

NCC

低功率射頻電機型式試驗報告

產品名稱: AC1200 Wi-Fi 訊號延伸器
型號: RE305
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: 2021.01.13
測試日期: 2021.03.11 ~ 2021.04.08
發行日期: 2021.04.20

測試工程師:



(柯文凱)

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

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CONTENTS

Description	Page
1. 一般資訊	4
2. 產品描述	5
2.1. 產品資訊	5
2.2. 動態雷達操作通道清單	6
2.3. 天線規格	7
2.4. 測試信道	8
2.5. 測試模式	8
3. 動態頻率選擇和測試雷達波	9
3.1. 動態頻率選擇偵測門檻及操作模式	9
3.2. 雷達信號參數	9
3.3. 測試限值	12
3.4. 測試架設圖	13
4. 測試設備明細	14
5. 測試結果	15
6. 雷達系統波形校驗	16
6.1. 量測方法	16
6.2. 校驗架構圖	16
6.3. 校驗結果	17
7. UNII 偵測頻寬	21
7.1. 適用標準	21
7.2. 量測方法	21
7.3. 檢測頻寬概率測試結果	22
8. 頻道可用性檢查時間量測	25
8.1. 適用標準	25
8.2. 量測方法	25
8.3. 頻道可用性檢查時間量測測試結果	26
9. 頻道關閉傳輸時間及不可佔用期間	28
9.1. 適用標準	28
9.2. 量測方法	28
9.3. 頻道關閉傳輸時間及不可佔用期間測試結果	29
10. 動態頻率選擇偵測門檻	33
10.1. 適用標準	33
10.2. 量測方法	33
10.3. 動態頻率選擇偵測門檻測試結果	34

1. 一般資訊

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
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	AC1200 Wi-Fi 訊號延伸器
產品型號	RE305
廠牌	tp-link
工作模式	主控運作模式 (AP, Client with Radar Detection)
無線規格	802.11a/b/g/n/ac
頻率範圍	<u>2.4GHz:</u> For 802.11b/g/n-HT20: 2412 ~ 2462 MHz For 802.11n-HT40: 2422 ~ 2452 MHz <u>5GHz:</u> For 802.11a/n-HT20/ac-VHT20: 5180~5240MHz, 5260~5320 MHz, 5500~5720MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40: 5190~5230MHz, 5270~5310 MHz, 5510~5710MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5690MHz, 5775MHz
調變模式	DSSS for IEEE 802.11b, OFDM for IEEE 802.11a/g/n/ac,
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

2.2. 動態雷達操作通道清單

802.11a/n-HT20/ac-VHT20

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

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

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 AC1200 Wi-Fi 訊號延伸器其天線為固定式 Dipole Antenna，(Brand: TP-LINK) (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	--	1	4.01
	5150 ~ 5850	2	1	4.01	1	4.01

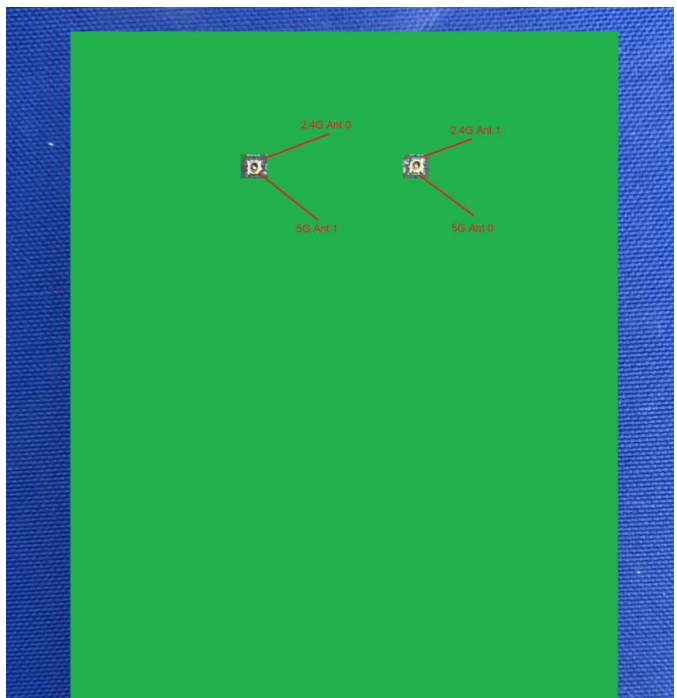
Note 1: The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

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

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

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

Note 3: All information declared by manufacturer.

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

2.4. 測試信道

Test Mode	Test Channel	Test Frequency
802.11ac-VHT20	100	5500 MHz
802.11ac-VHT40	102	5510 MHz
802.11ac-VHT80	106	5530 MHz

2.5. 測試模式

Test Mode	Mode 1: Operating under AP mode Mode 2: Operating under Client with Radar Detection Mode
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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 $\left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\text{usec}}} \right) \right\}$	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.

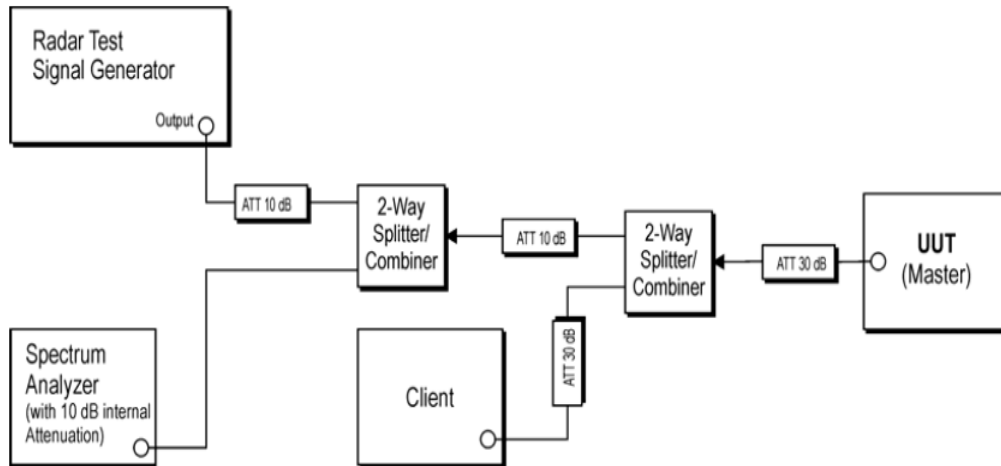


Figure A: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters

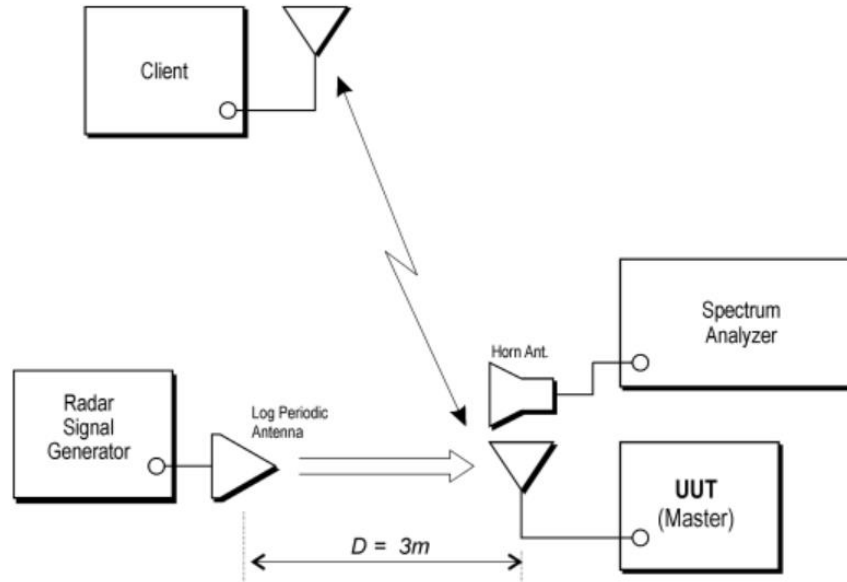


Figure B: Radiated Test Setup where UUT is a Master and Radar Test Waveforms are injected into the UUT

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
AC1200 Wi-Fi 訊號延伸器	tp-link	RE305

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 AC1200 Wi-Fi 訊號延伸器
型號 RE305

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

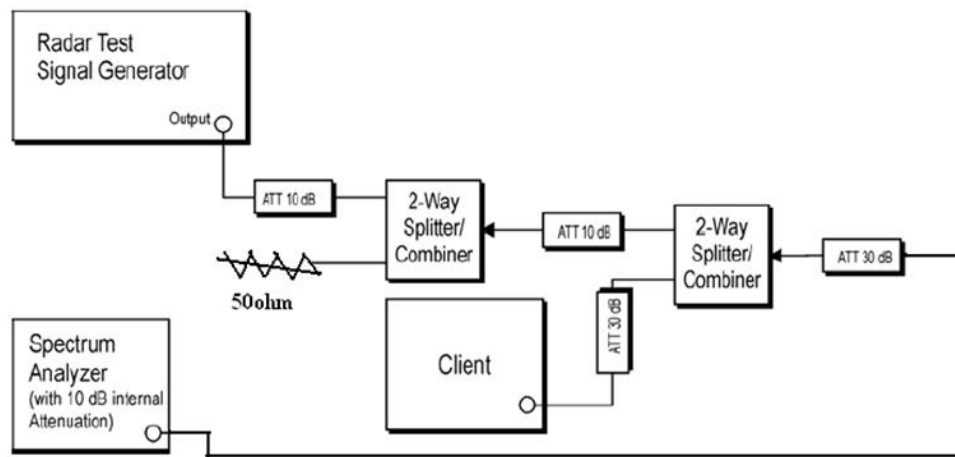
6.1. 量測方法

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。

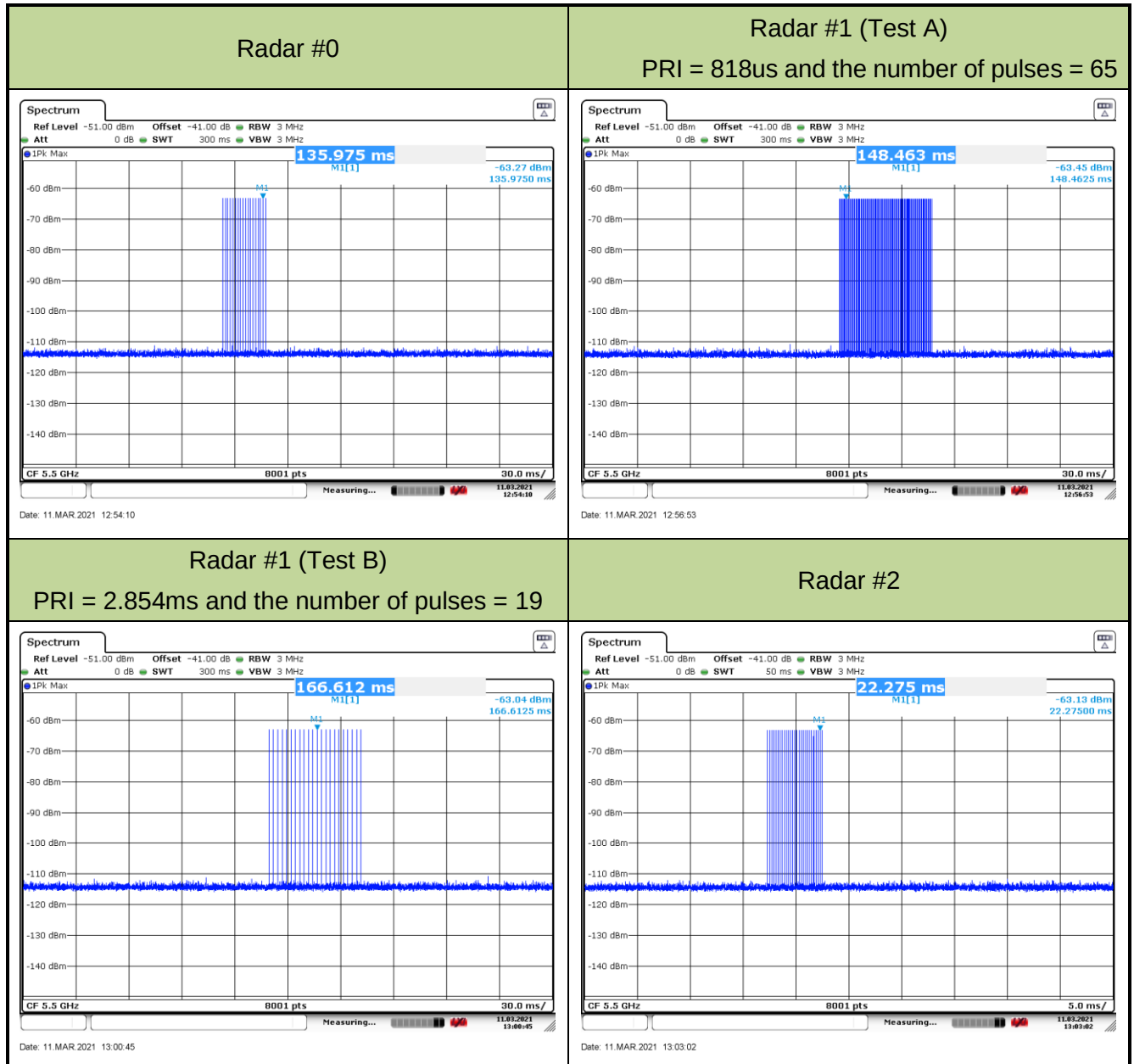
將雷達訊號產生器的振幅位準調整至頻譜分析儀上觀察到的位準為-63dBm，此位準為接收輸入端以 0dBi 的接收天線為參考基準。

