

EMC Test Report

Project Number: 4272209

Report Number: 4272209EMC01

Revision Level: 1

Client: Curiouser Products Inc

Equipment Under Test: Smart Mirror

Model: M1R0

FCC ID: 2AOSD-RLSYM1R0

IC ID: 23685- RLSY

Applicable Standards: ANSI C63.10: 2013 (FCC Part 15 Subpart C, § 15.247)

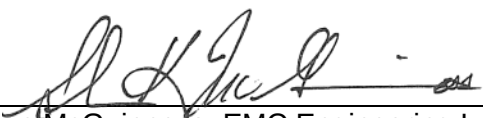
RSS-247, Issue 2

RSS-GEN Issue 4

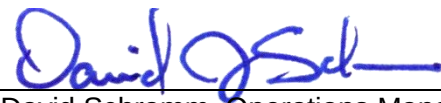
Report issued on: 3 August 2018

Test Result: Compliant

Tested by:


Shawn McGuinness, EMC Engineering Leader

Reviewed by:


David Schramm, Operations Manager

Remarks: This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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Table of Contents

1	SUMMARY OF TEST RESULTS.....	4
1.1	MODIFICATIONS REQUIRED FOR COMPLIANCE	4
2	GENERAL INFORMATION.....	5
2.1	CLIENT INFORMATION	5
2.2	TEST LABORATORY	5
2.3	GENERAL INFORMATION OF EUT	5
2.4	OPERATING MODES AND CONDITIONS	5
2.5	EUT CONNECTION BLOCK DIAGRAM – CONDUCTED MEASUREMENTS.....	6
2.6	EUT CONNECTION BLOCK DIAGRAM – RADIATED MEASUREMENTS	6
2.7	SYSTEM CONFIGURATIONS	7
3	BANDWIDTH	8
3.1	TEST RESULT.....	8
3.2	TEST METHOD.....	8
3.3	TEST SITE	8
3.4	TEST EQUIPMENT	8
3.5	TEST DATA.....	8
4	OUTPUT POWER	10
4.1	TEST RESULT.....	10
4.2	TEST METHOD.....	10
4.3	TEST SITE	10
4.4	TEST EQUIPMENT	10
4.5	TEST DATA.....	11
5	POWER SPECTRAL DENSITY	12
5.1	TEST RESULT.....	12
5.2	TEST METHOD.....	12
5.3	TEST SITE	12
5.4	TEST EQUIPMENT	12
5.5	TEST DATA.....	12
6	CONDUCTED SPURIOUS EMISSIONS	14
6.1	TEST RESULT.....	14
6.2	TEST METHOD.....	14
6.3	TEST SITE	14
6.4	TEST EQUIPMENT	14
6.5	TEST DATA – DTS BANDEDGE	15
6.6	TEST DATA – CONDUCTED SPURIOUS EMISSIONS	18
7	FIELD STRENGTH OF SPURIOUS RADIATION.....	20
7.1	TEST RESULT.....	20
7.2	TEST METHOD.....	20
7.3	TEST SITE	20
7.4	TEST EQUIPMENT	21
7.5	PEAK PLOTS	22
7.6	TABULAR DATA	34
8	RADIATED EMISSIONS AT BAND EDGE / RESTRICTED BAND	35
8.1	TEST RESULT.....	35
8.2	TEST SITE	35
8.3	TEST EQUIPMENT	35

8.4	TEST DATA – BAND EDGE	36
9	CONDUCTED EMISSIONS	39
9.1	TEST RESULT.....	39
9.2	TEST METHOD.....	39
9.3	TEST SITE	39
9.4	TEST EQUIPMENT	39
9.5	TEST DATA.....	40
10	REVISION HISTORY	42

1 Summary of Test Results

Test Description	Test Specification		Test Result
Bandwidth	15.247(d)	RSS-247 S5.2 (1) RSS-GEN S6.6	Compliant
Transmitter Output Power	15.247(b)(3)	RSS-247 S5.4 (4)	Compliant
Power Spectral Density	15.247(e)	RSS-247 S5.2 (2)	Compliant
Conducted Spurious Emissions / Band edge	15.247(d)	RSS-247 S5.5	Compliant
Radiated Spurious Emissions / Restricted Bands	15.35(b),15.209	RSS-GEN S6.13 RSS-GEN S8.10	Compliant
Antenna Requirement	15.203	RSS-GEN S8.3	Compliant (1)
AC Powerline Conducted Emission	15.107, 15.207	RSS-GEN S8.8	Compliant

1) Internal PCB trace antenna

1.1 Modifications Required for Compliance

None

2 General Information

2.1 Client Information

Name: Curiouser Products Inc
Address: 524 Broadway 11th Floor
City, State, Zip, Country: New York, NY 10013, USA

2.2 Test Laboratory

Name: SGS North America, Inc.
Address: 620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 3212.01

2.3 General Information of EUT

Type of Product: Smart Mirror
Model Number: 1
Serial Number: M1R010050

Frequency Range: 2400-2483.5MHz
Data Modes: 802.11b, 802.11g, 802.11n (HT20)
Antenna: Internal, PCB – Molex, P/N: 146153-0100, 3.0dB Gain.

Rated Voltage: 120Vac, 60Hz
Test Voltage: 120Vac, 60Hz

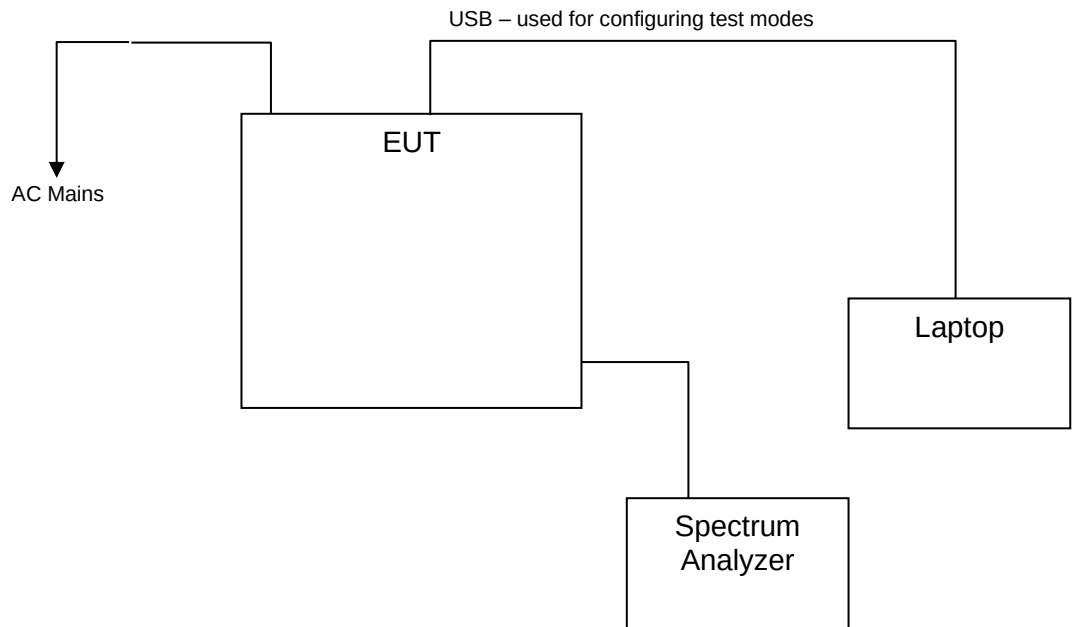
Sample Received Date: 20 February 2018
Dates of testing: 20 February – 06 June 2018

2.4 Operating Modes and Conditions

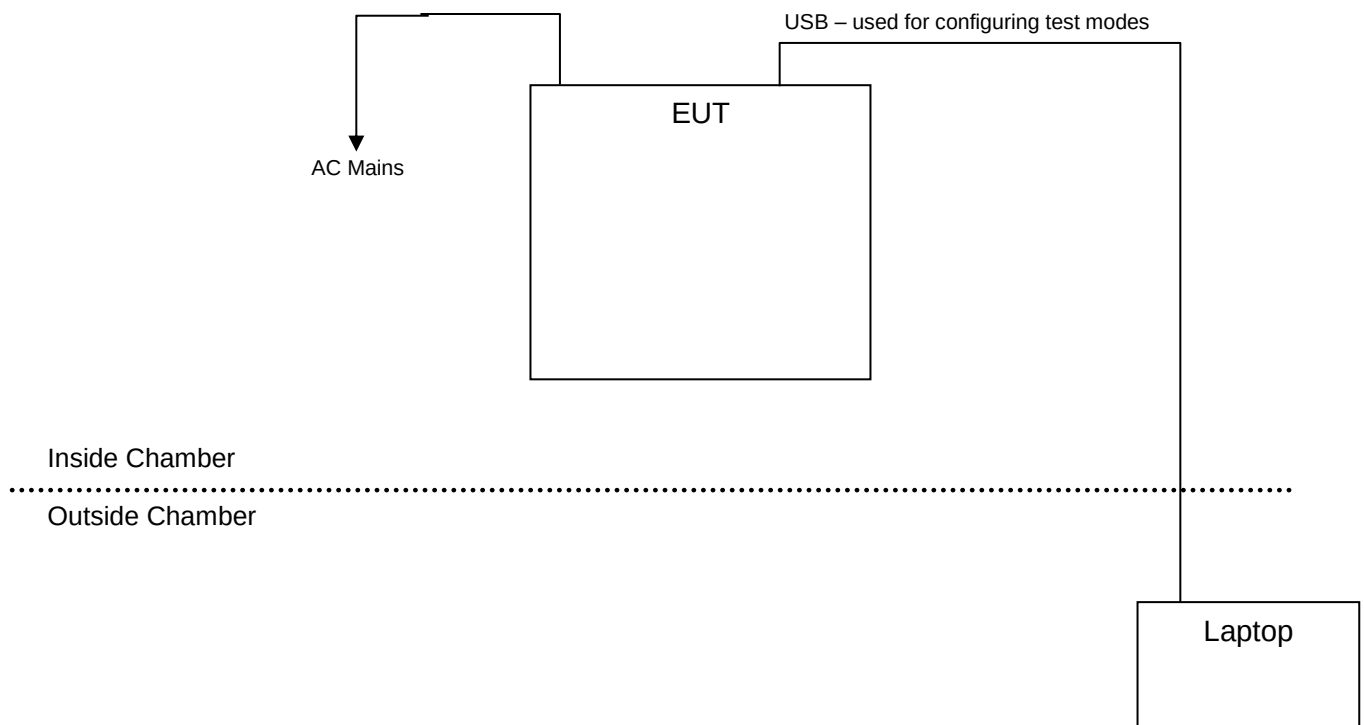
For spurious emissions measurements, only the worst-case mode with respect to peak power was investigated: 802.11b, 1Mbps. Investigations covered the low, middle, and high channels in the 2400-2483.5MHz band.

Continuous traffic was generated using test commands. Where the duty cycle measured below 99% and an RMS detector was employed, corrections of $10 \cdot \log(1/D)$ were applied per KDB publication 558074 D01 DTS Meas Guidance v04.

2.5 EUT Connection Block Diagram – Conducted Measurements



2.6 EUT Connection Block Diagram – Radiated Measurements



2.7 System Configurations

Device reference	Manufacturer	Description	Model Number	Serial Number
A	Curiouser Products Inc	Smart Mirror	M1R0	M1R010050
B	HP	Notebook	15-1233wm	5CD6415H9V

3 Bandwidth

3.1 Test Result

Test Description	Test Specification		Test Result
6 dB bandwidth / 99% OBW	15.247(d)	RSS-247 S5.2 (1) RSS-GEN S6.6	Compliant

3.2 Test Method

The procedures from ANSI C63.10: 2013 clause 11.8 and 558074 D01 DTS Meas Guidance v04 were used to determine the 6 dB bandwidth and 99% OBW.

3.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 22.8 °C
 Relative Humidity: 38.5 %

3.4 Test Equipment

Test End Date: 20-Feb-2018

Tester: JOP

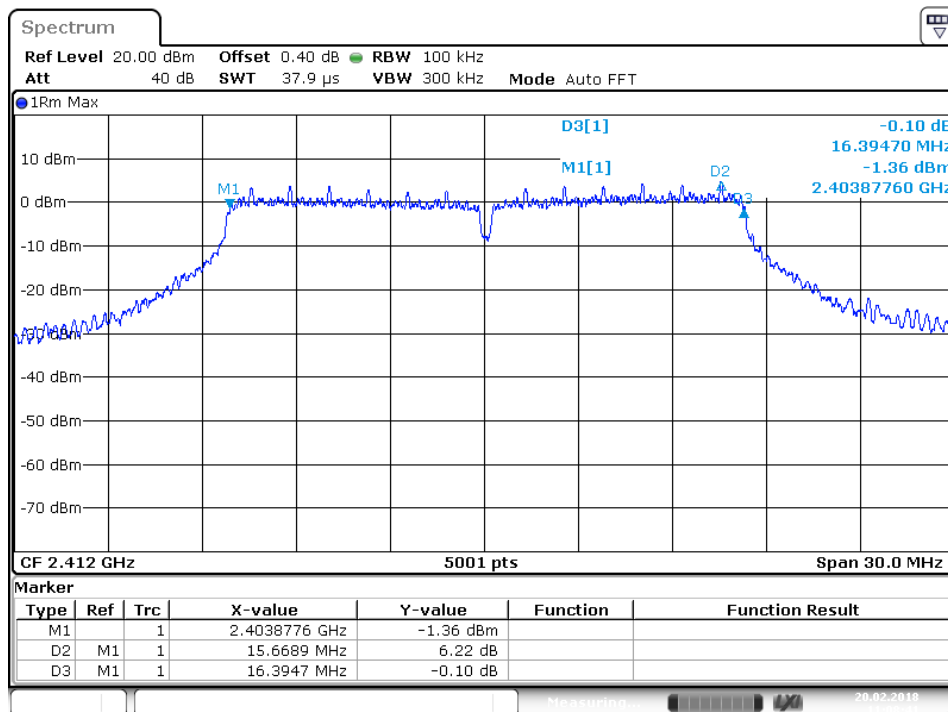
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
SPCTRUM ANALYZER	FSV30	ROHDE & SCHWARZ	S/N: 103106	24-Jul-2018
RF CABLE	SF102	HUBER & SUHNER	B079823	26-Jul-2018

Note: The equipment calibration period is 1 year.

