

TEST REPORT

Report Number. : NBK14480730A.V1

Applicant : Signify North America Corporation
O'Hare International Center
10275 W. Higgins Rd
Rosemont, IL 60018

Model : SNS412 MC & SNS212 MC

FCC ID : 2AF2N-SSM2

IC : 20659-SSM2

EUT Description : Indoor Lighting Control

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 2
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2023-02-01

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2023-02-01	Initial Issue	BM
-	-	-	-
-	-	-	-

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Signify North America Corporation
EUT DESCRIPTION: Indoor Lighting Control
MODEL: SNS412 MC & SNS212 MC
SERIAL NUMBER: see section 2 for information on samples used
SAMPLE RECEIPT DATE: 2022-09-15
DATE TESTED: 2022-09-15 TO 2022-12-20

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
47 CFR Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5 + A1 + A2	Complies

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For
UL LLC By:



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Staff Engineer
Consumer Technology Division
UL LLC

Prepared By:



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Test Engineer
Consumer Technology Division
UL LLC

2. TEST RESULTS SUMMARY

Multiple samples were used for testing. Each set of test data is identified with sample number used.

This report contains data provided by the applicant which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer. This pertains only to antenna gain.

Sample #	Model	Sensor Type	Sample Type
s28	SNS212 MC	with Occupancy Sensor	Radiated
s29	SNS212 MC	with Occupancy Sensor	Radiated
s30	SNS212 MC	with Occupancy Sensor	Antenna Port
s33	SNS412 MC	with out Occupancy Sensor	Antenna Port
s34	SNS412 MC	with out Occupancy Sensor	Radiated

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 5.2 (a)	6dB BW	Compliant	None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power	Compliant	None.
15.247 (e)	RSS-247 5.2 (b)	PSD	Compliant	None.
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Compliant	None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Compliant	None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Compliant	None.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15, ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 2.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Laboratory Code 0751.07, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☒	Building: 333 Pfingsten Road Northbrook, IL 60062	US0065	2180A	152210

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U _{Lab}
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.84 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	4.66 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Occupied Bandwidth	1.22%
Power Spectral Density	2.466dB
Antenna port Peak Power and emissions (S/A)	1.94dB

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a wireless Indoor Lighting Control device. Two variants are covered by this report – variant with occupancy sensor and variant without occupancy sensor. The device can operate either in BLE mode or ZigBee mode, but only one at a time.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	BLE	5.94	3.93
2405 - 2475	ZigBee	5.98	3.96

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

The radio utilizes an PCB inverted F Meander Line antenna, with a maximum gain of -2dBi.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 3.0.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions between 30MHz-1GHz were conducted on worst case channel based on the radiated measurements between 1GHz-25GHz. Measurements between 1GHz-25GHz were conducted on low, middle and high channels on sample with occupancy sensor and limited checks were performed on sample without the occupancy sensor. Radiated measurements below 30MHz were conducted on worst case channel based on the 1GHz-25GHz data. Line conducted emissions were conducted on middle channel only. For BLE both 1Mbps and 2Mbps were investigated.

All radiated emissions measurements were conducted in single orthogonal orientation – typical orientation when mounted in the ceiling.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer/Brand	Model	Serial Number	FCC ID
LED Driver	Philips	XI04C110V054VPT1	n/a	n/a

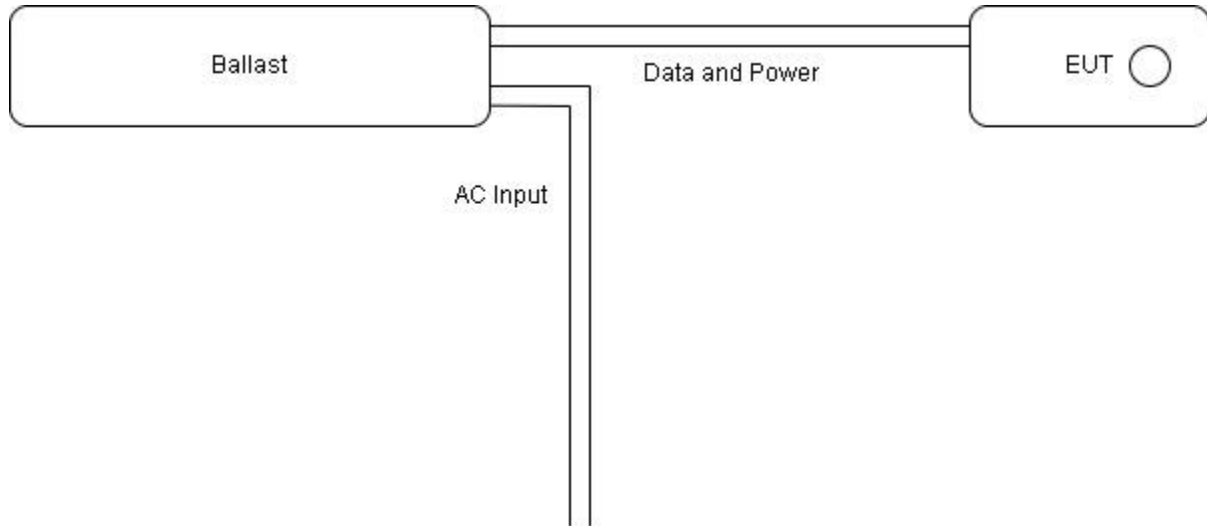
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	none	AC Power	1	AC input to
2	Power/Data	1	none	Data and Power for EUT	40cm	typical cable length used

TEST SETUP

The EUT is connected to a test laptop to program as specific test mode. Laptop is disconnected when sample is under test. Since laptop is not used during test nor is in the test environment is not listed as support equipment.

