DFS MEASUREMENT REPORT

FCC PART 15 Subpart E

FCC ID:	TE7RE605X
APPLICANT:	TP-Link Technologies Co., Ltd.
Application Type:	CLASS II PERMISSIVE CHANGE
Product:	AX1800 Wi-Fi 6 Range Extender AX1750 Wi-Fi 6 Range Extender
Model No.:	RE605X, RE603X
Brand Name:	tp-link
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
Test Date:	June 22 ~ October 26, 2020

Reviewed By: Paddy Chen
(Paddy Chen)

Approved By: Chenz Ker
(Chenz Ker)

Testing Laboratory
3261

The test results relate only to the samples tested.
This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 905462 D02v02. Test results reported herein relate only to the item(s) tested.
The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2007TW0006-U5	Rev. 01	Initial Report	11-04-2020	Valid

CONTENTS

Description Page

General Information

Applicant:	TP-Link Technologies Co., Ltd.
Applicant Address:	Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Manufacturer:	TP-Link Technologies Co., Ltd.
Manufacturer Address:	Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, 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)

Test Facility / Accreditations

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

- **MRT facility is a FCC registered (Reg. No. 154292) test facility with the site description report on file and is designated by the FCC as an Accredited Test Film.**
- **MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.**
- **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.**

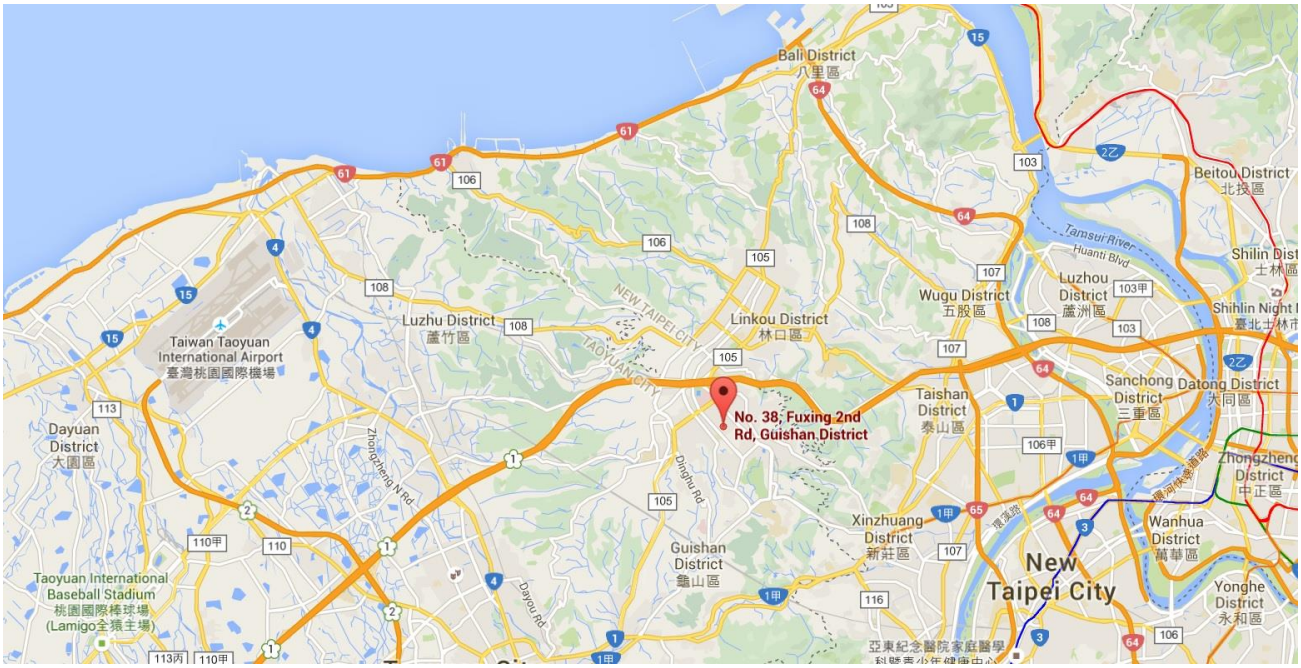
1. INTRODUCTION

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:	AX1800 Wi-Fi 6 Range Extender AX1750 Wi-Fi 6 Range Extender
Model No.:	RE605X, RE603X
Brand Name:	tp-link
Wi-Fi Specification:	802.11a/b/g/n/ac/ax
Operating Mode:	Master (AP, Range Extender, Mesh)
EUT Identification No.:	20200622Sample#09
Frequency Range:	**2.4GHz:** For 802.11b/g/n-HT20/ax-HE20: 2412 ~ 2462 MHz For 802.11n-HT40/ax-HE40: 2422 ~ 2452 MHz **5GHz:** For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5180~5240MHz, 5260~5320 MHz, 5500~5720MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5190~5230MHz, 5270~5310 MHz,5510~5710MHz, 5755~5795MHz For 802.11ac-VHT80/ax-HE80: 5210MHz, 5290MHz,5530MHz, 5610MHz, 5690MHz, 5775MHz
Type of Modulation:	802.11b: DSSS 802.11a/g/n/ac: OFDM 802.11ax: OFDMA
TPC mechanism:	Support (Details refer to operational description)
Power-on cycle:	Requires 41.3 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.

Note: There is the same hardware design, PCB layout between the models, different models and product names for different marketing requirements. Only RE605X (Product name: AX1800 Wi-Fi 6 Range Extender) was selected for final tests.

2.2. Description of Available Antennas

Antenna Type	Frequency Band (MHz)	T_X Paths	Number of spatial streams	Max Antenna Gain (dBi)	Beam-Forming Directional Gain (dBi)	CDD Directional Gain (dBi)	
						For Power	For PSD
Dipole Antenna	2412 ~ 2462	2	1	1.99	5.00	1.99	5.00
	5150 ~ 5250	2	1	1.98	4.99	1.98	4.99
	5250 ~ 5350	2	1	2.99	6.00	2.99	6.00
	5470 ~ 5725	2	1	2.46	5.47	2.46	5.47
	5725 ~ 5850	2	1	2.13	5.14	2.13	5.14

Note:

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

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

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

   Array Gain = 10 log (N_{ANT}/ N_{SS}) dB;

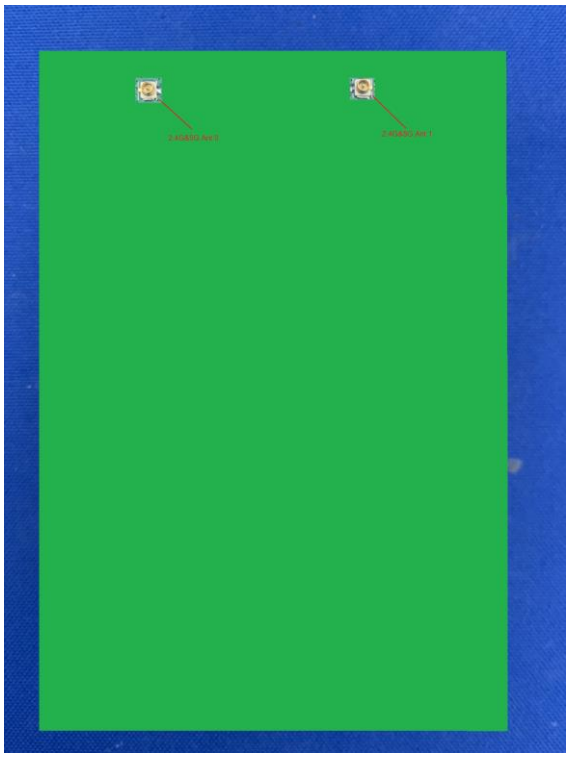
   - For power measurements on IEEE 802.11 devices,

   Array Gain = 0 dB for $N_{ANT} \leq 4$;

2. The EUT also supports Beam Forming mode, and the Beam Forming support 802.11ac/ax, not include 802.11a/b/g/n. BF Directional gain = G_{ANT} + 10 log (N_{ANT}).
3. All messages as above were declared by manufacturer.

2.3. Description of Antenna RF Port

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



2.4. Operating Frequency and Channel List 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
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
110	5550 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	Mode 1: Operating under AP mode Mode 2: Operating under Range Extender Mode (Repeater) Mode 3: Operating under Mesh mode

2.7. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part15 Subpart E (Section 15.407 Section (h)(2))
- KDB 905462 D02v02
- KDB 905462 D04v01

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	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{\text{PRI}_{\text{usec}}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 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.

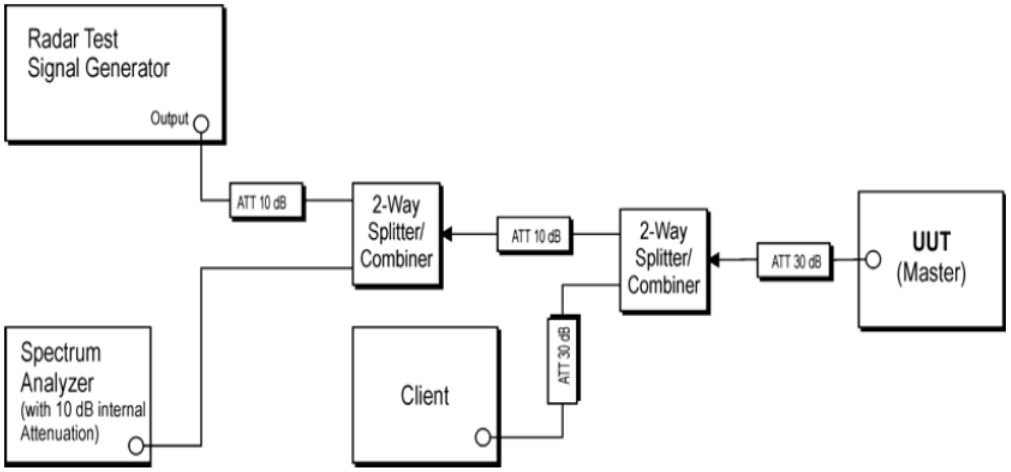


Figure 3-1: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters

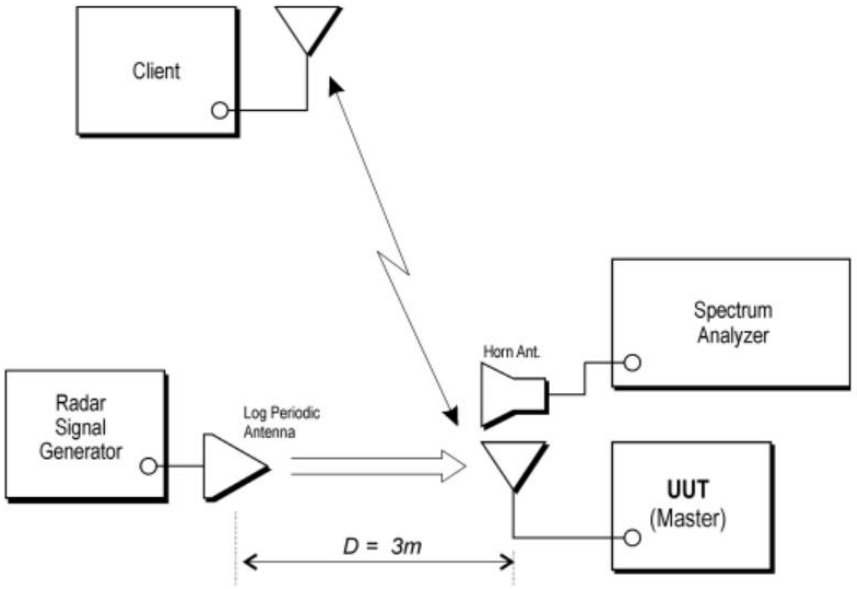


Figure 3-2: Radiated Test Setup where UUT is a Master and Radar Test Waveforms are injected into the UUT

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	2021/10/02
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2021/07/14
Vector Signal Generator	Keysight	N5182B	MRTTWA00010	1 year	2021/04/24
Combiner	WOKEN	0120A04208001S	MRTTWE00008	1 year	2021/06/18

Client Information

Instrument	Manufacturer	Type No.
HP 525 Wireless 802.11ac	HP	JG994A

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.

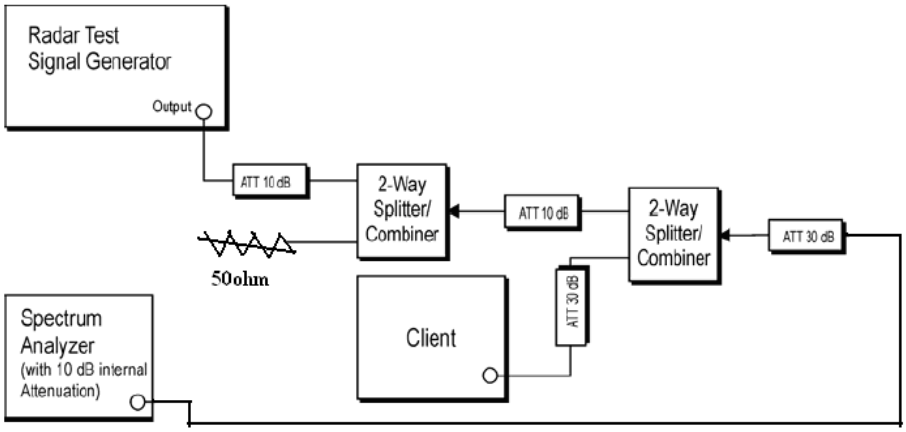


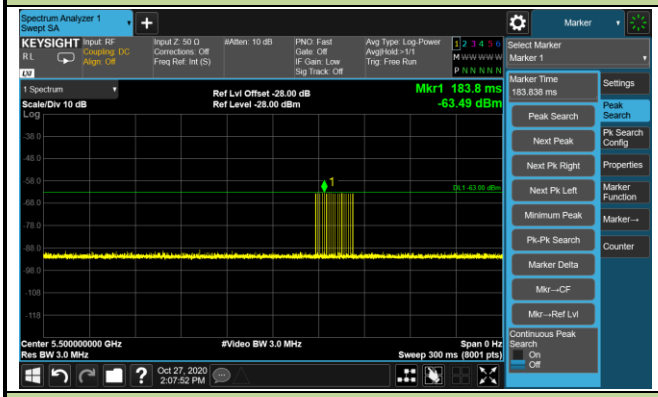
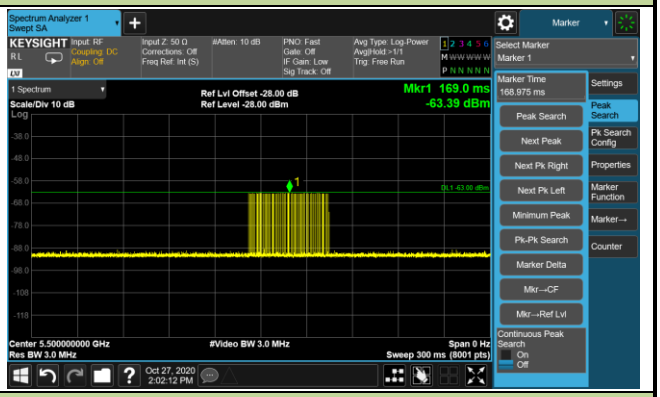
Figure 3-2: Conducted Test Setup

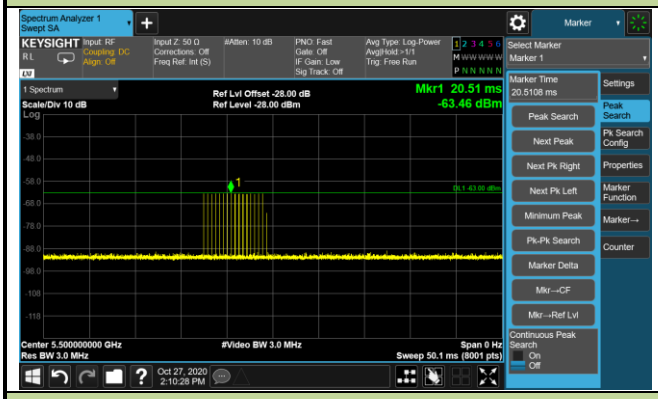
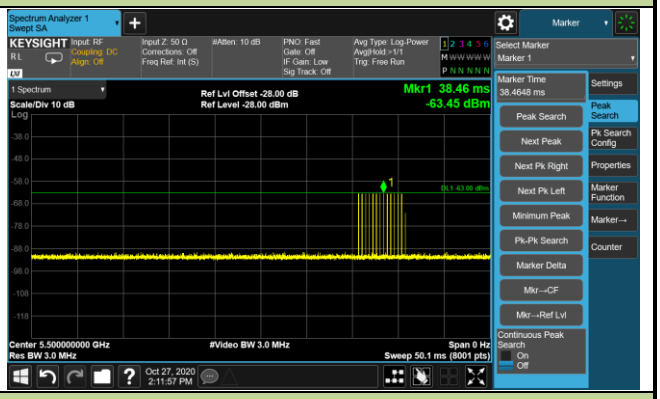
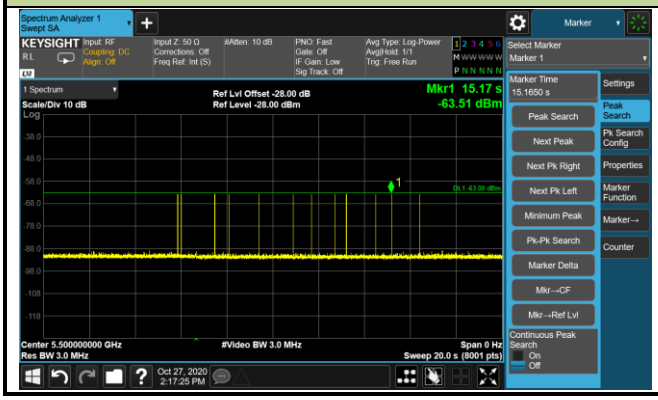
5.2.2. Calibration Procedure

