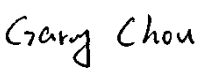



DFS TEST REPORT



Report No.: FCC_IC DFS_SL17030601-SHU-001A1_UNII Rev 1.0





Supersede Report No.: FCC_IC DFS_SL17030601-SHU-001A1_UNII

Applicant	Shure Inc.		
Product Name	MXCW Wireless Discussion System		
Model No.	MXCWAPT		
Test Standard	47CFR15.407 (h) RSS 247 Issue 1 2015		
Test Method	905462 D02 UNII DFS Compliance Procedures New Rules v02		
FCC ID	DD4MXCWAPT		
IC ID	616A-MXCWAPT		
Date of test	05/06/2017 to 09/13/2017		
Issue Date	09/19/2017		
Test Result	<u>Pass</u>	Fail	
Equipment complied with the specification			<input checked="" type="checkbox"/>
Equipment did not comply with the specification			<input type="checkbox"/>
			
Gary Chou		Chen Ge	
Test Engineer		Engineer Reviewer	
<p>This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only</p>			

Issued By:
SIEMIC Laboratories
775 Montague Expressway, Milpitas, 95035 CA



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Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC, RF/Wireless, Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless, Telecom
Taiwan	BSMI, NCC, NIST	EMC, RF, Telecom, Safety
Hong Kong	OFTA, NIST	RF/Wireless, Telecom
Australia	NATA, NIST	EMC, RF, Telecom, Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF, Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC, RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom, Safety
Israel	MOC, NIST	EMC, RF, Telecom, Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC, RF, Telecom
Canada	IC FCB, NIST	EMC, RF, Telecom
Singapore	iDA, NIST	EMC, RF, Telecom
EU	NB	EMC & R&TTE Directive
Japan	MIC (RCB 208)	RF, Telecom
HongKong	OFTA (US002)	RF, Telecom

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
FCC_IC DFS_SL17030601-SHU-001A1_UNII	None	Original	09/19/2017
FCC_IC DFS_SL17030601-SHU-001A1_UNII Rev 1.0	Rev 1.0	Updated per customer	10/03/2017

2 Executive Summary

The purpose of this test program was to demonstrate compliance of following product

Company: Shure Inc.
Product: MXCW Wireless Discussion System
Model: MXCWAPT

against the current Stipulated Standards. The specified model product stated above has demonstrated compliance with the Stipulated Standard listed on 1st page.

3 Customer information

Applicant Name	Shure Inc.
Applicant Address	5800 Touhy Ave, Niles, IL 60714 USA
Manufacturer Name	Shure Inc.
Manufacturer Address	5800 Touhy Ave, Niles, IL 60714 USA

4 Test site information

Lab performing tests	SIEMIC Laboratories
Lab Address	775 Montague Expressway, Milpitas, CA 95035
FCC Test Site No.	881796
IC Test Site No.	4842D-2
VCCI Test Site No.	A0133

5 Modification

Index	Item	Description	Note
-	-	-	-

6 EUT Information

6.1 EUT Description

Product Name	MXCW Wireless Discussion System
Model No.	MXCWAPT
Trade Name	SHURE
Serial No.	N/A
Host Model No.	MXCWAPT
Input Power	Power over Ethernet (PoE)
Power Adapter Manu/Model	Cisco 8-Port Gigabit Smart Switch with Power over Ethernet
Power Adapter SN	PSZ21011BPR
Date of EUT received	09/11/2017
Equipment Class/ Category	Wideband transmission system
Port/Connectors	XLR Audio Input and Output, PoE Ethernet for communication and power

6.2 Radio Description

Radio Type	802.11g	802.11a
Operating Frequency	2412-2462MHz	5180-5320MHz 5500-5720MHz 5745-5825MHz
Modulation	OFDM-CCK (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing	5MHz	20MHz
Number of Channels	11	20
Antenna Type	Custom dual band antenna soldered to PCB	
Antenna Gain (Peak)	6 dBi (5GHz)	
Antenna Connector Type	N/A	
Note	2.4GHz and 5GHz Radio do not transmit simultaneously	

Note:

1. The EUT operates in master mode.
2. The EUT was set to transmit at 20MHz during test.
3. EUT has 1 antenna sets, Custom dual band antenna soldered to PCB with 6dBi gain.
4. The EUT will not operate at frequency 5600-5660MHz in Canada.

6.3 EUT Photos-External



EUT – Top View



EUT – Bottom View



EUT – Front View



EUT – Rear View

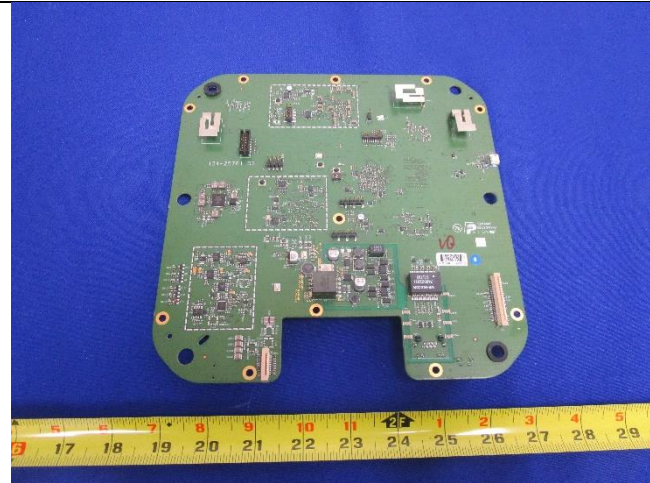


EUT – Left side View

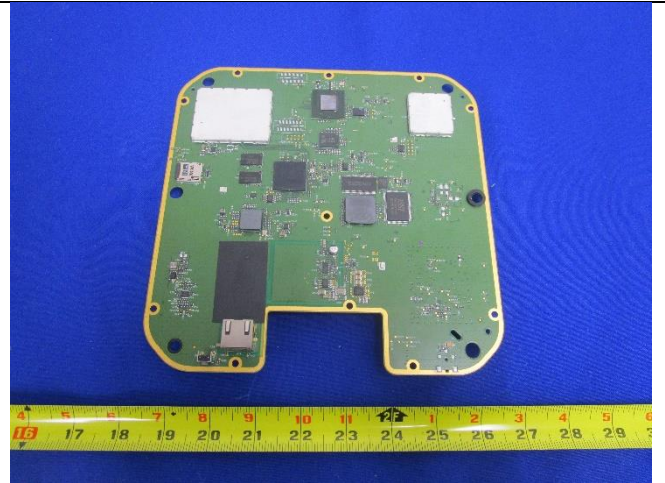


EUT – Right side View

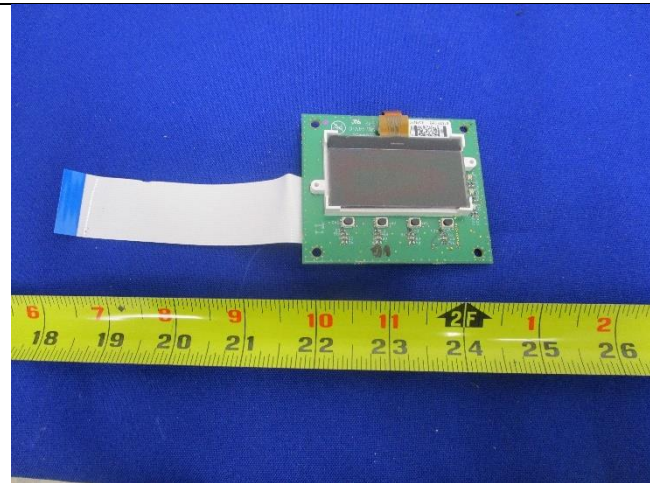
6.4 EUT Photos - Internal



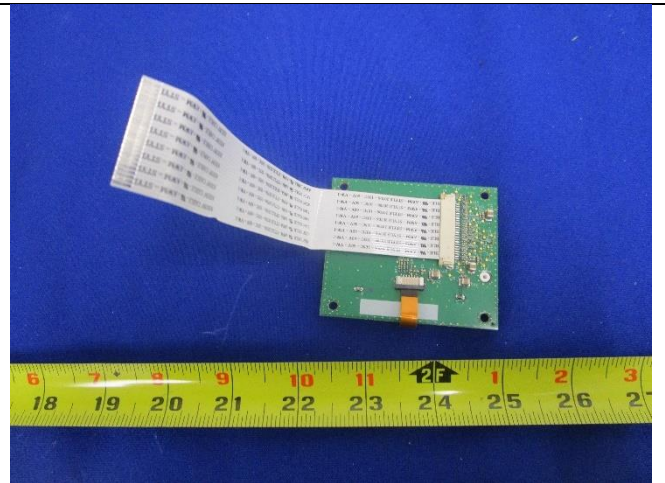
Main Board Top View



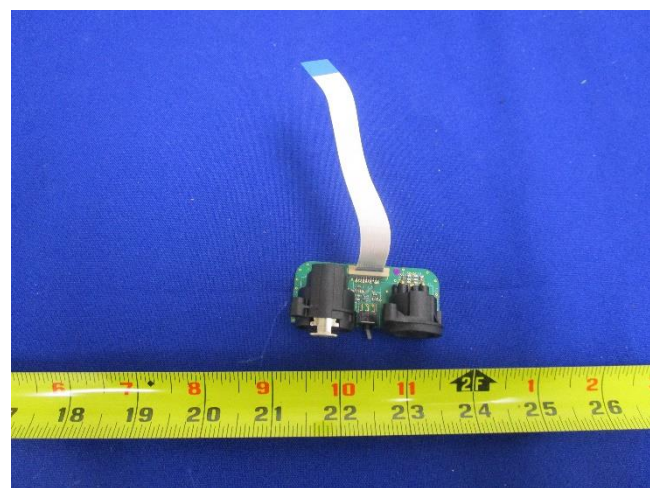
Main Board Bottom View



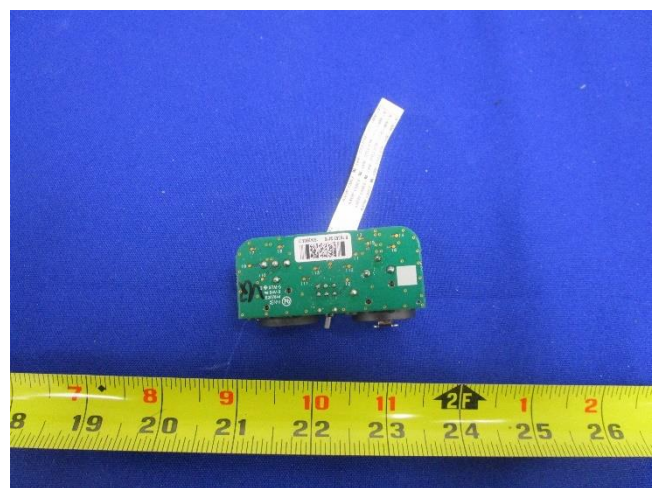
Screen Board Top View



Screen Board Bottom View

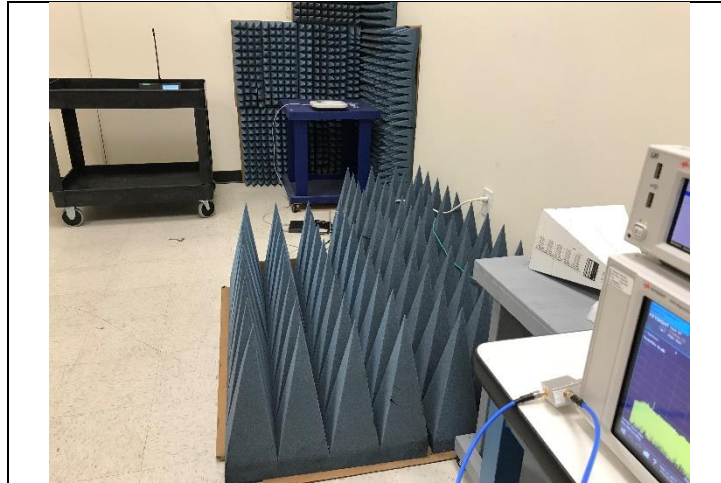


XLR Connector Board Top View



XLR Connector Board Bottom View

6.5 EUT Test Setup Photos



DFS

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
1	Laptop	PP01L Latitude E5440	F1WPF12	Dell	-

7.2 Cabling Description

Name	Connection Start		Connection Stop		Length / shielding Info		Note
	From	I/O Port	To	I/O Port	Length (m)	Shielding	
RJ45	EUT	RJ45	Laptop	RJ45	1	Unshielded	-

7.3 Test Software Description

Test Item	Software	Description
DFS Testing	Manufacturer test software	Monitor the statistic performance

8 Test Summary

Test Item	Test standard	Test Method/Procedure	Pass / Fail
UNII Detection Bandwidth	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
Initial Channel Availability Check Time	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
Radar Burst at the Beginning of the Channel Availability Check Time	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
Radar Burst at the End of the Channel Availability Check Time	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
In-Service Monitoring - Channel Move Time	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
In-Service Monitoring - Channel Closing Transmission Time	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
In-Service Monitoring - Non-Occupancy Period	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
Statistical Performance Check	47CFR15.407 (h) RSS 247 Issue 1 2015	905462 D02 UNII DFS Compliance Procedures New Rules v02	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A
Remark	N/A		

9 Measurement Uncertainty

Test Item	Frequency Range	Description	Uncertainty
Dynamic frequency selection (DFS) Conducted Measurement	5GHz – 6GHz	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2	$\pm 1.5\text{dB}$

10 Measurements, examination and derived results

10.1 Dynamic Frequency Selection (DFS)

10.1.1 General introduction

Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥ 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 spectra 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.

DFS Response requirement values

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 UNII 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 facilitating 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.

Radar Test Waveforms

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

1. Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum 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 5a	Roundup { (1/360) * (19*10 ⁶ /PRI _{μsec})	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A	-		
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

2. 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 Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse radar test signal. If more than 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.