SETUP DIAGRAMS



7. MEASUREMENT METHOD

Duty Cycle: ANSI C63.10 Subclause 11.6

6 dB BW: ANSI C63.10 Subclause -11.8.1, $RBW \geq DTS\ BW$

Occupied BW (99%): ANSI C63.10-2013 Section 6.9.3

Output Power: ANSI C63.10 Subclause -11.9.1.1, $RBW \geq DTS\ bandwidth$

PSD: ANSI C63.10 Subclause -11.10.2, Method PKPSD (peak PSD)

Radiated emissions non-restricted frequency bands: ANSI C63.10 Subclause -11.11, 6.10.5

Radiated emissions restricted frequency bands: ANSI C63.10 Subclause - 6.3 – 6.6

Conducted emissions in restricted frequency bands: ANSI C63.10 Subclause -11.12.2, 6.10.4

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4

8. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, June 15, 2019
Antenna Port Software	UL	UL RF	Ver 2021.04.09
AC Line Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015

Radiated Emissions Test Equipment

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Receiver	Rohde & Schwarz	ESCI	EMC4328	2021-12-20	2022-12-31
Loop Antenna	EMCO	6502/1	EMC4026	2022-01-05	2023-01-31
Hybrid Antenna	SunAR RF Motion	JB1-UN	EMC4456	2022-01-18	2023-01-31
Antenna Array	UL	BOMS	EMC4276	2022-07-27	2023-07-31
EMI Receiver	Rohde & Schwarz	ESU	EMC4323	2021-12-22	2022-12-31
Horn Antenna	EMCO	3117	EMC4293	2022-01-05	2023-01-31
Horn Antenna	EMCO	3115	EMC4030	2022-04-18	2023-04-30

Antenna Port Measurements

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Signal Analyzer	Agilent	N9030A PXA	EMC4360	2021-12-21	2022-12-31
*Attenuator with Cable	Generic	-	-	-	-
Network Analyzer	Agilent	E8363C	EMC4420	2021-12-25	2022-12-31

* Attenuator and cable is characterized prior to measurement with network analyzer.

Line Conducted Emissions Test Equipment

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	Rohde & Schwarz	ESR	EMC4377	2021-12-18	2022-12-31
Transient Limiter	Electro-Metrics	EM7600-2	EMC4224	N/A	N/A
High-Pass Filter	Solar Electronics	2803-150	EMC4327	N/A	N/A
Attenuator	HP	8494B	2831A00838	N/A	N/A
LISN - L3	Solar Electronics	8602-50-TS-50-N	EMC4067	2021-11-29	2022-11-30
LISN - L4	Solar Electronics	8602-50-TS-50-N	EMC4065	2021-11-29	2022-11-30

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

Tested by: BM06740
Test Date: see data below

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

Measured duty cycle used for testing was 100%

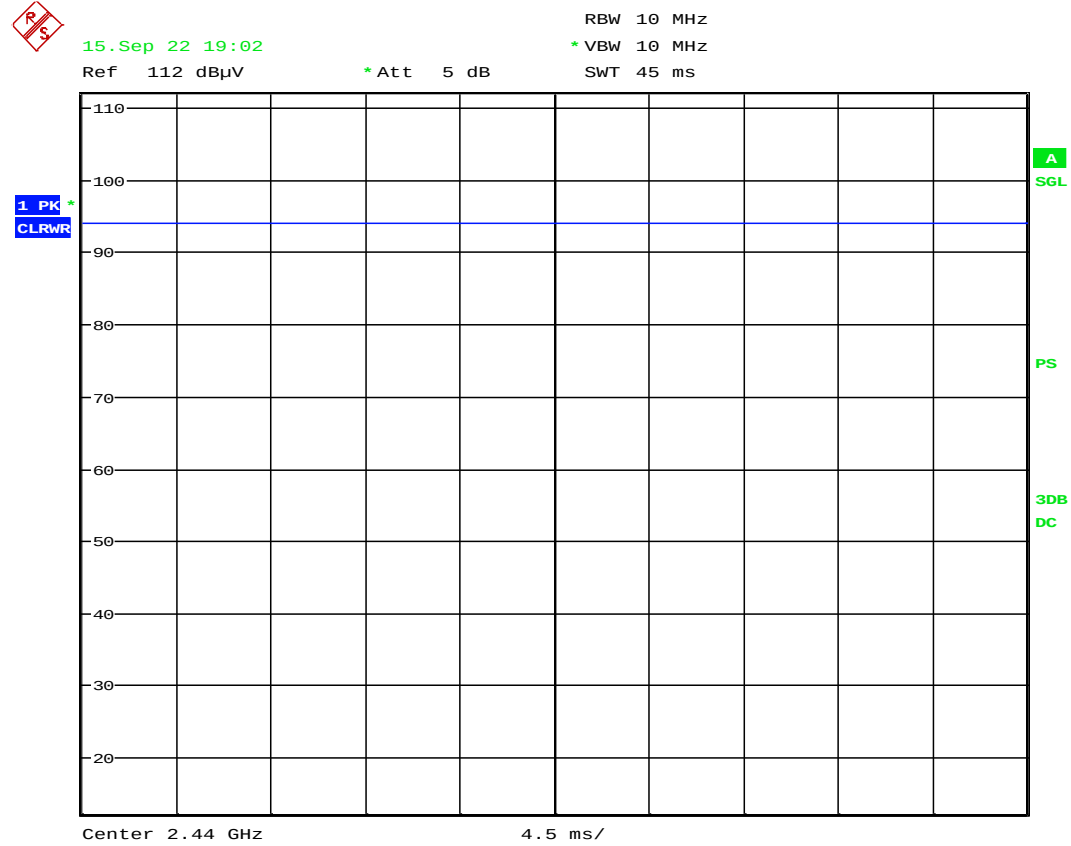
The actual duty cycle when the devices are installed in the field is limited to source limited duty cycle of 4.99% as worst case. In cases where spurious emissions exceeded the limit when measured without implementing the source base duty cycle relaxation, the source base duty cycle was added in. The source based duty cycle was calculated per the following:

$$20 * \log (0.05) = -26\text{dB}$$

See manufacturers documentation on duty cycle calculation.