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	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/10/27
Test Item	Radar Waveform Calibration		

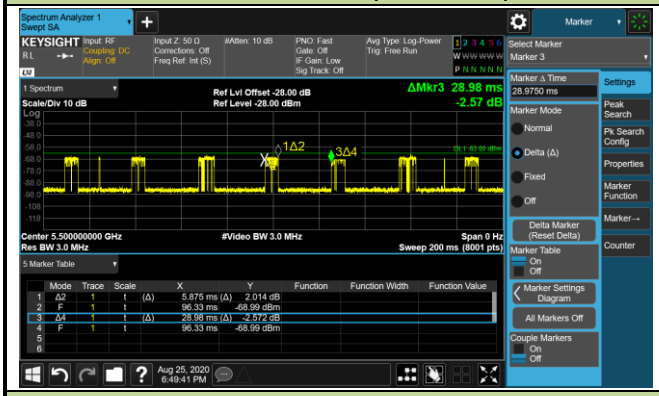
Radar #0	Radar #1 (Test A) PRI = 838us and the number of pulses = 63
	
Radar #1 (Test B) **PRI = 1.645ms and the number of pulses = 33**	**Radar #2**
	

Radar #3	Radar #4
	
Radar #5	**Radar #6**
	

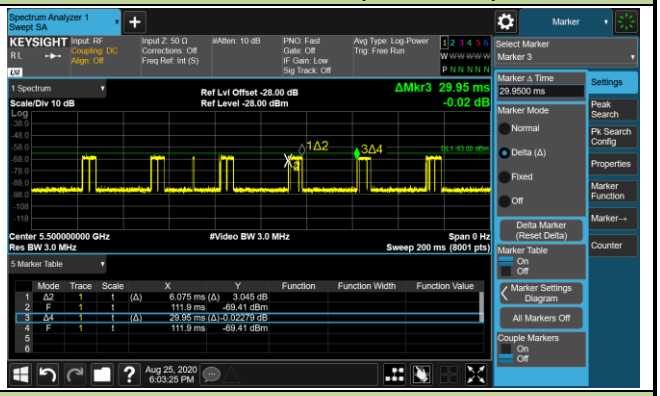
5.2.4. Channel Loading Test Result

Product	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/25
Test Item	Channel Loading		

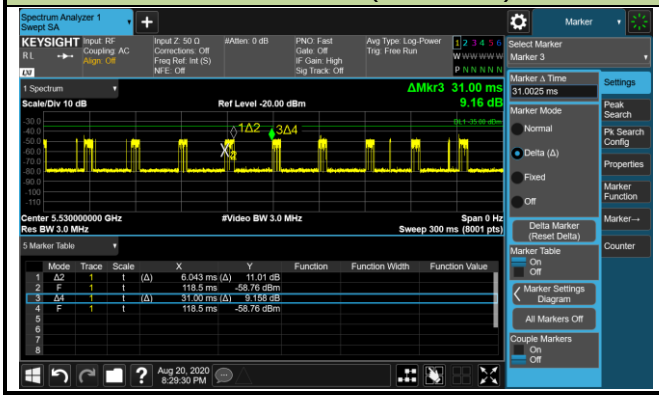
802.11ax-HE20 (5500MHz)



802.11ax-HE40 (5510MHz)



802.11ax-HE80 (5530MHz)



Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result
802.11ax-HE20	5500 MHz	20.27%	≥ 17%	Pass
802.11ax-HE40	5510 MHz	20.28%	≥ 17%	Pass
802.11ax-HE80	5530 MHz	19.49%	≥ 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	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/25
Test Item	Detection Bandwidth (802.11ax-HE20 mode - 5500MHz)		

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%
5490.4 FL	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%
5509.6 FH	1	1	1	1	1	1	1	1	1	1	100%
5510	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5500MHz. The 99% channel bandwidth is 19.00MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = FH - FL = 5509.6MHz – 5490.4MHz = 19.2MHz

Note 3: NII Detection Bandwidth Min. Limit (MHz): 19.00MHz x 100% = 19.00MHz.

Product	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/25
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 FL	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5526	1	1	1	1	1	1	1	1	1	1	100%
5527	1	1	1	1	1	1	1	1	1	1	100%
5528	1	1	1	1	1	1	1	1	1	1	100%
5529 FH	1	1	1	1	1	1	1	1	1	1	100%
5530	0	0	0	0	0	0	0	0	0	0	0%

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5510MHz. The 99% channel bandwidth is 37.62MHz. (See the 99% BW section of the RF report for further measurement details).

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

Note 3: NII Detection Bandwidth Min. Limit (MHz): 37.62MHz x 100% = 37.62MHz.

Product	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/24
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 76.85MHz. (See the 99% BW section of the RF report for further measurement details).

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

Note 3: NII Detection Bandwidth Min. Limit (MHz): 76.85MHz x 100% = 76.85MHz.

5.4. Initial Channel Availability Check Time Measurement

5.4.1. Test Limit

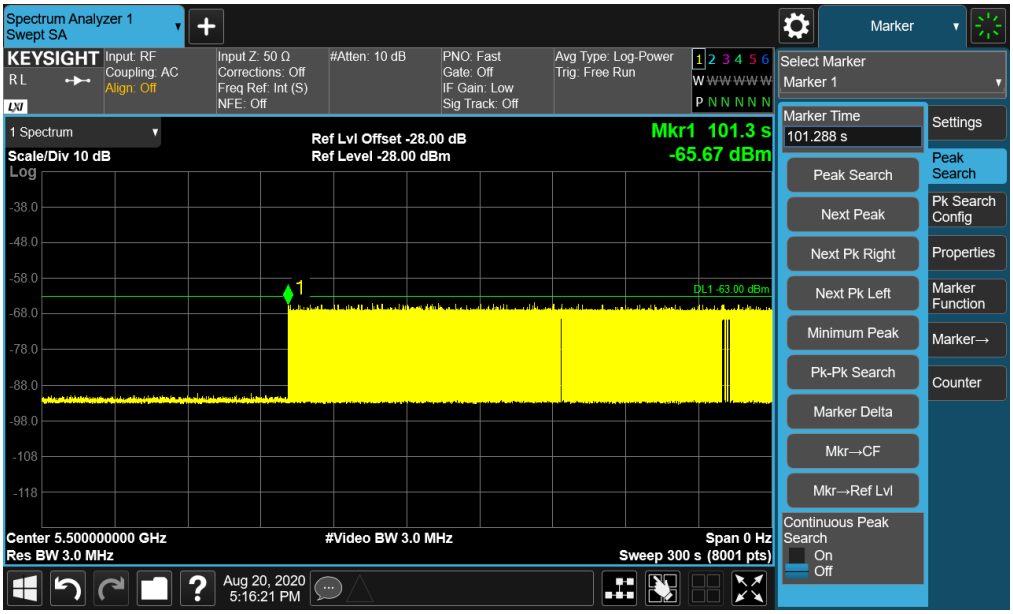
The EUT shall perform a Channel Availability Check to ensure that there is no radar operating on the channel. After power-up sequence, receive at least 1 minute on the intended operating frequency.

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	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/20
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 (41.3 sec). Initial beacons/data transmissions are indicated by marker 1 (101.3 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	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/20
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

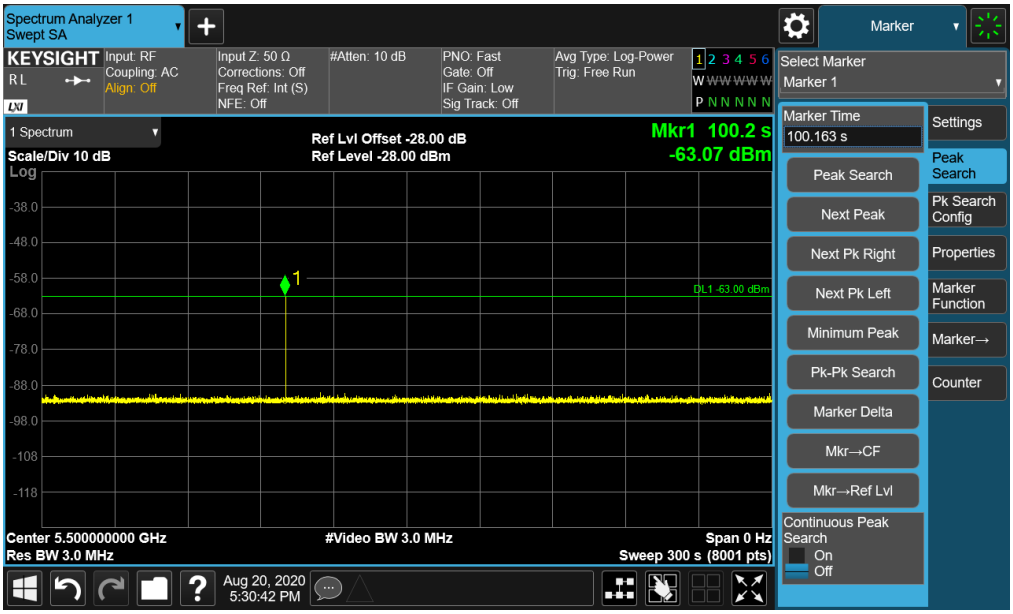
In the end of Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

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	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/20
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.

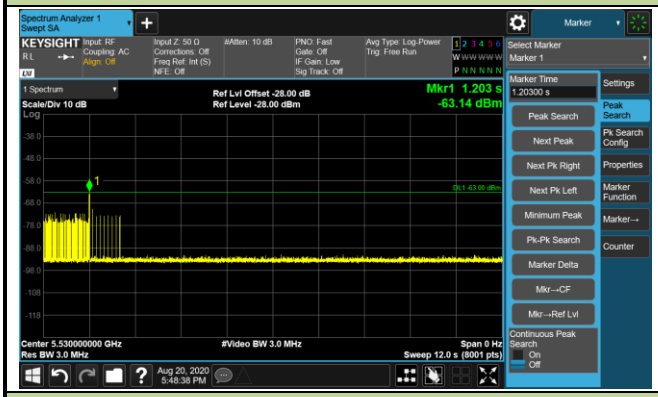
5.7.2. Test Procedure Used

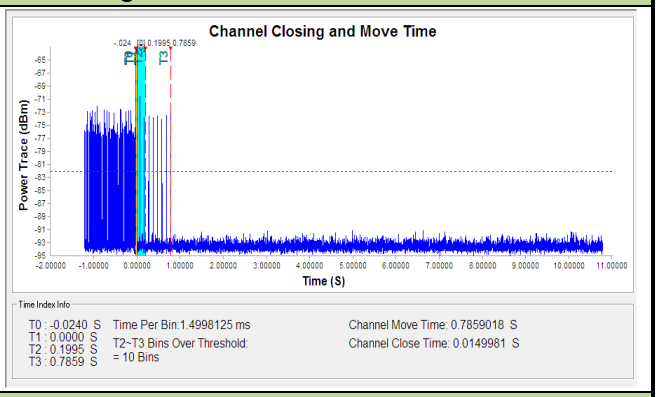
1. The test should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0.
2. When the radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device. A U-NII device operating as a Master Device will 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

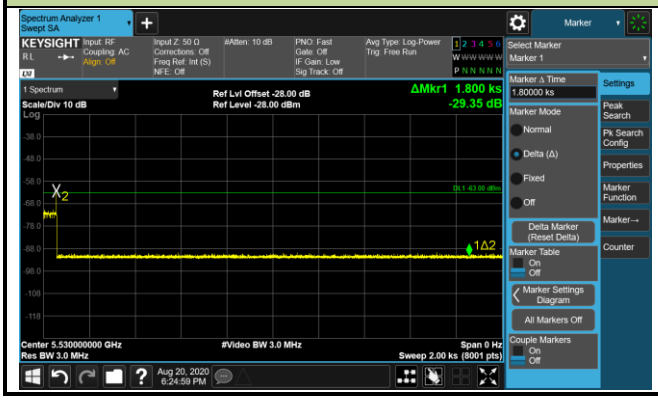
Product	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/20
Test Item	Channel Move Time and Channel Closing Transmission Time (802.11ax-HE80 mode - 5530MHz)		

Channel Move Time and Channel Closing Transmission Time





Non-Occupancy Period



Parameter	Test Result	Limit
	Type 0	
Channel Move Time (s)	0.786s	<10s
Channel Closing Transmission Time (ms) (Note)	15ms	< 60ms
Non-Occupancy Period (min)	≥ 30min	≥ 30min
Note: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 seconds period. The aggregate duration of control signals will not count quiet periods in between transmissions.		

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	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/25
Test Item	Radar Statistical Performance Check (802.11ax-HE20 – 5500MHz) (AP Mode)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	1	3066	18	1
2	5491.1	1	618	86	1
3	5492.0	1	718	74	1
4	5492.7	1	818	65	1
5	5493.4	1	598	89	1
6	5494.1	1	638	83	1
7	5494.7	1	538	98	1
8	5495.4	1	698	76	1
9	5496.1	1	658	81	1
10	5496.8	1	838	63	1
11	5497.5	1	678	78	1
12	5498.2	1	898	59	1
13	5498.9	1	878	61	1
14	5499.5	1	578	92	1
15	5500.0	1	918	58	1
16	5500.7	1	2784	19	1
17	5501.4	1	2732	20	1
18	5502.1	1	1742	31	1
19	5502.7	1	828	64	1
20	5503.4	1	1870	29	1
21	5504.0	1	2968	18	0
22	5504.7	1	1049	51	1
23	5505.4	1	2537	21	1
24	5506.1	1	2567	21	1
25	5506.7	1	2780	19	1
26	5507.4	1	906	59	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5508.0	1	2199	24	1
28	5508.7	1	583	91	1
29	5509.1	1	712	75	1
30	5509.6	1	2381	23	1
Detection Percentage (%)					96.7%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	5	225	28	1
2	5491.1	3.1	166	24	1
3	5492.0	3.1	217	28	1
4	5492.7	4.1	199	27	1
5	5493.4	4.2	218	28	1
6	5494.1	1.1	188	25	1
7	5494.7	3.4	193	29	1
8	5495.4	4.5	181	27	0
9	5496.1	3.8	212	27	1
10	5496.8	2.3	177	25	1
11	5497.5	1.5	152	25	1
12	5498.2	3.6	215	24	1
13	5498.9	2.2	227	28	0
14	5499.5	3.8	187	24	1
15	5500.0	4.8	198	25	0
16	5500.7	3.2	161	25	1
17	5501.4	3	215	27	1
18	5502.1	2.8	215	26	1
19	5502.7	3.3	208	29	1
20	5503.4	1.3	203	23	1
21	5504.0	1	206	25	1
22	5504.7	2.2	211	28	1
23	5505.4	4.7	187	27	1
24	5506.1	1.5	217	25	1
25	5506.7	4.7	203	28	1
26	5507.4	2.3	228	28	1
27	5508.0	3	230	25	1
28	5508.7	3.2	151	25	1
29	5509.1	4.6	202	28	1
30	5509.6	4.5	154	27	0
Detection Percentage (%)					86.7%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	9.9	274	18	1
2	5491.1	8.2	298	17	0
3	5492.0	6.4	350	17	1
4	5492.7	8.8	357	18	1
5	5493.4	9.3	460	17	1
6	5494.1	6.3	280	18	1
7	5494.7	7.6	221	18	1
8	5495.4	7	430	18	1
9	5496.1	7.9	355	18	1
10	5496.8	7.8	333	17	1
11	5497.5	9.5	369	17	1
12	5498.2	6.8	385	17	0
13	5498.9	6.2	221	17	1
14	5499.5	9.3	443	17	1
15	5500.0	7.8	490	18	1
16	5500.7	8.1	381	17	1
17	5501.4	9.1	310	17	0
18	5502.1	7.8	475	16	1
19	5502.7	9.1	467	17	1
20	5503.4	8.8	226	17	1
21	5504.0	9.8	278	17	1
22	5504.7	6.3	476	17	1
23	5505.4	8.5	468	16	1
24	5506.1	7.3	388	18	1
25	5506.7	9	243	18	1
26	5507.4	8.4	420	17	0
27	5508.0	9.4	302	18	1
28	5508.7	7.3	280	16	1
29	5509.1	7.3	237	16	1
30	5509.6	10	456	16	0
Detection Percentage (%)					83.3%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	15.2	299	12	1
2	5491.1	11.6	383	14	1
3	5492.0	15.6	440	13	1
4	5492.7	11.2	207	13	0
5	5493.4	16.5	411	15	1
6	5494.1	15.6	237	12	0
7	5494.7	14.6	308	16	1
8	5495.4	14.9	279	15	1
9	5496.1	13.8	236	14	0
10	5496.8	18.3	295	12	1
11	5497.5	15.2	284	13	1
12	5498.2	12.4	246	15	1
13	5498.9	17.1	498	13	1
14	5499.5	18.8	282	13	1
15	5500.0	12.1	464	14	1
16	5500.7	11.2	288	16	1
17	5501.4	15.9	302	13	1
18	5502.1	13.1	343	14	1
19	5502.7	11.8	426	14	1
20	5503.4	18.8	385	15	0
21	5504.0	16.6	453	14	1
22	5504.7	12.4	407	16	1
23	5505.4	17.3	395	16	0
24	5506.1	11.4	238	15	1
25	5506.7	18	268	14	1
26	5507.4	19.7	427	13	1
27	5508.0	19.1	474	14	1
28	5508.7	17.6	234	16	1
29	5509.1	14.9	261	12	1
30	5509.6	16.4	364	13	1
Detection Percentage (%)					83.3%