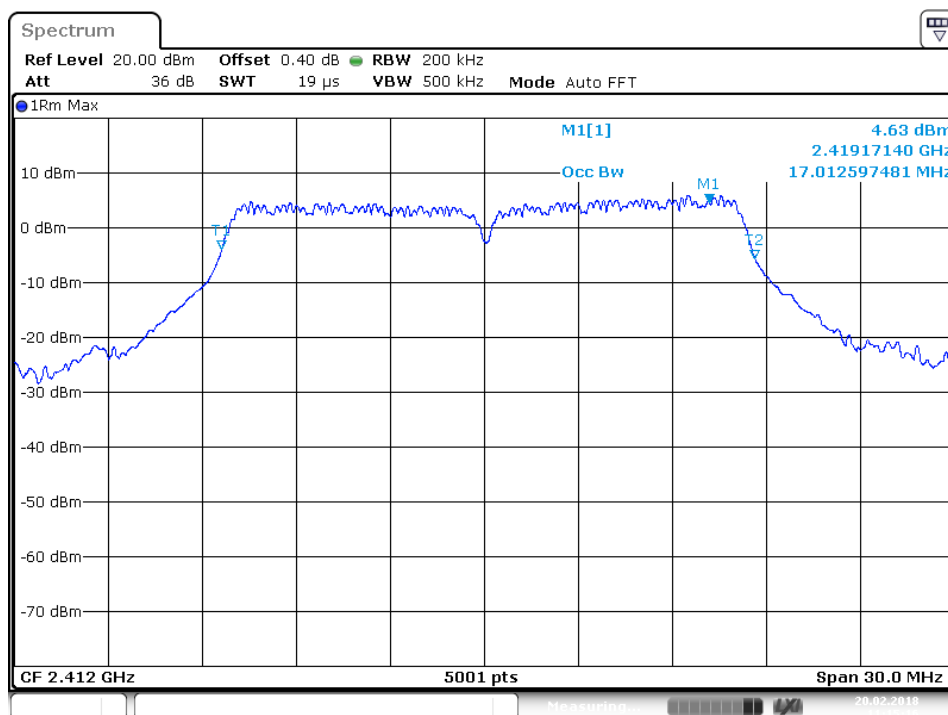
3.5 Test Data

Protocol	Channel	6dB Bandwidth (MHz)	Occupied Bandwidth (99%) (MHz)
802.11b	1	9.055	13.358
802.11b	6	9.095	13.244
802.11b	11	10.472	12.919
802.11g	1	16.395	17.013
802.11g	6	15.742	16.687
802.11g	11	16.317	16.492
802.11n (HT20)	1	17.583	18.101
802.11n (HT20)	6	17.866	18.036
802.11n (HT20)	11	17.541	17.781

Sample Plots



Date: 20.FEB.2018 11:08:41



Date: 20.FEB.2018 11:15:17

4 Output Power

4.1 Test Result

Test Description	Test Specification		Test Result
Peak Output Power	15.247(b) (3)	RSS-247 S5.4 (4)	Compliant

4.2 Test Method

Fundamental power measurements were recorded using the peak power procedures from ANSI C63.10: 2013 clause 11.9 and KDB 558074 D01 Measurement Guidance v04. The lowest data rate for each modulation was found to be the worst-case.

Limit

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. For using antennas with greater than 6dBi of gain, the limit is reduced in dB by the amount the gain exceeds 6dBi (e.g. for a 7.4dBi antenna, the limit is reduced from 30dBm to 28.6dBm)

4.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 24.0 °C
 Relative Humidity: 42.0 %

4.4 Test Equipment

Test End Date: 5-Mar-2018

Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
RF CABLE	SF102	HUBER & SUHNER	B079822	25-Jul-2019
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	1-Nov-2019
Switch platform with integrated power sensors	OPS120	ROHDE & SCHWARZ	15039	15-Dec-2019

Calibration interval is 1 year except for the FSV which is on a two-year cycle.

4.5 Test Data

Modulation	Channel	AVG Power (dBm)	Limit (dBm)	Margin (dB)
802.11b	1	16.9	30	-13.1
802.11b	6	16.2	30	-13.8
802.11b	11	16.6	30	-13.4
802.11g	1	15.8	30	-14.2
802.11g	6	15.3	30	-14.7
802.11g	11	15.2	30	-14.8
802.11n	1	16.0	30	-14
802.11n	6	15.4	30	-14.6
802.11n	11	13.0	30	-17

5 Power Spectral Density

5.1 Test Result

Test Description	Test Specification		Test Result
Power Spectral Density	15.247(e)	RSS-247 S5.2 (2)	Compliant

5.2 Test Method

Fundamental power measurements were recorded using the average PSD procedures from ANSI C63.10: 2013 clause 11.10 and KDB 558074 D01 Measurement Guidance v04. The lowest data rate for each modulation was determined to be the worst-case.

Limit

The limit is 8 dBm.

5.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 24.0 °C
Relative Humidity: 42.0 %

5.4 Test Equipment

Test End Date: 5-Mar-2018

Tester: JOP

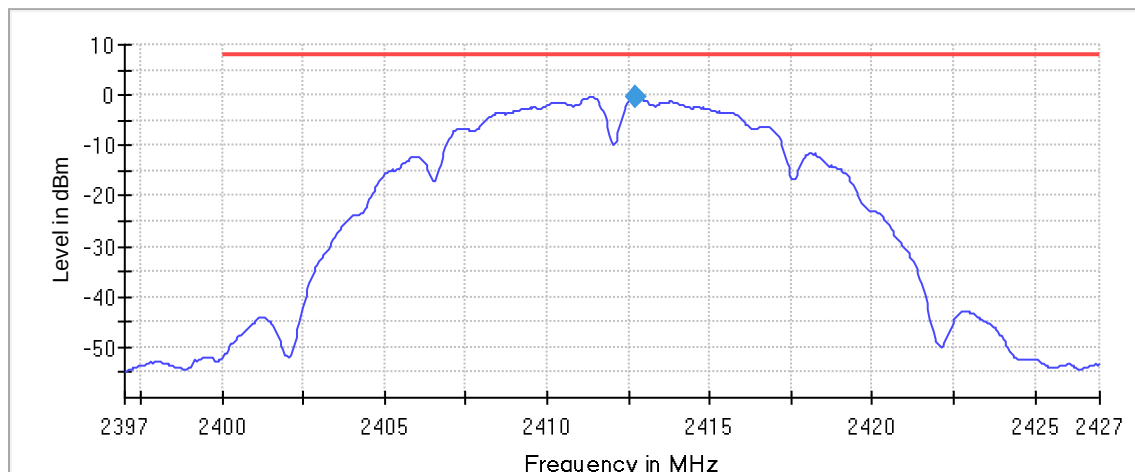
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
RF CABLE	SF102	HUBER & SUHNER	B079822	27-Jul-2018
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	1-Nov-2019
OPEN SWITCH AND CONTROL UNIT	OSP 120	ROHDE & SCHWARZ	S/N: 101182	CNR

Calibration interval is 1 year except for the FSV which is on a two-year cycle.

5.5 Test Data

Modulation	Channel	AVG Power (dBm)	Limit (dBm)	Margin (dB)
802.11b	1	-0.27	8	-8.68
802.11b	6	-0.68	8	-8.34
802.11b	11	-0.34	8	-12.34
802.11g	1	-4.34	8	-11.7
802.11g	6	-3.70	8	-13.09
802.11g	11	-5.09	8	-12.4
802.11n	1	-4.40	8	-11.98
802.11n	6	-3.98	8	-15.66
802.11n	11	-7.66	8	-8.68

Representative Graph



— Limit — Sum Level ◆ PSD

System Settings

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	600	~ 600
SweepTime	3.000 s	3.000 s
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.38 dB	0.50 dB

6 Conducted Spurious Emissions

6.1 Test Result

Test Description	Test Specification		Test Result
Conducted Spurious Emissions	15.247(d)	RSS-247 S5.5	Compliant

6.2 Test Method

Spurious emissions in non-restricted frequency bands were recorded using the methods defined in ANSI C63.10: 2013 clause 11.11 and KDB 558074 D01 Measurement Guidance v04.

Lowest, middle, and highest channels were investigated. Only the worst-case (lowest data rate) for each modulation was reported.

Because the average conducted output power was used to determine compliance with the output power limits, the limit is 30 dB below the maximum in-band peak PSD level in 100 kHz.

6.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 24.0 °C
 Relative Humidity: 42.0 %

6.4 Test Equipment

Test End Date: 5-Mar-2018

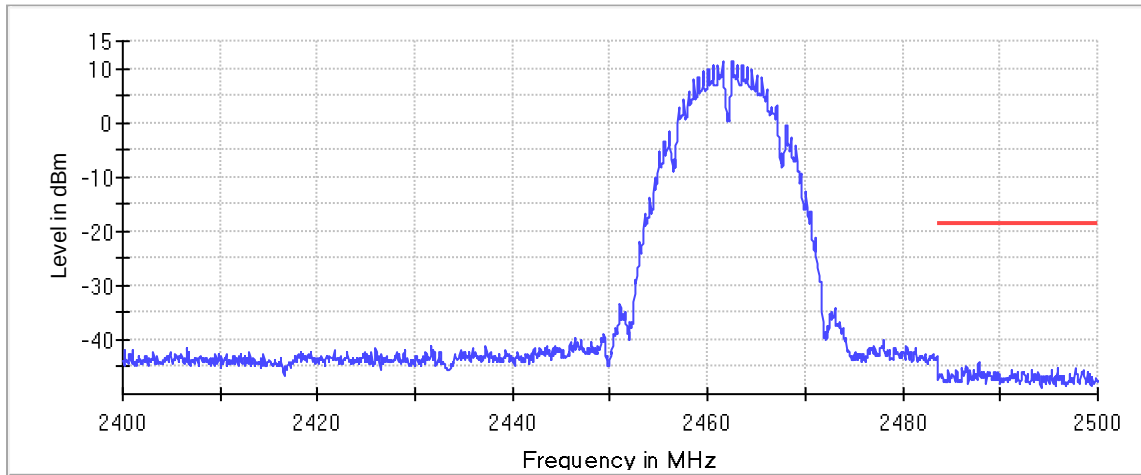
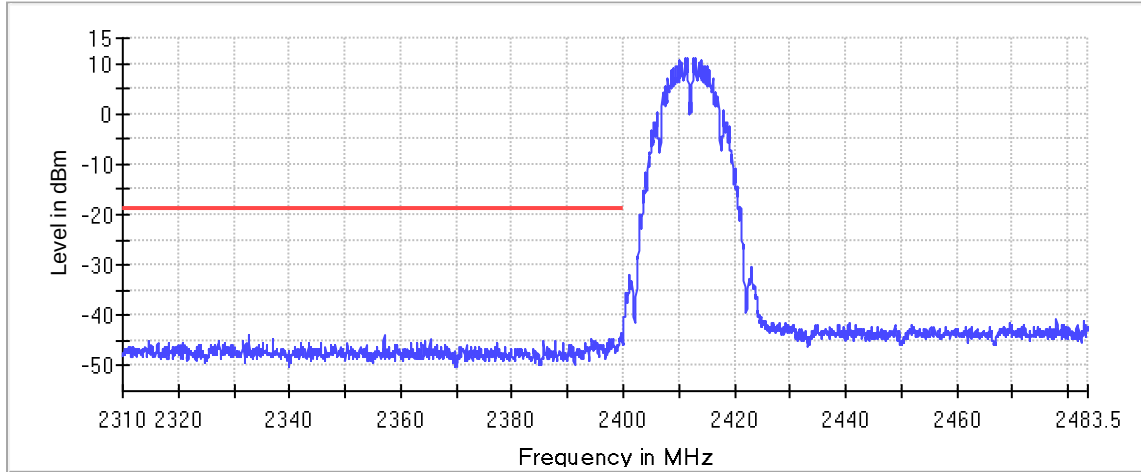
Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
RF CABLE	SF102	HUBER & SUHNER	B079822	27-Jul-2018
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	1-Nov-2019
OPEN SWITCH AND CONTROL UNIT	OSP 120	ROHDE & SCHWARZ	S/N: 101182	CNR

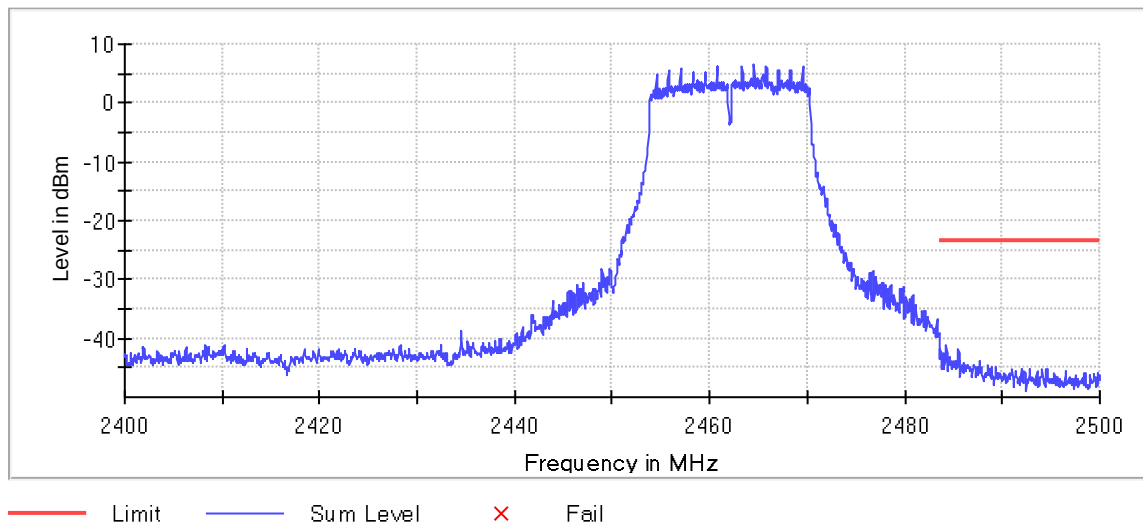
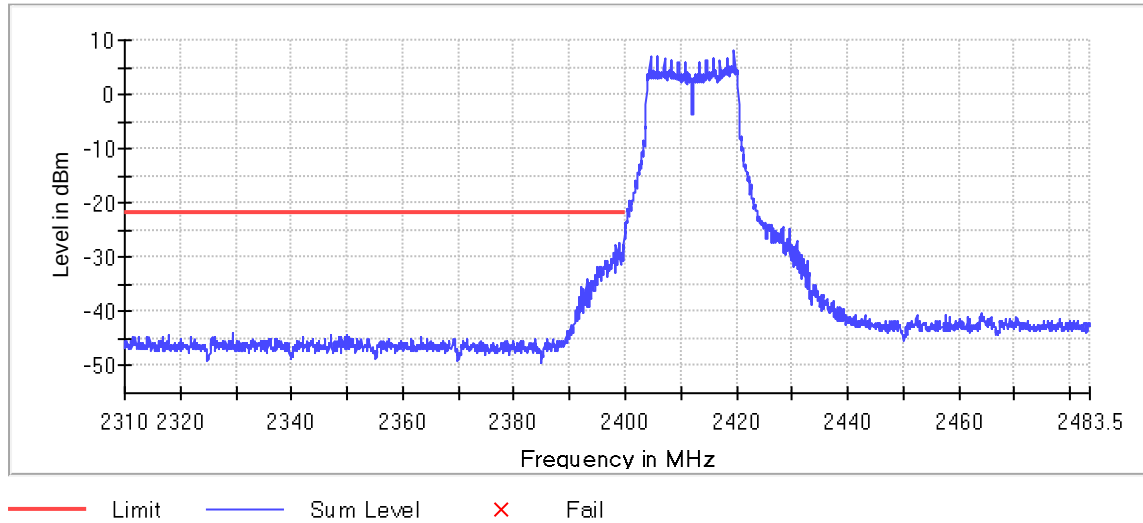
Calibration interval is 1 year except for the FSV which is on a two-year cycle.

