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Report No.: 1704RSU00206  
Report Version: V01  
Issue Date: 06-23-2017

# DFS MEASUREMENT REPORT

## FCC PART 15.407(h)

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**FCC ID:** TK4WPJ428

**APPLICANT:** Compex Systems Pte Ltd

**Application Type:** Class II Permissible Change

**Product:** Wireless Access Point

**Model No.:** WPJ428HV

**Serial Model:** WPJ428LV, WPJ418LV, WPJ418HV, MMS428LV, MMS428HV, MMS418LV, MMS418HV

**Brand Name:** COMPEX

**FCC Classification:** Unlicensed National Information Infrastructure (UNII)

**FCC Rule Part(s):** Part 15.407 Section (h)(2)  
KDB 905462 D02v02, KDB 905462 D04v01

**Type of Device:** Master Device

**Test Date:** June 06 ~ 19, 2017

Reviewed By : Jame Yuan  
( Jame Yuan )

Approved By : Marlin Chen  
( Marlin Chen )



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 905462 D02v02. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

## Revision History

Report No.	Version	Description	Issue Date	Note
1704RSU00206	Rev. 01	Initial report	06-23-2017	Valid

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## §2.1033 General Information

<b>Applicant:</b>	Compex Systems Pte Ltd
<b>Applicant Address:</b>	No:9 Harrison Road, Harrison Industrial Building, #05-01, Singapore 369651
<b>Manufacturer:</b>	Compex Systems Pte Ltd
<b>Manufacturer Address:</b>	No:9 Harrison Road, Harrison Industrial Building, #05-01, Singapore 369651
<b>Test Site:</b>	MRT Technology (Taiwan) Co., Ltd
<b>Test Site Address:</b>	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
<b>MRT FCC Registration No.:</b>	153292
<b>FCC ID:</b>	TK4WPJ428
<b>Test Device Serial No.:</b>	N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering
<b>FCC Classification:</b>	Unlicensed National Information Infrastructure (UNII)

### Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 809388) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-4179, G-814, C-4664, T-2206) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications and Radio testing for FCC, Industry Canada, EU and TELEC Rules.



## 1. INTRODUCTION

### 1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

### 1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2009 on September 30, 2013.



## 2. PRODUCT INFORMATION

### 2.1. Equipment Description

Product Name	Wireless Access Point
Model No.	WPJ428HV
Serial Model:	WPJ428LV, WPJ418LV, WPJ418HV, MMS428LV, MMS428HV, MMS418LV, MMS418HV
Radio Type	Intentional Transceiver
Operation Mode	Master Device
Frequency Range	For 802.11a/n-HT20/ac-VHT20: 5260~5320MHz, 5500~5720MHz For 802.11n-HT40/ac-VHT40: 5270~5310MHz, 5510~5710MHz For 802.11ac-VHT80: 5290MHz, 5530MHz, 5610MHz, 5690MHz
Type of Modulation	802.11a/n/ac: OFDM;
Power-on cycle	Requires 51.5 seconds to complete its power-on cycle;
Uniform Spreading (For DFS Frequency Band)	For the 5250-5350MHz, 5470-5725 MHz bands, the Master device provides, on aggregate, uniform loading of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.

### 2.2. DFS Band Carrier Frequencies Operation

802.11a/n-HT20/ac-VHT20

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

## 802.11n-HT40/ac-VHT40

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

## 802.11ac-VHT80

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

### 2.3. Description of Available Antennas

Antenna Type	Frequency Band (MHz)	TX Paths	Per Chain Max Antenna Gain (dBi)	
			Ant 0	Ant 1
Panel Antenna 3#	2412 ~ 2462	1	8	--
		2	8	8
	5180 ~ 5825	1	10	--
		2	10	10


Note 1: The device didn't support beam-forming technology and Cyclic Delay Diversity (CDD) technology, and the transmit signals are uncorrected, so no add array gain to the band power and band PSD.

Note 2: For SISO mode, only the Ant 0 chain can transmit. 11a&11b&11g mode support SISO mode, 11n mode support MIMO mode.

Note 3: When the device working on UNII-2A & UNII-2C bands, only the panel antenna 3# or antenna gain less than 10dBi can be used.

## 2.4. Description of Antenna RF Port

Antenna RF Port				
--	2.4GHz RF Port		5GHz RF Port	
Software Control Port for 1Tx	Ant 0	--	Ant 0	--
Software Control Port for 2Tx	Ant 0	Ant 1	Ant 0	Ant 1



## 2.5. Test Mode

Test Mode	Mode 1: Communication with Notebook
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### 3. DFS DETECTION THRESHOLDS AND RADAR TEST WAVEFORMS

#### 3.1. Applicability

The following table from FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 lists the applicable requirements for the DFS testing.

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

**Table 3-1: Applicability of DFS Requirements Prior to Use of a Channel**

Requirement	Operational Mode	
	Master Device or Client With Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

**Table 3-2: Applicability of DFS Requirements during normal operation**

### 3.2. DFS Devices Requirements

**Per FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 the following are the requirements for Master Devices:**

- (a) The Master Device will use DFS in order to detect Radar Waveforms with received signal strength above the DFS Detection Threshold in the 5250 ~ 5350 MHz and 5470 ~ 5725 MHz bands. DFS is not required in the 5150 ~ 5250 MHz or 5725 ~ 5825 MHz bands.
- (b) Before initiating a network on a Channel, the Master Device will perform a Channel Availability Check for a specified time duration (Channel Availability Check Time) to ensure that there is no radar system operating on the Channel, using DFS described under subsection a) above.
- (c) The Master Device initiates a U-NII network by transmitting control signals that will enable other U-NII devices to Associate with the Master Device.
- (d) During normal operation, the Master Device will monitor the Channel (In-Service Monitoring) to ensure that there is no radar system operating on the Channel, using DFS described under a).
- (e) If the Master Device has detected a Radar Waveform during In-Service Monitoring as described under d), the Operating Channel of the U-NII network is no longer an Available Channel. The Master Device will instruct all associated Client Device(s) to stop transmitting on this Channel within the Channel Move Time. The transmissions during the Channel Move Time will be limited to the Channel Closing Transmission Time.
- (f) Once the Master Device has detected a Radar Waveform it will not utilize the Channel for the duration of the Non-Occupancy Period.
- (g) If the Master Device delegates the In-Service Monitoring to a Client Device, then the combination will be tested to the requirements described under d) through f) above.

**Channel Move Time and Channel Closing Transmission Time requirements are listed in the following table.**

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.	

Note 2: 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 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

**Table 3-3: DFS Response Requirements**

### 3.3. DFS Detection Threshold Values

The DFS detection thresholds are defined for Master devices and Client Devices with In-service monitoring. These detection thresholds are listed in the following table.

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP $\geq$ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
<p><b>Note 1:</b> This is the level at the input of the receiver assuming a 0 dBi receive antenna.</p> <p><b>Note 2:</b> Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.</p> <p><b>Note3:</b> EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.</p>	

**Table 3-4: Detection Thresholds for Master Devices and Client Devices with Radar Detection**

### 3.4. Parameters of DFS Test Signals

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	$\text{Roundup} \left\{ \left( \frac{1}{360} \right), \left( \frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, 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
<b>Note 1:</b> Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

**Table 3-5: 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

**Table 3-6: 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

**Table 3-7: 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

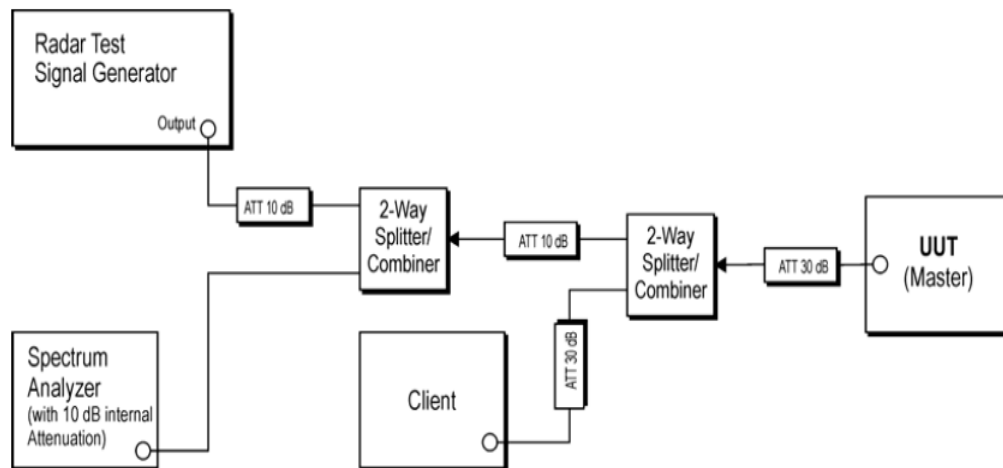
**Table 3-8: Parameters for Frequency Hopping Radar Waveforms**

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.

### 3.5. Conducted Test Setup

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 3-1: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters**

#### 4. TEST EQUIPMENT CALIBRATION DATE

Dynamic Frequency Selection (DFS) – TR3

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2018/05/08
ESG Vector Signal Generator	Agilent	E4438C	MRTSUE06026	1 year	2017/12/09
Temperature/Humidity Meter	Yuhuaze	HTC-2	MRTSUE06180	1 year	2017/11/20
Combiner	WOKEN	0120N02208001D	MRTSUE06200	1 year	N/A
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06023	1 year	2017/11/07
Notebook	ASUS	PRO45V	MRTSUE06180	N/A	N/A

Note: The notebook has a built-in Intel dual band wireless module (AC 7260).

Software	Version	Manufacturer	Function
Pulse Building	N/A	Agilent	Radar Signal Generation Software
DFS Tool	V 6.9.2	Agilent	DFS Test Software

## 5. TEST RESULT

### 5.1. Summary

**Company Name:** Compex Systems Pte Ltd

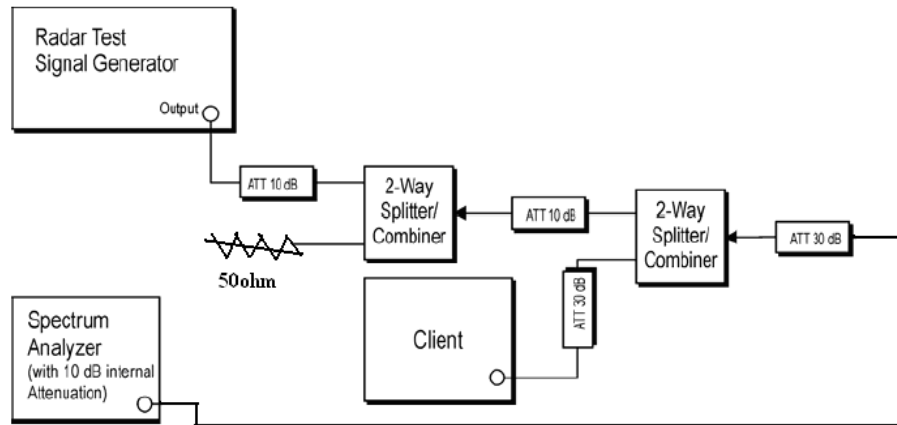
**FCC ID:** TK4WPJ428

Parameter	Limit	Test Result	Reference
UNII Detection Bandwidth Measurement	Refer Table 3-3	Pass	Section 5.4
Initial Channel Availability Check Time	Refer Table 3-3	Pass	Section 5.5
Radar Burst at the Beginning of the Channel Availability Check Time	Refer Table 3-3	Pass	Section 5.6
Radar Burst at the End of the Channel Availability Check Time	Refer Table 3-3	Pass	Section 5.7
In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time	Refer Table 3-3	Pass	Section 5.8
Non-Occupancy Period	Refer Table 3-3	Pass	Section 5.8
Statistical Performance Check	Refer Table 3-3	Pass	Section 5.9

## 5.2. Radar Waveform Calibration

### 5.2.1. Calibration Setup

The conducted test setup was used for this calibration testing. Figure 3-2 shows the typical test setup.



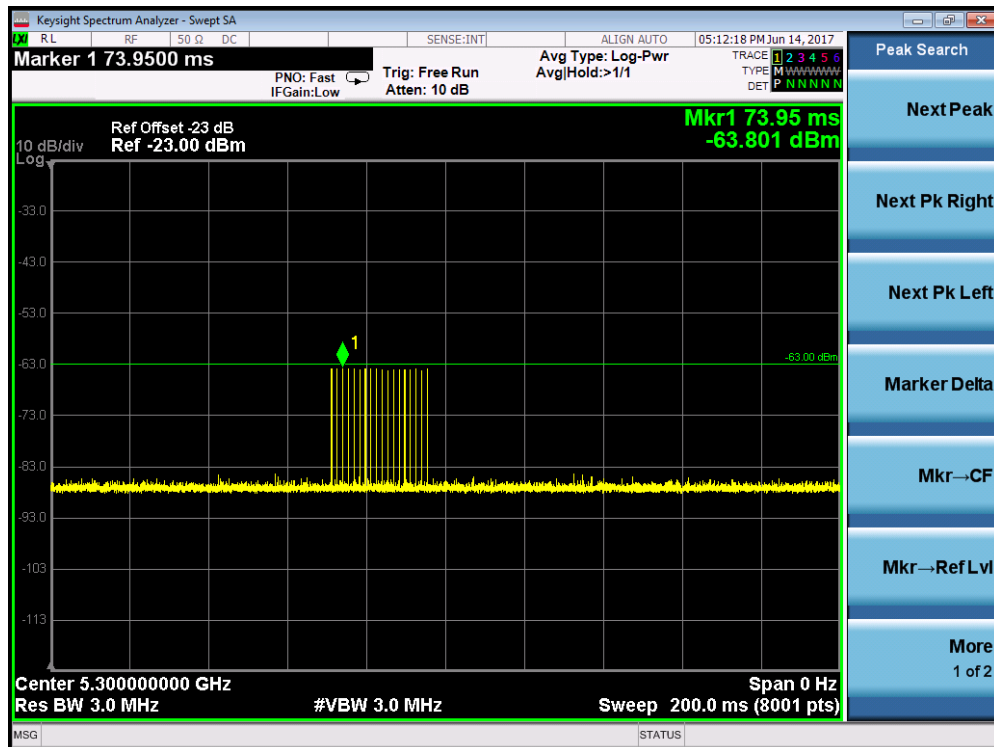
**Figure 3-2: Conducted Test Setup**

### 5.2.2. Calibration Procedure

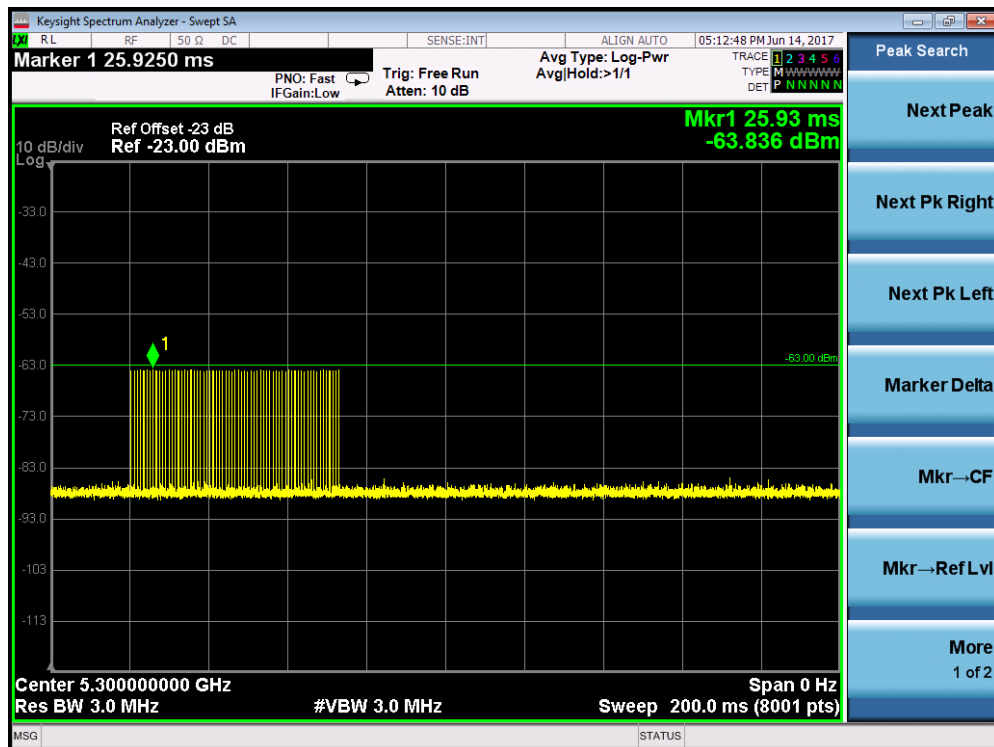
The Interference Radar Detection Threshold Level is  $(-64\text{dBm}) + (0) [\text{dBi}] + 1 \text{ dB} = -63 \text{ dBm}$  that had been taken into account the output power range and antenna gain. The above equipment setup was used to calibrate the conducted Radar Waveform. A vector signal generator was utilized to establish the test signal level for each radar type. During this process there were replace 50ohm terminal form Master and Client device and no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) at the frequency of the Radar Waveform generator. Peak detection was used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to at least 3MHz. The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was  $(-64\text{dBm}) + (0) [\text{dBi}] + 1 \text{ dB} = -63\text{dBm}$ . Capture the spectrum analyzer plots on short pulse radar types, long pulse radar type and hopping radar waveform.

### 5.2.3. Cablibration Result

Radar #0 DFS detection threshold level and the burst of pulses on the Channel frequency

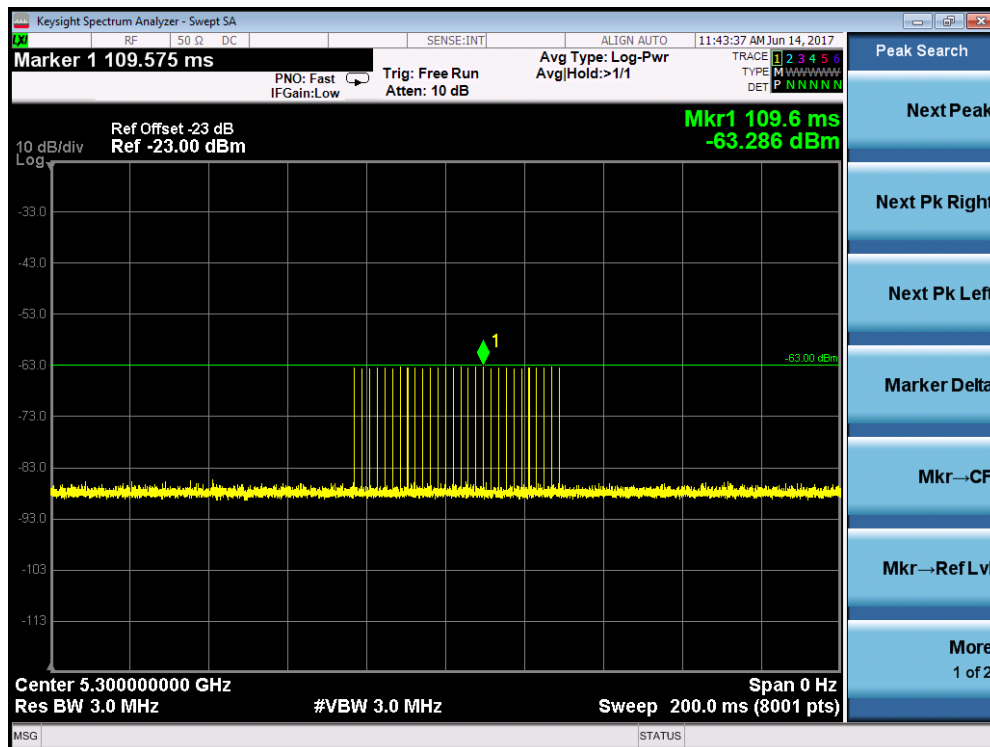


Radar #1(Test A) DFS detection threshold level and the burst of pulses on the Channel frequency



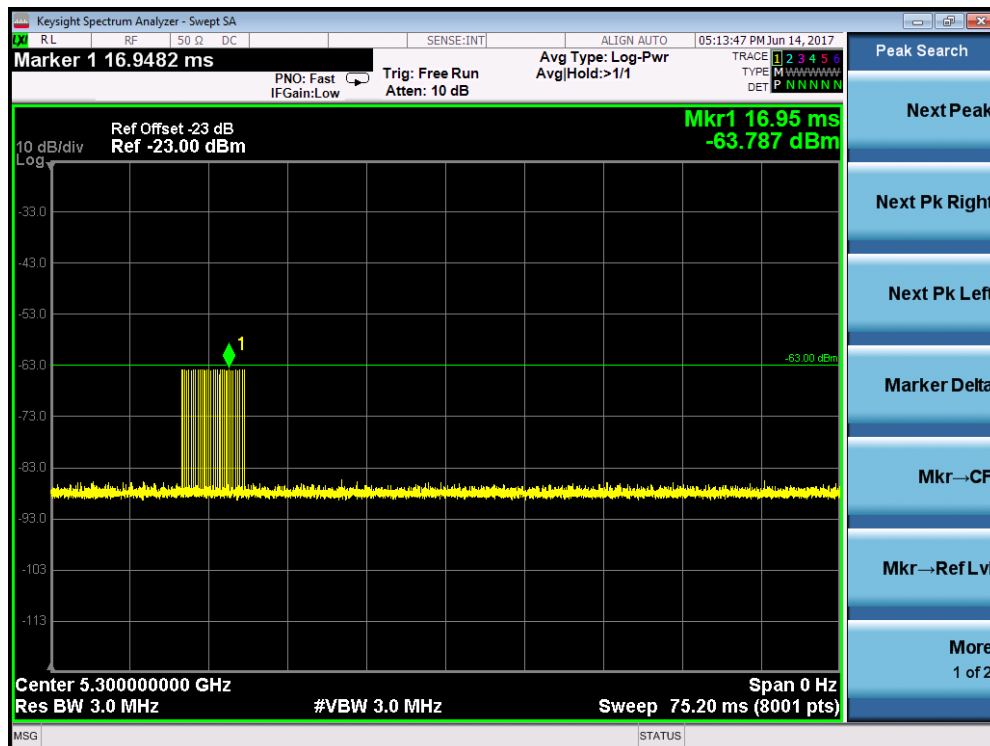
PRI = 798us and the number of pulses = 67

Radar #1(Test B) DFS detection threshold level and the burst of pulses on the Channel frequency

