

RF Test Report

Project Number: 4598567**Proposal Number:** 10361 rev3**Report Number:** 4598567EMC07**Revision Level:** 0**Client:** Owlet Baby Care Inc.**Equipment Under Test:** Owlet Smart Sock Base Station V3**Model:** OBL 3.0**FCC ID:** 2AIEP-OBL3A**IC ID:** 21386-OBL3A**Applicable Standards:** FCC Part 15 Subpart C, § 15.247

RSS-247, Issue 2, February 2017

RSS-GEN, Issue 5, March 2019, Amendment 1

ANSI C63.10:2013

Report issued on: 25 June 2020**Test Result:** Compliant

Prepared by:



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Reviewed by:



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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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1 Objective

This report covers testing and data reuse of the WLAN function of an RF module that has been incorporated into the Owlet Smart Sock Base Station V3, model OBL 3.0. The WLAN module was previously certified under FCC ID: VPYLB1LD and IC: 772C-LB1LD. The only change to the module is the antenna, therefore conducted data is being reused to support certification of the OBL 3.0.

1.1 Summary of results for reused data

Test Description	Test Specification		Test Result
Bandwidth	15.247(a)(2)	RSS-247 S5.2 (a) RSS-GEN S6.7	Compliant ⁽¹⁾
Output Power	15.247(b)(3)	RSS-247 S5.4 (d)	Compliant ⁽¹⁾
Power Spectral Density	15.247(e)	RSS-247 S5.2 (b)	Compliant ⁽¹⁾
Conducted Spurious Emissions / Band Edge	15.247(d)	RSS-247 S5.5	Compliant ⁽¹⁾

(1) Conducted tests from original grant still apply. See Intertek Report Number 17040026JMA-001.

1.2 Summary of results for radiated tests

Test Description	Test Specification		Test Result
Emissions in Restricted Frequency Bands	15.247(d) 15.205, 15.209	RSS-247 S5.5 RSS-GEN S8.9, S8.10	Compliant
Band Edge Emissions in Restricted Frequency Bands	15.205, 15.209	RSS-GEN S8.9, S8.10	Compliant
Antenna Requirement	15.203	RSS-GEN S6.8	Compliant ⁽²⁾

(2) Device uses an internal PCB trace inverted F antenna which cannot be replaced by the end user.

1.3 Modifications Required for Compliance

None.

2 General Information

2.1 Client Information

Name: Owlet Baby Care Inc.
Address: 2500 Executive Parkway Suite 500
City, State, Zip, Country: Lehi, UT 84043, 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

Equipment Under Test: Owlet Smart Sock Base Station V3
Model: OBL 3.0
Sample ID: 5220

FCC ID: 2AIEP-OBL3A
IC ID: 21386-OBL3A

Frequency Range: 2412 – 2462 MHz
Data Modes: WLAN IEEE 802.11b/g/n20 (DSSS, OFDM)
Antenna: Internal PCB Trace Inverted F Antenna (1.48 dBi)

Rated Voltage: 5 Vdc from AC Adapter with input rated for 100-240Vac 50-60Hz
Test Voltage: 5 Vdc from AC Adapter powered by 120Vac 60Hz

Sample Received Date: 02 March 2020
Dates of testing: 28 April – 14 May 2020

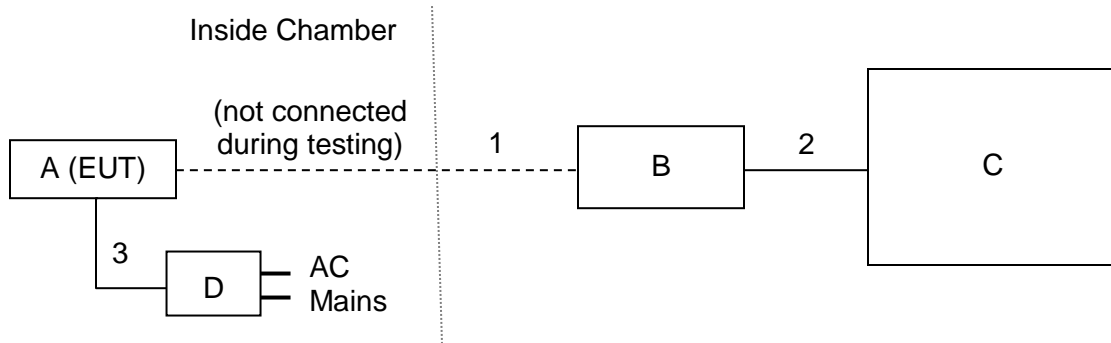
2.4 Operating Modes and Conditions

The EUT was programmed by the manufacturer to allow WLAN radio control using a “wl” test utility provided by the client, and also Bluetooth LE radio control using a Direct Test Mode software application from Nordic Semiconductor. The radiated test mode sample was configured with a 12-pin header for radio control and was powered using a USB C cable and an AC Power Adapter supplied by the client.

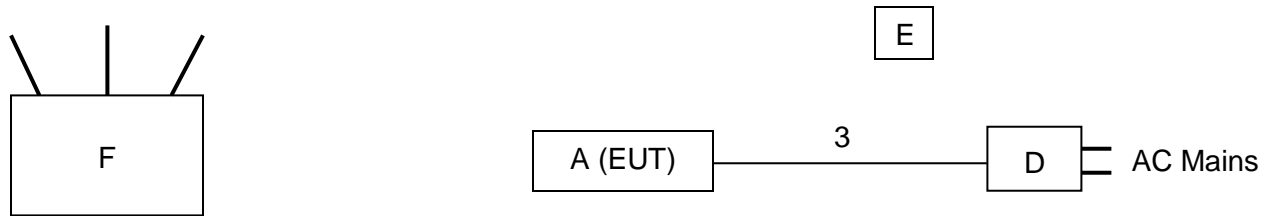
For spurious emissions testing, low, middle and high WLAN channels were tested using the worst-case Tx channel configuration based on the original test report on the WLAN module, which was 802.11b, 1Mbps. For restricted band band edge testing, low and high channels were tested using both 802.11b, 1Mbps and 802.11g, 6Mbps to cover both modulation types. Spurious and band edge emissions were also measured with both the WLAN and BLE radios transmitting simultaneously. A power setting of 17dBm was used for the WLAN Tx, and a Nordic power setting of -4dBm was used for the BLE Tx.

A test sample running normal operational firmware was used for the simultaneous transmission restricted band band-edge testing.

2.5 EUT Connection Block Diagram – Test Mode



2.6 EUT Connection Block Diagram – Normal Mode



2.7 System Configurations

Device Reference	Manufacturer	Description	Model Number	Serial Number
A	Owlet Baby Care Inc.	Owlet Base Station (EUT)	OBL 3.0	Not labeled
B	Owlet Baby Care Inc.	Developer Board	Super Base Buddy v1.0	Not labeled
C	Lenovo	Laptop Computer	T500	L3-ABV0N 08/12
D	Phihong USA	AC Power Adapter	PSA05A-050QL6	Not labeled
E	Owlet Baby Care Inc.	Owlet Smart Sock (EUT)	OSS 3.0	Not labeled
F	Netgear	Smart WiFi Router	R7000	3LG23C7F03390

2.8 Cable List

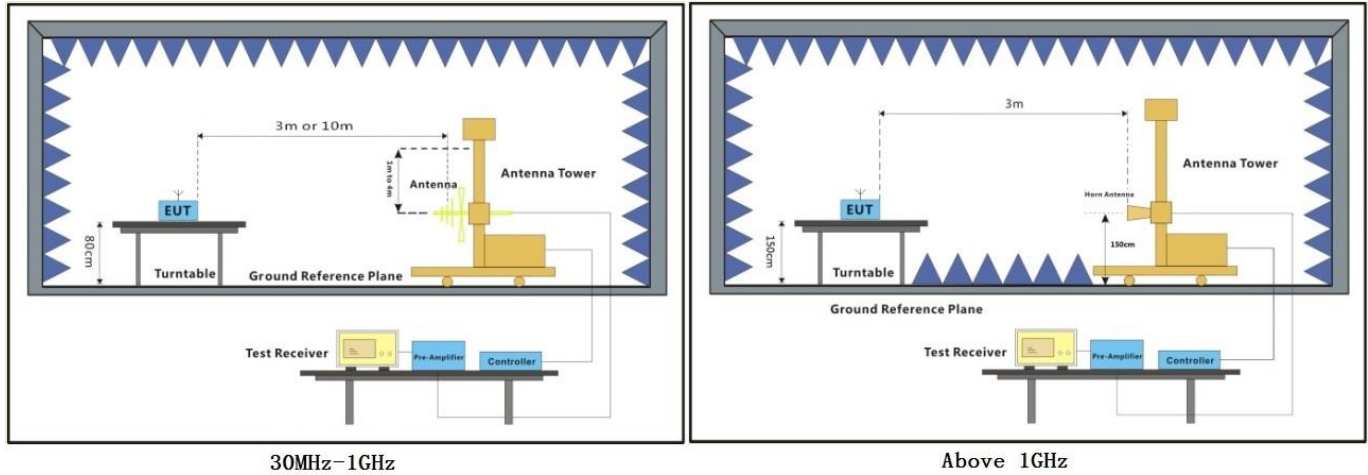
Cable reference	Port Name	Start	End	Cable Length (m)	Ferrite installed?	Shielded?
1	Comm.	EUT	Developer Board	0.25	N	N
2	USB	Laptop	Developer Board	1.45	N	N
3	DC Power	EUT	AC Power Adapter	1.52	N	N

3 Emissions in Restricted Frequency Bands

3.1 Test Result

Test Description	Test Specification		Test Result
Emissions in Restricted Frequency Bands	15.247(d) 15.205, 15.209	RSS-247 S5.5 RSS-GEN S8.9, S8.10	Compliant

3.2 Test Setup



3.3 Test Method

Radiated spurious emissions (RSE) in restricted frequency bands were measured using methods defined in ANSI C63.10 clause 11.12.

Low, middle and high channels were tested using the worst-case Tx channel configuration based on the original test report on the certified radio module, which was 802.11b with the lowest data rate of 1Mbps.

Additionally, radiated emissions were measured during the simultaneous transmissions of both the WLAN module and the Bluetooth LE radio which is also designed into the final product.

Test distances for radiated tests:

- 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 3 meters

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

3.4 Test Site

Absorber Lined Shielded Enclosure (ALSE), Suwanee, GA

Environmental Conditions	30-1000MHz	1-3GHz	3-18GHz	18-26GHz
Enclosure:	3m chamber	3m chamber	10m chamber	10m chamber
Temperature:	23.2 °C	23.4 °C	22.9 °C	22.9 °C
Relative Humidity:	44.3 %	49.1 %	36.3 %	35.9 %
Atmospheric Pressure:	98.4 kPa	98.6 kPa	98.5 kPa	98.5 kPa

3.5 Test Equipment

30-1000MHz

Test End Date: 5-Jun-2020

Tester: ZH

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
ANTENNA, BILOG	JB6	SUNOL	B079690	11-Dec-2020
RF Cable Nm to Nm, 0.01-18GHz	90-195-276	TELEDYNE STORM MICROWAVE	20113	2-Mar-2021
RF CABLE	SF106	HUBER & SUHNER	B079713	7-Sep-2020
RF Cable Nm to Nm, 0.01-18GHz	90-195-118	TELEDYNE STORM MICROWAVE	20125	2-Mar-2021
RF CABLE	SUCOFLEX 100	Huber & Suhner	B108523	5-Sep-2020
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	3-Dec-2020
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	6-Apr-2021

1-3GHz

Test End Date: 12-Jun-2020

Tester: MT

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
ANTENNA, DRG HORN (MEDIUM)	3117	ETS Lindgren	B079699	2-Jul-2020
RF Cable Nm to Nm, 0.01-18GHz	90-195-354	TELEDYNE STORM MICROWAVE	20120	2-Mar-2021
RF CABLE	SUCOFLEX 100	Huber & Suhner	B108523	5-Sep-2020
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	3-Dec-2020
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	6-Apr-2021

3-18GHz

Test End Date: 5-Jun-2020

Tester: ZH

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
ANTENNA, DRG HORN (MEDIUM)	3117	ETS Lindgren	B079691	10-Aug-2020
RF Cable Nm to Nm, 0.01-18GHz	90-195-276	TELEDYNE STORM MICROWAVE	20113	2-Mar-2021
RF CABLE	SUCOFLEX 100	Huber & Suhner	B108523	5-Sep-2020
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	3-Dec-2020
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	6-Apr-2021
FILTER, HIGH PASS, >2800MHz	HPM50111	MICRO-TRONICS	B085747	7-Sep-2020

18-26GHz

Test End Date: 28-Apr-2020

Tester: MT

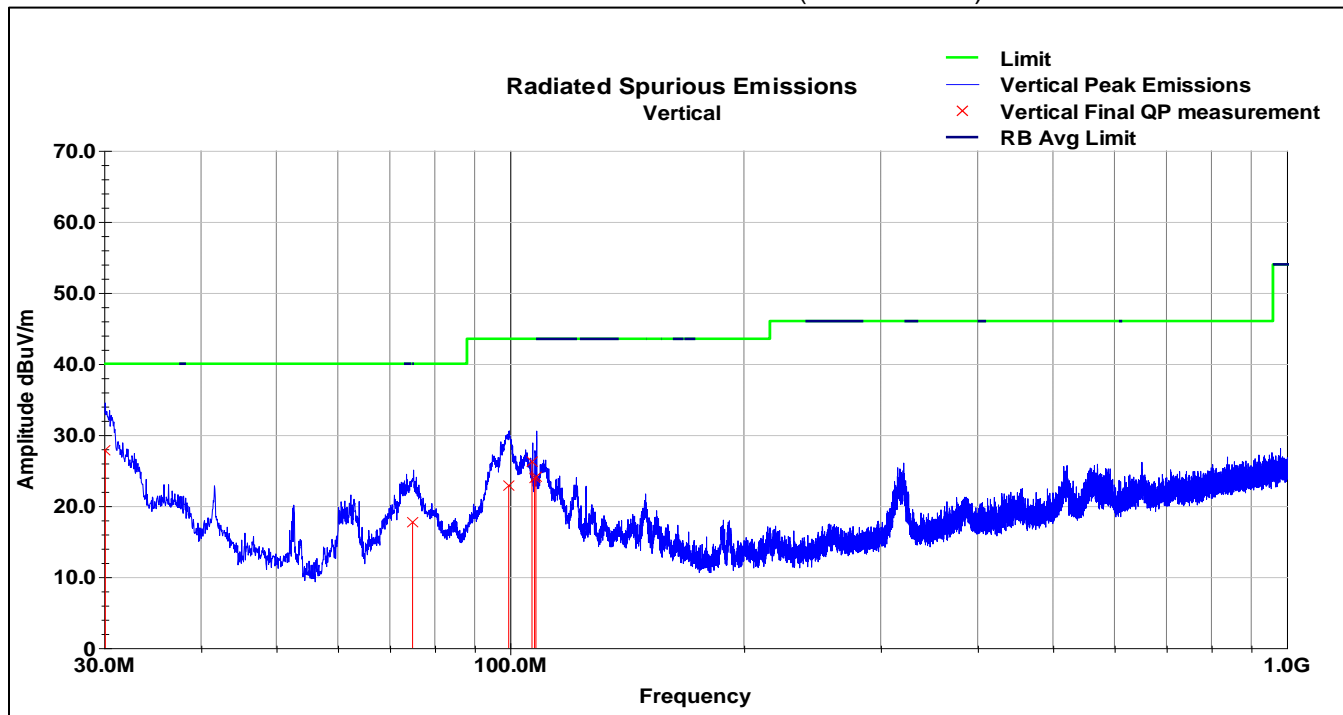
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
ANTENNA, HORN (SMALL)	LB-180400-20-C-KF	A-INFO	15007	6-Apr-2022
RF Cable SMA to SMA, 0.01-40GHz	084-0505-138	TELEDYNE STORM MICROWAVE	20111	6-Mar-2021
RF CABLE	SF102	Huber & Suhner	B079823	17-Jul-2020
LOW NOISE AMPLIFIER	NSP1840-HG	MITEQ	B087572	7-Oct-2020
EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	101585	3-Dec-2020

Note: The equipment calibration period is 1 year.

