MRT Technology (Taiwan) Co., Ltd   Report No.:   2010TW0002-UH
Phone: +886-3-3288388   Report Version: V1.0
Web: www.mrt-cert.com   Issue Date: 2020-12-07

DFS MEASUREMENT REPORT

FCC PART 15 Subpart E WLAN 802.11a/n/ac/ax

FCC ID: 2ALJ3AP30X

Applicant: HAN Networks Co., Ltd.

Application Type: Certification

Product: HAN Access Point

Model No.:   AP301

Brand Name: HAN NETWORKS; HANNETWORKS

FCC Classification: Unlicensed National Information Infrastructure (NII)

FCC Rule Part(s):   Part 15 Subpart E - 15.407 Section (h)(2)

Type of Device: Master Device

Receive Date   August 25, 2020

Test Date: September 22 ~ October 13, 2020

Tested By   :   *Fran Chen*
(Fran Chen)

Reviewed By   :   *Paddy Chen*
(Paddy Chen)

Approved By   :   *Chenz Ker*
(Chenz Ker)

The test results relate only to the samples tested.

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

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

Revision History

Report No.	Version	Description	Issue Date	Note
2010TW0002-UH	V1.0	Original Report	2020-12-07	Valid

CONTENTS

§2.1033 General Information

Applicant	HAN Networks Co., Ltd.
Applicant Address	101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China
Manufacturer	HAN Networks Co., Ltd.
Manufacturer Address	101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China
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.	291082
FCC Rule Part(s)	Part 15.247
Model No.	AP301
Test Device Serial No.:	#1 ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

1. MRT facility is an FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.
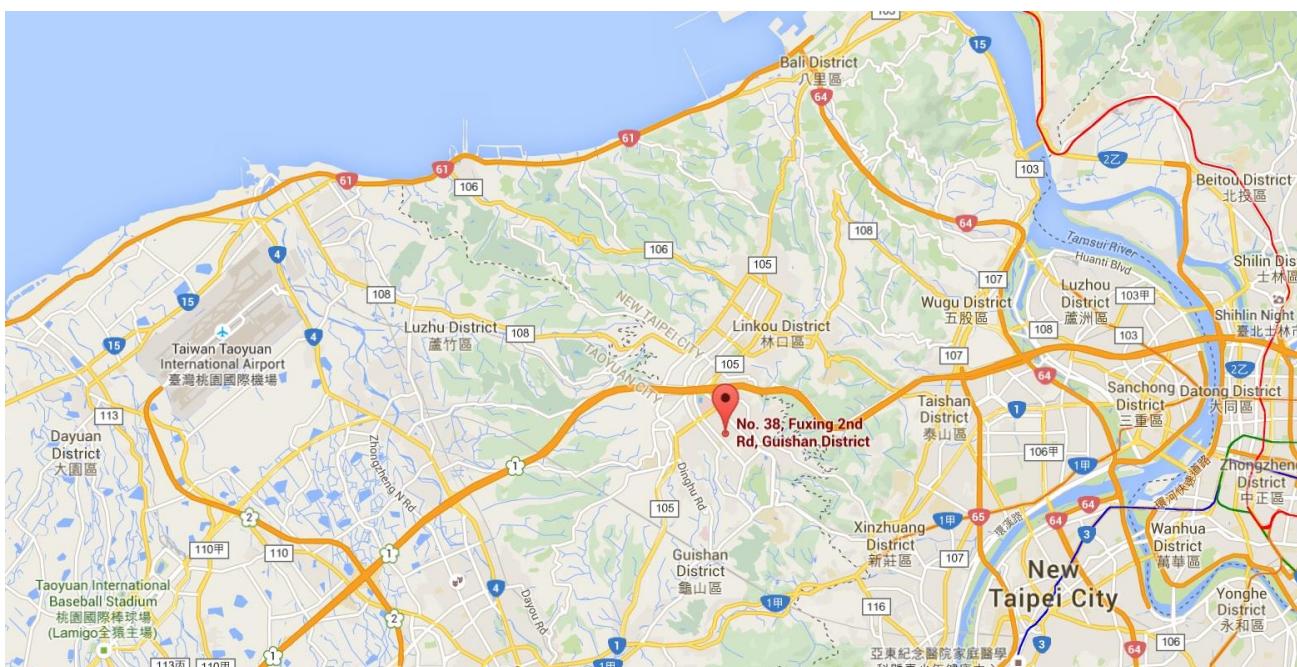
1. INTRODUCTION

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 Innovation, Science and Economic Development Canada and 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:	HAN Access Point
Model No.:	AP301
Brand Name:	HAN NETWORKS; HANNETWORKS
Wi-Fi Specification:	802.11a/b/g/n/ac/ax
Operating Temperature:	0 ~ 50 °C
Power Type:	PoE input or AC adapter input
Operating Environment:	Indoor Use

2.2. Product Specification Subjective to this Report

Frequency Range:	**5GHz:** For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5260~5320MHz, 5500~5720MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5270~5310MHz, 5510~5710MHz For 802.11ac-VHT80/ax-HE80: 5290MHz, 5530MHz, 5610 MHz, 5690 MHz
Type of Modulation:	802.11a/g/n/ac: OFDM, 802.11ax: OFDMA
TPC mechanism:	Support (Details refer to operational description)
Power-on cycle:	Requires 93.9 seconds to complete its power-on cycle
Uniform Spreading (For DFS Frequency Band):	For the 5470-5725 MHz bands, the Master device provides, on aggregate, uniform loading of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.

2.3. Description of Available Antennas

Antenna Type	Frequency Band (GHz)	T$_X$ Paths	Bandwidth (MHz)	Max Peak Gain (dBi)		CDD Directional Gain (dBi)		Beamforming Directional Gain (dBi)
				Ant 0	Ant 1	Power	PSD	
Wi-Fi Internal Antenna List (2.4GHz 2*2 MIMO, 5GHz 2*2 MIMO)								
PIFA Antenna	2412 ~ 2462	2	20, 40	3.20	3.30	3.30	6.31	6.31
	5150 ~ 5850	2	20, 40, 80	3.10	3.30	3.30	6.31	6.31

Note 1: The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11a/b/g/n/ac/ax and it is correlated.

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

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

Array Gain = 10 log (N$_{ANT}$/ N$_{SS}$) dB = 3.01;

- For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB for N$_{ANT}$ ≤ 4;

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G$_{ANT}$ set equal to the gain of the antenna having the highest gain.

Note 2: The EUT also supports Beamforming mode, and the Beamforming support 802.11n/ac/ax, not include 802.11a/b/g. The directional gain = G$_{ANT}$ + Array Gain (3.01dBi).

Note 3: Antenna type and antenna gain are provided by the manufacturer.

2.4. Working Frequencies for this report

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

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

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

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

802.11ac-VHT80/ax-HE80

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

2.5. Test Channels for this Report

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

2.6. Test Mode

Test Mode	Make the EUT communicate with notebook at DFS channel

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	$\text{Roundup}\left\{ \dfrac{\left(\dfrac{1}{360}\right) \cdot}{\left(\dfrac{19 \cdot 10^6}{\text{PRI}_{usec}}\right)} \right\}$	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.
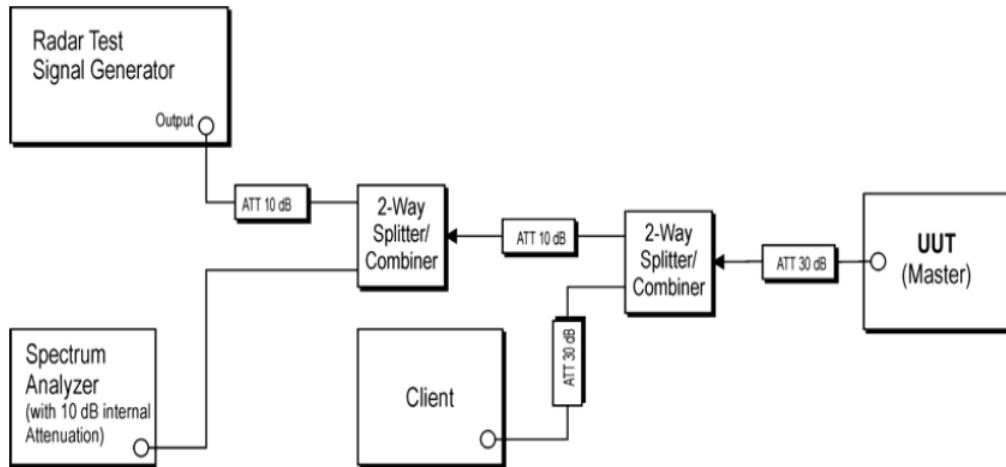
Figure 3-1: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters
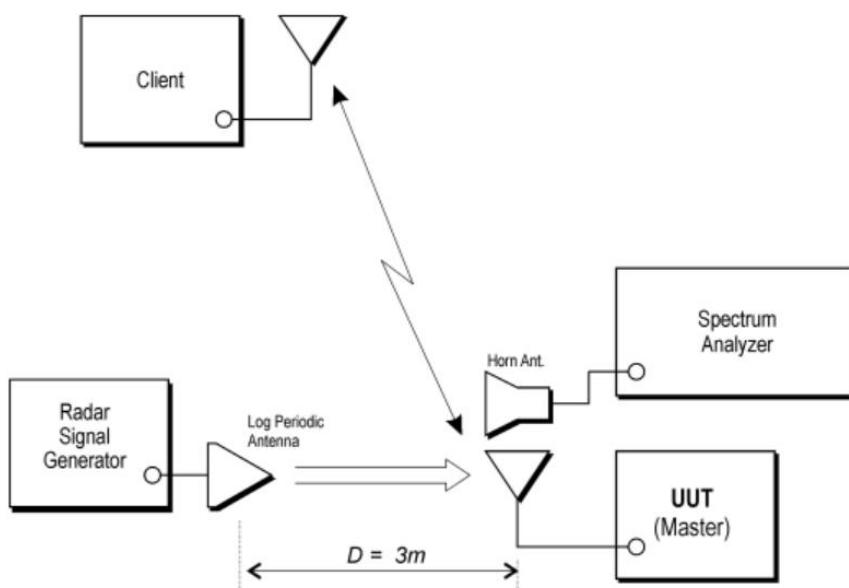
Figure 3-2: Radiated Test Setup where UUT is a Master and Radar Test Waveforms are injected into the UUT

4. TEST EQUIPMENT CALIBRATION DATE

Dynamic Frequency Selection (DFS)

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

Client Information

Instrument	Manufacturer	Type No.
PC	DELL	Vostro.270

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

5. TEST RESULT

5.1. Summary

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

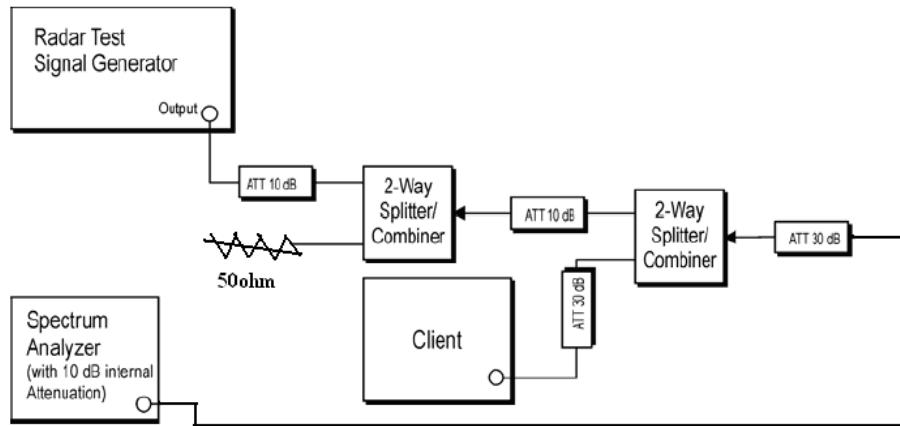The conducted test setup was used for this calibration testing. Figure 3-2 shows the typical test setup.
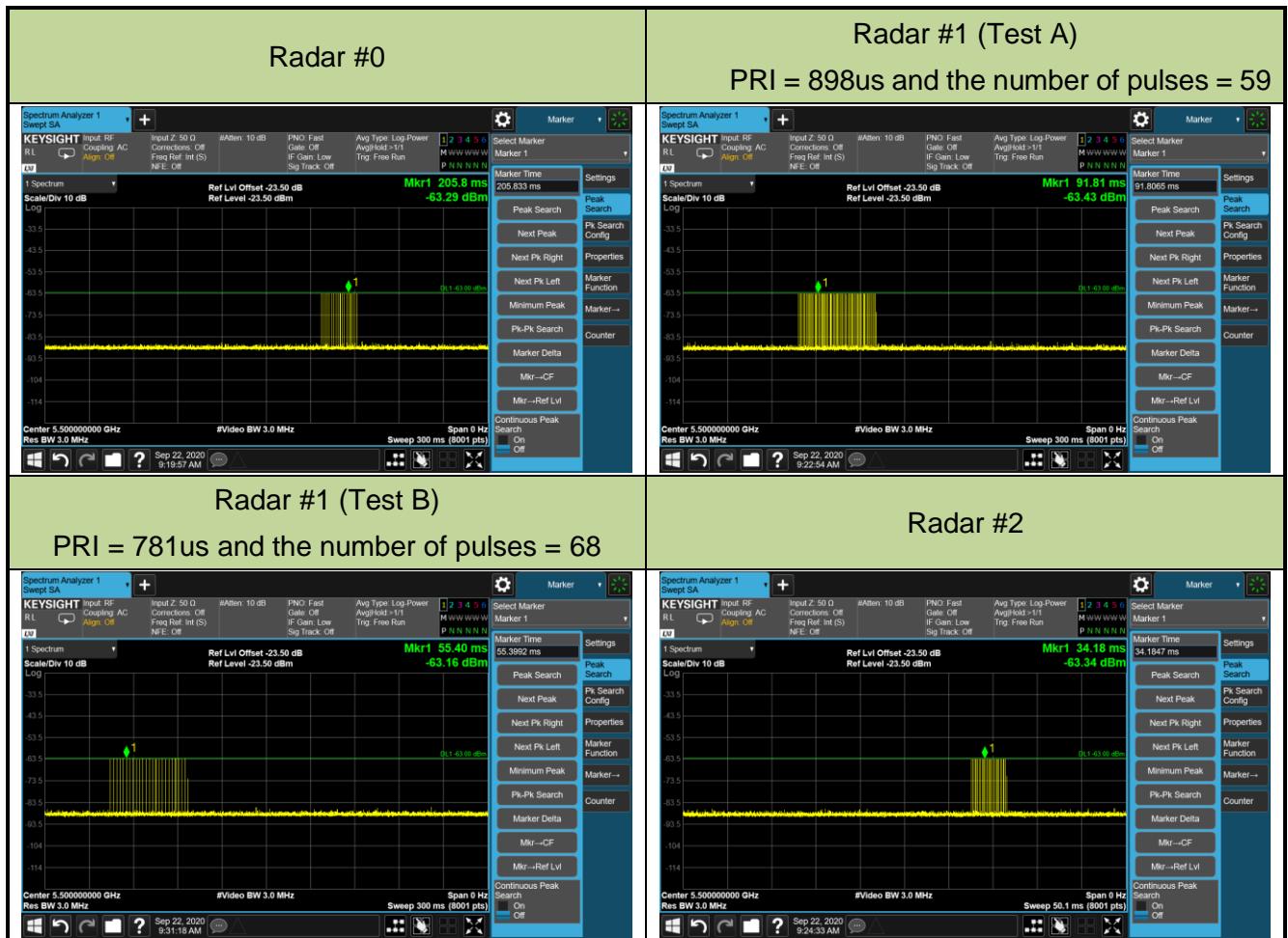