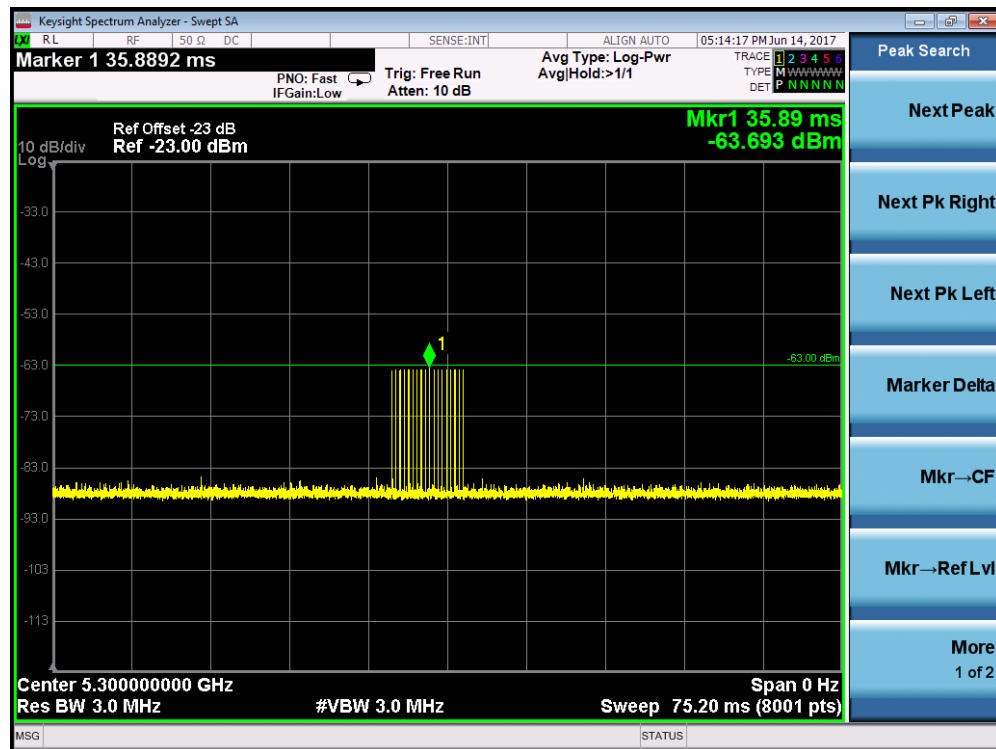


PRI = 1.951ms and the number of pulses = 28

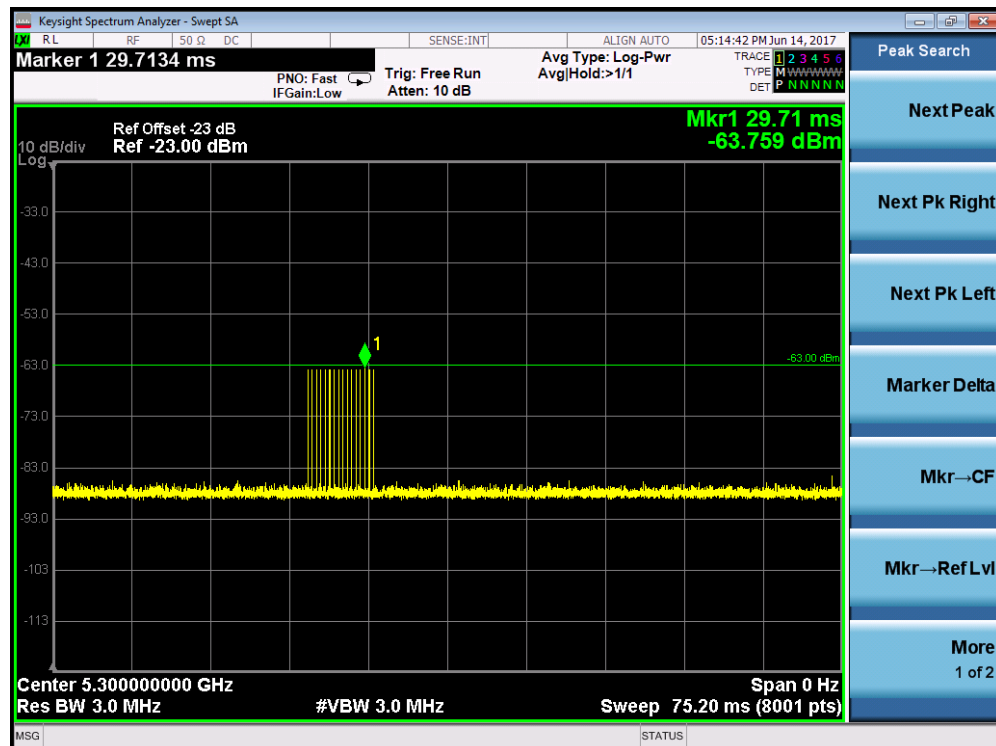
Radar #2 DFS detection threshold level and the burst of pulses on the Channel frequency



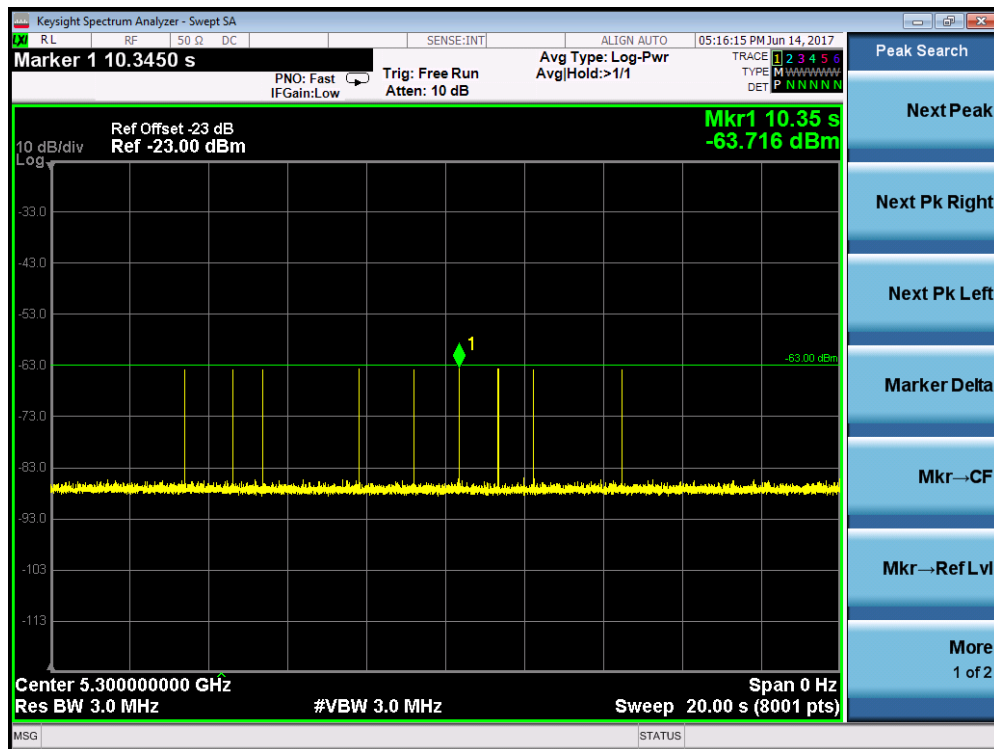
### Radar #3 DFS detection threshold level and the burst of pulses on the Channel frequency



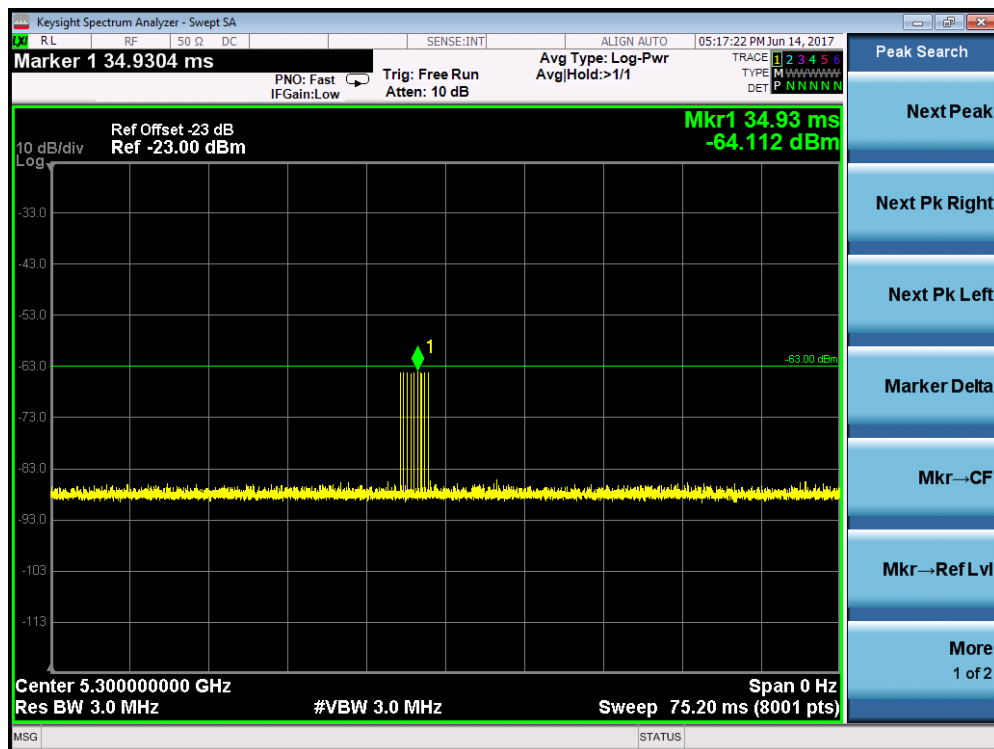
### Radar #4 DFS detection threshold level and the burst of pulses on the Channel frequency



### Radar #5 DFS detection threshold level and 12sec long burst on the Channel frequency

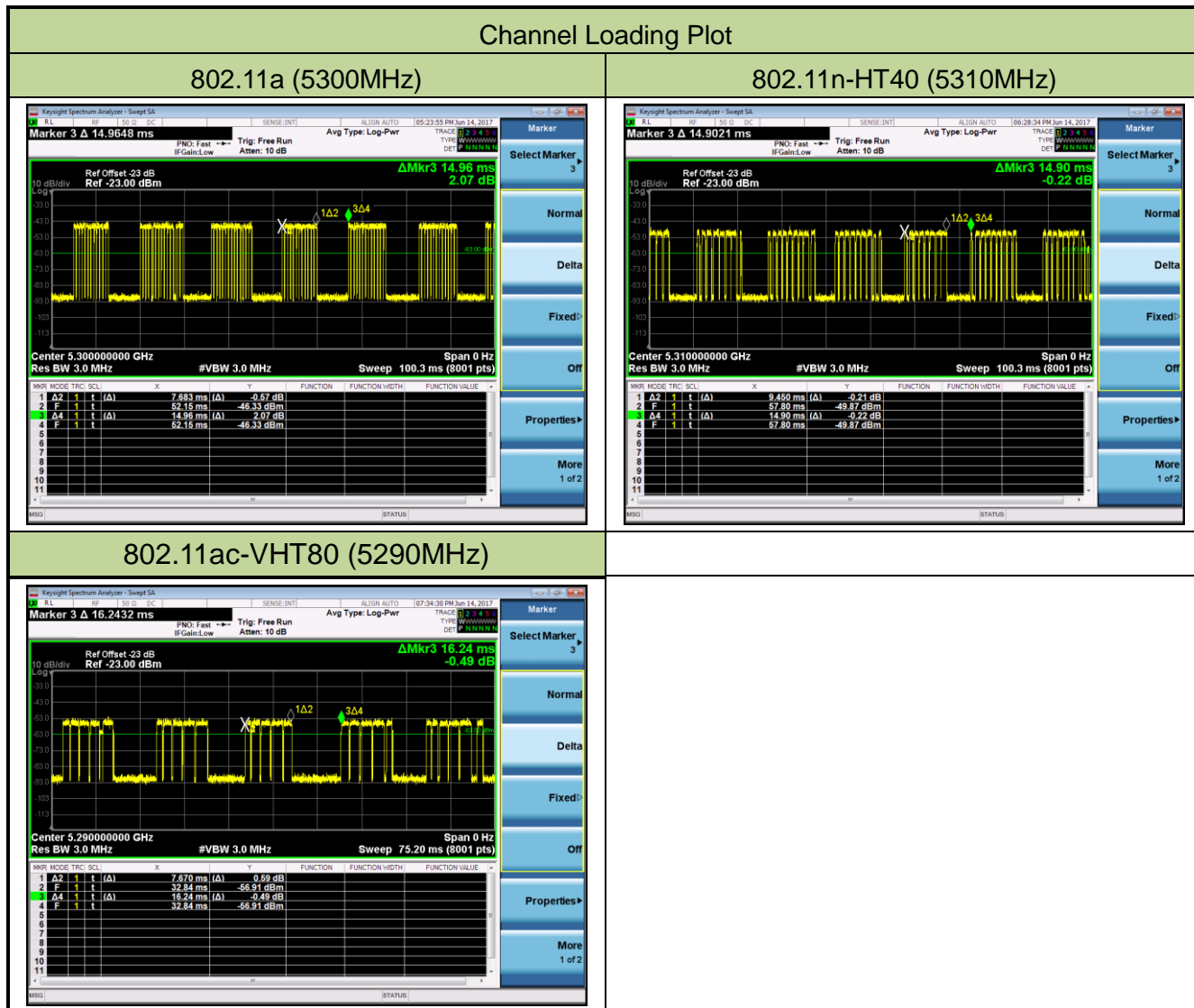


### Radar #6 DFS detection threshold level and a single hop (9 pulses) on the Channel frequency within UNII detection bandwidth



### 5.2.4.Channel Loading Test Result

System testing was performed with the designated MPEG test file that streams full motion video from the Wireless Access Point to the Client in full motion video mode using the media player with the V2.61 Codec package. 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).



Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result
802.11a	5300 MHz	51.36%	≥ 17%	Pass
802.11n-HT40	5310 MHz	63.42%	≥ 17%	Pass
802.11ac-VHT80	5290 MHz	47.23%	≥ 17%	Pass

### 5.3. UNII Detection Bandwidth Measurement

#### 5.3.1. Test Limit

Minimum 100% of the UNII 99% transmission power bandwidth. During the U-NII Detection Bandwidth detection test, each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

#### 5.3.2. Test Procedure

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.

### 5.3.3. Test Result

EUT Frequency=5300MHz for 802.11a											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5290	0	0	0	0	0	0	0	0	0	0	0%
5291 FL	1	1	1	1	1	1	1	1	1	1	100%
5292	1	1	1	1	1	1	1	1	1	1	100%
5293	1	1	1	1	1	1	1	1	1	1	100%
5294	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5300	1	1	1	1	1	1	1	1	1	1	100%
5305	1	1	1	1	1	1	1	1	1	1	100%
5306	1	1	1	1	1	1	1	1	1	1	100%
5307	1	1	1	1	1	1	1	1	1	1	100%
5308	1	1	1	1	1	1	1	1	1	1	100%
5309 FH	1	1	1	1	1	1	1	1	1	1	100%
5310	0	0	0	0	0	0	0	0	0	0	0%
Detection Bandwidth = FH - FL = 5309MHz - 5291MHz = 18MHz											
EUT 99% Bandwidth = 16.42MHz (see note)											
UNII Detection Bandwidth Min. Limit (MHz): 16.42MHz x 100% = 16.42MHz											

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5300MHz. The 99% channel bandwidth is 16.42MHz. (See the 99% BW section of the RF report for further measurement details).

EUT Frequency=5310MHz for 802.11n-HT40											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5290	0	0	0	0	0	0	0	0	0	0	0%
5291	0	0	0	0	0	0	0	0	0	0	0%
5292 FL	1	1	1	1	1	1	1	1	1	1	100%
5293	1	1	1	1	1	1	1	1	1	1	100%
5294	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5300	1	1	1	1	1	1	1	1	1	1	100%
5305	1	1	1	1	1	1	1	1	1	1	100%
5310	1	1	1	1	1	1	1	1	1	1	100%
5315	1	1	1	1	1	1	1	1	1	1	100%
5320	1	1	1	1	1	1	1	1	1	1	100%
5325	1	1	1	1	1	1	1	1	1	1	100%
5326	1	1	1	1	1	1	1	1	1	1	100%
5327	1	1	1	1	1	1	1	1	1	1	100%
5328	1	1	1	1	1	1	1	1	1	1	100%
5329 FH	1	1	1	1	1	1	1	1	1	1	100%
5330	0	0	0	0	0	0	0	0	0	0	0%
Detection Bandwidth = FH - FL = 5329MHz - 5292MHz = 37MHz											
EUT 99% Bandwidth = 36.09MHz (see note)											
UNII Detection Bandwidth Min. Limit (MHz): 36.09MHz x 100% = 36.09MHz											

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5310MHz. The 99% channel bandwidth is 36.09MHz. (See the 99% BW section of the RF report for further measurement details).

EUT Frequency=5290MHz for 802.11ac-VHT80											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5250	0	0	0	0	0	0	0	0	0	0	0%
5251 FL	1	1	1	1	1	1	1	1	1	1	100%
5252	1	1	1	1	1	1	1	1	1	1	100%
5253	1	1	1	1	1	1	1	1	1	1	100%
5254	1	1	1	1	1	1	1	1	1	1	100%
5255	1	1	1	1	1	1	1	1	1	1	100%
5260	1	1	1	1	1	1	1	1	1	1	100%
5265	1	1	1	1	1	1	1	1	1	1	100%
5270	1	1	1	1	1	1	1	1	1	1	100%
5275	1	1	1	1	1	1	1	1	1	1	100%
5280	1	1	1	1	1	1	1	1	1	1	100%
5285	1	1	1	1	1	1	1	1	1	1	100%
5290	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5300	1	1	1	1	1	1	1	1	1	1	100%
5305	1	1	1	1	1	1	1	1	1	1	100%
5310	1	1	1	1	1	1	1	1	1	1	100%
5315	1	1	1	1	1	1	1	1	1	1	100%
5320	1	1	1	1	1	1	1	1	1	1	100%
5325	1	1	1	1	1	1	1	1	1	1	100%
5326	1	1	1	1	1	1	1	1	1	1	100%
5327	1	1	1	1	1	1	1	1	1	1	100%
5328	1	1	1	1	1	1	1	1	1	1	100%
5329 FH	1	1	1	1	1	1	1	1	1	1	100%
5330	0	0	0	0	0	0	0	0	0	0	0%
Detection Bandwidth = FH - FL = 5329MHz - 5251MHz = 78MHz											
EUT 99% Bandwidth = 75.68MHz (see note)											
UNII Detection Bandwidth Min. Limit (MHz): 75.48MHz x 100% = 75.68MHz											

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5290MHz. The 99% channel bandwidth is 75.68MHz. (See the 99% BW section of the RF report for further measurement details).

## **5.4. Initial Channel Availability Check Time Measurement**

### **5.4.1. Test Limit**

The EUT shall perform a Channel Availability Check to ensure that there is no radar operating on the channel. After power-up sequence, receive at least 1 minute on the intended operating frequency.

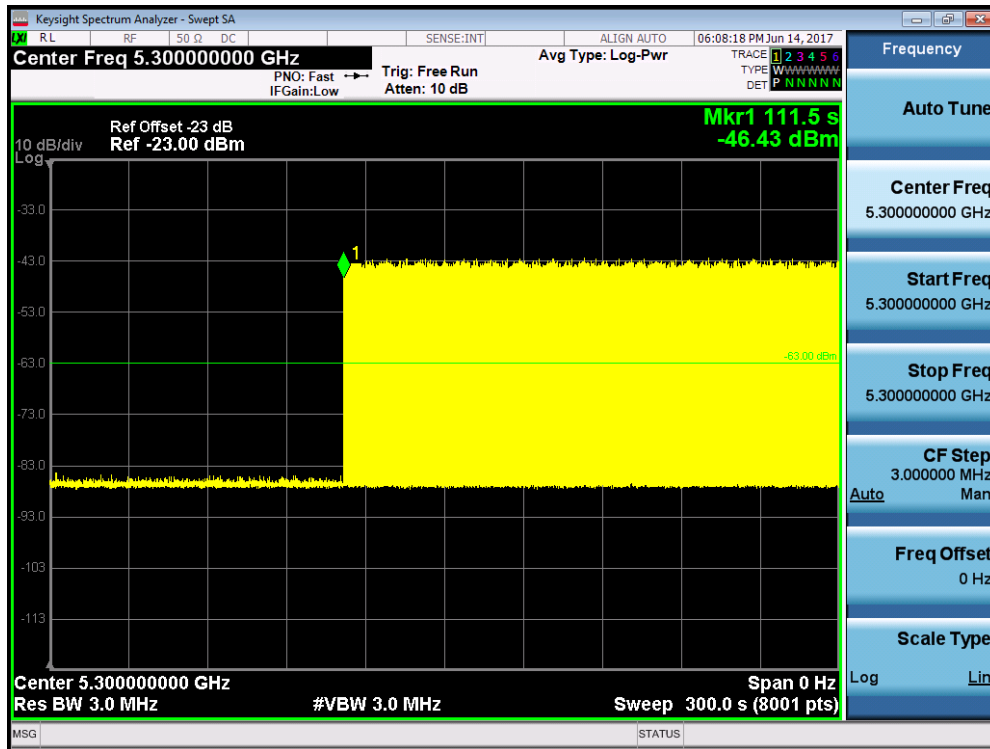
### **5.4.2. Test Procedure**

1. The U-NII devices will be powered on and be instructed to operate on the appropriate U-NII Channel that must incorporate DFS functions. At the same time the EUT is powered on, the spectrum analyzer will be set to zero span mode with a 3 MHz RBW and 3 MHz VBW on the Channel occupied by the radar (Chr) with a 2.5 minute sweep time. The spectrum analyzer's sweep will be started at the same time power is applied to the U-NII device.
2. The EUT should not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle.
3. Confirm that the EUT initiates transmission on the channel. Measurement system showing its nominal noise floor is marker1.

### 5.4.3. Test Result

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (51.5 sec). Initial beacons/data transmissions are indicated by marker 1 (111.5 sec).

Initial Channel Availability Check Time for 802.11a



## **5.5. Radar Burst at the Beginning of the Channel Availability Check Time Measurement**

### **5.5.1. Test Limit**

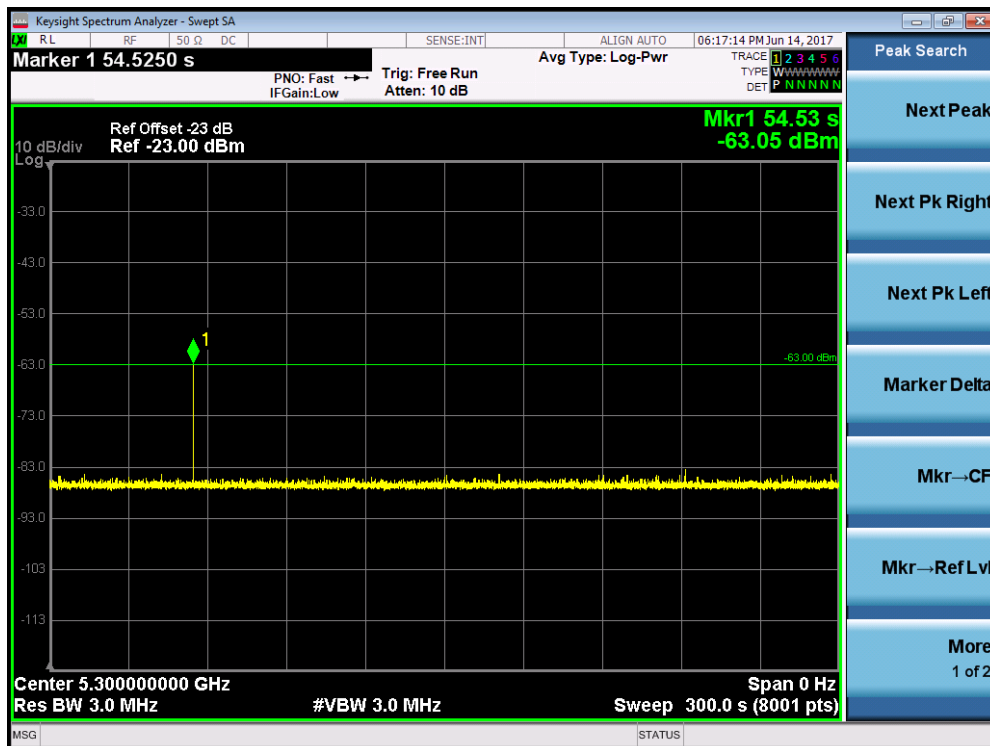
In beginning of the Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

### **5.5.2. Test Procedure**

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. 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.

### 5.5.3. Test Result

Radar Burst at the Beginning of the Channel Availability Check Time for 802.11a



## **5.6. Radar Burst at the End of the Channel Availability Check Time Measurement**

### **5.6.1. Test Limit**

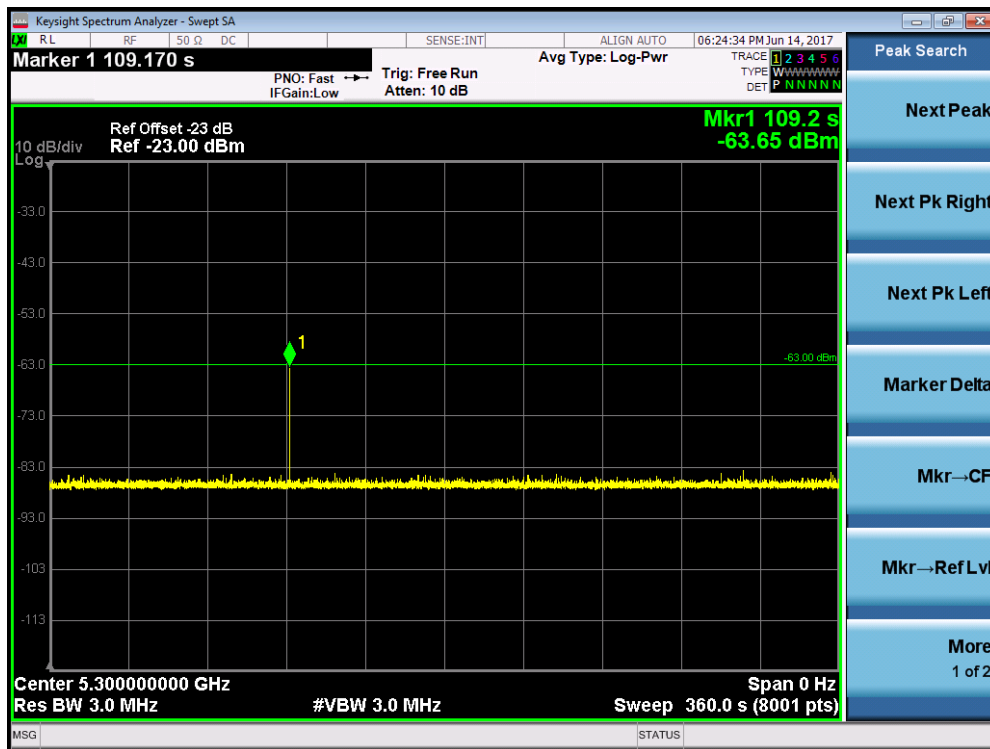
In the end of Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

### **5.6.2. Test Procedure**

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 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.
3. 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.