3.6 Test Data – WLAN Transmitter RSE

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

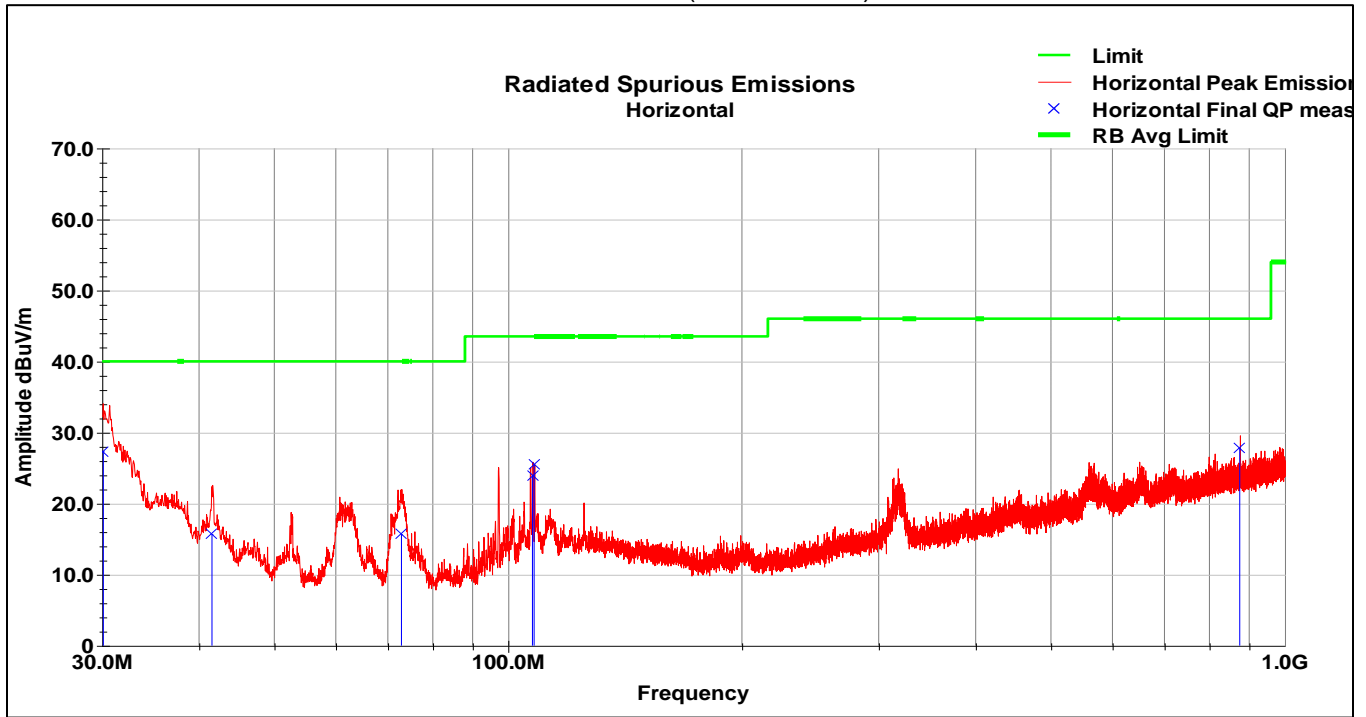
WLAN Channel 1 - Vertical Plot (30-1000MHz)



Vertical Data (30-1000MHz)

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)
30.12	39.9	V	86.0	250.0	22.1	0.5	34.7	27.8	40.0	-12.2
74.89	43.9	V	231.0	175.0	8.2	0.9	35.4	17.7	40.0	-22.3
99.58	47.3	V	339.0	175.0	10.2	1.1	35.6	22.9	43.5	-20.6
106.71	48.9	V	36.0	250.0	11.7	1.1	35.6	26.2	43.5	-17.4
107.53	46.5	V	75.0	175.0	11.9	1.1	35.6	23.9	43.5	-19.6
107.97	46.5	V	3.0	250.0	12.0	1.1	35.6	24.0	43.5	-19.5

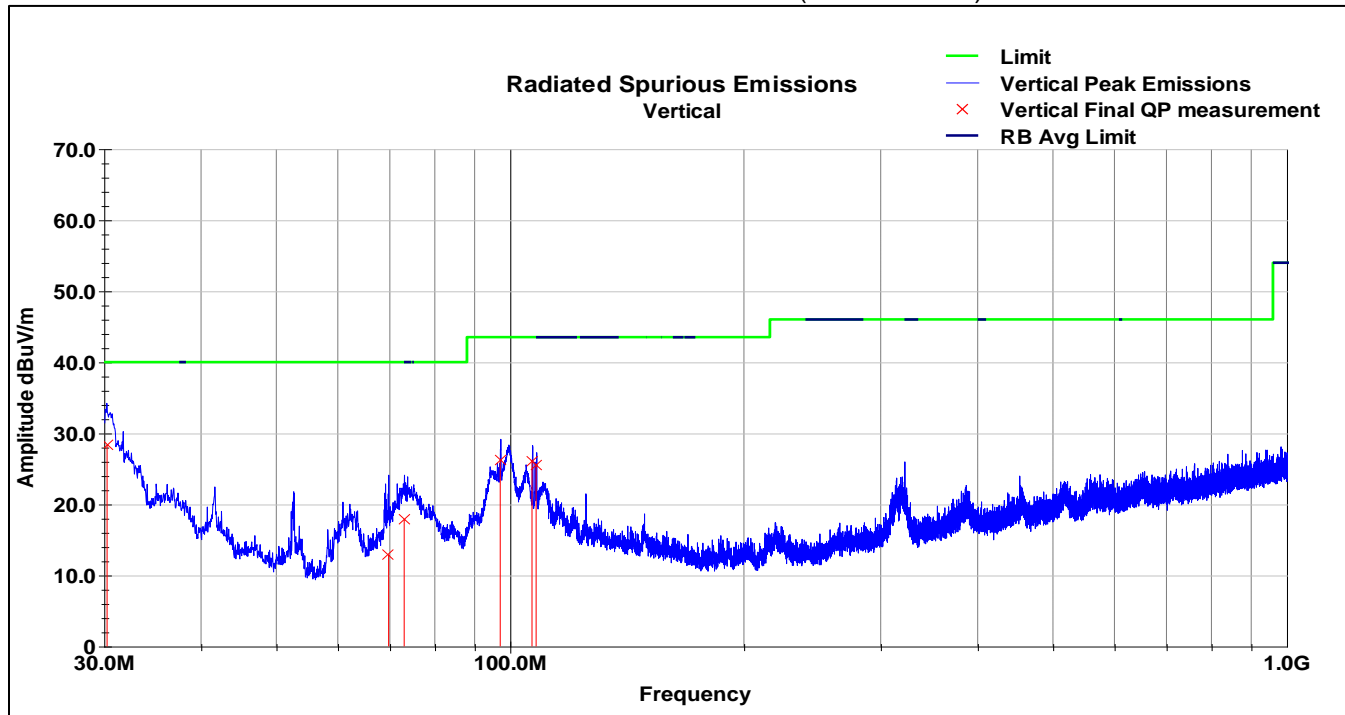
Horizontal Plot (30-1000MHz)



Horizontal Data (30-1000MHz)

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)
30.12	39.4	H	173.0	242.0	22.1	0.5	34.7	27.4	40.0	-12.6
41.56	36.7	H	241.0	157.0	13.3	0.7	35.0	15.7	40.0	-24.3
72.90	42.0	H	68.0	249.0	8.2	0.9	35.4	15.7	40.0	-24.3
107.48	46.6	H	84.0	110.0	11.9	1.1	35.6	24.0	43.5	-19.5
108.02	47.9	H	282.0	213.0	12.0	1.1	35.6	25.4	43.5	-18.1
875.08	36.9	H	225.0	243.0	22.7	3.2	35.0	27.8	46.0	-18.2

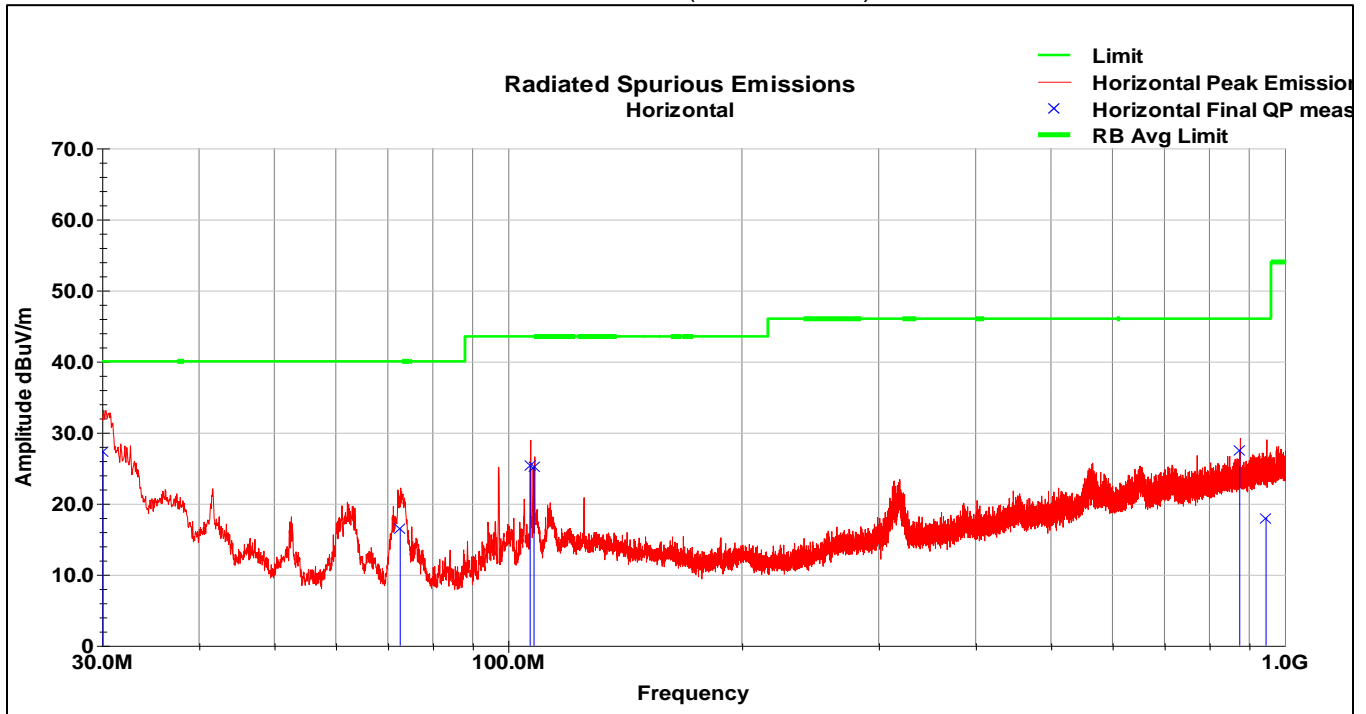
WLAN Channel 6 - Vertical Plot (30-1000MHz)



Vertical Data (30-1000MHz)

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)
30.27	40.6	V	318.0	178.0	22.0	0.5	34.7	28.4	40.0	-11.6
69.74	39.3	V	358.0	175.0	8.2	0.9	35.4	12.9	40.0	-27.1
73.05	44.2	V	193.0	175.0	8.2	0.9	35.4	17.9	40.0	-22.1
97.11	51.2	V	346.0	175.0	9.5	1.1	35.6	26.2	43.5	-17.3
106.71	48.8	V	309.0	175.0	11.7	1.1	35.6	26.1	43.5	-17.5
108.02	47.9	V	205.0	175.0	12.0	1.1	35.6	25.4	43.5	-18.1

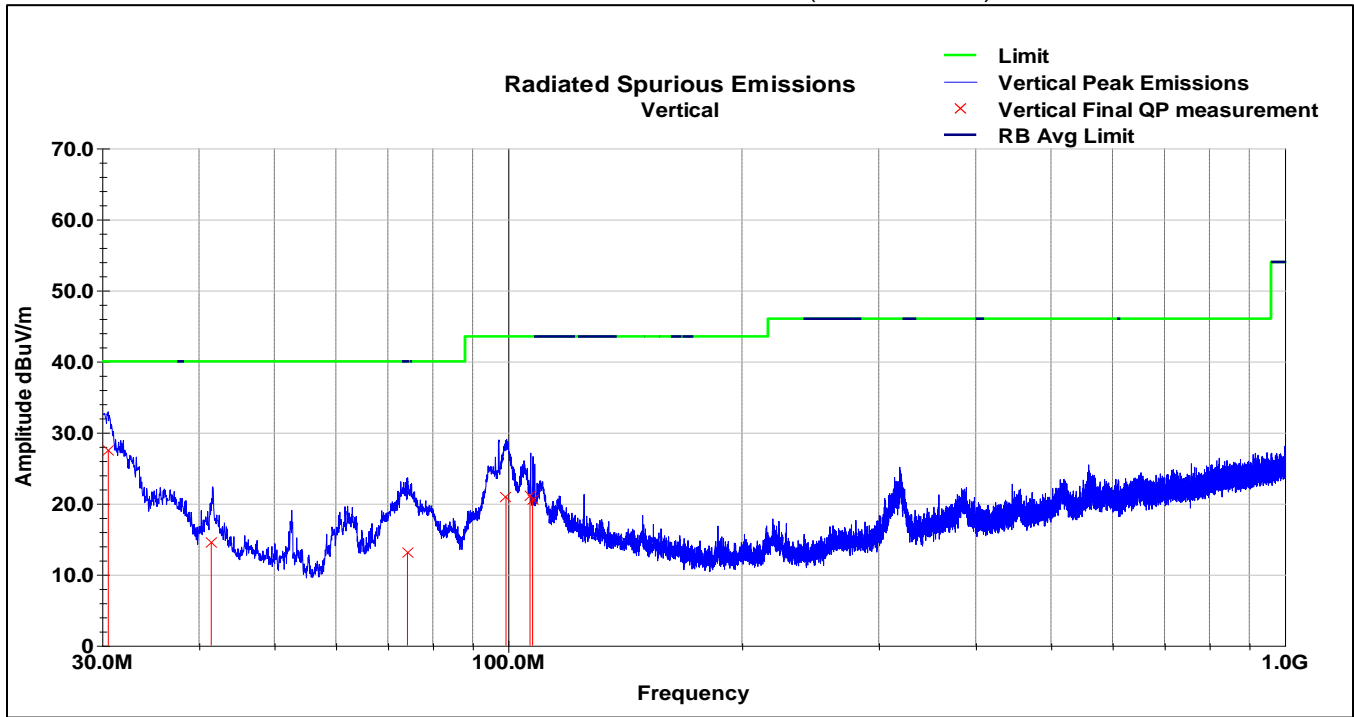
Horizontal Plot (30-1000MHz)



Horizontal Data (30-1000MHz)

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)
30.09	39.3	H	298.0	143.0	22.1	0.5	34.7	27.3	40.0	-12.7
72.63	42.8	H	237.0	218.0	8.2	0.9	35.4	16.5	40.0	-23.5
106.77	48.1	H	359.0	116.0	11.8	1.1	35.6	25.4	43.5	-18.1
107.99	47.7	H	98.0	175.0	12.0	1.1	35.6	25.2	43.5	-18.3
875.08	36.6	H	12.0	217.0	22.7	3.2	35.0	27.5	46.0	-18.5
946.31	26.4	H	345.0	175.0	23.2	3.3	35.0	18.0	46.0	-28.1