Figure 3-2: Conducted Test Setup
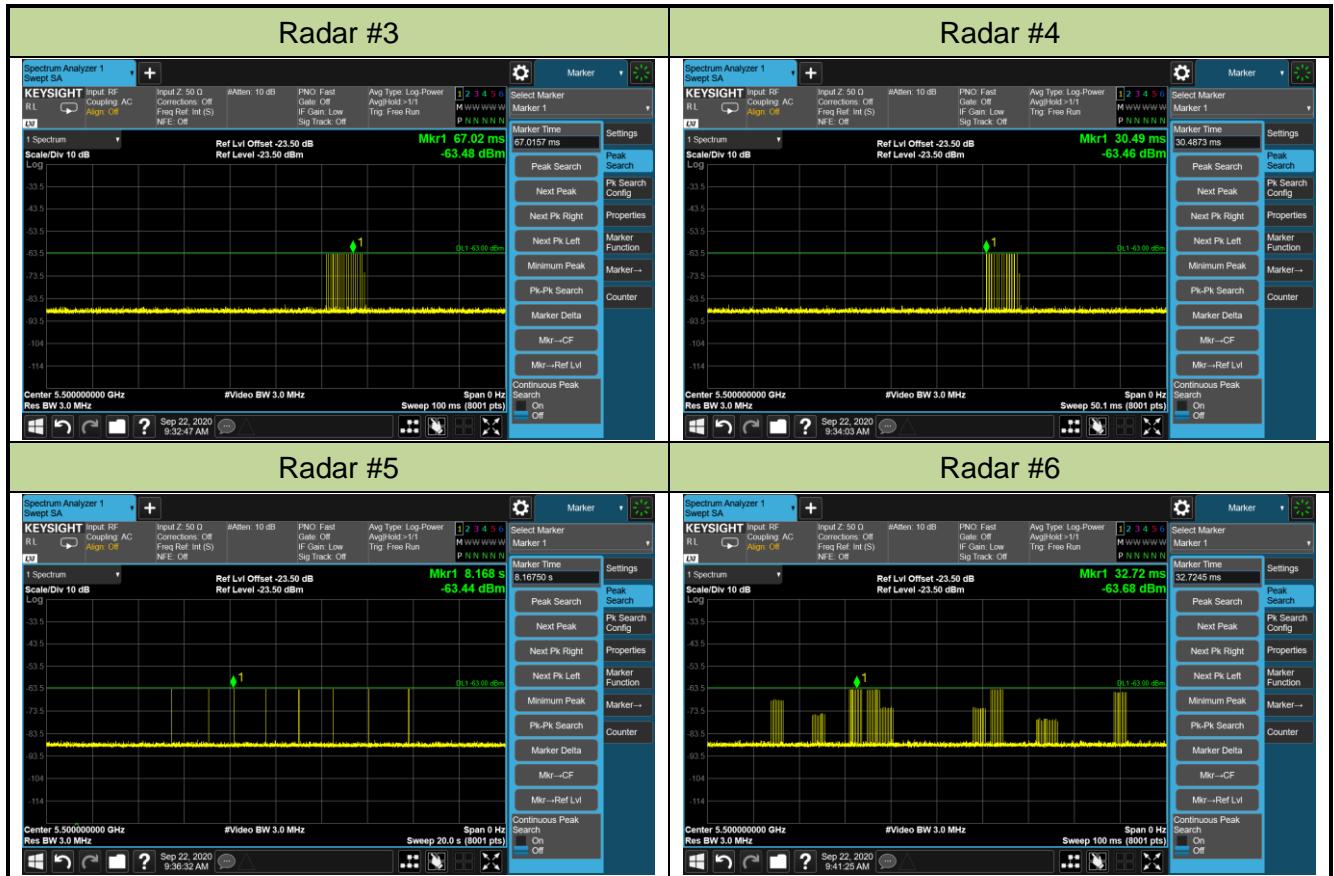
5.2.2. Calibration Procedure

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
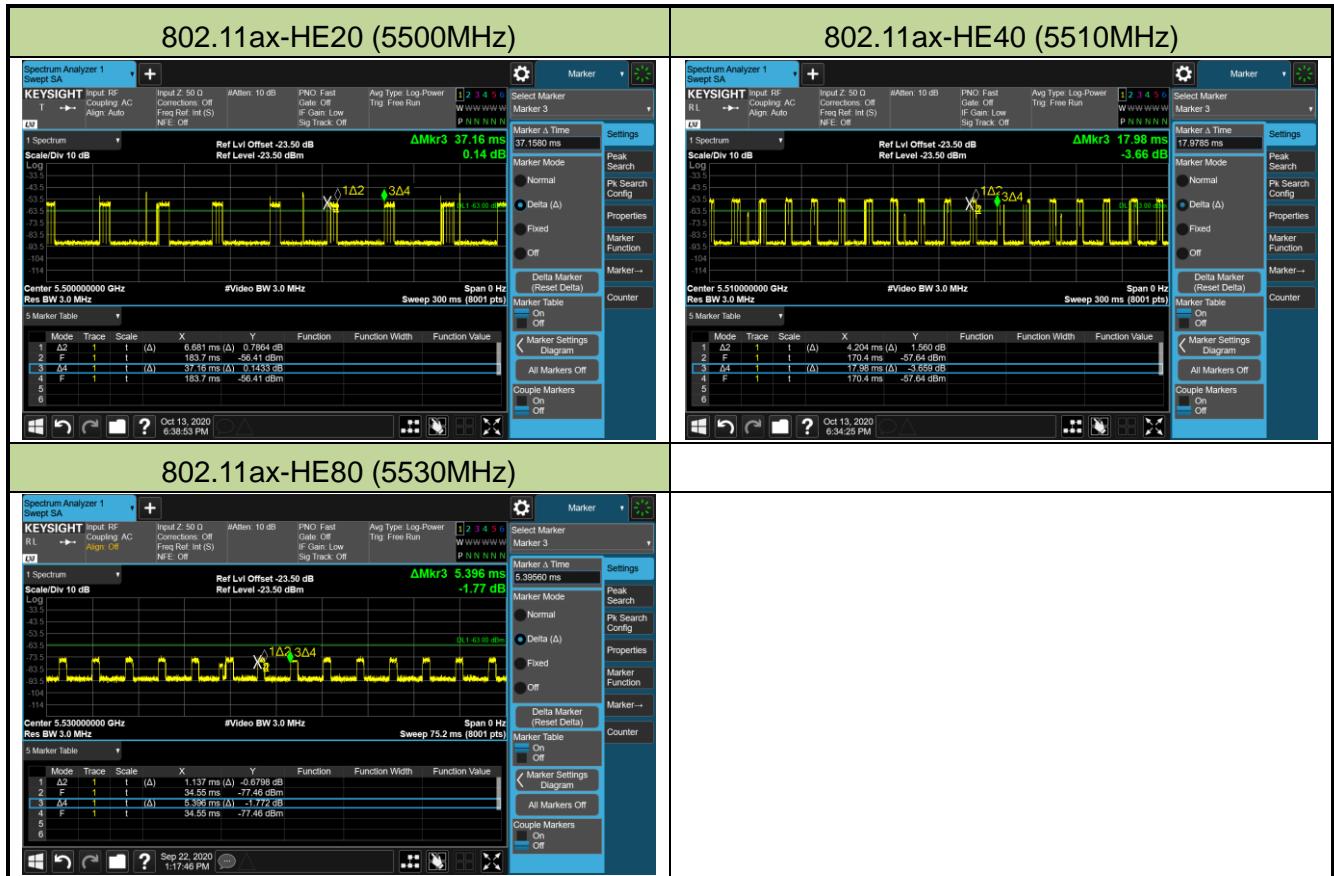
Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/22
Test Item	Radar Waveform Calibration		

Radar #0	Radar #1 (Test A) PRI = 898us and the number of pulses = 59
Radar #1 (Test B) PRI = 781us and the number of pulses = 68	**Radar #2**

Radar #3

Radar #4

Radar #5

Radar #6

5.2.4. Channel Loading Test Result

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/10/13
Test Item	Channel Loading		

802.11ax-HE20 (5500MHz)	802.11ax-HE40 (5510MHz)

802.11ax-HE80 (5530MHz)	

Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result
802.11ax-HE20	5500 MHz	17.98%	≥ 17%	Pass
802.11ax-HE40	5510 MHz	23.38%	≥ 17%	Pass
802.11ax-HE80	5530 MHz	21.07%	≥ 17%	Pass
Note: System testing was performed with the designated iperf test file. This file is used by IP and Frame based systems for loading the test channel during the In-service compliance testing of the U-NII device. Packet ratio = Time On / (Time On + Off Time).				

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

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/22
Test Item	Detection Bandwidth (802.11ax-HE20 mode - 5500MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate
	1	2	3	4	5	6	7	8	9	10	Detection Rate
5490	0	0	0	0	0	0	0	0	0	0	0%
5490.5F_L	1	1	1	1	1	1	1	1	1	1	100%
5491	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5506	1	1	1	1	1	1	1	1	1	1	100%
5507	1	1	1	1	1	1	1	1	1	1	100%
5508	1	1	1	1	1	1	1	1	1	1	100%
5509	1	1	1	1	1	1	1	1	1	1	100%
5509.5 F_H	1	1	1	1	1	1	1	1	1	1	100%
5510	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5500MHz. The 99% channel bandwidth is 18.86MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = F_H - F_L = 5509.5MHz – 5490.5MHz = 19.0MHz

Note 3: NII Detection Bandwidth Min. Limit (MHz): 18.86MHz x 100% = 18.86MHz.

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/22
Test Item	Detection Bandwidth (802.11ax-HE40 mode – 5510MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										
	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 F_L	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5526	1	1	1	1	1	1	1	1	1	1	100%
5527	1	1	1	1	1	1	1	1	1	1	100%
5528	1	1	1	1	1	1	1	1	1	1	100%
5529 F_H	1	1	1	1	1	1	1	1	1	1	100%
5530	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5510MHz. The 99% channel bandwidth is 37.13MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = F_H - F_L = 5529MHz - 5491MHz = 38MHz.

Note 3: NII Detection Bandwidth Min. Limit (MHz): 37.13MHz x 100% = 37.13MHz.

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/22
Test Item	Detection Bandwidth (802.11ax-HE80 mode – 5530MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										
	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%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5530MHz. The 99% channel bandwidth is 77.14MHz. (See the 99% BW section of the RF report for further measurement details).

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

Note 3: NII Detection Bandwidth Min. Limit (MHz): 77.14MHz x 100% = 77.14MHz.

5.4. Initial Channel Availability Check Time Measurement
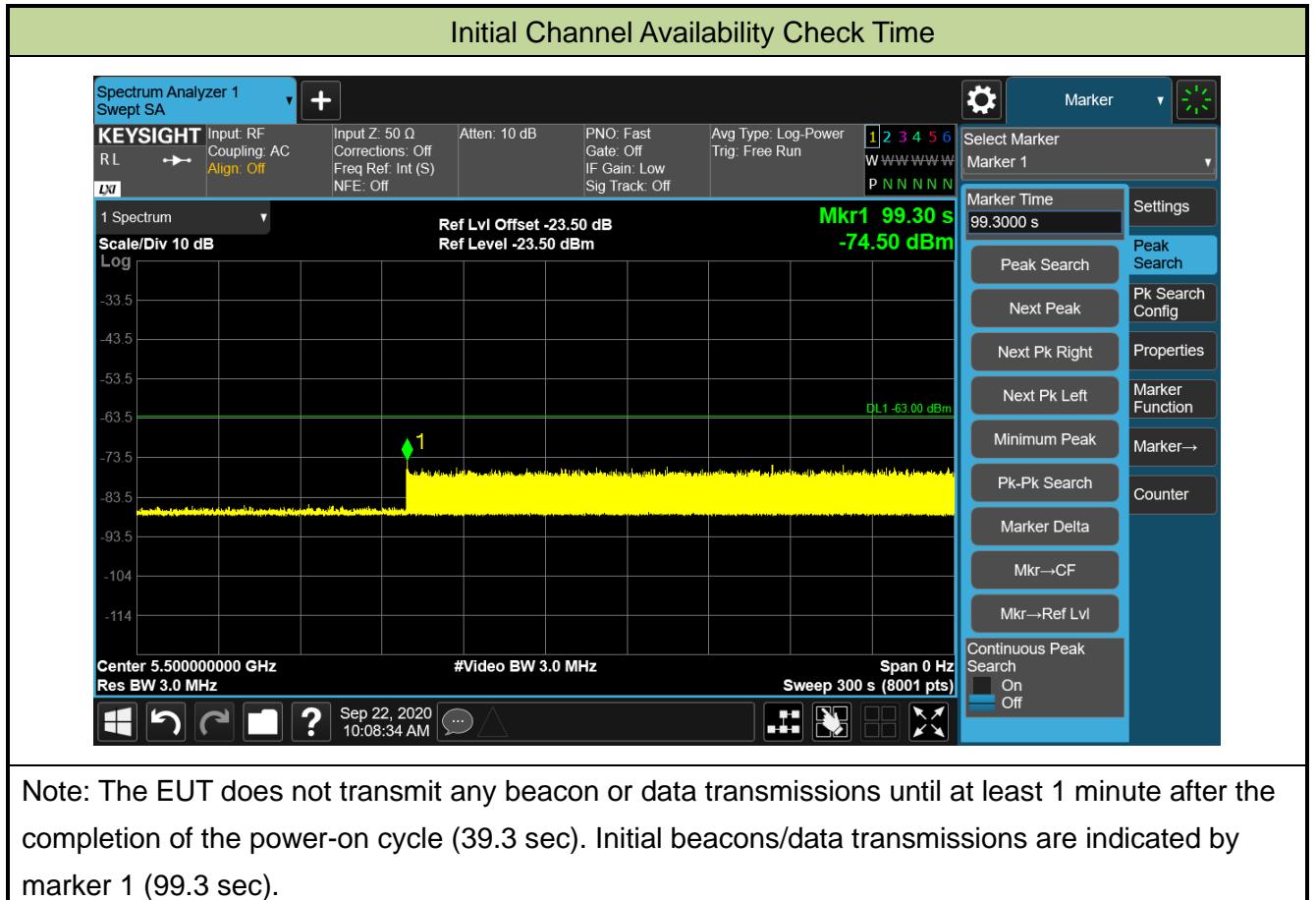
5.4.1. Test Limit

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

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/22
Test Item	Initial Channel Availability Check Time (802.11ax-HE20 mode - 5500MHz)		

Initial Channel Availability Check Time
Note: The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (39.3 sec). Initial beacons/data transmissions are indicated by marker 1 (99.3 sec).