6.2. 校驗架構圖

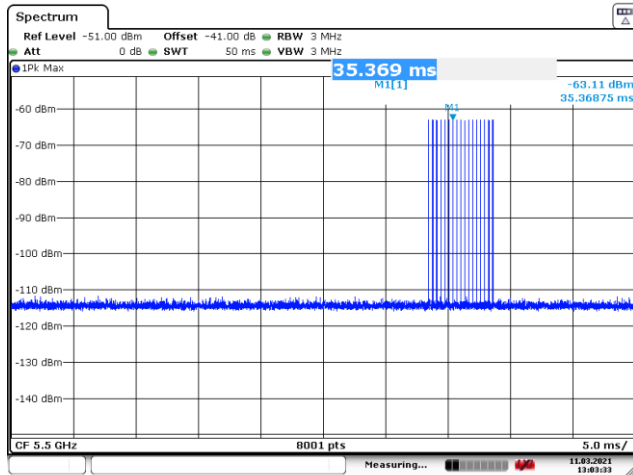


6.3. 校驗結果

待測物名稱	AC1200 Wi-Fi 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	2021/03/13
測試項目	雷達測試信號校驗		

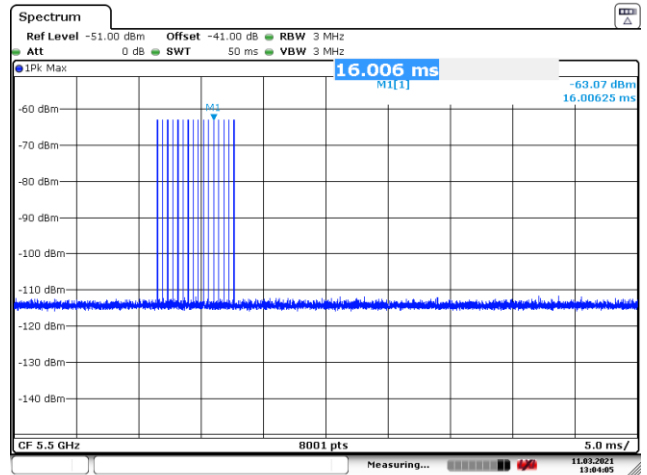


Radars #3



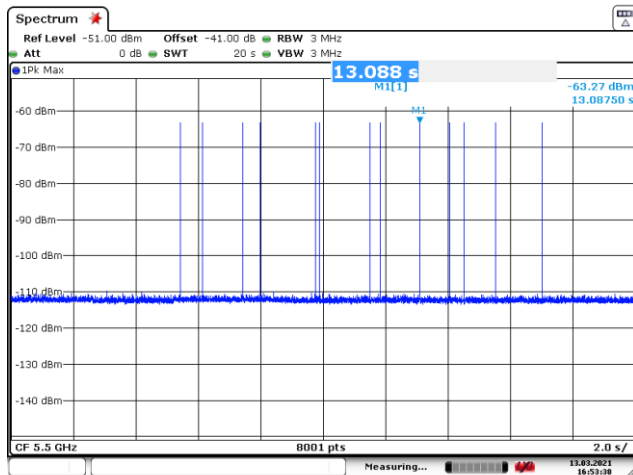
Date: 11.MAR.2021 13:03:34

Radars #4



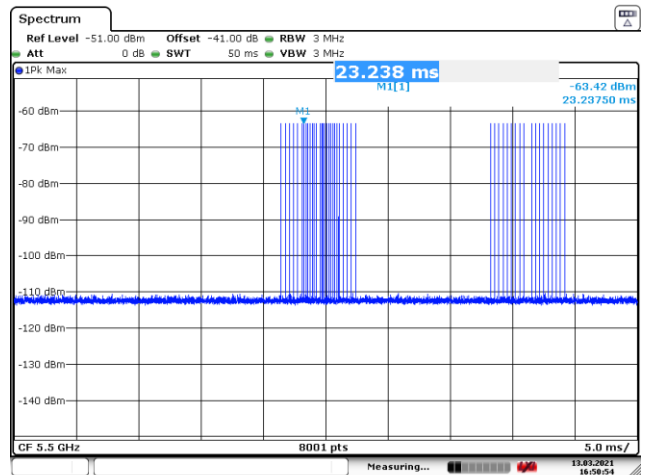
Date: 11.MAR.2021 13:04:05

Radars #5



Date: 13.MAR.2021 16:53:38

Radars #6



Date: 13.MAR.2021 16:50:54

待測物名稱	AC1200 Wi-Fi 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	2021/04/06
測試項目	占空比 – Mode 1		

802.11ac-VHT20 (5500MHz) Spectrum Ref Level -50.50 dBm Offset -40.50 dB RBW 3 MHz Att 0 dB SWT 300 ms VBW 3 MHz SGL 1Pk Clrw D2[1] 1.39 dB M1[1] 35.0125 ms M1[2] -77.99 dBm D2[2] 150.9375 ms -60 dBm -70 dBm -80 dBm -90 dBm -100 dBm -110 dBm -120 dBm -130 dBm -140 dBm CF 5.5 GHz 8001 pts 30.0 ms/ Marker <table><thead><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr></thead><tbody><tr><td>M1</td><td>1</td><td></td><td>150.9375 ms</td><td>-77.99 dBm</td><td></td><td></td></tr><tr><td>D1</td><td>M1</td><td>1</td><td>6.825 ms</td><td>1.80 dB</td><td></td><td></td></tr><tr><td>D2</td><td>M1</td><td>1</td><td>35.0125 ms</td><td>1.39 dB</td><td></td><td></td></tr></tbody></table> Ready 13.03.2021 15:32:18		Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		150.9375 ms	-77.99 dBm			D1	M1	1	6.825 ms	1.80 dB			D2	M1	1	35.0125 ms	1.39 dB			802.11ac-VHT40 (5510MHz) Spectrum Ref Level -50.50 dBm Offset -40.50 dB RBW 3 MHz Att 0 dB SWT 200 ms VBW 3 MHz SGL 1Pk Clrw D2[1] 4.32 dB M1[1] 25.9500 ms D2[2] -86.20 dBm M1[2] 84.0750 ms -60 dBm -70 dBm -80 dBm -90 dBm -100 dBm -110 dBm -120 dBm -130 dBm -140 dBm CF 5.51 GHz 8001 pts 20.0 ms/ Marker <table><thead><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr></thead><tbody><tr><td>M1</td><td>1</td><td></td><td>84.075 ms</td><td>-86.20 dBm</td><td></td><td></td></tr><tr><td>D1</td><td>M1</td><td>1</td><td>5.9 ms</td><td>5.36 dB</td><td></td><td></td></tr><tr><td>D2</td><td>M1</td><td>1</td><td>25.95 ms</td><td>4.32 dB</td><td></td><td></td></tr></tbody></table> Ready 13.03.2021 13:58:38		Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		84.075 ms	-86.20 dBm			D1	M1	1	5.9 ms	5.36 dB			D2	M1	1	25.95 ms	4.32 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																					
M1	1		150.9375 ms	-77.99 dBm																																																							
D1	M1	1	6.825 ms	1.80 dB																																																							
D2	M1	1	35.0125 ms	1.39 dB																																																							
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																					
M1	1		84.075 ms	-86.20 dBm																																																							
D1	M1	1	5.9 ms	5.36 dB																																																							
D2	M1	1	25.95 ms	4.32 dB																																																							
802.11ac-VHT80 (5530MHz) Spectrum Ref Level -51.00 dBm Offset -41.00 dB RBW 3 MHz Att 0 dB SWT 500 ms VBW 3 MHz SGL 1Pk Clrw D2[1] -0.33 dB M1[1] 25.9375 ms M1[2] -83.55 dBm D2[2] 315.9375 ms -60 dBm -70 dBm -80 dBm -90 dBm -100 dBm -110 dBm -120 dBm -130 dBm -140 dBm CF 5.53 GHz 8001 pts 50.0 ms/ Marker <table><thead><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr></thead><tbody><tr><td>M1</td><td>1</td><td></td><td>315.9375 ms</td><td>-83.55 dBm</td><td></td><td></td></tr><tr><td>D1</td><td>M1</td><td>1</td><td>4.9375 ms</td><td>-1.15 dB</td><td></td><td></td></tr><tr><td>D2</td><td>M1</td><td>1</td><td>25.9375 ms</td><td>-0.33 dB</td><td></td><td></td></tr></tbody></table> Ready 13.03.2021 10:40:01		Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		315.9375 ms	-83.55 dBm			D1	M1	1	4.9375 ms	-1.15 dB			D2	M1	1	25.9375 ms	-0.33 dB																																
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																					
M1	1		315.9375 ms	-83.55 dBm																																																							
D1	M1	1	4.9375 ms	-1.15 dB																																																							
D2	M1	1	25.9375 ms	-0.33 dB																																																							
Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result																																																							
802.11ac-VHT20	5500 MHz	19.49%	≥ 17%	Pass																																																							
802.11ac-VHT40	5510 MHz	22.74%	≥ 17%	Pass																																																							
802.11ac-VHT80	5530 MHz	19.04%	≥ 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).

待測物名稱	AC1200 Wi-Fi 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	2021/03/13
測試項目	占空比 – Mode 2		

802.11ac-VHT20 (5500MHz) Spectrum Ref Level -51.50 dBm Offset -41.50 dB RBW 3 MHz Att 0 dB SWT 200 ms VBW 3 MHz SGL 30.0 ms 1Pk Clrw D2[1] 2.59 dB M1[1] 30.0000 ms -76.23 dBm 83.2500 ms CF 5.5 GHz 8001 pts 20.0 ms/ <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>D1</td><td>M1</td><td>1</td><td>83.25 ms</td><td>-76.23 dBm</td><td></td><td></td></tr><tr><td>D2</td><td>M1</td><td>1</td><td>30.0 ms</td><td>2.59 dB</td><td></td><td></td></tr></table> Ready 06.04.2021 13:35:05 Date: 6 APR 2021 13:35:55		Type	Ref	Trc	X-value	Y-value	Function	Function Result	D1	M1	1	83.25 ms	-76.23 dBm			D2	M1	1	30.0 ms	2.59 dB			802.11ac-VHT40 (5510MHz) Spectrum Ref Level -51.50 dBm Offset -41.50 dB RBW 3 MHz Att 0 dB SWT 100 ms VBW 3 MHz SGL 17.913 ms 1Pk Clrw D2[1] 0.13 dB M1[1] 17.9125 ms -85.64 dBm 36.4875 ms CF 5.51 GHz 8001 pts 10.0 ms/ <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>D1</td><td>M1</td><td>1</td><td>36.4875 ms</td><td>-85.64 dBm</td><td></td><td></td></tr><tr><td>D2</td><td>M1</td><td>1</td><td>17.9125 ms</td><td>0.13 dB</td><td></td><td></td></tr></table> Ready 01.04.2021 09:56:54 Date: 1 APR 2021 09:56:54		Type	Ref	Trc	X-value	Y-value	Function	Function Result	D1	M1	1	36.4875 ms	-85.64 dBm			D2	M1	1	17.9125 ms	0.13 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
D1	M1	1	83.25 ms	-76.23 dBm																																									
D2	M1	1	30.0 ms	2.59 dB																																									
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
D1	M1	1	36.4875 ms	-85.64 dBm																																									
D2	M1	1	17.9125 ms	0.13 dB																																									
802.11ac-VHT80 (5530MHz) Spectrum Ref Level -51.50 dBm Offset -41.50 dB RBW 3 MHz Att 0 dB SWT 100 ms VBW 3 MHz SGL 6.975 ms 1Pk Clrw D2[1] -4.41 dB M1[1] 6.9750 ms -90.25 dBm 32.0625 ms CF 5.53 GHz 8001 pts 10.0 ms/ <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>32.0625 ms</td><td>-90.25 dBm</td><td></td><td></td></tr><tr><td>D1</td><td>M1</td><td>1</td><td>1.4 ms</td><td>0.11 dB</td><td></td><td></td></tr><tr><td>D2</td><td>M1</td><td>1</td><td>6.975 ms</td><td>-4.41 dB</td><td></td><td></td></tr></table> Ready 31.03.2021 15:01:01 Date: 31 MAR 2021 15:01:01		Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	32.0625 ms	-90.25 dBm			D1	M1	1	1.4 ms	0.11 dB			D2	M1	1	6.975 ms	-4.41 dB																		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
M1		1	32.0625 ms	-90.25 dBm																																									
D1	M1	1	1.4 ms	0.11 dB																																									
D2	M1	1	6.975 ms	-4.41 dB																																									
Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result																																									
802.11ac-VHT20	5500 MHz	23.67%	≥ 17%	Pass																																									
802.11ac-VHT40	5510 MHz	19.54%	≥ 17%	Pass																																									
802.11ac-VHT80	5530 MHz	20.07%	≥ 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	AC1200 Wi-Fi 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	2021/03/13
測試項目	Detection Bandwidth (802.11ac-VHT20 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%
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%
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	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 17.57MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5509MHz – 5491MHz = 18MHz

Note 3: NII Detection Bandwidth Min. Limit (MHz): 17.57MHz x 100% = 17.57MHz.

待測物名稱	AC1200 Wi-Fi 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	2021/03/13
測試項目	Detection Bandwidth (802.11ac-VHT40 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 36.11MHz. (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): 36.11MHz x 100% = 36.11MHz.

待測物名稱	AC1200 Wi-Fi 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	2021/03/13
測試項目	Detection Bandwidth (802.11ac-VHT80 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 75.36MHz. (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): 75.36MHz x 100% = 75.36MHz.

