



FCC / ISED Test Report

For:

Lennox Industries Inc.

Model Name:

30L26

Product Description:

Smart thermostat to control residential HVAC system

FCC ID: 2A6F9-E4025A

IC: 28687-E4025A

Applied Rules and Standards:

47 CFR Part 15.247 (DTS)

RSS-247 Issue 4 (DTS) & RSS-Gen Issue 5

REPORT #: EMC_LEN NX_032_26001_15_247_WIFI_DTS_Rev1

DATE: 2026-03-12



IC recognized #
3462B

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1 Assessment

The following device was evaluated against the applicable criteria specified in FCC rules Parts 15.247 of Title 47 of the Code of Federal Regulations and the relevant ISED Canada standard RSS-247.

There were no additions, deviations, or exclusions made from the test method.

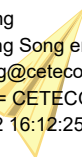
Company	Description	Model #
Lennox Industries Inc.	Smart thermostat to control residential HVAC system	30L26

Report Authorized by:

Responsible for testing Laboratory:

2026-03-12	Compliance	Alvin, Ilarina (Director of EMC Services)	Alvin ILARINA  Digitally signed by Alvin ILARINA Date: 2026.03.12 16:43:49 -07'00'
Date	Section	Name	Signature

Responsible for the Report:

2026-03-12	Compliance	Cheng Song (EMC Engineer)	Cheng Song CN = Cheng Song email = cheng.song@cetecom.com C = US O = CETECOM INC. 2026.03.12 16:12:25 -07'00' 
Date	Section	Name	Signature

The test results of this test report relate exclusively to the test item specified in Section3.
CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing Road
City/Zip Code	Milpitas, CA 95035
Country	USA
Telephone:	+1 (408) 586 6200
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EMC Lab Manager:	Alvin, Ilarina
Responsible Project Leader:	Ruby, Hall

2.2 Identification of the Client

Applicant's Name:	Lennox Industries Inc.
Street Address:	1600 Metrocrest Dr
City/Zip Code	Carrollton, TX 75006
Country	USA

2.3 Identification of the Manufacturer

Manufacturer's Name:	Same as Client
Manufacturers Address:	
City/Zip Code	
Country	

3 Equipment Under Test (EUT)

3.1 EUT Specifications

Model No:	30L26
HW Version:	108878
SW Version:	04.60.0156
FCC-ID:	2A6F9-E4025A
IC:	28687-E4025A
FWIN:	04.60.0156
HVIN:	108878-01
PMN:	Lennox E40 Smart Thermostat
Product Description:	Smart thermostat to control residential HVAC system
Frequency Range / number of channels:	Nominal band: 2400 MHz – 2483.5 MHz Center to center: 2412 MHz (ch 1) – 2462 MHz (ch 11), 11 channels
Radio Information:	<u>Wi-Fi Module</u> Model Name: Murata Model Number: LBEE59B1LV <u>Wireless Technologies</u> Wi-Fi 2.4GHz: 802.11 b, g, n
Antenna Information as declared:	Brand Name: Runshun Part No: B34X.W3.1 Type: WIFI FPC Antenna Location: Internal Peak Gain 2.4GHz: 3.9 dBi Peak Gain 5.0GHz: 2.7 dBi
Other Radios included in the device	BTLE and Wi-Fi 5GHz
Power Supply/ Rated Operating Voltage Range	Vmin: 18 Vac / Vnom: 24 Vac / Vmax: 30 Vac
Operating Temperature Range	Low: 0 °C / High 40 °C
Sample Revision	☐ Production ☒ Pre-Production
EUT Dimensions	136mm x 86mm x 25mm
Note: The information of the EUT specifications in the table above is provided by the client.	

3.2 EUT Power setting

Channel Number	2400 – 2483.5 MHz			
	802.11b	802.11g	802.11n (HT20)	802.11n (HT40)
Low	17	17	17	-
Mid	17	17	17	-
High	17	17	17	-

Note: The device configures its power settings through Python and shell scripts

3.3 EUT Sample details

EUT #	Model Number	HW Version	SW Version	Notes/Comments
1	30L26	108878	04.60.0156	Radiated & Conducted Emission

3.4 Accessory Equipment (AE) details

AE #	Type	Model	Manufacturer	Serial Number	Comments
1	Laptop	P135G	Dell	12243628947	Support laptop provided by Cetecom to exercise device.
2	USB				The debug adapter (USB-UART)
3	Transformer	MGT2450	MG Electronics	69NOE197643	120Vac to 24Vac

3.5 Test Sample Configuration

EUT Set-up #	Combination of AE used for test set up	Comments
1	EUT#2+AE1,2,3	The radio of the EUT was configured to a fixed channel transmission with highest possible duty cycle using software that is not available to the end user. The external antenna was connected. The client provides a USB cable to communicate with the device and send commands for configuring the Wi-Fi radios into a specific test mode. This test mode configuration, designed for worst-case scenarios, is not intended for end-user application and is outlined as follows: • Wi-Fi: continuous modulated transmission at the maximum power settings, highest duty cycle. • EUT power by 24VAC • Radiated RF measurements were performed with EUT configured via customer provided Python script and instructions • The EUT connected to support laptop to exercise device

3.6 Justification for Worst Case Mode of Operation

During the testing process, the EUT was tested with transmitter sets on low, mid and high channels, and highest possible duty cycle. For radiated measurements, all data in this report show the worst case between horizontal and vertical antenna polarizations and for all orientations of the EUT.

The channels and modulation schemes of the EUT were set with highest Duty Cycle possible using diagnostic software (not available to the end user).

4 Subject of Investigation

The objective of the measurements done by CETECOM Inc. was to assess the performance of the EUT according to the relevant requirements specified in FCC rules Part 15.247 of Title 47 of the Code of Federal Regulations and Radio Standard Specification RSS-247 of ISSED Canada.

Testing procedures are based on 558074 D01 15.247 Meas Guidance v05r02 – “GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES” - April 2, 2019, by the Federal Communications Commission, Office of Engineering and Technology, Laboratory Division.

5 Measurement Results Summary

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	NA	NP	Result
§15.247(a)(1) RSS-247 5.2(a)	Emission Bandwidth	Nominal	802.11b,g,n	☒	☐	☐	Complies
§15.247(e) RSS-247 5.2(b)	Power Spectral Density	Nominal	802.11b,g,n	☒	☐	☐	Complies
§15.247(b)(1) RSS-247 5.4(d)	Maximum Conducted Output Power and EIRP	Nominal	802.11b,g,n	☒	☐	☐	Complies
§15.247(d) RSS-247 5.5	Band edge compliance Non-restricted Band Edges	Nominal	802.11b,g,n	☒	☐	☐	Complies
§15.247; 15.209; 15.205 RSS-Gen 8.9; 8.10	Band edge compliance Restricted Band Edges	Nominal	802.11b,g,n	☒	☐	☐	Complies
§15.247(d); §15.209 RSS-Gen 6.13	TX Spurious Emissions- Radiated	Nominal	802.11b	☒	☐	☐	Complies
§15.207(a) RSS Gen 8.8	AC Conducted Emissions	Nominal	802.11b	☒	☐	☐	Complies

Note: Pass=Complies, NA=Not Applicable, NP=Not Performed

6 Measurement Uncertainty

6.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus, with 95% confidence interval (in dB delta to result), based on a coverage factor $k=2$.

Measurement System		EMC Lab 1	EMC Lab 2
Conducted emissions (mains port)	150 kHz – 30 MHz	2.47 dB	N/A
Radiated emissions	9 kHz – 30 MHz	2.68 dB	2.53 dB
	30 – 100 MHz	4.39 dB	3.85 dB
	100 MHz – 1 GHz	5.65 dB	5.24 dB
	1 – 6 GHz	5.0 dB	4.88 dB
	6 – 18 GHz	4.76 dB	4.58 dB
	18 – 40 GHz	4.65 dB	4.61 dB

According to TR 102 273 a multiplicative propagation of error is assumed for RF measurement systems. For this reason the RMS method is applied to dB values and not to linear values as appropriate for additive propagation of error. Also used: <http://physics.nist.gov/cuu/Uncertainty/typeb.html>. The above calculated uncertainties apply to direct application of the Substitution method. The Substitution method is always used when the EUT comes closer than 3dB to the limit.

6.2 Environmental Conditions during Testing:

The following environmental conditions were maintained during the course of testing:

- Ambient Temperature: 20-25°C
- Relative humidity: 40-60%

Deviating test conditions are indicated at individual test description where applicable.

6.3 Date of Testing:

2025-10-23 – 2026-02-27

6.4 Decision Rule:

Cetecom Inc follows ILAC G8:09/2019 chapter 4.2.1 (Simple Acceptance Rule).

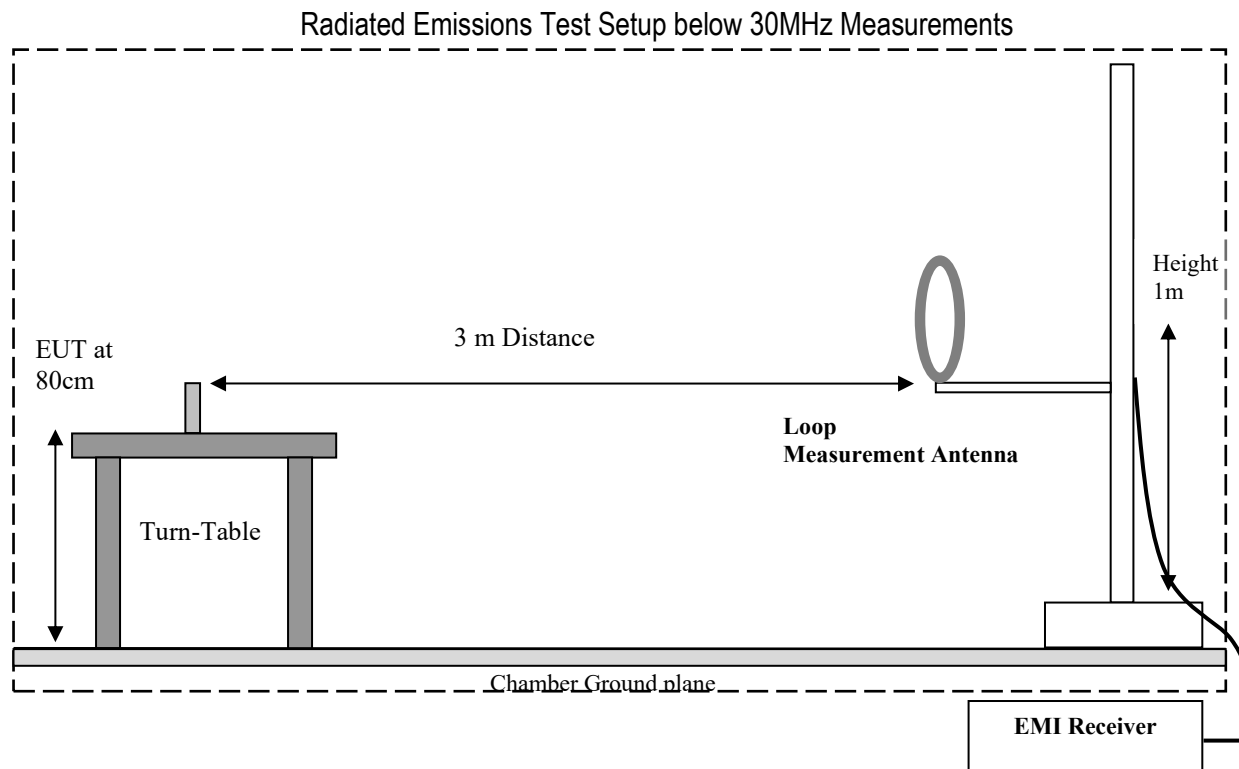
Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3. The measurement uncertainty is mentioned in this test report, See chapter 9, but is not taken into account – neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong.

