

RF Test Report

Project Number: 5335078**Offer Number: SUW-202506008473****Report Number: SUW5335078EMC01****Report Revision: 1****Client: Deere & Company****Equipment Under Test: JDLINK™ R Modem - 4G with 6-ft Cable & Whip Antenna****Model: MA4R****FCC ID: OV5-MA4R****IC ID: 11137A-MA4R****Applicable Standards: FCC Part 15 Subpart C, § 15.247****ANSI C63.10-2020****RSS-247 Issue 3; RSS-GEN Issue 5****Report issued on: 10 September 2025****Test Result: Compliant**

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01

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1 Summary of Test Results

Test Description	Test Specification		Test Result
Bandwidth	15.247(a)(2)	RSS-247 5.2(a) RSS-GEN 6.7	NA ¹
Peak Output Power – BLE	15.247(b)(3)	RSS-247 5.4 (d)	Compliant
Peak Output Power – WLAN	15.247(b)(3)	RSS-247 5.4 (d)	Compliant
Power Spectral Density	15.247(e)	RSS-247 5.2 (b)	NA ¹
Conducted Spurious Emissions / Band Edge	15.247(d)	RSS-247 5.5	NA ¹
Emissions in Restricted Frequency Bands	15.205, 15.209	RSS-GEN 8.9, 8.10	Compliant
Pseudo-Random Hop Sequence	15.247(a)(1)	RSS-247 5.1(a)	NA ¹
Channel Separation	15.247(a)(1)	RSS-247 5.1(b)	NA ¹
Number of Hopping Channels	15.247(a)(1)(iii)	RSS-247 5.1(d)	NA ¹
Dwell Time	15.247(a)(1)(iii)	RSS-247 5.1(d)	NA ¹
Antenna Requirement	15.203	RSS-GEN 6.8	Compliant
AC Powerline Conducted Emissions	15.107, 15.207	RSS-GEN 8.8	NA ²

- 1) Testing to address antenna change with use of 6-ft cable (C2PC). These tests were not affected by the modification and test requirements were covered in previous test reports: 4724254EMC09 (Rev 1) and 4724254EMC10 (Rev 1).
- 2) The device has no facility for connection to the AC mains.

1.1 Modifications Required for Compliance

None

2 General Information

2.1 Client Information

Name: Deere & Company dba John Deere Intelligent Solutions Group
Address: 9505 Northpark Drive
City, State, Zip, Country: Urbandale, Iowa 50131 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
CAB Identifier: US0186

2.3 General Information of EUT

Manufacturer Name: Deere & Company
Address: One John Deere Place
City, State, Zip, Country: Moline, IL 61265 USA

Product Marketing Name (PMN): JDLINK™R Modem - 4G
Model Number (HVIN): MA4R
Serial Number: PCMA4RA504062
FCC ID: OV5-MA4R
IC: 11137A-MA4R

Frequency Range: 2402 – 2480 MHz (BLE)
2412 – 2462 MHz (WLAN)
Data Mode / Modulation: Bluetooth Low Energy (BLE): GFSK (1Mbps)
WLAN: 802.11 b/g/nHT20
Antenna Type: Whip Antenna
Antenna Gain: 5.45 dBi

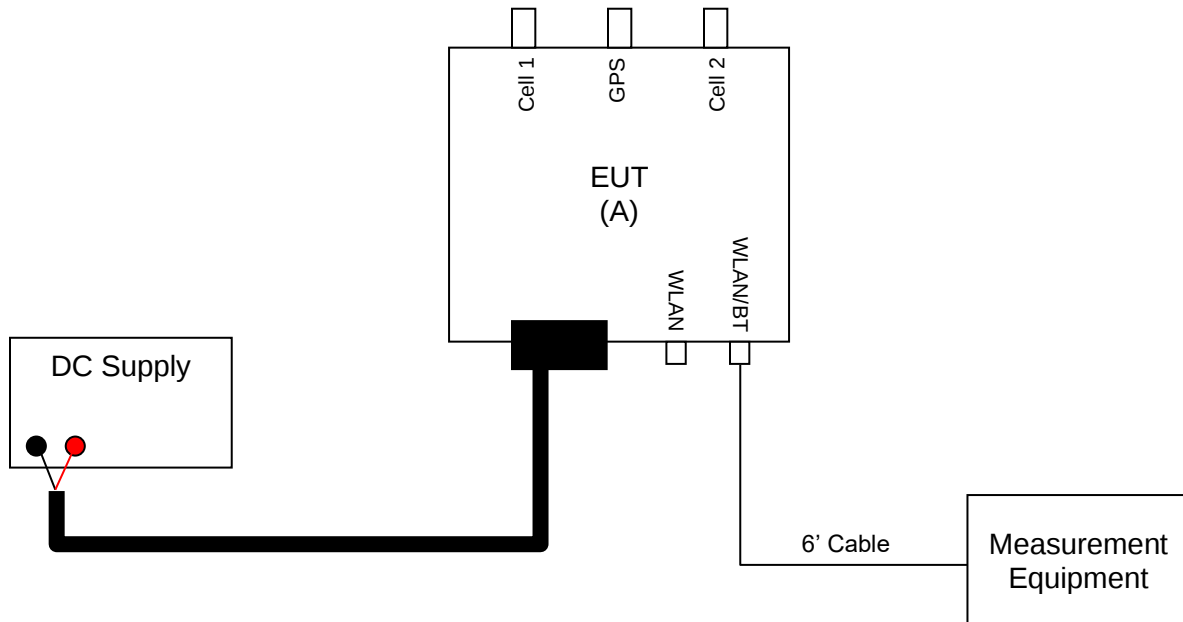
Rated Voltage: 9 – 32 Vdc
Test Voltage: 12 Vdc

Sample Received Date: 27 June 2025
Dates of testing: 01-11 July 2025

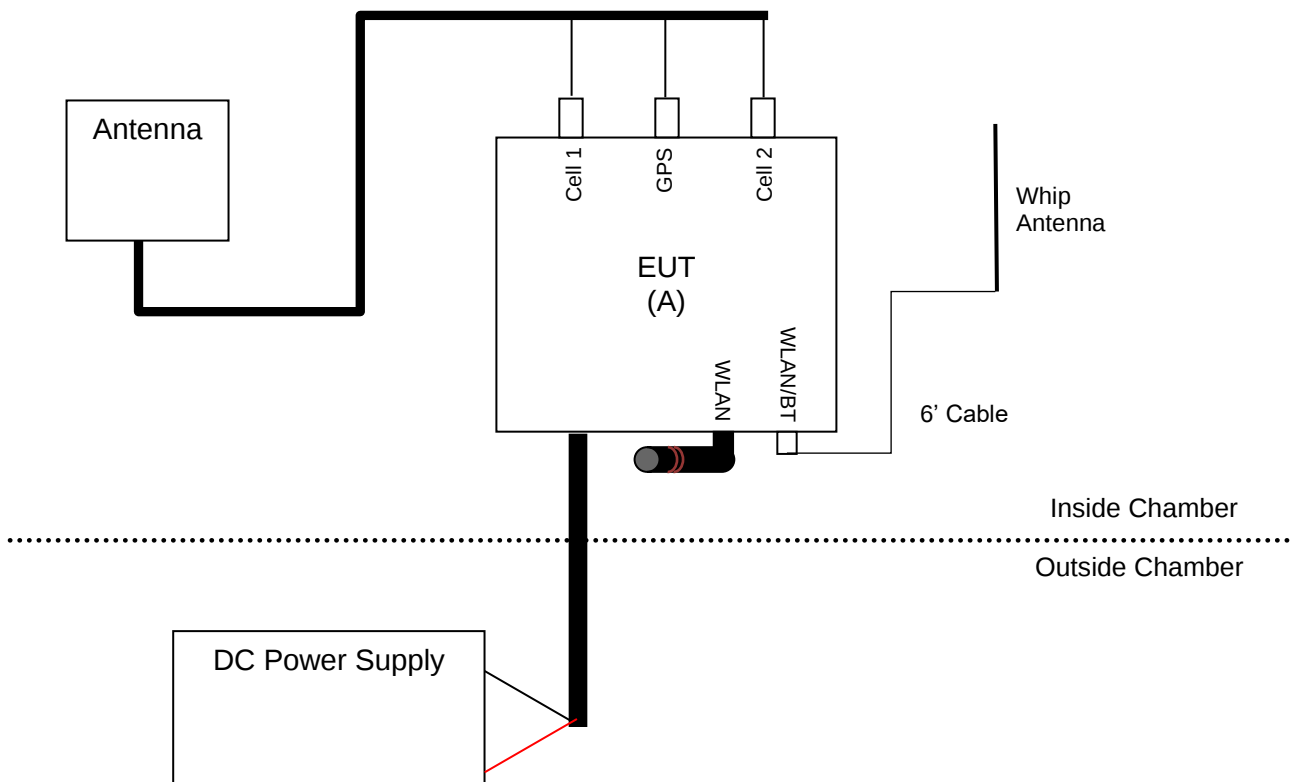
2.4 Operating Modes and Conditions

The EUT was programmed by the manufacturer with the capability to transmit on low, mid, and high channels in all necessary modulation and modes of operation using test mode commands.

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	Deere & Company	JDLink™R Modem - 4G	MA4R	PCMA4RA504062

The EUT was configured using the harness and antenna connections the same as in the original certification filing with the exception of the WLAN primary port, for which a 5.45dBi whip antenna was used at the end of a 6-foot-long cable. Conducted and radiated measurements were both performed using the 6-foot cable. Longer cables may be used without the need for any additional testing or certification. Also, alternate cables may be used provided the cable loss is the same or greater than the 6-foot cable used in this testing.

3 Peak Output Power – BLE

3.1 Test Result

Test Description	Test Specification		Test Result
Peak Output Power	15.247(b)(3)	RSS-247 5.4 (d)	Compliant

3.2 Test Method

Fundamental peak power measurements were recorded using the procedures from ANSI C63.10-2020 clause 11.9 and KDB 558074 D01 Measurement Guidance v05r2.

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)

3.3 Test Site

EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 24.2 °C

Relative Humidity: 54.8 %

Atmospheric Pressure: 98.44 kPa

3.4 Test Equipment

Test End Date: 11-Jul-2025

Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	4-Apr-2025	4-Apr-2026
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

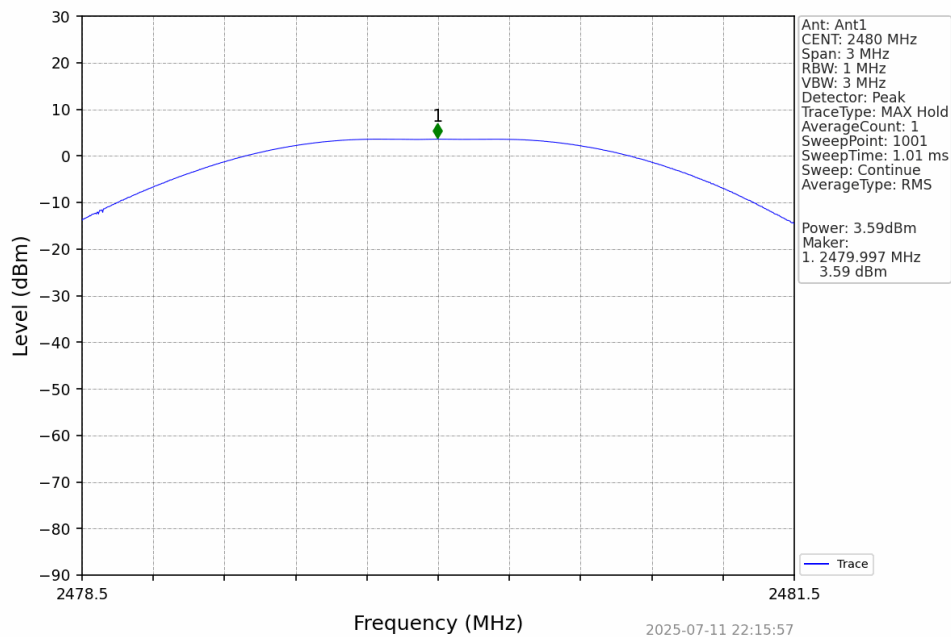
Software Profile: TSTPASS Version: 2.0, build 2023

3.5 Test Data

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		EIRP (dBm)	Verdict
			ANT1	Limit		
1M	SISO	2402	2.70	<=30	8.15	Pass
		2440	2.01	<=30	7.46	Pass
		2480	3.59	<=30	9.04	Pass
Note1: Antenna Gain: Ant1: 5.45 dBi;						

Sample Plot

High Channel (2480MHz)



4 Peak Output Power – WLAN

4.1 Test Result

Test Description	Test Specification		Test Result
Peak Output Power	15.247(b)(3)	RSS-247 5.4 (d)	Compliant

4.2 Test Method

Fundamental peak power measurements were recorded using the procedures from ANSI C63.10-2020 clause 11.9 and KDB 558074 D01 Measurement Guidance v05r2.

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

EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 26.01 °C

Relative Humidity: 55.4 %

Atmospheric Pressure: 98.04 kPa

4.4 Test Equipment

Test End Date: 10-Jul-2025

Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	4-Apr-2025	4-Apr-2026
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

Software Profile: TSTPASS Version: 2.0, build 2023

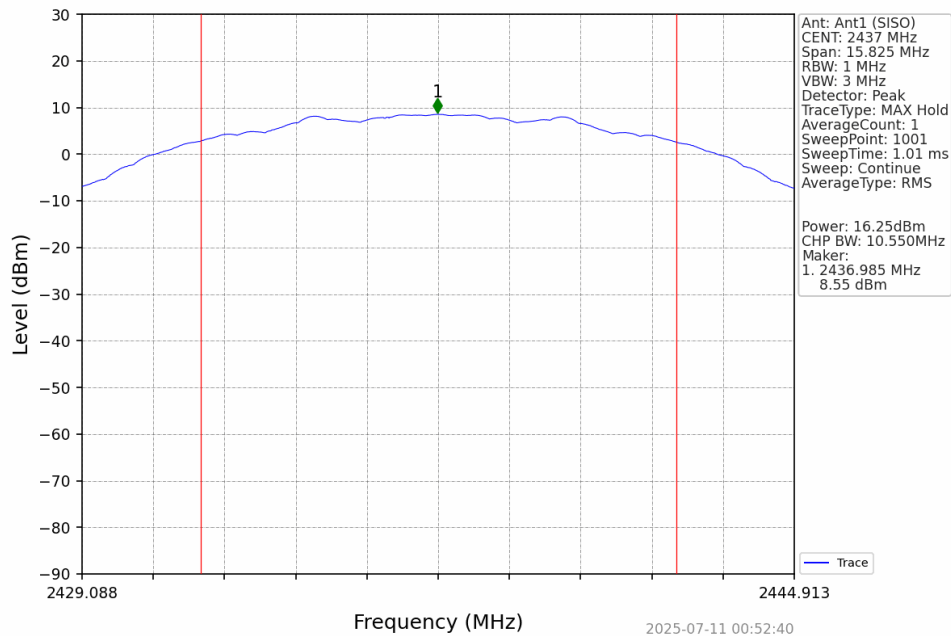
4.5 Test Data

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		EIRP (dBm)	Verdict
			ANT1	Limit		
802.11b	SISO	2412	16.49	<=30	21.94	Pass
		2437	16.25	<=30	21.70	Pass
		2462	17.00	<=30	22.45	Pass
802.11g	SISO	2412	15.87	<=30	21.32	Pass
		2437	19.90	<=30	25.35	Pass
		2462	15.84	<=30	21.29	Pass
802.11n (HT20)	SISO	2412	15.80	<=30	21.25	Pass
		2437	16.87	<=30	22.32	Pass
		2462	16.08	<=30	21.53	Pass

Note1: Antenna Gain: Ant1: 5.45 dBi;

Sample Plot

Mid Channel – 802.11g, Ant1 (2437MHz)



5 Field Strength of Spurious Radiation

5.1 Test Result

Test Description	Test Specification		Test Result
Spurious Emissions	15.205 and 15.209	RSS-GEN 8.9, 8.10	Compliant

5.2 Test Method

The measurement methods defined in ANSI C63.10 clauses 6.3, 6.5, 6.6 and 11.12 were used. The antenna was connected during test. Worst-case rates were tested.

Test distance:

9k to 30 MHz – Near field pre-scan 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

5.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 21.8 – 24.5 °C

Relative Humidity: 52.7 – 59.4 %

Atmospheric Pressure: 97.5 – 98.5 kPa

5.4 Test Equipment

30-1000MHz

Test End Date: 2-Jul-2025

Tester: ZH

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
ANTENNA, BILOG	JB6	SUNOL	B079690	19-Apr-2024	19-Apr-2026
N to N RF Cable	EM-B810NM-276	ECHELON	24021	15-Nov-2024	15-Nov-2025
RF CABLE	SF106	HUBER & SUHNER	B085903	7-Aug-2024	7-Aug-2025
RF CABLE	104PE	HUBER & SUHNER	B079793	7-Aug-2024	7-Aug-2025
RF CABLE NM TO NM, 0.01-18GHZ	90-195-079	TELEDYNE STORM MICROWAVE	20123	6-Feb-2025	6-Feb-2026
LOW NOISE AMPLIFIER	ZKL-2+	MINI-CIRCUITS	B079817	7-Aug-2024	7-Aug-2025
EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	22027	14-Nov-2024	14-Nov-2025

Software: "RSE 30-1000 MHz T7 240701" TILE! profile dated 01-July-2024

1-18GHz

Test End Date: 10-Jul-2025

Tester: PL, ZH

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
ANTENNA, DRG HORN (MEDIUM)	3117	ETS LINDGREN	B079691	2-Aug-2024	2-Aug-2026
N to N RF Cable	EM-B810NM-276	ECHELON	24022	15-Nov-2024	15-Nov-2025
N to N RF Cable	90-076-020	TELEDYNE STORM MICROWAVE	22037	11-Dec-2024	11-Dec-2025
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	3-Jul-2025	3-Jul-2026
EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	22032	2-Jan-2025	2-Jan-2026
FILTER, HIGH PASS, >2800MHZ	HPM50111	MICRO-TRONICS	22017	16-Jun-2025	16-Jun-2026

Software: "RSE 1-40 GHz T7 250623" TILE! profile dated 23-Jun-2025

18-26GHz

Test End Date: 9-Jul-2025

Tester: LM

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
ANTENNA, DRG HORN (SMALL)	3116B	ETS LINDGREN	B079697	2-Jul-2024	2-Jul-2026
SMA to SMA RF Cable	NC12-K1K1-138	MEGAPHASE	22002	3-Apr-2025	3-Apr-2026
RF CABLE SMA	HULL150A-29P-29P-36	HASCO COMPONENTS	19101	3-Apr-2025	3-Apr-2026
LOW NOISE AMPLIFIER	NSP1840-HG	MITEQ	B087572	21-Oct-2024	21-Oct-2025
EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	22032	2-Jan-2025	2-Jan-2026

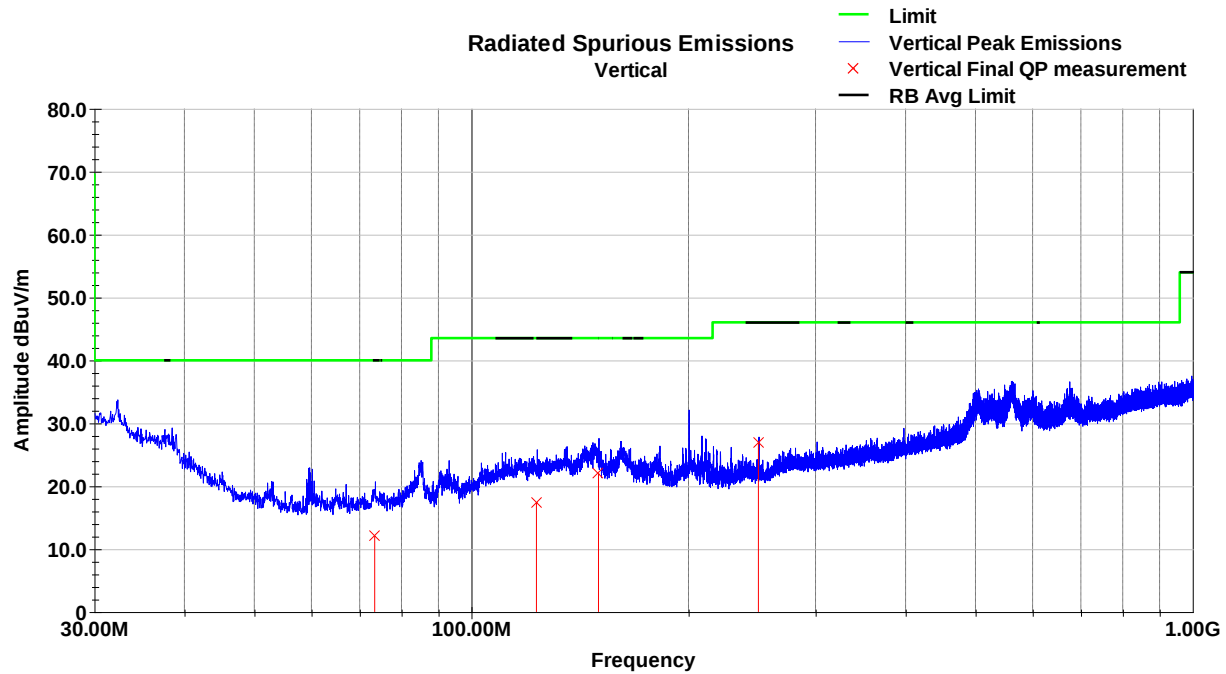
Software: "RSE 1-40 GHz T7 250623" TILE! profile dated 23-Jun-2025

5.5 Test Data

No discernable emissions were detected below 30 MHz.

5.5.1 WLAN 802.11b

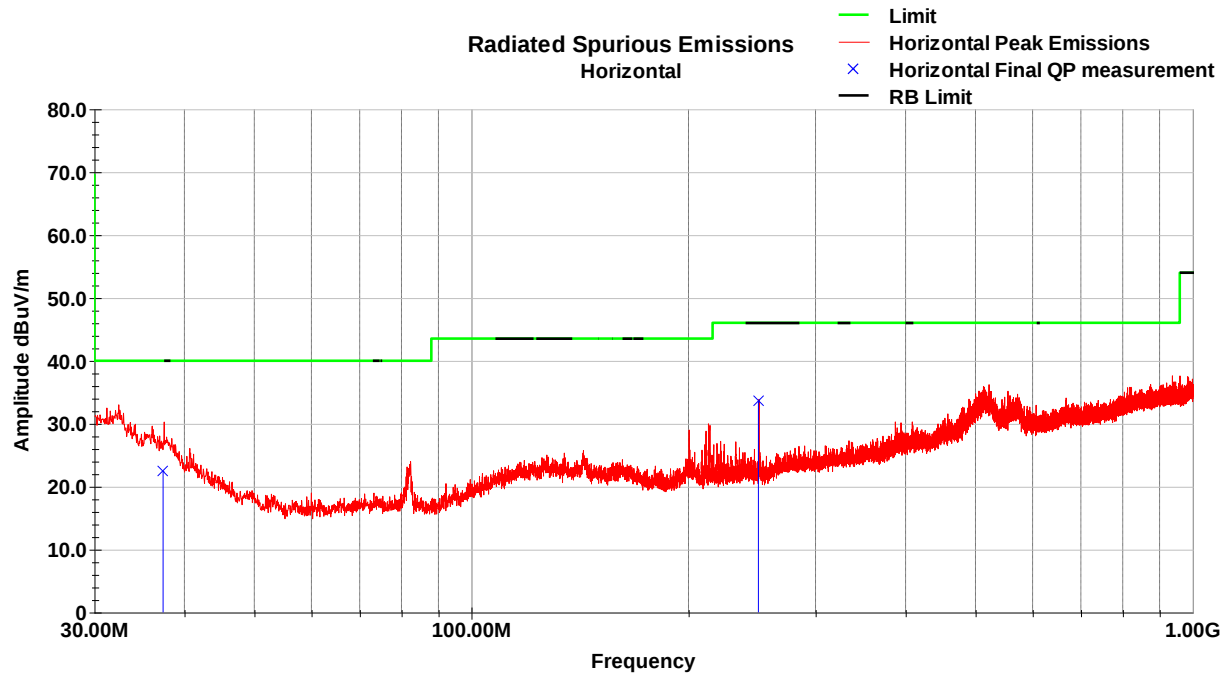
Vertical Plot (30-1000MHz) (WLAN 802.11b - LCH)



Vertical Data (30-1000MHz) (WLAN 802.11b - LCH)

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)
73.43	29.5	V	74.0	249.0	12.2	1.0	30.7	12.1	40.0	-27.9
123.09	28.8	V	162.0	129.0	17.8	1.4	30.6	17.5	43.5	-26.1
150.02	34.3	V	307.0	145.0	16.7	1.5	30.6	22.0	43.5	-21.5
249.98	38.8	V	255.0	143.0	16.2	2.1	30.3	26.9	46.0	-19.1
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

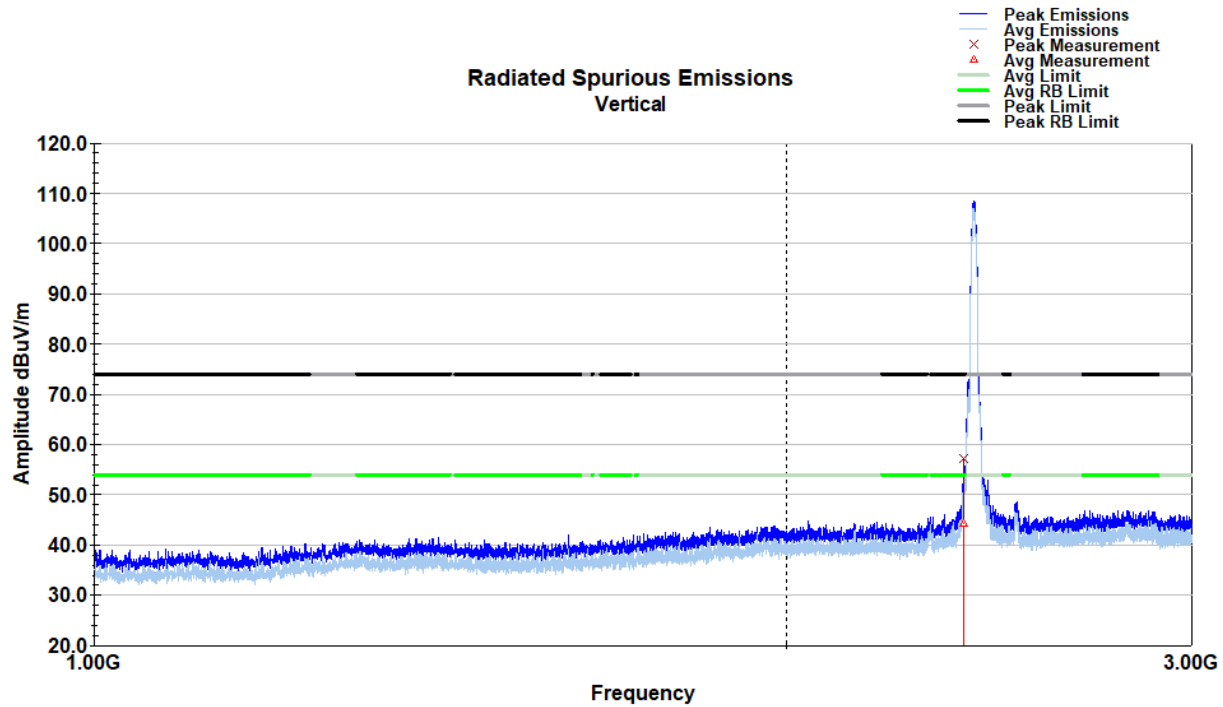
Horizontal Plot (30-1000MHz) (WLAN 802.11b - LCH)



Horizontal Data (30-1000MHz) (WLAN 802.11b - LCH)

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)
37.37	32.0	H	54.0	100.0	20.5	0.6	30.6	22.5	40.0	-17.5
249.98	45.5	H	55.0	143.0	16.2	2.1	30.3	33.6	46.0	-12.5
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11b - LCH)



Vertical Data (1-3GHz) (WLAN 802.11b - LCH)

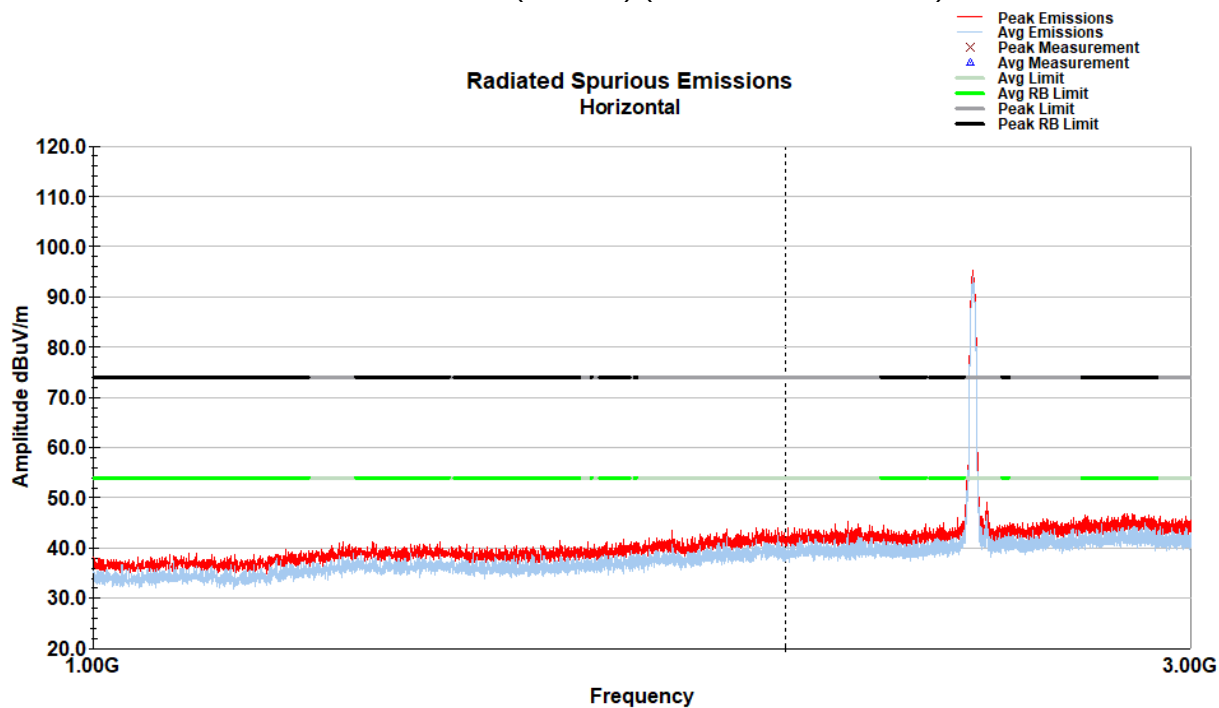
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2388.22	57.8	V	240.0	159.0	31.8	1.9	34.3	57.2	74.0	-16.8
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

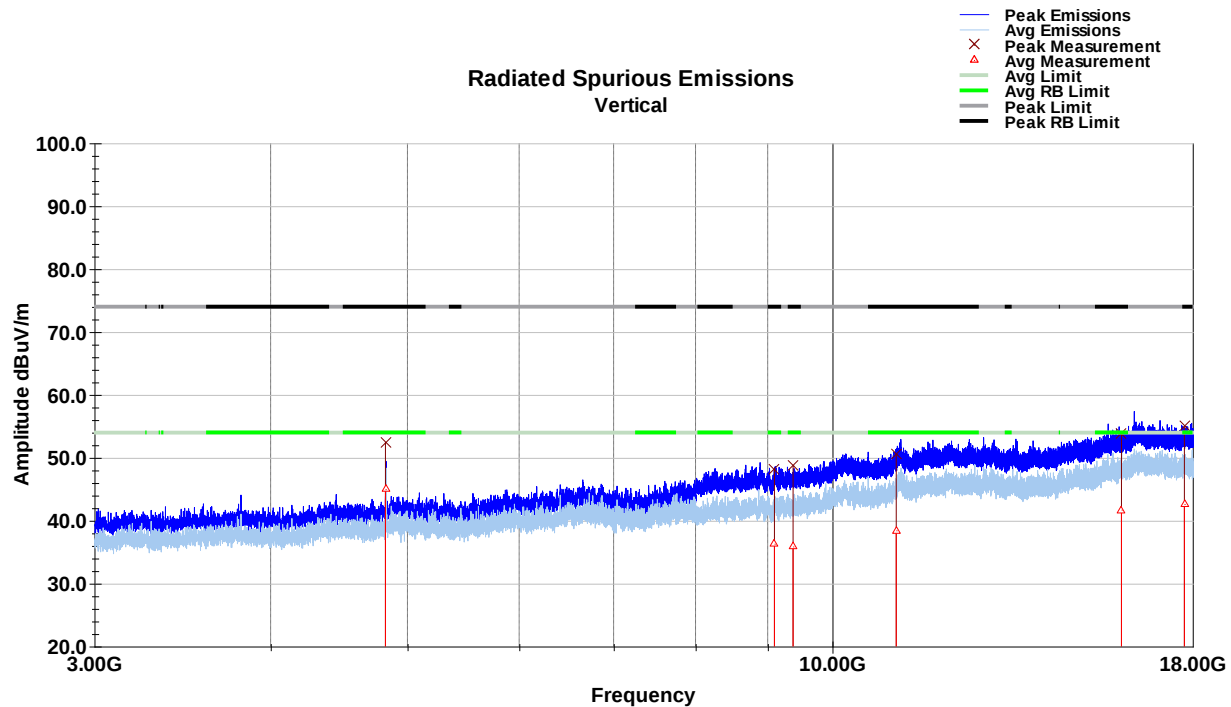
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2388.22	45.0	V	240.0	159.0	31.8	1.9	34.3	44.4	54.0	-9.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (WLAN 802.11b - LCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11b - LCH)



Vertical Data (3-18GHz) (WLAN 802.11b - LCH)