### 5.6.3. Test Result

Radar Burst at the End of the Channel Availability Check Time for 802.11a



## **5.7. In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period Measurement**

### **5.7.1. Test Limit**

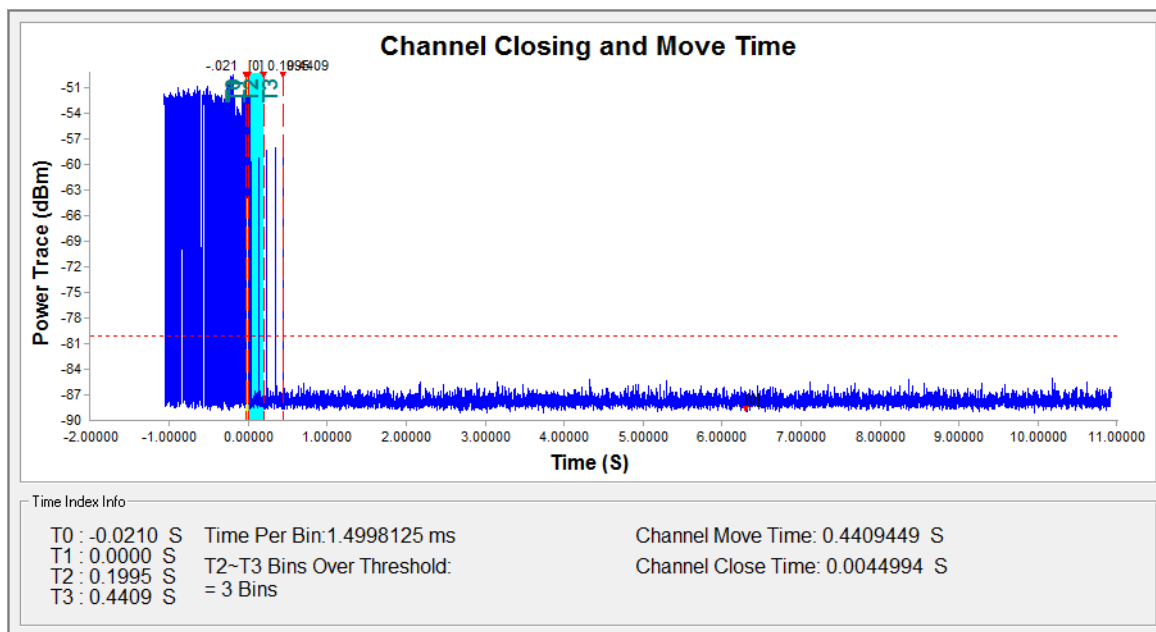
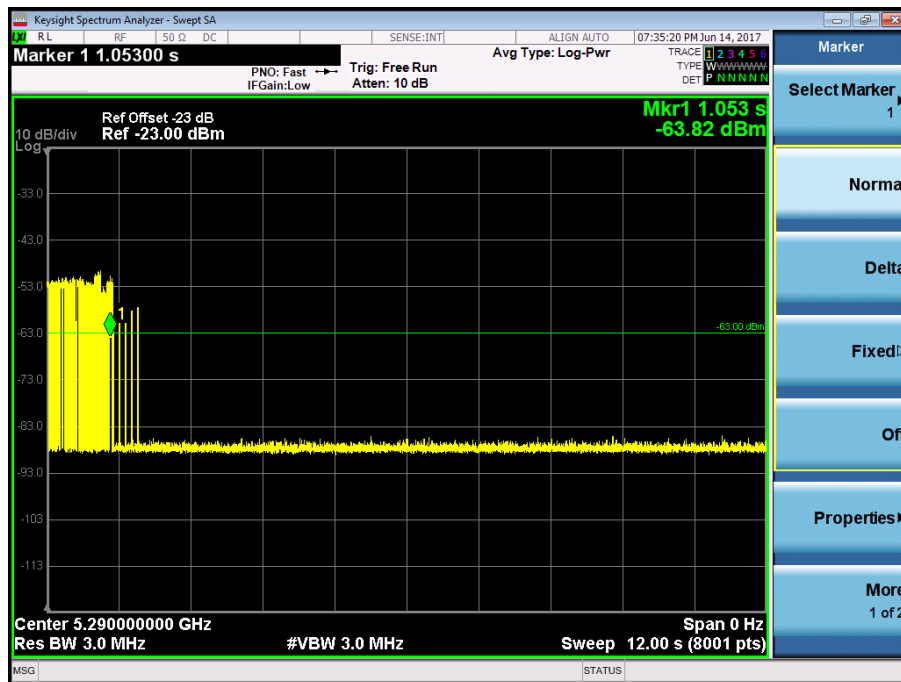
The EUT has In-Service Monitoring function to continuously monitor the radar signals. If the radar is detected, must leave the channel (Shutdown). The Channel Move Time to cease all transmissions on the current channel upon detection of a Radar Waveform above the DFS Detection Threshold within 10 sec. The total duration of Channel Closing Transmission Time is 260ms, consisting of data signals and the aggregate of control signals, by a U-NII device during the Channel Move Time. The Non-Occupancy Period time is 30 minute during which a Channel will not be utilized after a Radar Waveform is detected on that Channel.

### **5.7.2. Test Procedure Used**

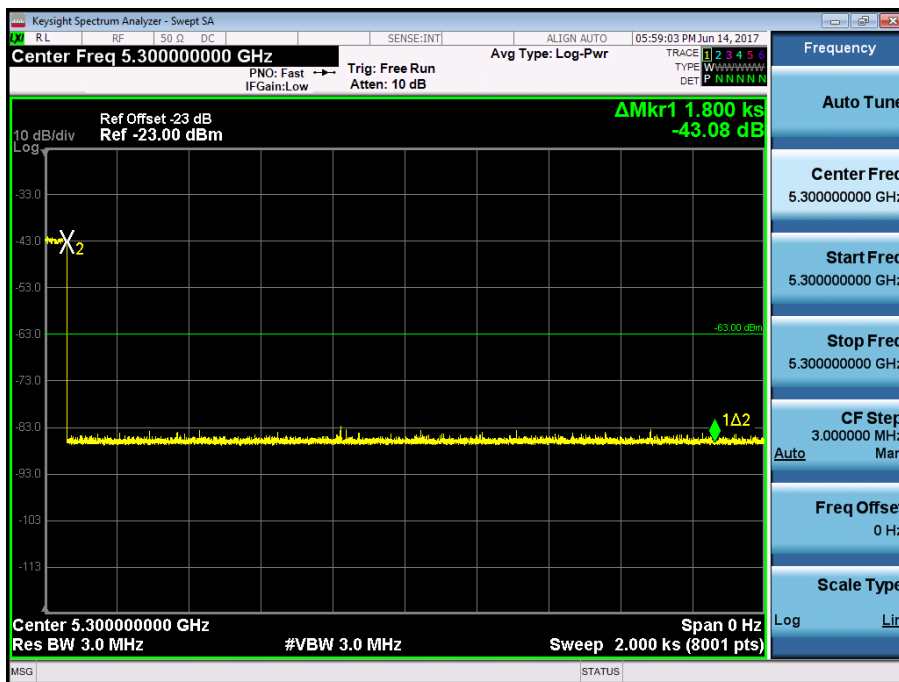
1. The test should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0.
2. When the radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device. A U-NII device operating as a Master Device will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

### 5.7.3. Test Result

Channel Move Time and Channel Closing Transmission Time for 802.11ac-VHT80 – 5290MHz



## Non-Occupancy Period for 802.11a – 5300MHz



Parameter	Test Result	Limit
	Type 0	
Channel Move Time (s)	0.441s	<10s
Channel Closing Transmission Time (ms) (Note)	4.5ms	< 60ms
Non-Occupancy Period (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.

## 5.8. Statistical Performance Check Measurement

### 5.8.1. Test Limit

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:  $(Pd1 + Pd2 + Pd3 + Pd4) / 4$ .

### 5.8.2. Test Procedure

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.

### 5.8.3. Test Result

Statistical Performance Check for 802.11a

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5292	1	738	72	1
2	5292	1	698	76	1
3	5292	1	818	65	1
4	5293	1	858	62	1
5	5293	1	758	70	1
6	5293	1	918	58	1
7	5294	1	838	63	1
8	5295	1	558	95	1
9	5296	1	618	86	1
10	5297	1	518	102	1
11	5298	1	678	78	1
12	5299	1	778	68	1
13	5300	1	3066	18	1
14	5300	1	638	83	1
15	5300	1	718	74	1
16	5300	1	2175	25	1
17	5300	1	1351	40	1
18	5300	1	1927	28	1
19	5301	1	768	69	1
20	5302	1	2592	21	1
21	5303	1	1201	44	1
22	5304	1	1828	29	1
23	5305	1	1432	37	1
24	5306	1	1611	33	1
25	5307	1	2162	25	1
26	5307	1	2407	22	1
27	5307	1	2876	19	1
28	5308	1	1186	45	1
29	5308	1	2473	22	1
30	5308	1	1297	41	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	5292	3.1	191	25	1
2	5292	3.3	206	24	1
3	5292	3.7	195	27	1
4	5293	5.0	230	23	1
5	5293	2.4	199	23	1
6	5293	3.2	202	23	1
7	5294	3.0	198	24	1
8	5295	1.9	211	23	1
9	5296	4.4	173	26	1
10	5297	4.3	201	29	1
11	5298	3.8	212	28	1
12	5299	2.3	167	24	1
13	5300	3.0	162	29	1
14	5300	1.5	228	29	1
15	5300	4.3	185	24	1
16	5300	1.1	160	29	1
17	5300	5.0	167	29	1
18	5300	3.8	217	24	1
19	5301	4.7	202	28	1
20	5302	2.9	160	29	1
21	5303	1.2	214	27	1
22	5304	3.2	186	27	1
23	5305	4.1	228	23	1
24	5306	1.4	173	23	1
25	5307	5.0	162	24	1
26	5307	3.5	228	24	1
27	5307	4.5	193	25	1
28	5308	3.5	203	28	1
29	5308	3.8	214	24	1
30	5308	1.1	211	28	1
Detection Percentage (%)					100%

## Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5292	7.8	329	16	1
2	5292	9.2	359	17	1
3	5292	7.7	304	17	1
4	5293	7.5	290	18	1
5	5293	7.4	387	17	1
6	5293	8.2	303	18	1
7	5294	7.4	396	17	1
8	5295	10.0	379	18	1
9	5296	9.7	259	16	1
10	5297	8.3	258	16	1
11	5298	7.6	417	17	1
12	5299	7.0	299	18	1
13	5300	9.2	470	18	1
14	5300	6.7	475	17	1
15	5300	8.4	271	18	1
16	5300	8.1	260	17	1
17	5300	8.8	316	16	1
18	5300	6.4	467	16	1
19	5301	9.9	359	16	1
20	5302	7.8	474	17	1
21	5303	7.2	469	18	1
22	5304	8.9	261	16	1
23	5305	7.4	405	17	1
24	5306	8.2	455	16	1
25	5307	6.5	327	17	1
26	5307	7.9	417	17	1
27	5307	9.0	295	16	1
28	5308	6.7	477	18	1
29	5308	10.0	431	16	1
30	5308	9.3	263	18	1
Detection Percentage (%)					100%

## Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5292	14.6	474	13	1
2	5292	18.2	288	12	1
3	5292	19.0	475	15	1
4	5293	14.8	270	13	1
5	5293	12.8	358	15	1
6	5293	16.4	458	14	1
7	5294	14.1	370	13	1
8	5295	11.1	417	15	1
9	5296	15.7	454	12	1
10	5297	12.3	447	14	1
11	5298	14.2	411	16	1
12	5299	16.5	358	14	1
13	5300	18.5	480	13	1
14	5300	11.2	335	12	1
15	5300	13.6	403	14	1
16	5300	11.1	252	12	1
17	5300	13.4	455	16	1
18	5300	11.9	268	12	1
19	5301	11.9	303	16	1
20	5302	18.3	302	13	1
21	5303	11.6	499	13	1
22	5304	16.7	411	15	1
23	5305	16.7	456	13	1
24	5306	19.4	262	12	1
25	5307	15.3	472	12	1
26	5307	16.1	463	15	1
27	5307	18.0	486	16	1
28	5308	13.1	286	13	1
29	5308	14.6	325	12	1
30	5308	13.9	341	15	1
Detection Percentage (%)					100%

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

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



## Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5299.2	1	16	5300.0	1
2	5296.8	1	17	5300.0	1
3	5295.2	1	18	5300.0	1
4	5294.0	1	19	5300.0	1
5	5297.6	1	20	5300.0	1
6	5298.8	1	21	5304.8	1
7	5294.4	1	22	5302.4	1
8	5295.2	1	23	5306.0	1
9	5299.6	1	24	5303.2	1
10	5296.0	1	25	5305.6	1
11	5300.0	1	26	5303.2	1
12	5300.0	1	27	5304.4	1
13	5300.0	1	28	5301.2	1
14	5300.0	1	29	5300.8	1
15	5300.0	1	30	5300.4	1
Detection Percentage (%)					100%

## Type 5 Radar Waveform\_1

Num of Bursts = 11  
Burst Interval (us)= 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	330070	2	18	100	1415	1744	0	330070	0	1090908
2	1773910	3	18	90	1218	1412	1445	2107139	1090909	2181817
3	364267	2	18	75	1934	1253	0	2475481	2181818	3272726
4	1190171	2	18	60	1781	1113	0	3668839	3272727	4363635
5	969851	2	18	65	1591	1729	0	4641584	4363636	5454544
6	1300034	1	18	90	1557	0	0	5944938	5454545	6545453
7	1511561	1	18	75	1131	0	0	7458056	6545454	7636362
8	396777	2	18	90	1108	1795	0	7855964	7636363	8727271
9	1689239	3	18	70	1350	1714	1388	9548106	8727272	9818180
10	527895	2	18	65	1816	1883	0	10080453	9818181	10909089
11	1295752	3	18	50	1745	1094	1985	11379904	10909090	11999998

Total number of pulses in waveform = 23

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**Type 5 Radar Waveform\_2**Num of Bursts = 19  
Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	553836	1	12	100	1356	0	0	553836	0	631578
2	88737	2	12	70	1675	1747	0	643929	631579	1263157
3	629209	2	12	80	1571	1381	0	1276560	1263158	1894736
4	773022	1	12	75	1883	0	0	2052534	1894737	2526315
5	732392	3	12	50	1350	1141	1250	2786809	2526316	3157894
6	380907	2	12	60	1817	1784	0	3171457	3157895	3789473
7	796011	2	12	70	1272	1367	0	3971069	3789474	4421052
8	503630	1	12	100	1791	0	0	4477338	4421053	5052631
9	952566	1	12	85	1016	0	0	5431695	5052632	5684210
10	488901	1	12	60	1392	0	0	5921612	5684211	6315789
11	491421	1	12	65	1006	0	0	6414425	6315790	6947368
12	722515	2	12	70	1043	1729	0	7137946	6947369	7578947
13	821307	2	12	60	1674	1211	0	7962025	7578948	8210526
14	341428	2	12	55	1297	1164	0	8306338	8210527	8842105
15	882749	1	12	55	1506	0	0	9191548	8842106	9473684
16	529042	3	12	90	1798	1873	1720	9722096	9473685	10105263
17	809616	2	12	65	1615	1871	0	10537103	10105264	10736842
18	390547	3	12	85	1193	1806	1741	10931136	10736843	11368421
19	442443	2	12	90	1955	1295	0	11378319	11368422	12000000

Total number of pulses in waveform = 34

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**Type 5 Radar Waveform\_3**Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	1000032	1	9	95	1954	0	0	1000032	0	1499999
2	1919907	2	9	95	1800	1008	0	2921893	1500000	2999999
3	1095005	2	9	65	1119	1385	0	4019706	3000000	4499999
4	1019588	1	9	100	1288	0	0	5041798	4500000	5999999
5	2401355	1	9	50	1411	0	0	7444441	6000000	7499999
6	1009148	3	9	90	1724	1230	1174	8455000	7500000	8999999
7	1616178	1	9	70	1063	0	0	10075306	9000000	10499999
8	809007	1	9	75	1890	0	0	10885376	10500000	11999999

Total number of pulses in waveform = 12

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**Type 5 Radar Waveform\_4**Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	199403	3	5	55	2000	1985	1916	199403	0	1333332
2	1473547	1	5	75	1510	0	0	1678851	1333333	2666665
3	2108115	3	5	100	1932	1654	1253	3788476	2666666	3999998
4	455038	3	5	100	1556	1885	1319	4248353	3999999	5333331
5	2338623	3	5	65	1258	1464	1835	6591736	5333332	6666664
6	349887	2	5	95	1744	1600	0	6946180	6666665	7999997
7	1237922	3	5	95	1436	1429	1386	8187446	7999998	9333330
8	1747550	3	5	80	1112	1600	1588	9939247	9333331	10666663
9	1189873	3	5	65	1553	1604	1150	11133420	10666664	11999996

Total number of pulses in waveform = 24

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**Type 5 Radar Waveform\_5**

Num of Bursts = 10  
Burst Interval (us)= 1200000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	1128120	3	14	85	1117	1560	1524	1128120	0	1199999
2	274875	1	14	90	1332	0	0	1407196	1200000	2399999
3	1366054	2	14	55	1766	1582	0	2774582	2400000	3599999
4	1280520	3	14	85	1601	1150	1252	4058450	3600000	4799999
5	1874058	2	14	50	1597	1718	0	5936511	4800000	5999999
6	871841	3	14	100	1162	1445	1877	6811667	6000000	7199999
7	1510395	1	14	50	1819	0	0	8326546	7200000	8399999
8	179650	3	14	55	1419	1530	1805	8508015	8400000	9599999
9	2079742	1	14	75	1480	0	0	10592511	9600000	10799999
10	659411	1	14	95	1944	0	0	11253402	10800000	11999999

Total number of pulses in waveform = 20

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**Type 5 Radar Waveform\_6**

Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	263006	2	17	100	1199	1126	0	263006	0	1333332
2	1797847	2	17	80	1145	1379	0	2063178	1333333	2666665
3	1220238	3	17	85	1077	1885	1503	3285940	2666666	3999998
4	1457802	1	17	95	1203	0	0	4748207	3999999	5333331
5	768415	1	17	70	1457	0	0	5517825	5333332	6666664
6	1646540	1	17	50	1831	0	0	7165822	6666665	7999997
7	1802233	3	17	90	1215	1261	1372	8969886	7999998	9333330
8	551810	1	17	70	1967	0	0	9525544	9333331	10666663
9	1341398	2	17	60	1234	1061	0	10868909	10666664	11999996

Total number of pulses in waveform = 16

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**Type 5 Radar Waveform\_7**

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	483324	2	6	100	1083	1049	0	483324	0	749999
2	382199	2	6	100	1481	1347	0	867655	750000	1499999
3	693516	1	6	85	1749	0	0	1563999	1500000	2249999
4	805228	1	6	55	1755	0	0	2370976	2250000	2999999
5	1222249	1	6	50	1311	0	0	3594980	3000000	3749999
6	776961	1	6	80	1948	0	0	4373252	3750000	4499999
7	436652	3	6	70	1833	1694	1036	4811852	4500000	5249999
8	921185	2	6	75	1020	1069	0	5737600	5250000	5999999
9	904970	2	6	75	1547	1974	0	6644659	6000000	6749999
10	374417	1	6	55	1722	0	0	7022597	6750000	7499999
11	720424	1	6	95	1868	0	0	7744743	7500000	8249999
12	1173148	2	6	75	1335	1286	0	8919759	8250000	8999999
13	255976	1	6	90	1549	0	0	9178356	9000000	9749999
14	1059993	2	6	70	1150	1864	0	10239898	9750000	10499999
15	854184	3	6	55	1593	1757	1191	11097096	10500000	11249999
16	563719	1	6	90	1206	0	0	11665356	11250000	11999999

Total number of pulses in waveform = 26

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**Type 5 Radar Waveform\_8**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	1226001	3	8	85	1983	1949	1223	1226001	0	1499999
2	730182	3	8	50	1530	1475	1945	1961338	1500000	2999999
3	1740115	3	8	95	1175	1507	1004	3706403	3000000	4499999
4	1880637	3	8	100	1098	1887	1738	5590726	4500000	5999999
5	1707113	2	8	50	1956	1840	0	7302562	6000000	7499999
6	1251801	2	8	55	1327	1204	0	8558159	7500000	8999999
7	1556863	1	8	80	1978	0	0	10117553	9000000	10499999
8	1720576	3	8	50	1143	1858	1002	11840107	10500000	11999999

Total number of pulses in waveform = 20

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**Type 5 Radar Waveform\_9**

Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	583072	1	19	90	1752	0	0	583072	0	857142
2	1104682	1	19	100	1120	0	0	1689506	857143	1714285
3	575239	3	19	60	1089	1469	1137	2265865	1714286	2571428
4	704171	3	19	90	1279	1353	1935	2973731	2571429	3428571
5	605619	3	19	80	1750	1274	1236	3583917	3428572	4285714
6	1110966	2	19	55	1288	1311	0	4699143	4285715	5142857
7	1038943	2	19	80	1134	1652	0	5740685	5142858	6000000
8	545522	2	19	80	1697	1847	0	6288993	6000001	6857143
9	633191	1	19	75	1767	0	0	6925728	6857144	7714286
10	1365096	1	19	100	1748	0	0	8292591	7714287	8571429
11	615458	3	19	100	1893	1425	1110	8909797	8571430	9428572
12	1339847	3	19	95	1139	1065	1606	10254072	9428573	10285715
13	263671	1	19	55	1168	0	0	10521553	10285716	11142858
14	1225807	3	19	65	1138	1828	1798	11748528	11142859	12000001

Total number of pulses in waveform = 29

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**Type 5 Radar Waveform\_10**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	2707	3	10	50	1274	1720	1900	2707	0	1499999
2	1901985	1	10	90	1285	0	0	1909586	1500000	2999999
3	1923066	1	10	65	1032	0	0	3833937	3000000	4499999
4	2120222	3	10	60	1621	1015	1200	5955191	4500000	5999999
5	184303	2	10	95	1380	1113	0	6143330	6000000	7499999
6	1870105	3	10	50	1974	1053	1989	8015928	7500000	8999999
7	2062713	3	10	55	1031	1269	1237	10083657	9000000	10499999
8	983154	3	10	65	1904	1431	1729	11070348	10500000	11999999

Total number of pulses in waveform = 19

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**Type 5 Radar Waveform\_11**

Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	491292	1	10	50	1732	0	0	491292	0	1333332
2	2161413	1	10	85	1858	0	0	2654437	1333333	2666665
3	512978	3	10	65	1989	1210	1915	3169273	2666666	3999998
4	1308516	1	10	80	1345	0	0	4482903	3999999	5333331
5	1819047	3	10	60	1617	1474	1417	6303295	5333332	6666664
6	571009	1	10	100	1995	0	0	6878812	6666665	7999997
7	2189748	3	10	100	1681	1266	1842	9070555	7999998	9333330
8	1095850	3	10	60	1518	1680	1886	10171194	9333331	10666663
9	1188874	3	10	85	1724	1184	1324	11365152	10666664	11999996

Total number of pulses in waveform = 19

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**Type 5 Radar Waveform\_12**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	1253917	2	9	80	1669	1691	0	1253917	0	1499999
2	1736092	3	9	90	1794	1467	1436	2993369	1500000	2999999
3	143129	2	9	95	1640	1974	0	3141195	3000000	4499999
4	2294029	2	9	55	1651	1681	0	5438838	4500000	5999999
5	561861	2	9	50	1679	1388	0	6004031	6000000	7499999
6	1539201	1	9	85	1639	0	0	7546299	7500000	8999999
7	1769304	2	9	95	1008	1828	0	9317242	9000000	10499999
8	1455565	2	9	85	1430	1429	0	10775643	10500000	11999999