7 Measurement Procedures

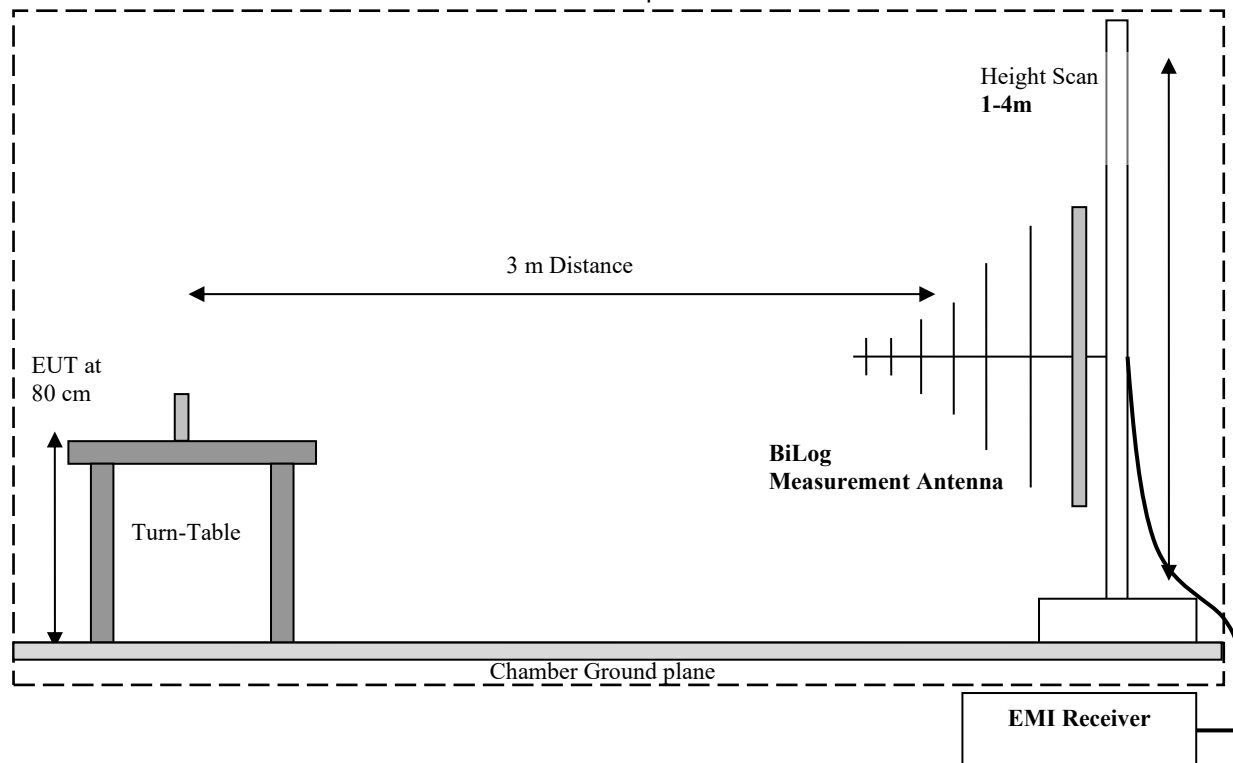
7.1 Radiated Measurement

The radiated measurement is performed according to ANSI C63.10 (2020)

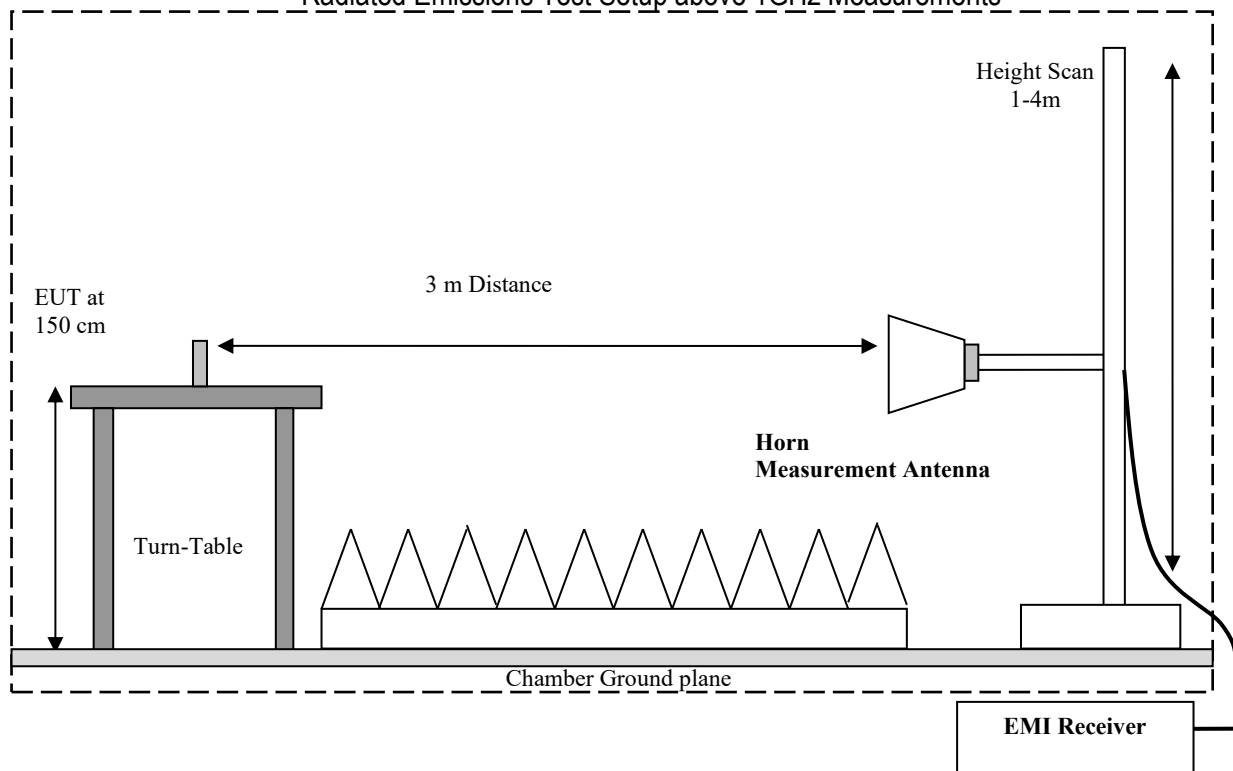
- The exploratory measurement is accomplished by running a matrix of 16 sweeps over the required frequency range with R&S Test-SW EMC32 for 4 positions of the turntable, two orthogonal positions of the EUT and both antenna polarizations. This procedure exceeds the requirement of the above standards to cover the 3 orthogonal axis of the EUT. A max peak detector is utilized during the exploratory measurement. The Test-SW creates an overall maximum trace for all 12 sweeps and saves the settings for each point of this trace. The maximum trace is part of the test report.
- The 10 highest emissions are selected with an automatic algorithm of EMC32 searching for peaks in the noise floor and ensuring that broadband signals are not selected multiple times.
- The maxima are then put through the final measurement and again maximized in a 90deg range of the turntable, fine search in frequency domain and height scan between 1m and 4m.
- The above procedure is repeated for all possible ways of power supply to EUT and for all supported modulations.
- In case there are no emissions above noise floor level only the maximum trace is reported as described above.
- The results are split up into up to 4 frequency ranges due to antenna bandwidth restrictions. A magnetic loop is used from 9 kHz to 30 MHz, a Biconilog antenna is used from 30 MHz to 1 GHz, and two different horn antennas are used to cover frequencies up to 40 GHz.

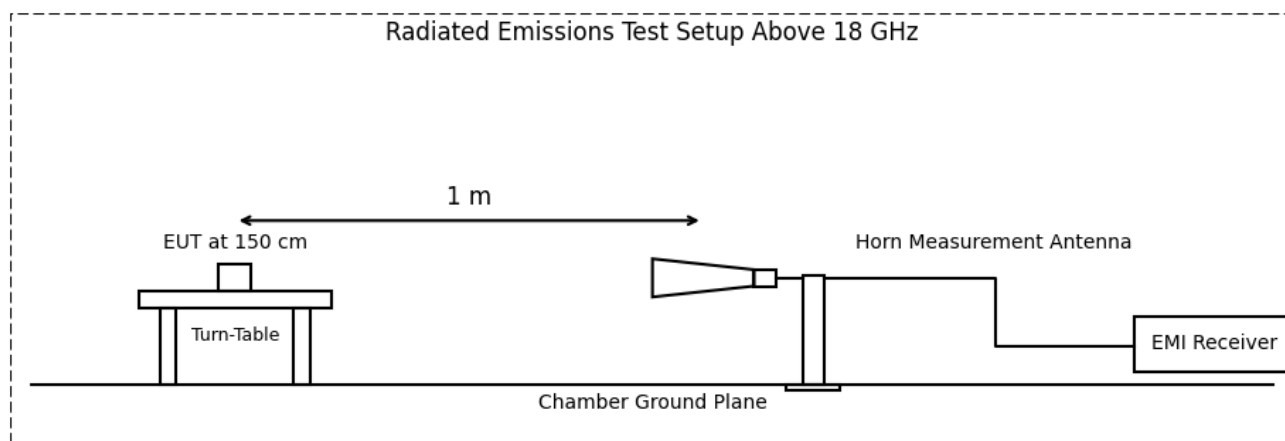


Radiated Emissions Test Setup 30MHz-1GHz Measurements



Radiated Emissions Test Setup above 1GHz Measurements





7.1.1 Sample Calculations for Field Strength Measurements

Field Strength is calculated from the Spectrum Analyzer/ Receiver readings, taking into account the following parameters:

1. Measured reading in dB μ V
2. Cable Loss between the receiving antenna and SA in dB and
3. Antenna Factor in dB/m

All radiated measurement plots in this report are taken from a test SW that calculates the Field Strength based on the following equation:

$$FS \text{ (dB}\mu\text{V/m)} = \text{Measured Value on SA (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$$

Example:

Frequency (MHz)	Measured SA (dB μ V)	Cable Loss (dB)	Antenna Factor Correction (dB)	Field Strength Result (dB μ V/m)
1000	80.5	3.5	14	98.0

For measurements performed above 18 GHz, the radiated spurious emissions were investigated at a measurement distance of 1 m. Since the applicable FCC limit is referenced to 3 m, the measured result is extrapolated to an equivalent 3 m field strength using the inverse distance relationship:

$$\text{Distance Correction} = 20 \log (d_{meas} / d_{ref})$$

To convert a measurement at 1 m to an equivalent 3 m field strength

$$FS_{3m} = FS_{1m} - 9.54 \text{ dB}$$

Alternatively, the regulatory limit may be adjusted to the measurement distance

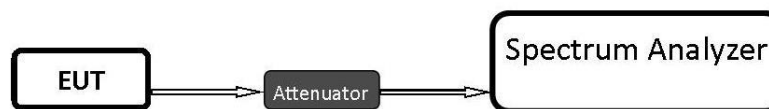
$$\text{Limit}_{1m} = \text{Limit}_{3m} + 9.54 \text{ dB}$$

7.2 Power Line Conducted Measurement Procedure

AC Power Line conducted emissions measurements performed according to: ANSI C63.4 (2014)

7.3 RF Conducted Measurement Procedure

Testing procedures are based on 558074 D01 15.247 Meas Guidance v05r02 – “GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES” - April 2, 2019, by the Federal Communications Commission, Office of Engineering and Technology, Laboratory Division.



- Connect the equipment as shown in the above diagram.
- Adjust the settings of the SA (Rohde-Schwarz Spectrum Analyzer) to connect the EUT at the required mode of test.
- Measurements are to be performed with the EUT set to the low, middle and high channels and for worst case modulation schemes.

8 Test Result Data

8.1 Maximum Conducted (Average) Output Power

8.1.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings:

- RBW = 1% to 5% of the OBW, not to exceed 1 MHz
- VBW $\geq 3 \times$ RBW
- Span = at least 1.5 times the OBW
- Sweep = Auto couple
- Detector function = RMS
- Trace = Average (at least 100 traces in power averaging (rms) mode)
- Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges
- Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times

8.1.2 Limits:

Maximum Output Power:

- FCC §15.247 (b)(1): 1 W
- IC RSS-247: 1 W

8.1.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input	Antenna Gain
23.8°C	1	802.11b 802.11g 802.11n	120VAC to 24VAC	3.9 dBi

8.1.4 Measurement result:

Test #	WLAN Mode	Frequency (MHz)	Output Power (dBm)	EIRP (dBm)	Limit (dBm)	Result
1	802.11b	2412	15.8	19.7	30 (Pk) / 36 (EIRP)	Pass
2	802.11b	2437	15.4	19.3	30 (Pk) / 36 (EIRP)	Pass
3	802.11b	2462	15.5	19.4	30 (Pk) / 36 (EIRP)	Pass
4	802.11g	2412	15.5	19.4	30 (Pk) / 36 (EIRP)	Pass
5	802.11g	2437	14.6	18.5	30 (Pk) / 36 (EIRP)	Pass
6	802.11g	2462	15.0	18.9	30 (Pk) / 36 (EIRP)	Pass
7	802.11n	2412	15.4	19.3	30 (Pk) / 36 (EIRP)	Pass
8	802.11n	2437	14.8	18.7	30 (Pk) / 36 (EIRP)	Pass
9	802.11n	2462	15.2	19.1	30 (Pk) / 36 (EIRP)	Pass

Note: For certain test cases where the measurement plots were determined to be similar, only the plot corresponding to the worst-case configuration is presented in the following section.

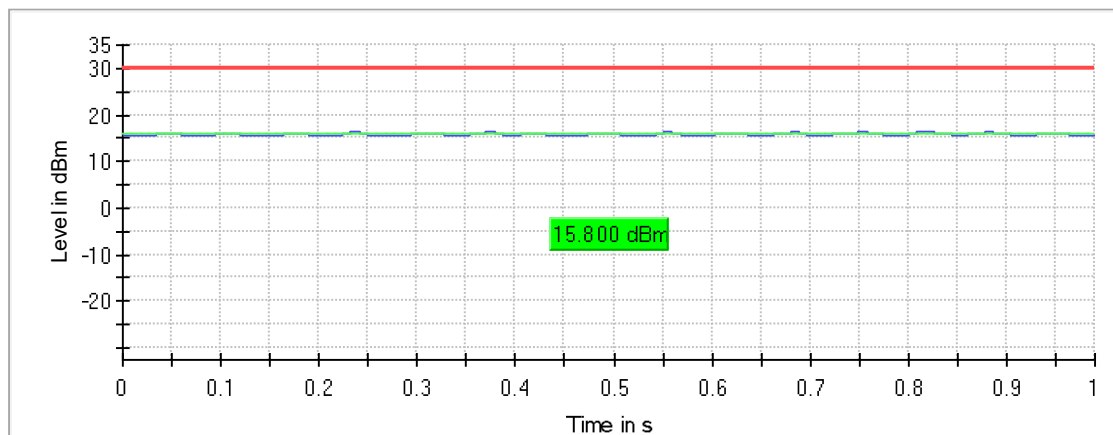
8.1.5 Measurement Plots:

RF output power (2412 MHz; 30 dBm; 20 MHz)

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2412.000000	15.8	30.0	15.8	99.647	PASS

Gated Trace



— Gated Trace — Overall — Limit

OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

8.2 Power Spectral Density

8.2.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings for AVGPSSD-1 PSD method:

- Set analyzer center frequency to DTS channel center frequency
- Set the span to $> 1.5 \times$ DTS bandwidth
- Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
- Set the VBW $\geq (3 \times \text{RBW})$
- Detector = RMS
- Sweep time = Auto couple
- Trace mode = Employ trace averaging (RMS)
- Allow trace to fully stabilize
- Use the peak marker function to determine the maximum amplitude level within the RBW
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat

8.2.2 Limits:

FCC §15.247(e) & RSS-247 5.2(b):

- For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.2.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input	Antenna Gain
23.8°C	1	802.11b 802.11g 802.11n	120VAC to 24VAC	3.9 dBi

8.2.4 Measurement result:

Test #	WLAN Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/3 kHz)	Limit (dBm / 3 kHz)	Result
1	802.11b	2412	-1.102	8	Pass
2	802.11b	2437	-1.490	8	Pass
3	802.11b	2462	-1.271	8	Pass
4	802.11g	2412	-4.135	8	Pass
5	802.11g	2437	-4.704	8	Pass
6	802.11g	2462	-4.270	8	Pass
7	802.11n	2412	-4.482	8	Pass
8	802.11n	2437	-4.929	8	Pass
9	802.11n	2462	-4.671	8	Pass

Note: For certain test cases where the measurement plots were determined to be similar, only the plot corresponding to the worst-case configuration is presented in the following section.