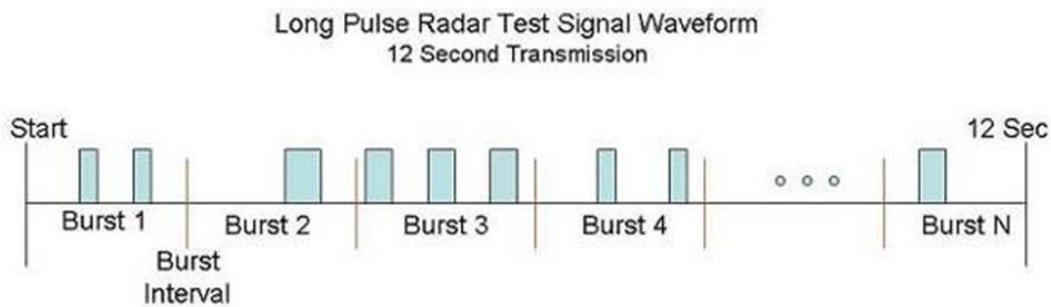
Each waveform is defined as follows:

- 1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
- 2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst_Count.
- 3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
- 4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the same pulse width. Pulses in different Bursts may have different pulse widths.
- 5) Each pulse has a linear FM chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a Burst will have the same chirp width. Pulses in different Bursts may have different chirp widths. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.

- 6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
- 7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst_Count. Each interval is of length $(12,000,000 / \text{Burst_Count})$ microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and $[(12,000,000 / \text{Burst_Count}) - (\text{Total Burst Length}) + (\text{One Random PRI Interval})]$ microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen independently.

A representative example of a Long Pulse radar test waveform:

- 1) The total test signal length is 12 seconds.
- 2) 8 Bursts are randomly generated for the Burst Count.
- 3) Burst 1 has 2 randomly generated pulses.
- 4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
- 5) The PRI is randomly selected to be at 1213 microseconds.
- 6) Bursts 2 through 8 are generated using steps 3 – 5.
- 7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 – 3,000,000 microsecond range).



3. Frequency Hopping Radar Type

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	.333	300	70%	30

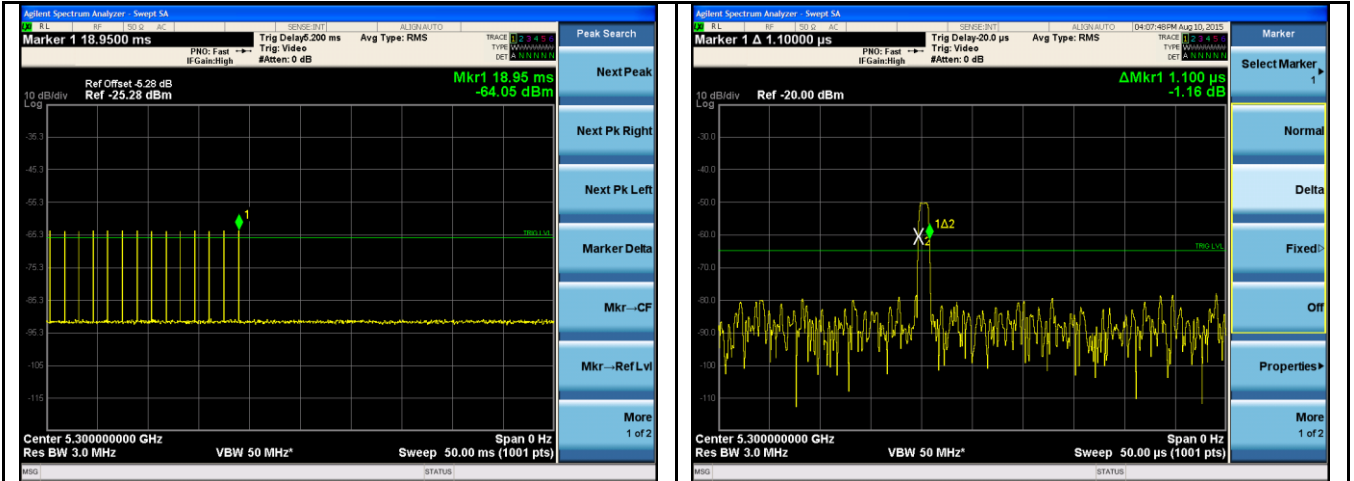
For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected 1 from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. 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.

10.1.2 Radar Waveform Calibration

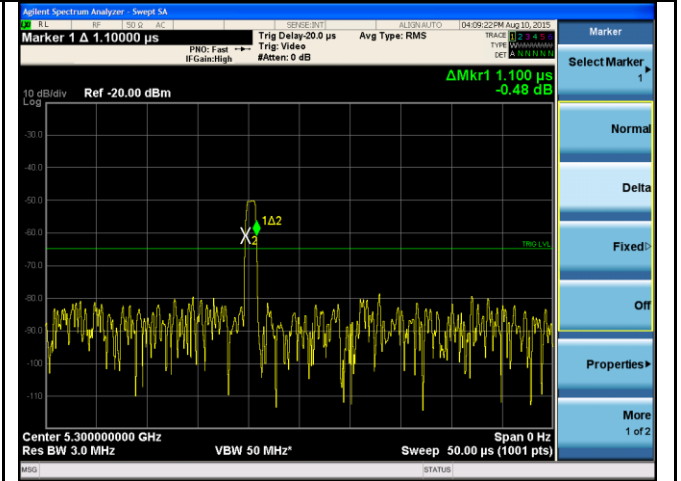
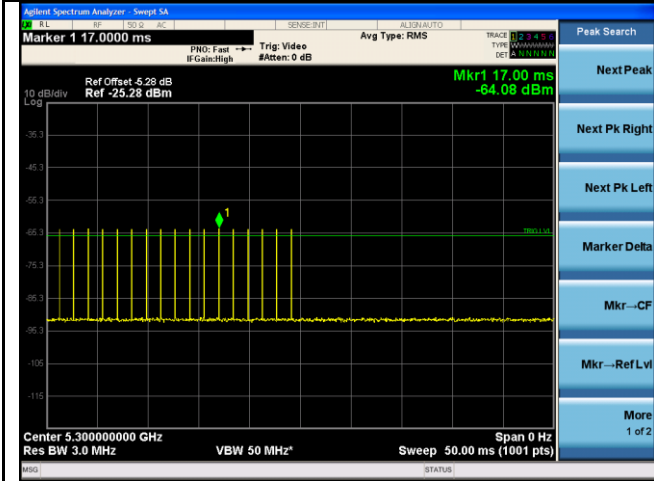
The following equipment setup was used to calibrate the conducted Radar Waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) mode at the frequency of the Radar Waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz.

Calibration Test Plots



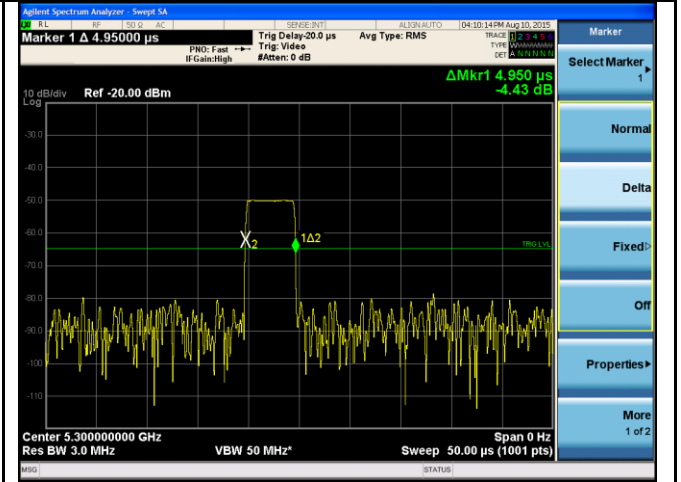
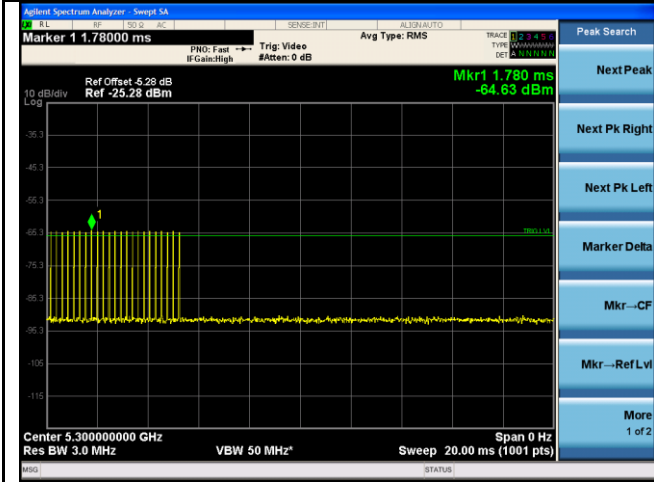
Radar Calibration - Type 0

Radar Calibration - Type 0 (Single Burst)



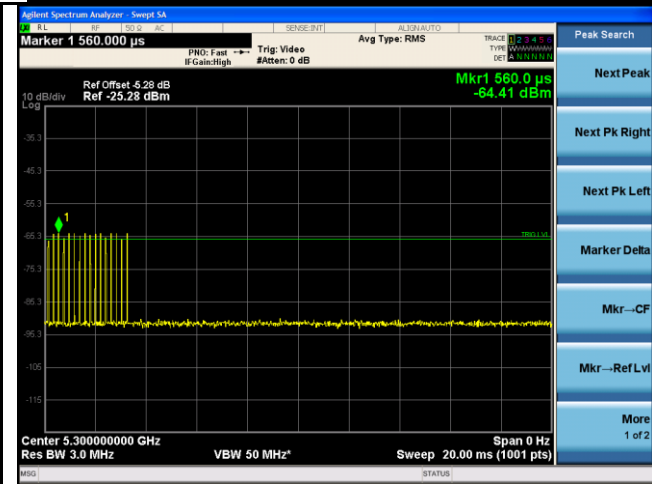
Radar Calibration - Type 1

Radar Calibration - Type 1 (Single Burst)

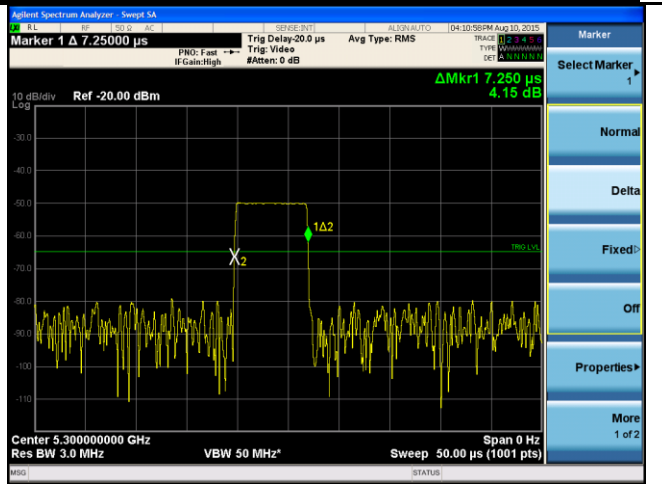


Radar Calibration - Type 2

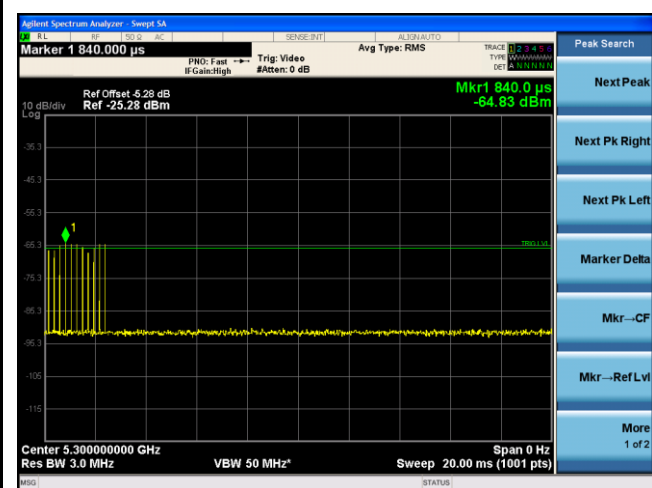
Radar Calibration - Type 2 (Single Burst)



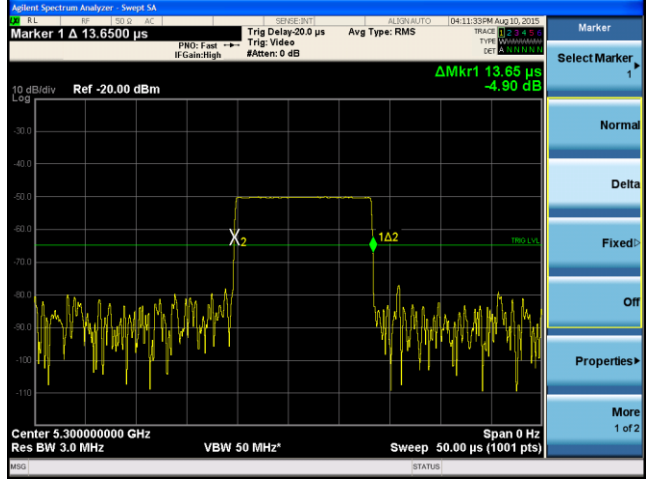
Radar Calibration - Type 3



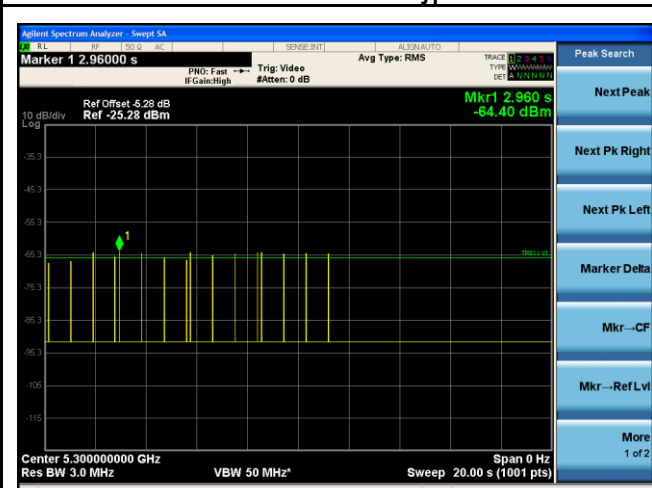
Radar Calibration - Type 3 (Single Burst)



