



DFS MEASUREMENT REPORT

FCC 15.407 WLAN 802.11a/n/ac

FCC ID: TV7CPGI52XL
Applicant: Mikrotiks SIA
Product: CAP XL ac
Model No.: RBcAPGi-5acD2nD-XL-US
Brand Name: MikroTik
FCC Classification: Unlicensed National Information Infrastructure (NII)
FCC Rule Part(s): Part 15 Subpart E - 15.407 Section (h)(2)
KDB 905462 D02v02, KDB 905462 D04v01
Test Date: September 05 ~ 08, 2021

Reviewed By:

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Approved By:

Robin Wu

Robin Wu



The test results relate only to the samples tested.

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

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

Revision History

Report No.	Version	Description	Issue Date	Note
2108RSU082-U2	Rev. 01	Initial Report	09-22-2021	Valid

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1. GENERAL INFORMATION

1.1. Applicant

Mikrotikls SIA

Brivibas gatve 214i, Riga, LV-1039, Latvia

1.2. Manufacturer

Mikrotikls SIA


Brivibas gatve 214i, Riga, LV-1039, Latvia

1.3. Testing Facility

<input checked="checked" type="checkbox"/>	Test Site – MRT Suzhou Laboratory
Laboratory Location (Suzhou - Wuzhong)	
D8 Building, No.2 Tian’edang Rd., Wuzhong Economic Development Zone, Suzhou, China	
Laboratory Location (Suzhou - SIP)	
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Laboratory Accreditations	
A2LA: 3628.01 CNAS: L10551	
FCC: CN1166 ISED: CN0001	
VCCI: <input type="checkbox"/> R-20025 <input type="checkbox"/> G-20034 <input type="checkbox"/> C-20020 <input type="checkbox"/> T-20020	
<input type="checkbox"/> R-20141 <input type="checkbox"/> G-20134 <input type="checkbox"/> C-20103 <input type="checkbox"/> T-20104	
<input type="checkbox"/>	Test Site – MRT Shenzhen Laboratory
Laboratory Location (Shenzhen)	
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Laboratory Accreditations	
A2LA: 3628.02 CNAS: L10551	
FCC: CN1284 ISED: CN0105	
<input type="checkbox"/>	Test Site – MRT Taiwan Laboratory
Laboratory Location (Taiwan)	
No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
Laboratory Accreditations	
TAF: L3261-190725	
FCC: 291082, TW3261 ISED: TW3261	

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	cAP XL ac
Model No.	RBcAPGi-5acD2nD-XL-US
Serial No.	E4F30DADDB70/052
Hardware Version	r4
Software Version	RouterOS 6.48.1
Wi-Fi Specification	802.11a/b/g/n/ac
Antenna Delivery	2*TX + 2*RX
Power Supply	AC/DC Adapter
Operating Environment	Indoor Use
Accessories	
AC/DC Adapter	Model No.: SAW30-240-1200G INPUT: 100-240V ~ 50/60Hz, 0.8A OUTPUT: 24.0V  1.2A, 28.8W
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

2.2. Radio Specification under Test

Frequency Range	For 802.11a/n-HT20/ac-VHT20: 5260~5320MHz, 5500~5720MHz For 802.11n-HT40/ac-VHT40: 5270~5310MHz, 5510~5710MHz For 802.11ac-VHT80: 5290MHz, 5530MHz, 5610MHz, 5690MHz
Modulation	802.11a/n/ac: OFDM
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Power-on cycle	Requires 45.3 seconds to complete its power-on cycle
Uniform Spreading (For DFS Frequency Band)	For the 5250-5350MHz, 5470-5725 MHz bands, the Master device provides, on aggregate, uniform loading of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.
Antenna Information	Refer to section 2.4

Note: For other features of this EUT, test report will be issued separately.

2.3. Working Frequencies for this Report

802.11a/n-HT20/ac-VHT20

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

802.11n-HT40/ac-VHT40

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

802.11ac-VHT80

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

2.4. Description of Available Antennas

Antenna Type	Frequency Band (GHz)	T _x Paths	Max Antenna Gain (dBi)	Directional Gain (dBi)	
				For Power	For PSD
PCB Patch Antenna	5	2	5.5	5.5	8.51

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

For CDD transmissions, directional gain is calculated as follows, $N_{ANT} = 2$, $N_{SS} = 1$.

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

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

$$\text{Array Gain} = 10 \log (N_{ANT} / N_{SS}) \text{ dB} = 3.01;$$
- For power measurements on IEEE 802.11 devices,

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

2.5. Test Channel

Test Mode	Test Channel	Test Frequency
802.11ac-VHT20	100	5500 MHz
802.11ac-VHT40	102	5510 MHz
802.11ac-VHT80	106	5530 MHz

2.6. Test Mode

Test Mode	Make the EUT communicate with client device at DFS channel
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2.7. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

3. DFS DETECTION THRESHOLDS AND RADAR TEST WAVEFORMS

3.1. Applicability

The following table from FCC KDB 905462 D02 NII 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 NII DFS Compliance Procedures New Rules v02 the following are the requirements for Master Devices:

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

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

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

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

Table 3-3: DFS Response Requirements

3.3. DFS Detection Threshold Values

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

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP \geq 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm

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	$\text{Roundup} \left\{ \begin{array}{l} \left(\frac{1}{360} \right) \cdot \\ \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \end{array} \right\}$	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: 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 NII DFS Compliance Procedures New Rules v02 describes a radiated test setup and a conducted test setup. The conducted test setup was used for this testing. Figure 3-1 shows the typical test setup.

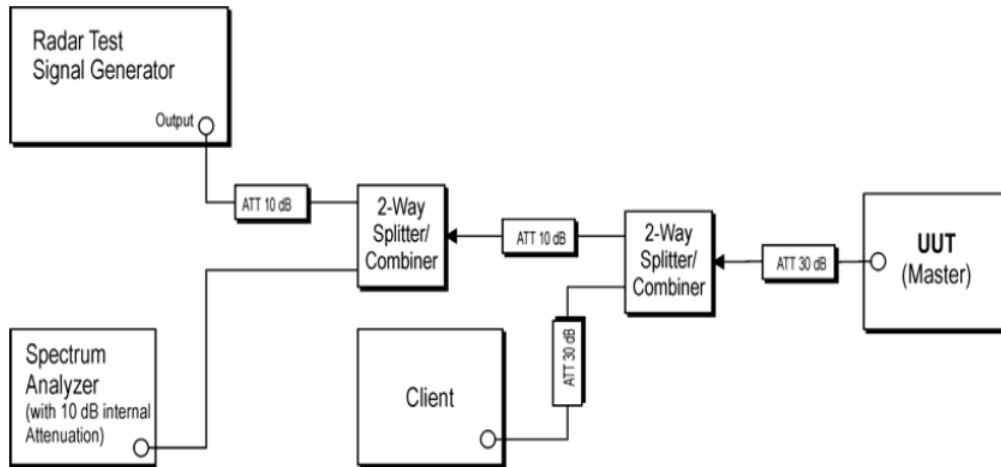


Figure 3-1: Conducted Test Setup where UUT is a Master and Radar Test Waveforms are injected into the Masters

4. TEST EQUIPMENT CALIBRATION DATE

Dynamic Frequency Selection (WZ-SR4)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Signal Analyzer	R&S	FSV40	MRTSUE06218	1 year	2022/04/13
Vector Signal Generator	Agilent	E4438C	MRTSUE06026	1 year	2021/10/22
Vector Signal Generator	R&S	SMBV100A	MRTSUE06279	1 year	2022/04/13
MXG Vector Signal Generator	KEYSIGHT	N5182B	MRTSUE06451	1 year	2022/06/24
Thermal Hygrometer	testo	608-H1	MRTSUE06222	1 year	2021/10/25

Software	Version	Manufacturer	Function
Pulse Building	N/A	Agilent	Radar Signal Generation Software
R&S Pulse Sequencer DFS	V 1.4	R&S	DFS Test Software
DFS Tool	V 6.9.2	Agilent	DFS Test Software
N7606C Signal Studio	V2.0.0.0	Keysight	DFS Test Software

5. TEST RESULT

5.1. Summary

Parameter	Test Result	Reference
UNII Detection Bandwidth Measurement	Pass	Section 5.3
Initial Channel Availability Check Time	Pass	Section 5.4
Radar Burst at the Beginning of the Channel Availability Check Time	Pass	Section 5.5
Radar Burst at the End of the Channel Availability Check Time	Pass	Section 5.6
In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time	Pass	Section 5.7
Non-Occupancy Period	Pass	Section 5.7
Statistical Performance Check	Pass	Section 5.8

Note 1: Item "Statistical Performance Check" was tested by radiated test method and any other items were tested by conducted test method.

Note 2: We used the worst-case level -64dBm as DFS detection thresholds for all DFS testing.

5.2. Radar Waveform Calibration

5.2.1. Calibration Setup

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

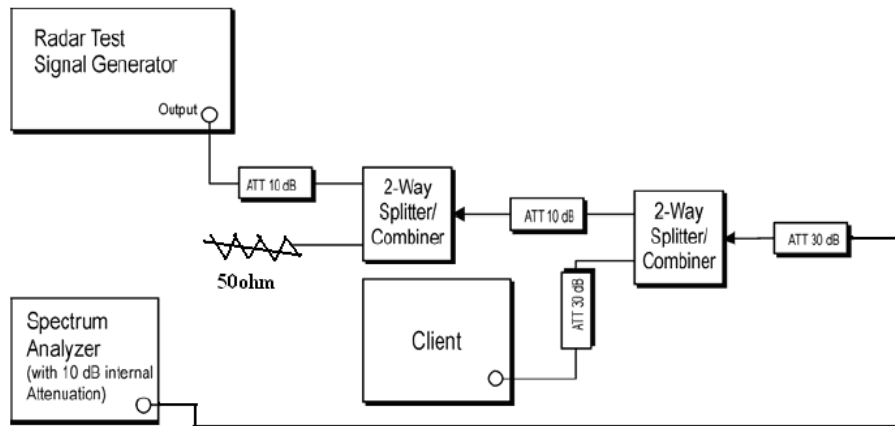


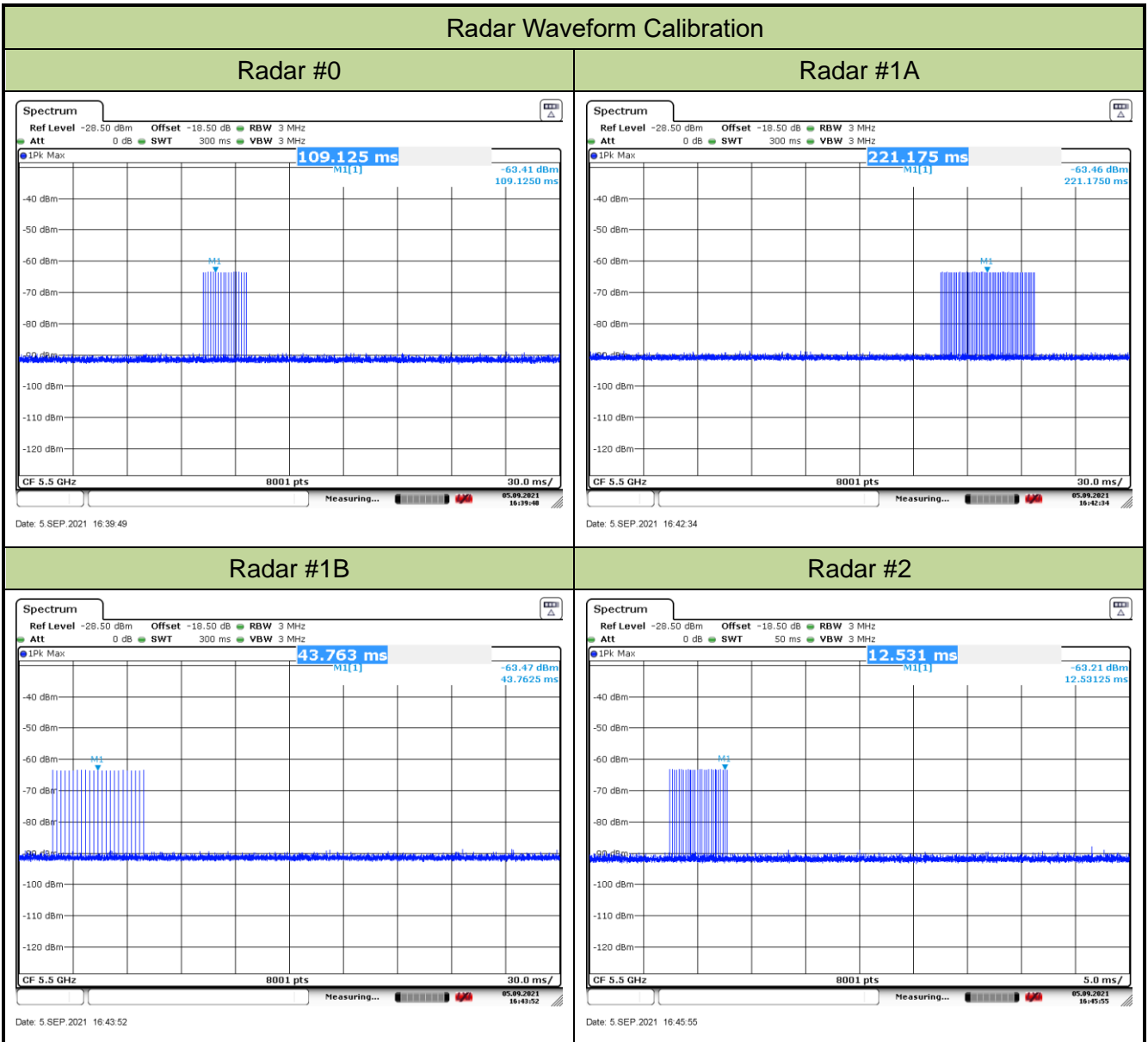
Figure 3-2: Conducted Test Setup

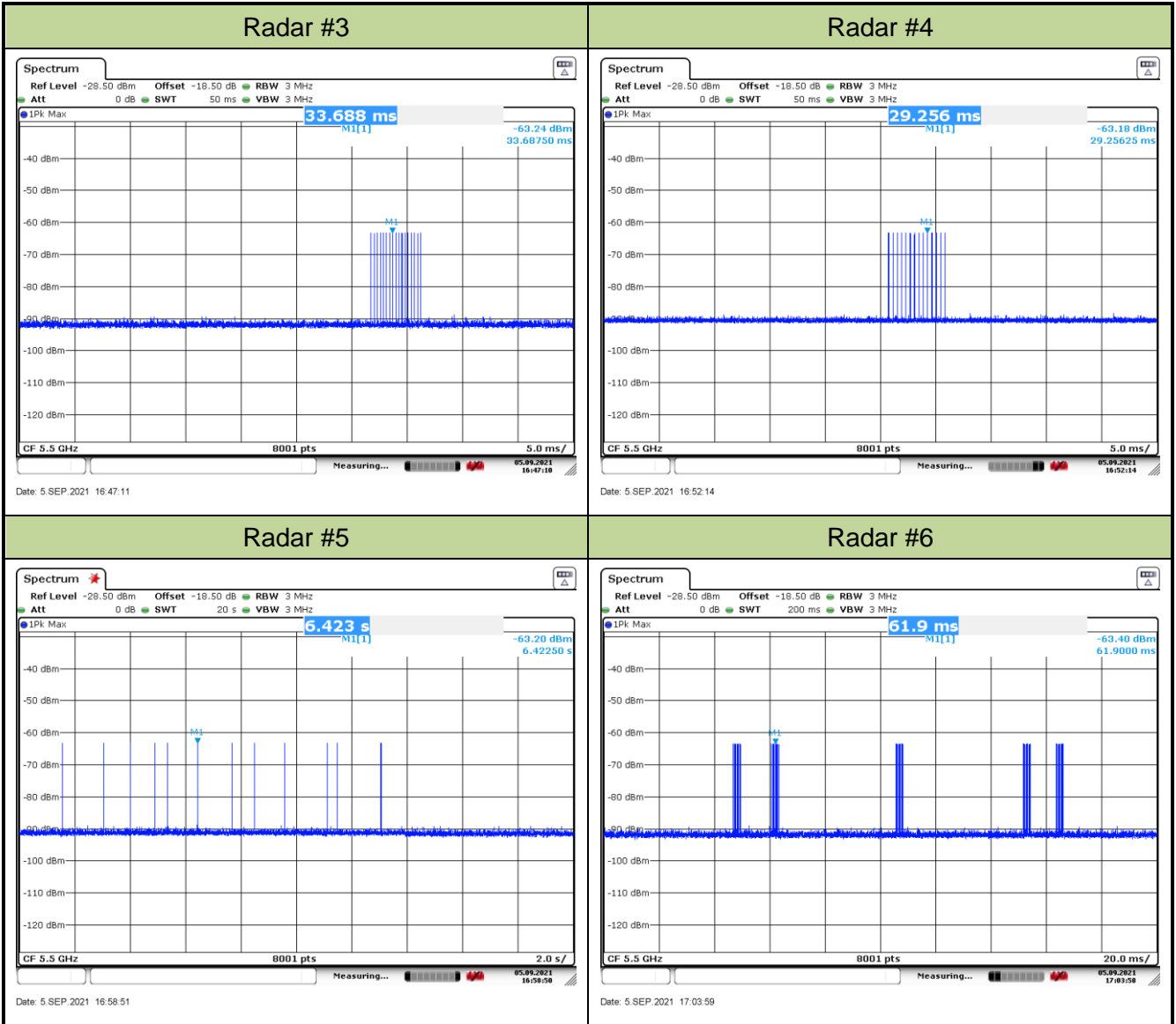
5.2.2. Calibration Procedure

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

5.2.3. Calibration Result

Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/05
Test Item	Radar Waveform Calibration		

