



427 West 12800 South
Draper, UT 84020

Test Report Certification

FCC ID	SWX-UCGT
ISED ID	6545A-UCGT
Equipment Under Test	UCG-Industrial
Test Report Serial Number	TR10652_01
Date of Test(s)	11 - 13, 26 November; 1 - 2, 20 December 2025; 15 and 23 January 2026
Report Issue Date	24 January 2026

Test Specification	Applicant
47 CFR FCC Part 15, Subpart E RSS-247, Issue 4 (July 2025)	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.



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 with the specifications provided by the manufacturer.

Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UBIQUITI
Model Number	UCG-Industrial
FCC ID	SWX-UCGT
ISED ID	6545A-UCGT

On this 24th day of January 2026, 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. Unified Compliance laboratory is not responsible for incorrect information provided by the manufacturer.

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Unified Compliance Laboratory


Written By: Joseph W. Jackson
Reviewed By: Clay Allred

Revision History		
Revision	Description	Date
01	Original Report Release	24 January 2026

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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	UCG-Industrial
Serial Number	C4E
Dimensions (cm)	30.8 x 20.0 x 4.4

2.2 Description of EUT

The UCG-Industrial is a rugged UniFi Console Gateway. The UCG-Industrial transmits in the 2.4 GHz and 5 GHz frequency bands using external antennas. The UCG-Industrial has one 10GbE SFP+ port, one 10GbE WAN port, and four 2.5 GbE LAN ports. The UCG-Industrial has two 64GB micro SD cards for extended storage. The UCG-Industrial has a Bluetooth transmitter for system management. The UCG-Industrial is powered from 110 - 240 AC Mains to 54.5 volts DC power.

The UCG-Industrial has two antenna options. A Monopole Antenna Model 117-05793 and a Dipole Antenna Model 117-06408. The Monopole Antenna has a gain of 3 dBi in the 2.4 GHz range and 5 dBi in the 5 GHz band. The Dipole Antenna has a gain of 6 dBi in both the 2.4 GHz and 5 GHz bands. For reporting purposes, the higher Dipole Antenna is reported unless otherwise stated.

For CDD transmissions, directional gain is calculated as follows.

Array Gain = $10 \log(\text{NANT}/\text{NSS})$ dB

NANT = number of transmit antennas and

NSS = number of spatial streams. NSS = 1 considered worst case.

For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for $\text{NANT} \leq 4$;

For PSD measurements when $\text{Nss}=1$: Array Gain = $10 \log(\text{NANT}/\text{NSS})$ dB + Antenna Gain (dBi). Or 3.01 dB + 6 dBi = 9.01 dBi.

The UCG-Industrial uses Transmit Power (TP) Control protocol and is included in the power tables of Section 5.4.

Band	Modulation Bandwidth	Frequency (MHz)
UNII-2A	20 MHz	5260, 5265, 5270, 5275, 5280, 5285, 5290, 5295, 5300, 5305, 5310, 5315, 5320
	40 MHz	5270, 5275, 5280, 5285, 5290, 5295, 5300, 5305, 5310
	80 MHz	5290

	160 MHz	5250
UNII-2C	20 MHz	5500, 5505, 5510, 5515, 5520, 5525, 5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600*, 5605*, 5610*, 5615*, 5620*, 5625*, 5630*, 5635*, 5640*, 5645*, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690, 5695, 5700, 5705, 5710, 5715, 5720
	40 MHz	5510, 5515, 5520, 5525, 5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600*, 5605*, 5610*, 5615*, 5620*, 5625*, 5630*, 5635*, 5640*, 5645*, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690, 5695, 5700, 5705, 5710
	80 MHz	5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600*, 5605*, 5610*, 5615*, 5620*, 5625*, 5630*, 5635*, 5640*, 5645*, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690
	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: UCG-Industrial (Note 1) SN: C4E	WiFi Switch	See Section 2.4
BN: UBIQUITI MN: ADS-350WAY-54-1540350E SN: N/A	Power Adapter	3 Conductor power cord to AC mains/80cm
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal Computer	Unshielded Cat 5e cable/1 meters

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
---------------	----------------------------	--------------------------

54 VDC Power Port	1	2 conductor power cable from power adapter/150 cm
10 GbE SFP+	1	Shielded cat 5E/7m
2.5 GbE LAN	4	Unshielded Cat 5E/7m
10 GbE WAN	1	Unshielded Cat 5E/7m

2.5 Operating Environment

Power Supply	120 Volts AC Mains to 54.5 Volts Output
AC Mains Frequency	60 Hz
Temperature	21.1 - 23.4 °C
Humidity	24.7 - 31.5 %
Barometric Pressure	1018 mBar

2.6 Operating Modes

The UCG-Industrial 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 a/be were investigated. All measurements are reported with the worst-case mode (802.11be maximum conducted output power and maximum power spectral density) 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

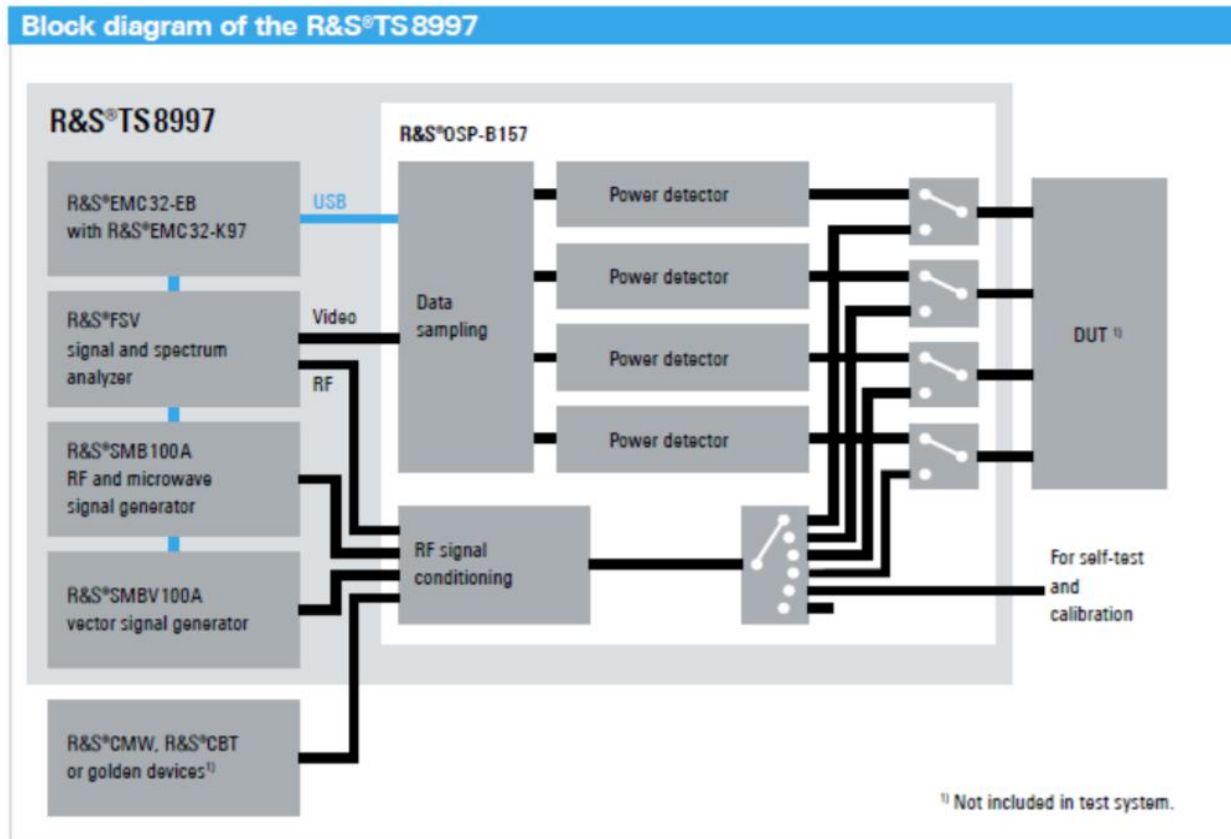


Diagram 1: Test Configuration Block Diagram

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
15.203	N/A	Antenna requirements	Structural Requirement	Compliant
15.207	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.407(a)	RSS-247 §6.2.2	Bandwidth Requirement	5260 to 5720	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5260 to 5720	Compliant
15.407(b)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A Note ¹
15.209	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 5720	Compliant
15.407(h)	RSS-247 §6.3	DFS Requirements	5260 to 5720	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.

Note ¹: Radiated Spurious was performed per 15.209 with the antenna unterminated.

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 2026. 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 2026.

Unified Compliance Laboratory has been assigned Registration Number 376708 by the FCC, MRA Designation Number US5037 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	11/18/2025	11/18/2026
LISN	AFJ	LS16C/10	UCL-2512	8/12/2025	8/12/2026
ISN	Teseq	ISN T800	UCL-2971	3/31/2025	3/31/2026
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	AFJ	AFJ FFT3010	UCL-3107	N/A	N/A

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

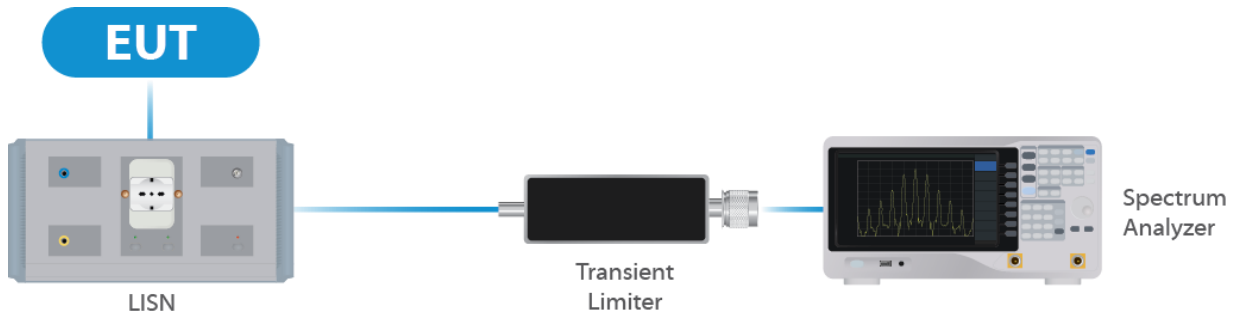


Figure 1: Conducted Emissions Test

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	FSV40	UCL-2861	1/16/2025	4/16/2026
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	4/28/2025	4/16/2026
Switch Extension	R&S	OSP-150W	UCL-2870	4/28/2025	4/16/2026
Test Software	R&S	EMC32	UCL-9442	--	--

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

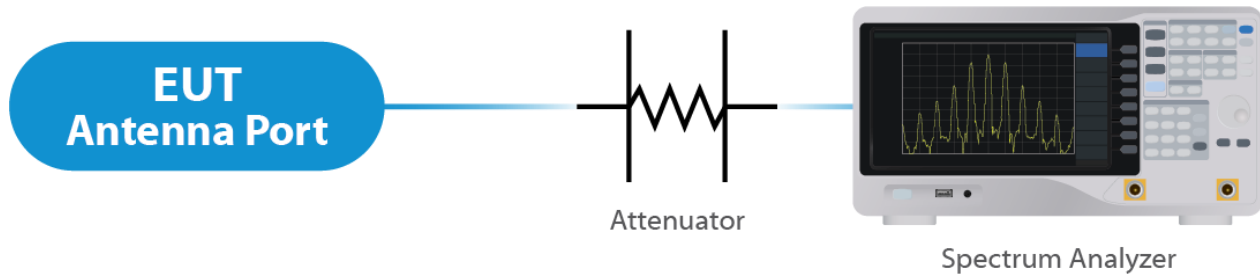


Figure 2: Direct Connect at the Antenna Port Test



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	12/18/2025	12/18/2026
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	7/22/2025	7/22/2026
Broadband Antenna	ETS-Lindgren	3142E	UCL-9782	2/6/2025	2/6/2026
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	4/2/2025	4/2/2027
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	2/11/2025	2/4/2027
10 - 40 GHz Horn Antenna	ETS-Lindgren	3116C	UCL-7209	6/6/2024	6/6/2026
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	7/22/2025	7/22/2026
Test Software	Nexio	BatEMC	UCL-5253 & UCL- 5249	N/A	N/A