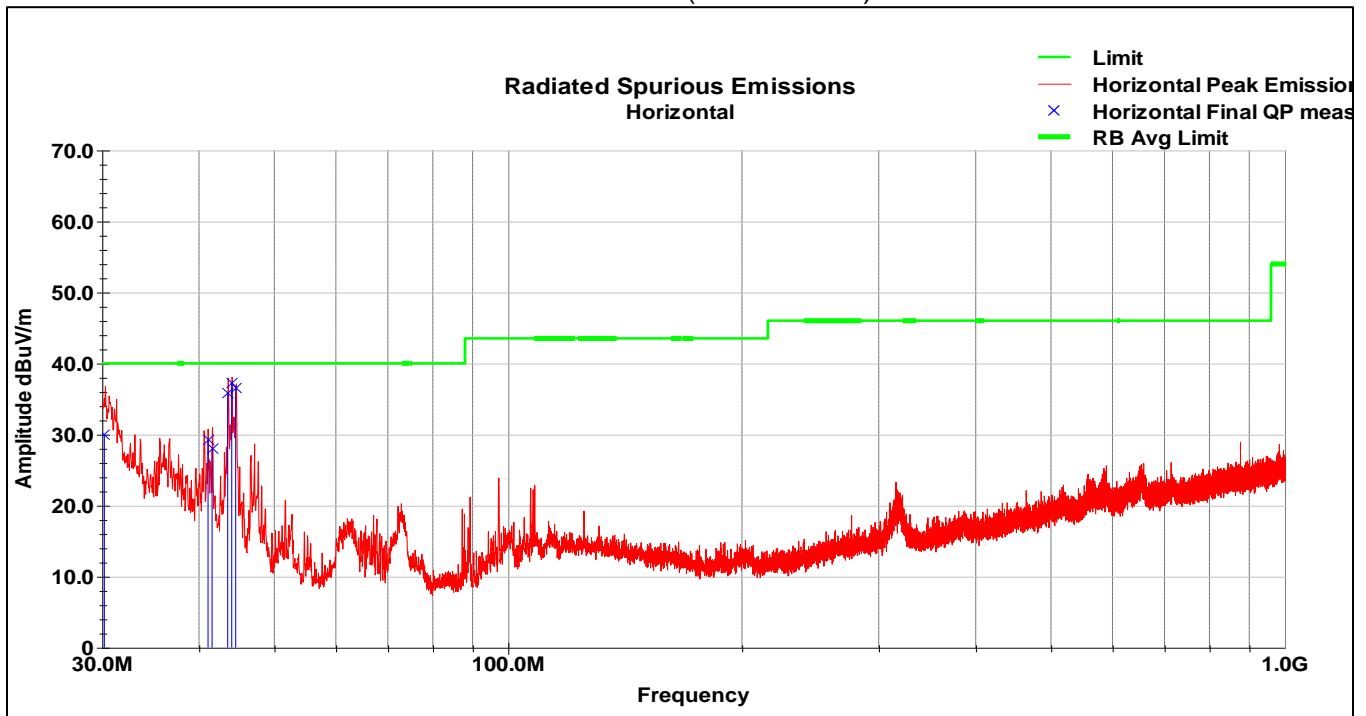
WLAN Channel 11 – Vertical Plot (30-1000MHz)



Vertical Data (30-1000MHz)

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)
30.57	40.0	V	39.0	250.0	21.7	0.5	34.7	27.5	40.0	-12.5
41.47	35.5	V	38.0	198.0	13.4	0.7	35.0	14.5	40.0	-25.5
74.21	39.4	V	116.0	250.0	8.2	0.9	35.4	13.1	40.0	-26.9
99.39	45.3	V	122.0	250.0	10.1	1.1	35.6	20.9	43.5	-22.6
106.71	43.8	V	318.0	250.0	11.7	1.1	35.6	21.1	43.5	-22.5
107.53	43.1	V	15.0	250.0	11.9	1.1	35.6	20.6	43.5	-23.0

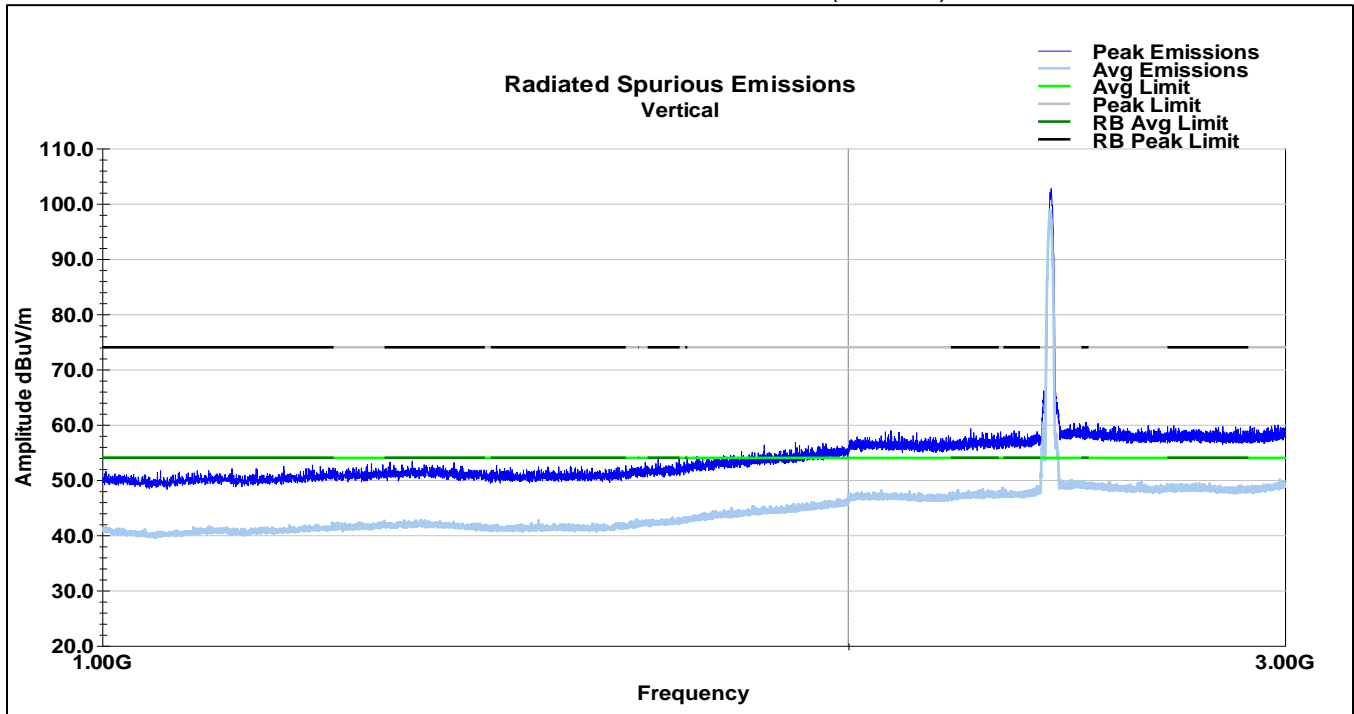
Horizontal Plot (30-1000MHz)



Horizontal Data (30-1000MHz)

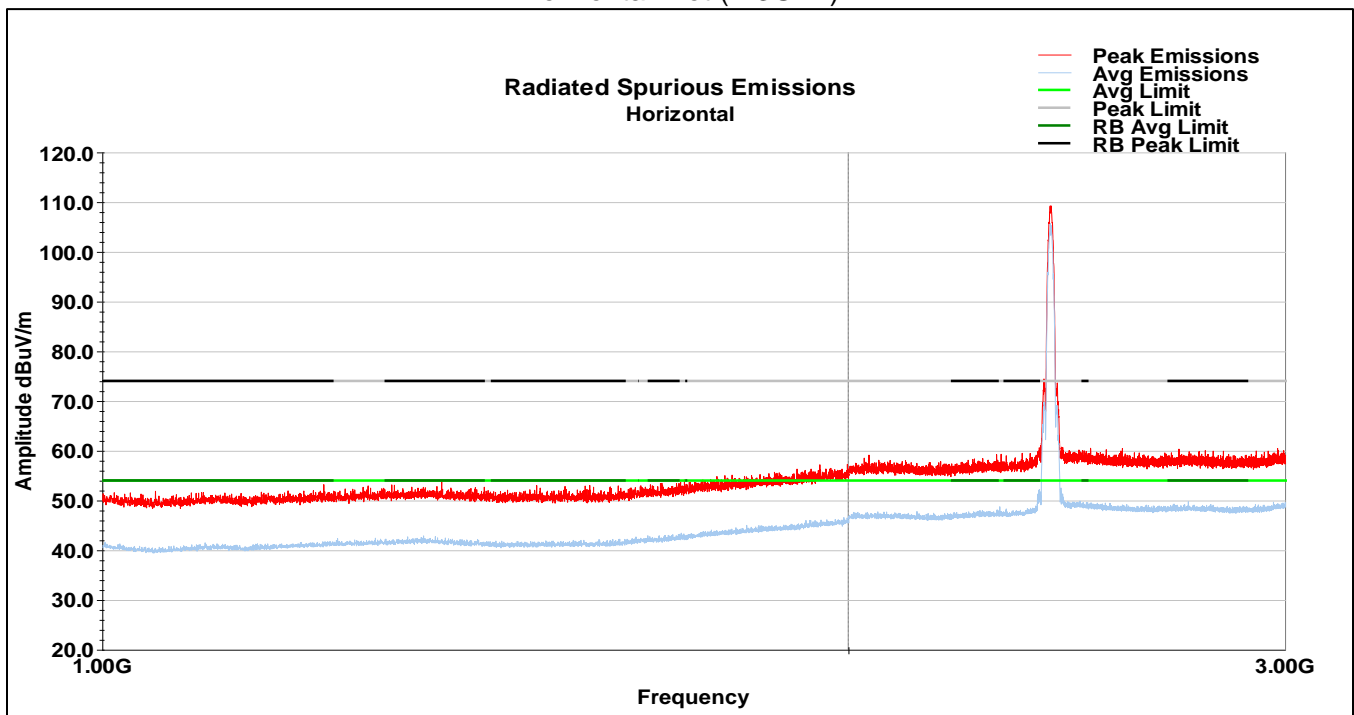
Frequency MHz	Raw QP (dBuV)	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	QP Value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.21	42.1	H	252.0	100.0	22.0	0.5	34.7	30.0	40.0	-10.0
41.08	50.0	H	248.0	100.0	13.6	0.7	35.0	29.3	40.0	-10.7
41.57	49.0	H	244.0	100.0	13.3	0.7	35.0	28.0	40.0	-12.0
43.55	58.3	H	247.0	100.0	12.0	0.7	35.1	35.9	40.0	-4.1
44.07	60.0	H	248.0	100.0	11.7	0.7	35.1	37.3	40.0	-2.7
44.59	59.5	H	246.0	100.0	11.3	0.7	35.0	36.4	40.0	-3.6

WLAN Channel 1 - Vertical Plot (1-3GHz)



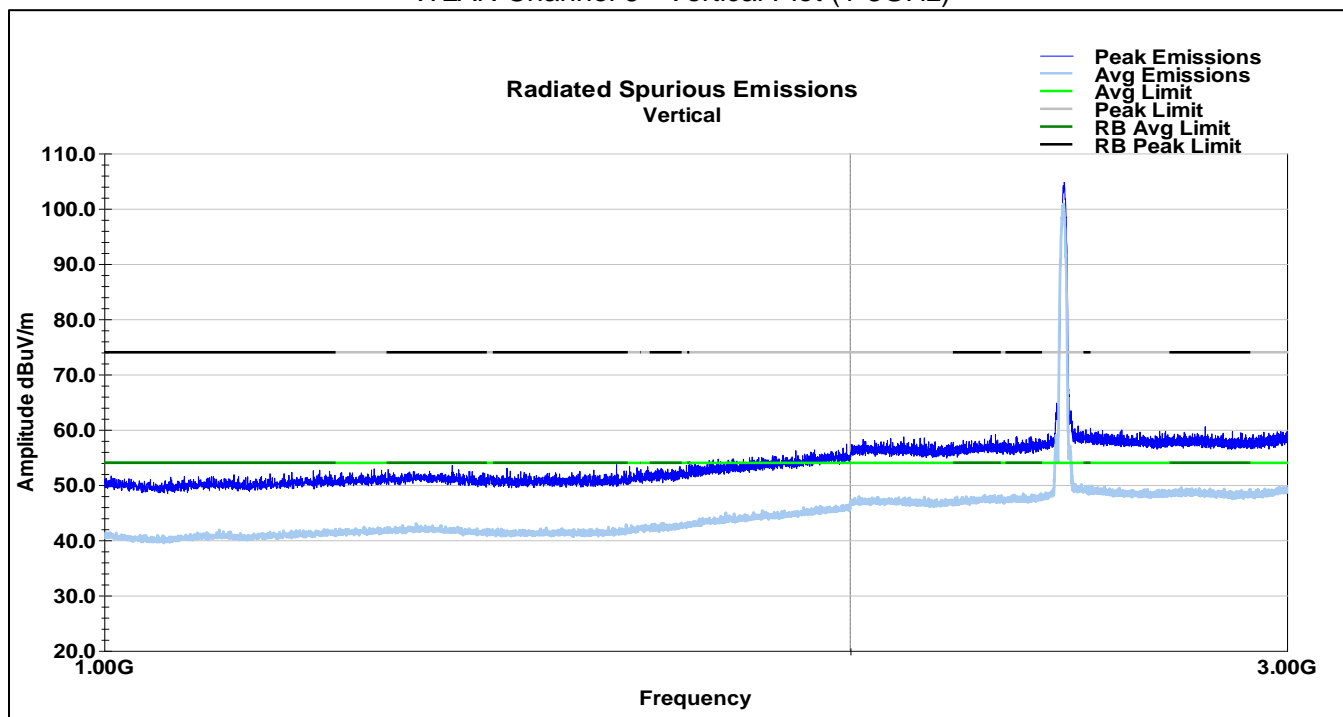
No spurious emissions observed

Horizontal Plot (1-3GHz)



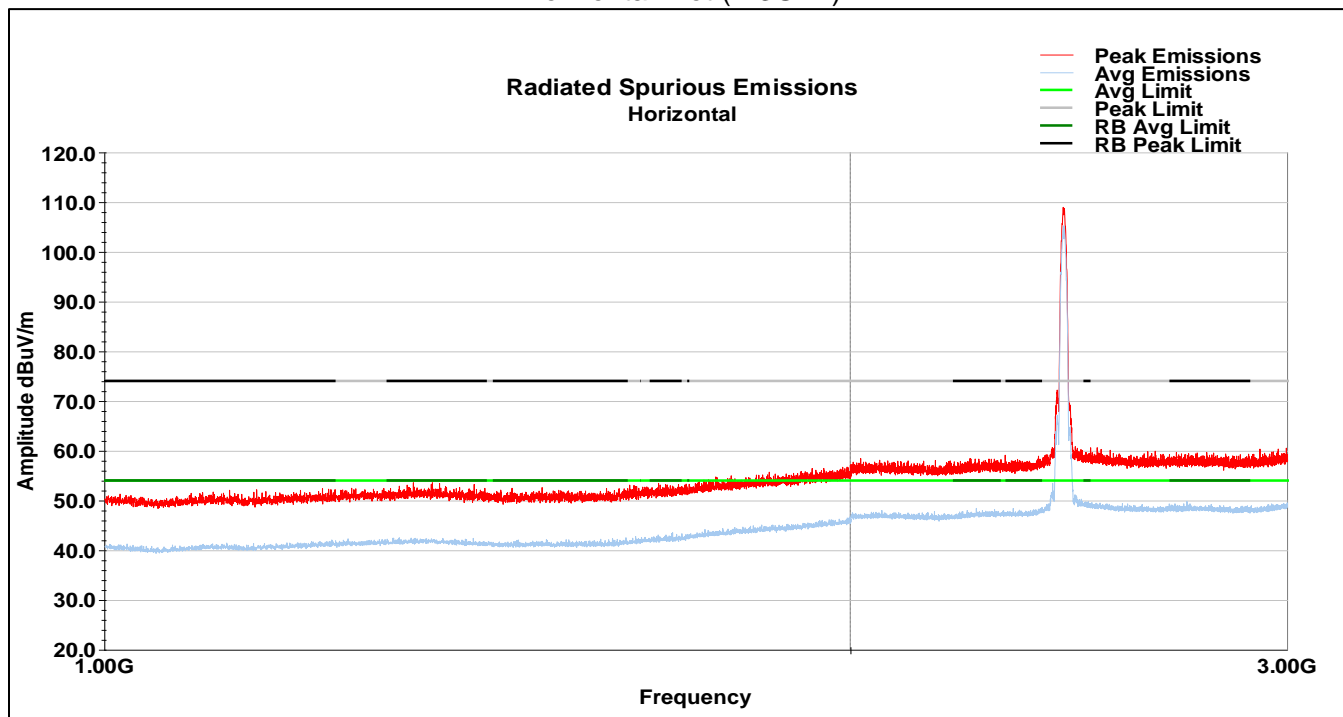
No spurious emissions observed

WLAN Channel 6 - Vertical Plot (1-3GHz)