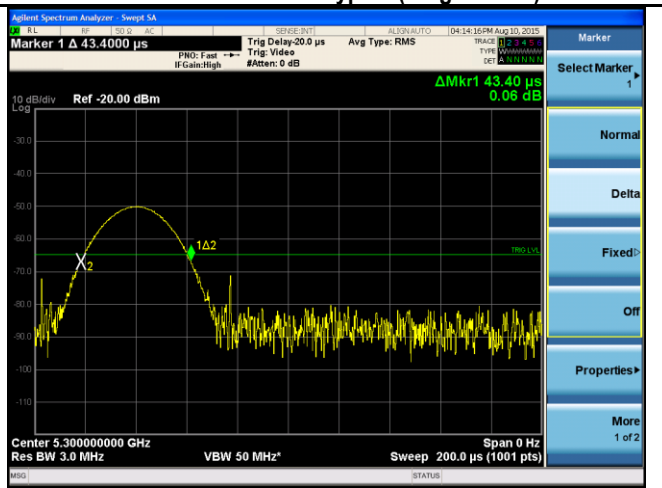
Radar Calibration - Type 4



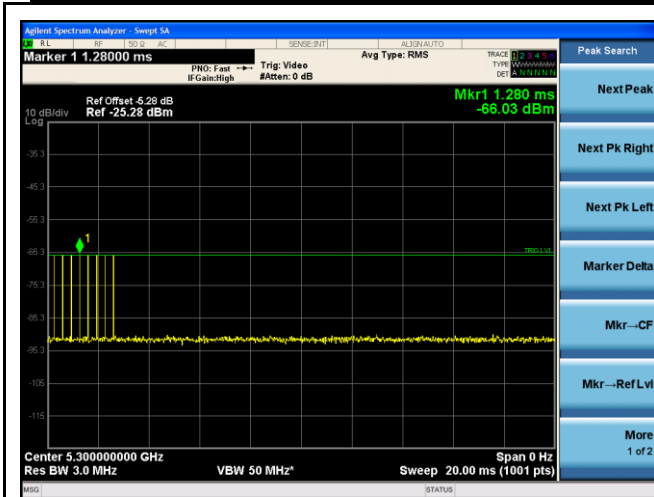
Radar Calibration - Type 4 (Single Burst)



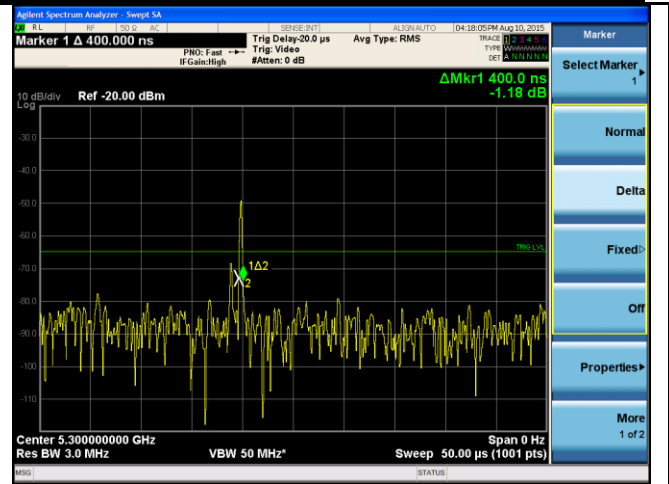
Radar Calibration - Type 5



Radar Calibration - Type 5 (Single Burst)



Radar Calibration - Type 6



Radar Calibration - Type 6 (Single Burst)

10.1.3 Test Procedure

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

These tests define how the following DFS parameters are verified during In-Service Monitoring; Channel Closing Transmission Time, Channel Move Time, and Non-Occupancy Period.

The steps below define the procedure to determine the above mentioned parameters 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.

UUT operating as a Master Device will associate with the (Client) at Mid Channel. DFS testing while the System testing was performed with the designated MPEG test file that streams full motion video at 30 frames per second from the Master to the Client IP based system

At time T0 the Radar Waveform generator sends a Burst of pulses for each of the radar types.

Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Compare the Channel Move Time and Channel Closing Transmission Time results to the limits defined in the DFS Response requirement values table.

Channel Closing Transmission Time- Measurement

A type 1 waveform was introduced to the EUT and the Spectrum Analyzer sweep time was set to 1s for monitoring and capturing the plot. A LabView program was created to collect trace data and capturing the plot. The program will calculate the channel closing time base on the spectrum analyzer result. The result will be calculated based on FCC procedure.

$$C= N \cdot D_{well}$$

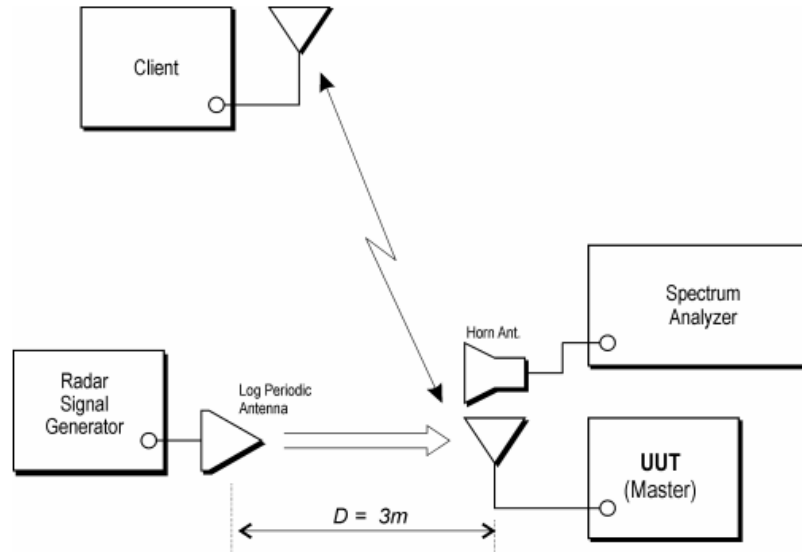
C is the closing time, N is the number of spectrum analyzer sampling bins showing a U-NII transmission and dwell is the dwell time per bin.

$$D_{well}= S/B$$

Where Dwell is the dwell time per spectrum analyzer sampling bin, S is the sweep time and B is the number of spectrum analyzer sampling bins.

10.1.4 DFS Test Setup

Test Setup Block Diagram



The radio was set at the center channel frequency of tested Channel.
A FCC approved Client device was used to link with the UUT (master) device.

For the frequency bands 5470MHz to 5725MHz 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.

The rated output power of the Master unit is > 23 dBm (EIRP). Therefore the required interference threshold is -64 dBm. After correction for procedural adjustment, the required radiated threshold at the antenna port is $-64 + 1 = -63$ dBm.

The calibrated radiated DFS detection threshold level is set to -64 dBm. The tested level is lower than the required level hence it provides margining to the limit.

10.1.5 **DFS Test Results**

10.1.5.1 **UNII Detection Bandwidth**

UNII Detection Bandwidth: All UNII channels for this device have identical Channel bandwidths and testing was performed on Mid Channel

The generating equipment is configured as shown in the Conducted Test Setup above. A single *Burst* of the short pulse radar type 0 is produced at Mid Channel at a -63 dBm level. The UUT is set up as a standalone device (no associated Client and no traffic).

A single radar Burst is generated for a minimum of 10 trials, and the response of the UUT is noted. The UUT must detect the Radar Waveform 90% or more of the time.

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. Repeat this measurement in 1MHz steps at frequencies 5 MHz below where the detection rate begins to fall. Record the highest frequency (denote as FH) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies above FH is not required to demonstrate compliance.

Starting at the center frequency of the UUT operating Channel, decrease 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 4. Repeat this measurement in 1MHz steps at frequencies 5 MHz above where the detection rate begins to fall. Record the lowest frequency (denote as FL) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies below FL is not required to demonstrate compliance.

The U-NII Detection Bandwidth is calculated as follows:

$$\text{U-NII Detection Bandwidth} = \text{FH} - \text{FL}$$

The U-NII Detection Bandwidth must be at least 100% of the UUT transmitter 99% power, otherwise, the UUT does not comply with DFS requirements.

Test Result

EUT Frequency = 5300MHz (11a mode)

Frequency (MHz)	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Detection Rate %
5530	No	No	No	No	No	No	No	No	No	No	0.00%
5290	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5295	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5300	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5305	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5310	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5311	No	No	No	No	No	No	No	No	No	No	0.00%
Detection Bandwidth: 20 MHz											
Specification: at least 100% of 99% of EUT bandwidth= 16.658 MHz											

EUT Frequency = 5500MHz (11a mode)

Frequency (MHz)	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Detection Rate %
5489	No	No	No	No	No	No	No	No	No	No	0.00%
5490	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5495	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5500	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5505	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5510	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100.00%
5511	No	No	No	No	No	No	No	No	No	No	0.00%
Detection Bandwidth: 20 MHz											
Specification: at least 100% of 99% of EUT bandwidth= 16.485 MHz											

10.1.5.2 Initial Channel Availability Check Time

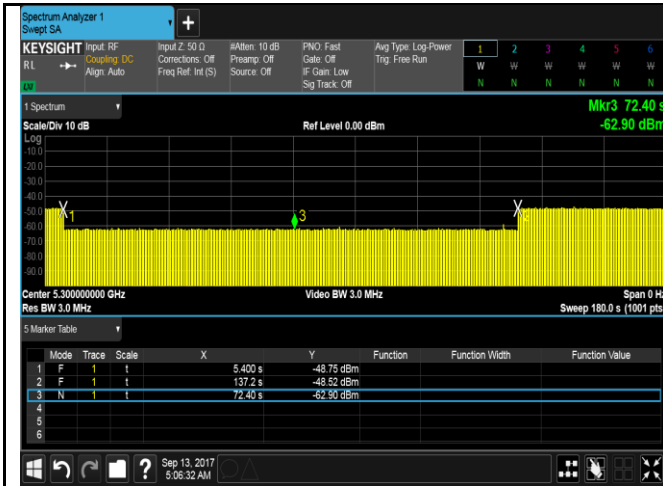
The Initial Channel Availability Check Time tests that the UUT does not emit beacon, control, or data signals on the test Channel until the power-up sequence has been completed and the U-NII device checks for Radar Waveforms for one minute on the test Channel. This test does not use any Radar Waveforms and only needs to be performed one time.

The U-NII device is powered on and be instructed to operate at Low channel, Mid Channel or High channel. At the same time the UUT is powered on, the spectrum analyzer is set to zero span modes with a 3 MHz resolution bandwidth at testing channels with a 3 minute sweep time. The analyzer's sweep will be started the same time power is applied to the UNII device.

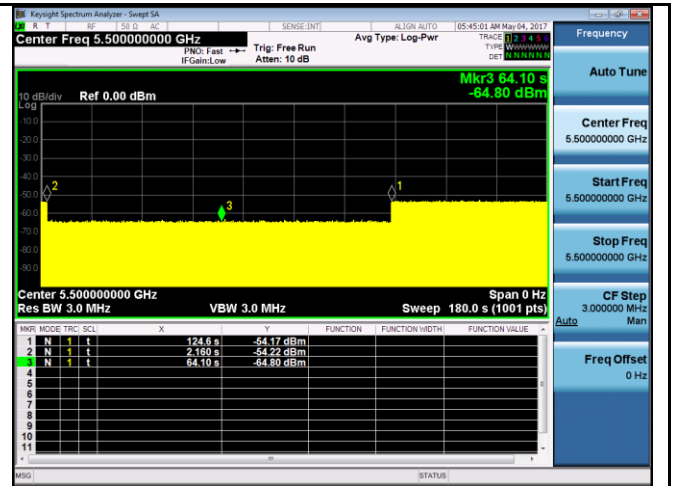
The UUT should not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle.

The initial power up time of the UUT is indicated by marker 1 in the plot. Initial beacons/data transmissions are indicated by marker.

Test Plots



Initial CAC – A mode – 5300MHz



Initial CAC – A mode – 5500MHz

10.1.5.3 Radar Burst at the Beginning of the Channel Availability Check Time

Radar Burst at the Beginning of the Channel Availability Check Time: 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.

The UUT is powered on at T0. T1 denotes the instant when the UUT 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 short pulse of radar type 0 at -64 dBm will commence within a 6 second window.

Verify that during the 3 minute measurement window no UUT transmissions occurred at mid channel. Visual indication on the UUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at center frequency of low channel, mid channel and high channel will continue for 2.5 minutes after the radar Burst has been generated.

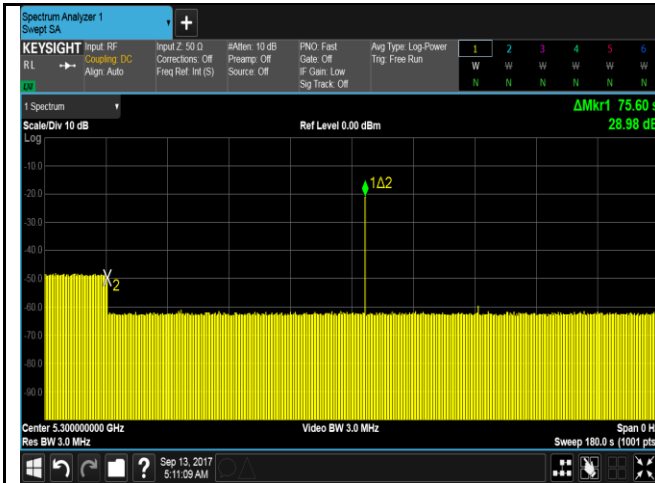
Note:

EUT power on cycle time \approx 67 Sec

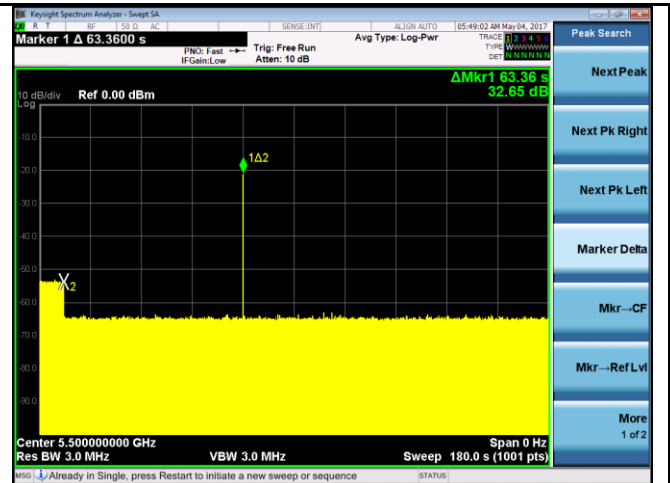
For CAC at the beginning, the radar signal was injected within 6 sec after 67 sec.