Table 4: List of equipment used for Radiated Emissions

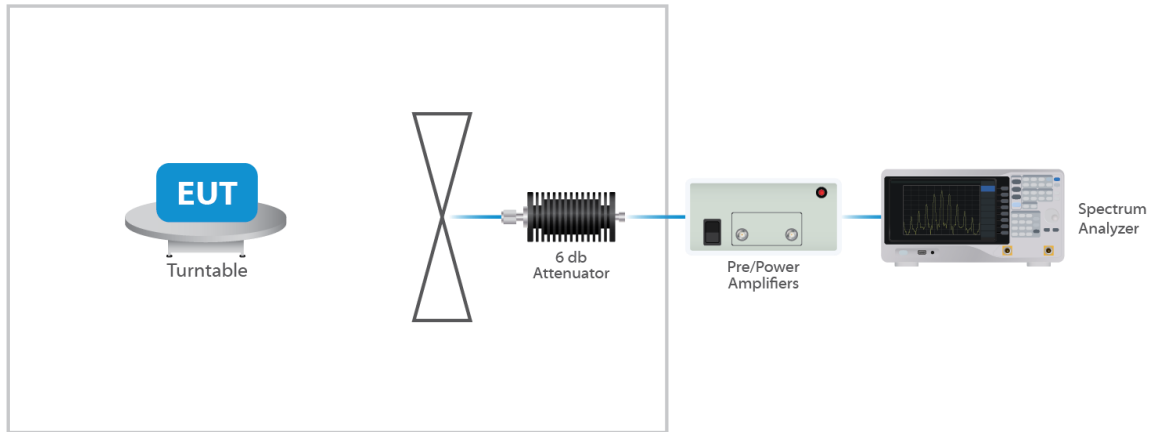


Figure 4: Radiated Emissions Test

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	5/20/2025	5/20/2026

4.4.1 Master Test Set Up

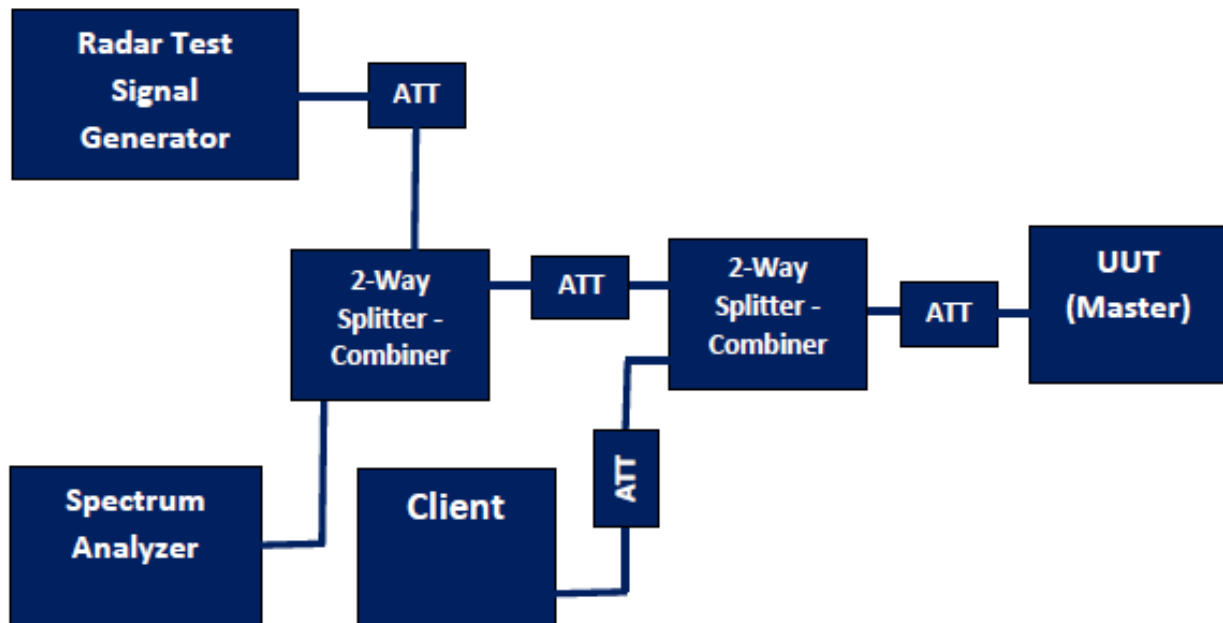


Figure 5: DFS Test Set Up - Master

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 ($\pm$ 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 internal antenna. Per the manufacturer, the Maximum gain of the Dipole Antenna per chain is 6 dBi. Per the manufacturer, the Maximum gain of the Monopole Antenna per chain is 3 dBi in the 2.4 GHz band and 5 dBi in the 5 GHz band. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable.

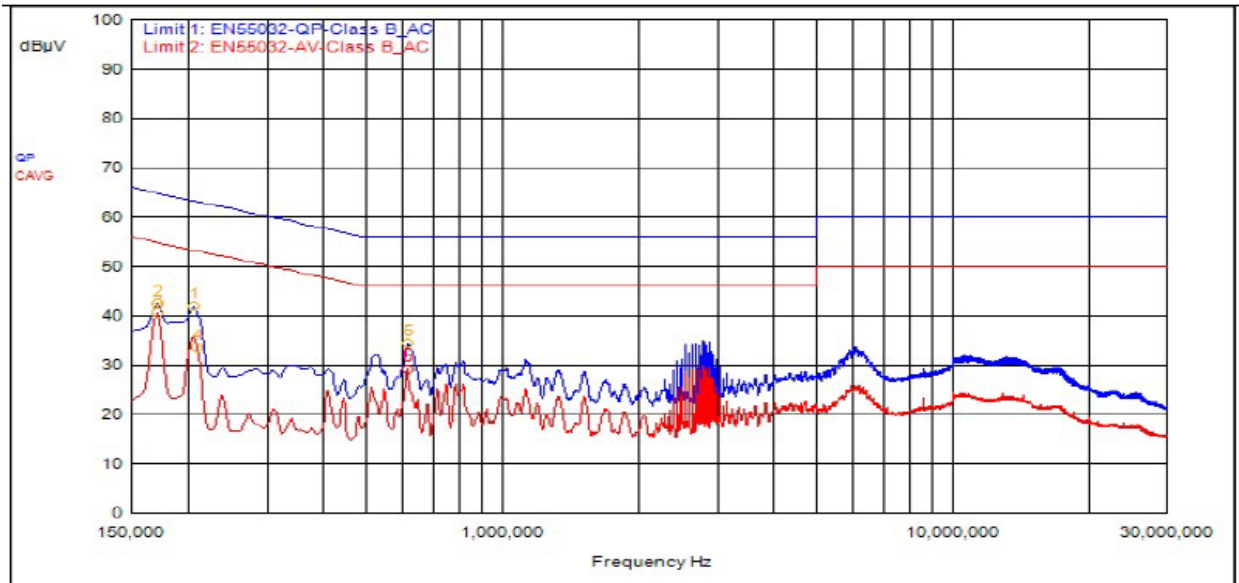
See Section 2.2 for directional gain calculation.

Results

The EUT complied with the specification

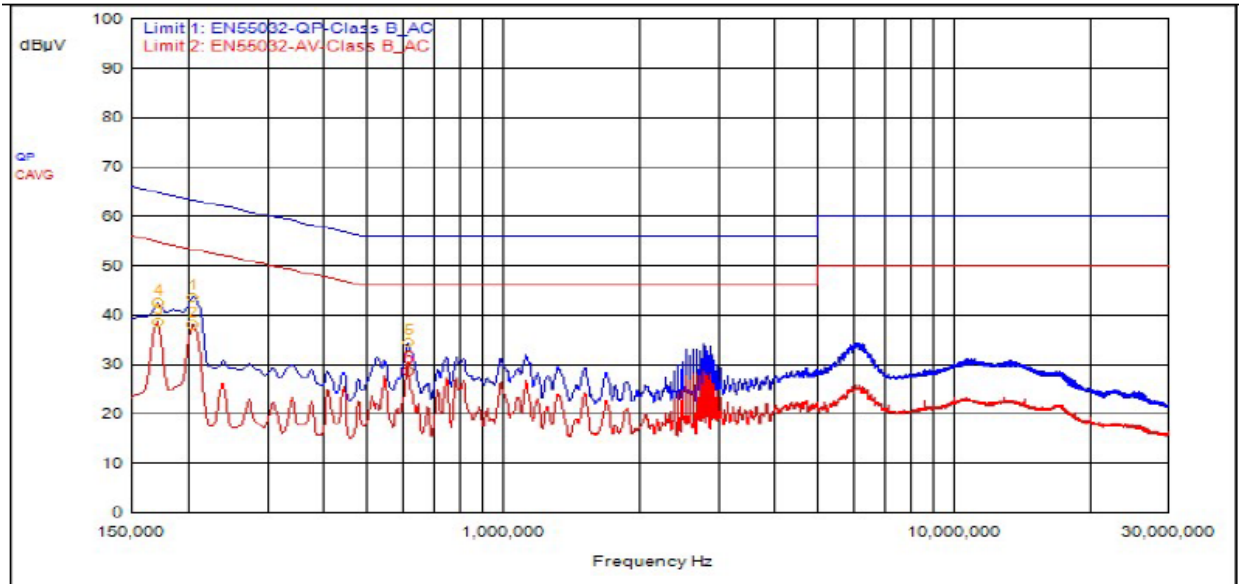
5.2 §15.207 Conducted Emissions at Mains Ports Data

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
1	207,000kHz	9.49			QPeak	32.41	41.90	63.32	-21.43			
5	618,000kHz	9.50			QPeak	24.81	34.31	56.00	-21.69			
2	171,000kHz	9.49			QPeak	33.14	42.63	64.91	-22.28			
3	171,000kHz	9.49			C_AVG	31.10	40.59			54.91	-14.32	
4	210,000kHz	9.49			C_AVG	24.22	33.71			53.21	-19.49	
6	615,000kHz	9.50			C_AVG	19.79	29.29			46.00	-16.71	

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	204,000kHz	9.62			QPeak	34.07	43.69	63.45	-19.76			
5	615,000kHz	9.58			QPeak	24.75	34.33	56.00	-21.67			
4	171,000kHz	9.62			QPeak	32.85	42.47	64.91	-22.44			
2	204,000kHz	9.62			C_AVG	28.55	38.17			53.45	-15.28	
3	171,000kHz	9.62			C_AVG	29.07	38.69			54.91	-16.22	
6	618,000kHz	9.58			C_AVG	19.02	28.60			46.00	-17.40	

Result

The EUT complied with the specification limit.

5.3 §15.407(a) 26 dB Emissions Bandwidth

All chains were measured under the guidance of KDB 789033 Section II.C. and KDB 662911 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)
OFDM 20	5260	16.9	22.8
OFDM 20	5280	16.9	22.5
OFDM 20	5320	17.1	22.4
EHT 20	5260	19.2	23.4
EHT 20	5280	19.3	23.3
EHT 20	5320	19.2	23.6
EHT 40	5270	38.3	44.0
EHT 40	5310	38.3	44.0
EHT 80	5290	78.0	86.5
EHT 160	5250	158.0	177.0

5.3.2 UNII-2C

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
OFDM 20	5500	17.1	22.8
OFDM 20	5600	17.1	22.5
OFDM 20	5720	17.1	22.7
EHT 20	5500	19.3	22.8
EHT 20	5600	19.2	22.7
EHT 20	5720	19.3	23.6
EHT 40	5510	38.5	43.5
EHT 40	5590	39.0	44.8
EHT 40	5710	39.0	44.8
EHT 80	5530	79.0	90.0
EHT 80	5610	79.0	87.0
EHT 80	5690	79.0	88.5
EHT 160	5570	157.7	173.0
EHT 240	5610	260.0	318.0

Result

All chains were tested and the highest bandwidth per chain is reported above. 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 662911 D01. Please see associated annex for details on instrument settings.

See Section 2.2 for directional gain calculation.

The maximum average RF conducted output power measured for this device was 23.96 dBm or 248.89 mW. The limit is 24 dBm or 250 mW when using antennas with 6 dBi or less gain. The Monopole Antenna has a gain of 5 dBi. The Dipole Antenna has a gain of 6 dBi.

5.4.1 UNII-2A

5.4.2 Dipole Antenna

Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss2	21	23.35	6	29.35	30	-0.65
OFDM 20	5280	Mcs0_Nss2	21	23.26	6	29.26	30	-0.74
OFDM 20	5320	Mcs0_Nss2	21	23.20	6	29.20	30	-0.80
EHT 20	5260	Mcs0_Nss2	21	23.48	6	29.48	30	-0.52
EHT 20	5280	Mcs0_Nss2	21	23.40	6	29.40	30	-0.60
EHT 20	5320	Mcs0_Nss2	21	23.30	6	29.30	30	-0.70
EHT 40	5270	Mcs0_Nss2	21	23.31	6	29.31	30	-0.69
EHT 40	5310	Mcs0_Nss2	21	23.17	6	29.17	30	-0.83
EHT 80	5290	Mcs0_Nss2	21	23.17	6	29.17	30	-0.83
EHT 160	5250	Mcs0_Nss2	21	23.58	6	29.58	30	-0.42

Nss=1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss1	18	20.35	6	26.35	30	-3.65
OFDM 20	5280	Mcs0_Nss1	18	20.26	6	26.26	30	-3.74
OFDM 20	5320	Mcs0_Nss1	18	20.20	6	26.20	30	-3.80
EHT 20	5260	Mcs0_Nss1	18	20.48	6	26.48	30	-3.52
EHT 20	5280	Mcs0_Nss1	18	20.40	6	26.40	30	-3.60
EHT 20	5320	Mcs0_Nss1	19	21.30	6	27.30	30	-2.70
EHT 40	5270	Mcs0_Nss1	21	23.31	6	29.31	30	-0.69
EHT 40	5310	Mcs0_Nss1	21	23.17	6	29.17	30	-0.83
EHT 80	5290	Mcs0_Nss1	21	23.17	6	29.17	30	-0.83
EHT 160	5250	Mcs0_Nss1	21	23.58	6	29.58	30	-0.42

5.4.3 Monopole Antenna
Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss2	21	23.35	5	28.35	30	-1.65
OFDM 20	5280	Mcs0_Nss2	21	23.26	5	28.26	30	-1.74
OFDM 20	5320	Mcs0_Nss2	21	23.20	5	28.20	30	-1.8
EHT 20	5260	Mcs0_Nss2	21	23.48	5	28.48	30	-1.52
EHT 20	5280	Mcs0_Nss2	21	23.40	5	28.40	30	-1.6
EHT 20	5320	Mcs0_Nss2	21	23.30	5	28.30	30	-1.7
EHT 40	5270	Mcs0_Nss2	21	23.31	5	28.31	30	-1.69
EHT 40	5310	Mcs0_Nss2	21	23.17	5	28.17	30	-1.83
EHT 80	5290	Mcs0_Nss2	21	23.17	5	28.17	30	-1.83
EHT 160	5250	Mcs0_Nss2	21	23.58	5	28.58	30	-1.42