Total number of pulses in waveform = 16

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**Type 5 Radar Waveform\_13**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	320650	2	5	70	1590	1882	0	320650	0	1499999
2	2426088	1	5	60	1502	0	0	2750210	1500000	2999999
3	1442998	1	5	80	1148	0	0	4194710	3000000	4499999
4	1390837	1	5	55	1189	0	0	5586695	4500000	5999999
5	1230955	3	5	50	1400	1029	1980	6818839	6000000	7499999
6	1344326	3	5	85	1496	1289	1368	8167574	7500000	8999999
7	1224126	1	5	55	1271	0	0	9395853	9000000	10499999
8	2582033	2	5	95	1706	1663	0	11979157	10500000	11999999

Total number of pulses in waveform = 14

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**Type 5 Radar Waveform\_14**

Num of Bursts = 11  
Burst Interval (us)= 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	284636	2	14	60	1339	1052	0	284636	0	1090908
2	1279655	1	14	50	1615	0	0	1566682	1090909	2181817
3	1465965	3	14	100	1371	1093	1293	3034262	2181818	3272726
4	954831	2	14	80	1786	1170	0	3992850	3272727	4363635
5	1413080	1	14	100	1446	0	0	5408886	4363636	5454544
6	79307	2	14	70	1741	1019	0	5489639	5454545	6545453
7	1100300	1	14	75	1431	0	0	6592699	6545454	7636362
8	1397501	2	14	60	1817	1743	0	7991631	7636363	8727271
9	1421498	3	14	65	1722	1750	1509	9416689	8727272	9818180
10	773575	1	14	100	1263	0	0	10195245	9818181	10909089
11	1545622	3	14	60	1969	1622	1805	11742130	10909090	11999998

Total number of pulses in waveform = 21

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**Type 5 Radar Waveform\_15**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	1064461	3	19	75	1950	1542	1329	1064461	0	1499999
2	487540	1	19	60	1343	0	0	1556822	1500000	2999999
3	2800978	1	19	85	1785	0	0	4359143	3000000	4499999
4	1014673	2	19	65	1223	1162	0	5375601	4500000	5999999
5	1967404	1	19	80	1586	0	0	7345390	6000000	7499999
6	281927	3	19	100	1601	1837	1451	7628903	7500000	8999999
7	1629236	2	19	90	1601	1434	0	9263028	9000000	10499999
8	2015635	2	19	65	1692	1220	0	11281698	10500000	11999999

Total number of pulses in waveform = 15

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**Type 5 Radar Waveform\_16**

Num of Bursts = 16  
Burst Interval (us)= 7500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	182717	2	6	55	1959	1251	0	182717	0	749999
2	630675	1	6	100	1936	0	0	816602	7500000	1499999
3	909046	3	6	60	1328	1003	1966	1727584	1500000	2249999
4	756092	1	6	70	1755	0	0	2487973	2250000	2999999
5	706967	3	6	95	1049	1589	1720	3196695	3000000	3749999
6	986233	1	6	55	1646	0	0	4187286	3750000	4499999
7	787062	3	6	100	1054	1619	1237	4975894	4500000	5249999
8	883110	1	6	65	1279	0	0	5863014	5250000	5999999
9	682435	2	6	70	1495	1835	0	6546728	6000000	6749999
10	663636	2	6	50	1984	1432	0	7213694	6750000	7499999
11	600526	1	6	50	1702	0	0	7817636	7500000	8249999
12	919754	1	6	90	1915	0	0	8739092	8250000	8999999
13	793179	1	6	55	1838	0	0	9534186	9000000	9749999
14	849698	1	6	60	1569	0	0	10385722	9750000	10499999
15	374362	3	6	80	1705	1410	1390	10761653	10500000	11249999
16	1112070	1	6	95	1191	0	0	11878228	11250000	11999999

Total number of pulses in waveform = 27

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**Type 5 Radar Waveform\_17**

Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	234564	3	18	100	1196	1566	1467	234564	0	1333332
2	1377305	2	18	85	1263	1560	0	1616098	1333333	2666665
3	2342745	3	18	65	1250	1735	1152	3961666	2666666	3999998
4	1098601	1	18	95	1649	0	0	5064404	3999999	5333331
5	1166691	1	18	95	1739	0	0	6232744	5333332	6666664
6	746166	3	18	75	1444	1476	1654	6980649	6666665	7999997
7	2154105	1	18	50	1737	0	0	9139328	7999998	9333330
8	559993	2	18	50	1095	1854	0	9701058	9333331	10666663
9	1281055	3	18	75	1535	1707	1578	10985062	10666664	11999996

Total number of pulses in waveform = 19

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**Type 5 Radar Waveform\_18**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	1379548	3	8	55	1271	1873	1017	1379548	0	1499999
2	626546	2	8	85	1752	1192	0	2010255	1500000	2999999
3	2200256	2	8	65	1699	1755	0	4213455	3000000	4499999
4	1421660	2	8	50	1737	1602	0	5638569	4500000	5999999
5	1772622	3	8	95	1542	1227	1137	7414530	6000000	7499999
6	1509175	2	8	50	1415	1835	0	8927611	7500000	8999999
7	697543	2	8	50	1915	1152	0	9628404	9000000	10499999
8	2124813	2	8	85	1583	1893	0	11756284	10500000	11999999

Total number of pulses in waveform = 18

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**Type 5 Radar Waveform\_19**

Num of Bursts = 18  
Burst Interval (us)= 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	388437	2	17	55	1066	1444	0	388437	0	666666
2	519861	1	17	85	1622	0	0	910798	666667	1333333
3	473457	1	17	80	1196	0	0	1385877	1333334	2000000
4	1072392	2	17	65	1935	1776	0	2459465	2000001	2666667
5	679066	2	17	70	1609	1488	0	3142242	2666668	3333334
6	728679	3	17	100	1758	1055	1355	3874018	3333335	4000001
7	491318	2	17	100	1504	1204	0	4369504	4000002	4666668
8	447884	3	17	90	2000	1259	1636	4820096	4666669	5333335
9	637655	3	17	50	1826	1720	1003	5462646	5333336	6000002
10	778539	3	17	100	1843	1593	1424	6245734	6000003	6666669
11	800784	1	17	80	1573	0	0	7051378	6666670	7333336
12	617621	1	17	85	1039	0	0	7670572	7333337	8000003
13	651512	3	17	60	1497	1148	1896	8323123	8000004	8666670
14	658562	2	17	80	1268	1528	0	8986226	8666671	9333337
15	904173	1	17	85	1794	0	0	9893195	9333338	10000004
16	526645	3	17	70	1069	1939	1122	10421634	10000005	10666671
17	289840	2	17	55	1522	1653	0	10715604	10666672	11333338
18	1120364	2	17	60	1994	1144	0	11839143	11333339	12000005

Total number of pulses in waveform = 37

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## Type 5 Radar Waveform\_20

Num of Bursts = 19

Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	295362	2	12	85	1173	1402	0	295362	0	631578
2	586288	1	12	95	1304	0	0	884225	631579	1263157
3	602110	1	12	65	1995	0	0	1487639	1263158	1894736
4	544300	1	12	50	1805	0	0	2033934	1894737	2526315
5	651104	3	12	100	1816	1414	1056	2686843	2526316	3157894
6	851751	3	12	65	1917	1812	1077	3542880	3157895	3789473
7	442551	2	12	70	1878	1756	0	3990237	3789474	4421052
8	646739	3	12	75	1517	1653	1557	4640610	4421053	5052631
9	759432	1	12	50	1145	0	0	5404769	5052632	5684210
10	590048	3	12	80	1226	1379	1568	5995962	5684211	6315789
11	395483	3	12	50	1663	1153	1313	6395618	6315790	6947368
12	1142072	1	12	85	1938	0	0	7541819	6947369	7578947
13	228803	2	12	60	1292	1333	0	7772560	7578948	8210526
14	508397	1	12	50	1760	0	0	8283582	8210527	8842105
15	1070409	1	12	70	1657	0	0	9355751	8842106	9473684
16	236469	3	12	70	1043	1198	1359	9593877	9473685	10105263
17	571504	1	12	50	1369	0	0	10168981	10105264	10736842
18	939850	2	12	50	1293	1743	0	11110200	10736843	11368421
19	688662	2	12	60	1106	1826	0	11781898	11368422	12000000

Total number of pulses in waveform = 36

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## Type 5 Radar Waveform\_21

Num of Bursts = 13

Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	844848	1	8	75	1706	0	0	844848	0	923076
2	722266	1	8	100	1872	0	0	1568820	923077	1846153
3	475169	3	8	50	1095	1960	1139	2045861	1846154	2769230
4	1623684	1	8	75	1163	0	0	3673739	2769231	3692307
5	730933	1	8	70	1516	0	0	4405835	3692308	4615384
6	352315	1	8	75	1155	0	0	4759666	4615385	5538461
7	1517678	2	8	60	1054	1973	0	6278499	5538462	6461538
8	739259	3	8	95	1514	1795	1114	7020785	6461539	7384615
9	1190500	3	8	95	1489	1163	1939	8215708	7384616	8307692
10	767713	1	8	75	1207	0	0	8988012	8307693	9230769
11	559466	1	8	95	1634	0	0	9548685	9230770	10153846
12	745247	1	8	90	1377	0	0	10295566	10153847	11076923
13	1591737	3	8	70	1396	1306	1791	11888680	11076924	12000000

Total number of pulses in waveform = 22

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## Type 5 Radar Waveform\_22

Num of Bursts = 16

Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	276669	3	14	90	1968	1298	1376	276669	0	749999
2	689844	2	14	50	1935	1248	0	971155	750000	1499999
3	1037246	2	14	80	1696	1520	0	2011584	1500000	2249999
4	793442	3	14	85	1512	1023	1195	2808242	2250000	2999999
5	441521	1	14	85	1657	0	0	3253493	3000000	3749999
6	1087478	2	14	75	1131	1786	0	4342628	3750000	4499999
7	844563	1	14	65	1242	0	0	5190108	4500000	5249999
8	269012	3	14	85	1287	1273	1283	5460362	5250000	5999999
9	1206783	2	14	50	1550	1078	0	6670988	6000000	6749999
10	750002	3	14	85	1304	1602	1843	7423618	6750000	7499999
11	402232	3	14	50	1499	1271	1635	7830599	7500000	8249999
12	906331	2	14	90	1818	1258	0	8741335	8250000	8999999
13	445305	3	14	70	1264	1296	1285	9189716	9000000	9749999
14	588370	3	14	55	1361	1949	1059	9781931	9750000	10499999
15	866108	2	14	60	1450	1927	0	10652408	10500000	11249999
16	1269950	3	14	65	1181	1421	1530	11925735	11250000	11999999

Total number of pulses in waveform = 38

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## Type 5 Radar Waveform\_23

Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	168971	3	5	70	1475	1324	1909	168971	0	857142
2	1134159	3	5	95	1823	1782	1344	1307838	857143	1714285
3	776844	3	5	60	1468	1232	1402	2089631	1714286	2571428
4	1214861	3	5	60	1626	1647	1303	3308594	2571429	3428571
5	640348	2	5	50	1828	1970	0	3953518	3428572	4285714
6	435370	3	5	65	1330	1617	1586	4392686	4285715	5142857
7	1224023	2	5	95	1931	1022	0	5621242	5142858	6000000
8	777129	1	5	55	1101	0	0	6401324	6000001	6857143
9	987247	1	5	100	1975	0	0	7389672	6857144	7714286
10	674221	3	5	100	1415	1914	1854	8065868	7714287	8571429
11	746493	2	5	90	1711	1574	0	8817544	8571430	9428572
12	670845	3	5	70	1365	1998	1232	9491674	9428573	10285715
13	1155719	1	5	95	1956	0	0	10651988	10285716	11142858
14	687180	1	5	55	1205	0	0	11341124	11142859	12000001

Total number of pulses in waveform = 31

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## Type 5 Radar Waveform\_24

Num of Bursts = 18  
Burst Interval (us)= 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	47503	3	12	100	1621	1024	1827	47503	0	666666
2	1217429	1	12	55	1566	0	0	1269404	666667	1333333
3	249357	1	12	100	1943	0	0	1520327	1333334	2000000
4	487822	1	12	100	1816	0	0	2010092	2000001	2666667
5	778876	3	12	70	1704	1860	1951	2790784	2666668	3333334
6	848374	2	12	90	1558	1919	0	3644673	3333335	4000001
7	750243	3	12	65	1522	1106	1043	4398393	4000002	4666668
8	748457	2	12	50	1687	1130	0	5150521	4666669	5333335
9	290437	1	12	70	1534	0	0	5443775	5333336	6000002
10	1162663	3	12	70	1683	1135	1551	6607872	6000003	6666669
11	467936	1	12	65	1440	0	0	7080177	6666670	7333336
12	871366	2	12	75	1641	1593	0	7952983	7333337	8000003
13	567130	1	12	95	1300	0	0	8523347	8000004	8666670
14	605464	1	12	80	1827	0	0	9130111	8666671	9333337
15	341885	3	12	65	1007	1302	1377	9473823	9333338	10000004
16	927763	3	12	65	1959	1166	1441	10405272	10000005	10666671
17	391757	1	12	70	1841	0	0	10801595	10666672	11333338
18	845252	2	12	60	1052	1144	0	11648688	11333339	12000005

Total number of pulses in waveform = 34

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## Type 5 Radar Waveform\_25

Num of Bursts = 11  
Burst Interval (us)= 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	338438	3	6	55	1940	1289	1556	338438	0	1090908
2	1663746	3	6	70	1567	1880	1561	2006949	1090909	2181817
3	1215638	2	6	75	1043	1192	0	3227595	2181818	3272726
4	1061510	3	6	85	1713	1978	1596	4291340	3272727	4363635
5	255637	1	6	70	1274	0	0	4552264	4363636	5454544
6	1188541	3	6	70	1742	1404	1528	5742079	5454545	6545453
7	799545	2	6	65	1370	1268	0	6546298	6545454	7636362
8	1722706	3	6	60	1623	1977	1355	8271642	7636363	8727271
9	510386	3	6	95	1359	1986	1733	8786983	8727272	9818180
10	1528586	1	6	85	1955	0	0	10320647	9818181	10909089
11	1202544	3	6	95	1040	1300	1467	11525146	10909090	11999998

Total number of pulses in waveform = 27

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**Type 5 Radar Waveform\_26**Num of Bursts = 13  
Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	157774	3	18	75	1905	1155	1688	157774	0	923076
2	1167413	2	18	60	1432	1707	0	1329935	923077	1846153
3	1310428	1	18	85	1888	0	0	2643502	1846154	2769230
4	986444	1	18	50	1851	0	0	3631834	2769231	3692307
5	667919	2	18	100	1944	1236	0	4301604	3692308	4615384
6	1008336	1	18	60	1015	0	0	5313120	4615385	5538461
7	528988	3	18	90	1945	1975	1536	5843123	5538462	6461538
8	1208718	1	18	70	1460	0	0	7057297	6461539	7384615
9	884287	1	18	55	1890	0	0	7943044	7384616	8307692
10	1228477	3	18	95	1696	1233	1661	9173411	8307693	9230769
11	588445	2	18	95	1706	1407	0	9766446	9230770	10153846
12	957937	2	18	80	1000	1355	0	10727496	10153847	11076923
13	395710	3	18	60	1360	1919	1374	11125561	11076924	12000000

Total number of pulses in waveform = 25

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**Type 5 Radar Waveform\_27**Num of Bursts = 12  
Burst Interval (us)= 1000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	433576	2	9	65	1149	1652	0	433576	0	999999
2	889510	2	9	75	1042	1143	0	1325887	1000000	1999999
3	1524993	1	9	50	1483	0	0	2853065	2000000	2999999
4	580317	3	9	75	1484	1379	1244	3434865	3000000	3999999
5	1130698	1	9	55	1976	0	0	4569670	4000000	4999999
6	501191	3	9	50	1271	1079	1713	5072837	5000000	5999999
7	1184045	3	9	100	1873	1247	1608	6260945	6000000	6999999
8	877703	2	9	50	1619	1966	0	7143376	7000000	7999999
9	1571191	3	9	50	1509	1378	1032	8718152	8000000	8999999
10	344492	2	9	90	1732	1256	0	9066563	9000000	9999999
11	1107280	3	9	65	1988	1240	1736	10176831	10000000	10999999
12	1586682	1	9	85	1519	0	0	11768477	11000000	11999999

Total number of pulses in waveform = 26

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**Type 5 Radar Waveform\_28**Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	240186	3	17	80	1242	1704	1788	240186	0	749999
2	725850	3	17	65	1339	1290	1965	970770	750000	1499999
3	986828	2	17	75	1952	1064	0	1962192	1500000	2249999
4	409851	3	17	75	1815	1859	1956	2375059	2250000	2999999
5	827454	2	17	80	1011	1270	0	3208143	3000000	3749999
6	973001	3	17	75	1063	1466	1006	4183425	3750000	4499999
7	995320	3	17	65	1331	1234	1310	5182280	4500000	5249999
8	129533	1	17	75	1719	0	0	5315888	5250000	5999999
9	1010349	1	17	95	1659	0	0	6327756	6000000	6749999
10	891198	3	17	90	1514	1476	1400	7220613	6750000	7499999
11	715503	2	17	65	1939	1026	0	7940506	7500000	8249999
12	1031645	2	17	95	1605	1441	0	8975116	8250000	8999999
13	304907	3	17	100	1475	1268	1055	9283069	9000000	9749999
14	621587	3	17	70	1769	1270	1967	9908454	9750000	10499999
15	785660	2	17	70	1931	1446	0	10699120	10500000	11249999
16	875269	2	17	65	1642	1496	0	11577766	11250000	11999999

Total number of pulses in waveform = 38

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**Type 5 Radar Waveform\_29**

Num of Bursts = 13  
Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	126024	3	10	55	1020	1505	1293	126024	0	923076
2	1053810	1	10	65	1483	0	0	1183652	923077	1846153
3	867821	1	10	85	1850	0	0	2052956	1846154	2769230
4	1172680	1	10	75	1591	0	0	3227486	2769231	3692307
5	1077486	1	10	95	1491	0	0	4306563	3692308	4615384
6	502047	2	10	85	1179	1957	0	4810101	4615385	5538461
7	1507860	2	10	90	1853	1486	0	6321097	5538462	6461538
8	354559	1	10	70	1593	0	0	6678995	6461539	7384615
9	1539327	2	10	50	1820	1495	0	8219915	7384616	8307692
10	886780	1	10	65	1069	0	0	9110010	8307693	9230769
11	199405	3	10	50	1671	1362	1110	9310474	9230770	10153846
12	1320688	2	10	50	1854	1362	0	10635305	10153847	11076923
13	811155	2	10	50	1951	1967	0	11449676	11076924	12000000

Total number of pulses in waveform = 22

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**Type 5 Radar Waveform\_30**

Num of Bursts = 15  
Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	742226	2	19	90	1118	1773	0	742226	0	799999
2	685195	2	19	85	1803	1165	0	1430312	800000	1599999
3	887977	3	19	85	1487	1262	1425	2321257	1600000	2399999
4	316624	1	19	75	1655	0	0	2642055	2400000	3199999
5	666352	3	19	95	1398	1847	1468	3310062	3200000	3999999
6	736435	1	19	65	1579	0	0	4051210	4000000	4799999
7	1413633	3	19	85	1897	1829	1837	5466422	4800000	5599999
8	826303	2	19	90	1456	1702	0	6298288	5600000	6399999
9	177776	3	19	80	1707	1726	1353	6479222	6400000	7199999
10	1411995	3	19	50	1104	1833	1200	7896003	7200000	7999999
11	292233	1	19	100	1066	0	0	8192373	8000000	8799999
12	1053274	2	19	70	1275	1140	0	9246703	8800000	9599999
13	1044539	3	19	95	1629	1898	1206	10293657	9600000	10399999
14	384264	1	19	70	1539	0	0	10682654	10400000	11199999
15	674092	1	19	85	1511	0	0	11358285	11200000	11999999

Total number of pulses in waveform = 31

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### 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	5292	1	16	5300	1
2	5292	1	17	5300	1
3	5292	1	18	5300	1
4	5293	1	19	5301	1
5	5293	1	20	5302	1
6	5293	1	21	5303	1
7	5294	1	22	5304	1
8	5295	1	23	5305	1
9	5296	1	24	5306	1
10	5297	1	25	5307	1
11	5298	1	26	5307	1
12	5299	1	27	5307	1
13	5300	1	28	5308	1
14	5300	1	29	5308	1
15	5300	1	30	5308	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5276	3	3	5264	9
15	5262	45	6	5278	18
34	5272	102	10	5291	30
35	5281	105	11	5315	33
37	5295	111	13	5271	39
42	5275	126	19	5316	57
48	5307	144	23	5296	69
58	5312	174	27	5275	81
60	5309	180	37	5319	111
78	5268	234	45	5288	135
83	5299	249	48	5272	144
87	5277	261	55	5289	165
93	5300	279	63	5282	189
98	5319	294	66	5273	198
99	5267	297	--	--	--

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5306	3	5	5281	15
29	5321	87	7	5276	21
33	5265	99	9	5293	27
39	5276	117	21	5265	63
55	5289	165	25	5313	75
73	5304	219	30	5310	90
75	5290	225	35	5272	105
87	5287	261	42	5280	126
98	5291	294	44	5273	132
--	--	--	49	5312	147
--	--	--	64	5287	192
--	--	--	67	5317	201
--	--	--	71	5322	213
--	--	--	74	5318	222
--	--	--	93	5300	279

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5300	27	21	5285	63
14	5320	42	26	5278	78
20	5301	60	31	5300	93
31	5266	93	36	5281	108
36	5317	108	46	5305	138
42	5322	126	47	5264	141
43	5268	129	48	5303	144
48	5299	144	50	5298	150
61	5288	183	58	5299	174
64	5304	192	63	5312	189
68	5313	204	76	5318	228
70	5283	210	88	5293	264
71	5312	213	89	5301	267
75	5307	225	94	5310	282
99	5287	297	--	--	--

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5322	0	1	5276	3
6	5294	18	12	5322	36
16	5317	48	13	5294	39
34	5289	102	19	5325	57
35	5267	105	51	5270	153
53	5318	159	52	5295	156
63	5313	189	59	5269	177
64	5320	192	70	5301	210
66	5323	198	71	5306	213
72	5279	216	77	5296	231
73	5293	219	79	5320	237
80	5284	240	83	5300	249
89	5265	267	92	5302	276
93	5299	279	99	5313	297
97	5295	291	--	--	--

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5290	18	0	5322	0
19	5317	57	4	5274	12
27	5303	81	28	5314	84
28	5266	84	42	5272	126
30	5325	90	53	5293	159
48	5306	144	56	5270	168
66	5298	198	59	5290	177
78	5310	234	67	5280	201
83	5299	249	76	5300	228
90	5292	270	86	5277	258
--	--	--	93	5271	279

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
3	5327	9	6	5273	18
35	5292	105	23	5297	69
39	5298	117	28	5302	84
46	5313	138	31	5326	93
48	5299	144	32	5288	96
50	5300	150	34	5289	102
54	5285	162	45	5278	135
57	5287	171	62	5309	186
61	5272	183	65	5294	195
62	5291	186	66	5324	198
75	5306	225	71	5310	213
83	5316	249	73	5327	219
87	5270	261	85	5290	255
--	--	--	86	5296	258
--	--	--	98	5287	294

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5297	3	31	5290	93
14	5290	42	44	5323	132
28	5314	84	51	5277	153
33	5320	99	62	5324	186
37	5286	111	65	5271	195
40	5278	120	84	5300	252
58	5329	174	--	--	--
62	5283	186	--	--	--
73	5280	219	--	--	--
87	5306	261	--	--	--
93	5303	279	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
17	5276	51	1	5328	3
34	5286	102	17	5320	51
42	5274	126	25	5280	75
47	5319	141	36	5276	108
49	5320	147	37	5288	111
51	5313	153	48	5323	144
52	5307	156	56	5324	168
54	5298	162	59	5298	177
56	5303	168	61	5305	183
60	5315	180	64	5287	192
68	5278	204	76	5302	228
71	5318	213	89	5316	267
76	5280	228	91	5284	273
78	5281	234	94	5308	282
83	5302	249	96	5327	288

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5292	33	0	5299	0
20	5278	60	14	5322	42
23	5323	69	22	5289	66
31	5321	93	24	5298	72
36	5329	108	29	5309	87
38	5274	114	31	5308	93
41	5327	123	38	5321	114
43	5296	129	46	5282	138
44	5314	132	55	5305	165
45	5328	135	62	5273	186
46	5291	138	63	5295	189
52	5304	156	65	5306	195
54	5320	162	66	5283	198
55	5295	165	67	5302	201
57	5285	171	74	5319	222
66	5308	198	75	5329	225
80	5325	240	80	5301	240
99	5277	297	81	5270	243
--	--	--	83	5279	249
--	--	--	89	5284	267
--	--	--	90	5317	270
--	--	--	93	5278	279

