UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-WAVEPC
ISED ID	6545A-WAVEPC
Equipment Under Test	Wave-Pico
Test Report Serial Number	TR8644_03
Date of Tests	11, 13, 16, 20 October; 2, 8-9 November 2023
Report Issue Date	17 January 2024

Test Specification	Applicant
47 CFR FCC Part 15, Subpart E	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.

NVLAP TESTING ilac-MRA

NVLAP LAB CODE 600241-0

Certification of Engineering Report

This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

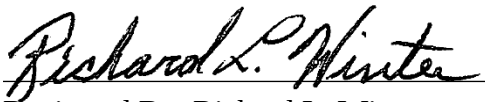
Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UBIQUITI
Model Number	Wave-Pico
FCC ID	SWX-WAVEPC
ISED ID	6545A-WAVEPC

On this 17th day of November 2023, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete and correct to the best of my knowledge and are made in good faith.

Although NVLAP has accredited the Unified Compliance Laboratory testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. federal government.

Unified Compliance Laboratory

Written By: Clay Allred



Reviewed By: Richard L. Winter

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	17 November 2023
02	Amend Power Supply Model in Sections 2.2 and 2.3	19 December 2023
03	Amended Table in Section5 5.3 and 5.6	17 January 2024

Table of Contents

1 Client Information

1.1 Applicant

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Alex Macon
Title	Compliance

1.2 Manufacturer

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Alex Macon
Title	Compliance

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	UBIQUITI
Model Number	Wave-Pico
Serial Number	A1A
Dimensions (cm)	15.2 x 15.2 x 5.6

2.2 Description of EUT

The Wave-Pico is a 60 GHz point-to-multipoint customer premise equipment that features wave technology with a high throughput rate. The Wave-Pico is also equipped with a 5 GHz WiFi 6 backup radio to sustain connectivity during a 60 GHz link disruption caused by inclement weather conditions. A Bluetooth LE transceiver is included for device management. The Wave-Pico is an outdoor device and has an Ethernet port which is used for data transfer and to provide power using a Model GP-H480-050G 48-volt PoE power adapter.

Band	Modulation Bandwidth	Frequency (MHz)
UNII-2A	20 MHz	5260, 5300, 5335
	40 MHz	5270, 5300, 5325
	80 MHz	5290, 5300, 5305
	160 MHz	5250
UNII-2C	20 MHz	5485, 5600*, 5710
	40 MHz	5495, 5600*, 5700
	80 MHz	5515, 5600*, 5680
	160 MHz	5570
* Frequency not applicable in Canada		

Table 1: UNII-2A and UNII-2C Channel Settings

This report covers the circuitry of the device subject to FCC Part 15, Subpart E. The circuitry of the device subject to FCC Part 15 Subpart B was found to be compliant and is covered under a separate Unified Compliance Laboratory test report.

2.3 EUT and Support Equipment

The EUT and support equipment used during the test are listed below.

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: UBIQUITI MN: Wave-Pico (Note 1)	Wireless Access Point	See Section 2.4

SN: A1A		
BN: UBIQUITI MN: GP-H480-050G SN: N/A	PoE Power Adapter	Shielded or Un-shielded cat 5e cable
BN: Dell MN: XPS 13 SN: N/A	Laptop Computer	Shielded or Un-shielded cat 5e cable

Notes: (1) EUT
(2) Interface port connected to EUT (See Section 2.4)

The support equipment listed above was not modified in order to achieve compliance with this standard.

2.4 Interface Ports on EUT

Name of Ports	No. of Ports Fitted to EUT	Cable Description/Length
AC Mains	1	3 conductor power cord/80cm
PoE (PoE Injector)	1	Shielded or Un-Shielded Cat 5e Cable/> 3 meters
LAN (PoE Injector)	1	Shielded or Un-Shielded Cat 5e Cable/> 3 Meters

2.5 Operating Environment

Power Supply	120 Volts ac to 48 Volts PoE
AC Mains Frequency	60 Hz
Temperature	21 - 24 °C
Humidity	17.57 – 33.6 %
Barometric Pressure	1019 mBar

2.6 Operating Modes

The Wave-Pico was tested using test software in order to enable to constant transmission. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11 ax were investigated. All measurements are reported with the worst-case mode (802.11ax) unless otherwise stated.

2.7 EUT Exercise Software

EUT firmware version 1.0 was used to operate the transmitter using a constant transmit mode.

2.8 Block Diagram of Test Configuration

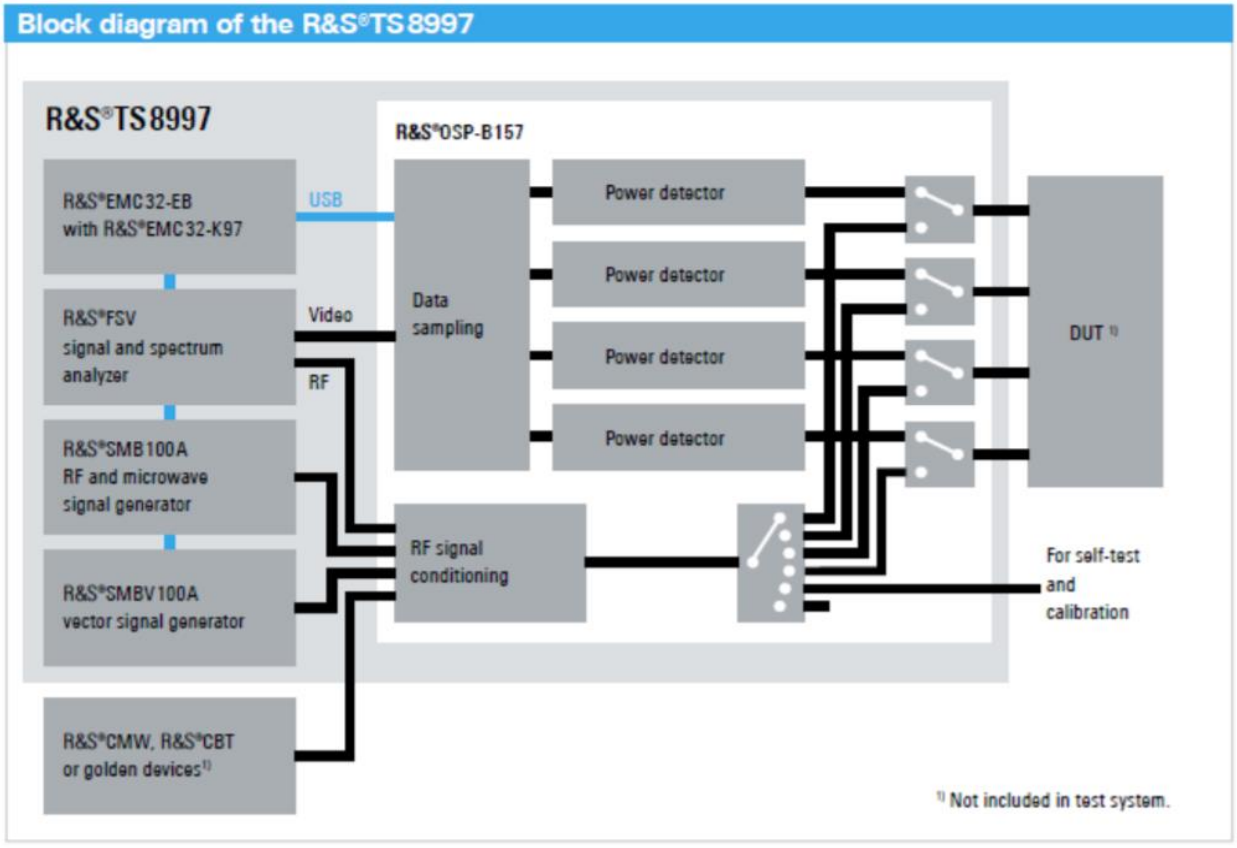


Diagram 1: Test Configuration Block Diagram

2.9 Modification Incorporated/Special Accessories on EUT

There were no modifications made to the EUT during testing to comply with the specification.

2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard

There were no deviations, opinions, additional information or interpretations from the test specification.

3 Test Specification, Method and Procedures

3.1 Test Specification

Title	47 CFR FCC Part 15, Subpart E, Section 15.407 Limits and methods of measurement of radio interference characteristics of Unlicensed National Information Infrastructure Devices
Purpose of Test	The tests were performed to demonstrate initial compliance

3.2 Methods & Procedures

3.2.1 47 CFR FCC Part 15 Section 15.407

See test standard for details.

3.3 FCC Part 15, Subpart E

3.3.1 Summary of Tests

FCC Section	ISED Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.407(a)	N/A	Antenna requirements	Structural Requirement	Compliant
15.407(b)	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Bandwidth Requirement	5260 to 5570	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5260 to 5570	Compliant
15.407(b)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	Compliant
15.407(b)	RSS-247 §6.2.2, §6.2.3	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Power Spectral Density	5260 to 5570	Compliant
15.407(h)	RSS-247 §6.3	DFS Requirements	5260 to 5570	Compliant
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 558074 and 47 CFR Part 15. Where applicable, KDB 662911 was followed to sum required measurements.				

3.4 Results

In the configuration tested, the EUT complied with the requirements of the specification.

3.5 Test Location

Testing was performed at the Unified Compliance Laboratory 3-meter and 10-meter chambers located at 427 West 12800 South, Draper, UT 84020. Unified Compliance Laboratory is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Code 600241-0 which is effective until 30 June 2024. This site has also been registered with Innovations, Science and Economic Development (ISED) department as was accepted under Appendix B, Phase 1 procedures of the APEC Tel MRA for Canadian recognition. ISED No.: 25346, effective until 30 June 2024.

Unified Compliance Laboratory has been assigned Designation Number US5037 by the FCC and Conformity Assessment Number US0223 by ISED.

4 Test Equipment

4.1 Conducted Emissions at Mains Ports

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	AFJ	FFT3010	UCL-2500	7/13/2023	7/13/2024
LISN	AFJ	LS16C/10	UCL-2512	5/26/2023	5/26/2024
ISN	Teseq	ISN T800	UCL-2974	6/27/2022	6/272024
LISN	Com-Power	LIN-120C	UCL-2612	1/24/2023	1/24/2024
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	UCL	Revision 1	UCL-3107	N/A	N/A

Table 2: List of equipment used for Conducted Emissions Testing at Mains Port

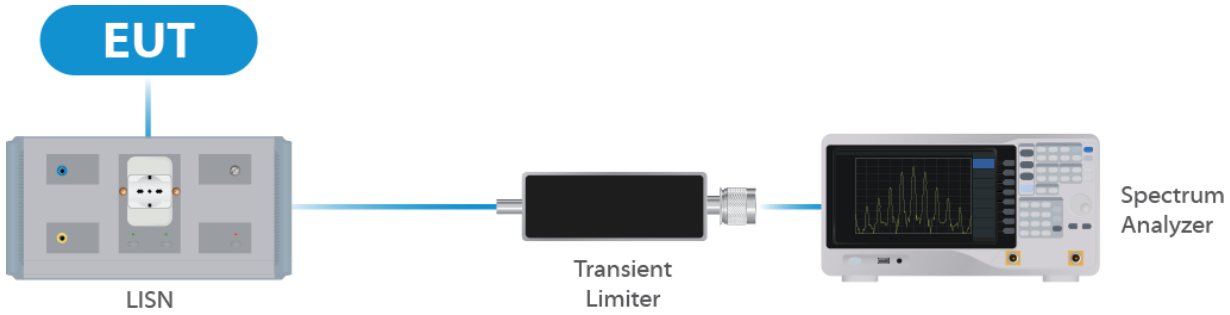


Figure 1: Conducted Emissions Test

4.2 Direct Connect at the Antenna Port Tests

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	R&S	FSVA3044	UCL-8620	5/23/2023	11/08/2024
Signal Generator	R&S	SMB100A	UCL-2864	N/A	N/A
Vector Signal Generator	R&S	SMBV100A	UCL-2873	N/A	N/A
Switch Extension	R&S	OSP-B157WX	UCL-2867	2/22/2023	2/22/2024
Switch Extension	R&S	OSP-150W	UCL-2870	2/22/2023	2/22/2024