Note: In addition, an average minimum percentage of successful detection across all four Short pulse radar test waveforms is as follows: $\frac{P_d1+P_d2+P_d3+P_d4}{4}$ = (96.7%+86.7%+83.3%+83.3%)/4 = 87.5% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5500.0	1	16	5494.4	1
2	5500.0	1	17	5498.0	1
3	5500.0	1	18	5496.8	1
4	5500.0	1	19	5494.0	1
5	5500.0	0	20	5492.8	1
6	5500.0	1	21	5506.8	1
7	5500.0	1	22	5502.4	1
8	5500.0	1	23	5503.6	1
9	5500.0	1	24	5506.8	1
10	5500.0	1	25	5507.6	1
11	5497.2	1	26	5501.6	0
12	5497.2	1	27	5507.6	1
13	5496.0	1	28	5507.6	1
14	5493.2	1	29	5503.2	1
15	5495.6	1	30	5504.4	1
Detection Percentage (%)					93.3%

Type 5 Radar Waveform_1

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	2	71.2	12	1435		708.139
2	2	89.4	12	1516		289.027
3	3	67.7	12	1412	1322	361.614
4	2	97.9	12	1684		532.291
5	2	77.3	12	1129		282.269
6	3	53.9	12	1735	1226	319.586
7	3	96.3	12	1075	1263	561.263
8	2	58	12	1711		228.44
9	3	65.8	12	1241	1810	434.357
10	2	65.6	12	1388		643.804
11	1	84.8	12			319.741
12	1	84.8	12			765.129
13	2	72.5	12	1000		348.686
14	3	75.9	12	1473	1296	634.943

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	88.4	13	1588		245.94
2	1	70.9	13			622.12
3	2	73.2	13	1602		241.87
4	2	58.8	13	1796		219.25
5	3	77.5	13	1640	1708	569.06
6	3	59.8	13	1954	1716	545.04
7	1	74.4	13			539.89
8	1	92.7	13			40.54
9	2	81	13	1778		6.77
10	2	91.9	13	1475		434.72
11	2	75.9	13	1997		778.8
12	2	98.8	13	1840		66.4

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	55.4	9	1290	1878	668.477
2	3	73.1	9	1119	1495	295.3
3	2	78.7	9	1814		65.08
4	1	99.1	9			1.7
5	2	66.6	9	1592		559.45
6	2	94.8	9	1919		706.66
7	2	67.3	9	1743		40.28
8	1	93.2	9			655.1
9	3	80.9	9	1079	1240	86.06
10	2	91.5	9	1752		410.81
11	2	55	9	1333		507.29
12	2	56	9	1907		633.98
13	1	74.2	9			370.42
14	3	63.9	9	1988	1261	347.3
15	1	82.4	9			416.3
16	2	58.6	9	1626		304.7

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	1	99.8	8			69.693
2	3	99.8	8	1811	1929	119.551
3	2	71.3	8	1080		176.85
4	1	51.7	8			103.45
5	2	57.7	8	1905		189.32
6	3	65.1	8	1665	1204	336.83
7	2	73.2	8	1838		597.54
8	1	78.4	8			595.68
9	2	91.9	8	1807		208.84
10	3	79.3	8	1520	1423	274.14
11	2	90.8	8	1162		761.48
12	1	65.7	8			437.71
13	2	80.5	8	1126		263.56
14	2	78.3	8	1623		672.9
15	1	93.9	8			209

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	78.7	14	1903		314.272
2	1	54.5	14			406.62
3	2	87.1	14	1369		407.99
4	3	95.3	14	1984	1312	558.19
5	2	86.9	14	1967		402.59
6	2	67.2	14	1240		376.07
7	1	93.3	14			139.11
8	1	61.5	14			333.97
9	3	94	14	1361	1214	215.87
10	1	92.3	14			362.81
11	1	88.9	14			488.03
12	2	74.5	14	1403		496.32
13	1	87.2	14			507.01
14	2	50.5	14	1848		359.04
15	2	55.1	14	1720		26.24
16	2	78.7	14	1510		141.63
17	2	73	14	1313		201.01
18	2	64.3	14	1295		405.6
19	1	91.8	14			397.6
20	2	92.9	14	1696		128.1

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	78.2	15			372.193
2	2	78.4	15	1014		106.075
3	2	53.6	15	1741		61.02
4	1	62.8	15			177.12
5	2	73.8	15	1687		280.5
6	1	97.9	15			584.11
7	2	60.8	15	1534		32.95
8	3	60.3	15	1155	1025	584.22
9	2	92.8	15	1915		189.47
10	1	50.3	15			433.99
11	3	54.7	15	1909	1474	430.09
12	2	59.4	15	1669		333.89
13	1	91.9	15			258.06
14	2	84.3	15	1876		145.34
15	2	88.8	15	1196		45.34
16	2	66.9	15	1427		94.83
17	2	80	15	1056		261.18
18	3	69.4	15	1493	1968	200.8
19	2	70.6	15	1765		14.8
20	2	56.2	15	1967		581.9

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	91.3	14	1147		311.468
2	2	52.4	14	1122		482.16
3	3	69	14	1230	1813	517.92
4	2	54.9	14	1375		161.19
5	2	81.6	14	1394		447.93
6	1	71	14			394.85
7	3	74.5	14	1559	1364	465.21
8	3	63.1	14	1893	1774	232.51
9	1	95.6	14			88.06
10	3	94.4	14	1411	1732	276.01
11	2	76.8	14	1036		573.81
12	2	50.6	14	1020		34.23
13	1	90	14			407.8
14	2	82.2	14	1334		189.04
15	2	91	14	1820		168.91
16	2	60	14	1908		205.25
17	3	71.6	14	1895	1604	485.6
18	3	75.1	14	1403	1670	98.4
19	1	91.9	14			85.4
20	2	58.1	14	1588		560.9

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	95.8	19	1555		727.744
2	2	66.8	19	1562		809.89
3	3	80.5	19	1509	1825	257.71
4	2	96.8	19	1564		797.14
5	1	65.3	19			161.02
6	2	54	19	1833		499.47
7	2	88.7	19	1688		711.41
8	3	64.7	19	1294	1936	529.99
9	2	60	19	1570		114.87
10	2	54.4	19	1090		486.92
11	2	67.7	19	1585		167
12	1	70.5	19			545.7

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	74.3	10	1896		211.576
2	3	64.4	10	1143	1515	2.112
3	2	77.7	10	1466		55.366
4	2	66.9	10	1687		248.999
5	1	74.7	10			855.172
6	1	81.8	10			391.005
7	2	93.8	10	1703		737.618
8	2	96.1	10	1102		126.772
9	1	58.7	10			824.585
10	1	91.4	10			628.088
11	1	62.6	10			656.861
12	3	71.6	10	1937	1236	415.554
13	1	57.1	10			402.577

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	86.6	5	1204	1159	922.891
2	2	95.4	5	1509		50.98
3	3	53.5	5	1462	1921	635.51
4	2	83.9	5	1879		589.8
5	1	94.2	5			861.21
6	1	59.8	5			582.49
7	2	80.6	5	1322		882.63
8	3	57.4	5	1719	1926	217.2

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	70.6	17	1508		59.856
2	2	74.5	17	1039		587.753
3	3	80.6	17	1255	1071	215.627
4	1	71.8	17			4.8
5	2	80.6	17	1198		195.843
6	1	73.5	17			295.467
7	2	67.6	17	1696		173.33
8	3	92.9	17	1616	1267	222.423
9	2	56.7	17	1696		150.857
10	3	98	17	1062	1515	463.15
11	2	91.4	17	1518		446.833
12	2	98.1	17	1504		548.287
13	1	54.2	17			103.2
14	1	75.9	17			369.763
15	3	84.3	17	1507	1210	44.817
16	3	69.9	17	1093	1179	344.4
17	2	77.6	17	1497		521.333
18	1	68.9	17			338.367

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	76.4	17	1452		395.946
2	1	51	17			596.968
3	3	85.4	17	1861	1378	657.025
4	3	70.9	17	1922	1918	11.603
5	3	65.5	17	1062	1607	567.641
6	1	92.7	17			242.438
7	3	78	17	1842	1275	273.976
8	2	53.8	17	1540		192.174
9	2	90.2	17	1762		386.971
10	1	66.4	17			452.749
11	2	82.3	17	1919		582.856
12	3	60.4	17	1887	1119	391.254
13	2	91.8	17	1485		638.342
14	2	87	17	1555		259.589
15	2	66.8	17	1147		682.747
16	2	50.3	17	1433		122.765
17	1	98.1	17			685.782

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	56.2	14	1566		254.614
2	2	67.8	14	1978		136.22
3	2	84.4	14	1873		14.55
4	2	67.2	14	1005		133.86
5	3	54.8	14	1271	1021	543.74
6	3	56.2	14	1328	1449	1152.77
7	1	62.1	14			440.18
8	2	70.1	14	1550		1091.82
9	3	70.3	14	1912	1610	327.3
10	2	58.8	14	1787		791.2

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	79.1	7	1082		814.755
2	1	64.2	7			340.84
3	2	52.3	7	1969		98.61
4	2	96.6	7	1693		899.97
5	3	51.7	7	1484	1196	1001.39
6	3	60.9	7	1677	1009	99.48
7	1	99.2	7			651.13
8	2	58.2	7	1193		452.99
9	2	56.3	7	1329		997.2
10	2	58.8	7	1390		314.2

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	52.3	13	1935		766.746
2	1	64.1	13			819.193
3	3	88.9	13	1716	1013	778.816
4	2	95.1	13	1108		768.429
5	2	85.1	13	1730		641.712
6	1	66.1	13			185.205
7	2	61.1	13	1752		271.338
8	2	88.9	13	1110		500.812
9	1	51.5	13			171.095
10	2	87	13	1801		855.788
11	2	70.6	13	1002		816.231
12	2	61.6	13	1773		6.654
13	2	99.4	13	1552		7.077

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	67.1	10	1499		654.55
2	2	54.2	10	1880		262.11
3	2	86.5	10	1049		703.33
4	2	54.9	10	1331		418.41
5	2	69.3	10	1537		357.16
6	3	78.7	10	1495	1589	308.48
7	3	84.8	10	1206	1390	138.85
8	2	61.7	10	1194		560.47
9	1	89.5	10			114.49
10	1	78.6	10			580.88
11	2	54.8	10	1067		585.43
12	3	72.6	10	1760	1173	638.69
13	1	79.4	10			438.01
14	1	58.3	10			28.74
15	2	87.4	10	1334		210
16	2	78.5	10	1626		43.4

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	83.8	19	1641		349.129
2	2	91.2	19	1431		482.1
3	3	51.4	19	1029	1018	879.63
4	2	66.5	19	1699		189.73
5	3	90.6	19	1370	1071	961.87
6	1	88.3	19			273.07
7	2	62.8	19	1918		858.97
8	3	60.6	19	1258	1572	195.04
9	3	60.3	19	1532	1537	940.66
10	1	53.8	19			906.45
11	3	63.4	19	1150	1474	38.6
12	2	64.2	19	1383		956.8

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	82.9	16			828.766
2	2	74.9	16	1117		3.527
3	2	54.2	16	1229		66.606
4	2	90.3	16	1517		356.049
5	2	72.3	16	1713		569.402
6	2	95.1	16	1757		521.205
7	3	83.5	16	1192	1204	707.158
8	1	97.3	16			916.462
9	3	60.2	16	1431	1460	592.755
10	2	90.2	16	1461		126.568
11	1	62.5	16			285.981
12	3	93	16	1021	1498	264.454
13	3	88.7	16	1940	1763	614.577

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	2	54	9	1947		731.286
2	3	86.5	9	1544	1423	723.09
3	3	88.2	9	1630	1255	951.91
4	1	94.2	9			817.68
5	1	55.9	9			290.59
6	1	93.4	9			770.52
7	1	76.7	9			421.23
8	1	56.5	9			360.49
9	2	96.5	9	1950		616.92
10	3	56.6	9	1978	1868	327.7
11	3	62.8	9	1564	1574	226.5
12	2	56.5	9	1953		56

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	61.3	6	1156		752.528
2	2	70.1	6	1094		539.16
3	2	54.8	6	1056		16.34
4	1	58	6			209.8
5	2	93.2	6	1233		466.58
6	2	82.7	6	1093		260.52
7	2	62.1	6	1519		238.76
8	2	59.9	6	1932		777.75
9	1	96.3	6			553.16
10	2	59	6	1762		490.35
11	2	87.8	6	1744		500.78
12	1	84.3	6			689.13
13	3	69.5	6	1770	1689	670.6
14	3	70.1	6	1392	1935	270.9
15	2	62.4	6	1017		40.9

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	3	98.2	7	1876	1873	420.13
2	1	80.3	7			761.15
3	2	69.8	7	1275		263.1
4	3	95.8	7	1826	1382	466.9
5	2	59.5	7	1863		617.3
6	3	66.3	7	1387	1502	17.44
7	1	69.3	7			546.76
8	1	85.9	7			731.82
9	2	82.4	7	1962		622.29
10	3	68.3	7	1463	1193	468.93
11	1	60.6	7			310.84
12	3	68.8	7	1287	1196	693.84
13	3	62.4	7	1021	1266	350.51
14	2	76.3	7	1238		382.5
15	2	98.2	7	1779		611.2

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	68.7	18	1219	1208	141.331
2	2	69.5	18	1169		43.866
3	3	84.1	18	1690	1937	901.546
4	1	98.9	18			69.059
5	1	88.4	18			467.642
6	2	73.4	18	1853		587.135
7	2	89.9	18	1822		89.698
8	2	89	18	1581		233.762
9	2	50.3	18	1845		299.955
10	3	91.6	18	1242	1680	152.118
11	2	66.7	18	1221		45.761
12	2	74.6	18	1995		318.954
13	2	92.6	18	1373		16.277

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	71.7	15			597.974
2	3	76.4	15	1818	1649	456.443
3	2	60.3	15	1142		727.386
4	1	75	15			102.389
5	3	97.2	15	1295	1654	225.082
6	2	72.6	15	1276		45.135
7	2	50.9	15	1135		441.928
8	2	85.5	15	1003		38.922
9	3	71.8	15	1795	1896	516.595
10	3	86.1	15	1860	1400	41.048
11	2	63.6	15	1574		732.901
12	2	84	15	1623		586.154
13	3	64.6	15	1251	1666	652.777

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	1	82	7			1239.03
2	1	81.8	7			1120.087
3	1	81	7			480.243
4	3	66.7	7	1952	1961	67.78
5	3	76.3	7	1223	1690	567.807
6	3	51.5	7	1682	1044	239.713
7	1	64.1	7			410.15
8	2	70.9	7	1430		1267.067
9	1	85.5	7			837.433

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	64.1	5			100.805
2	2	64.8	5	1201		438.54
3	1	53.7	5			528.96
4	1	98.6	5			156.9
5	2	96.8	5	1058		441.81
6	1	51.3	5			115.69
7	2	68.8	5	1454		259.77
8	1	97.2	5			26.73
9	2	70.4	5	1639		152.52
10	2	91.6	5	1101		588.86
11	1	75.5	5			210.86
12	2	100	5	1130		565.32
13	1	82.8	5			29.9
14	3	87	5	1399	1411	261.29
15	2	77.7	5	1934		502.5
16	2	93.8	5	1050		346.28
17	2	83.1	5	1274		168.01
18	3	57	5	1590	1500	72
19	3	87.9	5	1439	1056	539.8
20	3	59	5	1173	1877	239.9