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5302	33	4	5318	12
13	5305	39	8	5296	24
14	5318	42	14	5276	42
15	5304	45	19	5279	57
18	5326	54	33	5331	99
21	5310	63	36	5325	108
51	5290	153	37	5273	111
62	5303	186	39	5311	117
64	5279	192	44	5287	132
90	5286	270	59	5321	177
91	5307	273	78	5320	234
97	5299	291	--	--	--
98	5272	294	--	--	--

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5293	12	2	5316	6
14	5313	42	5	5334	15
31	5297	93	20	5275	60
34	5288	102	26	5280	78
35	5286	105	29	5326	87
36	5278	108	36	5303	108
62	5279	186	37	5290	111
64	5305	192	51	5279	153
68	5284	204	55	5317	165
86	5310	258	56	5278	168
93	5273	279	72	5276	216
--	--	--	75	5287	225
--	--	--	77	5304	231
--	--	--	83	5305	249

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5283	3	4	5292	12
7	5296	21	5	5326	15
11	5320	33	10	5289	30
26	5277	78	14	5309	42
47	5310	141	19	5315	57
50	5279	150	23	5317	69
65	5297	195	29	5311	87
67	5333	201	35	5281	105
78	5299	234	42	5331	126
79	5290	237	49	5318	147
81	5288	243	54	5329	162
83	5318	249	67	5308	201
89	5330	267	74	5293	222
92	5284	276	80	5312	240
--	--	--	84	5306	252

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5291	6	6	5299	18
5	5306	15	8	5314	24
20	5312	60	20	5291	60
37	5280	111	38	5310	114
39	5301	117	46	5303	138
48	5330	144	56	5319	168
50	5319	150	64	5290	192
57	5286	171	82	5335	246
59	5279	177	83	5286	249
72	5300	216	95	5309	285
86	5328	258	--	--	--
92	5283	276	--	--	--

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5313	3	11	5279	33
3	5323	9	20	5283	60
5	5281	15	23	5300	69
16	5307	48	26	5326	78
19	5322	57	29	5289	87
24	5285	72	35	5334	105
28	5309	84	48	5299	144
34	5330	102	53	5336	159
48	5319	144	65	5312	195
55	5287	165	69	5322	207
57	5306	171	73	5298	219
59	5292	177	--	--	--
74	5336	222	--	--	--
76	5314	228	--	--	--
79	5327	237	--	--	--
89	5312	267	--	--	--
91	5297	273	--	--	--

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5317	30	3	5309	9
25	5319	75	6	5293	18
26	5283	78	18	5316	54
27	5322	81	39	5319	117
35	5313	105	44	5314	132
39	5323	117	59	5298	177
50	5278	150	78	5315	234
55	5311	165	82	5323	246
56	5288	168	87	5303	261
61	5334	183	88	5331	264
63	5291	189	90	5330	270
68	5287	204	95	5311	285
69	5310	207	--	--	--
73	5305	219	--	--	--
77	5320	231	--	--	--

# Radar Statistical Performance for 802.11n-HT40

## Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5294	1	698	76	1
2	5294	1	718	74	1
3	5294	1	758	70	1
4	5295	1	798	67	1
5	5296	1	938	57	1
6	5298	1	558	95	1
7	5300	1	898	59	1
8	5302	1	638	83	1
9	5304	1	578	92	1
10	5306	1	3066	18	1
11	5308	1	598	89	1
12	5310	1	658	81	1
13	5310	1	618	86	1
14	5310	1	918	58	1
15	5310	1	538	99	1
16	5310	1	1095	49	1
17	5310	1	1410	38	1
18	5312	1	1086	49	1
19	5314	1	2804	19	1
20	5316	1	2077	26	1
21	5318	1	2803	19	1
22	5320	1	1292	41	1
23	5321	1	2205	24	1
24	5322	1	3027	18	1
25	5323	1	3006	18	1
26	5324	1	620	86	1
27	5325	1	2592	21	1
28	5326	1	619	86	1
29	5326	1	602	88	1
30	5326	1	1165	46	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	5294	4.0	158	29	1
2	5294	1.5	151	24	1
3	5294	1.3	175	25	1
4	5295	2.4	164	27	1
5	5296	3.4	221	24	1
6	5298	2.7	175	27	1
7	5300	3.3	194	24	1
8	5302	3.9	224	23	1
9	5304	1.9	214	26	1
10	5306	1.7	216	25	1
11	5308	2.8	206	29	1
12	5310	2.7	208	23	1
13	5310	3.1	221	26	1
14	5310	2.7	215	25	1
15	5310	3.3	229	28	1
16	5310	4.7	192	27	1
17	5310	1.2	186	23	1
18	5312	2.7	187	24	1
19	5314	1.9	202	26	1
20	5316	3.6	187	23	1
21	5318	1.6	158	29	1
22	5320	4.2	186	28	1
23	5321	2.4	176	24	1
24	5322	1.8	168	24	1
25	5323	3.8	196	23	1
26	5324	2.9	230	23	1
27	5325	4.5	222	29	1
28	5326	4.9	163	26	1
29	5326	2.1	162	23	1
30	5326	3.8	189	29	1
Detection Percentage (%)					100%

### Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5294	7.4	260	17	1
2	5294	8.5	454	17	1
3	5294	9.4	477	16	1
4	5295	7.9	459	17	1
5	5296	6.8	414	18	1
6	5298	7.9	330	17	1
7	5300	8.8	394	17	1
8	5302	9.5	432	17	1
9	5304	7.7	313	18	1
10	5306	7.7	290	17	1
11	5308	6.1	280	18	1
12	5310	9.5	443	18	1
13	5310	8.4	335	18	1
14	5310	6.6	366	18	1
15	5310	9.9	350	17	1
16	5310	9.3	270	16	1
17	5310	7.8	349	17	1
18	5312	8.6	442	17	1
19	5314	7.7	431	16	1
20	5316	9.2	333	17	1
21	5318	7.9	455	17	1
22	5320	6.5	360	18	1
23	5321	8.5	324	17	1
24	5322	6.8	296	17	1
25	5323	7.5	343	18	1
26	5324	8.3	285	17	1
27	5325	7.0	323	16	1
28	5326	9.0	311	17	1
29	5326	8.8	363	16	1
30	5326	9.7	332	16	1
Detection Percentage (%)					100%

### Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5294	16.8	482	12	1
2	5294	17.1	251	16	1
3	5294	18.3	318	16	1
4	5295	18.8	255	12	1
5	5296	18.1	291	13	1
6	5298	14.4	445	15	1
7	5300	17.0	345	13	1
8	5302	18.9	402	14	1
9	5304	16.8	331	16	1
10	5306	14.4	335	12	1
11	5308	11.8	412	15	1
12	5310	17.8	287	15	1
13	5310	19.3	383	13	1
14	5310	19.1	471	16	1
15	5310	13.7	397	16	1
16	5310	16.7	314	16	1
17	5310	19.6	388	15	1
18	5312	15.8	277	14	1
19	5314	17.0	286	12	1
20	5316	13.5	468	12	1
21	5318	11.6	458	15	1
22	5320	16.7	330	13	1
23	5321	12.5	455	13	1
24	5322	16.9	469	14	1
25	5323	17.0	264	15	1
26	5324	12.5	310	14	1
27	5325	15.7	325	16	1
28	5326	17.8	365	16	1
29	5326	18.4	467	12	1
30	5326	18.8	298	14	1
Detection Percentage (%)					100%

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

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



## Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5294.0	1	16	5310.0	1
2	5294.0	1	17	5310.0	1
3	5296.0	1	18	5310.0	1
4	5294.4	1	19	5310.0	1
5	5295.6	1	20	5310.0	1
6	5299.6	1	21	5324.4	1
7	5297.6	1	22	5324.0	1
8	5299.2	1	23	5326.0	1
9	5296.8	1	24	5320.8	1
10	5298.8	1	25	5321.2	1
11	5310.0	1	26	5325.6	1
12	5310.0	1	27	5320.4	1
13	5310.0	1	28	5324.8	1
14	5310.0	1	29	5323.2	1
15	5310.0	1	30	5322.4	1
Detection Percentage (%)					100%

## Type 5 Radar Waveform\_1

Num of Bursts = 15  
Burst Interval (us) = 8000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	492337	3	14	75	1309	1720	1839	492337	0	799999
2	1011606	1	14	70	1356	0	0	1508811	800000	1599999
3	801140	3	14	60	1360	1768	1847	2311307	1600000	2399999
4	261726	1	14	60	1230	0	0	2578008	2400000	3199999
5	670262	3	14	55	1021	1034	1042	3249500	3200000	3999999
6	1171410	1	14	100	1427	0	0	4424007	4000000	4799999
7	1011684	3	14	80	1492	1110	1097	5437118	4800000	5599999
8	628123	1	14	75	1667	0	0	6068940	5600000	6399999
9	704117	1	14	80	1344	0	0	6774724	6400000	7199999
10	581459	1	14	95	1360	0	0	7357527	7200000	7999999
11	900419	3	14	100	1573	1224	1568	8259306	8000000	8799999
12	580965	2	14	75	1351	1652	0	8844636	8800000	9599999
13	1349673	2	14	70	1504	1870	0	10197312	9600000	10399999
14	466752	1	14	95	1736	0	0	10667438	10400000	11199999
15	612752	1	14	90	1637	0	0	11281926	11200000	11999999

Total number of pulses in waveform = 27

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**Type 5 Radar Waveform\_2**Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	497795	1	5	90	1949	0	0	497795	0	857142
2	564660	2	5	95	1050	1437	0	1064404	857143	1714285
3	1004775	2	5	55	1914	1259	0	2071666	1714286	2571428
4	542504	2	5	85	1916	1129	0	2617343	2571429	3428571
5	1072593	1	5	100	1342	0	0	3692981	3428572	4285714
6	616236	1	5	85	1276	0	0	4310559	4285715	5142857
7	1468376	3	5	80	1576	1492	1930	5780211	5142858	6000000
8	328860	3	5	55	1117	1667	1072	6114069	6000001	6857143
9	1075710	3	5	55	1548	1141	1661	7193635	6857144	7714286
10	1169687	3	5	90	1105	1931	1466	8367672	7714287	8571429
11	715738	2	5	65	1384	1125	0	9087912	8571430	9428572
12	779056	3	5	90	1649	1732	1462	9869477	9428573	10285715
13	431405	1	5	65	1169	0	0	10305725	10285716	11142858
14	1472988	2	5	70	1465	1251	0	11779882	11142859	12000001

Total number of pulses in waveform = 29

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**Type 5 Radar Waveform\_3**Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	318813	1	10	65	1162	0	0	318813	0	1333332
2	1287830	1	10	65	1342	0	0	1607805	1333333	2666665
3	1462626	3	10	65	1298	1071	1519	3071773	2666666	3999998
4	1919643	1	10	50	1357	0	0	4995304	3999999	5333331
5	352386	1	10	85	1714	0	0	5349047	5333332	6666664
6	2065464	3	10	50	1368	1976	1902	7416225	6666665	7999997
7	582848	1	10	85	1187	0	0	8004319	7999998	9333330
8	2540445	2	10	70	1619	1889	0	10545951	9333331	10666663
9	165054	1	10	55	1883	0	0	10714513	10666664	11999996

Total number of pulses in waveform = 14

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**Type 5 Radar Waveform\_4**Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	115186	2	6	85	1507	1395	0	115186	0	1499999
2	2692248	3	6	100	1435	1586	1945	2810336	1500000	2999999
3	976576	3	6	70	1730	1459	1370	3791878	3000000	4499999
4	1129050	3	6	65	1730	1416	1194	4925487	4500000	5999999
5	1851322	3	6	50	1115	1739	1597	6781149	6000000	7499999
6	1964481	1	6	60	1017	0	0	8750081	7500000	8999999
7	1237652	3	6	100	1004	1661	1817	9988750	9000000	10499999
8	890741	1	6	70	1187	0	0	10883973	10500000	11999999

Total number of pulses in waveform = 19

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## Type 5 Radar Waveform\_5

Num of Bursts = 19  
Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	328943	2	9	50	1104	1507	0	328943	0	631578
2	794107	3	9	80	1165	1698	1208	1125661	631579	1263157
3	296144	2	9	100	1168	1904	0	1425876	1263158	1894736
4	907856	3	9	70	1265	1371	1452	2336804	1894737	2526315
5	476237	2	9	90	1826	1873	0	2817129	2526316	3157894
6	456383	3	9	95	1949	1687	1846	3277211	3157895	3789473
7	534231	3	9	65	1842	1685	1632	3816924	3789474	4421052
8	1207615	3	9	95	1972	1814	1754	5029698	4421053	5052631
9	522800	3	9	70	1080	1213	1693	5558038	5052632	5684210
10	212783	1	9	60	1536	0	0	5774807	5684211	6315789
11	1095088	2	9	60	1727	1836	0	6871431	6315790	6947368
12	590434	3	9	85	1860	1790	1846	7465428	6947369	7578947
13	643066	2	9	65	1767	1438	0	8113980	7578948	8210526
14	408537	3	9	55	1874	1932	1300	8525722	8210527	8842105
15	778021	1	9	75	1323	0	0	9308849	8842106	9473684
16	263713	1	9	70	1183	0	0	9573885	9473685	10105263
17	955313	3	9	95	1295	1000	1033	10530381	10105264	10736842
18	462180	3	9	65	1628	1735	1195	10995889	10736843	11368421
19	553594	1	9	95	1251	0	0	11554041	11368422	12000000

Total number of pulses in waveform = 44

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## Type 5 Radar Waveform\_6

Num of Bursts = 20  
Burst Interval (us)= 600000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	585971	1	19	55	1264	0	0	585971	0	599999
2	436741	2	19	95	1061	1645	0	1023976	600000	1199999
3	629692	2	19	85	1862	1497	0	1656374	1200000	1799999
4	425982	2	19	95	1420	1436	0	2085715	1800000	2399999
5	726649	2	19	95	1054	1845	0	2815220	2400000	2999999
6	274407	2	19	70	1668	1911	0	3092526	3000000	3599999
7	752182	3	19	100	1876	1750	1630	3848287	3600000	4199999
8	897091	3	19	60	1324	1661	1939	4750634	4200000	4799999
9	412167	2	19	55	1985	1568	0	5167725	4800000	5399999
10	567885	2	19	95	1995	1455	0	5739163	5400000	5999999
11	450618	3	19	85	1838	1065	1692	6193231	6000000	6599999
12	405755	2	19	100	1987	1343	0	6603581	6600000	7199999
13	892909	1	19	65	1034	0	0	7499820	7200000	7799999
14	374331	2	19	55	1201	1636	0	7875185	7800000	8399999
15	937638	1	19	80	1100	0	0	8815660	8400000	8999999
16	379996	1	19	55	1159	0	0	9196756	9000000	9599999
17	687638	2	19	60	1398	1448	0	9885553	9600000	10199999
18	769405	3	19	55	1608	1191	1513	10657804	10200000	10799999
19	297262	1	19	75	1733	0	0	10959378	10800000	11399999
20	832082	1	19	70	1753	0	0	11793193	11400000	11999999

Total number of pulses in waveform = 38

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## Type 5 Radar Waveform\_7

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	1476001	2	8	75	1017	1769	0	1476001	0	1499999
2	787038	3	8	70	1918	1116	1167	2265825	1500000	2999999
3	2094451	3	8	55	1347	1377	1053	4364477	3000000	4499999
4	738610	1	8	75	1294	0	0	5106864	4500000	5999999
5	1986587	3	8	70	1690	1713	1706	7094745	6000000	7499999
6	870288	1	8	100	1709	0	0	7970142	7500000	8999999
7	1474674	2	8	50	1088	1309	0	9446525	9000000	10499999
8	2377490	2	8	55	1766	1507	0	11826412	10500000	11999999

Total number of pulses in waveform = 17

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## Type 5 Radar Waveform\_8

Num of Bursts = 19  
Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	89832	3	18	55	1947	1281	1294	89832	0	631578
2	1116631	1	18	65	1146	0	0	1210985	631579	1263157
3	322604	2	18	90	1524	1852	0	1534735	1263158	1894736
4	955436	3	18	55	1890	1098	1038	2493547	1894737	2526315
5	94615	3	18	85	1043	1381	1266	2592188	2526316	3157894
6	1187469	2	18	100	1027	1877	0	3783347	3157895	3789473
7	472112	2	18	90	1650	1048	0	4258363	3789474	4421052
8	288893	2	18	60	1230	1162	0	4549954	4421053	5052631
9	655067	2	18	55	1912	1696	0	5208313	5052632	5684210
10	962230	1	18	60	1304	0	0	6174151	5684211	6315789
11	171429	2	18	90	1215	1367	0	6346884	6315790	6947368
12	697846	3	18	60	1784	1203	1794	7047312	6947369	7578947
13	962947	2	18	80	1348	1550	0	8015040	7578948	8210526
14	591283	2	18	70	1416	1688	0	8609221	8210527	8842105
15	424579	2	18	80	1180	1658	0	9036904	8842106	9473684
16	1022871	2	18	55	1445	1886	0	10062613	9473685	10105263
17	574918	2	18	65	1291	1527	0	10640862	10105264	10736842
18	445477	1	18	50	1546	0	0	11089157	10736843	11368421
19	719506	3	18	80	1761	1571	1923	11810209	11368422	12000000

Total number of pulses in waveform = 40

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## Type 5 Radar Waveform\_9

Num of Bursts = 13  
Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	881282	3	12	90	1262	1483	1878	881282	0	923076
2	736310	2	12	65	1594	1389	0	1622215	923077	1846153
3	491771	2	12	90	1817	1112	0	2116969	1846154	2769230
4	760576	1	12	80	1790	0	0	2880474	2769231	3692307
5	1228063	2	12	95	1286	1934	0	4110327	3692308	4615384
6	1115201	3	12	100	1721	1513	1443	5228748	4615385	5538461
7	424872	1	12	80	1989	0	0	5658297	5538462	6461538
8	1400110	1	12	60	1663	0	0	7060396	6461539	7384615
9	844522	3	12	90	1863	1574	1733	7906581	7384616	8307692
10	1112787	2	12	80	1978	1489	0	9024538	8307693	9230769
11	329889	2	12	65	1123	1940	0	9357894	9230770	10153846
12	1039244	1	12	65	1229	0	0	10400201	10153847	11076923
13	744075	2	12	80	1222	1228	0	11145505	11076924	12000000

Total number of pulses in waveform = 25

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## Type 5 Radar Waveform\_10

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	198648	2	17	90	1792	1508	0	198648	0	749999
2	969256	2	17	55	1837	1036	0	1171204	750000	1499999
3	513903	1	17	90	1853	0	0	1687980	1500000	2249999
4	1198315	1	17	65	1955	0	0	2888148	2250000	2999999
5	610921	3	17	55	1658	1372	1163	3501024	3000000	3749999
6	370600	2	17	100	1661	1877	0	3875817	3750000	4499999
7	869179	3	17	60	1907	1824	1658	4748534	4500000	5249999
8	1054291	3	17	95	1282	1358	1881	5808214	5250000	5999999
9	453828	3	17	95	1201	1156	1884	6266563	6000000	6749999
10	572924	2	17	90	1773	1144	0	6843728	6750000	7499999
11	1163981	1	17	90	1988	0	0	8010626	7500000	8249999
12	343530	3	17	95	1556	1369	1538	8356144	8250000	8999999
13	969875	1	17	95	1693	0	0	9330482	9000000	9749999
14	815412	3	17	50	1639	1542	1506	10147587	9750000	10499999
15	833956	3	17	100	1345	1626	1453	10986230	10500000	11249999
16	322583	3	17	90	1712	1746	1504	11313237	11250000	11999999

Total number of pulses in waveform = 36

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**Type 5 Radar Waveform\_11**

Num of Bursts = 12  
Burst Interval (us)= 1000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	199898	1	10	80	1017	0	0	199898	0	999999
2	1082081	3	10	100	1827	1977	1333	1282996	1000000	1999999
3	990578	1	10	75	1087	0	0	2278711	2000000	2999999
4	892793	2	10	95	1612	1950	0	3172591	3000000	3999999
5	987794	1	10	50	1424	0	0	4163947	4000000	4999999
6	1429288	3	10	65	1020	1222	1422	5594659	5000000	5999999
7	1197964	1	10	95	1218	0	0	6796287	6000000	6999999
8	792237	3	10	75	1784	1947	1962	7589742	7000000	7999999
9	703451	1	10	95	1724	0	0	8298886	8000000	8999999
10	835407	3	10	95	1206	1742	1136	9136017	9000000	9999999
11	1401883	1	10	55	1630	0	0	10541984	10000000	10999999
12	1042416	1	10	100	1692	0	0	11586030	11000000	11999999

Total number of pulses in waveform = 21

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**Type 5 Radar Waveform\_12**

Num of Bursts = 13  
Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	49200	1	17	100	1841	0	0	49200	0	923076
2	1142911	1	17	80	1240	0	0	1193952	923077	1846153
3	960353	1	17	80	1850	0	0	2155545	1846154	2769230
4	927589	3	17	85	1550	1353	1247	3084984	2769231	3692307
5	1295489	2	17	100	1399	1172	0	4384623	3692308	4615384
6	331698	3	17	65	1682	1116	1923	4718892	4615385	5538461
7	1190015	3	17	75	1790	1775	1813	5913628	5538462	6461538
8	1043899	2	17	60	1107	1854	0	6962905	6461539	7384615
9	827725	1	17	90	1004	0	0	7793591	7384616	8307692
10	569416	1	17	85	1556	0	0	8364011	8307693	9230769
11	1420610	3	17	50	1291	1540	1767	9786177	9230770	10153846
12	956611	1	17	70	1578	0	0	10747386	10153847	11076923
13	760225	3	17	60	1344	1383	1984	11509189	11076924	12000000

Total number of pulses in waveform = 25

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**Type 5 Radar Waveform\_13**

Num of Bursts = 11  
Burst Interval (us)= 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	18291	3	12	50	1239	1954	1193	18291	0	1090908
2	1226521	3	12	50	1515	1761	1930	1249198	1090909	2181817
3	1642387	1	12	75	1741	0	0	2896791	2181818	3272726
4	876361	3	12	70	1185	1978	1342	3774893	3272727	4363635
5	981189	1	12	75	1511	0	0	4760587	4363636	5454544
6	1575221	2	12	55	1594	1579	0	6337319	5454545	6545453
7	762979	3	12	85	1253	1960	1966	7103471	6545454	7636362
8	1379739	2	12	65	1362	1630	0	8488389	7636363	8727271
9	673695	1	12	50	1834	0	0	9165076	8727272	9818180
10	1179813	3	12	85	1381	1411	1229	10346723	9818181	10909089
11	1478744	1	12	90	1473	0	0	11829488	10909090	11999998

Total number of pulses in waveform = 23

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**Type 5 Radar Waveform\_14**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	680385	1	9	95	1547	0	0	680385	0	1499999
2	1930136	1	9	70	1220	0	0	2612068	1500000	2999999
3	1182862	1	9	75	1432	0	0	3796150	3000000	4499999
4	902927	3	9	95	1752	2000	1615	4700509	4500000	5999999
5	1831268	1	9	85	1932	0	0	6537144	6000000	7499999
6	1565672	1	9	85	1546	0	0	8104748	7500000	8999999
7	2093405	3	9	50	1453	1583	1242	10199699	9000000	10499999
8	786248	2	9	90	1710	1361	0	10990225	10500000	11999999

Total number of pulses in waveform = 13

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**Type 5 Radar Waveform\_15**

Num of Bursts = 17  
Burst Interval (us)= 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	3388	2	5	95	1403	1406	0	3388	0	705881
2	1259818	1	5	100	1820	0	0	1266015	705882	1411763
3	759716	3	5	55	1430	1264	1928	2027551	1411764	2117645
4	342442	3	5	70	1728	1569	1732	2374615	2117646	2823527
5	451342	2	5	100	1540	1730	0	2830986	2823528	3529409
6	751029	2	5	55	1025	1721	0	3585285	3529410	4235291
7	949478	1	5	60	1602	0	0	4537509	4235292	4941173
8	467831	1	5	50	1247	0	0	5006942	4941174	5647055
9	1045094	2	5	80	1073	1566	0	6053283	5647056	6352937
10	401832	2	5	60	1396	1215	0	6357754	6352938	7058819
11	1197364	1	5	85	1667	0	0	7657729	7058820	7764701
12	370252	1	5	50	1581	0	0	8029648	7764702	8470583
13	520324	2	5	60	1769	1829	0	8551553	8470584	9176465
14	886518	3	5	65	1968	1169	1653	9441669	9176466	9882347
15	585875	2	5	60	1193	1957	0	10032334	9882348	10588229
16	893671	3	5	65	1761	1502	1708	10929155	10588230	11294111
17	691450	3	5	55	1455	1765	1953	11625576	11294112	11999993