Table 3: List of equipment used for Direct Connect at the Antenna Port

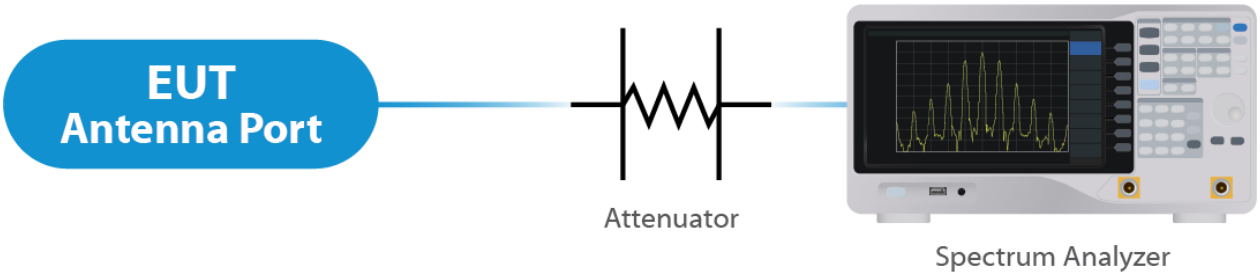


Figure 2: Direct Connect at the Antenna Port Test

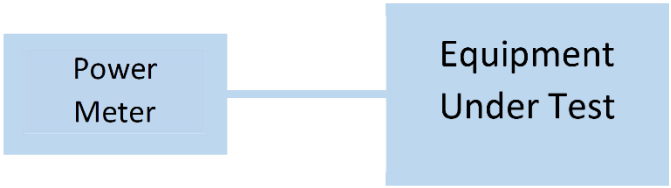


Figure 3: Output Power Measurement

4.3 Radiated Emissions

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	Keysight	N9038A	UCL-2778	1/27/2023	1/27/2024
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	10/7/2021	12/7/2023
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3062	2/22/2023	2/22/2025
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3071	1/11/2023	1/11/2025
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	9/22/2022	9/22/2024
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	1/27/2023	1/27/2025
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	6/09/2022	6/09/2024
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	12/9/2022	12/9/2023
Test Software	UCL	Revision 1	UCL-3108	N/A	N/A

Table 4: List of equipment used for Radiated Emissions

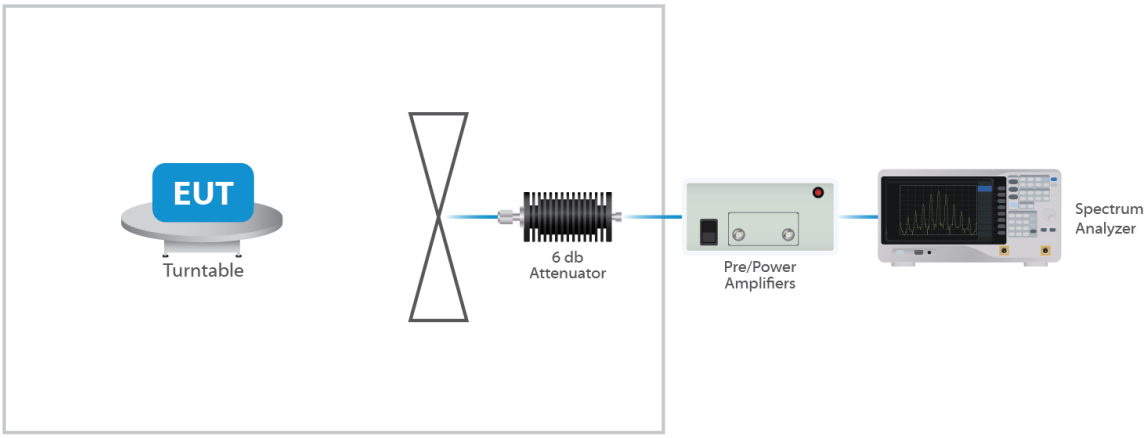


Figure 4: Radiated Emissions Test

4.4 DFS Testing

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Vector Signal Generator	R&S	SMBV100A	UCL-2873	N/A	N/A
Spectrum Analyzer	Keysight	N9010B	UCL-7069	4/26/2023	4/26/2024

4.4.1 Master Test Set Up

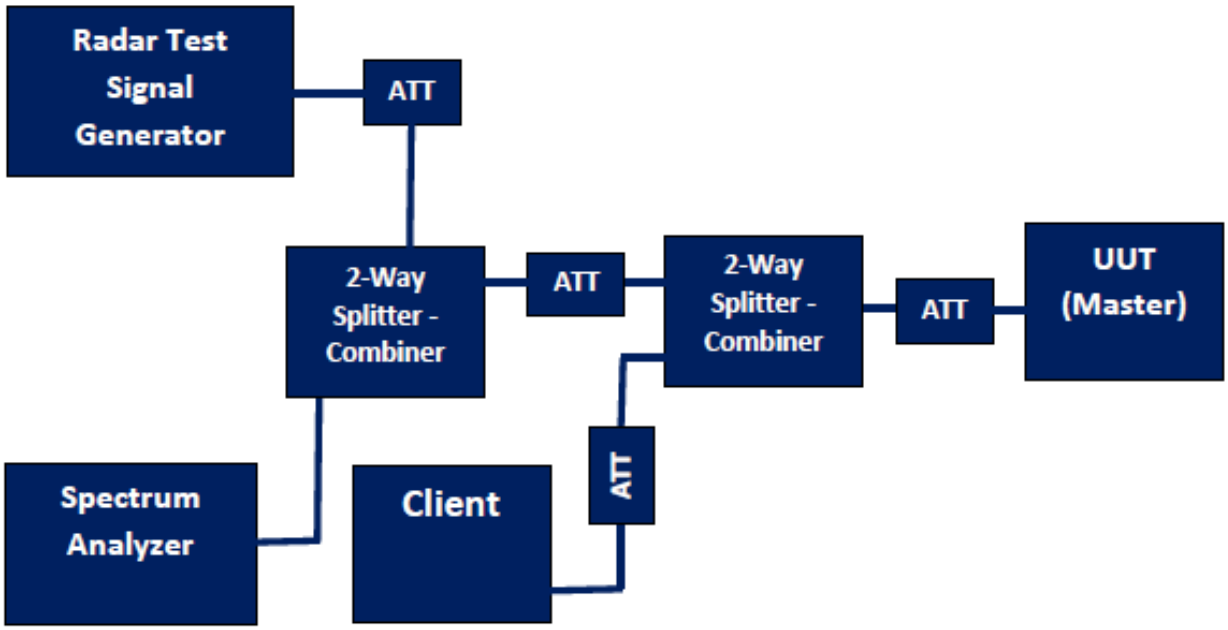


Figure 5: DFS Test Set Up - Master

4.5 Equipment Calibration

All applicable equipment is calibrated using either an independent calibration laboratory or Unified Compliance Laboratory personnel at intervals defined in ANSI C63.4:2014 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request.

4.6 Measurement Uncertainty

Test	Uncertainty (± dB)	Confidence (%)
Conducted Emissions	1.44	95
Radiated Emissions (9 kHz to 30 MHz)	2.50	95
Radiated Emissions (30 MHz to 1 GHz)	4.38	95
Radiated Emissions (1 GHz to 18 GHz)	4.37	95
Radiated Emissions (18 GHz to 40 GHz)	3.93	95
Direct Connect Tests	**K Factor**	**Value**
Emissions Bandwidth	2	2.0%
Output Power	2	1.0 dB
Peak Power Spectral Density	2	1.3 dB
Band Edge	2	0.8 dB
Transmitter Spurious Emissions	2	1.8 dB

5 Test Results

5.1 §15.203 Antenna Requirements

The EUT uses an integrated folding antenna structure. Per the manufacturer, the maximum gain of the antenna is 9 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable.

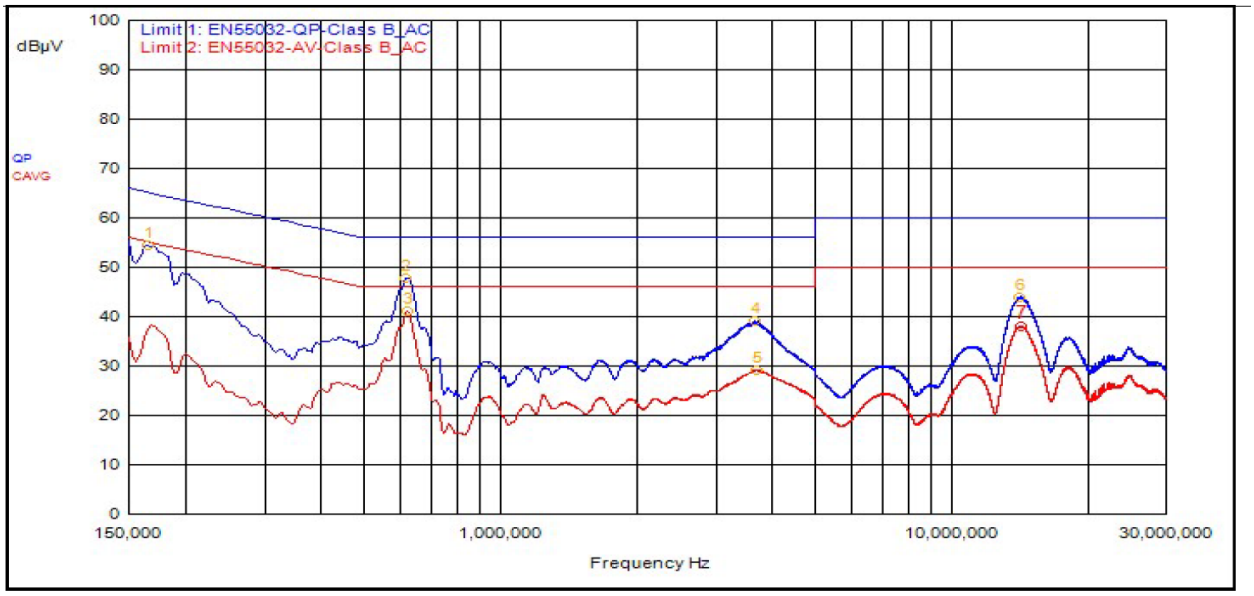
For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;
For PSD measurements when Nss=1: Array Gain = 10 log(Nant/Nss) dB = 3.01dB

Results

The EUT complied with the specification

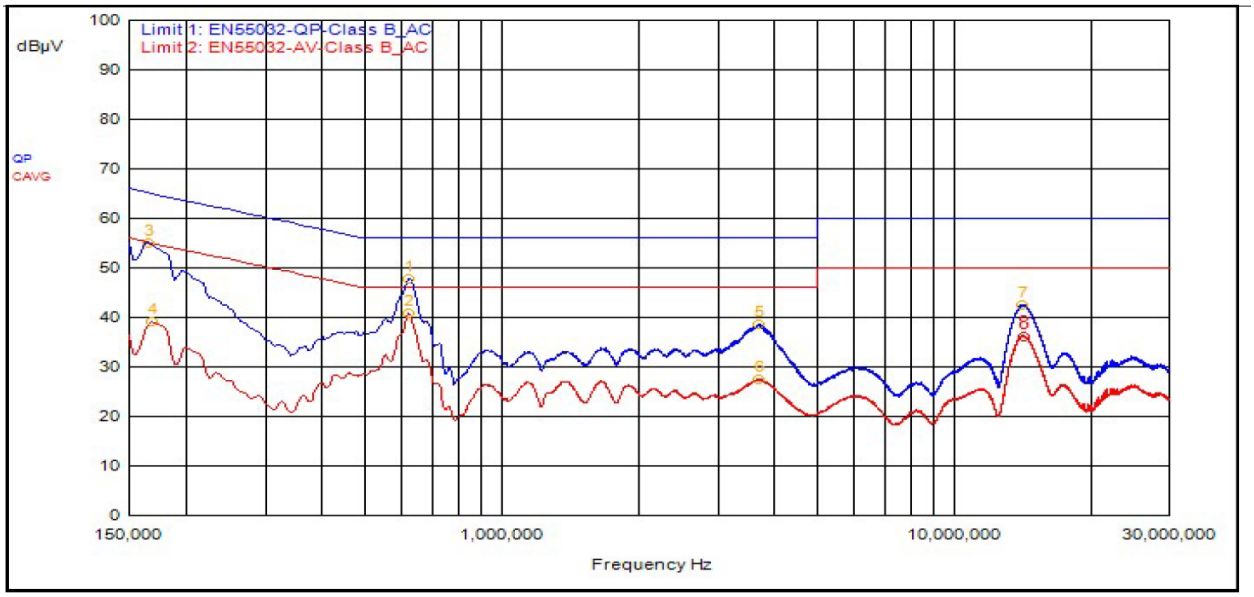
5.2 Conducted Emissions at Mains Ports Data

5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.	P/F
MU	MHz	dB	dB	dB	Type	dBµV	dBµV	dBµV	dB	dBµV	dB	P/F
2	618,000kHz	9.50	0.00		QPeak	38.34	47.84	56.00	-8.16			
1	165,000kHz	9.49	0.00		QPeak	44.96	54.45	65.21	-10.75			
6	14.184	9.68	0.00		QPeak	34.09	43.77	60.00	-16.23			
4	3.678	9.58	0.00		QPeak	29.57	39.15	56.00	-16.85			
3	621,000kHz	9.50	0.00		C_AVG	31.60	41.10			46.00	-4.90	
5	3.711	9.58	0.00		C_AVG	19.58	29.16			46.00	-16.84	
7	14.226	9.68	0.00		C_AVG	28.27	37.95			50.00	-12.05	

5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.	P/F
MU	MHz	dB	dB	dB	Type	dBµV	dBµV	dBµV	dB	dBµV	dB	P/F
1	624,000kHz	9.58	0.00		QPeak	38.13	47.71	56.00	-8.29			
3	165,000kHz	9.62	0.00		QPeak	45.42	55.04	65.21	-10.17			
7	14.208	9.73	0.00		QPeak	32.88	42.61	60.00	-17.39			
5	3.693	9.60	0.00		QPeak	28.90	38.50	56.00	-17.50			
2	624,000kHz	9.58	0.00		C_AVG	31.16	40.74			46.00	-5.26	
4	168,000kHz	9.62	0.00		C_AVG	29.41	39.03			55.06	-16.03	
6	3.699	9.60	0.00		C_AVG	17.93	27.53			46.00	-18.47	
8	14.226	9.73	0.00		C_AVG	26.46	36.19			50.00	-13.81	

Result

The EUT complied with the specification limit.

