UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-UKPRO
ISED ID	6545A-UKPRO
Equipment Under Test	U7-Outdoor
Test Report Serial Number	TR8913_02
Date of Test(s)	22, 28 – 30 November; 1, 8 December 2023; 3 January; 14 February; 18 – 19, 25 March 17 – 18 April 2024
Report Issue Date	19 April 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

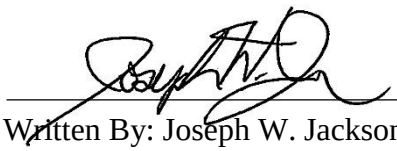
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with 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	U7_Outdoor
FCC ID	SWX-UKPRO
ISED ID	6545A-UKPRO

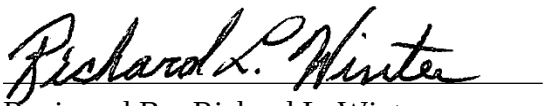
On this 19th day of April 2024, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete and correct to the best of my knowledge and are made in good faith.

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: Joseph W. Jackson



Reviewed By: Richard L. Winter

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	19 April 2024
02	New Model Number	10 May 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	U7-Outdoor
Serial Number	68D79A05C391
Dimensions (cm)	17.0 x 20.8 x 5.5

2.2 Description of EUT

The U7-Outdoor is a PoE powered WiFi 7 access point with a 2.5 GbE PoE port. The U7-Outdoor provides a 3.6 Gbps aggregate throughput rate. The U7-Outdoor transmits in the 2.4 (2x2) GHz and 5 (2x2) GHz frequency bands and uses an internal integrated or external dipole antenna. The U7-Outdoor is powered by an 802.3at PoE power adapter. The U7-Outdoor is an outdoor device.

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: U7-Outdoor (Note 1) SN: 68D79A05C391	WiFi Access Point	See Section 2.4
BN: UBIQUITI MN: U-POE-at SN: N/A	PoE Power Adapter	Unshielded Cat 5e cable/1 meters
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
AC Mains	1	3 conductor power cord/80 cm
POE (POE Injector)	1	Unshielded Cat 5e cable/8 meters
LAN (POE Injector)	1	Unshielded Cat 5e cable/1 meters

2.5 Operating Environment

Power Supply	120 Volts AC Mains to 48 Volts PoE
AC Mains Frequency	60 Hz
Temperature	21.7 – 23.8 °C
Humidity	19.1 – 32.4 %
Barometric Pressure	1014 mBar

2.6 Operating Modes

The U7-Outdoor 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/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

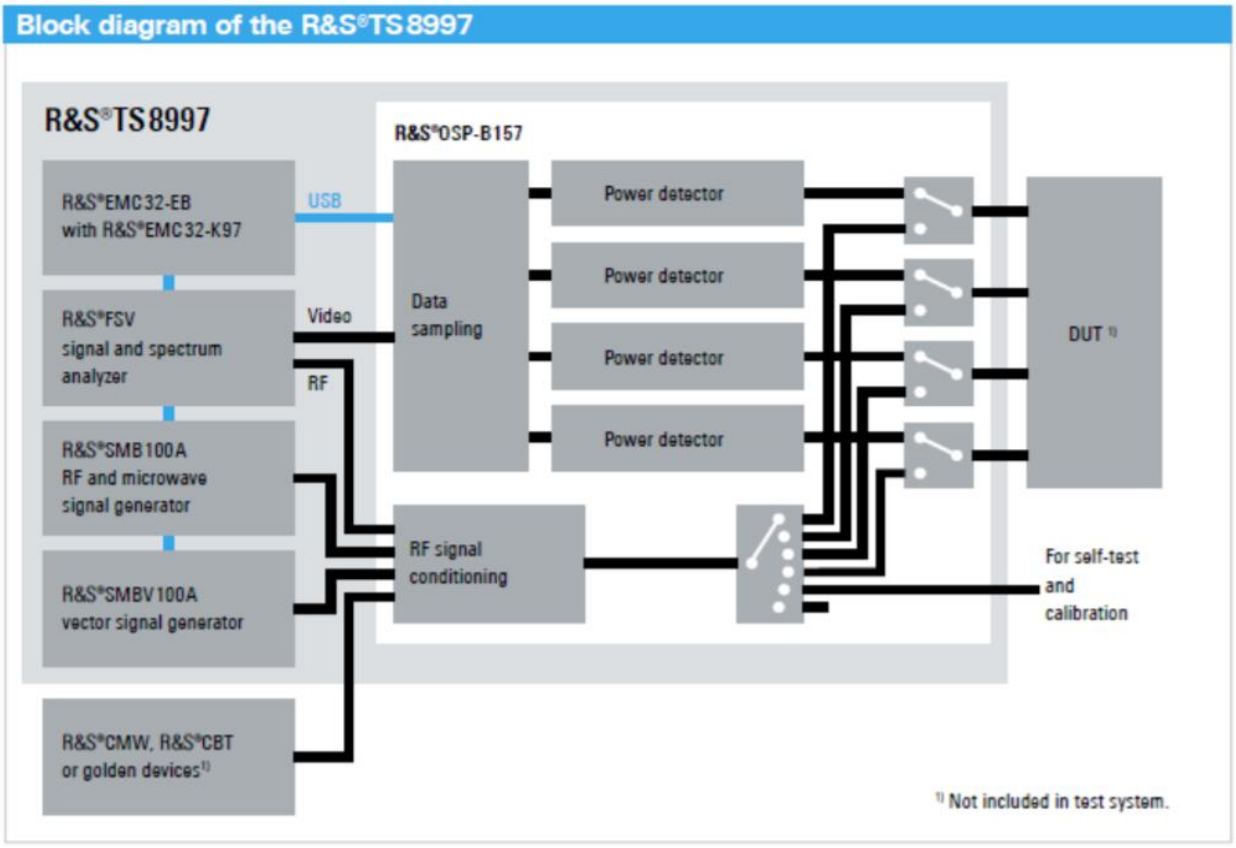


Diagram 1: Test Configuration Block Diagram

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 chamber 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	AFJ	LS16C\10	UCL-6749	1/29/2024	1/29/2025
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

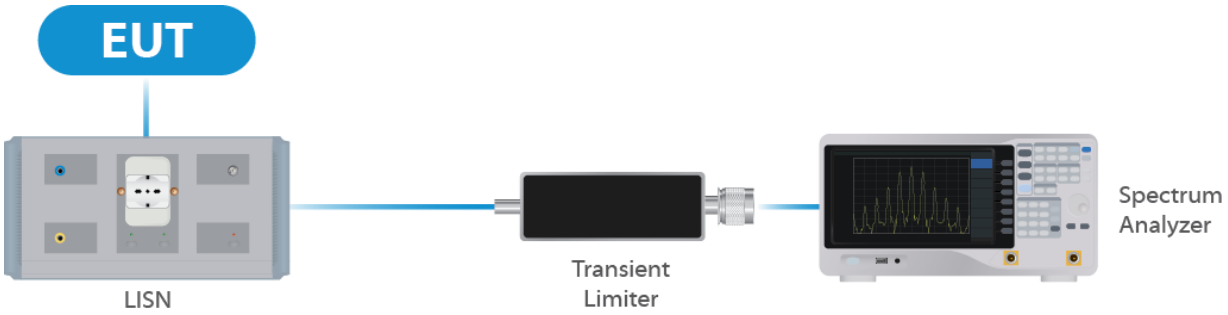


Figure 1: Conducted Emissions Test

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	FSV40	UCL-2861	11/27/2023	11/27/2024
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	3/20/2024
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

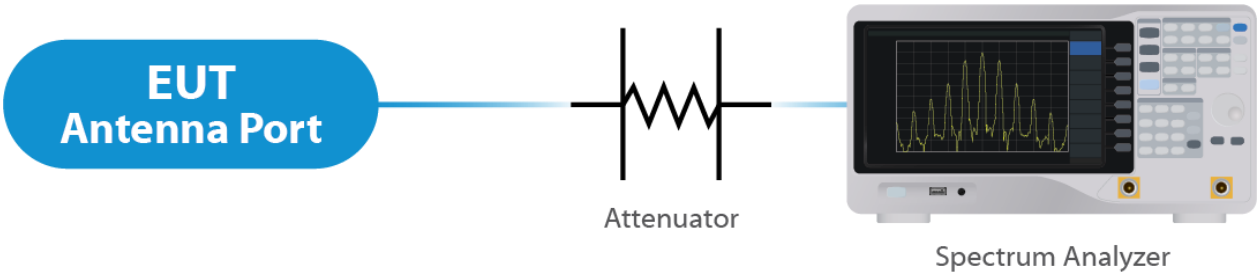


Figure 2: Direct Connect at the Antenna Port Test

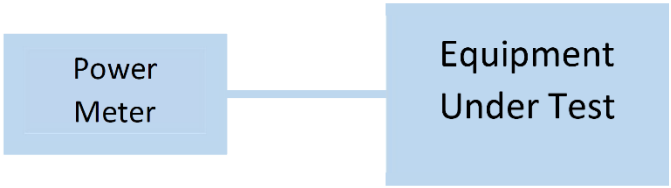


Figure 3: Output Power Measurement

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	1/25/2024	1/29/2025
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	1/19/2024	1/19/2026
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	1/19/2024	1/19/2026
Test Software	UCL	Revision 1	UCL-3108	N/A	N/A

Table 4: List of equipment used for Radiated Emissions

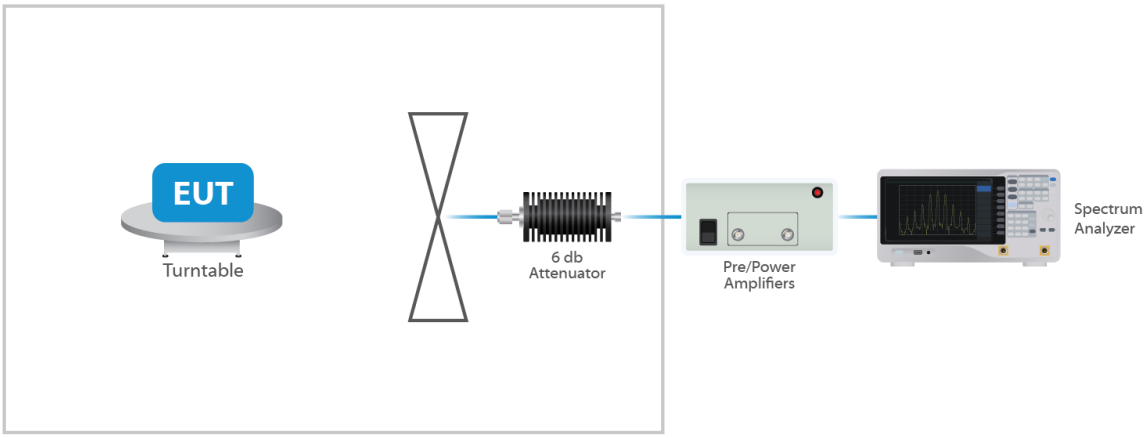


Figure 4: Radiated Emissions Test

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

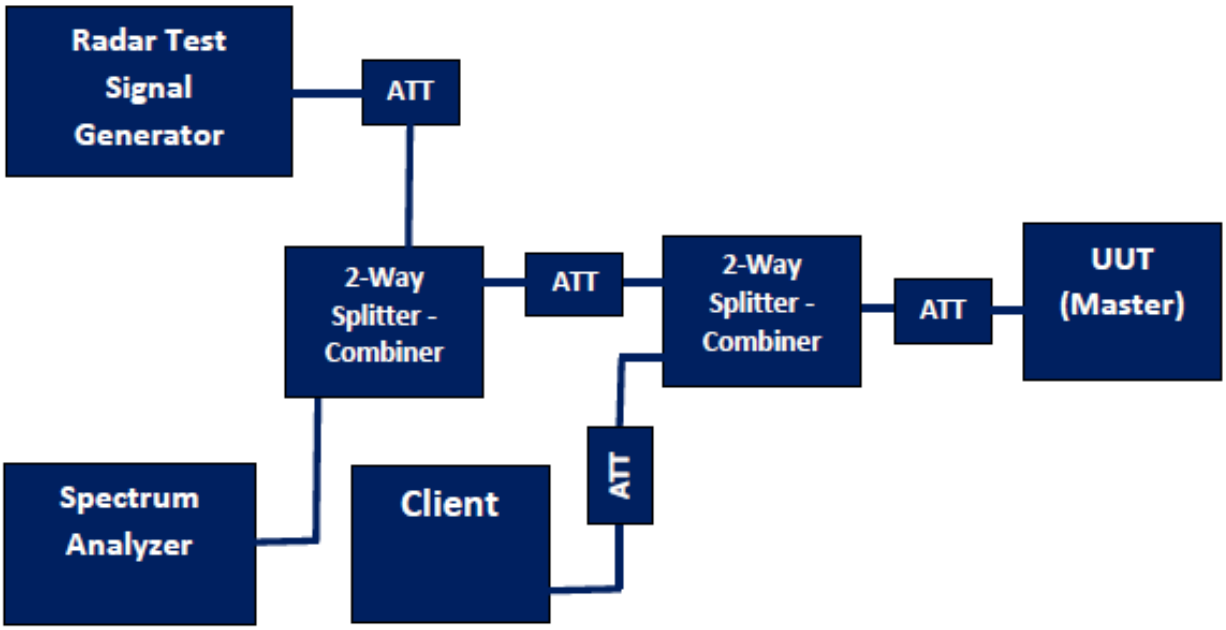


Figure 5: DFS Test Set Up - Master

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 internal antenna and an optional external antenna. Per the manufacturer, the Maximum gain of the internal antenna per chain is 12.5 dBi and the Maximum gain of the external antenna per chain is 4.57 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The internal antenna is not user replaceable, the external antenna is user replaceable. For CDD transmissions, directional gain is calculated as follows.

Array Gain = 10 log(NANT/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 NANT ≤ 4;
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi).

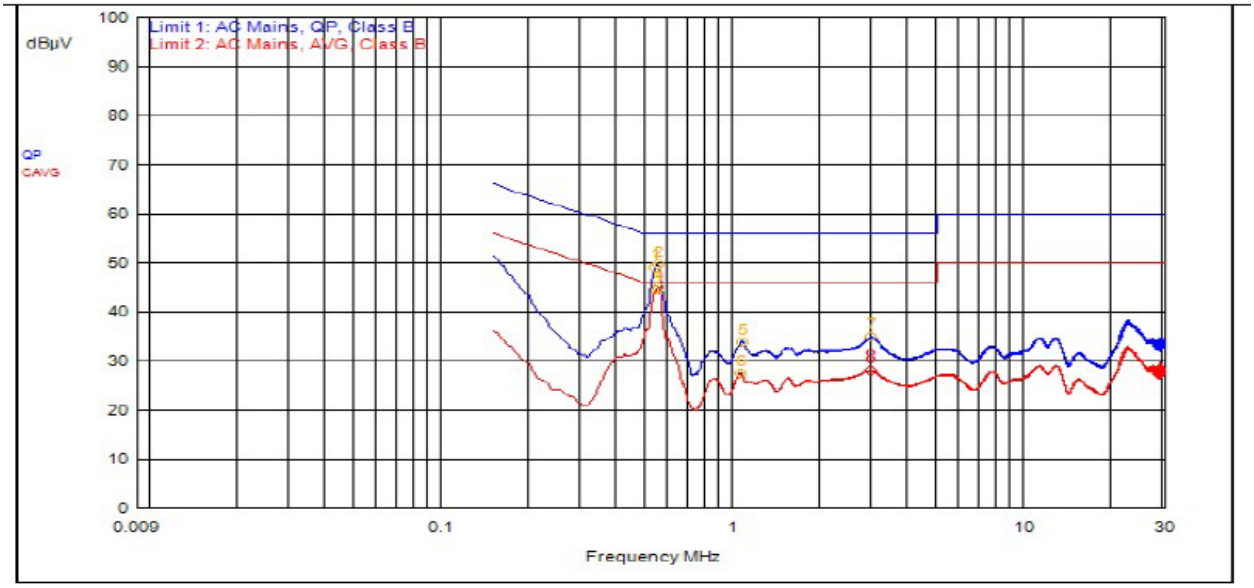
Or 3.01 dB + 12.5 dBi = 15.51 dBi for the internal antenna and 3.01 dB + 4.57 dBi = 7.58 dBi for the external antenna.