6.5 Test Data – DTS Bandedge

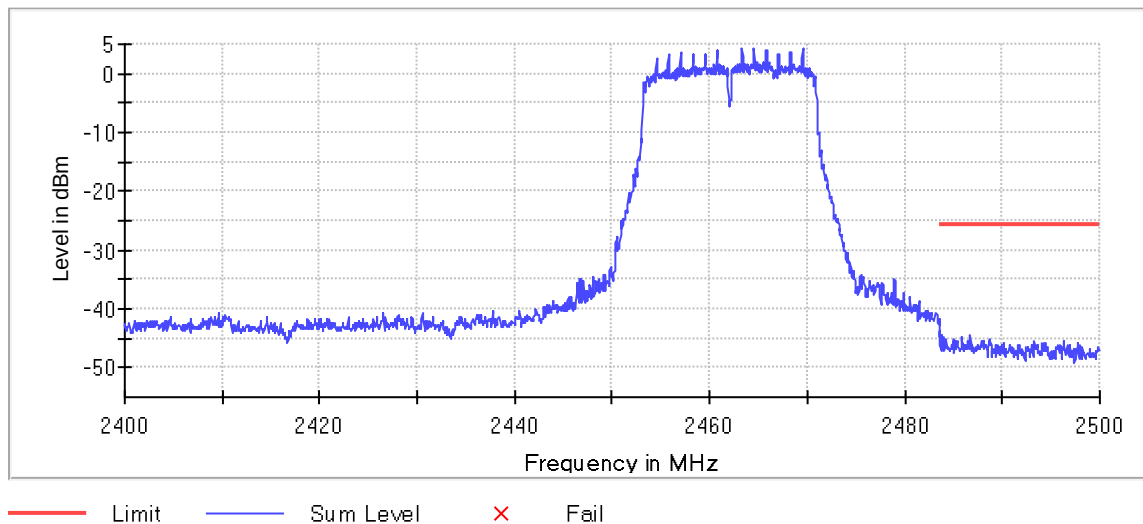
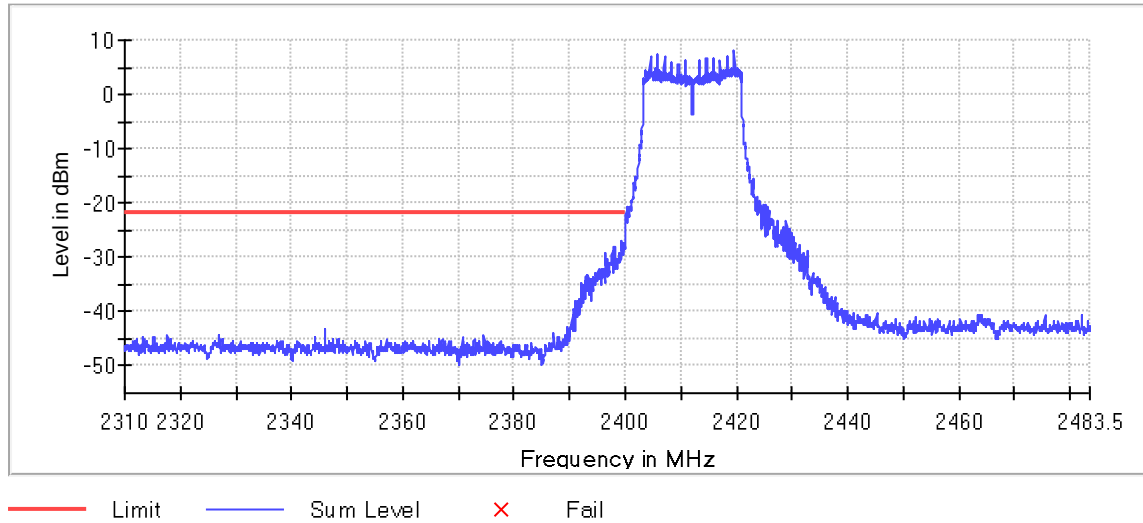
802.11b / 1Mbps
 Lower band edge / Upper band edge
 Channel 1 / Channel 11



802.11g / 6Mbps
 Lower band edge / Upper band edge
 Channel 1 / Channel 11

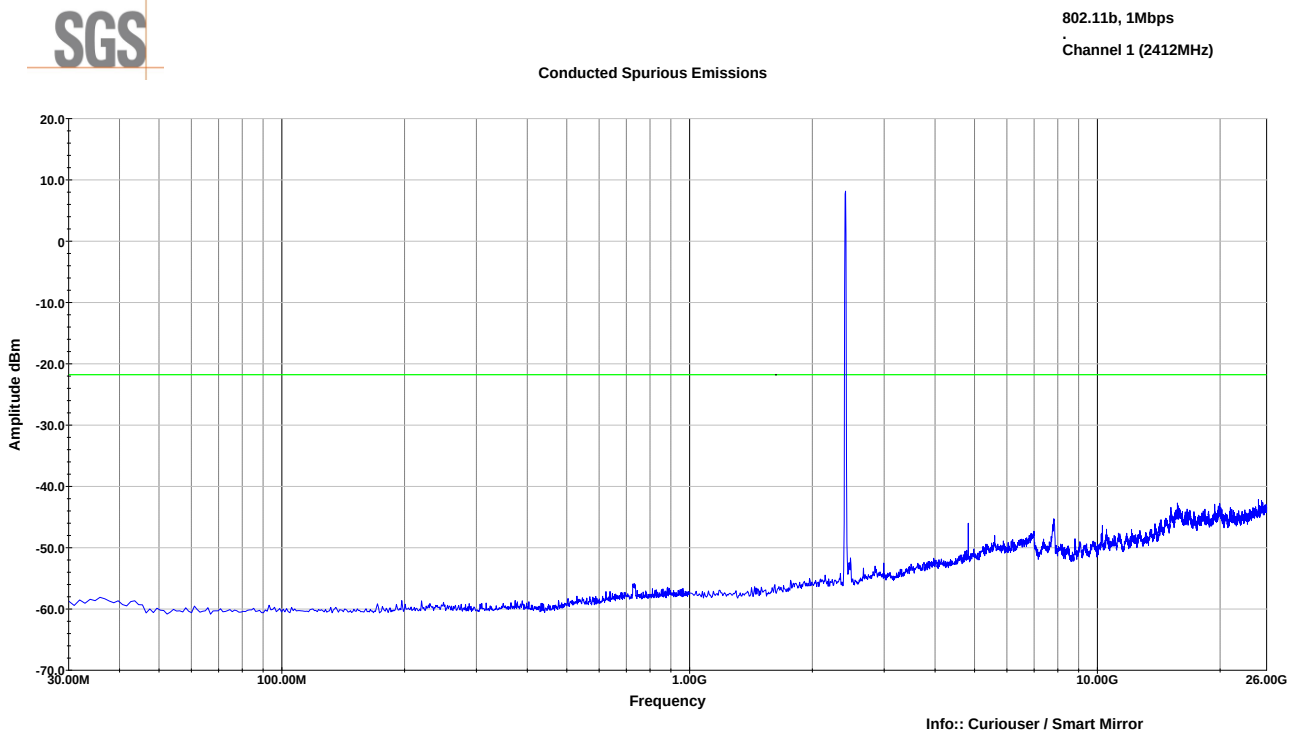


802.11n (HT20) / MCS0
 Lower band edge / Upper band edge
 Channel 1 / Channel 11

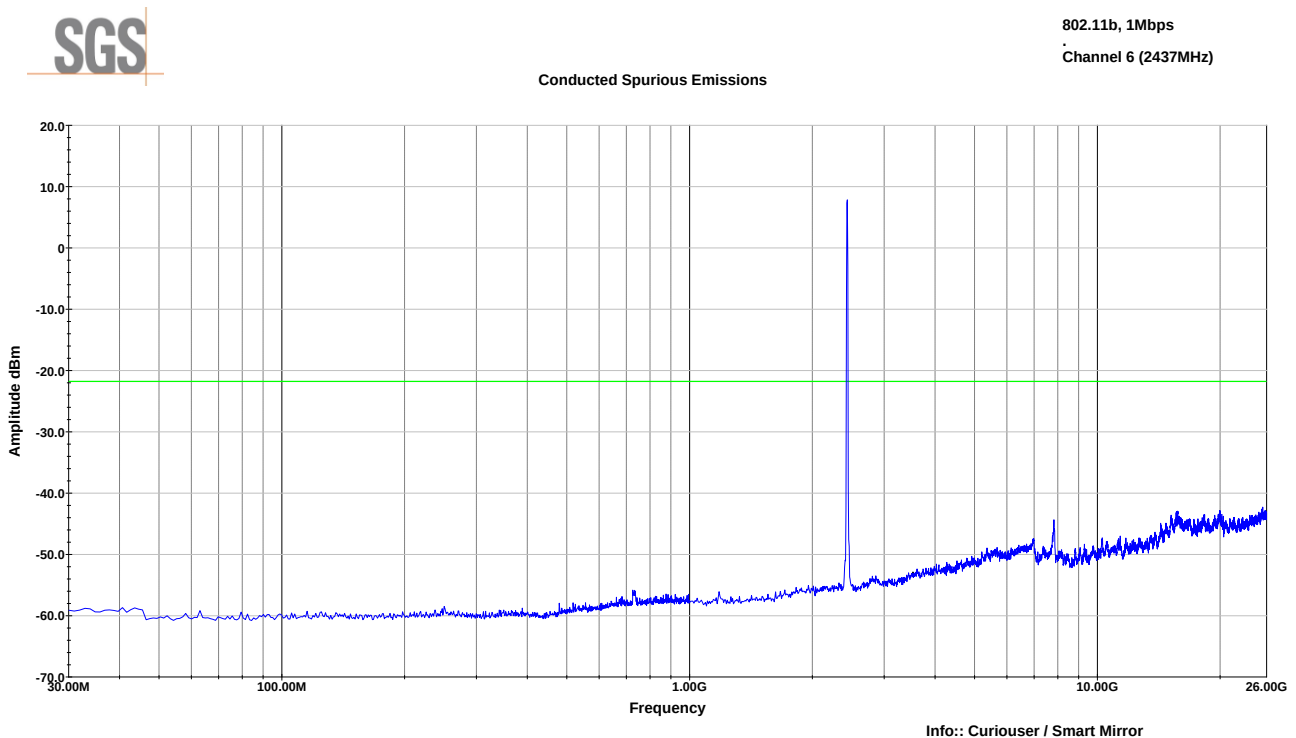


6.6 Test Data – Conducted Spurious Emissions

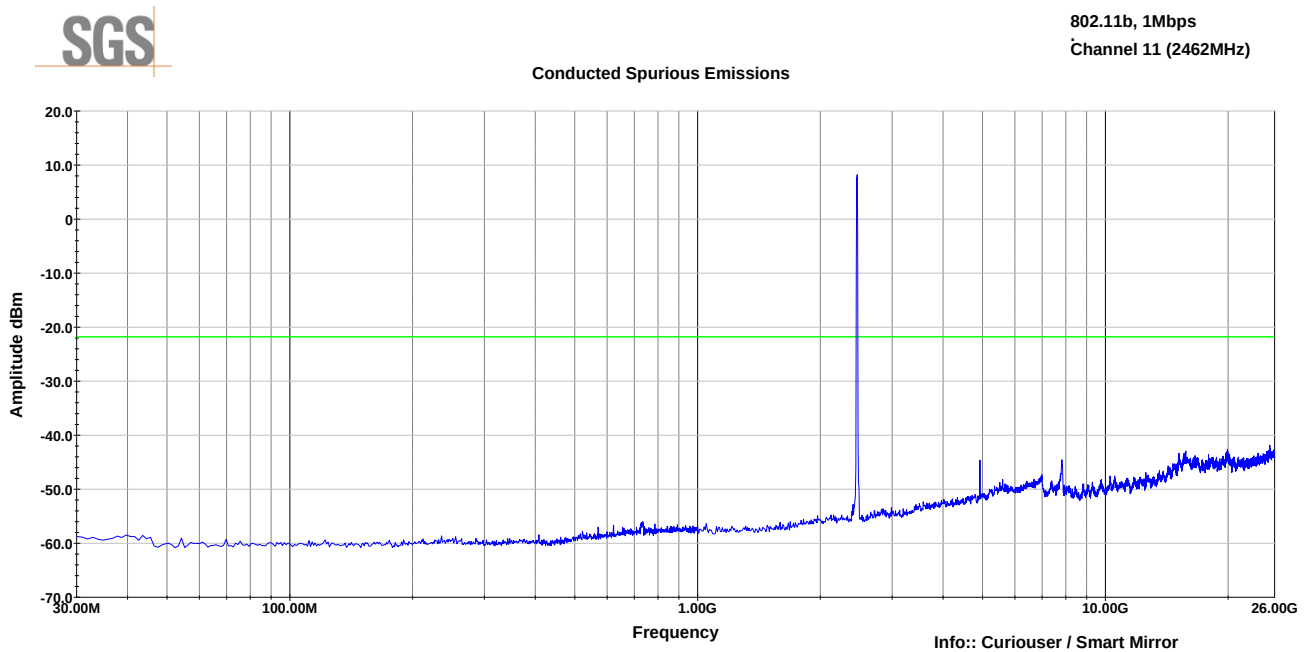
Conducted Spurs –Channel 1



Conducted Spurs –Channel 6



Conducted Spurs –Channel 11



7 Field Strength of Spurious Radiation

7.1 Test Result

Test Description	Test Specification		Test Result
Spurious Emissions	15.247 (d) and 15.209	RSS-247 S5.5	Compliant

7.2 Test Method

Radiated spurious emissions measurements were recorded with the device configured to transmit at the lowest, middle, and highest channels. The frequency range investigated was up through the 10th harmonic of the fundamental transmit frequency. The methods defined in ANSI C63.10: 2013 were used.

Lowest, middle, and highest channels were investigated. Only the worst-case (802.11b, 1Mbps) was reported except at the restricted band edges where all three modulations were measured.

Test distance:

- 9k to 30 MHz – Near field prescan to determine if there were any emissions.
- 30 to 1000 MHz - The EUT to measurement antenna distance was 3 meters
- 1 to 18 GHz - The EUT to measurement antenna distance was 3 meters
- 18 to 26 GHz - The EUT to measurement antenna distance was 1 meter

Limits within restricted bands of operation:

Frequency	Limits ⁽¹⁾		Peak Limits dBuV/m
	Microvolts/m	dBuV/m	
30 - 88 MHz	100	40 ⁽²⁾	--
88 - 216 MHz	150	43.5 ⁽²⁾	--
216 - 960 MHz	200	46 ⁽²⁾	--
960 - 1000 MHz	500	54 ⁽²⁾	--
1 - 40 GHz	500	54 ⁽³⁾	74

(1) These limits are applicable to emissions outside of the intentional transmit frequency band.

(2) Quasi-peak limit

(3) Average limit

7.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 24.0 °C
 Relative Humidity: 42.0 %

7.4 Test Equipment

Test End Date: 6-Mar-2018

Tester: JOP

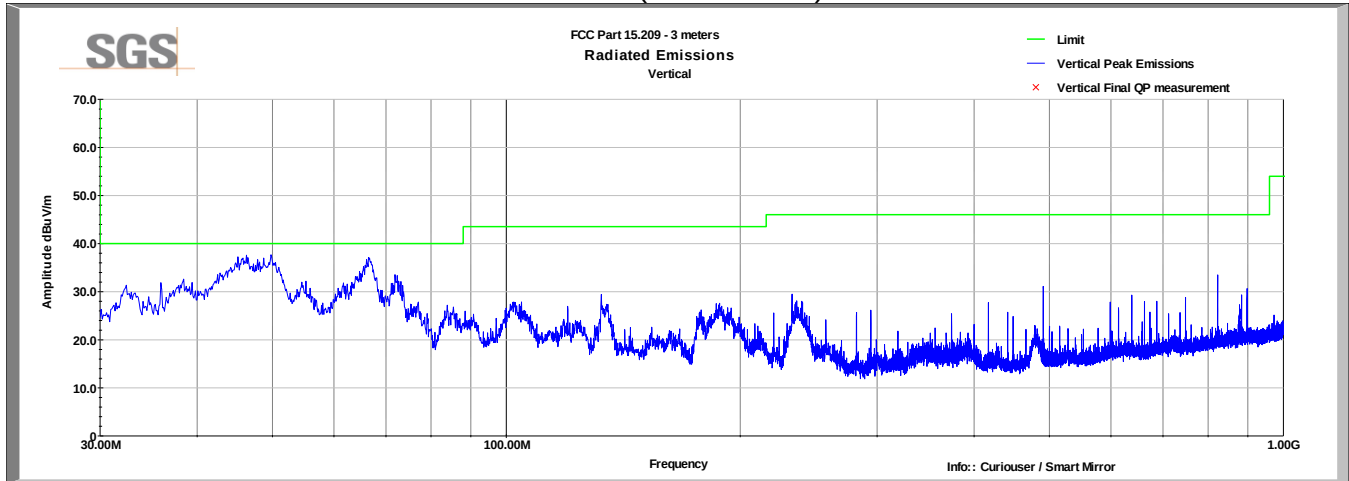
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	25-Apr-2018
EMI TEST RECEIVER	ESU8	ROHDE & SCHWARZ	B085759	25-Jul-2018
ANTENNA, BILOG	JB6	SUNOL	B079690	29-Nov-2018
RF CABLE	SF106	HUBER & SUHNER	B079661	25-Jul-2018
RF CABLE	SF106	HUBER & SUHNER	B079713	24-Jul-2018
RF CABLE	UC-N-MM-78	MAURY MICROWAVE	17017	25-Jul-2018
RF CABLE	SUCOFLEX 100	HUBER & SUHNER	B108523	24-Jul-2018
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	6-Mar-2019
ANTENNA, DRG HORN (MEDIUM)	3117	ETS LINDGREN	B079691	27-Jul-2018
RF CABLE	SF106	HUBER & SUHNER	B079712	24-Jul-2018
RF CABLE	104PE	HUBER & SUHNER	B079793	24-Jul-2018
FILTER, HIGH PASS (>2800MHZ)	HPM50111	MICRO-TRONICS	B085747	27-Jul-2018
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	15003	28-Jul-2018
HORN(SMALL)	LB-180400-20-C-KF	A-INFO	15007	21-Mar-2018
RF CABLE	SF102	HUBER & SUHNER	B079822	27-Jul-2018
RF CABLE	SF102	HUBER & SUHNER	B079824	26-Jul-2018
LOW NOISE AMPLIFIER	NSP1840-HG	MITEQ	B087572	28-Jul-2018
ANTENNA, LOOP, ACTIVE	6502	ETS LINDGREN	B085752	22-Aug-2018

Note: The equipment calibration period is 1 year.

