

NCC

低功率射頻電機型式試驗報告

產品名稱: AX1800 Wi-Fi 6 訊號延伸器
型號: RE605X
廠牌: tp-link
申請者: 聯洲國際有限公司
申請者地址: 新北市板橋區中山路一段 156 號 13 樓
測試標準: LP0002 (109 年版)
參考法規: ANSI C63.10-2013
測試結果: 符合
接收日期: 2020.06.22
測試日期: 2020.06.22 ~ 2020.10.26
發行日期: 2020.12.31

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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
2007TW0006-T3	1.0	Original Report	2020-12-31

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1. 一般資訊

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申請者地址	新北市板橋區中山路一段 156 號 13 樓
製造商	普聯技術有限公司
製造商地址	深圳市南山區深南路科技園工業廠房 24 棟南段 1 層、3-5 層、28 棟北段 1-4 層
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	AX1800 Wi-Fi 6 訊號延伸器
產品型號	RE605X
廠牌	tp-link
工作模式	主控運作模式 (AP, Range Extender, Mesh)
無線規格	802.11a/b/g/n/ac/ax
頻率範圍	<u>2.4GHz:</u> For 802.11b/g/n-HT20/ax-HE20: 2412 ~ 2462 MHz For 802.11n-HT40/ax-HE40: 2422 ~ 2452 MHz <u>5GHz:</u> For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5180~5240MHz, 5260~5320 MHz, 5500~5720MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5190~5230MHz, 5270~5310 MHz, 5510~5710MHz, 5755~5795MHz For 802.11ac-VHT80/ax-HE80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5690MHz, 5775MHz
調變模式	DSSS for IEEE 802.11b, OFDM for IEEE 802.11a/g/n/ac, OFDMA for IEEE 802.11ax
傳輸速率	802.11b: 1/2/5.5/11Mbps 802.11a/g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps 802.11ax: up to 1201Mbps

2.2. 動態雷達操作通道清單

802.11a/n-HT20/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
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	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	--	--	--	--

2.3. 天線規格

此 AX1800 Wi-Fi 6 訊號延伸器其天線為固定式 Dipole Antenna，(Brand: TP-LINK)使用 i-PEX 接頭，(檢附天線規格書)

Antenna Type	Frequency Band (MHz)	T _x Paths	Max Antenna Gain (dBi)	Beamforming Directional Gain (dBi)	CDD Directional Gain (dBi)	
					For Power	For PSD
Dipole Antenna	2412 ~ 2462	2	1.99	5.00	1.99	5.00
	5150 ~ 5250	2	1.98	4.99	1.98	4.99
	5250 ~ 5350	2	2.99	6.00	2.99	6.00
	5470 ~ 5725	2	2.46	5.47	2.46	5.47
	5725 ~ 5850	2	2.13	5.14	2.13	5.14

Note:

1. The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

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

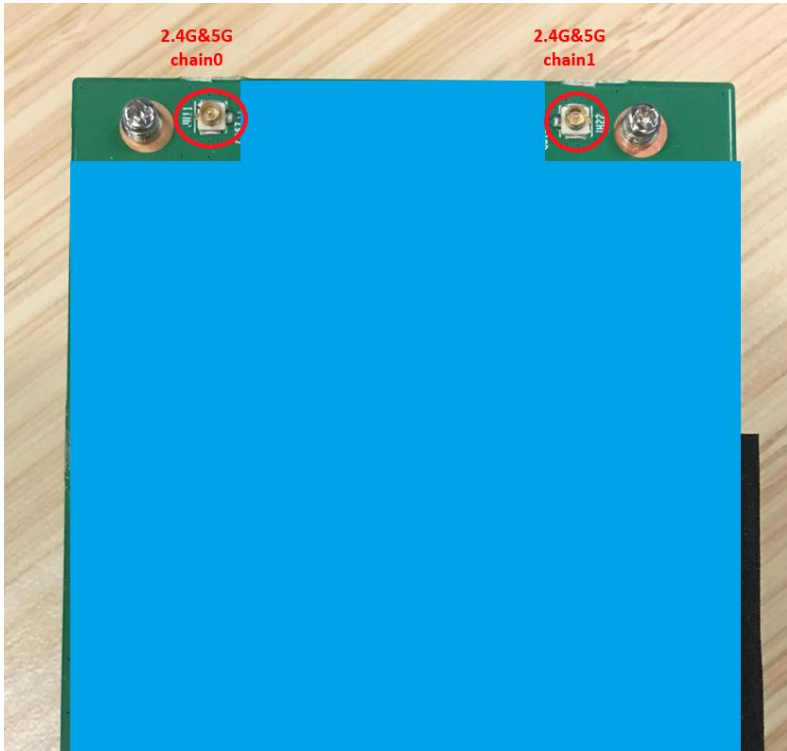
- For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log (N_{ANT} / N_{SS})$ dB;

- For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB for $N_{ANT} \leq 4$;

2. The EUT also supports Beam Forming mode, and the Beam Forming support 802.11ac/ax, not include 802.11a/b/g/n. BF Directional gain = $G_{ANT} + 10 \log (N_{ANT})$.

Antenna RF Port				
Software Control Port	2.4GHz RF Port		5GHz RF Port	
	Ant 0	Ant 1	Ant 0	Ant 1
				

2.4. 測試模式

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

- 對短脈衝雷達信號，此瞬間為叢訊的結束時間點算起。
- 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。
- 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.

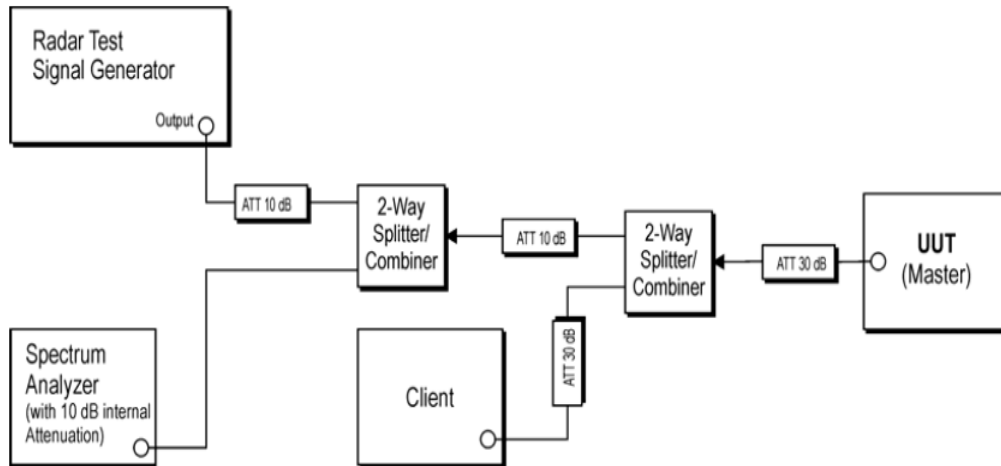


Figure A: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters

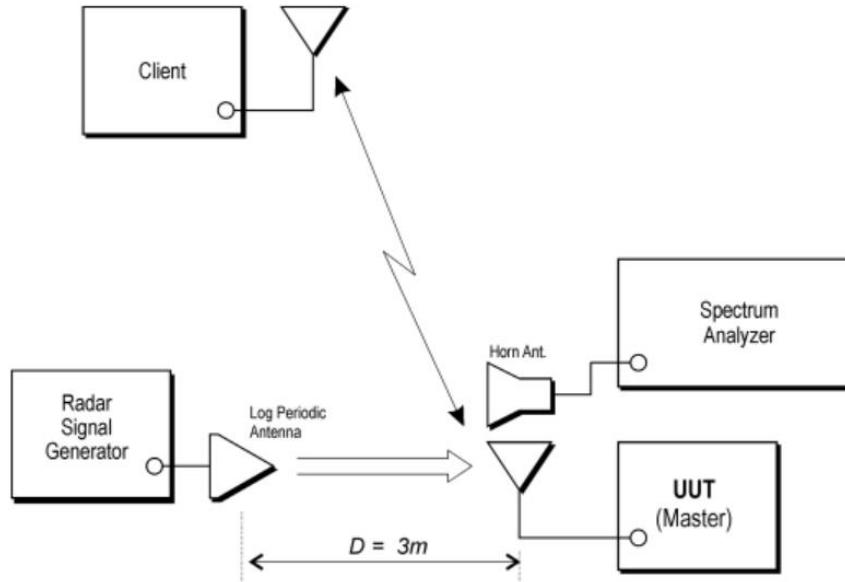


Figure B: Radiated Test Setup where UUT is a Master and Radar Test Waveforms are injected into the UUT

4. 測試設備明細

Dynamic Frequency Selection (DFS)

Instrument	Brand	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2021/10/02
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2021/07/14
Vector Signal Generator	Keysight	N5182B	MRTTWA00010	1 year	2021/04/24
Combiner	WOKEN	0120A04208001S	MRTTWE00008	1 year	2021/06/18
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2021/10/02
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2021/07/14

Client Information

Instrument	Brand	Type No.
HP 525 Wireless 802.11ac	HP	JG994A
AX1800 Wi-Fi 6 訊號延伸器	tp-link	RE605X

Software	Version	Brand	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 AX1800 Wi-Fi 6 訊號延伸器
型號 RE605X

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 6 章節
頻道可用性檢查時間量測	參考 3.3 章節	符合	第 7 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 8 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 9 章節