For CAC at the end, the radar signal was injected within 6 sec before 127 sec.

Test Plots



Radar at beginning of CAC – A mode – 5300MHz



Radar at beginning of CAC – A mode – 5500MHz

10.1.5.4 Radar Burst at the End of the Channel Availability Check Time

Radar Burst at the End of the Channel Availability Check Time: 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 end of the Channel Availability Check Time.

The UUT is powered on at T0. T1 denotes the instant when the UUT 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 short pulse of radar type 0 at -64 dBm will commence within a last 6 second window.

Visual indication on the UUT of successful detection of the radar Burst will be recorded and reported.

Observation of emissions at center frequency of mid channel will continue for 2.5 minutes after the radar Burst has been generated.

Verify that during the 3 minute measurement window no UUT transmissions occurred at mid channel.

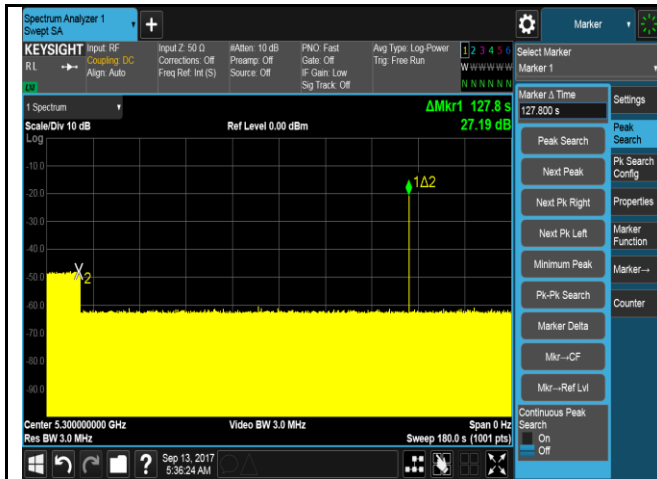
Note:

EUT power on cycle time \approx 67 Sec

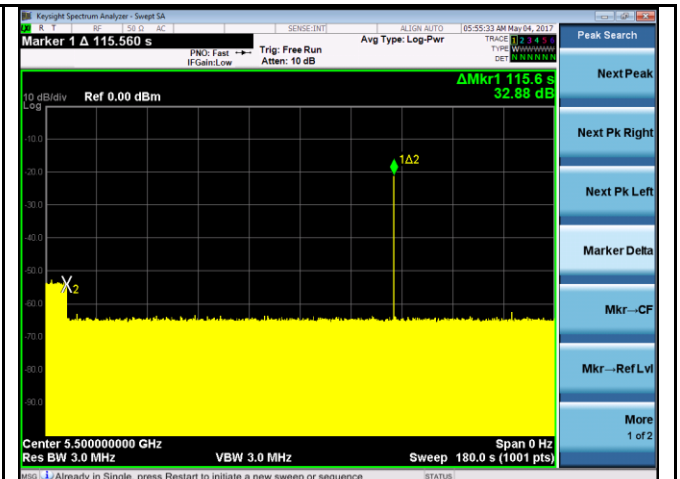
For CAC at the beginning, the radar signal was injected within 6 sec after 67 sec.

For CAC at the end, the radar signal was injected within 6 sec before 127 sec.

Test Plots



Radar at end of CAC – A mode – 5300MHz



Radar at end of CAC – A mode – 5500MHz

10.1.5.5 In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

These tests define how the following DFS parameters are verified during In-Service Monitoring; Channel Closing Transmission Time, Channel Move Time, and Non-Occupancy Period.

The steps below define the procedure to determine the above mentioned parameters 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.

A U-NII device operating as a Client Device will associate with the UUT (Master) at Mid 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 -64dBm.

Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Compare the Channel Move Time and Channel Closing Transmission Time results to the limits defined in the DFS Response requirement values table.

Channel Closing Transmission Time- Measurement

A type 1 waveform was introduced to the EUT and the Spectrum Analyzer sweep time was set to 1s for monitoring and capturing the plot. A LabView program was created to collect trace data and capturing the plot. The program will calculate the channel closing time base on the spectrum analyzer result. The result will be calculated based on FCC procedure.

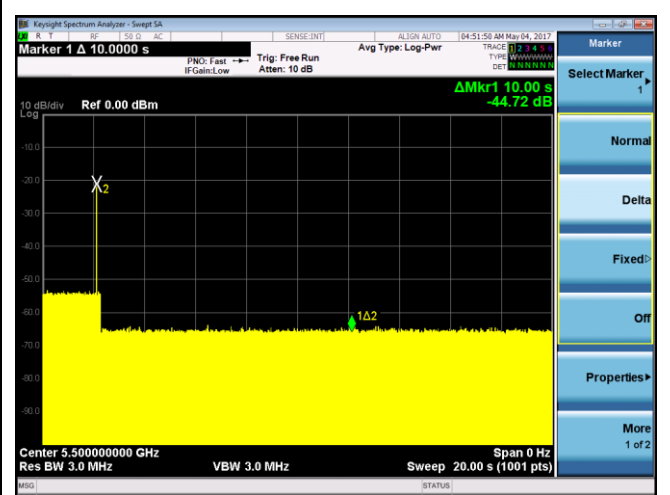
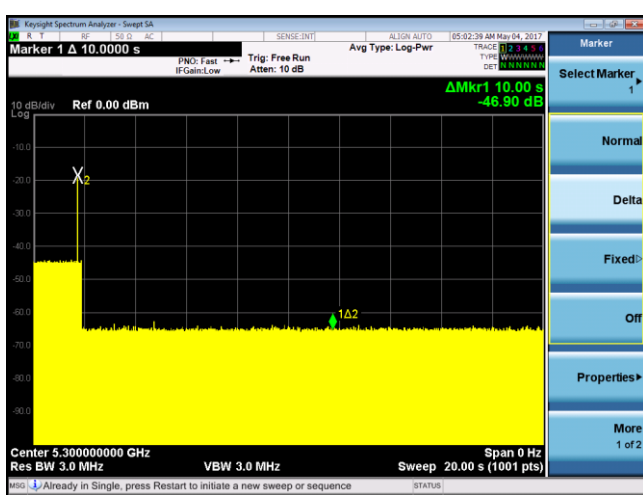
$$C = N * Dwell$$

C is the closing time, N is the number of spectrum analyzer sampling bins showing a U-NII transmission and dwell is the dwell time per bin.

$$Dwell = S/B$$

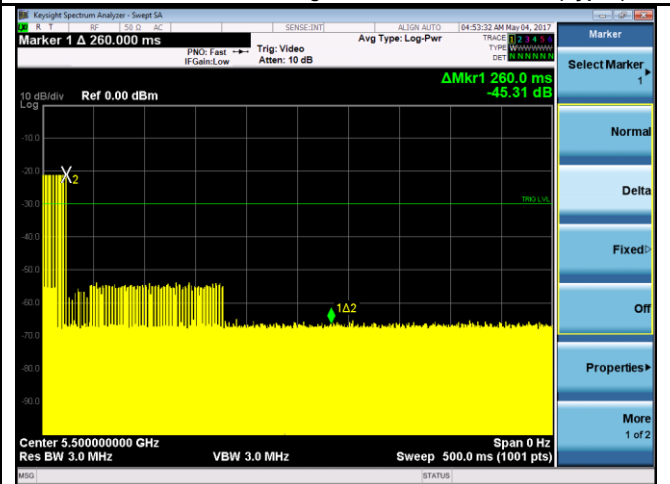
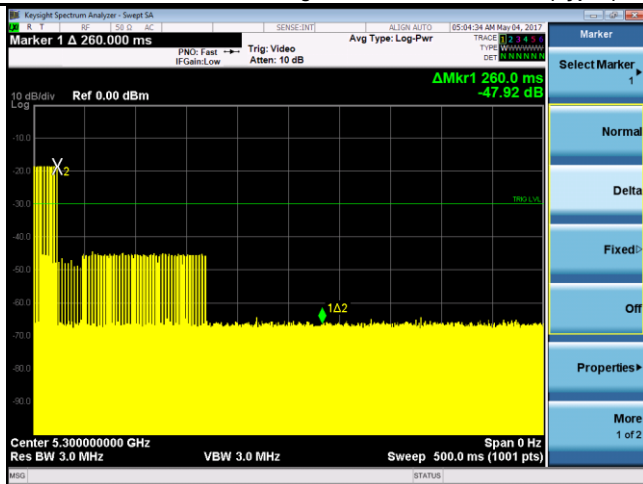
Where Dwell is the dwell time per spectrum analyzer sampling bin, S is the sweep time and B is the number of spectrum analyzer sampling bins.

Test Result



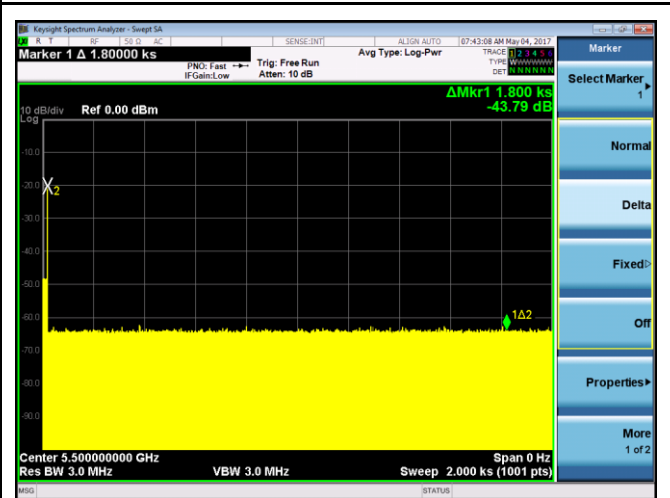
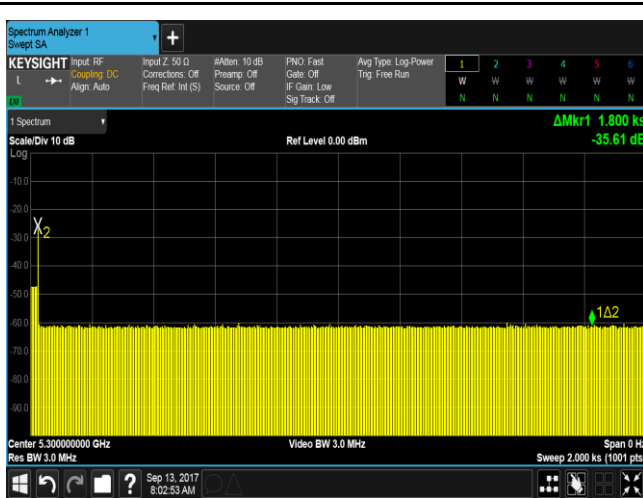
Channel Move Time& Closing Time - 802.11a-5300MHz (Type0)

Channel Move Time& Closing Time - 802.11a-5500MHz (Type0)



Channel Move Time& Closing Time - 802.11a-5300MHz (Type0)

Channel Move Time& Closing Time - 802.11a-5500MHz (Type0)



Non-Occupancy Period - 802.11a-5300MHz

Non-Occupancy Period - 802.11a-5500MHz

10.1.5.6 Statistical Performance Check

Statistical Performance Check, the steps below define the procedure to determine the minimum percentage of detection 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.

A U-NII device operating as a Client Device will associate with the UUT (Master) at Low, Mid and High 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.

The Radar Waveform generator sends the individual waveform for each of the radar types 0-6 at -62dbm. Statistical data will be gathered to determine the ability of the device to detect the radar test waveforms. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device

TotalWaveformDetections

TotalWaveformTrials ×100 = Probability of Detection Radar Waveform calculated by:

The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in the Radar Test Waveforms section.