8.2.5 Measurement Plots:

Power Spectral Density (AVGPSD-1) (2412 MHz; 30 dBm; 20 MHz)

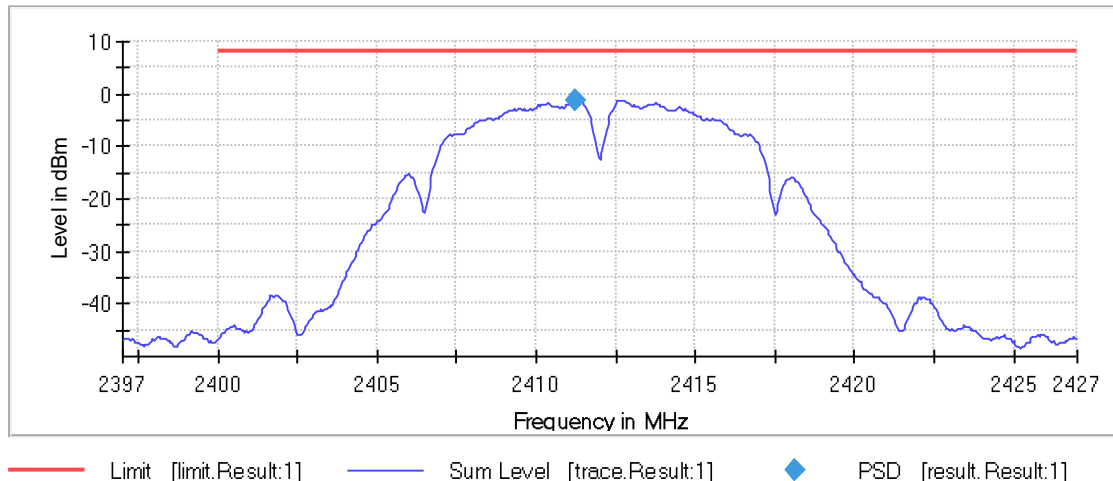
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2412.000000	2411.200000	-1.102	8.0	PASS

Ports

Port	State
1	used

Power Spectral Density (AVGPSD-1)



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39700 GHz	2.39700 GHz
Stop Frequency	2.42700 GHz	2.42700 GHz
Span	30.000 MHz	30.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	601	~ 600
SweepTime	15.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	35.000 dB	AUTO
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
SweepType	Sweep	Sweep
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	2 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.20 dB	0.50 dB

8.3 Band Edge Compliance

8.3.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings for band edge:

- Set the center frequency and span to encompass frequency range to be measured
- RBW = 100 kHz
- VBW $\geq 3 \times$ RBW
- Sweep Time: Auto couple
- Detector = Peak
- Trace = Max hold
- Allow trace to fully stabilize
- Use the peak marker function to determine the maximum amplitude level
- Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge

8.3.2 Limits non restricted band:

FCC§15.247 (d)

- In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

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- In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB.

Spectrum Analyzer settings for restricted band:

- Peak measurements are made using a peak detector and RBW=1 MHz

8.3.3 Limits restricted band §15.247/15.209/15.205 and RSS-Gen 8.9/8.10

- *PEAK LIMIT= 74 dB μ V/m @3m =-21.23 dBm
- *AVG. LIMIT= 54 dB μ V/m @3m =-41.23 dBm
- Start frequency & stop frequency according to frequency range specified in the restricted band table in FCC section 15.205 & RSS-Gen 8.10
- Measurements with a peak detector were used to show compliance to average limits, thus showing compliance to both peak and average limits.

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

8.3.4 Test conditions and setup:

Non-Restricted Band:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input	Antenna Gain
23.8°C	1	802.11b 802.11g 802.11n	120VAC to 24VAC	3.9 dBi

8.3.5 Measurement result:

Emissions in Nonrestricted frequency bands						
Plot #	Data rate	Frequency	Inband Peak Level	Level	Margin	Limit
		MHz	dBm	dBm	dB	dBm
1	11b 1Mb/s	2412	7.5	-34.5	22	-12.5
2	11g 6Mb/s	2412	4.5	-32.5	17.1	-15.5
3	11n HT20 MCS0	2412	4.5	-30.7	15.2	-15.5
4	11b 1Mb/s	2462	7.5	-35.2	22.8	-12.5
5	11g 6Mb/s	2462	4.1	-34.5	18.5	-15.9
6	11n HT20 MCS0	2462	4.3	-33.4	17.7	-15.7

Note 1: The antenna gain was not applied as a correction factor to the measured power value by the measurement system.

Note 2: For certain test cases where the measurement plots were determined to be similar, only the plot corresponding to the worst-case configuration is presented in the following section.

8.3.6 Measurement Plots:

Band Edge low (2412 MHz; 30 dBm; 20 MHz)

Result

DUT Frequency (MHz)	Result
2412.000000	PASS

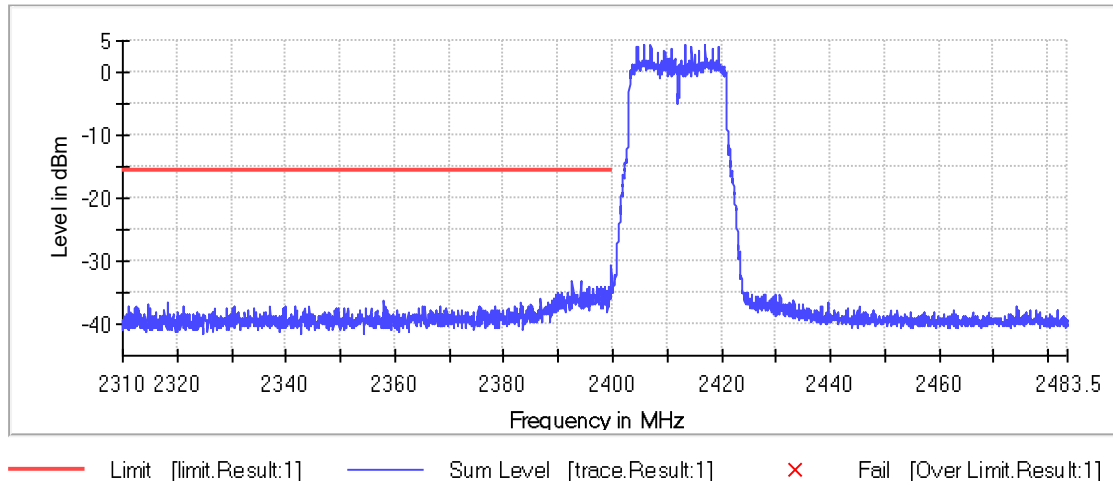
Inband Peak

Frequency (MHz)	Level (dBm)
2405.746765	4.5

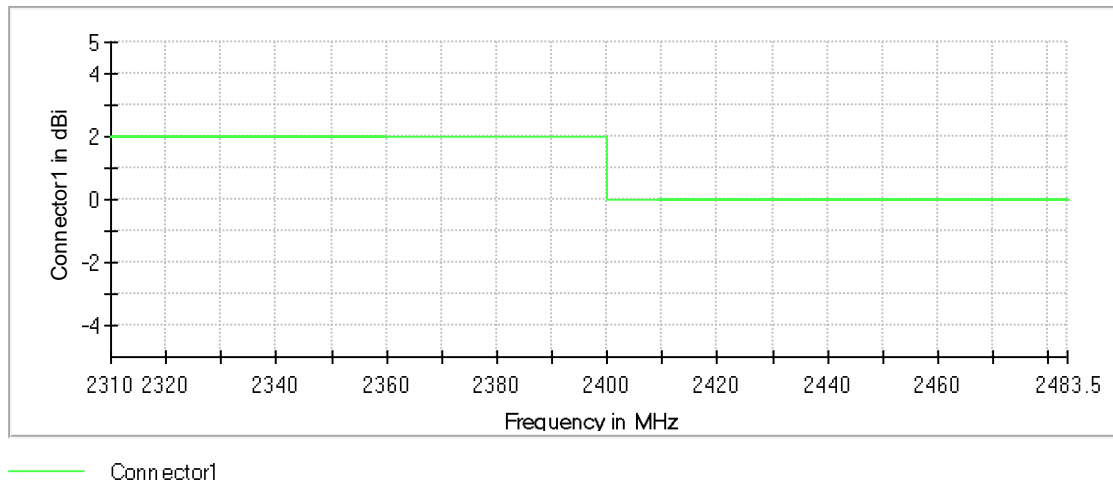
Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.800000	-30.7	15.2	-15.5	PASS
2399.750000	-31.7	16.2	-15.5	PASS
2392.600000	-33.1	17.6	-15.5	PASS
2394.100000	-33.3	17.8	-15.5	PASS
2399.900000	-33.3	17.8	-15.5	PASS
2399.850000	-33.5	18.0	-15.5	PASS
2397.000000	-33.9	18.5	-15.5	PASS
2394.150000	-34.0	18.5	-15.5	PASS
2399.200000	-34.0	18.5	-15.5	PASS
2395.750000	-34.0	18.5	-15.5	PASS
2398.500000	-34.1	18.6	-15.5	PASS
2397.900000	-34.2	18.7	-15.5	PASS
2398.150000	-34.2	18.7	-15.5	PASS
2399.250000	-34.3	18.8	-15.5	PASS
2397.050000	-34.3	18.8	-15.5	PASS

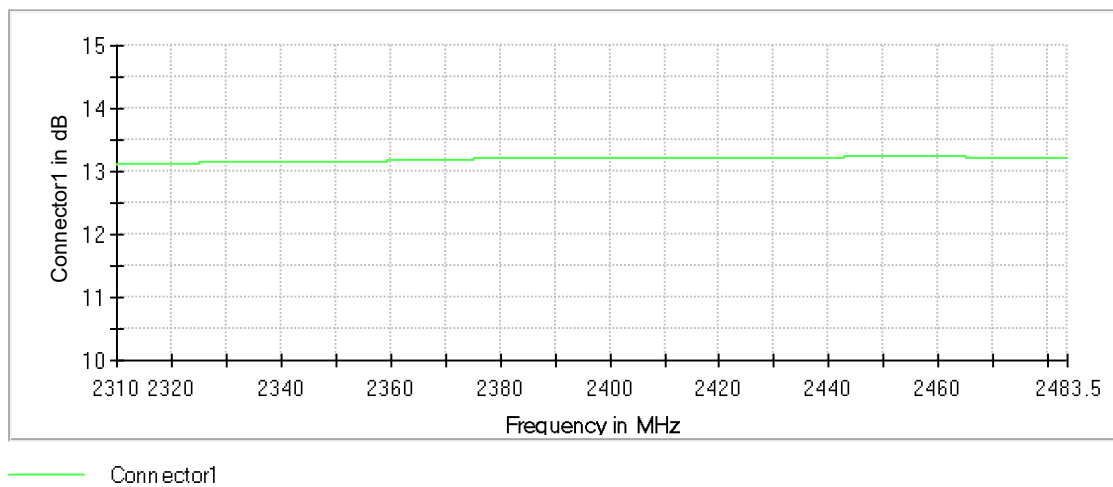
Band Edge



Gain



Attenuation



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1801	~ 1800
SweepTime	10.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	35.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	2 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1701	~ 1670
SweepTime	10.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	35.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	30 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.32 dB	0.50 dB

8.4 Emission Bandwidth 6dB and 99% Occupied Bandwidth

8.4.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings:

6dB (DTS) Bandwidth:

- Set RBW = 100 kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW
- Detector = Peak
- Trace mode = Max hold
- Sweep = Auto couple
- Allow the trace to stabilize
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

99% Occupied Bandwidth:

- Set frequency = nominal EUT channel center frequency
- Set Span = 1.5 x to 5.0 x OBW
- Set RBW = 1% to 5% of OBW
- Set the video bandwidth (VBW) $\approx 3 \times$ RBW
- Detector = Peak
- Trace mode = Max hold
- Sweep = Auto couple
- Allow the trace to stabilize
- Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth
- If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

8.4.2 Limits:

FCC §15.247(a)(2) and RSS-247 5.2(a)

- Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

8.4.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
23.8°C	1	802.11b 802.11g 802.11n	120VAC to 24VAC

8.4.4 Measurement result:

Plot #	Frequency (MHz)	EUT Operating Mode	6dB Emission Bandwidth (MHz)	Limit (MHz)	Result
1	2412	802.11b	9.100000	> 0.5	Pass
2	2437	802.11b	8.700000	> 0.5	Pass
3	2462	802.11b	8.200000	> 0.5	Pass
4	2412	802.11g	16.450000	> 0.5	Pass
5	2437	802.11g	16.450000	> 0.5	Pass
6	2462	802.11g	16.500000	> 0.5	Pass
7	2412	802.11n HT20	17.700000	> 0.5	Pass
8	2437	802.11n HT20	17.700000	> 0.5	Pass
9	2462	802.11n HT20	17.700000	> 0.5	Pass

Plot #	Frequency (MHz)	EUT Operating Mode	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
10	2412	802.11b	11.600000	N/A	Pass
11	2437	802.11b	11.500000	N/A	Pass
12	2462	802.11b	11.500000	N/A	Pass
13	2412	802.11g	17.000000	N/A	Pass
14	2437	802.11g	17.000000	N/A	Pass
15	2462	802.11g	17.000000	N/A	Pass
16	2412	802.11n HT20	18.100000	N/A	Pass
17	2437	802.11n HT20	18.000000	N/A	Pass
18	2462	802.11n HT20	18.100000	N/A	Pass

Note: For certain test cases where the measurement plots were determined to be similar, only the plot corresponding to the worst-case configuration is presented in the following section.