ON TIME AND DUTY CYCLE RESULTS

DUTY CYCLE PLOTS – BLE, 1Mbps



Date: 15.SEP.2022 19:02:28

DUTY CYCLE PLOTS – BLE, 2Mbps



15.Sep 22 19:06

Ref 112 dBμV

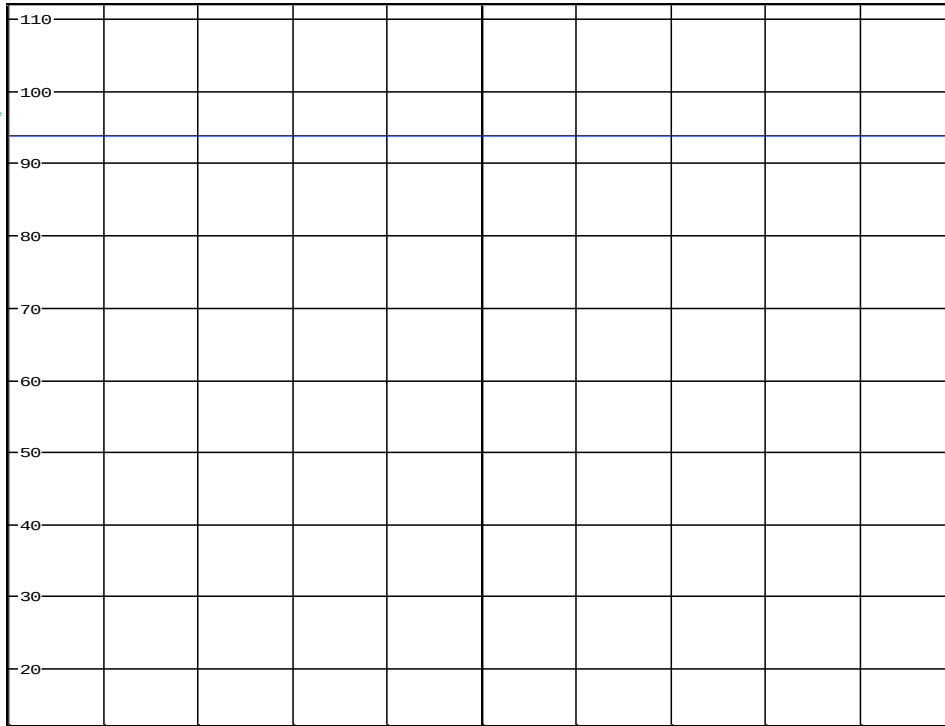
*Att 5 dB

RBW 10 MHz

*VBW 10 MHz

SWT 45 ms

1 PK *
CLRWR



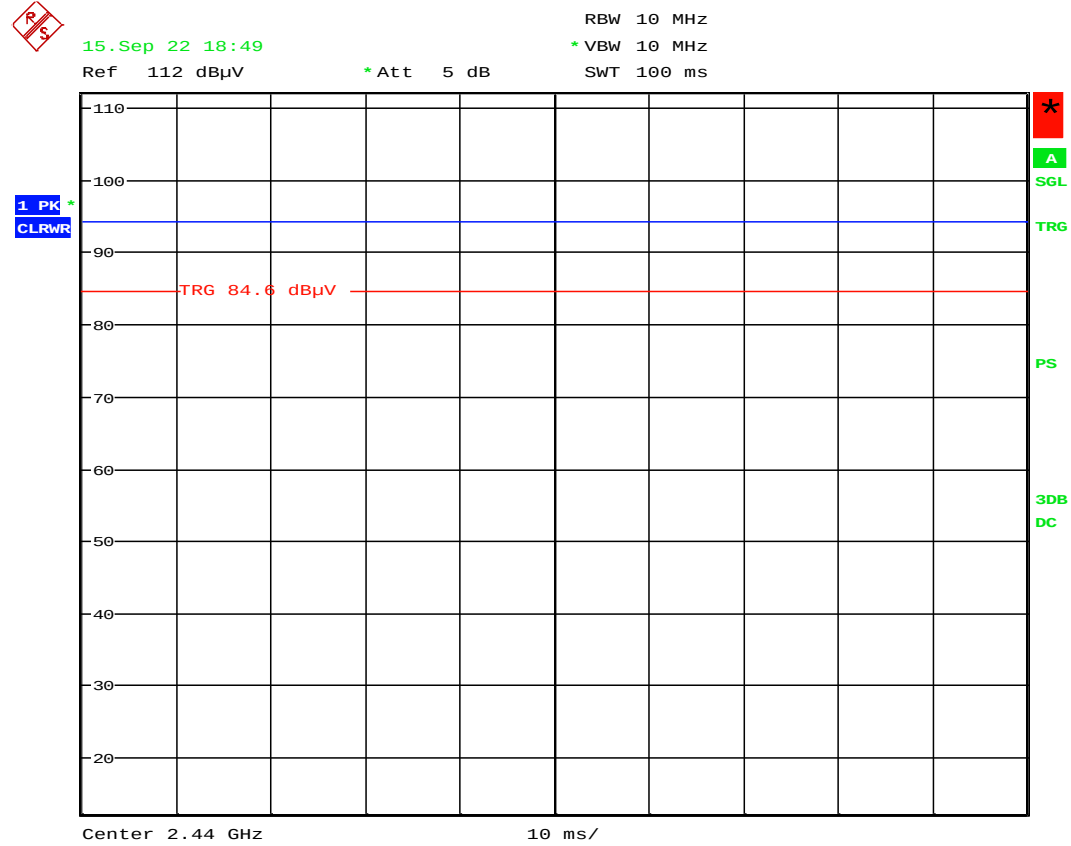
A
SGL

PS

3dB
DC

Date: 15.SEP.2022 19:06:22

DUTY CYCLE PLOTS – ZigBee



Date: 15.SEP.2022 18:49:05

