

# FCC 47 CFR PART 15 SUBPART E

for

802.11ac DOCSIS 3.0 Gateway MODEL: SR808ac Brand: SmartRG

Test Report Number:

C170830Z01-RP1-3

Issued Date: September 22, 2017

Issued for

SmartRG Inc. 501 SE Columbia Shores Boulevard, Suite 500 Vancouver, Washington 98661

Issued by:

#### **Compliance Certification Services (Shenzhen) Inc.**

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# **Revision History**

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	September 22, 2017	Initial Issue	ALL	Sabrina Wang



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# 1. TEST CERTIFICATION

Product	802.11ac DOCSIS 3.0 Gateway
Model	SR808ac
Brand	SmartRG
Tested	July 7~August 30, 2017
Applicant	SmartRG Inc. 501 SE Columbia Shores Boulevard, Suite 500 Vancouver, Washington 98661
Manufacturer	SmartRG Inc. 501 SE Columbia Shores Boulevard, Suite 500 Vancouver, Washington 98661

APPLICABLE STANDARDS			
STANDARD TEST RESULT			
FCC 47 CFR Part 15 Subpart E	No non-compliance noted		

### We hereby certify that:

Compliance Certification Services (Shenzhen) Inc. tested the above equipment. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in **ANSI C63.10: 2013** and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407 and IC RSS-247.

The TEST RESULTS of this report relate only to the tested sample identified in this report.

Approved by:

Reviewed by:

and

Sunday HuRuby ZhangSupervisor of EMC Dept.Supervisor of Report Dept.Compliance Certification Services (Shenzhen)Compliance Certification Services (Shenzhen)Inc.Inc.

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# 2. EUT DESCRIPTION

Product	802.11ac DOCSIS 3.0 Gateway				
Model Number	SR808ac				
Brand	SmartRG				
Model Discrepancy	N/A				
		0			
Serial Number	C170830Z01-RP1-	3			
Received Date	July 7, 2017				
Power Supply	DC12V supplied by	the adapter			
Adapter Manufacturer /Model No.	SOY-1200300US I/P: AC100-240V, 5 O/P: DC12V, 3.0A DC Output Cable: I				
		Mode	Frequency	Number of	
			Range(MHz)	channel	
		IEEE 802.11a IEEE 802.11n HT20	5180-5240	4 4	
	UNII Band I:	IEEE 802.11n HT20	5180-5240 5190-5230	2	
		IEEE 802.11ac 80	5210	1	
	UNII Band II: UNII Band III:	IEEE 802.11a	5260-5320	4	
		IEEE 802.11n HT20	5260-5320	4	
		IEEE 802.11n HT40	5270-5310	2	
<b>Operating Frequency</b>		IEEE 802.11ac 80	5290	1	
Range & Number of Channels		IEEE 802.11a	5500-5580; 5660- 5700	8	
		IEEE 802.11n HT20	5500-5580; 5660- 5700	8	
		IEEE 802.11n HT40	5510-5550; 5670	3	
		IEEE 802.11ac 80	5530	1	
		IEEE 802.11a	5745-5825	5	
	UNII Band IV:	IEEE 802.11n HT20	5745-5825	5	
		IEEE 802.11n HT40	5755-5795	2	
		IEEE 802.11ac 80	5775	1	
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)				
Antenna Specification	Embedded Antenna with 3dBi gain (Max)				
Channels Spacing	IEEE 802.11a, 802.11n HT20 : 20MHz IEEE 802.11n HT40: 40MHz IEEE 802.11ac 80: 80MHz				
Temperature Range	0°C ~ +40°C				
Hardware Version	V1.0				
Software Version	n 1.0.0.4				
Note: 1. The sample	selected for test wa	s engineering sample tha	t approximated to p	roduction product and	

**Note:** 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.



Operation Frequency:					
UNLICENSED NATIONAL INFORMA	UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)				
CHANNEL	MHz				
36	5180				
38	5190				
40	5200				
42	5210				
44	5220				
46	5230				
48	5240				
52	5260				
54	5270				
56	5280				
58	5290				
60	5300				
62	5310				
64	5320				
100	5500				
102	5510				
104	5520				
106	5530				
108	5540				
110	5550				
112	5560				
116	5580				
132	5660				
134	5670				
136	5680				
140	5700				
149	5745				
151	5755				
153	5765				
155	5775				
157	5785				
159	5795				
161	5805				
165	5825				

#### Remark:

- 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
- This submittal(s) (test report) is intended for <u>FCC ID</u>: <u>VW7SR808A</u> filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules and FCC 14-30.



# 3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 Radiated testing was performed at an antenna to EUT distance 3 meters. The tests documented in this report were performed in accordance with ANSI C63.4: 2009 and FCC CFR 47 Part 15.207, 15.209, 15.407 and FCC 14-30, IC RSS-247, Radio testing was performed according to KDB DA 02-2138、KDB 789033 D02、KDB 905462 D02, KDB 905462 D03, KDB 905462 D06;

# **3.1 EUT CONFIGURATION**

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

# 3.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E and IC RSS-247.

# **3.3 GENERAL TEST PROCEDURES**

# Conducted Emissions

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in Section 6.2 of ANSI C63.10, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

### Radiated Emissions

The EUT is placed on the turntable, which is 0.8 m (below 1GHz) /1.5m (Above 1GHz) above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.4 to Section 6.6 of ANSI C63.10.



# 3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41	322 - 335.4		

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



## **3.5 DESCRIPTION OF TEST MODES**

The EUT is a 3TX configuration without beam forming function.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

IEEE 802.11n HT20: 5300 MHz Channel (5300MHz) with 13Mbps data rate was chosen for the final testing.

IEEE 802.11n HT20: 5500 MHz Channel (5500MHz) with 13Mbps data rate was chosen for the final testing.

IEEE 802.11n HT40: 5310 MHz Channel (5310MHz) with 27Mbps data rate was chosen for the final testing.

IEEE 802.11n HT40: 5510 MHz Channel (5510MHz) with 27Mbps data rate was chosen for the final testing.

IEEE802.11ac 80: 5290 MHz Channel (5290MHz) with 27Mbps data rate was chosen for the final testing.

IEEE 802.11ac 80: 5530 MHz Channel (5530MHz) with 27Mbps data rate was chosen for the final testing.



# 4. SETUP OF EQUIPMENT UNDER TEST

# 4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

# 4.2 MEASUREMENT EQUIPMENT USED

Remark: Each piece of equipment is scheduled for calibration once a year.

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9010A	MY52221469	10/24/2017
Vector Signal Generator	KEYSIGHT	N5182B	MY53051596	04/11/2018

# 4.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Model No.	Serial No.	FCC ID	Brand	Data Cable	Power Cord
1	GPON ONU	G-240W-B	N/A	2ADZRG240WB	Alcatel.Lu cent	N/A	N/A
2	Notebook 1#	B475	WB048616 12	DoC	THINKPA D	Unshielded, 1.50m	Unshielded, 1.60m (AC Cable) Shielded, 1.80m (DC Cable)
3	Notebook 2#	Probook 5310m	N/A	N/A	HP	Unshielded 1.50m	Shielded 0.80m (AC Cable) Shielded 1.20m (DC Cable

Note:

Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



## 4.4 MEASUREMENT UNCERTAINTY

Parameter	Uncertainty
RF frequency	+/-1 * 10-5
RF power conducted	+/- 1,5 dB
RF power radiated	+/- 6 dB
Spurious emissions, conducted	+/- 3 dB
Spurious emissions, radiated	+/- 6 dB
Humidity	+/- 5 %
Temperature	+/- 1°C
Time	+/-10 %

**Remark:** This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



# 5. FACILITIES AND ACCREDITATIONS

# 5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd., Guan Lan Town, Baoan District, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22.

# 5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

# 5.3 ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

USA	A2LA
China	CNAS

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA	FCC
Japan	VCCI(C-4815,R-4320,T-2317, G-10624)
Canada	INDUSTRY CANADA

Copies of granted accreditation certificates are available for downloading from our web site, <u>http://www.ccssz.com</u>

# 6. DYNAMIC FREQUENCY SELECTION

# LIMIT

According to § 15.407 (h) and FCC 06-96 appendix "compliance measurement procedures for unlicensed-national information infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bands incorporating dynamic frequency selection".

Deminement		Operational	Mode	
Requirement	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	
Uniform Spreading	Yes	Not required	Not required	

### Table 1: Applicability of DFS requirements prior to use of a channel

#### Table 2: Applicability of DFS requirements during normal operation

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	Master Device or Client	Client Without	
with multiple bandwidth modes	with Radar Detection	Radar Detection	
U-NII Detection Bandwidth and	All BW modes must be	Not required	
Statistical Performance Check	tested		
Channel Move Time and Channel	Test using widest BW mode	Test using the widest	
Closing Transmission Time	available	BW mode available	
		for the link	
All other tests	Any single BW mode	Not required	
Note: Frequencies selected for statistical	performance check (Section 7.8	.4) should include	
several frequencies within the rada	r detection bandwidth and frequ	encies near the edge of	
the radar detection bandwidth. For	r 802.11 devices it is suggested t	to select frequencies in	
each of the bonded 20 MHz chann	els and the channel center freque	ency.	