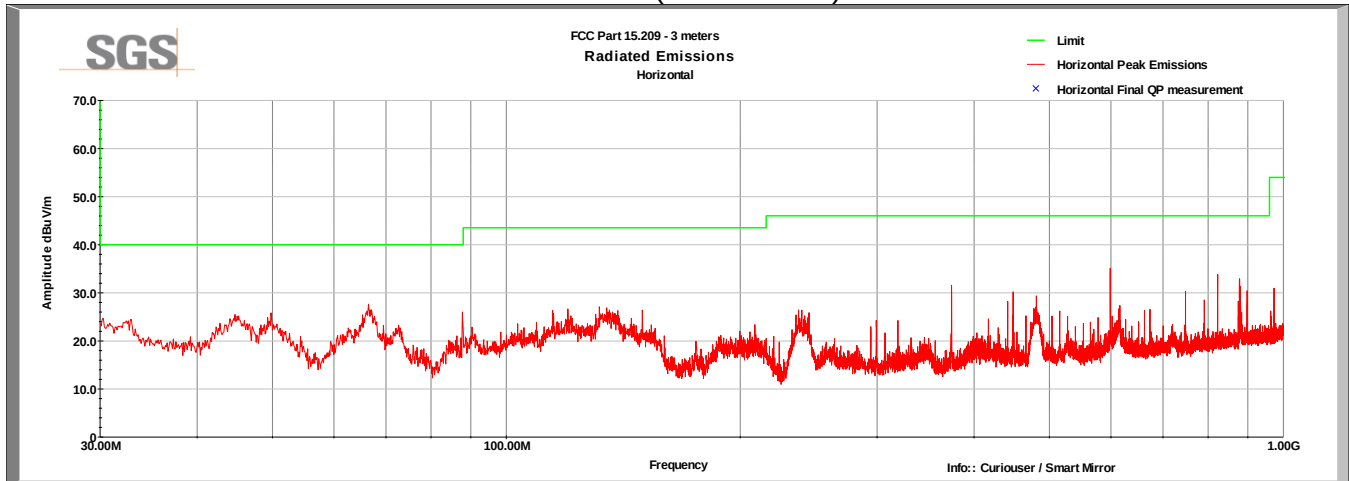
7.5 Peak Plots

No emissions were detected in the range 9kHz to 30MHz.

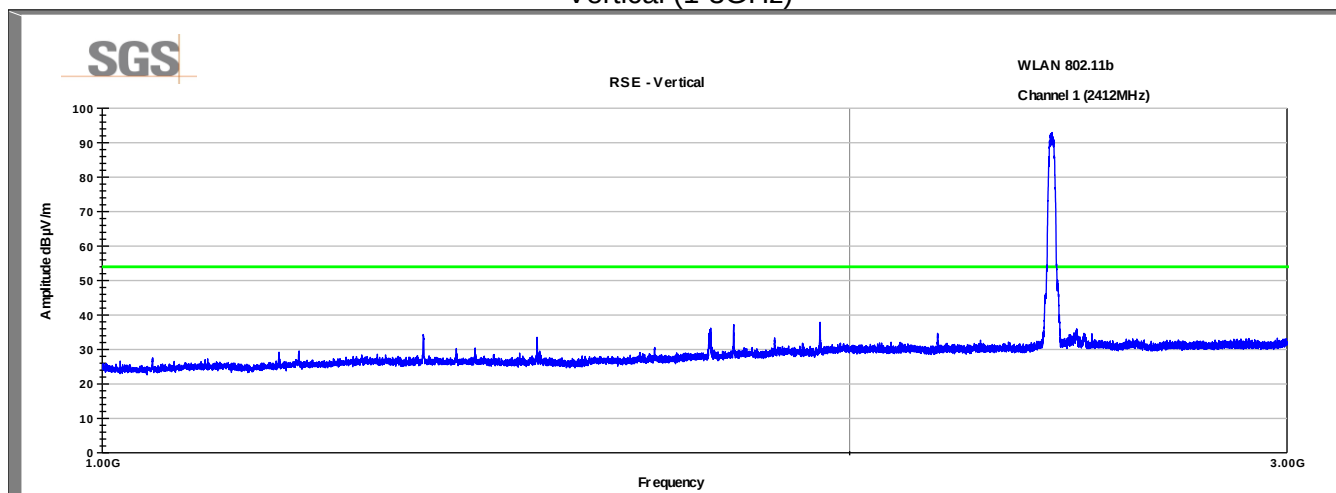
Channel 1
 Vertical (30-1000MHz)



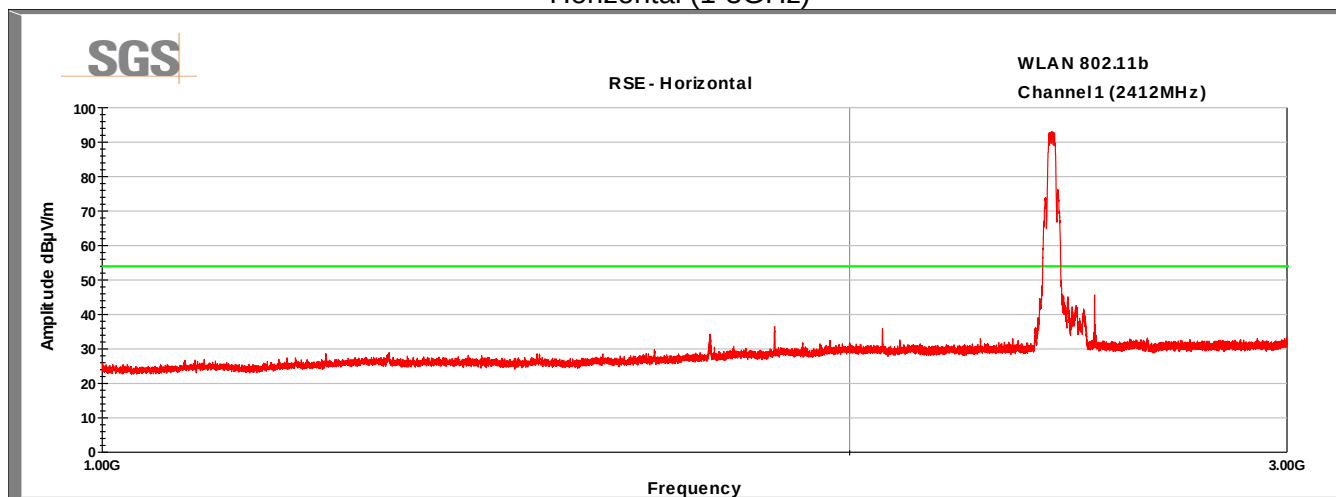
Horizontal (30-1000MHz)



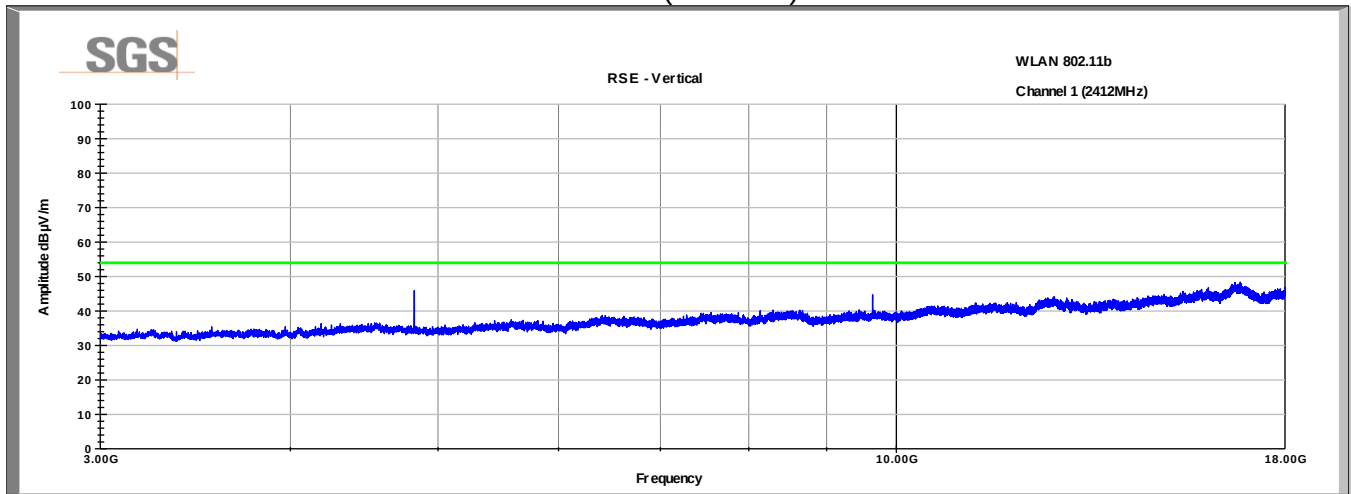
Channel 1 Vertical (1-3GHz)



Horizontal (1-3GHz)

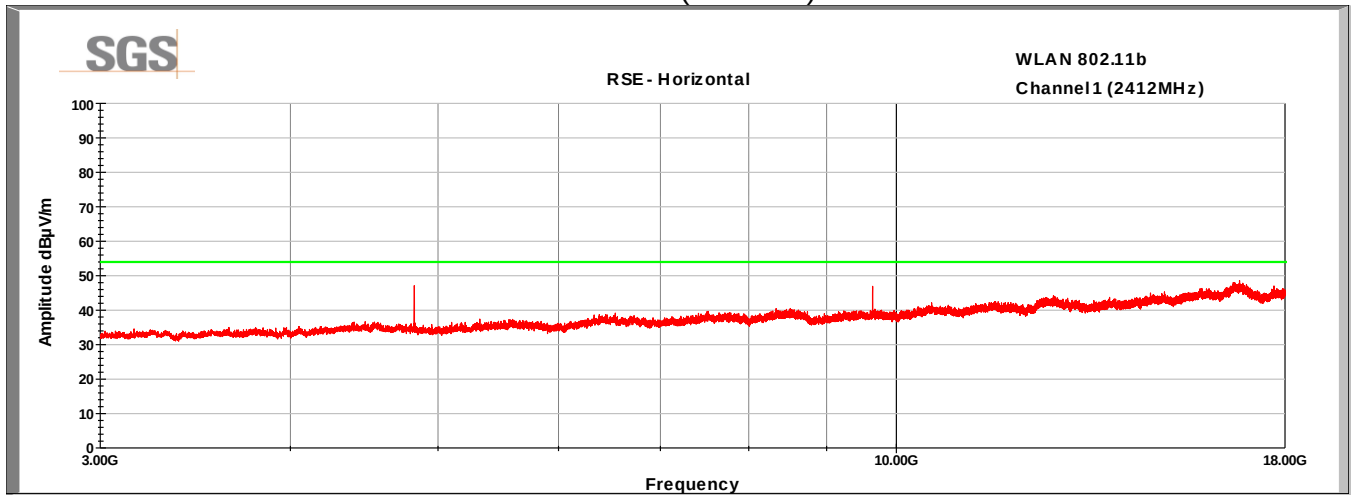


Channel 1 Vertical (3-18GHz)



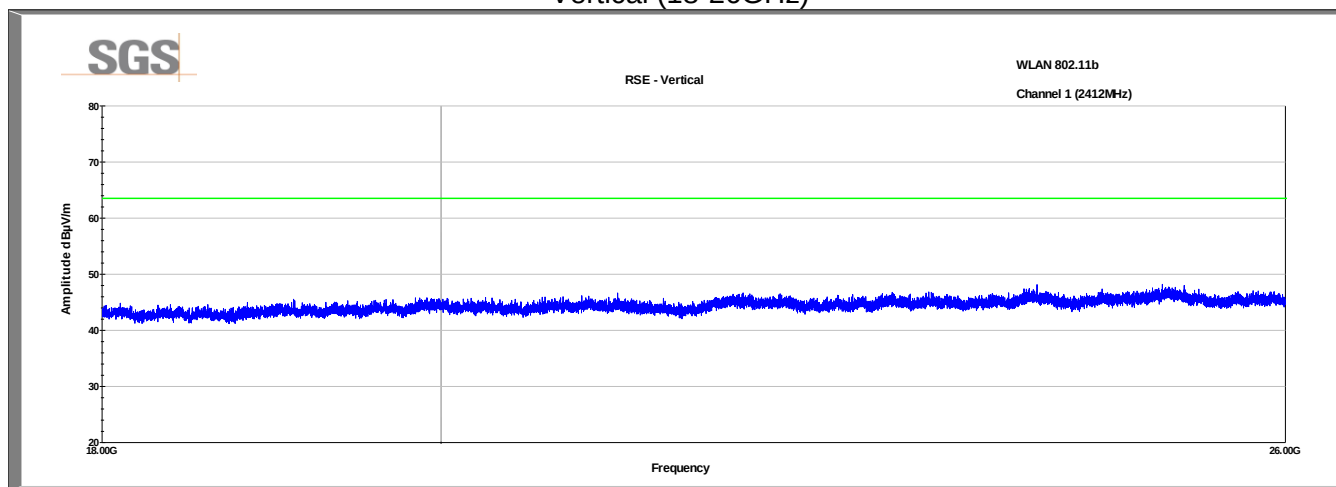
Worst-case spurious emission: 45.5dBµV/m (Peak) @ 4.924GHz, 8.5dB margin to AVG Limit

Horizontal (3-18GHz)