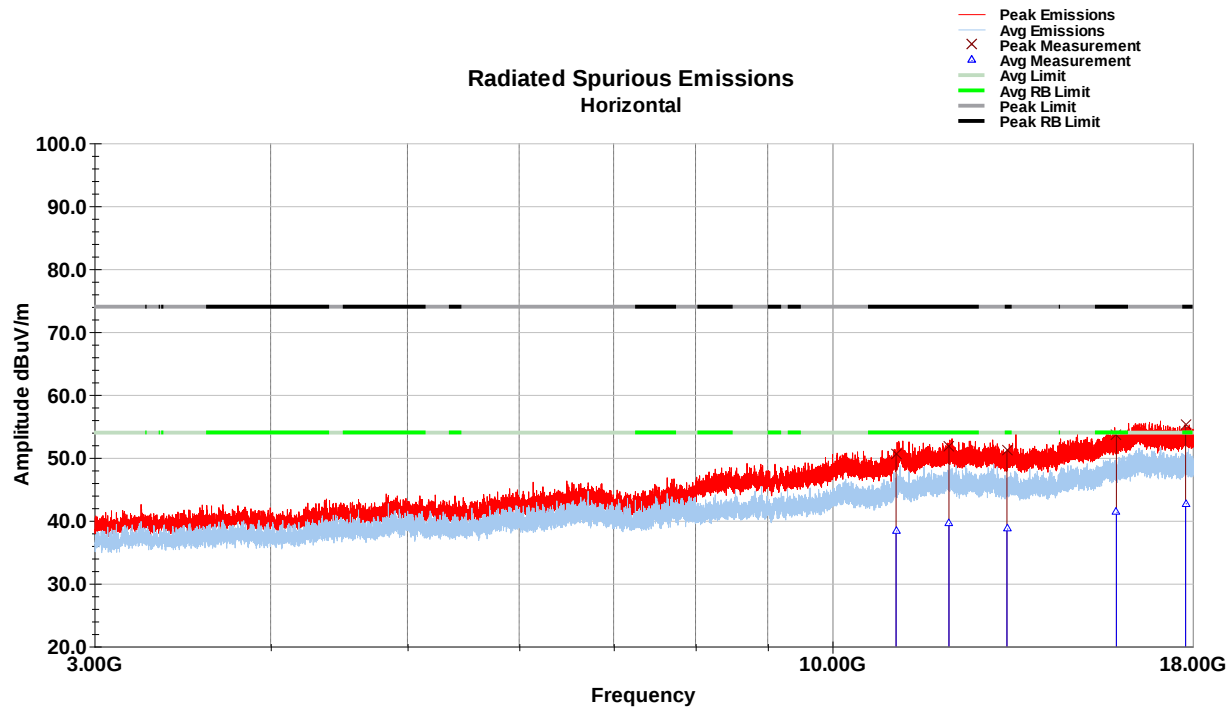
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4824.02	49.7	V	104.0	202.0	34.0	3.0	34.2	52.5	74.0	-21.5
9099.90	42.1	V	93.0	100.0	36.4	3.5	33.9	48.2	74.0	-25.8
9380.10	43.5	V	21.0	151.0	36.6	3.7	35.0	48.8	74.0	-25.2
11099.90	43.2	V	15.0	193.0	38.6	4.4	35.6	50.6	74.0	-23.4
16030.02	43.7	V	255.0	128.0	40.9	5.1	35.9	53.7	74.0	-20.3
17760.10	45.3	V	226.0	201.0	40.9	5.4	36.7	55.0	74.0	-19.0
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4824.02	42.3	V	104.0	202.0	34.0	3.0	34.2	45.0	54.0	-8.9
9099.90	30.2	V	93.0	100.0	36.4	3.5	33.9	36.3	54.0	-17.6
9380.10	30.6	V	21.0	151.0	36.6	3.7	35.0	35.9	54.0	-18.1
11099.90	31.1	V	15.0	193.0	38.6	4.4	35.6	38.5	54.0	-15.5
16030.02	31.7	V	255.0	128.0	40.9	5.1	35.9	41.8	54.0	-12.2
17760.10	33.0	V	226.0	201.0	40.9	5.4	36.7	42.6	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11b - LCH)



Horizontal Data (3-18GHz) (WLAN 802.11b - LCH)

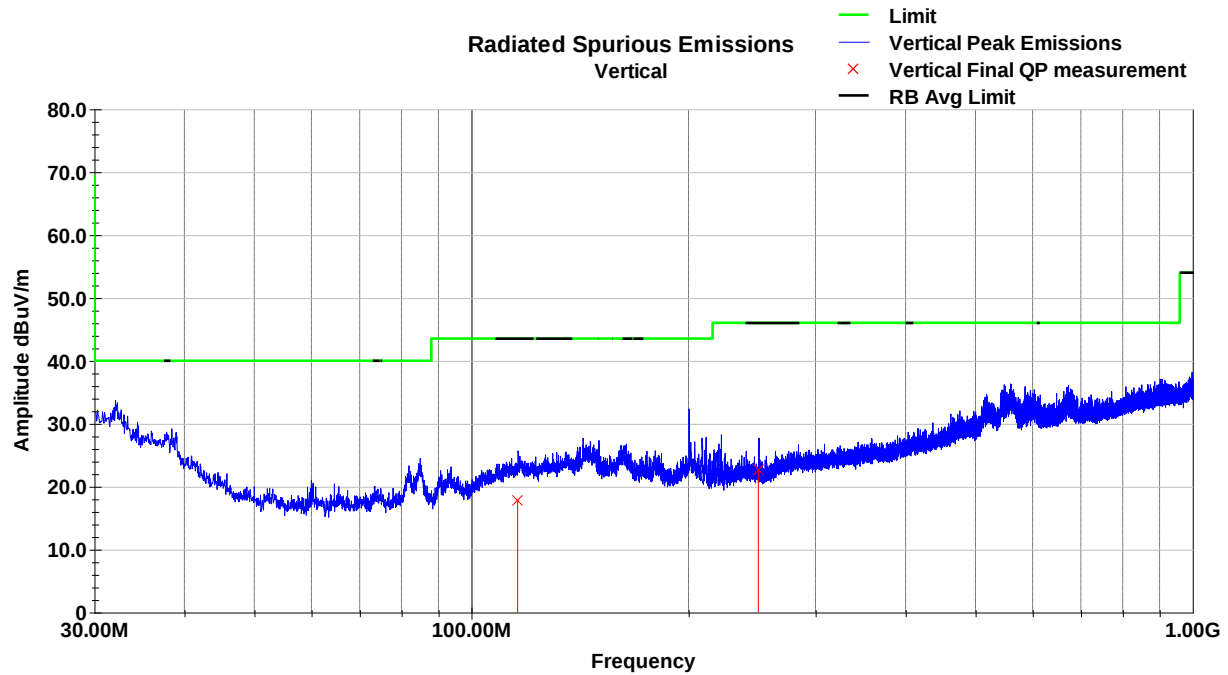
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
11096.80	43.3	H	324.0	175.0	38.5	4.4	35.6	50.6	74.0	-23.4
12096.32	44.2	H	194.0	179.0	39.2	4.4	35.9	51.9	74.0	-22.1
13297.64	43.4	H	96.0	211.0	39.2	4.5	36.0	51.2	74.0	-22.8
15896.44	43.7	H	56.0	105.0	40.8	5.0	35.9	53.6	74.0	-20.4
17798.00	45.5	H	292.0	138.0	41.0	5.3	36.6	55.2	74.0	-18.8
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
11096.80	31.1	H	324.0	175.0	38.5	4.4	35.6	38.4	54.0	-15.5
12096.32	31.9	H	194.0	179.0	39.2	4.4	35.9	39.6	54.0	-14.4
13297.64	31.0	H	96.0	211.0	39.2	4.5	36.0	38.8	54.0	-15.2
15896.44	31.5	H	56.0	105.0	40.8	5.0	35.9	41.4	54.0	-12.6
17798.00	33.1	H	292.0	138.0	41.0	5.3	36.6	42.8	54.0	-11.2
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

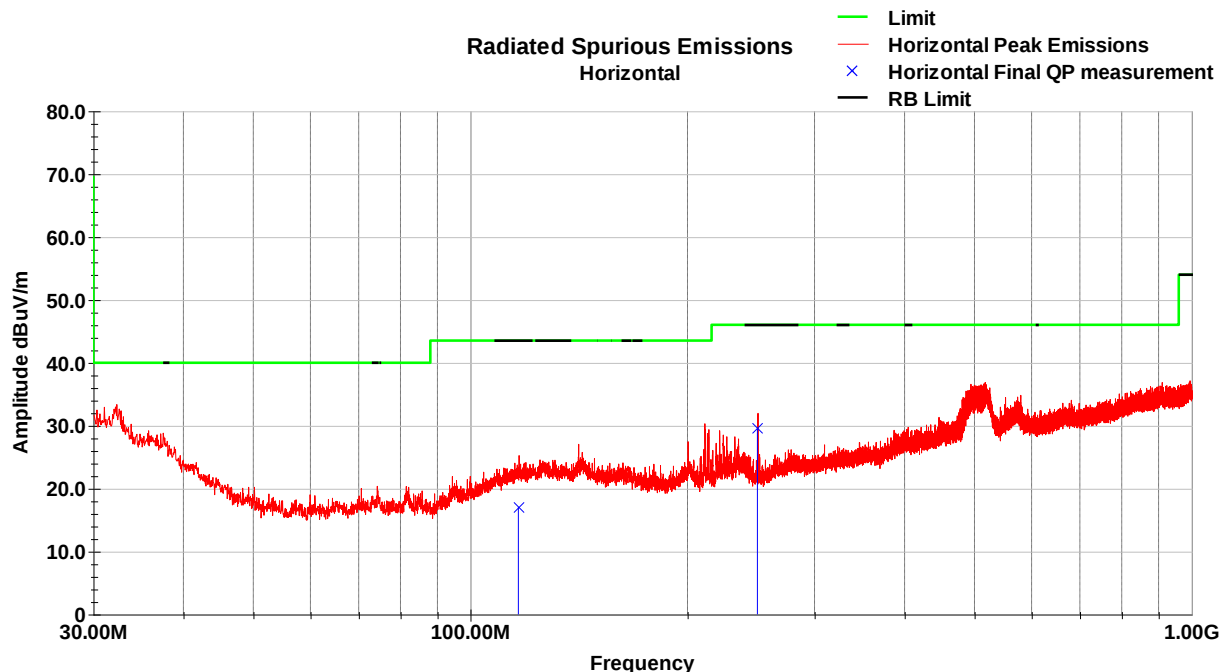
Vertical Plot (30-1000MHz) (WLAN 802.11b – MCH)



Vertical Data (30-1000MHz) (WLAN 802.11b – MCH)

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)
115.92	29.6	V	351.0	159.0	17.4	1.3	30.6	17.9	43.5	-25.7
249.93	34.5	V	244.0	173.0	16.2	2.1	30.3	22.6	46.0	-23.4
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

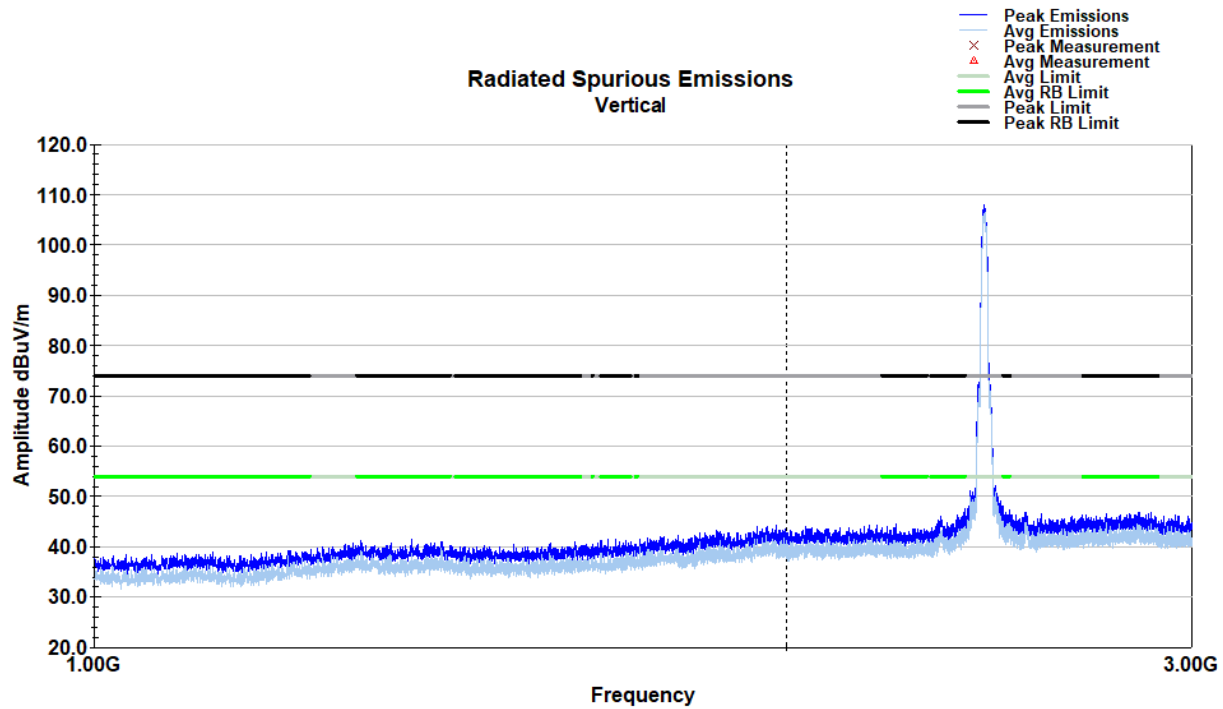
Horizontal Plot (30-1000MHz) (WLAN 802.11b – MCH)



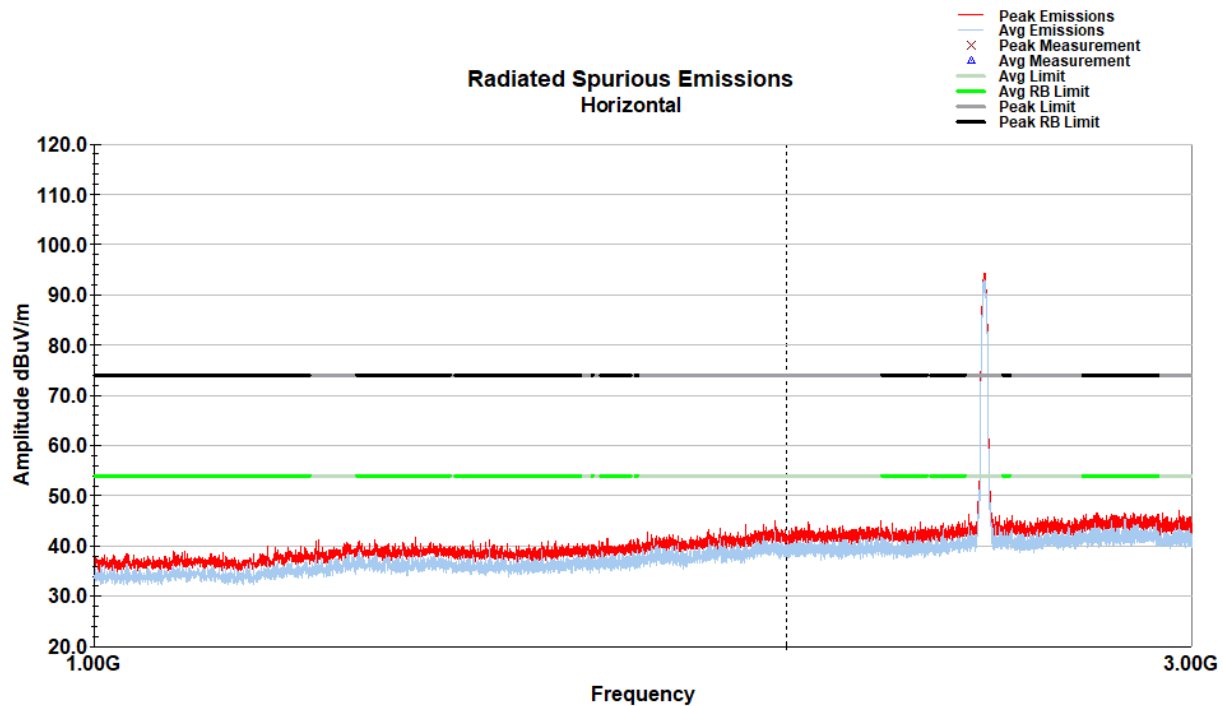
Horizontal Data (30-1000MHz) (WLAN 802.11b – MCH)

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)
116.54	28.8	H	131.0	262.0	17.4	1.3	30.6	17.1	43.5	-26.5
249.99	41.5	H	218.0	139.0	16.2	2.1	30.3	29.5	46.0	-16.5
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11b – MCH)

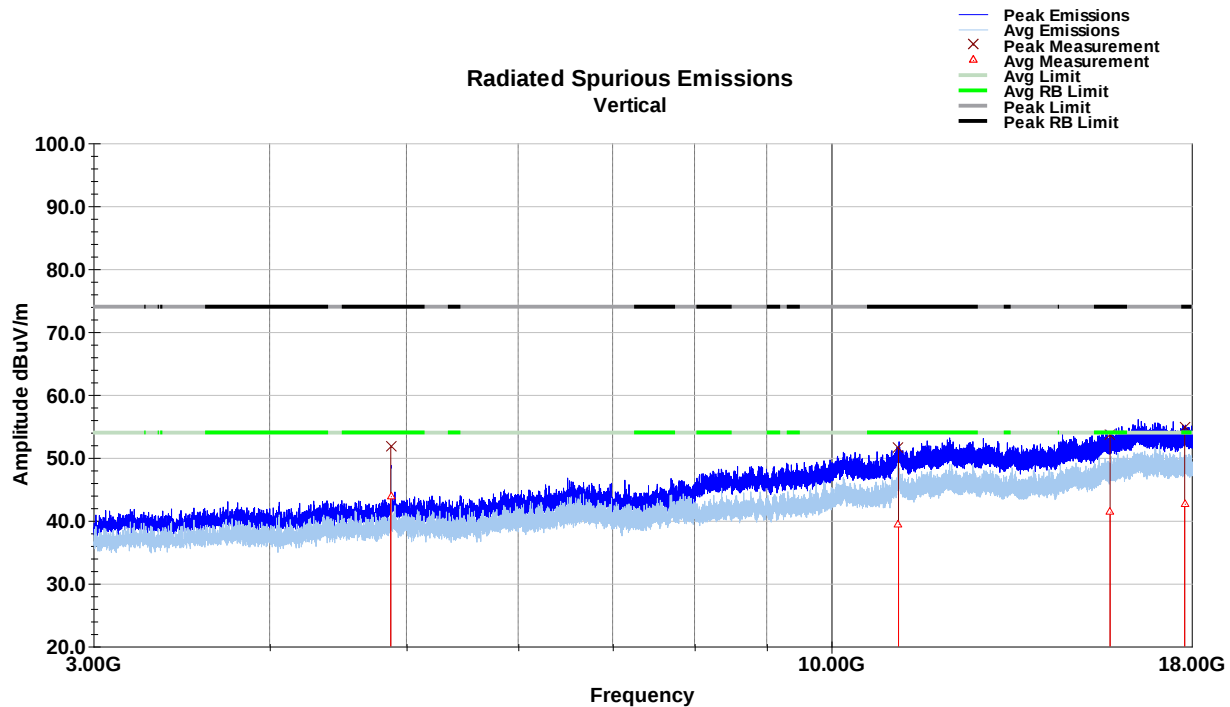


Horizontal Plot (1-3GHz) (WLAN 802.11b – MCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11b – MCH)



Vertical Data (3-18GHz) (WLAN 802.11b – MCH)

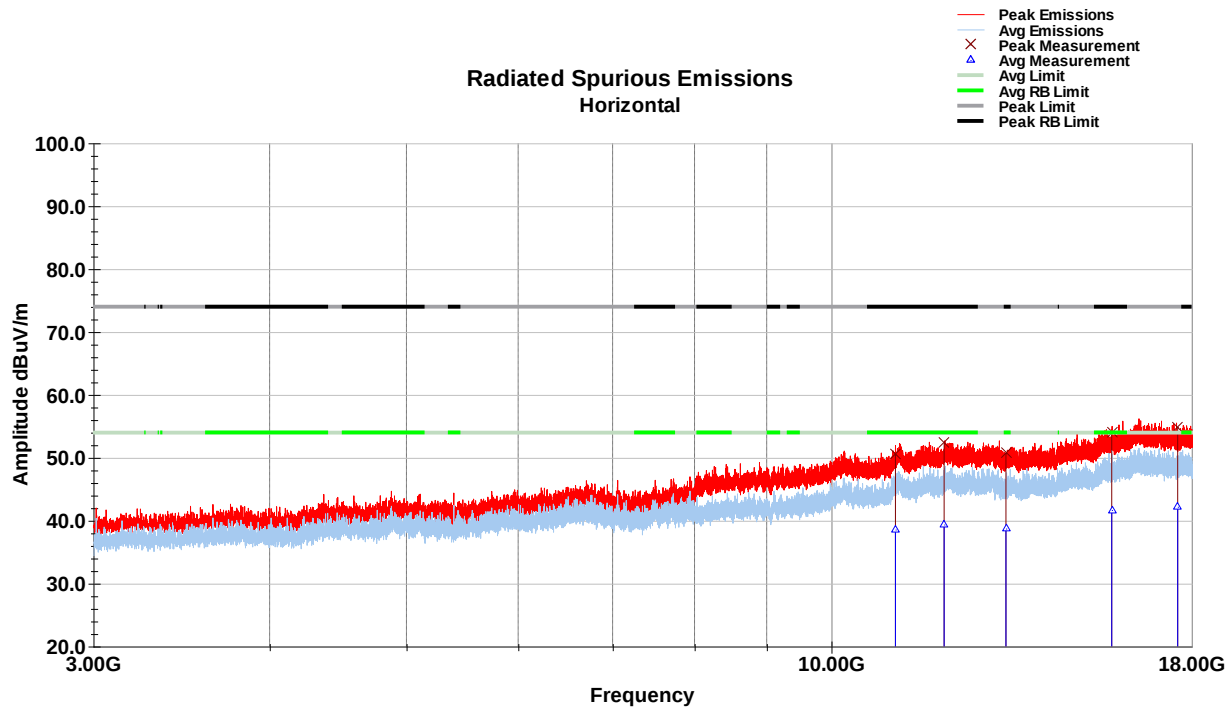
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4874.10	48.8	V	263.0	137.0	34.1	3.1	34.2	51.8	74.0	-22.2
11159.90	43.7	V	5.0	176.0	38.6	4.3	35.0	51.6	74.0	-22.4
15760.02	44.0	V	340.0	217.0	40.6	5.0	36.1	53.6	74.0	-20.4
17799.90	45.1	V	150.0	190.0	41.0	5.3	36.6	54.8	74.0	-19.2
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4874.10	40.9	V	263.0	137.0	34.1	3.1	34.2	43.9	54.0	-10.1
11159.90	31.6	V	5.0	176.0	38.6	4.3	35.0	39.5	54.0	-14.5
15760.02	31.9	V	340.0	217.0	40.6	5.0	36.1	41.4	54.0	-12.6
17799.90	33.0	V	150.0	190.0	41.0	5.3	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11b – MCH)



Horizontal Data (3-18GHz) (WLAN 802.11b – MCH)

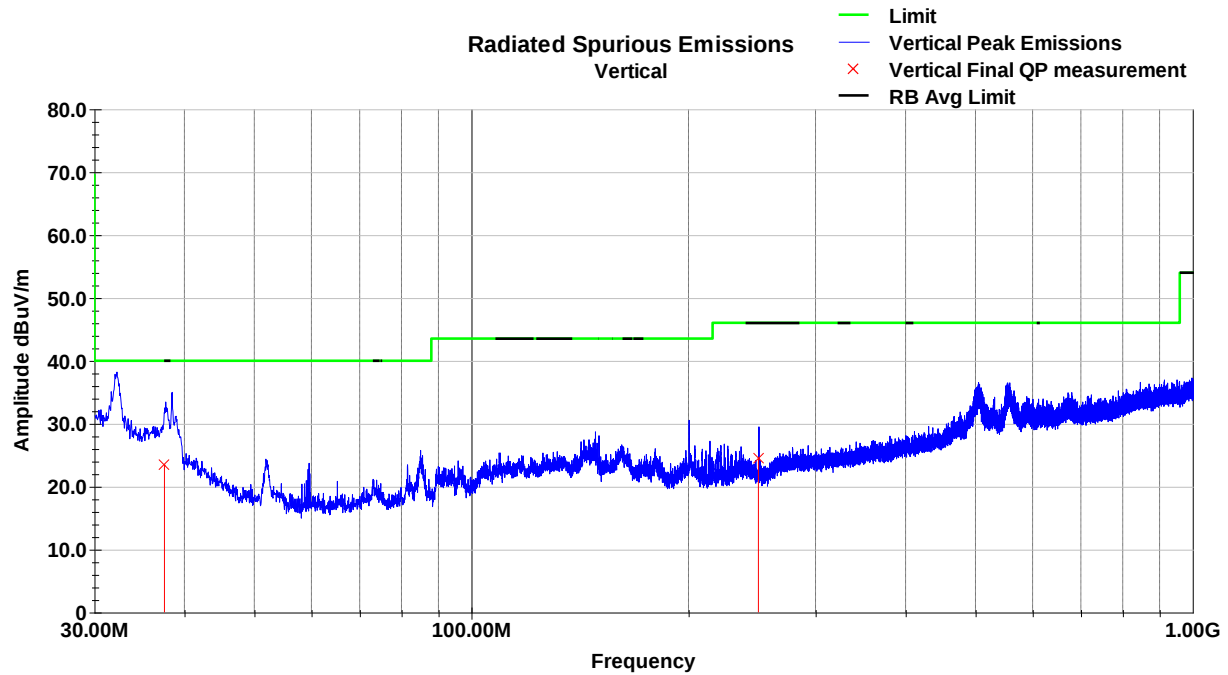
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
11103.16	43.2	H	213.0	156.0	38.6	4.4	35.6	50.5	74.0	-23.5
12021.00	44.6	H	248.0	187.0	39.1	4.4	35.8	52.4	74.0	-21.6
13296.56	43.0	H	167.0	165.0	39.2	4.5	36.0	50.7	74.0	-23.3
15802.44	44.5	H	11.0	235.0	40.6	5.0	36.0	54.1	74.0	-19.9
17596.56	45.1	H	343.0	178.0	40.8	5.2	36.3	54.8	74.0	-19.2
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit dBuV/m	Margin (dB)
11103.16	31.2	H	213.0	156.0	38.6	4.4	35.6	38.6	54.0	-15.4
12021.00	31.7	H	248.0	187.0	39.1	4.4	35.8	39.4	54.0	-14.6
13296.56	31.0	H	167.0	165.0	39.2	4.5	36.0	38.7	54.0	-15.2
15802.44	32.1	H	11.0	235.0	40.6	5.0	36.0	41.7	54.0	-12.3
17596.56	32.5	H	343.0	178.0	40.8	5.2	36.3	42.2	54.0	-11.8
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

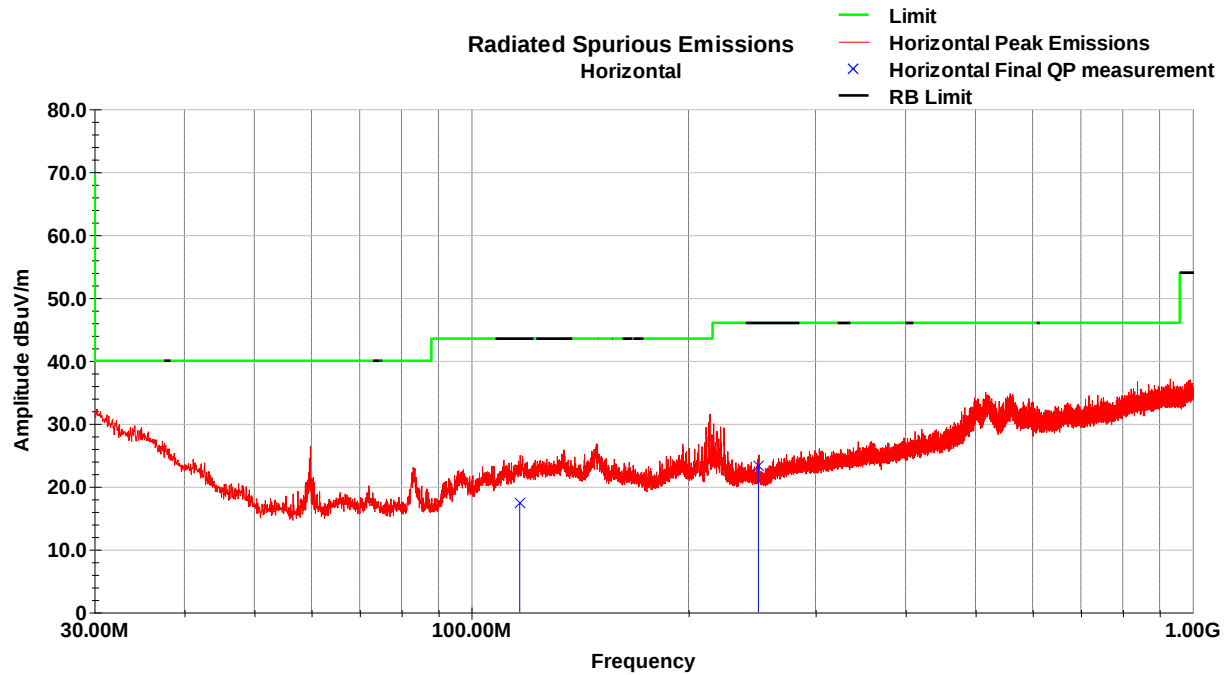
Vertical Plot (30-1000MHz) (WLAN 802.11b – HCH)



Vertical Data (30-1000MHz) (WLAN 802.11b – HCH)

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)
37.53	33.1	V	196.0	113.0	20.4	0.6	30.6	23.5	40.0	-16.5
249.98	36.5	V	359.0	129.0	16.2	2.1	30.3	24.6	46.0	-21.5
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

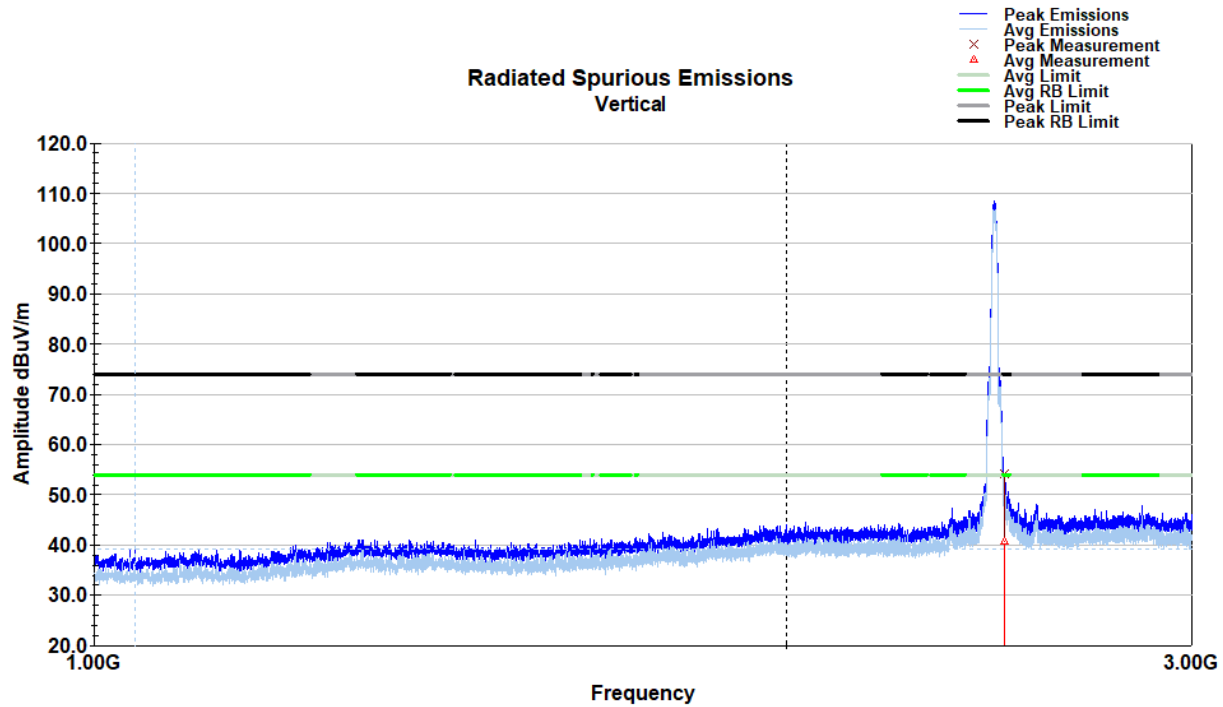
Horizontal Plot (30-1000MHz) (WLAN 802.11b – HCH)



Horizontal Data (30-1000MHz) (WLAN 802.11b – HCH)

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)
116.70	29.2	H	172.0	232.0	17.4	1.3	30.6	17.4	43.5	-26.1
249.98	35.2	H	212.0	189.0	16.2	2.1	30.3	23.3	46.0	-22.7
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11b – HCH)



Vertical Data (1-3GHz) (WLAN 802.11b – HCH)

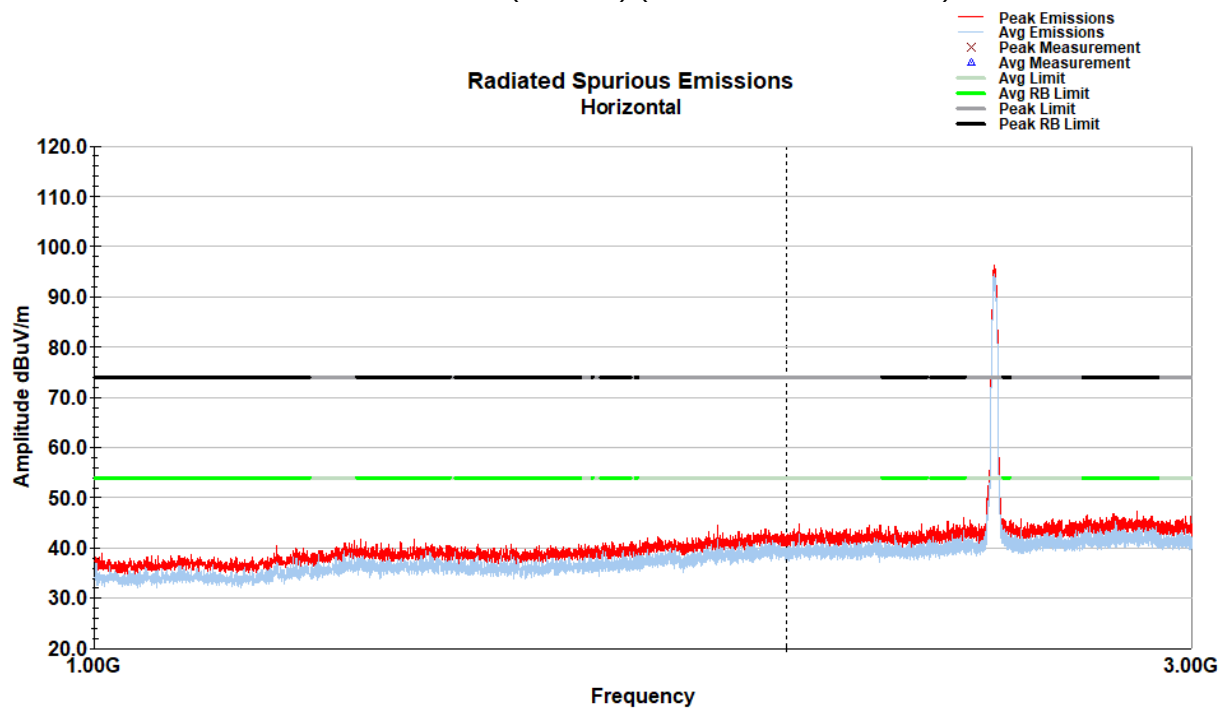
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2486.02	54.6	V	122.0	135.0	32.0	2.0	34.3	54.3	74.0	-19.7
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