6. 雷達系統波形校驗

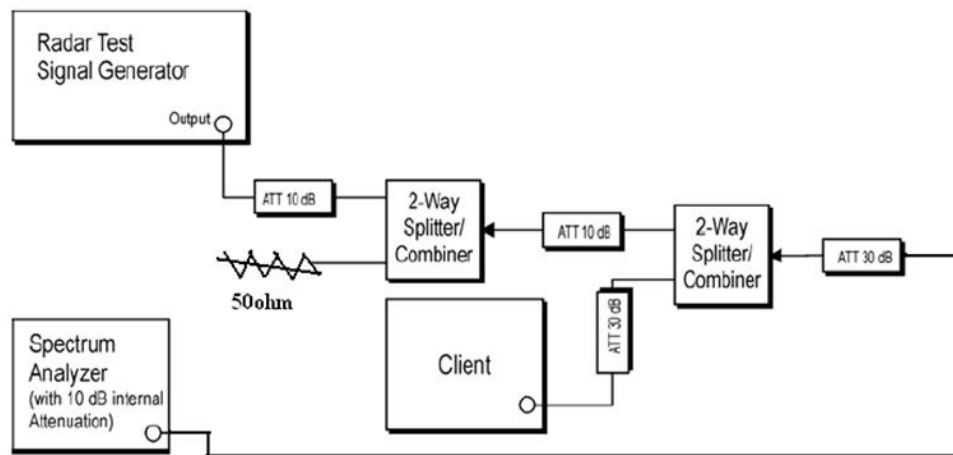
6.1. 量測方法

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。

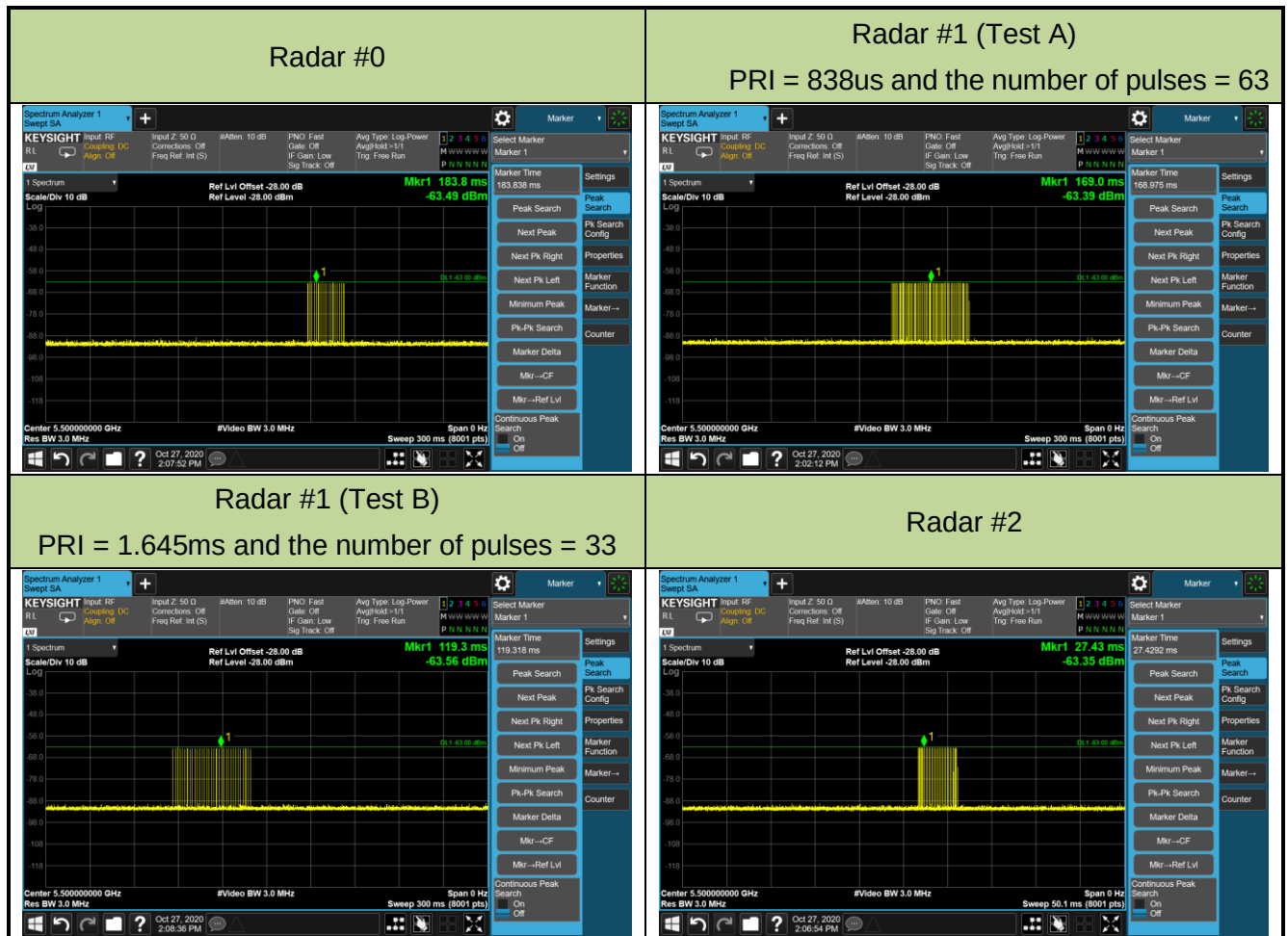
將雷達訊號產生器的振幅位準調整至頻譜分析儀上觀察到的位準為-63dBm，此位準為接收輸入端以 0dBi 的接收天線為參考基準。

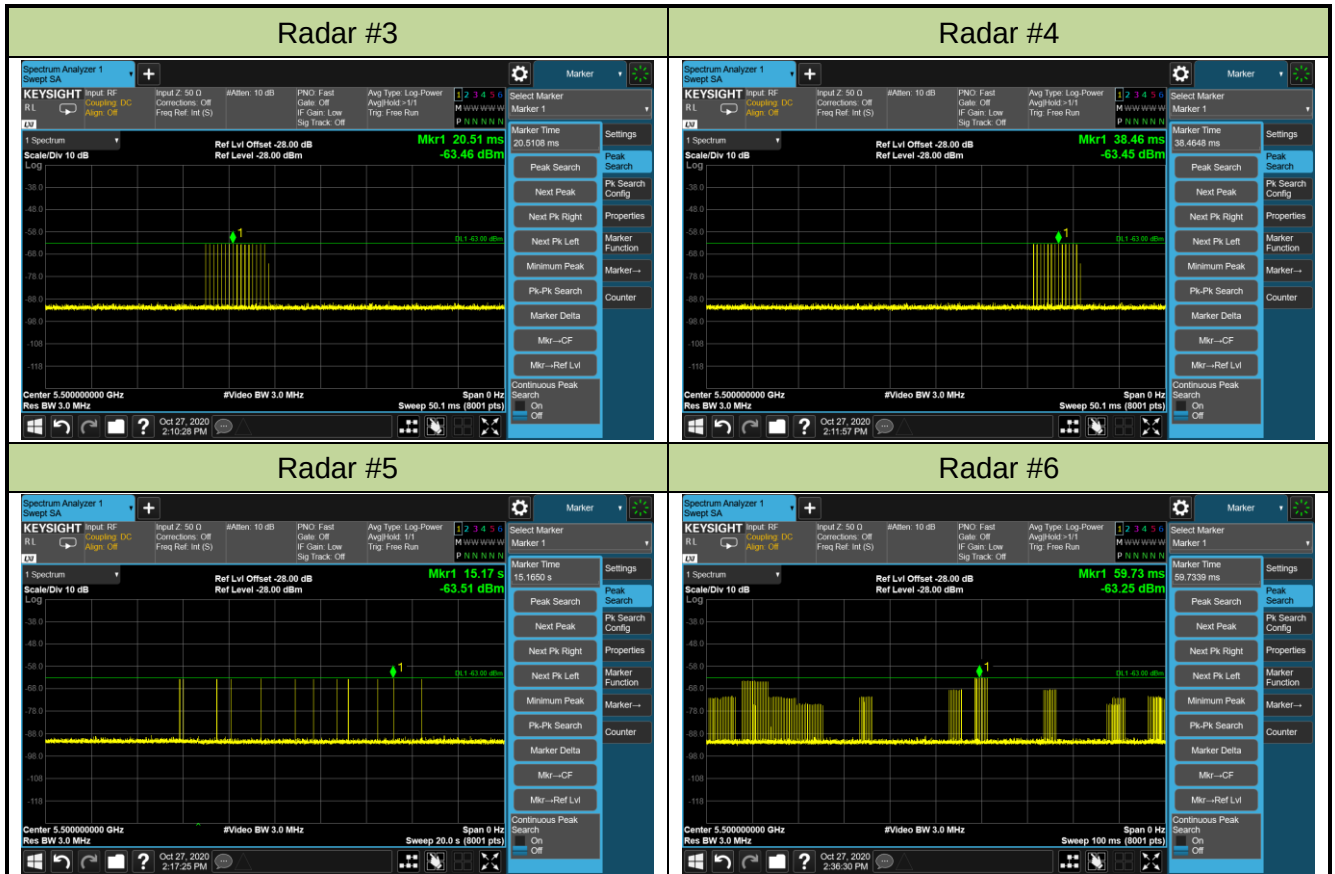
6.2. 校驗架構圖



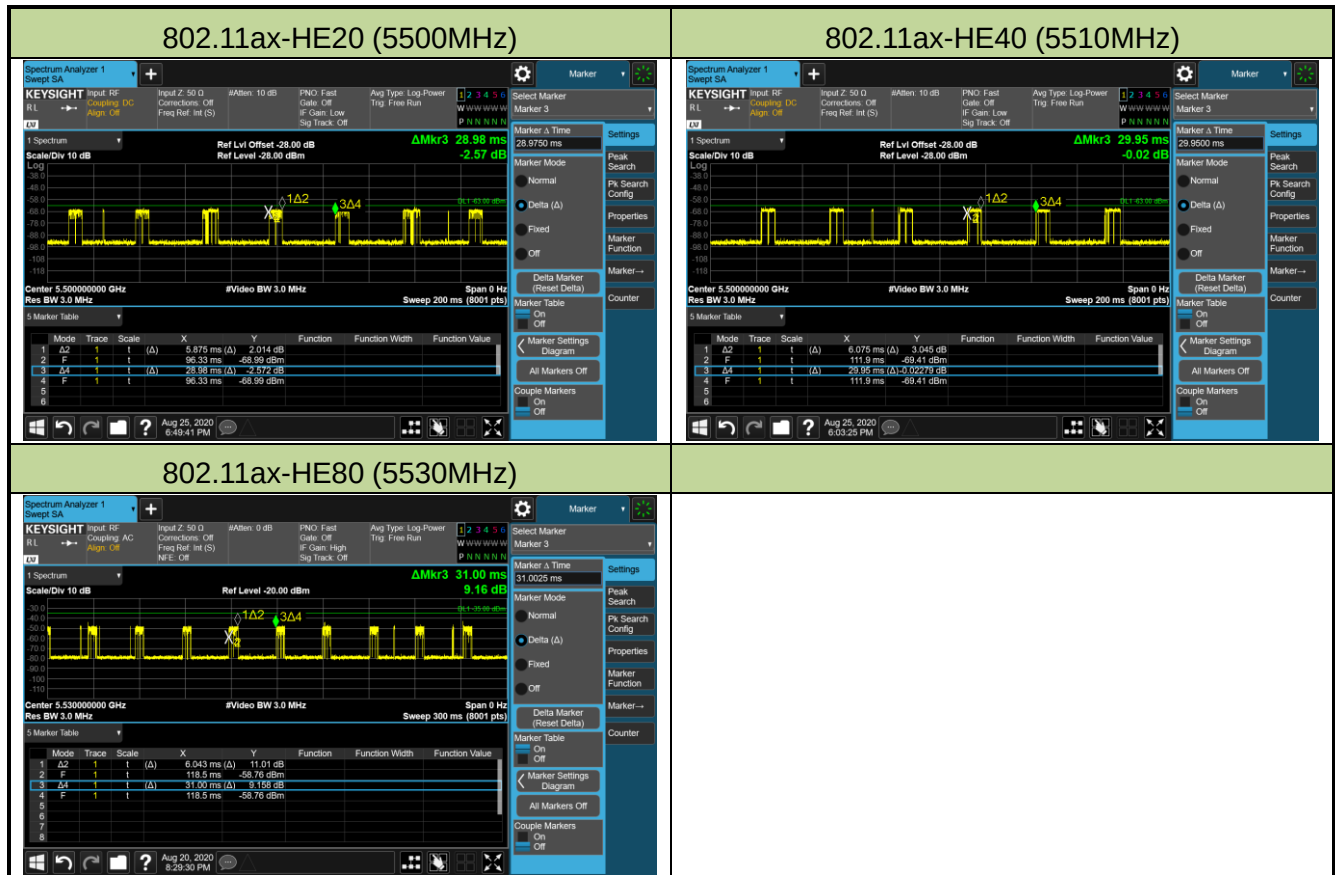
6.3. 校驗結果

待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/10/27
測試項目	雷達測試信號校驗		





待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/25
測試項目	占空比		



Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result
802.11ax-HE20	5500 MHz	20.27%	≥ 17%	Pass
802.11ax-HE40	5510 MHz	20.28%	≥ 17%	Pass
802.11ax-HE80	5530 MHz	19.49%	≥ 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

待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/25
測試項目	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	
5490	0	0	0	0	0	0	0	0	0	0	0%
5490.4 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%
5509.6 FH	1	1	1	1	1	1	1	1	1	1	100%
5510	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 19.00MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5509.6MHz – 5490.4MHz = 19.2MHz

Note 3: NII Detection Bandwidth Min. Limit (MHz): 19.00MHz x 100% = 19.00MHz.