Test Result-5300MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5300	FCC Radar Type 1	Waveform 1	Completed	Yes
2	5300	FCC Radar Type 1	Waveform 2	Completed	Yes
3	5300	FCC Radar Type 1	Waveform 3	Completed	Yes
4	5300	FCC Radar Type 1	Waveform 4	Completed	Yes
5	5300	FCC Radar Type 1	Waveform 5	Completed	Yes
6	5300	FCC Radar Type 1	Waveform 6	Completed	Yes
7	5300	FCC Radar Type 1	Waveform 7	Completed	Yes
8	5300	FCC Radar Type 1	Waveform 8	Completed	Yes
9	5300	FCC Radar Type 1	Waveform 9	Completed	Yes
10	5300	FCC Radar Type 1	Waveform 10	Completed	Yes
11	5300	FCC Radar Type 1	Waveform 11	Completed	Yes
12	5300	FCC Radar Type 1	Waveform 12	Completed	Yes
13	5300	FCC Radar Type 1	Waveform 13	Completed	Yes
14	5300	FCC Radar Type 1	Waveform 14	Completed	Yes
15	5300	FCC Radar Type 1	Waveform 15	Completed	Yes
16	5300	FCC Radar Type 1	Waveform 16	Completed	Yes
17	5300	FCC Radar Type 1	Waveform 17	Completed	Yes
18	5300	FCC Radar Type 1	Waveform 18	Completed	Yes
19	5300	FCC Radar Type 1	Waveform 19	Completed	Yes
20	5300	FCC Radar Type 1	Waveform 20	Completed	Yes
21	5300	FCC Radar Type 1	Waveform 21	Completed	Yes
22	5300	FCC Radar Type 1	Waveform 22	Completed	Yes
23	5300	FCC Radar Type 1	Waveform 23	Completed	Yes
24	5300	FCC Radar Type 1	Waveform 24	Completed	Yes
25	5300	FCC Radar Type 1	Waveform 25	Completed	Yes
26	5300	FCC Radar Type 1	Waveform 26	Completed	Yes
27	5300	FCC Radar Type 1	Waveform 27	Completed	Yes
28	5300	FCC Radar Type 1	Waveform 28	Completed	Yes
29	5300	FCC Radar Type 1	Waveform 29	Completed	Yes
30	5300	FCC Radar Type 1	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5300MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5300	FCC Radar Type 2	Waveform 1	Completed	Yes
2	5300	FCC Radar Type 2	Waveform 2	Completed	Yes
3	5300	FCC Radar Type 2	Waveform 3	Completed	Yes
4	5300	FCC Radar Type 2	Waveform 4	Completed	Yes
5	5300	FCC Radar Type 2	Waveform 5	Completed	Yes
6	5300	FCC Radar Type 2	Waveform 6	Completed	Yes
7	5300	FCC Radar Type 2	Waveform 7	Completed	Yes
8	5300	FCC Radar Type 2	Waveform 8	Completed	Yes
9	5300	FCC Radar Type 2	Waveform 9	Completed	Yes
10	5300	FCC Radar Type 2	Waveform 10	Completed	Yes
11	5300	FCC Radar Type 2	Waveform 11	Completed	Yes
12	5300	FCC Radar Type 2	Waveform 12	Completed	Yes
13	5300	FCC Radar Type 2	Waveform 13	Completed	Yes
14	5300	FCC Radar Type 2	Waveform 14	Completed	Yes
15	5300	FCC Radar Type 2	Waveform 15	Completed	Yes
16	5300	FCC Radar Type 2	Waveform 16	Completed	Yes
17	5300	FCC Radar Type 2	Waveform 17	Completed	Yes
18	5300	FCC Radar Type 2	Waveform 18	Completed	Yes
19	5300	FCC Radar Type 2	Waveform 19	Completed	Yes
20	5300	FCC Radar Type 2	Waveform 20	Completed	Yes
21	5300	FCC Radar Type 2	Waveform 21	Completed	Yes
22	5300	FCC Radar Type 2	Waveform 22	Completed	Yes
23	5300	FCC Radar Type 2	Waveform 23	Completed	Yes
24	5300	FCC Radar Type 2	Waveform 24	Completed	Yes
25	5300	FCC Radar Type 2	Waveform 25	Completed	Yes
26	5300	FCC Radar Type 2	Waveform 26	Completed	Yes
27	5300	FCC Radar Type 2	Waveform 27	Completed	Yes
28	5300	FCC Radar Type 2	Waveform 28	Completed	Yes
29	5300	FCC Radar Type 2	Waveform 29	Completed	Yes
30	5300	FCC Radar Type 2	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5300MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5300	FCC Radar Type 3	Waveform 1	Completed	Yes
2	5300	FCC Radar Type 3	Waveform 2	Completed	Yes
3	5300	FCC Radar Type 3	Waveform 3	Completed	Yes
4	5300	FCC Radar Type 3	Waveform 4	Completed	Yes
5	5300	FCC Radar Type 3	Waveform 5	Completed	Yes
6	5300	FCC Radar Type 3	Waveform 6	Completed	Yes
7	5300	FCC Radar Type 3	Waveform 7	Completed	Yes
8	5300	FCC Radar Type 3	Waveform 8	Completed	Yes
9	5300	FCC Radar Type 3	Waveform 9	Completed	Yes
10	5300	FCC Radar Type 3	Waveform 10	Completed	Yes
11	5300	FCC Radar Type 3	Waveform 11	Completed	Yes
12	5300	FCC Radar Type 3	Waveform 12	Completed	Yes
13	5300	FCC Radar Type 3	Waveform 13	Completed	Yes
14	5300	FCC Radar Type 3	Waveform 14	Completed	Yes
15	5300	FCC Radar Type 3	Waveform 15	Completed	Yes
16	5300	FCC Radar Type 3	Waveform 16	Completed	Yes
17	5300	FCC Radar Type 3	Waveform 17	Completed	Yes
18	5300	FCC Radar Type 3	Waveform 18	Completed	Yes
19	5300	FCC Radar Type 3	Waveform 19	Completed	Yes
20	5300	FCC Radar Type 3	Waveform 20	Completed	Yes
21	5300	FCC Radar Type 3	Waveform 21	Completed	Yes
22	5300	FCC Radar Type 3	Waveform 22	Completed	Yes
23	5300	FCC Radar Type 3	Waveform 23	Completed	Yes
24	5300	FCC Radar Type 3	Waveform 24	Completed	Yes
25	5300	FCC Radar Type 3	Waveform 25	Completed	Yes
26	5300	FCC Radar Type 3	Waveform 26	Completed	Yes
27	5300	FCC Radar Type 3	Waveform 27	Completed	Yes
28	5300	FCC Radar Type 3	Waveform 28	Completed	Yes
29	5300	FCC Radar Type 3	Waveform 29	Completed	Yes
30	5300	FCC Radar Type 3	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5300MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5300	FCC Radar Type 4	Waveform 1	Completed	Yes
2	5300	FCC Radar Type 4	Waveform 2	Completed	Yes
3	5300	FCC Radar Type 4	Waveform 3	Completed	Yes
4	5300	FCC Radar Type 4	Waveform 4	Completed	Yes
5	5300	FCC Radar Type 4	Waveform 5	Completed	Yes
6	5300	FCC Radar Type 4	Waveform 6	Completed	Yes
7	5300	FCC Radar Type 4	Waveform 7	Completed	Yes
8	5300	FCC Radar Type 4	Waveform 8	Completed	Yes
9	5300	FCC Radar Type 4	Waveform 9	Completed	Yes
10	5300	FCC Radar Type 4	Waveform 10	Completed	Yes
11	5300	FCC Radar Type 4	Waveform 11	Completed	Yes
12	5300	FCC Radar Type 4	Waveform 12	Completed	Yes
13	5300	FCC Radar Type 4	Waveform 13	Completed	Yes
14	5300	FCC Radar Type 4	Waveform 14	Completed	Yes
15	5300	FCC Radar Type 4	Waveform 15	Completed	Yes
16	5300	FCC Radar Type 4	Waveform 16	Completed	Yes
17	5300	FCC Radar Type 4	Waveform 17	Completed	Yes
18	5300	FCC Radar Type 4	Waveform 18	Completed	Yes
19	5300	FCC Radar Type 4	Waveform 19	Completed	Yes
20	5300	FCC Radar Type 4	Waveform 20	Completed	Yes
21	5300	FCC Radar Type 4	Waveform 21	Completed	Yes
22	5300	FCC Radar Type 4	Waveform 22	Completed	Yes
23	5300	FCC Radar Type 4	Waveform 23	Completed	Yes
24	5300	FCC Radar Type 4	Waveform 24	Completed	Yes
25	5300	FCC Radar Type 4	Waveform 25	Completed	Yes
26	5300	FCC Radar Type 4	Waveform 26	Completed	Yes
27	5300	FCC Radar Type 4	Waveform 27	Completed	Yes
28	5300	FCC Radar Type 4	Waveform 28	Completed	Yes
29	5300	FCC Radar Type 4	Waveform 29	Completed	Yes
30	5300	FCC Radar Type 4	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5300MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5307	FCC Radar Type 5	Waveform 1	Completed	No
2	5301	FCC Radar Type 5	Waveform 2	Completed	Yes
3	5306	FCC Radar Type 5	Waveform 3	Completed	Yes
4	5306	FCC Radar Type 5	Waveform 4	Completed	Yes
5	5305	FCC Radar Type 5	Waveform 5	Completed	Yes
6	5306	FCC Radar Type 5	Waveform 6	Completed	Yes
7	5303	FCC Radar Type 5	Waveform 7	Completed	Yes
8	5302	FCC Radar Type 5	Waveform 8	Completed	Yes
9	5301	FCC Radar Type 5	Waveform 9	Completed	Yes
10	5302	FCC Radar Type 5	Waveform 10	Completed	Yes
11	5306	FCC Radar Type 5	Waveform 11	Completed	Yes
12	5305	FCC Radar Type 5	Waveform 12	Completed	Yes
13	5301	FCC Radar Type 5	Waveform 13	Completed	Yes
14	5302	FCC Radar Type 5	Waveform 14	Completed	Yes
15	5307	FCC Radar Type 5	Waveform 15	Completed	Yes
16	5299	FCC Radar Type 5	Waveform 16	Completed	Yes
17	5299	FCC Radar Type 5	Waveform 17	Completed	Yes
18	5299	FCC Radar Type 5	Waveform 18	Completed	Yes
19	5294	FCC Radar Type 5	Waveform 19	Completed	No
20	5294	FCC Radar Type 5	Waveform 20	Completed	Yes
21	5294	FCC Radar Type 5	Waveform 21	Completed	Yes
22	5296	FCC Radar Type 5	Waveform 22	Completed	Yes
23	5294	FCC Radar Type 5	Waveform 23	Completed	Yes
24	5297	FCC Radar Type 5	Waveform 24	Completed	Yes
25	5297	FCC Radar Type 5	Waveform 25	Completed	Yes
26	5295	FCC Radar Type 5	Waveform 26	Completed	Yes
27	5296	FCC Radar Type 5	Waveform 27	Completed	Yes
28	5297	FCC Radar Type 5	Waveform 28	Completed	Yes
29	5296	FCC Radar Type 5	Waveform 29	Completed	Yes
30	5298	FCC Radar Type 5	Waveform 30	Completed	Yes

Detection Probability Rate %: 93.33

Note: Radar waveform center frequencies are selected based on section 7.8.4.2 Long Pulse Radar Test of 905462 D02 UNII DFS Compliance Procedures New Rules v02.