#### Table 3: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Maximum Transmit Power	Value					
	(See Notes 1, 2, and 3)					
$EIRP \ge 200 milliwatt$	-64 dBm					
EIRP < 200 milliwatt and	-62 dBm					
power spectral density < 10 dBm/MHz						
EIRP < 200 milliwatt that do not meet the power spectral	-64 dBm					
density requirement						
Note 1: This is the level at the input of the receiver assuming a 0 dBi						
<b>Note 2:</b> 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 device D01.						

#### Table 4: 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 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 C Short Tal	se italgai i est marcioin		
Radar	Pulse	PRI	Number of Pulses	Minimum	Minimum
Type	Width	(µsec)		Percentage of	Number
	(µsec)			Successful	of
				Detection	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 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	$\operatorname{Roundup} \left\{ \begin{array}{c} \left(\frac{1}{360}\right) \\ \left(\frac{19 \cdot 10^{6}}{\operatorname{PRI}_{\mu \operatorname{sec}}}\right) \end{array} \right\}$	60%	30
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: She	ort Pulse Rada	ar Type 0 should be u	used for the detection ba	ndwidth test, ch	annel move

#### Table 5 – Short Pulse Radar Test Waveforms

time, and channel closing time tests.

#### Table 6 – Long Pulse Radar Test Waveform

Radar Type	Pulse Width	Chirp Width	PRI (µsec)	Number of Pulses	Number of <i>Bursts</i>	Minimum Percentage of	Minimum Number of
	(µsec)	(MHz)		per Burst		Successful Detection	Trials
5	50-100	5-20	1000- 2000	1-3	8-20	80%	30

#### Table 7 – Frequency Hopping Radar Test Waveform

_			2		quency more	ping reason re		
	Radar	Pulse	PRI	Pulses	Hopping	Hopping	Minimum	Minimum
	Type	Width	(µsec)	per	Rate	Sequence	Percentage of	Number of
		(µsec)		Hop	(kHz)	Length	Successful	Trials
						(msec)	Detection	
	6	1	333	9	0.333	300	70%	30



# **DESCRIPTION OF EUT**

#### Overview Of EUT With Respect To §15.407 (H) Requirements

The firmware installed in the EUT during testing was: Firmware Rev: 1.0.0.4

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

The EUT is a Master Device.

The highest power level within these bands is 21.78dBm EIRP in the 5250-5350 MHz band and 21.60 dBm EIRP in the 5470-5725 MHz band.

The three antennas assembly utilized with the EUT has a gain of 3 dBi.

The rated output power of the Master unit is < 23dBm (EIRP). Therefore the required interference threshold level is -64 or -62 dBm. After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is -62+3=-59 dBm.

The calibrated conducted DFS Detection Threshold level is set to –64 or -62 dBm. The tested level is lower than the required level hence it provides margin to the limit.

The EUT uses one transmitter connected to two 50-ohm coaxial antenna ports via a diversity switch. Both antenna ports are connected to the test system via a power divider to perform conducted tests.

The Slave device associated with the EUT during these tests does not have radar detection capability.

WLAN traffic is generated by streaming the video file TestFile.mp2 "6 ½ Magic Hours" from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11a architecture, with a nominal channel bandwidth of 20 MHz.

Test results show that the EUT requires 33.31 seconds to complete its initial power-up cycle

#### Manufacturer's Statement Regarding Uniform Channel Spreading

The end product implements an automatic channel selection feature at startup such that operation commences on channels distributed across the entire set of allowed 5GHz channels. This feature will ensure uniform spreading is achieved while avoiding non-allowed channels due to prior radar events.



## TEST AND MEASUREMENT SYSTEM

#### System Overview

The measurement system is based on a conducted test method.

The short pulse and long pulse signal generating system utilizes the NTIA software and the same manufacturer / model Vector Signal Generator as the NTIA. The hopping signal generating system utilizes the simulated hopping method.

The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution. The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time. The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List, with the initial starting point randomized at run-time.

The signal monitoring equipment consists of a spectrum analyzer with the capacity to display 8192 bins on the horizontal axis. A time-domain resolution of 2 msec / bin is achievable with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. A time-domain resolution of 3 msec / bin is achievable with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

#### **Frequency Hopping Signal Generation**

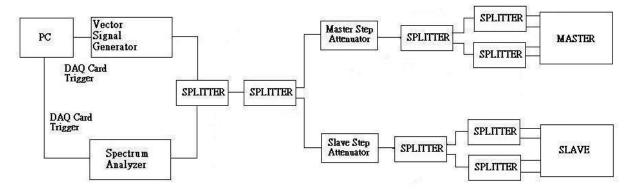
The hopping burst generator is a High Speed Digital I/O card plugged into the control computer. This card utilizes an independent hardware clock reference therefore the output pulse timing is unaffected by host computer operating system latency times.

The software selects the hopping sequence as a 100-length segment of the August 2005 NTIA hopping frequency list. This list contains 274 unique pseudorandom sequences. Each such sequence contains 475 frequencies ordered on a random without replacement basis. Each successive trial uses a contiguous 100- length segment from within each successive 475-length sequence in the list. The initial starting point within the list is randomized at run-time such that the first 100-length segment is entirely contained within the first 475-length sequence. The starting point of each successive trial is incremented by 475.

Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from FL to FH for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.



### Conducted Method System Block Diagram



#### Measurement System Frequency Reference

Lock the signal generator and the spectrum analyzer to the same reference source as follows: Connect the 10 MHz OUT (SWITCHED) on the spectrum analyzer to the 10 MHz IN on the signal generator and set the spectrum analyzer 10 MHz Out to On.

#### System Calibration

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of –62 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyzer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system.

Measure the amplitude and calculate the difference from -62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at -62 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at -62 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of -62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.



#### Interference Detection Threshold Adjustment

Download the applicable radar waveforms to the signal generator. Select the radar waveform, trigger a burst manually and measure the amplitude on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

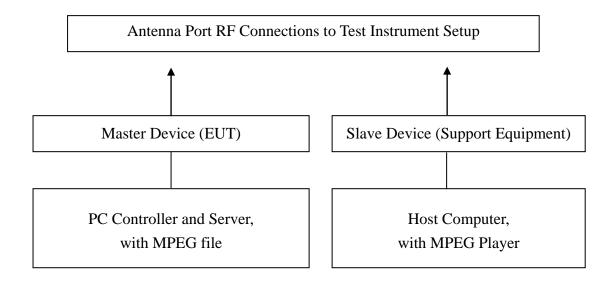
#### Adjustment Of Displayed Traffic Level

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.



### Test Setup





# TEST RESULTS

#### No non-compliance noted

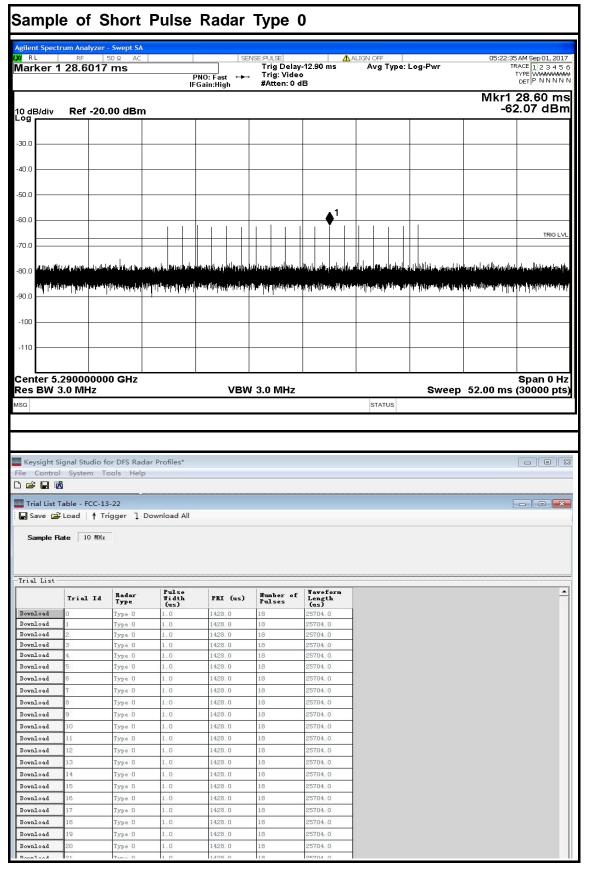
ter Throughp							
er 1 8.04607 s	PNO	SENSE:PU SENSE:PU SENSE:PU SENSE:PU SENSE:PU SENSE:PU SENSE:PU	ig: Free Run tten: 10 dB		r gType:Log-Ρι	wr	09:22:48 AM A TRACE TYPE DET
	IFGal	In:LUW #A					Mkr1 8 -43.62
/div Ref 0.00 dBm							-43.02
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DDE TRC SCL ×		Y	FUNCTION	FUNCTION WI	отн		TION VALUE
N 1 t	8.046 s	-43.62 dBm					
e Throughpu	t		101	STA	ATUS		
ye Throughpu Spectrum Analyzer - Swept SA RF 50 Ω AC er 1 12.9677 s	PNO	SENSE:PL Fast Tr in:Low #A	ग्रद्ध ig: Free Run itten: 10 dB			wr	09:24:54 AM A TRACE TYPE DET <b>Mkr1 1</b>
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Spectrum Analyzer - Swept SA	PNO	∵Fast ⊶⊫⊸ Tr	ig: Free Run		:F	MT	TRACE TYPE DET Mkr1 1
Spectrum Analyzer - Swept SA	PNO	∵Fast ⊶⊫⊸ Tr	ig: Free Run		:F	NT	TRACE TYPE DET Mkr1 1
Spectrum Analyzer - Swept SA	PNO	∵Fast ⊶⊫⊸ Tr	ig: Free Run		:F	WF	Mkr1 1 -43.54
Spectrum Analyzer - Swept SA	PNO	∵Fast ⊶⊫⊸ Tr	ig: Free Run		:F		Mkr1 1 -43.54
Spectrum Analyzer - Swept SA	PNO	∵Fast ⊶⊫⊸ Tr	ig: Free Run		:F		Mkr1 1 -43.54
Spectrum Analyzer - Swept SA	PNO	in:Low #A	ig: Free Run tten: 10 dB		:F		TRACE TYPE DET Mkr1 1 -43.54
Spectrum Analyzer - Swept SA           RF         50 Ω           er         1           Idiv         Ref           0.00         dBm	PNO IFGai	VBW 3.0	ig: Free Run ttten: 10 dB		r≠   g Type: Log-Pt	Sweep	TRACE TYPE DeT Mkr1 1 -43.54
Spectrum Analyzer - Swept SA           RF         50 Ω         AC           er 1 12.9677 s         S	PNO	VBW 3.0	ig: Free Run ttten: 10 dB		r≠   g Type: Log-Pt	Sweep	TRACE TYPE DET Mkr1 1 -43.54 1 1 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Spectrum Analyzer - Swept SA           RF         50 Ω           er         1           Idiv         Ref           0.00         dBm	PNO IFGai	VBW 3.0	ig: Free Run ttten: 10 dB		r≠   g Type: Log-Pt	Sweep	TRACE TYPE DET Mkr1 1 -43.54 1 1 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Spectrum Analyzer - Swept SA           RF         50 Ω           AC           er 1 12.9677 s	PNO IFGai	VBW 3.0	ig: Free Run ttten: 10 dB		r≠   g Type: Log-Pt	Sweep	TRACE TYPE DET Mkr1 1 -43.54 1 1 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5