5.5. Radar Burst at the Beginning of the Channel Availability Check Time Measurement
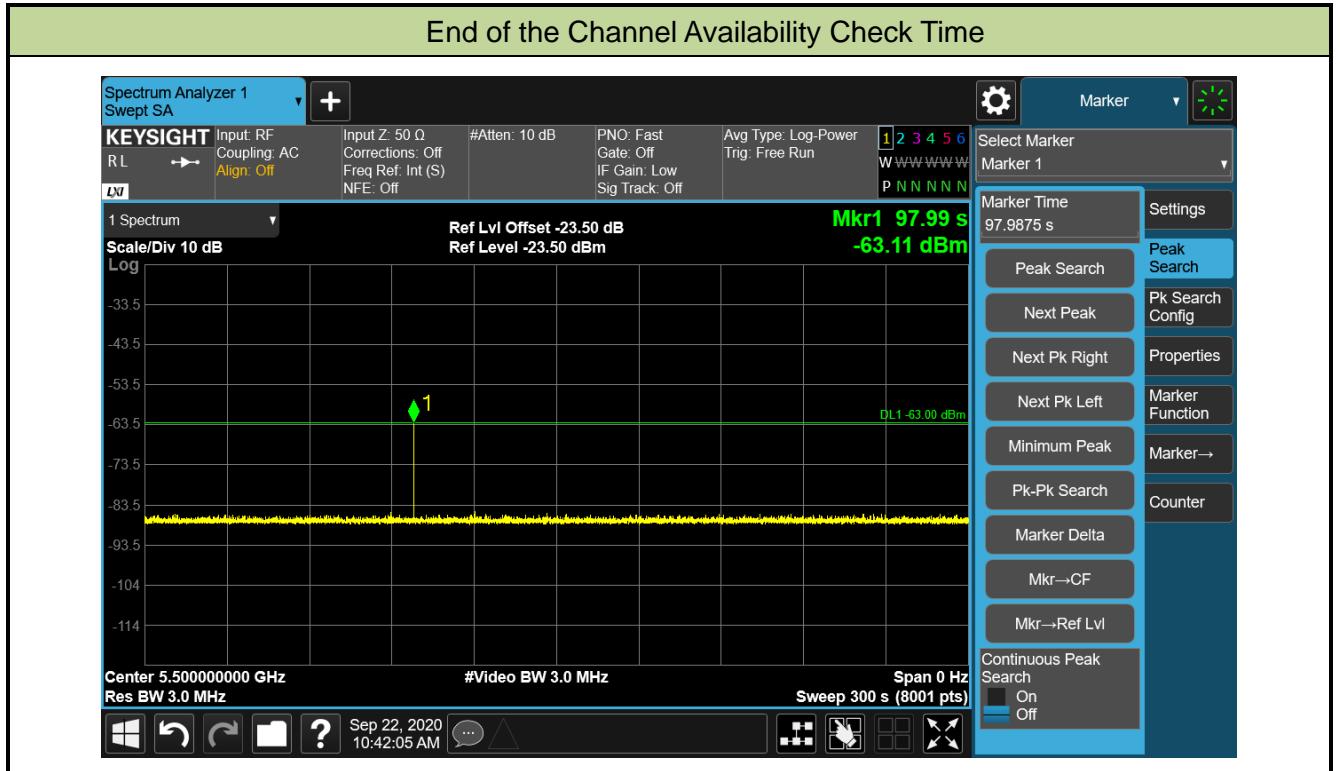
5.5.1. Test Limit
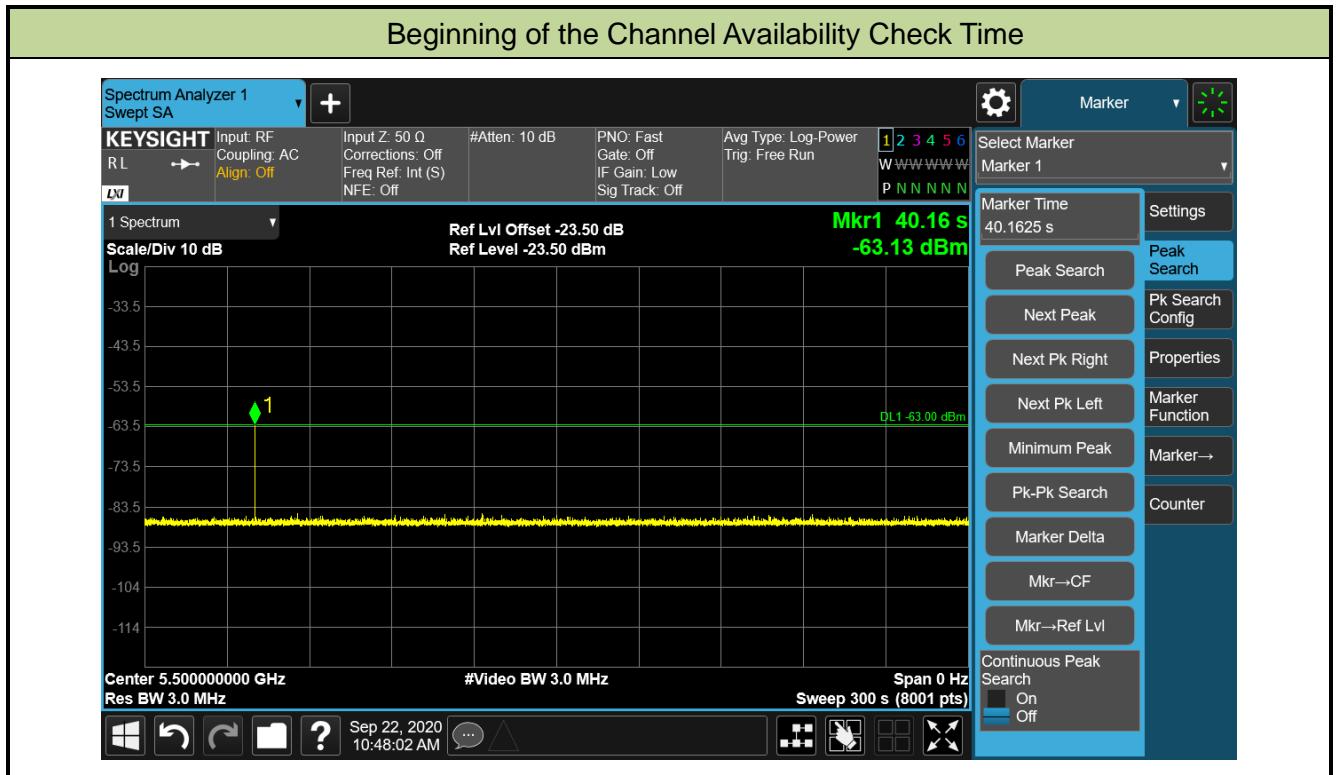
In beginning of the Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

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

Product	HAN Access Point, AP301	Temperature	26°C
Test Engineer	Jay Chiu	Relative Humidity	59%
Test Site	AC1	Test Date	2020/09/22
Test Item	Beginning of the Channel Availability Check Time (802.11ax-HE20 mode - 5500MHz)		

Beginning of the Channel Availability Check Time

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

Product	HAN Access Point, AP301	Temperature	26°C
Test Engineer	Jay Chiu	Relative Humidity	59%
Test Site	AC1	Test Date	2020/09/22
Test Item	End of the Channel Availability Check Time (802.11ax-HE20 mode - 5500MHz)		

End of the Channel Availability Check Time

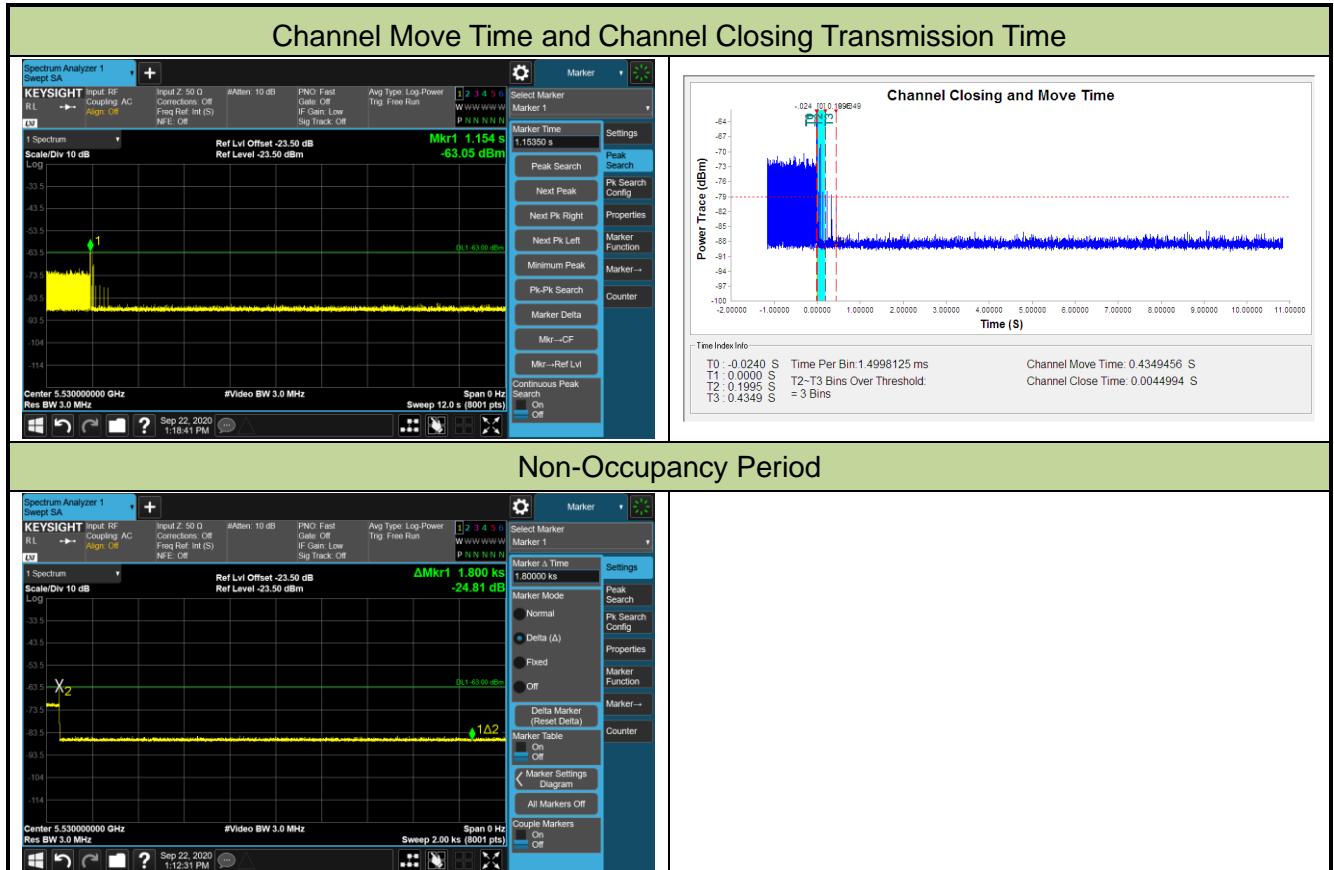## 5.7. In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period Measurement

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

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/22
Test Item	Channel Move Time and Channel Closing Transmission Time (802.11ax-HE80 mode - 5530MHz)		

Channel Move Time and Channel Closing Transmission Time
Non-Occupancy Period

Parameter	Test Result	Limit
	Type 0	
Channel Move Time (s)	0.435s	< 10s
Channel Closing Transmission Time (ms) (Note)	4.499ms	< 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

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/24
Test Item	Radar Statistical Performance Check (802.11ax-HE20 – 5500MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.5	1	758	70	1
2	5496.2	1	918	58	1
3	5493.0	1	658	81	1
4	5493.7	1	698	76	1
5	5494.3	1	718	74	0
6	5494.9	1	538	98	1
7	5495.5	1	778	68	1
8	5492.4	1	798	67	1
9	5496.8	1	938	57	1
10	5497.4	1	878	61	1
11	5491.1	1	598	89	1
12	5491.8	1	898	59	1
13	5500.7	1	2637	20	1
14	5498.7	1	838	63	1
15	5499.3	1	858	62	1
16	5500.0	1	2705	20	1
17	5498.1	1	518	102	1
18	5501.4	1	902	59	1
19	5502.1	1	621	85	1
20	5502.9	1	1414	38	1
21	5505.1	1	2647	20	1
22	5504.3	1	1943	28	1
23	5503.6	1	1218	44	1
24	5505.8	1	1989	27	1
25	5506.5	1	2048	26	1
26	5507.0	1	1814	30	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5507.7	1	2385	23	1
28	5508.5	1	2549	21	1
29	5509.2	1	1441	37	1
30	5509.5	1	2474	22	1
Detection Percentage (%)					96.7%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.5	3.5	230	26	1
2	5491.1	1.8	168	27	1
3	5491.8	3.1	190	24	1
4	5492.4	2.8	163	28	1
5	5493.0	4.2	173	28	0
6	5493.7	3.1	182	25	1
7	5494.3	4.1	190	25	1
8	5494.9	4.6	179	26	1
9	5495.5	4.9	193	25	1
10	5496.2	1.7	169	28	1
11	5496.8	2.7	190	29	1
12	5497.4	2	227	26	1
13	5498.1	4.2	210	26	1
14	5501.4	4	160	28	0
15	5499.3	1.5	206	27	1
16	5500.0	4.5	201	27	1
17	5500.7	1.5	153	23	1
18	5498.7	2.7	189	28	1
19	5502.1	4.3	207	27	1
20	5502.9	1.9	192	25	1
21	5503.6	2.9	151	24	1
22	5505.8	4	219	29	1
23	5505.1	1.4	187	28	1
24	5504.3	1	161	24	1
25	5506.5	3.9	204	27	1
26	5507.0	2.1	162	24	1
27	5507.7	2.5	159	26	1
28	5508.5	2.4	171	27	1
29	5509.2	3.3	227	28	1
30	5509.5	2.1	174	29	1
Detection Percentage (%)					93.3%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.5	8.8	252	17	1
2	5491.1	7.4	361	18	1
3	5491.8	6.9	259	18	1
4	5492.4	6.6	430	18	1
5	5493.0	6.5	344	18	1
6	5493.7	9.1	274	18	1
7	5494.3	8	350	17	0
8	5494.9	8.7	322	17	1
9	5495.5	9.8	352	18	1
10	5496.2	8.3	355	18	1
11	5496.8	6.3	494	17	1
12	5497.4	9.7	242	16	1
13	5498.1	6	478	17	1
14	5499.3	7	294	17	1
15	5500.0	6.6	293	17	1
16	5498.7	8.4	415	16	1
17	5500.7	8.3	326	17	1
18	5501.4	10	336	16	1
19	5502.1	9.5	329	18	1
20	5502.9	6	258	17	1
21	5503.6	6.2	300	16	1
22	5504.3	8.9	343	16	1
23	5506.5	9	475	17	1
24	5505.1	8.2	370	16	1
25	5505.8	6.4	217	18	1
26	5507.0	7	232	17	1
27	5507.7	7.1	457	17	1
28	5508.5	7.6	276	18	1
29	5509.2	9.7	469	17	1
30	5509.5	7.9	467	17	1
Detection Percentage (%)					96.7%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.5	18.1	391	13	1
2	5491.1	17.8	374	15	1
3	5491.8	11.7	424	15	1
4	5492.4	12.1	368	14	1
5	5493.0	13.5	496	15	1
6	5493.7	11.8	402	12	0
7	5494.3	17.7	406	13	1
8	5494.9	16	483	14	0
9	5495.5	12.7	200	12	1
10	5496.2	11.2	489	15	1
11	5496.8	11.5	308	16	1
12	5497.4	17.4	417	15	1
13	5498.1	12.9	451	15	1
14	5498.7	11.4	357	12	1
15	5500.7	18.6	328	12	0
16	5500.0	18.4	410	13	1
17	5499.3	11.2	299	13	1
18	5501.4	11.6	367	12	1
19	5502.1	11.8	221	14	1
20	5502.9	19.9	432	12	1
21	5503.6	13.4	267	15	1
22	5505.1	19.5	459	16	1
23	5504.3	15	347	15	1
24	5505.8	13.6	401	14	1
25	5506.5	18.1	486	13	1
26	5507.0	11.9	420	16	1
27	5507.7	18.8	468	14	1
28	5508.5	12.3	205	12	1
29	5509.2	15.7	484	14	1
30	5509.5	15.8	394	12	0
Detection Percentage (%)					86.7%

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

waveforms is as follows: $\dfrac{P_d1 + P_d2 + P_d3 + P_d4}{4}$ = (96.7%+93.9%+96.7%+86.7%)/4 = 93.5% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5500	1	16	5496.5	1
2	5500	1	17	5492.9	1
3	5500	1	18	5493.7	1
4	5500	1	19	5494.5	1
5	5500	1	20	5496.1	1
6	5500	1	21	5506.3	1
7	5500	1	22	5505.5	1
8	5500	1	23	5506.3	1
9	5500	1	24	5503.1	1
10	5500	1	25	5502.7	1
11	5492.5	1	26	5504.7	1
12	5496.5	1	27	5506.7	1
13	5492.9	1	28	5504.7	1
14	5497.3	1	29	5505.9	1
15	5493.7	1	30	5505.5	1
Detection Percentage (%)					100%

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	68.2	13	1462		104.384
2	1	95.4	13			243.086
3	2	76	13	1622		219.61
4	3	96.6	13	1280	1948	700.61
5	2	87.3	13	1469		95.97
6	1	87.7	13			81.29
7	2	61	13	1220		348.5
8	2	77.4	13	1302		698.99
9	1	56.8	13			644.66
10	1	63.9	13			284.16
11	1	93.5	13			60.63
12	2	97	13	1051		354.12
13	2	88.8	13	1315		61.87
14	2	87.8	13	1535		577.4
15	2	88.9	13	1003		238.7
16	2	86.4	13	1153		303.7

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	60.2	18	1093		473.706
2	2	89.4	18	1585		457.043
3	3	59.1	18	1801	1802	4.237
4	3	91.8	18	1044	1335	44.76
5	2	82.3	18	1200		508.373
6	2	83.3	18	1560		125.717
7	2	53	18	1089		270.91
8	2	99.4	18	1253		477.103
9	2	95	18	1883		151.917
10	3	83.6	18	1223	1833	201.78
11	1	62.1	18			337.843
12	2	64	18	1298		256.437
13	2	85	18	1699		301.49
14	1	66.5	18			198.343
15	2	58.2	18	1497		89.277
16	3	73.9	18	1802	1682	618
17	3	89.7	18	1503	1225	541.733
18	1	52.8	18			1.567