8.4.5 Measurement Plots:

Minimum Emission Bandwidth 6 dB (2462 MHz; 30 dBm; 20 MHz)

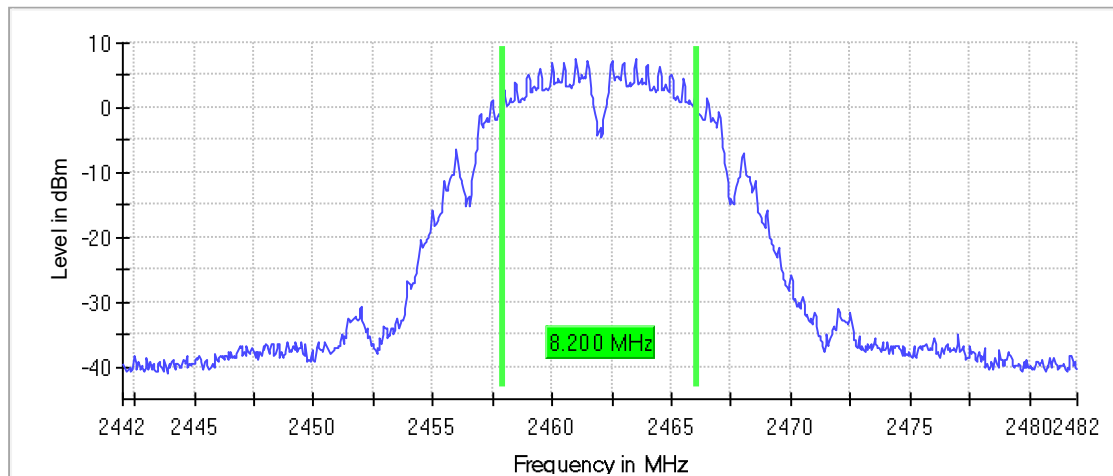
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2462.000000	8.200000	0.500000	---	2457.900000	2466.100000

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2462.000000	7.5	PASS

6 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44200 GHz	2.44200 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	801	~ 800
Sweptime	15.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	35.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.39 dB	0.50 dB

Occupied Channel Bandwidth 99% (2462 MHz; 30 dBm; 20 MHz)

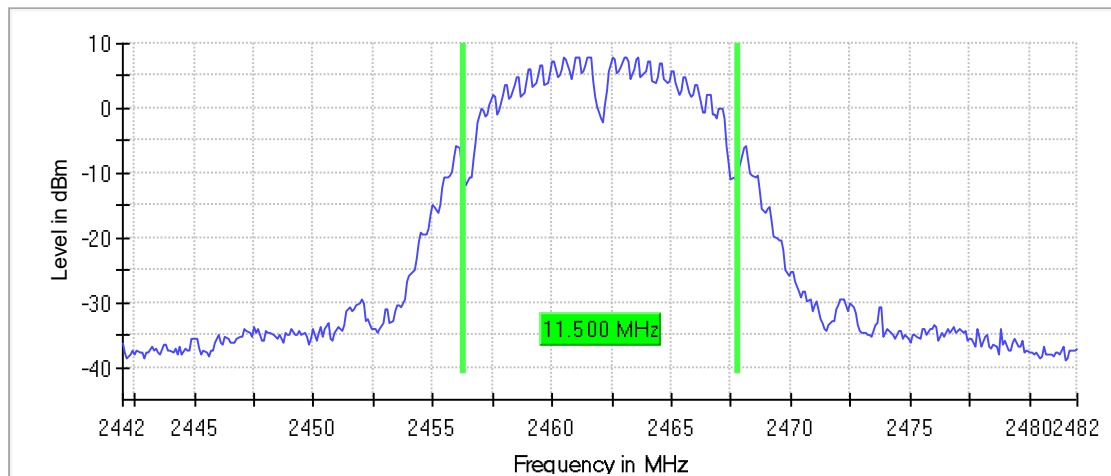
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2462.000000	11.500000	---	---	2456.300000	2467.800000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2462.000000	PASS

99 % Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44200 GHz	2.44200 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	>= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	401	~ 400
SweepTime	2.500 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	35.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	3 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.20 dB	0.30 dB

8.5 Radiated Transmitter Spurious Emissions and Restricted Bands

8.5.1 Measurement according to ANSI C63.10 (2020)

Spectrum Analyzer Settings:

- Frequency = 9 KHz – 30 MHz
- RBW = 9 KHz
- Detector: Peak

- Frequency = 30 MHz – 1 GHz
- Detector = Peak / Quasi-Peak
- RBW= 120 KHz (<1GHz)

- Frequency > 1 GHz
- Detector = Peak / Average
- RBW = 1 MHz

- Radiated spurious emissions shall be measured for the transmit frequencies, transmit power, and data rate for the lowest, middle and highest channel in each frequency band of operation and for the highest gain antenna for each antenna type, and using the appropriate parameters and test requirements.
- The highest (or worst-case) data rate shall be recorded for each measurement.
- For testing frequencies below 30 MHz at distance other than the specified in the standard, the limit conversion is calculated by using the FCC materials for the ANSI 63 committee issued on January, 27 1991.

8.5.2 Limits:

FCC §15.247

- In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

FCC §15.209 & RSS-Gen 8.9

- Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency of emission (MHz)	Field strength (μV/m)	Measurement Distance (m)	Field strength @ 3m (dBμV/m)
0.009–0.490	2400/F(kHz) / -----	300	-
0.490–1.705	24000/F(kHz) / -----	30	-
1.705–30.0	30 / (29.5)	30	-
30–88	100	3	40 dBμV/m
88–216	150	3	43.5 dBμV/m
216–960	200	3	46 dBμV/m
Above 960	500	3	54 dBμV/m

FCC §15.205 & RSS-Gen 8.10

- Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

- Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

*PEAK LIMIT= 74 dBμV/m

*AVG. LIMIT= 54 dBμV/m

8.5.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
22.0 °C	1	802.11b	120VAC to 24VAC

8.5.4 Measurement result:

Plot #	Channel #	Scan Frequency	Limit	Result
1-5	Low	9 kHz – 26 GHz	See section 8.5.2	Pass
6-10	Mid	9 kHz – 26 GHz	See section 8.5.2	Pass
11-15	High	9 kHz – 26 GHz	See section 8.5.2	Pass
16	Restricted Band Edge Low	2360 – 2412 MHz	See section 8.5.2	Pass
17	Restricted Band Edge High	2462 – 2500 MHz	See section 8.5.2	Pass

Note: The conducted measurements at the antenna port indicate 802.11b as the worst-case 2.4 GHz WLAN mode for RSE selection because it exhibits the highest transmitter levels among the evaluated modes: maximum conducted output power of 15.8 dBm (EIRP 19.7 dBm) at 2412 MHz, and the highest maximum PSD of -1.102 dBm/3 kHz (also at 2412 MHz), both higher than the corresponding 802.11g/n results. As radiated spurious emissions generally increase with higher transmit power and spectral density, 802.11b represents the worst-case condition for RSE compliance testing.

8.5.5 Measurement Plots:

Plot # 1 Radiated Emissions: 9 KHz – 30 MHz

Tx Frequency: 2412 MHz

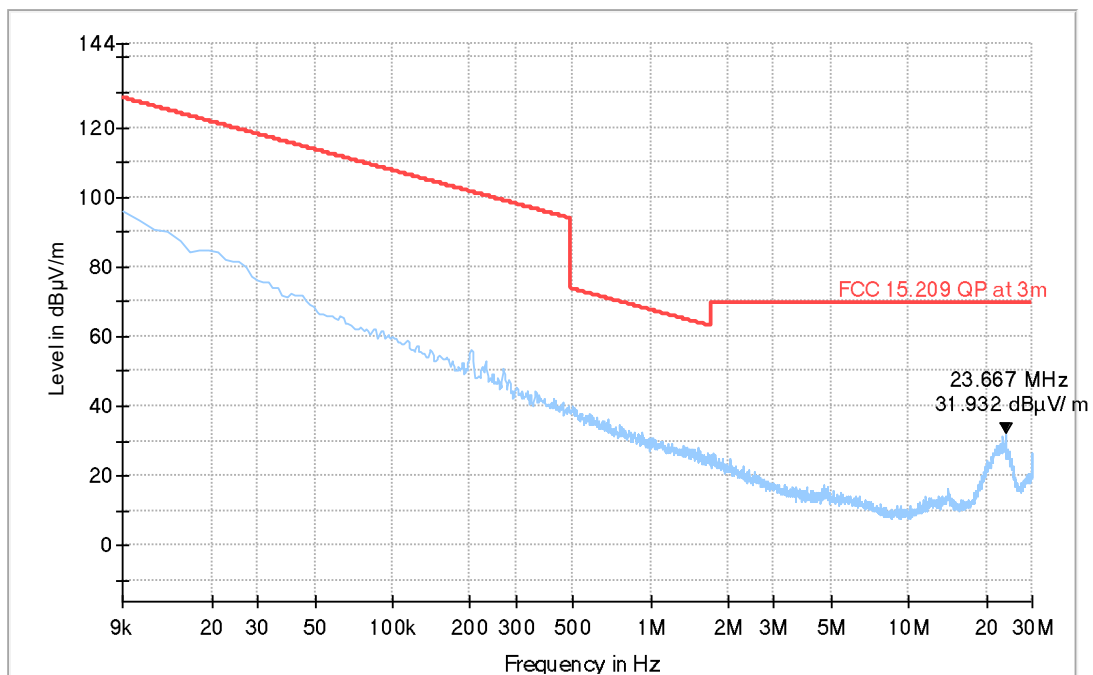
Modulation: 802.11g

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
---	---	---	---	---	---	---	---	---	---	---	---	---	---

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
---	---



◆ Preview Result 1 -PK+ Final_Result QPK
 ◆ FCC 15.209 QP at 3m Final_Result PK+

Plot # 2 Radiated Emissions: 30 – 1000MHz

Tx Frequency: 2412 MHz

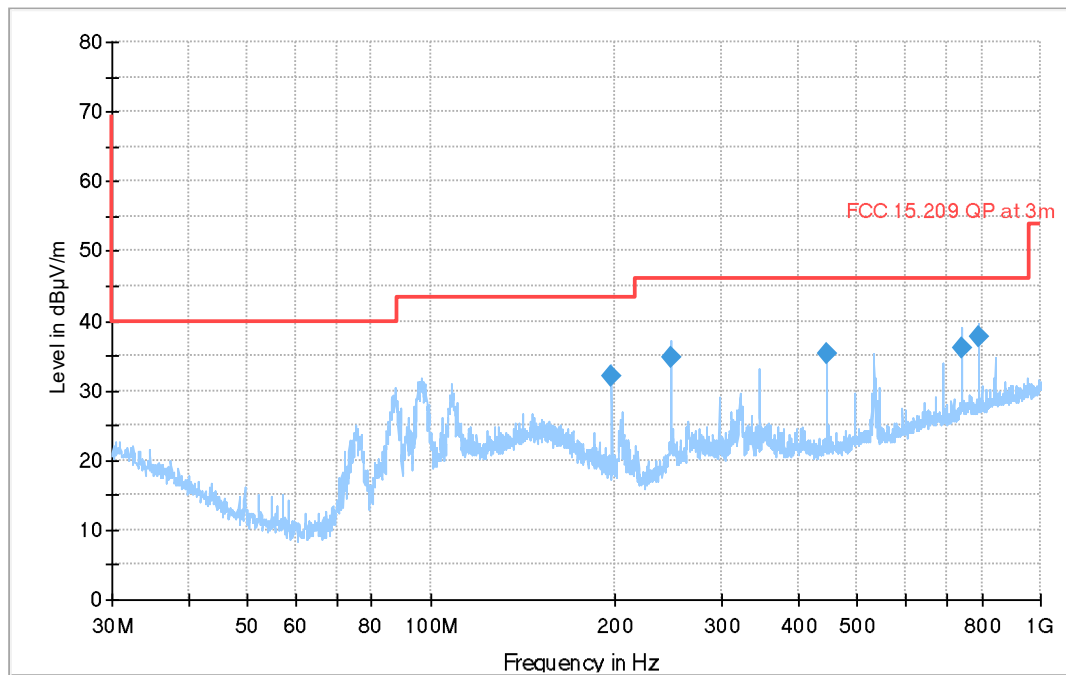
Modulation: 802.11g

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
198.016	32.178	---	43.50	11.32	500.0	120.0	134.0	H	141.0	-16.2	-34.2	0.0	18.0
247.461	34.796	---	46.02	11.22	500.0	120.0	149.0	H	344.0	-11.3	-34.0	0.0	22.7
445.487	35.409	---	46.02	10.61	500.0	120.0	201.0	V	292.0	-10.6	-33.3	0.0	22.7
742.505	36.142	---	46.02	9.88	500.0	120.0	159.0	H	154.0	-4.8	-32.3	0.0	27.6
792.014	37.630	---	46.02	8.39	500.0	120.0	281.0	H	13.0	-4.3	-32.4	0.0	28.1

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
198.016	48.3
247.461	46.1
445.487	46.0
742.505	40.9
792.014	41.9