Total number of pulses in waveform = 34

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**Type 5 Radar Waveform\_16**

Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	131869	2	14	60	1018	1332	0	131869	0	857142
2	1192442	1	14	55	1406	0	0	1326661	857143	1714285
3	902176	1	14	85	1440	0	0	2230243	1714286	2571428
4	484655	1	14	70	1527	0	0	2716338	2571429	3428571
5	1366699	2	14	60	1677	1232	0	4084564	3428572	4285714
6	593352	2	14	70	1798	1332	0	4680825	4285715	5142857
7	1234706	1	14	65	1882	0	0	5918661	5142858	6000000
8	386760	2	14	70	1112	1137	0	6307303	6000001	6857143
9	1192334	3	14	80	1814	1425	1196	7501886	6857144	7714286
10	285083	2	14	70	1080	1053	0	7791404	7714287	8571429
11	1096358	2	14	70	1844	1423	0	8889895	8571430	9428572
12	758343	2	14	55	1971	1815	0	9651505	9428573	10285715
13	1084340	2	14	65	1881	1299	0	10739631	10285716	11142858
14	978290	1	14	85	1943	0	0	11721101	11142859	12000001

Total number of pulses in waveform = 24

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## Type 5 Radar Waveform\_17

Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	166713	1	6	80	1515	0	0	166713	0	857142
2	799354	1	6	55	1459	0	0	967582	857143	1714285
3	1383044	3	6	100	1786	1375	1427	2352085	1714286	2571428
4	916686	2	6	55	1984	1650	0	3273359	2571429	3428571
5	792314	2	6	70	1706	1390	0	4069307	3428572	4285714
6	306344	2	6	85	1506	1942	0	4378747	4285715	5142857
7	1606650	3	6	100	1496	1964	1953	5988845	5142858	6000000
8	303188	1	6	85	1794	0	0	6297446	6000001	6857143
9	680874	2	6	90	1178	1031	0	6980114	6857144	7714286
10	1479986	3	6	55	1011	1210	1456	8462309	7714287	8571429
11	592108	1	6	90	1659	0	0	9058094	8571430	9428572
12	572316	2	6	65	1211	1904	0	9632069	9428573	10285715
13	838896	3	6	85	1294	1198	1604	10474080	10285716	11142858
14	822508	1	6	70	1023	0	0	11300684	11142859	12000001

Total number of pulses in waveform = 27

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## Type 5 Radar Waveform\_18

Num of Bursts = 17  
Burst Interval (us)= 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	638248	2	19	65	1564	1201	0	638248	0	705881
2	634735	1	19	95	1060	0	0	1275748	705882	1411763
3	580679	3	19	50	1706	1578	1185	1857487	1411764	2117645
4	452018	2	19	90	1012	1070	0	2313974	2117646	2823527
5	812747	1	19	65	1457	0	0	3128803	2823528	3529409
6	992835	3	19	95	1966	1627	1680	4123095	3529410	4235291
7	456415	1	19	75	1749	0	0	4584783	4235292	4941173
8	860864	3	19	85	1554	1622	1166	5447396	4941174	5647055
9	510366	1	19	60	1824	0	0	5962104	5647056	6352937
10	588241	1	19	55	1285	0	0	6552169	6352938	7058819
11	980768	2	19	70	1148	1384	0	7534222	7058820	7764701
12	498372	2	19	65	1613	1716	0	8035126	7764702	8470583
13	1112467	2	19	65	1039	1124	0	9150922	8470584	9176465
14	265310	3	19	75	1390	1845	1364	9418395	9176466	9882347
15	687995	1	19	55	1864	0	0	10110989	9882348	10588229
16	924486	3	19	80	1121	1978	1741	11037339	10588230	11294111
17	712907	3	19	65	1870	1891	1086	11755086	11294112	11999993

Total number of pulses in waveform = 34

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## Type 5 Radar Waveform\_19

Num of Bursts = 19  
Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	230619	3	8	70	1501	1510	1811	230619	0	631578
2	940894	1	8	95	1651	0	0	1176335	631579	1263157
3	364586	2	8	60	1708	1553	0	1542572	1263158	1894736
4	769062	3	8	80	1414	1070	1357	2314895	1894737	2526315
5	485542	2	8	65	1060	1738	0	2804278	2526316	3157894
6	507847	3	8	80	1667	1557	1853	3314913	3157895	3789473
7	769928	2	8	55	1034	1827	0	4089918	3789474	4421052
8	337498	2	8	55	1562	1343	0	4430277	4421053	5052631
9	640765	2	8	55	1965	1131	0	5073947	5052632	5684210
10	640065	1	8	80	1214	0	0	5717108	5684211	6315789
11	666273	2	8	55	1770	1922	0	6384595	6315790	6947368
12	689383	1	8	70	1874	0	0	7077670	6947369	7578947
13	1001857	2	8	80	1638	1723	0	8081401	7578948	8210526
14	167588	1	8	70	1935	0	0	8252350	8210527	8842105
15	625792	2	8	95	1429	1254	0	8880077	8842106	9473684
16	1004292	3	8	55	1303	1043	1326	9887052	9473685	10105263
17	410743	1	8	90	1661	0	0	10301467	10105264	10736842
18	1008171	2	8	85	1571	1669	0	11311299	10736843	11368421
19	449249	1	8	95	1397	0	0	11763788	11368422	12000000

Total number of pulses in waveform = 36

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## Type 5 Radar Waveform\_20

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	466295	3	18	85	1010	1518	1671	466295	0	749999
2	442384	1	18	50	1124	0	0	912878	750000	1499999
3	978675	3	18	50	1028	1025	1218	1892677	1500000	2249999
4	1070816	2	18	60	1419	1202	0	2966764	2250000	2999999
5	744959	2	18	75	1355	1445	0	3714344	3000000	3749999
6	104768	3	18	65	1120	1328	1638	3821912	3750000	4499999
7	928949	3	18	55	1248	1158	1071	4754947	4500000	5249999
8	1204792	3	18	85	1117	1194	1841	5963216	5250000	5999999
9	371718	2	18	50	1956	1680	0	6339086	6000000	6749999
10	788575	3	18	90	1439	1310	1689	7131297	6750000	7499999
11	766809	2	18	80	1053	1884	0	7902544	7500000	8249999
12	971106	3	18	90	1580	1011	1907	8876587	8250000	8999999
13	653588	2	18	75	1497	1427	0	9534673	9000000	9749999
14	939334	2	18	80	1165	1278	0	10476931	9750000	10499999
15	285587	1	18	65	1287	0	0	10764961	10500000	11249999
16	624113	3	18	80	1300	1824	1045	11390361	11250000	11999999

Total number of pulses in waveform = 38

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## Type 5 Radar Waveform\_21

Num of Bursts = 11  
Burst Interval (us)= 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	459865	2	9	90	1262	1350	0	459865	0	1090908
2	893872	2	9	95	1326	1679	0	1356349	1090909	2181817
3	1337148	2	9	70	1874	1715	0	2696502	2181818	3272726
4	1423928	3	9	50	1639	1717	1951	4124019	3272727	4363635
5	1042760	3	9	85	1655	1695	1751	5172086	4363636	5454544
6	1157962	1	9	70	1925	0	0	6335149	5454545	6545453
7	481539	3	9	90	1974	1365	1620	6818613	6545454	7636362
8	1179073	1	9	100	1431	0	0	8002645	7636363	8727271
9	1291634	3	9	70	1681	1136	1376	9295710	8727272	9818180
10	1064509	2	9	70	1819	1752	0	10364412	9818181	10909089
11	1539175	1	9	85	1022	0	0	11907158	10909090	11999998

Total number of pulses in waveform = 23

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## Type 5 Radar Waveform\_22

Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	338532	2	10	55	1026	1917	0	338532	0	857142
2	1054741	3	10	75	1100	1808	1757	1396216	857143	1714285
3	800754	1	10	55	1896	0	0	2201635	1714286	2571428
4	889175	3	10	60	1963	1739	1155	3092706	2571429	3428571
5	1147368	1	10	55	1958	0	0	4244931	3428572	4285714
6	809861	3	10	60	1014	1044	1607	5056750	4285715	5142857
7	185025	1	10	70	1473	0	0	5245440	5142858	6000000
8	1236282	3	10	75	1116	1077	1238	6483195	6000001	6857143
9	619987	2	10	100	1916	1339	0	7106613	6857144	7714286
10	1277454	2	10	55	1095	1465	0	8387322	7714287	8571429
11	810954	3	10	60	1276	1324	1892	9200836	8571430	9428572
12	511021	2	10	90	1355	1808	0	9716349	9428573	10285715
13	1298393	2	10	90	1209	1169	0	11017905	10285716	11142858
14	200448	1	10	55	1231	0	0	11220731	11142859	12000001

Total number of pulses in waveform = 29

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## Type 5 Radar Waveform\_23

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	711442	2	5	50	1285	1539	0	711442	0	749999
2	696323	1	5	50	1102	0	0	1410590	750000	1499999
3	640504	3	5	65	1355	1515	1521	2052195	1500000	2249999
4	485050	1	5	85	1639	0	0	2541639	2250000	2999999
5	745942	3	5	75	1495	1955	1379	3289220	3000000	3749999
6	970278	2	5	85	1967	1874	0	4254328	3750000	4499999
7	508208	1	5	65	1830	0	0	4776377	4500000	5249999
8	502841	1	5	100	1227	0	0	5281048	5250000	5999999
9	887257	3	5	55	1485	1621	1543	6169532	6000000	6749999
10	586447	2	5	85	1885	1829	0	6760628	6750000	7499999
11	1085061	2	5	75	1995	1900	0	7849403	7500000	8249999
12	509225	2	5	65	1063	1161	0	8362524	8250000	8999999
13	1331707	2	5	70	1114	1601	0	9696455	9000000	9749999
14	687549	1	5	75	1558	0	0	10386719	9750000	10499999
15	187766	1	5	85	1700	0	0	10576043	10500000	11249999
16	705688	3	5	90	1990	1103	1047	11283431	11250000	11999999

Total number of pulses in waveform = 30

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## Type 5 Radar Waveform\_24

Num of Bursts = 10  
Burst Interval (us)= 1200000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	1119	1	18	100	1247	0	0	1119	0	1199999
2	1269361	2	18	80	1688	1646	0	1271727	1200000	2399999
3	1777843	2	18	75	1076	1712	0	3052904	2400000	3599999
4	958599	3	18	70	1273	1650	1521	4014291	3600000	4799999
5	1110703	1	18	85	1194	0	0	5129438	4800000	5999999
6	1811655	3	18	95	1049	1178	1112	6942287	6000000	7199999
7	1029218	1	18	95	1938	0	0	7974844	7200000	8399999
8	956900	2	18	80	1821	1258	0	8933682	8400000	9599999
9	1060293	3	18	75	1057	1855	1111	9997054	9600000	10799999
10	1972384	3	18	95	1575	1151	1485	11973461	10800000	11999999

Total number of pulses in waveform = 21

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## Type 5 Radar Waveform\_25

Num of Bursts = 20  
Burst Interval (us)= 600000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	426872	3	17	85	1309	1914	1803	426872	0	599999
2	414655	1	17	60	1759	0	0	846553	600000	1199999
3	933032	3	17	80	1974	1400	1654	1781344	1200000	1799999
4	180174	3	17	95	1776	1495	1931	1966546	1800000	2399999
5	1008455	3	17	55	1963	1103	1913	2980203	2400000	2999999
6	604146	3	17	75	1076	1434	1467	3589328	3000000	3599999
7	255927	3	17	85	1598	1714	1902	3849232	3600000	4199999
8	564269	2	17	70	1110	1211	0	4418705	4200000	4799999
9	497829	3	17	50	1653	1891	1787	4918855	4800000	5399999
10	933815	3	17	75	1964	1041	1894	5858001	5400000	5999999
11	181790	3	17	50	1451	1359	1668	6044690	6000000	6599999
12	787376	2	17	55	1575	1603	0	6836544	6600000	7199999
13	729530	2	17	75	1285	1647	0	7569252	7200000	7799999
14	428199	1	17	50	1683	0	0	8000383	7800000	8399999
15	976056	3	17	50	1198	1397	1212	8978122	8400000	8999999
16	230966	3	17	65	1743	1576	1557	9212915	9000000	9599999
17	931424	1	17	75	1747	0	0	10149215	9600000	10199999
18	333824	1	17	80	1432	0	0	10484786	10200000	10799999
19	425455	3	17	95	1380	1023	1320	10911673	10800000	11399999
20	867864	3	17	75	1131	1086	1494	11783260	11400000	11999999

Total number of pulses in waveform = 49

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**Type 5 Radar Waveform\_26**Num of Bursts = 13  
Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	687132	2	6	95	1062	1627	0	687132	0	923076
2	410816	2	6	50	1209	1143	0	1100637	923077	1846153
3	1025839	3	6	80	1645	1810	1151	2128828	1846154	2769230
4	1467284	1	6	60	1290	0	0	3600718	2769231	3692307
5	750536	3	6	95	1237	1299	1641	4352544	3692308	4615384
6	794217	1	6	70	1063	0	0	5150938	4615385	5538461
7	970796	2	6	55	1008	1267	0	6122797	5538462	6461538
8	354342	3	6	55	1387	1552	1399	6479414	6461539	7384615
9	1276535	1	6	70	1936	0	0	7760287	7384616	8307692
10	844778	3	6	95	1299	1729	1875	8607001	8307693	9230769
11	1021719	3	6	65	1806	1389	1917	9633623	9230770	10153846
12	1025785	3	6	65	1296	1313	1772	10664520	10153847	11076923
13	857700	2	6	85	1666	1816	0	11526601	11076924	12000000

Total number of pulses in waveform = 29

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**Type 5 Radar Waveform\_27**Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	273952	1	19	70	1507	0	0	273952	0	1333332
2	2211991	1	19	70	1396	0	0	2487450	1333333	2666665
3	1186732	1	19	85	1089	0	0	3675578	2666666	3999998
4	433200	3	19	65	1237	1036	1276	4109867	3999999	5333331
5	1451054	3	19	50	1188	1391	1907	5564470	5333332	6666664
6	1898400	2	19	95	1455	1968	0	7467356	6666665	7999997
7	871200	1	19	50	1230	0	0	8341979	7999998	9333330
8	2201478	1	19	55	1287	0	0	10544687	9333331	10666663
9	480488	2	19	50	1844	1941	0	11026462	10666664	11999996

Total number of pulses in waveform = 15

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**Type 5 Radar Waveform\_28**Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	1237246	1	8	85	1472	0	0	1237246	0	1499999
2	667453	2	8	90	1489	1743	0	1906171	1500000	2999999
3	2342542	1	8	65	1202	0	0	4251945	3000000	4499999
4	1516761	3	8	65	1384	1755	1707	5769908	4500000	5999999
5	1151214	3	8	50	1264	1841	1834	6925968	6000000	7499999
6	1592002	1	8	65	1822	0	0	8522909	7500000	8999999
7	1613895	2	8	80	1094	1733	0	10138626	9000000	10499999
8	1110875	3	8	100	1035	1112	1384	11252328	10500000	11999999

Total number of pulses in waveform = 16

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## Type 5 Radar Waveform\_29

Num of Bursts = 18

Burst Interval (us)= 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	599319	2	12	100	1329	1607	0	599319	0	666666
2	168851	2	12	60	1161	1546	0	771106	666667	1333333
3	865924	2	12	100	1254	1584	0	1639737	1333334	2000000
4	966591	1	12	50	1349	0	0	2599166	2000001	2666667
5	608435	1	12	60	1175	0	0	3208950	2666668	3333334
6	141739	3	12	90	1020	1157	1125	3351864	3333335	4000001
7	972257	1	12	70	1358	0	0	4327423	4000002	4666668
8	382266	3	12	90	1391	1038	1254	4711047	4666669	5333335
9	1226409	2	12	60	1524	1864	0	5941139	5333336	6000002
10	427821	1	12	90	1149	0	0	6372348	6000003	6666669
11	555271	3	12	100	1994	1184	1085	6928768	6666670	7333336
12	417946	1	12	85	1223	0	0	7350977	7333337	8000003
13	1143150	1	12	55	1309	0	0	8495350	8000004	8666670
14	712761	2	12	60	1885	1798	0	9209420	8666671	9333337
15	364651	1	12	100	1785	0	0	9577754	9333338	10000004
16	549545	1	12	100	1849	0	0	10129084	10000005	10666671
17	972073	1	12	80	1141	0	0	11103006	10666672	11333338
18	268587	2	12	100	1272	1666	0	11372734	11333339	12000005

Total number of pulses in waveform = 30

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## Type 5 Radar Waveform\_30

Num of Bursts = 13

Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	671884	2	14	95	1586	1386	0	671884	0	923076
2	376680	1	14	50	1313	0	0	1051536	923077	1846153
3	1464288	2	14	85	1587	1937	0	2517137	1846154	2769230
4	571449	1	14	75	1089	0	0	3092110	2769231	3692307
5	1317753	1	14	50	1519	0	0	4410962	3692308	4615384
6	905022	3	14	70	1311	1876	1570	5317503	4615385	5538461
7	437711	1	14	50	1676	0	0	5759971	5538462	6461538
8	1380301	2	14	55	1575	1745	0	7141948	6461539	7384615
9	1149868	3	14	80	1812	1629	1673	8295136	7384616	8307692
10	248269	3	14	60	1085	1326	1844	8548519	8307693	9230769
11	1380313	1	14	75	1822	0	0	9933087	9230770	10153846
12	640649	2	14	70	1155	1243	0	10575558	10153847	11076923
13	1264140	1	14	50	1719	0	0	11842096	11076924	12000000

Total number of pulses in waveform = 23

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### 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	5294	1	16	5310	1
2	5294	1	17	5310	1
3	5294	1	18	5312	1
4	5295	1	19	5314	1
5	5296	1	20	5316	1
6	5298	1	21	5318	1
7	5300	1	22	5320	1
8	5302	1	23	5321	1
9	5304	1	24	5322	1
10	5306	1	25	5323	1
11	5308	1	26	5324	1
12	5310	1	27	5325	1
13	5310	1	28	5326	1
14	5310	1	29	5326	1
15	5310	1	30	5326	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5299	6	25	5293	75
7	5297	21	26	5281	78
13	5316	39	28	5302	84
24	5286	72	29	5297	87
60	5281	180	30	5290	90
61	5268	183	52	5266	156
66	5323	198	54	5276	162
74	5303	222	70	5295	210
76	5300	228	83	5294	249
81	5292	243	94	5314	282
86	5315	258	97	5312	291
95	5269	285	--	--	--
97	5278	291	--	--	--

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
35	5274	105	0	5284	0
38	5304	114	5	5308	15
43	5320	129	10	5280	30
45	5297	135	26	5297	78
65	5296	195	39	5268	117
72	5300	216	57	5305	171
88	5315	264	59	5281	177
89	5309	267	79	5270	237
90	5302	270	82	5295	246
91	5306	273	84	5315	252
94	5314	282	88	5321	264
96	5319	288	91	5324	273
98	5291	294	94	5320	282
--	--	--	95	5266	285

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5299	27	11	5302	33
18	5281	54	22	5308	66
36	5321	108	38	5297	114
44	5274	132	41	5311	123
49	5295	147	51	5275	153
51	5284	153	55	5309	165
52	5301	156	71	5282	213
57	5310	171	73	5319	219
62	5306	186	74	5272	222
68	5283	204	80	5268	240
69	5300	207	81	5284	243
75	5298	225	87	5290	261
83	5269	249	--	--	--
85	5268	255	--	--	--
86	5282	258	--	--	--
87	5291	261	--	--	--
92	5303	276	--	--	--

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5297	18	4	5275	12
21	5296	63	13	5286	39
23	5320	69	35	5330	105
30	5308	90	44	5280	132
37	5323	111	51	5302	153
65	5290	195	53	5316	159
67	5274	201	54	5279	162
90	5309	270	55	5312	165
--	--	--	82	5318	246
--	--	--	83	5305	249
--	--	--	87	5292	261
--	--	--	99	5304	297

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5291	12	9	5328	27
9	5315	27	16	5327	48
47	5323	141	21	5277	63
66	5298	198	22	5317	66
67	5282	201	32	5329	96
80	5332	240	46	5307	138
81	5276	243	54	5322	162
97	5284	291	63	5293	189
--	--	--	67	5301	201
--	--	--	73	5296	219
--	--	--	91	5289	273
--	--	--	96	5304	288
--	--	--	99	5305	297

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5315	9	1	5334	3
12	5306	36	20	5303	60
13	5283	39	21	5311	63
14	5314	42	24	5340	72
22	5304	66	28	5312	84
32	5337	96	53	5338	159
35	5323	105	54	5299	162
54	5296	162	73	5323	219
56	5286	168	81	5283	243
57	5305	171	82	5310	246
62	5310	186	85	5286	255
70	5331	210	88	5304	264
92	5293	276	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5310	9	11	5298	33
18	5312	54	21	5283	63
23	5306	69	23	5296	69
28	5296	84	24	5329	72
29	5281	87	49	5289	147
30	5319	90	66	5310	198
73	5292	219	67	5290	201
93	5303	279	69	5338	207
--	--	--	71	5318	213
--	--	--	72	5339	216
--	--	--	78	5307	234
--	--	--	90	5292	270
--	--	--	91	5322	273
--	--	--	93	5334	279
--	--	--	97	5306	291
--	--	--	99	5330	297

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5300	0	8	5332	24
11	5307	33	17	5291	51
21	5295	63	28	5280	84
25	5286	75	29	5302	87
27	5317	81	31	5316	93
46	5320	138	44	5320	132
47	5327	141	58	5307	174
54	5312	162	64	5329	192
57	5322	171	87	5313	261
68	5339	204	94	5297	282
75	5283	225	--	--	--
76	5329	228	--	--	--
77	5335	231	--	--	--
84	5281	252	--	--	--
92	5314	276	--	--	--
95	5319	285	--	--	--

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5313	0	2	5328	6
5	5287	15	8	5335	24
12	5320	36	11	5336	33
53	5326	159	13	5341	39
67	5289	201	16	5283	48
73	5317	219	17	5326	51
83	5283	249	22	5287	66
86	5298	258	27	5315	81
92	5280	276	36	5291	108
93	5329	279	53	5310	159
--	--	--	57	5339	171
--	--	--	59	5305	177
--	--	--	61	5338	183
--	--	--	83	5294	249
--	--	--	93	5324	279

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5315	0	9	5338	27
6	5323	18	11	5318	33
9	5310	27	12	5336	36
11	5287	33	14	5315	42
13	5299	39	16	5306	48
14	5295	42	23	5344	69
25	5341	75	25	5300	75
29	5312	87	28	5325	84
42	5340	126	35	5298	105
49	5292	147	51	5320	153
71	5301	213	60	5303	180
73	5291	219	81	5297	243
82	5336	246	--	--	--
86	5335	258	--	--	--
88	5290	264	--	--	--
95	5311	285	--	--	--
98	5327	294	--	--	--

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5311	39	17	5309	51
20	5336	60	38	5304	114
28	5315	84	49	5314	147
33	5309	99	62	5331	186
38	5329	114	67	5317	201
48	5298	144	73	5350	219
51	5322	153	75	5322	225
59	5345	177	78	5339	234
63	5342	189	86	5306	258
82	5299	246	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5342	6	0	5294	0
8	5298	24	6	5299	18
29	5292	87	9	5304	27
38	5295	114	11	5320	33
49	5327	147	22	5348	66
56	5323	168	25	5328	75
61	5322	183	39	5338	117
62	5310	186	43	5313	129
69	5308	207	57	5347	171
71	5337	213	68	5332	204
77	5339	231	71	5329	213
80	5349	240	80	5309	240
81	5344	243	84	5312	252
--	--	--	98	5316	294

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5346	33	5	5343	15
16	5313	48	28	5337	84
21	5332	63	35	5324	105
24	5336	72	39	5301	117
39	5327	117	58	5308	174
40	5309	120	68	5340	204
50	5310	150	73	5319	219
63	5352	189	74	5304	222
75	5338	225	84	5352	252
78	5340	234	90	5328	270
91	5303	273	93	5346	279
--	--	--	99	5305	297