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

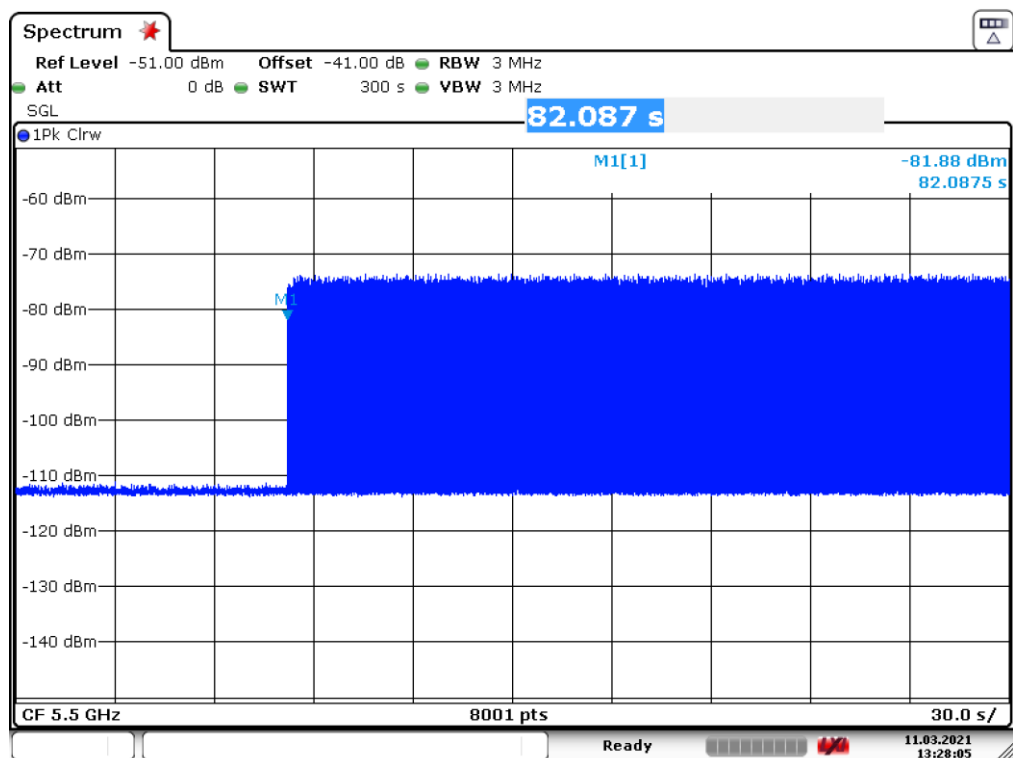
1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning 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	AC1200 Wi-Fi 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	2021/03/11
測試項目	頻道可用性檢查時間量測(802.11ac-VHT20 mode - 5500MHz)		

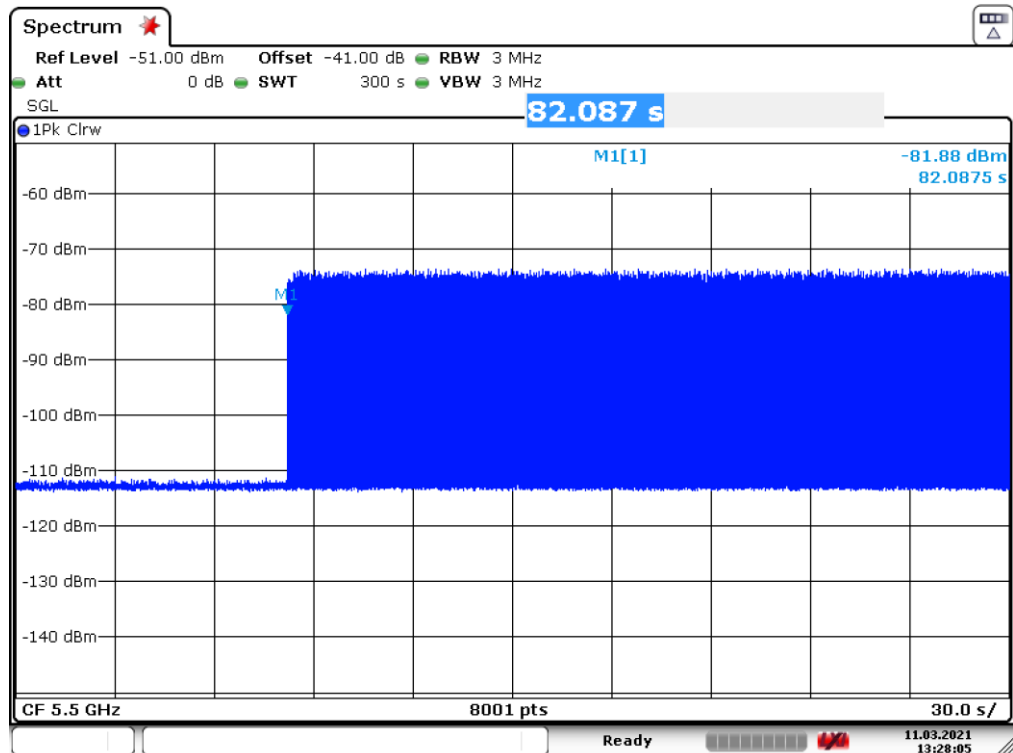
The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (22.1 sec). Initial beacons/data transmissions are indicated by marker 1 (82.1sec).

Initial Channel Availability Check Time for 802.11ac-VHT20



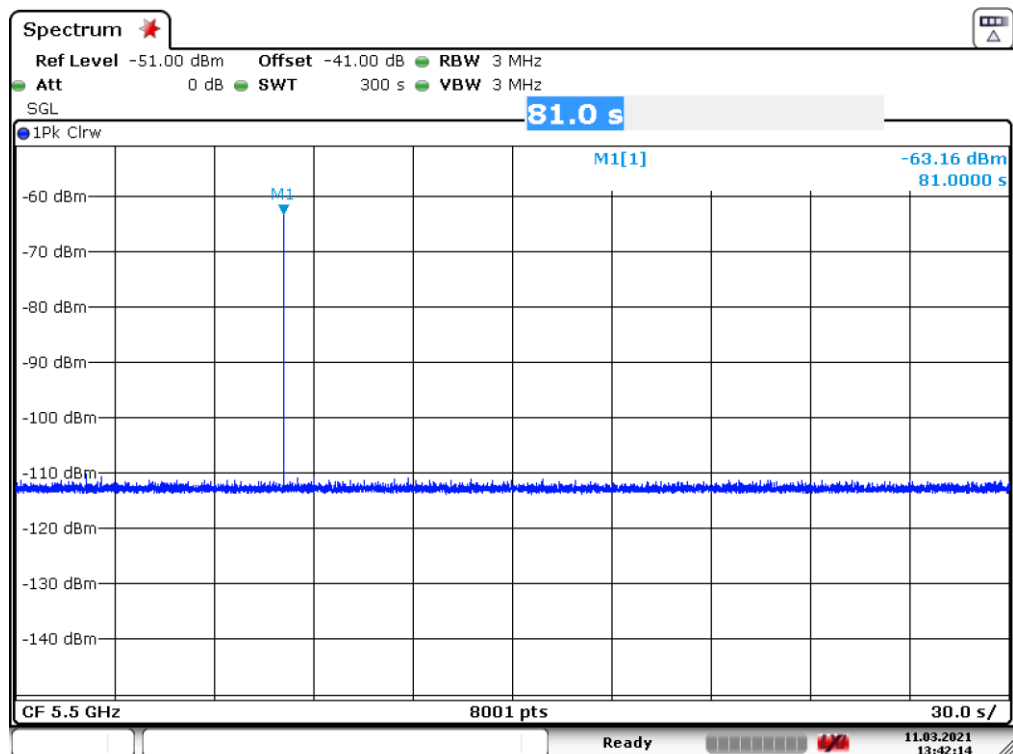
Date: 11.MAR.2021 13:28:05

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



Date: 11.MAR.2021 13:28:05

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



Date: 11.MAR.2021 13:42:15

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。

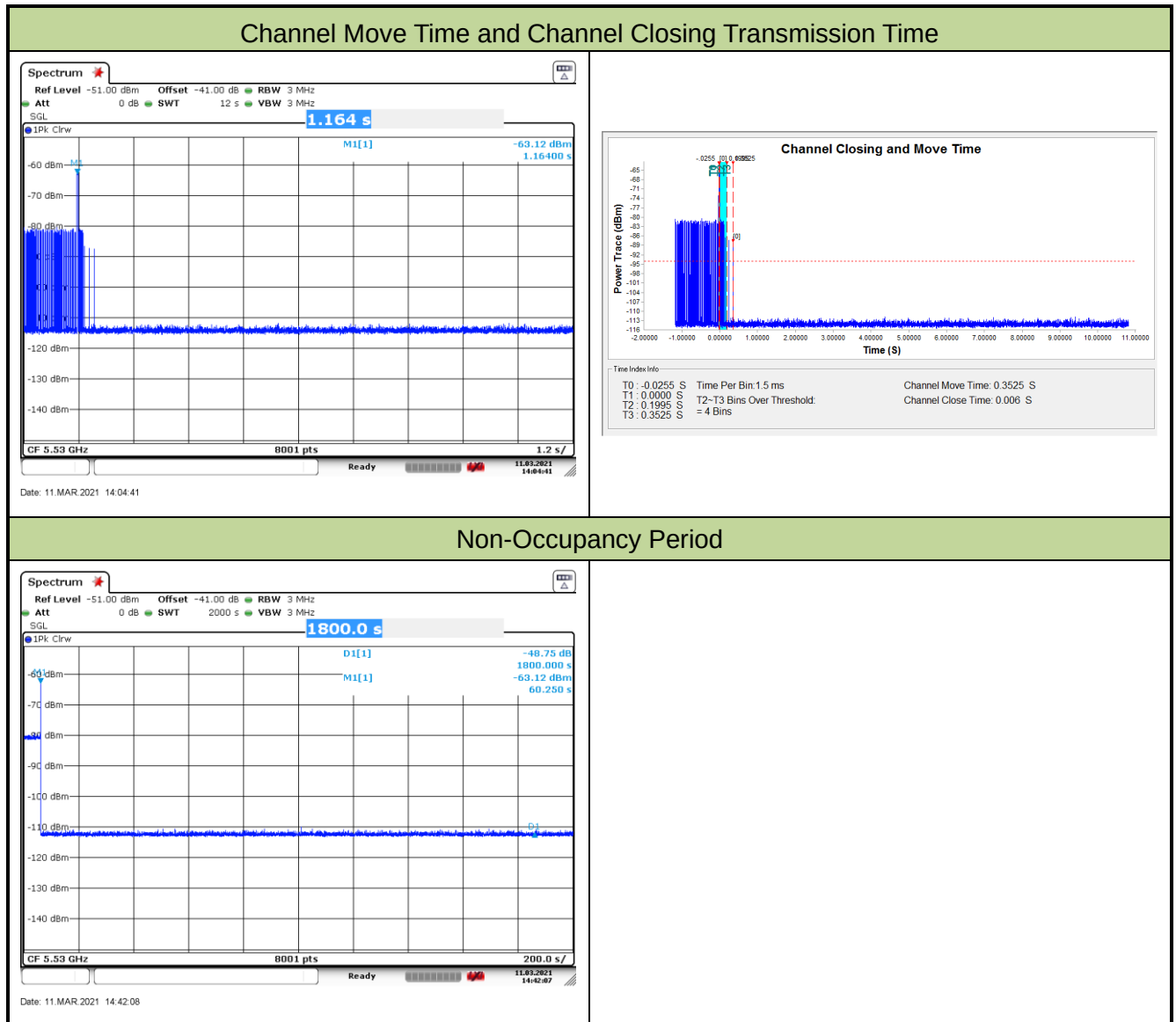
不可佔用期間：某一頻道已被頻道可用性檢查或”服務中”監視顯示含有雷達系統，至少須有30 分鐘的不可佔用期間。不可佔用期間起始於偵測到雷達系統的當時。

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

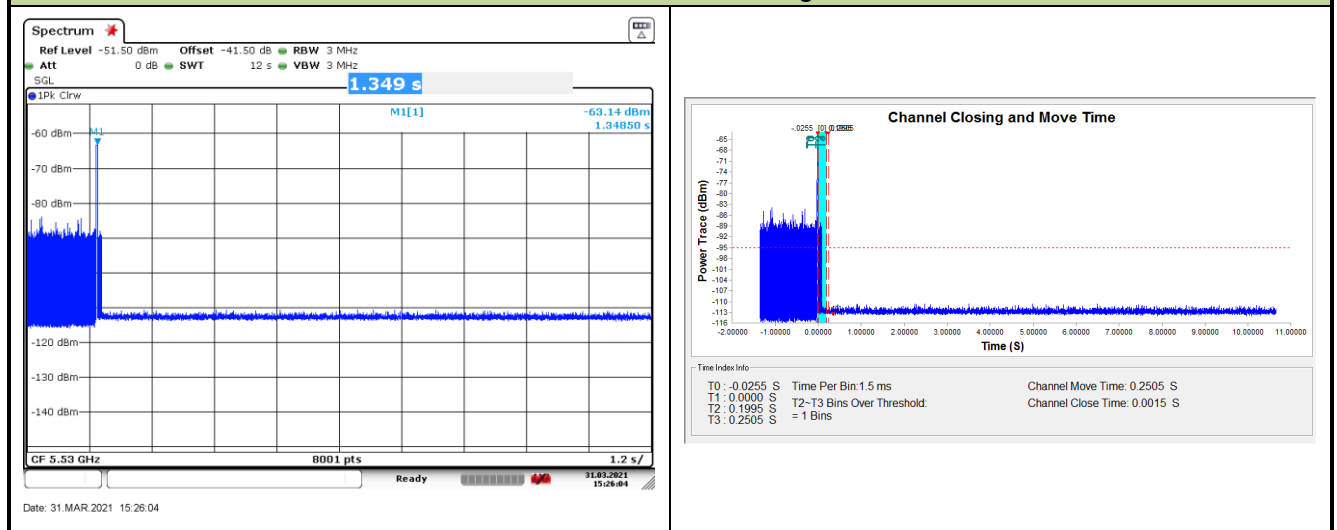
待測物名稱	AC1200 Wi-Fi 訊號延伸器	溫度	27°C
測試工程師	Kevin Ker	濕度	65%
測試場地	SR2	測試日期	2021/03/11
測試項目	Channel Move Time and Channel Closing Transmission Time (802.11ac-VHT80 mode - 5530MHz) – Mode 1		