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	74.6	13			124.548
2	2	52.6	13	1047		212.02
3	2	68.4	13	1296		389.02
4	1	79.3	13			333.09
5	3	64.4	13	1085	1536	16.17
6	3	52.2	13	1184	1451	1063.98
7	3	87.3	13	1877	1997	137.78
8	3	88.8	13	1905	1260	1131.39
9	3	62.2	13	1718	1488	965.4
10	3	58	13	1086	1801	78.3

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	88.8	11	1689		1018.35
2	3	81.3	11	1124	1238	224.631
3	2	77.1	11	1246		550.542
4	2	63	11	1514		469.133
5	1	87.2	11			933.974
6	1	69.9	11			849.435
7	3	79.4	11	1411	1571	68.395
8	2	82.3	11	1502		205.886
9	1	94.6	11			1006.427
10	2	92.2	11	1829		546.318
11	1	62.4	11			647.009

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	61.3	13			943.717
2	2	93.9	13	1515		318.607
3	1	78.3	13			728.253
4	2	86.6	13	1344		1235.75
5	1	50.9	13			1039.577
6	3	87.1	13	1524	1727	808.043
7	2	67	13	1368		429.49
8	3	79.1	13	1380	1052	895.467
9	2	58.8	13	1017		322.733

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	57.5	12	1192		678.546
2	2	82.6	12	1597		70.965
3	2	73.8	12	1600		459.11
4	3	61.2	12	1043	1070	153.36
5	1	96	12			303.74
6	2	93.5	12	1119		220.33
7	2	83.7	12	1028		536.6
8	1	62.4	12			392.05
9	3	81.7	12	1004	1124	300.71
10	2	56.4	12	1455		509.85
11	3	77.5	12	1244	1900	591.26
12	3	88.2	12	1932	1638	684.21
13	2	78.8	12	1190		704.2
14	3	67.8	12	1158	1421	573
15	2	80.7	12	1119		259.7

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	86.5	15	1937		371.302
2	2	60.3	15	1536		100.358
3	3	59.1	15	1574	1055	531.577
4	2	67.4	15	1698		179.24
5	3	53.9	15	1080	1957	268.383
6	3	95.4	15	1093	1143	557.747
7	2	70.5	15	1733		6.01
8	2	76.9	15	1974		576.273
9	3	78.4	15	1216	1804	624.997
10	2	75.5	15	1635		4.87
11	3	74.2	15	1463	1386	503.503
12	2	59.7	15	1882		227.827
13	1	78.1	15			324.93
14	3	56.2	15	1392	1670	13.083
15	2	75.7	15	1362		137.867
16	3	66.2	15	1070	1970	417.9
17	3	50.8	15	1189	1295	315.633
18	3	59.9	15	1247	1589	562.867

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (μ sec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	94.8	9	1326		481.913
2	2	53.3	9	1632		987.02
3	2	99.6	9	1011		870.54
4	2	63.2	9	1900		38.97
5	2	68.4	9	1489		559.29
6	2	65.1	9	1188		419.56
7	2	65.1	9	1462		745.25
8	2	60.7	9	1275		1034.99
9	2	94.2	9	1470		875.4
10	2	58.5	9	1532		421.9

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	60.4	13			207.88
2	1	87.1	13			439.451
3	2	80.8	13	1783		236.712
4	2	86.3	13	1287		439.273
5	2	51	13	1875		361.374
6	1	79.7	13			365.955
7	2	82	13	1888		244.456
8	1	59	13			249.447
9	2	65.4	13	1434		45.538
10	2	89.6	13	1558		145.929
11	1	52.3	13			582.971
12	3	54.6	13	1919	1616	287.632
13	2	98	13	1760		450.783
14	3	50.1	13	1472	1513	261.314
15	3	79.6	13	1493	1692	582.455
16	3	51.2	13	1842	1589	227.726
17	2	67.7	13	1525		284.837
18	2	60.4	13	1716		446.058
19	3	92.1	13	1262	1316	242.079

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	83.5	10			1138.06
2	2	70.7	10	1356		450.51
3	2	55.5	10	1779		601.35
4	2	52.8	10	1322		706.27
5	1	90.4	10			416.66
6	2	70.9	10	1666		770.32
7	2	87.4	10	1059		1082.45
8	3	55.1	10	1261	1069	898.09
9	1	52.5	10			331.07
10	2	85.2	10	1386		1036.1

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	79	5	1020		583.663
2	2	96	5	1987		498.501
3	2	70.8	5	1289		1046.452
4	2	51	5	1387		58.163
5	2	60.4	5	1868		718.894
6	3	78.6	5	1607	1890	366.145
7	2	70.8	5	1732		442.485
8	2	71.5	5	1675		666.126
9	1	50.2	5			879.647
10	2	82.5	5	1252		1077.318
11	2	72	5	1335		922.009

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	90.9	15	1297	1092	545.059
2	2	73.8	15	1234		777.921
3	3	81.8	15	1240	1051	1005.142
4	1	87.9	15			197.553
5	2	52.4	15	1199		984.654
6	2	64.2	15	1068		861.285
7	3	69.1	15	1433	1509	481.575
8	1	62.2	15			943.616
9	3	76.9	15	1782	1660	493.897
10	2	94.4	15	1976		760.518
11	3	50.2	15	1738	1577	540.209

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	85.7	6	1894		92.667
2	1	96.9	6			698.338
3	2	73.2	6	1594		519.115
4	3	75.2	6	1580	1393	166.753
5	1	55.9	6			526.621
6	1	52.9	6			138.388
7	3	64.6	6	1802	1881	18.076
8	3	99.1	6	1450	1928	649.614
9	2	71.1	6	1277		338.691
10	2	76.6	6	1962		669.289
11	2	58.9	6	1265		455.306
12	2	61.1	6	1240		255.334
13	2	83.2	6	1295		568.032
14	3	56.4	6	1302	1873	158.169
15	2	51.5	6	1529		467.747
16	1	66.8	6			301.165
17	2	62.7	6	1574		282.882

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	52.9	17	1523		858.1
2	2	94.1	17	1098		637.693
3	3	72	17	1981	1112	762.616
4	3	72.2	17	1450	1952	237.959
5	1	99	17			57.092
6	1	95.6	17			299.205
7	2	94.5	17	1053		299.368
8	2	75.1	17	1771		338.662
9	1	91.3	17			258.815
10	2	62.4	17	1743		601.358
11	2	78.5	17	1516		703.681
12	2	65.6	17	1859		814.654
13	2	79.3	17	1025		588.577

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	74.3	8	1279	1269	66.317
2	2	61.4	8	1326		602.491
3	2	77.1	8	1838		488.972
4	2	69.9	8	1038		165.113
5	1	51.8	8			552.104
6	1	61.7	8			413.805
7	2	92	8	1845		3.946
8	3	82.2	8	1565	1424	128.377
9	1	63.6	8			87.508
10	3	75.4	8	1599	1631	441.479
11	1	80.5	8			360.481
12	2	61.5	8	1580		350.372
13	3	91.9	8	1851	1402	199.213
14	3	51.5	8	1466	1878	263.274
15	3	67	8	1392	1335	554.895
16	1	94.7	8			194.586
17	2	71.3	8	1010		397.037
18	3	75.6	8	1714	1887	538.458
19	3	59.4	8	1040	1684	13.879

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	71.9	15	1891		738.406
2	2	55.2	15	1941		24.19
3	3	63.5	15	1444	1338	287.69
4	2	69.5	15	1354		473.64
5	3	54.9	15	1946	1681	991.49
6	1	83.2	15			998.1
7	2	76.6	15	1333		44.92
8	2	86.2	15	1945		1006.59
9	3	89.8	15	1954	1959	181.2
10	1	75.1	15			783.2

Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	62.5	6	1612		1087
2	2	90.5	6	1526		234.667
3	3	74.8	6	1338	1397	645.503
4	2	66.1	6	1967		564.95
5	1	92.2	6			298.727
6	3	64.6	6	1312	1365	279.913
7	3	56.9	6	1187	1106	569.66
8	3	98.3	6	1049	1621	755.567
9	2	76.3	6	1174		1002.633

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	64.8	8	1445	1834	404.686
2	1	95.3	8			504.261
3	2	85.9	8	1197		427.632
4	3	87.6	8	1710	1622	157.773
5	3	80.1	8	1932	1955	565.304
6	2	66.6	8	1457		400.275
7	3	61.1	8	1674	1533	127.176
8	1	93.6	8			202.897
9	1	83.6	8			16.728
10	2	85.7	8	1225		254.809
11	3	74.9	8	1025	1367	288.421
12	1	81.1	8			419.482
13	2	84.7	8	1040		109.983
14	1	58	8			602.664
15	1	62.4	8			551.475
16	1	85	8			173.866
17	2	91.5	8	1110		471.737
18	1	78.5	8			167.158
19	1	98.7	8			33.579

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	70.9	10			199.641
2	1	66.3	10			281.693
3	1	79.6	10			623.676
4	3	56.2	10	1914	1074	492.319
5	2	50.9	10	1655		135.842
6	2	66.5	10	1546		408.865
7	3	84.5	10	1614	1016	651.818
8	3	63.1	10	1311	1249	689.762
9	2	54.7	10	1751		416.135
10	2	72.4	10	1051		354.278
11	3	93.4	10	1408	1105	643.951
12	3	87.2	10	1504	1006	524.654
13	1	83.3	10			507.677

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	76	14			60.291
2	2	99.6	14	1094		574.373
3	3	60.9	14	1993	1988	480.196
4	1	67.6	14			707.809
5	1	92.8	14			573.512
6	2	70.3	14	1481		93.255
7	1	98.2	14			753.428
8	1	51.4	14			238.352
9	3	95.9	14	1576	1941	45.335
10	3	63.2	14	1430	1201	660.538
11	2	60.8	14	1803		896.831
12	1	63.7	14			504.754
13	2	90.9	14	1388		396.077

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	68.9	8			454.524
2	2	57	8	1560		309.563
3	2	75.3	8	1235		93.396
4	2	75.1	8	1280		870.119
5	2	57.3	8	1265		101.222
6	2	68	8	1907		162.115
7	3	63.5	8	1690	1859	858.188
8	1	57	8			729.162
9	2	91.1	8	1429		165.825
10	2	90.8	8	1056		250.168
11	1	60.4	8			291.511
12	1	83	8			511.454
13	3	74	8	1655	1142	73.077

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	87.7	10	1179		579.589
2	2	89.5	10	1424		437.53
3	2	90.9	10	1631		670.96
4	2	50.9	10	1172		439.19
5	1	50.3	10			104.77
6	2	84.6	10	1755		237.8
7	2	67.2	10	1878		446.59
8	2	99.6	10	1738		38.2
9	2	66	10	1260		110.94
10	2	90.6	10	1452		123.73
11	3	52.5	10	1861	1537	412.07
12	3	67.8	10	1959	1574	43.46
13	1	80.5	10			90.3
14	2	68.2	10	1028		558.8
15	2	58.7	10	1992		676.3
16	1	78.7	10			402.7

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	87.8	8			905.628
2	3	77.7	8	1626	1360	13.271
3	3	92.3	8	1586	1023	300.952
4	2	64.5	8	1183		539.623
5	2	70.4	8	1606		948.794
6	3	55.3	8	1310	1589	244.435
7	2	55.1	8	1643		500.485
8	3	51.2	8	1325	1849	212.306
9	2	71.8	8	1811		857.057
10	2	72.4	8	1955		954.618
11	1	76.5	8			948.309

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	74.1	16	1258		329.519
2	1	66.2	16			189.863
3	2	54.6	16	1990		158.502
4	3	64	16	1283	1895	436.103
5	3	97.6	16	1490	1666	495.364
6	1	76.1	16			252.985
7	2	88.2	16	1517		464.336
8	1	64.3	16			149.077
9	3	98.3	16	1446	1981	128.718
10	1	88.2	16			100.609
11	1	74.3	16			214.411
12	2	80.5	16	1685		367.522
13	2	82.2	16	1185		392.933
14	2	68.7	16	1974		190.424
15	2	67.1	16	1945		47.375
16	1	52.4	16			242.366
17	2	100	16	1436		397.837
18	1	64.1	16			556.258
19	2	53	16	1267		180.779

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	98.8	17	1690		903.22
2	3	60.5	17	1299	1115	891.64
3	2	90.3	17	1444		128.33
4	2	92.7	17	1203		937.04
5	1	56.8	17			934.13
6	2	87.6	17	1938		512.73
7	2	63.1	17	1122		711.76
8	3	91.5	17	1108	1832	946.18
9	2	89.3	17	1692		526.09
10	2	97.3	17	1243		922.77
11	3	82.4	17	1819	1348	183
12	3	86.2	17	1881	1509	892.8

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	51.4	12	1417		630.461
2	2	94.9	12	1288		716.84
3	1	57.3	12			106.5
4	3	76.2	12	1491	1723	228.19
5	1	87.6	12			640.28
6	2	79.1	12	1622		667.18
7	3	98.6	12	1433	1010	451.11
8	1	78.9	12			212
9	1	64.4	12			736.53
10	1	90.7	12			165.05
11	2	66.8	12	1237		584.67
12	3	82.1	12	1671	1827	531.58
13	2	83.1	12	1120		213.63
14	2	50.5	12	1578		366.3
15	2	62.4	12	1594		444.3
16	3	66.7	12	1771	1887	691.5

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	92.6	7	1537		312.508
2	3	98.1	7	1529	1472	640.61
3	2	68.2	7	1836		100.96
4	2	61.9	7	1710		199.01
5	2	77.9	7	1756		848.27
6	1	97.2	7			328.23
7	3	73.7	7	1653	1718	574.39
8	2	50.6	7	1526		273

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	95.8	12	1000		23.58
2	1	53.6	12			403.367
3	2	88.8	12	1549		133.244
4	2	68.4	12	1121		298.451
5	2	64.5	12	1327		264.599
6	2	58.9	12	1353		160.086
7	2	50.4	12	1097		609.263
8	2	52.6	12	1320		465.29
9	2	61.1	12	1540		174.087
10	3	88	12	1603	1566	75.594
11	2	78.8	12	1647		507.191
12	2	70.3	12	1140		581.329
13	1	99.6	12			802.386
14	3	89	12	1153	1515	244.943

Type 5 Radar Waveform_29

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	82.1	9	1322		547.378
2	3	89.7	9	1896	1444	427.053
3	3	89.4	9	1356	1896	625.487
4	2	53.2	9	1860		410.46
5	1	61.3	9			478.653
6	2	83.7	9	1396		228.657
7	2	88.1	9	1440		274.4
8	2	80.5	9	1537		9.533
9	2	66.8	9	1094		501.317
10	3	77.5	9	1443	1270	212.61
11	2	57.2	9	1635		179.503
12	2	78.2	9	1295		453.247
13	2	91.1	9	1382		310.87
14	2	68.6	9	1814		457.373
15	3	82.4	9	1629	1049	402.167
16	1	51.4	9			419.1
17	2	93	9	1683		189.533
18	3	80.9	9	1806	1260	196.267

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	57.4	10	1599		334.506
2	3	94.6	10	1812	1344	126.313
3	2	64.8	10	1841		796.066
4	2	95	10	1243		900.599
5	2	69.6	10	1784		429.622
6	3	89.6	10	1684	1104	223.225
7	1	66.3	10			118.848
8	2	54.4	10	1841		845.442
9	1	95.2	10			151.115
10	2	56.4	10	1072		199.138
11	2	63.9	10	1817		393.391
12	2	94	10	1629		318.154
13	3	70.5	10	1473	1450	196.677

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	5500	1	16	5500.0	1
2	5500	0	17	5500.7	1
3	5500	1	18	5501.4	1
4	5500	1	19	5502.1	1
5	5500	1	20	5502.9	1
6	5500	1	21	5503.6	1
7	5500	1	22	5504.3	1
8	5500	1	23	5505.1	1
9	5500	1	24	5505.8	1
10	5500	1	25	5506.5	1
11	5500	1	26	5507.0	1
12	5500	1	27	5507.7	1
13	5500	1	28	5508.5	1
14	5500	1	29	5509.2	1
15	5500	1	30	5509.5	0
Detection Percentage (%)					93.3%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
16	5501	48	30	5497	90
55	5492	165	94	5498	282
100	5503	300	--	--	--

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5502	3	37	5509	111
10	5506	30	39	5492	117
58	5493	174	70	5501	210
87	5492	261	71	5496	213
92	5500	276	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5498	3	54	5502	162
4	5490	12	70	5508	210
6	5509	18	78	5501	234
9	5497	27	--	--	--
53	5503	159	--	--	--
56	5510	168	--	--	--
73	5496	219	--	--	--
81	5500	243	--	--	--
96	5505	288	--	--	--

