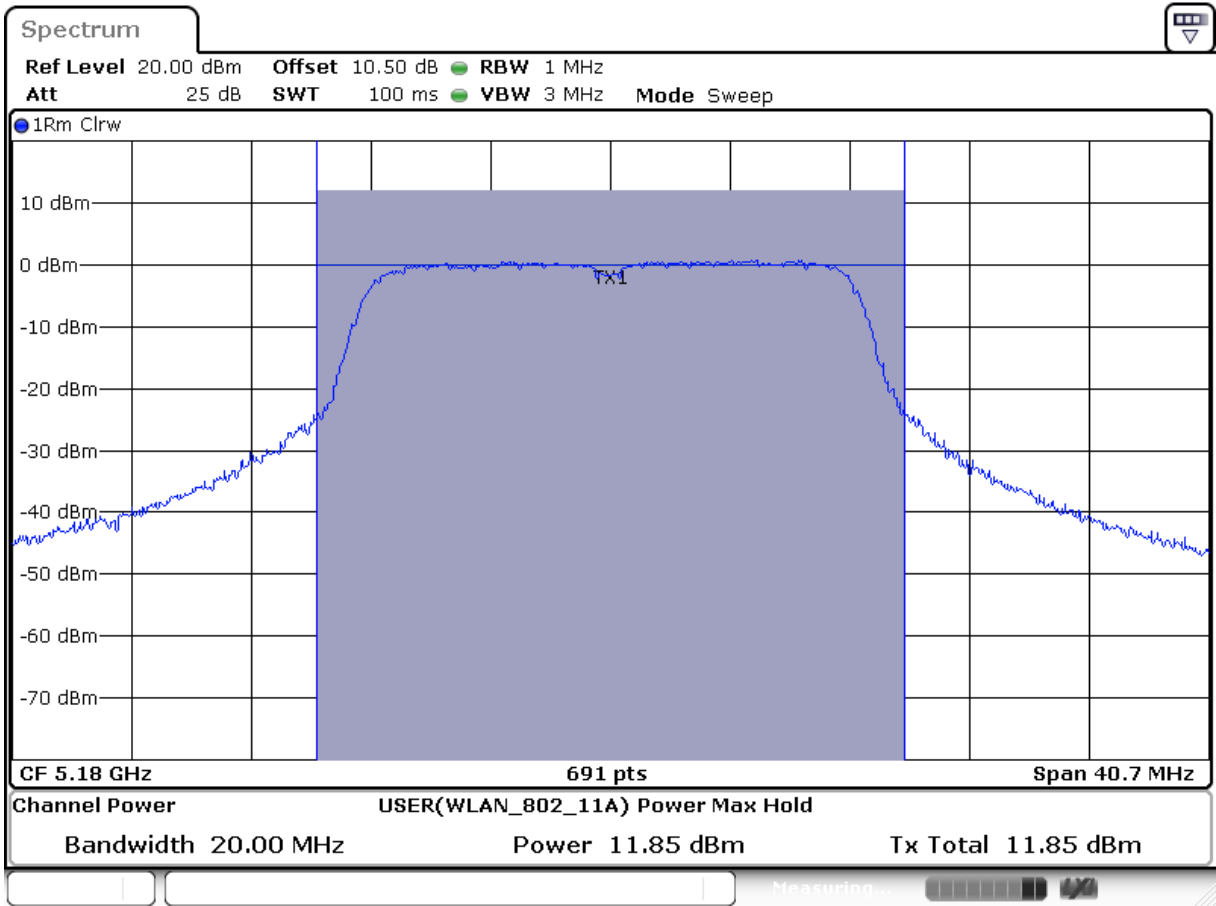
#1

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a_Channel 36_Output power		

File: 20-04-MAS-061_5-2a_Ant1

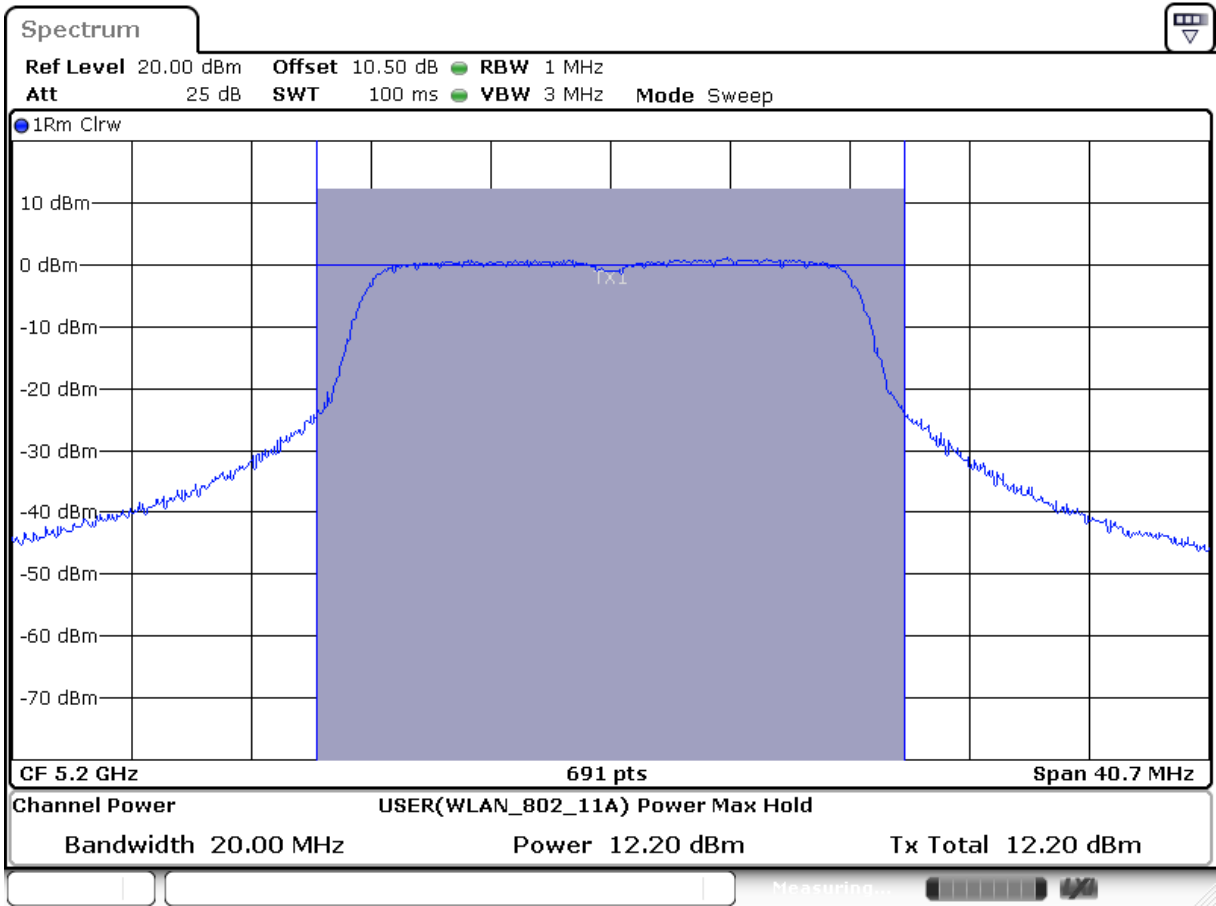
#8

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %

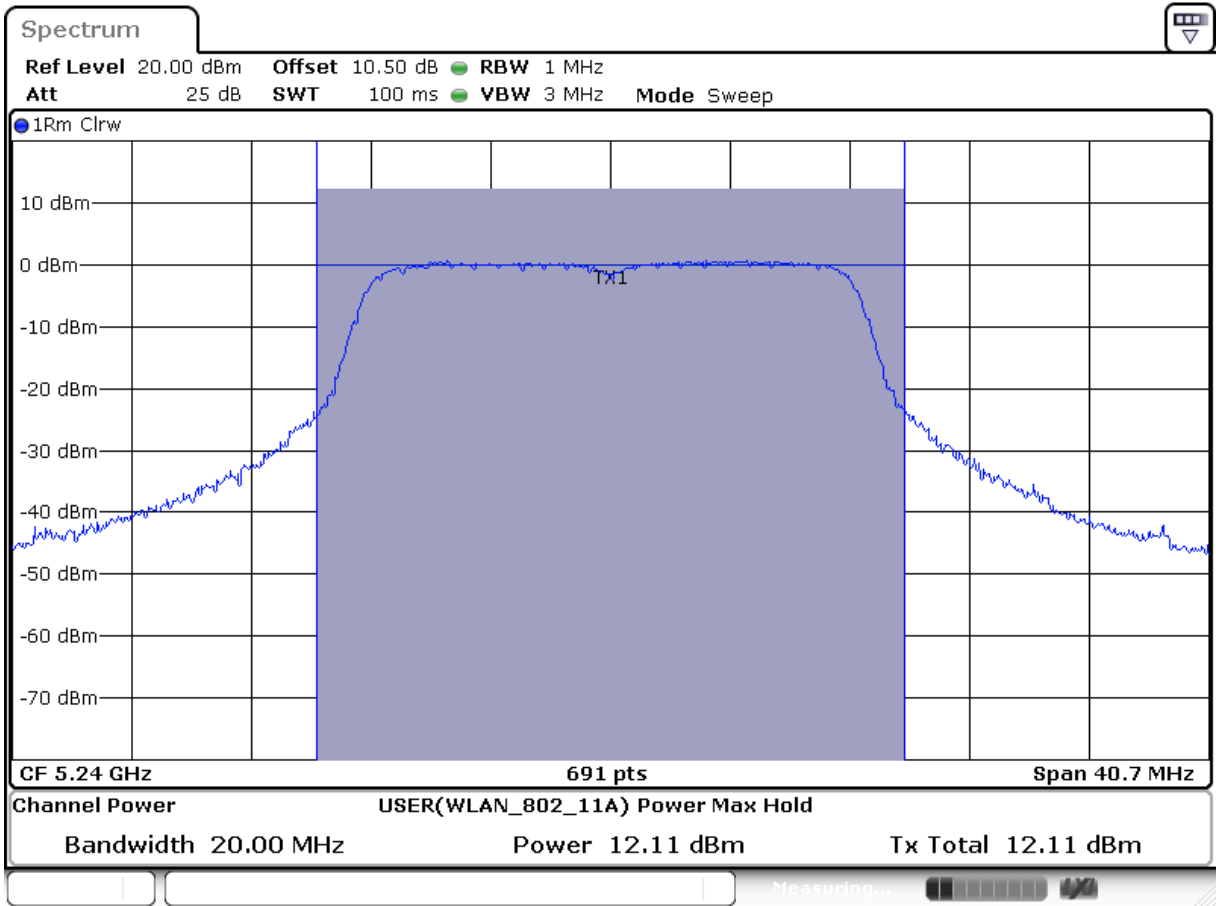


Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a_Channel 40_Output power		

File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#14 Date: 2020/5/20

Temperature: 25 °C
Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a_Channel 48_Output power		

7.4.2 調變技術:IEEE 802.11n HT20

7.4.2.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi, NCC Limit 如下表所示:

Channel	Output Power (dBm)	NCC Limit (dBm)	Chart
L	11.40	24	Page 49
M	11.38	24	Page 50
H	11.14	24	Page 51

註: 1. 繪圖資料請參考第 49-51 頁。

2. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。

3. Limit = 24dBm

4. If antenna gain $\leq$ 6dBi, NCC Limit = (Limit) dBm

5. If antenna gain > 6dBi, NCC Limit = (Limit) dBm – (highest antenna gain – 6 dBi)

6. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 20-04-MAS-061_5-2n20_Ant0

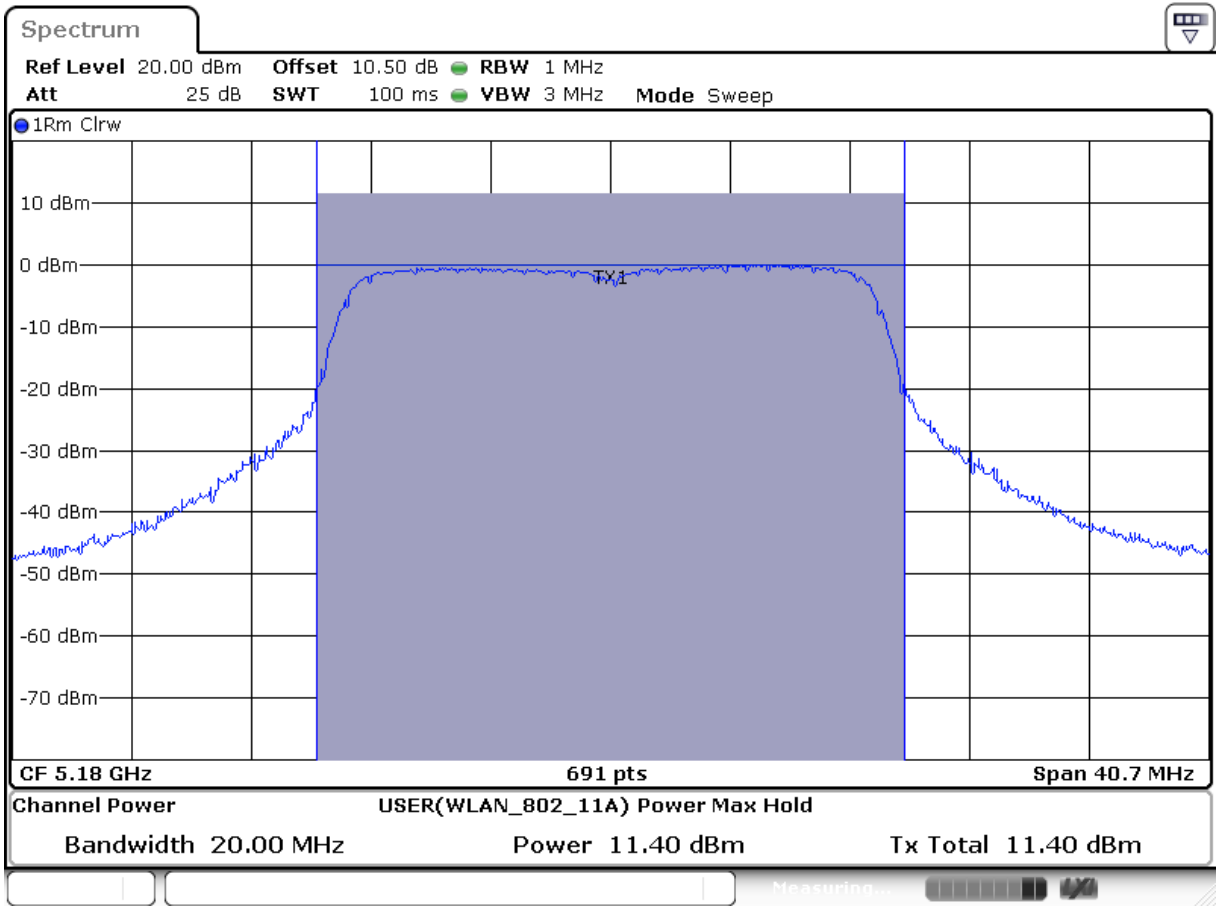
#1

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20_Channel 36_Output power		

File: 20-04-MAS-061_5-2n20_Ant0

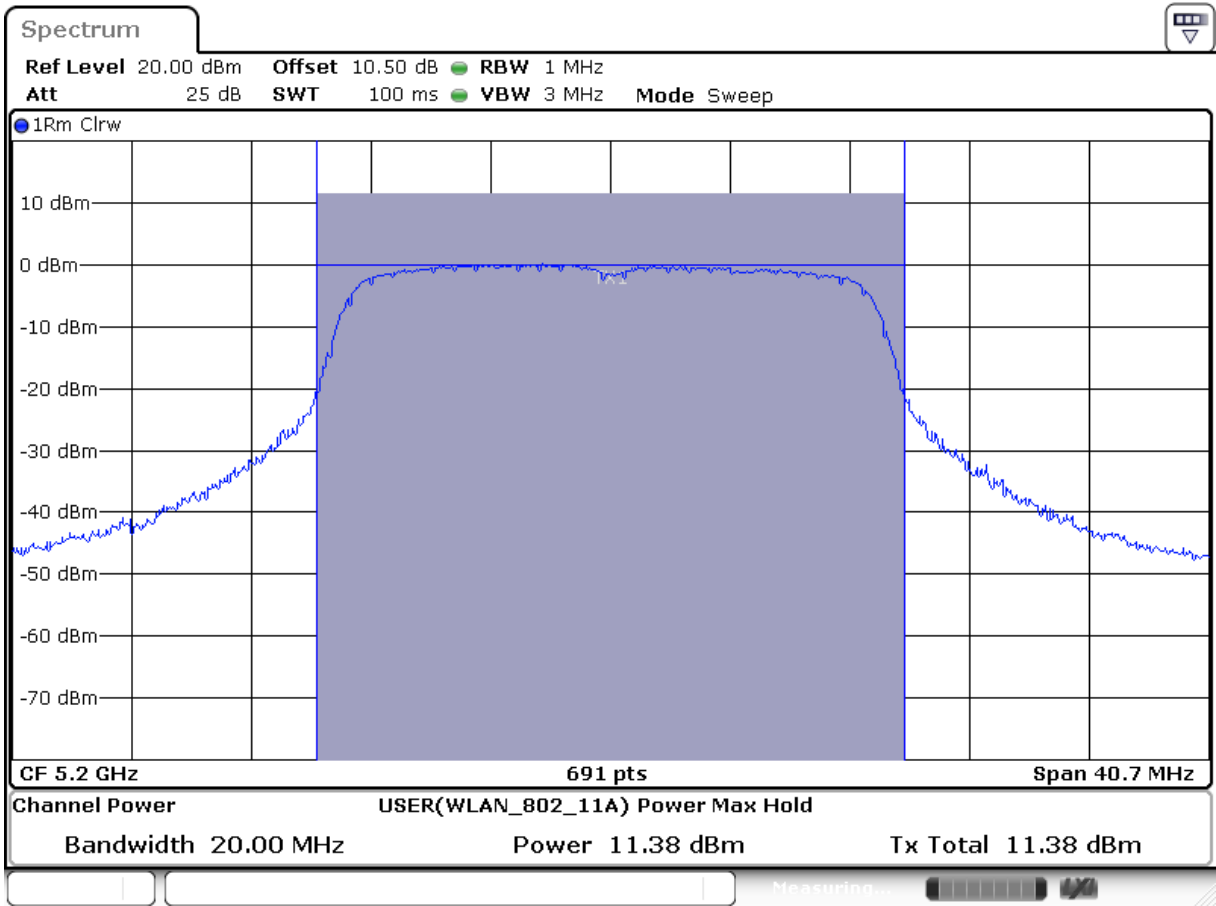
#8

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %

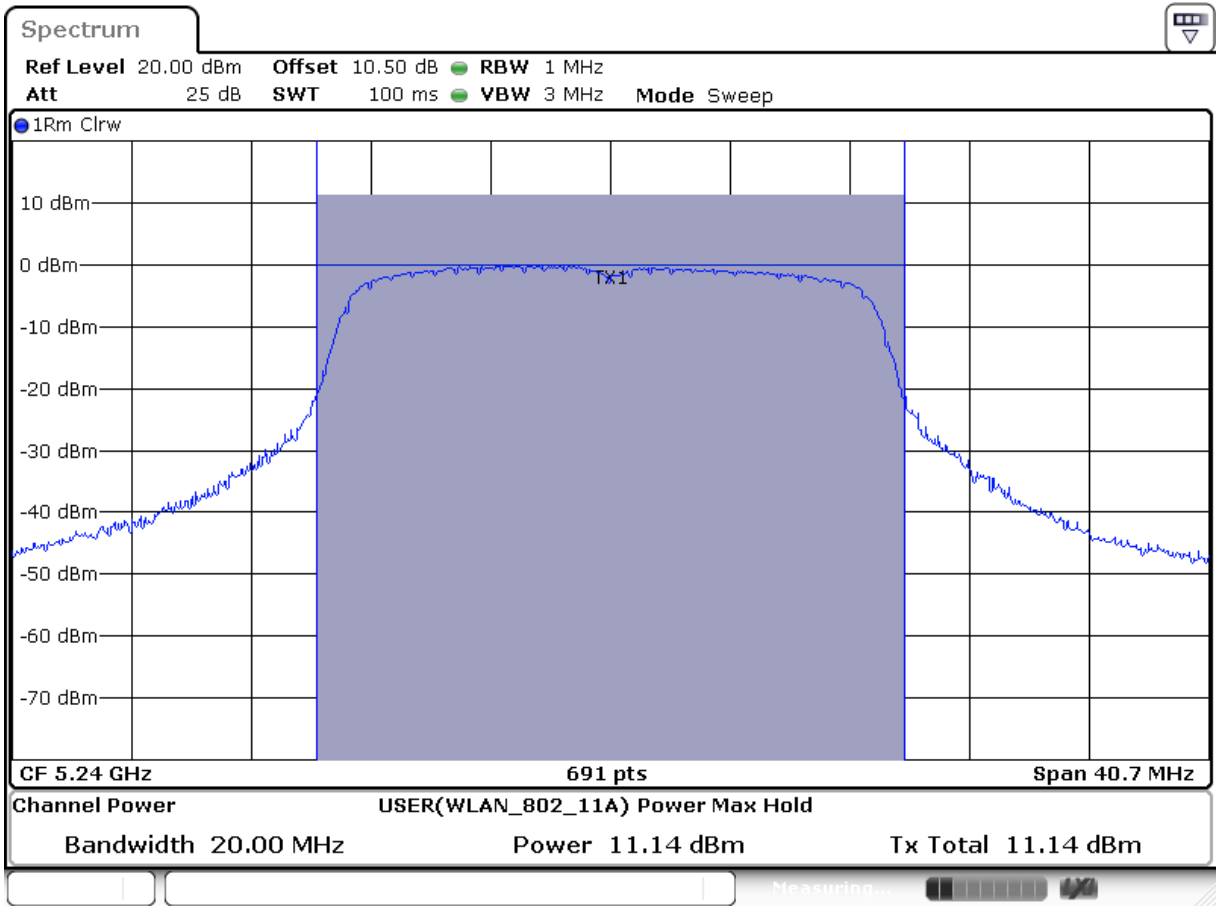


Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20_Channel 40_Output power		

File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#14 Date: 2020/5/20

Temperature: 25 °C
Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20_Channel 48_Output power		

7.4.2.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi，NCC Limit 如下表所示：

Channel	Output Power (dBm)	NCC Limit (dBm)	Chart
L	13.57	24.0	Page 53
M	14.14	24.0	Page 54
H	13.45	24.0	Page 55

註：1. 繪圖資料請參考第 53-55 頁。

2. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。

3. Fixed Limit = 24 dBm

4. If antenna gain $\leq$ 6dBi, NCC Limit = (Fixed Limit) dBm5. If antenna gain $>$ 6dBi, NCC Limit = (Fixed Limit) dBm – (highest antenna gain – 6 dBi)6. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 20-04-MAS-061_5-2n20_Ant1

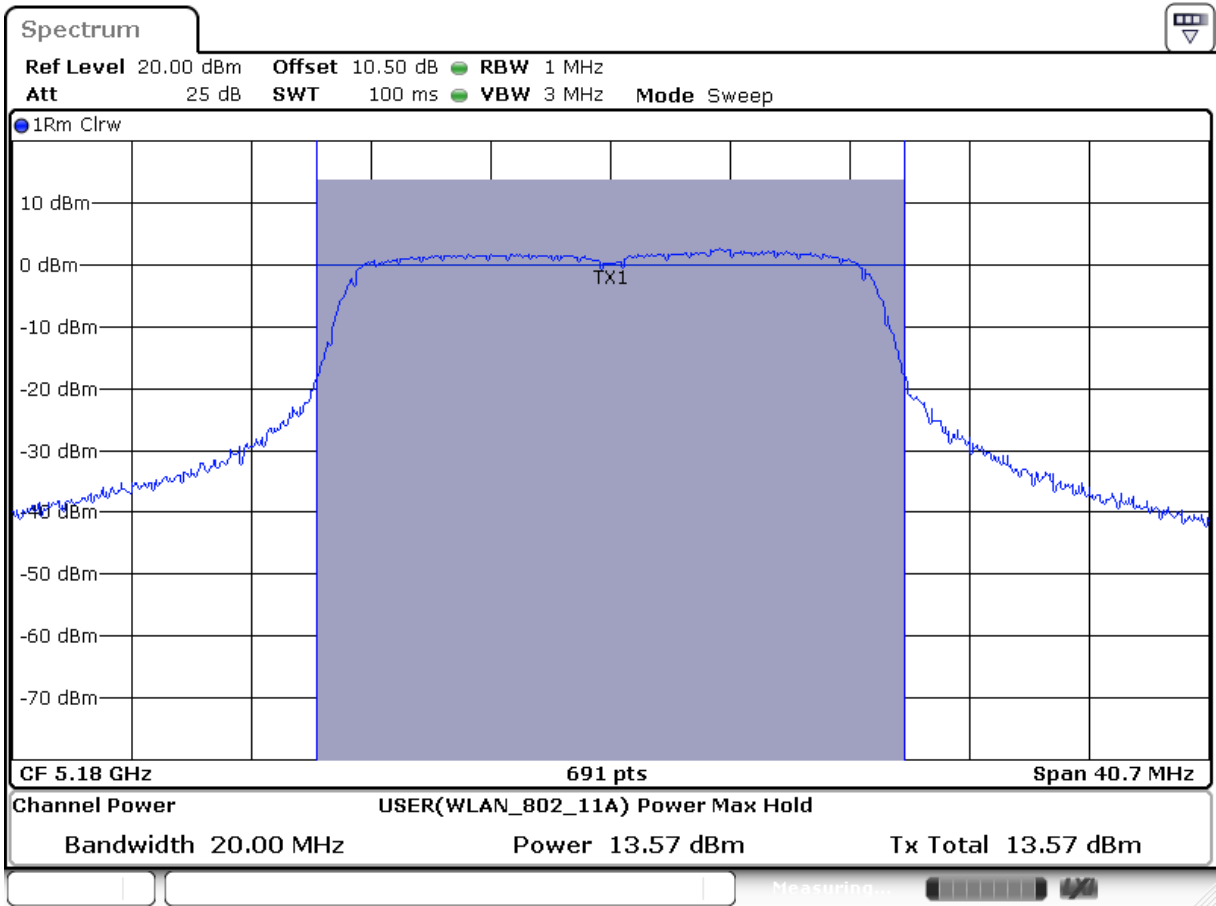
#1

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20_Channel 36_Output power		

File: 20-04-MAS-061_5-2n20_Ant1

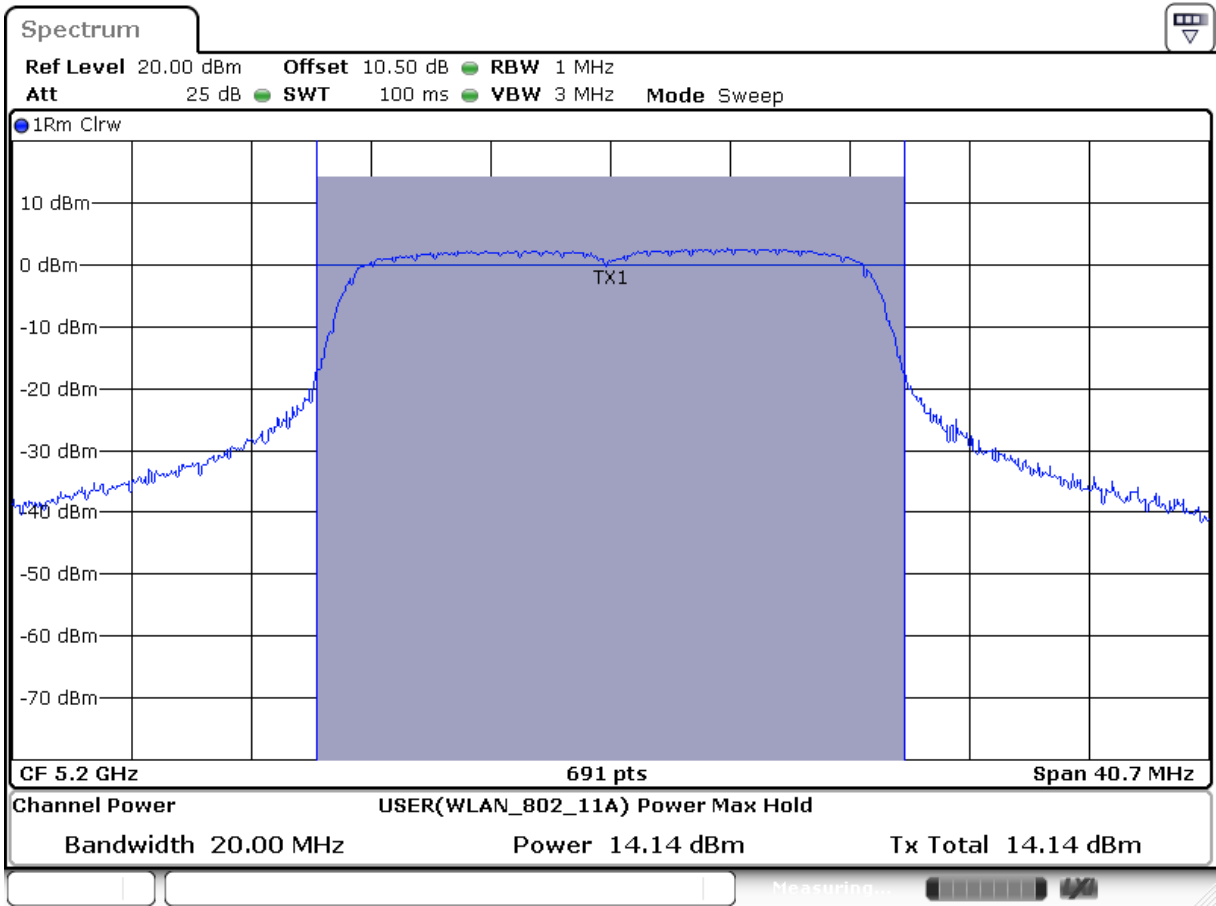
#8

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %

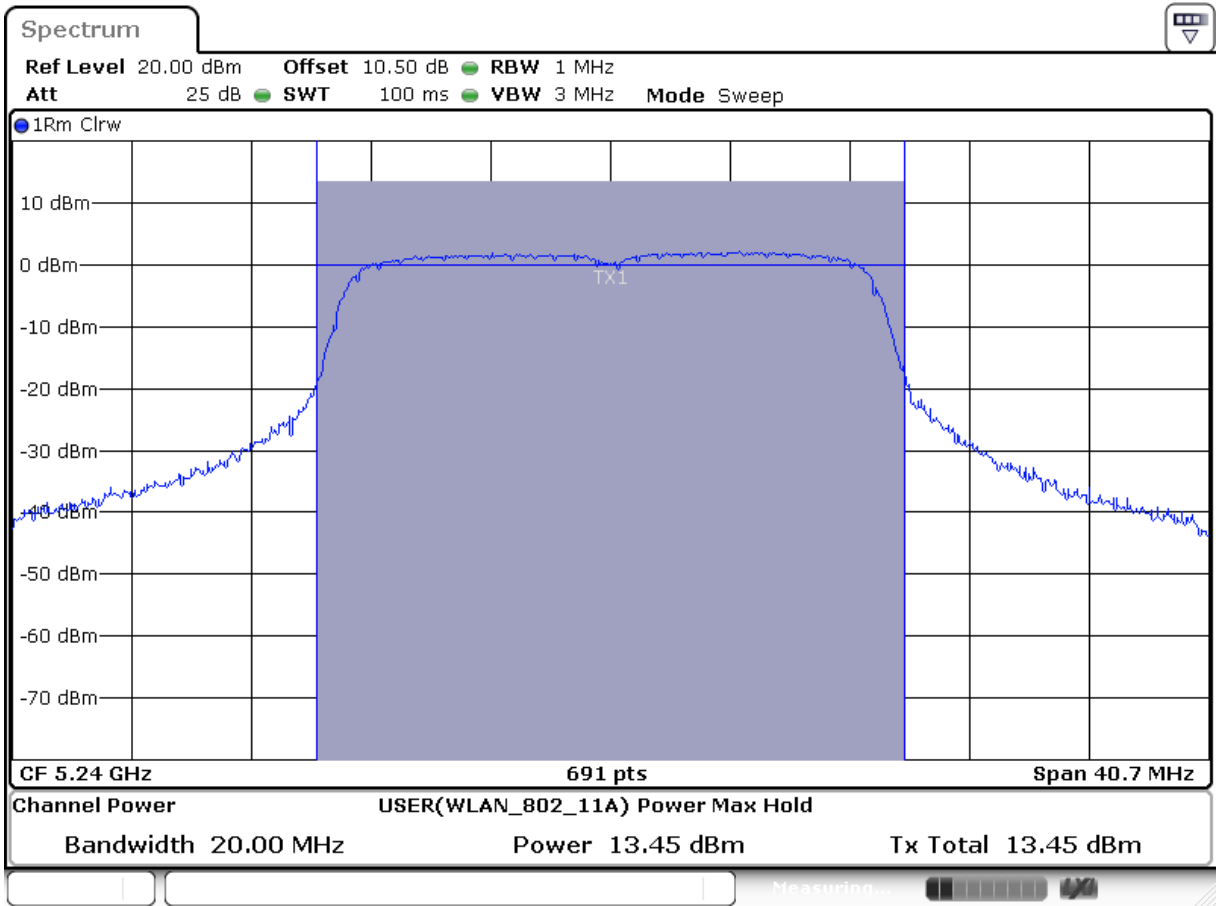


Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20_Channel 40_Output power		

File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#14 Date: 2020/5/20

Temperature: 25 °C
Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20_Channel 48_Output power		

7.4.2.3 CHAIN 0 + CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Ant 1 / Ant 2 combination 天線增益最大值為 7.41 dBi, NCC Limit 如下表所示:

Channel	CHAIN 0 Maximum Output Power (dBm)	CHAIN 1 Maximum Output Power (dBm)	TOTAL Power (dBm)	NCC Limit (dBm)	Chart
L	11.40	13.57	15.63	22.59	-
M	11.38	14.14	15.99	22.59	-
H	11.14	13.45	15.46	22.59	-

- 註: 1. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。
2. Fixed Limit = 24 dBm
3. If antenna gain $\leq$ 6dBi, NCC Limit = (Fixed Limit) dBm
4. If antenna gain $>$ 6dBi, NCC Limit = (Fixed Limit) dBm – (highest antenna gain – 6 dBi)
5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

7.4.3 調變技術:IEEE 802.11n HT40

7.4.3.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi , NCC Limit 如下表所示:

Channel	Output Power (dBm)	NCC Limit (dBm)	Chart
L	9.57	24	Page 58
H	9.56	24	Page 59

註: 1. 繪圖資料請參考第 58-59 頁。

2. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。

3. Limit = 24dBm

4. If antenna gain $\leq$ 6dBi, NCC Limit = (Limit) dBm

5. If antenna gain > 6dBi, NCC Limit = (Limit) dBm – (highest antenna gain – 6 dBi)

6. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 20-04-MAS-061_5-2n40_Ant0

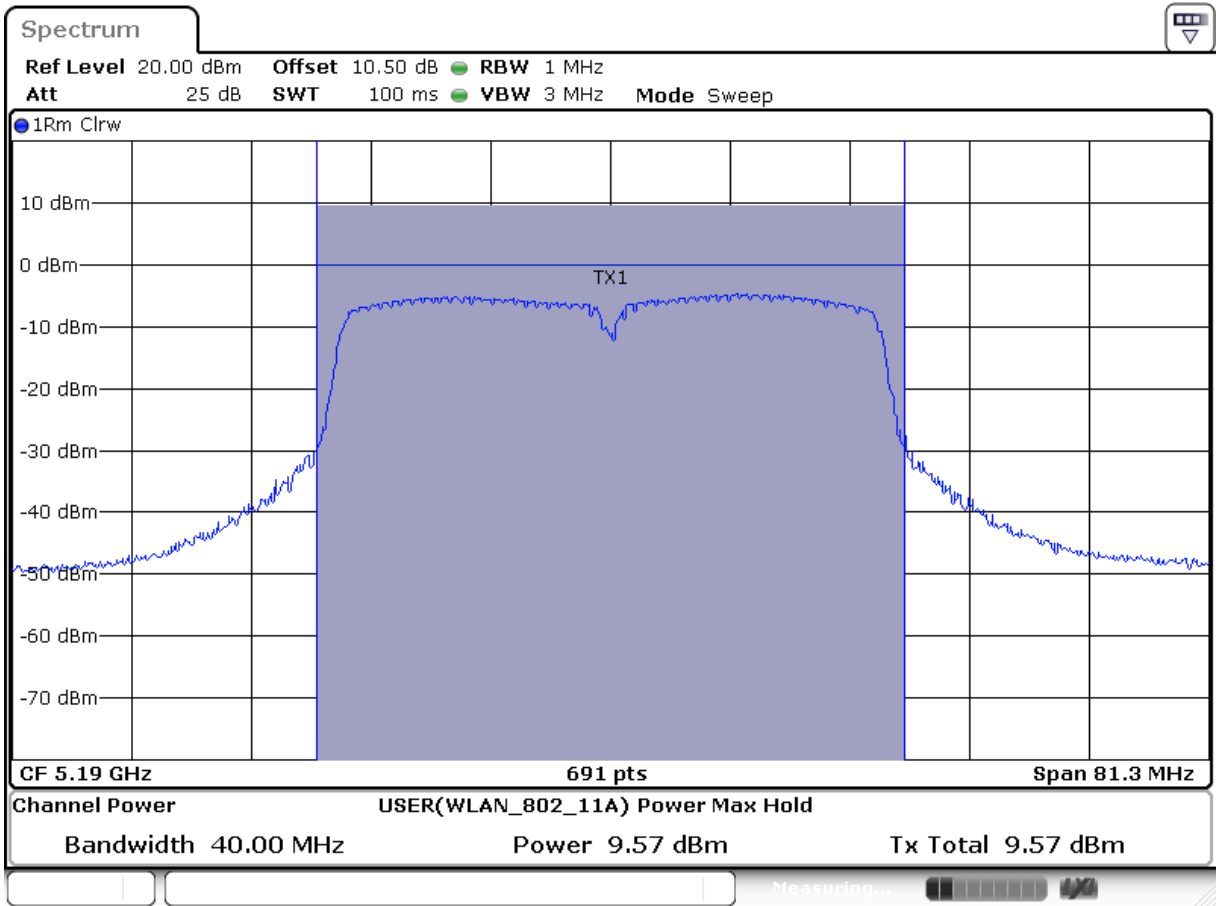
#1

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:

EUT:

Model:

Test Mode:

Note:

Wireless LAN Conveter

FBR-3250

UNII

NCC_LP0002_802.11n40_Channel 38_Output power

RF Conducted

Sweep Time: 100ms

RBW: 1000 KHz

Operator:

Att.: 25dB

VBW: 3000 KHz

Phillip

File: 20-04-MAS-061_5-2n40_Ant0

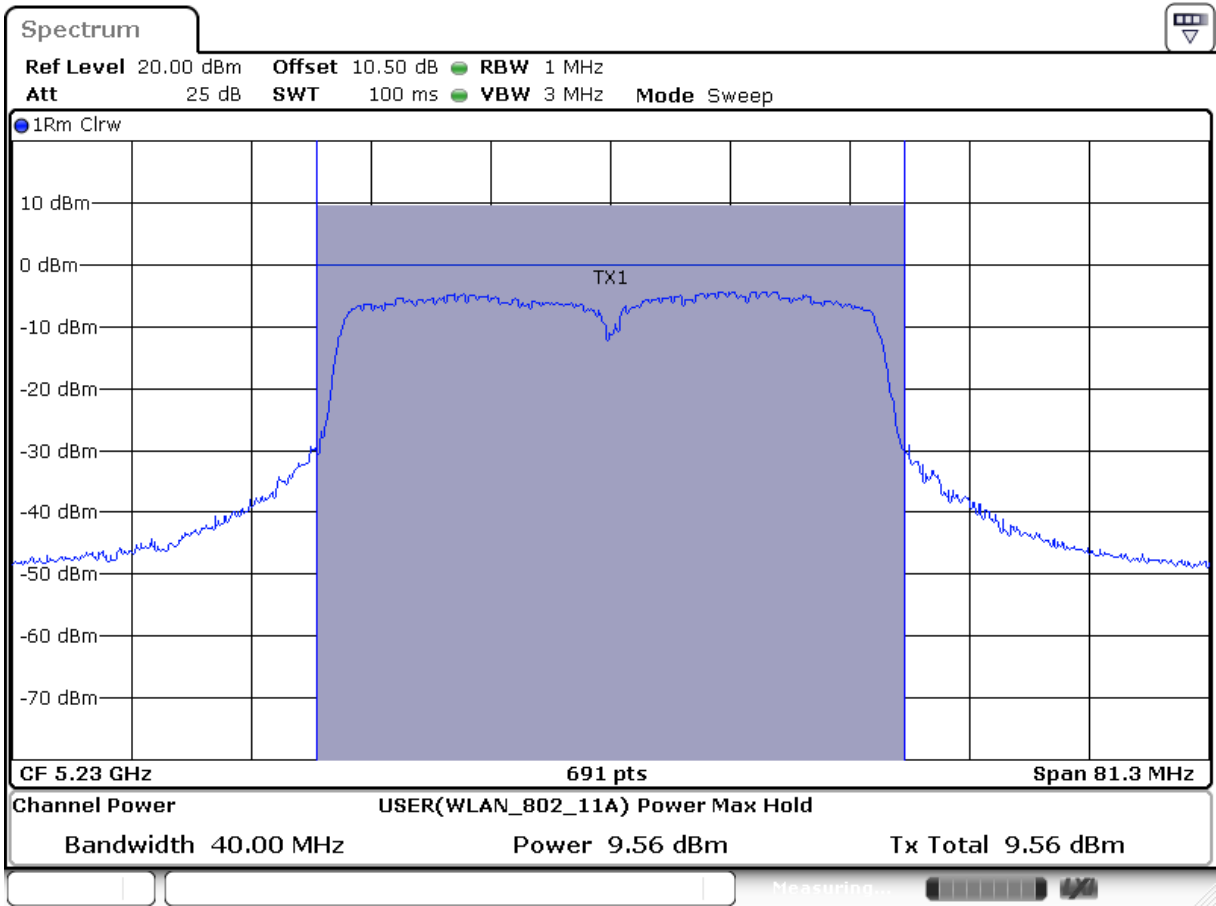
#8

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 46_Output power

RF Conducted

Sweep Time: 100ms

RBW: 1000 KHz

Operator:

Att.: 25dB

VBW: 3000 KHz

Phillip

7.4.3.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi，NCC Limit 如下表所示：

Channel	Output Power (dBm)	NCC Limit (dBm)	Chart
L	11.60	24.0	Page 61
H	11.72	24.0	Page 62

註：1. 繪圖資料請參考第 61-62 頁。

2. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。

3. Limit = 24dBm

4. If antenna gain $\leq$ 6dBi, NCC Limit = (Limit) dBm

5. If antenna gain > 6dBi, NCC Limit = (Limit) dBm – (highest antenna gain – 6 dBi)

6. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 20-04-MAS-061_5-2n40_Ant1

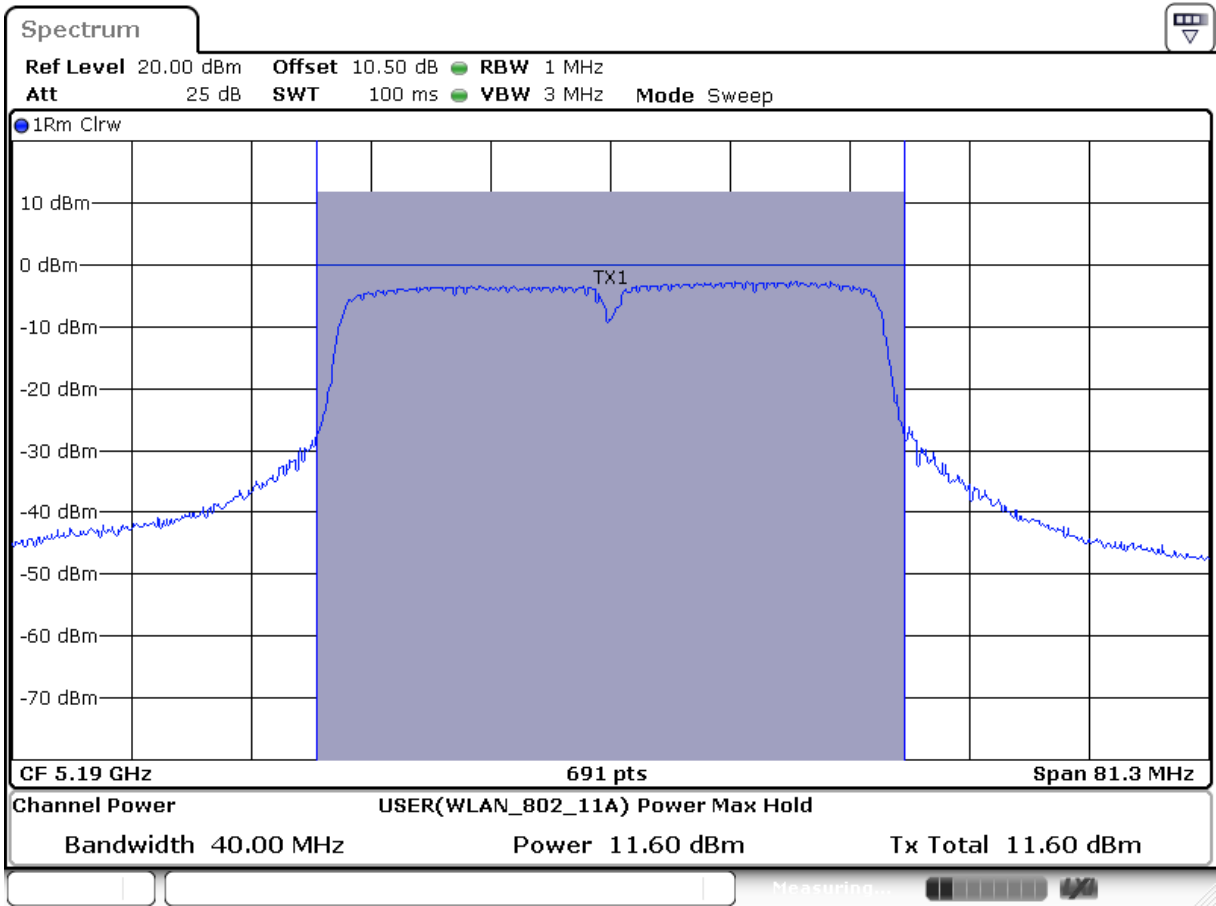
#1

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n40_Channel 38_Output power		

File: 20-04-MAS-061_5-2n40_Ant1

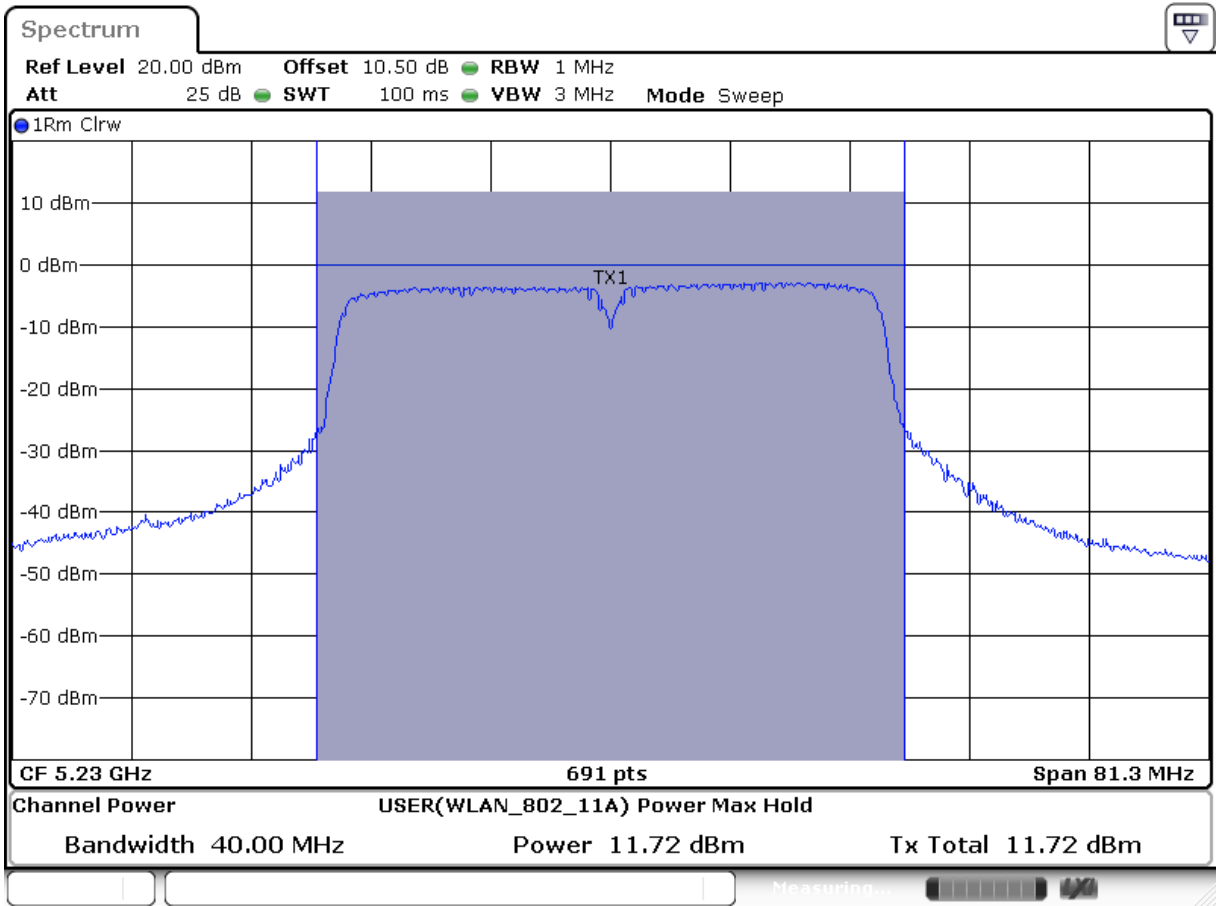
#8

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:		RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 100ms	Att.: 25dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n40_Channel 46_Output power		

7.4.3.3 CHAIN 0 + CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Ant 1 / Ant 2 combination 天線增益最大值為 7.41 dBi，NCC Limit 如下表所示：

Channel	CHAIN 0 Maximum Output Power (dBm)	CHAIN 1 Maximum Output Power (dBm)	TOTAL Power (dBm)	NCC Limit (dBm)	Chart
L	9.57	11.60	13.71	22.59	-
H	9.56	11.72	13.78	22.59	-

註：

1. 最大傳導輸出功率 (Maximum Output Power) 為經儀器校正補償過後的結果值。
3. Limit = 24dBm
4. If antenna gain $\leq$ 6dBi, NCC Limit = (Limit) dBm
5. If antenna gain > 6dBi, NCC Limit = (Limit) dBm – (highest antenna gain – 6 dBi)
6. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

7.5 結果判定

高、中、低頻段的最大傳導輸出功率皆低於限制值。

8 功率密度之量測

8.1 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.3.1節(1)(2)(3)(4)之規定，其中相關法規如下：

(1) 供戶外操作使用：

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 17 dBm。

(C) 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。

(2) 供室內操作使用：

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 17 dBm。

(C) 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。

(3) 供固定式點對點操作使用：

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 17 dBm。

(C) 使用超過 23 dBi 方向增益之指向性天線時，應依超過 23 dBi 天線方向增益的 dBi總量，等量減少最大傳導輸出功率及最大功率頻譜密度。

(D) 固定式點對點操作，不包括點對多點系統、全方向性應用及多台共站發射機傳送相同資訊。

(4) 供用戶端裝置(Client Device)操作使用：

(B) 在任何 1 MHz 頻帶中最大功率頻譜密度應小於或等於 11 dBm。

(C) 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。

8.2 量測功率密度之配置

如圖 1 所示。

8.3 量測功率密度之儀器

儀器名稱	製造者	型 號
Spectrum Analyzer	R&S	FSV
Attenuator	WEINSCHEL	56-10

測試軟體: LZ-RF (Ver. ETC-3A2)

8.4 量測結果

測試工程師：羅世勇

8.4.1 調變技術: IEEE 802.11a

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi，NCC Limit 如下表所示：

Channel	Peak Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	6.57	11	Page 66
M	6.83	11	Page 67
H	6.58	11	Page 68

註：1. 繪圖資料請參考第 66-68 頁。

2. 功率頻譜密度 (Peak Power Spectral Density) 為經儀器校正補償過後的結果值。

3. If antenna gain $\leq$ 6dBi, NCC Limit =11 dBm

4. If antenna gain > 6dBi, NCC Limit =11 dBm – (highest antenna gain – 6 dBi)

5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

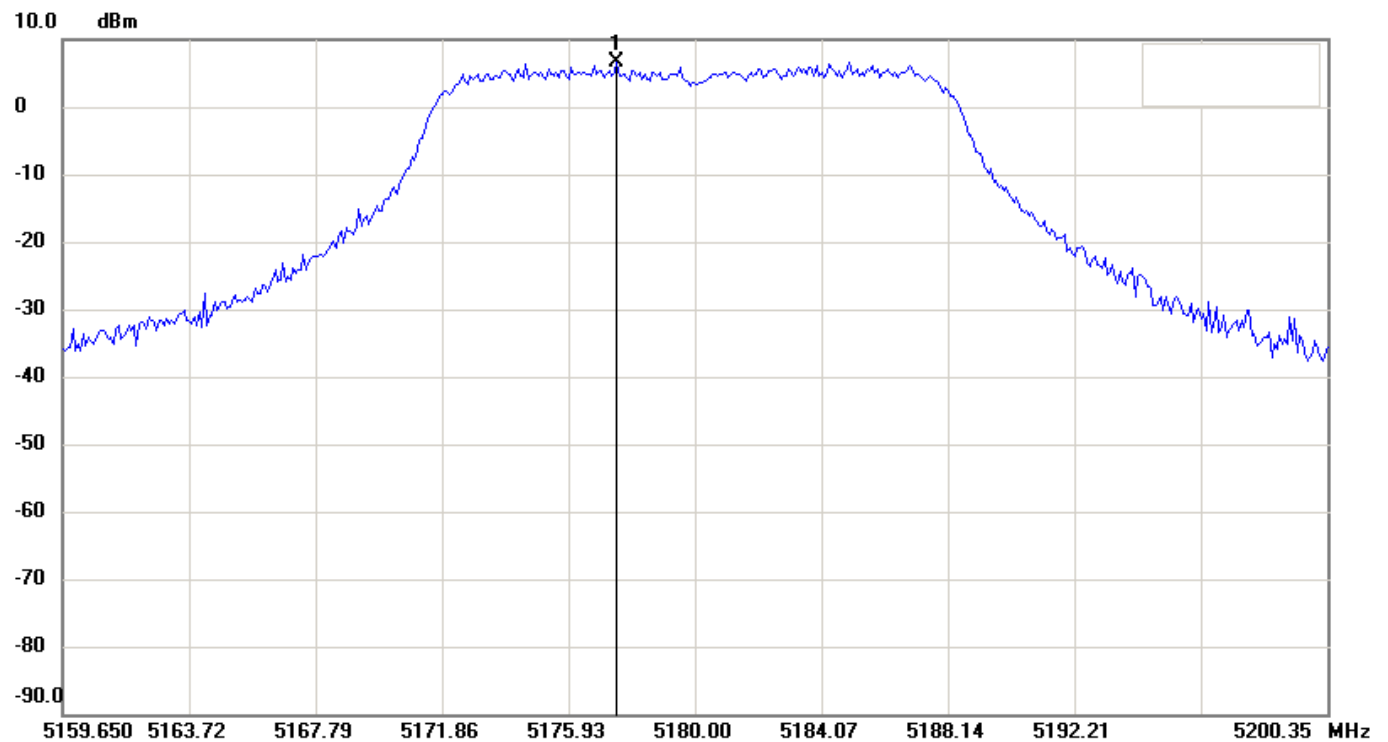
File: 20-04-MAS-061_5-2a_Ant1
 Site: RF-Cond01

#4

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 36_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5177.47660	6.57

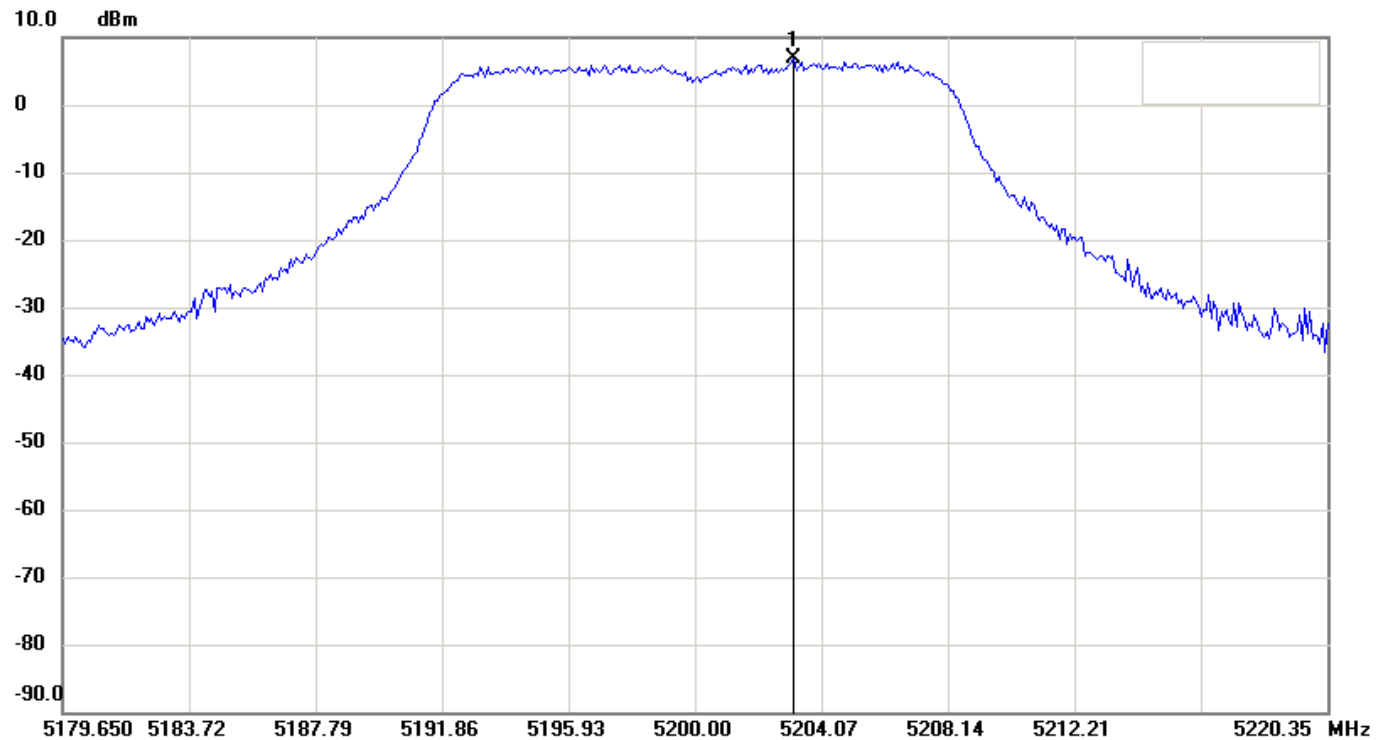
File: 20-04-MAS-061_5-2a_Ant1
 Site: RF-Cond01

#11

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 40_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5203.17460	6.83

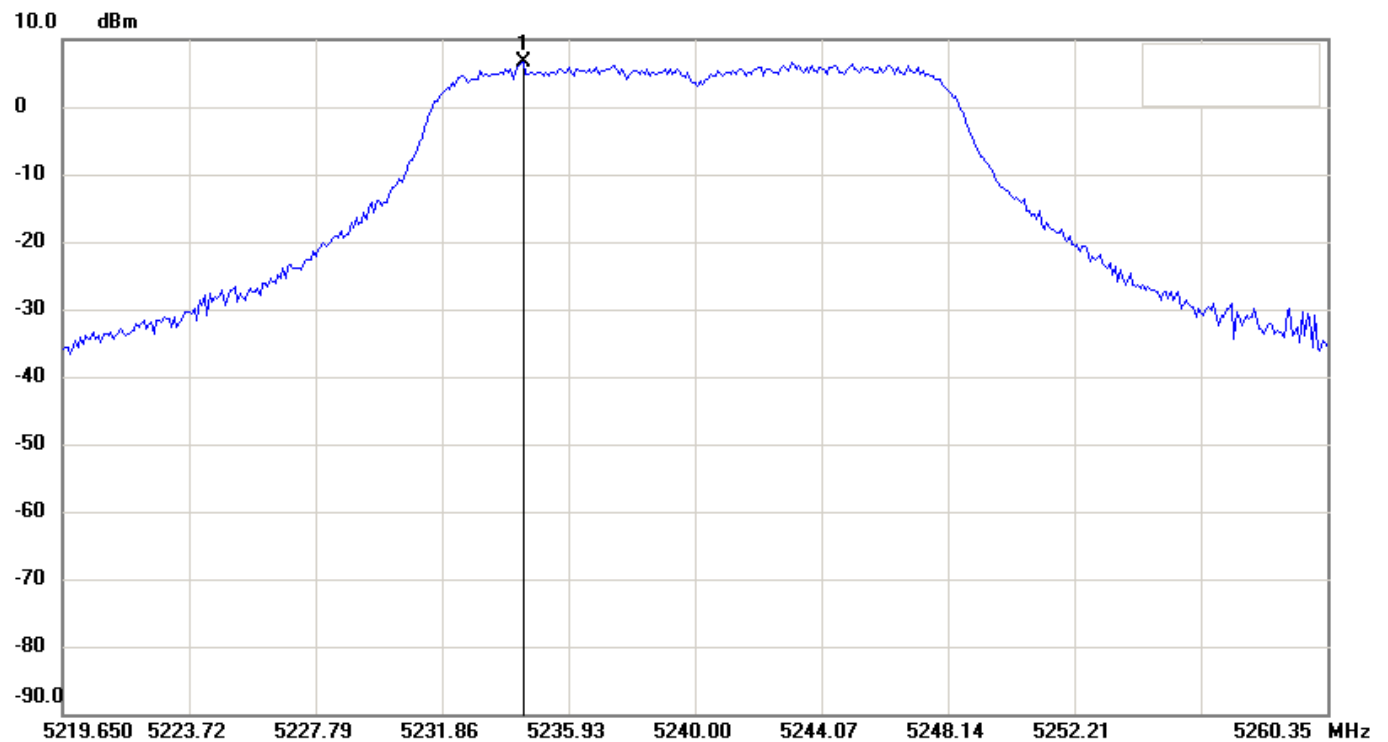
File: 20-04-MAS-061_5-2a_Ant1
 Site: RF-Cond01

#17

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 48_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

VBW: 3000 KHz

Operator:

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5234.46480	6.58

8.4.2 調變技術: IEEE 802.11n HT20

8.4.2.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi, NCC Limit 如下表所示:

Channel	Peak Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	4.86	11	Page 70
M	4.61	11	Page 71
H	4.54	11	Page 72

註: 1. 繪圖資料請參考第 70-72 頁。

2. 功率頻譜密度 (Peak Power Spectral Density) 為經儀器校正補償過後的結果值。

3. If antenna gain $\leq$ 6dBi, NCC Limit =11 dBm

4. If antenna gain > 6dBi, NCC Limit =11 dBm – (highest antenna gain – 6 dBi)

5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

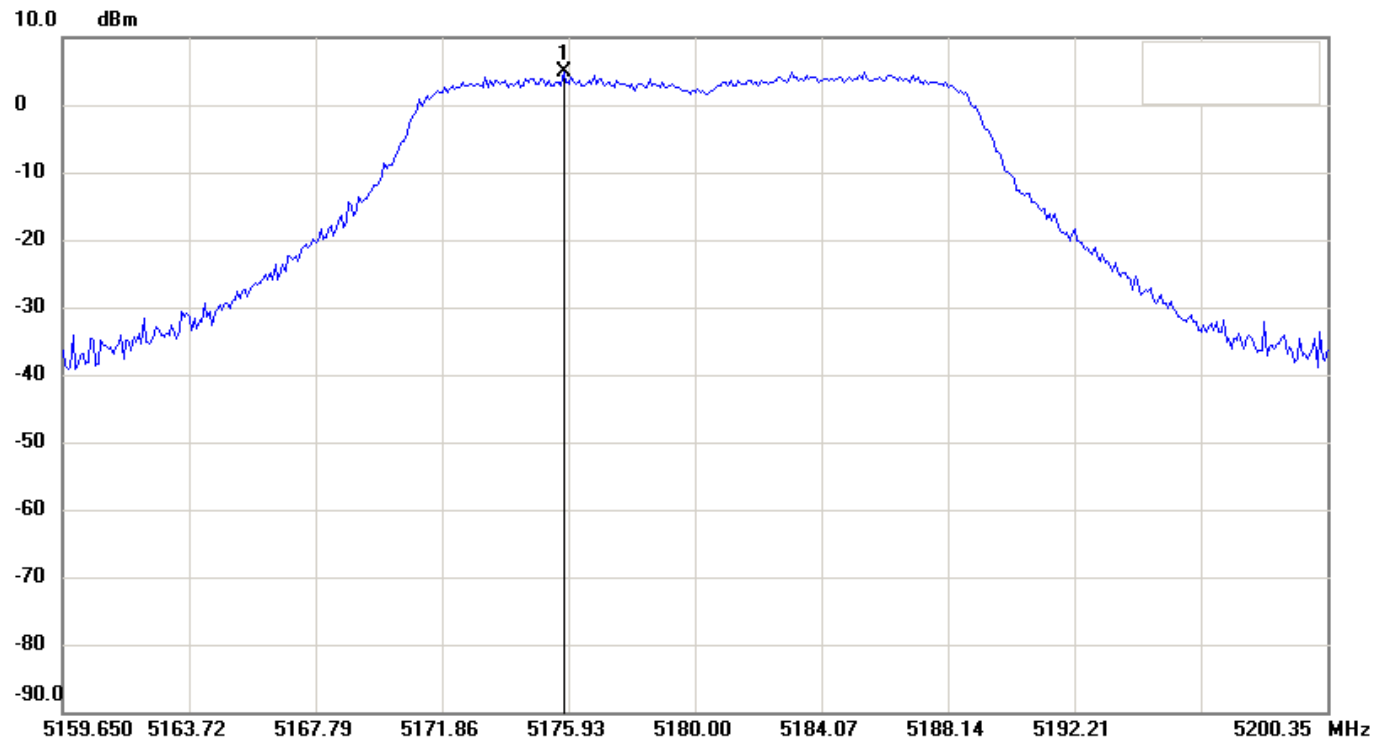
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#4

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 36_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz VBW: 3000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5175.76720	4.86

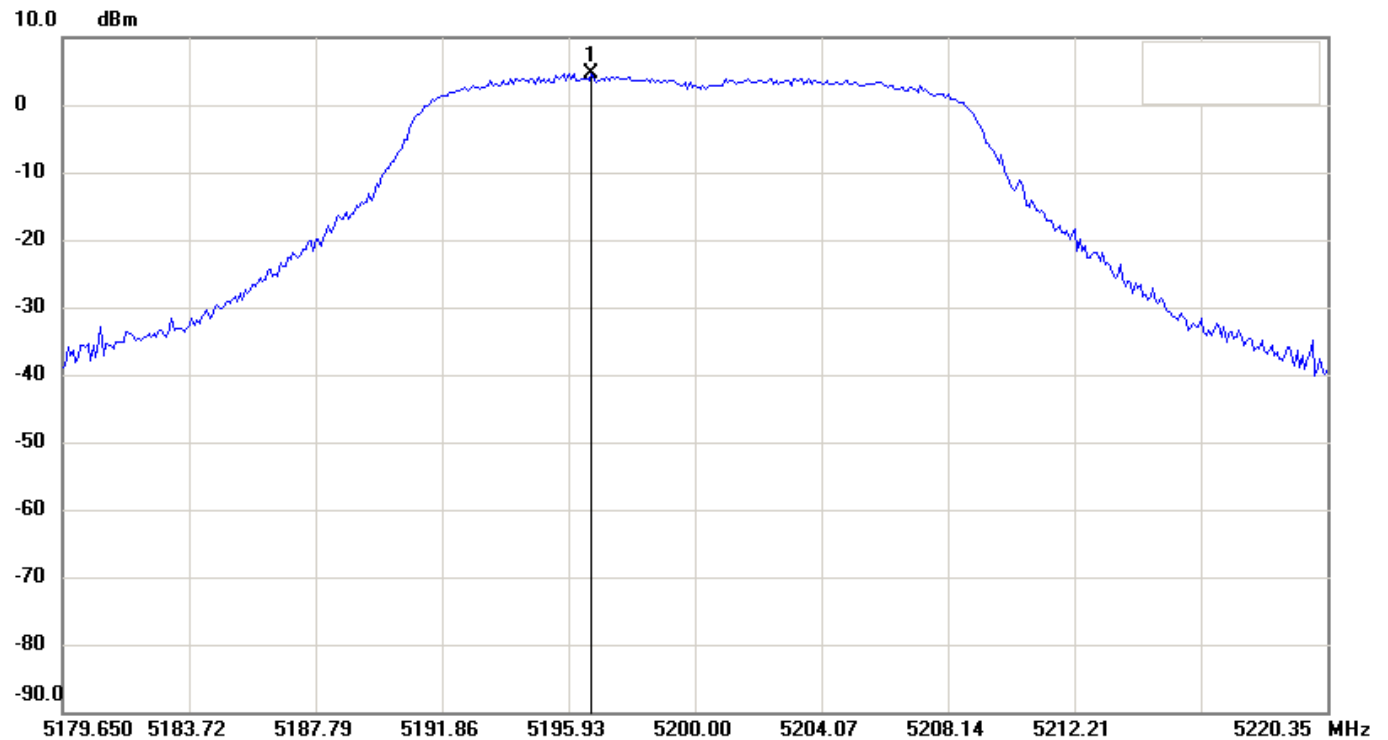
File: 20-04-MAS-061_5-2n20_Ant0
 Site: RF-Cond01

#11

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 40_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5196.66260	4.61

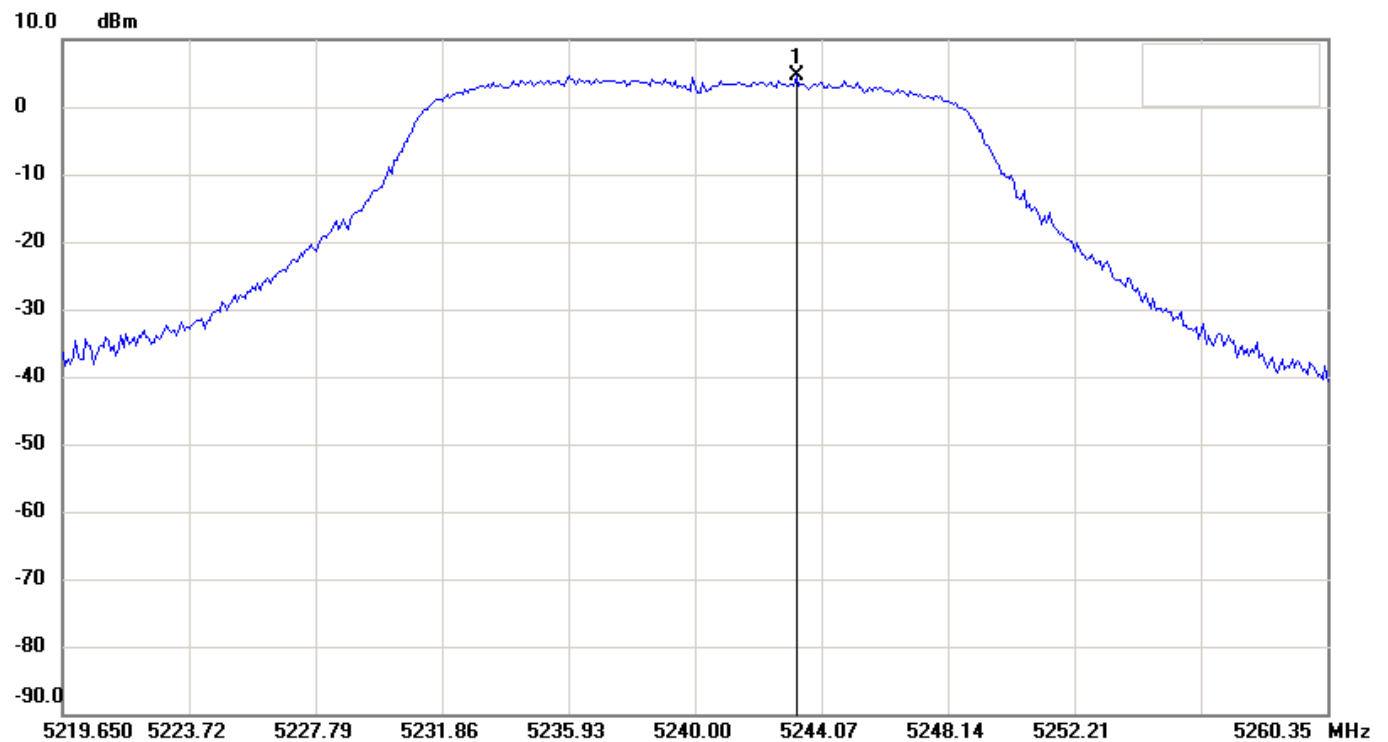
File: 20-04-MAS-061_5-2n20_Ant0
 Site: RF-Cond01

#17

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 48_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5243.25600	4.54

8.4.2.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi，NCC Limit 如下表所示：

Channel	Peak Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	7.24	11	Page 74
M	7.40	11	Page 75
H	6.51	11	Page 76

註：1. 繪圖資料請參考第 74-76 頁。

2. 功率頻譜密度 (Peak Power Spectral Density) 為經儀器校正補償過後的結果值。

3. If antenna gain $\leq$ 6dBi, NCC Limit =11 dBm

4. If antenna gain > 6dBi, NCC Limit =11 dBm – (highest antenna gain – 6 dBi)

5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

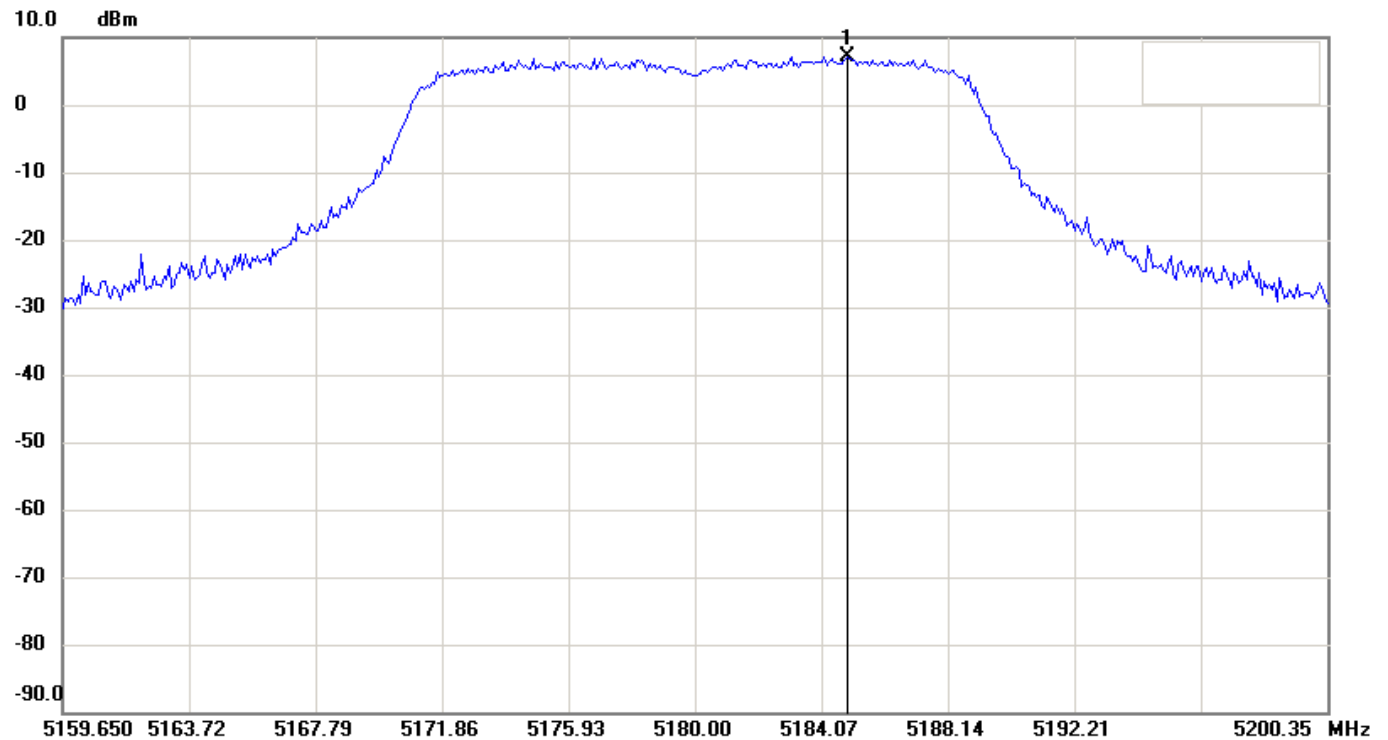
File: 20-04-MAS-061_5-2n20_Ant1
 Site: RF-Cond01

#4

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 36_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5184.88400	7.24

