

NCC

低功率射頻電機型式試驗報告

產品名稱: ACCESS POINT
型號: APINH503
廠牌: aruba / Hewlett Packard Enterprise
商標:  
申請者: 慧與科技股份有限公司
申請者地址: 臺北市南港區經貿二路 66 號 10 樓之 1
測試標準: LP0002 (107 年版)
參考法規: ANSI C63.10-2013
測試結果: 符合
接收日期: 2020.07.09
測試日期: 2020.07.20 ~ 2020.07.31

測試工程師:



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修訂紀錄

報告編號	版本	描述	發行日期
2007TW0002-T5	1.0	Original Report	2020-09-07

CONTENTS

Description	Page
1. 一般資訊	5
2. 產品描述	6
2.1. 產品資訊	6
2.2. 動態雷達操作通道清單	7
2.3. 測試通道	7
2.4. 天線規格	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	20
7.1. 適用標準	20
7.2. 量測方法	20
7.3. 檢測頻寬概率測試結果	21
8. 頻道可用性檢查時間量測	24
8.1. 適用標準	24
8.2. 量測方法	24
8.3. 頻道可用性檢查時間量測測試結果	25
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	31

10.1.	適用標準	31
10.2.	量測方法	31
10.3.	動態頻率選擇偵測門檻測試結果.....	32

1. 一般資訊

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申請者地址	臺北市南港區經貿二路 66 號 10 樓之 1
製造商	Hewlett Packard Enterprise Company
製造商地址	3333 Scott Blvd, Santa Clara, CA 95054, USA
實驗室	台灣曼瑞檢測科技有限公司
實驗室地址	33377 台灣桃園市龜山區復興二路 38 號
實驗室資訊	1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm. 2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada. 3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC, Industry Taiwan, EU and TELEC Rules.
實驗室測試環境條件	溫度 (°C) : 20-35 / 濕度 (%RH) : 30-65

2. 產品描述

2.1. 產品資訊

產品名稱	ACCESS POINT
產品型號	APINH503
無線規格	802.11a/b/g/n/ac/ax
頻率範圍	For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5260~5320MHz, 5500~5720MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5270~5310MHz, 5510~5710MHz For 802.11ac-VHT80/ax-HE80: 5290MHz, 5530MHz, 5610MHz, 5690MHz
調變模式	802.11a/n/ac: OFDM 802.11ax: OFDMA
產品上電時間	Requires 114.7 seconds to complete its power-on cycle
軟件版本	Aruba OS 8.7.0.0_75504
測試產品序列號	CNKHKSL01V
操作溫度	0 ~ 40 °C
待測物額定電壓	AC Adapter or POE input
操作環境	Indoor Use

Note:

1. 系列差異說明: 系列型號與主型號差異為廠牌不同,其硬體電路及軟體與主型號相同。該產品亦符合同系列產品技術規格及射頻性能相同。

2.2. 動態雷達操作通道清單

802.11a/n-HT20/ac-VHT20/ax-HE20

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

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

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

802.11ac-VHT80/ax-HE80

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

2.3. 測試通道

Test Mode	Test Channel	Test Frequency
802.11ax-HE20	100	5500 MHz
802.11ax-HE40	102	5510 MHz
802.11ax-HE80	106	5530 MHz

2.4. 天線規格

Antenna Type (Brand: Aruba M/N: AP503H P2)	Frequency Band (GHz)	Max Peak Gain (dBi)	BF Directional Gain (dBi)	CDD Directional Gain (dBi)	
				For Power	For PSD
Wi-Fi Internal Antenna (2.4GHz 2*2 MIMO, 5GHz 2*2 MIMO)					
PIFA	2.4	1.73	4.71	1.73	4.71
	5	5.04	8.05	5.04	8.05
Bluetooth / ZigBee Internal Antenna					
Monopole	2.4	2.49			

Note:

- The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.
For CDD transmissions, directional gain is calculated as follows, $N_{ANT} = 2$, $N_{SS} = 1$.
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 = $10 \log (N_{ANT} / N_{SS}) \text{ dB} = 3.01$;
 - For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB for $N_{ANT} \leq 4$;
- The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac/ax, not include 802.11a/b/g. Directional gain = $G_{ANT} + \text{BF Gain}$, BF Gain was declared by the applicant.
- Antenna type and antenna gain are provided by the manufacturer.

2.5. 測試模式

Test Mode	Mode: Make the EUT communicate with client device at DFS channel
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3. 動態頻率選擇和測試雷達波

3.1. 動態頻率選擇偵測門檻及操作模式

(1) 最低動態頻率選擇的偵測門檻

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

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

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

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

(2) 操作模式：動態頻率選擇之規定適用於以下之操作模式：

(A) 頻道可用性檢查時間之規定，適用於主控運作模式。

(B) 頻道移動時間之規定，適用於主控及受控運作模式。

3.2. 雷達信號參數

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

Short Pulse Radar Test Waveforms

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

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

Parameters for Short Pulse Radar Waveforms

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

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

13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

Pulse Repetition Intervals Values for Test A

Long Pulse Radar Test Waveform

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

Parameters for Long Pulse Radar Waveforms

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

Frequency Hopping Radar Test Waveform

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

Parameters for Frequency Hopping Radar Waveforms

For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

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

3.3. 測試限值

參數	限值
不可佔用期間	30 分鐘
頻道可用性檢查時間	60 秒
頻率移動時間	10 秒
頻道關閉傳輸時間	200 毫秒 + 在 10 秒週期內的 60 毫秒
U-NII 偵測頻寬	最小為 UNII 99% 發射頻寬的全部

註一：頻道移動時間與頻道關閉傳輸時間開始的瞬間如下所述：

- 對短脈衝雷達信號，此瞬間為叢訊的結束時間點算起。
- 對跳頻雷達信號，此瞬間為最後一個產生的叢訊結束時間點算起。
- 對長脈衝雷達測試信號，此瞬間為雷達波型信號結束的 12 秒時間點算起。

註二：頻道關閉傳輸時間包含於頻道移動時間起始的 200 毫秒，加上在 10 秒週期內剩下為了促成頻道移動所需的任何額外間歇性的管理與控制信號〔合計時間為 60 毫秒〕。此控制信號的合計持續時間不包含傳輸間的 quiet 週期。

註三：在 U-NII 檢測帶寬檢測測試，雷達類型“0”應該被使用。對每個頻率步進的檢測的最小百分比是 90%。測試是被執行在沒有資料傳輸的狀態下。

3.4. 測試架設圖

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

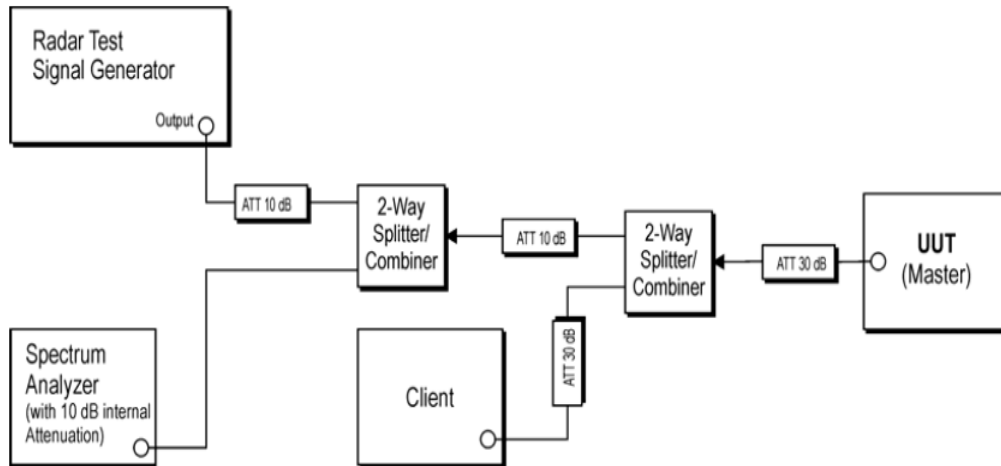


Figure A: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters

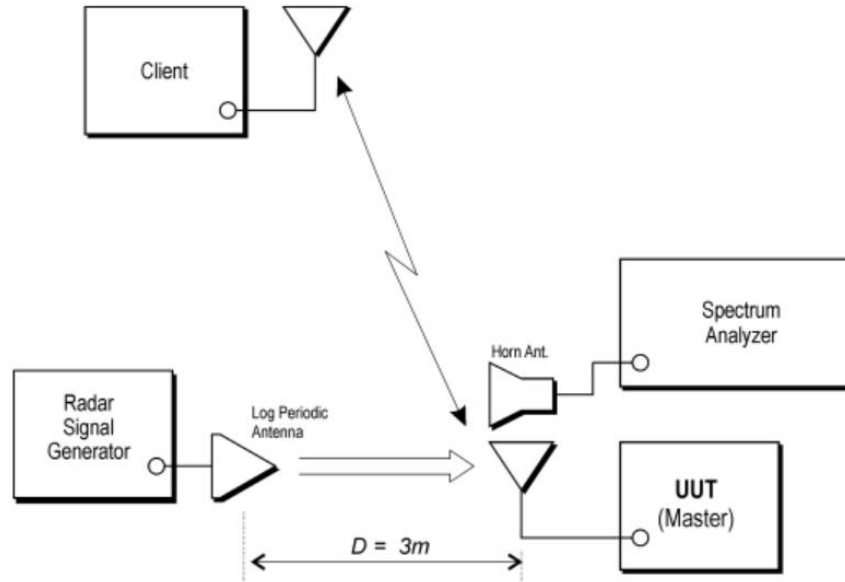


Figure B: Radiated Test Setup where UUT is a Master and Radar Test Waveforms are injected into the UUT

4. 測試設備明細

Dynamic Frequency Selection (DFS) - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2020/10/2
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2021/7/10
Vector Signal Generator	Keysight	N5182B	MRTTWA00010	1 year	2021/4/24
Combiner	WOKEN	0120A04208001S	MRTTWE00008	1 year	2021/6/18
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00032	1 year	2021/5/29
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	MRTTWA00003	1 year	2021/4/24

Client Information

Instrument	Manufacturer	Type No.	FCC ID
Wireless Network Adapter	Intel	AX200NGW	PD9AX200NG

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

5. 測試結果

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

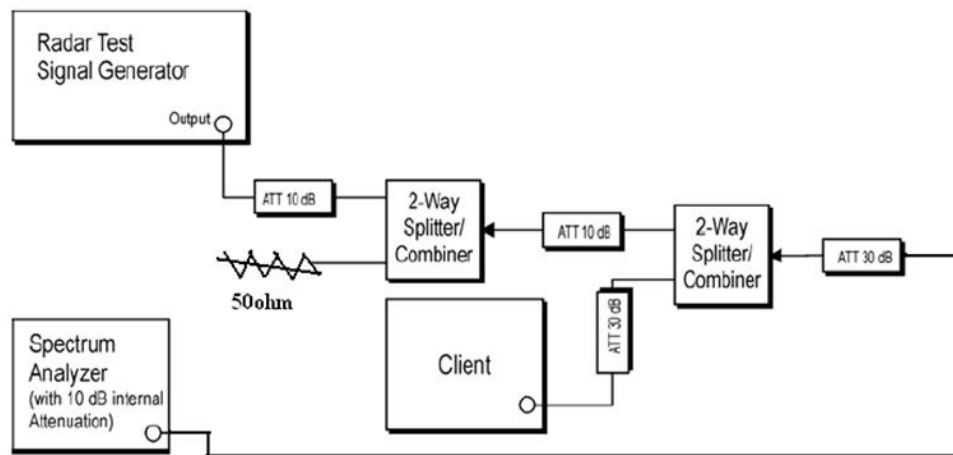
6.1. 量測方法

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。

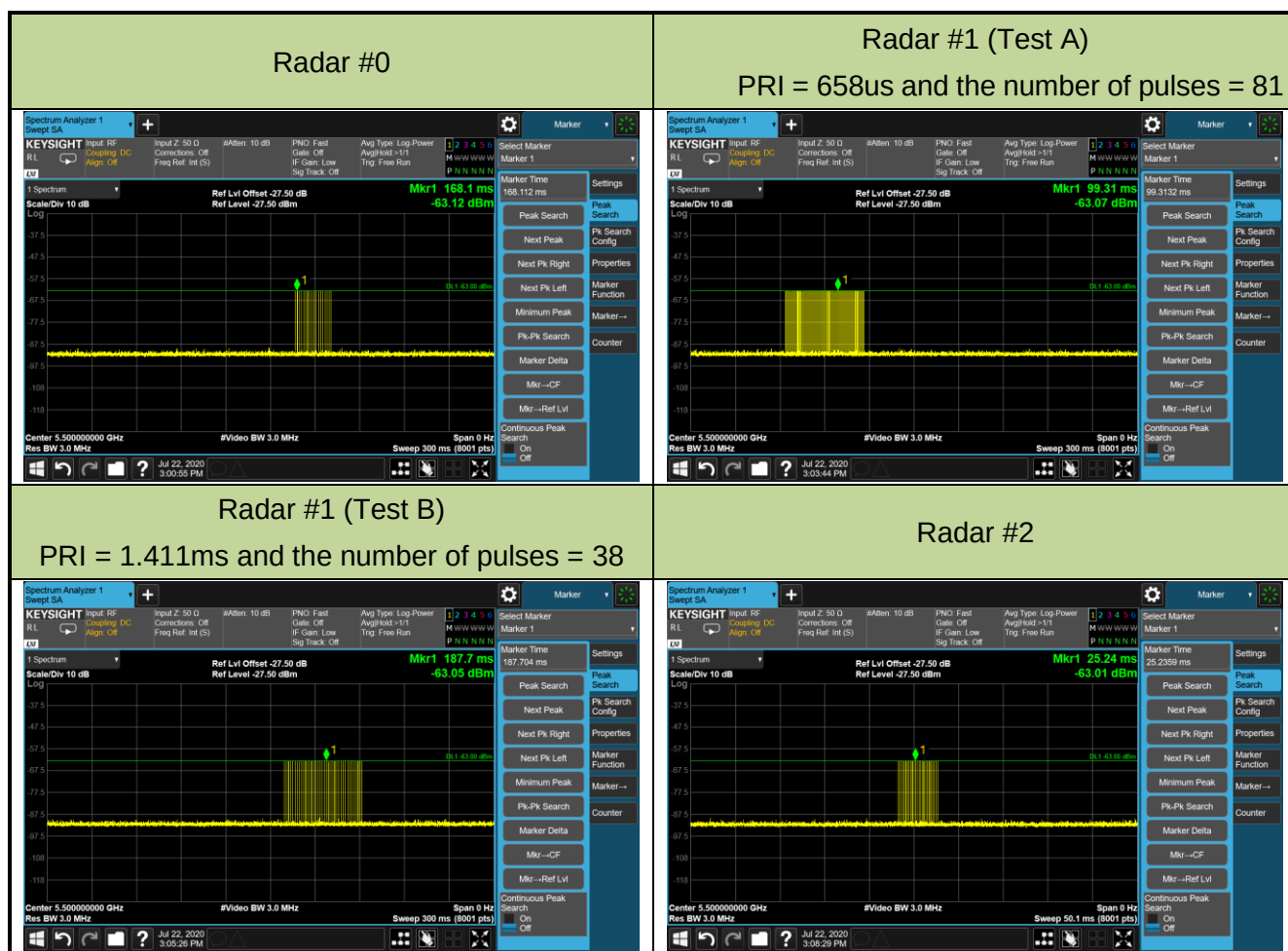
將雷達訊號產生器的振幅位準調整至頻譜分析儀上觀察到的位準為-63dBm，此位準為接收輸入端以 0dBi 的接收天線為參考基準。