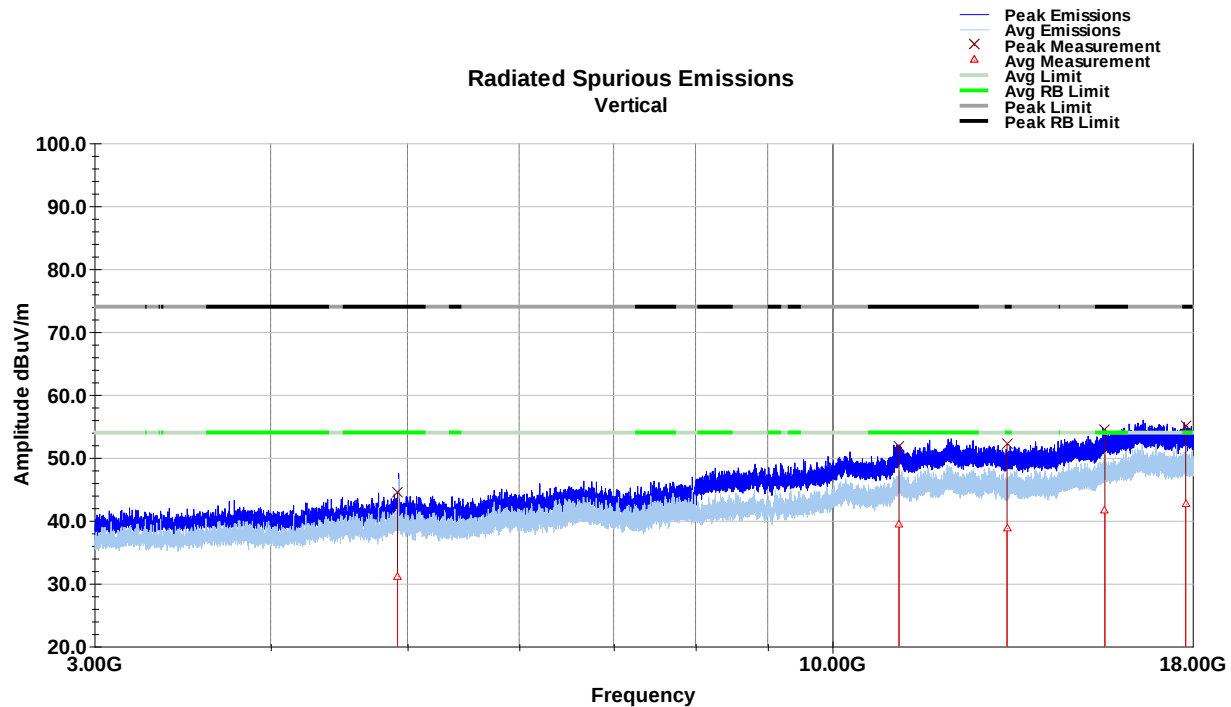
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2486.02	41.0	V	122.0	135.0	32.0	2.0	34.3	40.7	54.0	-13.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (WLAN 802.11b – HCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11b – HCH)



Vertical Data (3-18GHz) (WLAN 802.11b – HCH)

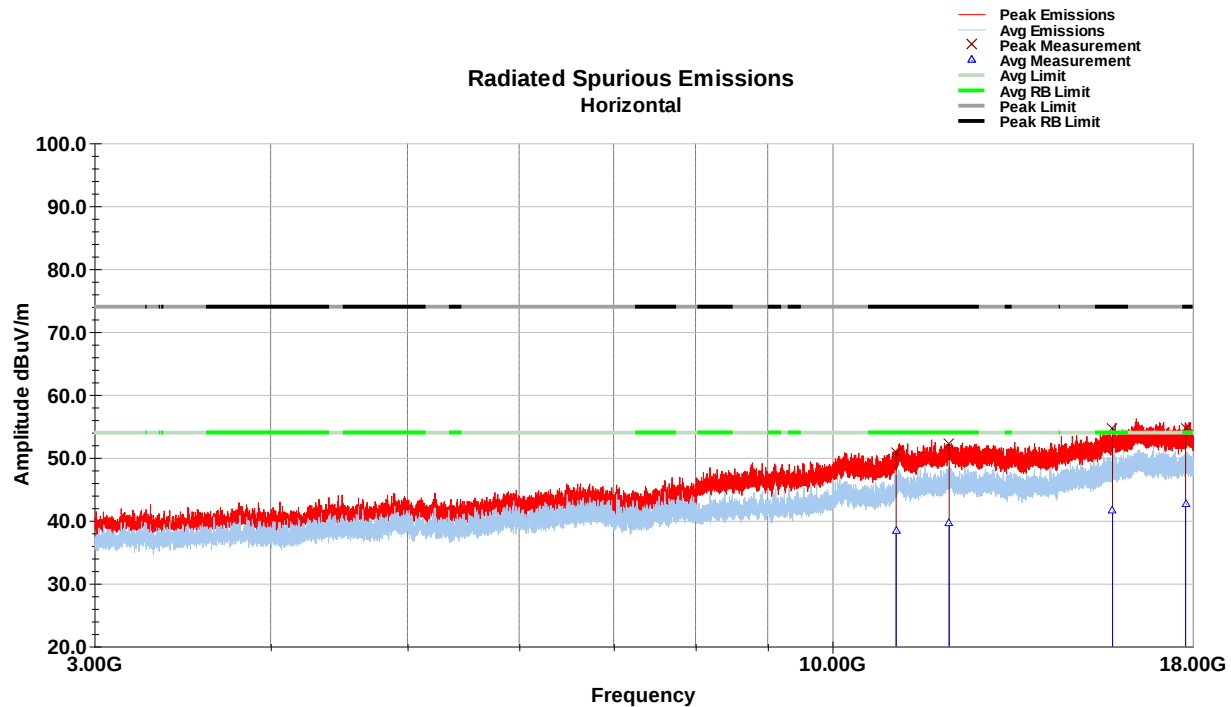
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4920.10	41.5	V	200.0	229.0	34.1	3.0	34.1	44.4	74.0	-29.6
11150.02	43.9	V	187.0	231.0	38.6	4.3	35.0	51.9	74.0	-22.1
13300.10	44.4	V	337.0	177.0	39.2	4.5	36.0	52.2	74.0	-21.8
15599.90	45.3	V	82.0	244.0	40.6	4.9	36.3	54.5	74.0	-19.5
17799.90	45.3	V	111.0	185.0	41.0	5.3	36.6	55.0	74.0	-19.0
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4920.10	28.2	V	200.0	229.0	34.1	3.0	34.1	31.2	54.0	-22.8
11150.02	31.4	V	187.0	231.0	38.6	4.3	35.0	39.4	54.0	-14.6
13300.10	31.1	V	337.0	177.0	39.2	4.5	36.0	38.8	54.0	-15.1
15599.90	32.4	V	82.0	244.0	40.6	4.9	36.3	41.6	54.0	-12.4
17799.90	33.0	V	111.0	185.0	41.0	5.3	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11b – HCH)



Horizontal Data (3-18GHz) (WLAN 802.11b – HCH)

Peak

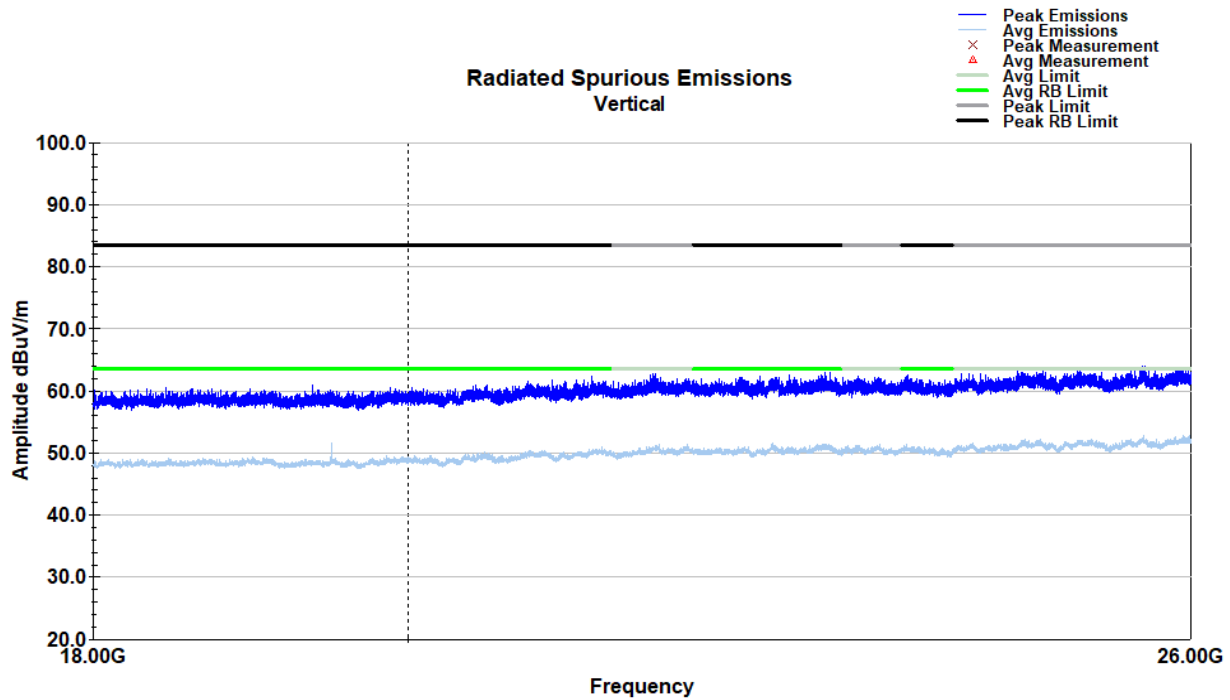
Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
11097.64	43.4	H	66.0	105.0	38.6	4.4	35.6	50.7	74.0	-23.3
12101.24	44.5	H	48.0	152.0	39.2	4.4	36.0	52.2	74.0	-21.8
15798.24	45.0	H	222.0	213.0	40.6	5.0	36.0	54.6	74.0	-19.4
17797.76	44.9	H	271.0	198.0	41.0	5.3	36.6	54.6	74.0	-19.4
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

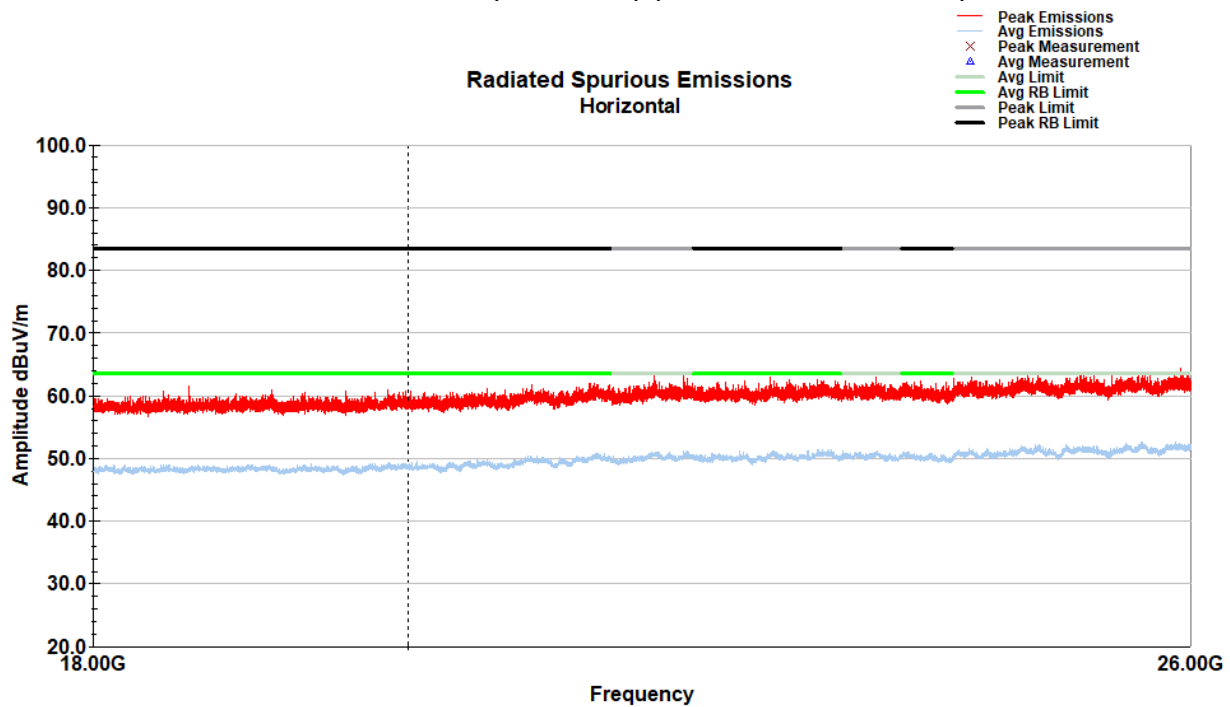
Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
11097.64	31.1	H	66.0	105.0	38.6	4.4	35.6	38.5	54.0	-15.5
12101.24	31.9	H	48.0	152.0	39.2	4.4	36.0	39.6	54.0	-14.4
15798.24	32.0	H	222.0	213.0	40.6	5.0	36.0	41.6	54.0	-12.4
17797.76	33.0	H	271.0	198.0	41.0	5.3	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

All channels had similar results in the 18-26GHz frequency range.

Vertical Plot (18-26GHz) (WLAN 802.11b – MCH)

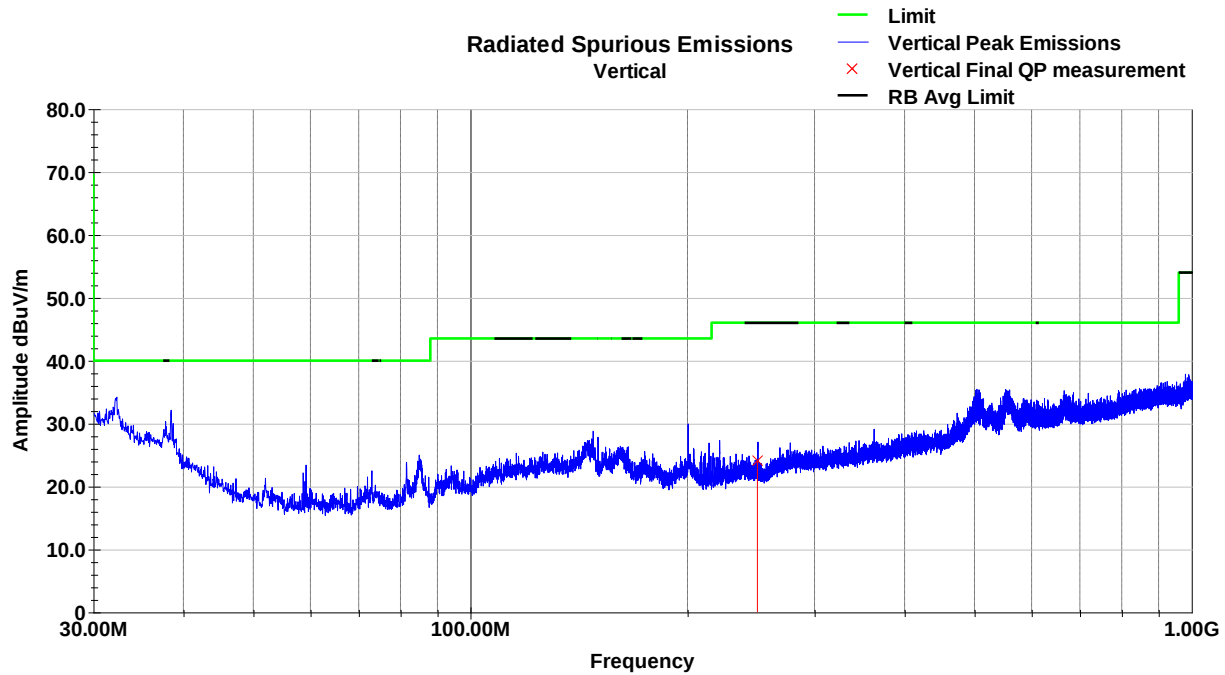


Horizontal Plot (18-26GHz) (WLAN 802.11b – MCH)



5.5.2 WLAN 802.11g

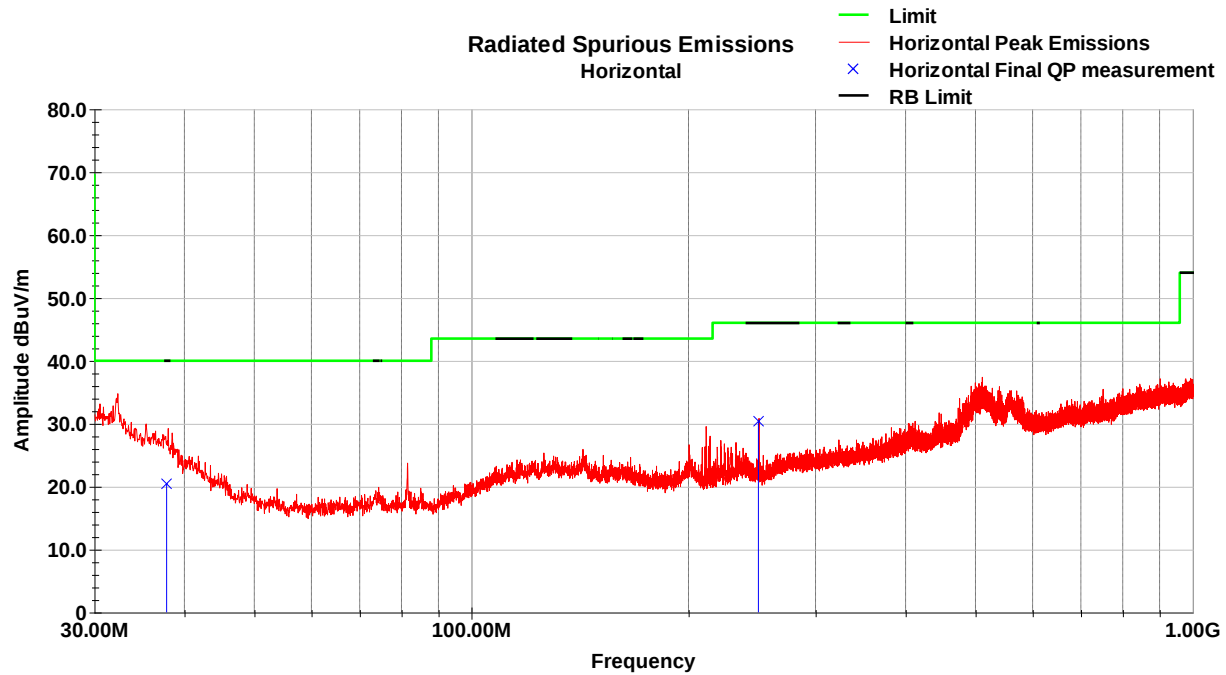
Vertical Plot (30-1000MHz) (WLAN 802.11g – LCH)



Vertical Data (30-1000MHz) (WLAN 802.11g – LCH)

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)
250.02	36.0	V	172.0	158.0	16.2	2.1	30.3	24.1	46.0	-21.9
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

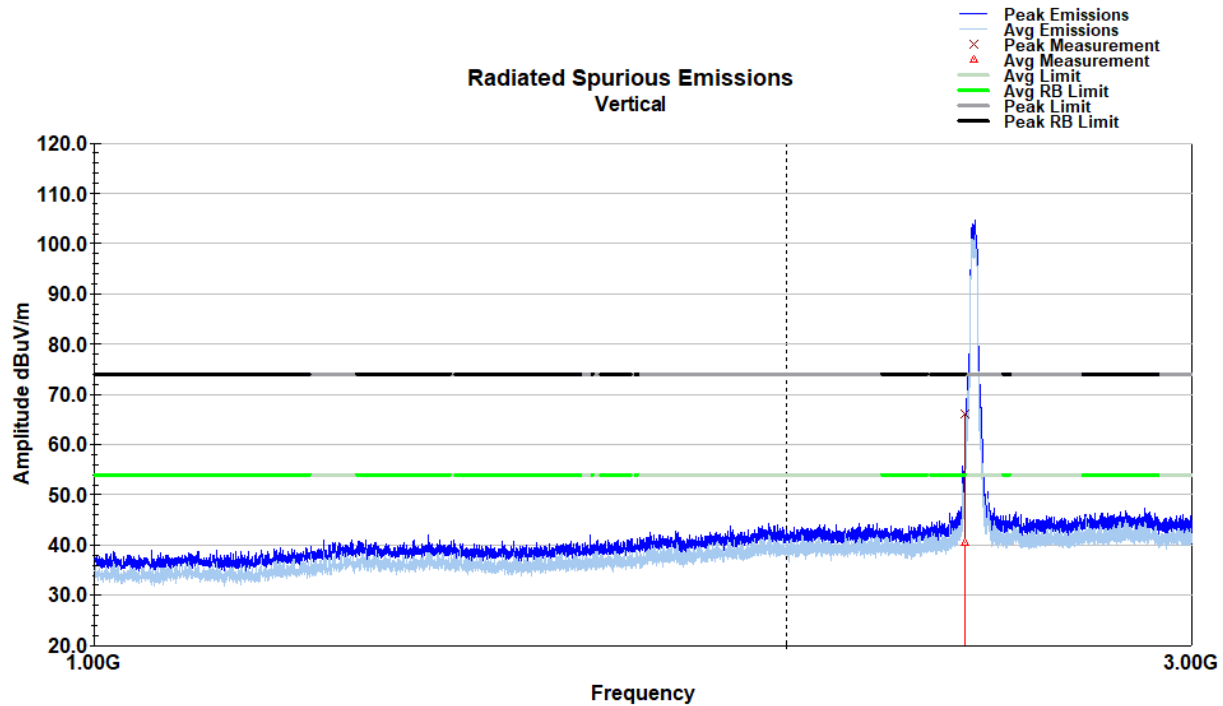
Horizontal Plot (30-1000MHz) (WLAN 802.11g – LCH)



Horizontal Data (30-1000MHz) (WLAN 802.11g – LCH)

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)
37.79	30.4	H	71.0	170.0	20.2	0.6	30.7	20.5	40.0	-19.5
249.99	42.3	H	74.0	100.0	16.2	2.1	30.3	30.4	46.0	-15.6
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11g – LCH)



Vertical Data (1-3GHz) (WLAN 802.11g – LCH)

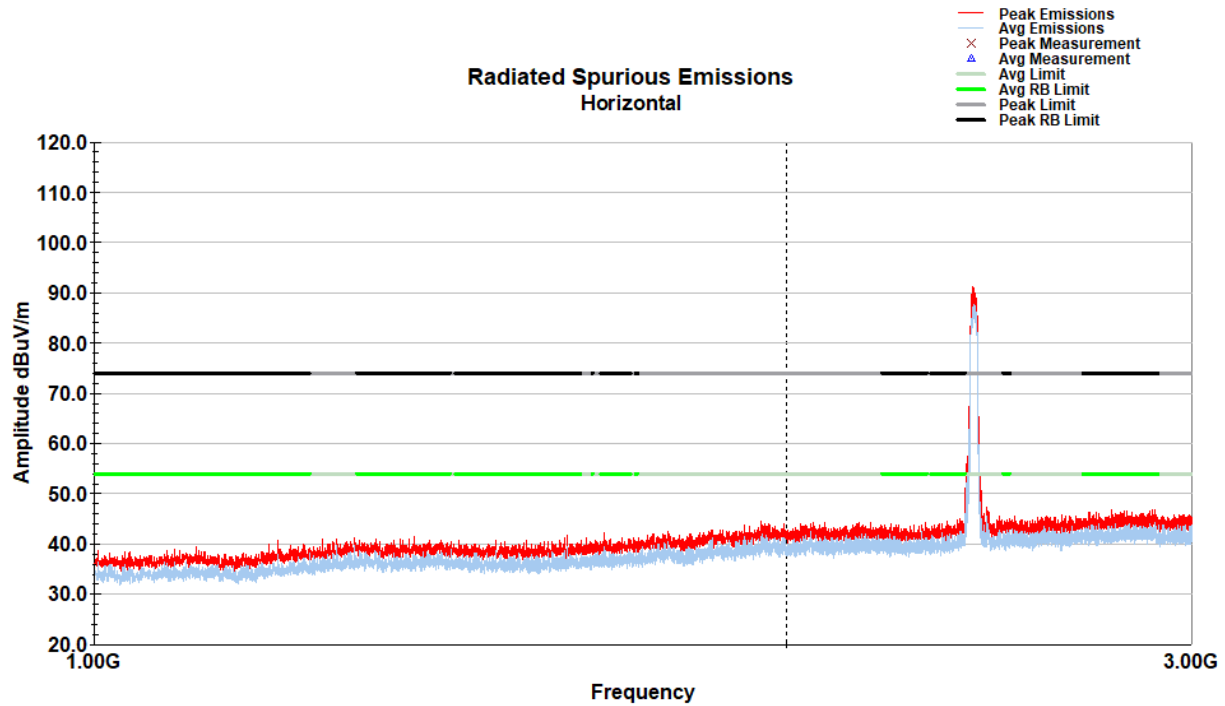
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2389.82	66.7	V	139.0	149.0	31.8	1.9	34.3	66.1	74.0	-7.9
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

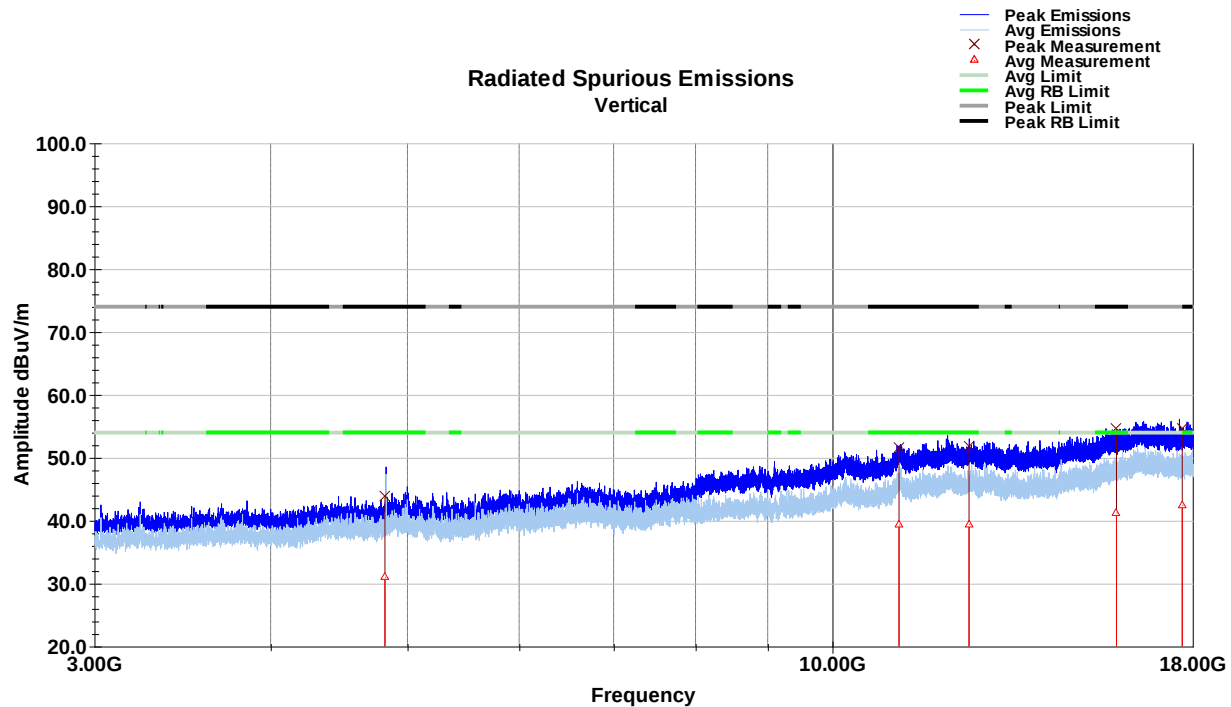
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2389.82	40.9	V	139.0	149.0	31.8	1.9	34.3	40.4	54.0	-13.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (WLAN 802.11g – LCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11g – LCH)



Vertical Data (3-18GHz) (WLAN 802.11g – LCH)

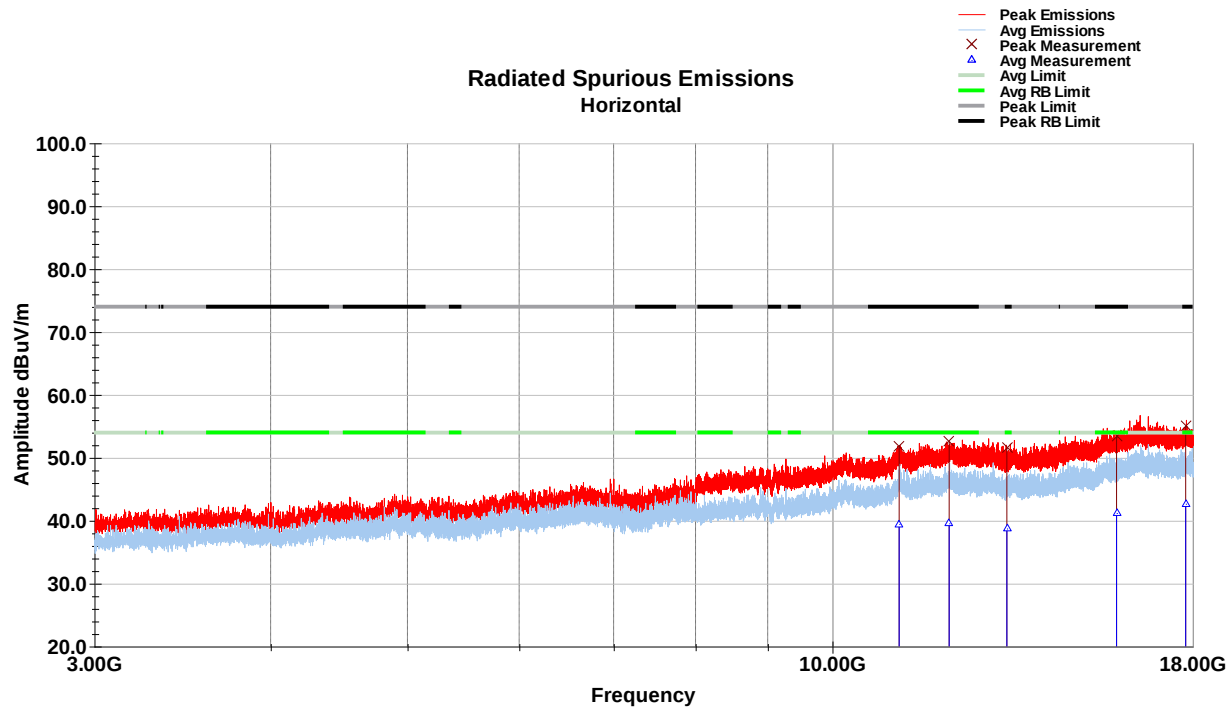
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4820.02	41.1	V	240.0	216.0	34.0	3.0	34.2	43.9	74.0	-30.1
11149.90	43.7	V	316.0	217.0	38.6	4.3	35.0	51.7	74.0	-22.3
12500.02	43.7	V	33.0	249.0	39.2	4.4	35.6	51.7	74.0	-22.3
15900.02	44.7	V	27.0	120.0	40.8	5.0	35.9	54.6	74.0	-19.4
17699.90	44.9	V	62.0	175.0	40.9	5.3	36.5	54.7	74.0	-19.3
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4820.02	28.3	V	240.0	216.0	34.0	3.0	34.2	31.1	54.0	-22.9
11149.90	31.4	V	316.0	217.0	38.6	4.3	35.0	39.4	54.0	-14.6
12500.02	31.5	V	33.0	249.0	39.2	4.4	35.6	39.5	54.0	-14.5
15900.02	31.4	V	27.0	120.0	40.8	5.0	35.9	41.3	54.0	-12.7
17699.90	32.8	V	62.0	175.0	40.9	5.3	36.5	42.5	54.0	-11.4
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11g – LCH)



Horizontal Data (3-18GHz) (WLAN 802.11g – LCH)

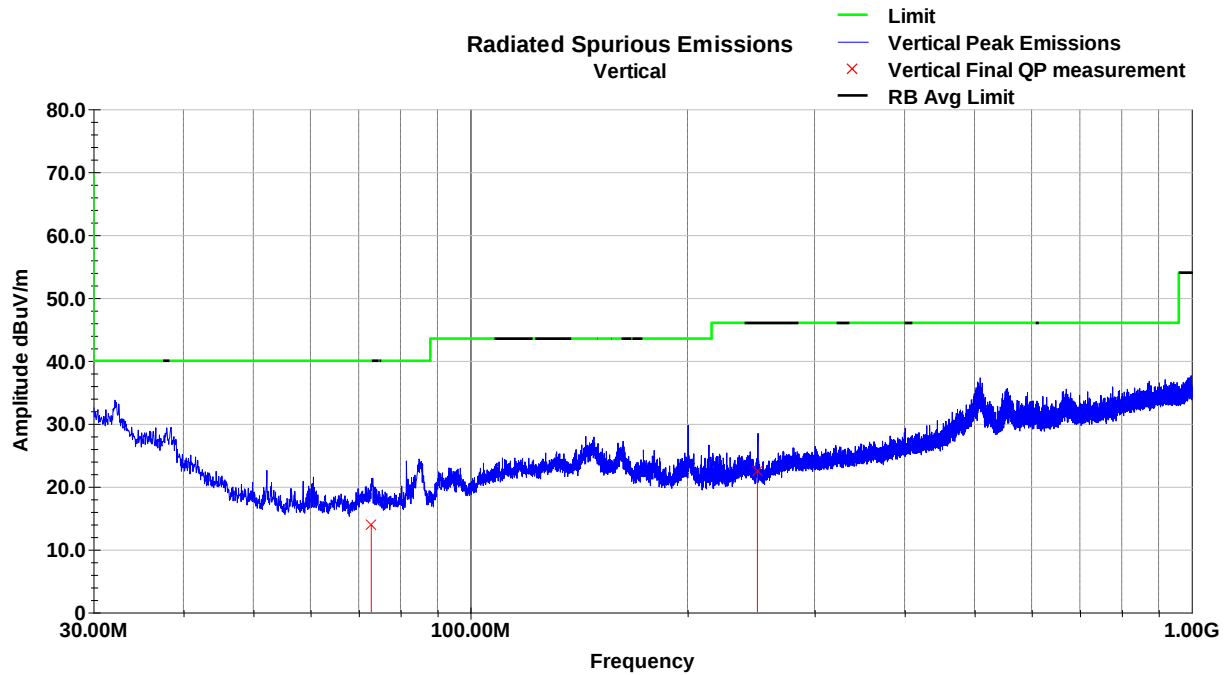
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
11152.32	43.9	H	102.0	160.0	38.6	4.3	35.0	51.8	74.0	-22.2
12100.52	44.9	H	205.0	218.0	39.2	4.4	36.0	52.5	74.0	-21.5
13295.24	43.9	H	176.0	134.0	39.2	4.5	36.0	51.6	74.0	-22.4
15901.72	43.5	H	26.0	182.0	40.8	5.0	35.9	53.4	74.0	-20.6
17800.64	45.3	H	202.0	213.0	41.0	5.3	36.6	55.0	74.0	-19.0
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
11152.32	31.6	H	102.0	160.0	38.6	4.3	35.0	39.5	54.0	-14.5
12100.52	31.9	H	205.0	218.0	39.2	4.4	36.0	39.6	54.0	-14.4
13295.24	31.0	H	176.0	134.0	39.2	4.5	36.0	38.8	54.0	-15.2
15901.72	31.3	H	26.0	182.0	40.8	5.0	35.9	41.2	54.0	-12.8
17800.64	33.0	H	202.0	213.0	41.0	5.3	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