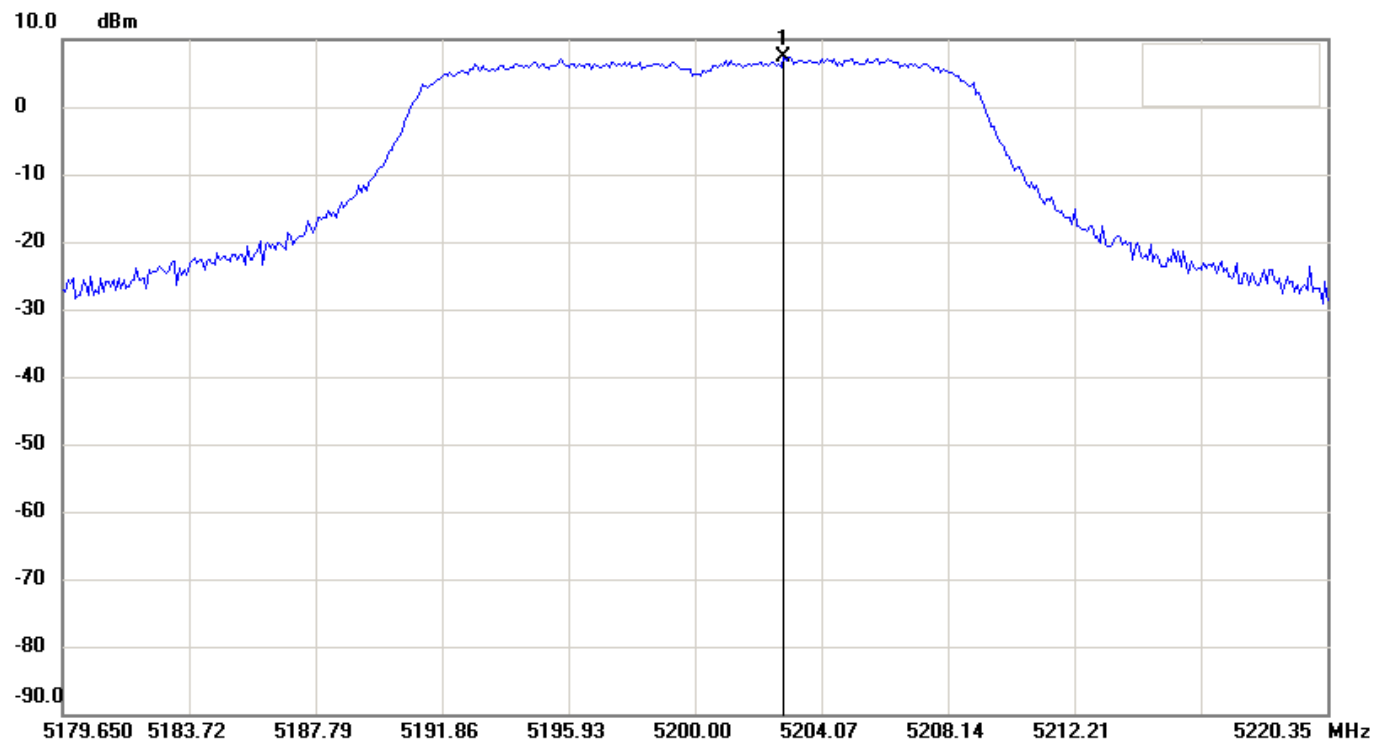
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#11

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 40_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5202.84900	7.40

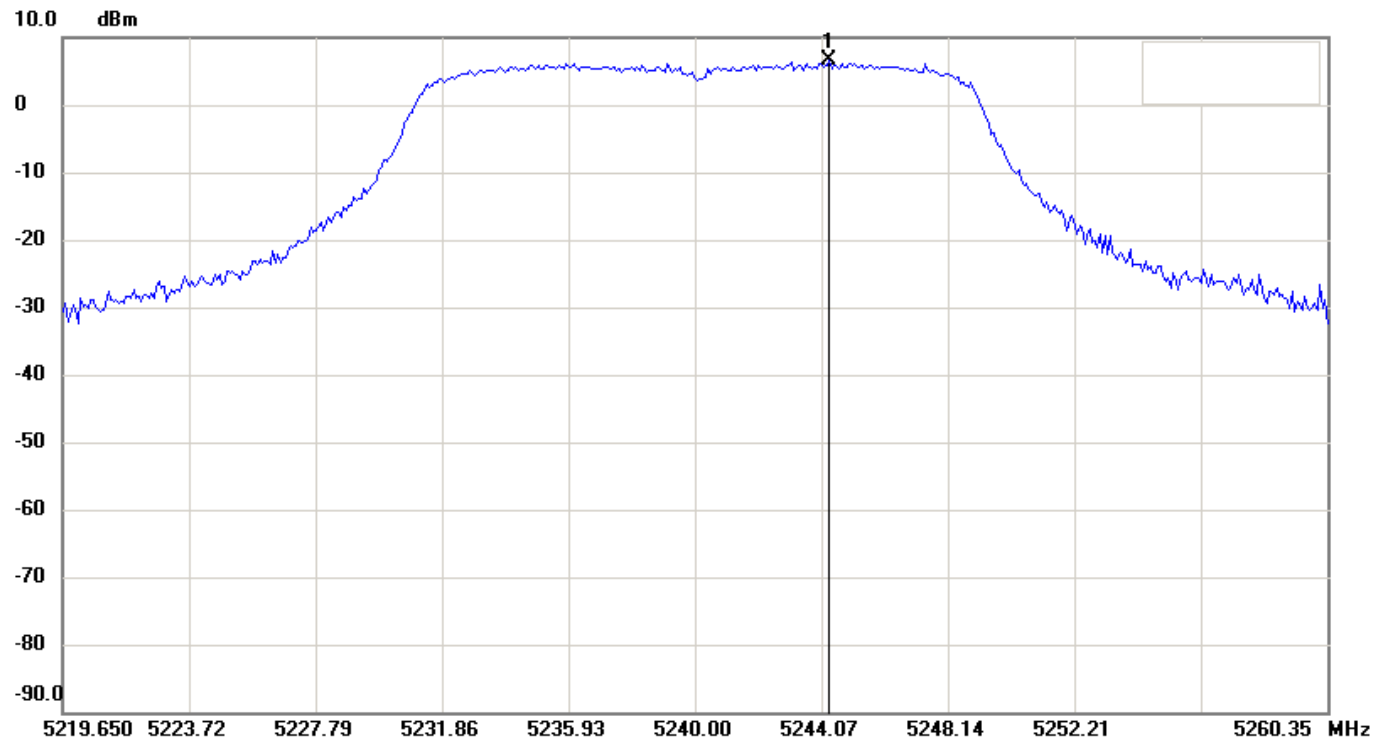
File: 20-04-MAS-061_5-2n20_Ant1
 Site: RF-Cond01

#17

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 48_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5244.31420	6.51

8.4.2.3 CHAIN 0 + CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Total power density calculation formula:

$$10 \log (10^{(\text{Chain 0 PPSD} / 10)} + 10^{(\text{Chain 1 PPSD} / 10)})$$

天線增益最大值為 7.41 dBi，NCC Limit 如下表所示：

Channel	Peak Power Spectral Density (dBm)		Total Peak Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
	Chain 0	Chain 1			
L	4.86	7.24	9.22	9.59	-
M	4.61	7.40	9.24	9.59	-
H	4.54	6.51	8.65	9.59	-

註：1. 功率頻譜密度 (Power Spectral Density) 為經儀器校正補償過後的結果值。

2. If antenna gain $\leq$ 6dBi, NCC Limit =11 dBm

3. If antenna gain > 6dBi, NCC Limit =11 dBm – (highest antenna gain – 6 dBi)

4. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

8.4.3 調變技術: IEEE 802.11n HT40

8.4.3.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi, NCC Limit 如下表所示:

Channel	Peak Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-0.09	11	Page 79
H	0.17	11	Page 80

註: 1. 繪圖資料請參考第 79-80 頁。

2. 功率頻譜密度 (Peak Power Spectral Density) 為經儀器校正補償過後的結果值。

3. If antenna gain $\leq$ 6dBi, NCC Limit =11 dBm

4. If antenna gain > 6dBi, NCC Limit =11 dBm – (highest antenna gain – 6 dBi)

5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

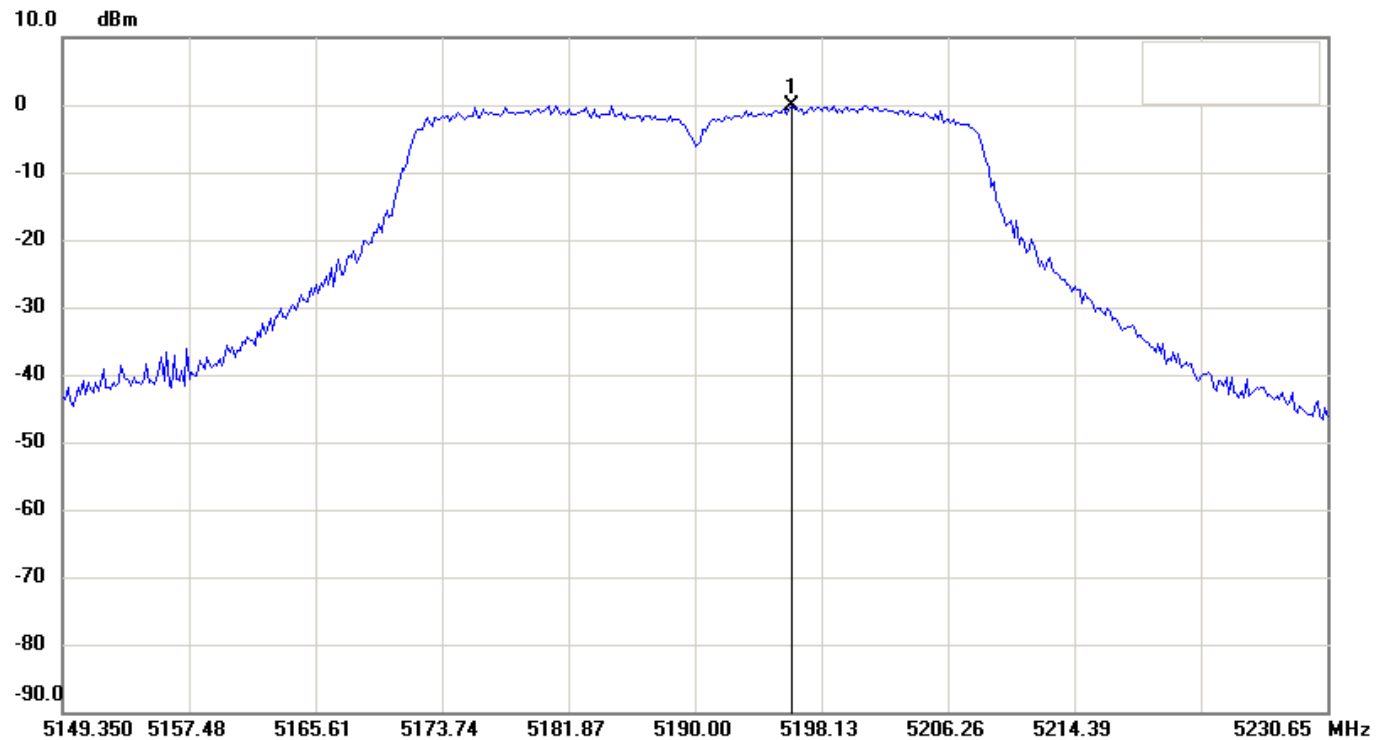
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#4

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 38_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5196.17880	-0.09

File: 20-04-MAS-061_5-2n40_Ant0

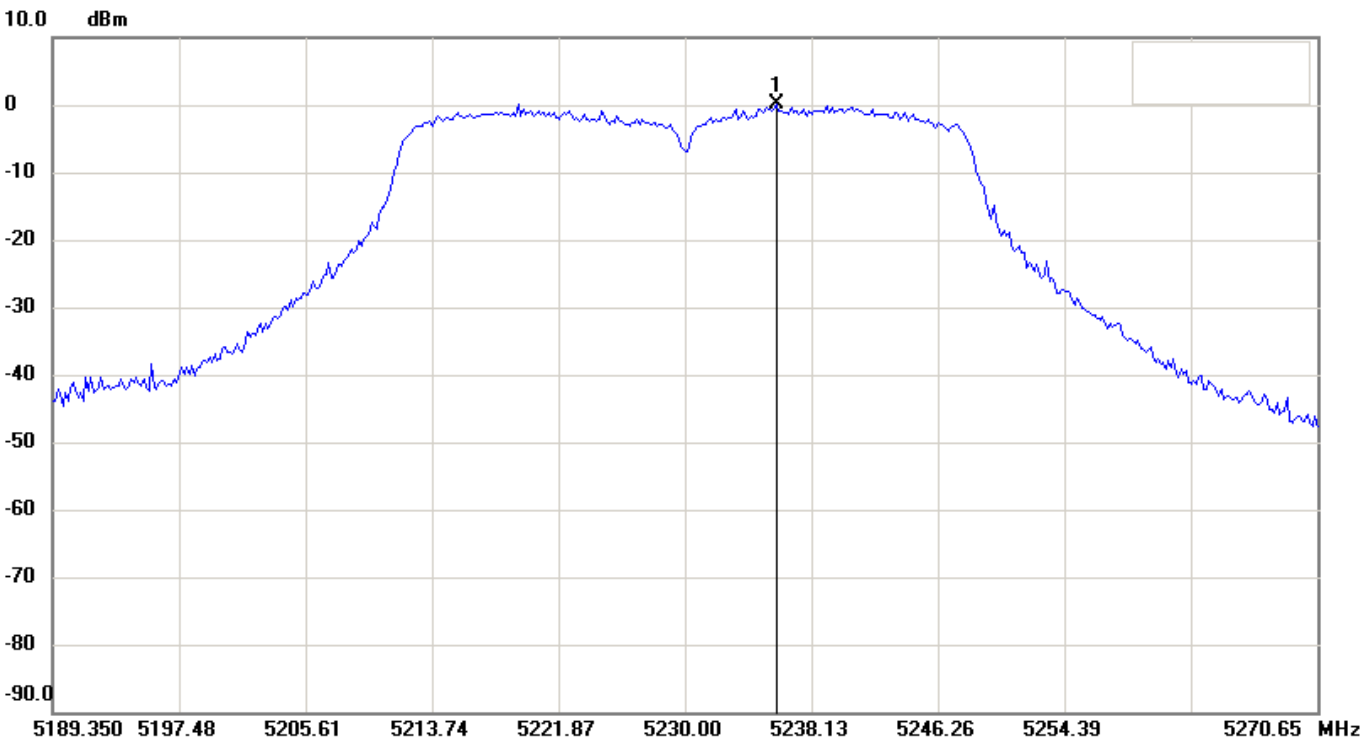
#11

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 46_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz VBW: 3000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5235.85360	0.17

8.4.3.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

天線增益最大值為 4.4 dBi，NCC Limit 如下表所示：

Channel	Peak Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	1.96	11	Page 82
H	1.94	11	Page 83

註：1. 繪圖資料請參考第 82-83 頁。

2. 功率頻譜密度 (Peak Power Spectral Density) 為經儀器校正補償過後的結果值。

3. If antenna gain $\leq$ 6dBi, NCC Limit =11 dBm

4. If antenna gain > 6dBi, NCC Limit =11 dBm – (highest antenna gain – 6 dBi)

5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

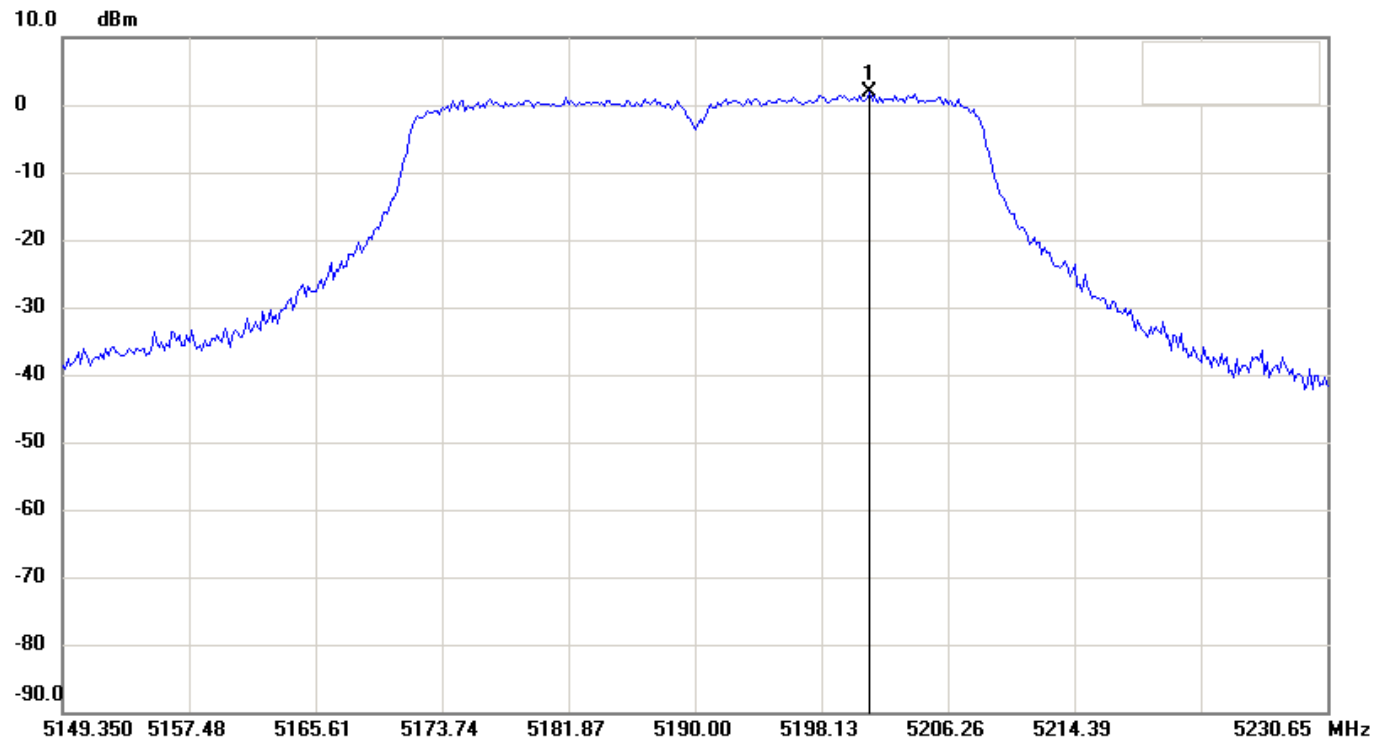
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#4

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 38_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5201.21940	1.96

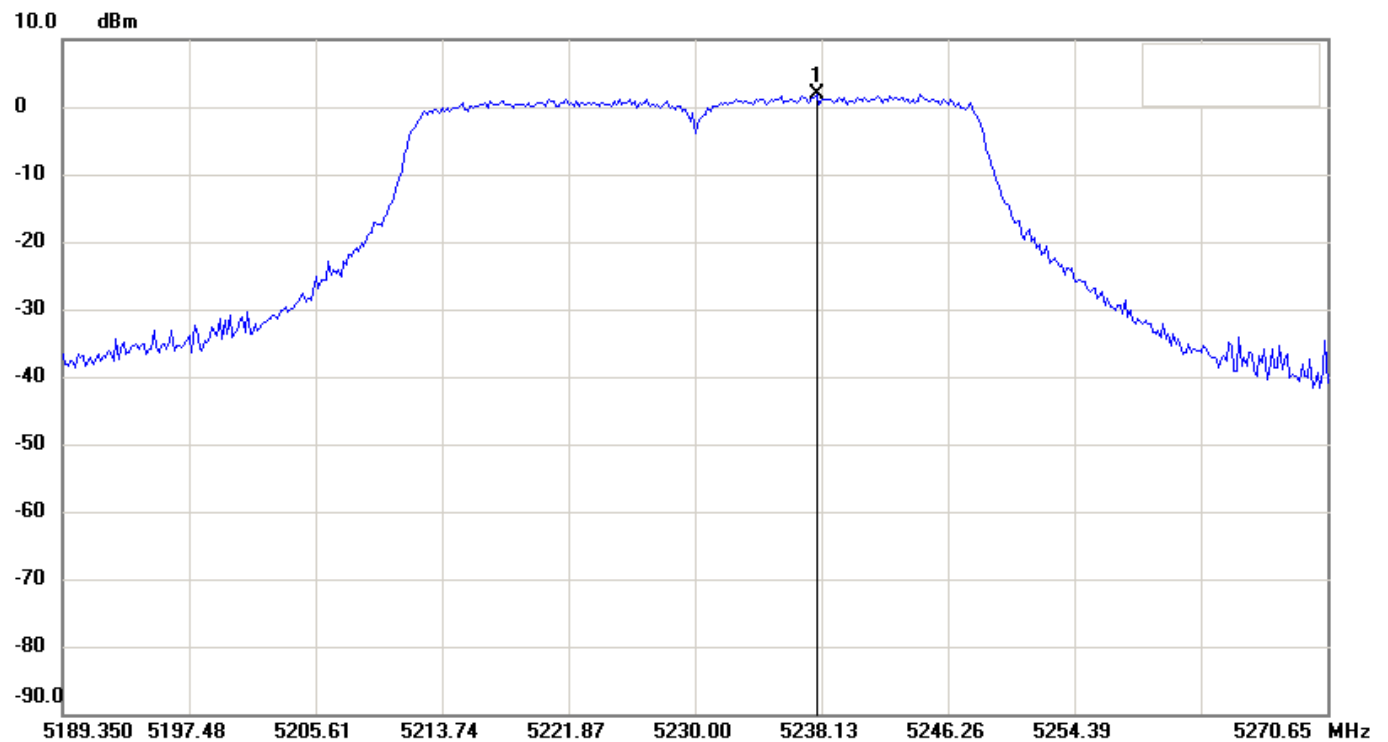
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#11

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition:

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 46_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz

Operator:

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5237.80480	1.94

8.4.3.3 CHAIN 0 + CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

Total power density calculation formula:

$$10 \log (10^{(\text{Chain 0 PPSD} / 10)} + 10^{(\text{Chain 1 PPSD} / 10)})$$

天線增益最大值為 7.41 dBi，NCC Limit 如下表所示：

Channel	Peak Power Spectral Density (dBm)		Total Peak Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
	Chain 0	Chain 1			
L	-0.09	1.96	4.07	9.59	-
H	0.17	1.94	4.15	9.59	-

註：1. 功率頻譜密度 (Power Spectral Density) 為經儀器校正補償過後的結果值。

2. If antenna gain $\leq$ 6dBi, NCC Limit =11 dBm

3. If antenna gain > 6dBi, NCC Limit =11 dBm – (highest antenna gain – 6 dBi)

4. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

8.5 結果判定

高、中、低頻段的峰值功率頻譜密度皆低於限值，合乎標準規定。

9 混附波發射限制之量測

9.1 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.4節之規定：不必要發射之限制值：在操作頻帶外的峰值發射應衰減至符合下列限制值：

- (1) 5.7.4.1節：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)≤-27 dBm/MHz。。
- (2) 5.7.4.3節：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。
- (3) 5.7.4.4節：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。

9.2 混附波發射限制之測試配置

如圖1 所示。

9.3 量測混附波發射限制之儀器

儀器名稱	製造者	型 號
Spectrum Analyzer	R&S	FSV
Attenuator	WEINSCHEL	56-10

測試軟體: LZ-RF (Ver. ETC-3A2)

9.4 混附波發射限制之量測結果 (傳導方式量測)

Single Conducted Limit:

Eirp Limit – Aantenna Directional Gain – 10 log[number of Tx output(s)]

9.4.1 調變技術: IEEE 802.11a

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

註：1. 繪圖資料請參考第 86-91 頁。

2. 量測不準確度:±1.5dB(1GHz≤f≤40GHz)

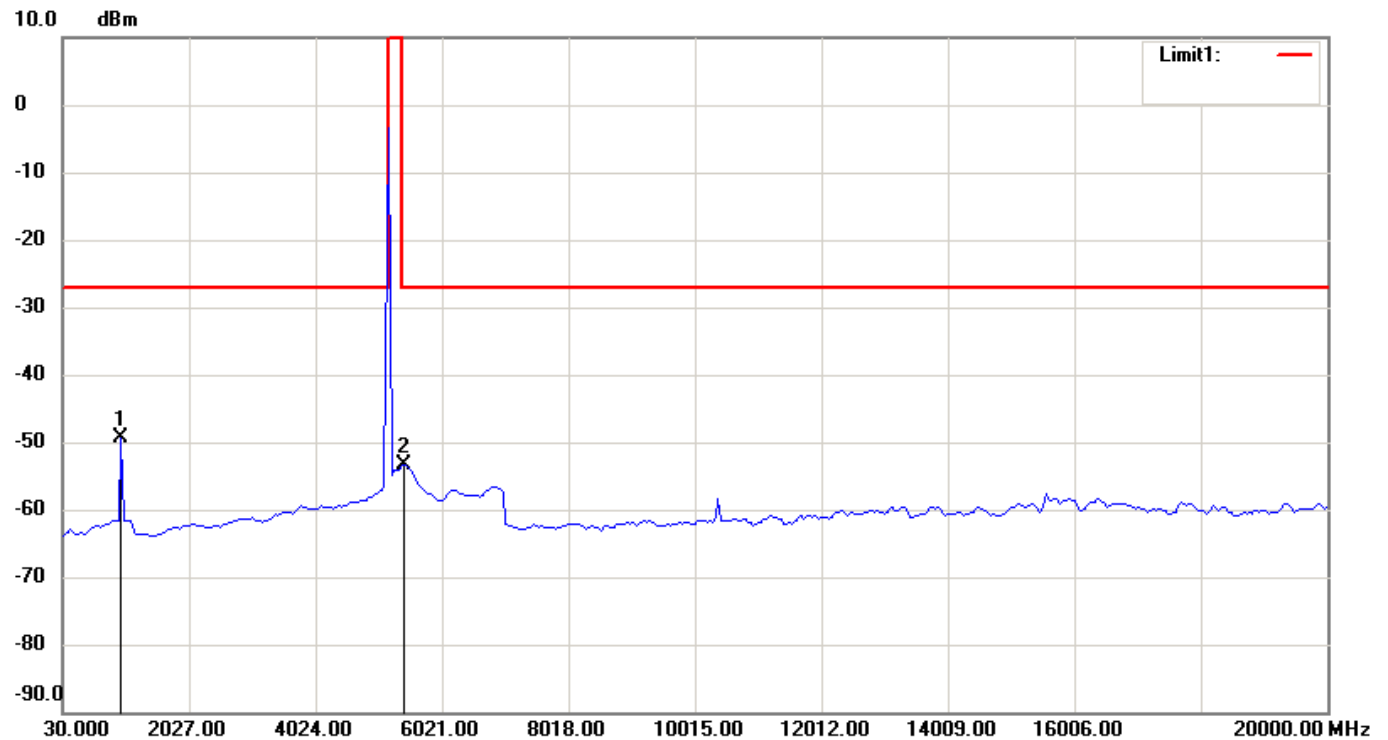
File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#5

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63%



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 36_Spurious-1

RF Conducted

Sweep Time: 79.9ms Att.: 15dB

RBW: 1000 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	948.6200	-49.46
2	5421.90000	-53.46

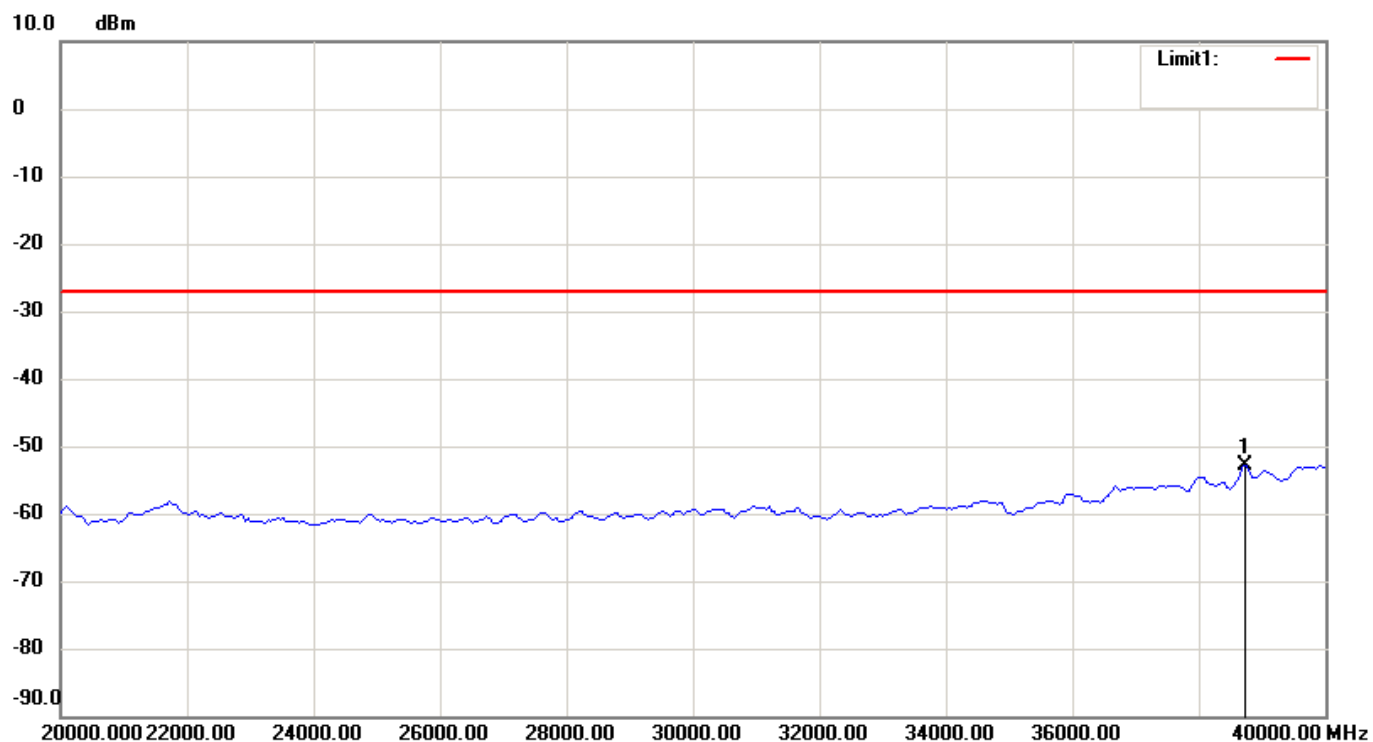
File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#6

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63%



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 36_Spurious-2

RF Conducted

Sweep Time: 80ms Att.: 15dB

RBW: 1000 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-52.88

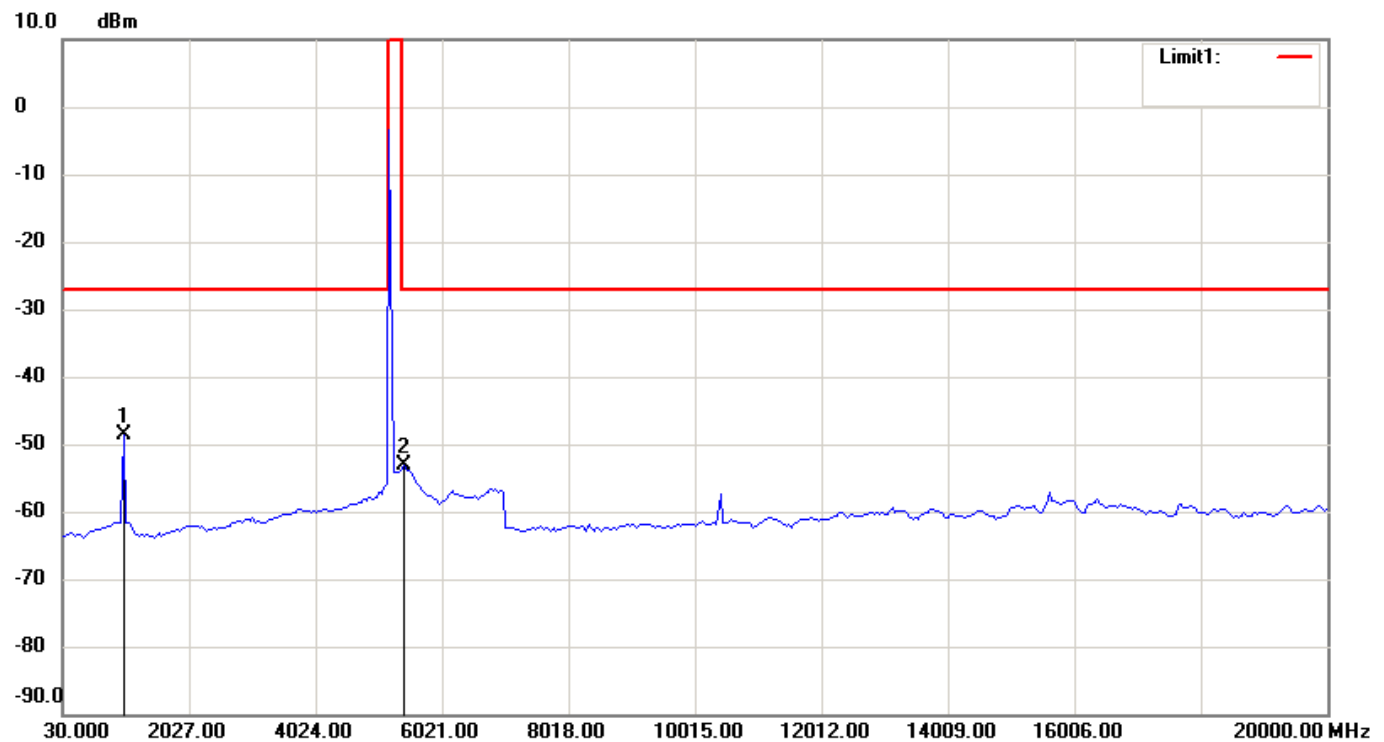
File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#12

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63%



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 40_Spurious-1

RF Conducted

Sweep Time: 79.9ms Att.: 15dB

RBW: 1000 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	988.5600	-48.67
2	5421.90000	-53.13

File: 20-04-MAS-061_5-2a_Ant1

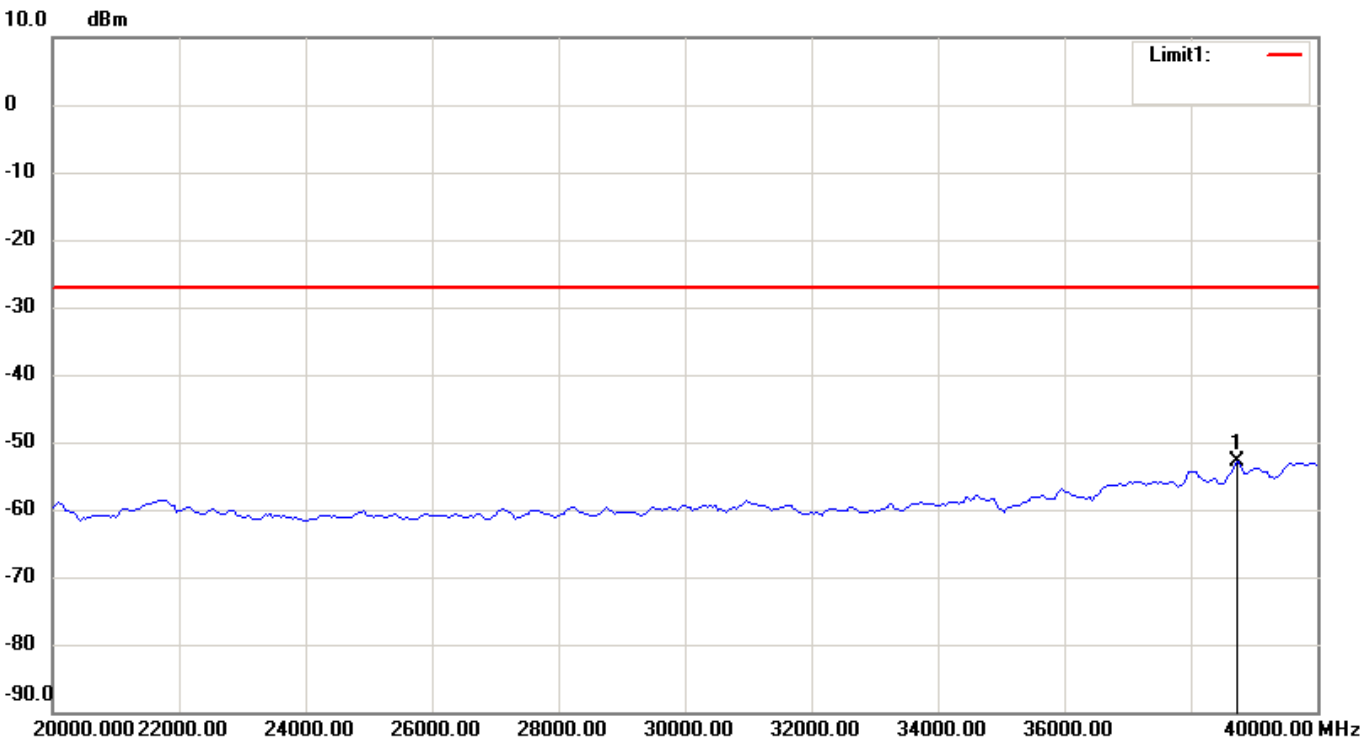
#13

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63%



Condition: UNII-Band1-2-Bandedge

RF Conducted

EUT: Wireless LAN Conveter

Sweep Time: 80ms Att.: 15dB

Model: FBR-3250

RBW: 1000 KHz VBW: 1000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11a_Channel 40_Spurious-2

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-52.96

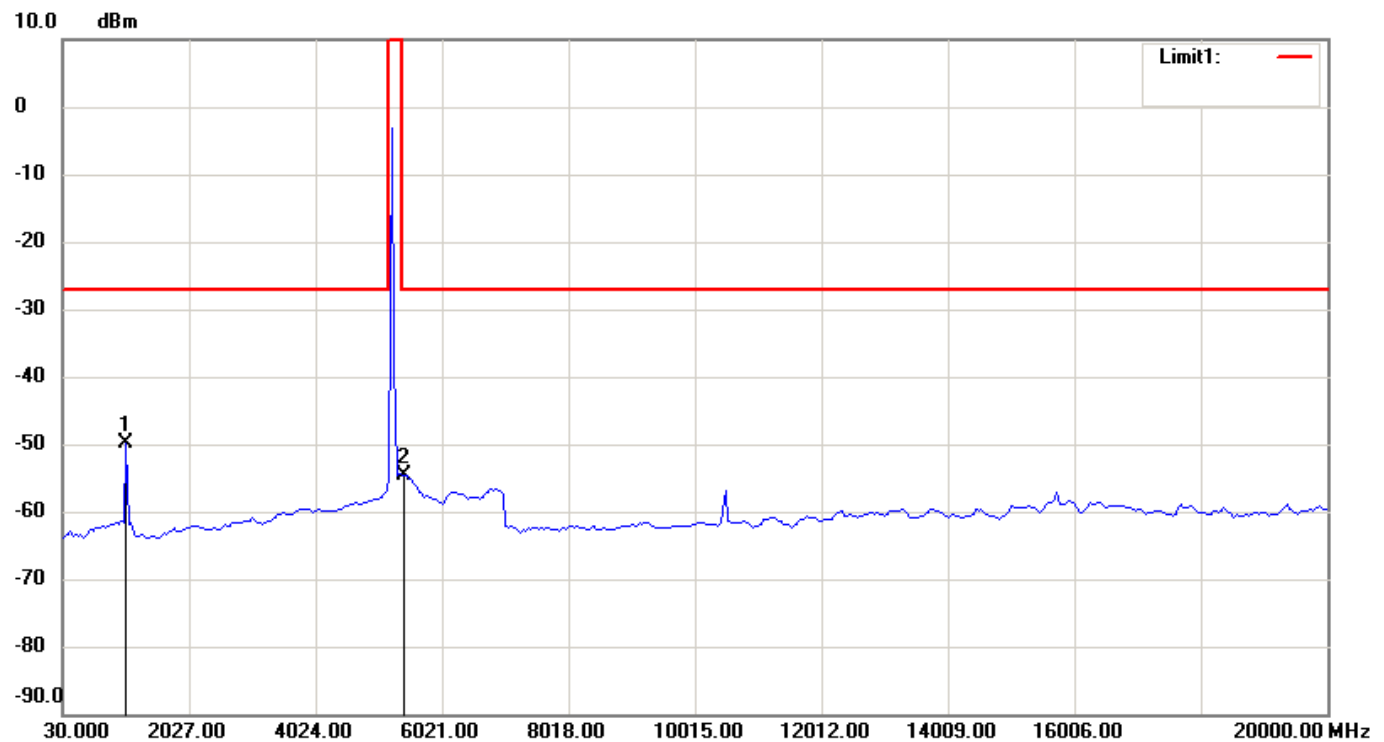
File: 20-04-MAS-061_5-2a_Ant1
Site: RF-Cond01