Test Result-5300MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5300	FCC Radar Type 6	Waveform 1	Completed	Yes
2	5300	FCC Radar Type 6	Waveform 2	Completed	Yes
3	5300	FCC Radar Type 6	Waveform 3	Completed	Yes
4	5300	FCC Radar Type 6	Waveform 4	Completed	Yes
5	5300	FCC Radar Type 6	Waveform 5	Completed	Yes
6	5300	FCC Radar Type 6	Waveform 6	Completed	Yes
7	5300	FCC Radar Type 6	Waveform 7	Completed	Yes
8	5300	FCC Radar Type 6	Waveform 8	Completed	Yes
9	5300	FCC Radar Type 6	Waveform 9	Completed	Yes
10	5300	FCC Radar Type 6	Waveform 10	Completed	Yes
11	5300	FCC Radar Type 6	Waveform 11	Completed	Yes
12	5300	FCC Radar Type 6	Waveform 12	Completed	Yes
13	5300	FCC Radar Type 6	Waveform 13	Completed	Yes
14	5300	FCC Radar Type 6	Waveform 14	Completed	Yes
15	5300	FCC Radar Type 6	Waveform 15	Completed	Yes
16	5300	FCC Radar Type 6	Waveform 16	Completed	Yes
17	5300	FCC Radar Type 6	Waveform 17	Completed	Yes
18	5300	FCC Radar Type 6	Waveform 18	Completed	Yes
19	5300	FCC Radar Type 6	Waveform 19	Completed	Yes
20	5300	FCC Radar Type 6	Waveform 20	Completed	Yes
21	5300	FCC Radar Type 6	Waveform 21	Completed	Yes
22	5300	FCC Radar Type 6	Waveform 22	Completed	Yes
23	5300	FCC Radar Type 6	Waveform 23	Completed	Yes
24	5300	FCC Radar Type 6	Waveform 24	Completed	Yes
25	5300	FCC Radar Type 6	Waveform 25	Completed	Yes
26	5300	FCC Radar Type 6	Waveform 26	Completed	Yes
27	5300	FCC Radar Type 6	Waveform 27	Completed	Yes
28	5300	FCC Radar Type 6	Waveform 28	Completed	Yes
29	5300	FCC Radar Type 6	Waveform 29	Completed	Yes
30	5300	FCC Radar Type 6	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5500MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5500	FCC Radar Type 1	Waveform 1	Completed	Yes
2	5500	FCC Radar Type 1	Waveform 2	Completed	Yes
3	5500	FCC Radar Type 1	Waveform 3	Completed	Yes
4	5500	FCC Radar Type 1	Waveform 4	Completed	Yes
5	5500	FCC Radar Type 1	Waveform 5	Completed	Yes
6	5500	FCC Radar Type 1	Waveform 6	Completed	Yes
7	5500	FCC Radar Type 1	Waveform 7	Completed	Yes
8	5500	FCC Radar Type 1	Waveform 8	Completed	Yes
9	5500	FCC Radar Type 1	Waveform 9	Completed	Yes
10	5500	FCC Radar Type 1	Waveform 10	Completed	Yes
11	5500	FCC Radar Type 1	Waveform 11	Completed	Yes
12	5500	FCC Radar Type 1	Waveform 12	Completed	Yes
13	5500	FCC Radar Type 1	Waveform 13	Completed	Yes
14	5500	FCC Radar Type 1	Waveform 14	Completed	Yes
15	5500	FCC Radar Type 1	Waveform 15	Completed	Yes
16	5500	FCC Radar Type 1	Waveform 16	Completed	Yes
17	5500	FCC Radar Type 1	Waveform 17	Completed	Yes
18	5500	FCC Radar Type 1	Waveform 18	Completed	Yes
19	5500	FCC Radar Type 1	Waveform 19	Completed	Yes
20	5500	FCC Radar Type 1	Waveform 20	Completed	Yes
21	5500	FCC Radar Type 1	Waveform 21	Completed	Yes
22	5500	FCC Radar Type 1	Waveform 22	Completed	Yes
23	5500	FCC Radar Type 1	Waveform 23	Completed	Yes
24	5500	FCC Radar Type 1	Waveform 24	Completed	Yes
25	5500	FCC Radar Type 1	Waveform 25	Completed	Yes
26	5500	FCC Radar Type 1	Waveform 26	Completed	Yes
27	5500	FCC Radar Type 1	Waveform 27	Completed	Yes
28	5500	FCC Radar Type 1	Waveform 28	Completed	Yes
29	5500	FCC Radar Type 1	Waveform 29	Completed	Yes
30	5500	FCC Radar Type 1	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5500MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5500	FCC Radar Type 2	Waveform 1	Completed	Yes
2	5500	FCC Radar Type 2	Waveform 2	Completed	Yes
3	5500	FCC Radar Type 2	Waveform 3	Completed	Yes
4	5500	FCC Radar Type 2	Waveform 4	Completed	Yes
5	5500	FCC Radar Type 2	Waveform 5	Completed	Yes
6	5500	FCC Radar Type 2	Waveform 6	Completed	Yes
7	5500	FCC Radar Type 2	Waveform 7	Completed	Yes
8	5500	FCC Radar Type 2	Waveform 8	Completed	Yes
9	5500	FCC Radar Type 2	Waveform 9	Completed	Yes
10	5500	FCC Radar Type 2	Waveform 10	Completed	Yes
11	5500	FCC Radar Type 2	Waveform 11	Completed	Yes
12	5500	FCC Radar Type 2	Waveform 12	Completed	Yes
13	5500	FCC Radar Type 2	Waveform 13	Completed	Yes
14	5500	FCC Radar Type 2	Waveform 14	Completed	Yes
15	5500	FCC Radar Type 2	Waveform 15	Completed	Yes
16	5500	FCC Radar Type 2	Waveform 16	Completed	Yes
17	5500	FCC Radar Type 2	Waveform 17	Completed	Yes
18	5500	FCC Radar Type 2	Waveform 18	Completed	Yes
19	5500	FCC Radar Type 2	Waveform 19	Completed	Yes
20	5500	FCC Radar Type 2	Waveform 20	Completed	Yes
21	5500	FCC Radar Type 2	Waveform 21	Completed	Yes
22	5500	FCC Radar Type 2	Waveform 22	Completed	Yes
23	5500	FCC Radar Type 2	Waveform 23	Completed	Yes
24	5500	FCC Radar Type 2	Waveform 24	Completed	Yes
25	5500	FCC Radar Type 2	Waveform 25	Completed	Yes
26	5500	FCC Radar Type 2	Waveform 26	Completed	Yes
27	5500	FCC Radar Type 2	Waveform 27	Completed	Yes
28	5500	FCC Radar Type 2	Waveform 28	Completed	Yes
29	5500	FCC Radar Type 2	Waveform 29	Completed	Yes
30	5500	FCC Radar Type 2	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5500MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5500	FCC Radar Type 3	Waveform 1	Completed	Yes
2	5500	FCC Radar Type 3	Waveform 2	Completed	Yes
3	5500	FCC Radar Type 3	Waveform 3	Completed	Yes
4	5500	FCC Radar Type 3	Waveform 4	Completed	Yes
5	5500	FCC Radar Type 3	Waveform 5	Completed	Yes
6	5500	FCC Radar Type 3	Waveform 6	Completed	Yes
7	5500	FCC Radar Type 3	Waveform 7	Completed	Yes
8	5500	FCC Radar Type 3	Waveform 8	Completed	Yes
9	5500	FCC Radar Type 3	Waveform 9	Completed	Yes
10	5500	FCC Radar Type 3	Waveform 10	Completed	Yes
11	5500	FCC Radar Type 3	Waveform 11	Completed	Yes
12	5500	FCC Radar Type 3	Waveform 12	Completed	Yes
13	5500	FCC Radar Type 3	Waveform 13	Completed	Yes
14	5500	FCC Radar Type 3	Waveform 14	Completed	Yes
15	5500	FCC Radar Type 3	Waveform 15	Completed	Yes
16	5500	FCC Radar Type 3	Waveform 16	Completed	Yes
17	5500	FCC Radar Type 3	Waveform 17	Completed	Yes
18	5500	FCC Radar Type 3	Waveform 18	Completed	Yes
19	5500	FCC Radar Type 3	Waveform 19	Completed	Yes
20	5500	FCC Radar Type 3	Waveform 20	Completed	Yes
21	5500	FCC Radar Type 3	Waveform 21	Completed	Yes
22	5500	FCC Radar Type 3	Waveform 22	Completed	Yes
23	5500	FCC Radar Type 3	Waveform 23	Completed	Yes
24	5500	FCC Radar Type 3	Waveform 24	Completed	Yes
25	5500	FCC Radar Type 3	Waveform 25	Completed	Yes
26	5500	FCC Radar Type 3	Waveform 26	Completed	Yes
27	5500	FCC Radar Type 3	Waveform 27	Completed	Yes
28	5500	FCC Radar Type 3	Waveform 28	Completed	Yes
29	5500	FCC Radar Type 3	Waveform 29	Completed	Yes
30	5500	FCC Radar Type 3	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5500MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5500	FCC Radar Type 4	Waveform 1	Completed	Yes
2	5500	FCC Radar Type 4	Waveform 2	Completed	Yes
3	5500	FCC Radar Type 4	Waveform 3	Completed	Yes
4	5500	FCC Radar Type 4	Waveform 4	Completed	Yes
5	5500	FCC Radar Type 4	Waveform 5	Completed	Yes
6	5500	FCC Radar Type 4	Waveform 6	Completed	Yes
7	5500	FCC Radar Type 4	Waveform 7	Completed	Yes
8	5500	FCC Radar Type 4	Waveform 8	Completed	Yes
9	5500	FCC Radar Type 4	Waveform 9	Completed	Yes
10	5500	FCC Radar Type 4	Waveform 10	Completed	Yes
11	5500	FCC Radar Type 4	Waveform 11	Completed	Yes
12	5500	FCC Radar Type 4	Waveform 12	Completed	Yes
13	5500	FCC Radar Type 4	Waveform 13	Completed	Yes
14	5500	FCC Radar Type 4	Waveform 14	Completed	Yes
15	5500	FCC Radar Type 4	Waveform 15	Completed	Yes
16	5500	FCC Radar Type 4	Waveform 16	Completed	Yes
17	5500	FCC Radar Type 4	Waveform 17	Completed	Yes
18	5500	FCC Radar Type 4	Waveform 18	Completed	Yes
19	5500	FCC Radar Type 4	Waveform 19	Completed	Yes
20	5500	FCC Radar Type 4	Waveform 20	Completed	Yes
21	5500	FCC Radar Type 4	Waveform 21	Completed	Yes
22	5500	FCC Radar Type 4	Waveform 22	Completed	Yes
23	5500	FCC Radar Type 4	Waveform 23	Completed	Yes
24	5500	FCC Radar Type 4	Waveform 24	Completed	Yes
25	5500	FCC Radar Type 4	Waveform 25	Completed	Yes
26	5500	FCC Radar Type 4	Waveform 26	Completed	Yes
27	5500	FCC Radar Type 4	Waveform 27	Completed	Yes
28	5500	FCC Radar Type 4	Waveform 28	Completed	Yes
29	5500	FCC Radar Type 4	Waveform 29	Completed	Yes
30	5500	FCC Radar Type 4	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Test Result-5500MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5500	FCC Radar Type 5	Waveform 1	Completed	Yes
2	5500	FCC Radar Type 5	Waveform 2	Completed	Yes
3	5501	FCC Radar Type 5	Waveform 3	Completed	Yes
4	5506	FCC Radar Type 5	Waveform 4	Completed	Yes
5	5504	FCC Radar Type 5	Waveform 5	Completed	Yes
6	5501	FCC Radar Type 5	Waveform 6	Completed	Yes
7	5502	FCC Radar Type 5	Waveform 7	Completed	Yes
8	5505	FCC Radar Type 5	Waveform 8	Completed	Yes
9	5506	FCC Radar Type 5	Waveform 9	Completed	Yes
10	5501	FCC Radar Type 5	Waveform 10	Completed	Yes
11	5507	FCC Radar Type 5	Waveform 11	Completed	No
12	5503	FCC Radar Type 5	Waveform 12	Completed	Yes
13	5503	FCC Radar Type 5	Waveform 13	Completed	Yes
14	5506	FCC Radar Type 5	Waveform 14	Completed	Yes
15	5505	FCC Radar Type 5	Waveform 15	Completed	Yes
16	5494	FCC Radar Type 5	Waveform 16	Completed	Yes
17	5495	FCC Radar Type 5	Waveform 17	Completed	Yes
18	5500	FCC Radar Type 5	Waveform 18	Completed	Yes
19	5496	FCC Radar Type 5	Waveform 19	Completed	Yes
20	5495	FCC Radar Type 5	Waveform 20	Completed	Yes
21	5493	FCC Radar Type 5	Waveform 21	Completed	No
22	5493	FCC Radar Type 5	Waveform 22	Completed	No
23	5494	FCC Radar Type 5	Waveform 23	Completed	Yes
24	5496	FCC Radar Type 5	Waveform 24	Completed	Yes
25	5495	FCC Radar Type 5	Waveform 25	Completed	Yes
26	5498	FCC Radar Type 5	Waveform 26	Completed	Yes
27	5498	FCC Radar Type 5	Waveform 27	Completed	Yes
28	5499	FCC Radar Type 5	Waveform 28	Completed	Yes
29	5499	FCC Radar Type 5	Waveform 29	Completed	Yes
30	5496	FCC Radar Type 5	Waveform 30	Completed	Yes

Detection Probability Rate %: 90.00

Note: Radar waveform center frequencies are selected based on section 7.8.4.2 Long Pulse Radar Test of 905462 D02 UNII DFS Compliance Procedures New Rules v02.

Test Result-5500MHz – 20MHz

Trials	Frequency (MHz)	Radar Type	Waveform Type	Status	Result
1	5500	FCC Radar Type 6	Waveform 1	Completed	Yes
2	5500	FCC Radar Type 6	Waveform 2	Completed	Yes
3	5500	FCC Radar Type 6	Waveform 3	Completed	Yes
4	5500	FCC Radar Type 6	Waveform 4	Completed	Yes
5	5500	FCC Radar Type 6	Waveform 5	Completed	Yes
6	5500	FCC Radar Type 6	Waveform 6	Completed	Yes
7	5500	FCC Radar Type 6	Waveform 7	Completed	Yes
8	5500	FCC Radar Type 6	Waveform 8	Completed	Yes
9	5500	FCC Radar Type 6	Waveform 9	Completed	Yes
10	5500	FCC Radar Type 6	Waveform 10	Completed	Yes
11	5500	FCC Radar Type 6	Waveform 11	Completed	Yes
12	5500	FCC Radar Type 6	Waveform 12	Completed	Yes
13	5500	FCC Radar Type 6	Waveform 13	Completed	Yes
14	5500	FCC Radar Type 6	Waveform 14	Completed	Yes
15	5500	FCC Radar Type 6	Waveform 15	Completed	Yes
16	5500	FCC Radar Type 6	Waveform 16	Completed	Yes
17	5500	FCC Radar Type 6	Waveform 17	Completed	Yes
18	5500	FCC Radar Type 6	Waveform 18	Completed	Yes
19	5500	FCC Radar Type 6	Waveform 19	Completed	Yes
20	5500	FCC Radar Type 6	Waveform 20	Completed	Yes
21	5500	FCC Radar Type 6	Waveform 21	Completed	Yes
22	5500	FCC Radar Type 6	Waveform 22	Completed	Yes
23	5500	FCC Radar Type 6	Waveform 23	Completed	Yes
24	5500	FCC Radar Type 6	Waveform 24	Completed	Yes
25	5500	FCC Radar Type 6	Waveform 25	Completed	Yes
26	5500	FCC Radar Type 6	Waveform 26	Completed	Yes
27	5500	FCC Radar Type 6	Waveform 27	Completed	Yes
28	5500	FCC Radar Type 6	Waveform 28	Completed	Yes
29	5500	FCC Radar Type 6	Waveform 29	Completed	Yes
30	5500	FCC Radar Type 6	Waveform 30	Completed	Yes

Detection Probability Rate %: 100.00

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Radiated DFS Measurement						
Keysight Signal Analyzer	N9010A	MY51440112	11/20/2016	1 Year	11/20/2017	<input checked="" type="checkbox"/>
Splitter/Combiner (Mini-Circuit)	ZFSC-2-9G+	S F030000719	N/A	1 Year	N/A	<input checked="" type="checkbox"/>
Splitter/Combiner (Mini-Circuit)	ZFSC-2-9G+	S F030000718	N/A	1 Year	N/A	<input checked="" type="checkbox"/>
Agilent Signal Generator	MXG N5182A	MY47071065	04/12/2017	1 Year	04/12/2018	<input checked="" type="checkbox"/>

Annex B. Radar Type waveform characteristic

Type 0:

Trial #	Number Pulses per Burst	Pulse Width (μ s)	PRI (μ s)
1	18	1.0	1428
2	18	1.0	1428
3	18	1.0	1428
4	18	1.0	1428
5	18	1.0	1428
6	18	1.0	1428
7	18	1.0	1428
8	18	1.0	1428
9	18	1.0	1428
10	18	1.0	1428
11	18	1.0	1428
12	18	1.0	1428
13	18	1.0	1428
14	18	1.0	1428
15	18	1.0	1428
16	18	1.0	1428
17	18	1.0	1428
18	18	1.0	1428
19	18	1.0	1428
20	18	1.0	1428
21	18	1.0	1428
22	18	1.0	1428
23	18	1.0	1428
24	18	1.0	1428
25	18	1.0	1428
26	18	1.0	1428
27	18	1.0	1428
28	18	1.0	1428
29	18	1.0	1428
30	18	1.0	1428

Type 1:

Trial #	Number Pulses per Burst	Pulse Width (μ s)	PRI (μ s)
1	57	1.0	938
2	76	1.0	698
3	86	1.0	618
4	99	1.0	538
5	61	1.0	878
6	18	1.0	3066
7	83	1.0	638
8	58	1.0	918
9	63	1.0	838
10	62	1.0	858
11	67	1.0	798
12	74	1.0	718
13	92	1.0	578
14	89	1.0	598
15	95	1.0	558
16	21	1.0	2536
17	55	1.0	966
18	64	1.0	827
19	22	1.0	2501
20	21	1.0	2595
21	48	1.0	1114
22	41	1.0	1302
23	18	1.0	3045
24	33	1.0	1624
25	19	1.0	2878
26	52	1.0	1027
27	22	1.0	2485
28	33	1.0	1600
29	46	1.0	1172
30	45	1.0	1177

Type 2:

Trial #	Number Pulses per Burst	Pulse Width (μ s)	PRI (μ s)
1	26	3.2	179
2	23	1.1	207
3	24	2.1	230
4	29	4.8	200
5	28	3.9	214
6	26	2.9	222
7	26	3.2	204
8	25	2.5	192
9	26	3.1	164
10	23	1.2	156
11	27	3.9	210
12	29	4.6	201
13	26	3.2	162
14	25	2.2	197
15	29	4.5	163
16	26	3	203
17	29	5	168
18	25	2.4	217
19	26	2.9	191
20	25	2.3	166
21	27	3.7	150
22	25	2.2	176
23	29	4.9	195
24	26	2.9	202
25	25	2.5	178
26	23	1.1	206
27	27	3.8	155
28	29	4.7	157
29	25	2.4	224
30	28	4.2	159

Type 3:

Trial #	Number Pulses per Burst	Pulse Width (μ s)	PRI (μ s)
1	17	8.2	355
2	16	6.1	487
3	16	7.1	344
4	18	9.8	288
5	18	8.9	230
6	17	7.9	432
7	17	8.2	207
8	17	7.5	443
9	17	8.1	439
10	16	6.2	223
11	18	8.9	208
12	18	9.6	463
13	17	8.2	441
14	16	7.2	323
15	18	9.5	297
16	17	8	412
17	18	10	324
18	17	7.4	271
19	17	7.9	349
20	16	7.3	409
21	18	8.7	373
22	16	7.2	254
23	18	9.9	274
24	17	7.9	278
25	17	7.5	317
26	16	6.1	260
27	18	8.8	211
28	18	9.7	272
29	17	7.4	264
30	18	9.2	284

