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Report No.: 1608TW0110-U15
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DFS MEASUREMENT REPORT
FCC PART 15 Subpart E & IC RSS-247

FCC ID:	2AD8UFZCWO4A1
IC:	109D-FZCWO4A1
APPLICANT:	Nokia Solutions and Networks
Application Type:	Certification
Product:	Wi-Fi AP 4x4 OD ext. antenna US
	Wi-Fi AP 4x4 OD omni antenna US
	Wi-Fi AP 4x4 OD direct antenna US
	Wi-Fi AP 4x4 OD small omni antenna US
Model No.:	WO4C-AC400
Brand Name:	Nokia
FCC Classification:	Unlicensed National Information Infrastructure (UNII)
IC Rule(s):	RSS-247 Issue 2, RSS-Gen Issue 4
FCC Rule Part(s):	Part 15 Subpart E - 15.407 Section (h)(2)
	KDB 905462 D02v02, KDB 905462 D04v01
Type of Device:	☒ Master Device
	☐ Client Device (No radar detection)
	☐ Client Device with radar detection
Test Date:	December 02, 2016 ~ January 19, 2017

Reviewed By : *Paddy Chen*

(Paddy Chen)

Approved By : *Chenz Ker*

(Chenz Ker)

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TAF
Testing Laboratory
3261

Revision History

Report No.	Version	Description	Issue Date	Note
1608TW0110-U15	Rev. 01	Initial Report	07-31-2017	Valid

CONTENTS

§2.1033 General Information

Applicant:	Nokia Solutions and Networks
Applicant Address:	Karaportti 3, FI-02610 Espoo, Finland
Manufacturer:	Nokia Solutions and Networks
Manufacturer Address:	Karaportti 3, FI-02610 Espoo, Finland
Test Site:	MRT Technology (Taiwan) Co., Ltd
Test Site Address:	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.:	153292
MRT IC Registration No.:	21723-1
Model No.:	WO4C-AC400
FCC ID:	2AD8UFZCWO4A1
IC:	109D-FZCWO4A1
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering
FCC Classification:	Unlicensed National Information Infrastructure (UNII)

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Fuxing Rd., Taoyuan, Taiwan (R.O.C)

- **MRT facility is a FCC registered (Reg. No. 153292) test facility with the site description report on file and is designated by the FCC as an Accredited Test Film.**

- **MRT facility is an IC registered (MRT Reg. No. 21723-1) test laboratory with the site description on file at Industry Canada.**

- **MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (TAF) under the American Association for Laboratory Accreditation Program (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC, Industry Taiwan, EU and TELEC Rules.**
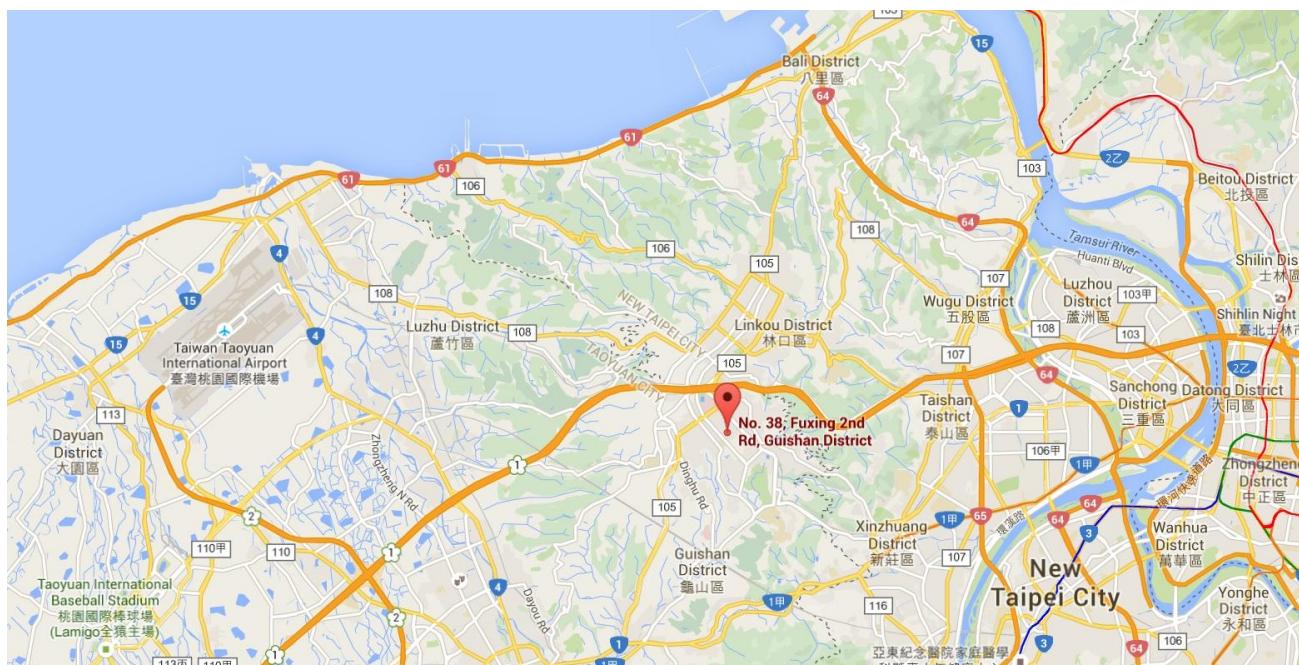
1.   INTRODUCTION

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 Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	Wi-Fi AP 4X4 OD ext. antenna US; Wi-Fi AP 4x4 OD omni antenna US; Wi-Fi AP 4x4 OD direct. antenna US; Wi-Fi AP 4x4 OD small omni antenna US
Model No.	WO4C-AC400
Radio Type	Intentional Transceiver
Operation Mode	Master Device
Frequency Range	**2.4GHz:** For 802.11b/g/n-HT20: 2412 ~ 2462 MHz For 802.11n-HT40: 2422 ~ 2452 MHz **5GHz:** For 802.11a/n-HT20: 5180~5320MHz, 5500~5700MHz, 5745~5825MHz For 802.11ac-VHT20: 5180~5320MHz, 5500~5720MHz, 5745~5825MHz For 802.11n-HT40: 5190~5310MHz, 5510~5670MHz, 5755~5795MHz For 802.11ac-VHT40: 5190~5310MHz, 5510~5710MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5690MHz, 5775MHz For 802.11ac-VHT80+80: 5210 MHz + 5290 MHz, 5210 MHz + 5530 MHz, 5210 MHz + 5610 MHz, 5210 MHz + 5690 MHz, 5210 MHz + 5775 MHz, 5290 MHz + 5530 MHz, 5290 MHz + 5610 MHz, 5290 MHz + 5690 MHz, 5290 MHz + 5775 MHz, 5530 MHz + 5610 MHz, 5530 MHz + 5690 MHz, 5530 MHz + 5775 MHz, 5610 MHz + 5690 MHz, 5610 MHz + 5775 MHz, 5690 MHz + 5775 MHz
Type of Modulation	802.11a/n/ac: OFDM;

Modulation Type	16QAM, 64QAM, QPSK, BPSK for OFDM 802.11a/n/ac: OFDM
Power-on cycle	For 802.11a mode, requires 132.3 seconds to complete its power-on cycle; For 802.11ac-VHT80+80 mode, requires 135.4 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.

Note 1: We select the POE adapter (M/N: PoE35-54A) to perform all RF testing.

Note 2: The product name difference as below:

● when the device has been connected the Galtronics Omni antenna, the product name is "Wi-Fi AP 4x4 OD omni antenna US";

● when the device has been connected the Galtronics Directional antenna, the product name is "Wi-Fi AP 4x4 OD direct. antenna US";

● when the device has been connected the PCTEL antenna & HUBER+SUHNER, the product name is "Wi-Fi AP 4X4 OD ext. antenna US";

● when the device has been connected the Galtronics Small Omni antenna, the product name is "Wi-Fi AP 4x4 OD small omni antenna US

2.2. Description of Available Antennas

Antenna	Manufacturer	Frequency Band (GHz)	Product Number	Tx Paths
	PCTEL, Inc.	2.4	FPMI2458-DP4RPSMA	4
		5		4
		2.4	FPMI2458-DP2RPSMA	2
		5		2
	Galtronics	2.4	Galtronics Omni Antenna	2
		5		2
		2.4	Galtronics Directional Antenna	2
		5		2
		2.4	Galtronics Small Omni Antenna	2
		5		2
	HUBER+ SUHNER	5	Sector-Antenna 1356.17.0011	1
		5	Directional Antenna 1356.17.0077	1

Note 1: This device make the transmission with two "FPMI2458-DP2RPSMA" directional antenna, there is not any superposition of transmit signal between two antennas.

Note 2: For "FPMI2458-DP2RPSMA" directional antenna, one antenna port be connected with device's Ant 0 & Ant 1, the other antenna port be connect with device's Ant 2 & Ant 3, and this installation has been showed in the professional installation manual.

Note 3: For HUBER+SUHNER antenna, this device make the transmission with four antenna, they

were installed by the four sides of the perpendicular. So the antenna was Independent of each other and had no MIMO, CDD or Beamforming mode.

Product Number	Frequency Band (MHz)	Tx Paths	Per Chain Max Antenna Gain (dBi)				Beam Forming Directional Gain (dBi)	CDD Directional Gain (dBi)
			Ant 0	Ant 1	Ant 2	Ant 3		
FPMI2458-DP4RPSMA	2412 ~2462	4	6.70	6.40	6.80	6.80	12.70	12.70
	5150 ~ 5250	4	5.79	5.57	5.89	5.05	11.60	11.60
	5150 ~ 5250 30°elevation angle	4	5.10	2.27	4.94	4.06	N/A	N/A
	5250 ~ 5350	4	5.68	5.53	5.65	4.91	11.47	11.47
	5470 ~ 5725	4	5.46	5.21	6.06	5.65	11.62	11.62
	5725 ~ 5850	4	5.24	5.09	6.73	5.62	11.71	11.71
FPMI2458-DP2RPSMA	2412 ~2462	2	6.70	6.40	--	--	9.56	9.56
			--	--	6.70	6.40	9.56	9.56
	5150 ~ 5250	2	5.79	5.57	--	--	8.69	8.69
			--	--	5.79	5.57	8.69	8.69
	5150 ~ 5250 30°elevation angle	2	5.10	2.27	--	--	N/A	N/A
			--	--	5.10	2.27	N/A	N/A
	5250 ~ 5350	2	5.68	5.53	--	--	8.62	8.62
			--	--	5.68	5.53	8.62	8.62
	5470 ~ 5725	2	5.46	5.21	--	--	8.35	8.35
			--	--	5.46	5.21	8.35	8.35
	5725 ~ 5850	2	5.24	5.09	--	--	8.18	8.18
			--	--	5.24	5.09	8.18	8.18

Product Number	Frequency Band (MHz)	Tx Paths	Per Chain Max Antenna Gain (dBi)				Beam Forming Directional Gain (dBi)	CDD Directional Gain (dBi)
			Ant 0	Ant 1	Ant 2	Ant 3		
Galtronics Omni Antenna	2412 ~2462	2	2.93	3.02	2.93	3.02	9.00	9.00
	5150 ~ 5250	2	6.68	6.53	6.68	6.53	12.63	12.63
	5150 ~ 5250 30°elevation angle	2	-1.32	-1.53	-1.32	-1.53	N/A	N/A
	5250 ~ 5350	2	6.68	6.53	6.68	6.53	12.63	12.63
	5470 ~ 5725	2	6.60	5.92	6.60	5.92	12.29	12.29
	5725 ~ 5850	2	6.78	6.55	6.78	6.55	12.69	12.69
Galtronics Directional Antenna	2412 ~2462	2	6.75	6.75	6.75	6.75	12.77	12.77
	5150 ~ 5250	2	8.39	8.16	8.39	8.16	14.30	14.30
	5150 ~ 5250 30°elevation angle	2	-1.54	-2.86	-1.54	-2.86	N/A	N/A
	5250 ~ 5350	2	8.39	8.16	8.39	8.16	14.30	14.30
	5470 ~ 5725	2	8.49	8.57	8.49	8.57	14.55	14.55
	5725 ~ 5850	2	8.92	8.82	8.92	8.82	14.89	14.89
Galtronics Small Omni Antenna	2412 ~2462	2	2.69	2.41	2.69	2.41	8.57	8.57
	5150 ~ 5250	2	3.27	3.85	3.27	3.85	9.59	9.59
	5150 ~ 5250 30°elevation angle	2	3.20	3.81	3.20	3.81	N/A	N/A
	5250 ~ 5350	2	2.77	3.30	2.77	3.30	9.06	9.06
	5470 ~ 5725	2	3.43	3.81	3.43	3.81	9.64	9.64
	5725 ~ 5850	2	4.35	4.30	4.35	4.30	10.35	10.35

Product Number	Frequency Band (MHz)	Tx Paths	Per Chain Max Antenna Gain (dBi)				Beam Forming Directional Gain (dBi)	CDD Directional Gain (dBi)
			Ant 0	Ant 1	Ant 2	Ant 3		
Sector-Antenna 1356.17.0011	5150 ~ 5250	1	16.00	16.00	16.00	16.00	N/A	N/A
	5150 ~ 5250 30°elevation angle	1	-1.22	-1.22	-1.22	-1.22	N/A	N/A
	5250 ~ 5350	1	16.00	16.00	16.00	16.00	N/A	N/A
	5470 ~ 5725	1	16.50	16.50	16.50	16.50	N/A	N/A
	5725 ~ 5850	1	17.00	17.00	17.00	17.00	N/A	N/A
Directional Antenna 1356.17.0077	5150 ~ 5250	1	14.00	14.00	14.00	14.00	N/A	N/A
	5150 ~ 5250 30°elevation angle	1	1.52	1.52	1.52	1.52	N/A	N/A
	5250 ~ 5350	1	14.00	14.00	14.00	14.00	N/A	N/A
	5470 ~ 5725	1	14.00	14.00	14.00	14.00	N/A	N/A
	5725 ~ 5850	1	14.00	14.00	14.00	14.00	N/A	N/A

Note

1. The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11a/b/g mode, and CDD signals are correlated.

2. The EUT supports Beam Forming technology for 802.11n/ac mode, and exclude 802.11b/g mode. Correlated signals include, but are not limited to, signals transmitted in any of the following modes:

   - Any transmit Beam Forming mode, whether fixed or adaptive (e.g., phased array modes, closed loop MIMO modes, Transmitter Adaptive Antenna modes, Maximum Ratio Transmission (MRT) modes, and Statistical Eigen Beam Forming (EBF) modes).

   - CDD signals are correlated and create unintended array gain that varies with signal bandwidth, antenna geometry, and cyclic delay values. Consequently, depending on system parameters, it may be appropriate to use different values of array gain for compliance with power limits versus compliance with power spectral density limits.

3. Unequal Antenna gains, with equal transmit powers. For Antenna gains given by G_1, G_2, …, G_N dBi transmit signals are correlated, then

   - Directional gain = $10*\log[(10^{G1/20} + 10^{G2/20} + … + 10^{GN/20})^2/N_{ANT}]$ dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

- For example (FPMI2458-DP4RPSMA Antenna): 5150 ~ 5250MHz Directional Gain = $10 \times \log[(10^{5.79/20} + 10^{5.57/20} + 10^{5.89/20} + 10^{5.05/20})^2/4]$ = 11.60 dBi

2.3. Description of Antenna RF Port

Antenna RF Port								
---	2.4GHz RF Port				5GHz RF Port			
Software Control Port	Ant 0	Ant 1	Ant 2	Ant 3	Ant 0	Ant 1	Ant 2	Ant 3

2.4. DFS Band Carrier Frequencies Operation

802.11a/n-HT20 Center Working Frequency of Each Channel

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 MH z
132	5660 MHz	136	5680 MHz	140	5700 MHz

802.11ac-VHT20 Center Working Frequency of Each Channel

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 Center Working Frequency of Each Channel

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	--	--	--	--

802.11ac-VHT40 Center Working Frequency of Each Channel

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	5710MHz	--	--

802.11ac-VHT80 Center Working Frequency of Each Channel

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

802.11ac-VHT80+80 Center Working Frequency of Each Channel

Channel	Frequency	Channel	Frequency
58 + 106	5290 MHz + 5530 MHz	58 + 122	5290 MHz + 5610 MHz
58 + 138	5290 MHz + 5690 MHz	58 + 155	5290 MHz + 5775 MHz
106 + 122	5530 MHz + 5610 MHz	106 + 138	5530 MHz + 5690 MHz
106 + 155	5530 MHz + 5775 MHz	122 + 138	5610 MHz + 5690 MHz
122 + 155	5610 MHz + 5775 MHz	138+ 155	5690 MHz + 5775 MHz
138+ 155	5690 MHz + 5775 MHz	--	--

Note: The device can't operate in 5600~5650 MHz band in Canada (The frequency of blue font).

2.5. Test Mode

Test Mode	Mode 1: Communication with Notebook & "WW WI-FI AP 4X4 OD ext. antenna" client mode

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 ≥ 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
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. **Note 2:** 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. **Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

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	$\text{Roundup}\left\{ \dfrac{\left(\dfrac{1}{360}\right)\cdot}{\left(\dfrac{19\cdot10^6}{PRI_{usec}}\right)} \right\}$	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
Note 1: 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.
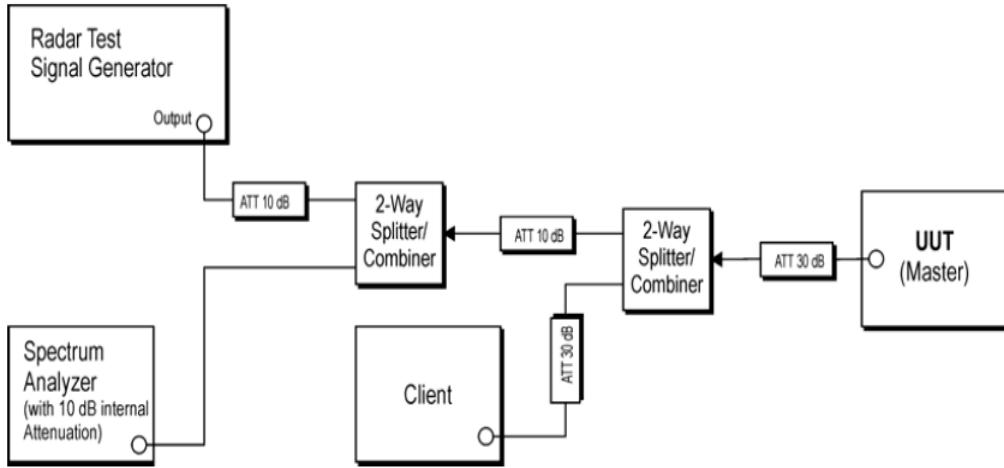
Figure 3-1: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters

4. TEST EQUIPMENT CALIBRATION DATE

Dynamic Frequency Selection (DFS) – TR3

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2017/07/11
MXG X-Series Microwave Analog Signal Generator	KEYSIGHT	N5183B	MRTTWA00013	1 year	2017/04/18
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2017/06/09
Combiner	WOKEN	0120N02208001D	MRTTWA00040	1 year	N/A
Broadband Hornantenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2017/04/06

Client Information

Instrument	Manufacturer	Type No.
Wireless Network Adapter	Intel	7260HMW
Wi-Fi AP 4x4 OD ext. antenna US	Nokia	WO4A-AC400

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: **Nokia Solutions and Networks**
FCC ID: **2AD8UFZCWO4A1**
IC: **109D-FZCWO4A1**

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.
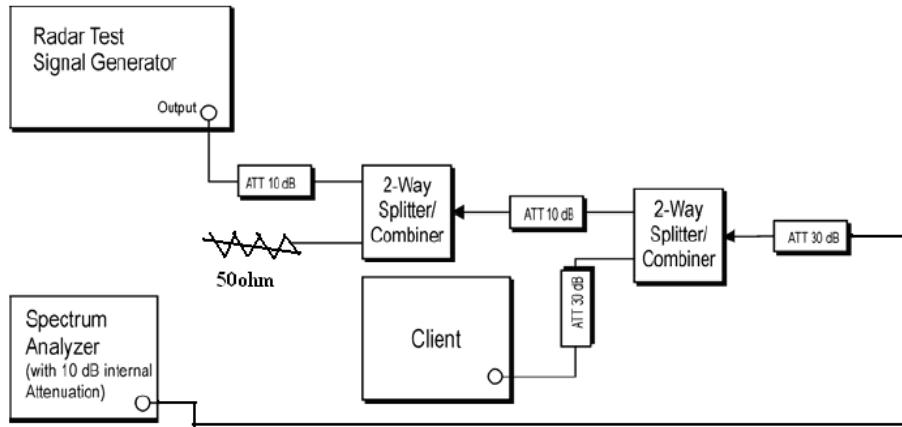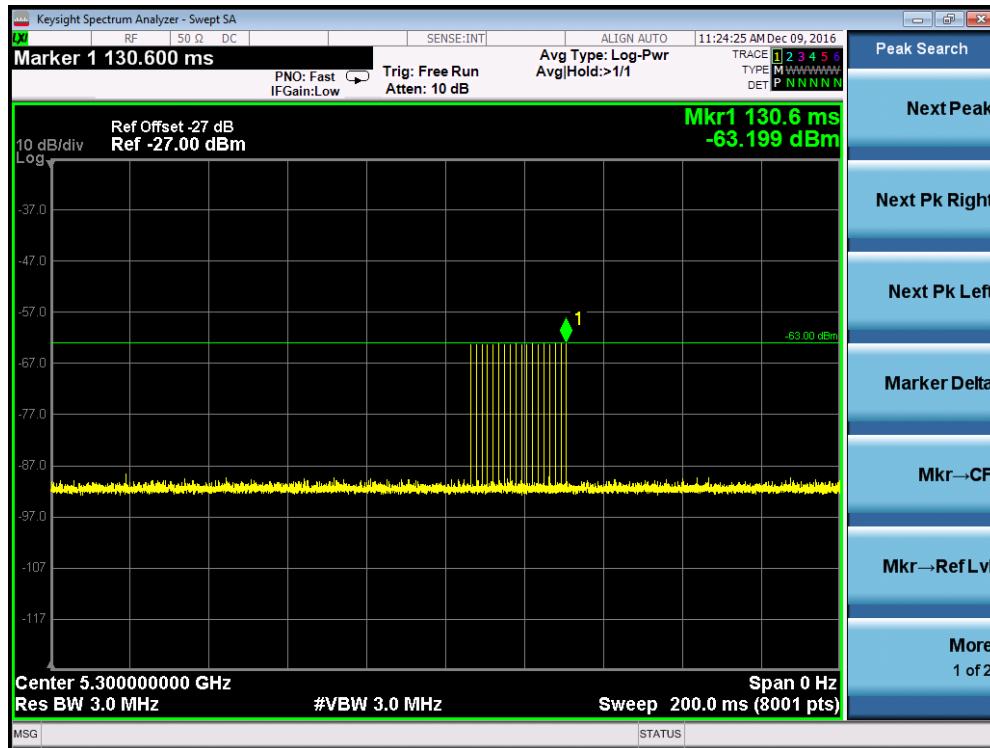
Figure 3-2: Conducted Test Setup