#18

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 48_Spurious-1

RF Conducted

Sweep Time: 79.9ms Att.: 15dB

RBW: 1000 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	1028.50000	-49.81
2	5421.90000	-54.52

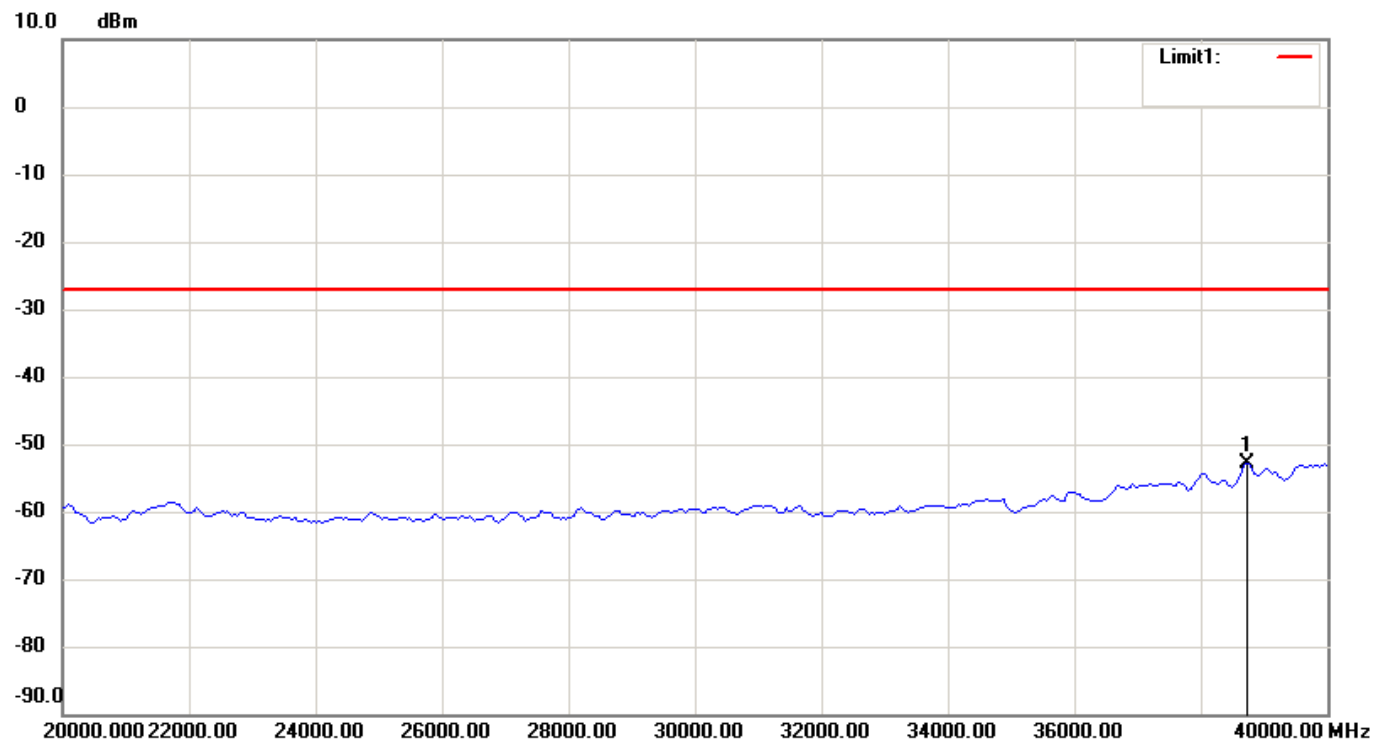
File: 20-04-MAS-061_5-2a_Ant1
 Site: RF-Cond01

#19

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63%



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 48_Spurious-2

RF Conducted

Sweep Time: 80ms Att.: 15dB

RBW: 1000 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-52.89

9.4.2 調變技術: IEEE 802.11n HT20

9.4.2.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

註: 1. 繪圖資料請參考第 93-98 頁。

2. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 40\text{GHz}$)

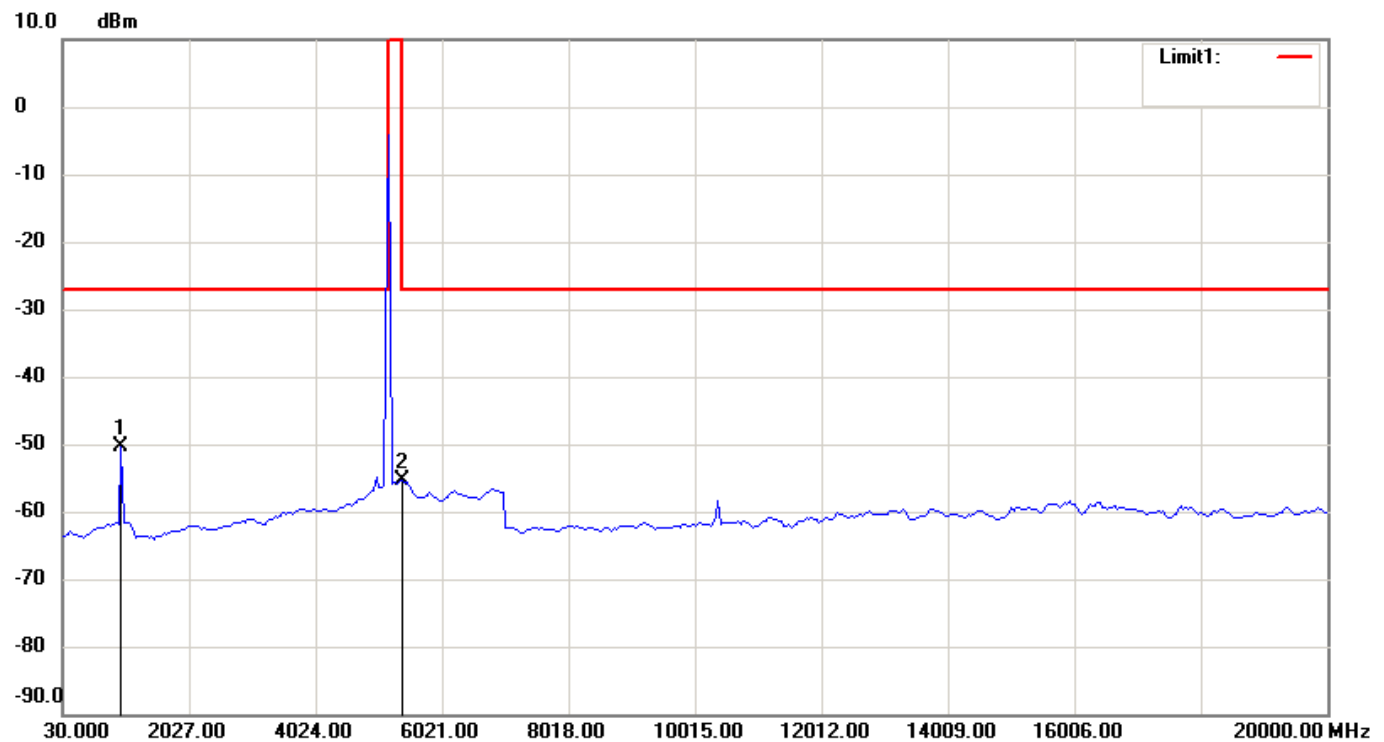
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#5

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 36_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	948.6200	-50.47
2	5381.96000	-55.49

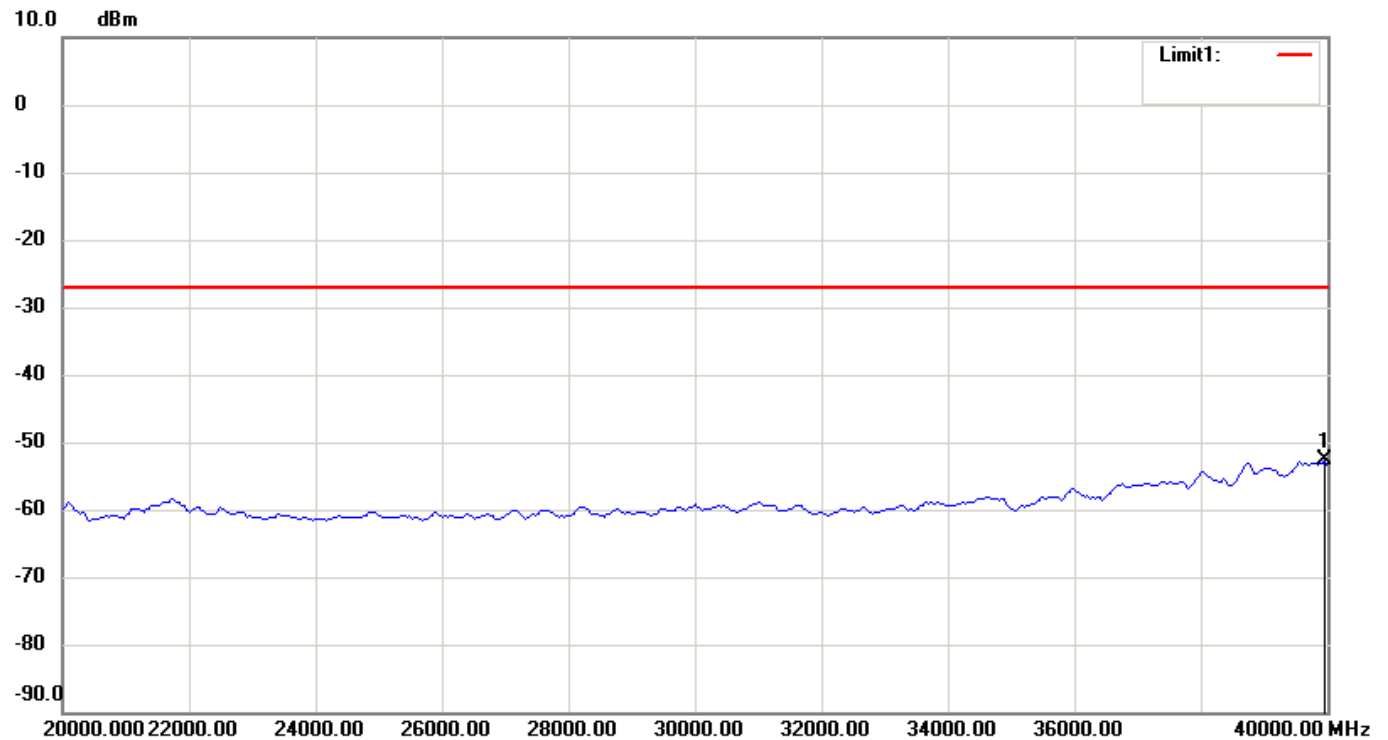
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#6

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 36_Spurious-2

RF Conducted

Sweep Time: 80ms Att.: 15dB

RBW: 1000 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39960.00000	-52.73

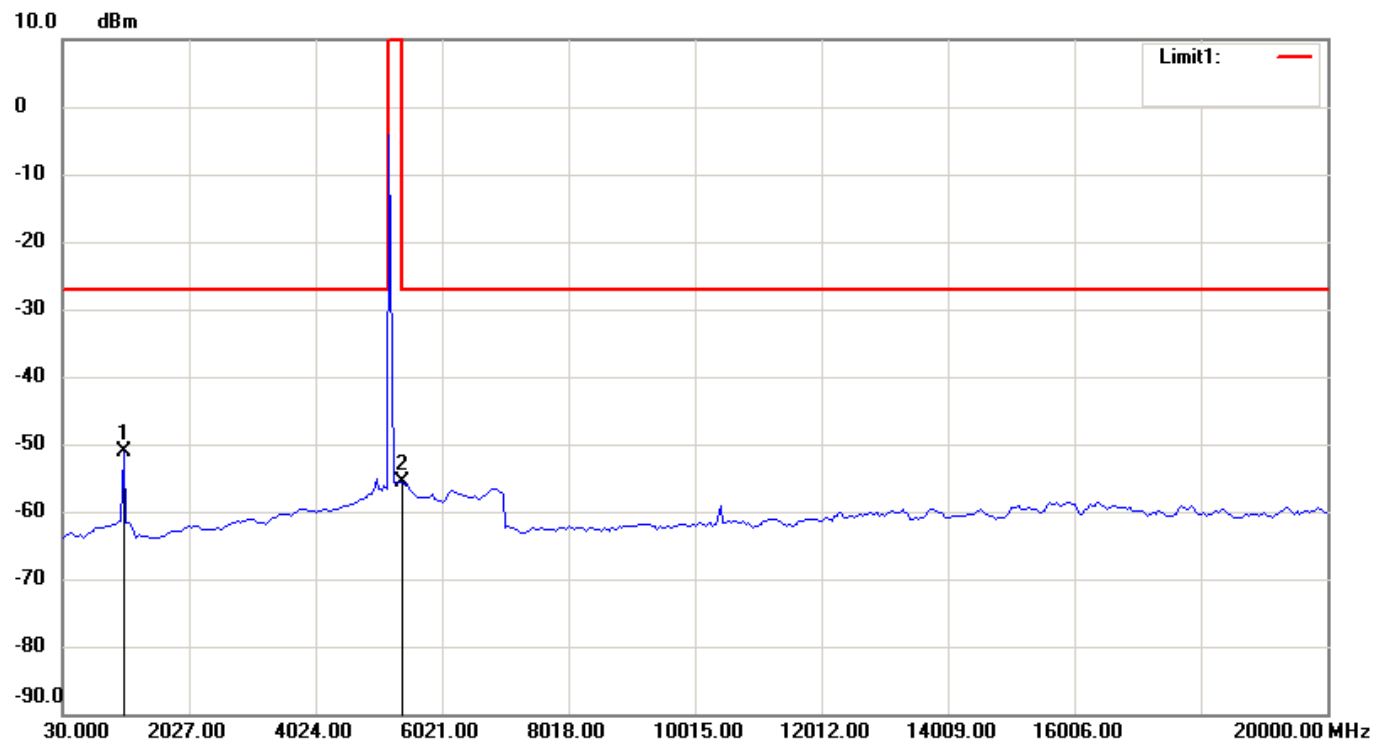
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#12

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 40_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	988.5600	-51.11
2	5381.96000	-55.64

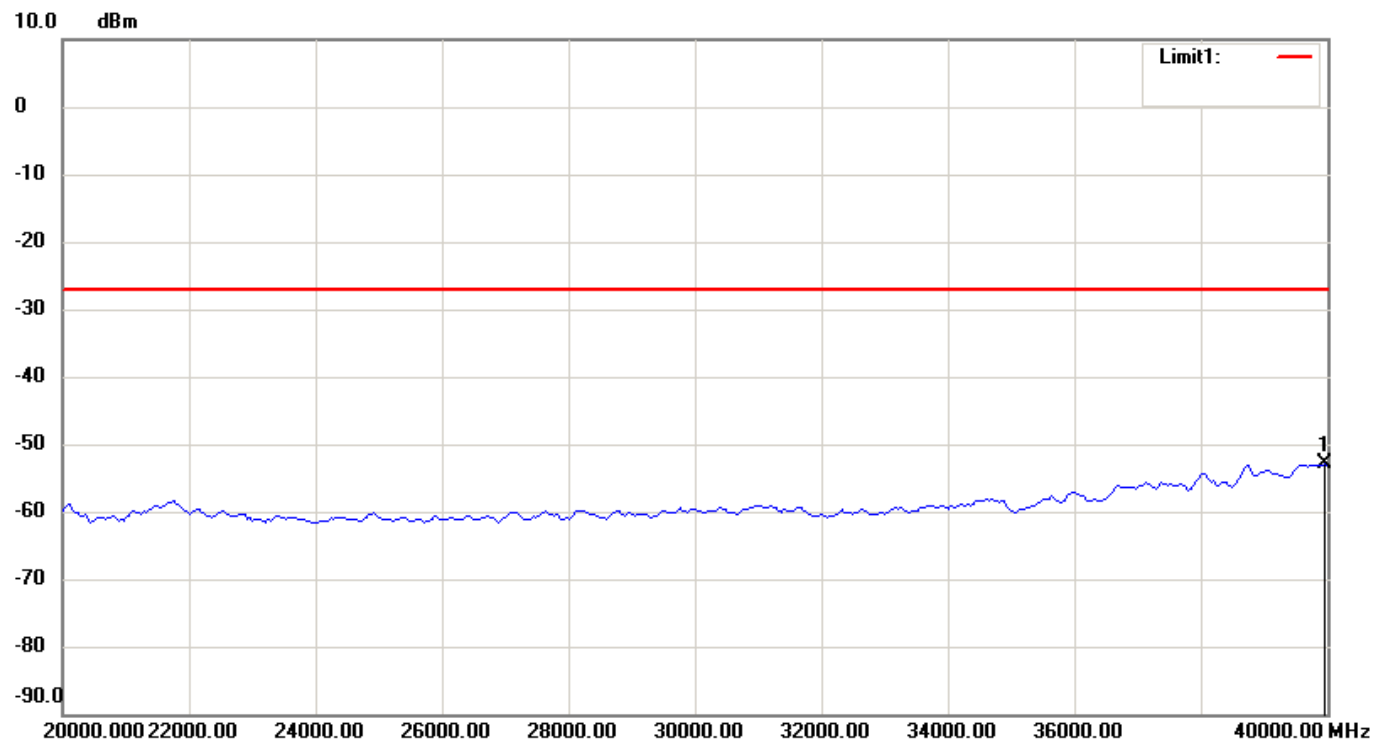
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#13

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 40_Spurious-2

RF Conducted
Sweep Time: 80ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39960.00000	-52.95

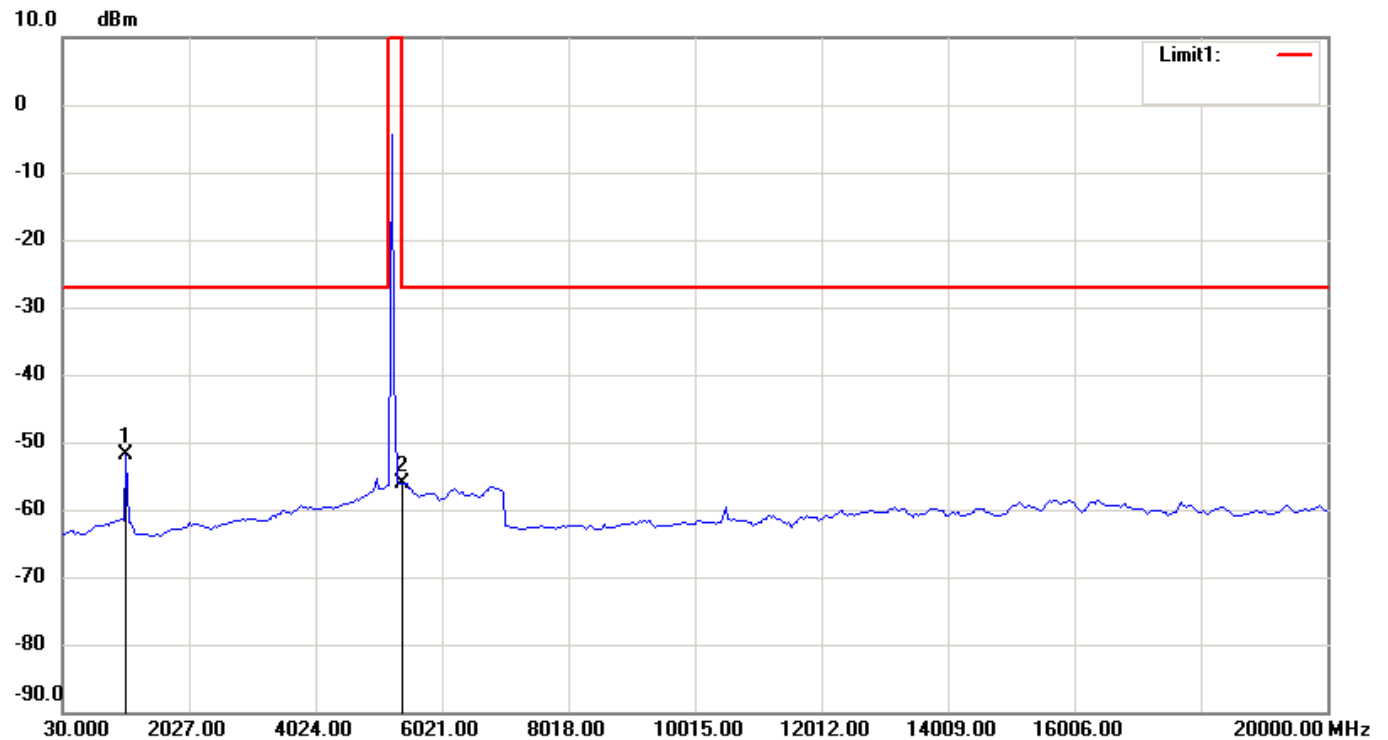
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#18

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 48_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	1028.50000	-51.94
2	5381.96000	-56.11

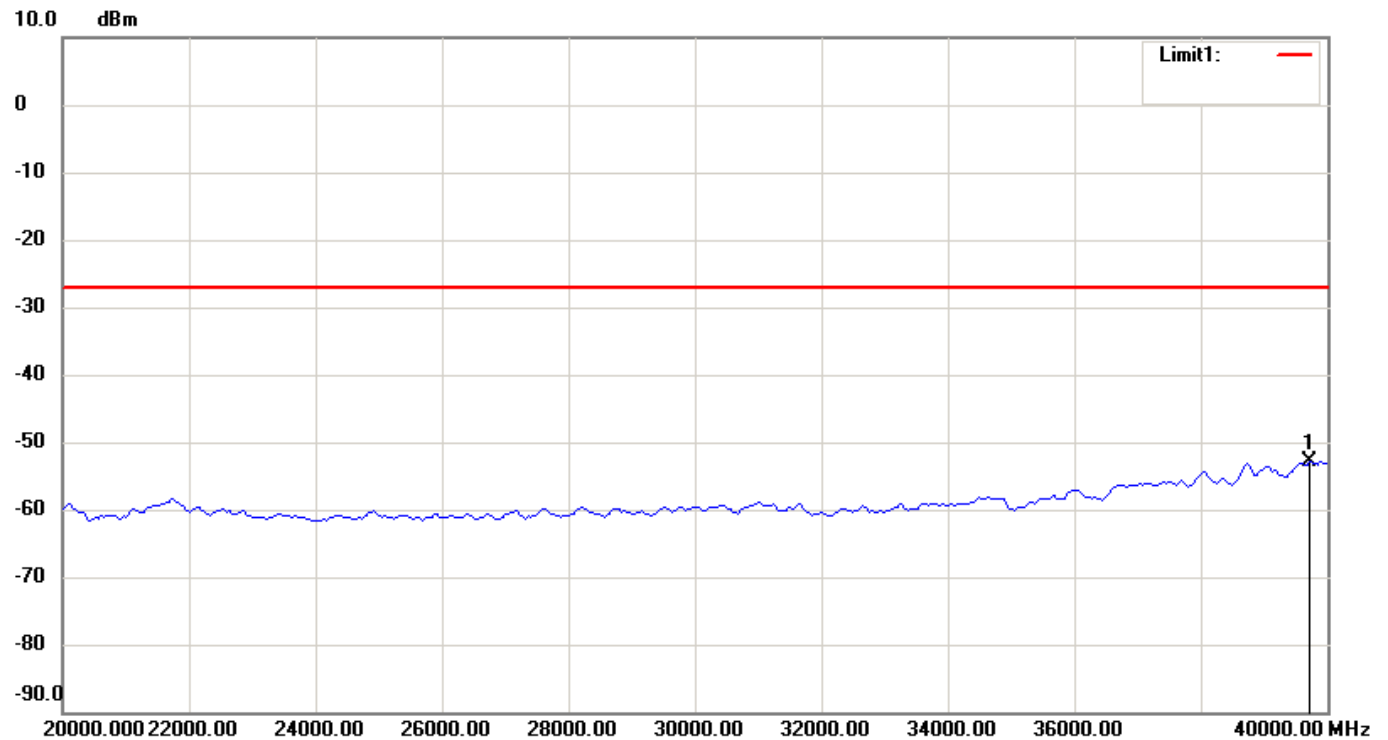
File: 20-04-MAS-061_5-2n20_Ant0
 Site: RF-Cond01

#19

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: NCC_LP0002_802.11n20_Channel 48_Spurious-2

RF Conducted
 Sweep Time: 80ms Att.: 15dB
 RBW: 1000 KHz VBW: 1000 KHz
 Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39720.00000	-52.93

9.4.2.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

註: 1. 繪圖資料請參考第 100-105 頁。

2. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 40\text{GHz}$)

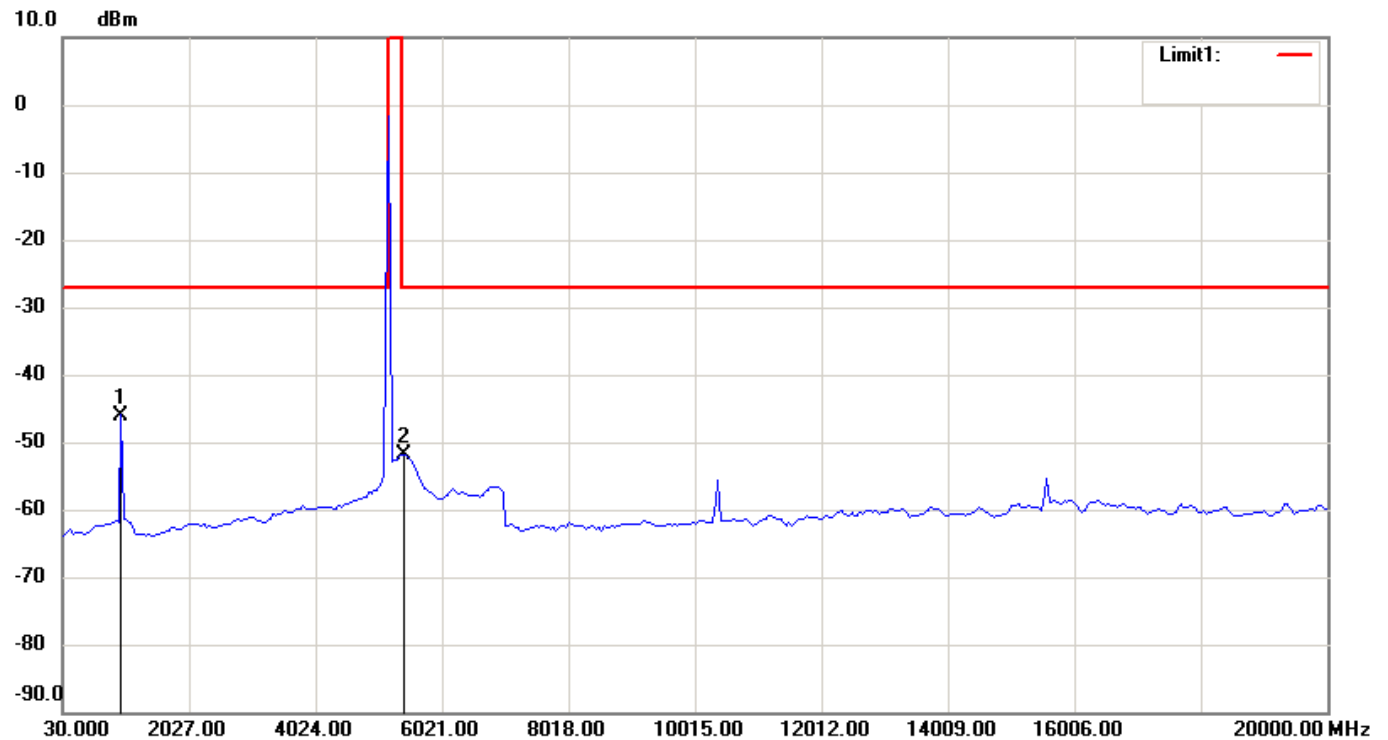
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#5

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 36_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	948.6200	-46.00
2	5421.90000	-51.77

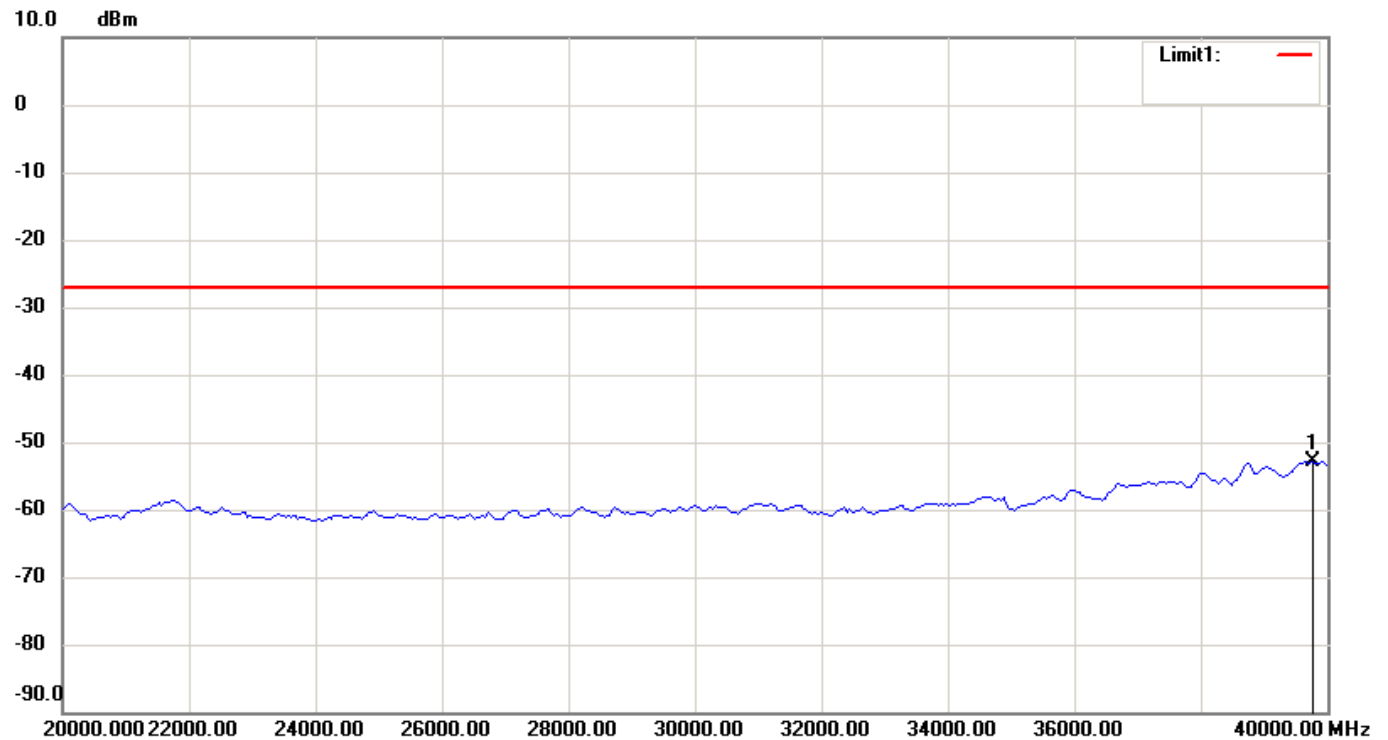
File: 20-04-MAS-061_5-2n20_Ant1
 Site: RF-Cond01

#6

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: NCC_LP0002_802.11n20_Channel 36_Spurious-2

RF Conducted
 Sweep Time: 80ms Att.: 15dB
 RBW: 1000 KHz VBW: 1000 KHz
 Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39760.00000	-52.89

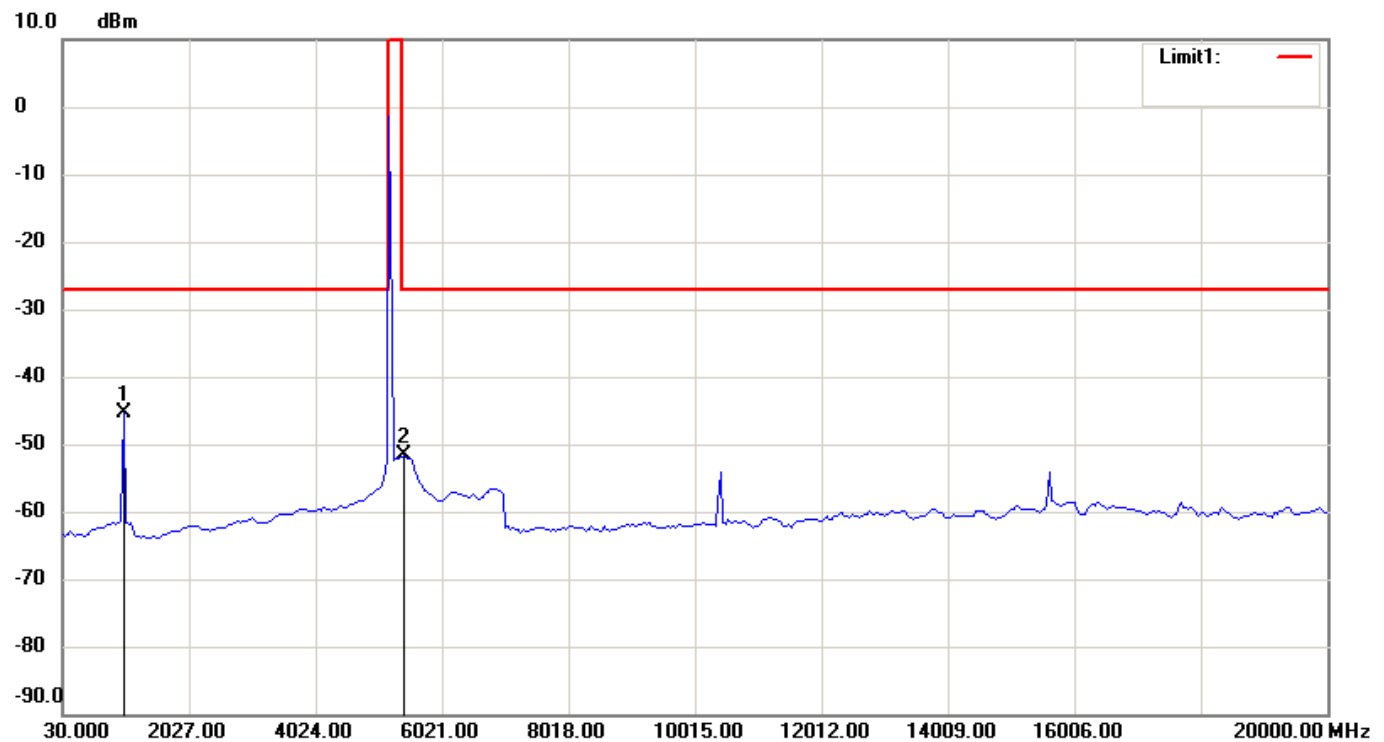
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#12

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 40_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	988.5600	-45.43
2	5421.90000	-51.63

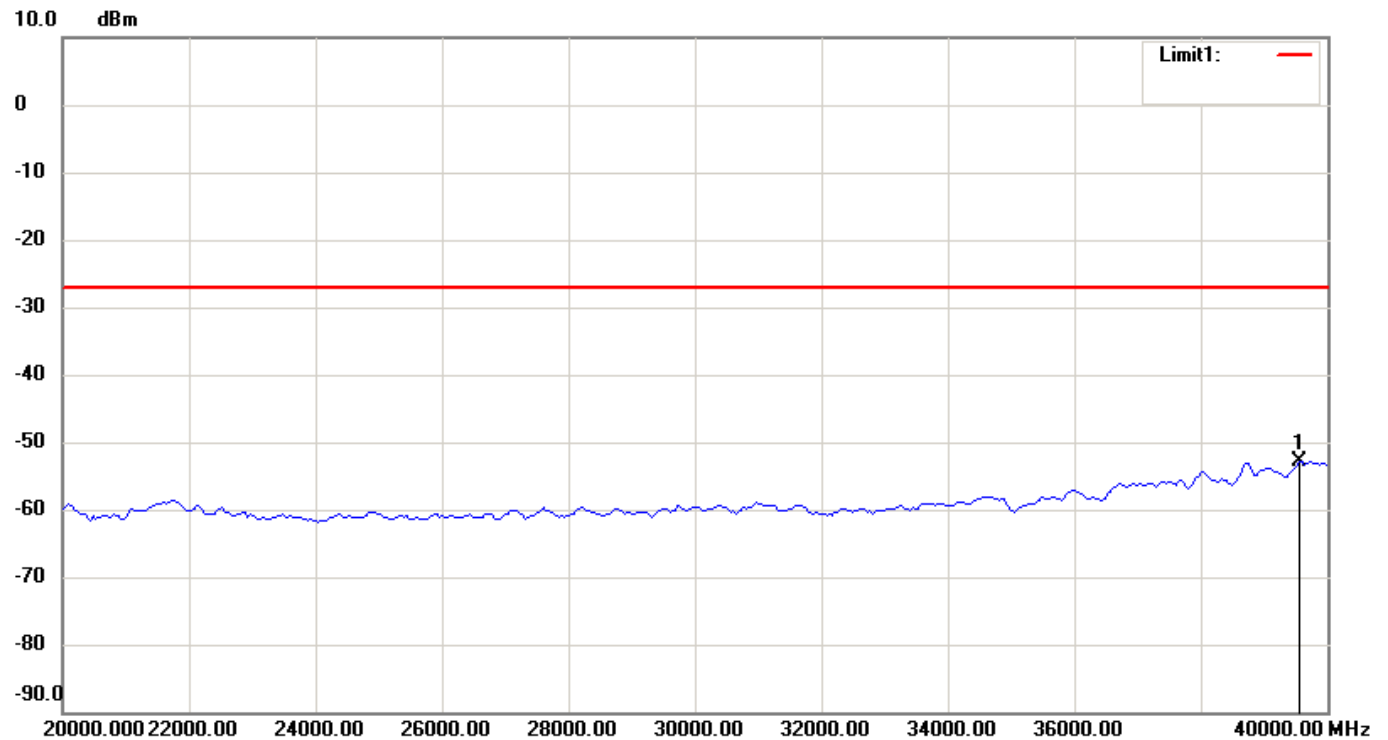
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#13

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 40_Spurious-2

RF Conducted
Sweep Time: 80ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39560.00000	-52.96

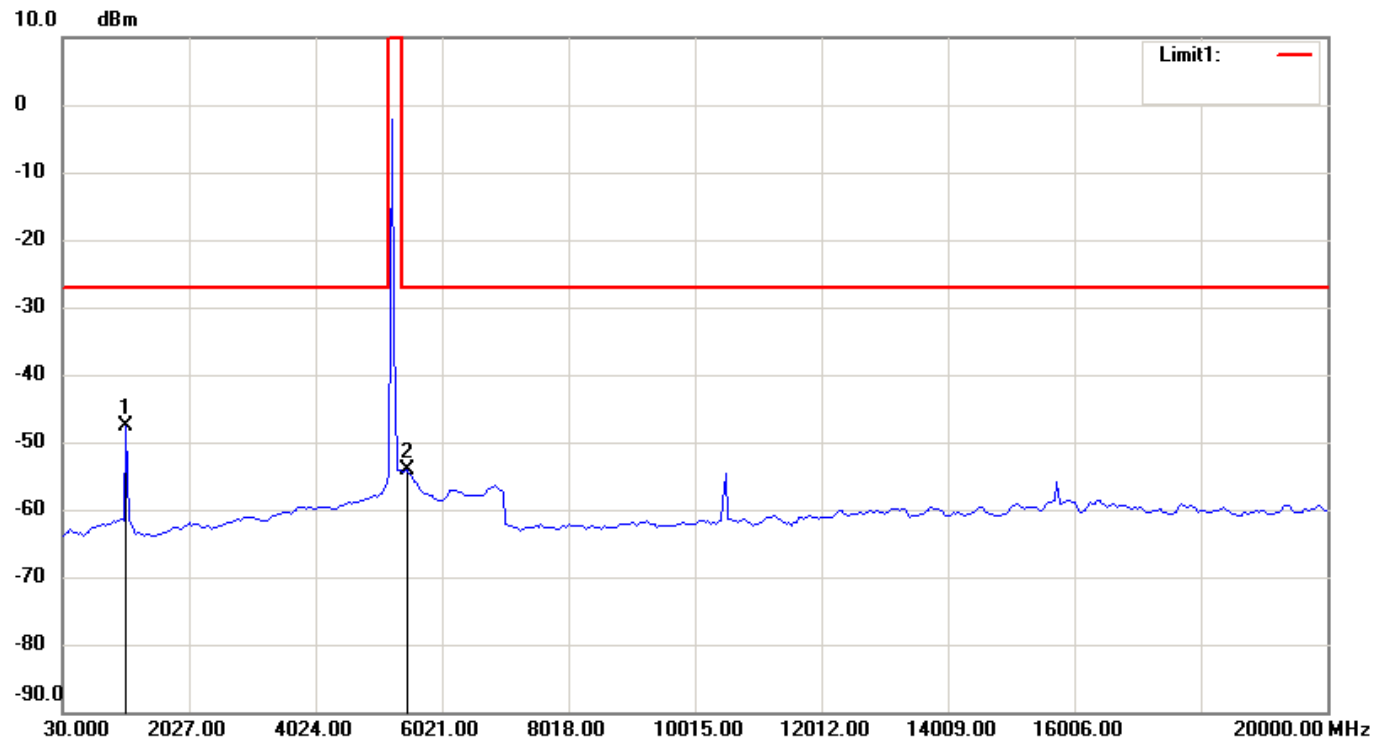
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#18