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5329	24	3	5348	9
10	5295	30	13	5299	39
11	5305	33	15	5321	45
52	5297	156	23	5343	69
57	5322	171	26	5356	78
68	5337	204	44	5353	132
85	5321	255	52	5327	156
90	5332	270	59	5297	177
96	5298	288	60	5347	180
97	5328	291	77	5339	231
--	--	--	80	5326	240
--	--	--	82	5331	246
--	--	--	83	5337	249

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5330	0	0	5341	0
5	5325	15	4	5328	12
21	5311	63	5	5309	15
24	5342	72	14	5316	42
27	5308	81	17	5307	51
32	5347	96	18	5355	54
33	5304	99	25	5352	75
38	5328	114	27	5349	81
39	5302	117	34	5306	102
40	5332	120	41	5318	123
56	5346	168	45	5304	135
57	5336	171	46	5354	138
77	5320	231	59	5339	177
90	5340	270	60	5340	180
--	--	--	74	5312	222
--	--	--	90	5350	270
--	--	--	93	5323	279
--	--	--	98	5343	294

## Radar Statistical Performance for 802.11ac-VHT80

## Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5254	1	778	68	1
2	5254	1	678	78	1
3	5254	1	698	76	1
4	5258	1	798	67	1
5	5262	1	878	61	1
6	5266	1	858	62	1
7	5270	1	758	70	1
8	5270	1	898	59	1
9	5270	1	638	83	1
10	5274	1	578	92	1
11	5278	1	818	65	1
12	5282	1	518	102	1
13	5286	1	3066	18	1
14	5290	1	658	81	1
15	5290	1	838	63	1
16	5290	1	2853	19	1
17	5294	1	2772	20	1
18	5298	1	1957	27	1
19	5302	1	1584	34	1
20	5306	1	567	94	1
21	5310	1	1608	33	1
22	5310	1	1883	29	1
23	5310	1	648	82	1
24	5314	1	1477	36	1
25	5318	1	2991	18	1
26	5320	1	1587	34	1
27	5324	1	3030	18	1
28	5326	1	3048	18	1
29	5326	1	663	80	1
30	5326	1	2695	20	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	5254	1.6	227	26	1
2	5254	3.7	150	24	1
3	5254	2.1	199	23	1
4	5258	2.2	200	28	1
5	5262	1.1	209	27	1
6	5266	2.0	216	28	1
7	5270	2.3	216	29	1
8	5270	2.9	162	28	1
9	5270	3.3	177	24	1
10	5274	4.8	189	26	1
11	5278	1.9	198	29	1
12	5282	1.3	187	24	1
13	5286	2.8	199	25	1
14	5290	2.2	224	25	1
15	5290	4.9	160	29	1
16	5290	3.7	220	24	1
17	5294	1.0	184	29	1
18	5298	3.0	185	24	1
19	5302	4.1	175	25	1
20	5306	2.4	169	26	1
21	5310	2.8	152	24	1
22	5310	5.0	199	26	1
23	5310	1.5	194	25	1
24	5314	3.8	215	29	1
25	5318	5.0	198	28	1
26	5320	2.5	203	26	1
27	5324	1.2	212	26	1
28	5326	4.3	156	29	1
29	5326	3.9	184	23	1
30	5326	3.7	177	27	1
Detection Percentage (%)					100%

## Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5254	7.7	483	16	1
2	5254	8.0	287	18	1
3	5254	7.6	281	17	1
4	5258	8.8	453	16	1
5	5262	7.9	327	18	1
6	5266	8.0	295	17	1
7	5270	7.8	266	18	1
8	5270	9.0	331	17	1
9	5270	9.3	315	16	1
10	5274	9.0	313	18	1
11	5278	7.6	268	16	1
12	5282	8.2	494	16	1
13	5286	9.0	278	16	1
14	5290	6.3	395	18	1
15	5290	7.3	499	17	1
16	5290	9.3	360	17	1
17	5294	6.5	362	17	1
18	5298	9.5	435	17	1
19	5302	6.6	414	16	1
20	5306	7.5	394	16	1
21	5310	8.9	485	16	1
22	5310	8.1	357	16	1
23	5310	6.8	293	16	1
24	5314	8.5	500	17	1
25	5318	7.3	415	16	1
26	5320	8.8	345	18	1
27	5324	9.6	399	16	1
28	5326	6.7	475	17	1
29	5326	9.9	371	16	1
30	5326	9.4	398	16	1
Detection Percentage (%)					100%

### Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5254	17.2	277	13	1
2	5254	15.7	493	12	1
3	5254	17.1	381	16	1
4	5258	14.3	344	13	1
5	5262	17.6	387	12	1
6	5266	17.0	500	13	1
7	5270	13.8	253	16	1
8	5270	18.3	286	14	1
9	5270	19.6	475	15	1
10	5274	19.7	373	13	1
11	5278	11.8	300	14	1
12	5282	16.9	257	13	1
13	5286	18.8	432	13	1
14	5290	16.3	425	13	1
15	5290	19.5	365	12	1
16	5290	11.2	420	15	1
17	5294	14.5	474	13	1
18	5298	19.0	297	13	1
19	5302	18.2	285	12	1
20	5306	14.0	298	15	1
21	5310	14.2	265	13	1
22	5310	17.7	443	16	1
23	5310	12.2	458	15	1
24	5314	13.3	280	15	1
25	5318	17.9	489	12	1
26	5320	11.1	291	16	1
27	5324	15.0	361	16	1
28	5326	17.1	347	16	1
29	5326	18.5	483	13	1
30	5326	11.9	371	16	1
Detection Percentage (%)					100%

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

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

### Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5256.0	1	16	5290.0	1
2	5258.8	1	17	5290.0	1
3	5257.6	1	18	5290.0	1
4	5255.2	1	19	5290.0	1
5	5254.0	1	20	5290.0	1
6	5259.6	1	21	5324.8	1
7	5254.4	1	22	5323.2	1
8	5259.2	1	23	5324.0	1
9	5256.8	1	24	5326.0	1
10	5255.6	1	25	5320.8	1
11	5290.0	1	26	5325.6	1
12	5290.0	1	27	5322.4	1
13	5290.0	1	28	5324.4	1
14	5290.0	1	29	5320.4	1
15	5290.0	1	30	5321.2	1
Detection Percentage (%)					100%

### Type 5 Radar Waveform\_1

Num of Bursts = 13 Burst Interval (us)= 923077										
Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	904889	1	10	80	1613	0	0	904889	0	923076
2	305540	2	10	55	1613	1185	0	1212042	923077	1846153
3	772897	2	10	65	1509	1180	0	1987737	1846154	2769230
4	936004	3	10	55	1451	1856	1502	2926430	2769231	3692307
5	1504654	3	10	50	1411	1591	1011	4435893	3692308	4615384
6	890172	2	10	85	1329	1554	0	5330078	4615385	5538461
7	966920	1	10	75	1582	0	0	6299881	5538462	6461538
8	1025795	3	10	75	1066	1994	1822	7327258	6461539	7384615
9	861866	2	10	50	1338	1962	0	8194006	7384616	8307692
10	571502	3	10	55	1603	1337	1120	8768808	8307693	9230769
11	1299119	1	10	65	1330	0	0	10071987	9230770	10153846
12	507533	1	10	75	1598	0	0	10580850	10153847	11076923
13	1052216	1	10	55	1341	0	0	11634664	11076924	12000000
Total number of pulses in waveform = 25 *****										

**Type 5 Radar Waveform\_2**

Num of Bursts = 10  
Burst Interval (us)= 1200000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	521314	3	17	50	1090	1677	1756	521314	0	1199999
2	695114	2	17	65	1740	1045	0	1220951	1200000	2399999
3	1735076	2	17	75	1935	1324	0	2958812	2400000	3599999
4	984292	3	17	75	1599	1824	1362	3946363	3600000	4799999
5	888857	1	17	55	1881	0	0	4840005	4800000	5999999
6	1413200	1	17	70	1104	0	0	6255086	6000000	7199999
7	2069096	1	17	95	1342	0	0	8325286	7200000	8399999
8	1267504	1	17	70	1913	0	0	9594132	8400000	9599999
9	498713	2	17	75	1841	1254	0	10094758	9600000	10799999
10	1011280	3	17	95	1000	1155	1943	11109133	10800000	11999999

Total number of pulses in waveform = 19  
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**Type 5 Radar Waveform\_3**

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	99512	3	14	75	1671	1169	1016	99512	0	749999
2	848029	3	14	60	1431	1155	1316	951397	750000	1499999
3	1018433	3	14	60	1554	1399	1067	1973732	1500000	2249999
4	951695	2	14	100	1928	1458	0	2929447	2250000	2999999
5	250365	2	14	90	1878	1039	0	3183198	3000000	3749999
6	937006	3	14	65	1315	1196	1738	4123121	3750000	4499999
7	731080	1	14	80	1081	0	0	4858450	4500000	5249999
8	439445	3	14	75	1764	1571	1207	5292976	5250000	5999999
9	1226991	2	14	90	1888	1938	0	6524509	6000000	6749999
10	579462	2	14	95	1868	1651	0	7107797	6750000	7499999
11	1000372	2	14	100	1095	1398	0	8111688	7500000	8249999
12	441243	1	14	50	1368	0	0	8555424	8250000	8999999
13	598571	1	14	90	1566	0	0	9155363	9000000	9749999
14	1314457	1	14	100	1543	0	0	10471386	9750000	10499999
15	161608	2	14	100	1825	1567	0	10634537	10500000	11249999
16	1079896	3	14	50	1401	1238	1341	11717825	11250000	11999999

Total number of pulses in waveform = 34  
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**Type 5 Radar Waveform\_4**

Num of Bursts = 15  
Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	26321	3	8	65	1038	1732	1011	26321	0	799999
2	1465178	2	8	75	1087	1317	0	1495280	800000	1599999
3	368868	1	8	95	1787	0	0	1866552	1600000	2399999
4	1270526	2	8	50	1262	1599	0	3138865	2400000	3199999
5	235564	2	8	90	1127	1815	0	3377290	3200000	3999999
6	1410409	2	8	85	1108	1278	0	4790641	4000000	4799999
7	634212	2	8	70	1351	1510	0	5427239	4800000	5599999
8	712743	2	8	70	1658	1630	0	6142843	5600000	6399999
9	289993	1	8	100	1087	0	0	6436124	6400000	7199999
10	959345	3	8	95	1936	1565	1133	7396556	7200000	7999999
11	962124	3	8	100	1332	1374	1270	8363314	8000000	8799999
12	1095827	2	8	65	1664	1752	0	9463117	8800000	9599999
13	831930	1	8	100	1773	0	0	10298463	9600000	10399999
14	303916	3	8	75	1510	1163	1057	10604152	10400000	11199999
15	988559	3	8	75	1642	1495	1196	11596441	11200000	11999999

Total number of pulses in waveform = 32  
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## Type 5 Radar Waveform\_5

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	433687	1	5	90	1363	0	0	433687	0	749999
2	1029347	1	5	60	1951	0	0	1464397	750000	1499999
3	443287	2	5	55	1114	1134	0	1909635	1500000	2249999
4	898802	1	5	85	1670	0	0	2810685	2250000	2999999
5	420932	1	5	65	1141	0	0	3233287	3000000	3749999
6	587482	3	5	55	1527	1745	1169	3821910	3750000	4499999
7	788148	2	5	55	1061	1331	0	4614499	4500000	5249999
8	1080955	3	5	90	1761	1839	1684	5697846	5250000	5999999
9	417733	2	5	85	1055	1995	0	6120863	6000000	6749999
10	1149657	1	5	90	1263	0	0	7273570	6750000	7499999
11	584104	2	5	50	1028	1577	0	7858937	7500000	8249999
12	770611	1	5	95	1347	0	0	8632153	8250000	8999999
13	592884	3	5	70	1445	1198	1809	9226384	9000000	9749999
14	794641	1	5	100	1425	0	0	10025477	9750000	10499999
15	560392	3	5	80	1120	1387	1348	10587294	10500000	11249999
16	1278751	1	5	75	1578	0	0	11869900	11250000	11999999

Total number of pulses in waveform = 28

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## Type 5 Radar Waveform\_6

Num of Bursts = 10  
Burst Interval (us)= 1200000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	642219	2	19	65	1243	1213	0	642219	0	1199999
2	1711944	3	19	75	1114	1194	1184	2356619	1200000	2399999
3	1132351	1	19	70	1337	0	0	3492462	2400000	3599999
4	1179573	1	19	65	1972	0	0	4673372	3600000	4799999
5	744320	1	19	80	1714	0	0	5419664	4800000	5999999
6	777155	1	19	60	1262	0	0	6198533	6000000	7199999
7	1649305	2	19	80	1884	1575	0	7849100	7200000	8399999
8	1127302	3	19	50	1477	1931	1941	8979861	8400000	9599999
9	1183996	1	19	60	1549	0	0	10169206	9600000	10799999
10	1665854	1	19	65	1968	0	0	11836609	10800000	11999999

Total number of pulses in waveform = 16

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## Type 5 Radar Waveform\_7

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	107834	1	6	70	1796	0	0	107834	0	749999
2	749845	1	6	85	1758	0	0	859475	750000	1499999
3	745826	2	6	55	1036	1829	0	1607059	1500000	2249999
4	1118768	1	6	75	1688	0	0	2728692	2250000	2999999
5	799006	1	6	60	1903	0	0	3529386	3000000	3749999
6	608938	3	6	60	1555	1985	1541	4140227	3750000	4499999
7	755997	1	6	100	1906	0	0	4901305	4500000	5249999
8	947139	2	6	85	1952	1470	0	5850350	5250000	5999999
9	800728	1	6	90	1164	0	0	6554500	6000000	6749999
10	839110	2	6	85	1461	1477	0	7494774	6750000	7499999
11	270488	3	6	80	1060	1131	1046	7768200	7500000	8249999
12	534517	3	6	80	1168	1640	1340	8305954	8250000	8999999
13	1099462	3	6	85	1676	1755	1642	9409564	9000000	9749999
14	381280	1	6	80	1728	0	0	9795917	9750000	10499999
15	1042809	1	6	80	1768	0	0	10840454	10500000	11249999
16	665646	2	6	95	1571	1451	0	11507868	11250000	11999999

Total number of pulses in waveform = 28

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**Type 5 Radar Waveform\_8**

Num of Bursts = 12  
Burst Interval (us)= 1000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	7978	3	18	60	1995	1921	1473	7978	0	999999
2	1243885	1	18	55	1090	0	0	1257252	1000000	1999999
3	1478244	1	18	100	1429	0	0	2736586	2000000	2999999
4	838081	2	18	95	1803	1721	0	3576096	3000000	3999999
5	1324875	2	18	65	1836	1847	0	4904495	4000000	4999999
6	977393	2	18	75	1013	1145	0	5885571	5000000	5999999
7	305761	3	18	70	1576	1239	1641	6193490	6000000	6999999
8	1738876	2	18	50	1448	1516	0	7936822	7000000	7999999
9	882741	2	18	60	1283	1094	0	8822527	8000000	8999999
10	980062	1	18	65	1746	0	0	9804966	9000000	9999999
11	581000	1	18	65	1355	0	0	10387712	10000000	10999999
12	1215211	1	18	95	1548	0	0	11604278	11000000	11999999

Total number of pulses in waveform = 21

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**Type 5 Radar Waveform\_9**

Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	536848	2	12	65	1867	1832	0	536848	0	1333332
2	1468230	2	12	60	1218	1600	0	2008777	1333333	2666665
3	1407880	1	12	75	1761	0	0	3419475	2666666	3999998
4	1307679	3	12	70	1524	1174	1617	4728915	3999999	5333331
5	866807	2	12	70	1862	1290	0	5600037	5333332	6666664
6	1403732	1	12	90	1283	0	0	7006921	6666665	7999997
7	1255959	2	12	75	1033	1502	0	8264163	7999998	9333330
8	1143701	3	12	100	1456	1645	1910	9410399	9333331	10666663
9	1969391	2	12	65	1274	1698	0	11384801	10666664	11999996

Total number of pulses in waveform = 18

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**Type 5 Radar Waveform\_10**

Num of Bursts = 15  
Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	700134	3	9	70	1916	1647	1321	700134	0	799999
2	700631	3	9	95	1712	1683	1506	1405649	800000	1599999
3	372167	1	9	55	1349	0	0	1782717	1600000	2399999
4	1396231	1	9	95	1508	0	0	3180297	2400000	3199999
5	442555	1	9	60	1443	0	0	3624360	3200000	3999999
6	758830	3	9	60	1204	1812	1672	4384633	4000000	4799999
7	909741	2	9	50	1884	1019	0	5299062	4800000	5599999
8	827123	3	9	75	1093	1326	1777	6129088	5600000	6399999
9	494454	1	9	65	1940	0	0	6627738	6400000	7199999
10	1209038	2	9	55	1970	1466	0	7838716	7200000	7999999
11	346867	1	9	95	1047	0	0	8189019	8000000	8799999
12	1366681	2	9	90	1598	1049	0	9556747	8800000	9599999
13	704033	3	9	70	1528	1534	1051	10263427	9600000	10399999
14	593757	3	9	95	1246	1728	1228	10861297	10400000	11199999
15	444820	3	9	50	1580	1584	1153	11310319	11200000	11999999

Total number of pulses in waveform = 32

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## Type 5 Radar Waveform\_11

Num of Bursts = 18  
Burst Interval (us)= 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	377095	3	8	60	1285	1385	1256	377095	0	666666
2	420202	2	8	75	1379	1972	0	801223	666667	1333333
3	596427	3	8	70	1399	1091	1180	1401001	1333334	2000000
4	896323	3	8	65	1502	1364	1682	2300994	2000001	2666667
5	486246	2	8	100	1215	1261	0	2791788	2666668	3333334
6	1047958	2	8	100	1978	1667	0	3842222	3333335	4000001
7	771883	2	8	55	1312	1284	0	4617750	4000002	4666668
8	444405	2	8	90	1106	1126	0	5064751	4666669	5333335
9	574304	1	8	55	1436	0	0	5641287	5333336	6000002
10	595653	2	8	90	1443	1880	0	6238376	6000003	6666669
11	773361	3	8	65	1804	1675	1724	7015060	6666670	7333336
12	901276	2	8	85	1417	1696	0	7921539	7333337	8000003
13	205055	3	8	90	1284	1485	1219	8129707	8000004	8666670
14	985881	1	8	100	1985	0	0	9119576	8666671	9333337
15	723753	1	8	65	1987	0	0	9845314	9333338	10000004
16	164103	3	8	60	1628	1485	1323	10011404	10000005	10666671
17	828214	3	8	65	1516	1662	1175	10844054	10666672	11333338
18	729115	2	8	100	1045	1830	0	11577422	11333339	12000005

Total number of pulses in waveform = 40

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## Type 5 Radar Waveform\_12

Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	195370	2	10	60	1107	1385	0	195370	0	857142
2	722066	2	10	100	1429	1325	0	919928	857143	1714285
3	1147338	3	10	80	1732	1454	1948	2070020	1714286	2571428
4	954286	2	10	70	1036	1868	0	3029440	2571429	3428571
5	1148196	3	10	70	1648	1720	1795	4180540	3428572	4285714
6	694810	1	10	80	1408	0	0	4880513	4285715	5142857
7	696011	2	10	65	1065	1433	0	5577932	5142858	6000000
8	1172598	3	10	85	1481	1262	1669	6753028	6000001	6857143
9	264289	3	10	90	1077	1027	1772	7021729	6857144	7714286
10	832114	2	10	90	1444	1630	0	7857719	7714287	8571429
11	1396439	2	10	55	1428	1860	0	9257232	8571430	9428572
12	252135	3	10	100	1799	1750	1005	9512655	9428573	10285715
13	1479385	3	10	80	1283	1663	1733	10996594	10285716	11142858
14	431978	3	10	95	1091	1706	1011	11433251	11142859	12000001

Total number of pulses in waveform = 34

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## Type 5 Radar Waveform\_13

Num of Bursts = 19  
Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	135459	2	5	50	1858	1731	0	135459	0	631578
2	1083030	1	5	95	1965	0	0	1222078	631579	1263157
3	265424	3	5	50	1532	1903	1430	1489467	1263158	1894736
4	984681	3	5	75	1898	1148	1978	2479013	1894737	2526315
5	68513	1	5	85	1725	0	0	2552550	2526316	3157894
6	605078	3	5	50	1693	1885	1153	3159353	3157895	3789473
7	725957	3	5	50	1123	1660	1182	3890041	3789474	4421052
8	605549	3	5	60	1477	1333	1772	4499555	4421053	5052631
9	659126	3	5	90	1668	1271	1492	5163263	5052632	5684210
10	766823	3	5	70	1094	1938	1966	5934517	5684211	6315789
11	976968	3	5	55	1558	1034	1780	6916483	6315790	6947368
12	358534	2	5	80	1288	1617	0	7279389	6947369	7578947
13	545455	3	5	90	1937	1521	1132	7827749	7578948	8210526
14	559790	3	5	80	1339	1567	1801	8392129	8210527	8842105
15	779526	2	5	55	1585	1045	0	9176362	8842106	9473684
16	662241	1	5	80	1074	0	0	9841233	9473685	10105263
17	288132	3	5	60	1977	1547	1308	10130439	10105264	10736842
18	1131224	2	5	65	1889	1808	0	11266495	10736843	11368421
19	334960	2	5	70	1601	1130	0	11605152	11368422	12000000

Total number of pulses in waveform = 46

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## Type 5 Radar Waveform\_14

Num of Bursts = 19

Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	370951	2	14	100	1852	1417	0	370951	0	631578
2	551465	2	14	80	1708	1382	0	925685	631579	1263157
3	368155	1	14	85	1462	0	0	1296930	1263158	1894736
4	647453	1	14	80	1434	0	0	1945845	1894737	2526315
5	1203701	1	14	80	1428	0	0	3150980	2526316	3157894
6	125585	1	14	60	1679	0	0	3277993	3157895	3789473
7	770681	2	14	50	1967	1940	0	4050353	3789474	4421052
8	714772	3	14	75	1748	1868	1201	4769032	4421053	5052631
9	449001	1	14	60	1676	0	0	5222850	5052632	5684210
10	784440	3	14	90	1958	1622	1534	6008966	5684211	6315789
11	441579	1	14	100	1459	0	0	6455659	6315790	6947368
12	606890	3	14	60	1239	1259	1925	7064008	6947369	7578947
13	595361	1	14	70	1064	0	0	7663792	7578948	8210526
14	634867	2	14	55	1302	1086	0	8299723	8210527	8842105
15	813459	1	14	60	1643	0	0	9115570	8842106	9473684
16	714376	2	14	50	1839	1805	0	9831589	9473685	10105263
17	885097	2	14	65	1630	1529	0	10720330	10105264	10736842
18	294303	3	14	70	1187	1207	1761	11017792	10736843	11368421
19	750157	3	14	60	1217	1120	1578	11772104	11368422	12000000

Total number of pulses in waveform = 35

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## Type 5 Radar Waveform\_15

Num of Bursts = 9

Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	118228	1	18	75	1604	0	0	118228	0	1333332
2	1788054	2	18	75	1337	1767	0	1907886	1333333	2666665
3	779386	1	18	60	1946	0	0	2690376	2666666	3999998
4	1789823	1	18	70	1337	0	0	4482145	3999999	5333331
5	2069678	1	18	90	1924	0	0	6553160	5333332	6666664
6	426580	1	18	85	1341	0	0	6981664	6666665	7999997
7	1432996	2	18	55	1187	1866	0	8416001	7999998	9333330
8	925516	3	18	85	1641	1484	1399	9344570	9333331	10666663
9	1857733	1	18	95	1274	0	0	11206827	10666664	11999996

Total number of pulses in waveform = 13

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## Type 5 Radar Waveform\_16

Num of Bursts = 12

Burst Interval (us)= 1000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	408562	3	6	80	1534	1788	1094	408562	0	999999
2	1154542	2	6	90	1494	1155	0	1567520	1000000	1999999
3	488422	1	6	60	1006	0	0	2058591	2000000	2999999
4	1851757	2	6	80	1180	1370	0	3911354	3000000	3999999
5	635788	3	6	55	1746	1129	1643	4549692	4000000	4999999
6	1267642	1	6	70	1213	0	0	5821852	5000000	5999999
7	179989	2	6	80	1876	2000	0	6003054	6000000	6999999
8	1511214	1	6	65	1840	0	0	7518144	7000000	7999999
9	507756	2	6	100	1834	1986	0	8027740	8000000	8999999
10	1373794	2	6	100	1876	1171	0	9405354	9000000	9999999
11	844978	1	6	100	1173	0	0	10253379	10000000	10999999
12	1284966	1	6	65	1811	0	0	11539518	11000000	11999999