Nss=1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss1	18	20.35	5	25.35	30	-4.65
OFDM 20	5280	Mcs0_Nss1	18	20.26	5	25.26	30	-4.74
OFDM 20	5320	Mcs0_Nss1	18	20.20	5	25.2	30	-4.8
EHT 20	5260	Mcs0_Nss1	18	20.48	5	25.48	30	-4.52
EHT 20	5280	Mcs0_Nss1	18	20.40	5	25.4	30	-4.6
EHT 20	5320	Mcs0_Nss1	19	21.30	5	26.3	30	-3.7
EHT 40	5270	Mcs0_Nss1	21	23.31	5	28.31	30	-1.69
EHT 40	5310	Mcs0_Nss1	21	23.17	5	28.17	30	-1.83
EHT 80	5290	Mcs0_Nss1	21	23.17	5	28.17	30	-1.83
EHT 160	5250	Mcs0_Nss1	21	23.58	5	28.58	30	-1.42

5.4.4 UNII-2C

5.4.5 Dipole Antenna

Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss1	21	23.06	6	29.06	30	-0.94
OFDM 20	5600	Mcs0_Nss1	21	22.88	6	28.88	30	-1.12
OFDM 20	5720	Mcs0_Nss1	21	22.94	6	28.94	30	-1.06
EHT 20	5500	Mcs0_Nss1	21	23.13	6	29.13	30	-0.87
EHT 20	5600	Mcs0_Nss1	21	23.07	6	29.07	30	-0.93
EHT 20	5720	Mcs0_Nss1	21	23.09	6	29.09	30	-0.91
EHT 40	5510	Mcs0_Nss1	21	22.88	6	28.88	30	-1.12
EHT 40	5590	Mcs0_Nss1	21	22.96	6	28.96	30	-1.04
EHT 40	5710	Mcs0_Nss1	21	23.03	6	29.03	30	-0.97
EHT 80	5530	Mcs0_Nss1	22	23.96	6	29.96	30	-0.04
EHT 80	5610	Mcs0_Nss1	21	23.06	6	29.06	30	-0.94
EHT 80	5690	Mcs0_Nss1	21	23.04	6	29.04	30	-0.96
EHT 160	5570	Mcs0_Nss1	21	23.19	6	29.19	30	-0.81
EHT 240	5610	Mcs0_Nss1	18	16.83	6	22.83	30	-7.17

Nss=1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss1	18	20.06	6	26.06	30	-3.94
OFDM 20	5600	Mcs0_Nss1	18	19.88	6	25.88	30	-4.12
OFDM 20	5720	Mcs0_Nss1	18	19.94	6	25.94	30	-4.06
EHT 20	5500	Mcs0_Nss1	18	20.13	6	26.13	30	-3.87
EHT 20	5600	Mcs0_Nss1	18	20.07	6	26.07	30	-3.93
EHT 20	5720	Mcs0_Nss1	18	20.09	6	26.09	30	-3.91
EHT 40	5510	Mcs0_Nss1	21	22.88	6	28.88	30	-1.12
EHT 40	5590	Mcs0_Nss1	21	22.96	6	28.96	30	-1.04
EHT 40	5710	Mcs0_Nss1	21	23.03	6	29.03	30	-0.97
EHT 80	5530	Mcs0_Nss1	22	23.96	6	29.96	30	-0.04
EHT 80	5610	Mcs0_Nss1	21	23.06	6	29.06	30	-0.94
EHT 80	5690	Mcs0_Nss1	21	23.04	6	29.04	30	-0.96
EHT 160	5570	Mcs0_Nss1	21	23.19	6	29.19	30	-0.81
EHT 240	5610	Mcs0_Nss1	18	16.83	6	22.83	30	-7.17

5.4.6 Monopole Antenna

Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss1	21	23.06	5	28.06	30	-1.94
OFDM 20	5600	Mcs0_Nss1	21	22.88	5	27.88	30	-2.12
OFDM 20	5720	Mcs0_Nss1	21	22.94	5	27.94	30	-2.06
EHT 20	5500	Mcs0_Nss1	21	23.13	5	28.13	30	-1.87
EHT 20	5600	Mcs0_Nss1	21	23.07	5	28.07	30	-1.93
EHT 20	5720	Mcs0_Nss1	21	23.09	5	28.09	30	-1.91
EHT 40	5510	Mcs0_Nss1	21	22.88	5	27.88	30	-2.12
EHT 40	5590	Mcs0_Nss1	21	22.96	5	27.96	30	-2.04
EHT 40	5710	Mcs0_Nss1	21	23.03	5	28.03	30	-1.97
EHT 80	5530	Mcs0_Nss1	22	23.96	5	28.96	30	-1.04
EHT 80	5610	Mcs0_Nss1	21	23.06	5	28.06	30	-1.94
EHT 80	5690	Mcs0_Nss1	21	23.04	5	28.04	30	-1.96
EHT 160	5570	Mcs0_Nss1	21	23.19	5	28.19	30	-1.81
EHT 240	5610	Mcs0_Nss1	18	16.83	5	21.83	30	-8.17

Nss=1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss1	18	20.06	5	25.06	30	-4.94
OFDM 20	5600	Mcs0_Nss1	18	19.88	5	24.88	30	-5.12
OFDM 20	5720	Mcs0_Nss1	18	19.94	5	24.94	30	-5.06
EHT 20	5500	Mcs0_Nss1	18	20.13	5	25.13	30	-4.87
EHT 20	5600	Mcs0_Nss1	18	20.07	5	25.07	30	-4.93
EHT 20	5720	Mcs0_Nss1	18	20.09	5	25.09	30	-4.91
EHT 40	5510	Mcs0_Nss1	21	22.88	5	27.88	30	-2.12
EHT 40	5590	Mcs0_Nss1	21	22.96	5	27.96	30	-2.04
EHT 40	5710	Mcs0_Nss1	21	23.03	5	28.03	30	-1.97
EHT 80	5530	Mcs0_Nss1	22	23.96	5	28.96	30	-1.04
EHT 80	5610	Mcs0_Nss1	21	23.06	5	28.06	30	-1.94
EHT 80	5690	Mcs0_Nss1	21	23.04	5	28.04	30	-1.96
EHT 160	5570	Mcs0_Nss1	21	23.19	5	28.19	30	-1.81
EHT 240	5610	Mcs0_Nss1	18	16.83	5	21.83	30	-8.17

Result

In the configuration tested, the maximum average RF output power was less than 0.250 watt; therefore, the EUT complied with the requirements of the specification.

* Gated EIRP shown in the Annex is the conducted measurement.

5.5 §15.407(b) Spurious Emissions

5.5.1 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 (dBi) + Cable Loss (dB) - Pre-Amplifier Gain (dB), and is added to the Receiver reading.

5.5.2 UNII-2A

QuasiPeak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
50.39 MHz	24.72	30.0	-5.28	118	2.99	Vertical	-11.52
56.86 MHz	29.95	30.0	-0.05	136	3.24	Vertical	-12.38
74.94 MHz	12.90	30.0	-17.10	22	2.48	Vertical	-18.00
108.96 MHz	27.50	30.0	-2.50	163	1.02	Vertical	-13.89
480.87 MHz	27.27	37.0	-9.73	253	1.02	Vertical	-8.13
483.49 MHz	25.37	37.0	-11.63	258	1.16	Vertical	-8.02
484.43 MHz	22.17	37.0	-14.83	258	1.13	Horizontal	-7.99
488.24 MHz	26.34	37.0	-10.66	190	2.22	Horizontal	-7.83
490.73 MHz	29.44	37.0	-7.56	297	1.81	Horizontal	-7.74
491.79 MHz	30.46	37.0	-6.54	282	2.14	Horizontal	-7.72
506.92 MHz	29.39	37.0	-7.61	202	1.51	Horizontal	-7.43

Table 5: Radiated Emissions 30 – 1000 MHz

Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
2.84 GHz	55.53	74.0	-18.47	236	1.631	Vertical	-12.75
4.80 GHz	49.40	74.0	-24.60	20	2.136	Vertical	-8.73
10.31 GHz	51.87	74.0	-22.13	95	2.639	Vertical	4.05
15.79 GHz	67.64	74.0	-6.36	98	2.136	Vertical	6.08
10.31 GHz	49.21	74.0	-24.79	252	1.632	Horizontal	4.05
15.79 GHz	66.50	74.0	-7.50	94	2.134	Horizontal	6.08

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
2.84 GHz	26.33	54.0	-27.67	236	1.631	Vertical	-12.75
4.80 GHz	36.69	54.0	-17.31	20	2.136	Vertical	-8.73
10.31 GHz	42.20	54.0	-11.80	95	2.639	Vertical	4.05
15.79 GHz	53.22	54.0	-0.78	98	2.136	Vertical	6.08
10.31 GHz	35.89	54.0	-18.11	252	1.632	Horizontal	4.05
15.79 GHz	51.96	54.0	-2.04	94	2.134	Horizontal	6.08

Table 6: Radiated Emissions 1 – 17 GHz at the Lowest Frequency

Peak

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
2.86 GHz	52.78	74.0	-21.22	239	1.63	Vertical	-12.72
4.82 GHz	48.63	74.0	-25.37	134	1.63	Vertical	-8.71
10.31 GHz	50.51	74.0	-23.49	69	1.63	Vertical	4.05
15.84 GHz	68.11	74.0	-5.89	76	2.133	Vertical	5.76
10.31 GHz	50.04	74.0	-23.96	142	2.637	Horizontal	4.05
15.84 GHz	64.96	74.0	-9.04	103	1.63	Horizontal	5.80

Avg

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
2.86 GHz	23.84	54.0	-30.16	239	1.63	Vertical	-12.72
4.82 GHz	35.87	54.0	-18.13	134	1.63	Vertical	-8.71
10.31 GHz	40.60	54.0	-13.40	69	1.63	Vertical	4.05
15.84 GHz	53.92	54.0	-0.08	76	2.133	Vertical	5.76
10.31 GHz	37.39	54.0	-16.61	142	2.637	Horizontal	4.05
15.84 GHz	50.75	54.0	-3.25	103	1.63	Horizontal	5.80

Table 7: Radiated Emissions 1 – 17 GHz at the Middle Frequency

Peak

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
2.87 GHz	54.93	74.0	-19.07	239	1.632	Vertical	-12.69
4.70 GHz	48.03	74.0	-25.97	130	1.63	Vertical	-8.95
10.31 GHz	51.96	74.0	-22.04	239	2.133	Vertical	4.05
15.96 GHz	65.12	74.0	-8.88	72	2.637	Vertical	5.91
15.96 GHz	66.48	74.0	-7.52	50	2.636	Horizontal	5.93

Avg

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
2.87 GHz	24.76	54.0	-29.24	239	1.632	Vertical	-12.69
4.70 GHz	34.41	54.0	-19.59	130	1.63	Vertical	-8.95
10.31 GHz	40.76	54.0	-13.24	239	2.133	Vertical	4.05
15.96 GHz	51.29	54.0	-2.71	72	2.637	Vertical	5.91
15.96 GHz	52.37	54.0	-1.63	50	2.636	Horizontal	5.93

Table 8: Radiated Emissions 1 – 17 GHz at the Highest Frequency

Peak

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
19.30 GHz	50.28	74.0	-23.72	1	Vertical	0.06
21.12 GHz	64.35	74.0	-9.65	345	Vertical	1.84
26.41 GHz	61.58	74.0	-12.41	357	Vertical	2.19
21.13 GHz	60.77	74.0	-13.23	350	Horizontal	1.85
26.39 GHz	55.14	74.0	-18.86	13	Horizontal	1.27
36.28 GHz	58.86	74.0	-15.14	92	Horizontal	7.09
39.48 GHz	60.03	74.0	-13.97	270	Horizontal	6.88

Avg

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
19.30 GHz	36.32	54.0	-17.68	1	Vertical	0.06
21.12 GHz	50.69	54.0	-3.31	345	Vertical	1.84
26.41 GHz	46.80	54.0	-7.20	357	Vertical	2.19
21.13 GHz	46.53	54.0	-7.47	350	Horizontal	1.85
26.39 GHz	40.73	54.0	-13.27	13	Horizontal	1.27
36.28 GHz	42.52	54.0	-11.48	92	Horizontal	7.09
39.48 GHz	44.18	54.0	-9.82	270	Horizontal	6.88

Table 9: Radiated Emissions 17 – 40 GHz at the Middle Frequency (worse case)

5.5.3 UNII-2C

QuasiPeak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
50.39 MHz	24.72	30.0	-5.28	118	2.99	Vertical	-11.52
56.86 MHz	29.95	30.0	-0.05	136	3.24	Vertical	-12.38
74.94 MHz	12.90	30.0	-17.10	22	2.48	Vertical	-18.00
108.96 MHz	27.50	30.0	-2.50	163	1.02	Vertical	-13.89
480.87 MHz	27.27	37.0	-9.73	253	1.02	Vertical	-8.13
483.49 MHz	25.37	37.0	-11.63	258	1.16	Vertical	-8.02
484.43 MHz	22.17	37.0	-14.83	258	1.13	Horizontal	-7.99
488.24 MHz	26.34	37.0	-10.66	190	2.22	Horizontal	-7.83
490.73 MHz	29.44	37.0	-7.56	297	1.81	Horizontal	-7.74
491.79 MHz	30.46	37.0	-6.54	282	2.14	Horizontal	-7.72
506.92 MHz	29.39	37.0	-7.61	202	1.51	Horizontal	-7.43