待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/25
測試項目	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 37.62MHz. (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): 37.62MHz x 100% = 37.62MHz.

待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/24
測試項目	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 76.85MHz. (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): 76.85MHz x 100% = 76.85MHz.

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

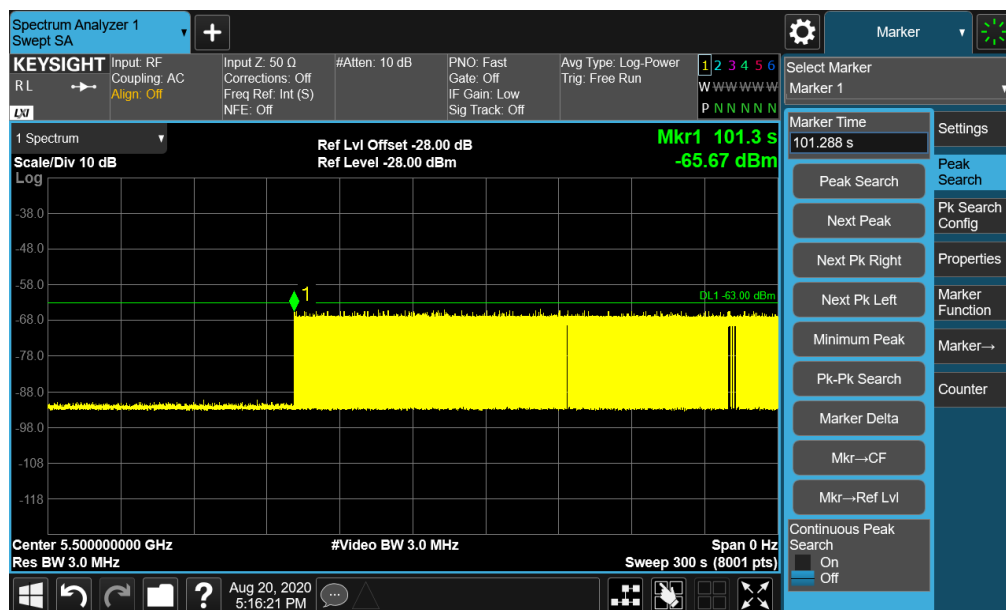
1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning 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

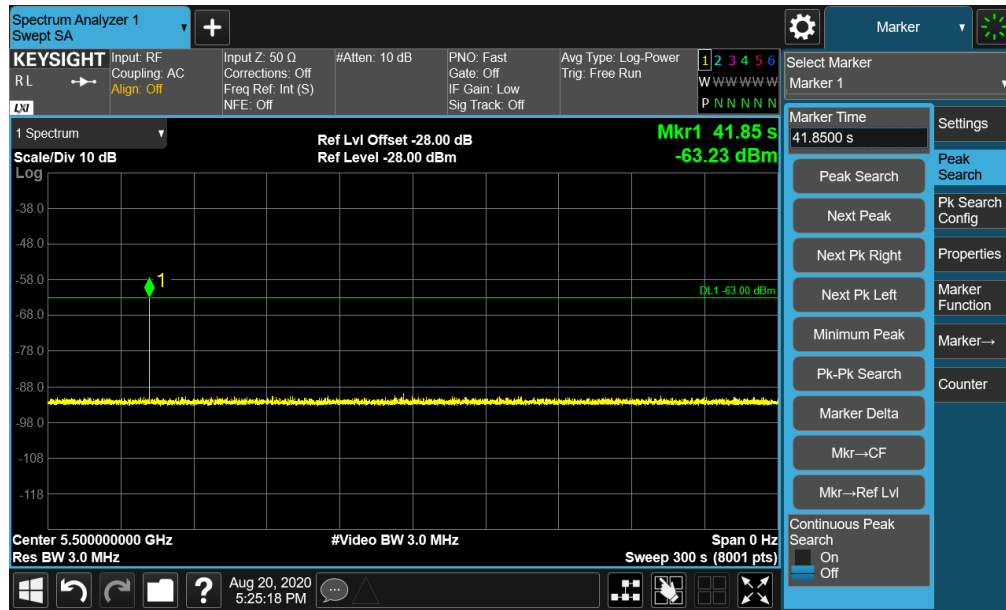
待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/20
測試項目	頻道可用性檢查時間量測		

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (41.3 sec). Initial beacons/data transmissions are indicated by marker 1 (101.3sec).

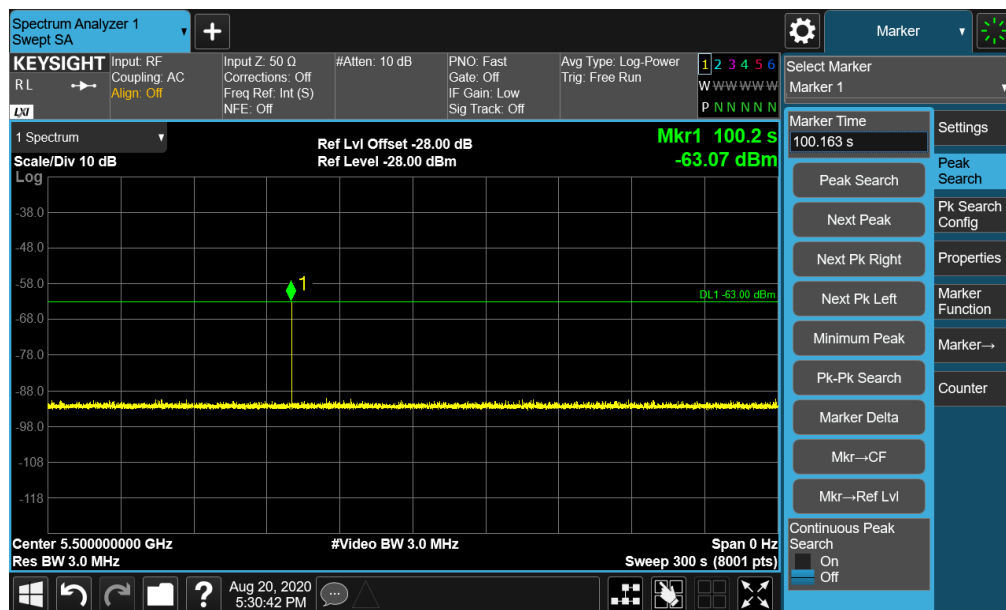
Initial Channel Availability Check Time for 802.11ax-HE20



Radar Burst at the Beginning of the Channel Availability Check Time for 802.11ax-HE20



Radar Burst at the End of the Channel Availability Check Time for 802.11ax-HE20



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。

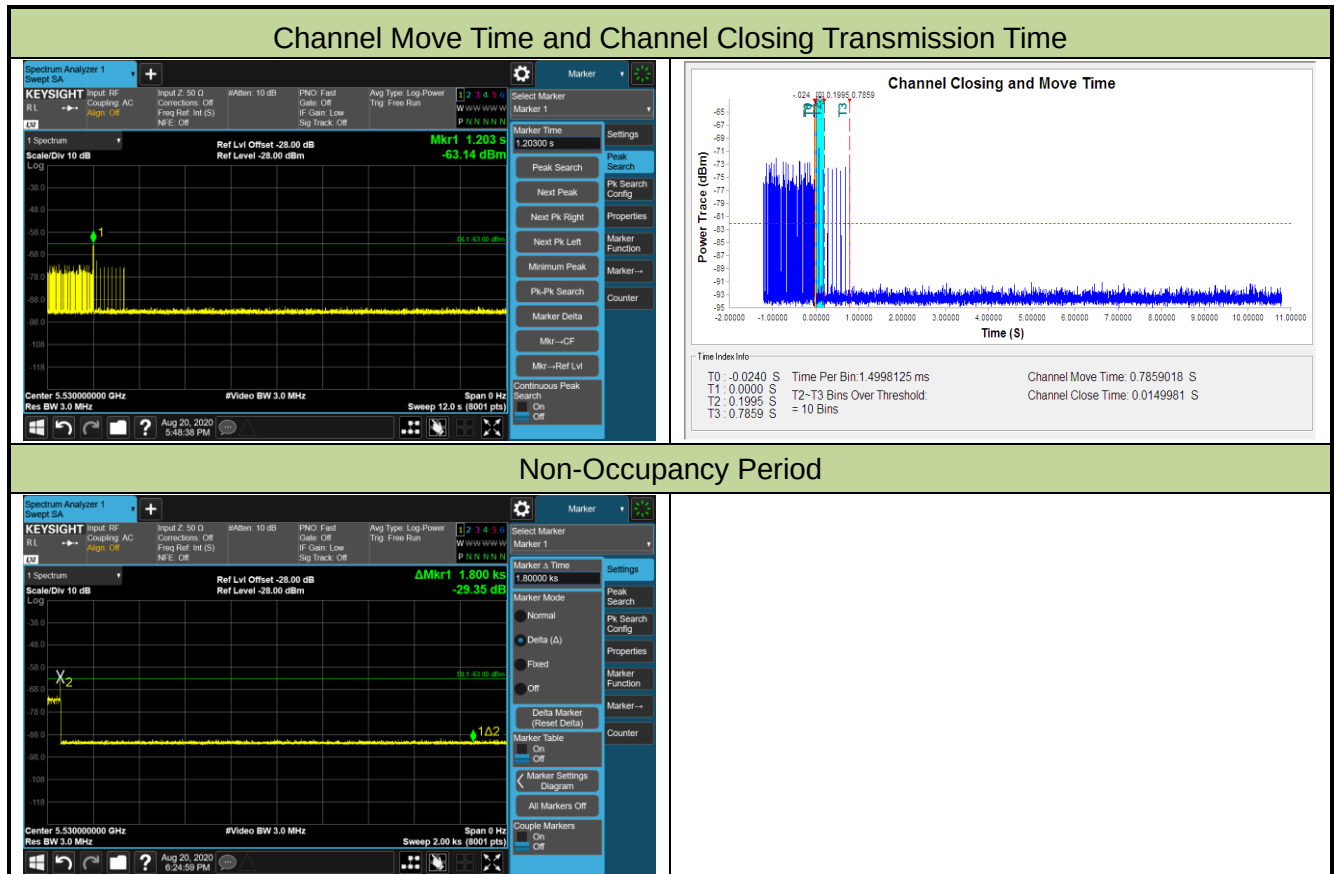
不可佔用期間：某一頻道已被頻道可用性檢查或”服務中”監視顯示含有雷達系統，至少須有30 分鐘的不可佔用期間。不可佔用期間起始於偵測到雷達系統的當時。

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	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/20
測試項目	Channel Move Time and Channel Closing Transmission Time (802.11ax-HE80 mode - 5530MHz)		