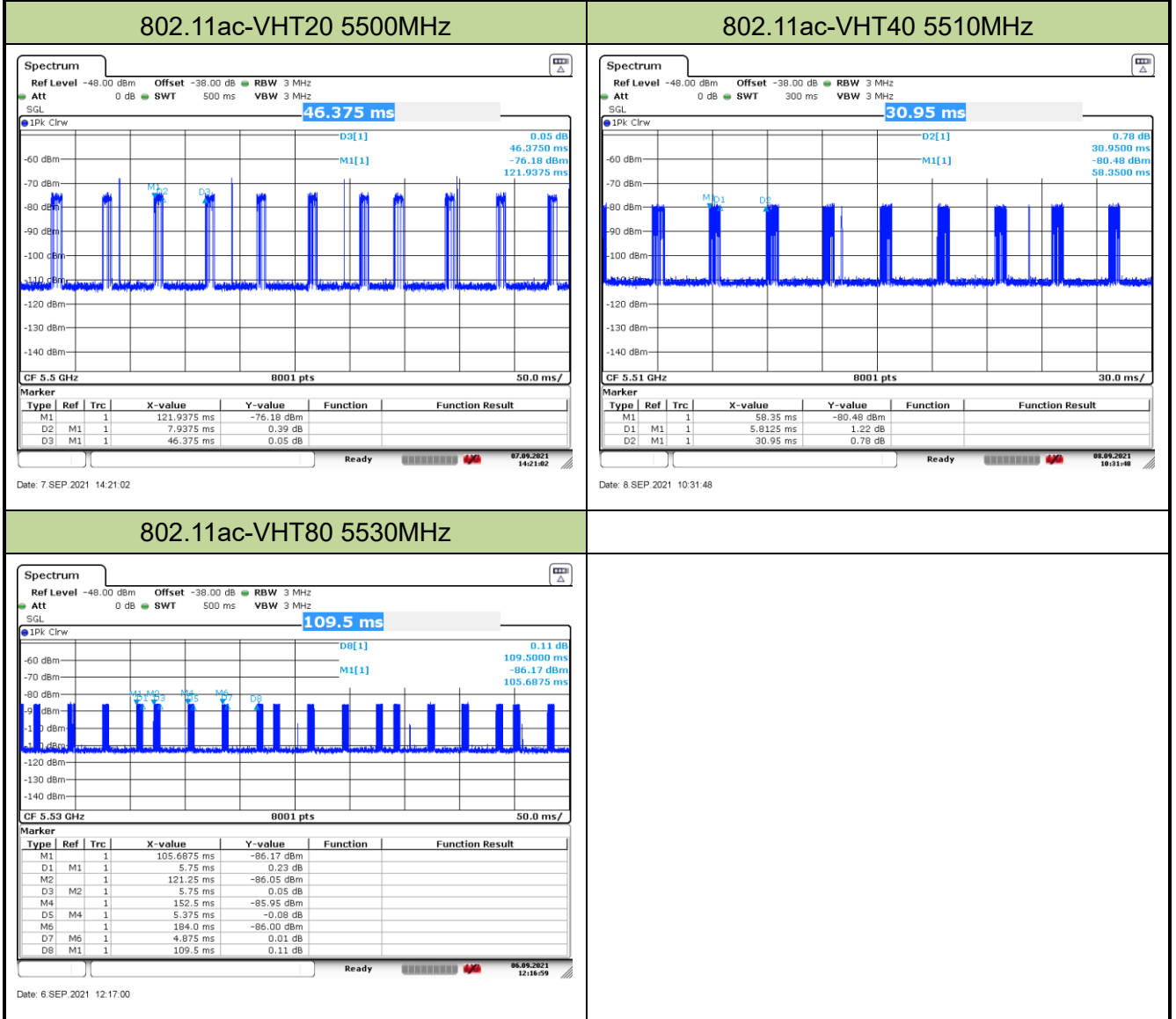




5.2.4. Channel Loading Test Result

Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/06~2021/09/08
Test Item	Channel Loading		

Channel Loading Plot



Test Mode	Test Frequency	Packet ratio	Requirement ratio	Test Result
802.11ac-VHT20	5500 MHz	17.12%	≥ 17%	Pass
802.11ac-VHT40	5510 MHz	18.78%	≥ 17%	Pass
802.11ac-VHT80	5530 MHz	19.86%	≥ 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. NII Detection Bandwidth Measurement

5.3.1. Test Limit

Minimum 100% of the NII 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 F_H) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies above F_H 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 F_L) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies below F_L is not required to demonstrate compliance.
7. The U-NII Detection Bandwidth is calculated as follows: $\text{U-NII Detection Bandwidth} = F_H - F_L$
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	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/08
Test Item	Detection Bandwidth (802.11ac-VHT20 mode - 5500MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490	0	0	0	0	0	0	0	0	0	0	0
5491 F _L	1	1	1	1	1	1	1	1	1	1	100
5492	1	1	1	1	1	1	1	1	1	1	100
5493	1	1	1	1	1	1	1	1	1	1	100
5494	1	1	1	1	1	1	1	1	1	1	100
5495	1	1	1	1	1	1	1	1	1	1	100
5500	1	1	1	1	1	1	1	1	1	1	100
5505	1	1	1	1	1	1	1	1	1	1	100
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 F _H	1	1	1	1	1	1	1	1	1	1	100
5510	0	0	0	0	0	0	0	0	0	0	0

Note 1: All NII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5500MHz. The 99% channel bandwidth is 17.60MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = $F_H - F_L = 5509\text{MHz} - 5491\text{MHz} = 18\text{MHz}$.

Note 3: NII Detection Bandwidth Min. Limit (MHz): $17.60\text{MHz} \times 100\% = 17.60\text{MHz}$.

Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/08
Test Item	Detection Bandwidth (802.11ac-VHT40 mode - 5510MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490	0	0	0	0	0	0	0	0	0	0	0
5491 F _L	1	1	1	1	1	1	1	1	1	1	1
5492	1	1	1	1	1	1	1	1	1	1	1
5493	1	1	1	1	1	1	1	1	1	1	1
5494	1	1	1	1	1	1	1	1	1	1	1
5495	1	1	1	1	1	1	1	1	1	1	1
5500	1	1	1	1	1	1	1	1	1	1	1
5505	1	1	1	1	1	1	1	1	1	1	1
5510	1	1	1	1	1	1	1	1	1	1	1
5515	1	1	1	1	1	1	1	1	1	1	1
5520	1	1	1	1	1	1	1	1	1	1	1
5525	1	1	1	1	1	1	1	1	1	1	1
5526	1	1	1	1	1	1	1	1	1	1	1
5527	1	1	1	1	1	1	1	1	1	1	1
5528	1	1	1	1	1	1	1	1	1	1	1
5529 F _H	1	1	1	1	1	1	1	1	1	1	1
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 36.01MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = $F_H - F_L = 5529\text{MHz} - 5491\text{MHz} = 38\text{MHz}$.

Note 3: NII Detection Bandwidth Min. Limit (MHz): $36.01\text{MHz} \times 100\% = 36.01\text{MHz}$.

Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/08
Test Item	Detection Bandwidth (802.11ac-VHT80 mode - 5530MHz)		

Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490	0	0	0	0	0	0	0	0	0	0	0
5492 F _L	1	1	1	1	1	1	1	1	1	1	1
5493	1	1	1	1	1	1	1	1	1	1	1
5494	1	1	1	1	1	1	1	1	1	1	1
5495	1	1	1	1	1	1	1	1	1	1	1
5500	1	1	1	1	1	1	1	1	1	1	1
5505	1	1	1	1	1	1	1	1	1	1	1
5510	1	1	1	1	1	1	1	1	1	1	1
5515	1	1	1	1	1	1	1	1	1	1	1
5520	1	1	1	1	1	1	1	1	1	1	1
5525	1	1	1	1	1	1	1	1	1	1	1
5530	1	1	1	1	1	1	1	1	1	1	1
5535	1	1	1	1	1	1	1	1	1	1	1
5540	1	1	1	1	1	1	1	1	1	1	1
5545	1	1	1	1	1	1	1	1	1	1	1
5550	1	1	1	1	1	1	1	1	1	1	1
5555	1	1	1	1	1	1	1	1	1	1	1
5560	1	1	1	1	1	1	1	1	1	1	1
5565	1	1	1	1	1	1	1	1	1	1	1
5566	1	1	1	1	1	1	1	1	1	1	1
5567	1	1	1	1	1	1	1	1	1	1	1
5568 F _H	1	1	1	1	1	1	1	1	1	1	1
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 75.73MHz. (See the 99% BW section of the RF report for further measurement details).

Note 2: Detection Bandwidth = $F_H - F_L = 5568\text{MHz} - 5492\text{MHz} = 76\text{MHz}$.

Note 3: NII Detection Bandwidth Min. Limit (MHz): $75.73\text{MHz} \times 100\% = 75.73\text{MHz}$.

5.4. Initial Channel Availability Check Time Measurement

5.4.1. Test Limit

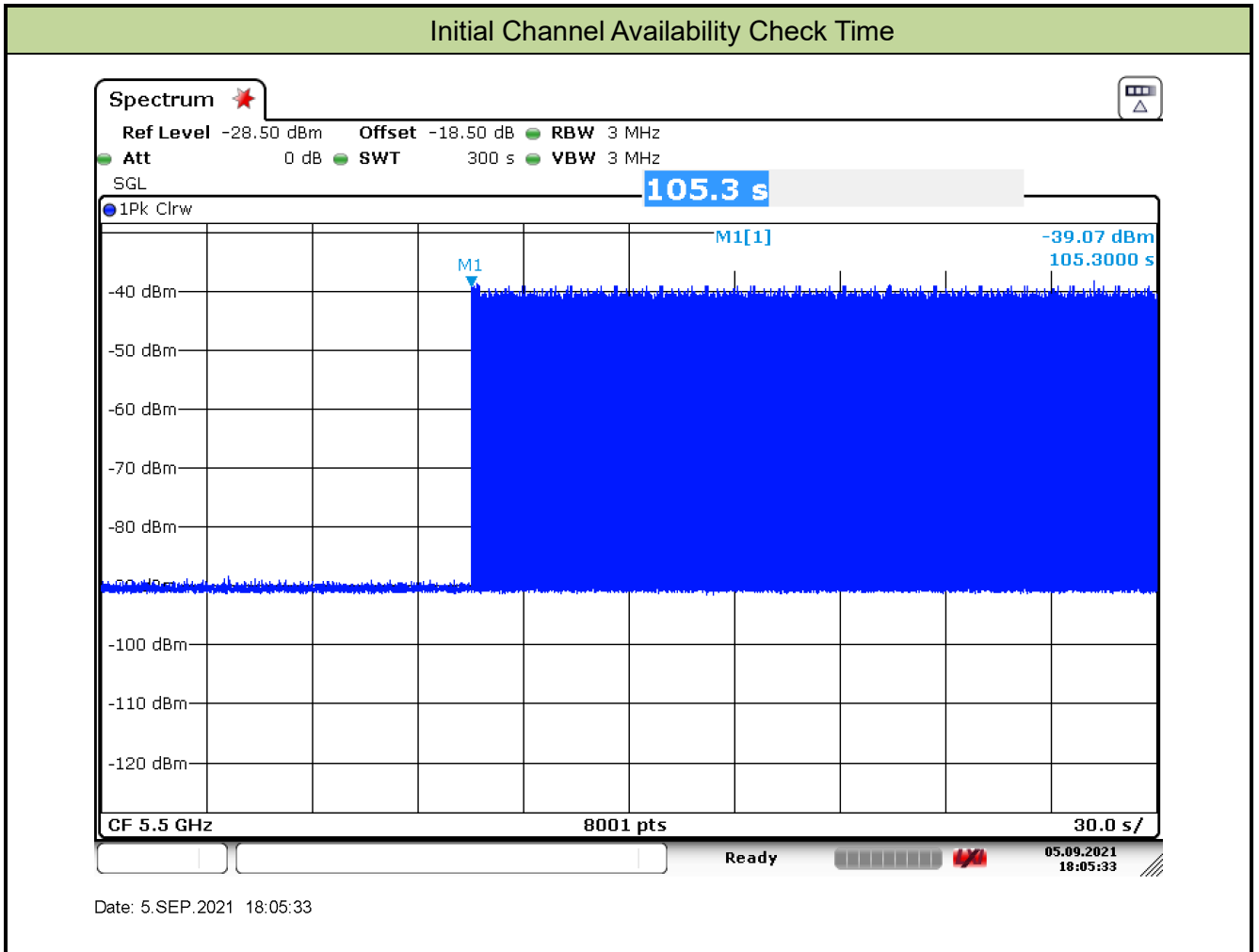
The EUT shall perform a Channel Availability Check to ensure that there is no radar operating on the channel. After power-up sequence, receive at least 1 minute on the intended operating frequency.

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 minutes 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	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/05
Test Item	Initial Channel Availability Check Time (802.11ac-VHT20 mode - 5500MHz)		



Note: The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (45.3sec). Initial beacons/data transmissions are indicated by marker 1 (105.3sec).

