UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-WAVEAPG2
ISED ID	6545A-WAVEAPG2
Equipment Under Test	Wave-AP-Gen2
Test Report Serial Number	TR9919_01
Date of Test(s)	11, 14, 17 - 19 February; 4, 26 - 27 March; 1 - 8 April 2025
Report Issue Date	14 April 2025

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

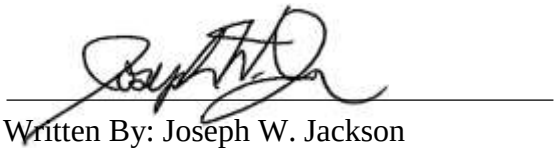
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with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

Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UBIQUITI
Model Number	Wave-AP-Gen2
FCC ID	SWX-WAVEAPG2
ISED ID	6545A-WAVEAPG2

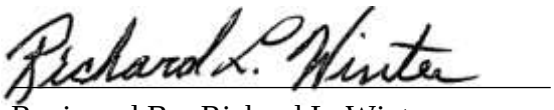
On this 14th day of April 2025, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete and correct to the best of my knowledge and are made in good faith. Unified Compliance laboratory is not responsible for incorrect information provided by the manufacturer.

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	14 April 2025

Table of Contents

1 Client Information

1.1 Applicant

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

1.2 Manufacturer

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

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	UBIQUITI
Model Number	Wave-AP-Gen2
Serial Number	F4E2C62FD3CA
Dimensions (cm)	15.8 x 28.7 x 10.0

2.2 Description of EUT

The Wave-AP-Gen2 is a fixed point to multiple-point transceiver, intended for outdoor use, operating in the 57 GHz to 71 GHz range. The Wave-AP-Gen2 has a 5150 GHz to 5850 GHz transceiver operating in the UNII-1, UNII-2 and UNII-3 bands. A Bluetooth LE transceiver is included for set-up and device management. An Ethernet port is used for transfer and to provide power using an Ubiquiti UPOE-at power supply.

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 + 13 dBi = 16.01 dBi for the internal antenna.

Or 3.01 dB + 20 dBi = 23.01 dBi for the external antenna.

The Wave-AP-Gen2 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
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
* 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: airFiber MN: Wave-AP-Gen2 (Note 1) SN: F4E2C62FD3CA	Wireless Access Point	See Section 2.4
BN: Ubiquiti MN: U-POE-at SN: N/A	PoE Power Adapter	Shielded or Un-shielded cat 5e cable
BN: Dell MN: XPS 13 SN: N/A	Laptop Computer	Shielded or Un-shielded cat 5e cable

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

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

2.4 Interface Ports on EUT

Name of Ports	No. of Ports Fitted to EUT	Cable Description/Length
AC (PoE Injector)	1	3 conductor power cord/80cm

LAN (PoE Injector)	1	Shielded or Un-shielded cat 5e cable/1 meter
Data	1	Shielded or Un-shielded cat 5e cable/1 meter

2.5 Operating Environment

Power Supply	120 Volts AC Mains to 48 Volts PoE
AC Mains Frequency	60 Hz
Temperature	21.3 - 22.5 °C
Humidity	24.0 - 25.6 %
Barometric Pressure	1016 mBar

2.6 Operating Modes

The Wave-AP-Gen2 was tested using test software in order to enable to constant transmission. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11 ax were investigated. All measurements are reported with the worst-case mode (802.11ax) unless otherwise stated.

2.7 EUT Exercise Software

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

2.8 Block Diagram of Test Configuration

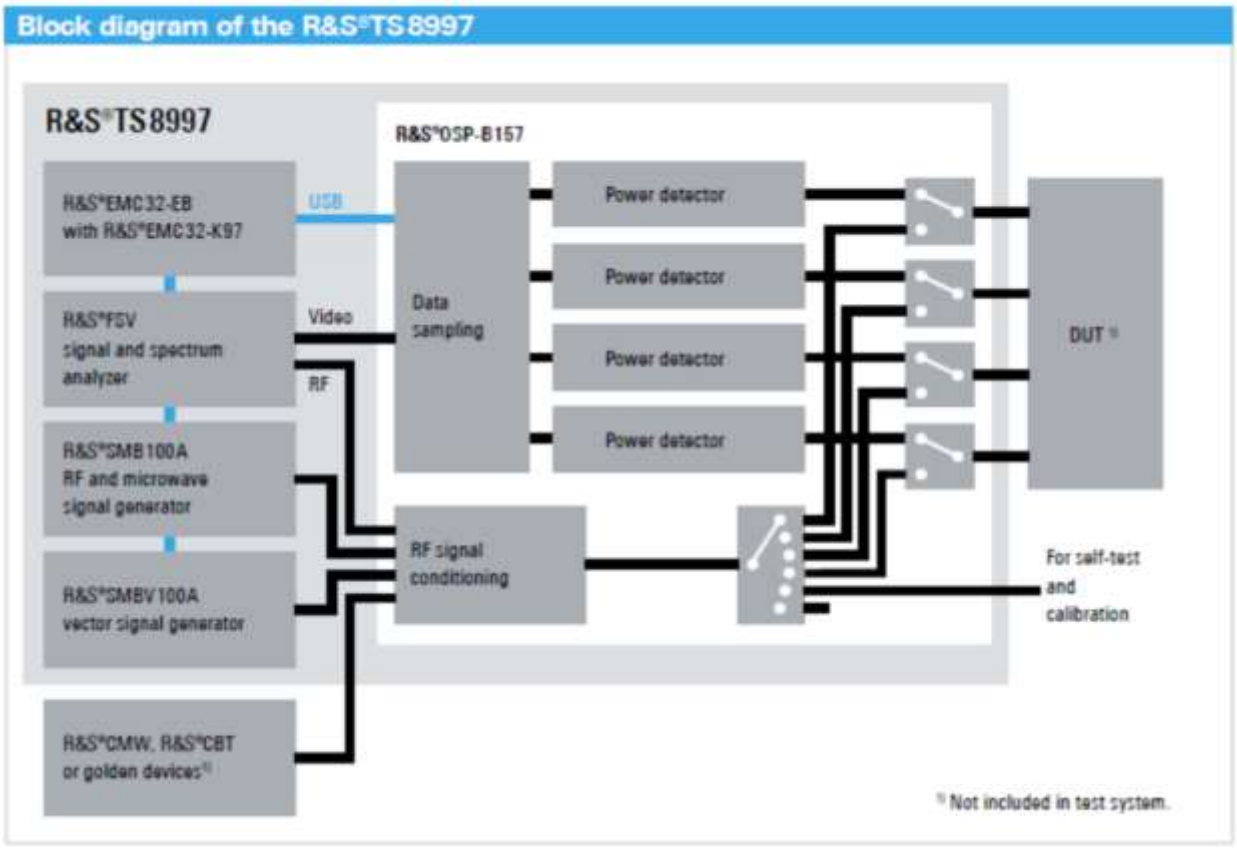


Diagram 1: Test Configuration Block Diagram

2.9 Modification Incorporated/Special Accessories on EUT

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

2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard

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

3 Test Specification, Method and Procedures

3.1 Test Specification

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

3.2 Methods & Procedures

3.2.1 47 CFR FCC Part 15 Section 15.407

See test standard for details.

3.3 FCC Part 15, Subpart E

3.3.1 Summary of Tests

FCC Section	ISED Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.203	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 2025. 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 2025.

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	8/27/2024	8/27/2025
LISN	AFJ	LS16C/10	UCL-2512	7/08/2024	7/08/2025
ISN	Teseq	ISN T800	UCL-2974	7/09/2024	7/09/2025
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

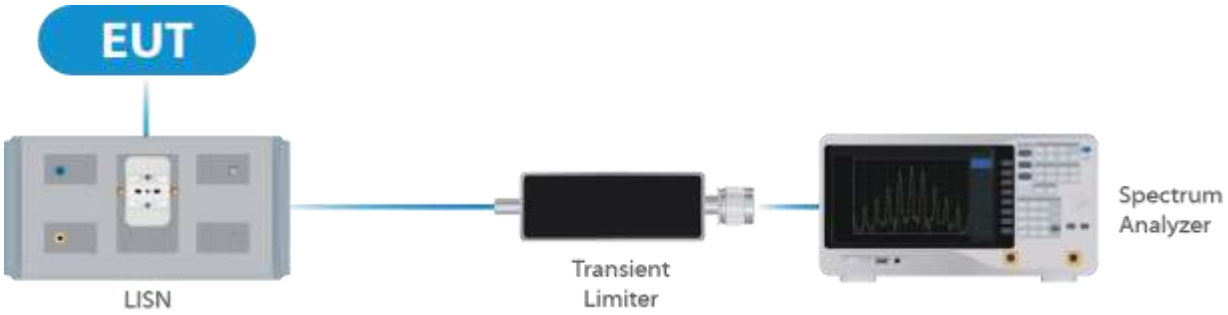


Figure 1: Conducted Emissions Test

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	1/16/2026
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	4/12/2024	4/19/2025
Switch Extension	R&S	OSP-150W	UCL-2870	4/12/2024	4/19/2025
Test Software	R&S	EMC32	UCL-9442	-	-

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

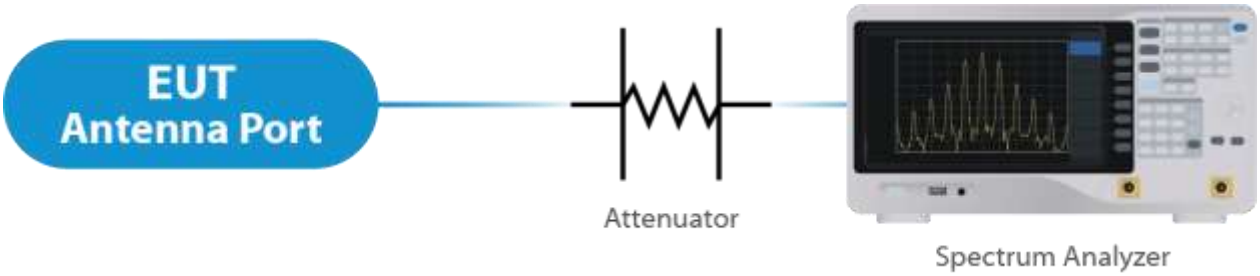


Figure 2: Direct Connect at the Antenna Port Test

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	12/27/2024	12/27/2025
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	3/22/2025
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	3/10/2023	3/10/2025
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	7/2/2024	7/2/2025
Test Software	Nexio	BatEMC	UCL-5253 & UCL-5249	N/A	N/A

Table 4: List of equipment used for Radiated Emissions

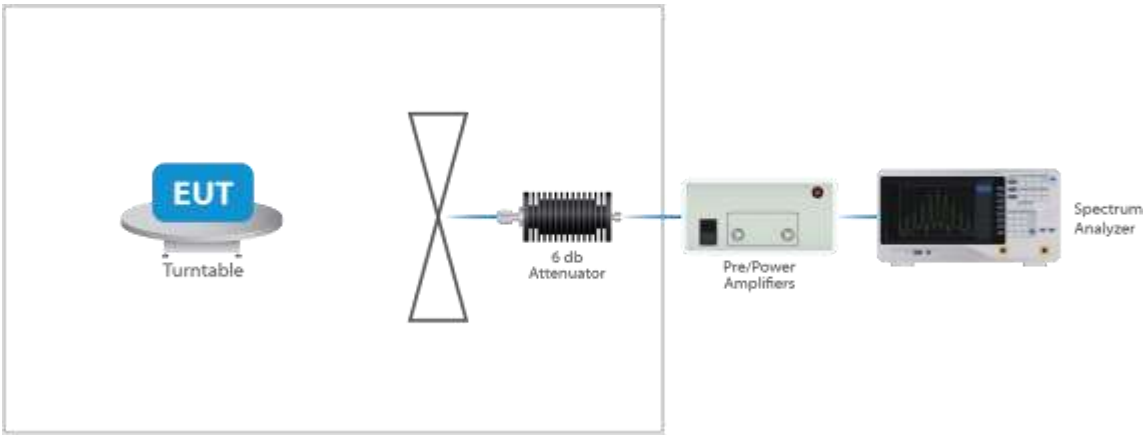


Figure 4: Radiated Emissions Test

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	5/3/2024	5/3/2025

4.4.1 Master Test Set Up

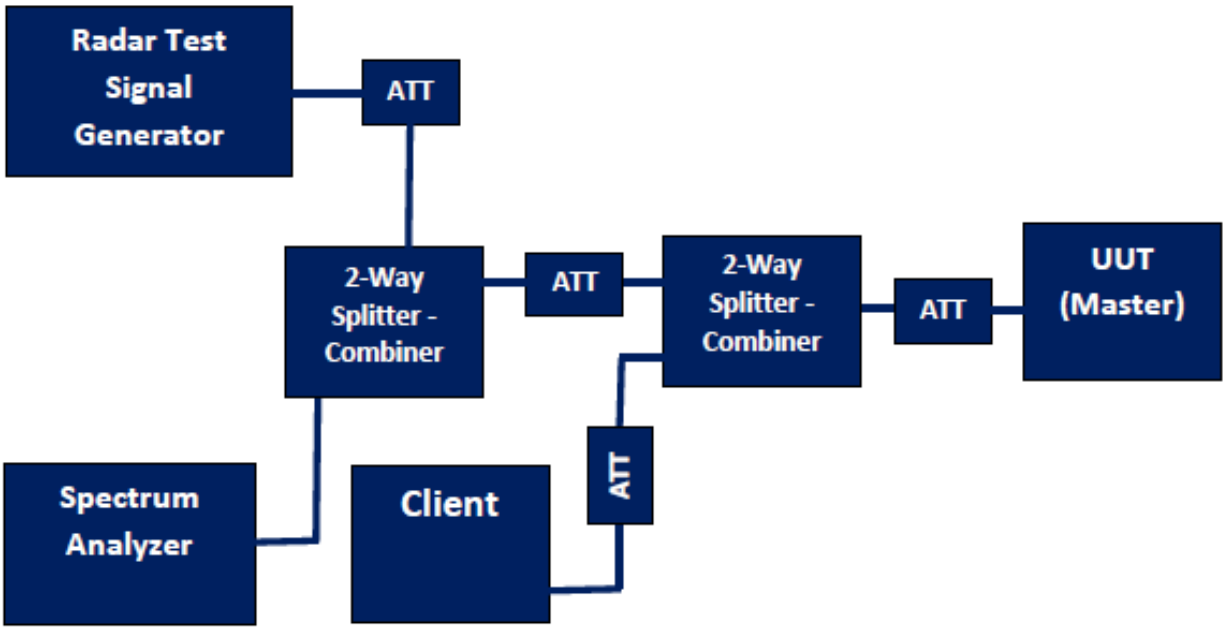


Figure 5: DFS Test Set Up - Master

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 a integral internal antenna and a Omni external antenna. Per the manufacturer, the Maximum gain of the internal antenna per chain is 13 dBi. Per the manufacturer, the Maximum gain of the external antenna per change is 20 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.