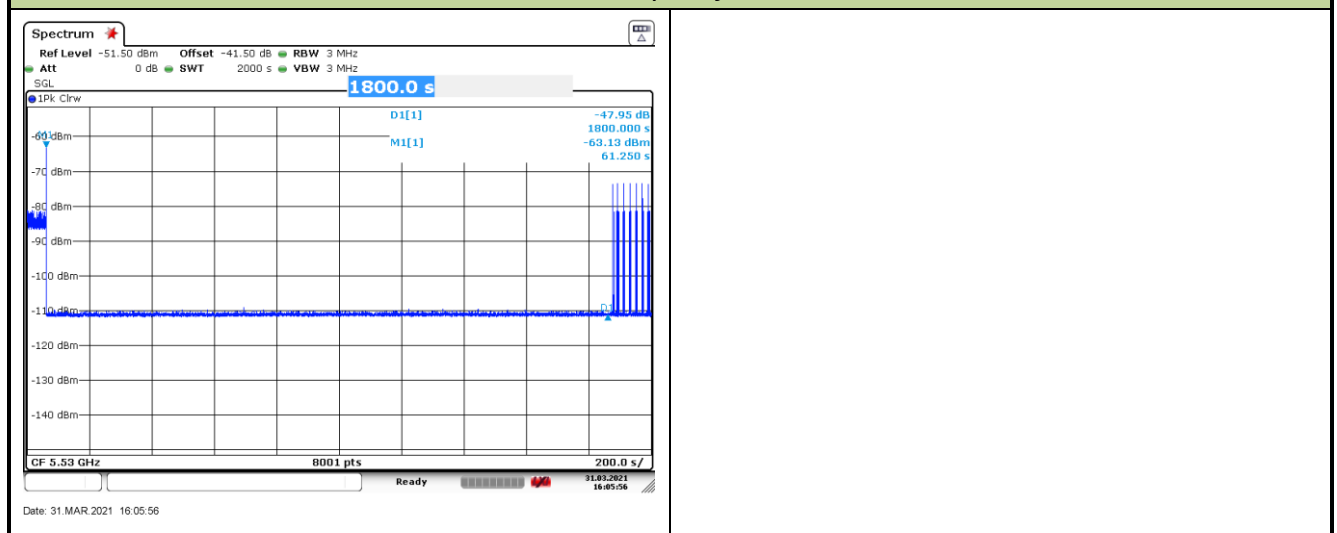
Parameter	Test Result	Limit
	Type 0	
Channel Move Time (s)	0.353s	<10s
Channel Closing Transmission Time (ms) (Note)	6.0ms	< 60ms
Non-Occupancy Period (min)	≥ 30min	≥ 30min
Note: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 seconds period. The aggregate duration of control signals will not count quiet periods in between transmissions.		

待測物名稱	AC1200 Wi-Fi 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	2021/03/31
測試項目	Channel Move Time and Channel Closing Transmission Time (802.11ac-VHT80 mode - 5530MHz) – Mode 2		

Channel Move Time and Channel Closing Transmission Time



Non-Occupancy Period



Parameter	Test Result	Limit
	Type 0	
Channel Move Time (s)	0.251s	<10s
Channel Closing Transmission Time (ms) (Note)	1.5ms	< 60ms
Non-Occupancy Period (min)	≥ 30min	≥ 30min
Note: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 seconds period. The aggregate duration of control signals will not count quiet periods in between transmissions.		

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	Pd > 60%
1	30(15 of test A and 15 of test B)	Pd > 60%
2	30	Pd > 60%
3	30	Pd > 60%
4	30	Pd > 60%
Aggregate (Radar Types 1-4)	120	Pd > 80%
5	30	Pd > 80%
6	30	Pd > 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: $(Pd1 + Pd2 + Pd3 + Pd4) / 4$.

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	AC1200 Wi-Fi 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	2021/03/13
測試項目	Radar Statistical Performance Check (802.11ac-VHT20 – 5500MHz) – Mode 1		

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	538	98	1
2	5491.1	1	858	62	1
3	5491.8	1	578	92	1
4	5492.5	1	698	76	1
5	5493.2	1	518	102	1
6	5493.9	1	758	70	1
7	5494.5	1	818	65	1
8	5495.2	1	3066	18	1
9	5495.9	1	838	63	1
10	5497.1	1	678	78	1
11	5498.2	1	798	67	1
12	5499.4	1	898	59	1
13	5500.0	1	778	68	1
14	5500.9	1	658	81	0
15	5501.7	1	738	72	1
16	5502.6	1	2854	19	1
17	5503.4	1	2531	21	1
18	5504.3	1	1279	42	1
19	5504.8	1	1045	51	1
20	5505.4	1	980	54	1
21	5505.9	1	2559	21	1
22	5506.5	1	1395	38	1
23	5506.8	1	540	98	1
24	5507.2	1	1668	32	1
25	5507.5	1	2538	21	1
26	5507.9	1	604	88	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5508.2	1	734	72	1
28	5508.6	1	807	66	1
29	5508.9	1	2848	19	1
30	5509.6	1	945	56	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	3.7	185	24	0
2	5491.1	2.4	188	27	1
3	5491.8	1.0	188	24	1
4	5492.5	3.5	182	26	1
5	5493.2	2.8	229	29	1
6	5493.9	3.5	178	27	1
7	5494.5	4.0	220	26	0
8	5495.2	3.6	219	27	1
9	5495.9	2.1	204	28	1
10	5497.1	4.2	208	25	1
11	5498.2	2.5	190	27	0
12	5499.4	4.5	186	23	1
13	5500.0	3.7	220	23	1
14	5500.9	1.0	223	29	1
15	5501.7	5.0	154	23	1
16	5502.6	1.1	167	28	1
17	5503.4	1.9	189	24	0
18	5504.3	4.1	157	26	1
19	5504.8	1.1	224	28	1
20	5505.4	3.4	200	28	1
21	5505.9	5.0	155	23	0
22	5506.5	4.9	212	28	1
23	5506.8	4.5	199	23	1
24	5507.2	1.9	229	26	1
25	5507.5	2.0	201	29	1
26	5507.9	3.8	203	29	0
27	5508.2	4.0	182	26	1
28	5508.6	3.9	177	23	1
29	5508.9	1.8	161	25	1
30	5509.6	1.6	166	28	1
Detection Percentage (%)					80%

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	6.7	293	17	1
2	5491.1	6.4	441	16	0
3	5491.8	9.6	319	17	1
4	5492.5	7.7	378	16	1
5	5493.2	8.3	233	16	1
6	5493.9	6.7	347	18	1
7	5494.5	9.6	486	16	1
8	5495.2	7.7	333	17	1
9	5495.9	7.0	353	17	0
10	5497.1	9.9	293	18	1
11	5498.2	7.9	203	18	1
12	5499.4	7.8	414	18	0
13	5500.0	9.1	321	16	1
14	5500.9	8.5	492	16	1
15	5501.7	6.2	289	16	1
16	5502.6	8.0	312	16	0
17	5503.4	10.0	357	16	1
18	5504.3	9.7	381	17	1
19	5504.8	9.7	306	18	1
20	5505.4	9.7	338	17	1
21	5505.9	7.3	470	18	0
22	5506.5	6.2	376	18	1
23	5506.8	8.6	284	17	1
24	5507.2	9.5	208	16	1
25	5507.5	7.1	494	16	1
26	5507.9	8.1	247	17	1
27	5508.2	8.5	232	16	1
28	5508.6	6.2	446	16	1
29	5508.9	7.1	237	17	1
30	5509.6	6.1	355	18	1
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	11.3	370	14	0
2	5491.1	12.6	473	16	1
3	5491.8	14.2	230	14	1
4	5492.5	19.6	276	12	1
5	5493.2	13.1	447	15	0
6	5493.9	17.3	223	13	1
7	5494.5	12.3	398	14	1
8	5495.2	18.8	359	14	1
9	5495.9	12.8	434	15	0
10	5497.1	17.6	469	12	1
11	5498.2	11.7	245	14	1
12	5499.4	19.3	353	12	1
13	5500.0	14.4	370	13	1
14	5500.9	16.7	376	14	1
15	5501.7	19.2	285	14	1
16	5502.6	17.3	444	15	1
17	5503.4	17.1	240	13	1
18	5504.3	15.0	401	14	0
19	5504.8	13.1	343	15	0
20	5505.4	14.0	296	14	1
21	5505.9	14.7	233	16	1
22	5506.5	11.7	278	13	1
23	5506.8	13.9	235	14	0
24	5507.2	15.2	488	16	1
25	5507.5	17.5	278	14	1
26	5507.9	16.7	441	14	1
27	5508.2	17.9	496	14	1
28	5508.6	14.6	497	14	0
29	5508.9	18.2	207	13	1
30	5509.6	13.0	393	16	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: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (96.7\% + 80\% + 83.3\% + 76.7\%) / 4 = 84.2\% (>80\%)$

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	5493.6	1
2	5500.0	1	17	5498.0	1
3	5500.0	1	18	5496.8	1
4	5500.0	1	19	5492.8	1
5	5500.0	1	20	5495.2	1
6	5500.0	1	21	5505.6	1
7	5500.0	1	22	5502.8	1
8	5500.0	1	23	5505.6	1
9	5500.0	1	24	5503.2	1
10	5500.0	1	25	5506.0	1
11	5496.8	1	26	5502.0	1
12	5495.2	1	27	5502.0	1
13	5494.8	1	28	5507.2	1
14	5497.2	1	29	5504.4	1
15	5494.8	1	30	5507.6	1
Detection Percentage (%)					100%

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	53.9	11	1853	1865	255.176
2	2	72.8	11	1303		298.267
3	2	53.5	11	1894		483.854
4	3	55.9	11	1036	1992	456.761
5	2	62.2	11	1988		60.369
6	2	59.6	11	1179		823.006
7	2	75.4	11	1079		507.633
8	3	97.1	11	1100	1756	22.05
9	1	99.6	11			165.697
10	1	92	11			701.784
11	3	86.1	11	1358	1191	591.031
12	3	60.7	11	1701	1841	678.629
13	3	99.7	11	1122	1377	363.586
14	3	81.1	11	1458	1024	655.643

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	1	90.3	9			176.538
2	3	77.6	9	1174	1951	360.797
3	2	94.5	9	1551		774.564
4	2	69.9	9	1441		188.791
5	2	59.2	9	1142		635.739
6	1	81.3	9			587.816
7	1	84.1	9			672.813
8	2	99.4	9	1294		597.64
9	2	90.6	9	1678		149.977
10	1	80.4	9			445.384
11	1	74.4	9			687.201
12	3	76.5	9	1401	1166	764.329
13	1	68	9			430.086
14	1	77.4	9			286.943

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	91.2	16	1254		345.019
2	3	65.4	16	1223	1831	162.697
3	3	75.9	16	2000	1826	89.884
4	3	56.7	16	1978	1799	318.061
5	1	96.8	16			773.659
6	2	83	16	1965		593.546
7	1	67.9	16			842.713
8	2	52.2	16	1591		190.93
9	1	95.6	16			253.597
10	2	50.9	16	1191		812.564
11	1	86.7	16			731.421
12	2	91.1	16	1266		678.729
13	1	88.1	16			40.586
14	1	94.5	16			507.043

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	2	63.1	13	1748		201.792
2	2	73.1	13	1101		580.14
3	2	51.1	13	1368		94.28
4	2	93.9	13	1747		187.06
5	2	73.3	13	1659		75.61
6	1	80.6	13			703.43
7	2	78.9	13	1800		728.24
8	2	64.6	13	1687		466.54
9	2	64.3	13	1214		477.21
10	1	76.4	13			50.16
11	1	60.5	13			588.59
12	2	65.1	13	1499		21.21
13	3	50.4	13	1096	1642	74.01
14	2	71.1	13	1172		662.3
15	2	76.7	13	1294		131.2
16	2	85.8	13	1945		667.9

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	87.3	5	1789		446.041
2	1	62.3	5			556.697
3	1	55.2	5			119.014
4	2	89.6	5	1368		843.691
5	2	50.8	5	1411		585.759
6	3	72.5	5	1327	1953	358.386
7	1	51.2	5			156.543
8	2	69.3	5	1152		316.81
9	2	70.9	5	1505		583.047
10	2	94.7	5	1641		507.714
11	3	52.6	5	1662	1356	385.211
12	1	85.3	5			613.729
13	2	62.6	5	1154		586.986
14	3	94.8	5	1687	1339	642.843

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	3	98.8	12	1959	1501	13.474
2	3	51.9	12	1879	1894	538.693
3	3	63.6	12	1407	1153	322.596
4	2	68.3	12	1629		905.489
5	2	92.4	12	1476		225.902
6	1	50.5	12			863.155
7	2	52.7	12	1558		769.288
8	2	64.6	12	1340		37.372
9	2	74.1	12	1898		59.125
10	1	94.8	12			435.938
11	2	57.6	12	1515		231.951
12	3	79.9	12	1296	1438	752.054
13	2	54.5	12	1243		146.677

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	1	86.3	12			317.236
2	2	56.7	12	1244		1003.761
3	1	61.6	12			421.142
4	1	56.3	12			922.923
5	2	98	12	1200		673.724
6	3	60.3	12	1896	1961	1056.615
7	1	64.2	12			57.175
8	3	53.7	12	1978	1762	856.076
9	3	66.8	12	1336	1048	695.157
10	2	58.6	12	1940		563.818
11	2	55.2	12	1041		590.009

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	90.4	9	1656		658.622
2	2	65.8	9	1976		927.36
3	1	84.2	9			623.9
4	3	85.9	9	1974	1033	714.14
5	2	58.2	9	1501		422.09
6	1	99	9			4.58
7	2	63.7	9	1471		13.87
8	2	85	9	1652		388.17
9	1	62.2	9			449.82
10	3	64.8	9	1274	1100	54.16
11	2	70.9	9	1026		363.9
12	2	81	9	1455		726.2

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	1	81.1	5			226.355
2	3	82.5	5	1782	1247	532.633
3	2	86.8	5	1684		259.736
4	3	51	5	1616	1475	93.389
5	3	97	5	1339	1858	584.612
6	1	53.4	5			545.715
7	2	69.7	5	1845		554.818
8	2	60.1	5	1695		604.582
9	3	83.5	5	1144	1828	162.485
10	2	80.6	5	1732		164.548
11	2	56.3	5	1087		836.431
12	3	63.8	5	1676	1098	711.854
13	3	88.6	5	1367	1975	227.377