9.2. 99% BANDWIDTH

Tested by: BM06740
Test Date: see data below

LIMITS

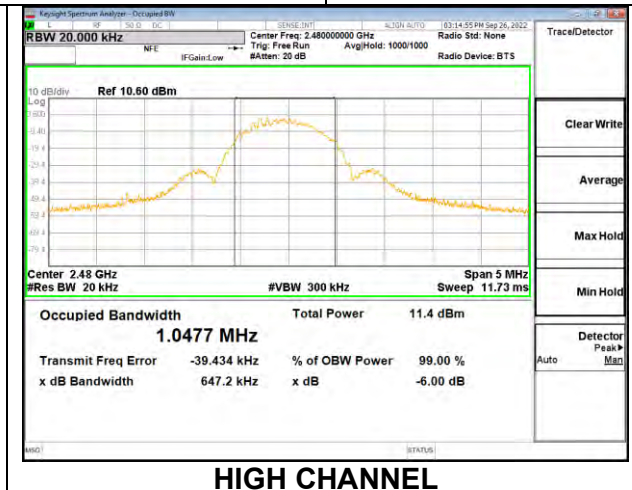
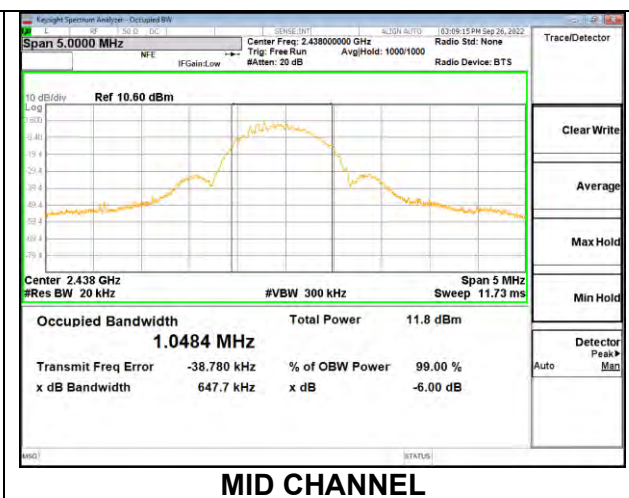
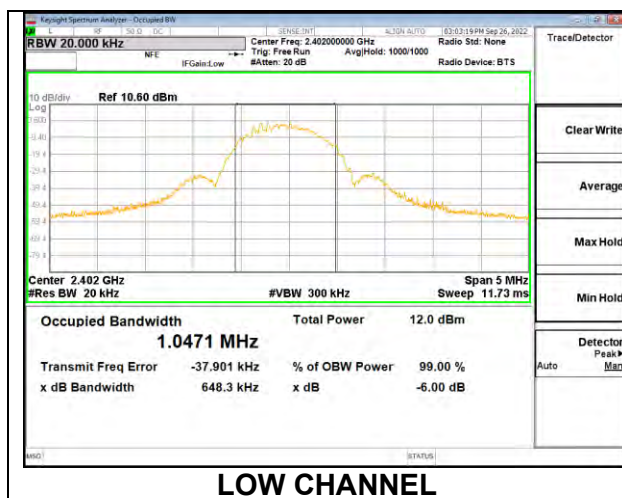
None; for reporting purposes only.

RESULTS

9.2.1. BLE (1Mbps)

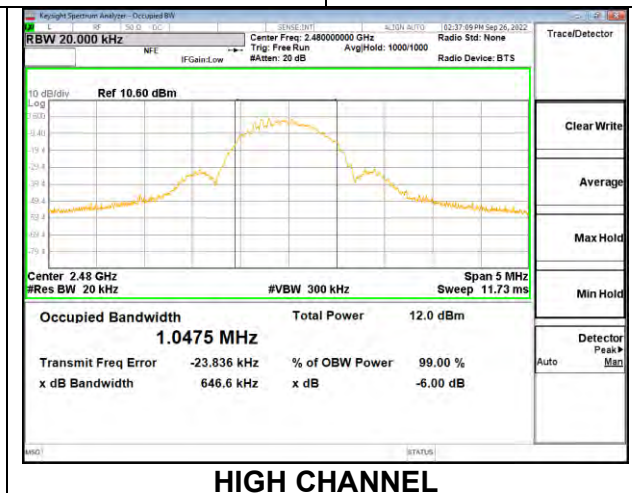
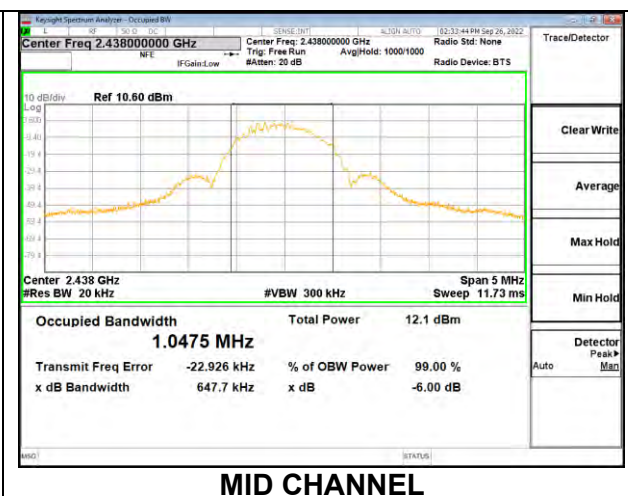
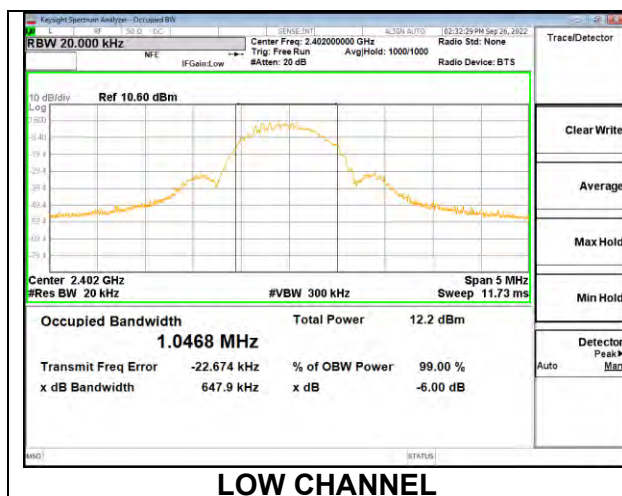
Sample s30