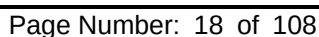
6.2. 校驗架構圖



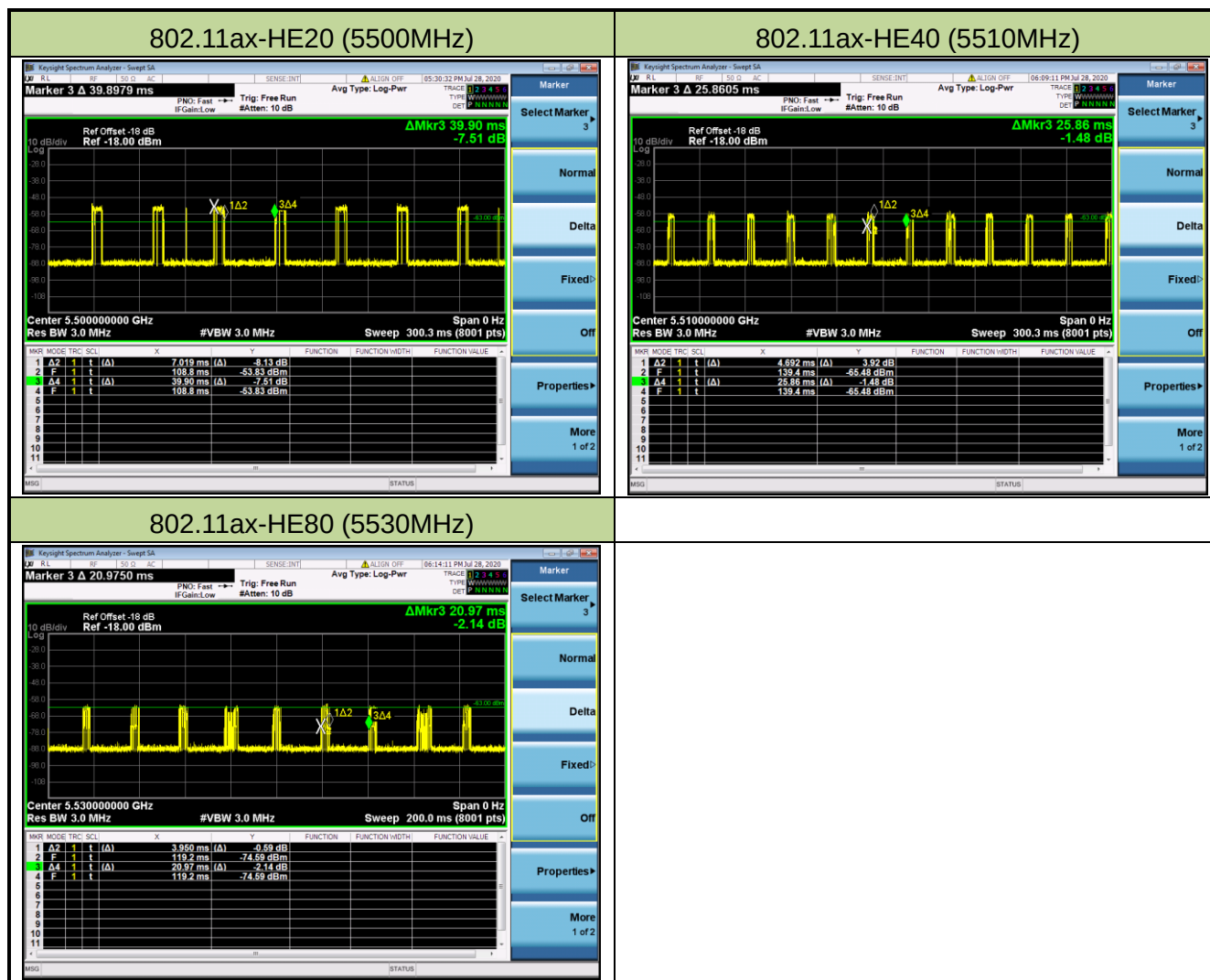
6.3. 校驗結果

待測物名稱	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/22
測試項目	雷達測試信號校正		





待測物名稱	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/28
測試項目	占空比		



Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result
802.11ax-HE20	5500 MHz	17.59%	≥ 17%	Pass
802.11ax-HE40	5510 MHz	18.14%	≥ 17%	Pass
802.11ax-HE80	5530 MHz	18.83%	≥ 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	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/30
測試項目	Detection Bandwidth (802.11ax-HE20 mode - 5500MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490.3	0	0	0	0	0	0	0	0	0	0	0%
5490.4 FL	1	1	1	1	1	1	1	1	1	1	100%
5490	1	1	1	1	1	1	1	1	1	1	100%
5491	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5506	1	1	1	1	1	1	1	1	1	1	100%
5507	1	1	1	1	1	1	1	1	1	1	100%
5508	1	1	1	1	1	1	1	1	1	1	100%
5509	1	1	1	1	1	1	1	1	1	1	100%
5509.7 FH	1	1	1	1	1	1	1	1	1	1	100%
5510	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5500MHz. The 99% channel bandwidth is 19.02MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5509.7MHz - 5490.4MHz = 19.30MHz

Note 3: NII Detection Bandwidth Min. Limit (MHz): 19.02MHz x 100% = 19.02MHz.

待測物名稱	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/30
測試項目	Detection Bandwidth (802.11ax-HE40 mode - 5510MHz)		

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

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5510MHz. The 99% channel bandwidth is 37.55MHz. (See the 99% BW section of the RF report for further measurement details).

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

Note 3: NII Detection Bandwidth Min. Limit (MHz): 37.55MHz x 100% = 37.55MHz.

待測物名稱	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/30
測試項目	Detection Bandwidth (802.11ax-HE80 mode - 5530MHz)		

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

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5530MHz. The 99% channel bandwidth is 76.79MHz. (See the 99% BW section of the RF report for further measurement details).

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

Note 3: NII Detection Bandwidth Min. Limit (MHz): 76.79MHz x 100% = 76.79MHz.

8. 頻道可用性檢查時間量測

8.1. 適用標準

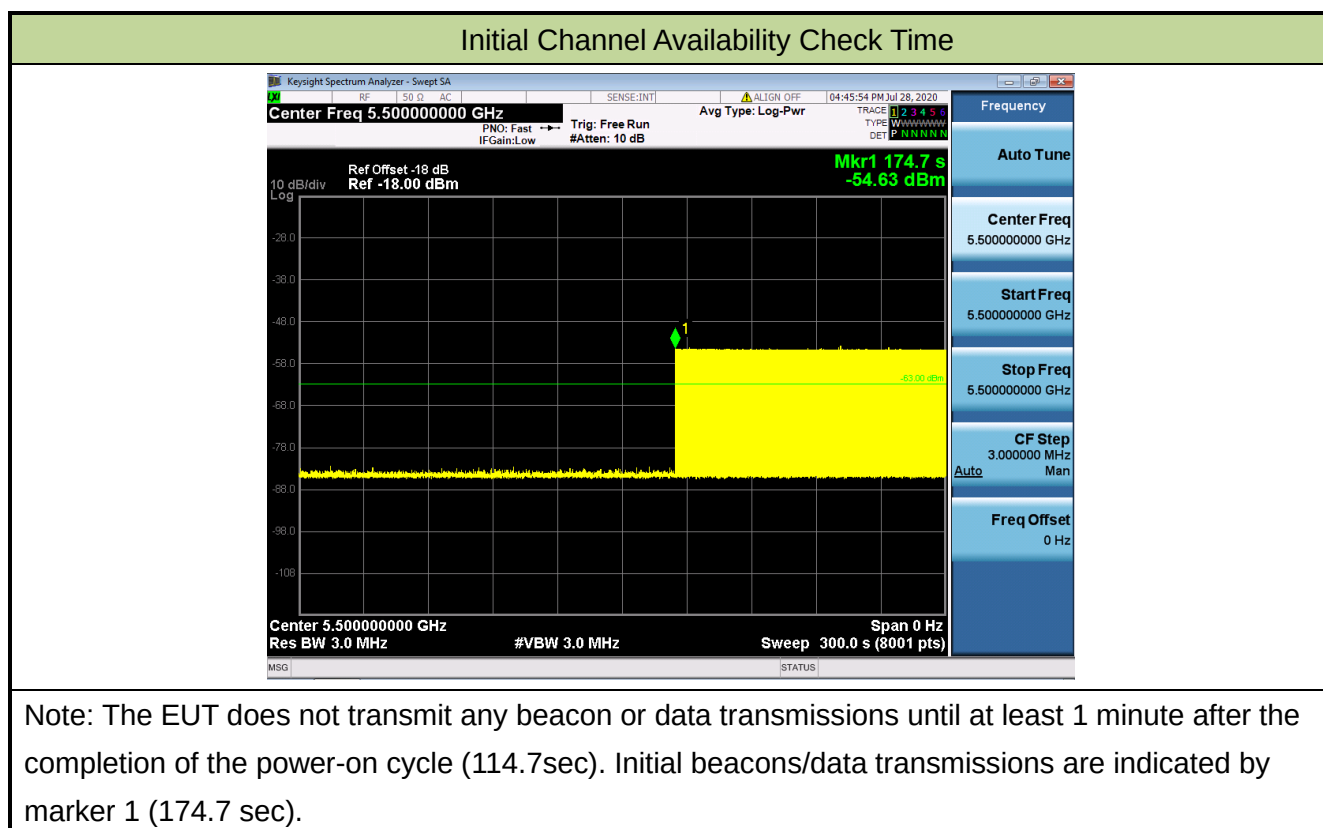
設備必須檢查其可在某一頻道上起始傳送之前是否有雷達系統已經操作在該頻道上，以及何時其必須移動到另一新的頻道，在60 秒內若沒有偵測到功率位準大過上述之擾門檻值的雷達訊號時，設備才可開始使用該頻道。

8.2. 量測方法

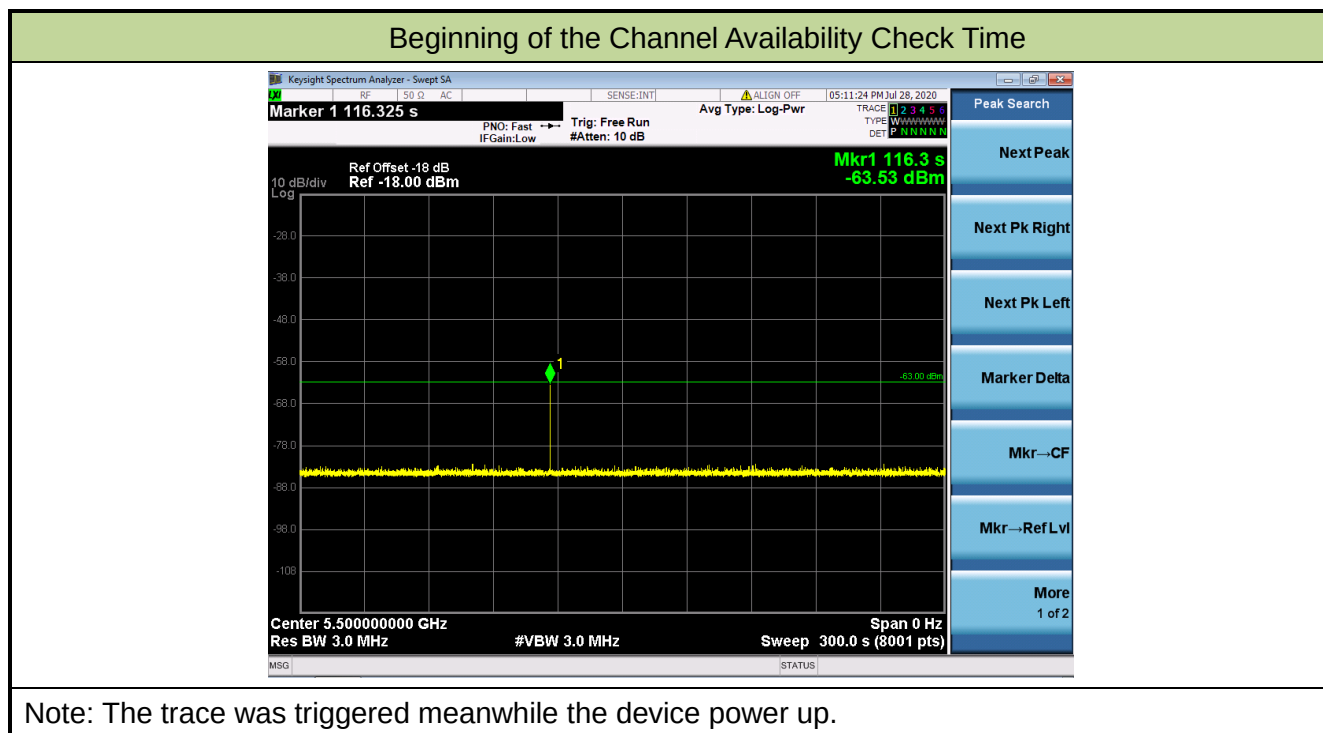
1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning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

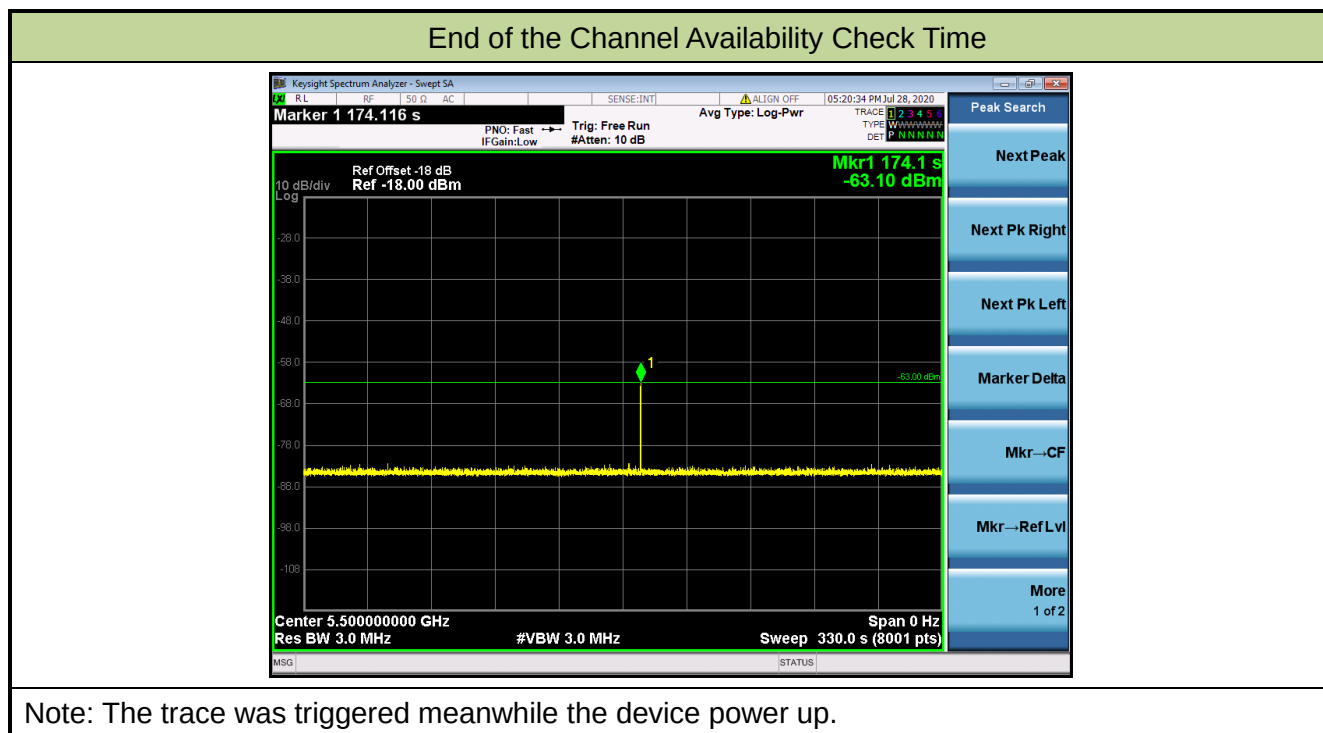
待測物名稱	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/28
測試項目	Initial Channel Availability Check Time (802.11ax-HE20 mode - 5500MHz)		