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
25	5504	75	8	5491	24
36	5500	108	14	5498	42
57	5499	171	43	5497	129
--	--	--	49	5503	147
--	--	--	60	5501	180
--	--	--	63	5500	189
--	--	--	64	5504	192

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5509	9	17	5509	51
16	5503	48	21	5493	63
51	5492	153	34	5496	102
67	5493	201	37	5494	111
--	--	--	57	5502	171

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
11	5500	33	23	5492	69
47	5506	141	30	5503	90
50	5507	150	37	5497	111
93	5492	279	82	5490	246
99	5494	297	89	5491	267

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5496	33	23	5493	69
15	5495	45	48	5492	144
16	5510	48	69	5499	207
46	5505	138	85	5490	255
96	5493	288	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5503	30	38	5504	114
21	5493	63	62	5503	186
29	5502	87	--	--	--
48	5492	144	--	--	--
49	5490	147	--	--	--
69	5495	207	--	--	--

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5491	6	5	5498	15
9	5495	27	16	5507	48
14	5503	42	67	5506	201
23	5505	69	75	5505	225
25	5501	75	--	--	--
37	5506	111	--	--	--
95	5510	285	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
53	5506	159	1	5496	3
80	5504	240	12	5490	36
83	5509	249	22	5501	66
89	5491	267	23	5491	69
--	--	--	61	5493	183

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5493	6	55	5501	165
11	5501	33	63	5509	189
28	5500	84	66	5508	198
33	5509	99	--	--	--
58	5496	174	--	--	--
80	5508	240	--	--	--
81	5491	243	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
22	5500	66	83	5498	249
27	5493	81	86	5505	258
45	5507	135	--	--	--
85	5495	255	--	--	--
91	5510	273	--	--	--
99	5508	297	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
24	5501	72	8	5498	24
44	5490	132	14	5509	42
67	5495	201	20	5510	60
77	5493	231	38	5504	114
92	5491	276	49	5506	147
93	5496	279	64	5490	192
--	--	--	72	5492	216

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
21	5501	63	2	5500	6
28	5507	84	6	5504	18
35	5502	105	11	5490	33
62	5500	186	49	5491	147
--	--	--	56	5508	168

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5509	12	7	5502	21
8	5497	24	9	5503	27
58	5491	174	17	5494	51
76	5510	228	24	5492	72

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/24
Test Item	Radar Statistical Performance Check (802.11ax-HE40 mode – 5510MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	1	778	68	1
2	5492.3	1	698	76	1
3	5493.0	1	578	92	1
4	5494.3	1	598	89	1
5	5495.5	1	538	98	1
6	5496.8	1	858	62	1
7	5498.1	1	558	95	1
8	5499.4	1	3066	18	1
9	5501.0	1	898	59	1
10	5504.8	1	918	58	1
11	5502.3	1	718	74	0
12	5503.5	1	798	67	1
13	5506.1	1	878	61	1
14	5507.4	1	838	63	1
15	5508.6	1	818	65	1
16	5509.7	1	1240	43	1
17	5510.0	1	2572	21	1
18	5511.5	1	2990	18	1
19	5514.4	1	1536	35	1
20	5512.9	1	1419	38	1
21	5515.8	1	1778	30	1
22	5517.3	1	2008	27	1
23	5518.8	1	1289	41	1
24	5520.2	1	2098	26	1
25	5521.7	1	1526	35	1
26	5523.1	1	1910	28	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5524.6	1	3010	18	1
28	5527.5	1	813	65	1
29	5526.1	1	3040	18	1
30	5529.0	1	1056	50	1
Detection Percentage (%)					96.7%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	3.4	197	25	1
2	5492.3	4.7	183	27	1
3	5493.0	3.7	159	26	1
4	5494.3	2.7	161	25	1
5	5495.5	1.4	181	26	1
6	5496.8	5	218	26	1
7	5498.1	3.6	220	25	1
8	5499.4	3	177	25	1
9	5501.0	2.5	156	29	1
10	5502.3	3.6	156	23	1
11	5506.1	3.9	199	27	1
12	5504.8	2.2	216	28	1
13	5503.5	3.9	183	26	1
14	5507.4	1.4	220	25	1
15	5508.6	2.4	212	26	1
16	5509.7	4.3	183	25	1
17	5510.0	3.2	158	24	1
18	5511.5	3.7	221	25	1
19	5514.4	3.9	229	29	1
20	5512.9	1.4	155	27	1
21	5515.8	3	216	27	1
22	5517.3	4.4	159	25	1
23	5518.8	1.3	180	26	1
24	5520.2	4.6	220	25	1
25	5521.7	1.9	188	26	1
26	5523.1	3.1	205	28	1
27	5524.6	1	229	23	1
28	5526.1	3.6	209	24	1
29	5527.5	1.5	218	25	1
30	5529.0	3.1	227	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	5491.0	7.6	313	18	1
2	5492.3	8.7	454	17	1
3	5493.0	7.5	354	17	1
4	5494.3	9	475	17	1
5	5495.5	8.7	460	17	1
6	5496.8	8.3	401	16	1
7	5498.1	7	298	17	1
8	5499.4	9.1	228	16	1
9	5501.0	6.4	415	17	1
10	5502.3	6.9	218	16	1
11	5506.1	7.4	417	18	1
12	5504.8	8	452	17	1
13	5503.5	6.5	236	17	1
14	5507.4	9.7	332	17	1
15	5508.6	6.2	481	16	1
16	5509.7	10	304	17	1
17	5510.0	9.9	408	17	1
18	5511.5	8.5	390	18	1
19	5514.4	7.5	398	16	1
20	5512.9	7.4	472	16	1
21	5515.8	8	284	17	1
22	5517.3	8.6	414	18	1
23	5518.8	8.4	499	17	1
24	5520.2	9.6	337	18	1
25	5521.7	6.5	347	17	1
26	5523.1	7	374	17	1
27	5524.6	8.6	283	16	1
28	5526.1	7.1	216	17	1
29	5527.5	7.4	472	16	1
30	5529.0	9.1	371	17	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	5491.0	15.4	467	16	1
2	5492.3	12.2	203	14	1
3	5493.0	12.8	259	16	1
4	5494.3	19.2	484	12	1
5	5495.5	15.7	285	15	1
6	5496.8	15.2	301	13	1
7	5498.1	15.2	264	15	1
8	5499.4	14.2	470	13	1
9	5501.0	11.8	258	13	1
10	5502.3	14.5	331	12	1
11	5503.5	14	419	14	1
12	5504.8	11.9	242	16	1
13	5506.1	17.6	457	12	1
14	5509.7	16	236	15	0
15	5508.6	15.7	272	15	1
16	5507.4	12.9	432	15	1
17	5510.0	19.4	260	15	1
18	5511.5	13	420	14	1
19	5512.9	17.1	360	14	1
20	5514.4	13.4	270	14	1
21	5515.8	19.9	242	15	1
22	5517.3	12.2	245	12	1
23	5521.7	15.6	255	12	1
24	5520.2	18.6	263	13	1
25	5518.8	13.9	368	13	1
26	5523.1	18.9	372	13	1
27	5524.6	19.3	244	14	1
28	5526.1	19.8	478	14	1
29	5527.5	13.6	392	12	1
30	5529.0	15.3	323	15	1
Detection Percentage (%)					96.7%

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

waveforms is as follows: $\dfrac{P_d1 + P_d2 + P_d3 + P_d4}{4}$ = (96.7%+100%+100%+96.7%)/4 = 98.35% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5500	1	16	5493.4	0
2	5500	1	17	5495.0	1
3	5500	1	18	5495.0	1
4	5500	1	19	5499.0	1
5	5500	1	20	5497.4	1
6	5500	1	21	5522.6	1
7	5500	1	22	5525.8	1
8	5500	1	23	5523.0	1
9	5500	1	24	5524.6	1
10	5500	1	25	5522.6	1
11	5497.4	1	26	5523.8	1
12	5497.0	1	27	5521.4	1
13	5497.4	1	28	5521.8	1
14	5495.0	1	29	5523.8	1
15	5493.0	1	30	5524.2	1
Detection Percentage (%)					96.7%

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	64.7	18	1257	1269	221.285
2	1	63.4	18			538.173
3	3	85.9	18	1257	1783	550.816
4	1	86.1	18			688.279
5	2	60.4	18	1032		491.882
6	2	86.7	18	1642		640.145
7	3	68.8	18	1912	1880	185.248
8	2	69.7	18	1592		113.492
9	1	95.7	18			115.155
10	3	64.6	18	1772	1703	138.478
11	2	96.9	18	1434		40.821
12	2	98.1	18	1909		25.654
13	2	68.9	18	1878		187.477

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	71	15	1151	1332	377.921
2	1	87.1	15			544.77
3	3	56	15	1984	1800	215.48
4	3	81.9	15	1779	1568	299.24
5	2	73	15	1097		91.22
6	1	51.4	15			221.09
7	2	70.1	15	1969		592.89
8	2	79.5	15	1178		141.97
9	2	96.8	15	1124		397.16
10	3	53.1	15	1425	1130	125.22
11	3	71.7	15	1199	1874	564.96
12	2	57.3	15	1725		332.94
13	2	76.4	15	1242		386.67
14	1	63.3	15			309.41
15	3	72.8	15	1898	1513	301.25
16	1	82.6	15			125.68
17	2	94.8	15	1771		14.96
18	2	50.5	15	1884		96.9
19	1	58.9	15			138.6
20	2	89.6	15	1338		40.3

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	57.2	6	1667	1102	1056.51
2	1	51.3	6			37.241
3	3	83.7	6	1902	1747	297.072
4	3	57.8	6	1516	1001	276.323
5	2	52.3	6	1089		360.554
6	3	79.6	6	1170	1537	302.235
7	2	55	6	1617		48.385
8	1	93.3	6			574.616
9	1	72.5	6			215.627
10	2	84.2	6	1724		1075.718
11	3	89.4	6	1072	1147	458.309

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	68.8	15	1947		289.991
2	3	77.5	15	1348	1723	1039.74
3	2	84.4	15	1338		818.04
4	1	96.7	15			774.9
5	2	94.5	15	1503		472.85
6	3	71.2	15	1266	1697	874.87
7	1	100	15			1318.8
8	3	91.7	15	1225	1321	1183.3

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	55.8	9	1743	1532	625.775
2	1	98	9			1033.877
3	1	60.8	9			937.863
4	3	99.1	9	1370	1892	141.21
5	1	80.6	9			146.957
6	2	62.3	9	1437		138.223
7	1	70.1	9			1153.57
8	3	63.4	9	1777	1807	954.467
9	3	58.4	9	1347	1871	363.733

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	94.4	6			845.079
2	2	67.4	6	1195		255.37
3	1	76	6			209.39
4	1	75.3	6			737.67
5	3	93.1	6	1052	1410	721.8
6	2	75	6	1146		815.46
7	2	78.5	6	1636		148.1
8	2	87.5	6	1836		593.45
9	2	76.6	6	1797		93.77
10	2	55.8	6	1173		620.38
11	2	100	6	1778		277.3
12	2	52.7	6	1854		792.7

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	63.7	14	1354		459.622
2	2	81.1	14	1385		413.438
3	2	82.4	14	1515		327.555
4	2	74.5	14	1635		442.653
5	1	54	14			452.771
6	2	73	14	1725		288.398
7	2	79.9	14	1527		146.736
8	3	69.6	14	1525	1713	354.354
9	2	63.7	14	1323		434.851
10	3	78.4	14	1630	1711	285.369
11	1	97.1	14			238.226
12	1	62.3	14			562.464
13	2	87.2	14	1958		533.192
14	1	84.8	14			668.089
15	1	66.1	14			253.347
16	3	94.6	14	1487	1207	391.865
17	1	52	14			103.582

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (μ sec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	88	6	1149	1726	260.652
2	2	55.6	6	1430		22.841
3	1	67.5	6			379.492
4	3	62.4	6	1784	1821	238.993
5	2	94.6	6	1968		318.054
6	1	99.2	6			245.205
7	2	96.1	6	1538		615.866
8	2	66.4	6	1032		617.437
9	1	60.5	6			509.998
10	1	67.6	6			118.389
11	3	91	6	1676	1119	595.751
12	3	98.8	6	1256	1340	395.692
13	2	85.9	6	1167		36.393
14	2	57.1	6	1886		580.014
15	1	53	6			419.025
16	1	65.8	6			353.846
17	1	73.7	6			406.837
18	2	72.7	6	1688		250.058
19	3	99.8	6	1054	1431	432.479

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	65.3	20	1667		647.226
2	2	73.1	20	1249		731.727
3	2	81.3	20	1337		649.144
4	2	50	20	1797		481.641
5	1	95.1	20			694.799
6	2	88.8	20	1076		227.796
7	2	95.5	20	1984		456.783
8	2	85.6	20	1110		449.88
9	2	66.3	20	1581		692.147
10	3	87.1	20	1968	1839	81.534
11	1	63.8	20			638.621
12	2	50.1	20	1887		443.239
13	2	99.9	20	1150		278.386
14	3	70.1	20	1721	1525	526.943

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	62.5	15	1726	1903	873.629
2	2	94.6	15	1235		352.003
3	2	88.8	15	1079		259.976
4	2	63.3	15	1334		496.659
5	2	96	15	1277		163.212
6	1	59.3	15			548.035
7	2	87.2	15	1537		861.578
8	2	67.8	15	1862		854.522
9	3	96	15	1167	1844	663.265
10	1	86.9	15			604.238
11	3	64.9	15	1546	1618	161.291
12	2	85	15	1337		44.554
13	1	78.5	15			649.177

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	80.5	16			229.606
2	3	76.9	16	1250	1109	460.227
3	1	57.6	16			582.434
4	2	75.8	16	1961		850.941
5	3	68.1	16	1029	1745	677.489
6	1	87.6	16			306.006
7	1	69.2	16			218.513
8	1	90	16			382.1
9	3	79.3	16	1677	1280	643.857
10	2	96.4	16	1027		650.254
11	1	89.4	16			416.471
12	2	99.2	16	1890		368.819
13	3	60.8	16	1873	1771	248.986
14	2	98.1	16	1456		727.843

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	53.5	15	1700	1862	497.849
2	3	79	15	1716	1337	564.501
3	2	69.8	15	1187		617.132
4	2	92.9	15	1866		46.613
5	2	81.3	15	1965		315.694
6	2	56	15	1678		15.135
7	2	94.8	15	1245		543.656
8	1	71.4	15			296.157
9	1	99.4	15			226.108
10	3	69.4	15	1177	1338	417.999
11	2	51	15	1170		248.151
12	2	64.4	15	1717		32.612
13	2	64.5	15	1049		257.463
14	2	69	15	1575		401.734
15	3	56.7	15	1672	1608	270.225
16	1	55.2	15			120.266
17	1	53.7	15			351.637
18	2	56.4	15	1431		353.058
19	1	67.7	15			297.279

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	80.8	16	1431		75.206
2	3	72.9	16	1028	1594	134.639
3	2	73.9	16	1657		344.655
4	1	50.7	16			373.693
5	3	84	16	1741	1307	415.311
6	1	52.9	16			389.318
7	1	74.4	16			11.346
8	2	60.3	16	1986		277.104
9	2	77.8	16	1092		25.801
10	2	73.2	16	1521		693.739
11	3	55	16	1106	1539	97.896
12	2	56.5	16	1562		639.734
13	1	76.8	16			241.652
14	3	65.9	16	1190	1975	216.159
15	2	97	16	1087		509.847
16	2	94.3	16	1861		255.565
17	3	66.9	16	1928	1796	655.682

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	54.4	10	1114	1111	410.597
2	2	96.7	10	1690		231.248
3	2	58.7	10	1742		426.66
4	2	54.2	10	1096		281.2
5	1	71.6	10			19.11
6	1	75.7	10			507.56
7	1	73.1	10			156.16
8	2	81.9	10	1010		588.93
9	2	80.9	10	1696		579.22
10	2	56.4	10	1552		195.8
11	2	78.3	10	1241		492.74
12	3	50.3	10	1425	1309	180.45
13	2	90.7	10	1488		102.9
14	2	99.7	10	1194		290.7
15	2	71.7	10	1477		695.3
16	2	61.7	10	1992		436.5