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20_Channel 48_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	1028.50000	-47.52
2	5461.84000	-54.17

File: 20-04-MAS-061_5-2n20_Ant1

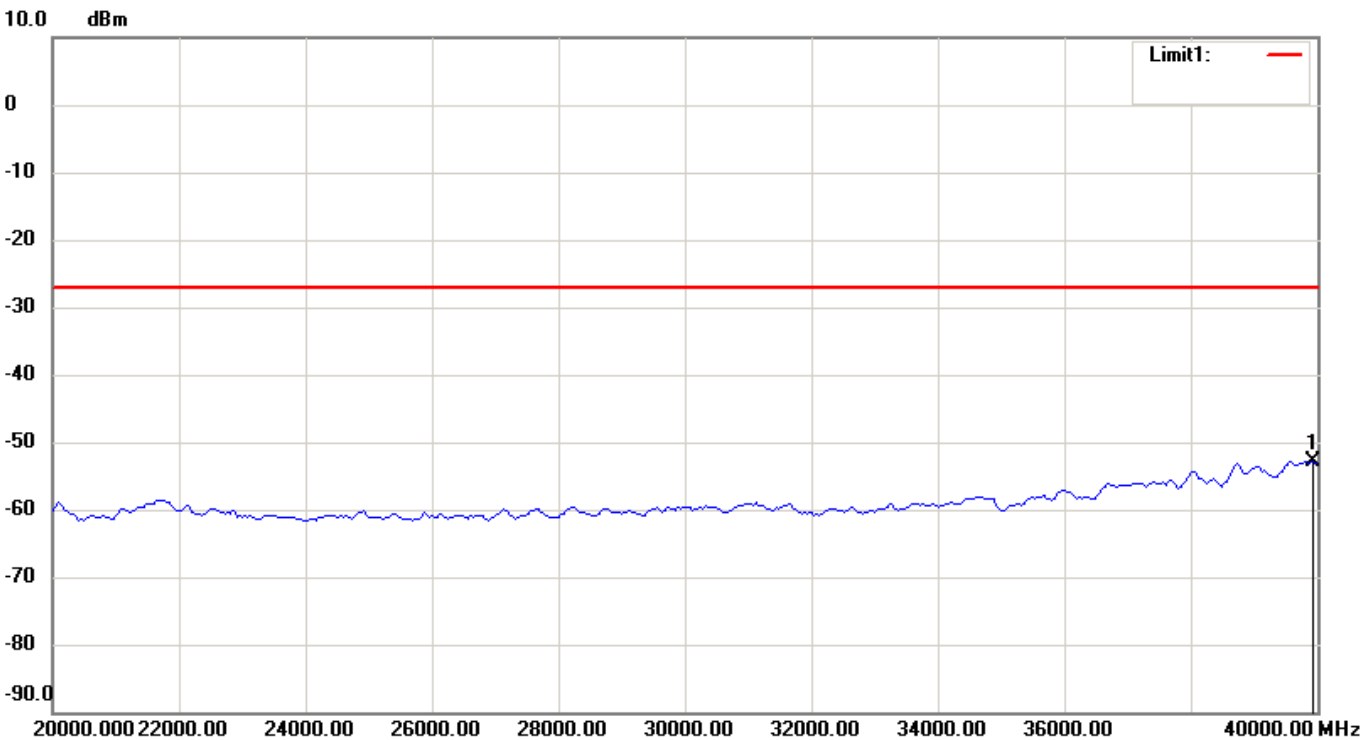
#19

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge

RF Conducted

EUT: Wireless LAN Conveter

Sweep Time: 80ms Att.: 15dB

Model: FBR-3250

RBW: 1000 KHz VBW: 1000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11n20_Channel 48_Spurious-2

No.	Frequency(MHz)	Level(dBm)
1	39920.00000	-52.90

9.4.3 調變技術: IEEE 802.11n HT40

9.4.3.1 CHAIN 0

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

註: 1. 繪圖資料請參考第 107-110 頁。

2. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 40\text{GHz}$)

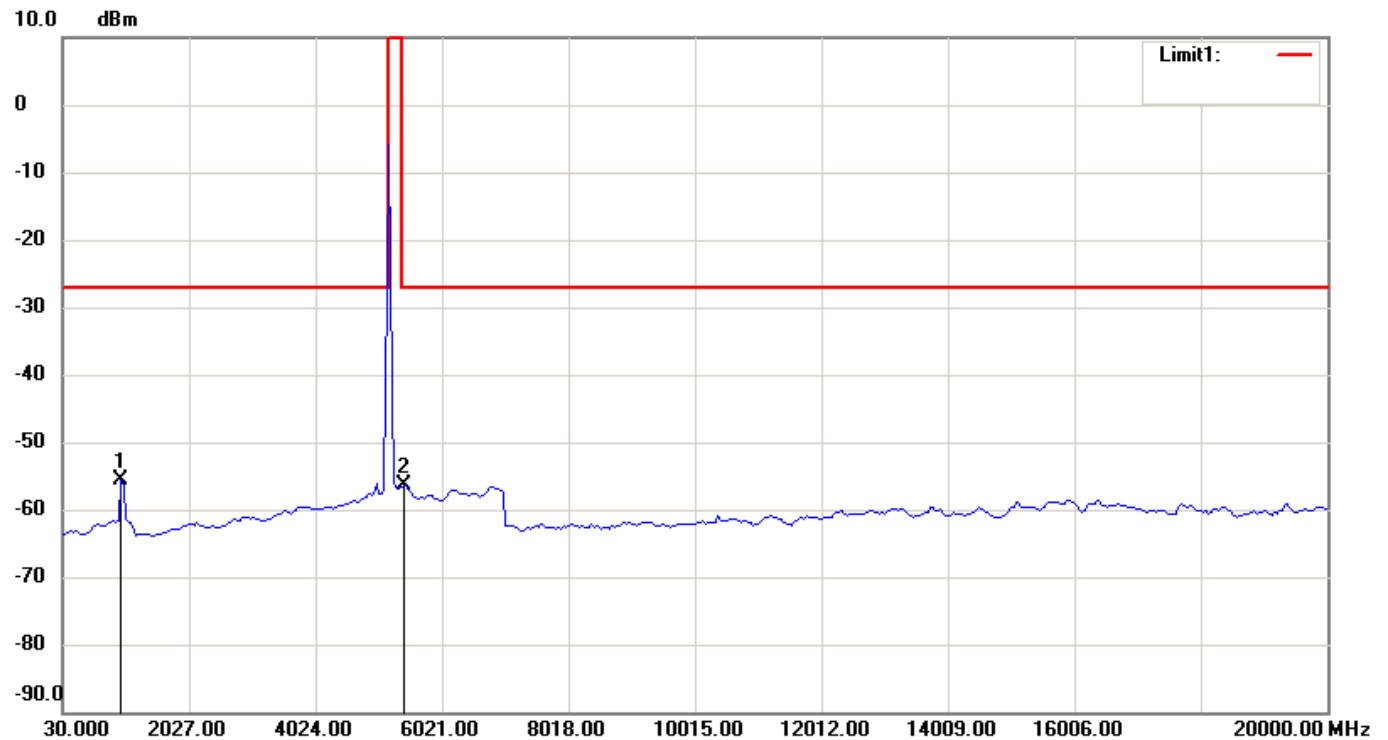
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#5

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40_Channel 38_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	948.6200	-55.74
2	5421.90000	-56.42

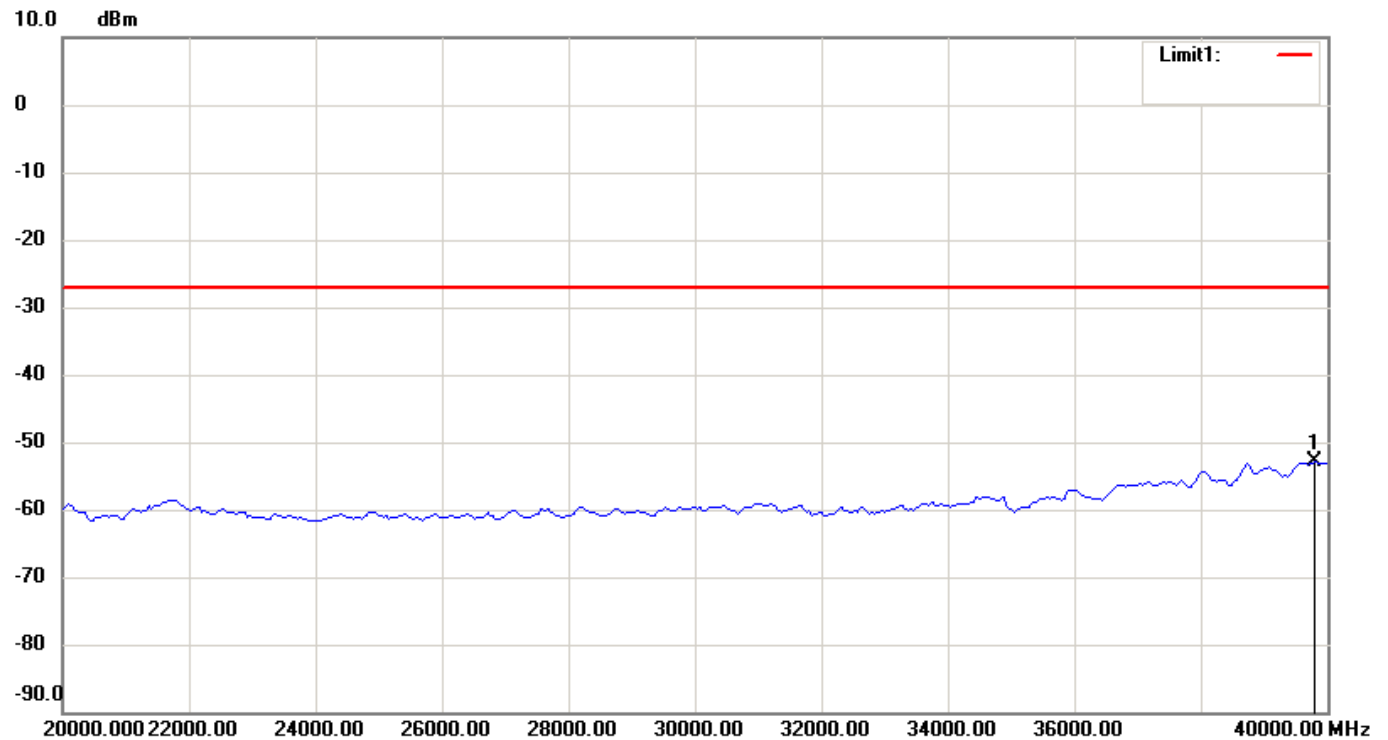
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#6

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40_Channel 38_Spurious-2

RF Conducted
Sweep Time: 80ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39800.00000	-52.98

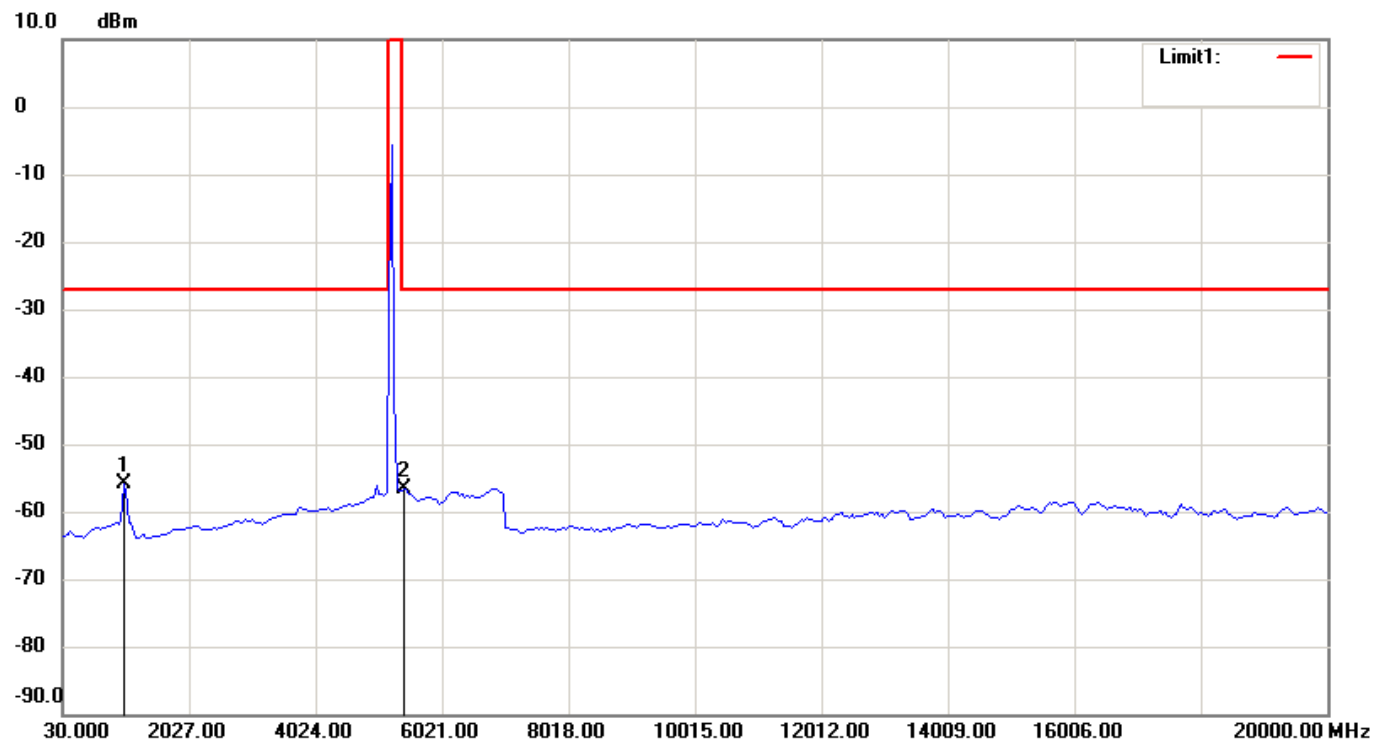
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#12

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40_Channel 46_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	988.5600	-55.94
2	5421.90000	-56.58

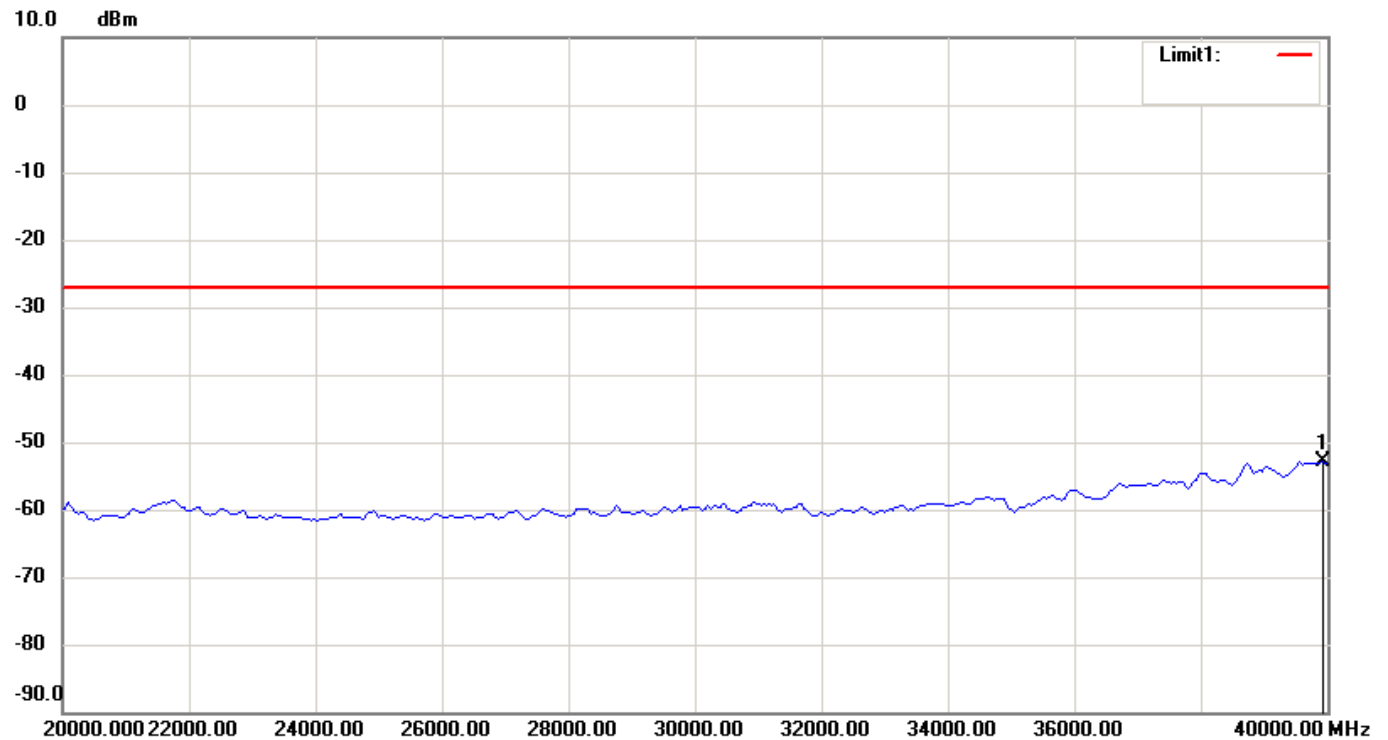
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#13

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40_Channel 46_Spurious-2

RF Conducted
Sweep Time: 80ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39920.00000	-52.81

9.4.3.2 CHAIN 1

測試日期: May 20, 2020

環境溫度: 25°C

環境濕度: 63%

註: 1. 繪圖資料請參考第 112-115 頁。

2. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 40\text{GHz}$)

9.5 結果判定

混附波之發射皆低於限值，符合標準規定。

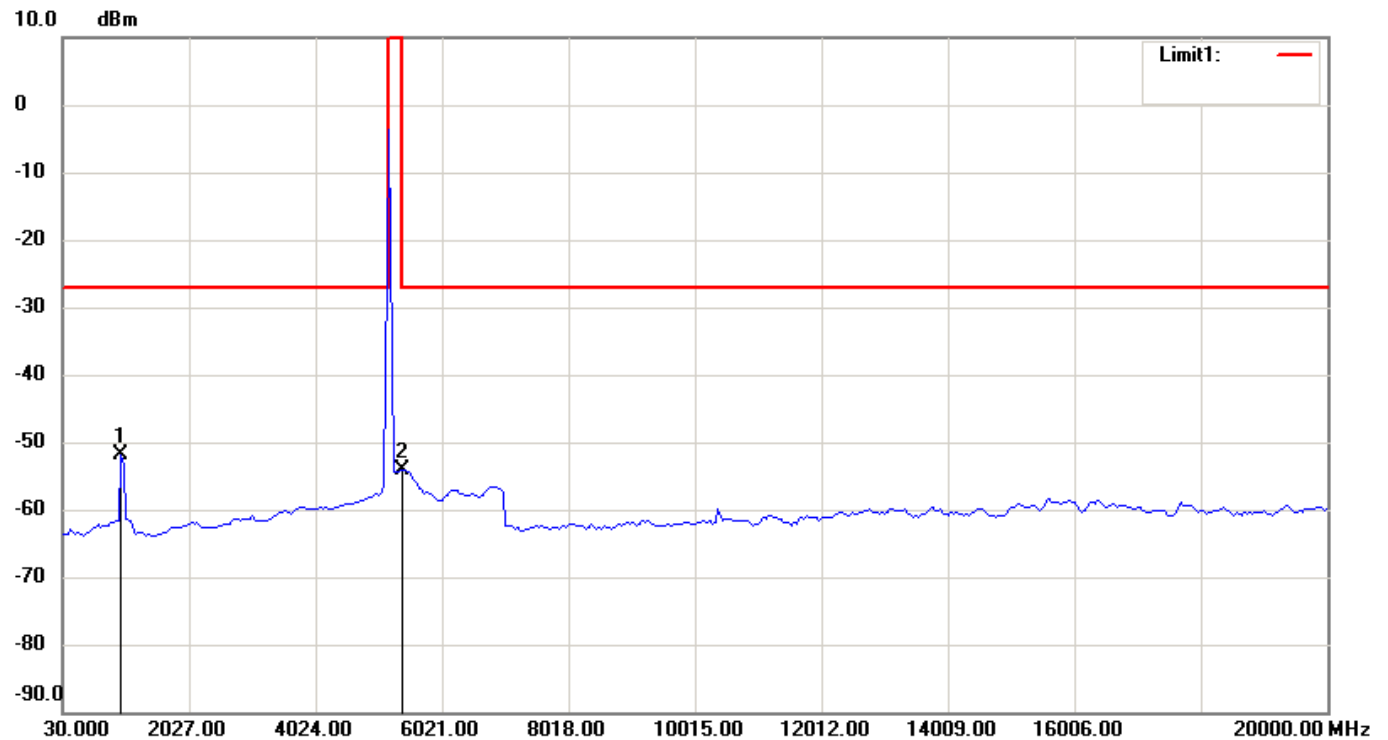
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#5

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40_Channel 38_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	948.6200	-51.94
2	5381.96000	-54.04

File: 20-04-MAS-061_5-2n40_Ant1

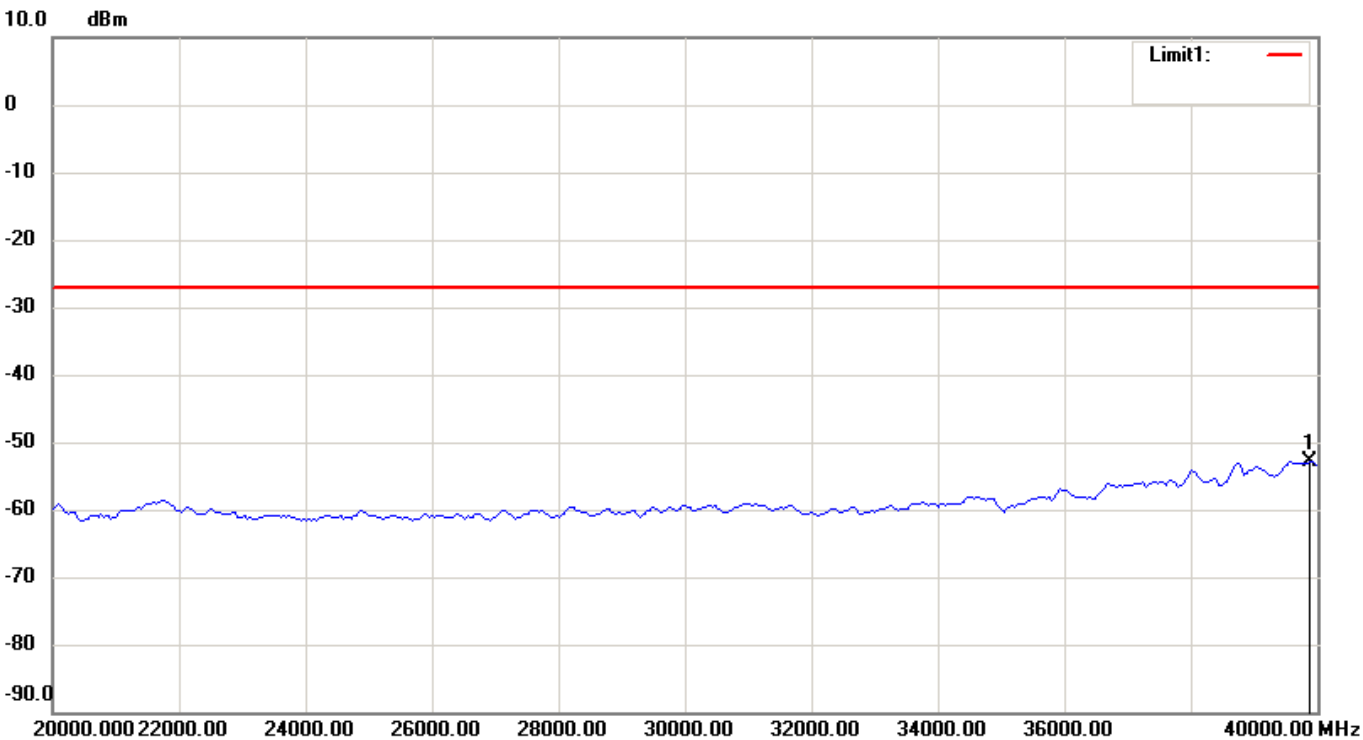
#6

Date: 2020/5/20

Temperature: 25 °C

Site: RF-Cond01

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 38_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	39880.00000	-52.80

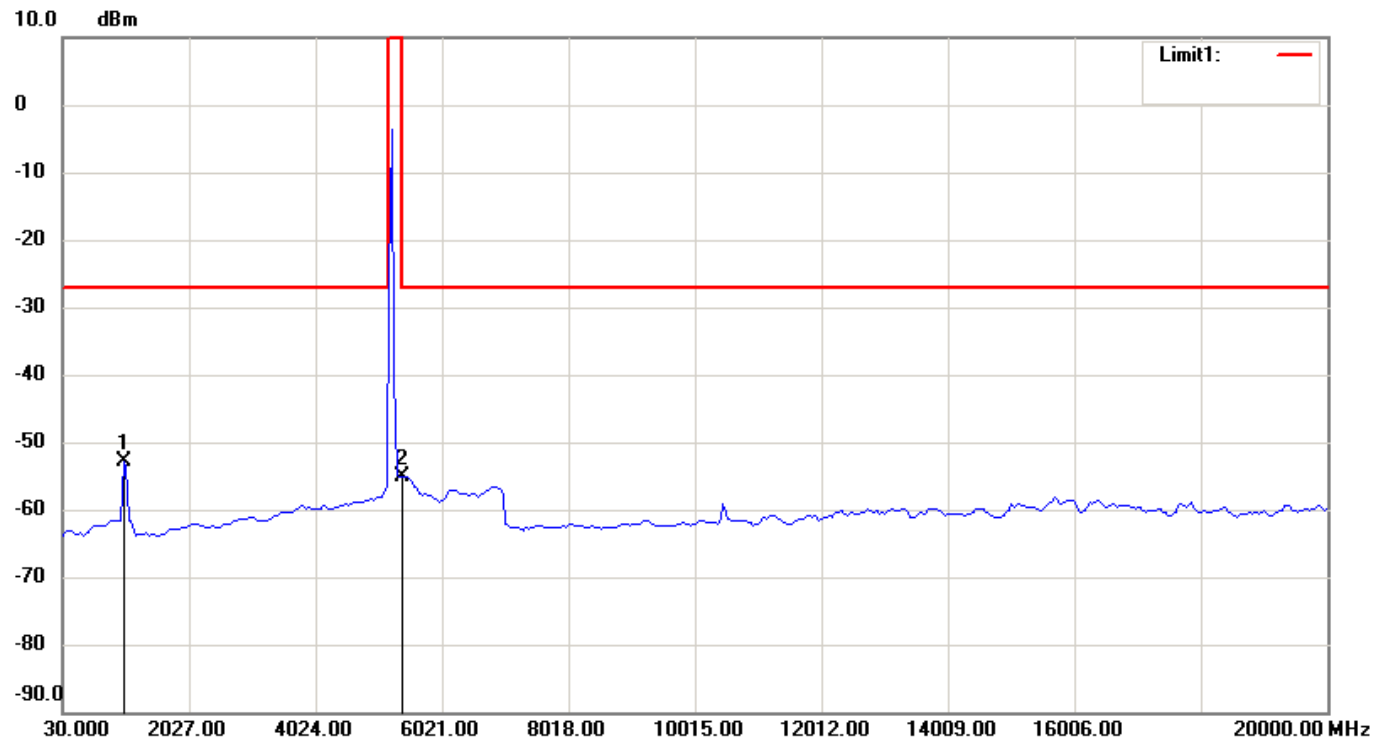
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#12

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40_Channel 46_Spurious-1

RF Conducted
Sweep Time: 79.9ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	988.5600	-52.98
2	5381.96000	-55.00

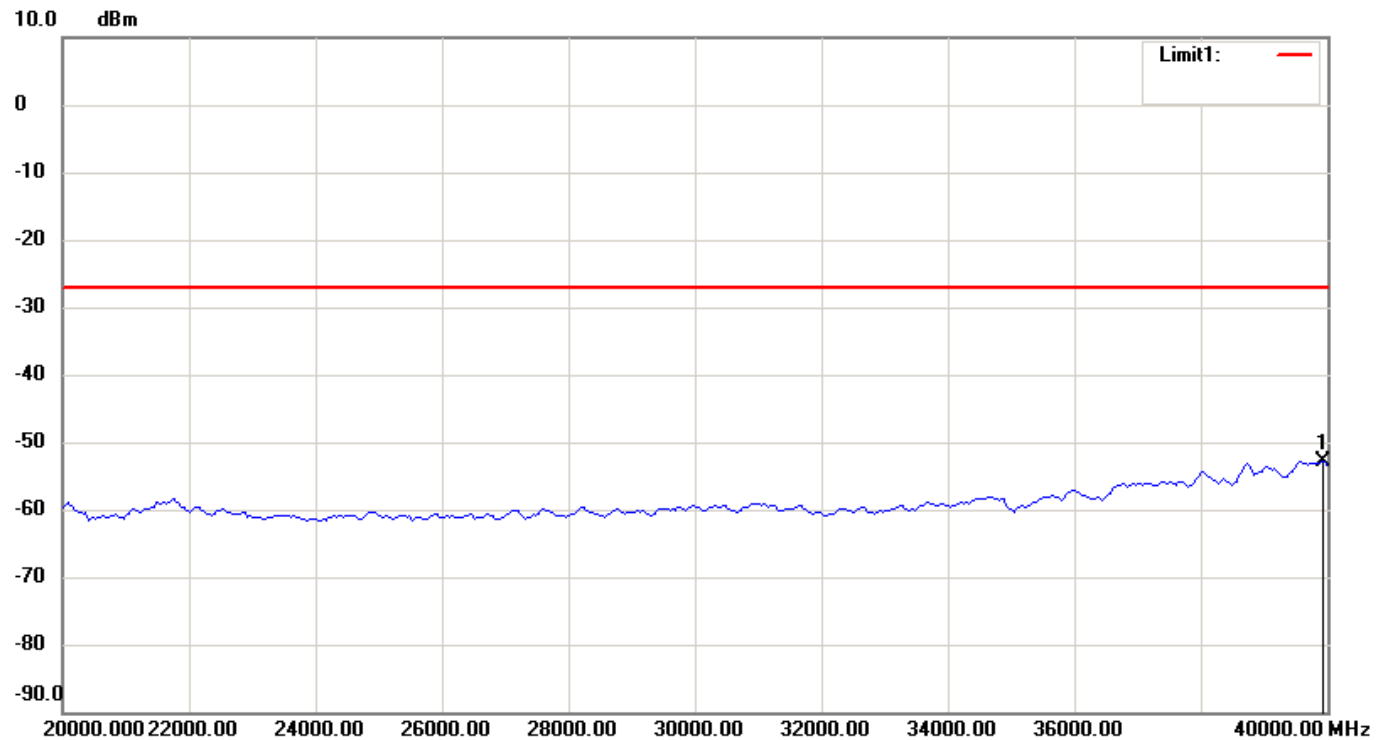
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#13

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40_Channel 46_Spurious-2

RF Conducted
Sweep Time: 80ms Att.: 15dB
RBW: 1000 KHz VBW: 1000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	39920.00000	-52.83

10 場強輻射之量測

10.1 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.4.5 節之規定，在 1GHz 以下的非必要之發射，應符合第 3.6 節之規定，任何使用交流市電為供應電之設備亦須符合第 3.3 節之電源線傳導限制值。

依據國家通訊傳播委員會低功率射頻器材技術規範 5.7.4.6 節之規定，非必要發射頻率屬 3.5 節規定頻段者，應符合 3.6 節之規定。

10.2 量測方法

將待測物置於非金屬桌面，使其在測試模式狀態，且設定為高、中、低各頻道產生最高最大傳導輸出功率的傳輸速率，接收天線置於3米外，且桌面要360度旋轉，另外接收天線也要從1米至4米升降變化，接收天線置於水平、垂直極向各執行測試一次。待測物若為手持式則分別要以三軸相放置，並分別測試以找出最大輻射電場強度。

10.3 量測場強輻射之儀器

(1)量測儀器

儀器名稱	製造者	型號
EMI Receiver	R&S	ESCI
Spectrum Analyzer	R&S	FSU46
Horn Aantenna	EMCO	3117
Horn Aantenna	EMCO	3116
PRE-Amplifier	Agilent	8449B
PRE-Amplifier	Agilent	8447D
BiLog Aantenna	ETC	MCTD 2786
PRE-Amplifier	Agilent	83051A
Spectrum Analyzer	R&S	FSV

測試軟體: LZ-RF (Ver. ETC-3A2)

(2)儀器設定

Frequency Bnd (MHz)	Instrument	Function	Resolution Bndwidth	Video Bndwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	300 kHz
	RF Test Receiver	Peak	120 kHz	300 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10 Hz

10.4 場強度之計算

場強之計算公式如下

$$\text{結果值} = \text{讀值} + \text{校正因子}$$

其中校正因子為：

天線因子+饋線損失+濾波器損失（若有使用）-放大器增益（若有使用）
量測結果請見下頁。

10.5 場強輻射之量測結果

測試工程師: 羅世勇

測試日期: May 14, 2020

環境溫度: 23°C

環境濕度: 65%

10.5.1 諧波發射量測值

10.5.1.1 調變技術: IEEE 802.11a

a. Channel Low

基本波頻率 : 5180 MHz

輻射 頻率 (MHz)	天線 極性 H/V	機器讀值 (dBuV/m)@3m		校正 因子 (dB)	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse) (dB)
		Peak	AVG		Peak	AVG	Peak	AVG	
10360.0000	H	---	---	6.19	---	---	74.0	54.0	---
10360.0000	V	---	---	6.19	---	---	74.0	54.0	---
15540.0000	H	---	---	11.34	---	---	74.0	54.0	---
15540.0000	V	---	---	11.34	---	---	74.0	54.0	---
20720.0000	H	---	---	18.46	---	---	74.0	54.0	---
20720.0000	V	---	---	18.46	---	---	74.0	54.0	---
25900.0000	H	---	---	16.70	---	---	74.0	54.0	---
25900.0000	V	---	---	16.70	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

b. Channel Mid

基本波頻率：5200 MHz

輻射 頻率 (MHz)	天線 極性 H/V	機器讀值 (dBuV/m)@3m		校正 因子 (dB)	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse) (dB)
		Peak	AVG		Peak	AVG	Peak	AVG	
10400.0000	H	---	---	6.29	---	---	74.0	54.0	---
10400.0000	V	---	---	6.29	---	---	74.0	54.0	---
15600.0000	H	---	---	11.33	---	---	74.0	54.0	---
15600.0000	V	---	---	11.33	---	---	74.0	54.0	---
20800.0000	H	---	---	18.54	---	---	74.0	54.0	---
20800.0000	V	---	---	18.54	---	---	74.0	54.0	---
26000.0000	H	---	---	16.59	---	---	74.0	54.0	---
26000.0000	V	---	---	16.59	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

c. Channel High

基本波頻率：5240 MHz

輻射 頻率	天線 極性	機器讀值 (dBuV/m)@3m		校正 因子	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse)
		Peak	AVG		Peak	AVG	Peak	AVG	
(MHz)	H/V			(dB)					(dB)
10480.0000	H	---	---	6.47	---	---	74.0	54.0	---
10480.0000	V	---	---	6.47	---	---	74.0	54.0	---
15720.0000	H	---	---	11.33	---	---	74.0	54.0	---
15720.0000	V	---	---	11.33	---	---	74.0	54.0	---
20960.0000	H	---	---	18.69	---	---	74.0	54.0	---
20960.0000	V	---	---	18.69	---	---	74.0	54.0	---
26200.0000	H	---	---	16.51	---	---	74.0	54.0	---
26200.0000	V	---	---	16.51	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

10.5.1.2 調變技術: IEEE 802.11n HT20

a. Channel Low

基本波頻率 : 5180 MHz

輻射 頻率 (MHz)	天線 極性 H/V	機器讀值 (dBuV/m)@3m		校正 因子 (dB)	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse) (dB)
		Peak	AVG		Peak	AVG	Peak	AVG	
10360.0000	H	---	---	6.19	---	---	74.0	54.0	---
10359.9200	V	51.43	36.20	6.19	57.62	42.39	74.0	54.0	-11.61
15540.0000	H	---	---	11.34	---	---	74.0	54.0	---
15540.0000	V	---	---	11.34	---	---	74.0	54.0	---
20720.0000	H	---	---	18.46	---	---	74.0	54.0	---
20720.0000	V	---	---	18.46	---	---	74.0	54.0	---
25900.0000	H	---	---	16.70	---	---	74.0	54.0	---
25900.0000	V	---	---	16.70	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

b. Channel Mid

基本波頻率：5200 MHz

輻射 頻率	天線 極性	機器讀值 (dBuV/m)@3m		校正 因子	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse)
		Peak	AVG		Peak	AVG	Peak	AVG	
(MHz)	H/V			(dB)					(dB)
10401.1218	H	51.49	36.16	6.29	57.78	42.45	74.0	54.0	-11.55
10401.2821	V	52.27	36.85	6.29	58.56	43.14	74.0	54.0	-10.86
15600.0000	H	---	---	11.33	---	---	74.0	54.0	---
15600.0000	V	---	---	11.33	---	---	74.0	54.0	---
20800.0000	H	---	---	18.54	---	---	74.0	54.0	---
20800.0000	V	---	---	18.54	---	---	74.0	54.0	---
26000.0000	H	---	---	16.59	---	---	74.0	54.0	---
26000.0000	V	---	---	16.59	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

c. Channel High

基本波頻率：5240 MHz

輻射 頻率	天線 極性	機器讀值 (dBuV/m)@3m		校正 因子	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse)
(MHz)	H/V	Peak	AVG	(dB)	Peak	AVG	Peak	AVG	(dB)
10480.0000	H	---	---	6.47	---	---	74.0	54.0	---
10481.0416	V	50.48	35.50	6.47	56.95	41.97	74.0	54.0	-12.03
15720.0000	H	---	---	11.33	---	---	74.0	54.0	---
15720.0000	V	---	---	11.33	---	---	74.0	54.0	---
20960.0000	H	---	---	18.69	---	---	74.0	54.0	---
20960.0000	V	---	---	18.69	---	---	74.0	54.0	---
26200.0000	H	---	---	16.51	---	---	74.0	54.0	---
26200.0000	V	---	---	16.51	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