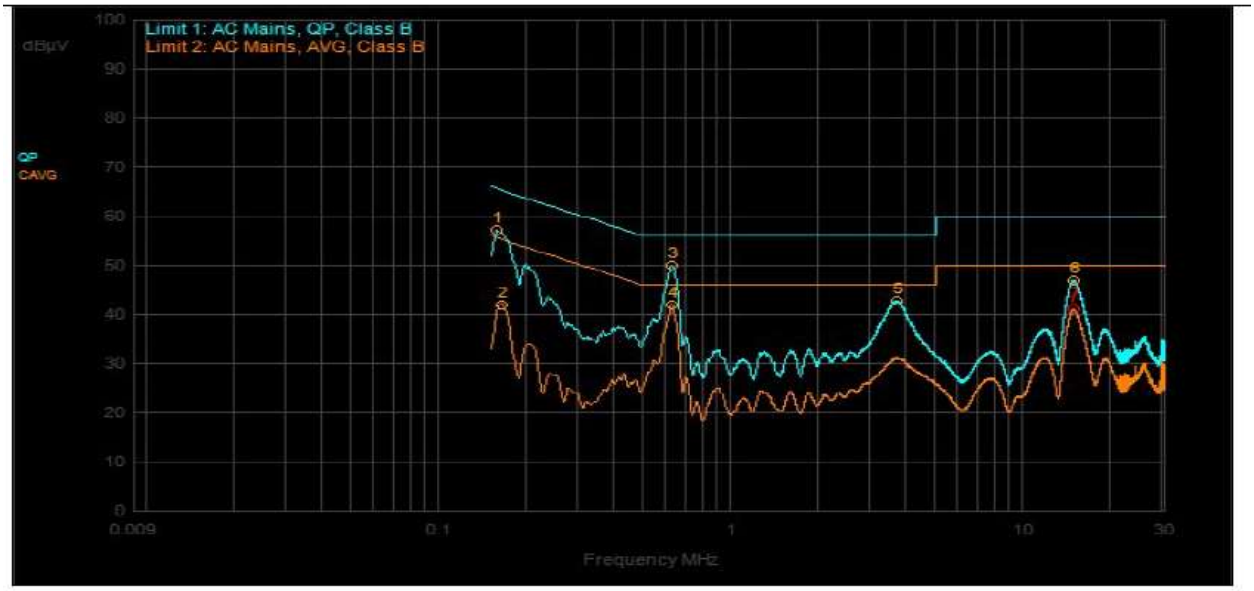
See Section 2.2 for directional gain calculation.

Results

The EUT complied with the specification

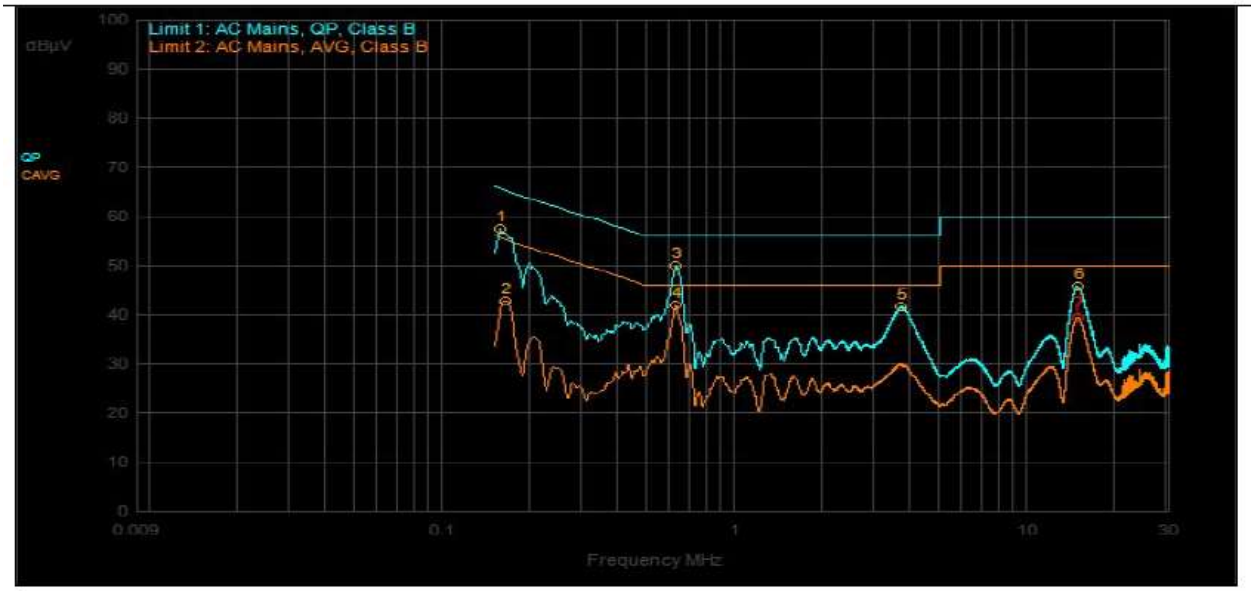
5.2 Conducted Emissions at Mains Ports Data

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
3	618,000kHz	12.37	0.00		QPeak	37.60	49.97	56.00	-6.03			
1	156,000kHz	12.40	0.00		QPeak	44.91	57.31	65.67	-8.36			
6	14.589	12.50	0.08		QPeak	34.36	46.94	60.00	-13.06			
5	3.630	11.97	0.00		QPeak	30.82	42.79	56.00	-13.21			
2	162,000kHz	12.39	0.00		C_AVG	29.57	41.96			55.36	-13.40	
4	618,000kHz	12.37	0.00		C_AVG	29.57	41.94			46.00	-4.06	
7	14.643	12.50	0.08		C_AVG	28.42	41.00			50.00	-9.00	

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
3	621,000kHz	12.37	0.00		QPeak	37.52	49.89	56.00	-6.11			
1	156,000kHz	12.38	0.00		QPeak	45.05	57.43	65.67	-8.24			
6	14.613	12.46	0.08		QPeak	33.27	45.81	60.00	-14.19			
5	3.660	11.92	0.00		QPeak	29.64	41.56	56.00	-14.44			
2	162,000kHz	12.38	0.00		C_AVG	30.51	42.89			55.36	-12.47	
4	621,000kHz	12.37	0.00		C_AVG	29.45	41.82			46.00	-4.18	
7	14.580	12.45	0.08		C_AVG	26.89	39.42			50.00	-10.58	

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

Internal Antenna

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
HE 20	5260	19.3	21.8
HE 20	5300	19.3	21.8
HE 20	5335	19.3	22.1
HE 40	5270	38.0	40.5
HE 40	5300	38.5	40.8
HE 40	5325	38.5	40.5
HE 80	5290	79.0	83.0
HE 80	5300	78.0	83.0
HE 80	5305	77.0	83.5

External Antenna

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
HE 20	5260	19.2	21.8
HE 20	5300	19.2	21.9
HE 20	5335	19.2	21.9
HE 40	5270	37.8	40.5
HE 40	5300	37.8	40.3
HE 40	5325	37.8	40.5
HE 80	5290	79.0	83.0
HE 80	5300	78.0	82.5
HE 80	5305	78.0	82.0

5.3.2 UNII-2C

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
HE 20	5485	19.5	21.9

HE 20	5600	19.3	21.9
HE 20	5710	19.3	22.1
HE 40	5495	38.5	40.8
HE 40	5600	38.0	40.5
HE 40	5700	38.5	40.8
HE 80	5515	77.0	82.5
HE 80	5600	78.0	81.5
HE 80	5680	78.0	83.0

External Antenna

Bandwidth	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
HE 20	5485	19.2	22.7
HE 20	5600	19.3	21.8
HE 20	5710	19.2	21.8
HE 40	5495	37.8	40.8
HE 40	5600	37.8	40.5
HE 40	5700	37.8	40.8
HE 80	5515	77.5	82.5
HE 80	5600	77.5	82.5
HE 80	5680	77.5	83.0

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 16.77 dBm or 47.53 mW. The limit is 24 dBm or 250 mW when using antennas with 6 dBi or less gain. The adjusted limit for the internal antenna is 17 dBm and 10 dBm for the external antenna.

The internal antenna has a maximum gain of 13 dBi. The external antenna has a maximum gain of 20 dBi.

5.4.1 UNII-2A

Internal Antenna

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss2	25	15.95	13	28.95	30	-1.05
HE 20	5300	Mcs0_Nss2	25	15.76	13	28.76	30	-1.24
HE 20	5335	Mcs0_Nss2	25	15.61	13	28.61	30	-1.39
HE 40	5270	Mcs0_Nss2	25	16.00	13	29.00	30	-1.00
HE 40	5300	Mcs0_Nss2	25	15.80	13	28.80	30	-1.20
HE 40	5325	Mcs0_Nss2	25	15.72	13	28.72	30	-1.28
HE 80	5290	Mcs0_Nss2	25	15.71	13	28.71	30	-1.29
HE 80	5300	Mcs0_Nss2	26	16.27	13	29.27	30	-0.73
HE 80	5305	Mcs0_Nss2	26	16.24	13	29.24	30	-0.76

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss1	16	6.95	13	19.95	30	-10.05

HE 20	5300	Mcs0_Nss1	16	6.76	13	19.76	30	-10.24
HE 20	5335	Mcs0_Nss1	16	6.61	13	19.61	30	-10.39
HE 40	5270	Mcs0_Nss1	19	10.00	13	23.00	30	-7.00
HE 40	5300	Mcs0_Nss1	19	9.80	13	22.80	30	-7.20
HE 40	5325	Mcs0_Nss1	19	9.72	13	22.72	30	-7.28
HE 80	5290	Mcs0_Nss1	21	11.71	13	24.71	30	-5.29
HE 80	5300	Mcs0_Nss1	23	13.27	13	26.27	30	-3.73
HE 80	5305	Mcs0_Nss1	23	13.24	13	26.24	30	-3.76

External Antenna

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss2	15	9.64	20	29.64	30	-0.36
HE 20	5300	Mcs0_Nss2	15	9.58	20	29.58	30	-0.42
HE 20	5335	Mcs0_Nss2	15	9.91	20	29.91	30	-0.09
HE 40	5270	Mcs0_Nss2	15	9.58	20	29.58	30	-0.42
HE 40	5300	Mcs0_Nss2	15	9.53	20	29.53	30	-0.47
HE 40	5325	Mcs0_Nss2	15	9.83	20	29.83	30	-0.17
HE 80	5290	Mcs0_Nss2	15	9.69	20	29.69	30	-0.31
HE 80	5300	Mcs0_Nss2	15	9.59	20	29.59	30	-0.41
HE 80	5305	Mcs0_Nss2	15	9.57	20	29.57	30	-0.43

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss1	-2	-7.36	20	12.64	30	-17.36
HE 20	5300	Mcs0_Nss1	-2	-7.42	20	12.58	30	-17.42
HE 20	5335	Mcs0_Nss1	-2	-7.09	20	12.91	30	-17.09

HE 40	5270	Mcs0_Nss1	1	-4.42	20	15.58	30	-14.42
HE 40	5300	Mcs0_Nss1	2	-3.47	20	16.53	30	-13.47
HE 40	5325	Mcs0_Nss1	1	-4.17	20	15.83	30	-14.17
HE 80	5290	Mcs0_Nss1	5	-0.31	20	19.69	30	-10.31
HE 80	5300	Mcs0_Nss1	5	-0.41	20	19.59	30	-10.41
HE 80	5305	Mcs0_Nss1	5	-0.43	20	19.57	30	-10.43

5.4.2 UNII-2C

Internal Antenna

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss2	29	16.62	13	29.62	30	-0.38
HE 20	5600	Mcs0_Nss2	27	16.61	13	29.61	30	-0.39
HE 20	5710	Mcs0_Nss2	27	16.17	13	29.17	30	-0.83
HE 40	5495	Mcs0_Nss2	27	16.15	13	29.15	30	-0.85
HE 40	5600	Mcs0_Nss2	27	16.75	13	29.75	30	-0.25
HE 40	5700	Mcs0_Nss2	27	16.61	13	29.61	30	-0.39
HE 80	5515	Mcs0_Nss2	29	16.77	13	29.77	30	-0.23
HE 80	5600	Mcs0_Nss2	27	16.70	13	29.70	30	-0.30
HE 80	5680	Mcs0_Nss2	27	16.61	13	29.61	30	-0.39

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss1	19	6.62	13	19.62	30	-10.38
HE 20	5600	Mcs0_Nss1	17	6.61	13	19.61	30	-10.39
HE 20	5710	Mcs0_Nss1	17	6.17	13	19.17	30	-10.83
HE 40	5495	Mcs0_Nss1	20	9.15	13	22.15	30	-7.85
HE 40	5600	Mcs0_Nss1	19	8.75	13	21.75	30	-8.25

HE 40	5700	Mcs0_Nss1	20	9.61	13	22.61	30	-7.39
HE 80	5515	Mcs0_Nss1	25	12.77	13	25.77	30	-4.23
HE 80	5600	Mcs0_Nss1	23	12.70	13	25.70	30	-4.30
HE 80	5680	Mcs0_Nss1	23	12.61	13	25.61	30	-4.39

External Antenna

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss2	15	9.37	20	29.37	30	-0.63
HE 20	5600	Mcs0_Nss2	15	9.03	20	29.03	30	-0.97
HE 20	5710	Mcs0_Nss2	16	9.77	20	29.77	30	-0.23
HE 40	5495	Mcs0_Nss2	15	9.26	20	29.26	30	-0.74
HE 40	5600	Mcs0_Nss2	15	8.96	20	28.96	30	-1.04
HE 40	5700	Mcs0_Nss2	15	9.15	20	29.15	30	-0.85
HE 80	5515	Mcs0_Nss2	15	9.02	20	29.02	30	-0.98
HE 80	5600	Mcs0_Nss2	15	9.08	20	29.08	30	-0.92
HE 80	5680	Mcs0_Nss2	15	9.14	20	29.14	30	-0.86

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss1	-2	-7.63	20	12.37	30	-17.63
HE 20	5600	Mcs0_Nss1	-2	-7.97	20	12.03	30	-17.97
HE 20	5710	Mcs0_Nss1	-1	-7.23	20	12.77	30	-17.23
HE 40	5495	Mcs0_Nss1	2	-3.74	20	16.26	30	-13.74
HE 40	5600	Mcs0_Nss1	2	-4.04	20	15.96	30	-14.04
HE 40	5700	Mcs0_Nss1	2	-3.85	20	16.15	30	-13.85
HE 80	5515	Mcs0_Nss1	5	-0.98	20	19.02	30	-10.98
HE 80	5600	Mcs0_Nss1	4	-1.92	20	18.08	30	-11.92

HE 80	5680	Mcs0_Nss1	5	-0.86	20	19.14	30	-10.86

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.