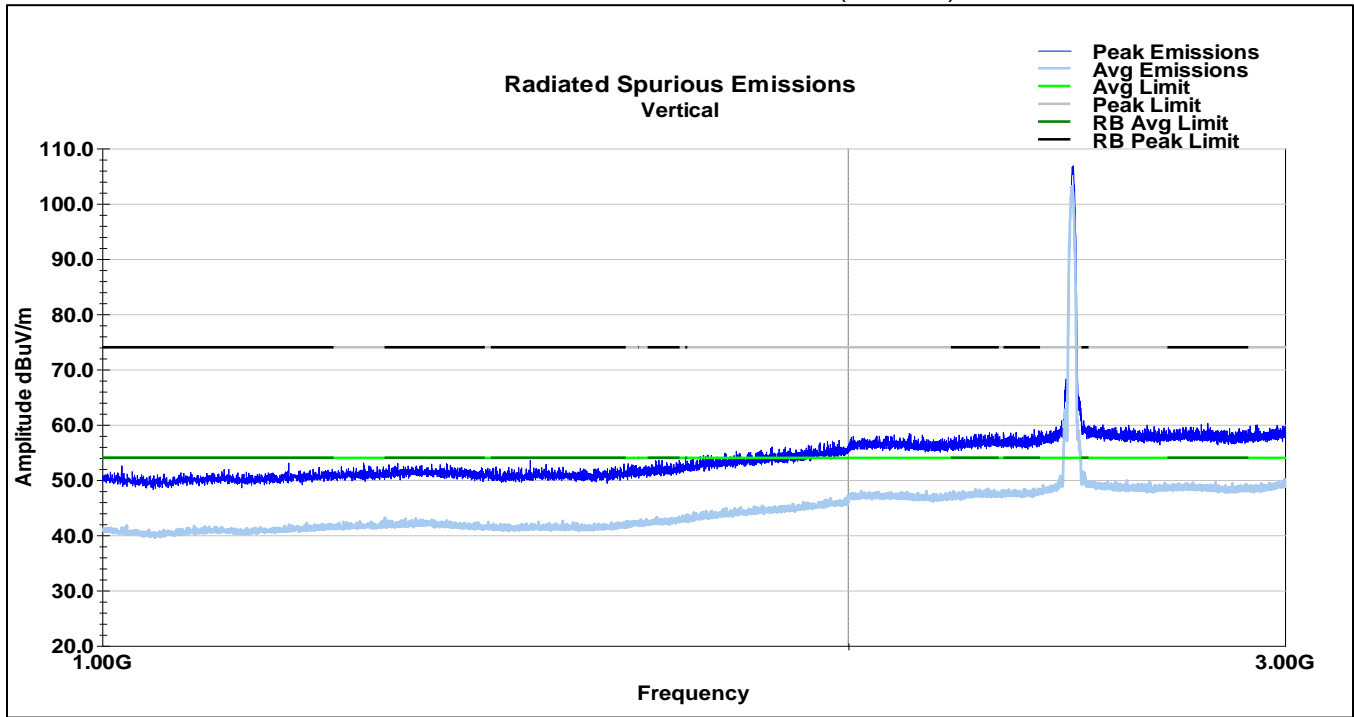
No spurious emissions observed

Horizontal Plot (1-3GHz)



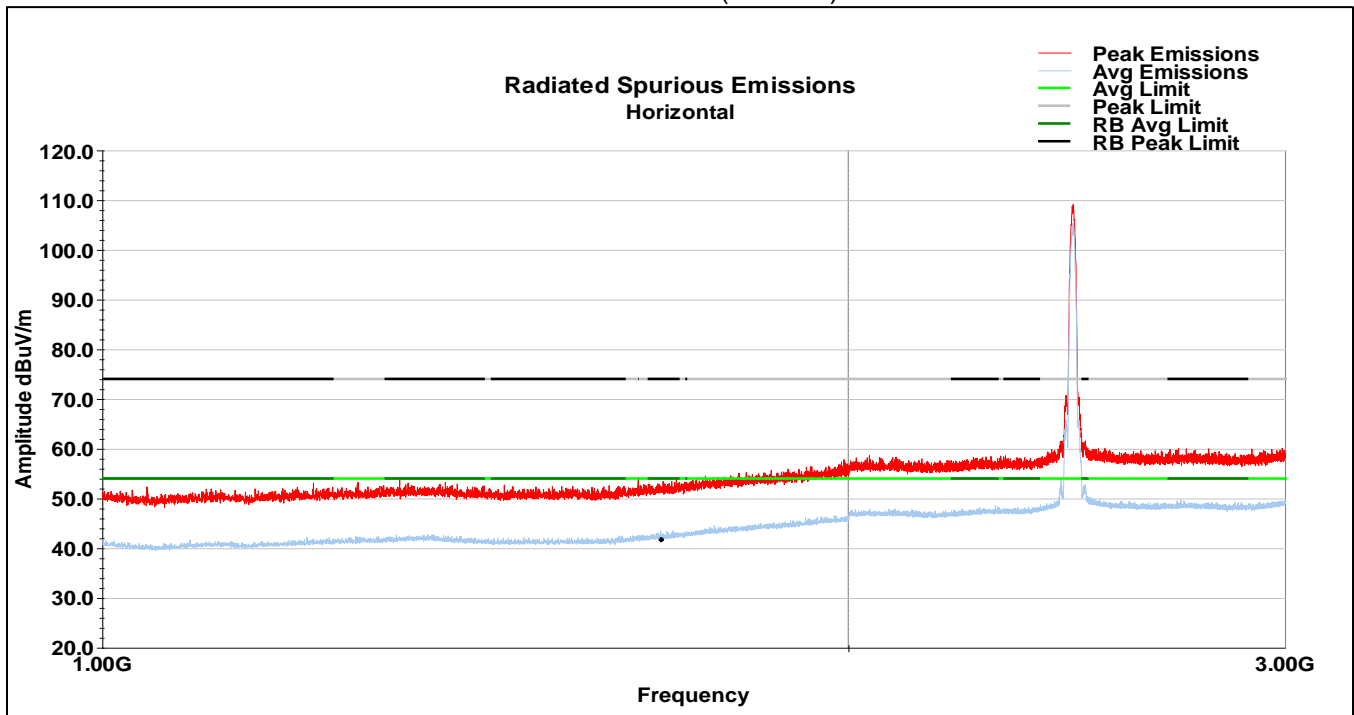
No spurious emissions observed

WLAN Channel 11 - Vertical Plot (1-3GHz)



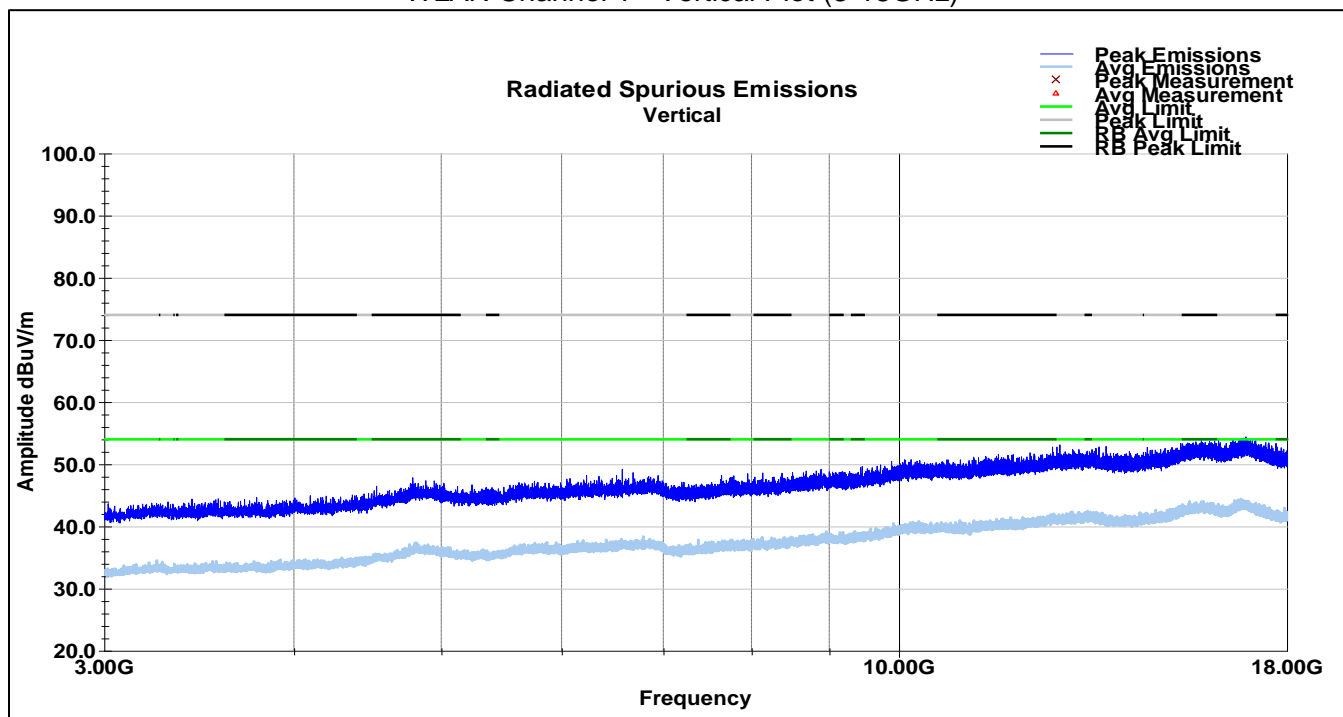
No spurious emissions observed

Horizontal Plot (1-3GHz)



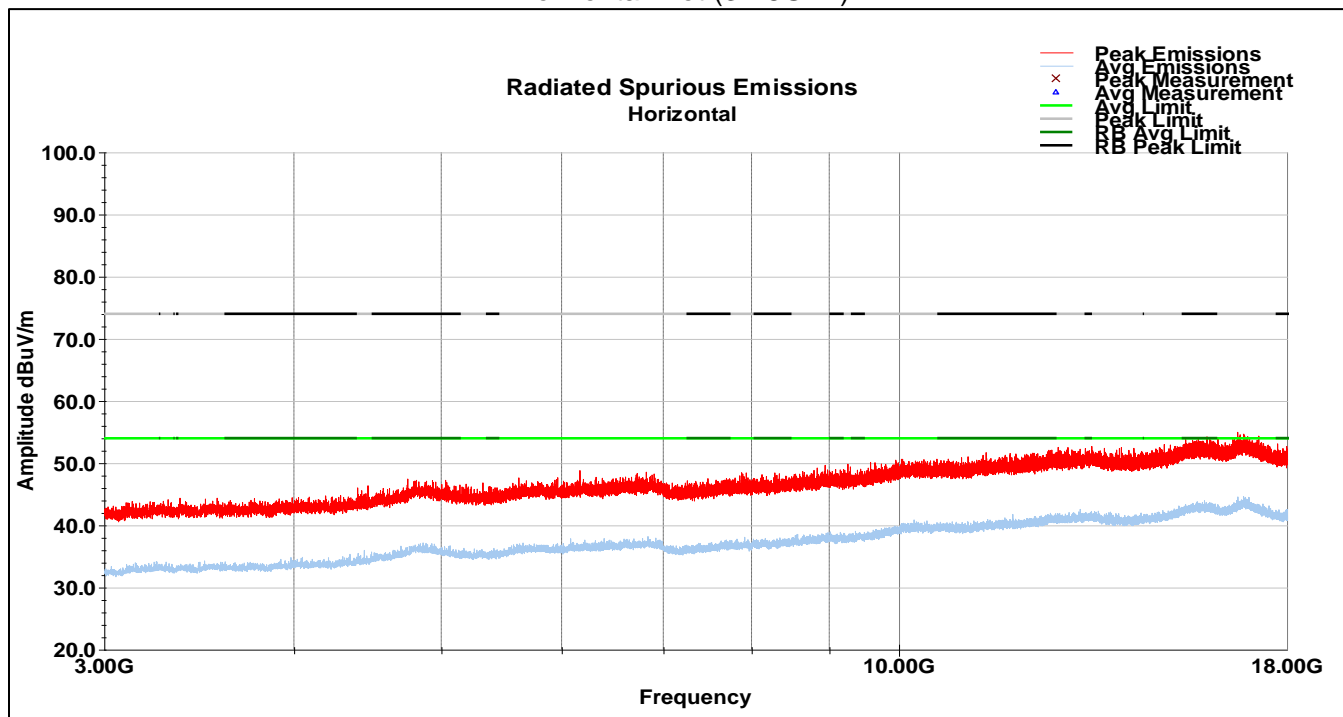
No spurious emissions observed

WLAN Channel 1 - Vertical Plot (3-18GHz)



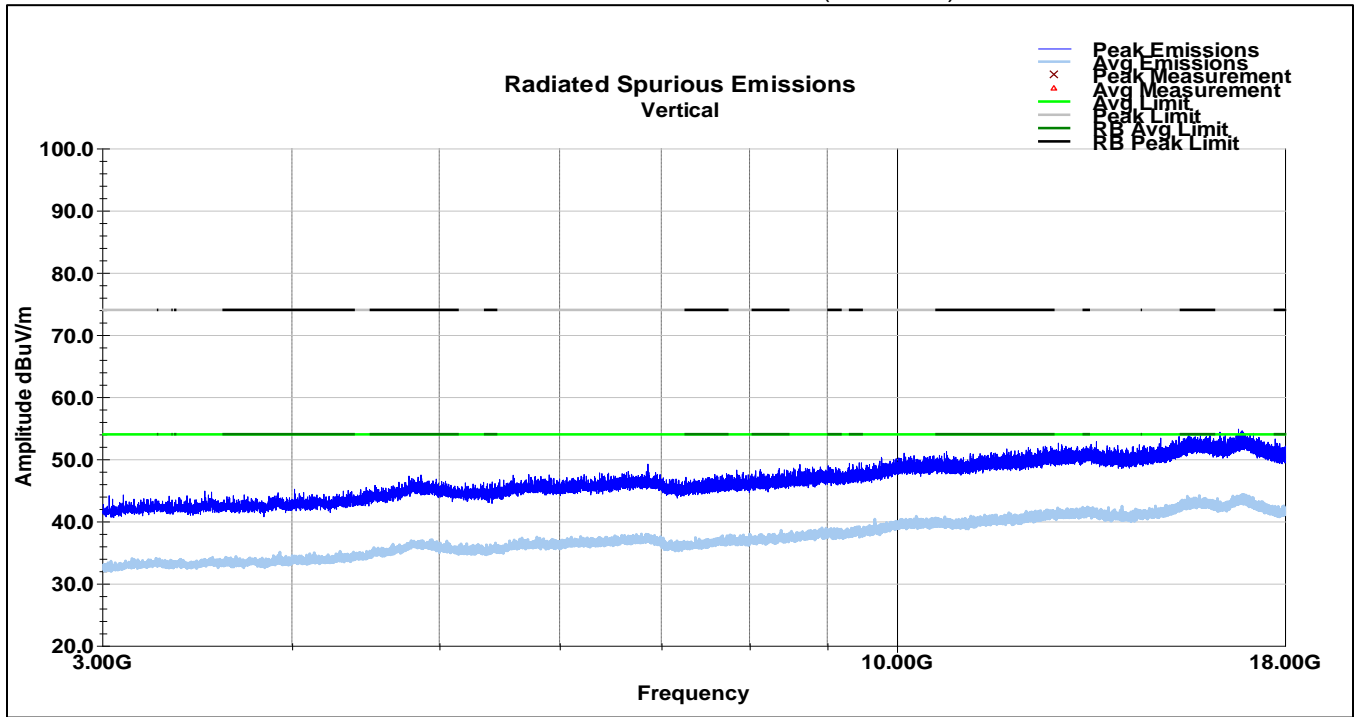
No spurious emissions observed

Horizontal Plot (3-18GHz)