5.3 §15.403(i) 26 dB Emissions Bandwidth

All chains were measured under the guidance of KDB 789033 Section II.C. and KDB 66291 D01. Please see associated annex for details on instrument settings.

5.3.1 UNII-2A

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
20	5260	19.3	25.5
20	5300	19.3	24.6
20	5335	19.3	25.9
40	5270	38.5	51.5
40	5300	38.0	45.8
40	5325	38.5	61.7
80	5290	79.0	108.5
80	5300	79.0	108.0
80	5305	79.0	108.0
160	5250	162.5	264.0

5.3.2 UNII-2C

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
20	5485	19.3	31.1
20	5600	19.0	24.5
20	5710	19.3	27.1
40	5495	38.5	59.4
40	5600	38.5	59.1
40	5700	38.0	53.1
80	5515	79.0	111.5
80	5600	80.0	111.0

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
80	5680	79.0	126.5
160	5570	162.5	253.0

Result

The 26 dB bandwidths are reported for information purposes. Please see Annex for all bandwidth measurements.

5.4 §15.407(a)(2) Maximum Average Output Power

All chains were measured and summed under the guidance of KDB 789033 Section II. E.2. and KDB 66291 D01. Please see associated annex for details on instrument settings.

The maximum average RF conducted output power measured for this device was 20.98 dBm or 125.3 mW. The limit is 24 dBm or 250 mW when using antennas with 6 dBi or less gain. The antenna has a maximum gain of 9 dBi.

5.4.1 UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
HE 20	5260	Msc0	38	20.67	9.19
HE 20	5300	Msc0	38	20.83	9.19
HE 20	5335	Msc0	37	20.77	9.26
HE 40	5270	Msc0	37	20.66	6.49
HE 40	5300	Msc0	37	20.67	6.47
HE 40	5325	Msc0	37	20.86	6.76
HE 80	5290	Msc0	37	20.65	3.57
HE 80	5300	Msc0	37	20.50	3.56
HE 80	5305	Msc0	37	20.48	3.53
HE160	5250	Msc0	37	20.98	1.11

5.4.2 UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
HE 20	5485	Msc0	38	20.90	9.18
HE 20	5600	Msc0	38	20.50	9.10
HE 20	5710	Msc0	39	20.82	9.07
HE 40	5495	Msc0	37	20.66	6.27
HE 40	5600	Msc0	38	20.82	6.64
HE 40	5700	Msc0	38	20.63	6.56
HE 80	5515	Msc0	38	20.66	3.90

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
HE 80	5600	Msc0	39	20.80	4.53
HE 80	5680	Msc0	38	20.49	3.37
HE160	5570	Msc0	37	20.42	0.86

Result

In the configuration tested, the maximum average RF output power was less than 1 watt; therefore, the EUT complied with the requirements of the specification.

5.5 §15.407(b) Spurious Emissions

5.5.1 Conducted Spurious Emissions

The frequency range from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental frequency was investigated to measure any antenna-conducted emissions. The graphs show the measurement data from spurious emissions noted across the frequency range when transmitting at the lowest frequency, middle frequency and upper frequency. Shown below are plots with the EUT turned to the upper and lower channels with the antenna gain of 9 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.
The emissions must be below -27 dBm EIRP.

Result

Conducted spurious emissions were below -27 dBm; therefore, the EUT complies with the specification. See Annex for results.

5.5.2 Radiated Spurious Emissions in the Restricted Bands of § 15.205

The frequency range from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental emissions was investigated to measure any radiated emissions in the restricted bands. For frequencies above 18.0 GHz. The emissions in the restricted bans must meet the limits specified in § 15.209. Conducted measurement results are included in the Annex. Radiated data with the EUT transmitting into a load is included below. All emissions between the required frequencies were investigated, the following plots represent the worst case. The “fail” is the transmitted signal exceeding the spurious limit.
Correction Factor = Antenna Factor + Cable Loss - Pre-Amplifier Gain, and is added to the Receiver reading.

5.5.3 UNII-2A

Final source: QuasiPeak

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Meas. Time	RBW (Hz)	Meas.Time (s)	Correction (dB)
30.386 MHz	1	18.991	49	-30.009	183	3.66	Vertical	15	120 k	0.001	-7.957
192 MHz	1	31.232	53.5	-22.268	185	2.059	Vertical	15	120 k	0.001	-16.393
384.03 MHz	1	43.962	56	-12.038	109	2.401	Vertical	15	120 k	0.001	-12.176
480 MHz	1	48.842	56	-7.158	265	1.863	Vertical	15	120 k	0.001	-9.391
575.95 MHz	1	40.156	56	-15.844	216	1.681	Vertical	15	120 k	0.001	-8.42
30.229 MHz	2	21.821	49	-27.179	19	4	Horizontal	15	120 k	0.001	-7.836
191.99 MHz	2	37.968	53.5	-15.532	303	1.701	Horizontal	15	120 k	0.001	-16.394
287.95 MHz	2	39.99	56	-16.01	125	1.138	Horizontal	15	120 k	0.001	-14.117
384.04 MHz	2	47.542	56	-8.458	328	2.22	Horizontal	15	120 k	0.001	-12.176
480.02 MHz	2	55.57	56	-0.43	1	1.858	Horizontal	15	120 k	0.001	-9.39
575.96 MHz	2	51.906	56	-4.094	143	1.496	Horizontal	15	120 k	0.001	-8.421

Graph 1: Radiated Emissions within 30MHz - 1GHz

Final source: Peak

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
13.956 GHz	1	55.257	74	-18.743	1	1.638	Vertical	5	1 M	0	11.103
13.832 GHz	2	54.609	74	-19.391	331	1.643	Horizontal	5	1 M	0	10.691

Final source: Avg

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
13.956 GHz	1	42.289	54	-11.711	1	1.638	Vertical	5	1 M	0	11.103
13.832 GHz	2	41.736	54	-12.264	331	1.643	Horizontal	5	1 M	0	10.691

Graph 2: 1 GHz – 16 GHz Middle Channel (Worst Case)

Final source: Peak

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
27.035 GHz	1	51.976	74	-22.024	231	Vertical	5	1 M	0	1.725
21.005 GHz	2	50.689	74	-23.311	281	Horizontal	5	1 M	0	0.86

Final source: Avg

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
27.035 GHz	1	37.435	54	-16.565	231	Vertical	5	1 M	0	1.725
21.005 GHz	2	36.525	54	-17.475	281	Horizontal	5	1 M	0	0.86

Graph 3: 16 GHz – 40 GHz Low Channel (Worst Case)

5.5.4 UNII-2C

Final source: QuasiPeak

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Meas. Time	RBW (Hz)	Meas.Time (s)	Correction (dB)
30.386 MHz	1	18.991	49	-30.009	183	3.66	Vertical	15	120 k	0.001	-7.957
192 MHz	1	31.232	53.5	-22.268	185	2.059	Vertical	15	120 k	0.001	-16.393
384.03 MHz	1	43.962	56	-12.038	109	2.401	Vertical	15	120 k	0.001	-12.176
480 MHz	1	48.842	56	-7.158	265	1.863	Vertical	15	120 k	0.001	-9.391
575.95 MHz	1	40.156	56	-15.844	216	1.681	Vertical	15	120 k	0.001	-8.42
30.229 MHz	2	21.821	49	-27.179	19	4	Horizontal	15	120 k	0.001	-7.836
191.99 MHz	2	37.968	53.5	-15.532	303	1.701	Horizontal	15	120 k	0.001	-16.394
287.95 MHz	2	39.99	56	-16.01	125	1.138	Horizontal	15	120 k	0.001	-14.117
384.04 MHz	2	47.542	56	-8.458	328	2.22	Horizontal	15	120 k	0.001	-12.176
480.02 MHz	2	55.57	56	-0.43	1	1.858	Horizontal	15	120 k	0.001	-9.39
575.96 MHz	2	51.906	56	-4.094	143	1.496	Horizontal	15	120 k	0.001	-8.421

Graph 4: Radiated Emissions within 30MHz - 1GHz

Final source: Peak

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
14.012 GHz	2	55.517	74	-18.483	106	2.645	Horizontal	5	1 M	0	11.073

Final source: Avg

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
14.012 GHz	2	41.937	54	-12.063	106	2.645	Horizontal	5	1 M	0	11.073

Graph 5: 1 GHz – 16 GHz High Channel (Worst Case)

Final source: Peak

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
32.669 GHz	1	52.337	74	-21.663	190	Vertical	5	1 M	0	1.987
35.242 GHz	1	54.007	74	-19.993	345	Vertical	5	1 M	0	2.902

Final source: Avg

Frequency	SR #	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Meas. Time (s)	RBW (Hz)	Meas.Time (s)	Correction (dB)
32.669 GHz	1	37.861	54	-16.139	190	Vertical	5	1 M	0	1.987
35.242 GHz	1	37.038	54	-16.962	345	Vertical	5	1 M	0	2.902

Graph 6: 16 GHz – 40 GHz High Channel (Worst Case)

5.6 §15.407(a) Maximum Power Spectral Density

All chains were measured and summed under the guidance of KDB 789033 Section II. F. and KDB 66291 D01. Please see associated annex for details on instrument settings.

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 11 dBm in any 1 MHz band during any time interval of continuous transmission. Results of this testing are summarized. With a 9 dBi antenna, the conducted limit for power spectral density is 11 dBm. As per KDB 662911, When the EUT is using spatial-multiplexing in HT to HE modes, there is not additional array gain to accommodate. When the EUT uses Nss=1 data rates, the antenna gain is 9 dBi + Array gain of 3.01 dB which is a total of 12.01 dBi therefor the limit was reduced to 4.99 for NSS-1 mode.
Results of this testing are summarized below.

5.6.1 UNII-2A

Non – NSS-1 mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
HE 20	5260	Mcs0_Nss4	38	20.67	9.19
HE 20	5300	Mcs0_Nss4	38	20.83	9.19
HE 20	5335	Mcs0_Nss4	37	20.77	9.26
HE 40	5270	Mcs0_Nss4	37	20.66	6.49
HE 40	5300	Mcs0_Nss4	37	20.67	6.47
HE 40	5325	Mcs0_Nss4	37	20.86	6.76
HE 80	5290	Mcs0_Nss4	37	20.65	3.57
HE 80	5300	Mcs0_Nss4	37	20.50	3.56
HE 80	5305	Mcs0_Nss4	37	20.48	3.53
HE160	5250	Mcs0_Nss4	37	20.98	1.11

NSS-1 mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
HE 20	5260	Mcs0_Nss1	29	16.17	4.69
HE 20	5300	Mcs0_Nss1	29	16.33	4.69
HE 20	5335	Mcs0_Nss1	28	16.27	4.76
HE 40	5270	Mcs0_Nss1	33	18.66	4.49
HE 40	5300	Mcs0_Nss1	34	19.17	4.97
HE 40	5325	Mcs0_Nss1	33	18.86	4.76
HE 80	5290	Mcs0_Nss4	37	20.65	3.57
HE 80	5300	Mcs0_Nss4	37	20.50	3.56
HE 80	5305	Mcs0_Nss4	37	20.48	3.53
HE160	5250	Mcs0_Nss4	37	20.98	1.11

5.6.2 UNII-2C

Non – NSS-1 mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
HE 20	5485	Mcs0_Nss4	38	20.90	9.18
HE 20	5600	Mcs0_Nss4	38	20.50	9.10
HE 20	5710	Mcs0_Nss4	39	20.82	9.07
HE 40	5495	Mcs0_Nss4	37	20.66	6.27
HE 40	5600	Mcs0_Nss4	38	20.82	6.64
HE 40	5700	Mcs0_Nss4	38	20.63	6.56
HE 80	5515	Mcs0_Nss4	38	20.66	3.90
HE 80	5600	Mcs0_Nss4	39	20.80	4.53
HE 80	5680	Mcs0_Nss4	38	20.49	3.37
HE160	5570	Mcs0_Nss4	37	20.42	0.86

NSS-1 mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
HE 20	5485	Mcs0_Nss1	29	16.40	4.68
HE 20	5600	Mcs0_Nss1	29	16.00	4.60
HE 20	5710	Mcs0_Nss1	30	16.32	4.57
HE 40	5495	Mcs0_Nss1	34	19.16	4.77
HE 40	5600	Mcs0_Nss1	34	18.82	4.64
HE 40	5700	Mcs0_Nss1	34	18.63	4.56
HE 80	5515	Mcs0_Nss4	38	20.66	3.90
HE 80	5600	Mcs0_Nss4	39	20.80	4.53
HE 80	5680	Mcs0_Nss4	38	20.49	3.37
HE160	5570	Mcs0_Nss4	37	20.42	0.86

Result

The maximum average power spectral density was less than the limit of 11dBm for Non-Nss-1 Mode and 4.99dBm for NSS-1 mode; therefore, the EUT complies with the specification.