Total number of pulses in waveform = 21

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## Type 5 Radar Waveform\_17

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	180248	3	17	95	1296	1782	1403	180248	0	749999
2	734165	3	17	95	1025	1482	1448	918894	750000	1499999
3	680672	3	17	65	1737	1409	1540	1603521	1500000	2249999
4	1110940	1	17	90	1703	0	0	2719147	2250000	2999999
5	467116	3	17	80	1076	1095	1117	3187966	3000000	3749999
6	852373	3	17	100	1638	1600	1347	4043627	3750000	4499999
7	802324	3	17	75	1616	1354	1589	4850536	4500000	5249999
8	1074121	1	17	50	1079	0	0	5929216	5250000	5999999
9	405664	3	17	85	1618	1636	1628	6335959	6000000	6749999
10	634468	3	17	50	1206	1132	1168	6975309	6750000	7499999
11	1234543	1	17	95	1047	0	0	8213358	7500000	8249999
12	633793	3	17	70	1420	1677	1727	8848198	8250000	8999999
13	539944	3	17	75	1314	1010	1741	9392966	9000000	9749999
14	664027	3	17	60	1327	1603	1382	10061058	9750000	10499999
15	1080019	2	17	55	1893	1101	0	11145389	10500000	11249999
16	840313	2	17	70	1652	1338	0	11988696	11250000	11999999

Total number of pulses in waveform = 40

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## Type 5 Radar Waveform\_18

Num of Bursts = 9  
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	1009065	1	9	60	1402	0	0	1009065	0	1333332
2	1166675	2	9	70	1512	1710	0	2177142	1333333	2666665
3	698587	1	9	60	1380	0	0	2878951	2666666	3999998
4	1520723	2	9	65	1308	1415	0	4401054	3999999	5333331
5	1776309	3	9	80	1048	1706	1774	6180086	5333332	6666664
6	709762	1	9	60	1706	0	0	6894376	6666665	7999997
7	2060323	2	9	75	1375	1183	0	8956405	7999998	9333330
8	1320712	2	9	90	1328	1566	0	10279675	9333331	10666663
9	1638470	2	9	85	1795	1308	0	11921039	10666664	11999996

Total number of pulses in waveform = 16

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## Type 5 Radar Waveform\_19

Num of Bursts = 10  
Burst Interval (us)= 1200000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	483841	2	19	85	1792	1163	0	483841	0	1199999
2	1671638	2	19	100	1817	1288	0	2158434	1200000	2399999
3	751440	3	19	95	1242	1469	1257	2912979	2400000	3599999
4	1877901	2	19	100	1340	1668	0	4794848	3600000	4799999
5	380591	3	19	55	1143	1930	1074	5178447	4800000	5999999
6	1333033	3	19	80	1777	1669	1499	6515627	6000000	7199999
7	884655	2	19	80	1534	1724	0	7405227	7200000	8399999
8	1869042	2	19	60	1500	1993	0	9277527	8400000	9599999
9	687133	1	19	75	1169	0	0	9968153	9600000	10799999
10	1369602	3	19	80	1086	1440	1589	11338924	10800000	11999999

Total number of pulses in waveform = 23

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## Type 5 Radar Waveform\_20

Num of Bursts = 14  
Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	222501	2	12	55	1871	1934	0	222501	0	857142
2	1333203	3	12	100	2000	1482	1682	1559509	857143	1714285
3	483976	1	12	55	1363	0	0	2048649	1714286	2571428
4	728091	1	12	100	1002	0	0	2778103	2571429	3428571
5	986216	3	12	95	1196	1413	1013	3765321	3428572	4285714
6	1205745	3	12	50	1178	1438	1835	4974688	4285715	5142857
7	836725	1	12	85	1525	0	0	5815864	5142858	6000000
8	597981	3	12	90	1940	1523	1218	6415370	6000001	6857143
9	470075	2	12	85	1595	1915	0	6890126	6857144	7714286
10	849533	3	12	55	1530	1843	1428	7743169	7714287	8571429
11	897556	1	12	50	1630	0	0	8645526	8571430	9428572
12	1433461	3	12	85	1802	1614	1108	10080617	9428573	10285715
13	917880	2	12	70	1211	1679	0	11003021	10285716	11142858
14	748386	2	12	100	1541	1685	0	11754297	11142859	12000001

Total number of pulses in waveform = 30

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## Type 5 Radar Waveform\_21

Num of Bursts = 16  
Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	127043	2	8	75	1733	1989	0	127043	0	749999
2	1064885	3	8	65	1031	1113	1607	1195650	750000	1499999
3	1020825	1	8	95	1463	0	0	2220226	1500000	2249999
4	337654	3	8	95	1842	1810	1884	2559343	2250000	2999999
5	790624	2	8	85	1580	1615	0	3355503	3000000	3749999
6	774264	2	8	90	1457	1689	0	4132962	3750000	4499999
7	794537	2	8	50	1991	1607	0	4930645	4500000	5249999
8	479657	2	8	65	1049	1975	0	5413900	5250000	5999999
9	623771	2	8	95	1216	1813	0	6040695	6000000	6749999
10	1222249	3	8	50	1473	1017	1891	7265973	6750000	7499999
11	806135	1	8	90	1175	0	0	8076489	7500000	8249999
12	834859	3	8	60	1242	1218	1514	8912523	8250000	8999999
13	544941	1	8	70	1626	0	0	9461438	9000000	9749999
14	715439	2	8	90	1478	1146	0	10178503	9750000	10499999
15	490346	3	8	70	1065	1256	1004	10671473	10500000	11249999
16	635793	3	8	55	1834	1151	1030	11310591	11250000	11999999

Total number of pulses in waveform = 35

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## Type 5 Radar Waveform\_22

Num of Bursts = 20  
Burst Interval (us)= 600000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	487934	3	12	95	1966	1070	1019	487934	0	599999
2	298429	1	12	50	1266	0	0	790418	600000	1199999
3	826247	1	12	60	1978	0	0	1617931	1200000	1799999
4	691050	3	12	90	1901	1719	1155	2310959	1800000	2399999
5	289304	2	12	65	1565	1200	0	2605038	2400000	2999999
6	626253	1	12	65	1152	0	0	3234056	3000000	3599999
7	893530	1	12	65	1483	0	0	4128738	3600000	4199999
8	666638	2	12	100	1437	1450	0	4796859	4200000	4799999
9	83365	1	12	80	1251	0	0	4883111	4800000	5399999
10	676550	3	12	75	1306	1735	1026	5763114	5400000	5999999
11	878752	3	12	60	1855	1794	1300	6443731	6000000	6599999
12	240880	3	12	65	1441	1537	1379	6689560	6600000	7199999
13	1051333	3	12	65	1505	1162	1115	7745250	7200000	7799999
14	329460	1	12	65	1846	0	0	8078492	7800000	8399999
15	623936	2	12	85	1119	1133	0	8704273	8400000	8999999
16	620467	2	12	50	1239	1009	0	9326982	9000000	9599999
17	288341	1	12	70	1499	0	0	9617571	9600000	10199999
18	635118	2	12	95	1078	1003	0	10254188	10200000	10799999
19	610678	3	12	100	1957	1620	1365	10866947	10800000	11399999
20	1075677	2	12	80	1783	1382	0	11947566	11400000	11999999

Total number of pulses in waveform = 40

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## Type 5 Radar Waveform\_23

Num of Bursts = 17  
Burst Interval (us)= 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	360285	3	10	55	1944	1837	1931	360285	0	705881
2	938290	2	10	70	1411	1576	0	1304287	705882	1411763
3	416955	2	10	75	1678	1973	0	1724229	1411764	2117645
4	957453	2	10	55	1862	1031	0	2685333	2117646	2823527
5	552696	2	10	95	1914	1052	0	3240922	2823528	3529409
6	508482	2	10	50	1585	1987	0	3752370	3529410	4235291
7	858822	2	10	55	1455	1874	0	4614764	4235292	4941173
8	620354	1	10	95	1233	0	0	5238447	4941174	5647055
9	1078431	2	10	100	1537	1943	0	6318111	5647056	6352937
10	164270	2	10	50	1458	1834	0	6485861	6352938	7058819
11	961503	2	10	75	1892	1102	0	7450656	7058820	7764701
12	857903	1	10	90	1594	0	0	8311553	7764702	8470583
13	467166	1	10	85	1890	0	0	8780313	8470584	9176465
14	982293	2	10	95	1943	1146	0	9764496	9176466	9882347
15	393414	1	10	100	1419	0	0	10160999	9882348	10588229
16	935877	3	10	65	1728	1908	1007	11098295	10588230	11294111
17	695700	3	10	100	1759	1859	1844	11798638	11294112	11999993

Total number of pulses in waveform = 33

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## Type 5 Radar Waveform\_24

Num of Bursts = 15  
Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	248530	1	5	60	1420	0	0	248530	0	799999
2	1110954	1	5	100	1767	0	0	1360904	800000	1599999
3	824992	1	5	60	1391	0	0	2187663	1600000	2399999
4	380132	3	5	50	1295	1077	1631	2569186	2400000	3199999
5	1042003	3	5	80	1650	1614	1034	3615192	3200000	3999999
6	993176	3	5	50	1751	1553	1553	4612666	4000000	4799999
7	334088	1	5	75	1919	0	0	4951611	4800000	5599999
8	1168063	2	5	75	1392	1367	0	6121593	5600000	6399999
9	469113	2	5	85	1693	1379	0	6593465	6400000	7199999
10	630309	3	5	70	1890	1081	1633	7226846	7200000	7999999
11	1477622	2	5	80	1348	1069	0	8709072	8000000	8799999
12	406015	3	5	75	1334	1258	1699	9117504	8800000	9599999
13	1069463	1	5	70	1145	0	0	10191268	9600000	10399999
14	293613	2	5	80	1641	1698	0	10486026	10400000	11199999
15	1147387	3	5	90	1531	1644	1298	11636752	11200000	11999999

Total number of pulses in waveform = 31

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## Type 5 Radar Waveform\_25

Num of Bursts = 17  
Burst Interval (us)= 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	42758	2	18	60	1366	1390	0	42758	0	705881
2	1090076	1	18	80	1860	0	0	1135590	705882	1411763
3	688021	1	18	60	1360	0	0	1825471	1411764	2117645
4	928652	3	18	85	1379	1952	1568	2755483	2117646	2823527
5	747878	3	18	60	1682	1204	1897	3508260	2823528	3529409
6	584419	2	18	75	1635	1592	0	4097462	3529410	4235291
7	701419	2	18	50	1667	1690	0	4802108	4235292	4941173
8	481354	1	18	85	1010	0	0	5286819	4941174	5647055
9	591098	3	18	50	1798	1782	1888	5878927	5647056	6352937
10	979135	3	18	65	1495	1896	1745	6863530	6352938	7058819
11	588679	1	18	50	1298	0	0	7457345	7058820	7764701
12	444623	2	18	90	1157	1283	0	7903266	7764702	8470583
13	655154	1	18	70	1010	0	0	8560860	8470584	9176465
14	622996	1	18	65	1250	0	0	9184866	9176466	9882347
15	834057	1	18	60	1078	0	0	10020173	9882348	10588229
16	626152	2	18	70	1333	1862	0	10647403	10588230	11294111
17	647492	3	18	65	1545	1492	1772	11298090	11294112	11999993

Total number of pulses in waveform = 32

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## Type 5 Radar Waveform\_26

Num of Bursts = 17  
Burst Interval (us)= 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	260629	2	6	95	1146	1209	0	260629	0	705881
2	460604	1	6	75	1532	0	0	723588	705882	1411763
3	1291728	3	6	80	1387	1807	1429	2016848	1411764	2117645
4	475260	3	6	75	1563	1196	1325	2496731	2117646	2823527
5	882028	1	6	65	1117	0	0	3382843	2823528	3529409
6	560778	3	6	50	1743	1940	1993	3944738	3529410	4235291
7	702004	2	6	95	1866	1833	0	4652418	4235292	4941173
8	760436	3	6	50	1977	1659	1014	5416553	4941174	5647055
9	350334	3	6	55	1998	1833	1598	5771537	5647056	6352937
10	1243917	3	6	60	1204	1949	1096	7020883	6352938	7058819
11	97368	1	6	95	1552	0	0	7122500	7058820	7764701
12	937826	2	6	70	1464	1797	0	8061878	7764702	8470583
13	812925	1	6	65	1626	0	0	8878064	8470584	9176465
14	459727	2	6	70	1233	1602	0	9339417	9176466	9882347
15	594698	1	6	100	1271	0	0	9936950	9882348	10588229
16	762837	3	6	60	1273	1417	1796	10701058	10588230	11294111
17	704184	3	6	55	1112	1492	1611	11409728	11294112	11999993

Total number of pulses in waveform = 37

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## Type 5 Radar Waveform\_27

Num of Bursts = 13  
Burst Interval (us)= 923077

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	39551	2	14	65	1338	1997	0	39551	0	923076
2	1763462	2	14	60	1530	1703	0	1806348	923077	1846153
3	465841	1	14	100	1769	0	0	2275422	1846154	2769230
4	1213092	1	14	70	1135	0	0	3490283	2769231	3692307
5	619842	3	14	95	1072	1818	1386	4111260	3692308	4615384
6	1017560	2	14	100	1808	1779	0	5133096	4615385	5538461
7	1099365	1	14	60	1265	0	0	6236048	5538462	6461538
8	312799	3	14	90	1328	1130	1832	6550112	6461539	7384615
9	1246431	1	14	65	1220	0	0	7800833	7384616	8307692
10	523152	3	14	55	1641	1790	1813	8325205	8307693	9230769
11	1456439	2	14	80	1663	1969	0	9786888	9230770	10153846
12	439256	2	14	100	1273	1202	0	10229776	10153847	11076923
13	1622964	2	14	85	1207	1903	0	11855215	11076924	12000000

Total number of pulses in waveform = 25

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## Type 5 Radar Waveform\_28

Num of Bursts = 17  
Burst Interval (us)= 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	461508	3	9	50	1130	1672	1737	461508	0	705881
2	349547	3	9	90	1757	1996	1721	815594	705882	1411763
3	1222203	1	9	65	1836	0	0	2043271	1411764	2117645
4	133757	2	9	80	1605	1453	0	2178864	2117646	2823527
5	819865	2	9	55	1955	1130	0	3001787	2823528	3529409
6	1116380	2	9	100	1069	1257	0	4121232	3529410	4235291
7	493240	2	9	100	1930	1912	0	4616798	4235292	4941173
8	679684	2	9	55	1943	1960	0	5300324	4941174	5647055
9	715038	3	9	65	1832	1883	1348	6019265	5647056	6352937
10	840377	3	9	55	1830	1480	1097	6864705	6352938	7058819
11	876671	3	9	80	1751	1611	1577	7745783	7058820	7764701
12	660792	1	9	65	1669	0	0	8411514	7764702	8470583
13	636187	1	9	50	1320	0	0	9049270	8470584	9176465
14	139353	3	9	80	1258	1503	1598	9189943	9176466	9882347
15	853459	1	9	85	1344	0	0	10047761	9882348	10588229
16	586784	1	9	85	1105	0	0	10635889	10588230	11294111
17	877820	2	9	85	1285	1708	0	11514814	11294112	11999993

Total number of pulses in waveform = 35

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**Type 5 Radar Waveform\_29**

Num of Bursts = 15  
Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	236305	3	19	95	1069	1843	1448	236305	0	799999
2	839811	2	19	60	1750	1056	0	1080476	800000	1599999
3	902253	1	19	75	1775	0	0	1985535	1600000	2399999
4	747898	2	19	55	1749	1015	0	2735208	2400000	3199999
5	1238532	2	19	75	1602	1206	0	3976504	3200000	3999999
6	157649	2	19	75	1285	1711	0	4136961	4000000	4799999
7	720818	2	19	100	1044	1317	0	4860775	4800000	5599999
8	1203870	2	19	60	1148	1806	0	6067006	5600000	6399999
9	626633	3	19	80	1869	1506	1274	6696593	6400000	7199999
10	992952	2	19	65	1301	1853	0	7694194	7200000	7999999
11	394029	1	19	60	1821	0	0	8091377	8000000	8799999
12	1320742	1	19	90	1912	0	0	9413940	8800000	9599999
13	681394	2	19	75	1707	1410	0	10097246	9600000	10399999
14	1042533	1	19	65	1397	0	0	11142896	10400000	11199999
15	773824	1	19	70	1492	0	0	11918117	11200000	11999999

Total number of pulses in waveform = 27  
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**Type 5 Radar Waveform\_30**

Num of Bursts = 8  
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri (us)	Pulse 2 Pri (us)	Pulse 3 Pri (us)	Start Loc (us)	Start Burst Interval (us)	End Burst Interval (us)
1	1113788	1	17	55	1512	0	0	1113788	0	1499999
2	1332876	3	17	65	1643	1633	1988	2448176	1500000	2999999
3	953664	2	17	55	1324	1239	0	3407104	3000000	4499999
4	2007507	1	17	70	1870	0	0	5417174	4500000	5999999
5	1114965	2	17	55	1965	1025	0	6534009	6000000	7499999
6	2184631	1	17	55	1799	0	0	8721630	7500000	8999999
7	1636886	3	17	100	1087	1567	1823	10360315	9000000	10499999
8	1381725	1	17	65	1651	0	0	11746517	10500000	11999999

Total number of pulses in waveform = 14  
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## 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	5254	1	16	5290	1
2	5254	1	17	5294	1
3	5254	1	18	5298	1
4	5258	1	19	5302	1
5	5262	1	20	5306	1
6	5266	1	21	5310	1
7	5270	1	22	5310	1
8	5270	1	23	5310	1
9	5270	1	24	5314	1
10	5274	1	25	5318	1
11	5278	1	26	5320	1
12	5282	1	27	5324	1
13	5286	1	28	5326	1
14	5290	1	29	5326	1
15	5290	1	30	5326	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5294	36	76	5274	228
25	5281	75	82	5261	246
47	5284	141	86	5255	258
52	5315	156	93	5278	279
59	5310	177	94	5253	282
66	5323	198	--	--	--
67	5307	201	--	--	--
69	5288	207	--	--	--
74	5306	222	--	--	--
75	5328	225	--	--	--
76	5325	228	--	--	--
79	5337	237	--	--	--
84	5311	252	--	--	--
91	5308	273	--	--	--
96	5295	288	--	--	--

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5263	30	4	5266	12
21	5256	63	20	5283	60
29	5272	87	22	5273	66
57	5284	171	24	5250	72
71	5288	213	59	5289	177
84	5260	252	63	5272	189
--	--	--	64	5274	192
--	--	--	77	5256	231
--	--	--	78	5287	234

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
35	5273	105	0	5265	0
41	5257	123	52	5264	156
49	5269	147	56	5269	168
54	5281	162	63	5287	189
77	5251	231	73	5281	219
78	5253	234	99	5290	297
93	5279	279	--	--	--

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
33	5295	99	0	5307	0
44	5290	132	11	5304	33
66	5265	198	22	5288	66
67	5281	201	49	5298	147
87	5272	261	62	5296	186
98	5279	294	67	5270	201
--	--	--	68	5282	204
--	--	--	70	5269	210
--	--	--	78	5276	234
--	--	--	80	5314	240
--	--	--	90	5274	270

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
15	5306	45	21	5308	63
38	5285	114	27	5293	81
51	5295	153	30	5276	90
52	5298	156	32	5291	96
61	5305	183	41	5257	123
64	5269	192	46	5264	138
65	5261	195	47	5297	141
70	5279	210	65	5286	195
84	5282	252	67	5271	201
92	5289	276	71	5250	213
96	5316	288	75	5266	225
--	--	--	79	5294	237
--	--	--	91	5301	273
--	--	--	92	5280	276
--	--	--	96	5268	288
--	--	--	98	5290	294
--	--	--	99	5252	297

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5282	0	3	5292	9
9	5253	27	18	5301	54
24	5303	72	30	5280	90
30	5263	90	56	5314	168
47	5255	141	57	5315	171
62	5291	186	75	5293	225
72	5293	216	93	5286	279
79	5290	237	97	5290	291
91	5312	273	99	5303	297
96	5308	288	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5273	9	13	5317	39
4	5275	12	26	5289	78
15	5279	45	31	5319	93
19	5290	57	34	5311	102
35	5315	105	36	5304	108
39	5288	117	53	5275	159
40	5302	120	69	5298	207
43	5314	129	73	5291	219
48	5308	144	82	5296	246
62	5270	186	88	5280	264
67	5260	201	--	--	--
83	5277	249	--	--	--
88	5305	264	--	--	--
91	5310	273	--	--	--
92	5272	276	--	--	--
96	5267	288	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5299	36	22	5327	66
16	5324	48	24	5295	72
18	5277	54	33	5312	33
19	5325	57	34	5315	102
21	5282	63	40	5291	120
41	5321	123	42	5303	126
44	5278	132	43	5320	129
49	5310	147	49	5275	147
58	5288	174	51	5296	153
60	5286	180	54	5301	162
70	5318	210	55	5274	165
74	5271	222	59	5282	177
81	5268	243	64	5308	192
96	5315	288	69	5286	207
99	5267	297	77	5271	231
--	--	--	83	5280	249
--	--	--	97	5309	291

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5327	3	2	5306	6
6	5339	18	5	5281	15
10	5353	30	8	5278	24
22	5349	66	12	5293	36
23	5350	69	18	5301	54
35	5329	105	20	5292	60
39	5300	117	22	5291	66
40	5347	120	24	5285	72
41	5343	123	29	5309	87
43	5346	129	35	5326	105
48	5322	144	50	5318	150
49	5354	147	56	5313	168
53	5334	159	78	5315	234
80	5318	240	--	--	--
85	5312	255	--	--	--
97	5319	291	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5311	18	2	5319	6
7	5302	21	9	5310	27
8	5283	24	10	5294	30
11	5298	33	17	5286	51
13	5280	39	24	5301	72
23	5284	69	29	5305	87
26	5326	78	51	5332	153
27	5321	81	71	5338	213
31	5277	93	75	5284	225
43	5281	129	86	5288	258
56	5328	168	92	5339	276
57	5285	171	95	5295	285
63	5292	189	--	--	--
68	5290	204	--	--	--
95	5293	285	--	--	--

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5313	9	0	5338	0
29	5301	87	12	5307	36
33	5291	99	13	5337	39
72	5339	216	32	5327	96
86	5316	258	40	5311	120
94	5332	282	70	5335	210
--	--	--	71	5343	213
--	--	--	87	5315	261
--	--	--	94	5305	282

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5315	3	14	5326	42
13	5305	39	33	5320	99
17	5337	51	38	5348	114
33	5342	99	40	5336	120
49	5343	147	41	5310	123
52	5314	156	48	5352	144
66	5339	198	64	5294	192
78	5296	234	65	5299	195
81	5334	243	70	5292	210
97	5325	291	72	5295	216
--	--	--	81	5301	243
--	--	--	89	5347	267
--	--	--	92	5349	276
--	--	--	96	5334	288

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5295	18	1	5301	3
34	5306	102	5	5307	15
35	5324	105	22	5356	66
39	5303	117	29	5341	87
48	5338	144	41	5298	123
53	5329	159	55	5335	165
57	5326	171	59	5337	177
79	5343	237	69	5314	207
84	5304	252	77	5315	231
86	5348	258	80	5311	240
90	5313	270	81	5358	243
98	5307	294	88	5334	264
--	--	--	90	5343	270
--	--	--	99	5353	297

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
20	5282	60	3	5315	9
23	5259	69	15	5275	45
36	5301	108	17	5312	51
38	5277	114	34	5260	102
41	5280	123	36	5267	108
60	5294	180	61	5297	183
75	5283	225	62	5263	186
--	--	--	70	5289	210
--	--	--	88	5277	264
--	--	--	95	5306	285
--	--	--	98	5316	294

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5299	3	14	5308	42
3	5332	9	16	5331	48
12	5331	36	25	5309	75
16	5285	48	29	5333	87
25	5326	75	31	5311	93
26	5330	78	38	5351	114
27	5314	81	41	5348	123
46	5339	138	44	5322	132
55	5316	165	45	5355	135
60	5338	180	48	5340	144
62	5306	186	52	5307	156
67	5292	201	58	5354	174
79	5286	237	68	5337	204
90	5328	270	73	5319	219
--	--	--	75	5297	225
--	--	--	81	5342	243
--	--	--	89	5349	267

## 6. CONCLUSION

The data collected relate only the item(s) tested and show that the **Wireless Access Point, Model No.: WO4A-AC400, WO4B-AC400, WO4C-AC400, FCC ID: TK4WPJ428** is in compliance with Part 15E of the FCC Rules.

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