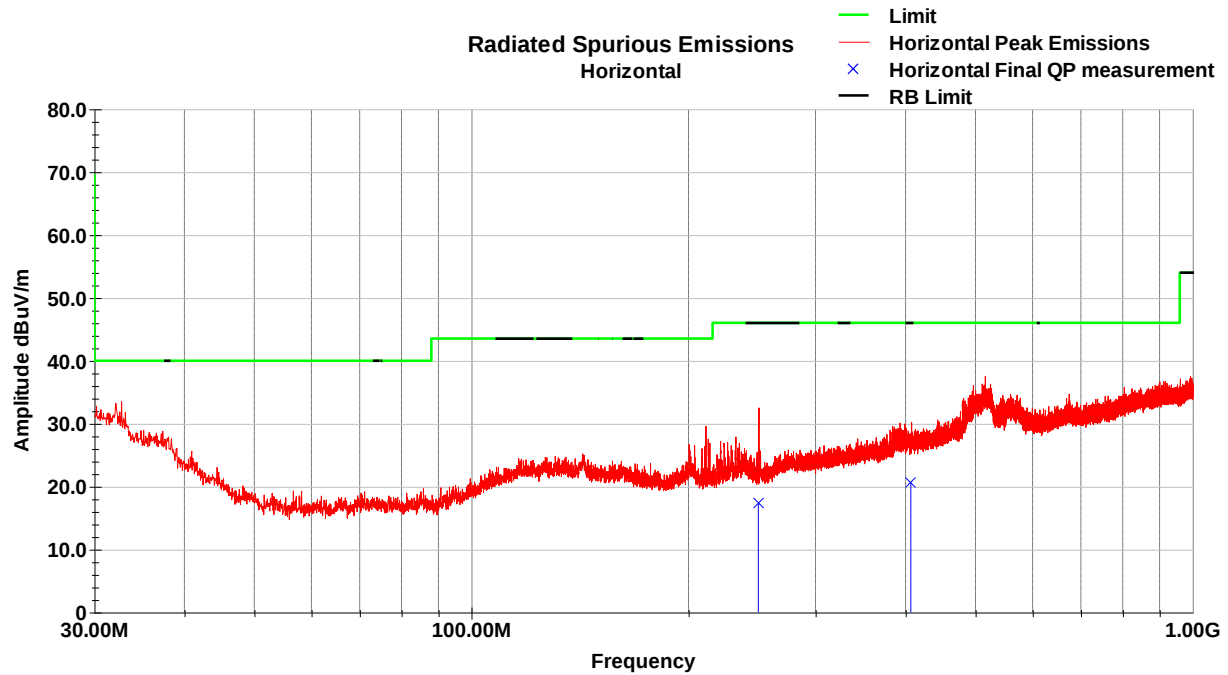
Vertical Plot (30-1000MHz) (WLAN 802.11g – MCH)



Vertical Data (30-1000MHz) (WLAN 802.11g – MCH)

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)
72.88	31.4	V	216.0	220.0	12.2	1.0	30.7	13.9	40.0	-26.1
250.02	34.4	V	226.0	160.0	16.2	2.1	30.3	22.5	46.0	-23.5
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

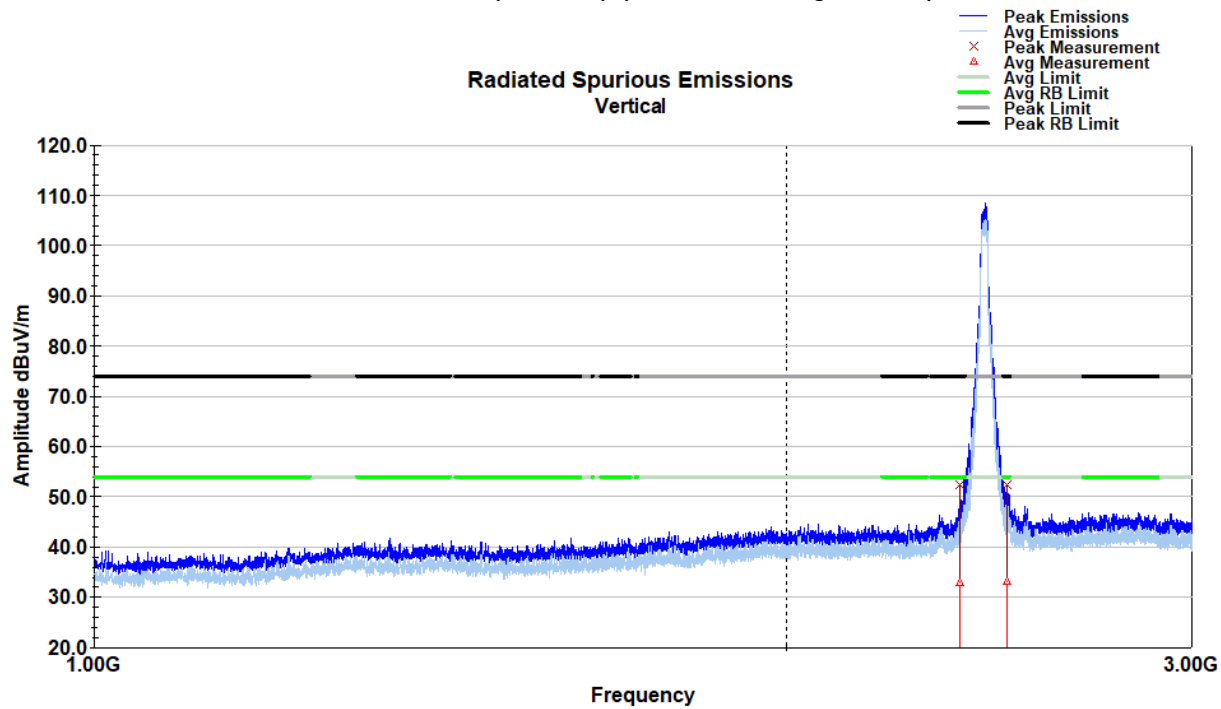
Horizontal Plot (30-1000MHz) (WLAN 802.11g – MCH)



Horizontal Data (30-1000MHz) (WLAN 802.11g – MCH)

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)
249.95	29.2	H	281.0	216.0	16.2	2.1	30.3	17.3	46.0	-28.7
406.83	27.3	H	341.0	128.0	20.5	2.7	30.0	20.6	46.0	-25.4
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11g – MCH)



Vertical Data (1-3GHz) (WLAN 802.11g – MCH)

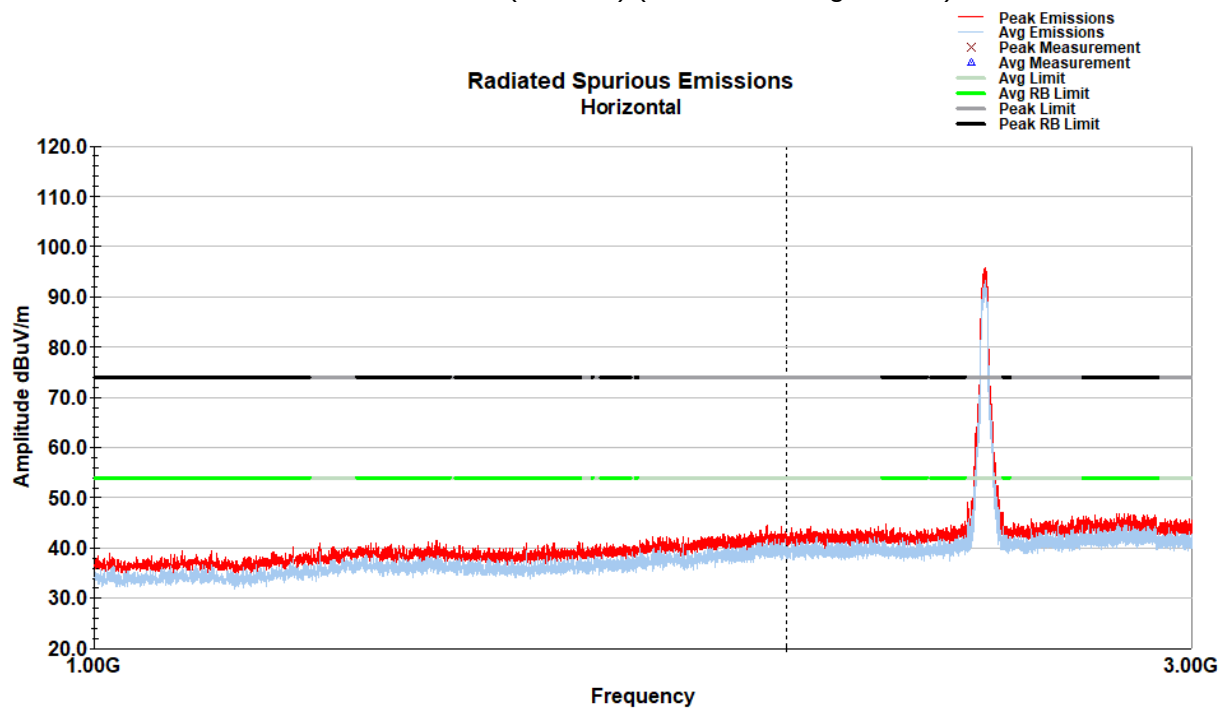
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2389.82	66.7	V	139.0	149.0	31.8	1.9	34.3	66.1	74.0	-7.9
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

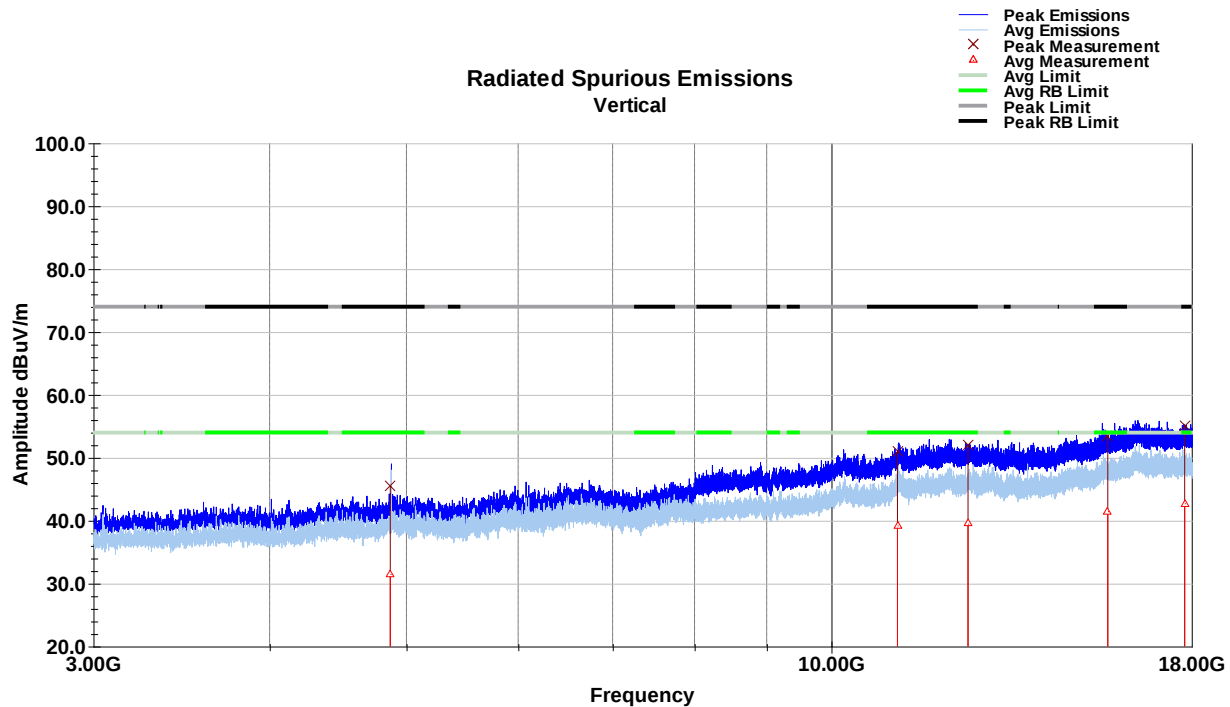
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2389.82	40.9	V	139.0	149.0	31.8	1.9	34.3	40.4	54.0	-13.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (WLAN 802.11g – MCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11g – MCH)



Vertical Data (3-18GHz) (WLAN 802.11g – MCH)

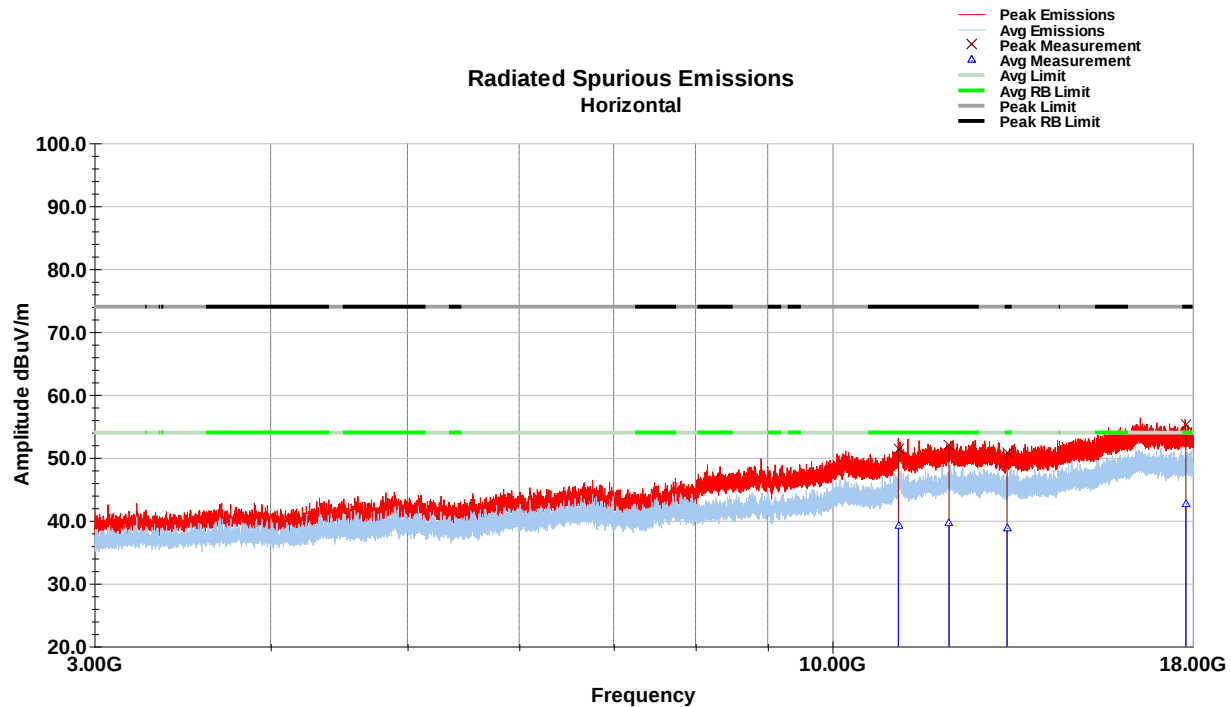
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4870.10	42.5	V	40.0	235.0	34.1	3.1	34.2	45.5	74.0	-28.5
11139.90	43.1	V	20.0	180.0	38.6	4.3	35.1	51.0	74.0	-23.0
12500.10	43.9	V	332.0	232.0	39.2	4.4	35.6	52.0	74.0	-22.0
15700.02	44.2	V	159.0	224.0	40.6	4.9	36.2	53.5	74.0	-20.5
17799.90	45.4	V	286.0	100.0	41.0	5.3	36.6	55.1	74.0	-18.9
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4870.10	28.6	V	40.0	235.0	34.1	3.1	34.2	31.5	54.0	-22.4
11139.90	31.4	V	20.0	180.0	38.6	4.3	35.1	39.2	54.0	-14.7
12500.10	31.5	V	332.0	232.0	39.2	4.4	35.6	39.5	54.0	-14.5
15700.02	32.2	V	159.0	224.0	40.6	4.9	36.2	41.5	54.0	-12.5
17799.90	33.1	V	286.0	100.0	41.0	5.3	36.6	42.8	54.0	-11.2
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11g – MCH)



Horizontal Data (3-18GHz) (WLAN 802.11g – MCH)

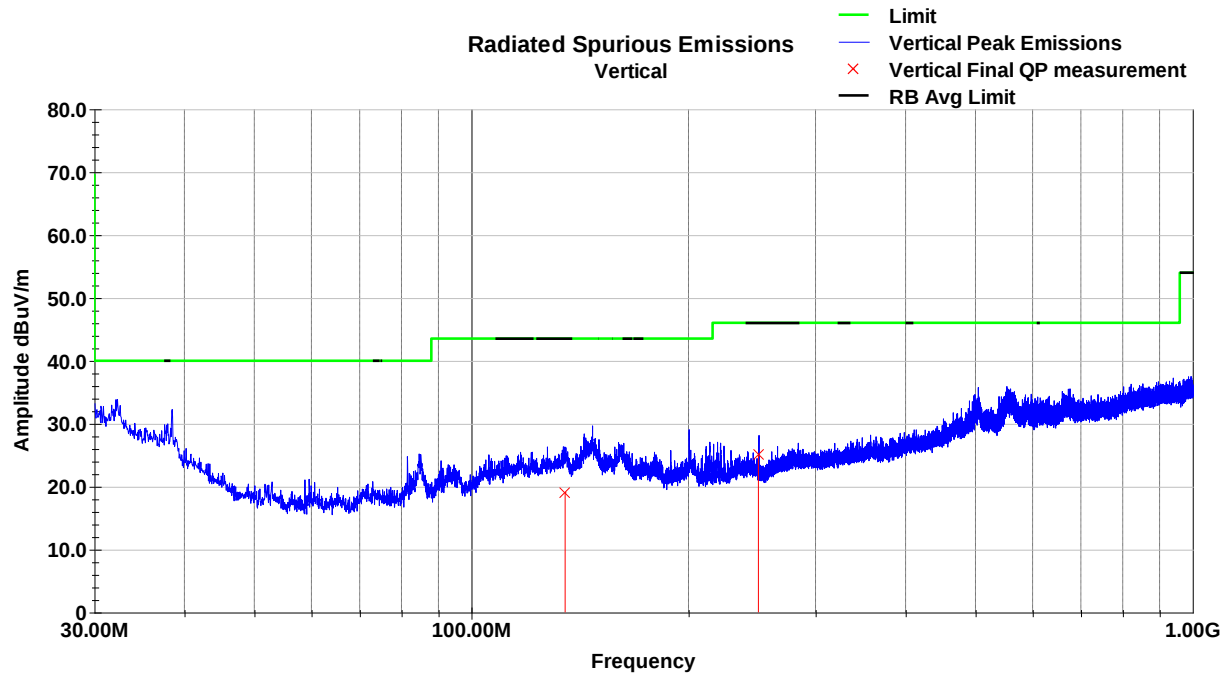
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
11139.08	43.6	H	240.0	178.0	38.6	4.3	35.1	51.4	74.0	-22.6
12099.56	44.4	H	203.0	215.0	39.2	4.4	36.0	52.1	74.0	-21.9
13298.84	43.1	H	5.0	249.0	39.2	4.5	36.0	50.8	74.0	-23.2
17804.60	45.6	H	181.0	240.0	41.0	5.3	36.6	55.3	74.0	-18.7
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit dBuV/m	Margin dB
11139.08	31.5	H	240.0	178.0	38.6	4.3	35.1	39.3	54.0	-14.7
12099.56	31.9	H	203.0	215.0	39.2	4.4	36.0	39.6	54.0	-14.4
13298.84	31.1	H	5.0	249.0	39.2	4.5	36.0	38.8	54.0	-15.2
17804.60	33.0	H	181.0	240.0	41.0	5.3	36.6	42.8	54.0	-11.2
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

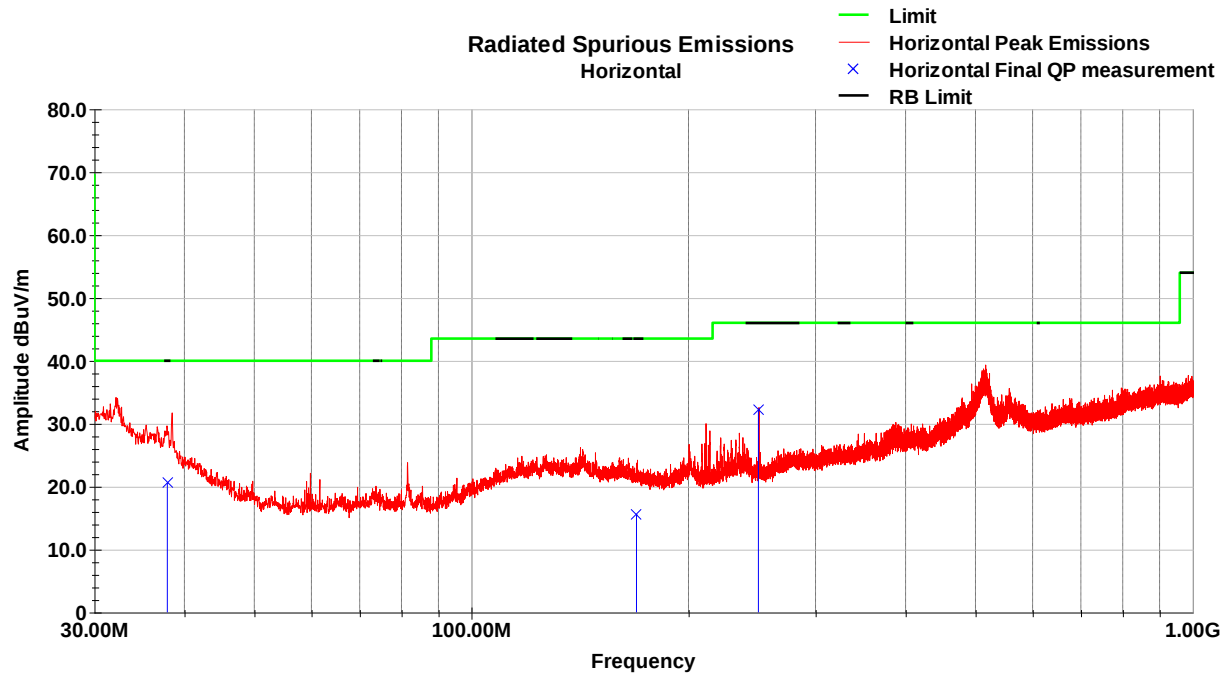
Vertical Plot (30-1000MHz) (WLAN 802.11g – HCH)



Vertical Data (30-1000MHz) (WLAN 802.11g – HCH)

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)
134.88	30.7	V	189.0	175.0	17.5	1.4	30.6	19.1	43.5	-24.4
249.98	37.0	V	178.0	158.0	16.2	2.1	30.3	25.1	46.0	-21.0
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

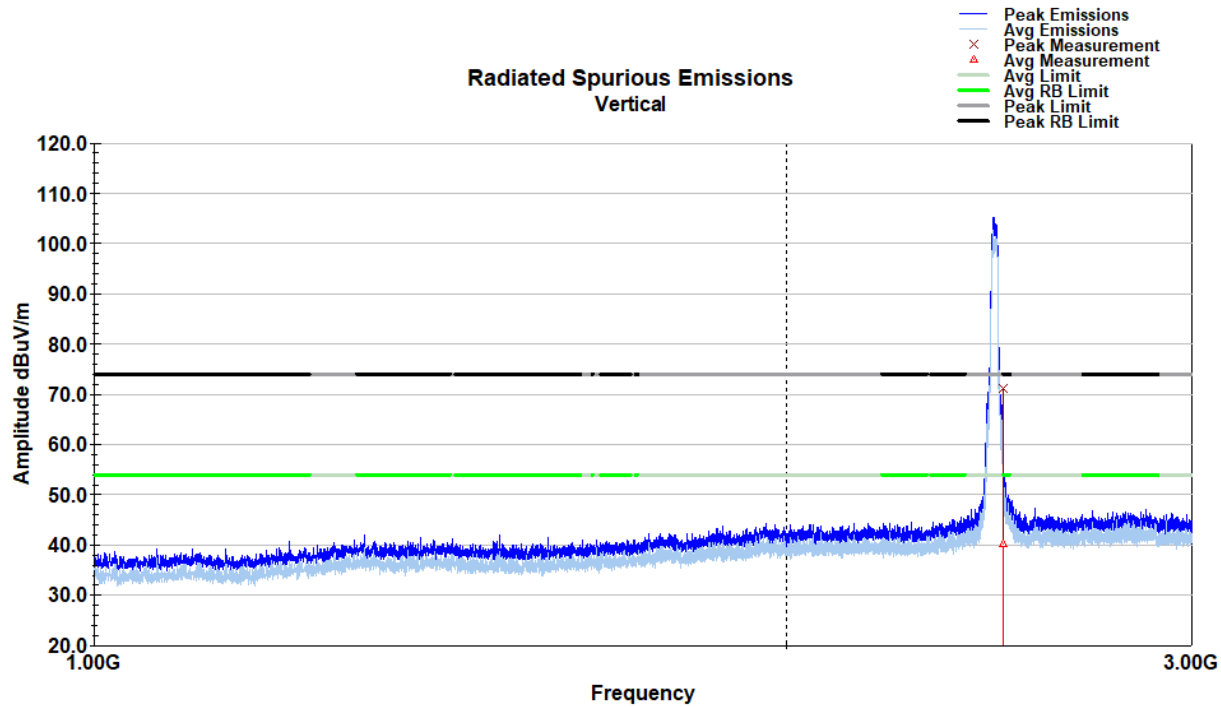
Horizontal Plot (30-1000MHz) (WLAN 802.11g – HCH)



Horizontal Data (30-1000MHz) (WLAN 802.11g – HCH)

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)
37.87	30.5	H	142.0	171.0	20.1	0.6	30.7	20.6	40.0	-19.4
169.41	28.2	H	229.0	115.0	16.2	1.6	30.4	15.6	43.5	-28.0
249.98	44.2	H	72.0	114.0	16.2	2.1	30.3	32.3	46.0	-13.7
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11g – HCH)



Vertical Data (1-3GHz) (WLAN 802.11g – HCH)

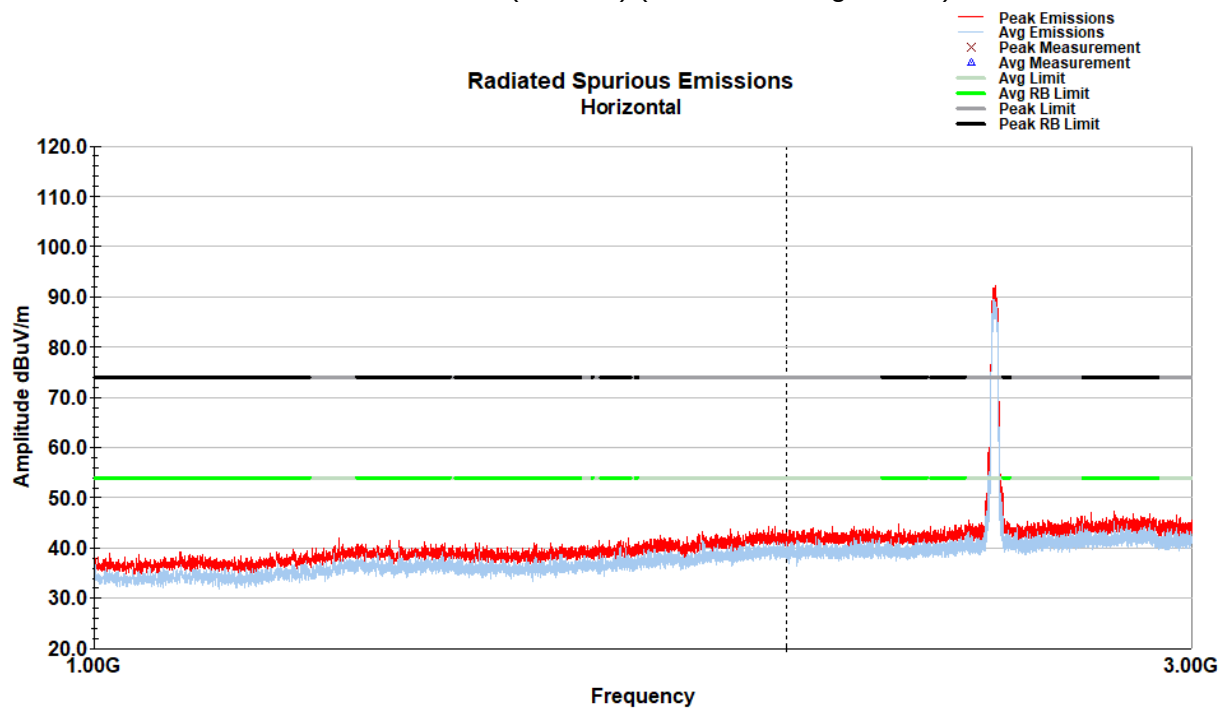
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2483.90	71.6	V	13.0	230.0	32.0	2.0	34.3	71.2	74.0	-2.8
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

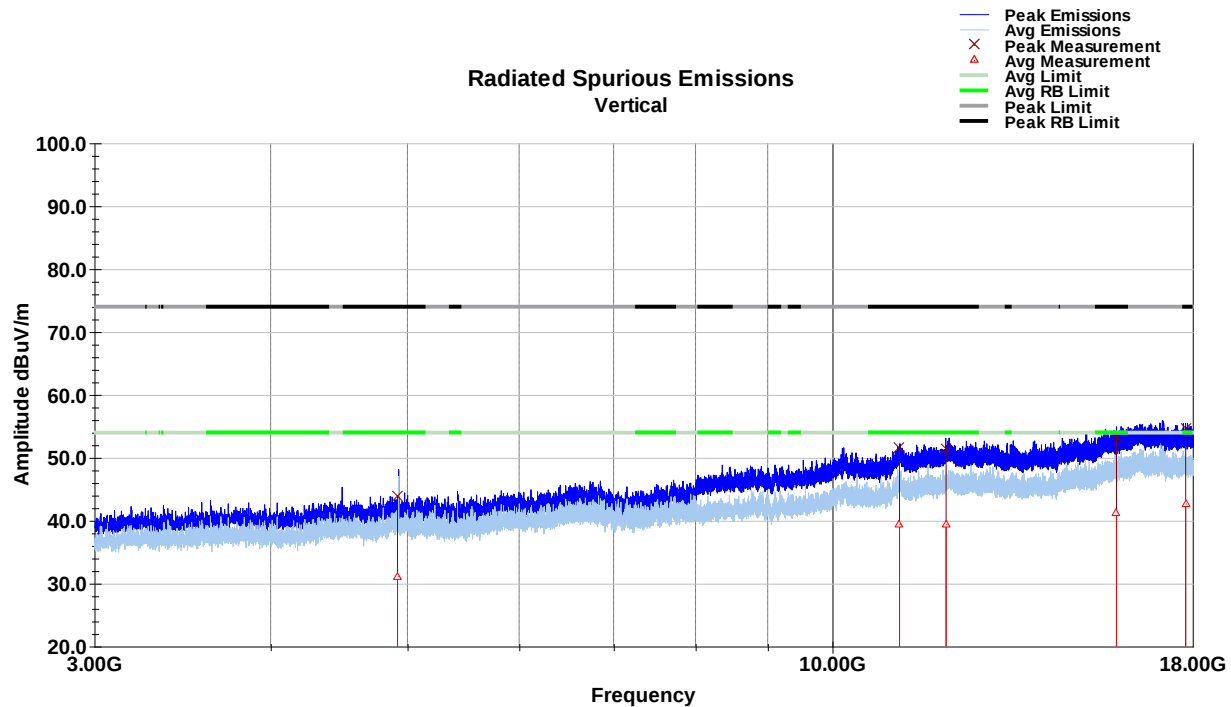
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2483.90	40.7	V	13.0	230.0	32.0	2.0	34.3	40.3	54.0	-13.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (WLAN 802.11g – HCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11g – HCH)



Vertical Data (3-18GHz) (WLAN 802.11g – HCH)