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	82.6	5	1843		253.8
2	1	86.3	5			152.591
3	1	90	5			153.672
4	1	78.4	5			350.983
5	3	85.6	5	1516	1735	233.924
6	3	55	5	1852	1555	204.725
7	3	58.4	5	1746	1430	48.666
8	3	90.5	5	1779	1702	212.747
9	1	82.1	5			529.378
10	3	70	5	1417	1383	111.999
11	2	70.5	5	1426		144.911
12	3	88.4	5	1289	1200	208.132
13	2	86.3	5	1404		444.593
14	1	87.5	5			44.004
15	3	50.6	5	1531	1475	236.385
16	2	78.9	5	1787		48.646
17	2	82.7	5	1590		254.737
18	2	94.3	5	1446		518.658
19	2	95.2	5	1621		34.279

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	92.5	6	1170		609.855
2	2	78.7	6	1905		332.058
3	3	75.2	6	1517	1656	431.405
4	2	69.4	6	1567		285.993
5	2	94.1	6	1968		157.281
6	2	52	6	1743		391.338
7	3	69	6	1613	1436	551.466
8	3	73.5	6	1803	1166	407.294
9	2	75.1	6	1622		367.791
10	1	61.6	6			528.489
11	3	67	6	1875	1141	50.246
12	1	80.3	6			589.914
13	1	83.5	6			287.472
14	1	73.5	6			348.409
15	2	63.3	6	1177		5.377
16	1	82.1	6			79.565
17	2	97.2	6	1194		644.182

Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	92.1	10			171.335
2	3	94.5	10	1156	1338	25.453
3	1	76.2	10			253.637
4	2	51.9	10	1509		139.38
5	1	69.9	10			316.483
6	2	65.1	10	1919		294.607
7	3	71	10	1857	1475	651.92
8	1	96.7	10			386.783
9	2	88.6	10	1265		265.317
10	3	66.3	10	1692	1564	118.39
11	3	72.5	10	1111	1455	287.113
12	1	94.6	10			600.677
13	2	82.4	10	1440		571.52
14	2	68.4	10	1156		256.903
15	1	79.6	10			296.247
16	2	70.2	10	1809		322.7
17	2	79.3	10	1860		547.333
18	1	71.1	10			572.167

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	99.9	10			687.662
2	1	56	10			453.95
3	3	76.4	10	1457	1089	19.58
4	2	54.8	10	1417		110.49
5	3	62.6	10	1824	1661	607.31
6	2	91.8	10	1663		121.1
7	2	71.9	10	1210		17.29
8	2	98.8	10	1797		159.72
9	2	64.7	10	1104		506.52
10	2	93.7	10	1931		422.06
11	1	93.6	10			640
12	1	71.6	10			913.8

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	88	20			157.522
2	2	75	20	1391		589.941
3	2	61.4	20	1213		182.652
4	2	92.6	20	1160		534.023
5	2	70.4	20	1838		568.274
6	3	53	20	1209	1517	564.825
7	3	79.8	20	1086	1914	303.896
8	2	83.4	20	1463		229.757
9	2	98.7	20	1439		610.648
10	2	54.3	20	1418		349.749
11	2	78.6	20	1421		481.831
12	3	83.9	20	1103	1254	418.172
13	3	82.8	20	1900	1280	584.703
14	3	55.6	20	1218	1192	220.914
15	2	93.3	20	1372		539.815
16	3	61.6	20	1180	1691	24.586
17	3	95.5	20	1124	1210	159.037
18	3	72.1	20	1585	1745	32.358
19	3	87	20	1333	1541	539.579

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	76.4	16	1433		222.507
2	3	88.8	16	1912	1846	956.59
3	2	80	16	1586		1131.18
4	2	85.1	16	1238		165.75
5	1	61.7	16			700.18
6	2	92.5	16	1407		226.19
7	1	65.8	16			1058.42
8	2	55.9	16	1089		568.52
9	2	88.7	16	1924		1093.7
10	3	80.6	16	1528	1945	358.8

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	83.3	16			50.007
2	2	62.1	16	1990		887.29
3	2	99.1	16	1213		1050.76
4	3	70.7	16	1211	1270	254.41
5	2	56	16	1086		210.22
6	1	76.2	16			727.2
7	3	94.2	16	1312	1985	153.52
8	2	84.1	16	1698		306.78
9	3	72.5	16	1248	1800	447.7
10	3	93.5	16	1761	1231	360.9

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	98.8	8	1435		723.27
2	3	63.7	8	1792	1423	294.217
3	2	84	8	1647		667.184
4	3	60.8	8	1076	1777	776.111
5	2	74.4	8	1374		687.809
6	2	63.6	8	1986		698.556
7	3	93.8	8	1157	1506	738.243
8	2	85.8	8	1993		645.5
9	2	52.4	8	1138		513.657
10	1	69.8	8			838.744
11	2	94.2	8	1686		305.291
12	1	63	8			55.119
13	2	98.2	8	1054		320.186
14	1	78.8	8			88.843

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	88.5	15	1612	1141	7.179
2	2	91.3	15	1964		604.9
3	2	58.5	15	1764		137.59
4	2	62.8	15	1319		11.76
5	3	96.3	15	1115	1773	735.71
6	3	81.9	15	1305	1326	137.08
7	3	74.8	15	1998	1993	92.54
8	2	62	15	1247		556.95
9	1	95.9	15			162.83
10	3	74.4	15	1004	1425	219.55
11	2	99.2	15	1128		475.81
12	1	80.2	15			691.15
13	2	80.6	15	1370		314.71
14	3	81.5	15	1363	1352	67.5
15	1	51.5	15			233.6

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	71.9	11	1792		714.218
2	2	54.5	11	1755		139.997
3	2	63.4	11	1475		356.263
4	2	67.6	11	1164		623.67
5	2	98.6	11	1434		1210.087
6	1	65.3	11			328.443
7	3	79.2	11	1657	1271	274.19
8	2	53.5	11	1043		771.567
9	2	69.1	11	1106		832.233

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	68.6	16	1271	1013	88.537
2	3	87.8	16	1285	1713	789.821
3	2	86.1	16	1183		134.222
4	2	77.6	16	1358		986.983
5	2	56.7	16	1867		616.864
6	3	93.5	16	1859	1548	886.785
7	3	79	16	1336	1251	893.875
8	2	51.8	16	1345		567.596
9	2	68.3	16	1358		269.457
10	3	90.5	16	1974	1673	947.118
11	1	74.9	16			206.809

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	71.8	13	1721		870.56
2	1	55	13			676.533
3	3	77.5	13	1263	1834	492.996
4	2	86.2	13	1482		145.199
5	1	54	13			199.492
6	1	79.4	13			453.635
7	3	52.8	13	1513	1910	865.358
8	2	75.8	13	1976		166.472
9	3	52.4	13	1400	1554	64.295
10	2	54.7	13	1089		862.698
11	2	79.4	13	1230		370.581
12	2	86.1	13	1824		499.054
13	2	63.5	13	1372		133.277

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	76.2	19	1318		555.59
2	2	73.6	19	1151		259.16
3	2	93.9	19	1983		452.94
4	2	78.4	19	1406		361.12
5	2	76.7	19	1008		167.9
6	2	52.7	19	1302		628.97
7	1	80	19			144.19
8	2	99.4	19	1714		220.59
9	2	94.1	19	1360		138.63
10	2	94.9	19	1913		778.07
11	2	67.6	19	1822		552.23
12	1	83	19			283.13
13	3	76.3	19	1935	1558	479.4
14	3	51.7	19	1123	1395	180
15	2	72.6	19	1711		103.1

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	86.3	18	1300		933.1
2	1	72.4	18			808.077
3	2	99.8	18	1351		1046.073
4	1	79.5	18			1218.87
5	2	93.1	18	1375		696.467
6	3	93.4	18	1417	1462	947.223
7	3	97.7	18	1224	1180	1123.91
8	1	51.8	18			397.727
9	3	65.1	18	1673	1357	942.133

Type 5 Radar Waveform_29

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	89.1	13	1452	1030	590.09
2	3	83.7	13	1176	1487	814.89
3	2	75.1	13	1966		680.12
4	3	89.6	13	1529	1009	401.48
5	2	57.2	13	1580		169.81
6	1	66.7	13			240.98
7	2	56.6	13	1393		149.68
8	2	58.2	13	1481		140.22
9	2	73.6	13	1310		730.81
10	3	95	13	1264	1788	190.35
11	3	56.8	13	1693	1199	241.3
12	1	81.3	13			969.5

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	94.3	12	1251		265.391
2	2	95.8	12	1373		594.13
3	2	97.2	12	1462		479.14
4	2	61.9	12	1240		382.23
5	2	94.2	12	1199		558.17
6	1	87.2	12			169.57
7	2	98.6	12	1080		596.88
8	3	52.7	12	1340	1611	243.66
9	2	77.8	12	1649		567.97
10	2	83.1	12	1613		523.25
11	3	74.8	12	1178	1890	495.74
12	1	65.9	12			14.1
13	1	63.6	12			338.01
14	2	66	12	1734		106.53
15	3	99	12	1487	1223	391.2
16	3	55.1	12	1715	1654	406.2

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	5500	1	16	5509.7	1
2	5500	1	17	5510.0	1
3	5500	1	18	5511.5	1
4	5500	1	19	5512.9	1
5	5500	1	20	5514.4	1
6	5500	1	21	5515.8	1
7	5500	1	22	5517.3	1
8	5500	1	23	5518.8	1
9	5500	1	24	5520.2	1
10	5500	1	25	5521.7	1
11	5500	1	26	5523.1	1
12	5500	1	27	5524.6	1
13	5500	1	28	5526.1	1
14	5500	1	29	5527.5	1
15	5500	1	30	5529.0	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
24	5522	72	31	5496	93
44	5508	132	37	5508	111
75	5528	225	68	5507	204
91	5526	273	69	5499	207
--	--	--	81	5511	243
--	--	--	82	5515	246
--	--	--	85	5523	255

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5527	15	12	5506	36
11	5502	33	14	5511	42
15	5504	45	19	5498	57
22	5495	66	24	5491	72
34	5499	102	31	5504	93
46	5522	138	64	5516	192
64	5516	192	77	5517	231
77	5506	231	82	5501	246
81	5528	243	85	5519	255
82	5500	246	89	5510	267
95	5510	285	97	5505	291
97	5523	291	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5511	15	12	5514	36
8	5500	24	14	5510	42
11	5503	33	18	5503	54
44	5508	132	24	5522	72
92	5493	276	29	5529	87
100	5515	300	85	5521	255
--	--	--	100	5500	300

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5520	27	4	5520	12
12	5512	36	11	5503	33
13	5505	39	13	5519	39
22	5524	66	15	5508	45
26	5528	78	24	5517	72
37	5498	111	35	5493	105
64	5529	192	43	5492	129
99	5511	297	50	5512	150
--	--	--	53	5495	159
--	--	--	58	5500	174
--	--	--	62	5496	186
--	--	--	66	5526	198
--	--	--	80	5505	240
--	--	--	83	5524	249
--	--	--	99	5490	297

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5505	6	1	5514	3
4	5518	12	12	5490	36
5	5508	15	26	5530	78
13	5527	39	28	5511	84
18	5493	54	32	5506	96
40	5500	120	50	5525	150
53	5496	159	67	5504	201
58	5509	174	68	5526	204
69	5528	207	70	5512	210
79	5521	237	72	5496	216
89	5495	267	79	5495	237
--	--	--	91	5499	273
--	--	--	97	5500	291

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
21	5526	63	7	5512	21
38	5509	114	27	5524	81
60	5495	180	31	5506	93
63	5516	189	52	5503	156
67	5502	201	57	5498	171
97	5530	291	83	5529	249
100	5493	300	85	5497	255
--	--	--	100	5508	300

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
15	5519	45	15	5529	45
23	5528	69	24	5520	72
33	5517	99	26	5494	78
44	5510	132	34	5523	102
70	5493	210	35	5526	105
73	5495	219	52	5512	156
99	5515	297	64	5496	192
--	--	--	65	5517	195
--	--	--	81	5497	243
--	--	--	82	5515	246

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5499	24	5	5497	15
38	5500	114	45	5506	135
50	5519	150	48	5524	144
56	5494	168	60	5518	180
57	5497	171	82	5529	246
90	5495	270	91	5505	273

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5494	9	18	5527	54
11	5517	33	21	5490	63
23	5522	69	43	5525	129
25	5495	75	48	5517	144
38	5527	114	53	5513	159
40	5496	120	57	5498	171
47	5506	141	67	5519	201
--	--	--	70	5497	210
--	--	--	74	5530	222
--	--	--	76	5505	228
--	--	--	91	5509	273
--	--	--	94	5493	282

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5522	21	15	5512	45
14	5530	42	19	5525	57
21	5525	63	22	5504	66
54	5529	162	35	5515	105
55	5499	165	41	5503	123
63	5515	189	46	5519	138
67	5505	201	71	5497	213
72	5521	216	81	5524	243
--	--	--	84	5498	252

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5502	9	6	5523	18
12	5523	36	9	5493	27
20	5499	60	20	5494	60
38	5519	114	33	5511	99
45	5513	135	46	5521	138
64	5498	192	55	5495	165
68	5525	204	60	5498	180
70	5491	210	72	5501	216
86	5520	258	100	5522	300

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5504	6	1	5490	3
15	5508	45	13	5498	39
34	5528	102	47	5519	141
36	5518	108	53	5504	159
40	5511	120	54	5496	162
52	5524	156	61	5512	183
82	5515	246	64	5520	192
86	5505	258	72	5528	216
91	5509	273	--	--	--
98	5517	294	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5514	12	1	5506	3
16	5518	48	9	5523	27
26	5509	78	47	5527	141
39	5516	117	63	5501	189
40	5526	120	74	5504	222
54	5493	162	80	5510	240
61	5521	183	--	--	--
69	5523	207	--	--	--

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
19	5524	57	5	5501	15
31	5497	93	8	5502	24
39	5510	117	42	5498	126
40	5512	120	44	5491	132
52	5507	156	45	5518	135
69	5520	207	53	5499	159
86	5499	258	55	5523	165
92	5529	276	70	5493	210
--	--	--	86	5520	258

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
16	5498	48	12	5508	36
21	5522	63	16	5502	48
25	5493	75	17	5517	51
33	5510	99	19	5496	57
80	5490	240	42	5515	126
--	--	--	46	5514	138
--	--	--	47	5490	141
--	--	--	62	5526	186
--	--	--	67	5506	201
--	--	--	97	5524	291