10.5.1.3 調變技術:IEEE 802.11n HT40

a. Channel High

基本波頻率 : 5190 MHz

輻射 頻率 (MHz)	天線 極性 H/V	機器讀值 (dBuV/m)@3m		校正 因子 (dB)	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse) (dB)
		Peak	AVG		Peak	AVG	Peak	AVG	
10380.0000	H	---	---	6.24	---	---	74.0	54.0	---
10380.0000	V	---	---	6.24	---	---	74.0	54.0	---
15570.0000	H	---	---	11.33	---	---	74.0	54.0	---
15570.0000	V	---	---	11.33	---	---	74.0	54.0	---
20760.0000	H	---	---	18.51	---	---	74.0	54.0	---
20760.0000	V	---	---	18.51	---	---	74.0	54.0	---
25950.0000	H	---	---	16.65	---	---	74.0	54.0	---
25950.0000	V	---	---	16.65	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

b. Channel Low

基本波頻率：5230 MHz

輻射 頻率	天線 極性	機器讀值 (dBuV/m)@3m		校正 因子	結果值 (dBuV/m)@3m		限制值 (dBuV/m)@3m		餘裕值 (worse)
(MHz)	H/V	Peak	AVG	(dB)	Peak	AVG	Peak	AVG	(dB)
10460.0000	H	---	---	6.43	---	---	74.0	54.0	---
10460.0000	V	---	---	6.43	---	---	74.0	54.0	---
15690.0000	H	---	---	11.33	---	---	74.0	54.0	---
15690.0000	V	---	---	11.33	---	---	74.0	54.0	---
20920.0000	H	---	---	18.64	---	---	74.0	54.0	---
20920.0000	V	---	---	18.64	---	---	74.0	54.0	---
26150.0000	H	---	---	16.53	---	---	74.0	54.0	---
26150.0000	V	---	---	16.53	---	---	74.0	54.0	---

註：

1. 標記“---”表發射之訊號太弱而儀器無法量測。
2. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
3. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

10.5.2 諧波及其它不必要之訊號測試圖

10.5.2.1 調變技術: IEEE 802.11a

a. Channel Low

操作模式：發射接收

基本波頻率：5180 MHz

File: 20-04-MAS-061_5-2a

#51

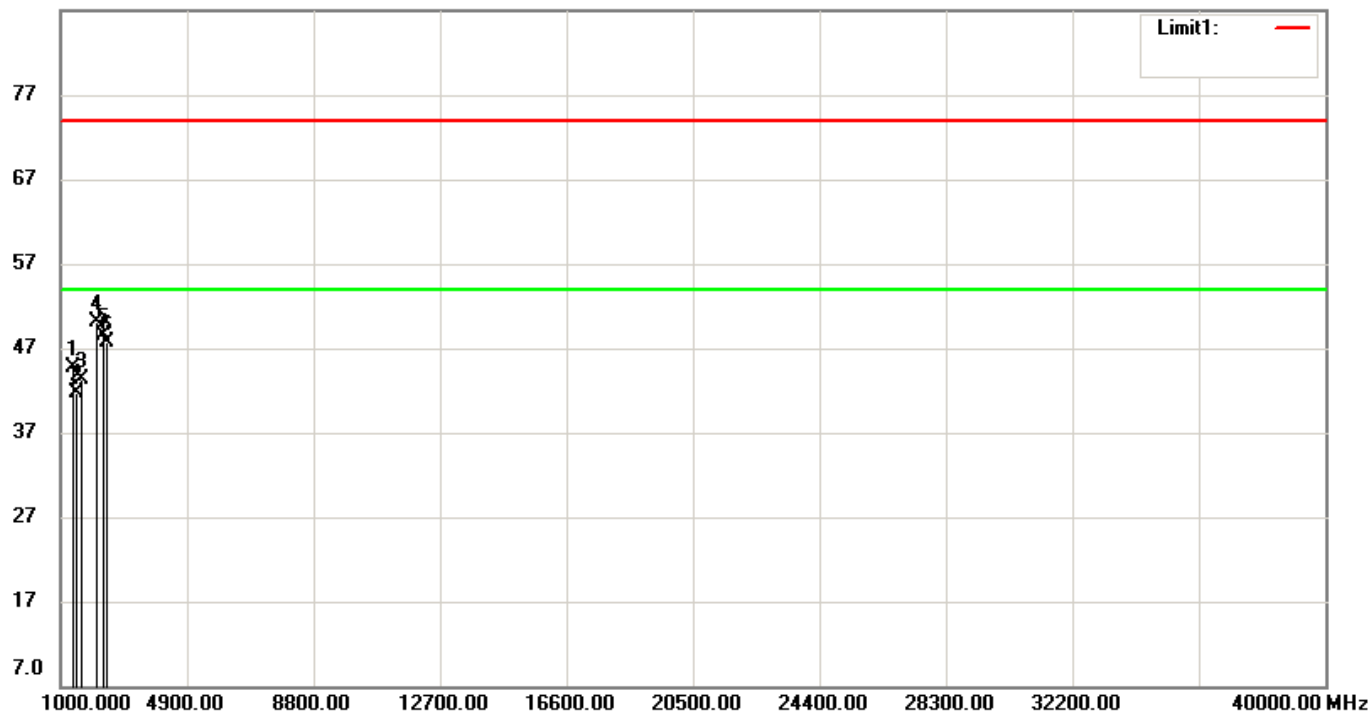
Date: 2020/5/14

Temperature: 23 °C

Site: RE02-EMC B1- N2

Humidity: 65 %

87.0 dBuV/m



Condition: NCC_Above1G_Pk
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: CH LOW

Polarization: Horizontal
 Distance: 3m
 Operator: Phillip

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	53.22	peak	-8.53	44.69	74.00	-29.31
2	1498.79800	49.95	peak	-8.20	41.75	74.00	-32.25
3	1591.90700	50.67	peak	-7.38	43.29	74.00	-30.71
4	2123.95830	53.47	peak	-3.38	50.09	74.00	-23.91
5	2250.32050	51.63	peak	-3.03	48.60	74.00	-25.40
6	2389.98400	50.46	peak	-2.67	47.79	74.00	-26.21

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f < 18\text{GHz}$)
 $\pm 4.4\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收

基本波頻率：5180 MHz

File: 20-04-MAS-061_5-2a

#52

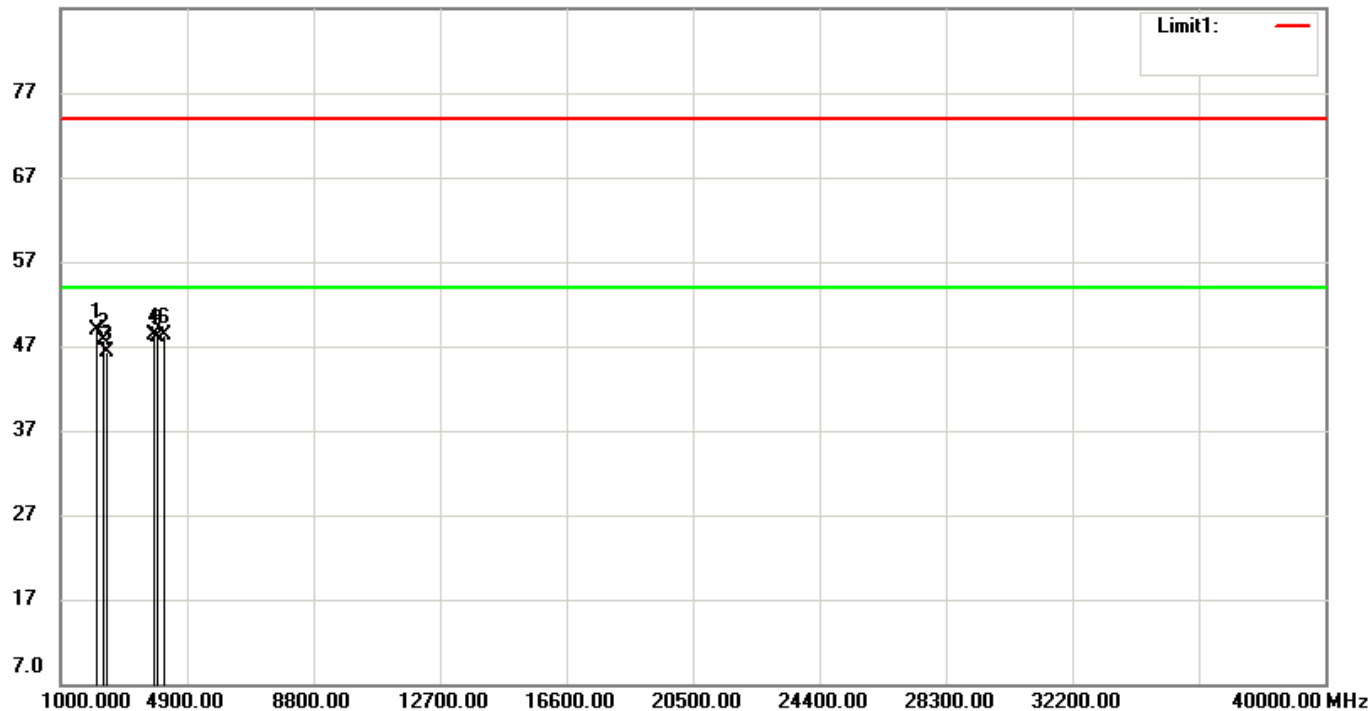
Date: 2020/5/14

Temperature: 23 °C

Site: RE02-EMC B1- N2

Humidity: 65 %

87.0 dBuV/m



Condition: NCC_Above1G_Pk
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: CH LOW

Polarization: Vertical
 Distance: 3m
 Operator: Phillip

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2123.95830	52.31	peak	-3.38	48.93	74.00	-25.07
2	2250.32050	50.76	peak	-3.03	47.73	74.00	-26.27
3	2389.98400	49.07	peak	-2.67	46.40	74.00	-27.60
4	3873.07700	48.38	peak	-0.11	48.27	74.00	-25.73
5	3999.43910	47.89	peak	0.23	48.12	74.00	-25.88
6	4125.80120	47.95	peak	0.31	48.26	74.00	-25.74

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f < 18\text{GHz}$)
 $\pm 4.4\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

b. Channel Mid

操作模式：發射接收

基本波頻率：5200 MHz

File: 20-04-MAS-061_5-2a

#53

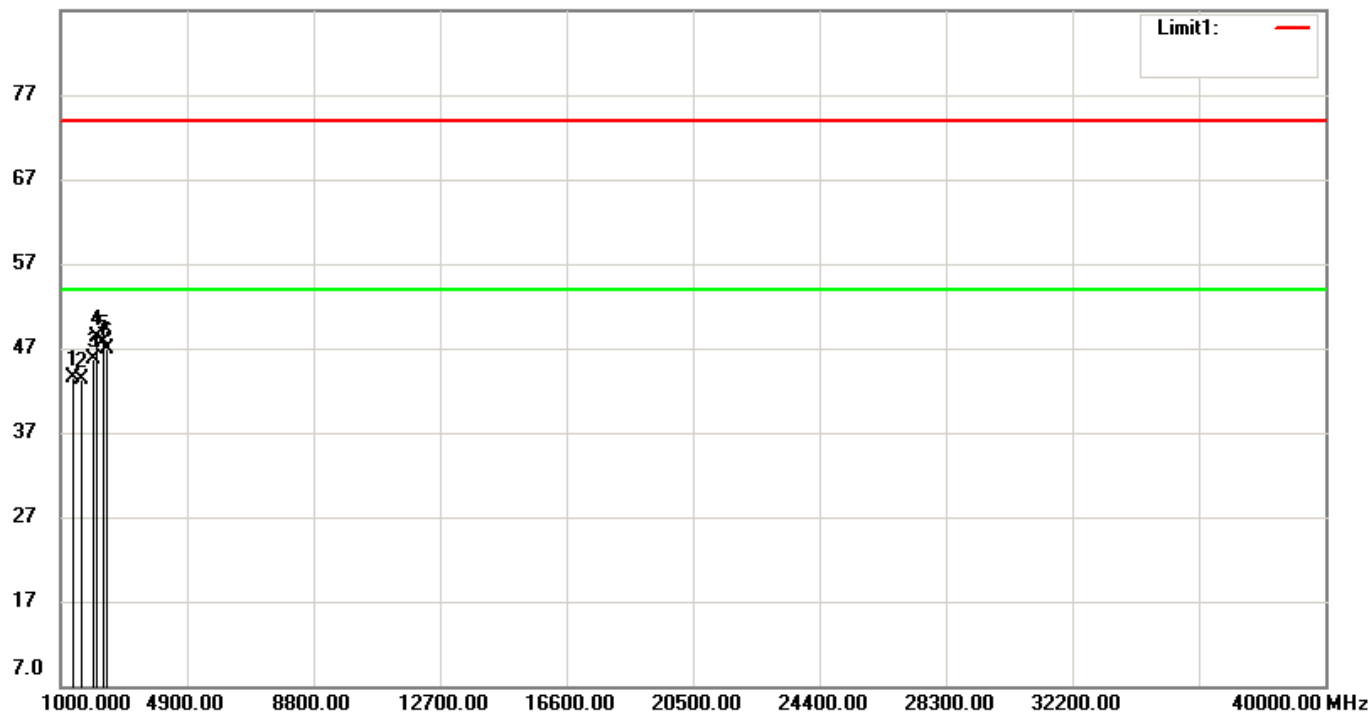
Date: 2020/5/14

Temperature: 23 °C

Site: RE02-EMC B1- N2

Humidity: 65 %

87.0 dBuV/m



Condition: NCC_Above1G_Pk
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: CH MID

Polarization: Horizontal
 Distance: 3m
 Operator: Phillip

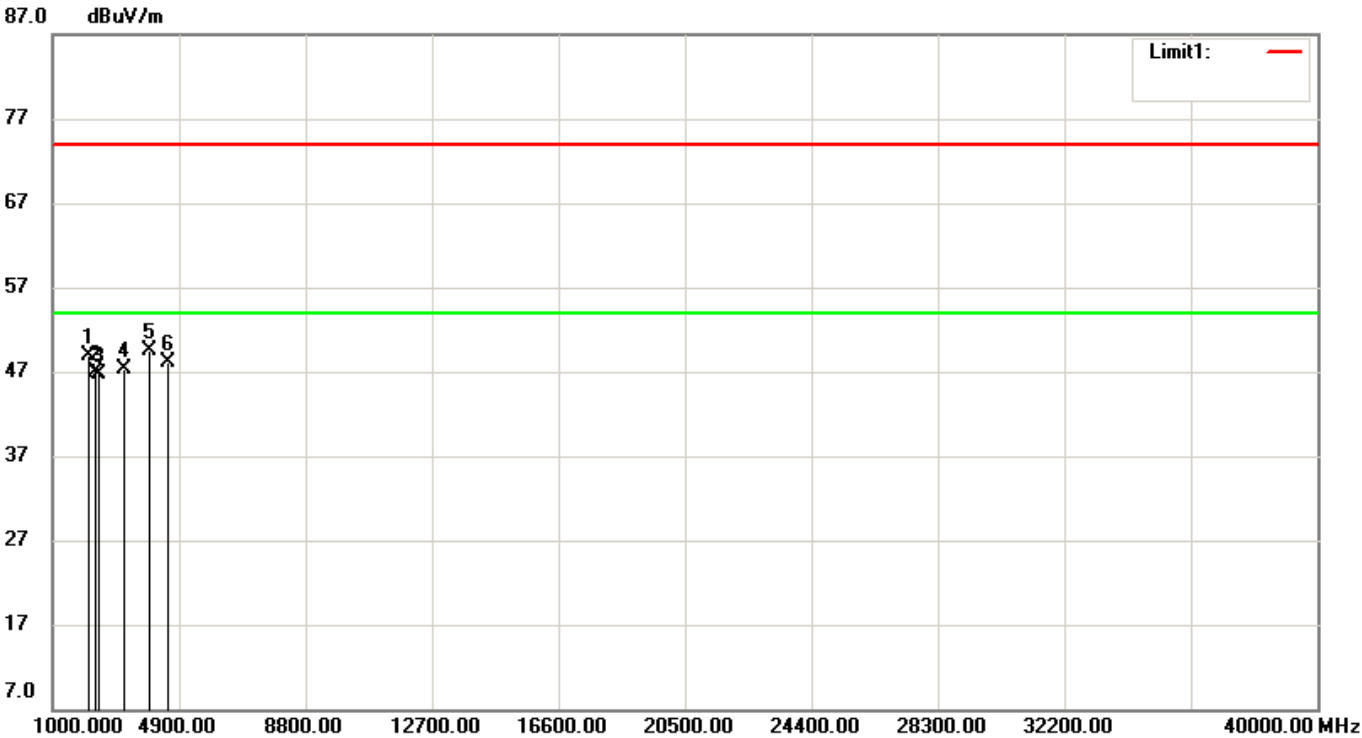
No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	52.03	peak	-8.53	43.50	74.00	-30.50
2	1591.90700	50.63	peak	-7.38	43.25	74.00	-30.75
3	1997.59610	49.45	peak	-3.72	45.73	74.00	-28.27
4	2123.95830	51.59	peak	-3.38	48.21	74.00	-25.79
5	2250.32050	50.83	peak	-3.03	47.80	74.00	-26.20
6	2396.63460	49.54	peak	-2.66	46.88	74.00	-27.12

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f < 18\text{GHz}$)
 $\pm 4.4\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5200 MHz

File: 20-04-MAS-061_5-2a #54 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH MID

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2123.95830	52.25	peak	-3.38	48.87	74.00	-25.13
2	2250.32050	49.92	peak	-3.03	46.89	74.00	-27.11
3	2396.63460	49.43	peak	-2.66	46.77	74.00	-27.23
4	3141.50640	48.83	peak	-1.62	47.21	74.00	-26.79
5	3999.43910	49.28	peak	0.23	49.51	74.00	-24.49
6	4511.53840	47.58	peak	0.58	48.16	74.00	-25.84

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

c. Channel High

操作模式：發射接收

基本波頻率：5240 MHz

File: 20-04-MAS-061_5-2a

#55

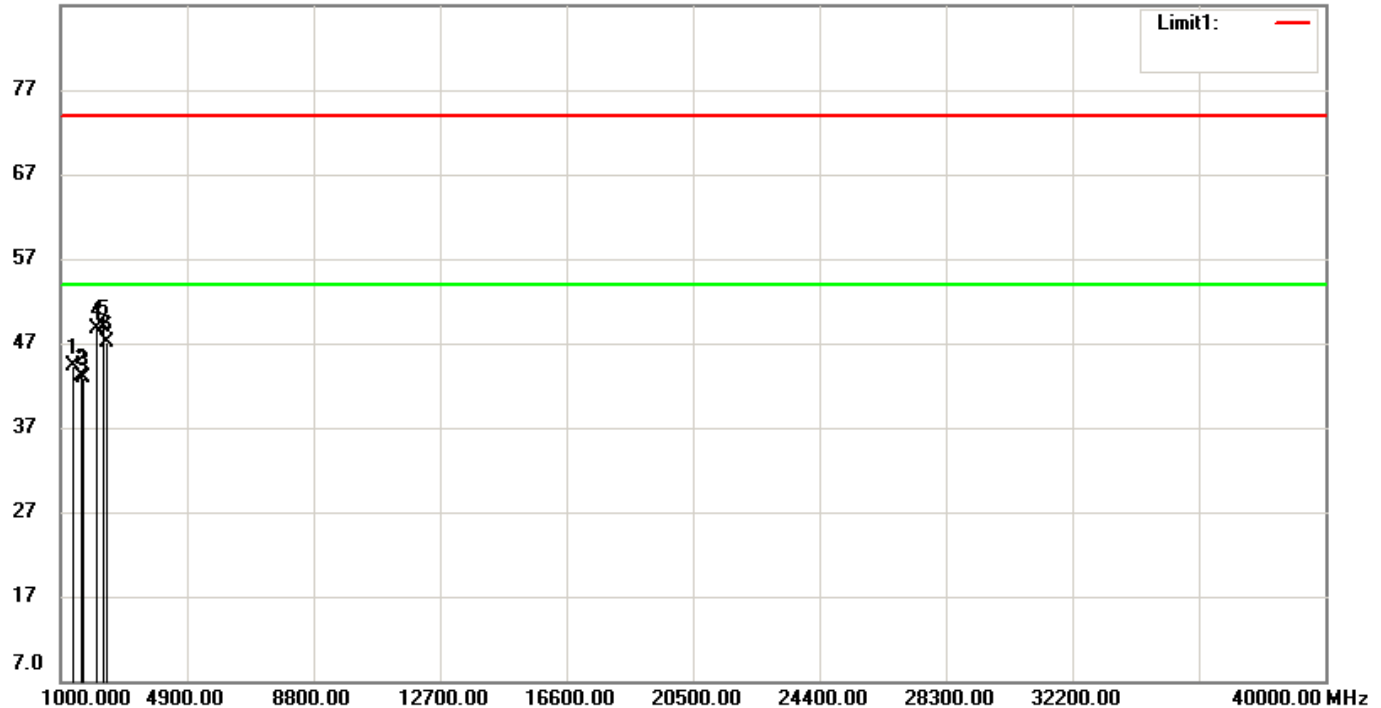
Date: 2020/5/14

Temperature: 23 °C

Site: RE02-EMC B1- N2

Humidity: 65 %

87.0 dBuV/m



Condition: NCC_Above1G_Pk
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: CH HIGH

Polarization: Horizontal
 Distance: 3m
 Operator: Phillip

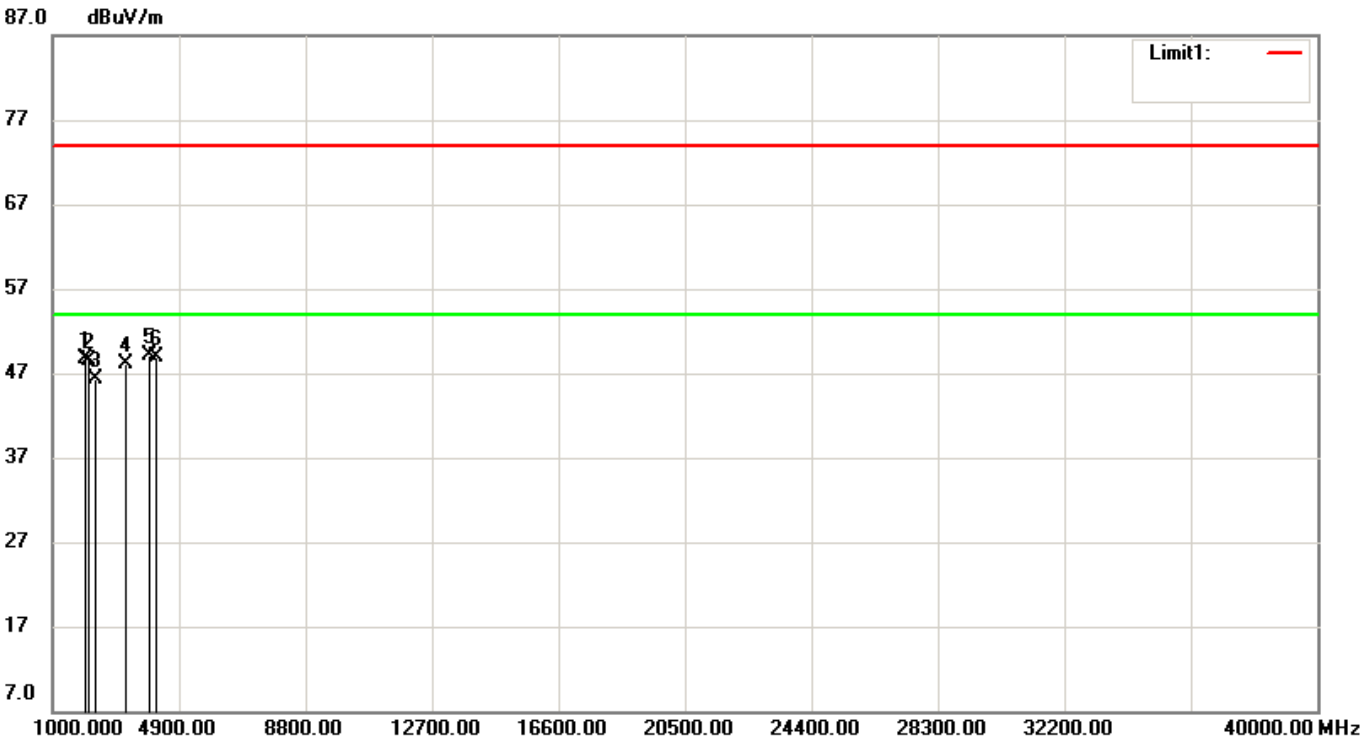
No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	52.81	peak	-8.53	44.28	74.00	-29.72
2	1591.90700	50.53	peak	-7.38	43.15	74.00	-30.85
3	1625.16020	49.95	peak	-7.07	42.88	74.00	-31.12
4	2123.95830	52.03	peak	-3.38	48.65	74.00	-25.35
5	2250.32050	51.96	peak	-3.03	48.93	74.00	-25.07
6	2396.63460	49.82	peak	-2.66	47.16	74.00	-26.84

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f < 18\text{GHz}$)
 $\pm 4.4\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5240 MHz

File: 20-04-MAS-061_5-2a #56 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH HIGH

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1957.69230	52.71	peak	-4.08	48.63	74.00	-25.37
2	2123.95830	51.93	peak	-3.38	48.55	74.00	-25.45
3	2250.32050	49.27	peak	-3.03	46.24	74.00	-27.76
4	3194.71150	49.64	peak	-1.54	48.10	74.00	-25.90
5	3999.43910	48.78	peak	0.23	49.01	74.00	-24.99
6	4125.80120	48.54	peak	0.31	48.85	74.00	-25.15

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

10.5.2.2 調變技術: IEEE 802.11n HT20

a. Channel Low

操作模式：發射接收

基本波頻率：5180 MHz

File: 20-04-MAS-061_5-2n20

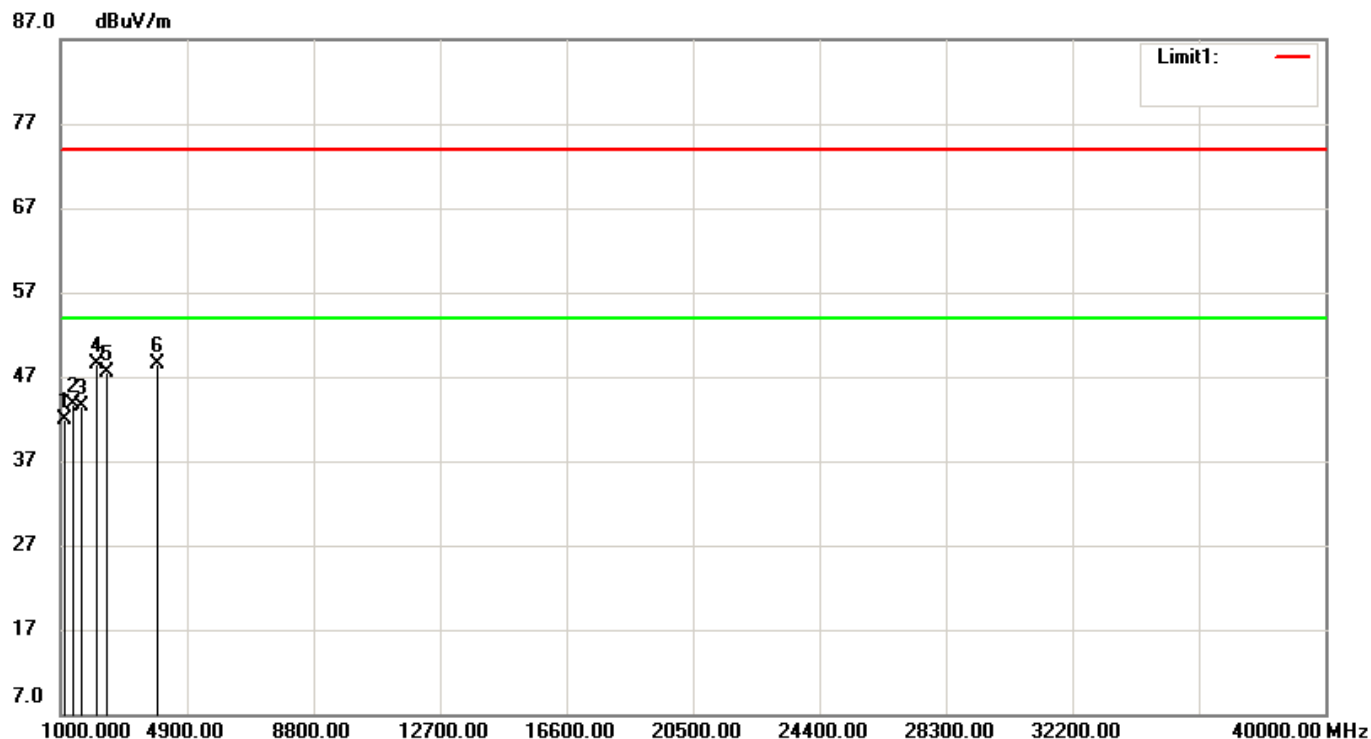
#55

Date: 2020/5/14

Temperature: 23 °C

Site: RE02-EMC B1- N2

Humidity: 65 %



Condition: NCC_Above1G_Pk
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: CH LOW

Polarization: Horizontal
 Distance: 3m
 Operator: Phillip

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1119.71150	51.13	peak	-9.18	41.95	74.00	-32.05
2	1372.43580	52.15	peak	-8.53	43.62	74.00	-30.38
3	1598.55760	50.78	peak	-7.31	43.47	74.00	-30.53
4	2123.95830	51.86	peak	-3.38	48.48	74.00	-25.52
5	2396.63460	50.23	peak	-2.66	47.57	74.00	-26.43
6	3999.43910	48.26	peak	0.23	48.49	74.00	-25.51

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f < 18\text{GHz}$)
 $\pm 4.4\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收

基本波頻率：5180 MHz

File: 20-04-MAS-061_5-2n20

#56

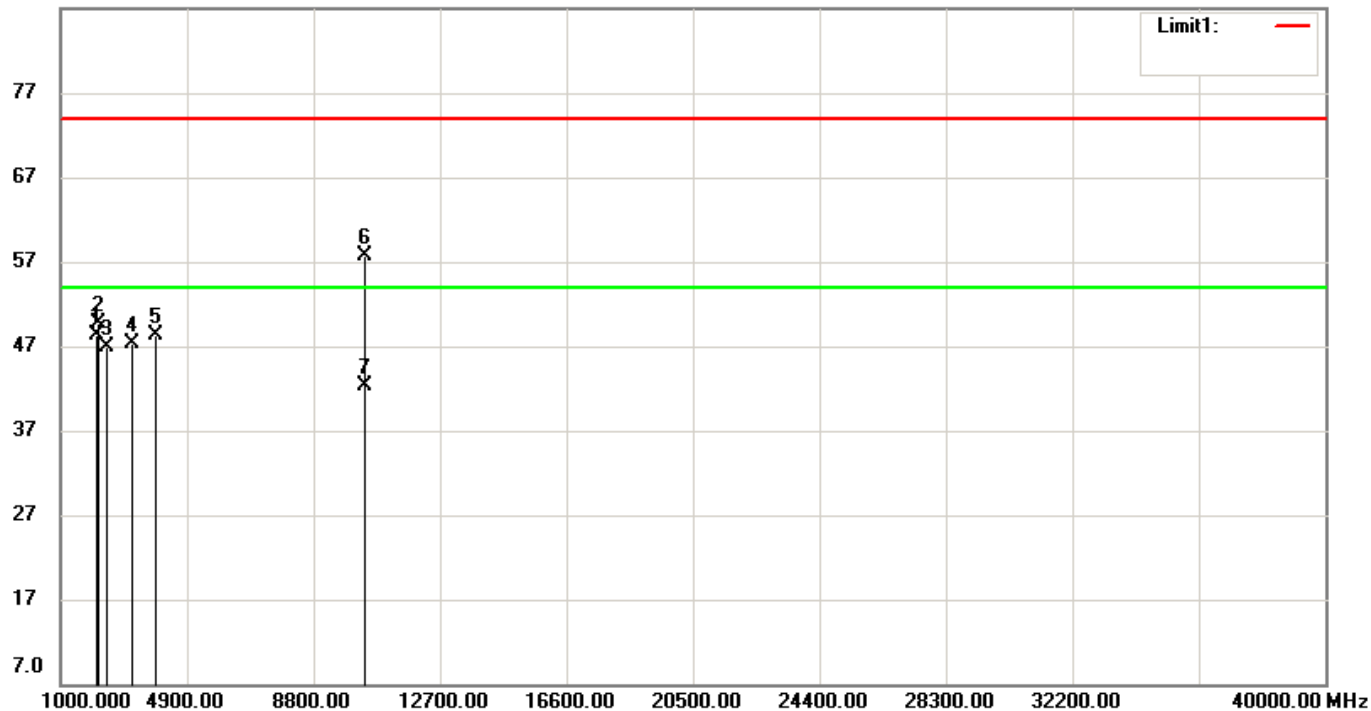
Date: 2020/5/14

Temperature: 23 °C

Site: RE02-EMC B1- N2

Humidity: 65 %

87.0 dBuV/m



Condition: NCC_Above1G_Pk
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: CH LOW

Polarization: Vertical
 Distance: 3m
 Operator: Phillip

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2123.95830	51.66	peak	-3.38	48.28	74.00	-25.72
2	2170.51280	52.95	peak	-3.25	49.70	74.00	-24.30
3	2376.68260	49.61	peak	-2.70	46.91	74.00	-27.09
4	3128.20510	48.87	peak	-1.64	47.23	74.00	-26.77
5	3879.72750	48.38	peak	-0.08	48.30	74.00	-25.70
6	10359.92000	51.43	peak	6.19	57.62	74.00	-16.38
7	10359.92000	36.20	AVG	6.19	42.39	54.00	-11.61

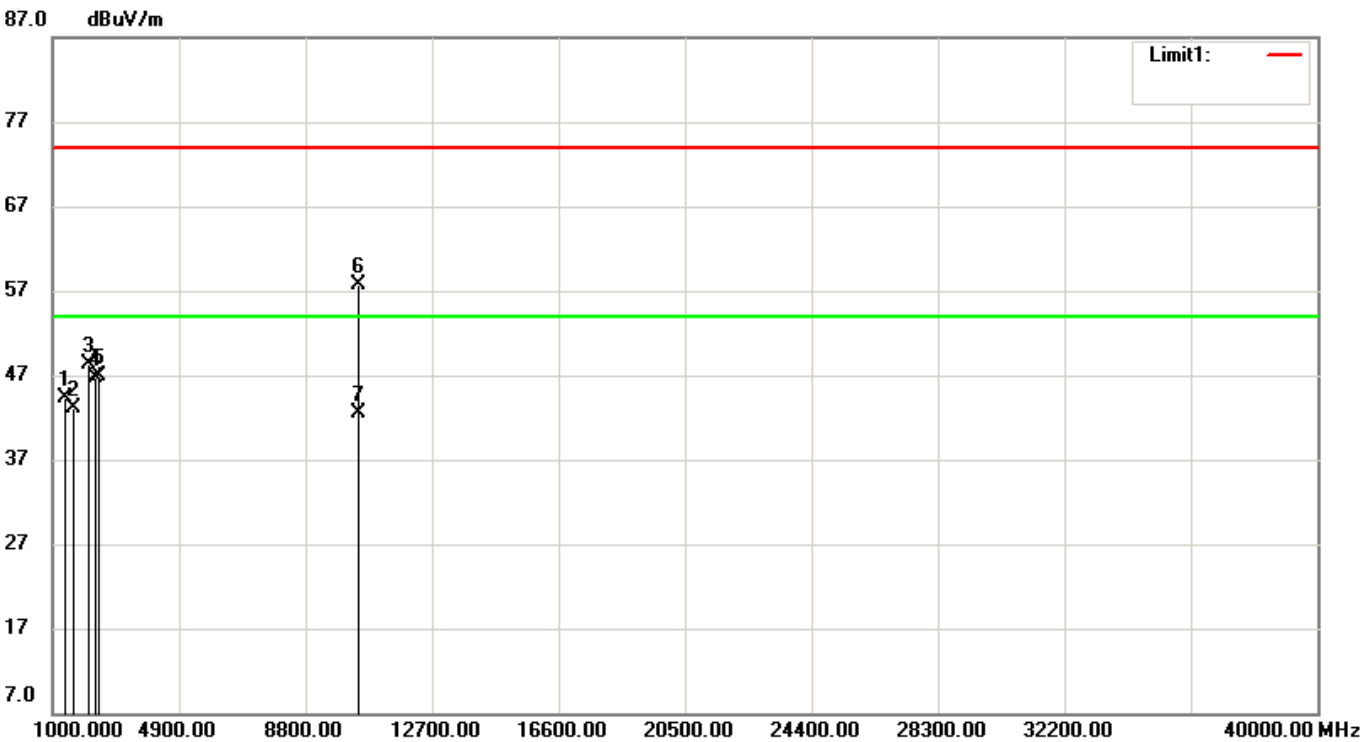
註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f < 18\text{GHz}$)
 $\pm 4.4\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

b. Channel Mid

操作模式：發射接收
基本波頻率：5200 MHz

File: 20-04-MAS-061_5-2n20 #57 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



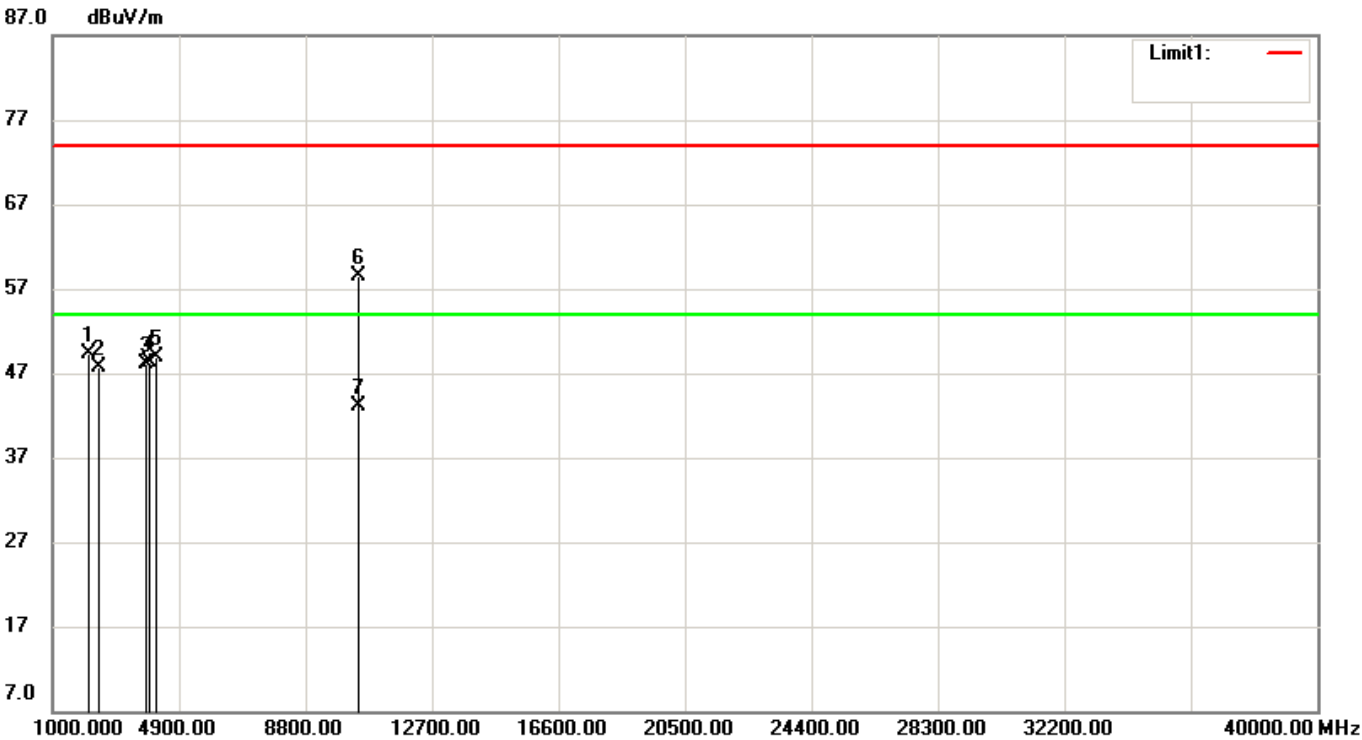
Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH MID

