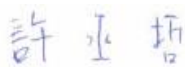


NCC

低功率射頻電機型式試驗報告

產品名稱: 無線基地台
英文名稱: OmniAccess Stellar
型號: OAW-AP1361, OAW-AP1361D, OAW-AP1362
廠牌: Alcatel-Lucent 
Enterprise
申請者: 皇輝科技股份有限公司
申請者地址: 台北市內湖區民權東路六段 11 巷 43 之 1 號 3 樓
測試標準: LP0002 (107 年版)
參考法規: ANSI C63.10-2013
測試結果: 符合
測試日期: 2020.03.13 ~ 2020.04.24
接收日期: 2020.03.10

測試工程師:



(許丞哲)

報告審核人:



(陳柏均)

報告簽屬人:



(柯承志)



本測試報告僅對實驗室所受測之樣品負責

本測試報告非經本公司同意不可局部複製使用

修訂紀錄

報告編號	版本	描述	發行日期
2004TW0007-T4	1.0	Original Report	2020-05-03

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1. 一般資訊

申請者	皇輝科技股份有限公司
申請者地址	台北市內湖區民權東路六段 11 巷 43 之 1 號 3 樓
製造商	ALE International
製造商地址	26801 WEST AGOURA ROAD, CALABASAS, CA 91301, USA
實驗室	台灣曼瑞檢測科技有限公司
實驗室地址	33377 台灣桃園市龜山區復興二路 38 號
實驗室資訊	1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm. 2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada. 3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC, Industry Taiwan, EU and TELEC Rules.
實驗室測試環境條件	溫度 (°C) : 20-35 / 濕度 (%RH) : 30-65

2. 產品描述

2.1. 產品資訊

產品名稱	無線基地台
產品型號	OAW-AP1361, OAW-AP1361D, OAW-AP1362
工作模式	主控運作模式
無線規格	802.11a/b/g/n/ac/ax, Bluetooth v5.1 single mode
頻率範圍	For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5260~5320MHz, 5500~5720MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5270~5310MHz, 5510~5710MHz For 802.11ac-VHT80/ax-HE80: 5290MHz, 5530MHz, 5610 MHz, 5690 MHz For 802.11ac-VHT80 + 80/ax-HE80 + 80: 5290MHz, 5530MHz, 5610 MHz
調變模式	802.11a/n/ac: OFDM; 802.11ax: OFDMA
傳輸速率	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 1733.3Mbps 802.11ax: up to 2402Mbps

備註:

不同機型的區別在於使用不同的 Wi-Fi 天線和外觀(OAW-AP1361& OAW-AP1361D 為內建式天線,其搭配的天線為不同款,天線增益也不相同, OAW-AP1362 為外接式天線)其他硬體都是一樣的,故僅針對產品型號 OAW-AP1361D 評估測試。

2.2. 動態雷達操作通道清單

802.11a/n/ac-VHT20/ax-HE20

Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260 MHz	56	5280 MHz	60	5300 MHz
64	5320 MHz	100	5500 MHz	104	5520 MHz
108	5540 MHz	112	5560 MHz	116	5580 MHz
120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz
144	5720 MHz	--	--	--	--

802.11n-HT40/ac-VHT40/ax-HE40

Channel	Frequency	Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz	102	5510 MHz
110	5550 MHz	118	5590 MHz	126	5630 MHz
134	5670 MHz	142	5710 MHz	--	--

802.11ac-VHT80/ax-HE80

Channel	Frequency	Channel	Frequency	Channel	Frequency
58	5290 MHz	106	5530 MHz	122	5610 MHz
138	5690 MHz	--	--	--	--

802.11ac-VHT80 + 80/ax-HE80 + 80

Channel	Frequency	Channel	Frequency	Channel	Frequency
58	5290 MHz	106	5530 MHz	122	5610 MHz

2.3. 天線規格

Model No.: AP1361(Antenna : MFR: N/A , M/N: N/A)

Antenna Type	Frequency Band (GHz)	T _x Paths	Bandwidth (MHz)	Max Peak Gain (dBi)				Directional Gain (dBi)	
				Ant 0	Ant 1	Ant 2	Ant 3	CDD	Beamforming
Wi-Fi Internal Antenna List (2.4GHz 2*2 MIMO, 5GHz 4*4 MIMO)									
Omni Antenna	2400 ~ 2483.5	2	20, 40	4.72	4.85	--	--	4.85	7.86
	5150 ~ 5850	4	20, 40, 80	6.48	6.31	6.26	6.12	6.48	12.50
	5150 ~ 5250 30° elevation angle	4	20, 40, 80	-5.46	-4.22	-2.90	-3.84	-2.90	3.12
Bluetooth Internal Antenna									
Antenna Type			Frequency Band (GHz)				Max Peak Gain (dBi)		
Omni Antenna			2400 ~ 2483.5				4.64		
Scan Antenna									
Antenna Type			Frequency Band (GHz)				Max Peak Gain (dBi)		
Omni Antenna			2400 ~ 2483.5				4.58		
			5150 ~ 5850				6.00		
			5150 ~ 5250 30° elevation angle				-5.83		

Model No.: AP1361D(Antenna : MFR: N/A , M/N: N/A)

Antenna Type	Frequency	T _x	Bandwidth	Max Peak Gain (dBi)				Directional Gain (dBi)	
	Band (GHz)	Paths	(MHz)	Ant 0	Ant 1	Ant 2	Ant 3	CDD	Beamforming
Wi-Fi Internal Antenna List (2.4GHz 2*2 MIMO, 5GHz 4*4 MIMO)									
Directional Antenna	2400 ~ 2483.5	2	20, 40	7.5	7.0	--	--	7.5	10.51
	5150 ~ 5850	4	20, 40, 80	7.4	7.0	6.9	7.2	7.4	13.42
	5150 ~ 5250 30° elevation angle	4	20, 40, 80	3.99	4.13	3.90	4.31	4.31	10.33
Bluetooth Internal Antenna									
Antenna Type			Frequency Band (GHz)				Max Peak Gain (dBi)		
Omni Antenna			2400 ~ 2483.5				3.30		
Scan Antenna									
Antenna Type			Frequency Band (GHz)				Max Peak Gain (dBi)		
Omni Antenna			2400 ~ 2483.5				7.20		
			5150 ~ 5850				9.40		
			5150 ~ 5250 30° elevation angle				4.02		

Model No.: AP1362(Antenna : MFR: N/A , M/N: N/A)

Antenna Type	Frequency	T _x	Bandwidth	Max Peak Gain	Directional Gain (dBi)	
	Band (GHz)	Paths	(MHz)	(dBi)	CDD	Beamforming
Wi-Fi Internal Antenna List (2.4GHz 2*2 MIMO, 5GHz 4*4 MIMO)						
Omni Antenna	2400 ~ 2483.5	2	20, 40	5	5	8.01
	5150 ~ 5850	4	20, 40, 80	7	5	11.02
	5150 ~ 5250 30° elevation angle	4	20, 40, 80	-0.3	-0.3	5.72
Bluetooth Internal Antenna						
Antenna Type		Frequency Band (GHz)			Max Peak Gain (dBi)	
Omni Antenna		2400 ~ 2483.5			4.06	
Scan Antenna						
Antenna Type		Frequency Band (GHz)			Max Peak Gain (dBi)	
Omni Antenna		2400 ~ 2483.5			4.58	
		5150 ~ 5850			6.00	
		5150 ~ 5250 30° elevation angle			4.02	

Note 1: The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11a/b/g/n/ac/ax mode and Beam Forming technology for 802.11n/ac/ax.

Note 2: The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signal is correlated.

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

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

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

Note 3: The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac/ax, not include 802.11a/b/g. The directional gain = $10 \cdot \log [(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$ dBi.

2.4. 測試模式

Test Mode	Make the EUT communicate with notebook at DFS channel
-----------	---

3. 動態頻率選擇和測試雷達波

3.1. 動態頻率選擇偵測門檻及操作模式

(1) 最低動態頻率選擇的偵測門檻

A) 最大 EIRP 為200 mW~1 W之設備，其最低動態頻率選擇的偵測門檻值為-64 dBm。

B) 最大 EIRP 低於200 mW，且功率頻譜密度小於10 dBm/MHz 之設備，其最低動態頻率選擇的偵測門檻值為-62 dBm。

C) 最大EIRP 低於200 mW，且功率頻譜密度大於或等於10 dBm/MHz 之設備，其最低動態頻率選擇的偵測門檻值為-64 dBm。

D) 此偵測門檻值為1 微秒內之平均接收功率，並以0 dBi 天線為參考基準。頻道初始設定得由系統隨機選取或使用使用者手動選取。

(2) 操作模式：動態頻率選擇之規定適用於以下之操作模式：

(A) 頻道可用性檢查時間之規定，適用於主控運作模式。

(B) 頻道移動時間之規定，適用於主控及受控運作模式。

3.2. 雷達信號參數

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 3-6	Roundup $\left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	60%	30

		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μ sec, with a minimum increment of 1 μ sec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

Parameters for Short Pulse Radar Waveforms

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms.

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678
10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758

14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

Pulse Repetition Intervals Values for Test A

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50 - 100	5 - 20	1000 - 2000	1 - 3	8 - 20	80%	30

Parameters for Long Pulse Radar Waveforms

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type waveforms, then each additional waveform must also be unique and not repeated from the previous waveforms.

Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses Per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

Parameters for Frequency Hopping Radar Waveforms

For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform.

The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

3.3. 測試限值

參數	限值
不可佔用期間	30 分鐘
頻道可用性檢查時間	60 秒
頻率移動時間	10 秒
頻道關閉傳輸時間	200 毫秒 + 在 10 秒週期內的 60 毫秒
U-NII 偵測頻寬	最小為 UNII 99% 發射頻寬的全部
註一：頻道移動時間與頻道關閉傳輸時間開始的瞬間如下所述： a. 對短脈衝雷達信號，此瞬間為叢訊的結束時間點算起。 b. 對跳頻雷達信號，此瞬間為最後一個產生的叢訊結束時間點算起。 c. 對長脈衝雷達測試信號，此瞬間為雷達波型信號結束的 12 秒時間點算起。 註二：頻道關閉傳輸時間包含於頻道移動時間起始的 200 毫秒，加上在 10 秒週期內剩下為了促成頻道移動所需的任何額外間歇性的管理與控制信號〔合計時間為 60 毫秒〕。此控制信號的合計持續時間不包含傳輸間的 quiet 週期。 註三：在 U-NII 檢測帶寬檢測測試，雷達類型”0”應該被使用。對每個頻率步進的檢測的最小百分比是 90%。測試是被執行在沒有資料傳輸的狀態下。	

3.4. 測試架設圖

The FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 describes a radiated test setup and a conducted test setup. The conducted test setup was used for this testing. Figure 3-1 shows the typical test setup.