	_	ghput								
X/ RL	ectrum Anal RF 1 11.93	l <mark>yzer - Swept SA</mark> 50 Ω AC <b>376 S</b>		SE PNO: Fast ↔ FGain:Low	ENSE:PULSE → Trig: Free I #Atten: 10	Run	LIGN OFF	Log-Pwr	TR	AM Aug 31, 2017 RACE 1 2 3 4 5 6 TYPE WWWWWM DET P N N N N
10 dB/div	/ Ref	0.00 dBm							Mkr -63	1 11.94 s 3.53 dBm
-10.0										
20.0										
30.0		 								
40.0										
50.0									1	
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30.0										
90.0										 
	5.29000 / 3.0 MH	10000 GHz Iz		VBV	N 3.0 MHz			Swee	ep 15.00 s	Span 0 H (30000 pt
ISG							STATUS			



#### PLOTS OF RADAR WAVEFORMS



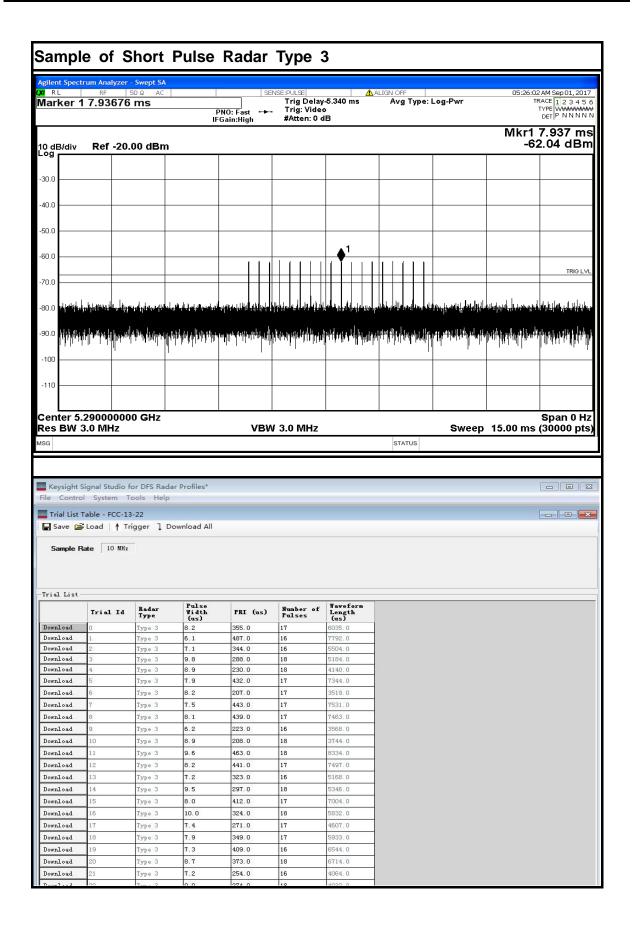
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Sam	nple of	Short	Pulse	Radar	Туре	2				
Mark	Spectrum Analyz RF er 1 6.912	50 Ω AC 73 ms	 IF	SE PNO: Fast ■Gain:High	Trig Dela Trig Dela Trig: Vide #Atten: 0	y-5.567 ms o	ALIGN OFF Avg Type:	Log-Pwr	™ Mkr1	7 AM Sep 01, 2017 RACE 1 2 3 4 5 6 TYPE WWWWW DET P N N N N N 6.913 ms 2.06 dBm
10 dB/	/div Ref-2	20.00 dBn	n						-0.	
-30.0										
40.0										
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-50.0 —										
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	6.6.5. <b>1</b>		. La lubra l'arta	1						o li statu
-80.0 #	in herein all all a binaite na hina			and the second secon	in in all in the second se		i di kana na mana na sana kana kana kana kana kana kan		la la se la chairte din	din bergehilling in self stade
-90.0	<del>dh ha a a a a an an an an an an a</del>	╷╴ <mark>╢╖╢╖╵╢╟╴</mark> ╟╢	and the state of the	un al da branch	<mark>haith ha bailebha</mark> idh	<b>HAR HAR HAR</b>	<mark>╢<mark>╎</mark>┽╢<sub>╢╜</sub>╢╷╷┥╹╜╿╕┉╹<sub>╢</sub>║</mark>	ula de la constante de la const	<sup>₽</sup> ₩₩₩₩₩₩₩₩₩₽₩	
-100 —		· · · ·	1.1					1		
-110										
-110										
	er 5.290000							_		Span 0 Hz
Res E	3W 3.0 MHz	2		VBV	V 3.0 MHz		STATUS	Sweep	15.00 ms	(30000 pts)
	sight Signal Stud Control System									
	List Table - FCC e 🗃 Load   🛉		Download All							
	ple Rate 10 M	IHz								
-Trial I	Ist Trial I	d Radar Type	Pulse Width	PRI (us)	Number of Pulses	Waveform Length				
Downlo		Type 2	3.2	179.0	26	4654.0				
Downlo Downlo		Type 2 Type 2	1.1	207.0 230.0	23 24	4761.0 5520.0				
Downlo	ad 3	Type 2	4.8	200.0	29	5800.0				
Downlo		Type 2 Type 2	3.9	214.0 222.0	28	5992.0 5772.0				
Downlo		Type 2	3.2	204.0	26	5304.0				
Downlo		Type 2	2.5	192.0	25	4800.0				
Downlo	ad 8	Type 2	3.1	164.0	26	4264.0				
Downlo		Type 2	1.2	156.0	23	3588.0				
Downlo		Type 2	3.9	210.0	27	5670.0				
Downlo		Type 2	4.6	201.0	29	5829.0				
Downlo		Type 2 Type 2	3.2	162.0	26	4212.0 4925.0				
Downlo	200 C	Type 2	4.5	163.0	25	4925.0				
Downlo	100	Type 2	3.0	203.0	26	5278.0				
Downlo		Type 2	5.0	168.0	29	4872.0				
Downlo	ad 17	Type 2	2.4	217.0	25	5425.0				
Downlo	ad 18	Type 2	2.9	191.0	26	4966.0				
Downlo	ad 19	Type 2	2.3	166.0	25	4150.0				
Downlo		Type 2	3.7	150.0	27	4050.0				
Downlo		Type 2	2.2	176.0	25	4400.0				
Downlo	ad 22	Type 2	4 9	195 0	29	5655 0				