項目	結果	限值
	Type 0	
頻率移動時間(s)	0.786s	<10s
頻道關閉傳輸時間(ms)	15ms	< 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	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/25
測試項目	Radar Statistical Performance Check (802.11ax-HE20 – 5500MHz) (AP Mode)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	1	3066	18	1
2	5491.1	1	618	86	1
3	5492.0	1	718	74	1
4	5492.7	1	818	65	1
5	5493.4	1	598	89	1
6	5494.1	1	638	83	1
7	5494.7	1	538	98	1
8	5495.4	1	698	76	1
9	5496.1	1	658	81	1
10	5496.8	1	838	63	1
11	5497.5	1	678	78	1
12	5498.2	1	898	59	1
13	5498.9	1	878	61	1
14	5499.5	1	578	92	1
15	5500.0	1	918	58	1
16	5500.7	1	2784	19	1
17	5501.4	1	2732	20	1
18	5502.1	1	1742	31	1
19	5502.7	1	828	64	1
20	5503.4	1	1870	29	1
21	5504.0	1	2968	18	0
22	5504.7	1	1049	51	1
23	5505.4	1	2537	21	1
24	5506.1	1	2567	21	1
25	5506.7	1	2780	19	1
26	5507.4	1	906	59	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5508.0	1	2199	24	1
28	5508.7	1	583	91	1
29	5509.1	1	712	75	1
30	5509.6	1	2381	23	1
Detection Percentage (%)					96.7%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	5	225	28	1
2	5491.1	3.1	166	24	1
3	5492.0	3.1	217	28	1
4	5492.7	4.1	199	27	1
5	5493.4	4.2	218	28	1
6	5494.1	1.1	188	25	1
7	5494.7	3.4	193	29	1
8	5495.4	4.5	181	27	0
9	5496.1	3.8	212	27	1
10	5496.8	2.3	177	25	1
11	5497.5	1.5	152	25	1
12	5498.2	3.6	215	24	1
13	5498.9	2.2	227	28	0
14	5499.5	3.8	187	24	1
15	5500.0	4.8	198	25	0
16	5500.7	3.2	161	25	1
17	5501.4	3	215	27	1
18	5502.1	2.8	215	26	1
19	5502.7	3.3	208	29	1
20	5503.4	1.3	203	23	1
21	5504.0	1	206	25	1
22	5504.7	2.2	211	28	1
23	5505.4	4.7	187	27	1
24	5506.1	1.5	217	25	1
25	5506.7	4.7	203	28	1
26	5507.4	2.3	228	28	1
27	5508.0	3	230	25	1
28	5508.7	3.2	151	25	1
29	5509.1	4.6	202	28	1
30	5509.6	4.5	154	27	0
Detection Percentage (%)					86.7%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	9.9	274	18	1
2	5491.1	8.2	298	17	0
3	5492.0	6.4	350	17	1
4	5492.7	8.8	357	18	1
5	5493.4	9.3	460	17	1
6	5494.1	6.3	280	18	1
7	5494.7	7.6	221	18	1
8	5495.4	7	430	18	1
9	5496.1	7.9	355	18	1
10	5496.8	7.8	333	17	1
11	5497.5	9.5	369	17	1
12	5498.2	6.8	385	17	0
13	5498.9	6.2	221	17	1
14	5499.5	9.3	443	17	1
15	5500.0	7.8	490	18	1
16	5500.7	8.1	381	17	1
17	5501.4	9.1	310	17	0
18	5502.1	7.8	475	16	1
19	5502.7	9.1	467	17	1
20	5503.4	8.8	226	17	1
21	5504.0	9.8	278	17	1
22	5504.7	6.3	476	17	1
23	5505.4	8.5	468	16	1
24	5506.1	7.3	388	18	1
25	5506.7	9	243	18	1
26	5507.4	8.4	420	17	0
27	5508.0	9.4	302	18	1
28	5508.7	7.3	280	16	1
29	5509.1	7.3	237	16	1
30	5509.6	10	456	16	0
Detection Percentage (%)					83.3%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	15.2	299	12	1
2	5491.1	11.6	383	14	1
3	5492.0	15.6	440	13	1
4	5492.7	11.2	207	13	0
5	5493.4	16.5	411	15	1
6	5494.1	15.6	237	12	0
7	5494.7	14.6	308	16	1
8	5495.4	14.9	279	15	1
9	5496.1	13.8	236	14	0
10	5496.8	18.3	295	12	1
11	5497.5	15.2	284	13	1
12	5498.2	12.4	246	15	1
13	5498.9	17.1	498	13	1
14	5499.5	18.8	282	13	1
15	5500.0	12.1	464	14	1
16	5500.7	11.2	288	16	1
17	5501.4	15.9	302	13	1
18	5502.1	13.1	343	14	1
19	5502.7	11.8	426	14	1
20	5503.4	18.8	385	15	0
21	5504.0	16.6	453	14	1
22	5504.7	12.4	407	16	1
23	5505.4	17.3	395	16	0
24	5506.1	11.4	238	15	1
25	5506.7	18	268	14	1
26	5507.4	19.7	427	13	1
27	5508.0	19.1	474	14	1
28	5508.7	17.6	234	16	1
29	5509.1	14.9	261	12	1
30	5509.6	16.4	364	13	1
Detection Percentage (%)					83.3%

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

test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (96.7\% + 86.7\% + 83.3\% + 83.3\%) / 4 = 87.5\% (>80\%)$

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	5498.0	1
3	5500.0	1	18	5496.8	1
4	5500.0	1	19	5494.0	1
5	5500.0	0	20	5492.8	1
6	5500.0	1	21	5506.8	1
7	5500.0	1	22	5502.4	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	5497.2	1	26	5501.6	0
12	5497.2	1	27	5507.6	1
13	5496.0	1	28	5507.6	1
14	5493.2	1	29	5503.2	1
15	5495.6	1	30	5504.4	1
Detection Percentage (%)					93.3%

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	71.2	12	1435		708.139
2	2	89.4	12	1516		289.027
3	3	67.7	12	1412	1322	361.614
4	2	97.9	12	1684		532.291
5	2	77.3	12	1129		282.269
6	3	53.9	12	1735	1226	319.586
7	3	96.3	12	1075	1263	561.263
8	2	58	12	1711		228.44
9	3	65.8	12	1241	1810	434.357
10	2	65.6	12	1388		643.804
11	1	84.8	12			319.741
12	1	84.8	12			765.129
13	2	72.5	12	1000		348.686
14	3	75.9	12	1473	1296	634.943

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	88.4	13	1588		245.94
2	1	70.9	13			622.12
3	2	73.2	13	1602		241.87
4	2	58.8	13	1796		219.25
5	3	77.5	13	1640	1708	569.06
6	3	59.8	13	1954	1716	545.04
7	1	74.4	13			539.89
8	1	92.7	13			40.54
9	2	81	13	1778		6.77
10	2	91.9	13	1475		434.72
11	2	75.9	13	1997		778.8
12	2	98.8	13	1840		66.4

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	55.4	9	1290	1878	668.477
2	3	73.1	9	1119	1495	295.3
3	2	78.7	9	1814		65.08
4	1	99.1	9			1.7
5	2	66.6	9	1592		559.45
6	2	94.8	9	1919		706.66
7	2	67.3	9	1743		40.28
8	1	93.2	9			655.1
9	3	80.9	9	1079	1240	86.06
10	2	91.5	9	1752		410.81
11	2	55	9	1333		507.29
12	2	56	9	1907		633.98
13	1	74.2	9			370.42
14	3	63.9	9	1988	1261	347.3
15	1	82.4	9			416.3
16	2	58.6	9	1626		304.7

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	99.8	8			69.693
2	3	99.8	8	1811	1929	119.551
3	2	71.3	8	1080		176.85
4	1	51.7	8			103.45
5	2	57.7	8	1905		189.32
6	3	65.1	8	1665	1204	336.83
7	2	73.2	8	1838		597.54
8	1	78.4	8			595.68
9	2	91.9	8	1807		208.84
10	3	79.3	8	1520	1423	274.14
11	2	90.8	8	1162		761.48
12	1	65.7	8			437.71
13	2	80.5	8	1126		263.56
14	2	78.3	8	1623		672.9
15	1	93.9	8			209

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	78.7	14	1903		314.272
2	1	54.5	14			406.62
3	2	87.1	14	1369		407.99
4	3	95.3	14	1984	1312	558.19
5	2	86.9	14	1967		402.59
6	2	67.2	14	1240		376.07
7	1	93.3	14			139.11
8	1	61.5	14			333.97
9	3	94	14	1361	1214	215.87
10	1	92.3	14			362.81
11	1	88.9	14			488.03
12	2	74.5	14	1403		496.32
13	1	87.2	14			507.01
14	2	50.5	14	1848		359.04
15	2	55.1	14	1720		26.24
16	2	78.7	14	1510		141.63
17	2	73	14	1313		201.01
18	2	64.3	14	1295		405.6
19	1	91.8	14			397.6
20	2	92.9	14	1696		128.1

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	78.2	15			372.193
2	2	78.4	15	1014		106.075
3	2	53.6	15	1741		61.02
4	1	62.8	15			177.12
5	2	73.8	15	1687		280.5
6	1	97.9	15			584.11
7	2	60.8	15	1534		32.95
8	3	60.3	15	1155	1025	584.22
9	2	92.8	15	1915		189.47
10	1	50.3	15			433.99
11	3	54.7	15	1909	1474	430.09
12	2	59.4	15	1669		333.89
13	1	91.9	15			258.06
14	2	84.3	15	1876		145.34
15	2	88.8	15	1196		45.34
16	2	66.9	15	1427		94.83
17	2	80	15	1056		261.18
18	3	69.4	15	1493	1968	200.8
19	2	70.6	15	1765		14.8
20	2	56.2	15	1967		581.9

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	91.3	14	1147		311.468
2	2	52.4	14	1122		482.16
3	3	69	14	1230	1813	517.92
4	2	54.9	14	1375		161.19
5	2	81.6	14	1394		447.93
6	1	71	14			394.85
7	3	74.5	14	1559	1364	465.21
8	3	63.1	14	1893	1774	232.51
9	1	95.6	14			88.06
10	3	94.4	14	1411	1732	276.01
11	2	76.8	14	1036		573.81
12	2	50.6	14	1020		34.23
13	1	90	14			407.8
14	2	82.2	14	1334		189.04
15	2	91	14	1820		168.91
16	2	60	14	1908		205.25
17	3	71.6	14	1895	1604	485.6
18	3	75.1	14	1403	1670	98.4
19	1	91.9	14			85.4
20	2	58.1	14	1588		560.9

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	95.8	19	1555		727.744
2	2	66.8	19	1562		809.89
3	3	80.5	19	1509	1825	257.71
4	2	96.8	19	1564		797.14
5	1	65.3	19			161.02
6	2	54	19	1833		499.47
7	2	88.7	19	1688		711.41
8	3	64.7	19	1294	1936	529.99
9	2	60	19	1570		114.87
10	2	54.4	19	1090		486.92
11	2	67.7	19	1585		167
12	1	70.5	19			545.7

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	74.3	10	1896		211.576
2	3	64.4	10	1143	1515	2.112
3	2	77.7	10	1466		55.366
4	2	66.9	10	1687		248.999
5	1	74.7	10			855.172
6	1	81.8	10			391.005
7	2	93.8	10	1703		737.618
8	2	96.1	10	1102		126.772
9	1	58.7	10			824.585
10	1	91.4	10			628.088
11	1	62.6	10			656.861
12	3	71.6	10	1937	1236	415.554
13	1	57.1	10			402.577

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	86.6	5	1204	1159	922.891
2	2	95.4	5	1509		50.98
3	3	53.5	5	1462	1921	635.51
4	2	83.9	5	1879		589.8
5	1	94.2	5			861.21
6	1	59.8	5			582.49
7	2	80.6	5	1322		882.63
8	3	57.4	5	1719	1926	217.2

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	70.6	17	1508		59.856
2	2	74.5	17	1039		587.753
3	3	80.6	17	1255	1071	215.627
4	1	71.8	17			4.8
5	2	80.6	17	1198		195.843
6	1	73.5	17			295.467
7	2	67.6	17	1696		173.33
8	3	92.9	17	1616	1267	222.423
9	2	56.7	17	1696		150.857
10	3	98	17	1062	1515	463.15
11	2	91.4	17	1518		446.833
12	2	98.1	17	1504		548.287
13	1	54.2	17			103.2
14	1	75.9	17			369.763
15	3	84.3	17	1507	1210	44.817
16	3	69.9	17	1093	1179	344.4
17	2	77.6	17	1497		521.333
18	1	68.9	17			338.367