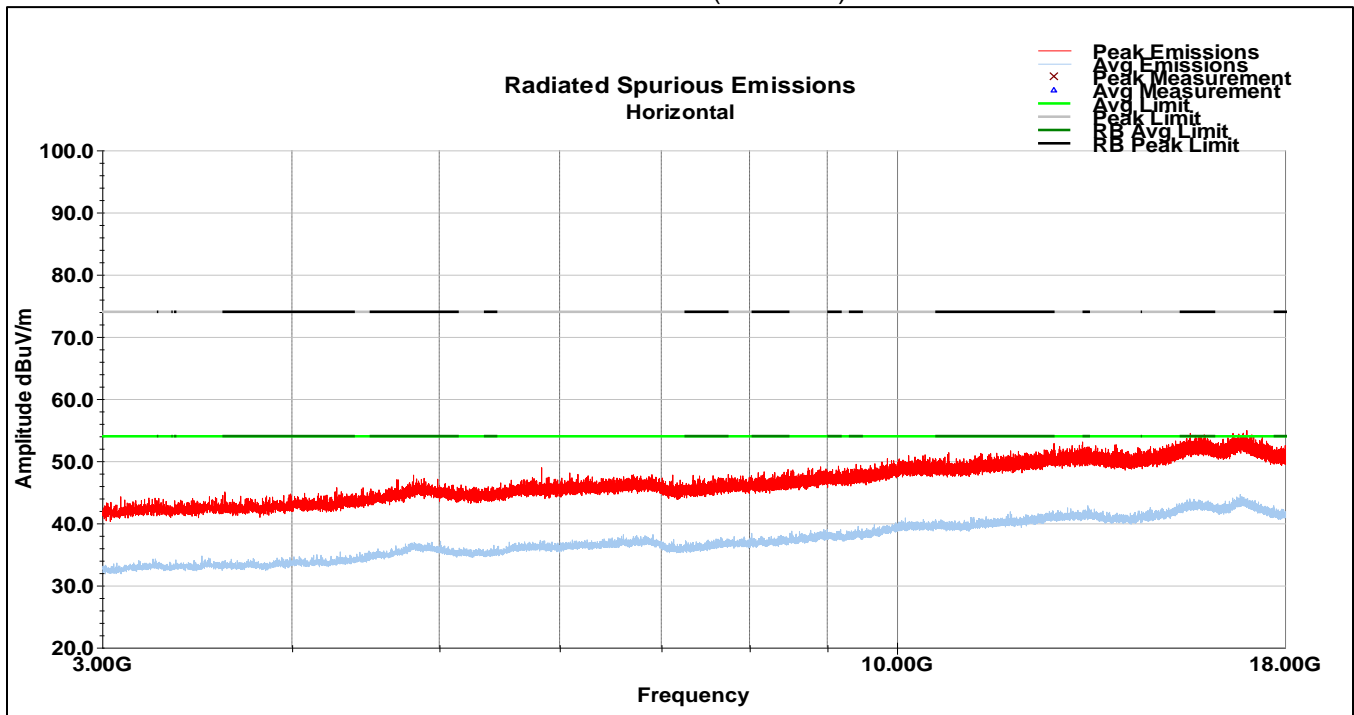
No spurious emissions observed

WLAN Channel 6 - Vertical Plot (3-18GHz)



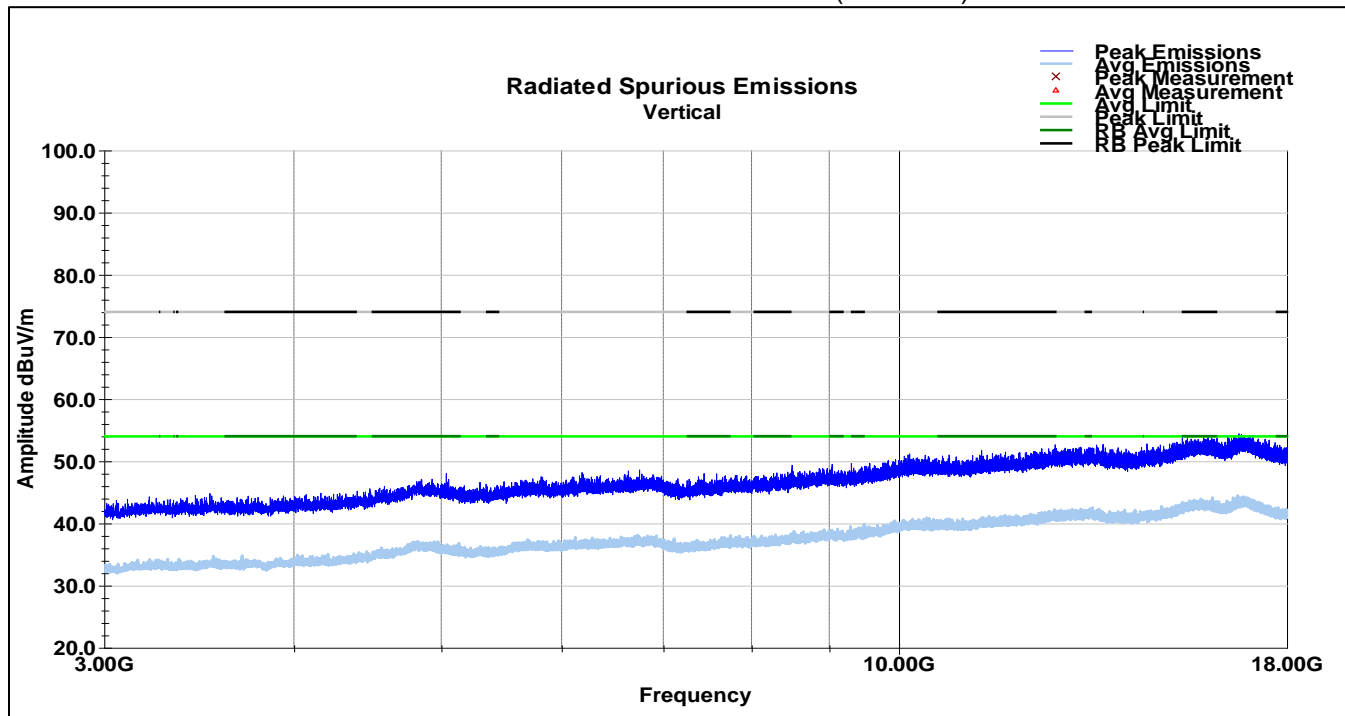
No spurious emissions observed

Horizontal Plot (3-18GHz)



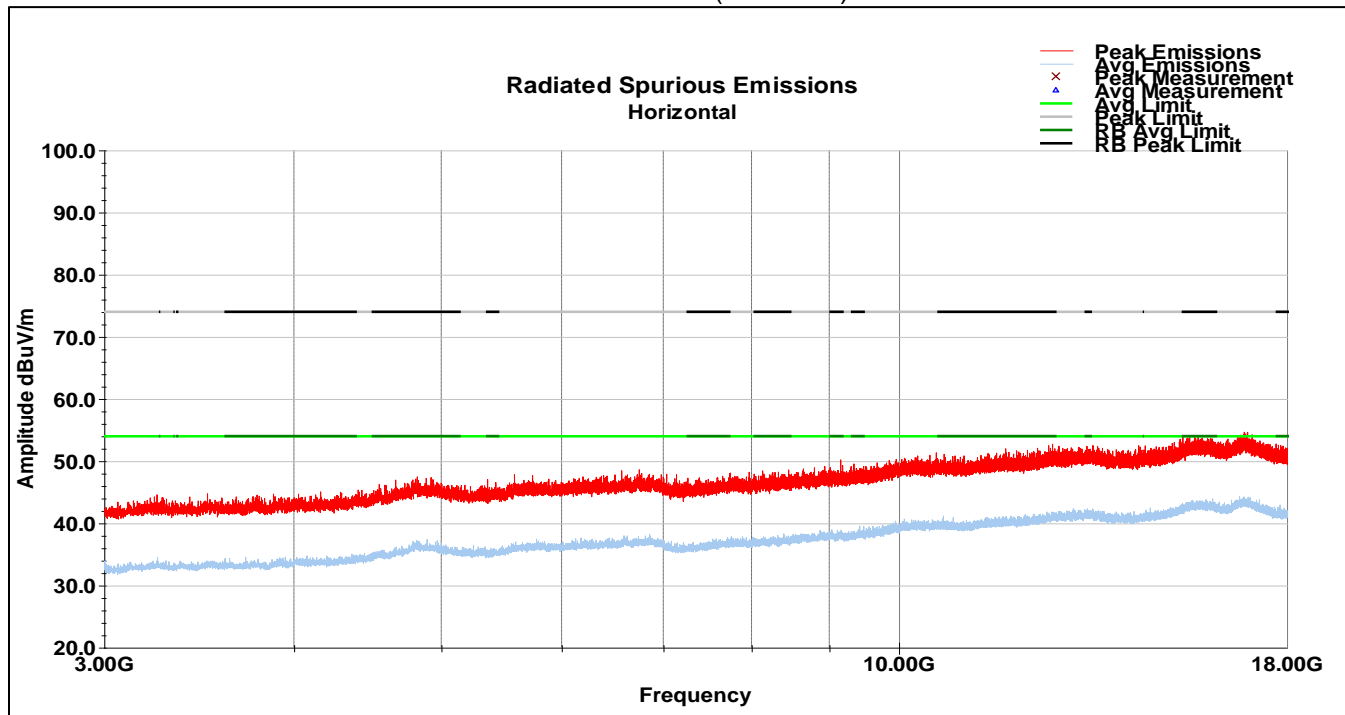
No spurious emissions observed

WLAN Channel 11 – Vertical Plot (3-18GHz)



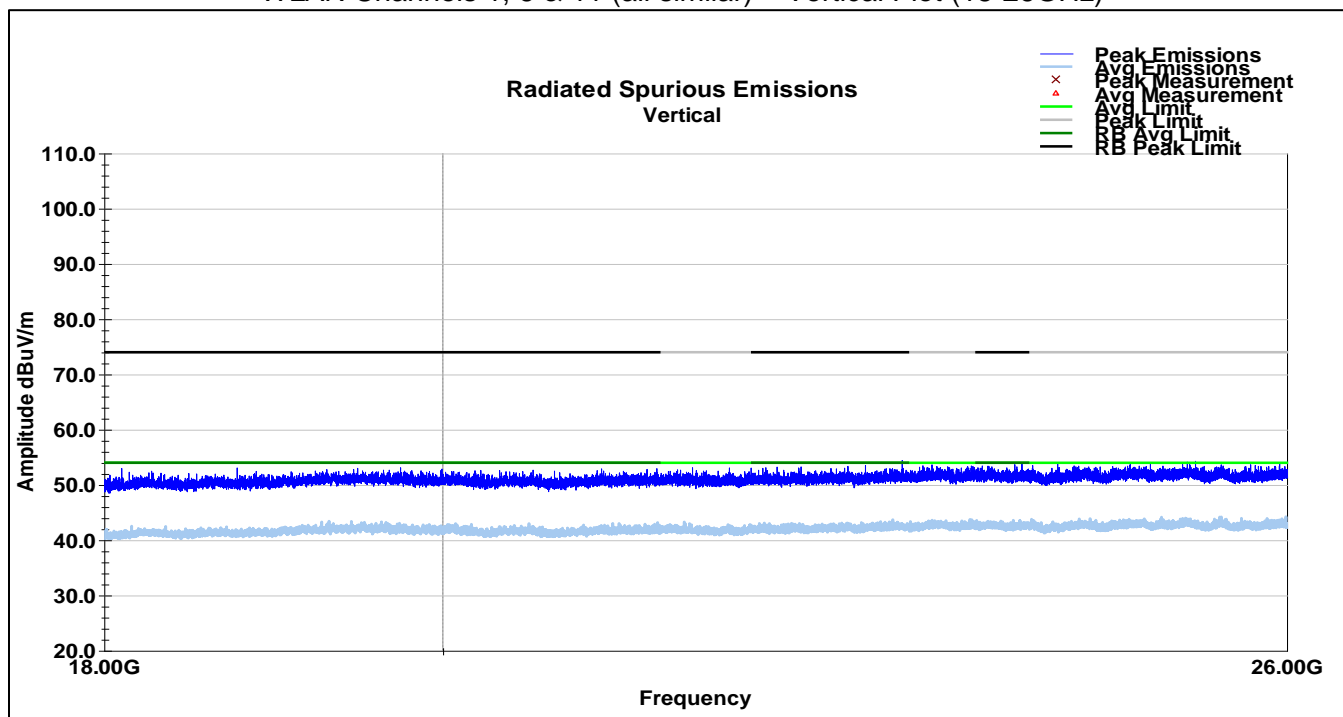
No spurious emissions observed

Horizontal Plot (3-18GHz)



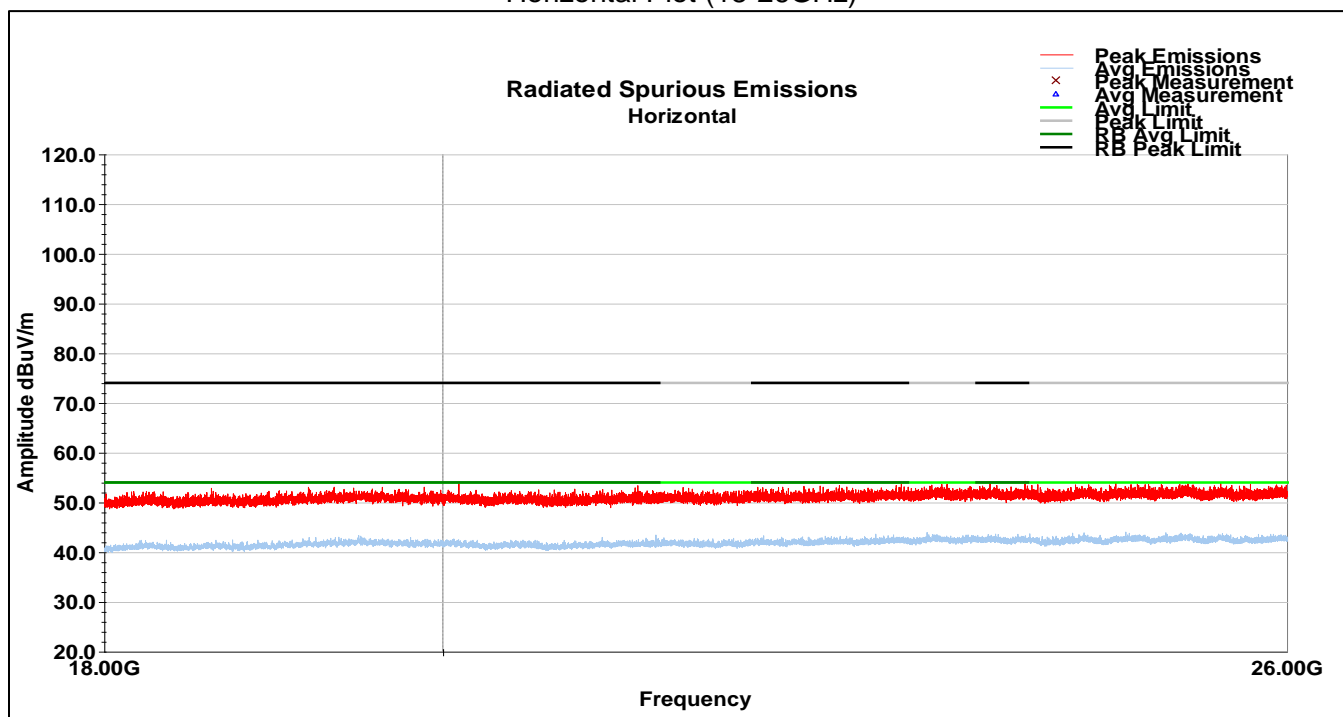
No spurious emissions observed

WLAN Channels 1, 6 & 11 (all similar) – Vertical Plot (18-26GHz)



No spurious emissions observed

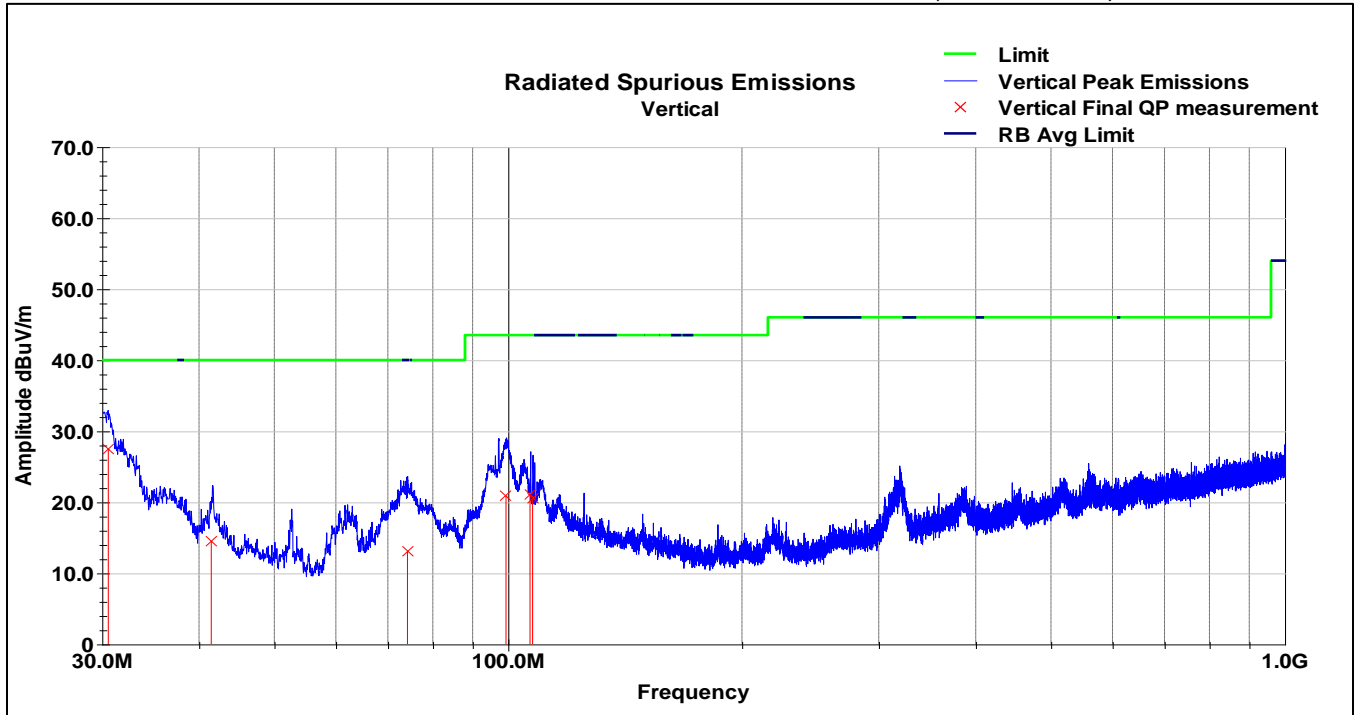
Horizontal Plot (18-26GHz)