Results

The EUT complied with the specification

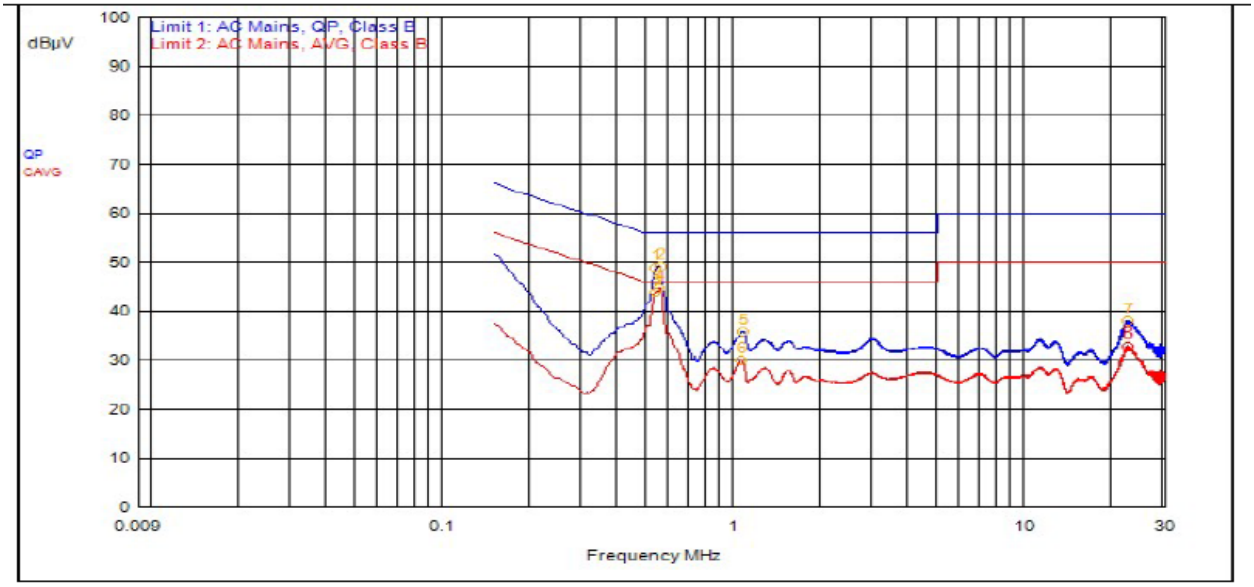
5.2 Conducted Emissions at Mains Ports Data

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	549,000kHz	12.41	0.00		QPeak	37.23	49.64	56.00	-6.36			
1	537,000kHz	12.41	0.00		QPeak	36.86	49.27	56.00	-6.73			
7	2.952	12.30	0.10		QPeak	22.60	35.00	56.00	-21.00			
5	1.059	12.38	0.10		QPeak	21.45	33.93	56.00	-22.07			
3	540,000kHz	12.41	0.00		C_AVG	32.16	44.57			46.00	-1.43	
4	549,000kHz	12.41	0.00		C_AVG	32.72	45.13			46.00	-0.87	
6	1.047	12.38	0.10		C_AVG	14.97	27.45			46.00	-18.55	
8	2.949	12.30	0.10		C_AVG	15.75	28.15			46.00	-17.85	

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
2	555,000kHz	12.41	0.00		QPeak	36.62	49.03	56.00	-6.97			
1	537,000kHz	12.42	0.00		QPeak	36.51	48.93	56.00	-7.07			
5	1.065	12.39	0.10		QPeak	23.39	35.88	56.00	-20.12			
7	22.383	12.39	0.20		QPeak	25.60	38.19	60.00	-21.81			
3	537,000kHz	12.42	0.00		C_AVG	31.47	43.89			46.00	-2.11	
4	552,000kHz	12.41	0.00		C_AVG	32.38	44.79			46.00	-1.21	
6	1.050	12.39	0.10		C_AVG	17.54	30.03			46.00	-15.97	
8	22.386	12.39	0.20		C_AVG	20.28	32.87			50.00	-17.13	

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 Internal Antenna

UNII-2A

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
OFDM 20	5260	16.9	23.1
OFDM 20	5280	16.8	22.0
OFDM 20	5320	16.8	22.3
HE 20	5260	31.0	23.2
HE 20	5280	31.0	22.7
HE 20	5320	31.8	22.5
HE 40	5270	39.0	42.8
HE 40	5310	38.5	42.8
HE 80	5290	79.0	89.5
HE 160	5250	162.5	171.0

UNII-2C

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
OFDM 20	5500	17.0	23.7
OFDM 20	5600	16.9	22.3
OFDM 20	5720	16.9	22.3
HE 20	5500	19.3	22.5
HE 20	5600	19.3	22.5
HE 20	5720	19.3	22.8
HE 40	5510	38.5	43.7
HE 40	5590	38.5	44.3

HE 40	5710	38.5	44.3
HE 80	5530	79.0	88.5
HE 80	5610	79.0	89.5
HE 80	5690	79.0	88.0
HE 160	5570	160.0	175.0

5.3.2 External Antenna

UNII-2A

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
OFDM 20	5260	16.8	22.5
OFDM 20	5280	16.8	22.5
OFDM 20	5320	16.9	22.6
HE 20	5260	30.3	22.8
HE 20	5280	32.5	23.2
HE 20	5320	31.3	22.7
HE 40	5270	38.5	44.4
HE 40	5310	38.5	44.0
HE 80	5290	79.0	91.0
HE 160	5250	162.5	176.0

UNII-2C

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
OFDM 20	5500	16.8	22.3
OFDM 20	5600	16.8	22.3
OFDM 20	5720	16.9	22.4
HE 20	5500	19.3	23.2
HE 20	5600	19.5	22.5

HE 20	5720	19.5	22.7
HE 40	5510	38.5	43.7
HE 40	5590	38.5	43.8
HE 40	5710	38.5	44.3
HE 80	5530	79.0	90.5
HE 80	5610	79.0	91.5
HE 80	5690	79.0	91.5
HE 160	5570	162.5	177.0

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 with the internal antenna 17.48 dBm or 55.98 mW. The limit is 24 dBm or 250 mW when using antennas with 6 dBi or less gain. The internal antenna has a maximum gain of 12.5 dBi so the adjusted limit is 17.5 dBm.

The maximum average RF conducted output power measured with the external antenna 23.95 dBm or 248.31 mW. The limit is 24 dBm or 250 mW when using antennas with 6 dBi or less gain. The external antenna has a maximum gain of 4.57 dBi.

5.4.1 Internal Antenna

UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5260	Nss2-Msc0	16	17.44	29.94	2.63
OFDM 20	5280	Nss2-Msc0	16	17.34	29.84	2.45
OFDM 20	5320	Nss2-Msc0	16	17.22	29.72	2.24
HE 20	5260	Nss2-Msc0	15	16.58	29.08	0.88
HE 20	5280	Nss2-Msc0	16	17.48	29.98	1.65
HE 20	5320	Nss2-Msc0	16	17.25	29.75	1.41
HE 40	5270	Nss2-Msc0	15	16.58	29.18	-2.00
HE 40	5310	Nss2-Msc0	16	17.40	29.90	-1.42
HE 80	5290	Nss2-Msc0	16	17.18	29.68	-4.42
HE 160	5250	Nss2-Msc0	15	16.77	29.27	-7.51

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5260	Nss1-Msc0	8	9.44	21.94	-5.37
OFDM 20	5280	Nss1-Msc0	8	9.34	21.84	-5.55
OFDM 20	5320	Nss1-Msc0	8	9.22	21.72	-5.76
HE 20	5260	Nss1-Msc0	9	10.58	23.08	-5.12

HE 20	5280	Nss1-Msc0	9	10.48	22.98	-5.35
HE 20	5320	Nss1-Msc0	9	10.25	22.75	-5.59
HE 40	5270	Nss1-Msc0	11	12.58	25.08	-6.00
HE 40	5310	Nss1-Msc0	12	13.40	25.90	-5.42
HE 80	5290	Nss1-Msc0	15	16.18	28.68	-5.42
HE 160	5250	Nss1-Msc0	15	16.77	29.27	-7.51

UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5500	Nss2-Msc0	16	17.20	29.70	2.00
OFDM 20	5600	Nss2-Msc0	16	17.11	29.61	2.13
OFDM 20	5720	Nss2-Msc0	16	16.98	29.48	1.83
HE 20	5500	Nss2-Msc0	16	17.35	29.85	1.69
HE 20	5600	Nss2-Msc0	16	17.22	29.72	1.62
HE 20	5720	Nss2-Msc0	16	17.12	29.62	1.42
HE 40	5510	Nss2-Msc0	16	17.39	29.89	-1.39
HE 40	5590	Nss2-Msc0	16	17.30	29.80	-1.37
HE 40	5710	Nss2-Msc0	16	17.21	29.71	-1.54
HE 80	5530	Nss2-Msc0	16	17.32	29.82	-4.58
HE 80	5610	Nss2-Msc0	16	16.79	29.29	-4.83
HE 80	5690	Nss2-Msc0	16	16.74	29.24	-5.00
HE 160	5570	Nss2-Msc0	16	17.16	29.66	-7.54

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5500	Nss1-Msc0	8	9.20	21.70	-6.00
OFDM 20	5600	Nss1-Msc0	8	9.11	21.61	-5.87
OFDM 20	5720	Nss1-Msc0	8	9.98	22.48	-5.17
HE 20	5500	Nss1-Msc0	9	10.35	22.85	-5.31
HE 20	5600	Nss1-Msc0	9	10.22	22.72	-5.38

HE 20	5720	Nss1-Msc0	9	10.12	22.62	-5.58
HE 40	5510	Nss1-Msc0	12	13.39	25.89	-5.39
HE 40	5590	Nss1-Msc0	12	13.30	25.80	-5.37
HE 40	5710	Nss1-Msc0	12	13.21	25.71	-5.54
HE 80	5530	Nss1-Msc0	15	16.32	28.82	-5.58
HE 80	5610	Nss1-Msc0	15	15.79	28.29	-5.82
HE 80	5690	Nss1-Msc0	15	15.74	28.24	-6.00
HE 160	5570	Nss1-Msc0	16	17.16	29.66	-7.54

5.4.2 External Antenna

UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5260	Nss2-Msc0	23	23.95	28.52	9.47
OFDM 20	5280	Nss2-Msc0	23	23.65	28.22	9.07
OFDM 20	5320	Nss2-Msc0	23	23.22	27.79	8.46
HE 20	5260	Nss2-Msc0	22	23.32	27.89	7.97
HE 20	5280	Nss2-Msc0	23	23.75	28.32	8.55
HE 20	5320	Nss2-Msc0	23	23.35	27.92	7.93
HE 40	5270	Nss2-Msc0	22	23.09	27.66	5.20
HE 40	5310	Nss2-Msc0	23	23.66	28.23	5.63
HE 80	5290	Nss2-Msc0	23	23.55	28.12	2.67
HE 160	5250	Nss2-Msc0	22	23.19	27.76	-0.55

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5260	Nss1-Msc0	22	22.95	27.52	8.47
OFDM 20	5280	Nss1-Msc0	23	23.65	28.22	9.07
OFDM 20	5320	Nss1-Msc0	23	23.22	27.79	8.46
HE 20	5260	Nss1-Msc0	22	23.32	27.89	7.97
HE 20	5280	Nss1-Msc0	23	23.75	28.32	8.55

HE 20	5320	Nss1-Msc0	23	23.35	27.92	7.93
HE 40	5270	Nss1-Msc0	22	23.09	27.66	5.20
HE 40	5310	Nss1-Msc0	23	23.66	28.23	5.63
HE 80	5290	Nss1-Msc0	23	23.55	28.12	2.67
HE 160	5250	Nss1-Msc0	22	23.19	27.76	-0.55

UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5500	Nss2-Msc0	24	23.68	28.25	9.24
OFDM 20	5600	Nss2-Msc0	23	23.20	27.77	8.59
OFDM 20	5720	Nss2-Msc0	23	23.53	28.10	9.90
HE 20	5500	Nss2-Msc0	24	23.78	28.35	8.74
HE 20	5600	Nss2-Msc0	23	23.31	27.88	8.15
HE 20	5720	Nss2-Msc0	23	23.61	28.18	8.46
HE 40	5510	Nss2-Msc0	24	23.89	28.46	5.90
HE 40	5590	Nss2-Msc0	23	23.30	27.87	5.29
HE 40	5710	Nss2-Msc0	23	23.61	28.18	5.57
HE 80	5530	Nss2-Msc0	24	23.79	28.36	2.92
HE 80	5610	Nss2-Msc0	24	23.85	28.42	2.68
HE 80	5690	Nss2-Msc0	23	23.09	27.66	2.15
HE 160	5570	Nss2-Msc0	23	22.98	27.55	-0.86

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured EIRP	Measured PSD
OFDM 20	5500	Nss1-Msc0	24	23.68	28.25	9.24
OFDM 20	5600	Nss1-Msc0	23	23.20	27.77	8.59
OFDM 20	5720	Nss1-Msc0	22	22.53	27.10	8.90
HE 20	5500	Nss1-Msc0	24	23.78	28.35	8.74
HE 20	5600	Nss1-Msc0	23	23.31	27.88	8.15
HE 20	5720	Nss1-Msc0	23	23.61	28.18	8.46

HE 40	5510	Nss1-Msc0	24	23.89	28.46	5.90
HE 40	5590	Nss1-Msc0	23	23.30	27.87	5.29
HE 40	5710	Nss1-Msc0	23	23.61	28.18	5.57
HE 80	5530	Nss1-Msc0	24	23.79	28.36	2.92
HE 80	5610	Nss1-Msc0	24	23.85	28.42	2.68
HE 80	5690	Nss1-Msc0	23	23.09	27.66	2.15
HE 160	5570	Nss1-Msc0	23	22.98	27.55	-0.86

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.

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 internal antenna gain of 12.5 dBi and external antenna gain of 4.57 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.

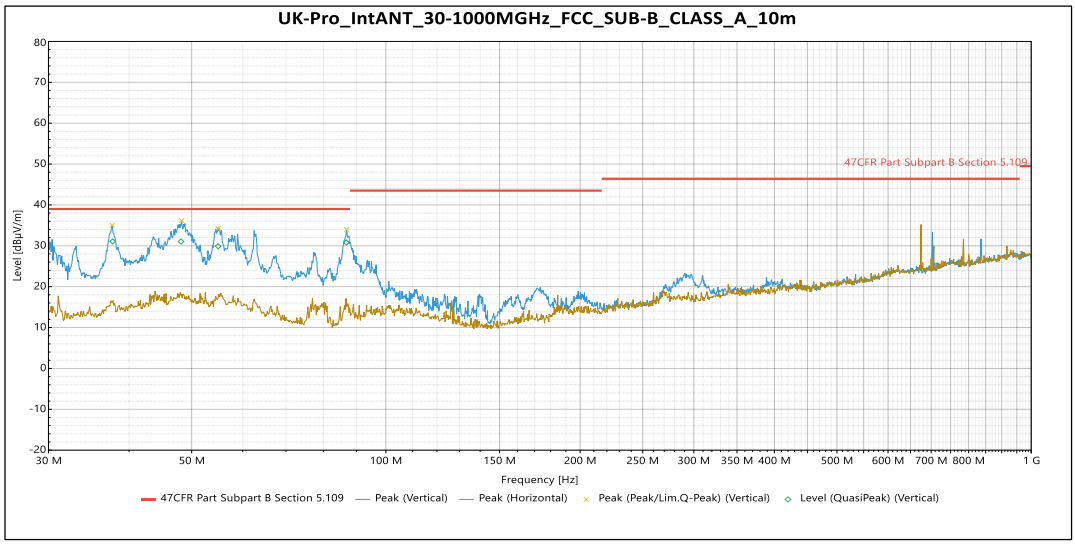
5.5.2 Radiated Spurious Emissions in the Restricted Bands of § 15.205

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 Internal Antenna

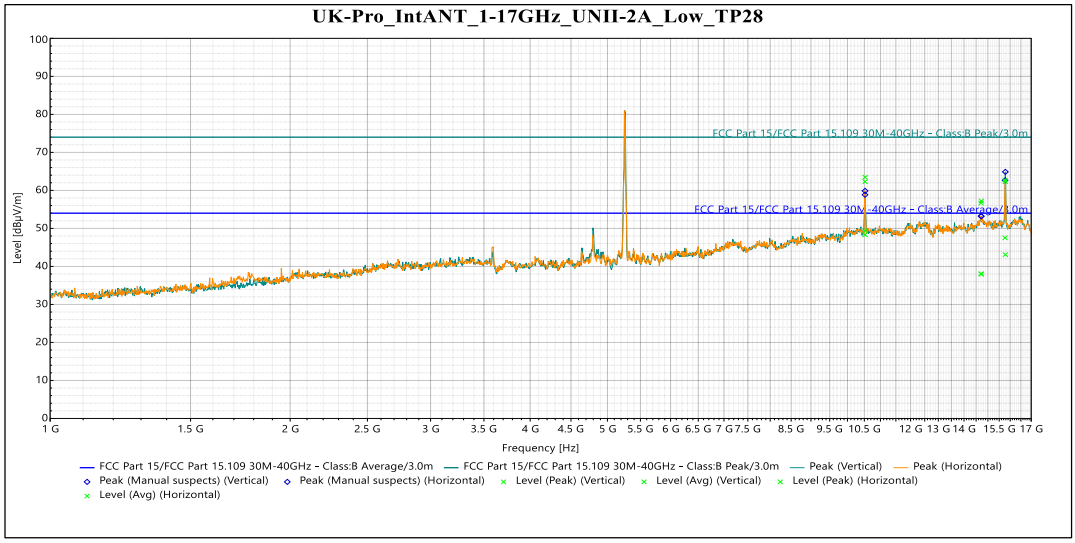
UNII-2A



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
37.726 MHz	31.084	39	-7.916	98	1.019	Vertical	-14.6
48.139 MHz	31.043	39	-7.957	76	2.405	Vertical	-12.303
54.963 MHz	29.877	39	-9.123	306	3.932	Vertical	-12.674
86.879 MHz	30.788	39	-8.212	178	1.35	Vertical	-17.381
Note: No Significant emissions were observed in the horizontal orientation of the antenna							

Table 5: Radiated Emissions 30 – 1000 MHz



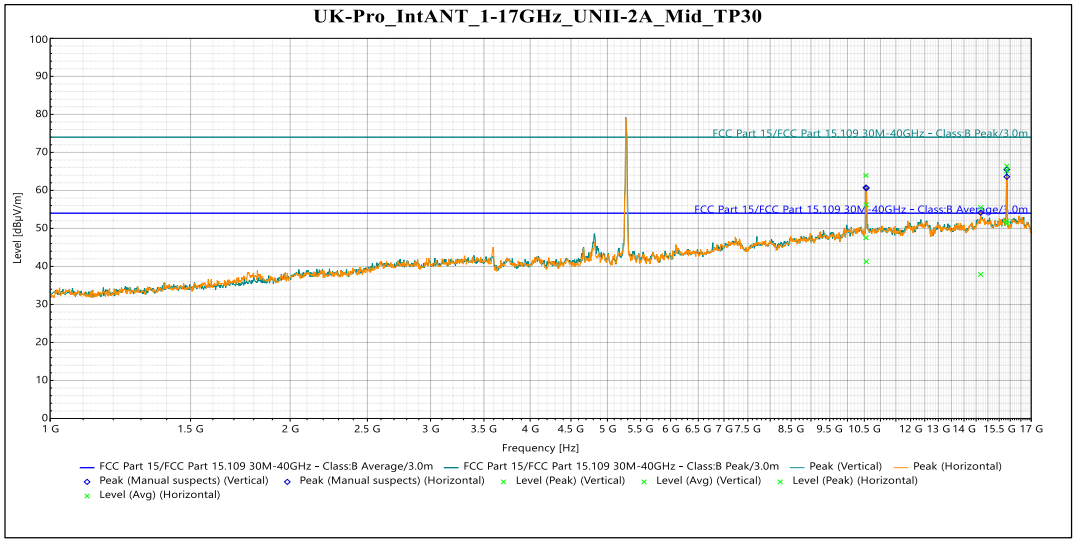
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.521 GHz	63.456	74	-10.544	1	2.758	Vertical	14.065
14.72 GHz	57.203	74	-16.797	151	1.5	Vertical	17.257
15.777 GHz	62.287	74	-11.713	17	3.809	Vertical	15.557
10.521 GHz	62.285	74	-11.715	41	1.632	Horizontal	14.065
14.709 GHz	56.673	74	-17.327	225	2.35	Horizontal	17.359
15.765 GHz	62.731	74	-11.269	103	3.108	Horizontal	15.665

