Report on the Testing of the

Ag Leader Technology
USB WIFI Adapter V2

FCC ID: 2AYNW-4006282
IC ID: 11212A-4006282

In accordance with:
FCC 47 CFR Part 15.247
FCC 47 CFR Part 15.207
ISED RSS-247 Issue 2, February 2017

America

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Prepared for: Ag Leader Technology
2202 South Riverside Drive
Ames, Iowa 50010

COMMERCIAL-IN-CONFIDENCE

Document Number: NC72167945.1 | Issue: 1

SIGNATURE			
NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Franklin Rose	Sr. Wireless RF Test Engineer	**Authorized Signatory**	06 MAY 2021

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD America, Inc. document control rules.

FCC Accreditation Designation Number US1148 New Brighton, MN Test Laboratory	Innovation, Science, and Economic Development Canada Accreditation Site Number 4512A New Brighton, MN Test Laboratory

EXECUTIVE SUMMARY
A sample of this product was tested and found to be compliant with the standards listed above and the tests shown in Table 1.3.1 of this report.

A2LA Cert. No. 2955.11

ACCREDITATION
Our A2LA Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our A2LA Accreditation.

TÜV SÜD America Inc
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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Table 1.1-1 – Modification Record

Issue	Description of Change	Date of Issue
1	First Issue	06 MAY 2021

1.2 Introduction

Manufacturer	Ag Leader
Applicant's Email Address	vellig@agleader.com
Model Number(s) / HVIN	4006282
Serial Number(s)	MAC Address: 88-DA-1A-7B-ED-E8
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 15.247 FCC 47 CFR Part 15.207 ISED RSS-247 Issue 2, February 2017
Order Number	72167945
Date of Receipt of EUT	06 April 2021
Start of Test	06 April 2021
Finish of Test	14 April 2021
Related Document(s)	KDB 996369 D04

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1.3 Scope of Testing

To perform testing for an FCC Class II Permissive Change to accommodate an antenna change and a new FCC ID number, as well Class IV Permissive Change for Industry Canada ID change. Ag Leader will only be using the 2.4GHz WIFI capabilities of the wireless module and disabling all other transmitter modes, as such only 2.4GHz WIFI modes were evaluated. New FCC and IC ID numbers are listed the cover page of this report and Table 1.5.1.

1.4 Summary of Results

A summary of the tests carried out in accordance with the specifications shown below.

Table 1.4-1 – Summary of Results

Section	Specification Clause		Test Description	Accreditation	Base Standard
2.1	15.203	RSS-GEN	Antenna Requirements	A2LA	FCC Sub Part C 15.203
2.2	15.207	RSS-GEN	Conducted Emissions	A2LA	ANSI C63.10:2013
2.3	15.247(d)	RSS-GEN	Radiated Spurious Emissions	A2LA	ANSI C63.10:2013
2.4	15.205	RSS-GEN	Radiated Restricted Bands of Emissions	A2LA	ANSI C63.10:2013

Table 1.4-2 – Test Accreditation

Test Name	Name of Tester(s)	Results / Comments
Antenna Requirements	Sean Sellergren	Pass
Conducted Emissions	N/A	N/A
Radiated Spurious Emissions	Sean Sellergren	Pass
Radiated Restricted Bands of Emissions	Sean Sellergren	Pass

Note: Tests marked with N/A were not tested due to EUT not meeting the full requirements for test applicability and therefore are not required.

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1.5 Product Information

1.5.1 Technical Description

The Equipment Under Test (EUT):
USB WIFI dongle to be used with vehicle displays.

Table 1.5-1 – Wireless Module Technical Information

Detail	Description
FCC ID	2AYNW-4006282
IC ID	11212A-4006282
Transceiver Model #	RS9116N-SB00-AA0
Operating Frequency	802.11b/g: 2412 – 2462 MHz 802.11n HT20: 2412 – 2462 MHz 802.11n HT40: 2422 – 2452 MHz
Modulation Format	802.11b: DSSS 802.11g/n: OFDM
Antenna Type / Gain:	Monopole / 1.8dBi

A full description and detailed product specification details are available from the manufacturer.

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Table 1.5-2 – Cable Descriptions

Cable/Port	Description
N/A	N/A

Table 1.5-3 – Support Equipment Descriptions

Description
Laptop used for channel and mode programming
Fiber-optic to USB interface box

1.5.2 Modes of Operation

The tested mode of operation was:

Low Channel: 802.11b/g/n (20MHz) = 2412 MHz, 80211.n (40MHz) = 2422MHz
Mid Channel: 802.11b/g/n (20 & 40MHz) = 2437 MHz
High Channel: 802.11b/g/n (20MHz) = 2462 MHz, 80211.n (40MHz) = 2452MHz

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test program. The modifications incorporated during each test are recorded on the appropriate test pages.

Table 1.7-1 – Modification Record

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
0	Initial State		

1.8 Test Location

TÜV SÜD conducted the following tests at our New Brighton, MN Test Laboratory.

Office address:

TÜV SÜD America
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2 Test Details

2.1 Antenna Requirements

2.1.1 Specification Reference

FCC 47 CFR Part 15 Subpart C, 15.203
RSS-GEN Issue 5

2.1.2 Equipment Under Test and Modification State

As shown in §1.4 with modification state "0", as noted in §1.6.

2.1.3 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Note: Above statement is taken from FCC Part 15 Subpart C §15.203

Table 2.1-1 – Antenna Used In EUT

Antenna Type	Connection Type	Antenna Gain
Monopole	RP-SMA	1.8dBi

Note: The EUT also contains a Rx Diversity antenna that was not evaluated, Chip type with a gain of 2.09dBi.

2.2 Conducted Emissions

2.2.1 Specification Reference

FCC 47 CFR Part 15 Subpart C, 15.207
RSS-GEN Issue 5

2.2.2 Equipment Under Test and Modification State

As shown in §1.4 with modification state “0”, as noted in §1.6.

2.2.3 Date of Test

N/A

Test Summary: The EUT is not AC powered but receives power via a USB connection and there is not applicable for this test.

Test Result: N/A

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2.3 Radiated Spurious Emissions

2.3.1 Specification Reference

FCC 47 CFR Part 15 Subpart C, 15.247
RSS-GEN Issue 5

2.3.2 Equipment Under Test and Modification State

As shown in §1.4 with modification state “0”, as noted in §1.6.

2.3.3 Date of Test

06 - 14 April 2021

2.3.4 Test Method

The EUT was set up in a semi-anechoic chamber on a remotely controlled turntable and placed on a non-conductive table 0.8 m above a reference ground plane for 30-1000 MHz and 1.5m above the ground plane for above 1 GHz.

For 30-1000 MHz a pre-scan of the EUT emissions profile was made while varying the antenna-to-EUT azimuth and antenna-to-EUT polarization using a peak detector; measurements were taken at a 3m distance.

For above 1 GHz a pre-scan of the EUT emissions profile was made while varying the antenna-to-EUT azimuth and antenna-to-EUT polarization using peak and average detectors; measurements were taken at a 3m distance.

For all frequency ranges the final readings were maximized by adjusting the antenna height, polarization and turntable azimuth, in accordance with the specification. For below 1 GHz final measurements were taken with a quasi-peak detector and above 1 GHz final measurements were re-measured with peak and average detectors.

The EUT was assessed against the limits specified in FCC 47 CFR Part 15C §15.209.

2.3.5 Environmental Conditions

The EUT was evaluated within the climatic range of the EUT as specified by the manufacturer. When the manufacturer does not specify climatic parameters for the EUT, all tests are performed within the ambient climatic conditions of the laboratory.

2.3.6 Additional Observations

The highest frequency to which the DUT was measured was determined in accordance with §15.33(a)(1).

Automated measurements used BAT-EMC (v3.18) software. All measurements were done at a 3m distance. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only.

2.3.7 Sample Computation (Radiated Emissions)

Measuring equipment raw measurement (dBµV) @ 30 MHz			20.0
Correction Factor (dB)	Cable 2	0.24	18.94
	TEMC00011 (antenna)	18.70	
Reported Quasi-peak Final Measurement (dBµV/m) @ 30 MHz			38.94

2.3.8 Test Results

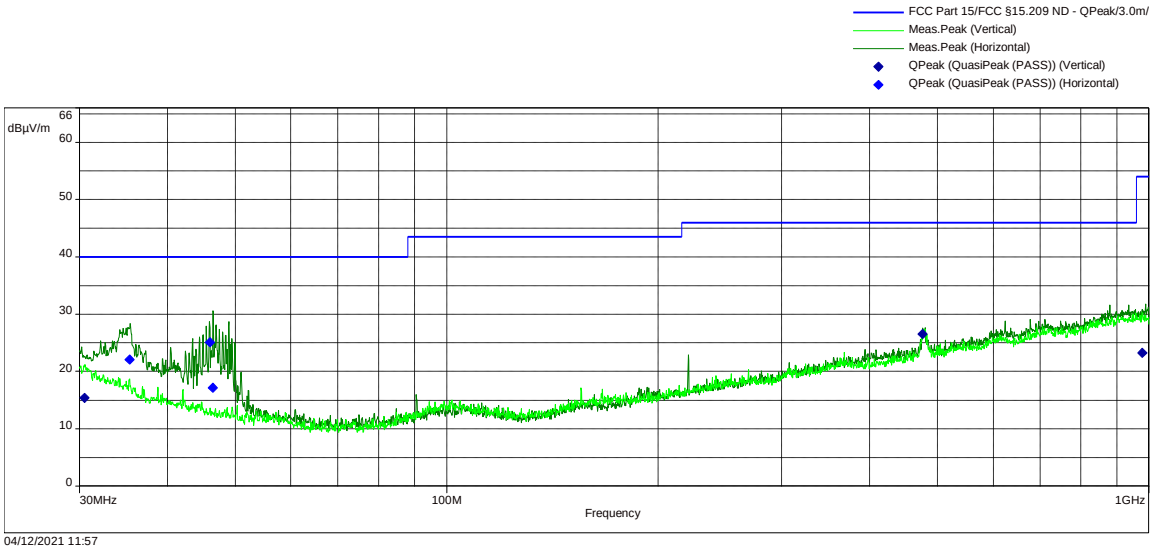
Test Summary: The EUT was set to constant transmit at low, mid and high channels for each mode of operation. Measurements between 1-18 GHz were taken with a 2.4 GHz notch filter in front of the pre-amp to prevent overloading.

Test Result: Pass

See data below for detailed results.

Spurious Emissions 30M-1GHz - 802.11b Low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11b Low Channel 2412MHz

Figure 2.3-1 – RE Spurious Emissions 30-1000 MHz – 802.11b Low Channel 2412 MHz

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Table 2.3-1 – RE Spurious Emissions 30-1000 MHz – 802.11b Low Channel 2412 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.494577MHz	15.37	40.00	-24.63	138.00	3.38	Vertical	Pass
35.340183MHz	22.10	40.00	-17.90	0.00	1.24	Horizontal	Pass
45.996155MHz	25.11	40.00	-14.89	240.00	1.00	Horizontal	Pass
46.428665MHz	17.14	40.00	-22.86	318.00	1.24	Horizontal	Pass
476.25218MHz	26.55	46.00	-19.45	115.00	2.16	Vertical	Pass
978.4295MHz	23.29	53.97	-30.68	218.00	1.80	Vertical	Pass

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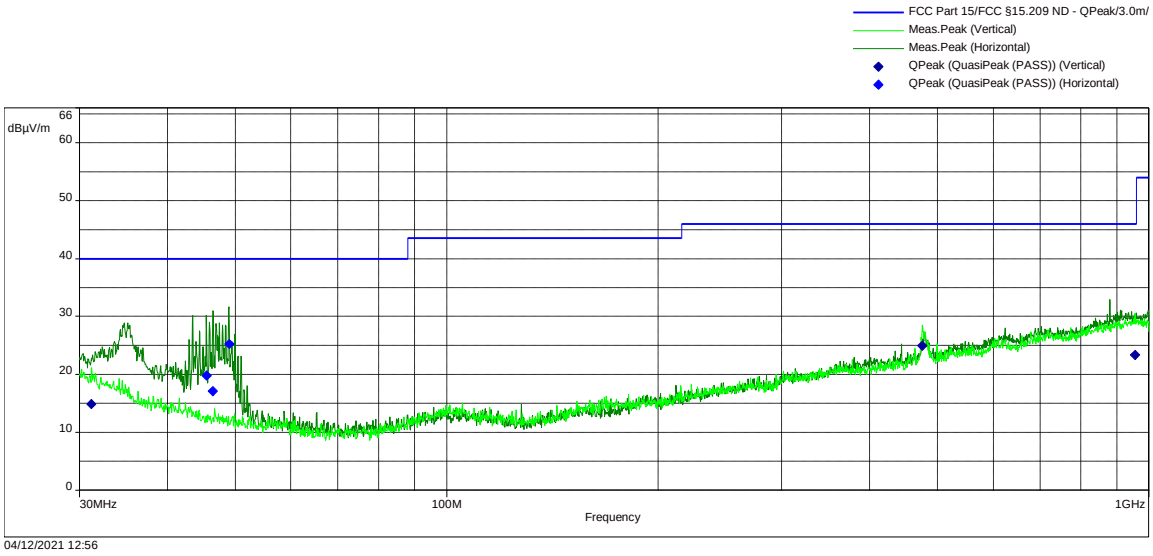
Spurious Emissions 30M-1GHz - 802.11b Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11b Mid Channel 2437MHz

Figure 2.3-2 – RE Spurious Emissions 30-1000 MHz – 802.11b Mid Channel 2437 MHz

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Table 2.3-2 – RE Spurious Emissions 30-1000 MHz – 802.11b Mid Channel 2437 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
31.194156MHz	14.84	40.00	-25.16	160.00	2.51	Vertical	Pass
45.493455MHz	19.82	40.00	-20.18	120.00	2.26	Horizontal	Pass
46.425491MHz	17.15	40.00	-22.85	313.00	1.24	Horizontal	Pass
49.000261MHz	25.22	40.00	-14.78	112.00	1.00	Horizontal	Pass
475.78671MHz	24.99	46.00	-21.01	116.00	1.00	Vertical	Pass
955.38811MHz	23.37	46.00	-22.63	247.00	2.05	Vertical	Pass

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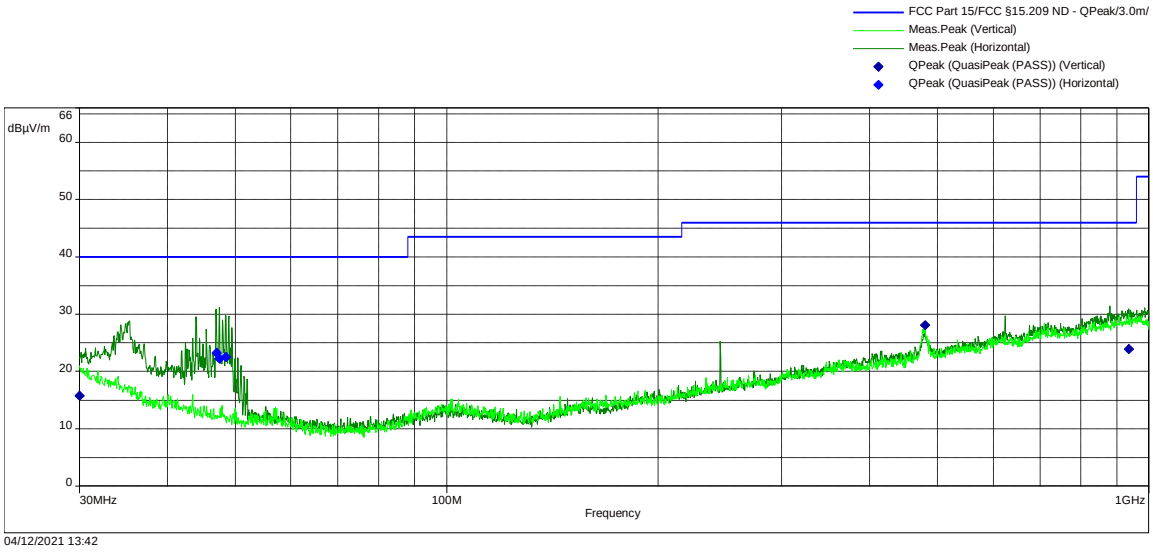
Spurious Emissions 30M-1GHz - 802.11b High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11b High Channel 2462MHz

Figure 2.3-3 – RE Spurious Emissions 30-1000 MHz – 802.11b High Channel 2462 MHz

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Table 2.3-3 – RE Spurious Emissions 30-1000 MHz – 802.11b High Channel 2462 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.000684MHz	15.80	40.00	-24.20	218.00	1.19	Vertical	Pass
47.005029MHz	23.28	40.00	-16.72	292.00	1.04	Horizontal	Pass
47.500649MHz	22.22	40.00	-17.78	215.00	1.34	Horizontal	Pass
48.478584MHz	22.49	40.00	-17.51	83.00	1.00	Horizontal	Pass
480.01573MHz	28.11	46.00	-17.89	105.00	1.95	Vertical	Pass
936.03035MHz	23.92	46.00	-22.08	28.00	2.46	Vertical	Pass

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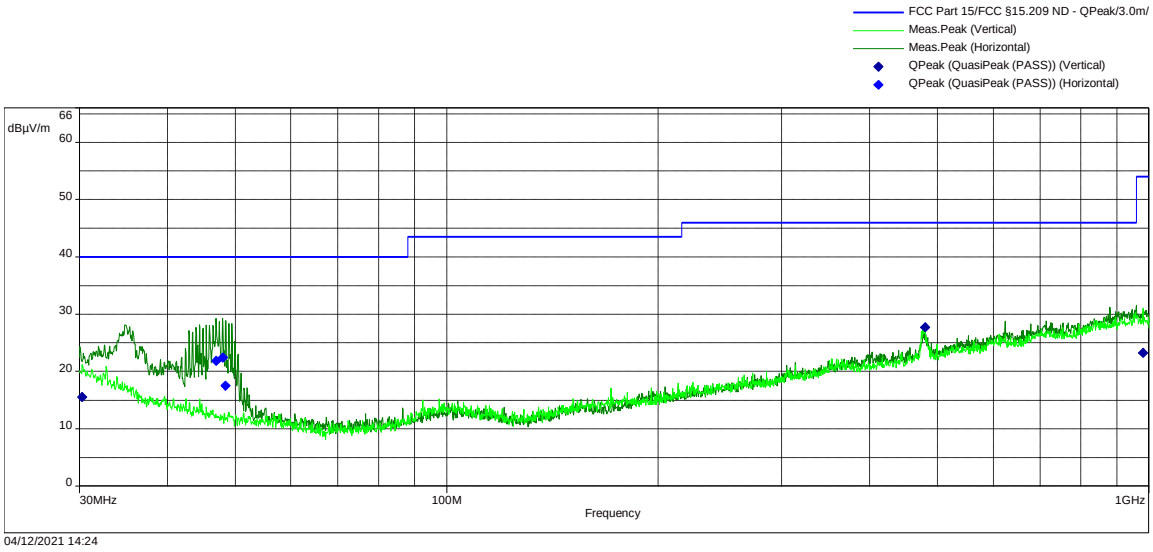
Spurious Emissions 30M-1GHz - 802.11g Low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11g Low Channel 2412MHz

Figure 2.3-4 – RE Spurious Emissions 30-1000 MHz – 802.11g Low Channel 2412 MHz

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Table 2.3-4 – RE Spurious Emissions 30-1000 MHz – 802.11g Low Channel 2412 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.294713MHz	15.53	40.00	-24.47	130.00	2.21	Vertical	Pass
46.999902MHz	21.88	40.00	-18.12	284.00	1.04	Horizontal	Pass
47.992485MHz	22.42	40.00	-17.58	24.00	1.00	Horizontal	Pass
48.431709MHz	17.53	40.00	-22.47	6.00	1.14	Horizontal	Pass
480.01561MHz	27.74	46.00	-18.26	109.00	2.05	Vertical	Pass
980.78816MHz	23.22	53.97	-30.75	152.00	3.38	Vertical	Pass

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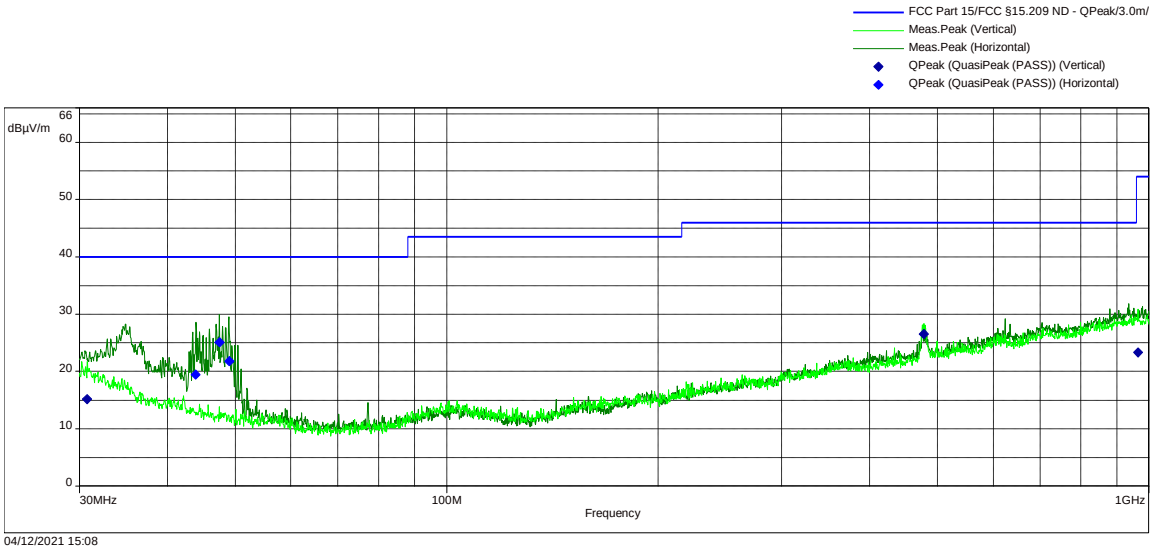
Spurious Emissions 30M-1GHz - 802.11g Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11g Mid Channel 2437MHz

