

低功率射頻器材 檢驗報告

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製造廠商	DENSO CORPORATION
受檢設備名稱	Cockpit Control Unit
廠牌	DENSO
型號	DNNS124
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)
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實驗室認可編號及範圍: 0371 (9 kHz to 325 GHz)

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測試報告記錄

申請廠商：台灣電綜股份有限公司
 製造廠商：DENSO CORPORATION
 廠牌：DENSO
 品名：Cockpit Control Unit
 型號：DNNS124
 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)：7.18 dBm (發射功率)
 工作頻率及調變方式：5745 ~ 5825 MHz / OFDM
 天線規格：內置固定式天線

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標準CISPR16-4-2 及 ETSI TR 100 028要求，則不列入測試結果考量。本試驗報告的結果僅與測試項目有關，且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	低功率射頻電機技術規範 3.3節	----	----	因使用直流電源故無需測試
2	天線增益之要求	低功率射頻電機技術規範 5.7.8節	----	請參閱5.2節	----
3	發射頻寬之要求	低功率射頻電機技術規範 5.7.5節	請參閱6.3節	請參閱6.4節	符合
4	最大傳導輸出功率之要求	低功率射頻電機技術規範 5.7.3.3節(1)	請參閱7.3節	請參閱7.4節	符合
5	功率密度之要求	低功率射頻電機技術規範 5.7.3.3節(2)	請參閱8.3節	請參閱8.4節	符合
6	混附波發射限制之要求	低功率射頻電機技術規範 5.7.4節	請參閱9.3節	請參閱9.4節	符合
7	場強輻射之要求	低功率射頻電機技術規範 5.7.4.6節	請參閱10.3節	請參閱10.5節	符合

報告簽署人：鄧景文
110.07.21

直接主管：黃政峰 量測員：鄧世峰
110.07.21 110/07/21

1 一般資料

1.1 產品描述

- a) 產品型態 : Cockpit Control Unit
 b) 商 標 : DENSO
 c) 產品型號 : DNNS124
 d) 供應電源 : DC 12V

備註：本產品內含 WLAN 及 Bluetooth 無線技術，WLAN 部份包含 DTS 與 UNII 頻帶。本報告僅記錄 UNII Band 4 (5725 至 5850 MHz) 部份，Bluetooth 部份請見 ETC 報告編號:21-05-MAW-008-01，DTS 部份請見 ETC 報告編號:21-05-MAW-008-02，UNII Band 1 (5180 MHz 至 5240 MHz)部份請見 ETC 報告編號:21-05-MAW-008-03。

1.2 產品特性

此裝置為 Cockpit Control Unit，內含之WLAN其發射頻率落於 5745 至 5825 MHz頻段，採用 IEEE 802.11a/n/ac OFDM 調變技術，其應用為區域網路無線傳輸。主波發射功率為 7.18 dBm，即為 5.22 mW。

RF chain	2T2R	
Operating Frequency	IEEE 802.11a/n 20/ac 20MHz: 5.745GHz~5.825GHz, 5ch IEEE 802.11ac 40MHz Bnd: 5.755GHz~5.795GHz, 2ch IEEE 802.11ac 80MHz: 5.775 GHz, 1ch	
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
	IEEE 802.11ac(20MHz,40MHz,80MHz)(OFDM/DSSS) QAM-256, 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：

- ① ISO/IEC 17025 : TAF(0371), NVLAP(Lab code: 200133-0), CBTL(**TÜ V SÜ D**)
- ② Recognized : BSMI, NCC, FCC(TW0371, TW1112), ISED(Industry Canada Site # 2949A-2)
- ③ Filing : VCCI (C-13518, R-13177, G-10098, T-11682)
- ④ 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

天線的規格不受國家通訊傳播委員會低功率射頻器材技術規範3.2節規定之限制，其發射天線之方向性增益超過6dBi時，應依其所超過之dB數等量降低峰值輸出功率。

如用於固定式點對點操作時，依法規5.7.3.3(3)供固定式點對點操作時，使用方向增益超過6 dBi 之發射天線，可不需對應減少發射器之傳導輸出功率限制值。

(3) 頻寬之要求

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.5節之規定，6dB頻寬至少應有500 kHz。

(4) 最大傳導輸出功率之要求

依據國家通訊傳播委員會低功率射頻器材技術規範5.7.3.3節(1)之規定，最大傳導輸出功率應小於或等於1 W。

(5) 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5.7.3.3節之(2)規定，在任何500 kHz 頻帶中最大功率頻譜密度應小於或等於30 dBm

(6) 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5.7.4.2節之規定，在5.725 GHz～5.850 GHz 的頻段操作之發射器：所有頻帶邊緣向外5MHz 內頻率之發射，有效等向輻射功率(EIRP)≤27 dBm/MHz～15.6dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣向外5 MHz～25MHz，有效等向輻射功率(EIRP)≤15.6 dBm/MHz～10 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外25 MHz～75 MHz，有效等向輻射功率(EIRP)≤10 dBm/MHz～-27 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外≥75 MHz 的頻率之發射，有效等向輻射功率(EIRP)≤-27 dBm/MHz；有關遮罩限制值詳圖 1。

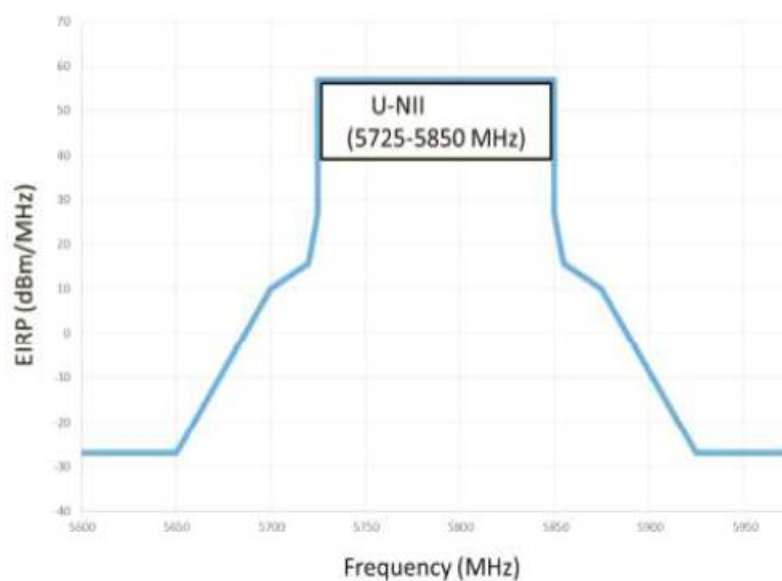


圖 1

(7) 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 5.7.4.6節之要求，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。3.6 節限制要求：

頻率(f) MHz	電場強度 (微伏特/公尺, $\mu V/m$)	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	

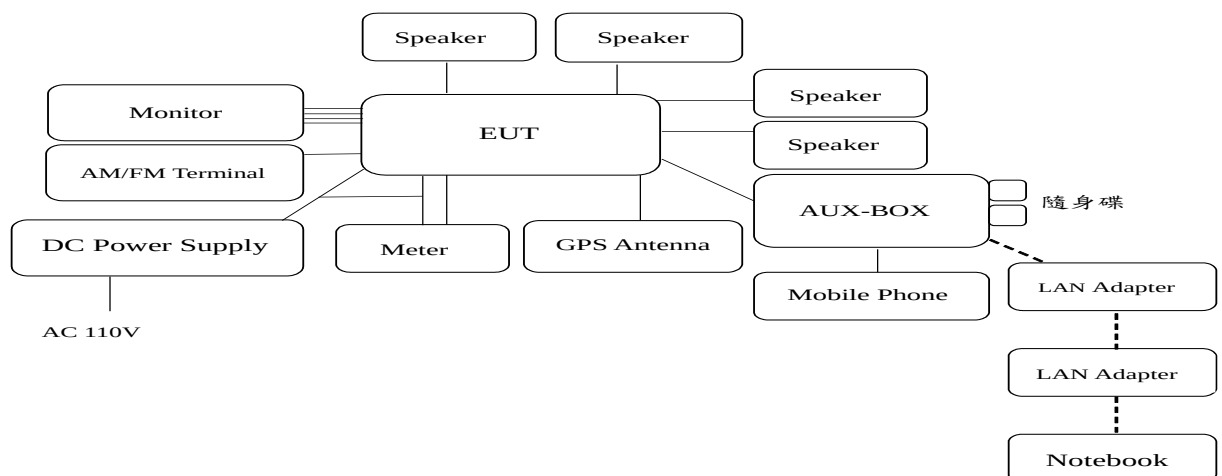
3 受測裝置之系統說明

3.1 受測裝置

裝置名稱	廠 牌	型 號	纜線說明
* Cockpit Control Unit	DENSO	DNNS124	----
*Monitor	DENSO	86213XC60A	非隔離電源線 0.2m * 1 隔離信號線 0.2m * 3
AM/FM Terminal	N/A	N/A	隔離信號線 2.0m * 1
AUX-BOX	SUBARU	86257AN00A	非隔離信號線 0.4m * 1 非隔離信號線 1.0m * 1
Meter	DENSO	85002AN02A	非隔離電源線 1.2m * 1 非隔離信號線 3.0m * 1 非隔離信號線 1.8m * 1
GPS Antenna	N/A	N/A	隔離信號線 0.7m * 1
Speaker	N/A	N/A	非隔離信號線 1.8m * 1
Speaker	N/A	N/A	非隔離信號線 1.8m * 1
Speaker	N/A	N/A	非隔離信號線 1.8m * 1
Speaker	N/A	N/A	非隔離信號線 1.8m * 1
DC Power Supply	GW Instek	GPS-1850D	非隔離電源線 1.8m * 1 非隔離電源線 3.6m * 1
隨身碟	Transcend	N/A	---
隨身碟	Kingston	100G3	---
Mobile Phone	mI	M1806E7TH	非隔離信號線 1.2m * 1
LAN Adapter	BUFFALO	LUA3-U2-ATX	非隔離信號線 1.0m * 1(LAN)
LAN Adapter	BUFFALO	LUA3-U2-ATX	----
Notebook	ASUS	P45V	---

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 HT20, 802.11ac VHT20 mode:

測試頻道如下:

Channel	Frequency (MHz)
Low = 149	5745
Middle = 157	5785
High = 165	5825

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

IEEE 802.11 n HT20, 802.11ac VHT20 mode: MCS0 data rate is the worse case for full testing.

3.2 IEEE 802.11n HT40, 802.11ac VHT40 mode:

測試頻道如下:

Channel	Frequency (MHz)
Low = 151	5755
High = 159	5795

IEEE 802.11 n HT40, 802.11ac VHT40 mode: MCS0 data rate is the worse case for full testing.

3.3 IEEE 802.11ac VHT80 mode:

測試頻道如下:

Channel	Frequency (MHz)
155	5775

IEEE 802.11 ac VHT80 mode: MCS0 data rate is the worse case for full testing.

4. 軟體設定: Tera Term.exe

		Power Setting
IEEE 802.11a	5745	7.5
	5785	7.5
	5825	7.5
IEEE 802.11n HT20	5745	6.5
	5785	6.5
	5825	6.5
IEEE 802.11n HT40	5755	5.5
	5795	5.5
IEEE 802.11ac VHT20	5745	6.5
	5785	6.5
	5825	6.5
IEEE 802.11ac VHT40	5755	5.5
	5795	5.5
IEEE 802.11ac VHT80	5775	4.5

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 802.11ac VHT20	-
D	IEEE 802.11n HT40	-
E	IEEE 802.11ac VHT40	-
F	IEEE 802.11ac VHT80	-

Normal Mode:

Test Mode	Note
G	BT Link+AUX Playing
H	WiFi Link+USB Playing

Mode	IEEE 802.11a/n20/ac20	IEEE 802.11n40/ac40	IEEE 802.11ac80
Test Channel	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
Channel Low (L)	5745	5755	5775
Channel Mid (M)	5785	n/a	n/a
Channel High (H)	5825	5795	n/a

3.2.2 測試項目及模式

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

註: 1. 各測試模式預掃時無差異，擇一作最終測試並記錄之。

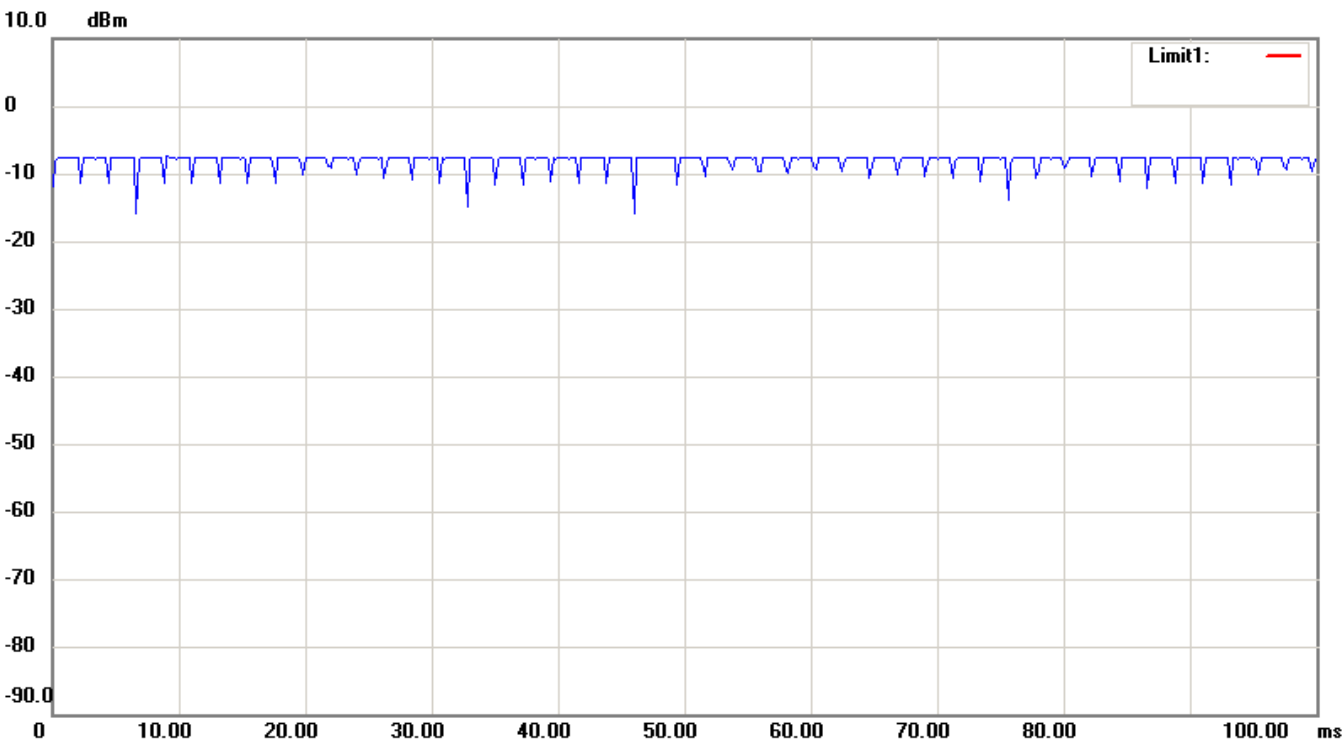
- Test Mode B 與 Test Mode C / Test Mode D 與 Test Mode E 使用相同調變技術及頻寬，故以最大傳導輸出功率較大者 Test Mode B 及 Test Mode D 為 Worse case，作最終測試並記錄之。
- 本產品內含雙天線，802.11n/ac 模式下有 MIMO 之功能，故對兩隻天線分別進行測試再加總並記錄之。802.11a 無 MIMO 之功能，在正常模式下僅使用 Antenna1，故僅針對 Antenna1 進行量測並記錄。
- 量測場強輻射時，若為手持式或穿戴式之裝置，應對其三個正交軸 (X、Y、Z) 的方位評估測試，並分別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。
- 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

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: 21-05-MAW-008_5-2a_Ant1 #21 Date: 2021/6/28 Temperature: 24 °C
Site: RF-Cond01 Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 100ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a Duty-1		

File: 21-05-MAW-008_5-2a_Ant1

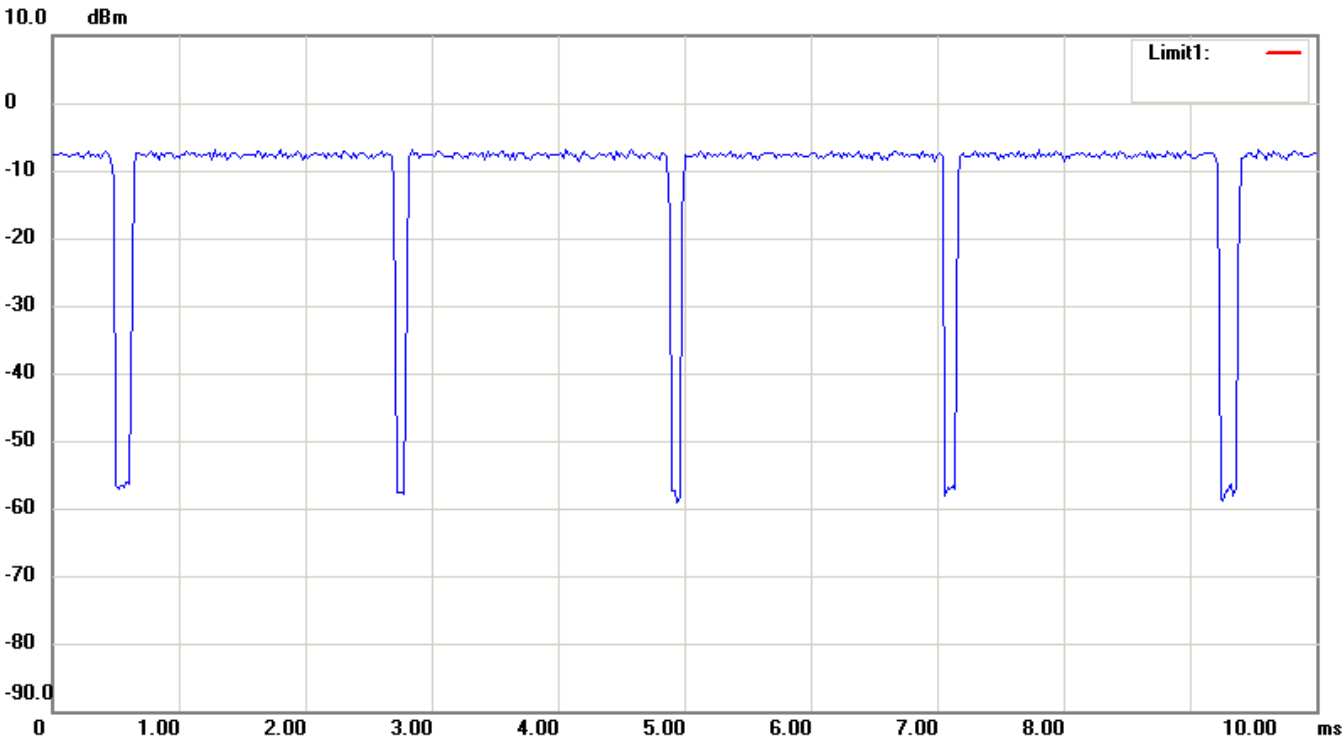
#22

Date: 2021/6/28

Temperature: 24 °C

Site: RF-Cond01

Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 10ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11a Duty-2 (Duty=93.6%)		

IEEE 802.11n HT20

File: 21-05-MAW-008_5-2n20_Ant1

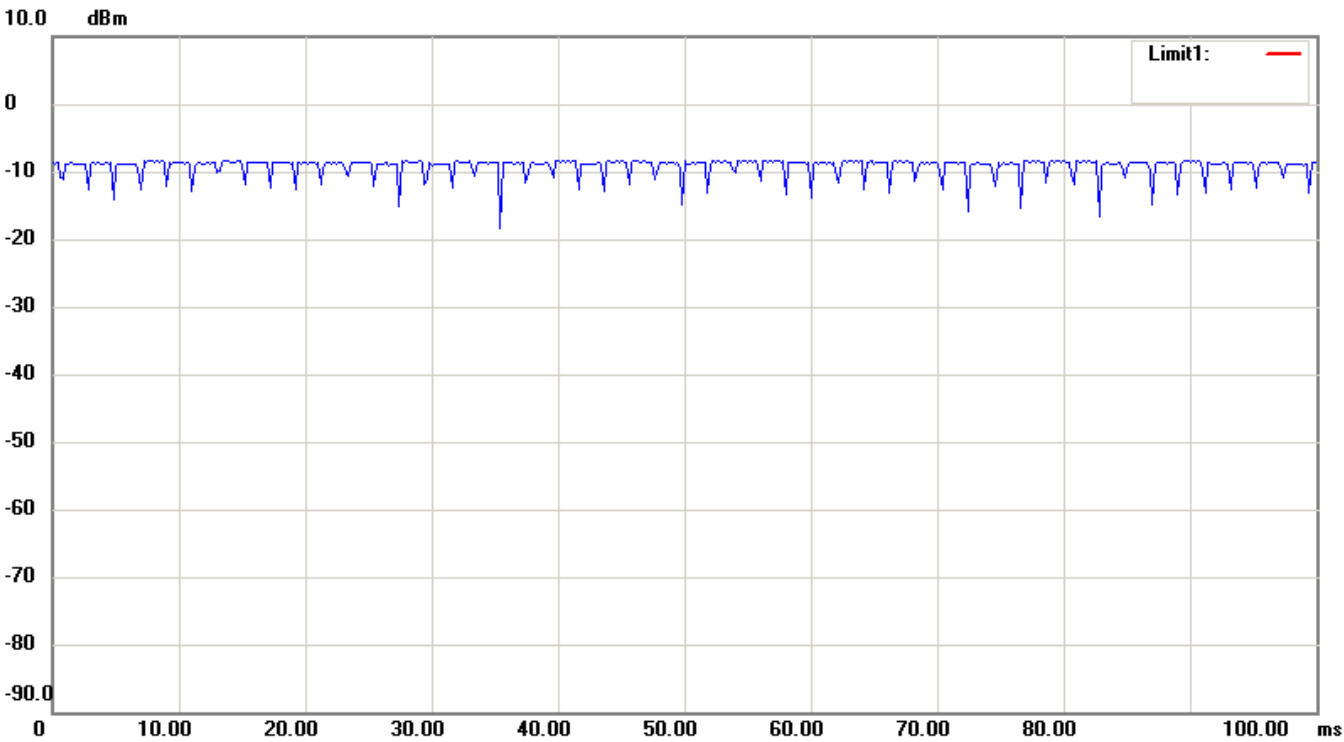
Site: RF-Cond01

#21

Date: 2021/6/28

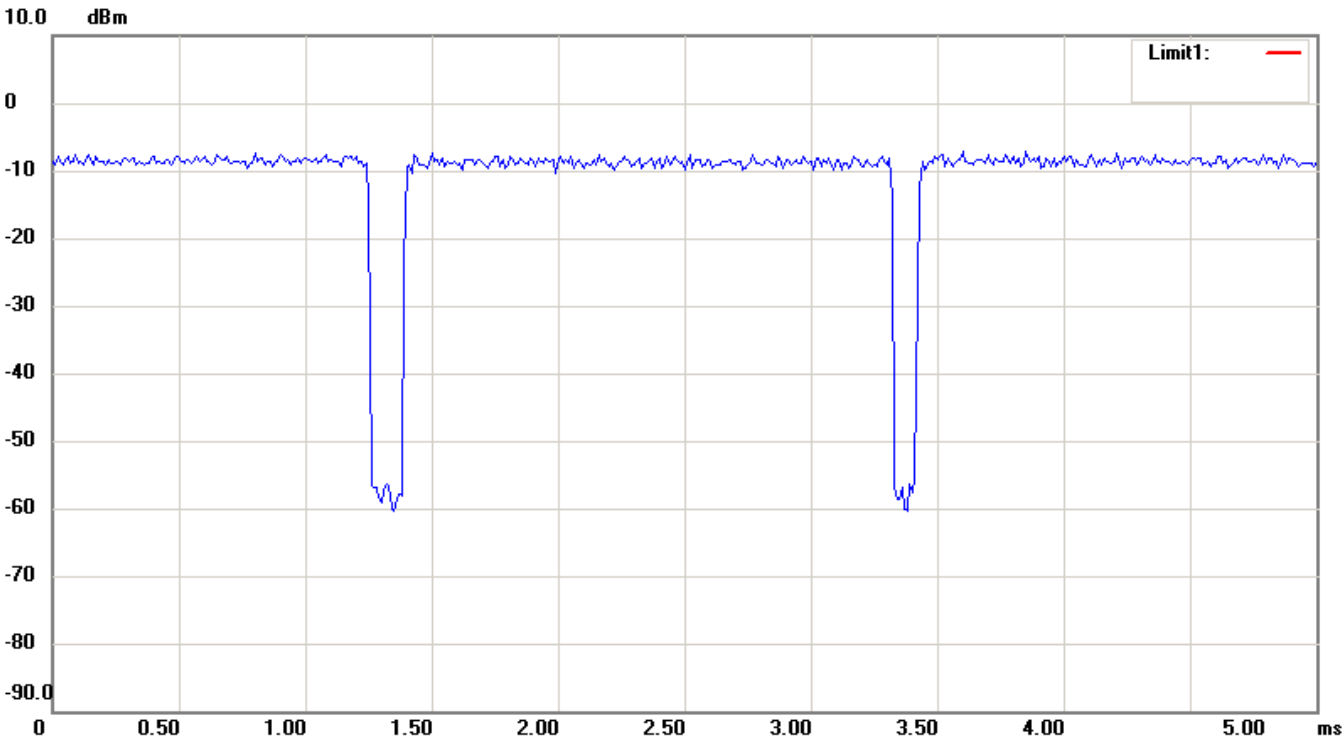
Temperature: 24 °C

Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 100ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20 Duty-1		

File: 21-05-MAW-008_5-2n20_Ant1 #22 Date: 2021/6/28 Temperature: 24 °C
Site: RF-Cond01 Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 5ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n20 Duty-2 (Duty=94.6%)		

IEEE 802.11n HT40

File: 21-05-MAW-008_5-2n40_Ant1

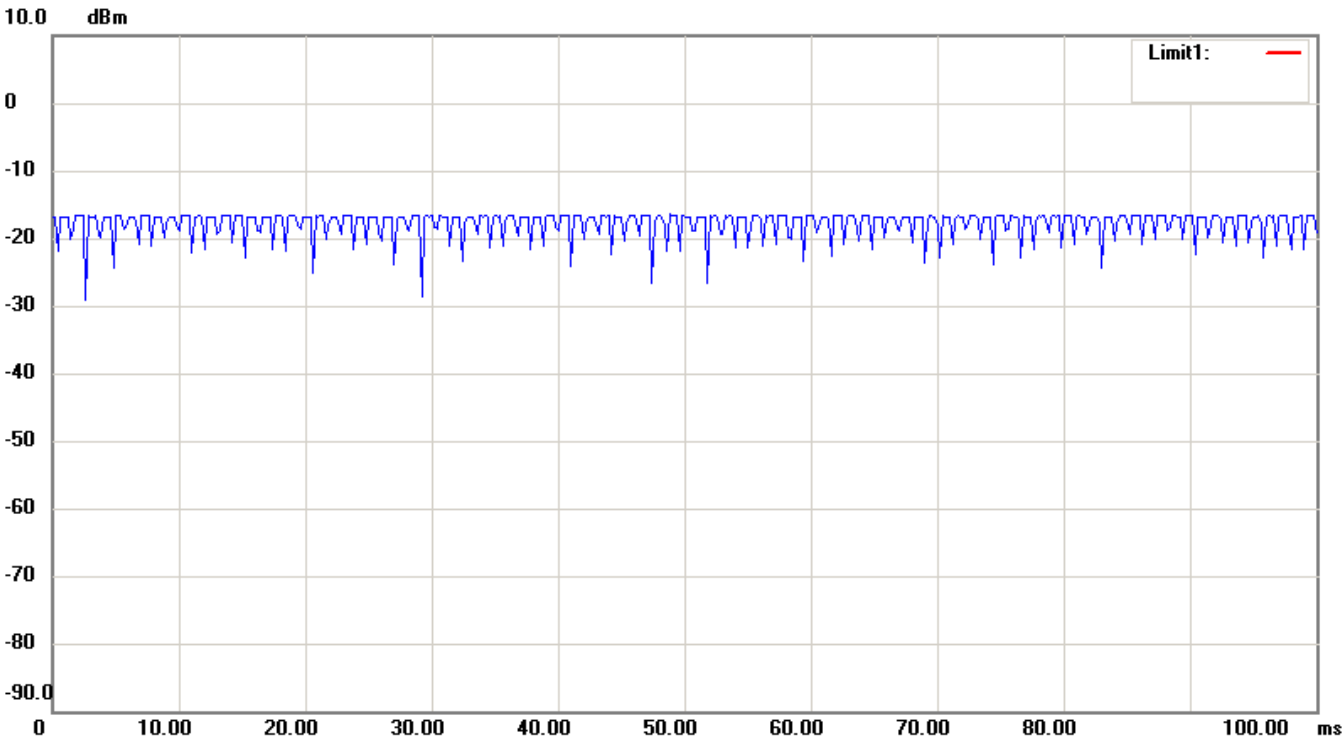
Site: RF-Cond01

#15

Date: 2021/6/28

Temperature: 24 °C

Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 100ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n40 Duty-1		

File: 21-05-MAW-008_5-2n40_Ant1

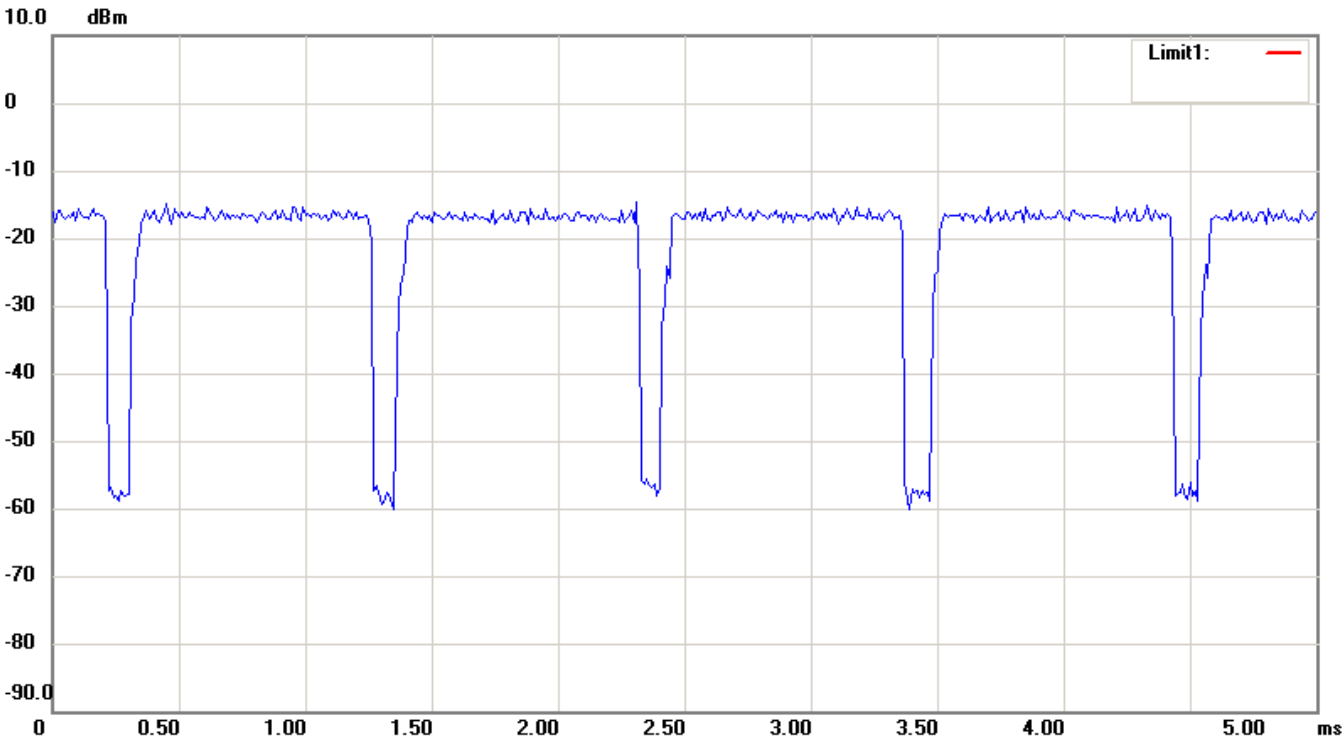
Site: RF-Cond01

#16

Date: 2021/6/28

Temperature: 24 °C

Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 5ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11n40 Duty-2 (Duty=85.0%)		

IEEE 802.11ac VHT80

File: 21-05-MAW-008_5-2ac80_Ant1

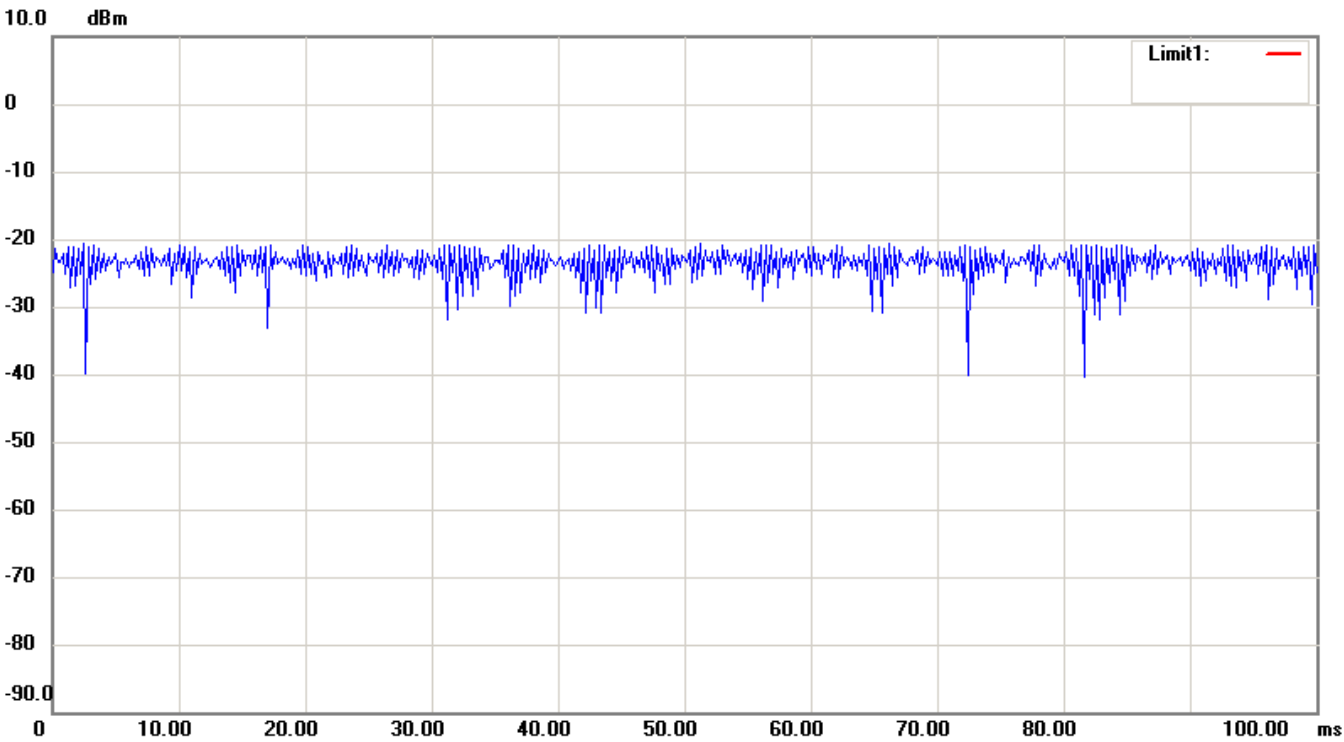
Site: RF-Cond01

#9

Date: 2021/6/28

Temperature: 24 °C

Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 100ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11ac80 Duty-1		

File: 21-05-MAW-008_5-2ac80_Ant1

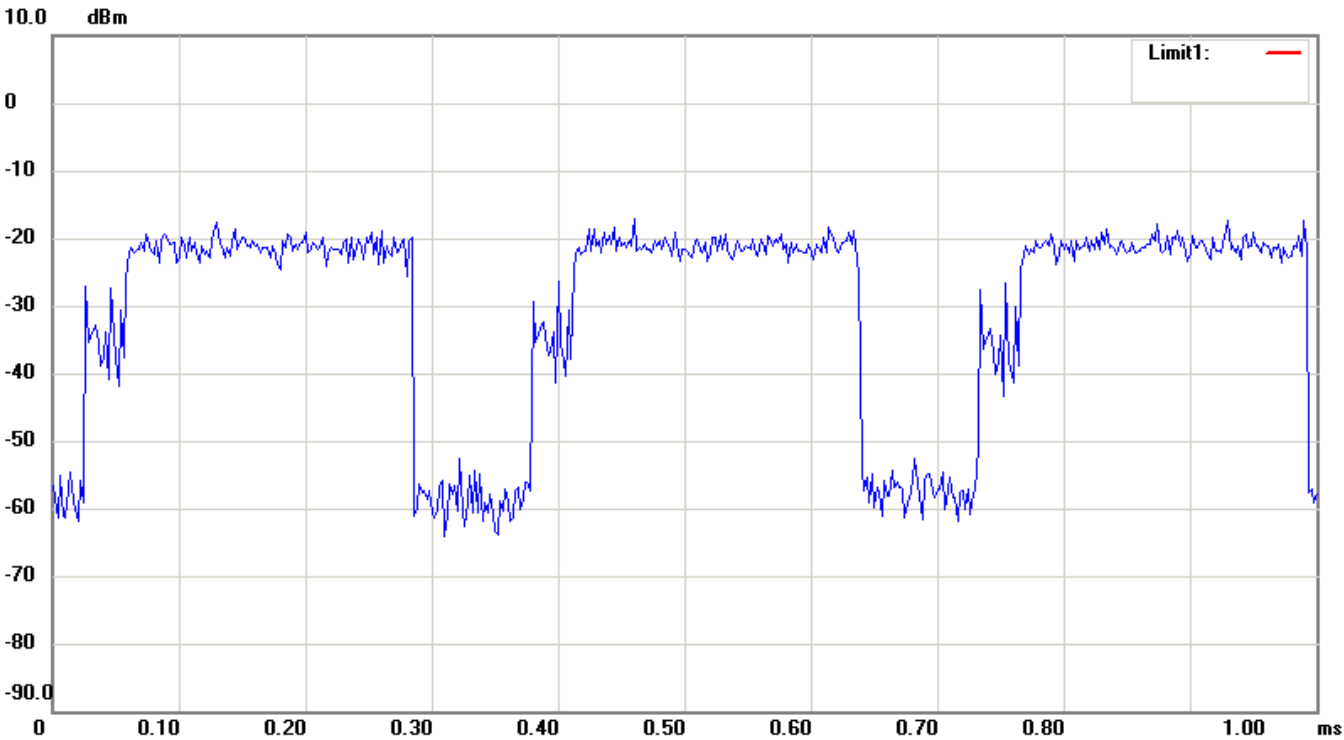
#10

Date: 2021/6/28

Temperature: 24 °C

Site: RF-Cond01

Humidity: 51 %



Condition:	UNII-Band1-2-Bandedge	RF Conducted	
EUT:	Cockpit Control Unit	Sweep Time: 1ms	Att.: 15dB
Model:	DNNS124	RBW: 1000 KHz	VBW: 3000 KHz
Test Mode:	UNII	Operator:	Phillip
Note:	NCC_LP0002_802.11ac80 Duty-2 (Duty=72.9%)		

4 電源線傳導干擾之量測

本產品僅使用電池供電，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

天線的規格不受國家通訊傳播委員會低功率射頻器材技術規範3.2節規定之限制，其發射天線之方向性增益超過6dBi時，應依其所超過之dB數等量降低峰值輸出功率。

如用於固定式點對點操作時，依法規5.7.3.3(3)供固定式點對點操作時，使用方向增益超過6 dBi 之發射天線，可不需對應減少發射器之傳導輸出功率限制值。

5.2 天線增益

此裝置使用內接固定式天線連接於主體內 PCB 板上，Antenna 1天線增益 0.02 dBi，Antenna 2天線增益 -5.26 dBi。

操作於MIMO模式下， $\text{Antenna1(CHAIN 0)} + \text{Antenna2(CHAIN 1)} = 0.79 \text{ dBi}$ ，天線之方向性增益低於 6 dBi。

5.3 結果判定

CHAIN 0 及 CHAIN 1 之方向性增益皆未超過 6 dBi，因此無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 0.79 dBi 低於6dBi，因此無需減少最大傳導輸出功率及功率密度之限制值。

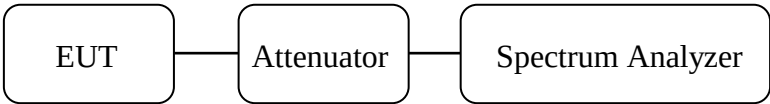
6 發射頻寬之要求

6.1 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5.7.5節之規定，6dB頻寬至少應有500 kHz。

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	廠 牌	型 號
Spectrum Analyzer	KEYSIGHT	N9030B
Spectrum Analyzer	R&S	FSV40
Attenuator	WEINSCHEL	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: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

Channel	6dB Bndwidth (MHz)	NCC Limit (kHz)	Chart
L	15.3	500	Page 24
M	15.5	500	Page 25
H	15.4	500	Page 26

註：繪圖資料請參考第 24-26 頁。

File: 21-05-MAW-008_5-8a_Ant1

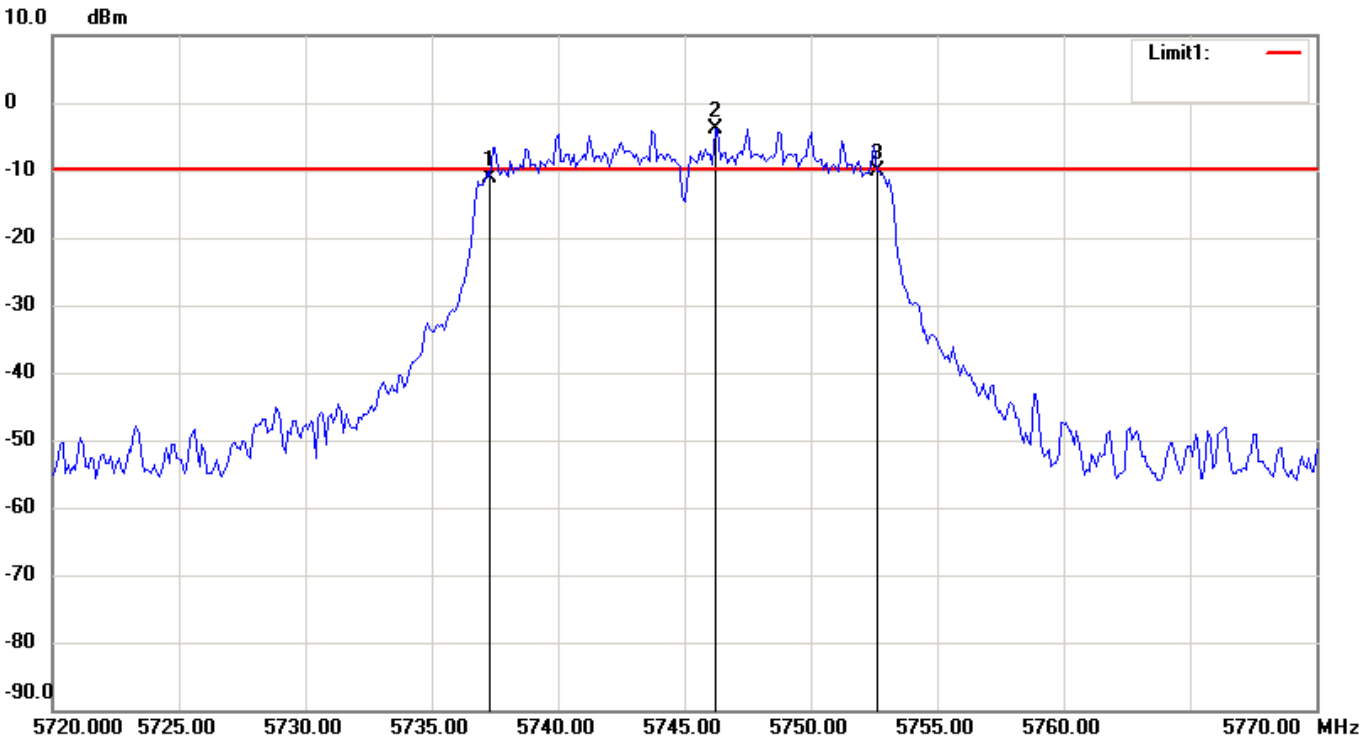
#2

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -9.75dBm

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 1.08ms

Att.: 15dB

Model: DNNS124

RBW: 100 KHz

VBW: 300 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11a Channel 149_-6dB MIN EBW

No.	Frequency(MHz)	Level(dBm)
1	5737.30000	-11.20
2	5746.20000	-3.75
3	5752.60000	-10.18

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.3	1.02

File: 21-05-MAW-008_5-8a_Ant1

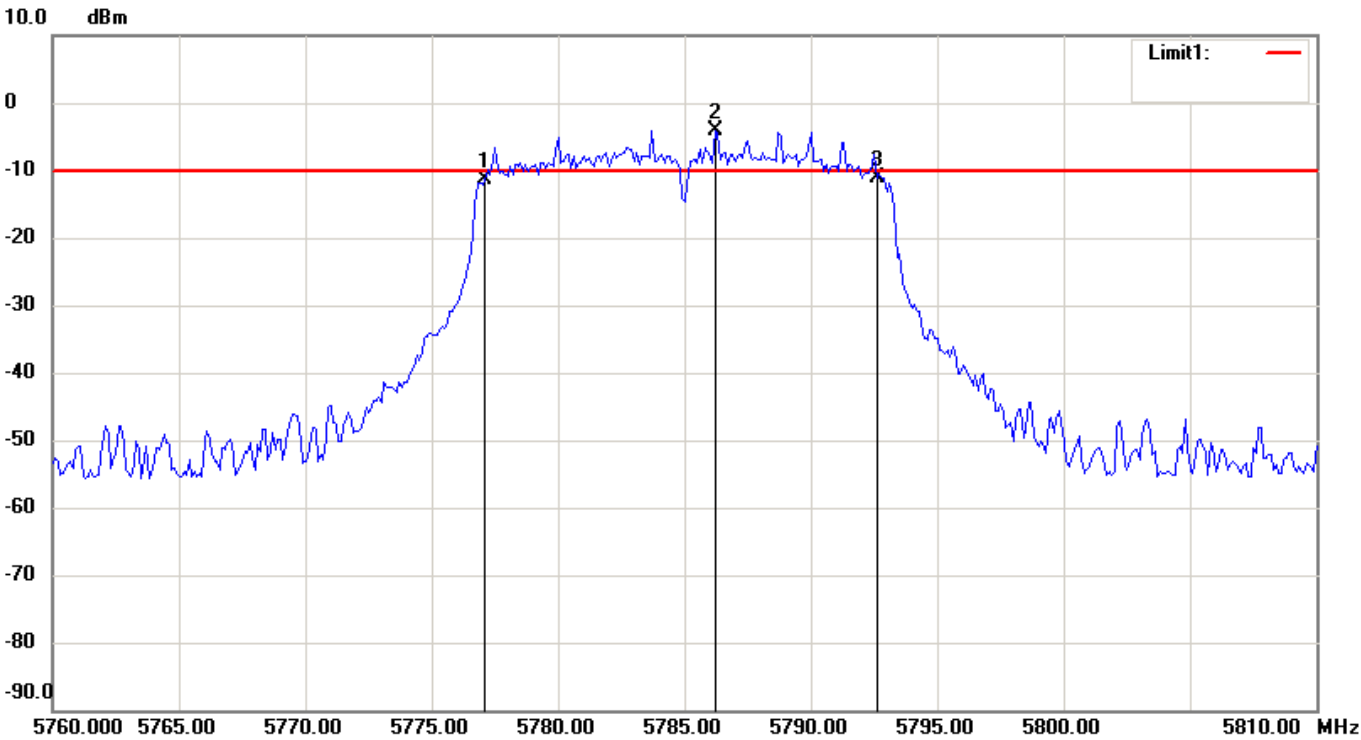
#10

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -10.13dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a Channel 157_-6dB MIN EBW

RF Conducted

Sweep Time: 1.08ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5777.10000	-11.40
2	5786.20000	-4.13
3	5792.60000	-11.01

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.5	0.39

File: 21-05-MAW-008_5-8a_Ant1

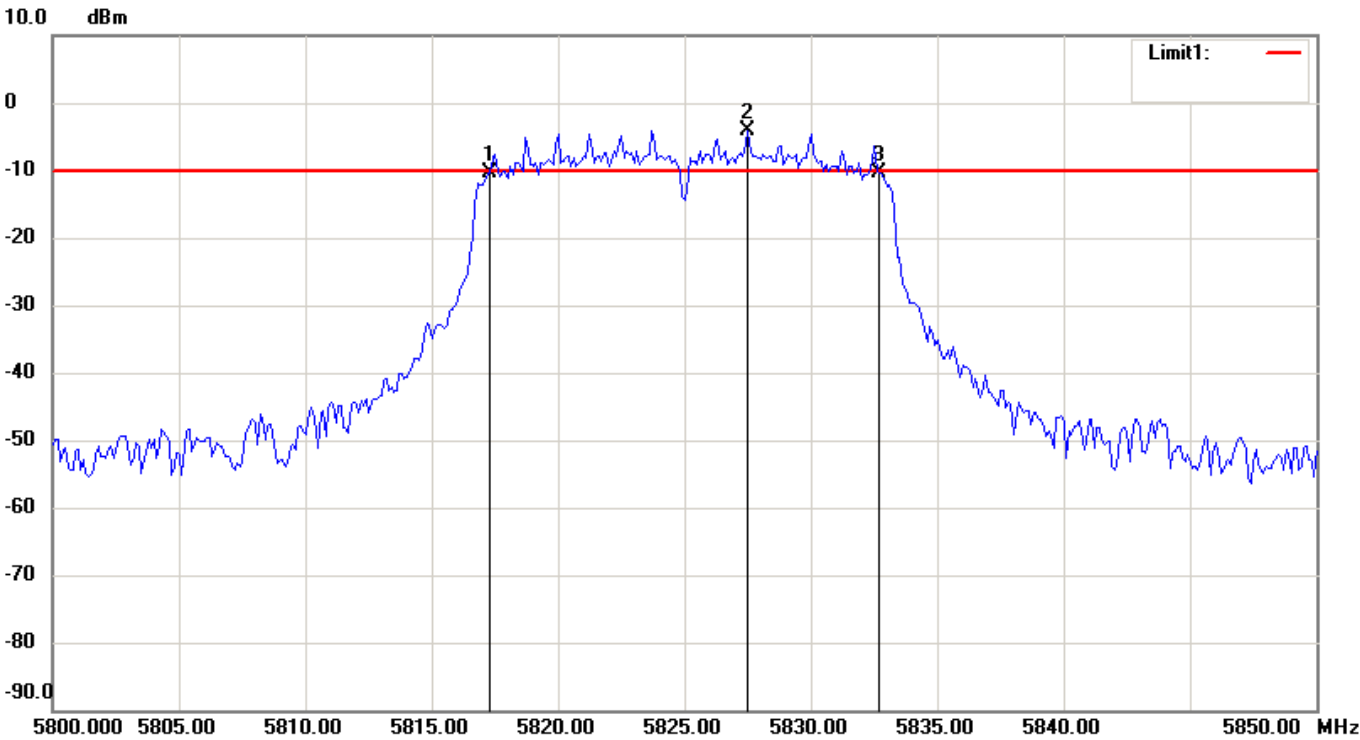
#17

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -10.08dBm

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 1.08ms Att.: 15dB

Model: DNNS124

RBW: 100 KHz VBW: 300 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11a Channel 165_-6dB MIN EBW

No.	Frequency(MHz)	Level(dBm)
1	5817.30000	-10.49
2	5827.50000	-4.08
3	5832.70000	-10.33

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.4	0.16

6.4.2 調變技術: IEEE 802.11n HT20

6.4.2.1 CHAIN 0

測試日期: Jun. 29, 2021 環境溫度: 23℃ 環境濕度: 60%

Channel	6dB Bndwidth (MHz)	NCC Limit (kHz)	Chart
L	15.3	500	Page 28
M	15.4	500	Page 29
H	15.4	500	Page 30

註：繪圖資料請參考第 28-30 頁。

File: 21-05-MAW-008_5-8n20_Ant1

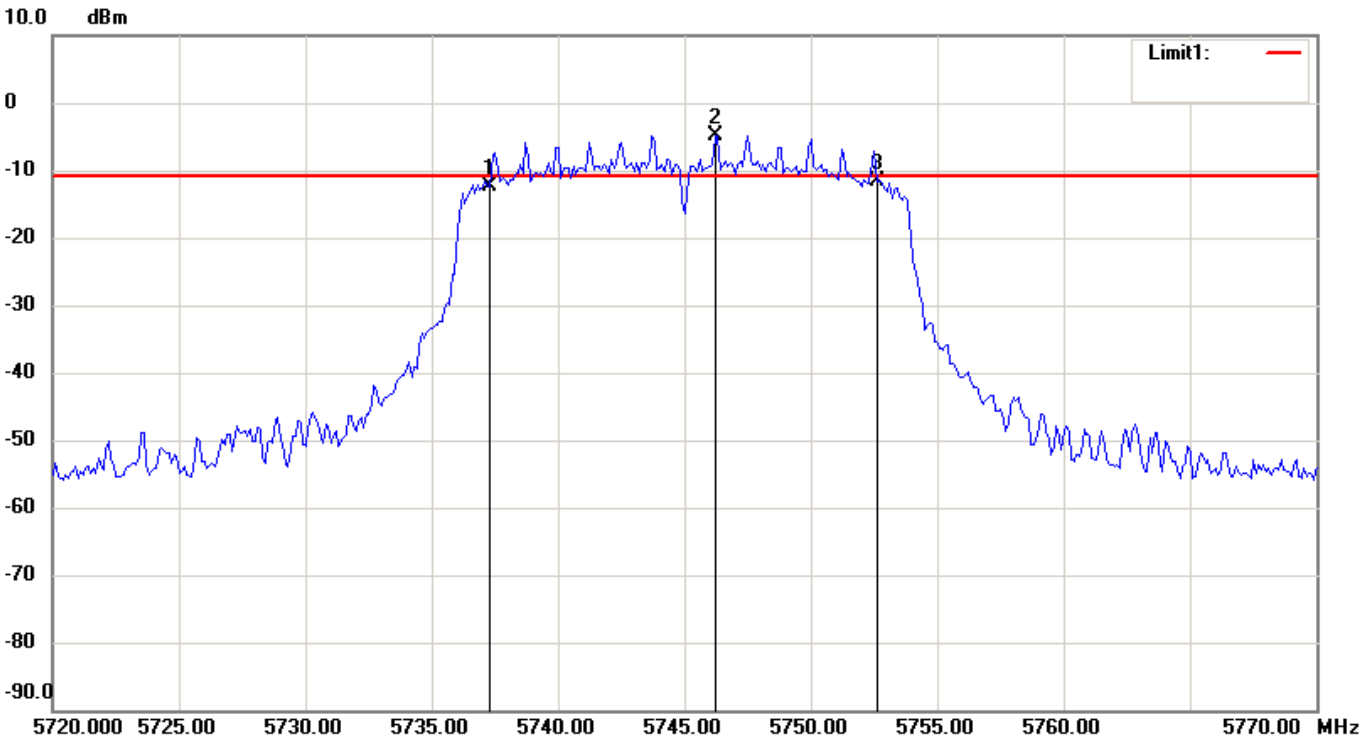
#2

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -10.81dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 149_-6dB MIN EBW

RF Conducted

Sweep Time: 1.08ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5737.30000	-12.45
2	5746.20000	-4.81
3	5752.60000	-11.54

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.3	0.91

File: 21-05-MAW-008_5-8n20_Ant1

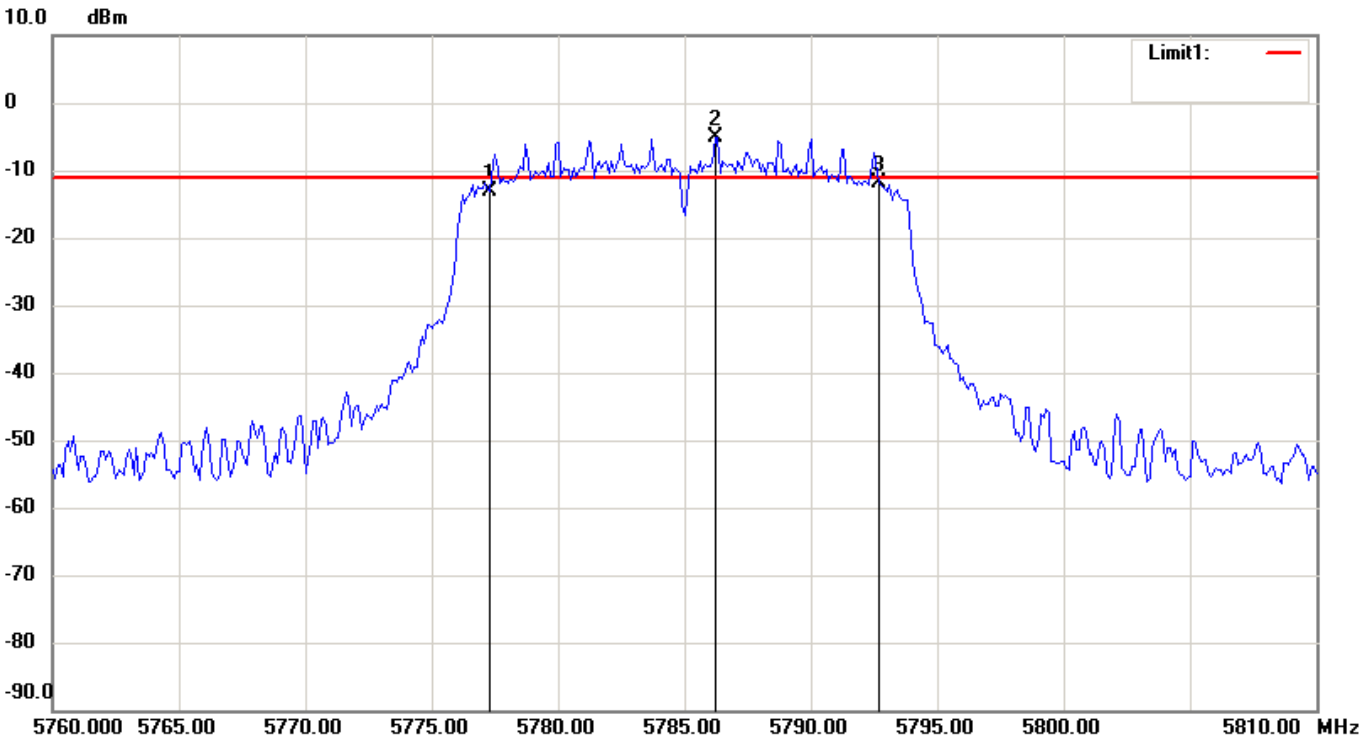
#10

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -11.01dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 157_-6dB MIN EBW

RF Conducted

Sweep Time: 1.08ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5777.30000	-13.05
2	5786.20000	-5.01
3	5792.70000	-11.90

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.4	1.15

File: 21-05-MAW-008_5-8n20_Ant1

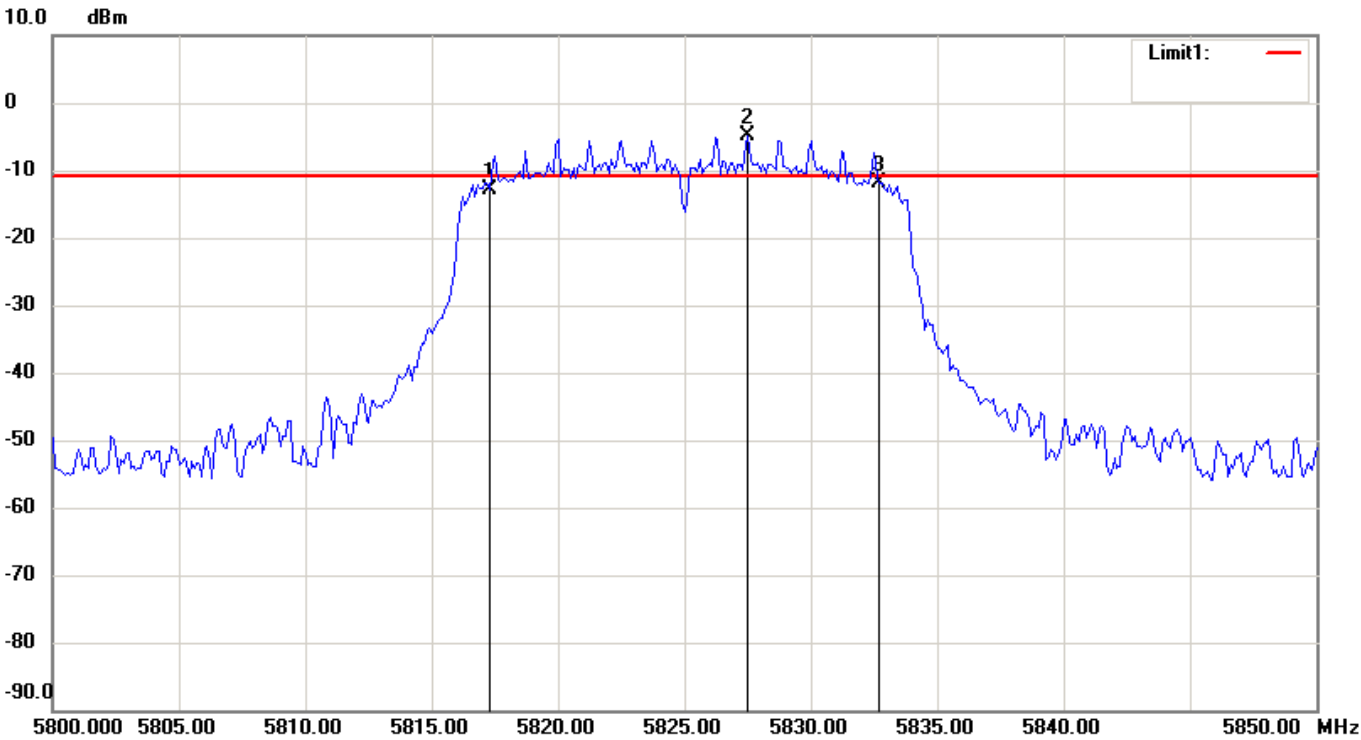
#17

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -10.98dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 165_-6dB MIN EBW

RF Conducted

Sweep Time: 1.08ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5817.30000	-12.83
2	5827.50000	-4.98
3	5832.70000	-11.86

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.4	0.97

6.4.2.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23℃ 環境濕度: 60%

Channel	6dB Bndwidth (MHz)	NCC Limit (kHz)	Chart
L	15.3	500	Page 32
M	15.4	500	Page 33
H	15.4	500	Page 34

註：繪圖資料請參考第 32-34 頁。

File: 21-05-MAW-008_5-8n20_Ant2

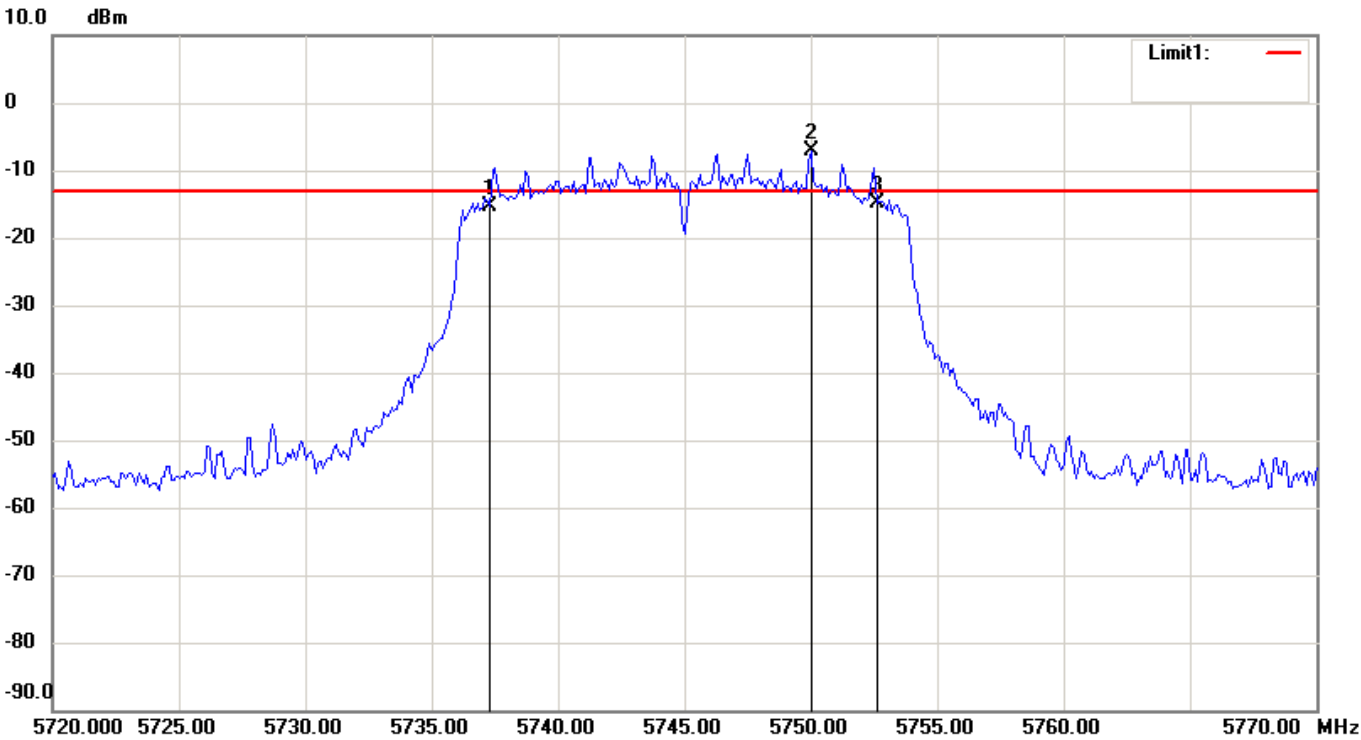
#25

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -13.11dBm

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 1.08ms

Att.: 15dB

Model: DNNS124

RBW: 100 KHz

VBW: 300 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11n20 Channel 149_-6dB MIN EBW

No.	Frequency(MHz)	Level(dBm)
1	5737.30000	-15.25
2	5750.00000	-7.11
3	5752.60000	-14.81

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.3	0.44

File: 21-05-MAW-008_5-8n20_Ant2

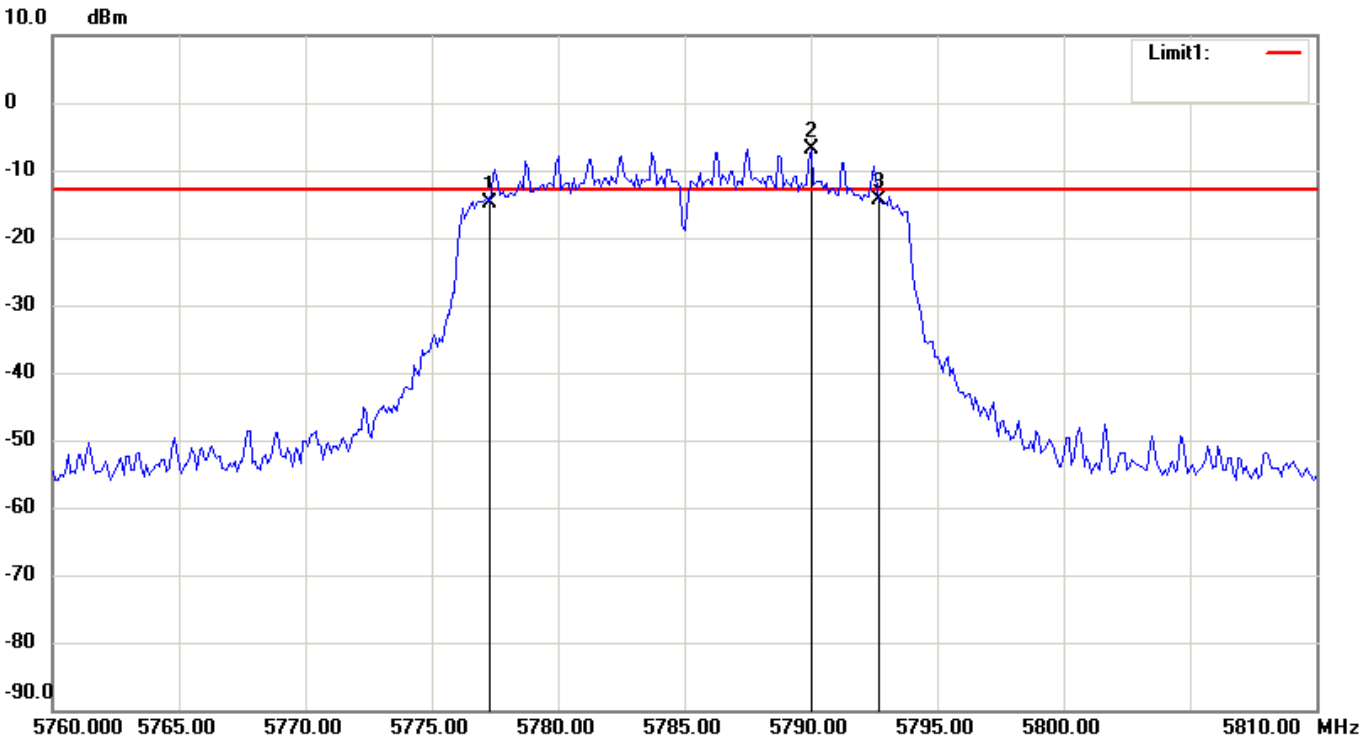
Site: RF-Cond01

#33

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: -12.91dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 157_-6dB MIN EBW