待測物名稱	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/28
測試項目	Beginning of the Channel Availability Check Time (802.11ax-HE20 - 5500MHz)		



待測物名稱	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/28
測試項目	End of the Channel Availability Check Time (802.11ax-HE20 - 5500MHz)		



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。

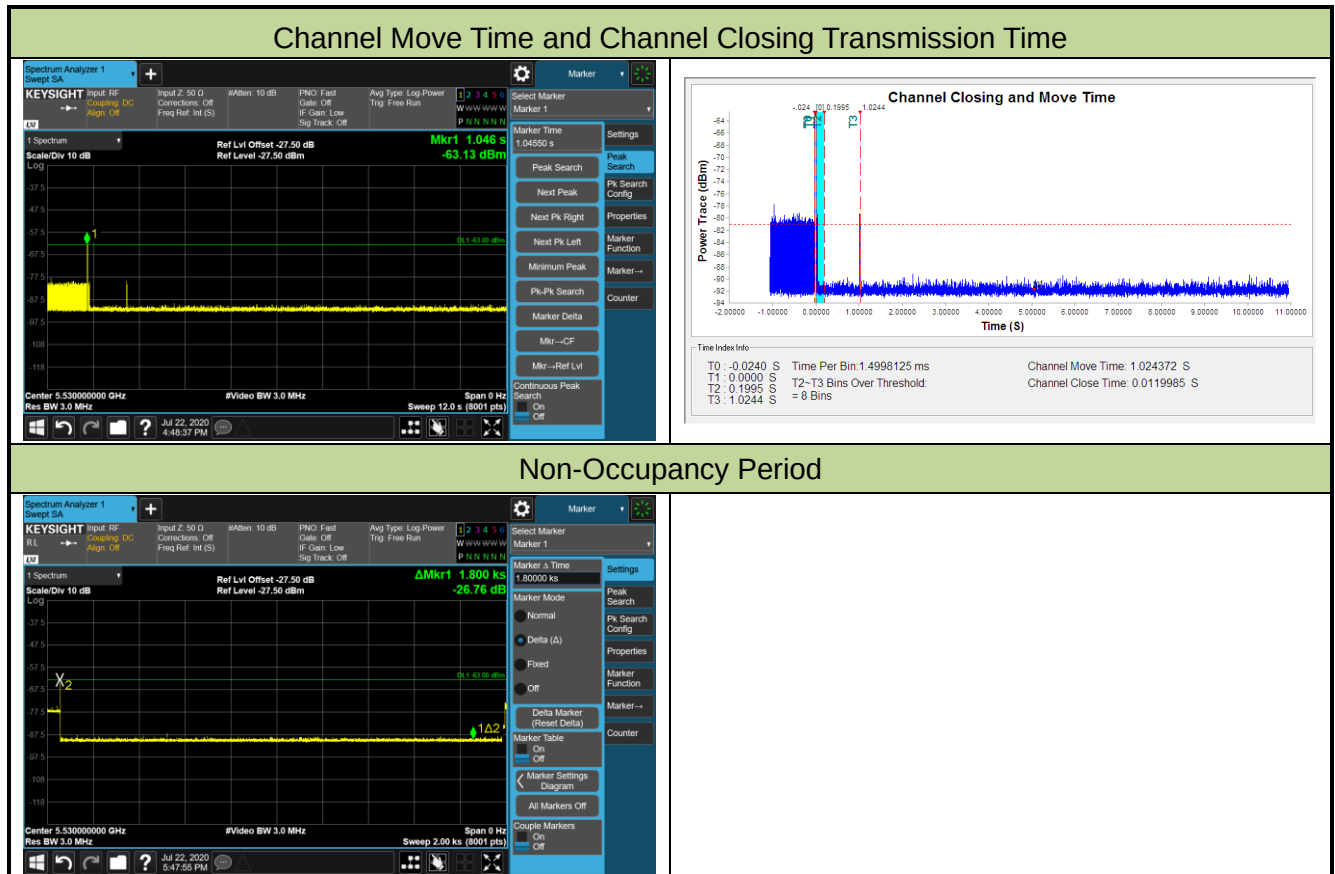
不可佔用期間：某一頻道已被頻道可用性檢查或”服務中”監視顯示含有雷達系統，至少須有30 分鐘的不可佔用期間。不可佔用期間起始於偵測到雷達系統的當時。

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: $D_{\text{well}} (1.5\text{ms}) = S (12 \text{ sec}) / B (8000)$; where D_{well} 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: $C = N \times D_{\text{well}}$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins showing a U-NII transmission and D_{well} 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	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/22
測試項目	Channel Move Time and Channel Closing Transmission Time (802.11ax-HE80 - 5530MHz)		



項目	結果	限值
	Type 0	
頻率移動時間(s)	1.024s	<10s
頻道關閉傳輸時間(ms)	12ms	< 60ms
不可佔用期間 (min)	≥ 30min	≥ 30 min
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	ACCESS POINT	溫度	27°C
測試工程師	Eric Lin	濕度	65%
測試場地	AC1	測試日期	2020/07/30
測試項目	Radar Statistical Performance Check (802.11ax-HE20 - 5500MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.3	1	538	98	1
2	5490.9	1	838	63	1
3	5491.6	1	878	61	1
4	5492.2	1	938	57	1
5	5492.9	1	578	92	1
6	5493.5	1	678	78	1
7	5494.2	1	818	65	1
8	5494.8	1	898	59	1
9	5495.5	1	778	68	1
10	5496.1	1	858	62	1
11	5496.8	1	3066	18	1
12	5497.4	1	598	89	1
13	5498.1	1	518	102	1
14	5498.7	1	638	83	1
15	5500.0	1	718	74	1
16	5500.6	1	1673	32	1
17	5501.3	1	2733	20	1
18	5501.9	1	1650	32	1
19	5502.6	1	1173	45	1
20	5503.2	1	849	63	1
21	5503.9	1	2350	23	1
22	5504.5	1	591	90	1
23	5505.2	1	1041	51	1
24	5505.8	1	1981	27	1
25	5506.5	1	1369	39	1
26	5507.1	1	1310	41	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5507.8	1	1153	46	1
28	5508.4	1	1214	44	1
29	5509.1	1	595	89	1
30	5509.7	1	2389	23	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.3	3.8	154	27	0
2	5490.9	1.0	215	29	1
3	5491.6	2.7	214	29	1
4	5492.2	4.3	183	27	1
5	5492.9	1.0	173	26	1
6	5493.5	4.5	193	26	1
7	5494.2	3.4	182	24	1
8	5494.8	4.2	158	23	1
9	5495.5	3.8	164	26	1
10	5496.1	4.3	160	26	1
11	5496.8	1.8	222	28	1
12	5497.4	1.7	222	29	1
13	5498.1	4.3	156	25	1
14	5498.7	1.4	223	26	1
15	5500.0	3.7	199	24	1
16	5500.6	1.6	186	24	1
17	5501.3	1.8	227	25	1
18	5501.9	3.1	216	27	0
19	5502.6	2.5	156	29	1
20	5503.2	1.0	199	28	1
21	5503.9	3.0	195	25	1
22	5504.5	2.6	163	25	1
23	5505.2	3.1	167	28	1
24	5505.8	4.5	197	25	1
25	5506.5	2.2	230	25	1
26	5507.1	1.0	212	25	1
27	5507.8	4.6	180	26	0
28	5508.4	3.8	220	24	1
29	5509.1	4.9	224	26	0
30	5509.7	2.1	195	24	1
Detection Percentage (%)					86.7%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.3	8.4	472	17	1
2	5490.9	9.8	217	17	1
3	5491.6	6.7	292	17	1
4	5492.2	9.6	466	17	1
5	5492.9	8.6	373	18	1
6	5493.5	6.8	211	18	1
7	5494.2	8.1	393	16	1
8	5494.8	9.5	476	16	0
9	5495.5	6.3	399	16	1
10	5496.1	8.6	222	18	1
11	5496.8	9.6	230	16	1
12	5497.4	7.8	427	17	1
13	5498.1	8.2	359	16	1
14	5498.7	8.6	492	18	1
15	5500.0	6.4	252	17	1
16	5500.6	6.6	445	17	1
17	5501.3	7.8	471	17	1
18	5501.9	7.9	211	18	0
19	5502.6	9.4	289	17	0
20	5503.2	6.5	477	17	1
21	5503.9	6.6	487	17	0
22	5504.5	8.7	263	18	1
23	5505.2	9.4	266	17	0
24	5505.8	8.0	452	17	0
25	5506.5	9.2	223	18	1
26	5507.1	8.0	410	18	1
27	5507.8	6.8	368	17	1
28	5508.4	6.3	342	16	0
29	5509.1	7.0	441	17	1
30	5509.7	6.4	307	16	1
Detection Percentage (%)					90%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.3	15.4	242	15	0
2	5490.9	19.0	346	13	0
3	5491.6	15.6	353	16	1
4	5492.2	13.9	215	15	1
5	5492.9	17.8	208	14	1
6	5493.5	15.7	474	14	1
7	5494.2	14.2	368	13	0
8	5494.8	13.1	244	15	1
9	5495.5	17.9	274	12	1
10	5496.1	17.6	470	13	0
11	5496.8	11.8	321	15	0
12	5497.4	15.3	211	14	1
13	5498.1	17.4	299	12	1
14	5498.7	15.9	292	16	1
15	5500.0	16.4	402	15	0
16	5500.6	11.3	223	13	1
17	5501.3	18.9	425	13	1
18	5501.9	16.1	447	14	1
19	5502.6	11.4	450	15	1
20	5503.2	16.3	443	14	1
21	5503.9	11.9	495	14	1
22	5504.5	19.0	260	15	0
23	5505.2	19.8	266	14	1
24	5505.8	13.1	310	13	1
25	5506.5	18.6	263	14	1
26	5507.1	18.7	459	15	0
27	5507.8	16.9	260	16	1
28	5508.4	19.4	228	16	1
29	5509.1	11.2	349	15	1
30	5509.7	18.6	344	16	1
Detection Percentage (%)					73.3%

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

waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (100\% + 86.7\% + 76.7\% + 73.3\%) / 4 = 84.2\% (>80\%)$

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	0	16	5492.7	1
2	5500.0	1	17	5493.1	1
3	5500.0	1	18	5496.7	1
4	5500.0	1	19	5492.7	1
5	5500.0	1	20	5493.9	1
6	5500.0	1	21	5504.5	1
7	5500.0	1	22	5502.9	1
8	5500.0	1	23	5504.5	1
9	5500.0	1	24	5502.5	1
10	5500.0	1	25	5506.9	1
11	5495.5	1	26	5505.3	1
12	5495.9	1	27	5502.1	1
13	5493.9	1	28	5506.9	1
14	5492.5	1	29	5502.9	1
15	5494.5	1	30	5506.5	1
Detection Percentage (%)					96.7%

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	89.2	20	1939	1890	438.989
2	1	54.5	20			154.836
3	2	61.1	20	1657		364.36
4	3	74.6	20	1090	1051	211.29
5	3	92.5	20	2000	1913	762.03
6	1	84.7	20			191.81
7	2	93.4	20	1061		528.4
8	3	58.4	20	1082	1837	742.44
9	2	97.2	20	1608		320.94
10	2	77	20	1591		270.16
11	1	83.1	20			320.41
12	2	51.1	20	1254		608.34
13	3	58.7	20	1918	1805	15.37
14	1	77.9	20			272.7
15	2	54.8	20	1097		429.1

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	65.4	5	1554		557.79
2	3	94.6	5	1393	1488	493.773
3	2	57.7	5	1785		150.086
4	2	63.7	5	1656		327.999
5	3	66.8	5	1742	1700	707.102
6	2	77.8	5	1258		198.915
7	2	67.5	5	1151		405.818
8	2	80.6	5	1386		221.472
9	1	94.6	5			216.245
10	1	90.2	5			178.738
11	1	67.4	5			316.001
12	2	82.2	5	1268		319.354
13	2	97	5	1872		278.477

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	69.1	13	1184		213.311
2	1	55.2	13			80.891
3	2	90.8	13	1188		328.522
4	2	92.8	13	1967		765.803
5	1	68.2	13			346.314
6	2	85.5	13	1856		131.485
7	1	67.1	13			508.805
8	3	66.9	13	1662	1448	513.766
9	2	99.6	13	1853		112.187
10	2	98.6	13	1151		577.318
11	2	60.6	13	1882		5.809

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	70.5	5	1074	1908	755.401
2	1	65	5			312.25
3	2	60.7	5	1899		19.78
4	2	98.5	5	1243		502.62
5	2	57.5	5	1267		585.31
6	1	50.7	5			963.3
7	2	90.1	5	1526		146.41
8	2	84.3	5	1515		516.3
9	1	91.5	5			246.38
10	3	53.9	5	1903	1184	677.66
11	1	84.3	5			12.1
12	1	71.2	5			473.9

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	3	72.4	12	1678	1100	44.485
2	2	94.7	12	1575		34.727
3	1	89.1	12			1152.613
4	2	83.7	12	1939		1060.53
5	2	63.9	12	1384		1022.067
6	3	50.3	12	1050	1581	1202.133
7	3	57.4	12	1806	1560	176.98
8	2	75	12	1770		673.367
9	2	92.8	12	1406		697.333

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	83	16	1153	1805	714.035
2	2	83.7	16	1153		468.63
3	2	56.6	16	1972		694.12
4	2	79.6	16	1509		462.06
5	1	84.4	16			423.86
6	3	71.8	16	1531	1006	117.5
7	3	53	16	1840	1041	641.83
8	2	68.3	16	1952		206.34
9	3	82.7	16	1378	1876	438.56
10	2	70.4	16	1996		289.92
11	2	61.5	16	1971		656.86
12	2	56.6	16	1591		454.75
13	3	94.6	16	1449	1260	100.03
14	2	59.6	16	1229		490.5
15	3	53.3	16	1996	1882	453.5

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	59.2	7			552.695
2	1	52.1	7			4.79
3	1	56.8	7			209.206
4	2	89.5	7	1760		409.129
5	2	60.4	7	1619		408.652
6	1	90.9	7			292.995
7	1	60.9	7			9.928
8	2	53.9	7	1850		559.912
9	2	62	7	1002		580.115
10	1	61.1	7			436.838
11	2	80.5	7	1688		626.691
12	1	91.6	7			86.954
13	1	97.1	7			630.277

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	1	73.6	13			281.301
2	2	80.1	13	1853		748.833
3	2	97.9	13	1748		437.076
4	1	72.2	13			893.829
5	2	63	13	1316		201.392
6	1	54.6	13			819.305
7	2	86.5	13	1715		450.168
8	2	64.9	13	1736		852.812
9	1	60.8	13			410.175
10	2	81.6	13	1745		902.938
11	3	63.8	13	1096	1130	584.961
12	2	91.5	13	1427		503.554
13	2	68	13	1314		667.677