Figure 2.3-5 – RE Spurious Emissions 30-1000 MHz – 802.11g Mid Channel 2437 MHz

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Table 2.3-5 – RE Spurious Emissions 30-1000 MHz – 802.11g Mid Channel 2437 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.781177MHz	15.18	40.00	-24.82	123.00	3.68	Vertical	Pass
43.916084MHz	19.46	40.00	-20.54	61.00	1.00	Horizontal	Pass
47.499917MHz	25.08	40.00	-14.92	336.00	1.14	Horizontal	Pass
48.997698MHz	21.79	40.00	-18.21	149.00	1.00	Horizontal	Pass
477.82802MHz	26.56	46.00	-19.44	116.00	2.16	Vertical	Pass
964.86049MHz	23.32	53.97	-30.65	204.00	3.58	Vertical	Pass

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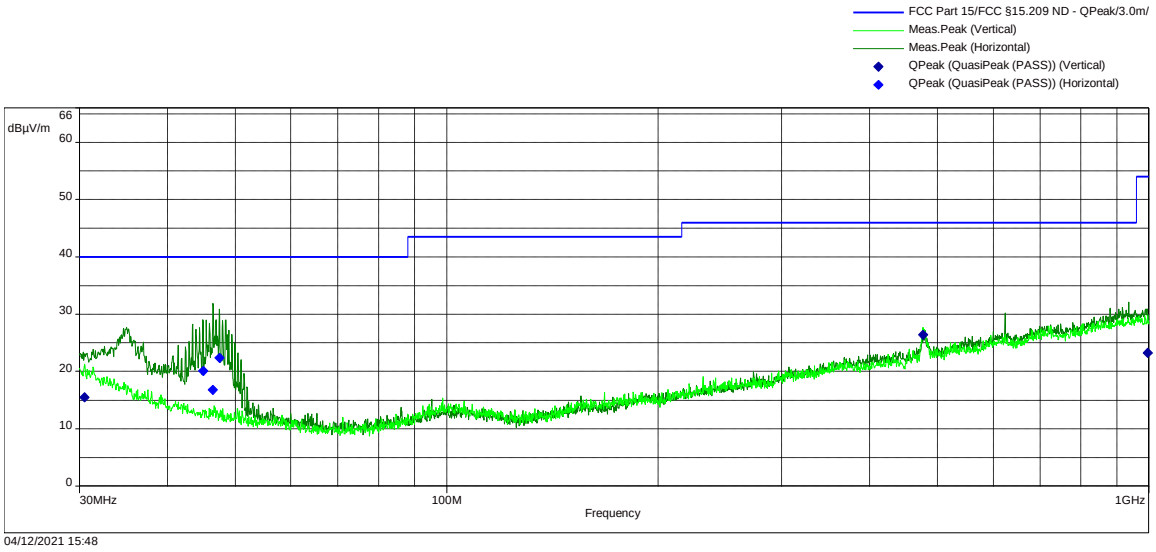
Spurious Emissions 30M-1GHz - 802.11g High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11g High Channel 2462MHz

Figure 2.3-6 – RE Spurious Emissions 30-1000 MHz – 802.11g High Channel 2462 MHz

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Table 2.3-6 – RE Spurious Emissions 30-1000 MHz – 802.11g High Channel 2462 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.508071MHz	15.44	40.00	-24.56	321.00	1.04	Vertical	Pass
44.975196MHz	20.13	40.00	-19.87	360.00	1.29	Horizontal	Pass
46.429885MHz	16.83	40.00	-23.17	39.00	1.29	Horizontal	Pass
47.49894MHz	22.38	40.00	-17.62	321.00	1.24	Horizontal	Pass
476.81487MHz	26.43	46.00	-19.57	97.00	1.95	Vertical	Pass
995.99086MHz	23.28	53.97	-30.69	226.00	2.10	Vertical	Pass

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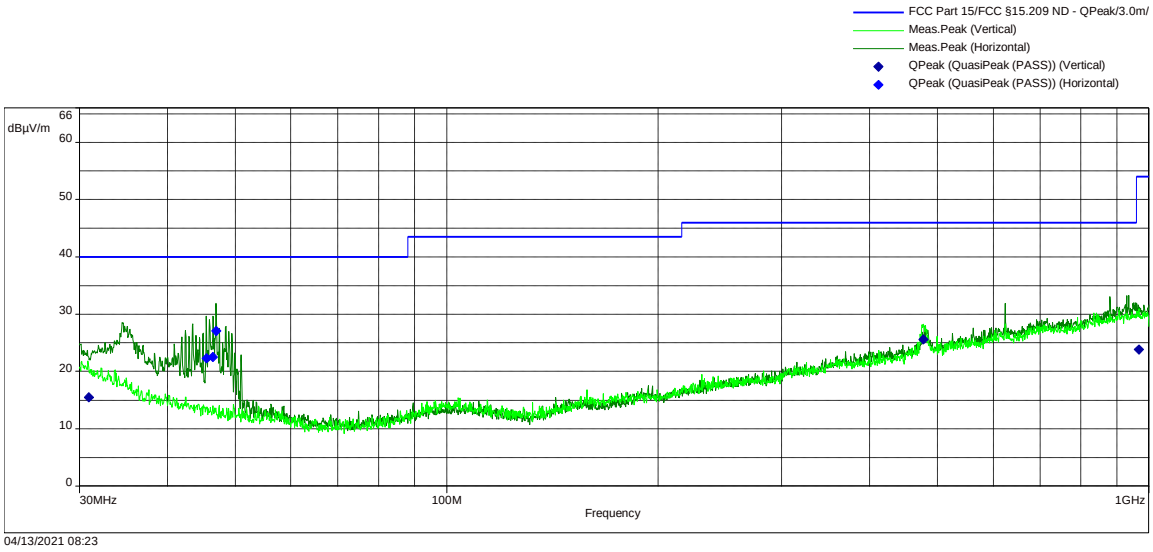
Spurious Emissions 30M-1GHz - 802.11n HT20 Low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT20 Low Channel 2412MHz

Figure 2.3-7 – RE Spurious Emissions 30-1000 MHz – 802.11n HT20 Low Channel 2412 MHz

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Table 2.3-7 – RE Spurious Emissions 30-1000 MHz – 802.11n HT20 Low Channel 2412 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.897134MHz	15.49	40.00	-24.51	343.00	2.92	Vertical	Pass
45.49492MHz	22.33	40.00	-17.67	310.00	1.00	Horizontal	Pass
46.429153MHz	22.48	40.00	-17.52	295.00	1.04	Horizontal	Pass
47.000269MHz	27.10	40.00	-12.90	259.00	1.00	Horizontal	Pass
477.18807MHz	25.57	46.00	-20.43	90.00	2.05	Vertical	Pass
967.8221MHz	23.84	53.97	-30.13	306.00	2.66	Vertical	Pass

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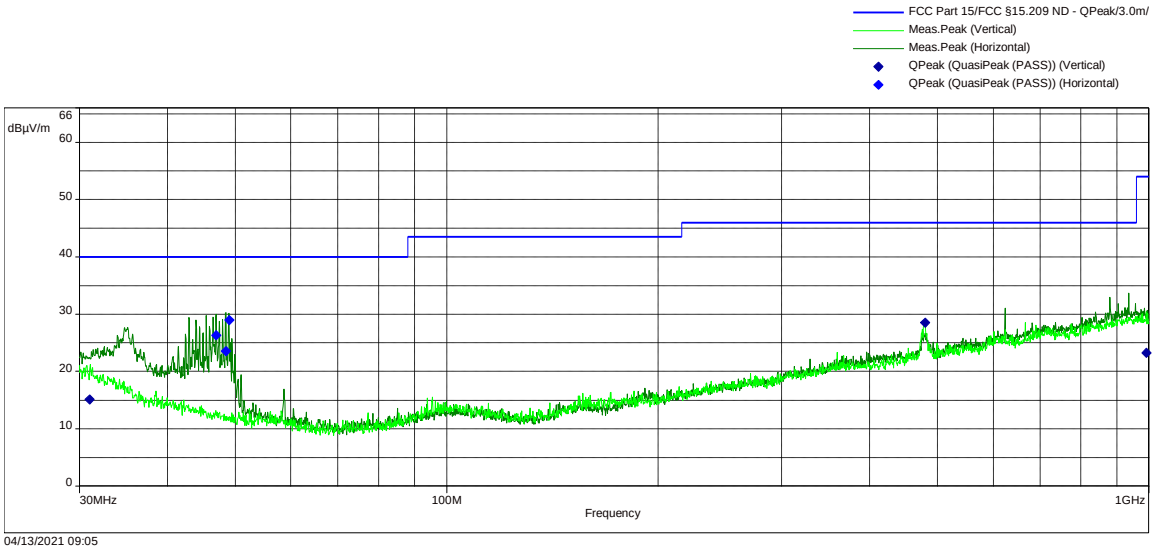
Spurious Emissions 30M-1GHz - 802.11n HT20 Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT20 Mid Channel 2437MHz

Figure 2.3-8 – RE Spurious Emissions 30-1000 MHz – 802.11n HT20 Mid Channel 2437 MHz

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Table 2.3-8 – RE Spurious Emissions 30-1000 MHz – 802.11n HT20 Mid Channel 2437 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
31.038227MHz	15.12	40.00	-24.88	218.00	1.04	Vertical	Pass
46.999414MHz	26.36	40.00	-13.64	230.00	1.00	Horizontal	Pass
48.501833MHz	23.53	40.00	-16.47	83.00	1.09	Horizontal	Pass
48.995867MHz	29.01	40.00	-10.99	87.00	1.04	Horizontal	Pass
479.99749MHz	28.51	46.00	-17.49	90.00	2.21	Vertical	Pass
991.76336MHz	23.26	53.97	-30.71	182.00	3.78	Vertical	Pass

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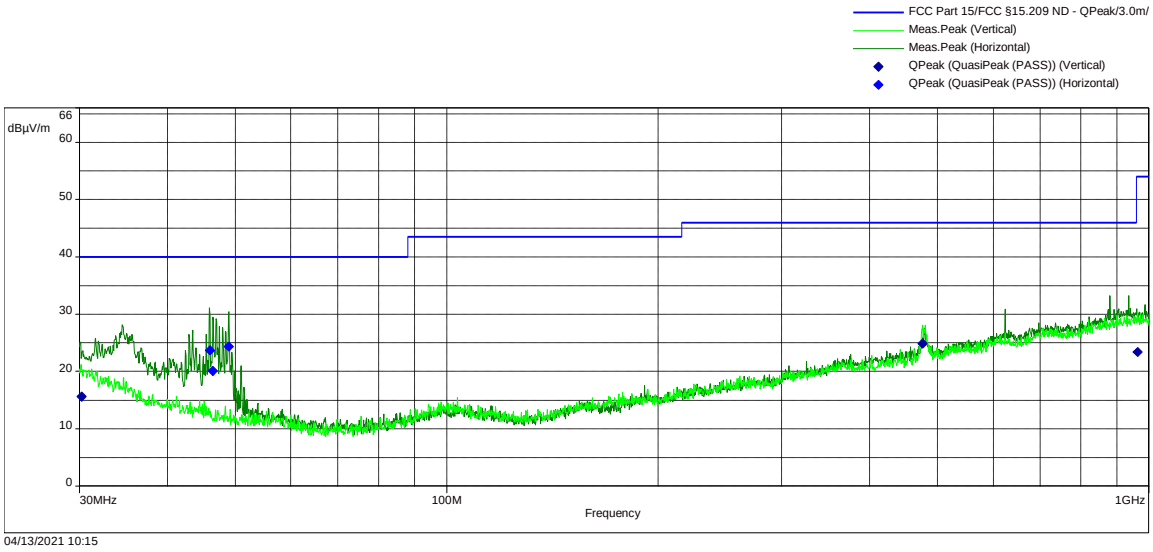
Spurious Emissions 30M-1GHz - 802.11n HT20 High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT20 High Channel 2462MHz

Figure 2.3-9 – RE Spurious Emissions 30-1000 MHz – 802.11n HT20 High Channel 2462 MHz

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Table 2.3-9 – RE Spurious Emissions 30-1000 MHz – 802.11n HT20 High Channel 2462 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.203781MHz	15.64	40.00	-24.36	343.00	1.09	Vertical	Pass
46.000427MHz	23.66	40.00	-16.34	281.00	1.09	Horizontal	Pass
46.422927MHz	20.11	40.00	-19.89	360.00	1.04	Horizontal	Pass
48.994646MHz	24.32	40.00	-15.68	98.00	1.00	Horizontal	Pass
476.12738MHz	24.89	46.00	-21.11	112.00	2.21	Vertical	Pass
963.24534MHz	23.43	53.97	-30.54	360.00	1.34	Vertical	Pass

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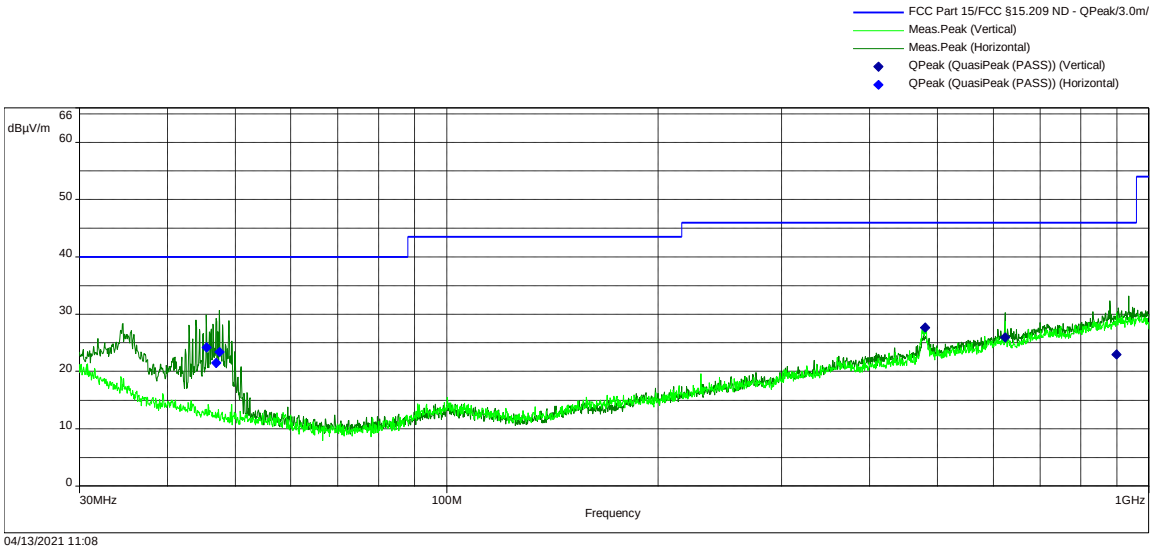
Spurious Emissions 30M-1GHz - 802.11n HT40 Low Channel 2422MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 Low Channel 2422MHz

Figure 2.3-10 – RE Spurious Emissions 30-1000 MHz – 802.11n HT40 Low Channel 2422 MHz

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Table 2.3-10 – RE Spurious Emissions 30-1000 MHz – 802.11n HT40 Low Channel 2422 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
45.503465MHz	24.22	40.00	-15.78	335.00	1.14	Horizontal	Pass
46.99856MHz	21.49	40.00	-18.51	296.00	1.29	Horizontal	Pass
47.496377MHz	23.38	40.00	-16.62	230.00	1.34	Horizontal	Pass
480.01586MHz	27.62	46.00	-18.38	116.00	2.16	Vertical	Pass
624.02039MHz	25.96	46.00	-20.04	233.00	1.00	Vertical	Pass
899.8064MHz	22.97	46.00	-23.03	113.00	2.46	Vertical	Pass

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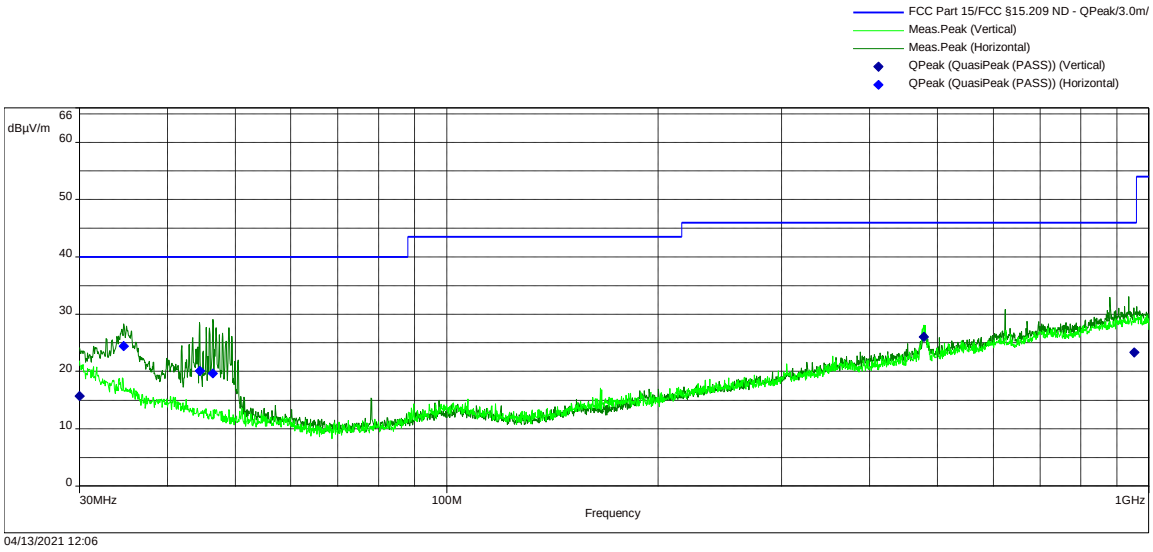
Spurious Emissions 30M-1GHz - 802.11n HT40 Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 Mid Channel 2437MHz

Figure 2.3-11 – RE Spurious Emissions 30-1000 MHz – 802.11n HT40 Mid Channel 2437 MHz

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Table 2.3-11 – RE Spurious Emissions 30-1000 MHz – 802.11n HT40 Mid Channel 2437 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
30.016675MHz	15.67	40.00	-24.33	314.00	3.78	Vertical	Pass
34.696756MHz	24.46	40.00	-15.54	292.00	1.00	Horizontal	Pass
44.489829MHz	20.12	40.00	-19.88	318.00	1.00	Horizontal	Pass
46.424758MHz	19.67	40.00	-20.33	288.00	1.09	Horizontal	Pass
477.8896MHz	26.01	46.00	-19.99	105.00	2.26	Vertical	Pass
953.51763MHz	23.34	46.00	-22.66	167.00	2.56	Vertical	Pass

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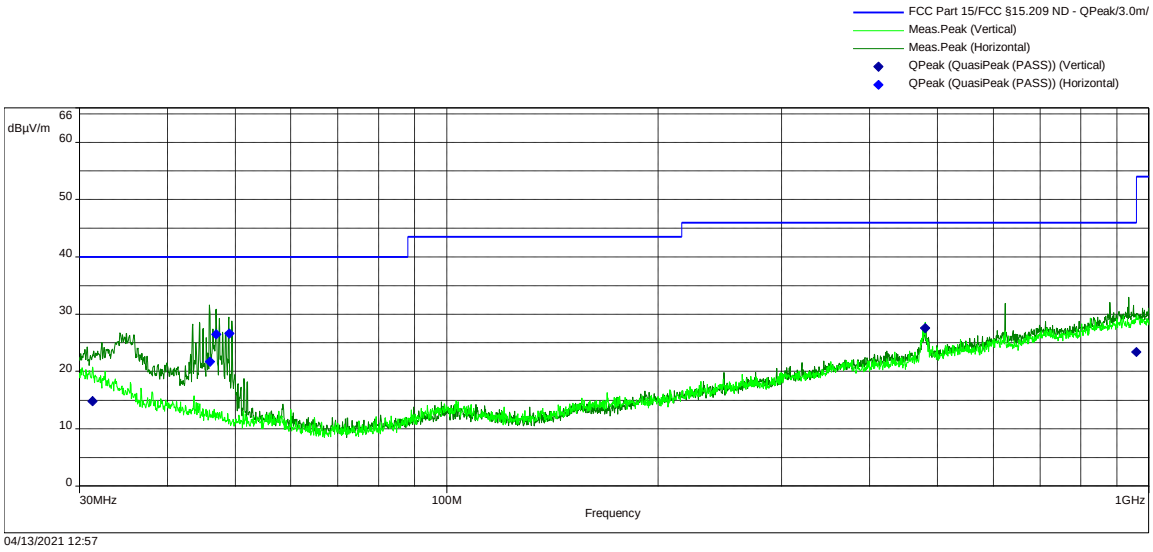
Spurious Emissions 30M-1GHz - 802.11n HT40 High Channel 2452MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
30MHz- 1GHz	Vertical	3m	100kHz	18001Pts	Auto
30MHz- 1GHz	Horizontal	3m	100kHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 High Channel 2452MHz

Figure 2.3-12 – RE Spurious Emissions 30-1000 MHz – 802.11n HT40 High Channel 2452 MHz

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Table 2.3-12 – RE Spurious Emissions 30-1000 MHz – 802.11n HT40 High Channel 2452 MHz

Frequency	QP Level (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (º)	Height (m)	Polarity	Result
31.305418MHz	14.79	40.00	-25.21	161.00	1.95	Vertical	Pass
46.000305MHz	21.72	40.00	-18.28	282.00	1.00	Horizontal	Pass
47.000635MHz	26.46	40.00	-13.54	264.00	1.19	Horizontal	Pass
48.997453MHz	26.60	40.00	-13.40	88.00	1.04	Horizontal	Pass
480.0158MHz	27.58	46.00	-18.42	117.00	2.16	Vertical	Pass
959.83466MHz	23.38	46.00	-22.62	52.00	2.77	Vertical	Pass