RF Conducted

Sweep Time: 1.08ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5777.30000	-14.75
2	5790.00000	-6.91
3	5792.70000	-14.36

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.4	0.39

File: 21-05-MAW-008_5-8n20_Ant2

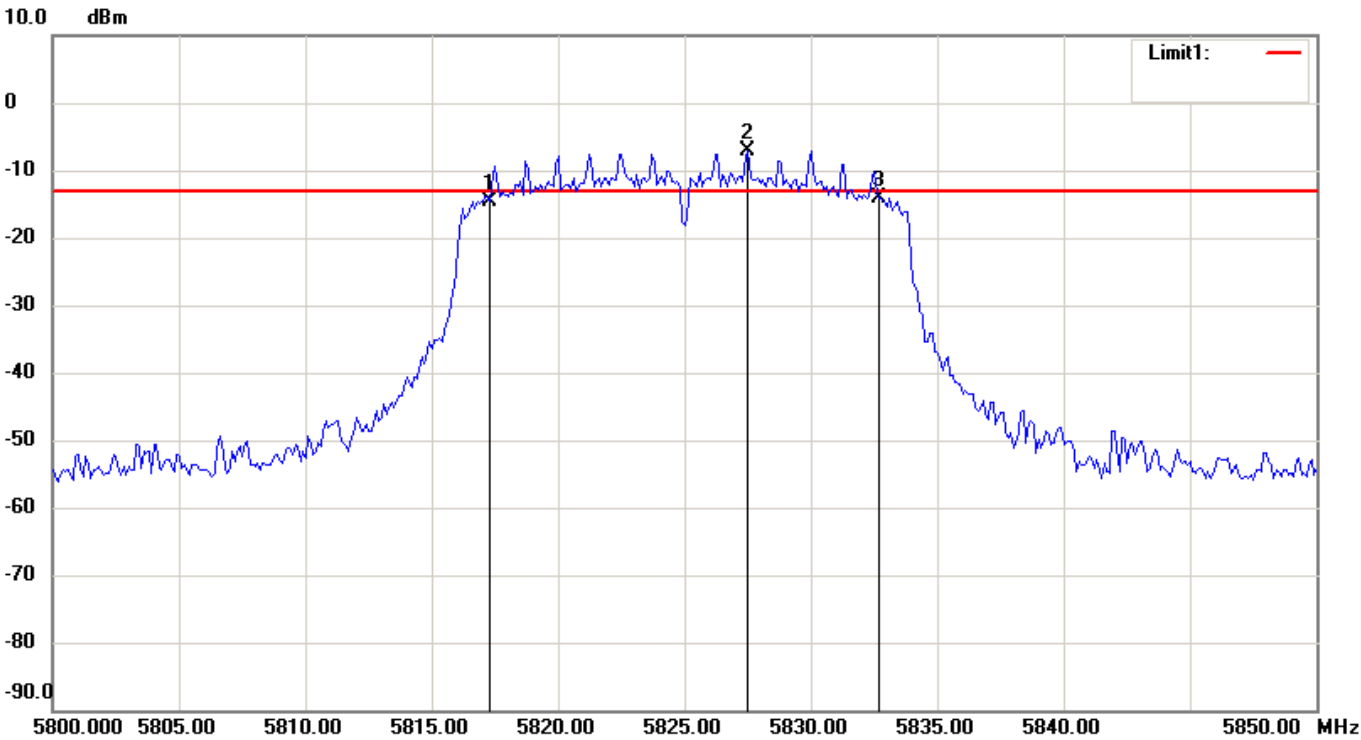
#40

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -13.07dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 165_-6dB MIN EBW

RF Conducted

Sweep Time: 1.08ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5817.30000	-14.51
2	5827.50000	-7.07
3	5832.70000	-14.11

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	15.4	0.4

6.4.3 調變技術: IEEE 802.11n HT40

6.4.3.1 CHAIN 0

測試日期: Jun. 29, 2021 環境溫度: 23℃ 環境濕度: 60%

Channel	6dB Bndwidth (MHz)	NCC Limit (kHz)	Chart
L	35.6	500	Page 36
H	35.6	500	Page 37

註：繪圖資料請參考第 36-37 頁。

File: 21-05-MAW-008_5-8n40_Ant1

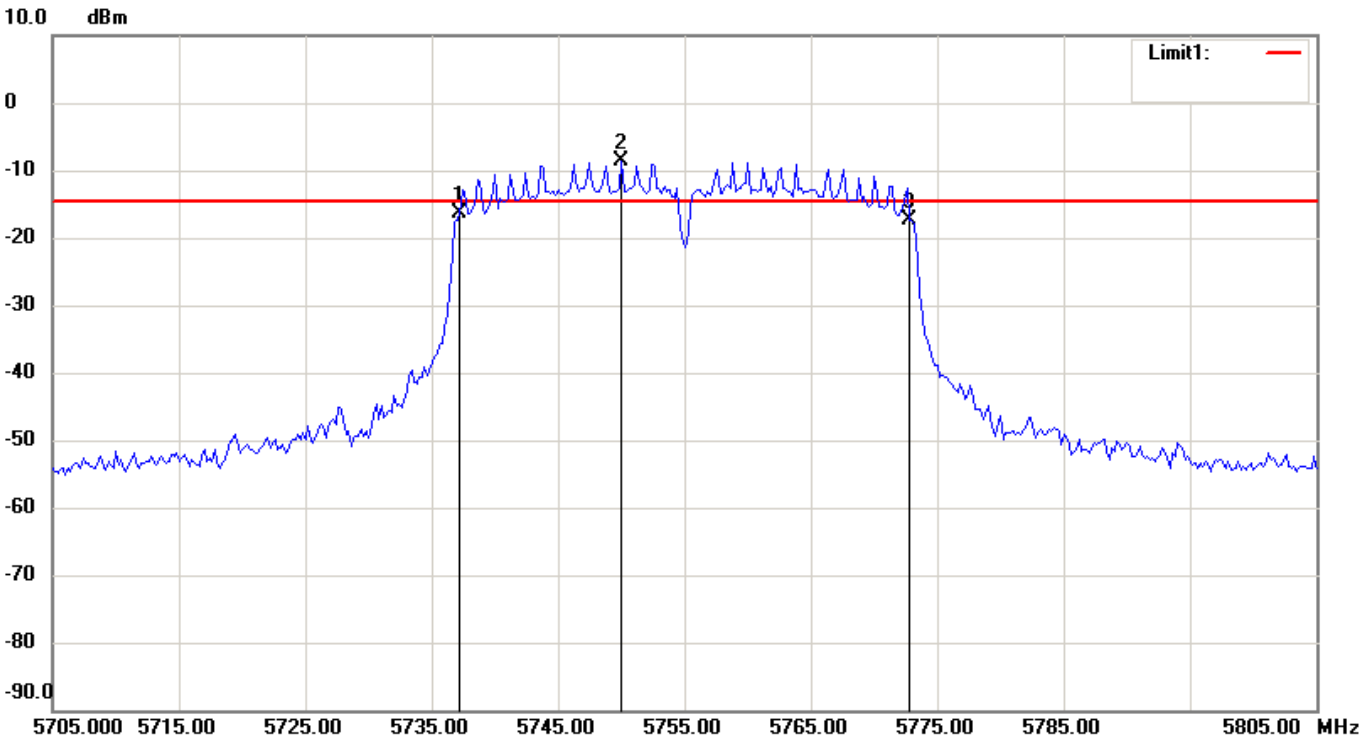
#2

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -14.6dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 151_-6dB EBW

RF Conducted

Sweep Time: 1ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5737.20000	-16.31
2	5750.00000	-8.60
3	5772.80000	-17.46

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	35.6	-1.15

File: 21-05-MAW-008_5-8n40_Ant1

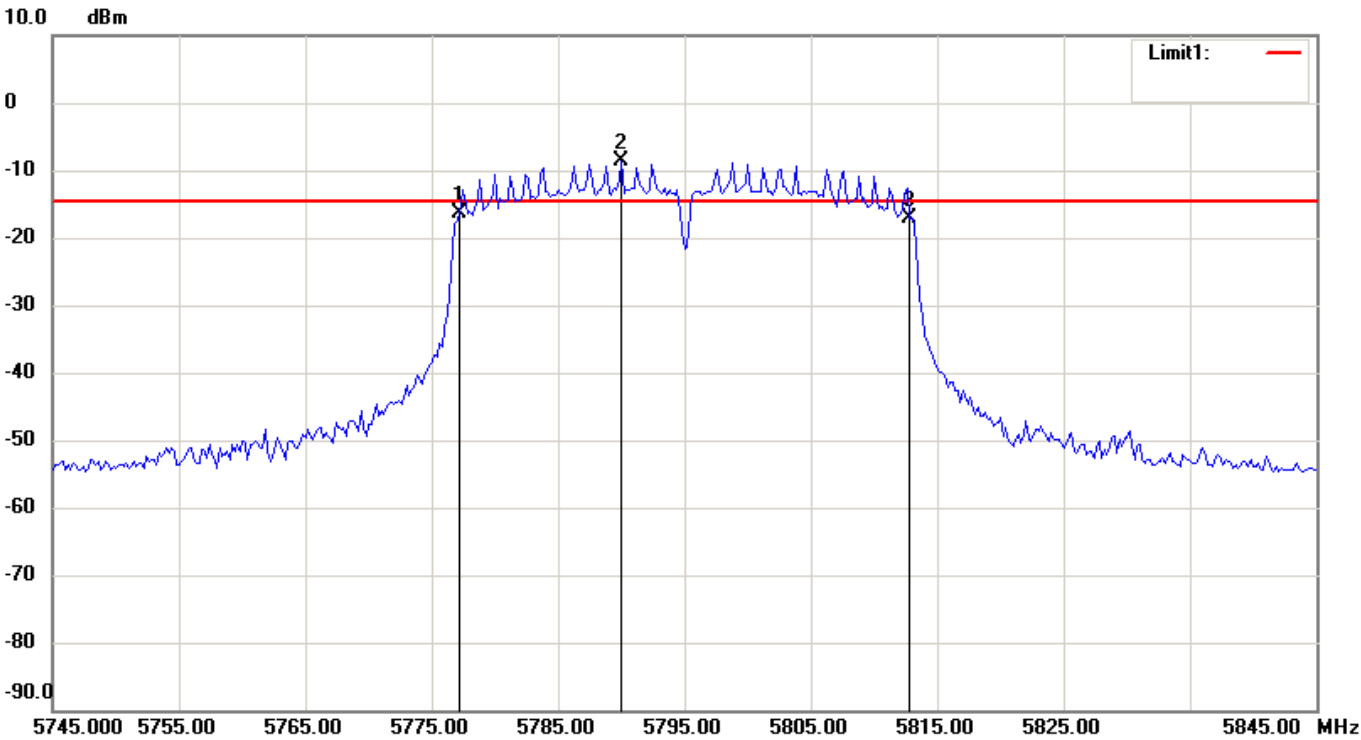
#10

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -14.74dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 159_-6dB EBW

RF Conducted

Sweep Time: 1ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5777.20000	-16.33
2	5790.00000	-8.74
3	5812.80000	-17.02

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	35.6	-0.69

6.4.3.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23℃ 環境濕度: 60%

Channel	6dB Bndwidth (MHz)	NCC Limit (kHz)	Chart
L	35.6	500	Page 39
H	35.6	500	Page 40

註：繪圖資料請參考第 39-40 頁。

File: 21-05-MAW-008_5-8n40_Ant2

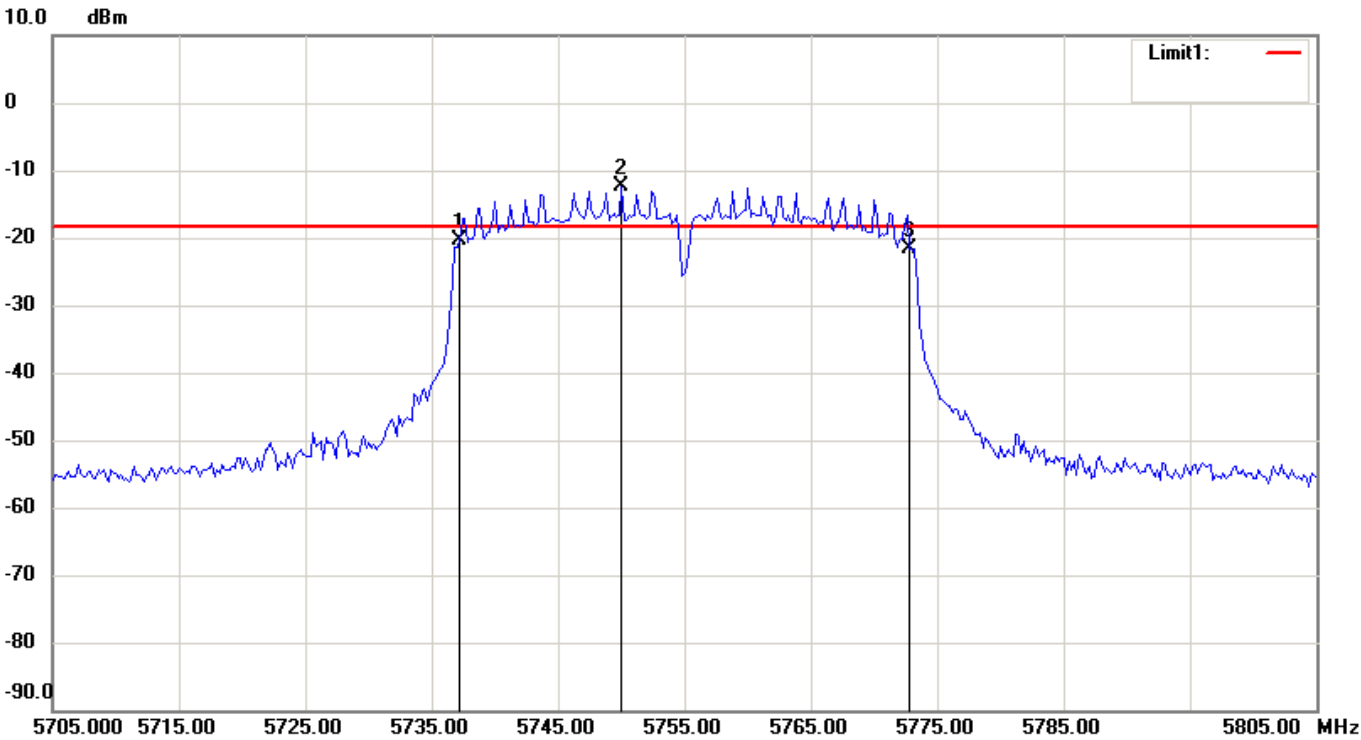
Site: RF-Cond01

#18

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: -18.35dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 151_-6dB EBW

RF Conducted

Sweep Time: 1ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5737.20000	-20.46
2	5750.00000	-12.35
3	5772.80000	-21.66

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	35.6	-1.2

File: 21-05-MAW-008_5-8n40_Ant2

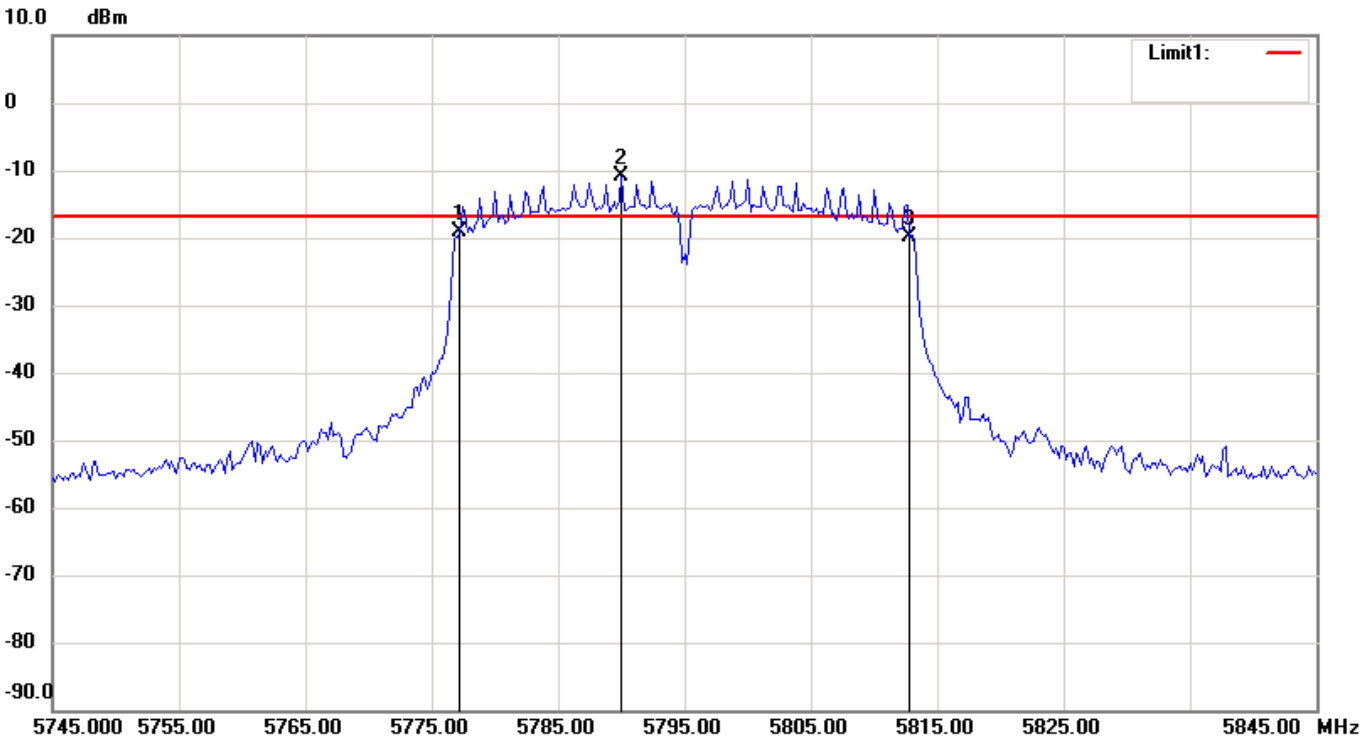
#26

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -16.82dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 159_-6dB EBW

RF Conducted

Sweep Time: 1ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5777.20000	-19.01
2	5790.00000	-10.82
3	5812.80000	-19.81

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	35.6	-0.8

6.4.4 調變技術:IEEE 802.11ac VHT80

6.4.4.1 CHAIN 0

測試日期: Jun. 29, 2021 環境溫度: 23℃ 環境濕度: 60%

Channel	6dB Bndwidth (MHz)	NCC Limit (kHz)	Chart
L	76.0	500	Page 42

註：繪圖資料請參考第 42 頁。

File: 21-05-MAW-008_5-8ac80_Ant1

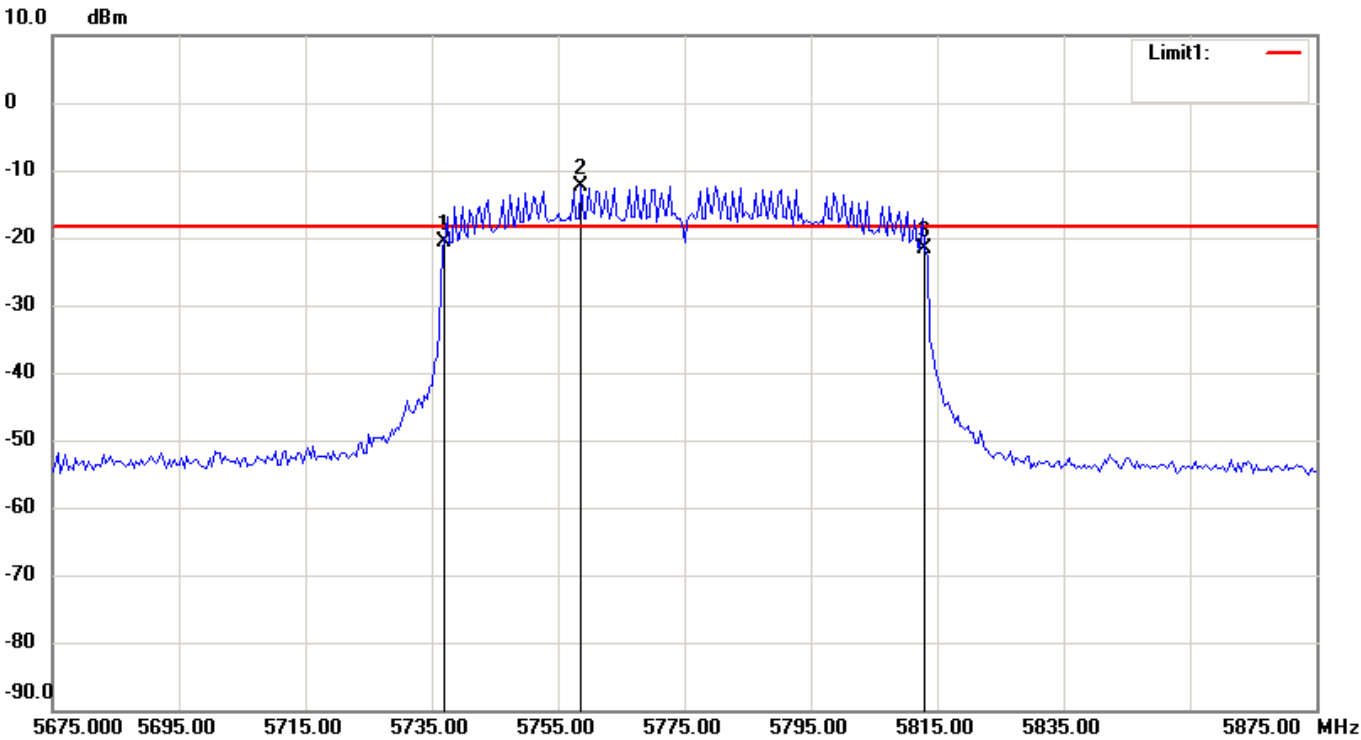
#2

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -18.28dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80 Channel 155_-6dB EBW

RF Conducted

Sweep Time: 2ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5737.00000	-20.71
2	5758.60000	-12.28
3	5813.00000	-21.62

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	76	-0.91

6.4.4.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23℃ 環境濕度: 60%

Channel	6dB Bndwidth (MHz)	NCC Limit (kHz)	Chart
L	76.0	500	Page 44

註：繪圖資料請參考第 44 頁。

6.5 結果判定

高、中、低頻段的 6dB 頻寬皆大於 500KHz。

File: 21-05-MAW-008_5-8ac80_Ant2

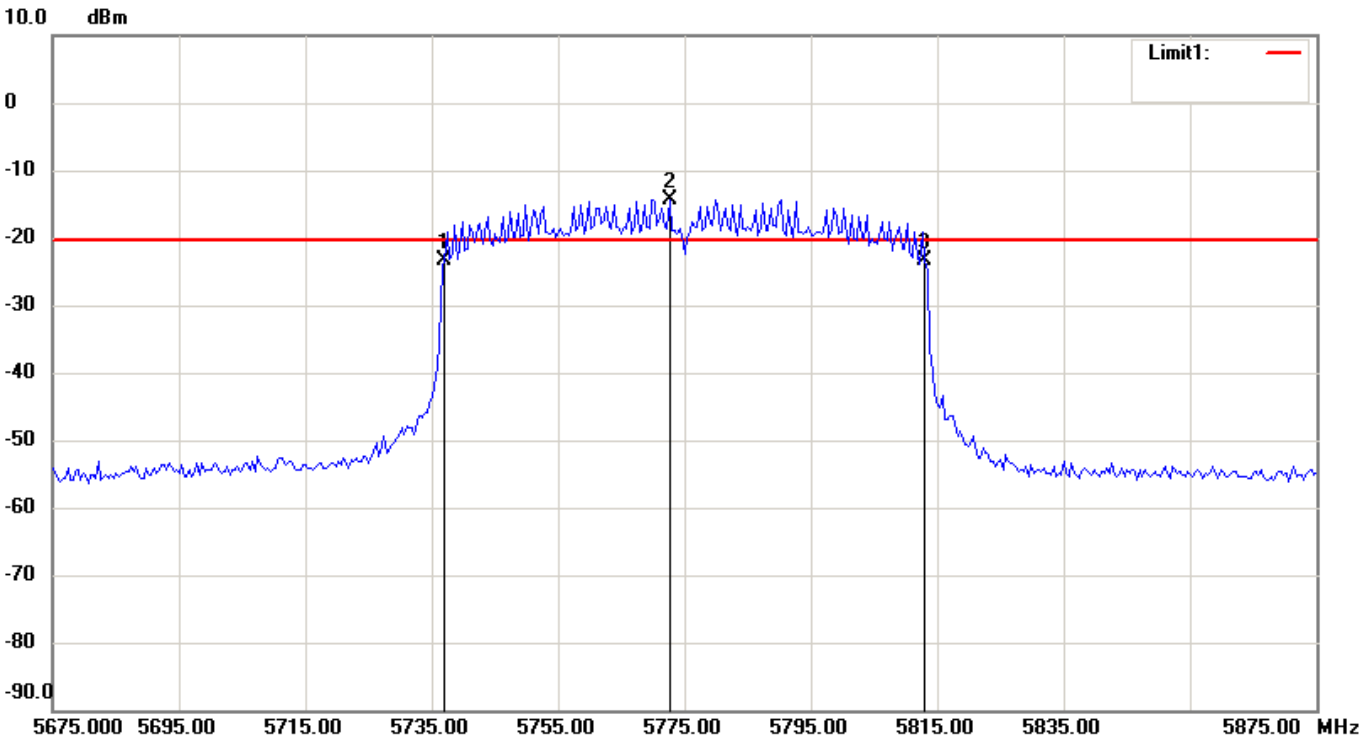
#2

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: -20.29dBm

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80 Channel 155_-6dB EBW

RF Conducted

Sweep Time: 2ms

RBW: 100 KHz

Operator:

Att.: 15dB

VBW: 300 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5737.00000	-23.48
2	5772.60000	-14.29
3	5813.00000	-23.38

No.		Δ Frequency(MHz)	Δ Level(dB)
1	mk3-mk1	76	0.1

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5.7.3.3節(1)之規定，最大傳導輸出功率應小於或等於1 W。

如用於固定式點對點操作時，依法規5.7.3.3(3)供固定式點對點操作時，使用方向增益超過6 dBi 之發射天線，可不需對應減少發射器之傳導輸出功率限制值。

依法規5.7.3.3 (4) 除(3)外，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。

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	廠 牌	型 號
Spectrum Analyzer	KEYSIGHT	N9030B
Spectrum Analyzer	R&S	FSV40
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

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 0.02 dBi，NCC Limit 如下表所示：

Channel	Maximum Output Power (dBm)	NCC Limit (dBm)	Chart
L	6.44	30	Page 47
M	6.27	30	Page 48
H	6.21	30	Page 49

註：1. 繪圖資料請參考第 47-49 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8a_Ant1

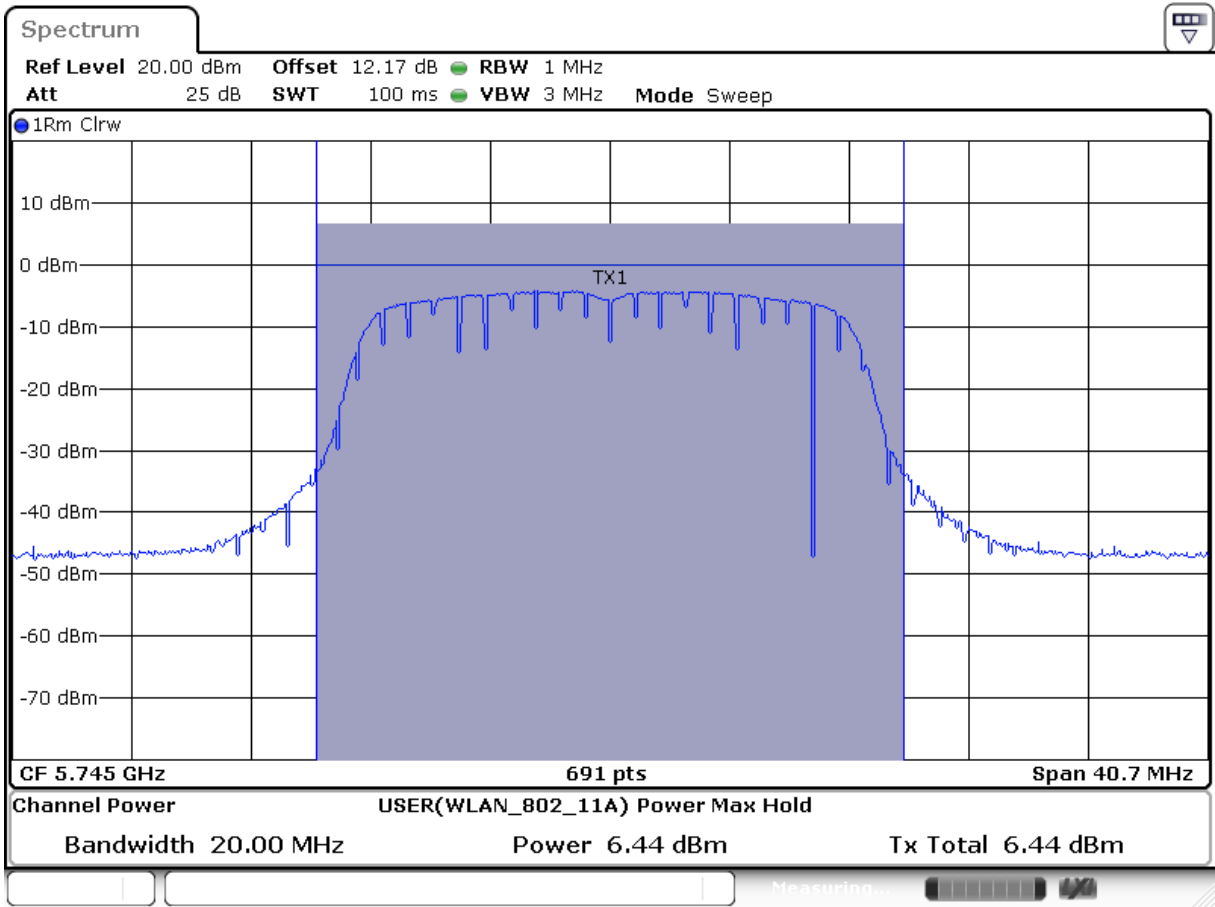
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11a_Channel 149_Output power	

File: 21-05-MAW-008_5-8a_Ant1

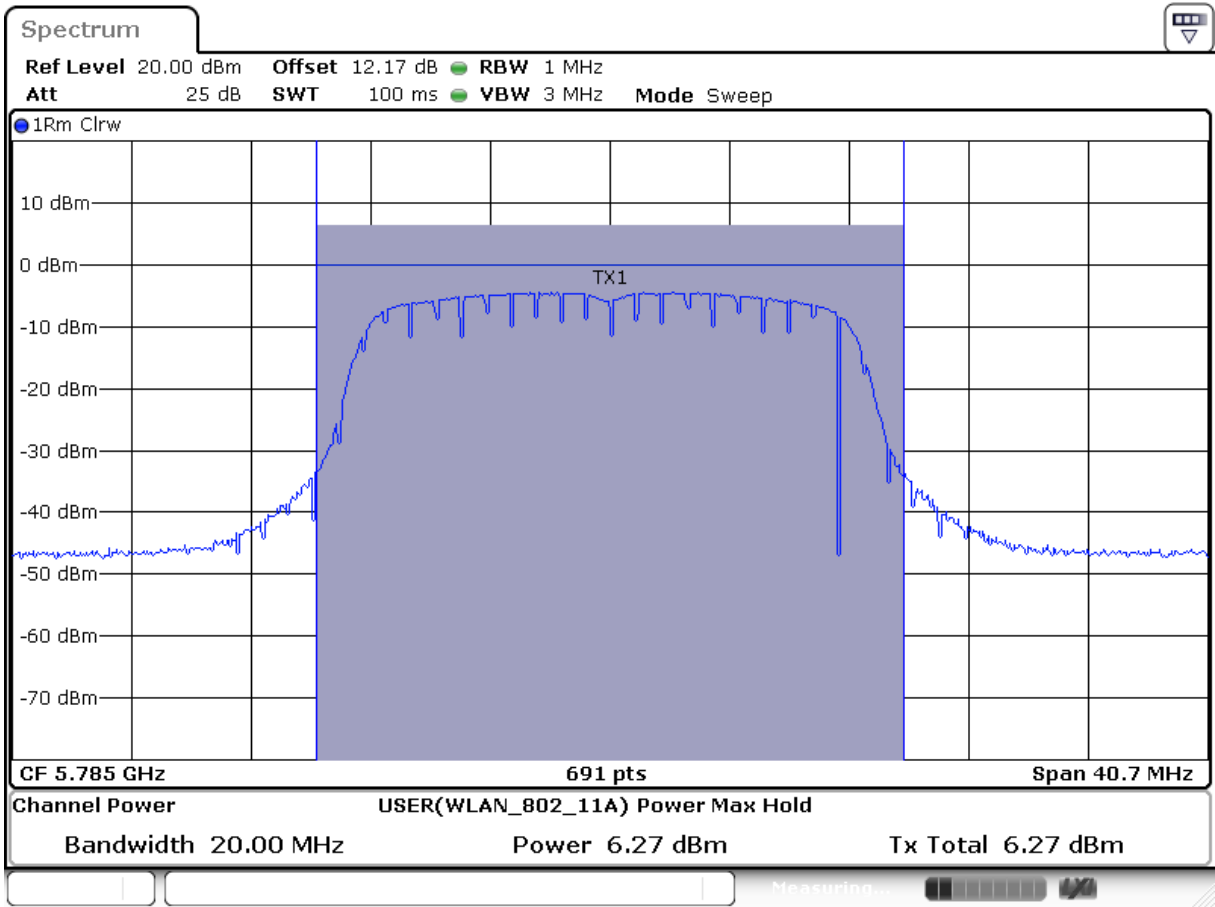
Site: RF-Cond01

#9

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11a_Channel 157_Output power	

File: 21-05-MAW-008_5-8a_Ant1

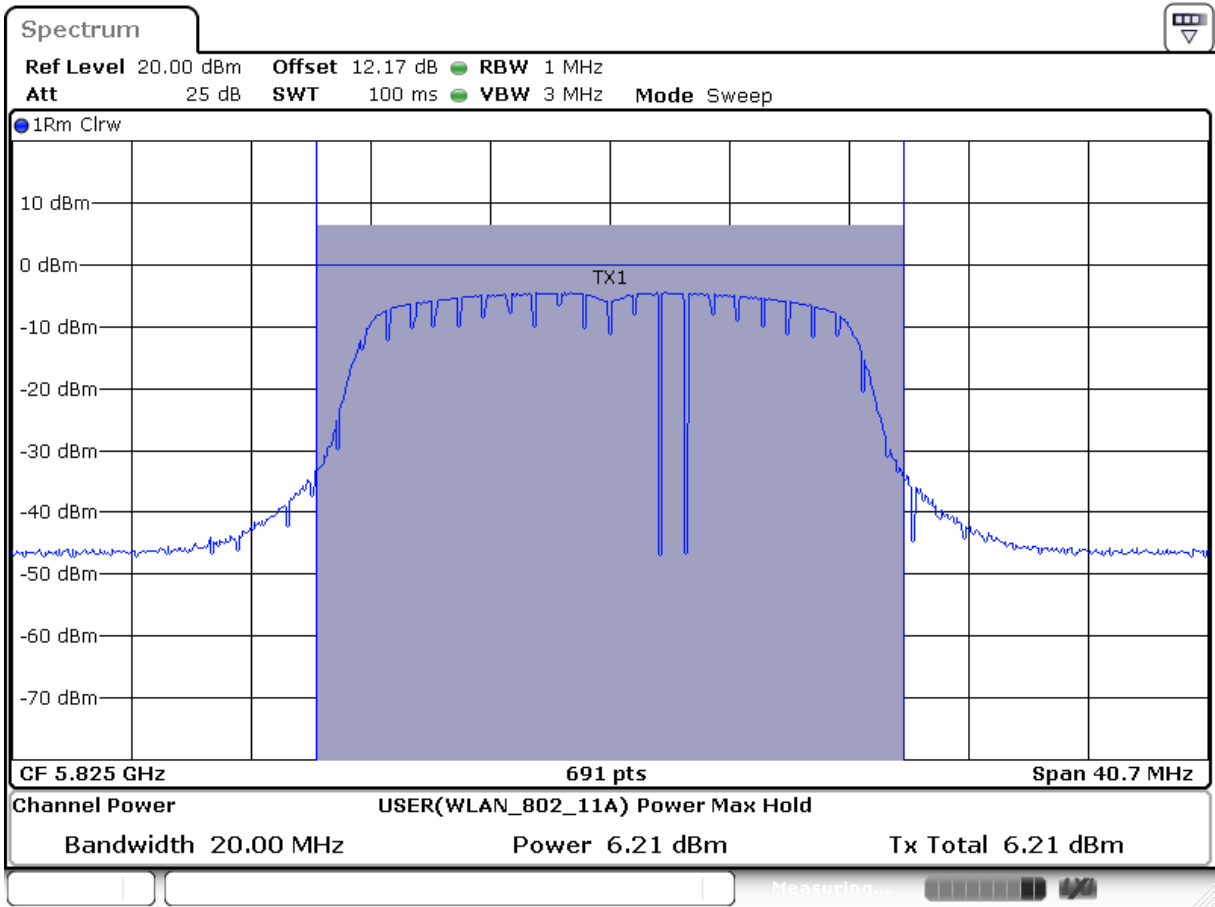
#16

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11a_Channel 165_Output power	

7.4.2 調變技術: IEEE 802.11n HT20

7.4.2.1 CHAIN 0

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 0.02 dBi，NCC Limit 如下表所示：

Channel	Maximum Output Power (dBm)	NCC Limit (dBm)	Chart
L	5.14	30	Page 51
M	5.06	30	Page 52
H	5.01	30	Page 53

註：1. 繪圖資料請參考第 51-53 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8n20_Ant1

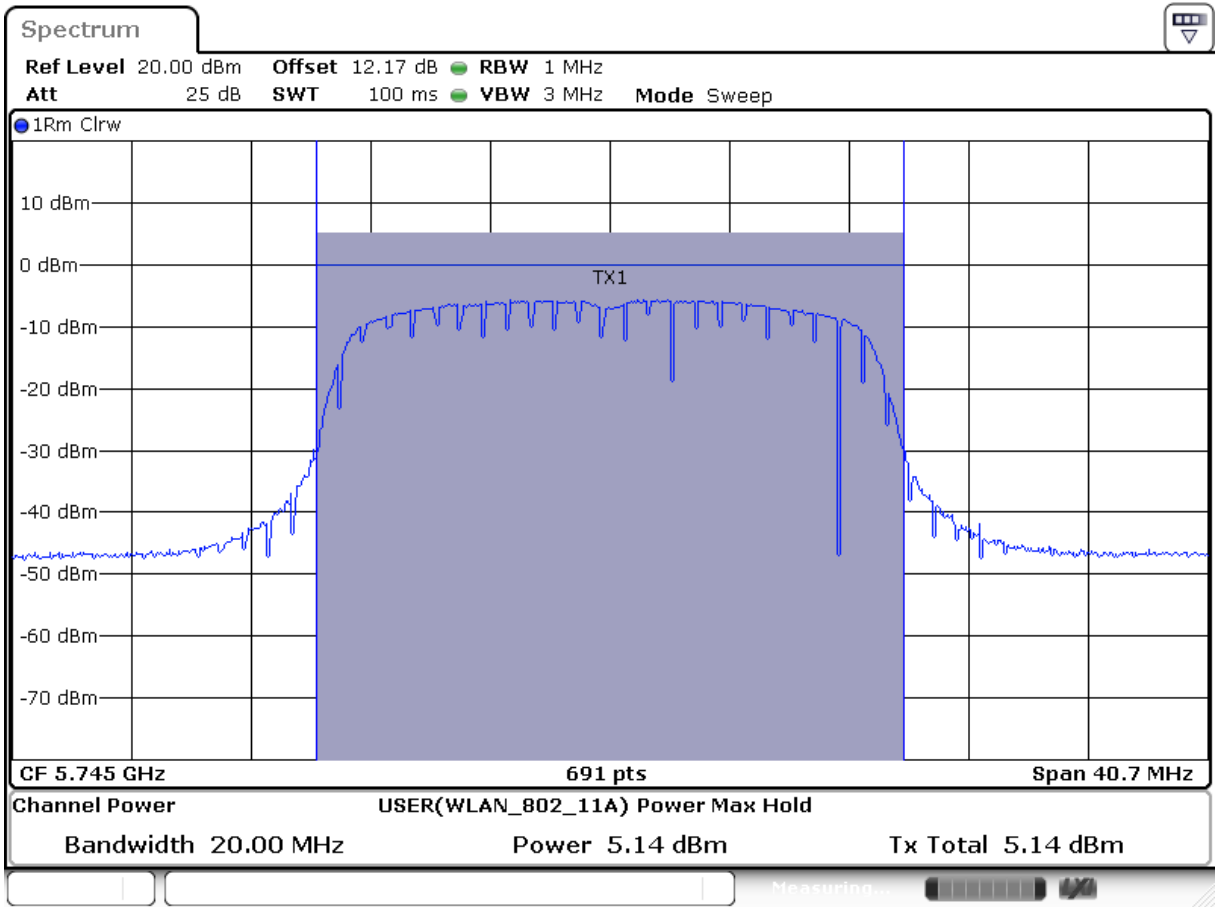
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11n20_Channel 149_Output power	

File: 21-05-MAW-008_5-8n20_Ant1

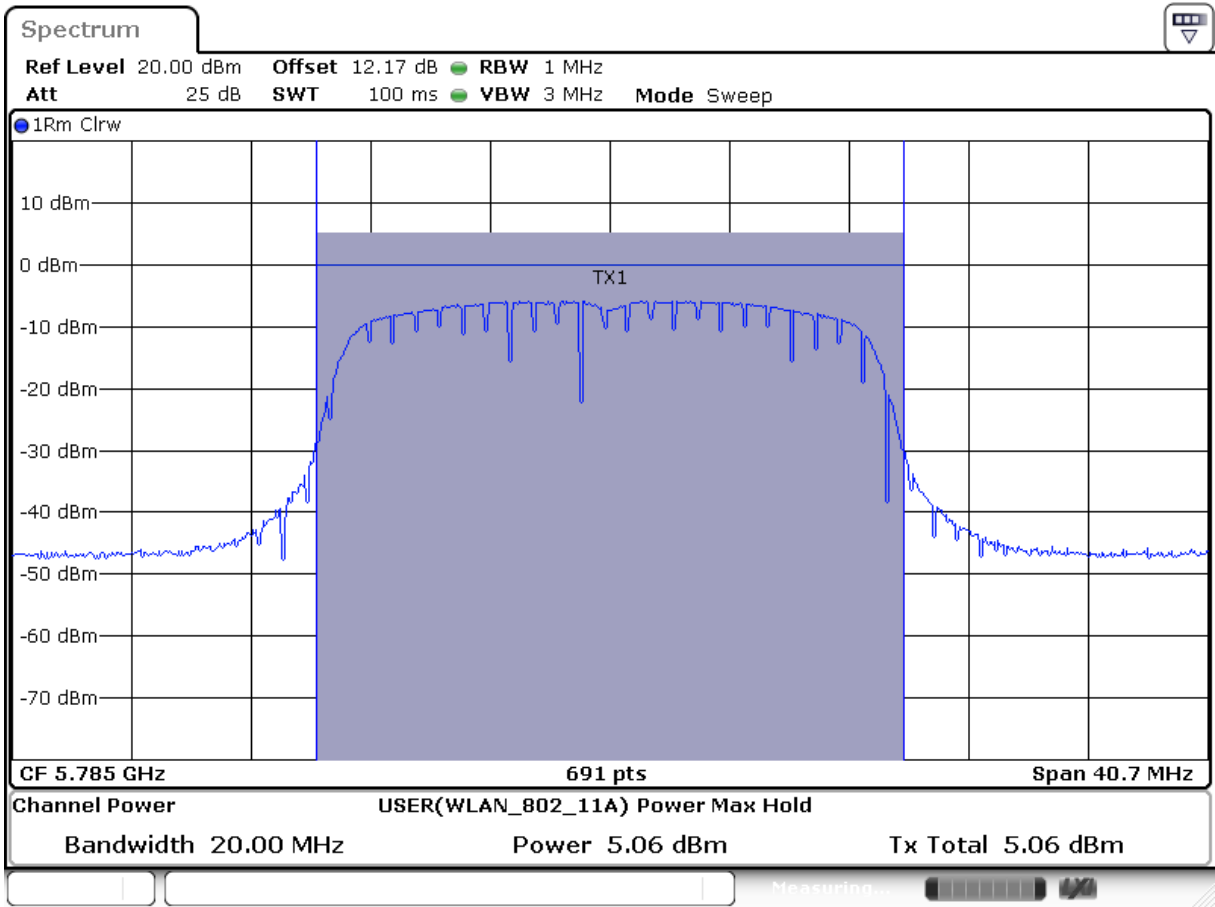
Site: RF-Cond01

#9

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11n20_Channel 157_Output power	

File: 21-05-MAW-008_5-8n20_Ant1

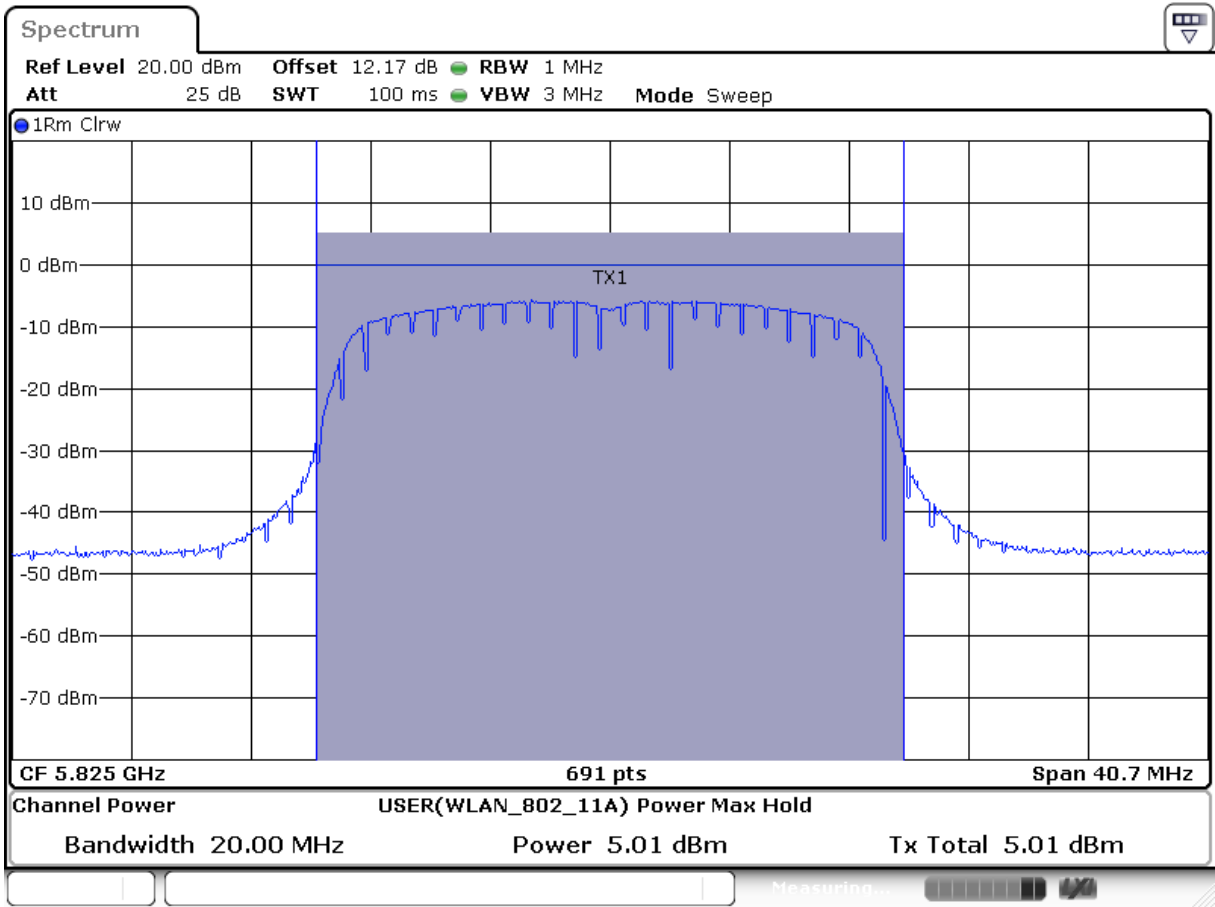
#16

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11n20_Channel 165_Output power	

7.4.2.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Maximum Output Power (dBm)	NCC Limit (dBm)	Chart
L	2.66	30	Page 55
M	3.04	30	Page 56
H	2.93	30	Page 57

註：1. 繪圖資料請參考第 55-57 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8n20_Ant2

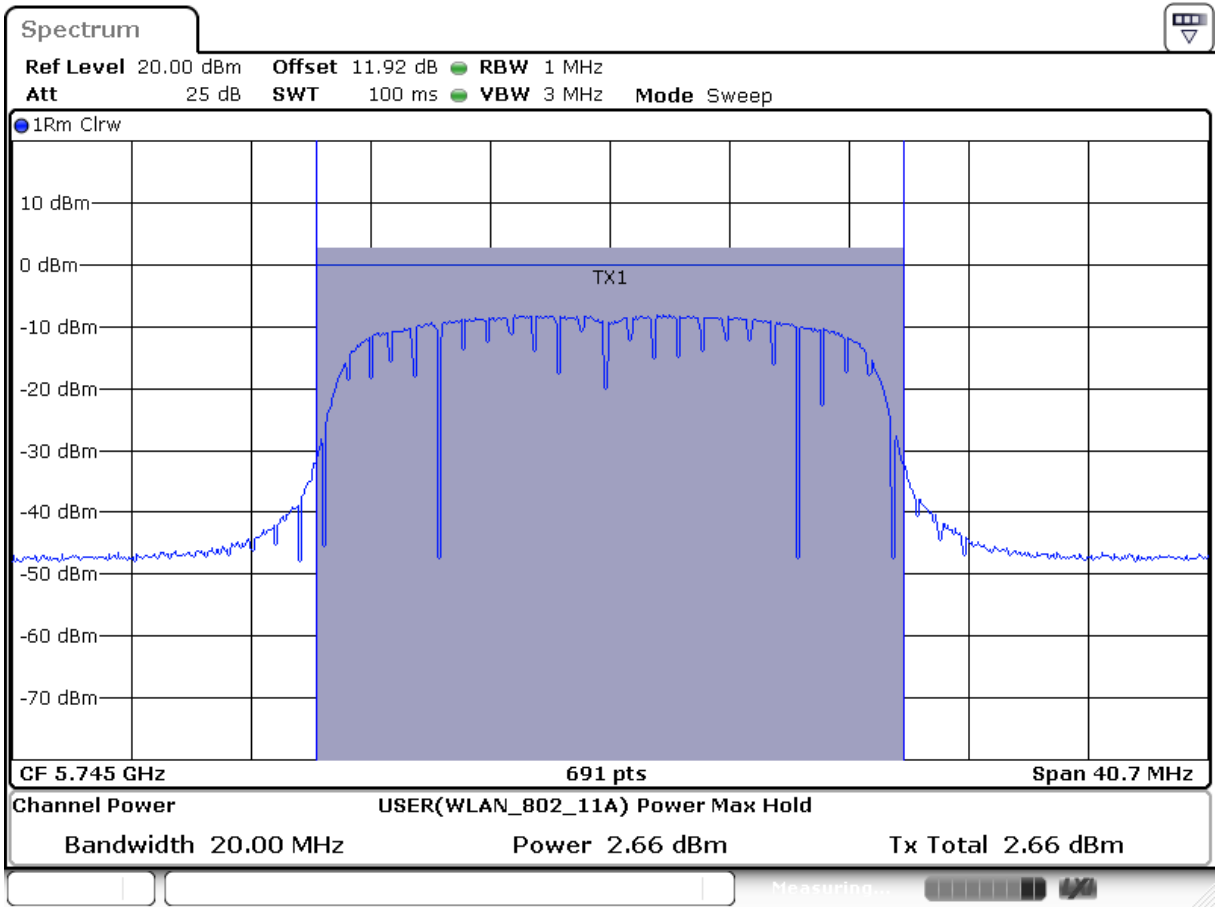
#24

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11n20_Channel 149_Output power	

File: 21-05-MAW-008_5-8n20_Ant2

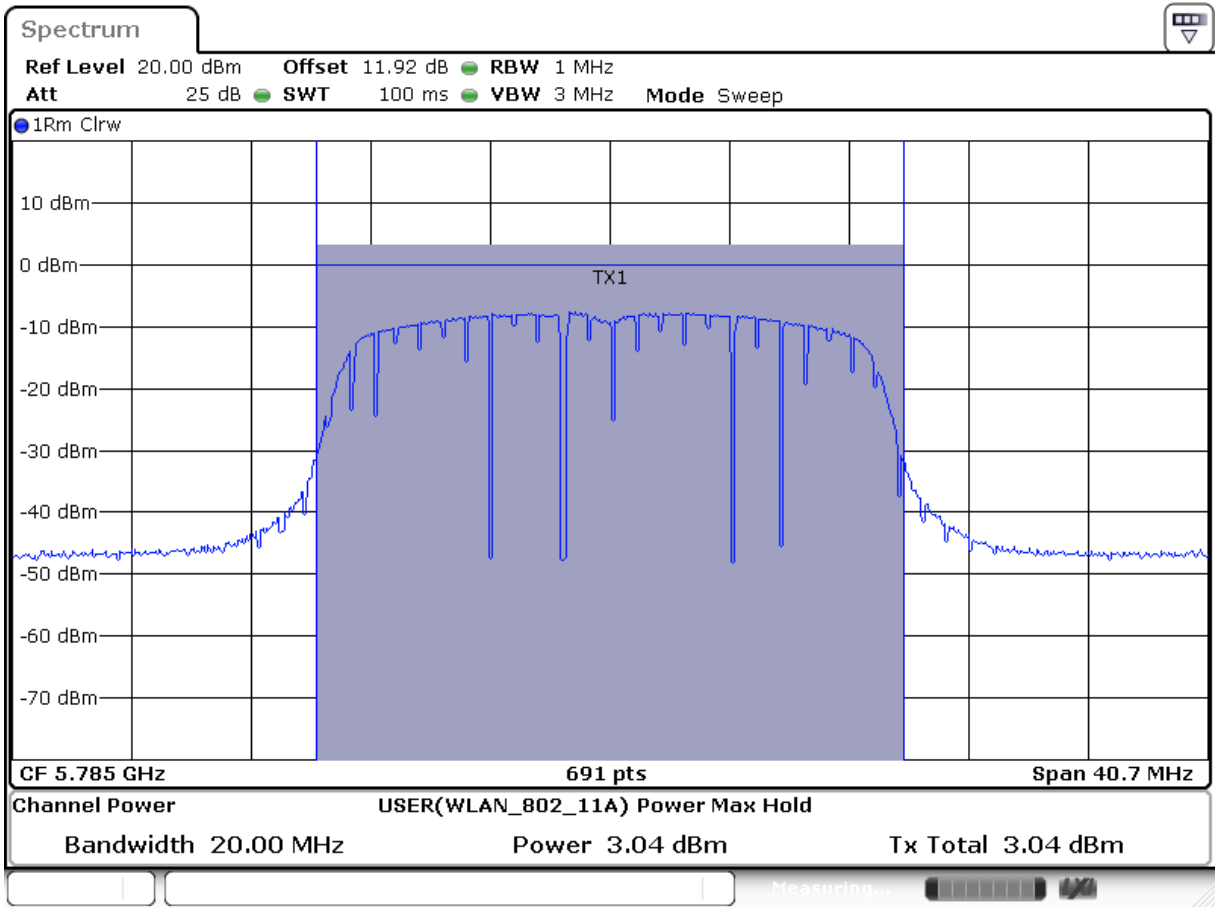
#32

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11n20_Channel 157_Output power	

File: 21-05-MAW-008_5-8n20_Ant2

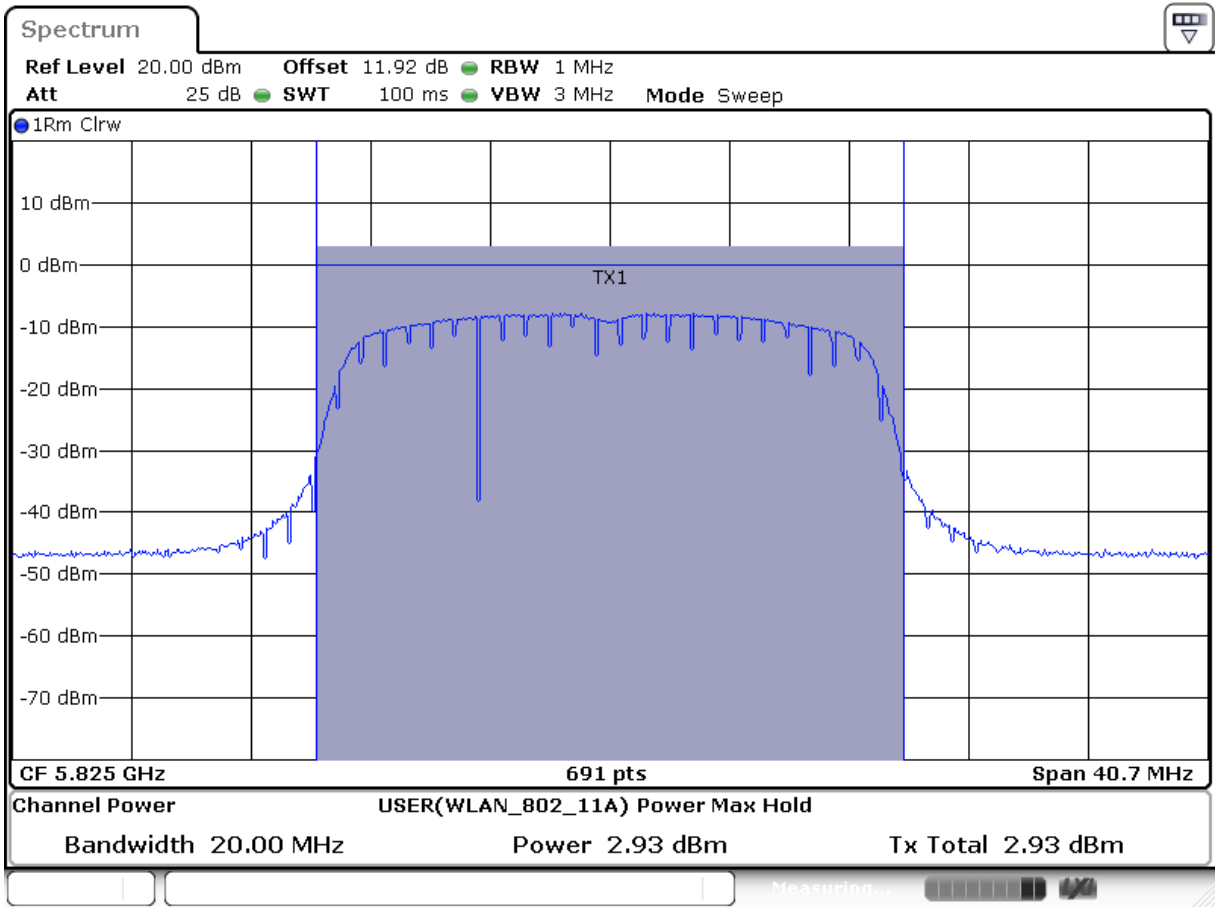
Site: RF-Cond01

#39

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11n20_Channel 165_Output power	

7.4.2.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

Ant 1 / Ant 2 combination 天線增益最大值為 0.79 dBi，NCC Limit 如下表所示：

Channel	CHAIN 0 Maximum Peak Output Power (dBm)	CHAIN 1 Maximum Peak Output Power (dBm)	TOTAL Power (dBm)	NCC Limit (dBm)
L	5.14	2.66	7.08	30
M	5.06	3.04	7.18	30
H	5.01	2.93	7.10	30

註:

1. 最大傳導輸出功率 (Maximum Peak Output Power) 為經儀器校正補償過後的結果值。
2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm
3. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)
4. NCC Limit (dBm)=10 log NCC Limit (mW)
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: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 0.02 dBi，NCC Limit 如下表所示：

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	3.95	30	Page 60
H	3.85	30	Page 61

註：1. 繪圖資料請參考第 60-61 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain $>$ 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8n40_Ant1

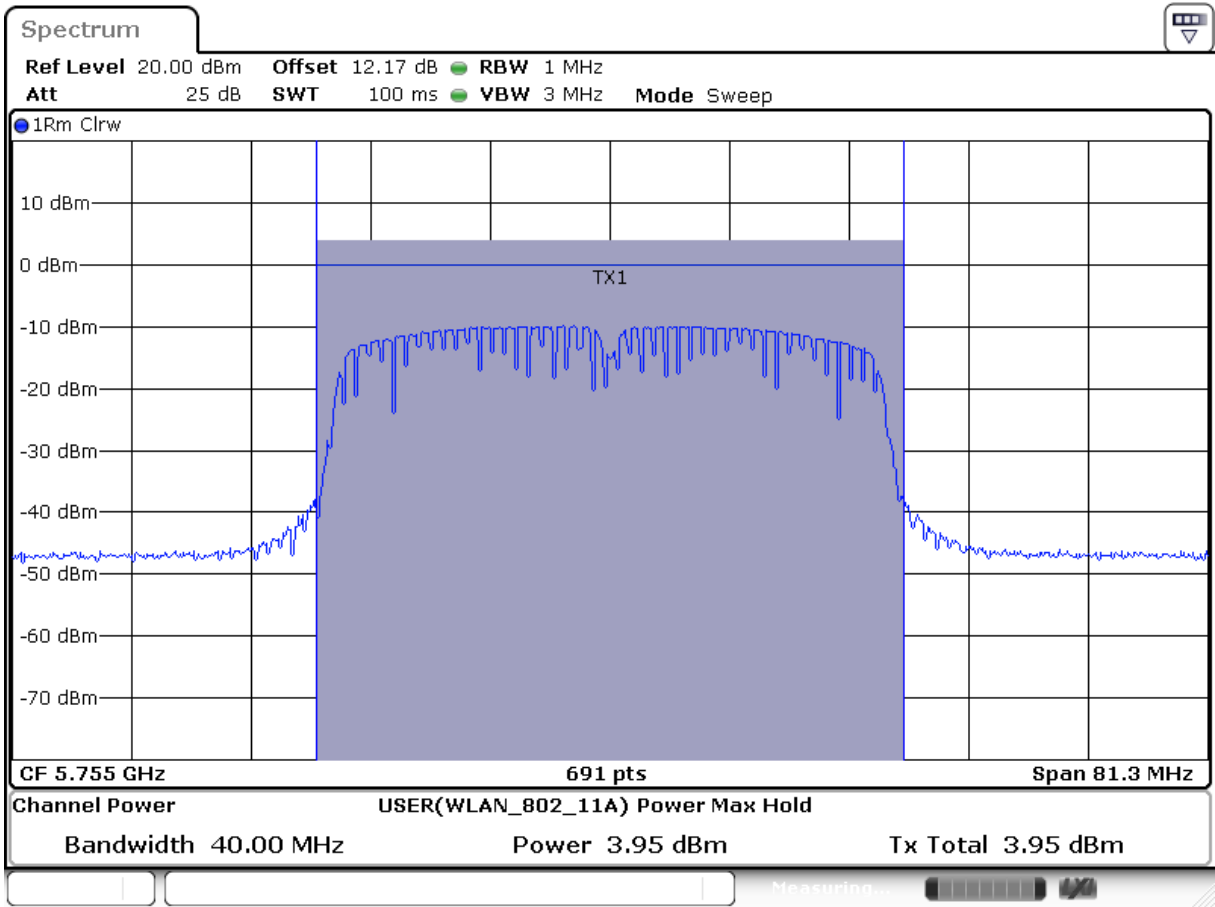
Site: RF-Cond01

#1

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



File: 21-05-MAW-008_5-8n40_Ant1

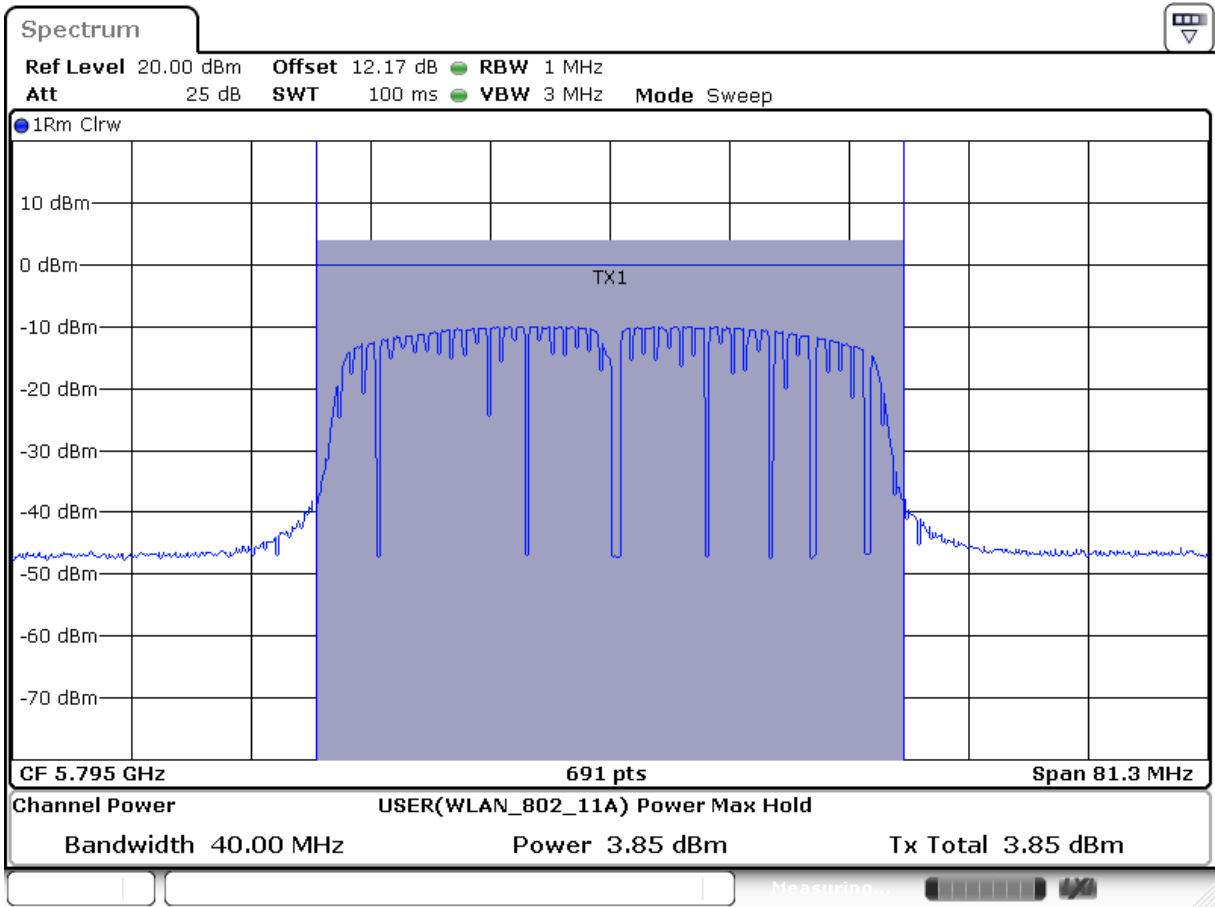
Site: RF-Cond01

#9

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



7.4.3.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	1.61	30	Page 63
H	1.34	30	Page 64

註：1. 繪圖資料請參考第 63-64 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8n40_Ant2