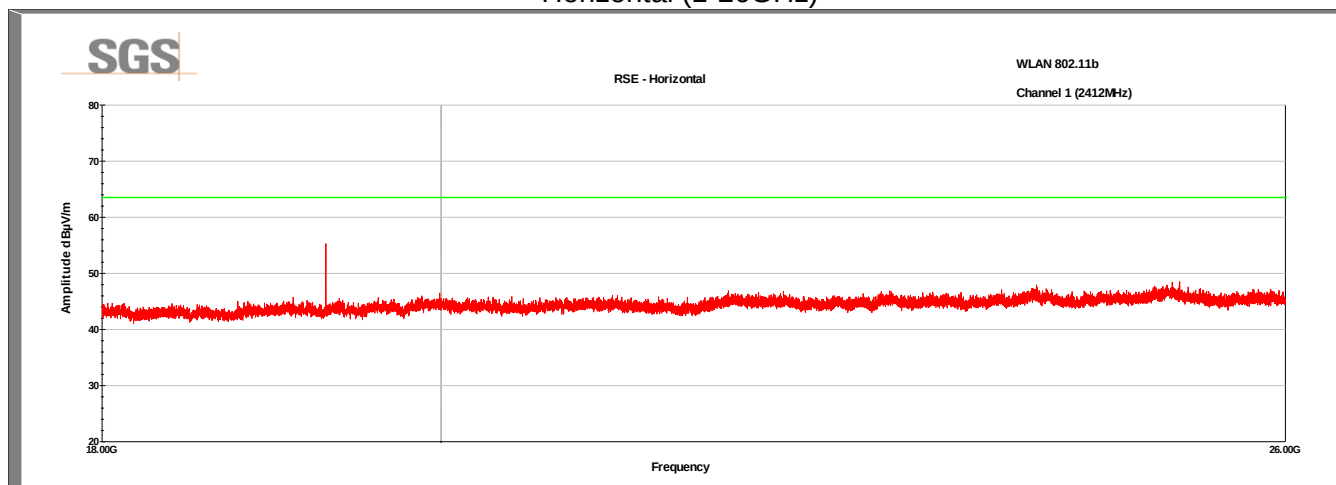


Worst-case spurious emission: 47.1dBµV/m (Peak) @ 4.924GHz, 6.9dB margin to AVG Limit

Channel 1
 Vertical (18-26GHz)

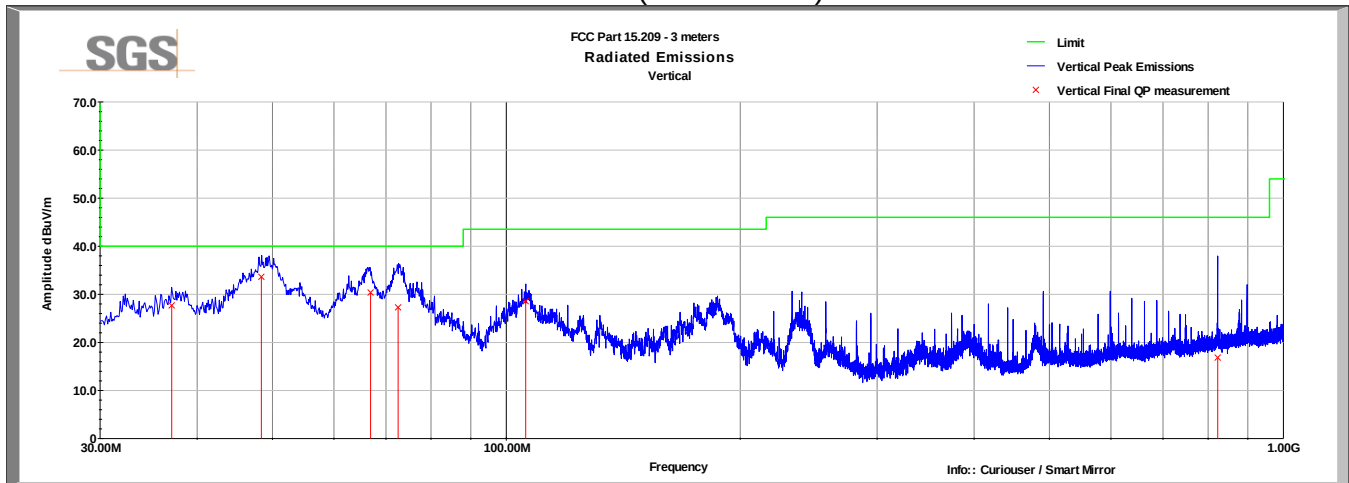


Horizontal (1-26GHz)

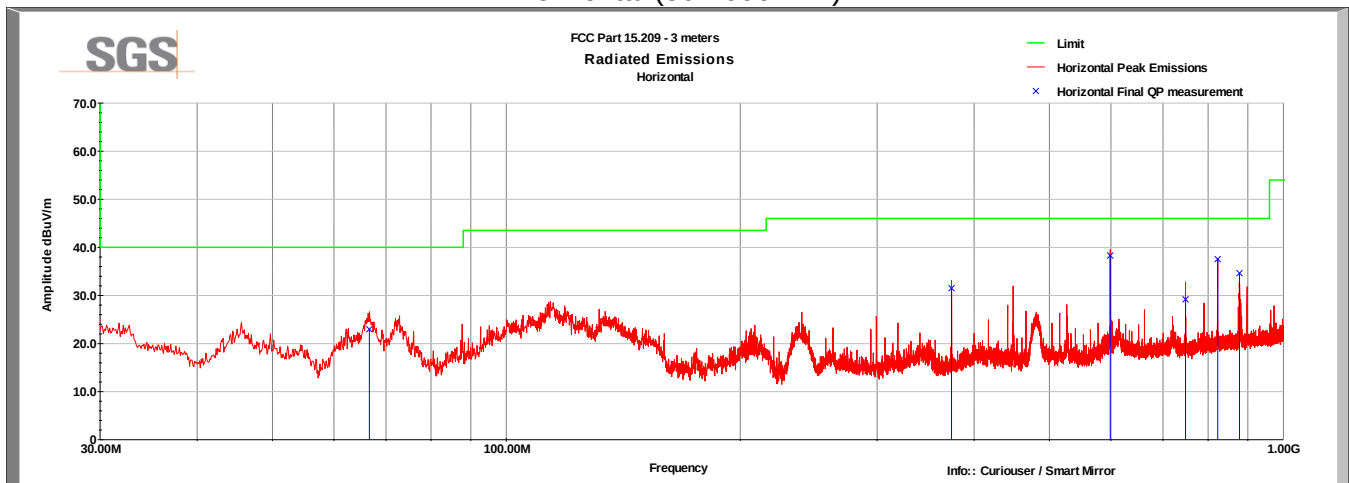


Worst-case spurious emission: 55.3dBμV/m (Peak) @ 19.296GHz, 8.7dB margin to AVG Limit

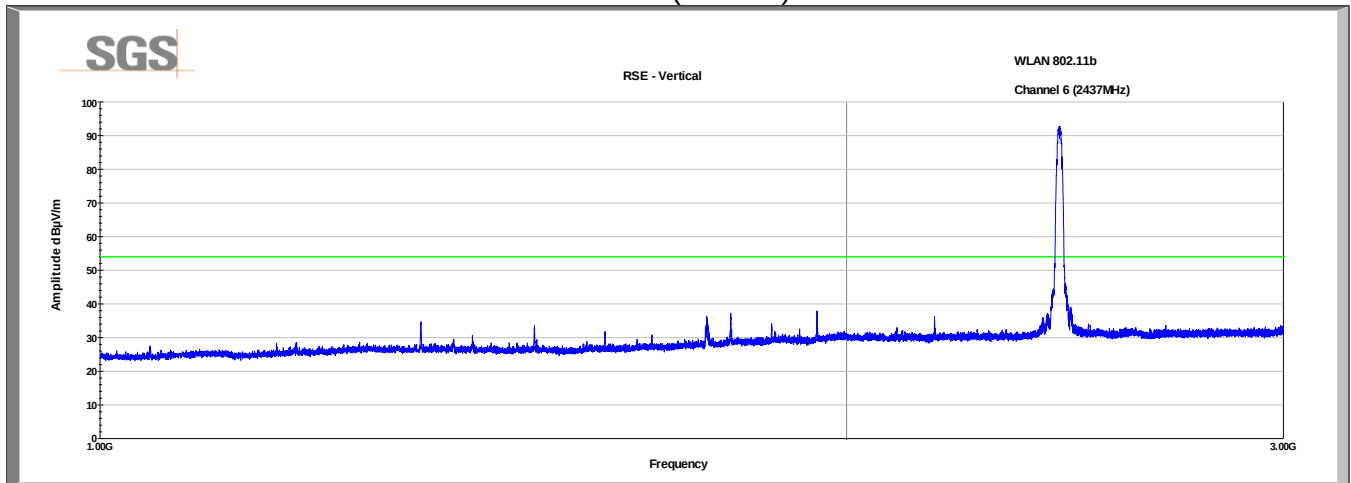
Channel 6 Vertical (30-1000MHz)



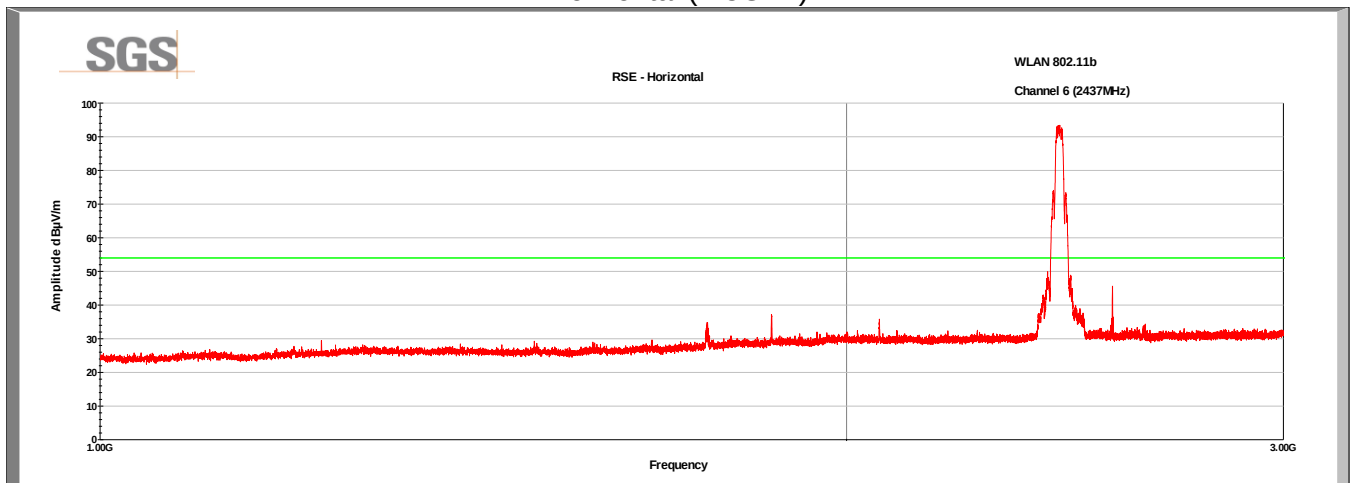
Horizontal (30-1000MHz)



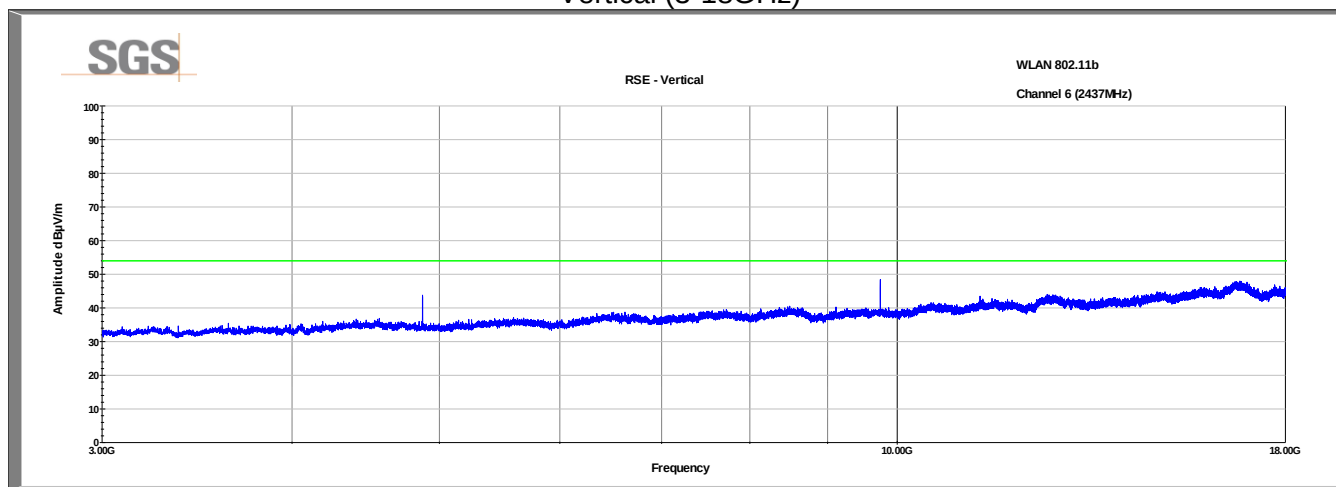
Channel 6 Vertical (1-3GHz)



Horizontal (1-3GHz)

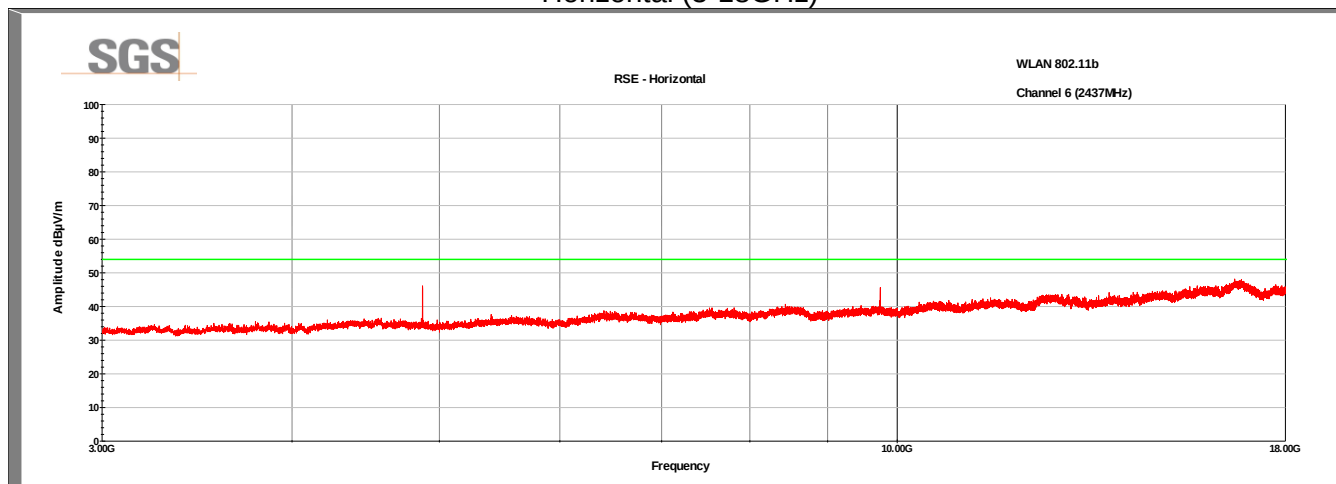


Channel 6 Vertical (3-18GHz)



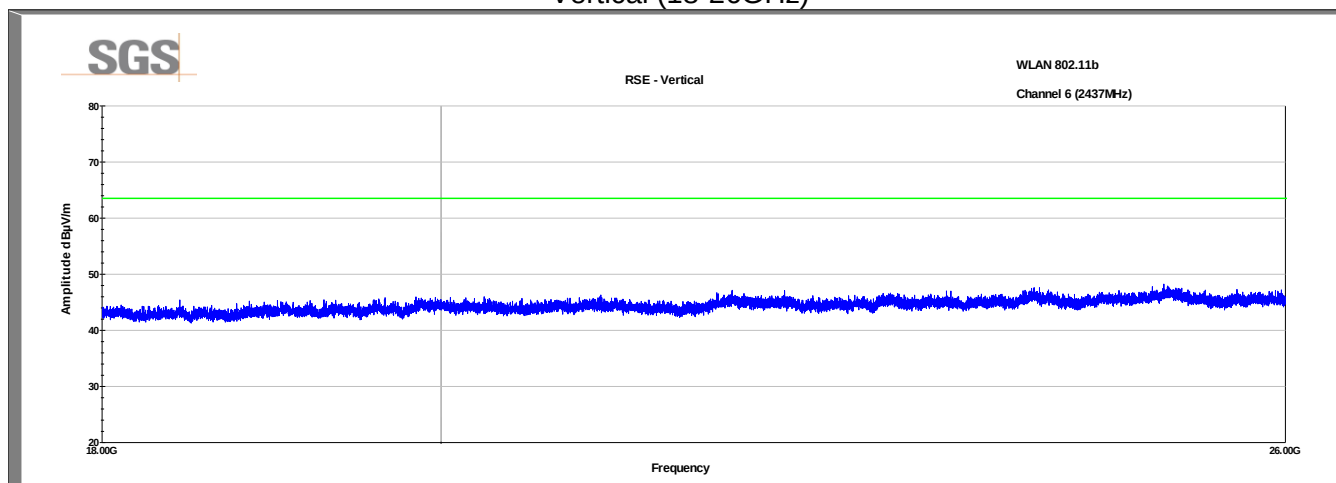
Worst-case spurious emission: 43.8dBμV/m (Peak) @ 4.874GHz, 10.2dB margin to AVG Limit
 Note: The 4th harmonic @ 9.748GHz does not fall within a restricted band.