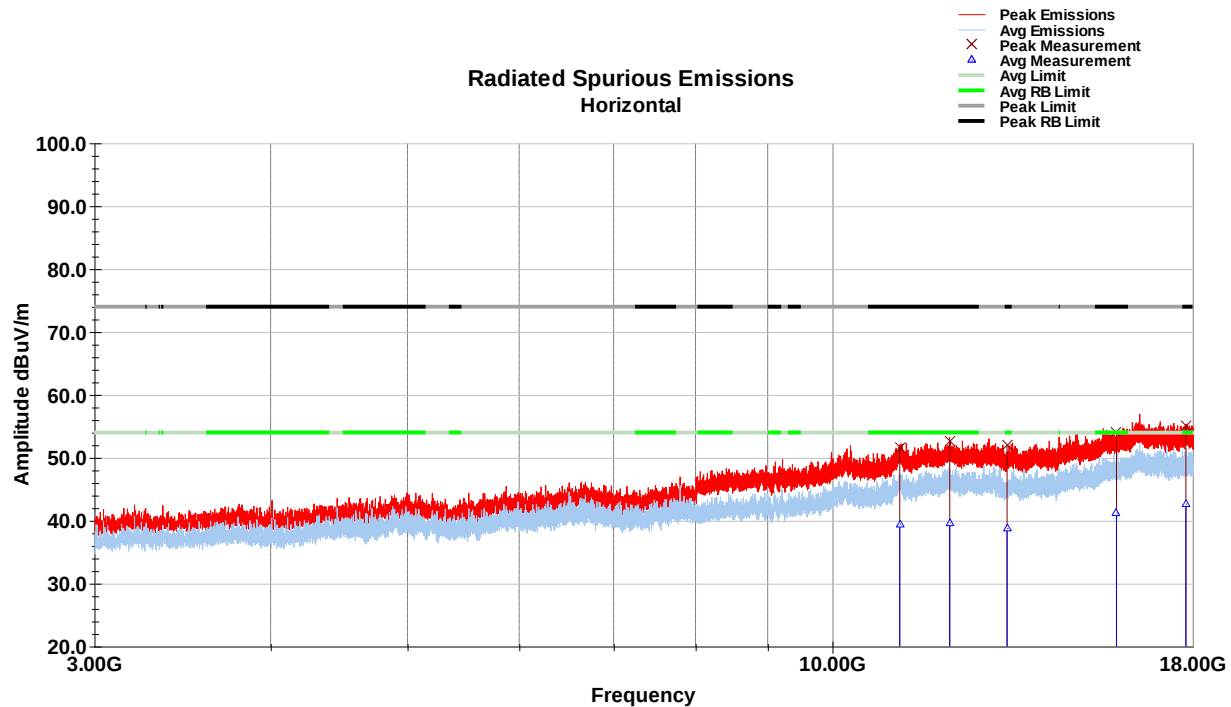
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4920.10	41.0	V	30.0	171.0	34.1	3.0	34.1	43.9	74.0	-30.1
11159.90	43.7	V	155.0	213.0	38.6	4.3	35.0	51.5	74.0	-22.5
12040.02	43.6	V	191.0	134.0	39.2	4.4	35.8	51.4	74.0	-22.6
15900.02	43.6	V	266.0	175.0	40.8	5.0	35.9	53.4	74.0	-20.6
17799.90	44.9	V	18.0	247.0	41.0	5.3	36.6	54.6	74.0	-19.4
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4920.10	28.2	V	30.0	171.0	34.1	3.0	34.1	31.2	54.0	-22.8
11159.90	31.6	V	155.0	213.0	38.6	4.3	35.0	39.5	54.0	-14.5
12040.02	31.7	V	191.0	134.0	39.2	4.4	35.8	39.5	54.0	-14.5
15900.02	31.4	V	266.0	175.0	40.8	5.0	35.9	41.3	54.0	-12.7
17799.90	33.0	V	18.0	247.0	41.0	5.3	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11g – HCH)



Horizontal Data (3-18GHz) (WLAN 802.11g – HCH)

Peak

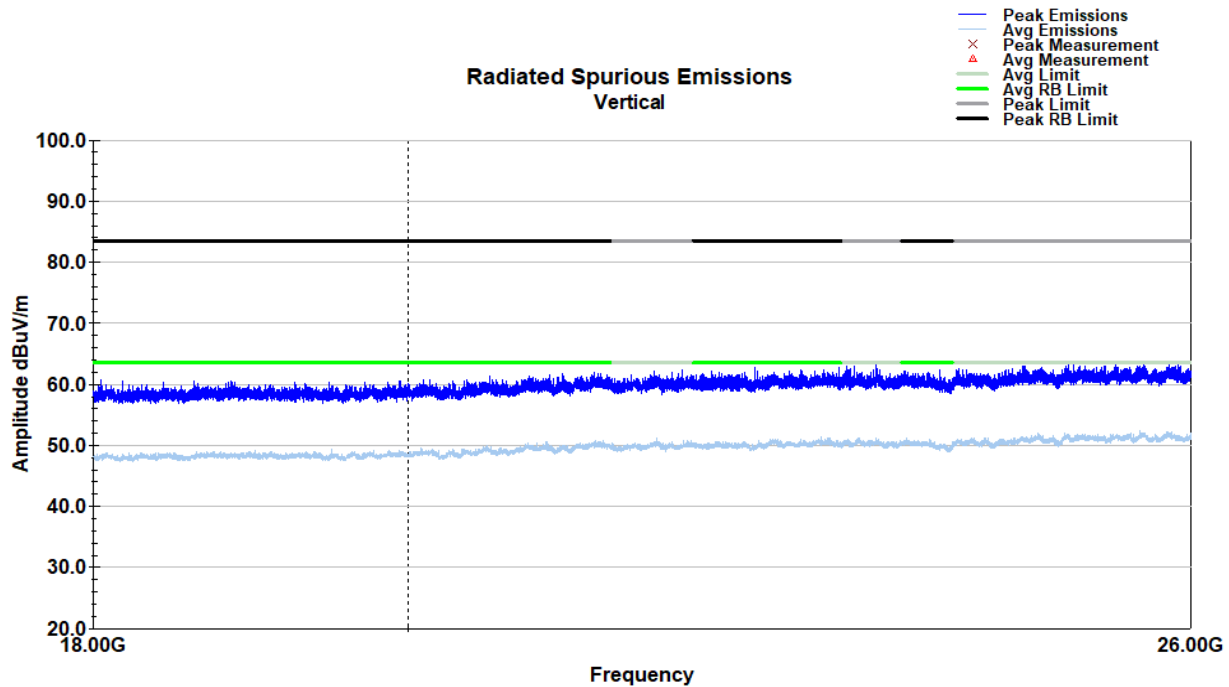
Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
11163.52	43.7	H	118.0	202.0	38.6	4.3	35.1	51.6	74.0	-22.4
12112.44	44.8	H	235.0	246.0	39.2	4.4	35.9	52.5	74.0	-21.5
13299.44	44.3	H	37.0	154.0	39.2	4.5	36.0	52.0	74.0	-22.0
15899.56	44.1	H	69.0	195.0	40.8	5.0	35.9	54.0	74.0	-20.0
17803.88	45.4	H	150.0	182.0	41.0	5.3	36.6	55.1	74.0	-18.9
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

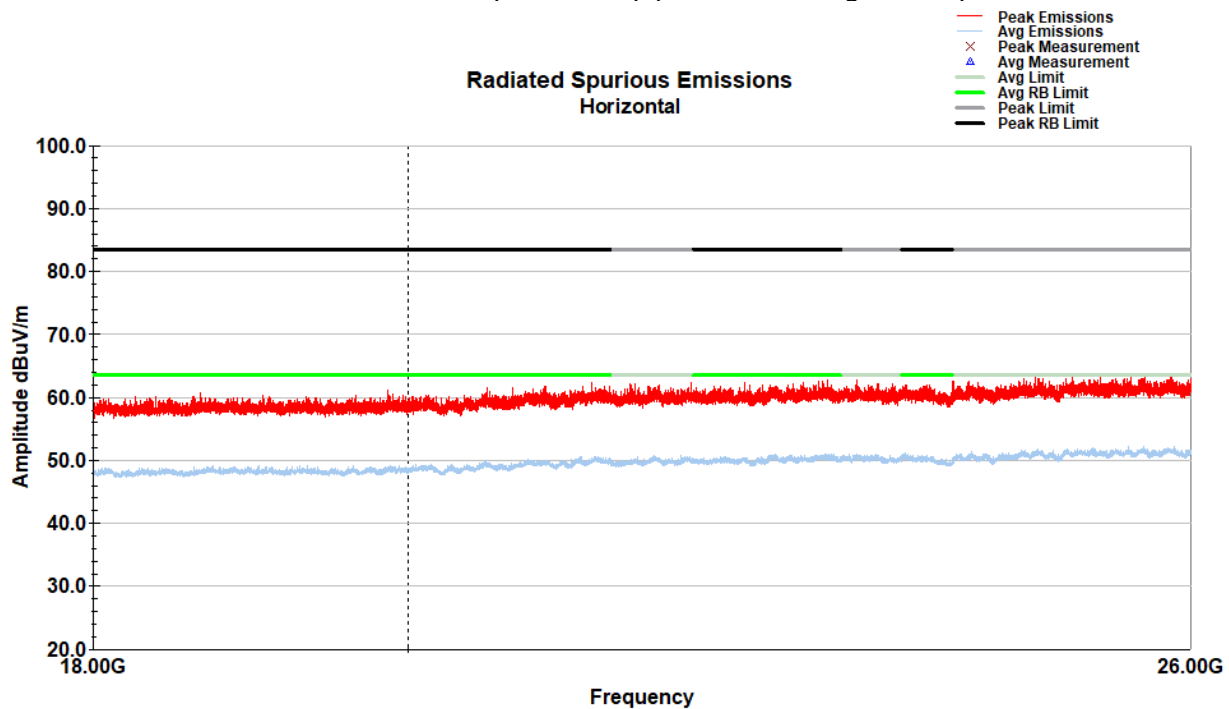
Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
11163.52	31.7	H	118.0	202.0	38.6	4.3	35.1	39.5	54.0	-14.5
12112.44	32.0	H	235.0	246.0	39.2	4.4	35.9	39.7	54.0	-14.2
13299.44	31.1	H	37.0	154.0	39.2	4.5	36.0	38.8	54.0	-15.1
15899.56	31.4	H	69.0	195.0	40.8	5.0	35.9	41.3	54.0	-12.7
17803.88	33.0	H	150.0	182.0	41.0	5.3	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

All channels had similar results in the 18-26GHz frequency range.

Vertical Plot (18-26GHz) (WLAN 802.11g – MCH)

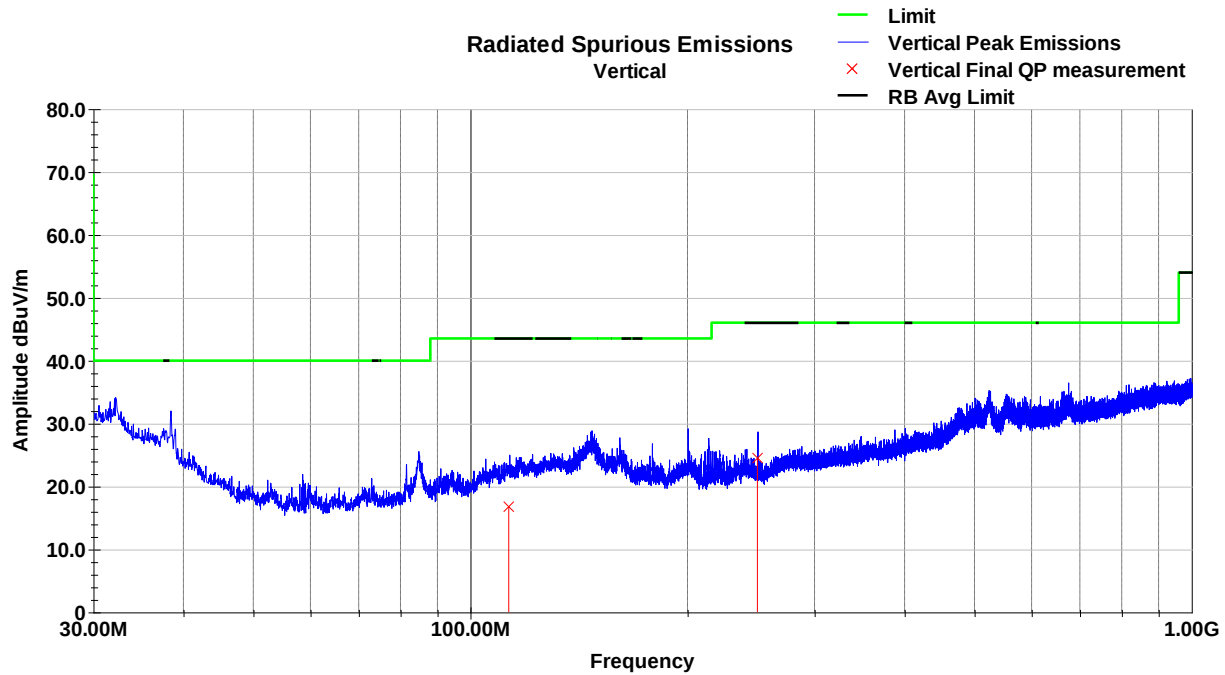


Horizontal Plot (18-26GHz) (WLAN 802.11g – MCH)



5.5.3 WLAN 802.11n HT20

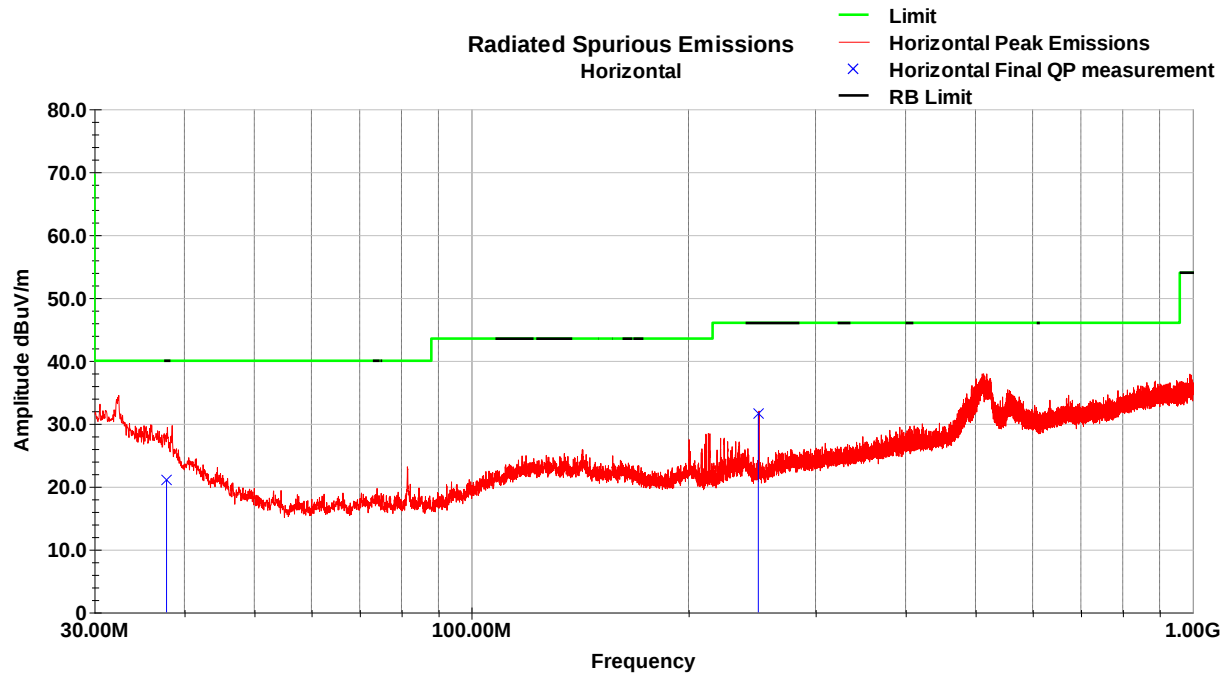
Vertical Plot (30-1000MHz) (WLAN 802.11n HT20 – LCH)



Vertical Data (30-1000MHz) (WLAN 802.11n HT20 – LCH)

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)
113.03	29.0	V	143.0	265.0	17.0	1.3	30.6	16.8	43.5	-26.7
249.98	36.3	V	141.0	201.0	16.2	2.1	30.3	24.4	46.0	-21.6
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

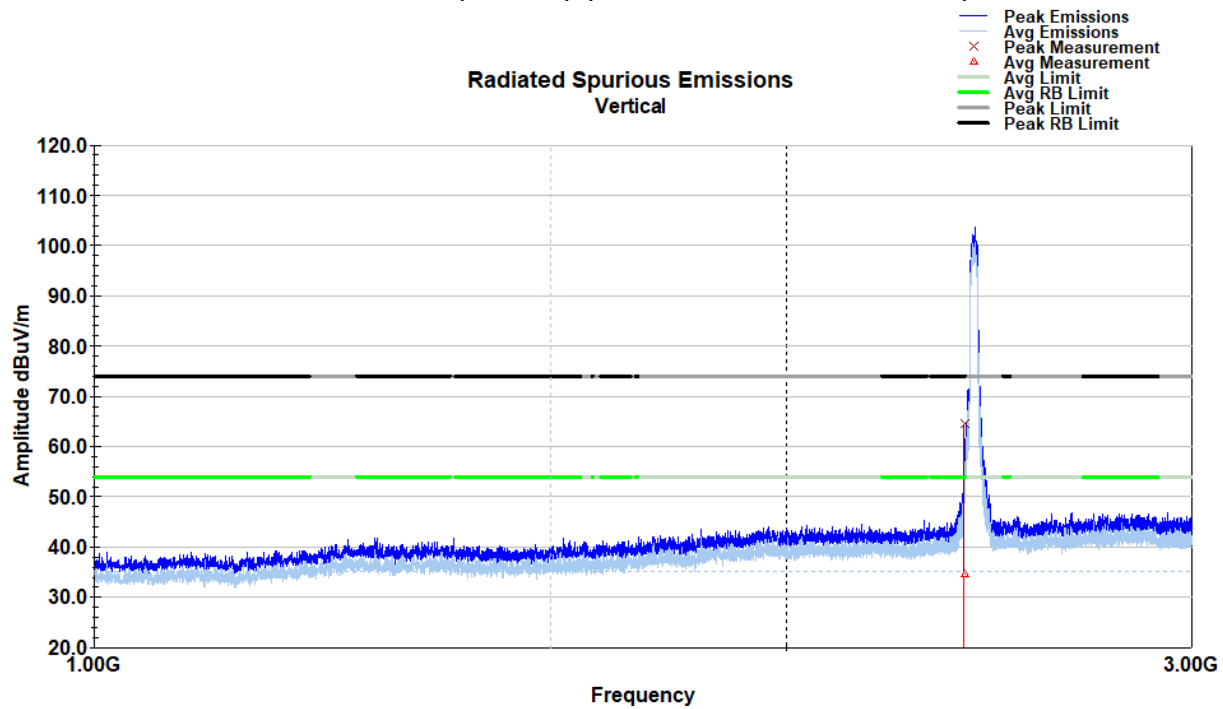
Horizontal Plot (30-1000MHz) (WLAN 802.11n HT20 – LCH)



Horizontal Data (30-1000MHz) (WLAN 802.11n HT20 – LCH)

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)
37.78	30.9	H	219.0	171.0	20.2	0.6	30.7	21.0	40.0	-19.0
249.97	43.5	H	80.0	114.0	16.2	2.1	30.3	31.6	46.0	-14.5
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11n HT20 – LCH)



Vertical Data (1-3GHz) (WLAN 802.11n HT20 – LCH)

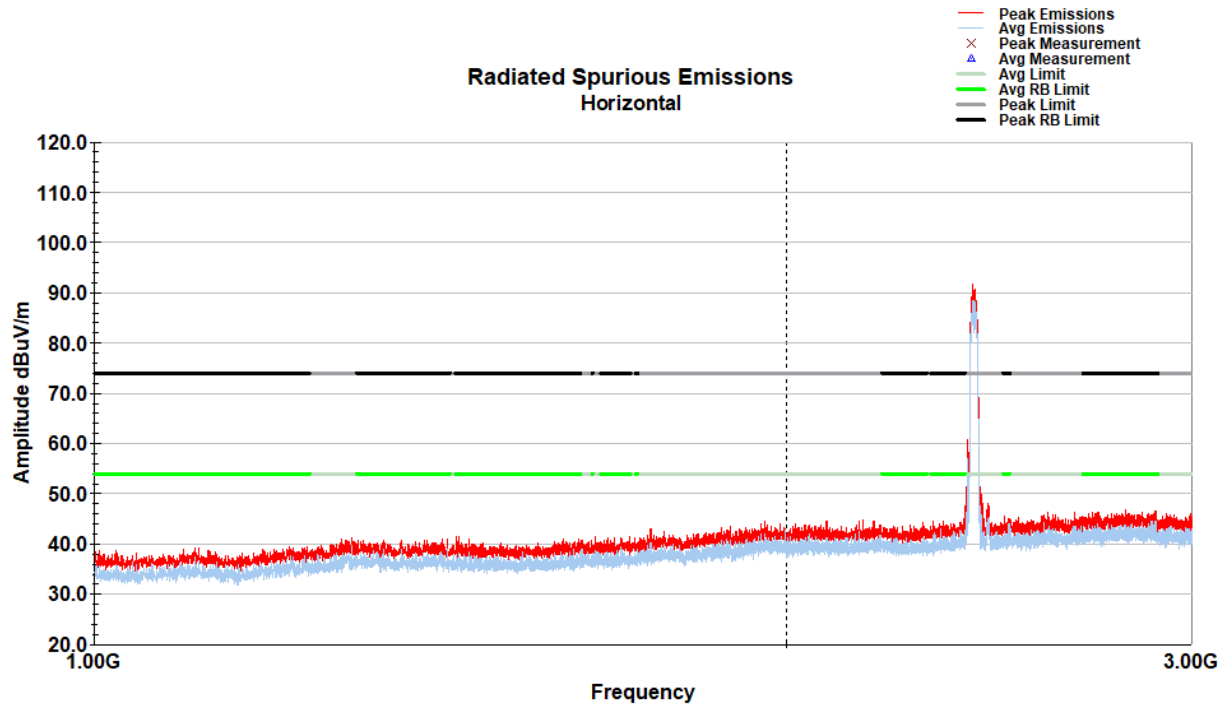
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2388.50	65.0	V	226.0	172.0	31.8	1.9	34.3	64.5	74.0	-9.5
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

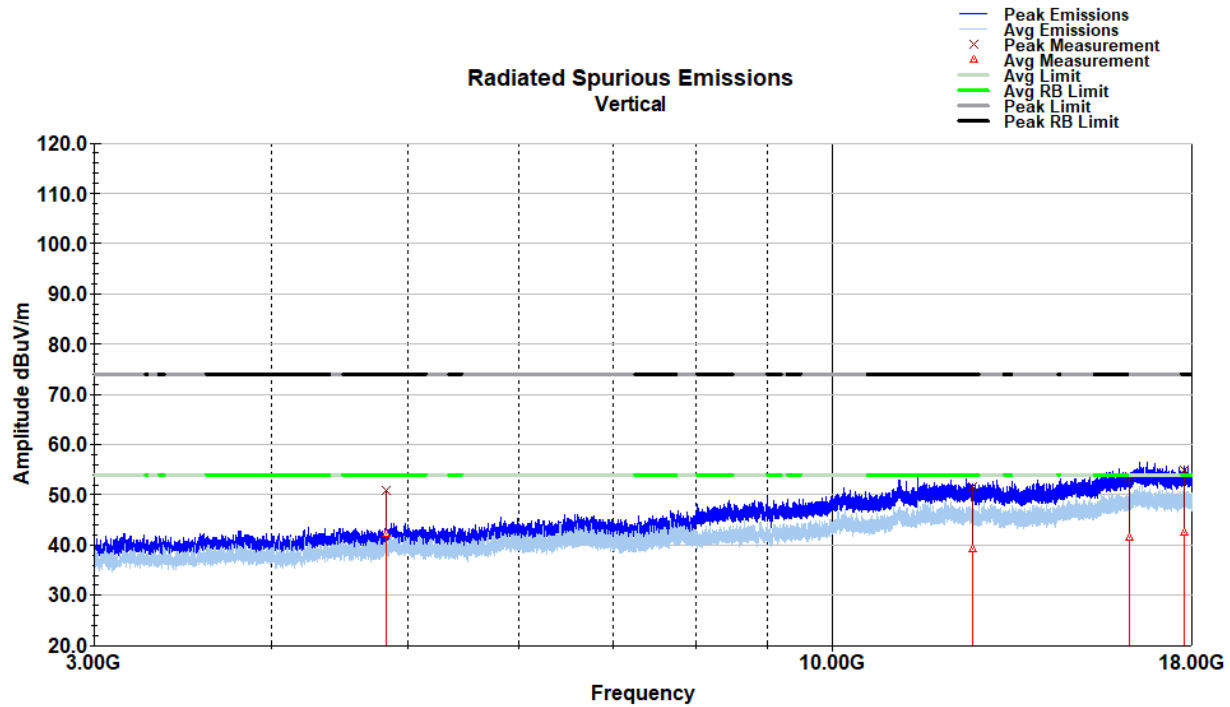
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2388.50	35.2	V	226.0	172.0	31.8	1.9	34.3	34.7	54.0	-19.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (WLAN 802.11n HT20 – LCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11n HT20 – LCH)



Vertical Data (3-18GHz) (WLAN 802.11n HT20 – LCH)

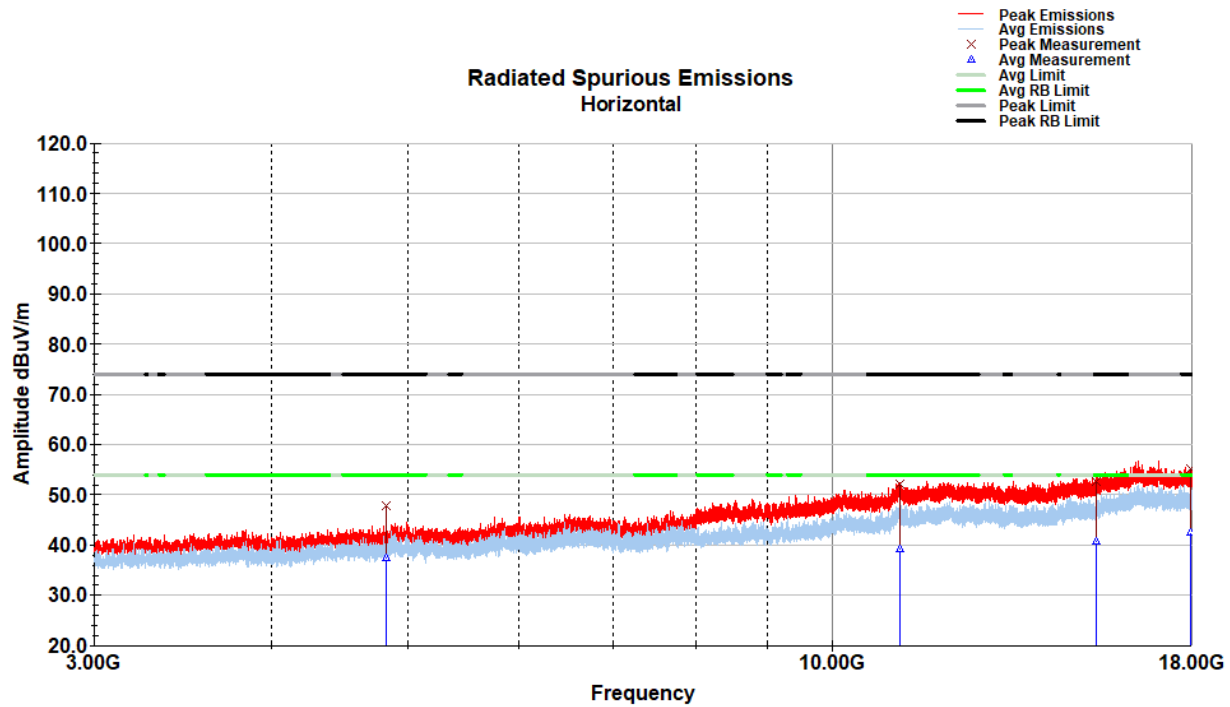
Peak

Frequency MHz	Raw Pk dBuV	Polarity V/H	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4824.06	48.2	V	188.0	113.0	34.0	3.0	34.2	51.0	74.0	-23.0
12587.68	43.5	V	292.0	248.0	39.3	4.4	35.6	51.6	74.0	-22.4
16237.78	43.9	V	47.0	149.0	40.8	5.0	36.1	53.7	74.0	-20.3
17781.96	45.4	V	308.0	110.0	41.0	5.4	36.6	55.1	74.0	-18.9
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4824.06	39.6	V	188.0	113.0	34.0	3.0	34.2	42.4	54.0	-11.6
12587.68	31.0	V	292.0	248.0	39.3	4.4	35.6	39.2	54.0	-14.8
16237.78	31.7	V	47.0	149.0	40.8	5.0	36.1	41.5	54.0	-12.5
17781.96	32.9	V	308.0	110.0	41.0	5.4	36.6	42.6	54.0	-11.4
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11n HT20 – LCH)



Horizontal Data (3-18GHz) (WLAN 802.11n HT20 – LCH)

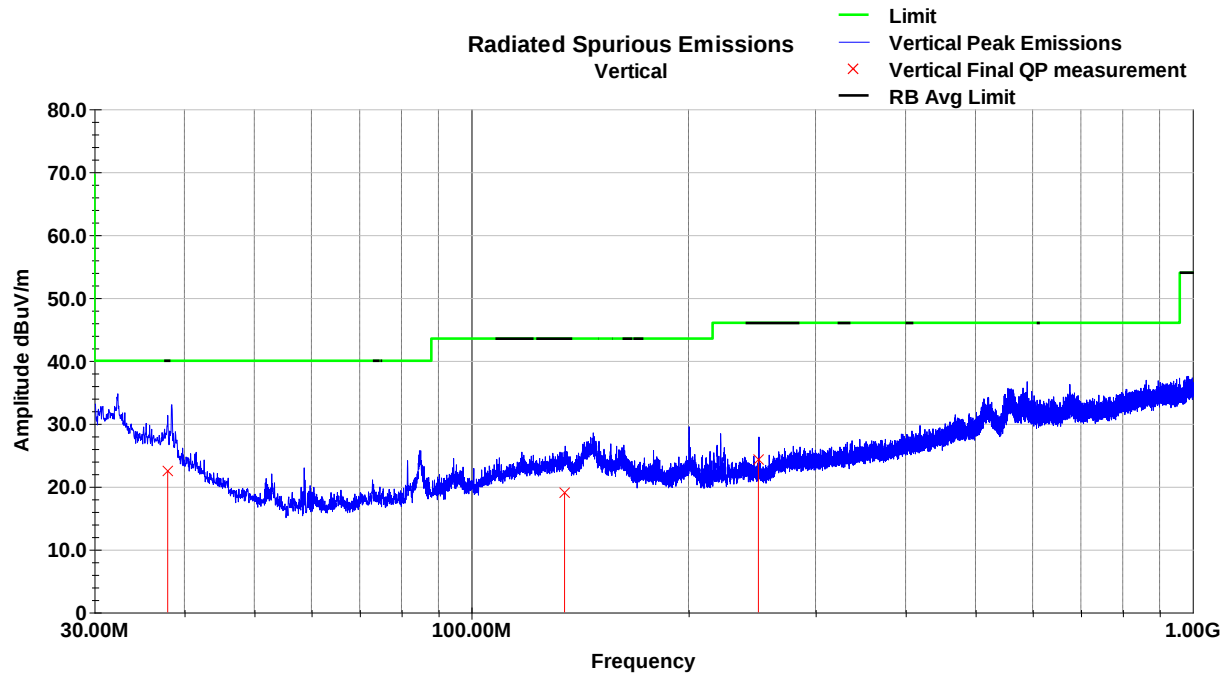
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4823.82	45.0	H	142.0	211.0	34.0	3.0	34.2	47.7	74.0	-26.3
11168.14	44.3	H	343.0	167.0	38.6	4.3	35.1	52.1	74.0	-21.9
15381.28	43.8	H	203.0	100.0	40.3	4.9	36.2	52.7	74.0	-21.3
17948.78	45.2	H	229.0	174.0	41.0	5.5	36.7	55.1	74.0	-18.9
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
4823.82	34.6	H	142.0	211.0	34.0	3.0	34.2	37.4	54.0	-16.6
11168.14	31.5	H	343.0	167.0	38.6	4.3	35.1	39.3	54.0	-14.7
15381.28	31.7	H	203.0	100.0	40.3	4.9	36.2	40.6	54.0	-13.3
17948.78	32.5	H	229.0	174.0	41.0	5.5	36.7	42.4	54.0	-11.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

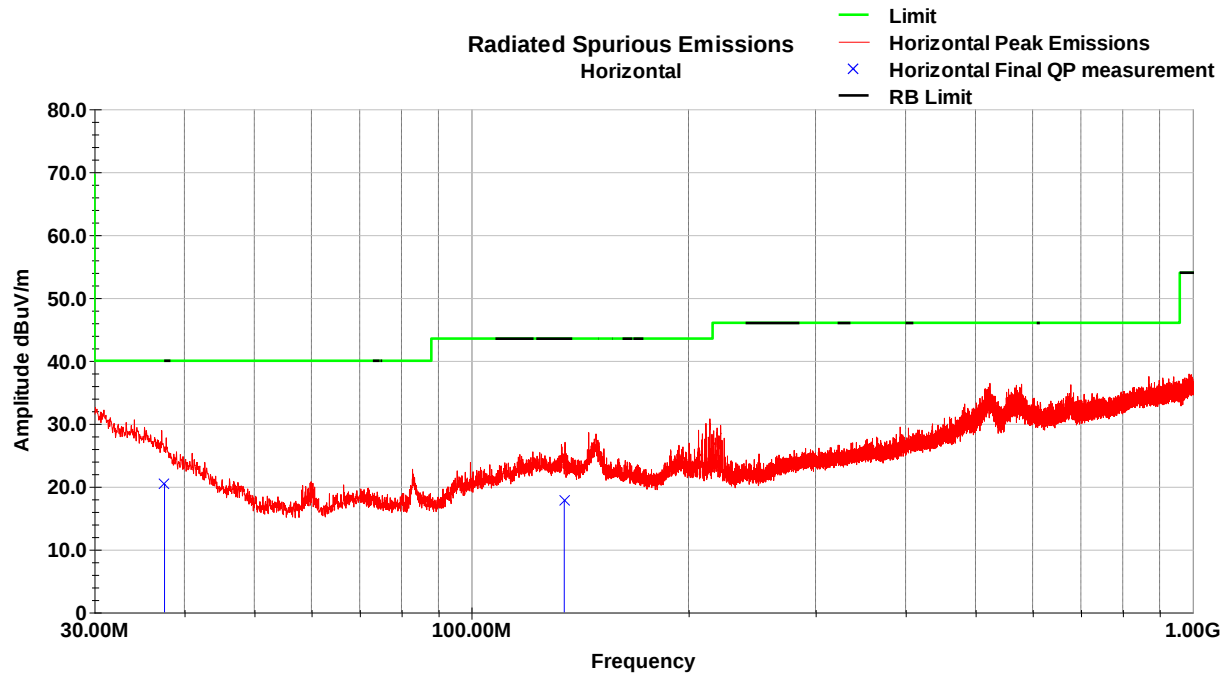
Vertical Plot (30-1000MHz) (WLAN 802.11n HT20 – MCH)



Vertical Data (30-1000MHz) (WLAN 802.11n HT20 – MCH)

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)
37.92	32.4	V	221.0	129.0	20.1	0.6	30.7	22.4	40.0	-17.6
134.63	30.5	V	195.0	189.0	17.5	1.4	30.6	19.0	43.5	-24.6
249.98	36.3	V	196.0	248.0	16.2	2.1	30.3	24.4	46.0	-21.7
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