◆ Preview Result 1-PK+ Final_Result QPK
◆ FCC 15.209 QP at 3m Final_Result PK+

Plot # 3 Radiated Emissions: 1 – 3 GHz

Tx Frequency: 2412 MHz

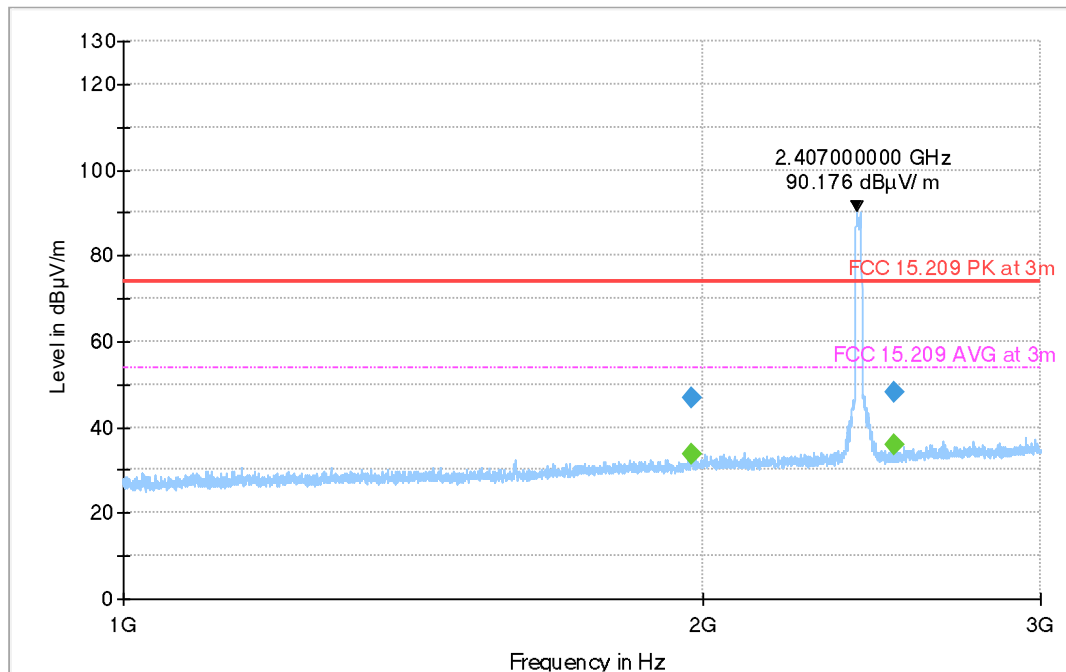
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
1975.040	---	33.812	53.98	20.17	500.0	1000.0	177.0	H	231.0	4.9	-22.5	0.0	27.3
1975.040	46.696	---	73.98	27.28	500.0	1000.0	177.0	H	231.0	4.9	-22.5	0.0	27.3
2517.518	---	35.737	53.98	18.24	500.0	1000.0	160.0	V	166.0	6.1	-22.3	0.0	28.4
2517.518	48.259	---	73.98	25.72	500.0	1000.0	160.0	V	166.0	6.1	-22.3	0.0	28.4

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
1975.040	29.0
1975.040	41.8
2517.518	29.6
2517.518	42.2



◆ Preview Result 1 -PK+ Final_Result PK+
 ◆ FCC 15.209 PK at 3m Final_Result AVG
 ◆ FCC 15.209 AVG at 3m

Plot # 4 Radiated Emissions: 3 - 18 GHz

Tx Frequency: 2412 MHz

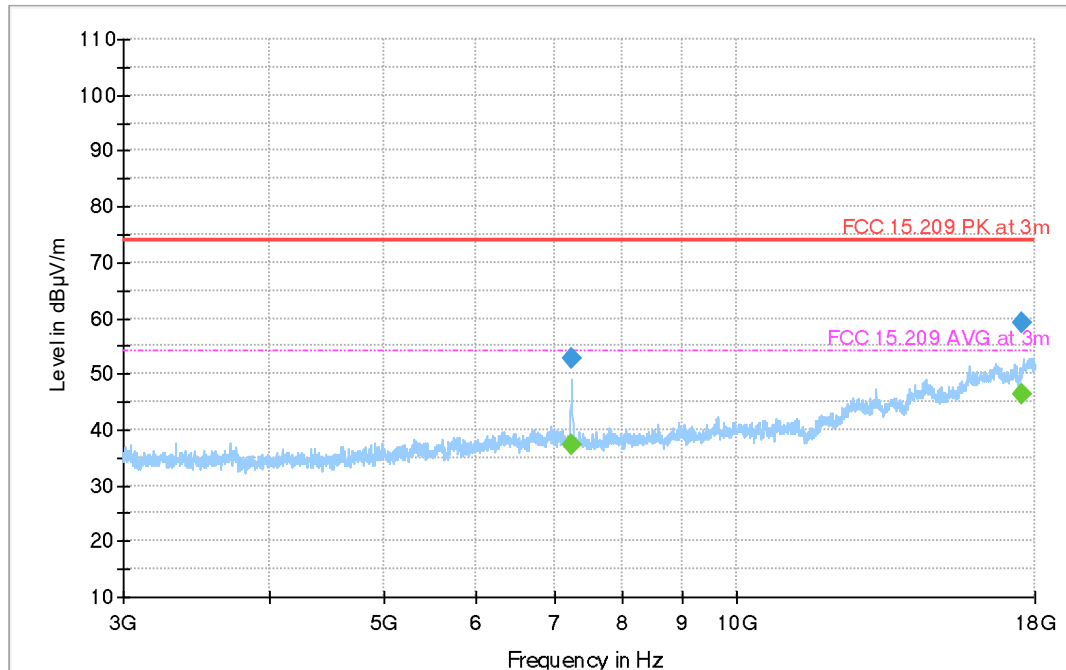
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
7230.016	52.824	---	73.98	21.16	500.0	1000.0	193.0	V	351.0	-2.1	8.9	-46.9	35.9
7230.016	---	37.429	53.98	16.55	500.0	1000.0	193.0	V	351.0	-2.1	8.9	-46.9	35.9
17573.627	59.051	---	73.98	14.93	500.0	1000.0	144.0	V	109.0	13.9	15.1	-42.8	41.5
17573.627	---	46.255	53.98	7.72	500.0	1000.0	144.0	V	109.0	13.9	15.1	-42.8	41.5

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
7230.016	54.9
7230.016	39.6
17573.627	45.2
17573.627	32.4



◆ Preview Result 1 -PK+ Final_Result PK+
 ◆ FCC 15.209 PK at 3m Final_Result AVG
 ◆ FCC 15.209 AVG at 3m

Plot # 5 Radiated Emissions: 18 - 26GHz

Tx Frequency: 2412 MHz

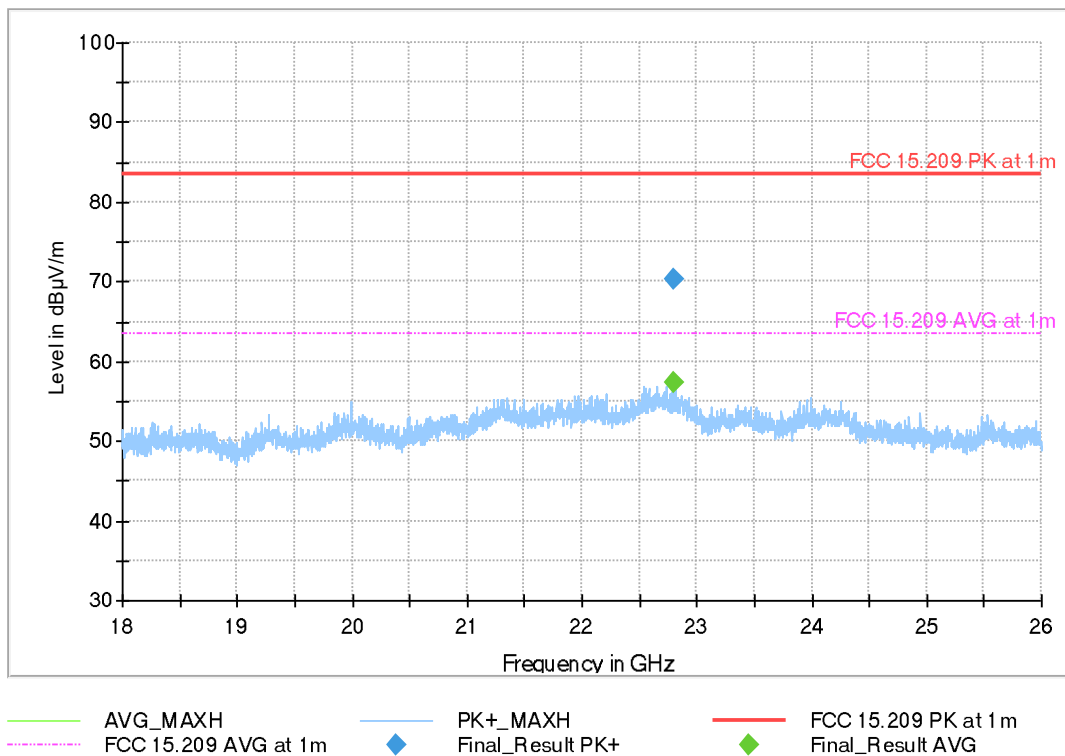
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
22806.388	---	57.360	63.50	6.14	500.0	1000.0	150.0	V	149.0	21.0	9.7	0.0	11.2
22806.388	70.307	---	83.50	13.19	500.0	1000.0	150.0	V	149.0	21.0	9.7	0.0	11.2

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
22806.388	36.4
22806.388	49.3



Plot # 6 Radiated Emissions: 9 KHz – 30 MHz

Tx Frequency: 2437 MHz

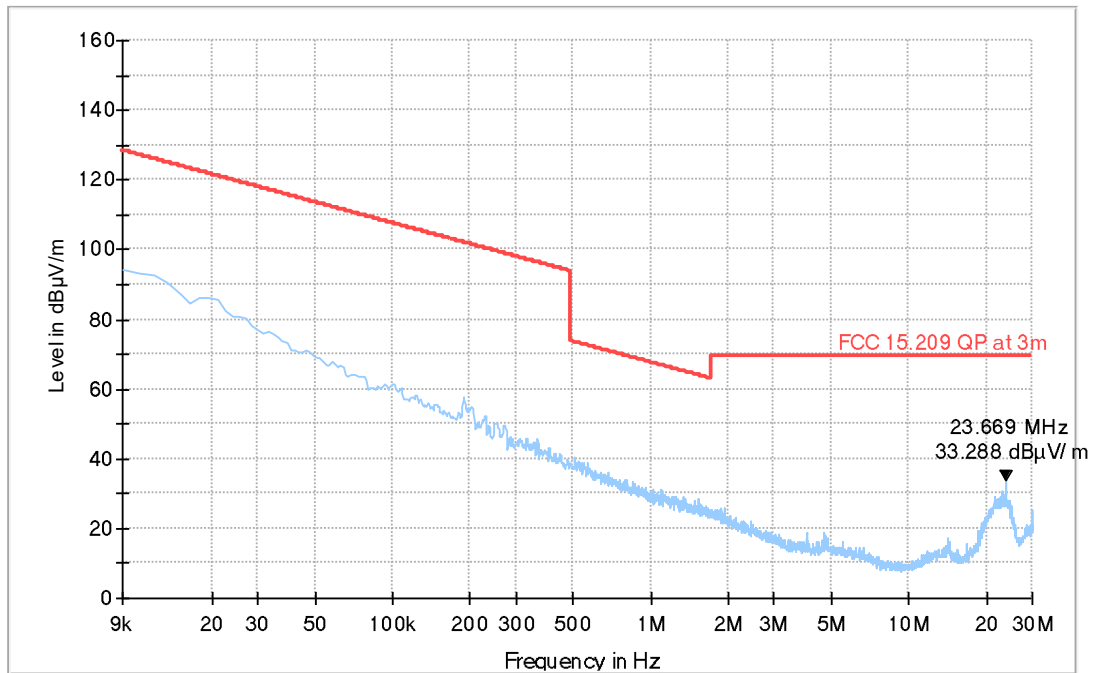
Modulation: 802.11g

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
---	---	---	---	---	---	---	---	---	---	---	---	---	---