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

5.5.1. Test Limit

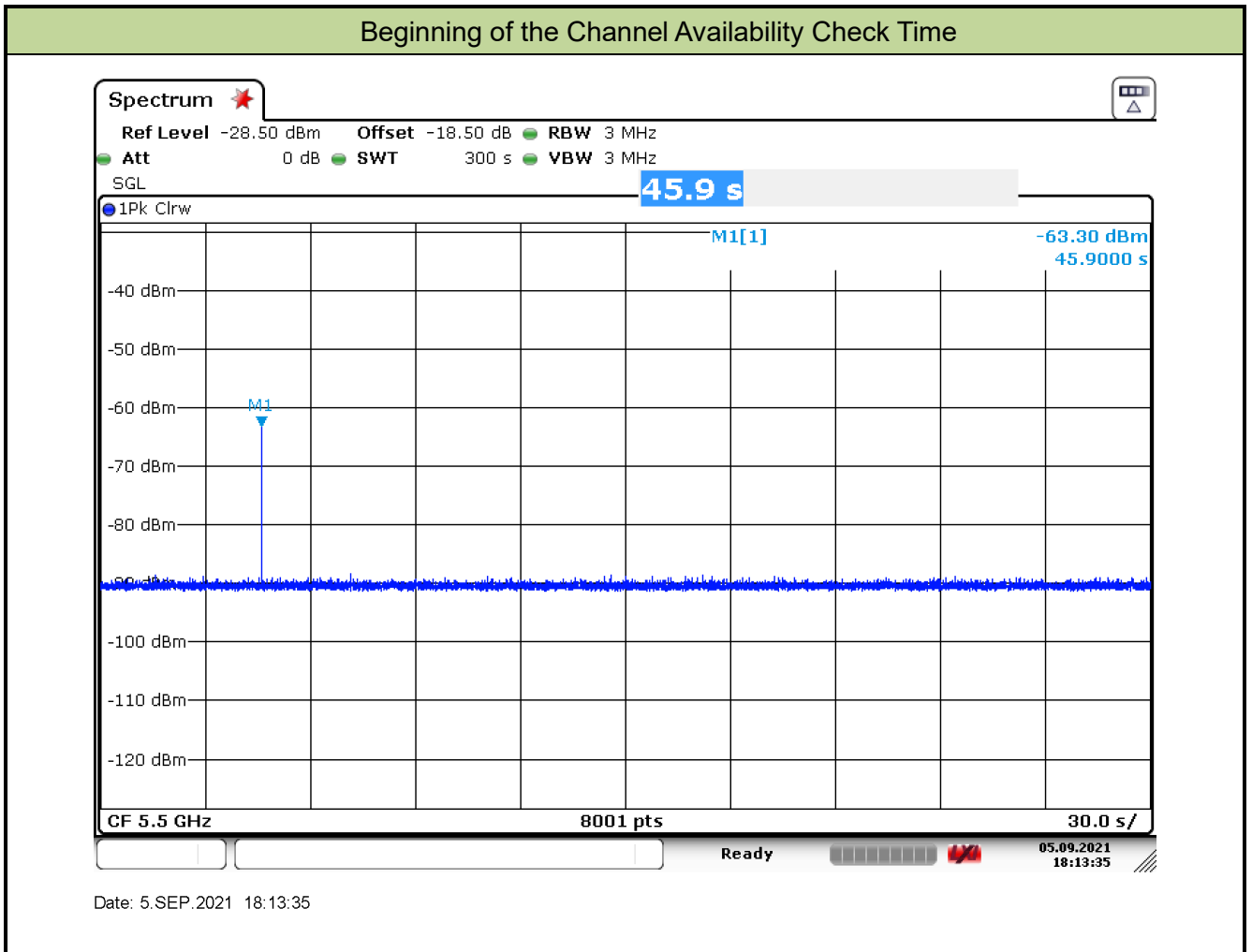
In beginning of the Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

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	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/05
Test Item	Beginning of the Channel Availability Check Time (802.11ac-VHT20 mode - 5500MHz)		



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

5.6.1. Test Limit

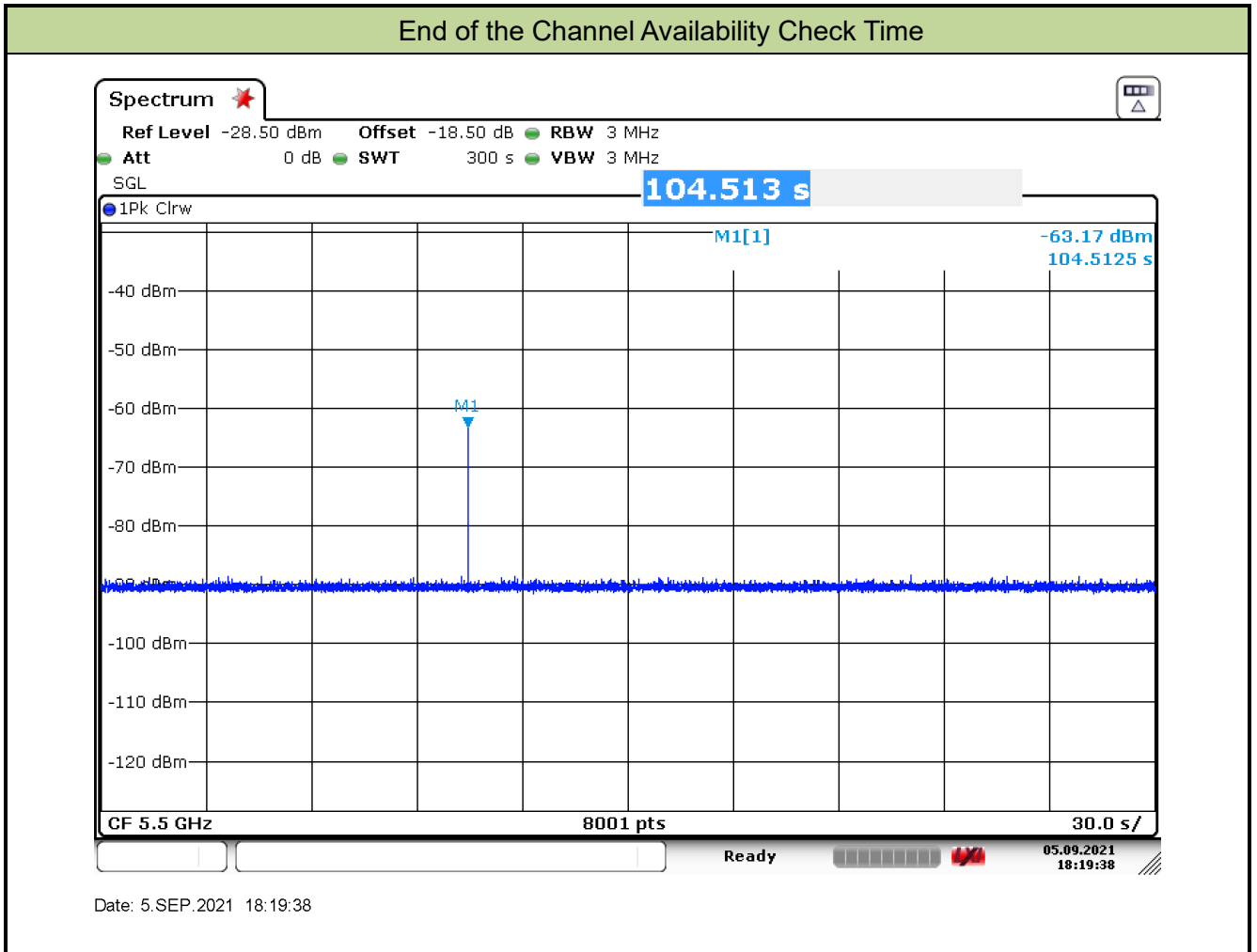
In the end of Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

5.6.2. Test Procedure

1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning of the Channel Availability Check Time.
2. The EUT is powered on at T0. T1 denotes the instant when the EUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds. A single Burst of one of Short Pulse Radar Types 0-4 at DFS Detection Threshold + 1 dB will commence within a 6 second window starting at T1+ 54 seconds.
3. Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions will continue for 2.5 minutes after the radar Burst has been generated. Verify that during the 2.5 minutes measurement window no EUT transmissions occurred.

5.6.3. Test Result

Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/05
Test Item	End of the Channel Availability Check Time (802.11ac-VHT20 mode - 5500MHz)		



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 minutes during which a Channel will not be utilized after a Radar Waveform is detected on that Channel.

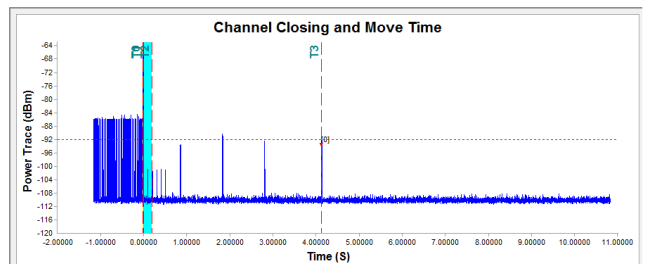
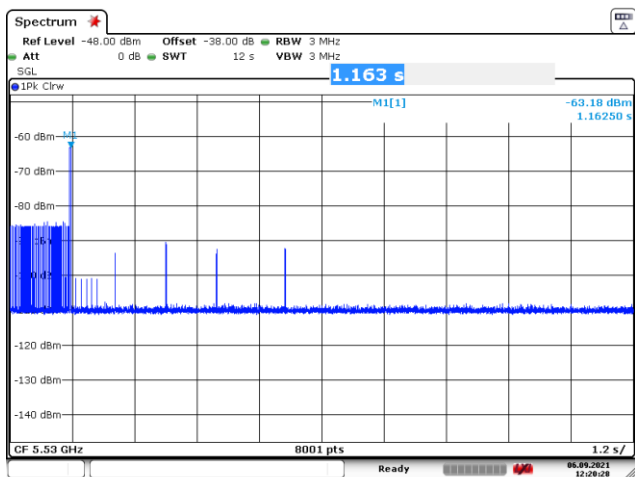
5.7.2. Test Procedure Used

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: $D_{well} (1.5ms) = S (12 \text{ sec}) / B (8000)$; where D_{well} is the dwell time per spectrum analyzer sampling bin, S is the sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: $C = N \times D_{well}$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins showing a U-NII transmission and D_{well} is the dwell time per bin.
5. Measure the EUT for more than 30 minutes following the channel close/move time to verify that the EUT does not resume any transmissions on this Channel.

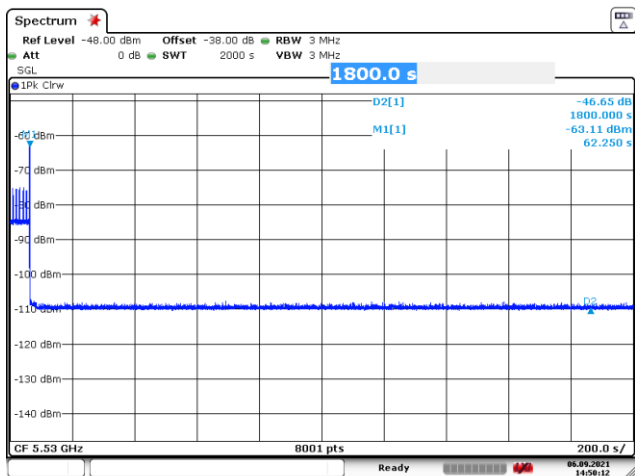
5.7.3. Test Result

Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/06
Test Item	Channel Move Time and Channel Closing Transmission Time (802.11ac-VHT80 mode - 5530MHz)		

Channel Move Time and Channel Closing Transmission Time



Non-Occupancy Period



Parameter	Test Result	Limit
Channel Move Time (s)	4.1205 s	<10s
Channel Closing Transmission Time (ms) (Note)	3 ms	< 60ms
Non-Occupancy Period (min)	≥ 30 min	≥ 30 min

Note: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 seconds period. The aggregate duration of control signals will not count quiet periods in between transmissions.

5.8. Statistical Performance Check Measurement

5.8.1. Test Limit

The minimum percentage of successful detection requirements found in below table when a radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

Radar Type	Minimum Number of Trails	Detection Probability
0	30	Pd > 60%
1	30(15 of test A and 15 of test B)	Pd > 60%
2	30	Pd > 60%
3	30	Pd > 60%
4	30	Pd > 60%
Aggregate (Radar Types 1-4)	120	Pd > 80%
5	30	Pd > 80%
6	30	Pd > 70%

Note: The percentage of successful detection is calculated by:

$(\text{Total Waveform Detections} / \text{Total Waveform Trails}) * 100 = \text{Probability of Detection Radar}$

Waveform In addition an aggregate minimum percentage of successful detection across all Short Pulse Radar Types 1-4 is required and is calculated as follows: $(Pd1 + Pd2 + Pd3 + Pd4) / 4$.

5.8.2. Test Procedure

1. Stream the MPEG test file from the Master Device to the Client Device on the test Channel for the entire period of the test.
2. At time T0 the Radar Waveform generator sends the individual waveform for each of the Radar Types 1-6, at levels equal to the DFS Detection Threshold + 1dB, on the Operating Channel.
3. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Short Pulse Radar Types 0 to ensure detection occurs.
4. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs.
5. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs.
6. The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in below table.

5.8.3. Test Result

Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/07
Test Item	Radar Statistical Performance Check (802.11ac-VHT20 mode - 5500MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5501	1	698	76	1
2	5508	1	798	67	1
3	5491	1	678	78	1
4	5494	1	778	68	1
5	5505	1	818	65	1
6	5497	1	618	86	1
7	5501	1	638	83	1
8	5504	1	898	59	1
9	5507	1	718	74	1
10	5500	1	838	63	1
11	5508	1	598	89	1
12	5497	1	858	62	1
13	5505	1	558	95	1
14	5497	1	938	57	1
15	5496	1	738	72	1
16	5491	1	2432	22	1
17	5499	1	2394	23	1
18	5497	1	1451	37	1
19	5509	1	2154	25	1
20	5503	1	566	94	1
21	5499	1	1973	27	1
22	5492	1	3038	18	1
23	5504	1	2369	23	1
24	5496	1	841	63	1
25	5508	1	1518	35	1
26	5503	1	2622	21	1
27	5505	1	2787	19	1
28	5504	1	2568	21	1
29	5491	1	1160	46	1



30	5497	1	903	59	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	5508	3.9	223	29	1
2	5501	3	215	24	1
3	5497	2.5	191	25	1
4	5491	3.3	228	26	1
5	5507	4.6	151	29	1
6	5508	3.9	193	27	1
7	5492	1.6	185	25	1
8	5509	2.1	221	26	1
9	5498	5	220	28	1
10	5500	1.7	225	27	1
11	5506	2.6	190	24	1
12	5492	4.9	220	24	1
13	5495	2.3	170	27	1
14	5508	1.7	216	27	1
15	5501	3.9	201	24	1
16	5508	2.6	230	26	1
17	5504	1	228	25	1
18	5493	3	196	27	0
19	5509	4.3	189	23	0
20	5502	4.3	180	27	1
21	5492	1.8	163	24	1
22	5496	1.4	215	24	1
23	5493	2.1	189	27	1
24	5505	4.1	222	26	1
25	5501	4.1	220	27	1
26	5491	2.1	171	28	1
27	5502	2.7	160	29	1
28	5495	3.8	170	27	1
29	5509	2.7	200	29	1
30	5491	4	211	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	5504	6.7	265	18	1
2	5507	8.1	205	17	0
3	5493	9.1	423	16	1
4	5495	8.2	433	17	1
5	5502	8.3	437	18	0
6	5508	7.4	227	17	1
7	5499	6.9	444	17	1
8	5496	8.4	379	18	1
9	5497	6.4	429	17	1
10	5509	6.8	282	16	0
11	5504	6.6	214	18	1
12	5501	6.4	289	17	1
13	5500	7.5	330	16	1
14	5502	6.9	385	17	1
15	5497	9.1	342	16	1
16	5505	9.6	273	17	1
17	5494	9.5	350	18	1
18	5505	6.1	289	16	1
19	5498	7.7	415	17	1
20	5500	9.4	306	17	1
21	5503	6.5	204	18	1
22	5507	8	495	17	1
23	5509	8.6	287	18	1
24	5504	8.5	353	18	1
25	5503	6.1	229	18	1
26	5494	8.3	256	16	1
27	5498	6.7	384	17	1
28	5502	8.8	277	17	1
29	5503	7.1	472	17	1
30	5494	9.7	384	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	5505	11	455	12	1
2	5503	11.1	204	13	1
3	5506	20	477	16	1
4	5500	14.7	351	14	1
5	5493	12.4	218	13	1
6	5497	19.7	243	15	1
7	5507	12.1	403	14	1
8	5509	17.4	223	12	1
9	5500	14.5	362	13	1
10	5492	19.4	309	14	1
11	5508	13.5	419	14	1
12	5498	12.9	355	15	1
13	5502	11.5	206	13	0
14	5496	17.1	290	14	1
15	5494	12.2	341	15	1
16	5498	19.7	484	13	1
17	5506	13.5	328	15	0
18	5502	12.7	458	13	1
19	5503	19.5	394	13	1
20	5507	16.5	232	14	1
21	5503	12.8	411	16	1
22	5499	12.8	395	12	1
23	5501	11.2	424	15	1
24	5496	15.3	209	12	1
25	5493	19.4	258	16	0
26	5495	19.4	364	13	1
27	5491	18.5	309	13	1
28	5498	12.6	488	13	0
29	5492	19.1	323	14	1
30	5508	17.6	236	13	1
Detection Percentage (%)					86.7

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

test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (100\% + 93.3\% + 90\% + 86.7\%) / 4 = 92.5\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5500	1	16	5495.8	0
2	5500	1	17	5499	1
3	5500	1	18	5493	1
4	5500	1	19	5498.2	0
5	5500	1	20	5495	1
6	5500	1	21	5501.4	1
7	5500	1	22	5504.6	1
8	5500	1	23	5506.2	1
9	5500	1	24	5501	1
10	5500	1	25	5501	1
11	5493.4	1	26	5501.4	1
12	5493	1	27	5503	1
13	5493.8	1	28	5507	1
14	5493	1	29	5503.8	1
15	5497.8	0	30	5507	1
Detection Percentage (%)					90