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	83.6	10	1733	1071	464.651
2	2	58.4	10	1711		471.62
3	2	99	10	1492		873.21
4	2	66.6	10	1218		746.5
5	1	84.4	10			967.42
6	1	66.4	10			894.14
7	3	90.4	10	1526	1512	427.04
8	1	55.1	10			969.96
9	1	76.9	10			244.24
10	1	57.9	10			704.44
11	3	73.5	10	1348	1145	975.5
12	2	88.5	10	1174		785

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	1	66.8	16			249.131
2	2	57.4	16	1416		885.763
3	2	53	16	1647		35.136
4	2	73.3	16	1465		595.159
5	3	76	16	1923	1062	835.972
6	1	63.6	16			769.865
7	2	72.8	16	1696		102.098
8	3	84.8	16	1299	1594	28.682
9	2	83	16	1357		398.015
10	1	63.8	16			406.098
11	2	94.5	16	1378		633.541
12	3	90.1	16	1531	1210	429.054
13	1	87.6	16			679.977

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	96.2	12	1977		843.367
2	1	51.7	12			74.577
3	2	74.1	12	1645		363.726
4	3	63.4	12	1153	1509	193.049
5	2	84.7	12	1091		477.042
6	2	96.5	12	1749		847.205
7	3	97.8	12	1030	1526	555.878
8	3	83.9	12	1239	1071	436.462
9	3	93.3	12	1981	1993	643.855
10	2	65.9	12	1425		447.358
11	1	59.9	12			509.351
12	3	86.2	12	1974	1176	732.254
13	2	85.8	12	1798		502.777

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	1	81.4	11			519.005
2	1	92.7	11			264.001
3	2	75.8	11	1290		204.312
4	3	88	11	1546	1437	568.613
5	1	92.7	11			326.424
6	1	66.1	11			173.855
7	2	76.1	11	1597		503.536
8	3	79.1	11	1204	1022	311.187
9	1	87.4	11			109.868
10	3	50.9	11	1440	1522	538.969
11	1	63.1	11			344.041
12	2	73.5	11	1209		410.102
13	1	86	11			212.523
14	2	95.8	11	1730		353.304
15	2	86.8	11	1711		62.225
16	1	90.5	11			16.916
17	3	64.3	11	1810	1394	75.037
18	2	90.6	11	1867		362.858
19	3	83.8	11	1522	1940	464.879

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	1	51.8	17			412.365
2	3	93.8	17	1917	1216	388.911
3	1	77.5	17			487.342
4	2	55.8	17	1418		421.073
5	3	67.4	17	1075	1369	498.444
6	2	66.7	17	1902		69.995
7	2	94.1	17	1901		574.666
8	1	83.5	17			78.247
9	1	93.2	17			99.978
10	2	63.7	17	1634		160.089
11	2	64.6	17	1920		482.721
12	3	67.1	17	1243	1201	541.312
13	2	77.7	17	1427		386.283
14	3	62.8	17	1948	1954	334.284
15	3	55.8	17	1037	1796	513.965
16	2	60.3	17	1713		510.056
17	1	56	17			510.037
18	2	72.6	17	1372		359.058
19	1	70.8	17			340.179

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	84.8	11			447.84
2	3	54.2	11	1432	1571	523.421
3	2	76.3	11	1826		343.242
4	2	62.7	11	1759		380.633
5	2	61.6	11	1025		174.064
6	2	84.5	11	1886		200.275
7	3	78.2	11	1236	1559	4.966
8	1	82.8	11			232.377
9	3	57.3	11	1421	1584	82.058
10	2	79.7	11	1491		458.449
11	2	83.4	11	1042		85.561
12	1	93	11			576.152
13	2	52.9	11	1293		535.703
14	1	88.1	11			22.304
15	2	75.7	11	1144		598.295
16	2	91.1	11	1204		232.476
17	3	89.6	11	1395	1011	535.437
18	2	88.6	11	1299		487.358
19	2	96.1	11	1664		463.379

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	81.1	8	1252		344.439
2	2	59.8	8	1418		132.907
3	2	78	8	1602		471.23
4	3	86	8	1608	1503	12.89
5	1	71.7	8			383.91
6	3	60.9	8	1034	1923	430.46
7	2	79.8	8	1448		644.16
8	1	73.7	8			247.38
9	1	85.9	8			2.51
10	2	98.5	8	1314		388.04
11	3	76.4	8	1821	1370	161.68
12	2	51.5	8	1163		500.48
13	2	50.3	8	1136		211.55
14	2	65	8	1570		349.9
15	2	96.9	8	1280		328.7

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	1	89.1	19			672.57
2	2	59.2	19	1750		355.72
3	2	74.2	19	1520		594.04
4	3	97.8	19	1540	1726	957.86
5	1	75.9	19			639.21
6	2	69.3	19	1360		189
7	2	73	19	1205		465.82
8	3	68.7	19	1385	1362	134.46
9	1	68	19			1027.9
10	3	82.6	19	1938	1567	495.9

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	88.5	16	1822		343.824
2	2	73.1	16	1109		328.082
3	1	91.8	16			542.707
4	3	57.5	16	1034	1197	99.66
5	2	58.3	16	1490		224.393
6	2	71.8	16	1527		268.887
7	3	74.2	16	1809	1273	449.25
8	3	80.5	16	1327	1539	658.953
9	1	79.2	16			650.277
10	1	96.5	16			292.96
11	3	79.5	16	1808	1879	495.923
12	2	50.9	16	1764		6.237
13	2	81.5	16	1132		660.39
14	3	93.7	16	1344	1885	628.283
15	2	82.5	16	1143		82.147
16	2	85.4	16	1733		542.6
17	3	57.6	16	1263	1621	648.433
18	2	85.1	16	1649		229.367

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	92.7	6	1216		654.02
2	2	84.5	6	1640		87.205
3	3	61.9	6	1127	1792	635.877
4	2	72.7	6	1261		644.74
5	2	71.9	6	1883		16.293
6	3	82.2	6	1096	1361	319.487
7	2	69	6	1248		409.51
8	2	59.5	6	1094		339.843
9	2	82.4	6	1869		335.647
10	2	70.7	6	1987		440.45
11	2	76.2	6	1553		633.523
12	2	76.8	6	1527		569.797
13	1	51.7	6			477.46
14	3	77.1	6	1606	1767	184.133
15	2	77.6	6	1285		279.557
16	2	92.2	6	1648		569.5
17	2	90.1	6	1051		89.633
18	1	73.6	6			328.067

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	3	89.3	12	1999	1117	74.855
2	2	58.9	12	1544		72.394
3	2	54.3	12	1534		248.995
4	2	89.7	12	1657		58.903
5	1	65.8	12			288.201
6	2	69.2	12	1029		124.508
7	2	70.5	12	1003		332.206
8	3	67.9	12	1268	1048	138.824
9	3	64.7	12	1268	1811	216.261
10	2	73.2	12	1205		549.289
11	2	66.5	12	1478		280.126
12	1	76	12			655.394
13	2	77.9	12	1907		65.602
14	2	82.6	12	1836		57.209
15	2	50.8	12	1507		415.147
16	2	73	12	1824		485.765
17	2	50.4	12	1559		5.882

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	87.8	10	1872	1133	186.489
2	2	67	10	1283		614.283
3	2	80.8	10	1663		299.407
4	2	54.4	10	1194		425.63
5	1	51.4	10			466.263
6	2	77.5	10	1225		276.607
7	3	72	10	1139	1762	414.61
8	2	98.4	10	1662		234.243
9	2	60.5	10	1806		163.067
10	1	71.3	10			401.28
11	2	69.9	10	1042		332.283
12	2	91.9	10	1464		516.537
13	2	64.8	10	1825		46.85
14	1	96	10			550.673
15	2	72.1	10	1329		491.297
16	1	77.4	10			317.1
17	1	67	10			489.633
18	1	60.9	10			118.367

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	2	68.7	17	1599		212.822
2	1	72.7	17			120.782
3	2	66.3	17	1692		519.747
4	2	60.3	17	1683		482.69
5	2	75	17	1561		451.243
6	2	57.5	17	1784		35.587
7	3	54.3	17	1859	1053	561.7
8	3	64.5	17	1598	1841	528.293
9	2	53.4	17	1147		530.387
10	2	55.4	17	1151		240.23
11	2	93	17	1697		531.033
12	2	74.2	17	1895		408.157
13	3	90.6	17	1456	1761	395.77
14	2	73.7	17	1699		141.083
15	2	53.3	17	1484		468.397
16	1	59.3	17			254.2
17	2	70.4	17	1931		449.233
18	2	94.1	17	1510		180.467

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	3	56.6	10	1729	1401	785.58
2	1	83.5	10			478.95
3	1	65.3	10			656.25
4	2	84.3	10	1783		367.4
5	2	54.5	10	1042		519.84
6	2	66.6	10	1504		474.25
7	2	88.5	10	1829		672.97
8	2	68.4	10	1103		454.42
9	3	62.3	10	1283	1708	169.39
10	2	66.3	10	1715		97.44
11	2	72.6	10	1532		248.47
12	2	51	10	1069		223.63
13	1	60.6	10			609.3
14	2	56.9	10	1699		355.9
15	3	54.7	10	1850	1816	443.3

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	57	16			203.869
2	2	89.8	16	1484		29.918
3	2	90.7	16	1018		282.577
4	2	60.8	16	1764		161.73
5	3	66.6	16	1632	1340	636.943
6	2	99.4	16	1399		224.617
7	3	53	16	1846	1588	332.92
8	3	64.9	16	1266	1856	369.463
9	1	52.9	16			92.127
10	1	67.6	16			152.62
11	2	73.1	16	1214		95.803
12	2	58.7	16	1445		366.917
13	1	58.7	16			412.77
14	2	67.8	16	1929		331.433
15	3	77.7	16	1556	1628	87.317
16	3	64.2	16	1490	1033	378.3
17	1	78.2	16			277.833
18	3	77.3	16	1381	1777	250.867

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	97.2	9	1337	1276	320.126
2	2	87	9	1763		810.997
3	3	82.8	9	1561	1392	495.354
4	1	71	9			278.151
5	2	93.8	9	1754		568.679
6	2	70.3	9	1784		653.686
7	1	78.1	9			263.033
8	2	57.8	9	1984		88.25
9	2	59.1	9	1176		219.927
10	3	53	9	1100	1660	62.264
11	2	74.9	9	1858		520.141
12	3	90.9	9	1486	1458	778.229
13	2	65.9	9	1507		246.986
14	3	65.7	9	1385	1473	560.243

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	95.1	19	1757		621.963
2	2	57.1	19	1653		268.1
3	2	86.9	19	1360		160.33
4	3	76.6	19	1548	1347	1091.27
5	1	95.9	19			1058.21
6	3	87.2	19	1469	1955	442.1
7	2	57.8	19	1393		364.68
8	1	95	19			947.15
9	1	89.2	19			28.36
10	2	66.2	19	1741		990

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	2	82.5	19	1239		975.087
2	2	90.3	19	1598		846.45
3	2	58.1	19	1182		832.23
4	1	81.9	19			320.56
5	1	70.7	19			443.92
6	2	66.3	19	1017		718.84
7	3	84	19	1935	1472	413
8	2	97.8	19	1708		682.56
9	3	63.2	19	1863	1711	832.7
10	2	83.7	19	1912		998.6

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	62.4	6	1073		148.907
2	3	77.8	6	1514	1166	256.166
3	3	93.2	6	1976	1448	237.882
4	1	67.1	6			106.843
5	2	70.2	6	1730		504.954
6	3	90.2	6	1338	1533	206.755
7	2	68.1	6	1244		204.206
8	3	87.6	6	1616	1181	18.287
9	3	60.1	6	1143	1336	31.208
10	3	94.4	6	1788	1694	31.719
11	2	76.5	6	1890		28.491
12	2	85.7	6	1079		1.782
13	2	80.6	6	1979		147.593
14	2	99	6	1467		191.084
15	2	94.8	6	1111		21.595
16	2	50.5	6	1168		180.296
17	1	92.8	6			535.837
18	2	92.7	6	1209		618.658
19	1	73.6	6			466.279

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	1	50.2	13			182.831
2	2	82.1	13	1016		227.841
3	3	65.4	13	1558	1488	374.002
4	2	64.5	13	1879		19.583
5	1	69.6	13			527.434
6	2	82.4	13	1123		233.675
7	2	50.6	13	1249		587.645
8	2	51.8	13	1239		256.716
9	2	51.5	13	1868		104.037
10	2	77.7	13	1642		688.818
11	2	93.2	13	1780		509.909

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	3	85.9	5	1082	1775	843.738
2	2	61.7	5	1706		722.093
3	2	51.5	5	1576		745.726
4	1	50.6	5			733.929
5	3	71.6	5	1017	1766	431.912
6	1	60.5	5			895.505
7	1	50.5	5			165.378
8	2	87.8	5	1251		736.052
9	2	90	5	1199		650.815
10	2	54.1	5	1198		717.848
11	2	57.6	5	1136		530.071
12	2	80.5	5	1996		174.654
13	2	97.8	5	1977		650.077

Radar Type 6 - Radar Statistical Performance

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

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
34	5494	102	6	5499	18
53	5491	159	47	5492	141
69	5509	207	65	5498	195
--	--	--	71	5501	213
--	--	--	97	5504	291

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
21	5509	63	39	5499	117
29	5504	87	54	5495	162
31	5493	93	72	5505	216
--	--	--	80	5502	240
--	--	--	95	5503	285
--	--	--	99	5497	297

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
14	5493	42	14	5496	42
18	5492	54	17	5490	51
26	5508	78	26	5509	78
30	5494	90	32	5504	96
99	5504	297	46	5508	138
--	--	--	50	5506	150
--	--	--	57	5502	171