5.2.2. Calibration Procedure
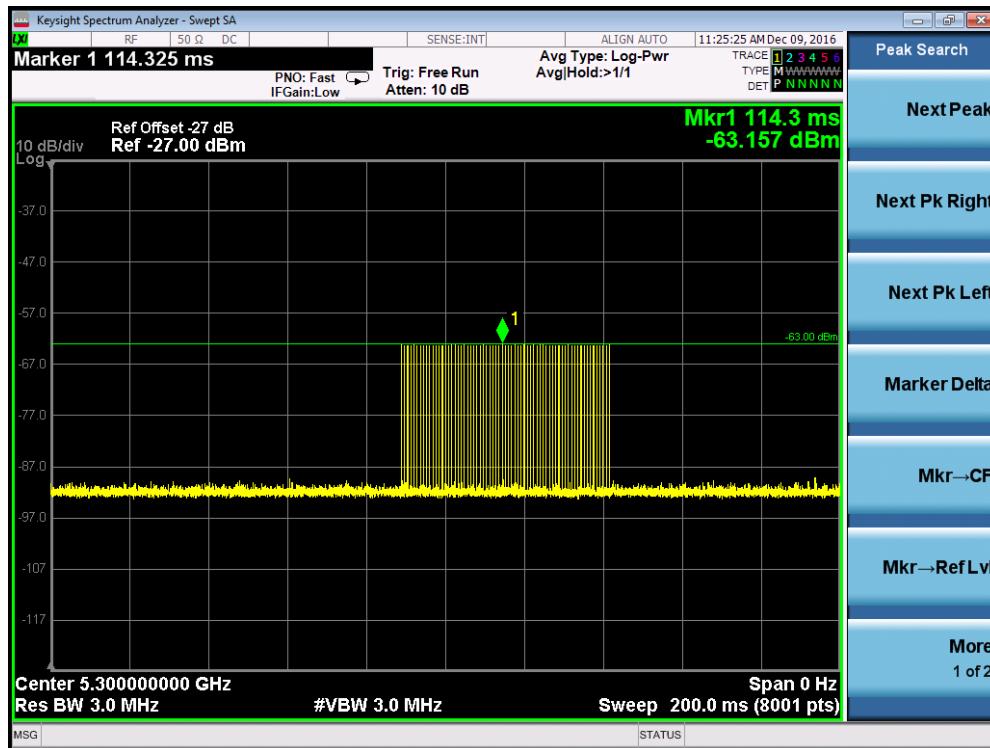
The Interference Radar Detection Threshold Level is (-64dBm) + (0) [dBi] + 1 dB= -63 dBm that had been taken into account the output power range and antenna gain. The above equipment setup was used to calibrate the conducted Radar Waveform. A vector signal generator was utilized to establish the test 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 (-64dBm) + (0) [dBi] + 1 dB= -63dBm. 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
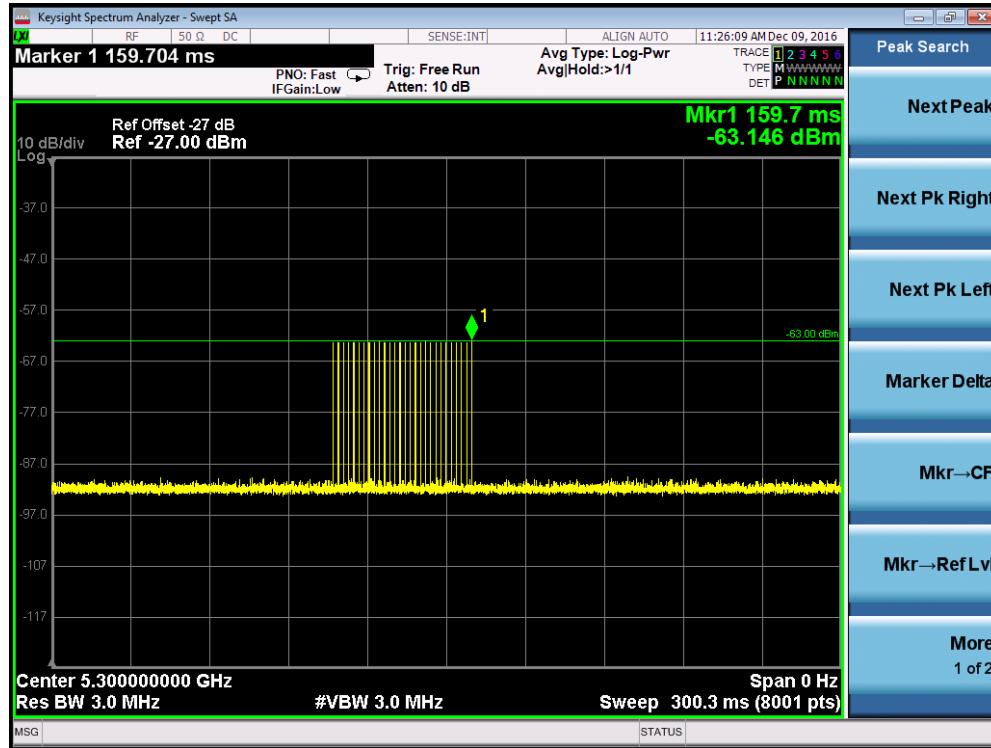
Radar #1(Test A) DFS detection threshold level and the burst of pulses on the Channel frequency
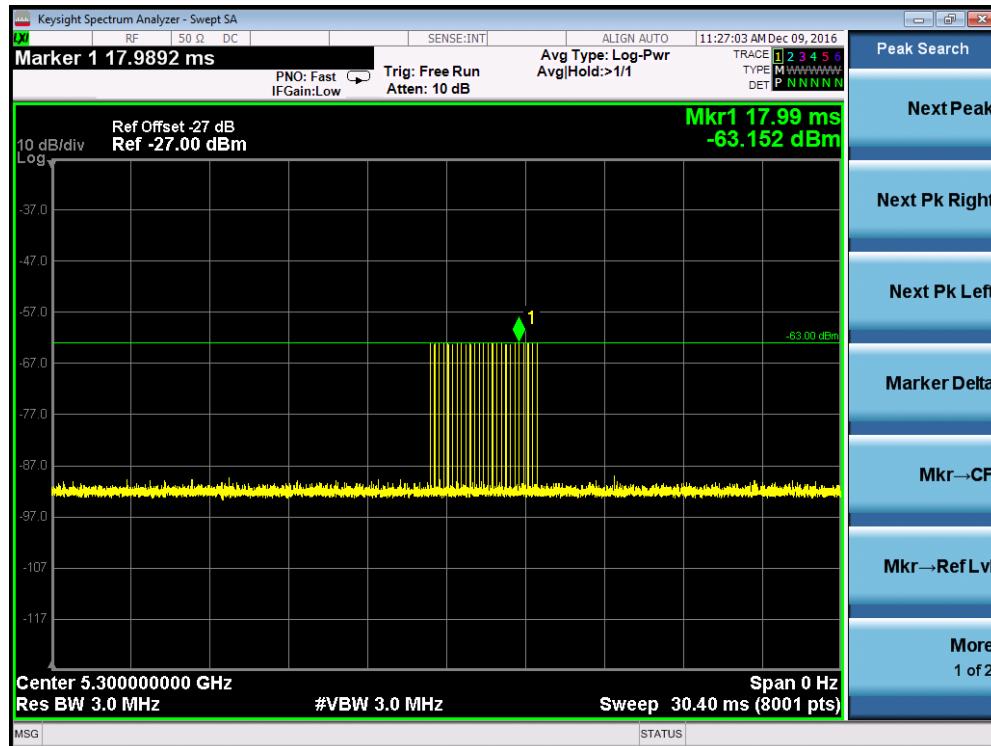
PRI = 798us and the number of pulses = 67

Radar #1(Test B) DFS detection threshold level and the burst of pulses on the Channel frequency
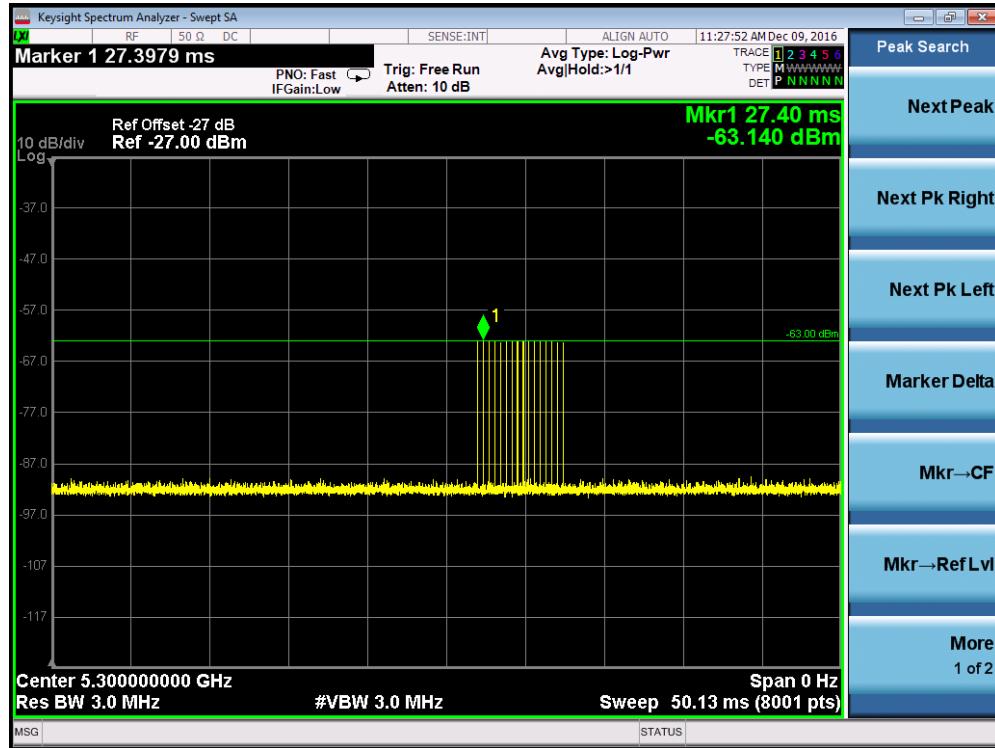
PRI = 1.919ms and the number of pulses = 28
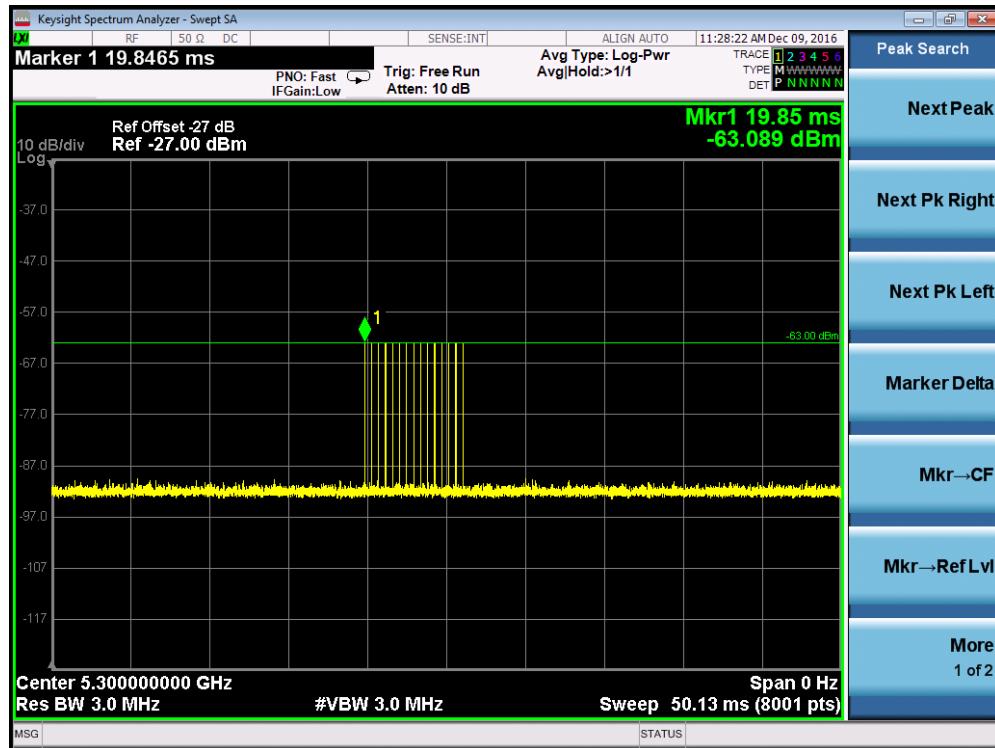
Radar #2 DFS detection threshold level and the burst of pulses on the Channel frequency
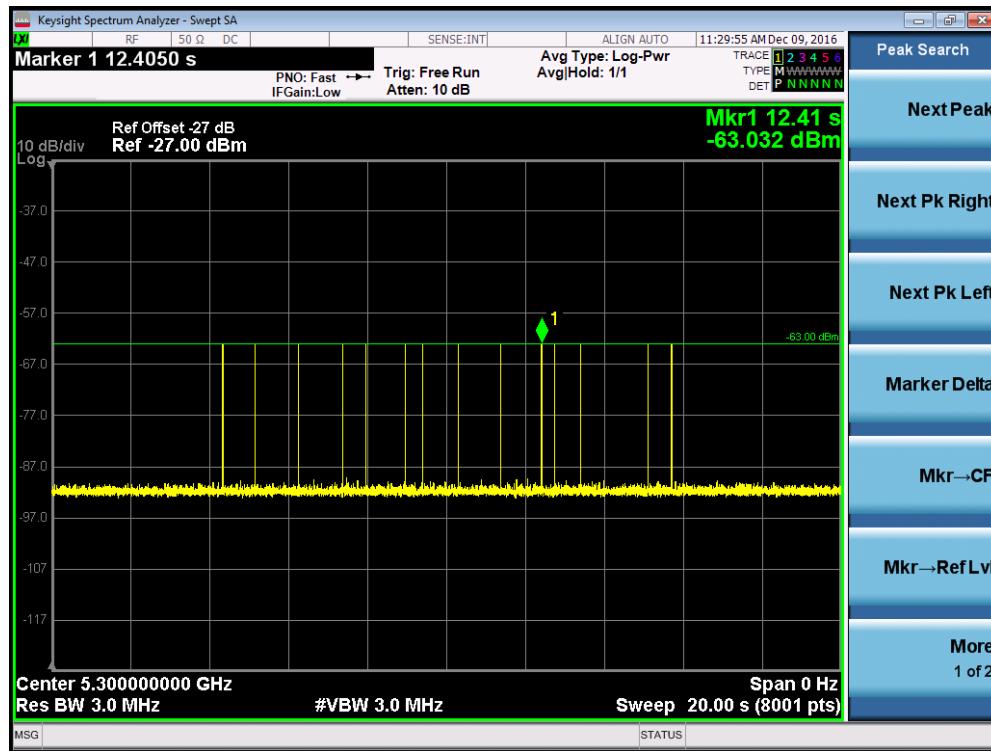
Radar #3 DFS detection threshold level and the burst of pulses on the Channel frequency
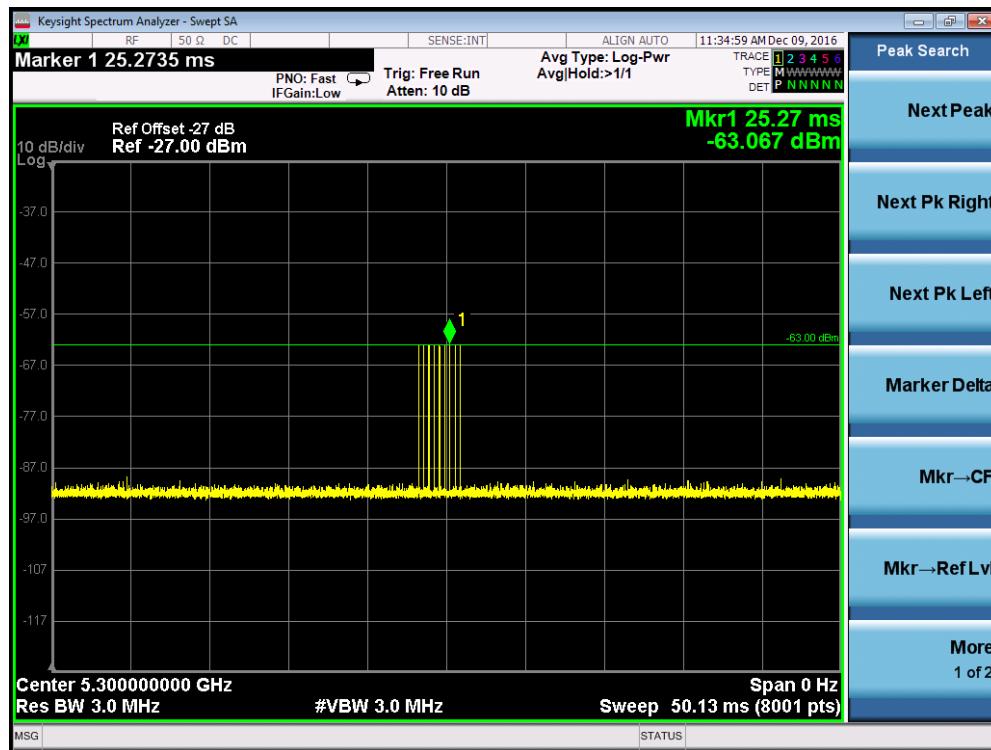
Radar #4 DFS detection threshold level and the burst of pulses on the Channel frequency

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 **WW WI-FI AP 4X4 OD ext. antenna** 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).

Channel Loading Plot	
802.11a (5300MHz)	802.11ac-VHT80 (5290MHz)
802.11ac-VHT80+80 Channel 58+106 (5290MHz)	802.11ac-VHT80+80 Channel 58+106 (5530MHz)

Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result
802.11a	5300 MHz	44.04%	≥ 17%	Pass
802.11ac-VHT80	5290 MHz	56.96%	≥ 17%	Pass
802.11ac-VHT80+80	5290 MHz	30.92%	≥ 17%	Pass
	5530 MHz	21.72%	≥ 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: U-NII Detection Bandwidth = FH – 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)										
	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
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 = 16.36MHz (see note)											
UNII Detection Bandwidth Min. Limit (MHz): 16.36MHz x 100% = 16.36MHz											

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5300MHz. The 99% channel bandwidth is 16.36MHz. (See the 99% BW section of the RF report for further measurement details).

EUT Frequency=5310MHz for 802.11n-HT40											
Radar Frequency	DFS Detection Trials (1=Detection, 0= No Detection)										
(MHz)	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
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 = 35.15MHz (see note)											
UNII Detection Bandwidth Min. Limit (MHz): 35.15MHz x 100% = 35.15MHz											

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5310MHz. The 99% channel bandwidth is 35.15MHz. (See the 99% BW section of the RF report for further measurement details).

EUT Frequency=5290MHz for 802.11ac-VHT80											
Radar Frequency	DFS Detection Trials (1=Detection, 0= No Detection)										
(MHz)	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
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 = 75.48MHz (see note)											
UNII Detection Bandwidth Min. Limit (MHz): 75.48MHz x 100% = 75.48MHz											

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5290MHz. The 99% channel bandwidth is 75.48MHz. (See the 99% BW section of the RF report for further measurement details).

EUT Frequency=5290MHz for 802.11ac-VHT80+80										
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)									
	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
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 = 76.45MHz (see note)										
UNII Detection Bandwidth Min. Limit (MHz): 76.45MHz x 100% = 76.45MHz										

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5290MHz. The 99% channel bandwidth is 76.45MHz. (See the 99% BW section of the RF report for further measurement details).