Table 10: Radiated Emissions 30 – 1000 MHz

Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
6.12 GHz	45.55	74.0	-28.45	99	1.63	Vertical	-6.10
11.01 GHz	48.61	74.0	-25.39	64	1.63	Vertical	5.28
16.51 GHz	69.52	74.0	-4.48	111	2.135	Vertical	8.05
10.31 GHz	49.95	74.0	-24.05	83	1.628	Horizontal	4.05
16.51 GHz	67.21	74.0	6.79	55	1.633	Horizontal	8.04

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
6.12 GHz	32.89	54.0	-21.11	99	1.63	Vertical	-6.10
11.01 GHz	35.45	54.0	-18.55	64	1.63	Vertical	5.28
16.51 GHz	53.85	54.0	-0.15	111	2.135	Vertical	8.05
10.31 GHz	39.37	54.0	-14.63	83	1.628	Horizontal	4.05
16.51 GHz	51.22	54.0	-2.78	55	1.633	Horizontal	8.04

Table 11: Radiated Emissions 1 – 17 GHz at the Lowest Frequency

Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.68 GHz	53.05	74.0	-20.95	240	1.628	Vertical	9.79
16.82 GHz	72.13	74.0	-1.87	125	2.135	Vertical	9.42
10.31 GHz	49.17	74.0	-24.83	98	1.631	Horizontal	4.05
16.80 GHz	69.60	74.0	-4.40	58	1.632	Horizontal	9.08

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.68 GHz	40.03	54.0	-13.97	240	1.628	Vertical	9.79
16.82 GHz	52.60	54.0	-1.40	125	2.135	Vertical	9.42
10.31 GHz	38.20	54.0	-15.80	98	1.631	Horizontal	4.05
16.80 GHz	53.31	54.0	-0.69	58	1.632	Horizontal	9.08

Table 12: Radiated Emissions 1 – 17 GHz at the Middle Frequency

Peak

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
6.04 GHz	51.40	74.0	-22.60	229	2.638	Vertical	-6.40
11.46 GHz	48.80	74.0	-25.20	252	3.144	Vertical	-5.62
14.77 GHz	52.88	74.0	-21.12	190	3.808	Vertical	-9.69
10.31 GHz	48.34	74.0	-25.66	234	1.5	Horizontal	4.05

Avg

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
6.04 GHz	39.20	54.0	-14.80	229	2.638	Vertical	-6.40
11.46 GHz	35.83	54.0	-18.17	252	3.144	Vertical	-5.62
14.77 GHz	40.03	54.0	-13.97	190	3.808	Vertical	-9.69
10.31 GHz	35.07	54.0	-18.93	234	1.5	Horizontal	4.05

Table 13: Radiated Emissions 1 – 17 GHz at the Highest Frequency

Peak

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
16.79 GHz	70.00	74.0	-4.00	33	Vertical	1.98
20.63 GHz	51.93	74.0	-22.07	10	Vertical	0.24
22.39 GHz	54.18	74.0	-19.82	2	Vertical	0.92
27.99 GHz	54.73	74.0	-19.27	25	Vertical	3.21
16.80 GHz	69.81	74.0	-4.19	324	Horizontal	1.96
19.30 GHz	52.20	74.0	-21.80	30	Horizontal	0.06
22.40 GHz	55.20	74.0	-18.80	56	Horizontal	0.89
31.08 GHz	54.43	74.0	-19.57	158	Horizontal	2.14

Avg

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
16.79 GHz	52.09	54.0	-1.91	33	Vertical	1.98
20.63 GHz	40.69	54.0	-13.31	10	Vertical	0.24
22.39 GHz	39.94	54.0	-14.06	2	Vertical	0.92
27.99 GHz	40.85	54.0	-13.15	25	Vertical	3.21
16.80 GHz	53.78	54.0	-0.22	324	Horizontal	1.96
19.30 GHz	40.98	54.0	-13.02	30	Horizontal	0.06
22.40 GHz	45.98	54.0	-8.02	56	Horizontal	0.89
31.08 GHz	40.01	54.0	-13.99	158	Horizontal	2.14

Table 14: Radiated Emissions 17 – 40 GHz at the Middle Frequency (worse 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 662911 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 6 dBi antenna, the conducted limit for power spectral density is 11 dBm.

See Section 2.2 for directional gain calculation.

Results of this testing are summarized.

5.6.1 UNII-2A

5.6.2 Dipole Antenna

Nss>1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss2	21	10.84	6	11	-0.16
OFDM 20	5280	Mcs0_Nss2	21	10.64	6	11	-0.36
OFDM 20	5320	Mcs0_Nss2	21	10.52	6	11	-0.48
EHT 20	5260	Mcs0_Nss2	21	10.39	6	11	-0.61
EHT 20	5280	Mcs0_Nss2	21	10.15	6	11	-0.85
EHT 20	5320	Mcs0_Nss2	21	9.98	6	11	-1.02
EHT 40	5270	Mcs0_Nss2	21	7.30	6	11	-3.70
EHT 40	5310	Mcs0_Nss2	21	6.74	6	11	-4.26
EHT 80	5290	Mcs0_Nss2	21	4.15	6	11	-6.85
EHT 160	5250	Mcs0_Nss2	21	1.55	6	11	-9.45

Nss=1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss1	18	7.84	6	7.99	-0.15
OFDM 20	5280	Mcs0_Nss1	18	7.64	6	7.99	-0.35
OFDM 20	5320	Mcs0_Nss1	18	7.52	6	7.99	-0.47
EHT 20	5260	Mcs0_Nss1	18	7.39	6	7.99	-0.60
EHT 20	5280	Mcs0_Nss1	18	7.15	6	7.99	-0.84
EHT 20	5320	Mcs0_Nss1	19	7.98	6	7.99	-0.01
EHT 40	5270	Mcs0_Nss1	21	7.30	6	7.99	-0.69
EHT 40	5310	Mcs0_Nss1	21	6.74	6	7.99	-1.25
EHT 80	5290	Mcs0_Nss1	21	4.15	6	7.99	-3.84
EHT 160	5250	Mcs0_Nss1	21	1.55	6	7.99	-6.44

5.6.3 Monopole Antenna

Nss>1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss2	21	9.84	5	11	-1.16
OFDM 20	5280	Mcs0_Nss2	21	9.64	5	11	-1.36
OFDM 20	5320	Mcs0_Nss2	21	9.52	5	11	-1.48
EHT 20	5260	Mcs0_Nss2	21	9.39	5	11	-1.61
EHT 20	5280	Mcs0_Nss2	21	9.15	5	11	-1.85
EHT 20	5320	Mcs0_Nss2	21	8.98	5	11	-2.02
EHT 40	5270	Mcs0_Nss2	21	6.3	5	11	-4.7
EHT 40	5310	Mcs0_Nss2	21	5.74	5	11	-5.26
EHT 80	5290	Mcs0_Nss2	21	3.15	5	11	-7.85
EHT 160	5250	Mcs0_Nss2	21	0.55	5	11	-10.45

Nss=1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5260	Mcs0_Nss1	18	6.84	5	8.99	-2.15
OFDM 20	5280	Mcs0_Nss1	18	6.64	5	8.99	-2.35
OFDM 20	5320	Mcs0_Nss1	18	6.52	5	8.99	-2.47
EHT 20	5260	Mcs0_Nss1	18	6.39	5	8.99	-2.6
EHT 20	5280	Mcs0_Nss1	18	6.15	5	8.99	-2.84
EHT 20	5320	Mcs0_Nss1	19	6.98	5	8.99	-2.01
EHT 40	5270	Mcs0_Nss1	21	6.30	5	8.99	-2.69
EHT 40	5310	Mcs0_Nss1	21	5.74	5	8.99	-3.25
EHT 80	5290	Mcs0_Nss1	21	3.15	5	8.99	-5.84
EHT 160	5250	Mcs0_Nss1	21	0.55	5	8.99	-8.44

5.6.4 UNII-2C

5.6.5 Dipole Antenna

Nss>1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss2	21	10.63	6	11	-0.37
OFDM 20	5600	Mcs0_Nss2	21	10.61	6	11	-0.39
OFDM 20	5720	Mcs0_Nss2	21	10.50	6	11	-0.5
EHT 20	5500	Mcs0_Nss2	21	10.18	6	11	-0.82
EHT 20	5600	Mcs0_Nss2	21	10.18	6	11	-0.82
EHT 20	5720	Mcs0_Nss2	21	10.14	6	11	-0.86
EHT 40	5510	Mcs0_Nss2	21	6.75	6	11	-4.25
EHT 40	5590	Mcs0_Nss2	21	7.02	6	11	-3.98
EHT 40	5710	Mcs0_Nss2	21	6.82	6	11	-4.18
EHT 80	5530	Mcs0_Nss2	22	5.01	6	11	-5.99
EHT 80	5610	Mcs0_Nss2	21	4.02	6	11	-6.98
EHT 80	5690	Mcs0_Nss2	21	3.89	6	11	-7.11
EHT 160	5570	Mcs0_Nss2	21	1.29	6	11	-9.71
EHT 240	5610	Mcs0_Nss2	18	-3.43	6	11	-14.43

Nss=1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss2	18	7.63	6	7.99	-0.36
OFDM 20	5600	Mcs0_Nss2	18	7.61	6	7.99	-0.38
OFDM 20	5720	Mcs0_Nss2	18	7.50	6	7.99	-0.49
EHT 20	5500	Mcs0_Nss2	18	7.18	6	7.99	-0.81
EHT 20	5600	Mcs0_Nss2	18	7.18	6	7.99	-0.81
EHT 20	5720	Mcs0_Nss2	18	7.14	6	7.99	-0.85
EHT 40	5510	Mcs0_Nss2	21	6.75	6	7.99	-1.24
EHT 40	5590	Mcs0_Nss2	21	7.02	6	7.99	-0.97
EHT 40	5710	Mcs0_Nss2	21	6.82	6	7.99	-1.17
EHT 80	5530	Mcs0_Nss2	22	5.01	6	7.99	-2.98
EHT 80	5610	Mcs0_Nss2	21	4.02	6	7.99	-3.97
EHT 80	5690	Mcs0_Nss2	21	3.89	6	7.99	-4.1
EHT 160	5570	Mcs0_Nss2	21	1.29	6	7.99	-6.7
EHT 240	5610	Mcs0_Nss2	18	-3.43	6	7.99	-11.42

5.6.6 Monopole Antenna

Nss>1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss2	21	9.63	5	11	-1.37
OFDM 20	5600	Mcs0_Nss2	21	9.61	5	11	-1.39
OFDM 20	5720	Mcs0_Nss2	21	9.50	5	11	-1.50
EHT 20	5500	Mcs0_Nss2	21	9.18	5	11	-1.82
EHT 20	5600	Mcs0_Nss2	21	9.18	5	11	-1.82
EHT 20	5720	Mcs0_Nss2	21	9.14	5	11	-1.86
EHT 40	5510	Mcs0_Nss2	21	5.75	5	11	-5.25
EHT 40	5590	Mcs0_Nss2	21	6.02	5	11	-4.98
EHT 40	5710	Mcs0_Nss2	21	5.82	5	11	-5.18
EHT 80	5530	Mcs0_Nss2	22	4.01	5	11	-6.99
EHT 80	5610	Mcs0_Nss2	21	3.02	5	11	-7.98
EHT 80	5690	Mcs0_Nss2	21	2.89	5	11	-8.11
EHT 160	5570	Mcs0_Nss2	21	0.29	5	11	-10.71
EHT 240	5610	Mcs0_Nss2	18	-4.43	5	11	-15.43

Nss=1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5500	Mcs0_Nss2	18	6.63	5	8.99	-2.36
OFDM 20	5600	Mcs0_Nss2	18	6.61	5	8.99	-2.38
OFDM 20	5720	Mcs0_Nss2	18	6.5	5	8.99	-2.49
EHT 20	5500	Mcs0_Nss2	18	6.18	5	8.99	-2.81
EHT 20	5600	Mcs0_Nss2	18	6.18	5	8.99	-2.81
EHT 20	5720	Mcs0_Nss2	18	6.14	5	8.99	-2.85
EHT 40	5510	Mcs0_Nss2	21	5.75	5	8.99	-3.24
EHT 40	5590	Mcs0_Nss2	21	6.02	5	8.99	-2.97
EHT 40	5710	Mcs0_Nss2	21	5.82	5	8.99	-3.17
EHT 80	5530	Mcs0_Nss2	22	4.01	5	8.99	-4.98
EHT 80	5610	Mcs0_Nss2	21	3.02	5	8.99	-5.97
EHT 80	5690	Mcs0_Nss2	21	2.89	5	8.99	-6.1
EHT 160	5570	Mcs0_Nss2	21	0.29	5	8.99	-8.7
EHT 240	5610	Mcs0_Nss2	18	-4.43	5	8.99	-13.42

Result

The maximum average power spectral density was less than the limit of 11 dBm (adjusted limit of 7.99 for Nss1); 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	Dipole 6 dBi, Monopole 5 dBi
Antenna used for test	Dipole 6 dBi
Operating mode	Master
If Client	N/A
Port used for testing	A0/A1
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	116s
Detection threshold level	-56.7 dBm