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	1	65.9	20			367.761
2	1	51.5	20			283.62
3	2	56.9	20	1754		688.28
4	2	63.9	20	1247		360.16
5	3	66.6	20	1918	1950	382.69
6	2	60.6	20	1467		330.72
7	3	60.8	20	1244	1723	658.68
8	2	77.8	20	1445		41.14
9	3	76.3	20	1441	1932	685.4
10	1	50.4	20			140.5

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	1	85.6	5			105.658
2	2	63.4	5	1709		320.988
3	2	85.8	5	1911		414.067
4	2	52	5	1403		584.41
5	1	69.4	5			340.803
6	1	74.5	5			135.237
7	1	55.5	5			116.88
8	2	84	5	1987		362.843
9	2	70.7	5	1356		558.117
10	1	71.8	5			156.5
11	2	83.3	5	1986		356.593
12	3	78.6	5	1151	1311	17.317
13	1	75.7	5			143.15
14	2	76.6	5	1530		299.613
15	3	66.4	5	1098	1913	607.007
16	3	53.3	5	1295	1594	617.8
17	2	96.4	5	1699		336.033
18	3	50.8	5	1109	1115	534.067

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	67.5	5	1144		408.576
2	1	58.9	5			221.39
3	3	94.4	5	1051	1630	1175.22
4	1	94.7	5			253.74
5	1	96.1	5			342.32
6	2	58.4	5	1736		206.35
7	3	70.5	5	1462	1831	1115.74
8	1	70.4	5			983.44
9	2	64	5	1167		851.7
10	1	71	5			1137.5

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	79.6	16	1342		635.745
2	2	77.5	16	1689		782.85
3	2	76.6	16	1328		800.51
4	1	66.8	16			453.92
5	3	93.8	16	1724	1592	914.75
6	2	51.9	16	1917		697.36
7	3	69.7	16	1787	1474	966.05
8	2	84.3	16	1077		854.59
9	1	89.6	16			143.46
10	1	73.8	16			793.81
11	3	52.1	16	1729	1902	310.8
12	3	99.2	16	1560	1517	804.1

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	55.9	13	1719		579.427
2	3	65.1	13	1001	1595	753.25
3	3	99.7	13	1630	1297	918.32
4	3	70.4	13	1327	1458	292.68
5	2	75	13	1814		672.3
6	2	67.6	13	1745		514.82
7	1	51	13			830.54
8	2	54.4	13	1310		389.61
9	3	84.1	13	1312	1923	719.04
10	2	77.1	13	1118		89.23
11	3	83.1	13	1716	1512	94.2
12	1	57.5	13			757.4

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5490.4	1	16	5500.7	1
2	5491.1	1	17	5501.4	1
3	5492.0	1	18	5502.1	1
4	5492.7	1	19	5502.7	1
5	5493.4	1	20	5503.4	1
6	5494.1	1	21	5504.0	1
7	5494.7	1	22	5504.7	1
8	5495.4	1	23	5505.4	1
9	5496.1	1	24	5506.1	1
10	5496.8	1	25	5506.7	1
11	5497.5	1	26	5507.4	1
12	5498.2	1	27	5508.0	1
13	5498.9	1	28	5508.7	1
14	5499.5	1	29	5509.1	0
15	5500.0	1	30	5509.6	1
Detection Percentage (%)					96.7%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
22	5510	66	28	5499	84
37	5492	111	55	5496	165
57	5496	171	67	5508	201
83	5493	249	69	5497	207
90	5508	270	83	5507	249
--	--	--	84	5495	252

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5507	39	27	5510	81
22	5491	66	36	5505	108
24	5499	72	--	--	--
59	5493	177	--	--	--
65	5497	195	--	--	--
75	5509	225	--	--	--
96	5496	288	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5497	3	49	5504	147
4	5510	12	69	5510	207
10	5493	30	--	--	--
14	5496	42	--	--	--
35	5503	105	--	--	--
45	5509	135	--	--	--
74	5500	222	--	--	--
77	5494	231	--	--	--
88	5508	264	--	--	--

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
19	5490	57	59	5496	177
23	5497	69	72	5509	216
54	5507	162	93	5495	279
58	5506	174	--	--	--
61	5510	183	--	--	--
68	5491	204	--	--	--
79	5503	237	--	--	--
83	5500	249	--	--	--
93	5495	279	--	--	--
97	5508	291	--	--	--

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5510	6	77	5503	231
9	5498	27	90	5506	270
29	5503	87	--	--	--
37	5506	111	--	--	--
57	5509	171	--	--	--
85	5508	255	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Frequency (MHz)	Hopping Number	Pulse Start (ms)
5	5498	15	33	5500	99
10	5501	30	51	5499	153
62	5510	186	62	5502	186
65	5508	195	--	--	--
73	5505	219	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5496	18	3	5510	9
22	5495	66	47	5508	141
25	5506	75	--	--	--
65	5505	195	--	--	--
75	5504	225	--	--	--
100	5499	300	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5492	24	9	5505	27
38	5495	114	23	5509	69
77	5505	231	81	5507	243
--	--	--	82	5490	246

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
27	5507	81	9	5494	27
38	5497	114	25	5493	75
45	5502	135	44	5496	132
57	5499	171	49	5510	147
60	5510	180	88	5498	264
68	5501	204	90	5502	270
93	5492	279	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
15	5492	45	71	5497	213
22	5504	66	93	5501	279
34	5508	102	100	5504	300
46	5507	138	--	--	--
73	5494	219	--	--	--

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
21	5497	63	50	5508	150
55	5499	165	69	5496	207
78	5501	234	71	5498	213
--	--	--	84	5510	252
--	--	--	94	5492	282

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
32	5491	96	7	5496	21
47	5501	141	8	5506	24
55	5508	165	51	5494	153
61	5492	183	76	5495	228
85	5502	255	82	5490	246
--	--	--	89	5493	267

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5501	12	10	5503	30
9	5506	27	52	5491	156
20	5505	60	77	5507	231
40	5504	120	96	5508	288

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
90	5501	270	64	5492	192
--	--	--	69	5496	207
--	--	--	83	5498	249

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
33	5496	99	17	5493	51
67	5502	201	19	5503	57
--	--	--	59	5491	177
--	--	--	98	5495	294

Product	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/25
Test Item	Radar Statistical Performance Check (802.11ax-HE40 mode – 5510MHz) (AP Mode)		

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	678	78	1
2	5492.5	1	698	76	1
3	5493.9	1	738	72	1
4	5495.4	1	818	65	1
5	5496.8	1	798	67	1
6	5498.3	1	658	81	1
7	5499.8	1	918	58	1
8	5501.2	1	838	63	1
9	5502.7	1	778	68	1
10	5503.0	1	878	61	1
11	5504.5	1	638	83	1
12	5505.9	1	898	59	1
13	5507.4	1	718	74	1
14	5508.8	1	558	95	1
15	5510.0	1	3066	18	1
16	5511.0	1	874	61	1
17	5512.3	1	2468	22	0
18	5513.6	1	1593	34	1
19	5514.9	1	1342	40	0
20	5516.2	1	2525	21	0
21	5517.6	1	2511	21	1
22	5518.9	1	1106	48	1
23	5520.2	1	1917	28	1
24	5521.5	1	2864	19	1
25	5522.8	1	1605	33	1
26	5524.1	1	2736	20	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5525.4	1	1772	30	1
28	5526.7	1	2118	25	1
29	5528.0	1	2486	22	1
30	5529.0	1	2612	21	1
Detection Percentage (%)					90%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	2.6	197	28	1
2	5492.5	3	216	24	1
3	5493.9	1	198	26	1
4	5495.4	3.6	186	25	1
5	5496.8	2.1	191	29	1
6	5498.3	4.7	185	25	1
7	5499.8	4.3	213	29	1
8	5501.2	2.4	161	27	1
9	5502.7	3.1	178	28	1
10	5503.0	4.4	164	28	1
11	5504.5	2.8	167	29	1
12	5505.9	2.8	217	26	1
13	5507.4	3.7	177	28	1
14	5508.8	3.9	207	25	1
15	5510.0	3.4	228	29	1
16	5511.0	1.8	155	26	1
17	5512.3	4	154	29	1
18	5513.6	1.1	203	28	1
19	5514.9	3.2	155	26	0
20	5516.2	3.4	162	23	1
21	5517.6	1.5	178	24	1
22	5518.9	4.4	168	24	1
23	5520.2	4.9	166	23	1
24	5521.5	4.5	212	25	0
25	5522.8	4.5	213	29	1
26	5524.1	1.9	164	27	1
27	5525.4	1.5	151	25	1
28	5526.7	3.5	224	23	1
29	5528.0	3.7	216	26	1
30	5529.0	3.5	150	27	1
Detection Percentage (%)					93.3%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	7.7	353	17	0
2	5492.5	9.1	426	16	1
3	5493.9	6.4	479	18	1
4	5495.4	6.2	267	17	1
5	5496.8	8	214	18	0
6	5498.3	6.3	388	17	1
7	5499.8	6	329	16	1
8	5501.2	9.7	226	17	1
9	5502.7	9.7	246	17	1
10	5503.0	8.2	468	18	1
11	5504.5	6.7	478	17	1
12	5505.9	7.9	428	16	1
13	5507.4	9.8	441	16	1
14	5508.8	7.8	468	16	1
15	5510.0	8.8	404	17	1
16	5511.0	9.5	290	17	0
17	5512.3	9.2	266	17	1
18	5513.6	9.5	297	17	1
19	5514.9	9.8	478	17	1
20	5516.2	6.3	285	18	1
21	5517.6	8.6	348	16	1
22	5518.9	6.1	329	17	1
23	5520.2	10	391	17	1
24	5521.5	6.5	390	18	1
25	5522.8	6.9	324	17	1
26	5524.1	6.8	498	17	1
27	5525.4	7.5	371	17	1
28	5526.7	10	498	16	1
29	5528.0	9.7	468	16	1
30	5529.0	9.5	234	18	1
Detection Percentage (%)					90%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	16.2	387	13	1
2	5492.5	12.5	292	13	1
3	5493.9	13.4	486	15	1
4	5495.4	11.9	327	16	0
5	5496.8	12	223	14	1
6	5498.3	15.9	312	13	0
7	5499.8	12.6	223	14	1
8	5501.2	19.1	479	13	0
9	5502.7	18.8	250	14	1
10	5503.0	18.2	205	15	1
11	5504.5	12.5	259	15	1
12	5505.9	13.8	231	14	1
13	5507.4	15.1	461	15	0
14	5508.8	14.7	250	15	1
15	5510.0	15.9	385	12	1
16	5511.0	11.4	363	14	1
17	5512.3	17	326	14	1
18	5513.6	14	292	16	1
19	5514.9	16.3	447	13	1
20	5516.2	19.6	441	14	1
21	5517.6	15.1	467	15	1
22	5518.9	17.9	496	16	1
23	5520.2	15.2	479	14	1
24	5521.5	14.4	214	15	0
25	5522.8	19.6	365	15	1
26	5524.1	11.9	293	14	0
27	5525.4	19.6	319	14	1
28	5526.7	18.5	460	12	0
29	5528.0	16.7	448	14	1
30	5529.0	17.3	281	14	1
Detection Percentage (%)					76.7%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test waveforms is as follows: $\frac{P_d1+P_d2+P_d3+P_d4}{4}$ = (90%+93.3%+90.0%+76.7%)/4 = 87.5% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5510.0	1	16	5495.0	1
2	5510.0	1	17	5498.2	1
3	5510.0	0	18	5498.6	1
4	5510.0	1	19	5498.6	1
5	5510.0	1	20	5495.8	1
6	5510.0	1	21	5525.8	1
7	5510.0	1	22	5522.6	1
8	5510.0	1	23	5523.4	1
9	5510.0	1	24	5521.4	0
10	5510.0	1	25	5525.0	1
11	5497.0	1	26	5523.0	1
12	5495.8	1	27	5526.2	1
13	5499.0	1	28	5523.0	1
14	5497.4	1	29	5523.8	1
15	5497.4	1	30	5524.2	1
Detection Percentage (%)					93.3%

Type 5 Radar Waveform_1

Burst	Number of Pulses	Pulse Width (μ sec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (μsec)	Pulse 2-to-3 PRI (μsec)	Start Location Within Interval (msec)
1	3	96.6	8	1568	1246	584.875
2	3	64	8	1072	1391	28.693
3	3	74.4	8	1119	1302	78.127
4	2	57.8	8	1481		607.64
5	2	71.5	8	1675		555.773
6	1	78.3	8			630.247
7	2	86	8	1000		224.71
8	2	96.4	8	1587		438.023
9	2	52.3	8	1358		401.877
10	2	72.3	8	1467		200.76
11	2	62.8	8	1128		208.023
12	1	56.3	8			412.817
13	3	77.8	8	1902	1905	184.53
14	1	92.1	8			23.843
15	2	99.1	8	1829		436.267
16	1	73.4	8			504.1
17	2	82.2	8	1287		434.033
18	3	57.5	8	1024	1822	409.267

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	90.1	12	1153		370.088
2	3	71.2	12	1787	1877	98.56
3	2	91.8	12	1145		483.44
4	3	84.8	12	1542	1463	550.94
5	3	86.7	12	1769	1635	610.97
6	2	71.4	12	1109		560.6
7	1	81.4	12			578.42
8	1	90.6	12			715.72
9	2	84.4	12	1080		299.68
10	2	88.6	12	1261		472.43
11	2	85.5	12	1332		474.47
12	1	82.2	12			714.3
13	2	88.2	12	1342		220.56
14	2	87.2	12	1031		200.16
15	3	85.8	12	1454	1562	549.6
16	1	94.1	12			475

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	2	83.4	7	1794		643.997
2	1	62.9	7			373.83
3	3	86.4	7	1327	1654	582.96
4	3	65.3	7	1635	1958	500.31
5	2	72.3	7	1729		1073.72
6	2	73	7	1526		520.22
7	1	69.2	7			1253.1
8	1	89.9	7			692.9

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	57.2	19	1062	1154	276.693
2	3	89.9	19	1493	1602	318.021
3	1	59.5	19			433.792
4	3	59	19	1902	1437	443.843
5	1	65.4	19			534.224
6	2	57.9	19	1652		711.425
7	1	79.5	19			528.675
8	3	93.9	19	1713	1015	995.086
9	1	58.1	19			377.987
10	3	95.1	19	1477	1768	873.018
11	2	68.2	19	1281		474.509

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	63.8	10	1315		607.036
2	2	76.6	10	1085		923.58
3	2	67.1	10	1586		697.79
4	2	92.7	10	1917		183.13
5	3	95.6	10	1069	1731	426.96
6	3	62.2	10	1751	1025	470.77
7	3	83.9	10	1333	1804	347.75
8	2	91.1	10	1389		269.51
9	1	80.7	10			907.56
10	1	60.7	10			553.64
11	2	90.4	10	1893		133.8
12	2	71.4	10	1598		725.8

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	50	5			620.409
2	3	63.7	5	1638	1432	99.853
3	2	54	5	1031		38.807
4	2	95	5	1525		499.19
5	2	95.8	5	1030		494.883
6	3	98	5	1454	1724	614.847
7	3	65.1	5	1300	1692	161.72
8	1	65	5			105.253
9	1	88.6	5			521.497
10	1	99.7	5			430.5
11	1	57.7	5			139.103
12	1	76.8	5			342.437
13	1	61.6	5			512.27
14	1	72.9	5			540.643
15	3	92.3	5	1613	1548	85.007
16	2	56.1	5	1347		653.1
17	3	69.1	5	1950	1983	642.333
18	2	59.7	5	1816		198.767

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	98.2	7	1499		54.428
2	2	77.8	7	1691		210.51
3	2	56.7	7	1445		213.477
4	2	55.2	7	1909		343.04
5	1	71.9	7			61.323
6	3	76.2	7	1784	1936	540.197
7	3	81.1	7	1702	1551	79.5
8	2	82.2	7	1298		328.543
9	2	70.2	7	1148		324.617
10	2	77	7	1596		300.39
11	1	60.4	7			390.243
12	2	50.5	7	1999		57.257
13	3	98.1	7	1402	1885	37.69
14	2	89.7	7	1182		551.433
15	3	94.4	7	1274	1050	500.257
16	1	70.6	7			444.5
17	3	90.3	7	1479	1452	47.033
18	3	65.3	7	1232	1905	427.767