Product	HAN Access Point, AP301	Temperature	27°C
Test Engineer	Jay Chiu	Relative Humidity	65%
Test Site	AC1	Test Date	2020/09/24
Test Item	Radar Statistical Performance Check (802.11ax-HE80 mode – 5530MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	1	838	63	1
2	5493.3	1	558	95	1
3	5495.6	1	778	68	1
4	5497.9	1	718	74	1
5	5500.2	1	658	81	1
6	5502.5	1	898	59	1
7	5504.8	1	598	89	1
8	5511.7	1	818	65	1
9	5509.4	1	878	61	1
10	5507.1	1	918	58	1
11	5514.0	1	538	98	1
12	5516.3	1	698	76	1
13	5518.6	1	858	62	1
14	5520.9	1	578	92	0
15	5523.2	1	738	72	1
16	5525.5	1	2207	24	1
17	5527.8	1	1166	46	1
18	5530.0	1	2918	19	1
19	5530.1	1	2666	20	1
20	5533.9	1	2793	19	1
21	5537.8	1	1588	34	1
22	5541.7	1	2407	22	1
23	5545.6	1	2690	20	1
24	5549.5	1	2097	26	1
25	5553.4	1	1435	37	1
26	5557.3	1	2046	26	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5561.2	1	2254	24	1
28	5565.1	1	1892	28	1
29	5567.0	1	2220	24	1
30	5569.0	1	581	91	1
Detection Percentage (%)					96.7%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	3.2	174	23	1
2	5493.3	4.3	208	25	1
3	5495.6	1	214	27	1
4	5497.9	1	210	29	1
5	5500.2	1.5	175	26	1
6	5502.5	1.1	197	24	1
7	5504.8	3.3	179	28	1
8	5507.1	4.4	193	23	1
9	5509.4	5	224	27	1
10	5511.7	1.8	183	25	1
11	5514.0	4.7	197	24	1
12	5516.3	3.3	205	24	1
13	5523.2	2.8	219	27	1
14	5520.9	1.8	222	27	1
15	5518.6	2.4	180	29	1
16	5525.5	5	183	27	1
17	5527.8	4.9	226	27	1
18	5530.1	2.5	192	24	1
19	5530.0	3.7	159	26	1
20	5533.9	4.5	198	23	1
21	5537.8	4.8	184	28	1
22	5541.7	4.5	150	26	1
23	5545.6	1.3	211	26	1
24	5549.5	1	187	28	1
25	5553.4	2.5	195	27	1
26	5557.3	4.9	218	28	1
27	5561.2	4.8	191	26	1
28	5565.1	1.8	186	29	1
29	5567.0	4.7	181	28	1
30	5569.0	3	166	27	1
Detection Percentage (%)					100%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	8.9	489	17	1
2	5493.3	8.2	210	17	1
3	5495.6	7.3	361	17	1
4	5497.9	8.2	379	17	1
5	5500.2	8.5	455	16	1
6	5502.5	6.7	255	18	1
7	5504.8	7.6	419	17	1
8	5507.1	7.5	479	18	1
9	5509.4	9.8	203	18	1
10	5511.7	6	467	17	1
11	5514.0	7.2	476	17	1
12	5516.3	9.2	348	17	1
13	5518.6	9.3	305	17	1
14	5520.9	9.7	304	16	1
15	5527.8	8	212	17	1
16	5525.5	9.4	432	18	1
17	5523.2	9.5	289	18	1
18	5530.1	8.7	238	16	1
19	5530.0	8.7	481	17	1
20	5533.9	7	447	18	1
21	5541.7	8.1	346	16	1
22	5537.8	8.2	202	17	1
23	5545.6	7.3	309	17	1
24	5549.5	8.9	296	18	1
25	5553.4	8.6	255	18	1
26	5557.3	8.4	395	17	1
27	5561.2	8.8	392	17	1
28	5565.1	9.5	284	16	1
29	5567.0	9.3	330	16	1
30	5569.0	8.9	461	17	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	5491.0	18.7	277	13	1
2	5493.3	19	428	13	1
3	5495.6	14.5	242	13	1
4	5497.9	19.4	477	14	1
5	5500.2	14.6	344	12	1
6	5502.5	13.8	485	14	1
7	5507.1	17.4	398	13	0
8	5504.8	17.8	376	14	1
9	5509.4	17.6	468	15	1
10	5511.7	14.4	318	13	1
11	5514.0	18.3	229	14	1
12	5516.3	17.5	453	16	1
13	5518.6	12.7	449	16	1
14	5520.9	12.9	415	15	1
15	5523.2	14.1	308	13	1
16	5525.5	19.6	369	14	1
17	5527.8	13.2	418	15	1
18	5530.1	14.2	369	13	1
19	5533.9	11.7	455	14	1
20	5530.0	13.5	434	16	1
21	5537.8	11.6	284	14	1
22	5541.7	18.5	473	15	1
23	5545.6	18	224	12	1
24	5549.5	11.6	386	15	1
25	5553.4	11.4	427	14	1
26	5557.3	18.7	376	13	1
27	5561.2	14.2	313	16	1
28	5565.1	13	384	13	0
29	5567.0	13.6	415	14	1
30	5569.0	18.6	455	12	1
Detection Percentage (%)					93.3%

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

waveforms is as follows: $\dfrac{P_d1 + P_d2 + P_d3 + P_d4}{4}$ = (96.7%+100%+100%+93.3%)/4 = 97.5% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5530	1	16	5495	1
2	5530	1	17	5499	1
3	5530	1	18	5495.4	1
4	5530	1	19	5496.2	1
5	5530	1	20	5493.4	1
6	5530	1	21	5567	1
7	5530	1	22	5563	1
8	5530	1	23	5562.6	1
9	5530	1	24	5562.6	1
10	5530	1	25	5561.8	1
11	5498.2	1	26	5563.4	1
12	5495.8	1	27	5565.4	1
13	5496.2	1	28	5561.4	1
14	5494.6	1	29	5564.2	1
15	5494.6	1	30	5564.2	1
Detection Percentage (%)					100%

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	88.4	8	1229	1715	607.05
2	3	52.6	8	1938	1046	166.361
3	2	88	8	1408		521.252
4	1	85.9	8			388.743
5	2	65.7	8	1832		241.034
6	2	69.8	8	1029		473.715
7	1	71.1	8			333.096
8	2	99.7	8	1122		350.667
9	2	56.2	8	1505		530.768
10	1	85	8			594.639
11	2	87.5	8	1107		114.291
12	3	56.2	8	1199	1146	103.522
13	3	61.5	8	1204	1863	333.403
14	2	96.3	8	1667		571.594
15	1	57.8	8			459.135
16	1	66	8			79.016
17	1	79.9	8			424.237
18	3	78.9	8	1395	1716	96.358
19	2	53.7	8	1866		404.279

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	87.9	17	1160		521.026
2	2	87.7	17	1174		659.088
3	2	70.3	17	1083		548.485
4	2	98.4	17	1182		438.253
5	1	96.1	17			127.271
6	1	86	17			664.088
7	2	56.3	17	1978		337.706
8	2	66.5	17	1073		471.774
9	1	58.3	17			159.331
10	2	90	17	1267		189.349
11	2	81.9	17	1363		325.746
12	2	50.4	17	1580		359.414
13	3	56.8	17	1381	1727	86.522
14	1	84.7	17			98.199
15	2	76.5	17	1792		549.547
16	2	61.2	17	1103		268.165
17	2	51.7	17	1912		211.182

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	66.7	9			466.819
2	2	93.5	9	1834		535.951
3	3	67.8	9	1659	1001	284.152
4	1	81.5	9			38.323
5	3	83.1	9	1677	1283	512.604
6	3	64	9	1514	1314	605.925
7	1	69.8	9			511.056
8	2	83.3	9	1631		522.617
9	2	70	9	1083		436.458
10	3	62.4	9	1957	1126	343.339
11	2	99.5	9	1873		567.541
12	2	63.7	9	1711		623.202
13	1	90.9	9			292.743
14	2	73.9	9	1652		565.464
15	2	70.2	9	1247		402.355
16	3	82.2	9	1463	1069	74.296
17	2	81	9	1165		416.537
18	2	81.2	9	1739		234.658
19	2	90.3	9	1667		55.379

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	76.5	8	1552	1717	933.059
2	3	97.5	8	1644	1881	469.331
3	3	57.8	8	1527	1611	457.992
4	2	60.8	8	1068		184.353
5	2	52.1	8	1084		745.974
6	1	72.8	8			698.265
7	2	63.4	8	1014		382.745
8	2	80.1	8	1801		632.656
9	3	74.6	8	1085	1603	322.337
10	3	89.6	8	1874	1794	489.718
11	3	65.1	8	1377	1070	401.609

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	67.1	12	1083		864.985
2	2	57.7	12	1274		777.643
3	3	60.9	12	1264	1359	832.686
4	1	80.6	12			116.059
5	2	78.8	12	1245		793.502
6	2	97	12	1242		503.985
7	2	79.2	12	1925		14.298
8	3	76.7	12	1210	1931	99.392
9	2	60	12	1813		233.555
10	3	56.3	12	1778	1283	91.168
11	2	93.9	12	1520		789.431
12	3	65.4	12	1578	1331	139.254
13	2	64.9	12	1557		62.177

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	96.6	14	1315		311.006
2	3	55.4	14	1604	1107	520.458
3	3	59.5	14	1597	1254	634.845
4	3	53.8	14	1288	1233	569.383
5	2	74.5	14	1460		44.071
6	2	63.8	14	1535		465.518
7	3	66.1	14	1097	1404	140.336
8	2	84.7	14	1594		402.454
9	1	93.7	14			248.561
10	1	54.3	14			461.949
11	1	87.8	14			364.776
12	1	88.2	14			41.014
13	2	91.4	14	1352		386.062
14	3	86.3	14	1667	1304	466.539
15	2	77.2	14	1024		319.647
16	1	80.5	14			362.965
17	3	54	14	1440	1427	581.282

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	87.5	11	1434		648.905
2	2	56.6	11	1168		340.22
3	3	76.7	11	1872	1475	80.26
4	2	51.8	11	1399		739.62
5	2	78.7	11	1296		146.59
6	2	57.9	11	1969		849.92
7	1	97.2	11			806.96
8	2	69.9	11	1858		727.49
9	2	69.2	11	1661		505.36
10	1	50.6	11			277.49
11	2	65.4	11	1852		583
12	2	68	11	1069		238.8

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (μ sec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	73.9	5	1692		114.674
2	2	82.4	5	1306		486.827
3	2	71.1	5	1224		84.084
4	1	63.9	5			607.281
5	2	88.6	5	1571		298.029
6	2	92	5	1514		10.636
7	3	93.5	5	1565	1788	482.793
8	2	86.2	5	1859		707.09
9	2	67.2	5	1236		470.387
10	2	57.3	5	1832		802.174
11	1	60.1	5			640.541
12	2	59.8	5	1789		34.539
13	2	83.8	5	1837		371.686
14	1	52.5	5			66.243

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	55.2	7			157.528
2	1	58.8	7			114.75
3	1	51.7	7			616.77
4	2	65.9	7	1386		291
5	3	90.9	7	1559	1973	953.26
6	1	96.8	7			488.05
7	2	91.7	7	1818		598.88
8	2	50.9	7	1523		468.6
9	2	64.4	7	1011		453.03
10	2	72.7	7	1198		380.2
11	2	77.3	7	1937		796.4
12	2	99.1	7	1760		190.8

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	76.9	19	1616		396.554
2	3	67.3	19	1243	1064	392.568
3	3	96.4	19	1407	1414	212.495
4	2	93	19	1837		69.893
5	2	88.9	19	1960		685.651
6	2	59.9	19	1537		616.828
7	2	74.1	19	1997		217.966
8	1	59.3	19			459.024
9	2	64	19	1826		79.111
10	2	66.6	19	1877		364.739
11	2	78.5	19	1442		584.416
12	3	51.7	19	1544	1973	575.184
13	1	72.7	19			603.502
14	2	53.3	19	1175		609.569
15	2	91.6	19	1335		647.647
16	2	83.9	19	1974		510.165
17	2	63.5	19	1894		151.682

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	94.8	18			600.562
2	2	72.5	18	1139		489.943
3	1	78.2	18			567.267
4	1	71.7	18			443.53
5	1	67.9	18			259.073
6	3	76.5	18	1788	1678	71.957
7	1	60.7	18			266.51
8	3	79.6	18	1995	1030	596.873
9	2	59.6	18	1501		495.357
10	3	84.5	18	1741	1334	555.2
11	2	98.8	18	1296		232.033
12	3	81.3	18	1968	1736	120.857
13	2	77.5	18	1673		173.4
14	2	71.3	18	1742		524.393
15	2	56.5	18	1013		80.997
16	2	97.1	18	1209		254.1
17	2	51.3	18	1487		507.433
18	2	59.1	18	1753		413.767

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	98.1	12	1445		579.499
2	2	99.9	12	1451		25.118
3	3	88.8	12	1449	1997	303.55
4	3	93.8	12	1579	1268	578.72
5	3	96	12	1517	1023	180.13
6	3	95	12	1351	1522	103.53
7	2	51.1	12	1485		136.67
8	2	67	12	1667		583.96
9	2	61.2	12	1371		354.01
10	2	69.8	12	1993		56.37
11	2	66	12	1450		138.62
12	2	53.7	12	1913		557.55
13	2	54	12	1618		721.05
14	2	80.8	12	1099		151.9
15	1	54.4	12			320
16	3	78.4	12	1395	1276	76.9

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	91.9	13	1544		0.191
2	1	61.7	13			247.434
3	3	98.9	13	1075	1154	368.705
4	3	80.6	13	1126	1616	282.693
5	2	55.4	13	1135		583.421
6	2	82.9	13	1391		276.718
7	3	52.9	13	1193	1109	432.116
8	2	71.5	13	1476		363.494
9	2	64.7	13	1856		41.401
10	3	85.9	13	1380	1174	272.699
11	1	87.4	13			585.486
12	1	84.1	13			339.684
13	2	69	13	1317		155.072
14	2	87.9	13	1650		168.089
15	2	57	13	1602		110.847
16	2	71.8	13	1238		685.465
17	2	87.5	13	1480		590.082

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	84.3	9	1073	1923	329.049
2	2	88.5	9	1415		327.493
3	1	98.4	9			645.806
4	2	68.3	9	1515		727.849
5	1	72	9			794.642
6	2	99	9	1241		827.195
7	2	88.7	9	1226		30.348
8	1	84.1	9			127.432
9	1	51.1	9			778.355
10	2	97.4	9	1143		915.578
11	2	61.5	9	1802		609.901
12	2	62.1	9	1847		884.354
13	2	70.7	9	1681		836.877

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	92.1	9	1474	1945	443.275
2	3	90.8	9	1516	1209	321.331
3	1	59.5	9			343.72
4	2	73.1	9	1686		366.5
5	2	60.1	9	1482		418.76
6	2	84.6	9	1678		583.01
7	3	86.8	9	1268	1608	578.8
8	2	57.7	9	1830		235.47
9	1	73.7	9			159.4
10	3	99	9	1002	1925	257.24
11	1	75.3	9			180.51
12	2	62.8	9	1204		336.03
13	1	89.2	9			481.24
14	2	52	9	1017		490.17
15	1	70.2	9			231.96
16	3	58.2	9	1528	1478	24.53
17	2	76.7	9	1678		176.5
18	2	54	9	1201		319.7
19	2	53.5	9	1588		438.5
20	3	97.2	9	1312	1455	378.3

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	96.4	10	1550		568.194
2	2	57.8	10	1758		857.16
3	2	51.2	10	1673		777.63
4	3	58.3	10	1322	1905	1187.97
5	2	61	10	1296		837.12
6	3	87.2	10	1636	1792	596.46
7	2	71	10	1599		1125.56
8	1	99.5	10			718.47
9	2	56.5	10	1902		804.1
10	2	96.1	10	1921		174.9

Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	63.2	20	1740	1066	457.788
2	2	72.2	20	1497		624.223
3	1	92.4	20			2.706
4	2	52	20	1792		859.589
5	1	70.4	20			327.942
6	2	74.4	20	1805		613.125
7	2	70.7	20	1080		679.868
8	1	87.7	20			576.092
9	2	89.3	20	1084		257.075
10	1	80.9	20			452.448
11	2	80.7	20	1759		485.691
12	2	64.6	20	1207		683.454
13	2	86	20	1813		477.777

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	82.2	11	1510	1159	403.612
2	2	73.8	11	1789		675.998
3	2	56.9	11	1429		479.945
4	2	66.5	11	1294		204.383
5	1	65.6	11			632.101
6	3	95.2	11	1354	1915	501.268
7	3	85.7	11	1557	1919	439.356
8	2	88.6	11	1431		44.144
9	2	61.4	11	1603		180.961
10	2	64	11	1786		161.829
11	1	76.6	11			539.926
12	2	93.8	11	1322		217.784
13	3	88.2	11	1743	1861	39.762
14	3	75.3	11	1576	1934	330.539
15	2	52.9	11	1661		657.647
16	1	60	11			258.465
17	2	66.2	11	1823		380.482

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	1	85.9	13			703.662
2	2	95.3	13	1637		423.03
3	1	90	13			277.01
4	3	73.1	13	1217	1568	18.53
5	1	98.3	13			213.98
6	2	50	13	1828		567.31
7	2	84.3	13	1772		299.63
8	1	94.2	13			487.86
9	1	59.5	13			352.98
10	3	63.4	13	1873	1627	272.01
11	2	56.3	13	1850		61.05
12	3	84.2	13	1623	1424	647.81
13	1	92	13			699.51
14	1	69.5	13			404.3
15	3	73.8	13	1286	1852	229.7
16	2	70.8	13	1985		400.4

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	72.1	6	1749	1796	328.94
2	3	52.4	6	1781	1764	312.255
3	1	92.1	6			105.952
4	2	99.1	6	1384		520.233
5	2	94.7	6	1943		246.214
6	3	91.9	6	1376	1895	286.805
7	2	82.8	6	1905		257.096
8	1	90.1	6			397.547
9	3	91.5	6	1871	1241	102.538
10	1	85.6	6			310.909
11	2	87.3	6	1465		301.811
12	3	98.3	6	1578	1759	476.942
13	1	95.9	6			95.873
14	2	56.2	6	1806		146.574
15	1	77.6	6			250.105
16	2	65.8	6	1989		529.516
17	3	57.9	6	1569	1056	471.537
18	2	65.8	6	1838		486.258
19	3	60	6	1909	1003	433.379