5.7 DFS Requirement

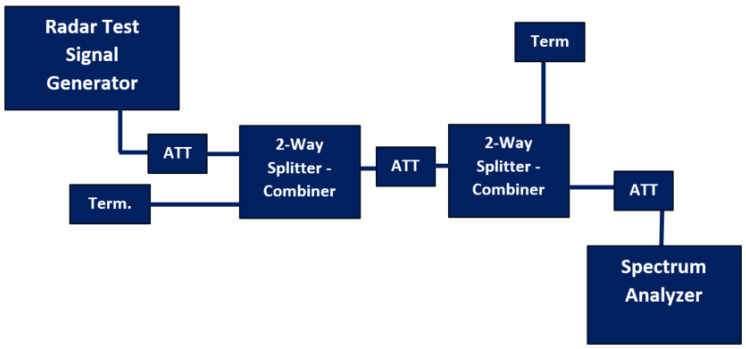
This product is a master with radar detection. The outcome of the required DFS tests is located in this section. DFS testing was performed following the test procedures as outlined in KDB 905462.

The product passes all required DFS tests for a master with radar detection.

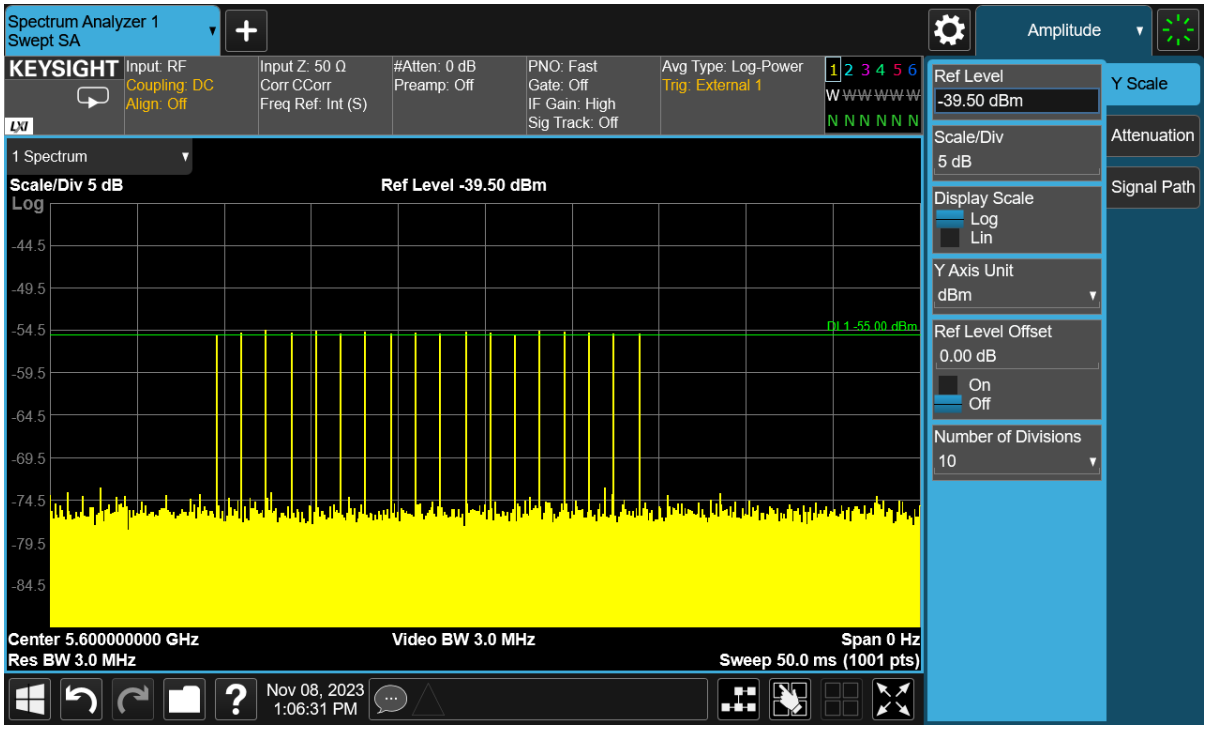
Information	Status
Possible Antenna/s	Integral
Antenna used for test	Integral
Operating mode	Master
If Client	NA
Port used for testing	J17 and J24
EIRP range	> 200 milliwatts
Impedance of port	50 ohms
Channel loading technique	Data transfer was enacted to achieve a minimum channel loading of approximately 17%
Antenna measurement technique	See note 1
Time of power-on cycle	30s
Detection threshold level	-55 dBm

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not Required	Yes
DFS Detection Threshold	Yes	Not Required	Yes
Channel Availability Check Time	Yes	Not Required	Not Required
U-NII Detection Bandwidth	Yes	Not Required	Yes

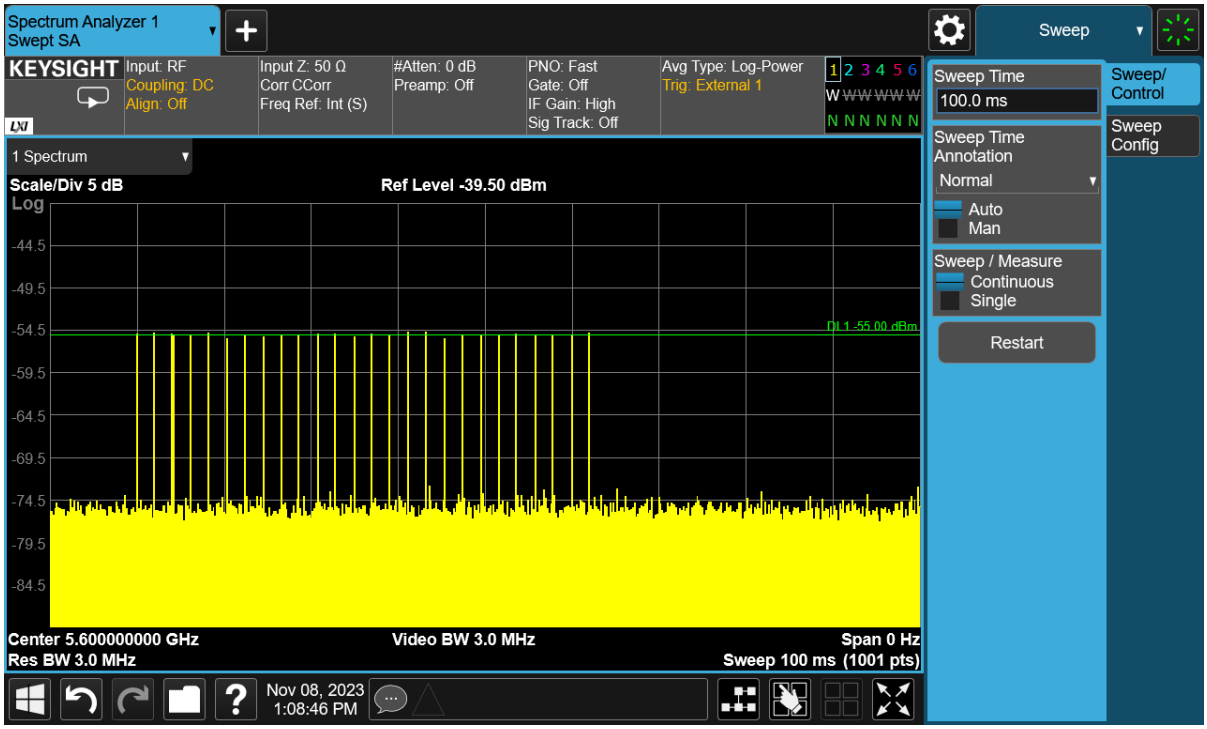
Requirement	Operational Mode	
	Master or Client Client Without Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not Required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not Required



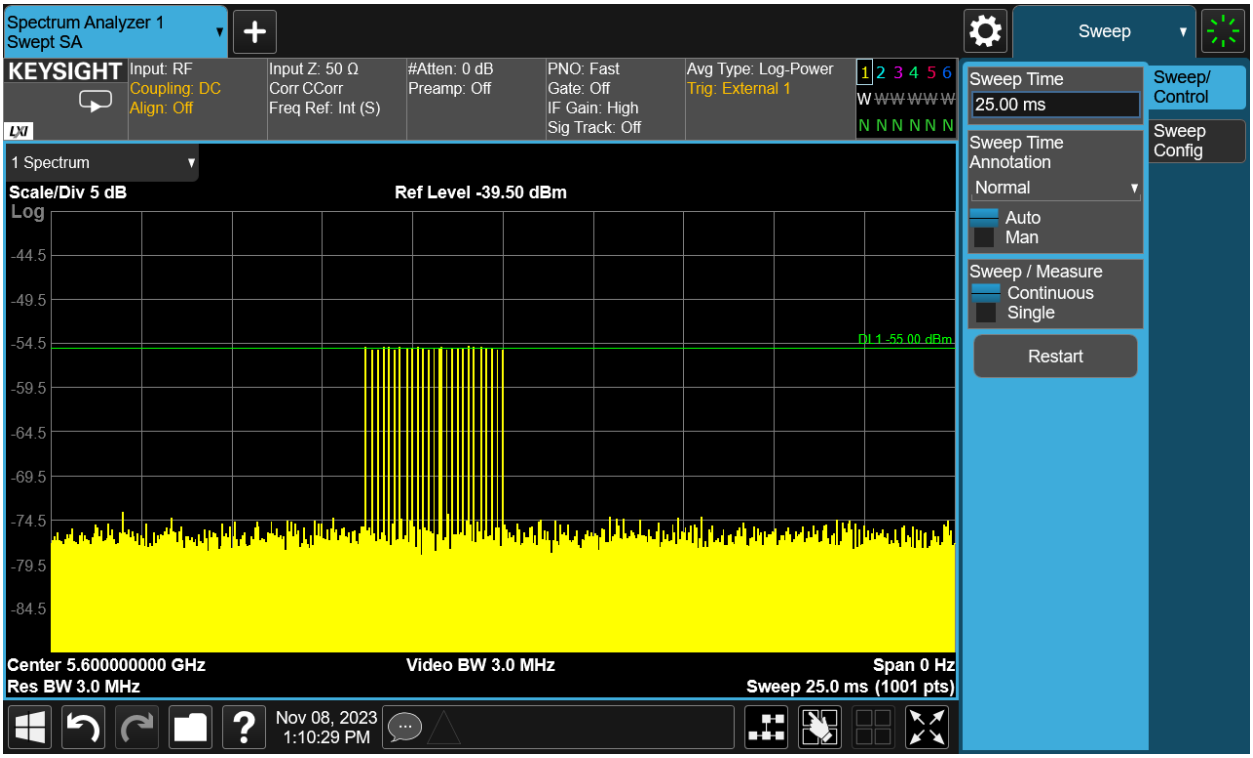
Maximum Transmit Power	**Value (See Notes 1, 2, and 3)**
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. **Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. **Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	