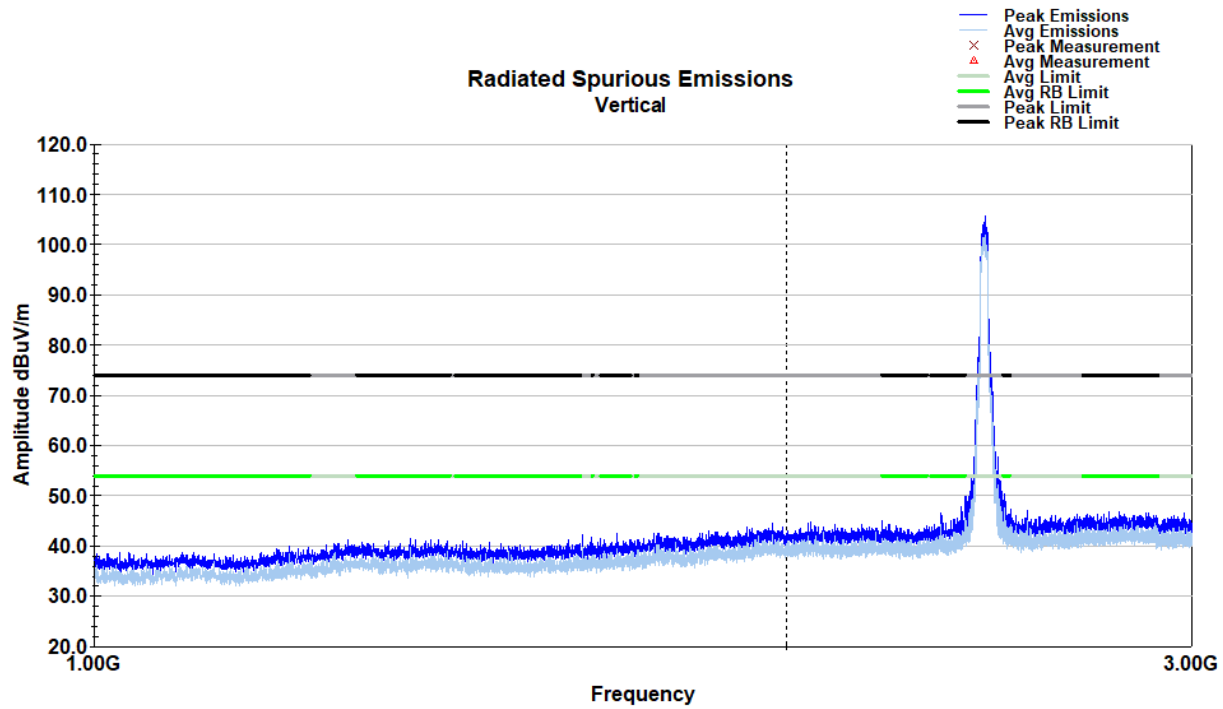
Horizontal Plot (30-1000MHz) (WLAN 802.11n HT20 – MCH)



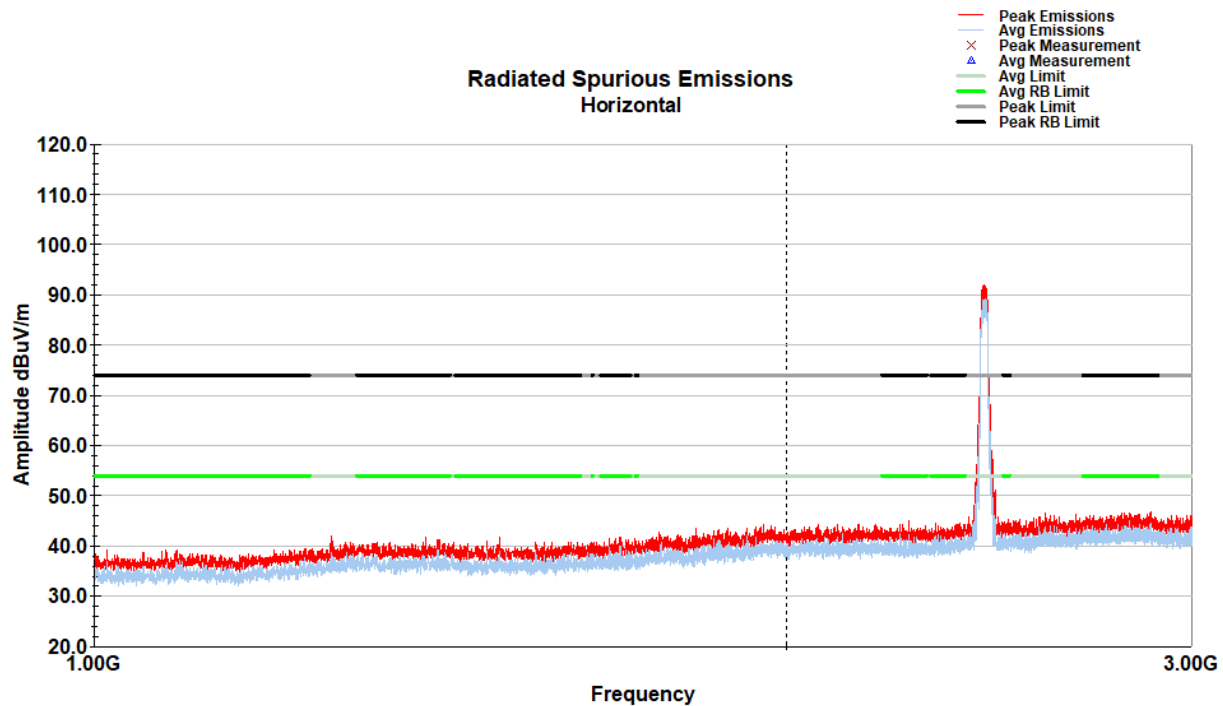
Horizontal Data (30-1000MHz) (WLAN 802.11n HT20 – MCH)

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)
37.54	29.8	H	322.0	293.0	20.4	0.9	30.7	20.4	40.0	-19.6
134.52	29.0	H	359.0	277.0	17.5	1.8	30.6	17.9	43.5	-25.7
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11n HT20 – MCH)

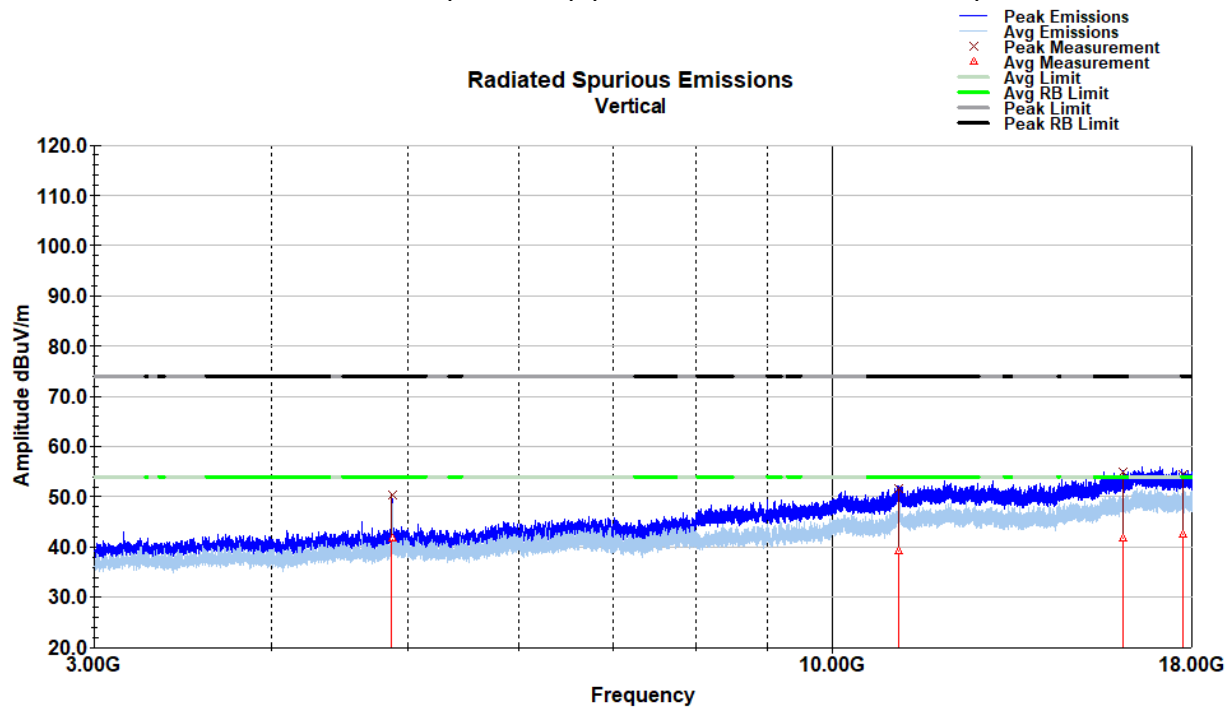


Horizontal Plot (1-3GHz) (WLAN 802.11n HT20 – MCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11n HT20 – MCH)



Vertical Data (3-18GHz) (WLAN 802.11n HT20 – MCH)

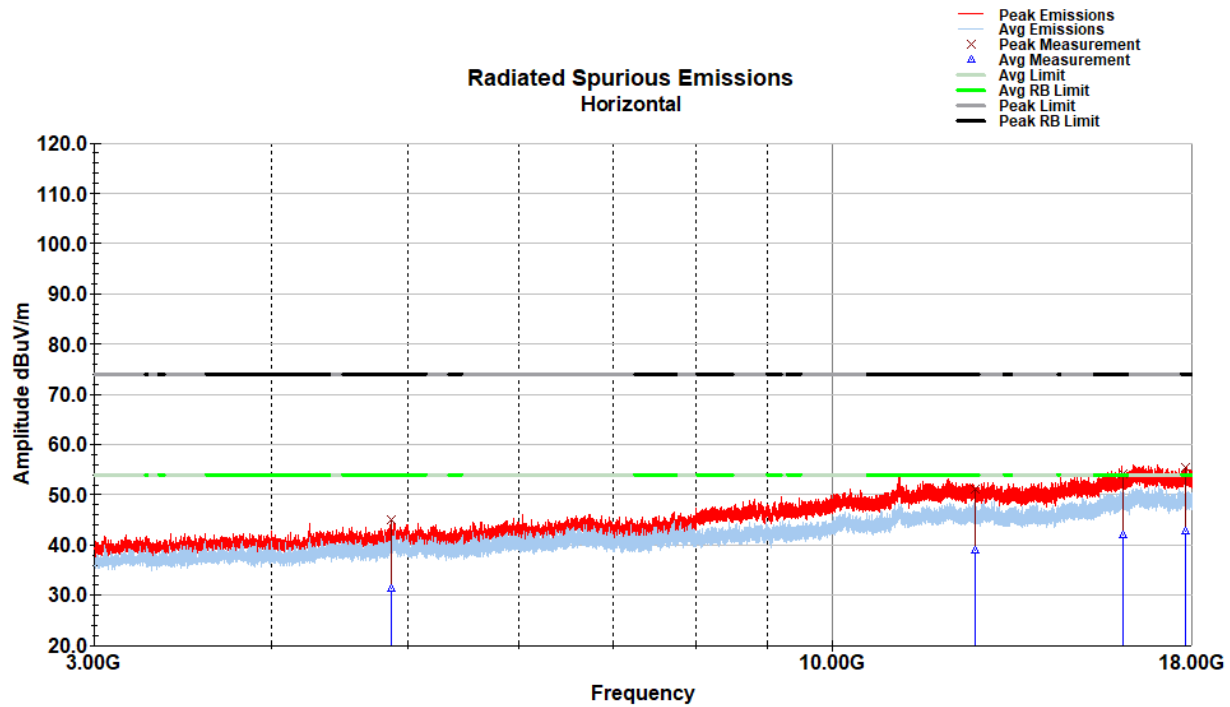
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4874.16	47.5	V	235.0	229.0	34.1	3.1	34.2	50.5	74.0	-23.5
11152.36	43.6	V	-1.0	111.0	38.6	4.3	35.0	51.5	74.0	-22.5
16095.16	45.1	V	61.0	213.0	40.9	4.9	35.9	55.0	74.0	-19.0
17732.46	44.8	V	185.0	100.0	40.9	5.4	36.6	54.5	74.0	-19.5
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4874.16	38.6	V	235.0	229.0	34.1	3.1	34.2	41.6	54.0	-12.4
11152.36	31.3	V	-1.0	111.0	38.6	4.3	35.0	39.3	54.0	-14.7
16095.16	31.8	V	61.0	213.0	40.9	4.9	35.9	41.7	54.0	-12.3
17732.46	32.7	V	185.0	100.0	40.9	5.4	36.6	42.4	54.0	-11.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11n HT20 – MCH)



Horizontal Data (3-18GHz) (WLAN 802.11n HT20 – MCH)

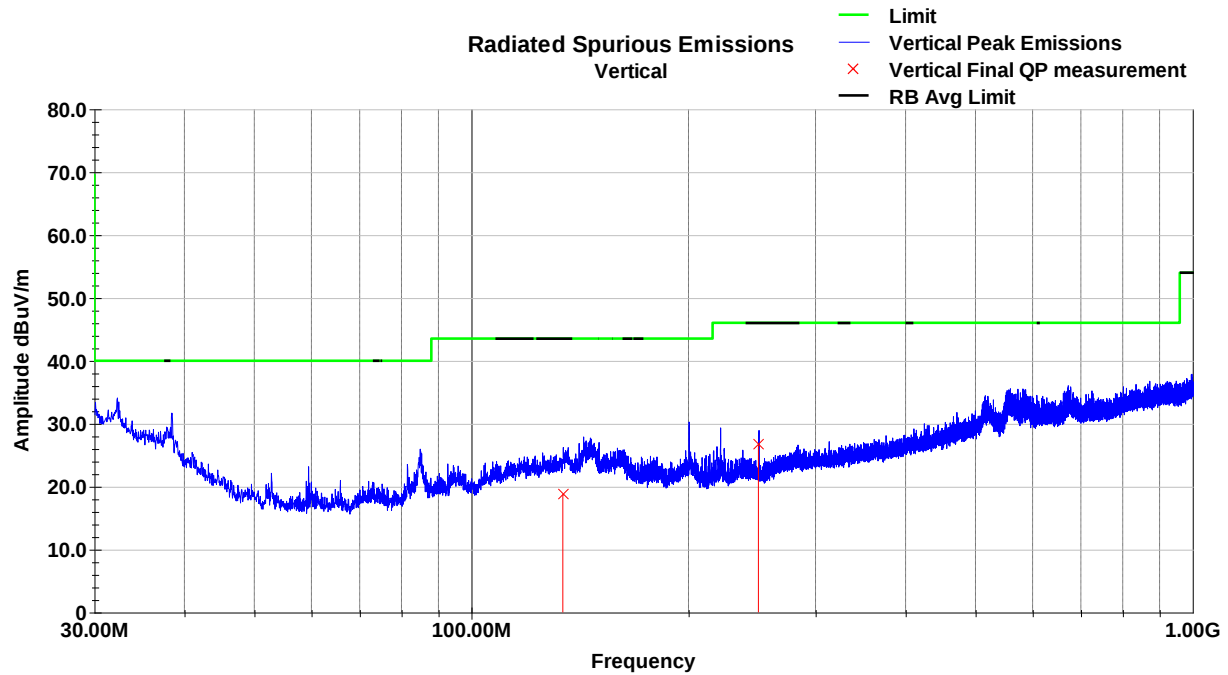
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4870.08	42.0	H	124.0	171.0	34.1	3.1	34.2	45.0	74.0	-29.0
12623.30	43.1	H	270.0	173.0	39.3	4.4	35.7	51.1	74.0	-22.9
16089.62	44.2	H	215.0	201.0	40.9	4.9	35.9	54.1	74.0	-19.9
17809.14	45.7	H	0.0	248.0	41.0	5.3	36.6	55.5	74.0	-18.5
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
4870.08	28.4	H	124.0	171.0	34.1	3.1	34.2	31.4	54.0	-22.6
12623.30	30.9	H	270.0	173.0	39.3	4.4	35.7	38.9	54.0	-15.1
16089.62	32.1	H	215.0	201.0	40.9	4.9	35.9	42.0	54.0	-12.0
17809.14	33.0	H	0.0	248.0	41.0	5.3	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

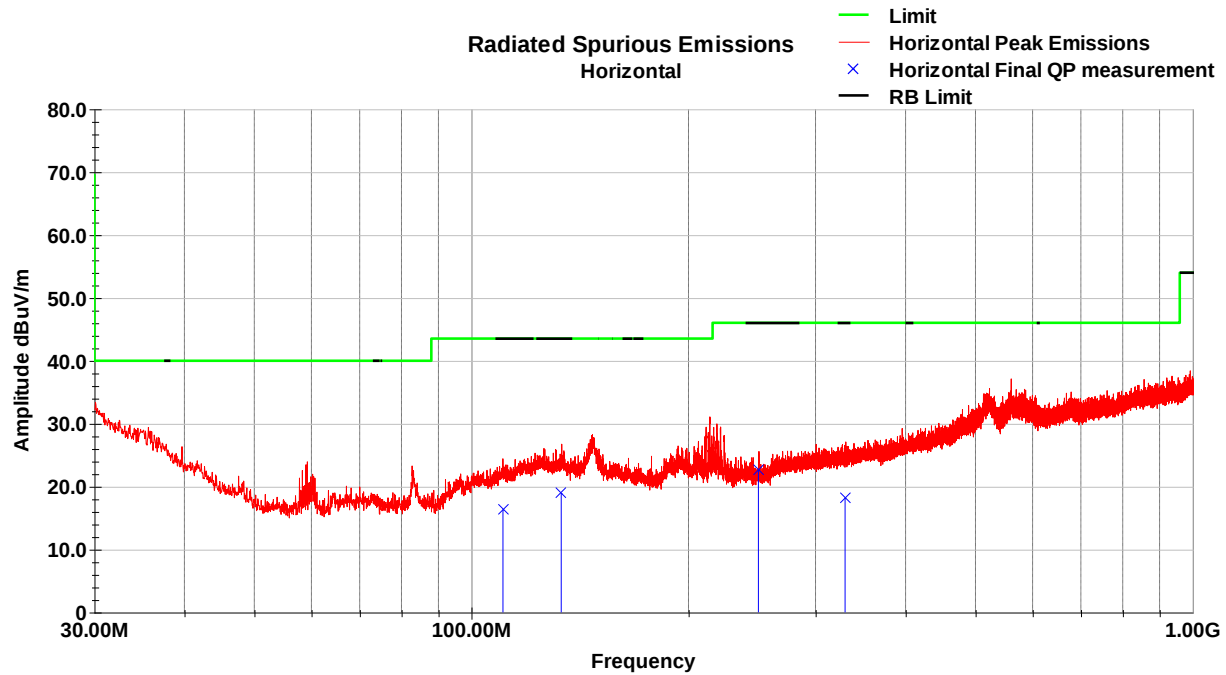
Vertical Plot (30-1000MHz) (WLAN 802.11n HT20 – HCH)



Vertical Data (30-1000MHz) (WLAN 802.11n HT20 – HCH)

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)
133.92	30.3	V	298.0	159.0	17.6	1.4	30.6	18.8	43.5	-24.8
249.98	38.6	V	168.0	100.0	16.2	2.1	30.3	26.6	46.0	-19.4
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

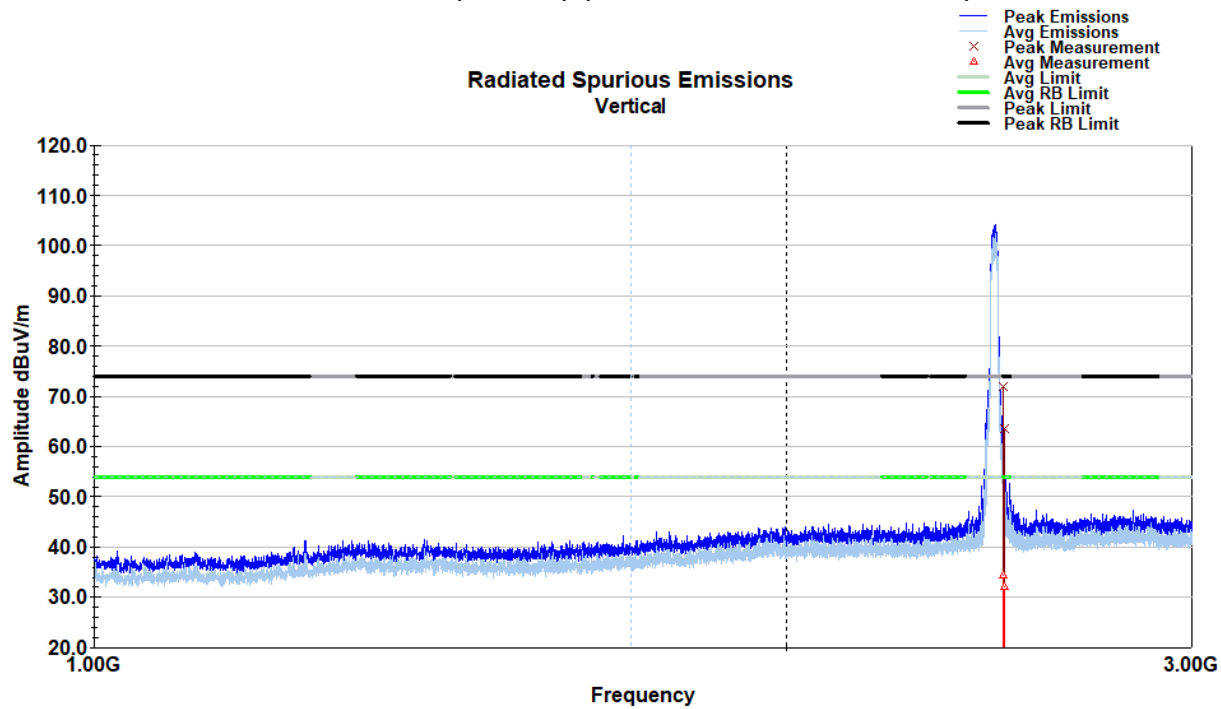
Horizontal Plot (30-1000MHz) (WLAN 802.11n HT20 – HCH)



Horizontal Data (30-1000MHz) (WLAN 802.11n HT20 – HCH)

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)
110.61	28.5	H	0.0	293.0	16.7	1.7	30.5	16.4	43.5	-27.2
133.20	30.0	H	17.0	279.0	17.7	1.8	30.6	19.0	43.5	-24.6
249.99	34.2	H	240.0	278.0	16.2	2.6	30.3	22.8	46.0	-23.3
329.79	26.6	H	23.0	278.0	18.8	3.0	30.2	18.3	46.0	-27.8
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (WLAN 802.11n HT20 – HCH)



Vertical Data (1-3GHz) (WLAN 802.11n HT20 – HCH)

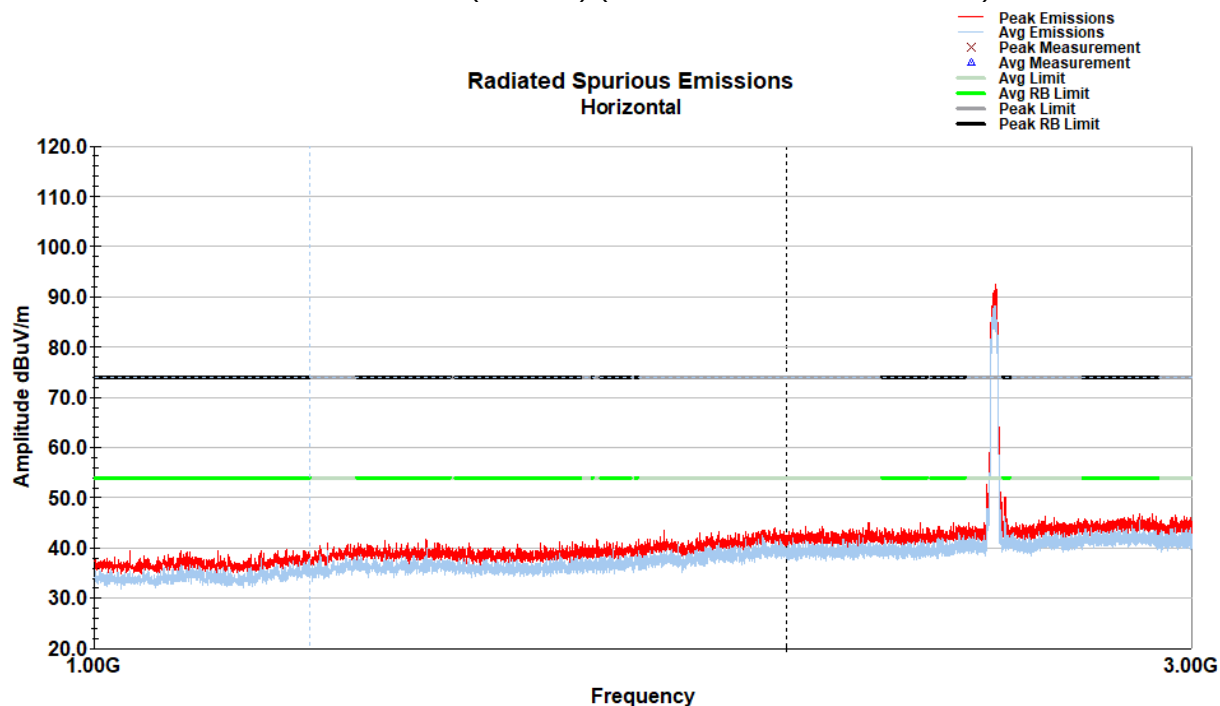
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2483.70	72.4	V	12.0	218.0	32.0	2.0	34.3	72.1	74.0	-1.9
2486.02	64.0	V	127.0	182.0	32.0	2.0	34.3	63.7	74.0	-10.3
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

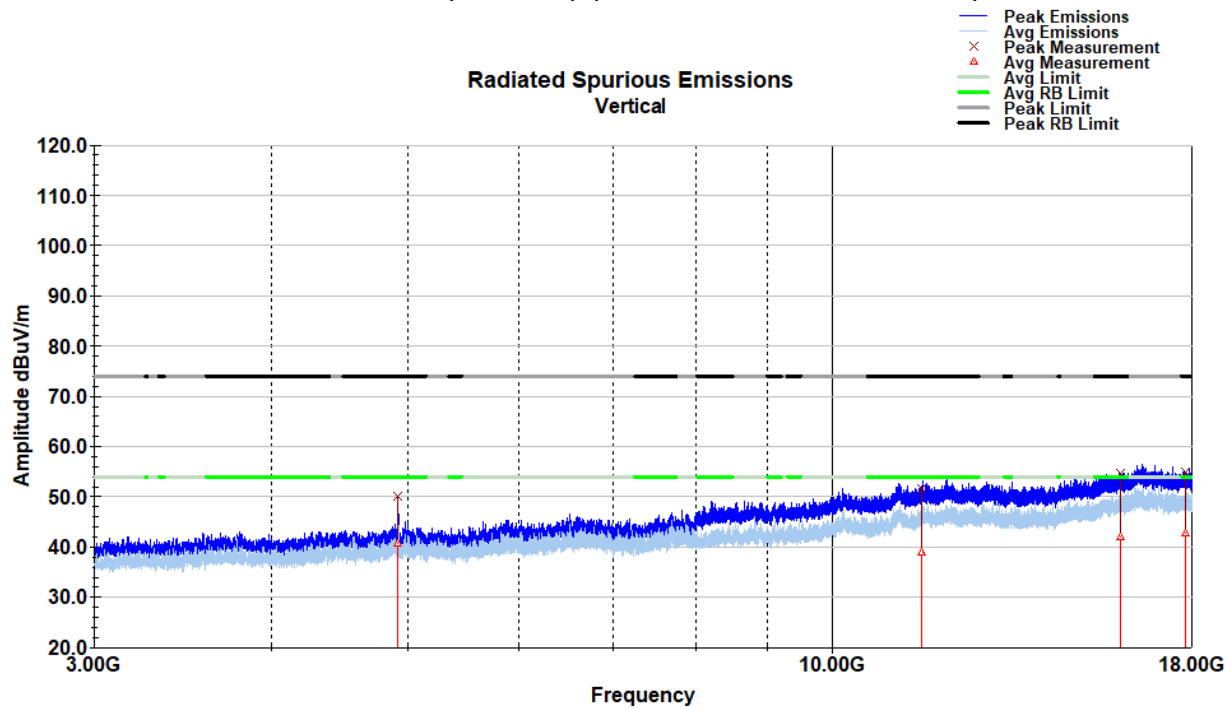
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2483.70	34.7	V	12.0	218.0	32.0	2.0	34.3	34.3	54.0	-19.7
2486.02	32.5	V	127.0	182.0	32.0	2.0	34.3	32.2	54.0	-21.8
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (WLAN 802.11n HT20 – HCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (WLAN 802.11n HT20 – HCH)



Vertical Data (3-18GHz) (WLAN 802.11n HT20 – HCH)

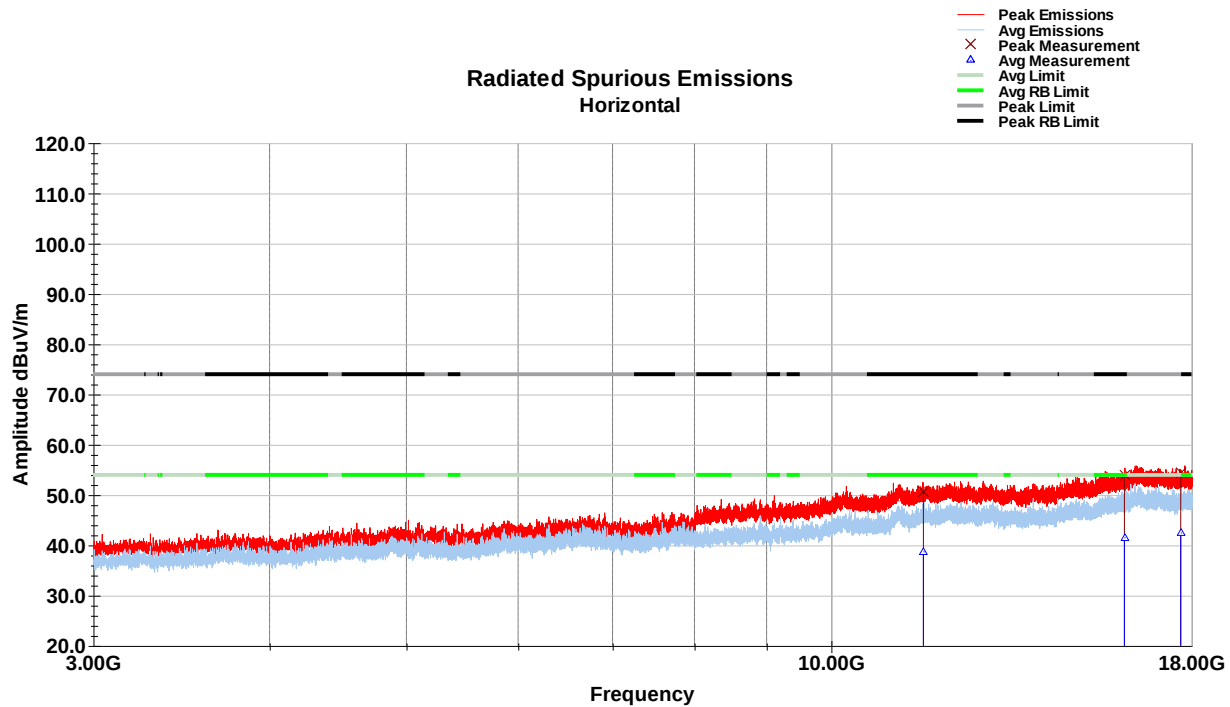
Peak

Frequency MHz	Raw Pk dBuV	Polarity V/H	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4924.04	47.1	V	79.0	250.0	34.1	3.0	34.2	50.0	74.0	-24.0
11586.48	43.8	V	61.0	106.0	38.9	4.5	35.6	51.6	74.0	-22.4
16014.30	44.7	V	77.0	149.0	40.9	5.1	35.9	54.8	74.0	-19.2
17816.70	45.2	V	281.0	234.0	41.0	5.4	36.6	54.9	74.0	-19.1
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4924.04	37.9	V	79.0	250.0	34.1	3.0	34.2	40.8	54.0	-13.2
11586.48	31.2	V	61.0	106.0	38.9	4.5	35.6	39.0	54.0	-15.0
16014.30	31.8	V	77.0	149.0	40.9	5.1	35.9	41.9	54.0	-12.1
17816.70	33.0	V	281.0	234.0	41.0	5.4	36.6	42.7	54.0	-11.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (WLAN 802.11n HT20 – HCH)



Horizontal Data (3-18GHz) (WLAN 802.11n HT20 – HCH)

Peak

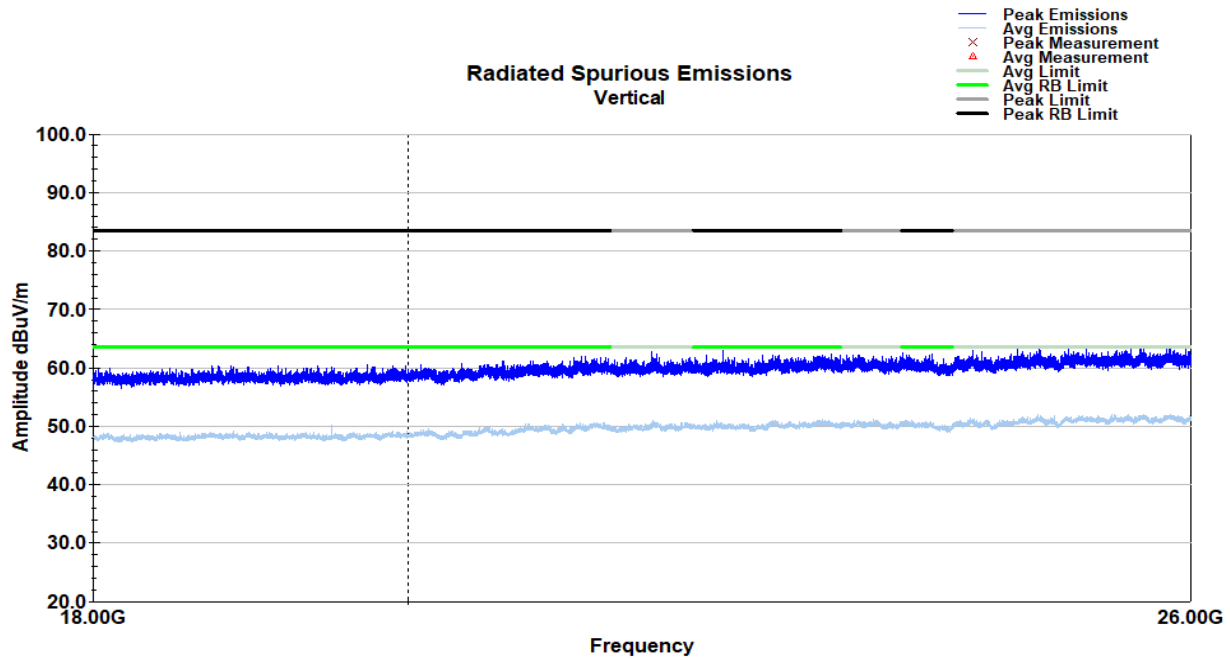
Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
11620.94	43.2	H	308.0	212.0	38.9	4.5	35.6	50.9	74.0	-23.1
16127.82	44.8	H	343.0	236.0	40.8	5.0	36.0	54.6	74.0	-19.4
17678.50	45.0	H	196.0	174.0	40.9	5.3	36.5	54.7	74.0	-19.3
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

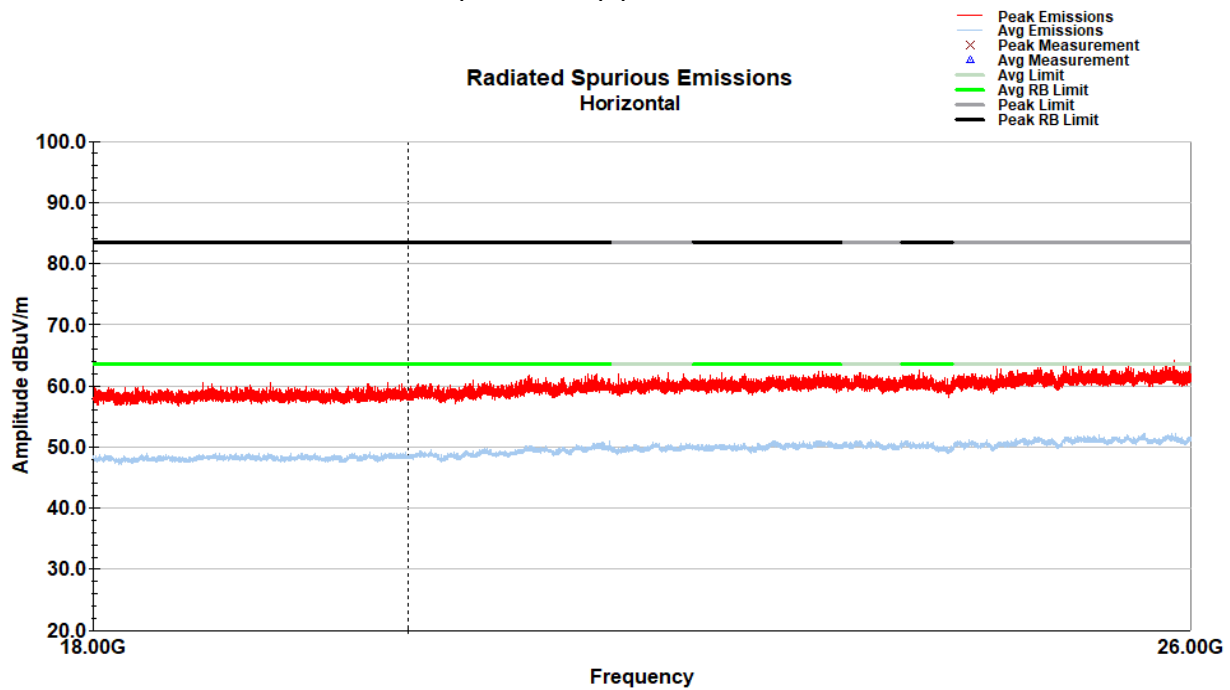
Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
11620.94	30.5	H	308.0	212.0	38.9	4.5	35.6	38.3	54.0	-15.7
16127.82	32.0	H	343.0	236.0	40.8	5.0	36.0	41.8	54.0	-12.2
17678.50	32.7	H	196.0	174.0	40.9	5.3	36.5	42.5	54.0	-11.5
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

All channels had similar results in the 18-26GHz frequency range.