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	76.4	17	1452		395.946
2	1	51	17			596.968
3	3	85.4	17	1861	1378	657.025
4	3	70.9	17	1922	1918	11.603
5	3	65.5	17	1062	1607	567.641
6	1	92.7	17			242.438
7	3	78	17	1842	1275	273.976
8	2	53.8	17	1540		192.174
9	2	90.2	17	1762		386.971
10	1	66.4	17			452.749
11	2	82.3	17	1919		582.856
12	3	60.4	17	1887	1119	391.254
13	2	91.8	17	1485		638.342
14	2	87	17	1555		259.589
15	2	66.8	17	1147		682.747
16	2	50.3	17	1433		122.765
17	1	98.1	17			685.782

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	56.2	14	1566		254.614
2	2	67.8	14	1978		136.22
3	2	84.4	14	1873		14.55
4	2	67.2	14	1005		133.86
5	3	54.8	14	1271	1021	543.74
6	3	56.2	14	1328	1449	1152.77
7	1	62.1	14			440.18
8	2	70.1	14	1550		1091.82
9	3	70.3	14	1912	1610	327.3
10	2	58.8	14	1787		791.2

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	79.1	7	1082		814.755
2	1	64.2	7			340.84
3	2	52.3	7	1969		98.61
4	2	96.6	7	1693		899.97
5	3	51.7	7	1484	1196	1001.39
6	3	60.9	7	1677	1009	99.48
7	1	99.2	7			651.13
8	2	58.2	7	1193		452.99
9	2	56.3	7	1329		997.2
10	2	58.8	7	1390		314.2

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	52.3	13	1935		766.746
2	1	64.1	13			819.193
3	3	88.9	13	1716	1013	778.816
4	2	95.1	13	1108		768.429
5	2	85.1	13	1730		641.712
6	1	66.1	13			185.205
7	2	61.1	13	1752		271.338
8	2	88.9	13	1110		500.812
9	1	51.5	13			171.095
10	2	87	13	1801		855.788
11	2	70.6	13	1002		816.231
12	2	61.6	13	1773		6.654
13	2	99.4	13	1552		7.077

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	67.1	10	1499		654.55
2	2	54.2	10	1880		262.11
3	2	86.5	10	1049		703.33
4	2	54.9	10	1331		418.41
5	2	69.3	10	1537		357.16
6	3	78.7	10	1495	1589	308.48
7	3	84.8	10	1206	1390	138.85
8	2	61.7	10	1194		560.47
9	1	89.5	10			114.49
10	1	78.6	10			580.88
11	2	54.8	10	1067		585.43
12	3	72.6	10	1760	1173	638.69
13	1	79.4	10			438.01
14	1	58.3	10			28.74
15	2	87.4	10	1334		210
16	2	78.5	10	1626		43.4

Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	83.8	19	1641		349.129
2	2	91.2	19	1431		482.1
3	3	51.4	19	1029	1018	879.63
4	2	66.5	19	1699		189.73
5	3	90.6	19	1370	1071	961.87
6	1	88.3	19			273.07
7	2	62.8	19	1918		858.97
8	3	60.6	19	1258	1572	195.04
9	3	60.3	19	1532	1537	940.66
10	1	53.8	19			906.45
11	3	63.4	19	1150	1474	38.6
12	2	64.2	19	1383		956.8

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	82.9	16			828.766
2	2	74.9	16	1117		3.527
3	2	54.2	16	1229		66.606
4	2	90.3	16	1517		356.049
5	2	72.3	16	1713		569.402
6	2	95.1	16	1757		521.205
7	3	83.5	16	1192	1204	707.158
8	1	97.3	16			916.462
9	3	60.2	16	1431	1460	592.755
10	2	90.2	16	1461		126.568
11	1	62.5	16			285.981
12	3	93	16	1021	1498	264.454
13	3	88.7	16	1940	1763	614.577

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	54	9	1947		731.286
2	3	86.5	9	1544	1423	723.09
3	3	88.2	9	1630	1255	951.91
4	1	94.2	9			817.68
5	1	55.9	9			290.59
6	1	93.4	9			770.52
7	1	76.7	9			421.23
8	1	56.5	9			360.49
9	2	96.5	9	1950		616.92
10	3	56.6	9	1978	1868	327.7
11	3	62.8	9	1564	1574	226.5
12	2	56.5	9	1953		56

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	61.3	6	1156		752.528
2	2	70.1	6	1094		539.16
3	2	54.8	6	1056		16.34
4	1	58	6			209.8
5	2	93.2	6	1233		466.58
6	2	82.7	6	1093		260.52
7	2	62.1	6	1519		238.76
8	2	59.9	6	1932		777.75
9	1	96.3	6			553.16
10	2	59	6	1762		490.35
11	2	87.8	6	1744		500.78
12	1	84.3	6			689.13
13	3	69.5	6	1770	1689	670.6
14	3	70.1	6	1392	1935	270.9
15	2	62.4	6	1017		40.9

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	98.2	7	1876	1873	420.13
2	1	80.3	7			761.15
3	2	69.8	7	1275		263.1
4	3	95.8	7	1826	1382	466.9
5	2	59.5	7	1863		617.3
6	3	66.3	7	1387	1502	17.44
7	1	69.3	7			546.76
8	1	85.9	7			731.82
9	2	82.4	7	1962		622.29
10	3	68.3	7	1463	1193	468.93
11	1	60.6	7			310.84
12	3	68.8	7	1287	1196	693.84
13	3	62.4	7	1021	1266	350.51
14	2	76.3	7	1238		382.5
15	2	98.2	7	1779		611.2

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	68.7	18	1219	1208	141.331
2	2	69.5	18	1169		43.866
3	3	84.1	18	1690	1937	901.546
4	1	98.9	18			69.059
5	1	88.4	18			467.642
6	2	73.4	18	1853		587.135
7	2	89.9	18	1822		89.698
8	2	89	18	1581		233.762
9	2	50.3	18	1845		299.955
10	3	91.6	18	1242	1680	152.118
11	2	66.7	18	1221		45.761
12	2	74.6	18	1995		318.954
13	2	92.6	18	1373		16.277

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	71.7	15			597.974
2	3	76.4	15	1818	1649	456.443
3	2	60.3	15	1142		727.386
4	1	75	15			102.389
5	3	97.2	15	1295	1654	225.082
6	2	72.6	15	1276		45.135
7	2	50.9	15	1135		441.928
8	2	85.5	15	1003		38.922
9	3	71.8	15	1795	1896	516.595
10	3	86.1	15	1860	1400	41.048
11	2	63.6	15	1574		732.901
12	2	84	15	1623		586.154
13	3	64.6	15	1251	1666	652.777

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	82	7			1239.03
2	1	81.8	7			1120.087
3	1	81	7			480.243
4	3	66.7	7	1952	1961	67.78
5	3	76.3	7	1223	1690	567.807
6	3	51.5	7	1682	1044	239.713
7	1	64.1	7			410.15
8	2	70.9	7	1430		1267.067
9	1	85.5	7			837.433

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	64.1	5			100.805
2	2	64.8	5	1201		438.54
3	1	53.7	5			528.96
4	1	98.6	5			156.9
5	2	96.8	5	1058		441.81
6	1	51.3	5			115.69
7	2	68.8	5	1454		259.77
8	1	97.2	5			26.73
9	2	70.4	5	1639		152.52
10	2	91.6	5	1101		588.86
11	1	75.5	5			210.86
12	2	100	5	1130		565.32
13	1	82.8	5			29.9
14	3	87	5	1399	1411	261.29
15	2	77.7	5	1934		502.5
16	2	93.8	5	1050		346.28
17	2	83.1	5	1274		168.01
18	3	57	5	1590	1500	72
19	3	87.9	5	1439	1056	539.8
20	3	59	5	1173	1877	239.9

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	65.9	20			367.761
2	1	51.5	20			283.62
3	2	56.9	20	1754		688.28
4	2	63.9	20	1247		360.16
5	3	66.6	20	1918	1950	382.69
6	2	60.6	20	1467		330.72
7	3	60.8	20	1244	1723	658.68
8	2	77.8	20	1445		41.14
9	3	76.3	20	1441	1932	685.4
10	1	50.4	20			140.5

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	85.6	5			105.658
2	2	63.4	5	1709		320.988
3	2	85.8	5	1911		414.067
4	2	52	5	1403		584.41
5	1	69.4	5			340.803
6	1	74.5	5			135.237
7	1	55.5	5			116.88
8	2	84	5	1987		362.843
9	2	70.7	5	1356		558.117
10	1	71.8	5			156.5
11	2	83.3	5	1986		356.593
12	3	78.6	5	1151	1311	17.317
13	1	75.7	5			143.15
14	2	76.6	5	1530		299.613
15	3	66.4	5	1098	1913	607.007
16	3	53.3	5	1295	1594	617.8
17	2	96.4	5	1699		336.033
18	3	50.8	5	1109	1115	534.067

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	67.5	5	1144		408.576
2	1	58.9	5			221.39
3	3	94.4	5	1051	1630	1175.22
4	1	94.7	5			253.74
5	1	96.1	5			342.32
6	2	58.4	5	1736		206.35
7	3	70.5	5	1462	1831	1115.74
8	1	70.4	5			983.44
9	2	64	5	1167		851.7
10	1	71	5			1137.5

Type 5 Radar Waveform_29

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	79.6	16	1342		635.745
2	2	77.5	16	1689		782.85
3	2	76.6	16	1328		800.51
4	1	66.8	16			453.92
5	3	93.8	16	1724	1592	914.75
6	2	51.9	16	1917		697.36
7	3	69.7	16	1787	1474	966.05
8	2	84.3	16	1077		854.59
9	1	89.6	16			143.46
10	1	73.8	16			793.81
11	3	52.1	16	1729	1902	310.8
12	3	99.2	16	1560	1517	804.1

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	55.9	13	1719		579.427
2	3	65.1	13	1001	1595	753.25
3	3	99.7	13	1630	1297	918.32
4	3	70.4	13	1327	1458	292.68
5	2	75	13	1814		672.3
6	2	67.6	13	1745		514.82
7	1	51	13			830.54
8	2	54.4	13	1310		389.61
9	3	84.1	13	1312	1923	719.04
10	2	77.1	13	1118		89.23
11	3	83.1	13	1716	1512	94.2
12	1	57.5	13			757.4

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	5490.4	1	16	5500.7	1
2	5491.1	1	17	5501.4	1
3	5492.0	1	18	5502.1	1
4	5492.7	1	19	5502.7	1
5	5493.4	1	20	5503.4	1
6	5494.1	1	21	5504.0	1
7	5494.7	1	22	5504.7	1
8	5495.4	1	23	5505.4	1
9	5496.1	1	24	5506.1	1
10	5496.8	1	25	5506.7	1
11	5497.5	1	26	5507.4	1
12	5498.2	1	27	5508.0	1
13	5498.9	1	28	5508.7	1
14	5499.5	1	29	5509.1	0
15	5500.0	1	30	5509.6	1
Detection Percentage (%)					96.7%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
22	5510	66	28	5499	84
37	5492	111	55	5496	165
57	5496	171	67	5508	201
83	5493	249	69	5497	207
90	5508	270	83	5507	249
--	--	--	84	5495	252