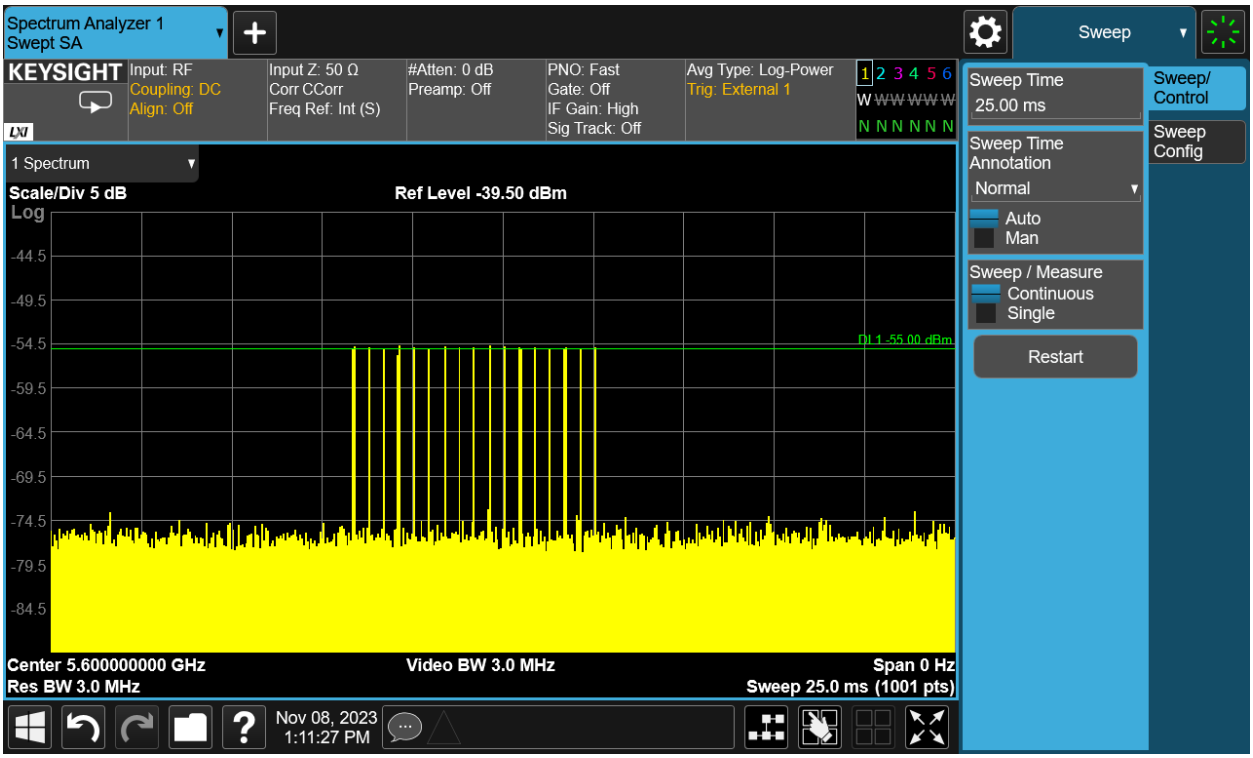
Plot 1: Radar Level 0



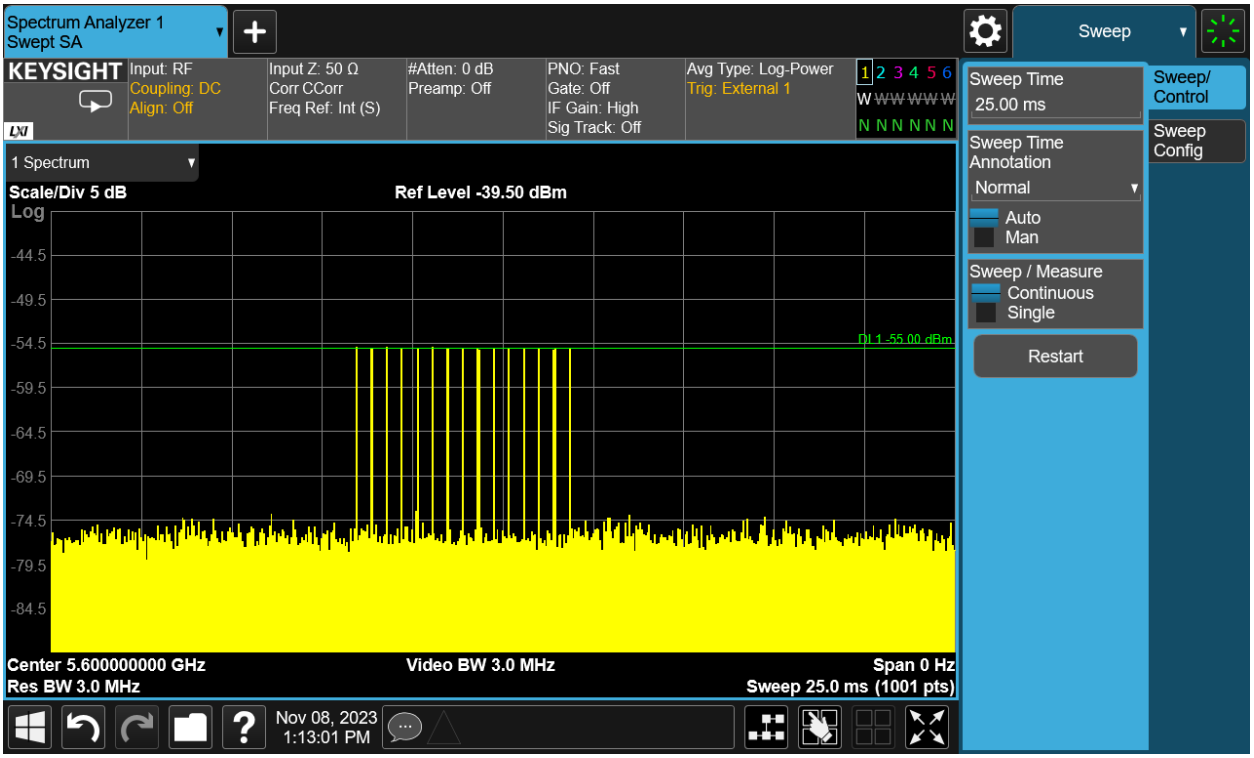
Plot 2: Radar Level 1



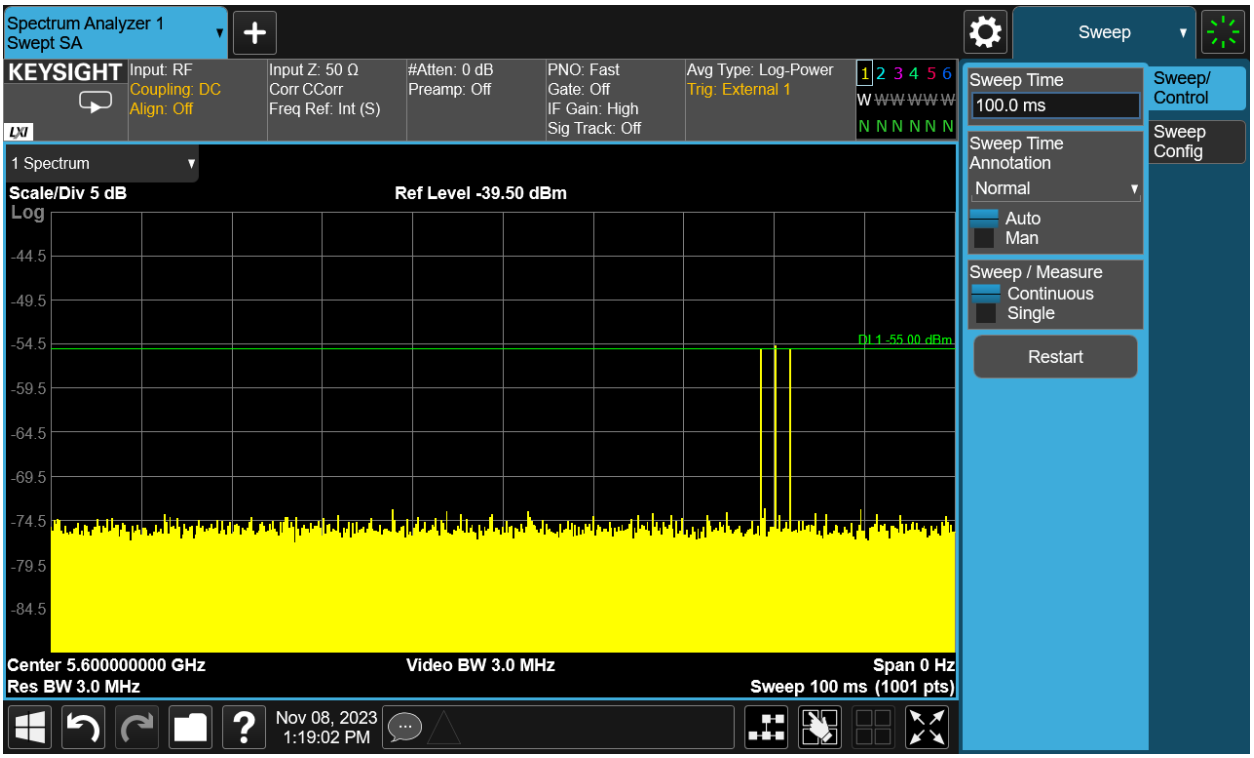
Plot 3: Radar Level 2



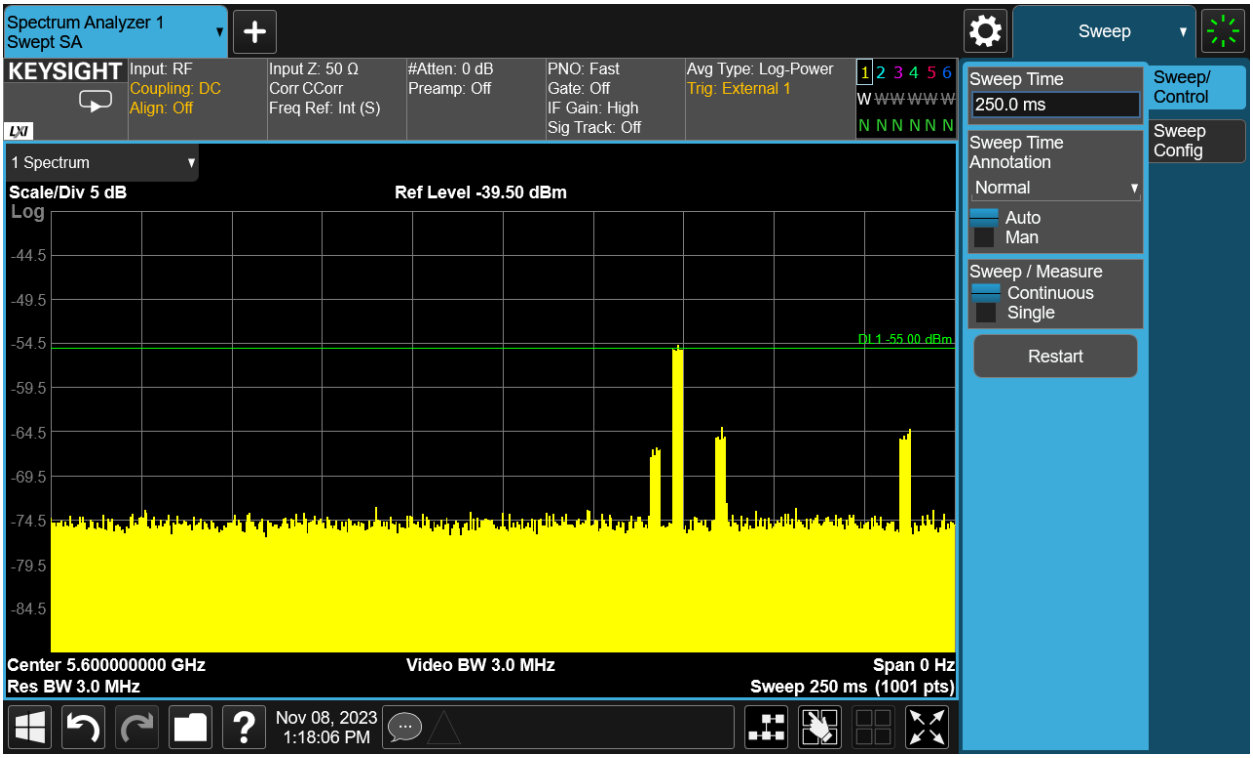
Plot 4: Radar Level 3



Plot 5: Radar Level 4



Plot 6: Radar Level 5



Plot 7: Radar Level 6

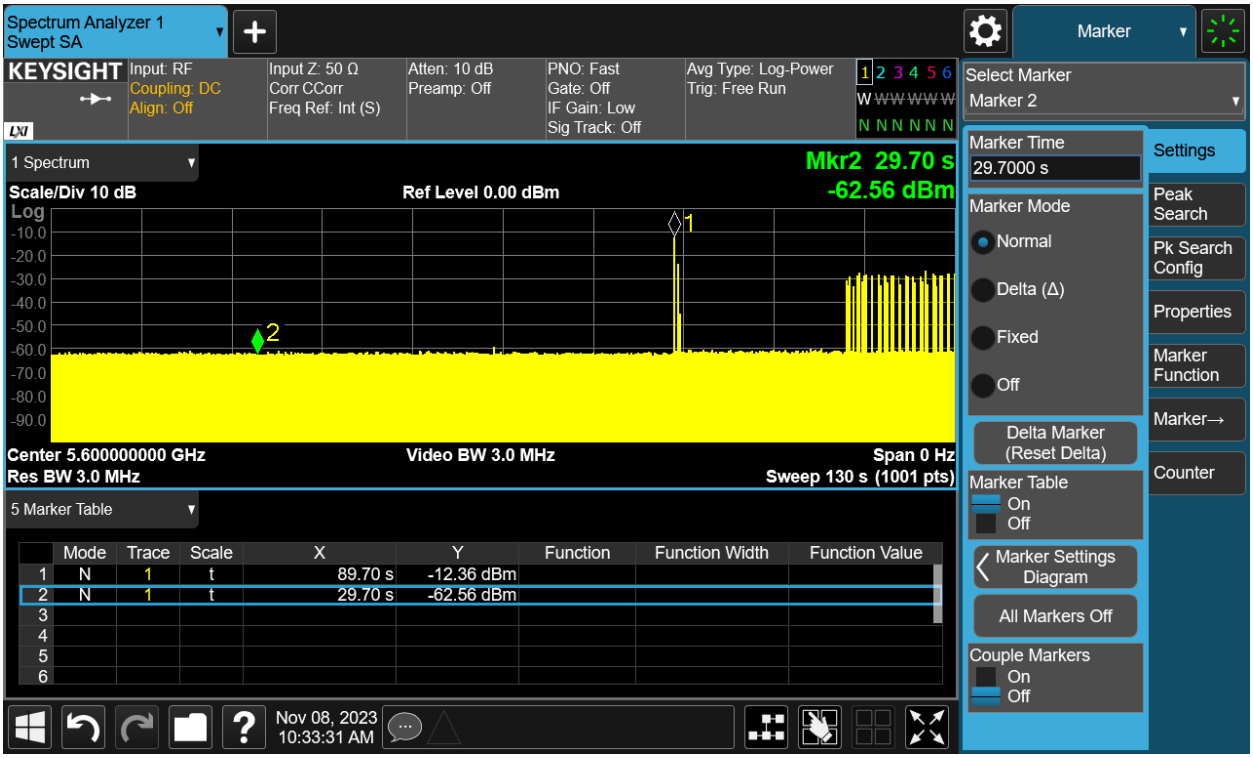
5.7.1 Channel Availability Check (CAC)

The EUT shall perform a CAC to ensure that there is no radar operating on the channel. After the power-up sequence, at-east 1 minute shall be monitored on the intended operating frequency. For initial CAC, the EUT does not emit beacon, control, or data signals on the test channel until the power-up sequence has been completed and the UNII device checks for radar waveforms for one minute on the test channel. This test does not use any radar waveforms. The markers in the associated plots indicate initial beacons.

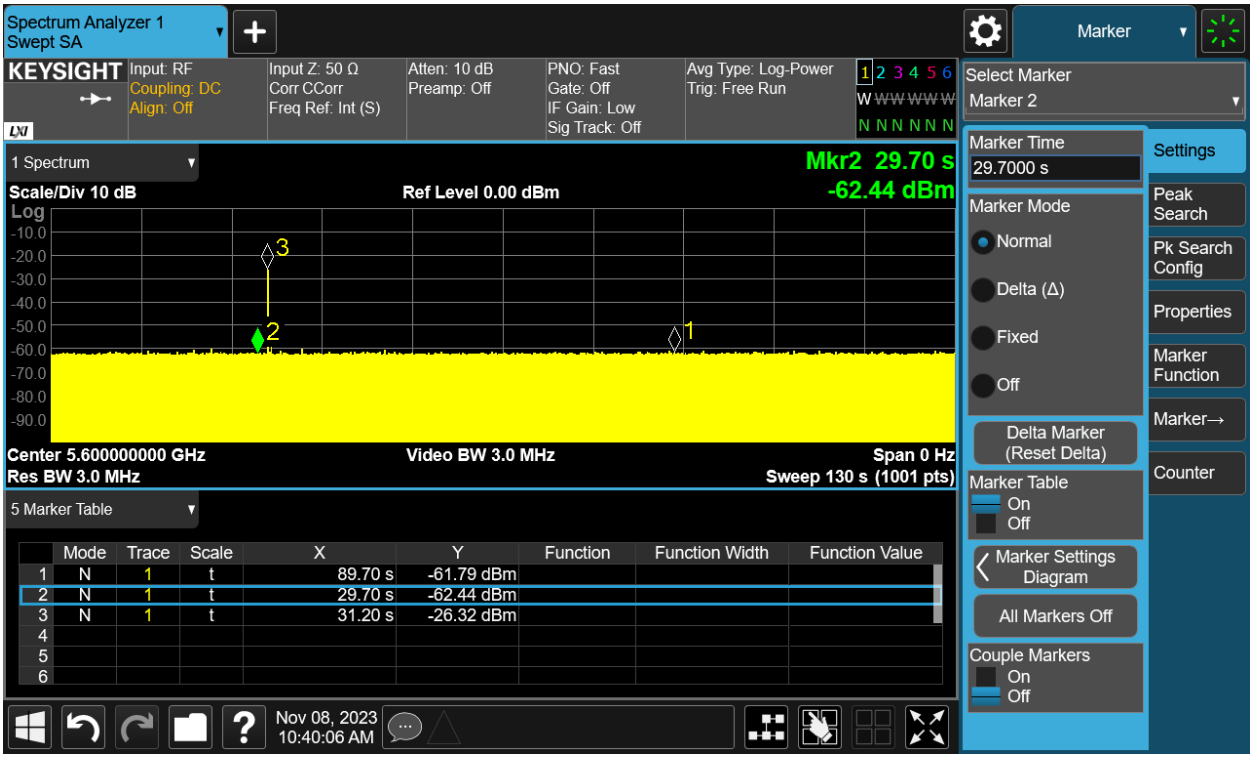
For radar burst at the beginning of the CAC. To verify successful radar detection on the selected channel during a period equal to the beginning of the CAC time, visual indication on the EUT of successful detection of the radar burst will be recorded and reported. Observation of the radar burst is show on the associated plot to be within the beginning of the CAC time. Emissions will continue to be monitored for the remaining 300 seconds.