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0471
Middle	2438	1.0484
High	2480	1.0477



Sample s33

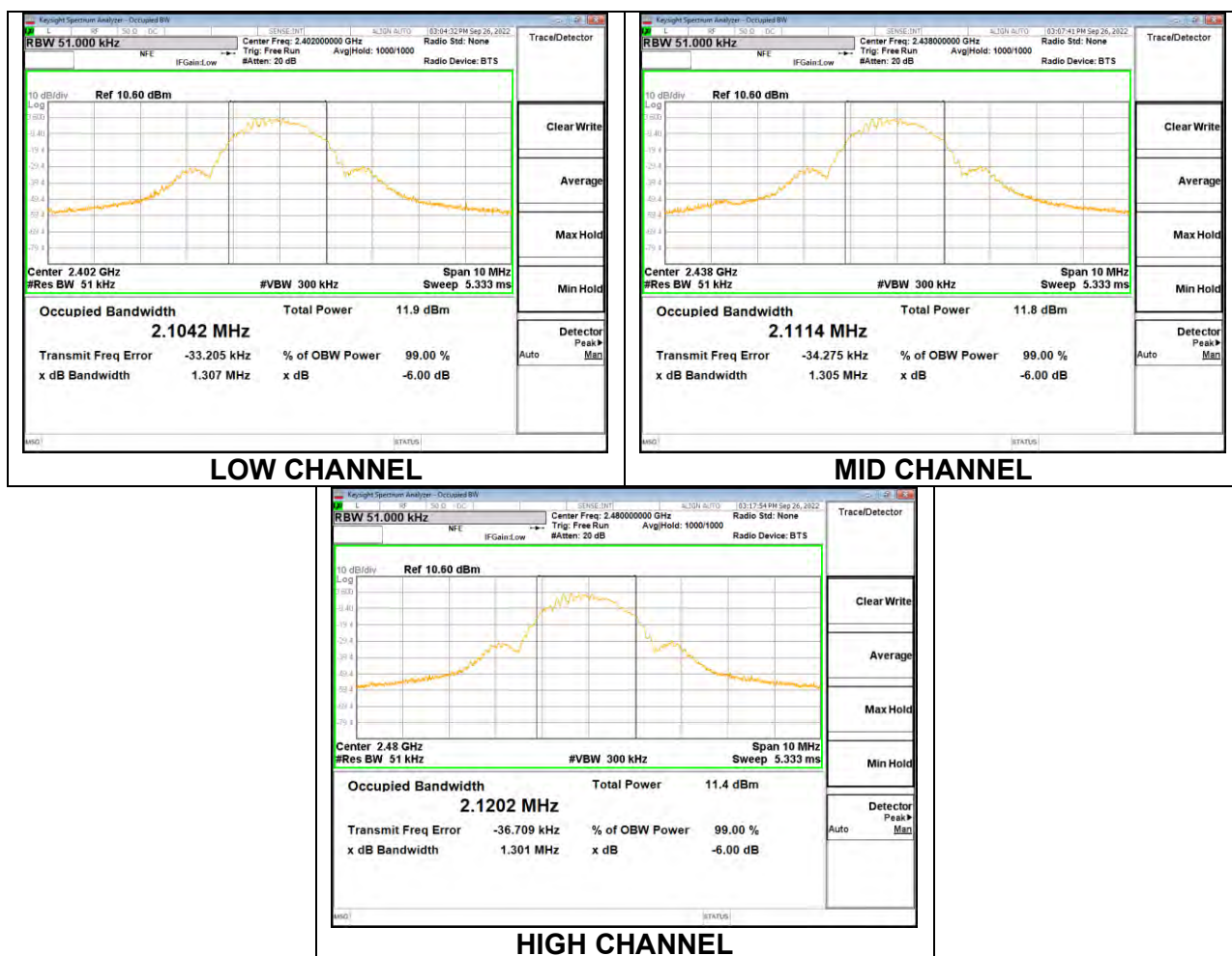
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0468
Middle	2438	1.0475
High	2480	1.0475



9.2.2. BLE (2Mbps)

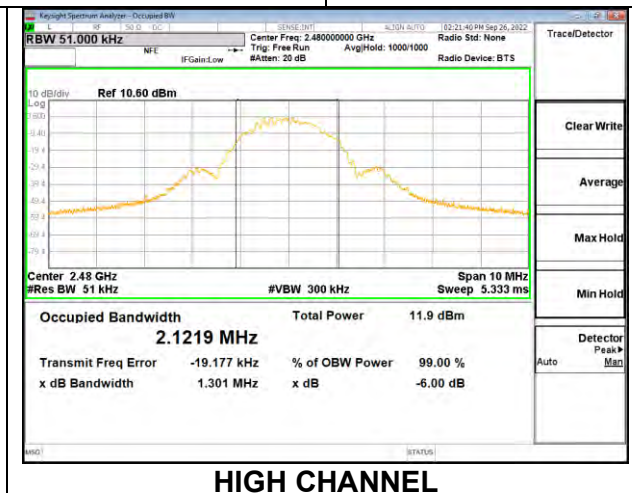
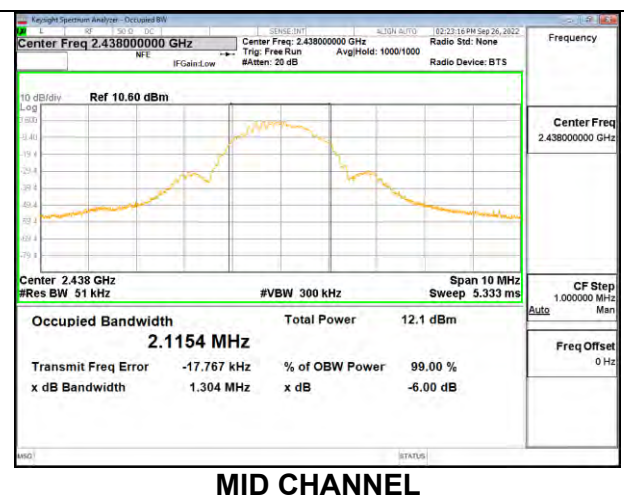
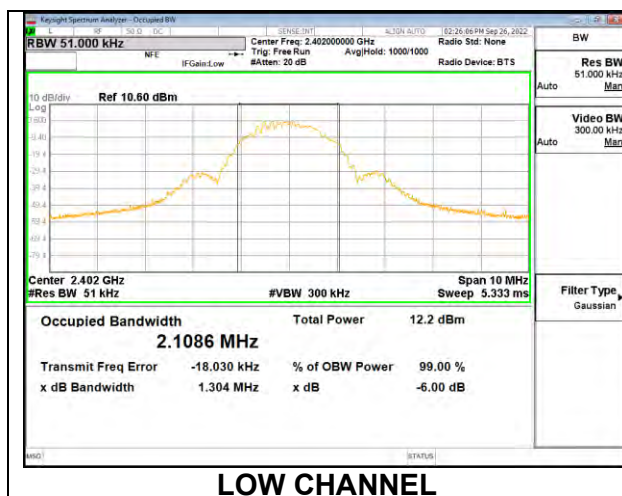
Sample s30