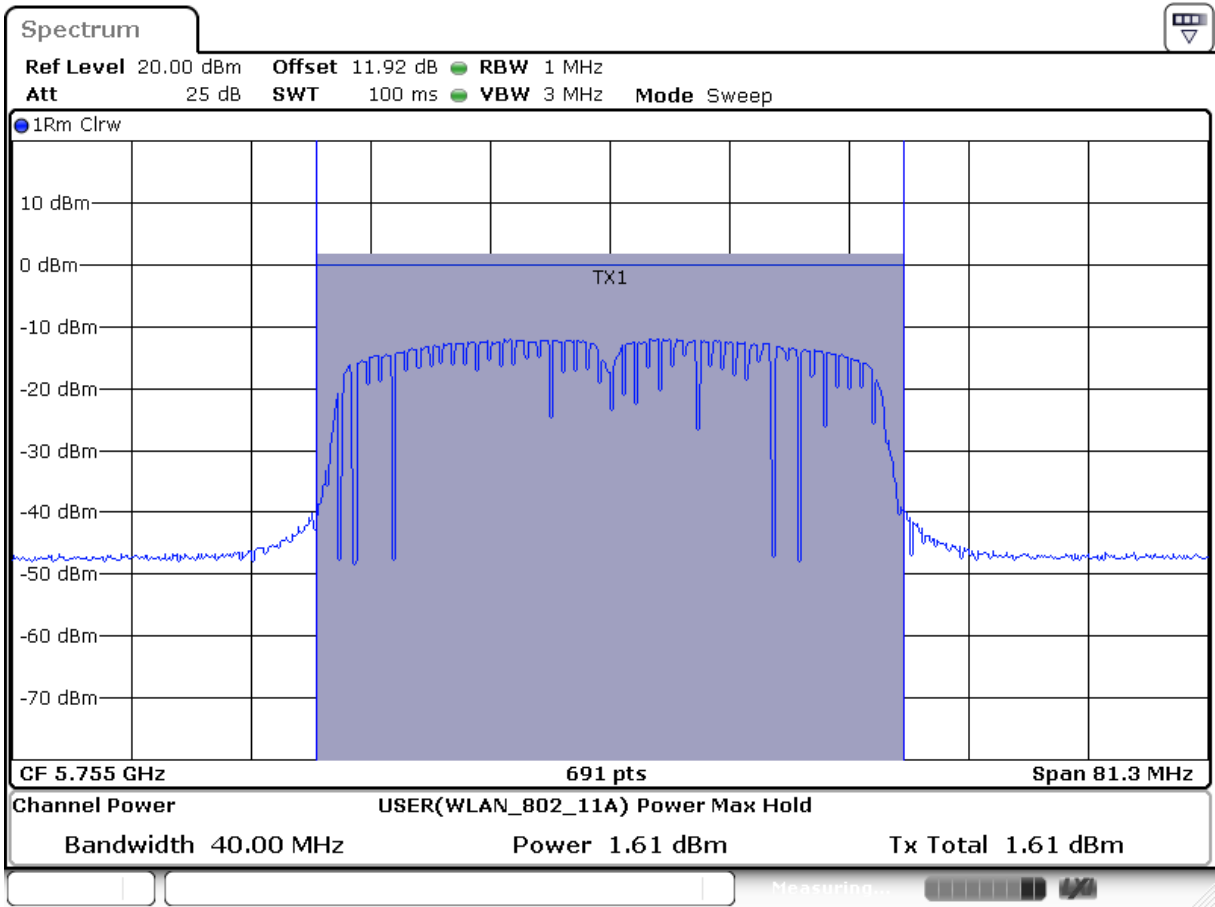
Site: RF-Cond01

#17

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



File: 21-05-MAW-008_5-8n40_Ant2

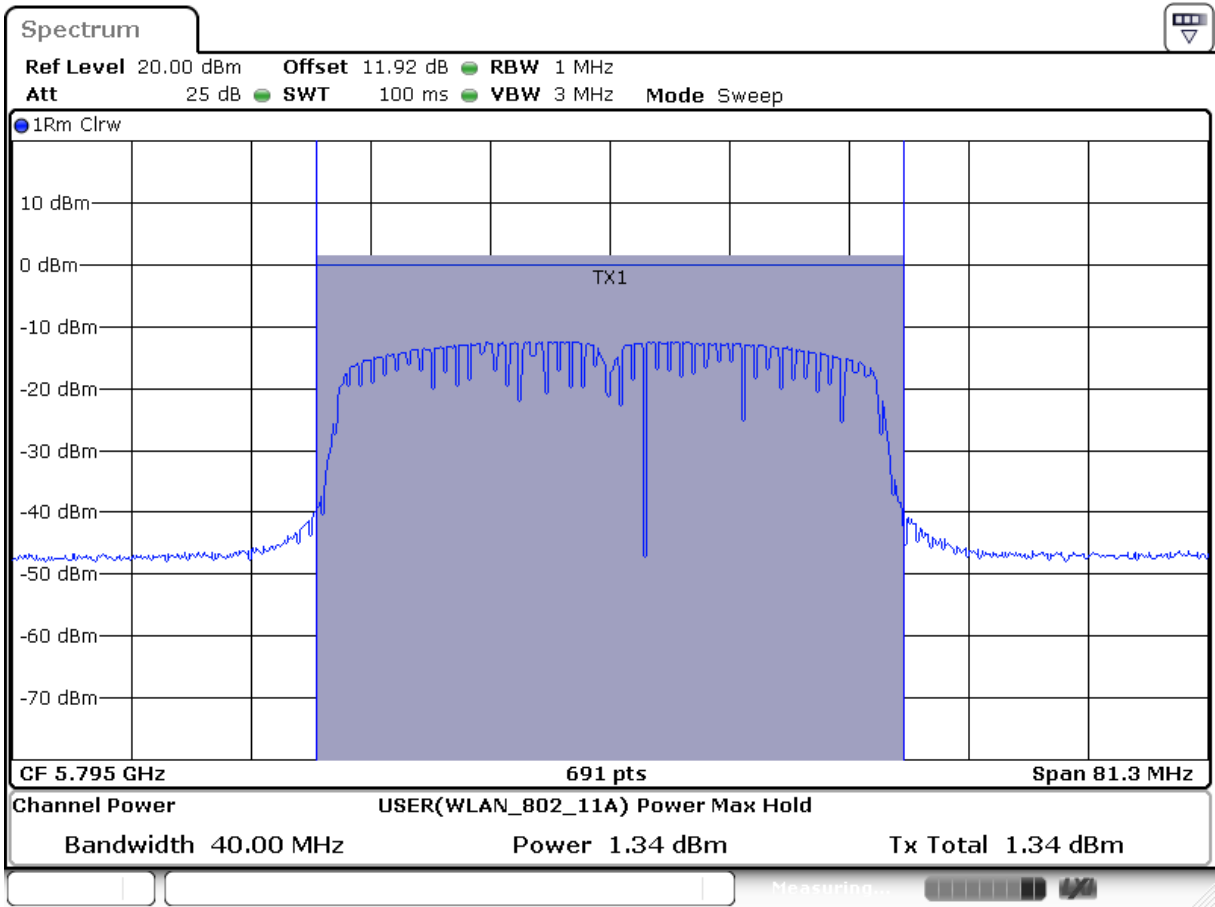
#25

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 159_Output power

RF Conducted

Sweep Time: 100ms

RBW: 1000 KHz

Operator:

Att.: 25dB

VBW: 3000 KHz

Phillip

7.4.3.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

Ant 1 / Ant 2 combination 天線增益最大值為 0.79 dBi，NCC Limit 如下表所示：

Channel	CHAIN 0 Maximum Peak Output Power (dBm)	CHAIN 1 Maximum Peak Output Power (dBm)	TOTAL Power (dBm)	NCC Limit (dBm)
L	3.95	1.61	5.95	30
H	3.85	1.34	5.78	30

註:

1. 最大傳導輸出功率 (Maximum Peak Output Power) 為經儀器校正補償過後的結果值。
2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm
3. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)
4. NCC Limit (dBm)=10 log NCC Limit (mW)
5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

7.4.4 調變技術: IEEE 802.11ac VHT20

7.4.4.1 CHAIN 0

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 0.02 dBi，NCC Limit 如下表所示：

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	5.04	30	Page 67
M	4.95	30	Page 68
H	4.91	30	Page 69

註：1. 繪圖資料請參考第 67-69 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8ac20_Ant1

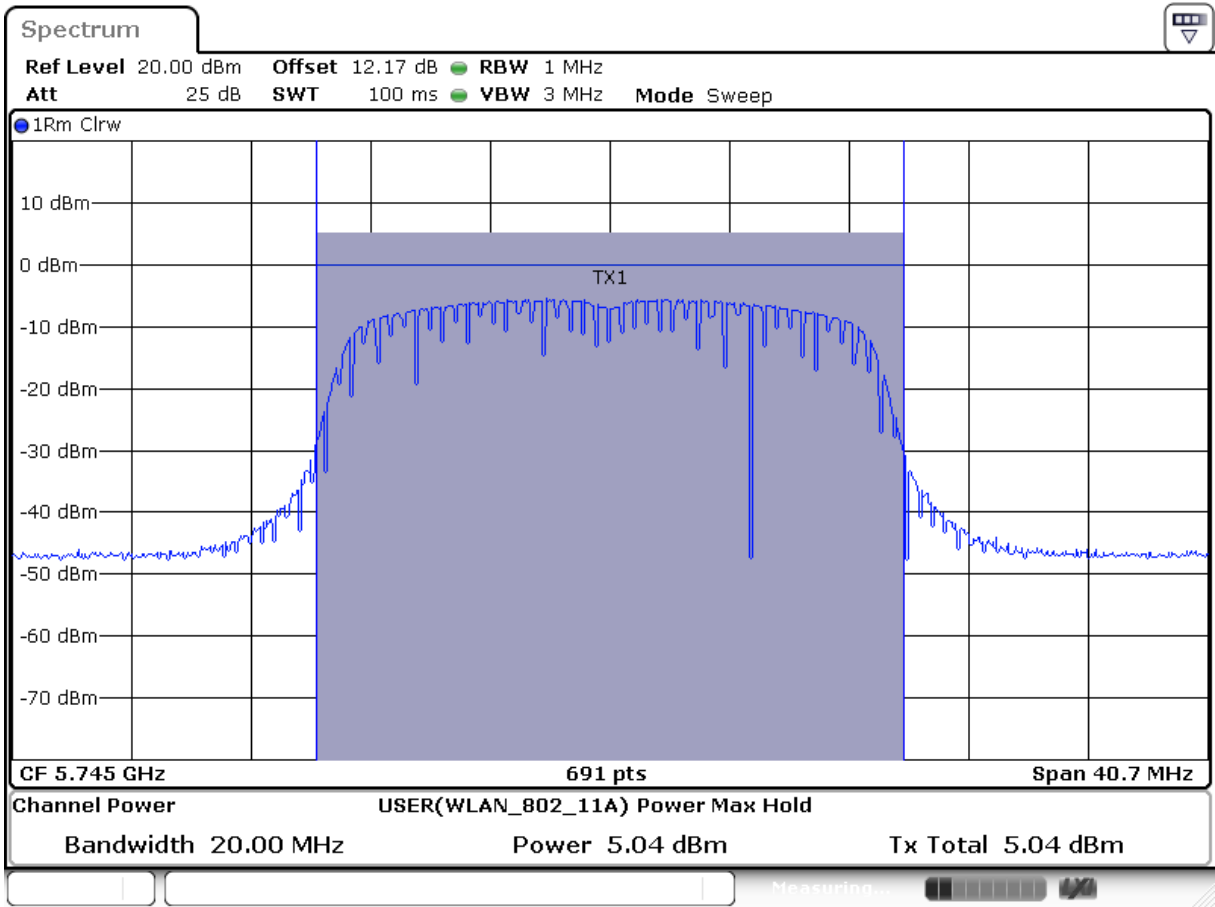
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11ac20_Channel 149_Output power	

File: 21-05-MAW-008_5-8ac20_Ant1

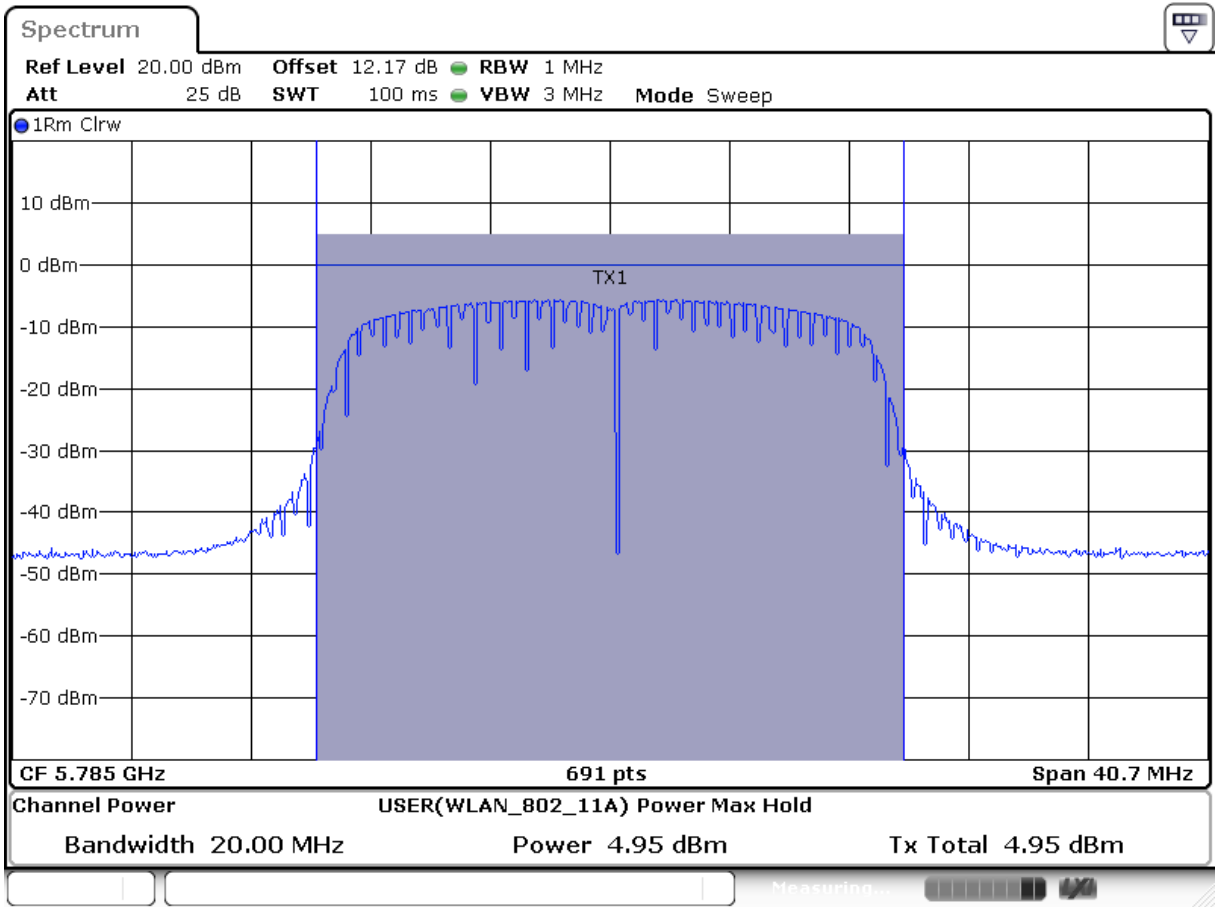
#9

Date: 2021/6/29

Temperature: 23 ℃

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11ac20_Channel 157_Output power	

File: 21-05-MAW-008_5-8ac20_Ant1

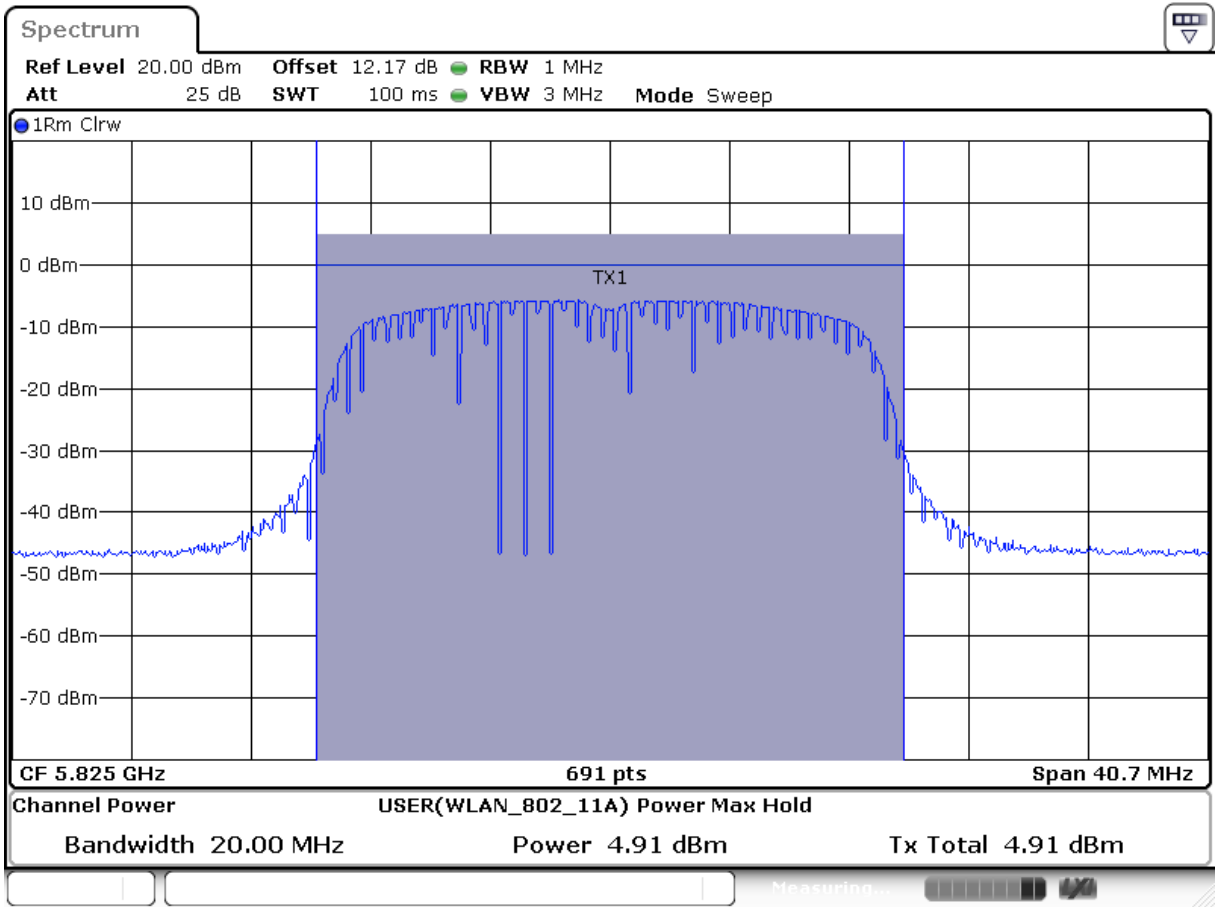
#16

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT:

Model:

Test Mode:

Note:

Cockpit Control Unit

DNNS124

UNII

NCC_LP0002_802.11ac20_Channel 165_Output power

RF Conducted

Sweep Time: 100ms

RBW: 1000 KHz

Operator:

Att.: 25dB

VBW: 3000 KHz

Phillip

7.4.4.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	2.39	30	Page 71
M	2.58	30	Page 72
H	2.67	30	Page 73

註：1. 繪圖資料請參考第 71-73 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8ac20_Ant2

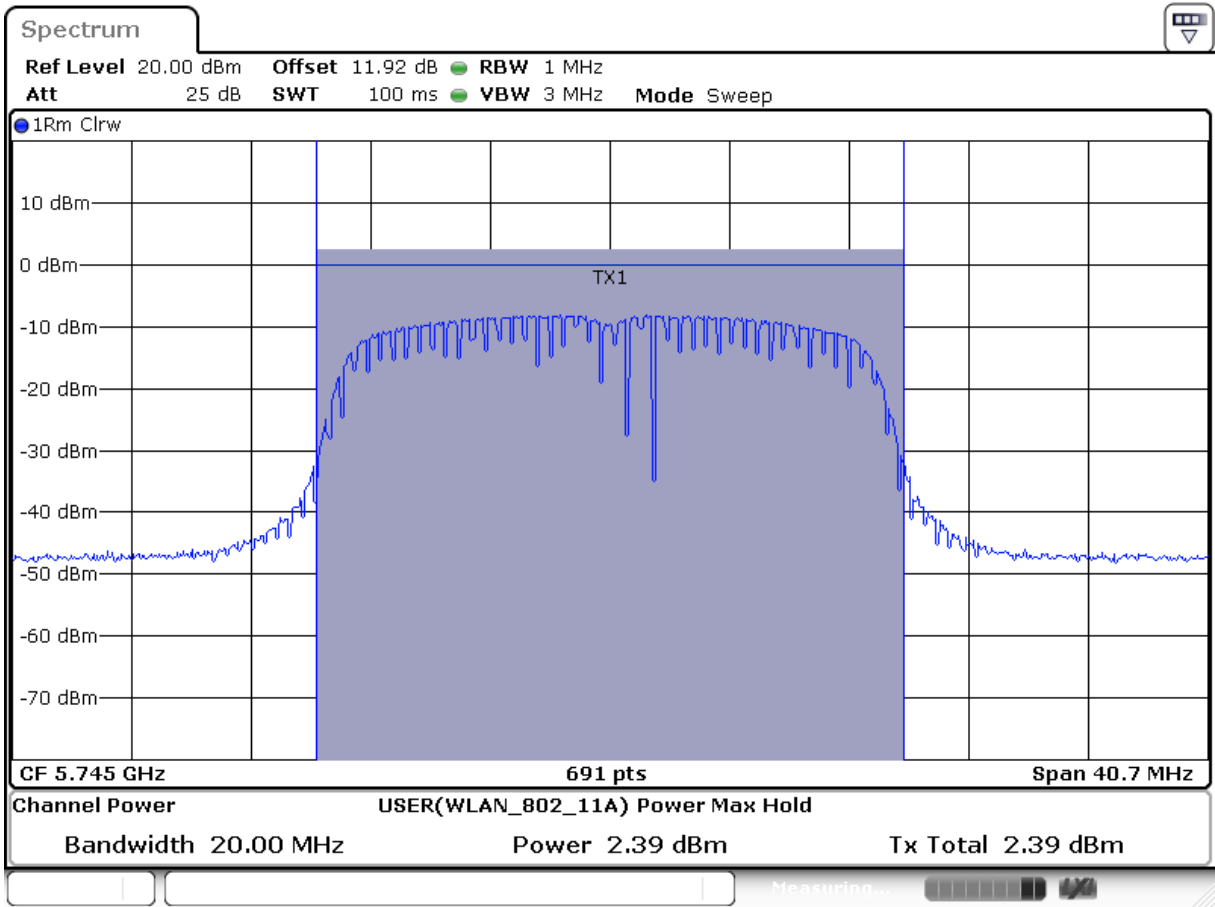
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11ac20_Channel 149_Output power	

File: 21-05-MAW-008_5-8ac20_Ant2

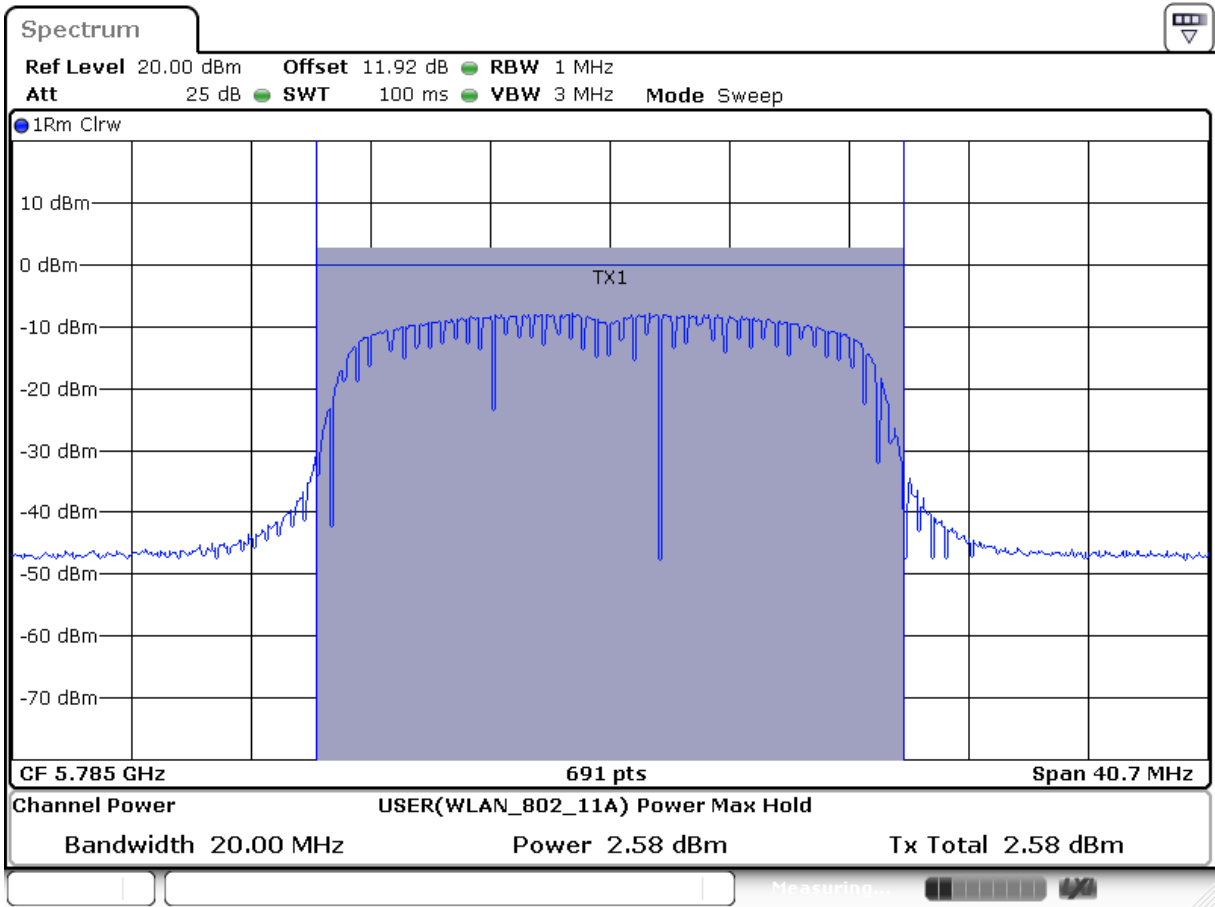
#9

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11ac20_Channel 157_Output power	

File: 21-05-MAW-008_5-8ac20_Ant2

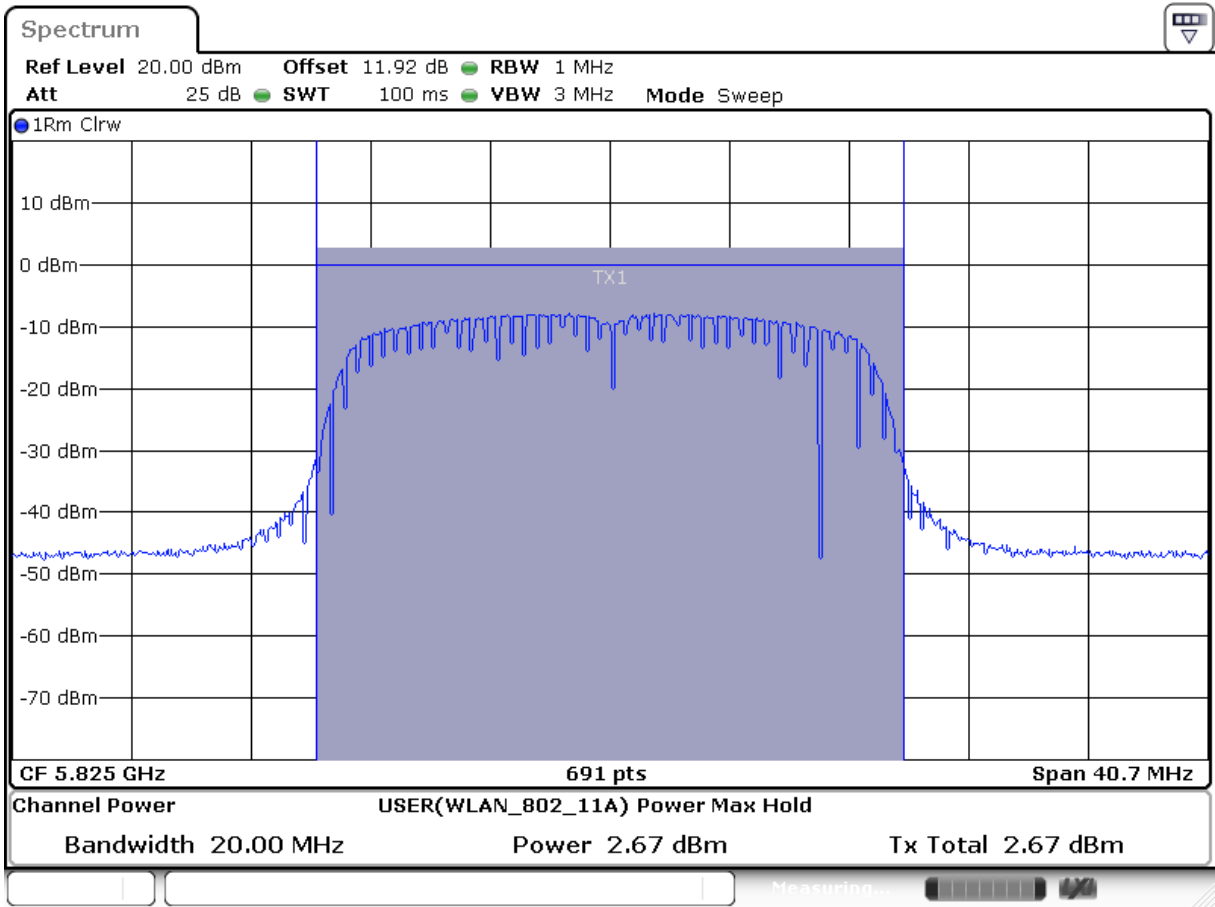
#16

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11ac20_Channel 165_Output power	

7.4.4.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

Ant 1 / Ant 2 combination 天線增益最大值為 0.79 dBi，NCC Limit 如下表所示：

Channel	CHAIN 0 Maximum Peak Output Power (dBm)	CHAIN 1 Maximum Peak Output Power (dBm)	TOTAL Power (dBm)	NCC Limit (dBm)
L	5.04	2.39	6.92	30
M	4.95	2.58	6.94	30
H	4.91	2.67	6.94	30

註:

1. 最大傳導輸出功率 (Maximum Peak Output Power) 為經儀器校正補償過後的結果值。
2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm
3. If antenna gain $>$ 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)
4. NCC Limit (dBm)=10 log NCC Limit (mW)
5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

7.4.5 調變技術: IEEE 802.11ac VHT40

7.4.5.1 CHAIN 0

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 0.02 dBi，NCC Limit 如下表所示：

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	3.54	30	Page 76
H	3.56	30	Page 77

註：1. 繪圖資料請參考第 76-77 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8ac40_Ant1

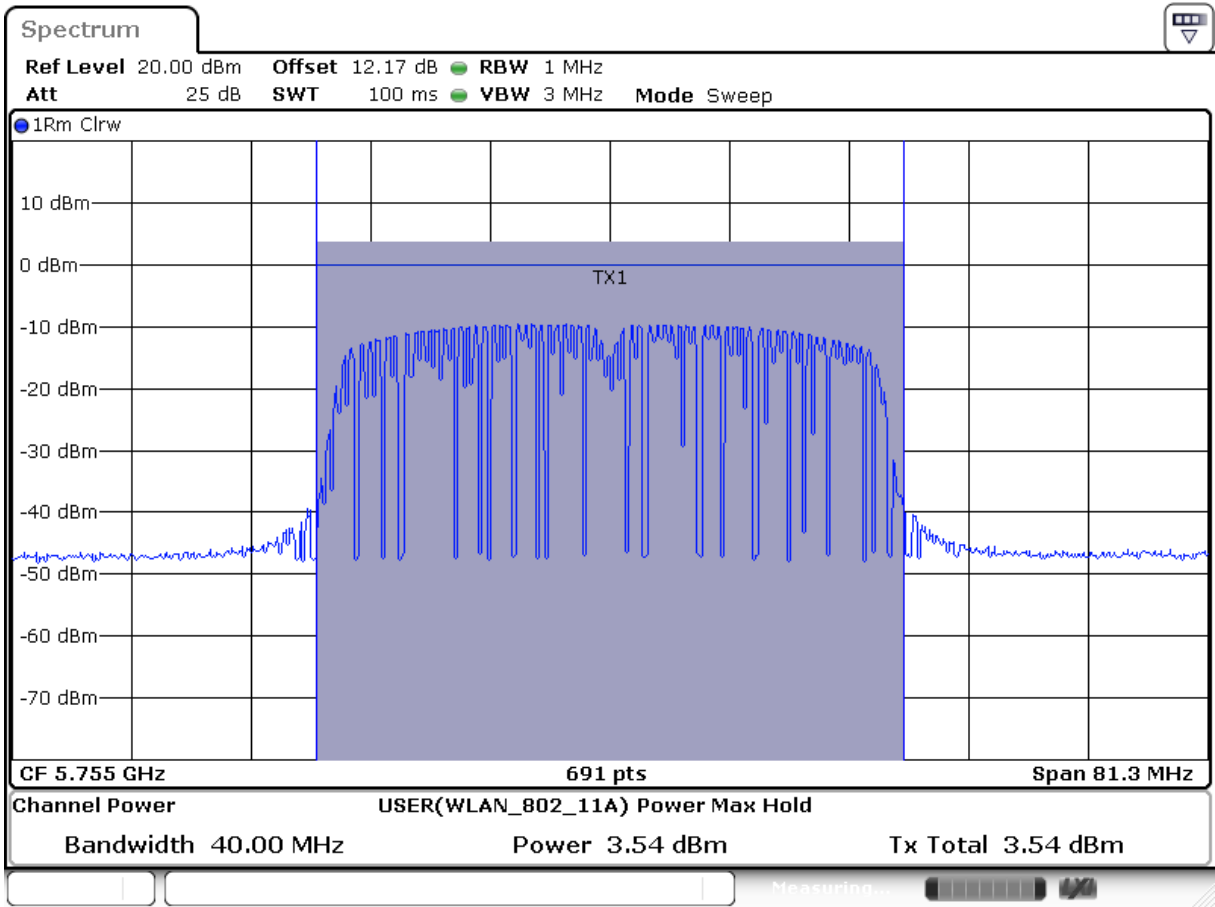
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac40_Channel 151_Output power

RF Conducted

Sweep Time: 100ms

RBW: 1000 KHz

Operator:

Att.: 25dB

VBW: 3000 KHz

Phillip

File: 21-05-MAW-008_5-8ac40_Ant1

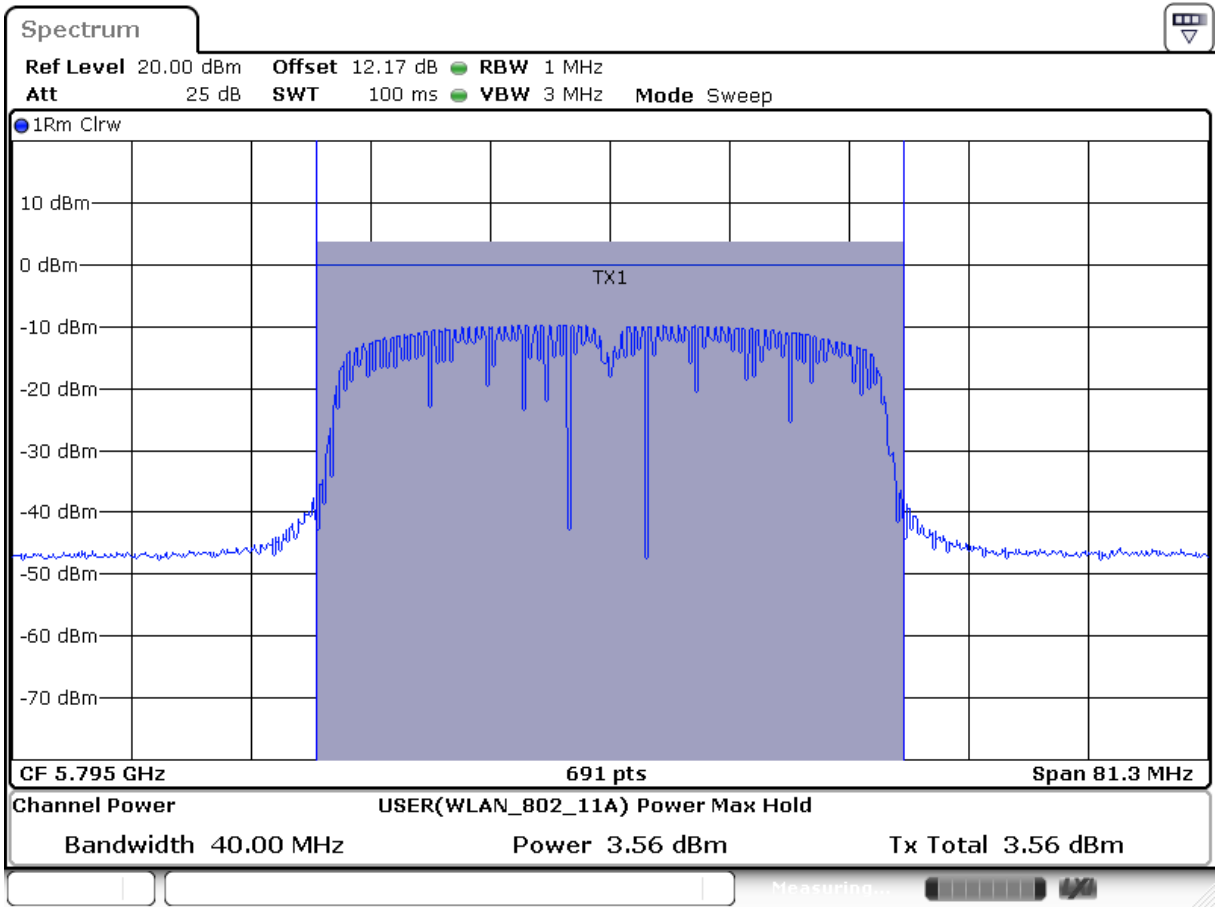
Site: RF-Cond01

#9

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11ac40_Channel 159_Output power	

7.4.5.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	1.17	30	Page 79
H	1.27	30	Page 80

註：1. 繪圖資料請參考第 79-80 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8ac40_Ant2

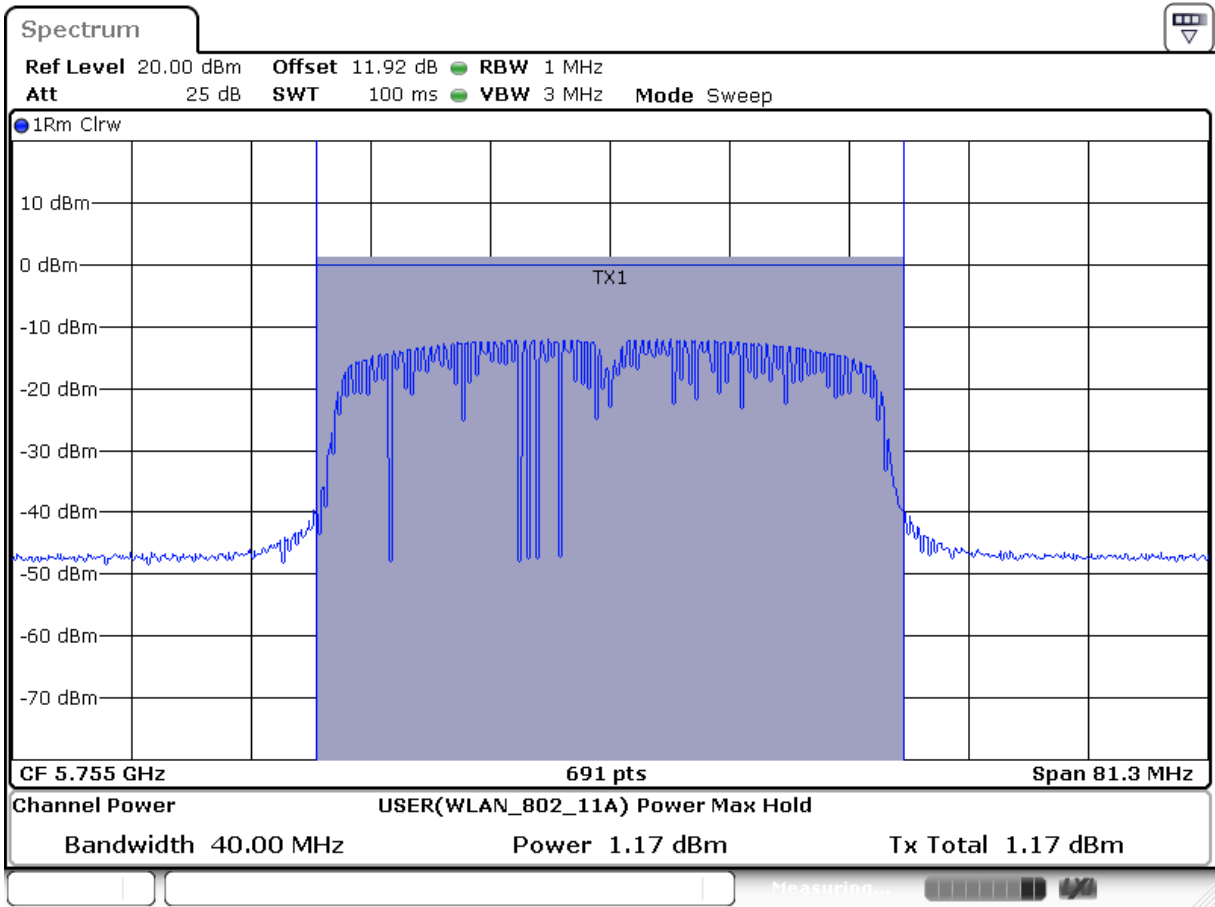
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



File: 21-05-MAW-008_5-8ac40_Ant2

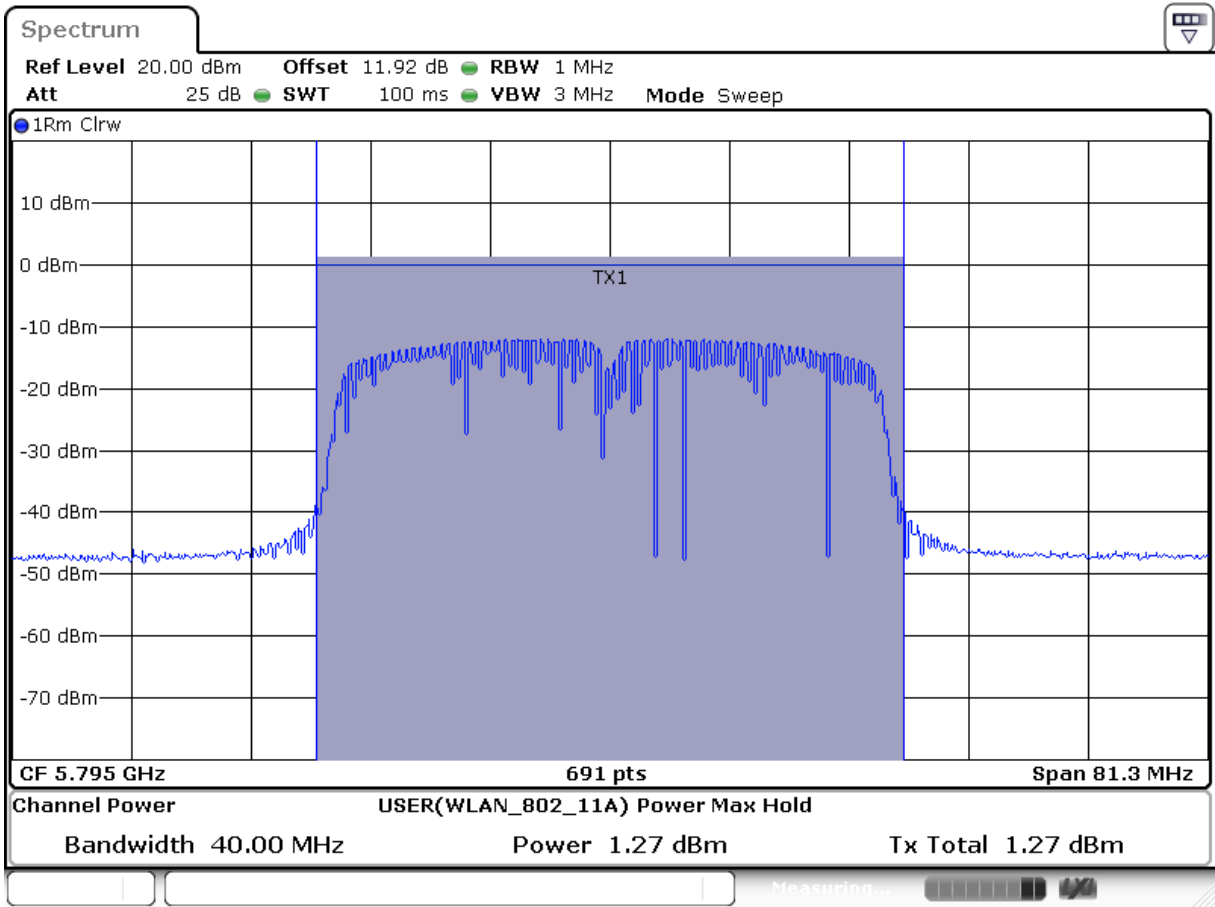
Site: RF-Cond01

#9

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



7.4.5.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

Ant 1 / Ant 2 combination 天線增益最大值為 0.79 dBi，NCC Limit 如下表所示：

Channel	CHAIN 0 Maximum Peak Output Power (dBm)	CHAIN 1 Maximum Peak Output Power (dBm)	TOTAL Power (dBm)	NCC Limit (dBm)
L	3.54	1.17	5.53	30
H	3.56	1.27	5.57	30

註:

1. 最大傳導輸出功率 (Maximum Peak Output Power) 為經儀器校正補償過後的結果值。
2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm
3. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)
4. NCC Limit (dBm)=10 log NCC Limit (mW)
5. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

7.4.6 調變技術: IEEE 802.11ac VHT80

7.4.6.1 CHAIN 0

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 0.02 dBi, NCC Limit 如下表所示:

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	1.94	30	Page 83

註: 1. 繪圖資料請參考第 83 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8ac80_Ant1

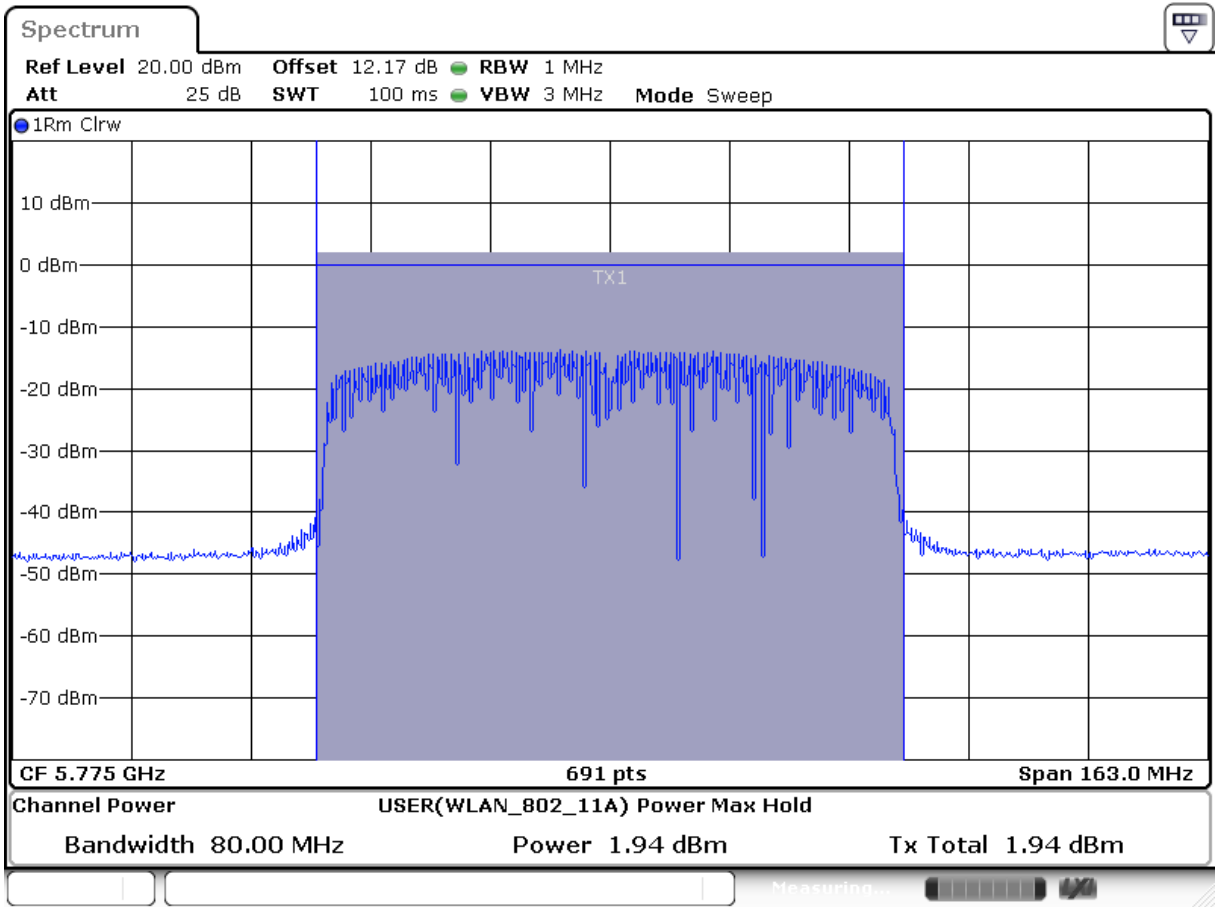
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:		RF Conducted
EUT:	Cockpit Control Unit	Sweep Time: 100ms Att.: 25dB
Model:	DNNS124	RBW: 1000 KHz VBW: 3000 KHz
Test Mode:	UNII	Operator: Phillip
Note:	NCC_LP0002_802.11ac80_Channel 155_Output power	

7.4.6.2 CHAIN 1

測試日期: Jun. 29, 2021 環境溫度: 23°C 環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Maximum Peak Output Power (dBm)	NCC Limit (dBm)	Chart
L	-0.28	30	Page 85

註：1. 繪圖資料請參考第 85 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. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

4. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

5. NCC Limit (dBm)=10 log NCC Limit (mW)

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

File: 21-05-MAW-008_5-8ac80_Ant2

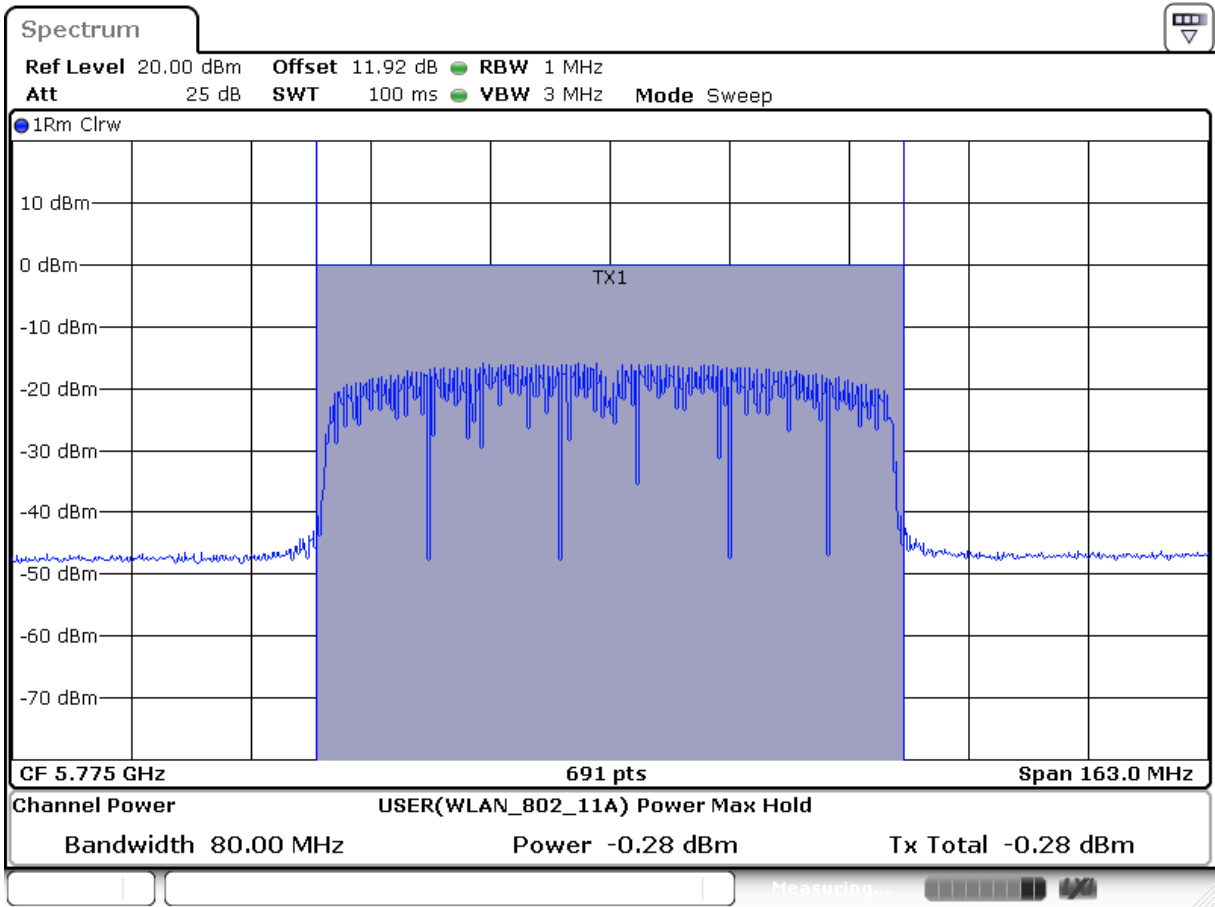
#1

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80_Channel 155_Output power

RF Conducted

Sweep Time: 100ms

RBW: 1000 KHz

Operator:

Att.: 25dB

VBW: 3000 KHz

Phillip

7.4.6.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

Ant 1 / Ant 2 combination 天線增益最大值為 0.79 dBi，NCC Limit 如下表所示：

Channel	CHAIN 0 Maximum Peak Output Power (dBm)	CHAIN 1 Maximum Peak Output Power (dBm)	TOTAL Power (dBm)	NCC Limit (dBm)
L	1.94	-0.28	3.98	30

註：

1. 最大傳導輸出功率 (Maximum Peak Output Power) 為經儀器校正補償過後的結果值。
2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm
3. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)
4. NCC Limit (dBm)=10 log NCC Limit (mW)
5. 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

國家通訊傳播委員會低功率射頻器材技術規範5.7.3.3節(2)之規定，在任何500 kHz頻帶中最大功率頻譜密度應小於或等於30 dBm。

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	廠 牌	型 號
Spectrum Analyzer	KEYSIGHT	N9030B
Spectrum Analyzer	R&S	FSV40
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: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 0.02 dBi, NCC Limit 如下表所示:

Channel	Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-0.36	30	Page 89
M	-0.41	30	Page 90
H	-0.45	30	Page 91

註: 1. 繪圖資料請參考第 89-91 頁。

2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

3. If antenna gain $>$ 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

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

File: 21-05-MAW-008_5-8a_Ant1

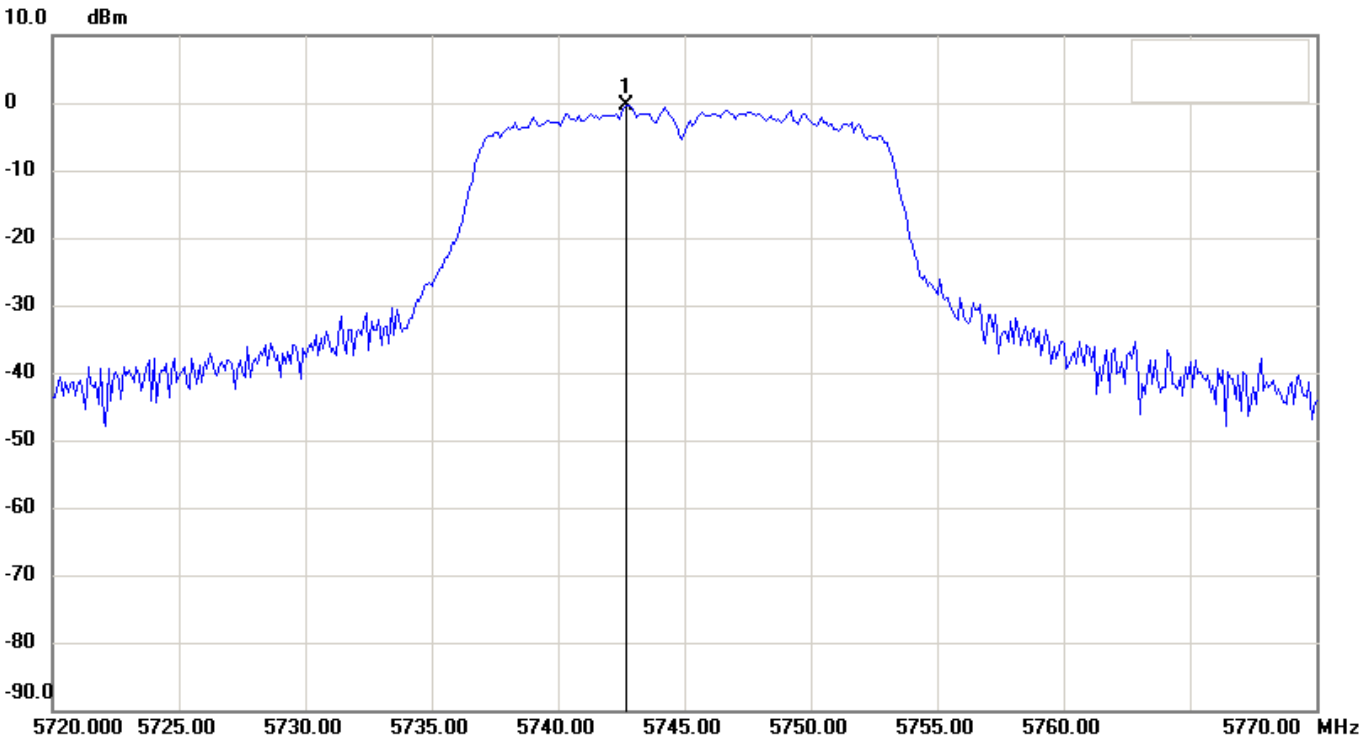
Site: RF-Cond01

#5

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 149_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5742.70000	-0.36

File: 21-05-MAW-008_5-8a_Ant1

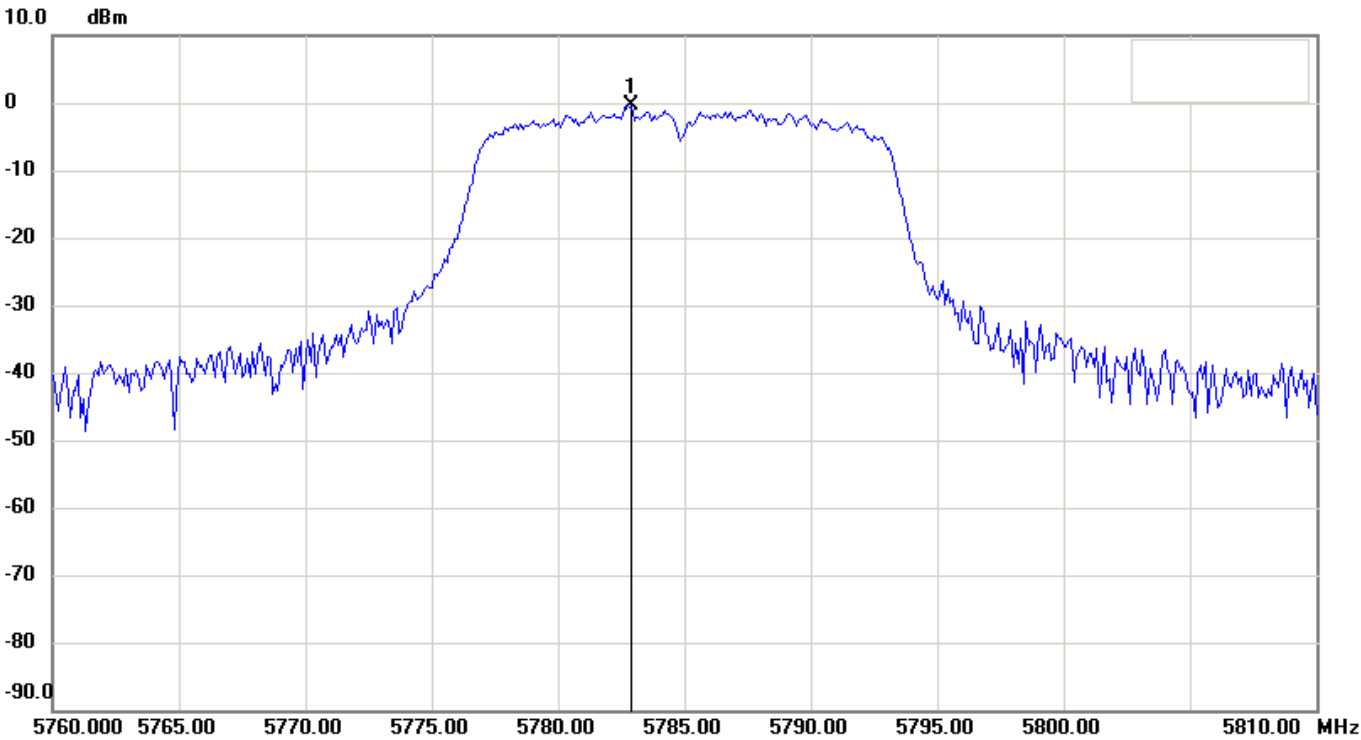
#13

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 157_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5782.90000	-0.41

File: 21-05-MAW-008_5-8a_Ant1

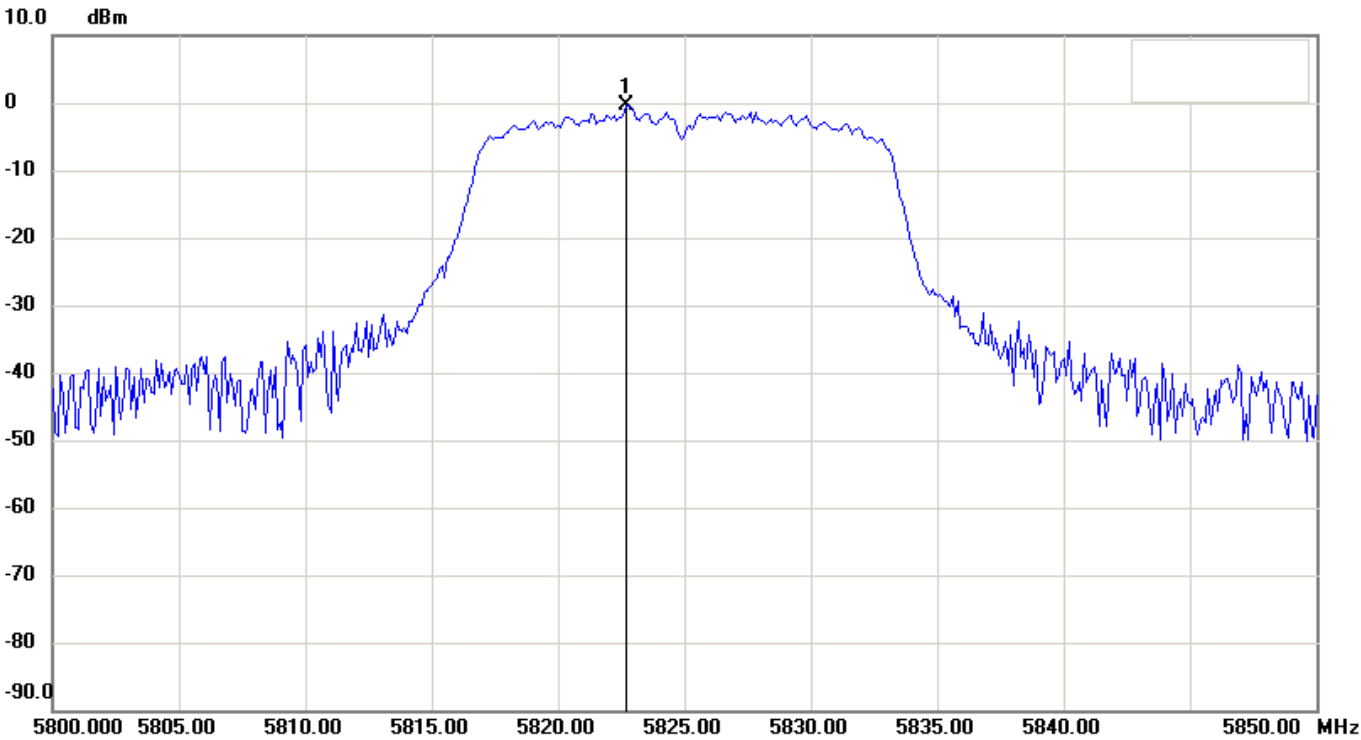
#20

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 165_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5822.70000	-0.45

8.4.2 調變技術: IEEE 802.11n HT20

8.4.2.1 CHAIN 0

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 0.02 dBi, NCC Limit 如下表所示:

Channel	Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-1.81	30	Page 93
M	-2.16	30	Page 94
H	-2.31	30	Page 95

註: 1. 繪圖資料請參考第 93-95 頁。

2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm3. If antenna gain $>$ 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)4. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 21-05-MAW-008_5-8n20_Ant1

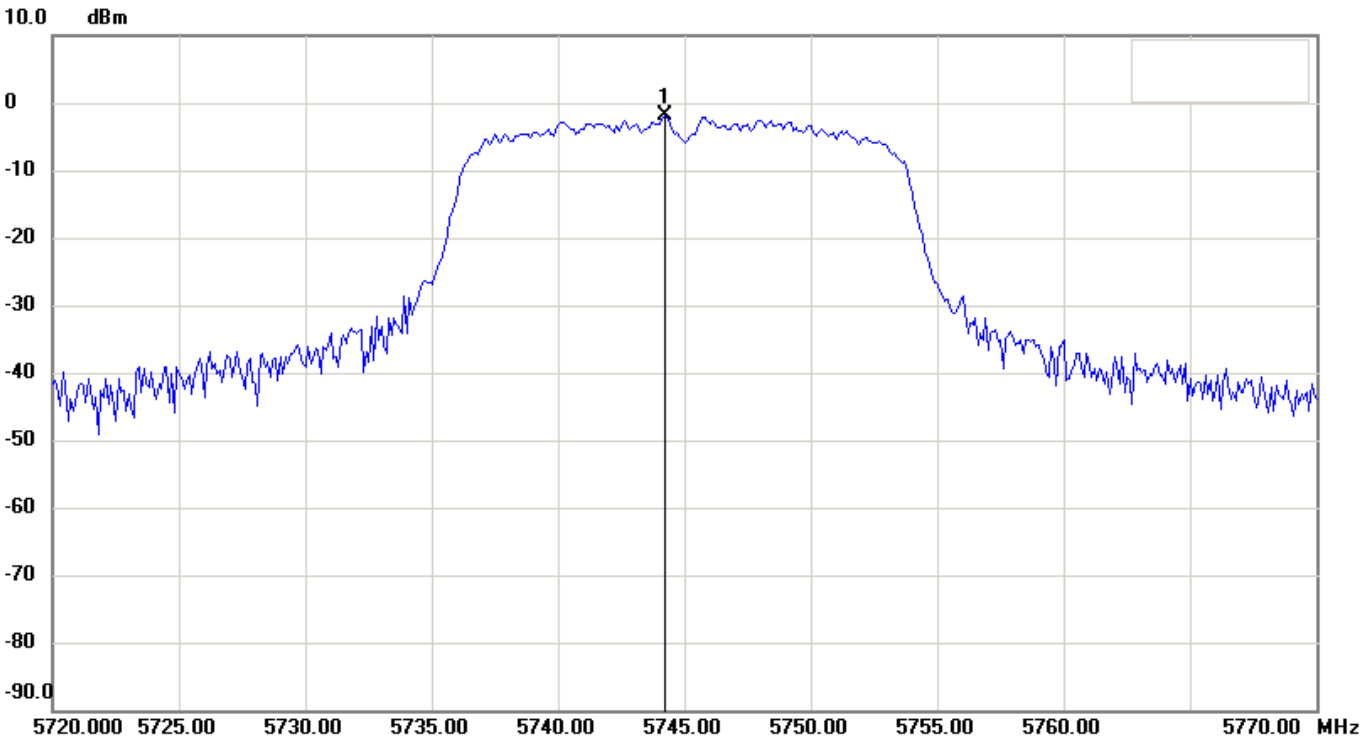
#5

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 149_Power Density

RF Conducted

Sweep Time: 1ms

RBW: 500 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5744.20000	-1.81

File: 21-05-MAW-008_5-8n20_Ant1

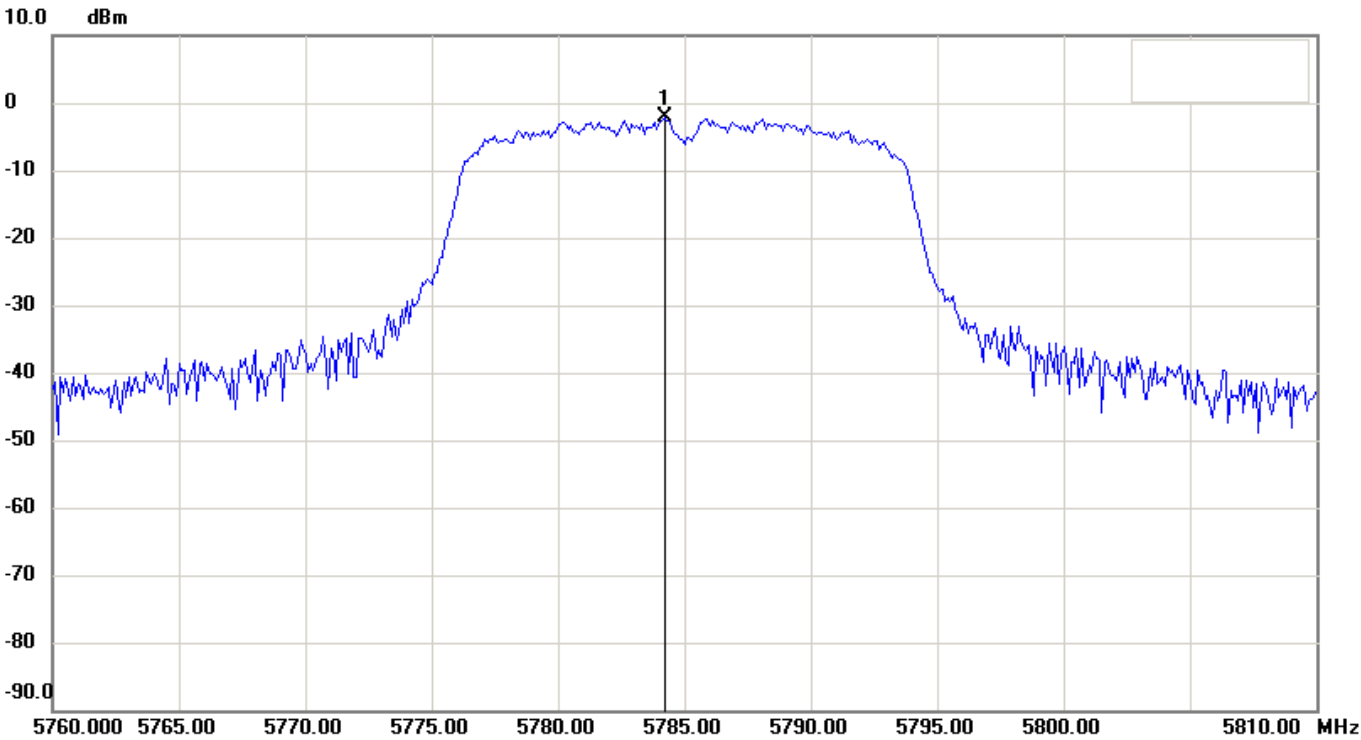
#13

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 157_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5784.20000	-2.16