For radar burst at the end of the CAC. To verify successful radar detection on the selected channel during a period equal to the end of the CAC time, visual indication on the EUT of successful detection of the radar burst will be recorded and reported. Observation of the radar burst is show on the associated plot to be within the end of the CAC time. Emissions will continue to be monitored for the remaining 300 seconds.

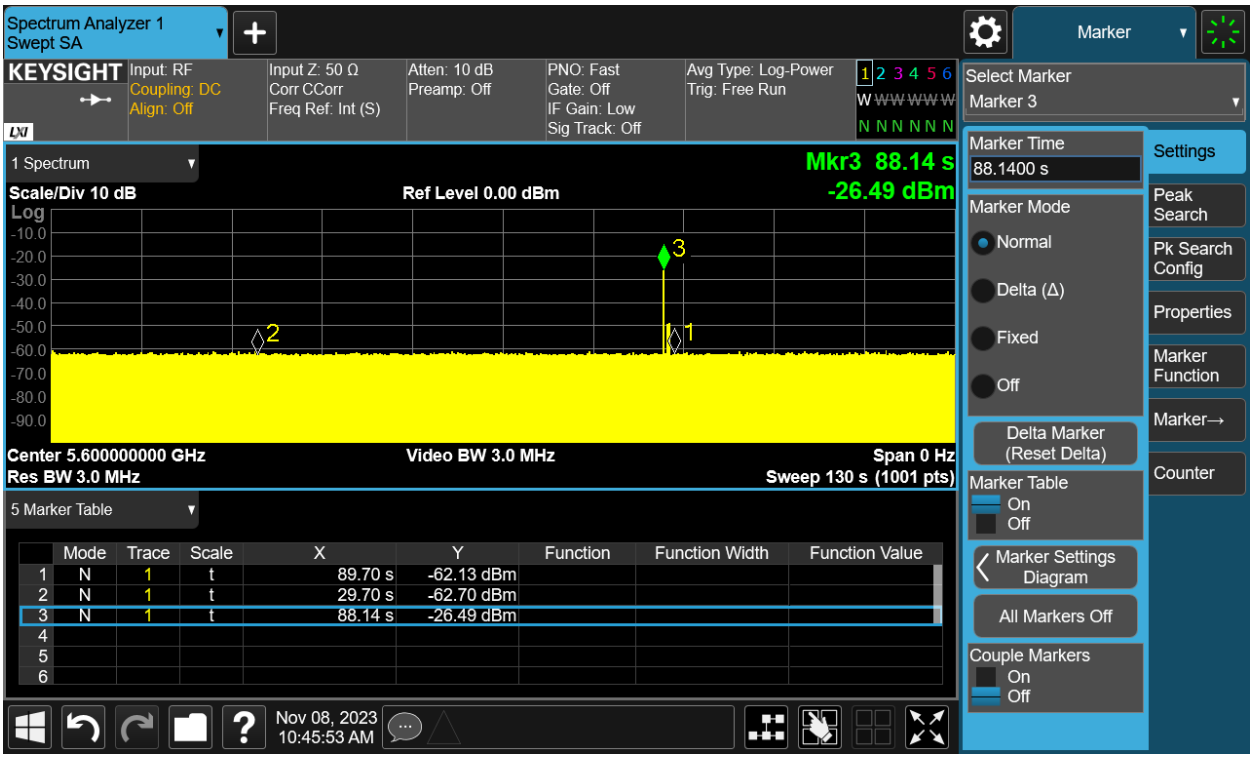
A spectrum analyzer is used as a monitor to verify that the EUT has vacated the channel within the channel closing transmission time and channel move time, and does not transmit on a channel during the non-occupancy period after the detection and channel move.



Plot 8: DUT Turn On



Plot 9: Beginning



Plot 10: End

5.7.2 In-service Monitoring

Channel Move Time	10 seconds
Channel Closing Transmission Time	200 ms + aggregate of 60 ms over remaining 10 second period
Non-occupancy period	Minimum 30 minutes

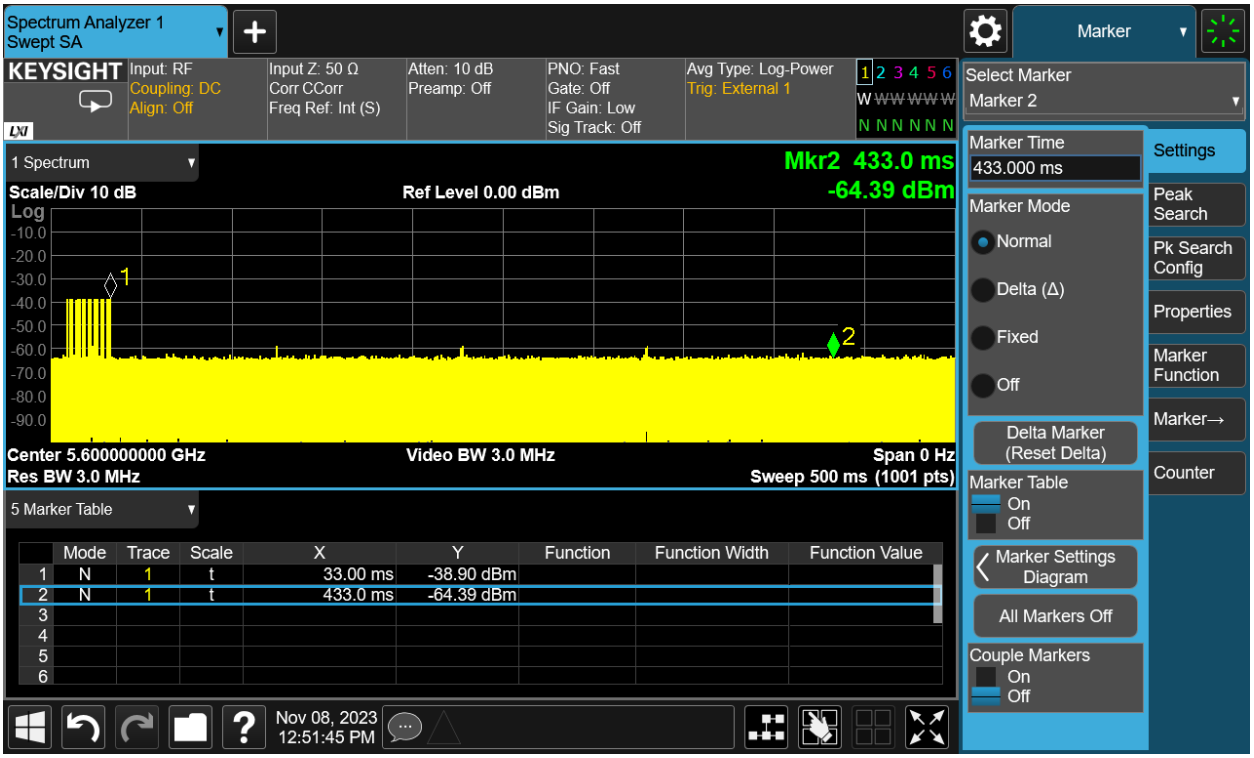
Verified during in-service monitoring: channel closing transmission time and channel move time. The transmissions were observed at the end of the radar burst on the operating channel for a duration of greater than 10 seconds. The transmissions were measured and recorded during the observation time. This was compared to the channel move time and channel closing time limits.