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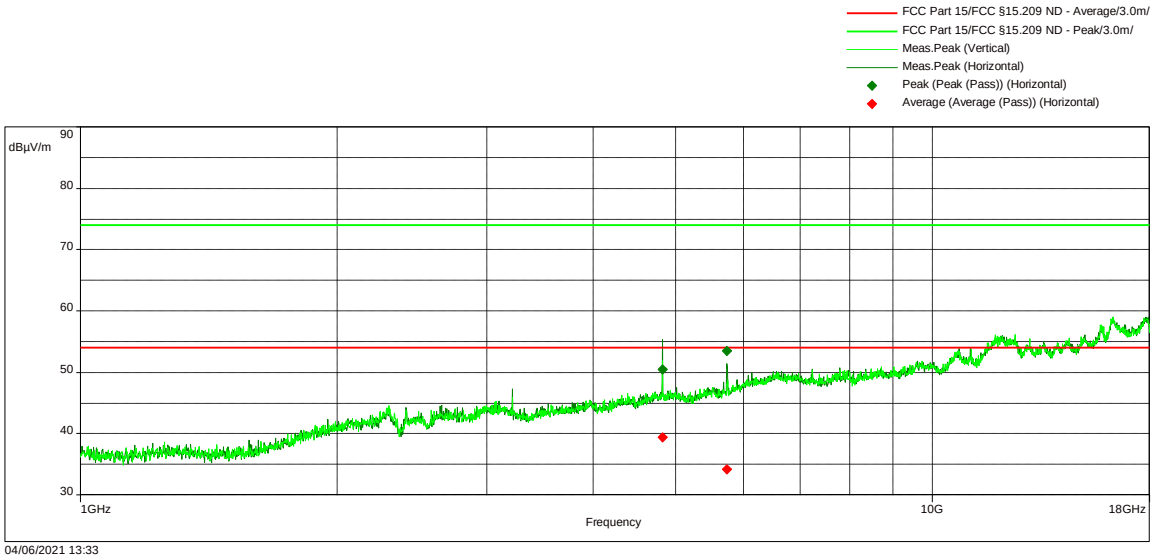
Spurious Emissions 1 - 18GHz - 802.11b Low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11b Low Channel 2412MHz

Figure 2.3-13 – RE Spurious Emissions 1 – 18 GHz – 802.11b Low Channel 2412 MHz

Table 2.3-13 – RE Spurious Emissions 1 – 18 GHz – 802.11b Low Channel 2412 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
4.8231111GHz	50.47	74.00	-23.53	39.40	54.00	-14.60	360.00	2.97	Horizontal	Pass	Pass
5.7420556GHz	53.48	74.00	-20.52	34.19	54.00	-19.81	171.00	4.00	Horizontal	Pass	Pass

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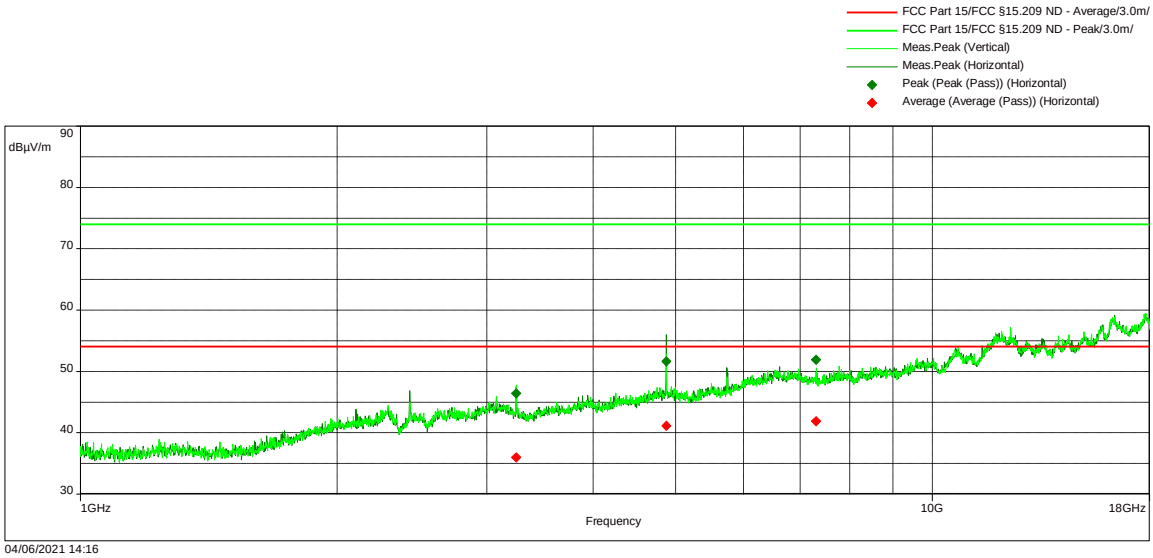
Spurious Emissions 1 - 18GHz - 802.11b Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11b Mid Channel 2437MHz

Figure 2.3-14 – RE Spurious Emissions 1 – 18 GHz – 802.11b Mid Channel 2437 MHz

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Table 2.3-14 – RE Spurious Emissions 1 – 18 GHz – 802.11b Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (°)	Height (m)	Polarity	Peak Result	Average Result
3.2487222GHz	46.38	74.00	-27.62	35.97	54.00	-18.03	28.00	2.81	Horizontal	Pass	Pass
4.8731667GHz	51.60	74.00	-22.40	41.14	54.00	-12.86	13.00	2.15	Horizontal	Pass	Pass
7.3098333GHz	51.89	74.00	-22.11	41.86	54.00	-12.14	35.00	2.21	Horizontal	Pass	Pass

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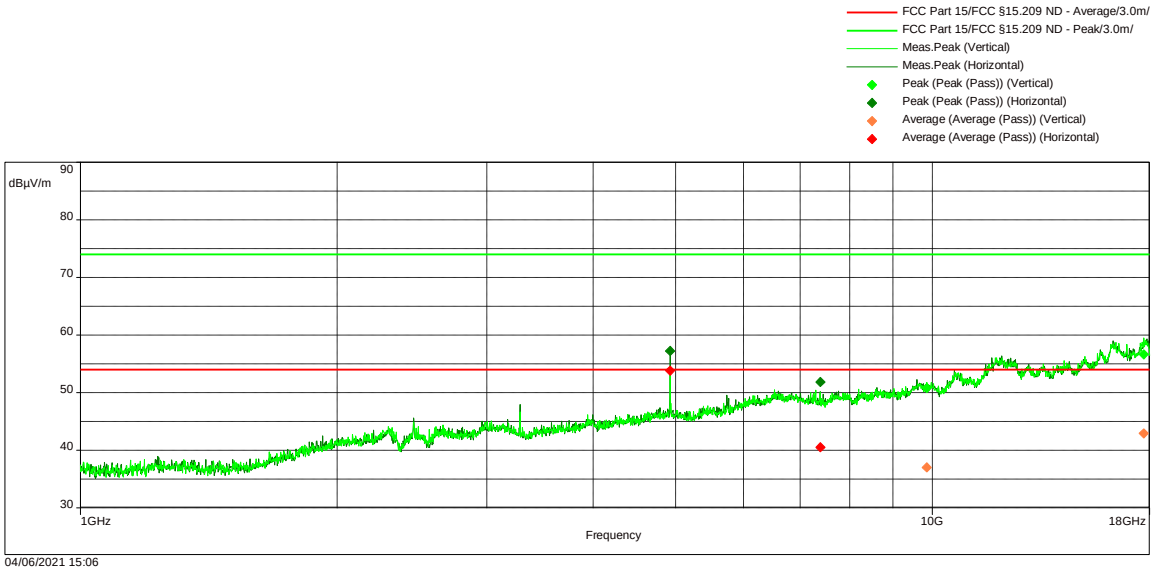
Spurious Emissions 1 - 18GHz - 802.11b High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11b High Channel 2462MHz

Figure 2.3-15 – RE Spurious Emissions 1 – 18 GHz – 802.11b High Channel 2462 MHz

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Table 2.3-15 – RE Spurious Emissions 1 – 18 GHz – 802.11b High Channel 2462 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
4.9241667GHz	57.24	74.00	-16.76	53.77	54.00	-0.23	20.00	2.36	Horizontal	Pass	Pass
7.3863333GHz	51.84	74.00	-22.16	40.50	54.00	-13.50	21.00	1.34	Horizontal	Pass	Pass
9.8541667GHz	50.79	74.00	-23.21	36.99	54.00	-17.01	321.00	1.86	Vertical	Pass	Pass
17.713833GHz	56.63	74.00	-17.37	42.91	54.00	-11.09	82.00	2.21	Vertical	Pass	Pass

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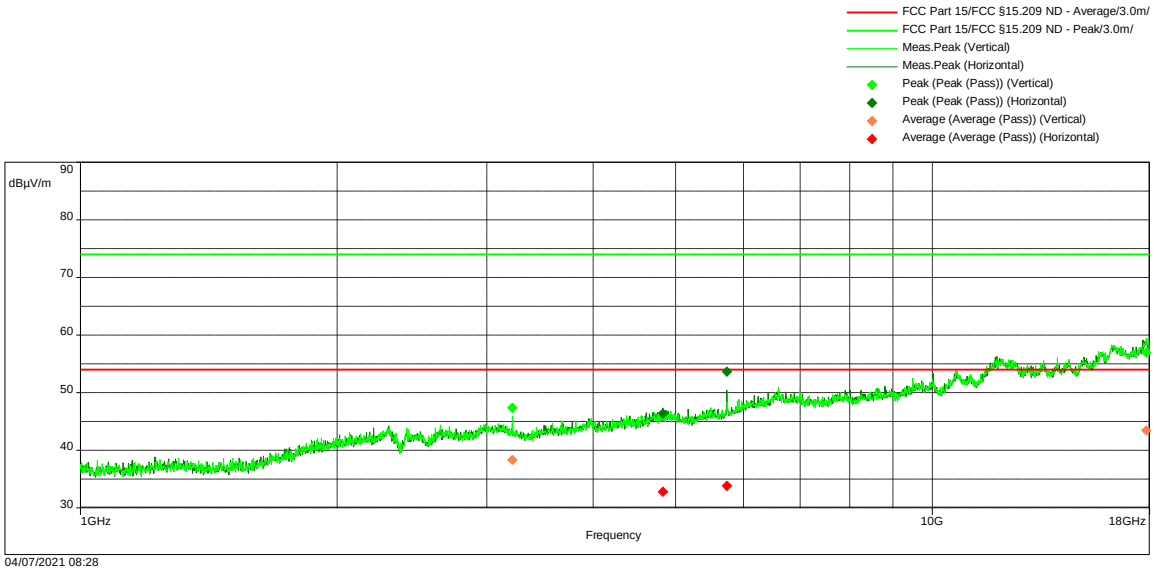
Spurious Emissions 1 - 18GHz - 802.11g Low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11g Low Channel 2412MHz

Figure 2.3-16 – RE Spurious Emissions 1 – 18 GHz – 802.11g Low Channel 2412 MHz

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Table 2.3-16 – RE Spurious Emissions 1 – 18 GHz – 802.11g Low Channel 2412 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
3.2156667GHz	47.37	74.00	-26.63	38.30	54.00	-15.70	8.00	3.66	Vertical	Pass	Pass
4.8316111GHz	46.32	74.00	-27.68	32.77	54.00	-21.23	349.00	3.91	Horizontal	Pass	Pass
5.7411111GHz	53.66	74.00	-20.34	33.80	54.00	-20.20	360.00	3.07	Horizontal	Pass	Pass
17.829056GHz	56.94	74.00	-17.06	43.44	54.00	-10.56	106.00	2.26	Vertical	Pass	Pass

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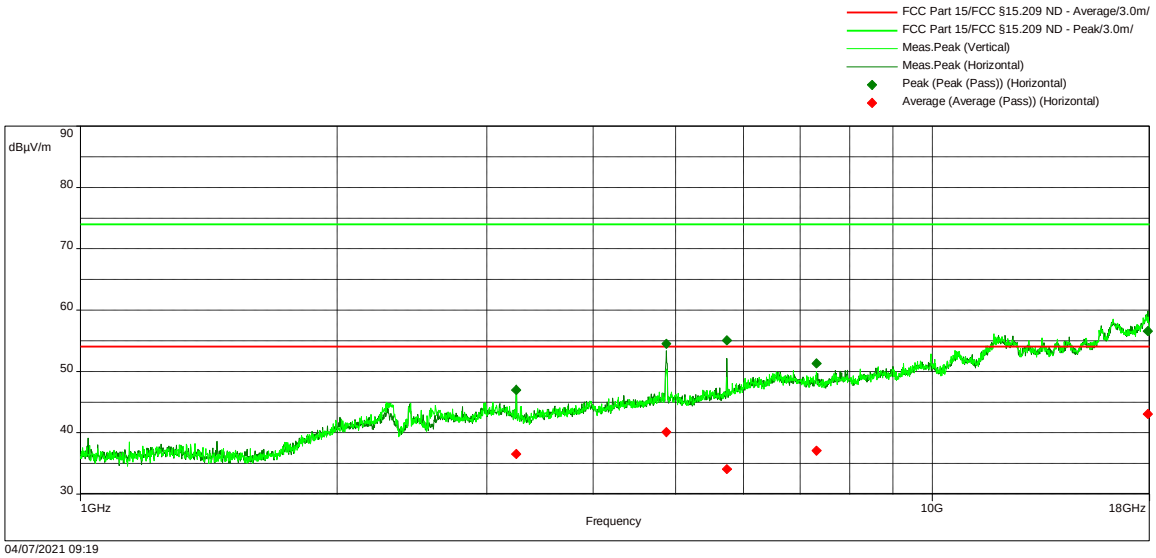
Spurious Emissions 1 - 18GHz - 802.11g Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11g Mid Channel 2437MHz

Figure 2.3-17 – RE Spurious Emissions 1 – 18 GHz – 802.11g Mid Channel 2437 MHz

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Table 2.3-17 – RE Spurious Emissions 1 – 18 GHz – 802.11g Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
3.2487222GHz	46.93	74.00	-27.07	36.55	54.00	-17.45	360.00	1.75	Horizontal	Pass	Pass
4.8741111GHz	54.50	74.00	-19.50	40.06	54.00	-13.94	352.00	2.56	Horizontal	Pass	Pass
5.7420556GHz	55.09	74.00	-18.91	34.07	54.00	-19.93	297.00	4.00	Horizontal	Pass	Pass
7.3173889GHz	51.27	74.00	-22.73	37.05	54.00	-16.95	360.00	2.66	Horizontal	Pass	Pass
17.913111GHz	56.58	74.00	-17.42	43.06	54.00	-10.94	22.00	1.00	Horizontal	Pass	Pass

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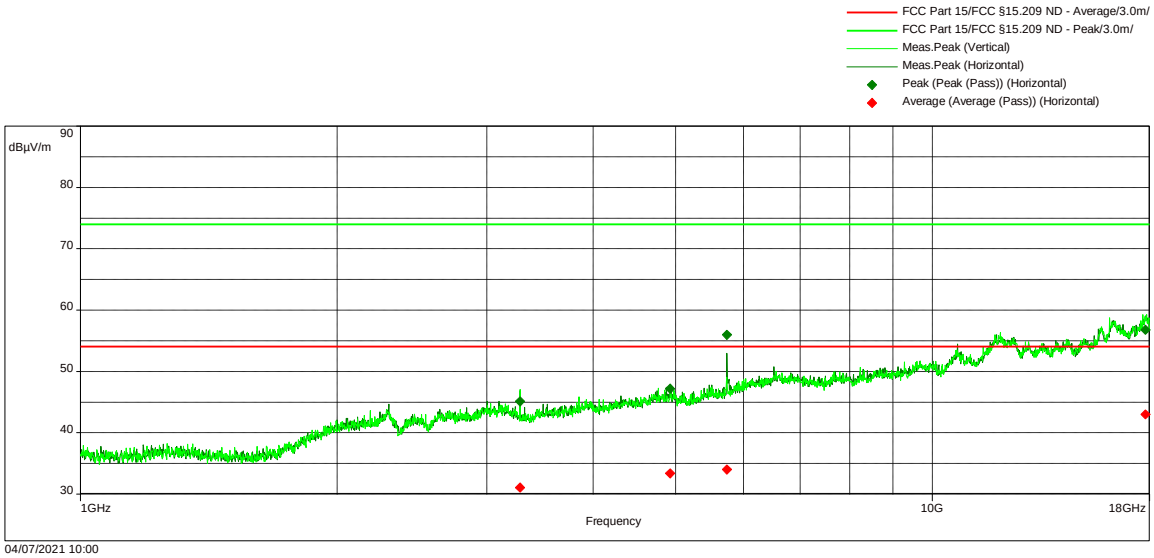
Spurious Emissions 1 - 18GHz - 802.11g High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11g High Channel 2462MHz

Figure 2.3-18 – RE Spurious Emissions 1 – 18 GHz – 802.11g High Channel 2462 MHz

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Table 2.3-18 – RE Spurious Emissions 1 – 18 GHz – 802.11g High Channel 2462 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
3.2817778GHz	45.12	74.00	-28.88	31.06	54.00	-22.94	359.00	2.00	Horizontal	Pass	Pass
4.9241667GHz	47.18	74.00	-26.82	33.37	54.00	-20.63	1.00	2.41	Horizontal	Pass	Pass
5.7420556GHz	55.98	74.00	-18.02	34.01	54.00	-19.99	228.00	3.46	Horizontal	Pass	Pass
17.7875GHz	56.77	74.00	-17.23	43.00	54.00	-11.00	11.00	2.56	Horizontal	Pass	Pass

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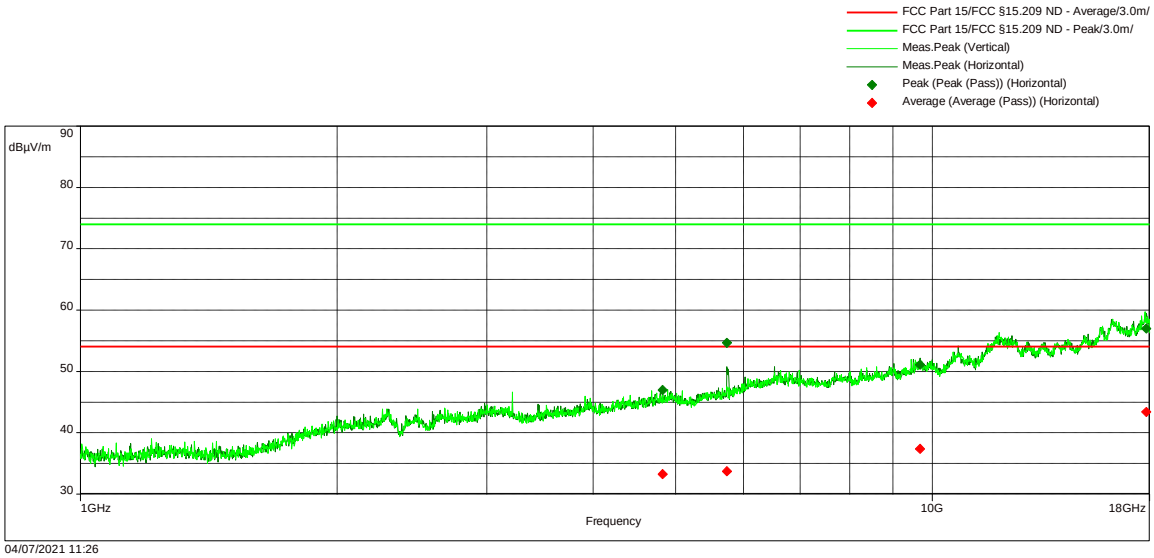
Spurious Emissions 1 - 18GHz - 802.11n HT20 Low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11n HT20 Low Channel 2412MHz

Figure 2.3-19 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT20 Low Channel 2412 MHz

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Table 2.3-19 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT20 Low Channel 2412 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
4.8240556GHz	46.97	74.00	-27.03	33.21	54.00	-20.79	62.00	1.04	Horizontal	Pass	Pass
5.7411111GHz	54.63	74.00	-19.37	33.74	54.00	-20.26	129.00	3.32	Horizontal	Pass	Pass
9.6728333GHz	51.08	74.00	-22.92	37.34	54.00	-16.66	0.00	2.51	Horizontal	Pass	Pass
17.845111GHz	56.98	74.00	-17.02	43.40	54.00	-10.60	0.00	1.73	Horizontal	Pass	Pass

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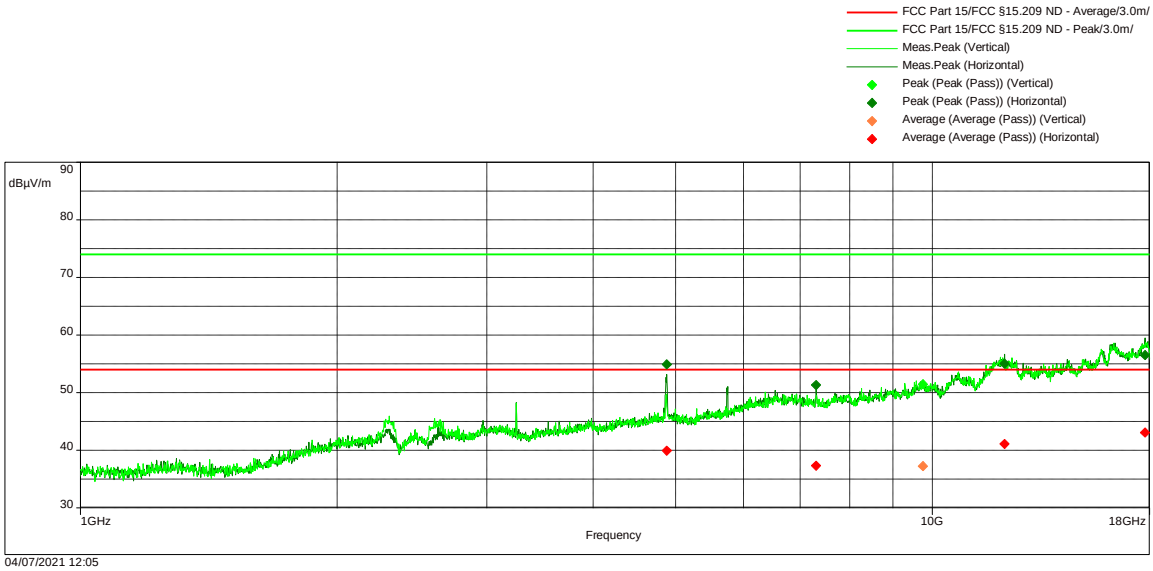
Spurious Emissions 1 - 18GHz - 802.11n HT20 Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11n HT20 Mid Channel 2437MHz

Figure 2.3-20 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT20 Mid Channel 2437 MHz

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Table 2.3-20 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT20 Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
4.8797778GHz	54.90	74.00	-19.10	39.94	54.00	-14.06	0.00	3.68	Horizontal	Pass	Pass
7.3032222GHz	51.33	74.00	-22.67	37.29	54.00	-16.71	19.00	1.83	Horizontal	Pass	Pass
9.7493333GHz	51.50	74.00	-22.50	37.23	54.00	-16.77	106.00	3.98	Vertical	Pass	Pass
12.159556GHz	55.02	74.00	-18.98	41.11	54.00	-12.89	7.00	1.29	Horizontal	Pass	Pass
17.783722GHz	56.47	74.00	-17.53	43.04	54.00	-10.96	52.00	3.38	Horizontal	Pass	Pass