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	52.91	peak	-8.53	44.38	74.00	-29.62
2	1591.90700	50.50	peak	-7.38	43.12	74.00	-30.88
3	2123.95830	51.65	peak	-3.38	48.27	74.00	-25.73
4	2250.32050	49.78	peak	-3.03	46.75	74.00	-27.25
5	2396.63460	49.53	peak	-2.66	46.87	74.00	-27.13
6	10401.12180	51.49	peak	6.29	57.78	74.00	-16.22
7	10401.12180	36.16	AVG	6.29	42.45	54.00	-11.55

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

操作模式：發射接收
基本波頻率：5200 MHz

File: 20-04-MAS-061_5-2n20 #58 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH MID

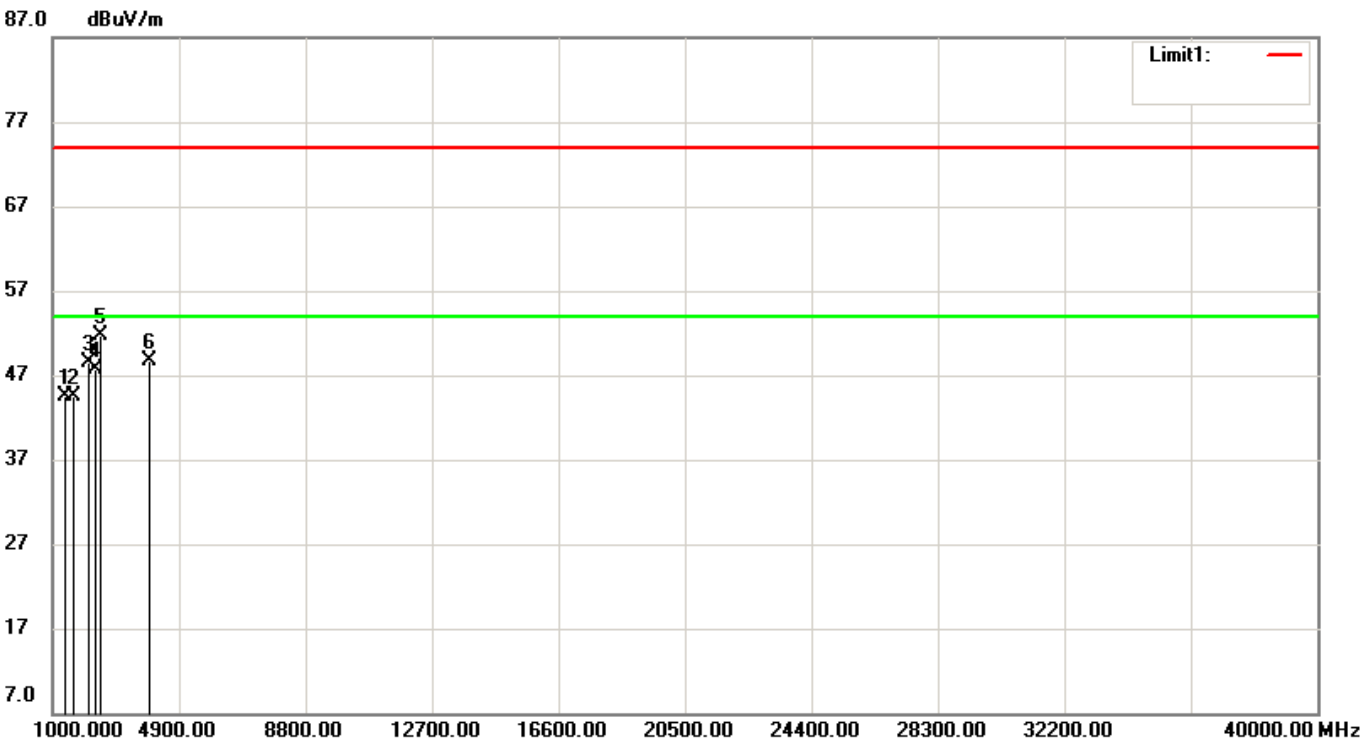
No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2123.95830	52.66	peak	-3.38	49.28	74.00	-24.72
2	2389.98400	50.28	peak	-2.67	47.61	74.00	-26.39
3	3873.07700	48.25	peak	-0.11	48.14	74.00	-25.86
4	3999.43910	48.00	peak	0.23	48.23	74.00	-25.77
5	4125.80120	48.53	peak	0.31	48.84	74.00	-25.16
6	10401.28210	52.27	peak	6.29	58.56	74.00	-15.44
7	10401.28210	36.85	AVG	6.29	43.14	54.00	-10.86

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

c. Channel High

操作模式：發射接收
基本波頻率：5240 MHz

File: 20-04-MAS-061_5-2n20 #59 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



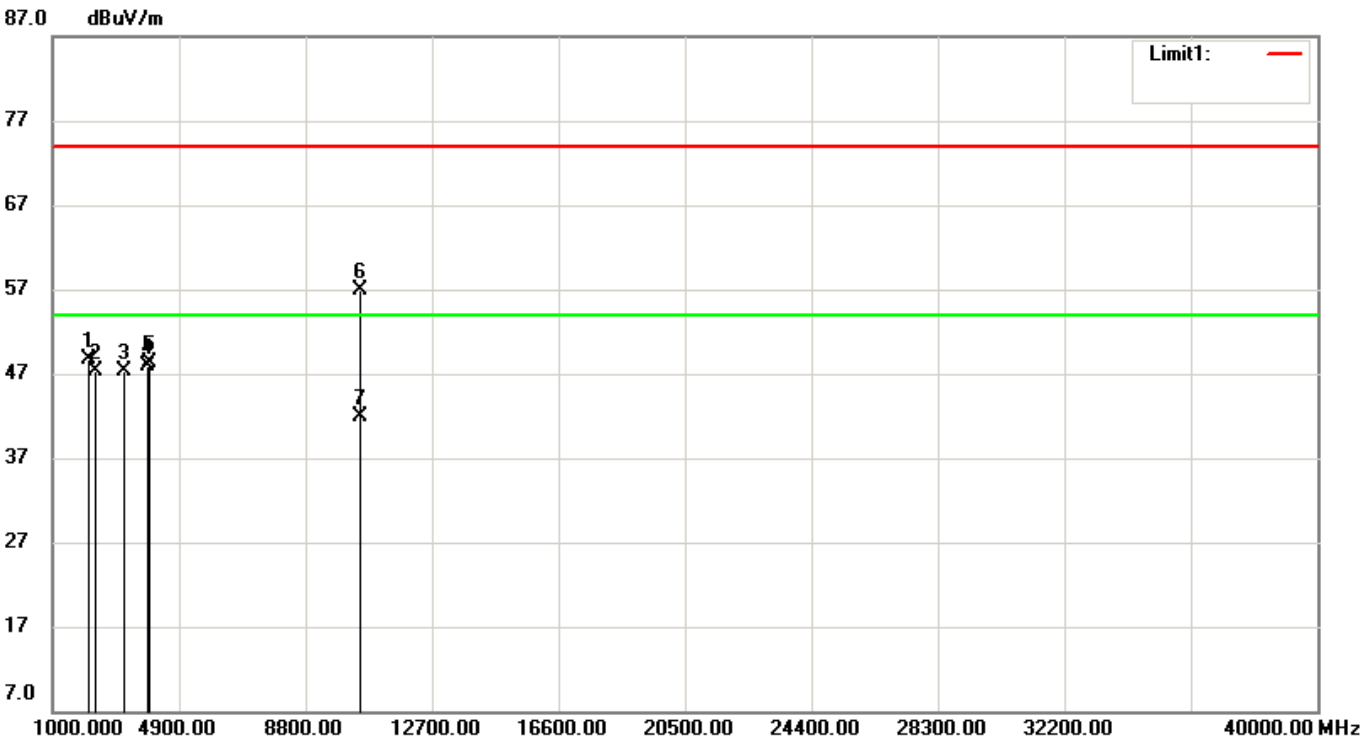
Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH HIGH

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	53.08	peak	-8.53	44.55	74.00	-29.45
2	1591.90700	51.88	peak	-7.38	44.50	74.00	-29.50
3	2123.95830	51.81	peak	-3.38	48.43	74.00	-25.57
4	2250.32050	50.82	peak	-3.03	47.79	74.00	-26.21
5	2496.39420	54.15	peak	-2.39	51.76	74.00	-22.24
6	3999.43910	48.43	peak	0.23	48.66	74.00	-25.34

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

操作模式：發射接收
基本波頻率：5240 MHz

File: 20-04-MAS-061_5-2n20 #60 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH HIGH

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2123.95830	52.03	peak	-3.38	48.65	74.00	-25.35
2	2250.32050	50.26	peak	-3.03	47.23	74.00	-26.77
3	3128.20510	49.03	peak	-1.64	47.39	74.00	-26.61
4	3879.72750	47.91	peak	-0.08	47.83	74.00	-26.17
5	3999.43910	48.13	peak	0.23	48.36	74.00	-25.64
6	10481.04160	50.48	peak	6.47	56.95	74.00	-17.05
7	10481.04160	35.50	AVG	6.47	41.97	54.00	-12.03

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值
亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

10.5.2.3 調變技術: IEEE 802.11n HT40

a. Channel Low

操作模式 : 發射接收

基本波頻率 : 5190 MHz

File: 20-04-MAS-061_5-2n40

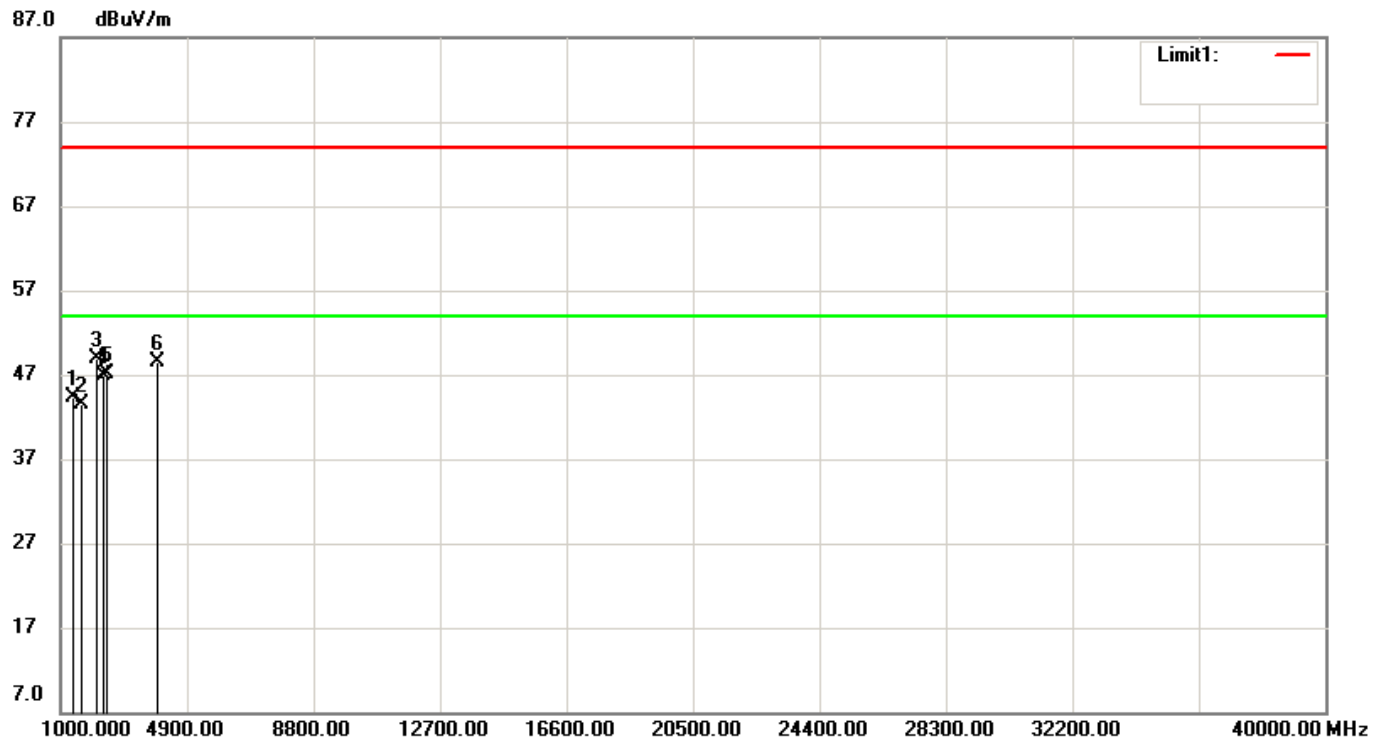
#41

Date: 2020/5/14

Temperature: 23 °C

Site: RE02-EMC B1- N2

Humidity: 65 %



Condition: NCC_Above1G_Pk
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: CH LOW

Polarization: Horizontal
 Distance: 3m
 Operator: Phillip

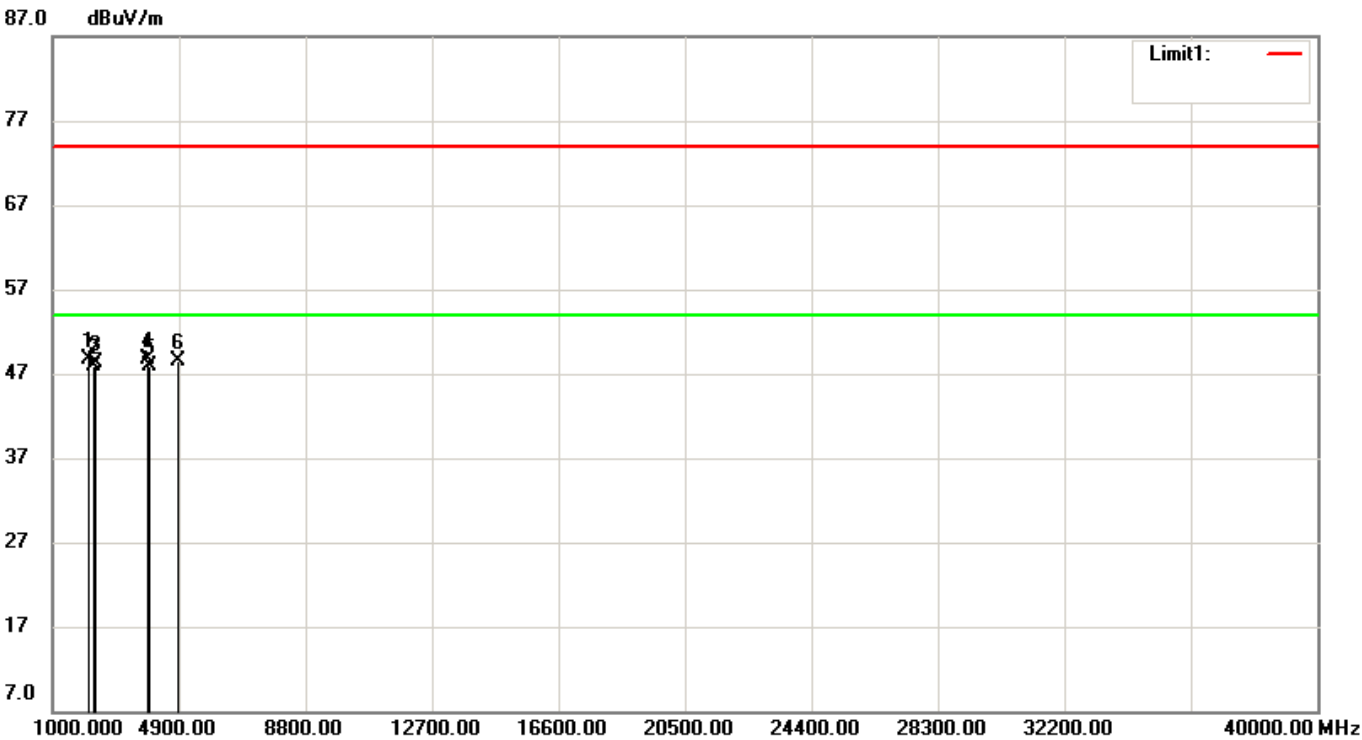
No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	52.90	peak	-8.53	44.37	74.00	-29.63
2	1591.90700	50.87	peak	-7.38	43.49	74.00	-30.51
3	2123.95830	52.24	peak	-3.38	48.86	74.00	-25.14
4	2250.32050	50.01	peak	-3.03	46.98	74.00	-27.02
5	2389.98400	49.85	peak	-2.67	47.18	74.00	-26.82
6	3999.43910	48.21	peak	0.23	48.44	74.00	-25.56

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f < 18\text{GHz}$)
 $\pm 4.4\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5190 MHz

File: 20-04-MAS-061_5-2n40 #42 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH LOW

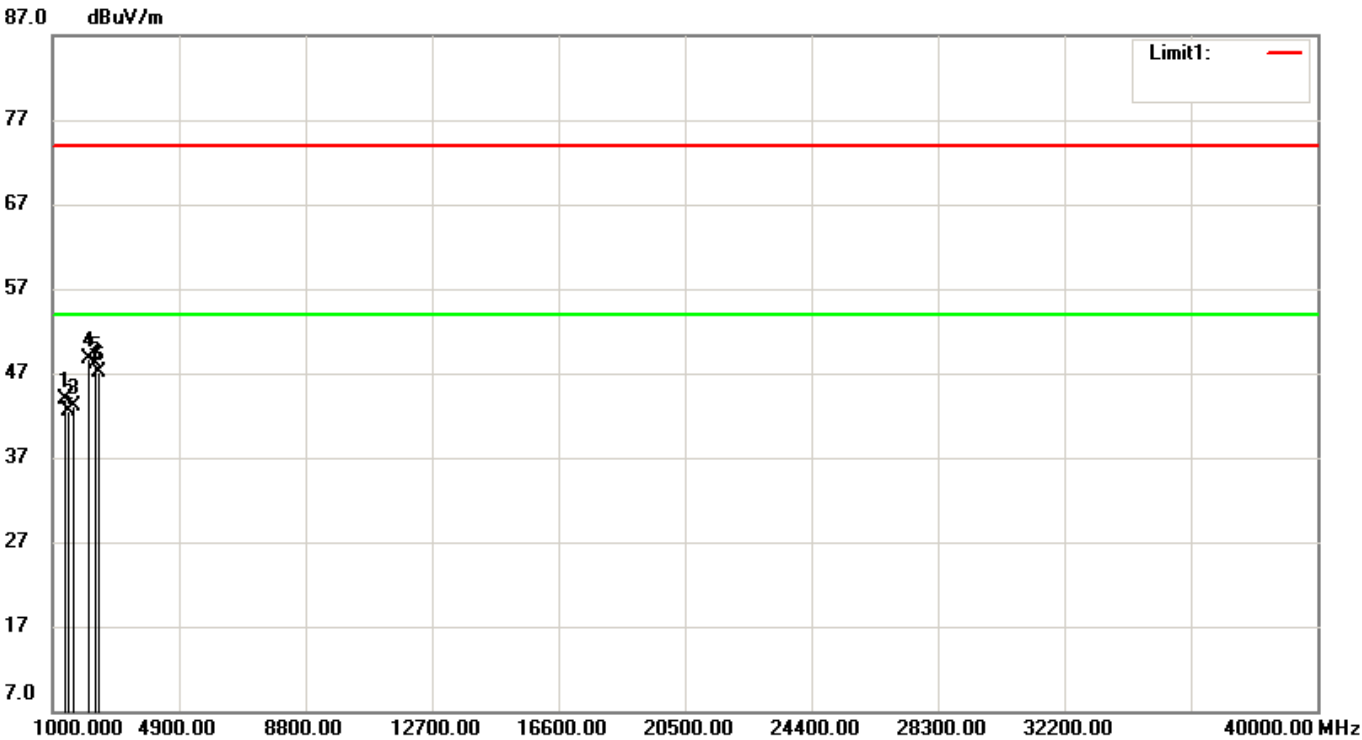
No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2123.95830	52.09	peak	-3.38	48.71	74.00	-25.29
2	2203.76600	51.01	peak	-3.16	47.85	74.00	-26.15
3	2250.32050	51.38	peak	-3.03	48.35	74.00	-25.65
4	3879.72750	48.74	peak	-0.08	48.66	74.00	-25.34
5	3999.43910	47.58	peak	0.23	47.81	74.00	-26.19
6	4850.72110	47.17	peak	1.24	48.41	74.00	-25.59

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

b. Channel High

操作模式：發射接收
基本波頻率：5230 MHz

File: 20-04-MAS-061_5-2n40 #43 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



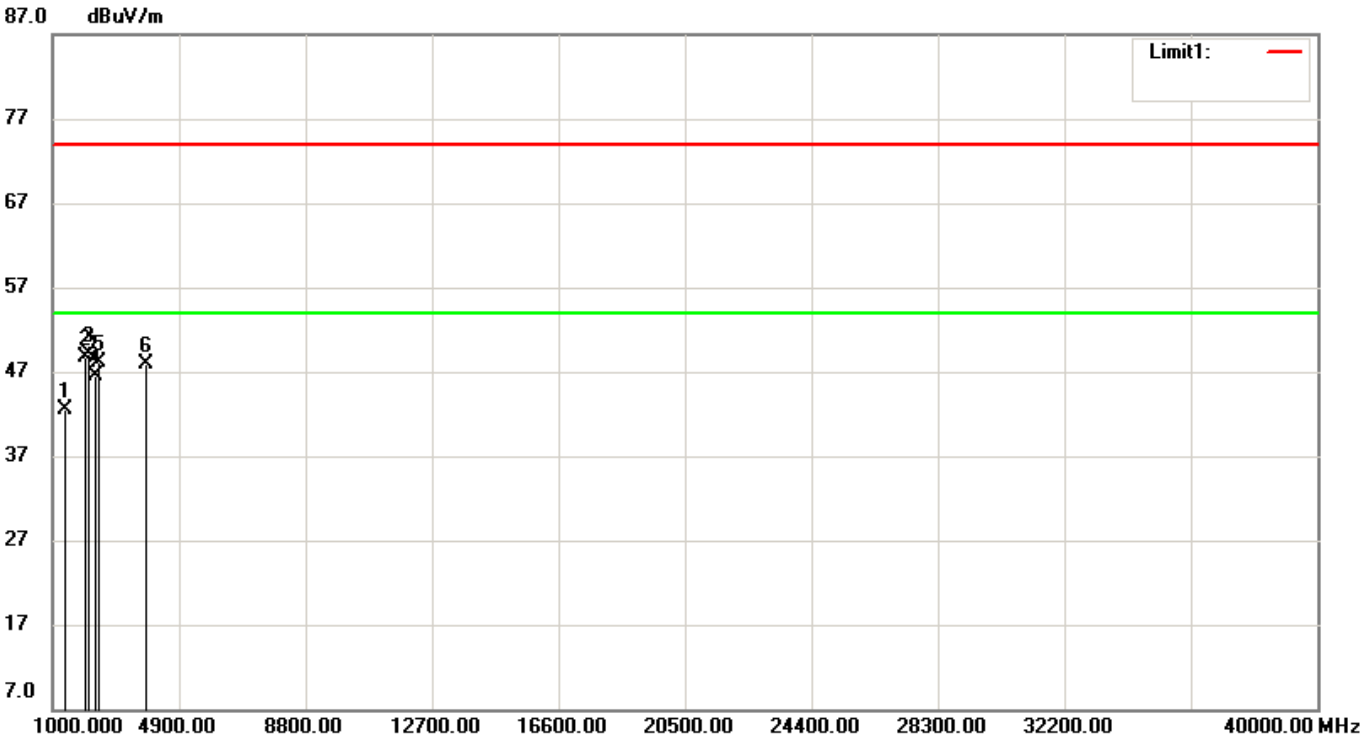
Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH HIGH

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	52.52	peak	-8.53	43.99	74.00	-30.01
2	1498.79800	50.71	peak	-8.20	42.51	74.00	-31.49
3	1591.90700	50.54	peak	-7.38	43.16	74.00	-30.84
4	2123.95830	52.05	peak	-3.38	48.67	74.00	-25.33
5	2250.32050	51.11	peak	-3.03	48.08	74.00	-25.92
6	2403.28510	49.71	peak	-2.63	47.08	74.00	-26.92

註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

操作模式：發射接收
基本波頻率：5230 MHz

File: 20-04-MAS-061_5-2n40 #44 Date: 2020/5/14 Temperature: 23 °C
Site: RE02-EMC B1- N2 Humidity: 65 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Wireless LAN Conveter Distance: 3m
Model: FBR-3250
Test Mode: UNII Operator: Phillip
Note: CH HIGH

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1372.43580	50.96	peak	-8.53	42.43	74.00	-31.57
2	1957.69230	52.83	peak	-4.08	48.75	74.00	-25.25
3	2123.95830	52.48	peak	-3.38	49.10	74.00	-24.90
4	2250.32050	49.62	peak	-3.03	46.59	74.00	-27.41
5	2396.63460	50.67	peak	-2.66	48.01	74.00	-25.99
6	3873.07700	47.93	peak	-0.11	47.82	74.00	-26.18

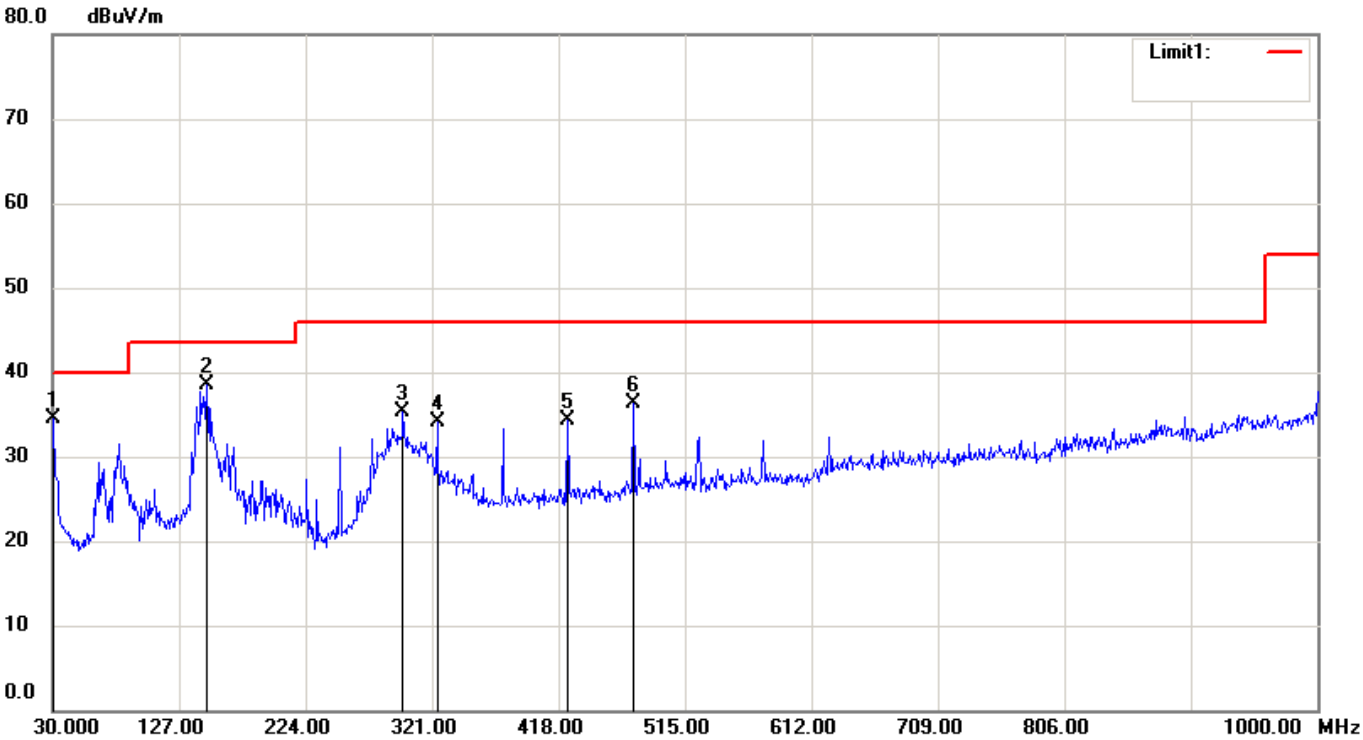
註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。
2. 量測不準確度: $\pm 4.1\text{dB}(1\text{GHz} \leq f < 18\text{GHz})$
 $\pm 4.4\text{dB}(18\text{GHz} \leq f \leq 40\text{GHz})$

10.5.3 其它不必要之訊號

File: 20-04-MAS-061_Below
1G_new1
Site: RE02-EMC B1-N2

#3

Date: 2020/9/16
Temperature: 23 °C
Humidity: 61 %



Condition: NCC_LP0002_30-1000MHz
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: Band1
Note:

Polarization: Horizontal
Distance: 3m
Operator: Phillip

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	30.9700	38.47	QP	-3.92	34.55	40.00	-5.45
2*	148.3400	43.59	QP	-5.03	38.56	43.50	-4.94
3	298.6900	39.71	QP	-4.46	35.25	46.00	-10.75
4	324.8800	38.20	QP	-4.03	34.17	46.00	-11.83
5	424.7900	35.87	QP	-1.62	34.25	46.00	-11.75
6	475.2300	37.42	QP	-1.12	36.30	46.00	-9.70

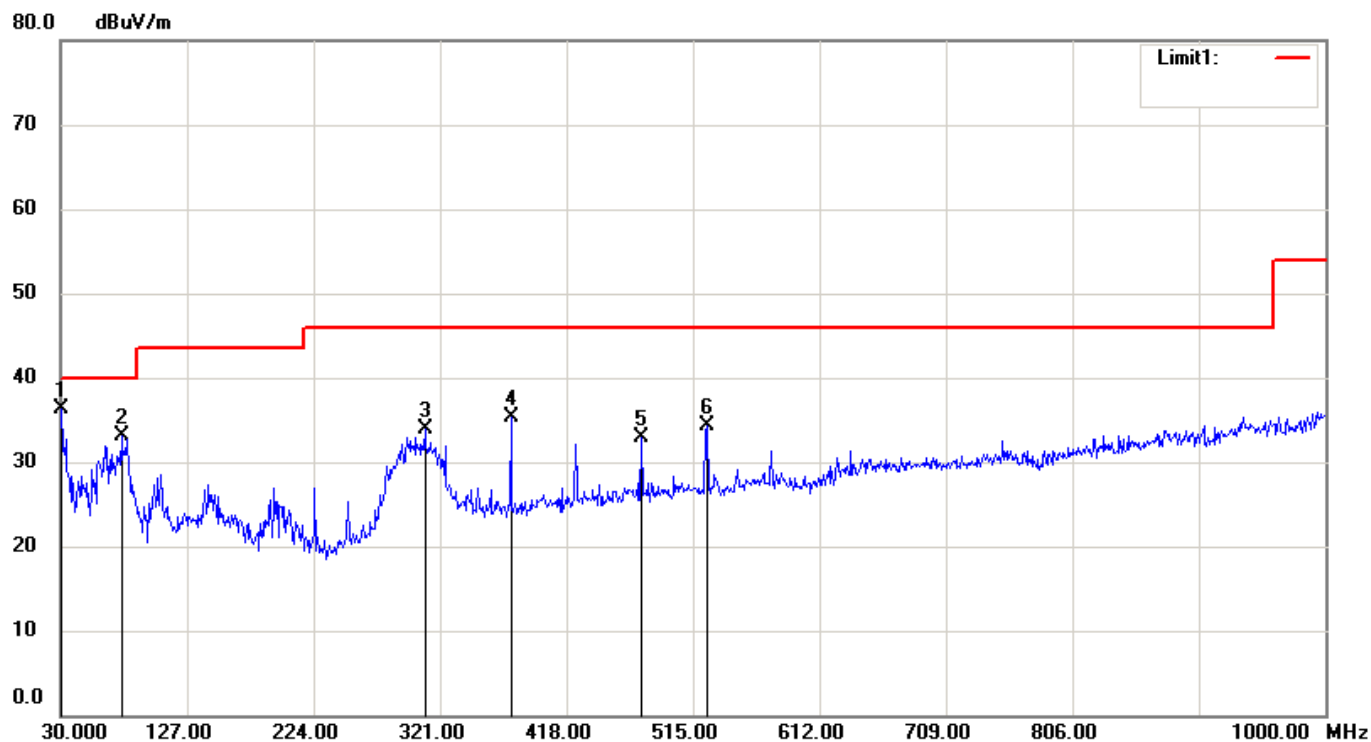
File: 20-04-MAS-061_Below
1G_new1
Site: RE02-EMC B1-N2

#4

Date: 2020/9/16

Temperature: 23 °C

Humidity: 61 %



Condition: NCC_LP0002_30-1000MHz
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: Band1
Note:

Polarization: Vertical
Distance: 3m
Operator: Phillip

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1*	30.9700	40.13	QP	-3.92	36.21	40.00	-3.79
2	76.5600	45.87	QP	-12.86	33.01	40.00	-6.99
3	309.3600	38.28	QP	-4.28	34.00	46.00	-12.00
4	375.3200	37.94	QP	-2.55	35.39	46.00	-10.61
5	475.2300	34.02	QP	-1.12	32.90	46.00	-13.10
6	525.6700	34.71	QP	-0.40	34.31	46.00	-11.69

註：1. 若以峰值檢測功能測量之值符合準峰值限制值，則可視同以準峰值功能測量之值亦符合準峰值限制值。

2. 量測不準確度: +4.20dB/ -4.24 dB ($30\text{MHz} \leq f < 1\text{GHz}$)

10.6 頻帶外邊緣輻射場強之量測結果

操作模式: 發射接收

測試日期: May 14, 2020

環境溫度: 23°C

環境濕度: 65%

10.6.1 調變技術: IEEE 802.11a

輻射 頻率	儀器讀值@3m (dBuV/m)				校正 因子	結果值		限制值@3m		餘裕值 (worse)	
	水平		垂直			(dBuV/m)		(dBuV/m)		(dB)	
(MHz)	峰值	平均值	峰值	平均值	(dB)	峰值	平均值	峰值	平均值	峰值	平均值
5150.000	26.7	13.1	27.6	13.0	38.66	66.3	51.8	74.0	54.0	-7.7	-2.2
5350.000	27.1	12.8	27.2	12.7	39.10	66.3	51.9	74.0	54.0	-7.7	-2.1

10.6.2 調變技術: IEEE 802.11n HT20

輻射 頻率	儀器讀值@3m (dBuV/m)				校正 因子	結果值		限制值@3m		餘裕值 (worse)	
	水平		垂直			(dBuV/m)		(dBuV/m)		(dB)	
(MHz)	峰值	平均值	峰值	平均值	(dB)	峰值	平均值	峰值	平均值	峰值	平均值
5150.000	28.8	13.7	27.2	13.0	38.66	67.5	52.4	74.0	54.0	-6.5	-1.6
5350.000	27.8	13.4	26.9	12.9	39.10	66.9	52.5	74.0	54.0	-7.1	-1.5

10.6.3 調變技術: IEEE 802.11n HT40

輻射 頻率	儀器讀值@3m (dBuV/m)				校正 因子	結果值		限制值@3m		餘裕值 (worse)	
	水平		垂直			(dBuV/m)		(dBuV/m)		(dB)	
(MHz)	峰值	平均值	峰值	平均值	(dB)	峰值	平均值	峰值	平均值	峰值	平均值
5150.000	29.3	14.5	26.9	13.1	38.66	68.0	53.2	74.0	54.0	-6.0	-0.8
5350.000	27.2	13.0	26.8	12.8	39.10	66.3	52.1	74.0	54.0	-7.7	-1.9

註: 1. 量測不準確度: $\pm 4.1\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

2. 量測頻率範圍為 4500 ~ 5250 MHz 及 5350 ~ 5460 MHz，並記錄兩頻率範圍中之最大讀值。

10.7 頻帶外邊緣直接量測

10.7.1 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4.7.4 不必要發射之限制值：在操作頻帶外的峰值發射應衰減至符合下列限制值：

4.7.4.1 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。

10.7.2 量測功率密度之配置

如圖 1 所示。

10.7.3 量測功率密度之儀器

儀器名稱	製造者	型 號
Spectrum Analyzer	R&S	FSV
Attenuator	WEINSCHEL	56-10

測試軟體: LZ-RF (Ver. ETC-3A2)

10.7.4 頻帶外邊緣直接量測之量測結果

調變技術: IEEE 802.11a

File: 20-04-MAS-061_5-2a_Ant1

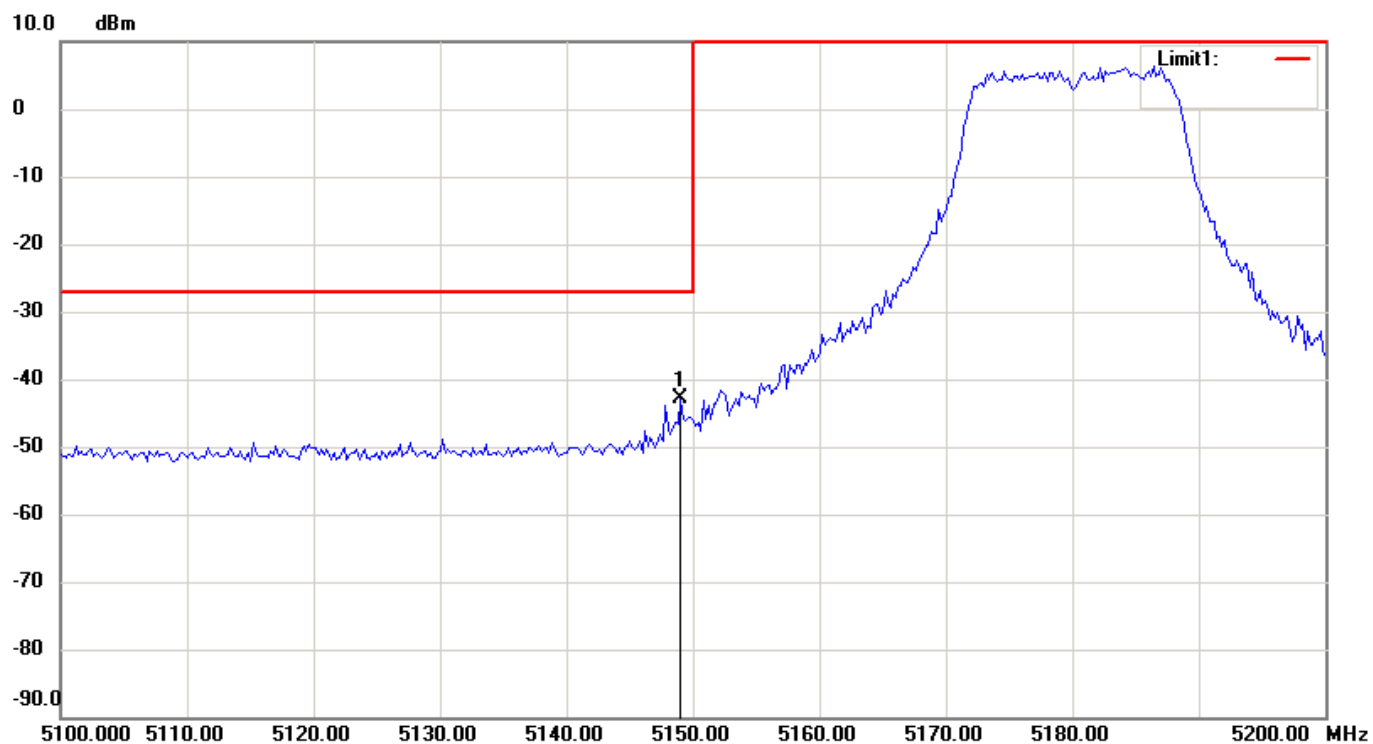
#7

Date: 2020/10/28

Temperature: °C

Site: RF-Cond01

Humidity: %



Condition: UNII-Band1-2-Bandedge

EUT: Wireless LAN Conveter

Model: FBR-3250

Test Mode: UNII

Note: NCC_LP0002_802.11a Channel 36_Low_Bandedge

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 1000 KHz VBW: 3000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5149.00000	-42.98