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	76.4	19			596.875
2	2	50.6	19	1641		545.043
3	2	98.7	19	1615		907.946
4	2	88.7	19	1849		787.689
5	2	86.5	19	1476		228.272
6	2	54.6	19	1679		510.155
7	3	90.8	19	1196	1180	844.908
8	2	84.2	19	1210		274.872
9	2	68.7	19	1719		72.635
10	1	87.7	19			323.658
11	2	99.2	19	1565		55.731
12	1	70.9	19			593.254
13	2	66.2	19	1694		83.577

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	96.2	6	1977		23.866
2	2	84	6	1357		286.14
3	2	88.3	6	1665		693.34
4	1	93.7	6			383.67
5	2	89	6	1443		701.49
6	2	81.6	6	1855		376.72
7	2	87.9	6	1324		11.43
8	1	86.6	6			172.38
9	1	59.8	6			4.88
10	2	77.6	6	1984		72.98
11	1	68.9	6			373.45
12	3	79.3	6	1687	1224	80.62
13	2	77.4	6	1946		230.55
14	2	61.7	6	1436		596.7
15	3	99.3	6	1053	1506	560.8
16	3	96.1	6	1852	1479	716.5

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	87.8	13	1271		820.638
2	2	95.3	13	1314		640.717
3	2	63.1	13	1385		253.353
4	2	86.8	13	1964		765.46
5	1	81	13			706.347
6	1	57.7	13			339.643
7	2	81	13	1426		1130.97
8	1	62.5	13			410.997
9	2	65.8	13	1665		767.433

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	63.9	14	1206		648.904
2	2	94.1	14	1005		663.297
3	1	73.1	14			449.134
4	2	90.7	14	1467		669.421
5	3	68.7	14	1161	1484	181.639
6	1	98	14			383.236
7	3	84.4	14	1282	1536	514.683
8	2	78.4	14	1342		207.53
9	1	99.2	14			252.887
10	3	55.2	14	1842	1080	526.774
11	1	80.4	14			333.381
12	2	62.2	14	1282		205.629
13	3	67.3	14	1107	1227	415.586
14	2	88.8	14	1561		555.443

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	83.7	14			518.316
2	2	51.5	14	1115		208.218
3	2	79	14	1706		237.705
4	2	65	14	1570		662.563
5	2	91.1	14	1323		418.441
6	1	54.2	14			694.598
7	2	61.2	14	1679		290.366
8	2	92	14	1847		152.994
9	3	50.3	14	1030	1355	23.141
10	3	67.8	14	1625	1113	341.499
11	2	96.6	14	1622		466.336
12	1	59.8	14			321.744
13	1	54.2	14			584.752
14	3	92	14	1014	1378	123.679
15	2	60.3	14	1504		472.247
16	1	56.9	14			590.365
17	3	98.9	14	1369	1471	62.682

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	85	14	1321		76.813
2	1	77.2	14			1318.937
3	1	69.5	14			116.353
4	1	55.5	14			1017.36
5	1	56.2	14			613.097
6	2	99.8	14	1121		140.543
7	1	54.8	14			366.86
8	2	50.9	14	1116		114.987
9	2	92.5	14	1083		681.433

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	89.2	9			377.422
2	3	71.6	9	1768	1469	65.791
3	3	90.8	9	1318	1281	778.542
4	1	68.5	9			132.813
5	3	67.5	9	1522	1328	553.034
6	3	86.2	9	1267	1326	360.585
7	1	60.3	9			121.265
8	2	94.9	9	1370		925.656
9	1	59.1	9			728.367
10	3	92.1	9	1659	1114	5.318
11	2	90.2	9	1772		88.709

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	96.9	6	1133		7.319
2	2	85.2	6	1935		523.78
3	2	82.1	6	1466		518.4
4	3	56.2	6	1550	1590	681.36
5	1	53.9	6			50.78
6	2	73.6	6	1863		170.41
7	2	82.9	6	1742		260.02
8	3	94.8	6	1239	1317	34.27
9	3	55.1	6	1005	1467	55.3
10	2	84.1	6	1816		88.33
11	2	91.3	6	1969		237.18
12	2	59.6	6	1135		224.43
13	2	91.4	6	1095		10.55
14	2	96.2	6	1793		535.6
15	2	98.2	6	1781		223
16	3	62.1	6	1614	1944	327.8

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	71.8	7			406.219
2	1	77.1	7			365.2
3	2	96.3	7	1512		8.57
4	1	82.1	7			160.78
5	3	73.5	7	1864	1767	47.45
6	2	86.3	7	1659		549.55
7	1	68.6	7			22.96
8	3	88.1	7	1572	1006	373.97
9	2	64.1	7	1474		170.82
10	2	90.4	7	1007		338.14
11	2	55.5	7	1850		284.32
12	3	58.9	7	1266	1064	356.93
13	2	93.5	7	1904		63.11
14	2	50.6	7	1806		525.36
15	3	71.5	7	1859	1675	269.57
16	2	85.8	7	1366		260.69
17	2	54.5	7	1385		339.07
18	3	84.5	7	1601	1253	61.9
19	2	80.9	7	1294		433.8
20	3	68.2	7	1702	1518	489.4

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	61.9	16	1830		671.389
2	3	89	16	1729	1573	1434.66
3	2	79.3	16	1735		31.86
4	1	84.9	16			1353.06
5	3	51.8	16	1894	1664	1469.07
6	2	93.4	16	1090		1485.35
7	3	51.4	16	1818	1739	140.16
8	3	75.2	16	1368	1680	760.8

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	52.7	6	1816		372.895
2	3	88.6	6	1372	1243	298.434
3	2	62.6	6	1309		118.057
4	1	52.8	6			411.24
5	1	78.3	6			210.423
6	2	84.9	6	1620		165.887
7	3	51	6	1276	1876	133.61
8	3	82.5	6	1680	1015	413.173
9	1	70.8	6			21.877
10	2	91	6	1364		250.81
11	1	65.2	6			367.753
12	2	91.8	6	1203		619.097
13	2	79.5	6	1206		338.53
14	3	97.8	6	1873	1076	363.993
15	2	73.4	6	1597		579.977
16	3	61.9	6	1581	1299	412.4
17	2	72.7	6	1957		24.833
18	2	97.1	6	1449		372.667

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	1	99.6	9			457.861
2	1	64.9	9			499.5
3	2	61.1	9	1872		318.21
4	2	74.7	9	1467		513.61
5	2	61.5	9	1705		472.53
6	3	70.2	9	1905	1804	649.85
7	2	75.8	9	1917		39.25
8	1	98.1	9			315.14
9	2	85	9	1084		700
10	2	96.9	9	1961		22.28
11	1	94.4	9			690.83
12	2	69	9	1357		181.23
13	2	83.7	9	1049		724.22
14	1	69.9	9			244.86
15	1	69.3	9			76.9
16	1	89.7	9			436.1

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	65	13	1970		703.199
2	2	52.2	13	1740		155.877
3	3	83.4	13	1805	1246	654.64
4	2	53.1	13	1497		88.16
5	2	99.2	13	1320		241.23
6	2	74.6	13	1962		324.78
7	2	67.8	13	1574		94.38
8	2	67.7	13	1737		505.59
9	3	76	13	1471	1027	12.65
10	3	72.8	13	1610	1650	224.75
11	2	64.8	13	1790		422.61
12	3	96.4	13	1665	1266	126.96
13	3	81	13	1344	1177	463.06
14	2	51.7	13	1931		222.34
15	3	66.8	13	1151	1867	397.1
16	3	83.2	13	1693	1883	450.2

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	1	69.3	17			227.861
2	3	95.1	17	1850	1595	1325.987
3	1	68.2	17			113.673
4	2	99.4	17	1225		956.23
5	3	91.3	17	1229	1781	1185.687
6	1	81.7	17			1195.103
7	3	80.9	17	1759	1877	959.41
8	1	82.6	17			436.587
9	1	76.3	17			1272.933

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	73.8	13	1815		168.876
2	1	89.5	13			588.96
3	3	94.3	13	1560	1022	394.42
4	2	67.5	13	1579		166.87
5	1	71.3	13			674.7
6	3	54.7	13	1425	1626	208.67
7	3	94	13	1482	1954	3.89
8	2	50.4	13	1882		57.23
9	3	58.2	13	1256	1585	122.71
10	3	67.5	13	1491	1811	689.02
11	3	55.1	13	1858	1766	487.12
12	1	69.2	13			383.26
13	1	60.8	13			119.58
14	2	87.5	13	1440		502.9
15	2	88.9	13	1071		275.3
16	2	57.4	13	1002		690.7

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	3	82.8	18	1329	1931	555.005
2	3	81.9	18	1080	1277	832.257
3	1	64.9	18			240.084
4	2	94.7	18	1366		713.021
5	2	74	18	1209		672.519
6	1	85.5	18			779.206
7	2	83.1	18	1217		533.133
8	1	66.2	18			695.02
9	3	99.1	18	1851	1501	92.297
10	2	96.6	18	1618		700.284
11	2	50.5	18	1171		245.701
12	3	51.7	18	1488	1232	785.129
13	1	60.2	18			273.686
14	2	83.3	18	1143		317.343

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	60.7	7	1298		13.275
2	2	62.2	7	1935		597.688
3	1	82	7			84.145
4	2	69.9	7	1066		409.773
5	3	60.4	7	1307	1079	630.271
6	3	68.3	7	1516	1020	89.458
7	3	66.5	7	1233	1747	248.916
8	2	78.8	7	1379		356.284
9	3	75.3	7	1834	2000	365.101
10	3	84.3	7	1272	1758	9.719
11	2	72.4	7	1706		249.926
12	1	52.4	7			661.034
13	2	73.1	7	1793		37.192
14	2	90.2	7	1471		230.279
15	2	98.4	7	1949		238.547
16	2	50.5	7	1895		369.765
17	2	88.2	7	1435		551.182

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	85.8	11	1104		275.196
2	3	74.8	11	1605	1231	101.459
3	2	88.8	11	1410		25.884
4	3	90.5	11	1711	1655	593.801
5	1	61.6	11			789.129
6	1	64	11			685.436
7	2	62.3	11	1180		259.753
8	2	81.5	11	1961		159.66
9	3	94.2	11	1970	1420	826.267
10	1	93	11			455.614
11	3	92.7	11	1707	1430	778.711
12	2	89.6	11	1686		635.929
13	3	58.2	11	1685	1801	94.986
14	2	93.7	11	2000		518.043

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	53.1	19	1400		565.98
2	2	85.8	19	1650		685.907
3	2	97.2	19	1778		156.434
4	2	91.2	19	1202		405.731
5	2	84.7	19	1329		484.029
6	1	98.4	19			433.366
7	2	92.7	19	1888		326.183
8	2	88.3	19	1219		523.16
9	2	99.9	19	1334		257.397
10	3	67.5	19	1794	1902	767.394
11	1	94.5	19			195.491
12	3	75.6	19	1237	1587	226.809
13	2	90.7	19	1552		704.986
14	2	94.2	19	1055		591.443

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	51.2	7	1462		162.696
2	2	97.5	7	1308		822.473
3	2	92.2	7	1966		295.656
4	1	88.3	7			92.209
5	3	71.9	7	1080	1890	273.502
6	2	52.8	7	1016		391.345
7	2	56.3	7	1406		351.868
8	2	69.4	7	1042		684.112
9	3	94.8	7	1052	1321	768.365
10	3	56.9	7	1530	1600	893.658
11	1	86.4	7			340.651
12	2	76.5	7	1716		155.554
13	1	86.2	7			538.577

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	56.4	17			487.751
2	2	75.2	17	1034		261.071
3	3	75.5	17	1614	1574	609.047
4	2	94.1	17	1183		490.04
5	2	52.2	17	1203		599.123
6	1	75.6	17			534.487
7	1	53.5	17			76.37
8	3	56.4	17	1560	1844	115.153
9	1	99.7	17			0.907
10	1	78.4	17			600.43
11	2	95.7	17	1029		447.583
12	2	59.2	17	1219		422.117
13	2	89.2	17	1028		242.81
14	2	80.4	17	1662		94.123
15	1	64.5	17			186.927
16	2	62.7	17	1050		171.2
17	3	66.4	17	1394	1329	461.333
18	3	97.3	17	1323	1208	536.367

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	63.2	8	1680	1341	279.721
2	1	80.8	8			621.133
3	2	61.4	8	1346		83.587
4	1	97.4	8			530.41
5	1	99.4	8			81.813
6	1	64.9	8			659.017
7	2	97.3	8	1322		451.75
8	2	94	8	1727		521.743
9	2	64.1	8	1280		246.457
10	2	93.1	8	1190		437.87
11	3	91.5	8	1249	1463	87.223
12	3	62.6	8	1517	1111	95.317
13	1	96.5	8			385.76
14	1	55.2	8			22.533
15	2	57.7	8	1847		160.387
16	1	84.1	8			452
17	3	53.3	8	1769	1792	517.633
18	2	92.3	8	1298		213.267

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5490.3	1	16	5500.6	1
2	5490.9	1	17	5501.3	1
3	5491.6	1	18	5501.9	1
4	5492.2	1	19	5502.6	1
5	5492.9	1	20	5503.2	1
6	5493.5	1	21	5503.9	1
7	5494.2	1	22	5504.5	1
8	5494.8	1	23	5505.2	1
9	5495.5	1	24	5505.8	1
10	5496.1	1	25	5506.5	1
11	5496.8	1	26	5507.1	1
12	5497.4	1	27	5507.8	1
13	5498.1	1	28	5508.4	1
14	5498.7	1	29	5509.1	1
15	5500.0	1	30	5509.7	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
24	5501	72	23	5506	69
33	5510	99	41	5508	123
51	5495	153	72	5504	216
96	5509	288	--	--	--

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
20	5491	60	3	5491	9
51	5492	153	--	--	--
64	5507	192	--	--	--
79	5504	237	--	--	--
88	5490	264	--	--	--
93	5509	279	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5508	21	15	5503	45
70	5503	210	55	5497	165
92	5502	276	78	5499	234

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
37	5501	111	1	5505	3
51	5500	153	15	5507	45
77	5510	231	65	5499	195
--	--	--	71	5510	213
--	--	--	77	5498	231

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5498	12	22	5497	66
25	5505	75	41	5506	123
38	5507	114	77	5505	231
48	5492	144	79	5500	237
64	5508	192	93	5494	279
96	5510	288	94	5503	282
99	5494	297	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5494	21	35	5504	105
20	5495	60	37	5496	111
33	5502	99	44	5502	132
54	5507	162	--	--	--
88	5492	264	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
83	5498	249	44	5503	132
--	--	--	74	5506	222

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
19	5503	57	27	5510	81
41	5509	123	40	5499	120
--	--	--	47	5498	141
--	--	--	79	5490	237
--	--	--	88	5502	264

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
32	5498	96	66	5503	198
77	5503	231	89	5504	267
83	5490	249	--	--	--
89	5505	267	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
23	5497	69	46	5491	138
24	5509	72	48	5501	144
58	5496	174	58	5490	174
--	--	--	86	5509	258

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5505	39	4	5503	12
22	5490	66	25	5495	75
25	5509	75	40	5500	120
61	5508	183	68	5508	204
88	5497	264	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
37	5510	111	6	5505	18
85	5501	255	26	5494	78
95	5498	285	37	5493	111
--	--	--	39	5492	117
--	--	--	41	5497	123
--	--	--	70	5510	210
--	--	--	73	5499	219
--	--	--	95	5504	285