EUT Frequency=5530MHz for 802.11ac-VHT80+80										
Radar Frequency	**DFS Detection Trials (1=Detection, 0= No Detection)**									
(MHz)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Detection Rate (%)**
5490	0	0	0	0	0	0	0	0	0	0	0%
5491 FL	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5530	1	1	1	1	1	1	1	1	1	1	100%
5535	1	1	1	1	1	1	1	1	1	1	100%
5540	1	1	1	1	1	1	1	1	1	1	100%
5545	1	1	1	1	1	1	1	1	1	1	100%
5550	1	1	1	1	1	1	1	1	1	1	100%
5555	1	1	1	1	1	1	1	1	1	1	100%
5560	1	1	1	1	1	1	1	1	1	1	100%
5565	1	1	1	1	1	1	1	1	1	1	100%
5566	1	1	1	1	1	1	1	1	1	1	100%
5567	1	1	1	1	1	1	1	1	1	1	100%
5568	1	1	1	1	1	1	1	1	1	1	100%
5569 FH	1	1	1	1	1	1	1	1	1	1	100%
5570	0	0	0	0	0	0	0	0	0	0	0%
Detection Bandwidth = FH - FL = 5569MHz - 5491MHz = 78MHz										
EUT 99% Bandwidth = 76.01MHz (see note)										
UNII Detection Bandwidth Min. Limit (MHz): 76.01MHz x 100% = 76.01MHz										

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5530MHz. The 99% channel bandwidth is 76.01MHz. (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.
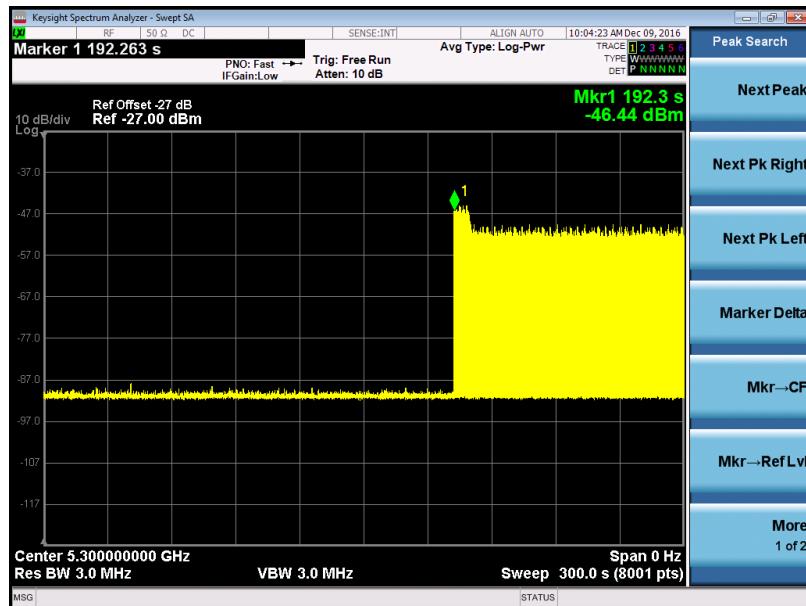
5.4.2. Test Procedure

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
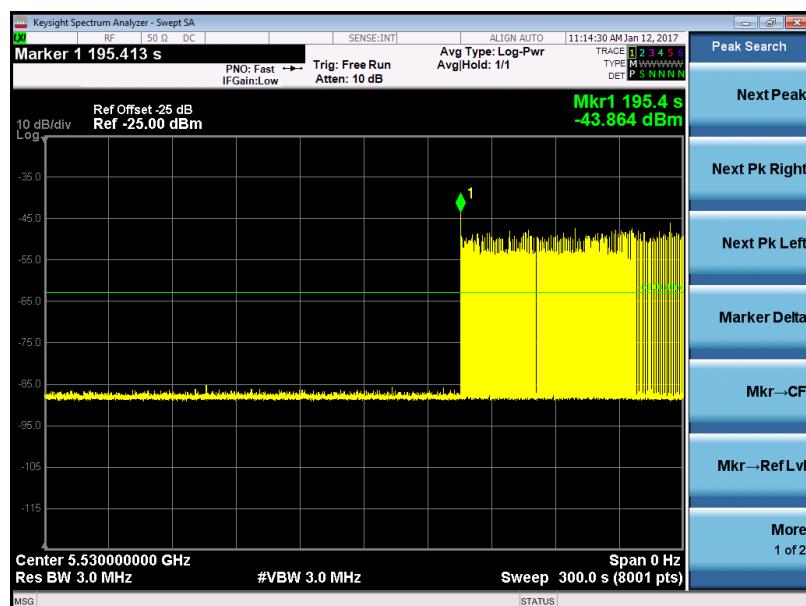
The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (132.3 sec). Initial beacons/data transmissions are indicated by marker 1 (192.3 sec).

Initial Channel Availability Check Time for 802.11a

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (135.4 sec). Initial beacons/data transmissions are indicated by marker 1 (195.4 sec).

Initial Channel Availability Check Time for 802.11ac-VHT80+80 Channel 58+106 (5530MHz)

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.
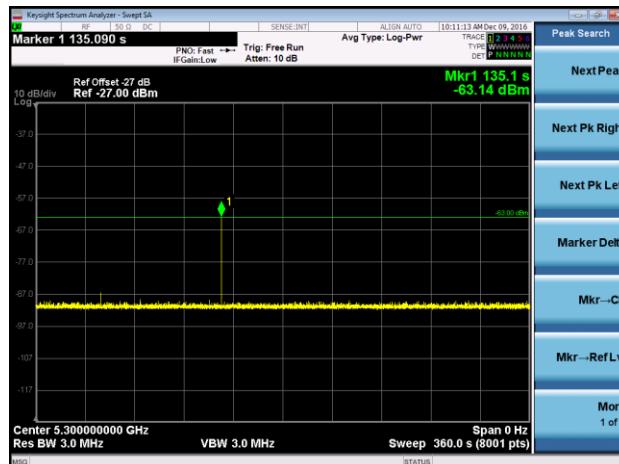
5.5.2. Test Procedure

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.
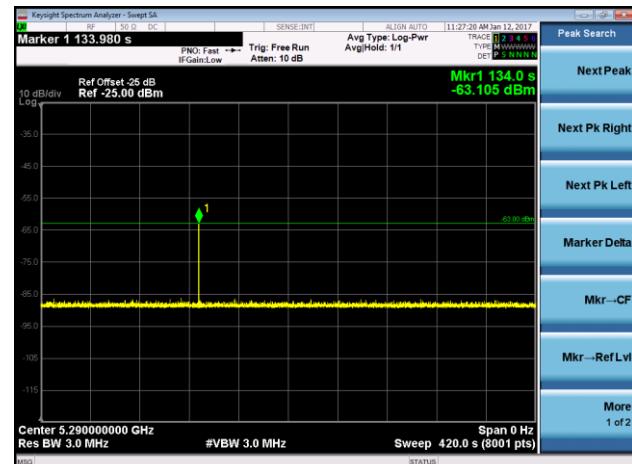
5.5.3. Test Result

Radar Burst at the Beginning of the Channel Availability Check Time	
802.11a (5300MHz)	802.11ac-VHT80+80 (5290MHz)
802.11ac-VHT80+80 (5530MHz)	

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.
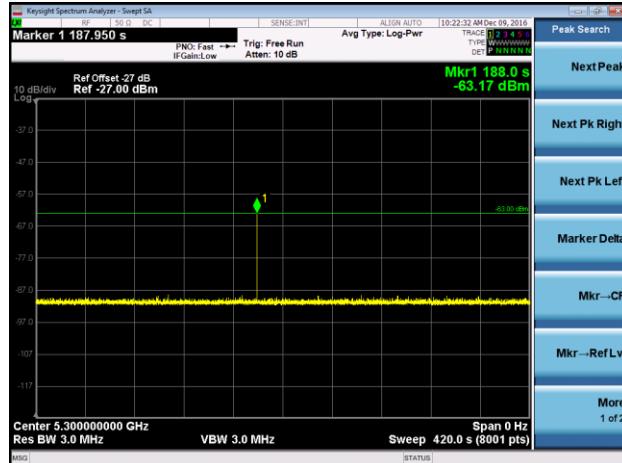
5.6.2. Test Procedure

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 thanT1 + 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.
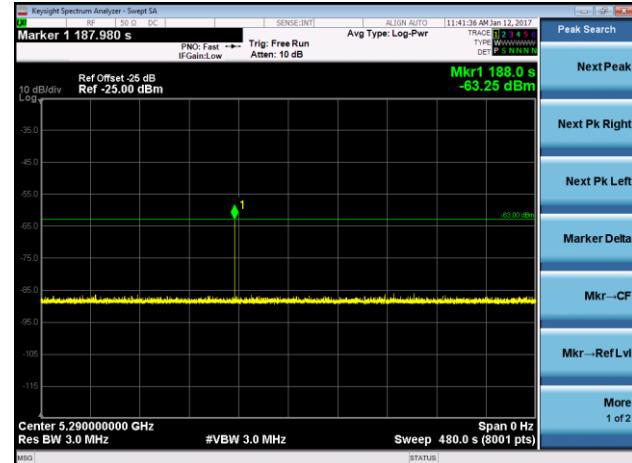
5.6.3. Test Result
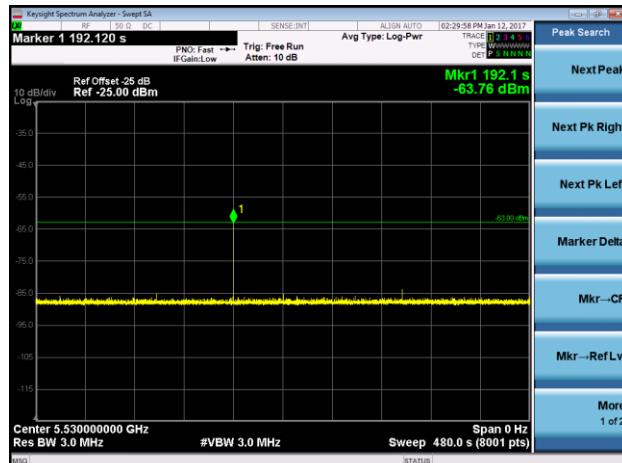
Radar Burst at the Beginning of the Channel Availability Check Time	
802.11a (5300MHz)	802.11ac-VHT80+80 (5290MHz)
802.11ac-VHT80+80 (5530MHz)	

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

5.7.1. Test Limit
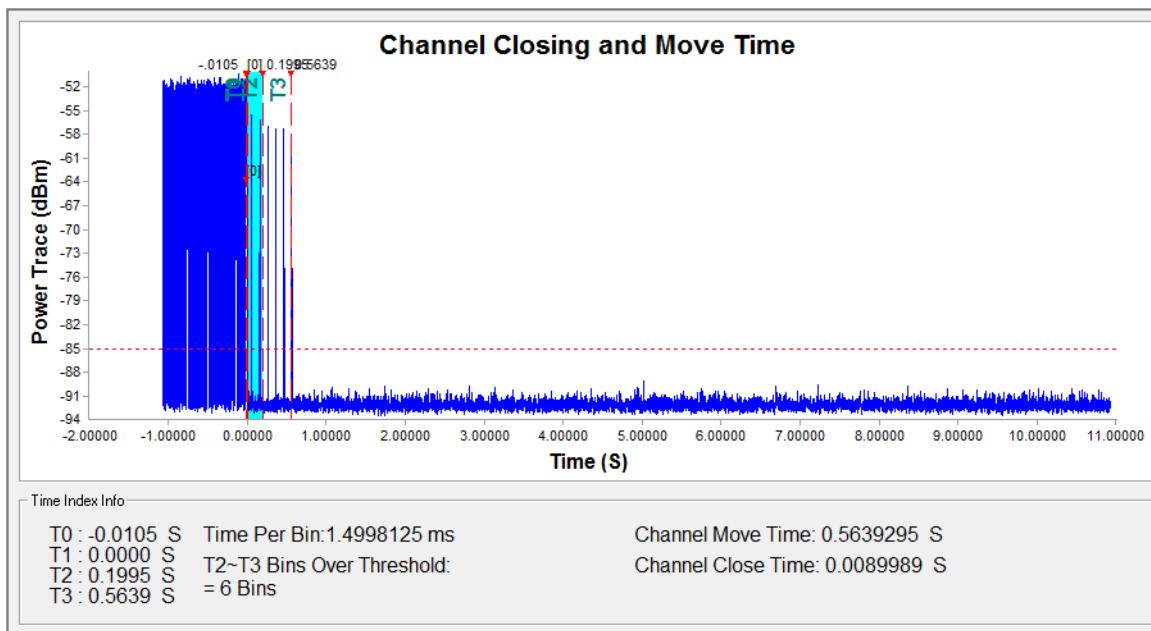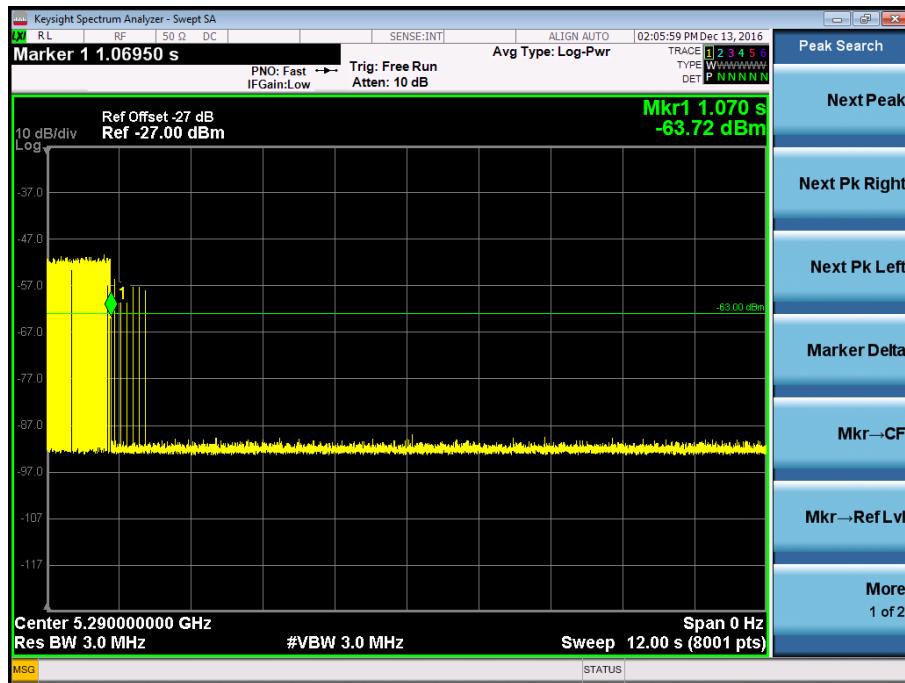
The EUT has In-Service Monitoring function to continuously monitor the radar signals. If the radar is detected, must leave the channel (Shutdown). The Channel Move Time to cease all transmissions on the current channel upon detection of a Radar Waveform above the DFS Detection Threshold within 10 sec. 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 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 X 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

Channel Closing and Move Time

Time Index Info

T0 : -0.0105 S   Time Per Bin:1.4998125 ms   Channel Move Time: 0.5639295 S
T1 : 0.0000 S   T2~T3 Bins Over Threshold: Channel Close Time: 0.0089989 S
T2 : 0.1995 S   = 6 Bins
T3 : 0.5639 S
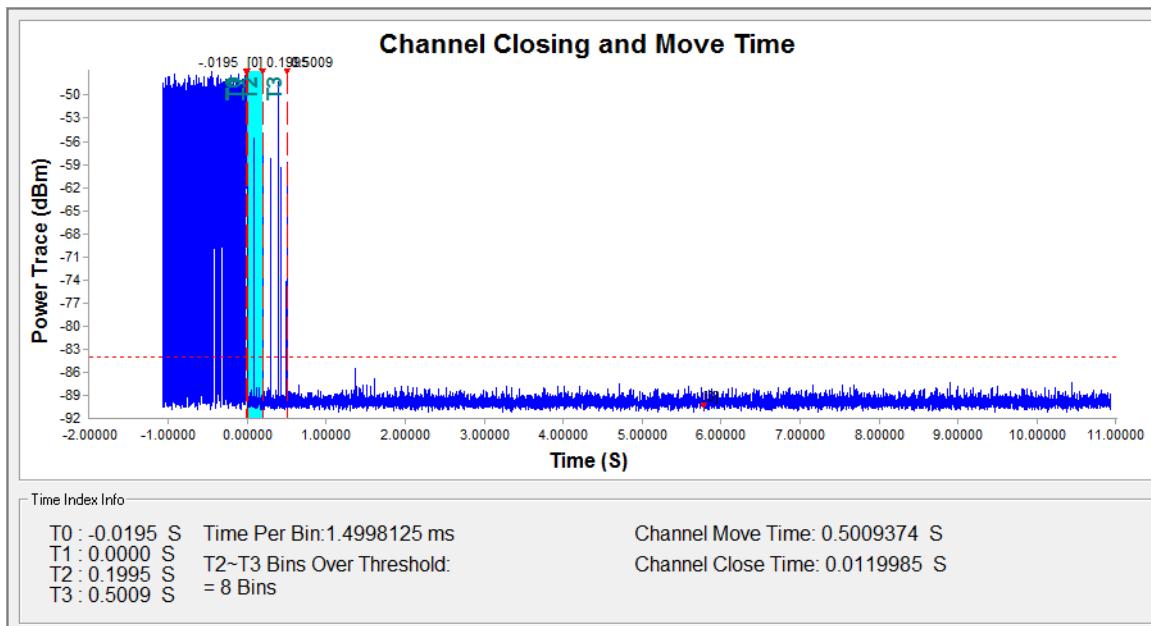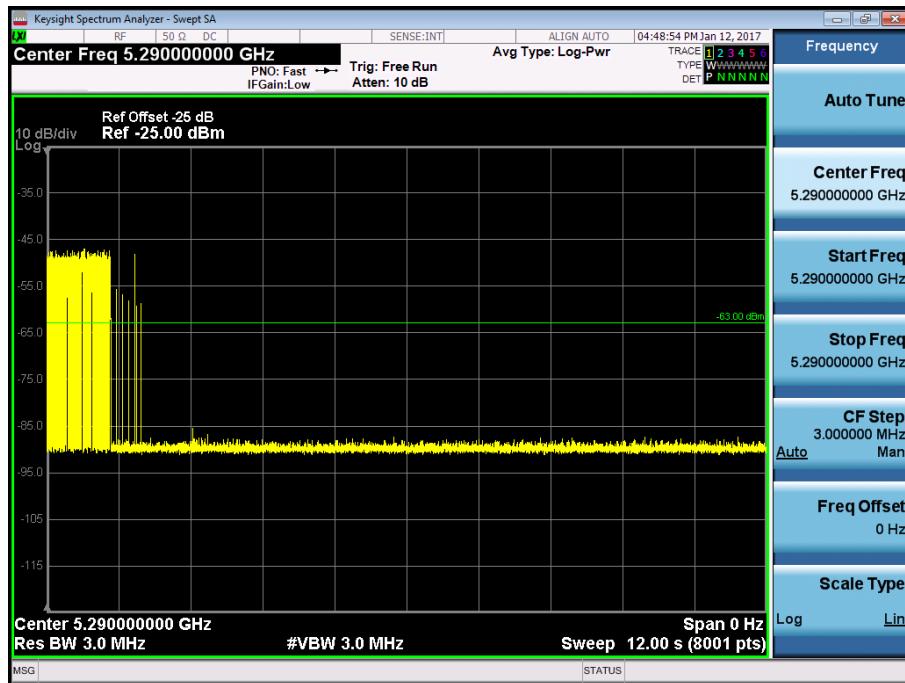
Non-Occupancy Period for 802.11a – 5300MHz

Parameter	Test Result		Limit
	Type 0		
Channel Move Time (s)	0.564s		<10s
Channel Closing Transmission Time (ms) (Note)	9.0ms		< 60ms
Non-Occupancy Period (min)	≥ 30min		≥ 30 min
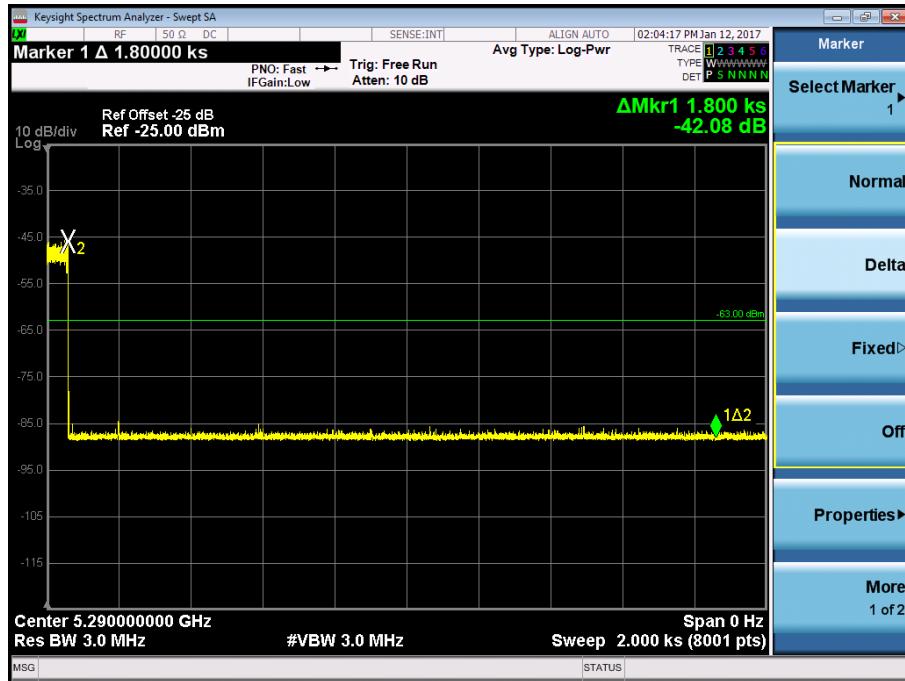
Note: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 seconds period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Channel Move Time and Channel Closing Transmission Time for 802.11ac-VHT80+80 Channel