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.521 GHz	49.369	54	-4.631	1	2.758	Vertical	14.065
14.72 GHz	37.959	54	-16.041	151	1.5	Vertical	17.257
15.777 GHz	43.096	54	-10.904	17	3.809	Vertical	15.557
10.521 GHz	48.321	54	-5.679	41	1.632	Horizontal	14.065
14.709 GHz	38.068	54	-15.932	225	2.35	Horizontal	17.359
15.765 GHz	47.51	54	-6.49	103	3.108	Horizontal	15.665

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



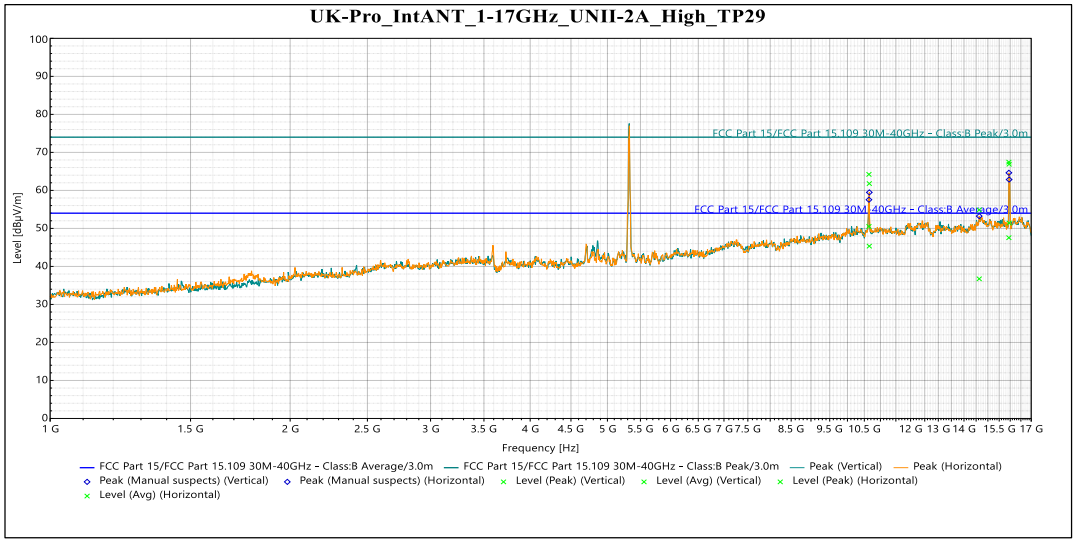
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.548 GHz	63.918	74	-10.082	359	2.17	Vertical	14.418
15.84 GHz	66.386	74	-7.614	44	2.708	Vertical	15.357
10.561 GHz	56.224	74	-17.776	345	3.427	Horizontal	14.588
14.693 GHz	55.473	74	-18.527	190	1.532	Horizontal	17.374
15.843 GHz	65.165	74	-8.835	257	2.709	Horizontal	15.358

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.548 GHz	47.553	54	-6.447	359	2.17	Vertical	14.418
15.84 GHz	51.932	54	-2.068	44	2.708	Vertical	15.357
10.561 GHz	41.265	54	-12.735	345	3.427	Horizontal	14.588
14.693 GHz	37.864	54	-16.136	190	1.532	Horizontal	17.374
15.843 GHz	51.268	54	-2.732	257	2.709	Horizontal	15.358

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



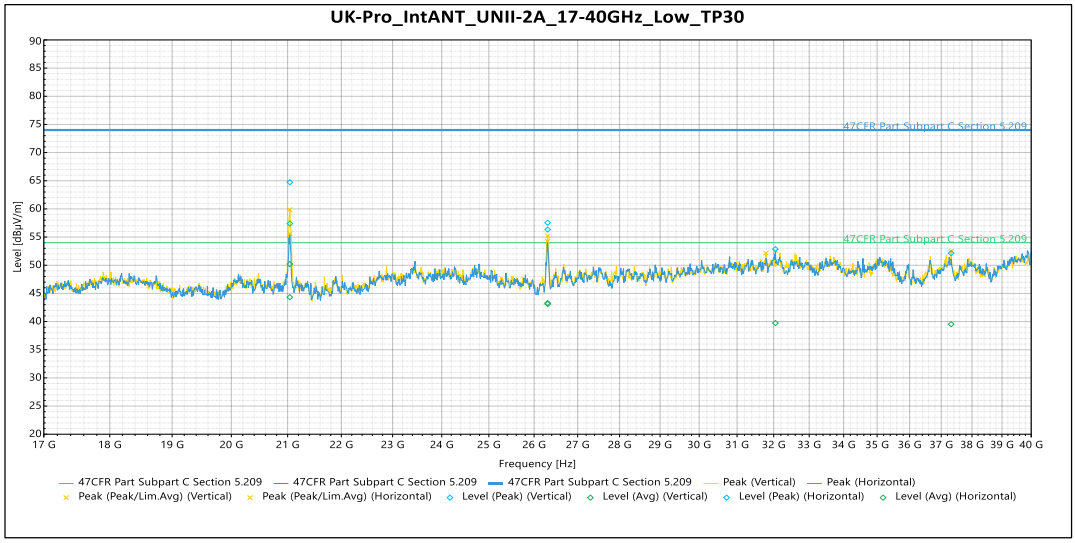
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.64 GHz	64.214	74	-9.786	332	2.352	Vertical	14.73
15.951 GHz	66.888	74	-7.112	54	1.5	Vertical	15.453
10.652 GHz	61.792	74	-12.208	329	1.631	Horizontal	14.687
14.631 GHz	54.856	74	-19.144	219	3.613	Horizontal	16.535
15.939 GHz	67.439	74	-6.561	49	1.632	Horizontal	15.411

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.64 GHz	50.505	54	-3.495	332	2.352	Vertical	14.73
15.951 GHz	51.406	54	-2.594	54	1.5	Vertical	15.453
10.652 GHz	45.334	54	-8.666	329	1.631	Horizontal	14.687
14.631 GHz	36.735	54	-17.265	219	3.613	Horizontal	16.535
15.939 GHz	47.551	54	-6.449	49	1.632	Horizontal	15.411

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



Peak

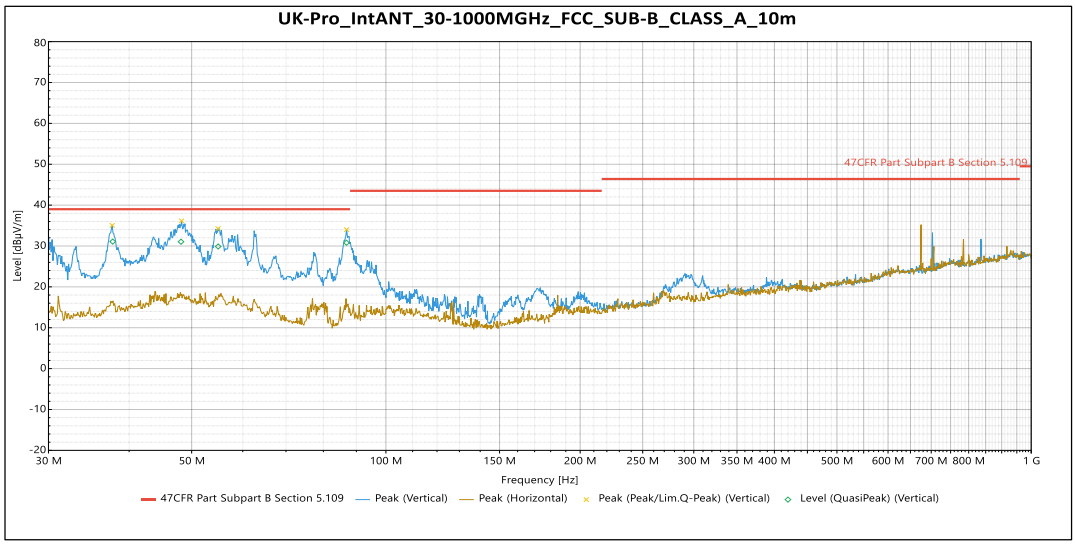
Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
21.04 GHz	64.743	74	-9.257	235	Vertical	-0.248
26.309 GHz	56.33	74	-17.67	189	Vertical	0.078
37.32 GHz	52.133	74	-21.867	103	Vertical	3.372
21.04 GHz	57.397	74	-16.603	149	Horizontal	-0.248
26.307 GHz	57.544	74	-16.456	183	Horizontal	0.05
32.047 GHz	52.852	74	-21.148	129	Horizontal	1.3

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
21.04 GHz	50.214	54	-3.786	235	Vertical	-0.248
26.309 GHz	43.122	54	-10.878	189	Vertical	0.078
37.32 GHz	39.539	54	-14.461	103	Vertical	3.372
21.04 GHz	44.332	54	-9.668	149	Horizontal	-0.248
26.307 GHz	43.291	54	-10.709	183	Horizontal	0.05
32.047 GHz	39.732	54	-14.268	129	Horizontal	1.3

Table 9: Radiated Emissions 17 – 40 GHz on the Lowest Frequency (worse case)

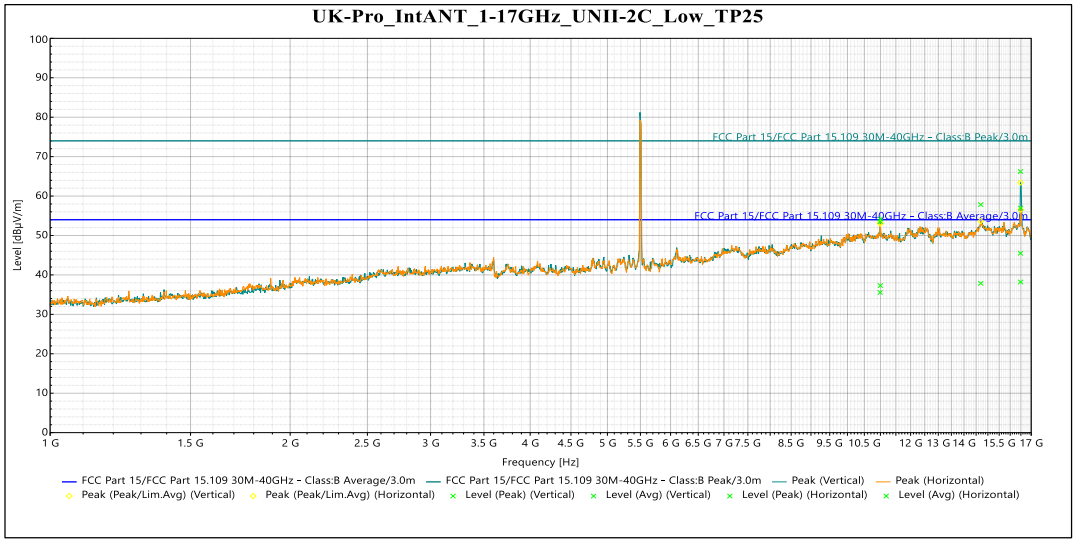
UNII-2C



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
37.726 MHz	31.084	39	-7.916	98	1.019	Vertical	-14.6
48.139 MHz	31.043	39	-7.957	76	2.405	Vertical	-12.303
54.963 MHz	29.877	39	-9.123	306	3.932	Vertical	-12.674
86.879 MHz	30.788	39	-8.212	178	1.35	Vertical	-17.381
Note: No Significant emissions were observed in the horizontal orientation of the antenna							

Table 10: Radiated Emissions 30 – 1000 MHz



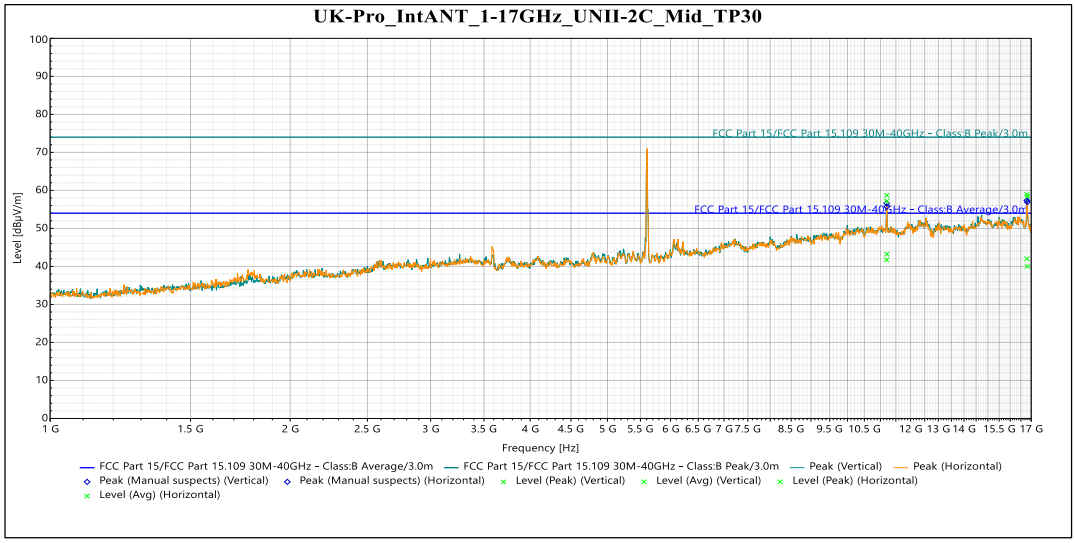
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.996 GHz	54.176	74	-19.824	257	2.35	Vertical	15.45
16.481 GHz	66.208	74	-7.792	355	1.5	Vertical	18.262
10.991 GHz	53.515	74	-20.485	57	3.427	Horizontal	15.422
14.695 GHz	57.841	74	-16.159	214	3.111	Horizontal	17.4
16.487 GHz	56.939	74	-17.061	276	3.457	Horizontal	18.268

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.996 GHz	37.298	54	-16.702	257	2.35	Vertical	15.45
16.481 GHz	45.476	54	-8.524	355	1.5	Vertical	18.262
10.991 GHz	35.554	54	-18.446	57	3.427	Horizontal	15.422
14.695 GHz	37.859	54	-16.141	214	3.111	Horizontal	17.4
16.487 GHz	38.197	54	-15.803	276	3.457	Horizontal	18.268

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



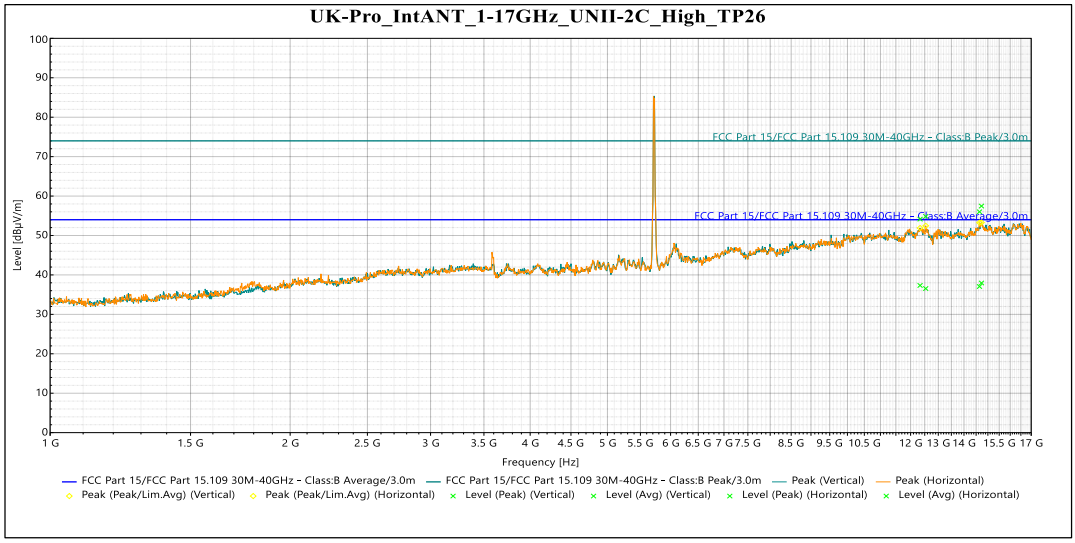
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.198 GHz	57.183	74	-16.817	62	2.712	Vertical	14.804
16.79 GHz	58.948	74	-15.052	13	1.631	Vertical	18.612
11.206 GHz	58.669	74	-15.331	37	1.63	Horizontal	14.839
16.814 GHz	58.411	74	-15.589	78	1.63	Horizontal	18.719

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.198 GHz	41.711	54	-12.289	62	2.712	Vertical	14.804
16.79 GHz	42.017	54	-11.983	13	1.631	Vertical	18.612
11.206 GHz	43.213	54	-10.787	37	1.63	Horizontal	14.839
16.814 GHz	40.014	54	-13.986	78	1.63	Horizontal	18.719

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



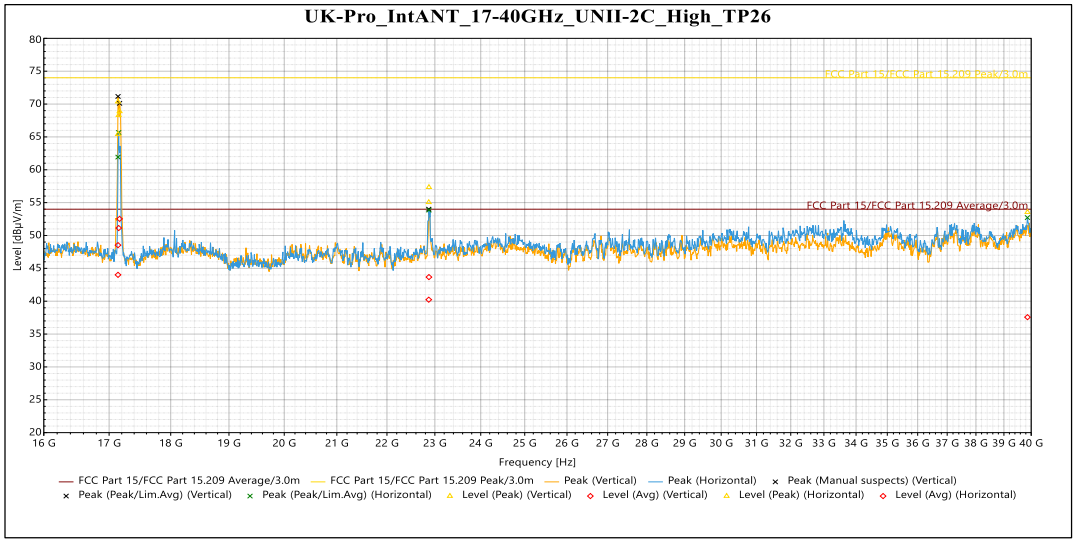
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
12.333 GHz	54.151	74	-19.849	181	2.933	Vertical	16.62
14.727 GHz	57.465	74	-16.535	46	1.881	Vertical	17.213
12.536 GHz	54.831	74	-19.169	316	4	Horizontal	16.589
14.642 GHz	56.011	74	-17.989	186	3.808	Horizontal	16.692