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	66.5	7	1641		688.62
2	3	71.6	7	1281	1068	956.137
3	3	81.3	7	1322	1498	866.273
4	3	71.2	7	1175	1072	843.53
5	2	93.4	7	1399		611.287
6	2	75.1	7	1696		831.683
7	1	55.2	7			252.41
8	2	54.8	7	1169		2.077
9	3	91.7	7	1080	1912	5.133

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	54.9	19	1163		868.582
2	2	59.6	19	1779		343.497
3	2	70.7	19	1578		305.113
4	2	65.9	19	1334		402.56
5	2	99.9	19	1572		429.467
6	1	80.8	19			793.193
7	2	62.2	19	1664		577.92
8	3	59.3	19	1950	1232	1076.267
9	1	91	19			746.633

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	88.1	18			207.72
2	1	55.9	18			15.313
3	1	78.7	18			505.837
4	1	92.9	18			32.97
5	3	65.6	18	1457	1315	158.523
6	2	98.4	18	1821		355.037
7	2	77.8	18	1905		647.39
8	2	53.6	18	1816		601.653
9	1	60.7	18			632.417
10	3	54.8	18	1651	1347	508.98
11	2	53.7	18	1546		201.953
12	2	82.4	18	1577		63.967
13	2	88.1	18	1981		263.59
14	3	95.6	18	1767	1819	226.183
15	2	96.5	18	1763		162.507
16	2	81.3	18	1506		421.4
17	1	68.4	18			635.533
18	2	86.2	18	1769		352.367

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	76.8	10	1035	1460	1144.45
2	3	59.7	10	1051	1520	676.857
3	2	82.5	10	1152		94.883
4	3	82.9	10	1692	1012	886.95
5	2	69.1	10	1366		891.177
6	2	72.5	10	1803		1239.773
7	1	78.1	10			1065.04
8	1	62.5	10			602.517
9	2	60.8	10	1946		349.033

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	60.1	16			805.818
2	1	70.9	16			116.48
3	2	94.9	16	1521		567.37
4	2	75.5	16	1673		84.58
5	3	50	16	1144	1706	598.06
6	3	78	16	1364	1866	714.41
7	3	98.8	16	1724	1226	583.3
8	2	64.5	16	1478		261.81
9	2	70.2	16	1477		771.51
10	2	76.4	16	1177		846.7
11	1	54.1	16			842.8
12	1	68.8	16			503.1

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	88.9	9	1254	1814	23.291
2	3	51.1	9	1552	1378	615.658
3	1	64	9			553.115
4	3	86.8	9	1909	1382	666.383
5	3	64.2	9	1901	1052	409.471
6	2	82.5	9	1948		90.188
7	2	71.6	9	1344		168.456
8	3	82.4	9	1382	1061	494.454
9	2	56.4	9	1998		382.081
10	2	91.9	9	1319		239.869
11	2	78.6	9	1810		587.676
12	2	87.5	9	1306		651.784
13	2	59.9	9	1142		687.242
14	3	71.6	9	1572	1661	2.379
15	1	75.8	9			516.847
16	1	94.2	9			35.965
17	2	97.4	9	1827		652.082

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	80.1	17	1292		259.925
2	2	51.3	17	1911		63.677
3	3	96.3	17	1640	1403	440.176
4	3	83.9	17	1425	1443	149.619
5	2	77	17	1320		312.392
6	3	70.1	17	1956	1659	606.755
7	1	64.8	17			116.548
8	2	50.5	17	1737		68.902
9	3	63.8	17	1799	1839	245.415
10	1	93.2	17			675.028
11	2	66.5	17	1946		628.941
12	1	98.2	17			617.154
13	2	92.1	17	1707		828.577

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	92.8	10			0.729
2	1	89.1	10			822.611
3	2	94.3	10	1003		1065.102
4	2	50.2	10	1061		277.473
5	1	96.5	10			932.404
6	3	91	10	1583	1080	688.055
7	3	97.5	10	1563	1657	181.995
8	3	75.3	10	1033	1884	251.336
9	3	86.3	10	1701	1434	270.127
10	2	56.1	10	1240		416.518
11	2	76.5	10	1518		97.009

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	87	9	1249	1961	24.127
2	1	78.3	9			638.173
3	3	67.5	9	1455	1910	95.367
4	2	94.7	9	1409		45.61
5	2	91.8	9	1206		349.573
6	3	61.9	9	1387	1906	378.027
7	2	58.9	9	1744		410.23
8	3	81.3	9	1282	1853	624.243
9	2	53.5	9	1299		277.087
10	1	58.7	9			471.73
11	2	64.8	9	1683		97.123
12	1	83.6	9			95.947
13	1	58.2	9			375.54
14	2	61.7	9	1415		184.083
15	2	98.3	9	1824		273.797
16	1	73.5	9			25.7
17	3	86.9	9	1619	1537	41.433
18	2	92.8	9	1900		618.767

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	75.9	15	1518	1299	638.691
2	2	64.7	15	1307		154.425
3	1	73.4	15			370.175
4	1	92.9	15			414.513
5	2	90.6	15	1534		426.291
6	2	70.8	15	1808		182.828
7	1	93.2	15			52.296
8	2	66	15	1960		622.264
9	3	95.2	15	1115	1426	74.581
10	2	99.8	15	1408		371.069
11	1	80.7	15			600.746
12	2	91.3	15	1295		365.124
13	2	71.4	15	1935		77.322
14	3	57.3	15	1079	1624	160.589
15	3	70.8	15	1351	1456	436.547
16	3	99	15	1898	1399	565.665
17	3	94.4	15	1065	1778	518.682

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	98.9	6	1480		824.078
2	2	93.1	6	1906		738.933
3	2	93.9	6	1924		627.586
4	2	72.3	6	1716		278.459
5	2	52.7	6	1831		477.122
6	3	84.1	6	1332	1065	771.415
7	2	71.5	6	1133		881.978
8	3	77.6	6	1032	1128	498.022
9	2	53	6	1381		38.855
10	3	57.3	6	1072	1511	251.178
11	2	92.2	6	1445		334.031
12	2	64.4	6	1999		819.454
13	2	52.7	6	1928		820.177

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	71.5	5	1799	1339	766.684
2	3	66.5	5	1776	1414	235.53
3	3	91.2	5	1969	1857	76.33
4	1	90.7	5			658.1
5	2	65.1	5	1998		177.93
6	1	67.1	5			850.3
7	1	55.6	5			971.42
8	2	90.7	5	1656		802.21
9	2	69.4	5	1443		705.6
10	2	93.5	5	1433		460.9

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	66.3	7			73.917
2	2	52.2	7	1745		773.971
3	3	90.3	7	1233	1990	26.382
4	2	89.2	7	1371		1044.443
5	3	98.8	7	1062	1722	402.744
6	1	67.7	7			810.135
7	3	75.7	7	1570	1373	261.985
8	2	99.1	7	1011		463.506
9	1	60.8	7			537.407
10	3	53	7	1277	1873	109.798
11	2	85.3	7	1392		325.709

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	55.3	5	1971		674.011
2	1	79.1	5			497.908
3	1	60.4	5			240.005
4	2	85.1	5	1087		159.383
5	1	77.5	5			108.591
6	1	84	5			170.548
7	2	69.7	5	1456		74.776
8	2	78	5	1620		160.704
9	3	90.2	5	1802	1189	529.481
10	1	77	5			69.689
11	3	56.8	5	1508	1070	299.246
12	3	96.2	5	1151	1468	653.404
13	3	82.7	5	1240	1352	687.002
14	2	80.8	5	1591		219.179
15	1	93.3	5			213.147
16	1	91.2	5			393.565
17	3	64.1	5	1022	1178	83.382

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	94.3	17			816.269
2	3	72.8	17	1040	1986	257.03
3	3	61.8	17	1954	1499	706.1
4	2	54.4	17	1601		713.56
5	2	67.6	17	1624		25.44
6	1	61.7	17			261.58
7	1	67.2	17			552.5
8	1	69.2	17			181.37
9	1	73.2	17			323.62
10	2	71	17	1752		822.11
11	3	73.9	17	1420	1233	178.6
12	2	86.2	17	1074		168.5

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	65.8	12			588.805
2	2	94.8	12	1231		722.617
3	1	52.7	12			317.174
4	3	80.3	12	1478	1260	768.471
5	2	73	12	1284		378.179
6	2	84.5	12	1524		482.626
7	2	98.6	12	1301		774.563
8	3	61.7	12	1489	1318	849.03
9	3	61.3	12	1572	1937	63.757
10	2	97	12	1903		687.894
11	3	72.2	12	1478	1860	169.011
12	1	51.9	12			847.629
13	2	75.2	12	1977		91.686
14	2	55.1	12	1759		548.443

Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	80.2	20	1890	1488	490.023
2	3	57.8	20	1550	1508	732.69
3	2	95.6	20	1340		43.31
4	3	65.7	20	1000	1109	108.16
5	3	56.5	20	1584	1824	79.15
6	2	87.3	20	1318		499.37
7	2	72.4	20	1619		87.83
8	1	88.1	20			52.07
9	1	70	20			314.83
10	2	64.1	20	1922		23.25
11	1	87.9	20			7.57
12	3	85.3	20	1920	1427	700.89
13	2	98.4	20	1451		541.16
14	1	70.4	20			218.27
15	2	56.3	20	1356		629.3
16	2	54	20	1714		283.6

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	65.9	5	1144		283.498
2	2	85.7	5	1492		315.007
3	2	57.4	5	1714		1025.533
4	2	94.6	5	1634		1151.26
5	2	85.9	5	1796		74.217
6	2	61.4	5	1529		674.733
7	3	53.5	5	1850	1138	263.78
8	3	91.1	5	1782	1302	591.667
9	2	70.7	5	1527		452.433

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	77.8	18	1197	1611	49.854
2	1	92.2	18			209.201
3	2	92.6	18	1124		53.262
4	2	93.4	18	1847		714.373
5	3	53	18	1892	1377	802.454
6	2	89.9	18	1786		68.735
7	2	62	18	1640		527.755
8	1	97	18			922.776
9	1	53.3	18			957.387
10	2	63.8	18	1630		226.518
11	2	95.1	18	1775		177.809

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	67.8	10	1005	1147	980.529
2	3	95	10	1795	1001	455.551
3	2	96.4	10	1145		1083.002
4	2	62.2	10	1091		401.733
5	1	94.2	10			175.514
6	2	60.7	10	1901		146.095
7	1	78.6	10			19.065
8	1	90	10			584.546
9	2	80	10	1846		37.867
10	2	90.4	10	1750		11.308
11	1	94.9	10			146.109

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	55.9	19	1730		428.947
2	1	63.3	19			700.2
3	2	83	19	1864		377.08
4	2	63.7	19	1547		630.37
5	2	91.7	19	1274		1057.4
6	3	52.7	19	1360	1071	1008.13
7	2	94	19	1415		967.17
8	3	53	19	1435	1371	971.73
9	2	96.5	19	1504		468.4
10	2	55.2	19	1120		691.9

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	96.1	11	1463		171.939
2	2	61.4	11	1462		333.441
3	3	95.1	11	1501	1000	440.622
4	3	95.8	11	1897	1917	443.283
5	2	63.4	11	1435		312.834
6	2	92.2	11	1334		347.835
7	3	83.2	11	1242	1112	548.286
8	2	95.3	11	1230		61.617
9	3	81.8	11	1218	1209	169.088
10	3	85.9	11	1184	1896	548.399
11	1	79.4	11			380.901
12	2	66.3	11	1197		621.412
13	2	63.3	11	1857		166.413
14	2	56.5	11	1511		573.554
15	1	60.7	11			210.665
16	3	79	11	1719	1460	280.826
17	2	51.6	11	1184		180.337
18	3	73.7	11	1978	1512	253.358
19	2	71.9	11	1799		363.479

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	83.5	7			429.506
2	2	87.3	7	1927		646.658
3	1	68.8	7			46.105
4	3	68.9	7	1115	1908	427.603
5	2	69.6	7	1016		75.781
6	1	63.6	7			554.148
7	3	64.4	7	1787	1212	119.686
8	3	71.6	7	1673	1344	118.054
9	2	84.9	7	1526		397.051
10	1	54.4	7			4.939
11	2	51.6	7	1519		336.126
12	2	87.8	7	1726		445.124
13	2	56	7	1447		370.302
14	2	98.3	7	1395		575.629
15	1	59.6	7			690.947
16	1	96.1	7			17.565
17	2	52	7	1039		578.082

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	71.2	20	1540	1502	467.047
2	3	69.6	20	1541	1505	321
3	1	58.7	20			578.05
4	3	94.2	20	1171	1059	86.17
5	2	92.3	20	1487		76.02
6	2	79.5	20	1384		389.45
7	1	68.9	20			107.97
8	2	50.1	20	1458		70.14
9	2	98.4	20	1747		55.31
10	2	52.1	20	1080		592.49
11	2	80	20	1166		704.3
12	2	80.4	20	1786		973

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	78.4	20	1163	1198	370.804
2	2	80.9	20	1010		602.548
3	2	61.1	20	1293		630.235
4	2	97.4	20	1714		462.823
5	1	70.2	20			266.651
6	2	57.9	20	1190		325.688
7	2	66.1	20	1115		47.076
8	1	98.8	20			488.664
9	2	85.5	20	1438		296.031
10	2	90.5	20	1256		666.889
11	2	52.8	20	1327		67.466
12	2	87.2	20	1777		561.174
13	1	69.5	20			224.952
14	3	58.2	20	1178	1460	217.869
15	3	59.2	20	1474	1782	361.847
16	2	94	20	1784		70.765
17	2	93.6	20	1726		414.482

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	71	19	1217		524.542
2	1	63.1	19			519.35
3	1	64.2	19			491.97
4	1	82.3	19			745.06
5	2	61	19	1925		836.16
6	1	81.1	19			831.4
7	2	71.5	19	1047		811.63
8	3	60.7	19	1595	1890	132.6
9	2	76.1	19	1455		826.25
10	2	97.8	19	1766		857.69
11	1	64.6	19			591.9
12	1	72.6	19			843.1

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	92.9	15	1582		306.954
2	2	82.3	15	1552		98.67
3	2	61	15	1291		184.77
4	2	74.1	15	1975		640.75
5	2	81.4	15	1144		938.99
6	3	74	15	1251	1107	425.07
7	2	62.7	15	1316		379.14
8	3	97	15	1087	1514	251.06
9	1	69.9	15			927.25
10	2	73.6	15	1799		88.47
11	1	94.7	15			151.9
12	3	99.7	15	1512	1044	215.1

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	76.3	5	1956		164.688
2	3	90.1	5	1271	1080	11.345
3	2	97.4	5	1285		22.6
4	3	50	5	1364	1784	119.86
5	1	90.1	5			452.43
6	2	88.1	5	1447		247.16
7	3	63.6	5	1933	1138	464.33
8	2	50	5	1072		738.02
9	1	78.7	5			667.68
10	1	71.7	5			315.21
11	2	97.7	5	1896		541.93
12	1	94.1	5			105.89
13	2	64.6	5	1055		75.91
14	2	90.1	5	1954		243
15	1	54.3	5			511.4

Type 5 Radar Waveform_29

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	80.5	13	1360		42.375
2	1	66.8	13			600.333
3	2	91	13	1042		561.237
4	3	87.2	13	1015	1660	499.85
5	1	52.3	13			480.433
6	3	91	13	1764	1572	409.897
7	2	99.5	13	1037		437.46
8	1	50.6	13			400.603
9	2	80.1	13	1098		105.197
10	1	57.1	13			502.92
11	3	95.9	13	1154	1353	172.453
12	3	79.6	13	1865	1923	325.457
13	2	75.2	13	1607		100.69
14	1	96.1	13			504.133
15	3	64.5	13	1543	1677	133.807
16	2	73.5	13	1484		474.6
17	2	60.8	13	1990		446.833
18	2	90.5	13	1026		244.967