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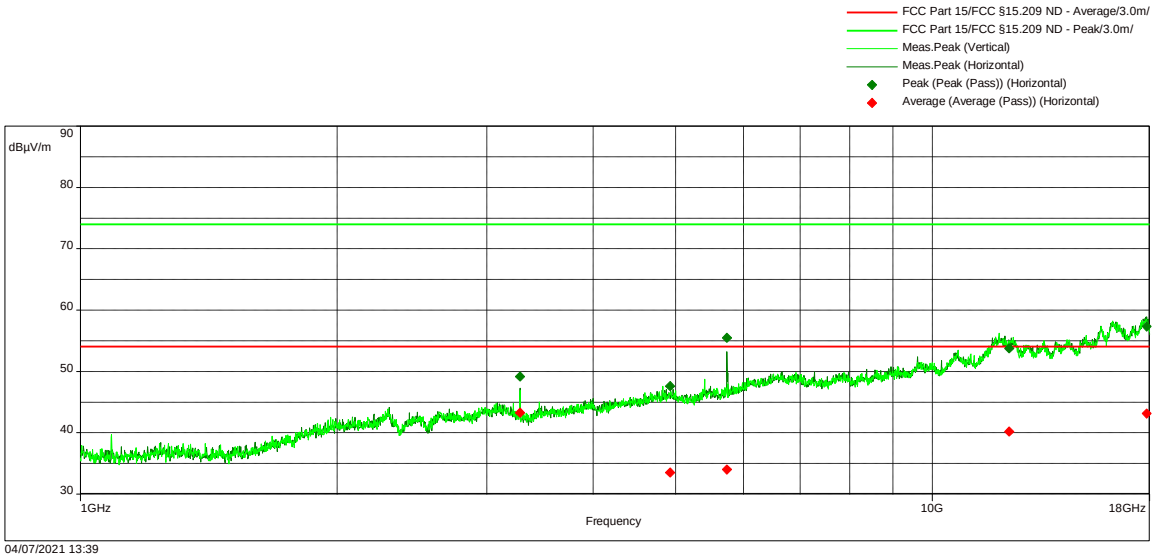
Spurious Emissions 1 - 18GHz - 802.11n HT20 High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT20 High Channel 2462MHz

Figure 2.3-21 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT20 High Channel 2462 MHz

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Table 2.3-21 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT20 High Channel 2462 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
3.2827222GHz	49.16	74.00	-24.84	43.24	54.00	-10.76	0.00	2.26	Horizontal	Pass	Pass
4.9241667GHz	47.59	74.00	-26.41	33.48	54.00	-20.52	52.00	1.09	Horizontal	Pass	Pass
5.7411111GHz	55.50	74.00	-18.50	34.00	54.00	-20.00	19.00	3.00	Horizontal	Pass	Pass
12.309722GHz	53.73	74.00	-13.82	40.18	54.00	-13.82	162.00	3.88	Horizontal	Pass	Pass
17.859278GHz	57.32	74.00	-10.88	43.12	54.00	-10.88	305.00	2.18	Horizontal	Pass	Pass

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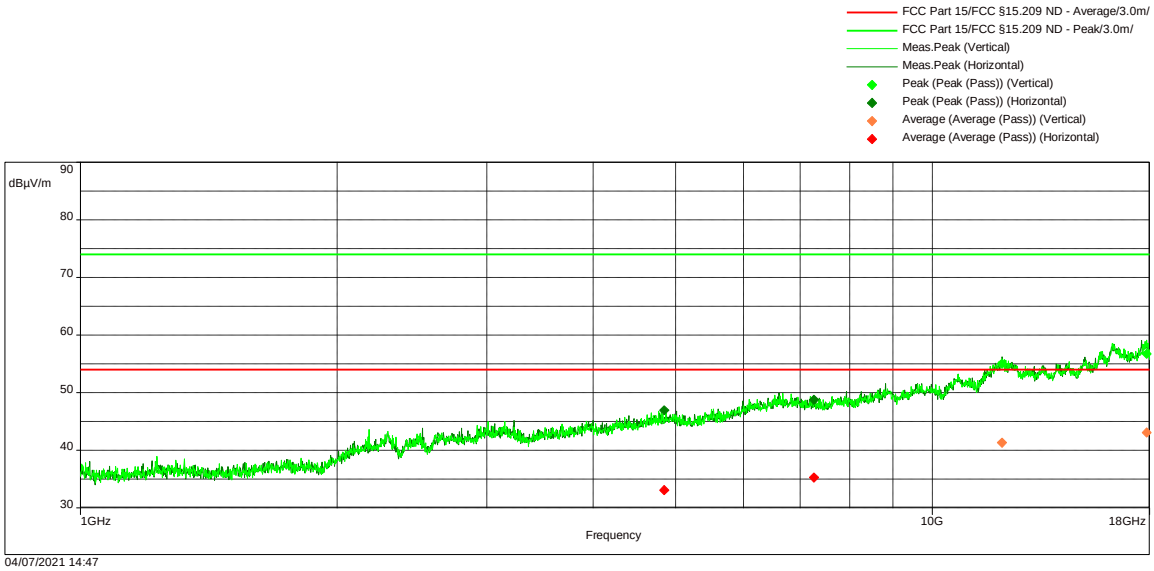
Spurious Emissions 1 - 18GHz - 802.11n HT40 Low Channel 2422MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 Low Channel 2422MHz

Figure 2.3-22 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT40 Low Channel 2422 MHz

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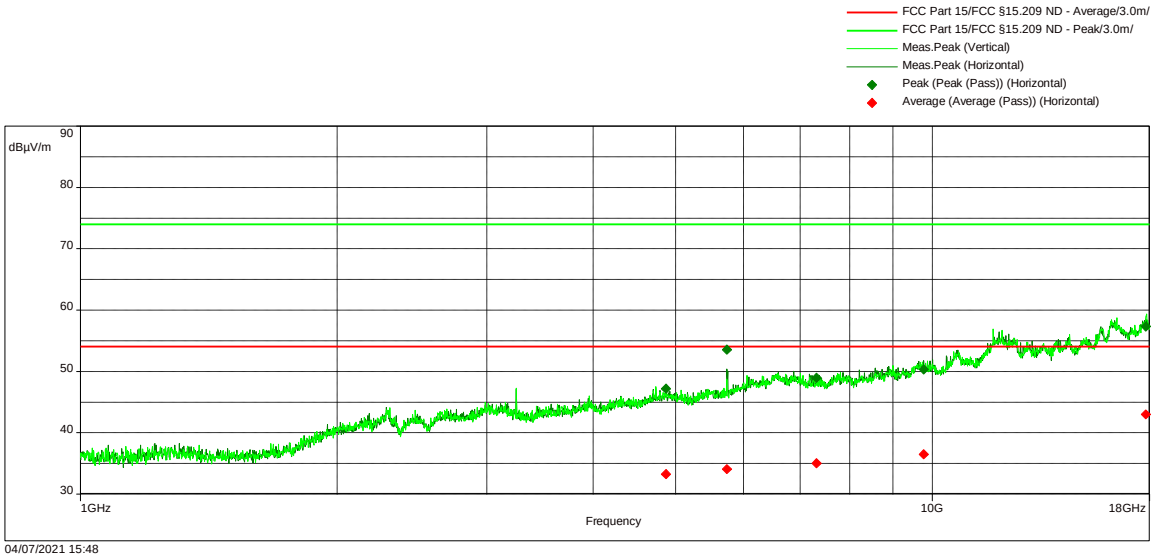
Table 2.3-22 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT40 Low Channel 2422 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
4.8438889GHz	46.93	74.00	-27.07	33.09	54.00	-20.91	96.00	1.09	Horizontal	Pass	Pass
7.2654444GHz	48.77	74.00	-25.23	35.28	54.00	-18.72	338.00	2.05	Horizontal	Pass	Pass
12.083056GHz	55.07	74.00	-18.93	41.35	54.00	-12.65	338.00	2.66	Vertical	Pass	Pass
17.851722GHz	56.70	74.00	-17.30	43.05	54.00	-10.95	44.00	2.36	Vertical	Pass	Pass

Spurious Emissions 1 - 18GHz - 802.11n HT40 Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 Mid Channel 2437MHz

Figure 2.3-23 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT40 Mid Channel 2437 MHz

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Table 2.3-23 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT40 Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
4.8693889GHz	47.16	74.00	-26.84	33.26	54.00	-20.74	327.00	2.95	Horizontal	Pass	Pass
5.7401667GHz	53.57	74.00	-20.43	34.06	54.00	-19.94	352.00	3.71	Horizontal	Pass	Pass
7.3107778GHz	48.98	74.00	-25.02	35.03	54.00	-18.97	209.00	1.09	Horizontal	Pass	Pass
9.7786111GHz	50.30	74.00	-23.70	36.44	54.00	-17.56	264.00	3.96	Horizontal	Pass	Pass
17.808278GHz	57.33	74.00	-16.67	42.96	54.00	-11.04	78.00	2.61	Horizontal	Pass	Pass

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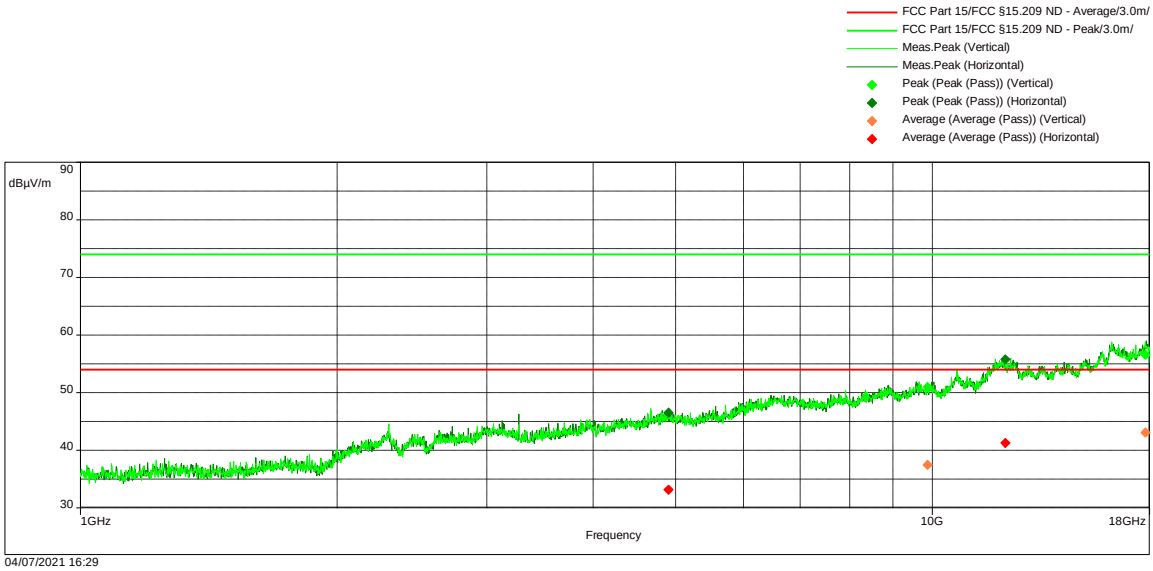
Spurious Emissions 1 - 18GHz - 802.11n HT40 High Channel 2452MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
1GHz- 18GHz	Vertical	3m	1MHz	18001Pts	Auto
1GHz- 18GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11n HT40 High Channel 2452MHz

Figure 2.3-24 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT40 High Channel 2452 MHz

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Table 2.3-24 – RE Spurious Emissions 1 – 18 GHz – 802.11n HT40 High Channel 2452 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
4.9043333GHz	46.48	74.00	-27.52	33.14	54.00	-20.86	293.00	1.90	Horizontal	Pass	Pass
9.8777778GHz	50.93	74.00	-23.07	37.41	54.00	-16.59	74.00	3.17	Vertical	Pass	Pass
12.193556GHz	55.74	74.00	-18.26	41.23	54.00	-12.77	166.00	2.31	Horizontal	Pass	Pass
17.791278GHz	56.56	74.00	-17.44	43.06	54.00	-10.94	30.00	3.68	Vertical	Pass	Pass

Spurious Emissions 18 - 26GHz - 802.11b low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto

Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11b Low Channel 2412MHz

Figure 2.3-25 – RE Spurious Emissions 18 – 26 GHz – 802.11b Low Channel 2412 MHz

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Table 2.3-25 – RE Spurious Emissions 18 – 26 GHz – 802.11b Low Channel 2412 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
18.014667GHz	45.55	74.00	-28.45	31.60	54.00	-22.40	139.00	1.90	Horizontal	Pass	Pass
25.86GHz	50.79	74.00	-23.21	36.91	54.00	-17.09	173.00	2.81	Horizontal	Pass	Pass

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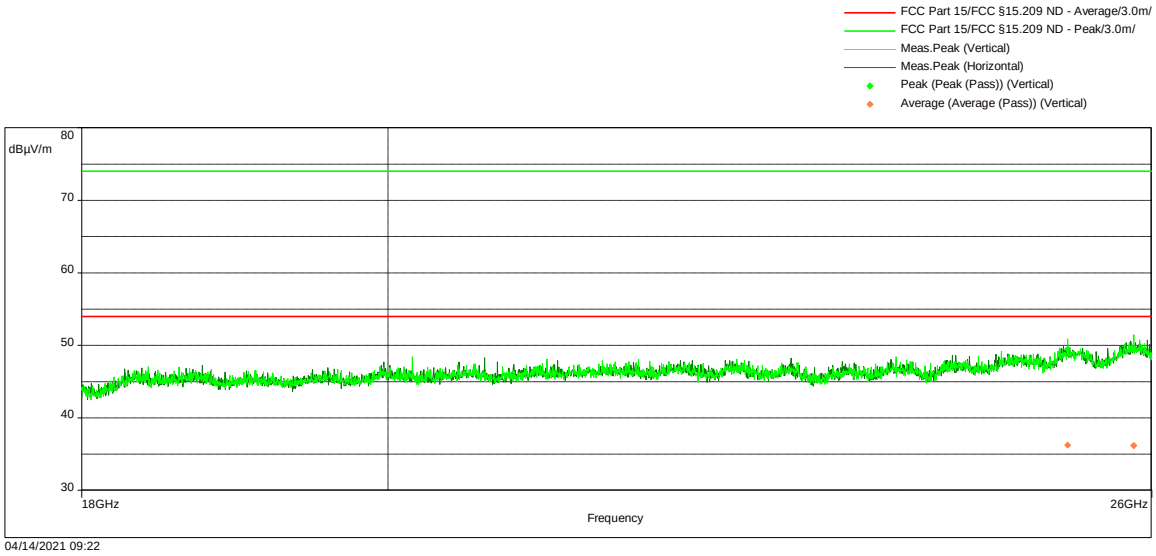
Spurious Emissions 18 - 26GHz - 802.11b Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11b Mid Channel 2437MHz

Figure 2.3-26 – RE Spurious Emissions 18 – 26 GHz – 802.11b Mid Channel 2437 MHz

Table 2.3-26 – RE Spurious Emissions 18 – 26 GHz – 802.11b Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.260444GHz	49.50	74.00	-24.50	36.26	54.00	-17.74	18.00	2.51	Vertical	Pass	Pass
25.84GHz	49.51	74.00	-24.49	36.21	54.00	-17.79	228.00	3.12	Vertical	Pass	Pass

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Spurious Emissions 18 - 26GHz - 802.11b High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto

Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11b High Channel 2462MHz

Figure 2.3-27 – RE Spurious Emissions 18 – 26 GHz – 802.11b High Channel 2462 MHz

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Table 2.3-27 – RE Spurious Emissions 18 – 26 GHz – 802.11b High Channel 2462 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
22.035111GHz	48.07	74.00	-25.93	34.15	-19.85	54.00	194.00	1.09	Vertical	Pass	Pass
25.761333GHz	50.30	74.00	-23.70	36.06	-17.94	54.00	99.00	2.46	Vertical	Pass	Pass

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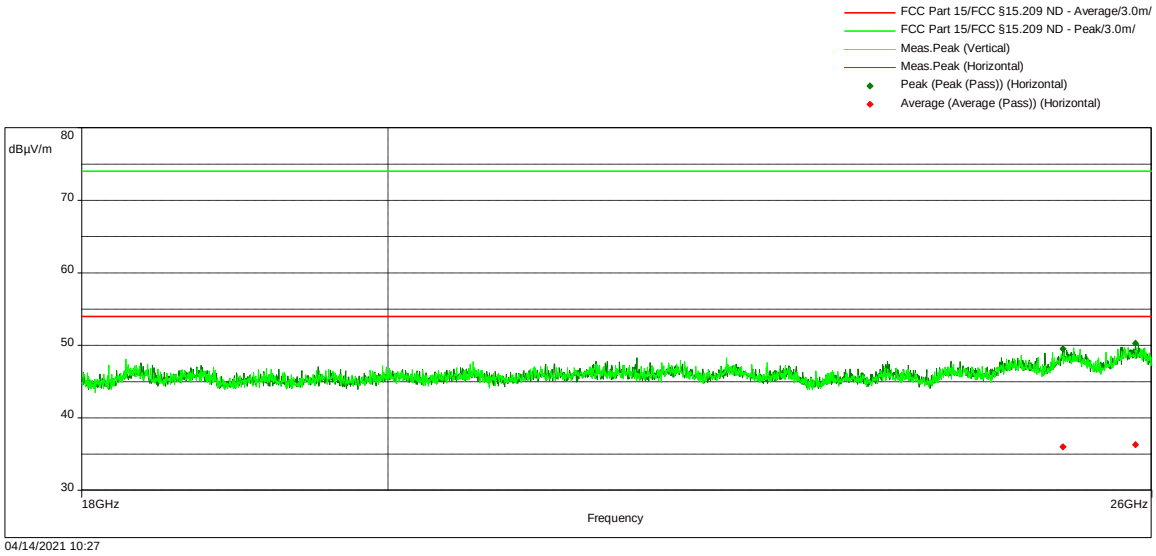
Spurious Emissions 18 - 26GHz - 802.11g low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11g Low Channel 2412MHz

Figure 2.3-28 – RE Spurious Emissions 18 – 26 GHz – 802.11g Low Channel 2412 MHz

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Table 2.3-28 – RE Spurious Emissions 18 – 26 GHz – 802.11g Low Channel 2412 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.217778GHz	49.55	74.00	-24.45	36.01	54.00	-17.99	283.00	3.73	Horizontal	Pass	Pass
25.857333GHz	50.29	74.00	-23.71	36.27	54.00	-17.73	331.00	3.63	Horizontal	Pass	Pass

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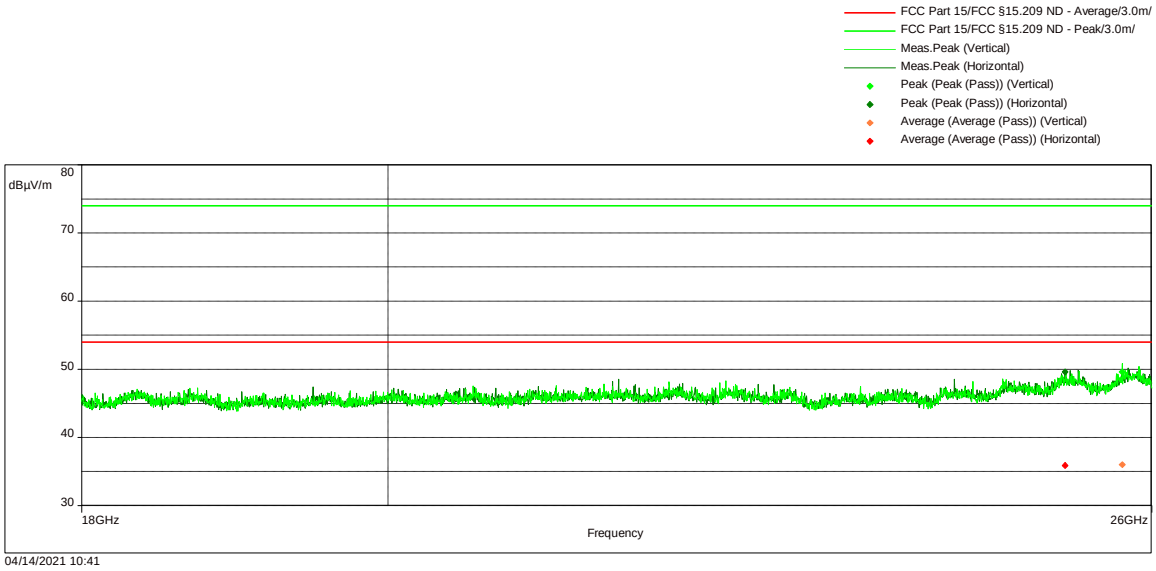
Spurious Emissions 18 - 26GHz - 802.11g Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11g Mid Channel 2437MHz

Figure 2.3-29 – RE Spurious Emissions 18 – 26 GHz – 802.11g Mid Channel 2437 MHz

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Table 2.3-29 – RE Spurious Emissions 18 – 26 GHz – 802.11g Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.235556GHz	49.62	74.00	-24.38	35.86	54.00	-18.14	143.00	2.71	Horizontal	Pass	Pass
25.739111GHz	49.61	74.00	-24.39	36.03	54.00	-17.97	228.00	2.16	Vertical	Pass	Pass

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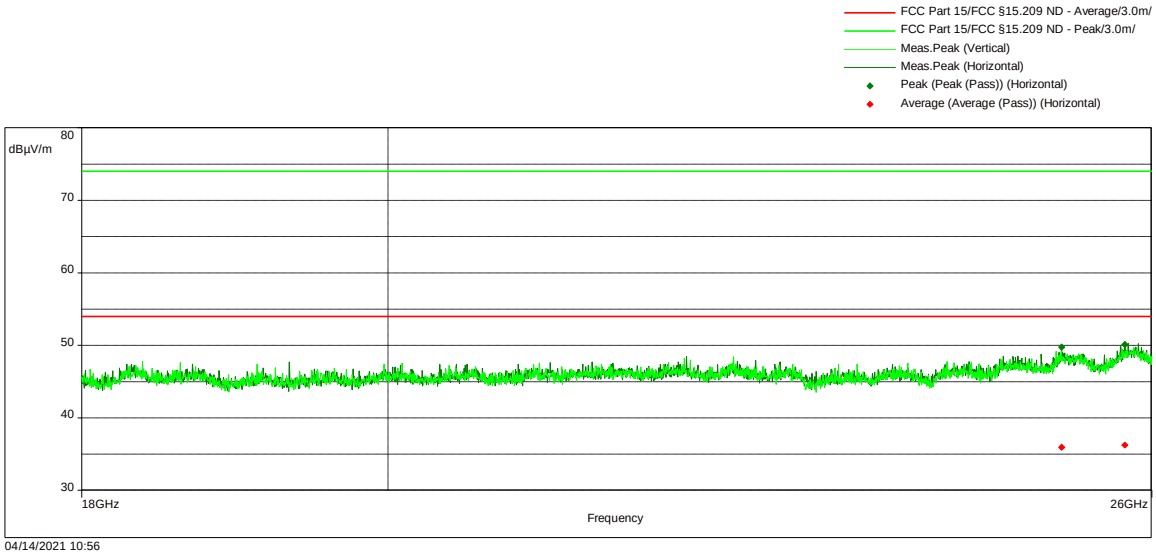
Spurious Emissions 18 - 26GHz - 802.11g High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11g High Channel 2462MHz