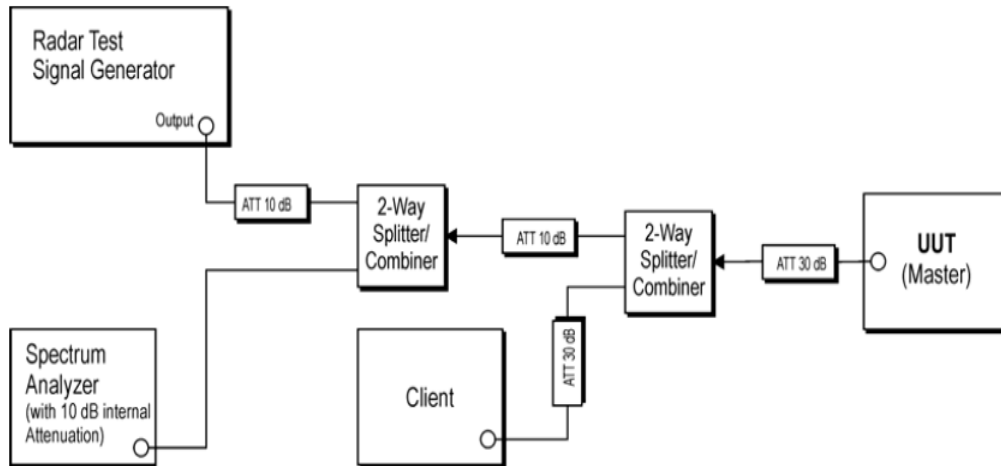


Figure A: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters

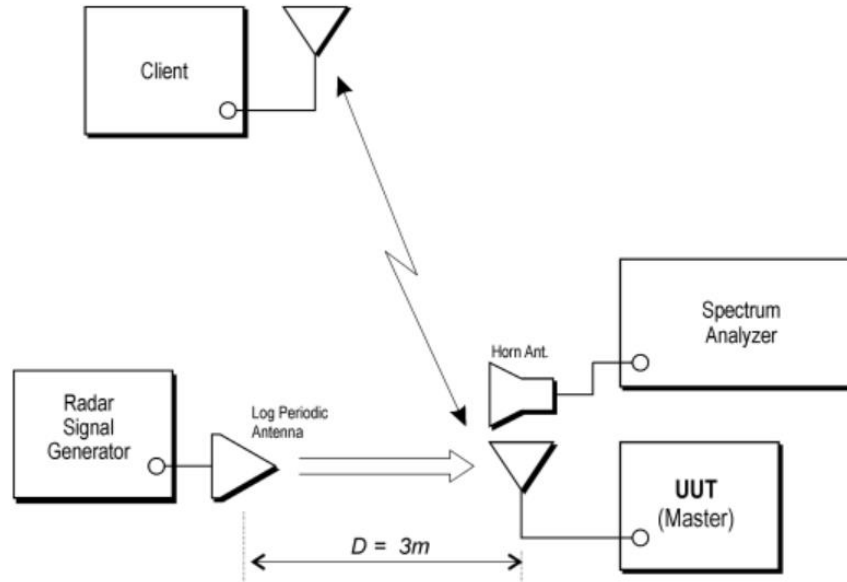


Figure B: Radiated Test Setup where UUT is a Master and Radar Test Waveforms are injected into the UUT

4. 測試設備明細

Dynamic Frequency Selection (DFS) - SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2020/07/29
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2020/07/11
Vector Signal Generator	Keysight	N5182B	MRTTWA00010	1 year	2020/04/21
Combiner	WOKEN	0120A04208001S	MRTTWE00008	1 year	2020/06/17

Client Information

Instrument	Manufacturer	Type No.
Wireless Network Adapter	Intel	7260HMW
Access Point	HAN Networks Co., Ltd	AP361

Software	Version	Manufacturer	Function
Pulse Building(N7607B)	V3.0.0	Keysight	Radar Signal Generation Software
DFS Tool	V6.7	Keysight	DFS Test Software

5. 測試結果

產品名稱 無線基地台
型號 OAW-AP1361, OAW-AP1361D, OAW-AP1362

量測項目	限制值	測試結果	測試數據
UNII 偵測頻寬量測	參考 3.3 章節	符合	第 7 章節
頻道可用性檢查時間量測	參考 3.3 章節	符合	第 8 章節
頻率移動時間, 頻道關閉傳輸時間	參考 3.3 章節	符合	第 9 章節
30 分鐘不可佔用期間量測	參考 3.3 章節	符合	
動態頻率選擇偵測門檻值量測	參考 3.3 章節	符合	第 10 章節

備註：符合性的判定是基於測試結果符合規範的限制值或客戶的宣告要求，測試結果的判定是不考慮測量不確定度的值。

6. 雷達系統波形校驗

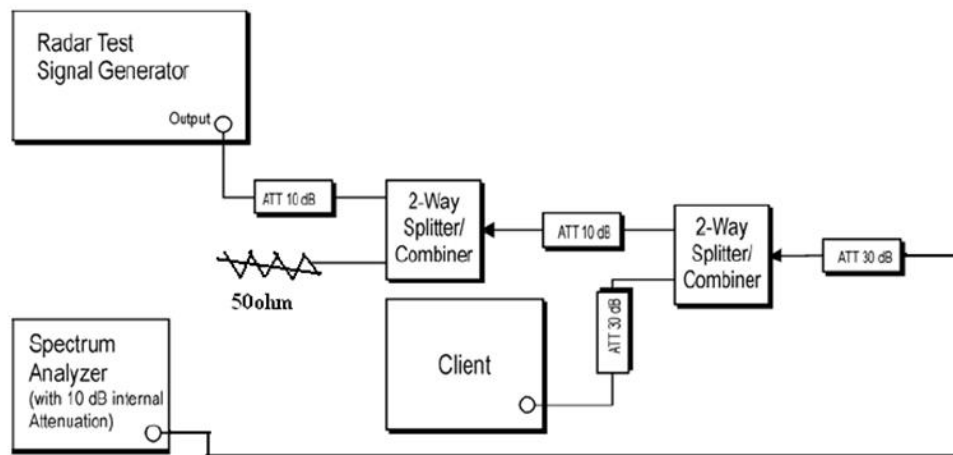
6.1. 量測方法

下圖之設備架構為用於校驗輻射測試之雷達波形，使用頻譜分析儀確認雷達測試信號之振幅位準。

將頻譜分析儀的中心頻率設為雷達波之頻率，頻率掃描範圍調整為零〔時域〕，解析頻寬與視訊頻寬分別為 3MHz 與 3MHz，並使用 peak detection 觀察雷達訊號產生器所创建的雷達波。

將雷達訊號產生器的振幅位準調整至頻譜分析儀上觀察到的位準為-63dBm，此位準為接收輸入端以 0dBi 的接收天線為參考基準。

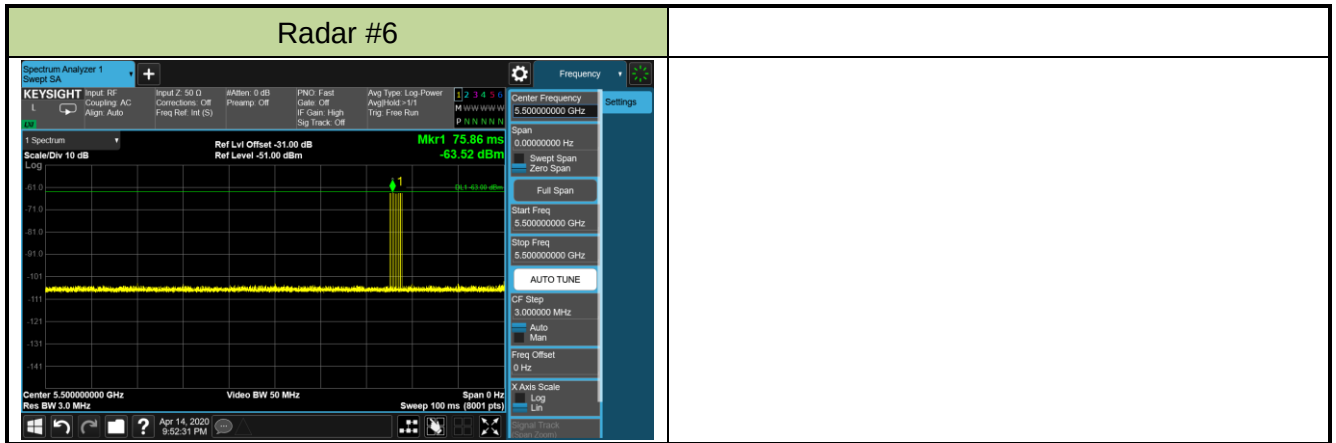
6.2. 校驗架構圖



6.3. 校驗結果

待測物名稱	無線基地台	溫度	26°C
測試工程師	Peter Syu	濕度	60%
測試場地	SR2	測試日期	2020/04/14
測試項目	雷達測試信號校驗		





待測物名稱	無線基地台	溫度	26°C
測試工程師	Peter Syu	濕度	60%
測試場地	SR2	測試日期	2020/04/17
測試項目	占空比		



測試模式	測試頻率	占空比	要求占空比	測試結果
802.11ax-HE20	5500 MHz	28.09%	≥ 17%	Pass
802.11ax-HE40	5510 MHz	35.43%	≥ 17%	Pass
802.11ax-HE80	5530 MHz	21.82%	≥ 17%	Pass
802.11ax-HE80+80	5290 MHz	25.88%	≥ 17%	Pass
802.11ax-HE80+80	5530 MHz	17.52%	≥ 17%	Pass
802.11ax-HE80+80	5610 MHz	21.47%	≥ 17%	Pass

Note: System testing was performed with the designated iperf test file. This file is used by IP and Frame based systems for loading the test channel during the In-service compliance testing of the U-NII device. Packet ratio = Time On / (Time On + Off Time).

7. UNII 偵測頻寬

7.1. 適用標準

待測物在其宣告頻寬測試偵測頻寬,在中心頻率以1MHz遞增及遞減雷達訊號每個頻率測試10次確認偵測成功機率(至少90%)並紀錄,必須要符合UNII 99% occupied bandwidth之100%頻寬。

7.2. 量測方法

1. Adjust the equipment to produce a single Burst of any one of the Short Pulse Radar Types 0-4 in Table 3-5 at the center frequency of the EUT Operating Channel at the specified DFS Detection Threshold level.
2. The generating equipment is configured as shown in the Conducted Test Setup above section 3.5.
3. The EUT is set up as a stand-alone device (no associated Client or Master, as appropriate) and no traffic. Frame based systems will be set to a talk/listen ratio reflecting the worst case (maximum) that is user configurable during this test.
4. Generate a single radar Burst, and note the response of the EUT. Repeat for a minimum of 10 trials. The EUT must detect the Radar Waveform using the specified U-NII Detection Bandwidth criterion shown in Table 3-5. In cases where the channel bandwidth may exceed past the DFS band edge on specific channels (i.e., 802.11ac or wideband frame based systems) select a channel that has the entire emission bandwidth within the DFS band. If this is not possible, test the detection BW to the DFS band edge.
5. Starting at the center frequency of the UUT operating Channel, increase the radar frequency in 5 MHz steps, repeating the above test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion specified in Table 3-3. Repeat this measurement in 1MHz steps at frequencies 5 MHz below where the detection rate begins to fall. Record the highest frequency (denote as FH) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies above FH is not required to demonstrate compliance.
6. Starting at the center frequency of the EUT operating Channel, decrease the radar frequency in 1 MHz steps, repeating the above item 4 test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion. Record the lowest frequency (denote as FL) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies below FL is not required to demonstrate compliance.
7. The U-NII Detection Bandwidth is calculated as follows: $\text{U-NII Detection Bandwidth} = \text{FH} - \text{FL}$
8. The U-NII Detection Bandwidth must be at least 100% of the EUT transmitter 99% power, otherwise, the EUT does not comply with DFS requirements.