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
12.333 GHz	37.334	54	-16.666	181	2.933	Vertical	16.62
14.727 GHz	37.949	54	-16.051	46	1.881	Vertical	17.213
12.536 GHz	36.542	54	-17.458	316	4	Horizontal	16.589
14.642 GHz	37.061	54	-16.939	186	3.808	Horizontal	16.692

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



Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.141 GHz	70.36	74	-3.64	24	Vertical	-0.025
17.166 GHz	68.885	74	-5.115	27	Vertical	0.032
22.87 GHz	55.046	74	-18.954	54	Vertical	0.754
17.141 GHz	65.414	74	-8.586	73	Horizontal	-0.025
17.152 GHz	68.308	74	-5.692	330	Horizontal	0
22.874 GHz	57.342	74	-16.658	312	Horizontal	0.771
39.862 GHz	53.551	74	-20.449	175	Horizontal	3.295

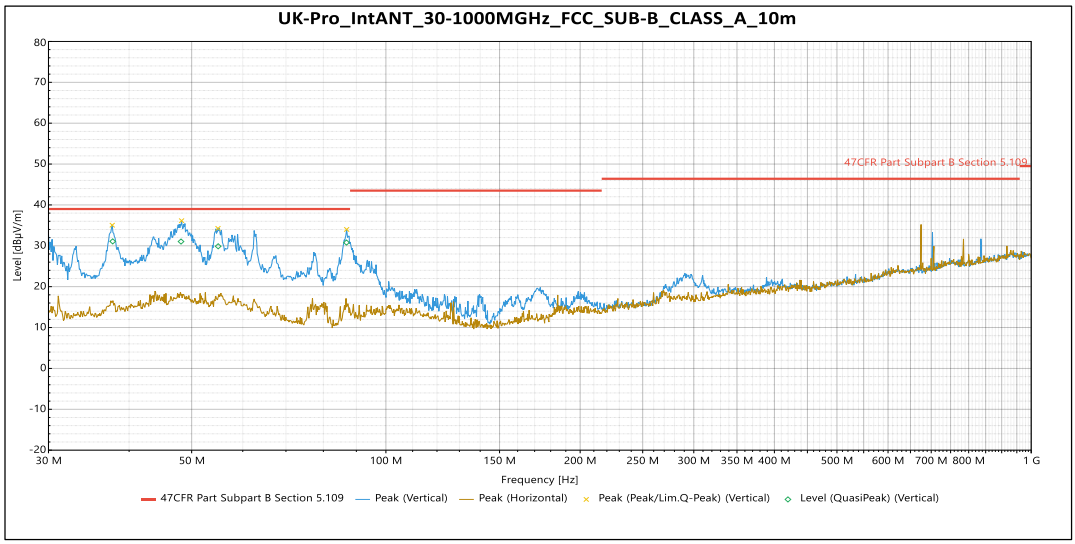
Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.141 GHz	48.533	54	-5.467	24	Vertical	-0.025
17.166 GHz	52.534	54	-1.466	27	Vertical	0.032
22.87 GHz	40.234	54	-13.766	54	Vertical	0.754
17.141 GHz	44.006	54	-9.994	73	Horizontal	-0.025
17.152 GHz	51.127	54	-2.873	330	Horizontal	0
22.874 GHz	43.667	54	-10.333	312	Horizontal	0.771
39.862 GHz	37.57	54	-16.43	175	Horizontal	3.295

Table 14: Radiated Emissions 17 – 40 GHz on the Highest Frequency (worse case)

5.5.4 Internal Antenna

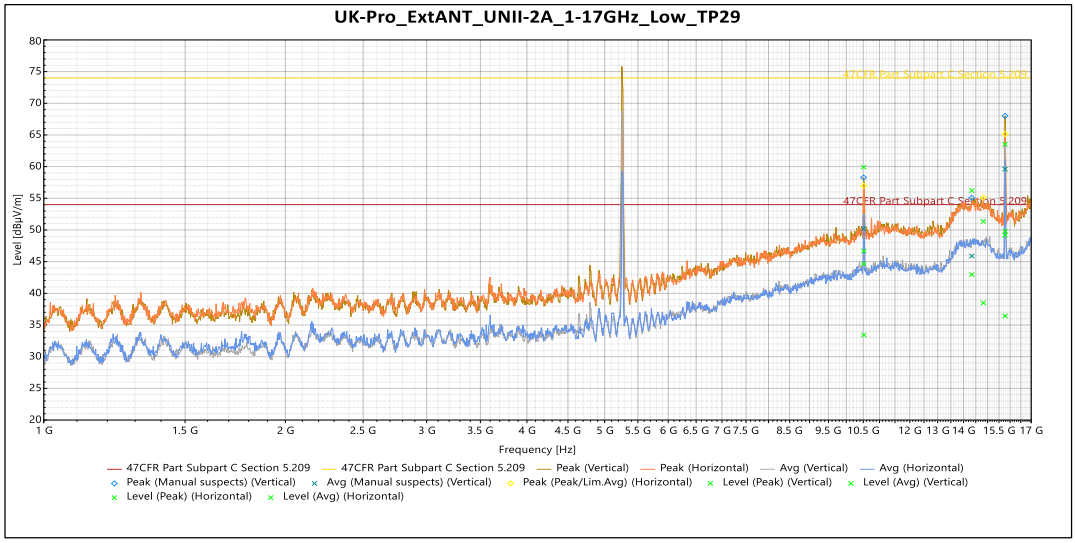
UNII-2A



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
37.726 MHz	31.084	39	-7.916	98	1.019	Vertical	-14.6
48.139 MHz	31.043	39	-7.957	76	2.405	Vertical	-12.303
54.963 MHz	29.877	39	-9.123	306	3.932	Vertical	-12.674
86.879 MHz	30.788	39	-8.212	178	1.35	Vertical	-17.381
Note: No Significant emissions were observed in the horizontal orientation of the antenna							

Table 15: Radiated Emissions 30 – 1000 MHz



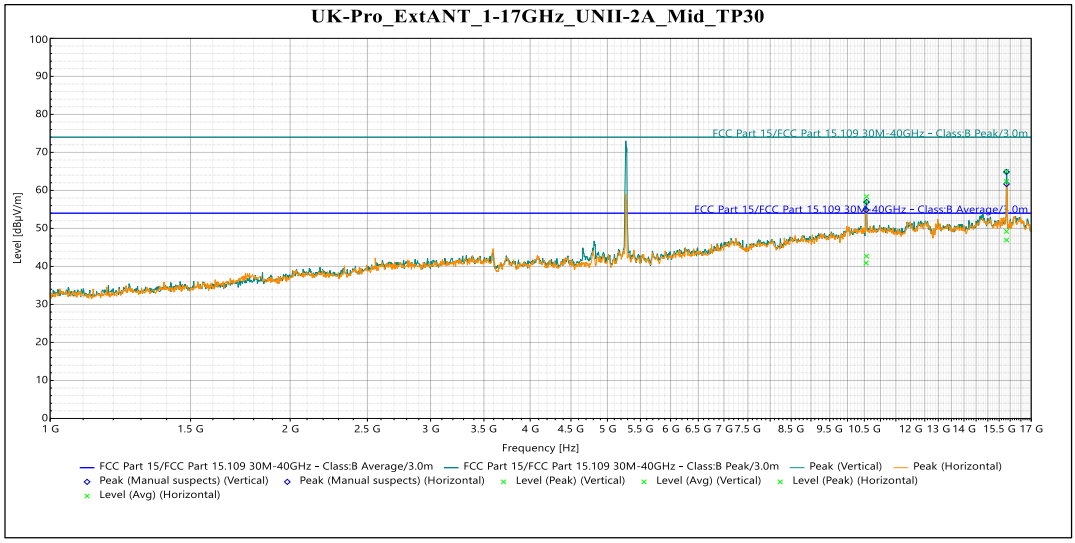
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.51 GHz	59.92	74	-14.08	44	1.638	Vertical	6.945
14.334 GHz	56.224	74	-17.776	86	1.638	Vertical	11.727
15.772 GHz	63.532	74	-10.468	8	1.5	Vertical	9.282
10.517 GHz	46.68	74	-27.32	257	1.643	Horizontal	6.972
14.821 GHz	51.357	74	-22.643	65	3.652	Horizontal	11.628
15.778 GHz	49.799	74	-24.201	150	1.834	Horizontal	9.284

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.51 GHz	44.649	54	-9.351	44	1.638	Vertical	6.945
14.334 GHz	42.959	54	-11.041	86	1.638	Vertical	11.727
15.772 GHz	49.185	54	-4.815	8	1.5	Vertical	9.282
10.517 GHz	33.425	54	-20.575	257	1.643	Horizontal	6.972
14.821 GHz	38.497	54	-15.503	65	3.652	Horizontal	11.628
15.778 GHz	36.435	54	-17.565	150	1.834	Horizontal	9.284

Table 16: Radiated Emissions 1 – 17 GHz Transmitting on the Lowest Frequency



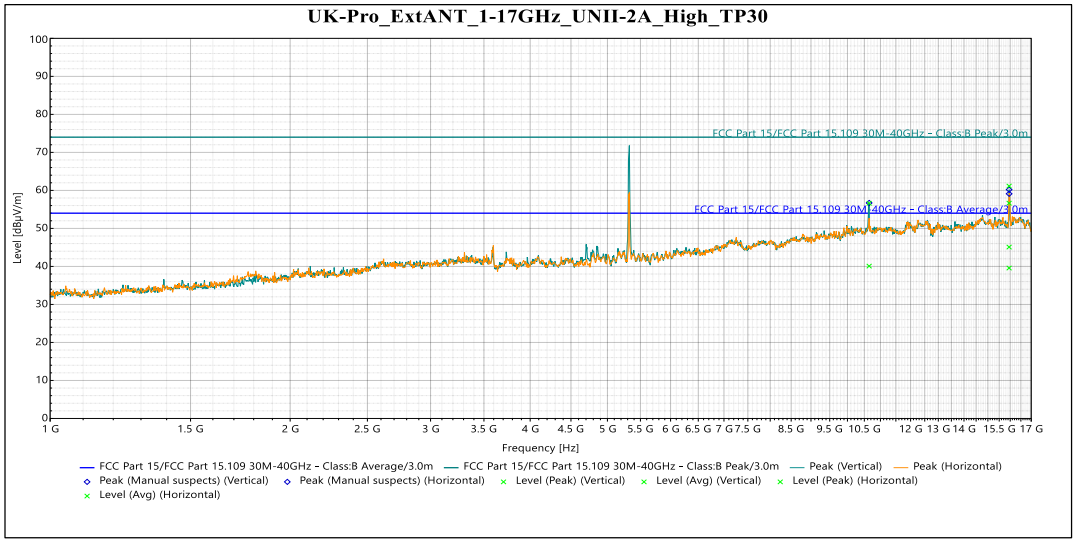
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.566 GHz	58.336	74	-15.664	348	3.456	Vertical	14.653
15.83 GHz	64.948	74	-9.052	324	3.97	Vertical	15.355
10.555 GHz	56.967	74	-17.033	322	1.5	Horizontal	14.509
15.832 GHz	62.321	74	-11.679	115	3.631	Horizontal	15.355

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.566 GHz	42.697	54	-11.303	348	3.456	Vertical	14.653
15.83 GHz	49.199	54	-4.801	324	3.97	Vertical	15.355
10.555 GHz	40.892	54	-13.108	322	1.5	Horizontal	14.509
15.832 GHz	46.938	54	-7.062	115	3.631	Horizontal	15.355

Table 17: Radiated Emissions 1 – 17 GHz Transmitting on the Middle Frequency



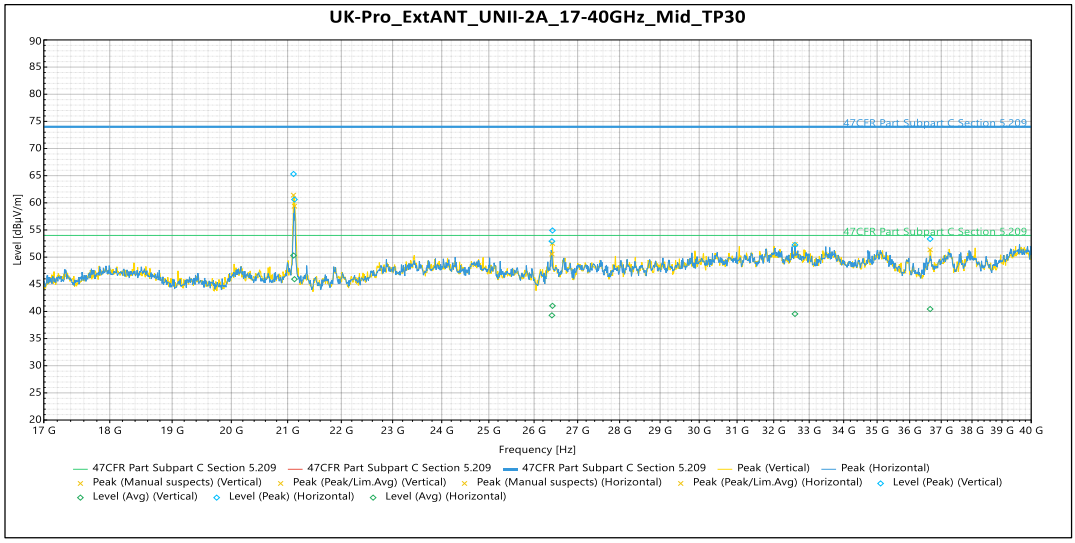
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.647 GHz	56.614	74	-17.386	117	2.347	Vertical	14.705
15.95 GHz	56.642	74	-17.358	34	1.632	Vertical	15.449
15.95 GHz	61.144	74	-12.856	302	1.81	Horizontal	15.449

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.647 GHz	40.078	54	-13.922	117	2.347	Vertical	14.705
15.95 GHz	39.569	54	-14.431	34	1.632	Vertical	15.449
15.95 GHz	45.087	54	-8.913	302	1.81	Horizontal	15.449

Table 18: Radiated Emissions 1 – 17 GHz Transmitting on the Highest Frequency



Peak

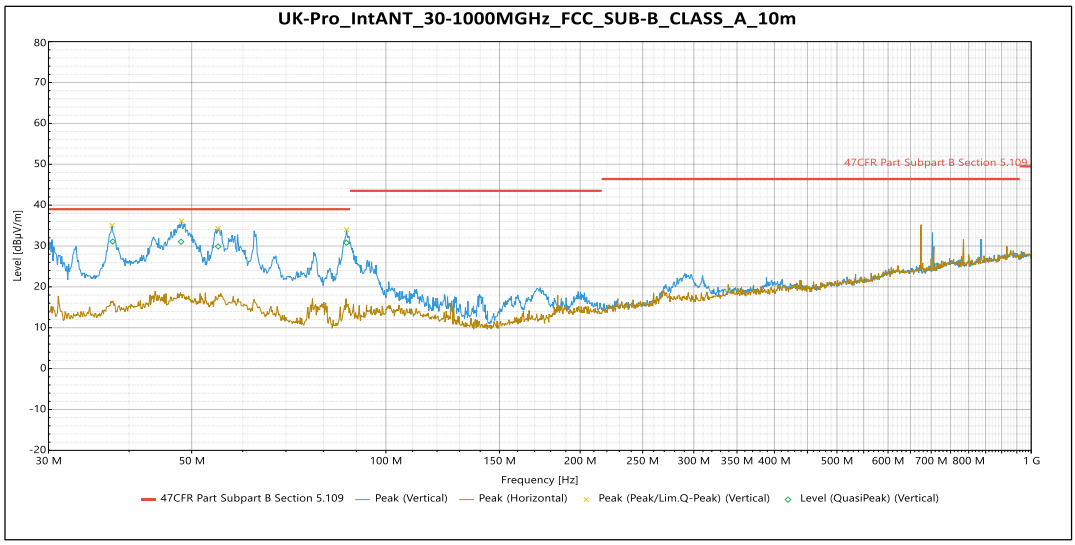
Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
21.108 GHz	65.307	74	-8.693	315	Vertical	-0.969
26.418 GHz	54.91	74	-19.09	67	Vertical	-0.909
36.646 GHz	53.352	74	-20.648	123	Vertical	3.608
21.125 GHz	60.609	74	-13.391	335	Horizontal	-1.226
26.405 GHz	52.923	74	-21.077	103	Horizontal	-1.163
32.595 GHz	52.244	74	-21.756	259	Horizontal	1.462

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
21.108 GHz	50.295	54	-3.705	315	Vertical	-0.969
26.418 GHz	41.028	54	-12.972	67	Vertical	-0.909
36.646 GHz	40.44	54	-13.56	123	Vertical	3.608
21.125 GHz	45.936	54	-8.064	335	Horizontal	-1.226
26.405 GHz	39.277	54	-14.723	103	Horizontal	-1.163
32.595 GHz	39.537	54	-14.463	259	Horizontal	1.462

Table 19: Radiated Emissions 17 – 40 GHz on the Middle Frequency (worse case)

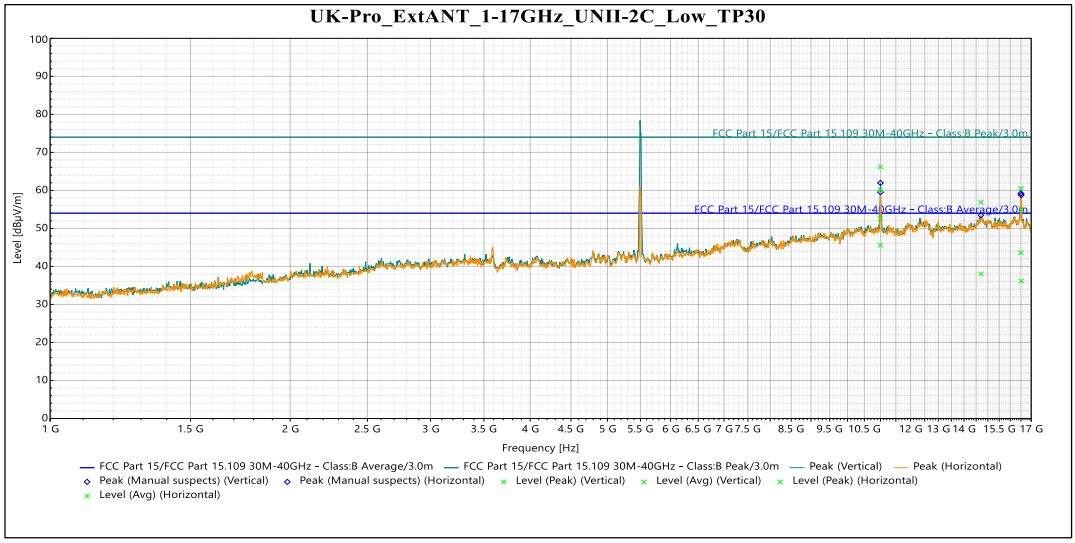
UNII-2C



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
37.726 MHz	31.084	39	-7.916	98	1.019	Vertical	-14.6
48.139 MHz	31.043	39	-7.957	76	2.405	Vertical	-12.303
54.963 MHz	29.877	39	-9.123	306	3.932	Vertical	-12.674
86.879 MHz	30.788	39	-8.212	178	1.35	Vertical	-17.381
Note: No Significant emissions were observed in the horizontal orientation of the antenna							