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	91.7	5			533.801
2	2	69.9	5	1814		458.48
3	2	55.5	5	1997		252.42
4	1	88.4	5			291.7
5	2	50.8	5	1502		100.91
6	3	79.2	5	1054	1431	512.56
7	3	68.7	5	1364	1195	394.45
8	2	55.4	5	1836		199.97
9	2	99.9	5	1707		67.28
10	3	54	5	1771	1525	523.03
11	3	98	5	1165	1798	403.41
12	2	81.4	5	1947		217.09
13	3	70	5	1607	1341	472.33
14	3	98.4	5	1934	1877	55.43
15	1	53	5			136.06
16	1	59	5			209.66
17	2	79.2	5	1181		253.94
18	3	67.6	5	1286	1717	71.3
19	2	80.3	5	1322		398.2
20	3	69.9	5	1729	1864	391.7

Radar Type 6 - Radar Statistical Performance

Trail #	1=Detection 0=No Detection	Trail #	1=Detection 0=No Detection
1	1	16	1
2	1	17	1
3	1	18	1
4	1	19	1
5	1	20	1
6	1	21	1
7	1	22	1
8	1	23	1
9	1	24	1
10	1	25	1
11	1	26	1
12	1	27	1
13	1	28	1
14	1	29	1
15	1	30	1
Detection Percentage (%)			100

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5508	6	15	5503	45
10	5500	30	30	5496	90
75	5497	225	36	5508	108
--	--	--	64	5504	192

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
36	5499	108	52	5490	156
62	5491	186	82	5504	246

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
32	5491	96	3	5491	9
47	5500	141	16	5500	48
50	5501	150	27	5508	81
55	5503	165	55	5501	165
86	5504	258	60	5505	180
97	5492	291	71	5507	213
--	--	--	73	5509	219
--	--	--	75	5492	225

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
33	5509	99	70	5501	210
34	5493	102	87	5510	261
91	5508	273	93	5507	279

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
58	5490	174	27	5498	81
93	5502	279	61	5492	183
95	5491	285	65	5500	195
--	--	--	80	5493	240
--	--	--	81	5503	243
--	--	--	82	5506	246
--	--	--	88	5501	264

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
46	5494	138	26	5503	78
68	5493	204	63	5491	189
76	5504	228	71	5490	213
89	5506	267	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5510	33	4	5492	12
27	5498	81	5	5490	15
37	5505	111	13	5495	39
92	5509	276	26	5500	78
--	--	--	85	5510	255

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
41	5498	123	17	5501	51
58	5501	174	23	5490	69
77	5496	231	55	5495	165
79	5500	237	58	5508	174
--	--	--	89	5492	267

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5497	39	43	5494	129
22	5495	66	47	5501	141
24	5499	72	48	5505	144
29	5492	87	51	5496	153
69	5504	207	91	5507	273
77	5496	231	--	--	--
91	5490	273	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
36	5496	108	7	5509	21
87	5509	261	41	5503	123
--	--	--	71	5507	213

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
14	5493	42	35	5501	105
19	5507	57	40	5494	120
20	5492	60	--	--	--
85	5499	255	--	--	--
93	5510	279	--	--	--
97	5498	291	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5491	3	11	5500	33
31	5508	93	14	5510	42
50	5492	150	51	5508	153
65	5507	195	64	5505	192
67	5497	201	85	5507	255
86	5510	258			

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5497	6	76	5503	228
36	5495	108	--	--	--
40	5504	120	--	--	--
56	5508	168	--	--	--
74	5492	222	--	--	--
97	5493	291	--	--	--

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
25	5506	75	22	5500	66
28	5493	84	64	5503	192
33	5500	99	71	5509	213
34	5502	102	77	5497	231
47	5508	141	90	5508	270
--	--	--	96	5490	288

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
22	5493	66	34	5499	102
32	5508	96	40	5500	120
43	5492	129	54	5508	162
69	5496	207	56	5494	168
83	5491	249	91	5495	273
91	5505	273	--	--	--
95	5506	285	--	--	--



Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/07
Test Item	Radar Statistical Performance Check (802.11ac-VHT40 mode - 5510MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5495	1	718	74	1
2	5512	1	698	76	1
3	5510	1	678	78	1
4	5504	1	518	102	1
5	5502	1	838	63	1
6	5491	1	738	72	1
7	5493	1	918	58	1
8	5510	1	558	95	1
9	5516	1	598	89	1
10	5526	1	898	59	1
11	5528	1	778	68	1
12	5523	1	878	61	1
13	5507	1	938	57	1
14	5509	1	618	86	1
15	5525	1	578	92	1
16	5496	1	1165	46	1
17	5511	1	2788	19	1
18	5497	1	764	69	1
19	5506	1	2612	21	1
20	5527	1	1870	29	1
21	5506	1	1104	48	1
22	5519	1	1728	31	1
23	5518	1	1636	33	1
24	5522	1	743	71	1
25	5491	1	1361	39	1
26	5524	1	2780	19	1
27	5525	1	734	72	1
28	5520	1	2795	19	1
29	5499	1	667	80	1
30	5502	1	1724	31	1

Detection Percentage (%)	100
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Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5522	2.8	193	27	1
2	5528	2.6	221	28	1
3	5502	3.1	189	25	1
4	5512	1.2	160	29	1
5	5510	1.2	214	28	0
6	5523	2.5	229	25	1
7	5528	3.5	164	27	1
8	5525	2.7	192	24	1
9	5529	3.4	178	26	1
10	5512	3.1	199	24	1
11	5500	3.2	168	28	1
12	5514	2.6	178	24	1
13	5526	2.6	228	24	1
14	5511	1.5	182	28	1
15	5512	3.3	195	28	1
16	5520	5	159	28	0
17	5499	2.8	218	24	1
18	5492	3.2	170	26	1
19	5521	2.5	161	28	1
20	5512	4.2	159	25	1
21	5499	3	201	29	1
22	5515	2.6	214	24	1
23	5500	4	193	28	1
24	5528	4.5	198	28	1
25	5500	4	180	27	1
26	5508	4.8	168	29	0
27	5514	1.3	189	28	1
28	5515	3.1	196	25	1
29	5501	4	158	23	1
30	5527	2.2	189	27	1
Detection Percentage (%)					90.0

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5526	7	289	17	1
2	5495	6	414	17	1
3	5510	7.2	372	17	1
4	5500	8.8	250	17	1
5	5513	8.4	274	17	1
6	5529	9	252	18	1
7	5500	6	465	17	1
8	5511	9.6	279	18	1
9	5527	6.2	230	18	1
10	5505	9.7	238	17	1
11	5515	6.2	412	16	1
12	5498	9.8	335	18	1
13	5503	7.1	376	16	1
14	5499	8	494	17	1
15	5525	8.6	262	18	1
16	5528	8.9	241	17	1
17	5510	8.4	353	17	1
18	5520	7.9	370	17	1
19	5523	8.3	363	18	0
20	5510	7.2	276	18	1
21	5505	7	406	18	1
22	5503	7.9	302	17	1
23	5521	9.6	457	16	1
24	5506	9.6	429	17	1
25	5518	9.1	451	16	1
26	5499	9.4	268	16	1
27	5516	9.2	361	18	1
28	5512	8.6	345	16	1
29	5507	6.4	374	17	1
30	5511	9.9	342	18	1
Detection Percentage (%)					96.7

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5508	12.2	263	15	1
2	5517	19.8	216	16	1
3	5525	13.4	330	15	1
4	5506	12.7	352	14	1
5	5494	17.4	307	14	1
6	5517	17.3	402	12	1
7	5519	11.1	455	14	0
8	5512	11.5	360	15	1
9	5528	17.5	236	14	1
10	5511	17.1	376	14	1
11	5505	17.6	482	12	1
12	5500	13	490	14	1
13	5524	13.9	274	14	1
14	5510	13.7	371	15	1
15	5529	12.2	221	13	1
16	5522	15.9	336	13	1
17	5516	12.9	441	15	1
18	5526	15.6	241	14	1
19	5524	19.6	363	15	1
20	5517	13.3	353	13	1
21	5518	14.1	352	15	1
22	5491	17.6	444	16	1
23	5493	12.6	329	14	1
24	5526	14.4	229	13	1
25	5507	11.8	262	14	1
26	5506	11.5	239	12	1
27	5493	15.3	379	12	1
28	5508	17.1	279	14	1
29	5529	20	451	14	1
30	5501	16.6	423	15	1
Detection Percentage (%)					96.7

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

test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (100\% + 90\% + 96.7\% + 96.7\%) / 4 = 95.8\% (>80\%)$



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	5510	1	16	5495	1
2	5510	1	17	5494.2	1
3	5510	1	18	5497.8	1
4	5510	1	19	5499	0
5	5510	1	20	5493.4	1
6	5510	1	21	5522.2	1
7	5510	1	22	5521	1
8	5510	1	23	5521.4	1
9	5510	1	24	5521.8	1
10	5510	1	25	5521.8	1
11	5497.8	1	26	5524.6	1
12	5499	0	27	5525.4	1
13	5497.4	1	28	5525.4	1
14	5497.4	1	29	5525	1
15	5496.2	1	30	5522.2	1
Detection Percentage (%)					93.3

Type 5 Radar Waveform_1						
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	96.2	18	1238	1388	680.426
2	2	51.5	18	1874		401.733
3	2	69.7	18	1020		829.606
4	3	50	18	1005	1670	884.339
5	1	66.7	18			883.492
6	2	62.6	18	1308		512.165
7	3	99.6	18	1965	1403	586.968
8	1	78.9	18			796.552
9	1	70.4	18			92.045
10	2	57.7	18	1589		164.748
11	2	59.9	18	1594		548.481
12	3	85.7	18	1202	1540	758.354
13	2	82	18	1211		698.077

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	59.8	11	1447	1130	121.549
2	2	83.8	11	1297		110.353
3	1	71.6	11			614.206
4	2	81.8	11	1559		778.479
5	2	94.2	11	1370		111.042
6	3	90.3	11	1631	1271	240.395
7	2	62.8	11	1237		476.928
8	2	98	11	1294		258.552
9	1	53	11			347.165
10	2	90.5	11	1063		124.578
11	2	74.4	11	1634		645.291
12	3	90.5	11	1038	1886	475.854
13	1	75.6	11			177.777

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	72.4	6	1314	1781	1279.31
2	2	57.1	6	1994		302.47
3	1	98.5	6			602.1
4	1	52.8	6			872.61
5	2	87.5	6	1030		670.64
6	2	69.7	6	1047		277.2
7	2	53.9	6	1957		1377.6
8	1	61.2	6			148.4

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	54.2	13	1772		277.252
2	2	99.2	13	1350		49.44
3	2	57.1	13	1364		324.89
4	2	84.1	13	1071		949.98
5	2	83.7	13	1567		730.6
6	2	59.3	13	1025		550.72
7	3	85.4	13	1241	1759	443.95
8	2	73.6	13	1889		510.95
9	2	75.3	13	1105		951.3
10	2	63	13	1665		204.3

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	65.2	14	1699		785.469
2	2	59.5	14	1384		131.06
3	3	90.2	14	1253	1151	501.22
4	2	98.1	14	1228		1147.03
5	2	71.1	14	1478		1148.1
6	3	82.9	14	1878	1524	615.67
7	3	54.7	14	1247	1931	172.82
8	2	94.7	14	1341		518.25
9	1	63.8	14			1087.1
10	3	52.5	14	1246	1081	718.7

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	98	7	1897		1311
2	2	76.9	7	1129		1057.037
3	2	84.7	7	1899		487.793
4	2	61.3	7	1510		1125.42
5	2	69.7	7	1355		411.377
6	1	69.4	7			672.093
7	2	83.4	7	1945		700.63
8	3	67.5	7	1550	1047	711.567
9	2	64.4	7	1015		332.133

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	55.4	18	1866		765.601
2	1	81.8	18			10.37
3	3	86.3	18	1557	1275	1149.07
4	3	95	18	1316	1757	1020.27
5	2	98.2	18	1512		847.82
6	2	90.1	18	1453		486.18
7	1	55	18			473.78
8	2	74.1	18	1784		395.91
9	2	58	18	1460		188.86
10	2	66	18	1425		978.3

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	99.9	10	1142		617.747
2	2	57	10	1948		409.663
3	2	73.2	10	1706		351.156
4	3	59.3	10	1457	1961	484.719
5	1	70.2	10			59.632
6	2	71	10	1735		258.265
7	2	60	10	1645		303.398
8	3	65.3	10	1895	1636	23.792
9	2	78.1	10	1472		78.115
10	1	58.2	10			76.068
11	3	69.2	10	1885	1697	801.631
12	3	57.5	10	1365	1675	305.954
13	1	55.5	10			67.077

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	78.6	20			504.131
2	1	59.3	20			13.582
3	1	76.6	20			579.515
4	2	66.4	20	1323		589.053
5	2	66	20	1319		515.271
6	2	81.8	20	1791		102.918
7	2	94.9	20	1868		680.706
8	3	91	20	1804	1617	412.794
9	2	75.4	20	1315		509.031
10	2	55.6	20	1375		672.699
11	1	88.7	20			89.296
12	1	50.5	20			445.334
13	1	90	20			381.682
14	2	60.3	20	1641		24.199
15	3	59.2	20	1856	1864	59.737
16	2	79.8	20	1666		128.965
17	3	92.3	20	1389	1124	522.782

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	68.7	6	1097		476.729
2	2	62.7	6	1091		582.787
3	2	56	6	1021		363.704
4	1	62.4	6			424.571
5	2	52.4	6	1719		48.629
6	2	75.3	6	1427		66.566
7	2	68.8	6	1527		551.923
8	1	95	6			762.95
9	2	62.4	6	1700		401.077
10	1	99.9	6			522.404
11	1	69.9	6			105.811
12	3	95.3	6	1633	1444	485.099
13	3	80.9	6	1641	1943	705.486
14	2	54.1	6	1354		9.143

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	86	10			910.907
2	1	73.6	10			1099.87
3	2	79.4	10	1794		1411.74
4	3	83.9	10	1797	1538	618.41
5	2	94.3	10	1998		1288.39
6	1	63	10			16.8
7	2	65.7	10	1871		989.37
8	2	56.8	10	1427		91.9

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	75.2	12	1786	1958	1033.21
2	1	82.8	12			1328.81
3	1	80.9	12			852.43
4	2	82	12	1153		296.22
5	2	71.4	12	1500		224.28
6	1	87.6	12			229.56
7	2	78.2	12	1917		1000.1
8	2	87	12	1934		1393.8

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	98.8	10	1015		204.758
2	1	75.2	10			156.955
3	3	96.3	10	1994	1142	379.99
4	2	91.7	10	1492		178.18
5	2	67.4	10	1259		252.07
6	1	86.7	10			789.27
7	2	81.6	10	1242		381.92
8	2	76	10	1497		416.18
9	2	97.2	10	1467		23.24
10	3	97.3	10	1193	1862	714.52
11	2	95	10	1488		611.71
12	2	90	10	1099		434.49
13	1	67.5	10			596.3
14	2	87	10	1883		251.5
15	2	78.3	10	1782		665.2

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	74.3	20	1165	1107	189.198
2	3	51.3	20	1531	1823	621.551
3	2	79.9	20	1629		340.092
4	2	88.9	20	1189		79.823
5	2	84	20	1610		350.774
6	2	84.5	20	1829		432.125
7	3	80.5	20	1982	1020	7.866
8	3	55.4	20	1897	1757	253.427
9	1	93.5	20			117.388
10	1	59.7	20			265.369
11	2	94	20	1625		295.461
12	2	53.8	20	1840		326.202
13	3	62.8	20	1931	1471	187.303
14	2	71.2	20	1126		247.044
15	3	92.1	20	1695	1550	229.485
16	2	60.3	20	1661		215.696
17	1	65.9	20			266.237
18	1	91.7	20			175.358
19	2	70	20	1774		444.179

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	97	17	1971		256.51
2	1	74	17			99.556
3	2	66.8	17	1430		90.89
4	1	97	17			398.37
5	2	75.6	17	1096		13.61
6	2	52.2	17	1814		252.14
7	2	67.6	17	1260		475.15
8	2	92.4	17	1572		442.77
9	1	75.8	17			304.21
10	3	58.9	17	1575	1249	641.35
11	2	99.5	17	1250		226.9
12	3	72.1	17	1147	1574	535.68
13	2	50.2	17	1997		450.14
14	1	73.9	17			1.34
15	2	52	17	1932		393
16	2	83.6	17	1355		224.9