Vertical Plot (18-26GHz) (WLAN 802.11n HT20 – MCH)

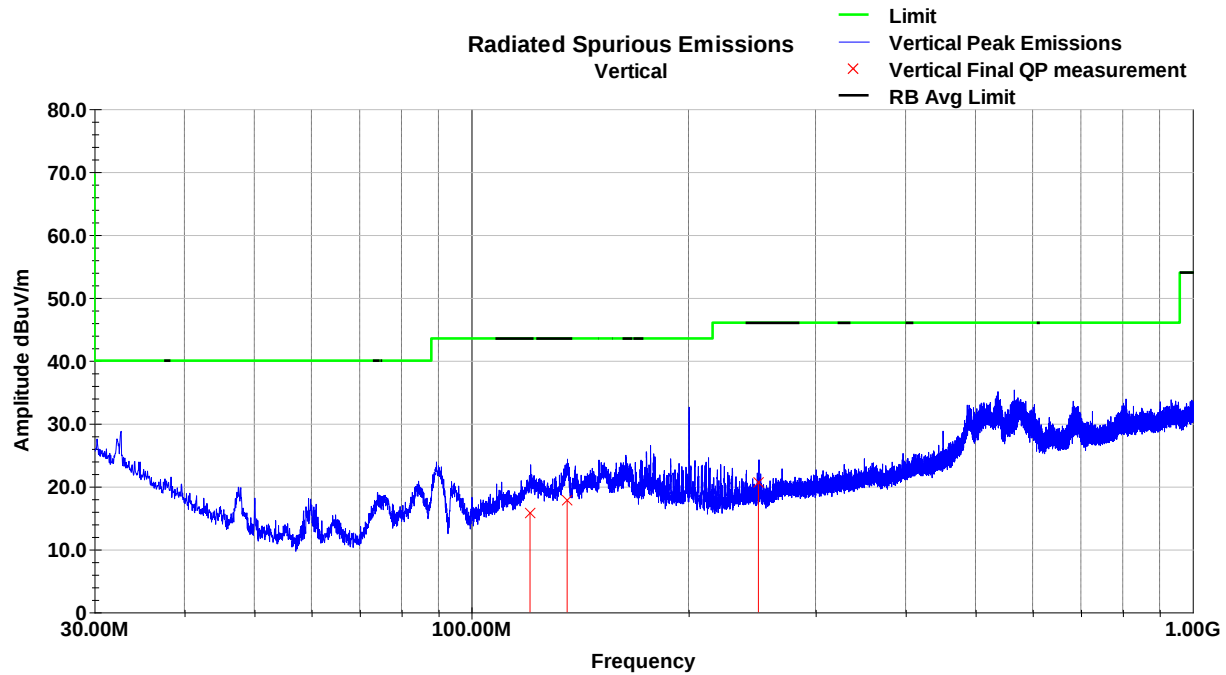


Horizontal Plot (18-26GHz) (WLAN 802.11n HT20 – MCH)



5.5.4 Bluetooth Low Energy

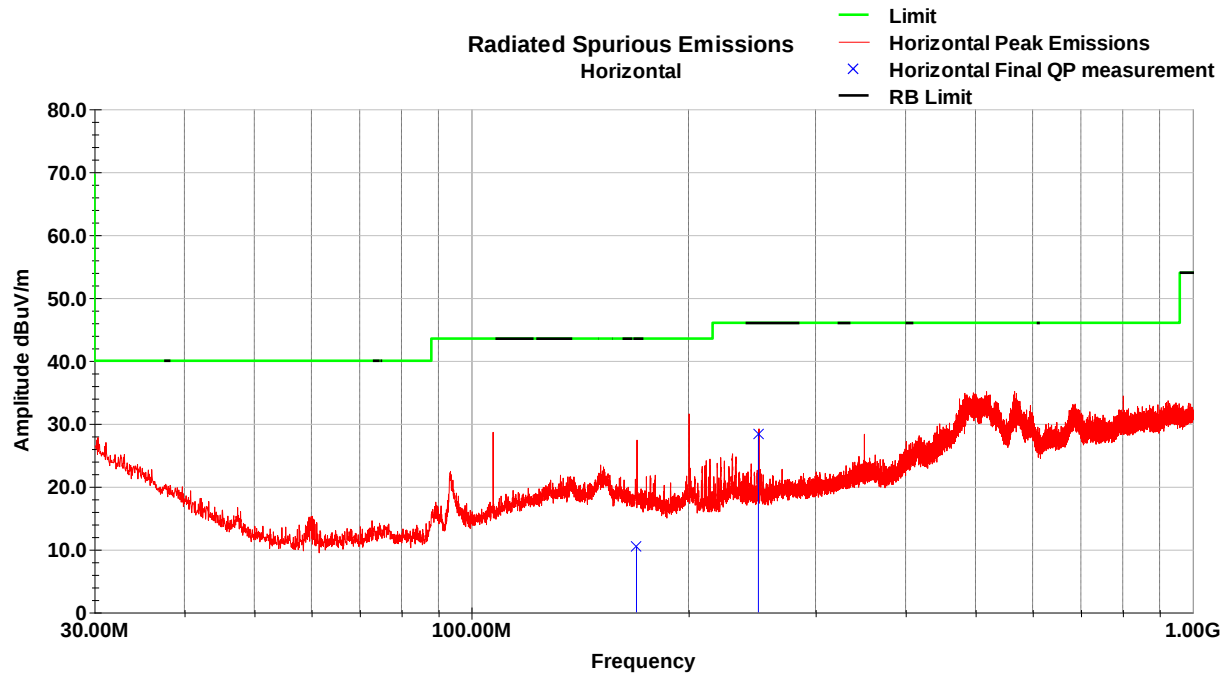
Vertical Plot (30-1000MHz) (BLE – LCH)



Vertical Data (30-1000MHz) (BLE – LCH)

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)
120.58	28.5	V	177.0	113.0	17.8	1.4	31.8	15.9	43.5	-27.7
135.78	30.5	V	212.0	129.0	17.5	1.4	31.8	17.7	43.5	-25.8
249.98	34.0	V	302.0	144.0	16.2	2.1	31.7	20.7	46.0	-25.3
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

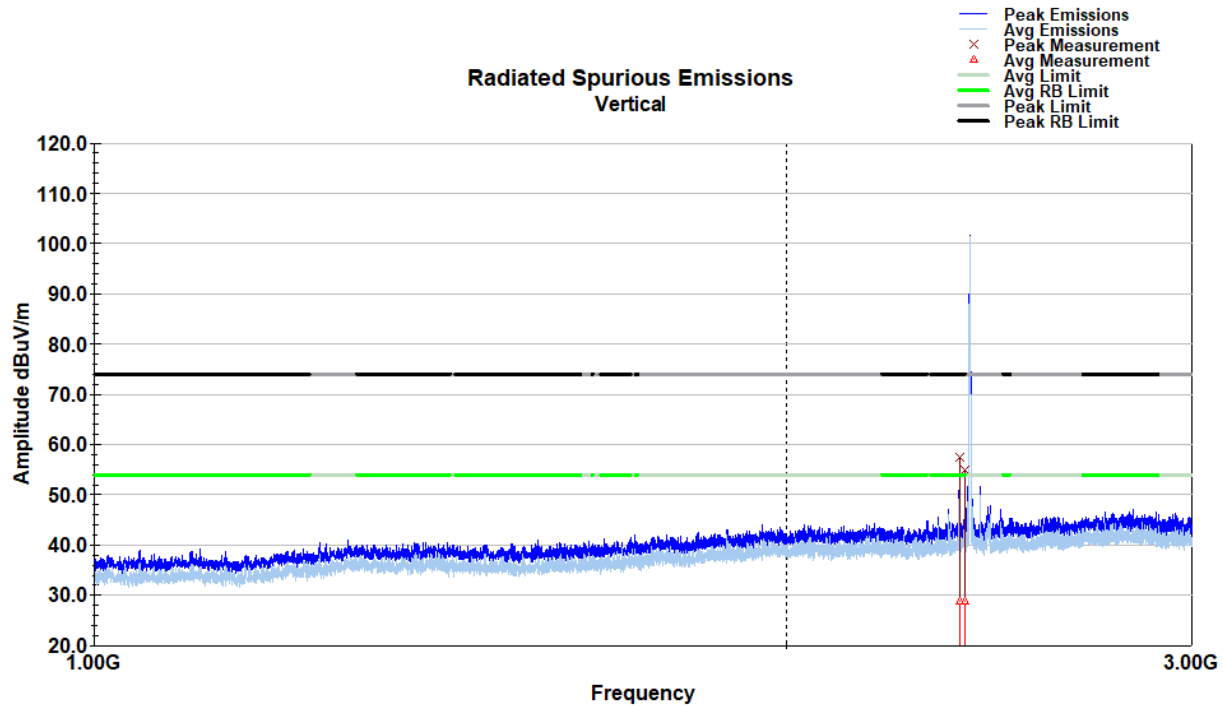
Horizontal Plot (30-1000MHz) (BLE – LCH)



Horizontal Data (30-1000MHz) (BLE – LCH)

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)
169.38	24.4	H	299.0	277.0	16.2	1.6	31.8	10.4	43.5	-33.1
249.98	41.7	H	207.0	140.0	16.2	2.1	31.7	28.4	46.0	-17.6
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (BLE – LCH)



Vertical Data (1-3GHz) (BLE – LCH)

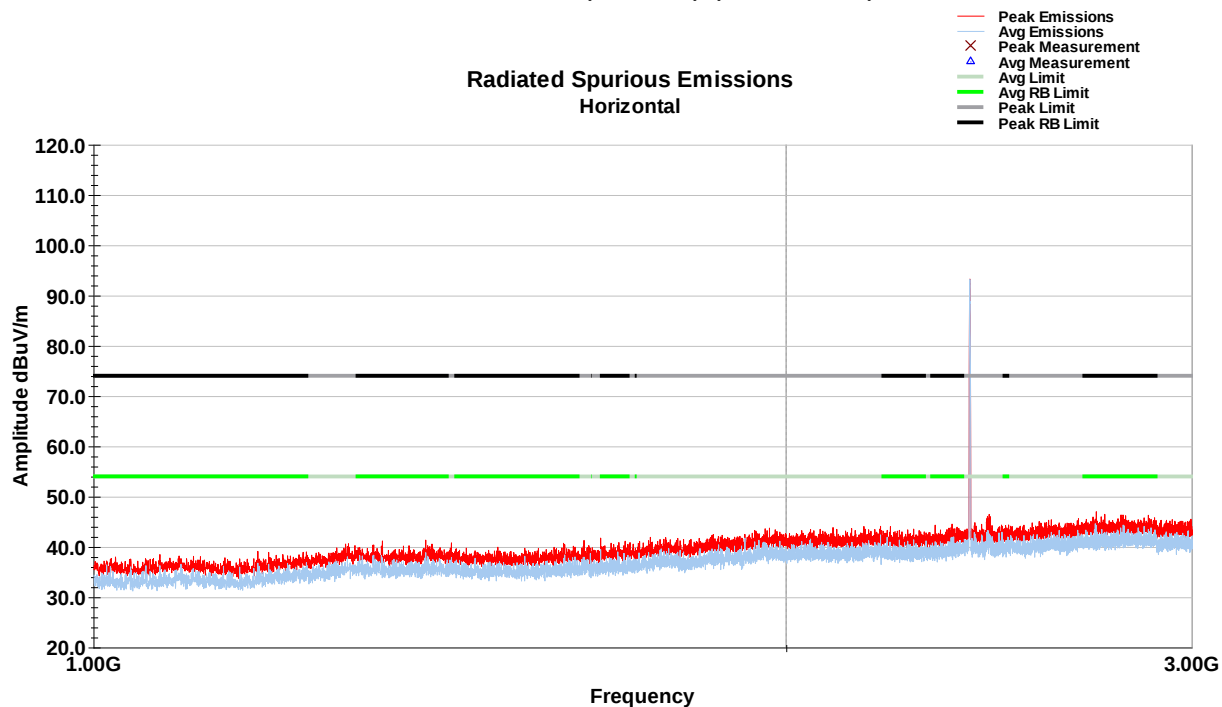
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2377.02	58.1	V	138.0	100.0	31.7	1.9	34.4	57.4	74.0	-16.6
2389.22	55.4	V	242.0	203.0	31.8	1.9	34.3	54.8	74.0	-19.2
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

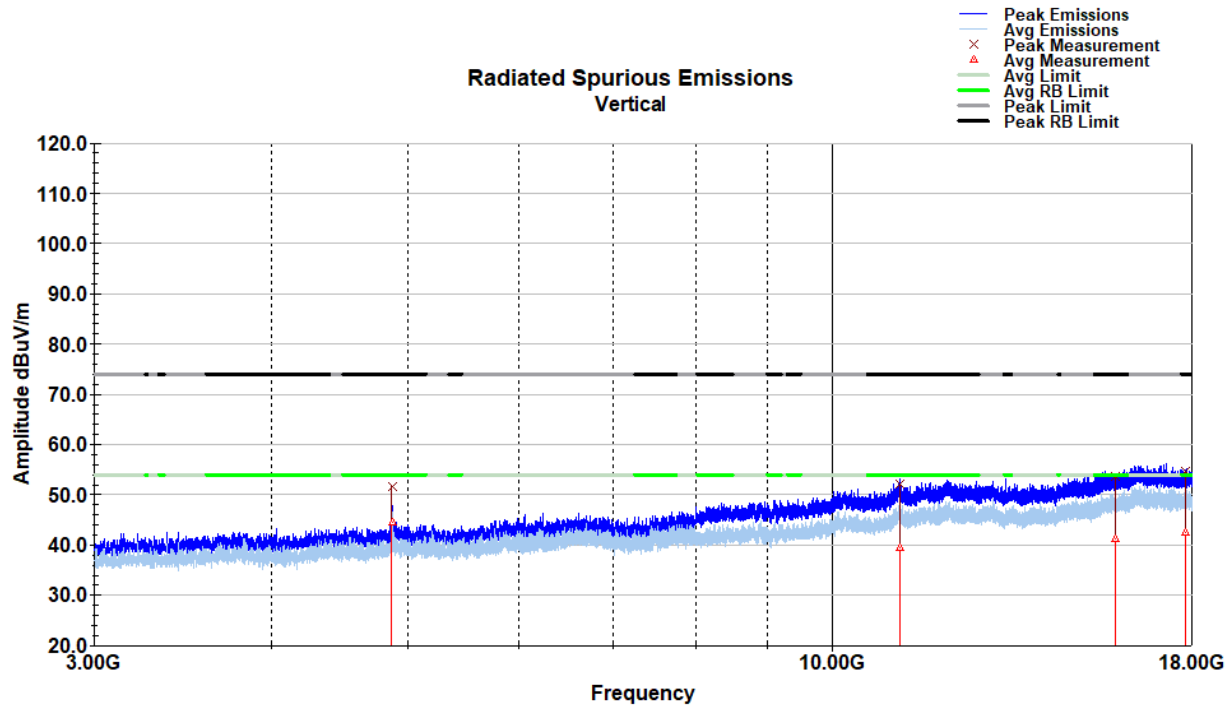
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2377.02	29.6	V	138.0	100.0	31.7	1.9	34.4	28.8	54.0	-25.2
2389.22	29.4	V	242.0	203.0	31.8	1.9	34.3	28.9	54.0	-25.1
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (BLE – LCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (BLE – LCH)



Vertical Data (3-18GHz) (BLE – LCH)

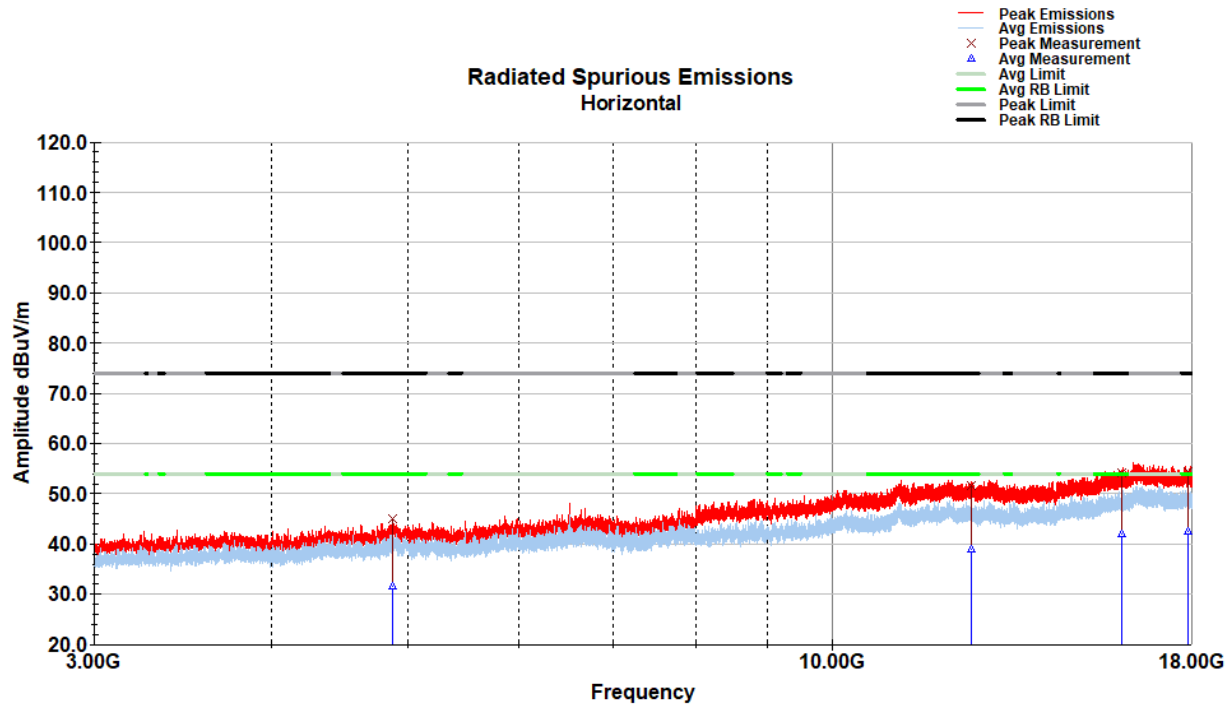
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4873.80	48.7	V	131.0	180.0	34.1	3.1	34.2	51.7	74.0	-22.3
11163.14	44.4	V	327.0	186.0	38.6	4.3	35.1	52.2	74.0	-21.8
15885.86	43.7	V	31.0	189.0	40.8	5.0	35.9	53.6	74.0	-20.4
17821.76	44.9	V	86.0	250.0	41.0	5.4	36.6	54.6	74.0	-19.4
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4873.80	41.5	V	131.0	180.0	34.1	3.1	34.2	44.5	54.0	-9.5
11163.14	31.5	V	327.0	186.0	38.6	4.3	35.1	39.4	54.0	-14.6
15885.86	31.4	V	31.0	189.0	40.8	5.0	35.9	41.2	54.0	-12.7
17821.76	32.8	V	86.0	250.0	41.0	5.4	36.6	42.6	54.0	-11.4
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (BLE – LCH)



Horizontal Data (3-18GHz) (BLE – LCH)

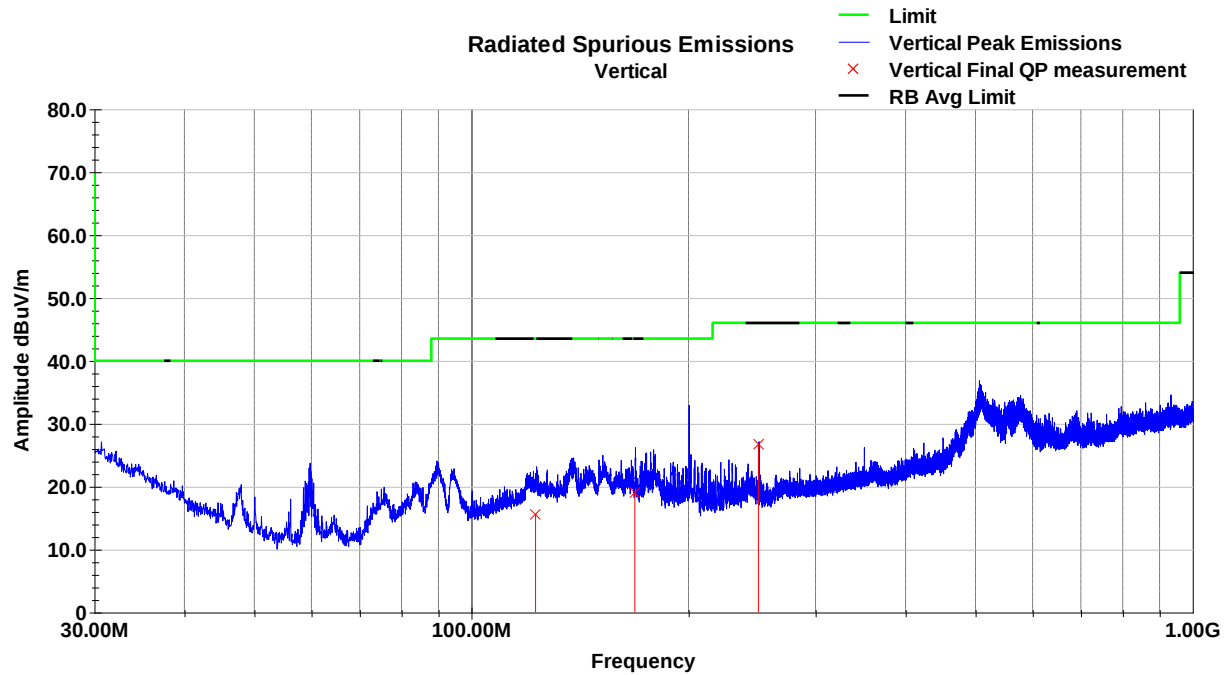
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4875.96	41.9	H	185.0	220.0	34.1	3.1	34.2	45.0	74.0	-29.0
12558.42	43.7	H	134.0	179.0	39.3	4.5	35.9	51.6	74.0	-22.4
16036.12	44.1	H	295.0	100.0	40.9	5.1	35.9	54.2	74.0	-19.8
17868.22	44.8	H	333.0	249.0	41.0	5.4	36.7	54.4	74.0	-19.6
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit dBuV/m	Margin dB
4875.96	28.5	H	185.0	220.0	34.1	3.1	34.2	31.5	54.0	-22.5
12558.42	31.2	H	134.0	179.0	39.3	4.5	35.9	39.1	54.0	-14.9
16036.12	31.9	H	295.0	100.0	40.9	5.1	35.9	41.9	54.0	-12.0
17868.22	32.8	H	333.0	249.0	41.0	5.4	36.7	42.4	54.0	-11.5
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

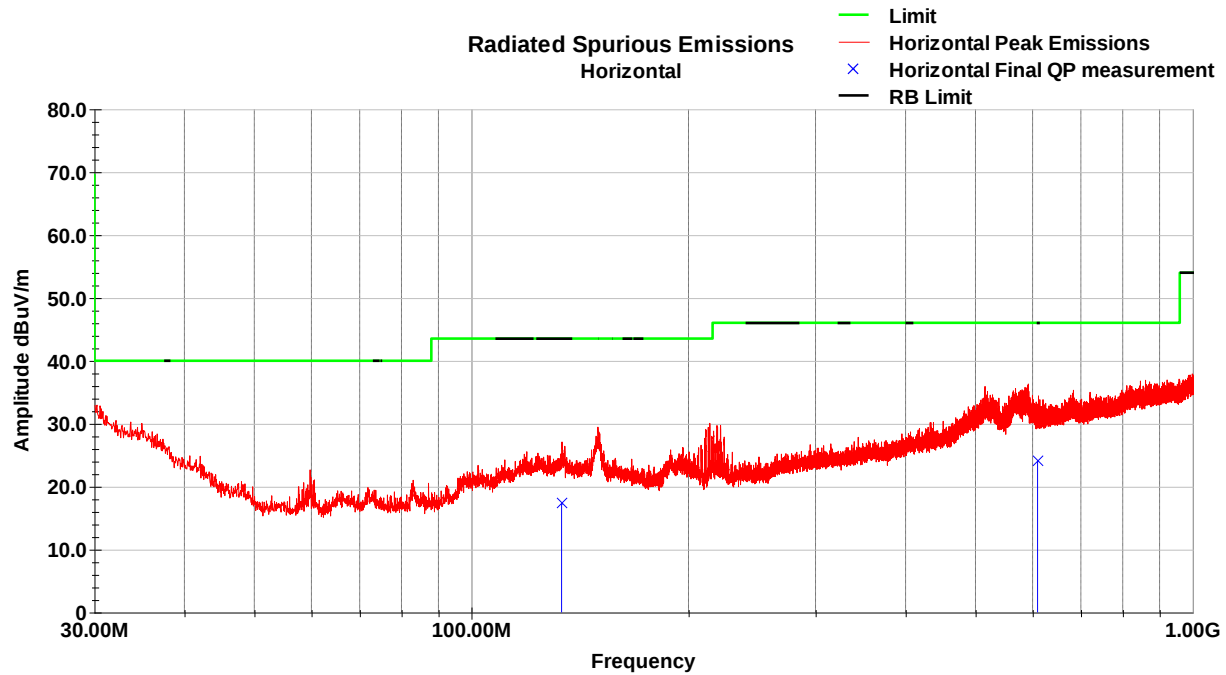
Vertical Plot (30-1000MHz) (BLE – MCH)



Vertical Data (30-1000MHz) (BLE – MCH)

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)
122.73	28.2	V	149.0	129.0	17.8	1.4	31.8	15.6	43.5	-27.9
168.53	32.8	V	124.0	174.0	16.2	1.6	31.8	18.9	43.5	-24.6
249.98	40.0	V	7.0	130.0	16.2	2.1	31.7	26.7	46.0	-19.3
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

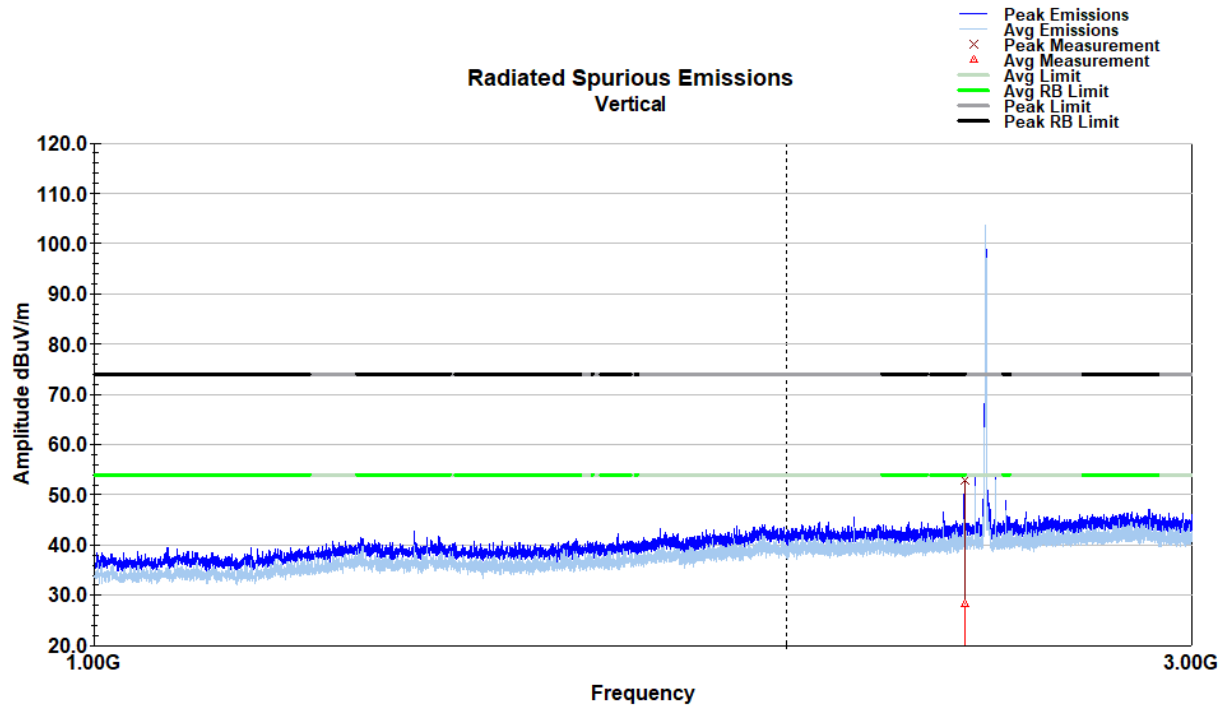
Horizontal Plot (30-1000MHz) (BLE – MCH)



Horizontal Data (30-1000MHz) (BLE – MCH)

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)
133.36	28.4	H	280.0	291.0	17.7	1.8	30.6	17.3	43.5	-26.2
609.73	26.0	H	359.0	247.0	23.7	4.0	29.8	24.1	46.0	-21.9
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (BLE – MCH)



Vertical Data (3-18GHz) (BLE – MCH)

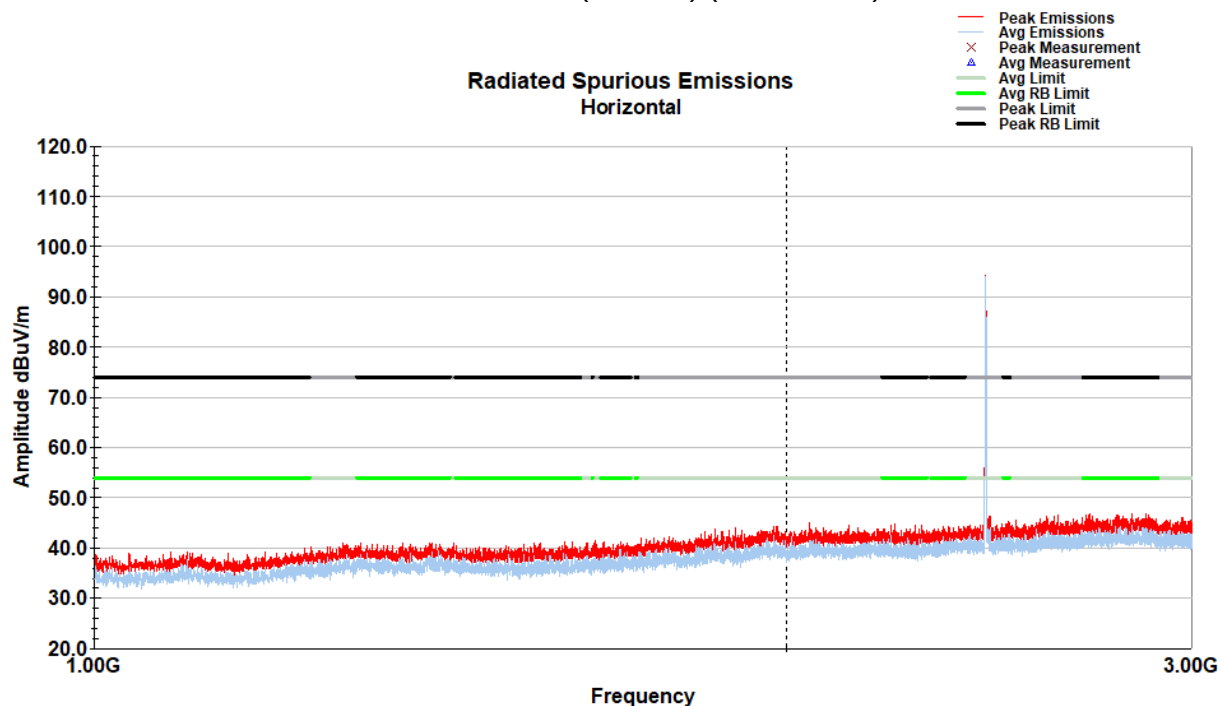
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2389.10	53.4	V	251.0	195.0	31.8	1.9	34.3	52.9	74.0	-21.1
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