Table 20: Radiated Emissions 30 – 1000 MHz



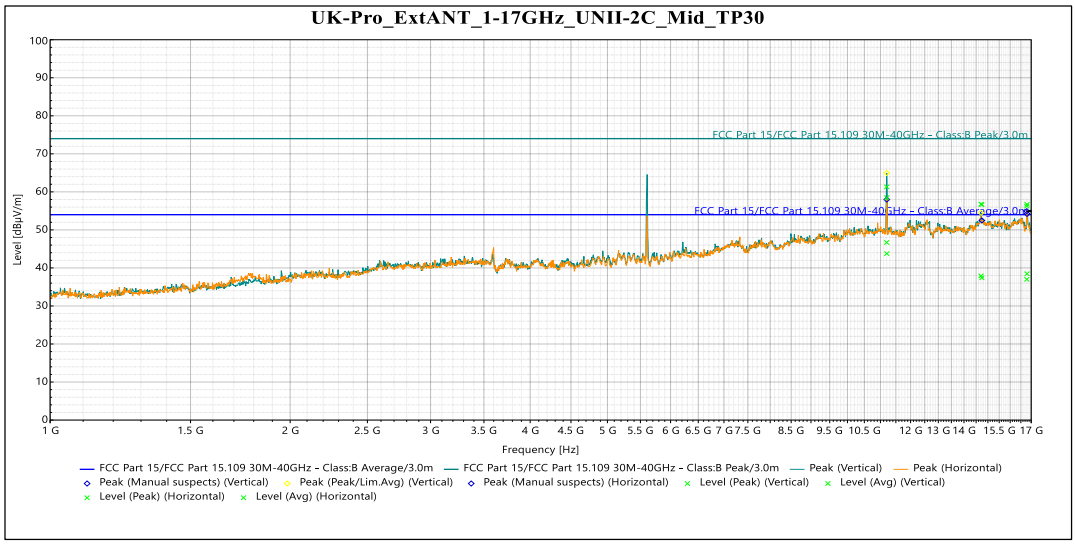
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11 GHz	66.193	74	-7.807	359	2.348	Vertical	15.473
16.519 GHz	54.978	74	-19.022	341	2.712	Vertical	18.315
11 GHz	60.14	74	-13.86	40	3.609	Horizontal	15.473
14.703 GHz	56.859	74	-17.141	298	1.527	Horizontal	17.428
16.502 GHz	60.522	74	-13.478	81	1.63	Horizontal	18.283

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11 GHz	52.556	54	-1.444	359	2.348	Vertical	15.473
16.519 GHz	36.181	54	-17.819	341	2.712	Vertical	18.315
11 GHz	45.563	54	-8.437	40	3.609	Horizontal	15.473
14.703 GHz	38.038	54	-15.962	298	1.527	Horizontal	17.428
16.502 GHz	43.607	54	-10.393	81	1.63	Horizontal	18.283

Table 21: Radiated Emissions 1 – 17 GHz Transmitting on the Lowest Frequency



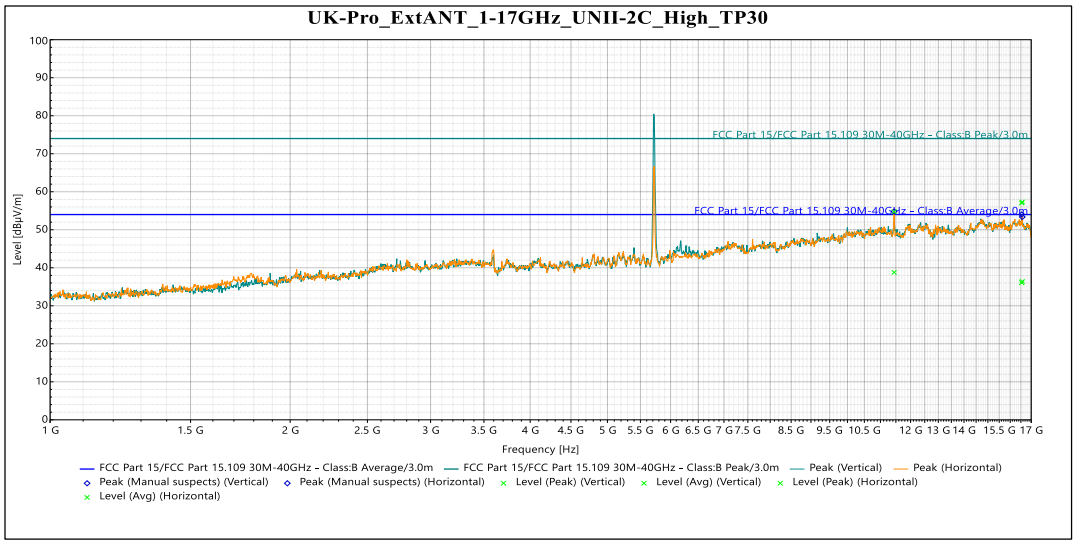
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.2 GHz	61.322	74	-12.678	261	3.808	Vertical	14.795
14.711 GHz	56.767	74	-17.233	215	3.253	Vertical	17.336
16.796 GHz	56.726	74	-17.274	20	2.759	Vertical	18.702
11.203 GHz	58.469	74	-15.531	238	4	Horizontal	14.82
14.743 GHz	56.652	74	-17.348	14	1.704	Horizontal	17.108
16.785 GHz	56.235	74	-17.765	258	3.25	Horizontal	18.537

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.2 GHz	46.687	54	-7.313	261	3.808	Vertical	14.795
14.711 GHz	37.919	54	-16.081	215	3.253	Vertical	17.336
16.796 GHz	38.484	54	-15.516	20	2.759	Vertical	18.702
11.203 GHz	43.773	54	-10.227	238	4	Horizontal	14.82
14.743 GHz	37.41	54	-16.59	14	1.704	Horizontal	17.108
16.785 GHz	37.007	54	-16.993	258	3.25	Horizontal	18.537

Table 22: Radiated Emissions 1 – 17 GHz Transmitting on the Middle Frequency



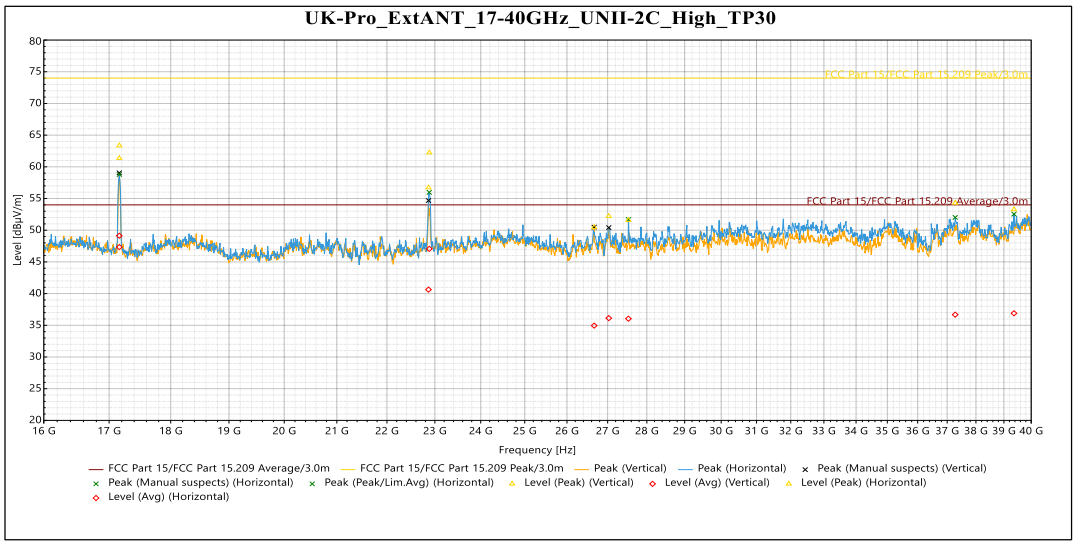
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
16.54 GHz	57.042	74	-16.958	285	3.968	Vertical	18.355
11.444 GHz	54.743	74	-19.257	13	2.057	Horizontal	14.611
16.567 GHz	57.301	74	-16.699	333	3.613	Horizontal	18.392

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
16.54 GHz	36.071	54	-17.929	285	3.968	Vertical	18.355
11.444 GHz	38.779	54	-15.221	13	2.057	Horizontal	14.611
16.567 GHz	36.4	54	-17.6	333	3.613	Horizontal	18.392

Table 23: Radiated Emissions 1 – 17 GHz Transmitting on the Highest Frequency



Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.162 GHz	61.352	74	-12.648	345	Vertical	0.023
22.865 GHz	56.722	74	-17.278	279	Vertical	0.722
26.665 GHz	50.471	74	-23.529	304	Vertical	1.833
27.028 GHz	52.205	74	-21.795	59	Vertical	1.907
17.162 GHz	63.351	74	-10.649	60	Horizontal	0.023
22.882 GHz	62.232	74	-11.768	314	Horizontal	0.805
27.526 GHz	51.578	74	-22.422	5	Horizontal	1.144
37.277 GHz	54.299	74	-19.701	1	Horizontal	4.059
39.366 GHz	53.282	74	-20.718	227	Horizontal	2.539

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.162 GHz	47.343	54	-6.657	345	Vertical	0.023
22.865 GHz	40.635	54	-13.365	279	Vertical	0.722
26.665 GHz	34.952	54	-19.048	304	Vertical	1.833
27.028 GHz	36.127	54	-17.873	59	Vertical	1.907
17.162 GHz	49.132	54	-4.868	60	Horizontal	0.023
22.882 GHz	47.065	54	-6.935	314	Horizontal	0.805
27.526 GHz	36.038	54	-17.962	5	Horizontal	1.144
37.277 GHz	36.68	54	-17.32	1	Horizontal	4.059
39.366 GHz	36.904	54	-17.096	227	Horizontal	2.539

Table 24: Radiated Emissions 17 – 40 GHz on the Highest 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 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 6 dBi antenna, the conducted limit for power spectral density is 11 dBm.

The internal antenna has a gain of 12.5 dBi so the PSD adjusted limit is 4.5 dBm. The external antenna has a gain is 4.57.

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 internal antenna gain is 12.5 dBi + Array gain of 3.01 dB which is a total of 15.51 dBi. The external antenna gain is 4.57 dBi + Array gain of 3.01 dB which is a total of 7.58 dBi.

Results of this testing are summarized.

5.6.1 Internal Antenna

UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5260	Nss2-Msc0	16	17.44	2.63
OFDM 20	5280	Nss2-Msc0	16	17.34	2.45
OFDM 20	5320	Nss2-Msc0	16	17.22	2.24
HE 20	5260	Nss2-Msc0	15	16.58	0.88
HE 20	5280	Nss2-Msc0	16	17.48	1.65
HE 20	5320	Nss2-Msc0	16	17.25	1.41
HE 40	5270	Nss2-Msc0	15	16.58	-2.00
HE 40	5310	Nss2-Msc0	16	17.40	-1.42
HE 80	5290	Nss2-Msc0	16	17.18	-4.42
HE 160	5250	Nss2-Msc0	15	16.77	-7.51

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5260	Nss1-Msc0	8	9.44	-5.01
OFDM 20	5280	Nss1-Msc0	8	9.34	-5.55
OFDM 20	5320	Nss1-Msc0	8	9.22	-5.76
HE 20	5260	Nss1-Msc0	9	10.58	-5.12
HE 20	5280	Nss1-Msc0	9	10.48	-5.35
HE 20	5320	Nss1-Msc0	9	10.25	-5.59
HE 40	5270	Nss1-Msc0	11	12.58	-6.00
HE 40	5310	Nss1-Msc0	12	13.40	-5.42
HE 80	5290	Nss1-Msc0	15	16.18	-5.42
HE 160	5250	Nss1-Msc0	15	16.77	-7.51

UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5500	Nss2-Msc0	16	17.20	2.00
OFDM 20	5600	Nss2-Msc0	16	17.11	2.13
OFDM 20	5720	Nss2-Msc0	16	16.98	1.83
HE 20	5500	Nss2-Msc0	16	17.35	1.69
HE 20	5600	Nss2-Msc0	16	17.22	1.62
HE 20	5720	Nss2-Msc0	16	17.12	1.42
HE 40	5510	Nss2-Msc0	16	17.39	-1.39
HE 40	5590	Nss2-Msc0	16	17.30	-1.37
HE 40	5710	Nss2-Msc0	16	17.21	-1.54
HE 80	5530	Nss2-Msc0	16	17.32	-4.58
HE 80	5610	Nss2-Msc0	16	16.79	-4.83
HE 80	5690	Nss2-Msc0	16	16.74	-5.00
HE 160	5570	Nss2-Msc0	16	17.16	-7.54

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5500	Nss1-Msc0	8	21.70	-6.0
OFDM 20	5600	Nss1-Msc0	8	21.61	-5.87
OFDM 20	5720	Nss1-Msc0	9	22.48	-5.17
HE 20	5500	Nss1-Msc0	9	22.85	-5.31
HE 20	5600	Nss1-Msc0	9	22.72	-5.38
HE 20	5720	Nss1-Msc0	9	22.62	-5.58
HE 40	5510	Nss1-Msc0	12	25.89	-5.39
HE 40	5590	Nss1-Msc0	12	25.80	-5.37
HE 40	5710	Nss1-Msc0	12	25.71	-5.54
HE 80	5530	Nss1-Msc0	15	28.82	-5.58
HE 80	5610	Nss1-Msc0	15	28.29	-5.83
HE 80	5690	Nss1-Msc0	15	28.24	-6.00
HE 160	5570	Nss1-Msc0	16	17.16	-7.54

5.6.2 External Antenna

UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5260	Nss2-Msc0	23	23.95	9.47
OFDM 20	5280	Nss2-Msc0	23	23.65	9.07
OFDM 20	5320	Nss2-Msc0	23	23.22	8.46
HE 20	5260	Nss2-Msc0	22	23.32	7.97
HE 20	5280	Nss2-Msc0	23	23.75	8.55
HE 20	5320	Nss2-Msc0	23	23.35	7.93
HE 40	4270	Nss2-Msc0	22	23.09	5.20
HE 40	5310	Nss2-Msc0	23	23.66	5.63
HE 80	5290	Nss2-Msc0	23	23.55	2.67
HE 160	5250	Nss2-Msc0	22	23.19	-0.55

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5260	Nss1-Msc0	22	22.95	27.52
8.47OFDM 20	5280	Nss1-Msc0	23	23.65	9.07
OFDM 20	5320	Nss1-Msc0	23	23.22	8.46
HE 20	5260	Nss1-Msc0	22	23.32	7.97
HE 20	5280	Nss1-Msc0	23	23.75	8.55
HE 20	5320	Nss1-Msc0	23	23.35	7.93
HE 40	4270	Nss1-Msc0	22	23.09	5.20
HE 40	5310	Nss1-Msc0	23	23.66	5.63
HE 80	5290	Nss1-Msc0	23	23.55	2.67
HE 160	5250	Nss1-Msc0	22	23.19	-0.55

UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5500	Nss2-Msc0	24	23.68	9.24
OFDM 20	5600	Nss2-Msc0	23	23.20	8.59
OFDM 20	5720	Nss2-Msc0	23	23.53	9.90
HE 20	5500	Nss2-Msc0	24	23.78	8.74
HE 20	5600	Nss2-Msc0	23	23.31	8.15
HE 20	5720	Nss2-Msc0	23	23.61	8.46
HE 40	5510	Nss2-Msc0	24	23.89	5.90
HE 40	5590	Nss2-Msc0	23	23.30	5.29
HE 40	5710	Nss2-Msc0	23	23.61	5.57
HE 80	5530	Nss2-Msc0	24	23.79	2.92
HE 80	5610	Nss2-Msc0	24	23.95	2.68
HE 80	5690	Nss2-Msc0	23	23.09	2.15
HE 160	5570	Nss2-Msc0	23	22.98	-0.86

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5500	Nss1-Msc0	24	23.68	9.24
OFDM 20	5600	Nss1-Msc0	23	23.20	8.59
OFDM 20	5720	Nss1-Msc0	22	22.53	8.90
HE 20	5500	Nss1-Msc0	24	23.78	8.74
HE 20	5600	Nss1-Msc0	23	23.31	8.15
HE 20	5720	Nss1-Msc0	23	23.61	8.46
HE 40	5510	Nss1-Msc0	24	23.89	5.90
HE 40	5590	Nss1-Msc0	23	23.30	5.29
HE 40	5710	Nss1-Msc0	23	23.61	5.57
HE 80	5530	Nss1-Msc0	24	23.79	2.92
HE 80	5610	Nss1-Msc0	24	23.95	2.68
HE 80	5690	Nss1-Msc0	23	23.09	2.15
HE 160	5570	Nss1-Msc0	23	22.98	-0.86

Result

The maximum average power spectral density for the internal antenna was less than the limit of 4.5 dBm (Nss1 limit of -5.01 dBm); the external antenna was less than the limit of 11 dBm (Nss1 limit of 9.42 dBm); therefore, the EUT complies with the specification.

5.7 DFS Requirement

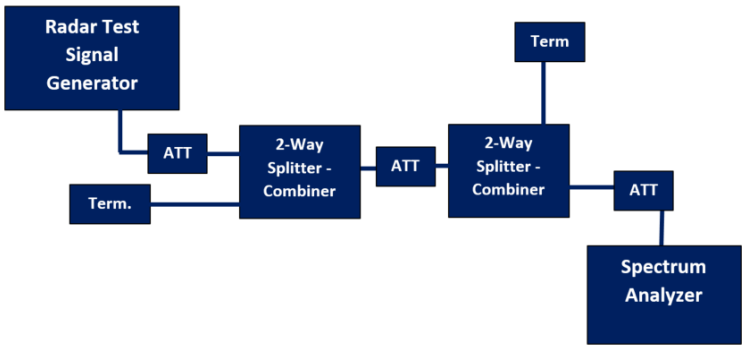
This product is a master with radar detection. The outcome of the required DFS tests is located in this section. DFS testing was performed following the test procedures as outlined in KDB 905462.