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5507	39	27	5510	81
22	5491	66	36	5505	108
24	5499	72	--	--	--
59	5493	177	--	--	--
65	5497	195	--	--	--
75	5509	225	--	--	--
96	5496	288	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5497	3	49	5504	147
4	5510	12	69	5510	207
10	5493	30	--	--	--
14	5496	42	--	--	--
35	5503	105	--	--	--
45	5509	135	--	--	--
74	5500	222	--	--	--
77	5494	231	--	--	--
88	5508	264	--	--	--

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
19	5490	57	59	5496	177
23	5497	69	72	5509	216
54	5507	162	93	5495	279
58	5506	174	--	--	--
61	5510	183	--	--	--
68	5491	204	--	--	--
79	5503	237	--	--	--
83	5500	249	--	--	--
93	5495	279	--	--	--
97	5508	291	--	--	--

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5510	6	77	5503	231
9	5498	27	90	5506	270
29	5503	87	--	--	--
37	5506	111	--	--	--
57	5509	171	--	--	--
85	5508	255	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
5	5498	15	33	5500	99
10	5501	30	51	5499	153
62	5510	186	62	5502	186
65	5508	195	--	--	--
73	5505	219	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5496	18	3	5510	9
22	5495	66	47	5508	141
25	5506	75	--	--	--
65	5505	195	--	--	--
75	5504	225	--	--	--
100	5499	300	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5492	24	9	5505	27
38	5495	114	23	5509	69
77	5505	231	81	5507	243
--	--	--	82	5490	246

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
27	5507	81	9	5494	27
38	5497	114	25	5493	75
45	5502	135	44	5496	132
57	5499	171	49	5510	147
60	5510	180	88	5498	264
68	5501	204	90	5502	270
93	5492	279	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
15	5492	45	71	5497	213
22	5504	66	93	5501	279
34	5508	102	100	5504	300
46	5507	138	--	--	--
73	5494	219	--	--	--

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
21	5497	63	50	5508	150
55	5499	165	69	5496	207
78	5501	234	71	5498	213
--	--	--	84	5510	252
--	--	--	94	5492	282

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
32	5491	96	7	5496	21
47	5501	141	8	5506	24
55	5508	165	51	5494	153
61	5492	183	76	5495	228
85	5502	255	82	5490	246
--	--	--	89	5493	267

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5501	12	10	5503	30
9	5506	27	52	5491	156
20	5505	60	77	5507	231
40	5504	120	96	5508	288

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
90	5501	270	64	5492	192
--	--	--	69	5496	207
--	--	--	83	5498	249

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
33	5496	99	17	5493	51
67	5502	201	19	5503	57
--	--	--	59	5491	177
--	--	--	98	5495	294

待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/25
測試項目	Radar Statistical Performance Check (802.11ax-HE40 mode – 5510MHz) (AP Mode)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	1	678	78	1
2	5492.5	1	698	76	1
3	5493.9	1	738	72	1
4	5495.4	1	818	65	1
5	5496.8	1	798	67	1
6	5498.3	1	658	81	1
7	5499.8	1	918	58	1
8	5501.2	1	838	63	1
9	5502.7	1	778	68	1
10	5503.0	1	878	61	1
11	5504.5	1	638	83	1
12	5505.9	1	898	59	1
13	5507.4	1	718	74	1
14	5508.8	1	558	95	1
15	5510.0	1	3066	18	1
16	5511.0	1	874	61	1
17	5512.3	1	2468	22	0
18	5513.6	1	1593	34	1
19	5514.9	1	1342	40	0
20	5516.2	1	2525	21	0
21	5517.6	1	2511	21	1
22	5518.9	1	1106	48	1
23	5520.2	1	1917	28	1
24	5521.5	1	2864	19	1
25	5522.8	1	1605	33	1
26	5524.1	1	2736	20	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5525.4	1	1772	30	1
28	5526.7	1	2118	25	1
29	5528.0	1	2486	22	1
30	5529.0	1	2612	21	1
Detection Percentage (%)					90%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	2.6	197	28	1
2	5492.5	3	216	24	1
3	5493.9	1	198	26	1
4	5495.4	3.6	186	25	1
5	5496.8	2.1	191	29	1
6	5498.3	4.7	185	25	1
7	5499.8	4.3	213	29	1
8	5501.2	2.4	161	27	1
9	5502.7	3.1	178	28	1
10	5503.0	4.4	164	28	1
11	5504.5	2.8	167	29	1
12	5505.9	2.8	217	26	1
13	5507.4	3.7	177	28	1
14	5508.8	3.9	207	25	1
15	5510.0	3.4	228	29	1
16	5511.0	1.8	155	26	1
17	5512.3	4	154	29	1
18	5513.6	1.1	203	28	1
19	5514.9	3.2	155	26	0
20	5516.2	3.4	162	23	1
21	5517.6	1.5	178	24	1
22	5518.9	4.4	168	24	1
23	5520.2	4.9	166	23	1
24	5521.5	4.5	212	25	0
25	5522.8	4.5	213	29	1
26	5524.1	1.9	164	27	1
27	5525.4	1.5	151	25	1
28	5526.7	3.5	224	23	1
29	5528.0	3.7	216	26	1
30	5529.0	3.5	150	27	1
Detection Percentage (%)					93.3%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	7.7	353	17	0
2	5492.5	9.1	426	16	1
3	5493.9	6.4	479	18	1
4	5495.4	6.2	267	17	1
5	5496.8	8	214	18	0
6	5498.3	6.3	388	17	1
7	5499.8	6	329	16	1
8	5501.2	9.7	226	17	1
9	5502.7	9.7	246	17	1
10	5503.0	8.2	468	18	1
11	5504.5	6.7	478	17	1
12	5505.9	7.9	428	16	1
13	5507.4	9.8	441	16	1
14	5508.8	7.8	468	16	1
15	5510.0	8.8	404	17	1
16	5511.0	9.5	290	17	0
17	5512.3	9.2	266	17	1
18	5513.6	9.5	297	17	1
19	5514.9	9.8	478	17	1
20	5516.2	6.3	285	18	1
21	5517.6	8.6	348	16	1
22	5518.9	6.1	329	17	1
23	5520.2	10	391	17	1
24	5521.5	6.5	390	18	1
25	5522.8	6.9	324	17	1
26	5524.1	6.8	498	17	1
27	5525.4	7.5	371	17	1
28	5526.7	10	498	16	1
29	5528.0	9.7	468	16	1
30	5529.0	9.5	234	18	1
Detection Percentage (%)					90%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	16.2	387	13	1
2	5492.5	12.5	292	13	1
3	5493.9	13.4	486	15	1
4	5495.4	11.9	327	16	0
5	5496.8	12	223	14	1
6	5498.3	15.9	312	13	0
7	5499.8	12.6	223	14	1
8	5501.2	19.1	479	13	0
9	5502.7	18.8	250	14	1
10	5503.0	18.2	205	15	1
11	5504.5	12.5	259	15	1
12	5505.9	13.8	231	14	1
13	5507.4	15.1	461	15	0
14	5508.8	14.7	250	15	1
15	5510.0	15.9	385	12	1
16	5511.0	11.4	363	14	1
17	5512.3	17	326	14	1
18	5513.6	14	292	16	1
19	5514.9	16.3	447	13	1
20	5516.2	19.6	441	14	1
21	5517.6	15.1	467	15	1
22	5518.9	17.9	496	16	1
23	5520.2	15.2	479	14	1
24	5521.5	14.4	214	15	0
25	5522.8	19.6	365	15	1
26	5524.1	11.9	293	14	0
27	5525.4	19.6	319	14	1
28	5526.7	18.5	460	12	0
29	5528.0	16.7	448	14	1
30	5529.0	17.3	281	14	1
Detection Percentage (%)					76.7%

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

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (90\% + 93.3\% + 90.0\% + 76.7\%) / 4 = 87.5\% (>80\%)$

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	5495.0	1
2	5510.0	1	17	5498.2	1
3	5510.0	0	18	5498.6	1
4	5510.0	1	19	5498.6	1
5	5510.0	1	20	5495.8	1
6	5510.0	1	21	5525.8	1
7	5510.0	1	22	5522.6	1
8	5510.0	1	23	5523.4	1
9	5510.0	1	24	5521.4	0
10	5510.0	1	25	5525.0	1
11	5497.0	1	26	5523.0	1
12	5495.8	1	27	5526.2	1
13	5499.0	1	28	5523.0	1
14	5497.4	1	29	5523.8	1
15	5497.4	1	30	5524.2	1
Detection Percentage (%)					93.3%

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	96.6	8	1568	1246	584.875
2	3	64	8	1072	1391	28.693
3	3	74.4	8	1119	1302	78.127
4	2	57.8	8	1481		607.64
5	2	71.5	8	1675		555.773
6	1	78.3	8			630.247
7	2	86	8	1000		224.71
8	2	96.4	8	1587		438.023
9	2	52.3	8	1358		401.877
10	2	72.3	8	1467		200.76
11	2	62.8	8	1128		208.023
12	1	56.3	8			412.817
13	3	77.8	8	1902	1905	184.53
14	1	92.1	8			23.843
15	2	99.1	8	1829		436.267
16	1	73.4	8			504.1
17	2	82.2	8	1287		434.033
18	3	57.5	8	1024	1822	409.267

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	90.1	12	1153		370.088
2	3	71.2	12	1787	1877	98.56
3	2	91.8	12	1145		483.44
4	3	84.8	12	1542	1463	550.94
5	3	86.7	12	1769	1635	610.97
6	2	71.4	12	1109		560.6
7	1	81.4	12			578.42
8	1	90.6	12			715.72
9	2	84.4	12	1080		299.68
10	2	88.6	12	1261		472.43
11	2	85.5	12	1332		474.47
12	1	82.2	12			714.3
13	2	88.2	12	1342		220.56
14	2	87.2	12	1031		200.16
15	3	85.8	12	1454	1562	549.6
16	1	94.1	12			475

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	83.4	7	1794		643.997
2	1	62.9	7			373.83
3	3	86.4	7	1327	1654	582.96
4	3	65.3	7	1635	1958	500.31
5	2	72.3	7	1729		1073.72
6	2	73	7	1526		520.22
7	1	69.2	7			1253.1
8	1	89.9	7			692.9

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	57.2	19	1062	1154	276.693
2	3	89.9	19	1493	1602	318.021
3	1	59.5	19			433.792
4	3	59	19	1902	1437	443.843
5	1	65.4	19			534.224
6	2	57.9	19	1652		711.425
7	1	79.5	19			528.675
8	3	93.9	19	1713	1015	995.086
9	1	58.1	19			377.987
10	3	95.1	19	1477	1768	873.018
11	2	68.2	19	1281		474.509

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	63.8	10	1315		607.036
2	2	76.6	10	1085		923.58
3	2	67.1	10	1586		697.79
4	2	92.7	10	1917		183.13
5	3	95.6	10	1069	1731	426.96
6	3	62.2	10	1751	1025	470.77
7	3	83.9	10	1333	1804	347.75
8	2	91.1	10	1389		269.51
9	1	80.7	10			907.56
10	1	60.7	10			553.64
11	2	90.4	10	1893		133.8
12	2	71.4	10	1598		725.8

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	50	5			620.409
2	3	63.7	5	1638	1432	99.853
3	2	54	5	1031		38.807
4	2	95	5	1525		499.19
5	2	95.8	5	1030		494.883
6	3	98	5	1454	1724	614.847
7	3	65.1	5	1300	1692	161.72
8	1	65	5			105.253
9	1	88.6	5			521.497
10	1	99.7	5			430.5
11	1	57.7	5			139.103
12	1	76.8	5			342.437
13	1	61.6	5			512.27
14	1	72.9	5			540.643
15	3	92.3	5	1613	1548	85.007
16	2	56.1	5	1347		653.1
17	3	69.1	5	1950	1983	642.333
18	2	59.7	5	1816		198.767