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
46	5510	138	17	5503	51
53	5504	159	67	5507	201
58	5502	174	72	5493	216
--	--	--	85	5510	255
--	--	--	90	5504	270

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
39	5500	117	3	5506	9
64	5506	192	34	5499	102
--	--	--	78	5503	234
--	--	--	98	5498	294

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
51	5497	153	24	5500	72
62	5509	186	45	5505	135
71	5502	213	92	5507	276
81	5494	243	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5508	18	33	5503	99
17	5501	51	49	5504	147
42	5491	126	77	5495	231
65	5505	195	81	5500	243
70	5502	210	--	--	--
84	5507	252	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5501	12	1	5492	3
21	5494	63	2	5491	6
36	5498	108	97	5507	291
45	5502	135	--	--	--
70	5510	210	--	--	--
87	5500	261	--	--	--
94	5496	282	--	--	--
99	5493	297	--	--	--

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
67	5496	201	16	5502	48
82	5497	246	44	5508	132
96	5499	288	45	5493	135
--	--	--	79	5501	237

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
17	5508	51	4	5509	12
37	5504	111	7	5493	21
100	5507	300	25	5494	75
--	--	--	35	5499	105
--	--	--	66	5496	198
--	--	--	73	5500	219
--	--	--	82	5495	246
--	--	--	91	5492	273
--	--	--	100	5501	300

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5493	27	2	5508	6
54	5498	162	28	5491	84
64	5492	192	49	5505	147
87	5490	261	66	5506	198

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5495	27	30	5494	90
21	5506	63	39	5498	117
100	5492	300	59	5507	177
--	--	--	61	5510	183

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
61	5500	183	9	5504	27
88	5499	264	24	5497	72
95	5497	285	70	5492	210
97	5492	291	71	5507	213
--	--	--	73	5508	219

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
91	5499	273	31	5502	93
--	--	--	35	5493	105
--	--	--	37	5504	111
--	--	--	38	5505	114
--	--	--	40	5498	120
--	--	--	71	5495	213
--	--	--	72	5510	216
--	--	--	74	5499	222

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5493	6	39	5508	117
16	5509	48	74	5496	222
76	5510	228	90	5492	270

待測物名稱	AC1200 Wi-Fi 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	2021/03/13
測試項目	Radar Statistical Performance Check (802.11ac-VHT40 mode – 5510MHz) – Mode 1		

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	658	81	1
2	5491.9	1	518	102	1
3	5492.8	1	718	74	1
4	5493.7	1	538	98	1
5	5494.6	1	858	62	1
6	5495.5	1	3066	18	1
7	5496.3	1	698	76	1
8	5497.2	1	618	86	1
9	5498.1	1	938	57	1
10	5499.7	1	878	61	1
11	5501.2	1	918	58	1
12	5502.8	1	818	65	1
13	5504.4	1	578	92	1
14	5505.9	1	798	67	1
15	5507.5	1	898	59	1
16	5509.0	1	884	60	1
17	5510.0	1	2646	20	1
18	5511.3	1	2644	20	1
19	5512.7	1	2066	26	1
20	5514.0	1	2017	27	1
21	5515.3	1	1656	32	1
22	5516.7	1	1024	52	1
23	5518.0	1	1992	27	1
24	5519.6	1	1060	50	1
25	5521.2	1	1993	27	1
26	5522.9	1	2194	25	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5524.5	1	2194	25	1
28	5526.1	1	588	90	1
29	5527.8	1	1902	28	1
30	5529.0	1	2897	19	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	2.6	162	25	0
2	5491.9	4.9	158	25	1
3	5492.8	4.9	162	27	1
4	5493.7	1.1	222	29	1
5	5494.6	2.9	212	26	0
6	5495.5	1.5	165	27	1
7	5496.3	1.7	230	27	1
8	5497.2	5.0	215	27	1
9	5498.1	2.8	154	26	0
10	5499.7	2.8	197	28	1
11	5501.2	2.1	223	26	1
12	5502.8	3.1	161	24	1
13	5504.4	4.3	212	27	1
14	5505.9	2.9	158	26	0
15	5507.5	1.0	182	23	1
16	5509.0	2.5	186	23	0
17	5510.0	2.5	156	27	1
18	5511.3	1.0	201	26	1
19	5512.7	4.3	173	29	1
20	5514.0	4.8	174	25	1
21	5515.3	2.9	221	26	1
22	5516.7	3.1	197	28	1
23	5518.0	1.5	217	25	0
24	5519.6	2.6	164	27	1
25	5521.2	2.4	200	26	1
26	5522.9	3.5	203	25	0
27	5524.5	1.8	164	27	1
28	5526.1	2.9	159	24	1
29	5527.8	2.7	213	29	1
30	5529.0	2.6	168	27	0
Detection Percentage (%)					73.3%

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	9.5	474	17	1
2	5491.9	6.3	374	17	1
3	5492.8	8.6	472	18	1
4	5493.7	6.4	380	17	1
5	5494.6	8.4	245	17	1
6	5495.5	6.5	277	17	1
7	5496.3	6.1	418	18	1
8	5497.2	8.4	421	17	1
9	5498.1	6.3	337	16	0
10	5499.7	9.3	308	17	1
11	5501.2	9.0	303	18	1
12	5502.8	9.4	204	17	1
13	5504.4	8.2	315	16	1
14	5505.9	9.3	233	16	1
15	5507.5	9.9	363	17	1
16	5509.0	7.2	222	16	0
17	5510.0	8.0	415	17	1
18	5511.3	8.8	339	16	0
19	5512.7	7.6	369	16	0
20	5514.0	7.6	469	17	1
21	5515.3	9.4	435	18	1
22	5516.7	9.0	308	16	1
23	5518.0	6.2	207	17	1
24	5519.6	7.0	366	18	0
25	5521.2	6.0	439	17	1
26	5522.9	9.4	232	16	1
27	5524.5	8.1	307	18	1
28	5526.1	9.1	281	18	1
29	5527.8	7.1	340	18	0
30	5529.0	6.5	321	18	1
Detection Percentage (%)					80%

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	11.3	499	16	1
2	5491.9	18.3	433	14	1
3	5492.8	13.9	325	16	1
4	5493.7	11.2	402	12	0
5	5494.6	17.5	457	13	1
6	5495.5	14.3	323	16	1
7	5496.3	11.3	457	16	1
8	5497.2	20.0	299	15	1
9	5498.1	13.3	423	15	1
10	5499.7	11.3	440	14	1
11	5501.2	20.0	205	15	0
12	5502.8	14.7	326	16	1
13	5504.4	17.3	452	14	1
14	5505.9	15.4	390	13	0
15	5507.5	11.1	286	13	0
16	5509.0	14.7	362	15	1
17	5510.0	19.4	462	16	1
18	5511.3	18.9	456	14	1
19	5512.7	13.4	420	12	1
20	5514.0	14.3	348	14	1
21	5515.3	13.8	386	15	1
22	5516.7	16.1	346	12	1
23	5518.0	16.7	250	12	1
24	5519.6	19.6	420	15	1
25	5521.2	18.1	225	12	0
26	5522.9	16.3	391	13	1
27	5524.5	17.5	263	16	1
28	5526.1	16.2	216	13	0
29	5527.8	13.4	246	15	1
30	5529.0	19.9	301	13	1
Detection Percentage (%)					80%

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

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (100\% + 73.3\% + 80\% + 80\%) / 4 = 83.3\% (>80\%)$

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	5498.6	1
2	5510.0	1	17	5493.0	1
3	5510.0	1	18	5495.8	1
4	5510.0	1	19	5495.8	1
5	5510.0	1	20	5498.6	1
6	5510.0	1	21	5526.6	1
7	5510.0	1	22	5526.2	1
8	5510.0	1	23	5522.6	1
9	5510.0	1	24	5521.4	1
10	5510.0	1	25	5525.4	1
11	5498.6	1	26	5527.0	1
12	5497.8	1	27	5526.2	1
13	5499.0	1	28	5525.0	1
14	5497.4	1	29	5523.4	1
15	5493.0	1	30	5521.8	1
Detection Percentage (%)					100%

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	1	94.8	20			600.518
2	3	55.5	20	1024	1963	490.28
3	2	76.7	20	1649		286.58
4	1	96.5	20			508.16
5	2	60.1	20	1928		138.34
6	2	65.4	20	1332		672.12
7	2	59.9	20	1082		423.16
8	2	98.5	20	1169		134.05
9	2	87	20	1021		462.7
10	2	53.3	20	1888		686.4
11	1	78.2	20			158.85
12	2	95.3	20	1477		369.4
13	1	95.1	20			424.13
14	1	52.2	20			560.7
15	3	57.6	20	1135	1165	503.4
16	2	66.2	20	1010		495.5

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	88.7	12	1367		231.67
2	2	86.2	12	1553		359.471
3	2	85.9	12	1395		953.892
4	1	68.4	12			49.063
5	2	99.1	12	1461		653.974
6	1	58.3	12			746.135
7	2	86.5	12	1397		397.435
8	2	64.8	12	1098		479.296
9	3	70.8	12	1076	1984	629.407
10	1	90.7	12			302.018
11	2	66.3	12	1158		498.309

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	50	16	1686	1733	48.877
2	2	72.8	16	1042		1025.911
3	2	52.5	16	1390		980.762
4	1	82.3	16			893.503
5	3	51.9	16	1140	1247	5.344
6	2	88.8	16	1848		945.475
7	1	74.9	16			193.395
8	2	95.5	16	1336		317.476
9	2	53.4	16	1860		141.647
10	2	51.6	16	1528		577.618
11	2	90.8	16	1895		453.209

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	77.2	13	1603	1135	729.182
2	2	94.9	13	1174		204.277
3	2	71.4	13	1423		20.764
4	2	59.2	13	1098		22.911
5	1	62.9	13			268.019
6	1	77.6	13			846.756
7	3	74.1	13	1288	1085	390.383
8	3	62.3	13	1876	1117	310.71
9	3	92.2	13	1887	1327	423.967
10	2	79.6	13	1948		684.224
11	3	53.8	13	1788	1307	220.471
12	2	91.5	13	1797		728.029
13	2	75.1	13	1577		320.886
14	1	57.4	13			665.643

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	1	77.3	19			47.573
2	3	78.1	19	1693	1177	745.87
3	1	51.7	19			168.9
4	2	71.4	19	1002		578.54
5	1	74.1	19			416.64
6	1	71.2	19			177.26
7	2	53.7	19	1070		45.06
8	3	91.6	19	1729	1526	430.46
9	3	73.7	19	1653	1453	483.7
10	3	85.4	19	1723	1643	331
11	1	81.5	19			284.88
12	2	54.7	19	1033		37.46
13	1	94.5	19			402.9
14	2	57.2	19	1858		80.5
15	2	83.9	19	1714		669.6

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	79.1	9			935.114
2	2	63.5	9	1017		399.631
3	3	95.4	9	1277	1227	635.452
4	2	57.8	9	1569		747.183
5	3	93.6	9	1290	1240	632.134
6	3	59.6	9	1333	1687	587.615
7	2	85.6	9	1552		524.795
8	2	73.5	9	1428		640.486
9	3	88.4	9	1196	1513	848.937
10	1	60.4	9			1071.218
11	2	50.9	9	1558		389.609

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	80	19	1907		782.935
2	2	64.6	19	1522		632.82
3	3	87	19	1131	1416	189.12
4	2	64.8	19	1268		286.14
5	2	74.6	19	1605		225.59
6	3	61.1	19	1841	1698	64.23
7	1	81.5	19			9.85
8	2	58	19	1490		596.43
9	1	55.6	19			351.42
10	2	55.8	19	1584		298.14
11	1	92	19			2.76
12	1	73.6	19			341.78
13	2	84.5	19	1781		449.6
14	2	60	19	1718		190.5
15	1	82.8	19			72.3

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	64.3	8	1905		286.32
2	1	59.8	8			271.65
3	3	70.9	8	1921	1902	617.6
4	3	89.9	8	1007	1499	453.22
5	1	86.7	8			401.27
6	2	72.4	8	1700		568.3
7	2	66.8	8	1634		389.63
8	2	72.2	8	1448		92.02
9	3	93.4	8	1880	1803	514.91
10	2	63.8	8	1767		165.35
11	1	52.3	8			462.32
12	2	50.3	8	1977		750.44
13	2	54.1	8	1209		170.91
14	2	70.9	8	1575		583.1
15	1	66.2	8			643

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	55.4	9	1129		717.132
2	2	56	9	1398		962.251
3	3	58.5	9	1615	1956	668.872
4	3	62.4	9	1368	1603	277.643
5	2	87.9	9	1994		446.324
6	2	83.8	9	1405		237.895
7	2	80.2	9	1770		796.745
8	2	51.9	9	1414		421.976
9	2	84.9	9	1395		558.347
10	3	87.9	9	1112	1507	279.818
11	2	58.7	9	1891		1047.709

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	1	50	13			966.062
2	3	93.2	13	1308	1386	970.821
3	1	96.9	13			308.032
4	1	95.7	13			806.413
5	1	82.8	13			563.554
6	2	86.8	13	1915		374.805
7	3	84.8	13	1823	1352	65.565
8	1	95.9	13			431.886
9	3	80.4	13	1971	1279	305.017
10	2	97.7	13	1200		546.118
11	2	78.1	13	1428		476.009

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	97.5	19	1939		147.607
2	3	88.7	19	1745	1400	131.481
3	1	69.8	19			421.91
4	3	78.2	19	1506	1387	543.87
5	1	78.1	19			150.69
6	1	66.6	19			658.06
7	3	92.1	19	1824	1202	500.18
8	3	60.2	19	1673	1479	258.66
9	2	91.5	19	1498		619.85
10	2	75.4	19	1130		434.88
11	3	90.7	19	1614	1018	406.88
12	2	96.9	19	1312		316.4
13	3	87.3	19	1931	1766	86.17
14	1	83.2	19			588.3
15	1	85.6	19			134.1
16	2	58.4	19	1468		115.4