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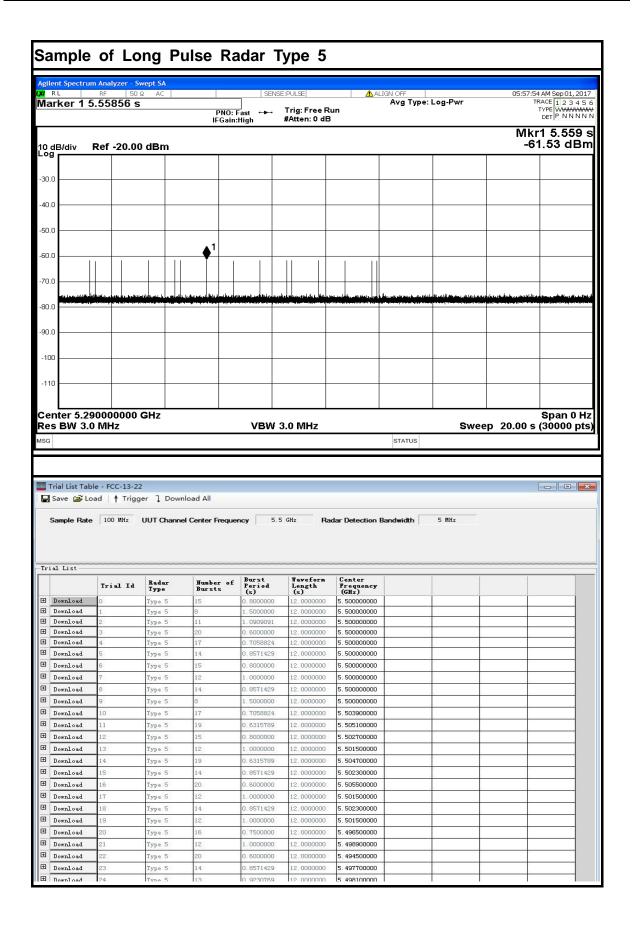




Sar	nple	of	Short	Pulse	Radar	Туре	4				
			zer - Swept SA								
ιx/ RL Marl		RF 9.379	50 Ω AC 81 ms		SE	NSE:PULSE Trig Delay	-5.340 ms	ALIGN OFF Avg Type:	Log-Pwr	TF	AM Sep 01, 2017 RACE 1 2 3 4 5 6
					PNO:Fast ↔ Gain:High	. Trig: Vide #Atten: 0 d					DET P N N N N N
		<b>D</b> -6.6									9.380 ms 2.49 dBm
10 dE Log	3/div	Ref -2	20.00 dBm							-02	2.49 UBIII
-30.0											
-40.0											
-50.0											
<u></u>								<b>▲</b> 1			
-60.0											TRIG LVL
-70.0											
-80.0	itali dottallar ca	الأخار والقتري	والمراجع التوالية والمراجع	ului, lui p <sup>i</sup> luiti lu <sub>i e</sub> nd ju	and the state of the second	بالسرار والمعارية	ار الليانية الرادية			أمتنا الارتباط والتأسير الأنسالي	and at the could be deared.
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-100	-						1			1	1
-110											
-110											
l Cent	ter 5.29	90000	000 GHz								Span 0 Hz
_	BW 3.0	0 MHz			VBW	/ 3.0 MHz			Sweep	15.00 ms	(30000 pts)
MSG								STATUS			
A CONTRACTOR OF THE OWNER OWNER OF THE OWNER OWNE	al List Tab										
: 🔛 Sa	ive 🚔 Lo	oad∣↑	Trigger ] [	ownload All							
Sai	mple Rate	e   10 M	IHz								
Trial	List										
		Trial I	d Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)				
Downl		1	Type 4 Type 4	16.0 11.3	355.0 487.0	14	4970.0 5844.0				
Downl			Type 4	13.5	344.0	13	4472.0				
Downl		1	Type 4	19.4	288.0	16	4608.0				
Downl			Type 4 Type 4	17.5 15.3	230.0 432.0	15	3450.0 6048.0	-			
Downl			Type 4	15.9	207.0	14	2898.0				
Downl	oad 7		Type 4	14.3	443.0	13	5759.0				
Downl			Type 4	15.8	439.0	14	6146.0				
Downl			Type 4	11.5	223.0	12	2676.0	-			
Downl		0	Type 4	17.4	208.0 463.0	15	3120.0 7408.0				
Downl		2	Type 4 Type 4	19.0	463.0	16	7408.0 6174.0	-			
Downl		3	Type 4	13.8	323.0	13	4199.0				
Downl		4	Type 4	18.9	297.0	16	4752.0				
Downl		5	Type 4	15.5	412.0	14	5768.0				
Downl		6	Type 4	19.9	324.0	16	5184.0				
Downl		7	Type 4	14.1	271.0	13	3523.0				
Downl		9	Type 4	15.2 13.8	349.0 409.0	14	4886.0 5317.0	-			
Downl		:0 .9	Type 4 Type 4	13.8	373.0	13	5595.0				
Downl		21	Type 4	13.8	254.0	13	3302.0				
Downl		2	Type 4	19.8	274.0	16	4384.0				
Downl	oad 2	:3	Type 4	15.3	278.0	14	3892.0				
Downl	nad 2	4	Type 4	14 5	317 0	13	4121 0				

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Sa	mple	of Lo	ng Pı	ulse R	adar T	ype 6					
		Analyzer - Sv									
ixi Vic		RF 50 S	2 AC   7.70 dBr	n		:PULSE  Trig Delay∹		LIGN OFF Avg Type:	Log-Pwr	TF	AM Sep 01, 2017 RACE 1 2 3 4 5 6
	<b>j</b>			PNO		Trig: Video #Atten: 0 dE	3				DET P N N N N N
					5					Mkr1	5.184 ms
		Ref -20.00	dBm							-62	2.49 dBm
Log											*
-30.	0										
-40.	0										
-50.	0										
-30.	0										
-60.	0										
											TRIG LVL
-70.	0										
-80.	ո է կույնեստ	<u>                                     </u>	ى ىسى يەرى يەر	المنابلة والمالية والمراجع		المراجع المراجع	بالمرامية المرامية	hur hall and a	i lite to a stabilite data da se	والالار المراطنين والارام	
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-90.	<sup>0</sup> մնան մե	n filifi. Ia tua ak İmaila	أليان المالية	halling on the second second second second	լ հետ մին են հետ հետ հետ	والفلية الأرار	. มีนั้นมีปก.เป็น	ի հանությունությո	on Í. d.latt. nækkke	יון און אייר אין אייראיין אייראיין אייראיי	ى بى <b>أبرالانداندانداندانا</b> با
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	Ĩ										
<b>C</b>	ntor 5 20	0000000	<u></u>								Spap 0 Hz
	s BW 3.0		GHZ		VBW 3	.0 MHz			Sweep	) 10.00 ms	Span 0 Hz (30000 pts)
MSG								STATUS			<u> </u>
		al Studio for I System Tool		ofiles*							
122		e - FCC-13-22									
	Save 🔁 Lo	ad   🛉 Trigg	er ] Down	load All							
	Sample Rate	125 MHz	Center Freque	ency 5500 M	Hz Channel Ba	andwidth 10	0 MHz				
Tri	al List										
		Trial Id	Radar	Pulse	PRI (us)	Pulses	Hopping	Hopping Sequence	Visible		
_	Download		Туре	Width (us)		per Hop	Rate (kHz)	Hopping Sequence Length (ms)	Frequency Number		
Œ	Download	0	Туре б Туре б	1.0	333.3 333.3	9	0.3333	300.0000000 300.0000000	21 16		
	Download Download	2	Type 6 Type 6	1.0	333. 3 333. 3	9	0.3333	300.0000000	18		
Œ	Download	4	Туре б	1.0	333.3	9	0.3333	300.0000000	22		
Đ	Download	5	Type 6	1.0	333.3	9	0.3333	300.0000000	19		
Œ	Download	6	Туре б	1.0	333. 3	9	0.3333	300.0000000	17		
	Download	7	Type 6	1.0	333.3	9	0.3333	300.0000000	17		
E	Download	8	Type 6	1.0	333.3	9	0.3333	300.0000000	27		
E	Download	9	Туре б Туре б	1.0	333.3	9	0.3333	300.0000000	20		
	Download	10	Туре б Туре б	1.0	333.3	9	0.3333	300.0000000	20		
Ð	Download	12	Type 6	1.0	333.3	9	0.3333	300.0000000	21		
Ð	Download	13	Type 6	1.0	333.3	9	0.3333	300.0000000	25		
Đ	Download	14	Туре б	1.0	333.3	9	0.3333	300.0000000	20		
Ð	Download	15	Туре б	1.0	333.3	9	0.3333	300.0000000	20		
	Download	16	Туре б	1.0	333.3	9	0.3333	300.0000000	20		
E	Download	17	Туре б	1.0	333.3	9	0.3333	300.0000000	26		
	Download	18	Type 6	1.0	333.3	9	0.3333	300.0000000	17		
Ð			-	4	005	0	0.0000	000.000	10		
FT	Download	19	Type 6	1.0	333.3	9	0.3333	300.0000000	19		
ŧ	Download Download Download	19 20 21	Туре 6 Туре 6 Туре 6	1.0 1.0 1.0	333.3 333.3 333.3	9	0.3333 0.3333 0.3333	300.0000000 300.0000000 300.0000000	19 22 26		



# TEST CHANNEL AND METHOD

All tests were performed at a channel center frequency of 5300 MHz utilizing a conducted test method.

# **CHANNEL AVAILABILITY CHECK TIME**

## Test Procedure To Determine Initial Power-Up Cycle Time

A link was established on channel then the EUT was rebooted. The time from the cessation of traffic to the re-initialization of traffic was measured as the time required for the EUT to complete the total powerup cycle. The time to complete the initial power-up period is 60 seconds less than this total power-up time.