Horizontal (3-18GHz)

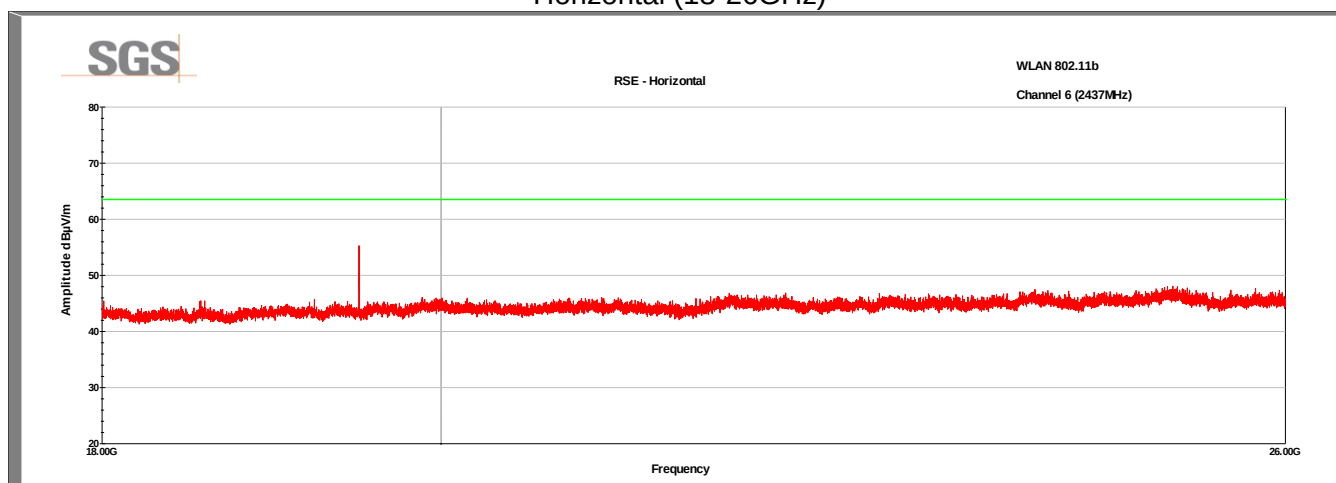


Worst-case spurious emission: 46.1dBμV/m (Peak) @ 4.874GHz, 7.9dB margin to AVG Limit
 Note: The 4th harmonic @ 9.748GHz does not fall within a restricted band.

Channel 6 Vertical (18-26GHz)

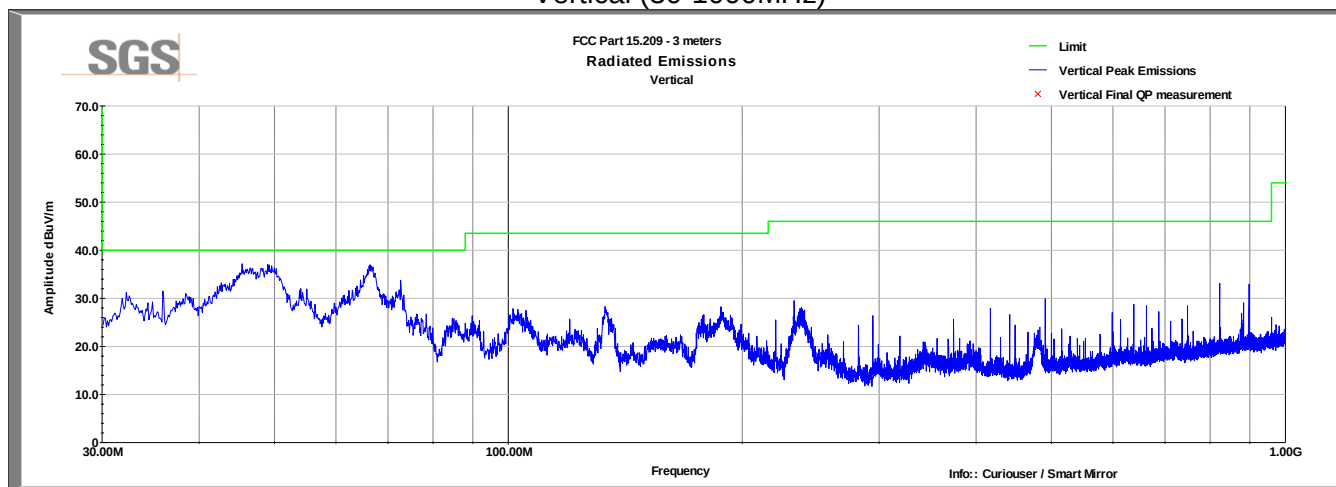


Horizontal (18-26GHz)

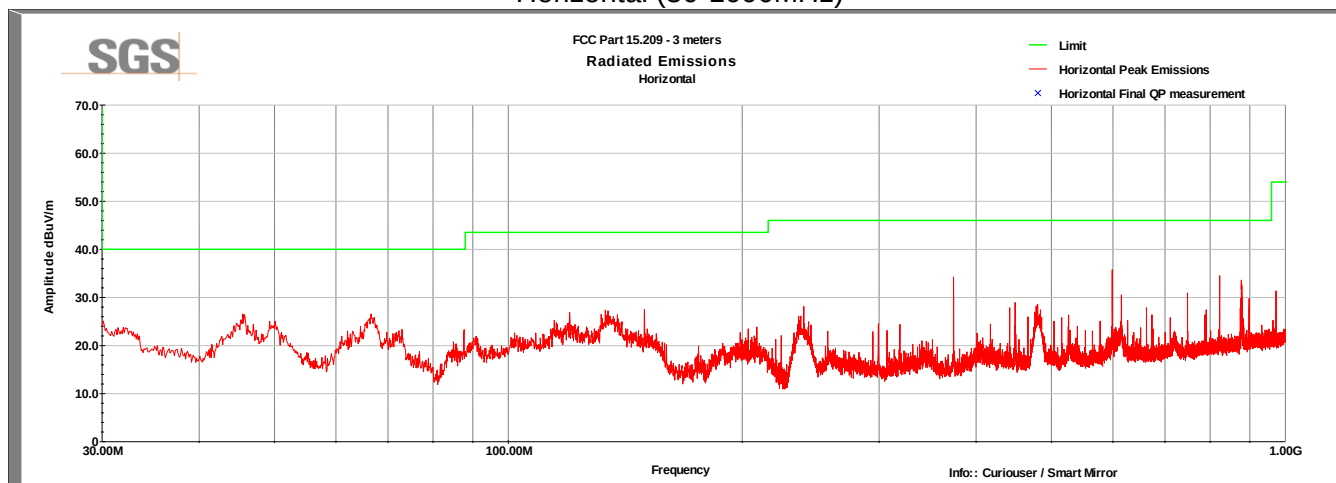


Worst-case spurious emission: 55.3dBμV/m (Peak) @ 19.496GHz, 8.7dB margin to AVG Limit

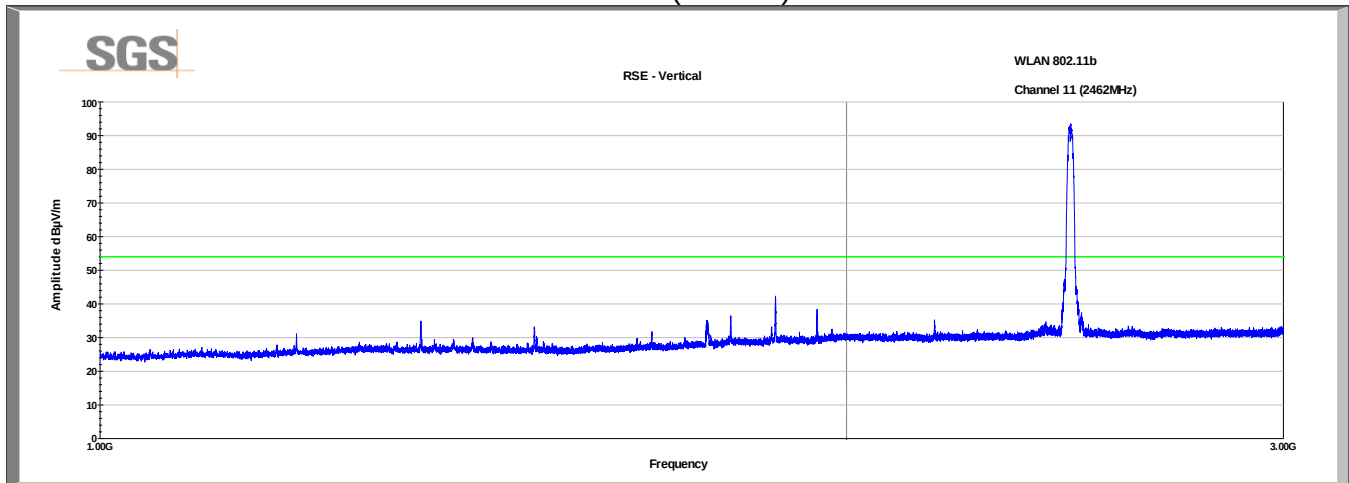
Channel 11 Vertical (30-1000MHz)



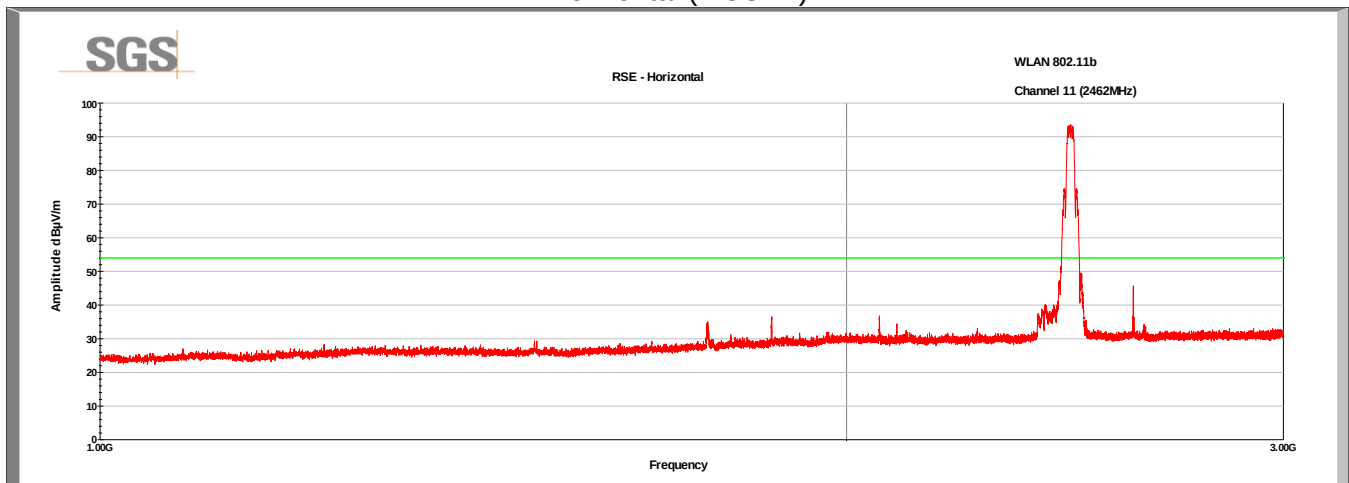
Horizontal (30-1000MHz)



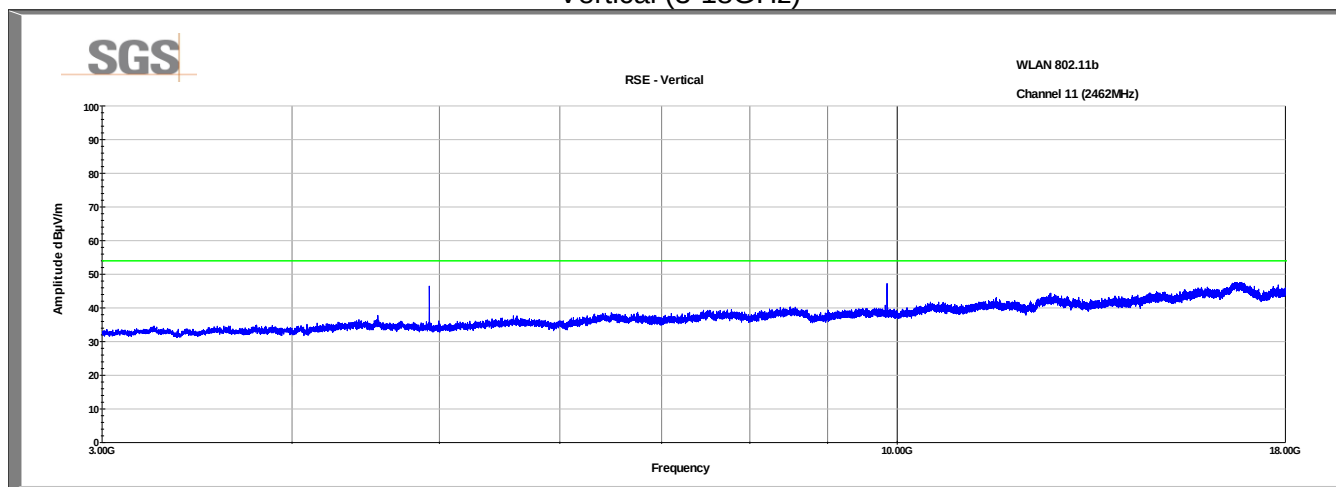
Channel 11 Vertical (1-3GHz)



Horizontal (1-3GHz)