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
22	5490	66	24	5493	72
29	5507	87	36	5490	108
--	--	--	60	5495	180
--	--	--	64	5504	192
--	--	--	75	5509	225
--	--	--	87	5494	261

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
26	5503	78	12	5502	36
32	5505	96	24	5504	72
37	5497	111	59	5496	177
44	5490	132	64	5492	192
71	5493	213	70	5491	210
74	5499	222	--	--	--
87	5502	261	--	--	--
92	5507	276	--	--	--

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
16	5498	48	4	5507	12
23	5493	69	37	5510	111
42	5490	126	43	5503	129
46	5495	138	90	5493	270
54	5509	162	96	5504	288
57	5504	171	--	--	--
67	5503	201	--	--	--

Product	ACCESS POINT	Test Site	AC1
Test Engineer	Eric Lin	Test Date	2020/07/30
Test Item	Radar Statistical Performance Check (802.11ax-HE40 mode - 5510MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	1	698	76	0
2	5492.3	1	778	68	1
3	5493.5	1	918	58	1
4	5494.8	1	898	59	1
5	5496.1	1	798	67	1
6	5497.3	1	518	102	1
7	5498.6	1	838	63	1
8	5499.9	1	618	86	1
9	5501.1	1	598	89	1
10	5502.4	1	678	78	1
11	5503.7	1	658	81	1
12	5504.9	1	3066	18	1
13	5506.2	1	638	83	1
14	5507.5	1	738	72	1
15	5510.0	1	758	70	1
16	5511.3	1	1167	46	1
17	5512.5	1	2180	25	1
18	5513.8	1	1426	37	1
19	5515.0	1	1845	29	1
20	5516.3	1	837	63	0
21	5517.6	1	1812	30	1
22	5518.8	1	1020	52	1
23	5520.1	1	735	72	1
24	5521.3	1	652	81	1
25	5522.6	1	2186	25	1
26	5523.9	1	1958	27	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5525.1	1	2443	22	1
28	5526.4	1	2203	24	1
29	5527.6	1	819	65	1
30	5529.0	1	1807	30	1
Detection Percentage (%)					93.3%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	4.2	222	26	1
2	5492.3	2.2	153	25	1
3	5493.5	5.0	185	26	1
4	5494.8	2.2	171	27	1
5	5496.1	1.2	150	25	1
6	5497.3	4.4	151	24	1
7	5498.6	4.8	222	28	1
8	5499.9	1.3	205	28	1
9	5501.1	2.7	198	29	1
10	5502.4	2.1	171	25	1
11	5503.7	2.1	225	28	0
12	5504.9	3.0	183	25	1
13	5506.2	2.7	189	25	0
14	5507.5	2.5	152	28	1
15	5510.0	3.0	225	24	1
16	5511.3	3.7	194	27	1
17	5512.5	3.6	168	24	1
18	5513.8	2.4	224	27	1
19	5515.0	2.7	158	24	1
20	5516.3	2.0	204	25	1
21	5517.6	1.3	155	26	1
22	5518.8	1.2	170	23	1
23	5520.1	3.2	191	23	1
24	5521.3	4.9	221	29	1
25	5522.6	4.8	204	28	1
26	5523.9	3.3	195	23	1
27	5525.1	3.8	180	28	1
28	5526.4	3.9	196	25	0
29	5527.6	4.5	178	28	1
30	5529.0	2.2	158	25	1
Detection Percentage (%)					90%

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	9.2	417	17	1
2	5492.3	9.2	206	17	1
3	5493.5	7.0	360	16	0
4	5494.8	9.9	474	17	0
5	5496.1	10.0	257	17	1
6	5497.3	9.0	404	16	1
7	5498.6	7.3	463	17	1
8	5499.9	8.5	259	18	1
9	5501.1	8.2	330	17	1
10	5502.4	7.5	489	17	0
11	5503.7	7.6	322	16	1
12	5504.9	7.9	387	18	1
13	5506.2	8.6	424	16	1
14	5507.5	9.4	412	17	1
15	5510.0	8.4	342	18	1
16	5511.3	9.9	441	17	1
17	5512.5	7.0	270	16	1
18	5513.8	7.9	399	17	1
19	5515.0	8.8	415	17	1
20	5516.3	9.8	390	18	1
21	5517.6	9.2	314	18	1
22	5518.8	8.6	269	17	1
23	5520.1	10.0	349	16	1
24	5521.3	9.3	359	16	1
25	5522.6	9.4	300	18	1
26	5523.9	8.3	342	18	1
27	5525.1	9.6	492	17	1
28	5526.4	8.8	349	16	1
29	5527.6	8.4	340	17	1
30	5529.0	9.8	313	16	0
Detection Percentage (%)					86.7%

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	13.3	369	13	1
2	5492.3	12.8	341	16	1
3	5493.5	15.2	256	16	0
4	5494.8	19.4	303	13	1
5	5496.1	16.4	440	14	0
6	5497.3	15.0	282	14	1
7	5498.6	11.9	273	15	0
8	5499.9	11.6	423	13	1
9	5501.1	13.8	276	15	1
10	5502.4	18.2	377	13	1
11	5503.7	11.2	477	15	1
12	5504.9	13.8	325	13	1
13	5506.2	13.3	296	15	1
14	5507.5	12.1	312	12	0
15	5510.0	13.0	383	13	1
16	5511.3	16.7	285	13	1
17	5512.5	17.3	346	13	1
18	5513.8	11.6	211	12	1
19	5515.0	13.4	492	12	1
20	5516.3	16.1	289	13	0
21	5517.6	11.8	315	12	1
22	5518.8	13.0	401	13	0
23	5520.1	14.4	404	12	0
24	5521.3	14.2	263	14	0
25	5522.6	15.8	366	12	1
26	5523.9	13.2	300	15	0
27	5525.1	18.2	327	13	1
28	5526.4	16.8	454	15	1
29	5527.6	11.9	348	16	1
30	5529.0	11.8	437	15	1
Detection Percentage (%)					70%

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

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (93.3\% + 90\% + 86.7\% + 70\%) / 4 = 85\% (>80\%)$

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	0	16	5496.2	1
2	5510.0	1	17	5494.6	1
3	5510.0	1	18	5493.4	1
4	5510.0	1	19	5495.0	1
5	5510.0	1	20	5498.6	1
6	5510.0	1	21	5521.4	1
7	5510.0	1	22	5523.8	1
8	5510.0	1	23	5521.4	1
9	5510.0	1	24	5524.2	1
10	5510.0	1	25	5522.6	1
11	5495.8	1	26	5525.8	1
12	5493.4	1	27	5523.4	1
13	5497.4	1	28	5523.8	1
14	5498.6	1	29	5525.0	0
15	5497.0	1	30	5524.6	1
Detection Percentage (%)					93.3%

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	76.7	7			19.416
2	2	66.7	7	1277		166.695
3	3	82	7	1822	1089	212.605
4	1	58.9	7			56.953
5	2	99.6	7	1370		546.161
6	3	64.9	7	1269	1830	624.738
7	2	56.1	7	1552		209.876
8	1	56.7	7			620.024
9	2	86.4	7	1433		508.541
10	2	82.2	7	1487		474.909
11	2	79.8	7	1394		218.226
12	2	59.5	7	1385		341.604
13	3	82.9	7	1476	1399	395.982
14	2	65.8	7	1383		498.509
15	3	96.9	7	1332	1937	539.947
16	3	57.4	7	1030	1559	525.465
17	1	76.7	7			591.082

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	3	76.6	15	1310	1155	548.56
2	2	65.8	15	1488		275.47
3	2	58.1	15	1909		488.81
4	2	94.5	15	1931		261.37
5	2	71.6	15	1118		211.62
6	3	82.3	15	1723	1213	15.32
7	2	60.3	15	1067		710.43
8	2	85.6	15	1342		82.6
9	3	62.9	15	1885	1304	598.92
10	1	92.6	15			35.44
11	2	76.8	15	1983		667.9
12	1	92.5	15			732.21
13	1	58.9	15			285.62
14	1	63.7	15			0.55
15	1	55	15			668
16	2	58.7	15	1273		338.4

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	59.9	15	1436		71.692
2	2	79.1	15	1777		829.721
3	1	74.4	15			910.742
4	2	91.6	15	1952		371.173
5	2	88.4	15	1327		194.474
6	2	69.4	15	1314		718.095
7	2	66.2	15	1346		843.835
8	2	65.3	15	1245		989.416
9	2	50.8	15	1825		576.707
10	3	94.5	15	1603	1450	893.118
11	2	99.3	15	1338		956.109

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	97.8	19	2000		227.318
2	2	88.1	19	1699		193.434
3	3	99.8	19	1581	1567	454.86
4	1	74.4	19			149.87
5	3	58.2	19	1278	1482	250.9
6	1	93.9	19			634.89
7	2	62.4	19	1139		270.11
8	2	55.1	19	1207		463
9	2	92	19	1111		97.83
10	2	51.9	19	1794		693.58
11	2	61.7	19	1911		260.4
12	3	68.9	19	1143	1520	543.35
13	2	66.8	19	1699		351.71
14	2	61.6	19	1742		112.59
15	1	70.3	19			80.4
16	2	65	19	1070		350.2

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	62.6	8	1954		618.612
2	2	80.1	8	1124		247.235
3	2	65.7	8	1020		262.272
4	2	95	8	1121		185.613
5	2	67.5	8	1314		606.054
6	2	85.3	8	1974		440.005
7	2	98.4	8	1164		15.546
8	2	96.4	8	1068		198.197
9	2	82.9	8	1359		559.038
10	2	64.1	8	1024		600.969
11	2	61.3	8	1981		428.241
12	1	96	8			608.312
13	3	54.8	8	1358	1453	103.263
14	2	71.8	8	1692		376.434
15	1	79.5	8			82.825
16	2	80.5	8	1797		568.816
17	2	83.2	8	1761		609.837
18	1	68.6	8			73.258
19	3	51.4	8	1983	1907	347.679

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	13	1044	1730	444.324
2	1	65.6	13			576.301
3	2	53.2	13	1914		1002.832
4	1	62	13			755.403
5	2	62.8	13	1135		969.934
6	3	91.2	13	1323	1061	849.195
7	2	96.5	13	1241		463.095
8	2	53.2	13	1630		888.956
9	1	98.9	13			672.897
10	2	92.7	13	1042		607.118
11	2	69.7	13	1817		244.709

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	62.6	20	1671		618.595
2	3	96.5	20	1447	1454	131.584
3	2	73.7	20	1479		642.915
4	1	65.7	20			251.833
5	1	84.3	20			524.961
6	3	97.5	20	1863	1832	678.518
7	2	81.9	20	1290		141.116
8	2	90.9	20	1457		587.884
9	1	54.9	20			408.861
10	3	57.2	20	1529	1414	6.439
11	3	59.9	20	1039	1028	529.866
12	1	51.3	20			554.464
13	1	55.8	20			613.072
14	2	73.3	20	1189		86.059
15	3	70	20	1291	1054	673.947
16	2	78.9	20	1606		304.765
17	2	97.1	20	1412		407.482

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	1	66.1	11			308.526
2	3	75.7	11	1530	1043	234.134
3	2	98.9	11	1343		24.435
4	3	93.4	11	1138	1074	653.993
5	2	73.8	11	1994		250.291
6	2	84.6	11	1309		412.218
7	2	81	11	1253		268.726
8	1	55.7	11			175.904
9	2	78.7	11	1274		219.281
10	1	66.9	11			47.849
11	2	88.2	11	1468		576.396
12	2	83.8	11	1335		535.594
13	1	72.6	11			658.712
14	3	94.2	11	1304	1288	608.619
15	2	94.5	11	1948		123.647
16	1	94.8	11			120.365
17	3	67.2	11	1394	1079	454.182

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	95.6	17			394.493
2	3	69.6	17	1399	1053	352.06
3	3	65	17	1574	1770	131.7
4	1	91.2	17			78.21
5	2	88.9	17	1498		188.52
6	2	64.8	17	1994		53.05
7	2	99	17	1432		75.88
8	3	84	17	1220	1935	455.34
9	2	87.7	17	1345		243.66
10	2	74.2	17	1883		555.6
11	1	64	17			41.9
12	2	94.5	17	1666		568.51
13	1	65.1	17			266.47
14	3	70.5	17	1406	1702	40.2
15	2	76.5	17	1650		419.1

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	99.6	16	1819		905.158
2	2	70.9	16	1045		901.74
3	1	59.5	16			941.58
4	1	85.1	16			1052.61
5	2	91.2	16	1211		968.54
6	2	86.4	16	1186		914.18
7	2	100	16	1599		441.74
8	3	94.5	16	1434	1016	76.97
9	2	69.5	16	1690		475.3
10	1	92.1	16			236

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	51.2	12	1054		631.725
2	2	84.4	12	1989		388.71
3	2	98.8	12	1658		358.34
4	2	59.7	12	1952		673.2
5	2	60.2	12	1779		677.66
6	3	62.1	12	1076	1060	34.16
7	2	52.9	12	1345		611.63
8	2	60.1	12	1684		187.44
9	2	92	12	1525		230.7
10	2	66.9	12	1165		54.96
11	1	95.2	12			703.13
12	2	91.4	12	1948		262.41
13	2	83	12	1152		229.69
14	2	59.2	12	1392		649.4
15	1	97.5	12			303.8
16	1	88.9	12			609.8

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	1	77.3	6			697.91
2	3	55.1	6	1111	1782	692.16
3	2	83.8	6	1948		815.28
4	3	77.8	6	1002	1391	520.42
5	2	75.5	6	1798		450.39
6	3	69.3	6	1067	1449	55.61
7	2	86.2	6	1124		566.02
8	2	91.5	6	1189		435.71
9	2	66.1	6	1798		731.5
10	2	88.4	6	1321		307.4

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	87.9	16	1350		314.664
2	3	62.9	16	1208	1941	157.067
3	3	54	16	1507	1086	347.862
4	3	66	16	1601	1250	141.493
5	2	80.4	16	1775		181.194
6	2	88.8	16	1122		544.675
7	1	69.8	16			253.256
8	2	78.9	16	1173		83.837
9	2	74.7	16	1462		98.248
10	2	82.7	16	1242		530.489
11	2	76.5	16	1439		110.611
12	2	80.1	16	1194		309.982
13	2	68.1	16	1883		288.513
14	2	52.6	16	1638		179.264
15	3	82.6	16	1821	1847	190.315
16	2	60.8	16	1838		58.186
17	2	83.5	16	1417		249.537
18	2	99.1	16	1863		326.058
19	2	98.7	16	1558		171.679

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	54.6	19	1602		378.007
2	3	63	19	1400	1308	890.28
3	2	54.9	19	1430		591.73
4	1	94.8	19			750.3
5	2	91.6	19	1544		473.75
6	2	86.9	19	1155		175.27
7	1	99.1	19			642.83
8	2	89	19	1846		1008.12
9	3	59.6	19	1121	1338	755.2
10	2	87.6	19	1904		1099

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	76	15	1671		198.177
2	3	96.5	15	1028	1889	161.981
3	2	71.1	15	1308		541.81
4	2	86	15	1941		671.01
5	2	87.7	15	1837		628.39
6	3	52.6	15	1844	1600	340.37
7	3	56.1	15	1923	1910	700.6
8	2	93.5	15	1540		93.63
9	2	60.7	15	1531		636.75
10	3	67.8	15	1410	1361	215.72
11	2	59.1	15	1421		92.56
12	2	82.8	15	1168		116.87
13	1	94.7	15			194.92
14	3	64.7	15	1494	1035	619.9
15	2	57.2	15	1201		397.8
16	2	52.9	15	1530		360.4