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	61.4	17	1936	1288	715.892
2	2	81.5	17	1018		360.14
3	2	92.3	17	1158		471.77
4	2	88.4	17	1347		92.12
5	2	82.5	17	1626		13.67
6	1	100	17			153.57
7	2	57.8	17	1279		552.95
8	2	50.5	17	1185		356.46
9	2	92.7	17	1236		282.75
10	1	61.2	17			479.11
11	2	84.8	17	1485		295.93
12	2	79.7	17	1007		40.39
13	2	95.2	17	1507		102.64
14	2	52.9	17	1269		510.6
15	1	56.4	17			36.3
16	1	85.6	17			189.4



Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	59.7	13			280.308
2	2	61.1	13	1877		509.68
3	1	88.4	13			309.34
4	2	76.7	13	1498		96.4
5	1	74.6	13			200.03
6	2	54.1	13	1718		534.76
7	3	86.6	13	1170	1194	220.96
8	3	64	13	1661	1842	252.62
9	2	92.8	13	1216		95.57
10	3	51.2	13	1562	1265	516.71
11	2	73.5	13	1590		331.74
12	1	66.3	13			396.94
13	2	90.6	13	1155		137.12
14	2	79.7	13	1317		85.23
15	3	64.2	13	1280	1648	447.32
16	1	90	13			271.7
17	2	64.2	13	1499		193.97
18	2	82.9	13	1160		242.4
19	2	68.7	13	1455		162.1
20	2	62	13	1732		532.9

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	65.6	7	1834		304.365
2	2	99.5	7	1400		470.711
3	2	75.5	7	1983		599.862
4	2	76.7	7	1762		301.543
5	2	69.4	7	1361		2.644
6	2	98.8	7	1898		555.185
7	3	94.1	7	1851	1601	31.166
8	2	76.3	7	1202		63.027
9	2	87.1	7	1234		529.098
10	2	91.9	7	1873		283.899
11	3	82.5	7	1897	1174	307.301
12	2	87.8	7	1142		562.032
13	2	65.2	7	1979		540.183
14	2	87.7	7	1399		250.244
15	2	54.6	7	1435		214.815
16	2	79.6	7	1254		4.096
17	3	88.3	7	1633	1738	446.237
18	1	92.5	7			558.958
19	2	92	7	1611		320.079

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	65.2	14	1468		318.969
2	2	90.5	14	1160		201.361
3	2	95.5	14	1035		113.542
4	3	99.7	14	1825	1613	34.733
5	2	61	14	1849		54.404
6	2	59.3	14	1457		180.075
7	3	88.4	14	1419	1381	12.006
8	3	92.3	14	1279	1862	233.637
9	3	90.3	14	1098	1062	511.428
10	2	72.5	14	1982		503.219
11	3	64.2	14	1692	1247	577.571
12	3	59.5	14	1031	1868	509.752
13	2	92.6	14	1174		536.733
14	1	76.2	14			617.024
15	3	96.4	14	1281	1729	513.955
16	1	63.9	14			42.706
17	2	57.1	14	1816		40.237
18	2	85	14	1859		176.758
19	2	62	14	1076		34.579

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	91.6	20	1673	1163	137.222
2	2	50.1	20	1840		287.574
3	3	98.8	20	1672	1512	46.167
4	3	86.8	20	1758	1814	182.59
5	2	57.2	20	1121		123.423
6	2	64.9	20	1985		623.367
7	2	92.7	20	1365		304.29
8	1	99.1	20			136.053
9	3	87.9	20	1774	1278	288.587
10	2	61.5	20	1728		475.01
11	2	62.3	20	1393		566.963
12	2	72.3	20	1904		485.427
13	2	62	20	2000		385.6
14	1	89.1	20			642.663
15	2	75.4	20	1941		533.327
16	3	70.1	20	1212	1608	23.6
17	3	54.9	20	1594	1442	298.033
18	3	64.9	20	1037	1069	619.167

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	51.7	12	1355		26.136
2	2	74.8	12	1829		248.068
3	3	66	12	1611	1921	513.58
4	2	65.9	12	1919		239.67
5	2	64.8	12	1953		627.83
6	3	59.5	12	1520	1747	261.86
7	2	79.7	12	1998		224.57
8	2	93.1	12	1061		91.27
9	2	79.7	12	1828		250.02
10	2	56.8	12	1988		265.83
11	2	52.5	12	1221		715.7
12	3	78.6	12	1438	1175	75.1
13	1	52.2	12			385.48
14	2	91.7	12	1025		590.9
15	2	90.3	12	1180		386.5
16	2	60.2	12	1895		401.6

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	56.7	12	1702		792.537
2	2	56.3	12	1371		88.643
3	2	62.3	12	1466		579.456
4	1	88.1	12			224.579
5	2	68.9	12	1529		596.492
6	2	67.3	12	1333		655.925
7	3	81.8	12	1307	1861	138.528
8	1	82.8	12			456.482
9	3	80.7	12	1178	1279	141.615
10	2	71	12	1081		699.318
11	3	65.3	12	1373	1149	386.331
12	3	97.2	12	1154	1492	511.054
13	3	75.7	12	1410	1926	190.077

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	67	8	1076		1180.49
2	3	86	8	1912	1713	1427.82
3	2	86.3	8	1023		501.74
4	2	77.6	8	1201		1401
5	2	79.9	8	1055		1482.52
6	3	83.8	8	1254	1978	349.98
7	2	55.6	8	1998		854.91
8	3	68.8	8	1850	1434	667.6

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	57.3	6	1725		655.472
2	3	97.2	6	1300	1300	201.25
3	1	54	6			418.3
4	3	62.3	6	1859	1916	639.67
5	3	64.8	6	1025	1465	740.81
6	2	95.8	6	1978		120.27
7	1	65.3	6			896.63
8	2	59.4	6	1150		197.29
9	2	95.9	6	1349		292.38
10	2	97.2	6	1589		341.34
11	1	85.6	6			340.5
12	1	83.9	6			30.9

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	81.8	13	1805		293.937
2	2	54.9	13	1034		78.193
3	1	79.7	13			458.88
4	2	69.7	13	1031		512.41
5	2	82.7	13	1684		67.81
6	2	86.3	13	1685		151.51
7	1	53.8	13			507.28
8	2	99.4	13	1707		45.69
9	1	65.4	13			60.13
10	2	85.2	13	1978		297.94
11	3	77.8	13	1569	1596	400.74
12	2	63.1	13	1245		347.31
13	2	58.9	13	1862		258.38
14	2	82.9	13	1543		289.31
15	2	62	13	1105		368.7
16	2	90	13	1655		458.69
17	2	95.4	13	1048		532.1
18	2	69.7	13	1171		19.5
19	3	64.6	13	1865	1007	539.6
20	1	81.8	13			526.1

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	79.9	12	1955		401.736
2	1	77.2	12			887.99
3	2	53.4	12	1784		927.94
4	2	88.3	12	1233		675.29
5	1	53.1	12			197.72
6	2	65.8	12	1526		815.14
7	3	99.3	12	1492	1009	902.35
8	3	92.6	12	1304	1229	741.93
9	3	82	12	1820	1662	143.25
10	2	89.2	12	1611		410.97
11	2	94	12	1524		935.4
12	2	86.1	12	1258		373.3

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	51.2	10	1847	1852	749.618
2	3	77	10	1007	1904	26.67
3	2	63.4	10	1122		8.79
4	3	94	10	1493	1297	813.34
5	1	59.4	10			802.89
6	2	92.1	10	1260		152.33
7	2	76.4	10	1271		113.6
8	2	76.9	10	1301		704.39
9	1	55	10			260.31
10	3	68.2	10	1085	1455	201.62
11	2	62.1	10	1538		791.4
12	2	87.1	10	1894		479

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	61.1	8	1126	1887	335.662
2	1	55.2	8			686.588
3	1	89.4	8			145.535
4	2	94.1	8	1869		213.503
5	2	54.2	8	1010		141.711
6	3	70.7	8	1905	1799	258.328
7	3	65.3	8	1769	1015	190.246
8	2	60.7	8	1287		309.864
9	2	70.7	8	1277		652.401
10	2	89.1	8	1063		698.889
11	2	64.2	8	1272		213.406
12	3	99.4	8	1063	1703	236.074
13	1	56.2	8			530.332
14	2	75.8	8	1819		346.089
15	2	81.7	8	1380		15.657
16	2	90.4	8	1730		269.465
17	2	55.1	8	1343		352.182

Type 5 Radar Waveform_29

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	69.8	14			383.377
2	2	89.1	14	1668		387.87
3	1	91.6	14			360.43
4	1	53.1	14			35.74
5	3	62.3	14	1848	1828	539.31
6	1	94.9	14			157.92
7	2	85.9	14	1103		231.32
8	2	95.2	14	1146		423.56
9	1	72.1	14			265.17
10	2	60.9	14	1935		551.33
11	3	75.6	14	1268	1029	466.3
12	2	92.7	14	1433		86.04
13	3	54.5	14	1738	1785	121.12
14	1	68.9	14			54.3
15	2	60.2	14	1253		606.1

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	56.6	11	1935	1509	410.716
2	3	63.5	11	1470	1824	515.57
3	1	61.6	11			689.97
4	2	52.3	11	1549		713.35
5	1	66.1	11			440.22
6	1	69.8	11			390.15
7	3	79.6	11	1983	1739	668.24
8	3	73	11	1811	1364	677.09
9	3	77.4	11	1183	1834	375.32
10	1	57.4	11			196.42
11	3	71.2	11	1626	1687	580.73
12	2	95.3	11	1881		644.32
13	2	66.8	11	1544		133.43
14	2	73.3	11	1472		581.6
15	1	99.3	11			544.3
16	1	68	11			226.9

Radar Type 6 - Radar Statistical Performance

Trail #	1=Detection 0=No Detection	Trail #	1=Detection 0=No Detection
1	1	16	1
2	1	17	1
3	1	18	1
4	1	19	1
5	1	20	1
6	1	21	1
7	1	22	1
8	1	23	1
9	1	24	1
10	1	25	1
11	1	26	1
12	1	27	1
13	1	28	1
14	1	29	1
15	1	30	1
Detection Percentage (%)			100

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5498	24	5	5513	15
32	5509	96	7	5491	21
46	5511	138	11	5498	33
50	5513	150	20	5529	60
66	5525	198	24	5521	72
87	5516	261	50	5509	150
88	5514	264	75	5494	225
90	5526	270	86	5496	258
--	--	--	98	5519	294

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5491	12	8	5527	24
13	5513	39	31	5506	93
20	5525	60	36	5520	108
25	5505	75	39	5511	117
32	5495	96	55	5529	165
35	5499	105	60	5530	180
37	5527	111	69	5490	207
44	5500	132	75	5493	225
68	5492	204	--	--	--
75	5506	225	--	--	--
81	5523	243	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5516	30	7	5493	21
27	5497	81	18	5528	54
39	5495	117	28	5527	84
44	5503	132	44	5494	132
49	5524	147	51	5517	153
59	5519	177	53	5492	159
84	5522	252	58	5512	174
94	5493	282	70	5507	210
--	--	--	84	5499	252
--	--	--	93	5524	279

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
11	5521	33	4	5503	12
26	5491	78	18	5509	54
44	5516	132	36	5499	108
51	5522	153	51	5516	153
52	5494	156	65	5511	195
55	5510	165	69	5519	207
65	5529	195	79	5517	237
76	5519	228	87	5505	261
77	5523	231	--	--	--
84	5511	252	--	--	--
86	5513	258	--	--	--
95	5501	285	--	--	--

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5503	24	3	5506	9
10	5512	30	21	5510	63
14	5521	42	42	5524	126
27	5526	81	46	5521	138
39	5500	117	50	5493	150
58	5501	174	56	5495	168
60	5528	180	94	5515	282
63	5495	189	98	5526	294
73	5510	219	--	--	--
76	5490	228	--	--	--
77	5530	231	--	--	--
78	5506	234	--	--	--
79	5527	237	--	--	--
88	5529	264	--	--	--

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
13	5526	39	21	5511	63
28	5507	84	62	5501	186
34	5511	102	68	5509	204
41	5505	123	70	5521	210
42	5527	126	83	5493	249
50	5501	150	--	--	--
63	5498	189	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5515	12	7	5502	21
39	5511	117	32	5499	96
48	5503	144	43	5529	129
52	5524	156	46	5528	138
63	5518	189	59	5518	177
69	5507	207	60	5506	180
88	5493	264	92	5527	276
90	5490	270	93	5491	279
94	5497	282	95	5509	285

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5497	36	24	5500	72
42	5508	126	28	5508	84
56	5529	168	30	5494	90
68	5491	204	33	5528	99
78	5502	234	39	5513	117
82	5495	246	42	5499	126
99	5514	297	47	5490	141
--	--	--	55	5529	165
--	--	--	57	5493	171
--	--	--	63	5520	189
--	--	--	65	5502	195
--	--	--	69	5511	207
--	--	--	78	5517	234
--	--	--	79	5505	237
--	--	--	83	5504	249
--	--	--	100	5509	300

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5501	6	39	5528	117
9	5509	27	57	5523	171
13	5496	39	64	5529	192
37	5516	111	70	5514	210
43	5504	129	87	5503	261
50	5518	150	89	5496	267
65	5498	195	90	5502	270
99	5517	297	--	--	--

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
39	5500	117	17	5517	51
63	5525	189	57	5529	171
71	5512	213	58	5511	174
74	5518	222	67	5523	201
88	5516	264	71	5516	213
--	--	--	83	5502	249
--	--	--	94	5505	282
--	--	--	97	5503	291

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
12	5502	36	4	5517	12
64	5504	192	14	5526	42
75	5494	225	19	5502	57
91	5522	273	21	5525	63
--	--	--	27	5503	81
--	--	--	31	5508	93
--	--	--	77	5506	231
--	--	--	96	5497	288

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5504	6	17	5506	51
12	5505	36	45	5490	135
13	5519	39	48	5519	144
19	5524	57	60	5494	180
40	5515	120	69	5517	207
47	5528	141	80	5512	240
56	5503	168	81	5525	243
67	5510	201	87	5523	261
98	5506	294	100	5495	300

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5511	3	1	5523	3
14	5522	42	17	5490	51
22	5527	66	46	5528	138
27	5516	81	47	5517	141
29	5494	87	82	5514	246
32	5521	96	--	--	--
36	5496	108	--	--	--
39	5513	117	--	--	--
49	5518	147	--	--	--
58	5493	174	--	--	--
84	5508	252	--	--	--

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5527	12	2	5518	6
24	5516	72	29	5498	87
46	5518	138	36	5501	108
72	5521	216	39	5528	117
95	5505	285	50	5522	150
96	5499	288	69	5519	207
97	5512	291	--	--	--
100	5504	300	--	--	--

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5514	3	11	5511	33
12	5507	36	23	5528	69
13	5529	39	69	5508	207
20	5523	60	--	--	--
49	5502	147	--	--	--
52	5490	156	--	--	--
57	5516	171	--	--	--
63	5495	189	--	--	--
82	5518	246	--	--	--



Product	CAP XL ac	Test Engineer	Jake Lan
Test Site	WZ-SR4	Test Date	2021/09/07
Test Item	Radar Statistical Performance Check (802.11ac-VHT80 mode – 5530MHz)		

Radar Type 1 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5530	1	898	59	1
2	5509	1	798	67	1
3	5531	1	698	76	1
4	5510	1	718	74	1
5	5492	1	578	92	1
6	5495	1	918	58	1
7	5533	1	658	81	1
8	5530	1	778	68	1
9	5552	1	678	78	1
10	5560	1	538	98	1
11	5524	1	738	72	1
12	5563	1	878	61	1
13	5568	1	758	70	1
14	5499	1	558	95	1
15	5492	1	858	62	1
16	5514	1	2299	23	1
17	5538	1	699	76	1
18	5497	1	2633	21	0
19	5568	1	871	61	1
20	5530	1	1090	49	1
21	5511	1	1676	32	1
22	5564	1	1816	30	1
23	5526	1	3022	18	1
24	5550	1	1399	38	1
25	5504	1	1262	42	1
26	5565	1	667	80	1
27	5561	1	1665	32	1
28	5499	1	2599	21	1
29	5529	1	2585	21	1
30	5537	1	2187	25	1