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	77.4	17	1806	1312	264.627
2	1	64.1	17			180.014
3	2	73.8	17	1848		323.455
4	2	52.4	17	1375		524.263
5	2	89.5	17	1802		602.601
6	2	73.4	17	1979		70.358
7	2	76.9	17	1229		336.756
8	2	79.1	17	1102		267.254
9	3	56.3	17	1118	1932	504.301
10	2	76.6	17	1818		310.639
11	1	53.3	17			150.206
12	3	67	17	1347	1365	484.064
13	2	52.8	17	1880		267.052
14	3	58.5	17	1512	1187	447.909
15	3	97.5	17	1504	1876	139.047
16	3	72.8	17	1963	1309	493.965
17	2	81	17	1869		67.782

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	3	58.6	20	1585	1799	14.881
2	3	52.5	20	1789	1911	282.803
3	2	74.2	20	1935		439.696
4	2	94.6	20	1236		234.889
5	2	74.2	20	1495		885.782
6	1	83.9	20			71.165
7	3	77	20	1139	1149	294.948
8	2	93.6	20	1183		221.612
9	1	69	20			5.825
10	1	84	20			471.668
11	2	74.8	20	1628		89.161
12	3	77.7	20	1950	1316	94.454
13	2	81.2	20	1527		862.177

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	3	81	16	1581	1076	731.76
2	3	62.7	16	1299	1977	7.455
3	2	80.6	16	1112		538.216
4	2	99.8	16	1188		522.909
5	3	96.3	16	1362	1197	71.652
6	2	94	16	1553		253.015
7	2	70.4	16	1468		277.078
8	2	79.4	16	1020		17.112
9	2	95.3	16	1281		15.795
10	2	90.9	16	1027		566.318
11	2	91.5	16	1832		278.061
12	2	68.6	16	1513		89.854
13	3	51	16	1806	1110	796.077

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	62.9	5	1846		97.306
2	2	61.7	5	1761		66.576
3	3	92.6	5	1741	1026	364.81
4	1	73.1	5			255.7
5	2	81.3	5	1021		187.11
6	3	60.6	5	1556	1186	388.2
7	1	69.6	5			483.2
8	1	65	5			298.22
9	2	58.1	5	1291		362.43
10	2	89.4	5	1009		408.21
11	1	51.1	5			61.21
12	3	88.4	5	1052	1959	121.1
13	2	82.7	5	1669		265
14	2	89.8	5	1588		64.38
15	2	61.2	5	1991		59.46
16	2	64.5	5	1076		181.58
17	2	50.7	5	1834		365.49
18	3	86.5	5	1766	1966	137
19	2	62.9	5	1011		321.5
20	2	97.3	5	1956		427.6

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	1	92.1	19			318.927
2	3	87	19	1589	1271	349.688
3	1	90.4	19			436.222
4	2	81.3	19	1542		290.563
5	1	68.5	19			120.534
6	3	96.3	19	1611	1528	615.245
7	1	89.2	19			326.026
8	2	52	19	1193		559.037
9	3	72.1	19	1123	1227	1.798
10	1	70.2	19			596.289
11	1	97.1	19			164.061
12	2	68	19	1035		160.472
13	3	63.6	19	1595	1669	324.463
14	2	81.3	19	1519		559.224
15	3	67.2	19	1089	1542	226.705
16	2	70.1	19	1131		102.486
17	2	57.7	19	1404		534.137
18	2	65.6	19	1405		373.358
19	3	72.6	19	1357	1983	323.779

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	3	96.6	5	1403	1967	489.023
2	2	50.3	5	1211		309.72
3	2	75.1	5	1039		9.66
4	2	63.4	5	1151		281.07
5	2	94	5	1437		844.2
6	2	97.7	5	1668		23.02
7	3	73.8	5	1745	1789	94.25
8	3	57.5	5	1217	1955	363.86
9	2	84.7	5	1106		1095.7
10	3	68.3	5	1491	1244	883.9

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	59.9	12	1304		313.638
2	1	97.1	12			643.141
3	3	57.7	12	1537	1255	270.662
4	3	58.4	12	1911	1092	993.693
5	1	81.1	12			144.684
6	3	51.8	12	1366	1743	715.095
7	2	95.7	12	1375		543.705
8	2	66.7	12	1130		619.286
9	3	70.2	12	1537	1589	226.477
10	2	60.3	12	1808		592.618
11	1	95.5	12			1003.709

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	75.6	12	1956		196.143
2	3	92.2	12	1421	1579	294.723
3	2	94	12	1797		138.336
4	2	89	12	1006		197.489
5	3	73.6	12	1421	1259	61.092
6	3	95.7	12	1871	1850	453.575
7	2	86.5	12	1023		15.548
8	2	60.8	12	1467		779.902
9	1	62.4	12			500.885
10	1	66.7	12			575.648
11	2	67.1	12	1754		158.001
12	1	71.2	12			503.354
13	2	56.1	12	1713		239.177

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	57.6	19	1722		68.034
2	3	84.4	19	1709	1312	1157.02
3	2	67.9	19	1884		222.9
4	3	63.2	19	1529	1272	327.73
5	3	54.9	19	1218	1063	252.88
6	3	89.8	19	1975	1582	902.86
7	1	61.2	19			534.8
8	2	60.6	19	1715		507.42
9	2	96.3	19	1186		386.54
10	2	97	19	1010		153.4

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	66.2	6	1688		623.827
2	2	62.4	6	1826		429.31
3	2	87.3	6	1758		706.77
4	2	72.9	6	1374		317.51
5	2	73.4	6	1437		163.5
6	1	70.1	6			179.47
7	1	77.5	6			612.06
8	3	59.3	6	1948	1289	562.1
9	3	63.5	6	1192	1668	767.75
10	2	94.8	6	1441		476.09
11	3	88.8	6	1696	1461	221.07
12	3	80.8	6	1922	1655	237.21
13	3	82.9	6	1978	1563	63.6
14	2	81.8	6	1992		717.7
15	1	61.8	6			461.2

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	2	71	7	1090		31.592
2	1	58.9	7			786.87
3	1	79.4	7			356.91
4	2	90.9	7	1197		1004.72
5	3	75.9	7	1219	1783	273
6	2	76	7	1222		86.8
7	3	60.8	7	1654	1579	748.23
8	2	56.7	7	1075		364.27
9	2	92.1	7	1664		487.7
10	2	92.1	7	1960		59.8

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	51.4	16	1833		388.558
2	1	53	16			129.505
3	2	59.8	16	1378		394.227
4	3	99.4	16	1125	1631	439.93
5	2	74.6	16	1935		133.663
6	1	82.3	16			448.497
7	2	92.4	16	1970		200
8	2	86.6	16	1835		209.283
9	3	87.2	16	1543	1613	468.917
10	2	90.1	16	1761		174.08
11	2	90	16	1460		201.533
12	1	88.8	16			644.847
13	1	96.5	16			560.67
14	3	91.9	16	1514	1204	40.583
15	1	75.8	16			459.997
16	3	89.8	16	1614	1983	50.3
17	2	97.3	16	1346		569.233
18	2	56.1	16	1104		183.767

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	90.2	19	1444		145.222
2	3	76.1	19	1333	1931	440.571
3	1	58.3	19			507.082
4	2	84.4	19	1467		421.043
5	2	74.5	19	1918		1.604
6	2	81	19	1879		151.545
7	1	56.9	19			322.446
8	2	67.6	19	1313		286.897
9	2	71.4	19	1310		310.028
10	2	69.8	19	1522		434.089
11	3	89.7	19	1935	1704	100.501
12	2	89.4	19	1857		46.272
13	3	75.1	19	1476	1136	545.963
14	2	84.8	19	1066		378.414
15	2	64.3	19	1992		332.445
16	2	80.9	19	1555		543.916
17	1	94.7	19			591.637
18	3	78.2	19	1454	1685	251.558
19	2	94.6	19	1744		618.879

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	2	75.3	9	1762		118.074
2	2	53.8	9	1282		497.06
3	2	81.4	9	1709		276.68
4	2	70.7	9	1536		642.49
5	1	91.6	9			483.43
6	2	86.3	9	1327		672.89
7	2	64.2	9	1778		416.71
8	3	90.4	9	1075	1093	525.69
9	2	55.3	9	1815		519.66
10	3	67.1	9	1516	1357	667.43
11	1	62.5	9			142.69
12	1	90.8	9			628.02
13	1	52.3	9			23.56
14	2	77.3	9	1038		390.3
15	2	70.7	9	1393		211.7
16	2	58.6	9	1931		150.7

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	80.1	5	1963		812.763
2	2	94	5	1037		916.751
3	3	69.3	5	1930	1379	258.562
4	2	53.8	5	1148		527.583
5	1	61.2	5			549.714
6	3	88.2	5	1772	1191	42.495
7	2	68.5	5	1046		178.525
8	2	71	5	1440		326.546
9	3	86.2	5	1845	1298	217.197
10	3	92.3	5	1610	1624	140.228
11	2	90.2	5	1750		1057.309

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	3	63	7	1038	1695	358.187
2	2	89.9	7	1788		547.12
3	2	50.7	7	1152		705.91
4	2	71.1	7	1904		333.64
5	2	98	7	1647		47.7
6	3	84.2	7	1472	1068	728.44
7	2	85.2	7	1275		468.02
8	1	88	7			596.15
9	3	79.6	7	1362	1991	691.63
10	2	64.3	7	1922		161.33
11	1	64.9	7			413.96
12	2	83.6	7	1912		343
13	1	98.2	7			73.88
14	3	77.1	7	1386	1446	215.01
15	3	91.4	7	1946	1093	434.4
16	2	91.8	7	1163		645.2

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	1	90.3	10			648.351
2	1	89.4	10			668.628
3	2	99.6	10	1251		170.145
4	3	87.4	10	1464	1794	604.573
5	2	52.2	10	1207		410.071
6	2	86.6	10	1103		34.928
7	3	87.4	10	1442	1219	315.536
8	2	64.1	10	1785		47.984
9	2	83.8	10	1836		493.181
10	2	96.7	10	1376		587.659
11	3	65.2	10	1296	1250	125.946
12	2	98.2	10	1228		368.064
13	3	74.7	10	1182	1421	193.562
14	2	87	10	1516		378.699
15	2	81.8	10	1998		410.547
16	2	67.4	10	1658		629.865
17	2	83.4	10	1677		374.482

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	84.4	14	1117		488.912
2	3	69	14	1320	1391	130.973
3	1	88.9	14			114.092
4	2	99	14	1449		574.643
5	3	87.9	14	1828	1734	522.034
6	3	50.5	14	1502	1142	63.225
7	2	96.9	14	1777		624.216
8	2	79.1	14	1195		252.017
9	3	84	14	1238	1336	561.608
10	2	92.7	14	1192		613.319
11	3	55	14	1132	1937	258.571
12	2	58.1	14	1881		260.332
13	2	72.4	14	1520		608.653
14	1	53	14			31.214
15	1	66.6	14			343.725
16	1	97.6	14			255.256
17	1	58.3	14			321.437
18	2	94	14	1951		60.758
19	1	54.7	14			480.879

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	3	56	18	1625	1959	86.865
2	3	66.8	18	1262	1630	48.342
3	1	58.8	18			447.777
4	1	75.7	18			260.63
5	3	92.7	18	1980	1537	171.573
6	2	82.7	18	1775		363.017
7	1	80.1	18			525.01
8	2	82	18	1861		52.123
9	2	82.5	18	1306		611.197
10	3	86.8	18	1334	1995	104.46
11	2	59.1	18	1407		596.933
12	3	62.9	18	1550	1179	454.197
13	3	61	18	1882	1746	253.12
14	2	70.8	18	1052		474.503
15	1	80.1	18			13.617
16	1	62.9	18			54.6
17	3	69.1	18	1497	1271	41.233
18	1	93.6	18			524.567

Radar Type 6 - Radar Statistical Performance

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

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5519	6	10	5514	30
6	5522	18	28	5523	84
9	5496	27	51	5515	153
31	5530	93	55	5501	165
37	5491	111	56	5508	168
40	5512	120	57	5494	171
70	5523	210	78	5516	234
86	5505	258	79	5530	237
89	5527	267	96	5520	288
97	5492	291	99	5525	297

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5492	15	7	5519	21
8	5523	24	22	5496	66
28	5507	84	23	5528	69
35	5516	105	37	5504	111
46	5518	138	50	5520	150
47	5526	141	57	5505	171
67	5498	201	68	5516	204
68	5509	204	--	--	--
71	5490	213	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5512	6	4	5500	12
41	5494	123	48	5497	144
42	5525	126	51	5501	153
45	5521	135	59	5525	177
46	5493	138	78	5499	234
63	5520	189	85	5508	255
--	--	--	87	5491	261
--	--	--	93	5518	279

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
22	5516	66	10	5500	30
24	5490	72	29	5518	87
25	5524	75	40	5490	120
27	5523	81	52	5504	156
38	5506	114	55	5512	165
68	5527	204	75	5492	225

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5509	15	6	5522	18
24	5518	72	10	5492	30
37	5503	111	16	5500	48
41	5507	123	24	5494	72
42	5502	126	26	5503	78
58	5500	174	29	5507	87
65	5499	195	30	5530	90
89	5513	267	74	5518	222
95	5505	285	80	5493	240
--	--	--	82	5512	246
--	--	--	96	5527	288

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5514	27	6	5526	18
11	5530	33	10	5525	30
16	5515	48	16	5510	48
17	5504	51	24	5503	72
20	5494	60	31	5516	93
51	5500	153	55	5502	165
66	5496	198	62	5519	186
80	5509	240	68	5497	204
88	5495	264	77	5515	231
92	5516	276	87	5527	261
98	5502	294	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
17	5523	51	1	5513	3
19	5520	57	2	5497	6
26	5529	78	25	5505	75
29	5511	87	34	5528	102
52	5493	156	62	5493	186
54	5513	162	77	5515	231
58	5527	174	83	5511	249
74	5522	222	93	5507	279
82	5505	246	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5524	9	5	5528	15
10	5494	30	10	5501	30
15	5502	45	13	5522	39
36	5522	108	40	5494	120
69	5491	207	54	5498	162
74	5510	222	55	5512	165
76	5493	228	72	5525	216
92	5501	276	81	5515	243
94	5503	282	82	5504	246
97	5506	291	94	5505	282
98	5529	294	--	--	--