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

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

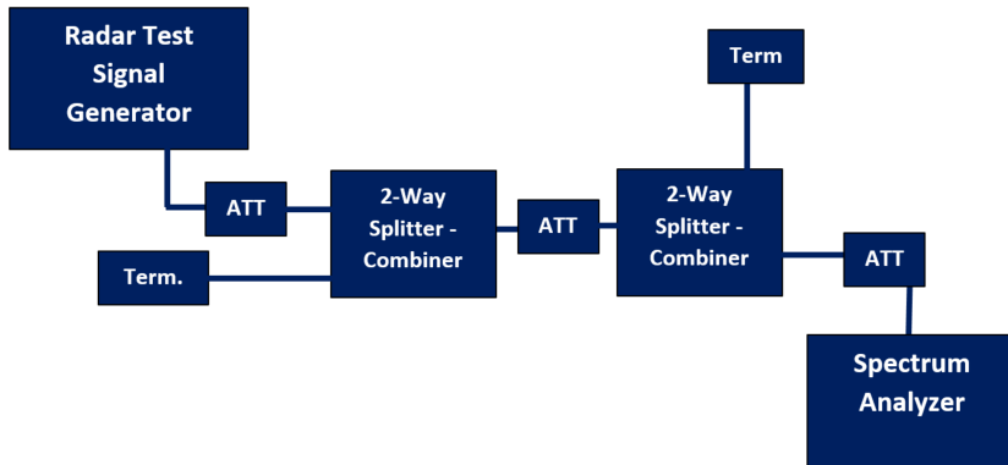


Figure 6: DFS injection at Master conducted setup

Parameter	Value
<i>Non-occupancy period</i>	Minimum 30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds See Note 1.
<i>Channel Closing Transmission Time</i>	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
<i>U-NII Detection Bandwidth</i>	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> 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 <i>U-NII Detection Bandwidth</i> 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 15: DFS Timing requirements

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

Table 16: DFS Detection Threshold

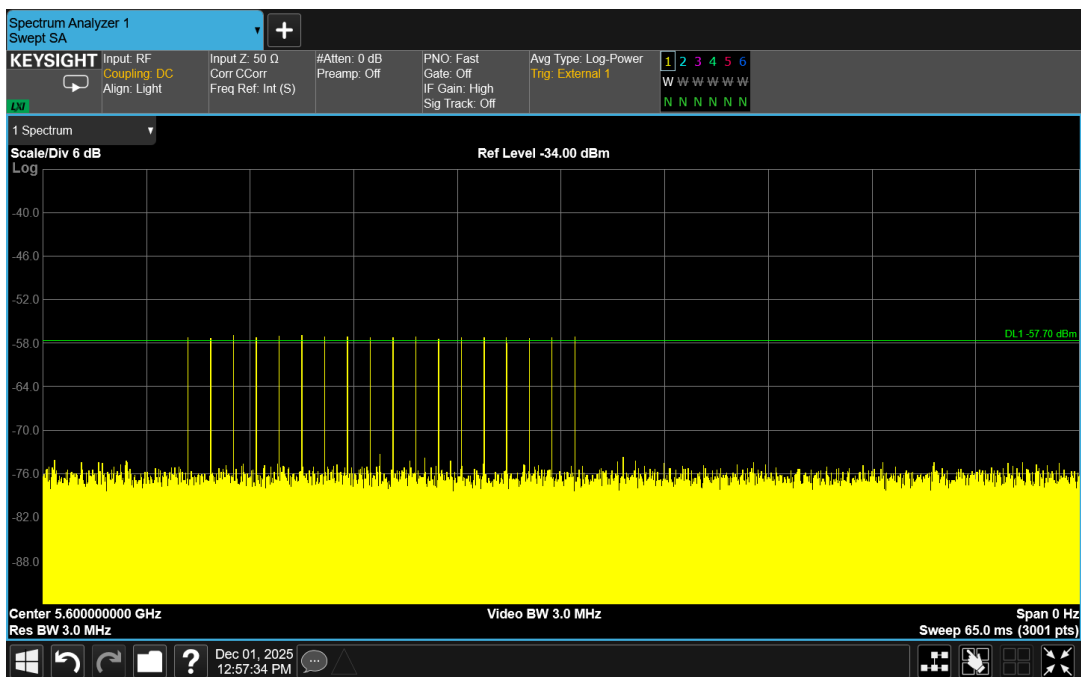
Radar Type	Pulse Width (μ sec)	PRI (μ sec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A	$\text{Roundup} \left\{ \begin{array}{l} \left(\frac{1}{360} \right) \cdot \\ \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \end{array} \right\}$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

Table 17: Short Pulse Radar Types

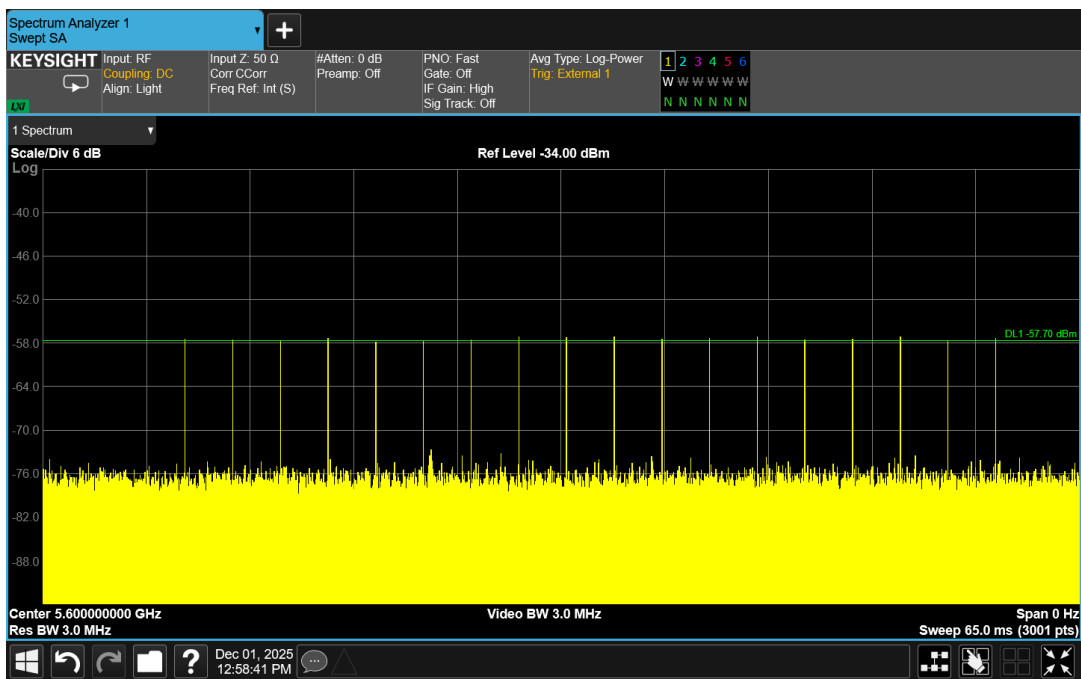
Radar Type	Pulse Width (μ sec)	Chirp Width (MHz)	PRI (μ sec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Radar Type	Pulse Width (μ sec)	PRI (μ sec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

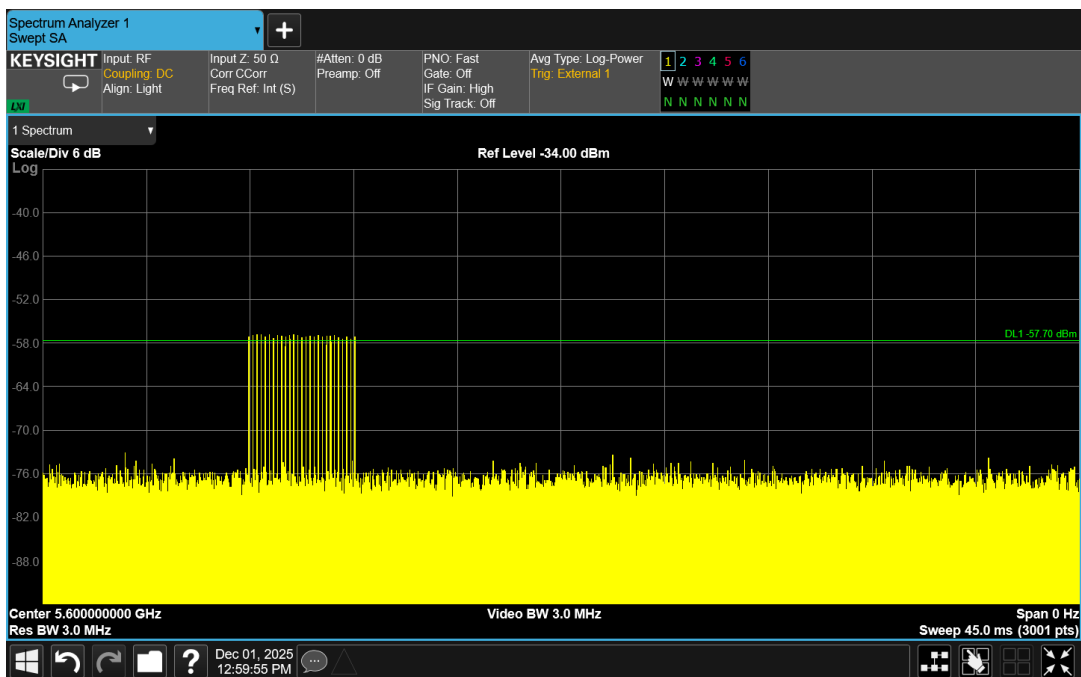
Table 18: Long Pulse Radar Types for In-service Monitoring