7.3. 檢測頻寬概率測試結果

Product	無線基地台	Temperature	23 ~ 25°C
Test Engineer	Peter Syu	Relative Humidity	46 ~ 60%
Test Site	SR2	Test Date	2020/04/16 ~ 2020/04/17
Test Item	Detection Bandwidth (802.11ax-HE20 mode - 5500MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5489	0	0	0	0	0	0	0	0	0	0	0%
5490 FL	1	1	1	1	1	1	1	1	1	1	100%
5491	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5506	1	1	1	1	1	1	1	1	1	1	100%
5507	1	1	1	1	1	1	1	1	1	1	100%
5508	1	1	1	1	1	1	1	1	1	1	100%
5509	1	1	1	1	1	1	1	1	1	1	100%
5510 FH	1	1	1	1	1	1	1	1	1	1	100%
5511	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5500MHz. The 99% channel bandwidth is 18.95MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5510MHz - 5490MHz = 20MHz.

Note 3: NII Detection Bandwidth Min. Limit (MHz): 18.95MHz x 100% = 18.95MHz.

Product	無線基地台	Temperature	23 ~ 25°C
Test Engineer	Peter Syu	Relative Humidity	46 ~ 60%
Test Site	SR2	Test Date	2020/04/16 ~ 2020/04/17
Test Item	Detection Bandwidth (802.11ax-HE40 mode - 5510MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490	0	0	0	0	0	0	0	0	0	0	0%
5491 FL	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5526	1	1	1	1	1	1	1	1	1	1	100%
5527	1	1	1	1	1	1	1	1	1	1	100%
5528	1	1	1	1	1	1	1	1	1	1	100%
5529 FH	1	1	1	1	1	1	1	1	1	1	100%
5530	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5510MHz. The 99% channel bandwidth is 37.70MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5529MHz - 5491MHz = 38MHz.

Note 3: NII Detection Bandwidth Min. Limit (MHz): 37.70MHz x 100% = 37.70MHz.

Product	無線基地台	Temperature	23 ~ 25°C
Test Engineer	Peter Syu	Relative Humidity	46 ~ 60%
Test Site	SR2	Test Date	2020/04/16 ~ 2020/04/17
Test Item	Detection Bandwidth (802.11ax-HE80 mode - 5530MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490	0	0	0	0	0	0	0	0	0	0	0%
5491 FL	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5530	1	1	1	1	1	1	1	1	1	1	100%
5535	1	1	1	1	1	1	1	1	1	1	100%
5540	1	1	1	1	1	1	1	1	1	1	100%
5545	1	1	1	1	1	1	1	1	1	1	100%
5550	1	1	1	1	1	1	1	1	1	1	100%
5555	1	1	1	1	1	1	1	1	1	1	100%
5560	1	1	1	1	1	1	1	1	1	1	100%
5565	1	1	1	1	1	1	1	1	1	1	100%
5566	1	1	1	1	1	1	1	1	1	1	100%
5567	1	1	1	1	1	1	1	1	1	1	100%
5568	1	1	1	1	1	1	1	1	1	1	100%
5569 FH	1	1	1	1	1	1	1	1	1	1	100%
5570	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5530MHz. The 99% channel bandwidth is 76.93MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5569MHz - 5491MHz = 78MHz.

Note 3: NII Detection Bandwidth Min. Limit (MHz): 76.93MHz x 100% = 76.93MHz.

Product	無線基地台	Temperature	23 ~ 25°C
Test Engineer	Peter Syu	Relative Humidity	46 ~ 60%
Test Site	SR2	Test Date	2020/04/16 ~ 2020/04/17
Test Item	Detection Bandwidth (802.11ax-HE80 + 80 mode - 5290MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5250 FL	1	1	1	1	1	1	1	1	1	1	100%
5251	1	1	1	1	1	1	1	1	1	1	100%
5252	1	1	1	1	1	1	1	1	1	1	100%
5253	1	1	1	1	1	1	1	1	1	1	100%
5254	1	1	1	1	1	1	1	1	1	1	100%
5255	1	1	1	1	1	1	1	1	1	1	100%
5260	1	1	1	1	1	1	1	1	1	1	100%
5265	1	1	1	1	1	1	1	1	1	1	100%
5270	1	1	1	1	1	1	1	1	1	1	100%
5275	1	1	1	1	1	1	1	1	1	1	100%
5280	1	1	1	1	1	1	1	1	1	1	100%
5285	1	1	1	1	1	1	1	1	1	1	100%
5290	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5300	1	1	1	1	1	1	1	1	1	1	100%
5305	1	1	1	1	1	1	1	1	1	1	100%
5310	1	1	1	1	1	1	1	1	1	1	100%
5315	1	1	1	1	1	1	1	1	1	1	100%
5320	1	1	1	1	1	1	1	1	1	1	100%
5325	1	1	1	1	1	1	1	1	1	1	100%
5326	1	1	1	1	1	1	1	1	1	1	100%
5327	1	1	1	1	1	1	1	1	1	1	100%
5328	1	1	1	1	1	1	1	1	1	1	100%
5329 FH	1	1	1	1	1	1	1	1	1	1	100%
5330	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5290MHz. The 99% channel bandwidth is 78.17MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5329MHz - 5250MHz = 79MHz.

Note 3: NII Detection Bandwidth Min. Limit (MHz): 78.17MHz x 100% = 78.17MHz.

Product	無線基地台	Temperature	23 ~ 25°C
Test Engineer	Peter Syu	Relative Humidity	46 ~ 60%
Test Site	SR2	Test Date	2020/04/16 ~ 2020/04/17
Test Item	Detection Bandwidth (802.11ax-HE80 + 80 mode - 5530MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490	0	0	0	0	0	0	0	0	0	0	0%
5491 FL	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5530	1	1	1	1	1	1	1	1	1	1	100%
5535	1	1	1	1	1	1	1	1	1	1	100%
5540	1	1	1	1	1	1	1	1	1	1	100%
5545	1	1	1	1	1	1	1	1	1	1	100%
5550	1	1	1	1	1	1	1	1	1	1	100%
5555	1	1	1	1	1	1	1	1	1	1	100%
5560	1	1	1	1	1	1	1	1	1	1	100%
5565	1	1	1	1	1	1	1	1	1	1	100%
5566	1	1	1	1	1	1	1	1	1	1	100%
5567	1	1	1	1	1	1	1	1	1	1	100%
5568	1	1	1	1	1	1	1	1	1	1	100%
5569	1	1	1	1	1	1	1	1	1	1	100%
5570 FH	1	1	1	1	1	1	1	1	1	1	100%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5530MHz. The 99% channel bandwidth is 77.42MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5570MHz - 5491MHz = 79MHz.

Note 3: NII Detection Bandwidth Min. Limit (MHz): 77.42MHz x 100% = 77.42MHz.

Product	無線基地台	Temperature	23 ~ 25°C
Test Engineer	Peter Syu	Relative Humidity	46 ~ 60%
Test Site	SR2	Test Date	2020/04/16 ~ 2020/04/17
Test Item	Detection Bandwidth (802.11ax-HE80+80 mode - 5610MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5570 FL	1	1	1	1	1	1	1	1	1	1	100%
5571	1	1	1	1	1	1	1	1	1	1	100%
5572	1	1	1	1	1	1	1	1	1	1	100%
5573	1	1	1	1	1	1	1	1	1	1	100%
5574	1	1	1	1	1	1	1	1	1	1	100%
5575	1	1	1	1	1	1	1	1	1	1	100%
5580	1	1	1	1	1	1	1	1	1	1	100%
5585	1	1	1	1	1	1	1	1	1	1	100%
5590	1	1	1	1	1	1	1	1	1	1	100%
5595	1	1	1	1	1	1	1	1	1	1	100%
5600	1	1	1	1	1	1	1	1	1	1	100%
5605	1	1	1	1	1	1	1	1	1	1	100%
5610	1	1	1	1	1	1	1	1	1	1	100%
5615	1	1	1	1	1	1	1	1	1	1	100%
5620	1	1	1	1	1	1	1	1	1	1	100%
5625	1	1	1	1	1	1	1	1	1	1	100%
5630	1	1	1	1	1	1	1	1	1	1	100%
5635	1	1	1	1	1	1	1	1	1	1	100%
5640	1	1	1	1	1	1	1	1	1	1	100%
5645	1	1	1	1	1	1	1	1	1	1	100%
5646	1	1	1	1	1	1	1	1	1	1	100%
5647	1	1	1	1	1	1	1	1	1	1	100%
5648	1	1	1	1	1	1	1	1	1	1	100%
5649 FH	1	1	1	1	1	1	1	1	1	1	100%
5650	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5610MHz. The 99% channel bandwidth is 77.58MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5649 - 5570 = 79MHz.

Note 3: NII Detection Bandwidth Min. Limit (MHz): 77.58MHz x 100% = 77.58MHz.

8. 頻道可用性檢查時間量測

8.1. 適用標準

設備必須檢查其可在某一頻道上起始傳送之前是否有雷達系統已經操作在該頻道上，以及何時其必須移動到另一新的頻道，在60 秒內若沒有偵測到功率位準大過上述之擾門檻值的雷達訊號時，設備才可開始使用該頻道。

8.2. 量測方法

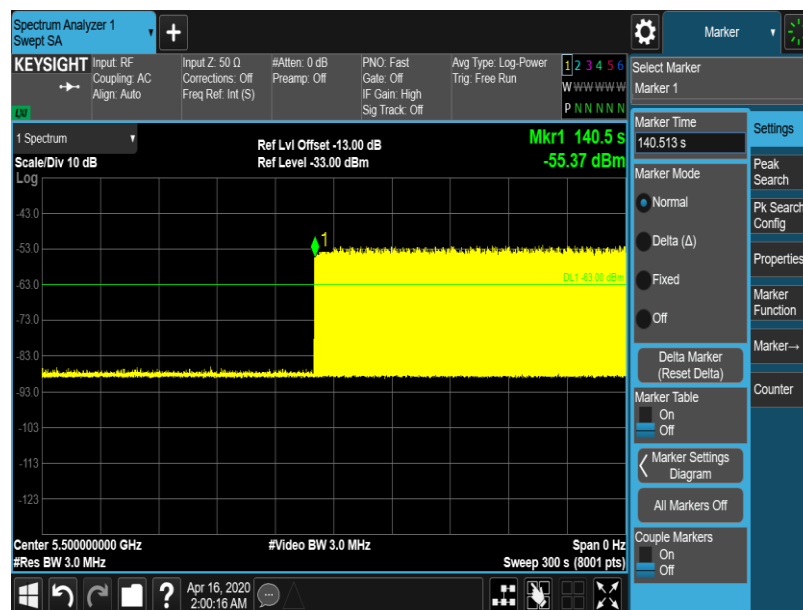
1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning of the Channel Availability Check Time.
2. The EUT is in completion power-up cycle (from T0 to T1). T1 denotes the instant when the EUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds. A single Burst of one of Short Pulse Radar Types 0-4 at DFS Detection Threshold + 1 dB will commence within a 6 second window starting at T1.
3. The EUT is powered on at T0. T1 denotes the instant when the EUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds. A single Burst of one of Short Pulse Radar Types 0-4 at DFS Detection Threshold + 1 dB will commence within a 6 second window starting at T1+ 54 seconds.
4. Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions will continue for 2.5 minutes after the radar Burst has been generated. Verify that during the 2.5 minutes measurement window no EUT transmissions occurred.