58+106 - 5290MHz

Channel Move Time and Channel Closing Transmission Time for 802.11ac-VHT80+80

Channel58+106 - 5290MHz
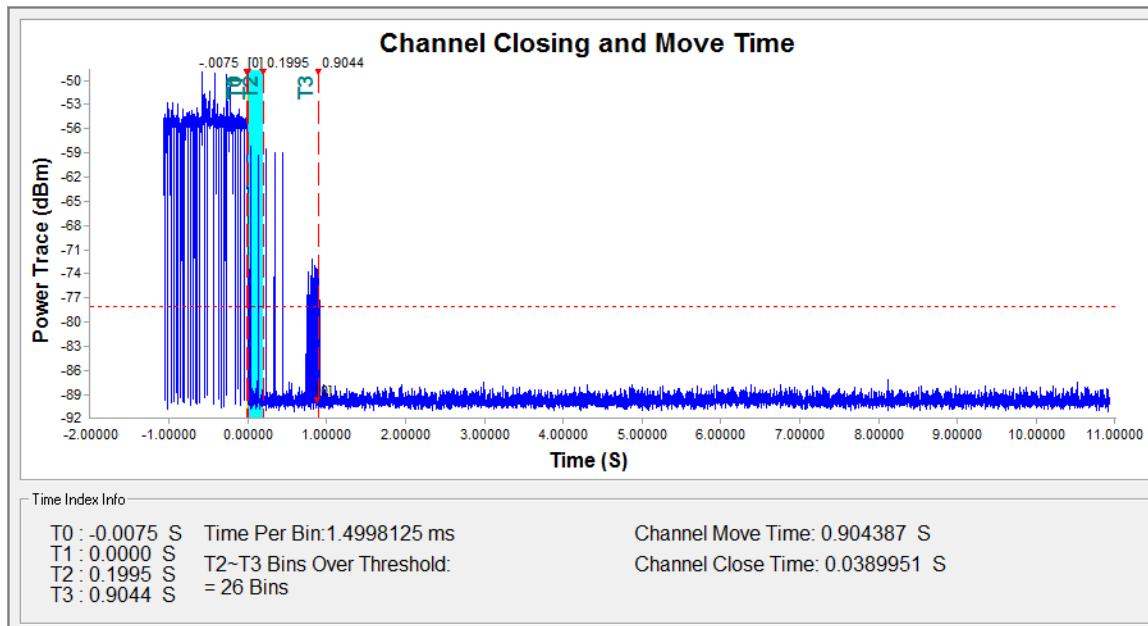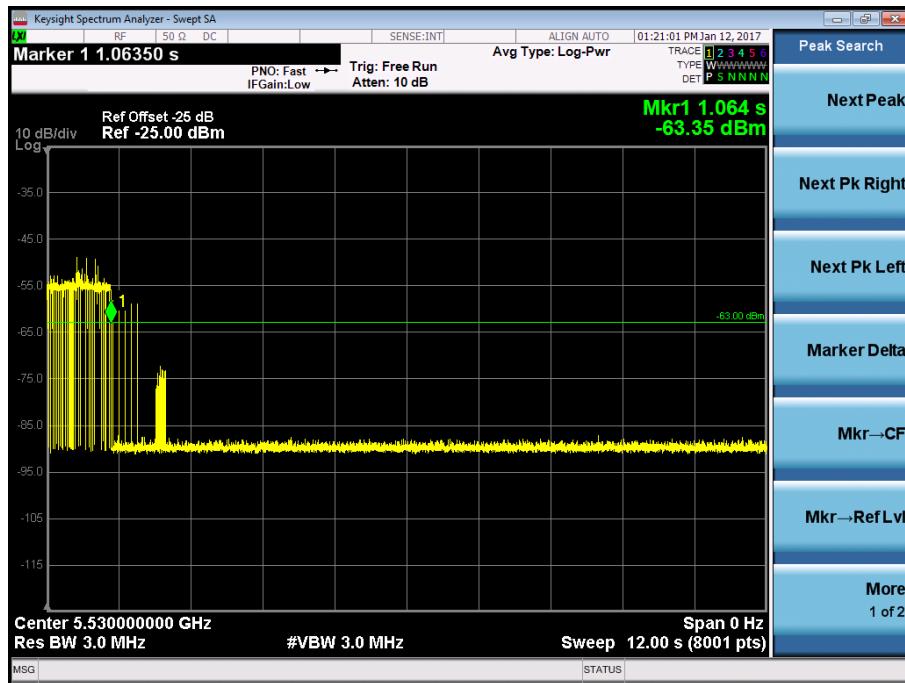
Parameter	Test Result	Limit
	Type 0	
Channel Move Time (s)	0.501s	<10s
Channel Closing Transmission Time (ms) (Note)	12.0ms	< 60ms
Non-Occupancy Period (min)	≥ 30min	≥ 30 min

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.

Channel Move Time and Channel Closing Transmission Time for 802.11ac-VHT80+80

Channel58+106 - 5530MHz

Channel Closing and Move Time

Time Index Info

T0 : -0.0075 S
T1 : 0.0000 S
T2 : 0.1995 S
T3 : 0.9044 S

Time Per Bin:1.4998125 ms

T2~T3 Bins Over Threshold:
= 26 Bins

Channel Move Time: 0.904387 S

Channel Close Time: 0.0389951 S

Channel Move Time and Channel Closing Transmission Time for 802.11ac-VHT80+80

Channel58+106 - 5530MHz

Parameter	Test Result	Limit
	Type 0	
Channel Move Time (s)	0.904s	<10s
Channel Closing Transmission Time (ms) (Note)	39.0ms	< 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:

(Total Waveform Detections / Total Waveform Trails) * 100 = 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	5300	1	638	83	1
2	5300	1	518	102	1
3	5300	1	618	86	1
4	5300	1	918	58	1
5	5300	1	3066	18	1
6	5300	1	838	63	1
7	5300	1	858	62	1
8	5300	1	558	95	1
9	5300	1	658	81	1
10	5300	1	538	99	1
11	5300	1	898	59	1
12	5300	1	758	70	1
13	5300	1	778	68	1
14	5300	1	738	72	1
15	5300	1	878	61	1
16	5300	1	1097	49	1
17	5300	1	887	60	1
18	5300	1	812	65	1
19	5300	1	2293	24	1
20	5300	1	891	60	1
21	5300	1	991	54	1
22	5300	1	1025	52	1
23	5300	1	2468	22	1
24	5300	1	1677	32	1
25	5300	1	2996	18	1
26	5300	1	1164	46	1
27	5300	1	1547	35	1
28	5300	1	2013	27	1
29	5300	1	562	94	1
30	5300	1	2600	21	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	5308	2.2	197	25	1
2	5308	2.7	212	27	1
3	5308	4.2	171	26	1
4	5308	4.1	178	25	1
5	5308	2.2	175	26	1
6	5308	1.6	211	29	1
7	5308	1.8	172	26	1
8	5308	2.2	190	26	1
9	5308	3.4	214	26	1
10	5308	1.5	195	23	1
11	5308	2.2	167	25	1
12	5308	4.0	211	24	1
13	5308	2.8	150	26	1
14	5308	1.4	182	29	1
15	5308	2.5	181	25	1
16	5308	3.9	153	26	1
17	5308	3.7	191	26	1
18	5308	1.5	212	24	1
19	5308	4.9	219	23	1
20	5308	1.4	163	25	1
21	5308	2.3	183	26	1
22	5308	1.0	171	28	1
23	5308	1.1	178	24	1
24	5308	1.4	172	28	1
25	5308	3.9	184	26	1
26	5308	4.7	206	25	1
27	5308	3.3	213	25	1
28	5308	1.3	157	28	1
29	5308	2.4	194	28	1
30	5308	2.9	158	26	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	5308	8.5	254	17	1
2	5308	9.8	294	17	1
3	5308	6.3	271	17	1
4	5308	6.0	374	16	1
5	5308	9.3	476	16	1
6	5308	9.2	340	16	1
7	5308	7.2	275	17	1
8	5308	8.1	458	16	1
9	5308	8.3	477	16	1
10	5308	8.3	382	16	1
11	5308	6.7	271	16	1
12	5308	7.8	407	18	1
13	5308	7.4	357	17	1
14	5308	6.5	343	17	1
15	5308	8.7	298	16	1
16	5308	6.1	446	17	1
17	5308	10.0	341	18	1
18	5308	8.6	490	16	1
19	5308	8.6	446	17	1
20	5308	7.7	492	17	1
21	5308	8.9	307	18	1
22	5308	7.9	420	17	1
23	5308	10.0	412	18	1
24	5308	6.6	302	18	1
25	5308	7.6	336	18	1
26	5308	8.4	298	16	1
27	5308	10.0	314	18	1
28	5308	8.8	416	18	1
29	5308	8.6	340	16	1
30	5308	9.3	370	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	5292	16.1	295	15	1
2	5292	19.8	356	15	1
3	5292	11.7	259	13	1
4	5292	19.9	420	16	1
5	5292	13.5	378	12	1
6	5292	14.4	402	14	1
7	5292	15.4	408	16	1
8	5292	12.4	477	15	1
9	5292	17.1	464	12	1
10	5292	11.3	329	12	1
11	5292	16.1	416	15	1
12	5497	15.1	402	14	1
13	5292	16.1	490	13	1
14	5292	14.2	467	15	1
15	5292	16.6	402	13	1
16	5292	14.6	354	16	1
17	5292	17.1	320	12	1
18	5292	15.8	250	14	1
19	5292	14.3	423	13	1
20	5292	15.8	439	13	1
21	5292	14.2	385	14	1
22	5292	19.0	433	13	1
23	5292	15.9	350	12	1
24	5292	15.9	345	13	1
25	5292	17.3	271	16	1
26	5292	15.0	406	14	1
27	5292	13.9	281	14	1
28	5292	19.1	392	15	1
29	5292	17.1	490	15	1
30	5292	17.6	354	16	1
Detection Percentage (%)					100%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4}$ = (100%+100%+100%+100%)/4 = 100% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5294.0	1	16	5300.0	1
2	5294.4	1	17	5300.0	1
3	5295.2	1	18	5300.0	1
4	5295.6	1	19	5300.0	1
5	5296.0	1	20	5300.0	1
6	5296.8	1	21	5306.0	1
7	5297.6	1	22	5305.6	1
8	5298.8	1	23	5304.8	1
9	5299.2	1	24	5304.4	1
10	5299.6	1	25	5304.0	1
11	5300.0	1	26	5303.2	1
12	5300.0	1	27	5302.4	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 = 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	557261	2	8	85	1269	1092	0	557261	0	857142
2	463272	1	8	60	1405	0	0	1022894	857143	1714285
3	1470893	1	8	60	1815	0	0	2495192	1714286	2571428
4	371380	2	8	55	1743	1600	0	2868387	2571429	3428571
5	1047063	2	8	80	1963	1128	0	3918793	3428572	4285714
6	712413	2	8	50	1928	1438	0	4634297	4285715	5142857
7	1106103	2	8	50	1012	1491	0	5743766	5142858	6000000
8	584718	1	8	80	1733	0	0	6330987	6000001	6857143
9	617164	1	8	80	1710	0	0	6949884	6857144	7714286
10	948004	3	8	65	1101	1688	1714	7899598	7714287	8571429
11	1323533	1	8	95	1620	0	0	9227634	8571430	9428572
12	919650	2	8	75	1115	1770	0	10148904	9428573	10285715
13	191005	2	8	50	1542	1990	0	10342794	10285716	11142858
14	1053820	1	8	90	1398	0	0	11400146	11142859	12000001
Total number of pulses in waveform = 23										
**										

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	171768	3	12	85	1010	1785	1581	171768	0	631578
2	488683	2	12	100	1955	1508	0	664827	631579	1263157
3	971594	3	12	90	1229	1496	1532	1639884	1263158	1894736
4	726321	3	12	80	1543	1117	1042	2370462	1894737	2526315
5	462818	3	12	100	1324	1390	1688	2836982	2526316	3157894
6	808679	2	12	65	1962	1845	0	3650063	3157895	3789473
7	560427	1	12	60	1533	0	0	4214297	3789474	4421052
8	414682	1	12	80	1472	0	0	4630512	4421053	5052631
9	695140	1	12	75	1831	0	0	5327124	5052632	5684210
10	982136	2	12	80	1918	1739	0	6311091	5684211	6315789
11	372417	1	12	75	1053	0	0	6687165	6315790	6947368
12	714140	2	12	75	1930	1902	0	7402358	6947369	7578947
13	269120	3	12	90	1809	1795	1835	7675310	7578948	8210526
14	1077246	2	12	55	1591	1833	0	8757995	8210527	8842105
15	663370	2	12	65	1249	1649	0	9424789	8842106	9473684
16	517379	2	12	65	1229	1522	0	9945066	9473685	10105263
17	699425	3	12	85	1443	1643	1976	10647242	10105264	10736842
18	423864	2	12	90	1240	1696	0	11076168	10736843	11368421
19	433990	3	12	50	1446	1351	1133	11513094	11368422	12000000

Total number of pulses in waveform = 41

Type 5 Radar Waveform_3

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	328561	3	17	50	1653	1948	1250	328561	0	705881
2	906374	2	17	85	1035	1133	0	1239786	705882	1411763
3	269945	2	17	60	1988	1872	0	1511899	1411764	2117645
4	1163587	2	17	80	1754	1507	0	2679346	2117646	2823527
5	456287	3	17	70	1548	1368	1863	3138894	2823528	3529409
6	695126	3	17	55	1616	1281	1589	3838799	3529410	4235291
7	991927	2	17	80	1372	1446	0	4835212	4235292	4941173
8	484979	1	17	100	1407	0	0	5323009	4941174	5647055
9	635146	2	17	80	1780	1831	0	5959562	5647056	6352937
10	533473	2	17	80	1160	1945	0	6496646	6352938	7058819
11	678464	1	17	50	1454	0	0	7178215	7058820	7764701
12	1074863	1	17	100	1472	0	0	8254532	7764702	8470583
13	454500	1	17	75	1711	0	0	8710504	8470584	9176465
14	993615	3	17	95	1647	1006	1396	9705830	9176466	9882347
15	196392	1	17	55	1847	0	0	9906271	9882348	10588229
16	1298003	1	17	75	1812	0	0	11206121	10588230	11294111
17	327586	2	17	80	1203	1003	0	11535519	11294112	11999993

Total number of pulses in waveform = 32

Type 5 Radar Waveform_4

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	93263	3	14	70	1590	1597	1862	93263	0	631578
2	1026569	1	14	65	1573	0	0	1124881	631579	1263157
3	202535	3	14	55	1911	1759	1751	1328989	1263158	1894736
4	1160334	1	14	80	1319	0	0	2494744	1894737	2526315
5	115721	3	14	100	1594	1088	1376	2611784	2526316	3157894
6	846290	1	14	85	1515	0	0	3462132	3157895	3789473
7	557232	2	14	90	1668	1438	0	4020879	3789474	4421052
8	617259	3	14	50	1399	1417	1285	4641244	4421053	5052631
9	498504	3	14	75	1579	1599	1892	5143849	5052632	5684210
10	1157292	2	14	60	1533	1578	0	6306211	5684211	6315789
11	130968	1	14	75	1292	0	0	6440290	6315790	6947368
12	885138	3	14	100	1362	1405	1625	7326720	6947369	7578947
13	594723	3	14	100	1387	1337	1872	7925835	7578948	8210526
14	334743	2	14	50	1946	1516	0	8265174	8210527	8842105
15	623483	3	14	55	1973	1025	1658	8892119	8842106	9473684
16	752273	3	14	65	1533	1266	1232	9649048	9473685	10105263
17	1057846	3	14	80	1697	1439	1035	10710925	10105264	10736842
18	442354	2	14	60	1828	1898	0	11157450	10736843	11368421
19	723570	2	14	90	1214	1188	0	11884746	11368422	12000000

Total number of pulses in waveform = 44

Type 5 Radar Waveform_5

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	291966	3	5	95	1157	1447	1029	291966	0	799999
2	686022	3	5	70	1956	1765	1253	981621	800000	1599999
3	858744	2	5	85	1720	1537	0	1845339	1600000	2399999
4	641020	1	5	80	1771	0	0	2489616	2400000	3199999
5	1176402	3	5	75	1834	1081	1072	3667789	3200000	3999999
6	457250	2	5	85	1463	1133	0	4129026	4000000	4799999
7	813326	2	5	60	1578	1520	0	4944948	4800000	5599999
8	994669	3	5	55	1082	1033	1931	5942715	5600000	6399999
9	584450	1	5	50	1252	0	0	6531211	6400000	7199999
10	1235825	3	5	90	1346	1101	1908	7768288	7200000	7999999
11	820236	1	5	75	1260	0	0	8592879	8000000	8799999
12	293283	1	5	100	1808	0	0	8887422	8800000	9599999
13	875802	2	5	90	1733	1044	0	9765032	9600000	10399999
14	1005125	1	5	50	1850	0	0	10772934	10400000	11199999
15	477225	2	5	70	1316	1745	0	11252009	11200000	11999999

Total number of pulses in waveform = 30
****

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	726595	2	19	100	1541	1640	0	726595	0	1333332
2	870050	1	19	65	1842	0	0	1599826	1333333	2666665
3	2329253	3	19	65	1668	1918	1799	3930921	2666666	3999998
4	512530	1	19	65	1478	0	0	4448836	3999999	5333331
5	2058038	1	19	60	1995	0	0	6508352	5333332	6666664
6	674267	3	19	50	1838	1082	1968	7184614	6666665	7999997
7	2106922	1	19	50	1660	0	0	9296424	7999998	9333330
8	775690	1	19	95	1418	0	0	10073774	9333331	10666663
9	1895692	2	19	70	1936	1590	0	11970884	10666664	11999996

Total number of pulses in waveform = 15
****

Type 5 Radar Waveform_7

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	401423	2	18	80	1120	1667	0	401423	0	599999
2	695385	2	18	55	1276	1968	0	1099595	600000	1199999
3	563290	3	18	70	1502	1083	1485	1666129	1200000	1799999
4	508608	2	18	50	1927	1557	0	2178807	1800000	2399999
5	257435	1	18	80	1657	0	0	2439726	2400000	2999999
6	1004950	3	18	100	1387	1503	1132	3446333	3000000	3599999
7	467342	1	18	50	1411	0	0	3917697	3600000	4199999
8	431971	1	18	50	1142	0	0	4351079	4200000	4799999
9	770492	2	18	100	1390	1003	0	5122713	4800000	5399999
10	808619	2	18	100	1166	1259	0	5933725	5400000	5999999
11	483258	2	18	100	1557	1684	0	6419408	6000000	6599999
12	445658	1	18	85	1586	0	0	6868307	6600000	7199999
13	670698	3	18	95	1539	1135	1463	7540591	7200000	7799999
14	437466	2	18	100	1457	1338	0	7982194	7800000	8399999
15	889080	3	18	65	1859	1827	1628	8874069	8400000	8999999
16	559099	2	18	75	1830	1363	0	9438482	9000000	9599999
17	284088	1	18	90	1308	0	0	9725763	9600000	10199999
18	985710	3	18	75	1968	1709	1982	10712781	10200000	10799999
19	166054	2	18	60	1723	1810	0	10884494	10800000	11399999
20	518814	1	18	65	1504	0	0	11406841	11400000	11999999

Total number of pulses in waveform = 39
****

Type 5 Radar Waveform_8

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	535995	1	6	95	1987	0	0	535995	0	599999
2	222436	2	6	60	1916	1437	0	760418	600000	1199999
3	899705	1	6	90	1578	0	0	1663476	1200000	1799999
4	637340	2	6	80	1975	1846	0	2302394	1800000	2399999
5	625788	1	6	65	1918	0	0	2932003	2400000	2999999
6	306271	3	6	95	1417	1833	1757	3240192	3000000	3599999
7	717176	2	6	90	1334	1783	0	3962375	3600000	4199999
8	720589	1	6	90	1806	0	0	4686081	4200000	4799999
9	372107	1	6	60	1160	0	0	5059994	4800000	5399999
10	539093	2	6	80	1322	1680	0	5600247	5400000	5999999
11	524922	3	6	55	1537	1815	1472	6128171	6000000	6599999
12	674382	1	6	75	1592	0	0	6807377	6600000	7199999
13	796050	2	6	100	1593	1154	0	7605019	7200000	7799999
14	389075	3	6	85	1332	1214	1541	7996841	7800000	8399999
15	862379	2	6	50	1449	1677	0	8863307	8400000	8999999
16	679335	2	6	65	1184	1948	0	9545768	9000000	9599999
17	146338	1	6	95	1950	0	0	9695238	9600000	10199999
18	960716	1	6	75	1113	0	0	10657904	10200000	10799999
19	621797	3	6	75	1746	1884	1239	11280814	10800000	11399999
20	209361	2	6	80	1771	1828	0	11495044	11400000	11999999