Figure 2.3-30 – RE Spurious Emissions 18 – 26 GHz – 802.11g High Channel 2462 MHz

Table 2.3-30 – RE Spurious Emissions 18 – 26 GHz – 802.11g High Channel 2462 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.208444GHz	49.76	74.00	-24.24	35.97	54.00	-18.03	228.00	3.22	Horizontal	Pass	Pass
25.761778GHz	50.13	74.00	-23.87	36.22	54.00	-17.78	342.00	1.19	Horizontal	Pass	Pass

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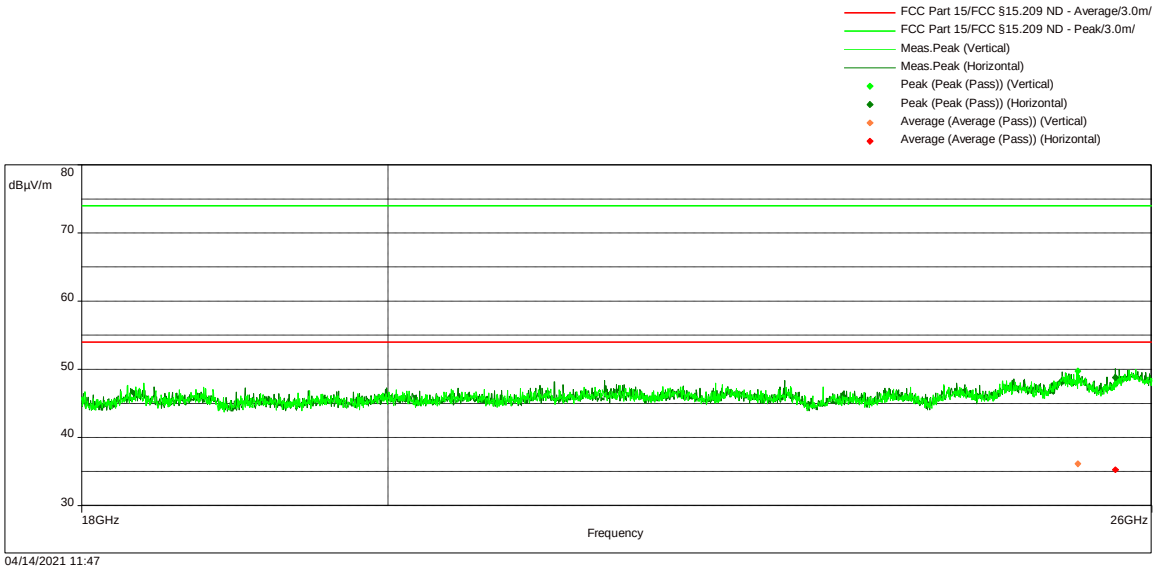
Spurious Emissions 18 - 26GHz - 802.11n HT20 low Channel 2412MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11n HT20 Low Channel 2412MHz

Figure 2.3-31 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT20 Low Channel 2412 MHz

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Table 2.3-31 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT20 Low Channel 2412 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.350222GHz	49.72	74.00	-24.28	36.16	54.00	-17.84	162.00	1.00	Vertical	Pass	Pass
25.678667GHz	48.82	74.00	-25.18	35.29	54.00	-18.71	327.00	2.56	Horizontal	Pass	Pass

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Spurious Emissions 18 - 26GHz - 802.11n HT20 Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto

Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT20 Mid Channel 2437MHz

Figure 2.3-32 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT20 Mid Channel 2437 MHz

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Table 2.3-32 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT20 Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.299556GHz	49.44	74.00	-24.56	35.78	54.00	-18.22	51.00	3.27	Vertical	Pass	Pass
25.969778GHz	49.90	74.00	24.10	35.51	54.00	-18.49	338.00	2.21	Horizontal	Pass	Pass

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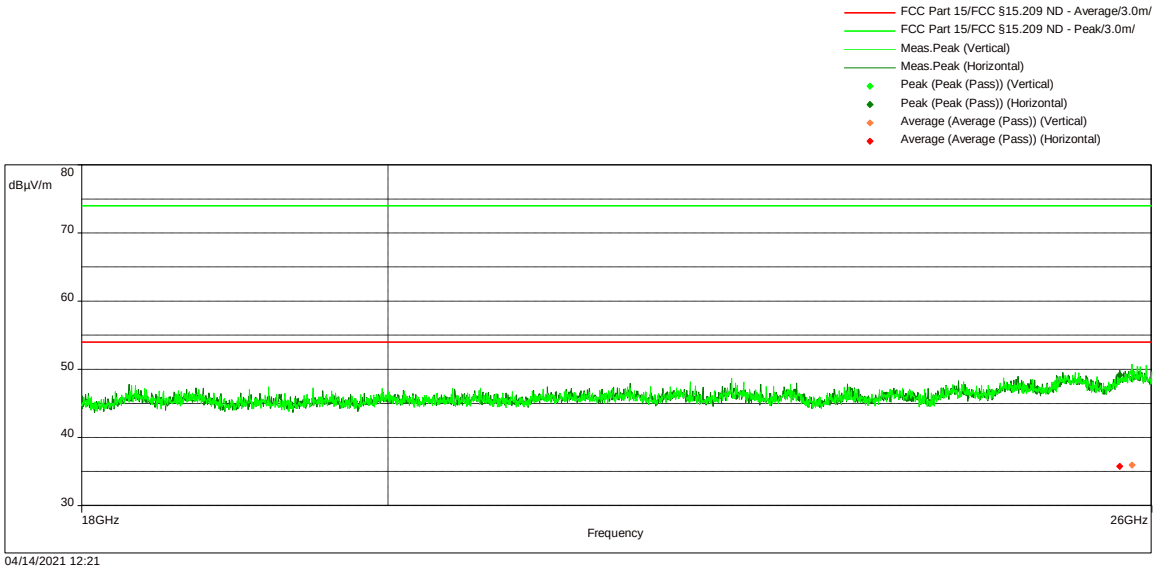
Spurious Emissions 18 - 26GHz - 802.11n HT20 High Channel 2462MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
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Test Results:
Pass

Test Notes: 802.11n HT20 High Channel 2462MHz

Figure 2.3-33 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT20 High Channel 2462 MHz

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Table 2.3-33 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT20 High Channel 2462 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.714222GHz	49.17	74.00	-24.83	35.74	54.00	-18.26	165.00	1.60	Horizontal	Pass	Pass
25.824889GHz	49.58	74.00	-24.42	35.94	54.00	-18.06	217.00	1.34	Vertical	Pass	Pass

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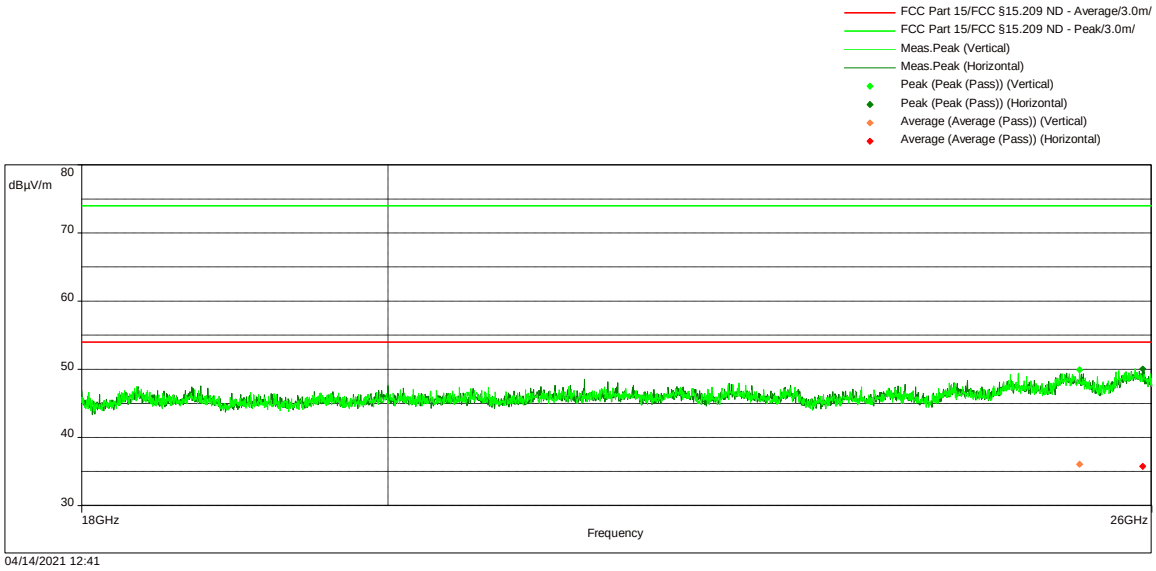
Spurious Emissions 18 - 26GHz - 802.11n HT40 low Channel 2422MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 Low Channel 2422MHz

Figure 2.3-34 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT40 Low Channel 2422 MHz

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Table 2.3-34 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT40 Low Channel 2422 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.362222GHz	49.91	74.00	-24.09	36.09	54.00	-17.91	348.00	2.36	Vertical	Pass	Pass
25.921778GHz	50.07	74.00	-23.93	35.77	54.00	-18.23	11.00	2.61	Horizontal	Pass	Pass

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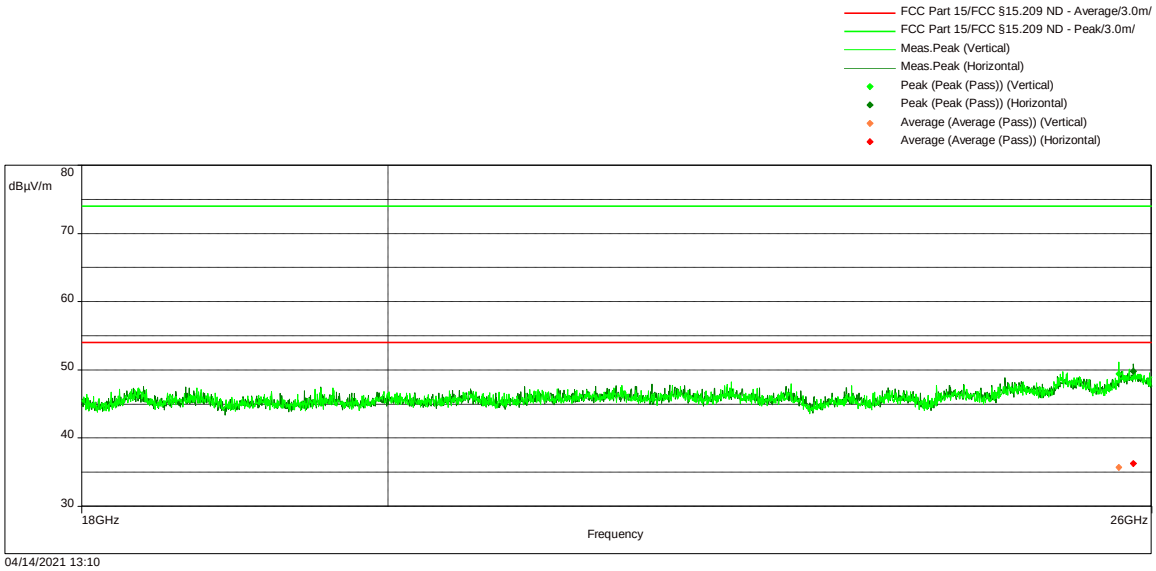
Spurious Emissions 18 - 26GHz - 802.11n HT40 Mid Channel 2437MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto



Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 Mid Channel 2437MHz

Figure 2.3-35 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT40 Mid Channel 2437 MHz

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Table 2.3-35 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT40 Mid Channel 2437 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (°)	Height (m)	Polarity	Peak Result	Average Result
25.707111GHz	49.43	74.00	-24.57	35.68	54.00	-18.32	173.00	1.39	Vertical	Pass	Pass
25.838222GHz	49.81	74.00	-24.19	36.24	54.00	-17.76	194.00	1.29	Horizontal	Pass	Pass

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Spurious Emissions 18 - 26GHz - 802.11n HT40 High Channel 2452MHz

Frequency Range	Polarity	Antenna Distance	RBW	Step Size	Sweep Time
18GHz- 26GHz	Vertical	3m	1MHz	18001Pts	Auto
18GHz- 26GHz	Horizontal	3m	1MHz	18001Pts	Auto

Limit:
FCC §15.209

Test Results:
Pass

Test Notes: 802.11n HT40 High Channel 2452MHz

Figure 2.3-36 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT40 High Channel 2452 MHz

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Table 2.3-36 – RE Spurious Emissions 18 – 26 GHz – 802.11n HT40 High Channel 2452 MHz

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Azimuth (º)	Height (m)	Polarity	Peak Result	Average Result
25.818222GHz	49.86	74.00	-24.14	36.21	54.00	-17.79	19.00	3.48	Horizontal	Pass	Pass
25.856GHz	49.51	74.00	-24.49	36.12	54.00	-17.88	96.00	1.14	Vertical	Pass	Pass

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2.3.9 Test Location and Test Equipment Used

The tests were carried out in New Brighton, MN.
Test Area: 3mSAC

Table 2.3-37 – Radiated Emissions Equipment List

Device #	Manufacturer	Description	Model	Serial #	Cal Code	Cal Date	Cal Due
NBLE11141	Hewlett-Packard	Preamplifier, 100 kHz-1300 MHz	8447D	2944A08773	B	01/08/2021	01/08/2022
WRLE11519	Com-Power Corp.	Preamp, 500 MHz-18 GHz	PAM-118A	18040002	B	01/08/2021	01/08/2022
NBLE11555	Rohde & Schwarz	Receiver, 2 Hz-44 GHz	ESW44	101537	G	12/31/2020	12/31/2021
NBLE11578	ETS-Lindgren	Antenna, BiConiLog	3142C	00079889	G	09/14/2020	09/14/2022
NBLE11630	ETS-Lindgren	Antenna, 1-18 GHz	3117	00218816	B	09/04/2020	09/04/2022
NBLE11689	ATM	Antenna, DRG 18-40 GHz	180-442-KF	102040	G	05/13/2019	05/13/2021
NBLE11688	Rohde & Schwarz	Preamp, 18-40 GHz	TRS-PR1840	10006	G	05/02/2019	05/02/2021
NBLE11699	Microwave Circuits	Notch Filter, 2.4-2.4837 GHz	N0324415	502922 DC1947	B	01/19/2021	01/19/2022

Cal Code G = Calibration performed by an accredited outside source.
Cal Code B = Calibration verification performed internally.
Cal Code Y = Passive Device, or Calibration not required when used with other calibrated equipment.

2.4 Radiated Band-Edge

2.4.1 Specification Reference

FCC 47 CFR Part 15 Subpart C, 15.247
RSS-GEN Issue 5

2.4.2 Equipment Under Test and Modification State

As shown in §1.4 with modification state “0”, as noted in §1.6.

2.4.3 Date of Test

06 - 14 April 2021

2.4.4 Test Method

The EUT was set up in a semi-anechoic chamber on a remotely controlled turntable and placed on a non-conductive table 1.5 m above a reference ground plane. Measurements were taken at a 3m distance. The fundamental signal was maximized while varying the antenna-to-EUT azimuth and antenna-to-EUT polarization using a peak detector. Band-edge measurements were made with the device in its maximized position using a peak and average detector as described in ANSI C63.10.

The EUT was assessed against the limits specified in FCC 47 CFR Part 15C §15.209.

2.4.5 Environmental Conditions

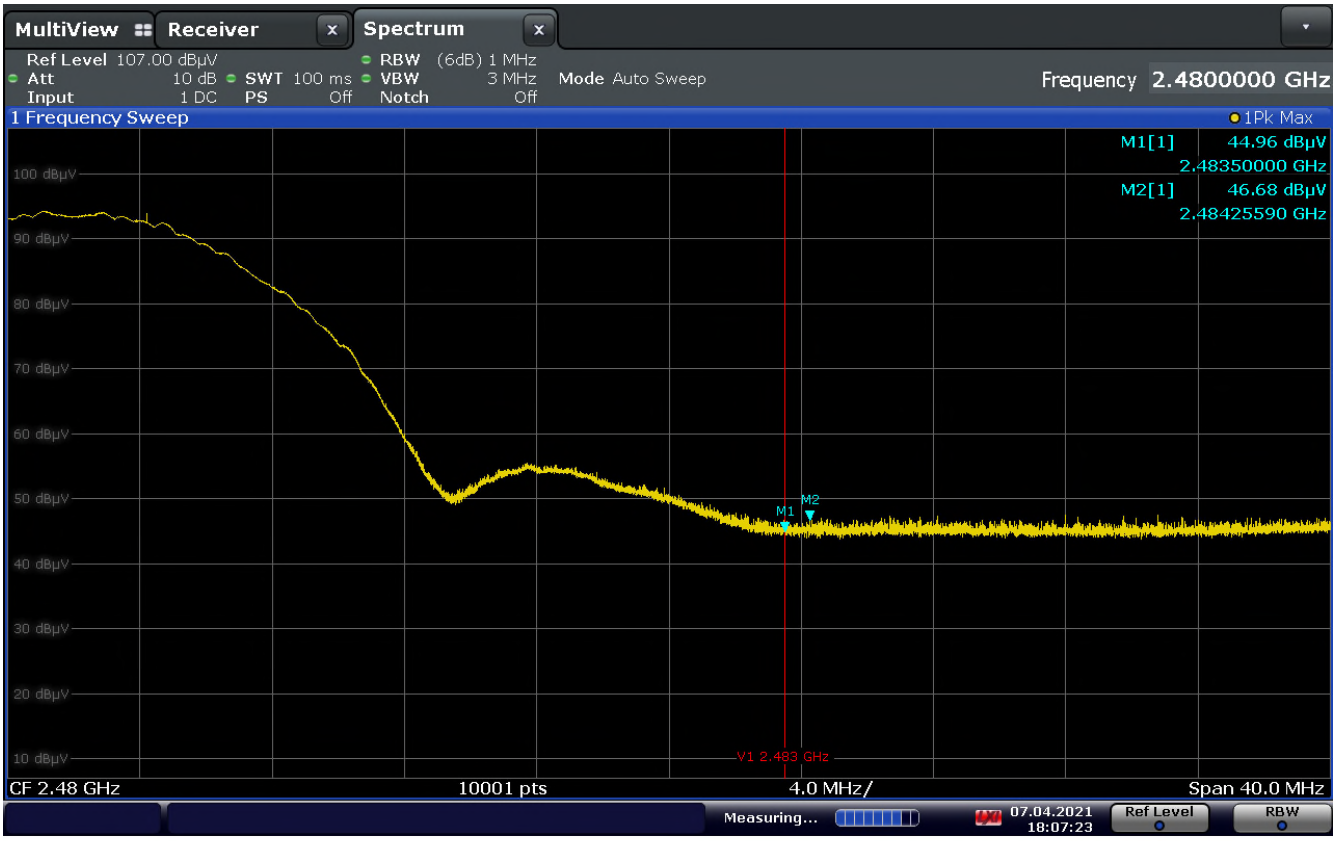
The EUT was evaluated within the climatic range of the EUT as specified by the manufacturer. When the manufacturer does not specify climatic parameters for the EUT, all tests are performed within the ambient climatic conditions of the laboratory.

2.4.6 Test Results

Test Summary: Calculated final data is shown in the tables below the screen capture.

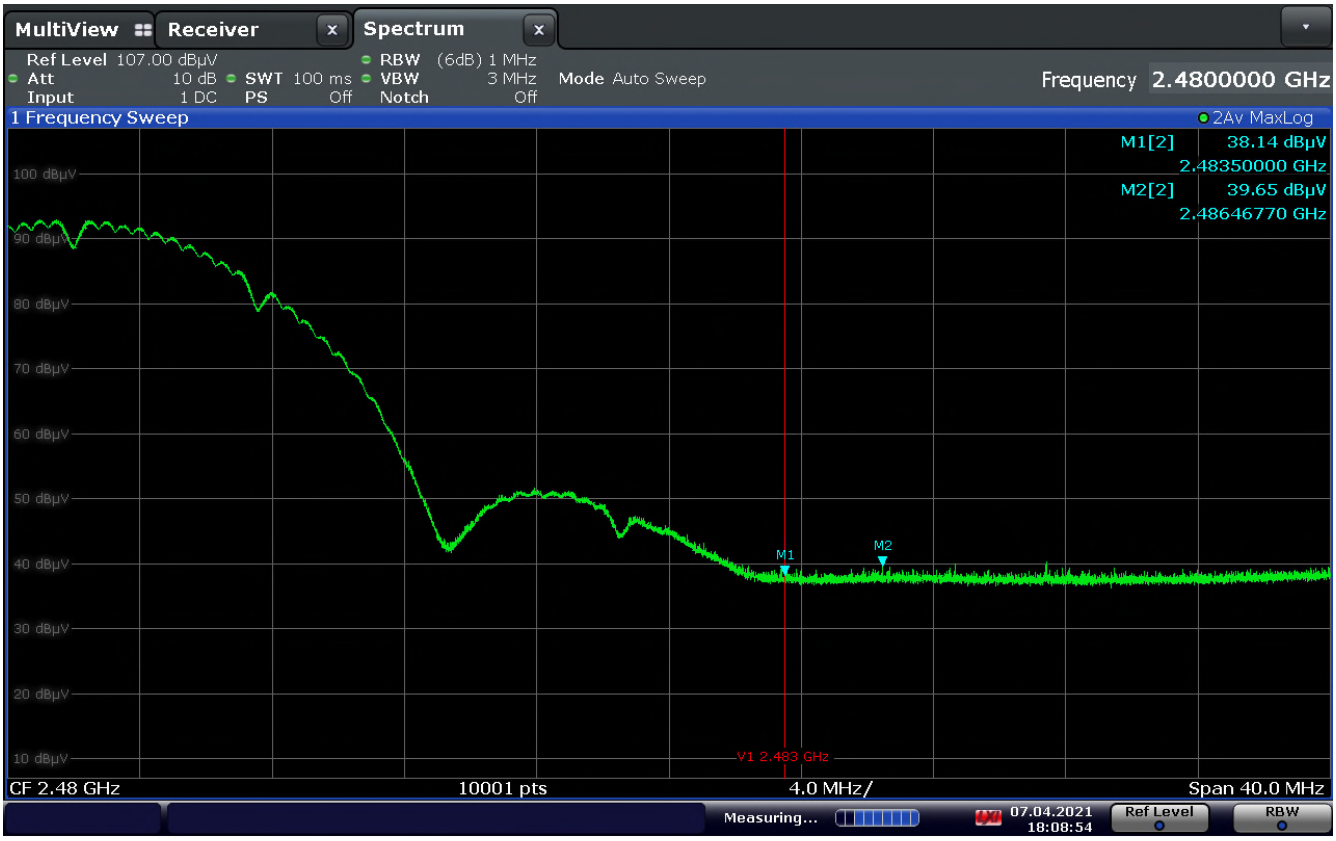
Test Result: Pass

See data below for detailed results.