No spurious emissions observed

3.7 Test Data – WLAN and BLE Simultaneous Transmission RSE

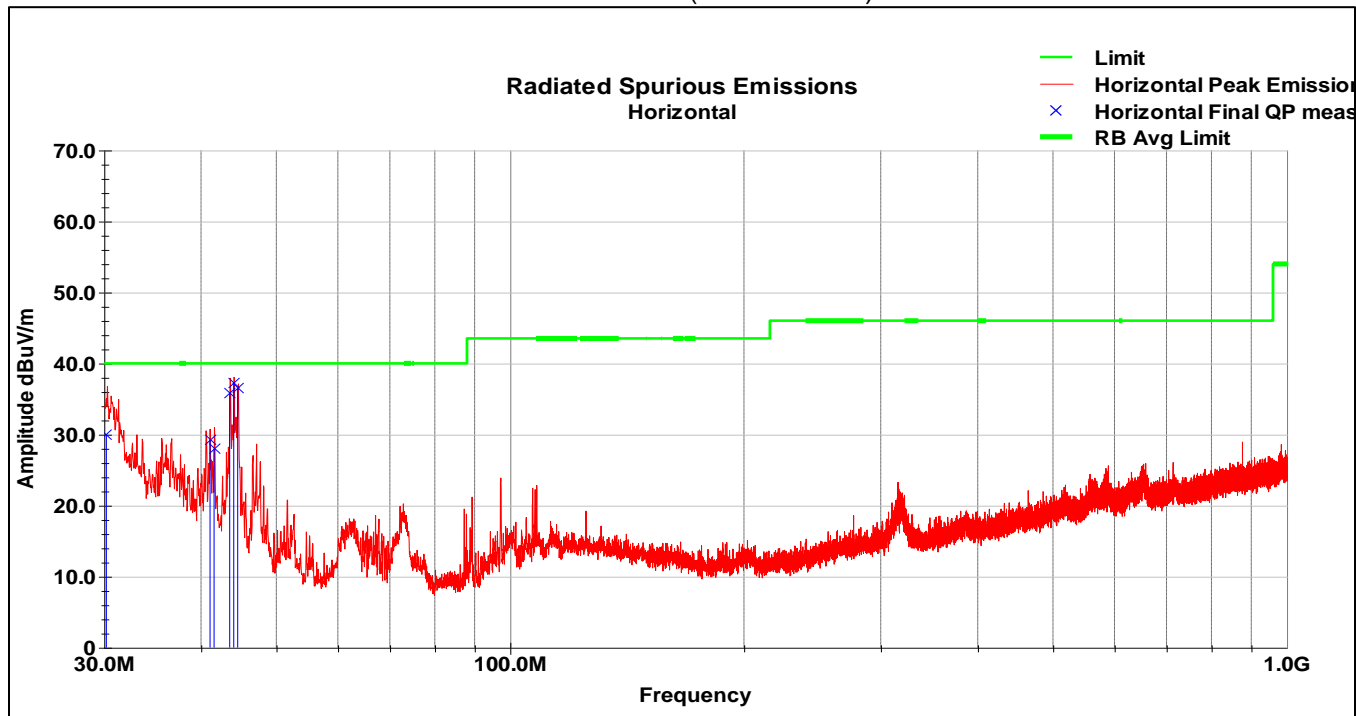
WLAN Channel 11 + BLE Channel 19 – Vertical Plot (30-1000MHz)



Vertical Data (30-1000MHz)

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)
30.57	40.0	V	39.0	250.0	21.7	0.5	34.7	27.5	40.0	-12.5
41.47	35.5	V	38.0	198.0	13.4	0.7	35.0	14.5	40.0	-25.5
74.21	39.4	V	116.0	250.0	8.2	0.9	35.4	13.1	40.0	-26.9
99.39	45.3	V	122.0	250.0	10.1	1.1	35.6	20.9	43.5	-22.6
106.71	43.8	V	318.0	250.0	11.7	1.1	35.6	21.1	43.5	-22.5
107.53	43.1	V	15.0	250.0	11.9	1.1	35.6	20.6	43.5	-23.0

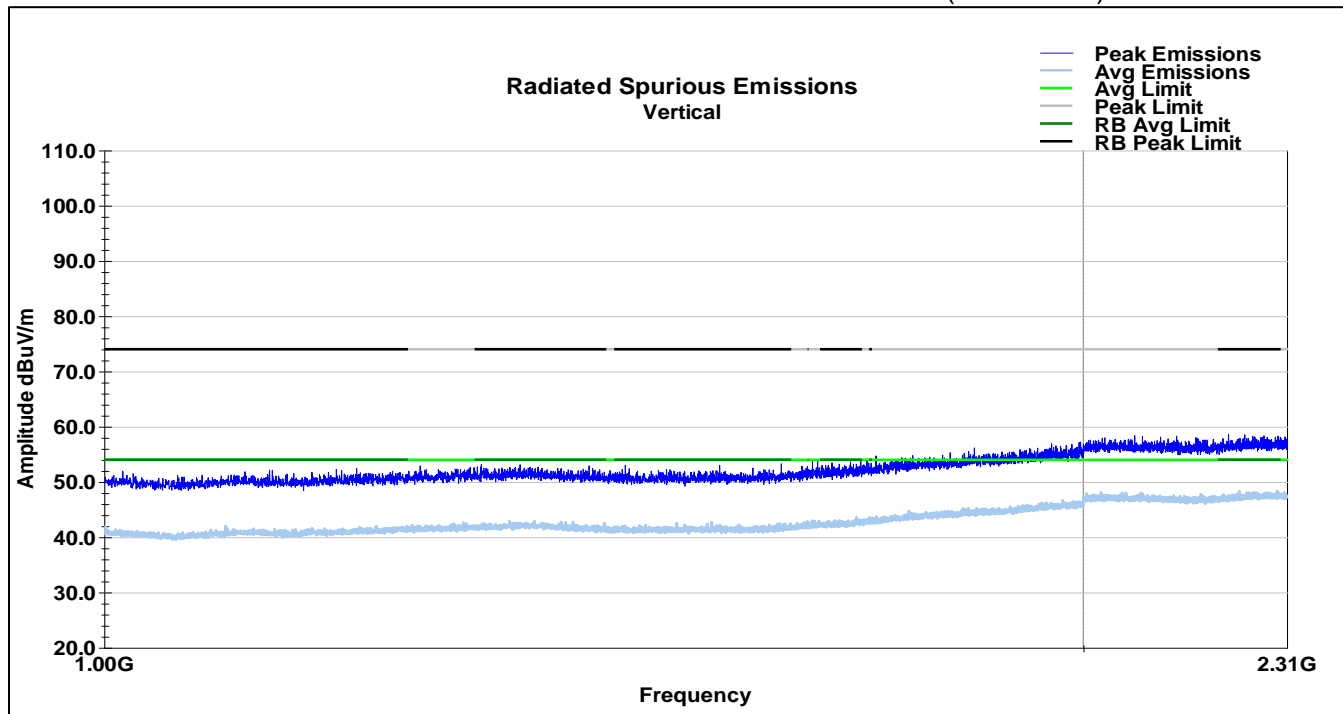
Horizontal Plot (30-1000MHz)



Horizontal Data (30-1000MHz)

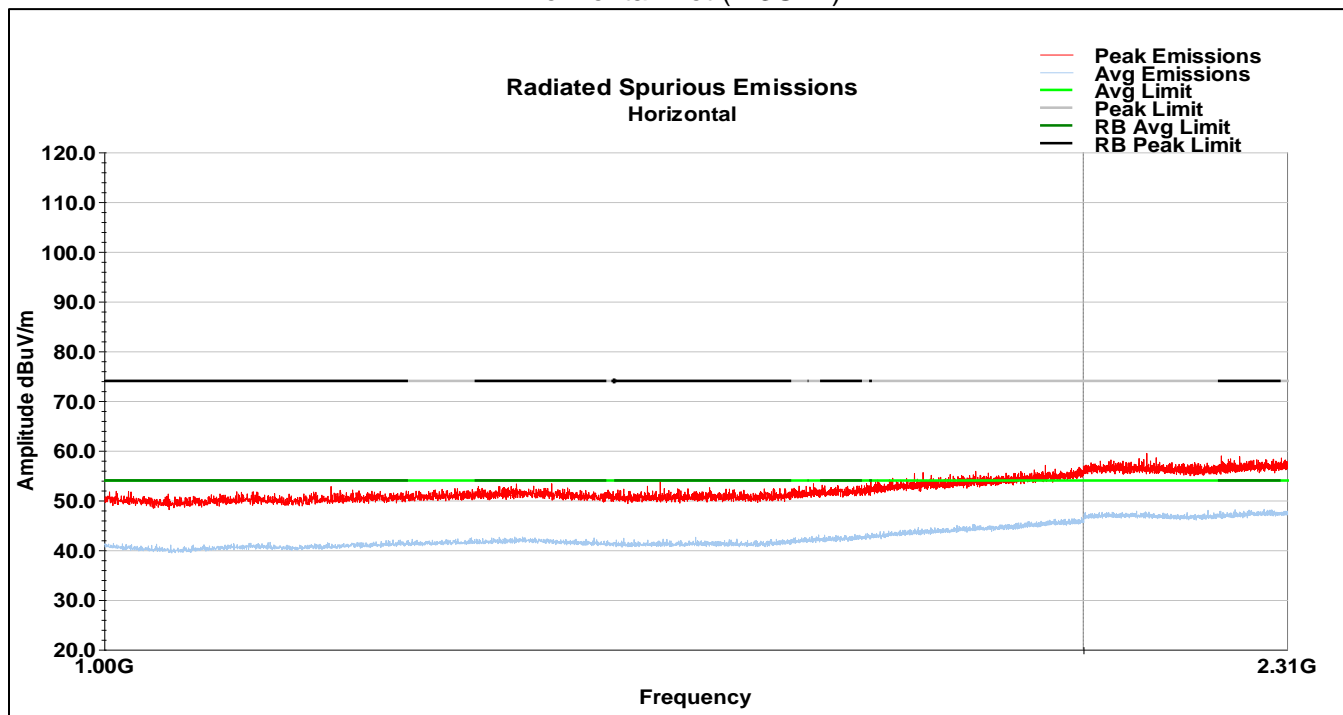
Frequency MHz	Raw QP (dBuV)	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	QP Value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.21	42.1	H	252.0	100.0	22.0	0.5	34.7	30.0	40.0	-10.0
41.08	50.0	H	248.0	100.0	13.6	0.7	35.0	29.3	40.0	-10.7
41.57	49.0	H	244.0	100.0	13.3	0.7	35.0	28.0	40.0	-12.0
43.55	58.3	H	247.0	100.0	12.0	0.7	35.1	35.9	40.0	-4.1
44.07	60.0	H	248.0	100.0	11.7	0.7	35.1	37.3	40.0	-2.7
44.59	59.5	H	246.0	100.0	11.3	0.7	35.0	36.4	40.0	-3.6

WLAN Channel 11 + BLE Channel 19 – Vertical Plot (1-2.31GHz)



No spurious emissions observed

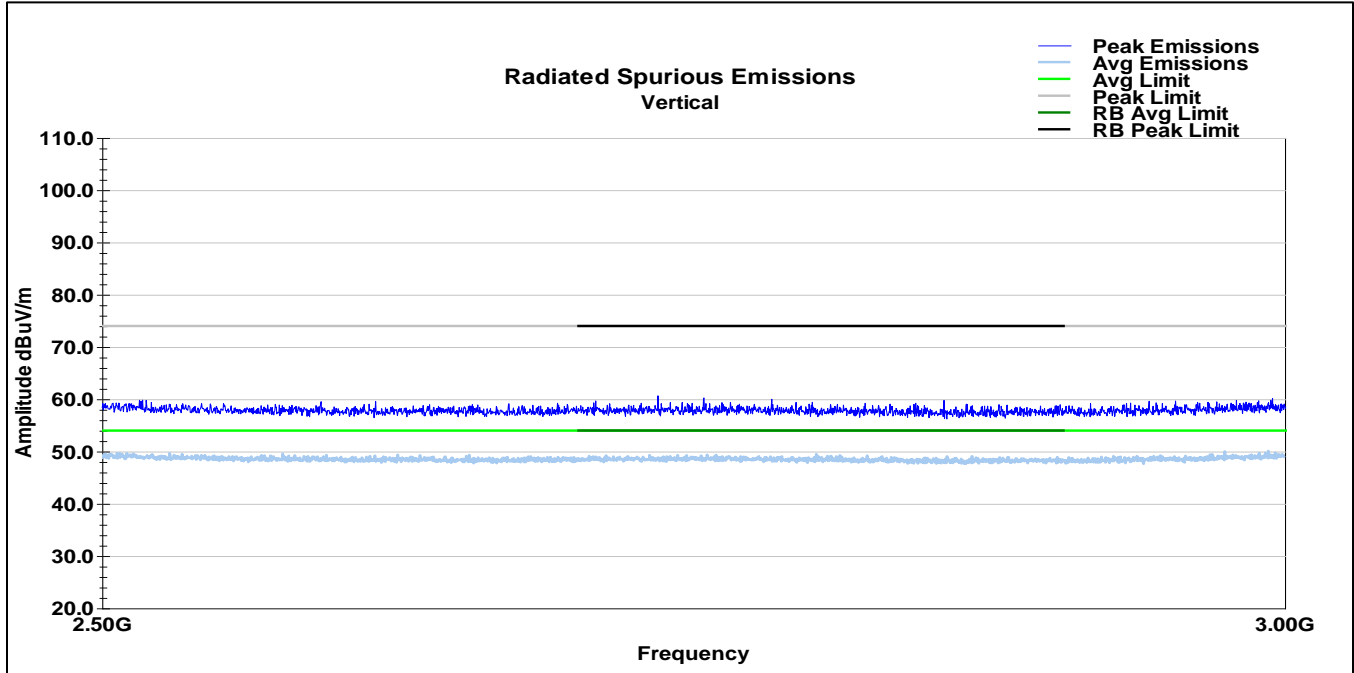
Horizontal Plot (1-3GHz)



No spurious emissions observed

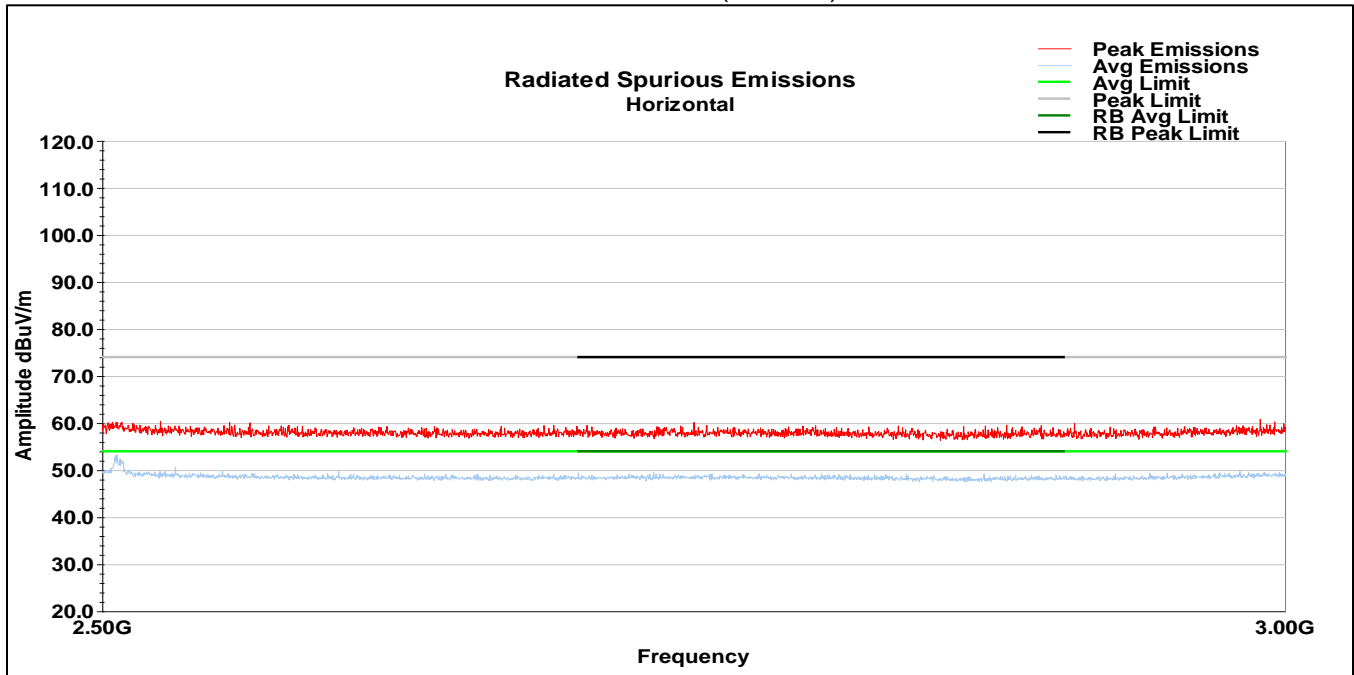
Note: See the Band Edge test results in Section 4.6 of this report for coverage of the restricted bands on either side of the authorized band (i.e. 2.31-2.39GHz and 2.4835-2.5GHz).