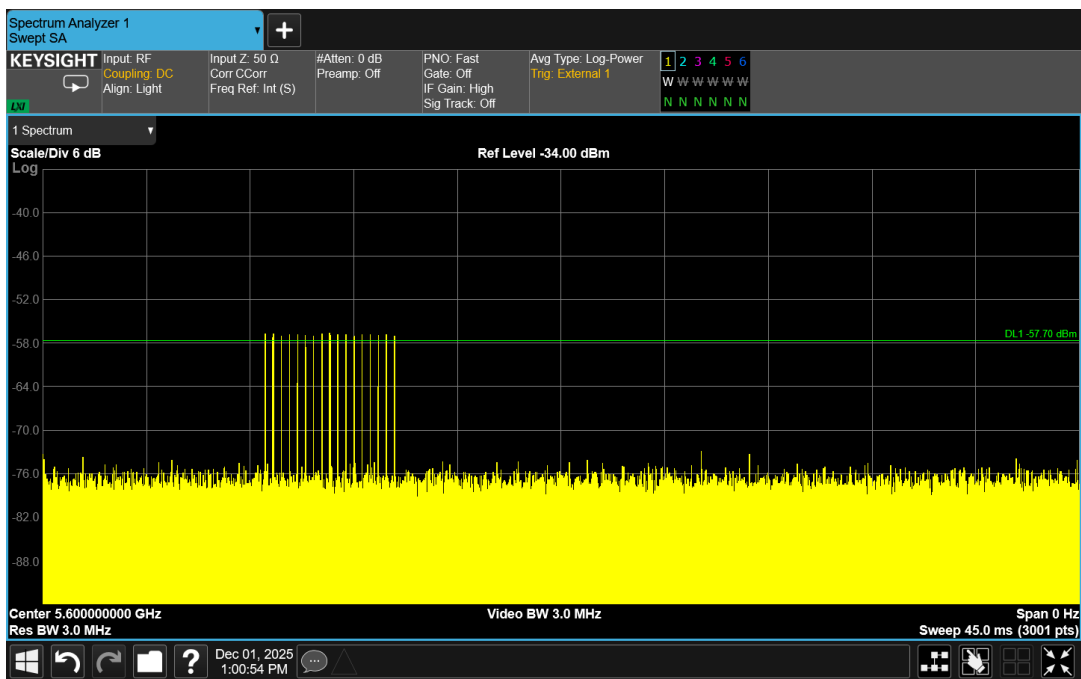
Plot 1: Radar Level 0



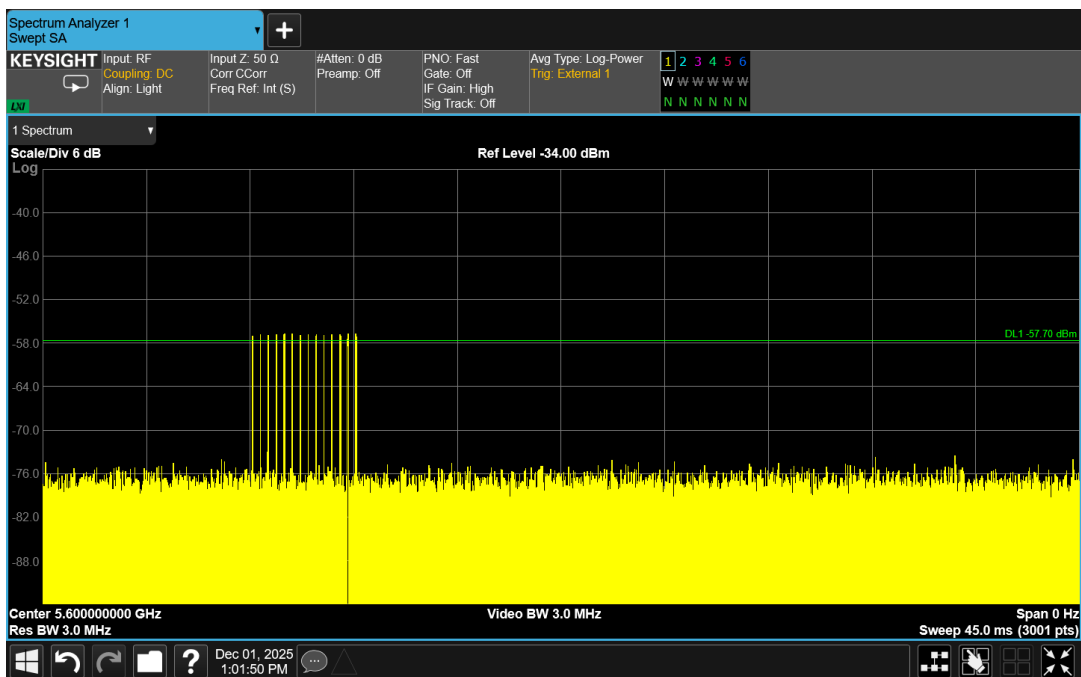
Plot 2: Radar Level 1



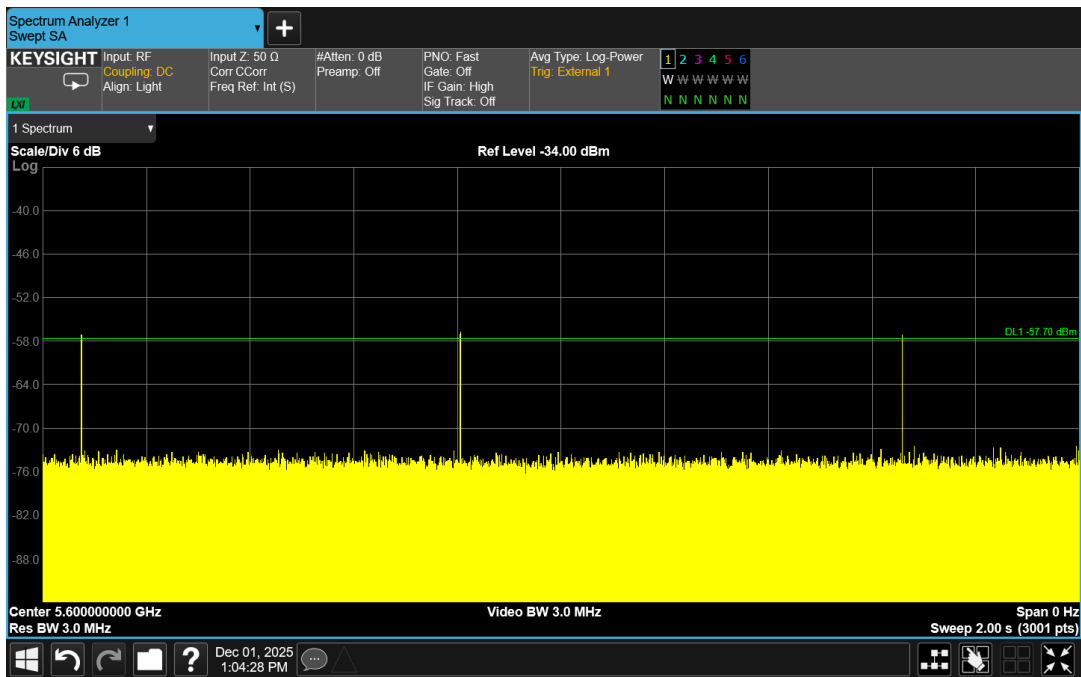
Plot 3: Radar Level 2



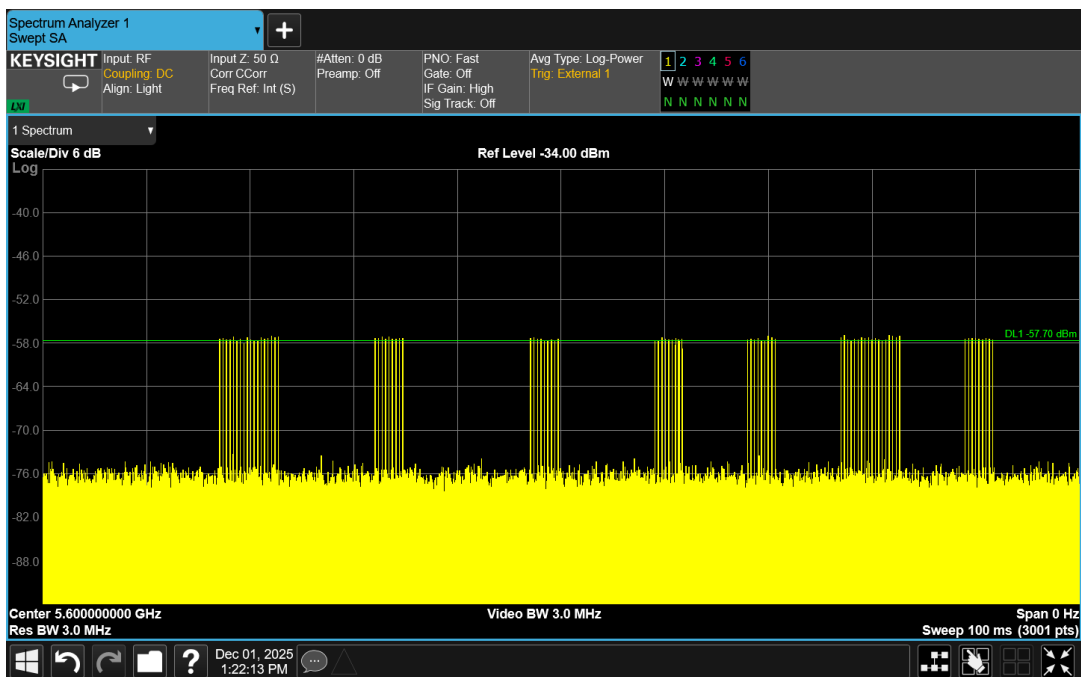
Plot 4: Radar Level 3



Plot 5: Radar Level 4



Plot 6: Radar Level 5



Plot 7: Radar Level 6

5.7.1 Channel Availability Check (CAC)

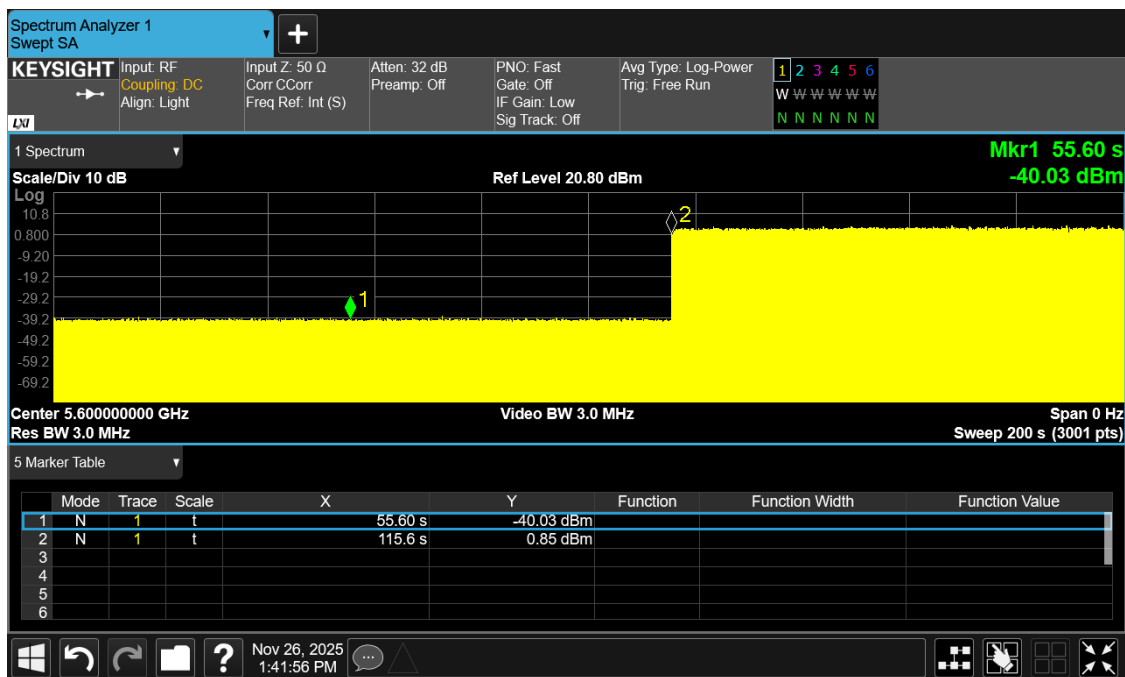
The EUT shall perform a CAC to ensure that there is no radar operating on the channel. After the power-up sequence, at-least 1 minute shall be monitored on the intended operating frequency.

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.

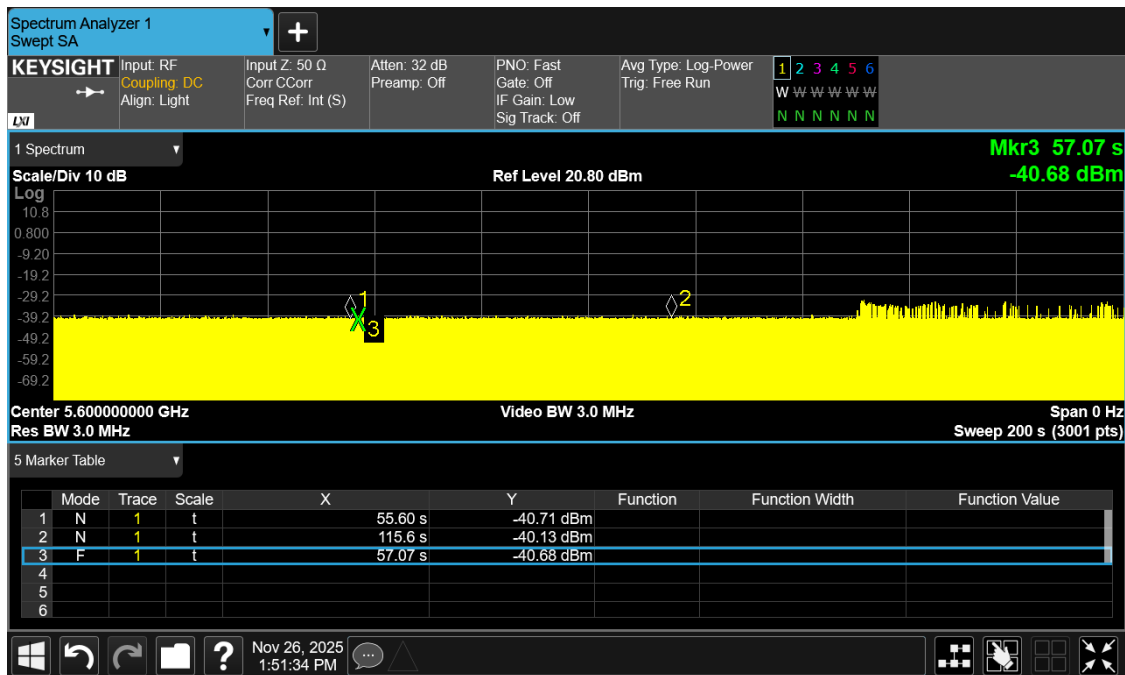
For radar burst at the beginning of the CAC. To verify successful radar detection on the selected channel during a period equal to the beginning of the CAC time, visual indication on the EUT of successful detection of the radar burst will be recorded and reported. Observation of the radar burst is show 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.

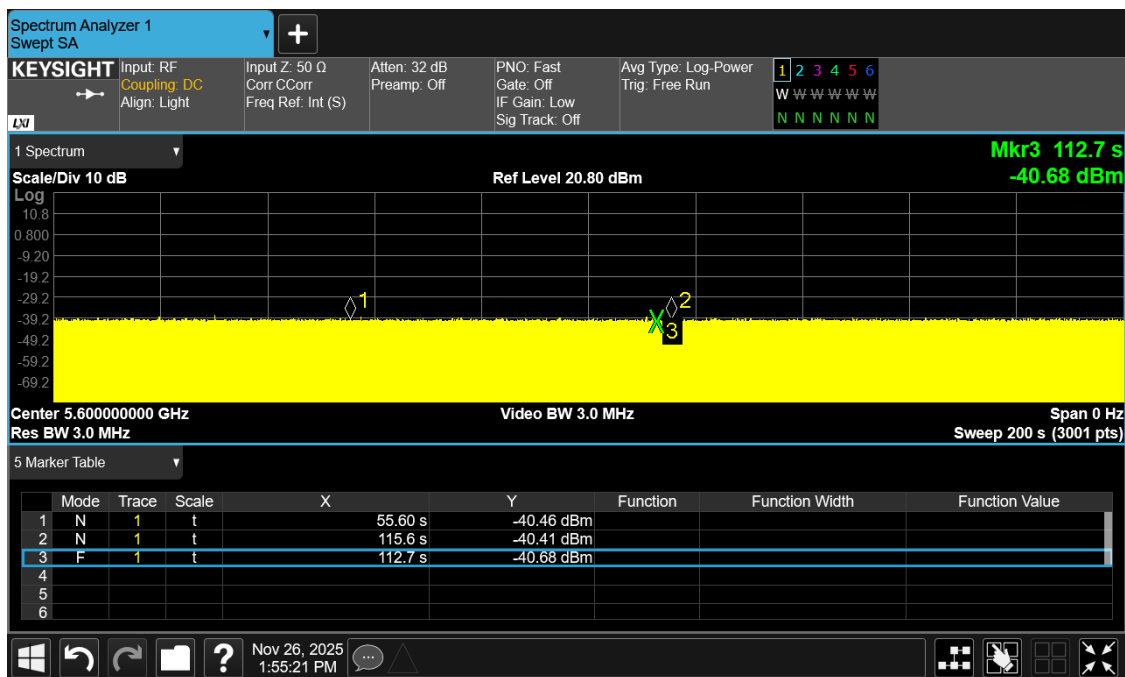
A spectrum analyzer is used as a monitor to verify that the EUT has vacated the channel within the channel closing transmission time and channel move time, and does not transmit on a channel during the non-occupancy period after the detection and channel move.