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

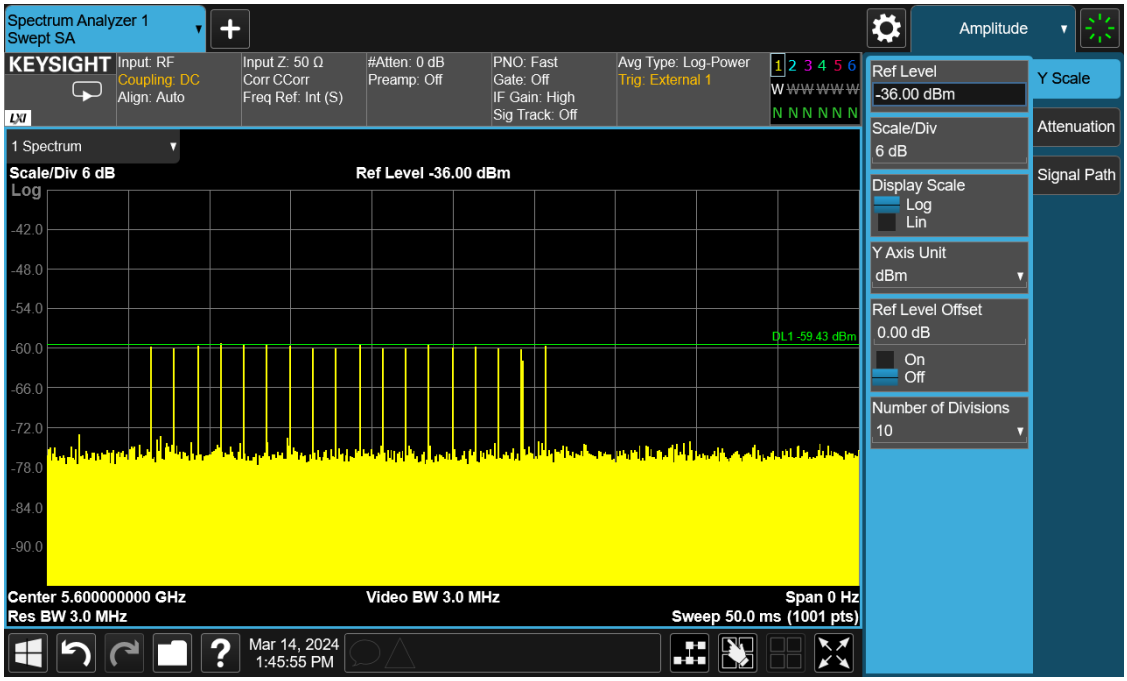
Information	Status	
Possible Antenna/s	Internal Integral 12.5 dBi and External 4.57 dBi	
Antenna used for test	Internal Integral	
Operating mode	Master	
If Client	N/A	
Port used for testing	J0 and J1	
EIRP range	> 200 milliwatts	
Impedance of port	50 ohms	
Channel loading technique	Data transfer was enacted to achieve a minimum channel loading of approximately 17%	
Antenna measurement technique	See note 1	
Time of power-on cycle	25s	
Detection threshold level	-64 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

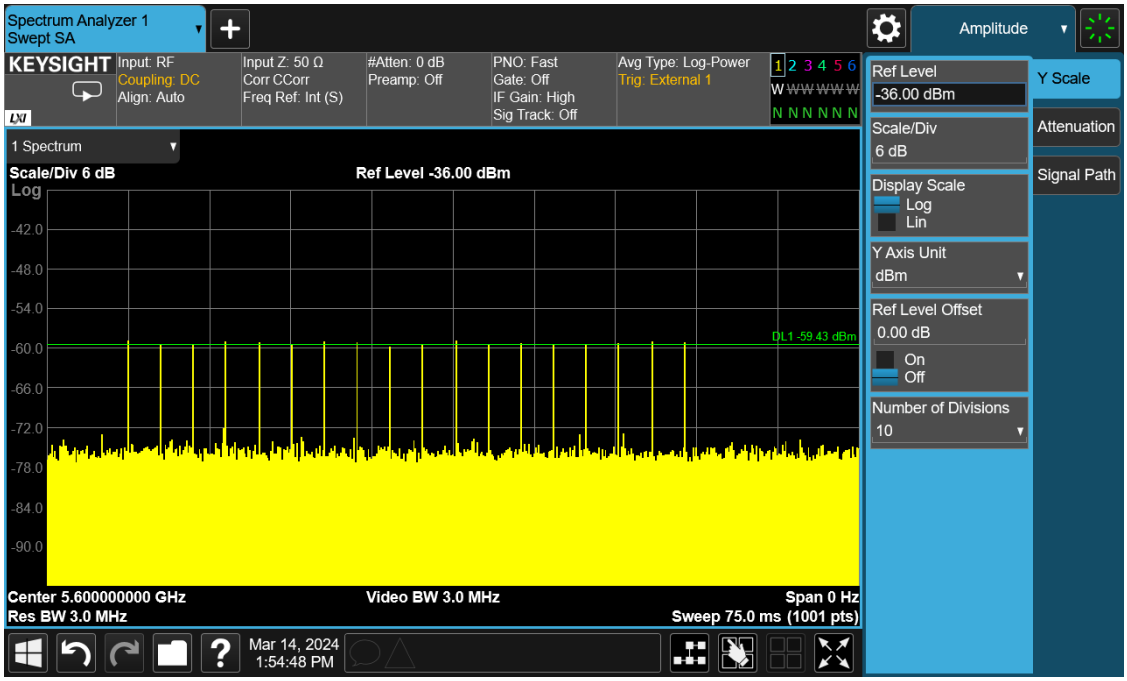
Requirement	Operational Mode	
	Master or Client Client Without Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not Required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not Required



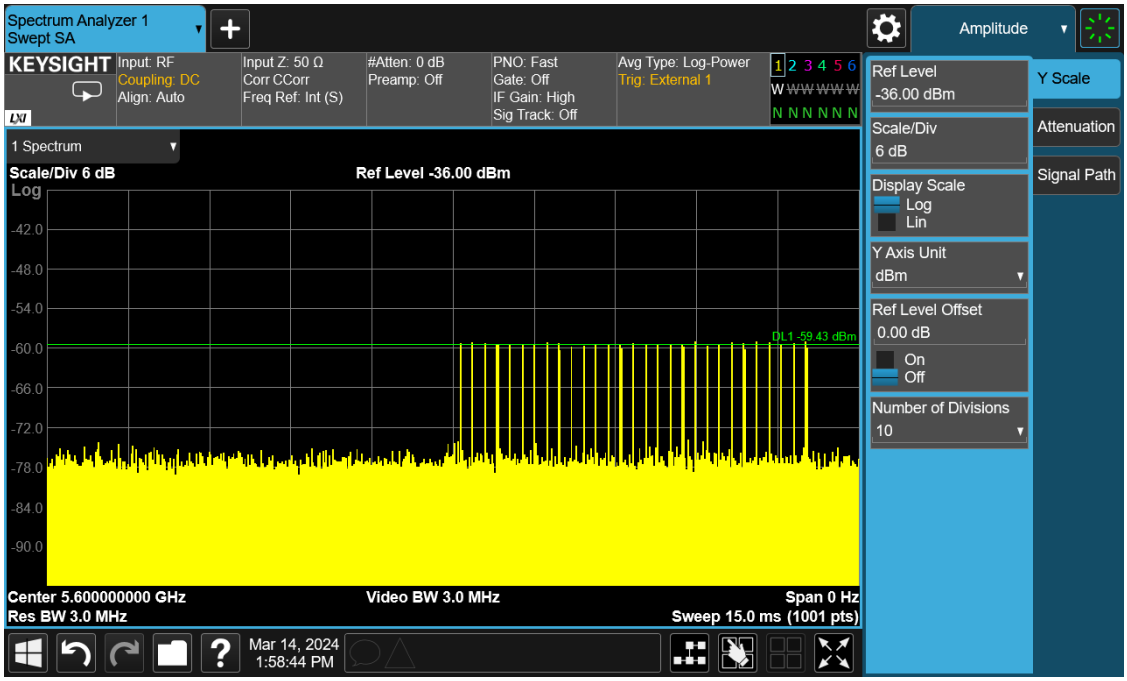
Maximum Transmit Power	**Value (See Notes 1, 2, and 3)**
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming 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.	