8.3. 頻道可用性檢查時間量測測試結果

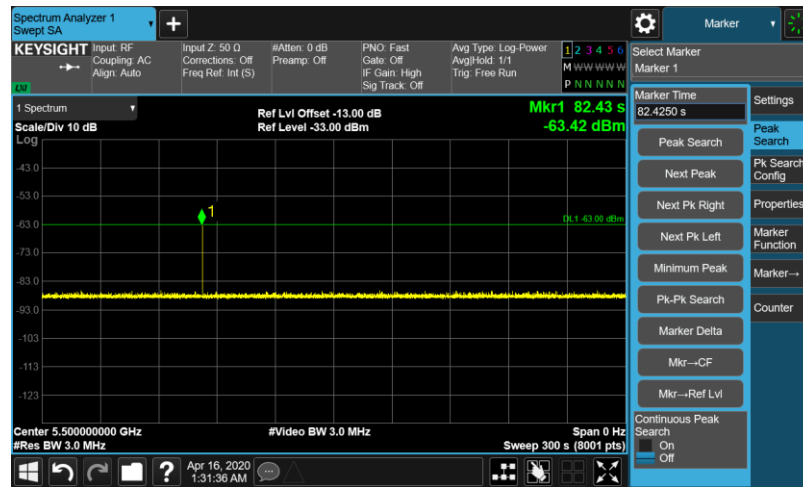
待測物名稱	無線基地台	溫度	26°C
測試工程師	Peter Syu	濕度	60%
測試場地	SR2	測試日期	2020/04/16
測試項目	頻道可用性檢查時間量測		

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (80.5 sec). Initial beacons/data transmissions are indicated by marker 1 (140.5sec).

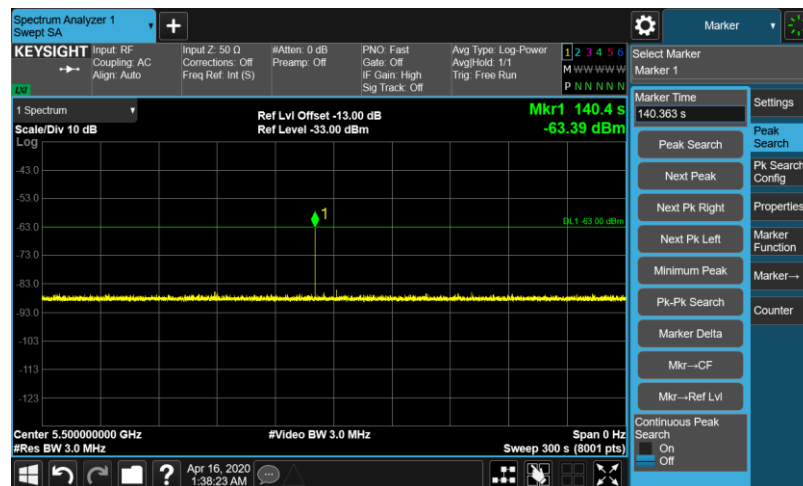
Initial Channel Availability Check Time for 802.11ac-VHT20



Radar Burst at the Beginning of the Channel Availability Check Time for 802.11ac-VHT20



Radar Burst at the End of the Channel Availability Check Time for 802.11ac-VHT20



9. 頻道關閉傳輸時間及不可佔用期間

9.1. 適用標準

頻道移動時間：在偵測到雷達的存在後，所有在該操作頻道上的所有傳輸須在10秒內停止，在偵測到雷達訊號後，該期間內的傳輸應維持最多200 毫秒的正常通訊。另外，間歇性的管理與控制訊號可在剩餘的時間中傳送，以便撤離該操作頻道。

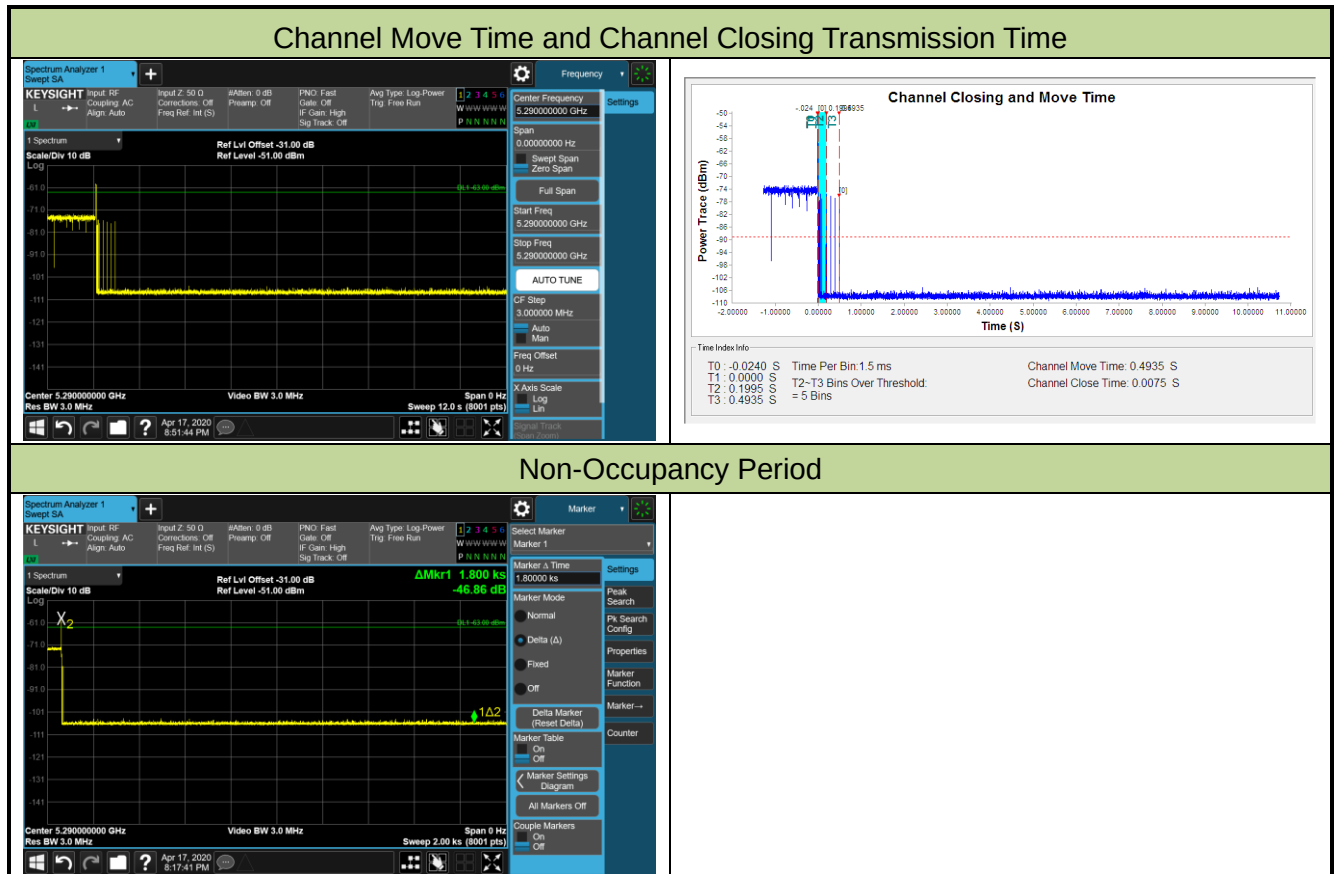
不可佔用期間：某一頻道已被頻道可用性檢查或”服務中”監視顯示含有雷達系統，至少須有30 分鐘的不可佔用期間。不可佔用期間起始於偵測到雷達系統的當時。

9.2. 量測方法

1. The test should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0.
2. When the radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device. A U-NII device operating as a Master Device will associate with the Client Device at Channel. Stream the MPEG test file from the Master Device to the Client Device on the selected Channel for the entire period of the test. At time T0 the Radar Waveform generator sends a Burst of pulses for each of the radar types at Detection Threshold + 1dB.
3. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the EUT during the observation time (Channel Move Time).
4. Measurement of the aggregate duration of the Channel Closing Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: $Dwell (1.5ms) = S (12 \text{ sec}) / B (8000)$; where Dwell is the dwell time per spectrum analyzer sampling bin, S is the sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: $C = N \times Dwell$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins showing a U-NII transmission and Dwell is the dwell time per bin.
5. Measure the EUT for more than 30 minutes following the channel close/move time to verify that the EUT does not resume any transmissions on this Channel.

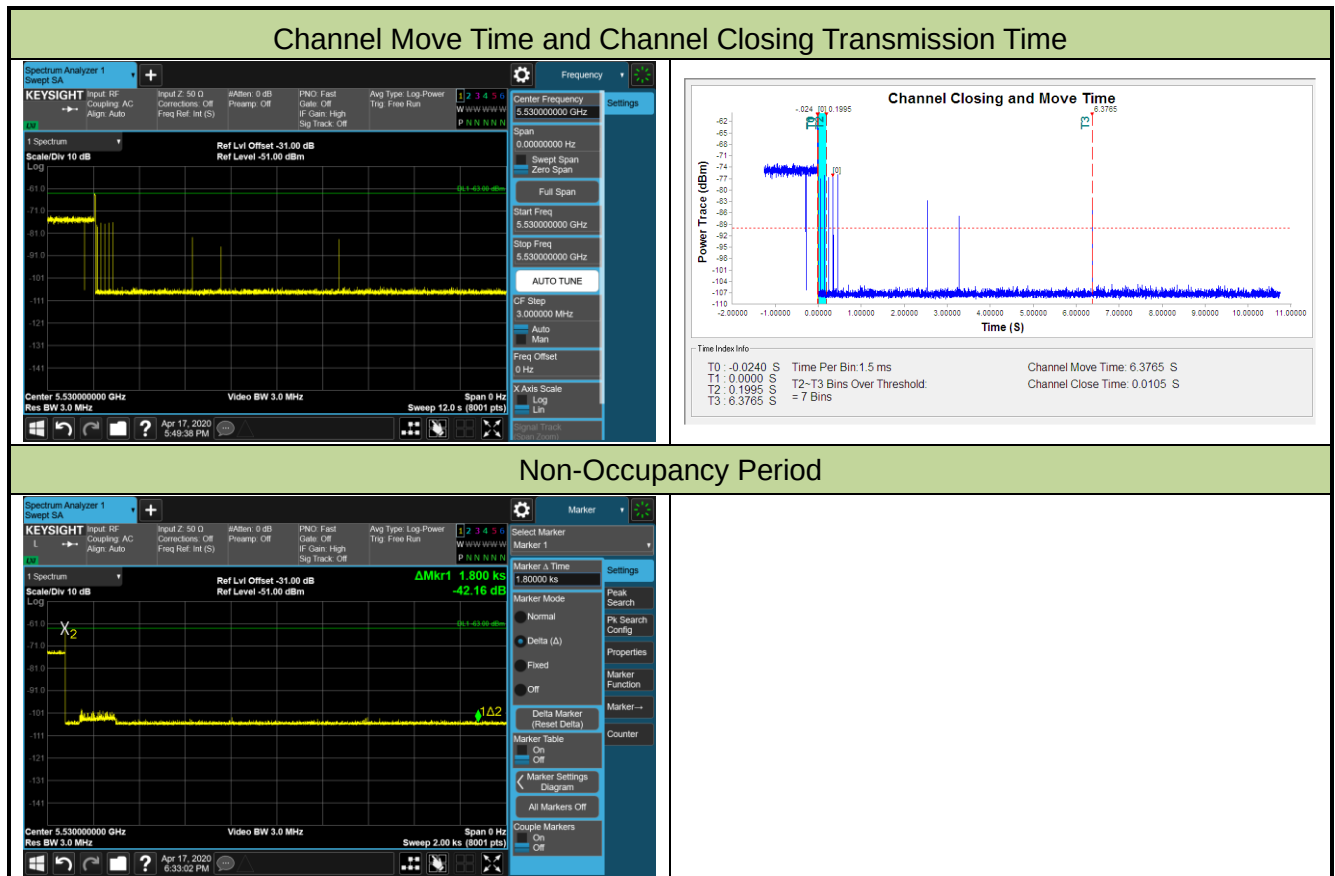
9.3. 頻道關閉傳輸時間及不可佔用期間測試結果

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/17
測試項目	Channel Move Time and Channel Closing Transmission Time (802.11ax-HE80+80 mode - 5290MHz)		