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

5.5 §15.407(b) Spurious Emissions

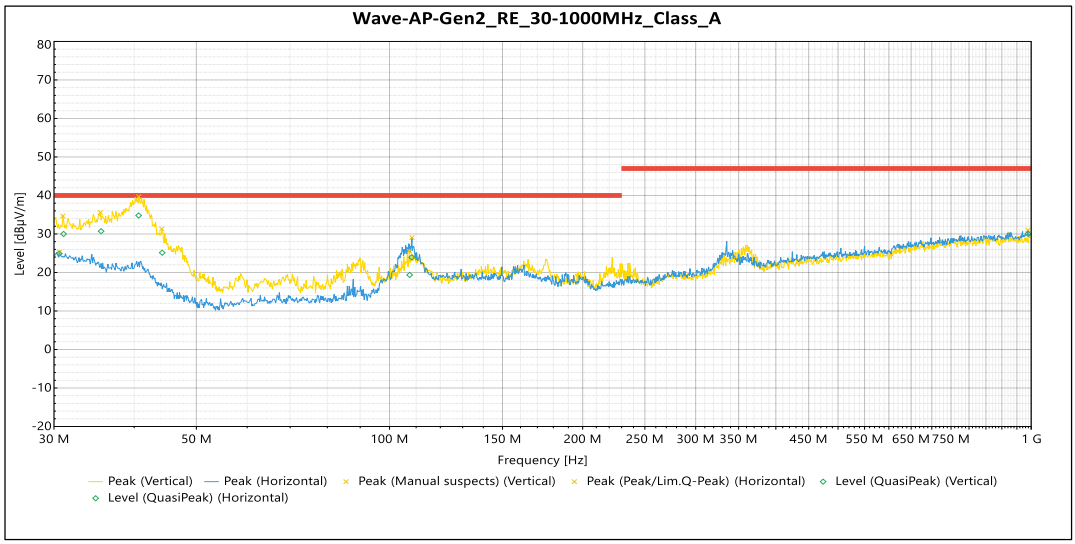
5.5.1 Radiated Spurious Emissions in the Restricted Bands of § 15.205

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

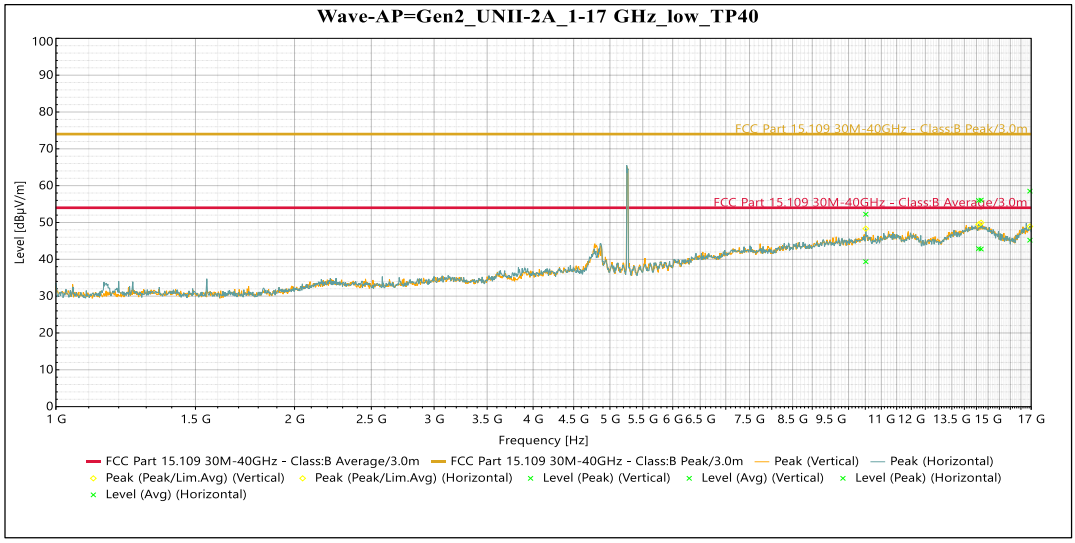
Internal Antenna



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
31.05 MHz	30.01	40	-9.99	271	1.03	Vertical	-4.31
35.53 MHz	30.72	40	-9.28	212	1.03	Vertical	-6.93
40.65 MHz	34.80	40	-5.20	310	2.83	Vertical	-10.67
44.24 MHz	25.13	40	-14.87	222	3.86	Vertical	-13.26
107.51 MHz	19.35	40	-20.45	289	2.17	Vertical	-11.50
30.58 MHz	24.90	40	-15.10	134	3.17	Horizontal	-3.96
108.28 MHz	23.93	40	-16.08	328	4	Horizontal	-11.34
988.42 MHz	30.06	47	-16.94	319	4.01	Horizontal	0.70

Table 5: Radiated Emissions 30 – 1000 MHz



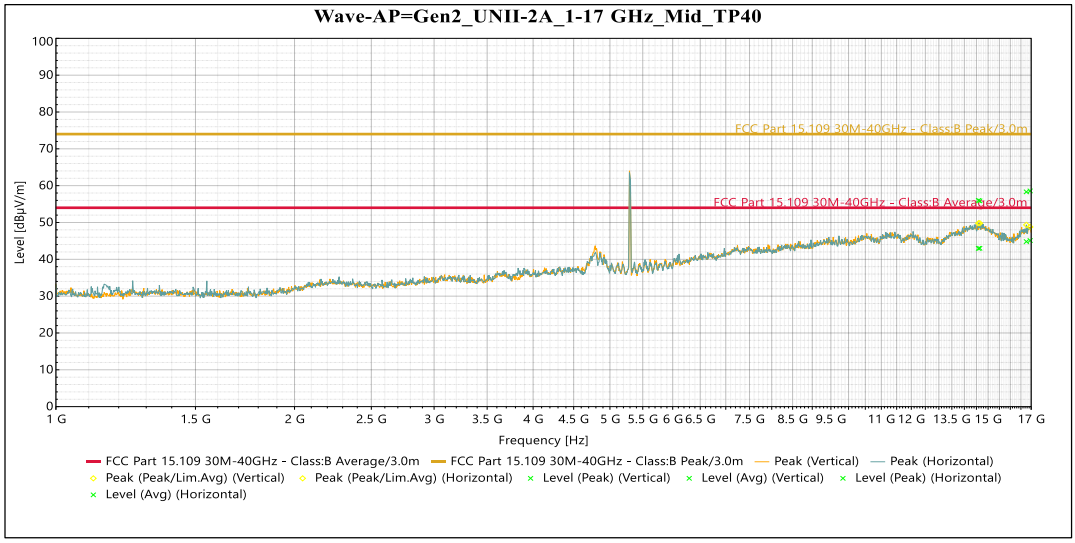
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.70 GHz	56.08	74.0	-17.92	325	3.149	Vertical	14.84
16.94 GHz	58.52	74.0	-15.48	61	3.802	Vertical	18.46
10.51 GHz	52.23	74.0	-21.77	37	3.802	Horizontal	11.45
14.60 GHz	55.97	74.0	-18.03	174	2.82	Horizontal	14.88

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.70 GHz	42.79	54.0	-11.21	325	3.149	Vertical	14.84
16.94 GHz	45.19	54.0	-8.81	61	3.802	Vertical	18.46
10.51 GHz	39.35	54.0	-14.65	37	3.802	Horizontal	11.45
14.60 GHz	42.90	54.0	-11.10	174	2.82	Horizontal	14.88

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



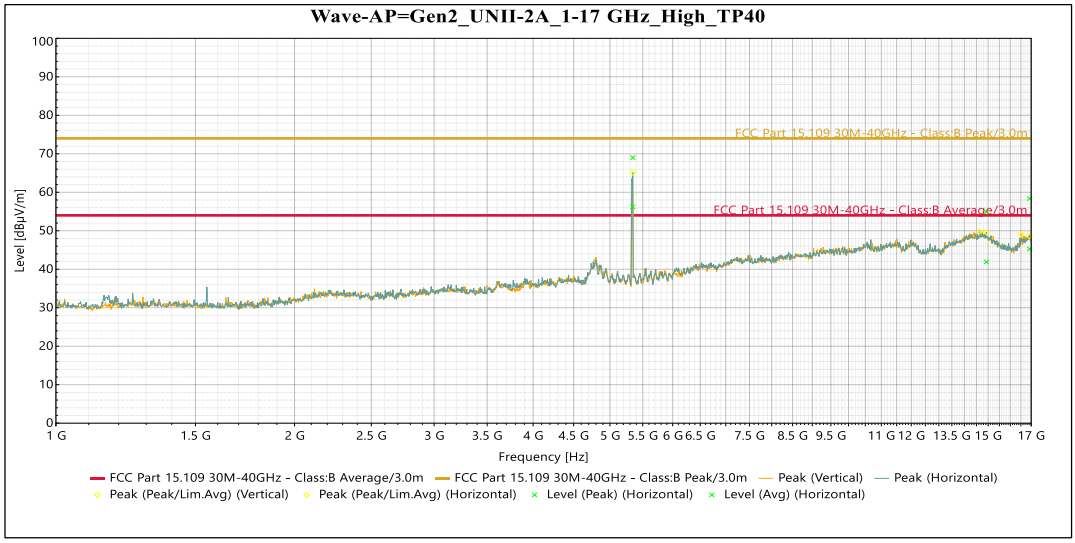
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.64 GHz	55.88	74.0	-18.12	92	3.798	Vertical	14.86
16.95 GHz	58.57	74.0	-15.43	98	3.802	Vertical	18.44
14.59 GHz	55.99	74.0	-18.01	45	1.838	Horizontal	14.89
16.76 GHz	58.31	74.0	-15.69	162	2.65	Horizontal	17.44

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.64 GHz	42.99	54.0	-11.01	92	3.798	Vertical	14.86
16.95 GHz	45.10	54.0	-8.90	98	3.802	Vertical	18.44
14.59 GHz	42.96	54.0	-11.04	45	1.838	Horizontal	14.89
16.76 GHz	44.81	54.0	-9.19	162	2.65	Horizontal	17.44

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



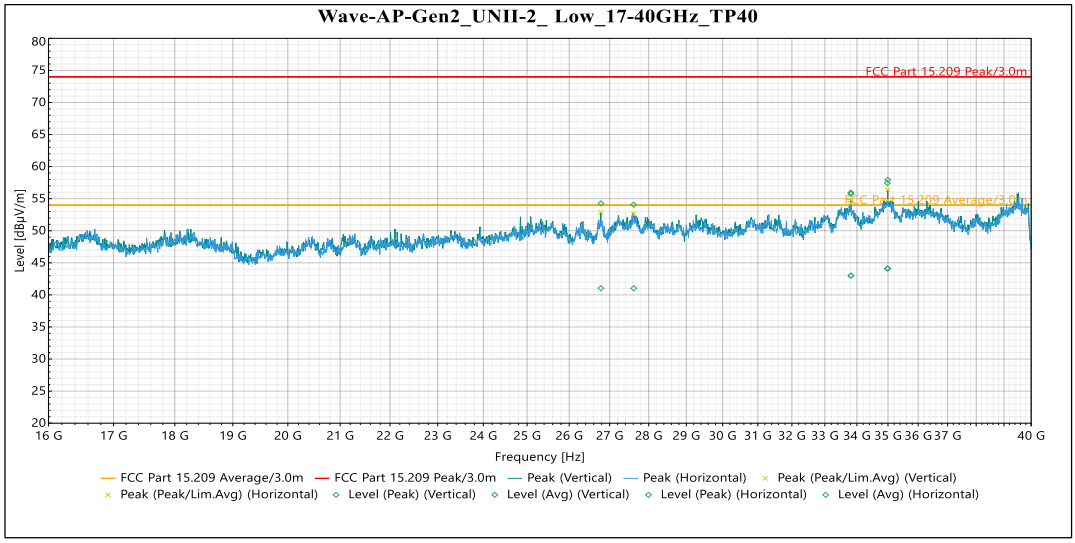
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
No significant emissions were observed in the Vertical orientation of the antenna							
14.93 GHz	54.91	74.0	-19.09	236	2.645	Horizontal	14.02
16.92 GHz	58.37	74.0	-15.63	347	3.153	Horizontal	18.50

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
No significant emissions were observed in the Vertical orientation of the antenna							
14.93 GHz	41.89	54.0	-12.11	236	2.645	Horizontal	14.02
16.92 GHz	45.25	54.0	-8.75	347	3.153	Horizontal	18.50

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



Peak

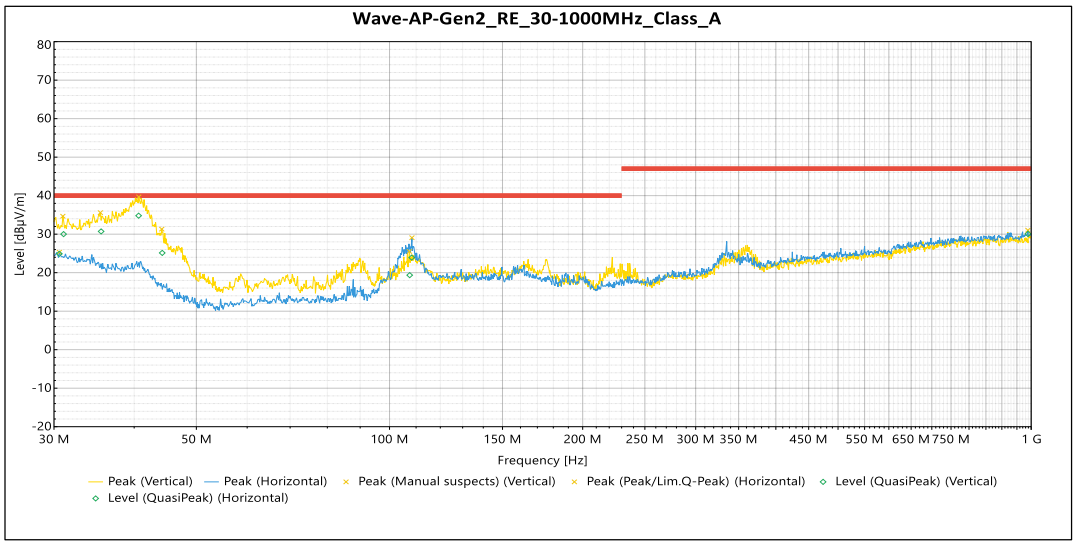
Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
26.78 GHz	54.26	74.0	-19.74	85	Vertical	2.54
33.81 GHz	55.75	74.0	-18.25	351	Vertical	4.03
34.99 GHz	57.95	74.0	-16.05	99	Vertical	5.11
27.61 GHz	54.06	74.0	-19.94	145	Horizontal	2.17
33.81 GHz	55.96	74.0	-18.04	295	Horizontal	4.04
34.98 GHz	57.45	74.0	-16.55	233	Horizontal	5.09

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
26.78 GHz	41.04	54.0	-12.96	85	Vertical	2.54
33.81 GHz	43.00	54.0	-11.00	351	Vertical	4.03
34.99 GHz	44.12	54.0	-9.88	99	Vertical	5.11
27.61 GHz	41.02	54.0	-12.98	145	Horizontal	2.17
33.81 GHz	43.01	54.0	-10.99	295	Horizontal	4.04
34.98 GHz	44.12	54.0	-9.88	233	Horizontal	5.09

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

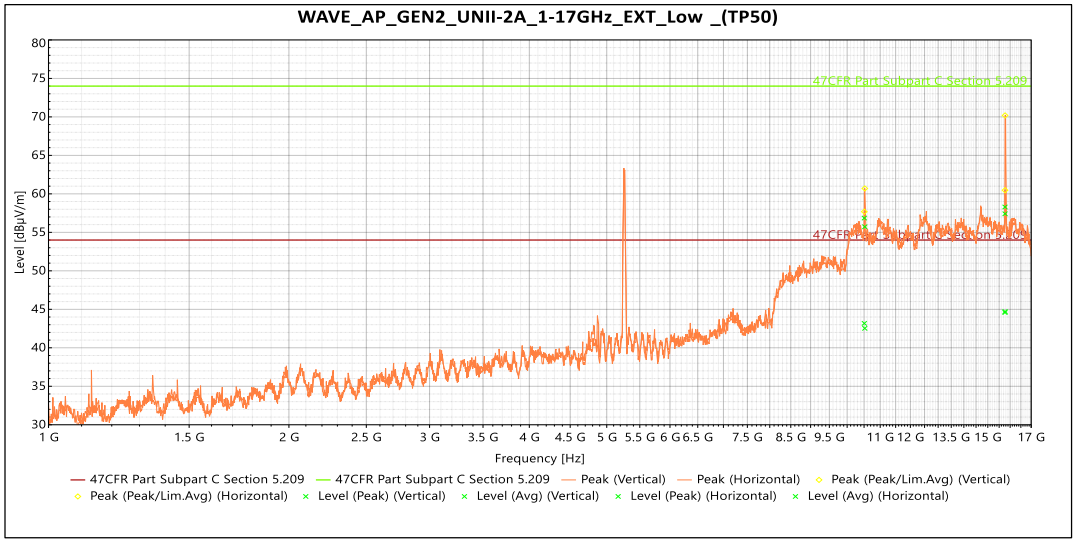
External Antenna



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
31.05 MHz	30.01	40	-9.99	271	1.03	Vertical	-4.31
35.53 MHz	30.72	40	-9.28	212	1.03	Vertical	-6.93
40.65 MHz	34.80	40	-5.20	310	2.83	Vertical	-10.67
44.24 MHz	25.13	40	-14.87	222	3.86	Vertical	-13.26
107.51 MHz	19.35	40	-20.45	289	2.17	Vertical	-11.50
30.58 MHz	24.90	40	-15.10	134	3.17	Horizontal	-3.96
108.28 MHz	23.93	40	-16.08	328	4	Horizontal	-11.34
988.42 MHz	30.06	47	-16.94	319	4.01	Horizontal	0.70