File: 21-05-MAW-008_5-8n20_Ant1

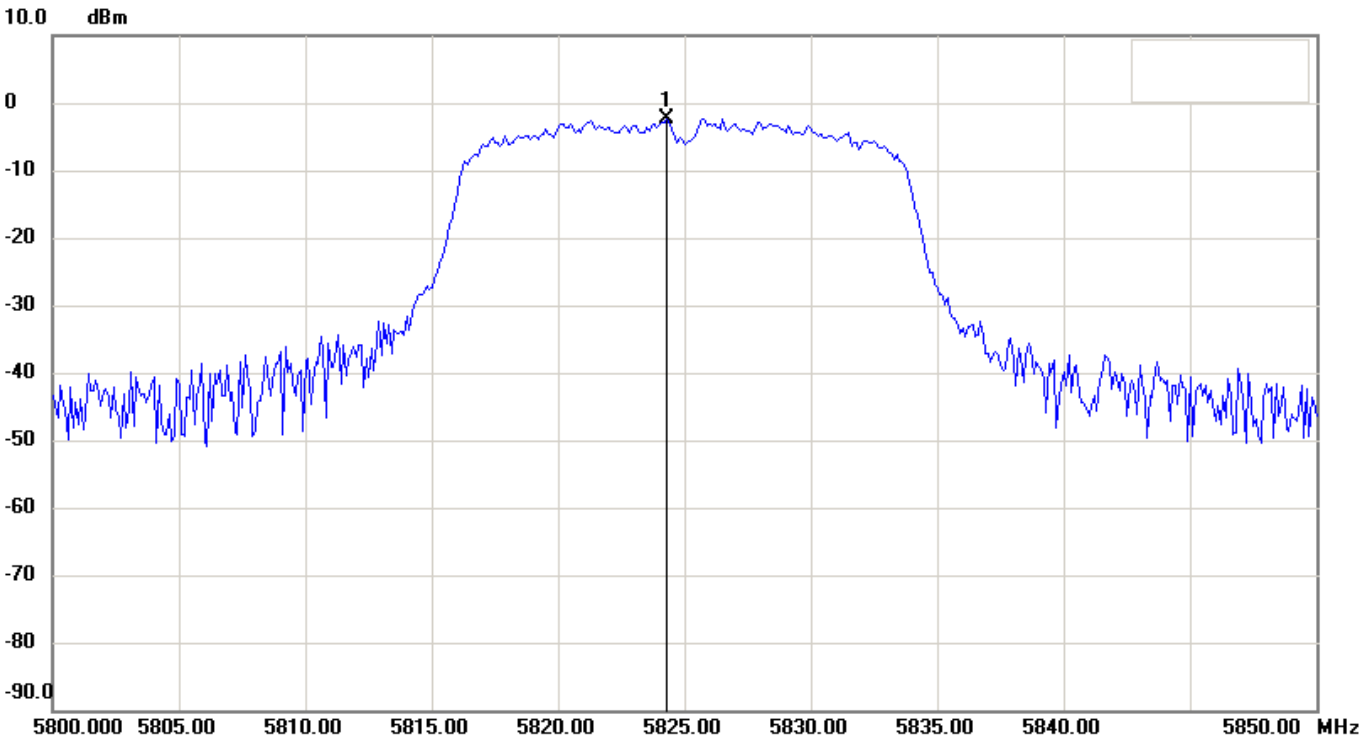
#20

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 165_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5824.30000	-2.31

8.4.2.2 CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-4.34	30	Page 97
M	-3.94	30	Page 98
H	-4.39	30	Page 99

註：1. 繪圖資料請參考第 97-99 頁。

2. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

3. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

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

File: 21-05-MAW-008_5-8n20_Ant2

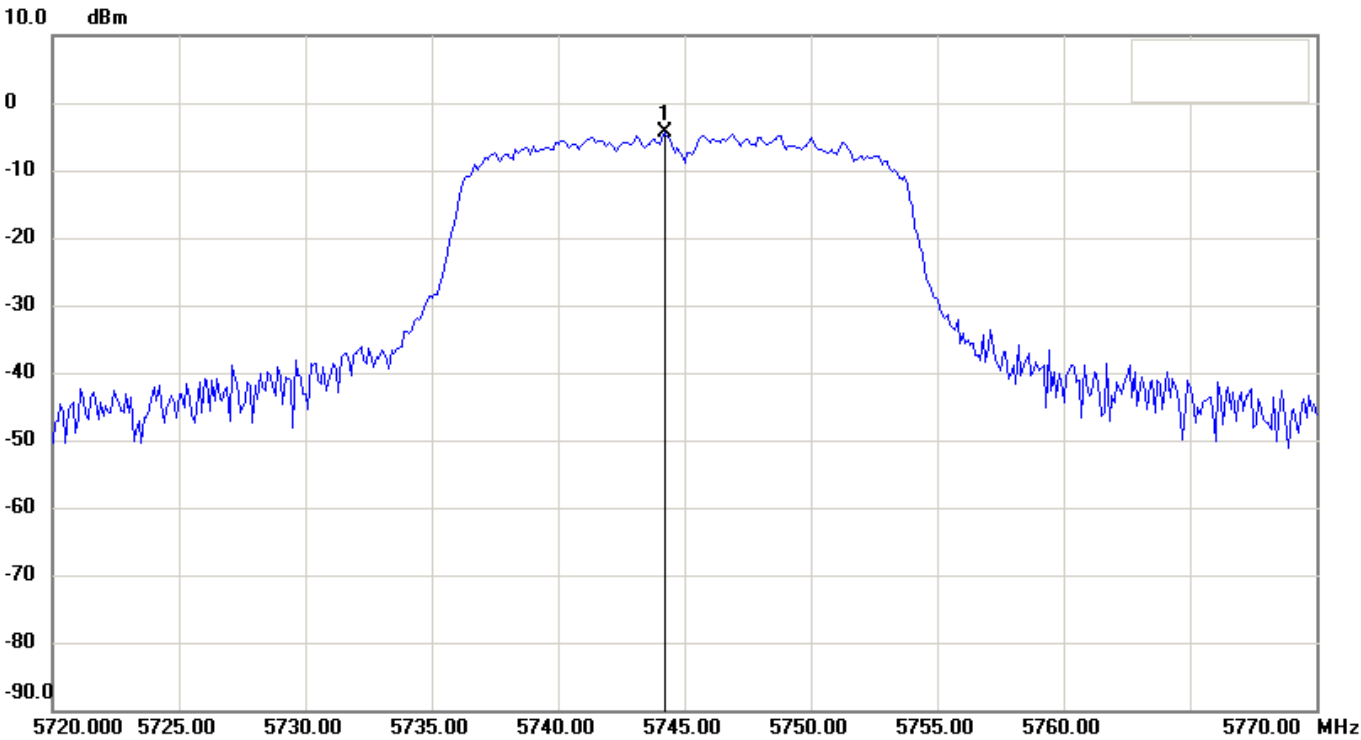
#28

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 149_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5744.20000	-4.34

File: 21-05-MAW-008_5-8n20_Ant2

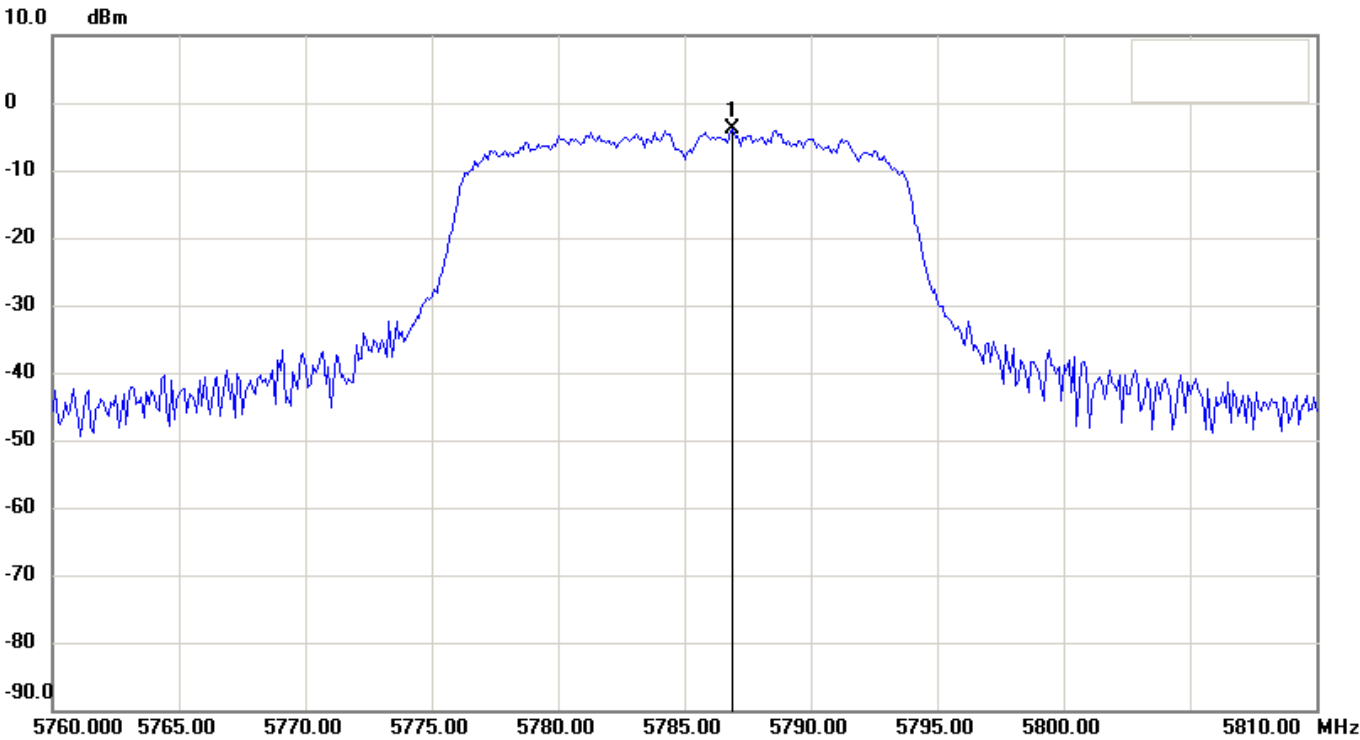
Site: RF-Cond01

#36

Date: 2021/6/29

Temperature: 23 ℃

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 157_Power Density

RF Conducted

Sweep Time: 1ms

RBW: 500 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5786.90000	-3.94

File: 21-05-MAW-008_5-8n20_Ant2

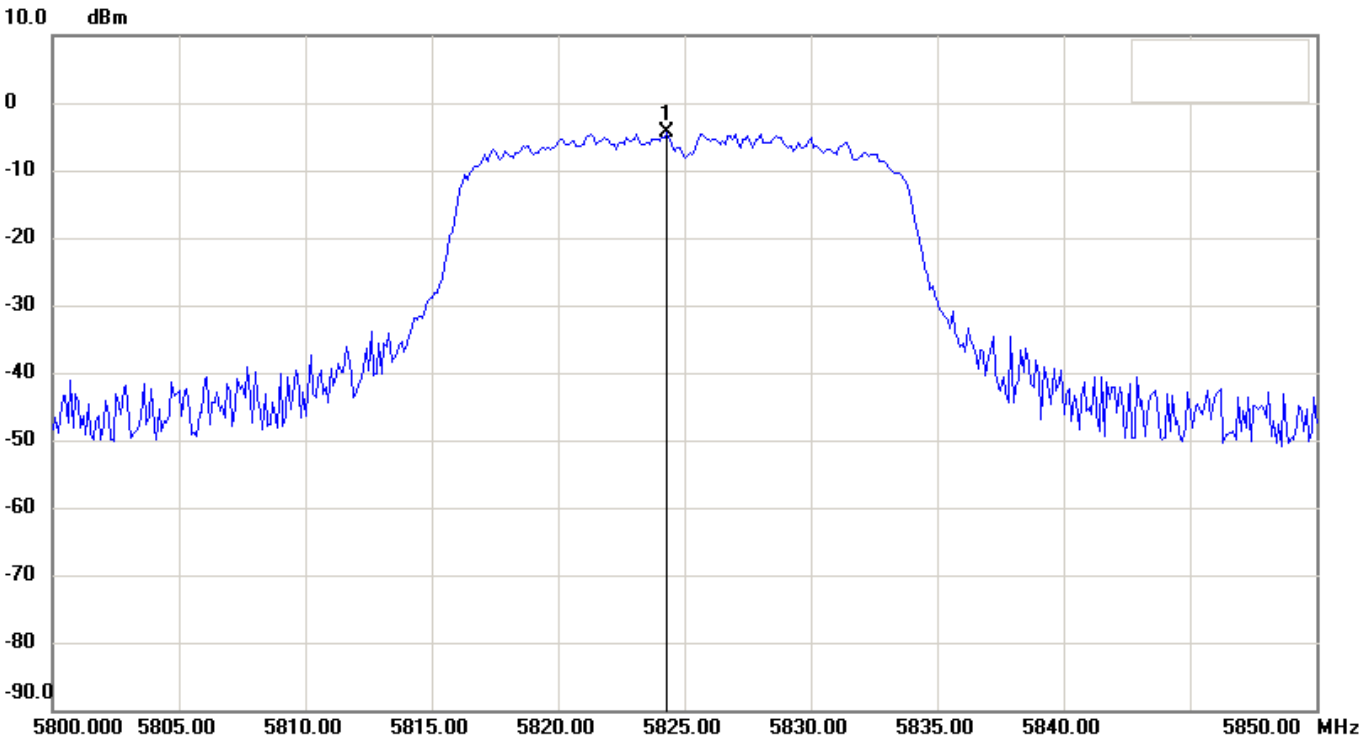
#43

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 165_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5824.30000	-4.39

8.4.2.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

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 0.79 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	-1.81	-4.34	0.12	30	-
M	-2.16	-3.94	0.05	30	-
H	-2.31	-4.39	-0.22	30	-

註：1. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm2. If antenna gain $>$ 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)3. 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: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 0.02 dBi，NCC Limit 如下表所示：

Channel	Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-6.53	30	Page 102
H	-6.65	30	Page 103

註：1. 繪圖資料請參考第 102-103 頁。

2. If antenna gain $\leq$ 6dBi, NCC Limit = 30dBm3. If antenna gain $>$ 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)4. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 21-05-MAW-008_5-8n40_Ant1

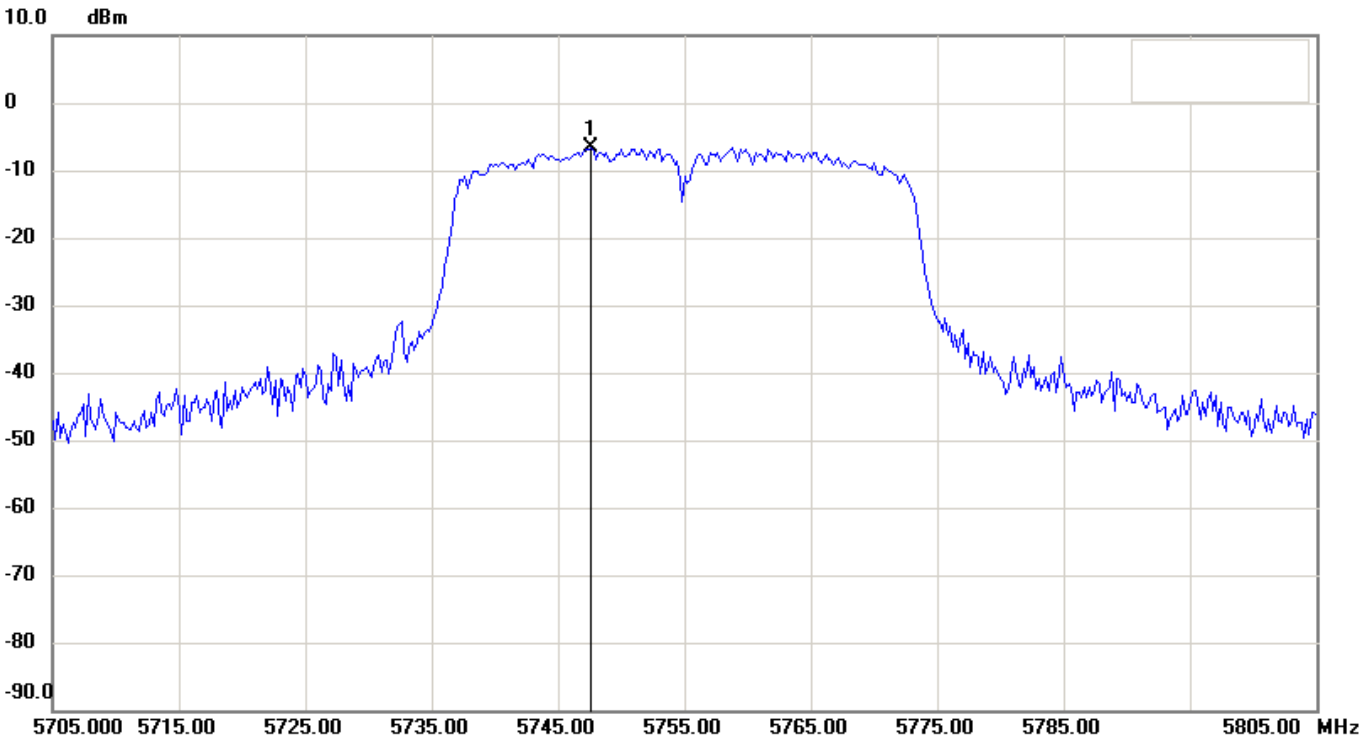
Site: RF-Cond01

#5

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 151_Power Density

RF Conducted

Sweep Time: 1ms

RBW: 500 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5747.60000	-6.53

File: 21-05-MAW-008_5-8n40_Ant1

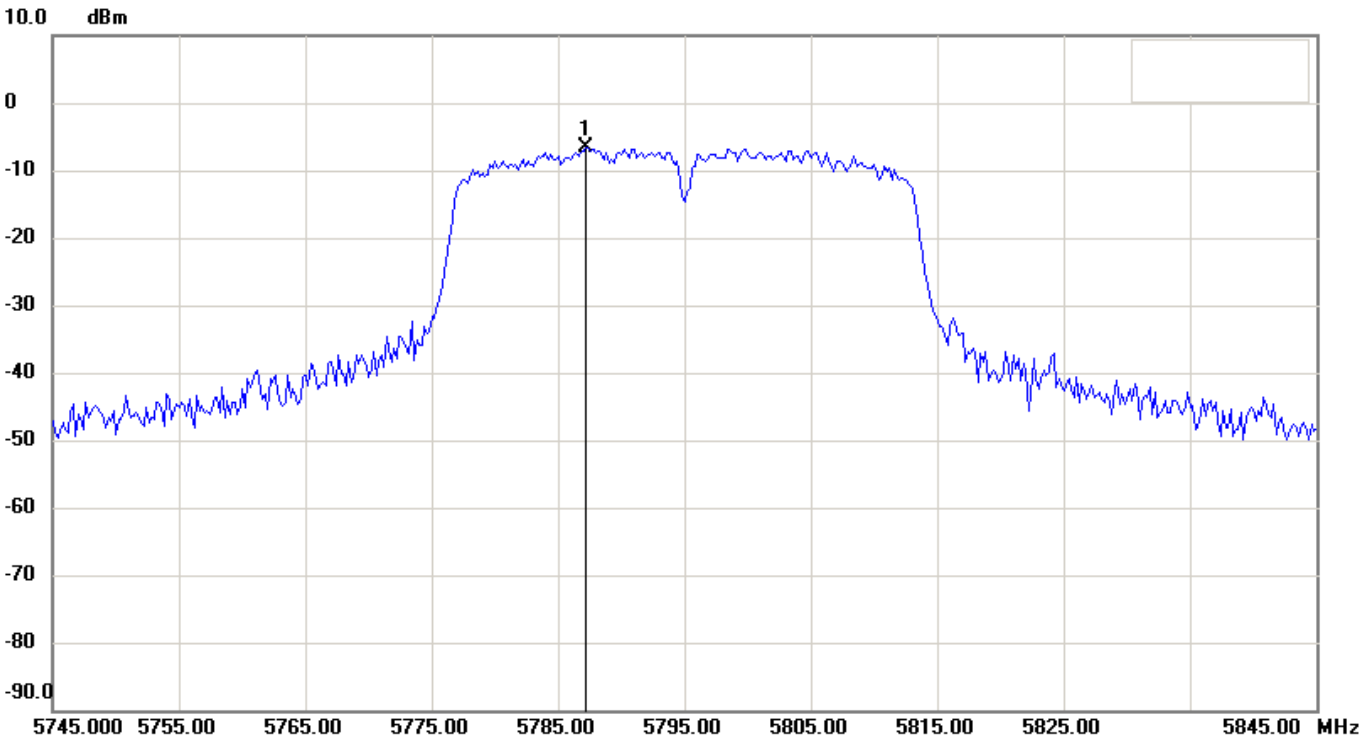
#13

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 159_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5787.20000	-6.65

8.4.3.2 CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-10.08	30	Page 105
H	-9.03	30	Page 106

註：1. 繪圖資料請參考第 105-106 頁。

2. If antenna gain $\leq 6\text{dBi}$, NCC Limit = 30dBm3. If antenna gain $> 6\text{dBi}$, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)4. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 21-05-MAW-008_5-8n40_Ant2

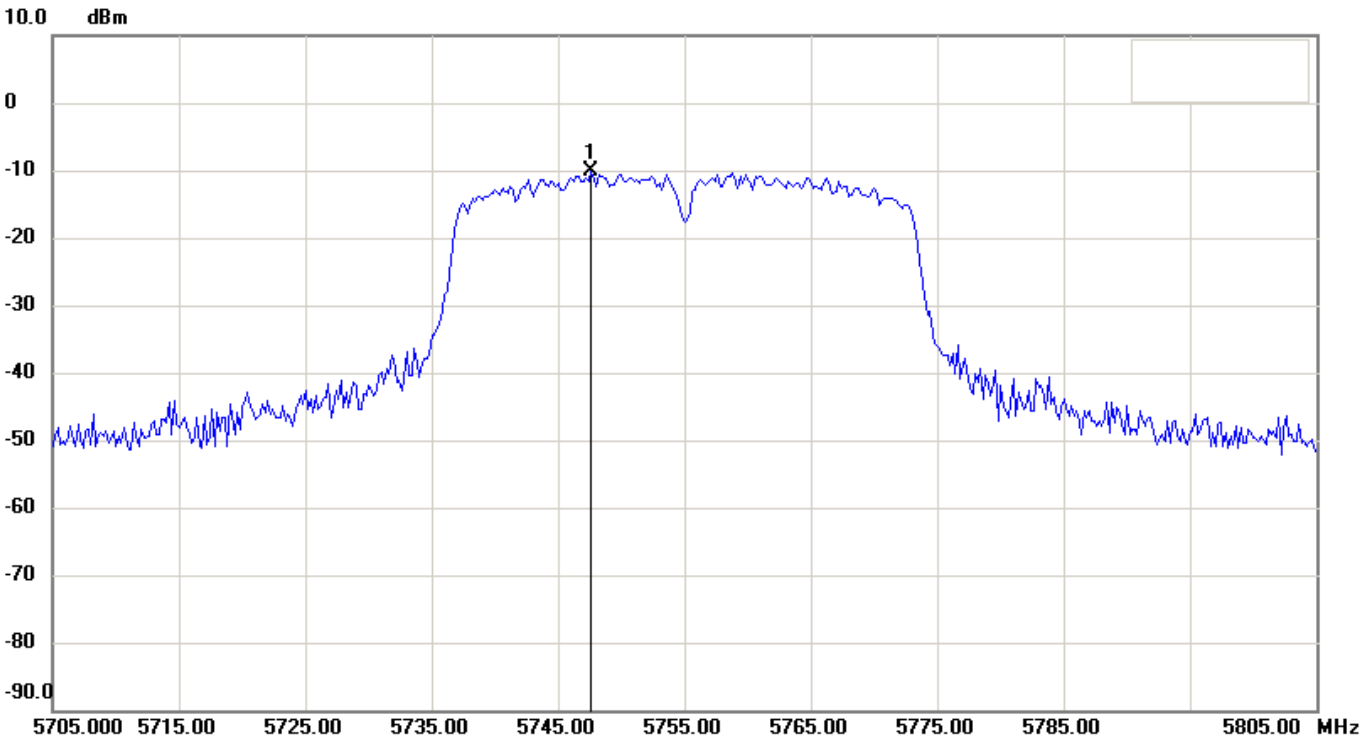
Site: RF-Cond01

#21

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 151_Power Density

RF Conducted

Sweep Time: 1ms

RBW: 500 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5747.60000	-10.08

File: 21-05-MAW-008_5-8n40_Ant2

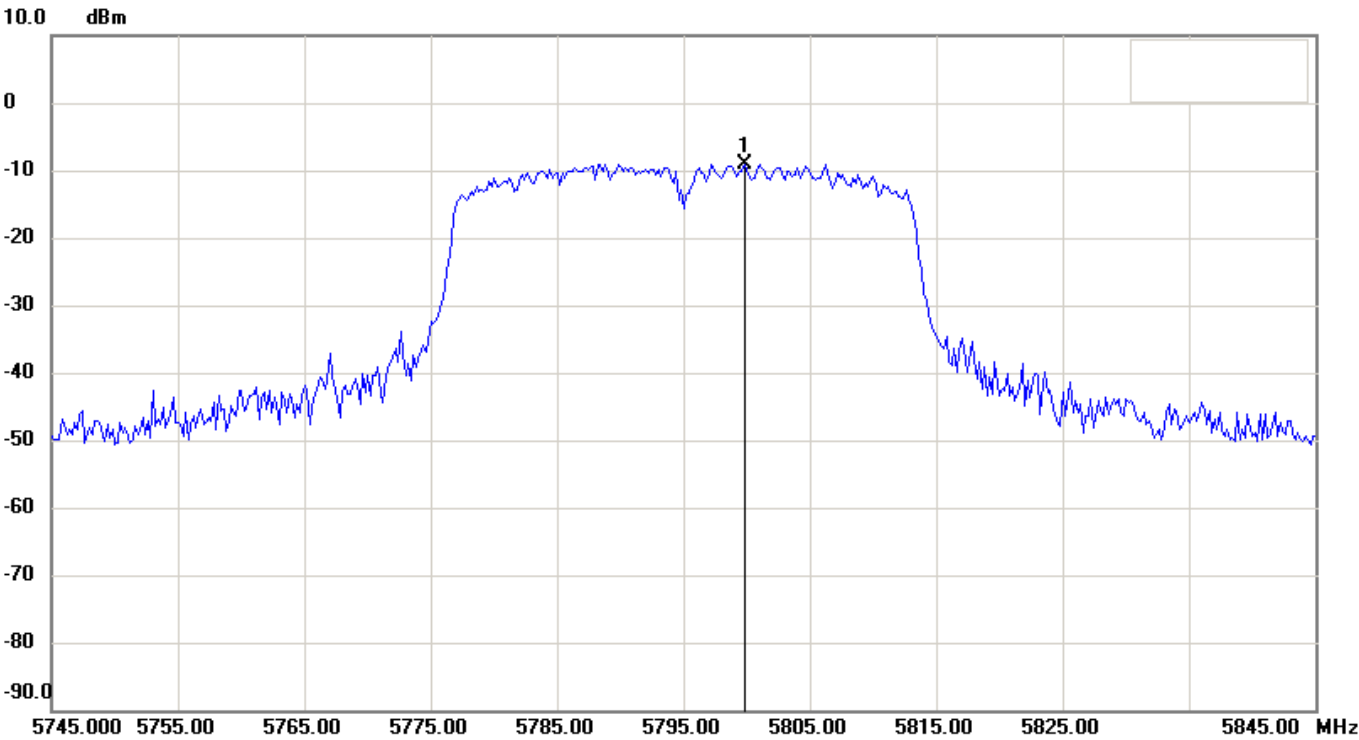
Site: RF-Cond01

#29

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 159_Power Density

RF Conducted

Sweep Time: 1ms

RBW: 500 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5799.80000	-9.03

8.4.3.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

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 0.79 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	-6.53	-10.08	-4.94	30	-
H	-6.65	-9.03	-4.67	30	-

註：1. If antenna gain $\leq$ 6dBi, NCC Limit = 30 dBm

2. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

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

8.4.4 調變技術: IEEE 802.11ac VHT80

8.4.4.1 CHAIN 0

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 0.02 dBi，NCC Limit 如下表所示：

Channel	Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-9.76	30	Page 109

註：1. 繪圖資料請參考第 109 頁。

2. If antenna gain $\leq 6\text{dBi}$, NCC Limit = 30 dBm3. If antenna gain $> 6\text{dBi}$, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)4. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 21-05-MAW-008_5-8ac80_Ant1

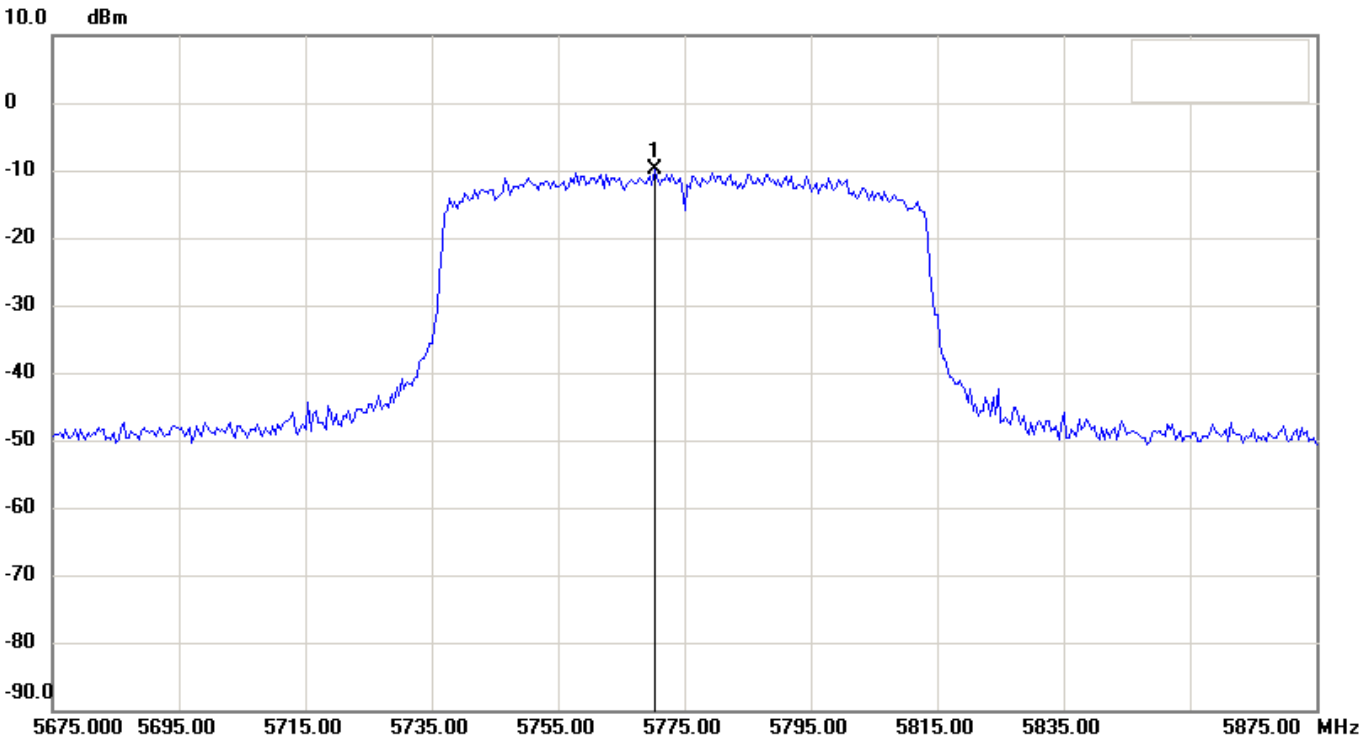
#5

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80_Channel 155_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5770.20000	-9.76

8.4.4.2 CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

天線增益最大值為 -5.26 dBi，NCC Limit 如下表所示：

Channel	Power Spectral Density (dBm)	NCC Limit (dBm)	Chart
L	-11.70	30	Page 111

註：1. 繪圖資料請參考第 111 頁。

2. If antenna gain $\leq$ 6dBi, NCC Limit =30 dBm

3. If antenna gain > 6dBi, NCC Limit = 30dBm – (highest antenna gain – 6 dBi)

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

File: 21-05-MAW-008_5-8ac80_Ant2

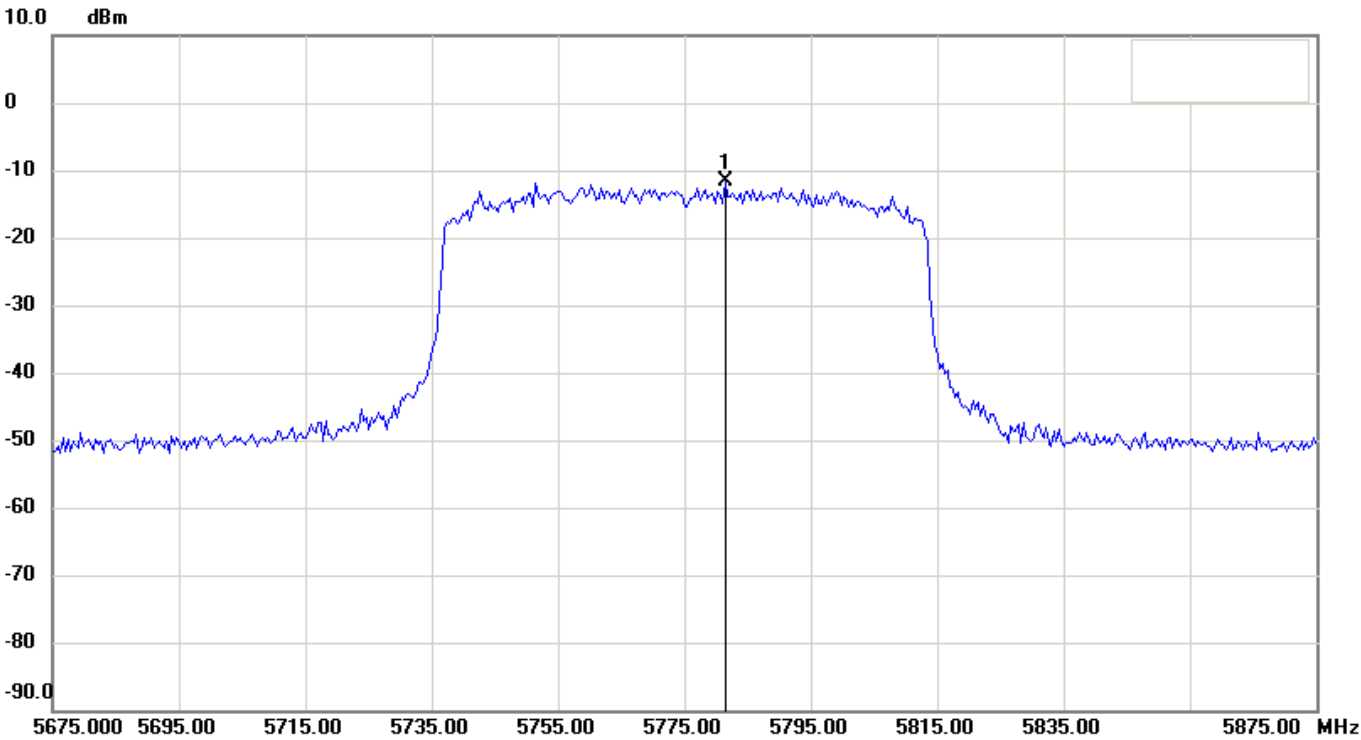
#5

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition:

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80_Channel 155_Power Density

RF Conducted

Sweep Time: 1ms Att.: 15dB

RBW: 500 KHz VBW: 1000 KHz

Operator: Phillip

No.	Frequency(MHz)	Level(dBm)
1	5781.40000	-11.70

8.4.4.3 CHAIN 0 + CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

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 0.79 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	-9.76	-11.70	-7.61	30	-

註：1. If antenna gain $\leq$ 6dBi, NCC Limit = 8 dBm

2. If antenna gain > 6dBi, NCC Limit = 8dBm – (highest antenna gain – 6 dBi)

3. 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3kHz功率密度皆低於限制值，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5.7.4.2節之規定，在5.725 GHz～5.850 GHz 的頻段操作之發射器：所有頻帶邊緣向外5MHz 內頻率之發射，有效等向輻射功率(EIRP) ≤ 27 dBm/MHz～15.6dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣向外5 MHz～25MHz，有效等向輻射功率(EIRP) ≤ 15.6 dBm/MHz～10 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外25 MHz～75 MHz，有效等向輻射功率(EIRP) ≤ 10 dBm/MHz～-27 dBm/MHz (以線性法計算對應之限制值)；所有頻帶邊緣外 ≥ 75 MHz 的頻率之發射，有效等向輻射功率(EIRP) ≤ -27 dBm/MHz。

此外落於國家通訊傳播委員會低功率射頻器材技術規範第3.5節禁用頻段之輻射，應符合國家通訊傳播委員會低功率射頻器材技術規範第3.6節之規定。

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	廠 牌	型 號
Spectrum Analyzer	KEYSIGHT	N9030B
Spectrum Analyzer	R&S	FSV40
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)

測試工程師: 羅世勇

9.4.1 調變技術: IEEE 802.11a

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

註：1. 繪圖資料請參考第 114-121 頁。

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

File: 21-05-MAW-008_5-8a_Ant1

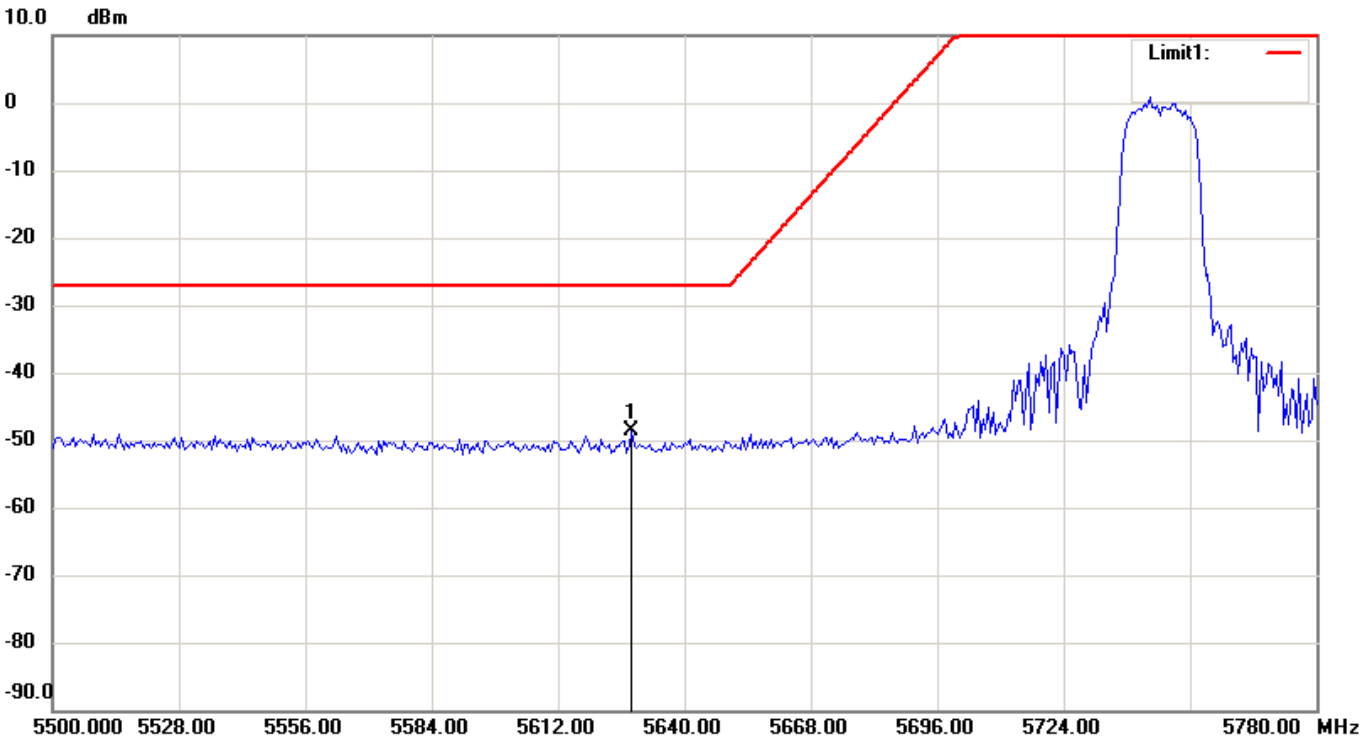
#8

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 1ms Att.: 15dB

Model: DNNS124

RBW: 1000 KHz VBW: 3000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11a Channel 149_Low_Bandedge

No.	Frequency(MHz)	Level(dBm)
1	5628.24000	-48.63

File: 21-05-MAW-008_5-8a_Ant1

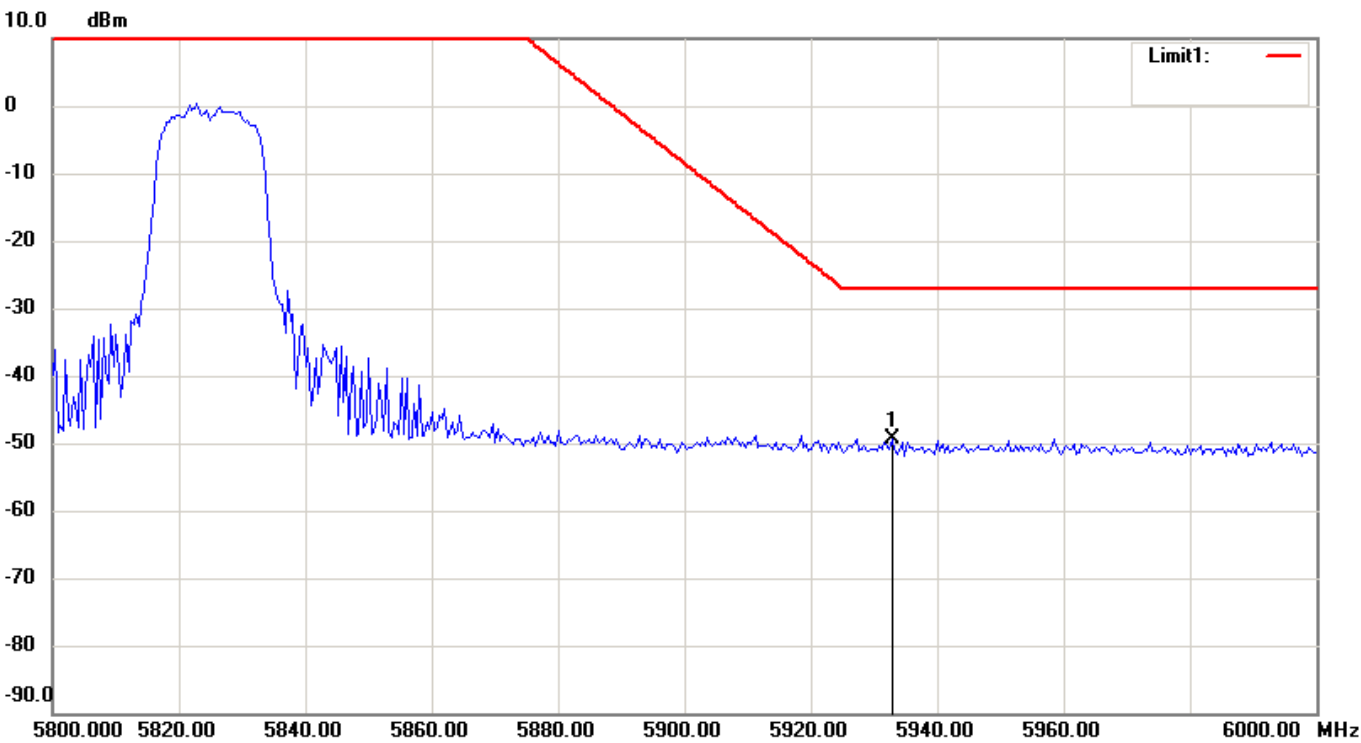
#23

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 1ms Att.: 15dB

Model: DNNS124

RBW: 1000 KHz VBW: 3000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11a Channel 165_High_Bandedge

No.	Frequency(MHz)	Level(dBm)
1	5932.80000	-49.34

File: 21-05-MAW-008_5-8a_Ant1

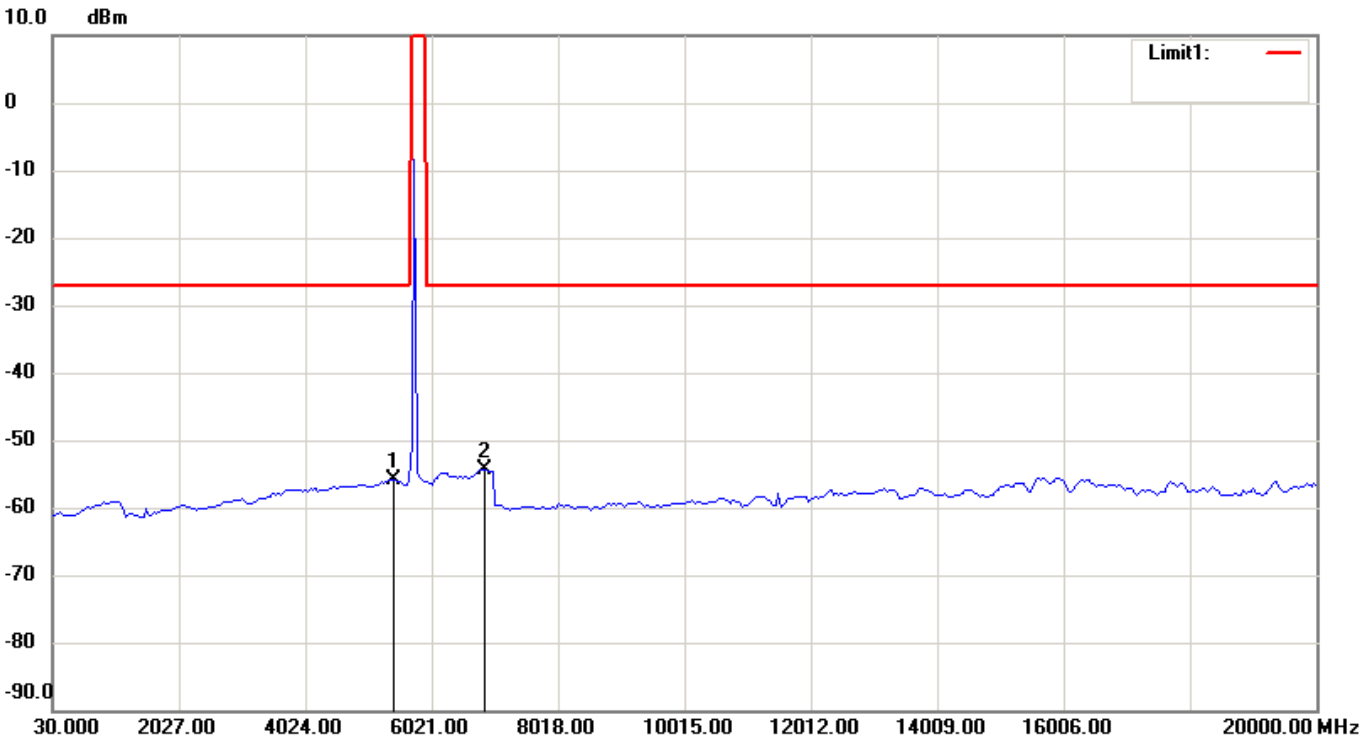
#6

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 79.9ms Att.: 15dB

Model: DNNS124

RBW: 1000 KHz VBW: 1000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11a_Channel 149_Spurious-1

No.	Frequency(MHz)	Level(dBm)
1	5421.90000	-55.83
2	6859.74000	-54.34

File: 21-05-MAW-008_5-8a_Ant1

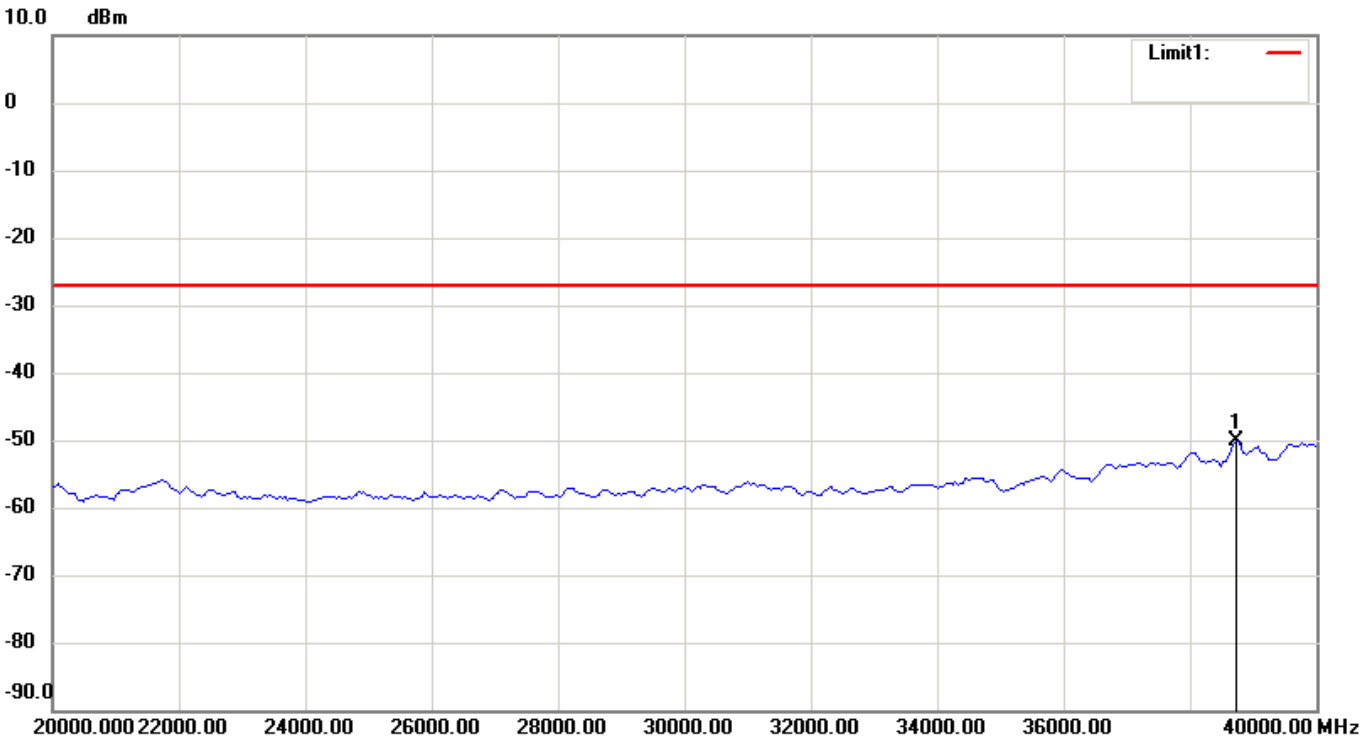
Site: RF-Cond01

#7

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 149_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-50.14

File: 21-05-MAW-008_5-8a_Ant1

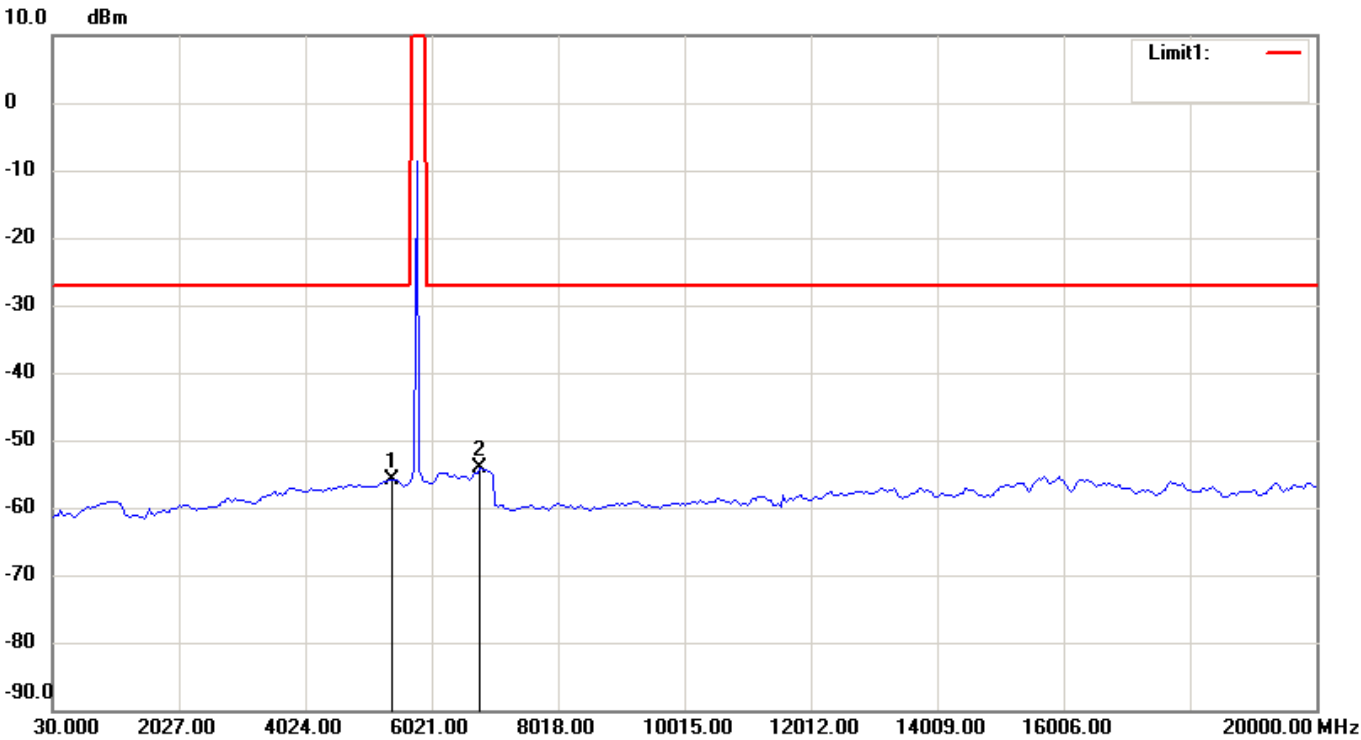
#14

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 157_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5381.96000	-55.81
2	6779.86000	-54.22

File: 21-05-MAW-008_5-8a_Ant1

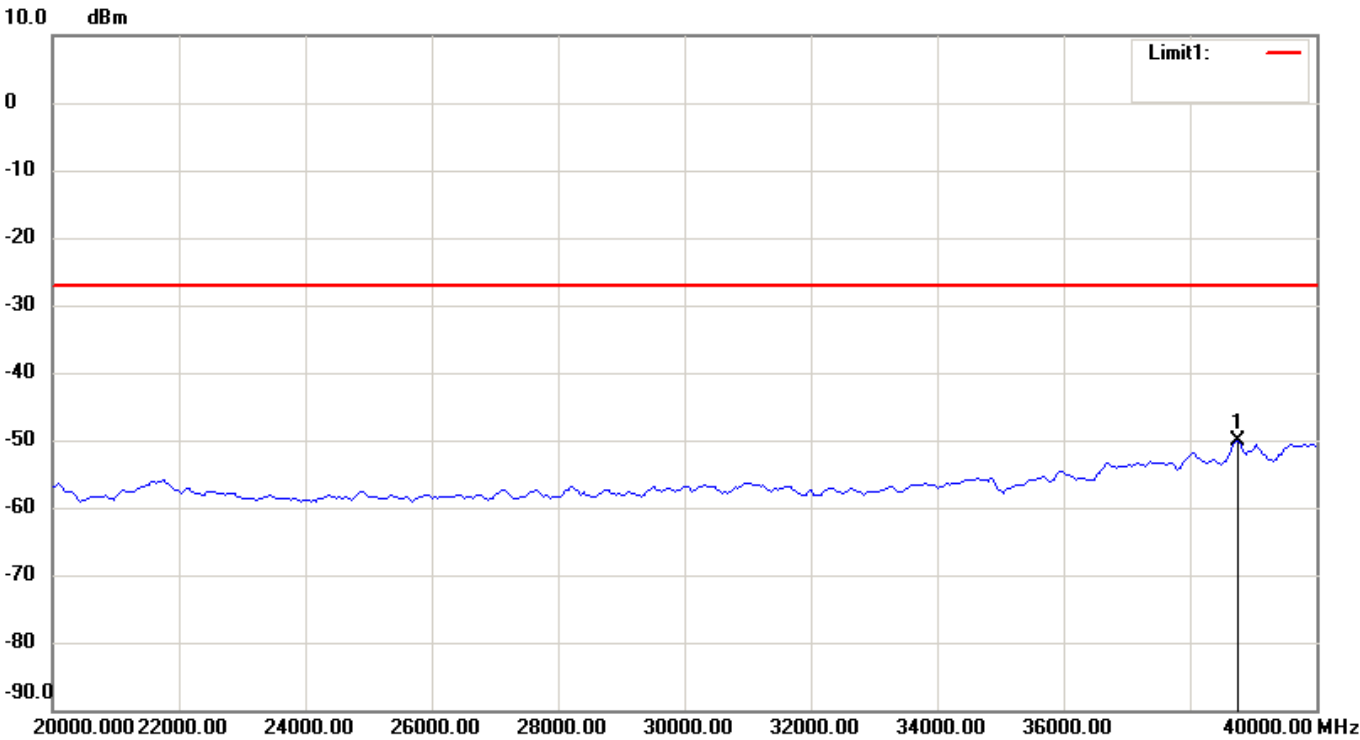
Site: RF-Cond01

#15

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 157_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38760.00000	-50.07

File: 21-05-MAW-008_5-8a_Ant1

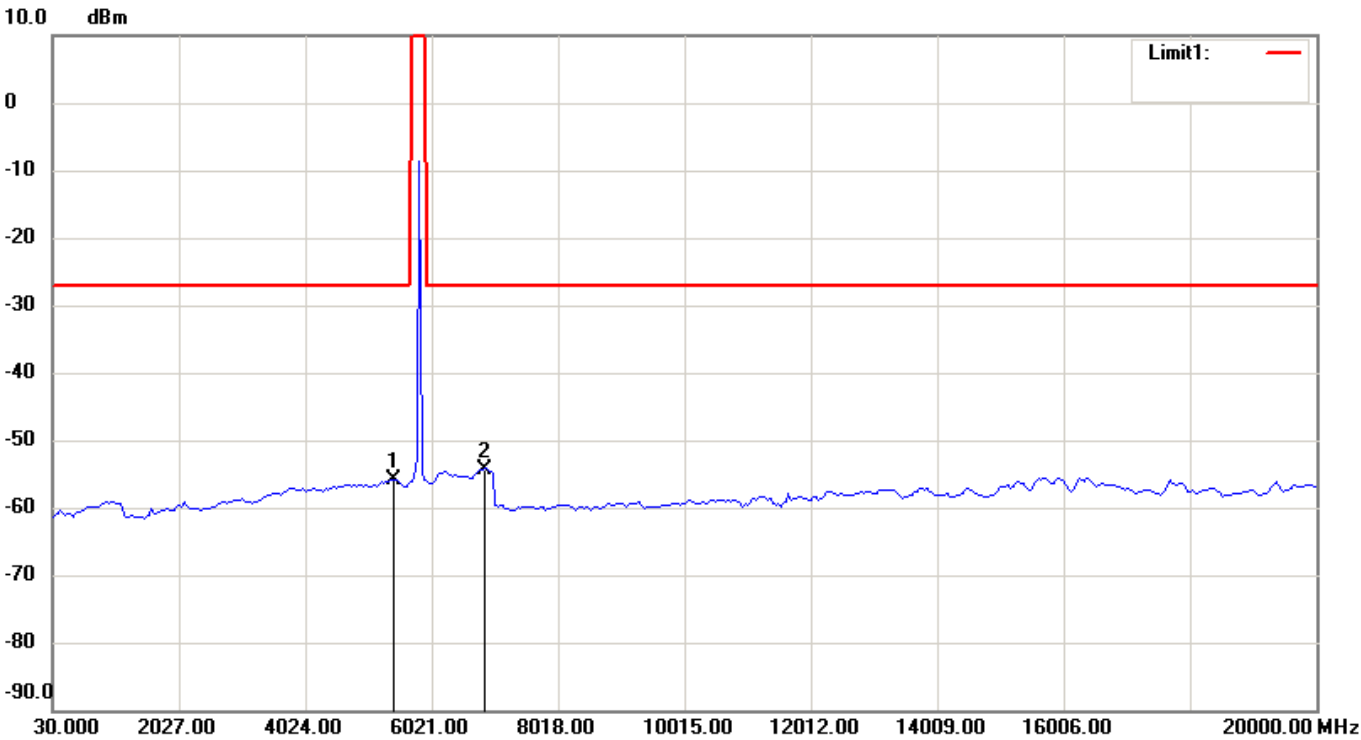
Site: RF-Cond01

#21

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 165_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5421.90000	-55.90
2	6859.74000	-54.25

File: 21-05-MAW-008_5-8a_Ant1

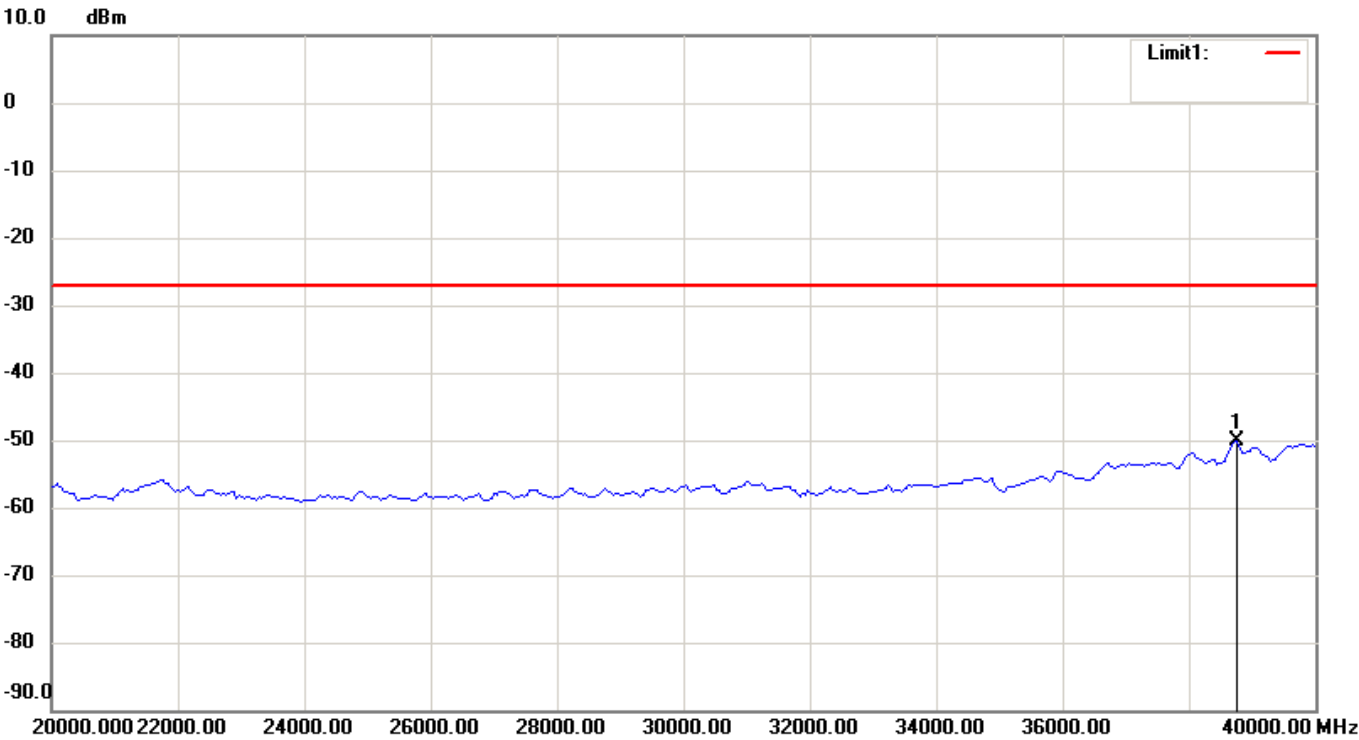
Site: RF-Cond01

#22

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11a_Channel 165_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38760.00000	-50.03

9.4.2 調變技術: IEEE 802.11n HT20

9.4.2.1 CHAIN 0

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

註: 1. 繪圖資料請參考第 123-130 頁。

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

File: 21-05-MAW-008_5-8n20_Ant1

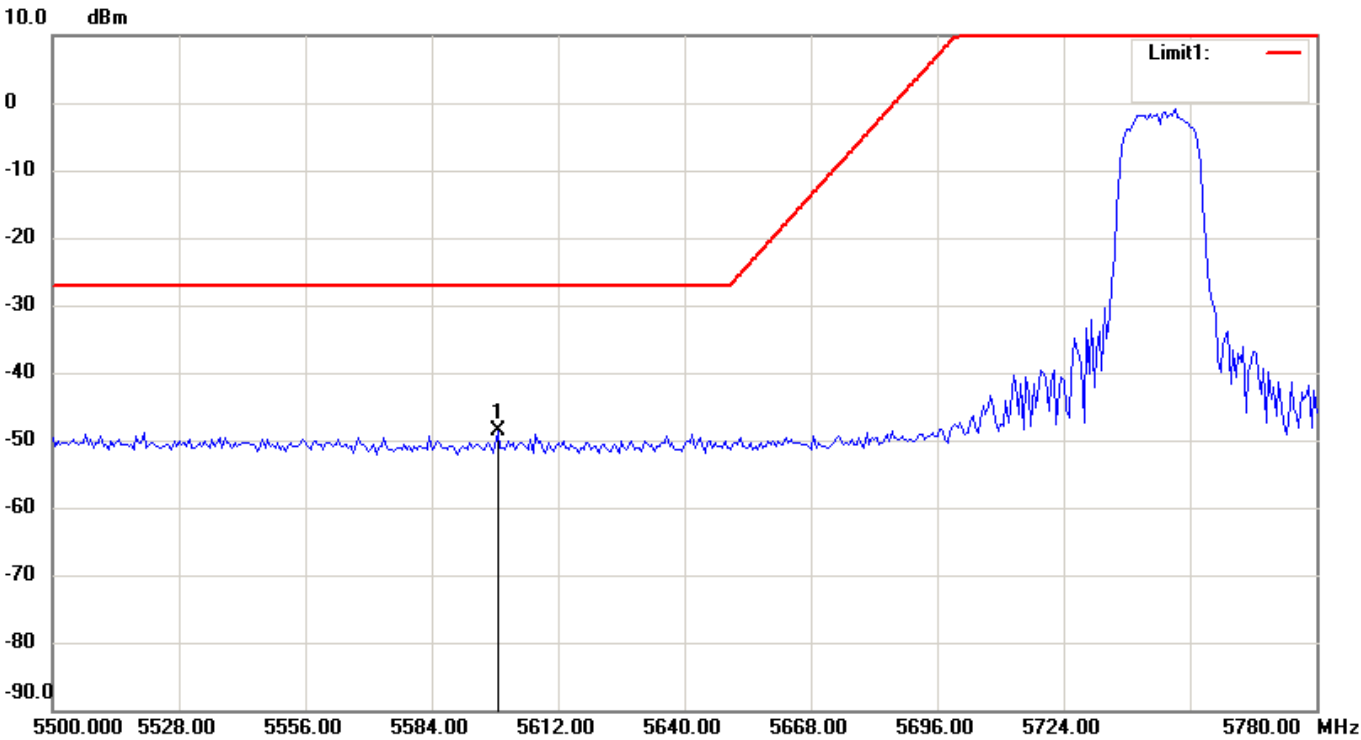
Site: RF-Cond01

#8

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 149_Low_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5598.56000	-48.61