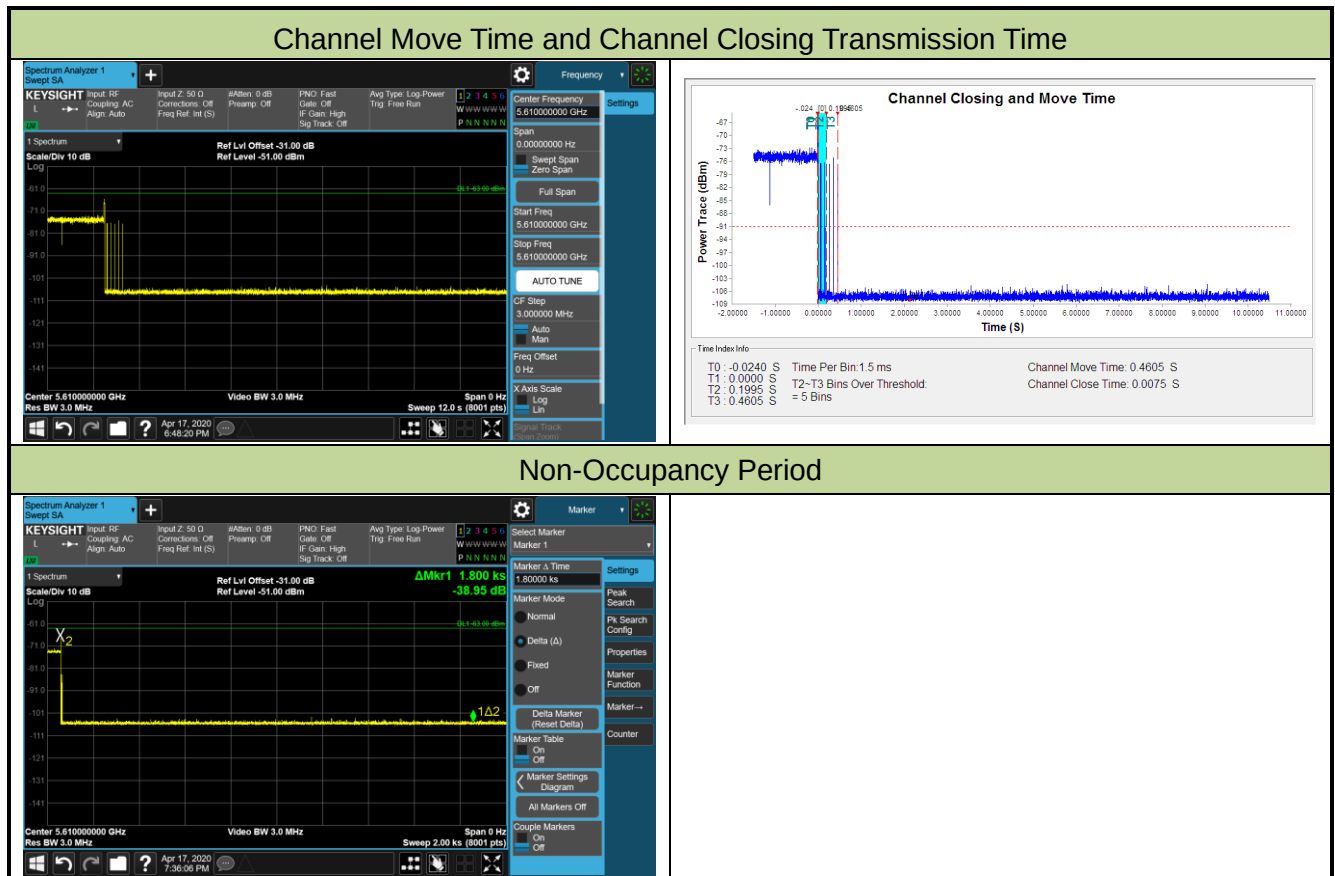
項目	結果	限值
	Type 0	
頻率移動時間(s)	0.494s	<10s
頻道關閉傳輸時間(ms)	7.5ms	< 60ms
不可佔用期間 (min)	≥ 30min	≥ 30 min

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/17
測試項目	Channel Move Time and Channel Closing Transmission Time (802.11ax-HE80+80 mode - 5530MHz)		



項目	結果	限值
	Type 0	
頻率移動時間(s)	6.377s	<10s
頻道關閉傳輸時間(ms)	10.5ms	< 60ms
不可佔用期間 (min)	≥ 30min	≥ 30 min

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/17
測試項目	Channel Move Time and Channel Closing Transmission Time (802.11ax-HE80+80 mode - 5610MHz)		



項目	結果	限值
	Type 0	
頻率移動時間(s)	0.547s	<10s
頻道關閉傳輸時間(ms)	7.5ms	< 60ms
不可佔用期間 (min)	≥ 30min	≥ 30 min

10. 動態頻率選擇偵測門檻

10.1. 適用標準

The minimum percentage of successful detection requirements found in below table when a radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

Radar Type	Minimum Number of Trails	Detection Probability
0	30	$P_d > 60\%$
1	30(15 of test A and 15 of test B)	$P_d > 60\%$
2	30	$P_d > 60\%$
3	30	$P_d > 60\%$
4	30	$P_d > 60\%$
Aggregate (Radar Types 1-4)	120	$P_d > 80\%$
5	30	$P_d > 80\%$
6	30	$P_d > 70\%$

The percentage of successful detection is calculated by:

$(\text{Total Waveform Detections} / \text{Total Waveform Trails}) * 100 = \text{Probability of Detection Radar}$

Waveform In addition an aggregate minimum percentage of successful detection across all Short Pulse Radar Types 1-4 is required and is calculated as follows: $(P_{d1} + P_{d2} + P_{d3} + P_{d4}) / 4$.

10.2. 量測方法

1. Stream the MPEG test file from the Master Device to the Client Device on the test Channel for the entire period of the test.
2. At time T0 the Radar Waveform generator sends the individual waveform for each of the Radar Types 1-6, at levels equal to the DFS Detection Threshold + 1dB, on the Operating Channel.
3. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Short Pulse Radar Types 0 to ensure detection occurs.
4. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs.
5. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs.
6. The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in below table.

10.3. 動態頻率選擇偵測門檻測試結果

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/18 ~ 2020/04/22
測試項目	Radar Statistical Performance Check (802.11ax-HE20 - 5500MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490	1	938.0	57	1
2	5490	1	698.0	76	1
3	5490	1	618.0	86	1
4	5490	1	538.0	99	1
5	5490	1	878.0	61	1
6	5490	1	3066.0	18	1
7	5490	1	638.0	83	1
8	5490	1	918.0	58	1
9	5490	1	838.0	63	1
10	5490	1	858.0	62	1
11	5500.	1	798.0	67	1
12	5500.	1	718.0	74	1
13	5500.	1	578.0	92	1
14	5500.	1	598.0	89	1
15	5500.	1	558.0	95	1
16	5500.	1	2536.0	21	1
17	5500.	1	966.0	55	1
18	5500.	1	827.0	64	1
19	5500.	1	2501.0	22	1
20	5500.	1	2595.0	21	1
21	5510	1	1114.0	48	1
22	5510	1	1302.0	41	1
23	5510	1	3045.0	18	1
24	5510	1	1624.0	33	1
25	5510	1	2878.0	19	1
26	5510	1	1027.0	52	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5510	1	2485.0	22	1
28	5510	1	1600.0	33	1
29	5510	1	1172.0	46	1
30	5510	1	1172.0	45	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490	3.2	179.0	26	1
2	5490	1.1	207.0	23	1
3	5490	2.1	230.0	24	1
4	5490	4.8	200.0	29	1
5	5490	3.9	214.0	28	1
6	5490	2.9	222.0	26	1
7	5490	3.2	204.0	26	1
8	5490	2.5	192.0	25	1
9	5490	3.1	164.0	26	1
10	5500.	1.2	156.0	23	1
11	5500.	3.9	210.0	27	1
12	5500.	4.6	201.0	29	1
13	5500.	3.2	162.0	26	1
14	5500.	2.2	197.0	25	1
15	5500.	4.5	163.0	29	1
16	5500.	3.0	203.0	26	1
17	5500.	5.0	168.0	29	1
18	5500.	2.4	217.0	25	1
19	5500.	2.9	191.0	26	1
20	5510	2.3	166.0	25	1
21	5510	3.7	150.0	27	1
22	5510	2.2	176.0	25	1
23	5490	4.9	195.0	29	1
24	5510	2.9	202.0	26	1
25	5510	2.5	178.0	25	1
26	5510	1.1	206.0	23	1
27	5510	3.8	155.0	27	1
28	5510	4.7	157.0	29	1
29	5510	2.4	224.0	25	1
30	5510	4.2	159.0	28	1
Detection Percentage (%)					100%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490	8.2	355.0	17	1
2	5490	6.1	487.0	16	1
3	5490	7.1	344.0	16	1
4	5490	9.8	288.0	18	1
5	5490	8.9	230.0	18	1
6	5490	7.9	432.0	17	1
7	5490	8.2	207.0	17	1
8	5490	7.5	443.0	17	1
9	5490	8.1	439.0	17	1
10	5490	6.2	223.0	16	1
11	5500.	8.9	208.0	18	1
12	5500.	9.6	463.0	18	1
13	5500.	8.2	441.0	17	1
14	5500.	7.2	323.0	16	1
15	5500.	9.5	297.0	18	1
16	5500.	8.0	412.0	17	1
17	5500.	10.0	324.0	18	1
18	5500.	7.4	271.0	17	1
19	5500.	7.9	349.0	17	1
20	5500.	7.3	409.0	16	1
21	5510	8.7	373.0	18	1
22	5510	7.2	254.0	16	1
23	5510	9.9	274.0	18	1
24	5510	7.9	278.0	17	1
25	5510	7.5	317.0	17	1
26	5510	6.1	260.0	16	1
27	5510	8.8	211.0	18	1
28	5510	9.7	272.0	18	1
29	5510	7.4	264.0	17	1
30	5510	9.2	284.0	18	1
Detection Percentage (%)					100%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490	19.4	288.0	16	1
2	5490	17.5	230.0	15	1
3	5490	15.3	432.0	14	1
4	5490	15.9	207.0	14	1
5	5490	14.3	443.0	13	1
6	5490	15.8	439.0	14	1
7	5490	11.5	223.0	12	1
8	5490	17.4	208.0	15	1
9	5490	19.0	463.0	16	1
10	5490	16.0	441.0	14	1
11	5500.	13.8	323.0	13	1
12	5500.	18.9	297.0	16	1
13	5500.	15.5	412.0	14	1
14	5500.	19.9	324.0	16	1
15	5500.	14.1	271.0	13	1
16	5500.	15.2	349.0	14	1
17	5500.	13.8	409.0	13	1
18	5500.	17.1	373.0	15	1
19	5500.	13.8	254.0	13	1
20	5500.	19.8	274.0	16	1
21	5510	15.3	278.0	14	1
22	5510	14.5	317.0	13	1
23	5510	11.3	260.0	12	1
24	5510	17.3	211.0	15	1
25	5510	19.2	272.0	16	1
26	5510	14.2	264.0	13	1
27	5510	16.0	355.0	14	1
28	5510	11.3	487.0	12	1
29	5510	13.5	344.0	13	1
30	5510	19.4	288.0	16	1
Detection Percentage (%)					100%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test

waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5500.0	1	16	5494.4	1
2	5500.0	1	17	5495.2	1
3	5500.0	1	18	5495.6	1
4	5500.0	1	19	5494.4	1
5	5500.0	1	20	5496.0	1
6	5500.0	1	21	5503.6	1
7	5500.0	1	22	5504.0	1
8	5500.0	1	23	5503.6	1
9	5500.0	1	24	5506.8	1
10	5500.0	1	25	5507.6	1
11	5494.8	1	26	5504.0	1
12	5498.0	1	27	5504.4	1
13	5497.6	1	28	5505.6	1
14	5492.0	1	29	5505.6	1
15	5493.6	1	30	5506.4	1
Detection Percentage (%)					100%