18:07:24 07.04.2021

Figure 2.4-1 – Band-Edge, 802.11b High Channel – Peak



18:08:54 07.04.2021

Figure 2.4-2 – Band-Edge, 802.11b High Channel – Average

Table 2.4-1 – Restricted Band Edge – 802.11b High Channel – Peak

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2483.5 MHz	51.76	74.00	-22.24	6.8	Pass
2484.25	53.48	74.00	-20.52	6.8	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor. Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-2 – Restricted Band Edge – 802.11b High Channel – Average

Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2483.5MHz	44.94	54.00	-9.06	6.8	Pass
2486.46	46.45	54.00	-7.55	6.8	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor. Margin Calculation: Average Margin = Average Level – Average Limit.

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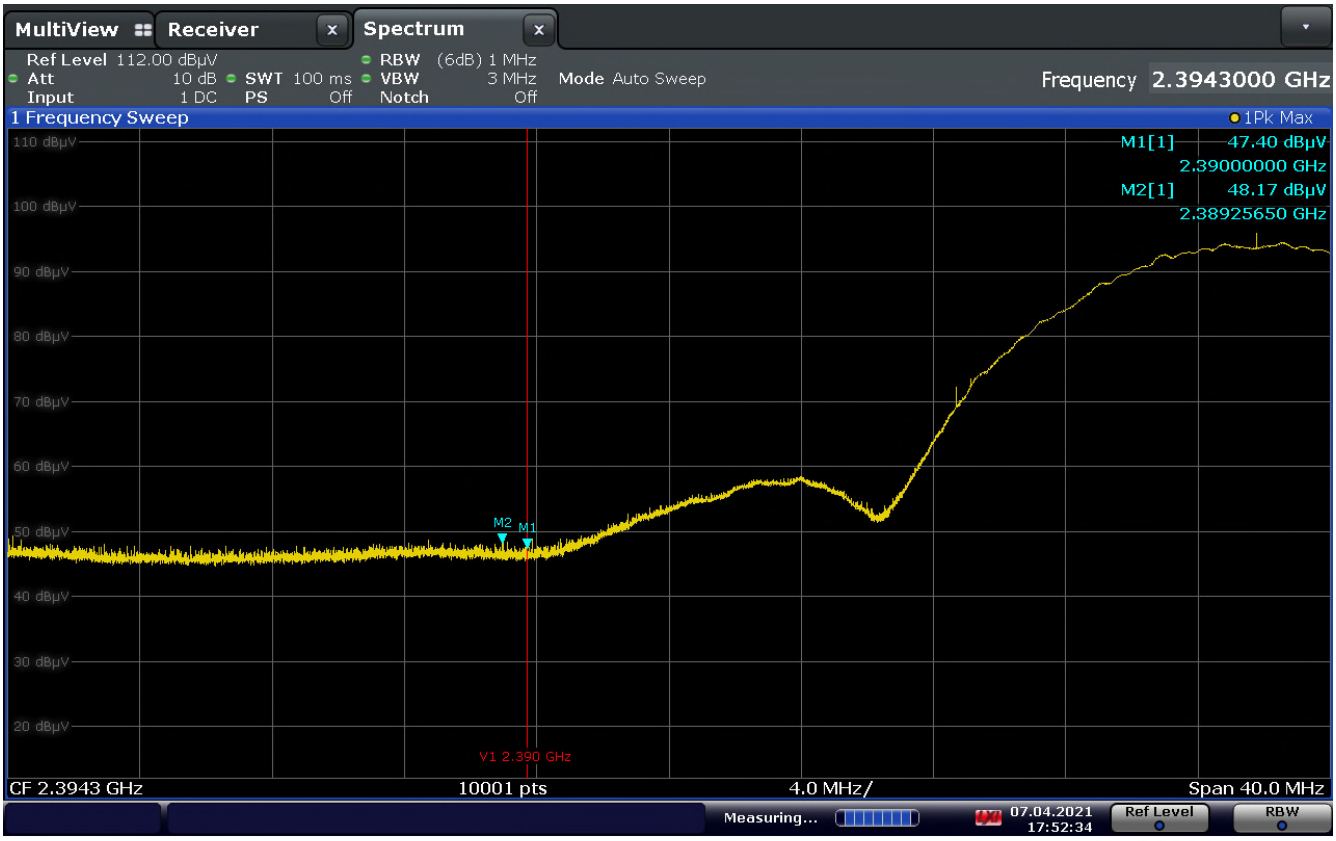

17:52:35 07.04.2021

Figure 2.4-3 – Band-edge, 802.11b Low Channel – Peak

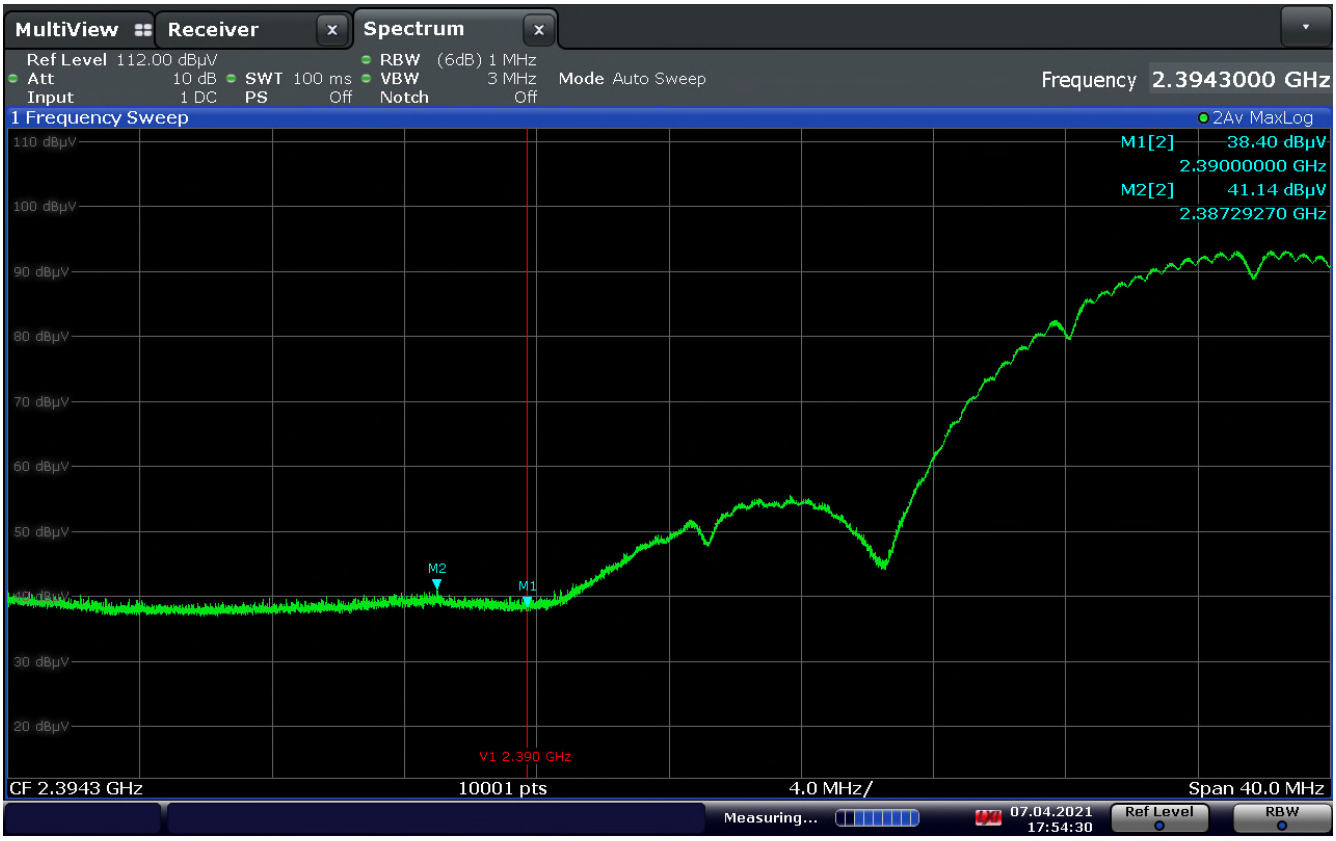

Figure 2.4-4 – Band-edge, 802.11b Low Channel – Average

Table 2.4-3 – Restricted Band Edge – 802.11b Low Channel – Peak

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2390 MHz	54.25	74.00	-19.75	6.85	Pass
2389.25	55.02	74.00	-18.98	6.85	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor. Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-4 – Restricted Band Edge – 802.11b Low Channel – Average

Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2390 MHz	45.25	54.00	-8.75	6.85	Pass
2387.29	47.99	54.00	-6.01	6.85	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor. Margin Calculation: Average Margin = Average Level – Average Limit.

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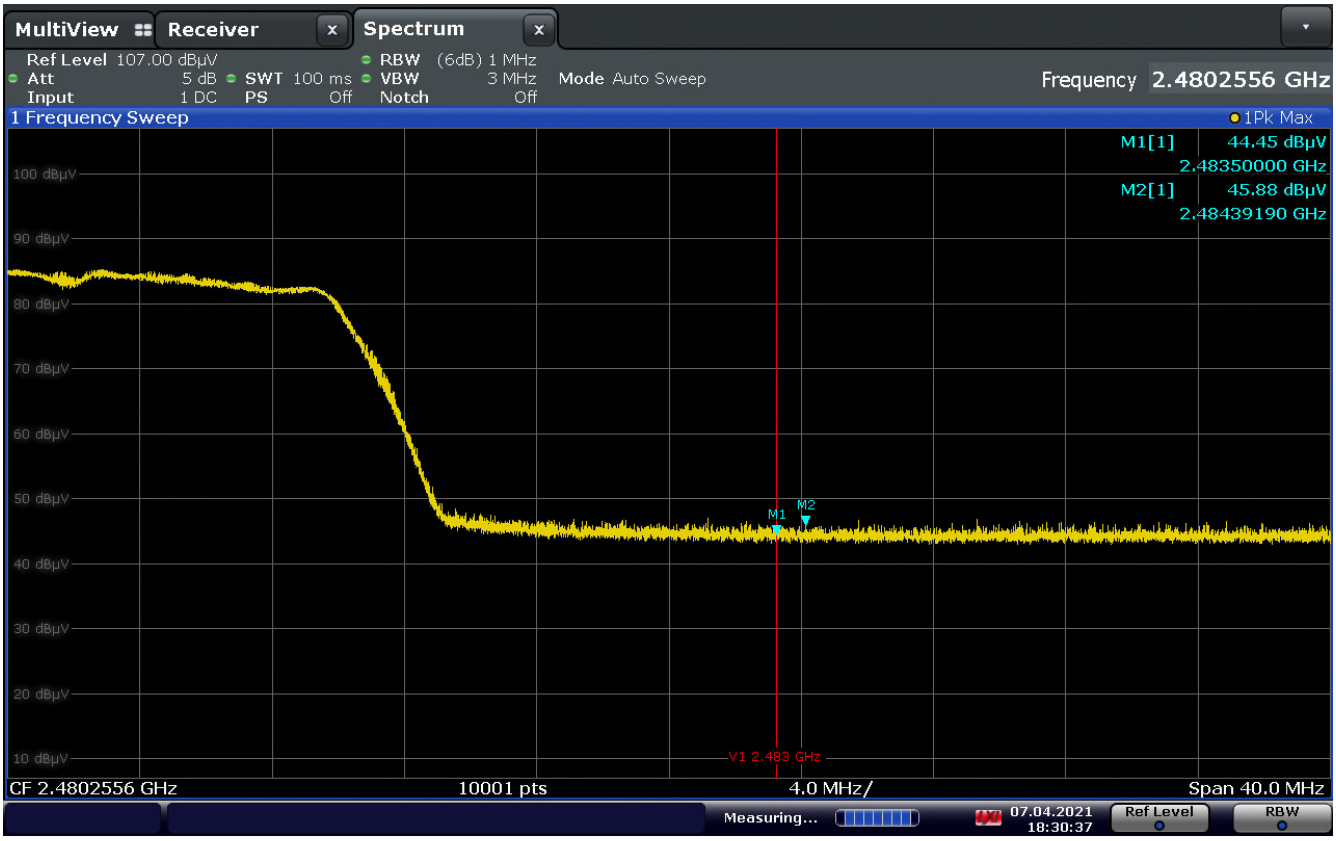
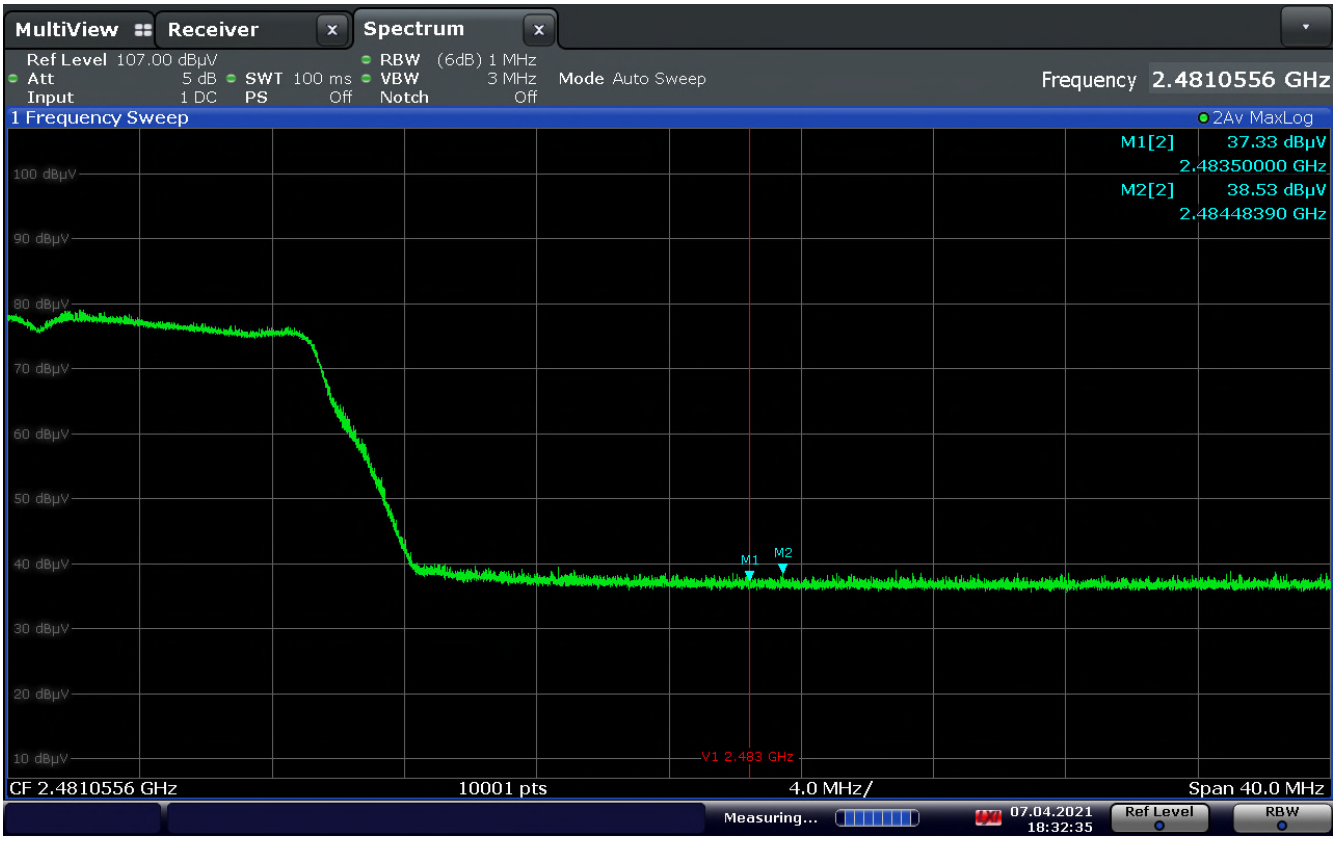


Figure 2.4-5 – Band-Edge, 802.11g High Channel – Peak



18:32:36 07.04.2021

Figure 2.4-6 – Band-Edge, 802.11g High Channel – Average

Table 2.4-5 – Restricted Band Edge – 802.11g High Channel – Peak

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2483.5 MHz	51.25	74.00	-22.75	6.8	Pass
2484.39	52.68	74.00	-21.32	6.8	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor. Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-6 – Restricted Band Edge – 802.11g High Channel – Average

Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2483.5MHz	44.13	54.00	-9.87	6.8	Pass
2484.48	45.33	54.00	-8.67	6.8	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor. Margin Calculation: Average Margin = Average Level – Average Limit.

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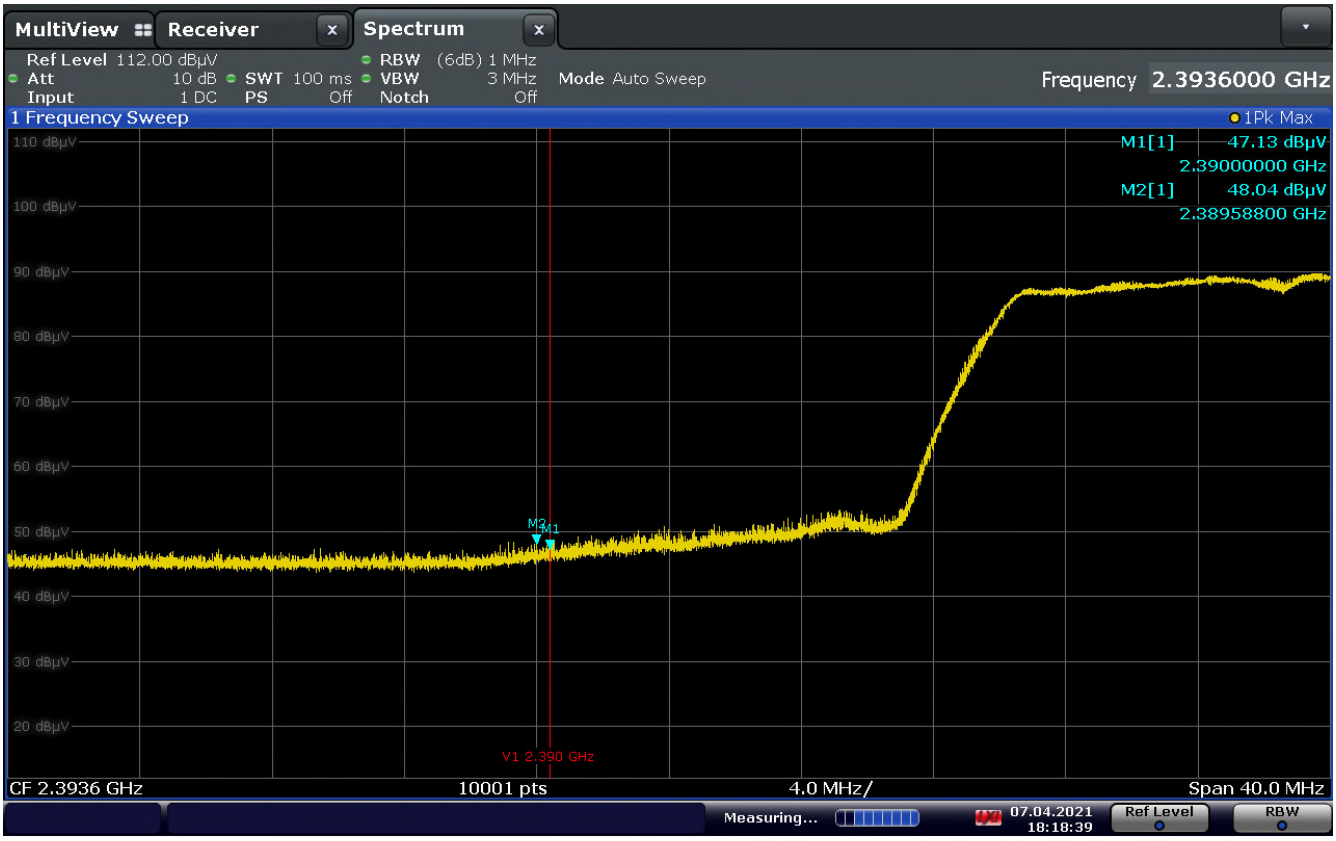