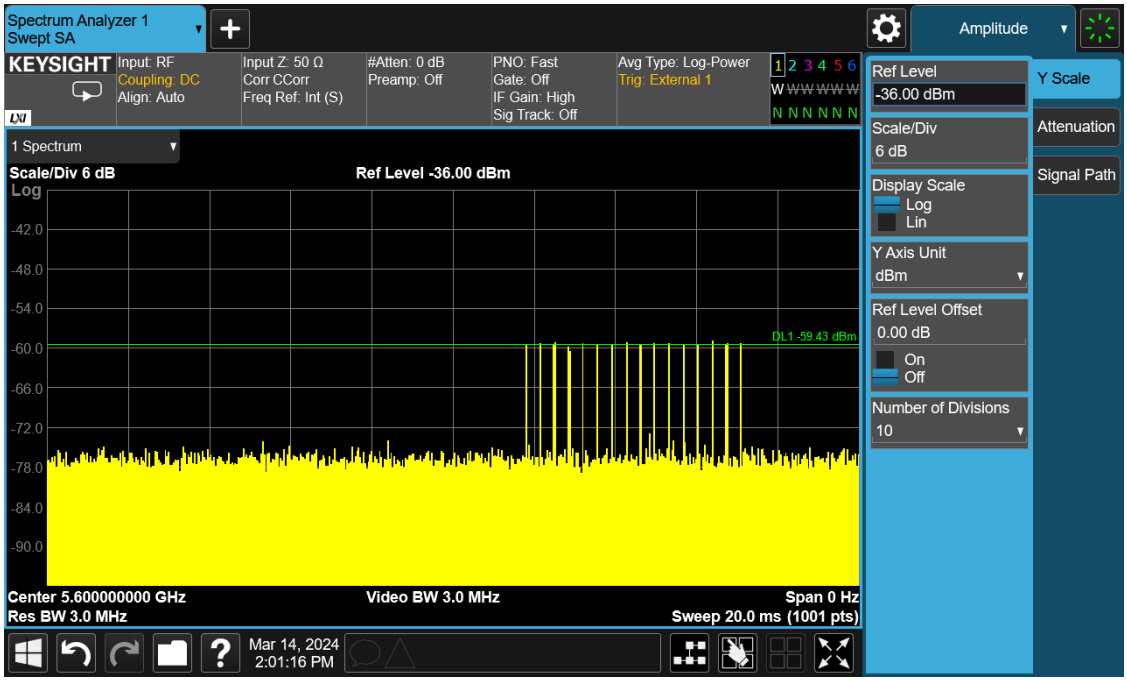
Plot 1: Radar Level 0



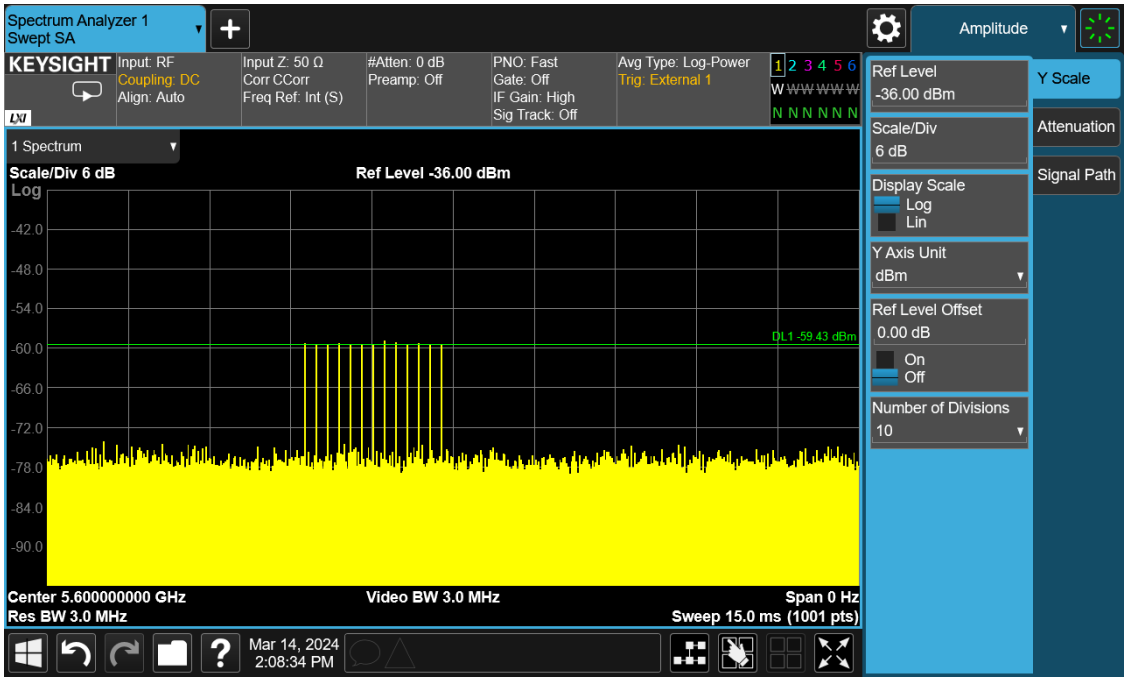
Plot 2: Radar Level 1



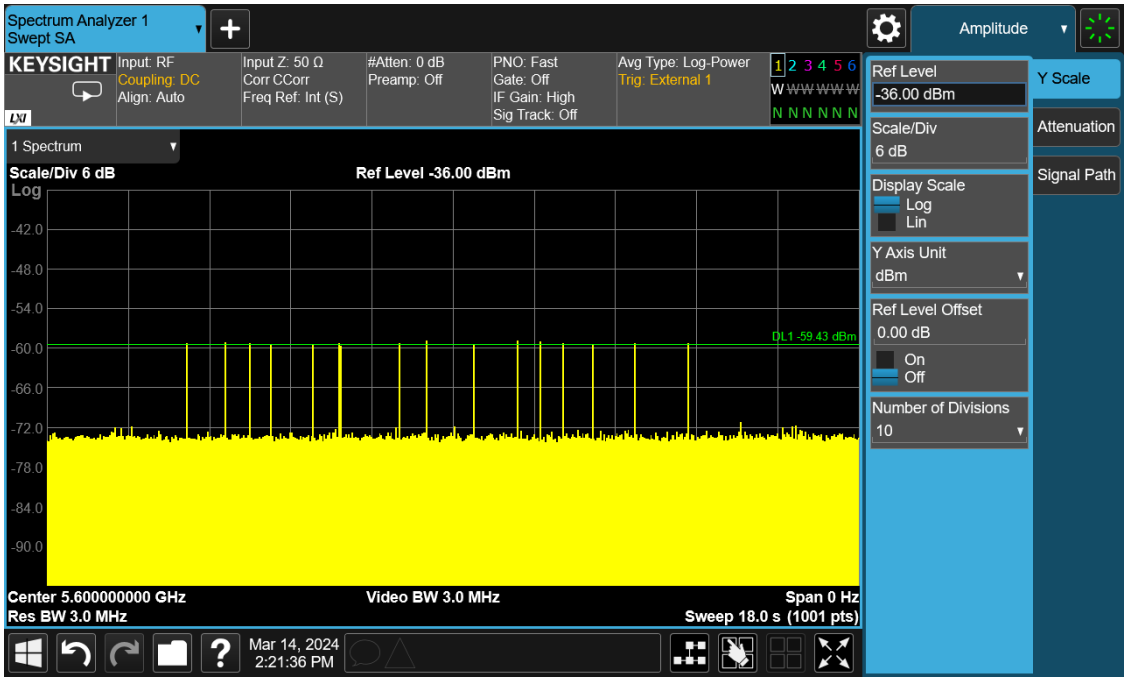
Plot 3: Radar Level 2



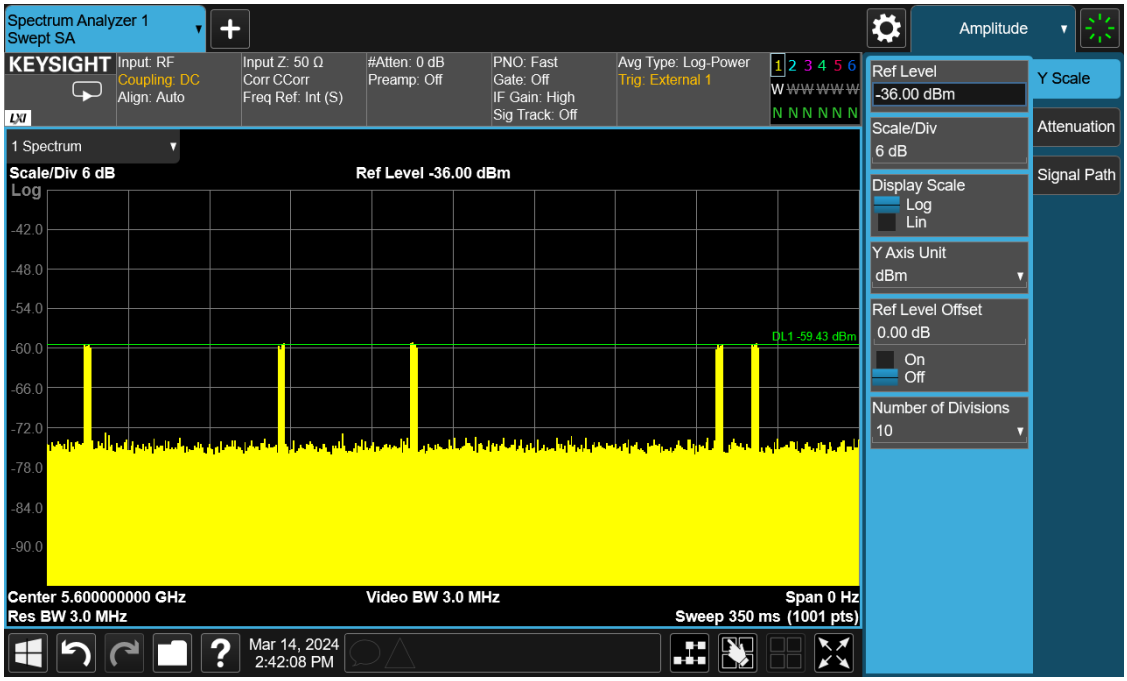
Plot 4: Radar Level 3



Plot 5: Radar Level 4



Plot 6: Radar Level 5



Plot 7: Radar Level 6

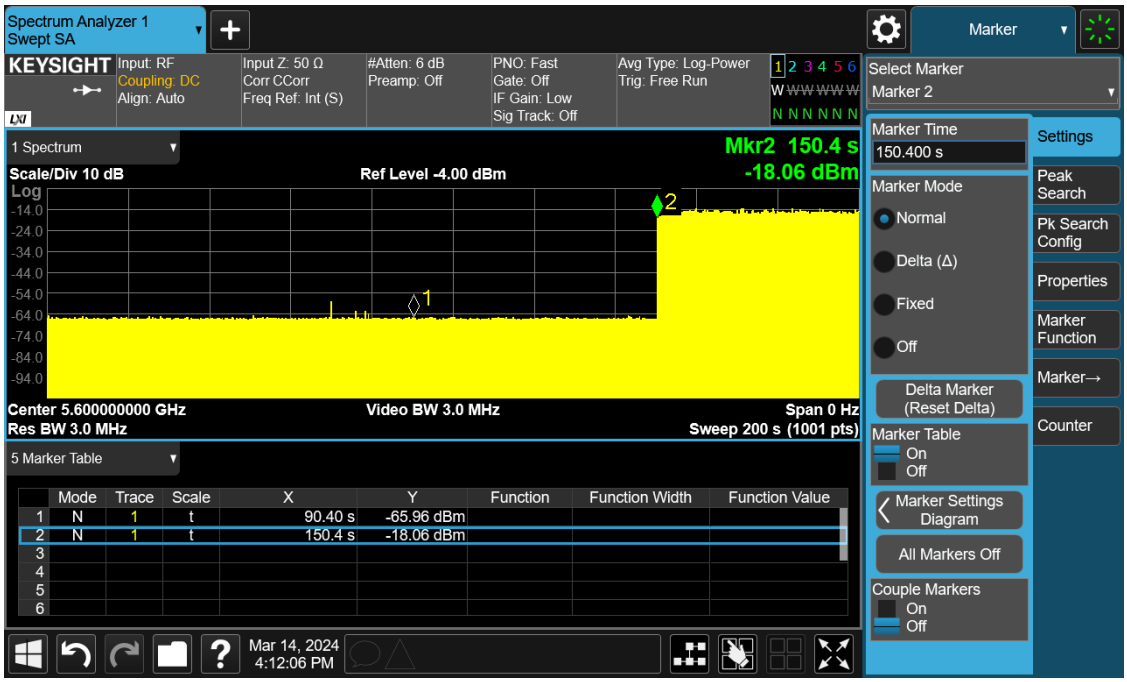
5.7.1 Channel Availability Check (CAC)

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.

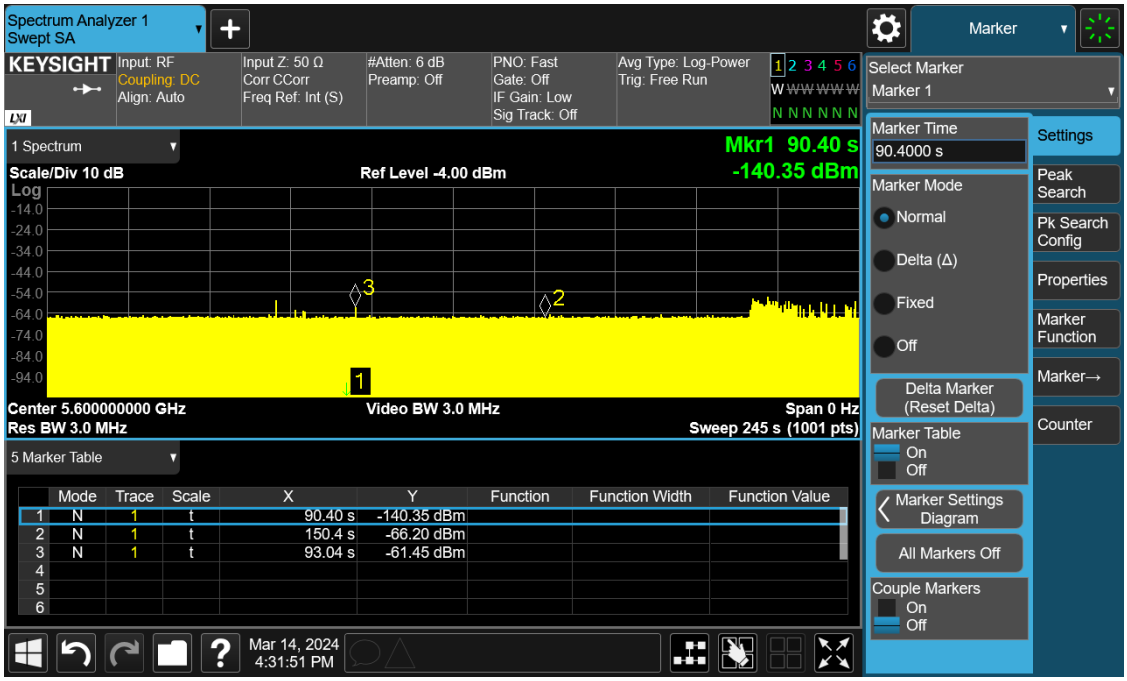
For radar burst at the beginning of the CAC. To verify successful radar detection on the selected channel during a period equal to the beginning of the CAC time, visual indication on the EUT of successful detection of the radar burst will be recorded and reported. Observation of the radar burst is show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

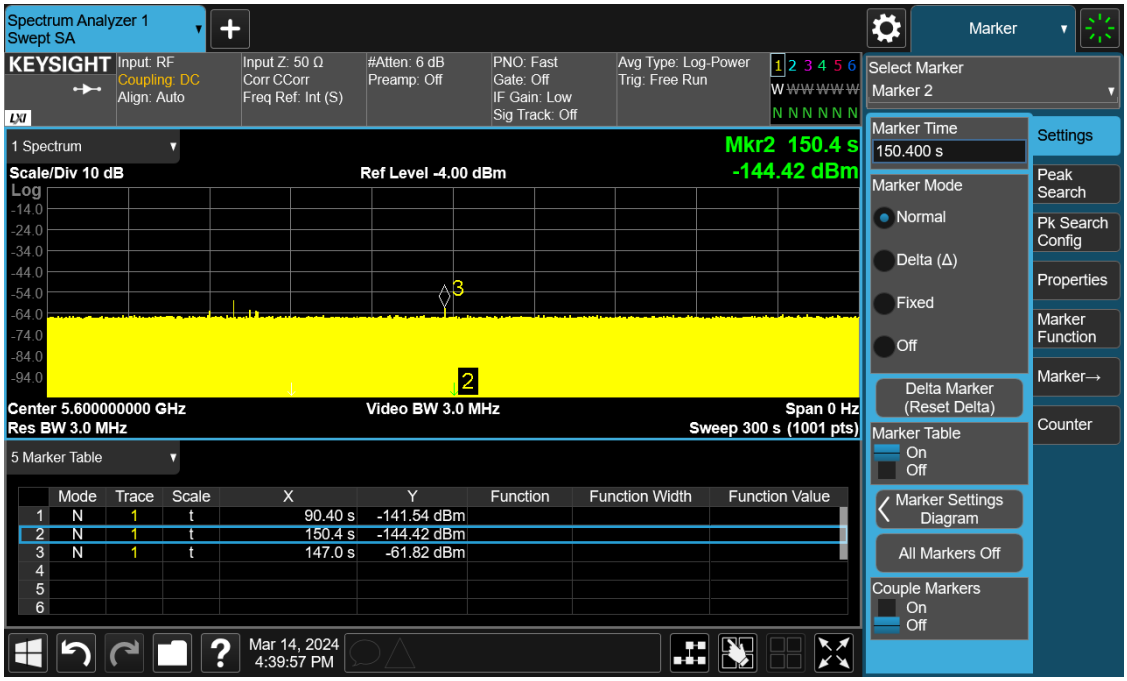
A spectrum analyzer is used as a monitor to verify that the EUT has vacated the channel within the channel closing transmission time and channel move time, and does not transmit on a channel during the non-occupancy period after the detection and channel move.



Plot 8: DUT Turn On



Plot 9: Beginning



Plot 10: End

5.7.2 In-service Monitoring

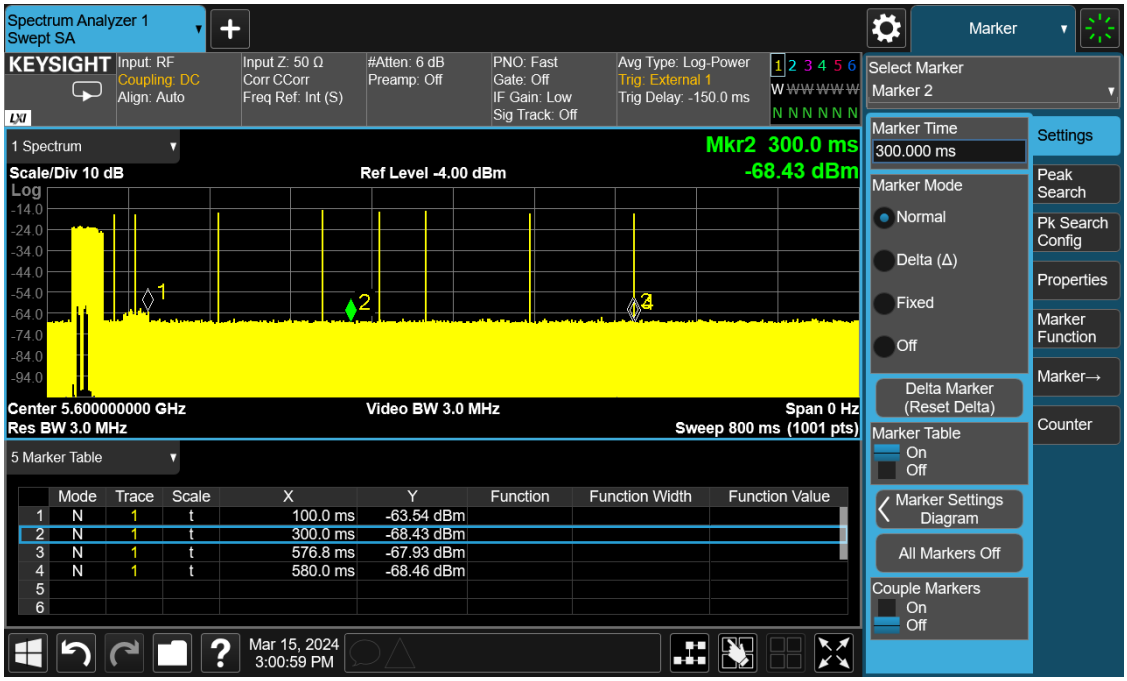
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 ms + aggregate of 60 ms over remaining 10 second period
Non-occupancy period	Minimum 30 minutes

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.

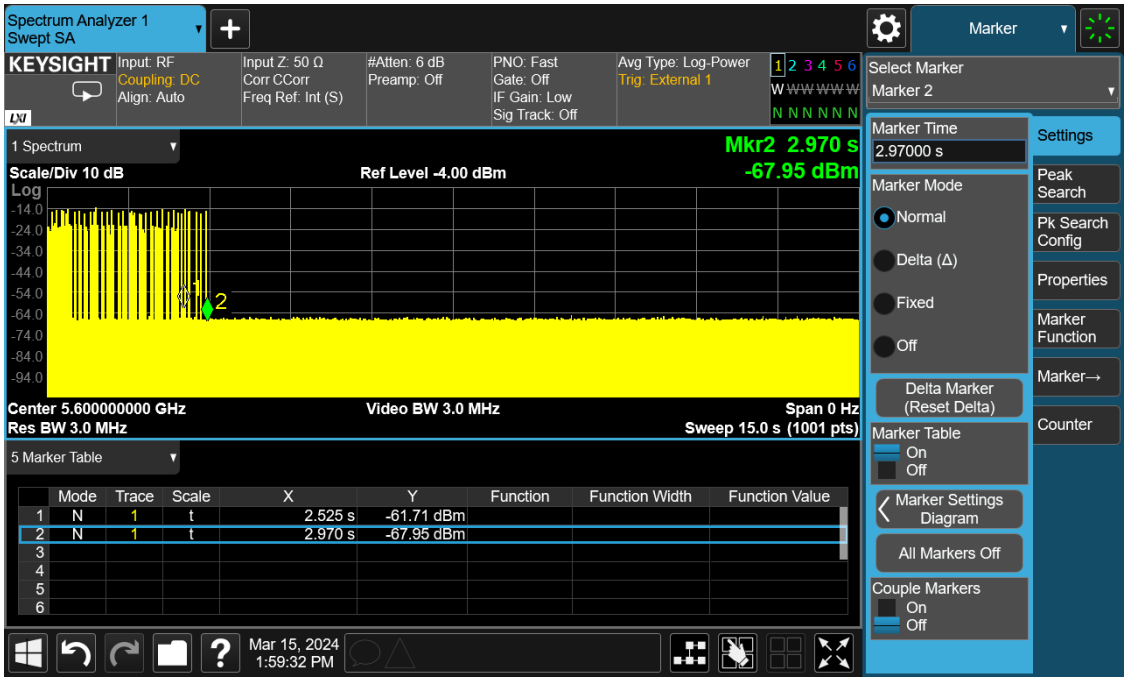
During the 30 minutes observation time, the EUT did not make any transmissions on a channel after a radar signal was detected.

Please see plots below.

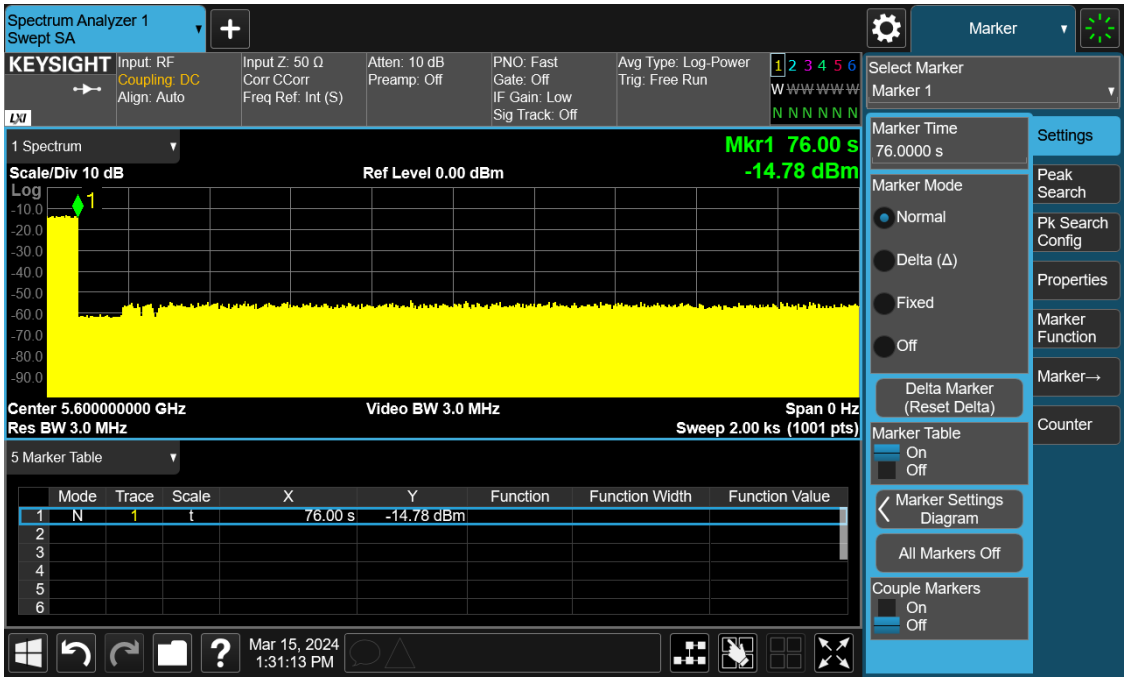
A spectrum analyzer is used as a monitor to verify that the EUT has vacated the channel within the channel closing transmission time and channel move time, and does not transmit on a channel during the non-occupancy period after the detection and channel move.