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	64.5	13	1199		183.785
2	1	65	13			460.038
3	3	82.5	13	1302	1334	210.715
4	3	51.5	13	1003	1688	623.293
5	2	63.9	13	1131		30.541
6	2	66.8	13	1140		644.138
7	1	57.3	13			111.646
8	1	84.3	13			261.084
9	3	68	13	1202	1806	323.631
10	2	81.4	13	1164		31.459
11	2	78.3	13	1273		520.016
12	2	70.3	13	1452		237.234
13	2	83.2	13	1413		521.922
14	2	57.4	13	1970		484.279
15	1	99.3	13			323.347
16	2	96.4	13	1117		146.065
17	2	90.7	13	1572		646.482

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	62.8	9	1758	1892	149.058
2	2	81.3	9	1641		411.213
3	2	71.8	9	1973		205.236
4	1	64.4	9			153.489
5	3	81.7	9	1601	1718	146.822
6	1	58.4	9			213.855
7	3	89.9	9	1510	1357	229.228
8	2	99.5	9	1313		492.632
9	2	93.5	9	1017		35.275
10	3	78.1	9	1587	1856	180.708
11	3	72.6	9	1287	1515	401.931
12	3	90.8	9	1347	1599	649.254
13	1	97.6	9			394.577

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	66	6	1125		894.086
2	2	85.4	6	1513		376.383
3	3	72.4	6	1563	1728	0.606
4	1	92.7	6			748.399
5	3	89.4	6	1606	1853	604.252
6	1	62.1	6			851.845
7	1	85.9	6			278.588
8	3	72.4	6	1968	1981	886.092
9	1	57	6			284.985
10	2	58	6	1812		828.998
11	2	74	6	1540		819.431
12	2	64.3	6	1298		593.154
13	2	96.6	6	1909		431.077

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	90.8	10	1701		310.59
2	1	58.4	10			451.761
3	1	87.1	10			410.352
4	2	90	10	1271		325.903
5	2	73.4	10	1310		1083.224
6	3	69.7	10	1590	1050	33.155
7	3	86.5	10	1948	1966	521.225
8	2	65.9	10	1642		756.226
9	2	96.9	10	1042		1073.787
10	3	91.4	10	1260	1595	863.018
11	3	60	10	1741	1825	702.709

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	75.5	19	1132		154.949
2	2	94	19	1220		233.86
3	2	68.1	19	1947		680.125
4	2	63.5	19	1849		444.183
5	2	75.4	19	1453		189.971
6	2	65.6	19	1981		412.038
7	2	68.9	19	1940		34.366
8	1	82.4	19			686.884
9	2	77.7	19	1172		185.251
10	1	64.6	19			540.439
11	2	77.5	19	1174		214.326
12	2	76.5	19	1235		500.234
13	1	53.2	19			2.192
14	1	75.5	19			158.989
15	3	90.4	19	1961	1567	45.777
16	1	98.9	19			503.165
17	2	60.4	19	1952		592.282

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	1	81.5	19			565.411
2	2	69.6	19	1618		265.158
3	2	65.2	19	1301		367.06
4	2	92.4	19	1906		156.87
5	3	90.8	19	1666	1646	154.93
6	2	69.9	19	1844		469.48
7	1	89.6	19			380.48
8	2	55.8	19	1673		326.54
9	2	57.2	19	1797		59.98
10	1	52.6	19			506.7
11	3	95.6	19	1705	1911	204.62
12	1	54	19			52.85
13	1	76.1	19			554.38
14	2	61.6	19	1110		112.65
15	2	83.1	19	1679		451.88
16	2	87.7	19	1028		273.89
17	2	86.4	19	1863		281.97
18	1	74.2	19			173.8
19	2	93.1	19	1776		33
20	3	75.3	19	1183	1577	297.1

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	53.6	13	1549	1144	629.026
2	2	65.4	13	1661		65.543
3	2	72.5	13	1893		624.297
4	3	96.9	13	1346	1535	168.99
5	1	51.7	13			129.503
6	1	65.8	13			462.887
7	1	77.2	13			147.91
8	2	56.4	13	1131		311.413
9	2	90.6	13	1056		428.357
10	1	75.6	13			83.36
11	1	61.4	13			571.853
12	1	67	13			443.217
13	2	98.1	13	1133		605.51
14	3	99.5	13	1941	1628	349.233
15	2	82.6	13	1715		638.447
16	1	72.2	13			88.3
17	3	50.4	13	1654	1452	228.533
18	2	78.4	13	1677		477.967

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	99.7	19	1811	1567	412.248
2	3	78.3	19	1018	1894	115.903
3	1	51.7	19			424.596
4	3	59.8	19	1394	1928	396.209
5	2	77.3	19	1412		281.112
6	3	87	19	1622	1542	752.325
7	1	52	19			463.708
8	3	93.4	19	1808	1480	889.822
9	2	96.4	19	1049		280.825
10	1	63.4	19			290.628
11	1	59.2	19			818.231
12	2	58.8	19	1200		491.754
13	1	71.1	19			514.577

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	3	81	12	1740	1956	42.61
2	1	92.4	12			614.011
3	3	92.8	12	1806	1276	895.642
4	2	82.6	12	1546		947.613
5	1	58	12			967.584
6	2	92.3	12	1293		399.545
7	1	99.6	12			599.865
8	3	77.3	12	1530	1304	351.736
9	3	68.3	12	1930	1422	162.997
10	3	93.3	12	1796	1066	563.718
11	3	70.8	12	1464	1076	523.909

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	64.7	16	1763		731.382
2	3	83.7	16	1079	1133	262.827
3	2	93.4	16	1076		148.254
4	1	80.9	16			535.201
5	2	62.4	16	1150		830.259
6	3	60.6	16	1667	1999	234.896
7	2	54.9	16	1563		395.693
8	2	61.8	16	1367		284.4
9	2	78.7	16	1534		462.477
10	3	97.4	16	1300	1799	815.194
11	1	67.2	16			50.441
12	2	98.3	16	1504		767.129
13	1	74.9	16			491.586
14	3	99.6	16	1946	1810	277.543

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	52.4	8	1904		89.961
2	2	76.7	8	1787		177.174
3	2	54.4	8	1300		337.382
4	2	82.1	8	1238		352.013
5	2	57.3	8	1649		519.314
6	2	86.7	8	1890		273.045
7	1	68.6	8			37.316
8	1	85.7	8			89.577
9	2	57.1	8	1754		37.728
10	2	67.4	8	1459		61.919
11	1	74.2	8			372.321
12	2	90.2	8	1093		225.352
13	1	98.1	8			231.293
14	2	86.6	8	1328		148.924
15	2	60.5	8	1299		270.325
16	2	83	8	1882		78.026
17	2	70.9	8	1879		207.437
18	2	89.1	8	1795		169.258
19	2	83	8	1597		579.279

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	55.6	14	1041	1751	365.537
2	2	98.7	14	1924		139.683
3	3	57.1	14	1481	1558	232.206
4	2	52.8	14	1823		9.339
5	1	57.3	14			335.852
6	1	66.9	14			173.115
7	2	58	14	1079		342.358
8	3	52.6	14	1055	1694	505.982
9	1	58.5	14			885.195
10	2	99.7	14	1736		904.718
11	1	51	14			95.401
12	2	54.1	14	1572		893.054
13	3	75.1	14	1327	1120	74.077

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	76.6	13			756.676
2	1	91.8	13			529.951
3	1	53	13			319.952
4	1	95.4	13			1070.533
5	1	96.7	13			603.594
6	1	57.2	13			313.985
7	1	96.1	13			290.575
8	2	55.2	13	1869		476.816
9	3	57.9	13	1150	1415	437.637
10	2	59.5	13	1752		397.118
11	2	50.6	13	1009		756.309

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	98.1	10			619.521
2	2	68.5	10	1800		868.02
3	2	84.3	10	1143		477.07
4	1	75.6	10			781.88
5	2	53	10	1709		504.9
6	2	53.6	10	1186		396.3
7	2	74.1	10	1542		42.98
8	2	75.2	10	1377		588.44
9	3	65.8	10	1624	1941	835.35
10	2	64.3	10	1895		313.07
11	3	83.1	10	1628	1405	73.4
12	2	55.5	10	1324		772.9

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	64	11	1529		526.061
2	2	76.4	11	1525		262.827
3	3	99.2	11	1078	1112	278.13
4	2	86.9	11	1566		435.44
5	1	66.4	11			139.78
6	2	65	11	1346		558.2
7	2	65.1	11	1241		5.62
8	2	51.4	11	1620		402.36
9	1	96	11			124.77
10	2	61.5	11	1057		55.65
11	1	52.1	11			210.79
12	2	95.8	11	1368		545.04
13	2	81.8	11	1359		139.19
14	3	82.6	11	1460	1376	296.71
15	2	97.9	11	1188		19.76
16	2	99.6	11	1664		248.17
17	2	83.8	11	1475		542.5
18	2	58.3	11	1240		487.3
19	2	92.8	11	1482		457.1
20	1	75.9	11			446.9

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5491.0	0	16	5511.3	1
2	5492.3	1	17	5512.5	1
3	5493.5	1	18	5513.8	1
4	5494.8	1	19	5515.0	1
5	5496.1	1	20	5516.3	1
6	5497.3	1	21	5517.6	1
7	5498.6	1	22	5518.8	1
8	5499.9	1	23	5520.1	1
9	5501.1	1	24	5521.3	1
10	5502.4	1	25	5522.6	1
11	5503.7	1	26	5523.9	1
12	5504.9	1	27	5525.1	1
13	5506.2	0	28	5526.4	1
14	5507.5	1	29	5527.6	1
15	5510.0	1	30	5529.0	1
Detection Percentage (%)					93.3%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5524	24	12	5491	36
13	5507	39	13	5515	39
26	5521	78	24	5508	72
41	5516	123	47	5528	141
52	5490	156	50	5505	150
81	5502	243	52	5524	156
98	5505	294	73	5493	219
--	--	--	80	5511	240
--	--	--	88	5494	264
--	--	--	93	5527	279

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5522	21	8	5505	24
11	5503	33	39	5518	117
43	5514	129	45	5507	135
44	5506	132	58	5527	174
54	5504	162	83	5499	249
77	5517	231	90	5524	270
83	5521	249	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
43	5491	129	18	5501	54
50	5490	150	21	5511	63
65	5505	195	22	5503	66
77	5529	231	32	5508	96
81	5495	243	45	5512	135
--	--	--	62	5495	186
--	--	--	95	5509	285

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5492	24	3	5529	9
9	5490	27	4	5526	12
26	5496	78	8	5515	24
29	5512	87	16	5514	48
42	5506	126	18	5518	54
70	5501	210	35	5522	105
81	5495	243	72	5493	216
85	5498	255	73	5511	219
91	5524	273	78	5527	234
93	5510	279	80	5499	240
98	5525	294	94	5500	282

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5495	21	8	5502	24
13	5512	39	10	5507	30
14	5506	42	20	5517	60
15	5515	45	39	5526	117
38	5498	114	55	5520	165
42	5514	126	66	5510	198
59	5507	177	68	5528	204
61	5490	183	70	5505	210
71	5517	213	71	5511	213
87	5530	261	72	5495	216
96	5500	288	73	5491	219
99	5492	297	90	5509	270
--	--	--	97	5493	291

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
4	5503	12	13	5503	39
14	5507	42	14	5525	42

17	5493	51	18	5505	54
30	5501	90	28	5528	84
80	5519	240	30	5518	90
90	5502	270	49	5517	147
--	--	--	56	5507	168

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
14	5505	42	18	5512	54
24	5490	72	38	5515	114
28	5526	84	52	5513	156
36	5502	108	53	5503	159
46	5520	138	70	5524	210
61	5528	183	78	5492	234
67	5516	201	81	5495	243
--	--	--	83	5514	249

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5514	15	2	5504	6
12	5493	36	4	5520	12
45	5490	135	18	5522	54
51	5510	153	29	5492	87
61	5505	183	37	5508	111
91	5500	273	44	5497	132
--	--	--	77	5524	231
--	--	--	83	5506	249
--	--	--	87	5526	261
--	--	--	89	5516	267
Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5495	6	34	5497	102
6	5519	18	52	5510	156
8	5518	24	79	5530	237

13	5517	39	80	5515	240
26	5494	78	--	--	--
28	5506	84	--	--	--
44	5491	132	--	--	--
54	5493	162	--	--	--
58	5513	174	--	--	--
91	5523	273	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5517	24	5	5514	15
30	5522	90	11	5495	33
31	5518	93	29	5499	87
85	5504	255	75	5501	225
86	5506	258	81	5520	243
96	5496	288	86	5508	258
--	--	--	92	5494	276

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5524	18	19	5493	57
41	5509	123	40	5520	120
56	5510	168	41	5523	123
57	5490	171	55	5512	165
58	5526	174	66	5503	198
64	5514	192	--	--	--
66	5525	198	--	--	--
74	5519	222	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
32	5517	96	23	5512	69
35	5509	105	24	5511	72
60	5523	180	30	5501	90

82	5500	246	40	5514	120
89	5515	267	41	5491	123
97	5498	291	45	5505	135
--	--	--	68	5529	204
--	--	--	69	5490	207
--	--	--	79	5492	237
--	--	--	87	5507	261
--	--	--	92	5495	276

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5511	9	3	5520	9
4	5497	12	22	5530	66
12	5527	36	50	5490	150
18	5507	54	67	5524	201
21	5518	63	68	5500	204
23	5495	69	71	5506	213
42	5509	126	80	5492	240
56	5530	168	84	5527	252
66	5529	198	--	--	--

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5510	6	33	5491	99
9	5528	27	51	5524	153
36	5495	108	52	5516	156
37	5509	111	54	5520	162
39	5523	117	59	5492	177
44	5507	132	65	5494	195
63	5525	189	68	5507	204
97	5519	291	70	5502	210
--	--	--	73	5526	219
--	--	--	82	5518	246
--	--	--	88	5498	264
--	--	--	95	5525	285

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5517	15	2	5524	6
22	5490	66	6	5503	18
24	5524	72	17	5530	51
41	5509	123	32	5516	96
78	5525	234	41	5494	123
81	5511	243	67	5515	201
84	5493	252	72	5513	216
92	5516	276	--	--	--