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	58.6	8	1808		353.23
2	3	78.6	8	1403	1971	21.893
3	3	56.3	8	1378	1435	87.85
4	2	81.1	8	1998		493.57
5	1	99	8			326.85
6	1	62.3	8			395.25
7	1	88.3	8			6.68
8	2	51.1	8	1208		401.95
9	2	96.2	8	1293		295.31
10	3	91	8	1348	1358	588.03
11	2	51.4	8	1393		131.54
12	1	93.7	8			559.27
13	3	79.9	8	1180	1002	84.76
14	3	84.1	8	1870	1853	346.75
15	2	90.3	8	1876		274.2
16	2	71.9	8	1905		124.43
17	1	86	8			558.8
18	3	88.2	8	1285	1928	216.5
19	2	69.5	8	1763		148.7
20	1	73.2	8			320.6

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	3	58.7	8	1914	1688	1225.78
2	1	95.2	8			860.837
3	2	65.9	8	1221		1235.473
4	1	61.8	8			875.25
5	1	76.5	8			876.957
6	2	78.2	8	1815		852.823
7	2	50.6	8	1352		875.05
8	3	88.7	8	1359	1448	204.437
9	3	95.2	8	1667	1125	453.133

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	86.8	17	1670		247.135
2	2	82.4	17	1963		623.63
3	2	68.5	17	1371		210.42
4	1	69.5	17			1190.59
5	3	95.4	17	1610	1224	256.56
6	2	55.2	17	1045		964.11
7	2	88.9	17	1413		75.04
8	2	85.5	17	1525		449.22
9	1	99.2	17			591.7
10	2	84.1	17	1159		647

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	71.1	15	1684		175.563
2	2	72	15	1932		854.19
3	2	76.4	15	1416		740.72
4	1	76.3	15			245.41
5	2	90.8	15	1318		555.08
6	1	71.3	15			440.07
7	2	87.7	15	1056		24.5
8	2	60.8	15	1878		254.37
9	3	87.8	15	1571	1903	784.34
10	3	93.1	15	1227	1863	886.3
11	2	58.3	15	1290		794.7
12	2	54.5	15	1163		293.6

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	53.2	12	1808	1333	259.941
2	2	92.1	12	1616		364.475
3	3	84.1	12	1435	1351	327.532
4	1	78.5	12			387.123
5	2	85.7	12	1801		464.804
6	3	65.3	12	1795	1043	604.485
7	3	71.9	12	1360	1665	286.386
8	2	81.2	12	1093		563.627
9	1	94.6	12			112.468
10	2	69.1	12	1849		471.969
11	2	95.7	12	1650		126.641
12	2	95.9	12	1636		578.492
13	2	75.1	12	1388		449.013
14	3	63.5	12	1710	1272	470.474
15	2	63.9	12	1117		333.775
16	1	89.4	12			35.756
17	2	96.9	12	1040		299.237
18	1	80.1	12			180.158
19	1	97	12			441.879

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	3	53.3	20	1639	1073	145.199
2	2	72.7	20	1141		1325.36
3	3	68.3	20	1935	1564	889.01
4	1	92.9	20			168.41
5	3	98.8	20	1387	1135	528.82
6	2	98.5	20	1585		701.23
7	1	53.3	20			1441.9
8	1	69	20			1317.9

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	70.8	16	1187		487.001
2	1	56.9	16			222.432
3	3	92.4	16	1173	1375	151.47
4	1	81.2	16			366.29
5	1	73.8	16			6.12
6	2	81.9	16	1100		74.32
7	3	88.5	16	1145	1414	259.94
8	2	60.5	16	1467		70.77
9	2	50.9	16	1141		150.9
10	1	90.3	16			71.35
11	3	96.6	16	1590	1420	573.73
12	1	69.6	16			369.82
13	3	59.1	16	1595	1275	517.79
14	1	69.3	16			447.08
15	2	67	16	1795		369.95
16	2	82.6	16	1570		284.21
17	2	100	16	1360		424.9
18	2	61.5	16	1406		164.9
19	3	80.3	16	1370	1185	245.2
20	3	78.1	16	1271	1754	575.3

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	1	65.2	16			623.591
2	3	65.5	16	1527	1095	15.805
3	3	86.7	16	1063	1197	122.755
4	3	69.7	16	1437	1812	169.303
5	2	71.4	16	1862		231.031
6	2	96.2	16	1929		252.888
7	2	59.6	16	1986		698.866
8	2	54.7	16	1333		665.854
9	2	75.4	16	1196		453.771
10	1	62.6	16			108.139
11	3	75	16	1470	1274	462.666
12	3	87.7	16	1227	1029	674.444
13	2	51.8	16	1862		593.272
14	1	55.9	16			18.199
15	1	93.2	16			399.547
16	2	86.4	16	1141		574.065
17	2	90.9	16	1287		450.882

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	3	86.5	10	1673	1250	294.973
2	3	54.4	10	1217	1390	290.463
3	2	61.8	10	1515		520.616
4	3	81.3	10	1058	1865	471.079
5	2	94.6	10	1396		297.192
6	3	99.2	10	1862	1327	902.715
7	2	83.7	10	1642		352.538
8	2	55.6	10	1234		533.542
9	2	50	10	1282		577.425
10	1	60.2	10			703.858
11	2	88.4	10	1726		153.891
12	2	71.7	10	1473		851.254
13	3	67.1	10	1064	1991	63.477

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	58.4	18	1123		250.069
2	3	66	18	1725	1913	866.683
3	2	99.2	18	1730		202.556
4	1	69.3	18			770.419
5	3	97.4	18	1588	1117	521.802
6	1	75.8	18			795.205
7	2	98.5	18	1102		648.108
8	3	51.7	18	1000	1760	130.192
9	2	61.2	18	1995		748.775
10	2	74	18	1835		611.058
11	2	68.4	18	1080		770.531
12	1	60.1	18			647.354
13	2	63.4	18	1956		886.077

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	2	82.2	19	1883		197.741
2	2	76	19	1791		9.931
3	2	63.1	19	1802		900.026
4	2	84.1	19	1336		611.629
5	2	91.6	19	1631		720.612
6	2	53.1	19	1785		411.085
7	2	80	19	1265		845.748
8	2	96.4	19	1234		796.262
9	3	86.8	19	1609	1347	208.245
10	3	94.8	19	1533	1174	518.088
11	1	50.7	19			696.101
12	3	79.1	19	1092	1528	799.254
13	2	80	19	1065		304.877

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	3	86.5	19	1487	1970	463.823
2	3	69.1	19	1887	1248	510.991
3	2	56.2	19	1242		580.912
4	1	67.6	19			595.363
5	2	83.3	19	1292		289.884
6	1	76.7	19			510.415
7	3	52.4	19	1168	1184	548.676
8	2	71.5	19	1933		87.777
9	1	83.7	19			330.158
10	3	60.1	19	1291	1172	338.509
11	3	71.7	19	1431	1252	344.131
12	2	64.3	19	1971		256.782
13	2	59.5	19	1149		454.343
14	1	59.8	19			242.324
15	2	73.8	19	1923		98.405
16	2	95.6	19	1037		551.216
17	3	90.4	19	1602	1392	120.837
18	2	82.1	19	1025		86.658
19	2	80.3	19	1290		441.679

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	85.2	12	1359		445.834
2	2	81.5	12	1205		400.091
3	2	73.9	12	1160		280.652
4	2	65.8	12	1346		384.443
5	2	85.4	12	1793		313.604
6	2	94.8	12	1227		546.735
7	1	51.3	12			545.766
8	3	62	12	1275	1102	214.057
9	3	66.4	12	1663	1079	11.538
10	3	52.3	12	1375	1547	533.499
11	2	80.8	12	1411		460.491
12	2	55.8	12	1048		101.412
13	1	65.2	12			486.573
14	1	58	12			152.214
15	2	64.8	12	1200		352.585
16	3	93.5	12	1534	1265	5.716
17	1	58.2	12			376.637
18	2	52.3	12	1986		472.158
19	2	96.5	12	1633		23.279

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	77.9	8	1902		395.653
2	3	66.7	8	1823	1555	164.433
3	2	84.4	8	1713		400.126
4	2	67.7	8	1061		707.929
5	1	97.7	8			56.472
6	3	76.6	8	1106	1198	773.565
7	2	68.5	8	1420		629.408
8	2	79.5	8	1373		911.042
9	2	64.2	8	1257		468.665
10	2	81.5	8	1383		141.078
11	2	68.1	8	1228		41.881
12	2	93.1	8	1504		267.954
13	1	76.7	8			27.177

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	75.6	16	1501	1907	401.065
2	3	81.3	16	1863	1117	781.41
3	2	88	16	1016		370.38
4	1	53.2	16			721.05
5	1	50.9	16			215.05
6	2	78.6	16	1027		620.42
7	2	61.1	16	1380		439.75
8	3	75.9	16	1352	1903	840.78
9	2	73	16	1928		175.59
10	1	55.6	16			1045.7

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	2	65.9	14	1039		9.848
2	3	87.4	14	1653	1386	193.567
3	2	76.8	14	1331		744.314
4	2	85	14	1887		338.121
5	3	55.8	14	1586	1974	13.809
6	1	86.4	14			53.906
7	2	81	14	1061		498.903
8	1	99.6	14			704.52
9	2	52	14	1282		645.067
10	2	95.9	14	1382		717.664
11	1	56	14			843.421
12	2	89.2	14	1435		766.529
13	2	64.3	14	1587		54.686
14	2	56	14	1737		405.043

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	19	1290		124.637
2	2	90.6	19	1095		833.511
3	1	77.8	19			643.162
4	1	78.7	19			970.623
5	2	61	19	1062		138.534
6	1	62.8	19			433.325
7	3	73.7	19	1014	1279	1068.695
8	1	69.9	19			294.266
9	2	71	19	1086		889.867
10	3	95.6	19	1685	1504	456.718
11	2	96.4	19	1258		669.409

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	83.4	10	1510	1470	64.484
2	1	85.4	10			579.457
3	3	58.9	10	1561	1209	835.834
4	2	52.8	10	1700		269.101
5	3	80.2	10	1718	1912	261.309
6	3	94.1	10	1279	1860	225.746
7	2	85.7	10	1595		286.023
8	2	52.1	10	1706		91.2
9	2	77.9	10	1750		531.557
10	3	73	10	1211	1015	306.844
11	2	71.5	10	1722		773.051
12	2	61.8	10	1988		731.029
13	1	79.2	10			312.986
14	1	91.3	10			664.443

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	88.6	15	1067		388.102
2	2	96.6	15	1460		224.02
3	2	62.4	15	1727		94.447
4	1	82.6	15			166.81
5	2	82.4	15	1852		133.803
6	2	63	15	1685		452.257
7	2	50.6	15	1113		150.47
8	3	73.9	15	1598	1389	280.583
9	3	71.7	15	1542	1882	116.527
10	2	86.9	15	1508		358.03
11	2	53.1	15	1425		9.333
12	1	62.5	15			472.777
13	2	65.3	15	1300		25.63
14	3	91.7	15	1748	1288	135.633
15	2	79.4	15	1240		585.327
16	2	72.6	15	1660		171.1
17	2	93.3	15	1706		281.033
18	1	52.8	15			379.467

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	1	77.3	7			434.232
2	3	54.9	7	1247	1102	311
3	1	98.5	7			513.82
4	3	78.4	7	1607	1426	141.93
5	2	70.4	7	1659		177.35
6	2	67.2	7	1328		560.96
7	2	95	7	1298		1.12
8	3	54.9	7	1379	1427	277.28
9	1	88.1	7			712.74
10	1	54.3	7			275.56
11	2	83.4	7	1101		640.7
12	1	62	7			294.66
13	2	79.8	7	1516		333.83
14	1	94.7	7			699.3
15	3	99.7	7	1480	1177	328.9
16	3	83.2	7	1167	1203	512.8

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	3	96.6	15	1221	1126	211.884
2	1	84.9	15			156.546
3	1	65.7	15			32.285
4	3	90.3	15	1911	1112	338.743
5	3	78.6	15	1076	1342	429.341
6	2	78.9	15	1817		450.678
7	2	55.8	15	1435		397.786
8	3	92.4	15	1324	1648	512.384
9	3	93.2	15	1078	1870	327.031
10	2	50.8	15	1473		323.329
11	1	82.3	15			611.746
12	3	60.3	15	1311	1395	91.324
13	1	54.8	15			44.992
14	2	64.2	15	1521		636.509
15	3	53.2	15	1510	1117	332.247
16	3	83.5	15	1167	1574	598.965
17	1	95.5	15			98.582

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	95.5	13	1132		219.88
2	2	97.2	13	1147		204.34
3	2	85.4	13	1527		451.5
4	3	97.1	13	1593	1944	286.85
5	1	56	13			64.57
6	1	88.3	13			378.31
7	1	50	13			50.97
8	2	83.6	13	1662		369.12
9	2	86.7	13	1916		71.43
10	3	53.9	13	1057	1789	135.9
11	2	86	13	1218		8.9
12	1	71.4	13			320.9
13	1	59	13			450.5
14	2	65.7	13	1895		46.1
15	1	87.5	13			516.27
16	3	68.2	13	1437	1701	108.84
17	2	65.1	13	1713		173.44
18	1	70.6	13			486.9
19	1	65.6	13			361.1
20	1	97.8	13			311.2

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	91	12	1696		233.9
2	2	64.6	12	1551		396.697
3	2	57.4	12	1521		1114.033
4	2	61.2	12	1424		850.22
5	3	91.4	12	1758	1635	887.187
6	2	94.6	12	1991		247.133
7	2	55.1	12	1201		486.72
8	2	69.5	12	1409		1041.667
9	2	99.7	12	1269		1176.633

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5491.0	0	16	5511.0	1
2	5492.5	1	17	5512.3	1
3	5493.9	1	18	5513.6	1
4	5495.4	1	19	5514.9	1
5	5496.8	1	20	5516.2	1
6	5498.3	1	21	5517.6	1
7	5499.8	1	22	5518.9	1
8	5501.2	1	23	5520.2	1
9	5502.7	1	24	5521.5	1
10	5503.0	1	25	5522.8	1
11	5504.5	1	26	5524.1	1
12	5505.9	1	27	5525.4	1
13	5507.4	1	28	5526.7	1
14	5508.8	1	29	5528.0	1
15	5510.0	1	30	5529.0	1
Detection Percentage (%)					96.7%

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5516	3	6	5523	18
11	5508	33	13	5518	39
30	5519	90	30	5491	90
32	5522	96	35	5498	105
56	5529	168	50	5495	150
72	5499	216	54	5507	162
78	5513	234	57	5490	171
80	5506	240	72	5516	216
--	--	--	73	5513	219
--	--	--	74	5524	222
--	--	--	76	5519	228
--	--	--	90	5527	270
--	--	--	96	5510	288
--	--	--	99	5508	297

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
19	5499	57	1	5521	3
21	5495	63	13	5503	39
28	5512	84	17	5511	51
30	5498	90	18	5517	54
38	5510	114	32	5530	96
48	5500	144	59	5514	177
55	5490	165	71	5496	213
57	5492	171	90	5519	270
66	5507	198	--	--	--
76	5522	228	--	--	--
93	5505	279	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5490	3	5	5508	15
7	5510	21	9	5505	27
18	5528	54	10	5519	30
20	5527	60	16	5513	48
23	5519	69	26	5515	78
29	5517	87	31	5529	93
52	5500	156	39	5512	117
53	5506	159	60	5527	180
--	--	--	65	5499	195
--	--	--	75	5516	225
--	--	--	90	5530	270

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5526	3	9	5513	27
4	5528	12	13	5495	39
5	5512	15	15	5529	45
58	5511	174	41	5496	123
60	5508	180	59	5520	177
93	5490	279	77	5530	231
94	5504	282	91	5516	273
--	--	--	92	5524	276

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5495	33	19	5495	57
14	5496	42	37	5530	111
24	5490	72	38	5491	114
43	5526	129	45	5499	135
62	5522	186	50	5515	150
65	5515	195	100	5513	300
69	5500	207	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5513	36	6	5523	18
14	5498	42	11	5503	33
16	5499	48	13	5512	39
25	5490	75	20	5515	60
26	5504	78	21	5509	63
94	5528	282	37	5491	111
--	--	--	57	5493	171
--	--	--	72	5490	216
--	--	--	77	5501	231

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5517	24	13	5510	39
52	5519	156	32	5519	96
54	5502	162	49	5491	147
68	5499	204	52	5499	156
73	5500	219	57	5530	171
90	5497	270	78	5520	234
99	5511	297	83	5514	249
--	--	--	88	5498	264
--	--	--	89	5501	267
--	--	--	95	5518	285

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5492	24	1	5503	3
19	5504	57	2	5511	6
20	5506	60	7	5523	21
25	5498	75	17	5510	51
30	5523	90	27	5528	81
32	5522	96	30	5517	90
36	5518	108	50	5518	150
37	5526	111	61	5522	183
63	5496	189	64	5519	192
64	5520	192	80	5506	240
--	--	--	86	5529	258