Plot 11: Channel Close



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 = 5610 MHz - 5590 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
5575	1	1	1	1	1	1	1	1	1	1	100
5580	1	1	1	1	1	1	1	1	1	1	100
5585	1	1	1	1	1	1	1	1	1	1	100
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 = 5610 MHz - 5570 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
5575	1	1	1	1	1	1	1	1	1	1	100
5580	1	1	1	1	1	1	1	1	1	1	100
5585	1	1	1	1	1	1	1	1	1	1	100
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
5610	1	1	1	1	1	1	1	1	1	1	100
5615	1	1	1	1	1	1	1	1	1	1	100
5620	1	1	1	1	1	1	1	1	1	1	100
5625	1	1	1	1	1	1	1	1	1	1	100
5630	1	1	1	1	1	1	1	1	1	1	100
5635	1	1	1	1	1	1	1	1	1	1	100
5640	1	1	1	1	1	1	1	1	1	1	100
5645	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 = 5650 MHz - 5570 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	1	1	1	1	1	1	1	1	1	1	100
5495	1	1	1	1	1	1	1	1	1	1	100
5500	1	1	1	1	1	1	1	1	1	1	100
5505	1	1	1	1	1	1	1	1	1	1	100
5510	1	1	1	1	1	1	1	1	1	1	100
5515	1	1	1	1	1	1	1	1	1	1	100
5520	1	1	1	1	1	1	1	1	1	1	100
5525	1	1	1	1	1	1	1	1	1	1	100
5530	1	1	1	1	1	1	1	1	1	1	100
5535	1	1	1	1	1	1	1	1	1	1	100
5540	1	1	1	1	1	1	1	1	1	1	100
5545	1	1	1	1	1	1	1	1	1	1	100
5550	1	1	1	1	1	1	1	1	1	1	100
5555	1	1	1	1	1	1	1	1	1	1	100
5560	1	1	1	1	1	1	1	1	1	1	100
5565	1	1	1	1	1	1	1	1	1	1	100
5570	1	1	1	1	1	1	1	1	1	1	100
5575	1	1	1	1	1	1	1	1	1	1	100
5580	1	1	1	1	1	1	1	1	1	1	100
5585	1	1	1	1	1	1	1	1	1	1	100
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
5610	1	1	1	1	1	1	1	1	1	1	100
5615	1	1	1	1	1	1	1	1	1	1	100
5620	1	1	1	1	1	1	1	1	1	1	100
5625	1	1	1	1	1	1	1	1	1	1	100
5630	1	1	1	1	1	1	1	1	1	1	100
5635	1	1	1	1	1	1	1	1	1	1	100
5640	1	1	1	1	1	1	1	1	1	1	100
5645	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 = 5650 MHz - 5490 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	28	30	93%
Type 2	24	30	80%
Type 3	25	30	83%
Type 4	20	30	67%
Type 5	29	30	97%
Type 6	30	30	100%
Aggregate 1-4	97	120	81%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	102	1	518	y
2	65	1	818	y
3	86	1	618	y
4	58	1	918	y
5	68	1	778	y
6	72	1	738	y
7	57	1	938	y
8	95	1	558	y
9	83	1	638	y
10	61	1	878	y
11	70	1	758	y
12	74	1	718	y
13	62	1	858	y
14	89	1	598	y
15	92	1	578	y
16	19	1	2825	y
17	28	1	1924	n
18	29	1	1873	y
19	57	1	937	y
20	23	1	2325	y
21	33	1	1611	y
22	22	1	2437	y
23	30	1	1782	y
24	25	1	2119	y
25	33	1	1627	y
26	18	1	3019	n
27	87	1	610	y
28	44	1	1223	y
29	27	1	2012	y
30	26	1	2087	y
				28/30: 93.3%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	24	4.9	211	y
2	28	2.1	160	y
3	27	4.9	156	y
4	28	3	156	n
5	27	2.9	214	y
6	23	1	161	y
7	25	1.4	217	y
8	24	2.7	153	y
9	23	4.4	195	y
10	24	4.2	165	y
11	26	1.7	162	y
12	24	4.5	193	y
13	24	2	210	y
14	27	1.8	226	y
15	29	3.5	215	y
16	28	4.1	183	y
17	27	2.5	199	n
18	25	2.8	214	y
19	24	4.4	184	y
20	27	2.9	198	n
21	24	3.9	201	y
22	28	1.6	202	y
23	25	4	209	y
24	26	2.1	196	n
25	27	4.5	203	y
26	25	2.5	166	n
27	29	1.5	224	y
28	27	3.2	186	y
29	25	4	192	n
30	28	4	200	y
				24/30: 80%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	16	8.5	463	y
2	17	8.4	240	y
3	17	7.3	432	y
4	17	6.8	418	n
5	17	6.4	316	y
6	16	7.6	458	y
7	18	9.2	494	y
8	18	8.8	324	y
9	18	7.9	434	y
10	18	6.4	296	y
11	17	9.1	425	y
12	17	9.1	472	y
13	17	6.4	203	y
14	17	6.7	466	y
15	16	6.5	401	y
16	18	8.1	243	n
17	17	7.2	262	y
18	17	8.4	422	y
19	17	9.7	334	y
20	17	9.1	206	y
21	17	7.2	468	y
22	17	8	471	y
23	17	7.7	473	y
24	16	7	329	y
25	18	6.1	276	y
26	17	7.2	373	n
27	17	6.5	470	n
28	17	8.1	405	y
29	17	7.6	214	n
30	17	9.3	298	y
				25/30: 83.3%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	15	17.4	334	y
2	14	14.4	312	y
3	16	16.6	329	n
4	13	18.9	286	y
5	14	14.4	266	y
6	14	12.1	277	y
7	15	18.2	276	n
8	14	11.3	465	n
9	15	15.4	449	y
10	16	13.8	330	n
11	13	17.7	340	n
12	13	15.1	317	n
13	12	13.5	297	y
14	13	13	404	y
15	16	17.4	434	y
16	15	11.4	411	n
17	13	17.8	466	n
18	13	12.3	310	y
19	15	14	410	y
20	14	15.4	270	y
21	12	17.9	455	y
22	15	15.3	409	y
23	15	19.6	301	n
24	13	18.7	487	n
25	14	14.4	438	y
26	14	18.2	322	y
27	15	12.3	327	y
28	15	12.3	242	y
29	12	19.4	376	y
30	15	14.1	353	y
				20/30: 66.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	18	1	5500
2	y	19	1	5500
3	y	17	1	5500
4	y	12	1	5500
5	y	7	1	5500
6	y	19	1	5500
7	y	16	1	5500
8	y	19	1	5500
9	y	15	1	5500
10	y	14	1	5500
11	y	18	2	5498.2
12	y	8	2	5494.2
13	n	16	2	5497.4
14	y	15	2	5497
15	y	14	2	5496.6
16	y	8	2	5494.2
17	y	7	2	5493.8
18	y	19	2	5498.6
19	y	5	2	5493
20	y	5	2	5493
21	y	17	3	5502.2
22	y	5	3	5507
23	y	9	3	5505.4
24	y	6	3	5506.6
25	y	16	3	5502.6
26	y	7	3	5506.2
27	y	17	3	5502.2
28	y	12	3	5504.2
29	y	9	3	5505.4
30	y	12	3	5504.2

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%

40 MHz

Summary			
Type	**Detections**	**Trials**	**Detection Probability**
Type 1	28	30	93%
Type 2	24	30	80%
Type 3	21	30	70%
Type 4	23	30	77%
Type 5	28	30	93%
Type 6	30	30	100%
Aggregate 1-4	96	120	80%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	20	1	2718	y
2	60	1	884	y
3	22	1	2422	y
4	30	1	1780	n
5	44	1	1213	y
6	58	1	917	y
7	61	1	873	y
8	31	1	1734	y
9	21	1	2572	y
10	28	1	1940	y
11	81	1	658	y
12	100	1	530	y
13	54	1	983	y
14	54	1	977	y
15	32	1	1650	y
16	30	1	1812	y
17	24	1	2267	y
18	19	1	2884	y
19	19	1	2877	y
20	31	1	1750	y
21	93	1	572	y
22	29	1	1866	y
23	34	1	1564	n
24	97	1	546	y
25	33	1	1598	y
26	25	1	2194	y
27	21	1	2555	y
28	39	1	1366	y
29	52	1	1025	y
30	38	1	1422	y
				28/30: 93.3%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	23	1.5	229	y
2	27	4.8	157	y
3	24	1	159	y
4	26	2.1	222	n
5	29	3.6	201	y
6	24	2.7	188	n
7	26	2.6	214	n
8	24	2.7	229	y
9	25	1.6	215	y
10	29	4.1	206	n
11	26	1.9	214	y
12	23	1.2	152	y
13	28	4.3	198	y
14	26	1	167	y
15	25	1	163	y
16	27	2.4	172	y
17	27	2.3	194	y
18	29	3	194	y
19	29	3.9	166	y
20	28	4.6	176	y
21	28	3.3	160	y
22	26	4.9	211	n
23	27	1.9	157	n
24	28	1.7	164	y
25	28	1.7	164	y
26	25	1.6	150	y
27	26	2.6	217	y
28	23	2.8	212	y
29	24	1.3	169	y
30	26	3.7	217	y
				24/30: 80%

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	8.4	361	y
2	17	7.4	266	y
3	17	7	430	y
4	16	8.9	482	y
5	17	7.9	355	y
6	18	8.5	343	y
7	18	9.8	431	n
8	17	6.1	373	y
9	17	6.9	224	y
10	16	9.6	297	y
11	16	6.9	464	n
12	16	9.9	257	n
13	17	7.4	454	y
14	18	8.9	250	y
15	16	9	422	y
16	17	6.7	255	n
17	16	9.2	366	y
18	18	9.1	482	y
19	18	8.8	377	y
20	16	6.6	418	n
21	16	9.8	300	y
22	18	6.9	484	y
23	17	7.7	205	n
24	17	9.5	207	n
25	17	9.8	429	y
26	17	7.9	310	n
27	16	8.3	419	n
28	18	7.8	471	y
29	18	7.2	350	y
30	18	7.2	396	y
				21/30: 70%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	13	18.7	449	n
2	13	19.9	390	y
3	13	16.2	359	y
4	13	19.8	275	y
5	13	18.4	420	y
6	13	17.6	433	n
7	15	12.7	462	y
8	12	15	307	n
9	14	17.8	403	y
10	14	13.9	211	y
11	14	14	357	y
12	12	16.8	286	y
13	16	18.3	329	y
14	13	18.7	391	y
15	13	17.8	244	y
16	13	19.4	333	y
17	16	19.7	292	n
18	14	13.7	257	y
19	15	18.3	431	y
20	15	15.1	234	y
21	14	11	254	n
22	15	16.8	220	y
23	13	19.2	481	y
24	15	18.7	262	y
25	13	17	428	n
26	14	12.9	322	y
27	15	18.2	379	n
28	15	19.3	333	y
29	13	15.7	360	y
30	14	18.8	297	y
				23/30: 76.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	9	1	5500
2	y	16	1	5500
3	y	15	1	5500
4	y	12	1	5500
5	y	15	1	5500
6	y	12	1	5500
7	y	6	1	5500
8	y	7	1	5500
9	y	12	1	5500
10	y	9	1	5500
11	y	18	2	5498.2
12	y	5	2	5493
13	y	15	2	5497
14	y	18	2	5498.2
15	y	5	2	5493
16	n	5	2	5493
17	y	18	2	5498.2
18	y	11	2	5495.4
19	y	18	2	5498.2
20	y	10	2	5495
21	y	6	3	5506.6
22	y	6	3	5506.6
23	y	10	3	5505
24	y	5	3	5507
25	n	14	3	5503.4
26	y	8	3	5505.8
27	y	16	3	5502.6
28	y	10	3	5505
29	y	9	3	5505.4
30	y	13	3	5503.8

28/30: 93.3%

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	30	30	100%
Type 2	24	30	80%
Type 3	22	30	73%
Type 4	23	30	77%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	99	120	83%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	72	1	738	y
2	95	1	558	y
3	68	1	778	y
4	58	1	918	y
5	62	1	858	y
6	98	1	538	y
7	86	1	618	y
8	92	1	578	y
9	67	1	798	y
10	89	1	598	y
11	18	1	3066	y
12	81	1	658	y
13	74	1	718	y
14	59	1	898	y
15	65	1	818	y
16	41	1	1309	y
17	18	1	2997	y
18	74	1	714	y
19	20	1	2638	y
20	22	1	2428	y
21	21	1	2590	y
22	30	1	1777	y
23	22	1	2509	y
24	25	1	2151	y
25	26	1	2073	y
26	28	1	1893	y
27	98	1	539	y
28	18	1	3026	y
29	20	1	2688	y
30	47	1	1134	y
				30/30: 100%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	23	3.1	190	y
2	24	3.5	200	y
3	24	2.8	179	y
4	24	1.5	208	y
5	26	1.2	213	y
6	25	4.4	208	y
7	28	2	181	n
8	25	2.4	187	n
9	28	1.7	156	n
10	24	3.9	202	n
11	26	3.8	177	y
12	28	3.1	226	y
13	24	4	203	y
14	29	4.9	155	n
15	28	3.7	152	y
16	24	3.8	152	y
17	24	4.7	168	y
18	23	2.2	179	y
19	26	1.5	201	y
20	26	4	179	y
21	29	2.3	181	y
22	28	4.6	161	y
23	27	3.3	155	n
24	25	3	226	y
25	28	3.8	180	y
26	24	1.1	221	y
27	29	3.1	160	y
28	25	2.9	221	y
29	23	1.1	173	y
30	28	3.6	153	y
				24/30: 80%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	16	9.1	254	y
2	16	7.5	410	y
3	17	7.8	332	y
4	16	9.4	429	y
5	18	7.1	473	y
6	17	6.5	311	y
7	16	7	400	n
8	17	9.7	439	y
9	17	9.4	368	n
10	17	8.7	488	y
11	17	6.7	221	y
12	18	8.3	283	y
13	17	6.3	377	n
14	17	7	373	y
15	17	8	247	y
16	17	9.7	363	y
17	16	7.2	437	y
18	17	8.8	439	n
19	18	7.9	246	y
20	17	8.4	352	n
21	18	9.8	217	y
22	17	6	268	n
23	16	7.6	477	y
24	17	8.4	222	y
25	17	7.1	234	n
26	17	9	209	n
27	18	7.3	480	y
28	17	9.4	363	y
29	18	6.8	253	y
30	18	8.9	309	y
				22/30: 73.3%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	12	17.8	247	y
2	15	19.4	418	y
3	13	12	457	n
4	13	19.5	205	y
5	14	18.3	366	y
6	16	12	349	y
7	14	15.6	373	y
8	13	18.4	218	y
9	13	11.7	466	y
10	15	16.7	266	n
11	13	12.4	245	y
12	14	19.7	488	y
13	15	17.2	364	y
14	13	12.3	284	y
15	13	13.7	463	y
16	12	17.9	266	y
17	15	14.7	423	y
18	16	11.7	344	y
19	14	11.6	227	y
20	16	12.6	294	n
21	14	12.2	483	y
22	14	15	444	n
23	16	11	265	y
24	14	19.2	412	y
25	14	12.8	233	n
26	15	18	259	y
27	13	16.5	396	n
28	14	19.8	282	y
29	15	15.5	341	n
30	12	13.9	334	y
				23/30: 76.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	5	1	5500
2	y	17	1	5500
3	y	17	1	5500
4	y	16	1	5500
5	y	9	1	5500
6	y	17	1	5500
7	y	9	1	5500
8	y	6	1	5500
9	y	6	1	5500
10	y	7	1	5500
11	y	6	2	5493.4
12	y	15	2	5497
13	y	15	2	5497
14	y	14	2	5496.6
15	y	14	2	5496.6
16	y	5	2	5493
17	y	6	2	5493.4
18	y	9	2	5494.6
19	y	12	2	5495.8
20	y	18	2	5498.2
21	y	16	3	5502.6
22	y	18	3	5501.8
23	y	18	3	5501.8
24	y	15	3	5503
25	y	15	3	5503
26	y	17	3	5502.2
27	y	9	3	5505.4
28	y	14	3	5503.4
29	y	9	3	5505.4
30	y	11	3	5504.6

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%

160 MHz

Summary			
Type	**Detections**	**Trials**	**Detection Probability**
Type 1	25	30	83%
Type 2	25	30	83%
Type 3	28	30	93%
Type 4	23	30	77%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	101	120	84%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	28	1	1947	y
2	37	1	1458	y
3	20	1	2699	n
4	43	1	1232	y
5	36	1	1503	y
6	22	1	2435	y
7	60	1	883	y
8	38	1	1407	y
9	37	1	1439	y
10	77	1	693	y
11	30	1	1760	y
12	29	1	1831	y
13	26	1	2042	y
14	63	1	837	y
15	30	1	1779	y
16	26	1	2028	y
17	62	1	853	n
18	51	1	1047	y
19	22	1	2405	y
20	20	1	2646	y
21	18	1	3059	n
22	22	1	2398	n
23	24	1	2207	y
24	53	1	997	y
25	43	1	1236	y
26	55	1	969	y
27	19	1	2841	y
28	29	1	1825	y
29	22	1	2486	n
30	98	1	538	y
				25/30: 83.3%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	26	4.2	181	y
2	26	4	208	y
3	25	3	174	y
4	25	1.9	227	n
5	25	4.1	223	y
6	28	3.5	219	y
7	25	1.4	164	y
8	25	1	153	y
9	27	4.7	201	y
10	27	2.6	180	y
11	28	2.2	154	y
12	26	3.1	174	y
13	26	3.7	195	y
14	26	2	171	y
15	26	4.8	187	y
16	28	4.4	189	y
17	25	3.2	222	y
18	24	4.6	156	n
19	28	2	172	n
20	27	1.9	190	y
21	28	4.1	223	y
22	24	2.6	157	y
23	27	2	201	y
24	24	3.4	187	y
25	24	2.3	192	y
26	25	1.5	210	y
27	26	1.2	214	n
28	23	3.2	222	y
29	27	4.3	173	y
30	27	3.1	221	n
				25/30: 83.3%

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	6.5	253	y
2	16	7.7	220	y
3	16	9.8	417	y
4	18	7.1	385	y
5	17	8.7	406	y
6	18	8.5	338	y
7	17	9.2	469	n
8	17	7.7	401	y
9	18	9.5	444	y
10	17	7.3	246	y
11	17	7.5	275	y
12	16	7.2	383	y
13	17	7.5	270	y
14	17	6.1	353	y
15	17	7.5	328	y
16	17	9.6	307	y
17	18	8.8	468	y
18	18	6.5	358	y
19	18	8.3	388	y
20	17	7.2	368	y
21	18	8.8	364	y
22	17	6.2	229	y
23	18	8.6	267	y
24	16	7.4	460	n
25	17	8.4	383	y
26	17	7.2	380	y
27	17	7.1	398	y
28	16	7.3	222	y
29	18	6.7	259	y
30	18	9.9	419	y
				28/30: 93.3%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	13	15.8	309	y
2	14	14.7	465	y
3	14	18.5	315	y
4	12	13.5	339	n
5	15	11.6	341	y
6	16	14.6	414	y
7	14	16.5	403	y
8	15	11	357	y
9	13	16.3	249	y
10	14	15.4	236	n
11	15	11.7	277	n
12	16	13.1	402	y
13	15	17.5	259	y
14	14	12.1	449	y
15	13	16.9	329	y
16	13	17.9	337	y
17	15	14.9	276	y
18	15	16.6	478	y
19	14	15.2	451	y
20	14	12.5	293	y
21	13	19.8	308	y
22	13	14.4	311	n
23	16	19.1	275	n
24	13	12.1	497	n
25	13	15.3	331	n
26	16	14.7	327	y
27	14	11.2	450	y
28	13	14.3	217	y
29	13	14.4	212	y
30	14	14.1	241	y
				23/30: 76.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	15	1	5500
2	y	8	1	5500
3	y	8	1	5500
4	y	17	1	5500
5	y	13	1	5500
6	y	7	1	5500
7	y	10	1	5500
8	y	11	1	5500
9	y	7	1	5500
10	y	10	1	5500
11	y	16	2	5497.4
12	y	8	2	5494.2
13	y	17	2	5497.8
14	y	15	2	5497
15	y	17	2	5497.8
16	y	15	2	5497
17	y	9	2	5494.6
18	y	8	2	5494.2
19	y	18	2	5498.2
20	y	11	2	5495.4
21	y	9	3	5505.4
22	y	8	3	5505.8
23	y	18	3	5501.8
24	y	14	3	5503.4
25	y	5	3	5507
26	y	10	3	5505
27	y	16	3	5502.6
28	y	8	3	5505.8
29	y	13	3	5503.8
30	y	13	3	5503.8

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%

-- End of Test Report --