18:18:39 07.04.2021

Figure 2.4-7 – Band-edge, 802.11g Low Channel – Peak

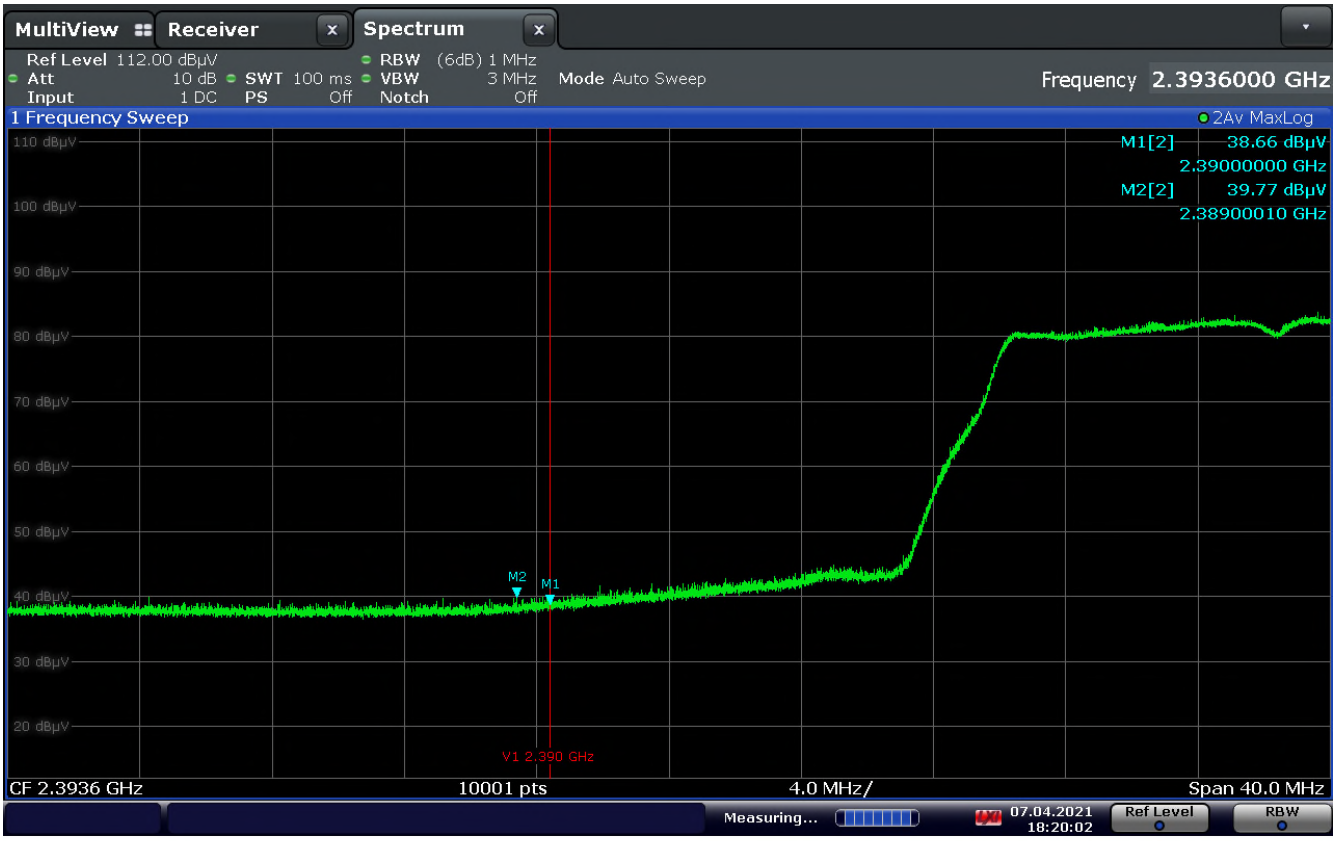


Figure 2.4-8 – Band-edge, 802.11g Low Channel – Average

Table 2.4-7 – Restricted Band Edge – 802.11g Low Channel – Peak

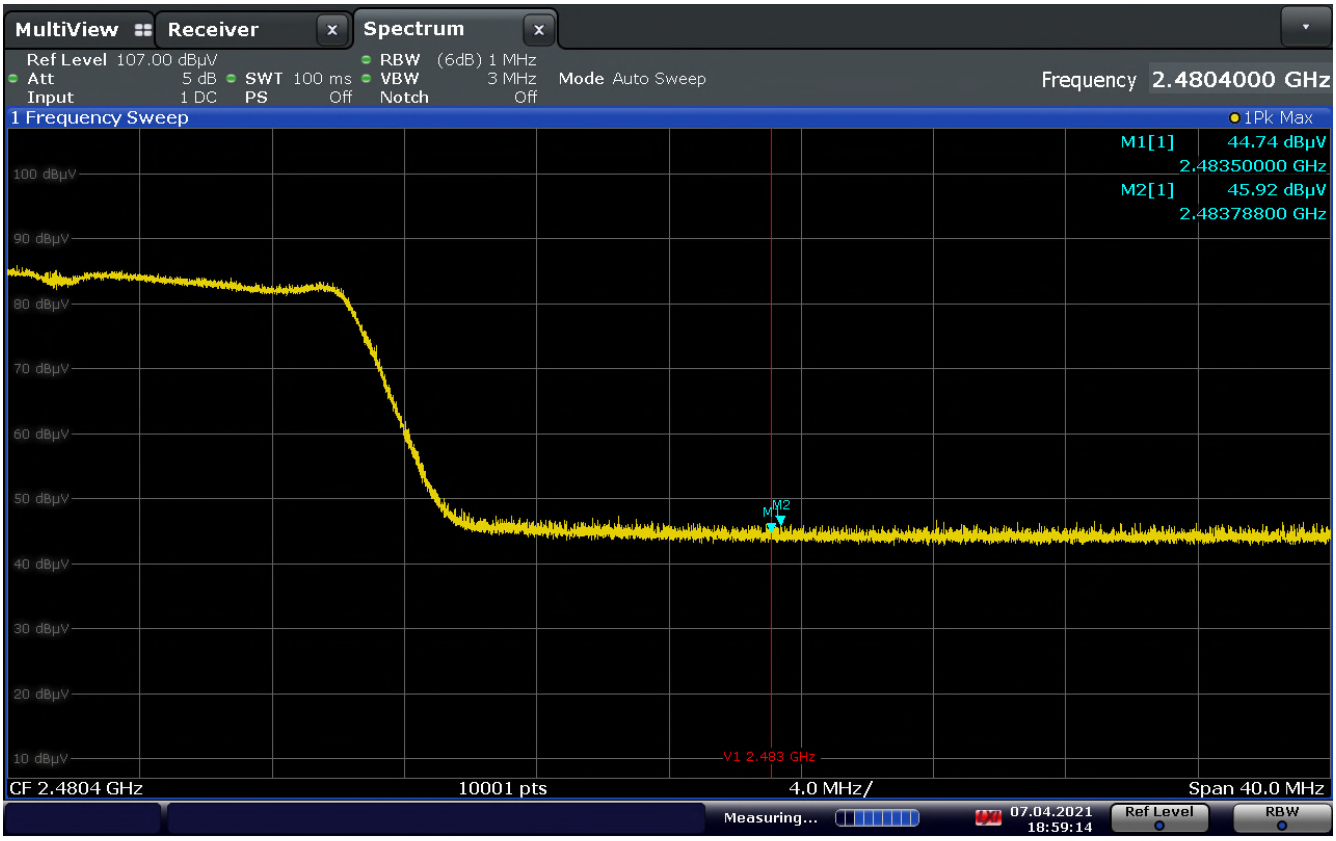
Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2390 MHz	53.98	74.00	-20.02	6.85	Pass
2389.58	54.89	74.00	-19.11	6.85	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor.
Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-8 – Restricted Band Edge – 802.11g Low Channel – Average

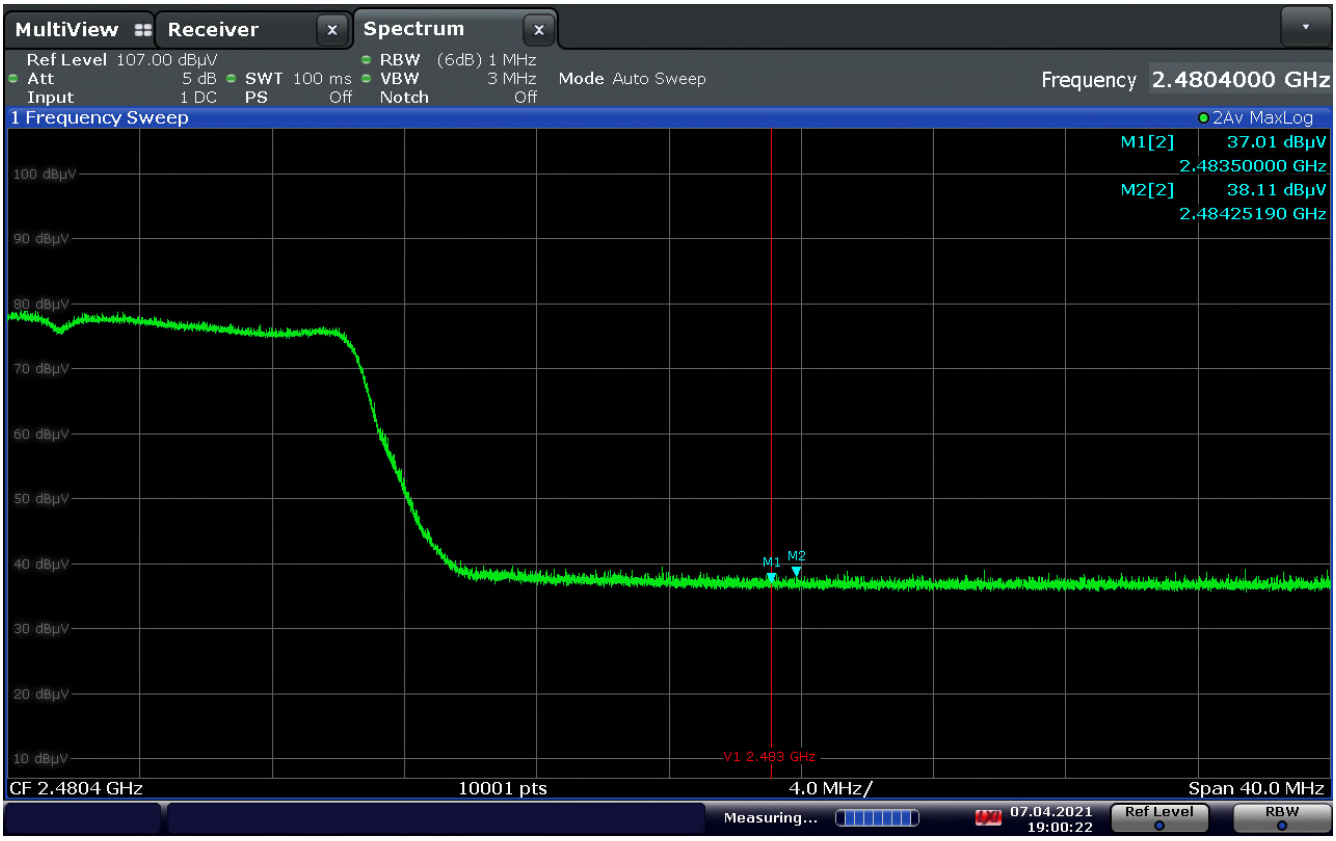
Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2390 MHz	45.51	54.00	-8.49	6.85	Pass
2389.00	46.62	54.00	-7.38	6.85	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor.
Margin Calculation: Average Margin = Average Level – Average Limit.



18:59:15 07.04.2021

Figure 2.4-9 – Band-Edge, 802.11n HT20 High Channel – Peak



19:00:23 07.04.2021

Figure 2.4-10 – Band-Edge, 802.11n HT20 High Channel – Average

Table 2.4-9 – Restricted Band Edge – 802.11n HT20 High Channel – Peak

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2483.5 MHz	51.54	74.00	-22.46	6.8	Pass
2483.78	52.72	74.00	-21.28	6.8	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor.
Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-10 – Restricted Band Edge – 802.11n HT20 High Channel – Average

Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2483.5MHz	43.81	54.00	-10.19	6.8	Pass
2484.25	44.91	54.00	-9.09	6.8	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor.
Margin Calculation: Average Margin = Average Level – Average Limit.

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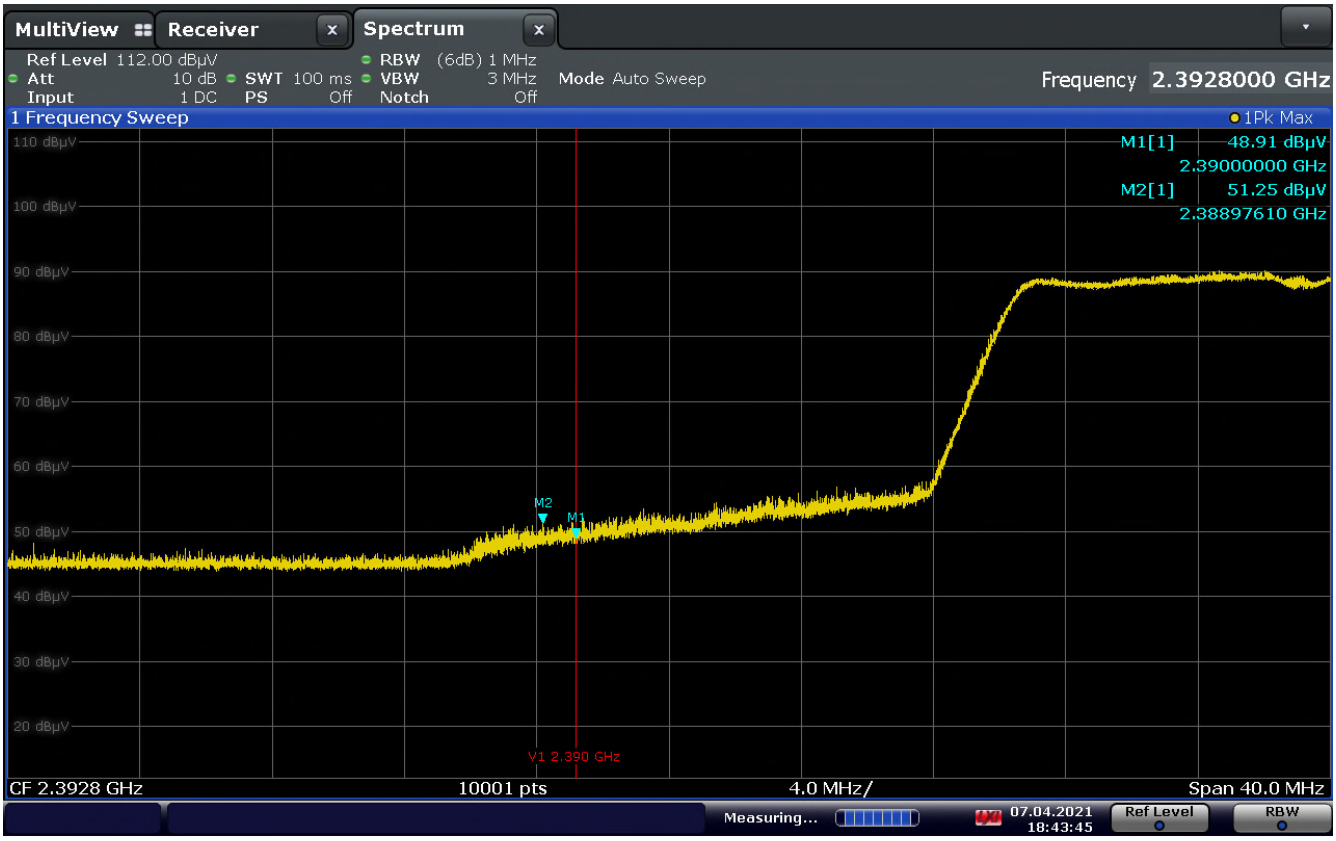
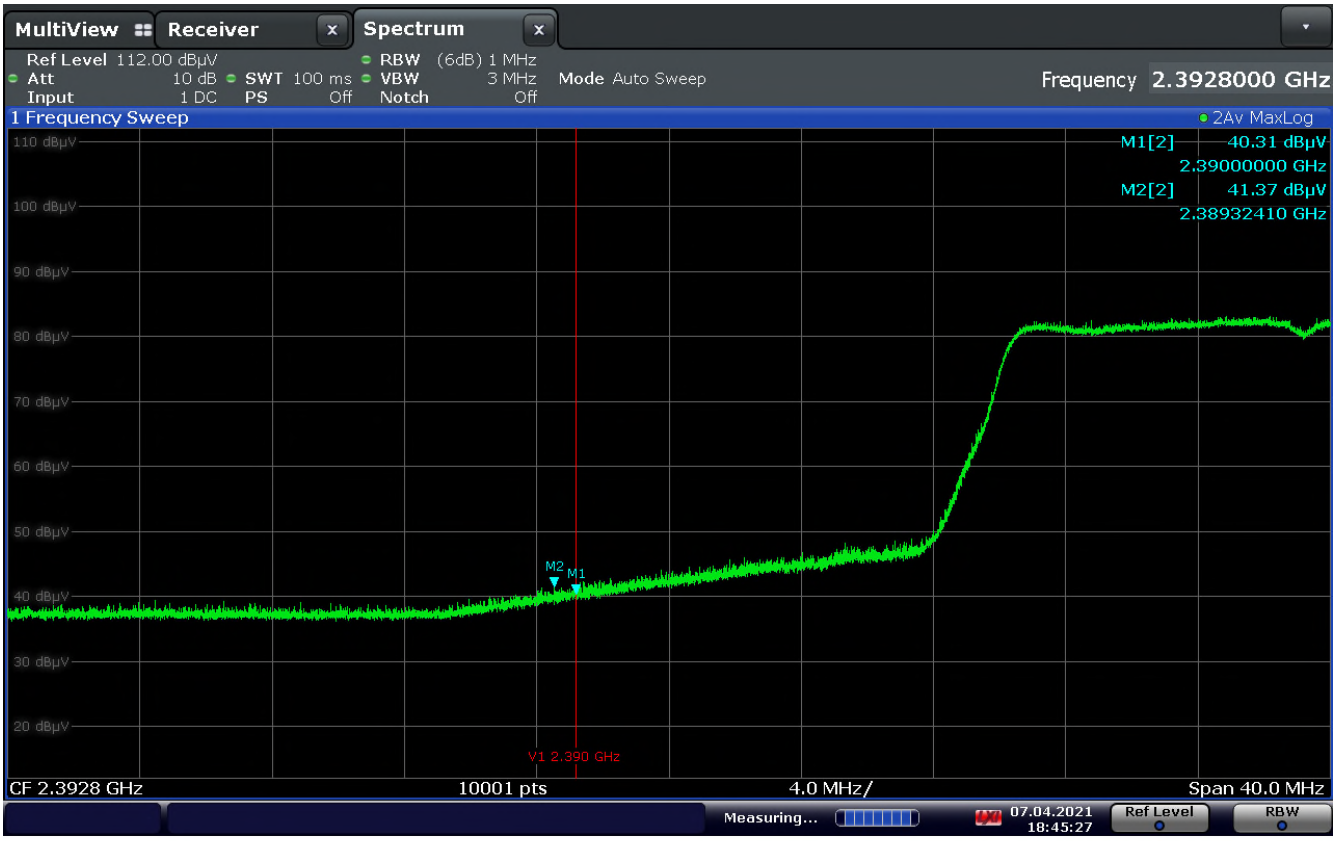


Figure 2.4-11 – Band-edge, 802.11n HT20 Low Channel – Peak



18:45:27 07.04.2021

Figure 2.4-12 – Band-edge, 802.11n HT20 Low Channel – Average

Table 2.4-11 – Restricted Band Edge – 802.11n HT20 Low Channel – Peak

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2390 MHz	55.76	74.00	-18.24	6.85	Pass
2388.97	58.1	74.00	-15.9	6.85	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor.
Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-12 – Restricted Band Edge – 802.11n HT20 Low Channel – Average

Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2390 MHz	47.16	54.00	-6.84	6.85	Pass
2389.32	48.22	54.00	-5.78	6.85	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor.
Margin Calculation: Average Margin = Average Level – Average Limit.