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5490	1	16	5500	1
2	5490	1	17	5500	1
3	5490	1	18	5500	1
4	5490	1	19	5500	1
5	5490	1	20	5500	1
6	5490	1	21	5510	1
7	5490	1	22	5510	1
8	5490	1	23	5510	1
9	5490	1	24	5510	1
10	5490	1	25	5510	1
11	5500	1	26	5510	1
12	5500	1	27	5510	1
13	5500	1	28	5510	1
14	5500	1	29	5510	1
15	5500	1	30	5510	1
Detection Percentage (%)					100%

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/18 ~ 2020/04/22
測試項目	Radar Statistical Performance Check (802.11ax-HE40 mode - 5510MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	1	938.0	57	1
2	5491	1	698.0	76	1
3	5491	1	618.0	86	1
4	5491	1	538.0	99	1
5	5500	1	878.0	61	1
6	5500	1	3066.0	18	1
7	5500	1	638.0	83	1
8	5500	1	918.0	58	1
9	5509	1	838.0	63	1
10	5509	1	858.0	62	1
11	5509	1	798.0	67	1
12	5509	1	718.0	74	1
13	5510	1	578.0	92	1
14	5510	1	598.0	89	1
15	5510	1	558.0	95	1
16	5510	1	2536.0	21	1
17	5510	1	966.0	55	1
18	5510	1	827.0	64	1
19	5511	1	2501.0	22	1
20	5511	1	2595.0	21	1
21	5511	1	1114.0	48	1
22	5511	1	1302.0	41	1
23	5520	1	3045.0	18	1
24	5520	1	1624.0	33	1
25	5520	1	2878.0	19	1
26	5520	1	1027.0	52	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5529	1	2485.0	22	1
28	5529	1	1600.0	33	1
29	5529	1	1172.0	46	1
30	5529	1	1172.0	45	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	3.2	179.0	26	1
2	5491	1.1	207.0	23	1
3	5491	2.1	230.0	24	1
4	5491	4.8	200.0	29	1
5	5500	3.9	214.0	28	1
6	5500	2.9	222.0	26	1
7	5500	3.2	204.0	26	1
8	5500	2.5	192.0	25	1
9	5509	3.1	164.0	26	1
10	5509	1.2	156.0	23	1
11	5509	3.9	210.0	27	1
12	5509	4.6	201.0	29	1
13	5510	3.2	162.0	26	1
14	5510	2.2	197.0	25	1
15	5510	4.5	163.0	29	1
16	5510	3.0	203.0	26	1
17	5510	5.0	168.0	29	1
18	5510	2.4	217.0	25	1
19	5511	2.9	191.0	26	1
20	5511	2.3	166.0	25	1
21	5511	3.7	150.0	27	1
22	5511	2.2	176.0	25	1
23	5520	4.9	195.0	29	1
24	5520	2.9	202.0	26	1
25	5520	2.5	178.0	25	1
26	5520	1.1	206.0	23	1
27	5529	3.8	155.0	27	1
28	5529	4.7	157.0	29	1
29	5529	2.4	224.0	25	1
30	5529	4.2	159.0	28	1
Detection Percentage (%)					100%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	8.2	355.0	17	1
2	5491	6.1	487.0	16	1
3	5491	7.1	344.0	16	1
4	5491	9.8	288.0	18	1
5	5500	8.9	230.0	18	1
6	5500	7.9	432.0	17	1
7	5500	8.2	207.0	17	1
8	5500	7.5	443.0	17	1
9	5509	8.1	439.0	17	1
10	5509	6.2	223.0	16	1
11	5509	8.9	208.0	18	1
12	5509	9.6	463.0	18	1
13	5510	8.2	441.0	17	1
14	5510	7.2	323.0	16	1
15	5510	9.5	297.0	18	1
16	5510	8.0	412.0	17	1
17	5510	10.0	324.0	18	1
18	5510	7.4	271.0	17	1
19	5511	7.9	349.0	17	1
20	5511	7.3	409.0	16	1
21	5511	8.7	373.0	18	1
22	5511	7.2	254.0	16	1
23	5520	9.9	274.0	18	1
24	5520	7.9	278.0	17	1
25	5520	7.5	317.0	17	1
26	5520	6.1	260.0	16	1
27	5529	8.8	211.0	18	1
28	5529	9.7	272.0	18	1
29	5529	7.4	264.0	17	1
30	5529	9.2	284.0	18	1
Detection Percentage (%)					100%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	19.4	288.0	16	1
2	5491	17.5	230.0	15	1
3	5491	15.3	432.0	14	1
4	5491	15.9	207.0	14	1
5	5500	14.3	443.0	13	1
6	5500	15.8	439.0	14	1
7	5500	11.5	223.0	12	1
8	5500	17.4	208.0	15	1
9	5509	19.0	463.0	16	1
10	5509	16.0	441.0	14	1
11	5509	13.8	323.0	13	1
12	5509	18.9	297.0	16	1
13	5510	15.5	412.0	14	1
14	5510	19.9	324.0	16	1
15	5510	14.1	271.0	13	1
16	5510	15.2	349.0	14	1
17	5510	13.8	409.0	13	1
18	5510	17.1	373.0	15	1
19	5511	13.8	254.0	13	1
20	5511	19.8	274.0	16	1
21	5511	15.3	278.0	14	1
22	5511	14.5	317.0	13	1
23	5520	11.3	260.0	12	1
24	5520	17.3	211.0	15	1
25	5520	19.2	272.0	16	1
26	5520	14.2	264.0	13	1
27	5529	16.0	355.0	14	1
28	5529	11.3	487.0	12	1
29	5529	13.5	344.0	13	1
30	5529	19.4	288.0	16	1
Detection Percentage (%)					100%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5510.0	1	16	5493.0	1
2	5510.0	1	17	5493.8	1
3	5510.0	1	18	5495.0	1
4	5510.0	1	19	5495.8	1
5	5510.0	1	20	5497.8	1
6	5510.0	1	21	5525.8	1
7	5510.0	1	22	5522.6	1
8	5510.0	1	23	5527.0	1
9	5510.0	1	24	5521.4	1
10	5510.0	1	25	5522.2	1
11	5495.8	1	26	5521.4	1
12	5494.2	1	27	5523.8	1
13	5493.0	1	28	5525.0	1
14	5497.8	1	29	5523.4	1
15	5497.8	1	30	5524.2	1
Detection Percentage (%)					100%

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5491	1	16	5510	1
2	5491	1	17	5510	1
3	5491	1	18	5510	1
4	5491	1	19	5511	1
5	5500	1	20	5511	1
6	5500	1	21	5511	1
7	5500	1	22	5511	1
8	5500	1	23	5520	1
9	5509	1	24	5520	1
10	5509	1	25	5520	1
11	5509	1	26	5520	1
12	5509	1	27	5529	1
13	5510	1	28	5529	1
14	5510	1	29	5529	1
15	5510	1	30	5529	1
Detection Percentage (%)					100%

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/18 ~ 2020/04/22
測試項目	Radar Statistical Performance Check (802.11ax-HE80 mode - 5530MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	1	938.0	57	1
2	5491	1	698.0	76	1
3	5500	1	618.0	86	1
4	5500	1	538.0	99	1
5	5509	1	878.0	61	1
6	5509	1	3066.0	18	1
7	5510	1	638.0	83	1
8	5510	1	918.0	58	1
9	5511	1	838.0	63	1
10	5511	1	858.0	62	1
11	5520	1	798.0	67	1
12	5520	1	718.0	74	1
13	5529	1	578.0	92	1
14	5529	1	598.0	89	1
15	5530	1	558.0	95	1
16	5530	1	2536.0	21	1
17	5531	1	966.0	55	1
18	5531	1	827.0	64	1
19	5540	1	2501.0	22	1
20	5540	1	2595.0	21	1
21	5549	1	1114.0	48	1
22	5549	1	1302.0	41	1
23	5550	1	3045.0	18	1
24	5550	1	1624.0	33	1
25	5551	1	2878.0	19	1
26	5551	1	1027.0	52	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5560	1	2485.0	22	1
28	5560	1	1600.0	33	1
29	5569	1	1172.0	46	1
30	5569	1	1172.0	45	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	3.2	179.0	26	1
2	5491	1.1	207.0	23	1
3	5500	2.1	230.0	24	1
4	5500	4.8	200.0	29	1
5	5509	3.9	214.0	28	1
6	5509	2.9	222.0	26	1
7	5510	3.2	204.0	26	1
8	5510	2.5	192.0	25	1
9	5511	3.1	164.0	26	1
10	5511	1.2	156.0	23	1
11	5520	3.9	210.0	27	1
12	5520	4.6	201.0	29	1
13	5529	3.2	162.0	26	1
14	5529	2.2	197.0	25	1
15	5530	4.5	163.0	29	1
16	5530	3.0	203.0	26	1
17	5531	5.0	168.0	29	1
18	5531	2.4	217.0	25	1
19	5540	2.9	191.0	26	1
20	5540	2.3	166.0	25	1
21	5549	3.7	150.0	27	1
22	5549	2.2	176.0	25	1
23	5550	4.9	195.0	29	1
24	5550	2.9	202.0	26	1
25	5551	2.5	178.0	25	1
26	5551	1.1	206.0	23	1
27	5560	3.8	155.0	27	1
28	5560	4.7	157.0	29	1
29	5569	2.4	224.0	25	1
30	5569	4.2	159.0	28	1
Detection Percentage (%)					100%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	8.2	355.0	17	1
2	5491	6.1	487.0	16	1
3	5500	7.1	344.0	16	1
4	5500	9.8	288.0	18	1
5	5509	8.9	230.0	18	1
6	5509	7.9	432.0	17	1
7	5510	8.2	207.0	17	1
8	5510	7.5	443.0	17	1
9	5511	8.1	439.0	17	1
10	5511	6.2	223.0	16	1
11	5520	8.9	208.0	18	1
12	5520	9.6	463.0	18	1
13	5529	8.2	441.0	17	1
14	5529	7.2	323.0	16	1
15	5530	9.5	297.0	18	1
16	5530	8.0	412.0	17	1
17	5531	10.0	324.0	18	1
18	5531	7.4	271.0	17	1
19	5540	7.9	349.0	17	1
20	5540	7.3	409.0	16	1
21	5549	8.7	373.0	18	1
22	5549	7.2	254.0	16	1
23	5550	9.9	274.0	18	1
24	5550	7.9	278.0	17	1
25	5551	7.5	317.0	17	1
26	5551	6.1	260.0	16	1
27	5560	8.8	211.0	18	1
28	5560	9.7	272.0	18	1
29	5569	7.4	264.0	17	1
30	5569	9.2	284.0	18	1
Detection Percentage (%)					100%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	19.4	288.0	16	1
2	5491	17.5	230.0	15	1
3	5500	15.3	432.0	14	1
4	5500	15.9	207.0	14	1
5	5509	14.3	443.0	13	1
6	5509	15.8	439.0	14	1
7	5510	11.5	223.0	12	1
8	5510	17.4	208.0	15	1
9	5511	19.0	463.0	16	1
10	5511	16.0	441.0	14	1
11	5520	13.8	323.0	13	1
12	5520	18.9	297.0	16	1
13	5529	15.5	412.0	14	1
14	5529	19.9	324.0	16	1
15	5530	14.1	271.0	13	1
16	5530	15.2	349.0	14	1
17	5531	13.8	409.0	13	1
18	5531	17.1	373.0	15	1
19	5540	13.8	254.0	13	1
20	5540	19.8	274.0	16	1
21	5549	15.3	278.0	14	1
22	5549	14.5	317.0	13	1
23	5550	11.3	260.0	12	1
24	5550	17.3	211.0	15	1
25	5551	19.2	272.0	16	1
26	5551	14.2	264.0	13	1
27	5560	16.0	355.0	14	1
28	5560	11.3	487.0	12	1
29	5569	13.5	344.0	13	1
30	5569	19.4	288.0	16	1
Detection Percentage (%)					100%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test