Plot 8: DUT Turn On



Plot 9: Beginning



Plot 10: End

5.7.2 In-service Monitoring

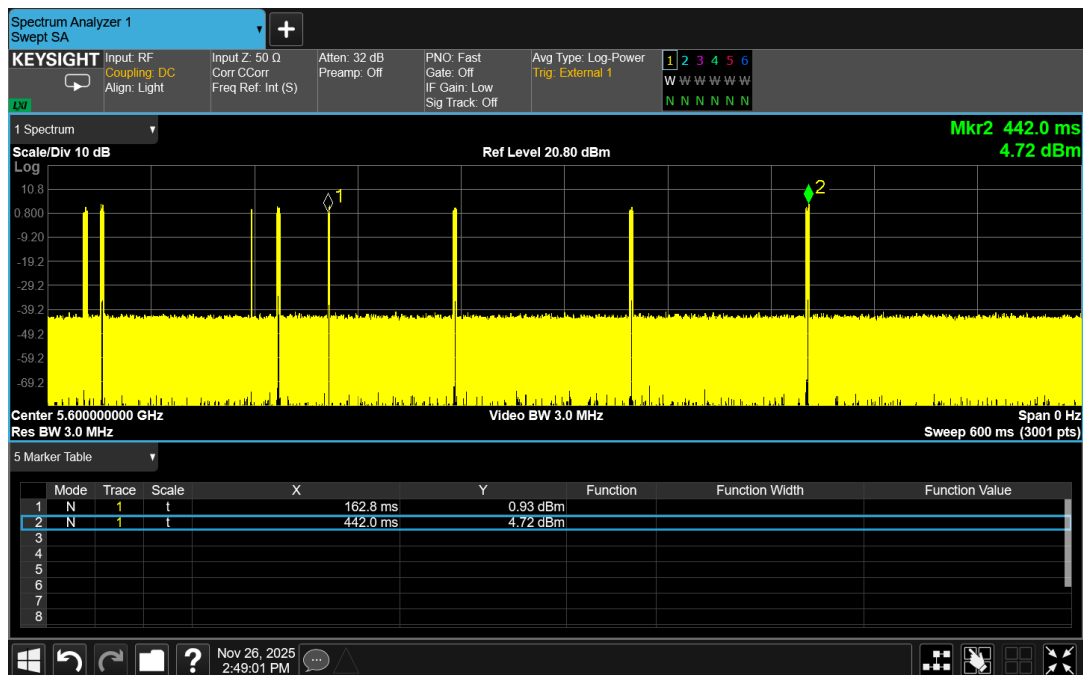
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 ms + aggregate of 60 ms over remaining 10 second period
Non-occupancy period	Minimum 30 minutes

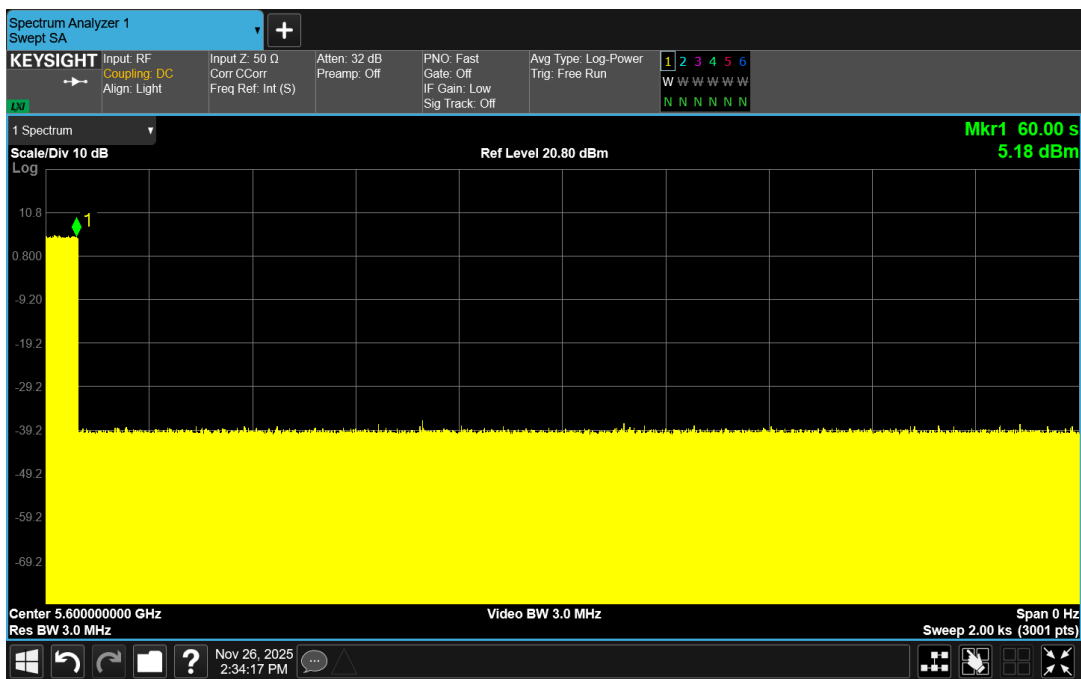
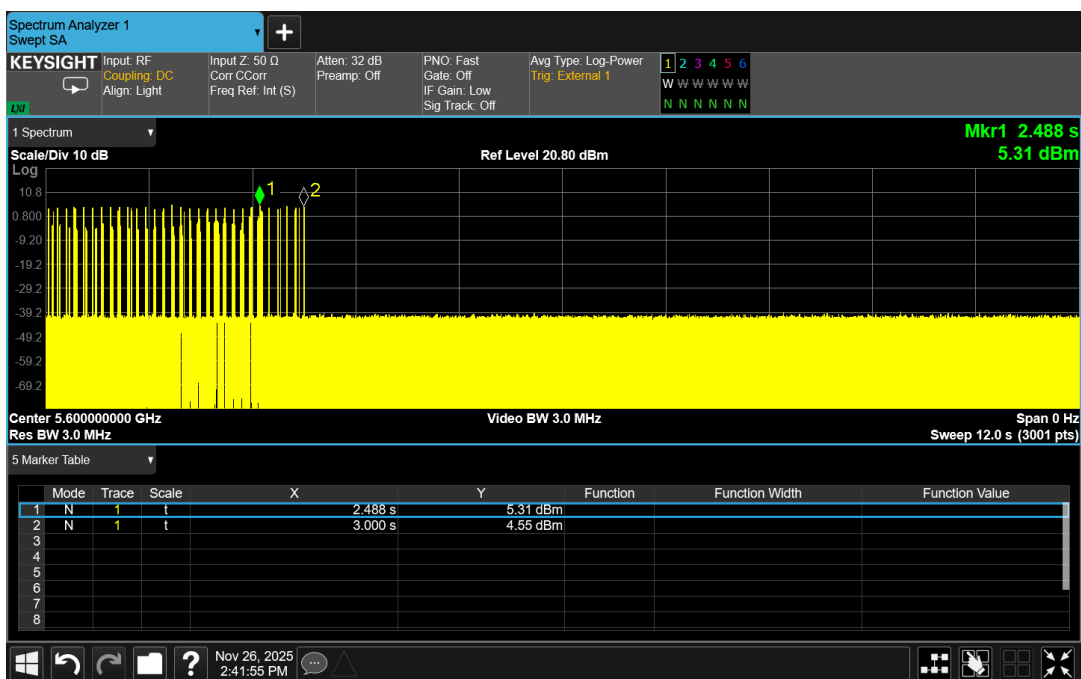
Verified during in-service monitoring: channel closing transmission time and channel move time. The transmissions were observed at the end of the radar burst on the operating channel for a duration of greater than 10 seconds. The transmissions were measured and recorded during the observation time. This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





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	1	100
5590	1	1	1	1	1	1	1	1	1	1	1	100
5610	1	1	1	1	1	1	1	1	1	1	1	100
5630	1	1	1	1	1	1	1	1	1	1	1	100
F_High 5650	0	1	1	1	1	1	1	1	1	1	1	90
Total Detection Percentage												98
Detection Bandwidth = FH-FL = 5570 MHz - 5650 MHz = 80 MHz												
99% Bandwidth = 79.2 MHz												

160 MHz

EUT Frequency = 5570 MHz ; Bandwidth = 160 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 5490	0	1	1	1	1	1	1	1	1	1	90	
5510	1	1	1	1	1	1	1	1	1	1	100	
5530	1	1	1	1	1	1	1	1	1	1	100	
5550	1	1	1	1	1	1	1	1	1	1	100	
5570	1	1	1	0	1	0	1	1	1	1	80	
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											96.66666667	
Detection Bandwidth = FH-FL = 5490 MHz - 5650 MHz = 160 MHz												
99% Bandwidth = 158.4 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 (%)	Minimum 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	27	30	90%
Type 2	28	30	93%
Type 3	28	30	93%
Type 4	27	30	90%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	110	120	92%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	21	1	2609	y
2	44	1	1219	y
3	40	1	1346	y
4	36	1	1499	y
5	37	1	1460	n
6	70	1	762	y
7	21	1	2600	y
8	42	1	1269	y
9	33	1	1608	y
10	52	1	1016	y
11	21	1	2617	n
12	70	1	760	y
13	24	1	2208	n
14	49	1	1085	y
15	73	1	726	y
16	59	1	894	y
17	25	1	2167	y
18	56	1	943	y
19	39	1	1374	y
20	58	1	917	y
21	18	1	3006	y
22	38	1	1415	y
23	100	1	529	y
24	23	1	2382	y
25	27	1	1984	y
26	22	1	2403	y
27	28	1	1946	y
28	30	1	1772	y
29	37	1	1441	y
30	55	1	972	y
				27/30: 90%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	23	3.7	163	y
2	27	1	214	y
3	26	3.9	157	y
4	24	2	176	y
5	28	1.8	225	y
6	23	3.2	208	y
7	28	1.5	172	y
8	26	4.9	170	n
9	28	3.8	201	y
10	26	4.6	198	y
11	25	3.3	221	y
12	23	1.4	225	y
13	26	1.4	151	y
14	25	1.5	151	y
15	26	3.4	216	y
16	27	1.3	182	y
17	27	3.4	205	y
18	25	2.2	216	y
19	23	1.5	169	y
20	28	2	166	y
21	25	1.6	151	y
22	28	3.6	161	n
23	27	3.4	165	y
24	29	2	206	y
25	25	3.1	174	y
26	25	1.4	165	y
27	26	4.4	209	y
28	27	1.1	224	y
29	29	2.1	215	y
30	27	1.5	225	y
				28/30: 93.3%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	17	6.4	342	y
2	17	9.2	213	y
3	16	8.3	481	y
4	17	9	363	y
5	18	8.9	422	y
6	17	8	434	y
7	17	8.4	348	y
8	17	7.6	459	y
9	16	7.1	497	y
10	16	6.5	214	y
11	18	8.3	462	y
12	17	7.2	446	y
13	18	9.9	236	y
14	18	6.3	249	y
15	17	7.6	411	y
16	17	7	427	y
17	16	6.5	417	y
18	17	9.7	457	y
19	17	8.8	476	y
20	17	6.8	336	y
21	18	8.5	373	y
22	17	9.4	488	y
23	16	8.3	237	y
24	17	6.4	415	y
25	17	7.8	268	y
26	18	9.3	275	y
27	17	9.1	200	y
28	17	8	458	n
29	17	9.4	363	n
30	18	8.3	259	y
				28/30: 93.3%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	14	19.6	285	y
2	14	15.2	332	y
3	14	18.2	305	y
4	16	13.4	496	n
5	16	13.2	499	y
6	13	15.4	277	y
7	15	12.2	463	y
8	15	17.8	421	y
9	16	16.2	487	y
10	15	18.6	404	y
11	15	14.2	498	y
12	13	16.2	467	y
13	16	15.7	492	y
14	12	18	277	y
15	13	12.4	304	y
16	13	16.4	216	y
17	15	13.5	375	y
18	13	11.7	477	y
19	15	12.4	305	n
20	16	14.7	313	y
21	16	16.4	215	y
22	13	17.6	263	y
23	15	14.2	415	n
24	16	13.8	275	y
25	12	19.9	388	y
26	15	14.4	241	y
27	12	18.6	252	y
28	13	14.7	265	y
29	15	12.5	311	y
30	14	17.4	218	y
				27/30: 90%

TYPE 5		Rohde & Schwarz K350 Pulse Sequencer DFS		
Trial #	Detection (yes/no)	Chirp Width (MHz)	Subset	Fc
1	y	9	1	5500
2	y	6	1	5500
3	y	15	1	5500
4	y	10	1	5500
5	y	6	1	5500
6	y	17	1	5500
7	y	12	1	5500
8	y	19	1	5500
9	y	9	1	5500
10	y	20	1	5500
11	y	12	2	5495.8
12	y	8	2	5494.2
13	y	12	2	5495.8
14	y	16	2	5497.4
15	y	19	2	5498.6
16	y	16	2	5497.4
17	y	14	2	5496.6
18	y	8	2	5494.2
19	y	10	2	5495
20	y	18	2	5498.2
21	y	13	3	5503.8
22	y	7	3	5506.2
23	y	17	3	5502.2
24	y	16	3	5502.6
25	y	12	3	5504.2
26	y	12	3	5504.2
27	y	18	3	5501.8
28	y	6	3	5506.6
29	y	13	3	5503.8
30	y	6	3	5506.6