Table 10: Radiated Emissions 30 – 1000 MHz



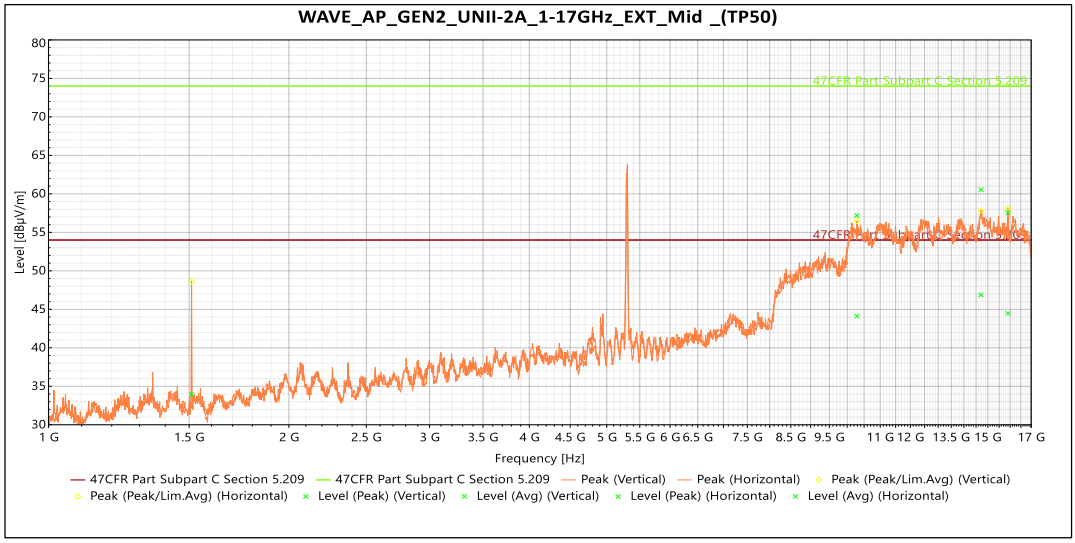
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.52 GHz	55.72	74.0	-18.28	125	2.828	Vertical	10.84
15.77 GHz	57.41	74.0	-16.59	220	3.81	Vertical	12.73
10.51 GHz	56.86	74.0	-17.14	271	3.81	Horizontal	10.70
15.76 GHz	58.29	74.0	-15.71	126	3.317	Horizontal	12.73

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.52 GHz	42.53	54.0	-11.47	125	2.828	Vertical	10.84
15.77 GHz	44.71	54.0	-9.29	220	3.81	Vertical	12.73
10.51 GHz	43.17	54.0	-10.83	271	3.81	Horizontal	10.70
15.76 GHz	44.58	54.0	-9.42	126	3.317	Horizontal	12.73

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



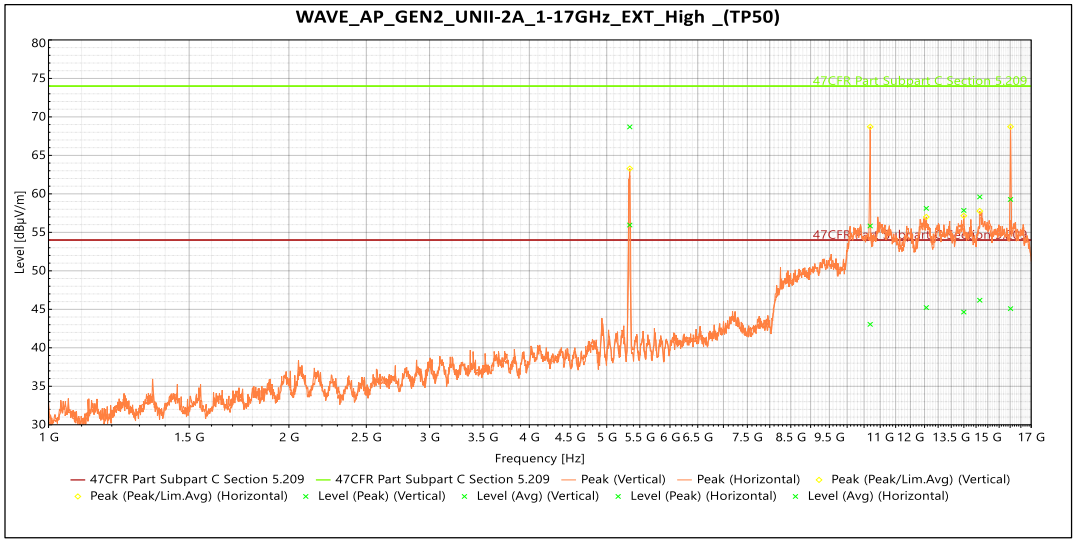
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
15.90 GHz	57.56	74.0	-16.44	213	3.316	Vertical	12.60
1.51 GHz	33.94	74.0	-40.06	335	3.808	Horizontal	-18.99
10.29 GHz	57.18	74.0	-16.82	116	3.81	Horizontal	11.45
14.71 GHz	60.55	74.0	-13.45	334	3.813	Horizontal	15.05

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
15.90 GHz	44.47	54.0	-9.53	213	3.316	Vertical	12.60
1.51 GHz	21.25	54.0	-32.75	335	3.808	Horizontal	-18.99
10.29 GHz	44.10	54.0	-9.90	116	3.81	Horizontal	11.45
14.71 GHz	46.69	54.0	-7.13	334	3.813	Horizontal	15.05

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



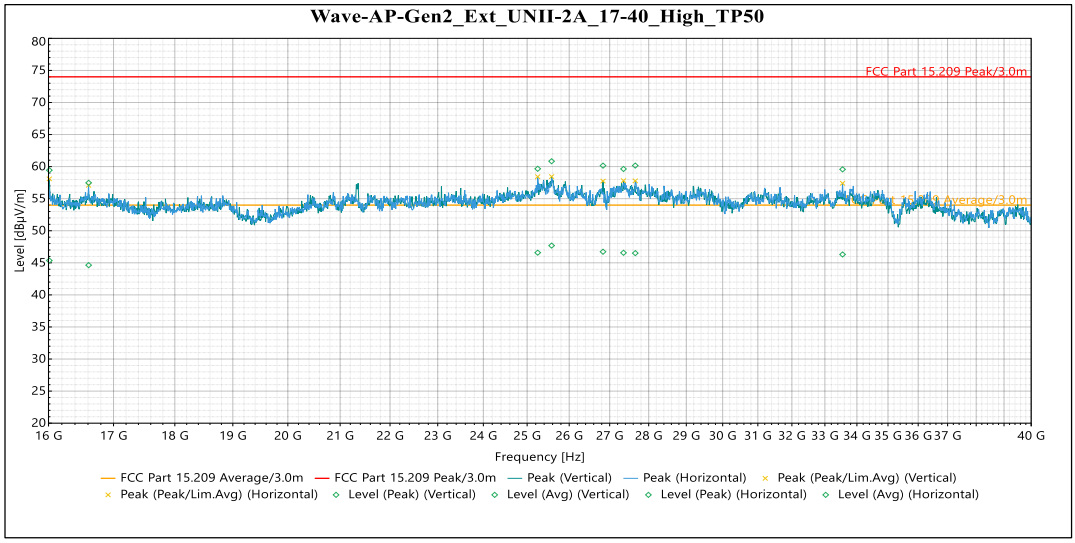
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.69 GHz	55.83	74.0	-18.17	142	3.808	Vertical	11.16
16.02 GHz	59.27	74.0	-14.73	132	3.656	Vertical	12.40
12.56 GHz	58.12	74.0	-15.88	348	3.646	Horizontal	13.07
14.00 GHz	57.85	74.0	-16.15	257	3.812	Horizontal	12.44
14.66 GHz	59.61	74.0	-14.39	46	3.81	Horizontal	14.44

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.69 GHz	43.05	54.0	-10.95	142	3.808	Vertical	11.16
16.02 GHz	45.09	54.0	-8.91	132	3.656	Vertical	12.40
12.56 GHz	45.22	54.0	-8.78	348	3.646	Horizontal	13.07
14.00 GHz	44.64	54.0	-9.36	257	3.812	Horizontal	12.44
14.66 GHz	46.18	54.0	-7.82	46	3.81	Horizontal	14.44

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



Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
16.01 GHz	59.44	74.0	-14.56	330	Vertical	10.42
25.58 GHz	60.84	74.0	-13.16	0	Vertical	10.15
26.83 GHz	60.15	74.0	-13.85	235	Vertical	8.87
27.35 GHz	59.64	74.0	-14.36	335	Vertical	8.72
16.61 GHz	57.47	74.0	-16.53	169	Horizontal	7.93
25.25 GHz	59.66	74.0	-14.34	276	Horizontal	8.94
27.65 GHz	60.16	74.0	-13.84	8	Horizontal	8.79
33.55 GHz	59.57	74.0	-14.43	10	Horizontal	9.56

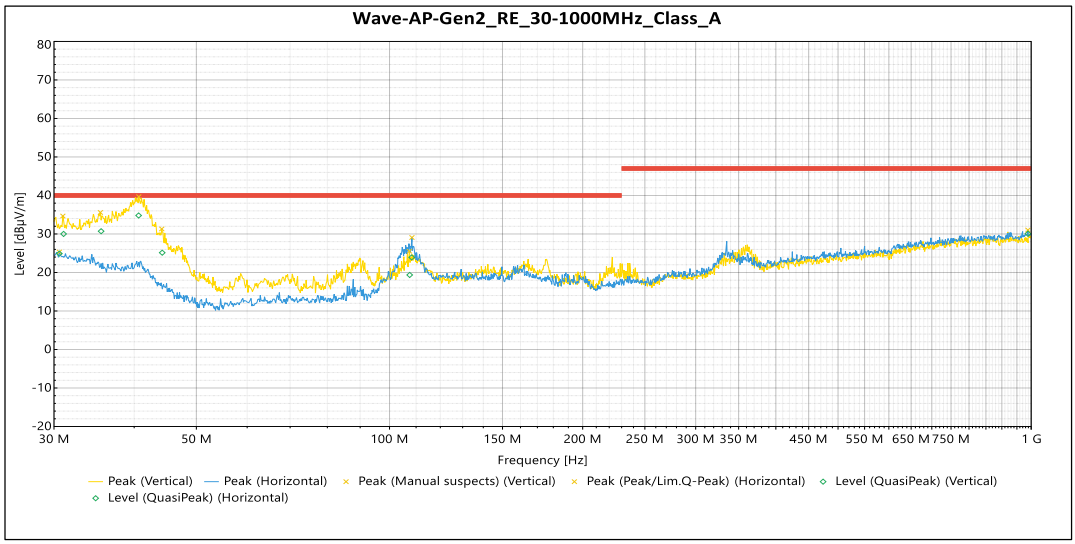
Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
16.01 GHz	45.36	54.0	-8.64	330	Vertical	10.42
25.58 GHz	47.69	54.0	-6.31	0	Vertical	10.15
26.83 GHz	46.73	54.0	-7.27	235	Vertical	8.87
27.35 GHz	46.56	54.0	-7.44	335	Vertical	8.72
16.61 GHz	44.64	54.0	-9.36	169	Horizontal	7.93
25.25 GHz	46.58	54.0	-7.42	276	Horizontal	8.94
27.65 GHz	46.51	54.0	-7.49	8	Horizontal	8.79
33.55 GHz	46.31	54.0	-7.69	10	Horizontal	9.56

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

5.5.3 UNII-2C

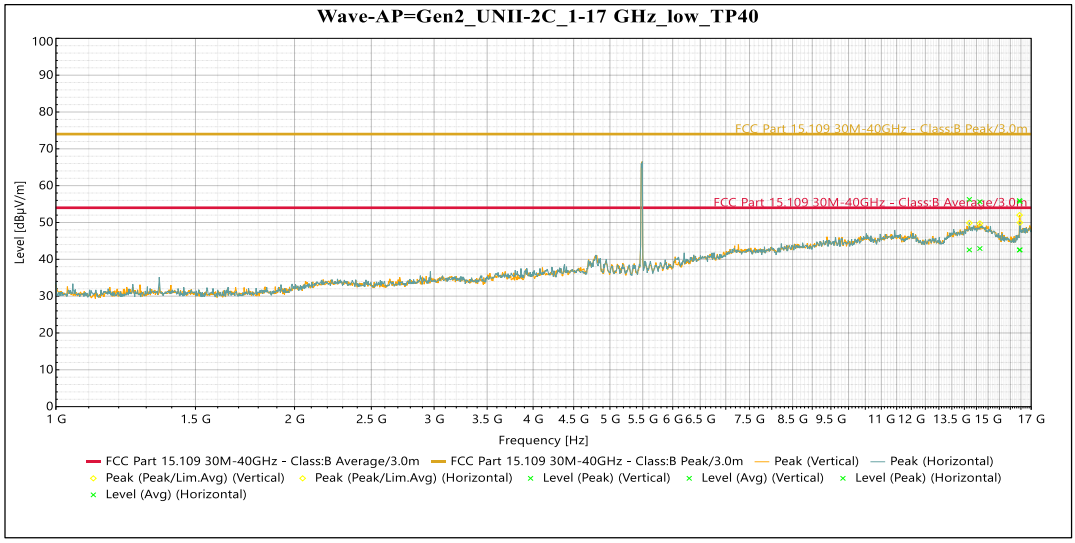
Internal Antenna



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
31.05 MHz	30.01	40	-9.99	271	1.03	Vertical	-4.31
35.53 MHz	30.72	40	-9.28	212	1.03	Vertical	-6.93
40.65 MHz	34.80	40	-5.20	310	2.83	Vertical	-10.67
44.24 MHz	25.13	40	-14.87	222	3.86	Vertical	-13.26
107.51 MHz	19.35	40	-20.45	289	2.17	Vertical	-11.50
30.58 MHz	24.90	40	-15.10	134	3.17	Horizontal	-3.96
108.28 MHz	23.93	40	-16.08	328	4	Horizontal	-11.34
988.42 MHz	30.06	47	-16.94	319	4.01	Horizontal	0.70