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	72.5	5	1269		30.082
2	2	98.6	5	1594		239.115
3	2	67	5	1108		233.88
4	2	82.5	5	1227		214.05
5	2	86.2	5	1673		222.09
6	2	76.6	5	1287		291.54
7	1	63.9	5			461.68
8	1	71.7	5			125.17
9	1	72.9	5			22.3
10	1	95.8	5			320.16
11	2	53	5	1482		246.65
12	2	65.4	5	1368		534.04
13	1	81.6	5			222.94
14	2	92.1	5	1783		246.22
15	2	95.8	5	1981		372.62
16	1	79.6	5			228.89
17	2	92.7	5	1722		384.4
18	2	50.9	5	1367		488.1
19	2	73.7	5	1112		45.5
20	3	87.2	5	1980	1242	263.2

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	73.5	15	1669	1162	132.826
2	2	80.6	15	1472		539.56
3	2	83.2	15	1730		195.87
4	2	72.8	15	1516		279.42
5	3	50.8	15	1984	1678	326.81
6	1	51.5	15			705.3
7	2	74.3	15	1242		528.6
8	2	97.7	15	1497		156.09
9	3	54.7	15	1856	1852	825.12
10	1	73.8	15			662.51
11	2	74.1	15	1165		660.6
12	2	60.4	15	1989		178.9

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	90.9	16	1830	1101	723.706
2	2	75.2	16	1080		41.211
3	2	50.7	16	1453		855.782
4	2	83.5	16	1526		984.763
5	1	72	16			782.034
6	3	69.6	16	1897	1142	100.515
7	3	74	16	1511	1874	339.525
8	2	64.1	16	1241		1019.126
9	2	97.8	16	1821		899.727
10	2	97.8	16	1759		48.098
11	2	52.1	16	1191		863.409

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	64	16	1723		651.286
2	3	77.2	16	1616	1483	436.417
3	1	88.5	16			643.434
4	1	71.2	16			693.871
5	2	57.3	16	1444		462.409
6	2	94.8	16	1279		112.146
7	1	99	16			70.753
8	2	83.2	16	1030		835.25
9	3	72.8	16	1604	1723	662.447
10	3	91.5	16	1600	1275	407.874
11	2	75.7	16	1532		366.791
12	3	83.6	16	1937	1268	206.439
13	2	64.7	16	1277		335.386
14	1	63.9	16			296.043

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	74.8	18			358.264
2	2	58.1	18	1261		196.04
3	1	66.8	18			320.37
4	1	86.3	18			194.48
5	1	52.3	18			339.69
6	2	66.3	18	1664		788.54
7	2	66.2	18	1656		1190.14
8	2	63.2	18	1278		592.2
9	2	51.9	18	1857		879.1
10	2	53.7	18	1417		1189.7

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	68.2	14	1708	1553	125.626
2	1	80.2	14			509.06
3	1	79.1	14			571.78
4	2	90.9	14	1555		615.28
5	3	68.9	14	1934	1450	12.76
6	2	84.9	14	1657		696.3
7	1	97.4	14			421.75
8	2	60.9	14	1717		356.59
9	3	88.5	14	1866	1189	673.38
10	2	99.3	14	1070		162.12
11	1	55.4	14			310.07
12	2	64.4	14	1571		588.68
13	3	70.5	14	1191	1805	790.9
14	1	74.8	14			264.8
15	3	87.7	14	1844	1170	392.9

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	63	9	1520	1319	345.289
2	1	89.2	9			509.723
3	1	76.2	9			589.877
4	2	54.7	9	1759		139.24
5	1	79.6	9			360.383
6	2	72.1	9	1635		253.867
7	2	99.5	9	1607		571.85
8	2	83.6	9	1213		285.203
9	2	84.4	9	1505		590.427
10	2	59	9	1062		516.39
11	2	95.6	9	1440		402.943
12	1	77.4	9			230.507
13	3	58.7	9	1690	1906	580.2
14	1	57.4	9			475.063
15	3	82.5	9	1762	1966	31.777
16	2	93.9	9	1808		604.7
17	2	84.4	9	1849		81.933
18	2	73.9	9	1713		344.967

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (µ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	82	19	1026		680.436
2	2	88.8	19	1336		1415.77
3	2	99.7	19	1661		1051.5
4	2	88.6	19	1205		601.87
5	1	99.5	19			73.23
6	1	87.1	19			1263
7	3	55.3	19	1302	1332	604.07
8	2	73.8	19	1246		1177.8

Type 5 Radar Waveform_29						
Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	99.9	12	1278		440.785
2	2	69.5	12	1131		593.19
3	1	84.3	12			639.72
4	2	78.5	12	1142		663.81
5	1	79.2	12			694.04
6	2	64.2	12	1959		623.83
7	2	71.4	12	1306		666.93
8	1	51.4	12			205.16
9	2	73.4	12	1078		552.39
10	1	67.8	12			664.16
11	2	93.9	12	1501		366.84
12	3	79.4	12	1943	1128	637.22
13	1	85.2	12			79.35
14	1	84.3	12			243.71
15	1	66.4	12			433.3
16	1	97.1	12			220

Type 5 Radar Waveform_30						
Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	95.1	12	1080	1052	752.221
2	3	89.5	12	1589	1809	684.46
3	3	76.4	12	1750	1120	67.36
4	1	78.3	12			10.66
5	1	87.6	12			414.29
6	2	84.5	12	1048		89.05
7	2	73.7	12	1837		333.79
8	2	51.7	12	1973		510.34
9	1	99.6	12			408.36
10	2	82	12	1986		667.72
11	3	80.2	12	1318	1109	253.13
12	2	68.1	12	1749		270.04
13	2	69.8	12	1190		747.5
14	2	58.6	12	1336		93.8
15	3	54.1	12	1968	1651	724.6

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	5500	1	16	5525.5	1
2	5500	1	17	5527.8	1
3	5500	1	18	5530.1	1
4	5500	1	19	5530.0	1
5	5500	1	20	5533.9	1
6	5500	1	21	5537.8	1
7	5500	1	22	5541.7	1
8	5500	1	23	5545.6	1
9	5500	1	24	5549.5	1
10	5500	1	25	5553.4	1
11	5500	1	26	5557.3	1
12	5500	1	27	5561.2	1
13	5500	1	28	5565.1	1
14	5500	1	29	5567.0	1
15	5500	1	30	5569.0	1
Detection Percentage (%)					100%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5501	3	2	5561	6
8	5500	24	4	5490	12
25	5539	75	6	5499	18
26	5529	78	17	5568	51
50	5544	150	19	5548	57
54	5567	162	20	5547	60
60	5557	180	23	5557	69
67	5556	201	28	5530	84
72	5502	216	40	5558	120
81	5550	243	45	5562	135
92	5499	276	59	5509	177
94	5515	282	61	5564	183
--	--	--	63	5535	189
--	--	--	68	5506	204
--	--	--	85	5508	255
--	--	--	96	5569	288

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5565	6	6	5547	18
3	5563	9	12	5513	36
5	5502	15	36	5561	108
11	5552	33	40	5507	120
12	5566	36	48	5517	144
16	5494	48	51	5567	153
17	5520	51	53	5494	159
34	5499	102	65	5509	195
35	5567	105	67	5520	201
42	5547	126	71	5558	213
44	5559	132	73	5536	219
49	5538	147	75	5527	225
58	5511	174	77	5505	231
76	5557	228	78	5537	234
85	5527	255	81	5512	243
90	5526	270	82	5498	246
93	5550	279	85	5534	255
99	5546	297	95	5495	285

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5549	33	8	5541	24
33	5502	99	9	5518	27
36	5516	108	12	5497	36
40	5504	120	13	5530	39
42	5543	126	14	5561	42
45	5527	135	20	5526	60
52	5534	156	21	5521	63
53	5552	159	34	5560	102
73	5535	219	37	5548	111
88	5494	264	55	5505	165
97	5553	291	63	5493	189
100	5554	300	68	5570	204
--	--	--	71	5552	213
--	--	--	72	5535	216
--	--	--	81	5500	243
--	--	--	86	5558	258
--	--	--	88	5553	264
--	--	--	89	5492	267
--	--	--	93	5517	279
--	--	--	99	5507	297

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5550	12	2	5521	6
6	5540	18	5	5549	15
9	5492	27	12	5554	36
17	5496	51	15	5557	45
20	5569	60	24	5526	72
22	5497	66	27	5522	81
25	5534	75	30	5547	90
27	5491	81	36	5561	108
30	5520	90	44	5553	132
35	5561	105	45	5515	135
39	5552	117	52	5551	156
42	5522	126	53	5499	159
49	5558	147	62	5520	186
51	5553	153	63	5505	189
59	5490	177	65	5500	195
71	5511	213	76	5529	228
72	5539	216	79	5544	237
82	5503	246	85	5566	255
88	5513	264	86	5546	258
95	5551	285	88	5512	264
98	5525	294	93	5559	279
99	5538	297	--	--	--
100	5502	300	--	--	--

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5553	18	12	5501	36
18	5529	54	16	5514	48
24	5534	72	22	5518	66
29	5503	87	24	5512	72
40	5494	120	32	5502	96
42	5507	126	33	5523	99
47	5562	141	35	5561	105
50	5498	150	42	5517	126
52	5520	156	63	5532	189
66	5491	198	68	5496	204
73	5556	219	72	5508	216
77	5514	231	86	5507	258
80	5521	240	88	5498	264
81	5519	243	91	5547	273
89	5501	267	95	5519	285
96	5569	288	100	5535	300

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5563	6	2	5564	6
9	5511	27	3	5539	9
15	5531	45	5	5513	15
22	5540	66	10	5531	30
35	5545	105	13	5499	39
43	5502	129	17	5523	51
49	5547	147	18	5518	54
54	5553	162	43	5528	129
56	5550	168	49	5516	147
68	5568	204	50	5512	150
69	5561	207	68	5490	204
72	5500	216	79	5532	237
76	5534	228	81	5549	243
84	5565	252	88	5554	264
88	5562	264	91	5557	273
89	5519	267	95	5507	285
97	5525	291	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5538	12	3	5531	9
8	5533	24	7	5551	21
9	5507	27	8	5549	24
11	5500	33	13	5544	39
12	5516	36	14	5559	42
18	5542	54	22	5564	66
22	5497	66	23	5511	69
34	5569	102	28	5509	84
45	5545	135	31	5507	93
48	5520	144	36	5561	108
69	5565	207	39	5495	117
71	5536	213	45	5518	135
79	5496	237	47	5529	141
85	5502	255	48	5534	144
89	5511	267	49	5504	147
90	5491	270	64	5552	192
91	5566	273	67	5503	201
94	5498	282	68	5528	204
95	5539	285	70	5543	210
97	5546	291	72	5520	216
98	5512	294	75	5550	225
--	--	--	80	5530	240
--	--	--	84	5505	252
--	--	--	96	5497	288

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
24	5504	72	24	5545	72
27	5496	81	31	5562	93
33	5500	99	32	5535	96
35	5531	105	36	5521	108
37	5524	111	38	5555	114
40	5506	120	47	5532	141
48	5503	144	53	5501	159
56	5499	168	59	5514	177
68	5544	204	61	5520	183
79	5498	237	67	5561	201
86	5561	258	86	5526	258
96	5552	288	92	5497	276
--	--	--	100	5518	300

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5493	12	3	5531	9
9	5539	27	12	5510	36
10	5509	30	20	5507	60
11	5538	33	22	5537	66
16	5518	48	29	5558	87
26	5499	78	42	5497	126
27	5503	81	47	5544	141
33	5550	99	51	5566	153
36	5534	108	54	5535	162
41	5516	123	55	5519	165
57	5546	171	57	5542	171
67	5545	201	70	5557	210
69	5515	207	81	5511	243
77	5502	231	82	5539	246
78	5514	234	93	5506	279
81	5495	243	94	5540	282
84	5555	252	99	5530	297
91	5567	273	--	--	--
93	5501	279	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5517	9	2	5529	6
16	5507	48	6	5569	18
17	5532	51	7	5546	21
19	5490	57	13	5534	39
25	5499	75	19	5557	57
35	5502	105	38	5532	114
37	5552	111	43	5531	129
43	5503	129	46	5508	138
45	5560	135	56	5537	168
50	5506	150	58	5550	174
54	5566	162	69	5566	207
56	5530	168	81	5497	243
60	5513	180	86	5560	258
66	5494	198	90	5517	270
72	5498	216	94	5556	282
74	5525	222	97	5504	291
76	5519	228	--	--	--
95	5547	285	--	--	--
97	5561	291	--	--	--

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5522	3	8	5567	24
3	5548	9	11	5551	33
4	5536	12	24	5530	72
12	5556	36	40	5534	120
24	5493	72	45	5509	135
25	5516	75	48	5542	144
27	5542	81	49	5527	147
29	5499	87	54	5495	162
33	5512	99	64	5523	192
41	5568	123	65	5529	195
47	5513	141	69	5502	207
49	5501	147	71	5547	213
52	5524	156	92	5559	276
55	5514	165	99	5538	297
59	5492	177	--	--	--
69	5569	207	--	--	--
77	5509	231	--	--	--
80	5537	240	--	--	--
90	5496	270	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5514	9	7	5560	21
9	5536	27	10	5564	30
20	5524	60	16	5561	48
25	5563	75	21	5538	63
34	5501	102	24	5493	72
36	5525	108	28	5503	84
37	5510	111	31	5527	93
41	5498	123	33	5518	99
42	5506	126	47	5511	141
43	5526	129	51	5536	153
44	5508	132	52	5516	156
47	5497	141	69	5507	207
55	5516	165	75	5537	225
56	5540	168	82	5502	246
63	5513	189	83	5501	249
74	5568	222	85	5519	255
75	5541	225	89	5543	267
80	5517	240	98	5555	294
83	5527	249	--	--	--
86	5494	258	--	--	--
96	5511	288	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5546	3	1	5531	3
2	5509	6	3	5544	9
10	5542	30	16	5562	48
13	5501	39	17	5491	51
14	5502	42	20	5547	60
15	5505	45	24	5546	72
18	5554	54	29	5501	87
23	5498	69	40	5495	120
27	5507	81	52	5557	156
31	5533	93	61	5527	183
33	5500	99	66	5548	198
35	5532	105	68	5507	204
36	5527	108	70	5529	210
41	5499	123	79	5538	237
42	5496	126	86	5561	258
62	5565	186	89	5505	267
67	5553	201	95	5515	285
74	5494	222	99	5504	297
79	5547	237	100	5521	300
82	5551	246	--	--	--
93	5490	279	--	--	--
95	5560	285	--	--	--
100	5524	300	--	--	--

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5509	21	15	5505	45
14	5561	42	17	5533	51
16	5552	48	20	5507	60
20	5511	60	22	5546	66
29	5515	87	36	5566	108
31	5568	93	53	5510	159
32	5558	96	57	5494	171
36	5551	108	61	5531	183
38	5516	114	65	5506	195
39	5533	117	71	5542	213
41	5570	123	76	5535	228
45	5535	135	77	5495	231
47	5517	141	79	5503	237
56	5563	168	84	5502	252
67	5550	201	87	5523	261
79	5566	237	88	5509	264
83	5536	249	89	5497	267
85	5556	255	--	--	--
86	5503	258	--	--	--
89	5502	267	--	--	--
91	5567	273	--	--	--
93	5527	279	--	--	--
94	5541	282	--	--	--
99	5560	297	--	--	--

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
20	5502	60	3	5563	9
37	5528	111	6	5570	18
40	5550	120	8	5516	24
41	5544	123	13	5521	39
45	5505	135	17	5567	51
47	5523	141	18	5493	54
51	5552	153	20	5555	60
60	5537	180	23	5553	69
61	5561	183	24	5531	72
62	5506	186	33	5495	99
63	5521	189	55	5537	165
65	5516	195	68	5506	204
70	5534	210	69	5556	207
76	5522	228	74	5494	222
84	5536	252	81	5517	243
--	--	--	85	5538	255
--	--	--	87	5550	261
--	--	--	88	5544	264
--	--	--	94	5564	282

6. CONCLUSION

The data collected relate only the item(s) tested and show that the device is compliance with Part

15E of the FCC Rules.

The End

Appendix A - Test Setup Photograph

Refer to "2010TW0002-UT" file.

Appendix B - EUT Photograph

Refer to "2010TW0002-UE" file.