File: 21-05-MAW-008_5-8n20_Ant1

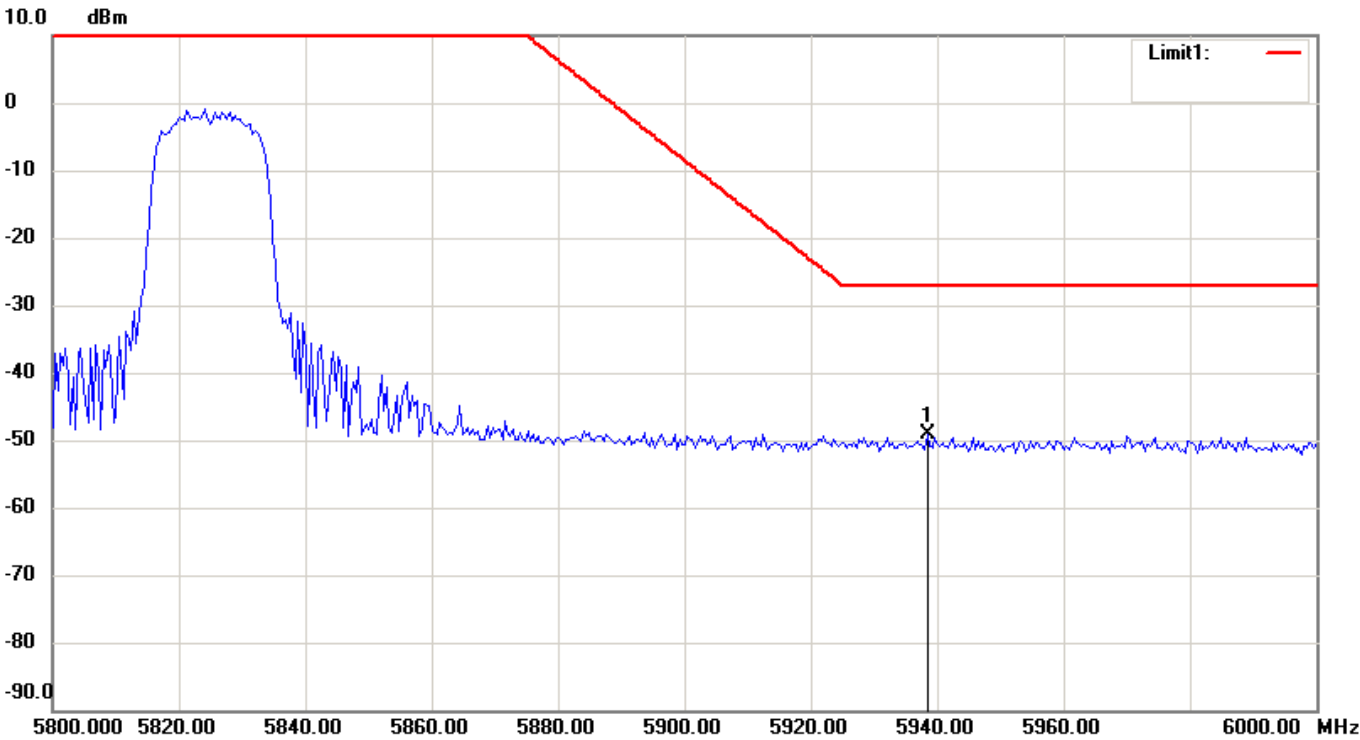
Site: RF-Cond01

#23

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 165_High_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

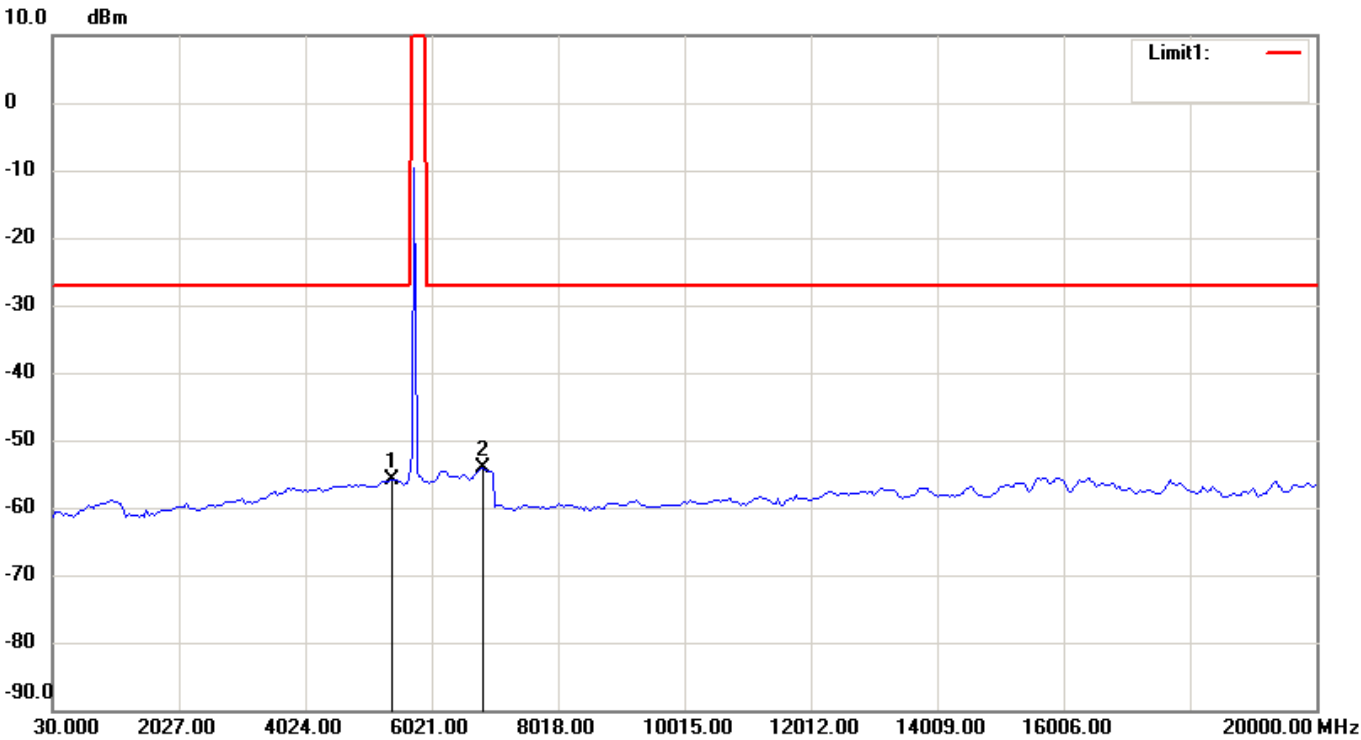
Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5938.40000	-49.10

File: 21-05-MAW-008_5-8n20_Ant1 #6 Date: 2021/6/29 Temperature: 23 °C
Site: RF-Cond01 Humidity: 60 %



Condition: UNII-Band-4-Bandedge RF Conducted
EUT: Cockpit Control Unit Sweep Time: 79.9ms Att.: 15dB
Model: DNNS124 RBW: 1000 KHz VBW: 1000 KHz
Test Mode: UNII Operator: Phillip
Note: NCC_LP0002_802.11n20_Channel 149_Spurious-1

No.	Frequency(MHz)	Level(dBm)
1	5381.96000	-55.82
2	6819.80000	-54.23

File: 21-05-MAW-008_5-8n20_Ant1

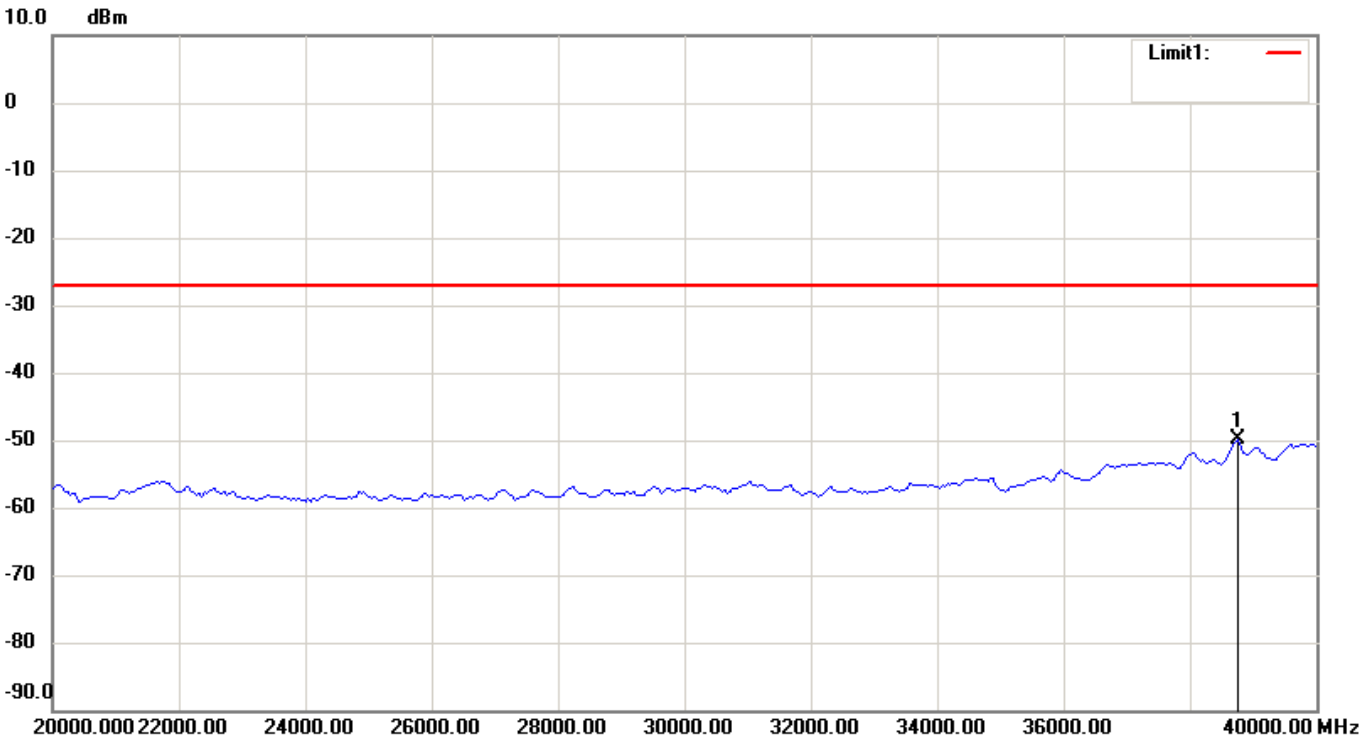
Site: RF-Cond01

#7

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 149_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38760.00000	-49.93

File: 21-05-MAW-008_5-8n20_Ant1

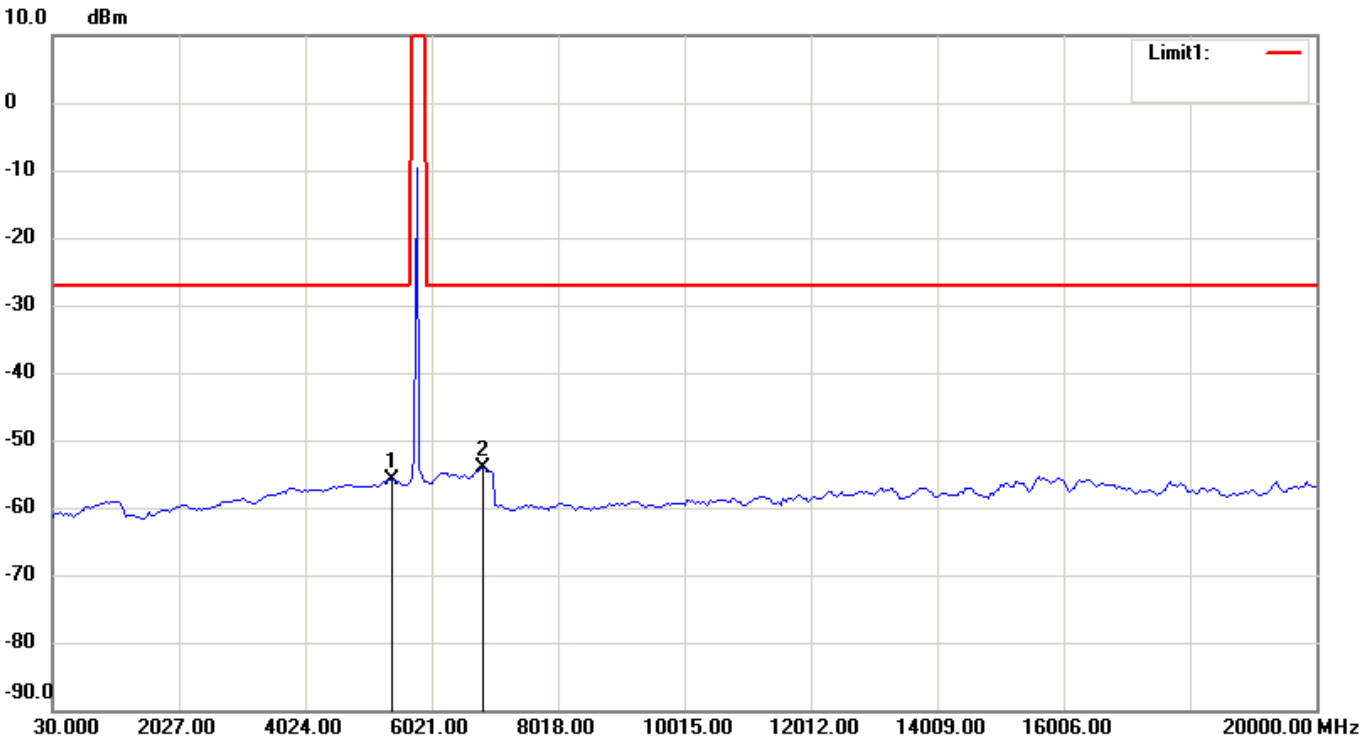
#14

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 157_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5381.96000	-55.93
2	6819.80000	-54.10

File: 21-05-MAW-008_5-8n20_Ant1

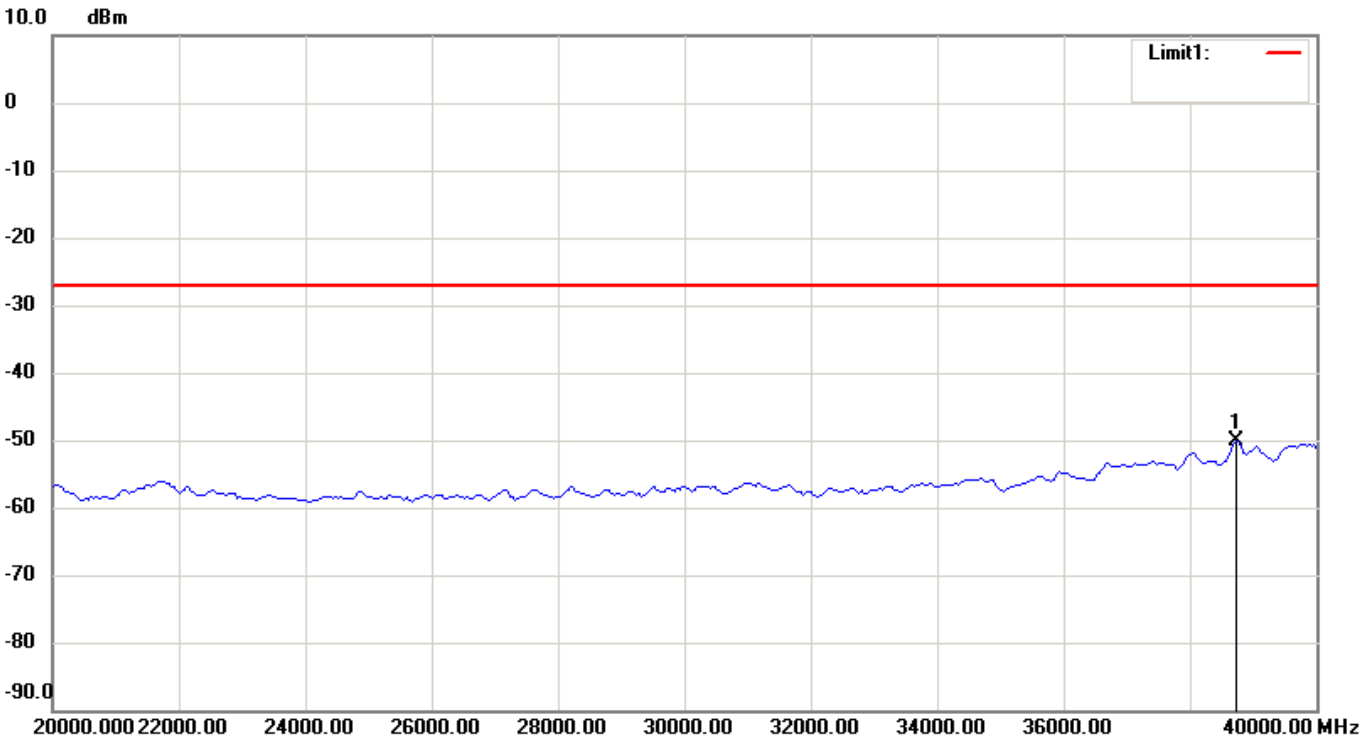
Site: RF-Cond01

#15

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 157_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-50.02

File: 21-05-MAW-008_5-8n20_Ant1

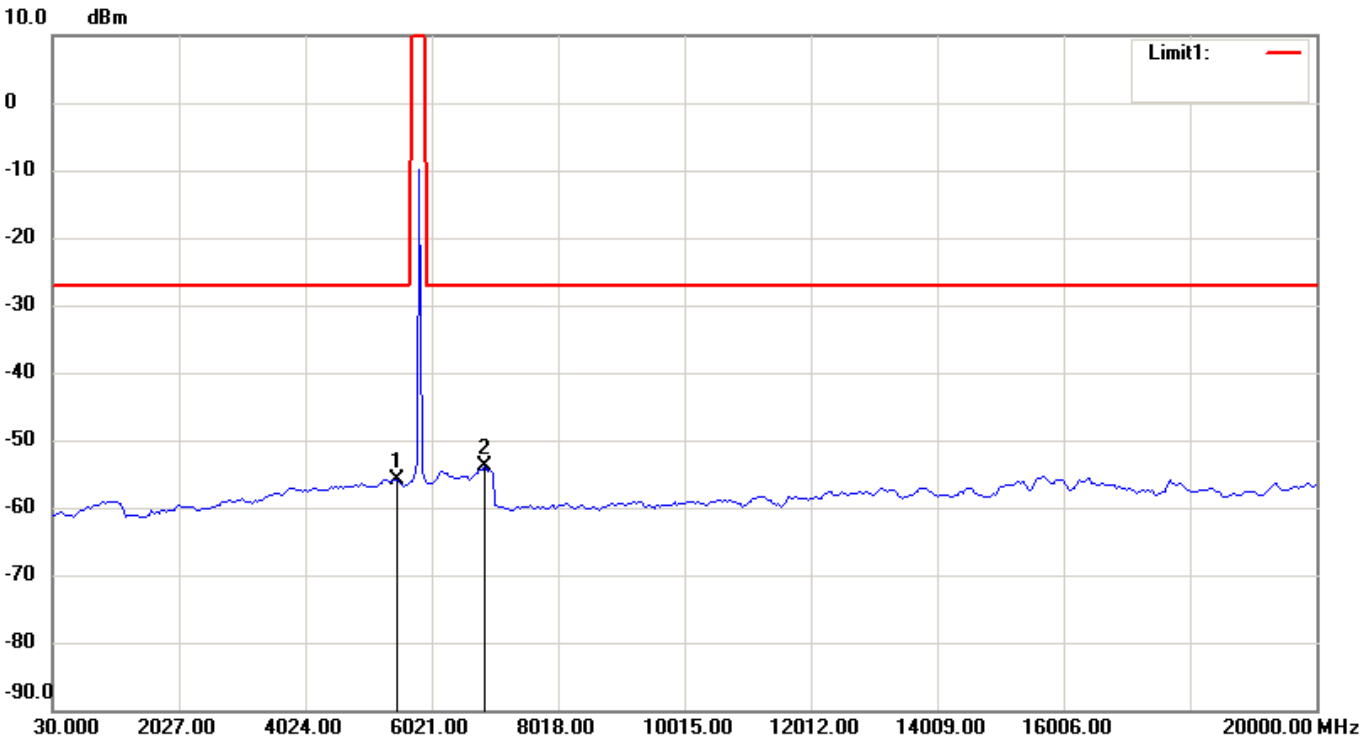
#21

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 79.9ms Att.: 15dB

Model: DNNS124

RBW: 1000 KHz VBW: 1000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11n20_Channel 165_Spurious-1

No.	Frequency(MHz)	Level(dBm)
1	5461.84000	-55.84
2	6859.74000	-53.83

File: 21-05-MAW-008_5-8n20_Ant1

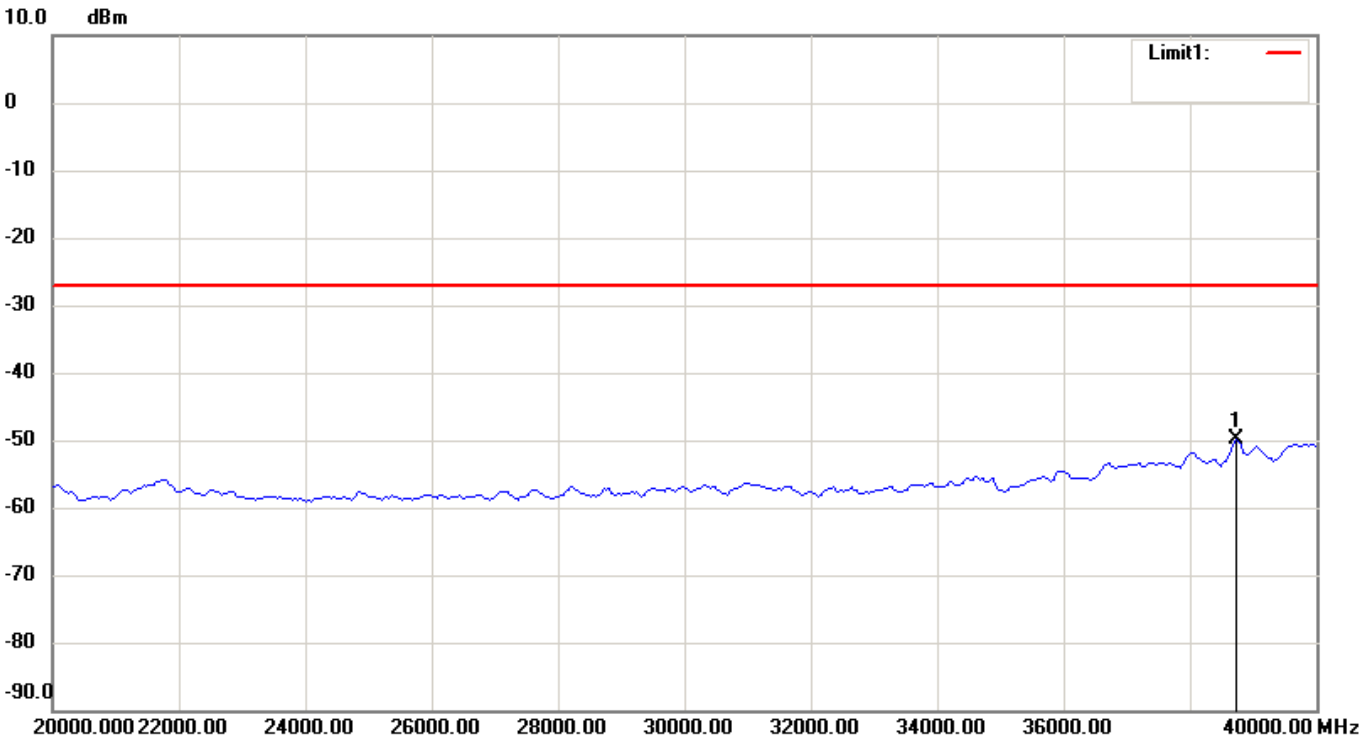
#22

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 165_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-49.92

9.4.2.2 CHAIN 1

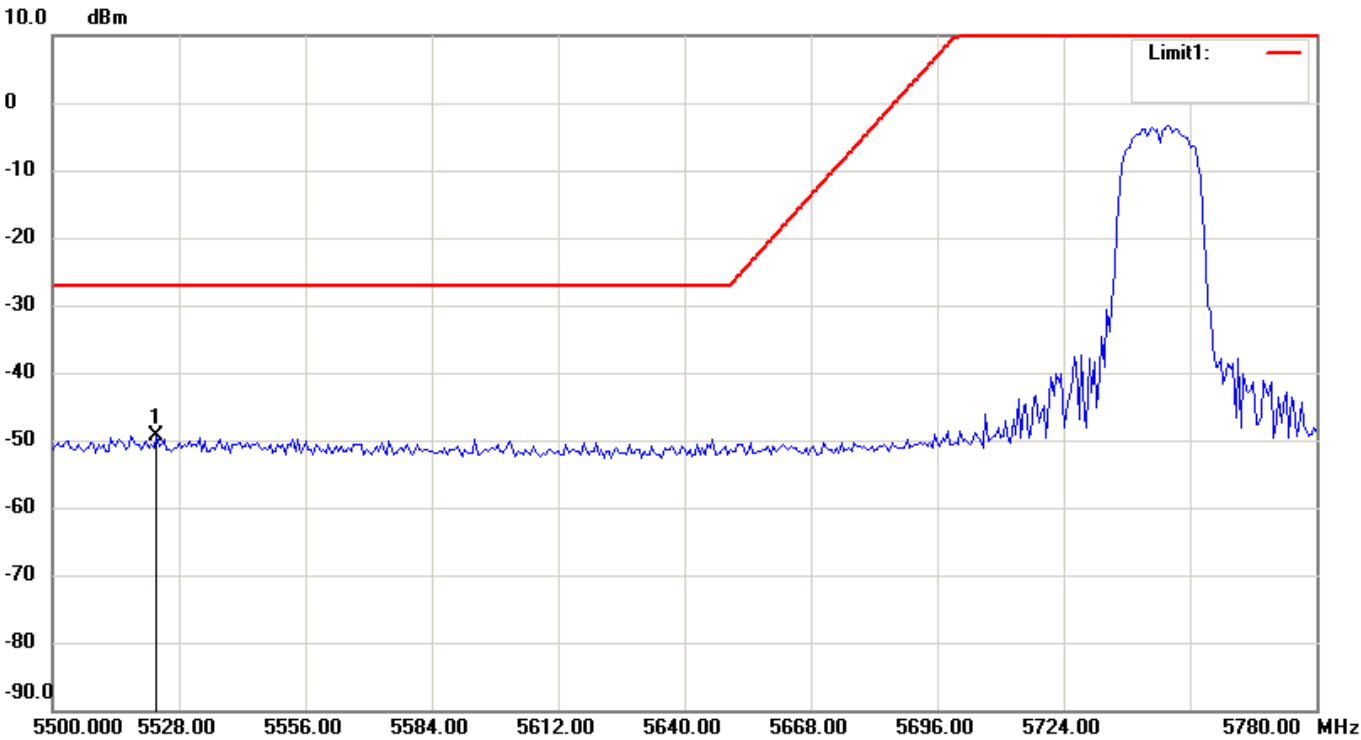
測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

- 註：1. 繪圖資料請參考第 132-139 頁。
2. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

File: 21-05-MAW-008_5-8n20_Ant2 #31 Date: 2021/6/29 Temperature: 23 °C
Site: RF-Cond01 Humidity: 60 %



Condition: UNII-Band-4-Bandedge RF Conducted
EUT: Cockpit Control Unit Sweep Time: 1ms Att.: 15dB
Model: DNNS124 RBW: 1000 KHz VBW: 3000 KHz
Test Mode: UNII Operator: Phillip
Note: NCC_LP0002_802.11n20 Channel 149_Low_Bandedge

No.	Frequency(MHz)	Level(dBm)
1	5522.96000	-49.38

File: 21-05-MAW-008_5-8n20_Ant2

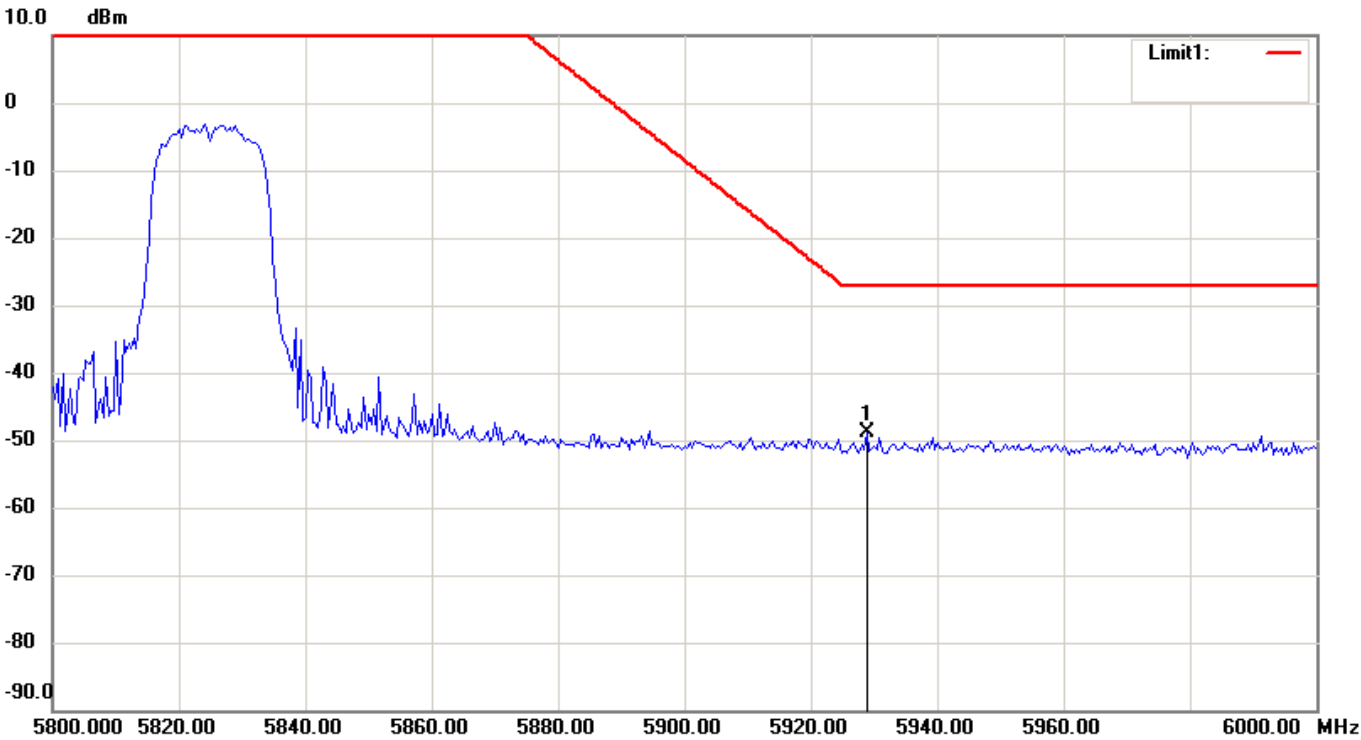
#46

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20 Channel 165_High_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

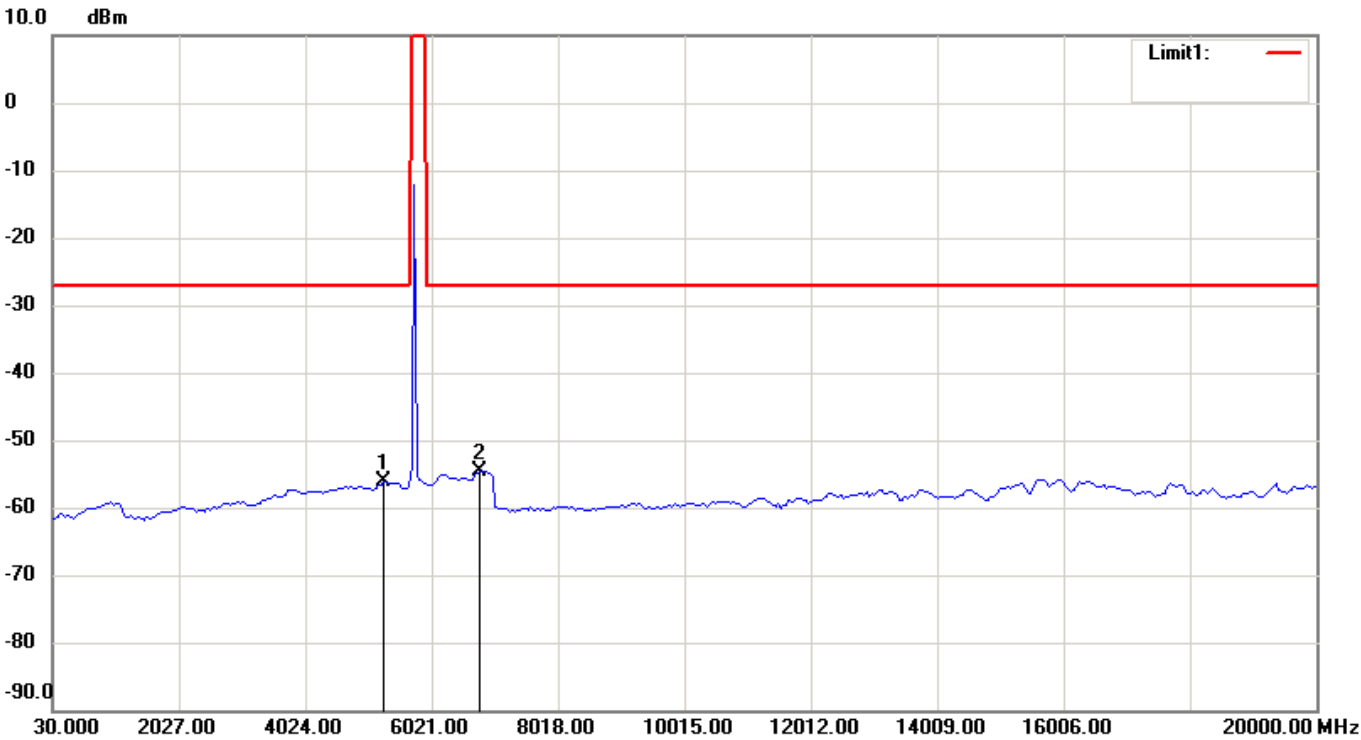
Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5928.80000	-48.91

File: 21-05-MAW-008_5-8n20_Ant2 #29 Date: 2021/6/29 Temperature: 23 °C
Site: RF-Cond01 Humidity: 60 %



Condition: UNII-Band-4-Bandedge RF Conducted
EUT: Cockpit Control Unit Sweep Time: 79.9ms Att.: 15dB
Model: DNNS124 RBW: 1000 KHz VBW: 1000 KHz
Test Mode: UNII Operator: Phillip
Note: NCC_LP0002_802.11n20_Channel 149_Spurious-1

No.	Frequency(MHz)	Level(dBm)
1	5262.14000	-56.23
2	6779.86000	-54.58

File: 21-05-MAW-008_5-8n20_Ant2

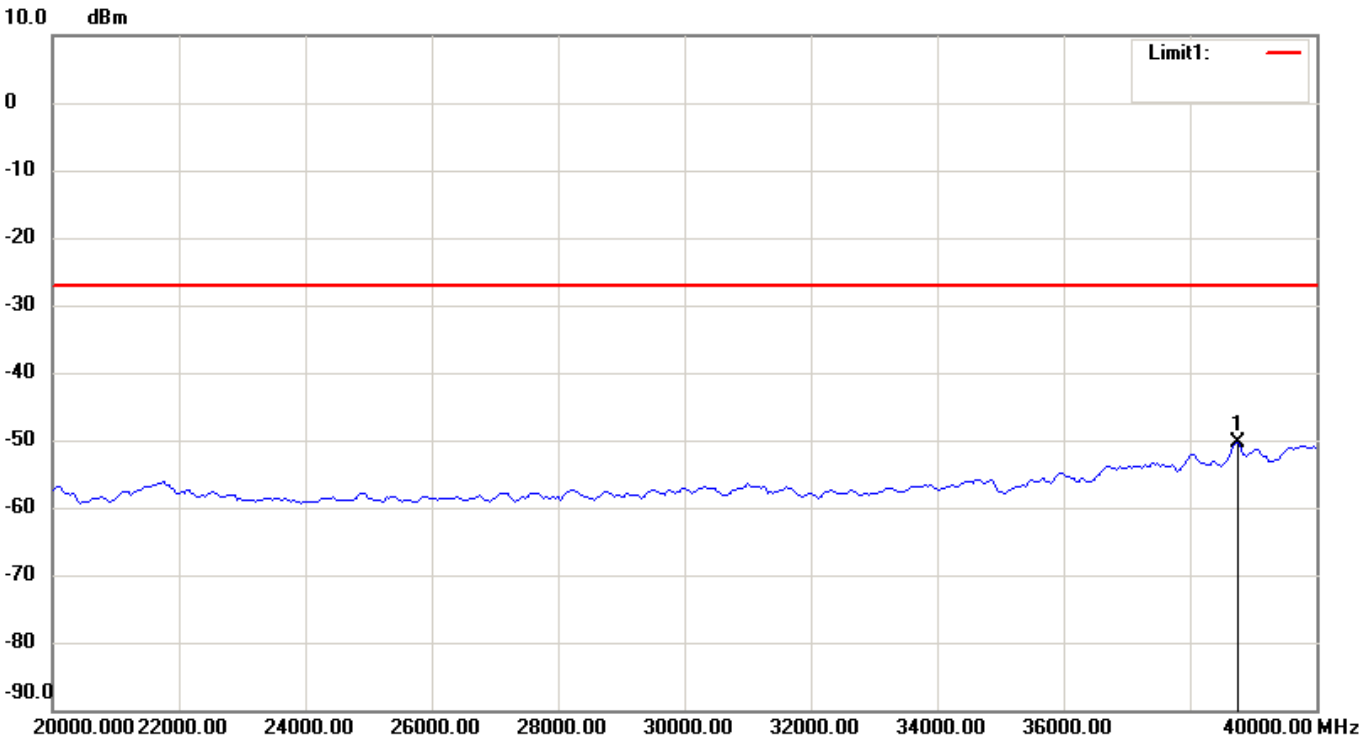
Site: RF-Cond01

#30

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 149_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38760.00000	-50.28

File: 21-05-MAW-008_5-8n20_Ant2

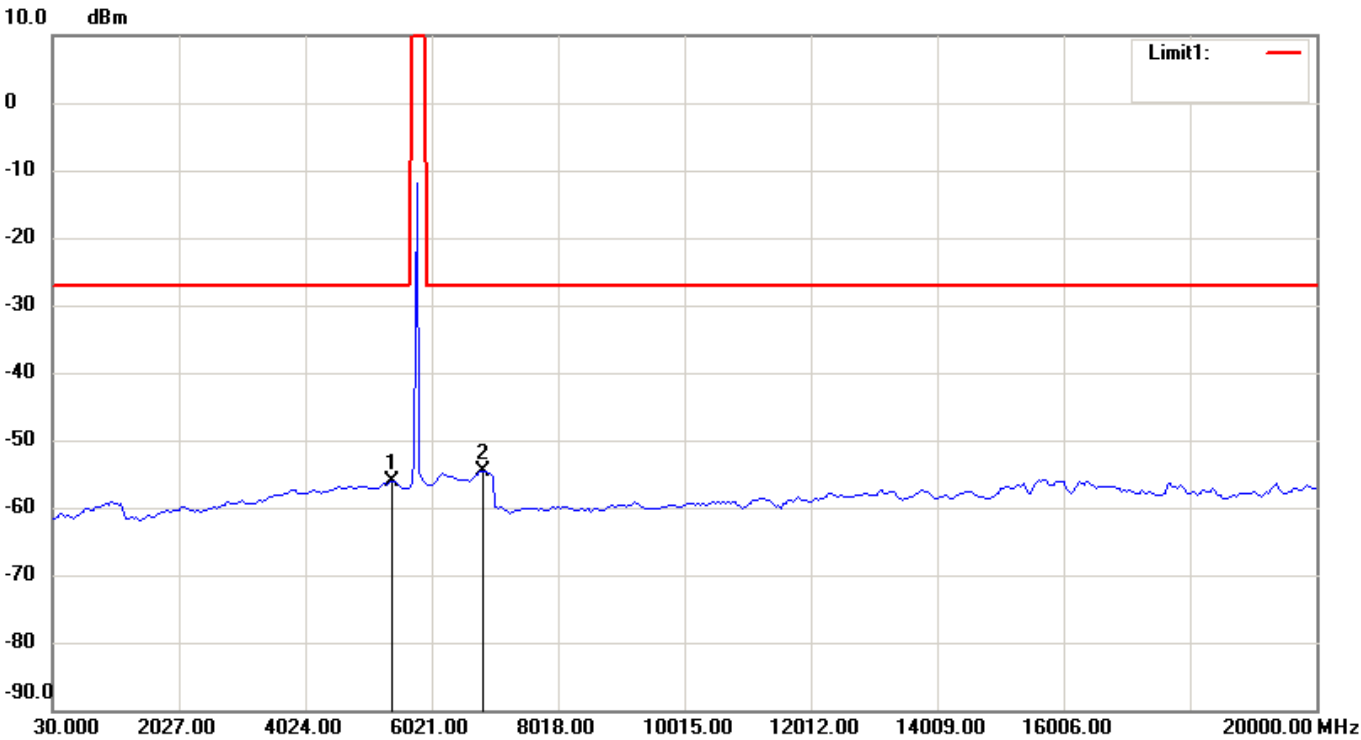
#37

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 79.9ms Att.: 15dB

Model: DNNS124

RBW: 1000 KHz VBW: 1000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11n20_Channel 157_Spurious-1

No.	Frequency(MHz)	Level(dBm)
1	5381.96000	-56.19
2	6819.80000	-54.64

File: 21-05-MAW-008_5-8n20_Ant2

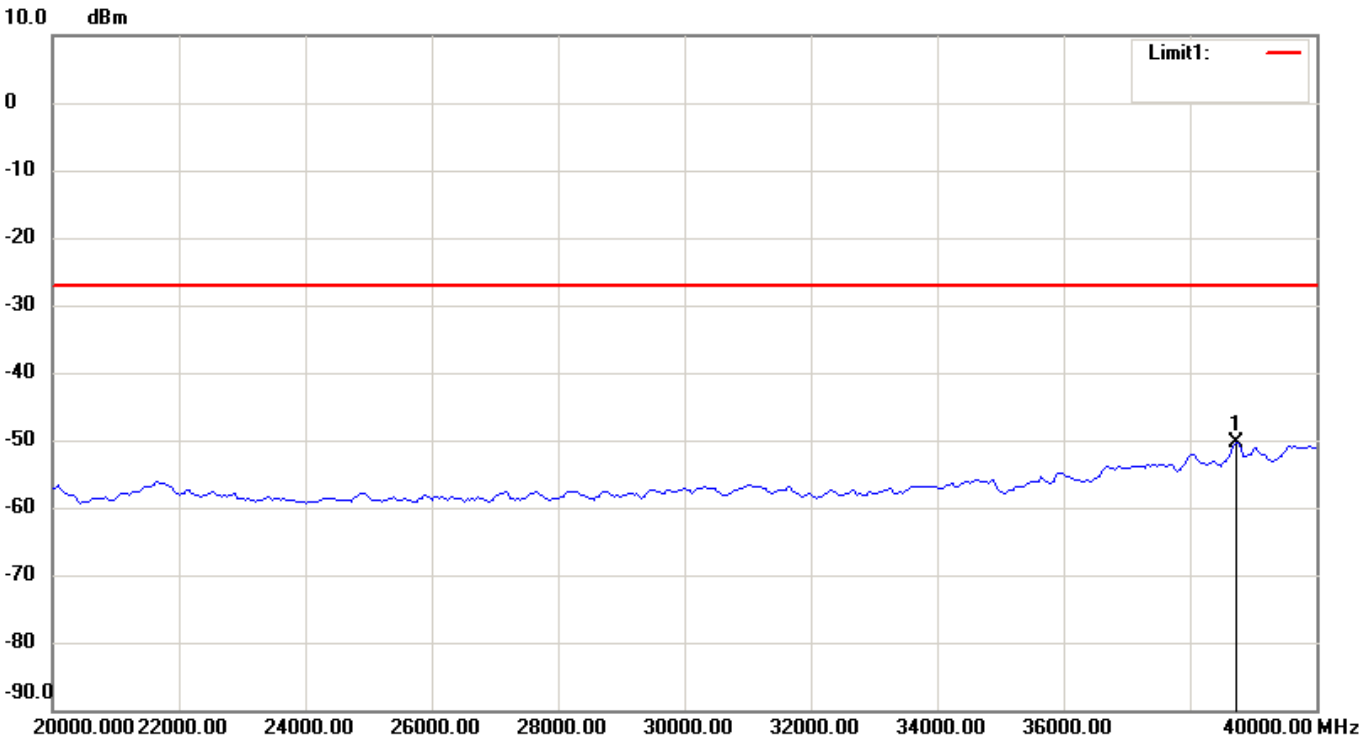
Site: RF-Cond01

#38

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 157_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-50.30

File: 21-05-MAW-008_5-8n20_Ant2

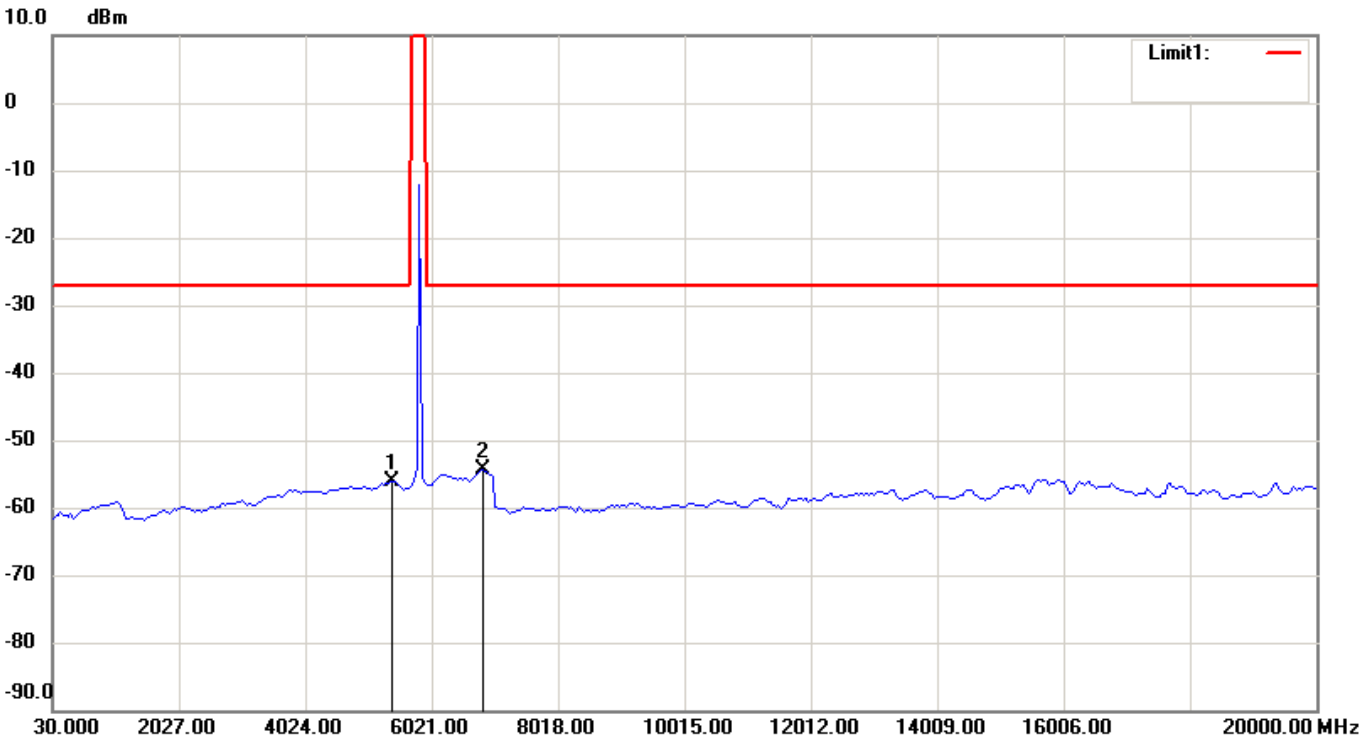
Site: RF-Cond01

#44

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 165_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5381.96000	-56.12
2	6819.80000	-54.49

File: 21-05-MAW-008_5-8n20_Ant2

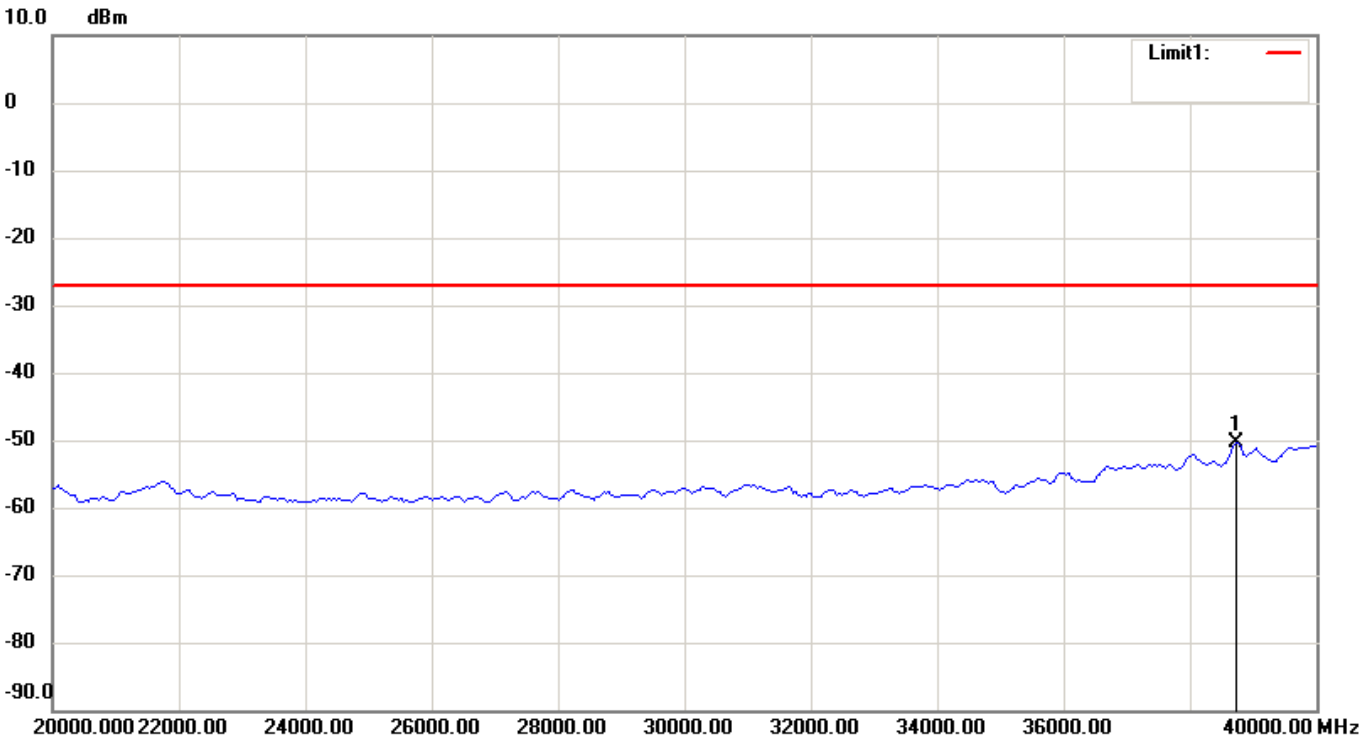
Site: RF-Cond01

#45

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n20_Channel 165_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-50.29

9.4.3 調變技術: IEEE 802.11n HT40

9.4.3.1 CHAIN 0

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

註：1. 繪圖資料請參考第 141-146 頁。

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

File: 21-05-MAW-008_5-8n40_Ant1

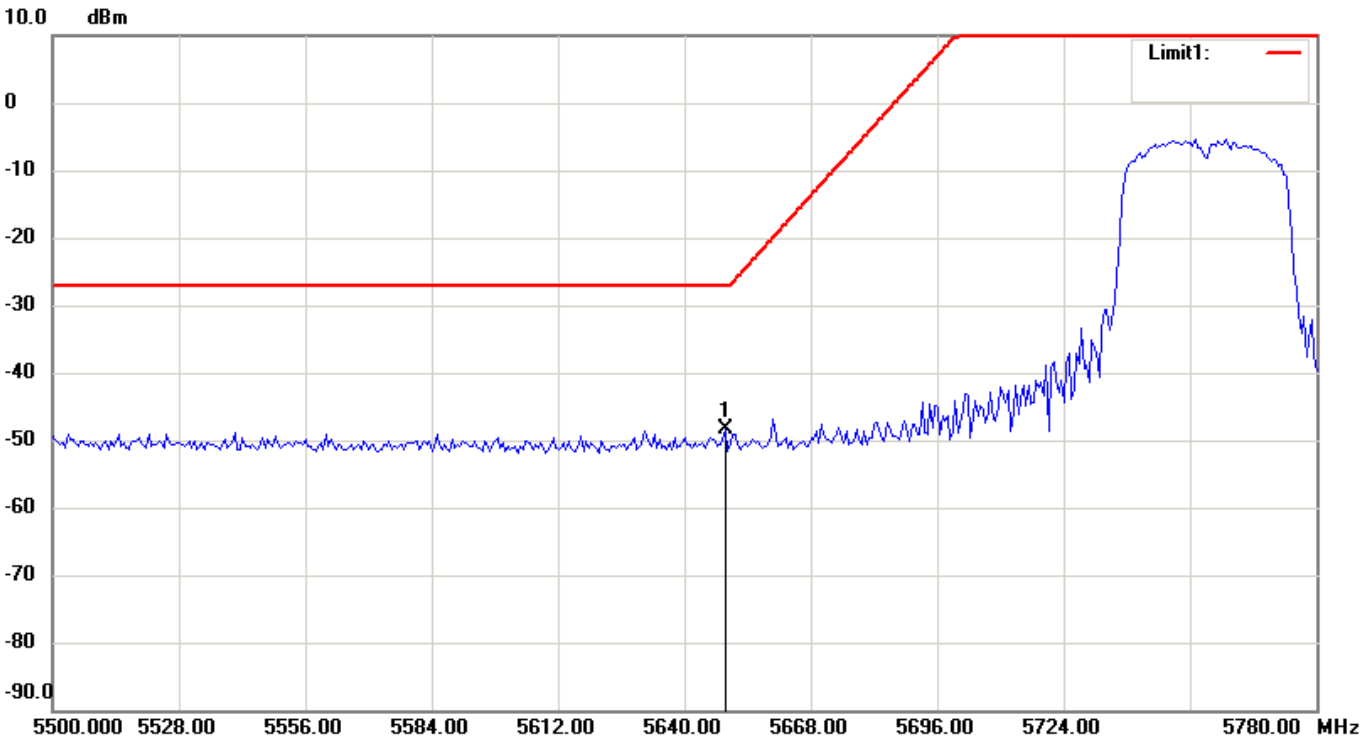
Site: RF-Cond01

#8

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 151_Low_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5648.96000	-48.31

File: 21-05-MAW-008_5-8n40_Ant1

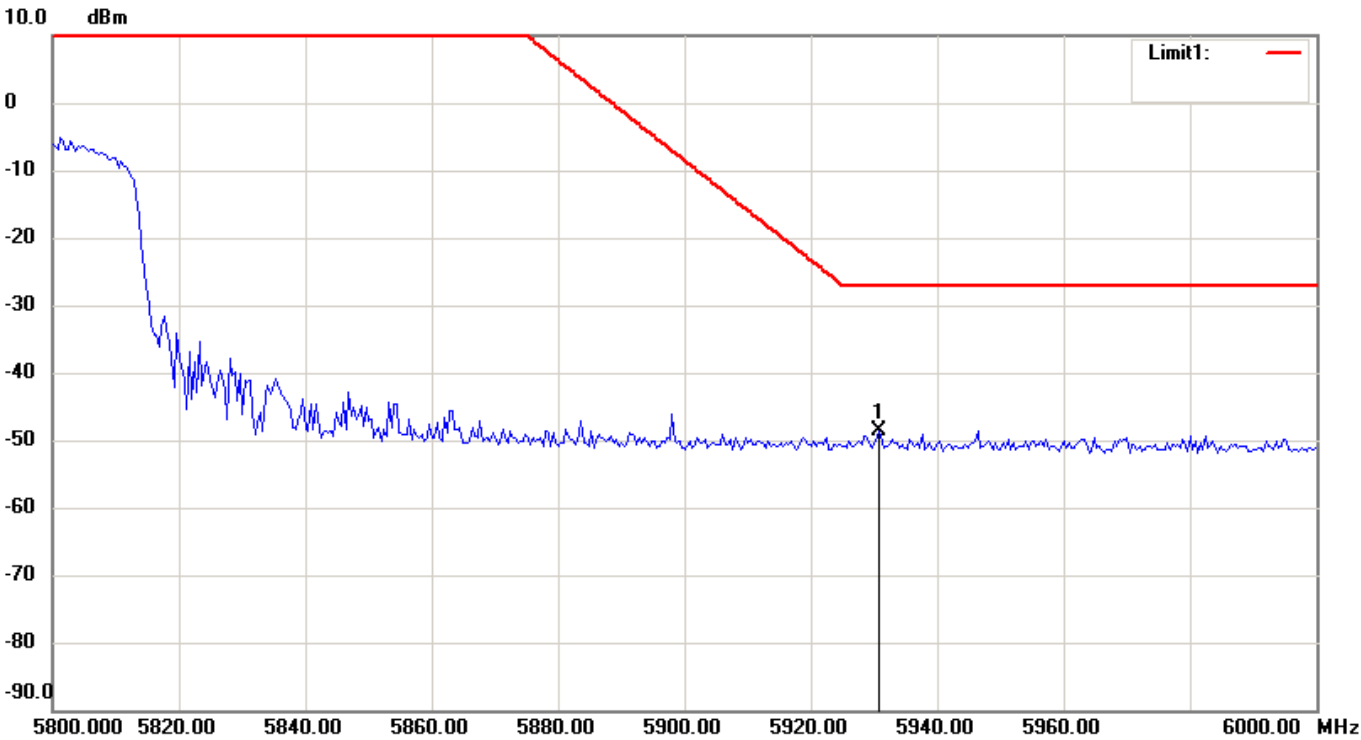
Site: RF-Cond01

#16

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 159_High_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

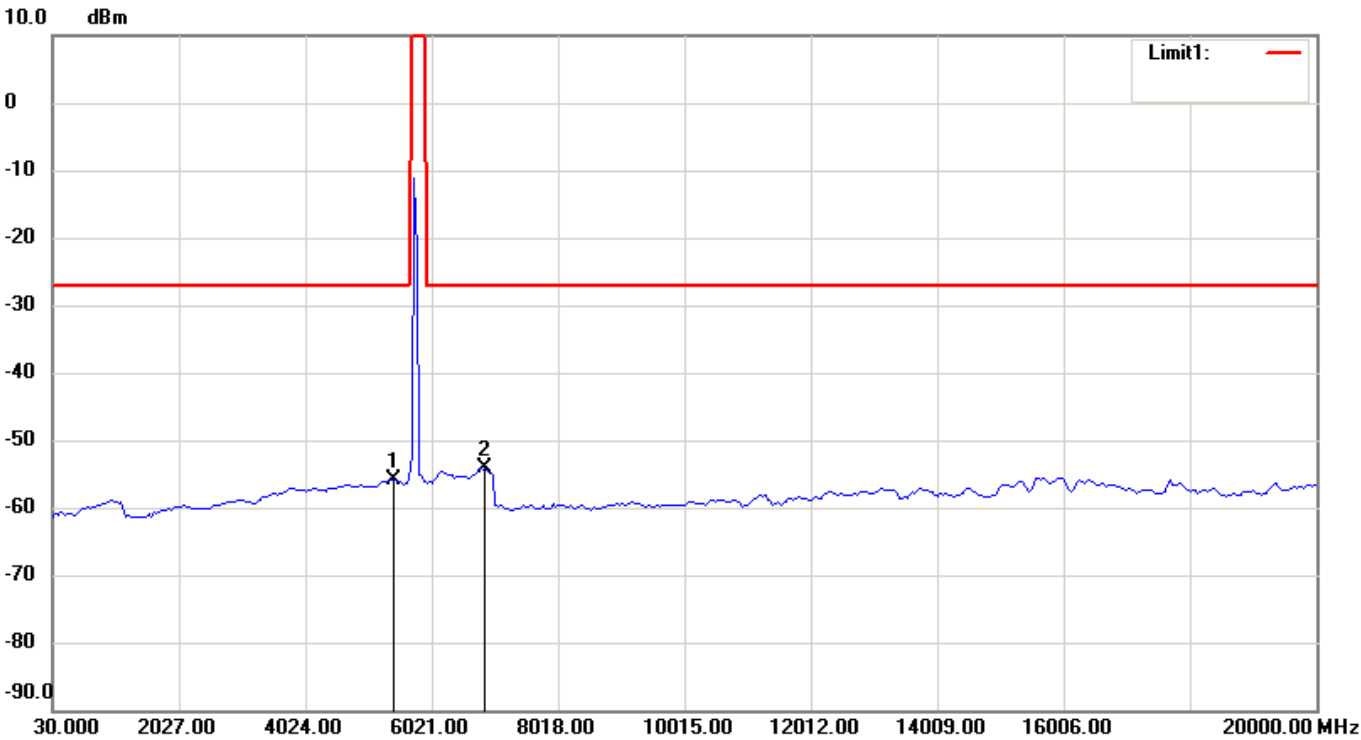
Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5930.80000	-48.66

File: 21-05-MAW-008_5-8n40_Ant1 #6 Date: 2021/6/29 Temperature: 23 °C
Site: RF-Cond01 Humidity: 60 %



Condition: UNII-Band-4-Bandedge RF Conducted
EUT: Cockpit Control Unit Sweep Time: 79.9ms Att.: 15dB
Model: DNNS124 RBW: 1000 KHz VBW: 1000 KHz
Test Mode: UNII Operator: Phillip
Note: NCC_LP0002_802.11n40_Channel 151_Spurious-1

No.	Frequency(MHz)	Level(dBm)
1	5421.90000	-55.76
2	6859.74000	-54.15

File: 21-05-MAW-008_5-8n40_Ant1

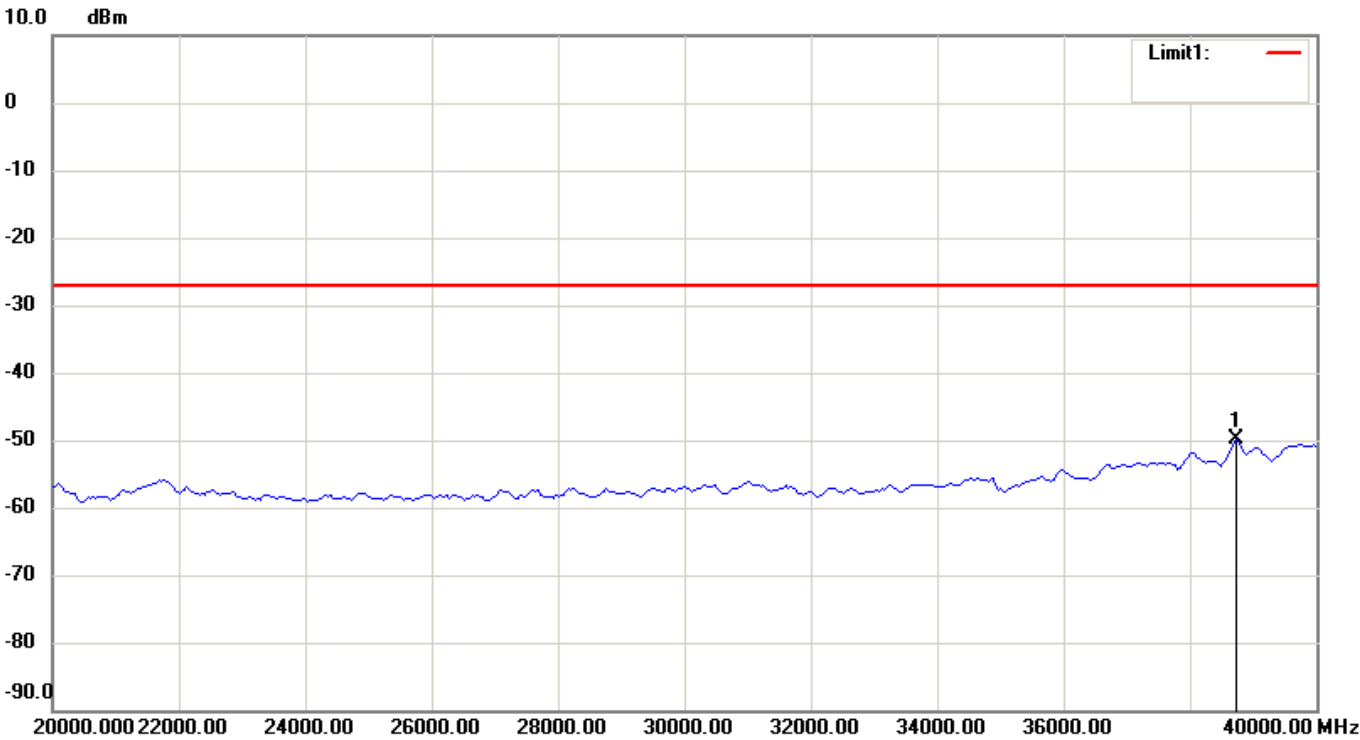
Site: RF-Cond01

#7

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 151_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-49.84

File: 21-05-MAW-008_5-8n40_Ant1

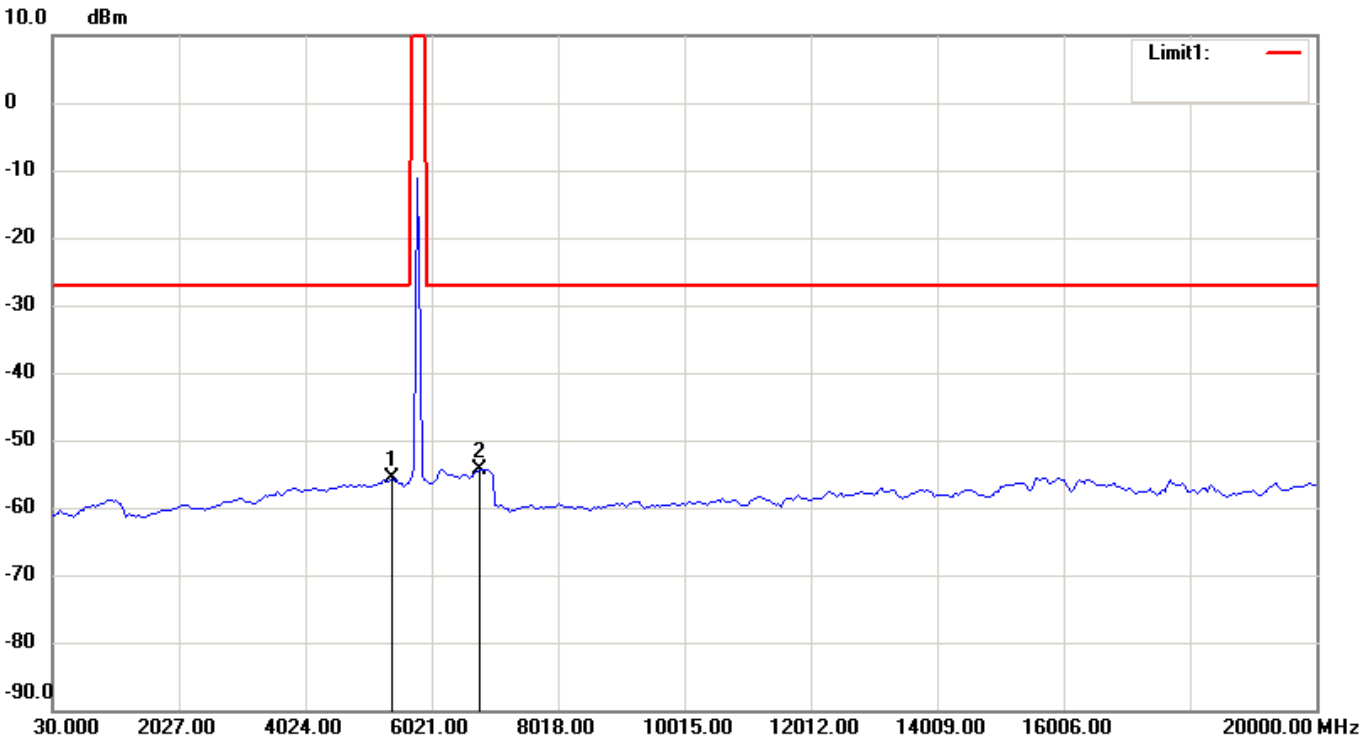
#14

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 159_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5381.96000	-55.56
2	6779.86000	-54.29