Total number of pulses in waveform = 36
****

Type 5 Radar Waveform_9

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	116025	1	10	50	1300	0	0	116025	0	631578
2	623683	1	10	90	1990	0	0	741008	631579	1263157
3	681156	1	10	75	1259	0	0	1424154	1263158	1894736
4	1038684	3	10	85	1763	1172	1425	2464097	1894737	2526315
5	592959	3	10	100	1102	1807	1617	3061416	2526316	3157894
6	598375	3	10	70	1276	1005	1171	3664317	3157895	3789473
7	577566	3	10	95	1045	1541	1600	4245335	3789474	4421052
8	266331	2	10	85	1501	1402	0	4515852	4421053	5052631
9	1136630	1	10	60	1675	0	0	5655385	5052632	5684210
10	209034	1	10	100	1904	0	0	5866094	5684211	6315789
11	891660	2	10	55	1501	1309	0	6759658	6315790	6947368
12	717719	3	10	85	1817	1899	1198	7480187	6947369	7578947
13	176618	3	10	50	1689	1427	1745	7661719	7578948	8210526
14	1002572	1	10	55	1349	0	0	8669152	8210527	8842105
15	630405	3	10	50	1446	1517	1134	9300906	8842106	9473684
16	322968	3	10	65	1993	1084	1625	9627971	9473685	10105263
17	1015039	2	10	65	1998	1882	0	10647712	10105264	10736842
18	603844	2	10	70	1701	1729	0	11255436	10736843	11368421
19	333973	3	10	100	1234	1321	1845	11592839	11368422	12000000

Total number of pulses in waveform = 41
****

Type 5 Radar Waveform_10

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	936278	1	9	70	1766	0	0	936278	0	999999
2	685064	1	9	85	1515	0	0	1623108	1000000	1999999
3	645453	2	9	85	1009	1170	0	2270076	2000000	2999999
4	1210750	2	9	90	1799	1180	0	3483005	3000000	3999999
5	574099	1	9	80	1611	0	0	4060083	4000000	4999999
6	1691292	1	9	75	1911	0	0	5752986	5000000	5999999
7	387820	1	9	85	1112	0	0	6142717	6000000	6999999
8	1237018	3	9	70	1217	1192	1837	7380847	7000000	7999999
9	1569585	3	9	70	1714	1668	1079	8954678	8000000	8999999
10	290686	1	9	80	1272	0	0	9249825	9000000	9999999
11	1635891	2	9	65	1052	1983	0	10886988	10000000	10999999
12	788402	1	9	100	1210	0	0	11678425	11000000	11999999

Total number of pulses in waveform = 19
****

Type 5 Radar Waveform_11

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	536858	2	9	55	1090	1881	0	536858	0	749999
2	783959	1	9	55	1358	0	0	1323788	750000	1499999
3	373405	3	9	100	1651	1790	1532	1698551	1500000	2249999
4	592948	3	9	50	1420	1941	1016	2296472	2250000	2999999
5	1211281	2	9	55	1448	1215	0	3512130	3000000	3749999
6	972708	3	9	100	1175	1518	1695	4487501	3750000	4499999
7	668209	1	9	50	1242	0	0	5160098	4500000	5249999
8	238560	1	9	80	1674	0	0	5399900	5250000	5999999
9	942013	3	9	50	1891	1844	1742	6343587	6000000	6749999
10	484743	3	9	50	1695	1724	1282	6833807	6750000	7499999
11	1106005	3	9	100	1370	1643	2000	7944513	7500000	8249999
12	1019186	1	9	60	1138	0	0	8968712	8250000	8999999
13	496419	3	9	85	1844	1466	1552	9466269	9000000	9749999
14	827302	3	9	70	1348	1315	1479	10298433	9750000	10499999
15	474468	3	9	85	1930	1447	1269	10777043	10500000	11249999
16	1078773	1	9	90	1416	0	0	11860462	11250000	11999999

Total number of pulses in waveform = 36
****

Type 5 Radar Waveform_12

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	335712	2	17	100	1418	1132	0	335712	0	749999
2	721146	1	17	80	1111	0	0	1059408	750000	1499999
3	464018	3	17	60	1937	1226	1280	1524537	1500000	2249999
4	856458	3	17	50	1994	1695	1022	2385438	2250000	2999999
5	677280	3	17	55	1217	1051	1180	3067429	3000000	3749999
6	730007	3	17	75	1410	1555	1980	3800884	3750000	4499999
7	901225	3	17	100	1904	1773	1045	4707054	4500000	5249999
8	1020756	2	17	55	1541	1394	0	5732532	5250000	5999999
9	550065	3	17	95	1222	1137	1428	6285532	6000000	6749999
10	1021861	1	17	70	1836	0	0	7311180	6750000	7499999
11	551170	1	17	95	1984	0	0	7864186	7500000	8249999
12	579960	1	17	50	1738	0	0	8446130	8250000	8999999
13	602858	3	17	55	1307	1193	1710	9050726	9000000	9749999
14	1260170	3	17	60	1028	1101	1076	10315106	9750000	10499999
15	898956	2	17	90	1401	1822	0	11217267	10500000	11249999
16	370704	1	17	90	1317	0	0	11591194	11250000	11999999

Total number of pulses in waveform = 35
****

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	232932	2	18	90	1532	1443	0	232932	0	631578
2	676289	1	18	100	1271	0	0	912196	631579	1263157
3	695601	2	18	90	1053	1017	0	1609068	1263158	1894736
4	702644	1	18	75	1953	0	0	2313782	1894737	2526315
5	419486	3	18	55	1529	1150	1032	2735221	2526316	3157894
6	517284	1	18	80	1077	0	0	3256216	3157895	3789473
7	661300	2	18	75	1375	1644	0	3918593	3789474	4421052
8	802027	2	18	85	1935	1737	0	4723639	4421053	5052631
9	458418	2	18	80	1917	1788	0	5185729	5052632	5684210
10	969818	1	18	75	1270	0	0	6159252	5684211	6315789
11	184682	1	18	100	1626	0	0	6345204	6315790	6947368
12	812328	1	18	80	1654	0	0	7159158	6947369	7578947
13	502832	1	18	80	1723	0	0	7663644	7578948	8210526
14	714460	1	18	60	1978	0	0	8379827	8210527	8842105
15	969491	3	18	50	1920	1871	1758	9351296	8842106	9473684
16	156638	3	18	100	1146	1253	1236	9513483	9473685	10105263
17	1140519	1	18	75	1238	0	0	10657637	10105264	10736842
18	666286	3	18	90	1564	1885	1434	11325161	10736843	11368421
19	384003	3	18	65	1757	1988	1147	11714047	11368422	12000000

Total number of pulses in waveform = 34
****

Type 5 Radar Waveform_14

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	359924	1	12	100	1048	0	0	359924	0	749999
2	978348	1	12	55	1479	0	0	1339320	750000	1499999
3	743259	1	12	80	1242	0	0	2084058	1500000	2249999
4	887869	1	12	80	1633	0	0	2973169	2250000	2999999
5	602454	3	12	85	1278	1833	1133	3577256	3000000	3749999
6	434973	3	12	60	1991	1384	1719	4016473	3750000	4499999
7	1111768	3	12	80	1576	1679	1248	5133335	4500000	5249999
8	192684	1	12	70	1871	0	0	5330522	5250000	5999999
9	708561	3	12	60	1501	1642	1894	6040954	6000000	6749999
10	1080591	1	12	95	1126	0	0	7126582	6750000	7499999
11	920393	3	12	95	1776	1998	1038	8048101	7500000	8249999
12	752345	2	12	80	1007	1668	0	8805258	8250000	8999999
13	323712	1	12	60	1310	0	0	9131645	9000000	9749999
14	925636	3	12	70	1558	1759	1554	10058591	9750000	10499999
15	491830	3	12	85	1672	1215	1103	10555292	10500000	11249999
16	694601	3	12	90	1680	1310	1024	11253883	11250000	11999999

Total number of pulses in waveform = 33
****

Type 5 Radar Waveform_15

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	302993	3	6	90	1791	1042	1884	302993	0	599999
2	442525	2	6	50	1855	1854	0	750235	600000	1199999
3	837624	2	6	80	1630	1269	0	1591568	1200000	1799999
4	626259	3	6	55	1252	1908	1105	2220726	1800000	2399999
5	227063	1	6	60	1363	0	0	2452054	2400000	2999999
6	855600	1	6	60	1575	0	0	3309017	3000000	3599999
7	611458	1	6	80	1517	0	0	3922050	3600000	4199999
8	469095	2	6	90	1406	1119	0	4392662	4200000	4799999
9	716260	3	6	100	1232	1856	1338	5111447	4800000	5399999
10	321600	1	6	55	1367	0	0	5437473	5400000	5999999
11	669804	3	6	70	1910	1406	1694	6108644	6000000	6599999
12	954185	2	6	100	1944	1351	0	7067839	6600000	7199999
13	282385	3	6	70	1417	1800	1207	7353519	7200000	7799999
14	450938	2	6	90	1907	1900	0	7808881	7800000	8399999
15	1069331	1	6	100	1313	0	0	8882019	8400000	8999999
16	451484	3	6	50	1514	1027	1084	9334816	9000000	9599999
17	456066	3	6	75	1909	1148	1119	9794507	9600000	10199999
18	478628	3	6	60	1360	1463	1732	10277311	10200000	10799999
19	575080	2	6	100	1458	1558	0	10856946	10800000	11399999
20	667678	2	6	60	1185	1427	0	11527640	11400000	11999999

Total number of pulses in waveform = 43
****

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	518981	2	14	50	1232	1218	0	518981	0	857142
2	774553	2	14	85	1388	1730	0	1295984	857143	1714285
3	741460	1	14	85	1551	0	0	2040562	1714286	2571428
4	661767	2	14	100	1568	1112	0	2703880	2571429	3428571
5	880230	1	14	65	1866	0	0	3586790	3428572	4285714
6	1109952	3	14	55	1543	1186	1756	4698608	4285715	5142857
7	536906	1	14	100	1118	0	0	5239999	5142858	6000000
8	1294244	3	14	50	1605	1984	1160	6535361	6000001	6857143
9	928948	2	14	80	1994	1443	0	7469058	6857144	7714286
10	597726	3	14	75	1798	1004	1987	8070221	7714287	8571429
11	1287138	2	14	85	1391	1885	0	9362148	8571430	9428572
12	594533	1	14	85	1415	0	0	9959957	9428573	10285715
13	625436	3	14	75	1792	1518	1582	10586808	10285716	11142858
14	1128927	1	14	90	1822	0	0	11720627	11142859	12000001

Total number of pulses in waveform = 27
****

Type 5 Radar Waveform_17

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	111031	1	19	85	1419	0	0	111031	0	1199999
2	2216119	1	19	95	1170	0	0	2328569	1200000	2399999
3	969833	2	19	90	1576	1699	0	3299572	2400000	3599999
4	567198	3	19	50	1382	1340	1026	3870045	3600000	4799999
5	1785495	1	19	80	1002	0	0	5659288	4800000	5999999
6	737795	3	19	70	1415	1713	1241	6398085	6000000	7199999
7	1503249	1	19	65	1741	0	0	7905703	7200000	8399999
8	1392831	3	19	75	1017	1070	1426	9300275	8400000	9599999
9	617786	3	19	75	1913	1051	1296	9921574	9600000	10799999
10	1828800	1	19	60	1289	0	0	11754634	10800000	11999999

Total number of pulses in waveform = 19
****

Type 5 Radar Waveform_18

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	512714	2	5	55	1612	1929	0	512714	0	1199999
2	1383306	2	5	65	1568	1196	0	1899561	1200000	2399999
3	587373	1	5	80	1241	0	0	2489698	2400000	3599999
4	1549229	2	5	70	1011	1829	0	4040168	3600000	4799999
5	922008	3	5	65	1003	1587	1764	4965016	4800000	5999999
6	1601770	1	5	85	1120	0	0	6571140	6000000	7199999
7	1705625	2	5	50	1801	1326	0	8277885	7200000	8399999
8	734102	2	5	75	1318	1595	0	9015114	8400000	9599999
9	1371426	3	5	70	1966	1107	1480	10389453	9600000	10799999
10	1219812	1	5	65	1329	0	0	11613818	10800000	11999999

Total number of pulses in waveform = 19
****

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	959366	3	8	95	1567	1205	1924	959366	0	1199999
2	1183037	1	8	90	1162	0	0	2147099	1200000	2399999
3	1162156	3	8	65	1230	1238	1507	3310417	2400000	3599999
4	1463534	1	8	100	1940	0	0	4777926	3600000	4799999
5	435699	2	8	100	1842	1305	0	5215565	4800000	5999999
6	1584600	3	8	100	1698	1897	1471	6803312	6000000	7199999
7	468838	3	8	100	1744	1627	1988	7277216	7200000	8399999
8	1730089	3	8	100	1107	1882	1750	9012664	8400000	9599999
9	585635	1	8	100	1840	0	0	9603038	9600000	10799999
10	2334566	1	8	50	1917	0	0	11939444	10800000	11999999

Total number of pulses in waveform = 21
****

Type 5 Radar Waveform_20

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	413862	1	10	60	1107	0	0	413862	0	799999
2	559042	3	10	55	1043	1386	1240	974011	800000	1599999
3	1065997	1	10	50	1621	0	0	2043677	1600000	2399999
4	441166	2	10	95	1829	1354	0	2486464	2400000	3199999
5	729656	1	10	100	1055	0	0	3219303	3200000	3999999
6	1394237	3	10	100	1194	1848	1674	4614595	4000000	4799999
7	338542	3	10	55	1150	1147	1080	4957853	4800000	5599999
8	785429	1	10	65	1840	0	0	5746659	5600000	6399999
9	1057034	3	10	100	1116	1366	1825	6805533	6400000	7199999
10	502602	1	10	70	1731	0	0	7312442	7200000	7999999
11	861620	3	10	75	1461	1842	1619	8175793	8000000	8799999
12	909553	2	10	50	1470	1714	0	9090268	8800000	9599999
13	1179342	3	10	80	1998	1123	1539	10272794	9600000	10399999
14	730294	2	10	75	1916	1343	0	11007748	10400000	11199999
15	730450	1	10	60	1997	0	0	11741457	11200000	11999999

Total number of pulses in waveform = 30
****

Type 5 Radar Waveform_21

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	371146	3	9	90	1206	1363	1779	371146	0	666666
2	684457	1	9	70	1733	0	0	1059951	666667	1333333
3	729505	3	9	50	1827	1971	1304	1791189	1333334	2000000
4	805616	1	9	50	1216	0	0	2601907	2000001	2666667
5	453790	1	9	60	1033	0	0	3056913	2666668	3333334
6	669506	2	9	100	1513	1674	0	3727452	3333335	4000001
7	412754	2	9	100	1120	1055	0	4143393	4000002	4666668
8	939457	1	9	60	1890	0	0	5085025	4666669	5333335
9	876303	1	9	70	1663	0	0	5963218	5333336	6000002
10	694564	2	9	70	1825	1869	0	6659445	6000003	6666669
11	265211	1	9	70	1171	0	0	6928350	6666670	7333336
12	729892	1	9	80	1026	0	0	7659413	7333337	8000003
13	967173	1	9	70	1129	0	0	8627612	8000004	8666670
14	264154	3	9	100	1961	1198	1480	8892895	8666671	9333337
15	698048	2	9	90	1210	1015	0	9595582	9333338	10000004
16	620029	1	9	55	1102	0	0	10217836	10000005	10666671
17	1039982	3	9	100	1830	1096	1896	11258920	10666672	11333338
18	510210	1	9	95	1282	0	0	11773952	11333339	12000005

Total number of pulses in waveform = 30
****

Type 5 Radar Waveform_22

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	192712	1	12	75	1780	0	0	192712	0	1499999
2	2241075	2	12	55	1502	1446	0	2435567	1500000	2999999
3	1311688	3	12	90	1306	1268	1327	3750203	3000000	4499999
4	758370	2	12	90	1513	1272	0	4512474	4500000	5999999
5	2789035	3	12	90	1708	1273	1622	7304294	6000000	7499999
6	995805	3	12	90	1140	1536	1461	8304702	7500000	8999999
7	1405507	1	12	100	1483	0	0	9714346	9000000	10499999
8	1350481	1	12	90	1275	0	0	11066310	10500000	11999999

Total number of pulses in waveform = 16
****

Type 5 Radar Waveform_23

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)
	746011									
1		2	14	55	1687	1513	0	746011	0	1090908
	903434									
2		2	14	85	1168	1297	0	1652645	1090909	2181817
	813553									
3		3	14	80	1771	1664	1774	2468663	2181818	3272726
	1571086									
4		3	14	100	1203	1522	1297	4044958	3272727	4363635
	460541									
5		2	14	90	1509	1391	0	4509521	4363636	5454544
	1940004									
6		2	14	75	1133	1971	0	6452425	5454545	6545453
	382737									
7		3	14	75	1457	1777	1040	6838266	6545454	7636362
	837415									
8		2	14	60	1270	1901	0	7679955	7636363	8727271
	2069499									
9		3	14	60	1306	1768	1890	9752625	8727272	9818180
	940720									
10		3	14	85	1604	1736	1220	10698309	9818181	10909089
	1017911									
11		3	14	85	1275	1855	1521	11720780	10909090	11999998

Total number of pulses in waveform = 28
****

Type 5 Radar Waveform_24

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)
	1040045									
1		1	6	80	1115	0	0	1040045	0	1499999
	1068470									
2		2	6	80	1294	1284	0	2109630	1500000	2999999
	1502064									
3		3	6	90	1969	1272	1785	3614272	3000000	4499999
	1330511									
4		3	6	50	1475	1506	1128	4949809	4500000	5999999
	1968442									
5		1	6	60	1803	0	0	6922360	6000000	7499999
	658807									
6		1	6	55	1012	0	0	7582970	7500000	8999999
	2519492									
7		3	6	90	1528	1554	1557	10103474	9000000	10499999
	427143									
8		1	6	50	1635	0	0	10535256	10500000	11999999

Total number of pulses in waveform = 15
****

Type 5 Radar Waveform_25

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)
	678388									
1		3	18	85	1546	1219	1718	678388	0	799999
	321662									
2		3	18	75	1827	1563	1686	1004533	800000	1599999
	662621									
3		3	18	100	1723	1183	1711	1672230	1600000	2399999
	1236593									
4		3	18	80	1536	1303	1741	2913440	2400000	3199999
	849423									
5		3	18	95	1280	1366	1979	3767443	3200000	3999999
	916741									
6		1	18	80	1790	0	0	4688809	4000000	4799999
	446739									
7		3	18	50	1016	1687	1171	5137338	4800000	5599999
	938626									
8		3	18	80	1084	1783	1549	6079838	5600000	6399999
	1108014									
9		2	18	100	1378	1738	0	7192268	6400000	7199999
	255494									
10		3	18	50	1001	1092	1122	7450878	7200000	7999999
	843445									
11		1	18	80	1263	0	0	8297538	8000000	8799999
	1014008									
12		2	18	95	1143	1918	0	9312809	8800000	9599999
	312878									
13		2	18	95	1581	1675	0	9628748	9600000	10399999
	1433889									
14		3	18	85	1407	1615	1835	11065893	10400000	11199999
	736358									
15		1	18	60	1693	0	0	11807108	11200000	11999999

Total number of pulses in waveform = 36
****

Type 5 Radar Waveform_26

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	534438	1	17	85	1863	0	0	534438	0	631578
2	135874	3	17	90	1716	1481	1174	672175	631579	1263157
3	708501	3	17	100	1719	1752	1340	1385047	1263158	1894736
4	844549	3	17	75	1401	1606	1137	2234407	1894737	2526315
5	449195	1	17	85	1689	0	0	2687746	2526316	3157894
6	798575	3	17	85	1317	1801	1472	3488010	3157895	3789473
7	586299	3	17	80	1109	1651	1552	4078899	3789474	4421052
8	530816	1	17	100	1355	0	0	4614027	4421053	5052631
9	1020224	3	17	60	1905	1662	1081	5635606	5052632	5684210
10	164985	2	17	60	1391	1007	0	5805239	5684211	6315789
11	512826	2	17	55	1334	1853	0	6320463	6315790	6947368
12	920008	3	17	50	1339	1286	1733	7243658	6947369	7578947
13	345494	1	17	65	1317	0	0	7593510	7578948	8210526
14	1165275	1	17	50	1604	0	0	8760102	8210527	8842105
15	549348	2	17	60	1277	1033	0	9311054	8842106	9473684
16	246199	3	17	85	1687	1962	1369	9559563	9473685	10105263
17	880638	3	17	85	1927	1147	1158	10445219	10105264	10736842
18	859488	3	17	80	1298	1003	1990	11308939	10736843	11368421
19	109460	3	17	70	1864	1400	1083	11422690	11368422	12000000