Table 15: Radiated Emissions 30 – 1000 MHz



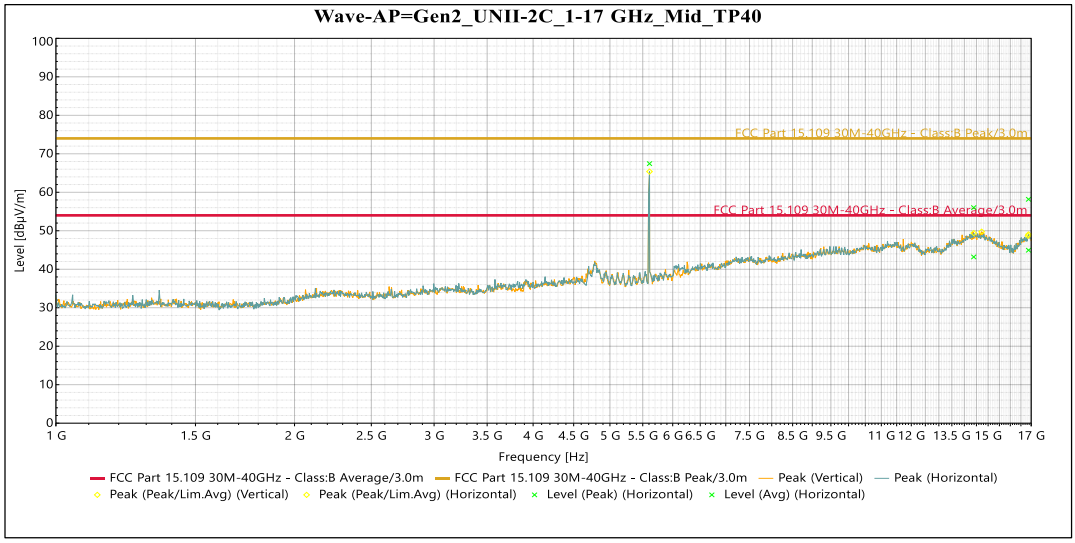
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.65 GHz	55.63	74.0	-18.37	297	3.798	Vertical	14.86
16.44 GHz	55.95	74.0	-18.05	6	3.798	Vertical	14.79
14.21 GHz	56.26	74.0	-17.74	113	2.324	Horizontal	14.81
16.45 GHz	55.70	74.0	-18.30	171	4	Horizontal	14.96

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.65 GHz	42.93	54.0	-11.07	297	3.798	Vertical	14.86
16.44 GHz	42.52	54.0	-11.48	6	3.798	Vertical	14.79
14.21 GHz	42.56	54.0	-11.44	113	2.324	Horizontal	14.81
16.45 GHz	42.58	54.0	-11.42	171	4	Horizontal	14.96

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



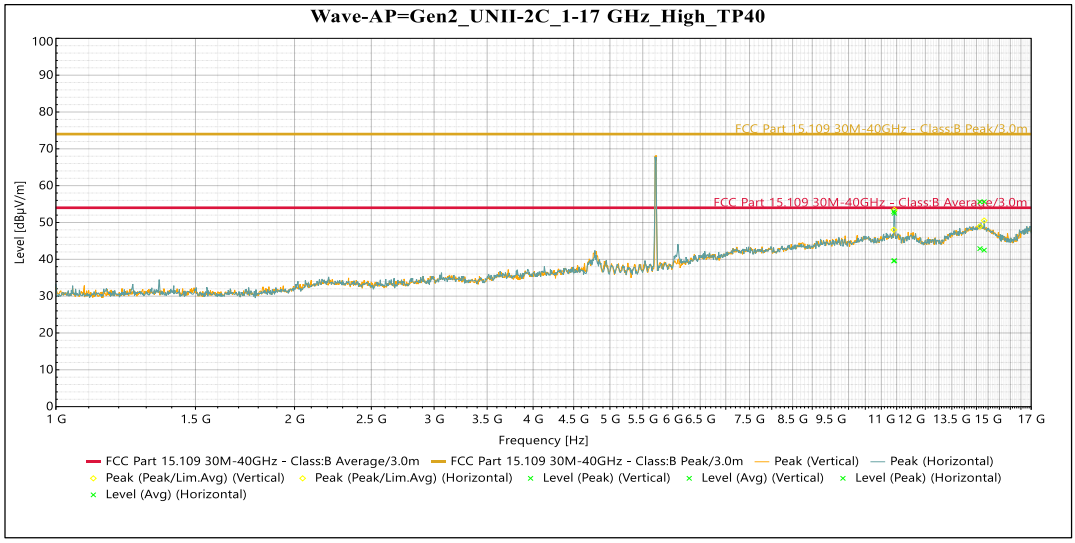
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
No significant emissions were observed in the Vertical orientation of the antenna							
14.39 GHz	56.02	74.0	-17.98	90	4	Horizontal	15.01
16.87 GHz	58.18	74.0	-15.82	311	3.802	Horizontal	18.12

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
No significant emissions were observed in the Vertical orientation of the antenna							
14.39 GHz	43.19	54.0	-10.81	90	4	Horizontal	15.01
16.87 GHz	44.95	54.0	-9.05	311	3.802	Horizontal	18.12

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



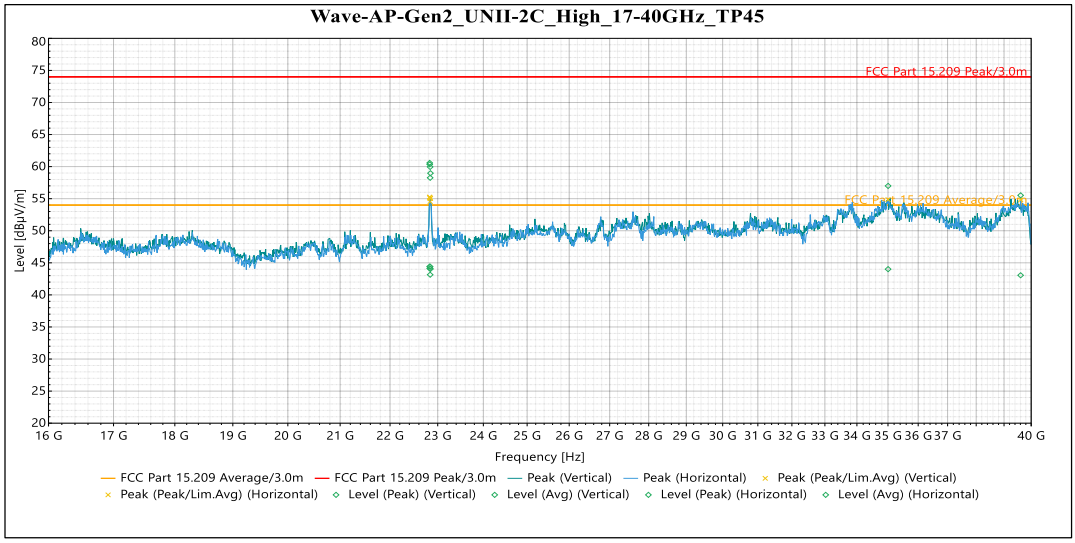
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.41 GHz	52.95	74.0	-21.05	354	2.325	Vertical	12.58
14.65 GHz	55.59	74.0	-18.41	43	4	Vertical	14.86
11.43 GHz	52.51	74.0	-21.49	98	1.833	Horizontal	12.59
14.83 GHz	55.63	74.0	-18.37	193	2.65	Horizontal	14.51

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.41 GHz	39.53	54.0	-14.47	354	2.325	Vertical	12.58
14.65 GHz	42.90	54.0	-11.10	43	4	Vertical	14.86
11.43 GHz	39.64	54.0	-14.36	98	1.833	Horizontal	12.59
14.83 GHz	42.48	54.0	-11.52	193	2.65	Horizontal	14.51

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



Peak

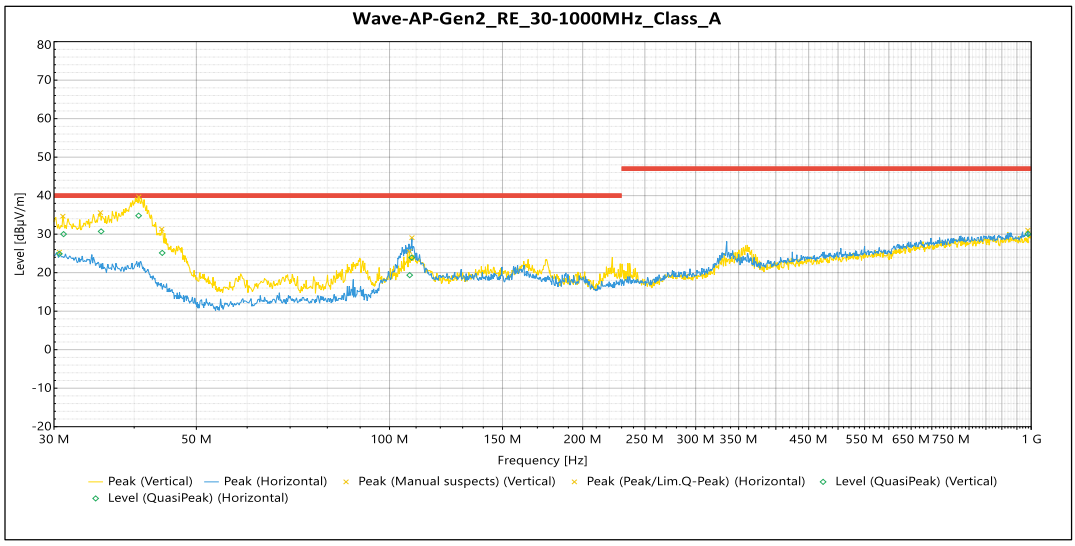
Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
22.83 GHz	60.57	74.0	-13.43	61	Vertical	-0.43
22.84 GHz	59.95	74.0	-14.05	64	Vertical	-0.39
22.85 GHz	58.97	74.0	-15.03	285	Vertical	-0.36
22.83 GHz	60.35	74.0	-13.65	324	Horizontal	-0.43
22.84 GHz	58.26	74.0	-15.74	319	Horizontal	-0.39
35.00 GHz	56.99	74.0	-17.01	215	Horizontal	5.10
39.61 GHz	55.52	74.0	-18.48	112	Horizontal	2.84

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
22.83 GHz	44.13	54.0	-9.87	61	Vertical	-0.43
22.84 GHz	44.39	54.0	-9.61	64	Vertical	-0.39
22.85 GHz	44.05	54.0	-9.95	285	Vertical	-0.36
22.83 GHz	44.42	54.0	-9.58	324	Horizontal	-0.43
22.84 GHz	43.14	54.0	-10.86	319	Horizontal	-0.39
35.00 GHz	44.02	54.0	-9.98	215	Horizontal	5.10
39.61 GHz	43.06	54.0	-10.94	112	Horizontal	2.84

Table 19: Radiated Emissions 17 – 40 GHz at the Highest Frequency (worse case)

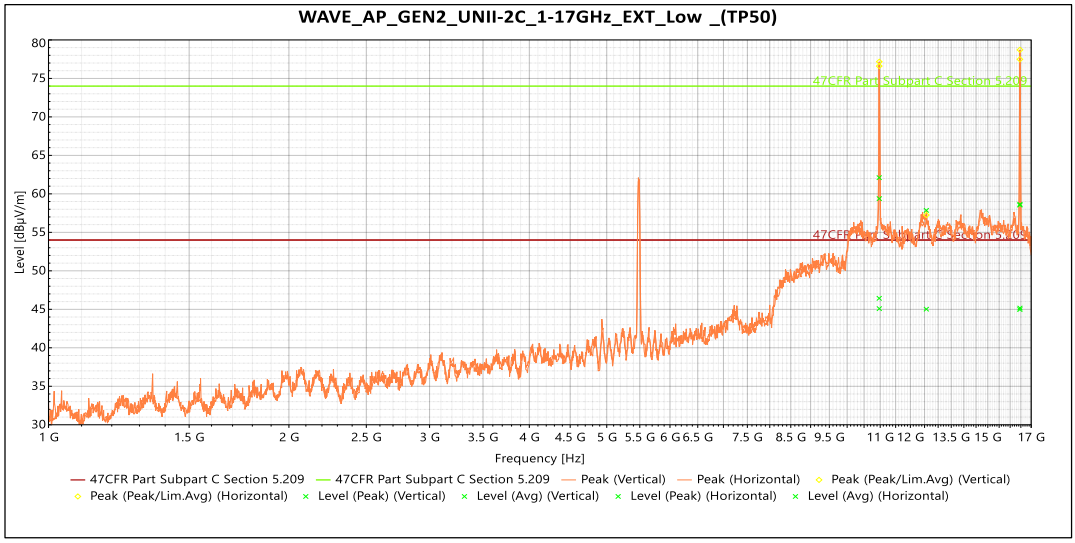
External Antenna



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
31.05 MHz	30.01	40	-9.99	271	1.03	Vertical	-4.31
35.53 MHz	30.72	40	-9.28	212	1.03	Vertical	-6.93
40.65 MHz	34.80	40	-5.20	310	2.83	Vertical	-10.67
44.24 MHz	25.13	40	-14.87	222	3.86	Vertical	-13.26
107.51 MHz	19.35	40	-20.45	289	2.17	Vertical	-11.50
30.58 MHz	24.90	40	-15.10	134	3.17	Horizontal	-3.96
108.28 MHz	23.93	40	-16.08	328	4	Horizontal	-11.34
988.42 MHz	30.06	47	-16.94	319	4.01	Horizontal	0.70

Table 20: Radiated Emissions 30 – 1000 MHz



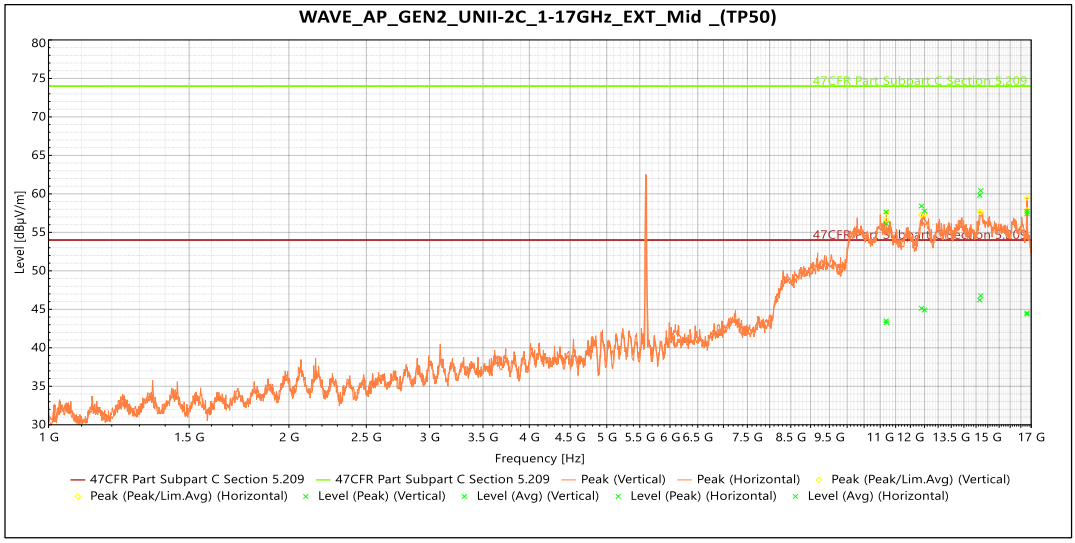
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.97 GHz	59.38	74.0	-14.62	127	3.802	Vertical	12.86
12.57 GHz	57.86	74.0	-16.14	204	3.802	Vertical	13.07
16.46 GHz	57.64	74.0	-15.36	129	3.307	Vertical	13.99
10.97 GHz	62.11	74.0	-11.89	174	1.638	Horizontal	12.88
16.45 GHz	58.54	74.0	-15.46	161	2.146	Horizontal	13.97

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.97 GHz	45.09	54.0	-8.91	127	3.802	Vertical	12.86
12.57 GHz	45.02	54.0	-8.98	204	3.802	Vertical	13.07
16.46 GHz	45.16	54.0	-8.84	129	3.307	Vertical	13.99
10.97 GHz	46.43	54.0	-7.57	174	1.638	Horizontal	12.88
16.45 GHz	44.97	54.0	-9.03	161	2.146	Horizontal	13.97