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
---	---



◆ Preview Result 1 -PK+ Final_Result QPK
 ◆ FCC 15.209 QP at 3m Final_Result PK+

Plot # 7 Radiated Emissions: 30 – 1000MHz

Tx Frequency: 2437 MHz

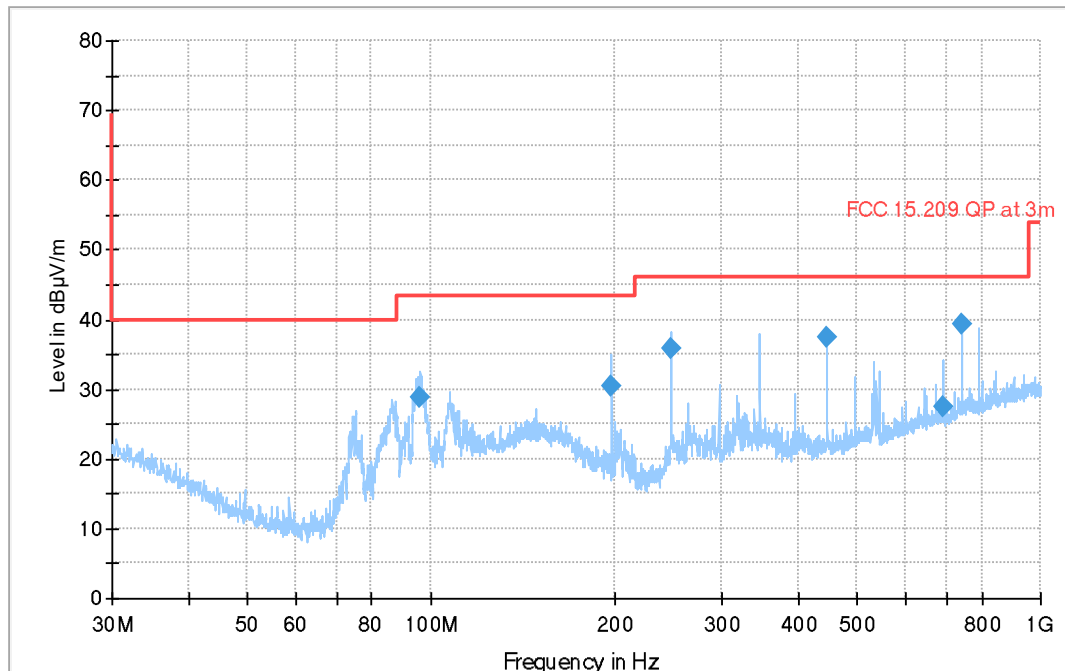
Modulation: 802.11g

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
96.206	28.925	---	43.50	14.58	500.0	120.0	193.0	H	6.0	-15.3	-34.6	0.0	19.4
197.985	30.368	---	43.50	13.13	500.0	120.0	221.0	H	320.0	-16.2	-34.2	0.0	18.0
247.523	35.910	---	46.02	10.11	500.0	120.0	116.0	H	359.0	-11.3	-34.0	0.0	22.7
445.495	37.419	---	46.02	8.60	500.0	120.0	149.0	V	281.0	-10.6	-33.3	0.0	22.7
692.971	27.605	---	46.02	18.42	500.0	120.0	100.0	H	172.0	-5.9	-32.5	0.0	26.6
742.500	39.430	---	46.02	6.59	500.0	120.0	137.0	H	192.0	-4.8	-32.3	0.0	27.6

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
96.206	44.2
197.985	46.5
247.523	47.2
445.495	48.0
692.971	33.5
742.500	44.2



◆ Preview Result 1-PK+ Final_Result QPK
◆ FCC 15.209 QP at 3m Final_Result PK+

Plot # 8 Radiated Emissions: 1 – 3 GHz

Tx Frequency: 2437 MHz

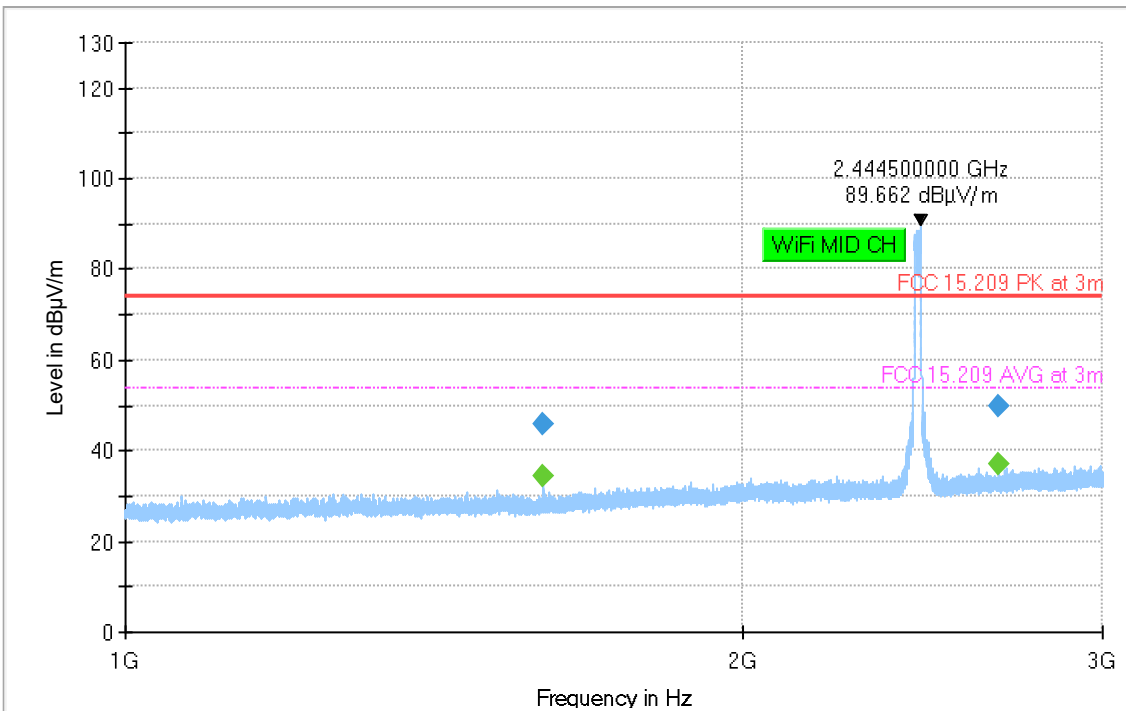
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
1598.699	45.974	---	73.98	28.01	500.0	1000.0	382.0	V	236.0	2.5	-22.9	0.0	25.4
1598.699	---	34.371	53.98	19.61	500.0	1000.0	382.0	V	236.0	2.5	-22.9	0.0	25.4
2668.065	49.992	---	73.98	23.99	500.0	1000.0	196.0	H	205.0	6.7	-22.1	0.0	28.8
2668.065	---	36.828	53.98	17.15	500.0	1000.0	196.0	H	205.0	6.7	-22.1	0.0	28.8

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
1598.699	43.4
1598.699	31.8
2668.065	43.3
2668.065	30.1



◆ PK+_MAXH Final_Result PK+
 ◆ FCC 15.209 PK at 3m
 ◆ FCC 15.209 AVG at 3m
 ◆ Final_Result AVG

Plot # 9 Radiated Emissions: 3 - 18 GHz

Tx Frequency: 2437 MHz

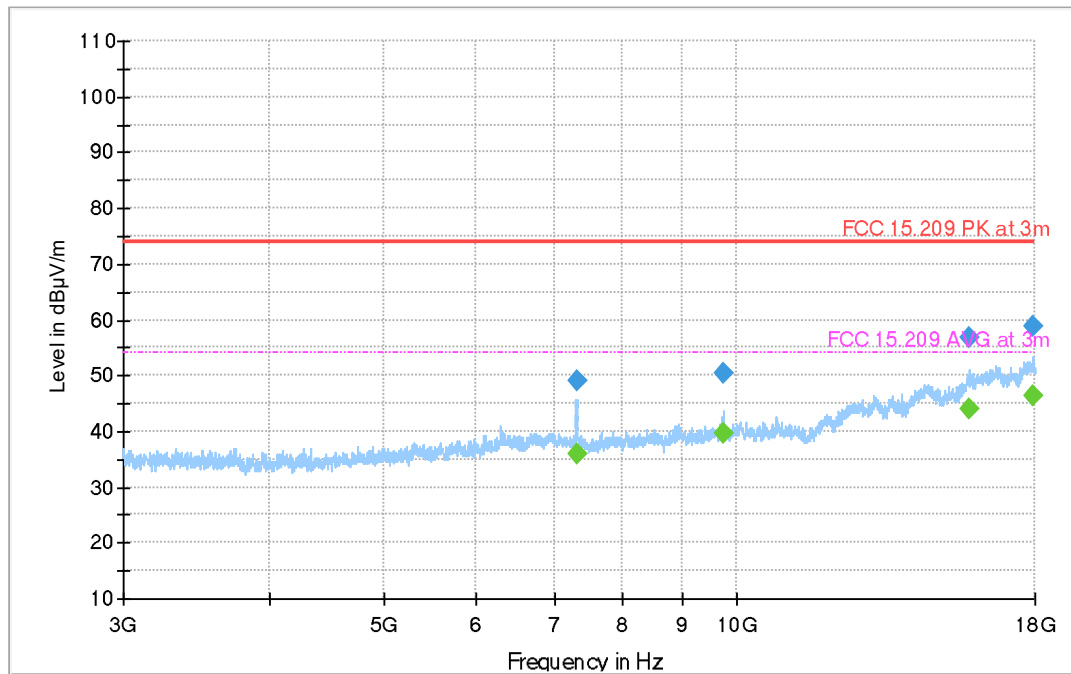
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
7312.123	49.131	---	73.98	24.85	500.0	1000.0	230.0	V	-4.0	-1.7	9.0	-46.6	35.8
7312.123	---	35.933	53.98	18.05	500.0	1000.0	230.0	V	-4.0	-1.7	9.0	-46.6	35.8
9747.887	---	39.630	53.98	14.35	500.0	1000.0	246.0	V	126.0	1.2	10.6	-46.8	37.4
9747.887	50.280	---	73.98	23.70	500.0	1000.0	246.0	V	126.0	1.2	10.6	-46.8	37.4
15828.207	---	44.167	53.98	9.81	500.0	1000.0	205.0	H	254.0	11.0	13.4	-43.6	41.3
15828.207	56.676	---	73.98	17.30	500.0	1000.0	205.0	H	254.0	11.0	13.4	-43.6	41.3
17952.178	58.798	---	73.98	15.18	500.0	1000.0	183.0	V	4.0	14.8	15.4	-42.3	41.6
17952.178	---	46.416	53.98	7.56	500.0	1000.0	183.0	V	4.0	14.8	15.4	-42.3	41.6

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
7312.123	50.9
7312.123	37.7
9747.887	38.5
9747.887	49.1
15828.207	33.1
15828.207	45.6
17952.178	44.0
17952.178	31.6

Preview Result 1-PK+
Final_Result PK+FCC 15.209 PK at 3m
Final_Result AVG

FCC 15.209 AVG at 3m

Plot # 10 Radiated Emissions: 18 - 26GHz

Tx Frequency: 2437 MHz

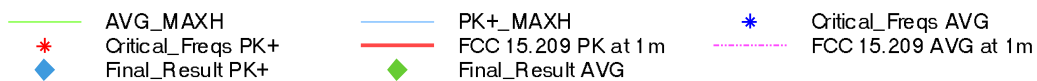
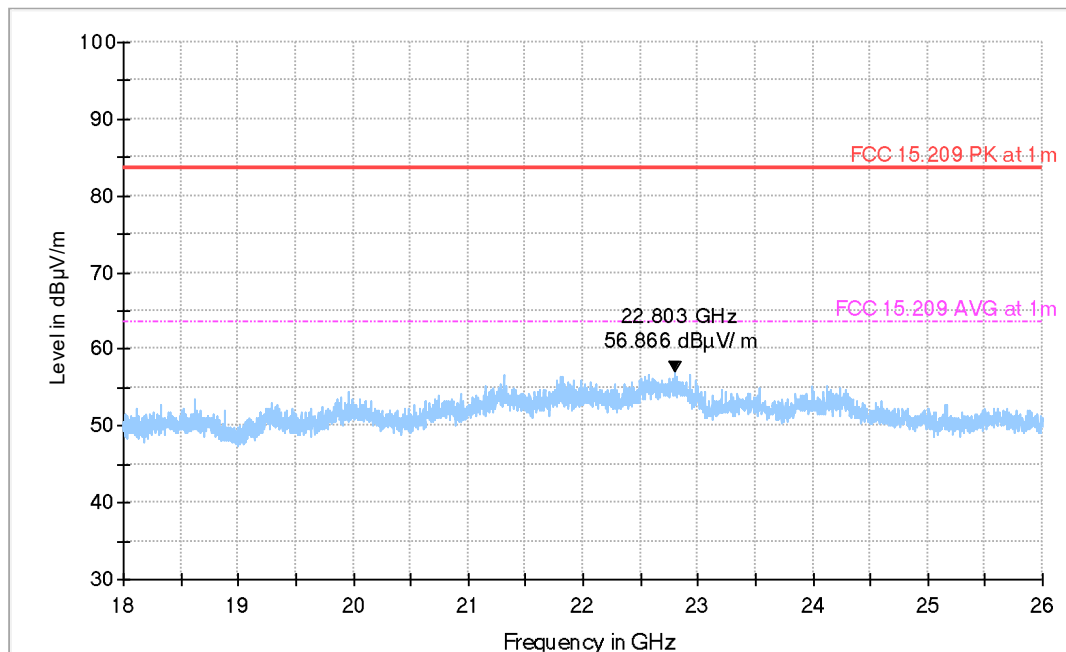
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
----	----	----	----	----	----	----	----	----	----	----	----	----	----

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
----	----



Plot # 11 Radiated Emissions: 9 KHz – 30 MHz

Tx Frequency: 2462 MHz

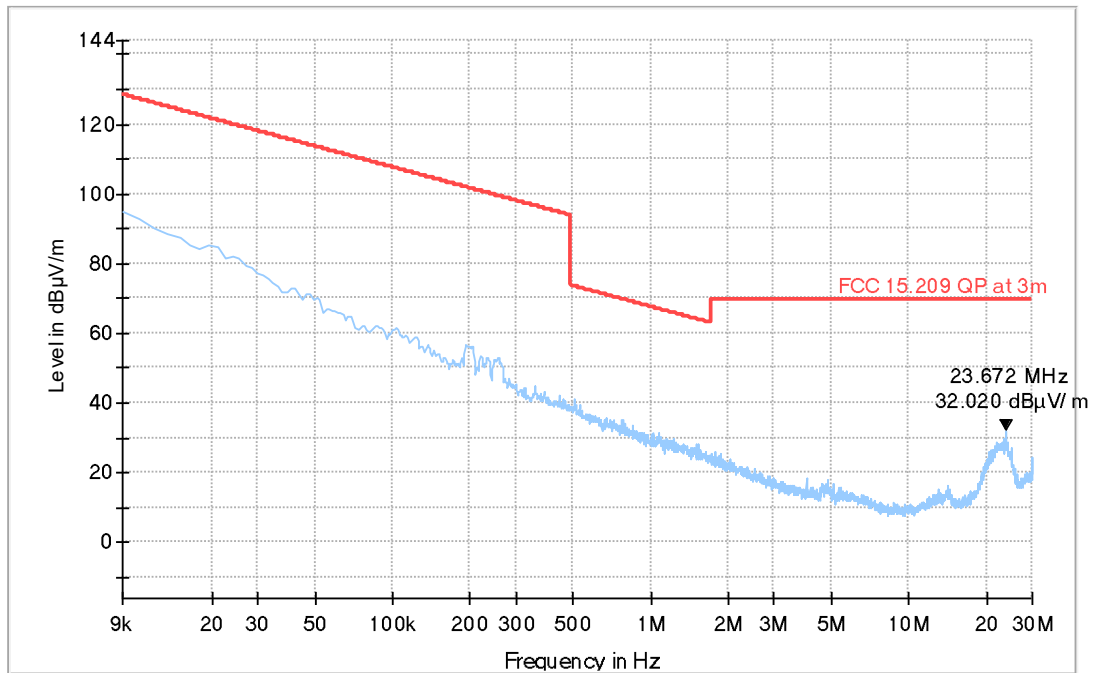
Modulation: 802.11g

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
---	---	---	---	---	---	---	---	---	---	---	---	---	---