Total number of pulses in waveform = 44
****

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	85074	3	19	80	1494	1093	1554	85074	0	999999
2	1285710	3	19	95	1272	1087	1650	1374925	1000000	1999999
3	1096477	2	19	75	1459	1722	0	2475411	2000000	2999999
4	1489299	3	19	75	1668	1234	1403	3967891	3000000	3999999
5	731250	3	19	60	1471	1083	1143	4703446	4000000	4999999
6	712698	2	19	70	1355	1262	0	5419841	5000000	5999999
7	945777	2	19	80	1227	1108	0	6368235	6000000	6999999
8	1375768	2	19	90	1467	1999	0	7746338	7000000	7999999
9	721521	2	19	90	1239	1366	0	8471325	8000000	8999999
10	628517	2	19	85	1768	1280	0	9102447	9000000	9999999
11	1247123	3	19	85	1234	1255	1935	10352618	10000000	10999999
12	1238145	2	19	70	1933	1440	0	11595187	11000000	11999999

Total number of pulses in waveform = 29
****

Type 5 Radar Waveform_28

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	41267	3	5	75	1595	1120	1178	41267	0	1090908
2	1525366	2	5	70	1225	1600	0	1570526	1090909	2181817
3	1251117	3	5	90	1512	1684	1231	2824468	2181818	3272726
4	1360076	3	5	100	1840	1893	1595	4188971	3272727	4363635
5	972897	1	5	85	1814	0	0	5167196	4363636	5454544
6	675004	2	5	55	1625	1212	0	5844014	5454545	6545453
7	1435378	1	5	75	1397	0	0	7282229	6545454	7636362
8	408142	3	5	95	1744	1808	1781	7691768	7636363	8727271
9	2100770	2	5	100	1369	1513	0	9797871	8727272	9818180
10	518427	1	5	80	1413	0	0	10319180	9818181	10909089
11	807692	1	5	50	1082	0	0	11128285	10909090	11999998

Total number of pulses in waveform = 22
****

Type 5 Radar Waveform_29

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	175288	2	10	75	1711	1562	0	175288	0	1499999
2	1829229	2	10	70	1531	1857	0	2007790	1500000	2999999
3	1348739	2	10	50	1726	1809	0	3359917	3000000	4499999
4	2311103	2	10	70	1599	1971	0	5674555	4500000	5999999
5	927570	2	10	75	1214	1174	0	6605695	6000000	7499999
6	918528	3	10	70	1779	1882	1457	7526611	7500000	8999999
7	1976285	2	10	90	1266	1472	0	9508014	9000000	10499999
8	1562651	3	10	90	1512	1770	1220	11073403	10500000	11999999

Total number of pulses in waveform = 18
****

Type 5 Radar Waveform_30

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	348291	2	8	50	1851	1429	0	348291	0	666666
2	846106	3	8	90	1921	1864	1666	1197677	666667	1333333
3	485846	2	8	85	1316	1676	0	1688974	1333334	2000000
4	801684	1	8	55	1287	0	0	2493650	2000001	2666667
5	226919	1	8	85	1592	0	0	2721856	2666668	3333334
6	705458	2	8	65	1289	1282	0	3428906	3333335	4000001
7	884593	1	8	55	1809	0	0	4316070	4000002	4666668
8	984656	1	8	90	1508	0	0	5302535	4666669	5333335
9	522232	3	8	65	1551	1333	1481	5826275	5333336	6000002
10	261133	1	8	85	1049	0	0	6091773	6000003	6666669
11	1023162	3	8	90	1426	1980	1480	7115984	6666670	7333336
12	249066	2	8	70	1346	1431	0	7369936	7333337	8000003
13	1217021	2	8	50	1250	1832	0	8589734	8000004	8666670
14	726097	3	8	90	1503	1459	1220	9318913	8666671	9333337
15	378709	3	8	70	1207	1046	1172	9701804	9333338	10000004
16	606327	1	8	70	1821	0	0	10311556	10000005	10666671
17	933565	1	8	100	1596	0	0	11246942	10666672	11333338
18	301839	2	6	100	1258	1892	0	11550377	11333339	12000005

Total number of pulses in waveform = 34
****

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	5292	1
2	5292	1	17	5292	1
3	5292	1	18	5292	1
4	5292	1	19	5292	1
5	5292	1	20	5292	1
6	5292	1	21	5292	1
7	5292	1	22	5292	1
8	5292	1	23	5292	1
9	5292	1	24	5292	1
10	5292	1	25	5292	1
11	5292	1	26	5292	1
12	5292	1	27	5292	1
13	5292	1	28	5292	1
14	5292	1	29	5292	1
15	5292	1	30	5292	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5265	0	5	5274	15
12	5296	36	6	5271	18
17	5314	51	9	5279	27
37	5318	111	19	5262	57
42	5262	126	28	5298	84
44	5276	132	29	5305	87
57	5264	171	32	5319	96
62	5266	186	42	5308	126
72	5287	216	43	5269	129
75	5275	225	46	5280	138
88	5301	264	47	5284	141
98	5293	294	70	5276	210
--	--	--	83	5322	249

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5315	39	9	5281	27
39	5294	117	12	5292	36
54	5282	162	17	5289	51
62	5289	186	29	5309	87
64	5305	192	40	5271	120
69	5300	207	44	5270	132
84	5290	252	60	5314	180
86	5297	258	67	5266	201
92	5302	276	73	5311	219
98	5293	294	86	5287	258
--	--	--	87	5282	261
--	--	--	99	5265	297

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5318	0	4	5319	12
14	5264	42	10	5298	30
19	5276	57	22	5282	66
24	5294	72	25	5284	75
32	5311	96	27	5293	81
44	5320	132	35	5262	105
45	5278	135	38	5304	114
46	5269	138	40	5275	120
48	5293	144	48	5278	144
61	5299	183	49	5264	147
74	5298	222	50	5289	150
92	5271	276	51	5299	153
97	5267	291	54	5300	162
--	--	--	60	5313	180
--	--	--	66	5280	198
--	--	--	69	5290	207
--	--	--	80	5283	240

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5299	9	0	5313	0
6	5309	18	11	5277	33
13	5321	39	12	5274	36
14	5304	42	16	5301	48
18	5294	54	32	5265	96
30	5288	90	38	5289	114
35	5287	105	47	5275	141
38	5265	114	78	5279	234
43	5264	129	80	5299	240
46	5314	138	82	5272	246
49	5310	147	92	5300	276
59	5270	177	97	5298	291
62	5274	186	99	5317	297
67	5296	201	--	--	--
76	5290	228	--	--	--
79	5320	237	--	--	--
88	5275	264	--	--	--

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5316	15	22	5276	66
8	5280	24	31	5313	93
15	5286	45	33	5280	99
26	5262	78	44	5312	132
37	5320	111	49	5277	147
38	5270	114	53	5322	159
39	5299	117	61	5308	183
49	5269	147	62	5319	186
63	5292	189	67	5286	201
70	5288	210	80	5296	240
72	5274	216	93	5288	279
88	5314	264	--	--	--
92	5284	276	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
11	5277	33	8	5296	24
14	5269	42	24	5263	72
16	5279	48	26	5280	78
25	5268	75	27	5282	81
46	5315	138	30	5311	90
51	5280	153	32	5273	96
66	5284	198	38	5286	114
68	5304	204	44	5302	132
74	5288	222	57	5313	171
77	5271	231	61	5266	183
81	5300	243	62	5281	186
86	5294	258	64	5292	192
92	5295	276	74	5276	222
94	5287	282	96	5284	288

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5310	21	4	5264	12
16	5279	48	8	5320	24
17	5296	51	9	5267	27
26	5304	78	10	5315	30
33	5294	99	16	5266	48
45	5285	135	25	5280	75
67	5302	201	31	5277	93
71	5283	213	42	5302	126
84	5301	252	51	5288	153
--	--	--	67	5294	201
--	--	--	70	5310	210
--	--	--	84	5291	252

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5319	12	1	5295	3
8	5305	24	24	5317	72
33	5300	99	32	5279	96
35	5280	105	34	5319	102
36	5264	108	38	5302	114
38	5310	114	44	5311	132
40	5303	120	45	5298	135
41	5277	123	60	5287	180
66	5307	198	63	5318	189
68	5304	204	67	5297	201
70	5296	210	74	5300	222
91	5293	273	78	5307	234
97	5288	291	--	--	--

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5300	12	5	5294	15
9	5320	27	24	5284	72
30	5268	90	31	5316	93
34	5294	102	43	5285	129
35	5299	105	50	5302	150
40	5317	120	55	5267	165
41	5311	123	71	5274	213
45	5287	135	76	5313	228
49	5276	147	89	5269	267
51	5270	153	91	5319	273
54	5295	162	93	5306	279
56	5290	168	--	--	--
63	5274	189	--	--	--
68	5293	204	--	--	--
69	5301	207	--	--	--
73	5319	219	--	--	--
85	5298	255	--	--	--
86	5306	258	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5320	27	1	5299	3
10	5265	30	4	5316	12
33	5269	99	7	5311	21
61	5292	183	8	5309	24
77	5263	231	11	5306	33
79	5285	237	17	5292	51
95	5282	285	18	5286	54
--	--	--	42	5272	126
--	--	--	57	5274	171
--	--	--	58	5275	174
--	--	--	64	5287	192
--	--	--	68	5312	204
--	--	--	70	5304	210
--	--	--	71	5291	213
--	--	--	91	5271	273

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5322	3	1	5272	3
2	5311	6	6	5282	18
13	5287	39	18	5294	54
17	5290	51	23	5308	69
18	5281	54	25	5306	75
26	5308	78	31	5296	93
29	5295	87	34	5267	102
35	5273	105	40	5301	120
39	5268	117	44	5300	132
45	5313	135	50	5264	150
51	5298	153	53	5316	159
53	5306	159	55	5289	165
58	5279	174	62	5276	186
61	5297	183	65	5304	195
71	5302	213	83	5313	249
80	5310	240	84	5284	252
84	5314	252	97	5302	291

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5281	24	2	5281	6
9	5312	27	5	5285	15
11	5317	33	18	5298	54
27	5291	81	38	5309	114
30	5299	90	45	5313	135
50	5278	150	47	5312	141
52	5318	156	52	5301	156
56	5306	168	58	5269	174
60	5284	180	60	5262	180
63	5283	189	61	5311	183
71	5295	213	67	5305	201
79	5310	237	69	5322	207
93	5305	279	75	5282	225
--	--	--	76	5280	228
--	--	--	86	5296	258

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5264	3	17	5271	51
23	5307	69	18	5264	54
24	5263	72	20	5321	60
40	5290	120	27	5281	81
47	5291	141	28	5262	84
50	5302	150	31	5296	93
55	5304	165	41	5320	123
59	5320	177	42	5263	126
64	5315	192	43	5279	129
69	5314	207	47	5266	141
89	5308	267	58	5300	174
91	5275	273	59	5310	177
--	--	--	60	5275	180
--	--	--	68	5292	204
--	--	--	71	5302	213
--	--	--	83	5306	249
--	--	--	95	5291	285

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5306	15	5	5306	15
7	5312	21	7	5312	21
11	5268	33	11	5268	33
20	5280	60	20	5280	60
26	5273	78	26	5273	78
32	5304	96	32	5304	96
34	5311	102	34	5311	102
62	5275	186	62	5275	186
82	5317	246	82	5317	246
85	5288	255	85	5288	255
92	5320	276	92	5320	276

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5278	0	3	5288	9
2	5291	6	13	5290	39
9	5281	27	20	5268	60
10	5315	30	23	5279	69
17	5266	51	26	5272	78
23	5270	69	35	5301	105
37	5298	111	43	5274	129
39	5294	117	54	5302	162
43	5316	129	65	5321	195
48	5265	144	74	5283	222
95	5289	285	84	5276	252

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	5293	1	898	59	1
2	5293	1	598	89	1
3	5293	1	798	67	1
4	5293	1	678	78	1
5	5293	1	698	76	1
6	5293	1	3066	18	1
7	5293	1	778	68	1
8	5293	1	838	63	1
9	5293	1	658	81	1
10	5293	1	638	83	1
11	5293	1	918	58	1
12	5293	1	618	86	1
13	5293	1	558	95	1
14	5293	1	658	81	1
15	5293	1	858	62	1
16	5293	1	2662	20	1
17	5293	1	1095	49	1
18	5293	1	1427	37	1
19	5293	1	1012	53	1
20	5293	1	2955	18	1
21	5293	1	1335	40	1
22	5293	1	1898	28	1
23	5293	1	2308	23	1
24	5293	1	2650	20	1
25	5293	1	1512	35	1
26	5293	1	1550	35	1
27	5293	1	2198	25	1
28	5293	1	612	87	1
29	5293	1	2740	20	1
30	5293	1	2092	26	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	5328	3.1	184	29	1
2	5328	2.4	172	24	1
3	5328	2.9	161	29	1
4	5328	4.7	158	27	1
5	5328	3.3	188	23	1
6	5328	2.8	187	23	1
7	5328	4.5	212	26	1
8	5328	1.9	214	25	1
9	5328	1.9	202	28	1
10	5328	4.3	176	25	1
11	5328	2.1	184	26	1
12	5328	1.8	158	26	1
13	5328	3.0	200	25	1
14	5328	4.3	171	26	1
15	5328	1.6	189	23	1
16	5328	4.4	184	27	1
17	5328	3.9	179	27	1
18	5328	2.1	225	29	1
19	5328	1.8	156	29	1
20	5328	4.9	150	29	1
21	5328	1.9	201	23	1
22	5328	2.9	228	27	1
23	5328	4.2	177	27	1
24	5328	3.7	169	28	1
25	5328	5.0	223	26	1
26	5328	4.4	219	28	1
27	5328	4.2	209	24	1
28	5328	1.6	211	29	1
29	5328	1.2	210	27	1
30	5328	2.1	217	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	5310	9.9	282	18	1
2	5310	6.0	371	18	1
3	5310	6.1	340	18	1
4	5310	9.8	349	16	1
5	5310	7.0	258	18	1
6	5310	9.1	408	18	1
7	5310	8.2	302	18	1
8	5310	9.9	486	17	1
9	5310	9.6	294	18	1
10	5310	6.2	267	16	1
11	5310	10.0	466	18	1
12	5310	9.0	451	16	1
13	5310	9.6	322	18	1
14	5310	6.0	443	16	1
15	5310	8.7	477	16	1
16	5310	7.0	463	16	1
17	5310	7.8	323	17	1
18	5310	9.2	367	18	1
19	5310	6.8	397	18	1
20	5310	9.4	343	17	1
21	5310	6.0	483	17	1
22	5310	7.1	462	18	1
23	5310	7.2	302	16	1
24	5310	6.4	411	18	1
25	5310	7.0	481	16	1
26	5310	9.4	451	18	1
27	5310	6.3	452	16	1
28	5310	9.1	311	16	1
29	5310	7.2	359	18	1
30	5310	9.6	345	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	5328	15.3	450	13	1
2	5328	20.0	309	12	1
3	5328	17.6	298	12	1
4	5328	16.4	343	15	1
5	5328	14.9	377	12	1
6	5328	15.8	282	14	1
7	5328	14.4	342	16	1
8	5328	19.2	350	14	1
9	5328	18.4	444	16	1
10	5328	16.1	355	13	1
11	5328	16.5	278	12	1
12	5328	14.9	379	16	1
13	5328	14.7	423	15	1
14	5328	19.2	375	14	1
15	5328	14.2	269	13	1
16	5328	17.0	344	13	1
17	5328	12.2	385	16	1
18	5328	13.5	264	14	1
19	5328	11.2	410	15	1
20	5328	14.5	324	12	1
21	5328	14.6	333	14	1
22	5328	11.5	414	12	1
23	5328	12.2	424	15	1
24	5328	12.4	350	12	1
25	5328	15.1	461	16	1
26	5328	15.9	342	12	1
27	5328	13.5	369	14	1
28	5328	16.6	375	12	1
29	5328	18.4	338	12	1
30	5328	14.3	269	12	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	5294.0	1	16	5310.0	1
2	5294.4	1	17	5310.0	1
3	5295.2	1	18	5310.0	1
4	5295.6	1	19	5310.0	1
5	5296.0	1	20	5310.0	1
6	5296.8	1	21	5326.0	1
7	5297.6	1	22	5325.6	1
8	5298.8	1	23	5324.8	1
9	5299.2	1	24	5324.4	1
10	5299.6	1	25	5324.0	1
11	5310.0	1	26	5323.2	1
12	5310.0	1	27	5322.4	1
13	5310.0	1	28	5321.2	1
14	5310.0	1	29	5320.8	1
15	5310.0	1	30	5320.4	1
Detection Percentage (%)					100%