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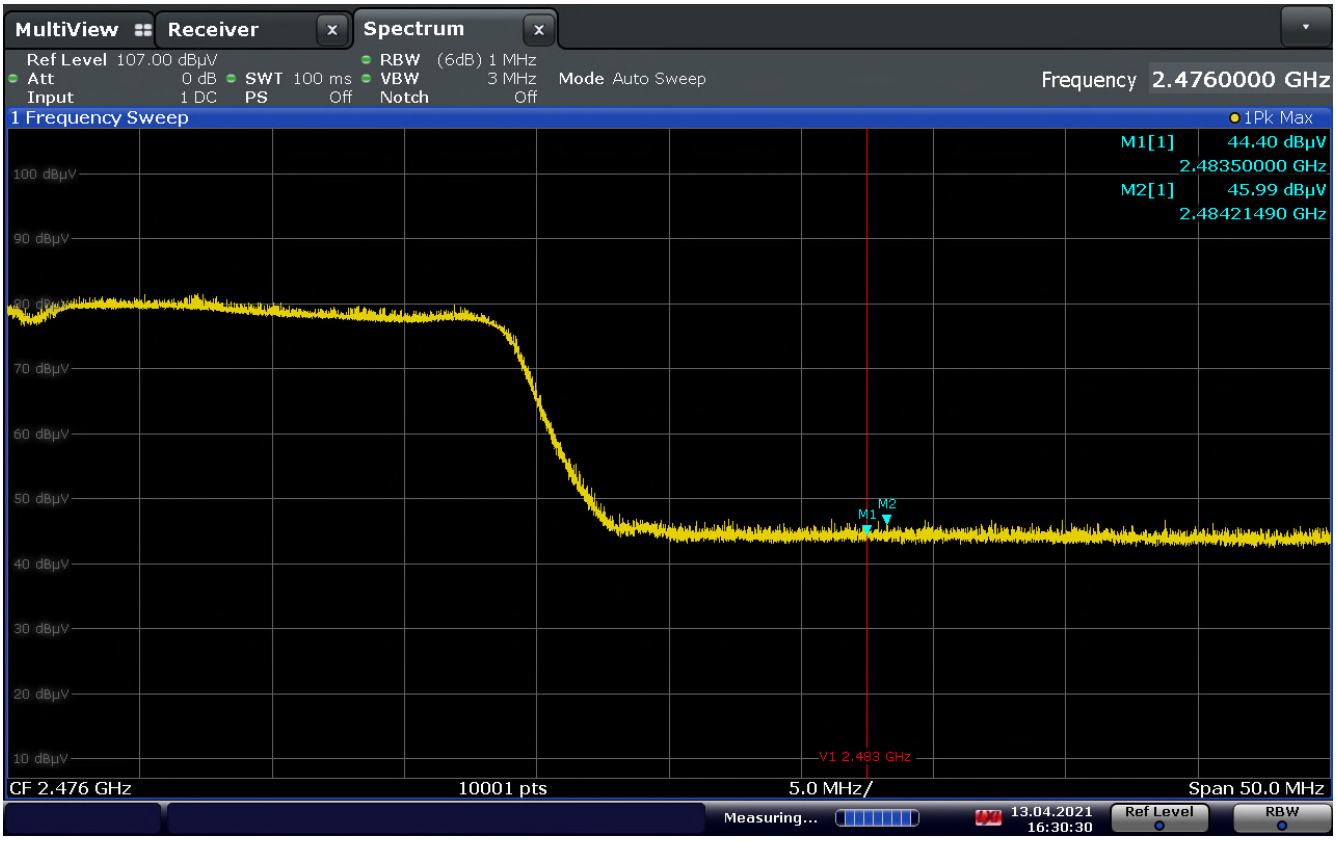

16:30:30 13.04.2021

Figure 2.4-13 – Band-Edge, 802.11n HT40 High Channel – Peak

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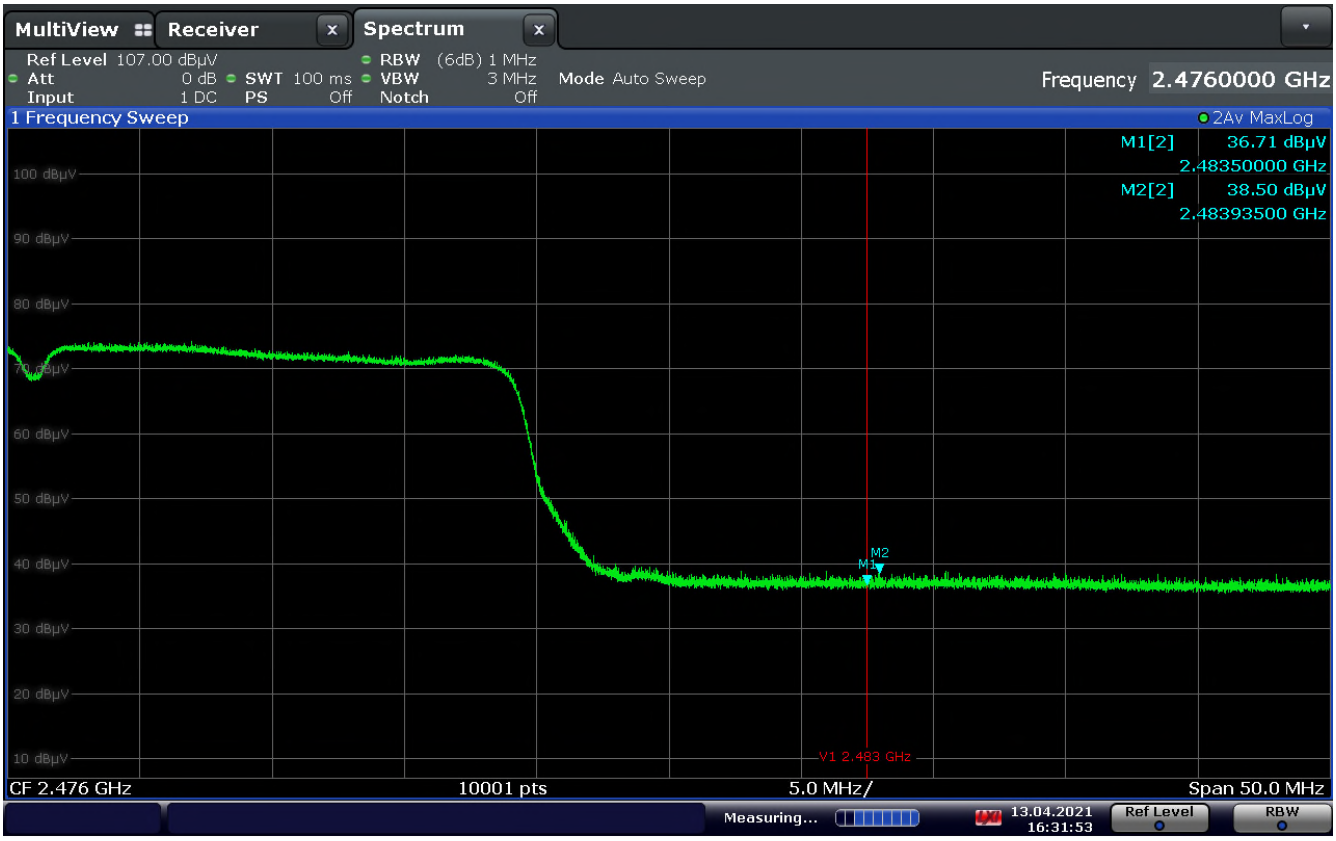

16:31:54 13.04.2021

Figure 2.4-14 – Band-Edge, 802.11n HT40 High Channel – Average

Table 2.4-13 – Restricted Band Edge – 802.11n HT40 High Channel – Peak

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2483.5 MHz	51.20	74.00	-22.8	6.8	Pass
2484.21	52.79	74.00	-21.21	6.8	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor.
Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-14 – Restricted Band Edge – 802.11n HT40 High Channel – Average

Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2483.5MHz	43.51	54.00	-10.49	6.8	Pass
2483.93	45.30	54.00	-8.70	6.8	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor.
Margin Calculation: Average Margin = Average Level – Average Limit.

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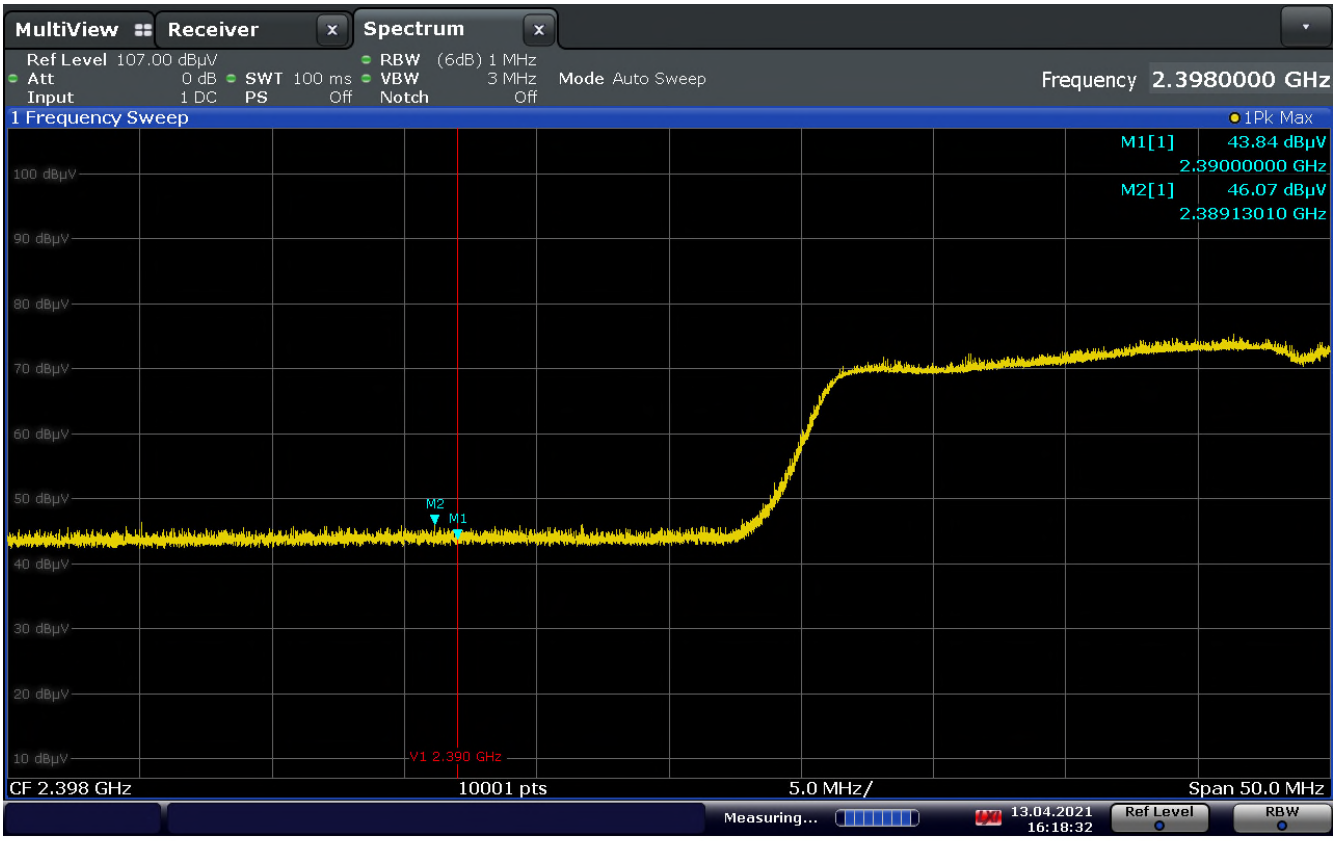
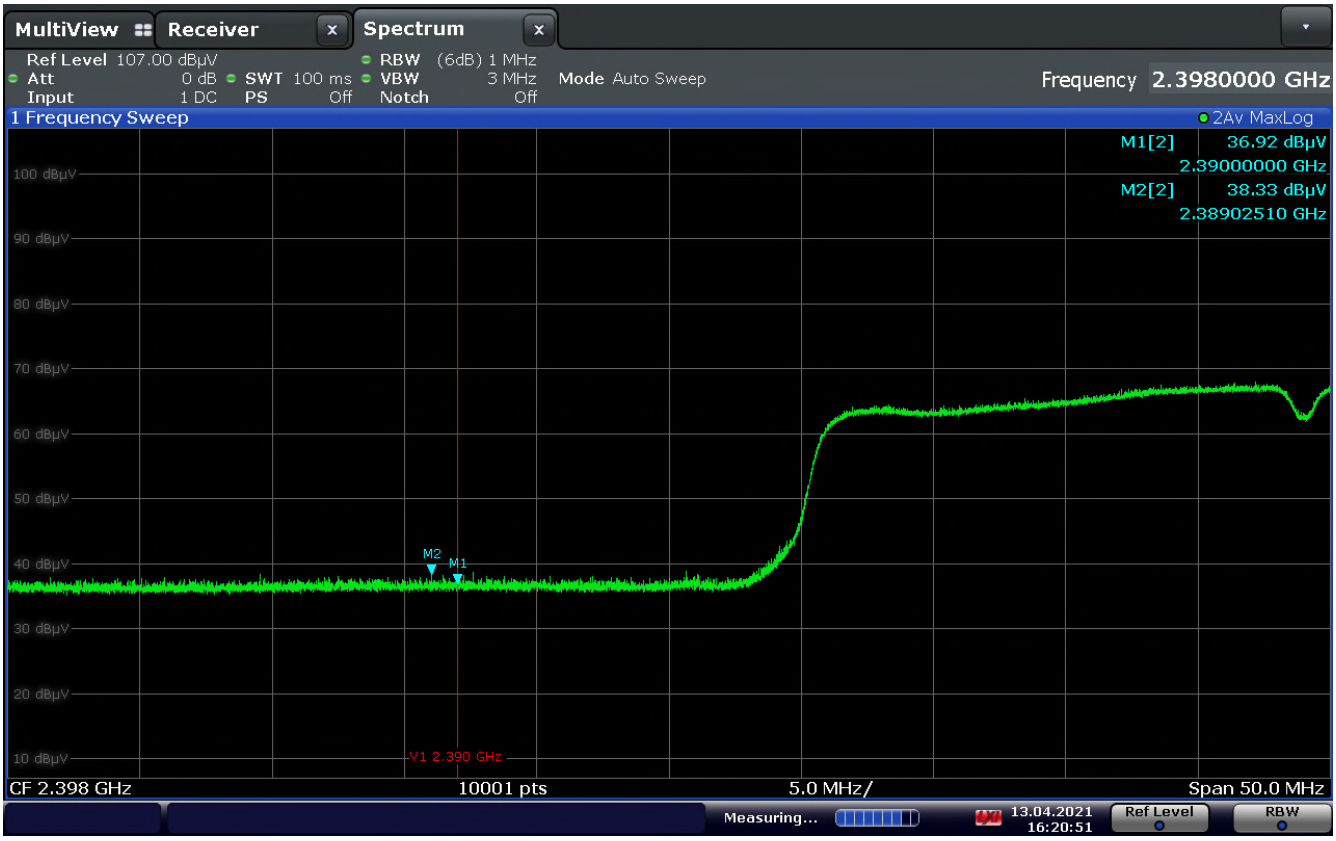


Figure 2.4-15 – Band-edge, 802.11n HT40 Low Channel – Peak



16:20:52 13.04.2021

Figure 2.4-16 – Band-edge, 802.11n HT40 Low Channel – Average

Table 2.4-15 – Restricted Band Edge – 802.11n HT40 Low Channel – Peak

Frequency	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Correction Factor (dB)	Peak Result
2390 MHz	50.69	74.00	-23.31	6.85	Pass
2389.13	52.92	74.00	-21.08	6.85	Pass

Note: Peak level calculation: Final Peak level = analyzer level + correction factor.
Margin Calculation: Peak Margin = Peak Level – Peak Limit.

Table 2.4-16 – Restricted Band Edge – 802.11n HT40 Low Channel – Average

Frequency	Average Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)	Correction Factor (dB)	Average Result
2390 MHz	43.77	54.00	-10.23	6.85	Pass
2389.02	45.18	54.00	-8.82	6.85	Pass

Note: Peak level calculation: Final Average level = analyzer level + correction factor.
Margin Calculation: Average Margin = Average Level – Average Limit.

2.4.7 Test Location and Test Equipment Used

The tests were carried out in New Brighton, MN.
Test Area: 3mSAC

Table 2.4-17 – Restricted Band Edge Equipment List

Device #	Manufacturer	Description	Model	Serial #	Cal Code	Cal Date	Cal Due
WRLE11519	Com-Power Corp.	Preamp, 500 MHz-18 GHz	PAM-118A	18040002	B	01/08/2021	01/08/2022
NBLE11555	Rohde & Schwarz	Receiver, 2 Hz-44 GHz	ESW44	101537	G	12/31/2020	12/31/2021
NBLE11607	Pasternack	Attenuator, 10 dB	PE7017-10	11607	B	11/03/2020	11/03/2021
NBLE11630	ETS-Lindgren	Antenna, 1-18 GHz	3117	00218816	B	09/04/2020	09/04/2022

Cal Code G = Calibration performed by an accredited outside source.
Cal Code B = Calibration verification performed internally.
Cal Code Y = Passive Device, or Calibration not required when used with other calibrated equipment.

3 Diagram of Test Set-ups

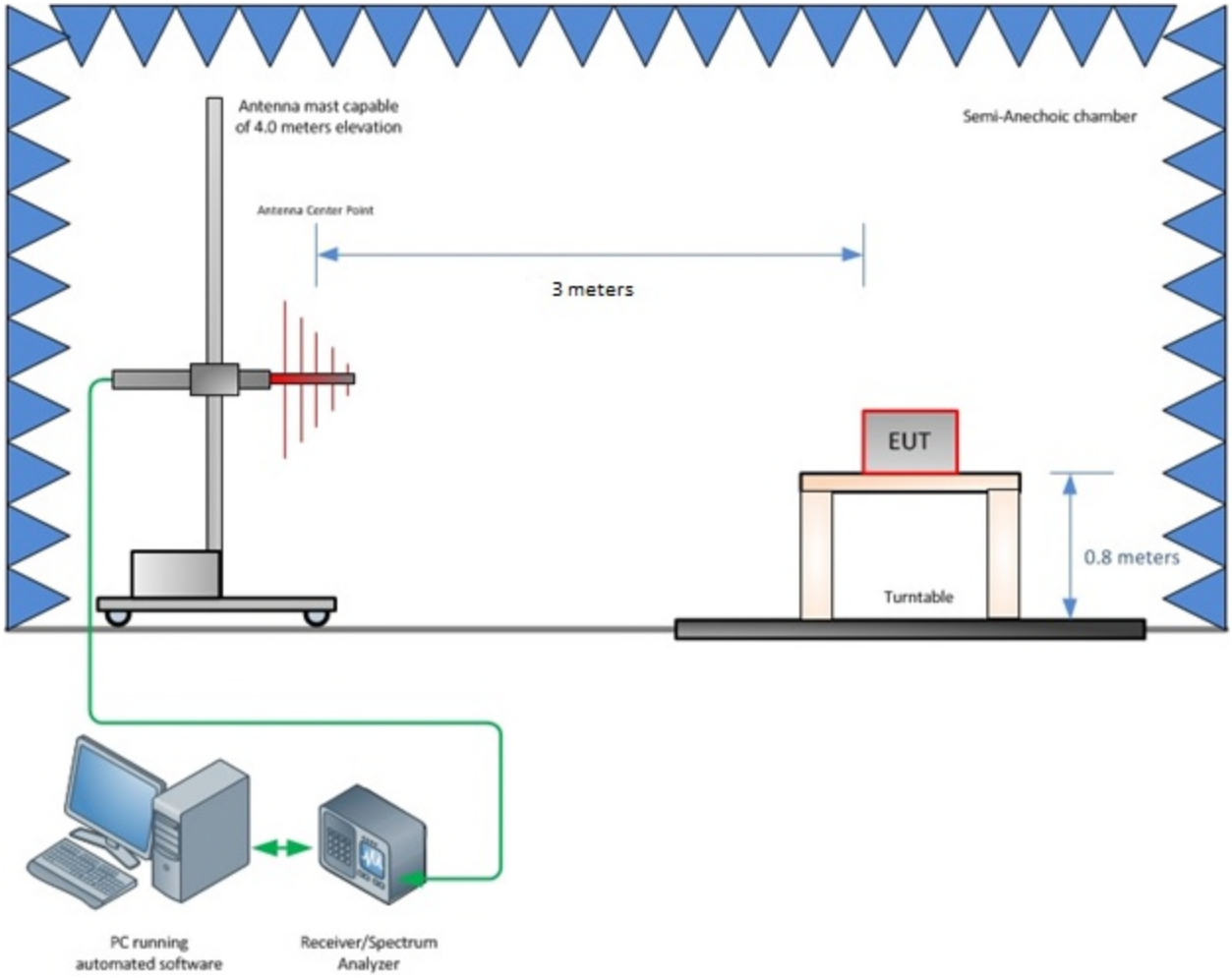


Figure 3-1 – Radiated Emissions Test Setup up to 1 GHz

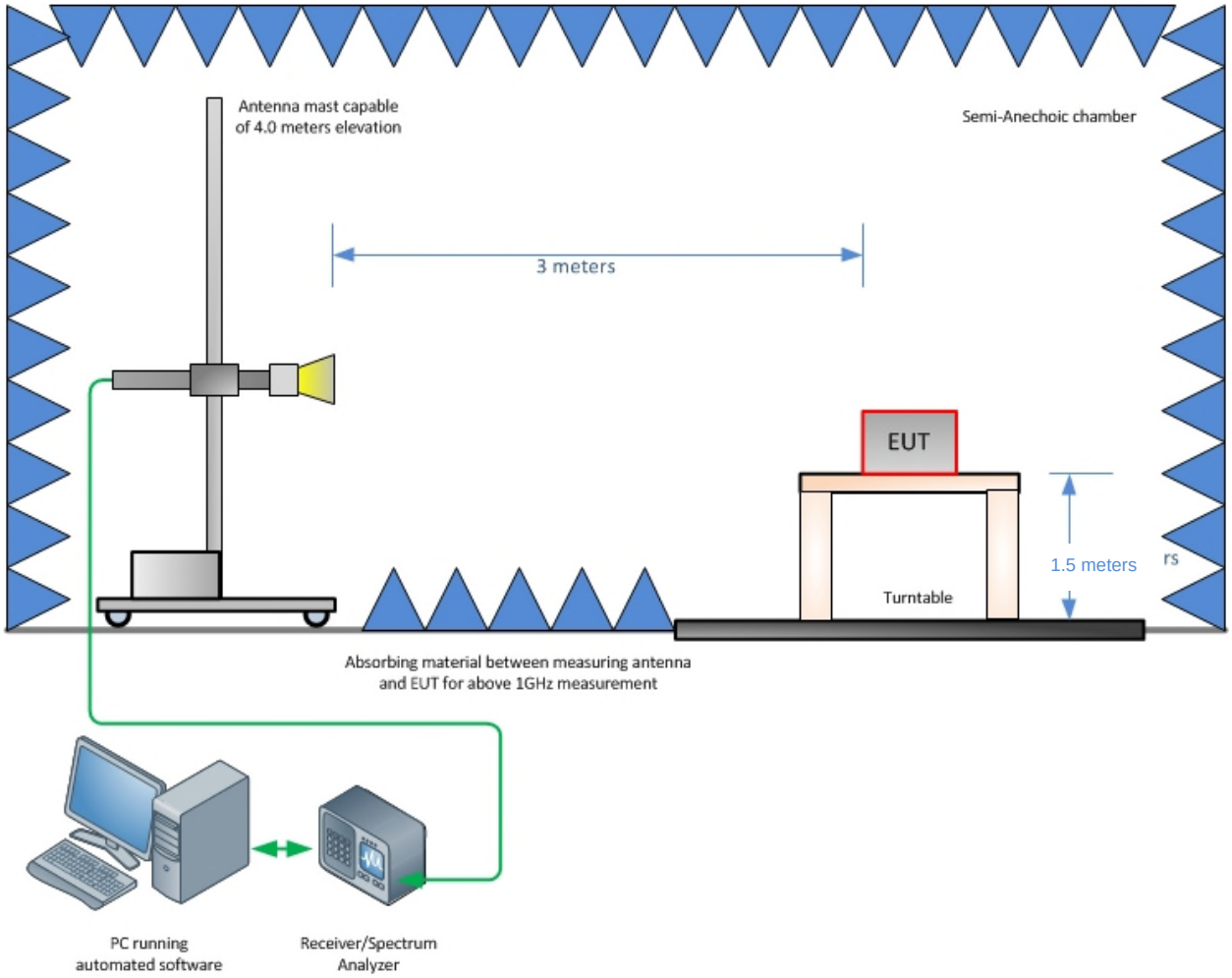


Figure 3-2 – Radiated Emissions Test Setup above 1 GHz

4 Accreditation, Disclaimers and Copyright

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STATEMENT OF MEASUREMENT UNCERTAINTY – Emissions

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. This test system has a measurement uncertainty of ±3.30 dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. This test system for 30 MHz-1000 MHz has a measurement uncertainty of ±5.88 dB and above 1 GHz a measurement uncertainty of ±4.47 dB. The measurement uncertainty values for conducted and radiated emissions meet the requirements as expressed in CISPR 16-4-2. The equipment comprising the test systems is calibrated on an annual basis.

TEST EQUIPMENT

All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated to meet test method standard requirements and/or manufacturer's specifications

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