File: 21-05-MAW-008_5-8n40_Ant1

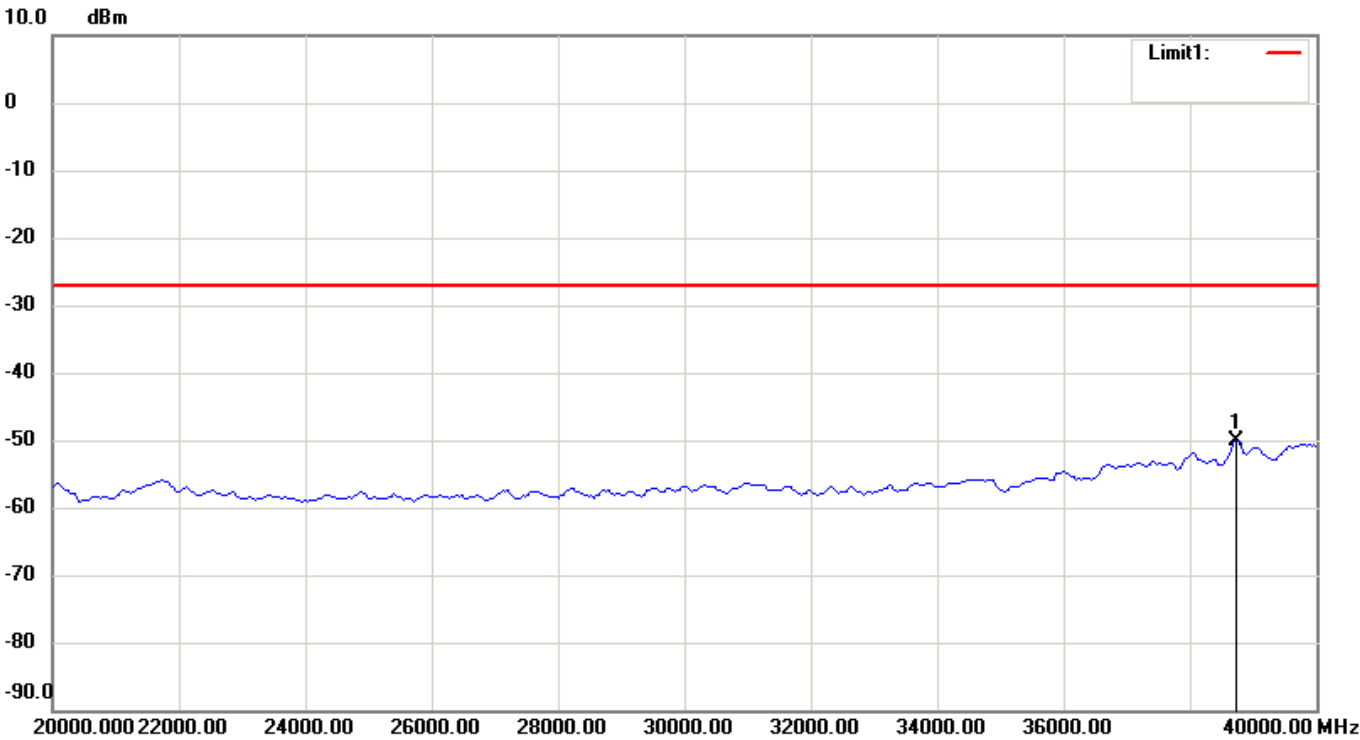
#15

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 159_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-50.09

9.4.3.2 CHAIN 1

測試日期: Jun. 29, 2021

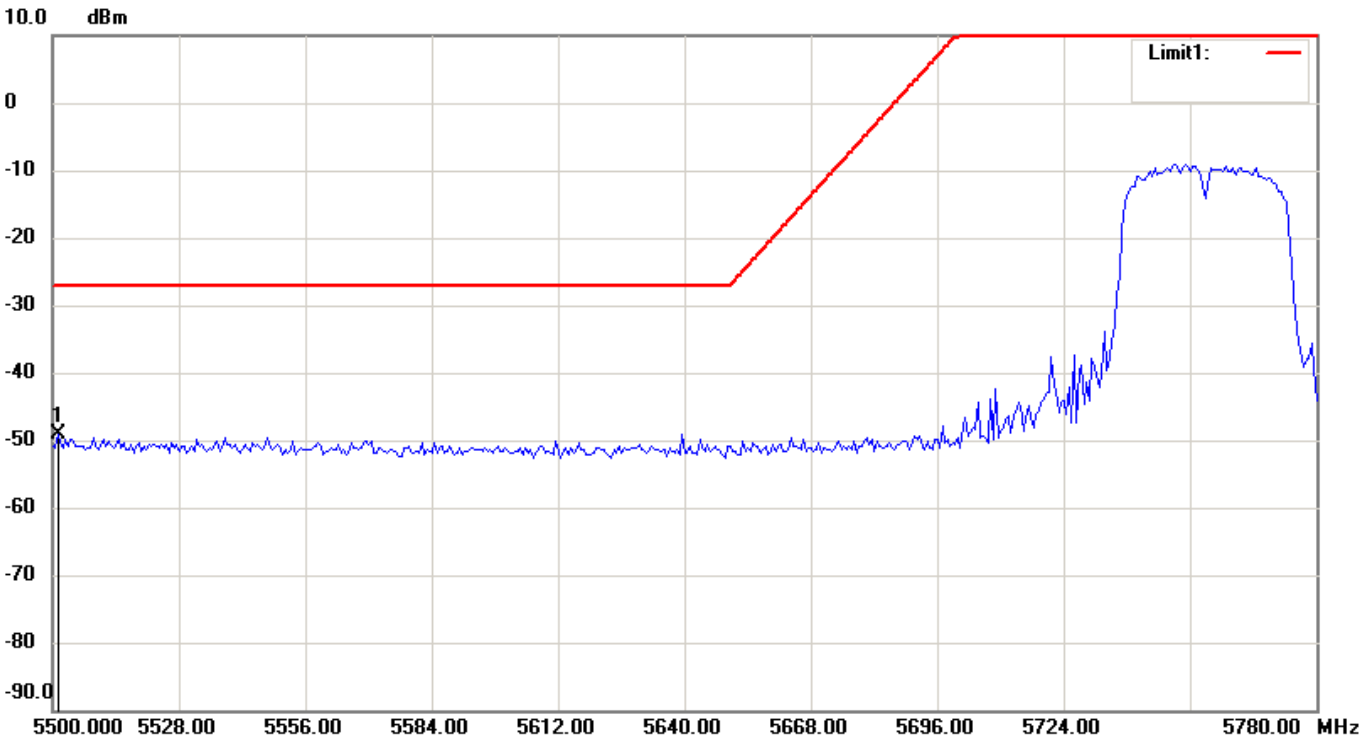
環境溫度: 23°C

環境濕度: 60%

註：1. 繪圖資料請參考第 148-153 頁。

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

File: 21-05-MAW-008_5-8n40_Ant2 #24 Date: 2021/6/29 Temperature: 23 °C
Site: RF-Cond01 Humidity: 60 %



Condition: UNII-Band-4-Bandedge RF Conducted
EUT: Cockpit Control Unit Sweep Time: 1ms Att.: 15dB
Model: DNNS124 RBW: 1000 KHz VBW: 3000 KHz
Test Mode: UNII Operator: Phillip
Note: NCC_LP0002_802.11n40 Channel 151_Low_Bandedge

No.	Frequency(MHz)	Level(dBm)
1	5501.12000	-49.14

File: 21-05-MAW-008_5-8n40_Ant2

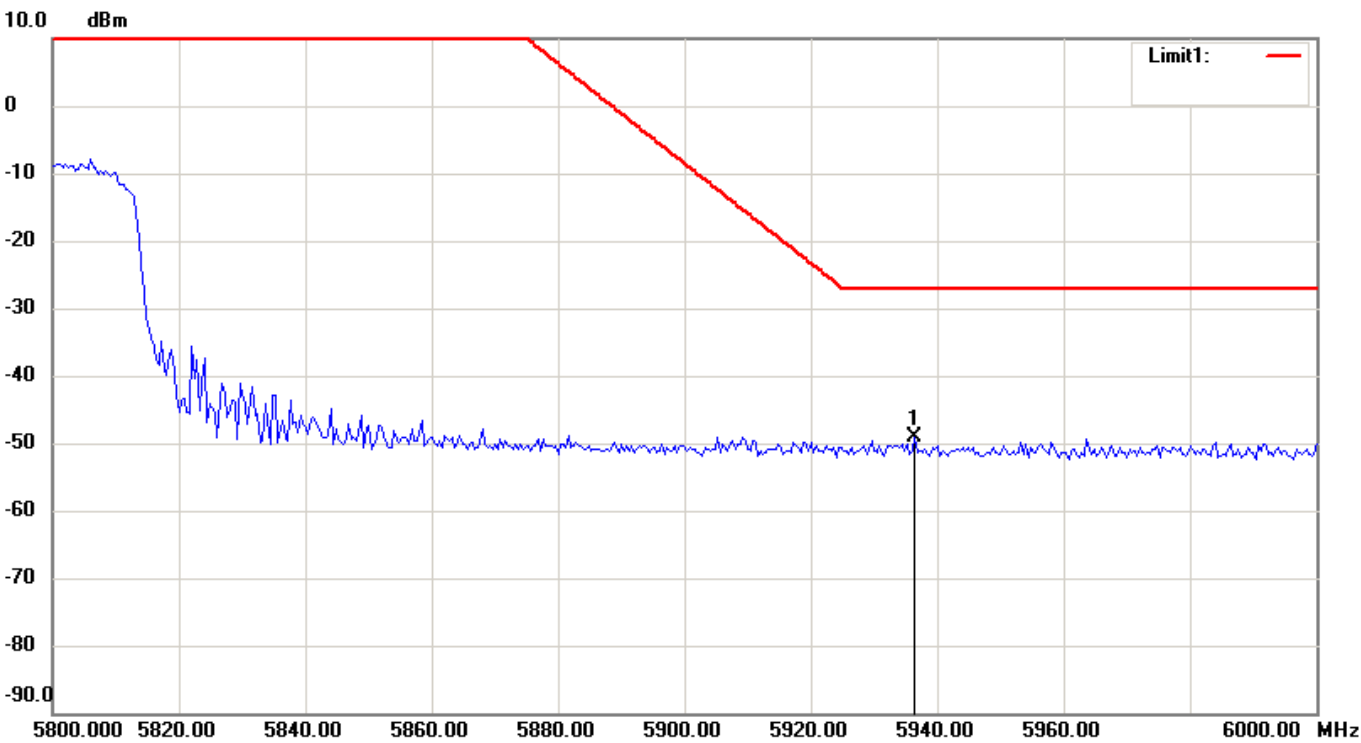
Site: RF-Cond01

#32

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40 Channel 159_High_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5936.40000	-49.16

File: 21-05-MAW-008_5-8n40_Ant2

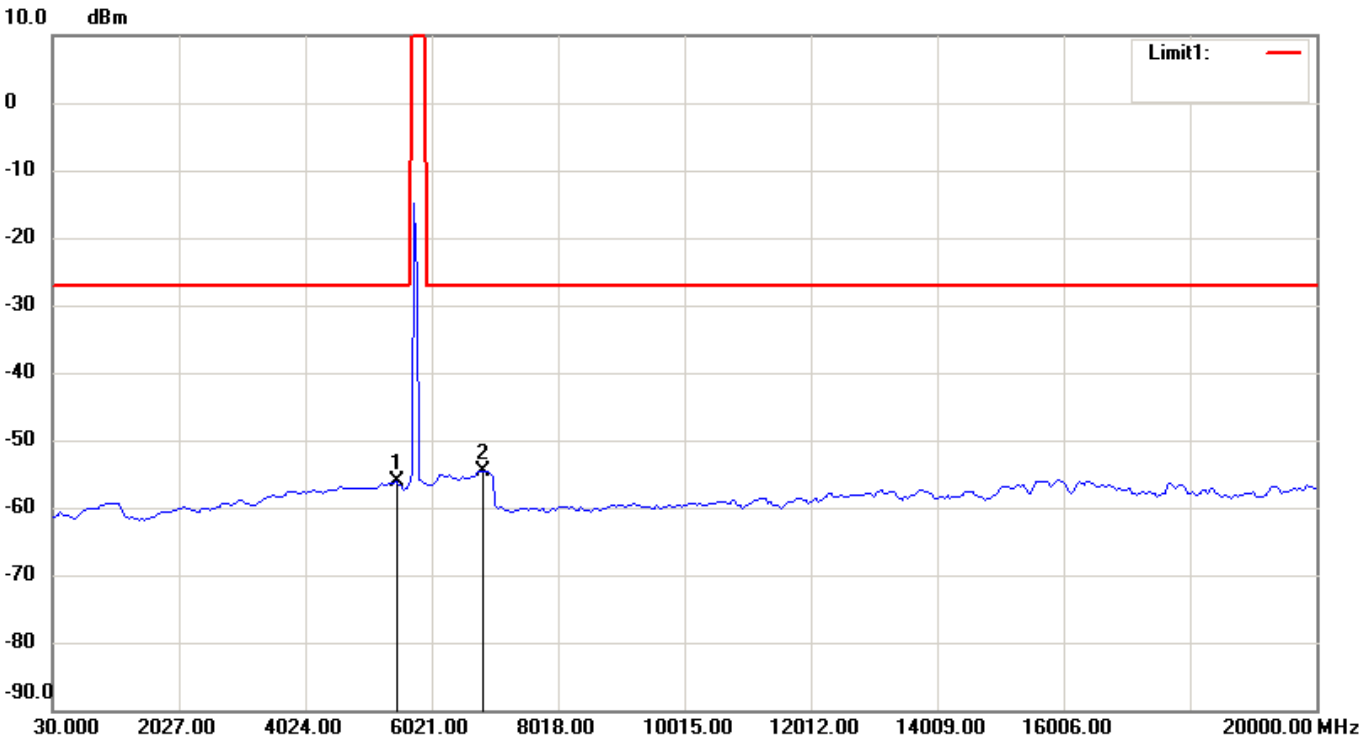
Site: RF-Cond01

#22

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 151_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

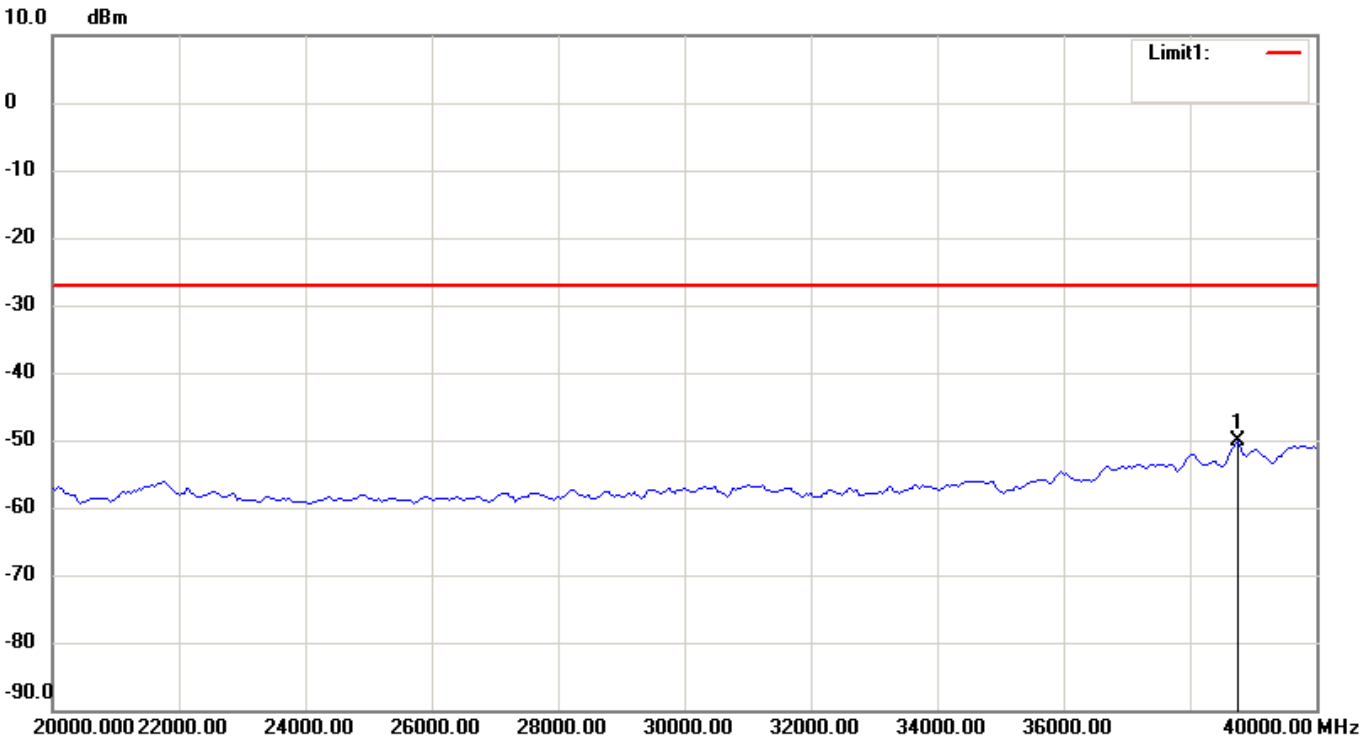
Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5461.84000	-56.22
2	6819.80000	-54.60

File: 21-05-MAW-008_5-8n40_Ant2 #23 Date: 2021/6/29 Temperature: 23 °C
Site: RF-Cond01 Humidity: 60 %



Condition: UNII-Band-4-Bandedge RF Conducted
EUT: Cockpit Control Unit Sweep Time: 80ms Att.: 15dB
Model: DNNS124 RBW: 1000 KHz VBW: 1000 KHz
Test Mode: UNII Operator: Phillip
Note: NCC_LP0002_802.11n40_Channel 151_Spurious-2

No.	Frequency(MHz)	Level(dBm)
1	38760.00000	-50.13

File: 21-05-MAW-008_5-8n40_Ant2

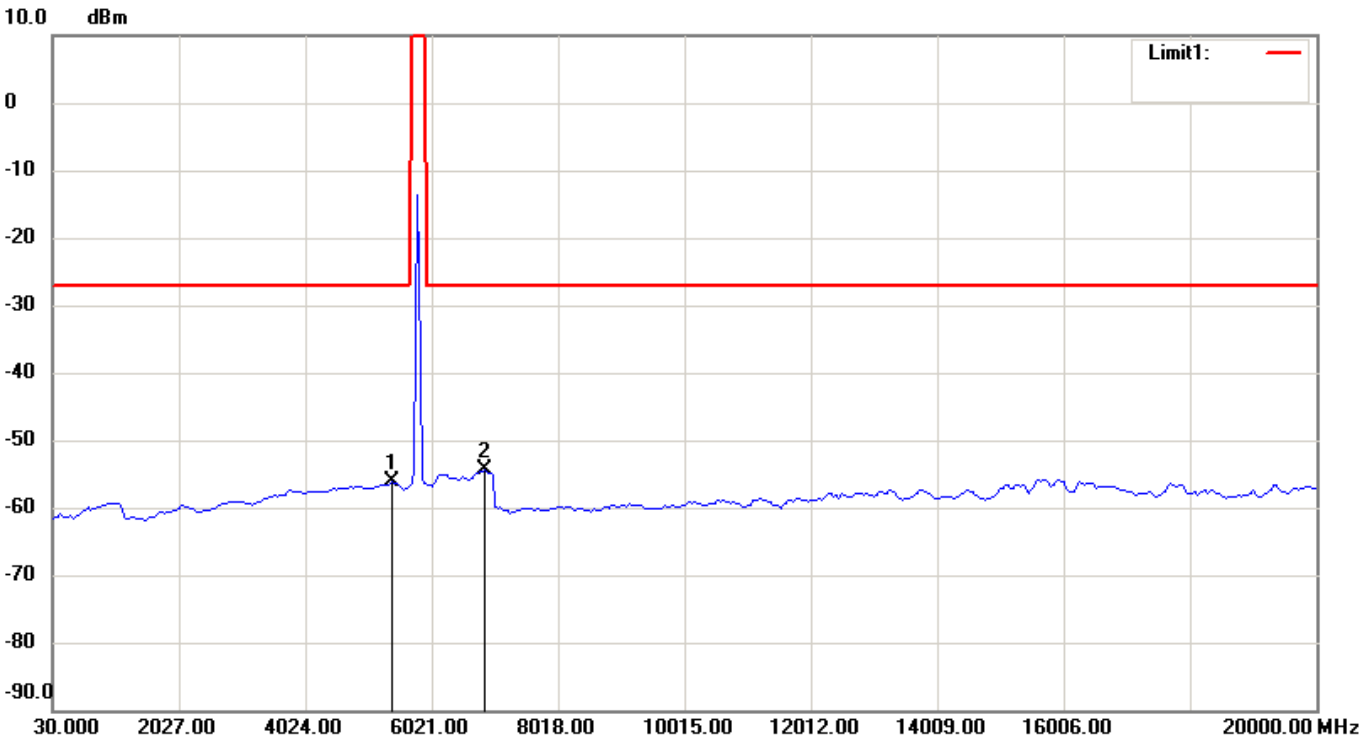
Site: RF-Cond01

#30

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 159_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5381.96000	-56.20
2	6859.74000	-54.46

File: 21-05-MAW-008_5-8n40_Ant2

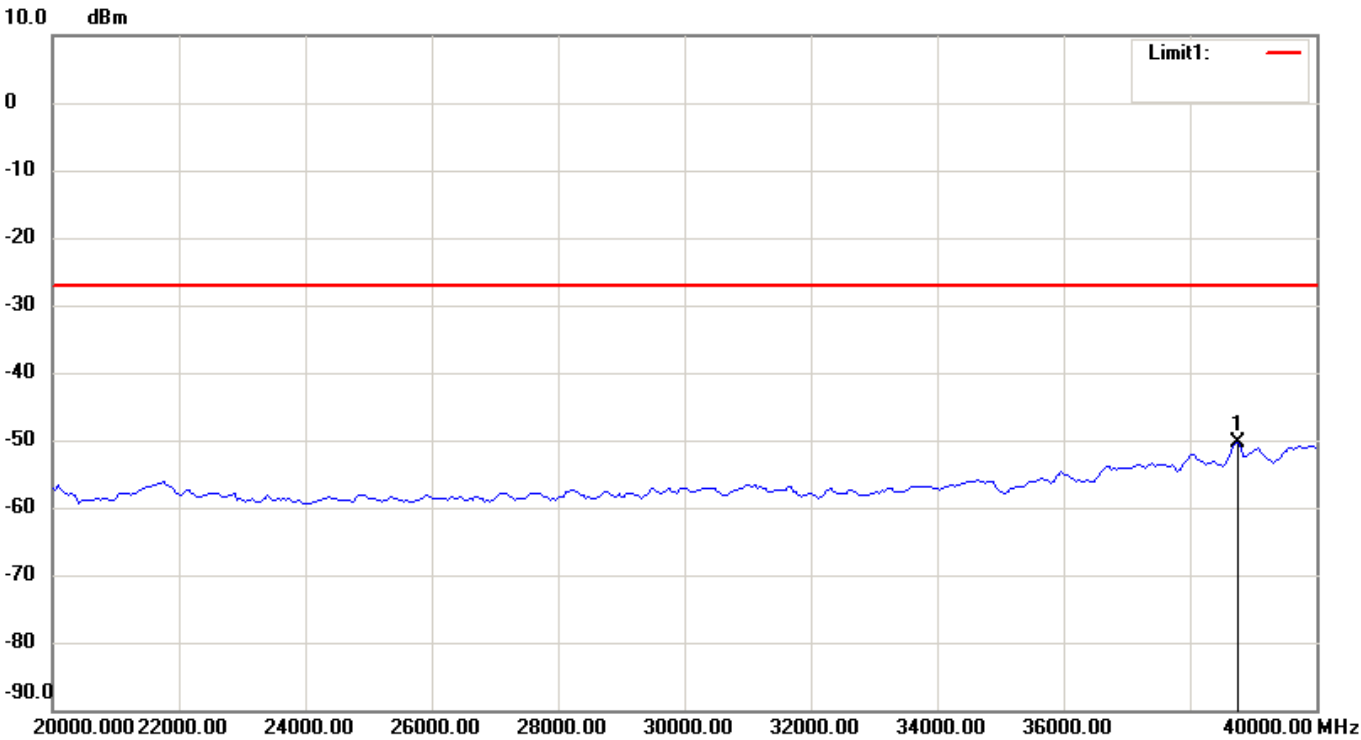
Site: RF-Cond01

#31

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11n40_Channel 159_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38760.00000	-50.35

9.4.4 調變技術:IEEE 802.11ac VHT80

9.4.4.1 CHAIN 0

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

註: 1. 繪圖資料請參考第 155-158 頁。

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

File: 21-05-MAW-008_5-8ac80_Ant1

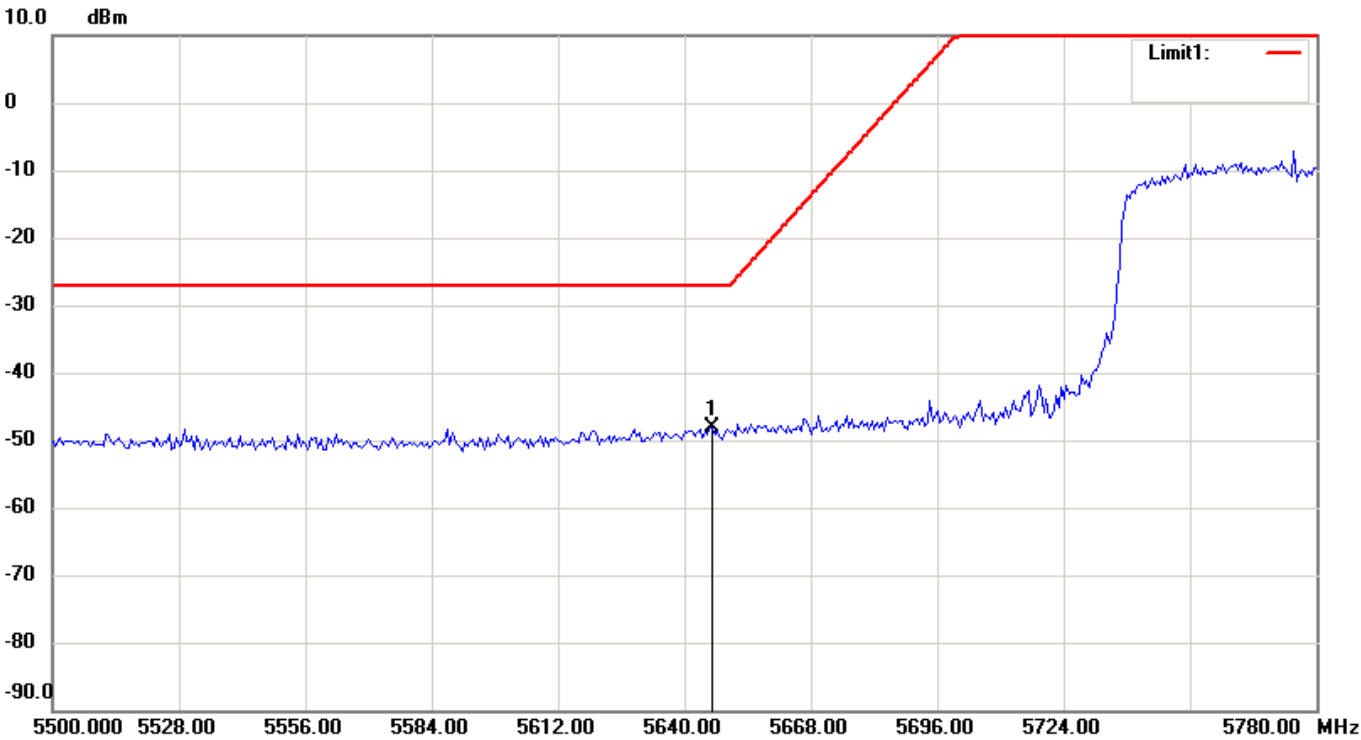
#8

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

RF Conducted

EUT: Cockpit Control Unit

Sweep Time: 1ms Att.: 15dB

Model: DNNS124

RBW: 1000 KHz VBW: 3000 KHz

Test Mode: UNII

Operator: Phillip

Note: NCC_LP0002_802.11ac80 Channel 155_Low_Bandedge

No.	Frequency(MHz)	Level(dBm)
1	5646.16000	-48.15

File: 21-05-MAW-008_5-8ac80_Ant1

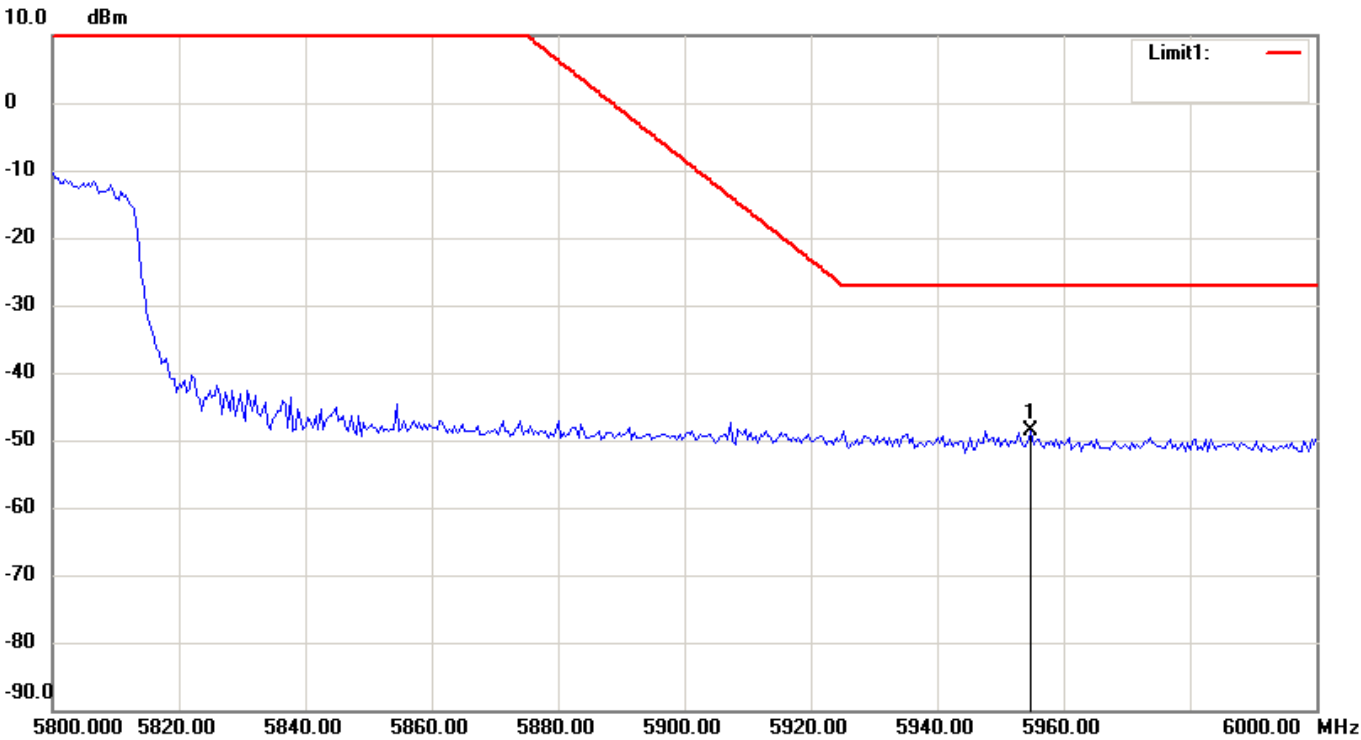
Site: RF-Cond01

#9

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80 Channel 155_High_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5954.80000	-48.55

File: 21-05-MAW-008_5-8ac80_Ant1

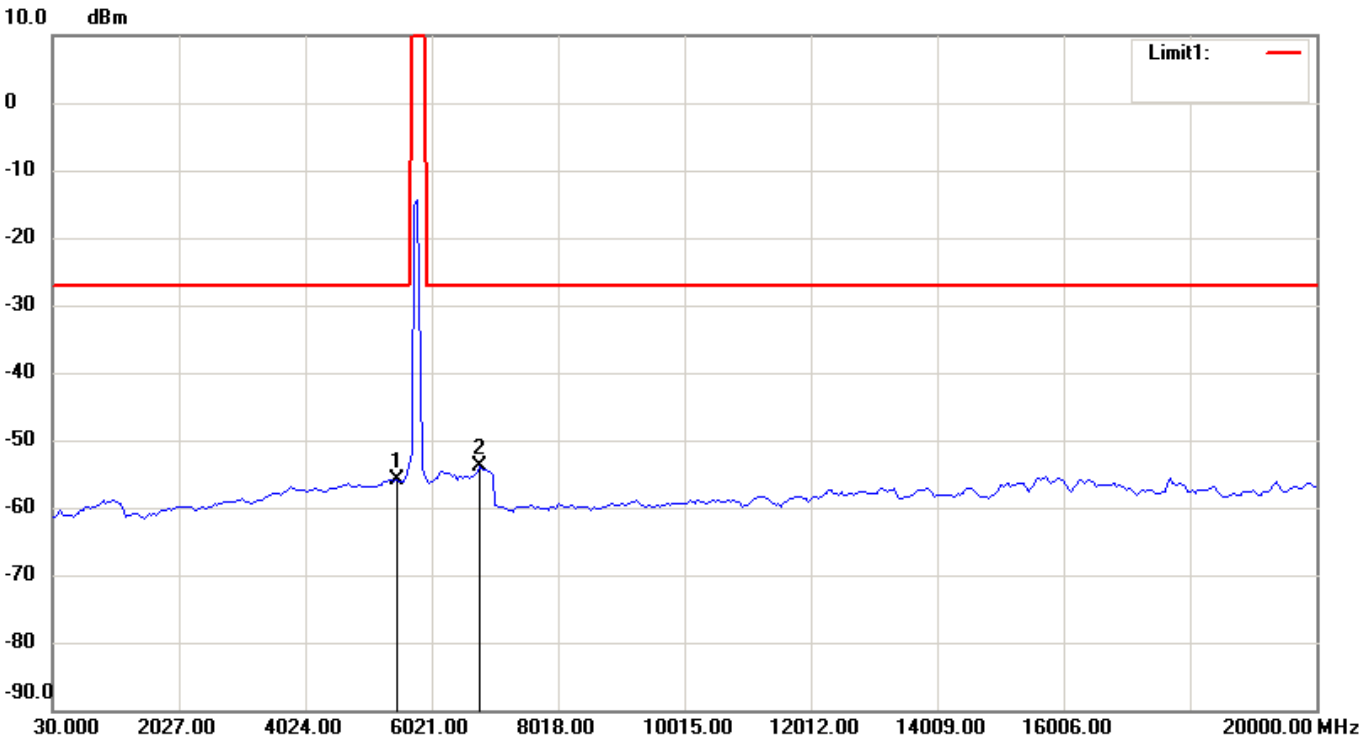
#6

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80_Channel 155_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5461.84000	-55.83
2	6779.86000	-53.95

File: 21-05-MAW-008_5-8ac80_Ant1

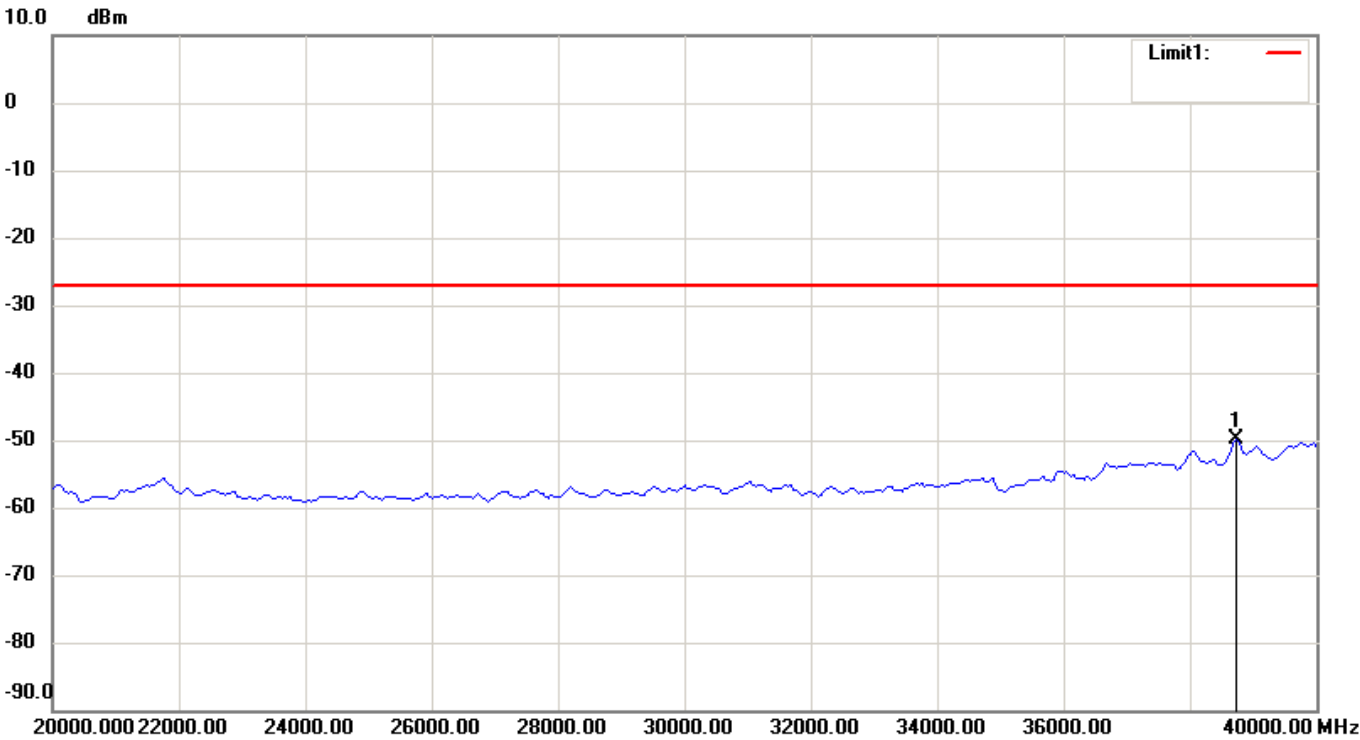
Site: RF-Cond01

#7

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80_Channel 155_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38720.00000	-49.96

9.4.4.2 CHAIN 1

測試日期: Jun. 29, 2021

環境溫度: 23°C

環境濕度: 60%

- 註：1. 繪圖資料請參考第 160-163 頁。
2. 量測不準確度: $\pm 1.5\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)

9.5 結果判定

混附波之發射皆低於使用頻帶內最高的射頻功率20dB以上，符合標準規定。

File: 21-05-MAW-008_5-8ac80_Ant2

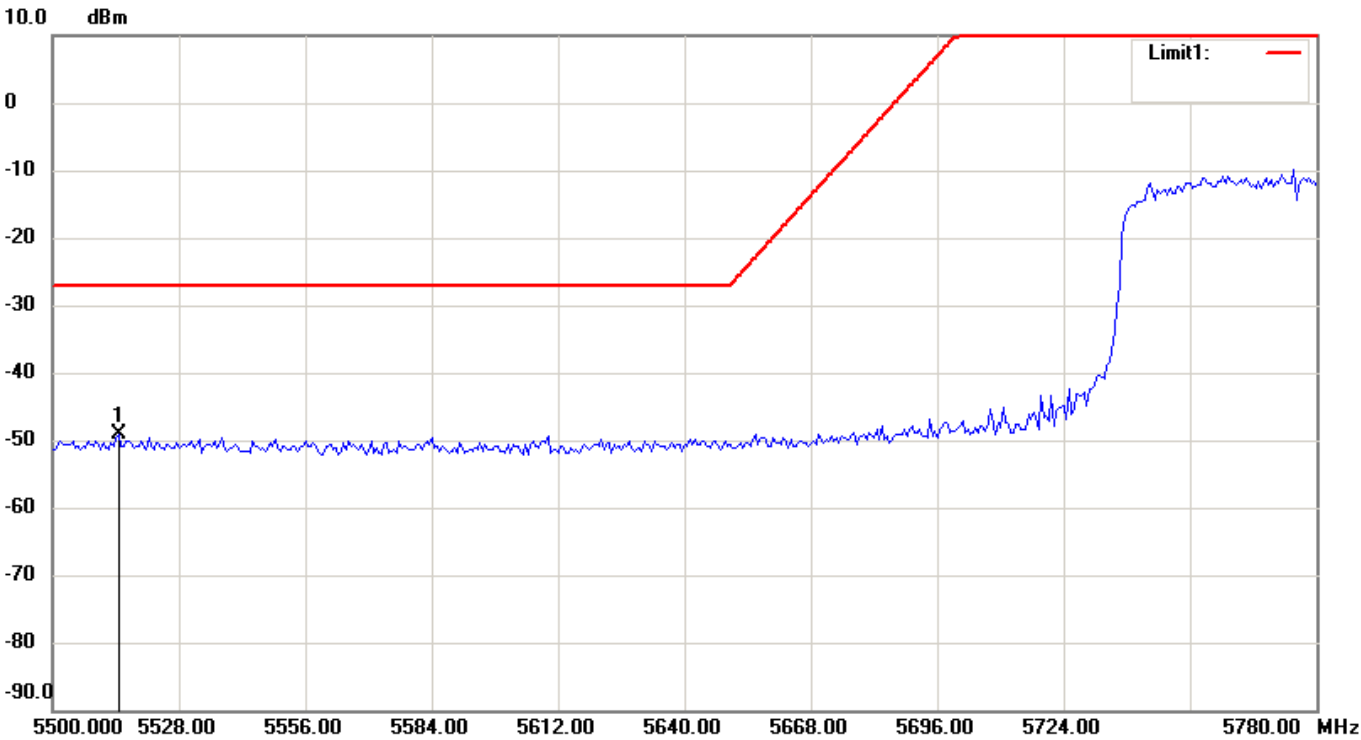
Site: RF-Cond01

#8

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80 Channel 155_Low_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5514.56000	-49.01

File: 21-05-MAW-008_5-8ac80_Ant2

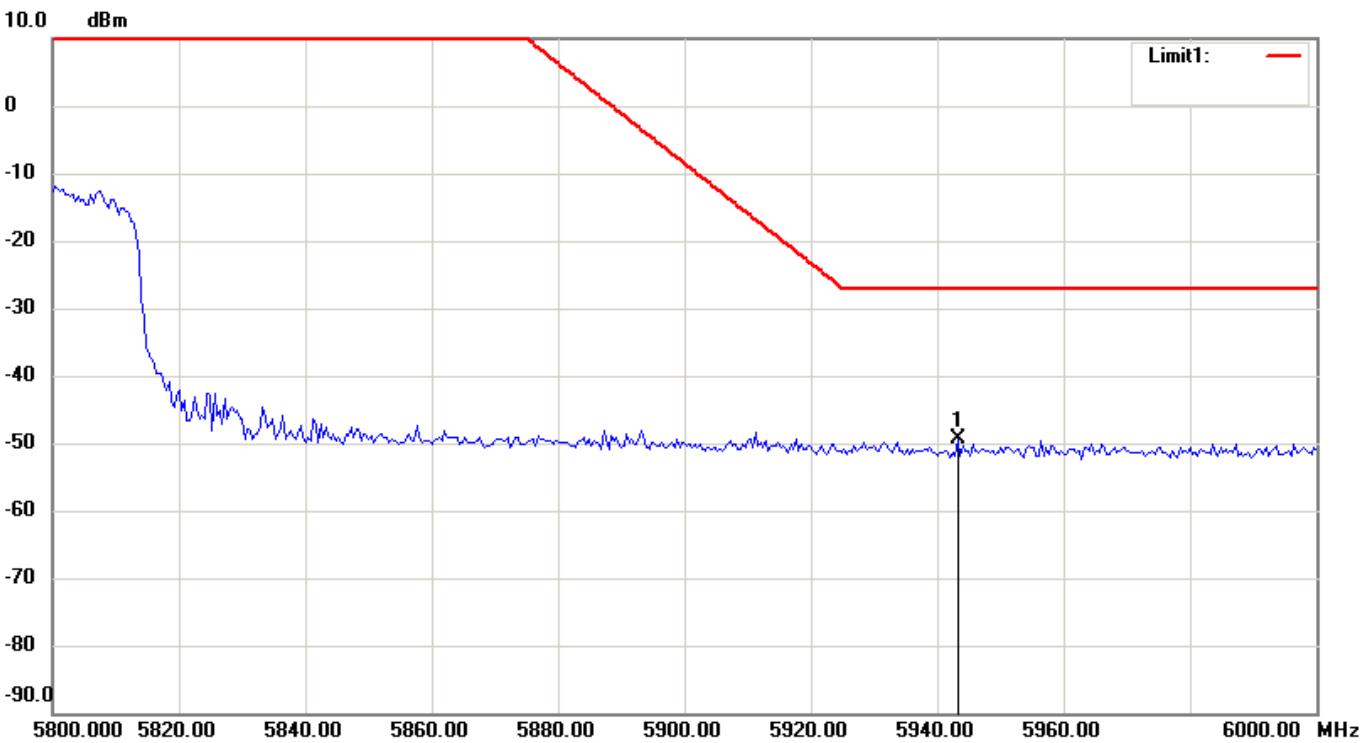
Site: RF-Cond01

#9

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80 Channel 155_High_Bandedge

RF Conducted

Sweep Time: 1ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 3000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5943.20000	-49.29

File: 21-05-MAW-008_5-8ac80_Ant2

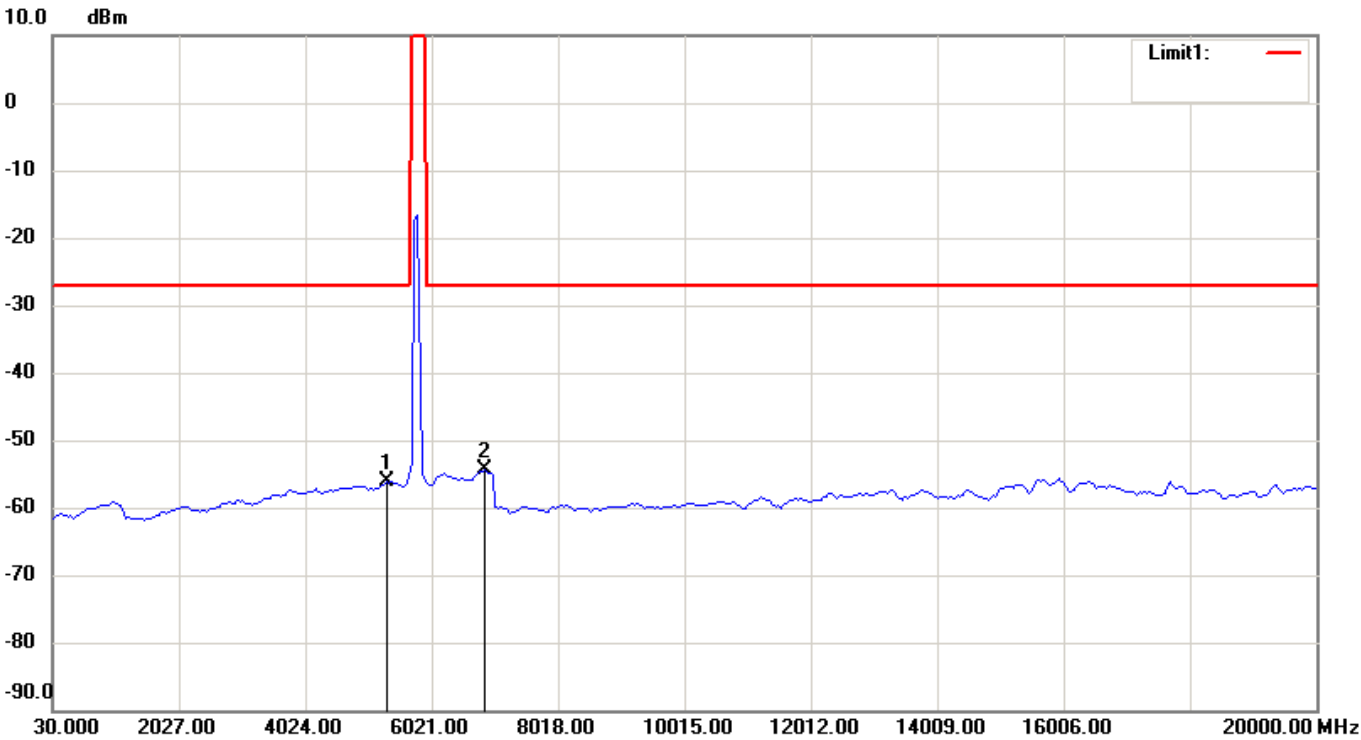
#6

Date: 2021/6/29

Temperature: 23 °C

Site: RF-Cond01

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80_Channel 155_Spurious-1

RF Conducted

Sweep Time: 79.9ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	5302.08000	-56.13
2	6859.74000	-54.44

File: 21-05-MAW-008_5-8ac80_Ant2

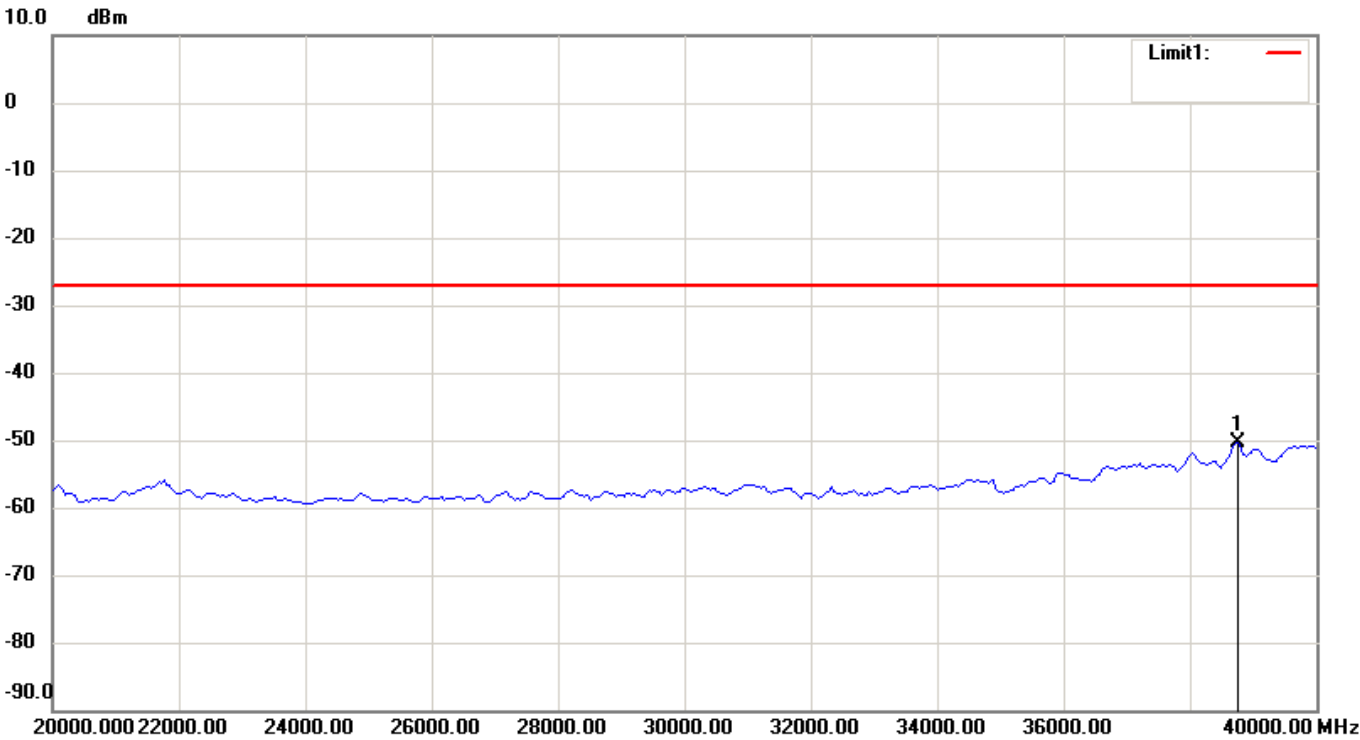
Site: RF-Cond01

#7

Date: 2021/6/29

Temperature: 23 °C

Humidity: 60 %



Condition: UNII-Band-4-Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: NCC_LP0002_802.11ac80_Channel 155_Spurious-2

RF Conducted

Sweep Time: 80ms

RBW: 1000 KHz

Operator:

Att.: 15dB

VBW: 1000 KHz

Phillip

No.	Frequency(MHz)	Level(dBm)
1	38760.00000	-50.34

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 以下的不必要之發射，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節之要求，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。

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	廠 牌	型 號
EMI Receiver	R&S	ESCI
Spectrum Analyzer	R&S	FSU46
Spectrum Analyzer	R&S	FSV40
Horn Aantenna	EMCO	3117
Horn Aantenna	EMCO	3116
PRE-Amplifier	Agilent	8449B
PRE-Amplifier	Agilent	8447D
BiLog Aantenna	ETC	MCTD 2786
Trilog Broadband Antenna with 5dB Pad	SCHWARZBECK&EMCI	VULB 9168 & EMCI-N-6-05
PRE-Amplifier	Agilent	83051A
Spectrum Analyzer	KEYSIGHT	N9030B

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

10.5.1 諧波發射量測值

10.5.1.1 調變技術: IEEE 802.11a

a. Channel Low

操作模式 : 發射接收

基本波頻率 : 5745 MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11490.0000	H	---	---	8.0	---	---	74.0	54.0	---
11490.0000	V	---	---	8.0	---	---	74.0	54.0	---
17235.0000	H	---	---	13.5	---	---	74.0	54.0	---
17235.0000	V	---	---	13.5	---	---	74.0	54.0	---
22980.0000	H	---	---	19.5	---	---	74.0	54.0	---
22980.0000	V	---	---	19.5	---	---	74.0	54.0	---
28725.0000	H	---	---	21.1	---	---	74.0	54.0	---
28725.0000	V	---	---	21.1	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)

VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)

VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

b. Channel Mid

操作模式：發射接收

基本波頻率：5785MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11570.0000	H	---	---	8.0	---	---	74.0	54.0	---
11570.0000	V	---	---	8.0	---	---	74.0	54.0	---
17355.0000	H	---	---	14.3	---	---	74.0	54.0	---
17355.0000	V	---	---	14.3	---	---	74.0	54.0	---
23140.0000	H	---	---	19.4	---	---	74.0	54.0	---
23140.0000	V	---	---	19.4	---	---	74.0	54.0	---
28925.0000	H	---	---	21.1	---	---	74.0	54.0	---
28925.0000	V	---	---	21.1	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

c. Channel High

操作模式：發射接收

基本波頻率：5825MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11650.0000	H	---	---	8.1	---	---	74.0	54.0	---
11650.0000	V	---	---	8.1	---	---	74.0	54.0	---
17475.0000	H	---	---	15.2	---	---	74.0	54.0	---
17475.0000	V	---	---	15.2	---	---	74.0	54.0	---
23300.0000	H	---	---	19.4	---	---	74.0	54.0	---
23300.0000	V	---	---	19.4	---	---	74.0	54.0	---
29125.0000	H	---	---	21.2	---	---	74.0	54.0	---
29125.0000	V	---	---	21.2	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

10.5.1.2 調變技術: IEEE 802.11n HT20

a. Channel Low

操作模式：發射接收

基本波頻率：5745 MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11490.0000	H	---	---	8.0	---	---	74.0	54.0	---
11490.0000	V	---	---	8.0	---	---	74.0	54.0	---
17235.0000	H	---	---	13.5	---	---	74.0	54.0	---
17235.0000	V	---	---	13.5	---	---	74.0	54.0	---
22980.0000	H	---	---	19.5	---	---	74.0	54.0	---
22980.0000	V	---	---	19.5	---	---	74.0	54.0	---
28725.0000	H	---	---	21.1	---	---	74.0	54.0	---
28725.0000	V	---	---	21.1	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

b. Channel Mid

操作模式：發射接收

基本波頻率：5785MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11570.0000	H	---	---	8.0	---	---	74.0	54.0	---
11570.0000	V	---	---	8.0	---	---	74.0	54.0	---
17355.0000	H	---	---	14.3	---	---	74.0	54.0	---
17355.0000	V	---	---	14.3	---	---	74.0	54.0	---
23140.0000	H	---	---	19.4	---	---	74.0	54.0	---
23140.0000	V	---	---	19.4	---	---	74.0	54.0	---
28925.0000	H	---	---	21.1	---	---	74.0	54.0	---
28925.0000	V	---	---	21.1	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

c. Channel High

操作模式：發射接收

基本波頻率：5825MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11650.0000	H	---	---	8.1	---	---	74.0	54.0	---
11650.0000	V	---	---	8.1	---	---	74.0	54.0	---
17475.0000	H	---	---	15.2	---	---	74.0	54.0	---
17475.0000	V	---	---	15.2	---	---	74.0	54.0	---
23300.0000	H	---	---	19.4	---	---	74.0	54.0	---
23300.0000	V	---	---	19.4	---	---	74.0	54.0	---
29125.0000	H	---	---	21.2	---	---	74.0	54.0	---
29125.0000	V	---	---	21.2	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

10.5.1.3 調變技術: IEEE 802.11n HT40

a. Channel Low

操作模式：發射接收

基本波頻率：5755 MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11510.0000	H	---	---	8.0	---	---	74.0	54.0	---
11510.0000	V	---	---	8.0	---	---	74.0	54.0	---
17265.0000	H	---	---	13.7	---	---	74.0	54.0	---
17265.0000	V	---	---	13.7	---	---	74.0	54.0	---
23020.0000	H	---	---	19.5	---	---	74.0	54.0	---
23020.0000	V	---	---	19.5	---	---	74.0	54.0	---
28775.0000	H	---	---	21.1	---	---	74.0	54.0	---
28775.0000	V	---	---	21.1	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

b. Channel High

操作模式：發射接收

基本波頻率：5795 MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11590.0000	H	---	---	8.0	---	---	74.0	54.0	---
11590.0000	V	---	---	8.0	---	---	74.0	54.0	---
17385.0000	H	---	---	14.6	---	---	74.0	54.0	---
17385.0000	V	---	---	14.6	---	---	74.0	54.0	---
23180.0000	H	---	---	19.4	---	---	74.0	54.0	---
23180.0000	V	---	---	19.4	---	---	74.0	54.0	---
28975.0000	H	---	---	21.1	---	---	74.0	54.0	---
28975.0000	V	---	---	21.1	---	---	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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

10.5.1.4 調變技術: IEEE 802.11ac VHT80

操作模式：發射接收

基本波頻率：5775 MHz

測試日期: Jul. 05, 2021

環境溫度: 24°C

環境濕度: 62%

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)
11550.0000	H	---	---	8.0	---	---	74.0	54.0	---
11550.0000	V	---	---	8.0	---	---	74.0	54.0	---
17325.0000	H	---	---	14.2	---	---	74.0	54.0	---
17325.0000	V	---	---	14.2	---	---	74.0	54.0	---
23100.0000	H	---	---	19.5	---	---	74.0	54.0	---
23100.0000	V	---	---	19.5	---	---	74.0	54.0	---
28875.0000	H	---	---	21.1	---	---	74.0	54.0	---
28875.0000	V	---	---	21.1	---	---	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：

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

10.5.2 諧波及其它不必要之訊號測試圖

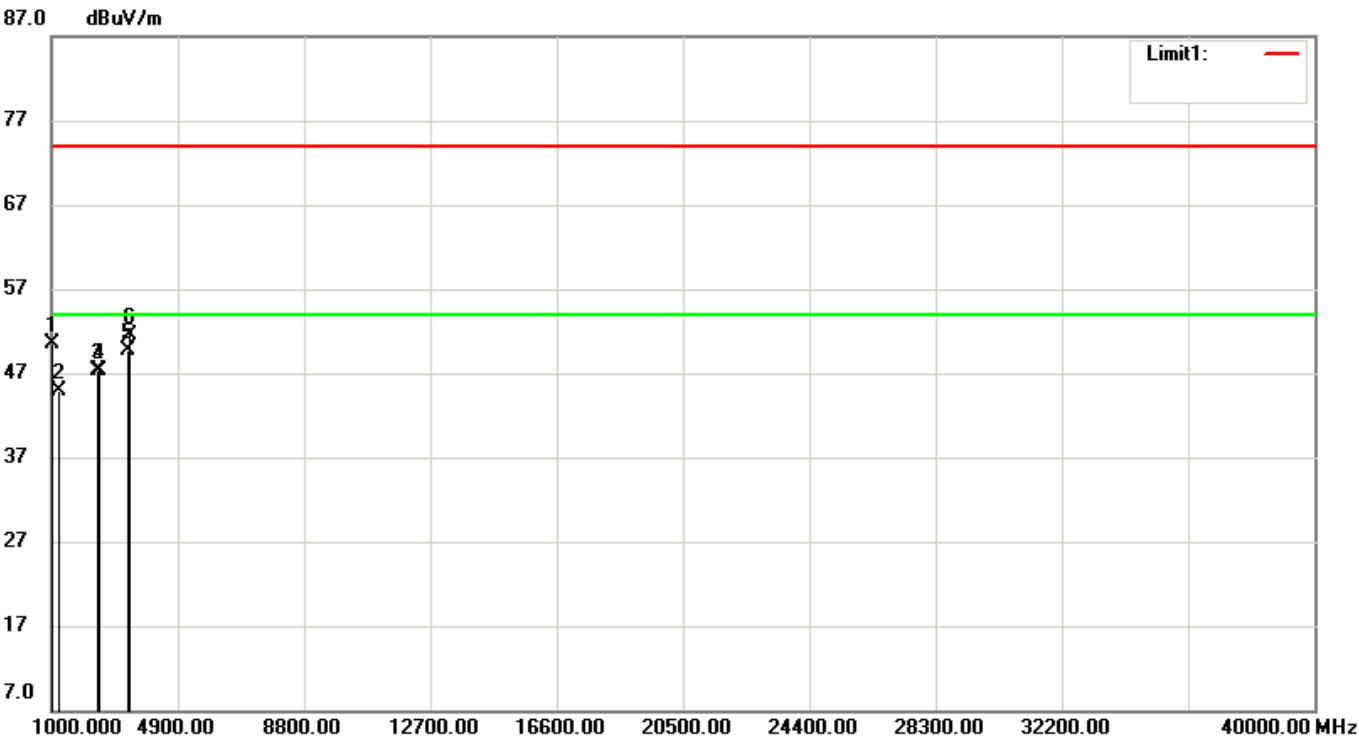
10.5.2.1 調變技術: IEEE 802.11a

a. Channel Low

操作模式：發射接收

基本波頻率：5745 MHz

File: 21-05-MAW-008_5-8a #19 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH LOW-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	59.90	peak	-9.35	50.55	74.00	-23.45
2	1196.87500	53.78	peak	-8.85	44.93	74.00	-29.07
3	2415.98550	50.09	peak	-2.84	47.25	74.00	-26.75
4	2499.27880	49.88	peak	-2.62	47.26	74.00	-26.74
5	3347.35560	51.35	peak	-1.60	49.75	74.00	-24.25
6	3385.21630	53.14	peak	-1.55	51.59	74.00	-22.41

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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ;HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)

VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ;HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)

VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ;HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5745 MHz

File: 21-05-MAW-008_5-8a

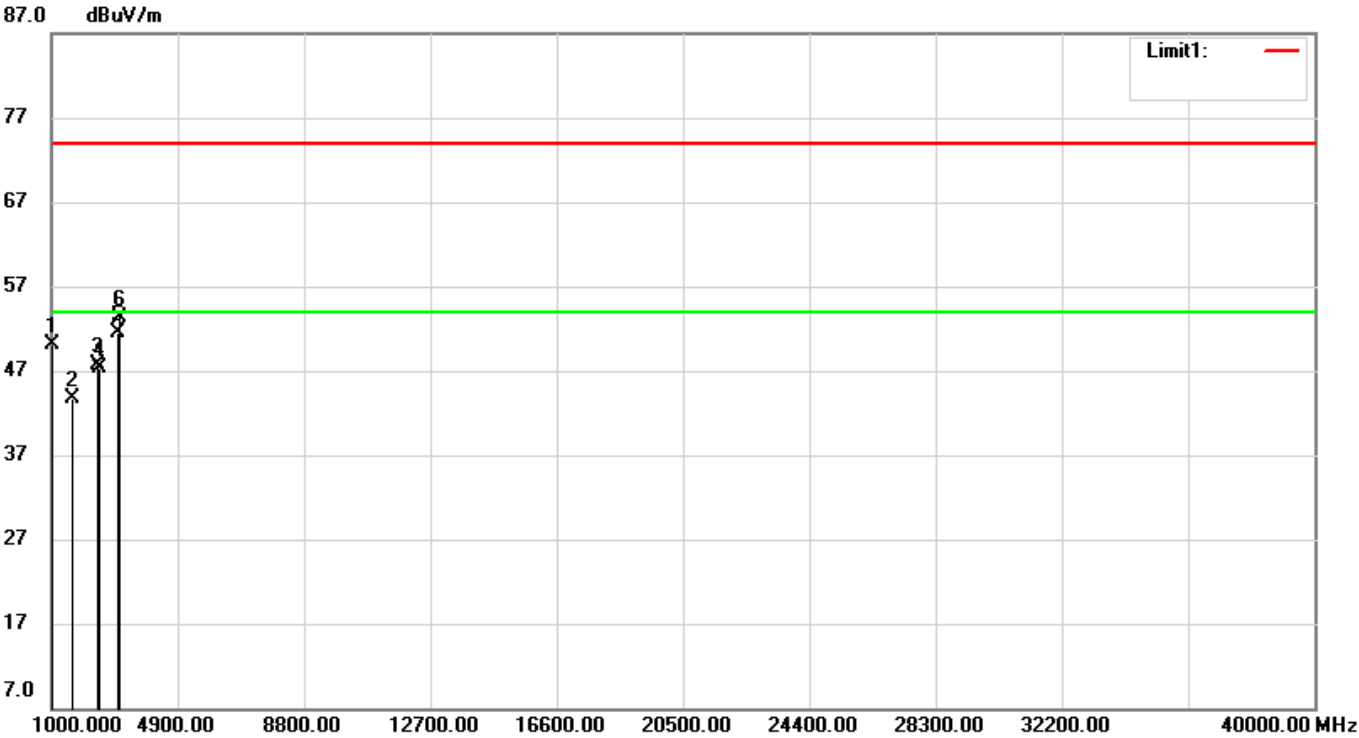
Site: RE02-EMC B1-N2

#20

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: CH LOW-1

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	1037.86050	59.47	peak	-9.35	50.12	74.00	-23.88
2	1598.19710	50.89	peak	-7.11	43.78	74.00	-30.22
3	2415.98550	50.62	peak	-2.84	47.78	74.00	-26.22
4	2491.70670	49.99	peak	-2.64	47.35	74.00	-26.65
5	3036.89900	53.39	peak	-1.96	51.43	74.00	-22.57
6	3067.18750	55.27	peak	-1.94	53.33	74.00	-20.67

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：
- VER: ±5.32dB(1GHz≤f<6GHz) ;HOR: ±5.05dB(1GHz≤f<6GHz)

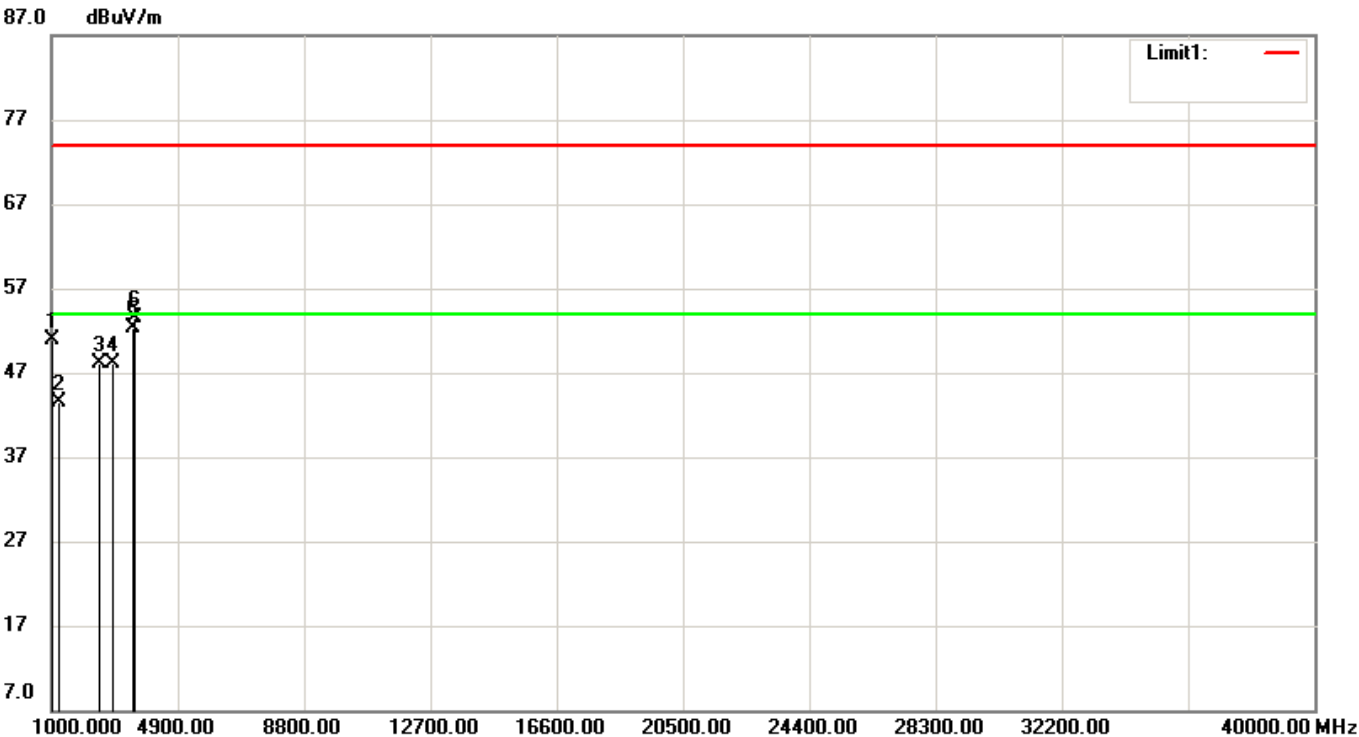
VER: ±4.71dB(6GHz≤f<18GHz) ;HOR: ±4.96dB(6GHz≤f<18GHz)