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%

40 MHz

Summary			
Type	Detections	Trials	Detection Probability
Type 1	30	30	100%
Type 2	25	30	83%
Type 3	29	30	97%
Type 4	28	30	93%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	112	120	93%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	37	1	1430	y
2	20	1	2703	y
3	84	1	628	y
4	25	1	2161	y
5	23	1	2293	y
6	38	1	1407	y
7	52	1	1018	y
8	71	1	750	y
9	27	1	2022	y
10	58	1	916	y
11	21	1	2576	y
12	52	1	1021	y
13	40	1	1319	y
14	80	1	660	y
15	27	1	2003	y
16	22	1	2466	y
17	23	1	2311	y
18	47	1	1129	y
19	18	1	2995	y
20	54	1	994	y
21	19	1	2826	y
22	45	1	1181	y
23	27	1	2015	y
24	25	1	2142	y
25	24	1	2206	y
26	60	1	892	y
27	25	1	2175	y
28	22	1	2508	y
29	18	1	2932	y
30	61	1	869	y
				30/30: 100%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	24	2.6	205	y
2	27	4.2	183	y
3	28	1.8	175	y
4	28	2.2	211	y
5	23	2.9	181	y
6	29	1.5	196	y
7	27	2.1	179	y
8	28	3.5	152	n
9	25	2.9	200	n
10	23	2.9	197	y
11	27	2	217	y
12	26	4.2	152	y
13	27	3.3	162	n
14	28	4.2	162	n
15	25	4.2	196	y
16	29	2.7	189	y
17	28	2.7	214	y
18	28	1.4	224	y
19	29	1.9	228	y
20	25	4.5	201	y
21	27	1.5	163	y
22	25	2.6	203	y
23	25	2.1	230	y
24	26	3.4	157	y
25	25	1	201	n
26	23	3.4	187	y
27	27	4.6	216	y
28	26	4.7	179	y
29	27	4.9	169	y
30	24	3.6	151	y
				25/30: 83.3%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	17	6.5	302	y
2	17	8.3	491	y
3	18	9.3	496	y
4	18	6.5	382	y
5	17	8.1	218	y
6	18	8.7	341	y
7	17	10	469	y
8	18	9.9	435	y
9	18	9.6	213	y
10	17	9.4	268	n
11	16	10	278	y
12	18	6.7	406	y
13	18	6.2	445	y
14	18	8.1	224	y
15	18	6.6	264	y
16	18	7.1	383	y
17	18	9.8	386	y
18	18	8.8	304	y
19	16	7	248	y
20	17	9.3	339	y
21	16	8.1	283	y
22	17	9.6	404	y
23	17	7.6	205	y
24	18	7.7	312	y
25	16	9.3	274	y
26	17	9.9	442	y
27	18	9.4	301	y
28	17	8.1	442	y
29	17	7.6	202	y
30	16	7.5	341	y
				29/30: 96.7%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	16	15.5	220	y
2	16	15	310	y
3	13	12	335	y
4	13	12	321	y
5	15	17.5	485	y
6	16	14.6	346	y
7	13	13.9	414	y
8	12	12.8	401	y
9	13	19.3	250	y
10	13	11.3	440	y
11	15	15.7	386	y
12	14	11.9	267	y
13	12	16.4	234	n
14	15	13.7	214	y
15	16	16.1	425	y
16	16	18.8	354	y
17	13	15.7	373	y
18	15	12.2	438	y
19	15	16.2	274	y
20	13	13.1	385	y
21	14	18.8	389	y
22	13	12.7	397	y
23	12	14.2	489	y
24	14	15.5	461	y
25	15	18.6	277	y
26	15	13.4	309	y
27	13	14.4	451	y
28	15	16.8	473	y
29	13	13.1	346	y
30	15	17.5	243	n
				28/30: 93.3%

TYPE 5		Rohde & Schwarz K350 Pulse Sequencer DFS		
Trial #	Detection (yes/no)	Chirp Width (MHz)	Subset	Fc
1	y	7	1	5590
2	y	5	1	5590
3	y	13	1	5590
4	y	19	1	5590
5	y	19	1	5590
6	y	7	1	5590
7	y	9	1	5590
8	y	5	1	5590
9	y	7	1	5590
10	y	18	1	5590
11	y	10	2	5574
12	y	14	2	5575.6
13	y	17	2	5576.8
14	y	6	2	5572.4
15	y	19	2	5577.6
16	y	12	2	5574.8
17	y	17	2	5576.8
18	y	11	2	5574.4
19	y	8	2	5573.2
20	y	16	2	5576.4
21	y	20	3	5602
22	y	8	3	5606.8
23	y	7	3	5607.2
24	y	13	3	5604.8
25	y	16	3	5603.6
26	y	5	3	5608
27	y	9	3	5606.4
28	y	6	3	5607.6
29	y	17	3	5603.2
30	y	18	3	5602.8

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	25	30	83%
Type 3	27	30	90%
Type 4	28	30	93%
Type 5	29	30	97%
Type 6	30	30	100%
Aggregate 1-4	109	120	91%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	42	1	1279	y
2	70	1	754	y
3	95	1	557	y
4	41	1	1289	y
5	31	1	1712	y
6	34	1	1565	y
7	37	1	1432	y
8	32	1	1667	n
9	98	1	542	y
10	19	1	2840	y
11	31	1	1746	y
12	58	1	922	y
13	41	1	1290	y
14	91	1	585	y
15	46	1	1167	y
16	24	1	2250	y
17	23	1	2354	y
18	24	1	2274	y
19	29	1	1863	y
20	35	1	1527	y
21	33	1	1606	y
22	28	1	1920	y
23	19	1	2907	y
24	52	1	1023	y
25	21	1	2519	y
26	23	1	2340	y
27	21	1	2529	y
28	32	1	1659	y
29	28	1	1884	y
30	90	1	591	y
				29/30: 96.7%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	27	4.4	158	n
2	23	3.3	218	y
3	23	4	180	y
4	28	2.2	188	n
5	28	2.7	163	y
6	23	3.7	200	y
7	28	3.3	192	y
8	28	3.7	214	y
9	27	1	167	y
10	27	1.5	174	n
11	25	4.3	194	y
12	24	2.8	197	y
13	29	3	230	y
14	25	3	198	y
15	25	2.1	190	y
16	25	3.1	176	y
17	28	3.2	230	y
18	28	4.3	167	y
19	29	2.8	171	n
20	24	1.6	199	y
21	27	3	212	y
22	26	1.8	185	y
23	25	2.2	184	y
24	27	4.6	172	y
25	23	3	223	y
26	28	3.5	164	y
27	25	4.9	157	y
28	27	1.9	178	y
29	28	2.5	176	n
30	25	1	163	y
				25/30: 83.3%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	17	6.5	240	y
2	17	9.1	219	y
3	18	6.3	378	y
4	17	6.3	372	y
5	17	8.9	466	y
6	17	6.9	279	y
7	16	8.6	401	y
8	18	6.6	435	y
9	16	6.9	365	y
10	18	9.2	282	y
11	17	9.3	268	y
12	18	9.7	479	y
13	17	7.5	227	n
14	17	8.7	221	y
15	17	9.3	435	n
16	17	6.7	434	y
17	18	6.4	407	y
18	18	7.2	327	y
19	18	9.1	254	n
20	17	7.5	400	y
21	17	8.7	321	y
22	16	9.6	334	y
23	16	9	353	y
24	17	6	446	y
25	17	9.9	380	y
26	18	6.5	391	y
27	18	7.4	307	y
28	17	8.5	286	y
29	17	8.4	214	y
30	16	6.7	377	y
				27/30: 90%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	13	18.8	274	y
2	15	15.4	419	y
3	15	15.6	245	n
4	16	14.6	385	n
5	13	16.8	489	y
6	14	17.4	492	y
7	16	11.5	397	y
8	13	11.5	419	y
9	16	19.7	301	y
10	13	18	215	y
11	12	19.5	223	y
12	14	19.4	415	y
13	13	13	423	y
14	14	19.8	434	y
15	12	12.8	484	y
16	15	16.8	209	y
17	12	16.4	307	y
18	15	17.5	498	y
19	12	13.2	239	y
20	15	11	204	y
21	13	11.2	278	y
22	13	19.7	443	y
23	13	18.9	428	y
24	15	12.2	217	y
25	14	14.1	358	y
26	13	15.1	300	y
27	13	14.2	267	y
28	15	16.1	208	y
29	15	11.1	266	y
30	12	19.7	431	y
				28/30: 93.3%

TYPE 5		Rohde & Schwarz K350 Pulse Sequencer DFS		
Trial #	Detection (yes/no)	Chirp Width (MHz)	Subset	Fc
1	y	5	1	5610
2	y	16	1	5610
3	y	6	1	5610
4	y	13	1	5610
5	y	20	1	5610
6	y	6	1	5610
7	y	5	1	5610
8	y	20	1	5610
9	y	6	1	5610
10	y	16	1	5610
11	y	15	2	5576
12	y	7	2	5572.8
13	y	11	2	5574.4
14	y	13	2	5575.2
15	n	14	2	5575.6
16	y	19	2	5577.6
17	y	20	2	5578
18	y	15	2	5576
19	y	19	2	5577.6
20	y	13	2	5575.2
21	y	11	3	5645.6
22	y	6	3	5647.6
23	y	12	3	5645.2
24	y	10	3	5646
25	y	10	3	5646
26	y	10	3	5646
27	y	20	3	5642
28	y	15	3	5644
29	y	17	3	5643.2
30	y	15	3	5644

29/30: 96.7%

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%

160 MHz

Summary			
Type	Detections	Trials	Detection Probability
Type 1	29	30	97%
Type 2	27	30	90%
Type 3	25	30	83%
Type 4	27	30	90%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	108	120	90%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	41	1	1295	y
2	19	1	2894	y
3	21	1	2571	y
4	19	1	2835	y
5	30	1	1770	y
6	45	1	1187	y
7	24	1	2218	y
8	33	1	1600	y
9	92	1	579	y
10	27	1	1968	y
11	24	1	2248	y
12	35	1	1507	y
13	29	1	1841	n
14	20	1	2701	y
15	30	1	1781	y
16	31	1	1733	y
17	20	1	2740	y
18	29	1	1869	y
19	29	1	1861	y
20	24	1	2233	y
21	34	1	1583	y
22	19	1	2889	y
23	26	1	2085	y
24	67	1	789	y
25	90	1	592	y
26	23	1	2391	y
27	97	1	547	y
28	18	1	2994	y
29	91	1	580	y
30	25	1	2135	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	4.9	179	y
2	25	4	176	y
3	25	3.1	177	y
4	27	3.7	205	y
5	27	4.9	164	n
6	27	1.9	216	y
7	27	1.4	211	y
8	28	1.2	153	n
9	26	4.7	161	y
10	25	2	220	y
11	25	4.9	194	y
12	28	3.3	192	y
13	26	3	217	y
14	29	1	156	n
15	25	3.4	196	y
16	26	2.3	164	y
17	23	4.8	185	y
18	25	3.9	154	y
19	23	4.8	215	y
20	27	1.7	180	y
21	27	4.8	223	y
22	24	4.9	187	y
23	25	3.6	185	y
24	25	2.1	218	y
25	23	3.7	170	y
26	25	4.3	210	y
27	24	3.5	205	y
28	28	4.4	171	y
29	25	4.6	223	y
30	25	3.4	172	y
				27/30: 90%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	17	8.1	444	y
2	17	6.7	387	y
3	16	7.9	276	y
4	16	8	449	n
5	18	6	412	n
6	16	6.6	371	n
7	16	8.1	313	y
8	18	9	393	y
9	17	9.3	233	y
10	17	8.9	433	y
11	16	9.2	410	y
12	16	8.3	213	n
13	17	7.3	403	y
14	16	7	496	y
15	17	9.5	367	y
16	17	8.4	411	y
17	16	9.8	276	y
18	17	10	376	y
19	18	6.8	249	y
20	18	8	377	y
21	16	8.2	218	y
22	17	9.3	467	y
23	16	6.6	409	y
24	17	7	291	y
25	18	7.8	218	y
26	17	8.8	498	y
27	18	9.6	405	y
28	16	10	388	y
29	17	8.8	219	n
30	17	7.3	273	y
				25/30: 83.3%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (μ sec)	PRI (μ s)	Detection (yes/no)
1	14	16.9	358	y
2	13	18.8	417	y
3	14	12.3	440	y
4	16	19.2	410	y
5	12	14.3	204	n
6	16	19.1	298	y
7	15	12.3	451	y
8	12	18.2	486	n
9	15	11.8	499	y
10	14	19.3	389	y
11	14	17	344	y
12	12	12.3	406	n
13	15	15	365	y
14	16	19.3	359	y
15	13	18.6	369	y
16	13	17.8	231	y
17	13	12	325	y
18	14	15.8	210	y
19	15	17	239	y
20	15	13	237	y
21	15	19.4	234	y
22	13	17.5	477	y
23	12	15.5	497	y
24	13	16.4	411	y
25	15	18.6	496	y
26	12	19.3	364	y
27	15	12.8	252	y
28	14	13.7	337	y
29	15	14	418	y
30	15	17.3	395	y
				27/30: 90%

TYPE 5		Rohde & Schwarz K350 Pulse Sequencer DFS		
Trial #	Detection (yes/no)	Chirp Width (MHz)	Subset	Fc
1	y	10	1	5570
2	y	11	1	5570
3	y	10	1	5570
4	y	12	1	5570
5	y	11	1	5570
6	y	10	1	5570
7	y	8	1	5570
8	y	8	1	5570
9	y	11	1	5570
10	y	19	1	5570
11	y	15	2	5496
12	y	10	2	5494
13	y	14	2	5495.6
14	y	14	2	5495.6
15	y	19	2	5497.6
16	y	9	2	5493.6
17	y	19	2	5497.6
18	y	20	2	5498
19	y	16	2	5496.4
20	y	14	2	5495.6
21	y	12	3	5645.2
22	y	10	3	5646
23	y	12	3	5645.2
24	y	14	3	5644.4
25	y	19	3	5642.4
26	y	12	3	5645.2
27	y	5	3	5648
28	y	6	3	5647.6
29	y	9	3	5646.4
30	y	10	3	5646
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 --