### Test Procedure For Timing Of Radar Burst

With a link established on channel, the EUT was rebooted. A radar signal was triggered within 0 to 6 seconds after the initial power-up period, corresponding to the beginning of the CAC time, and transmissions on the channel were monitored on the spectrum analyzer.

The Non-Occupancy list was cleared. With a link established on channel, the EUT was rebooted. A radar signal was triggered within 54 to 60 seconds after the initial power-up period, corresponding to the end of the CAC time, and transmissions on the channel were monitored on the spectrum analyzer.

# **Channel Availability Check Time Results**

No non-compliance noted.

Time required for EUT to complete the initial power-up cycle
(sec)
33.31

If a radar signal is detected during the channel availability check then the PC controlling the EUT displays a message stating that radar was detected.

Timing of Radar Burst	Display on EUT / PC Control Computer	Spectrum Analyzer Display
No Radar Triggered	EUT Initiates Transmissions	Transmissions begin on channel after completion of the initial power-up cycle and the 60 second CAC
Within 0 to 6 second window	EUT indicates radar detected EUT does not display any radar parameter values	No transmissions on channel
Within 54 to 60 second window	EUT indicates radar detected EUT does not display any radar parameter values	No transmissions on channel



#### CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

#### General Reporting Notes

The reference marker is set at the end of last radar pulse.

#### Type 0 Radar Reporting Notes

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated

Begins no later than (Reference Marker + 200 msec)

and

Ends no earlier than (Reference Marker + 10 sec).



### TEST RESULTS

#### LOW BAND RESULTS

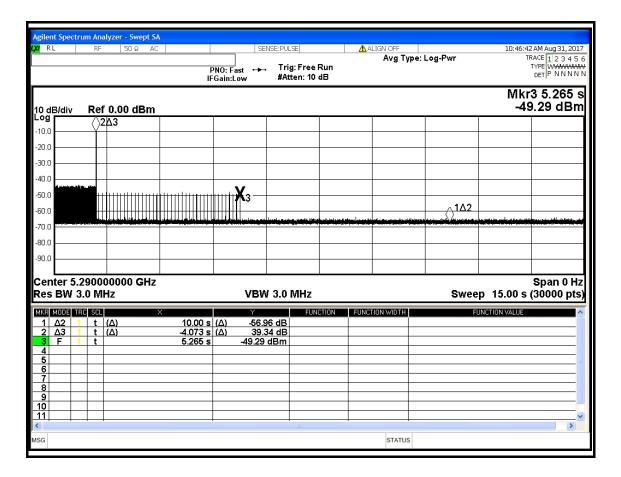
#### LOW BAND RESULTS

#### IEEE 802.11ac 80 MHz Mode

#### Type 0 Channel Move Time Results

No non-compliance noted.

Channel Move Time	Limit
(s)	(s)
4.073	10



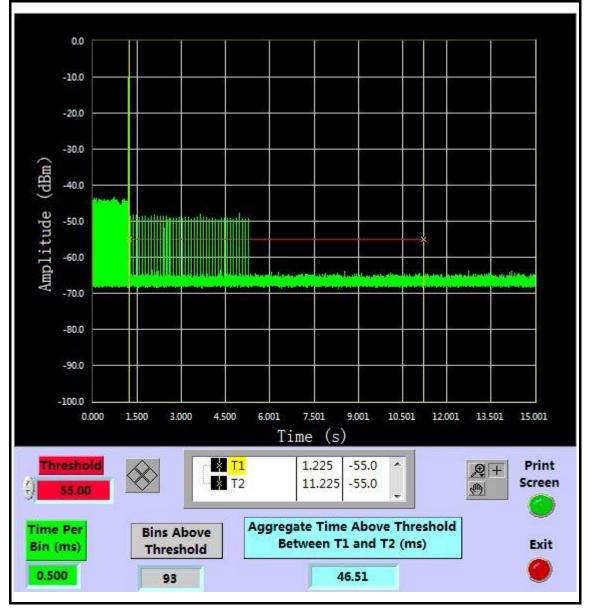


### Type 1 Channel Closing Transmission Time sResults

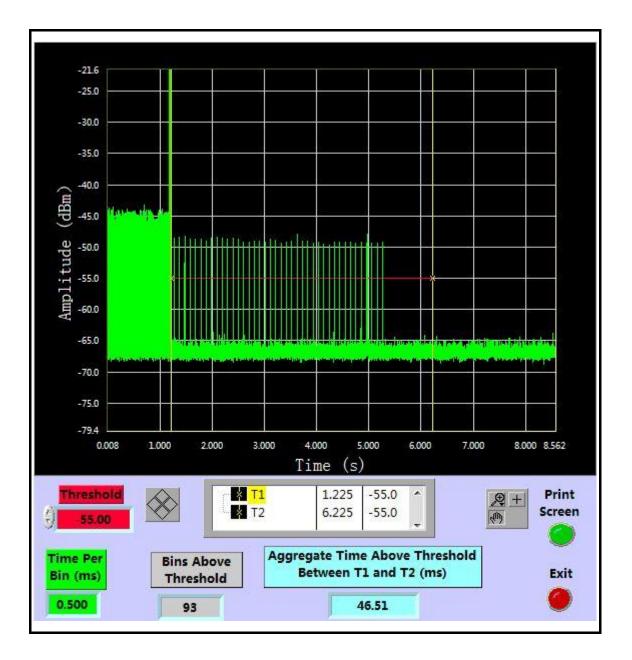
No non-compliance noted.

Transmission After 200(ms)	Aggregate Transmission Time (ms)	Limit for Aggregate Transmission Time After 200 (ms)	Result
Yes	46.51	60	Pass

Only intermittent transmissions are observed during the aggregate monitoring period.









### **Non-Occupancy Period**

#### Type 1 Non-Occupancy Period Test Results

No non-compliance noted: No EUT transmissions were observed on the test channel during the 30 minute observation time.

		ctrun		lyzer - Swept S										
t <mark>x/</mark> ℝ Mar		1 Δ	RF 1.1	50 Ω Α( 80000 ks	P	'NO: Fas Gain:Lo	at ⊶⊷⊷	E:PULSE Trig: Free #Atten: 10		<u>A</u> A	LIGN OFF Avg Type:	Log-Pwr	Т	6 AM Aug 31, 2017 RACE 1 2 3 4 5 6 TYPE WWWWWWW DET P N N N N N
	B/div	,	Ref	0.00 dBm									∆Mkr1 ·	1.800 ks -55.81 dB
-10.0	-×	2												
-20.0 -30.0														
-40.0	-													
-50.0 -60.0		ubeta na s	0			la rus a cub		*		h	nar at and her for a first Land		en en beseden en beseden at terdenaries	1∆2
-70.0														
-90.0														
	ter : BW			00000 GHz Hz			VBW	3.0 MHz				Sweep	2.000 ks	Span 0 Hz (30000 pts)
1	MODE	TRC 1	t		× 1.800 ks	(Δ)	Y -55.81	dB	ICTION	FUNC	TION WIDTH	FL	INCTION VALUE	<u>^</u>
2 3 4	F	1	t		48.60 s		-9.25 d	Bm						
5 6 7			_											
8 9 10														
11														<u>×</u>
MSG											STATUS			



#### Initial Channel Availability Check Time (Master)

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (=83.31-60=33.31 sec).