VER: ±5.37dB(18GHz≤f≤40GHz) ;HOR: ±5.61dB(18GHz≤f≤40GHz)

b. Channel Mid

操作模式：發射接收
基本波頻率：5785 MHz

File: 21-05-MAW-008_5-8a #21 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH MID-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	60.24	peak	-9.35	50.89	74.00	-23.11
2	1196.87500	52.40	peak	-8.85	43.55	74.00	-30.45
3	2491.70670	50.72	peak	-2.64	48.08	74.00	-25.92
4	2847.59610	50.29	peak	-2.20	48.09	74.00	-25.91
5	3460.93750	53.79	peak	-1.46	52.33	74.00	-21.67
6	3513.94230	54.88	peak	-1.37	53.51	74.00	-20.49

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:
- VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5785 MHz

File: 21-05-MAW-008_5-8a

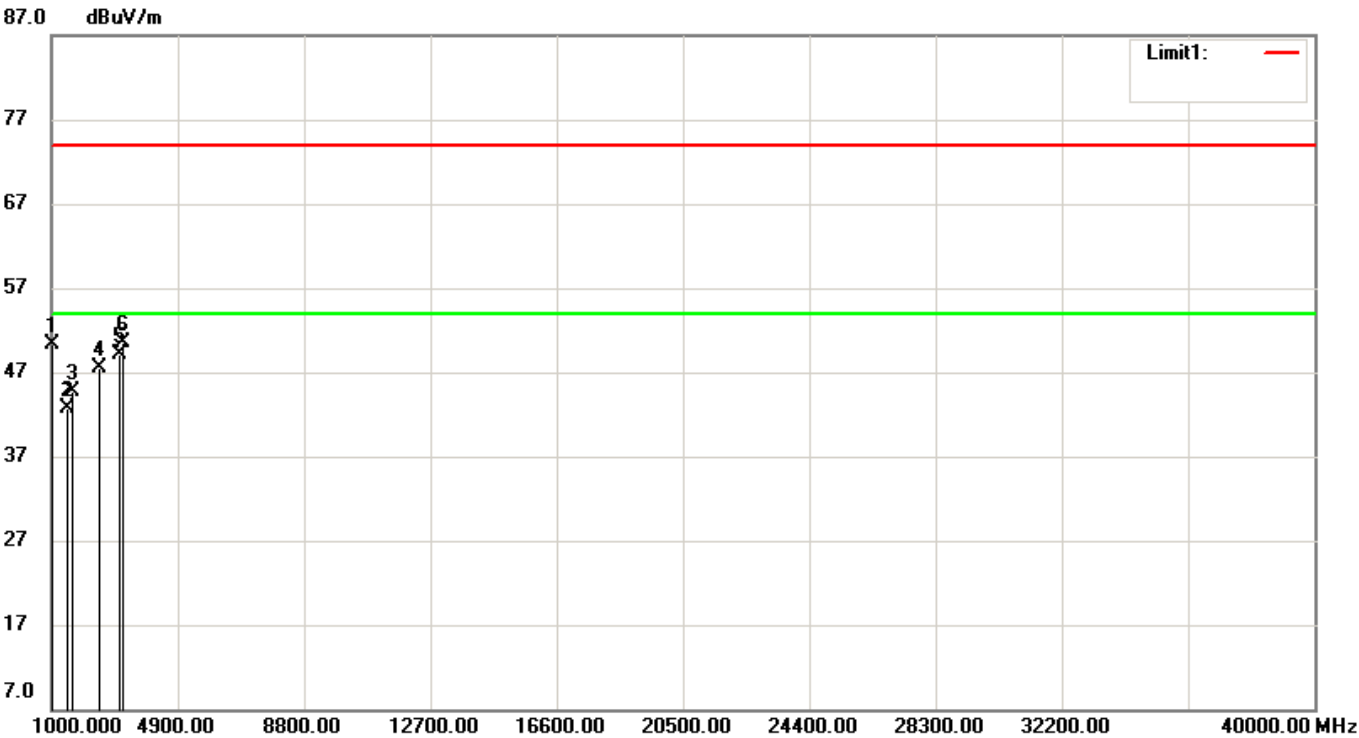
Site: RE02-EMC B1-N2

#22

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: CH MID-1

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	1037.86050	59.56	peak	-9.35	50.21	74.00	-23.79
2	1469.47110	50.79	peak	-7.99	42.80	74.00	-31.20
3	1598.19710	51.81	peak	-7.11	44.70	74.00	-29.30
4	2499.27880	50.18	peak	-2.62	47.56	74.00	-26.44
5	3112.62010	50.94	peak	-1.87	49.07	74.00	-24.93
6	3173.19710	52.29	peak	-1.80	50.49	74.00	-23.51

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:
- VER: ±5.32dB(1GHz≤f<6GHz) ;HOR: ±5.05dB(1GHz≤f<6GHz)

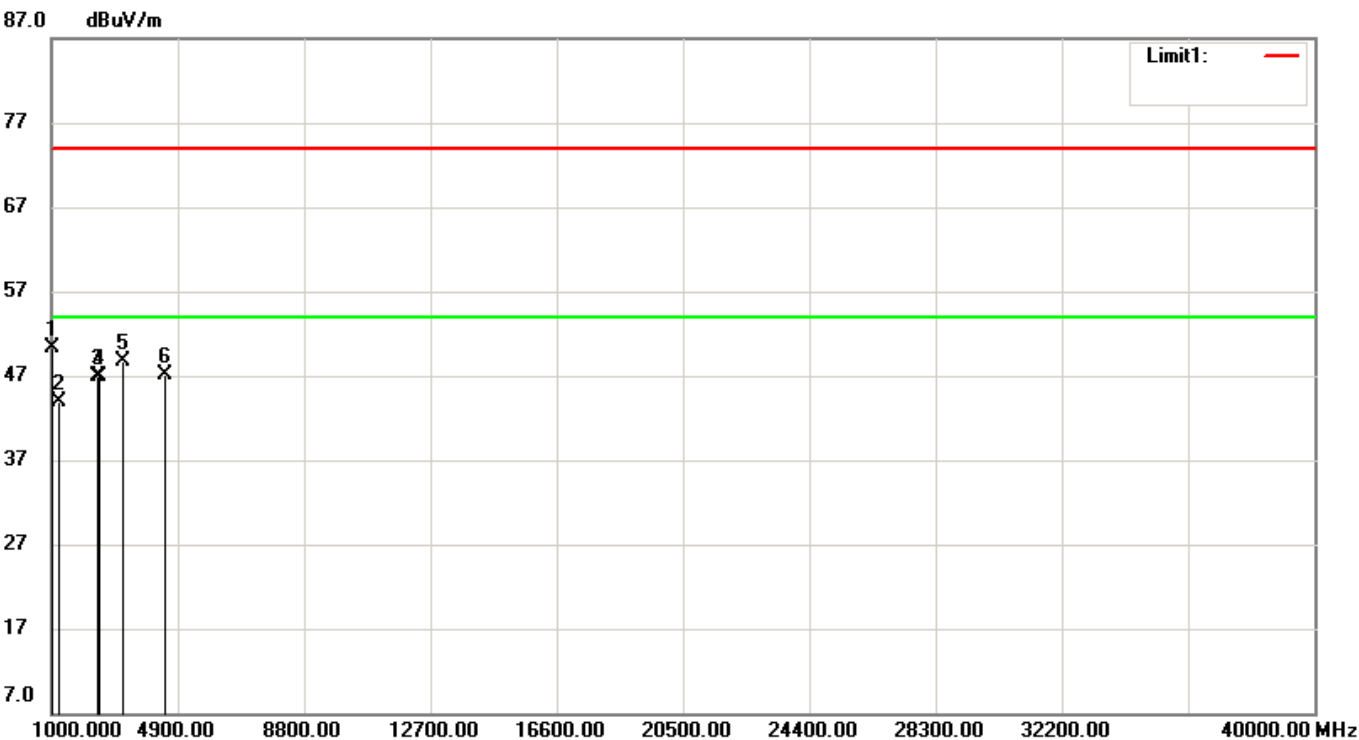
VER: ±4.71dB(6GHz≤f<18GHz) ;HOR: ±4.96dB(6GHz≤f<18GHz)

VER: ±5.37dB(18GHz≤f≤40GHz) ;HOR: ±5.61dB(18GHz≤f≤40GHz)

c. Channel High

操作模式：發射接收
基本波頻率：5825 MHz

File: 21-05-MAW-008_5-8a #23 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH HIGH-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1045.43260	59.61	peak	-9.32	50.29	74.00	-23.71
2	1196.87500	52.67	peak	-8.85	43.82	74.00	-30.18
3	2415.98550	49.78	peak	-2.84	46.94	74.00	-27.06
4	2491.70670	49.64	peak	-2.64	47.00	74.00	-27.00
5	3127.76440	50.50	peak	-1.86	48.64	74.00	-25.36
6	4452.88460	47.06	peak	0.02	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:

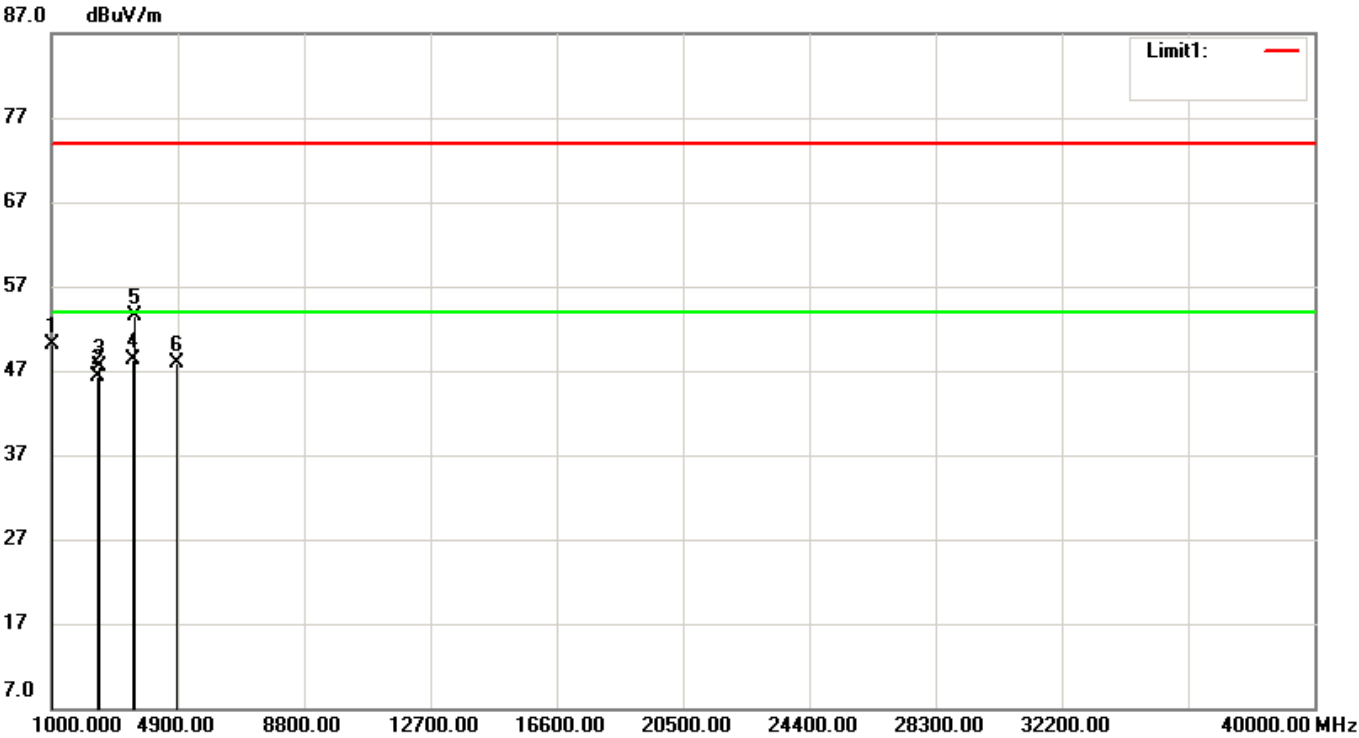
VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ;HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)

VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ;HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)

VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ;HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5825 MHz

File: 21-05-MAW-#24 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC Humidity: 62 %
B1-N2



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH HIGH-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	59.46	peak	-9.35	50.11	74.00	-23.89
2	2400.84130	49.23	peak	-2.88	46.35	74.00	-27.65
3	2491.70670	50.23	peak	-2.64	47.59	74.00	-26.41
4	3453.36530	49.80	peak	-1.46	48.34	74.00	-25.66
5	3529.08650	54.89	peak	-1.34	53.55	74.00	-20.45
6	4823.91820	46.82	peak	1.15	47.97	74.00	-26.03

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。

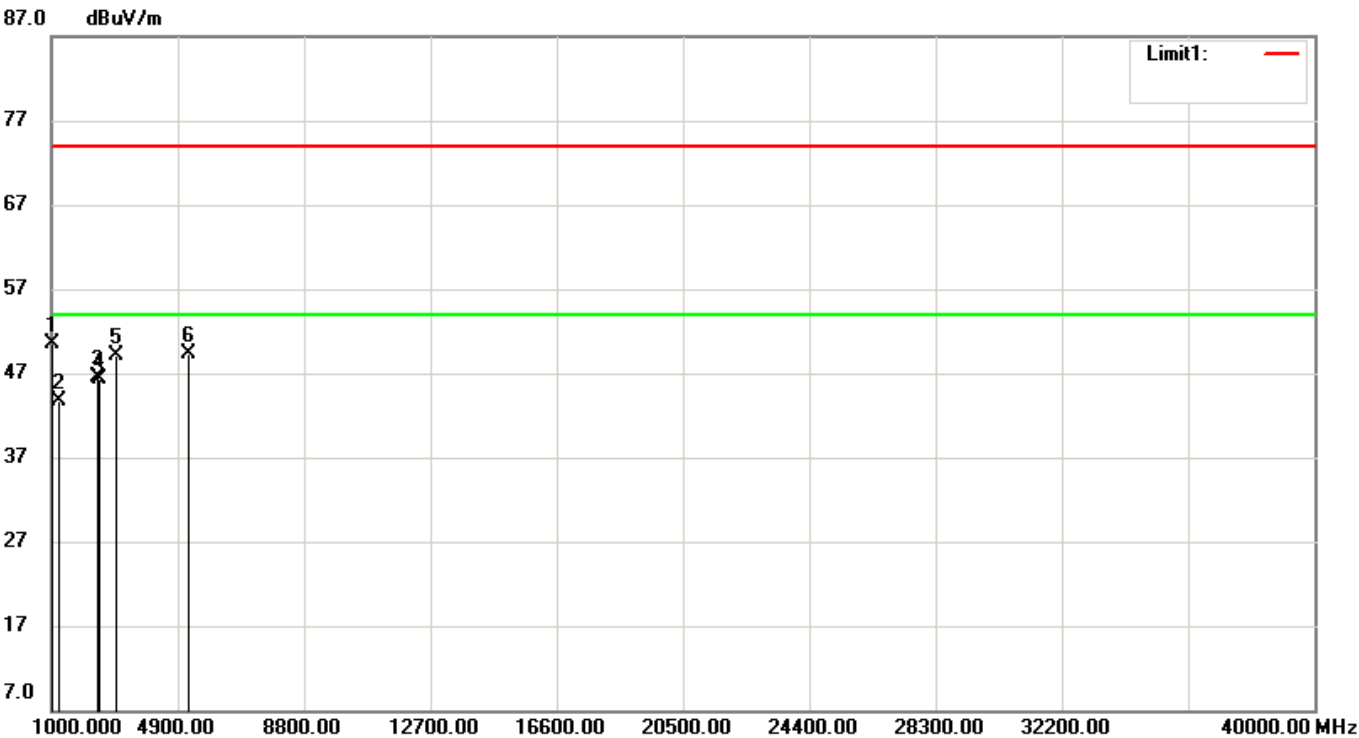
2. 量測不準確度：
VER: ±5.32dB(1GHz ≤ f < 6GHz) ;HOR: ±5.05dB(1GHz ≤ f < 6GHz)
VER: ±4.71dB(6GHz ≤ f < 18GHz) ;HOR: ±4.96dB(6GHz ≤ f < 18GHz)
VER: ±5.37dB(18GHz ≤ f ≤ 40GHz) ;HOR: ±5.61dB(18GHz ≤ f ≤ 40GHz)

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：5745 MHz

File: 21-05-MAW-008_5-8n20 #19 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH LOW-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	59.77	peak	-9.35	50.42	74.00	-23.58
2	1196.87500	52.52	peak	-8.85	43.67	74.00	-30.33
3	2408.41340	49.29	peak	-2.86	46.43	74.00	-27.57
4	2491.70670	48.97	peak	-2.64	46.33	74.00	-27.67
5	2968.75000	51.16	peak	-2.05	49.11	74.00	-24.89
6	5202.52400	47.41	peak	1.93	49.34	74.00	-24.66

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：
VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5745 MHz

File: 21-05-MAW-008_5-8n20

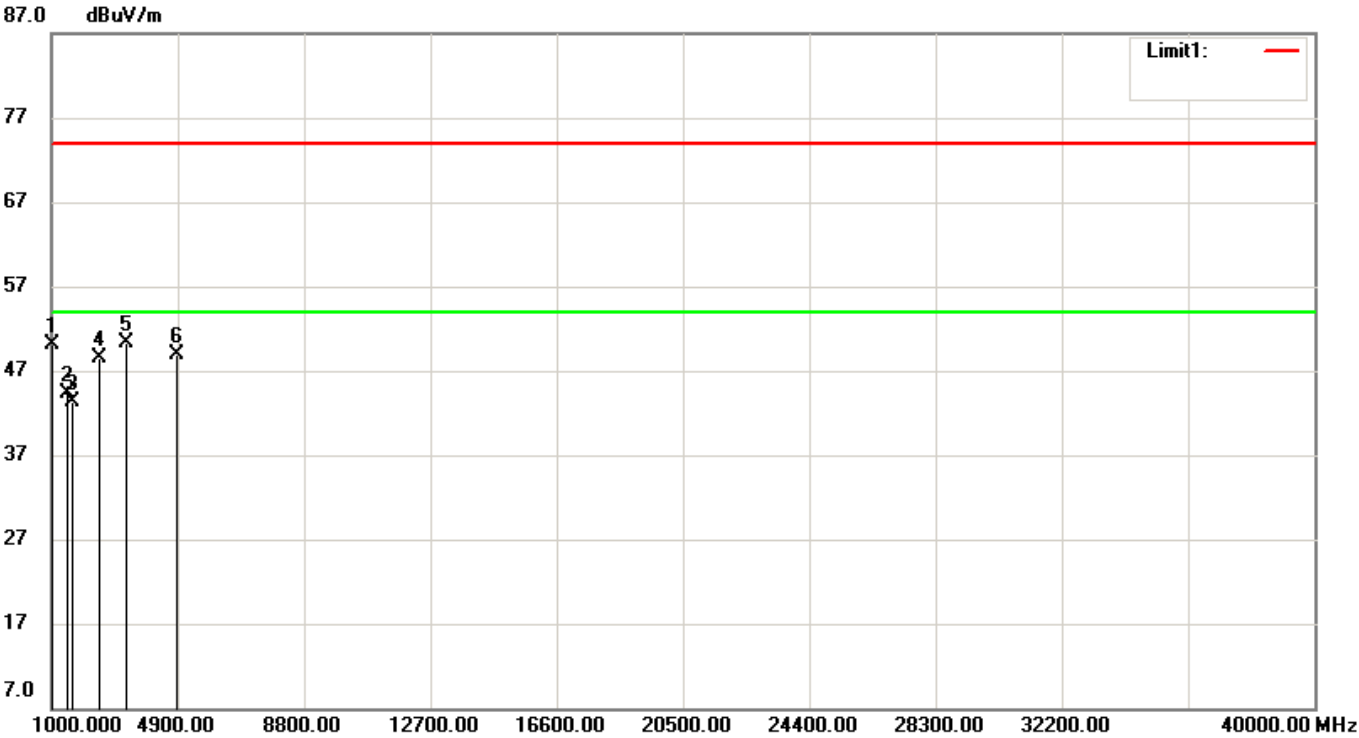
Site: RE02-EMC B1-N2

#20

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: CH LOW-1

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	1037.86050	59.53	peak	-9.35	50.18	74.00	-23.82
2	1492.18750	52.29	peak	-7.92	44.37	74.00	-29.63
3	1590.62500	50.56	peak	-7.18	43.38	74.00	-30.62
4	2491.70670	51.15	peak	-2.64	48.51	74.00	-25.49
5	3309.49510	51.92	peak	-1.65	50.27	74.00	-23.73
6	4831.49030	47.64	peak	1.18	48.82	74.00	-25.18

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：
- VER: ±5.32dB(1GHz≤f<6GHz) ;HOR: ±5.05dB(1GHz≤f<6GHz)

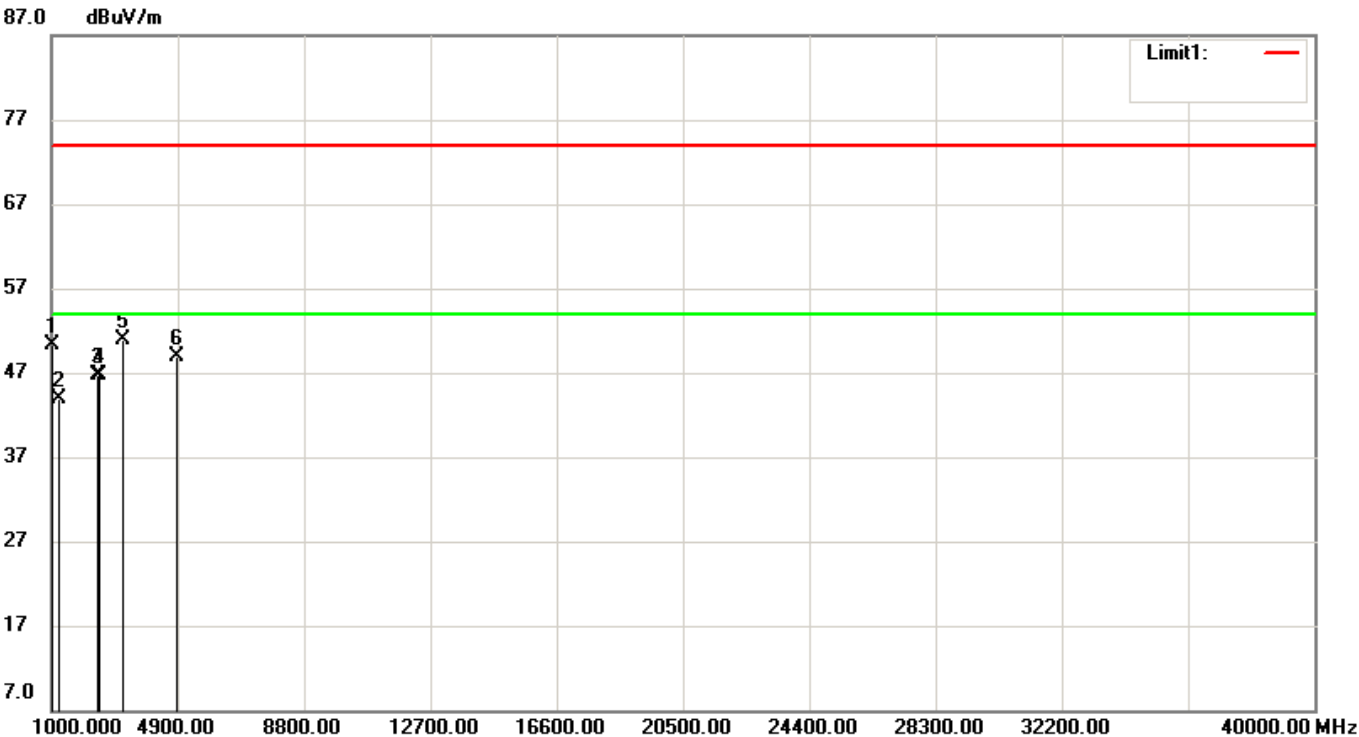
VER: ±4.71dB(6GHz≤f<18GHz) ;HOR: ±4.96dB(6GHz≤f<18GHz)

VER: ±5.37dB(18GHz≤f≤40GHz) ;HOR: ±5.61dB(18GHz≤f≤40GHz)

b. Channel Mid

操作模式：發射接收
基本波頻率：5785 MHz

File: 21-05-MAW-008_5-8n20 #21 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH MID-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1045.43260	59.67	peak	-9.32	50.35	74.00	-23.65
2	1196.87500	52.79	peak	-8.85	43.94	74.00	-30.06
3	2415.98550	49.62	peak	-2.84	46.78	74.00	-27.22
4	2491.70670	49.38	peak	-2.64	46.74	74.00	-27.26
5	3127.76440	52.76	peak	-1.86	50.90	74.00	-23.10
6	4816.34610	47.74	peak	1.13	48.87	74.00	-25.13

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:
VER: ±5.32dB(1GHz ≤ f < 6GHz) ;HOR: ±5.05dB(1GHz ≤ f < 6GHz)
VER: ±4.71dB(6GHz ≤ f < 18GHz) ;HOR: ±4.96dB(6GHz ≤ f < 18GHz)
VER: ±5.37dB(18GHz ≤ f ≤ 40GHz) ;HOR: ±5.61dB(18GHz ≤ f ≤ 40GHz)

操作模式：發射接收
基本波頻率：5785 MHz

File: 21-05-MAW-008_5-8n20

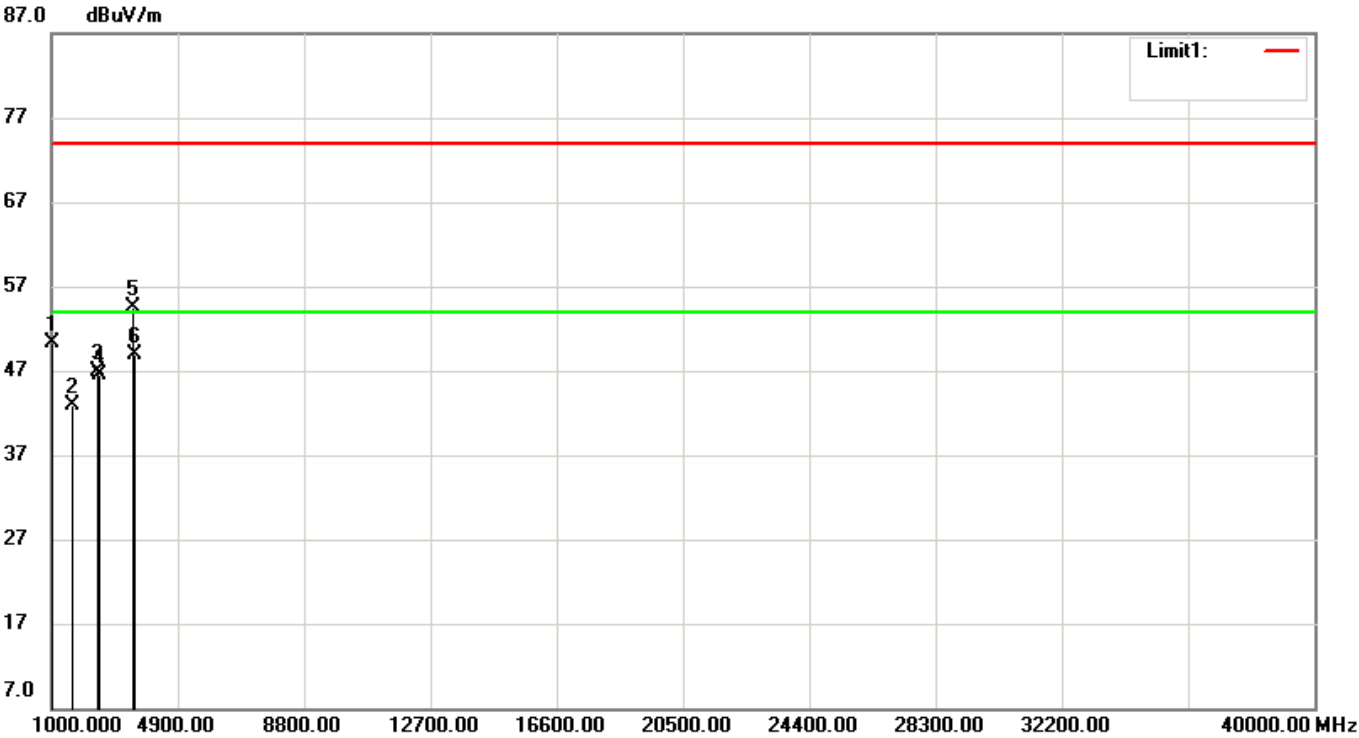
Site: RE02-EMC B1-N2

#22

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: CH MID-1

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	1045.43260	59.70	peak	-9.32	50.38	74.00	-23.62
2	1590.62500	50.07	peak	-7.18	42.89	74.00	-31.11
3	2408.41340	49.73	peak	-2.86	46.87	74.00	-27.13
4	2491.70670	49.20	peak	-2.64	46.56	74.00	-27.44
5	3453.36530	55.98	peak	-1.46	54.52	74.00	-19.48
6	3506.37010	50.36	peak	-1.39	48.97	74.00	-25.03

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：
- VER: ±5.32dB(1GHz≤f<6GHz) ;HOR: ±5.05dB(1GHz≤f<6GHz)

VER: ±4.71dB(6GHz≤f<18GHz) ;HOR: ±4.96dB(6GHz≤f<18GHz)

VER: ±5.37dB(18GHz≤f≤40GHz) ;HOR: ±5.61dB(18GHz≤f≤40GHz)

c. Channel High

操作模式：發射接收

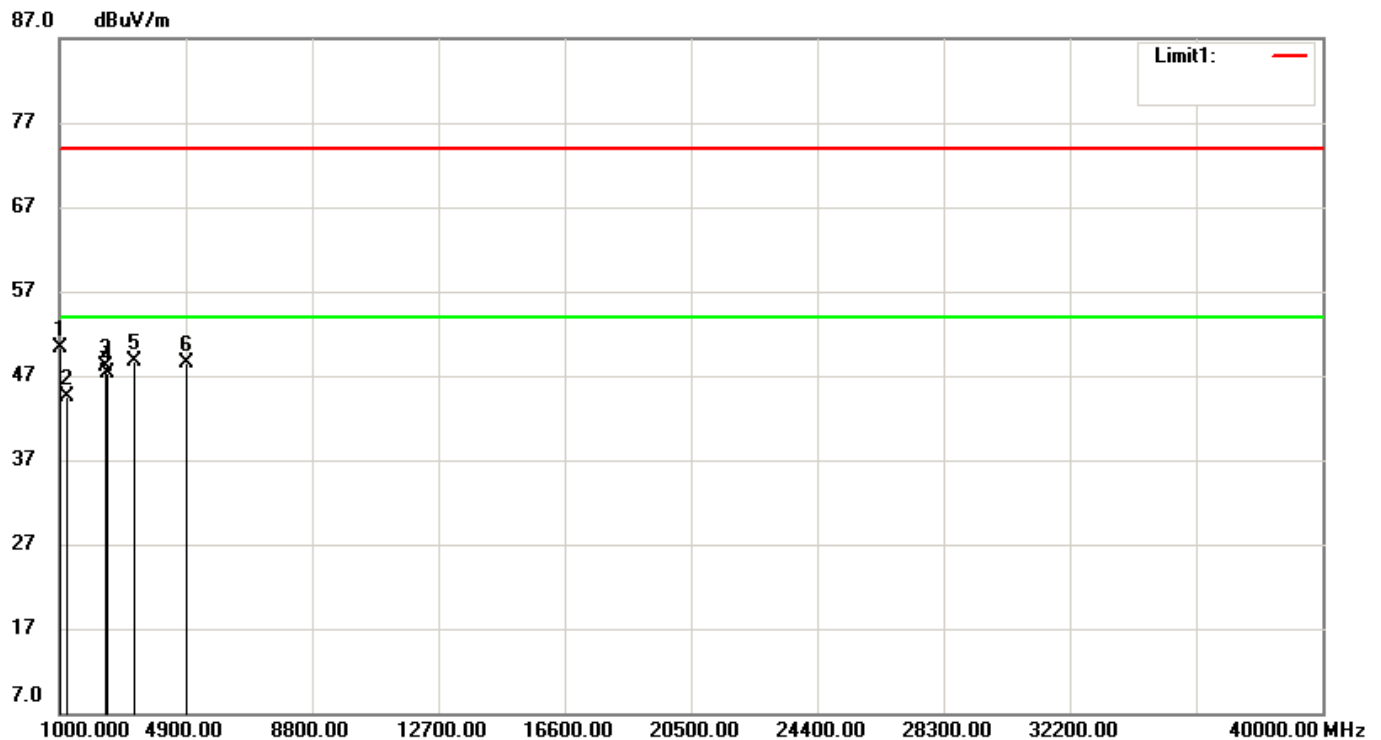
基本波頻率：5825 MHz

File: 21-05-MAW- #23
 008_5-8n20
 Site: RE02-EMC
 B1-N2

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: NCC_Above1G_Pk
 EUT: Cockpit Control Unit
 Model: DNNS124
 Test Mode: UNII
 Note: CH HIGH-1

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	1045.43260	59.59	peak	-9.32	50.27	74.00	-23.73
2	1196.87500	53.42	peak	-8.85	44.57	74.00	-29.43
3	2415.98550	51.01	peak	-2.84	48.17	74.00	-25.83
4	2491.70670	49.94	peak	-2.64	47.30	74.00	-26.70
5	3286.77880	50.28	peak	-1.67	48.61	74.00	-25.39
6	4876.92300	47.25	peak	1.34	48.59	74.00	-25.41

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：

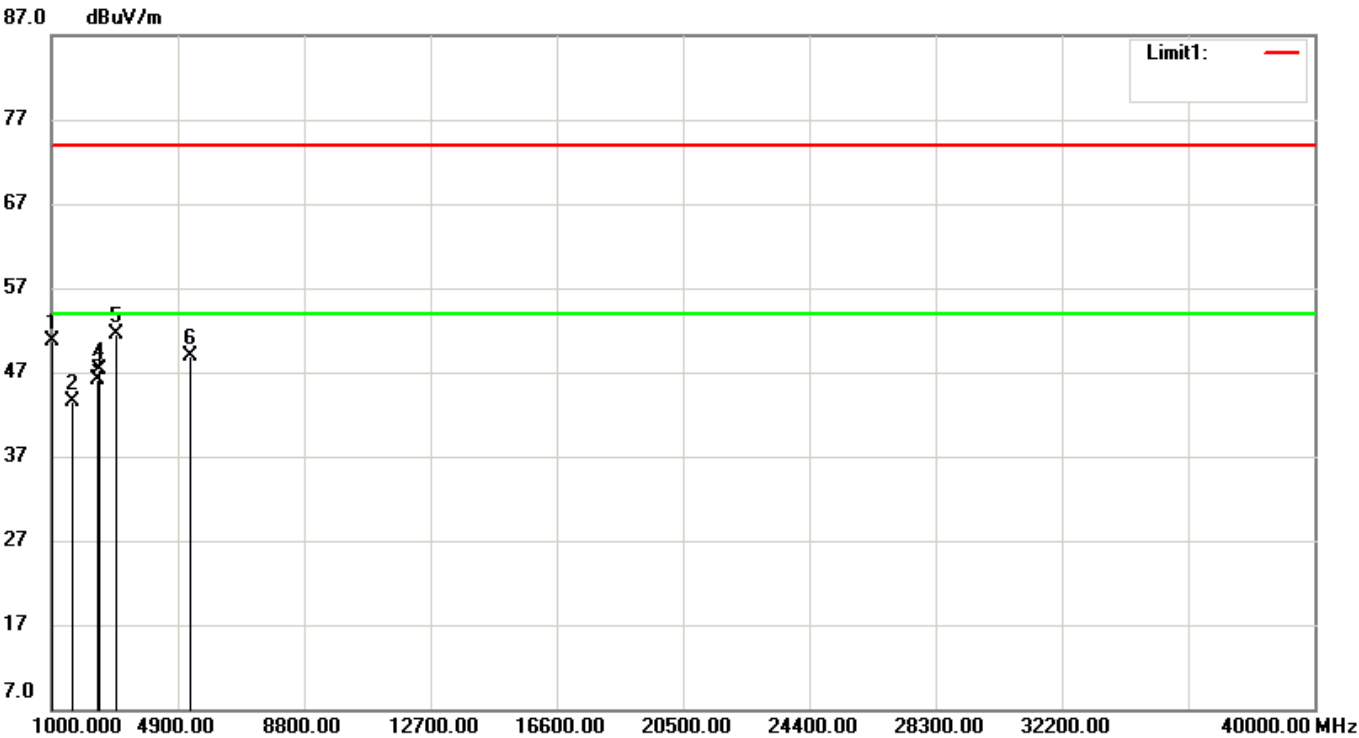
VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)

VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)

VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5825 MHz

File: 21-05-MAW-008_5-8n20 #24 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH HIGH-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	60.01	peak	-9.35	50.66	74.00	-23.34
2	1590.62500	50.76	peak	-7.18	43.58	74.00	-30.42
3	2393.26920	49.07	peak	-2.90	46.17	74.00	-27.83
4	2491.70670	50.01	peak	-2.64	47.37	74.00	-26.63
5	2953.60560	53.51	peak	-2.07	51.44	74.00	-22.56
6	5293.38940	46.88	peak	2.00	48.88	74.00	-25.12

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。

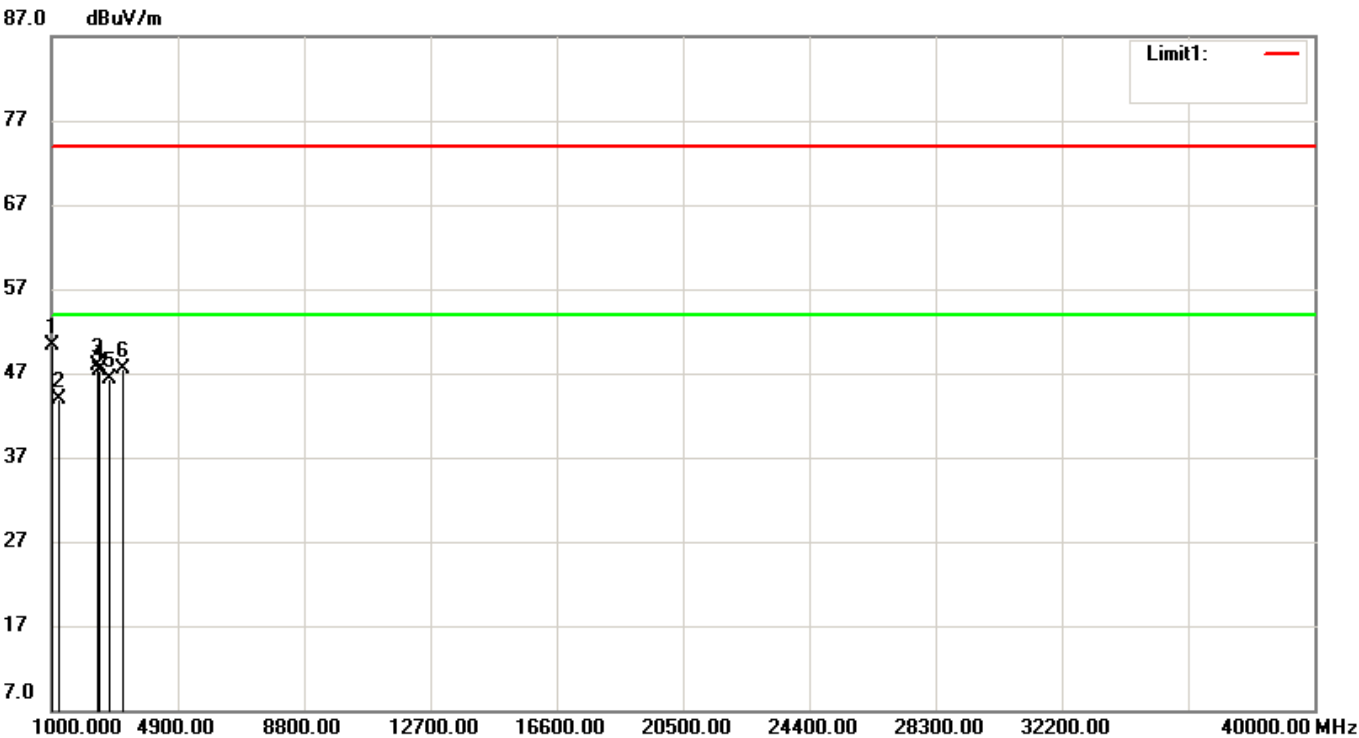
2. 量測不準確度:
- VER: ±5.32dB(1GHz ≤ f < 6GHz) ;HOR: ±5.05dB(1GHz ≤ f < 6GHz)
- VER: ±4.71dB(6GHz ≤ f < 18GHz) ;HOR: ±4.96dB(6GHz ≤ f < 18GHz)
- VER: ±5.37dB(18GHz ≤ f ≤ 40GHz) ;HOR: ±5.61dB(18GHz ≤ f ≤ 40GHz)

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：5755 MHz

File: 21-05-MAW-008_5-8n40 #13 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH LOW-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	59.75	peak	-9.35	50.40	74.00	-23.60
2	1196.87500	52.82	peak	-8.85	43.97	74.00	-30.03
3	2415.98550	50.78	peak	-2.84	47.94	74.00	-26.06
4	2491.70670	49.90	peak	-2.64	47.26	74.00	-26.74
5	2809.73550	48.54	peak	-2.25	46.29	74.00	-27.71
6	3165.62500	49.37	peak	-1.82	47.55	74.00	-26.45

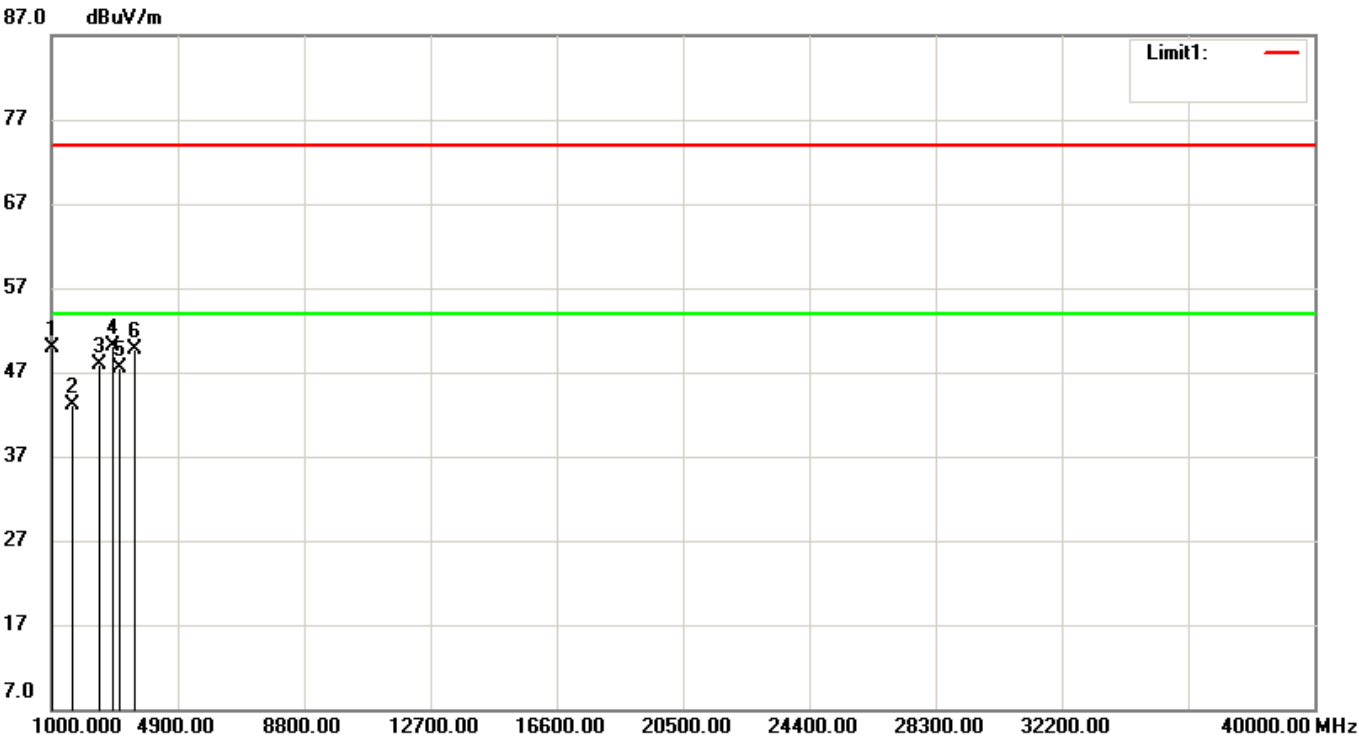
註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5755 MHz

File: 21-05-MAW- #14 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC Humidity: 62 %
B1-N2



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH LOW-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	59.24	peak	-9.35	49.89	74.00	-24.11
2	1598.19710	50.24	peak	-7.11	43.13	74.00	-30.87
3	2491.70670	50.58	peak	-2.64	47.94	74.00	-26.06
4	2847.59610	52.32	peak	-2.20	50.12	74.00	-23.88
5	3105.04800	49.47	peak	-1.89	47.58	74.00	-26.42
6	3536.65860	51.11	peak	-1.31	49.80	74.00	-24.20

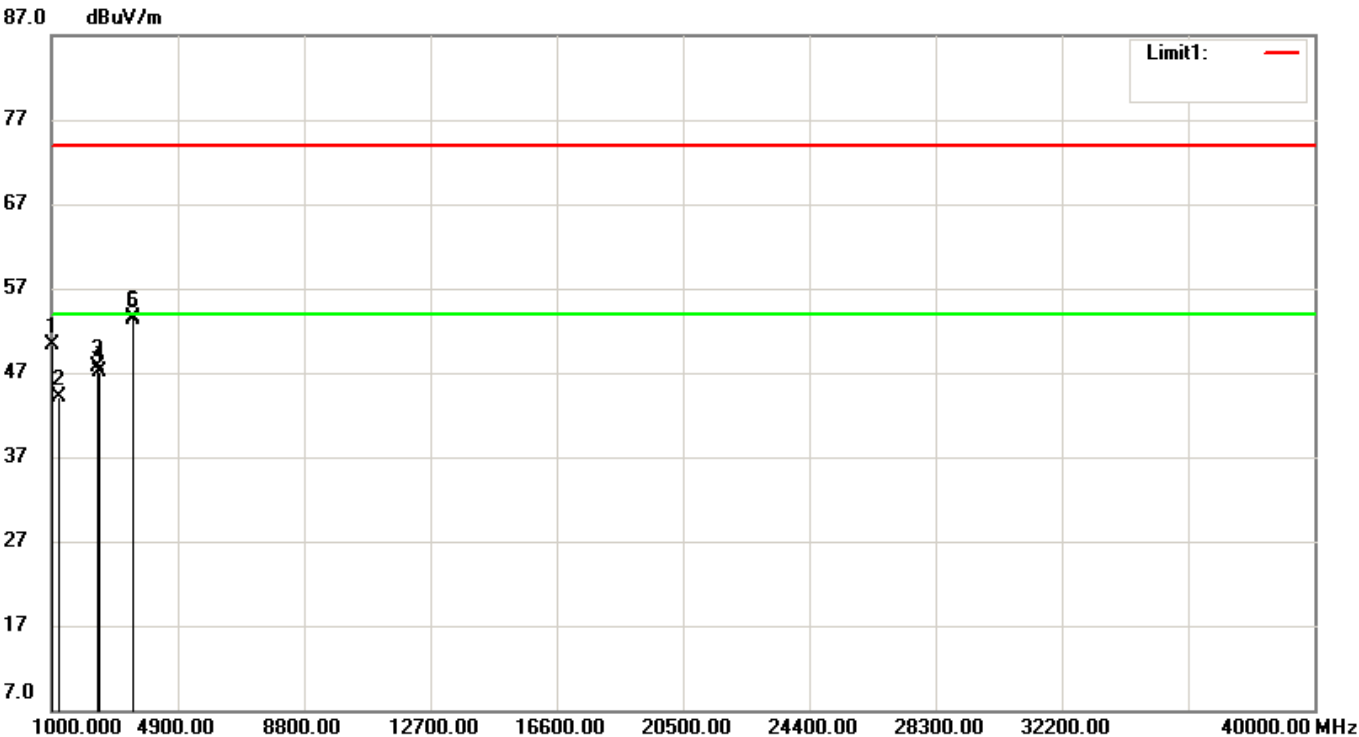
註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度:
- VER: ±5.32dB(1GHz ≤ f < 6GHz) ;HOR: ±5.05dB(1GHz ≤ f < 6GHz)
- VER: ±4.71dB(6GHz ≤ f < 18GHz) ;HOR: ±4.96dB(6GHz ≤ f < 18GHz)
- VER: ±5.37dB(18GHz ≤ f ≤ 40GHz) ;HOR: ±5.61dB(18GHz ≤ f ≤ 40GHz)

b. Channel High

操作模式：發射接收
基本波頻率：5795 MHz

File: 21-05-MAW-008_5-8n40 #15 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH HIGH-1

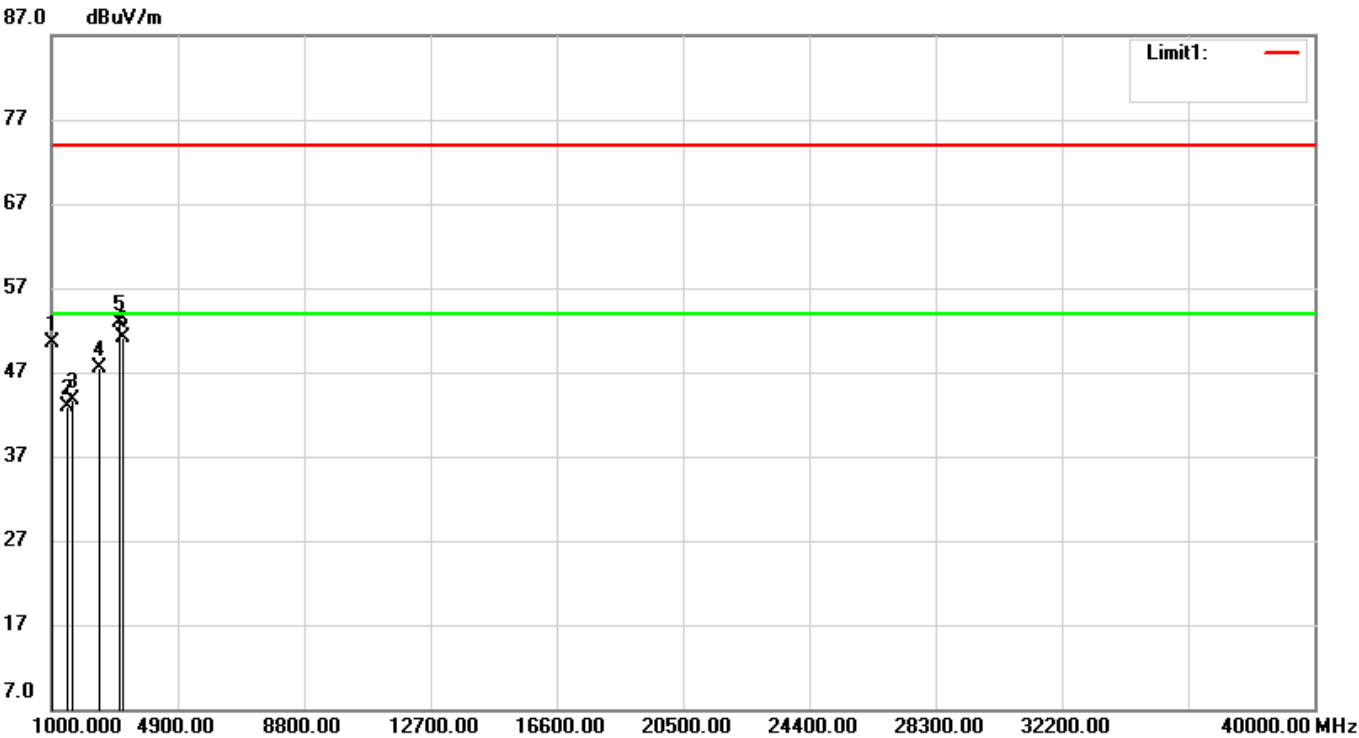
No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1045.43260	59.54	peak	-9.32	50.22	74.00	-23.78
2	1196.87500	52.87	peak	-8.85	44.02	74.00	-29.98
3	2415.98540	50.52	peak	-2.84	47.68	74.00	-26.32
4	2499.27880	49.70	peak	-2.62	47.08	74.00	-26.92
5	3460.93750	54.73	peak	-1.46	53.27	74.00	-20.73
6	3498.79800	55.00	peak	-1.41	53.59	74.00	-20.41

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:
- VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式：發射接收
基本波頻率：5795 MHz

File: 21-05-MAW-008_5-8n40 #16 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Vertical
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH HIGH-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1037.86050	59.89	peak	-9.35	50.54	74.00	-23.46
2	1492.18750	50.89	peak	-7.92	42.97	74.00	-31.03
3	1590.62500	50.86	peak	-7.18	43.68	74.00	-30.32
4	2499.27880	50.10	peak	-2.62	47.48	74.00	-26.52
5	3120.19230	54.83	peak	-1.87	52.96	74.00	-21.04
6	3158.05270	52.98	peak	-1.82	51.16	74.00	-22.84

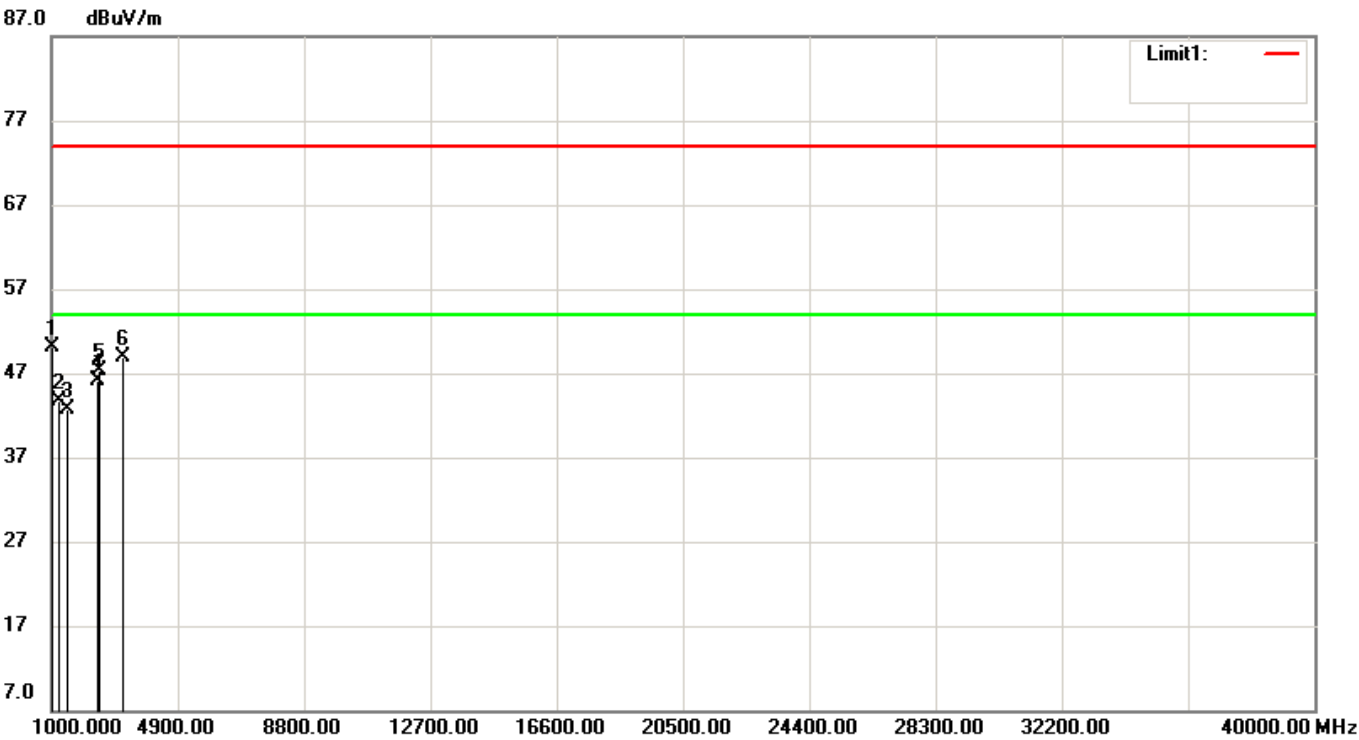
註：1. 若以峰值檢測功能測量之值符合平均值限制值，則可視同以平均值功能測量之值亦符合平均值限制值。

2. 量測不準確度:
- VER: ±5.32dB(1GHz ≤ f < 6GHz) ;HOR: ±5.05dB(1GHz ≤ f < 6GHz)
- VER: ±4.71dB(6GHz ≤ f < 18GHz) ;HOR: ±4.96dB(6GHz ≤ f < 18GHz)
- VER: ±5.37dB(18GHz ≤ f ≤ 40GHz) ;HOR: ±5.61dB(18GHz ≤ f ≤ 40GHz)

10.5.2.4 調變技術: IEEE 802.11ac VHT80

操作模式：發射接收
基本波頻率：5775 MHz

File: 21-05-MAW-#9 Date: 2021/7/5 Temperature: 24 °C
Site: RE02-EMC B1-N2 Humidity: 62 %



Condition: NCC_Above1G_Pk Polarization: Horizontal
EUT: Cockpit Control Unit Distance: 3m
Model: DNNS124
Test Mode: UNII Operator: Phillip
Note: CH LOW-1

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1045.43260	59.45	peak	-9.32	50.13	74.00	-23.87
2	1196.87500	52.55	peak	-8.85	43.70	74.00	-30.30
3	1484.61530	50.72	peak	-7.95	42.77	74.00	-31.23
4	2415.98550	48.98	peak	-2.84	46.14	74.00	-27.86
5	2491.70670	49.93	peak	-2.64	47.29	74.00	-26.71
6	3158.05280	50.66	peak	-1.82	48.84	74.00	-25.16

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:
- VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

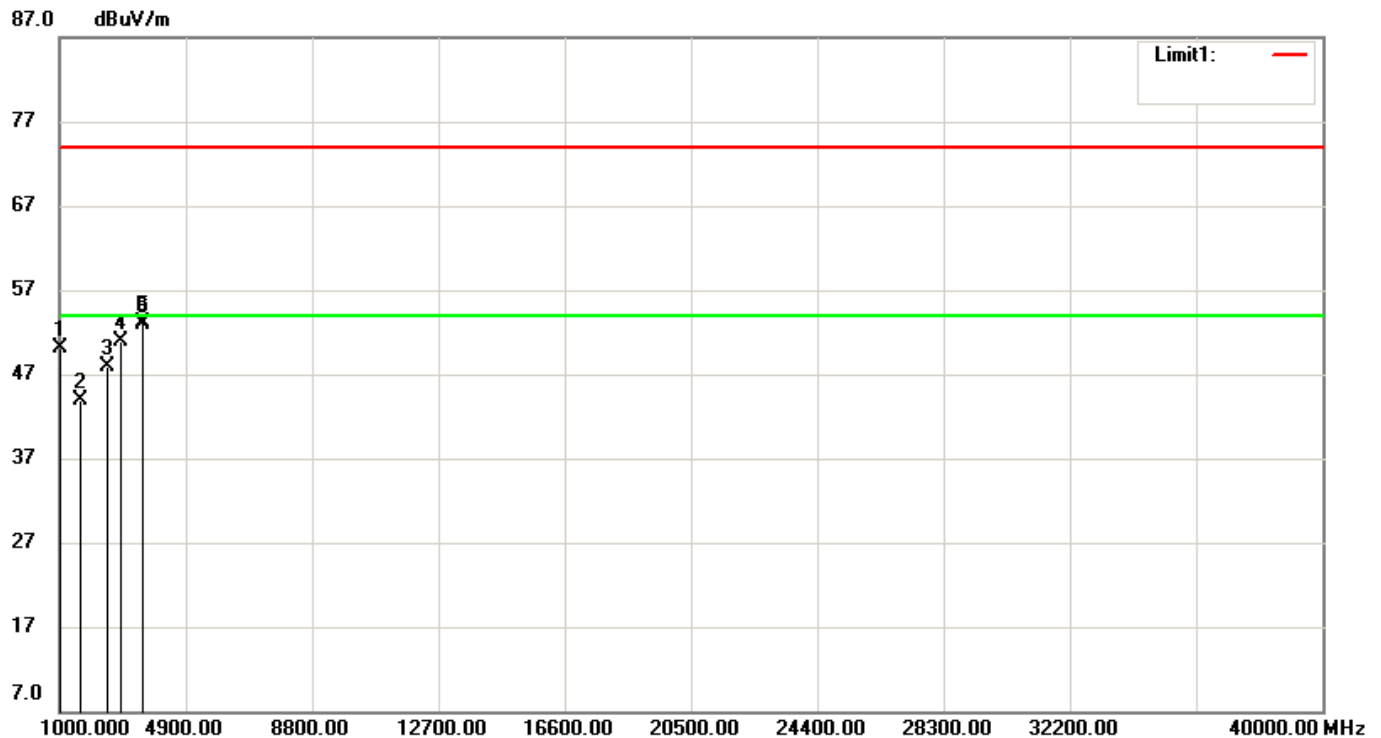
操作模式：發射接收
基本波頻率：5775 MHz

File: 21-05-MAW- #10
008_5-8ac80
Site: RE02-EMC
B1-N2

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: NCC_Above1G_Pk
EUT: Cockpit Control Unit
Model: DNNS124
Test Mode: UNII
Note: CH LOW-1

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	1037.86050	59.40	peak	-9.35	50.05	74.00	-23.95
2	1590.62500	51.10	peak	-7.18	43.92	74.00	-30.08
3	2499.27880	50.52	peak	-2.62	47.90	74.00	-26.10
4	2870.31250	52.98	peak	-2.17	50.81	74.00	-23.19
5	3521.51440	54.53	peak	-1.35	53.18	74.00	-20.82
6	3551.80280	54.22	peak	-1.27	52.95	74.00	-21.05

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:

VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ; HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)

VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ; HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)

VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ; HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

10.5.2.5 測試狀態：BT Link+AUX Playing

操作模式: Mode G

File: 21-05-MAW-008_Normal

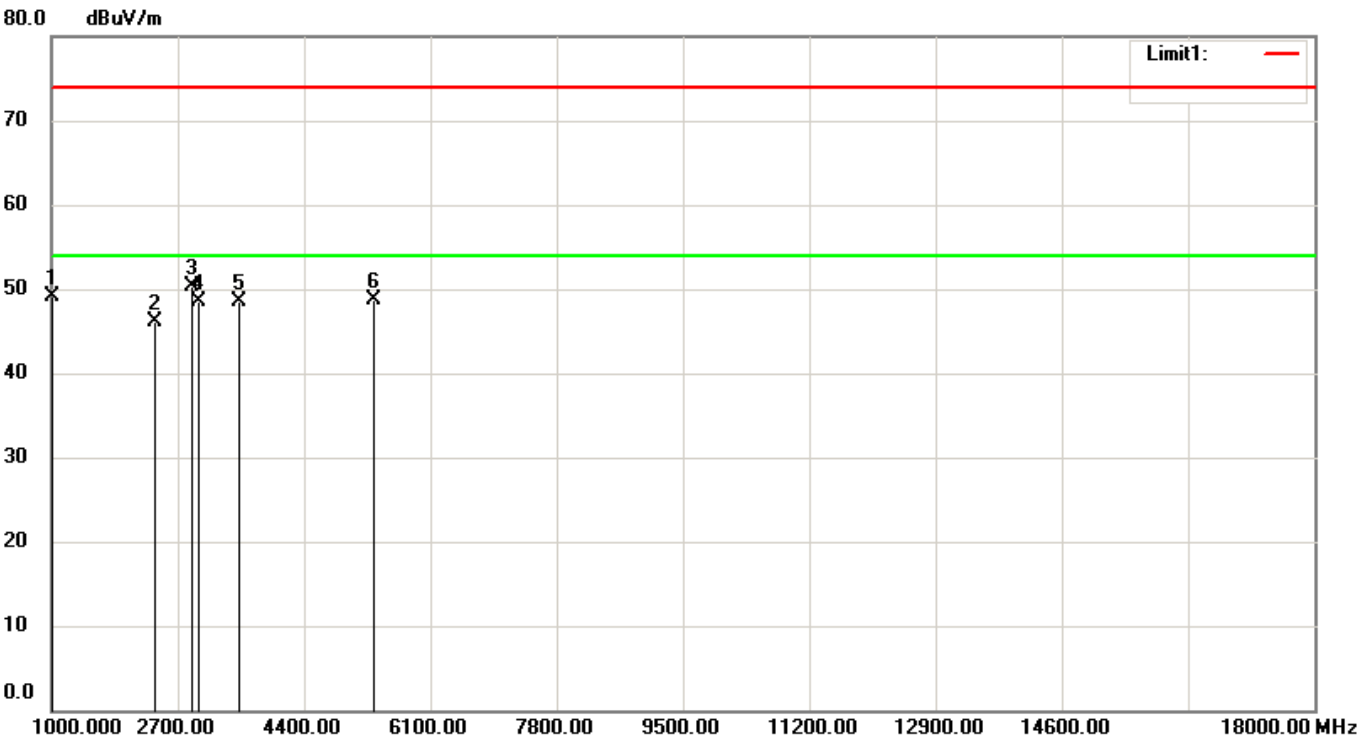
Site: RE02-EMC B1-N2

#7

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Normal 1

Note: BT Link+AUX Playing

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	1027.24360	58.45	peak	-9.38	49.07	74.00	-24.93
2	2389.42310	48.96	peak	-2.91	46.05	74.00	-27.95
3	2879.80770	52.45	peak	-2.16	50.29	74.00	-23.71
4	2988.78210	50.55	peak	-2.03	48.52	74.00	-25.48
5	3533.65380	49.76	peak	-1.32	48.44	74.00	-25.56
6	5331.73080	46.68	peak	2.04	48.72	74.00	-25.28

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:
VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ;HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ;HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ;HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式: Mode G

File: 21-05-MAW-008_Normal

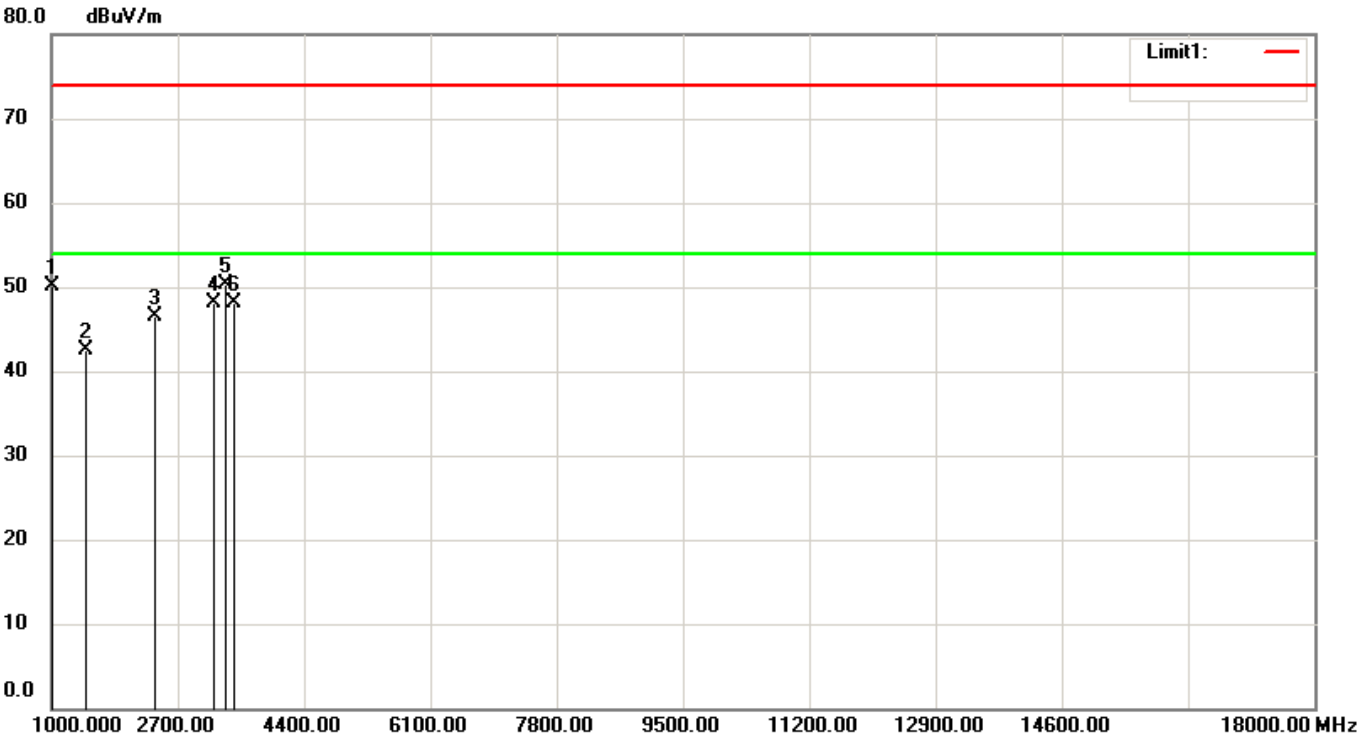
Site: RE02-EMC B1-N2

#8

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Normal 1

Note: BT Link+AUX Playing

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	1027.24360	59.43	peak	-9.38	50.05	74.00	-23.95
2	1463.14100	50.52	peak	-8.01	42.51	74.00	-31.49
3	2389.42310	49.37	peak	-2.91	46.46	74.00	-27.54
4	3179.48720	49.98	peak	-1.79	48.19	74.00	-25.81
5	3342.94870	51.85	peak	-1.60	50.25	74.00	-23.75
6	3451.92310	49.51	peak	-1.46	48.05	74.00	-25.95