Type 4:

Trial #	Number Pulses per Burst	Pulse Width (μ s)	PRI (μ s)
1	14	16	355
2	12	11.3	487
3	13	13.5	344
4	16	19.4	288
5	15	17.5	230
6	14	15.3	432
7	14	15.9	207
8	13	14.3	443
9	14	15.8	439
10	12	11.5	223
11	15	17.4	208
12	16	19	463
13	14	16	441
14	13	13.8	323
15	16	18.9	297
16	14	15.5	412
17	16	19.9	324
18	13	14.1	271
19	14	15.2	349
20	13	13.8	409
21	15	17.1	373
22	13	13.8	254
23	16	19.8	274
24	14	15.3	278
25	13	14.5	317
26	12	11.3	260
27	15	17.3	211
28	16	19.2	272
29	13	14.2	264
30	15	18.2	284

Type 5:
Waveform 1

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.5	2	60	1728	0.51	20
2	1.5 - 3.0	3	76	1076, 1580	2.55	10
3	3.0 - 4.5	3	72	1872, 1208	3.96	20
4	4.5 - 6.0	2	76	1860	5.655	10
5	6.0 - 7.5	3	100	1400, 1860	6.825	20
6	7.5 - 9.0	1	52	/	7.89	10
7	9.0 - 10.5	3	92	1460, 1720	9.735	20
8	10.5 - 12.0	3	64	1704, 1240	10.98	10

Waveform 2

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.5	1	96	/	0.315	20
2	1.5 - 3.0	2	56	1784	1.68	10
3	3.0 - 4.5	3	100	1204, 1064	3.675	20
4	4.5 - 6.0	1	72	/	4.905	10
5	6.0 - 7.5	1	92	/	6.75	20
6	7.5 - 9.0	3	68	1060, 1808	7.71	10
7	9.0 - 10.5	3	72	1824, 1700	9.45	20
8	10.5 - 12.0	1	64	/	11.355	10

Waveform 3

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.5	1	76	/	0.705	20
2	1.5 - 3.0	2	88	1964	2.505	10
3	3.0 - 4.5	1	100	/	3.375	20
4	4.5 - 6.0	1	60	/	5.19	10
5	6.0 - 7.5	1	64	/	6.585	20
6	7.5 - 9.0	1	56	/	7.905	10
7	9.0 - 10.5	1	100	/	9.75	20
8	10.5 - 12.0	3	96	1256, 1104	11.04	10

Waveform 4

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.5	1	52	/	0.645	20
2	1.5 - 3.0	3	56	1836, 1788	1.845	10
3	3.0 - 4.5	2	52	1416	3.66	20
4	4.5 - 6.0	2	56	1812	5.52	10
5	6.0 - 7.5	1	80	/	6.6	20
6	7.5 - 9.0	3	92	1928, 1036	8.58	10
7	9.0 - 10.5	2	84	2000	9.24	20
8	10.5 - 12.0	2	88	1036	11.115	10

Waveform 5

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.5	2	56	1952	0.435	20
2	1.5 - 3.0	1	60	/	2.04	10
3	3.0 - 4.5	2	92	1064	3.99	20
4	4.5 - 6.0	2	64	1540	4.875	10
5	6.0 - 7.5	1	72	/	6.525	20
6	7.5 - 9.0	2	76	1692	7.785	10
7	9.0 - 10.5	3	80	1900, 1072	9.465	20
8	10.5 - 12.0	2	76	1136	10.74	10

Waveform 6

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.2	3	56	1484, 1292	0.252	20
2	1.2 - 2.4	3	68	1028, 1424	1.764	10
3	2.4 - 3.6	1	56	/	3.252	20
4	3.6 - 4.8	2	64	1956	3.9	10
5	4.8 - 6.0	2	100	1004	5.088	20
6	6.0 - 7.2	3	88	1368, 1652	6.672	10
7	7.2 - 8.4	3	52	1208, 1656	7.836	20
8	8.4 - 9.6	1	96	/	8.832	10
9	9.6 - 10.8	2	84	1288	9.972	20
10	10.8 - 12.0	1	100	/	11.16	10

Waveform 7

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.2	3	80	1656, 1788	0.852	20
2	1.2 - 2.4	1	96	/	1.404	10
3	2.4 - 3.6	1	84	/	3.108	20
4	3.6 - 4.8	3	56	1728, 1768	4.536	10
5	4.8 - 6.0	3	76	1596, 1656	5.496	20
6	6.0 - 7.2	3	64	1232, 1696	6.36	10
7	7.2 - 8.4	2	92	1924	7.848	20
8	8.4 - 9.6	1	96	/	8.544	10
9	9.6 - 10.8	1	60	/	9.78	20
10	10.8 - 12.0	1	76	/	10.992	10

Waveform 8

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.2	3	96	1940, 1260	0.636	20
2	1.2 - 2.4	1	72	/	1.368	10
3	2.4 - 3.6	3	60	1820, 1556	3.276	20
4	3.6 - 4.8	2	92	1416	3.72	10
5	4.8 - 6.0	3	96	1480, 1604	5.496	20
6	6.0 - 7.2	1	56	/	6.528	10
7	7.2 - 8.4	1	68	/	7.764	20
8	8.4 - 9.6	1	64	/	8.772	10
9	9.6 - 10.8	2	88	1232	10.08	20
10	10.8 - 12.0	2	76	1396	11.124	10

Waveform 9

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.2	1	76	/	0.588	20
2	1.2 - 2.4	1	56	/	1.86	10
3	2.4 - 3.6	3	92	1860, 1084	3.3	20
4	3.6 - 4.8	1	96	/	4.236	10
5	4.8 - 6.0	3	92	1432, 1860	5.28	20
6	6.0 - 7.2	1	100	/	6.264	10
7	7.2 - 8.4	3	64	1544, 1368	8.064	20
8	8.4 - 9.6	2	72	1248	8.724	10
9	9.6 - 10.8	1	76	/	9.828	20
10	10.8 - 12.0	3	84	1136, 1992	11.568	10

Waveform 10

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.0 - 1.2	1	68	/	0.576	20
2	1.2 - 2.4	1	84	/	1.44	10
3	2.4 - 3.6	3	64	1620, 1340	2.928	20
4	3.6 - 4.8	2	72	1552	4.2	10
5	4.8 - 6.0	3	64	1608, 1880	5.388	20
6	6.0 - 7.2	2	60	1672	6.192	10
7	7.2 - 8.4	3	52	1080, 1344	8.04	20
8	8.4 - 9.6	3	76	1828, 1868	8.568	10
9	9.6 - 10.8	2	56	1032	10.08	20
10	10.8 - 12.0	3	64	1728, 1256	11.088	10

Waveform 11

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	1	3	72	1440, 1968	0.14	20
2	2	1	64	/	1.42	10
3	3	2	60	1924	2.79	20
4	4	3	88	1188, 1956	3.17	10
5	5	3	52	1380, 1472	4.75	20
6	6	1	64	/	5.57	10
7	7	2	68	1856	6.76	20
8	8	1	100	/	7.59	10
9	9	1	72	/	8.7	20
10	10	3	60	1328, 1160	9.24	10
11	11	3	80	1740, 1248	10.72	20
12	12	2	88	1448	11.28	10

Waveform 12

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	1	1	100	/	0.61	20
2	2	3	92	1680, 1104	1.2	10
3	3	1	88	/	2.46	20
4	4	3	80	1628, 1052	3.22	10
5	5	2	68	1356	4.5	20
6	6	2	80	1532	5.15	10
7	7	1	52	/	6.33	20
8	8	2	60	1828	7.57	10
9	9	2	72	1492	8.74	20
10	10	2	80	1096	9.21	10
11	11	1	88	/	10.62	20
12	12	3	100	1744, 1860	11.65	10

Waveform13

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	1	3	84	1576, 1216	0.72	20
2	2	1	92	/	1.27	10
3	3	3	52	1356, 1236	2.68	20
4	4	3	80	1096, 1252	3.79	10
5	5	2	52	1224	4.7	20
6	6	3	76	1532, 1684	5.47	10
7	7	1	60	/	6.16	20
8	8	1	56	/	7.1	10
9	9	2	100	1572	8.44	20
10	10	1	72	/	9.41	10
11	11	2	80	1004	10.61	20
12	12	1	84	/	11.21	10

Waveform 14

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	1	1	80	/	0.48	20
2	2	1	92	/	1.66	10
3	3	1	88	/	2.51	20
4	4	2	96	1372	3.29	10
5	5	1	84	/	4.27	20
6	6	2	64	1396	5.28	10
7	7	2	80	1572	6.79	20
8	8	2	68	1932	7.21	10
9	9	1	60	/	8.11	20
10	10	1	68	/	9.15	10
11	11	1	84	/	10.2	20
12	12	3	100	1328, 1812	11.33	10

Waveform 15

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	1	1	80	/	0.71	20
2	2	3	96	1508, 1240	1.38	10
3	3	2	60	1072	2.7	20
4	4	2	64	1812	3.5	10
5	5	2	60	1672	4.57	20
6	6	2	92	1412	5.23	10
7	7	1	56	/	6.29	20
8	8	3	96	1812, 1336	7.3	10
9	9	2	88	1584	8.15	20
10	10	2	72	1700	9.49	10
11	11	1	76	/	10.37	20
12	12	2	68	1060	11.52	10

Waveform 16

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.80	3	92	1244, 1572	0.496	20
2	0.80 - 1.60	1	80	/	1.232	10
3	1.60 - 2.40	3	84	1432, 1632	1.688	20
4	2.40 - 3.20	3	60	1448, 1972	2.816	10
5	3.20 - 4.00	3	92	1080, 1184	3.32	20
6	4.00 - 4.80	3	96	1160, 1228	4.28	10
7	4.80 - 5.60	3	60	1036, 1736	4.936	20
8	5.60 - 6.40	2	56	1172	6.008	10
9	6.40 - 7.20	1	52	/	6.6	20
10	7.20 - 8.00	2	76	1980	7.512	10
11	8.00 - 8.80	3	80	1280, 1588	8.224	20
12	8.80 - 9.60	2	68	1664	9.008	10
13	9.60 - 10.40	2	92	1676	10.168	20
14	10.40 - 11.20	2	84	1332	10.728	10
15	11.20 - 12.00	2	60	1684	11.496	20

Waveform 17

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.80	1	72	/	0.632	20
2	0.80 - 1.60	3	92	1884, 1104	1.424	10
3	1.60 - 2.40	1	84	/	2.08	20
4	2.40 - 3.20	2	60	1912	2.912	10
5	3.20 - 4.00	3	72	1584, 1492	3.608	20
6	4.00 - 4.80	3	60	1588, 1752	4.272	10
7	4.80 - 5.60	2	64	1780	5.168	20
8	5.60 - 6.40	3	76	1588, 1744	5.808	10
9	6.40 - 7.20	1	56	/	6.888	20
10	7.20 - 8.00	2	76	1940	7.512	10
11	8.00 - 8.80	2	92	1444	8.592	20
12	8.80 - 9.60	3	60	1988, 1864	9.4	10
13	9.60 - 10.40	1	100	/	9.864	20
14	10.40 - 11.20	3	84	1284, 1748	10.728	10
15	11.20 - 12.00	2	100	1900	11.752	20

Waveform 18

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.80	1	56	/	0.504	20
2	0.80 - 1.60	3	76	1116, 1584	1.208	10
3	1.60 - 2.40	1	80	/	1.72	20
4	2.40 - 3.20	1	100	/	2.664	10
5	3.20 - 4.00	3	84	1264, 1140	3.568	20
6	4.00 - 4.80	1	72	/	4.544	10
7	4.80 - 5.60	3	56	1872, 1108	4.944	20
8	5.60 - 6.40	3	60	1320, 1920	6.208	10
9	6.40 - 7.20	2	76	1756	6.744	20
10	7.20 - 8.00	3	60	1596, 1400	7.776	10
11	8.00 - 8.80	1	56	/	8.36	20
12	8.80 - 9.60	3	88	1356, 1840	9.336	10
13	9.60 - 10.40	2	64	1712	9.896	20
14	10.40 - 11.20	1	100	/	10.984	10
15	11.20 - 12.00	3	76	1028, 1688	11.76	20

Waveform 19

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.80	1	84	/	0.408	20
2	0.80 - 1.60	3	64	1780, 1296	1.304	10
3	1.60 - 2.40	3	68	1400, 1292	1.824	20
4	2.40 - 3.20	1	92	/	2.944	10
5	3.20 - 4.00	1	64	/	3.352	20
6	4.00 - 4.80	2	56	1264	4.232	10
7	4.80 - 5.60	1	72	/	4.92	20
8	5.60 - 6.40	2	76	1460	5.992	10
9	6.40 - 7.20	1	84	/	6.528	20
10	7.20 - 8.00	2	68	1188	7.44	10
11	8.00 - 8.80	3	72	1576, 1536	8.456	20
12	8.80 - 9.60	2	64	1056	8.968	10
13	9.60 - 10.40	1	100	/	9.808	20
14	10.40 - 11.20	2	52	1092	10.616	10
15	11.20 - 12.00	3	68	1936, 1464	11.528	20

Waveform 20

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.80	1	88	/	0.2	20
2	0.80 - 1.60	1	68	/	1.376	10
3	1.60 - 2.40	2	88	1496	1.92	20
4	2.40 - 3.20	1	64	/	2.608	10
5	3.20 - 4.00	3	84	1768, 1184	3.584	20
6	4.00 - 4.80	3	52	1620, 1552	4.568	10
7	4.80 - 5.60	3	80	1908, 1884	5.432	20
8	5.60 - 6.40	3	92	1728, 1684	6.032	10
9	6.40 - 7.20	3	60	1536, 1496	6.928	20
10	7.20 - 8.00	3	76	1776, 1580	7.304	10
11	8.00 - 8.80	1	80	/	8.36	20
12	8.80 - 9.60	3	56	1020, 1292	9.072	10
13	9.60 - 10.40	2	60	1380	9.712	20
14	10.40 - 11.20	3	96	1324, 1664	10.992	10
15	11.20 - 12.00	2	72	1896	11.416	20