RL	R	nalyzer - Sw	AC			ENSE:PULS	-	A .	LIGN OFF		OE:CE:C	21.004.0
		60.000C					≔ : Free Rur		Avg Type:	Log-Pwr		31 AM Aug 31, 2 TRACE 1 2 3 4 TYPE WWWW
					NO: Fast ↔ Gain:Low		en: 10 dB					DET P N N N
			<b>D</b>								ΔMkr	1 -60.00 -18.36 d
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<u>Δ2</u>	1 t 1 t	(Δ)		-60.00 s 93.31 s		.36 dB 5 dBm						
N	1 t			0.000 s	-66.2	0 dBm						
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l <b>X</b> I R	L		RF				SEM NO: Fast ↔ Gain:Low		SE g:FreeRu ten:10dE		<u> </u>	.IGN OFF Avg T	ype:	Log-Pwr			05:29:3 T	RACE 1	31,2017 23456 <del>WWWWW</del> NNNNN
	B/di	v	Ref	f 0.00 dBm												Δ	Mkr	l -60 -0.1	0.00 s 2 dB
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-90.0		5.0		00000 01-														0.000	- 0.11-
Res				00000 GHz Hz			VBW	3.0	MHz					5	Swee	p 14	0.0 s	Spa (3000	n 0 Hz 00 pts)
1	MODE	1 TRO	t	(Δ)	× -60.00		γ (Δ) -0.1	2 dB	FUNCTI	ION	FUNCT	ION WIDTH			FL	INCTION 1	VALUE		^
2 3 4	N	1	t t		93.3 <sup>.</sup> 0.000	1 s 0 s	-66.29 -66.13			_									
5 6 7																			=
8						_													
10									101										~
MSG													-						
												STATU	s						
												STATU	S						
Agilor	ot Sp	octru	m 40	aluzor Swoot S								STATU	S						
LXI R	L		RF				SEP	NSE:PUL	Œ		<u>∧</u> AL	.IGN OFF		Log-Pwi			Т	RACE 1	231,2017 2 3 4 5 6
LXI R	L		RF			PI	SEP NO: Fast ↔ Gain:Low	Trig	ΞΞ g:Free Ru ten:10 dE	un 3	<u>∧</u> AL	.IGN OFF		Log-Pwr			т	RACE 1 TYPE W DET P	23456 
Mar	⊾ ker	· 1 /	₽F <b>Δ -6</b>	50 Ω AC		PI	NO: Fast 🔸	Trig	g: Free Ru	un 3	<u>∕</u> AL	.IGN OFF		Log-Pwi			т	TYPE W DET P	23456 www.www
10 d Log -10.0	B/di	· 1 /	₽F <b>Δ -6</b>	50 Ω AC 60.0000 s		PI	NO: Fast 🔸	Trig	g: Free Ru	un 3	<u></u> ▲ AL	.IGN OFF		Log-Pwr			т	TYPE W DET P	23456 
Mar Mar 10 d	B/di	· 1 /	₽F <b>Δ -6</b>	50 Ω AC 60.0000 s		PP IFC	NO: Fast 🔸	Trig	g: Free Ru	un 3	AL	.IGN OFF		Log-Pwi			т	TYPE W DET P	23456 
(X/ R Mar 10 d -10.0 -20.0 -30.0 -40.0	B/di	· 1 /	₽F <b>Δ -6</b>	50 Ω AC 60.0000 s		PI IF6	NO: Fast 🔸	Trig	g: Free Ru	un 3	AL	.IGN OFF		Log-Pwr			т	TYPE W DET P	23456 
(X/ R Mar 10 d Log -10.0 -20.0 -30.0	B/di	· 1 /	₽F <b>Δ -6</b>	50 Ω AC 60.0000 s			NO: Fast 🔸	Trig	g: Free Ru	un 3	AL	.IGN OFF		Log-Pwr			т	TYPE W DET P	23456 
<b>10 d</b> <b>Mar</b> -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 -70.0	B/di	· 1 /	₽F <b>Δ -6</b>	50 Ω AC 60.0000 s			NO: Fast 🔸	Trig	g: Free Ru	un 3		.IGN OFF	ype:	Log-Pwr			т	TYPE W DET P	23456 
() R R R R R R R R R R R R R R R R R R R	B/di	· 1 /	₽F <b>Δ -6</b>	50 Ω AC 60.0000 s			NO: Fast 🔸	Trig	g: Free Ru	un 3		.IGN OFF	ype:	Log-Pwr			т	TYPE W DET P	23456 
201 R R R R R R R R R R R R R R R R R R R	B/di	v 5.2	Ref	50.0000 s			NO: Fast 🔸	Trig #Att	g: Free Ru ten: 10 dE	3		.IGN OFF	ype:		igo.ou.et		T Mkr		23456 
Mar           10 dd           -10.0           -20.0           -30.0           -40.0           -80.0           -80.0           -90.0           Cer           Res           MIXII           1	B/di	5.2 V 3.	Re1 Re1 9000 0 M	50.20 AC		2 2 0 s ( /	NO: Fast Sain:Low VBW	Tris #Att	g: Free Ru ten: 10 dE	3 		.IGN OFF	2		Swee		T Mkr 		23456 NNNNN 0.00 S 33 dB
Mar           10 dd           -10.0           -20.0           -30.0           -40.0           -80.0           -80.0           -90.0           Cer           Res           MIXII           1	B/di	5.2 V 3.	Re1 Re1 9000 0 M	50.20 AC		2 0 s i 1 s	NO: Fast Sain:Low	I 3.0	g: Free Ru ten: 10 dE	3 			2		Swee	ΔI	T Mkr 		23456 NNNNN 0.00 S 33 dB
07 R Mar 10 d 20.0 -20.0		5.2 V 3.	Re1 Re1 9000 M	50.20 AC	1Δ2 1Δ2	2 0 s i 1 s	NO: Fast Sain:Low VBW (Δ) -0.5 -65.54	I 3.0	g: Free Ru ten: 10 dE	3 			2		Swee	ΔI	T Mkr 		23456 NNNNN 0.00 S 33 dB
Mar           10 d           -10.0           -20.0           -30.0           -40.0           -50.0           -60.0           -80.0           -80.0           -80.0           -80.0           -30.0           -30.0           -30.0           -50.0           -60.0           -30.0           -80.0           -90.0		5.2 V 3.	Re1 Re1 9000 M	50.20 AC	1Δ2 1Δ2	2 0 s i 1 s	NO: Fast Sain:Low VBW (Δ) -0.5 -65.54	I 3.0	g: Free Ru ten: 10 dE	3 			2		Swee	ΔI	T Mkr 		23456 NNNNN 0.00 S 33 dB
Mar           10 dd Log           -10.0           -20.0           -30.0           -40.0           -50.0           -80.0           -90.0           Cer           Res           1           -3           4           6           7           9           10           11		5.2 V 3.	Re1 Re1 9000 M	50.20 AC	1Δ2 1Δ2	2 0 s i 1 s	NO: Fast Sain:Low VBW (Δ) -0.5 -65.54	I 3.0	g: Free Ru ten: 10 dE	3 			2		Swee	ΔI	T Mkr 		23456 33 dB 33 dB 00 pts)
Mar           10 d           -10.0           -20.0           -30.0           -40.0           -50.0           -60.0           -80.0           -80.0           -80.0           -90.0           B           -90.0		5.2 V 3.	Re1 Re1 9000 M	50.20 AC 50.0000 S f 0.00 dBm 0.00 dBm 0.00 dBm 0.00 dBm 0.00 dBm 0.00 dBm	1Δ2 1Δ2	2 0 s i 1 s	NO: Fast Sain:Low VBW (Δ) -0.5 -65.54	I 3.0	g: Free Ru ten: 10 dE	3 			2		Swee	ΔI	T Mkr 		23456 NNNNN 0.00 S 33 dB

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# **DETECTION BANDWIDTH**

## IEEE 802.11n 20 MHz Mode

#### Test Results

FL (MHz)	FH (MHz)	Detection Bandwidth (MHz)	99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (MHz)	Minimum Limit (%)
5291	5309	18	17.850	100.84	100

Number of Trials	Frequency (MHz)	Number Detected	Detection(%)
10	5291	10	100
10	5292	9	90
10	5293	10	100
10	5294	9	90
10	5295	10	100
10	5300	9	90
10	5305	10	100
10	5306	9	90
10	5307	10	100
10	5308	9	90
10	5309	10	100



## IEEE 802.11n 40 MHz Mode

### Test Results

FL (MHz)	FH (MHz)	Detection Bandwidth (MHz)	99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (MHz)	Minimum Limit (%)
5292	5328	36	36.400	98.90	100

Number of Trials	Frequency (MHz)	Number Detected	Detection(%)
10	5292	9	90
10	5293	9	90
10	5294	10	100
10	5295	9	90
10	5300	10	100
10	5305	9	90
10	5310	10	100
10	5315	9	90
10	5320	10	100
10	5325	9	90
10	5326	10	100
10	5327	9	90
10	5328	10	100



### IEEE 802.11ac 80 MHz Mode

#### **Test Results**

FL (MHz)	FH (MHz)	Detection Bandwidth (MHz)	99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (MHz)	Minimum Limit (%)
5252	5328	76	75.804	100.26	100

	Frequency	Number	
Number of Trials	(MHz)	Detected	Detection(%)
10	5252	10	100
10	5253	9	90
10	5254	10	100
10	5255	9	90
10	5260	9	90
10	5265	10	100
10	5270	9	90
10	5275	10	100
10	5280	9	90
10	5285	9	90
10	5290	9	90
10	5295	10	100
10	5300	10	100
10	5305	9	90
10	5310	10	100
10	5315	9	90
10	5320	100	100
10	5325	10	100
10	5326	9	90
10	5327	10	100
10	5328	10	100



# **Statistical Performance Check**

# IEEE 802.11n 20 MHz Mode

### Test Results

No non-compliance noted:

#### Summary of Detection Probability

Radar Type	Number of Trials	Detection (%)	Limit (%)	Pass / Fail
Туре 0	30	93.33	60	Pass
Type 2	30	96.67	60	Pass
Туре 3	30	96.67	60	Pass
Type 4	30	96.67	60	Pass
Aggregate of 1 to 4	30	95.84	80	Pass
Туре 5	30	96.67	70	Pass
Туре 6	30	96.67	80	Pass



## **Type 0 Detection Probability**

	Successful Detection
Trial No.	(Yes/No)
1	YES
2	YES
3	YES
4	YES
5	NO
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	NO
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 2 Detection Probability**

	Successful Detection
Trial No.	(Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	NO
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



#### **Type 3 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	NO
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 4 Detection Probability**

Trial No.	Successful Detection
1	(Yes/No) YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	NO
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 5 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	NO
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 6 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	NO
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## IEEE 802.11n 40 MHz Mode

## Test Results

No non-compliance noted:

Summary of Detection Probability

Radar Type	Number of Trials	Detection (%)	Limit (%)	Pass / Fail
Туре 0	30	90.00	60	Pass
Type 2	30	96.67	60	Pass
Туре 3	30	93.33	60	Pass
Туре 4	30	93.33	60	Pass
Aggregate of 1 to 4	30	93.33	80	Pass
Туре 5	30	93.33	70	Pass
Туре 6	30	93.33	80	Pass



### **Type 0 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	NO
16	YES
17	YES
18	NO
19	YES
20	YES
21	YES
22	YES
23	NO
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 2 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	NO
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



#### **Type 3 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	NO
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	NO
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 4 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	NO
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	NO
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 5 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	NO
14	YES
15	YES
16	YES
17	YES
18	NO
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 6 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	NO
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	NO
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



### IEEE 802.11ac 80 MHz Mode

### <u>Test Results</u>

No non-compliance noted:

Summary of Detection Probability

Radar Type	Number of Trials	Detection (%)	Limit (%)	Pass / Fail
Туре 0	30	93.33	60	Pass
Type 2	30	93.33	60	Pass
Туре 3	30	96.67	60	Pass
Туре 4	30	96.67	60	Pass
Aggregate of 1 to 4	30	95.00	80	Pass
Type 5	30	96.67	70	Pass
Туре 6	30	96.67	80	Pass



## **Type 0 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	NO
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	NO
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



### **Type 2 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	NO
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	NO
24	YES
25	YES
26	YES
27	YES
30	YES



#### **Type 3 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	NO
30	YES



## **Type 4 Detection Probability**

Trial No.	Successful Detection (Yes/No)				
1	YES				
2	YES				
3	YES				
4	YES				
5	YES				
6	YES				
7	YES				
8	YES				
9	YES				
10	YES				
11	YES				
12	YES YES YES				
13					
14					
15	YES				
16	YES				
17	YES				
18	YES				
19	YES				
20	YES				
21	NO				
22	YES				
23	YES				
24	YES				
25	YES				
26	YES YES				
27					
30	YES				



## **Type 5 Detection Probability**

Trial No.	Successful Detection (Yes/No)					
1	YES					
2	YES					
3	YES					
4	YES					
5	YES					
6	YES					
7	YES					
8	YES					
9	YES					
10	YES					
11	YES					
12	YES					
13	YES					
14	YES					
15	YES					
16	YES					
17	NO					
18	YES					
19	YES					
20	YES					
21	YES					
22	YES					
23	YES					
24	YES					
25	YES					
26	YES YES					
27						
30	YES					



## **Type 6 Detection Probability**

Trial No.	Successful Detection				
	(Yes/No)				
1	YES				
2	YES				
3	YES				
4	YES				
5	YES				
6	YES				
7	YES				
8	YES				
9	YES				
10	YES				
11	YES				
12	YES YES YES				
13					
14					
15	YES				
16	YES				
17	YES				
18	NO				
19	YES				
20	YES				
21	YES				
22	YES				
23	YES				
24	YES				
25	YES				
26	YES				
27					
30	YES				
	1				



### CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

#### General Reporting Notes

The reference marker is set at the end of last radar pulse.

#### Type 0 Radar Reporting Notes

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated

Begins no later than (Reference Marker + 200 msec)

and

Ends no earlier than (Reference Marker + 10 sec).



### HIGH BAND RESULTS

#### IEEE 802.11ac 80 MHz Mode

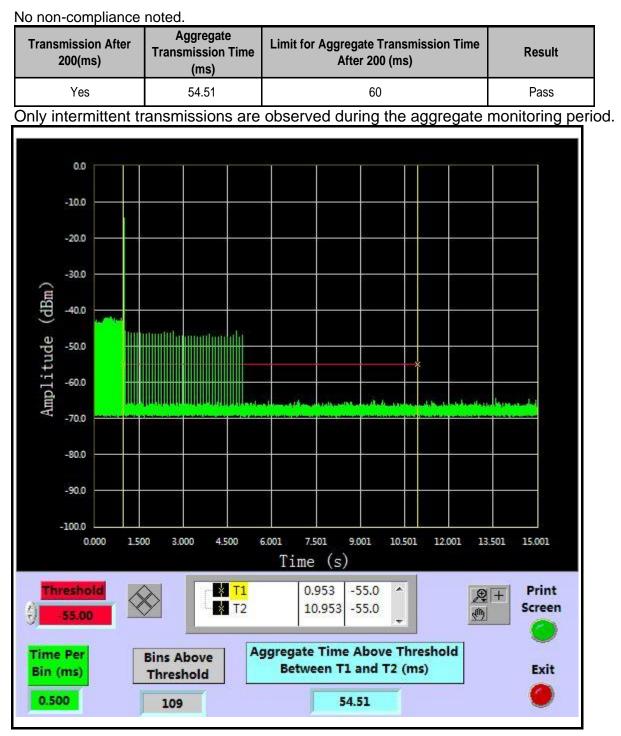
#### **Type 0 Channel Move Time Results**

Channel Move Time	Limit
(s)	(s)
4.035	10

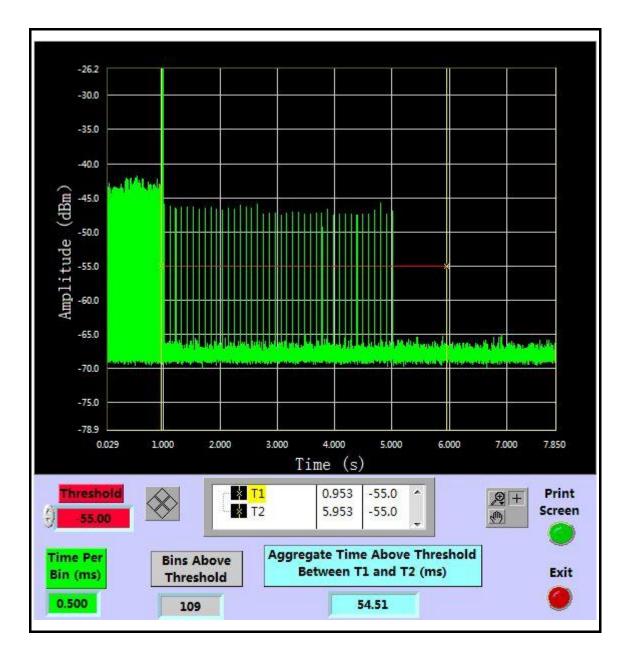
		ctrum		lyzer - Swept SA										
<b>l,XI</b> R	L		RF	50Ω AC			SEN	SE:PULSE	_	Al 🔔	LIGN OFF Avg Typ	e: Log-Pwr	Т	7 AM Aug 31, 2017 RACE 1 2 3 4 5 6
						NO: Fa Gain:Lo	st ⊶i∔⊶ owr	Trig: Free #Atten: 10						TYPE WWWWWWW DET P N N N N N
10 d	Mkr3 5.001 s о dB/div Ref 0.00 dBm -46.96 dBm													
Log -10.0		(`	24	3										
-20.0		-ľ	, 											
-30.0		_												
-40.0	i na ili	det, puele				ш <b>Х</b> ?	,							
-50.0 -60.0							,							
-70.0							i alu au da da da	tanı, artis dağı dağı maranı		in si fisia mi			antindige genetlemente	a dia tanàna mina mina dia m
-80.0														
-90.0														
	ter BW			00000 GHz Hz			VBW	3.0 MHz				Swee	ep 15.00 s	Span 0 Hz (30000 pts)
	MODE	TRC			×		Y		ICTION	FUNCT	ION WIDTH	F	UNCTION VALUE	<u>^</u>
1	∆2 ∆3	1		(Δ) (Δ)	10.00 s -4.035 s	(Δ) (Δ)	-54.02 32.42	2 dB						
3 4 5	F	1	t		5.001 s		-46.96 c	Bm						
6 7														
/ 8 9														
10 11														
<			-					III.		-				
MSG											STATUS			



## **Type 1 Channel Closing Transmission Time Results**









## **Non-Occupancy Period**

### Type 1 Non-Occupancy Period Test Results

No non-compliance noted: No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilen	gjient Spectrum Analyzer - Swept SA R L RF 50 Ω AC SENSE:PULSE ΔALIGN OFF 08:56:24 AM Aug 31, 2017											
t <mark>xi</mark> ri Mar	⊾ ker 1	RF Δ 1.	50 Ω AC 80000 ks	Р	SE NO: Fast ↔ Gain:Low	NSE:PULSE Trig: Free #Atten: 10		ALIGN OFF	Type: Log-	Pwr	T	4 AM Aug 31, 2017 IRACE 1 2 3 4 5 6 TYPE WWWWWWW DET P N N N N N
10 di	B/div	Ref	7 0.00 dBm								∆Mkr1	1.800 ks -51.42 dB
Log -10.0	<b>%</b> 2											
-20.0 -30.0												
-40.0 -50.0	-											
-60.0				e te utpre sontationel a ca	to Materian dis Astronya Salim Louis	ishan da balan satisfi			والمراجع والمحاورة	an a	an the state of the	<u>1∆2</u>
-70.0 -80.0												
-90.0												
	iter 5. BW 3		00000 GHz Hz		VBW	/ 3.0 MHz				Sweep	2.000 ks	Span 0 Hz (30000 pts)
1		t	(Δ)	× 1.800 ks	γ (Δ) -51.4	12 dB	NCTION	FUNCTION WIDT	H	FU	NCTION VALUE	<u>^</u>
2 3 4	F 1	t		36.73 s	-14.50	aBm						
5 6 7												
8 9 10												
11								1				×
MSG								STAT	-US			