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	98.2	7	1499		54.428
2	2	77.8	7	1691		210.51
3	2	56.7	7	1445		213.477
4	2	55.2	7	1909		343.04
5	1	71.9	7			61.323
6	3	76.2	7	1784	1936	540.197
7	3	81.1	7	1702	1551	79.5
8	2	82.2	7	1298		328.543
9	2	70.2	7	1148		324.617
10	2	77	7	1596		300.39
11	1	60.4	7			390.243
12	2	50.5	7	1999		57.257
13	3	98.1	7	1402	1885	37.69
14	2	89.7	7	1182		551.433
15	3	94.4	7	1274	1050	500.257
16	1	70.6	7			444.5
17	3	90.3	7	1479	1452	47.033
18	3	65.3	7	1232	1905	427.767

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	58.6	8	1808		353.23
2	3	78.6	8	1403	1971	21.893
3	3	56.3	8	1378	1435	87.85
4	2	81.1	8	1998		493.57
5	1	99	8			326.85
6	1	62.3	8			395.25
7	1	88.3	8			6.68
8	2	51.1	8	1208		401.95
9	2	96.2	8	1293		295.31
10	3	91	8	1348	1358	588.03
11	2	51.4	8	1393		131.54
12	1	93.7	8			559.27
13	3	79.9	8	1180	1002	84.76
14	3	84.1	8	1870	1853	346.75
15	2	90.3	8	1876		274.2
16	2	71.9	8	1905		124.43
17	1	86	8			558.8
18	3	88.2	8	1285	1928	216.5
19	2	69.5	8	1763		148.7
20	1	73.2	8			320.6

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	58.7	8	1914	1688	1225.78
2	1	95.2	8			860.837
3	2	65.9	8	1221		1235.473
4	1	61.8	8			875.25
5	1	76.5	8			876.957
6	2	78.2	8	1815		852.823
7	2	50.6	8	1352		875.05
8	3	88.7	8	1359	1448	204.437
9	3	95.2	8	1667	1125	453.133

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	86.8	17	1670		247.135
2	2	82.4	17	1963		623.63
3	2	68.5	17	1371		210.42
4	1	69.5	17			1190.59
5	3	95.4	17	1610	1224	256.56
6	2	55.2	17	1045		964.11
7	2	88.9	17	1413		75.04
8	2	85.5	17	1525		449.22
9	1	99.2	17			591.7
10	2	84.1	17	1159		647

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	71.1	15	1684		175.563
2	2	72	15	1932		854.19
3	2	76.4	15	1416		740.72
4	1	76.3	15			245.41
5	2	90.8	15	1318		555.08
6	1	71.3	15			440.07
7	2	87.7	15	1056		24.5
8	2	60.8	15	1878		254.37
9	3	87.8	15	1571	1903	784.34
10	3	93.1	15	1227	1863	886.3
11	2	58.3	15	1290		794.7
12	2	54.5	15	1163		293.6

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	53.2	12	1808	1333	259.941
2	2	92.1	12	1616		364.475
3	3	84.1	12	1435	1351	327.532
4	1	78.5	12			387.123
5	2	85.7	12	1801		464.804
6	3	65.3	12	1795	1043	604.485
7	3	71.9	12	1360	1665	286.386
8	2	81.2	12	1093		563.627
9	1	94.6	12			112.468
10	2	69.1	12	1849		471.969
11	2	95.7	12	1650		126.641
12	2	95.9	12	1636		578.492
13	2	75.1	12	1388		449.013
14	3	63.5	12	1710	1272	470.474
15	2	63.9	12	1117		333.775
16	1	89.4	12			35.756
17	2	96.9	12	1040		299.237
18	1	80.1	12			180.158
19	1	97	12			441.879

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	53.3	20	1639	1073	145.199
2	2	72.7	20	1141		1325.36
3	3	68.3	20	1935	1564	889.01
4	1	92.9	20			168.41
5	3	98.8	20	1387	1135	528.82
6	2	98.5	20	1585		701.23
7	1	53.3	20			1441.9
8	1	69	20			1317.9

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	70.8	16	1187		487.001
2	1	56.9	16			222.432
3	3	92.4	16	1173	1375	151.47
4	1	81.2	16			366.29
5	1	73.8	16			6.12
6	2	81.9	16	1100		74.32
7	3	88.5	16	1145	1414	259.94
8	2	60.5	16	1467		70.77
9	2	50.9	16	1141		150.9
10	1	90.3	16			71.35
11	3	96.6	16	1590	1420	573.73
12	1	69.6	16			369.82
13	3	59.1	16	1595	1275	517.79
14	1	69.3	16			447.08
15	2	67	16	1795		369.95
16	2	82.6	16	1570		284.21
17	2	100	16	1360		424.9
18	2	61.5	16	1406		164.9
19	3	80.3	16	1370	1185	245.2
20	3	78.1	16	1271	1754	575.3

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	65.2	16			623.591
2	3	65.5	16	1527	1095	15.805
3	3	86.7	16	1063	1197	122.755
4	3	69.7	16	1437	1812	169.303
5	2	71.4	16	1862		231.031
6	2	96.2	16	1929		252.888
7	2	59.6	16	1986		698.866
8	2	54.7	16	1333		665.854
9	2	75.4	16	1196		453.771
10	1	62.6	16			108.139
11	3	75	16	1470	1274	462.666
12	3	87.7	16	1227	1029	674.444
13	2	51.8	16	1862		593.272
14	1	55.9	16			18.199
15	1	93.2	16			399.547
16	2	86.4	16	1141		574.065
17	2	90.9	16	1287		450.882

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	86.5	10	1673	1250	294.973
2	3	54.4	10	1217	1390	290.463
3	2	61.8	10	1515		520.616
4	3	81.3	10	1058	1865	471.079
5	2	94.6	10	1396		297.192
6	3	99.2	10	1862	1327	902.715
7	2	83.7	10	1642		352.538
8	2	55.6	10	1234		533.542
9	2	50	10	1282		577.425
10	1	60.2	10			703.858
11	2	88.4	10	1726		153.891
12	2	71.7	10	1473		851.254
13	3	67.1	10	1064	1991	63.477

Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	58.4	18	1123		250.069
2	3	66	18	1725	1913	866.683
3	2	99.2	18	1730		202.556
4	1	69.3	18			770.419
5	3	97.4	18	1588	1117	521.802
6	1	75.8	18			795.205
7	2	98.5	18	1102		648.108
8	3	51.7	18	1000	1760	130.192
9	2	61.2	18	1995		748.775
10	2	74	18	1835		611.058
11	2	68.4	18	1080		770.531
12	1	60.1	18			647.354
13	2	63.4	18	1956		886.077

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	82.2	19	1883		197.741
2	2	76	19	1791		9.931
3	2	63.1	19	1802		900.026
4	2	84.1	19	1336		611.629
5	2	91.6	19	1631		720.612
6	2	53.1	19	1785		411.085
7	2	80	19	1265		845.748
8	2	96.4	19	1234		796.262
9	3	86.8	19	1609	1347	208.245
10	3	94.8	19	1533	1174	518.088
11	1	50.7	19			696.101
12	3	79.1	19	1092	1528	799.254
13	2	80	19	1065		304.877

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	86.5	19	1487	1970	463.823
2	3	69.1	19	1887	1248	510.991
3	2	56.2	19	1242		580.912
4	1	67.6	19			595.363
5	2	83.3	19	1292		289.884
6	1	76.7	19			510.415
7	3	52.4	19	1168	1184	548.676
8	2	71.5	19	1933		87.777
9	1	83.7	19			330.158
10	3	60.1	19	1291	1172	338.509
11	3	71.7	19	1431	1252	344.131
12	2	64.3	19	1971		256.782
13	2	59.5	19	1149		454.343
14	1	59.8	19			242.324
15	2	73.8	19	1923		98.405
16	2	95.6	19	1037		551.216
17	3	90.4	19	1602	1392	120.837
18	2	82.1	19	1025		86.658
19	2	80.3	19	1290		441.679

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	85.2	12	1359		445.834
2	2	81.5	12	1205		400.091
3	2	73.9	12	1160		280.652
4	2	65.8	12	1346		384.443
5	2	85.4	12	1793		313.604
6	2	94.8	12	1227		546.735
7	1	51.3	12			545.766
8	3	62	12	1275	1102	214.057
9	3	66.4	12	1663	1079	11.538
10	3	52.3	12	1375	1547	533.499
11	2	80.8	12	1411		460.491
12	2	55.8	12	1048		101.412
13	1	65.2	12			486.573
14	1	58	12			152.214
15	2	64.8	12	1200		352.585
16	3	93.5	12	1534	1265	5.716
17	1	58.2	12			376.637
18	2	52.3	12	1986		472.158
19	2	96.5	12	1633		23.279

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	77.9	8	1902		395.653
2	3	66.7	8	1823	1555	164.433
3	2	84.4	8	1713		400.126
4	2	67.7	8	1061		707.929
5	1	97.7	8			56.472
6	3	76.6	8	1106	1198	773.565
7	2	68.5	8	1420		629.408
8	2	79.5	8	1373		911.042
9	2	64.2	8	1257		468.665
10	2	81.5	8	1383		141.078
11	2	68.1	8	1228		41.881
12	2	93.1	8	1504		267.954
13	1	76.7	8			27.177

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	75.6	16	1501	1907	401.065
2	3	81.3	16	1863	1117	781.41
3	2	88	16	1016		370.38
4	1	53.2	16			721.05
5	1	50.9	16			215.05
6	2	78.6	16	1027		620.42
7	2	61.1	16	1380		439.75
8	3	75.9	16	1352	1903	840.78
9	2	73	16	1928		175.59
10	1	55.6	16			1045.7

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	65.9	14	1039		9.848
2	3	87.4	14	1653	1386	193.567
3	2	76.8	14	1331		744.314
4	2	85	14	1887		338.121
5	3	55.8	14	1586	1974	13.809
6	1	86.4	14			53.906
7	2	81	14	1061		498.903
8	1	99.6	14			704.52
9	2	52	14	1282		645.067
10	2	95.9	14	1382		717.664
11	1	56	14			843.421
12	2	89.2	14	1435		766.529
13	2	64.3	14	1587		54.686
14	2	56	14	1737		405.043

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	74	19	1290		124.637
2	2	90.6	19	1095		833.511
3	1	77.8	19			643.162
4	1	78.7	19			970.623
5	2	61	19	1062		138.534
6	1	62.8	19			433.325
7	3	73.7	19	1014	1279	1068.695
8	1	69.9	19			294.266
9	2	71	19	1086		889.867
10	3	95.6	19	1685	1504	456.718
11	2	96.4	19	1258		669.409

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	83.4	10	1510	1470	64.484
2	1	85.4	10			579.457
3	3	58.9	10	1561	1209	835.834
4	2	52.8	10	1700		269.101
5	3	80.2	10	1718	1912	261.309
6	3	94.1	10	1279	1860	225.746
7	2	85.7	10	1595		286.023
8	2	52.1	10	1706		91.2
9	2	77.9	10	1750		531.557
10	3	73	10	1211	1015	306.844
11	2	71.5	10	1722		773.051
12	2	61.8	10	1988		731.029
13	1	79.2	10			312.986
14	1	91.3	10			664.443