File: 20-04-MAS-061_5-2a_Ant1

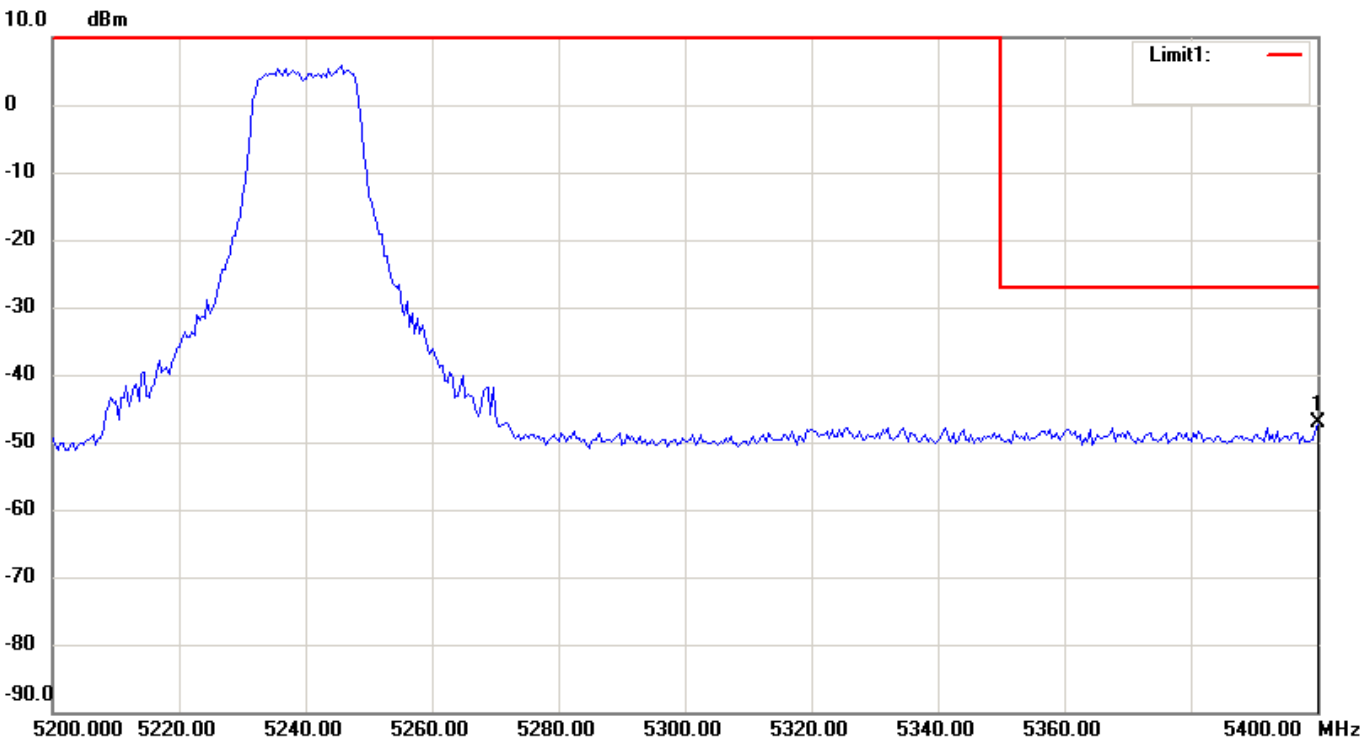
#20

Date: 2020/10/28

Temperature: °C

Site: RF-Cond01

Humidity: %



Condition: UNII-Band1-2-Bandedge

RF Conducted

EUT: Wireless LAN Conveter

Sweep Time: 1ms Att.: 15dB

Model: FBR-3250

RBW: 1000 KHz VBW: 3000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11a Channel 48_High_Bandedge

No.	Frequency(MHz)	Level(dBm)
1	5400.00000	-47.15

調變技術: IEEE 802.11n HT20

CHAIN 0

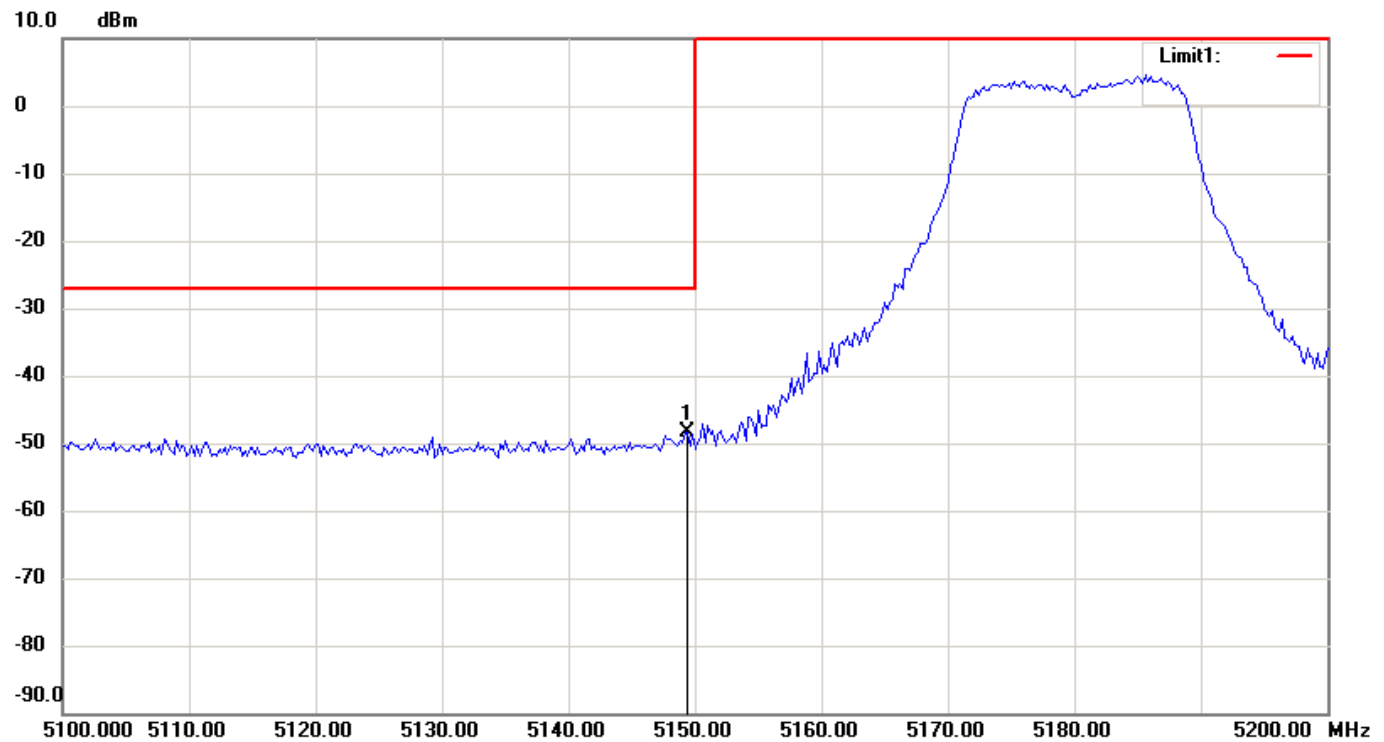
File: 20-04-MAS-061_5-2n20_Ant0
 Site: RF-Cond01

#7

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: NCC_LP0002_802.11n20 Channel 36_Low_Bandedge

RF Conducted
 Sweep Time: 1ms Att.: 15dB
 RBW: 1000 KHz VBW: 3000 KHz
 Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5149.40000	-48.31

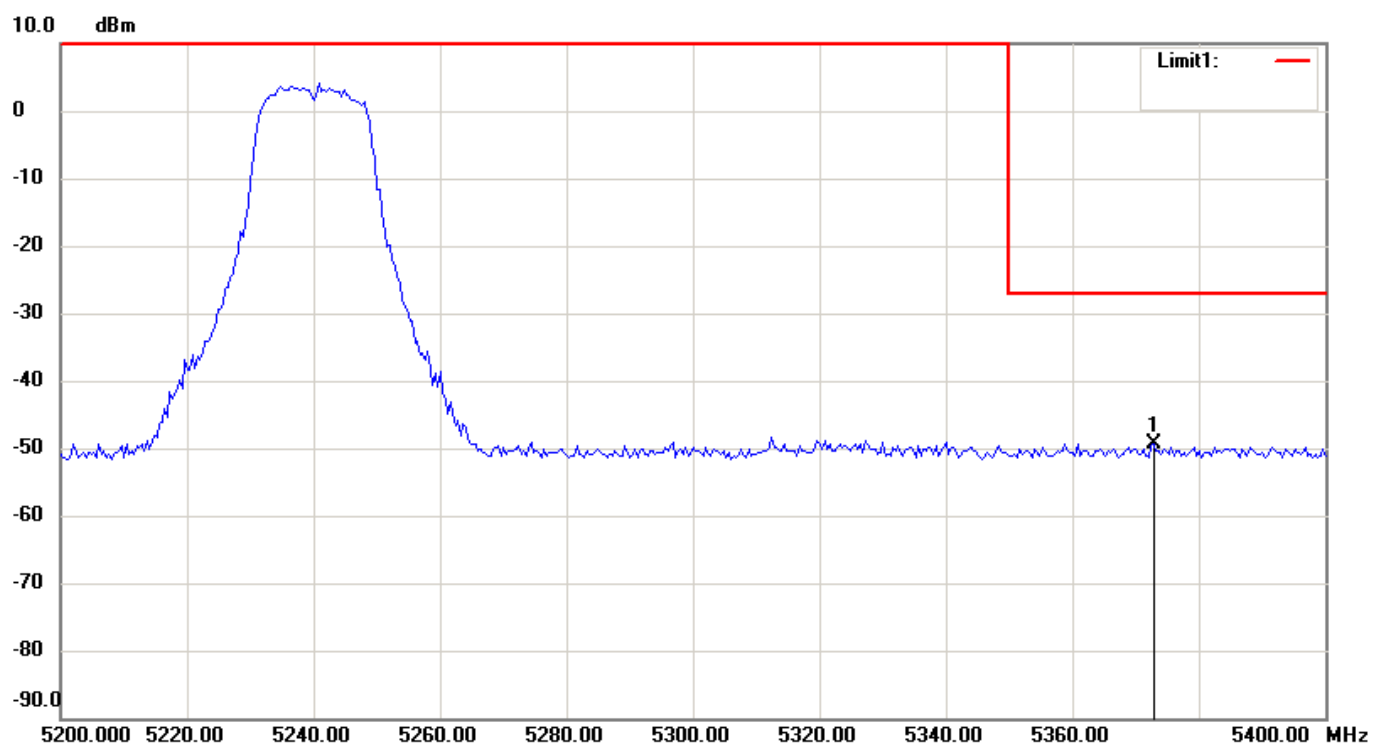
File: 20-04-MAS-061_5-2n20_Ant0
Site: RF-Cond01

#20

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20 Channel 48_High_Bandedge

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 1000 KHz VBW: 3000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5372.80000	-49.29

調變技術: IEEE 802.11n HT20

CHAIN 1

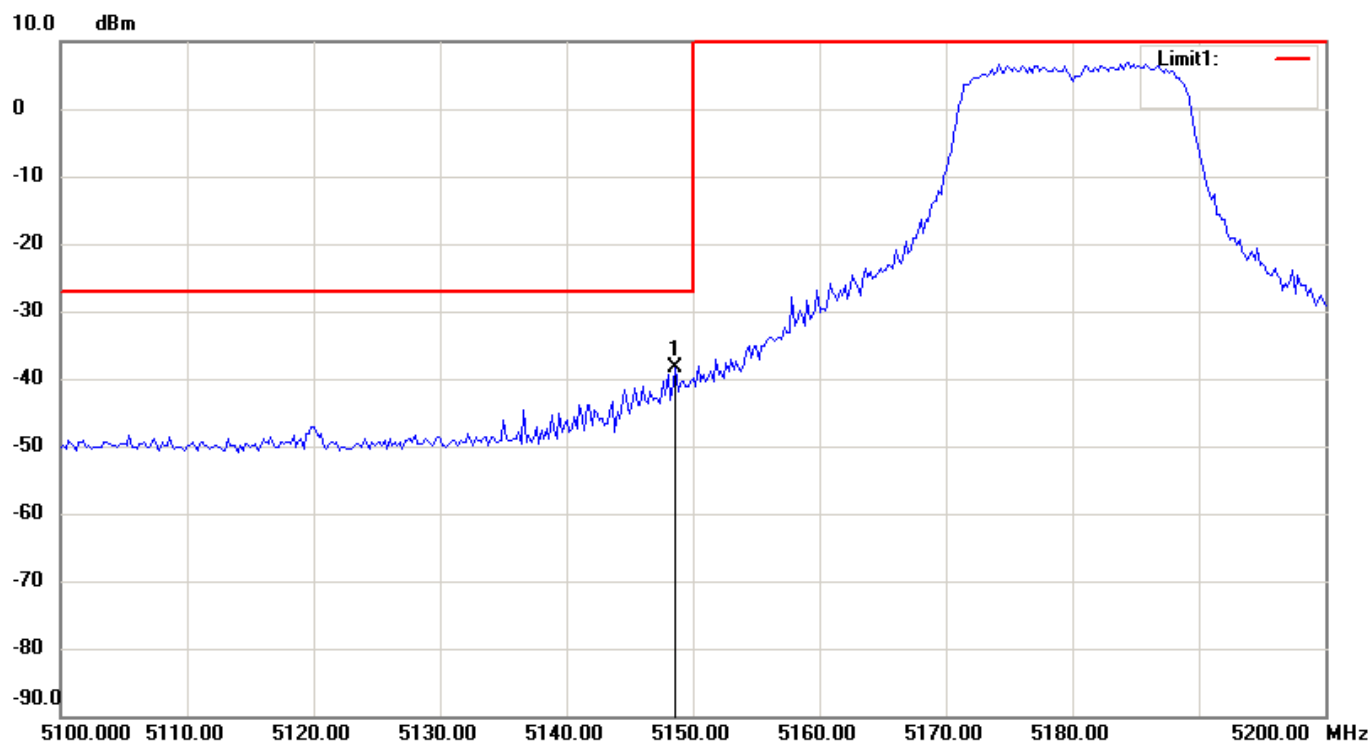
File: 20-04-MAS-061_5-2n20_Ant1
 Site: RF-Cond01

#7

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
 EUT: Wireless LAN Conveter
 Model: FBR-3250
 Test Mode: UNII
 Note: NCC_LP0002_802.11n20 Channel 36_Low_Bandedge

RF Conducted
 Sweep Time: 1ms Att.: 15dB
 RBW: 1000 KHz VBW: 3000 KHz
 Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5148.60000	-38.39

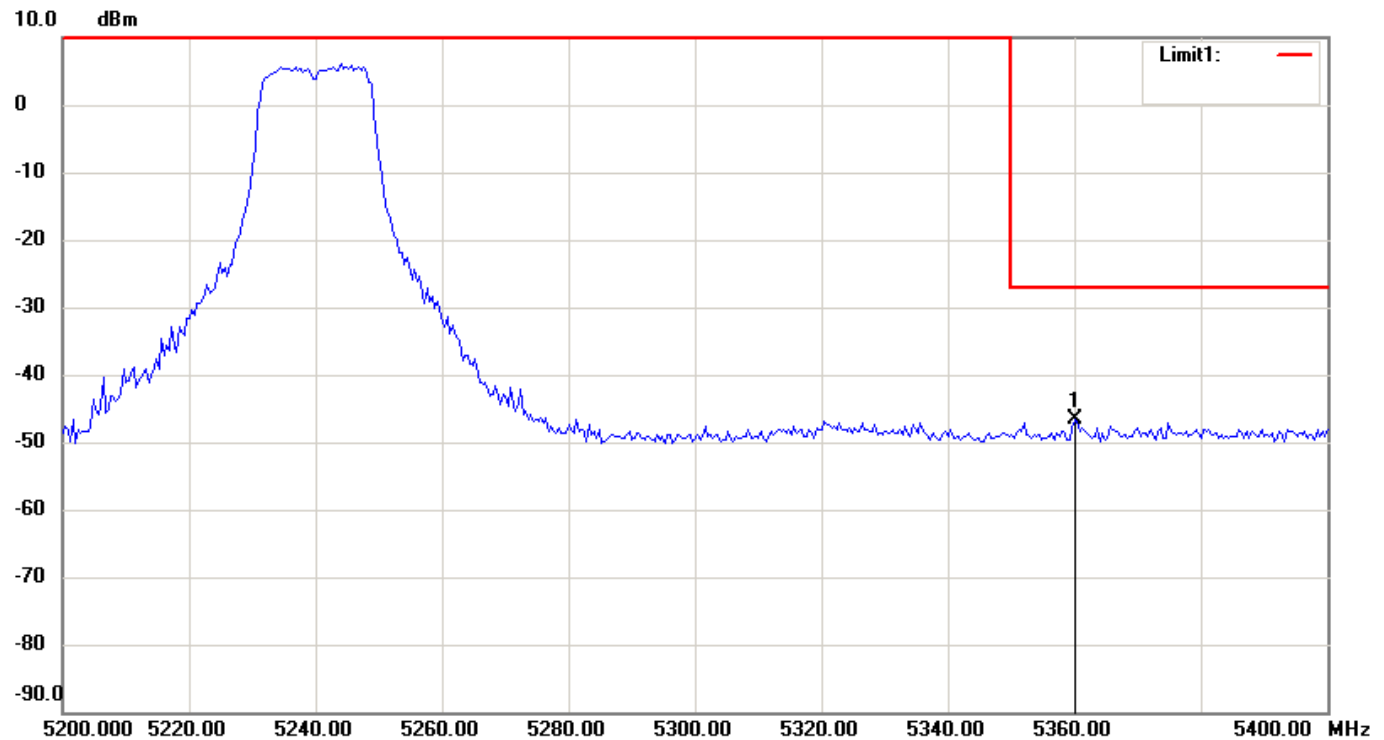
File: 20-04-MAS-061_5-2n20_Ant1
Site: RF-Cond01

#20

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



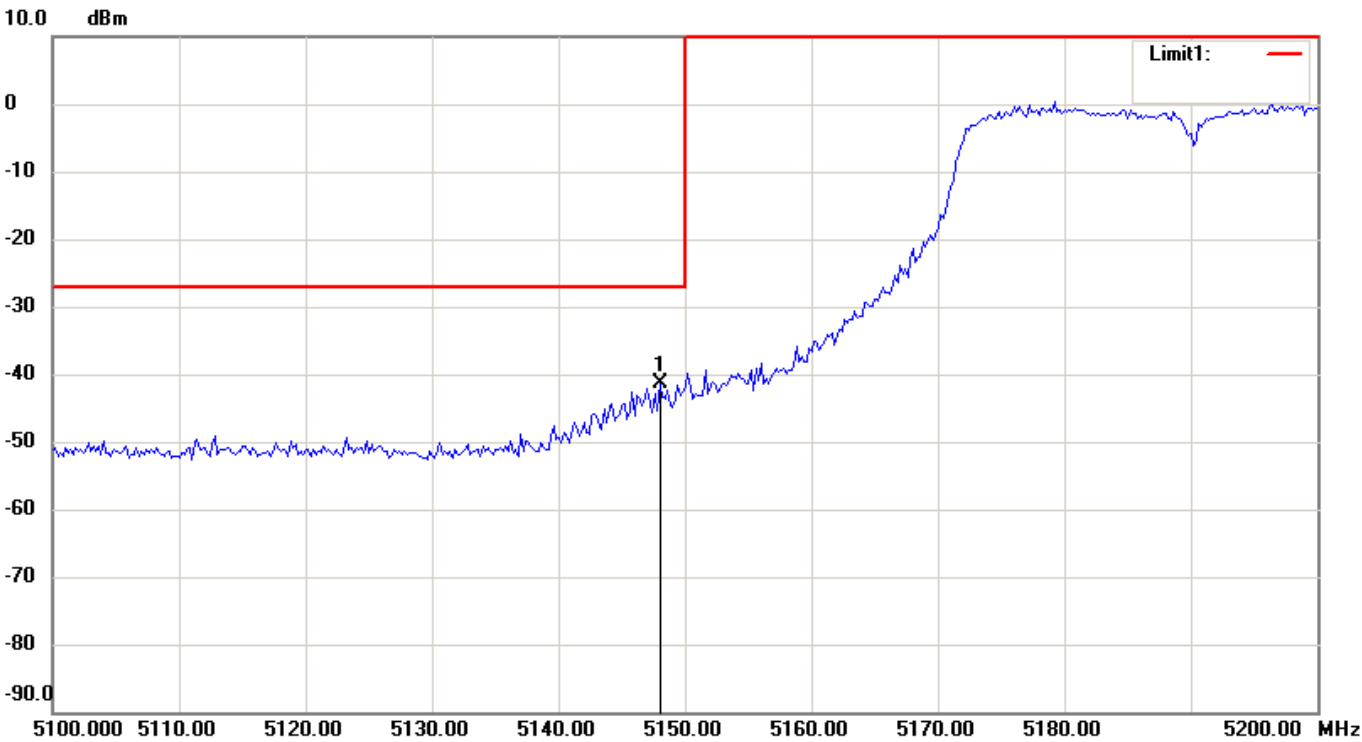
Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n20 Channel 48_High_Bandedge

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 1000 KHz VBW: 3000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5360.00000	-46.51

調變技術: IEEE 802.11n HT40
CHAIN 0

File: 20-04-MAS-061_5-2n40_Ant0 #7 Date: 2020/5/20 Temperature: 25 °C
Site: RF-Cond01 Humidity: 63 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Wireless LAN Conveter	Sweep Time: 1ms	Att.: 15dB
Model:	FBR-3250	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n40 Channel 38_Low_Bandedge		

No.	Frequency(MHz)	Level(dBm)
1	5148.00000	-41.31

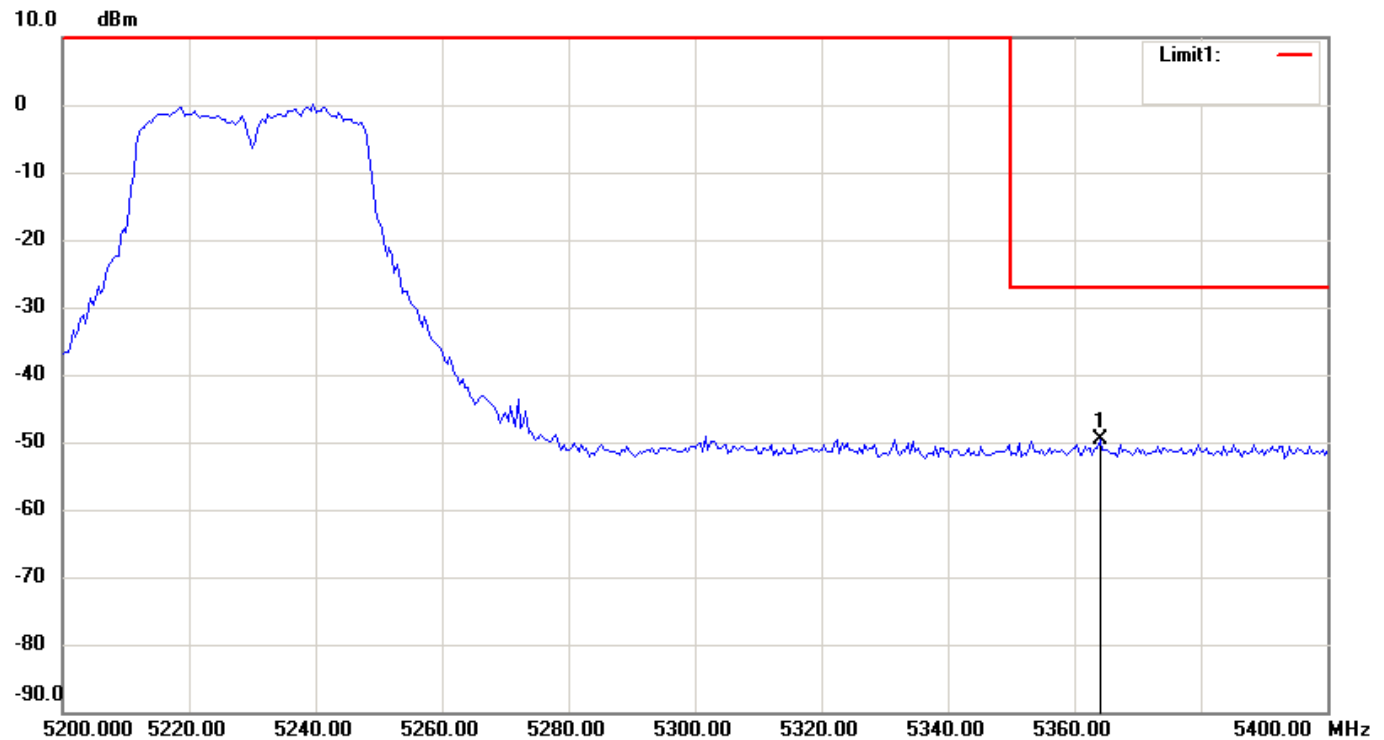
File: 20-04-MAS-061_5-2n40_Ant0
Site: RF-Cond01

#14

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



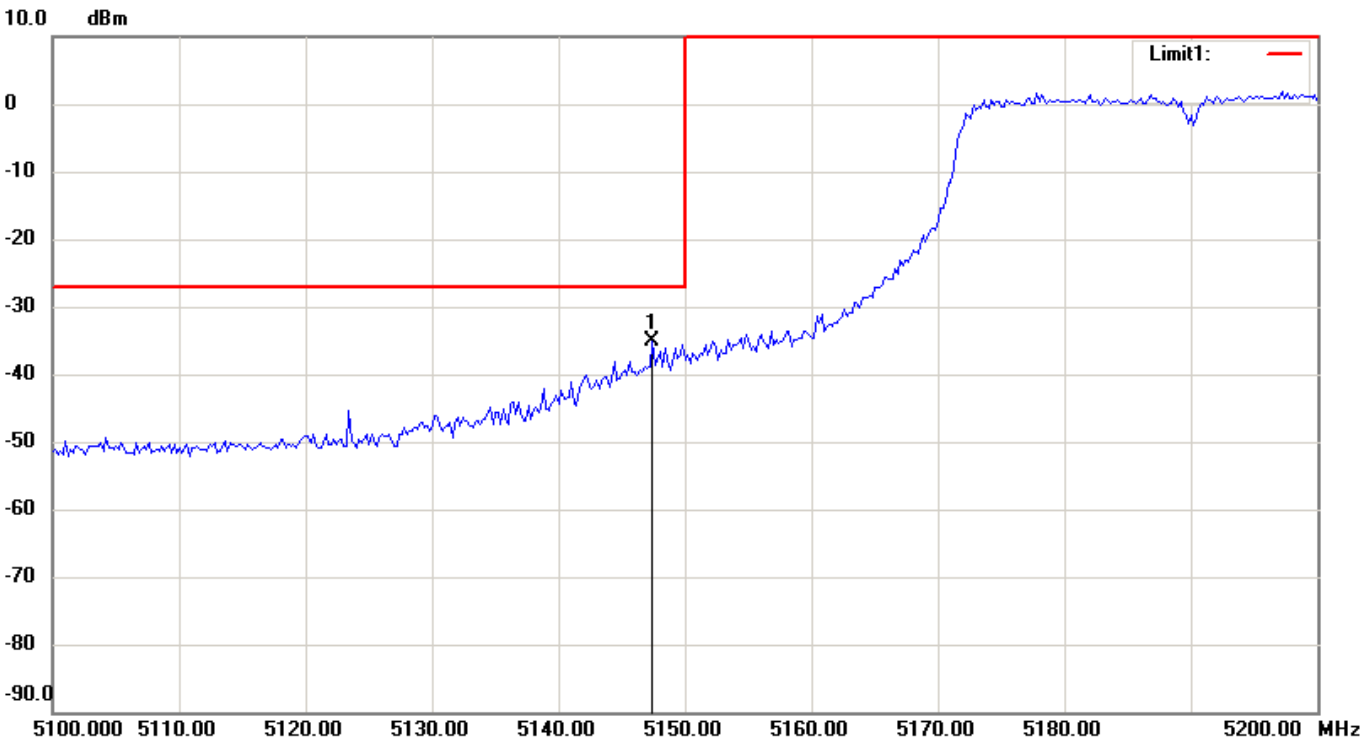
Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40 Channel 46_High_Bandedge

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 1000 KHz VBW: 3000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5364.00000	-49.74

調變技術: IEEE 802.11n HT40
CHAIN 1

File: 20-04-MAS-061_5-2n40_Ant1 #7 Date: 2020/5/20 Temperature: 25 °C
Site: RF-Cond01 Humidity: 63 %



Condition: UNII-Band1-2-Bandedge RF Conducted
EUT: Wireless LAN Conveter Sweep Time: 1ms Att.: 15dB
Model: FBR-3250 RBW: 1000 KHz VBW: 3000 KHz
Test Mode: UNII Operator: Phillip
Note: NCC_LP0002_802.11n40 Channel 38_Low_Bandedge

No.	Frequency(MHz)	Level(dBm)
1	5147.40000	-35.07

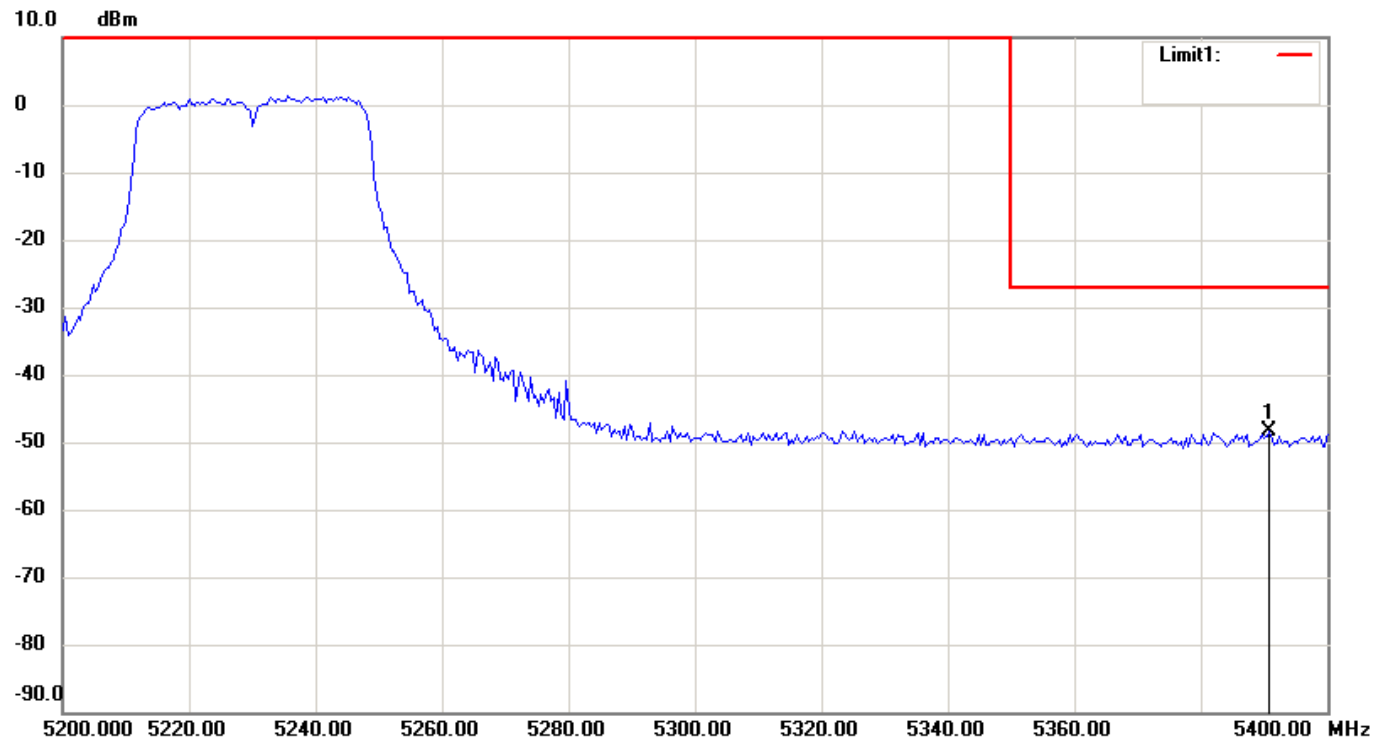
File: 20-04-MAS-061_5-2n40_Ant1
Site: RF-Cond01

#14

Date: 2020/5/20

Temperature: 25 °C

Humidity: 63 %



Condition: UNII-Band1-2-Bandedge
EUT: Wireless LAN Conveter
Model: FBR-3250
Test Mode: UNII
Note: NCC_LP0002_802.11n40 Channel 46_High_Bandedge

RF Conducted
Sweep Time: 1ms Att.: 15dB
RBW: 1000 KHz VBW: 3000 KHz
Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5390.80000	-48.25

10.7.5 結果判定

以上頻帶外邊緣測試之結果皆低於限制值-27dBm，合乎標準規定。

10.8 輻射之測試配置

圖 2: 量測頻率低於1GHz之測試配置

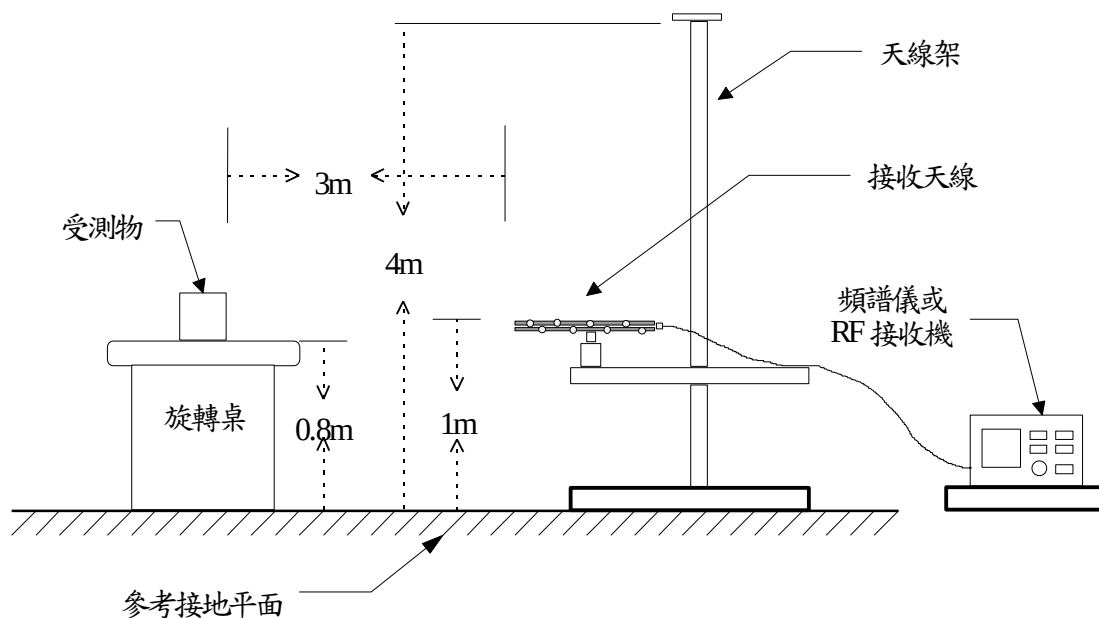
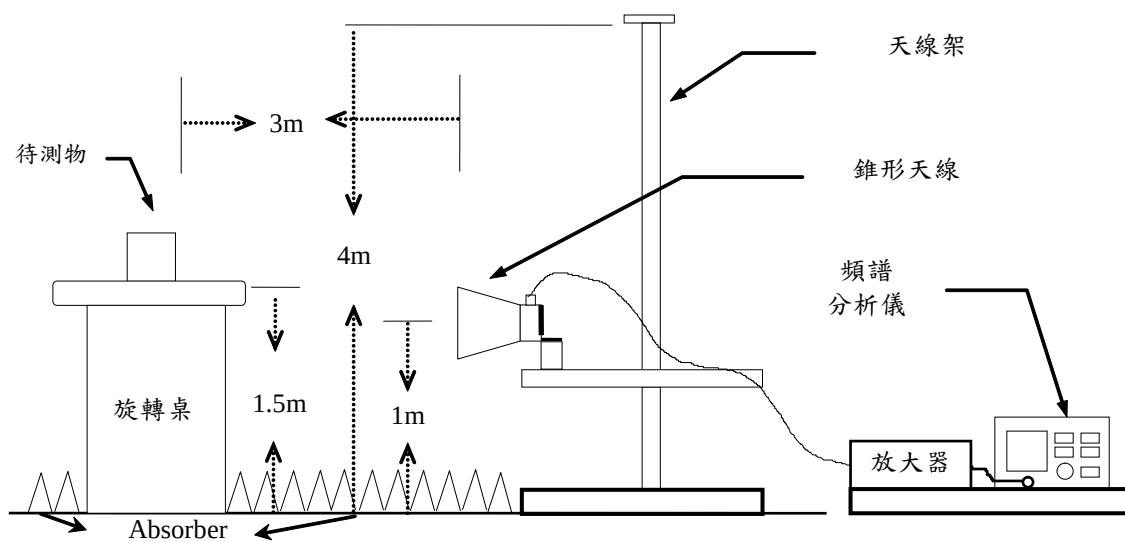


圖 3: 量測頻率高於1GHz之測試配置



10.9 輻射量測之配置照片

請參考產品照片

11 量測之儀器

儀器名稱	製造者	型 號	財產編號/序號	校驗日期	下次校驗日期
Spectrum Analyzer	R&S	FSV	13052017-001	06/12/2020	06/11/2021
Attenuator	WEINSCHEL	56-10	58772	04/24/2020	04/23/2021
EMI Receiver	R&S	ESCI	13054423-001	12/24/2019	12/25/2020
Spectrum Analyzer	R&S	FSU46	13040904-001	05/28/2020	05/27/2021
Horn Antenna	EMCO	3117	13059211-004	04/21/2020	04/20/2021
Horn Antenna	EMCO	3116	13059202-001	11/15/2019	11/14/2020
PRE-Amplifier	Agilent	8449B	13040709-001	12/31/2019	12/30/2020
PRE-Amplifier	Agilent	8447D	13040715-002	04/22/2020	04/21/2021
BiLog Antenna	ETC	MCTD 2786	BL19J04024	01/14/2020	01/13/2021
PRE-Amplifier	Agilent	83051A	13052916001	09/18/2020	09/17/2021