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5498	36	8	5519	24
18	5506	54	16	5501	48
22	5510	66	24	5498	72
26	5491	78	32	5505	96
30	5512	90	48	5508	144
47	5497	141	67	5503	201
50	5516	150	79	5520	237
52	5493	156	87	5521	261
60	5524	180	90	5504	270
65	5526	195	93	5527	279
70	5528	210	--	--	--
73	5521	219	--	--	--
92	5520	276	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
38	5509	114	3	5493	9
42	5497	126	16	5505	48
44	5517	132	29	5516	87
54	5523	162	30	5503	90
77	5528	231	34	5512	102
79	5490	237	41	5526	123
--	--	--	51	5514	153
--	--	--	95	5525	285
--	--	--	98	5517	294
--	--	--	99	5490	297

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5500	39	4	5511	12
21	5516	63	5	5502	15
23	5518	69	30	5523	90
30	5498	90	39	5518	117
32	5509	96	51	5515	153
53	5503	159	67	5520	201
65	5530	195	80	5510	240
79	5496	237	85	5492	255
80	5492	240	--	--	--
83	5523	249	--	--	--
94	5512	282	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
15	5507	45	4	5507	12
23	5499	69	8	5492	24
29	5523	87	46	5528	138
36	5509	108	53	5529	159
38	5524	114	73	5526	219
41	5500	123	87	5520	261
53	5504	159	90	5494	270
61	5522	183	99	5504	297
85	5510	255	--	--	--
93	5497	279	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5504	18	10	5526	30
29	5528	87	20	5522	60
32	5525	96	43	5491	129
40	5529	120	48	5507	144
99	5508	297	49	5500	147
--	--	--	52	5505	156
--	--	--	55	5512	165

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
20	5497	60	9	5503	27
44	5496	132	19	5512	57
48	5499	144	35	5525	105
66	5530	198	70	5507	210
86	5517	258	74	5519	222
88	5521	264	83	5529	249
90	5508	270	88	5491	264
--	--	--	94	5530	282
--	--	--	100	5490	300

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5517	6	16	5509	48
20	5512	60	19	5515	57
23	5519	69	21	5504	63
33	5490	99	22	5525	66
37	5491	111	39	5523	117
41	5500	123	42	5494	126
68	5529	204	44	5518	132
83	5526	249	64	5503	192
92	5501	276	84	5511	252
93	5525	279	--	--	--

Product	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/08/24~2020/10/25
Test Item	Radar Statistical Performance Check (802.11ax-HE80 mode – 5530MHz) (AP Mode)		

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	678	78	1
2	5493.7	1	838	63	1
3	5496.4	1	758	70	1
4	5499.1	1	918	58	1
5	5501.8	1	778	68	1
6	5504.4	1	638	83	1
7	5507.1	1	698	76	1
8	5509.8	1	578	92	1
9	5512.5	1	718	74	1
10	5515.2	1	878	61	1
11	5517.9	1	818	65	1
12	5520.6	1	598	89	1
13	5523.3	1	518	102	1
14	5526.0	1	658	81	1
15	5528.6	1	858	62	1
16	5530.0	1	1909	28	1
17	5532.7	1	825	64	1
18	5535.4	1	735	72	1
19	5538.1	1	813	65	1
20	5540.8	1	1243	43	1
21	5543.4	1	2213	24	1
22	5546.1	1	1680	32	1
23	5548.8	1	924	58	1
24	5551.5	1	1212	44	1
25	5554.2	1	1986	27	1
26	5556.9	1	2028	26	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5559.6	1	1531	35	1
28	5562.3	1	2256	24	1
29	5565.0	1	2138	25	1
30	5569.0	1	961	55	1
Detection Percentage (%)					100%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	4.8	204	25	0
2	5493.7	2.3	162	25	1
3	5496.4	2.8	170	27	1
4	5499.1	4.1	200	25	1
5	5501.8	4.9	229	27	1
6	5504.4	1.1	219	28	1
7	5507.1	5	188	25	1
8	5509.8	3.5	157	28	1
9	5512.5	4.1	152	28	0
10	5515.2	3.5	195	26	1
11	5517.9	1.6	170	28	1
12	5520.6	2.3	204	24	0
13	5523.3	4	192	27	1
14	5526.0	1.8	188	26	0
15	5528.6	1.2	223	27	1
16	5530.0	4.9	154	27	1
17	5532.7	1.8	174	24	1
18	5535.4	2	157	25	1
19	5538.1	2.2	198	28	1
20	5540.8	1.4	150	26	1
21	5543.4	2	212	23	1
22	5546.1	4.5	185	28	1
23	5548.8	1.2	158	24	1
24	5551.5	3.4	163	24	0
25	5554.2	1.9	200	28	1
26	5556.9	3.7	227	26	0
27	5559.6	2.4	197	24	1
28	5562.3	3.1	198	25	1
29	5565.0	2	160	27	1
30	5569.0	4.8	212	23	1
Detection Percentage (%)					80%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5491.0	7	398	17	1
2	5493.7	6.7	389	17	1
3	5496.4	7.5	384	16	0
4	5499.1	7.4	208	17	1
5	5501.8	9.8	415	16	1
6	5504.4	8	221	16	1
7	5507.1	7.4	321	17	0
8	5509.8	9.3	306	17	1
9	5512.5	8	340	17	1
10	5515.2	7.9	458	18	1
11	5517.9	8.6	414	17	1
12	5520.6	9.5	306	17	1
13	5523.3	7.4	261	16	1
14	5526.0	7.5	325	18	1
15	5528.6	7.8	325	18	0
16	5530.0	9.5	283	16	0
17	5532.7	9.7	235	18	1
18	5535.4	7.9	287	18	0
19	5538.1	9.6	274	17	1
20	5540.8	7	482	16	0
21	5543.4	9.3	301	16	1
22	5546.1	8.1	253	17	1
23	5548.8	6.1	416	17	1
24	5551.5	7.7	211	16	0
25	5554.2	8.4	377	17	0
26	5556.9	7.2	390	18	1
27	5559.6	7.1	263	17	1
28	5562.3	6.1	350	17	0
29	5565.0	9	488	17	1
30	5569.0	9.6	391	16	1
Detection Percentage (%)					70%

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	395	14	0
2	5493.7	12.4	249	15	1
3	5496.4	19	458	14	0
4	5499.1	18.7	371	14	1
5	5501.8	14.1	390	13	0
6	5504.4	15.9	296	14	1
7	5507.1	19.1	339	12	1
8	5509.8	17.6	477	13	1
9	5512.5	19.9	422	15	1
10	5515.2	18.8	252	13	1
11	5517.9	12.9	281	13	1
12	5520.6	11.2	496	12	1
13	5523.3	18.3	326	16	1
14	5526.0	13.4	500	15	1
15	5528.6	16.5	212	14	1
16	5530.0	12.1	406	15	1
17	5532.7	12.5	226	15	1
18	5535.4	18.3	322	15	1
19	5538.1	11.6	234	13	1
20	5540.8	14.7	335	14	1
21	5543.4	19.3	323	12	1
22	5546.1	16.6	454	14	1
23	5548.8	12.2	276	16	1
24	5551.5	16.5	319	13	1
25	5554.2	18.8	214	16	1
26	5556.9	17.7	238	12	1
27	5559.6	16.7	213	12	1
28	5562.3	18.6	393	13	1
29	5565.0	20	344	15	1
30	5569.0	12.9	261	16	1
Detection Percentage (%)					90%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test waveforms is as follows: $\frac{P_d1+P_d2+P_d3+P_d4}{4}$ = (100%+80%+70%+90%)/4 = 85.0% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5530.0	1	16	5493.4	1
2	5530.0	1	17	5493.0	1
3	5530.0	1	18	5498.2	1
4	5530.0	1	19	5494.2	1
5	5530.0	1	20	5497.8	1
6	5530.0	1	21	5564.6	1
7	5530.0	1	22	5561.0	1
8	5530.0	1	23	5563.0	1
9	5530.0	1	24	5566.6	0
10	5530.0	1	25	5562.6	0
11	5494.6	1	26	5562.6	1
12	5494.6	1	27	5566.6	1
13	5499.0	1	28	5561.8	1
14	5494.6	1	29	5561.8	1
15	5498.6	1	30	5563.4	0
Detection Percentage (%)					90%

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	2	93.9	9	1251		494.491
2	2	71.5	9	1383		585.667
3	2	86.3	9	1048		513.524
4	3	84	9	1724	1793	385.411
5	3	59.7	9	1283	1404	587.899
6	3	68.7	9	1811	1792	169.826
7	1	97.7	9			838.383
8	1	50.3	9			183.56
9	2	70.9	9	1178		233.477
10	1	65.4	9			462.864
11	2	98.8	9	1760		573.881
12	3	88.6	9	1816	1421	287.439
13	2	74.5	9	1999		699.286
14	3	85	9	1233	1436	30.743

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	76.9	18	1666	1742	113.188
2	3	54.5	18	1050	1244	542.793
3	2	72.5	18	1537		353.127
4	1	86.4	18			365.67
5	2	50.6	18	1446		262.933
6	1	64.8	18			627.157
7	3	62.2	18	1619	1431	485.06
8	2	78.5	18	1864		176.683
9	3	53.7	18	1223	1867	125.277
10	2	63.8	18	1049		472.73
11	2	60.6	18	1033		194.783
12	2	74.9	18	1311		546.277
13	1	54.1	18			149.79
14	2	51.5	18	1783		418.553
15	2	67.4	18	1405		44.667
16	3	64.4	18	1088	1971	342.1
17	1	60.8	18			478.633
18	2	52.4	18	1957		178.967

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	2	95.6	9	1896		155.684
2	1	71.5	9			99.983
3	1	59.5	9			433.696
4	2	72.5	9	1523		340.219
5	1	89.7	9			684.682
6	3	93.6	9	1535	1725	385.365
7	2	67.4	9	1620		507.958
8	3	66	9	1501	1506	534.362
9	3	67.8	9	1102	1503	506.815
10	1	64.9	9			843.768
11	3	96.8	9	1418	1792	36.181
12	2	65.2	9	1254		28.654
13	2	90.8	9	1888		860.477

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	62.7	20	1163		395.244
2	2	80.4	20	1504		103.9
3	2	83.4	20	1591		131.62
4	2	51.2	20	1848		69.25
5	1	62.7	20			603.42
6	2	64.9	20	1462		595.23
7	3	84.7	20	1359	1336	919.56
8	2	83.9	20	1232		576.27
9	3	55.5	20	1235	1565	364.09
10	2	75	20	1046		937.67
11	1	90.2	20			671.6
12	2	93.1	20	1804		873.3

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	2	86.4	17	1658		558.409
2	3	66.8	17	1214	1692	692.57
3	2	81.4	17	1323		160.09
4	1	72.8	17			790.45
5	1	92.1	17			701.07
6	2	93.2	17	1134		673.66
7	1	66.1	17			222.32
8	2	70.5	17	1714		771.85
9	1	79.4	17			410.87
10	2	66	17	1226		44.87
11	2	60.7	17	1807		182.8
12	1	61.4	17			456.3

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	75.6	18	1449		338.624
2	3	54.7	18	1104	1734	386.758
3	3	80.4	18	1868	1787	389.11
4	1	67	18			437.48
5	2	70.7	18	1350		256.39
6	3	66.7	18	1336	1077	37.91
7	2	95.4	18	1661		58.12
8	2	75.9	18	1185		446.15
9	3	76.3	18	1380	1773	543.74
10	2	59.9	18	1836		557.29
11	2	76	18	1157		67.17
12	2	75.5	18	1838		463.63
13	1	65.2	18			139.01
14	3	68.2	18	1264	1253	88.23
15	2	72.7	18	1641		537.84
16	2	58.9	18	1682		105.13
17	1	87.2	18			272.17
18	3	87.7	18	1744	1636	579.2
19	2	91.3	18	1291		579.1
20	1	74.7	18			64.8

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	93.6	17	1064		191.013
2	1	84.2	17			132.124
3	2	84.2	17	1464		461.64
4	2	82.1	17	1970		164.06
5	2	74.6	17	1275		55.35
6	2	86.2	17	1683		739.29
7	3	92.4	17	1923	1605	92.23
8	1	79.3	17			647.37
9	3	92.7	17	1535	1651	697.71
10	2	96.9	17	1277		325.47
11	3	60.5	17	1483	1299	534.22
12	3	57.8	17	1137	1898	575.37
13	2	93.2	17	1046		662.4
14	2	88.8	17	1657		57.3
15	3	81.1	17	1489	1826	287

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	99.7	18	1617	1737	372.801
2	1	71.6	18			138.289
3	1	68.3	18			86.302
4	2	99.4	18	1511		92.353
5	2	93.7	18	1580		58.414
6	2	50.4	18	2000		340.005
7	2	56.4	18	1910		256.106
8	1	95.4	18			240.697
9	2	83.2	18	1142		376.708
10	3	73.5	18	1008	1066	503.469
11	2	92.5	18	1992		174.311
12	1	96.2	18			234.192
13	1	92.7	18			599.633
14	3	78.8	18	1144	1053	221.044
15	2	94.8	18	1704		158.725
16	2	81.9	18	1296		577.816
17	2	99	18	1541		387.937
18	1	97.3	18			372.658
19	2	51.9	18	1661		344.579

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	68.1	20	1138		407.764
2	1	90.4	20			152.263
3	2	90.7	20	1125		514.307
4	2	53.1	20	1087		376.05
5	2	88.1	20	1775		527.023
6	1	57.8	20			622.927
7	1	69.5	20			24.62
8	2	92.7	20	1891		481.543
9	1	72.1	20			179.327
10	3	87.5	20	1178	1720	142.83
11	3	52.2	20	1045	1091	329.593
12	3	96.9	20	1582	1946	314.957
13	1	89.3	20			473.22
14	1	74	20			255.333
15	2	80.2	20	1950		311.757
16	1	74	20			515
17	3	73.8	20	1959	1747	332.833
18	2	79.9	20	1741		40.567

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	52.1	13	1781		687.726
2	1	86.3	13			582.91
3	3	81.5	13	1474	1002	197.79
4	3	52.6	13	1257	1686	58.38
5	2	75	13	1190		520.08
6	3	61.4	13	1616	1078	103.16
7	1	54.4	13			1184.7
8	1	67	13			776.6

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	92.5	9	1171		386.228
2	2	57.8	9	1118		425.89
3	1	68.6	9			699.54
4	2	70.2	9	1175		380.76
5	2	63.7	9	1568		199.19
6	2	62.9	9	1803		564.29
7	1	66.9	9			59.56
8	1	73.3	9			189.71
9	2	74.5	9	1751		470.03
10	3	59.9	9	1221	1205	650.8
11	1	81.8	9			589.09
12	1	87.2	9			526.23
13	2	84.3	9	1787		634.61
14	3	98.1	9	1610	1116	560.4
15	1	81.6	9			466.5
16	1	60.7	9			130.3

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	78.8	9	1741		61.378
2	1	77.8	9			656.527
3	2	84.7	9	1834		305.014
4	2	62.5	9	1770		837.481
5	2	65.6	9	1880		658.929
6	2	92.1	9	1922		53.076
7	1	81.7	9			218.743
8	2	81.7	9	1326		329.75
9	2	61.4	9	1290		505.097
10	2	62.1	9	1649		185.084
11	1	66.6	9			754.611
12	1	79.3	9			168.469
13	2	55.4	9	1745		176.586
14	1	55.2	9			586.443

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	66	20	1612		938.529
2	2	57.3	20	1739		161.231
3	1	93.3	20			425.872
4	1	82.6	20			359.753
5	3	74.8	20	1976	1032	793.884
6	3	87.2	20	1486	1834	257.135
7	2	87.4	20	1405		589.225
8	3	66.8	20	1578	1358	122.666
9	3	54.1	20	1975	1814	466.747
10	2	74.9	20	1207		230.518
11	1	96.8	20			579.009

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	92.9	9	1965	1337	402.828
2	2	98.6	9	1213		85.36
3	1	78.7	9			947.16
4	1	59	9			54.99
5	2	76.8	9	1218		672.22
6	3	95.5	9	1826	1587	554.02
7	2	52.4	9	1837		115.56
8	2	60.3	9	1969		621.09
9	2	93.8	9	1671		662.36
10	1	78.3	9			348.25
11	3	54	9	1284	1186	442.9
12	2	65.6	9	1156		671.6

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	78.7	19	1472	1792	376.556
2	2	99.5	19	1446		732.081
3	2	76.9	19	1653		48.582
4	3	55.2	19	1837	1270	422.723
5	2	55.2	19	1217		596.864
6	2	52.5	19	1795		47.505
7	2	78.5	19	1687		984.375
8	1	56.8	19			268.866
9	2	81.7	19	1598		926.797
10	3	66.5	19	1738	1684	902.118
11	2	88.4	19	1944		309.509