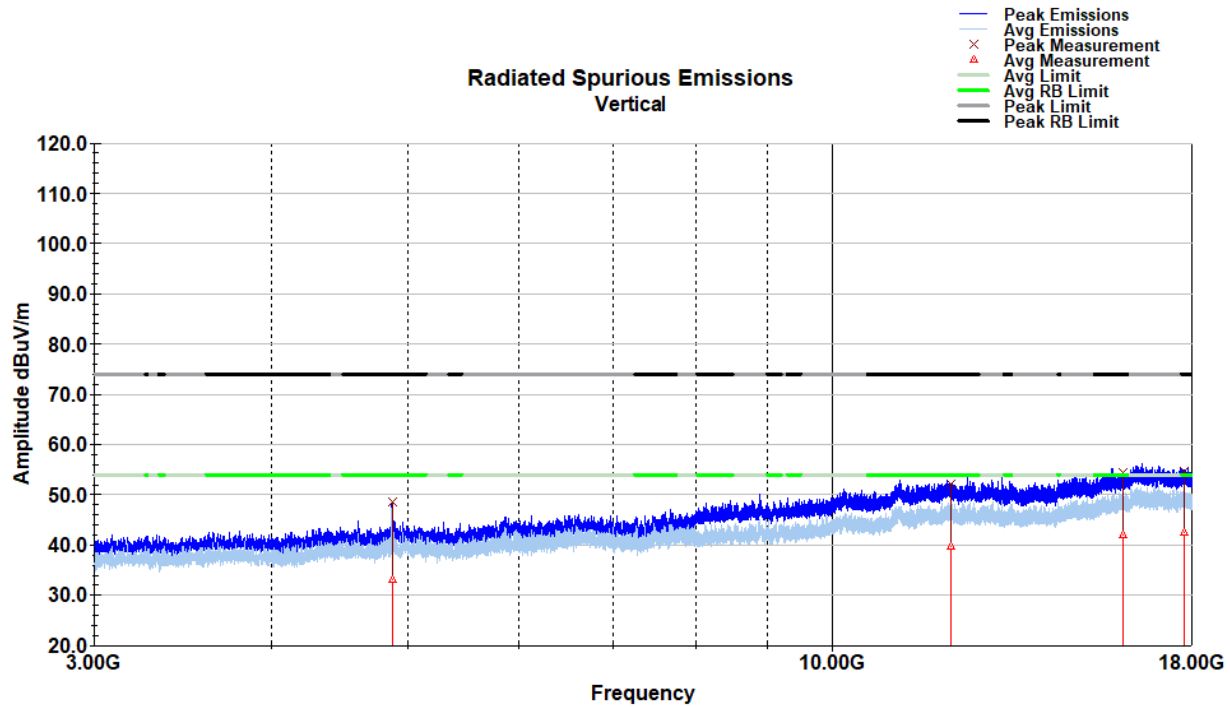
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2389.10	28.8	V	251.0	195.0	31.8	1.9	34.3	28.3	54.0	-25.7
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (BLE – MCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (BLE – MCH)



Vertical Data (3-18GHz) (BLE – MCH)

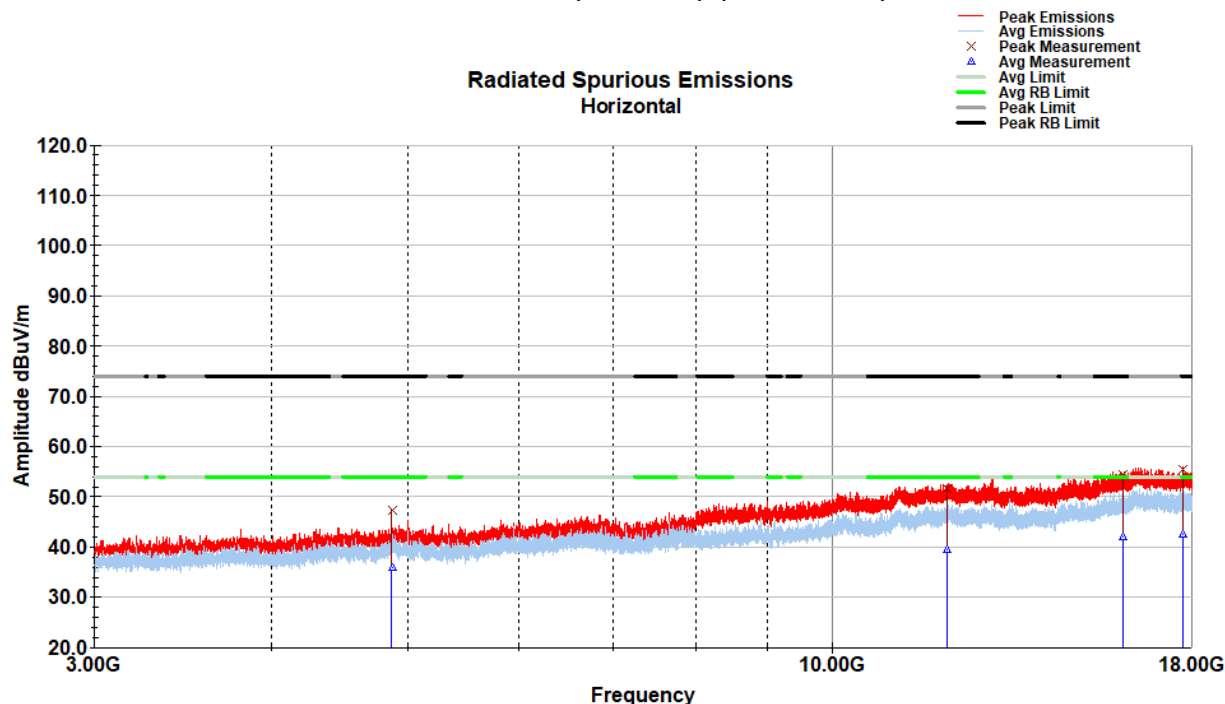
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4880.42	45.4	V	104.0	134.0	34.1	3.1	34.1	48.5	74.0	-25.5
12146.70	44.3	V	67.0	137.0	39.2	4.5	35.8	52.2	74.0	-21.8
16086.62	44.4	V	223.0	250.0	40.9	4.9	35.9	54.3	74.0	-19.7
17787.38	45.0	V	147.0	131.0	41.0	5.3	36.6	54.7	74.0	-19.3
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4880.42	29.9	V	104.0	134.0	34.1	3.1	34.1	33.0	54.0	-21.0
12146.70	31.7	V	67.0	137.0	39.2	4.5	35.8	39.7	54.0	-14.3
16086.62	32.1	V	223.0	250.0	40.9	4.9	35.9	42.1	54.0	-11.9
17787.38	32.9	V	147.0	131.0	41.0	5.3	36.6	42.6	54.0	-11.4
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (BLE – MCH)



Horizontal Data (3-18GHz) (BLE – MCH)

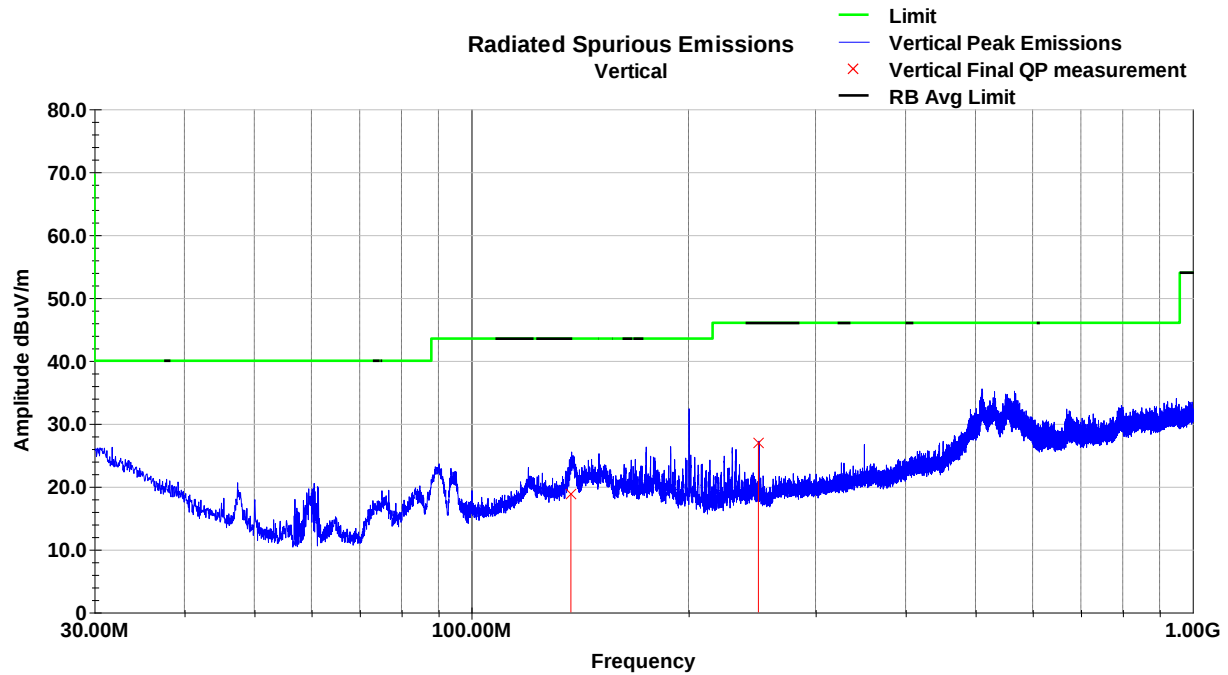
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4874.04	44.4	H	163.0	245.0	34.1	3.1	34.2	47.4	74.0	-26.6
12061.28	43.9	H	174.0	132.0	39.2	4.4	35.8	51.7	74.0	-22.3
16089.62	44.5	H	346.0	142.0	40.9	4.9	35.9	54.4	74.0	-19.6
17750.96	45.7	H	9.0	184.0	40.9	5.5	36.7	55.3	74.0	-18.7
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
4874.04	32.9	H	163.0	245.0	34.1	3.1	34.2	35.9	54.0	-18.1
12061.28	31.7	H	174.0	132.0	39.2	4.4	35.8	39.5	54.0	-14.5
16089.62	32.2	H	346.0	142.0	40.9	4.9	35.9	42.1	54.0	-11.9
17750.96	32.8	H	9.0	184.0	40.9	5.5	36.7	42.5	54.0	-11.5
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

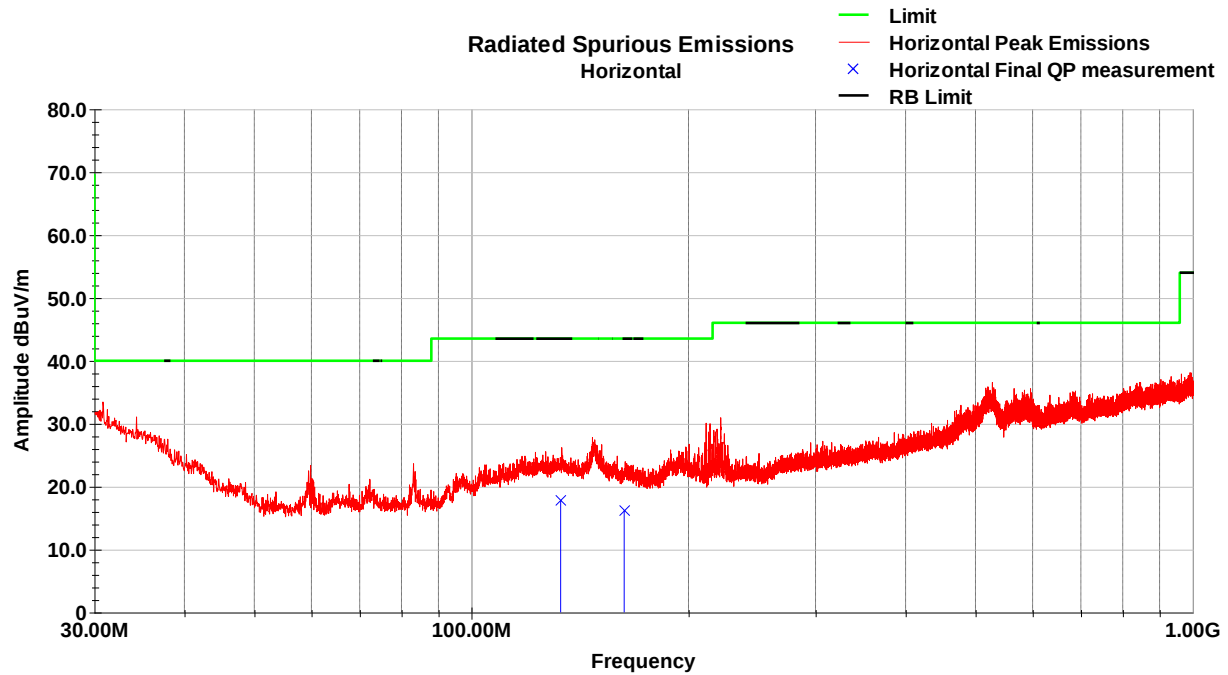
Vertical Plot (30-1000MHz) (BLE – HCH)



Vertical Data (30-1000MHz) (BLE – HCH)

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)
137.38	31.8	V	152.0	130.0	17.4	1.4	31.8	18.9	43.5	-24.6
249.98	40.2	V	8.0	144.0	16.2	2.1	31.7	26.8	46.0	-19.2
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

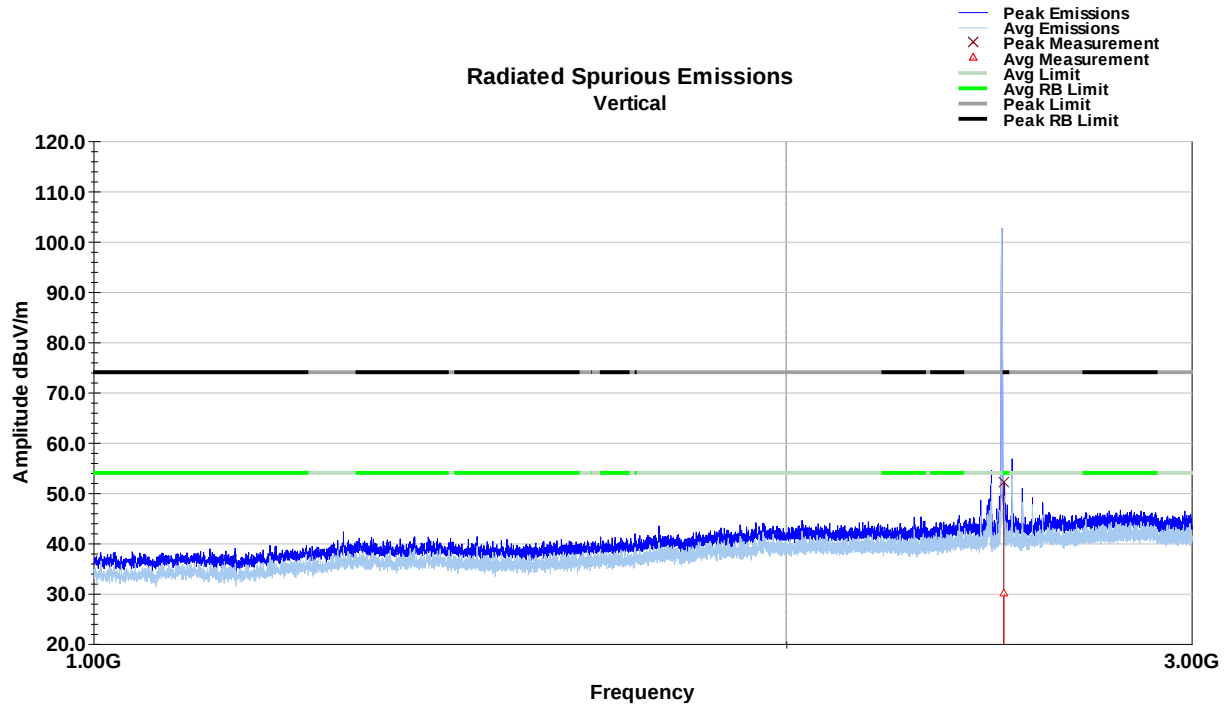
Horizontal Plot (30-1000MHz) (BLE – HCH)



Horizontal Data (30-1000MHz) (BLE – HCH)

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)
132.98	28.8	H	307.0	262.0	17.7	1.8	30.6	17.8	43.5	-25.7
162.89	28.0	H	111.0	234.0	16.7	2.0	30.5	16.2	43.5	-27.3
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

Vertical Plot (1-3GHz) (BLE – HCH)



Vertical Data (1-3GHz) (BLE – HCH)

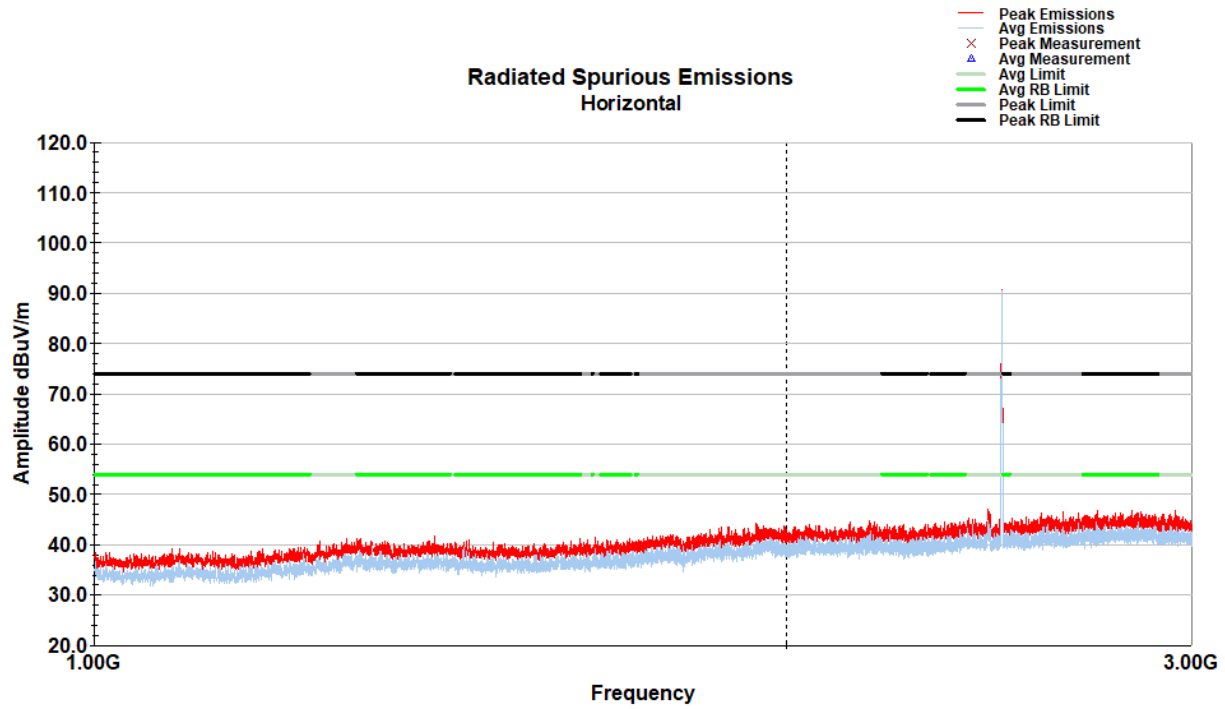
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2486.70	52.5	V	269.0	249.0	32.0	2.0	34.3	52.2	74.0	-21.8
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

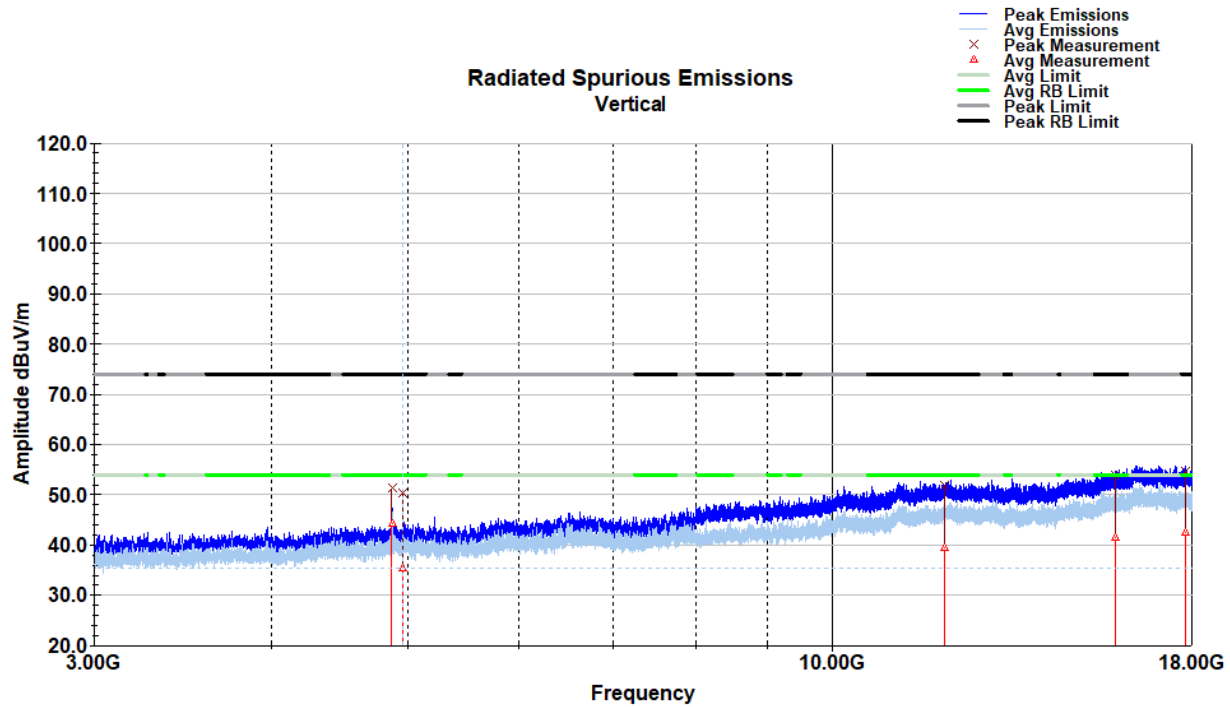
Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2486.70	30.3	V	269.0	249.0	32.0	2.0	34.3	30.0	54.0	-24.0
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (1-3GHz) (BLE – HCH)



No spurious emissions within restricted bands

Vertical Plot (3-18GHz) (BLE – HCH)



Vertical Data (3-18GHz) (BLE – HCH)

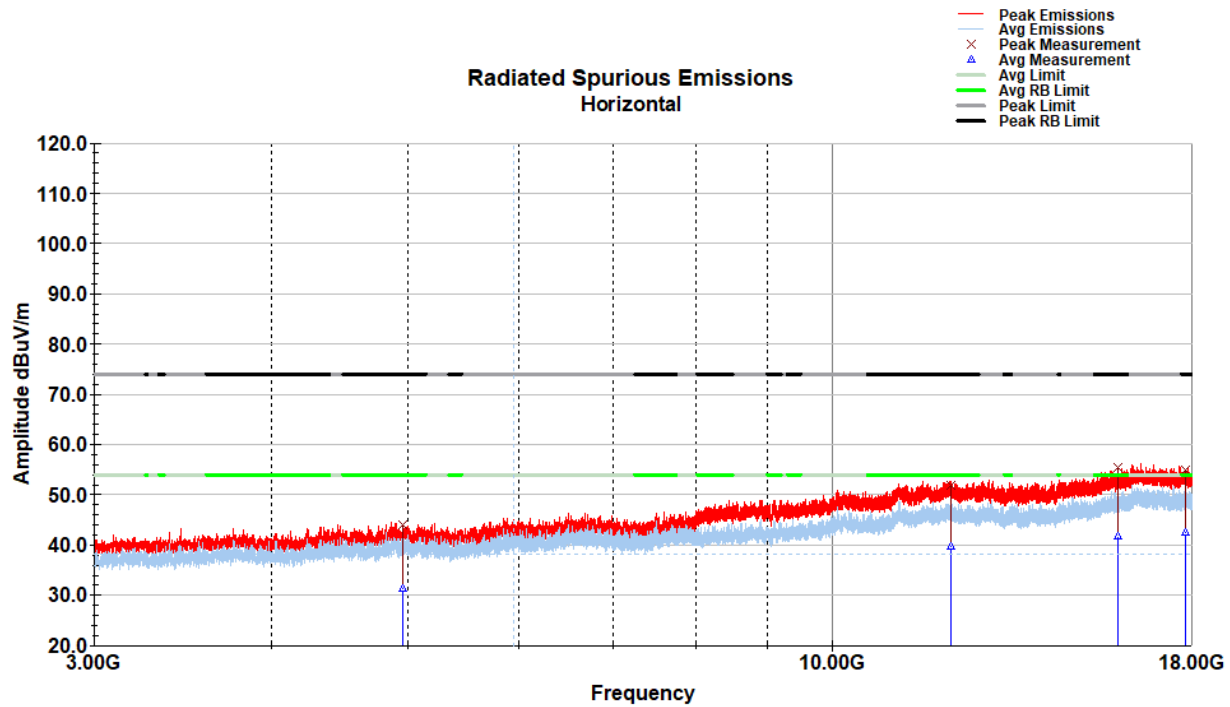
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4873.78	48.4	V	133.0	175.0	34.1	3.1	34.2	51.4	74.0	-22.6
4959.92	47.7	V	127.0	170.0	34.1	2.9	34.3	50.3	74.0	-23.7
12011.60	44.1	V	125.0	243.0	39.1	4.4	35.9	51.8	74.0	-22.2
15876.76	44.0	V	271.0	117.0	40.7	5.0	35.9	53.8	74.0	-20.2
17818.10	44.9	V	210.0	106.0	41.0	5.4	36.6	54.6	74.0	-19.4
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
4873.78	41.3	V	133.0	175.0	34.1	3.1	34.2	44.3	54.0	-9.6
4959.92	32.9	V	127.0	170.0	34.1	2.9	34.3	35.5	54.0	-18.5
12011.60	31.7	V	125.0	243.0	39.1	4.4	35.9	39.4	54.0	-14.6
15876.76	31.6	V	271.0	117.0	40.7	5.0	35.9	41.5	54.0	-12.5
17818.10	32.9	V	210.0	106.0	41.0	5.4	36.6	42.6	54.0	-11.4
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

Horizontal Plot (3-18GHz) (BLE – HCH)



Horizontal Data (3-18GHz) (BLE – HCH)

Peak

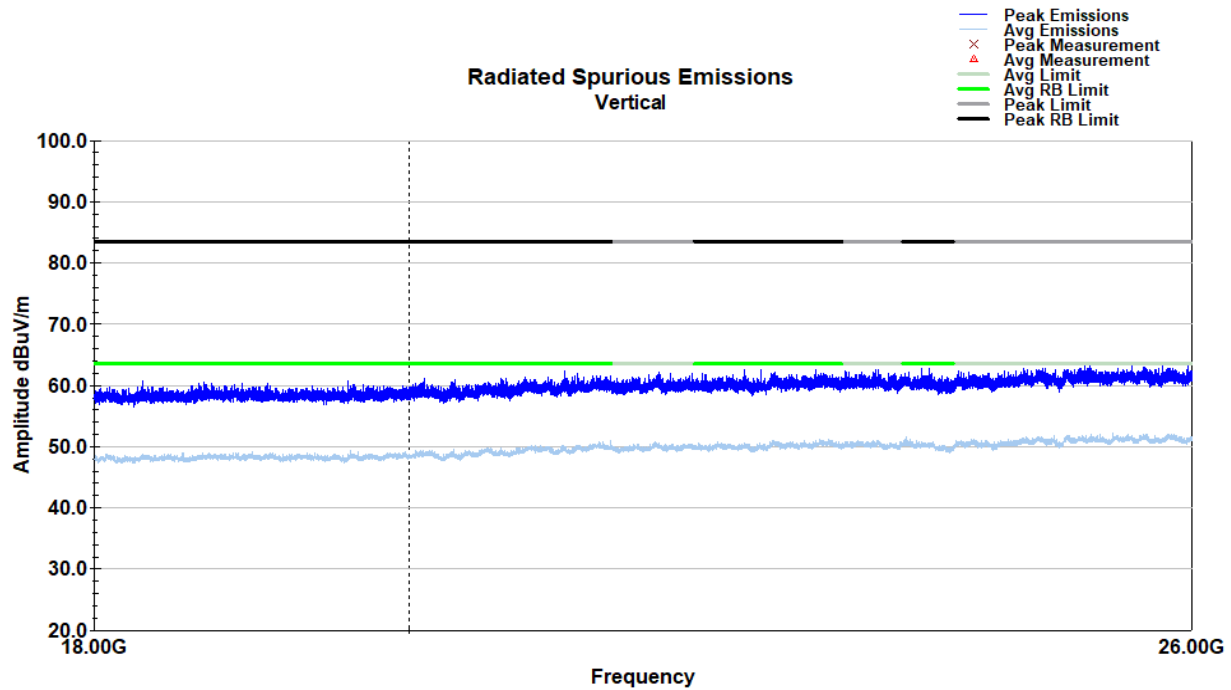
Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
4959.20	41.4	H	5.0	135.0	34.1	2.9	34.3	44.0	74.0	-30.0
12148.56	44.0	H	-1.0	103.0	39.2	4.5	35.8	52.0	74.0	-22.0
15953.50	45.4	H	327.0	244.0	40.9	5.0	35.9	55.4	74.0	-18.6
17797.00	45.2	H	276.0	174.0	41.0	5.3	36.6	54.9	74.0	-19.1
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average

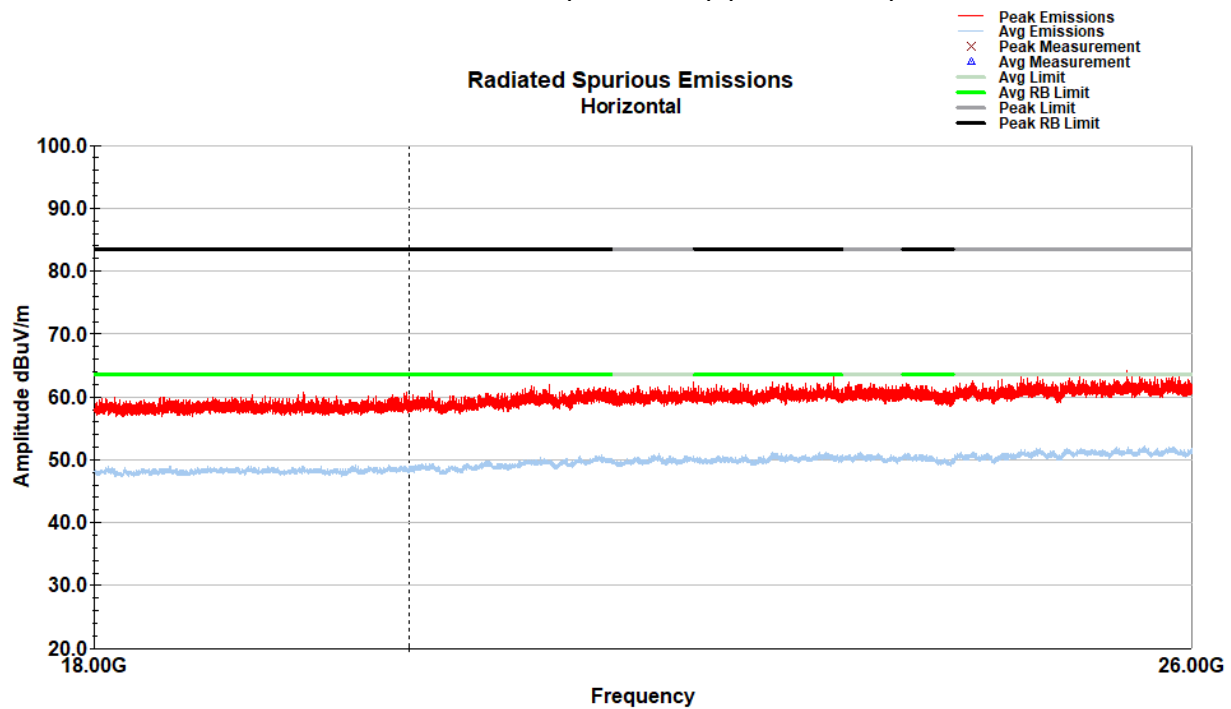
Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
4959.20	28.8	H	5.0	135.0	34.1	2.9	34.3	31.4	54.0	-22.6
12148.56	31.7	H	-1.0	103.0	39.2	4.5	35.8	39.7	54.0	-14.3
15953.50	31.6	H	327.0	244.0	40.9	5.0	35.9	41.6	54.0	-12.4
17797.00	32.8	H	276.0	174.0	41.0	5.3	36.6	42.5	54.0	-11.5
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

All channels had similar results in the 18-26GHz frequency range.

Vertical Plot (18-26GHz) (BLE – MCH)



Horizontal Plot (18-26GHz) (BLE – MCH)



6 Antenna Requirement

6.1 Result

Test Description	Test Specification	Test Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.203	Compliant

6.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

6.3 Conclusion

The device utilizes a cable containing a non-standard reverse-polarity threaded male connection (RP TNC male connector) to connect to the antenna and a standard SMA connection on the EUT side. The antenna is professionally installed, and users will not be able to access it once installed.

7 Measurement Uncertainty

The measurement uncertainty figures are be calculated in accordance with TR 100 028-1 [2] and correspond to an expansion factor (coverage factor) $k = 2$ (which provide confidence levels of 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Measurement uncertainty is not used to adjust the measurements to determine compliance.

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 %	$\pm 0.4\%$

8 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	31 July 2025
1	- Max antenna gain was changed to match the antenna datasheet - EIRP results were added for BLE and WLAN in sections 3.5 & 4.5 - Output Power data for 802.11n(HT40) was removed in section 4.5 - Several RSE final measurement points were added in section 5.5	10 September 2025