WLAN Channel 11 + BLE Channel 19 – Vertical Plot (2.5-3GHz)



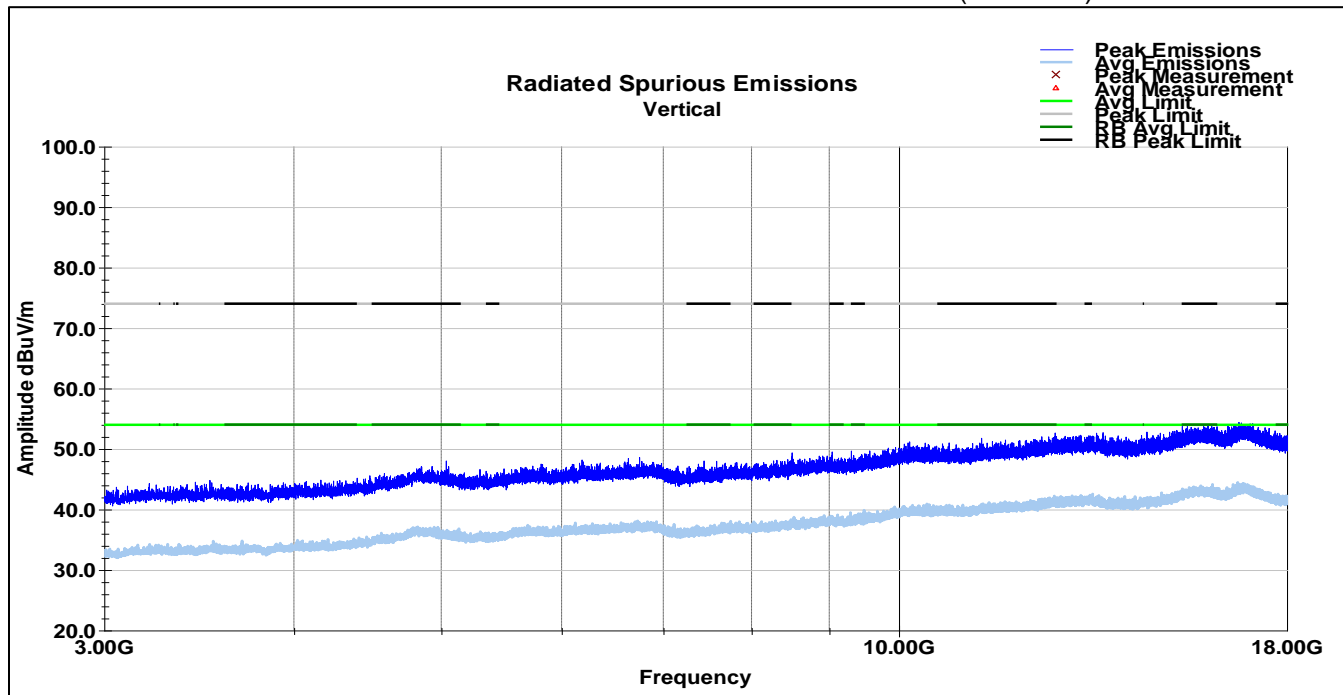
No spurious emissions observed

Horizontal Plot (1-3GHz)



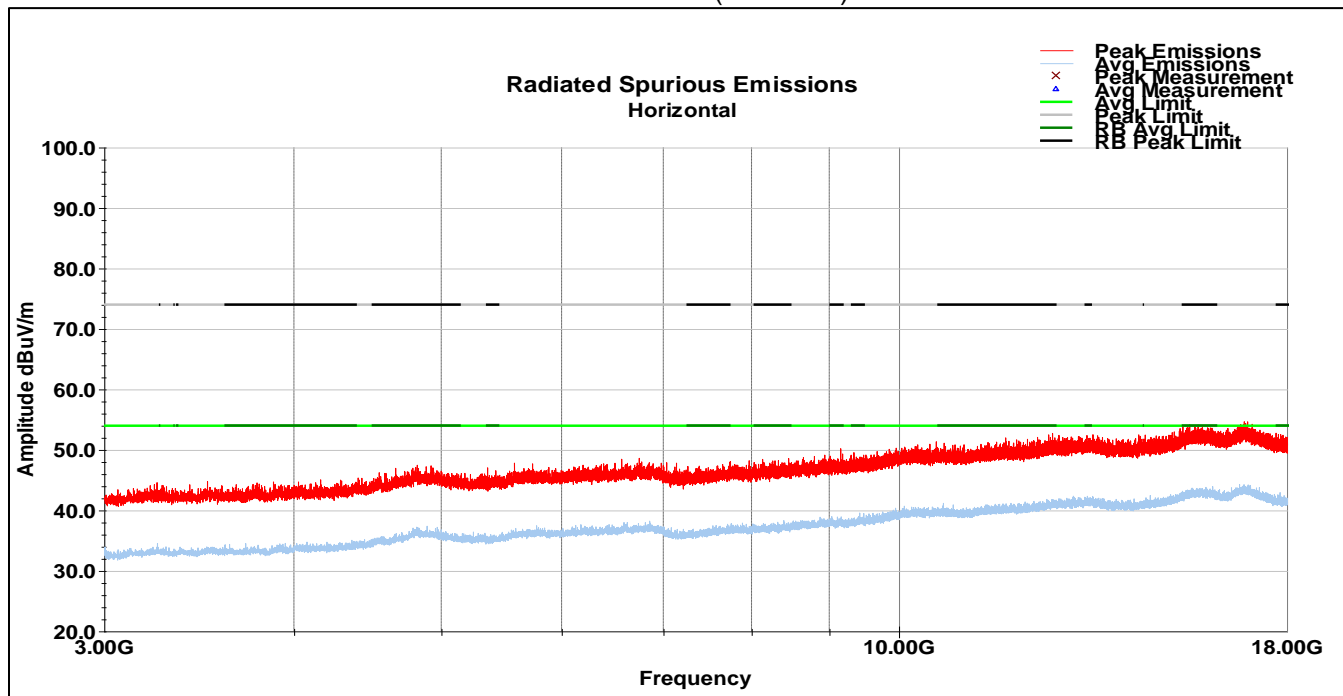
No spurious emissions observed

WLAN Channel 11 + BLE Channel 19 – Vertical Plot (3-18GHz)



No spurious emissions observed

Horizontal Plot (3-18GHz)



No spurious emissions observed

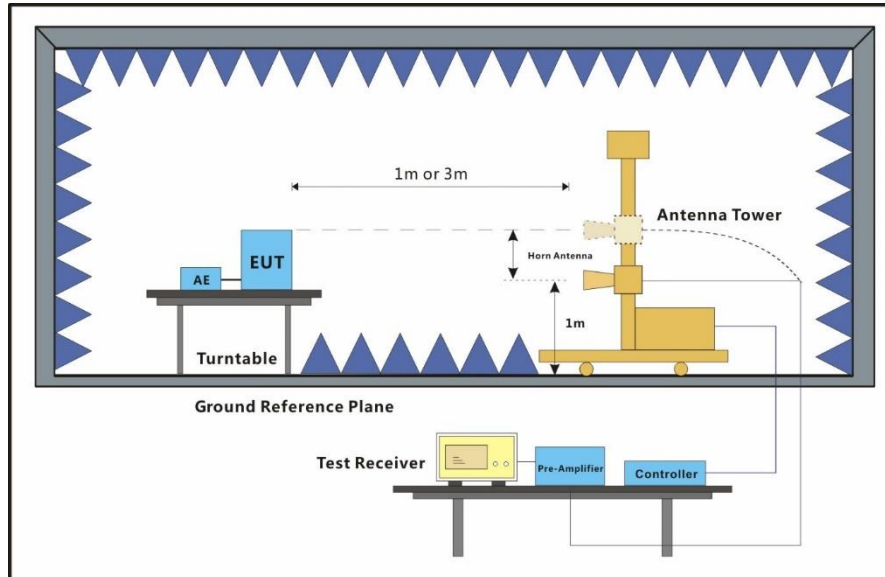
Note: No measurements were made above 18GHz since no emissions were observed from 3-18GHz.

4 Band Edge Emissions in Restricted Frequency Bands

4.1 Test Result

Test Description	Test Specification		Test Result
Band Edge Emissions in Restricted Frequency Bands	15.205, 15.209	RSS-GEN S8.9, 8.10	Compliant

4.2 Test Setup



4.3 Test Method

Field strength measurements were performed at the restricted band edges of 2390MHz and 2483.5MHz. Measurements were made using the radiated methods defined in ANSI C63.10: 2013 clause 11.12.1.

Both peak and average measurements were performed at a 3m distance from the EUT. A reference level offset was applied to the spectrum analyzer to account for the measuring antenna gain and the cable losses.

The WLAN transmitter tests were performed using a test mode sample, whereas the simultaneous transmission test was performed using a normal sample.

4.4 Test Site

Absorber Lined Shielded Enclosure (ALSE), Suwanee, GA

Environmental Conditions	WLAN Tx only	Simultaneous Tx
Enclosure:	3m chamber	10m chamber
Temperature:	23.2 °C	22.5 °C
Relative Humidity:	49.6 %	47.5 %
Atmospheric Pressure:	98.6 kPa	98.3 kPa

4.5 Test Equipment

WLAN Tx only

Test End Date: 12-Jun-2020

Tester: MT

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
ANTENNA, DRG HORN (MEDIUM)	3117	ETS Lindgren	B079699	2-Jul-2020
RF Cable Nm to Nm, 0.01-18GHz	90-195-354	TELEDYNE STORM MICROWAVE	20120	2-Mar-2021
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	6-Apr-2021

Simultaneous Tx

Test End Date: 16-Jun-2020

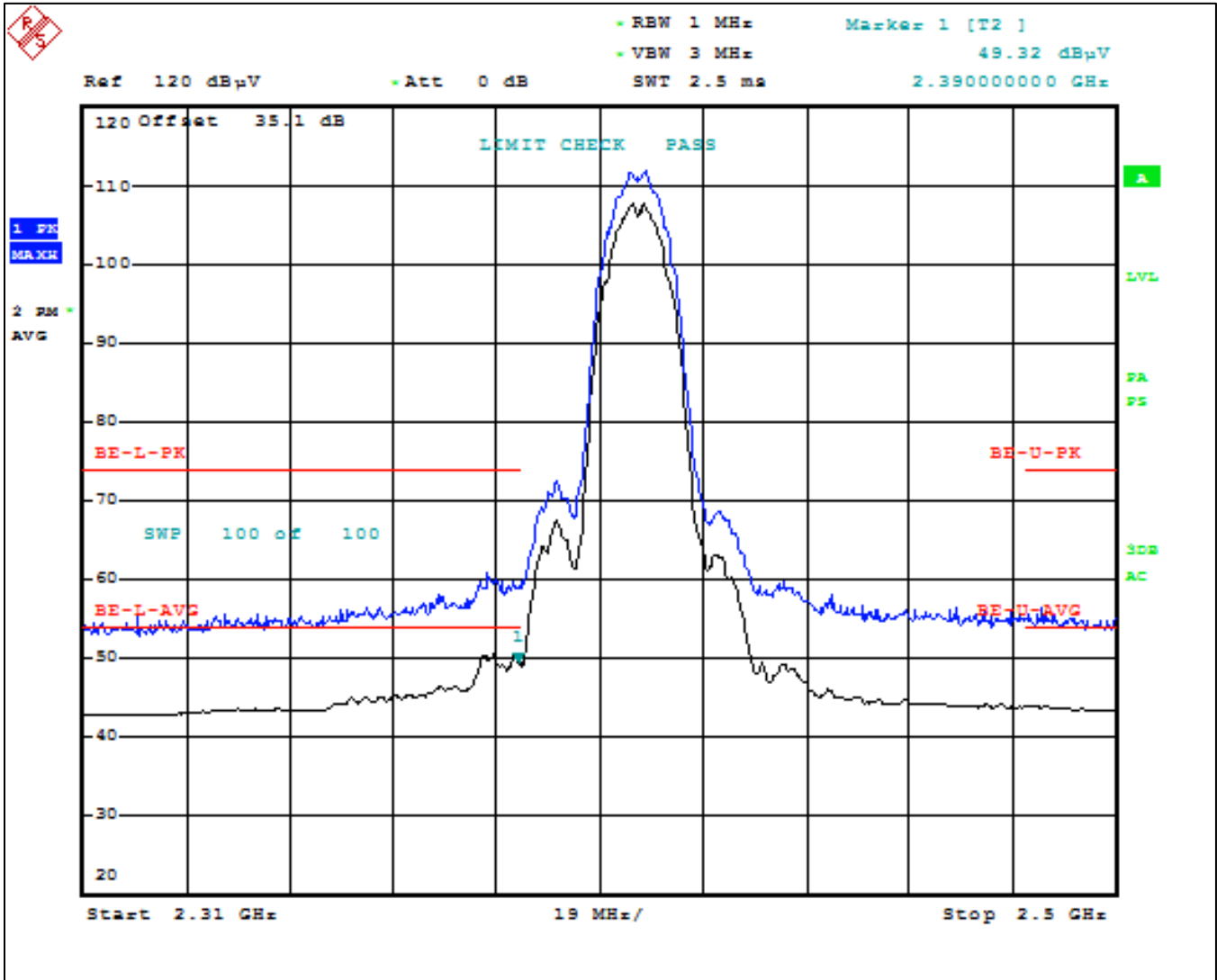
Tester: MT

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
ANTENNA, DRG HORN (MEDIUM)	3117	ETS Lindgren	B079691	10-Aug-2020
RF Cable Nm to Nm, 0.01-18GHz	90-195-276	TELEDYNE STORM MICROWAVE	20113	2-Mar-2021
RF CABLE	SF106	HUBER & SUHNER	B079713	7-Sep-2020
RF Cable Nm to Nm, 0.01-18GHz	90-195-118	TELEDYNE STORM MICROWAVE	20126	2-Mar-2021
EMI TEST RECEIVER	ESU8	ROHDE & SCHWARZ	B085759	7-May-2021