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	88.6	15	1067		388.102
2	2	96.6	15	1460		224.02
3	2	62.4	15	1727		94.447
4	1	82.6	15			166.81
5	2	82.4	15	1852		133.803
6	2	63	15	1685		452.257
7	2	50.6	15	1113		150.47
8	3	73.9	15	1598	1389	280.583
9	3	71.7	15	1542	1882	116.527
10	2	86.9	15	1508		358.03
11	2	53.1	15	1425		9.333
12	1	62.5	15			472.777
13	2	65.3	15	1300		25.63
14	3	91.7	15	1748	1288	135.633
15	2	79.4	15	1240		585.327
16	2	72.6	15	1660		171.1
17	2	93.3	15	1706		281.033
18	1	52.8	15			379.467

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	77.3	7			434.232
2	3	54.9	7	1247	1102	311
3	1	98.5	7			513.82
4	3	78.4	7	1607	1426	141.93
5	2	70.4	7	1659		177.35
6	2	67.2	7	1328		560.96
7	2	95	7	1298		1.12
8	3	54.9	7	1379	1427	277.28
9	1	88.1	7			712.74
10	1	54.3	7			275.56
11	2	83.4	7	1101		640.7
12	1	62	7			294.66
13	2	79.8	7	1516		333.83
14	1	94.7	7			699.3
15	3	99.7	7	1480	1177	328.9
16	3	83.2	7	1167	1203	512.8

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	96.6	15	1221	1126	211.884
2	1	84.9	15			156.546
3	1	65.7	15			32.285
4	3	90.3	15	1911	1112	338.743
5	3	78.6	15	1076	1342	429.341
6	2	78.9	15	1817		450.678
7	2	55.8	15	1435		397.786
8	3	92.4	15	1324	1648	512.384
9	3	93.2	15	1078	1870	327.031
10	2	50.8	15	1473		323.329
11	1	82.3	15			611.746
12	3	60.3	15	1311	1395	91.324
13	1	54.8	15			44.992
14	2	64.2	15	1521		636.509
15	3	53.2	15	1510	1117	332.247
16	3	83.5	15	1167	1574	598.965
17	1	95.5	15			98.582

Type 5 Radar Waveform_29

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	95.5	13	1132		219.88
2	2	97.2	13	1147		204.34
3	2	85.4	13	1527		451.5
4	3	97.1	13	1593	1944	286.85
5	1	56	13			64.57
6	1	88.3	13			378.31
7	1	50	13			50.97
8	2	83.6	13	1662		369.12
9	2	86.7	13	1916		71.43
10	3	53.9	13	1057	1789	135.9
11	2	86	13	1218		8.9
12	1	71.4	13			320.9
13	1	59	13			450.5
14	2	65.7	13	1895		46.1
15	1	87.5	13			516.27
16	3	68.2	13	1437	1701	108.84
17	2	65.1	13	1713		173.44
18	1	70.6	13			486.9
19	1	65.6	13			361.1
20	1	97.8	13			311.2

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	91	12	1696		233.9
2	2	64.6	12	1551		396.697
3	2	57.4	12	1521		1114.033
4	2	61.2	12	1424		850.22
5	3	91.4	12	1758	1635	887.187
6	2	94.6	12	1991		247.133
7	2	55.1	12	1201		486.72
8	2	69.5	12	1409		1041.667
9	2	99.7	12	1269		1176.633

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	5491.0	0	16	5511.0	1
2	5492.5	1	17	5512.3	1
3	5493.9	1	18	5513.6	1
4	5495.4	1	19	5514.9	1
5	5496.8	1	20	5516.2	1
6	5498.3	1	21	5517.6	1
7	5499.8	1	22	5518.9	1
8	5501.2	1	23	5520.2	1
9	5502.7	1	24	5521.5	1
10	5503.0	1	25	5522.8	1
11	5504.5	1	26	5524.1	1
12	5505.9	1	27	5525.4	1
13	5507.4	1	28	5526.7	1
14	5508.8	1	29	5528.0	1
15	5510.0	1	30	5529.0	1
Detection Percentage (%)					96.7%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5516	3	6	5523	18
11	5508	33	13	5518	39
30	5519	90	30	5491	90
32	5522	96	35	5498	105
56	5529	168	50	5495	150
72	5499	216	54	5507	162
78	5513	234	57	5490	171
80	5506	240	72	5516	216
--	--	--	73	5513	219
--	--	--	74	5524	222
--	--	--	76	5519	228
--	--	--	90	5527	270
--	--	--	96	5510	288
--	--	--	99	5508	297

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
19	5499	57	1	5521	3
21	5495	63	13	5503	39
28	5512	84	17	5511	51
30	5498	90	18	5517	54
38	5510	114	32	5530	96
48	5500	144	59	5514	177
55	5490	165	71	5496	213
57	5492	171	90	5519	270
66	5507	198	--	--	--
76	5522	228	--	--	--
93	5505	279	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5490	3	5	5508	15
7	5510	21	9	5505	27
18	5528	54	10	5519	30
20	5527	60	16	5513	48
23	5519	69	26	5515	78
29	5517	87	31	5529	93
52	5500	156	39	5512	117
53	5506	159	60	5527	180
--	--	--	65	5499	195
--	--	--	75	5516	225
--	--	--	90	5530	270

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5526	3	9	5513	27
4	5528	12	13	5495	39
5	5512	15	15	5529	45
58	5511	174	41	5496	123
60	5508	180	59	5520	177
93	5490	279	77	5530	231
94	5504	282	91	5516	273
--	--	--	92	5524	276

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5495	33	19	5495	57
14	5496	42	37	5530	111
24	5490	72	38	5491	114
43	5526	129	45	5499	135
62	5522	186	50	5515	150
65	5515	195	100	5513	300
69	5500	207	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5513	36	6	5523	18
14	5498	42	11	5503	33
16	5499	48	13	5512	39
25	5490	75	20	5515	60
26	5504	78	21	5509	63
94	5528	282	37	5491	111
--	--	--	57	5493	171
--	--	--	72	5490	216
--	--	--	77	5501	231

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5517	24	13	5510	39
52	5519	156	32	5519	96
54	5502	162	49	5491	147
68	5499	204	52	5499	156
73	5500	219	57	5530	171
90	5497	270	78	5520	234
99	5511	297	83	5514	249
--	--	--	88	5498	264
--	--	--	89	5501	267
--	--	--	95	5518	285

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5492	24	1	5503	3
19	5504	57	2	5511	6
20	5506	60	7	5523	21
25	5498	75	17	5510	51
30	5523	90	27	5528	81
32	5522	96	30	5517	90
36	5518	108	50	5518	150
37	5526	111	61	5522	183
63	5496	189	64	5519	192
64	5520	192	80	5506	240
--	--	--	86	5529	258

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5498	36	8	5519	24
18	5506	54	16	5501	48
22	5510	66	24	5498	72
26	5491	78	32	5505	96
30	5512	90	48	5508	144
47	5497	141	67	5503	201
50	5516	150	79	5520	237
52	5493	156	87	5521	261
60	5524	180	90	5504	270
65	5526	195	93	5527	279
70	5528	210	--	--	--
73	5521	219	--	--	--
92	5520	276	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
38	5509	114	3	5493	9
42	5497	126	16	5505	48
44	5517	132	29	5516	87
54	5523	162	30	5503	90
77	5528	231	34	5512	102
79	5490	237	41	5526	123
--	--	--	51	5514	153
--	--	--	95	5525	285
--	--	--	98	5517	294
--	--	--	99	5490	297

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5500	39	4	5511	12
21	5516	63	5	5502	15
23	5518	69	30	5523	90
30	5498	90	39	5518	117
32	5509	96	51	5515	153
53	5503	159	67	5520	201
65	5530	195	80	5510	240
79	5496	237	85	5492	255
80	5492	240	--	--	--
83	5523	249	--	--	--
94	5512	282	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
15	5507	45	4	5507	12
23	5499	69	8	5492	24
29	5523	87	46	5528	138
36	5509	108	53	5529	159
38	5524	114	73	5526	219
41	5500	123	87	5520	261
53	5504	159	90	5494	270
61	5522	183	99	5504	297
85	5510	255	--	--	--
93	5497	279	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5504	18	10	5526	30
29	5528	87	20	5522	60
32	5525	96	43	5491	129
40	5529	120	48	5507	144
99	5508	297	49	5500	147
--	--	--	52	5505	156
--	--	--	55	5512	165

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
20	5497	60	9	5503	27
44	5496	132	19	5512	57
48	5499	144	35	5525	105
66	5530	198	70	5507	210
86	5517	258	74	5519	222
88	5521	264	83	5529	249
90	5508	270	88	5491	264
--	--	--	94	5530	282
--	--	--	100	5490	300

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5517	6	16	5509	48
20	5512	60	19	5515	57
23	5519	69	21	5504	63
33	5490	99	22	5525	66
37	5491	111	39	5523	117
41	5500	123	42	5494	126
68	5529	204	44	5518	132
83	5526	249	64	5503	192
92	5501	276	84	5511	252
93	5525	279	--	--	--

待測物名稱	AX1800 Wi-Fi 6 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2020/08/24~2020/10/25
測試項目	Radar Statistical Performance Check (802.11ax-HE80 mode – 5530MHz) (AP Mode)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	1	678	78	1
2	5493.7	1	838	63	1
3	5496.4	1	758	70	1
4	5499.1	1	918	58	1
5	5501.8	1	778	68	1
6	5504.4	1	638	83	1
7	5507.1	1	698	76	1
8	5509.8	1	578	92	1
9	5512.5	1	718	74	1
10	5515.2	1	878	61	1
11	5517.9	1	818	65	1
12	5520.6	1	598	89	1
13	5523.3	1	518	102	1
14	5526.0	1	658	81	1
15	5528.6	1	858	62	1
16	5530.0	1	1909	28	1
17	5532.7	1	825	64	1
18	5535.4	1	735	72	1
19	5538.1	1	813	65	1
20	5540.8	1	1243	43	1
21	5543.4	1	2213	24	1
22	5546.1	1	1680	32	1
23	5548.8	1	924	58	1
24	5551.5	1	1212	44	1
25	5554.2	1	1986	27	1
26	5556.9	1	2028	26	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5559.6	1	1531	35	1
28	5562.3	1	2256	24	1
29	5565.0	1	2138	25	1
30	5569.0	1	961	55	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	5491.0	4.8	204	25	0
2	5493.7	2.3	162	25	1
3	5496.4	2.8	170	27	1
4	5499.1	4.1	200	25	1
5	5501.8	4.9	229	27	1
6	5504.4	1.1	219	28	1
7	5507.1	5	188	25	1
8	5509.8	3.5	157	28	1
9	5512.5	4.1	152	28	0
10	5515.2	3.5	195	26	1
11	5517.9	1.6	170	28	1
12	5520.6	2.3	204	24	0
13	5523.3	4	192	27	1
14	5526.0	1.8	188	26	0
15	5528.6	1.2	223	27	1
16	5530.0	4.9	154	27	1
17	5532.7	1.8	174	24	1
18	5535.4	2	157	25	1
19	5538.1	2.2	198	28	1
20	5540.8	1.4	150	26	1
21	5543.4	2	212	23	1
22	5546.1	4.5	185	28	1
23	5548.8	1.2	158	24	1
24	5551.5	3.4	163	24	0
25	5554.2	1.9	200	28	1
26	5556.9	3.7	227	26	0
27	5559.6	2.4	197	24	1
28	5562.3	3.1	198	25	1
29	5565.0	2	160	27	1
30	5569.0	4.8	212	23	1
Detection Percentage (%)					80%