Detection Percentage (%)	96.7
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Radar Type 2 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5565	4.1	213	26	0
2	5568	3.2	153	27	1
3	5538	1.6	173	27	1
4	5552	2.9	166	28	1
5	5544	1.4	228	25	1
6	5567	2.5	180	29	1
7	5568	2.2	218	26	0
8	5502	4.9	225	28	1
9	5512	4.4	180	26	1
10	5539	4.6	197	24	1
11	5517	3.5	223	26	1
12	5492	5	160	27	1
13	5557	2.9	227	28	1
14	5531	4.1	185	25	1
15	5514	1.7	205	24	0
16	5525	4.1	185	24	1
17	5529	3.3	224	27	1
18	5552	4.8	173	28	1
19	5543	2	203	24	1
20	5492	1.3	228	25	1
21	5524	3.7	188	28	1
22	5494	2	230	28	1
23	5548	1.9	215	25	0
24	5507	3.7	201	28	1
25	5519	2.1	208	25	1
26	5541	3.8	170	23	1
27	5515	4.8	184	23	1
28	5492	3.8	213	27	1
29	5503	4.4	156	23	1
30	5554	4.4	175	23	1
Detection Percentage (%)					86.7

Radar Type 3 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5551	7	279	17	0
2	5540	9.5	264	18	1
3	5549	8.1	299	16	1
4	5542	9.6	305	17	1
5	5547	7.8	311	17	1
6	5530	9.7	261	17	1
7	5527	7.8	223	17	1
8	5501	8.3	498	18	0
9	5556	9.6	498	17	0
10	5492	6.2	218	16	1
11	5530	6.5	302	17	1
12	5493	9.4	362	18	1
13	5536	9.4	384	16	1
14	5495	9.8	455	16	1
15	5514	6	294	18	1
16	5536	8.8	359	16	1
17	5568	8.8	412	17	1
18	5514	9.4	231	17	1
19	5503	6.9	296	16	1
20	5551	7.6	413	17	1
21	5539	9.9	292	16	1
22	5504	7.4	304	16	1
23	5527	7.3	407	16	1
24	5520	6.8	340	17	1
25	5515	8.6	363	16	1
26	5505	9.5	259	17	1
27	5514	7.6	422	16	1
28	5539	9.2	461	16	1
29	5546	9.3	325	16	1
30	5497	8.5	483	16	1
Detection Percentage (%)					90

Radar Type 4 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection 0=No Detection
1	5509	16.3	392	14	1
2	5507	14.1	365	16	1
3	5559	17.4	353	14	1
4	5540	17.1	220	15	1
5	5538	16.2	250	13	1
6	5524	18.9	341	14	1
7	5541	19.6	228	14	1
8	5529	19	354	13	1
9	5536	18.7	264	14	1
10	5521	18.1	318	12	1
11	5546	14.9	396	13	0
12	5527	18.9	412	14	1
13	5560	19.2	358	12	1
14	5532	12	293	16	1
15	5539	12.6	281	13	1
16	5504	12.6	421	15	1
17	5554	11	323	14	1
18	5568	12.2	206	15	1
19	5550	19.7	200	12	1
20	5510	17.6	495	16	1
21	5557	19.4	397	13	0
22	5537	13.7	307	13	1
23	5506	14.3	249	15	1
24	5537	13.4	405	14	1
25	5516	15.6	415	14	1
26	5512	14.5	295	13	1
27	5540	12.2	429	12	1
28	5496	18.8	355	15	1
29	5502	11.6	487	14	1
30	5531	16.6	487	15	1
Detection Percentage (%)					93.3

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

test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (96.7\% + 86.7\% + 90\% + 93.3\%) / 4 = 91.7\% (>80\%)$

Radar Type 5 - Radar Statistical Performance

Trail #	Test Freq. (MHz)	1=Detection 0=No Detection	Trail #	Test Freq. (MHz)	1=Detection 0=No Detection
1	5530	1	16	5494.4	1
2	5530	1	17	5498.4	1
3	5530	1	18	5500	1
4	5530	1	19	5495.6	1
5	5530	1	20	5499.2	1
6	5530	1	21	5564	1
7	5530	1	22	5564	1
8	5530	1	23	5563.6	1
9	5530	1	24	5565.2	1
10	5530	1	25	5560.8	1
11	5499.2	1	26	5561.6	1
12	5496.4	1	27	5562	1
13	5496	1	28	5566	1
14	5497.2	1	29	5560.8	1
15	5498.8	1	30	5560	1
Detection Percentage (%)					100

Type 5 Radar Waveform_1

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	98.4	11	1457		384.816
2	1	58.5	11			872.39
3	2	100	11	1183		826.86
4	3	91.6	11	1726	1693	731.51
5	1	63.2	11			178.18
6	3	78.4	11	1880	1615	260.27
7	2	99	11	1973		507.55
8	2	66.7	11	1591		307.71
9	1	65.9	11			401.44
10	3	86.9	11	1371	1007	952.2
11	3	61	11	1344	1772	296.7
12	2	75.1	11	1861		886.9

Type 5 Radar Waveform_2

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	69.1	20	1451		50.807
2	3	74.3	20	1165	1758	228.69
3	2	89.9	20	1380		865.18
4	2	83.9	20	1482		291.64
5	2	81.1	20	1523		676.84
6	1	67.4	20			410.72
7	2	50.6	20	1804		420.39
8	2	71.3	20	1212		866.04
9	2	93.6	20	1454		974.87
10	2	78	20	1043		847.15
11	1	97.5	20			624
12	1	93.6	20			596.5

Type 5 Radar Waveform_3

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	88.7	16	1003	1756	506.079
2	1	82	16			14.652
3	2	92.9	16	1841		525.93
4	2	75.3	16	1193		172.28
5	2	72.9	16	1613		516.04
6	2	73.5	16	1739		691.94
7	1	76.4	16			184.29
8	3	67.8	16	1534	1188	587.71
9	1	52.3	16			639.93
10	3	61.4	16	1964	1587	427.62
11	1	77.9	16			665.77
12	2	52.7	16	1248		655.64
13	2	90.9	16	1188		1.06
14	1	79	16			488.6
15	3	86	16	1514	1908	171.9

Type 5 Radar Waveform_4

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	87.9	5	1120		117.389
2	2	54	5	1747		259.62
3	1	63.1	5			134.86
4	3	79.3	5	1154	1892	65.61
5	2	74.5	5	1839		534.2
6	2	51.3	5	1382		279.46
7	2	53.6	5	1227		194.88
8	2	84.1	5	1403		111.76
9	2	91.1	5	1702		721.14
10	2	51.3	5	1853		601.55
11	2	50.4	5	1125		83.02
12	1	67.3	5			477.1
13	2	70.3	5	1133		513.98
14	3	61.9	5	1510	1595	80.67
15	2	97.4	5	1623		349.5
16	3	54.7	5	1689	1228	299.2

Type 5 Radar Waveform_5

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	89.3	9	1420		617.002
2	2	63.8	9	1576		1259.187
3	1	79	9			212.143
4	2	84.9	9	1522		19.8
5	3	65.6	9	1234	1515	227.927
6	1	51.3	9			710.153
7	2	66.7	9	1897		22.11
8	2	87.3	9	1751		369.297
9	1	74.3	9			809.533

Type 5 Radar Waveform_6

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	71.7	18	1543	1016	568.109
2	1	82.9	18			0.523
3	2	71.6	18	1628		676.885
4	3	56.4	18	1277	1013	462.813
5	2	92.3	18	1953		135.281
6	2	64.5	18	1685		18.138
7	2	94.1	18	1676		259.056
8	3	55.8	18	1343	1224	563.214
9	2	98.4	18	1886		240.681
10	2	73.8	18	1185		315.419
11	1	83.9	18			558.396
12	2	65.9	18	1366		390.884
13	3	59.2	18	1528	1100	342.232
14	3	78.5	18	1730	1302	213.609
15	1	53.5	18			261.247
16	1	61.6	18			331.665
17	2	86.9	18	1355		137.482

Type 5 Radar Waveform_7

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	70.4	14			129.83
2	3	95.6	14	1344	1177	375.143
3	2	76.1	14	1152		761.376
4	1	53.5	14			550.869
5	2	63.5	14	1843		225.412
6	1	57.7	14			478.865
7	2	93.8	14	1005		546.838
8	1	83.1	14			911.142
9	1	53.8	14			592.505
10	1	75.7	14			220.718
11	3	95.5	14	1893	1521	322.941
12	2	88.4	14	1866		195.454
13	2	85.4	14	1019		769.077

Type 5 Radar Waveform_8

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	55.7	19	1248		562.421
2	2	84.3	19	1401		955.8
3	2	52.3	19	1756		853.96
4	3	78.8	19	1489	1740	775.22
5	1	87.2	19			642.43
6	3	68.6	19	1119	1610	1067.59
7	3	77.5	19	1487	1173	71.98
8	2	98.6	19	1811		434.29
9	1	66.5	19			560.9
10	2	80.5	19	1364		111.7

Type 5 Radar Waveform_9

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	63	14	1457		718.307
2	1	84.4	14			433.567
3	2	54	14	1829		395.564
4	1	65.7	14			95.741
5	2	55.6	14	1304		333.599
6	1	83.2	14			496.206
7	2	87.4	14	1197		644.633
8	2	51.7	14	1636		686.44
9	3	51	14	1712	1537	630.727
10	3	71.9	14	1088	1284	565.264
11	3	96.9	14	1509	1492	363.911
12	1	60.5	14			753.429
13	2	93.1	14	1123		825.386
14	3	51.8	14	1558	1679	287.543

Type 5 Radar Waveform_10

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	51.1	19	1582	1124	950.382
2	2	72.3	19	1661		1007.35
3	2	72.5	19	1654		787.43
4	1	81.1	19			753.45
5	2	54.9	19	1967		721.87
6	3	58.4	19	1330	1580	496.86
7	3	67.9	19	1728	1727	736.9
8	1	89.7	19			769.81
9	3	75.2	19	1111	1046	783
10	2	89.9	19	1653		1161.9

Type 5 Radar Waveform_11

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	51.8	18	1651		369.109
2	2	52.2	18	1008		493.28
3	2	72.3	18	1522		842.62
4	2	64	18	1874		288.84
5	1	72	18			55.39
6	2	63.8	18	1337		113.78
7	2	94.6	18	1562		371.33
8	1	77.8	18			3.39
9	1	78.2	18			633.35
10	2	58.8	18	1196		309.58
11	1	77	18			661.5
12	3	53.2	18	1190	1220	79.2

Type 5 Radar Waveform_12

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	88.6	11	1662		146.365
2	3	81.8	11	1994	1102	386.33
3	1	54.2	11			226.98
4	2	63.9	11	1005		30.38
5	2	81.8	11	1858		52.06
6	2	98.9	11	1148		231.47
7	2	78.1	11	1162		770.1
8	1	55.5	11			512.94
9	2	72.9	11	1698		1189
10	1	89.9	11			42.2

Type 5 Radar Waveform_13

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	96.5	10	1181		57.052
2	1	55	10			256.33
3	2	67.7	10	1524		234.4
4	2	89.8	10	1393		10.02
5	3	88	10	1910	1653	125.8
6	2	67.1	10	1820		697.53
7	2	91.2	10	1276		478.97
8	2	69.3	10	1658		815.63
9	1	71.8	10			610.67
10	1	68	10			777.13
11	3	84.1	10	1720	1138	869.4
12	2	91.1	10	1956		715.6

Type 5 Radar Waveform_14

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	84.6	13	1218	1506	942.24
2	1	68.8	13			243.81
3	3	52.9	13	1800	1329	606.58
4	1	51.2	13			317.78
5	2	92.9	13	1706		99.8
6	1	93.9	13			281.27
7	2	74	13	1345		946.91
8	3	51.6	13	1956	1557	377.7
9	3	66.2	13	1665	1729	902.59
10	2	65.8	13	1408		64.17
11	2	60	13	1826		142.7
12	2	64.6	13	1855		857.7

Type 5 Radar Waveform_15

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	60	17			572.648
2	3	90.5	17	1196	1177	721.911
3	2	58	17	1751		932.922
4	2	93.5	17	1934		154.673
5	1	58.8	17			1058.104
6	1	88.8	17			163.895
7	2	63.8	17	1192		799.115
8	3	58.6	17	1772	1424	883.946
9	2	82.3	17	1170		190.437
10	1	54.3	17			430.718
11	2	73.3	17	1117		742.209

Type 5 Radar Waveform_16

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	96.2	6	1655		532.488
2	2	54.1	6	1262		39.899
3	1	71.1	6			109.46
4	2	91.1	6	1015		503.64
5	1	50.6	6			397.77
6	2	52.9	6	1758		334.73
7	2	62.5	6	1538		784.51
8	1	76.5	6			236.08
9	2	59.4	6	1876		606.63
10	2	56	6	1952		742.67
11	1	88.1	6			542.01
12	3	78.3	6	1044	1629	199.26
13	2	67.6	6	1720		40.85
14	3	60.8	6	1840	1734	252.6
15	2	99.4	6	1653		606.1

Type 5 Radar Waveform_17

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	77.4	16	1152		720.438
2	1	63.3	16			387.483
3	2	50.7	16	1920		186.806
4	2	74.3	16	1130		35.339
5	2	78.1	16	1377		500.362
6	3	61.6	16	1434	1525	517.355
7	1	64.3	16			176.248
8	2	80.7	16	1688		373.022
9	1	95.1	16			485.875
10	1	99.9	16			206.498
11	3	95.1	16	1406	1871	442.531
12	3	69.1	16	1649	1450	54.554
13	1	67.6	16			375.677

Type 5 Radar Waveform_18

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	85.8	20	1498		1221.79
2	2	69.7	20	1192		364.397
3	1	92	20			203.883
4	2	92.9	20	1506		603.71
5	3	56.1	20	1067	1644	0.007
6	3	66.8	20	1554	1518	782.493
7	2	79.6	20	1973		493.57
8	2	63.1	20	1089		333.037
9	2	94.2	20	1311		744.333

Type 5 Radar Waveform_19

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	50.4	9	1373		227.482
2	2	68.1	9	1052		379.22
3	2	63.3	9	1267		315.34
4	2	89	9	1658		351.31
5	1	59.3	9			73.61
6	2	92.2	9	1342		476.61
7	2	79.7	9	1664		211.49
8	2	99.4	9	1845		649.8
9	3	88.7	9	1150	1006	495.27
10	3	85.9	9	1055	1993	759.39
11	2	67.4	9	1870		782.4
12	1	66.2	9			453.2

Type 5 Radar Waveform_20

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	53.1	18			545.897
2	2	71.4	18	1201		39.857
3	1	64.6	18			321.993
4	3	56	18	1317	1500	1324.23
5	3	55.3	18	1964	1797	1012.107
6	2	71.2	18	1458		1235.023
7	3	97.7	18	1776	1564	495.46
8	3	84.5	18	1700	1327	491.347
9	2	75.3	18	1515		398.233

Type 5 Radar Waveform_21

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	71.9	10			170.056
2	2	85.3	10	1348		171.343
3	3	94.7	10	1709	1944	609.836
4	3	66.2	10	1242	1749	303.449
5	1	60.3	10			561.332
6	2	69	10	1209		572.735
7	2	55.4	10	1869		863.508
8	2	62.1	10	1859		445.292
9	1	51.8	10			245.305
10	2	52.7	10	1337		199.768
11	3	78.6	10	1545	1503	132.861
12	1	60.2	10			773.754
13	3	55.3	10	1049	1868	314.077

Type 5 Radar Waveform_22

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	85	10			1302.12
2	3	80.2	10	1785	1185	1137.857
3	2	90.9	10	1086		332.063
4	2	66.1	10	1246		617.38
5	2	75.2	10	1019		460.597
6	2	65.9	10	1827		303.083
7	2	56.3	10	1620		899.46
8	2	52.9	10	1523		716.067
9	2	61.3	10	1883		922.733