Product	ACCESS POINT	Test Site	AC1
Test Engineer	Eric Lin	Test Date	2020/07/30
Test Item	Radar Statistical Performance Check (802.11ax-HE80 mode - 5530MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	1	578	92	0
2	5493.6	1	838	63	1
3	5496.2	1	858	62	1
4	5498.8	1	918	58	1
5	5501.4	1	558	95	1
6	5504.0	1	638	83	1
7	5506.6	1	738	72	1
8	5509.2	1	898	59	1
9	5511.8	1	818	65	1
10	5514.4	1	598	89	1
11	5517.0	1	718	74	1
12	5519.6	1	3066	18	1
13	5522.2	1	698	76	1
14	5524.8	1	618	86	1
15	5530.0	1	798	67	1
16	5532.6	1	1893	28	1
17	5535.2	1	2233	24	1
18	5537.8	1	2993	18	1
19	5540.4	1	1975	27	1
20	5543.0	1	2204	24	1
21	5545.6	1	2978	18	1
22	5548.2	1	1402	38	1
23	5550.8	1	2162	25	1
24	5553.4	1	676	78	1
25	5556.0	1	2002	27	1
26	5558.6	1	2238	24	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5561.2	1	2034	26	1
28	5563.8	1	1470	36	1
29	5566.4	1	790	67	1
30	5569.0	1	2940	18	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	4.2	202	26	0
2	5493.6	3.4	205	23	1
3	5496.2	4.1	214	25	1
4	5498.8	4.6	150	25	1
5	5501.4	5.0	209	26	1
6	5504.0	2.4	202	28	1
7	5506.6	1.7	218	29	1
8	5509.2	2.3	204	25	1
9	5511.8	3.1	161	26	1
10	5514.4	1.5	170	27	1
11	5517.0	4.3	209	26	1
12	5519.6	2.6	214	23	1
13	5522.2	3.1	207	24	1
14	5524.8	1.6	151	24	0
15	5530.0	4.1	224	25	1
16	5532.6	2.3	151	27	1
17	5535.2	3.6	225	24	1
18	5537.8	4.9	213	25	1
19	5540.4	3.6	217	24	1
20	5543.0	3.3	160	27	1
21	5545.6	3.3	202	24	1
22	5548.2	1.5	216	28	1
23	5550.8	4.3	209	23	1
24	5553.4	3.9	174	26	1
25	5556.0	3.0	206	26	1
26	5558.6	5.0	208	25	1
27	5561.2	3.9	180	29	1
28	5563.8	3.7	169	24	1
29	5566.4	3.7	219	26	1
30	5569.0	4.7	198	25	1
Detection Percentage (%)					93.3%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	9.3	448	18	1
2	5493.6	8.8	296	18	1
3	5496.2	9.8	443	18	1
4	5498.8	10.0	225	17	1
5	5501.4	6.1	353	17	1
6	5504.0	6.6	457	16	1
7	5506.6	6.3	438	17	1
8	5509.2	9.1	242	18	1
9	5511.8	10.0	293	17	1
10	5514.4	6.0	206	17	1
11	5517.0	7.4	285	18	1
12	5519.6	9.8	370	16	0
13	5522.2	7.1	357	17	1
14	5524.8	9.3	320	17	1
15	5530.0	7.2	439	17	1
16	5532.6	8.6	420	18	1
17	5535.2	7.0	383	16	1
18	5537.8	9.8	354	17	1
19	5540.4	6.2	336	16	1
20	5543.0	7.0	380	16	1
21	5545.6	7.1	364	18	0
22	5548.2	8.0	445	18	1
23	5550.8	8.8	338	17	1
24	5553.4	9.0	423	16	1
25	5556.0	8.3	280	18	1
26	5558.6	6.6	304	17	1
27	5561.2	9.9	347	16	0
28	5563.8	7.7	310	18	1
29	5566.4	9.8	240	16	1
30	5569.0	6.4	364	17	1
Detection Percentage (%)					90%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	12.5	266	13	0
2	5493.6	16.1	390	15	1
3	5496.2	18.7	381	16	1
4	5498.8	17.2	331	13	1
5	5501.4	13.4	318	14	1
6	5504.0	19.4	422	16	1
7	5506.6	14.7	344	13	1
8	5509.2	18.7	499	16	0
9	5511.8	18.2	444	12	1
10	5514.4	18.6	331	14	1
11	5517.0	14.9	346	13	1
12	5519.6	13.4	399	14	1
13	5522.2	17.9	374	13	1
14	5524.8	16.3	432	15	0
15	5530.0	15.8	243	16	0
16	5532.6	12.7	206	13	0
17	5535.2	16.7	441	14	1
18	5537.8	13.5	396	14	1
19	5540.4	19.4	257	13	1
20	5543.0	19.6	407	13	1
21	5545.6	12.3	439	12	1
22	5548.2	19.8	257	15	1
23	5550.8	11.4	419	13	1
24	5553.4	15.1	254	15	0
25	5556.0	11.3	267	12	1
26	5558.6	13.2	327	13	0
27	5561.2	12.0	269	12	0
28	5563.8	11.5	351	15	1
29	5566.4	15.6	374	13	1
30	5569.0	17.2	297	14	0
Detection Percentage (%)					70%

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

waveforms is as follows: $\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4} = (96.7\% + 93.3\% + 90\% + 70\%) / 4 = 87.5\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5530.0	1	16	5497.4	1
2	5530.0	1	17	5497.0	1
3	5530.0	1	18	5498.6	1
4	5530.0	1	19	5496.6	1
5	5530.0	1	20	5497.0	0
6	5530.0	1	21	5564.6	1
7	5530.0	1	22	5562.6	1
8	5530.0	1	23	5566.2	1
9	5530.0	1	24	5564.2	1
10	5530.0	1	25	5564.2	1
11	5497.4	1	26	5567.0	1
12	5494.5	1	27	5566.2	1
13	5496.2	1	28	5561.4	1
14	5493.4	1	29	5562.6	0
15	5496.6	1	30	5564.2	1
Detection Percentage (%)					93.3%

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	1	92.2	11			790.121
2	3	55.3	11	1217	1394	218.14
3	2	72.3	11	1633		573.91
4	2	89.4	11	1747		800.7
5	2	77.3	11	1075		1089.15
6	2	64.8	11	1881		1133.75
7	2	51.5	11	1576		387.89
8	2	98.1	11	1479		739.61
9	2	77.4	11	1206		263.37
10	2	95.7	11	1117		647

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	53.9	5	1950		1133.69
2	2	50	5	1565		143.36
3	1	96.8	5			210.82
4	1	90.1	5			658.52
5	3	65.8	5	1636	1600	445.33
6	2	67.6	5	1915		248.74
7	3	58.3	5	1507	1596	1170.09
8	2	64.4	5	1861		921.29
9	3	81.8	5	1960	1386	1045.8
10	3	73.2	5	1578	1969	170.6

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	92.8	12	1038	1564	27.84
2	2	50.6	12	1810		420.45
3	2	62.7	12	1378		492.26
4	2	94.3	12	1155		442.61
5	1	87.5	12			351.46
6	2	88.7	12	1888		257.4
7	1	58.9	12			309.04
8	3	50	12	1456	1010	218.06
9	2	60.9	12	1090		768.68
10	3	87.6	12	1628	1052	376.93
11	1	67.8	12			694.48
12	2	97.8	12	1217		384.34
13	2	75.3	12	1530		168.76
14	3	88.7	12	1235	1991	602
15	1	89.8	12			343.2

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	91.6	12	1708	1430	381.012
2	2	55.6	12	1331		552.861
3	2	78.4	12	1768		888.032
4	2	69.4	12	1762		194.033
5	2	97.4	12	1588		522.884
6	2	82	12	1737		4.065
7	3	90	12	1576	1329	107.365
8	1	70.6	12			481.126
9	1	67.1	12			921.667
10	2	68.4	12	1114		979.618
11	2	63.7	12	1361		610.409

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	63.3	10	1318		610.421
2	2	60.1	10	1104		1055.057
3	2	52	10	1558		403.743
4	3	59.8	10	1014	1364	673.38
5	3	90.5	10	1304	1325	1077.837
6	2	80.6	10	1456		159.623
7	1	73	10			321.89
8	1	82.5	10			285.537
9	3	60.1	10	1531	1945	234.633

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	2	77.7	12	1038		927.898
2	2	84.9	12	1407		142.73
3	3	52.5	12	1577	1065	288.98
4	2	85.2	12	1225		693.15
5	2	86.7	12	1453		532.19
6	1	70.1	12			873.32
7	2	88.8	12	1857		411.21
8	3	72.7	12	1395	1288	965.77
9	1	91.4	12			410.77
10	3	60.7	12	1453	1016	801.99
11	3	65	12	1749	1814	933.8
12	2	83.7	12	1915		269.2

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	57.5	19	1213		437.312
2	2	52.4	19	1346		728.843
3	2	78.6	19	1399		814.786
4	3	62.9	19	1857	1796	914.829
5	2	70.6	19	1640		50.282
6	2	88.2	19	1169		64.705
7	1	55.4	19			558.298
8	2	70.7	19	1656		584.302
9	1	96.7	19			889.345
10	3	61.8	19	1062	1934	715.508
11	1	90.2	19			32.121
12	1	79.1	19			395.954
13	2	50.2	19	1213		60.377

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	1	81.5	8			110.174
2	2	55.7	8	1696		486
3	3	70.1	8	1086	1415	464.18
4	2	64	8	1816		66.16
5	2	72	8	1114		76.77
6	2	91.9	8	1499		45.56
7	3	60.7	8	1291	1341	384.3
8	1	67.4	8			89.87
9	2	53.9	8	1185		664.59
10	3	78.1	8	1744	1154	79.12
11	2	57.9	8	1881		109.15
12	2	82.7	8	1055		105.38
13	2	70.8	8	1971		457.08
14	2	88.9	8	1614		653.8
15	3	65.8	8	1795	1029	718.5
16	2	73.9	8	1486		27.4

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	3	87	9	1713	1421	860.085
2	3	71.6	9	1937	1883	267.263
3	2	80.8	9	1347		829.596
4	2	60.6	9	1949		356.229
5	2	58.1	9	1102		495.752
6	1	75.1	9			893.565
7	2	89.3	9	1685		314.568
8	2	86.3	9	1606		411.482
9	3	53.2	9	1008	1249	601.305
10	3	87.8	9	1468	1029	78.298
11	2	94.6	9	1220		128.151
12	3	79.7	9	1874	1984	876.654
13	1	71.1	9			619.377

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	2	63.9	7	1164		186.36
2	2	73.4	7	1553		190.071
3	1	65	7			170.005
4	1	52.8	7			654.693
5	3	85.3	7	1949	1189	441.731
6	2	68	7	1840		228.098
7	2	81.8	7	1871		109.856
8	2	62.8	7	1839		226.064
9	2	97.4	7	1247		697.761
10	3	61.1	7	1341	1505	453.229
11	1	85	7			454.966
12	3	64.9	7	1802	1422	291.964
13	2	96.6	7	1531		639.492
14	2	81.2	7	1947		222.439
15	1	83.3	7			186.647
16	3	94.1	7	1879	1319	80.265
17	2	74.9	7	1591		357.982

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	3	69.5	16	1996	1379	327.614
2	2	61.2	16	1775		240.611
3	3	67.3	16	1252	1332	722.012
4	3	87.9	16	1091	1935	1073.803
5	3	63.3	16	1807	1183	930.724
6	1	65.6	16			582.855
7	3	81.8	16	1236	1807	887.615
8	2	66.6	16	1530		987.266
9	2	81.7	16	1894		542.697
10	3	72	16	1181	1960	13.708
11	1	60.9	16			868.409

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	1	84.1	13			591.025
2	1	51.2	13			37.574
3	1	64.1	13			822.734
4	2	61.6	13	1574		527.831
5	2	60.1	13	1597		124.569
6	1	81	13			414.326
7	3	72.4	13	1257	1285	793.183
8	2	71.1	13	1876		422.25
9	1	99.7	13			174.477
10	2	97.3	13	1541		481.994
11	2	62.5	13	1632		645.311
12	1	68.6	13			181.109
13	3	53.7	13	1733	1370	363.286
14	3	74.5	13	1271	1627	263.543

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	73.4	6	1168		150.681
2	3	51.4	6	1266	1624	79.24
3	3	77	6	1181	1055	579.01
4	1	61.4	6			651.36
5	1	73.4	6			221.42
6	1	59.6	6			414.83
7	3	64	6	1798	1845	841.75
8	2	54.8	6	1157		45.99
9	2	87.2	6	1720		626.08
10	2	95.1	6	1004		816.99
11	1	72.7	6			243.5
12	2	59.3	6	1827		434.4

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	80.8	6	1538		858.625
2	2	50	6	1313		736.03
3	2	67.7	6	1582		137.6
4	2	71.6	6	1509		137.55
5	1	87.9	6			89.49
6	2	78.1	6	1801		648.62
7	2	55.4	6	1576		110.4
8	2	66.3	6	1071		774.86
9	1	88.9	6			757.08
10	1	50.8	6			214.9
11	1	56.1	6			369.1
12	2	74.1	6	1033		874.4

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	3	62.5	14	1284	1182	22.723
2	2	99.2	14	1275		597.27
3	1	53.6	14			546.18
4	1	90.1	14			258.11
5	2	71.4	14	1854		448.95
6	3	56.9	14	1787	1892	926.6
7	1	81.6	14			13.1
8	1	58	14			605.6
9	2	89.3	14	1616		247.2
10	2	78.6	14	1945		964.54
11	1	90.5	14			985.4
12	2	60.2	14	1917		136.2

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	92.7	16	1365		25.026
2	3	82.7	16	1326	1141	103.354
3	3	60.6	16	1394	1718	489.055
4	1	54.1	16			303.473
5	1	60.1	16			564.131
6	2	53.8	16	1845		694.458
7	1	73.5	16			72.626
8	2	65.1	16	1875		24.544
9	1	99.6	16			657.091
10	1	88.1	16			71.019
11	3	83.8	16	1133	1679	409.726
12	2	69.7	16	1320		496.624
13	2	82.5	16	1770		125.682
14	3	74.4	16	1466	1472	565.459
15	2	55.8	16	1293		153.047
16	3	77.6	16	1538	1213	357.565
17	3	87.4	16	1321	1995	677.282

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	94.5	15	1347	1153	479.929
2	2	86.1	15	1558		296.81
3	2	92.9	15	1931		202.36
4	3	54.3	15	1864	1712	933.42
5	2	60.4	15	1299		287.34
6	3	85.7	15	1864	1439	66.77
7	2	88.7	15	1029		195.29
8	1	53.7	15			160.27
9	1	96.9	15			524.36
10	2	70.4	15	1563		941.05
11	1	68.4	15			577.4
12	2	96.3	15	1484		605

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	92	19	1372		105.999
2	3	53.2	19	1788	1136	292.68
3	2	60	19	1711		264.212
4	1	77.8	19			82.333
5	2	65.4	19	1515		622.854
6	2	67	19	1495		455.655
7	2	76.3	19	1770		618.046
8	2	70.9	19	1122		344.617
9	2	89.6	19	1718		100.048
10	3	74.3	19	1193	1984	192.269
11	2	94.8	19	1948		212.171
12	3	94.3	19	1878	1387	317.982
13	2	67.8	19	1260		583.153
14	2	68.9	19	1001		400.024
15	2	87.6	19	1290		134.605
16	3	67.4	19	1349	1980	553.116
17	2	92.8	19	1362		415.437
18	2	63	19	1128		342.658
19	2	59.1	19	1786		572.379

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	1	71.8	14			229.422
2	1	99.3	14			112.763
3	3	56.6	14	1899	1181	517.386
4	2	76.5	14	1286		272.059
5	2	53.3	14	1411		330.642
6	2	79.9	14	1346		107.555
7	3	92	14	1166	1841	394.358
8	2	97.5	14	1726		912.282
9	2	94.7	14	1523		89.695
10	2	94.6	14	1260		286.398
11	1	87.3	14			836.631
12	1	63	14			17.554
13	1	59.4	14			210.077

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	76.1	15	1473	1635	4.877
2	1	55.6	15			376.127
3	2	52.3	15	1714		781.463
4	1	67.8	15			811.43
5	1	91.3	15			1161.527
6	2	81.3	15	1935		810.493
7	2	59.2	15	1955		1188.72
8	1	80.5	15			1018.067
9	1	52.5	15			498.033

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	98.5	11	1450		259.043
2	2	67	11	1803		31.88
3	3	98.5	11	1339	1797	732.11
4	3	97.9	11	1173	1572	179.56
5	3	79.2	11	1936	1292	150.95
6	2	62.7	11	1157		44.12
7	2	69.5	11	1034		123.04
8	2	77.4	11	1679		6.73
9	2	53.3	11	1203		743.78
10	2	94.4	11	1083		377.08
11	2	61	11	1317		482
12	1	99	11			795.2