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5500	3	4	5513	12
16	5496	48	19	5509	57
18	5525	54	21	5528	63
21	5530	63	51	5501	153
31	5497	93	55	5522	165
85	5513	255	58	5511	174
--	--	--	60	5504	180
--	--	--	61	5490	183
--	--	--	70	5529	210
--	--	--	95	5496	285

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
19	5505	57	9	5512	27
23	5503	69	32	5498	96
32	5512	96	36	5504	108
42	5499	126	59	5526	177
43	5498	129	75	5514	225
73	5519	219	82	5521	246
--	--	--	95	5516	285

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5500	3	11	5511	33
15	5493	45	30	5519	90
21	5524	63	38	5530	114
26	5521	78	56	5528	168
30	5492	90	67	5524	201
49	5508	147	68	5525	204
68	5496	204	69	5509	207
--	--	--	74	5499	222
--	--	--	75	5506	225
--	--	--	82	5520	246
--	--	--	85	5496	255
--	--	--	92	5512	276
--	--	--	99	5494	297
--	--	--	100	5526	300

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5496	21	1	5492	3
38	5518	114	11	5498	33
46	5515	138	40	5523	120
48	5495	144	58	5496	174
51	5519	153	68	5507	204
68	5522	204	88	5494	264
75	5506	225	--	--	--
84	5503	252	--	--	--
89	5508	267	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5517	3	2	5502	6
6	5504	18	7	5513	21
8	5520	24	18	5501	54
54	5508	162	37	5492	111
90	5501	270	44	5512	132
98	5516	294	49	5493	147
--	--	--	68	5522	204
--	--	--	76	5491	228

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5515	30	19	5527	57
50	5516	150	31	5515	93
54	5502	162	35	5524	105
65	5529	195	55	5530	165
67	5523	201	79	5493	237
70	5507	210	82	5523	246
80	5506	240	96	5507	288
85	5512	255	99	5512	297

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
16	5510	48	19	5495	57
22	5526	66	37	5506	111
43	5504	129	40	5502	120
77	5505	231	46	5504	138
79	5518	237	54	5527	162
83	5524	249	81	5522	243
87	5491	261	92	5516	276
95	5522	285	--	--	--

待測物名稱	AC1200 Wi-Fi 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	2021/03/13
測試項目	Radar Statistical Performance Check (802.11ac-VHT80 mode – 5530MHz) – Mode 1		

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	558	95	1
2	5493.6	1	618	86	1
3	5496.2	1	598	89	1
4	5498.8	1	738	72	1
5	5501.4	1	818	65	1
6	5504.0	1	678	78	1
7	5506.5	1	658	81	1
8	5509.1	1	638	83	1
9	5511.7	1	778	68	1
10	5514.3	1	798	67	1
11	5517.6	1	918	58	1
12	5520.8	1	878	61	1
13	5524.0	1	3066	18	1
14	5527.3	1	758	70	1
15	5530.0	1	858	62	1
16	5533.2	1	1042	51	1
17	5536.5	1	527	100	1
18	5539.7	1	2141	25	1
19	5543.0	1	825	64	1
20	5546.2	1	2354	23	1
21	5548.5	1	1126	47	0
22	5550.8	1	2638	20	1
23	5553.0	1	926	57	1
24	5555.3	1	2737	20	1
25	5557.6	1	2304	23	1
26	5559.9	1	558	95	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5559.9	1	574	92	1
28	5562.2	1	1791	30	1
29	5564.4	1	1066	50	1
30	5566.7	1	957	56	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	5491.0	3.5	176	28	1
2	5493.6	1.8	174	28	1
3	5496.2	2.4	182	25	1
4	5498.8	2.3	202	28	1
5	5501.4	3.4	220	29	1
6	5504.0	3.3	203	26	1
7	5506.5	3.8	211	27	1
8	5509.1	1.1	163	25	1
9	5511.7	4.6	224	25	1
10	5514.3	4.7	189	24	1
11	5517.6	1.9	216	24	1
12	5520.8	2.5	218	28	1
13	5524.0	4.7	183	24	1
14	5527.3	1.8	191	27	1
15	5530.0	3.5	218	25	1
16	5533.2	4.0	164	29	1
17	5536.5	4.7	212	25	0
18	5539.7	4.0	225	26	1
19	5543.0	1.1	167	25	1
20	5546.2	1.5	182	27	1
21	5548.5	1.2	159	26	1
22	5550.8	4.8	183	28	1
23	5553.0	2.7	187	26	1
24	5555.3	1.1	217	27	1
25	5557.6	4.3	216	25	1
26	5559.9	4.8	213	23	1
27	5562.2	2.5	207	25	1
28	5564.4	1.3	200	29	1
29	5566.7	1.2	167	29	1
30	5569.0	1.9	227	29	1
Detection Percentage (%)					96.7%

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	8.0	389	16	0
2	5493.6	8.7	274	17	1
3	5496.2	6.8	277	17	1
4	5498.8	7.3	417	16	0
5	5501.4	9.4	244	17	1
6	5504.0	9.9	240	18	1
7	5506.5	7.5	300	17	1
8	5509.1	8.3	380	17	0
9	5511.7	8.3	264	17	1
10	5514.3	9.2	329	18	0
11	5517.6	9.0	421	17	1
12	5520.8	8.7	264	17	1
13	5524.0	7.9	353	17	1
14	5527.3	7.3	487	17	1
15	5530.0	9.0	371	17	1
16	5533.2	6.0	208	17	1
17	5536.5	6.6	411	17	1
18	5539.7	7.6	492	18	1
19	5543.0	9.4	256	17	0
20	5546.2	7.8	490	16	1
21	5548.5	9.2	416	16	0
22	5550.8	8.7	279	18	1
23	5553.0	9.4	386	17	1
24	5555.3	6.6	384	17	1
25	5557.6	6.7	492	17	1
26	5559.9	9.7	425	16	0
27	5562.2	8.1	244	16	1
28	5564.4	9.2	466	17	1
29	5566.7	8.4	281	17	1
30	5569.0	8.9	337	16	0
Detection Percentage (%)					73.3%

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	14.8	242	15	0
2	5493.6	13.1	278	12	1
3	5496.2	13.6	339	13	1
4	5498.8	16.8	355	14	1
5	5501.4	11.6	321	15	1
6	5504.0	13.4	405	12	1
7	5506.5	11.7	352	12	1
8	5509.1	18.1	427	14	1
9	5511.7	12.9	419	13	1
10	5514.3	18	440	14	1
11	5517.6	11.7	218	14	1
12	5520.8	15.3	302	12	1
13	5524.0	16.9	285	13	1
14	5527.3	17.7	390	13	1
15	5530.0	11.6	350	16	1
16	5533.2	13	484	12	1
17	5536.5	13.9	373	13	1
18	5539.7	13	212	16	1
19	5543.0	12.6	407	14	1
20	5546.2	14.8	416	15	1
21	5548.5	11.5	362	14	1
22	5550.8	12.2	204	16	1
23	5553.0	18.7	437	16	0
24	5555.3	15.9	401	13	1
25	5557.6	13.6	235	12	1
26	5559.9	18.7	379	14	0
27	5562.2	18.1	286	15	1
28	5564.4	17.6	237	13	1
29	5566.7	18.6	374	16	1
30	5569.0	18	362	12	1
Detection Percentage (%)					90%

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

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (96.7\% + 96.7\% + 73.3\% + 90\%) / 4 = 89.2\% (>80\%)$

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	5493.0	1
2	5530.0	1	17	5493.0	1
3	5530.0	1	18	5493.8	1
4	5530.0	1	19	5494.2	1
5	5530.0	1	20	5497.4	1
6	5530.0	1	21	5566.2	1
7	5530.0	1	22	5561.8	1
8	5530.0	1	23	5561.4	1
9	5530.0	1	24	5566.6	1
10	5530.0	1	25	5562.6	1
11	5493.8	1	26	5561.0	1
12	5497.4	1	27	5562.2	1
13	5499.0	1	28	5561.0	1
14	5493.8	1	29	5564.6	1
15	5497.0	1	30	5561.4	1
Detection Percentage (%)					100%

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	1	58.4	12			222.662
2	3	51.7	12	1157	1210	20.821
3	1	64	12			377.206
4	3	61.3	12	1659	1587	11.899
5	1	99.4	12			853.642
6	3	84.1	12	1753	1516	54.815
7	1	86.2	12			769.958
8	2	64.1	12	1244		179.852
9	3	81.5	12	1219	1872	506.305
10	3	79	12	1937	1520	556.808
11	2	81.3	12	1725		88.551
12	2	75.2	12	1110		174.854
13	1	90.6	12			739.677

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	54.7	16	1309		78.9
2	1	74.3	16			603.29
3	3	69.8	16	1255	1069	1021.1
4	2	83.6	16	1192		80.68
5	2	72.8	16	1124		704.44
6	3	86.4	16	1069	1209	1151.65
7	3	70.6	16	1463	1108	182.27
8	2	81.2	16	1961		422.41
9	3	71	16	1900	1395	1004.2
10	3	96.8	16	1328	1615	770.3

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	81.6	6	1982		835.134
2	1	73	6			731.95
3	2	70.5	6	1644		59.91
4	3	61.4	6	1179	1156	322.1
5	3	90.4	6	1649	1071	367.18
6	3	95.9	6	1032	1228	70.71
7	2	87.4	6	1971		197.48
8	2	59.4	6	1286		485.7
9	2	66.4	6	1739		197.34
10	1	78.8	6			715.67
11	2	67.8	6	1357		379.1
12	1	80.1	6			210.1

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	2	72.1	12	1434		435.622
2	2	98.8	12	1123		1040.97
3	2	81.7	12	1020		230.67
4	1	87	12			1065.2
5	2	73.6	12	1568		515.59
6	1	75	12			828.54
7	2	57.9	12	1021		606.54
8	2	96.3	12	1868		1166.6
9	3	75.2	12	1000	1434	0.2
10	2	75.2	12	1496		1000.6

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	1	72.1	19			551.438
2	1	90.7	19			583.82
3	3	63.3	19	1918	1021	1117.66
4	3	62.1	19	1106	1422	425.18
5	2	53.6	19	1677		366.8
6	3	89.1	19	1500	1946	852.81
7	3	58.9	19	1395	1121	24.31
8	2	91.8	19	1525		306.23
9	2	98.2	19	1777		167.17
10	2	53.8	19	1936		453

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	3	56.9	11	1591	1203	339.565
2	1	97.6	11			635.28
3	3	94.7	11	1936	1411	378.04
4	2	74.5	11	1368		717.53
5	2	73.5	11	1712		255.21
6	2	99.7	11	1512		515.94
7	3	85.4	11	1817	1068	670.6
8	2	86	11	1855		767.99
9	2	94.4	11	1629		415.29
10	2	56.1	11	1196		763.32
11	3	73.8	11	1786	1760	349.58
12	2	66.1	11	1201		301.31
13	1	75.5	11			183.03
14	2	95.5	11	1555		763.7
15	2	61.9	11	1385		44.6

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	82.5	5	1034		487.123
2	2	95.8	5	1625		362.29
3	2	82.4	5	1229		522.56
4	3	57.3	5	1087	1220	171.65
5	3	72	5	1124	1883	87.26
6	3	78.4	5	1745	1256	211.41
7	2	90.1	5	1382		81.16
8	1	52.3	5			133.26
9	2	50.5	5	1513		10.22
10	3	62	5	1244	1162	189.33
11	2	52.8	5	1727		537.52
12	3	85.6	5	1808	1421	366.9
13	2	90	5	1897		551.43
14	2	69.6	5	1316		401.6
15	3	93.2	5	1979	1550	463.37
16	2	51.6	5	1136		99.24
17	2	97.5	5	1281		464.5
18	2	75.6	5	1386		209.2
19	2	85.5	5	1265		436.8
20	3	95.4	5	1753	1965	23.8

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	92.6	10	1890		294.365
2	1	57.7	10			825.5
3	2	62.8	10	1980		525.35
4	3	86.1	10	1881	1882	632.98
5	2	92.4	10	1402		479.17
6	2	80.9	10	1815		292.73
7	3	92.7	10	1303	1864	470.21
8	2	64.1	10	1283		77.36
9	2	77	10	1417		656.23
10	2	55.8	10	1963		367.44
11	3	77.1	10	1274	1305	954.4
12	2	82.5	10	1598		882.7

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	99.3	7	1565		69.305
2	3	75.2	7	1870	1326	601.021
3	1	62.8	7			199.362
4	2	96.5	7	1600		54.283
5	2	93.8	7	1525		234.184
6	2	85.3	7	1893		240.615
7	2	59.4	7	1994		210.296
8	2	72.9	7	1323		556.057
9	2	73.3	7	1393		19.838
10	3	88.7	7	1890	1817	202.819
11	2	64.2	7	1533		409.431
12	2	98.1	7	1130		541.392
13	1	70.1	7			594.193
14	2	98.5	7	1393		326.664
15	2	90.7	7	1808		454.165
16	1	65.2	7			318.786
17	2	64.8	7	1596		510.337
18	1	83.6	7			211.558
19	2	59.7	7	1889		274.279

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	1	55.1	20			270.318
2	2	69.7	20	1070		534.52
3	2	68.5	20	1570		163.37
4	1	77.1	20			223.23
5	3	98.3	20	1637	1070	538.44
6	2	94	20	1402		600.25
7	1	61.4	20			5.63
8	2	87.1	20	1886		164.28
9	2	53.3	20	1399		121.8
10	2	80.9	20	1496		35.8
11	3	60.1	20	1335	1822	374.51
12	3	94.3	20	1705	1768	254.6
13	3	68.5	20	1009	1467	647.06
14	1	84.7	20			394.5
15	2	69.8	20	1478		417.1
16	2	56.3	20	1971		161.2