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



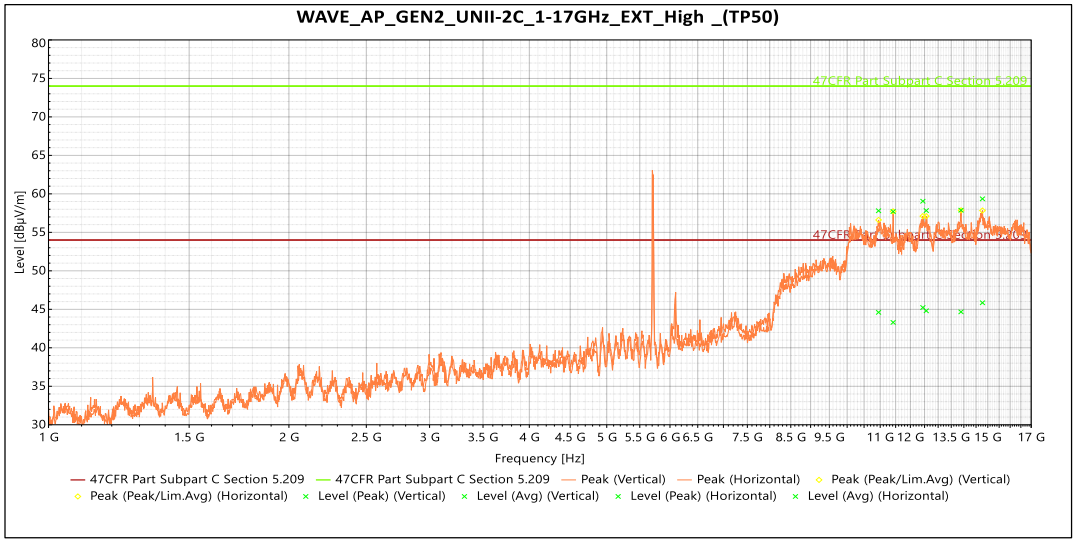
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.19 GHz	57.65	74.0	-16.35	129	3.802	Vertical	11.03
12.39 GHz	58.42	74.0	-15.58	1	2.82	Vertical	13.79
14.70 GHz	60.43	74.0	-13.57	234	3.802	Vertical	15.15
16.80 GHz	57.44	74.0	-16.56	218	3.311	Vertical	13.64
11.20 GHz	56.11	74.0	-17.89	126	3.798	Horizontal	10.99
12.50 GHz	57.77	74.0	-16.23	124	3.802	Horizontal	13.30
14.66 GHz	59.82	74.0	-14.18	113	3.802	Horizontal	14.46
16.80 GHz	57.72	74.0	-16.28	321	2.325	Horizontal	13.64

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.19 GHz	43.50	54.0	-10.50	129	3.802	Vertical	11.03
12.39 GHz	45.13	54.0	-8.87	1	2.82	Vertical	13.79
14.70 GHz	46.78	54.0	-7.22	234	3.802	Vertical	15.15
16.80 GHz	44.54	54.0	-9.46	218	3.311	Vertical	13.64
11.20 GHz	43.26	54.0	-10.74	126	3.798	Horizontal	10.99
12.50 GHz	44.90	54.0	-9.10	124	3.802	Horizontal	13.30
14.66 GHz	46.19	54.0	-7.81	113	3.802	Horizontal	14.46
16.80 GHz	44.38	54.0	-9.62	321	2.325	Horizontal	13.64

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



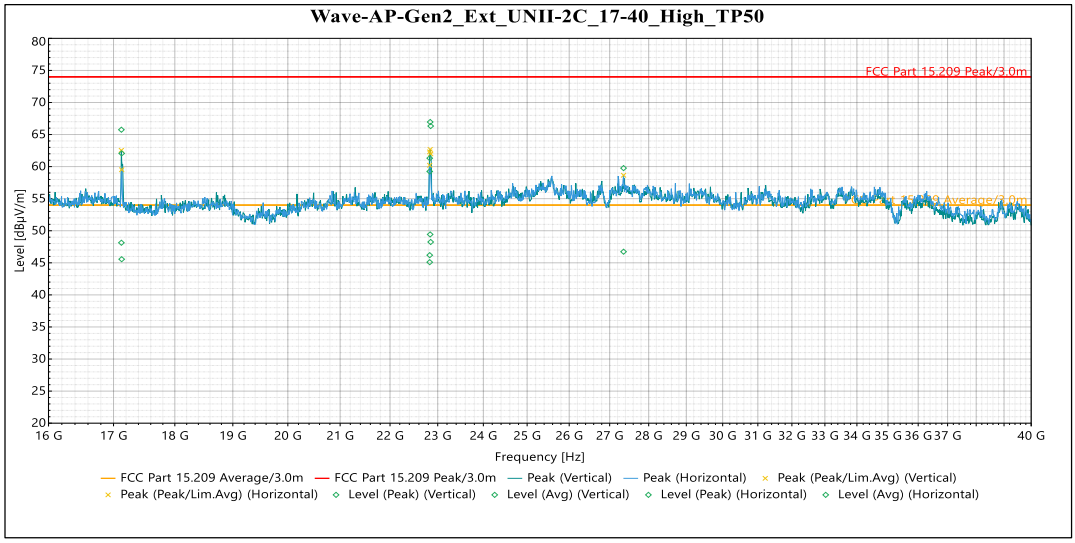
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.42 GHz	57.70	74.0	-16.30	186	3.802	Vertical	10.68
12.56 GHz	57.83	74.0	-16.17	62	3.798	Vertical	13.08
14.77 GHz	59.35	74.0	-14.65	148	3.798	Vertical	14.20
10.95 GHz	57.80	74.0	-16.20	73	3.311	Horizontal	12.99
12.44 GHz	59.04	74.0	-14.96	16	3.798	Horizontal	13.53
13.89 GHz	57.88	74.0	-16.12	31	1.5	Horizontal	12.66

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.42 GHz	43.30	54.0	-10.70	186	3.802	Vertical	10.68
12.56 GHz	44.80	54.0	-9.20	62	3.798	Vertical	13.08
14.77 GHz	45.85	54.0	-8.15	148	3.798	Vertical	14.20
10.95 GHz	44.60	54.0	-9.40	73	3.311	Horizontal	12.99
12.44 GHz	45.23	54.0	-8.77	16	3.798	Horizontal	13.53
13.89 GHz	44.67	54.0	-9.33	31	1.5	Horizontal	12.66

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



Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.13 GHz	65.75	74.0	-8.25	360	Vertical	6.59
22.83 GHz	61.31	74.0	-12.69	28	Vertical	7.22
22.84 GHz	66.95	74.0	-7.05	46	Vertical	7.32
22.85 GHz	66.33	54.0	-7.67	51	Vertical	7.43
17.13 GHz	62.06	74.0	-11.94	340	Horizontal	6.57
22.83 GHz	59.25	74.0	-14.75	30	Horizontal	7.22
27.35 GHz	59.77	74.0	-14.23	306	Horizontal	8.72

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.13 GHz	48.13	54.0	-5.87	360	Vertical	6.59
22.83 GHz	46.19	54.0	-7.81	28	Vertical	7.22
22.84 GHz	49.43	54.0	-4.57	46	Vertical	7.32
22.85 GHz	48.25	54.0	-5.75	51	Vertical	7.43
17.13 GHz	45.56	54.0	-8.44	340	Horizontal	6.57
22.83 GHz	54.10	54.0	-8.90	30	Horizontal	7.22
27.35 GHz	46.73	54.0	-7.27	306	Horizontal	8.72

Table 24: Radiated Emissions 17 – 40 GHz at 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 662911 D01. Please see associated annex for details on instrument settings.

See Section 2.2 for directional gain calculation.

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 13 dBi so the PSD adjusted limit is 4 dBm. The external antenna has a gain is 20 dBi so the PSD adjusted limit is -3 dBm.

Results of this testing are summarized.

5.6.1 UNII-2A

Internal Antenna

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss2	25	2.62	13	4	-1.38
HE 20	5300	Mcs0_Nss2	25	2.69	13	4	-1.31
HE 20	5335	Mcs0_Nss2	25	2.54	13	4	-1.46
HE 40	5270	Mcs0_Nss2	25	-0.46	13	4	-4.46
HE 40	5300	Mcs0_Nss2	25	-0.82	13	4	-4.82
HE 40	5325	Mcs0_Nss2	25	-0.75	13	4	-4.75
HE 80	5290	Mcs0_Nss2	25	-3.00	13	4	-7.00
HE 80	5300	Mcs0_Nss2	26	-3.41	13	4	-7.41
HE 80	5305	Mcs0_Nss2	26	-3.07	13	4	-7.07

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss1	16	-6.38	13	-6.01	-0.37
HE 20	5300	Mcs0_Nss1	16	-6.31	13	-6.01	-0.30

HE 20	5335	Mcs0_Nss1	16	-6.47	13	-6.01	-0.46
HE 40	5270	Mcs0_Nss1	19	-6.46	13	-6.01	-0.45
HE 40	5300	Mcs0_Nss1	19	-6.82	13	-6.01	-0.81
HE 40	5325	Mcs0_Nss1	19	-6.75	13	-6.01	-0.74
HE 80	5290	Mcs0_Nss1	21	-7.00	13	-6.01	-0.99
HE 80	5300	Mcs0_Nss1	23	-6.41	13	-6.01	-0.40
HE 80	5305	Mcs0_Nss1	23	-6.07	13	-6.01	-0.06

External Antenna

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss2	15	-3.70	13	-3	-0.70
HE 20	5300	Mcs0_Nss2	15	-3.66	13	-3	-0.66
HE 20	5335	Mcs0_Nss2	15	-3.18	13	-3	-0.18
HE 40	5270	Mcs0_Nss2	15	-6.97	13	-3	-3.97
HE 40	5300	Mcs0_Nss2	15	-7.13	13	-3	-4.13
HE 40	5325	Mcs0_Nss2	15	-6.74	13	-3	-3.74
HE 80	5290	Mcs0_Nss2	15	-10.10	13	-3	-7.10
HE 80	5300	Mcs0_Nss2	15	-10.09	13	-3	-7.09
HE 80	5305	Mcs0_Nss2	15	-10.05	13	-3	-7.05
HE 160	5250	Mcs0_Nss2	15	-12.67	13	-3	-9.67

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5260	Mcs0_Nss1	-2	-20.70	13	-20.01	-0.69
HE 20	5300	Mcs0_Nss1	-2	-20.66	13	-20.01	-0.65
HE 20	5335	Mcs0_Nss1	-2	-20.18	13	-20.01	-0.17
HE 40	5270	Mcs0_Nss1	1	-20.97	13	-20.01	-0.96
HE 40	5300	Mcs0_Nss1	2	-20.13	13	-20.01	-0.12
HE 40	5325	Mcs0_Nss1	1	-20.74	13	-20.01	-0.73
HE 80	5290	Mcs0_Nss1	5	-20.10	13	-20.01	-0.09

HE 80	5300	Mcs0_Nss1	5	-20.09	13	-20.01	-0.08
HE 80	5305	Mcs0_Nss1	5	-20.05	13	-20.01	-0.04

5.6.2 UNII-2C

Internal Antenna

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss2	29	3.61	13	4	-0.39
HE 20	5600	Mcs0_Nss2	27	3.74	13	4	-0.26
HE 20	5710	Mcs0_Nss2	27	3.45	13	4	-0.55
HE 40	5495	Mcs0_Nss2	27	0.07	13	4	-3.93
HE 40	5600	Mcs0_Nss2	27	1.04	13	4	-2.96
HE 40	5700	Mcs0_Nss2	27	0.51	13	4	-3.49
HE 80	5515	Mcs0_Nss2	29	-2.29	13	4	-6.29
HE 80	5600	Mcs0_Nss2	27	-2.15	13	4	-6.15
HE 80	5680	Mcs0_Nss2	27	-2.48	13	4	-6.48

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss1	19	-6.39	13	-6.01	-0.38
HE 20	5600	Mcs0_Nss1	17	-6.26	13	-6.01	-0.25
HE 20	5710	Mcs0_Nss1	17	-6.55	13	-6.01	-0.54
HE 40	5495	Mcs0_Nss1	20	-6.94	13	-6.01	-0.93
HE 40	5600	Mcs0_Nss1	19	-6.96	13	-6.01	-0.95
HE 40	5700	Mcs0_Nss1	20	-6.49	13	-6.01	-0.48
HE 80	5515	Mcs0_Nss1	25	-6.29	13	-6.01	-0.28
HE 80	5600	Mcs0_Nss1	23	-6.15	13	-6.01	-0.14
HE 80	5680	Mcs0_Nss1	23	-6.48	13	-6.01	-0.47

External Antenna

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss2	15	-3.78	20	-3	-0.78
HE 20	5600	Mcs0_Nss2	15	-3.49	20	-3	-0.49
HE 20	5710	Mcs0_Nss2	16	-3.28	20	-3	-0.28
HE 40	5495	Mcs0_Nss2	15	-7.03	20	-3	-4.03
HE 40	5600	Mcs0_Nss2	15	-7.03	20	-3	-4.03
HE 40	5700	Mcs0_Nss2	15	-7.51	20	-3	-4.51
HE 80	5515	Mcs0_Nss2	15	-10.16	20	-3	-7.16
HE 80	5600	Mcs0_Nss2	15	-9.91	20	-3	-6.91
HE 80	5680	Mcs0_Nss2	15	-10.10	20	-3	-7.10

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
HE 20	5485	Mcs0_Nss1	-2	-20.78	20	-20.01	-0.77
HE 20	5600	Mcs0_Nss1	-2	-20.49	20	-20.01	-0.48
HE 20	5710	Mcs0_Nss1	-1	-20.28	20	-20.01	-0.27
HE 40	5495	Mcs0_Nss1	2	-20.03	20	-20.01	-0.02
HE 40	5600	Mcs0_Nss1	2	-20.03	20	-20.01	-0.02
HE 40	5700	Mcs0_Nss1	2	-20.51	20	-20.01	-0.50
HE 80	5515	Mcs0_Nss1	5	-20.16	20	-20.01	-0.15
HE 80	5600	Mcs0_Nss1	4	-20.91	20	-20.01	-0.90
HE 80	5680	Mcs0_Nss1	5	-20.10	20	-20.01	-0.09

Result

The maximum average power spectral density was less than the limit of 11 dBm; therefore, the EUT complies with the specification.

5.7 DFS Requirement

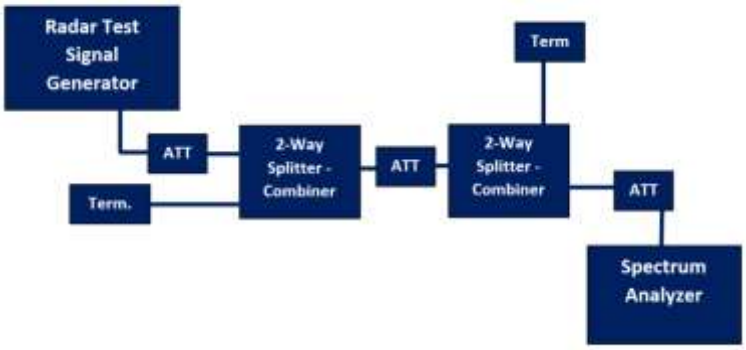
This product is a master with radar detection. The outcome of the required DFS tests is located in this section. DFS testing was performed following the test procedures as outlined in KDB 905462.