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	2.1042
Middle	2438	2.1114
High	2480	2.1202



Sample s33

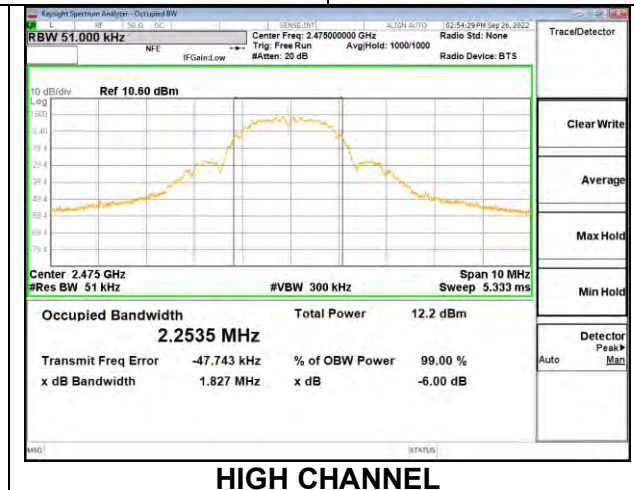
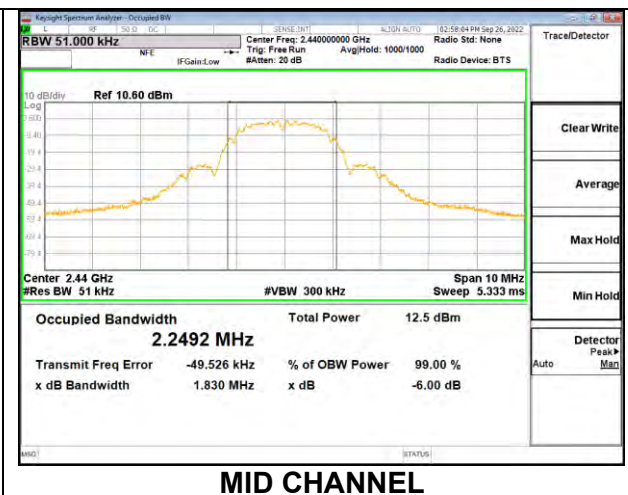
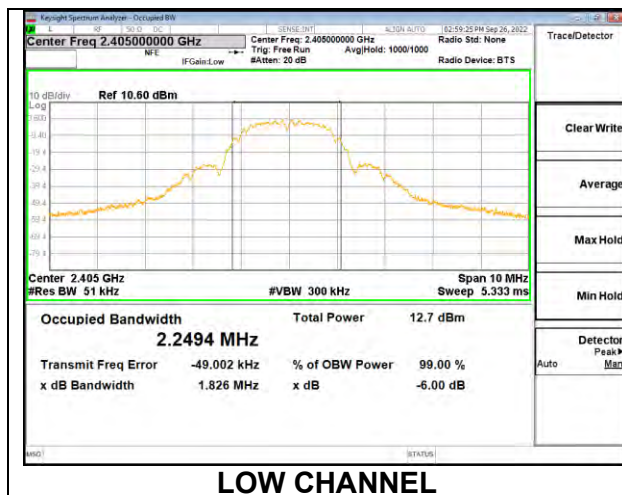
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	2.1086
Middle	2438	2.1154
High	2480	2.1219



9.2.3. Zigbee

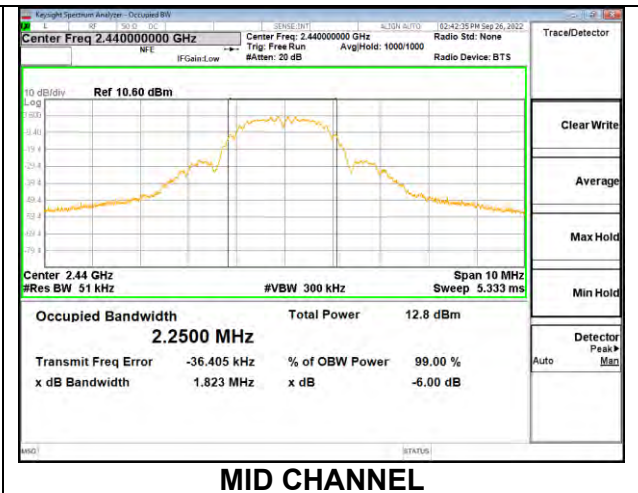
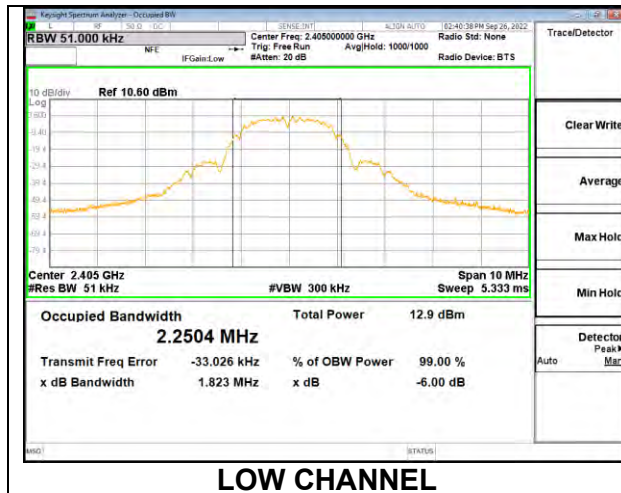
Sample s30