Type 5 Radar Waveform_1

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

Burst   Off Time   #        Chirp    PW     Pulse 1   Pulse 2   Pulse 3   Start Loc   Start Burst     End Burst
#       (us)       Pulses   (MHz)    (us)   Pri(us)   Pri(us)   Pri(us)   (us)        Interval(us)    Interval(us)
        624707
1                  3        6        60     1190      1382      1305      624707      0               857142
        769875
2                  3        6        50     1487      1697      1819      1398459     857143          1714285
        433533
3                  1        6        50     1907      0         0         1836995     1714286         2571428
        1389482
4                  3        6        100    1152      1064      1369      3228384     2571429         3428571
        248340
5                  1        6        65     1606      0         0         3480309     3428572         4285714
        936142
6                  2        6        70     1228      1611      0         4418057     4285715         5142857
        975683
7                  3        6        60     1026      1045      1748      5396579     5142858         6000000
        1350334
8                  3        6        100    1109      1542      1834      6750732     6000001         6857143
        438084
9                  3        6        55     1543      1121      1513      7193301     6857144         7714286
        947900
10                 1        6        95     1537      0         0         8145378     7714287         8571429
        484332
11                 2        6        65     1712      1734      0         8631247     8571430         9428572
        1281831
12                 1        6        80     1912      0         0         9916524     9428573         10285715
        922483
13                 2        6        100    1380      1562      0         10840919    10285716        11142858
        658650
14                 3        6        80     1490      1661      1939      11502511    11142859        12000001
Total number of pulses in waveform = 31
****************************************************************************
```

Type 5 Radar Waveform_2

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)
	889920									
1		2	12	75	1276	1774	0	889920	0	1090908
	636324									
2		1	12	100	1349	0	0	1529294	1090909	2181817
	1710197									
3		1	12	65	1254	0	0	3240840	2181818	3272726
	77222									
4		2	12	65	1949	1059	0	3319316	3272727	4363635
	1263310									
5		2	12	60	1450	1927	0	4585634	4363636	5454544
	1850122									
6		3	12	65	1181	1421	1530	6439133	5454545	6545453
	493644									
7		1	12	90	1710	0	0	6936909	6545454	7636362
	1539220									
8		3	12	95	1445	1993	1488	8477839	7636363	8727271
	458717									
9		1	12	90	1662	0	0	8941482	8727272	9818180
	1832231									
10		3	12	75	1966	1279	1831	10775375	9818181	10909089
	1102207									
11		1	12	70	1705	0	0	11882658	10909090	11999998

Total number of pulses in waveform = 20
****

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)
	685238									
1		1	17	85	1431	0	0	685238	0	1333332
	997850									
2		1	17	70	1643	0	0	1684519	1333333	2666665
	2231664									
3		1	17	85	1692	0	0	3917826	2666666	3999998
	557950									
4		2	17	95	1442	1152	0	4477468	3999999	5333331
	1137054									
5		2	17	95	1881	1415	0	5617116	5333332	6666664
	1441949									
6		1	17	100	1006	0	0	7062361	6666665	7999997
	1891139									
7		1	17	50	1807	0	0	8954506	7999998	9333330
	1111107									
8		2	17	55	1981	1042	0	10067420	9333331	10666663
	1906620									
9		2	17	50	1612	1085	0	11977063	10666664	11999996

Total number of pulses in waveform = 13
****

Type 5 Radar Waveform_4

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)
	199113									
1		2	5	65	1341	1707	0	199113	0	631578
	1035948									
2		3	5	100	1422	1268	1594	1238109	631579	1263157
	547275									
3		3	5	80	1843	1842	1182	1789668	1263158	1894736
	547534									
4		3	5	60	1911	1166	1685	2342069	1894737	2526315
	222689									
5		2	5	60	1052	1108	0	2569520	2526316	3157894
	873015									
6		3	5	55	1492	1465	1852	3444695	3157895	3789473
	348131									
7		1	5	65	1321	0	0	3797635	3789474	4421052
	624587									
8		1	5	95	1613	0	0	4423543	4421053	5052631
	1131825									
9		1	5	60	1179	0	0	5556981	5052632	5684210
	469778									
10		2	5	55	1569	1546	0	6027938	5684211	6315789
	639736									
11		3	5	80	1259	1517	1381	6670789	6315790	6947368
	634228									
12		2	5	70	1422	1084	0	7309174	6947369	7578947
	712189									
13		1	5	100	1858	0	0	8023869	7578948	8210526
	533208									
14		1	5	70	1852	0	0	8558935	8210527	8842105
	577746									
15		2	5	70	1817	1843	0	9138533	8842106	9473684
	490975									
16		3	5	90	1514	1736	1219	9633168	9473685	10105263
	1023967									
17		3	5	50	1860	1116	1637	10661604	10105264	10736842
	531601									
18		2	5	55	1523	1615	0	11197818	10736843	11368421
	529850									
19		2	5	70	1265	1423	0	11730806	11368422	12000000

Total number of pulses in waveform = 40
****

Type 5 Radar Waveform_5

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	469130	2	19	85	1656	1253	0	469130	0	666666
2	318009	1	19	55	1029	0	0	790048	666667	1333333
3	1180491	1	19	75	1000	0	0	1971568	1333334	2000000
4	505046	3	19	100	1149	1106	1149	2477614	2000001	2666667
5	263916	2	19	55	1564	1709	0	2744934	2666668	3333334
6	983034	2	19	70	1657	1468	0	3731241	3333335	4000001
7	834540	1	19	60	1073	0	0	4568906	4000002	4666668
8	554484	2	19	75	1899	1476	0	5124463	4666669	5333335
9	523245	2	19	95	1570	1900	0	5651083	5333336	6000002
10	402744	3	19	95	1117	1712	1053	6057297	6000003	6666669
11	631055	2	19	55	1078	1658	0	6692234	6666670	7333336
12	883421	3	19	100	1177	1813	1095	7578391	7333337	8000003
13	755061	1	19	80	1568	0	0	8337537	8000004	8666670
14	722917	2	19	75	1766	1971	0	9062022	8666671	9333337
15	500023	3	19	60	1021	1851	1895	9565782	9333338	10000004
16	756311	2	19	55	1269	1306	0	10326860	10000005	10666671
17	433739	3	19	55	1217	1504	1148	10763174	10666672	11333338
18	930212	1	19	70	1033	0	0	11697255	11333339	12000005

Total number of pulses in waveform = 36
****

Type 5 Radar Waveform_6

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	345272	1	9	65	1136	0	0	345272	0	749999
2	568692	1	9	80	1539	0	0	915100	750000	1499999
3	1292834	1	9	65	1474	0	0	2209473	1500000	2249999
4	682970	2	9	80	1573	1977	0	2893917	2250000	2999999
5	389016	2	9	100	1070	1372	0	3286483	3000000	3749999
6	504850	2	9	95	1343	1914	0	3793775	3750000	4499999
7	1328345	2	9	85	1581	1990	0	5125377	4500000	5249999
8	578163	1	9	65	1622	0	0	5707111	5250000	5999999
9	939327	1	9	90	1301	0	0	6648060	6000000	6749999
10	610481	1	9	65	1136	0	0	7259842	6750000	7499999
11	417321	3	9	100	1807	1534	1722	7678299	7500000	8249999
12	849384	3	9	60	1813	1976	1589	8532746	8250000	8999999
13	1049338	1	9	80	1112	0	0	9587462	9000000	9749999
14	605628	3	9	95	1946	1969	1188	10194202	9750000	10499999
15	478827	2	9	60	1508	1083	0	10678132	10500000	11249999
16	852408	3	9	75	1692	1584	1457	11533131	11250000	11999999

Total number of pulses in waveform = 29
****

Type 5 Radar Waveform_7

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	472232	1	14	65	1899	0	0	472232	0	1090908
2	714773	1	14	50	1613	0	0	1188904	1090909	2181817
3	1067013	1	14	60	1609	0	0	2257530	2181818	3272726
4	1768217	1	14	70	1103	0	0	4027356	3272727	4363635
5	757445	3	14	85	1588	1311	1032	4785904	4363636	5454544
6	942519	1	14	85	1154	0	0	5732354	5454545	6545453
7	1276321	3	14	55	1180	1638	1493	7009829	6545454	7636362
8	1578791	2	14	50	1095	1961	0	8592931	7636363	8727271
9	394435	2	14	95	1270	1201	0	8990422	8727272	9818180
10	1898701	1	14	70	1182	0	0	10891594	9818181	10909089
11	896768	3	14	65	1676	1384	1061	11789544	10909090	11999998

Total number of pulses in waveform = 19
****

Type 5 Radar Waveform_8

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	754045	1	8	80	1884	0	0	754045	0	799999
2	839211	1	8	85	1969	0	0	1595140	800000	1599999
3	173392	1	8	55	1038	0	0	1770501	1600000	2399999
4	1221197	1	8	100	1004	0	0	2992736	2400000	3199999
5	704787	3	8	80	1408	1675	1342	3698527	3200000	3999999
6	636166	3	8	100	1259	1764	1211	4339118	4000000	4799999
7	468015	3	8	85	1582	1281	1514	4811367	4800000	5599999
8	935704	2	8	75	1521	1020	0	5751448	5600000	6399999
9	1114271	2	8	90	1422	1999	0	6868260	6400000	7199999
10	454516	1	8	65	1943	0	0	7326197	7200000	7999999
11	1214507	1	8	100	1668	0	0	8542647	8000000	8799999
12	294777	3	8	80	1632	1718	1385	8839092	8800000	9599999
13	827671	3	8	85	1136	1926	1910	9671498	9600000	10399999
14	1051142	2	8	85	1024	1104	0	10727612	10400000	11199999
15	1199246	3	8	55	1385	1920	1646	11928986	11200000	11999999

Total number of pulses in waveform = 30
****

Type 5 Radar Waveform_9

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	117494	2	18	70	1102	1358	0	117494	0	999999
2	1628739	2	18	55	1292	1948	0	1748693	1000000	1999999
3	1161570	3	18	90	1188	1751	1743	2913503	2000000	2999999
4	998737	2	18	70	1340	1086	0	3916922	3000000	3999999
5	583399	1	18	95	1234	0	0	4502747	4000000	4999999
6	1216390	3	18	75	1429	1359	1549	5720371	5000000	5999999
7	993658	3	18	50	1140	1846	1288	6718366	6000000	6999999
8	796381	3	18	50	1887	1081	1480	7519021	7000000	7999999
9	1341540	1	18	55	1110	0	0	8865009	8000000	8999999
10	252472	1	18	65	1451	0	0	9118591	9000000	9999999
11	1728719	3	18	70	1271	1867	1486	10848761	10000000	10999999
12	943295	3	18	50	1500	1252	1426	11796680	11000000	11999999

Total number of pulses in waveform = 27
****

Type 5 Radar Waveform_10

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	111404	2	10	80	1153	1196	0	111404	0	857142
2	814364	1	10	50	1326	0	0	928117	857143	1714285
3	785400	1	10	90	1505	0	0	1714843	1714286	2571428
4	904327	3	10	90	1141	1211	1153	2620675	2571429	3428571
5	818867	2	10	50	1643	1575	0	3443047	3428572	4285714
6	1509977	3	10	60	1511	1033	1830	4956242	4285715	5142857
7	539989	2	10	75	1521	1639	0	5500605	5142858	6000000
8	630990	3	10	100	1300	1086	1595	6134755	6000001	6857143
9	1563567	1	10	85	1374	0	0	7702303	6857144	7714286
10	358916	2	10	65	1011	1343	0	8062593	7714287	8571429
11	1347220	3	10	90	1570	1194	1149	9412167	8571430	9428572
12	451177	3	10	70	1678	1926	1349	9867257	9428573	10285715
13	560058	3	10	95	1103	1146	1002	10432268	10285716	11142858
14	930214	2	10	60	1052	1524	0	11365733	11142859	12000001

Total number of pulses in waveform = 31
****

Type 5 Radar Waveform_11

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	875032	2	9	55	1994	1018	0	875032	0	923076
2	836441	1	9	50	1657	0	0	1714485	923077	1846153
3	353876	1	9	75	1620	0	0	2070018	1846154	2769230
4	1044414	1	9	55	1597	0	0	3116052	2769231	3692307
5	1283627	2	9	90	1776	1406	0	4401276	3692308	4615384
6	1038272	1	9	95	1683	0	0	5442730	4615385	5538461
7	724389	2	9	50	1342	1874	0	6168802	5538462	6461538
8	961358	3	9	50	1948	1372	1623	7133376	6461539	7384615
9	923961	2	9	55	1887	1329	0	8062280	7384616	8307692
10	486336	2	9	65	1708	1989	0	8551832	8307693	9230769
11	1479262	3	9	65	1311	1039	1400	10034791	9230770	10153846
12	391486	1	9	70	1584	0	0	10430027	10153847	11076923
13	1322948	3	9	70	1281	1606	1032	11754559	11076924	12000000

Total number of pulses in waveform = 24
****

Type 5 Radar Waveform_12

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	612143	1	14	65	1829	0	0	612143	0	799999
2	878771	2	14	55	1319	1690	0	1492743	800000	1599999
3	633907	3	14	100	1063	1800	1888	2129659	1600000	2399999
4	607370	2	14	60	1998	1611	0	2741780	2400000	3199999
5	550091	3	14	70	1531	1406	1726	3295480	3200000	3999999
6	1372614	1	14	80	1082	0	0	4672757	4000000	4799999
7	150178	3	14	85	1712	1441	1648	4824017	4800000	5599999
8	1037788	1	14	95	1863	0	0	5866606	5600000	6399999
9	744344	2	14	75	1558	1525	0	6612813	6400000	7199999
10	657576	1	14	100	1372	0	0	7273472	7200000	7999999
11	1496553	2	14	55	1121	1366	0	8771397	8000000	8799999
12	322420	1	14	70	1216	0	0	9096304	8800000	9599999
13	740437	2	14	95	1057	1084	0	9837957	9600000	10399999
14	1328968	2	14	100	1162	1461	0	11169066	10400000	11199999
15	379347	2	14	80	1501	1353	0	11551036	11200000	11999999

Total number of pulses in waveform = 28
****

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	36238	1	10	90	1514	0	0	36238	0	631578
2	860456	3	10	75	1392	1943	1944	898208	631579	1263157
3	528469	1	10	95	1512	0	0	1431956	1263158	1894736
4	701101	1	10	95	1984	0	0	2134569	1894737	2526315
5	934606	3	10	85	1011	1236	1043	3071159	2526316	3157894
6	573199	2	10	80	1278	1558	0	3647648	3157895	3789473
7	328359	2	10	65	1286	1354	0	3978843	3789474	4421052
8	1024849	3	10	80	1131	1345	1129	5006332	4421053	5052631
9	178227	3	10	70	1300	1196	1817	5188164	5052632	5684210
10	563849	3	10	85	1566	1737	1741	5756326	5684211	6315789
11	1180005	1	10	75	1904	0	0	6941375	6315790	6947368
12	345755	3	10	55	1299	1092	1761	7289034	6947369	7578947
13	632057	1	10	85	1946	0	0	7925243	7578948	8210526
14	303413	1	10	65	1964	0	0	8230602	8210527	8842105
15	1037000	3	10	80	1559	1668	1906	9269566	8842106	9473684
16	587318	1	10	55	1852	0	0	9862017	9473685	10105263
17	469820	1	10	50	1347	0	0	10333689	10105264	10736842
18	651626	2	10	60	1177	1522	0	10986662	10736843	11368421
19	969108	2	10	55	1324	1275	0	11958469	11368422	12000000

Total number of pulses in waveform = 37
****

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	189168	1	6	90	1662	0	0	189168	0	1499999
2	1855483	1	6	80	1902	0	0	2046313	1500000	2999999
3	1684741	2	6	90	1726	1226	0	3732956	3000000	4499999
4	2222158	3	6	85	1196	1489	1052	5958066	4500000	5999999
5	564076	2	6	90	1542	1057	0	6525879	6000000	7499999
6	986449	2	6	65	1855	1457	0	7514927	7500000	8999999
7	2786500	2	6	60	1205	1600	0	10304739	9000000	10499999
8	533360	2	6	90	1510	1228	0	10840904	10500000	11999999

Total number of pulses in waveform = 15
****

Type 5 Radar Waveform_15

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	80178	3	19	50	1028	1312	1185	80178	0	999999
2	1263557	3	19	70	1537	1919	1033	1347260	1000000	1999999
3	1122768	1	19	90	1511	0	0	2474517	2000000	2999999
4	993221	1	19	55	1485	0	0	3469249	3000000	3999999
5	1260766	3	19	80	1176	1653	1316	4731500	4000000	4999999
6	753130	1	19	60	1915	0	0	5488775	5000000	5999999
7	1386154	3	19	90	1550	1828	1654	6876844	6000000	6999999
8	720877	1	19	85	1428	0	0	7602753	7000000	7999999
9	1120651	1	19	60	1188	0	0	8724832	8000000	8999999
10	610019	1	19	60	1662	0	0	9336039	9000000	9999999
11	903008	1	19	100	1809	0	0	10240709	10000000	10999999
12	759002	3	19	80	1519	1997	1224	11001520	11000000	11999999

Total number of pulses in waveform = 22
****

Type 5 Radar Waveform_16

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	193237	1	18	95	1350	0	0	193237	0	666666
2	1020989	2	18	100	1543	1590	0	1215576	666667	1333333
3	307648	3	18	50	1317	1736	1358	1526357	1333334	2000000
4	897339	3	18	80	1549	1723	1664	2428107	2000001	2666667
5	629943	3	18	95	1871	1896	1297	3062986	2666668	3333334
6	548075	2	18	75	1039	1756	0	3616125	3333335	4000001
7	854470	2	18	100	1703	1191	0	4473390	4000002	4666668
8	454007	2	18	65	1527	1988	0	4930291	4666669	5333335
9	636468	2	18	55	1242	1067	0	5570274	5333336	6000002
10	851821	2	18	70	1029	1318	0	6424404	6000003	6666669
11	439656	3	18	60	1147	1207	1119	6866407	6666670	7333336
12	868599	2	18	50	1929	1549	0	7738479	7333337	8000003
13	365727	2	18	75	1684	1219	0	8107684	8000004	8666670
14	1027937	1	18	55	1935	0	0	9138524	8666671	9333337
15	478049	2	18	100	1161	1718	0	9618508	9333338	10000004
16	1000877	2	18	100	1429	1378	0	10622264	10000005	10666671
17	65368	3	18	50	1994	1292	1244	10690439	10666672	11333338
18	1020198	1	18	95	1457	0	0	11715167	11333339	12000005

Total number of pulses in waveform = 38
****

Type 5 Radar Waveform_17

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	352961	3	5	60	1835	1740	1995	352961	0	705881
2	355081	2	5	100	1249	1542	0	713612	705882	1411763
3	714856	2	5	65	1068	1706	0	1431259	1411764	2117645
4	1012309	3	5	100	1666	1921	1740	2446342	2117646	2823527
5	681779	3	5	75	1174	1988	1571	3133448	2823528	3529409
6	924206	3	5	65	1940	1750	1176	4062387	3529410	4235291
7	477082	1	5	55	1687	0	0	4544335	4235292	4941173
8	670147	2	5	100	1796	1220	0	5216169	4941174	5647055
9	968569	3	5	80	1368	1118	1225	6187754	5647056	6352937
10	332462	3	5	95	1707	1767	1101	6523927	6352938	7058819
11	1186127	1	5	95	1080	0	0	7714629	7058820	7764701
12	73480	3	5	65	1898	1925	1191	7789189	7764702	8470583
13	1296953	2	5	95	1148	1110	0	9091156	8470584	9176465
14	546387	1	5	75	1374	0	0	9639801	9176466	9882347
15	513920	3	5	50	1527	1554	1375	10155095	9882348	10588229
16	829167	2	5	90	1255	1023	0	10988718	10588230	11294111
17	854732	1	5	55	1758	0	0	11845728	11294112	11999993

Total number of pulses in waveform = 38

Type 5 Radar Waveform_18

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	760119	2	8	60	1572	1421	0	760119	0	999999
2	704170	1	8	80	1296	0	0	1467282	1000000	1999999
3	1175523	3	8	100	1979	1486	1528	2644101	2000000	2999999
4	939503	3	8	85	1843	1806	1652	3588597	3000000	3999999
5	977799	1	8	75	1946	0	0	4571697	4000000	4999999
6	939520	1	8	90	1813	0	0	5513163	5000000	5999999
7	667054	2	8	70	1571	1572	0	6182030	6000000	6999999
8	1748019	2	8	50	1028	1656	0	7933192	7000000	7999999
9	870421	1	8	75	1638	0	0	8806297	8000000	8999999
10	916652	3	8	60	1267	1762	1716	9724587	9000000	9999999
11	608206	2	8	95	1063	1225	0	10337538	10000000	10999999
12	1561257	1	8	75	1819	0	0	11901083	11000000	11999999

Total number of pulses in waveform = 22

Type 5 Radar Waveform_19

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	419445	3	12	90	1396	1958	1570	419445	0	1499999
2	2032931	1	12	90	1428	0	0	2457300	1500000	2999999
3	1935121	2	12	85	1049	1042	0	4393849	3000000	4499999
4	1134237	1	12	55	1053	0	0	5530177	4500000	5999999
5	608560	2	12	70	1861	1225	0	6139790	6000000	7499999
6	2204909	3	12	100	1629	1454	1683	8347785	7500000	8999999
7	880372	1	12	75	1723	0	0	9232923	9000000	10499999
8	2365290	3	12	50	1163	1344	1278	11599936	10500000	11999999

Total number of pulses in waveform = 16

Type 5 Radar Waveform_20

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	607358	3	17	75	1520	1275	1857	607358	0	799999
2	751308	2	17	100	1867	1375	0	1363318	800000	1599999
3	810343	1	17	55	1306	0	0	2176903	1600000	2399999
4	855994	1	17	100	1226	0	0	3034203	2400000	3199999
5	930560	1	17	85	1202	0	0	3965989	3200000	3999999
6	563023	1	17	75	1845	0	0	4530214	4000000	4799999
7	652729	2	17	65	1445	1982	0	5184788	4800000	5599999
8	633949	1	17	90	1146	0	0	5822164	5600000	6399999
9	1207179	3	17	70	1373	1821	1659	7030489	6400000	7199999
10	267339	3	17	55	1726	1057	1633	7302681	7200000	7999999
11	1487871	1	17	80	1629	0	0	8794968	8000000	8799999
12	32062	3	17	55	1962	1870	1389	8828659	8800000	9599999
13	1474003	2	17	75	1837	1941	0	10307883	9600000	10399999
14	366312	3	17	70	1962	1479	1412	10677973	10400000	11199999
15	707149	3	17	55	1698	1227	1861	11389975	11200000	11999999

Total number of pulses in waveform = 30
****

Type 5 Radar Waveform_21

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	60193	1	10	90	1331	0	0	60193	0	799999
2	1298798	2	10	70	1950	1626	0	1360322	800000	1599999
3	998310	1	10	50	1288	0	0	2362208	1600000	2399999
4	776963	1	10	90	1182	0	0	3140459	2400000	3199999
5	422721	3	10	75	1869	1914	1711	3564362	3200000	3999999
6	758666	3	10	55	1413	1574	1655	4328522	4000000	4799999
7	1112563	1	10	80	1154	0	0	5445727	4800000	5599999
8	775325	2	10	50	1013	1945	0	6222206	5600000	6399999
9	628201	1	10	65	1382	0	0	6853365	6400000	7199999