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	56.8	16	1893		886.114
2	1	53.5	16			478.733
3	2	90.2	16	1958		657.756
4	2	51	16	1908		614.739
5	3	59.3	16	1162	1472	733.002
6	3	81.6	16	1486	1268	897.335
7	3	78.6	16	1243	1628	759.078
8	1	82.8	16			45.072
9	3	56.1	16	1846	1231	570.465
10	1	72.2	16			354.258
11	2	92.3	16	1004		494.841
12	2	83.4	16	1364		116.854
13	2	76.3	16	1041		280.777

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	75.5	7	1932		271.934
2	1	94.2	7			91.24
3	2	77.6	7	1689		993.11
4	2	58.8	7	1376		375.1
5	2	76.3	7	1511		87.46
6	2	58.5	7	1045		298.32
7	1	74.3	7			687.24
8	3	85.5	7	1404	1699	550.84
9	3	95.5	7	1134	1798	176.4
10	1	56.6	7			311.02
11	2	69.4	7	1202		745.2
12	2	58.6	7	1790		757.1

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	92.5	12			156.907
2	2	80.2	12	1125		344.723
3	2	93.4	12	1558		414.307
4	3	99.8	12	1630	1820	156.88
5	1	91.1	12			530.993
6	2	92.9	12	1560		574.677
7	1	61.6	12			94.31
8	1	95.9	12			297.453
9	2	64.8	12	1393		347.677
10	3	64.1	12	1598	1442	658.57
11	3	64	12	1333	1620	121.903
12	2	89	12	1499		645.327
13	2	60.4	12	1109		132.85
14	2	79.1	12	1256		332.123
15	2	57.5	12	1856		497.087
16	2	78.8	12	1111		302.6
17	3	67.5	12	1242	1559	561.833
18	3	70.5	12	1789	1850	502.067

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	86.6	12	1301		520.209
2	2	85.7	12	1517		163.155
3	3	72.2	12	1721	1509	101.91
4	2	85.4	12	1062		426.79
5	2	99	12	1197		499.78
6	3	93.6	12	1212	1418	289.53
7	1	85	12			711.5
8	2	64.6	12	1173		481.56
9	2	55	12	1221		408.51
10	1	57.6	12			645.18
11	2	78.9	12	1687		600.4
12	2	98.5	12	1691		515.1
13	2	92.9	12	1928		412.39
14	3	76.1	12	1208	1906	374.7
15	1	99.9	12			670.5
16	2	72.6	12	1146		243.8

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	64.5	5	1790		146.34
2	3	83.7	5	1340	1850	593.418
3	3	68.3	5	1568	1302	305.215
4	2	66.6	5	1756		101.943
5	3	93.2	5	1496	1538	650.861
6	2	90.5	5	1493		269.718
7	2	97.8	5	1268		445.716
8	3	51.9	5	1340	1188	12.364
9	2	75.9	5	1840		49.761
10	2	74.3	5	1064		74.279
11	2	89.9	5	1281		448.576
12	2	77.2	5	1709		650.134
13	3	52.7	5	1363	1146	393.532
14	3	60.4	5	1922	1740	454.039
15	1	54.1	5			694.247
16	3	76.6	5	1435	1260	332.465
17	1	93.5	5			619.082

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	81	7	1120	1443	468.909
2	2	70.5	7	1305		781.78
3	2	92	7	1026		557.45
4	3	88.2	7	1837	1887	269.3
5	2	71.1	7	1477		738.12
6	2	67.4	7	1019		508.54
7	3	52.2	7	1174	1364	648.7
8	1	85	7			518.64
9	1	82.8	7			817.22
10	3	99.3	7	1229	1329	705.06
11	3	89.2	7	1552	1817	868.2
12	2	81.8	7	1905		724.1

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	86.4	19	1322		123.85
2	3	88.7	19	1844	1731	532.777
3	2	81.5	19	1013		397.704
4	2	96.6	19	1871		621.241
5	2	97.6	19	1533		596.429
6	2	87.6	19	1097		475.816
7	2	82.7	19	1306		38.203
8	2	60.6	19	1226		609.63
9	3	57.9	19	1910	1753	9.227
10	3	58	19	1499	1248	73.354
11	2	99	19	1118		840.831
12	3	91.8	19	1459	1482	321.559
13	1	73.5	19			369.186
14	3	57.2	19	1796	1039	224.943

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	90.8	16			718.279
2	1	88.2	16			525.083
3	2	63.3	16	1381		172.986
4	2	93.4	16	1616		847.489
5	1	69.1	16			857.342
6	2	83.8	16	1931		822.295
7	2	62.2	16	1099		692.888
8	2	88.5	16	1792		632.682
9	2	58.9	16	1806		573.435
10	2	87.4	16	1394		278.498
11	2	98.7	16	1177		192.241
12	1	70.4	16			27.054
13	2	70.3	16	1360		527.677

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μ sec)	Pulse 2-to-3 PRI (μ sec)	Start Location Within Interval (msec)
1	2	73.5	12	1556		71.548
2	2	50.6	12	1724		600.69
3	2	51.6	12	1871		548.47
4	2	88.4	12	1857		1012.13
5	3	89.7	12	1403	1612	1068.93
6	2	77.4	12	1360		323.19
7	1	69.2	12			838.25
8	3	86.2	12	1326	1710	822.48
9	3	92.1	12	1567	1983	1169.1
10	1	99.4	12			547

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5491.0	1	16	5532.6	1
2	5493.6	1	17	5535.2	1
3	5496.2	1	18	5537.8	1
4	5498.8	1	19	5540.4	1
5	5501.4	1	20	5543.0	1
6	5504.0	1	21	5545.6	1
7	5506.6	1	22	5548.2	1
8	5509.2	1	23	5550.8	1
9	5511.8	1	24	5553.4	1
10	5514.4	1	25	5556.0	1
11	5517.0	1	26	5558.6	1
12	5519.6	1	27	5561.2	1
13	5522.2	1	28	5563.8	1
14	5524.8	1	29	5566.4	1
15	5530.0	1	30	5569.0	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5554	18	4	5557	12
10	5494	30	7	5567	21
11	5497	33	9	5540	27
14	5569	42	10	5568	30
17	5501	51	18	5536	54
20	5509	60	27	5516	81
22	5508	66	43	5569	129
30	5490	90	45	5512	135
33	5534	99	50	5535	150
35	5500	105	53	5539	159
38	5553	114	63	5545	189
48	5532	144	68	5509	204
57	5570	171	70	5519	210
60	5498	180	72	5532	216
72	5565	216	74	5517	222
74	5536	222	80	5564	240
78	5557	234	83	5527	249
98	5546	294	88	5522	264
99	5556	297	96	5537	288
--	--	--	99	5520	297

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5544	3	3	5510	9
10	5514	30	10	5542	30
12	5542	36	11	5503	33
14	5552	42	14	5508	42
16	5539	48	18	5526	54
27	5559	81	24	5498	72
30	5564	90	27	5511	81
32	5491	96	38	5497	114
33	5515	99	45	5505	135
35	5550	105	53	5540	159
49	5505	147	60	5529	180
59	5508	177	67	5548	201
60	5548	180	71	5491	213
66	5501	198	73	5496	219
68	5522	204	76	5541	228
69	5566	207	77	5551	231
72	5518	216	91	5524	273
78	5553	234	95	5523	285
83	5540	249	96	5560	288
85	5568	255	99	5552	297
86	5557	258	100	5558	300
87	5562	261	--	--	--
93	5530	279	--	--	--
94	5499	282	--	--	--
100	5513	300	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5527	3	1	5522	3
27	5563	81	6	5537	18
33	5533	99	8	5499	24
38	5543	114	9	5557	27
40	5549	120	16	5566	48
42	5565	126	20	5555	60
59	5535	177	26	5550	78
60	5537	180	28	5548	84
64	5499	192	30	5565	90
71	5558	213	31	5519	93
89	5555	267	44	5516	132
93	5529	279	47	5541	141
95	5503	285	54	5564	162
98	5491	294	56	5502	168
--	--	--	62	5500	186
--	--	--	70	5549	210
--	--	--	81	5528	243

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
17	5505	51	1	5537	3
20	5506	60	3	5540	9
32	5491	96	4	5512	12
37	5529	111	5	5516	15
46	5493	138	6	5555	18
48	5503	144	10	5545	30
49	5500	147	11	5507	33
50	5538	150	20	5529	60
51	5517	153	21	5511	63
61	5521	183	29	5552	87
63	5545	189	32	5505	96
67	5513	201	46	5535	138
75	5547	225	47	5515	141
80	5549	240	58	5543	174
89	5531	267	59	5510	177
92	5558	276	74	5551	222
--	--	--	79	5493	237
--	--	--	85	5522	255
--	--	--	87	5553	261
--	--	--	94	5491	282
--	--	--	96	5565	288

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5518	24	21	5549	63
11	5536	33	23	5491	69
12	5549	36	35	5501	105
24	5508	72	40	5509	120
34	5540	102	43	5565	129
48	5559	144	52	5558	156
57	5507	171	66	5542	198
62	5502	186	79	5550	237
66	5570	198	85	5564	255
68	5566	204	91	5534	273
71	5552	213	92	5530	276
87	5530	261	96	5539	288
100	5532	300	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
4	5547	12	4	5540	12
5	5525	15	10	5565	30
9	5500	27	18	5527	54
11	5516	33	22	5515	66
34	5567	102	32	5506	96
35	5556	105	37	5541	111
41	5540	123	39	5525	117
50	5541	150	47	5524	141
53	5537	159	51	5558	153
56	5494	168	53	5556	159
61	5546	183	55	5559	165
70	5524	210	58	5523	174
87	5528	261	66	5522	198
91	5526	273	68	5499	204
95	5555	285	73	5569	219
97	5559	291	76	5538	228
--	--	--	82	5505	246
--	--	--	84	5511	252
--	--	--	91	5548	273
--	--	--	96	5567	288

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5551	9	3	5506	9
8	5533	24	6	5538	18
11	5525	33	18	5531	54
20	5491	60	22	5548	66
26	5497	78	30	5562	90
37	5532	111	32	5504	96
40	5528	120	34	5529	102
48	5490	144	38	5515	114
49	5554	147	42	5564	126
51	5567	153	46	5490	138
53	5545	159	68	5503	204
55	5509	165	69	5519	207
56	5544	168	70	5537	210
57	5552	171	84	5544	252
68	5510	204	85	5550	255
69	5507	207	86	5556	258
72	5535	216	87	5540	261
76	5562	228	90	5523	270
89	5547	267	94	5497	282
--	--	--	96	5536	288

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
14	5520	42	1	5508	3
20	5531	60	17	5531	51
32	5528	96	20	5555	60
33	5516	99	25	5569	75
38	5546	114	28	5548	84
45	5536	135	29	5518	87
63	5496	189	36	5547	108
70	5501	210	45	5556	135
74	5513	222	52	5524	156
80	5504	240	53	5527	159
92	5559	276	68	5553	204
--	--	--	71	5529	213
--	--	--	72	5510	216
--	--	--	88	5544	264
--	--	--	89	5538	267
--	--	--	91	5515	273
--	--	--	92	5539	276
--	--	--	95	5530	285
--	--	--	96	5545	288
--	--	--	99	5541	297

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5524	9	3	5519	9
6	5545	18	6	5510	18
7	5527	21	8	5494	24
18	5492	54	18	5492	54
19	5549	57	35	5533	105
20	5505	60	38	5550	114
27	5520	81	39	5538	117
28	5558	84	40	5526	120
38	5551	114	44	5535	132
40	5552	120	50	5566	150
41	5525	123	52	5547	156
61	5570	183	68	5531	204
66	5514	198	71	5490	213
67	5501	201	77	5525	231
70	5529	210	80	5556	240
76	5526	228	93	5570	279
81	5553	243	95	5527	285
86	5522	258	--	--	--
90	5504	270	--	--	--
94	5518	282	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5500	27	5	5514	15
15	5532	45	9	5551	27
16	5520	48	16	5539	48
20	5491	60	17	5549	51
45	5527	135	18	5513	54
52	5545	156	27	5493	81
55	5565	165	29	5500	87
57	5561	171	36	5545	108
64	5560	192	39	5496	117
65	5567	195	53	5563	159
66	5525	198	58	5546	174
71	5568	213	63	5492	189
73	5528	219	64	5515	192
74	5553	222	67	5556	201
76	5566	228	74	5495	222
81	5549	243	80	5498	240
88	5558	264	81	5569	243
--	--	--	85	5494	255
--	--	--	87	5523	261
--	--	--	90	5547	270
--	--	--	92	5548	276
--	--	--	98	5537	294
--	--	--	99	5516	297

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5559	3	4	5491	12
5	5499	15	11	5529	33
19	5496	57	17	5551	51
25	5536	75	20	5565	60
34	5556	102	25	5513	75
38	5534	114	27	5524	81
55	5551	165	30	5497	90
60	5558	180	32	5528	96
61	5535	183	40	5559	120
68	5553	204	47	5543	141
93	5544	279	50	5512	150
100	5523	300	58	5507	174
--	--	--	59	5530	177
--	--	--	73	5493	219
--	--	--	87	5514	261
--	--	--	89	5536	267
--	--	--	93	5535	279

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5539	39	1	5547	3
15	5541	45	2	5566	6
31	5505	93	3	5494	9
35	5536	105	21	5531	63
41	5531	123	26	5554	78
49	5521	147	33	5537	99
55	5555	165	40	5526	120
60	5496	180	48	5569	144
68	5490	204	53	5564	159
72	5547	216	56	5504	168
84	5566	252	62	5570	186
86	5564	258	78	5499	234
92	5568	276	79	5510	237
99	5499	297	86	5511	258
--	--	--	92	5553	276
--	--	--	94	5514	282

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5535	33	2	5530	6
18	5507	54	9	5504	27
23	5531	69	23	5528	69
24	5546	72	28	5491	84
37	5556	111	29	5542	87
52	5562	156	37	5549	111
58	5547	174	49	5548	147
60	5538	180	53	5538	159
67	5499	201	55	5562	165
71	5501	213	58	5565	174
74	5569	222	60	5509	180
81	5504	243	61	5496	183
85	5543	255	68	5506	204
86	5521	258	70	5490	210
--	--	--	73	5553	219
--	--	--	98	5560	294
--	--	--	100	5494	300

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5565	9	3	5564	9
4	5564	12	23	5549	69
6	5522	18	40	5509	120
13	5537	39	44	5519	132
15	5526	45	53	5503	159
38	5548	114	60	5532	180
44	5519	132	61	5523	183
55	5529	165	63	5540	189
61	5546	183	68	5508	204
64	5569	192	72	5546	216
72	5509	216	77	5492	231
74	5539	222	78	5517	234
75	5530	225	80	5497	240
81	5524	243	92	5570	276
87	5506	261	--	--	--
92	5494	276	--	--	--
93	5540	279	--	--	--
100	5521	300	--	--	--

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5510	3	2	5566	6
6	5538	18	4	5549	12
21	5570	63	7	5564	21
22	5564	66	40	5570	120
30	5554	90	41	5515	123
32	5496	96	54	5502	162
34	5511	102	57	5561	171
45	5545	135	58	5547	174
49	5526	147	63	5510	189
54	5541	162	67	5519	201
55	5567	165	74	5567	222
58	5498	174	85	5513	255
79	5551	237	91	5517	273
88	5517	264	100	5545	300
90	5534	270	--	--	--
92	5506	276	--	--	--
95	5502	285	--	--	--

The End