Type 5 Radar Waveform_23

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	78.1	11	1635	1060	146.137
2	3	50.8	11	1448	1717	356.718
3	3	93.2	11	1781	1496	548.975
4	2	93.3	11	1130		11.323
5	1	86.4	11			631.351
6	2	81.8	11	1625		407.808
7	3	88.1	11	1125	1178	99.566
8	2	79.7	11	1359		53.784
9	3	84.1	11	1038	1965	101.261
10	2	65.7	11	1492		236.509
11	3	71.3	11	1087	1315	504.016
12	2	79.9	11	1514		329.884
13	1	66.6	11			631.542
14	2	91	11	1230		67.849
15	2	89.1	11	1851		296.447
16	2	63.9	11	1918		336.865
17	3	73.7	11	1733	1151	199.982

Type 5 Radar Waveform_24

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	79.5	7	1495		67.902
2	3	77.2	7	1036	1953	282.05
3	2	55.6	7	1323		199.26
4	1	79.4	7			403.51
5	3	57.8	7	1450	1591	254.48
6	3	90.7	7	1200	1437	103.39
7	2	85.6	7	1904		44.89
8	2	74.5	7	1919		586.28
9	2	99.3	7	1612		420.07
10	1	88.4	7			247.65
11	1	93.1	7			434.26
12	3	60.2	7	1588	1939	540.99
13	2	72.2	7	1710		94.55
14	3	93.1	7	1348	1354	520.2
15	1	57.9	7			580.6
16	2	76.5	7	1837		416.9

Type 5 Radar Waveform_25

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	58	18	1468	1983	321.384
2	2	81.2	18	1445		520.59
3	2	70.7	18	1419		423.42
4	2	78.1	18	1409		396.99
5	2	94.9	18	1827		322.18
6	2	84.1	18	1285		446.88
7	2	68.2	18	1014		321.02
8	2	74.7	18	1955		61.46
9	3	79.4	18	1120	1128	237.22
10	2	56.1	18	1730		88.22
11	2	93.7	18	1423		432.79
12	2	50	18	1377		560.22
13	2	54.1	18	1300		173.73
14	3	92.3	18	1623	1860	157.54
15	3	62.2	18	1809	1259	565.13
16	3	92.1	18	1347	1172	192.93
17	2	94.4	18	1500		365.99
18	2	72.2	18	1228		433.1
19	2	50.8	18	1267		123
20	1	62.3	18			379.9

Type 5 Radar Waveform_26

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	92.2	16	1981		213.788
2	2	84.4	16	1647		3.309
3	2	51.5	16	1869		127.412
4	2	65.7	16	1291		205.623
5	2	81.2	16	1566		574.714
6	3	67.9	16	1615	1430	584.905
7	3	77.4	16	1159	1664	414.946
8	2	54.3	16	1405		50.107
9	3	73.6	16	1562	1211	506.648
10	2	67.6	16	1085		519.659
11	2	69.4	16	1603		111.301
12	3	98.3	16	1423	1003	158.922
13	2	56.8	16	1901		193.513
14	1	60.9	16			4.954
15	1	77.7	16			578.155
16	2	94.6	16	1360		376.396
17	1	72.3	16			471.437
18	1	99.5	16			180.958
19	3	93.4	16	1452	1919	429.379

Type 5 Radar Waveform_27

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	54.7	15			321.562
2	1	90	15			314.547
3	2	80	15	1431		481.454
4	1	92.4	15			2.041
5	1	67	15			259.599
6	2	56.8	15	1645		301.056
7	3	76.1	15	1406	1788	597.793
8	2	63.6	15	1702		101.3
9	1	57.7	15			513.067
10	2	99.5	15	1720		169.004
11	2	72.8	15	1041		37.941
12	1	94.8	15			72.199
13	2	66.7	15	1591		665.886
14	2	65.8	15	1334		611.743

Type 5 Radar Waveform_28

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	3	79.7	5	1358	1108	399.442
2	1	94.5	5			607.098
3	3	88	5	1857	1489	594.125
4	2	55.4	5	1905		364.523
5	2	63.8	5	1128		358.631
6	2	74.4	5	1662		185.798
7	2	97.9	5	1478		451.246
8	2	86.3	5	1802		238.984
9	2	70.2	5	1618		298.881
10	1	57	5			393.379
11	2	60.8	5	1998		255.206
12	1	84.1	5			96.764
13	2	82.9	5	1308		442.722
14	2	60.2	5	1145		37.629
15	2	58.4	5	1611		415.947
16	3	88.9	5	1067	1772	10.765
17	1	86.4	5			398.982

Type 5 Radar Waveform_29

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	1	77.3	18			940.355
2	2	51	18	1675		297.671
3	1	80.5	18			1077.052
4	3	66.6	18	1323	1594	1061.183
5	2	57.8	18	1503		393.424
6	1	77.5	18			619.585
7	2	92.4	18	1003		303.345
8	3	85.6	18	1967	1557	232.076
9	3	66.1	18	1646	1125	236.627
10	1	82.4	18			656.118
11	2	55.8	18	1149		1043.209

Type 5 Radar Waveform_30

Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 PRI (µsec)	Pulse 2-to-3 PRI (µsec)	Start Location Within Interval (msec)
1	2	78.3	20	1561		529.163
2	3	90.8	20	1195	1777	379.317
3	2	83.3	20	1346		512.994
4	3	64.1	20	1640	1019	374.391
5	2	74.6	20	1934		676.449
6	1	96	20			26.616
7	2	72.4	20	1605		295.003
8	3	90.9	20	1026	1345	645.72
9	3	61	20	1112	1221	309.587
10	1	98.3	20			405.564
11	3	62.7	20	1403	1355	666.021
12	3	54.9	20	1033	1119	423.859
13	3	75.3	20	1480	1060	329.186
14	1	52.1	20			182.643

Radar Type 6 - Radar Statistical Performance

Trail #	1=Detection 0=No Detection	Trail #	1=Detection 0=No Detection
1	1	16	1
2	1	17	1
3	1	18	1
4	1	19	1
5	1	20	1
6	1	21	1
7	1	22	1
8	1	23	1
9	1	24	1
10	1	25	1
11	1	26	1
12	1	27	1
13	1	28	1
14	1	29	1
15	1	30	1
Detection Percentage (%)			100

Radar waveform #1			Radar waveform #2		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
14	5557	42	3	5540	9
15	5524	45	13	5506	39
17	5542	51	14	5549	42
20	5550	60	44	5531	132
21	5513	63	46	5515	138
24	5506	72	60	5516	180
26	5522	78	67	5501	201
31	5548	93	81	5544	243
49	5570	147	82	5542	246
62	5499	186	83	5504	249
64	5565	192	85	5493	255
66	5511	198	87	5538	261
69	5502	207	99	5524	297
75	5531	225	--	--	--
78	5497	234	--	--	--
80	5551	240	--	--	--
99	5507	297	--	--	--

Radar waveform #3			Radar waveform #4		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5515	9	5	5567	15
5	5492	15	8	5557	24
11	5569	33	15	5556	45
13	5495	39	24	5568	72
19	5545	57	34	5540	102
22	5570	66	39	5554	117
23	5539	69	42	5531	126
40	5508	120	47	5512	141
42	5543	126	52	5491	156
51	5562	153	61	5523	183
52	5532	156	68	5537	204
56	5513	168	71	5505	213
66	5561	198	73	5525	219
67	5565	201	75	5490	225
68	5517	204	79	5563	237
74	5528	222	81	5520	243
78	5556	234	86	5545	258
79	5511	237	91	5496	273
81	5564	243	--	--	--
82	5507	246	--	--	--
89	5547	267	--	--	--
92	5560	276	--	--	--
95	5563	285	--	--	--
97	5509	291	--	--	--
98	5527	294	--	--	--

Radar waveform #5			Radar waveform #6		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
6	5562	18	7	5527	21
18	5554	54	11	5552	33
26	5511	78	13	5547	39
27	5515	81	14	5569	42
39	5560	117	18	5508	54
42	5490	126	26	5496	78
50	5518	150	27	5510	81
52	5539	156	32	5511	96
55	5558	165	56	5499	168
56	5510	168	57	5501	171
57	5514	171	67	5509	201
59	5516	177	70	5562	210
66	5536	198	72	5543	216
73	5556	219	85	5535	255
75	5517	225	88	5503	264
76	5535	228	91	5512	273
82	5532	246	92	5551	276
83	5542	249	93	5555	279
91	5548	273	95	5490	285
95	5541	285	99	5504	297
98	5504	294	100	5549	300

Radar waveform #7			Radar waveform #8		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
18	5497	54	10	5493	30
33	5512	99	16	5520	48
45	5536	135	20	5532	60
50	5556	150	24	5507	72
61	5509	183	25	5564	75
65	5525	195	27	5549	81
79	5551	237	29	5535	87
84	5535	252	30	5544	90
88	5502	264	38	5528	114
96	5503	288	42	5534	126
100	5549	300	56	5522	168
--	--	--	63	5512	189
--	--	--	69	5546	207
--	--	--	73	5495	219
--	--	--	74	5492	222
--	--	--	79	5514	237
--	--	--	80	5499	240
--	--	--	81	5523	243
--	--	--	89	5556	267

Radar waveform #9			Radar waveform #10		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
2	5526	6	1	5536	3
9	5562	27	4	5570	12
10	5494	30	6	5551	18
15	5569	45	14	5530	42
22	5550	66	36	5500	108
50	5547	150	37	5550	111
51	5556	153	44	5538	132
53	5540	159	47	5533	141
60	5542	180	48	5507	144
73	5510	219	68	5521	204
78	5534	234	71	5520	213
82	5545	246	74	5513	222
91	5495	273	91	5493	273
96	5515	288	96	5558	288
99	5528	297	97	5509	291

Radar waveform #11			Radar waveform #12		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5533	12	2	5530	6
7	5541	21	10	5561	30
10	5506	30	15	5529	45
12	5547	36	21	5543	63
13	5563	39	25	5519	75
14	5499	42	28	5544	84
17	5538	51	33	5560	99
20	5536	60	35	5537	105
29	5505	87	36	5523	108
35	5528	105	51	5496	153
37	5522	111	66	5538	198
39	5564	117	72	5556	216
40	5534	120	85	5555	255
42	5550	126	86	5494	258
46	5569	138	89	5511	267
59	5570	177	92	5502	276
62	5495	186	99	5495	297
71	5503	213	100	5525	300
77	5561	231	--	--	--
85	5562	255	--	--	--
96	5557	288	--	--	--
99	5523	297	--	--	--
100	5518	300	--	--	--

Radar waveform #13			Radar waveform #14		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
18	5541	54	3	5558	9
21	5535	63	6	5500	18
41	5513	123	11	5554	33
45	5539	135	26	5521	78
50	5502	150	36	5527	108
52	5523	156	43	5506	129
53	5570	159	56	5555	168
65	5532	195	60	5540	180
67	5509	201	70	5508	210
68	5549	204	71	5569	213
79	5545	237	72	5517	216
80	5566	240	73	5565	219
83	5499	249	74	5535	222
90	5554	270	79	5541	237
93	5505	279	96	5497	288
--	--	--	100	5516	300

Radar waveform #15			Radar waveform #16		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
4	5542	12	7	5528	21
14	5491	42	25	5518	75
20	5546	60	38	5502	114
45	5526	135	46	5515	138
53	5562	159	50	5519	150
59	5505	177	52	5509	156
65	5519	195	57	5569	171
75	5502	225	62	5563	186
76	5516	228	65	5567	195
87	5541	261	80	5529	240
89	5507	267	87	5551	261
97	5500	291	91	5499	273
99	5568	297	92	5514	276

Radar waveform #17			Radar waveform #18		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5493	3	2	5518	6
17	5502	51	16	5522	48
28	5538	84	22	5501	66
39	5561	117	27	5510	81
45	5506	135	33	5503	99
59	5568	177	44	5550	132
60	5496	180	46	5538	138
66	5529	198	50	5492	150
69	5516	207	56	5493	168
79	5533	237	71	5532	213
--	--	--	79	5531	237
--	--	--	81	5512	243
--	--	--	83	5534	249
--	--	--	88	5490	264
--	--	--	89	5567	267
--	--	--	92	5553	276
--	--	--	95	5557	285
--	--	--	96	5494	288

Radar waveform #19			Radar waveform #20		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
10	5538	30	13	5492	39
30	5566	90	16	5551	48
32	5493	96	26	5519	78
40	5559	120	28	5524	84
48	5541	144	40	5515	120
51	5551	153	43	5550	129
61	5554	183	47	5501	141
71	5527	213	48	5516	144
73	5505	219	55	5490	165
75	5499	225	60	5521	180
76	5568	228	62	5512	186
88	5562	264	65	5552	195
89	5534	267	67	5497	201
94	5513	282	82	5547	246
98	5529	294	98	5528	294
--	--	--	99	5564	297

Radar waveform #21			Radar waveform #22		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
7	5570	21	1	5552	3
10	5536	30	2	5548	6
12	5505	36	12	5522	36
14	5545	42	15	5542	45
21	5552	63	27	5518	81
25	5498	75	31	5543	93
29	5548	87	33	5493	99
30	5558	90	48	5566	144
43	5556	129	49	5559	147
47	5551	141	55	5547	165
49	5512	147	61	5527	183
55	5504	165	62	5560	186
58	5503	174	65	5561	195
59	5562	177	77	5491	231
61	5538	183	85	5535	255
73	5497	219	98	5490	294
74	5542	222	--	--	--
77	5496	231	--	--	--
89	5568	267	--	--	--
94	5567	282	--	--	--
95	5541	285	--	--	--
98	5534	294	--	--	--

Radar waveform #23			Radar waveform #24		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
3	5557	9	5	5532	15
4	5556	12	20	5550	60
7	5513	21	37	5494	111
12	5520	36	43	5492	129
14	5504	42	46	5516	138
19	5561	57	55	5517	165
20	5519	60	59	5553	177
23	5505	69	65	5541	195
37	5507	111	77	5528	231
39	5536	117	78	5507	234
42	5525	126	80	5562	240
43	5499	129	84	5530	252
50	5548	150	85	5495	255
51	5498	153	96	5527	288
61	5527	183	--	--	--
68	5564	204	--	--	--
73	5553	219	--	--	--
75	5509	225	--	--	--
90	5566	270	--	--	--
91	5492	273	--	--	--

Radar waveform #25			Radar waveform #26		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
8	5536	24	7	5558	21
14	5519	42	12	5529	36
16	5531	48	13	5536	39
23	5525	69	23	5534	69
26	5490	78	25	5505	75
28	5545	84	26	5512	78
36	5555	108	30	5508	90
46	5564	138	33	5519	99
48	5528	144	34	5506	102
57	5542	171	36	5555	108
61	5550	183	38	5528	114
62	5501	186	40	5520	120
65	5496	195	51	5544	153
66	5547	198	57	5537	171
69	5522	207	60	5494	180
77	5562	231	66	5562	198
86	5539	258	67	5530	201
90	5570	270	71	5557	213
91	5543	273	74	5509	222
95	5535	285	77	5545	231
--	--	--	91	5553	273
--	--	--	98	5570	294

Radar waveform #27			Radar waveform #28		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
9	5525	27	4	5549	12
14	5535	42	10	5560	30
32	5545	96	20	5529	60
33	5557	99	23	5504	69
38	5522	114	33	5518	99
44	5560	132	50	5506	150
54	5517	162	51	5559	153
60	5491	180	54	5554	162
78	5568	234	58	5570	174
83	5547	249	73	5520	219
--	--	--	91	5535	273

Radar waveform #29			Radar waveform #30		
Hopping Number	Frequency (MHz)	Pulse Start (ms)	Hopping Number	Frequency (MHz)	Pulse Start (ms)
1	5504	3	4	5565	12
12	5539	36	9	5552	27
23	5510	69	11	5499	33
26	5544	78	17	5516	51
34	5509	102	20	5559	60
37	5549	111	24	5542	72
38	5553	114	33	5538	99
45	5568	135	40	5545	120
50	5561	150	48	5534	144
53	5562	159	63	5514	189
56	5525	168	71	5553	213
76	5511	228	74	5562	222
79	5498	237	77	5544	231
87	5546	261	81	5519	243
89	5536	267	88	5508	264
96	5550	288	90	5569	270
--	--	--	96	5496	288
--	--	--	100	5541	300

6. CONCLUSION

The data collected relate only the item(s) tested and show that the device is in compliance with FCC Rules.

————— The End —————

Appendix - Test Setup Photograph

Refer to "2108RSU082-UT" file.