$$\text{waveforms is as follows: } \frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5530.0	1	16	5499.0	1
2	5530.0	1	17	5497.0	1
3	5530.0	1	18	5494.2	1
4	5530.0	1	19	5495.0	1
5	5530.0	1	20	5495.4	1
6	5530.0	1	21	5561.8	1
7	5530.0	1	22	5564.2	1
8	5530.0	1	23	5566.6	1
9	5530.0	1	24	5563.4	1
10	5530.0	1	25	5565.4	1
11	5495.8	1	26	5561.0	1
12	5497.0	1	27	5561.0	1
13	5493.4	1	28	5563.4	1
14	5495.0	1	29	5565.4	1
15	5494.6	1	30	5561.8	1
Detection Percentage (%)					100%

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5491	1	16	5530	1
2	5491	1	17	5531	1
3	5500	1	18	5531	1
4	5500	1	19	5540	1
5	5509	1	20	5540	1
6	5509	1	21	5549	1
7	5510	1	22	5549	1
8	5510	1	23	5550	1
9	5511	1	24	5550	1
10	5511	1	25	5551	1
11	5520	1	26	5551	1
12	5520	1	27	5560	1
13	5529	1	28	5560	1
14	5529	1	29	5569	1
15	5530	1	30	5569	1
Detection Percentage (%)					100%

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/18 ~ 2020/04/22
測試項目	Radar Statistical Performance Check (802.11ax-HE80 + 80 mode – 5290MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5250	1	938.0	57	1
2	5250	1	698.0	76	1
3	5260	1	618.0	86	1
4	5260	1	538.0	99	1
5	5269	1	878.0	61	1
6	5269	1	3066.0	18	1
7	5270	1	638.0	83	1
8	5270	1	918.0	58	1
9	5271	1	838.0	63	1
10	5271	1	858.0	62	1
11	5280	1	798.0	67	1
12	5280	1	718.0	74	1
13	5289	1	578.0	92	1
14	5289	1	598.0	89	1
15	5290	1	558.0	95	1
16	5290	1	2536.0	21	1
17	5291	1	966.0	55	1
18	5291	1	827.0	64	1
19	5300	1	2501.0	22	1
20	5300	1	2595.0	21	1
21	5309	1	1114.0	48	1
22	5309	1	1302.0	41	1
23	5310	1	3045.0	18	1
24	5310	1	1624.0	33	1
25	5311	1	2878.0	19	1
26	5311	1	1027.0	52	1
27	5320	1	2485.0	22	1
28	5320	1	1600.0	33	1
29	5329	1	1172.0	46	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
30	5329	1	1172.0	45	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5250	3.2	179.0	26	1
2	5250	1.1	207.0	23	1
3	5260	2.1	230.0	24	1
4	5260	4.8	200.0	29	1
5	5269	3.9	214.0	28	1
6	5269	2.9	222.0	26	1
7	5270	3.2	204.0	26	1
8	5270	2.5	192.0	25	1
9	5271	3.1	164.0	26	1
10	5271	1.2	156.0	23	1
11	5280	3.9	210.0	27	1
12	5280	4.6	201.0	29	1
13	5289	3.2	162.0	26	1
14	5289	2.2	197.0	25	1
15	5290	4.5	163.0	29	1
16	5290	3.0	203.0	26	1
17	5291	5.0	168.0	29	1
18	5291	2.4	217.0	25	1
19	5300	2.9	191.0	26	1
20	5300	2.3	166.0	25	1
21	5309	3.7	150.0	27	1
22	5309	2.2	176.0	25	1
23	5310	4.9	195.0	29	1
24	5310	2.9	202.0	26	1
25	5311	2.5	178.0	25	1
26	5311	1.1	206.0	23	1
27	5320	3.8	155.0	27	1
28	5320	4.7	157.0	29	1
29	5329	2.4	224.0	25	1
30	5329	4.2	159.0	28	1
Detection Percentage (%)					100%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5250	8.2	355.0	17	1
2	5250	6.1	487.0	16	1
3	5260	7.1	344.0	16	1
4	5260	9.8	288.0	18	1
5	5269	8.9	230.0	18	1
6	5269	7.9	432.0	17	1
7	5270	8.2	207.0	17	1
8	5270	7.5	443.0	17	1
9	5271	8.1	439.0	17	1
10	5271	6.2	223.0	16	1
11	5280	8.9	208.0	18	1
12	5280	9.6	463.0	18	1
13	5289	8.2	441.0	17	1
14	5289	7.2	323.0	16	1
15	5290	9.5	297.0	18	1
16	5290	8.0	412.0	17	1
17	5291	10.0	324.0	18	1
18	5291	7.4	271.0	17	1
19	5300	7.9	349.0	17	1
20	5300	7.3	409.0	16	1
21	5309	8.7	373.0	18	1
22	5309	7.2	254.0	16	1
23	5310	9.9	274.0	18	1
24	5310	7.9	278.0	17	1
25	5311	7.5	317.0	17	1
26	5311	6.1	260.0	16	1
27	5320	8.8	211.0	18	1
28	5320	9.7	272.0	18	1
29	5329	7.4	264.0	17	1
30	5329	9.2	284.0	18	1
Detection Percentage (%)					100%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5250	19.4	288.0	16	1
2	5250	17.5	230.0	15	1
3	5260	15.3	432.0	14	1
4	5260	15.9	207.0	14	1
5	5269	14.3	443.0	13	1
6	5269	15.8	439.0	14	1
7	5270	11.5	223.0	12	1
8	5270	17.4	208.0	15	1
9	5271	19.0	463.0	16	1
10	5271	16.0	441.0	14	1
11	5280	13.8	323.0	13	1
12	5280	18.9	297.0	16	1
13	5289	15.5	412.0	14	1
14	5289	19.9	324.0	16	1
15	5290	14.1	271.0	13	1
16	5290	15.2	349.0	14	1
17	5291	13.8	409.0	13	1
18	5291	17.1	373.0	15	1
19	5300	13.8	254.0	13	1
20	5300	19.8	274.0	16	1
21	5309	15.3	278.0	14	1
22	5309	14.5	317.0	13	1
23	5310	11.3	260.0	12	1
24	5310	17.3	211.0	15	1
25	5311	19.2	272.0	16	1
26	5311	14.2	264.0	13	1
27	5320	16.0	355.0	14	1
28	5320	11.3	487.0	12	1
29	5329	13.5	344.0	13	1
30	5329	19.4	288.0	16	1
Detection Percentage (%)					100%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5290.0	1	16	5256.8	1
2	5290.0	1	17	5255.6	1
3	5290.0	1	18	5258.0	1
4	5290.0	1	19	5257.2	1
5	5290.0	1	20	5252.0	1
6	5290.0	1	21	5323.4	1
7	5290.0	1	22	5325.8	1
8	5290.0	1	23	5322.6	1
9	5290.0	1	24	5323.8	1
10	5290.0	1	25	5325.0	1
11	5257.2	1	26	5323.4	1
12	5253.2	1	27	5323.0	1
13	5254.8	1	28	5322.6	1
14	5257.2	1	29	5323.4	1
15	5254.0	1	30	5324.2	1
Detection Percentage (%)					100%

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5250	1	16	5290	1
2	5250	1	17	5291	1
3	5260	1	18	5291	1
4	5260	1	19	5300	1
5	5269	1	20	5300	1
6	5269	1	21	5309	1
7	5270	1	22	5309	1
8	5270	1	23	5310	1
9	5271	1	24	5310	1
10	5271	1	25	5311	1
11	5280	1	26	5311	1
12	5280	1	27	5320	1
13	5289	1	28	5320	1
14	5289	1	29	5329	1
15	5290	1	30	5329	1
Detection Percentage (%)					100%