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	78.8	6	1274		294.859
2	3	81.2	6	1025	1877	372.923
3	3	74.9	6	1018	1993	287.687
4	2	56.2	6	1681		491.43
5	2	88	6	1467		429.283
6	2	91.4	6	1682		528.207
7	2	89.1	6	1757		609.18
8	1	61.2	6			319.143
9	2	98.9	6	1003		372.437
10	2	72.4	6	1769		529.75
11	2	100	6	1020		44.263
12	2	81.9	6	1507		536.107
13	2	52.8	6	1155		154.17
14	1	57.5	6			447.723
15	1	90.3	6			607.757
16	2	89.9	6	1634		217.5
17	2	76.1	6	1715		505.333
18	2	94.4	6	1047		370.267

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	71.6	5			551.524
2	1	96.1	5			181.28
3	2	58.8	5	1842		543.02
4	2	87.3	5	1099		490.66
5	2	96.9	5	1531		145.04
6	3	97.7	5	1725	1100	136.77
7	2	64.6	5	1198		53.15
8	2	82.3	5	1380		538.06
9	3	87.3	5	1052	1750	97.64
10	1	56.8	5			140.29
11	2	69.4	5	1497		316.4
12	3	50	5	1688	1645	102.56
13	2	100	5	1424		560.96
14	2	94.1	5	1948		34.08
15	1	56.5	5			0.94
16	1	71.4	5			360.69
17	1	71.9	5			507
18	3	53.4	5	1924	1600	519.2
19	3	96	5	1113	1614	123
20	3	95.7	5	1298	1414	228.6

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	2	92.6	18	1764		74.159
2	1	77.5	18			367.438
3	2	86.7	18	1776		685.275
4	3	52.6	18	1883	1921	624.163
5	3	82.7	18	1878	1820	352.511
6	2	80.2	18	1464		141.248
7	1	93.1	18			290.896
8	2	62.1	18	1173		326.584
9	1	54.1	18			225.591
10	2	86.3	18	1473		614.889
11	1	98.9	18			567.726
12	2	67.5	18	1804		120.584
13	2	70.4	18	1181		270.292
14	3	62.5	18	1399	1783	144.309
15	3	77.3	18	1963	1186	251.047
16	2	56.8	18	1324		263.565
17	3	65.5	18	1990	1517	67.182

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	62.8	8			298.263
2	3	58.2	8	1121	1794	22.871
3	2	89.7	8	1730		1030.902
4	2	56.3	8	1803		476.053
5	2	64.9	8	1157		925.274
6	1	73.7	8			700.385
7	1	92.8	8			209.195
8	2	89.2	8	1916		1001.286
9	2	79.2	8	1047		679.107
10	2	93.7	8	1979		685.118
11	2	75.3	8	1493		967.809

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	72.2	17	1290		601.86
2	1	98	17			647.243
3	2	83.2	17	1475		413.227
4	3	74.5	17	1847	1906	6.15
5	3	80.2	17	1768	1030	353.323
6	1	51.5	17			501.307
7	3	73.7	17	1353	1682	60.81
8	2	76	17	1000		2.003
9	2	51.2	17	1319		56.117
10	2	62.4	17	1754		233.32
11	2	80.4	17	1481		348.283
12	2	85.9	17	1063		462.547
13	3	70.3	17	1607	1725	348.58
14	1	58.3	17			300.173
15	3	80.5	17	1666	1915	471.207
16	2	72.4	17	1352		53
17	2	84.7	17	1950		648.033
18	3	73.8	17	1661	1140	636.967

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	73.8	11			530.469
2	1	97.6	11			441.09
3	3	74.5	11	1009	1205	622.79
4	3	67.2	11	1212	1062	262.43
5	2	70.8	11	1993		722.44
6	2	64.5	11	1203		312.22
7	3	51.8	11	1083	1552	551.39
8	3	57.3	11	1863	1736	1007.94
9	1	79.8	11			1131.4
10	2	87.8	11	1712		117.2

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	2	59.3	20	1106		709.996
2	1	58.9	20			398.5
3	3	98.6	20	1978	1303	434.32
4	3	91.4	20	1104	1352	174.26
5	2	74	20	1300		94.06
6	3	65.5	20	1871	1852	254.41
7	3	83.2	20	1111	1962	441.18
8	2	68.8	20	1343		638.73
9	3	82.6	20	1694	1444	48.58
10	3	83.8	20	1746	1977	684.23
11	2	63.3	20	1734		724.73
12	1	90.9	20			407.32
13	2	95.1	20	1604		177.05
14	1	87.9	20			89.28
15	2	59.9	20	1778		585.7
16	3	97.9	20	1807	1171	674.8

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	2	62	15	1621		848.002
2	2	83	15	1559		461.117
3	2	62.3	15	1788		119.894
4	2	52.8	15	1109		339.861
5	2	56.7	15	1051		416.079
6	2	98.1	15	1292		226.386
7	2	71.5	15	1377		246.073
8	2	71	15	1049		479.25
9	2	86.4	15	1099		264.047
10	2	77	15	1220		427.064
11	1	79.4	15			208.781
12	2	91	15	1489		161.729
13	2	76.4	15	1671		730.886
14	1	84.8	15			512.643

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	68.7	6	1803		560.033
2	1	56.4	6			312.584
3	2	53.3	6	1539		192.982
4	3	55.5	6	1278	1551	31.673
5	2	51.3	6	1953		420.574
6	2	82	6	1523		287.235
7	2	56.4	6	1839		507.926
8	2	83.5	6	1779		195.637
9	1	63.8	6			365.038
10	2	59.8	6	1943		573.269
11	2	97.1	6	1726		206.311
12	2	62.4	6	1700		338.742
13	1	94.4	6			522.143
14	2	99.3	6	1679		344.714
15	3	91.6	6	1753	1937	19.775
16	1	92.7	6			537.516
17	2	82.2	6	1501		482.537
18	3	87.8	6	1925	1745	386.158
19	3	66.7	6	1882	1333	454.079

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	87.9	16	1978	1616	465.87
2	2	88.9	16	1826		670.577
3	2	83.3	16	1901		363.303
4	2	52.2	16	1248		102.12
5	2	79.5	16	1035		1259.267
6	2	53.6	16	1446		717.533
7	2	95.5	16	1227		505.97
8	2	96.3	16	1064		916.967
9	2	53.1	16	1706		1252.233

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	82.1	16	1508	1016	568.424
2	1	72.1	16			588.643
3	2	84.1	16	1026		527.417
4	2	72.9	16	1627		156.65
5	2	89	16	1539		237.233
6	2	98.7	16	1771		623.137
7	1	56	16			562.47
8	3	55	16	1988	1187	197.563
9	2	80.2	16	1902		579.407
10	1	99	16			128.61
11	1	82.3	16			646.913
12	1	61.2	16			469.167
13	3	72.8	16	1256	1493	179.61
14	1	51.9	16			506.263
15	3	55.9	16	1406	1566	397.847
16	3	61.3	16	1937	1406	414.3
17	2	52.4	16	1482		316.133
18	1	96.4	16			193.567

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	67	6	1083		68.456
2	2	81	6	1642		280.34
3	1	84	6			667.43
4	3	84.7	6	1722	1165	467.9
5	3	53.8	6	1948	1962	51.81
6	3	72	6	1741	1425	98.15
7	2	69.2	6	1425		728.24
8	2	99.9	6	1206		132.32
9	1	56.5	6			569.14
10	1	61.2	6			299.08
11	2	59.5	6	1455		317.75
12	2	71.7	6	1102		552.74
13	3	84.7	6	1207	1433	426.1
14	3	58.6	6	1844	1152	643
15	3	74.5	6	1474	1453	121.1

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	3	71.1	18	1190	1719	738.525
2	2	51.2	18	1748		361.883
3	2	87.6	18	1189		434.996
4	2	98.6	18	1579		179.589
5	2	85	18	1927		449.382
6	3	77.3	18	1789	1874	111.945
7	2	50.9	18	1697		175.528
8	2	99.9	18	1130		541.082
9	1	96	18			702.135
10	1	77.8	18			677.858
11	1	55.4	18			846.831
12	1	64.1	18			601.654
13	1	79.3	18			32.377

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	68.5	18	1874		73.593
2	3	75.4	18	1187	1185	30.055
3	2	56.7	18	1162		120.662
4	2	69.3	18	1376		98.043
5	2	61.2	18	1279		495.384
6	3	59.8	18	1776	1729	3.685
7	1	85.7	18			242.056
8	2	72.5	18	1194		241.197
9	3	57.4	18	1296	1495	541.978
10	2	90	18	1101		40.109
11	3	52	18	1446	1735	236.101
12	1	79.9	18			138.642
13	2	68.4	18	1089		110.613
14	1	95.2	18			436.764
15	1	99.4	18			591.155
16	1	53.7	18			8.426
17	2	99.6	18	1084		54.437
18	2	63.8	18	1089		590.958
19	1	69.3	18			41.779

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	69	14	1885		912.05
2	1	88.1	14			725.82
3	2	80.7	14	1946		722.18
4	1	52.6	14			142.19
5	2	50.8	14	1428		630.57
6	1	98.8	14			125.35
7	2	94.1	14	1065		462.2
8	3	90.1	14	1200	1569	428.31
9	3	86.5	14	1335	1893	479.8
10	2	93.8	14	1010		122.8

Radar Type 6 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5491.0	1	16	5530.0	1
2	5493.7	1	17	5532.7	1
3	5496.4	1	18	5535.4	1
4	5499.1	1	19	5538.1	1
5	5501.8	1	20	5540.8	1
6	5504.4	1	21	5543.4	1
7	5507.1	1	22	5546.1	1
8	5509.8	1	23	5548.8	1
9	5512.5	1	24	5551.5	1
10	5515.2	1	25	5554.2	1
11	5517.9	1	26	5556.9	1
12	5520.6	1	27	5559.6	1
13	5523.3	1	28	5562.3	1
14	5526.0	1	29	5565.0	1
15	5528.6	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)
7	5538	21	2	5560	6
12	5503	36	3	5515	9
13	5559	39	6	5525	18
14	5509	42	8	5533	24
20	5494	60	21	5497	63
23	5516	69	23	5495	69
26	5544	78	27	5568	81
27	5556	81	31	5502	93
34	5498	102	32	5494	96
47	5568	141	37	5512	111
53	5512	159	46	5551	138
55	5500	165	53	5537	159
62	5522	186	63	5531	189
65	5511	195	74	5562	222
78	5523	234	76	5539	228
83	5550	249	79	5545	237
96	5555	288	93	5511	279

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5529	18	6	5500	18
8	5503	24	8	5534	24
10	5499	30	14	5566	42
16	5541	48	32	5570	96
20	5551	60	38	5535	114
34	5525	102	39	5545	117
37	5493	111	47	5537	141
41	5518	123	57	5562	171
45	5512	135	65	5519	195
50	5554	150	66	5527	198
61	5504	183	67	5505	201
81	5542	243	68	5531	204
82	5528	246	76	5544	228
83	5500	249	85	5496	255
94	5570	282	88	5556	264
--	--	--	89	5503	267
--	--	--	90	5529	270
--	--	--	93	5512	279
--	--	--	94	5563	282

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5563	12	5	5493	15
9	5513	27	12	5495	36
15	5515	45	19	5567	57
16	5524	48	42	5538	126
17	5535	51	44	5494	132
18	5550	54	45	5515	135
20	5491	60	46	5525	138
31	5516	93	57	5502	171
36	5530	108	59	5521	177
37	5504	111	64	5505	192
39	5555	117	75	5533	225
47	5548	141	87	5506	261
54	5541	162	89	5510	267
56	5569	168	90	5503	270
59	5543	177	92	5556	276
61	5536	183	98	5499	294
67	5564	201	--	--	--
70	5507	210	--	--	--
72	5493	216	--	--	--
76	5497	228	--	--	--
82	5490	246	--	--	--
90	5499	270	--	--	--
98	5522	294	--	--	--
100	5521	300	--	--	--

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5554	6	1	5546	3
7	5541	21	2	5515	6
12	5516	36	4	5549	12
18	5558	54	10	5514	30
19	5498	57	11	5551	33
20	5502	60	24	5508	72
35	5540	105	29	5513	87
46	5551	138	31	5542	93
48	5550	144	44	5570	132
61	5500	183	51	5554	153
63	5520	189	58	5567	174
66	5514	198	60	5500	180
67	5503	201	80	5547	240
72	5566	216	82	5495	246
77	5528	231	83	5521	249
85	5508	255	85	5548	255
--	--	--	88	5503	264
--	--	--	90	5532	270
--	--	--	91	5543	273

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5527	15	2	5513	6
9	5540	27	6	5566	18
10	5558	30	17	5531	51
11	5566	33	22	5516	66
23	5534	69	25	5537	75
24	5523	72	27	5501	81
31	5550	93	31	5523	93
38	5504	114	44	5538	132
39	5541	117	63	5507	189
48	5499	144	67	5522	201
49	5544	147	70	5492	210
54	5490	162	73	5491	219
55	5508	165	75	5546	225
58	5506	174	82	5524	246
65	5515	195	83	5494	249
67	5520	201	91	5544	273
69	5519	207	--	--	--
73	5543	219	--	--	--
76	5563	228	--	--	--
80	5491	240	--	--	--
87	5526	261	--	--	--
98	5528	294	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5525	30	5	5548	15
18	5560	54	6	5546	18
23	5501	69	7	5539	21
29	5543	87	9	5501	27
32	5496	96	23	5528	69
39	5529	117	24	5561	72
44	5505	132	25	5502	75
60	5516	180	26	5542	78
65	5570	195	27	5531	81
68	5550	204	38	5505	114
75	5547	225	40	5512	120
78	5568	234	47	5554	141
84	5546	252	51	5518	153
96	5504	288	58	5521	174
99	5506	297	63	5510	189
--	--	--	65	5506	195
--	--	--	68	5538	204
--	--	--	75	5559	225
--	--	--	83	5517	249
--	--	--	86	5495	258

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5536	12	4	5508	12
7	5496	21	11	5521	33
15	5549	45	25	5546	75
17	5517	51	28	5556	84
26	5505	78	49	5543	147
34	5516	102	53	5558	159
39	5502	117	56	5540	168
42	5532	126	58	5523	174
47	5542	141	60	5538	180
53	5550	159	61	5562	183
62	5568	186	67	5534	201
65	5548	195	78	5501	234
67	5537	201	92	5498	276
68	5512	204	99	5537	297
72	5561	216	--	--	--
74	5495	222	--	--	--
75	5543	225	--	--	--
89	5541	267	--	--	--

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5505	6	6	5495	18
6	5492	18	12	5564	36
7	5531	21	16	5516	48
10	5565	30	19	5559	57
11	5564	33	21	5529	63
13	5567	39	28	5504	84
18	5510	54	29	5521	87
20	5535	60	34	5493	102
21	5526	63	40	5505	120
23	5550	69	42	5554	126
24	5545	72	43	5492	129
47	5536	141	45	5517	135
50	5546	150	55	5533	165
51	5541	153	65	5497	195
52	5547	156	74	5560	222
58	5494	174	80	5513	240
59	5549	177	82	5543	246
67	5497	201	83	5547	249
71	5554	213	86	5535	258
72	5538	216	91	5549	273
73	5542	219	100	5540	300
74	5570	222	--	--	--
78	5513	234	--	--	--
80	5516	240	--	--	--
86	5524	258	--	--	--
95	5560	285	--	--	--
97	5548	291	--	--	--

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5564	9	19	5512	57
9	5492	27	22	5553	66
18	5500	54	26	5569	78
24	5490	72	29	5570	87
26	5536	78	34	5554	102
27	5542	81	38	5495	114
36	5547	108	44	5562	132
40	5507	120	48	5537	144
45	5568	135	51	5528	153
50	5537	150	53	5551	159
52	5520	156	54	5533	162
60	5494	180	61	5558	183
71	5503	213	79	5538	237
75	5558	225	82	5546	246
83	5539	249	92	5565	276
84	5516	252	--	--	--
92	5517	276	--	--	--
98	5519	294	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5507	12	1	5524	3
5	5518	15	6	5508	18
10	5560	30	8	5537	24
12	5514	36	9	5501	27
21	5504	63	20	5527	60
29	5519	87	26	5517	78
33	5540	99	32	5530	96
42	5501	126	37	5547	111
77	5537	231	50	5529	150
86	5557	258	53	5553	159
93	5516	279	56	5532	168
--	--	--	62	5494	186
--	--	--	71	5499	213
--	--	--	77	5526	231
--	--	--	90	5549	270
--	--	--	99	5505	297
--	--	--	100	5503	300