10	370787	2	10	50	1841	1881	0	7225534	7200000	7999999
11	1386083	1	10	100	1509	0	0	8615339	8000000	8799999
12	381813	1	10	55	1371	0	0	8998661	8800000	9599999
13	652561	2	10	55	1417	1344	0	9652593	9600000	10399999
14	1058813	3	10	90	1259	1768	1314	10714167	10400000	11199999
15	993901	1	10	90	1196	0	0	11712409	11200000	11999999

Total number of pulses in waveform = 25
****

Type 5 Radar Waveform_22

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	293705	1	14	65	1026	0	0	293705	0	999999
2	718371	3	14	90	1944	1712	1806	1013102	1000000	1999999
3	1240007	3	14	70	1905	1079	1015	2258571	2000000	2999999
4	1576771	1	14	60	1669	0	0	3839341	3000000	3999999
5	426954	3	14	100	1831	1254	1377	4267964	4000000	4999999
6	1319233	2	14	95	1238	1159	0	5591659	5000000	5999999
7	902150	3	14	60	1082	1859	1671	6496206	6000000	6999999
8	1347193	1	14	95	1161	0	0	7848011	7000000	7999999
9	1006218	1	14	70	1662	0	0	8855390	8000000	8999999
10	231617	1	14	50	1052	0	0	9088669	9000000	9999999
11	1110603	1	14	95	1738	0	0	10200324	10000000	10999999
12	1201646	2	14	60	1292	1141	0	11403708	11000000	11999999

Total number of pulses in waveform = 22
****

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	746911	1	18	100	1973	0	0	746911	0	857142
2	663356	3	18	65	1640	1986	1267	1412240	857143	1714285
3	1064593	1	18	80	1741	0	0	2481726	1714286	2571428
4	507939	2	18	85	1298	1086	0	2991406	2571429	3428571
5	926968	1	18	90	1377	0	0	3920758	3428572	4285714
6	429410	3	18	65	1886	1475	1682	4351545	4285715	5142857
7	1207372	1	18	65	1124	0	0	5563960	5142858	6000000
8	1152427	1	18	60	1141	0	0	6717511	6000001	6857143
9	185989	3	18	65	1823	1914	1558	6904641	6857144	7714286
10	1432846	3	18	65	1885	1929	1475	8342782	7714287	8571429
11	228502	2	18	65	1125	1613	0	8576573	8571430	9428572
12	935913	3	18	100	1205	1048	1557	9515224	9428573	10285715
13	773121	3	18	60	1778	1235	1845	10292155	10285716	11142858
14	1334414	3	18	95	1321	1144	1314	11631427	11142859	12000001

Total number of pulses in waveform = 30
****

Type 5 Radar Waveform_24

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	350087	3	12	70	1596	1575	1315	350087	0	705881
2	446260	2	12	85	1525	1431	0	800833	705882	1411763
3	721205	3	12	50	1527	1245	1105	1524994	1411764	2117645
4	1067189	1	12	55	1511	0	0	2596060	2117646	2823527
5	811913	3	12	70	1780	1978	1187	3409484	2823528	3529409
6	505355	3	12	50	1317	1764	1690	3919784	3529410	4235291
7	375025	3	12	70	1047	1725	1669	4299580	4235292	4941173
8	1333458	2	12	80	1076	1887	0	5637479	4941174	5647055
9	682977	1	12	85	1003	0	0	6323419	5647056	6352937
10	567313	2	12	65	1651	1741	0	6891735	6352938	7058819
11	340791	2	12	65	1617	1356	0	7235918	7058820	7764701
12	1092095	2	12	85	1030	1457	0	8330986	7764702	8470583
13	717831	2	12	80	1874	1834	0	9051304	8470584	9176465
14	427478	2	12	95	1196	1394	0	9482490	9176466	9882347
15	1079161	1	12	70	1345	0	0	10564241	9882348	10588229
16	616766	2	12	100	1594	1615	0	11182352	10588230	11294111
17	605631	3	12	95	1144	1304	1123	11791192	11294112	11999993

Total number of pulses in waveform = 37
****

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	341695	3	8	70	1084	1971	1110	341695	0	705881
2	561964	2	8	55	1549	1003	0	907824	705882	1411763
3	1065484	2	8	90	1062	1877	0	1975860	1411764	2117645
4	351189	2	8	60	1181	1179	0	2329988	2117646	2823527
5	726054	2	8	55	1648	1703	0	3058402	2823528	3529409
6	951492	2	8	75	1162	1434	0	4013245	3529410	4235291
7	313192	2	8	95	1021	1134	0	4329033	4235292	4941173
8	993739	2	8	100	1351	1133	0	5324927	4941174	5647055
9	579689	3	8	100	1037	1049	1251	5907100	5647056	6352937
10	773097	2	8	85	1400	1687	0	6683534	6352938	7058819
11	894192	2	8	60	1331	1724	0	7580813	7058820	7764701
12	720974	3	8	100	1921	1244	1193	8304842	7764702	8470583
13	755630	1	8	90	1810	0	0	9064830	8470584	9176465
14	484677	1	8	80	1985	0	0	9551317	9176466	9882347
15	658974	2	8	100	1850	1336	0	10212276	9882348	10588229
16	668160	3	8	85	1291	1788	1155	10883622	10588230	11294111
17	594741	3	8	55	1397	1101	1137	11482597	11294112	11999993

Total number of pulses in waveform = 37
****

Type 5 Radar Waveform_26

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	501473	1	17	75	1705	0	0	501473	0	857142
2	868214	3	17	70	1201	1716	1400	1371392	857143	1714285
3	503585	2	17	55	1611	1104	0	1879294	1714286	2571428
4	736288	3	17	75	1092	1587	1842	2618297	2571429	3428571
5	1214205	3	17	55	1198	1578	1502	3837023	3428572	4285714
6	527679	2	17	50	1624	1642	0	4368980	4285715	5142857
7	1457478	3	17	80	1623	1415	1348	5829724	5142858	6000000
8	697027	1	17	65	1845	0	0	6531137	6000001	6857143
9	720930	3	17	60	1477	1388	1570	7253912	6857144	7714286
10	848593	3	17	90	1443	1087	1241	8106940	7714287	8571429
11	513758	3	17	80	1015	1532	1234	8624469	8571430	9428572
12	950610	3	17	50	1082	1386	1569	9578860	9428573	10285715
13	896284	2	17	95	1589	1069	0	10479181	10285716	11142858
14	683495	1	17	55	1665	0	0	11165334	11142859	12000001

Total number of pulses in waveform = 33
****

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	560801	1	5	75	1780	0	0	560801	0	923076
2	770295	2	5	55	1377	1831	0	1332876	923077	1846153
3	679045	2	5	85	1228	1909	0	2015129	1846154	2769230
4	1640074	2	5	55	1347	1747	0	3658340	2769231	3692307
5	745521	3	5	65	1173	1386	1563	4406955	3692308	4615384
6	829240	1	5	55	1246	0	0	5240317	4615385	5538461
7	533928	3	5	80	1569	1753	1558	5775491	5538462	6461538
8	1483667	1	5	55	1879	0	0	7264038	6461539	7384615
9	188359	2	5	80	1750	1186	0	7454276	7384616	8307692
10	893330	3	5	100	1637	1224	1741	8350542	8307693	9230769
11	1244829	2	5	60	1355	1547	0	9599973	9230770	10153846
12	862739	3	5	60	1380	1932	1245	10465614	10153847	11076923
13	869745	1	5	75	1593	0	0	11339916	11076924	12000000

Total number of pulses in waveform = 26
****

Type 5 Radar Waveform_28

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	454540	2	19	70	1847	1075	0	454540	0	923076
2	911698	2	19	65	1968	1709	0	1369160	923077	1846153
3	817777	2	19	90	1370	1102	0	2190614	1846154	2769230
4	687211	3	19	60	1026	1832	1963	2880297	2769231	3692307
5	1110160	2	19	75	1078	1287	0	3995278	3692308	4615384
6	1063477	1	19	75	1180	0	0	5061120	4615385	5538461
7	1041350	2	19	65	1230	1521	0	6103650	5538462	6461538
8	1150845	1	19	80	1038	0	0	7257246	6461539	7384615
9	902612	1	19	50	1401	0	0	8160896	7384616	8307692
10	921902	2	19	100	1934	1428	0	9084199	8307693	9230769
11	248265	2	19	70	1546	1444	0	9335826	9230770	10153846
12	1202368	1	19	85	1108	0	0	10541184	10153847	11076923
13	1164789	1	19	65	1986	0	0	11707081	11076924	12000000

Total number of pulses in waveform = 22
****

Type 5 Radar Waveform_29

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	1127542	2	6	50	1799	1166	0	1127542	0	1499999
2	880762	1	6	75	1114	0	0	2011269	1500000	2999999
3	1127718	3	6	95	1547	1904	1411	3140101	3000000	4499999
4	2484726	2	6	100	1532	1338	0	5629689	4500000	5999999
5	1679189	3	6	70	1579	1246	1756	7311748	6000000	7499999
6	540037	1	6	80	1576	0	0	7856366	7500000	8999999
7	1186607	2	6	50	1425	1056	0	9044549	9000000	10499999
8	2431547	3	6	95	1693	1848	1745	11478577	10500000	11999999

Total number of pulses in waveform = 17
****

Type 5 Radar Waveform_30

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	986945	2	9	75	1106	1145	0	986945	0	999999
2	544366	1	9	75	1469	0	0	1533562	1000000	1999999
3	1439509	1	9	50	1441	0	0	2974540	2000000	2999999
4	280224	1	9	85	1345	0	0	3256205	3000000	3999999
5	801040	1	9	90	1135	0	0	4058590	4000000	4999999
6	1208403	1	9	90	1966	0	0	5268128	5000000	5999999
7	830426	2	9	80	1957	1278	0	6100520	6000000	6999999
8	1220726	3	9	50	1403	1349	1038	7324481	7000000	7999999
9	1324251	2	9	70	1344	1136	0	8652522	8000000	8999999
10	850351	1	9	65	1683	0	0	9505353	9000000	9999999
11	902863	1	9	85	1970	0	0	10409899	10000000	10999999
12	686100	3	9	95	1310	1426	1221	11097969	11000000	11999999

Total number of pulses in waveform = 19
****

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	5327	1	16	5327	1
2	5327	1	17	5327	1
3	5327	1	18	5327	1
4	5327	1	19	5327	1
5	5327	1	20	5327	1
6	5327	1	21	5327	1
7	5327	1	22	5327	1
8	5327	1	23	5327	1
9	5327	1	24	5327	1
10	5327	1	25	5327	1
11	5327	1	26	5327	1
12	5327	1	27	5327	1
13	5327	1	28	5327	1
14	5327	1	29	5327	1
15	5327	1	30	5327	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5322	27	2	5307	6
12	5306	36	32	5352	96
19	5354	57	34	5310	102
22	5308	66	49	5356	147
30	5357	90	50	5322	150
39	5324	117	52	5347	156
46	5299	138	57	5344	171
63	5345	189	60	5324	180
66	5344	198	67	5346	201
68	5335	204	88	5315	264
82	5333	246	95	5305	285

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5354	18	4	5298	12
18	5325	54	10	5320	30
25	5300	75	12	5304	36
28	5336	84	18	5300	54
34	5322	102	23	5339	69
44	5310	132	30	5301	90
47	5320	141	34	5312	102
50	5304	150	45	5352	135
83	5344	249	51	5353	153
87	5357	261	53	5336	159
91	5333	273	58	5342	174
93	5313	279	73	5334	219
96	5351	288	91	5325	273
--	--	--	95	5310	285
--	--	--	99	5356	297

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5353	0	1	5335	3
4	5306	12	3	5325	9
6	5321	18	10	5300	30
16	5339	48	13	5338	39
29	5301	87	29	5347	87
30	5309	90	30	5323	90
33	5318	99	52	5341	156
48	5329	144	66	5331	198
62	5337	186	67	5328	201
99	5315	297	72	5354	216
--	--	--	73	5345	219
--	--	--	75	5312	225
--	--	--	78	5298	234
--	--	--	96	5308	288
--	--	--	97	5348	291
--	--	--	98	5327	294

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5333	6	15	5350	45
8	5316	24	44	5316	132
15	5312	45	46	5319	138
16	5297	48	61	5320	183
46	5356	138	64	5347	192
49	5321	147	73	5304	219
52	5309	156	74	5342	222
56	5305	168	83	5308	249
59	5310	177	93	5354	279
72	5331	216	98	5351	294
80	5350	240	99	5317	297
90	5339	270	--	--	--
91	5324	273	--	--	--
92	5325	276	--	--	--

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5339	9	7	5322	21
4	5316	12	45	5351	135
10	5317	30	51	5324	153
22	5357	66	61	5305	183
32	5330	96	67	5339	201
36	5297	108	72	5342	216
54	5319	162	73	5301	219
55	5348	165	75	5323	225
56	5308	168	96	5354	288
60	5327	180	97	5334	291
68	5310	204	98	5316	294
80	5334	240	--	--	--
96	5356	288	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5307	21	5	5354	15
9	5327	27	13	5306	39
17	5357	51	16	5311	48
20	5300	60	17	5351	51
23	5314	69	20	5319	60
28	5356	84	25	5310	75
33	5352	99	33	5330	99
37	5319	111	41	5324	123
59	5350	177	69	5342	207
70	5332	210	70	5303	210
78	5354	234	73	5321	219
92	5346	276	81	5348	243
94	5336	282	91	5350	273
--	--	--	93	5317	279
--	--	--	96	5334	288

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
0	5311	0	9	5317	27
27	5348	81	20	5320	60
32	5338	96	26	5355	78
36	5318	108	33	5327	99
37	5320	111	38	5305	114
42	5315	126	47	5332	141
56	5334	168	55	5343	165
66	5316	198	58	5350	174
74	5355	222	83	5342	249
77	5308	231	87	5310	261
81	5353	243	93	5354	279
89	5354	267	--	--	--
94	5298	282	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5309	27	16	5303	48
10	5329	30	17	5307	51
16	5330	48	22	5316	66
33	5322	99	24	5327	72
37	5307	111	29	5349	87
39	5304	117	34	5345	102
42	5326	126	37	5310	111
43	5325	129	43	5356	129
53	5323	159	89	5320	267
73	5337	219	92	5338	276
84	5355	252	95	5325	285
85	5312	255	99	5312	297
86	5298	258	--	--	--
89	5324	267	--	--	--

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5308	21	13	5356	39
8	5305	24	18	5327	54
10	5304	30	19	5314	57
15	5348	45	22	5350	66
61	5353	183	23	5306	69
67	5324	201	33	5339	99
68	5298	204	35	5298	105
75	5356	225	43	5308	129
79	5340	237	44	5353	132
82	5352	246	47	5316	141
93	5343	279	68	5319	204
--	--	--	93	5335	279
--	--	--	95	5325	285
--	--	--	97	5313	291

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5353	30	7	5309	21
22	5357	66	12	5337	36
27	5320	81	20	5346	60
37	5326	111	24	5300	72
59	5300	177	27	5324	81
65	5322	195	29	5347	87
73	5345	219	33	5319	99
77	5330	231	42	5315	126
80	5347	240	51	5342	153
83	5346	249	55	5330	165
--	--	--	71	5301	213
--	--	--	72	5316	216
--	--	--	81	5308	243
--	--	--	86	5302	258
--	--	--	87	5348	261
--	--	--	95	5306	285

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5351	3	13	5332	39
3	5334	9	18	5356	54
4	5338	12	48	5326	144
25	5342	75	51	5323	153
38	5303	114	52	5350	156
40	5315	120	58	5297	174
49	5337	147	60	5306	180
62	5347	186	61	5312	183
73	5336	219	92	5334	276
82	5302	246	--	--	--
86	5329	258	--	--	--
90	5322	270	--	--	--
91	5326	273	--	--	--
95	5308	285	--	--	--
98	5327	294	--	--	--
99	5301	297	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
15	5306	45	17	5344	51
18	5343	54	26	5312	78
24	5326	72	31	5306	93
28	5330	84	41	5327	123
43	5323	129	42	5298	126
60	5299	180	49	5345	147
68	5350	204	51	5338	153
71	5311	213	57	5342	171
73	5327	219	66	5313	198
78	5338	234	70	5311	210
88	5348	264	85	5323	255
89	5349	267	88	5301	264
95	5351	285	96	5336	288
96	5344	288	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5345	24	0	5318	0
16	5354	48	1	5314	3
28	5301	84	11	5317	33
42	5323	126	16	5308	48
45	5319	135	21	5313	63
49	5303	147	32	5323	96
62	5327	186	33	5309	99
77	5315	231	39	5311	117
78	5350	234	41	5310	123
90	5332	270	44	5350	132
94	5333	282	45	5342	135
--	--	--	48	5341	144
--	--	--	49	5330	147
--	--	--	53	5337	159
--	--	--	70	5315	210
--	--	--	80	5339	240
--	--	--	88	5303	264
--	--	--	98	5356	294

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5332	3	14	5302	42
4	5318	12	15	5323	45
9	5356	27	19	5340	57
15	5301	45	27	5337	81
37	5321	111	56	5318	168
49	5350	147	57	5312	171
53	5308	159	63	5345	189
71	5342	213	75	5310	225
78	5324	234	78	5347	234
80	5351	240	79	5344	237
89	5310	267	86	5305	258
94	5329	282	91	5321	273
96	5330	288	95	5317	285

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5326	15	6	5307	18
14	5324	42	18	5342	54
23	5331	69	20	5340	60
24	5328	72	35	5321	105
36	5319	108	36	5351	108
40	5323	120	37	5327	111
56	5315	168	44	5318	132
57	5305	171	48	5350	144
59	5301	177	49	5341	147
64	5314	192	72	5308	216
68	5325	204	74	5334	222
71	5337	213	75	5309	225
77	5350	231	--	--	--
91	5332	273	--	--	--

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	5253	1	778	68	1
2	5253	1	598	89	1
3	5253	1	938	57	1
4	5253	1	578	92	1
5	5253	1	518	102	1
6	5253	1	698	76	1
7	5253	1	898	59	1
8	5253	1	818	65	1
9	5253	1	858	62	1
10	5253	1	838	63	1
11	5253	1	918	58	1
12	5253	1	758	70	1
13	5253	1	878	61	1
14	5253	1	618	86	1
15	5253	1	738	72	1
16	5253	1	2957	18	1
17	5253	1	3010	18	1
18	5253	1	2285	24	1
19	5253	1	1765	30	1
20	5253	1	562	94	1
21	5253	1	1995	27	1
22	5253	1	2588	21	1
23	5253	1	2162	25	1
24	5253	1	1905	28	1
25	5253	1	608	87	1
26	5253	1	1423	38	1
27	5253	1	1703	31	1
28	5253	1	1697	32	1
29	5253	1	1068	50	1
30	5253	1	2701	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	5290	1.6	155	26	1
2	5290	3.1	160	24	1
3	5290	1.3	161	23	1
4	5290	2.6	151	29	1
5	5290	1.1	157	23	1
6	5290	2.2	180	27	1
7	5290	1.8	214	28	1
8	5290	2.3	176	29	1
9	5290	3.7	156	29	1
10	5290	3.9	178	26	1
11	5290	3.5	170	29	1
12	5290	3.2	171	23	1
13	5290	4.6	197	27	1
14	5290	2.6	150	24	1
15	5290	4.8	185	24	1
16	5290	1.4	219	27	1
17	5290	4.5	226	24	1
18	5290	1.1	210	29	1
19	5290	5.0	199	26	1
20	5290	4.8	228	25	1
21	5290	5.0	194	24	1
22	5290	3.3	172	29	1
23	5290	4.2	206	23	1
24	5290	2.3	163	24	1
25	5290	1.2	193	25	1
26	5290	3.8	216	24	1
27	5290	4.9	215	26	1
28	5290	3.6	193	28	1
29	5290	2.2	222	24	1
30	5290	2.1	217	24	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	5311	6.0	303	18	1
2	5311	9.6	302	16	1
3	5311	9.4	399	18	1
4	5311	8.4	335	17	1
5	5311	8.3	269	17	1
6	5311	9.3	267	17	1
7	5311	6.0	317	16	1
8	5311	9.0	321	16	1
9	5311	8.7	302	17	1
10	5311	6.3	491	17	1
11	5311	8.8	364	17	1
12	5311	7.9	283	17	1
13	5311	9.8	265	17	1
14	5311	9.6	450	18	1
15	5311	6.5	384	18	1
16	5311	6.3	468	16	1
17	5311	6.1	298	18	1
18	5311	8.3	424	16	1
19	5311	10.0	277	17	1
20	5311	6.5	263	17	1
21	5311	8.4	265	16	1
22	5311	7.1	296	17	1
23	5311	9.2	272	16	1
24	5311	8.0	353	17	1
25	5311	9.3	395	18	1
26	5311	9.6	398	17	1
27	5311	8.4	390	18	1
28	5311	8.0	428	18	1
29	5311	9.1	345	16	1
30	5311	8.9	419	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	5327	18.5	360	13	1
2	5327	11.3	407	16	1
3	5327	18.8	340	14	1
4	5327	16.9	450	13	1
5	5327	15.6	464	12	1
6	5327	17.8	500	12	1
7	5327	12.1	479	14	1
8	5327	12.1	272	12	1
9	5327	16.3	452	14	1
10	5327	18.2	303	13	1
11	5327	18.5	453	15	1
12	5327	14.7	341	14	1
13	5327	13.8	278	16	1
14	5327	12.8	439	13	1
15	5327	13.2	465	16	1
16	5327	15.5	301	14	1
17	5327	13.7	341	13	1
18	5327	11.3	265	15	1
19	5327	17.7	257	12	1
20	5327	18.6	451	14	1
21	5327	14.7	477	15	1
22	5327	14.2	396	14	1
23	5327	19.9	379	16	1
24	5327	12.9	414	15	1
25	5327	14.5	324	13	1
26	5327	16.6	368	14	1
27	5327	12.0	293	14	1
28	5327	18.9	405	15	1
29	5327	12.3	422	16	1
30	5327	14.9	480	13	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	5254.0	1	16	5290.0	1
2	5254.4	1	17	5290.0	1
3	5255.2	1	18	5290.0	1
4	5255.6	1	19	5290.0	1
5	5256.0	1	20	5290.0	1
6	5256.8	1	21	5326.0	1
7	5257.6	1	22	5325.6	1
8	5258.8	1	23	5324.8	1
9	5259.2	1	24	5324.4	1
10	5259.6	1	25	5324.0	1
11	5290.0	1	26	5323.2	1
12	5290.0	1	27	5322.4	1
13	5290.0	1	28	5321.2	1
14	5290.0	1	29	5320.8	1
15	5290.0	1	30	5320.4	1
Detection Percentage (%)					100%

Type 5 Radar Waveform_1										

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

Burst     Off Time    #        Chirp    PW       Pulse 1    Pulse 2    Pulse 3    Start Loc    Start Burst     End Burst
#         (us)        Pulses   (MHz)    (us)     Pri(us)    Pri(us)    Pri(us)    (us)         Interval(us)    Interval(us)
          78034
1                     2        10       55       1476       1135       0          78034        0               799999
          1165670
2                     2        10       75       1296       1474       0          1246315      800000          1599999
          1148314
3                     1        10       75       1623       0          0          2397399      1600000         2399999
          658489
4                     2        10       95       1909       1563       0          3057511      2400000         3199999
          183591
5                     3        10       85       1410       1843       1008       3244574      3200000         3999999
          860641
6                     2        10       95       1060       1314       0          4109476      4000000         4799999
          1319898
7                     2        10       50       1877       1126       0          5431748      4800000         5599999
          949763
8                     3        10       50       1892       1323       1352       6384514      5600000         6399999
          19298
9                     3        10       55       1216       1399       1035       6408379      6400000         7199999
          1017617
10                    1        10       100      1214       0          0          7429646      7200000         7999999
          728391
11                    1        10       85       1650       0          0          8159251      8000000         8799999
          668228
12                    1        10       100      1092       0          0          8829129      8800000         9599999
          1096707
13                    3        10       55       1637       1810       1165       9926928      9600000         10399999
          767325
14                    3        10       60       1813       1060       1890       10698865     10400000        11199999
          841185
15                    3        10       100      1982       1820       1876       11544813     11200000        11999999
Total number of pulses in waveform = 32
*****************************************************************************
```