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/18 ~ 2020/04/22
測試項目	Radar Statistical Performance Check (802.11ax-HE80 + 80 mode – 5530MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	1	938.0	57	1
2	5491	1	698.0	76	1
3	5500	1	618.0	86	1
4	5500	1	538.0	99	1
5	5509	1	878.0	61	1
6	5509	1	3066.0	18	1
7	5510	1	638.0	83	1
8	5510	1	918.0	58	1
9	5511	1	838.0	63	1
10	5511	1	858.0	62	1
11	5520	1	798.0	67	1
12	5520	1	718.0	74	1
13	5529	1	578.0	92	1
14	5529	1	598.0	89	1
15	5530	1	558.0	95	1
16	5530	1	2536.0	21	1
17	5531	1	966.0	55	1
18	5531	1	827.0	64	1
19	5540	1	2501.0	22	1
20	5540	1	2595.0	21	1
21	5549	1	1114.0	48	1
22	5549	1	1302.0	41	1
23	5550	1	3045.0	18	1
24	5550	1	1624.0	33	1
25	5551	1	2878.0	19	1
26	5551	1	1027.0	52	1
27	5560	1	2485.0	22	1
28	5560	1	1600.0	33	1
29	5570	1	1172.0	46	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
30	5570	1	1172.0	45	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	3.2	179.0	26	1
2	5491	1.1	207.0	23	1
3	5500	2.1	230.0	24	1
4	5500	4.8	200.0	29	1
5	5509	3.9	214.0	28	1
6	5509	2.9	222.0	26	1
7	5510	3.2	204.0	26	1
8	5510	2.5	192.0	25	1
9	5511	3.1	164.0	26	1
10	5511	1.2	156.0	23	1
11	5520	3.9	210.0	27	1
12	5520	4.6	201.0	29	1
13	5529	3.2	162.0	26	1
14	5529	2.2	197.0	25	1
15	5530	4.5	163.0	29	1
16	5530	3.0	203.0	26	1
17	5531	5.0	168.0	29	1
18	5531	2.4	217.0	25	1
19	5540	2.9	191.0	26	1
20	5540	2.3	166.0	25	1
21	5549	3.7	150.0	27	1
22	5549	2.2	176.0	25	1
23	5550	4.9	195.0	29	1
24	5550	2.9	202.0	26	1
25	5551	2.5	178.0	25	1
26	5551	1.1	206.0	23	1
27	5560	3.8	155.0	27	1
28	5560	4.7	157.0	29	1
29	5570	2.4	224.0	25	1
30	5570	4.2	159.0	28	1
Detection Percentage (%)					100%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	8.2	355.0	17	1
2	5491	6.1	487.0	16	1
3	5500	7.1	344.0	16	1
4	5500	9.8	288.0	18	1
5	5509	8.9	230.0	18	1
6	5509	7.9	432.0	17	1
7	5510	8.2	207.0	17	1
8	5510	7.5	443.0	17	1
9	5511	8.1	439.0	17	1
10	5511	6.2	223.0	16	1
11	5520	8.9	208.0	18	1
12	5520	9.6	463.0	18	1
13	5529	8.2	441.0	17	1
14	5529	7.2	323.0	16	1
15	5530	9.5	297.0	18	1
16	5530	8.0	412.0	17	1
17	5531	10.0	324.0	18	1
18	5531	7.4	271.0	17	1
19	5540	7.9	349.0	17	1
20	5540	7.3	409.0	16	1
21	5549	8.7	373.0	18	1
22	5549	7.2	254.0	16	1
23	5550	9.9	274.0	18	1
24	5550	7.9	278.0	17	1
25	5551	7.5	317.0	17	1
26	5551	6.1	260.0	16	1
27	5560	8.8	211.0	18	1
28	5560	9.7	272.0	18	1
29	5570	7.4	264.0	17	1
30	5570	9.2	284.0	18	1
Detection Percentage (%)					100%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491	19.4	288.0	16	1
2	5491	17.5	230.0	15	1
3	5500	15.3	432.0	14	1
4	5500	15.9	207.0	14	1
5	5509	14.3	443.0	13	1
6	5509	15.8	439.0	14	1
7	5510	11.5	223.0	12	1
8	5510	17.4	208.0	15	1
9	5511	19.0	463.0	16	1
10	5511	16.0	441.0	14	1
11	5520	13.8	323.0	13	1
12	5520	18.9	297.0	16	1
13	5529	15.5	412.0	14	1
14	5529	19.9	324.0	16	1
15	5530	14.1	271.0	13	1
16	5530	15.2	349.0	14	1
17	5531	13.8	409.0	13	1
18	5531	17.1	373.0	15	1
19	5540	13.8	254.0	13	1
20	5540	19.8	274.0	16	1
21	5549	15.3	278.0	14	1
22	5549	14.5	317.0	13	1
23	5550	11.3	260.0	12	1
24	5550	17.3	211.0	15	1
25	5551	19.2	272.0	16	1
26	5551	14.2	264.0	13	1
27	5560	16.0	355.0	14	1
28	5560	11.3	487.0	12	1
29	5570	13.5	344.0	13	1
30	5570	19.4	288.0	16	1
Detection Percentage (%)					100%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5530.0	1	16	5495.0	1
2	5530.0	1	17	5497.4	1
3	5530.0	1	18	5495.0	1
4	5530.0	1	19	5493.0	1
5	5530.0	1	20	5496.2	1
6	5530.0	1	21	5562.8	1
7	5530.0	1	22	5566.0	1
8	5530.0	1	23	5566.8	1
9	5530.0	1	24	5563.6	1
10	5530.0	1	25	5566.8	1
11	5499.0	1	26	5562.8	1
12	5497.4	1	27	5567.2	1
13	5498.6	1	28	5566.0	1
14	5495.4	1	29	5566.8	1
15	5496.2	1	30	5564.4	1
Detection Percentage (%)					100%

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5491	1	16	5530	1
2	5491	1	17	5531	1
3	5500	1	18	5531	1
4	5500	1	19	5540	1
5	5509	1	20	5540	1
6	5509	1	21	5549	1
7	5510	1	22	5549	1
8	5510	1	23	5550	1
9	5511	1	24	5550	1
10	5511	1	25	5551	1
11	5520	1	26	5551	1
12	5520	1	27	5560	1
13	5529	1	28	5560	1
14	5529	1	29	5570	1
15	5530	1	30	5570	1
Detection Percentage (%)					100%

待測物名稱	無線基地台	溫度	27°C
測試工程師	Peter Syu	濕度	65%
測試場地	SR2	測試日期	2020/04/18 ~ 2020/04/22
測試項目	Radar Statistical Performance Check (802.11ax-HE80 + 80 mode – 5610MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5570	1	938.0	57	1
2	5570	1	698.0	76	1
3	5580	1	618.0	86	1
4	5580	1	538.0	99	1
5	5589	1	878.0	61	1
6	5589	1	3066.0	18	1
7	5590	1	638.0	83	1
8	5590	1	918.0	58	1
9	5591	1	838.0	63	1
10	5591	1	858.0	62	1
11	5600	1	798.0	67	1
12	5600	1	718.0	74	1
13	5609	1	578.0	92	1
14	5609	1	598.0	89	1
15	5610	1	558.0	95	1
16	5610	1	2536.0	21	1
17	5611	1	966.0	55	1
18	5611	1	827.0	64	1
19	5620	1	2501.0	22	1
20	5620	1	2595.0	21	1
21	5629	1	1114.0	48	1
22	5629	1	1302.0	41	1
23	5630	1	3045.0	18	1
24	5630	1	1624.0	33	1
25	5631	1	2878.0	19	1
26	5631	1	1027.0	52	1
27	5640	1	2485.0	22	1
28	5640	1	1600.0	33	1
29	5649	1	1172.0	46	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
30	5649	1	1172.0	45	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5570	3.2	179.0	26	1
2	5570	1.1	207.0	23	1
3	5580	2.1	230.0	24	1
4	5580	4.8	200.0	29	1
5	5589	3.9	214.0	28	1
6	5589	2.9	222.0	26	1
7	5590	3.2	204.0	26	1
8	5590	2.5	192.0	25	1
9	5591	3.1	164.0	26	1
10	5591	1.2	156.0	23	1
11	5600	3.9	210.0	27	1
12	5600	4.6	201.0	29	1
13	5609	3.2	162.0	26	1
14	5609	2.2	197.0	25	1
15	5610	4.5	163.0	29	1
16	5610	3.0	203.0	26	1
17	5611	5.0	168.0	29	1
18	5611	2.4	217.0	25	1
19	5620	2.9	191.0	26	1
20	5620	2.3	166.0	25	1
21	5629	3.7	150.0	27	1
22	5629	2.2	176.0	25	1
23	5630	4.9	195.0	29	1
24	5630	2.9	202.0	26	1
25	5631	2.5	178.0	25	1
26	5631	1.1	206.0	23	1
27	5640	3.8	155.0	27	1
28	5640	4.7	157.0	29	1
29	5649	2.4	224.0	25	1
30	5649	4.2	159.0	28	1
Detection Percentage (%)					100%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5570	8.2	355.0	17	1
2	5570	6.1	487.0	16	1
3	5580	7.1	344.0	16	1
4	5580	9.8	288.0	18	1
5	5589	8.9	230.0	18	1
6	5589	7.9	432.0	17	1
7	5590	8.2	207.0	17	1
8	5590	7.5	443.0	17	1
9	5591	8.1	439.0	17	1
10	5591	6.2	223.0	16	1
11	5600	8.9	208.0	18	1
12	5600	9.6	463.0	18	1
13	5609	8.2	441.0	17	1
14	5609	7.2	323.0	16	1
15	5610	9.5	297.0	18	1
16	5610	8.0	412.0	17	1
17	5611	10.0	324.0	18	1
18	5611	7.4	271.0	17	1
19	5620	7.9	349.0	17	1
20	5620	7.3	409.0	16	1
21	5629	8.7	373.0	18	1
22	5629	7.2	254.0	16	1
23	5630	9.9	274.0	18	1
24	5630	7.9	278.0	17	1
25	5631	7.5	317.0	17	1
26	5631	6.1	260.0	16	1
27	5640	8.8	211.0	18	1
28	5640	9.7	272.0	18	1
29	5649	7.4	264.0	17	1
30	5649	9.2	284.0	18	1
Detection Percentage (%)					100%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5570	19.4	288.0	16	1
2	5570	17.5	230.0	15	1
3	5580	15.3	432.0	14	1
4	5580	15.9	207.0	14	1
5	5589	14.3	443.0	13	1
6	5589	15.8	439.0	14	1
7	5590	11.5	223.0	12	1
8	5590	17.4	208.0	15	1
9	5591	19.0	463.0	16	1
10	5591	16.0	441.0	14	1
11	5600	13.8	323.0	13	1
12	5600	18.9	297.0	16	1
13	5609	15.5	412.0	14	1
14	5609	19.9	324.0	16	1
15	5610	14.1	271.0	13	1
16	5610	15.2	349.0	14	1
17	5611	13.8	409.0	13	1
18	5611	17.1	373.0	15	1
19	5620	13.8	254.0	13	1
20	5620	19.8	274.0	16	1
21	5629	15.3	278.0	14	1
22	5629	14.5	317.0	13	1
23	5630	11.3	260.0	12	1
24	5630	17.3	211.0	15	1
25	5631	19.2	272.0	16	1
26	5631	14.2	264.0	13	1
27	5640	16.0	355.0	14	1
28	5640	11.3	487.0	12	1
29	5649	13.5	344.0	13	1
30	5649	19.4	288.0	16	1
Detection Percentage (%)					100%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5610.0	1	16	5574.0	1
2	5610.0	1	17	5575.6	1
3	5610.0	1	18	5577.2	1
4	5610.0	1	19	5573.2	1
5	5610.0	1	20	5577.6	1
6	5610.0	1	21	5641.0	1
7	5610.0	1	22	5645.4	1
8	5610.0	1	23	5643.0	1
9	5610.0	1	24	5642.2	1
10	5610.0	1	25	5643.0	1
11	5572.4	1	26	5641.8	1
12	5576.4	1	27	5642.2	1
13	5576.8	1	28	5643.4	1
14	5578.0	1	29	5644.2	1
15	5575.2	1	30	5647.0	1
Detection Percentage (%)					100%

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5570	1	16	5610	1
2	5570	1	17	5611	1
3	5580	1	18	5611	1
4	5580	1	19	5620	1
5	5589	1	20	5620	1
6	5589	1	21	5629	1
7	5590	1	22	5629	1
8	5590	1	23	5630	1
9	5591	1	24	5630	1
10	5591	1	25	5631	1
11	5600	1	26	5631	1
12	5600	1	27	5640	1
13	5609	1	28	5640	1
14	5609	1	29	5649	1
15	5610	1	30	5649	1
Detection Percentage (%)					100%

_____ The End _____

附錄 A - 測試照

參照 “2004TW0007-測試照” 檔案.

附錄 B - 外觀照

參照 “2004TW0007-外觀照” 檔案。

附錄 C - 內部照

參照 “2004TW0007-內部照” 檔案.