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

Information	Status
Possible Antenna/s	Integral 13 dBi/ 20 dBi External Sector
Antenna used for test	Integral 13 dBi
Operating mode	Master
Port used for testing	FJ1/FJ2
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	80s
Detection threshold level	-51 dBm

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

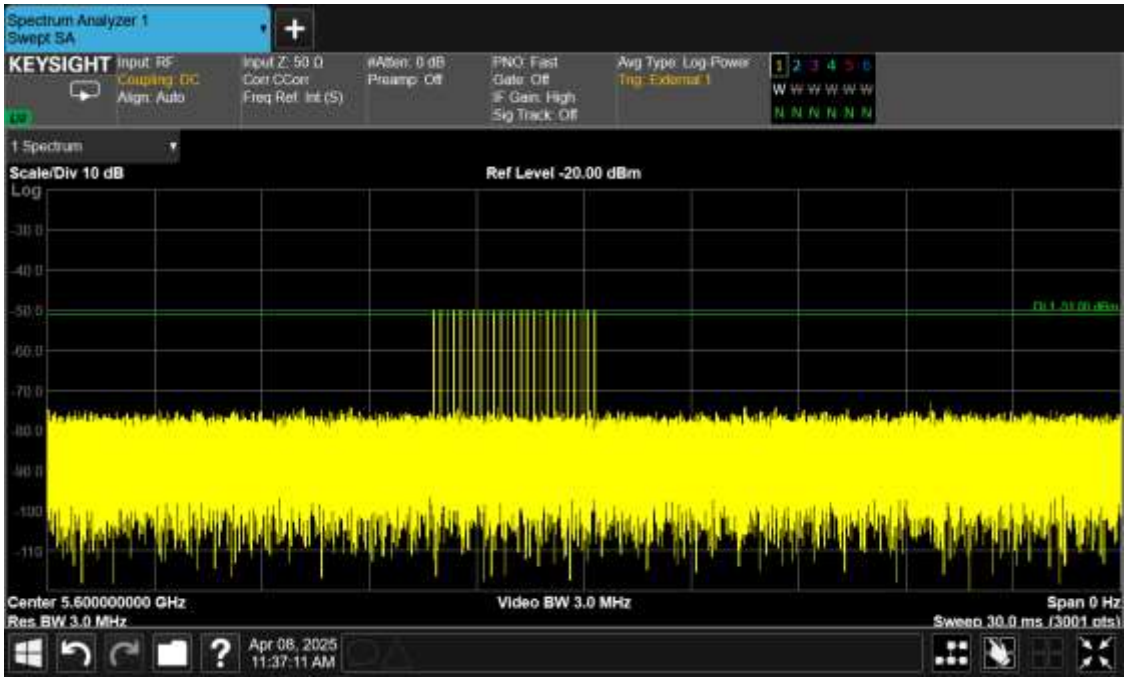
Requirement	Operational Mode	
	Master or Client Client Without Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not Required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not Required



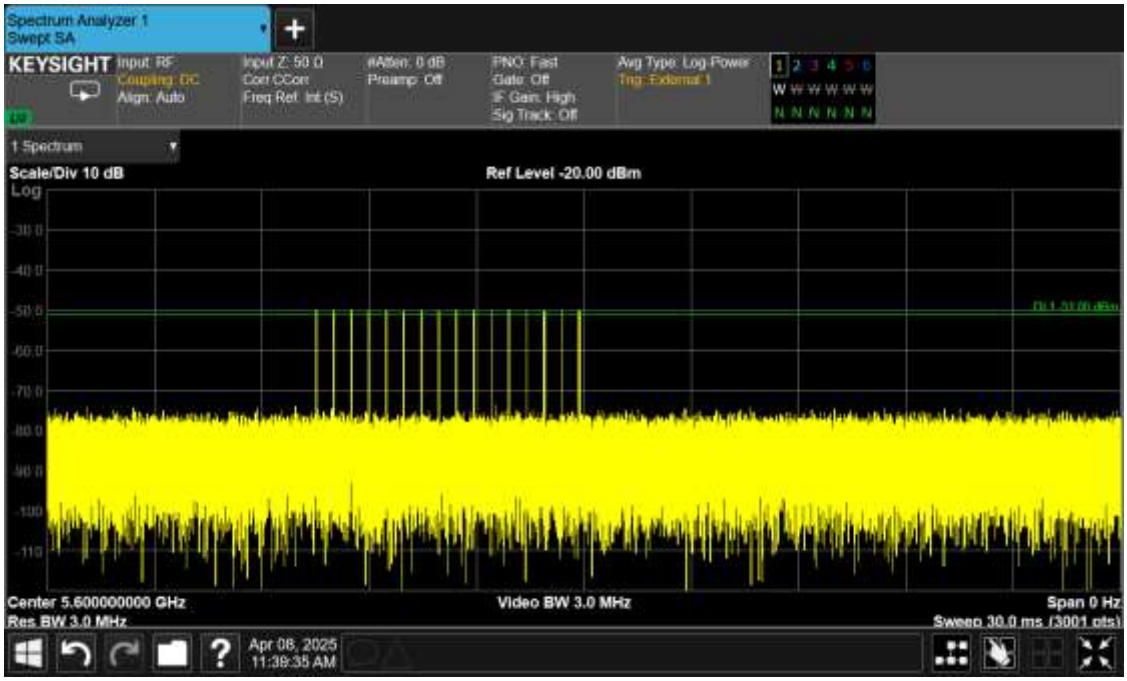
Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a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

Plot 1: Radar Level 0

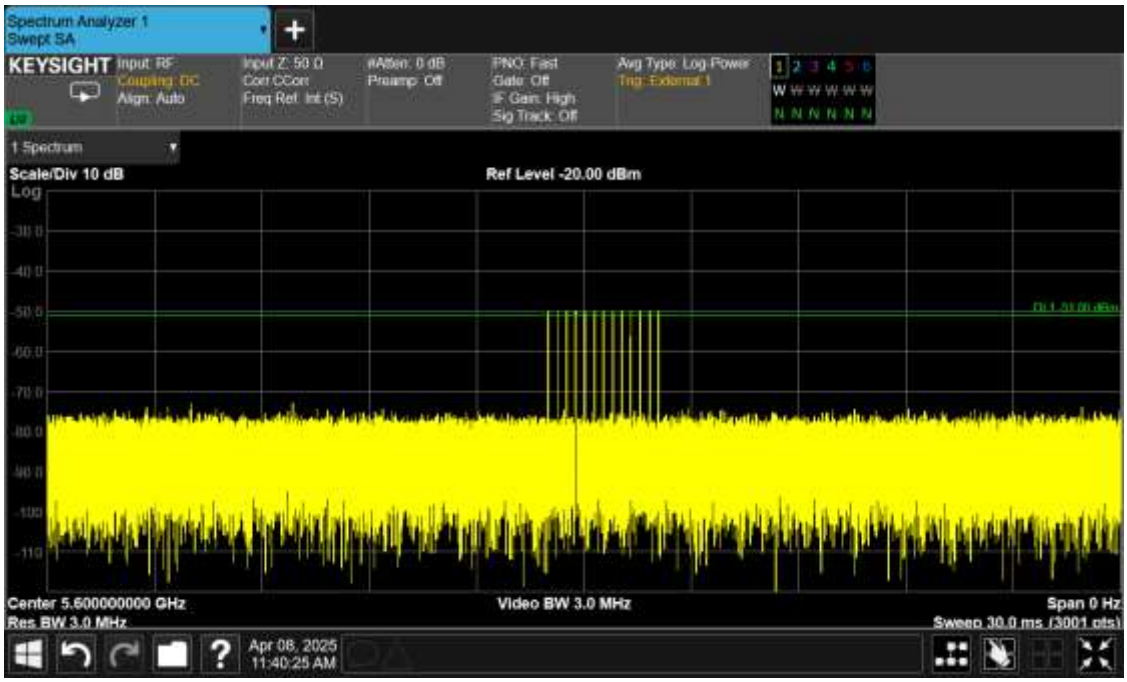
Plot 2: Radar Level 1



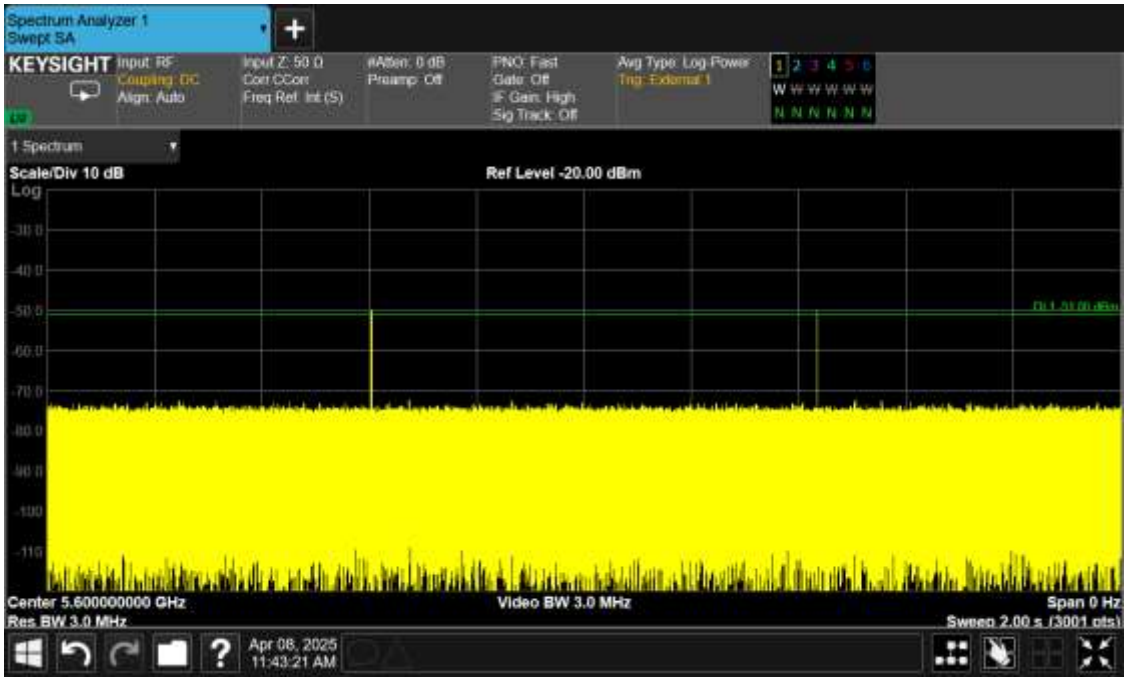
Plot 3: Radar Level 2



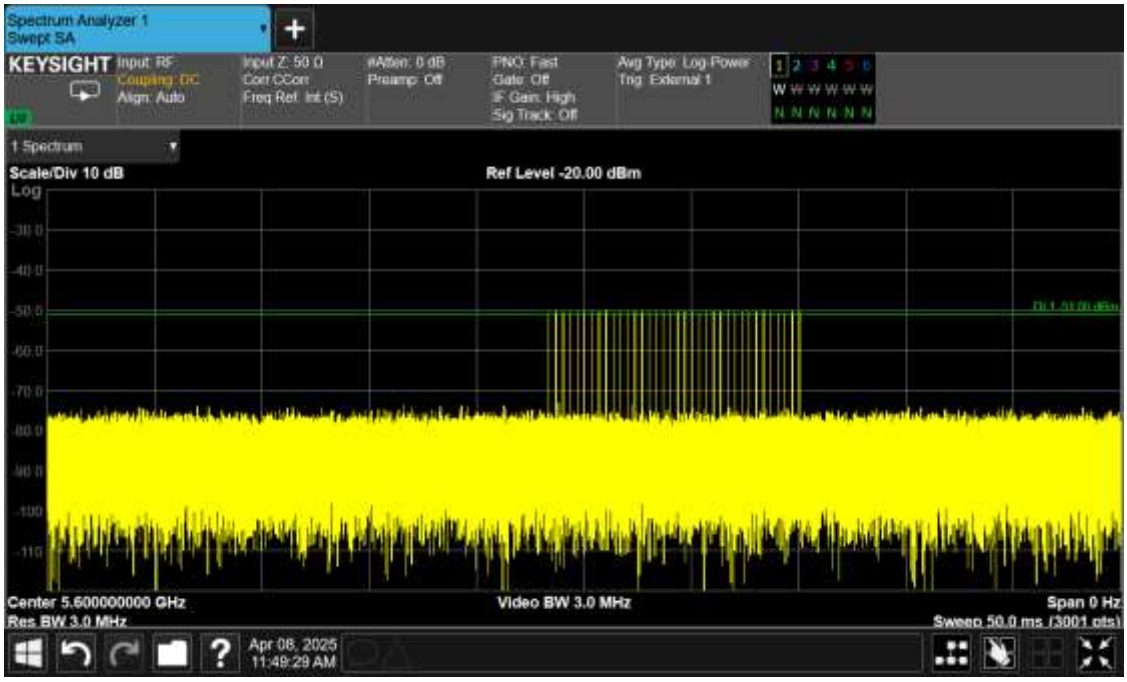
Plot 4: Radar Level 3



Plot 5: Radar Level 4



Plot 6: Radar Level 5



Plot 7: Radar Level 6

5.7.1 Channel Availability Check (CAC)

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

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

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

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

Plot 8: DUT Turn On

Plot 9: Beginning

Plot 10: End

5.7.2 In-service Monitoring

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

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

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

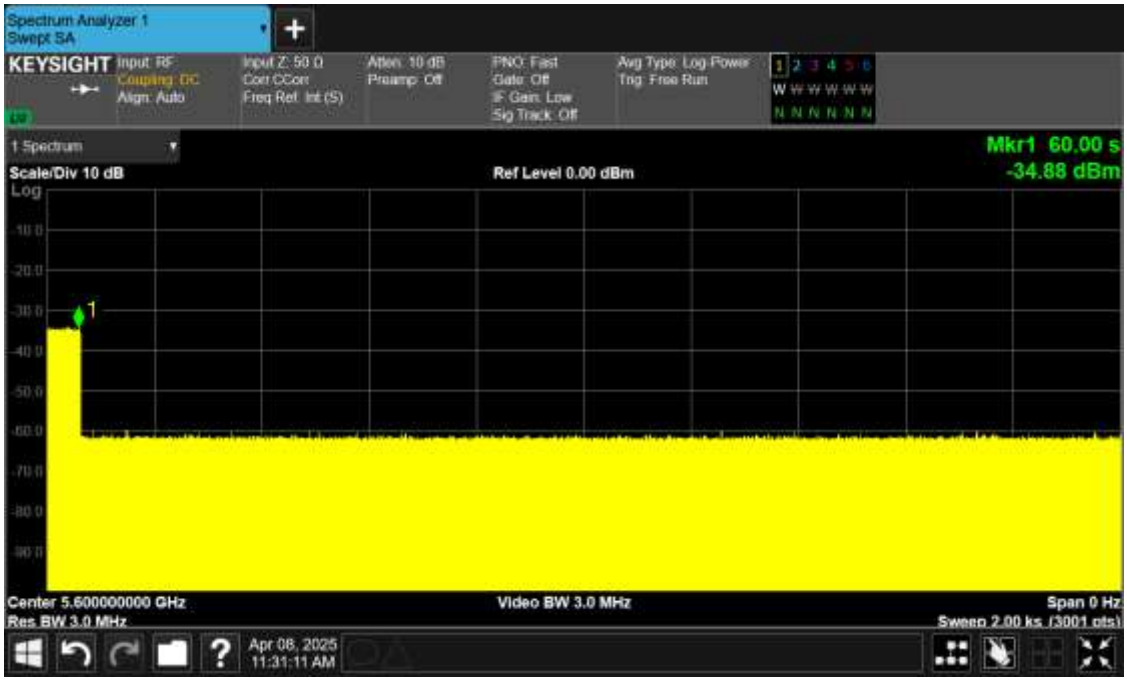
During the 30 minutes observation time, the EUT did not make any transmissions on a channel after a radar signal was detected.

Please see plots below.