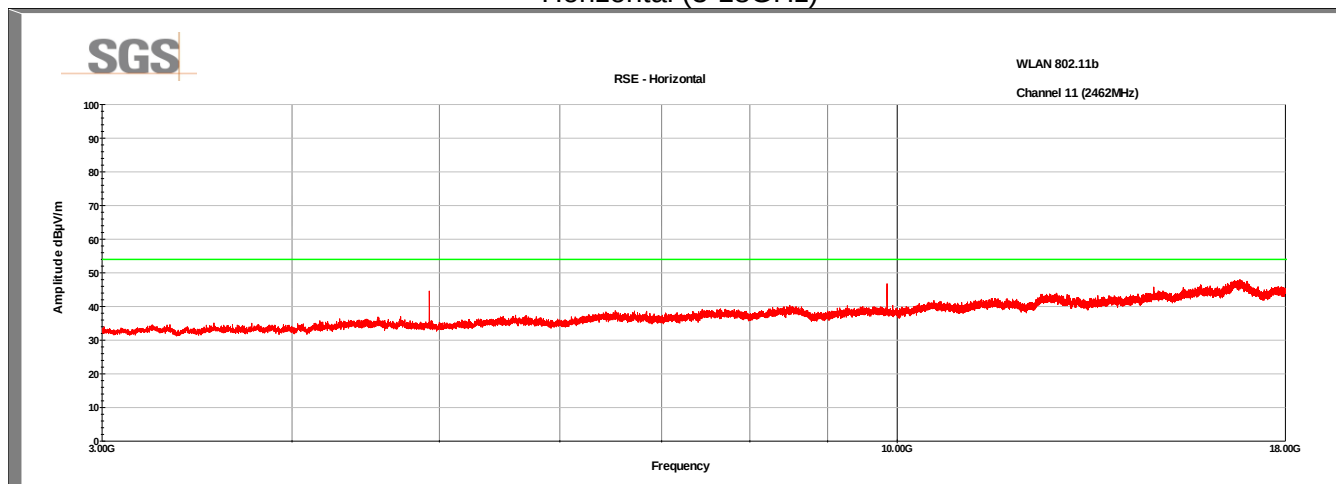


Channel 11 Vertical (3-18GHz)



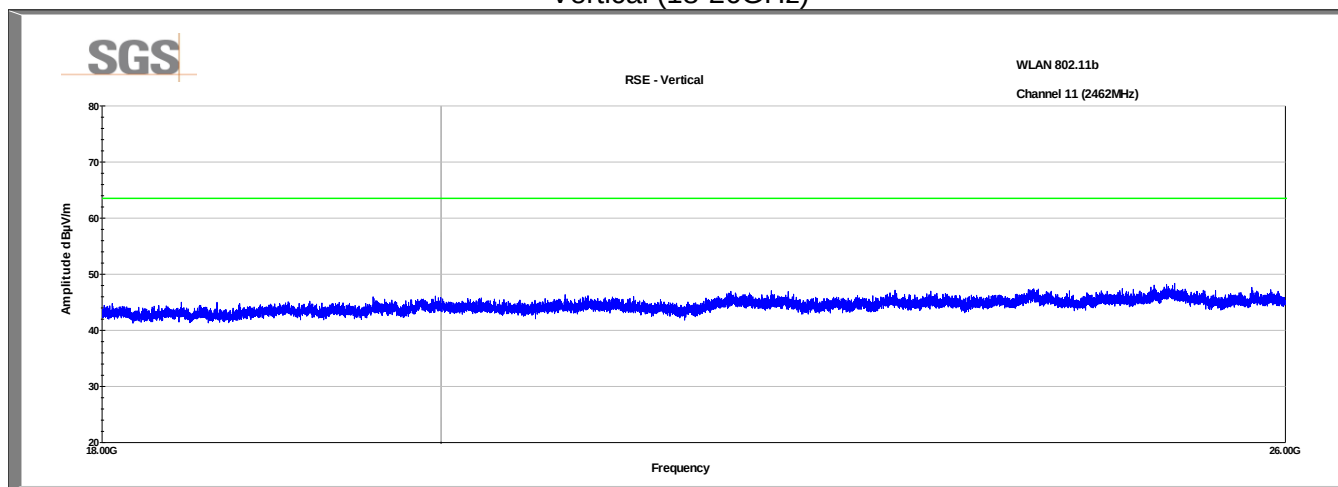
Worst-case spurious emission: 46.5dBμV/m (Peak) @ 4.924GHz, 7.5dB margin to AVG Limit
 Note: The 4th harmonic @ 9.848GHz does not fall within a restricted band.

Horizontal (3-18GHz)

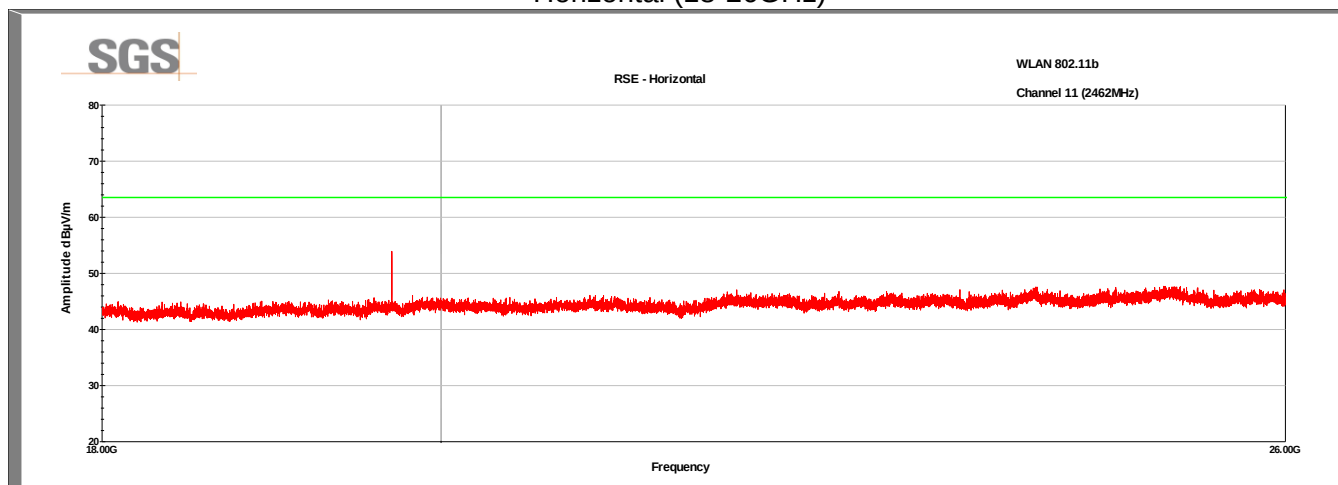


Worst-case spurious emission: 44.6dBμV/m (Peak) @ 4.924GHz, 9.4dB margin to AVG Limit
 Note: The 4th harmonic @ 9.848GHz does not fall within a restricted band.

Channel 11 Vertical (18-26GHz)



Horizontal (18-26GHz)



Worst-case spurious emission: 53.9dBμV/m (Peak) @ 19.696GHz, 10.1dB margin to AVG Limit

7.6 Tabular Data

Frequency MHz	Raw QP (dBuV)	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	QP Value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
37.09	42.4	V	242.0	175.0	16.8	0.5	32.1	27.7	40.0	-12.3
48.39	56.4	V	180.0	175.0	9.4	0.6	32.8	33.6	40.0	-6.4
66.88	54.8	V	32.0	175.0	8.1	0.7	33.3	30.4	40.0	-9.6
72.57	51.6	V	272.0	175.0	8.2	0.8	33.3	27.3	40.0	-12.7
105.91	49.6	V	0.0	175.0	11.8	0.9	33.8	28.5	43.5	-15.0
823.24	25.0	V	157.0	175.0	22.4	2.7	33.3	16.8	46.0	-29.2
66.64	47.4	H	260.0	325.0	8.1	0.7	33.3	23.0	40.0	-17.0
374.18	47.6	H	146.0	175.0	15.7	1.8	33.5	31.5	46.0	-14.5
598.67	49.6	H	1.0	175.0	19.7	2.3	33.3	38.3	46.0	-7.8
748.34	38.7	H	225.0	175.0	21.2	2.5	33.3	29.2	46.0	-16.8
823.18	45.8	H	232.0	175.0	22.4	2.7	33.3	37.6	46.0	-8.5
878.13	42.3	H	331.0	175.0	22.8	2.8	33.3	34.6	46.0	-11.4
QP Value = Level + AF + CL - Amp										
Margin = QP Value - Limit										

Note: There was no discernible difference in the measurement data below 1GHz when transmitting at different channels. QP measurements were only recorded with the device transmitting on Channel 6.

When applicable, peak data for spurious emissions above 1GHz are identified below the associated peak plot.

8 Radiated Emissions at Band Edge / Restricted Band

8.1 Test Result

Test Description	Test Specification	Test Result
Field strength of spurious radiation	15.247 (d) and 15.209	Compliant

Peak and average field strength measurements were performed at the restricted band edges of 2390MHz and 2483.5MHz. Measurements were made using the conducted methods defined ANSI C63.10, Clause 11.12.2.

Offset Calculations (at restricted band edges):

Offset calculations so that conducted measurements on the spectrum analyzer in dBμV represent field strength measurements in dBμV/m.

$$\text{Offset} = -20\log(D) + 104.8 - 107 + \text{CL} + \text{DC} + \text{AG}$$

D = 3m	Distance
CF = 0.4 dB	Cable Loss
DC (802.11b) = 0.0 dB (99.3%)	Duty Cycle Correction Factor
DC (802.11g) = 0.2 dB (95.9%)	Duty Cycle Correction Factor
DC (802.11n) = 0.2 dB (95.6%)	Duty Cycle Correction Factor

Offset (802.11b) = -8.3 dB
Offset (802.11g) = -8.1 dB
Offset (802.11n) = -8.1 dB

8.2 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 22.8 °C
Relative Humidity: 38.5 %

8.3 Test Equipment

Test End Date: 20-Feb-2018

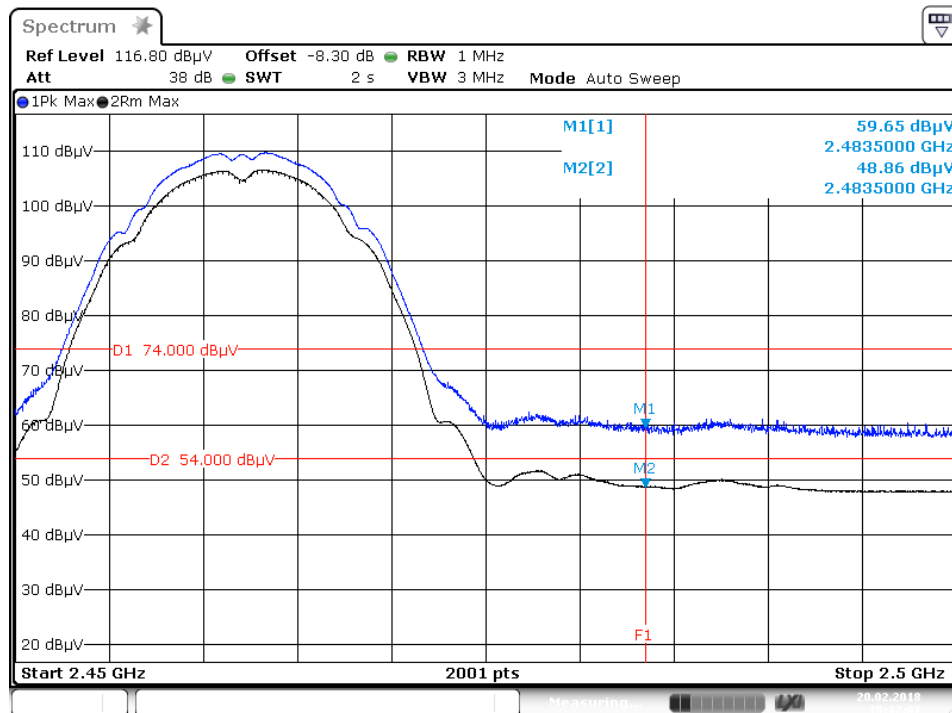
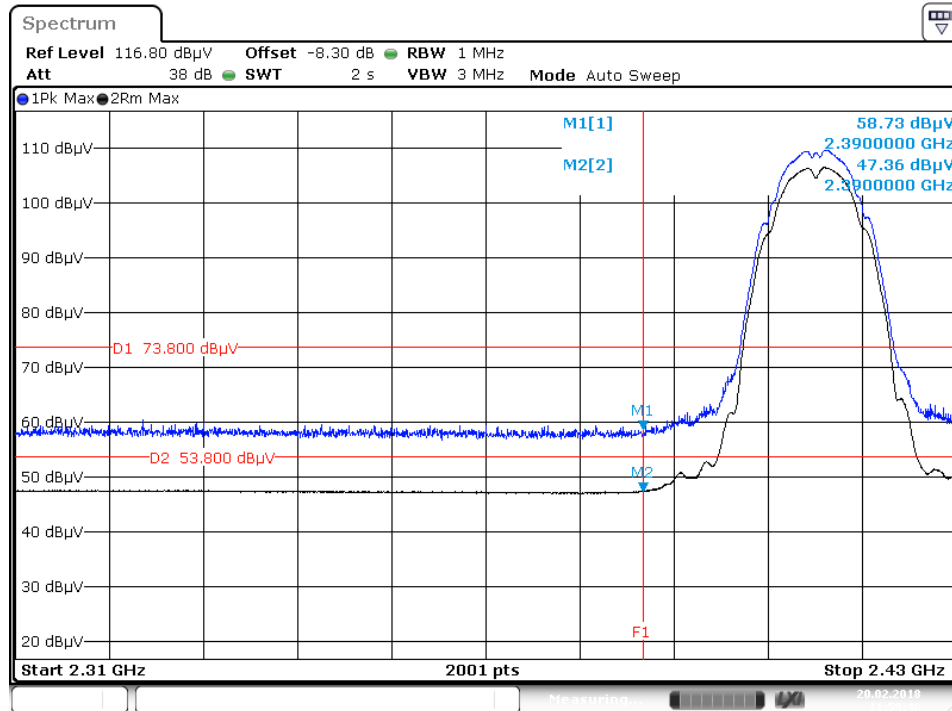
Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
SPCTRUM ANALYZER	FSV30	ROHDE & SCHWARZ	S/N: 103106	24-Jul-2018
RF CABLE	SF102	HUBER & SUHNER	B079823	26-Jul-2018

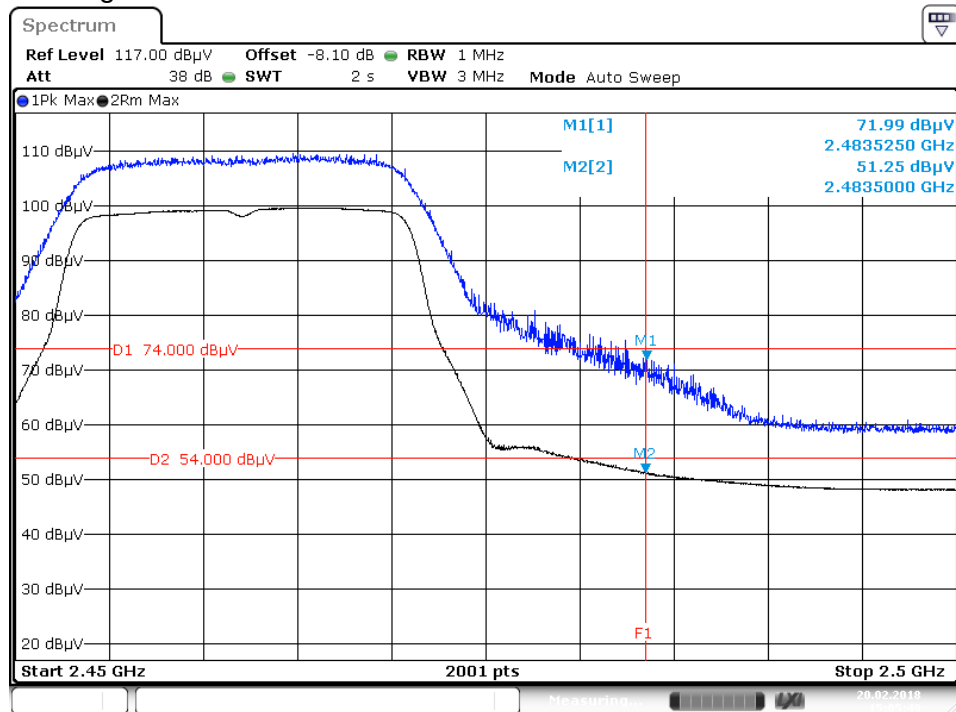
Note: The equipment calibration period is 1 year.