One 12 second plot is reported for the short pulse radar type 0. A 60 ms plot is also provided to verify closing time for the aggregate transmission time starting from 200 ms after the end of the radar signal to the completion of the channel move.

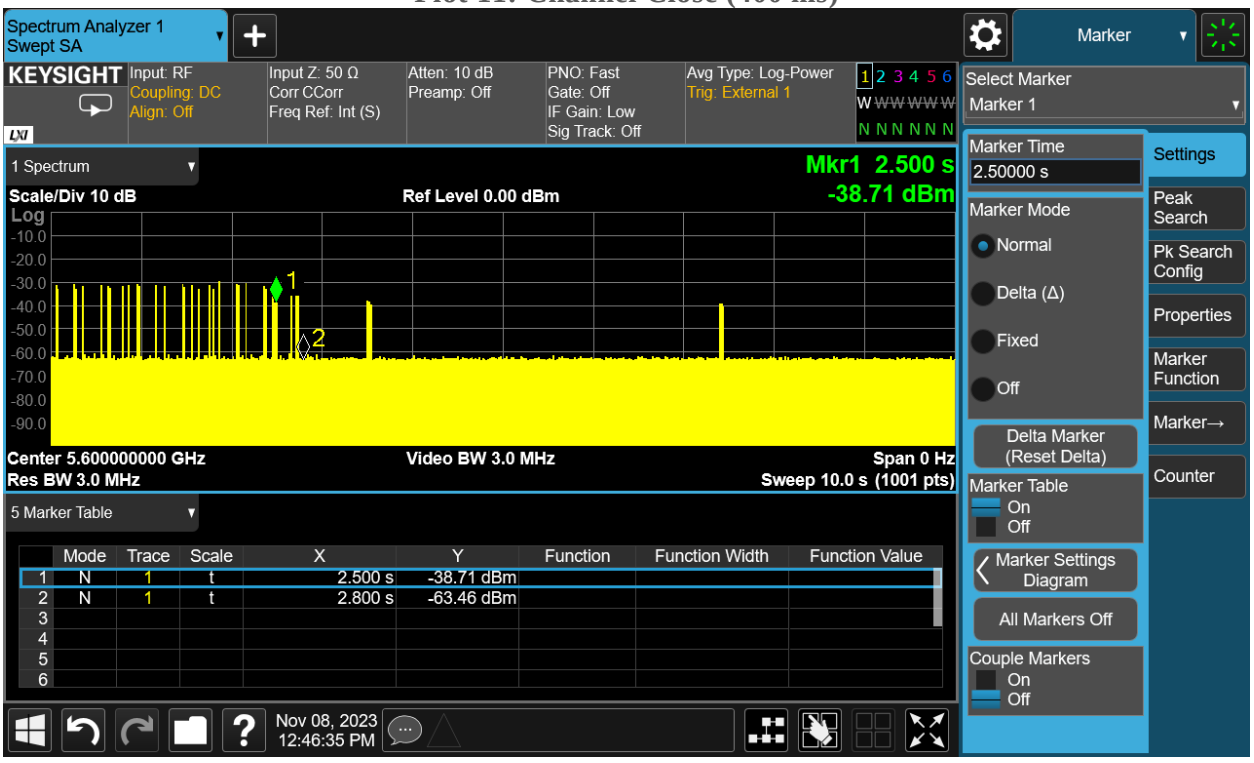
During the 30 minutes observation time, the EUT did not make any transmissions on a channel after a radar signal was detected.

Please see plots below.

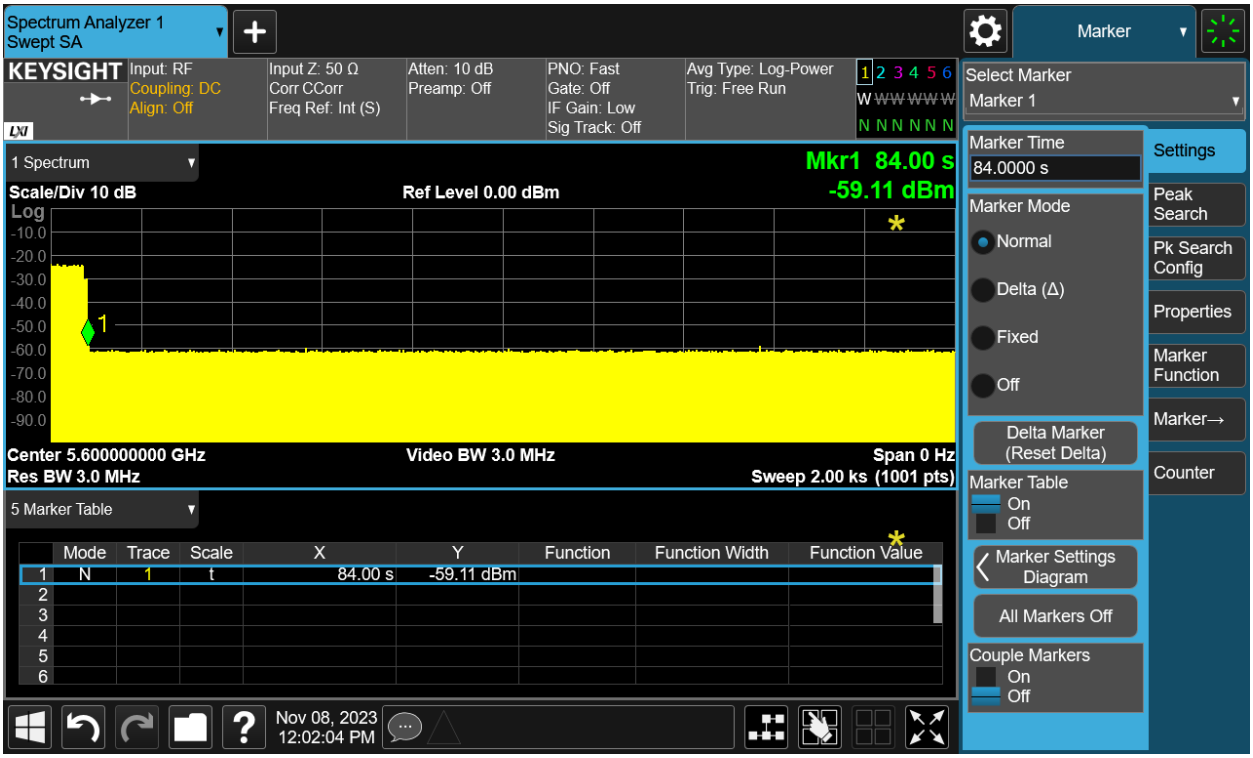
A spectrum analyzer is used as a monitor to verify that the EUT has vacated the channel within the channel closing transmission time and channel move time, and does not transmit on a channel during the non-occupancy period after the detection and channel move.



Plot 11: Channel Close (400 ms)



Plot 12: Channel Move



Plot 13: Non-Occupancy

5.7.3 DFS Detection Bandwidth

20 MHz

EUT Frequency = 5600 MHz ; Bandwidth = 20 MHz											
Radar Frequency MHz	DFS Detection Trials (1 = Detection, 0 = No Detection)										Detection Rate %
	Trials										
	1	2	3	4	5	6	7	8	9	10	
F_Low 5590	1	1	1	1	1	1	1	1	1	1	100
5595	1	1	1	1	1	1	1	1	1	1	100
5600	1	1	1	1	1	1	1	1	1	1	100
5605	1	1	1	1	1	1	1	1	1	1	100
F_High 5610	1	1	1	1	1	1	1	1	1	1	100
Total Detection Percentage											100
Detection Bandwidth = FH-FL = 5590 MHz - 5610 MHz = 20 MHz											
99% Bandwidth = 19.8 MHz											

40 MHz

EUT Frequency = 5590 MHz ; Bandwidth = 40 MHz											
Radar Frequency MHz	DFS Detection Trials (1 = Detection, 0 = No Detection)										Detection Rate %
	Trials										
	1	2	3	4	5	6	7	8	9	10	
F_Low 5570	1	1	1	1	1	1	1	1	1	1	100
5580	1	1	1	1	1	1	1	1	1	1	100
5590	1	1	1	1	1	1	1	1	1	1	100
5600	1	1	1	1	1	1	1	1	1	1	100
F_High 5610	1	1	1	1	1	1	1	1	1	1	100
Total Detection Percentage											100
Detection Bandwidth = FH-FL = 5570 MHz - 5610 MHz = 40 MHz											
99% Bandwidth = 39.6 MHz											

80 MHz

EUT Frequency = 5610 MHz ; Bandwidth = 80 MHz											
Radar Frequency MHz	DFS Detection Trials (1 = Detection, 0 = No Detection)										Detection Rate %
	Trials										
	1	2	3	4	5	6	7	8	9	10	
F_Low 5570	1	1	1	1	1	1	1	1	1	1	100
5590	1	1	1	1	1	1	1	1	1	1	100
5610	1	1	1	1	1	1	1	1	1	1	100
5630	1	1	1	1	1	1	1	1	1	1	100
F_High 5650	1	1	1	1	1	1	1	1	1	1	100
Total Detection Percentage											100
Detection Bandwidth = FH-FL = 5570 MHz - 5650 MHz = 80 MHz											
99% Bandwidth = 79.2 MHz											

5.7.4 Detection Probability

For statistical performance check. Demonstrating a minimum channel loading of approximately 17% or greater of the test. Observe the transmissions of the EUT at the end of the burst on the operating channel for duration greater than 10 seconds for short pulse radar type 1-4 and 6 to ensure detection occurs. Then observe the transmissions of the EUT at the end of the burst on the operating channel for duration greater than 22 seconds for long pulse radar type 5 to ensure detection occurs. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs.
Please see data below.

Radar Type	Min successful detection (%)	Maximum Trials
1	60	30

2	60	30
3	60	30
4	60	30
Types 1 - 4	80	120
5	80	30
6	70	30

20 MHz

Summary			
Type	**Detections**	**Trials**	**Detection Probability**
Type 1	29	30	97%
Type 2	26	30	87%
Type 3	26	30	87%
Type 4	26	30	87%
Type 5	30	30	100%
Type 6	29	30	97%
Aggregate 1-4	107	120	89%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	19	1	2796	y
2	25	1	2123	y
3	35	1	1527	y
4	36	1	1478	y
5	39	1	1385	y
6	21	1	2605	y
7	23	1	2294	y
8	25	1	2141	y
9	25	1	2175	y
10	18	1	3041	y
11	36	1	1489	y
12	21	1	2597	y
13	28	1	1929	y
14	32	1	1677	y
15	26	1	2059	y
16	22	1	2482	y
17	40	1	1321	y
18	25	1	2112	y
19	19	1	2776	y
20	27	1	1973	y
21	22	1	2438	y
22	24	1	2238	y
23	26	1	2080	y
24	24	1	2212	y
25	74	1	716	n
26	32	1	1691	y
27	100	1	531	y
28	22	1	2426	y
29	30	1	1816	y
30	60	1	892	y
				29/30: 96.7%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	28	2.1	208	y
2	26	2.8	228	y
3	26	1.9	215	y
4	29	3.6	186	y
5	24	1.9	210	y
6	28	2.7	210	y
7	24	1.6	156	y
8	23	4.8	201	y
9	26	2	161	y
10	23	4	229	n
11	24	4.2	168	y
12	27	1.4	157	y
13	27	1.8	167	n
14	28	4.2	216	y
15	28	1.8	220	y
16	23	1.4	158	n
17	29	2.8	167	y
18	25	4.1	185	y
19	26	2.4	159	y
20	25	3.6	229	n
21	28	2.6	160	y
22	26	4.6	163	y
23	28	3.6	205	y
24	25	4.5	185	y
25	23	1.8	228	y
26	28	1.7	220	y
27	24	1.1	165	y
28	28	2.9	154	y
29	25	4.9	217	y
30	27	3.3	164	y
				26/30: 86.7%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	18	9.8	387	n
2	18	7.2	241	y
3	16	9.9	419	n
4	17	8.1	329	y
5	18	9	253	y
6	17	9.3	449	y
7	16	8.7	253	y
8	16	8.5	383	y
9	18	6.4	425	n
10	17	8.2	248	y
11	17	9.3	200	y
12	17	8.7	313	y
13	16	8.1	208	y
14	17	9.8	258	y
15	18	9.4	428	y
16	17	6.6	232	y
17	16	8.1	209	y
18	16	7.4	322	y
19	16	6.8	460	y
20	17	7.7	484	y
21	18	8.2	466	y
22	17	7.4	427	y
23	16	9.6	215	y
24	17	7.5	478	y
25	17	8	366	y
26	18	6.3	482	y
27	17	9.9	365	n
28	16	8.2	389	y
29	17	8.3	390	y
30	17	8.8	323	y
				26/30: 86.7%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	14	12.8	304	y
2	14	16.1	469	y
3	15	18.1	427	y
4	16	14.2	369	y
5	13	18.6	266	y
6	14	14.1	479	y
7	12	12.4	300	y
8	15	12.3	323	n
9	13	17.5	240	y
10	16	12.2	484	n
11	16	12.3	489	y
12	13	17.6	300	y
13	13	11	453	y
14	15	11.5	271	y
15	14	18.4	272	y
16	15	19.8	402	y
17	12	19.8	204	y
18	14	19.9	306	y
19	14	12.7	309	n
20	13	11.3	379	y
21	15	19	343	y
22	13	13.9	294	y
23	14	13.8	368	y
24	13	13.5	203	y
25	13	14.5	344	y
26	16	15.1	415	y
27	14	12.3	284	y
28	14	17.7	294	n
29	14	15.4	315	y
30	14	15.4	315	y
				26/30: 86.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	16	1	5600
2	y	9	1	5600
3	y	5	1	5600
4	y	17	1	5600
5	y	5	1	5600
6	y	18	1	5600
7	y	6	1	5600
8	y	14	1	5600
9	y	17	1	5600
10	y	14	1	5600
11	y	13	2	5595.2
12	y	15	2	5596
13	y	13	2	5595.2
14	y	13	2	5595.2
15	y	11	2	5594.4
16	y	13	2	5595.2
17	y	8	2	5593.2
18	y	6	2	5592.4
19	y	9	2	5593.6
20	y	14	2	5595.6
21	y	17	3	5603.2
22	y	13	3	5604.8
23	y	14	3	5604.4
24	y	14	3	5604.4
25	y	6	3	5607.6
26	y	16	3	5603.6
27	y	12	3	5605.2
28	y	9	3	5606.4
29	y	12	3	5605.2
30	y	5	3	5608
	30/30: 100%			