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2405	2.2494
Middle	2440	2.2492
High	2475	2.2535



Sample s33

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2405	2.2504
Middle	2440	2.2500
High	2475	2.2566



9.3. 6 dB BANDWIDTH

Tested by: BM06740
Test Date: see data below

LIMITS

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

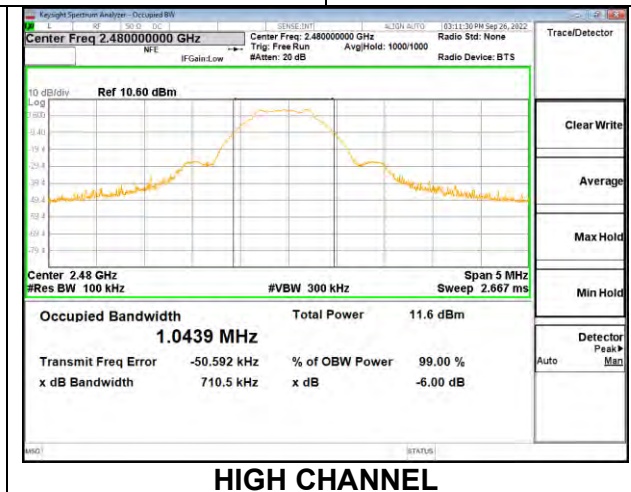
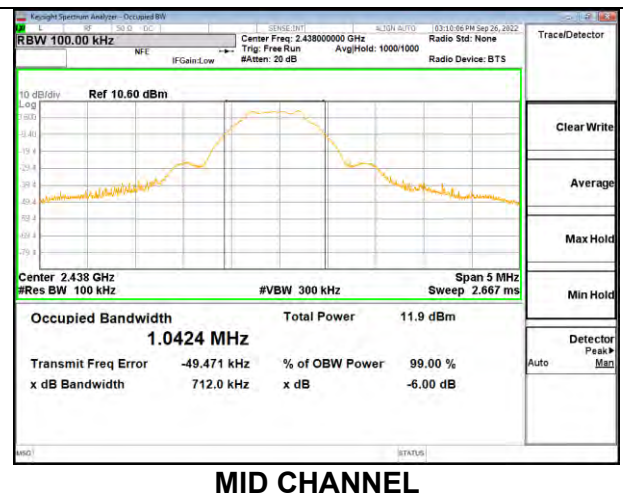
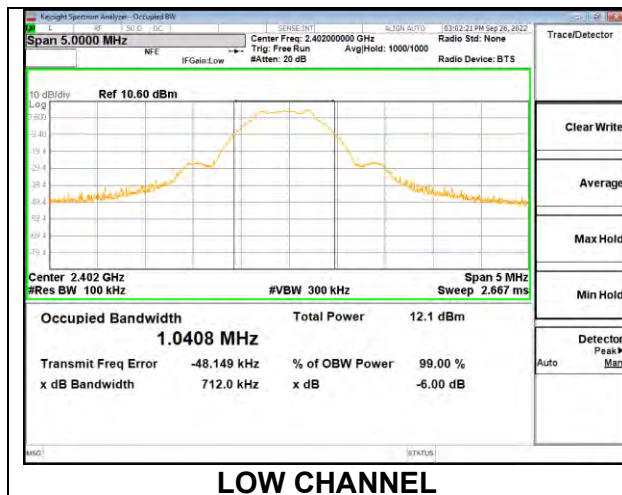
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

9.3.1. BLE (1Mbps)

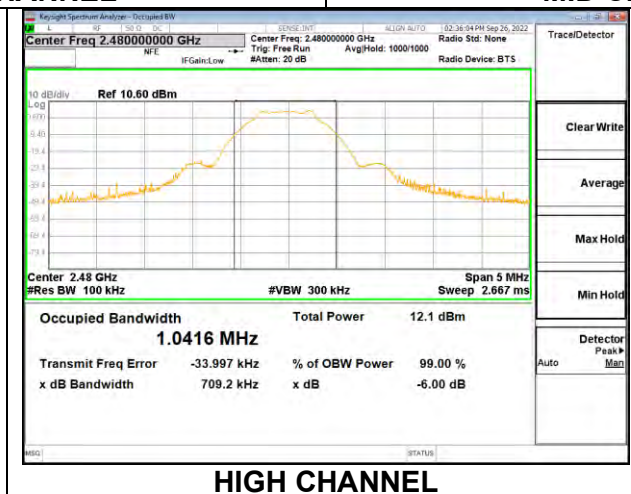
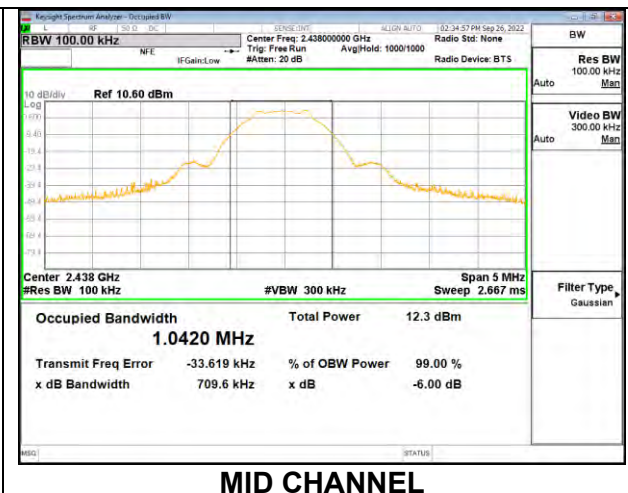
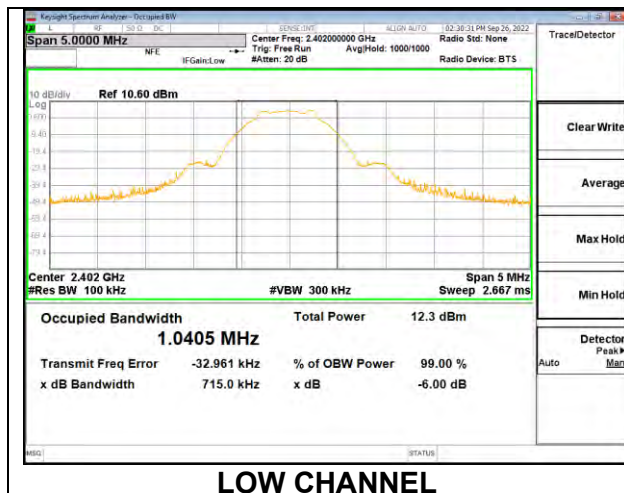
Sample s30