Waveform 21

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.75	3	52	1384, 1180	0.3225	20
2	0.75 - 1.50	2	60	1096	1.2525	10
3	1.50 - 2.25	3	72	1520, 1716	1.755	20
4	2.25 - 3.00	1	60	/	2.4675	10
5	3.00 - 3.75	2	56	1292	3.5475	20
6	3.75 - 4.50	2	64	1704	4.23	10
7	4.50 - 5.25	2	84	1708	4.9575	20
8	5.25 - 6.00	3	56	1008, 1624	5.565	10
9	6.00 - 6.75	3	80	1468, 1056	6.5325	20
10	6.75 - 7.50	2	88	1160	7.1325	10
11	7.50 - 8.25	3	56	1216, 1852	7.6575	20
12	8.25 - 9.00	1	52	/	8.37	10
13	9.00 - 9.75	1	80	/	9.45	20
14	9.75 - 10.50	3	60	1020, 1996	9.99	10
15	10.50 - 11.25	3	88	1960, 1620	10.6125	20
16	11.25 - 12.00	3	92	1760, 1496	11.46	10

Waveform 22

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.75	3	56	1704, 1692	0.3825	20
2	0.75 - 1.50	1	100	/	1.335	10
3	1.50 - 2.25	2	92	1068	2.025	20
4	2.25 - 3.00	2	84	1844	2.715	10
5	3.00 - 3.75	2	68	1896	3.0975	20
6	3.75 - 4.50	2	100	1656	3.8775	10
7	4.50 - 5.25	2	60	1960	5.0175	20
8	5.25 - 6.00	1	88	/	5.73	10
9	6.00 - 6.75	1	84	/	6.3975	20
10	6.75 - 7.50	3	56	1784, 1692	7.0125	10
11	7.50 - 8.25	3	52	1784, 1648	7.83	20
12	8.25 - 9.00	1	60	/	8.655	10
13	9.00 - 9.75	3	80	1460, 1564	9.195	20
14	9.75 - 10.50	2	68	1604	10.0875	10
15	10.50 - 11.25	1	76	/	10.77	20
16	11.25 - 12.00	2	96	1276	11.415	10

Waveform 23

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.75	3	52	1240, 1024	0.2025	20
2	0.75 - 1.50	2	100	1632	0.825	10
3	1.50 - 2.25	3	76	1112, 1156	1.6725	20
4	2.25 - 3.00	2	56	1808	2.43	10
5	3.00 - 3.75	1	64	/	3.585	20
6	3.75 - 4.50	3	68	1960, 1672	4.3425	10
7	4.50 - 5.25	2	52	1700	4.7625	20
8	5.25 - 6.00	1	100	/	5.385	10
9	6.00 - 6.75	3	60	1084, 1112	6.42	20
10	6.75 - 7.50	3	64	1972, 1164	7.0875	10
11	7.50 - 8.25	3	92	1752, 1168	7.845	20
12	8.25 - 9.00	3	80	1448, 1432	8.775	10
13	9.00 - 9.75	2	88	1744	9.39	20
14	9.75 - 10.50	2	92	1548	10.125	10
15	10.50 - 11.25	2	80	1812	11.0625	20
16	11.25 - 12.00	2	52	1508	11.3475	10

Waveform 24

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.75	2	56	1404	0.2775	20
2	0.75 - 1.50	3	64	1964, 1024	1.1625	10
3	1.50 - 2.25	3	84	1708, 1640	2.0475	20
4	2.25 - 3.00	2	88	1128	2.79	10
5	3.00 - 3.75	1	100	/	3.0825	20
6	3.75 - 4.50	1	60	/	3.885	10
7	4.50 - 5.25	2	96	1436	5.07	20
8	5.25 - 6.00	1	68	/	5.64	10
9	6.00 - 6.75	3	72	1496, 1800	6.3375	20
10	6.75 - 7.50	1	100	/	6.975	10
11	7.50 - 8.25	2	68	1752	8.0025	20
12	8.25 - 9.00	1	84	/	8.6025	10
13	9.00 - 9.75	1	72	/	9.3225	20
14	9.75 - 10.50	2	88	1552	10.215	10
15	10.50 - 11.25	3	52	1884, 1864	10.9425	20
16	11.25 - 12.00	3	60	1776, 1700	11.34	10

Waveform 25

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.75	1	88	/	0.105	20
2	0.75 - 1.50	1	96	/	1.0125	10
3	1.50 - 2.25	1	60	/	2.055	20
4	2.25 - 3.00	1	80	/	2.5875	10
5	3.00 - 3.75	3	76	1344, 1716	3.2475	20
6	3.75 - 4.50	2	64	1560	4.3275	10
7	4.50 - 5.25	2	84	1964	4.935	20
8	5.25 - 6.00	3	60	1760, 1532	5.7225	10
9	6.00 - 6.75	2	80	1432	6.375	20
10	6.75 - 7.50	1	96	/	7.1925	10
11	7.50 - 8.25	3	60	1904, 1676	7.6125	20
12	8.25 - 9.00	1	80	/	8.535	10
13	9.00 - 9.75	2	68	1724	9.465	20
14	9.75 - 10.50	3	76	1936, 1648	10.2	10
15	10.50 - 11.25	2	88	1728	10.92	20
16	11.25 - 12.00	3	84	1908, 1144	11.64	10

Waveform 26

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.60	1	96	/	0.36	20
2	0.60 - 1.20	3	80	1072, 1772	0.84	10
3	1.20 - 1.80	1	88	/	1.392	20
4	1.80 - 2.40	1	100	/	2.202	10
5	2.40 - 3.00	2	56	1692	2.718	20
6	3.00 - 3.60	3	84	1572, 1816	3.084	10
7	3.60 - 4.20	1	60	/	3.678	20
8	4.20 - 4.80	1	92	/	4.674	10
9	4.80 - 5.40	3	52	1628, 1704	5.13	20
10	5.40 - 6.00	3	84	1200, 1716	5.466	10
11	6.00 - 6.60	2	80	1580	6.432	20
12	6.60 - 7.20	3	68	1552, 1236	6.66	10
13	7.20 - 7.80	1	60	/	7.482	20
14	7.80 - 8.40	3	88	1192, 1516	8.094	10
15	8.40 - 9.00	3	56	1372, 1284	8.598	20
16	9.00 - 9.60	3	88	1824, 1280	9.354	10
17	9.60 - 10.20	1	60	/	10.014	20
18	10.20 - 10.80	3	84	1644, 1420	10.272	10
19	10.80 - 11.40	3	72	1348, 1724	11.226	20
20	11.40 - 12.00	1	88	/	11.742	10

Waveform 27

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.60	2	56	1976	0.192	20
2	0.60 - 1.20	2	100	1968	0.78	10
3	1.20 - 1.80	3	60	1892, 1628	1.476	20
4	1.80 - 2.40	3	64	1752, 1328	2.268	10
5	2.40 - 3.00	2	92	1664	2.484	20
6	3.00 - 3.60	2	84	1236	3.234	10
7	3.60 - 4.20	1	64	/	3.858	20
8	4.20 - 4.80	2	80	1280	4.572	10
9	4.80 - 5.40	3	76	1588, 1452	4.92	20
10	5.40 - 6.00	1	64	/	5.688	10
11	6.00 - 6.60	3	80	1464, 1924	6.204	20
12	6.60 - 7.20	1	76	/	6.996	10
13	7.20 - 7.80	1	72	/	7.65	20
14	7.80 - 8.40	1	60	/	8.01	10
15	8.40 - 9.00	2	76	1320	8.694	20
16	9.00 - 9.60	2	100	1684	9.408	10
17	9.60 - 10.20	2	56	1656	9.822	20
18	10.20 - 10.80	3	80	1064, 1868	10.374	10
19	10.80 - 11.40	1	60	/	10.866	20
20	11.40 - 12.00	3	88	1124, 1952	11.718	10

Waveform 28

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.60	2	68	1484	0.306	20
2	0.60 - 1.20	1	88	/	0.834	10
3	1.20 - 1.80	2	92	1832	1.398	20
4	1.80 - 2.40	2	72	1160	2.076	10
5	2.40 - 3.00	1	68	/	2.472	20
6	3.00 - 3.60	3	72	1320, 1844	3.18	10
7	3.60 - 4.20	1	92	/	3.768	20
8	4.20 - 4.80	2	72	1384	4.668	10
9	4.80 - 5.40	1	100	/	5.274	20
10	5.40 - 6.00	1	92	/	5.802	10
11	6.00 - 6.60	1	96	/	6.252	20
12	6.60 - 7.20	3	92	1364, 1348	6.732	10
13	7.20 - 7.80	3	72	1596, 1464	7.464	20
14	7.80 - 8.40	1	60	/	7.878	10
15	8.40 - 9.00	3	64	1444, 1224	8.508	20
16	9.00 - 9.60	1	100	/	9.438	10
17	9.60 - 10.20	3	72	1712, 1152	9.93	20
18	10.20 - 10.80	1	88	/	10.584	10
19	10.80 - 11.40	2	68	1368	11.022	20
20	11.40 - 12.00	1	88	/	11.544	10

Waveform29

Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.60	1	72	/	0.348	20
2	0.60 - 1.20	1	92	/	1.068	10
3	1.20 - 1.80	2	60	1624	1.41	20
4	1.80 - 2.40	2	100	1336	2.082	10
5	2.40 - 3.00	3	72	1924, 1172	2.67	20
6	3.00 - 3.60	3	88	1488, 1396	3.438	10
7	3.60 - 4.20	1	76	/	4.008	20
8	4.20 - 4.80	1	72	/	4.674	10
9	4.80 - 5.40	2	92	1864	5.1	20
10	5.40 - 6.00	2	64	1748	5.604	10
11	6.00 - 6.60	2	84	1356	6.198	20
12	6.60 - 7.20	1	68	/	6.996	10
13	7.20 - 7.80	3	96	1236, 1988	7.542	20
14	7.80 - 8.40	3	56	1328, 1864	8.034	10
15	8.40 - 9.00	3	76	1160, 1264	8.538	20
16	9.00 - 9.60	2	96	1224	9.18	10
17	9.60 - 10.20	3	84	1136, 1364	10.002	20
18	10.20 - 10.80	1	56	/	10.302	10
19	10.80 - 11.40	2	64	1388	11.124	20
20	11.40 - 12.00	1	88	/	11.628	10

Waveform 30

















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Burst #	Burst Interval(s)	Number of Pulses	Pulse Width (us)	Pulse Spacing(us)	Pulse Start (s)	Chirp Width (MHZ)
1	0.00 - 0.60	2	52	1352	0.12	20
2	0.60 - 1.20	1	100	/	0.876	10
3	1.20 - 1.80	1	96	/	1.314	20
4	1.80 - 2.40	3	60	1220, 1504	1.974	10
5	2.40 - 3.00	1	92	/	2.46	20
6	3.00 - 3.60	2	100	1100	3.45	10
7	3.60 - 4.20	1	88	/	3.99	20
8	4.20 - 4.80	1	68	/	4.428	10
9	4.80 - 5.40	2	72	1396	5.154	20
10	5.40 - 6.00	3	92	1240, 1216	5.67	10
11	6.00 - 6.60	1	72	/	6.21	20
12	6.60 - 7.20	1	92	/	6.858	10
13	7.20 - 7.80	2	96	1896	7.602	20
14	7.80 - 8.40	2	68	1552	7.926	10
15	8.40 - 9.00	1	64	/	8.838	20
16	9.00 - 9.60	1	60	/	9.396	10
17	9.60 - 10.20	3	72	1996, 1516	9.978	20
18	10.20 - 10.80	2	68	1992	10.518	10
19	10.80 - 11.40	3	60	1448, 1792	11.148	20
20	11.40 - 12.00	2	68	1156	11.736	10

Type 6:

Trial #	Pluses per Hop	Pulse Width (μ s)	Hopping Sequence Length(ms)
1	9	16	300
2	9	11.3	300
3	9	13.5	300
4	9	19.4	300
5	9	17.5	300
6	9	15.3	300
7	9	15.9	300
8	9	14.3	300
9	9	15.8	300
10	9	11.5	300
11	9	17.4	300
12	9	19	300
13	9	16	300
14	9	13.8	300
15	9	18.9	300
16	9	15.5	300
17	9	19.9	300
18	9	14.1	300
19	9	15.2	300
20	9	13.8	300
21	9	17.1	300
22	9	13.8	300
23	9	19.8	300
24	9	15.3	300
25	9	14.5	300
26	9	11.3	300
27	9	17.3	300
28	9	19.2	300
29	9	14.2	300
30	9	18.2	300

Annex C. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)		Please see the documents for the detailed scope
ISO Guide 65 (A2LA)		Please see the documents for the detailed scope
TCB Designation		A1, A2, A3, A4, B1, B2, B3, B4, C
FCC DoC Accreditation		FCC Declaration of Conformity Accreditation
FCC Site Registration		3 meter site
FCC Site Registration		10 meter site
IC Site Registration		3 meter site
IC Site Registration		10 meter site
EU NB		Radio & Telecommunications Terminal Equipment: EN45001 – EN ISO/IEC 17025
		Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)	 	Phase I, Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
HongKong OFCA		(Phase II) OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		Radio: Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII

Japan Recognized Certification Body Designation		<p>Radio : A1. Terminal equipment for purpose of calling</p> <p>Telecom : B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item 1 of the Radio Law</p>
Korea CAB Accreditation		<p>EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI EMS: KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS</p> <p>Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21, RRL Notice 2007-80, RRL Notice 2004-68</p> <p>Telecom: President Notice 20664, RRL Notice 2007-30, RRL Notice 2008-7 with attachments 1, 3, 5, 6; President Notice 20664, RRL Notice 2008-7 with attachment 4</p>
Taiwan NCC CAB Recognition		LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition		CNS 13438
Japan VCCI		<p>R-3083: Radiation 3 meter site</p> <p>C-3421: Main Ports Conducted Interference Measurement</p> <p>T-1597: Telecommunication Ports Conducted Interference Measurement</p>
Australia CAB Recognition		<p>EMC: AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4</p> <p>Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771</p> <p>Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06 AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/ACIF S60950.1</p>
Australia NATA Recognition		AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016, AS/ACIF S031, AS/ACIF S038, AS/ACIF S040, AS/ACIF S041, AS/ACIF S043.2