TYPE 6 S	Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Detection (yes/no)**
1	y
2	y
3	y
4	y
5	y
6	y
7	y
8	y
9	y
10	y
11	y
12	y
13	y
14	y
15	y
16	y
17	y
18	y
19	y
20	y
21	y
22	y
23	y
24	y
25	y
26	y
27	n
28	y
29	y
30	y
	29/30: 96.7%

40 MHz

Summary			
Type	**Detections**	**Trials**	**Detection Probability**
Type 1	22	30	73%
Type 2	26	30	87%
Type 3	29	30	97%
Type 4	26	30	87%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	103	120	86%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	19	1	2796	y
2	25	1	2123	y
3	35	1	1527	y
4	36	1	1478	y
5	39	1	1385	y
6	21	1	2605	n
7	23	1	2294	n
8	25	1	2141	y
9	25	1	2175	y
10	18	1	3041	y
11	36	1	1489	n
12	21	1	2597	n
13	28	1	1929	n
14	32	1	1677	y
15	26	1	2059	y
16	22	1	2482	y
17	40	1	1321	y
18	25	1	2112	y
19	19	1	2776	n
20	27	1	1973	y
21	22	1	2438	n
22	24	1	2238	y
23	26	1	2080	y
24	24	1	2212	n
25	74	1	716	y
26	32	1	1691	y
27	100	1	531	y
28	22	1	2426	y
29	30	1	1816	y
30	60	1	892	y
				22/30: 73.3%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	28	2.1	208	y
2	26	2.8	228	y
3	26	1.9	215	y
4	29	3.6	186	y
5	24	1.9	210	y
6	28	2.7	210	y
7	24	1.6	156	n
8	23	4.8	201	y
9	26	2	161	y
10	23	4	229	y
11	24	4.2	168	y
12	27	1.4	157	y
13	27	1.8	167	n
14	28	4.2	216	y
15	28	1.8	220	y
16	23	1.4	158	y
17	29	2.8	167	y
18	25	4.1	185	y
19	26	2.4	159	y
20	25	3.6	229	y
21	28	2.6	160	n
22	26	4.6	163	n
23	28	3.6	205	y
24	25	4.5	185	y
25	23	1.8	228	y
26	28	1.7	220	y
27	24	1.1	165	y
28	28	2.9	154	y
29	25	4.9	217	y
30	27	3.3	164	y
				26/30: 86.7%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	18	9.8	387	y
2	18	7.2	241	y
3	16	9.9	419	y
4	17	8.1	329	y
5	18	9	253	y
6	17	9.3	449	y
7	16	8.7	253	y
8	16	8.5	383	y
9	18	6.4	425	y
10	17	8.2	248	y
11	17	9.3	200	y
12	17	8.7	313	y
13	16	8.1	208	y
14	17	9.8	258	y
15	18	9.4	428	y
16	17	6.6	232	y
17	16	8.1	209	y
18	16	7.4	322	y
19	16	6.8	460	y
20	17	7.7	484	y
21	18	8.2	466	n
22	17	7.4	427	y
23	16	9.6	215	y
24	17	7.5	478	y
25	17	8	366	y
26	18	6.3	482	y
27	17	9.9	365	y
28	16	8.2	389	y
29	17	8.3	390	y
30	17	8.8	323	y
				29/30: 96.7%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	14	12.8	304	y
2	14	16.1	469	y
3	15	18.1	427	n
4	16	14.2	369	y
5	13	18.6	266	y
6	14	14.1	479	y
7	12	12.4	300	y
8	15	12.3	323	y
9	13	17.5	240	y
10	16	12.2	484	y
11	16	12.3	489	y
12	13	17.6	300	y
13	13	11	453	y
14	15	11.5	271	y
15	14	18.4	272	y
16	15	19.8	402	y
17	12	19.8	204	y
18	14	19.9	306	n
19	14	12.7	309	y
20	13	11.3	379	y
21	15	19	343	y
22	13	13.9	294	y
23	14	13.8	368	y
24	13	13.5	203	y
25	13	14.5	344	y
26	16	15.1	415	y
27	14	12.3	284	n
28	14	17.7	294	y
29	14	15.4	315	n
30	14	15.4	315	y
				26/30: 86.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	8	1	5600
2	y	7	1	5600
3	y	7	1	5600
4	y	15	1	5600
5	y	11	1	5600
6	y	7	1	5600
7	y	16	1	5600
8	y	11	1	5600
9	y	18	1	5600
10	y	12	1	5600
11	y	10	2	5574
12	y	7	2	5572.8
13	y	6	2	5572.4
14	y	18	2	5577.2
15	y	9	2	5573.6
16	y	15	2	5576
17	y	10	2	5574
18	y	16	2	5576.4
19	y	9	2	5573.6
20	y	9	2	5573.6
21	y	5	3	5608
22	y	14	3	5604.4
23	y	6	3	5607.6
24	y	18	3	5602.8
25	y	12	3	5605.2
26	y	18	3	5602.8
27	y	11	3	5605.6
28	y	6	3	5607.6
29	y	13	3	5604.8
30	y	17	3	5603.2
	30/30: 100%			

TYPE 6 S	Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Detection (yes/no)**
1	y
2	y
3	y
4	y
5	y
6	y
7	y
8	y
9	y
10	y
11	y
12	y
13	y
14	y
15	y
16	y
17	y
18	y
19	y
20	y
21	y
22	y
23	y
24	y
25	y
26	y
27	y
28	y
29	y
30	y
	30/30: 100%

80 MHz

Summary			
Type	**Detections**	**Trials**	**Detection Probability**
Type 1	29	30	97%
Type 2	26	30	87%
Type 3	27	30	90%
Type 4	23	30	77%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	105	120	88%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	19	1	2796	y
2	25	1	2123	y
3	35	1	1527	y
4	36	1	1478	y
5	39	1	1385	y
6	21	1	2605	y
7	23	1	2294	y
8	25	1	2141	y
9	25	1	2175	y
10	18	1	3041	y
11	36	1	1489	y
12	21	1	2597	y
13	28	1	1929	y
14	32	1	1677	y
15	26	1	2059	y
16	22	1	2482	y
17	40	1	1321	y
18	25	1	2112	y
19	19	1	2776	y
20	27	1	1973	y
21	22	1	2438	y
22	24	1	2238	y
23	26	1	2080	y
24	24	1	2212	y
25	74	1	716	n
26	32	1	1691	y
27	100	1	531	y
28	22	1	2426	y
29	30	1	1816	y
30	60	1	892	y
				29/30: 96.7%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	28	2.1	208	y
2	26	2.8	228	y
3	26	1.9	215	y
4	29	3.6	186	n
5	24	1.9	210	y
6	28	2.7	210	y
7	24	1.6	156	y
8	23	4.8	201	y
9	26	2	161	n
10	23	4	229	n
11	24	4.2	168	y
12	27	1.4	157	n
13	27	1.8	167	y
14	28	4.2	216	y
15	28	1.8	220	y
16	23	1.4	158	y
17	29	2.8	167	y
18	25	4.1	185	y
19	26	2.4	159	y
20	25	3.6	229	y
21	28	2.6	160	y
22	26	4.6	163	y
23	28	3.6	205	y
24	25	4.5	185	y
25	23	1.8	228	y
26	28	1.7	220	y
27	24	1.1	165	y
28	28	2.9	154	y
29	25	4.9	217	y
30	27	3.3	164	y
				26/30: 86.7%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	18	9.8	387	y
2	18	7.2	241	y
3	16	9.9	419	n
4	17	8.1	329	y
5	18	9	253	y
6	17	9.3	449	y
7	16	8.7	253	y
8	16	8.5	383	y
9	18	6.4	425	y
10	17	8.2	248	y
11	17	9.3	200	y
12	17	8.7	313	n
13	16	8.1	208	y
14	17	9.8	258	y
15	18	9.4	428	n
16	17	6.6	232	y
17	16	8.1	209	y
18	16	7.4	322	y
19	16	6.8	460	y
20	17	7.7	484	y
21	18	8.2	466	y
22	17	7.4	427	y
23	16	9.6	215	y
24	17	7.5	478	y
25	17	8	366	y
26	18	6.3	482	y
27	17	9.9	365	y
28	16	8.2	389	y
29	17	8.3	390	y
30	17	8.8	323	y
				27/30: 90%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	14	12.8	304	y
2	14	16.1	469	y
3	15	18.1	427	y
4	16	14.2	369	y
5	13	18.6	266	n
6	14	14.1	479	y
7	12	12.4	300	y
8	15	12.3	323	y
9	13	17.5	240	y
10	16	12.2	484	y
11	16	12.3	489	y
12	13	17.6	300	y
13	13	11	453	y
14	15	11.5	271	y
15	14	18.4	272	y
16	15	19.8	402	y
17	12	19.8	204	y
18	14	19.9	306	n
19	14	12.7	309	y
20	13	11.3	379	n
21	15	19	343	n
22	13	13.9	294	y
23	14	13.8	368	y
24	13	13.5	203	n
25	13	14.5	344	y
26	16	15.1	415	n
27	14	12.3	284	y
28	14	17.7	294	n
29	14	15.4	315	y
30	14	15.4	315	y
				23/30: 76.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	8	1	5600
2	y	7	1	5600
3	y	7	1	5600
4	y	15	1	5600
5	y	11	1	5600
6	y	7	1	5600
7	y	16	1	5600
8	y	11	1	5600
9	y	18	1	5600
10	y	12	1	5600
11	y	10	2	5574
12	y	7	2	5572.8
13	y	6	2	5572.4
14	y	18	2	5577.2
15	y	9	2	5573.6
16	y	15	2	5576
17	y	10	2	5574
18	y	16	2	5576.4
19	y	9	2	5573.6
20	y	9	2	5573.6
21	y	5	3	5648
22	y	14	3	5644.4
23	y	6	3	5647.6
24	y	18	3	5642.8
25	y	12	3	5645.2
26	y	18	3	5642.8
27	y	11	3	5645.6
28	y	6	3	5647.6
29	y	13	3	5644.8
30	y	17	3	5643.2
	30/30: 100%			

TYPE 6 S	Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Detection (yes/no)**
1	y
2	y
3	y
4	y
5	y
6	y
7	y
8	y
9	y
10	y
11	y
12	y
13	y
14	y
15	y
16	y
17	y
18	y
19	y
20	y
21	y
22	y
23	y
24	y
25	y
26	y
27	y
28	y
29	y
30	y
	30/30: 100%

-- End of Test Report --