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

Plot 11: Channel Close (400 ms)

Plot 12: Channel Move



Plot 13: Non-Occupancy

5.7.3 DFS Detection Bandwidth

20 MHz

EUT Frequency = 5600 MHz ; Bandwidth = 20 MHz											
Radar Frequency MHz	DFS Detection Trials (1 = Detection, 0 = No Detection)										Detection Rate %
	Trials										
	1	2	3	4	5	6	7	8	9	10	
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
Parameter											Value
U-NII 99% Transmission Power Bandwidth:											19.039
Lowest frequency with at least 90% detection (F_L):											5590
Highest frequency with at least 90% detection (F_H):											5610
Detection Bandwidth (F_H - F_L):											20
Detection Bandwidth percentage of 99% Transmission Power Bandwidth:											105%

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	
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	0	1	1	1	1	1	1	1	1	1	90
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
Parameter											Value
U-NII 99% Transmission Power Bandwidth:											37.914
Lowest frequency with at least 90% detection (F_L):											5580
Highest frequency with at least 90% detection (F_H):											5620
Detection Bandwidth (F_H - F_L):											40
Detection Bandwidth percentage of 99% Transmission Power Bandwidth:											106%

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	
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	90
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	0	1	1	1	1	1	1	1	1	1	90
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	0	1	1	1	1	1	90
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
Parameter											Value
U-NII 99% Transmission Power Bandwidth:											77.779
Lowest frequency with at least 90% detection (F_L):											5560
Highest frequency with at least 90% detection (F_H):											5640
Detection Bandwidth (F_H - F_L):											80
Detection Bandwidth percentage of 99% Transmission Power Bandwidth:											103%

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	26	30	87%
Type 2	26	30	87%
Type 3	27	30	90%
Type 4	23	30	77%
Type 5	30	30	100%
Type 6	29	30	97%
Aggregate 1-4	102	120	85%

RADAR TYPE 1				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	29	1	1852	y
2	47	1	1136	y
3	34	1	1586	y
4	18	1	2986	y
5	19	1	2876	n
6	86	1	616	y
7	90	1	588	y
8	29	1	1851	y
9	18	1	3030	n
10	53	1	1012	y
11	24	1	2255	y
12	20	1	2667	y
13	18	1	2942	y
14	51	1	1047	y
15	35	1	1542	y
16	43	1	1232	y
17	28	1	1937	y
18	20	1	2694	y
19	19	1	2819	y
20	52	1	1016	y
21	20	1	2714	y
22	60	1	881	y
23	38	1	1395	y
24	24	1	2231	n
25	48	1	1106	y
26	54	1	991	y
27	30	1	1779	n
28	18	1	2965	y
29	101	1	523	y
30	27	1	2003	y
				26/30: 86.7%

RADAR TYPE 2				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	23	1.1	185	y
2	27	2.5	207	y
3	26	2.2	203	y
4	27	3.9	191	y
5	25	3.5	177	y
6	26	1.9	199	y
7	26	4.6	187	y
8	27	2.5	154	y
9	24	1.2	203	y
10	24	2	218	y
11	24	2.9	180	y
12	26	3.4	230	y
13	25	1.2	228	y
14	26	1.9	168	y
15	27	2.6	155	y
16	23	4.5	229	y
17	28	3.7	190	y
18	27	3.6	180	y
19	28	1.7	227	y
20	27	3.8	229	y
21	25	2.8	172	y
22	26	3.5	156	n
23	26	2.4	157	y
24	24	1.4	175	y
25	24	2.6	215	y
26	28	4.4	167	n
27	25	3.5	168	n
28	28	1.2	225	y
29	28	3.4	161	y
30	24	4.1	219	n
				26/30: 86.7%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	17	9.1	243	y
2	17	9.1	216	y
3	18	8.8	221	y
4	18	6.5	218	y
5	17	7.1	381	y
6	16	7.2	385	y
7	17	6.3	255	y
8	18	9.4	263	y
9	16	7.1	222	y
10	17	10	414	y
11	16	7	281	y
12	17	6.6	312	y
13	16	7.3	279	y
14	18	7	315	y
15	18	8.4	431	y
16	16	9.1	298	y
17	17	7.1	282	y
18	17	9.9	398	y
19	18	9.1	245	y
20	17	6.6	276	y
21	17	8.2	296	y
22	16	8.4	397	n
23	17	9	297	y
24	17	7.8	460	y
25	17	6.3	491	n
26	18	9.5	216	y
27	16	7.5	386	y
28	18	7.5	406	n
29	16	9.6	496	y
30	18	8.3	211	y
				27/30: 90%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	13	15.7	231	y
2	15	18.1	349	y
3	13	15.6	439	y
4	12	13.6	354	y
5	12	18.3	296	y
6	13	16.9	415	y
7	12	14.2	314	y
8	13	11.8	446	y
9	14	13.4	482	y
10	13	17.4	446	y
11	14	13.4	252	n
12	15	11.4	330	y
13	15	14.5	434	n
14	14	14.1	315	n
15	12	11.5	285	y
16	16	19.2	262	y
17	14	14.6	259	y
18	12	15.6	418	y
19	14	13.3	309	y
20	16	14.8	475	n
21	15	13.5	463	n
22	12	15.8	293	y
23	12	12.7	406	y
24	13	18.4	435	y
25	16	17.1	423	n
26	14	17.5	250	n
27	16	13.1	226	y
28	13	14	209	y
29	14	18.6	249	y
30	16	16.5	267	y
				23/30: 76.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	17	1	5600
2	y	14	1	5600
3	y	10	1	5600
4	y	7	1	5600
5	y	7	1	5600
6	y	8	1	5600
7	y	14	1	5600
8	y	8	1	5600
9	y	10	1	5600
10	y	15	1	5600
11	y	16	2	5596.4
12	y	10	2	5594
13	y	10	2	5594
14	y	11	2	5594.4
15	y	10	2	5594
16	y	6	2	5592.4
17	y	11	2	5594.4
18	y	9	2	5593.6
19	y	7	2	5592.8
20	y	14	2	5595.6
21	y	20	3	5602
22	y	6	3	5607.6
23	y	17	3	5603.2
24	y	6	3	5607.6
25	y	6	3	5607.6
26	y	15	3	5604
27	y	7	3	5607.2
28	y	7	3	5607.2
29	y	13	3	5604.8
30	y	10	3	5606
	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	n
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
	29/30: 96.7%

40 MHz

Summary

Type	Detections	Trials	Detection Probability
Type 1	28	30	93%
Type 2	29	30	97%
Type 3	22	30	73%
Type 4	24	30	80%
Type 5	30	30	100%
Type 6	30	30	100%
Aggregate 1-4	103	120	86%

RADAR TYPE 1 — Rohde & Schwarz K350 Pulse Sequencer DFS

Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	30	1	1784	y
2	61	1	870	y
3	23	1	2383	y
4	100	1	529	y
5	86	1	619	y
6	20	1	2702	y
7	33	1	1639	y
8	41	1	1292	y
9	30	1	1797	y
10	60	1	886	y
11	63	1	846	y
12	36	1	1471	n
13	47	1	1139	y
14	25	1	2182	n
15	51	1	1045	y
16	26	1	2044	y
17	26	1	2080	y
18	27	1	2000	y
19	31	1	1733	y
20	22	1	2472	y
21	26	1	2105	y
22	102	1	519	y
23	25	1	2109	y
24	44	1	1213	y
25	30	1	1774	y
26	46	1	1151	y
27	53	1	1007	y
28	32	1	1648	y
29	20	1	2769	y
30	19	1	2778	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	29	2.2	188	y
2	26	4	155	y
3	24	1.4	222	y
4	28	2.1	226	y
5	26	3.3	159	y
6	25	2.7	190	y
7	28	4.8	150	y
8	25	2.2	208	y
9	26	1	158	y
10	28	1.7	172	y
11	23	3	152	y
12	27	4.2	166	y
13	25	2.3	203	y
14	25	4.7	225	n
15	28	1	189	y
16	25	3.7	190	y
17	26	2.7	159	y
18	24	4.3	169	y
19	26	2.5	197	y
20	27	4.7	184	y
21	23	3.9	185	y
22	28	4.3	180	y
23	27	4	200	y
24	27	3.6	214	y
25	25	4	225	y
26	26	1.3	169	y
27	27	3.3	167	y
28	24	3.6	224	y
29	24	1.6	197	y
30	26	4.7	196	y
				29/30: 96.7%

RADAR TYPE 3				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	17	6.1	373	y
2	18	6.6	329	y
3	17	8.1	317	y
4	16	6.4	467	n
5	17	7.2	277	y
6	16	7.7	249	y
7	16	7.9	323	y
8	18	7.7	420	y
9	16	9.4	439	y
10	16	7.9	353	y
11	17	8.5	370	n
12	17	7.5	412	n
13	16	7.6	243	y
14	18	9.4	243	y
15	18	9.3	445	n
16	18	8.2	213	y
17	18	6.7	369	y
18	16	7.7	435	y
19	17	6.1	440	n
20	17	7.8	319	y
21	16	7.7	236	y
22	17	8.9	229	y
23	18	6.7	244	n
24	17	8.1	257	y
25	16	8.6	234	y
26	17	6.6	413	n
27	17	6.6	236	y
28	17	8.8	341	n
29	17	8.2	500	y
30	16	8.1	456	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	14	14.7	406	y
2	13	12.4	242	n
3	15	18.2	238	y
4	16	12.3	292	y
5	13	18.5	482	n
6	16	18	249	y
7	12	18.5	237	y
8	13	14.3	251	y
9	14	19.2	476	y
10	13	15.5	308	y
11	12	19.4	201	y
12	13	18.2	244	n
13	12	16.2	307	y
14	15	14.3	423	y
15	16	16.6	451	y
16	15	15	253	y
17	12	19.9	465	n
18	15	12.6	457	y
19	15	12.1	416	y
20	12	18.3	411	n
21	15	11.2	204	y
22	15	18.4	425	y
23	13	12.7	330	y
24	16	14.6	452	y
25	16	14.5	255	y
26	16	19.3	214	n
27	15	11.3	393	y
28	15	17.6	457	y
29	16	17.6	269	y
30	13	17.6	360	y
				24/30: 80%

TYPE 5				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Detection (yes/no)	Chirp Width (MHz)	Subset	Fc
1	y	11	1	5600
2	y	11	1	5600
3	y	5	1	5600
4	y	7	1	5600
5	y	12	1	5600
6	y	13	1	5600
7	y	16	1	5600
8	y	12	1	5600
9	y	18	1	5600
10	y	13	1	5600
11	y	13	2	5585.2
12	y	8	2	5583.2
13	y	5	2	5582
14	y	15	2	5586
15	y	19	2	5587.6
16	y	6	2	5582.4
17	y	16	2	5586.4
18	y	14	2	5585.6
19	y	17	2	5586.8
20	y	8	2	5583.2
21	y	17	3	5613.2
22	y	13	3	5614.8
23	y	17	3	5613.2
24	y	13	3	5614.8
25	y	15	3	5614
26	y	13	3	5614.8
27	y	6	3	5617.6
28	y	16	3	5613.6
29	y	9	3	5616.4
30	y	9	3	5616.4
	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	27	30	90%
Type 2	24	30	80%
Type 3	23	30	77%
Type 4	23	30	77%
Type 5	30	30	100%
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	22	1	2414	y
2	71	1	747	y
3	21	1	2551	y
4	31	1	1706	y
5	18	1	3036	y
6	38	1	1392	y
7	23	1	2317	y
8	34	1	1573	y
9	18	1	3008	n
10	23	1	2362	y
11	20	1	2746	y
12	74	1	717	y
13	26	1	2058	y
14	25	1	2160	y
15	54	1	990	y
16	22	1	2485	y
17	19	1	2893	y
18	32	1	1665	y
19	23	1	2368	y
20	59	1	904	n
21	18	1	2957	n
22	27	1	1969	y
23	51	1	1035	y
24	18	1	2945	y
25	41	1	1307	y
26	32	1	1660	y
27	73	1	724	y
28	23	1	2365	y
29	26	1	2101	y
30	27	1	2010	y
				27/30: 90%

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	1.6	152	y
2	26	4.2	221	n
3	25	3.6	151	y
4	27	1	157	y
5	28	1.9	184	y
6	28	2.9	153	y
7	25	1.3	205	n
8	28	1.5	161	n
9	28	3.9	180	y
10	25	4.7	190	y
11	24	1.4	152	y
12	27	4.6	203	y
13	27	4.4	230	y
14	28	2.5	159	n
15	24	2.8	170	y
16	25	1.6	158	y
17	24	1.2	213	y
18	27	1.7	199	y
19	28	3.9	161	y
20	28	4.2	211	y
21	24	1.3	184	y
22	27	2.3	228	n
23	29	3.5	213	y
24	28	2.3	209	y
25	26	4.3	150	y
26	26	1.7	176	n
27	25	3.1	198	y
28	24	4.7	165	y
29	25	4.9	165	y
30	26	1.6	161	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	18	6.5	296	y
2	18	9	269	y
3	17	9.8	340	y
4	18	6.2	369	y
5	16	6.1	340	y
6	18	7.9	300	y
7	17	8.5	453	n
8	17	6.8	390	y
9	16	10	491	n
10	17	6.1	347	y
11	17	7.2	456	y
12	17	7.4	249	y
13	16	7.2	280	y
14	17	7.8	377	y
15	16	7.8	340	y
16	17	9.3	314	y
17	16	8.3	361	y
18	16	8.6	348	n
19	17	6.3	332	n
20	17	7.7	232	y
21	18	8.8	287	y
22	18	8.2	421	y
23	17	7.5	391	y
24	17	6.3	440	y
25	17	6.2	403	n
26	16	9.8	279	n
27	17	6.6	301	y
28	17	9.5	238	y
29	17	8.3	426	n
30	17	8.7	232	y
				23/30: 76.7%

RADAR TYPE 4				Rohde & Schwarz K350 Pulse Sequencer DFS
Trial #	Number of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	12	13.9	210	y
2	14	14.6	384	n
3	15	14.3	293	y
4	15	17.1	274	y
5	15	18.2	347	n
6	14	19.4	379	y
7	13	11.1	400	y
8	16	13	372	y
9	14	13	402	n
10	12	15.7	458	n
11	12	14.6	318	y
12	12	12.9	330	n
13	12	13.2	462	y
14	13	14.5	497	y
15	15	13.1	200	y
16	14	16.8	327	y
17	13	16.2	314	y
18	13	12.8	309	n
19	14	18.1	288	y
20	13	17.7	294	y
21	13	18.9	308	y
22	15	12.3	295	y
23	14	17.3	377	y
24	12	17.2	449	n
25	16	15.9	223	y
26	15	15.3	242	y
27	12	17.7	415	y
28	16	14.3	357	y
29	13	19.4	291	y
30	12	14.4	465	y
				23/30: 76.7%

TYPE 5	Rohde & Schwarz K350 Pulse Sequencer DFS			
Trial #	**Detection (yes/no)**	**Chirp Width (MHz)**	**Subset**	**Fc**
1	y	7	1	5600
2	y	10	1	5600
3	y	20	1	5600
4	y	15	1	5600
5	y	7	1	5600
6	y	16	1	5600
7	y	13	1	5600
8	y	12	1	5600
9	y	15	1	5600
10	y	11	1	5600
11	y	14	2	5565.6
12	y	16	2	5566.4
13	y	17	2	5566.8
14	y	6	2	5562.4
15	y	6	2	5562.4
16	y	10	2	5564
17	y	5	2	5562
18	y	16	2	5566.4
19	y	18	2	5567.2
20	y	9	2	5563.6
21	y	12	3	5635.2
22	y	20	3	5632
23	y	12	3	5635.2
24	y	8	3	5636.8
25	y	20	3	5632
26	y	18	3	5632.8
27	y	19	3	5632.4
28	y	13	3	5634.8
29	y	18	3	5632.8
30	y	9	3	5636.4
	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 --