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
---	---



◆ Preview Result 1 -PK+ Final_Result QPK
 ◆ FCC 15.209 QP at 3m Final_Result PK+

Plot # 12 Radiated Emissions: 30 – 1000MHz

Tx Frequency: 2462 MHz

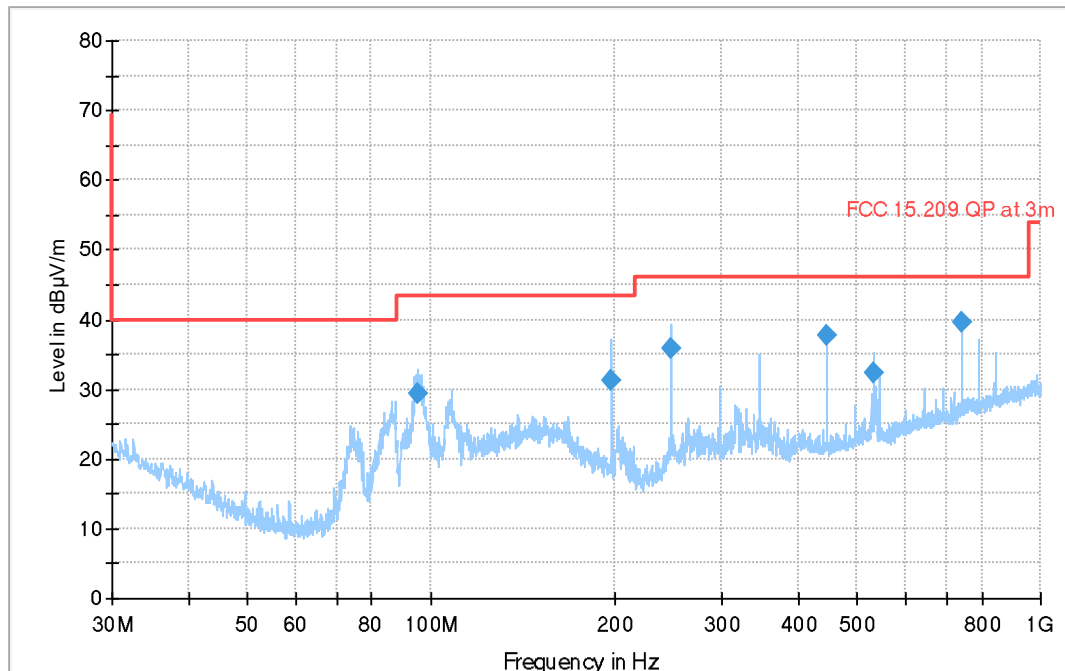
Modulation: 802.11g

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
95.140	29.241	---	43.50	14.26	500.0	120.0	201.0	H	20.0	-15.6	-34.6	0.0	19.0
197.996	31.188	---	43.50	12.31	500.0	120.0	227.0	H	-37.0	-16.2	-34.2	0.0	18.0
247.474	35.747	---	46.02	10.27	500.0	120.0	192.0	H	357.0	-11.3	-34.0	0.0	22.7
445.509	37.609	---	46.02	8.41	500.0	120.0	166.0	V	297.0	-10.6	-33.3	0.0	22.7
531.952	32.257	---	46.02	13.76	500.0	120.0	193.0	H	124.0	-8.8	-33.0	0.0	24.3
742.498	39.568	---	46.02	6.45	500.0	120.0	133.0	H	187.0	-4.8	-32.3	0.0	27.6

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
95.140	44.9
197.996	47.4
247.474	47.1
445.509	48.2
531.952	41.0
742.498	44.3



Plot # 13 Radiated Emissions: 1 – 3 GHz

Tx Frequency: 2462 MHz

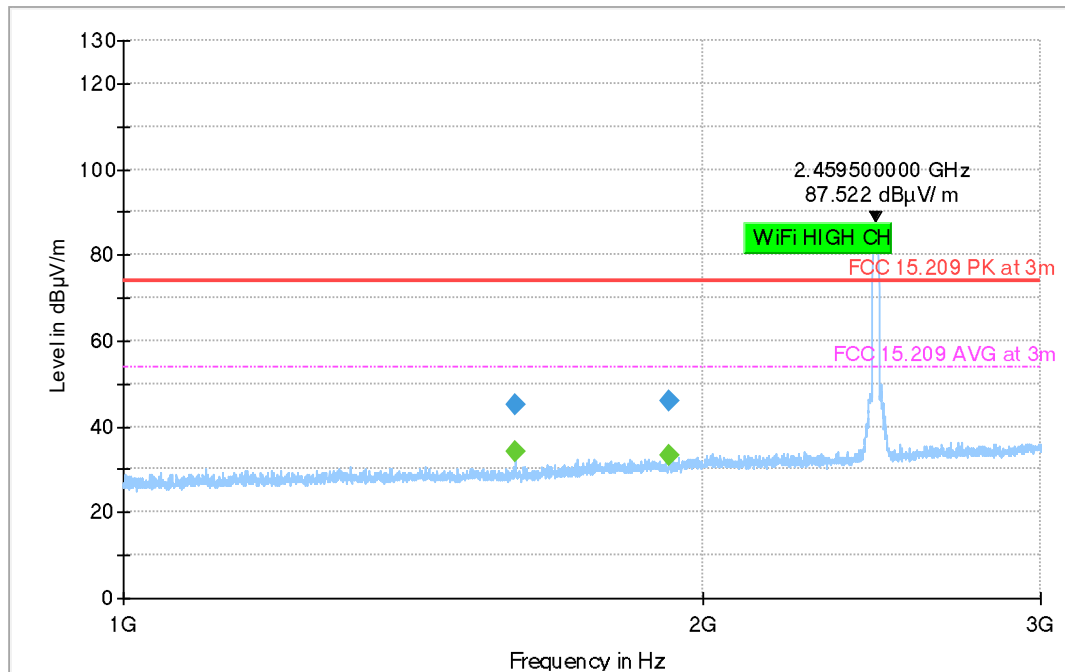
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
1598.464	45.145	---	73.98	28.83	500.0	1000.0	100.0	H	326.0	2.5	-22.9	0.0	25.4
1598.464	---	34.086	53.98	19.89	500.0	1000.0	100.0	H	326.0	2.5	-22.9	0.0	25.4
1922.232	46.054	---	73.98	27.93	500.0	1000.0	297.0	H	295.0	4.6	-22.7	0.0	27.3
1922.232	---	33.204	53.98	20.78	500.0	1000.0	297.0	H	295.0	4.6	-22.7	0.0	27.3

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
1598.464	42.6
1598.464	31.5
1922.232	41.5
1922.232	28.6



◆ Preview Result 1-PK+ Final_Result PK+
 ◆ FCC 15.209 PK at 3m Final_Result AVG
 ◆ FCC 15.209 AVG at 3m

Plot # 14 Radiated Emissions: 3 - 18 GHz

Tx Frequency: 2462 MHz

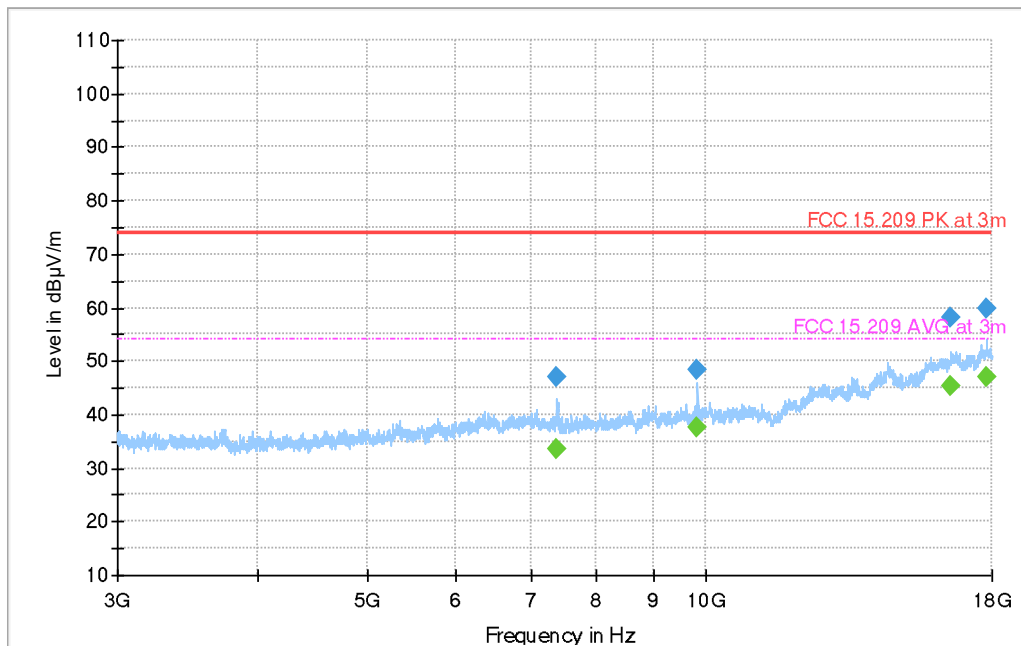
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
7383.305	47.112	---	73.98	26.87	500.0	1000.0	160.0	V	-17.0	-1.4	9.2	-46.4	35.9
7383.305	---	33.605	53.98	20.37	500.0	1000.0	160.0	V	-17.0	-1.4	9.2	-46.4	35.9
9848.243	48.339	---	73.98	25.64	500.0	1000.0	227.0	V	2.0	1.2	10.5	-46.8	37.5
9848.243	---	37.534	53.98	16.45	500.0	1000.0	227.0	V	2.0	1.2	10.5	-46.8	37.5
16532.937	---	45.327	53.98	8.65	500.0	1000.0	100.0	H	76.0	12.8	15.2	-43.3	41.0
16532.937	57.983	---	73.98	16.00	500.0	1000.0	100.0	H	76.0	12.8	15.2	-43.3	41.0
17833.125	---	47.069	53.98	6.91	500.0	1000.0	400.0	H	13.0	14.6	15.5	-42.5	41.6
17833.125	59.944	---	73.98	14.04	500.0	1000.0	400.0	H	13.0	14.6	15.5	-42.5	41.6

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
7383.305	48.5
7383.305	35.0
9848.243	47.1
9848.243	36.3
16532.937	32.5
16532.937	45.2
17833.125	32.5
17833.125	45.4



◆ Preview Result 1-PK+ Final_Result PK+ ◆ FCC 15.209 PK at 3m Final_Result AVG - - - - - FCC 15.209 AVG at 3m

Plot # 15 Radiated Emissions: 18 - 26GHz

Tx Frequency: 2462 MHz

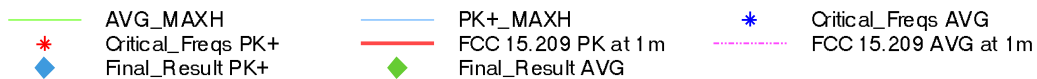
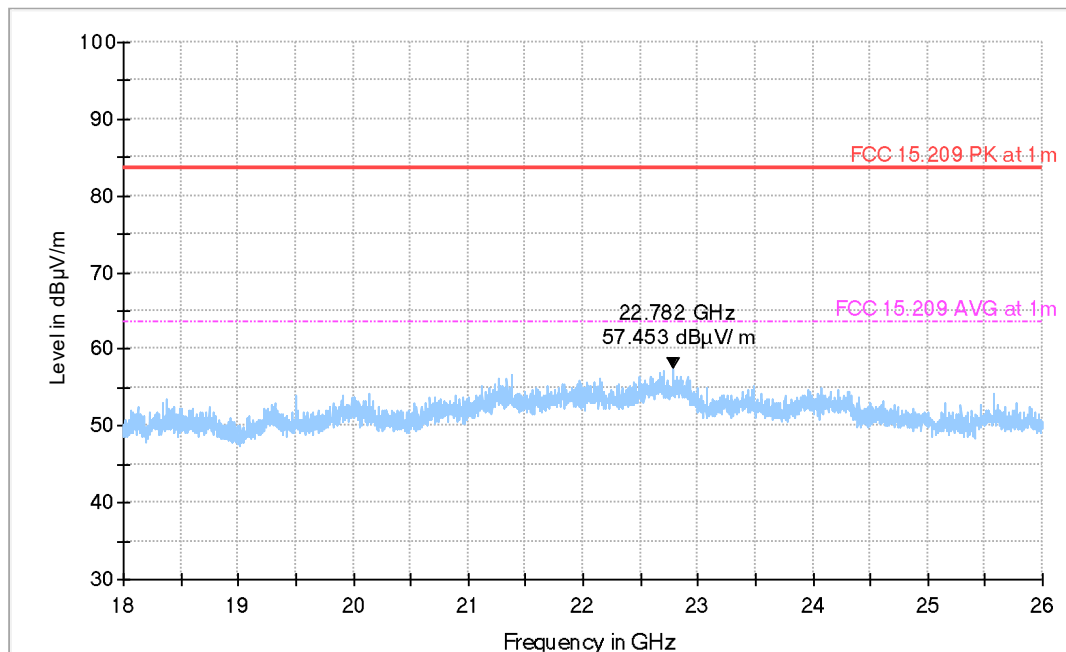
Modulation: 802.11g