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5525	24	15	5518	45
11	5492	33	30	5491	90
17	5531	51	31	5520	93
19	5515	57	37	5560	111
25	5568	75	38	5568	114
27	5502	81	42	5557	126
31	5493	93	56	5537	168
34	5505	102	60	5551	180
35	5519	105	64	5503	192
39	5556	117	76	5502	228
42	5562	126	82	5562	246
48	5509	144	92	5541	276
52	5528	156	97	5497	291
55	5547	165	99	5496	297
78	5507	234	--	--	--
85	5494	255	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5543	18	4	5564	12
17	5561	51	8	5520	24
22	5531	66	15	5540	45
24	5539	72	20	5535	60
32	5553	96	49	5517	147
38	5518	114	54	5519	162
45	5511	135	59	5514	177
54	5541	162	64	5549	192
82	5538	246	69	5522	207
83	5529	249	70	5534	210
94	5501	282	73	5562	219
97	5566	291	76	5496	228
--	--	--	96	5524	288
--	--	--	100	5563	300

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5500	6	6	5531	18
5	5558	15	18	5560	54
6	5546	18	35	5539	105
8	5537	24	36	5512	108
17	5570	51	37	5563	111
20	5532	60	38	5546	114
42	5505	126	40	5548	120
43	5531	129	43	5564	129
44	5556	132	48	5499	144
70	5536	210	50	5506	150
71	5566	213	54	5520	162
78	5508	234	64	5517	192
81	5568	243	80	5518	240
84	5541	252	95	5521	285
93	5521	279	--	--	--

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5532	6	11	5536	33
16	5502	48	16	5545	48
20	5519	60	21	5546	63
31	5530	93	23	5527	69
36	5534	108	26	5505	78
66	5505	198	28	5566	84
72	5510	216	29	5524	87
81	5494	243	41	5539	123
86	5506	258	46	5506	138
93	5498	279	53	5528	159
94	5563	282	56	5491	168
97	5511	291	57	5567	171
--	--	--	60	5509	180
--	--	--	61	5549	183
--	--	--	62	5497	186
--	--	--	63	5548	189
--	--	--	66	5494	198
--	--	--	68	5498	204
--	--	--	71	5538	213
--	--	--	82	5525	246
--	--	--	84	5526	252
--	--	--	87	5504	261
--	--	--	88	5496	264
--	--	--	89	5557	267
--	--	--	92	5570	276
--	--	--	97	5542	291
--	--	--	98	5516	294

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
5	5537	15	22	5490	66
22	5526	66	25	5492	75
27	5565	81	26	5493	78
34	5510	102	33	5503	99
39	5521	117	34	5510	102
52	5560	156	49	5568	147
53	5540	159	51	5551	153
59	5524	177	55	5522	165
60	5530	180	64	5563	192
77	5509	231	82	5507	246
89	5562	267	83	5564	249
99	5506	297	92	5548	276
--	--	--	94	5528	282
--	--	--	99	5539	297

Product	AX1800 Wi-Fi 6 Range Extender	Temperature	27°C
Test Engineer	Kevin Ker	Relative Humidity	65%
Test Site	SR2	Test Date	2020/10/26
Test Item	Radar Statistical Performance Check (802.11ax-HE20 – 5500MHz) (Mesh Mode)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	1	658	81	1
2	5491.0	1	898	59	1
3	5491.6	1	778	68	1
4	5492.2	1	538	98	1
5	5492.8	1	758	70	1
6	5493.4	1	558	95	1
7	5494.0	1	678	78	1
8	5494.6	1	718	74	1
9	5495.2	1	638	83	1
10	5495.8	1	818	65	1
11	5496.4	1	698	76	1
12	5497.0	1	598	89	1
13	5497.6	1	3066	18	1
14	5498.2	1	578	92	1
15	5498.8	1	918	58	1
16	5499.4	1	1106	48	1
17	5500.0	1	1451	37	1
18	5500.7	1	1843	29	1
19	5501.4	1	1780	30	1
20	5502.1	1	2811	19	1
21	5502.8	1	1324	40	1
22	5503.5	1	1053	51	0
23	5504.2	1	2841	19	1
24	5504.9	1	2271	24	1
25	5505.6	1	2248	24	1
26	5506.3	1	2291	24	1

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
27	5507.0	1	1330	40	1
28	5507.7	1	1957	27	0
29	5508.4	1	2580	21	1
30	5509.6	1	1322	40	1
Detection Percentage (%)					93.3%

Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	2.3	207	24	1
2	5491.0	3.9	162	26	1
3	5491.6	2.3	186	28	1
4	5492.2	1.4	177	28	1
5	5492.8	1.9	168	29	1
6	5493.4	2.7	229	26	1
7	5494.0	2.8	225	28	1
8	5494.6	4.4	187	25	1
9	5495.2	1.6	223	25	1
10	5495.8	2.2	214	25	1
11	5496.4	1.0	181	26	1
12	5497.0	1.7	185	24	1
13	5497.6	3.0	207	24	1
14	5498.2	3.6	214	28	1
15	5498.8	1.7	178	25	1
16	5499.4	3.9	160	27	1
17	5500.0	2.3	160	26	1
18	5500.7	2.5	175	26	0
19	5501.4	1.9	227	27	1
20	5502.1	2.0	175	26	1
21	5502.8	4.8	191	24	1
22	5503.5	2.1	161	25	1
23	5504.2	1.7	221	24	1
24	5504.9	1.2	226	29	1
25	5505.6	4.9	228	23	0
26	5506.3	4.5	184	25	0
27	5507.0	1.5	186	23	0
28	5507.7	4.9	158	27	1
29	5508.4	2.3	152	25	0
30	5509.6	3.7	175	24	1
Detection Percentage (%)					83.3%

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	8.5	216	18	1
2	5491.0	10.0	430	16	0
3	5491.6	9.4	221	18	1
4	5492.2	9.2	277	17	1
5	5492.8	6.3	324	17	1
6	5493.4	8.9	337	16	1
7	5494.0	8.2	463	16	1
8	5494.6	6.1	349	17	1
9	5495.2	8.1	282	18	1
10	5495.8	8.9	373	16	1
11	5496.4	9.4	248	17	1
12	5497.0	8.3	283	18	1
13	5497.6	9.9	287	18	0
14	5498.2	8.5	403	16	1
15	5498.8	6.3	313	17	1
16	5499.4	8.5	458	16	1
17	5500.0	7.4	394	18	1
18	5500.7	8.8	365	18	1
19	5501.4	6.4	392	17	1
20	5502.1	6.8	208	16	1
21	5502.8	8.3	213	17	0
22	5503.5	9.5	438	18	1
23	5504.2	7.4	267	17	1
24	5504.9	9.9	312	17	1
25	5505.6	9.4	203	16	1
26	5506.3	8.8	451	16	1
27	5507.0	8.5	385	18	1
28	5507.7	7.9	334	17	1
29	5508.4	7.5	365	17	1
30	5509.6	8.9	237	17	1
Detection Percentage (%)					90%

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5490.4	13.7	473	16	1
2	5491.0	15.6	336	16	0
3	5491.6	16.8	237	14	1
4	5492.2	11.8	434	16	1
5	5492.8	19.9	279	12	0
6	5493.4	18.3	432	14	0
7	5494.0	16.6	317	14	0
8	5494.6	19.9	356	14	1
9	5495.2	19.0	443	16	1
10	5495.8	17.9	411	14	1
11	5496.4	18.8	275	13	1
12	5497.0	16.9	255	14	1
13	5497.6	11.4	361	14	1
14	5498.2	19.7	436	13	1
15	5498.8	11.9	398	12	1
16	5499.4	17.0	380	12	1
17	5500.0	13.5	452	13	1
18	5500.7	15.2	412	15	1
19	5501.4	19.4	367	15	1
20	5502.1	12.8	411	12	1
21	5502.8	15.4	396	13	0
22	5503.5	13.4	486	15	1
23	5504.2	11.8	395	14	1
24	5504.9	18.3	277	12	1
25	5505.6	13.1	492	13	0
26	5506.3	13.4	340	14	1
27	5507.0	11.3	395	15	1
28	5507.7	13.7	391	15	0
29	5508.4	17.9	422	14	1
30	5509.6	18.0	203	16	1
Detection Percentage (%)					76.7%

Note: In addition an average minimum percentage of successful detection across all four Short pulse radar test waveforms is as follows: $\frac{P_d1+P_d2+P_d3+P_d4}{4}$ = (93.3%+83.3%+90%+76.7%)/4 = 85.8% (>80%)

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5500.0	0	16	5498.4	1
2	5500.0	1	17	5496.0	1
3	5500.0	1	18	5496.4	1
4	5500.0	1	19	5494.8	1
5	5500.0	1	20	5494.4	1
6	5500.0	1	21	5505.2	1
7	5500.0	1	22	5503.2	1
8	5500.0	0	23	5507.2	0
9	5500.0	1	24	5504.8	0
10	5500.0	1	25	5504.8	1
11	5495.2	1	26	5502.8	1
12	5493.2	1	27	5504.0	1
13	5494.0	1	28	5506.8	1
14	5493.6	1	29	5504.4	1
15	5493.6	0	30	5505.6	1
Detection Percentage (%)					83.3%

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	2	68.5	17	1333		49.047
2	1	73.2	17			437.833
3	2	97.5	17	1680		99.567
4	1	74.4	17			8.92
5	2	58.2	17	1580		352.653
6	2	83.6	17	1384		103.737
7	2	53.4	17	1473		417.92
8	2	54.3	17	1538		307.923
9	3	89.9	17	1325	1691	248.537
10	2	69.5	17	1068		114.83
11	3	90	17	1401	1136	457.983
12	2	89	17	1185		315.857
13	1	54.1	17			304.05
14	2	82.6	17	1398		487.743
15	2	98.7	17	1258		579.827
16	3	69.3	17	1537	1913	552.3
17	1	76.6	17			377.033
18	2	64.3	17	1826		515.467

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	63.9	11	1888		185.112
2	2	94.8	11	1601		916.113
3	3	92.9	11	1846	1876	590.276
4	3	67.5	11	1865	1638	691.209
5	2	60.6	11	1501		385.602
6	2	85.9	11	1174		912.515
7	2	69.8	11	1162		851.898
8	2	58.8	11	1664		520.812
9	3	89.9	11	1605	1333	700.525
10	3	84.6	11	1573	1092	265.968
11	2	90.1	11	1499		670.801
12	2	97.5	11	1883		678.854
13	2	99.8	11	1232		315.377

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	86.2	14			201.152
2	2	85.1	14	1516		545.251
3	1	57	14			940.592
4	2	76.1	14	1144		788.473
5	2	79.5	14	1606		240.094
6	2	78.7	14	1467		676.995
7	2	83.1	14	1869		529.445
8	2	59.8	14	1095		716.716
9	3	50.8	14	1963	1923	452.967
10	2	90.9	14	1920		331.318
11	2	64.8	14	1267		992.809

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	1	52.7	9			439.242
2	2	84.5	9	1146		640.758
3	1	56.3	9			283.815
4	3	71.8	9	1776	1867	201.993
5	3	62.4	9	1690	1885	16.001
6	2	87.5	9	1143		19.928
7	1	74.5	9			632.976
8	2	89.1	9	1026		400.594
9	3	73.5	9	1178	1789	134.571
10	2	82.5	9	1309		600.819
11	1	52.7	9			111.006
12	2	76.3	9	1641		18.214
13	2	89.4	9	1547		95.592
14	1	68.9	9			280.099
15	2	59	9	1287		402.247
16	1	70.6	9			384.165
17	2	89.2	9	1525		122.982

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	90.8	20	1267		661.486
2	3	53.7	20	1872	1171	296.85
3	3	77.2	20	2000	1740	668.57
4	3	63	20	1459	1047	706.3
5	2	99.6	20	1749		566.95
6	3	84	20	1364	1046	539.22
7	3	51.8	20	1298	1030	423.03
8	1	70.5	20			145.6
9	2	74	20	1842		2.58
10	3	81.4	20	1541	1849	127.52
11	2	72	20	1929		496.02
12	1	66.5	20			357.94
13	1	65.4	20			82.7
14	3	51.5	20	1722	1263	160.7
15	1	68.2	20			348.5

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	3	76.1	19	1596	1494	50.852
2	3	87.2	19	1662	1681	564.067
3	3	74.5	19	1073	1153	617.614
4	2	61.5	19	1926		523.961
5	2	76.9	19	1817		3.639
6	2	96.2	19	1753		798.846
7	2	86.2	19	1873		406.823
8	2	92.2	19	1164		27.97
9	2	90.9	19	1720		842.107
10	3	99.3	19	1471	1459	491.714
11	2	83	19	1220		555.281
12	1	56.3	19			534.709
13	3	99.1	19	1093	1840	603.586
14	2	84.6	19	1377		369.343

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	1	65.1	17			334.176
2	2	81.4	17	1648		206.481
3	2	57.9	17	1741		305.275
4	2	86.9	17	1269		55.783
5	3	64.4	17	1985	1110	19.211
6	2	88.8	17	1357		339.278
7	2	50.3	17	1288		499.026
8	2	73.7	17	1190		304.294
9	3	94.4	17	1488	1746	385.291
10	2	78.5	17	1335		695.439
11	2	56	17	1365		510.716
12	1	70.6	17			673.594
13	1	91.3	17			394.592
14	1	81.4	17			643.709
15	1	74.2	17			225.547
16	2	74.4	17	1428		272.765
17	3	94.6	17	1622	1555	214.882

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	1	58.5	10			822.958
2	2	61.8	10	1555		264.583
3	2	72.8	10	1294		603.616
4	1	73.9	10			377.219
5	1	50.5	10			894.692
6	2	93.9	10	1003		68.665
7	3	70.5	10	1152	1721	304.208
8	3	52.2	10	1662	1450	11.222
9	2	55.2	10	1829		671.185
10	2	76.4	10	1555		885.408
11	1	85.7	10			18.901
12	2	81.1	10	1682		286.354
13	2	96.1	10	1517		37.677

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	68.6	16	1762		674.466
2	2	95.3	16	1908		1105.017
3	2	57.4	16	1327		909.833
4	3	51	16	1003	1112	933.22
5	2	93.6	16	1264		155.877
6	1	90.7	16			821.553
7	2	63.1	16	1954		1019.6
8	3	83.2	16	1063	1763	774.967
9	2	64.5	16	1097		282.833

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	52.4	16	1163		385.916
2	1	72.9	16			120.471
3	2	63	16	1836		63.834
4	2	68.6	16	1289		13.661
5	3	53.6	16	1830	1964	477.309
6	3	61.6	16	1617	1985	838.906
7	1	62	16			835.403
8	1	91.6	16			84.95
9	3	58.5	16	1303	1680	237.857
10	2	73.1	16	1265		840.704
11	1	98.7	16			14.841
12	3	55.5	16	1482	1548	310.769
13	3	59	16	1369	1519	147.286
14	3	91.4	16	1415	1741	670.543

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	97.1	12	1770		342.861
2	3	52	12	1337	1894	106.09
3	2	57.7	12	1883		239.705
4	3	85.1	12	1848	1364	380.973
5	2	51.8	12	1431		476.581
6	2	97.7	12	1456		459.308
7	1	53.2	12			375.746
8	2	82.2	12	1294		364.104
9	3	56.3	12	1945	1454	510.121
10	2	89.9	12	1314		412.249
11	3	76.6	12	1040	1298	617.266
12	2	82.2	12	1207		474.954
13	2	78.4	12	1719		461.832
14	2	56.1	12	1782		425.999
15	2	91	12	1872		45.587
16	2	90.8	12	1419		579.065
17	3	76.9	12	1655	1770	77.882

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	71.3	7	1833		939.283
2	2	81.9	7	1103		760.111
3	2	96.9	7	1160		816.972
4	2	77.2	7	1441		614.693
5	1	51	7			273.654
6	1	80.6	7			686.315
7	2	87.3	7	1343		714.475
8	3	82.1	7	1960	1271	359.516
9	1	70.1	7			34.507
10	3	59.7	7	1351	1316	213.318
11	1	97	7			360.509

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	3	56.3	9	1037	1728	254.484
2	2	78	9	1609		348.636
3	2	61.3	9	1698		248.772
4	3	95.8	9	1749	1304	535.823
5	3	60.4	9	1990	1221	275.634
6	2	71.4	9	1551		218.705
7	2	95.3	9	1937		334.036
8	2	64	9	1498		418.337
9	1	60.6	9			553.568
10	1	88.2	9			443.749
11	2	81.7	9	1911		290.061
12	3	52.6	9	1366	1182	107.782
13	2	88	9	1873		500.593
14	3	93.5	9	1338	1727	19.104
15	3	80.8	9	1626	1921	73.955
16	1	85.4	9			498.726
17	2	70.8	9	1670		166.237
18	3	74.3	9	1910	1088	448.658
19	2	93.2	9	1160		377.179