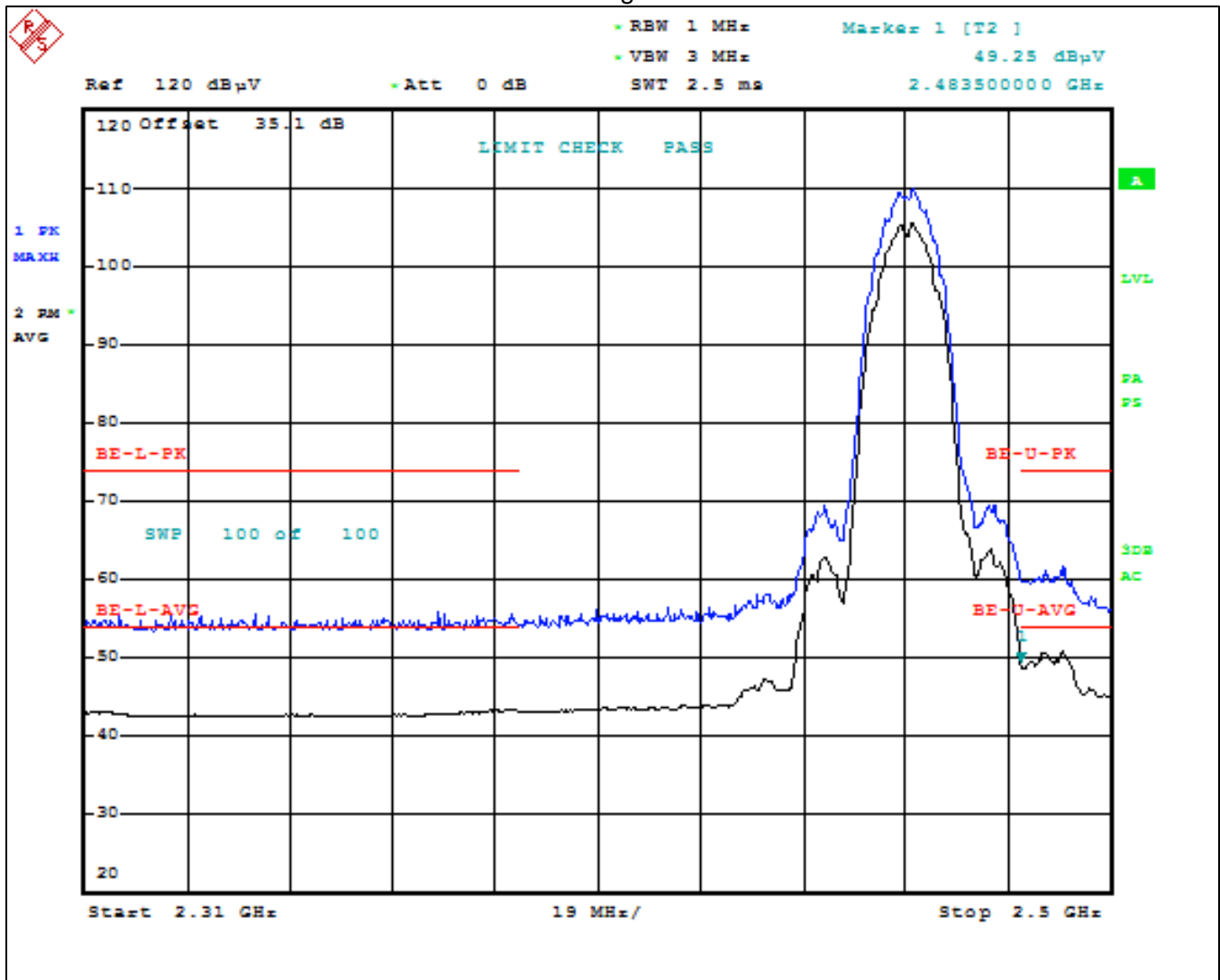
Note: The equipment calibration period is 1 year.

4.6 Test Data – WLAN Transmitter Band Edge

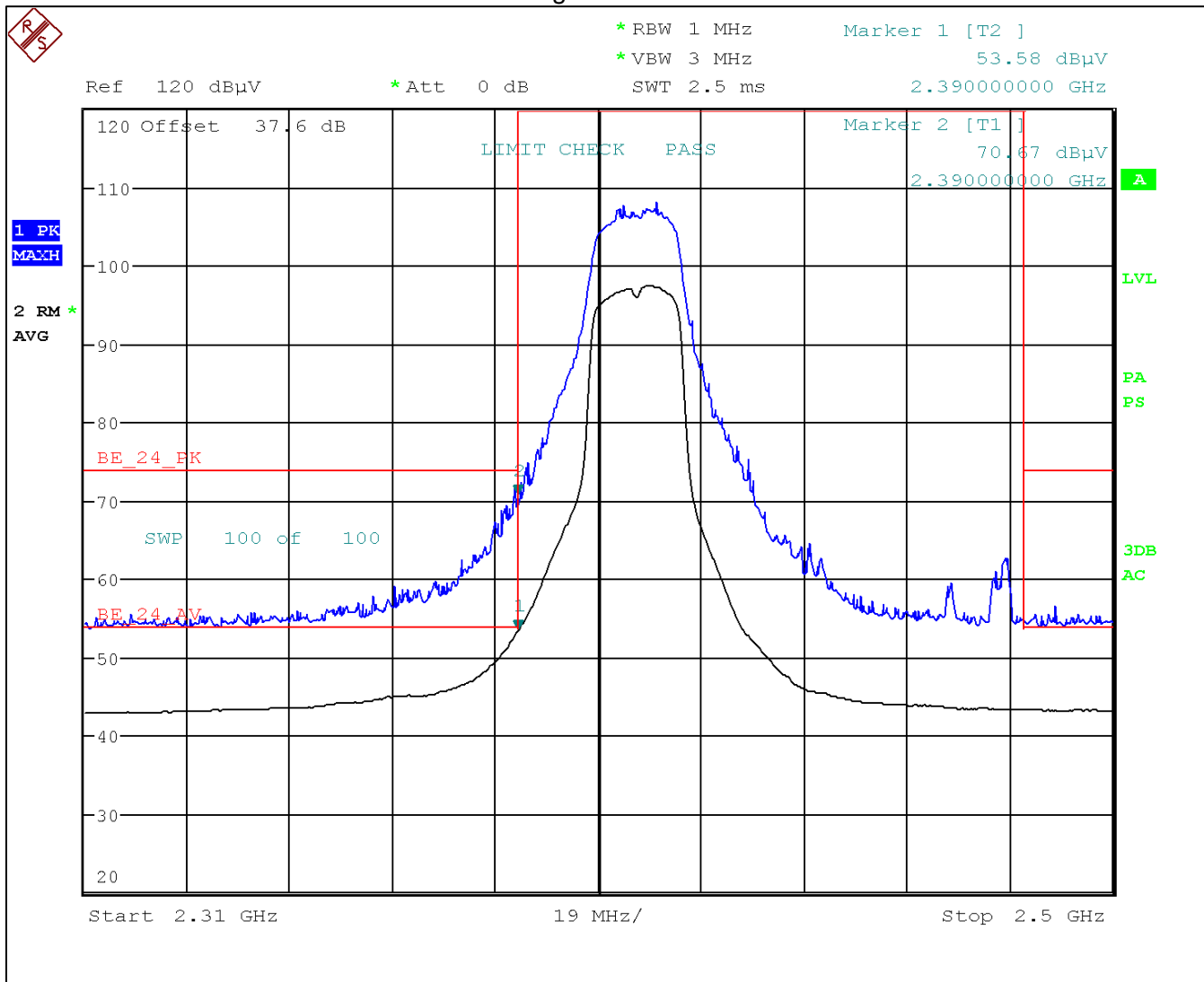
802.11b – Low Channel



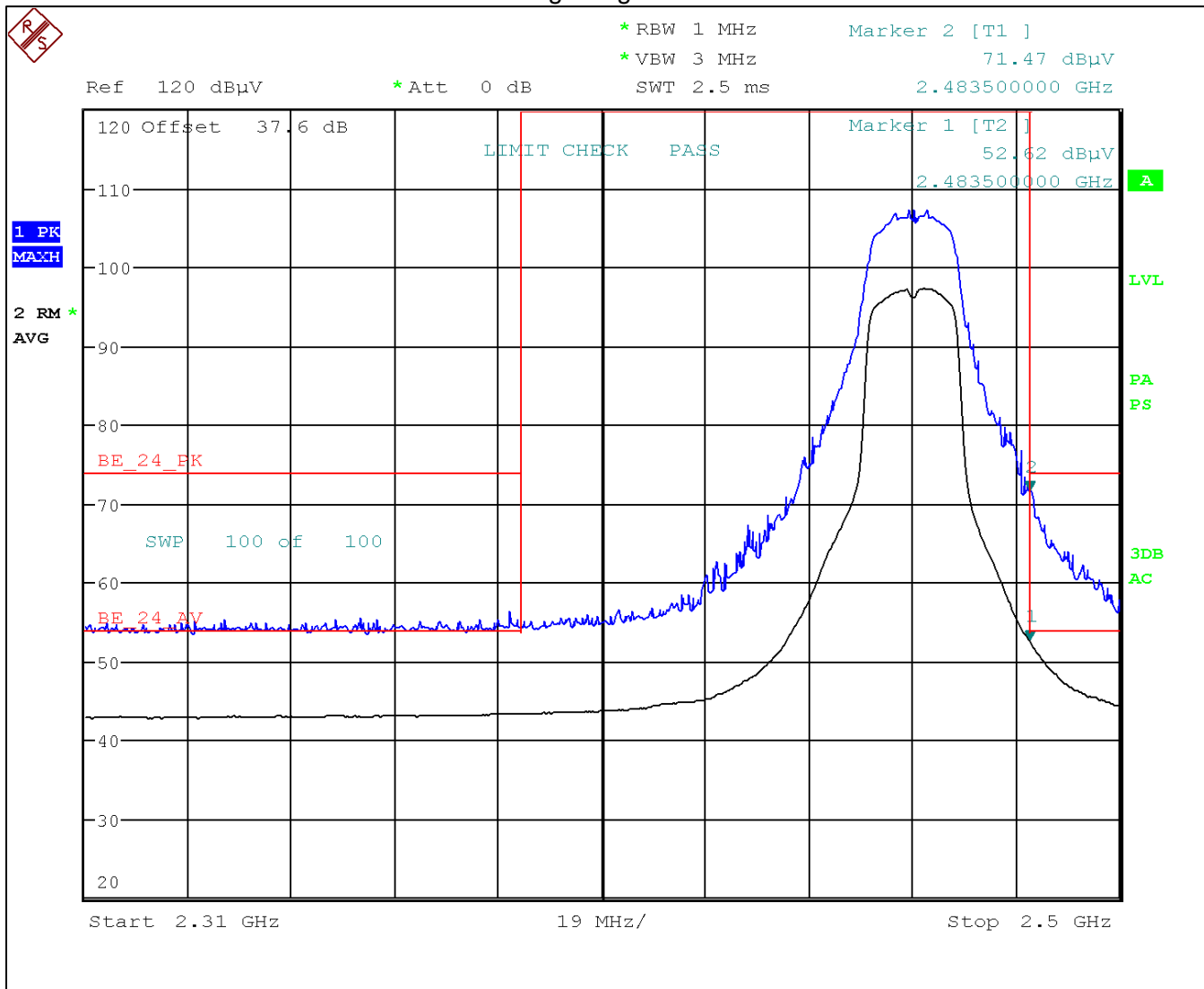
802.11b – High Channel



802.11g – Low Channel

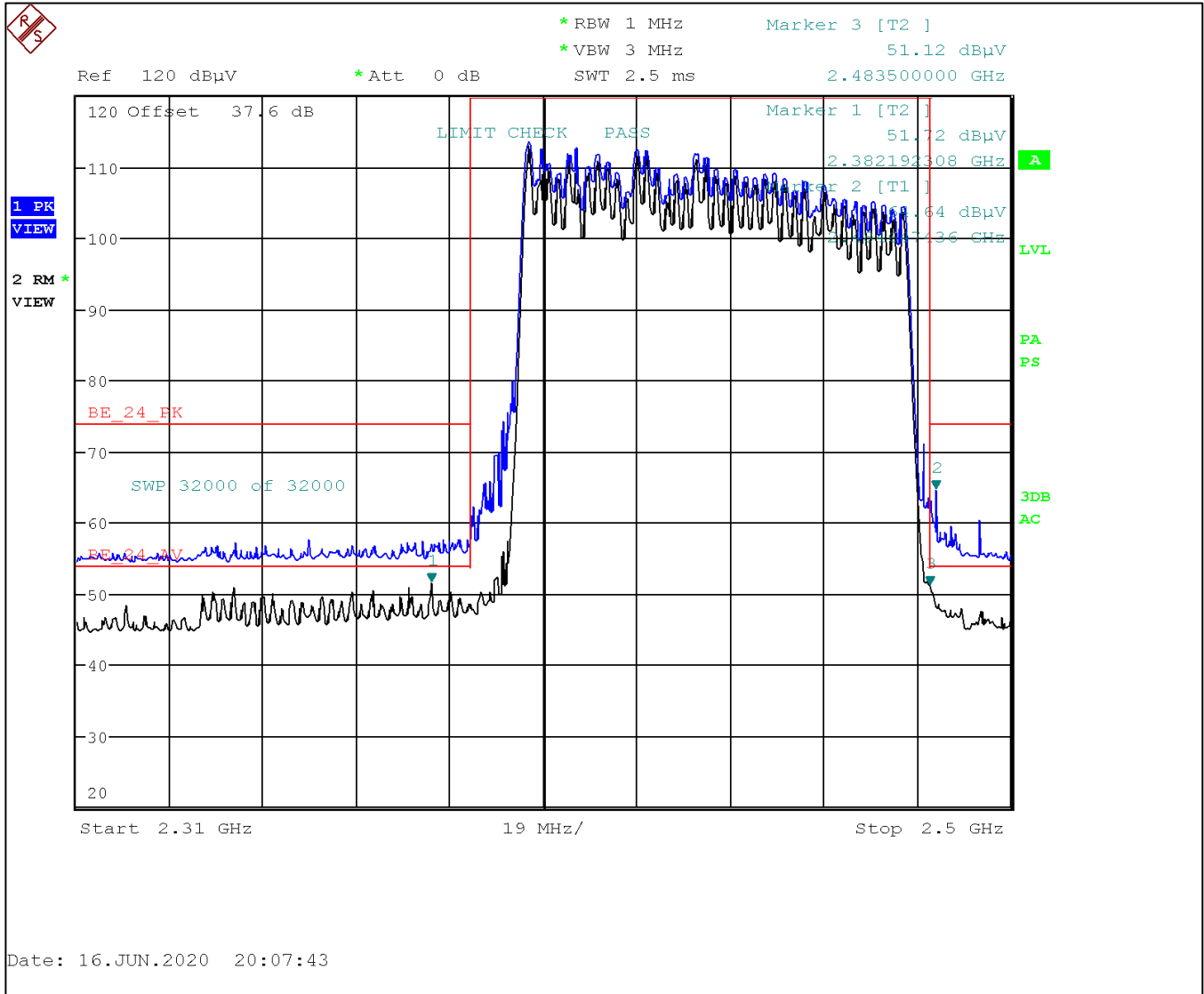


802.11g – High Channel



4.7 Test Data – WLAN and BLE Simultaneous Transmission Band Edge

Note: This test was performed using a normal test sample with both radios operating as they normally would in the field. Max hold was applied on both peak and RMS traces for 32000 sweeps.



5 Measurement Uncertainty

The measurement uncertainty figures are calculated in accordance with TR 100 028-1 [2] and correspond to an expansion factor (coverage factor) $k = 2$ (which provides confidence levels of 95.45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Parameter	Expanded Uncertainty for Normal k factor equal to 2	
	Required	Laboratory Actual
Radio Frequency	$\pm 1 \times 10^{-5}$	$\pm 9.8 \times 10^{-8}$
total RF power, conducted	± 1.5 dB	± 1.2 dB
RF power density, conducted	± 3 dB	± 0.7 dB
spurious emissions, conducted	± 3 dB	± 2.1 dB
all emissions, radiated	± 6 dB	± 4.8 dB
temperature	$\pm 1^{\circ}\text{C}$	$\pm 0.5^{\circ}\text{C}$
humidity	± 5 %	$\pm 3.5\%$
DC and low frequency voltages	± 3 %	$\pm 0.4\%$
Conducted disturbance at mains port using AMN	± 3.4 dB	± 2.5 dB

6 Revision History

Revision Level	Description of changes	Revision Date
Draft	--	27 May 2020
0	Initial release	25 June 2020