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
***	***	***	***	***	***	***	***	***	***	***	***	***	***

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
***	***



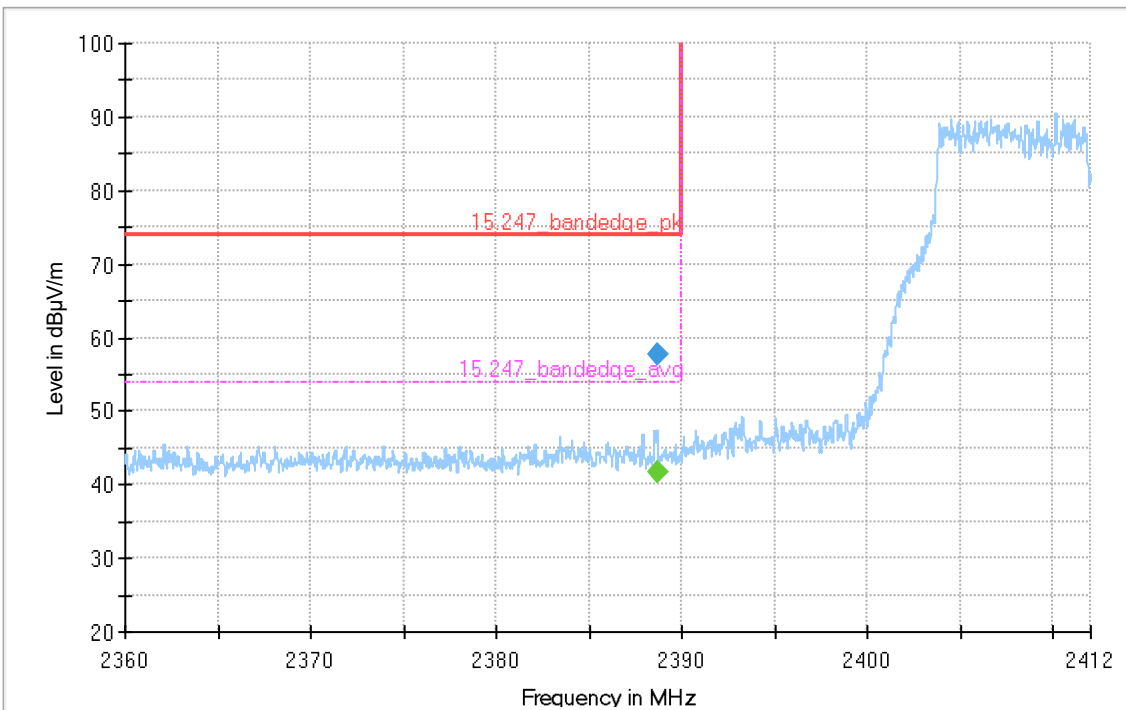
Plot # 16 Lower Bandedge

Tx Frequency: 2412 MHz

Modulation: 802.11g

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin	Meas. Time (ms)	Bandwidth	Height	Pol	Azimuth	Corr. (dB/m)	Comment
2388.64	---	41.66322395	54.00	12.34	500.0	1000.0	100.0	V	111.0	33.5	
2388.64	57.58735725	---	74.00	16.41	500.0	1000.0	100.0	V	111.0	33.5	



◆ Preview Result 1-PK+ Final_Result PK+
 ◆ 15.247_bandedge_pk Final_Result CAV
 ◆ 15.247_bandedge_avg

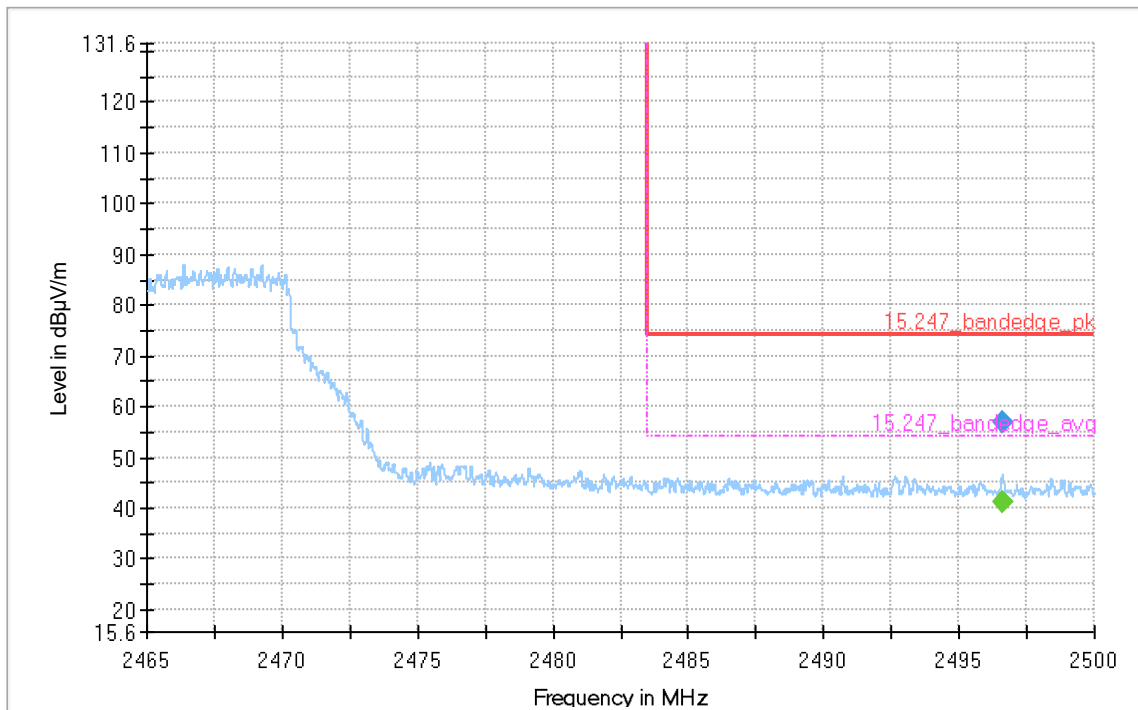
Plot # 17 Upper Bandedge

Tx Frequency: 2462 MHz

Modulation: 802.11g

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin	Meas. Time (ms)	Bandwidth	Height	Pol	Azimuth	Corr. (dB/m)	Comment
2496.61	---	41.02909899	54.00	12.97	500.0	1000.0	151.0	V	62.0	34.0	
2496.61	56.76698351	---	74.00	17.23	500.0	1000.0	151.0	V	62.0	34.0	



◆ Preview Result 1-PK+ Final_Result PK+
 ◆ 15.247_bandedge_pk Final_Result CAV
 ◆ 15.247_bandedge_avg

8.6 AC Power Line Conducted Emissions

8.6.1 Measurement according to ANSI C63.4 (2014)

Analyzer Settings:

- RBW = 9 KHz (CISPR Bandwidth)
- Detector: Peak / Average for Pre-scan
- Quasi-Peak/Average for Final Measurements

8.6.2 Limits: §15.207 & RSS-Gen 8.8

FCC §15.207(a) & RSS-Gen 8.8

- Except as shown in paragraphs (b) and (c) of this section of the CFR, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table (1), as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between frequency ranges.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

*Decreases with the logarithm of the frequency.

8.6.3 Test conditions and setup:

Ambient Temperature ©	EUT Set-Up #	EUT operating mode	Power line (L1, L2, L3, N)	Power Input
22 °C	1	802.11b	Line & Neutral	120VAC to 24VAC

8.6.4 Measurement Result:

Plot #	Port	EUT Set-Up #:	EUT operating mode	Scan Frequency	Limit	Result
1	AC Mains	1	802.11b	150 kHz – 30 MHz	See section 8.6.2	Pass

8.6.5 Measurement Plots:

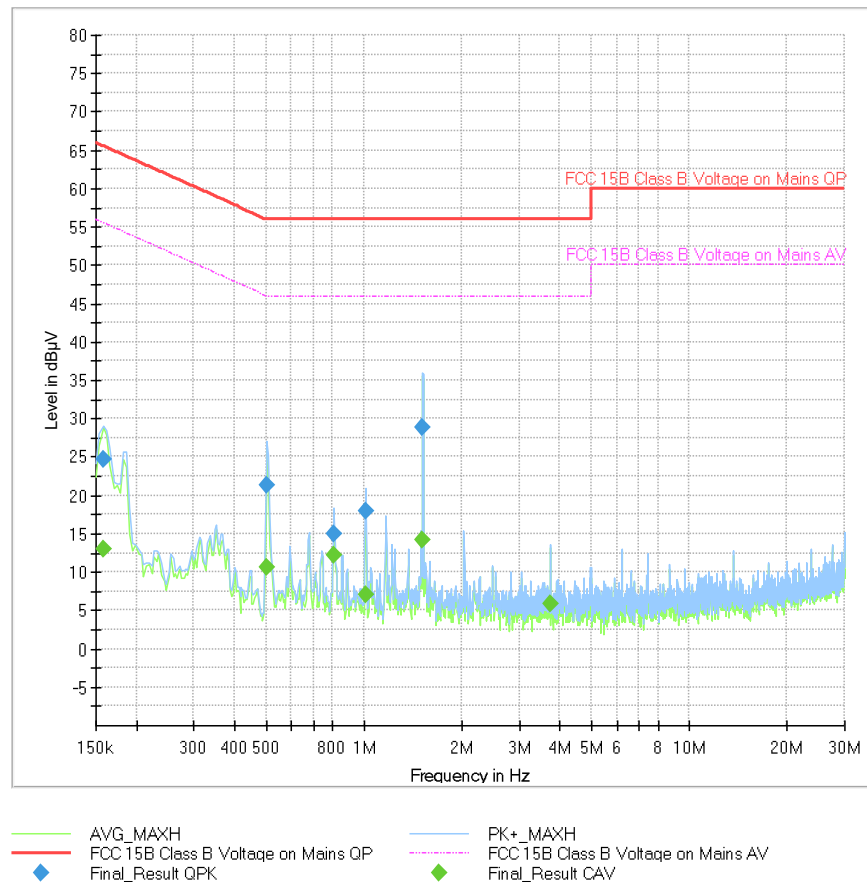
Plot # 1 AC Conducted Emission 150kHz – 30MHz

Tx Frequency: 2412 MHz

Modulation: 802.11g

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin	Meas. Time (ms)	Bandwidth (h)	Line	PE	Corr. (dB)
0.16	---	13.00051276	55.57	42.56	1000.0	9.0	L1	GND	10.1
0.16	24.69304816	---	65.57	40.87	1000.0	9.0	L1	GND	10.1
0.50	21.40815918	---	56.00	34.59	1000.0	9.0	L1	GND	9.9
0.50	---	10.71528809	46.00	35.28	1000.0	9.0	L1	GND	9.9
0.81	15.05600408	---	56.00	40.94	1000.0	9.0	N	GND	9.9
0.81	---	12.19190649	46.00	33.81	1000.0	9.0	N	GND	9.9
1.01	---	7.13799683	46.00	38.86	1000.0	9.0	L1	GND	9.9
1.01	17.93159119	---	56.00	38.07	1000.0	9.0	L1	GND	9.9
1.52	28.85769287	---	56.00	27.14	1000.0	9.0	N	GND	9.9
1.52	---	14.28309265	46.00	31.72	1000.0	9.0	N	GND	9.9
3.73	---	5.86755005	46.00	40.13	1000.0	9.0	L1	GND	9.9



9 Test setup photos

Setup photos are included in supporting file name: "EMC_LENXX_032_26001_FCC_Setup_Photos.pdf"

10 Test Equipment and Ancillaries Used for Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
PASSIVE LOOP ANTENNA	ETS LINDGREN	6512	000164698	3 Years	09/05/2025
BILOG ANTENNA	A.H. SYSTEMS	BiLA2G	569	3 Years	09/08/2025
HORN ANTENNA	EMCO	3115	00035111	3 Years	09/04/2025
HORN ANTENNA	ETS LINDGREN	3117-PA	00167061	3 Years	09/04/2025
HORN ANTENNA	ETS LINDGREN	3116C-PA	00166821	3 Years	09/04/2025
ESW.EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW44	101715	3 Years	12/09/2025
DIGITAL THERMOMETER	Control Company	4410,90080-03	230712972	3 Years	10/18/2023
Signal Analyzer	R&S	FSV40	101022	3 Years	09/30/2025
Multimeter	Fluke	115	56090717MV	3 Years	09/25/2025
Software	EMC32	Version 10.50.40	-	-	-
TEST RECEIVER	R&S	ESW44	103143	2 Years	09/12/2024
PULSE LIMITER	R&S	ESH3-Z2	102473	3 Years	09/08/2025
LISN	FCC	FCC-LISN-50-25-2-08	08014	2 Years	09/08/2025
Multimeter	Fluke	115	56090717MV	3 Years	09/25/2025
Software	EMC32	Version 11.40.00	-	-	-

Note: Equipment used meets the measurement uncertainty requirements as required per applicable standards for 95% confidence levels. Calibration due dates, unless defined specifically, falls on the last day of the month. Items indicated "N/A" for cal status either do not specifically require calibration or is internally characterized before use.

11 History

Date	Report Name	Changes to report	Prepared by
2026-03-11	EMC_LENXX_032_26001_15_247_WIFI_DTS	Initial Version	Cheng Song
2026-03-12	EMC_LENXX_032_26001_15_247_WIFI_DTS_Rev1	Updated HVIN	Cheng Song

<<< The End >>>