8.4 Test Data – Band Edge

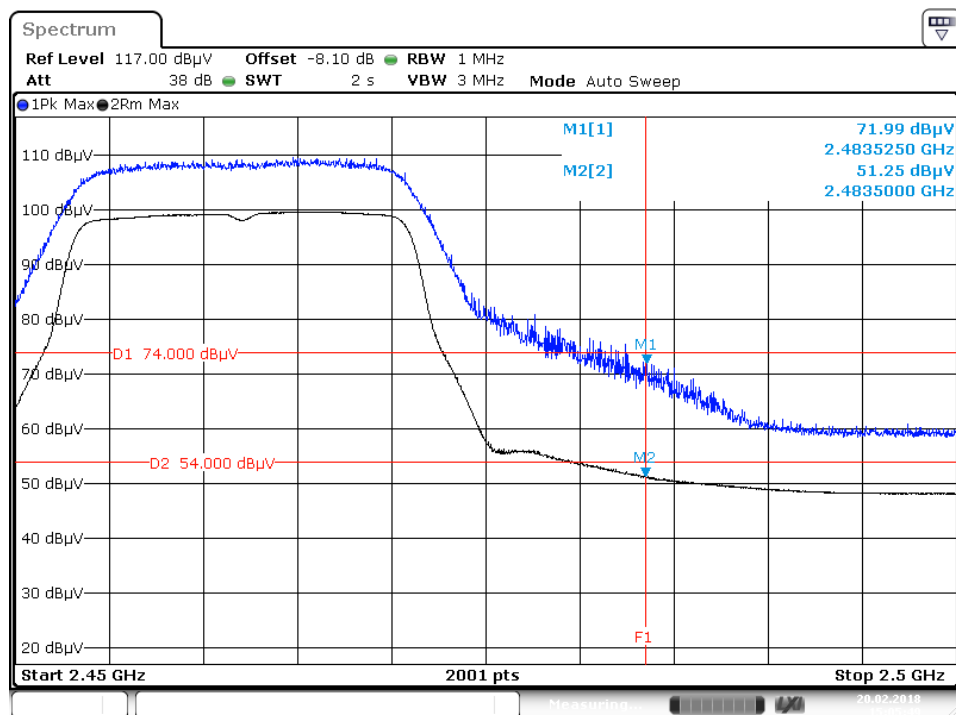
802.11b



802.11g

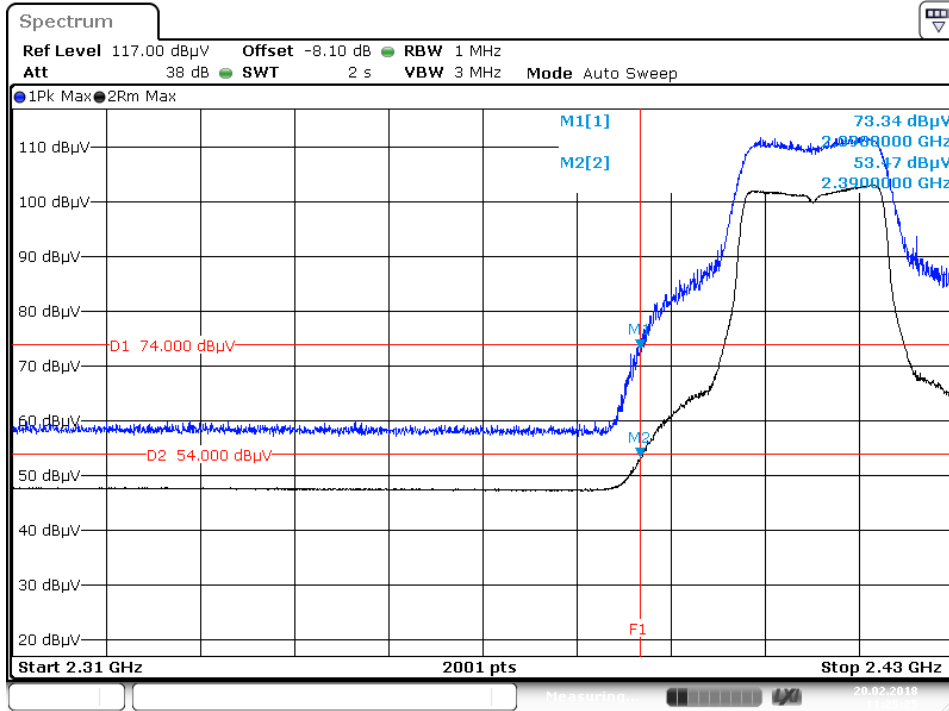


Date: 20.FEB.2018 15:05:49

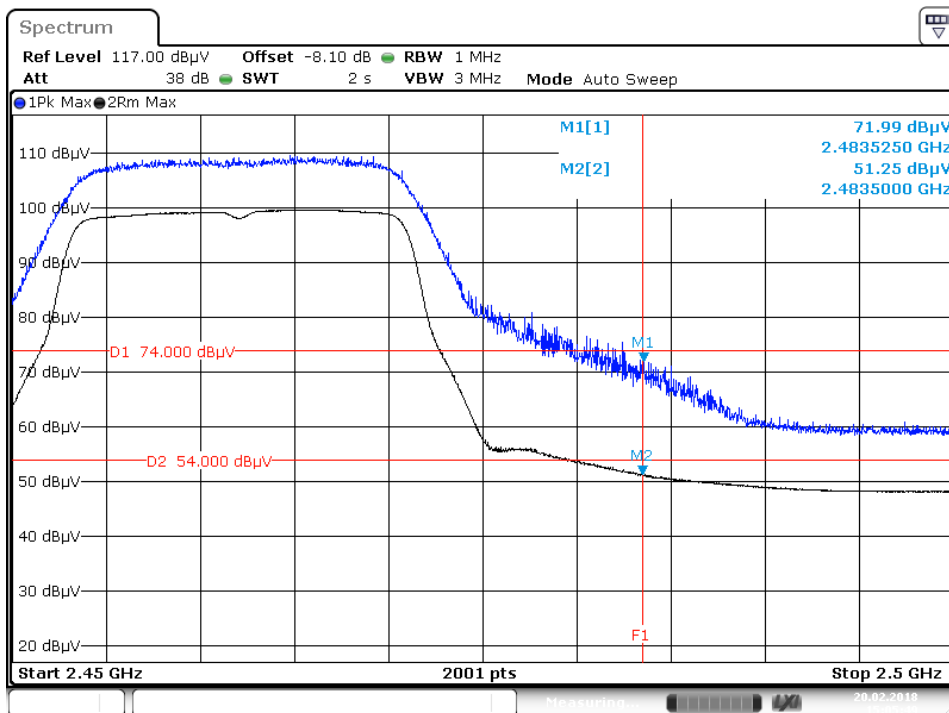


Date: 20.FEB.2018 15:05:49

802.11n (HT20)



Date: 20.FEB.2018 11:25:25



Date: 20.FEB.2018 15:05:49

9 Conducted Emissions

9.1 Test Result

Test Description	Basic Standards	Test Result
Conducted Emissions, Class B	RSS-GEN, Issue 4 ANSI C63.4:2014	Compliant

9.2 Test Method

With the receiver's resolution bandwidth was set to 9 kHz the exploratory scans were performed over the measuring frequency range (0.15MHz to 30MHz) using a max hold mode incorporating a Peak detector and Average detector and using the TILE! software. The final test data was measured using a Quasi-Peak detector and Average detector and compared against the limits indicated in the table below.

Frequency Range	Class A Limits (dBuV)	Class B Limits (dBuV) CISPR
0.15 to 0.5 MHz	Avg 66 QP 79	Avg 56 to 46 QP 66 to 56
0.5 to 5 MHz	Avg 60 QP 73	Avg 46 Pk 56
5 to 30 MHz	Avg 60 QP 73	Avg 50 Pk 60

9.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 23.8°C
Relative Humidity: 22.2%

9.4 Test Equipment

Test End Date: 6-Jun-2018

Tester: SKM

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
LINE IMPEDANCE STABILIZATION NETWORK	NNB 51	TESEQ	B087573	21-Nov-2018
RF CABLE	UC-N-MM-78	MAURY MICROWAVE	17016	25-Jul-2018
EMI TEST RECEIVER	ESU8	ROHDE & SCHWARZ	B085759	25-Jul-2018

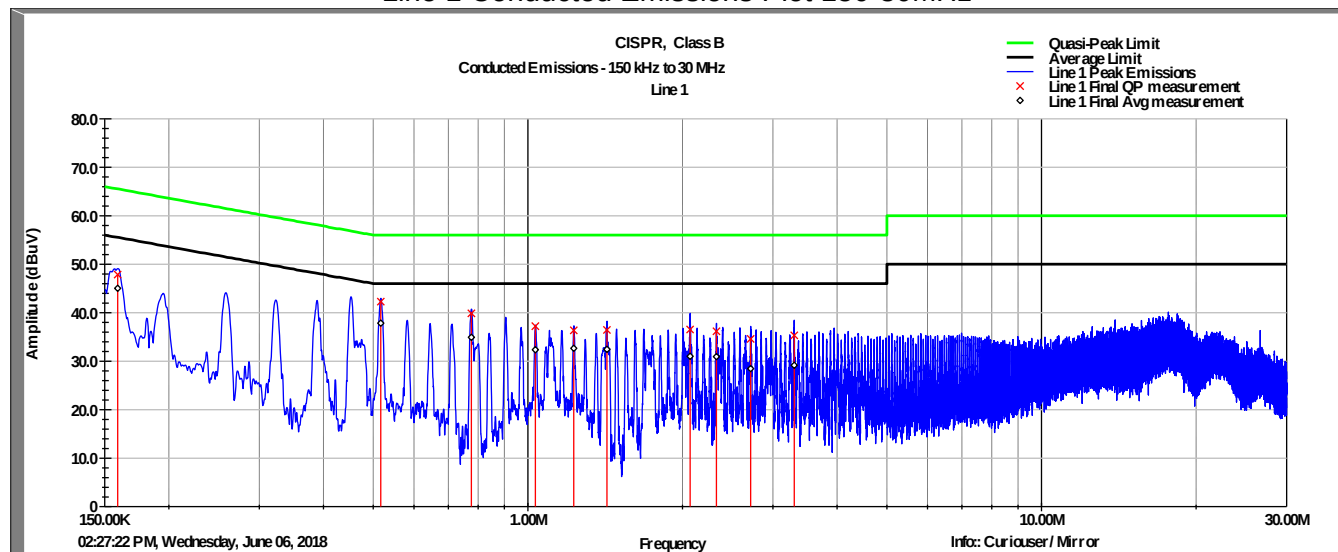
Note: The equipment calibration period is 1 year.

Software:

"Conducted Emissions" TILE! profile dated Dec 2015

9.5 Test Data

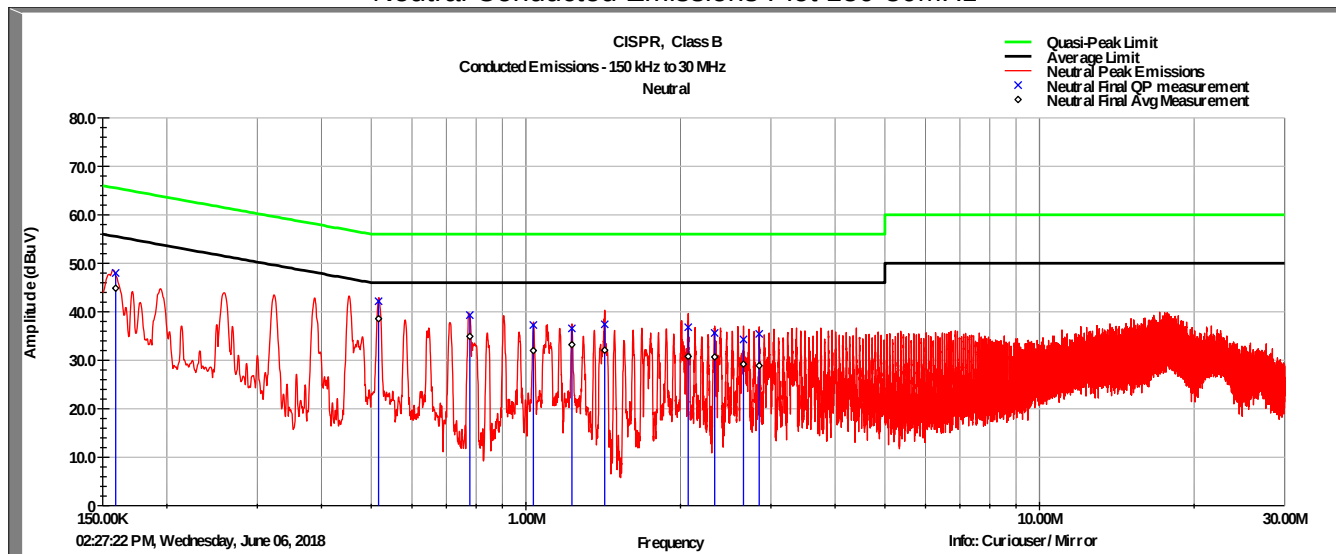
Line 1 Conducted Emissions Plot 150-30MHz



Line 1 Conducted Emissions Data 150-30MHz

Frequency MHz	QP Value dBuV	QP Limit dBuV	QP Margin dB	Avg Value dBuV	Avg Limit dBuV	Avg Margin dB
0.159	47.9	65.5	-17.7	45.0	55.5	-10.5
0.517	42.3	56.0	-13.7	37.8	46.0	-8.2
0.776	39.9	56.0	-16.1	34.9	46.0	-11.1
1.034	37.2	56.0	-18.8	32.3	46.0	-13.7
1.228	36.3	56.0	-19.7	32.7	46.0	-13.3
1.425	36.4	56.0	-19.6	32.4	46.0	-13.6
2.069	36.5	56.0	-19.5	31.0	46.0	-15.0
2.329	36.2	56.0	-19.8	30.9	46.0	-15.1
2.715	34.6	56.0	-21.4	28.5	46.0	-17.5
3.300	35.3	56.0	-20.7	29.2	46.0	-16.8

Neutral Conducted Emissions Plot 150-30MHz



Neutral Conducted Emissions Data 150-30MHz

Frequency MHz	QP Value dBuV	QP Limit dBuV	QP Margin dB	Avg Value dBuV	Avg Limit dBuV	Avg Margin dB
0.159	48.0	65.5	-17.6	44.8	55.5	-10.7
0.517	42.2	56.0	-13.8	38.6	46.0	-7.4
0.778	39.3	56.0	-16.7	34.9	46.0	-11.1
1.034	37.3	56.0	-18.7	32.0	46.0	-14.0
1.229	36.6	56.0	-19.4	33.2	46.0	-12.8
1.424	37.4	56.0	-18.6	32.1	46.0	-13.9
2.070	36.8	56.0	-19.2	30.8	46.0	-15.2
2.331	35.6	56.0	-20.4	30.7	46.0	-15.3
2.653	34.3	56.0	-21.7	29.2	46.0	-16.8
2.846	35.4	56.0	-20.6	28.9	46.0	-17.1

10 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	7-June 2018
1	Client address has been corrected. Dates of testing have been corrected. Corrected calibration date of the Open Switch and Control Unit, OSP120	3 August 2018