- 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:
- VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ;HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
- VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ;HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
- VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ;HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

10.5.2.6 測試狀態: WiFi Link+USB Playing

操作模式: Mode H

File: 21-05-MAW-008_Normal

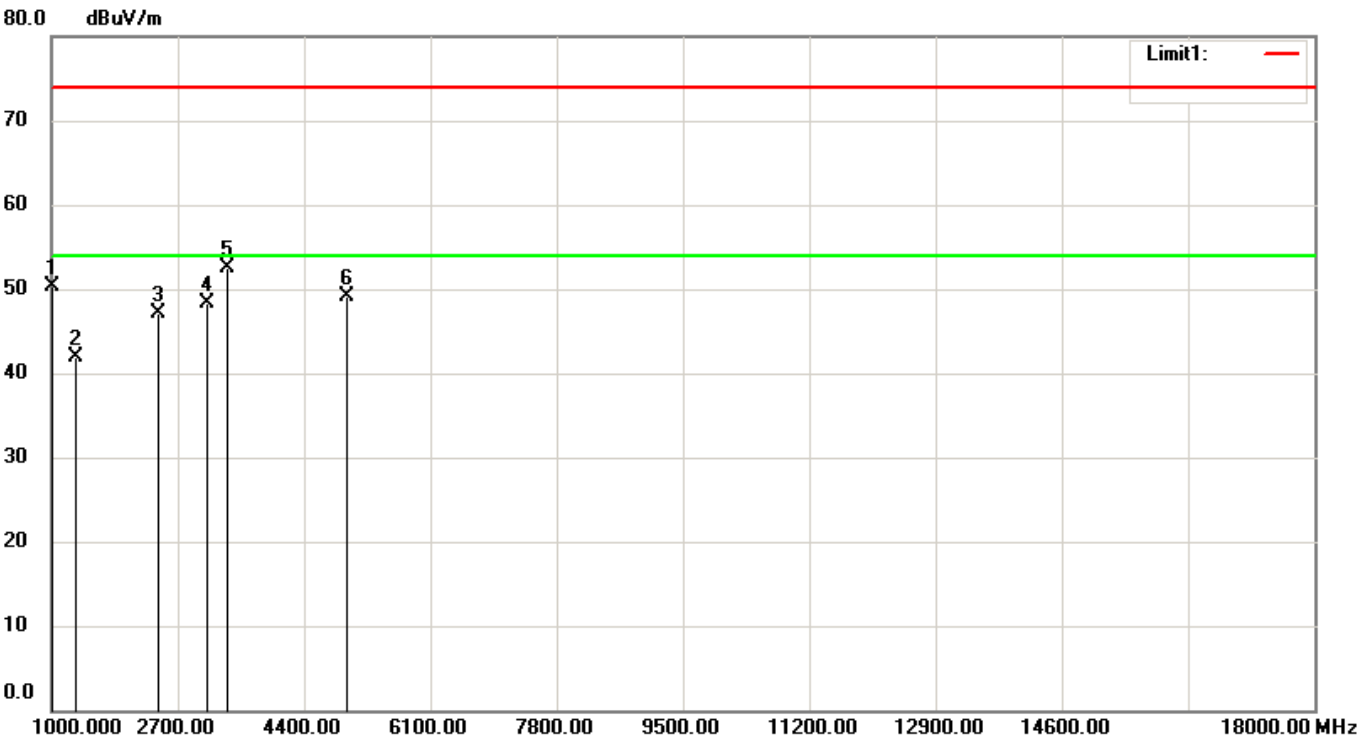
Site: RE02-EMC B1-N2

#6

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Normal 2

Note: WiFi Link+USB Playing

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	1027.24360	59.62	peak	-9.38	50.24	74.00	-23.76
2	1326.92310	50.30	peak	-8.44	41.86	74.00	-32.14
3	2443.91030	49.86	peak	-2.76	47.10	74.00	-26.90
4	3097.75640	50.29	peak	-1.89	48.40	74.00	-25.60
5	3370.19230	53.97	peak	-1.56	52.41	74.00	-21.59
6	4977.56410	47.46	peak	1.69	49.15	74.00	-24.85

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:
VER: $\pm 5.32\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$) ;HOR: $\pm 5.05\text{dB}$ ($1\text{GHz} \leq f < 6\text{GHz}$)
VER: $\pm 4.71\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$) ;HOR: $\pm 4.96\text{dB}$ ($6\text{GHz} \leq f < 18\text{GHz}$)
VER: $\pm 5.37\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$) ;HOR: $\pm 5.61\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

操作模式: Mode H

File: 21-05-MAW-008_Normal

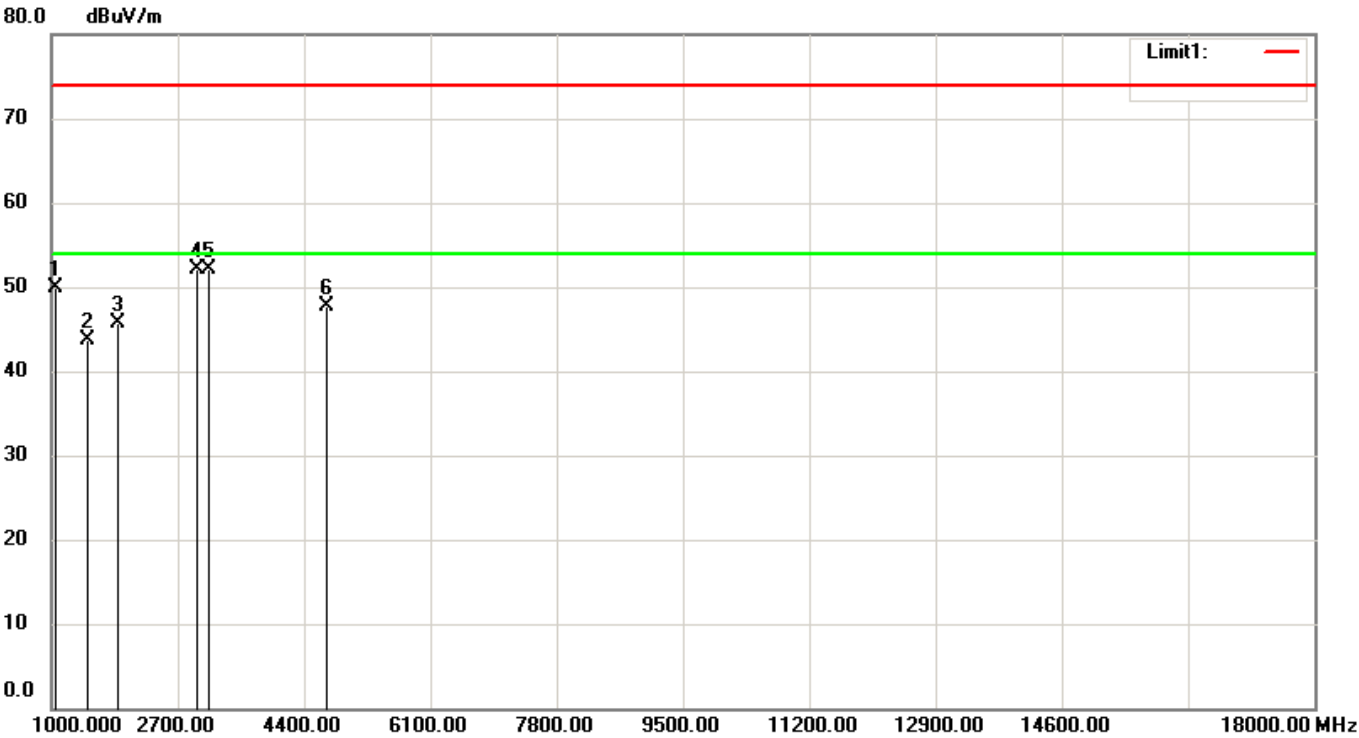
Site: RE02-EMC B1-N2

#5

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_Above1G_Pk

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Normal 2

Note: WiFi Link+USB Playing

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	1054.48720	59.22	peak	-9.31	49.91	74.00	-24.09
2	1490.38460	51.74	peak	-7.94	43.80	74.00	-30.20
3	1899.03850	50.49	peak	-4.73	45.76	74.00	-28.24
4	2961.53850	54.11	peak	-2.06	52.05	74.00	-21.95
5	3125.00000	53.95	peak	-1.86	52.09	74.00	-21.91
6	4705.12820	46.92	peak	0.74	47.66	74.00	-26.34

- 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:
- VER: ±5.32dB(1GHz ≤ f < 6GHz) ;HOR: ±5.05dB(1GHz ≤ f < 6GHz)

VER: ±4.71dB(6GHz ≤ f < 18GHz) ;HOR: ±4.96dB(6GHz ≤ f < 18GHz)

VER: ±5.37dB(18GHz ≤ f ≤ 40GHz) ;HOR: ±5.61dB(18GHz ≤ f ≤ 40GHz)

10.5.3 其它不必要之訊號

10.5.3.1 測試狀態：IEEE 802.11n HT20

File: 21-05-MAW-008_Below 1G

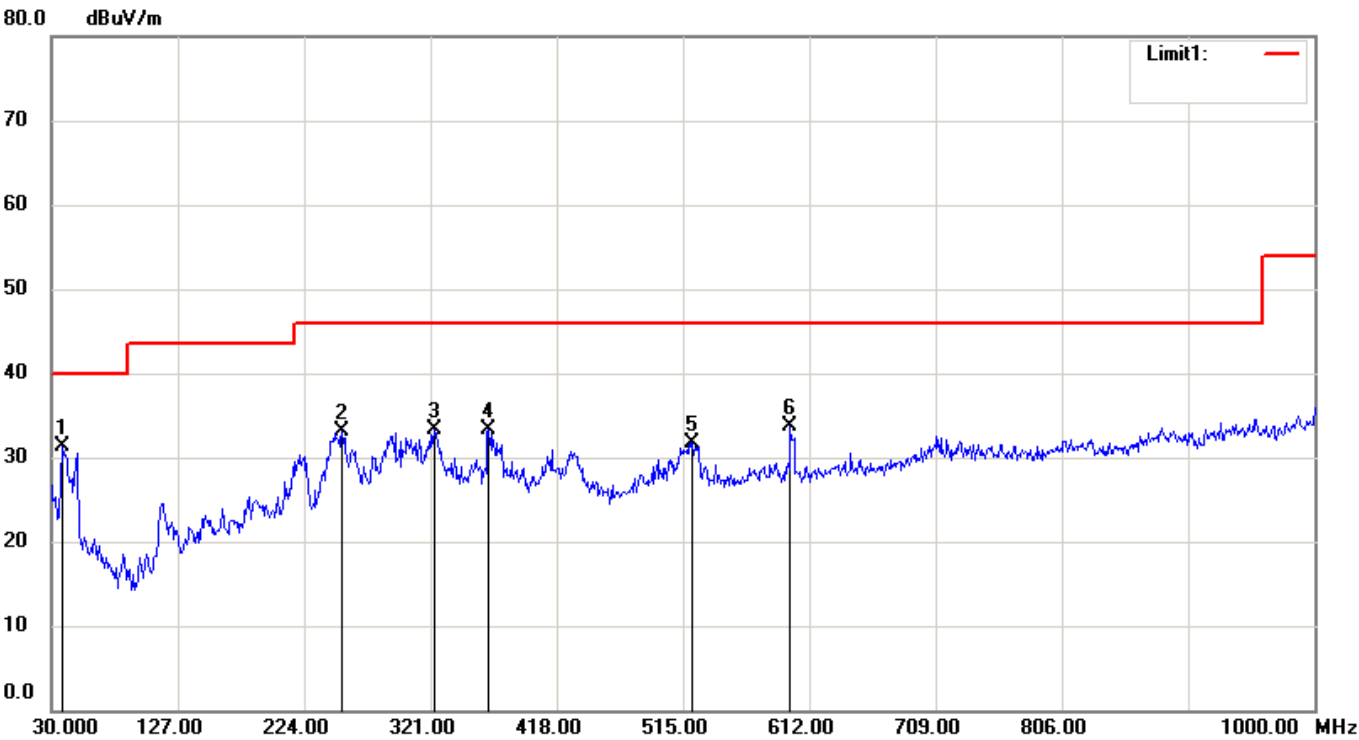
Site: RE02-EMC B1-N2

#7

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_LP0002_30-1000MHz

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Band4

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	37.7600	39.73	QP	-8.44	31.29	40.00	-8.71
2	253.1000	40.19	QP	-7.17	33.02	46.00	-12.98
3	323.9100	38.30	QP	-4.93	33.37	46.00	-12.63
4	365.6200	37.33	QP	-4.06	33.27	46.00	-12.73
5	521.7900	32.85	QP	-1.24	31.61	46.00	-14.39
6	597.4500	33.21	QP	0.57	33.78	46.00	-12.22

File: 21-05-MAW-008_Below 1G

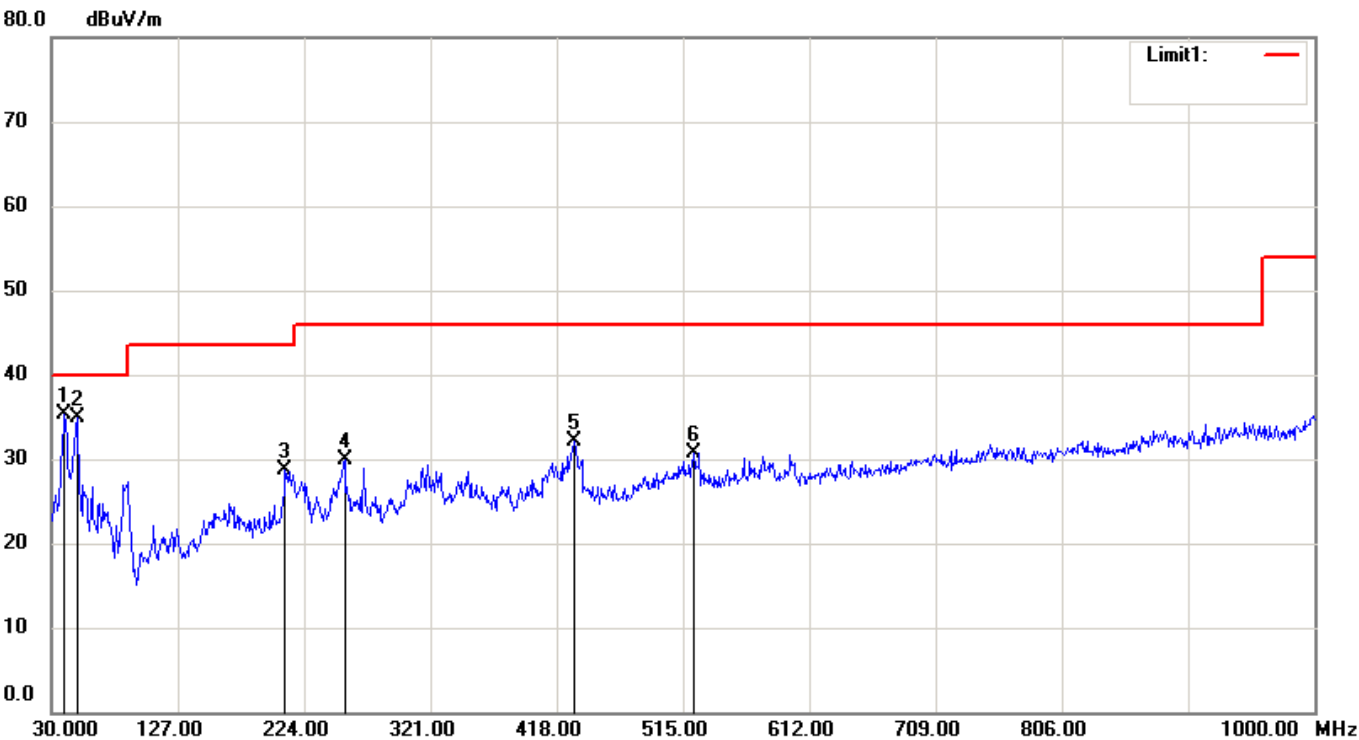
Site: RE02-EMC B1-N2

#8

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_LP0002_30-1000MHz

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Band4

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	39.7000	43.49	QP	-8.18	35.31	40.00	-4.69
2	49.4000	42.50	QP	-7.59	34.91	40.00	-5.09
3	209.4500	38.03	QP	-9.25	28.78	43.50	-14.72
4	255.0400	36.99	QP	-7.14	29.85	46.00	-16.15
5	431.5800	34.81	QP	-2.76	32.05	46.00	-13.95
6	523.7300	31.97	QP	-1.20	30.77	46.00	-15.23

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：
VER: $\pm 6.23\text{dB}(30\text{MHz} \leq f < 200\text{MHz})$;HOR: $\pm 4.55\text{dB}(30\text{MHz} \leq f < 200\text{MHz})$
VER: $\pm 5.94\text{dB}(2000\text{MHz} \leq f < 1\text{GHz})$;HOR: $\pm 4.34\text{dB}(200\text{MHz} \leq f < 1\text{GHz})$

10.5.3.2 測試狀態: BT Link+AUX Playing

File: 21-05-MAW-008_Below 1G

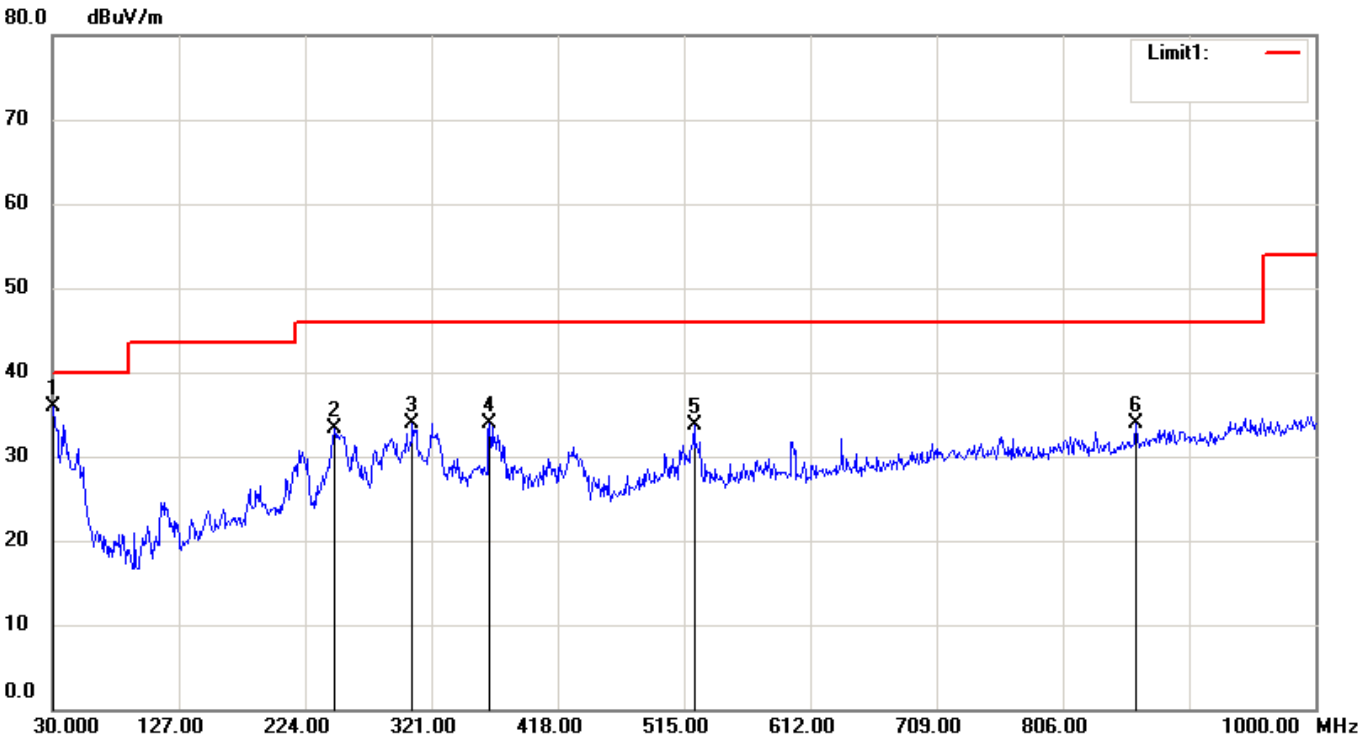
Site: RE02-EMC B1-N2

#9

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_LP0002_30-1000MHz

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Normal 1

Note: BT Link+AUX Playing

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	45.06	QP	-9.12	35.94	40.00	-4.06
2	246.3100	40.58	QP	-7.33	33.25	46.00	-12.75
3	306.4500	39.22	QP	-5.31	33.91	46.00	-12.09
4	365.6200	37.88	QP	-4.06	33.82	46.00	-12.18
5	522.7600	34.87	QP	-1.22	33.65	46.00	-12.35
6	862.2600	28.64	QP	5.21	33.85	46.00	-12.15

File: 21-05-MAW-008_Below 1G

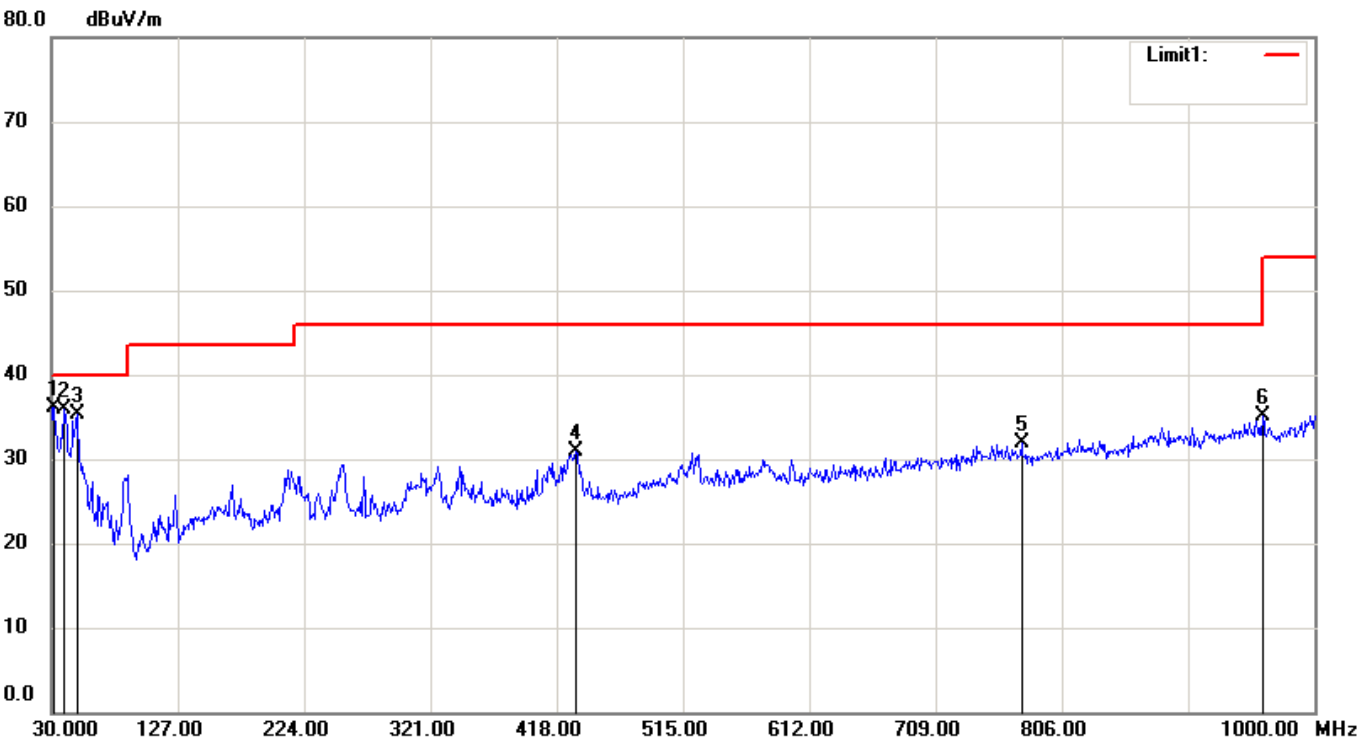
Site: RE02-EMC B1-N2

#10

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_LP0002_30-1000MHz

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Normal 1

Note: BT Link+AUX Playing

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	31.9400	45.18	QP	-9.04	36.14	40.00	-3.86
2	39.7000	44.08	QP	-8.18	35.90	40.00	-4.10
3	49.4000	42.86	QP	-7.59	35.27	40.00	-4.73
4	432.5500	33.64	QP	-2.73	30.91	46.00	-15.09
5	774.9600	28.17	QP	3.68	31.85	46.00	-14.15
6	960.2300	28.12	QP	7.05	35.17	54.00	-18.83

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：
VER: ±6.23dB(30MHz≤f<200MHz) ;HOR: ±4.55dB(30MHz≤f<200MHz)
VER: ±5.94dB(2000MHz≤f<1GHz) ;HOR: ±4.34dB(200MHz≤f<1GHz)

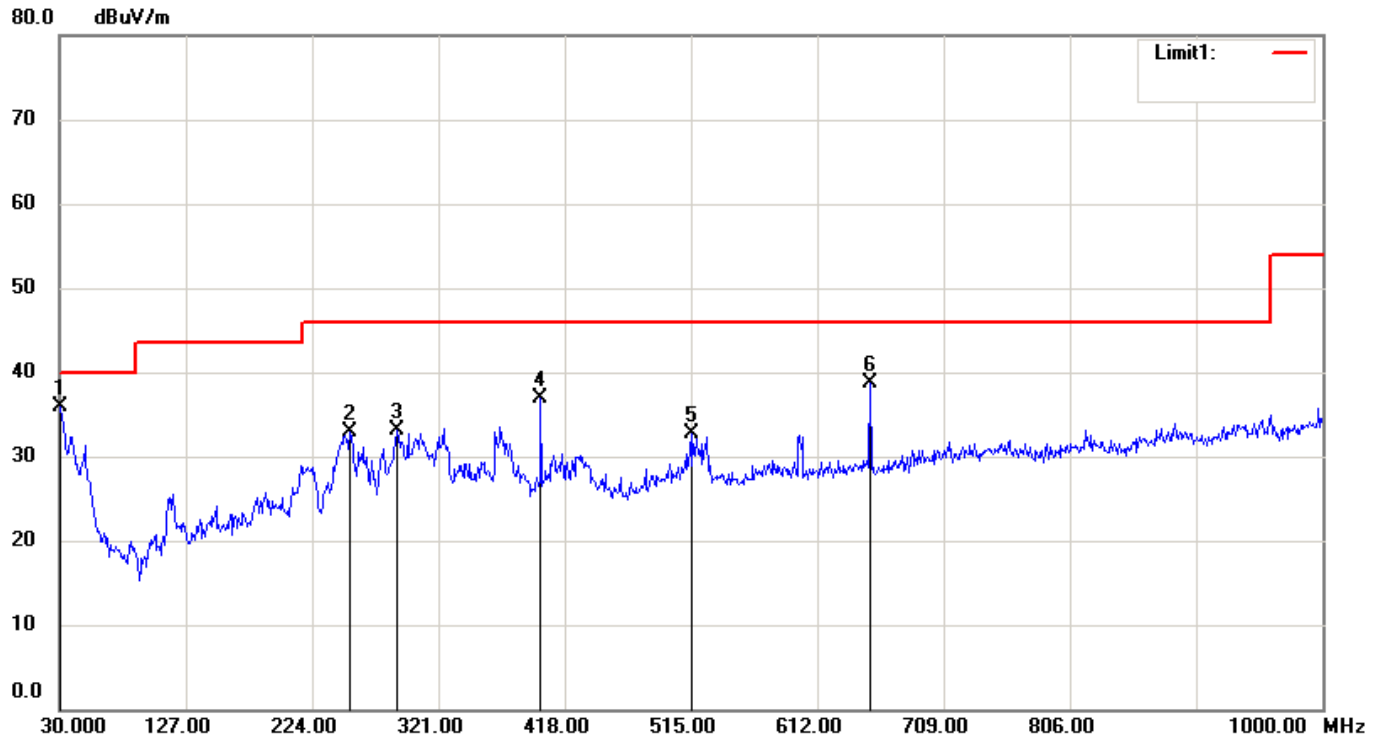
10.5.3.3 測試狀態: WiFi Link+USB Playing

File: 21-05-MAW- #11
 008_Below 1G
 Site: RE02-EMC B1-
 N2

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_LP0002_30-1000MHz
 EUT: Cockpit Control Unit
 Model: DNNS124
 Test Mode: Normal 2
 Note: WiFi Link+USB Playing

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	30.0000	45.10	QP	-9.19	35.91	40.00	-4.09
2	253.1000	39.98	QP	-7.17	32.81	46.00	-13.19
3	288.9900	38.66	QP	-5.65	33.01	46.00	-12.99
4	399.5700	40.24	QP	-3.32	36.92	46.00	-9.08
5	515.0000	34.13	QP	-1.41	32.72	46.00	-13.28
6	652.7400	37.44	QP	1.24	38.68	46.00	-7.32

File: 21-05-MAW-008_Below 1G

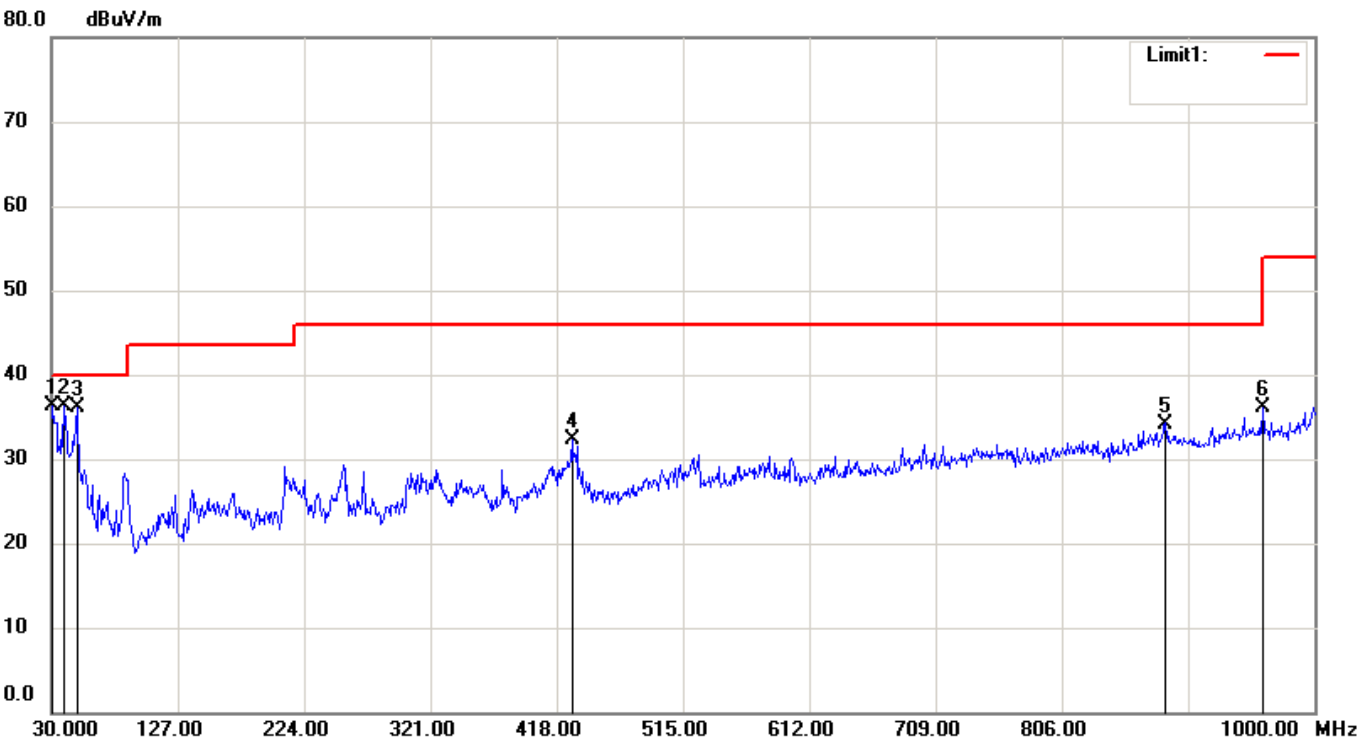
Site: RE02-EMC B1-N2

#12

Date: 2021/7/1

Temperature: 22 °C

Humidity: 66 %



Condition: NCC_LP0002_30-1000MHz

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: Normal 2

Note: WiFi Link+USB Playing

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	45.47	QP	-9.12	36.35	40.00	-3.65
2	39.7000	44.41	QP	-8.18	36.23	40.00	-3.77
3	49.4000	43.67	QP	-7.59	36.08	40.00	-3.92
4	429.6400	35.06	QP	-2.78	32.28	46.00	-13.72
5	885.5400	28.52	QP	5.68	34.20	46.00	-11.80
6	960.2300	29.12	QP	7.05	36.17	54.00	-17.83

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：
VER: $\pm 6.23\text{dB}(30\text{MHz} \leq f < 200\text{MHz})$;HOR: $\pm 4.55\text{dB}(30\text{MHz} \leq f < 200\text{MHz})$
VER: $\pm 5.94\text{dB}(2000\text{MHz} \leq f < 1\text{GHz})$;HOR: $\pm 4.34\text{dB}(200\text{MHz} \leq f < 1\text{GHz})$

10.6 頻帶外邊輻射量測之量測結果

調變技術: IEEE 802.11a

File: 21-05-MAW-008_5-8a

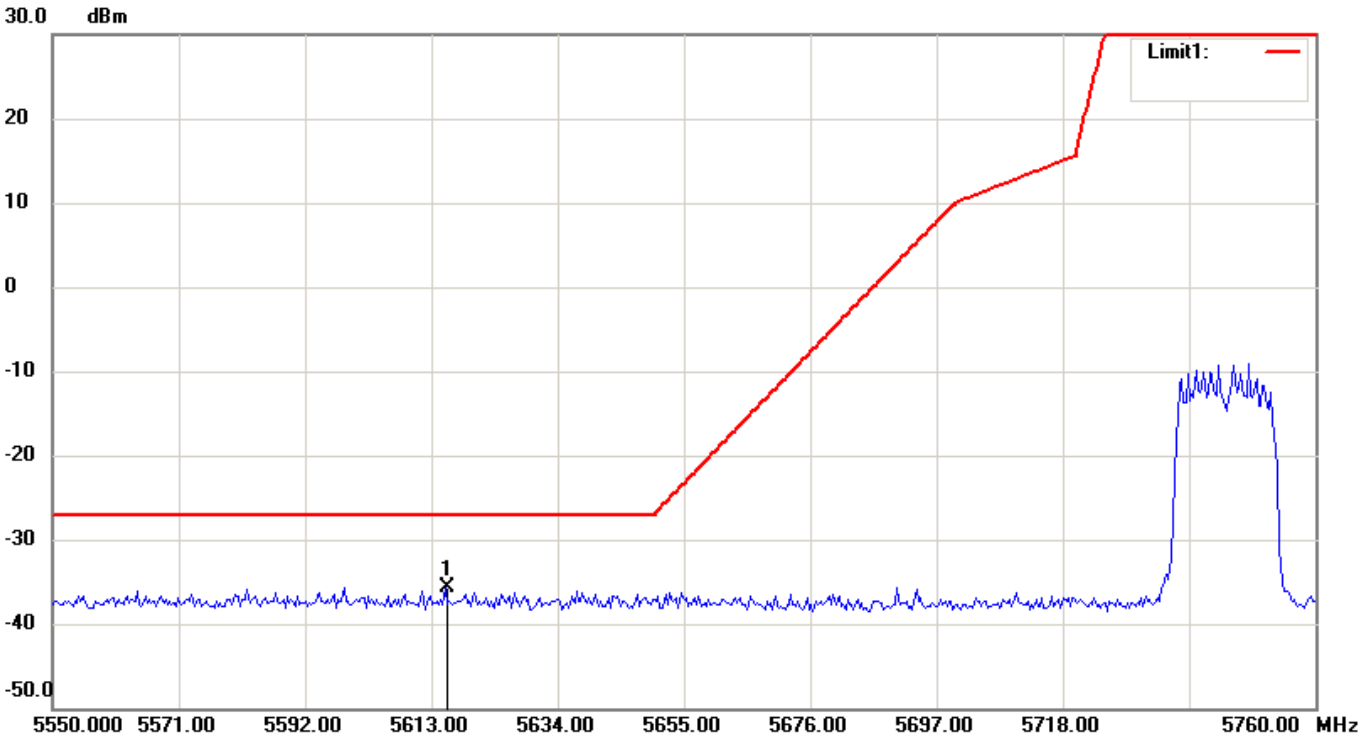
Site: RE02-EMC B1-N2

#30

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: 5.8G Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: Low Bandedge

Polarization: Horizontal

Distance: 3m

Operator: Phillip

No.	Frequency (MHz)	Reading (dBm)	Detector	Corrected dB	Result (dBm)	Limit (dBm)	Margin (dB)
1	5615.28850	-86.38	peak	50.67	-35.71	-27.00	-8.71

File:

21-05-MAW-008_5-8a

#29

Date:

2021/7/5

Temperature:

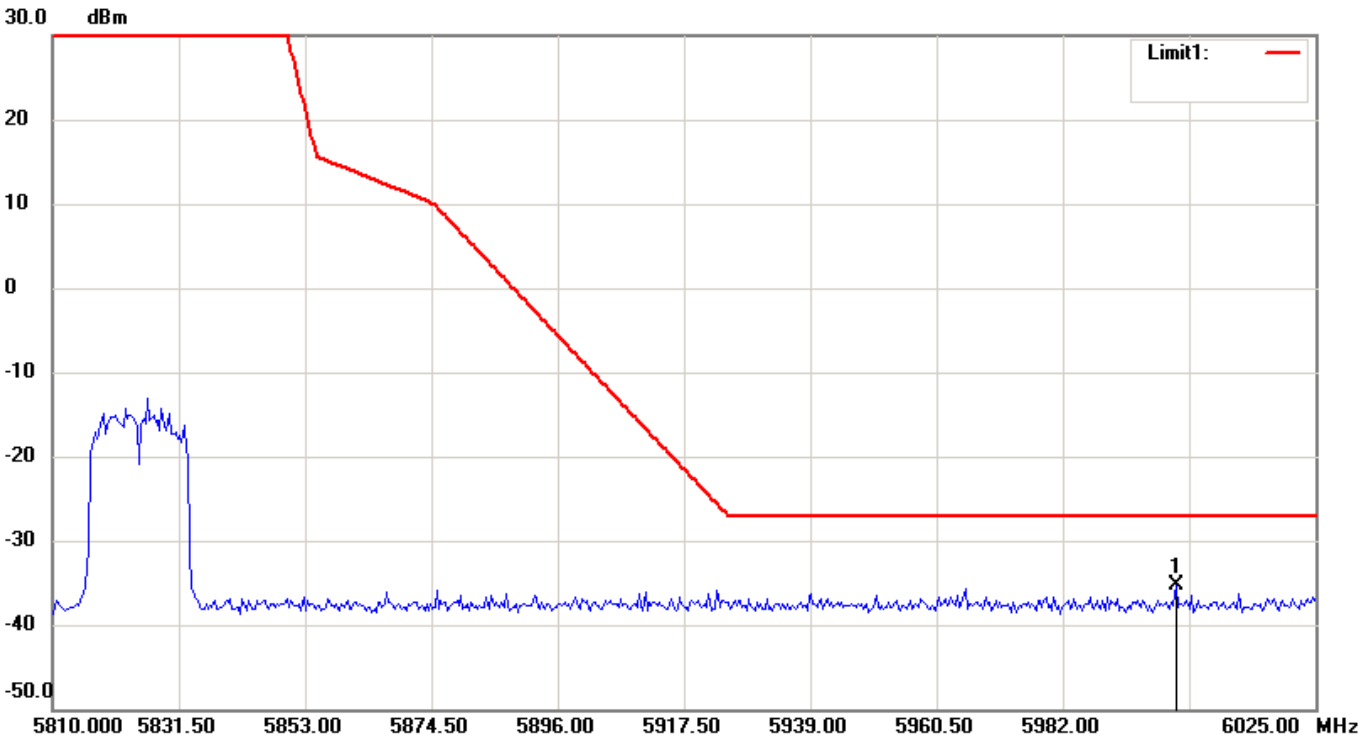
24 °C

Site:

RE02-EMC
B1-N2

Humidity:

62 %



Condition:

5.8G Bandedge

Polarization:

Horizontal

EUT:

Cockpit Control Unit

Distance:

3m

Model:

DNNS124

Operator:

Phillip

Test Mode:

UNII

Note:

High Bandedge

						Limit (dBm)	Margin (dB)
1	6001.22600	-86.04	peak	50.80	-35.24	-27.00	-8.24

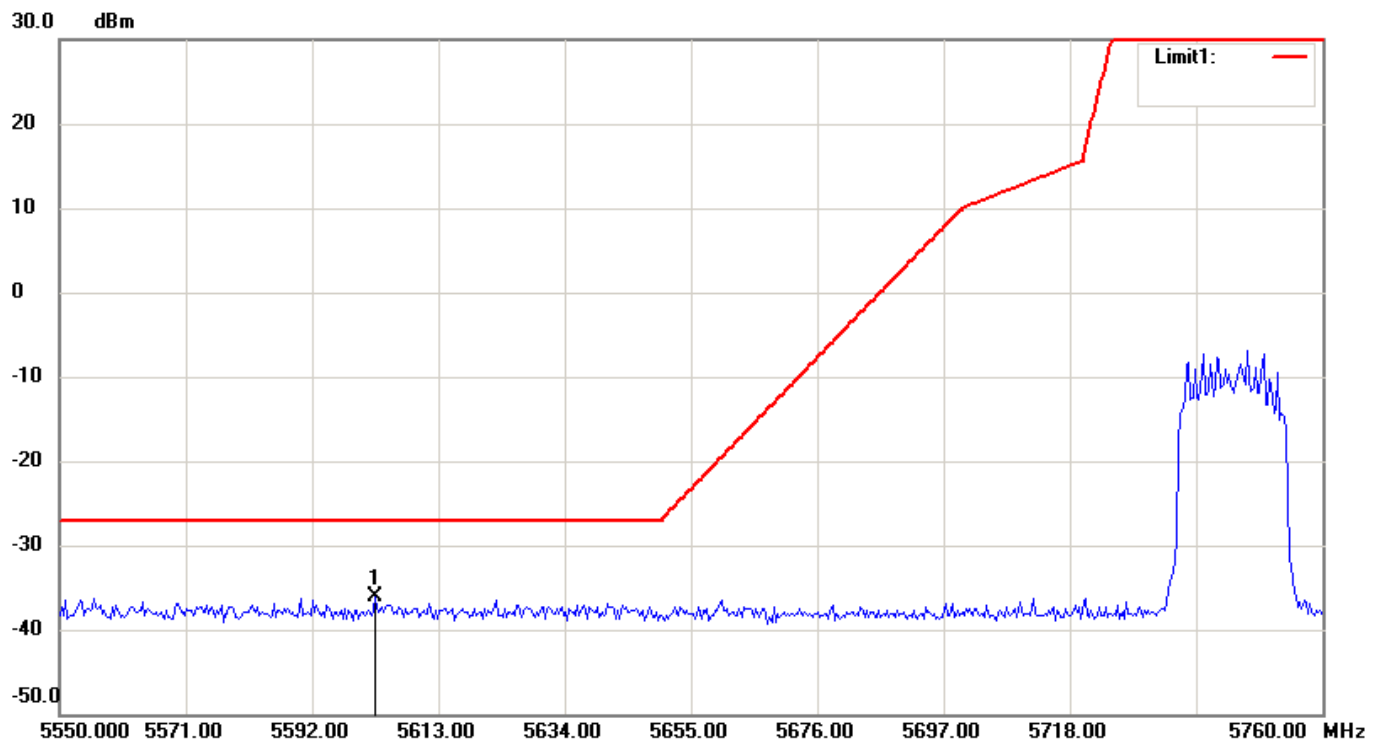
調變技術: IEEE 802.11n HT20

File: 21-05-MAW-008_5-8n20 #29
 Site: RE02-EMC B1-N2

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: 5.8G Bandedge
 EUT: Cockpit Control Unit
 Model: DNNS124
 Test Mode: UNII
 Note: Low Bandedge

Polarization: Horizontal
 Distance: 3m
 Operator: Phillip

No.	Frequency (MHz)	Reading (dBm)	Detector	Corrected dB	Result (dBm)	Limit (dBm)	Margin (dB)
1	5602.50000	-86.77	peak	50.66	-36.11	-27.00	-9.11

File: 21-05-MAW-008_5-8n20

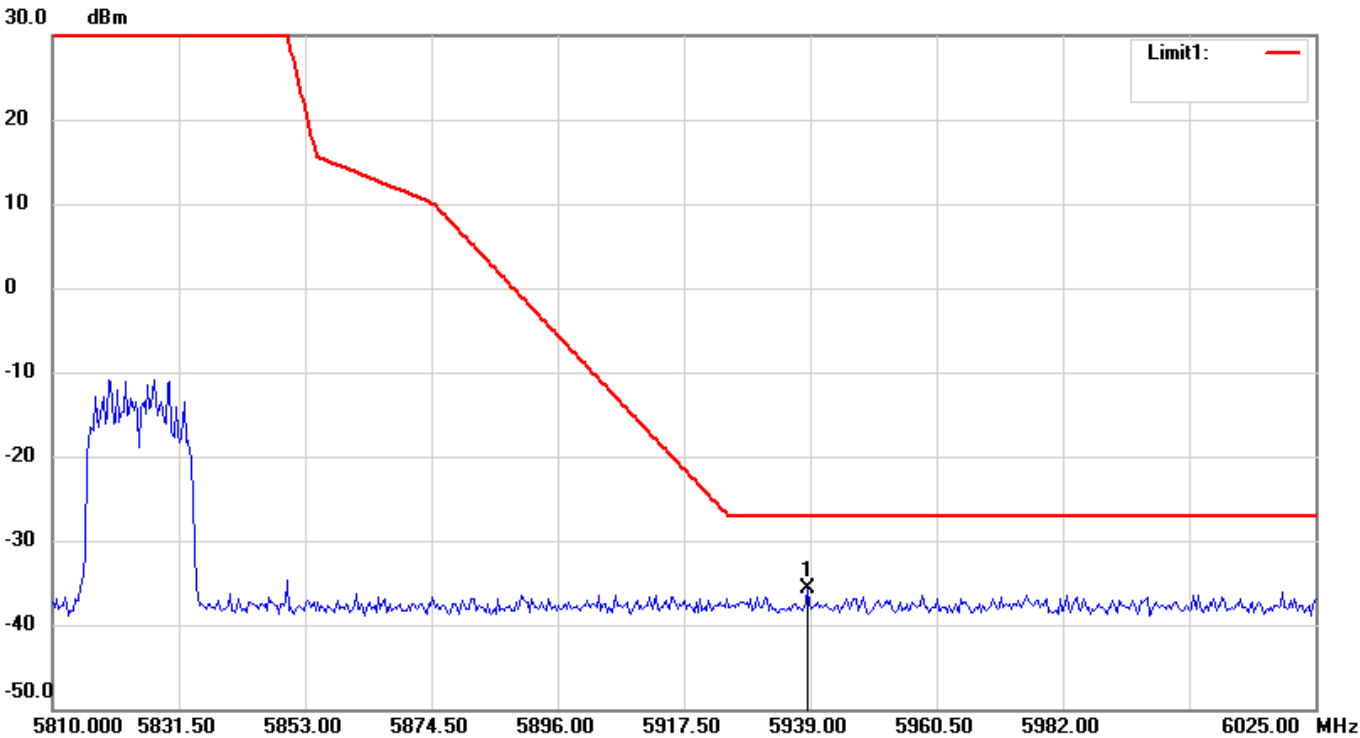
Site: RE02-EMC B1-N2

#30

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: 5.8G Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: High Bandedge

Polarization: Horizontal

Distance: 3m

Operator: Phillip

No.	Frequency (MHz)	Reading (dBm)	Detector	Corrected dB	Result (dBm)	Limit (dBm)	Margin (dB)
1	5938.51760	-86.49	peak	50.78	-35.71	-27.00	-8.71

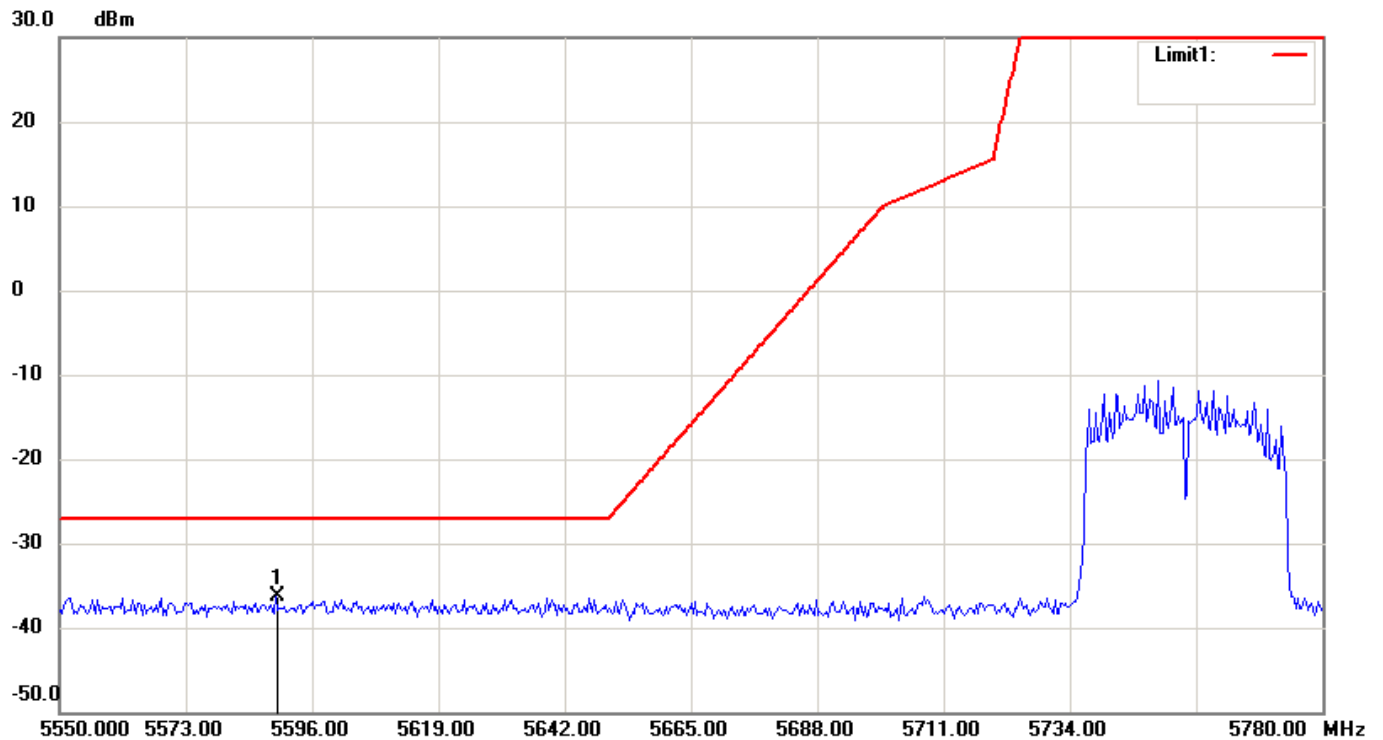
調變技術: IEEE 802.11n HT40

File: 21-05-MAW-008_5-8n40 #26
 Site: RE02-EMC B1-N2

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: 5.8G Bandedge
 EUT: Cockpit Control Unit
 Model: DNNS124
 Test Mode: UNII
 Note: Low Bandedge

Polarization: Horizontal
 Distance: 3m
 Operator: Phillip

No.	Frequency (MHz)	Reading (dBm)	Detector	Corrected dB	Result (dBm)	Limit (dBm)	Margin (dB)
1	5589.43910	-87.05	peak	50.66	-36.39	-27.00	-9.39

File: 21-05-MAW-008_5-8n40

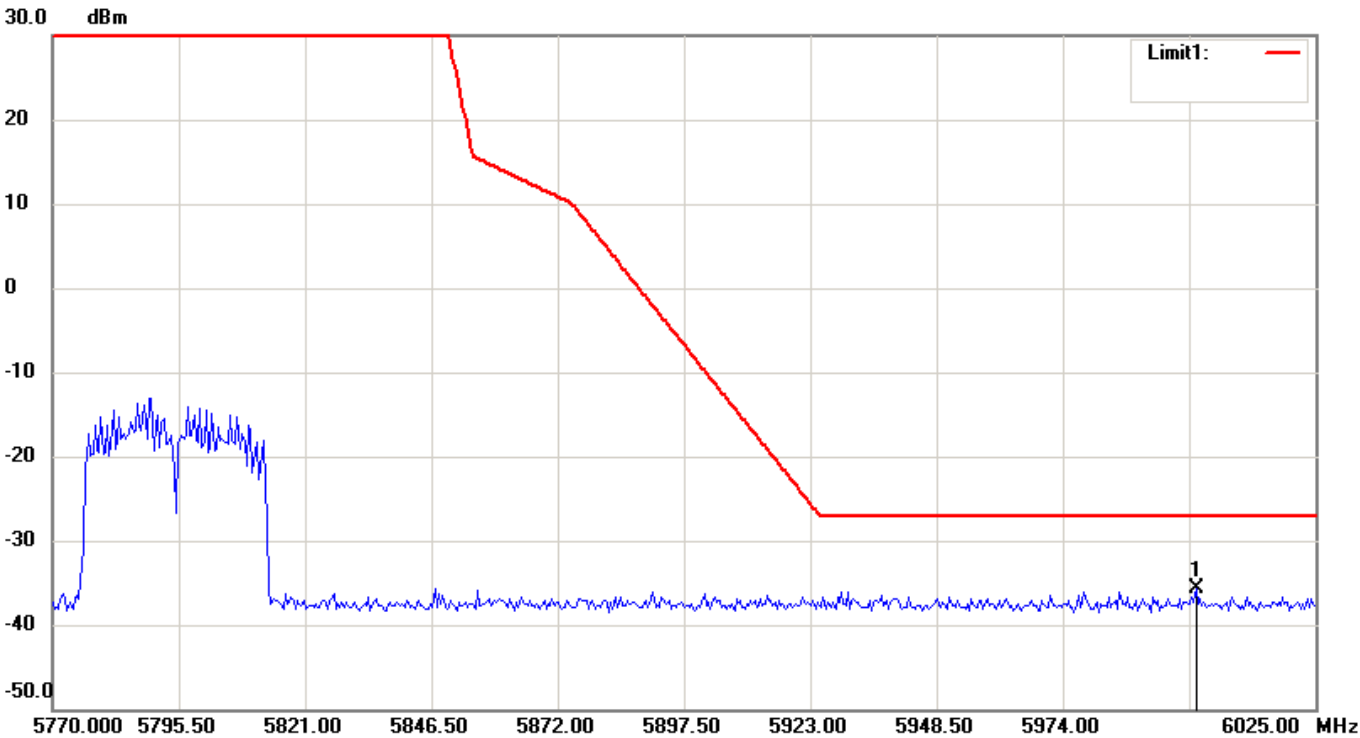
Site: RE02-EMC B1-N2

#25

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: 5.8G Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: High Bandedge

Polarization: Horizontal

Distance: 3m

Operator: Phillip

No.	Frequency (MHz)	Reading (dBm)	Detector	Corrected dB	Result (dBm)	Limit (dBm)	Margin (dB)
1	6000.88940	-86.55	peak	50.80	-35.75	-27.00	-8.75

調變技術: IEEE 802.11ac VHT80

File: 21-05-MAW-008_5-8ac80

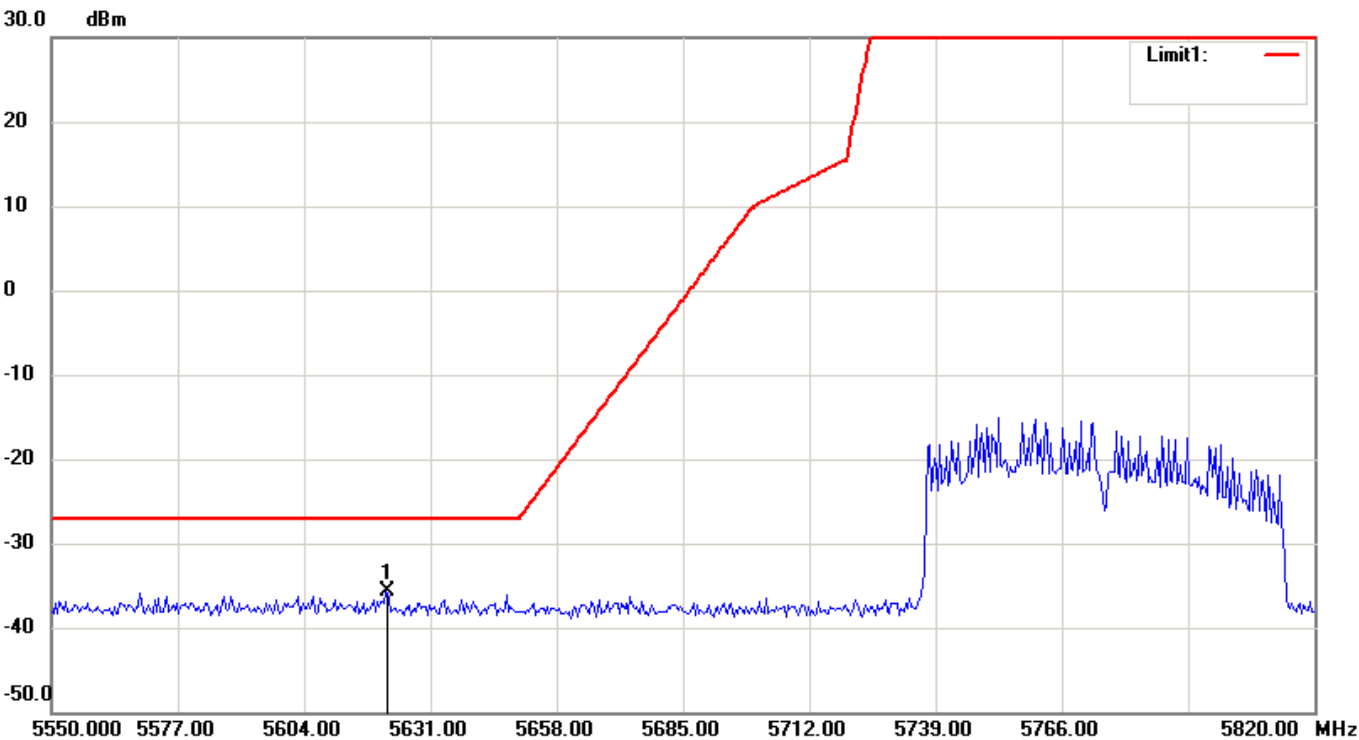
#5

Date: 2021/7/5

Temperature: 24 °C

Site: RE02-EMC B1-N2

Humidity: 62 %



Condition: 5.8G Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: Low Bandedge

Polarization: Horizontal

Distance: 3m

Operator: Phillip

No.	Frequency (MHz)	Reading (dBm)	Detector	Corrected dB	Result (dBm)	Limit (dBm)	Margin (dB)
1	5621.39420	-86.41	peak	50.67	-35.74	-27.00	-8.74

File: 21-05-MAW-008_5-8ac80

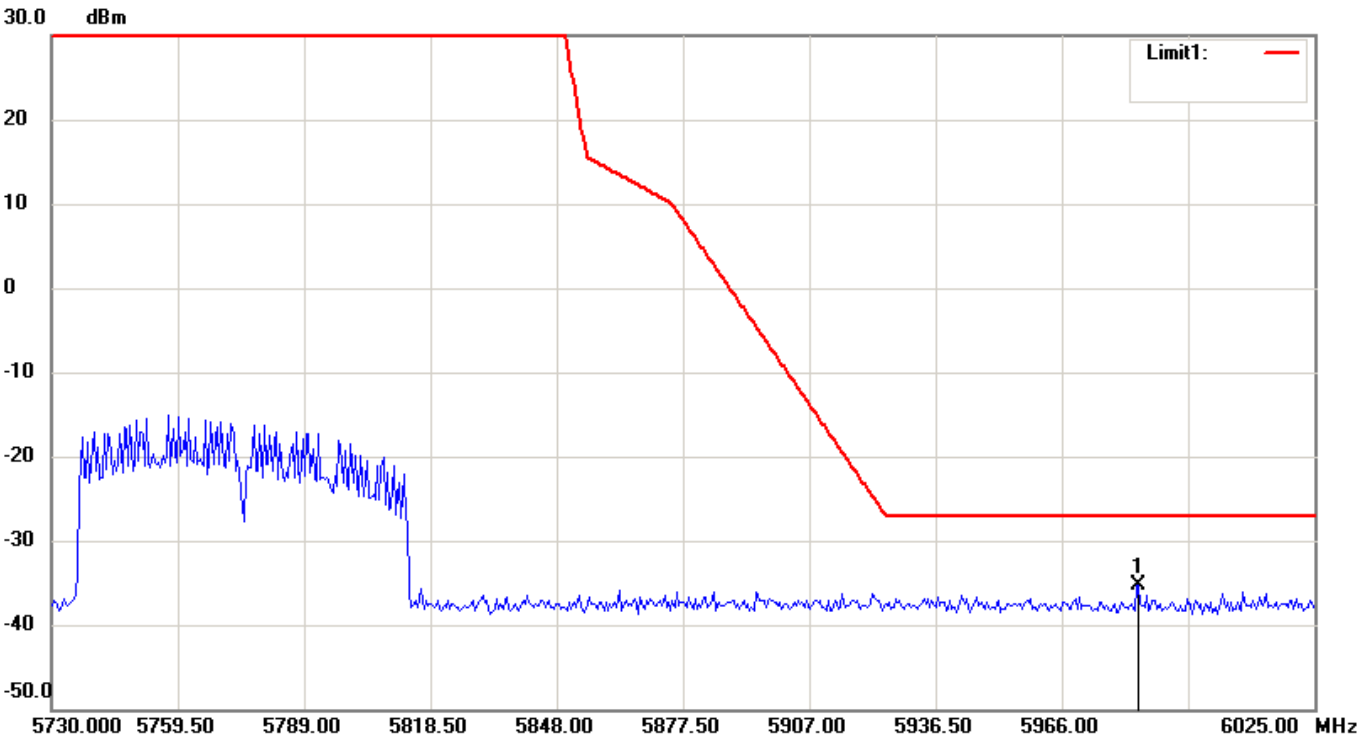
Site: RE02-EMC B1-N2

#6

Date: 2021/7/5

Temperature: 24 °C

Humidity: 62 %



Condition: 5.8G Bandedge

EUT: Cockpit Control Unit

Model: DNNS124

Test Mode: UNII

Note: High Bandedge

Polarization: Horizontal

Distance: 3m

Operator: Phillip

No.	Frequency (MHz)	Reading (dBm)	Detector	Corrected dB	Result (dBm)	Limit (dBm)	Margin (dB)
1	5983.39740	-86.10	peak	50.79	-35.31	-27.00	-8.31

10.7 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

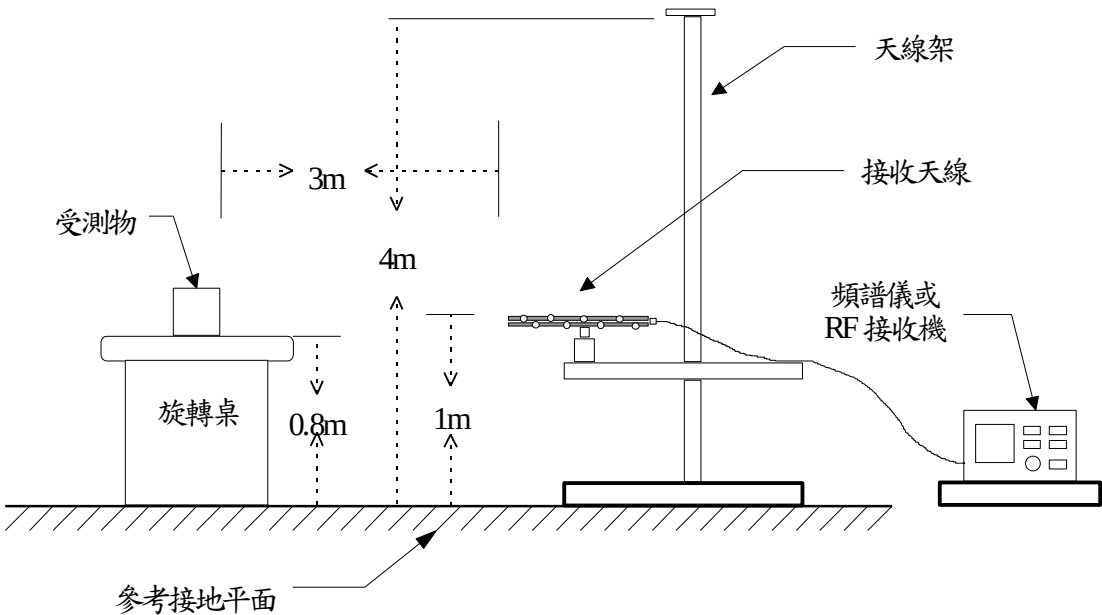
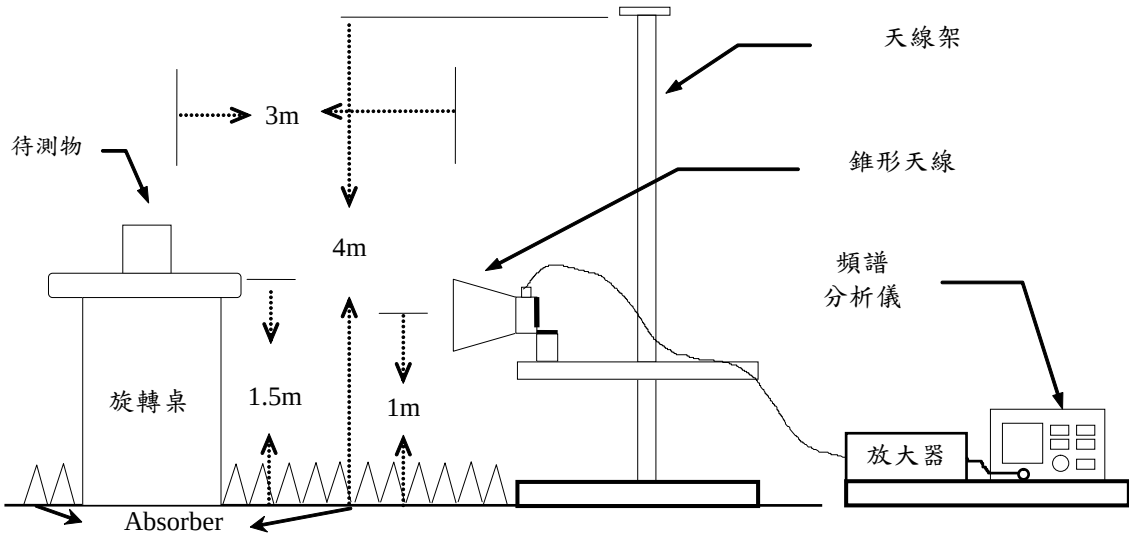


圖 3: 量測頻率高於1GHz之測試配置



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	廠 牌	型 號	財產編號/序號	校驗日期	下次校驗日期
Spectrum Analyzer	KEYSIGHT	N9030B	MY60070506	09/23/2020	09/24/2021
Spectrum Analyzer	R&S	FSV40	13052017-001	05/27/2021	05/26/2022
Attenuator	WEINSCHEL	56-10	58772	05/03/2021	05/02/2022
EMI Receiver	R&S	ESCI	13054423-001	12/15/2020	12/14/2021
Spectrum Analyzer	R&S	FSU46	13040904-001	05/13/2021	05/12/2022
Horn Antenna	EMCO	3117	13059211-004	04/09/2021	04/08/2022
Horn Antenna	EMCO	3116	13059202-001	11/06/2020	11/05/2021
PRE-Amplifier	Agilent	8449B	13040709-001	12/21/2020	12/20/2021
PRE-Amplifier	Agilent	8447D	13040715-002	05/03/2021	05/02/2022
BiLog Antenna	ETC	MCTD 2786	BL19J04024	03/11/2021	03/10/2022
Trilog Broadband Antenna with 5dB Pad	SCHWARZB ECK&EMCI	VULB 9168 & EMCI-N-6-05	1211&AT- N0569	05/10/2021	05/09/2022
PRE-Amplifier	Agilent	83051A	13052916001	09/18/2020	09/17/2021
Vector Signal Generator	R&S	SMU200A	13549901-002	06/03/2021	06/02/2022