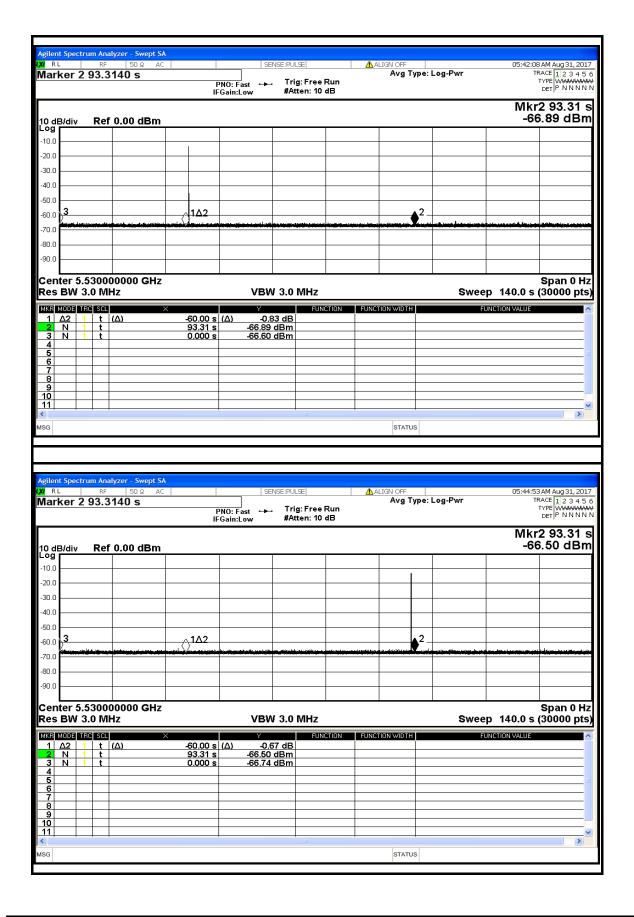


### Initial Channel Availability Check Time (Master)

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (=93.31-60=33.31 sec).

		ctrur		alyzer - Sw															
l <b>xi</b> ri			RF	50 Ω	AC			SENS	E:PULSE			🔔 Al	.IGN OFF		_og-Pwr		05:3	39:12 AN	4 Aug 31, 2017 E 1 2 3 4 5 6
Mari	ker	29	13.3	8140 s			'NO: Fas Gain:Lov			ree Ru : 10 dB			Avgi	ype: I	_og-Pwr			TYP	
	Mkr2 93.31 s -44.07 dBm -44.07 dBm																		
Log -10.0																			
-20.0																			
-30.0														2					
-40.0													1		والأفاقي ورجار				
-50.0	3					∧1Δ2													
-60.0	Č.,		L				J. D. Johnson J. Barlin, M.				يد براغيس								
-70.0																			
-80.0																			
-90.0																			
Cen Res				00000 <b>C</b> Hz	GHz			VBW	3.0 Mł	Ηz					s	wee	p 140.0	S s (3	pan 0 Hz 0000 pts)
MKR I		TRC			×			Y		FUNCTIO	ON	FUNCT	ION WIDTH			FU	INCTION VAL	UE	^
1	<u>Δ2</u> Ν	1	t	<u>(Δ)</u>		-60.00 s 93.31 s		-22.73 44.07 d	<u>dB</u> Bm										
3	N	1	t			0.000 s	•	-66.34 d	Bm										
5																			
6																			
8																			
10																			
11																			×
MSG													STATU	s					







# **DETECTION BANDWIDTH**

## IEEE 802.11n 20 MHz Mode

#### Test Results

FL (MHz)	FH (MHz)	Detection Bandwidth (MHz)	99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (MHz)	Minimum Limit (%)
5491	5509	18	17.879	100.68	100

Number of Trials	Frequency (MHz)	Number Detected	Detection(%)
10	5491	10	100
10	5492	8	80
10	5493	10	100
10	5494	8	80
10	5495	10	100
10	5500	9	90
10	5505	10	100
10	5506	9	90
10	5507	8	80
10	5508	10	100
10	5509	10	100



## IEEE 802.11n 40 MHz Mode

#### Test Results

FL (MHz)	FH (MHz)	Detection Bandwidth (MHz)	99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (MHz)	Minimum Limit (%)
5492	5528	36	36.408	98.88	100

Number of Trials	Frequency (MHz)	Number Detected	Detection(%)	
10	5292	9	90	
10	5293	10	100	
10	5294	8	80	
10	5295	10	100	
10	5300	10	100	
10	5305	9	90	
10	5510	10	100	
10	5515	8	80	
10	5520	10	100	
10	5525	9	90	
10	5526	10	100	
10	5527	8	80	
10	5528	9	90	



### IEEE 802.11ac 80 MHz Mode

#### Test Results

FL (MHz)	FH (MHz)	Detection Bandwidth (MHz)	99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (MHz)	Minimum Limit (%)
5492	5568	76	75.804	100.26	100

Number of Trials	Frequency (MHz)	Number Detected	Detection(%)	
10	5492	9	90	
10	5493	10	100	
10	5494	8	80	
10	5495	10	100	
10	5500	10	100	
10	5505	9	90	
10	5510	10	100	
10	5515	9	80	
10	5520	10	100	
10	5525	8	80	
10	5530	10	100	
10	5535	9	90	
10	5540	10	100	
10	5545	9	90	
10	5550	10	100	
10	5555	10	100	
10	5560	8	80	
10	5565	10	100	
10	5566	9	90	
10	5567	8	80	
10	5568	10	100	



# **Statistical Performance Check**

## IEEE 802.11n 20 MHz Mode Test Results

No non-compliance noted:

#### Summary of Detection Probability

Radar Type	Number of Trials	Detection (%)	Limit (%)	Pass / Fail
Туре 0	30	96.67	60	Pass
Type 2	30	93.33	60	Pass
Туре 3	30	93.33	60	Pass
Туре 4	30	96.67	60	Pass
Aggregate of 1 to 4	30	95.00	80	Pass
Туре 5	30	96.67	70	Pass
Туре 6	30	96.67	80	Pass



### **Type 0 Detection Probability**

Trial No.	Successful Detection (Yes/No)		
1	YES		
2	YES		
3	YES		
4	YES		
5	YES		
6	YES		
7	YES		
8	YES		
9	YES		
10	YES		
11	YES		
12	YES		
13	YES		
14	YES		
15	NO		
16	YES		
17	YES		
18	YES		
19	YES		
20	YES		
21	YES		
22	YES		
23	YES		
24	YES		
25	YES		
26	YES		
27	YES		
30	YES		



# **Type 2 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	NO
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	NO
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



#### **Type 3 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	NO
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	NO
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



# **Type 4 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	NO
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 5 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	NO
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 6 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	NO
24	YES
25	YES
26	YES
27	YES
30	YES



## IEEE 802.11n 40 MHz Mode

## Test Results

No non-compliance noted:

Summary of Detection Probability

Radar Type	Number of Trials	Detection (%)	Limit (%)	Pass / Fail
Туре 0	30	96.67	60	Pass
Type 2	30	96.67	60	Pass
Туре 3	30	93.33	60	Pass
Туре 4	30	96.67	60	Pass
Aggregate of 1 to 4	30	95.84	80	Pass
Туре 5	30	93.33	70	Pass
Туре 6	30	96.67	80	Pass



#### **Type 0 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	NO
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



# **Type 2 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	NO
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



#### **Type 3 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	NO
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	NO
26	YES
27	YES
30	YES



# **Type 4 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	NO
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 5 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	NO
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	NO
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



# **Type 6 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	NO
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



#### IEEE 802.11ac 80 MHz Mode

## Test Results

No non-compliance noted:

Summary of Detection Probability

Radar Type	Number of Trials	Detection (%)	Limit (%)	Pass / Fail
Туре 0	30	96.67	60	Pass
Type 2	30	96.67	60	Pass
Туре 3	30	96.67	60	Pass
Туре 4	30	93.33	60	Pass
Aggregate of 1 to 4	30	95.84	80	Pass
Туре 5	30	96.67	70	Pass
Туре 6	30	96.67	80	Pass



#### **Type 0 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	NO
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



# **Type 2 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	NO
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



#### **Type 3 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	NO
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



# **Type 4 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	NO
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	NO
25	YES
26	YES
27	YES
30	YES



## **Type 5 Detection Probability**

Trial No.	Successful Detection (Yes/No)
1	YES
2	YES
3	YES
4	YES
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	NO
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



## **Type 6 Detection Probability**

<b>-</b> · · · · ·	Successful Detection
Trial No.	(Yes/No)
1	YES
2	YES
3	YES
4	NO
5	YES
6	YES
7	YES
8	YES
9	YES
10	YES
11	YES
12	YES
13	YES
14	YES
15	YES
16	YES
17	YES
18	YES
19	YES
20	YES
21	YES
22	YES
23	YES
24	YES
25	YES
26	YES
27	YES
30	YES



# **APPENDIX I PHOTOGRAPHS OF TEST SETUP**