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.7120	0.5
Middle	2438	0.7120	0.5
High	2480	0.7105	0.5



Sample s33

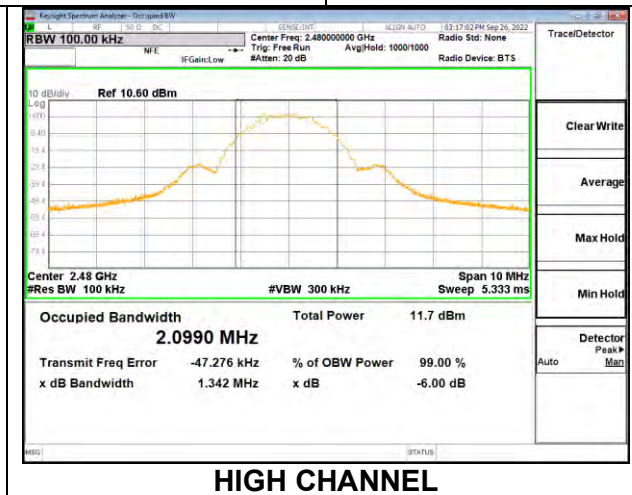
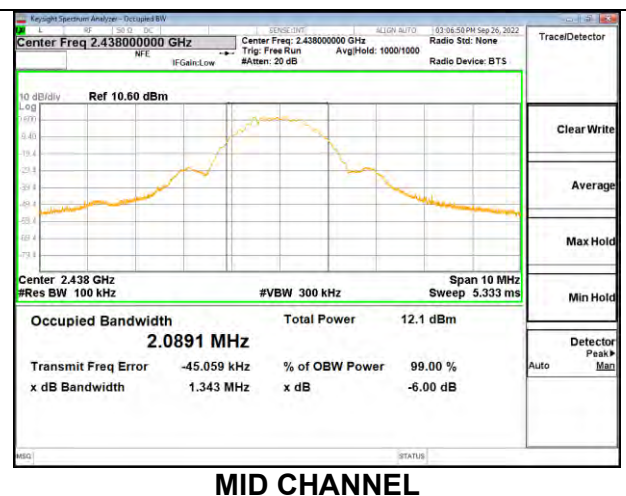
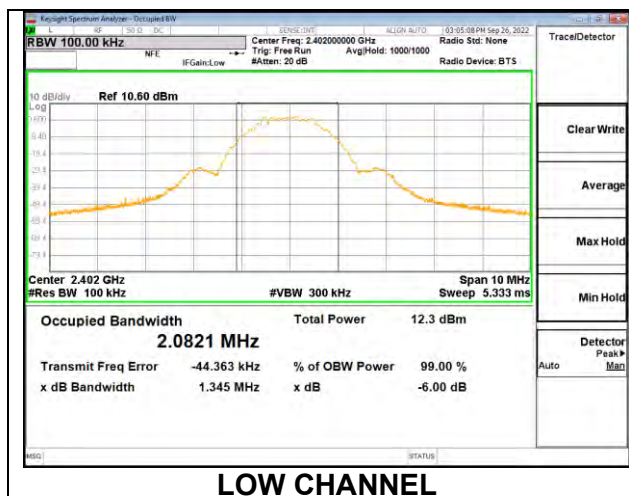
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.7150	0.5
Middle	2438	0.7096	0.5
High	2480	0.7092	0.5



9.3.2. BLE (2Mbps)

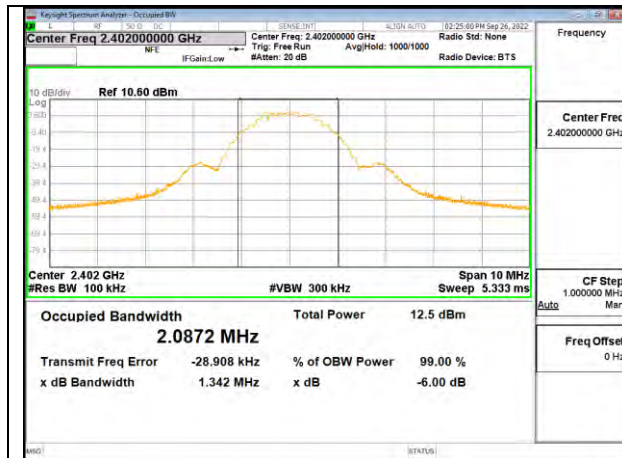
Sample s30

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.3450	0.5
Middle	2438	1.3430	0.5
High	2480	1.3420	0.5



Sample s33

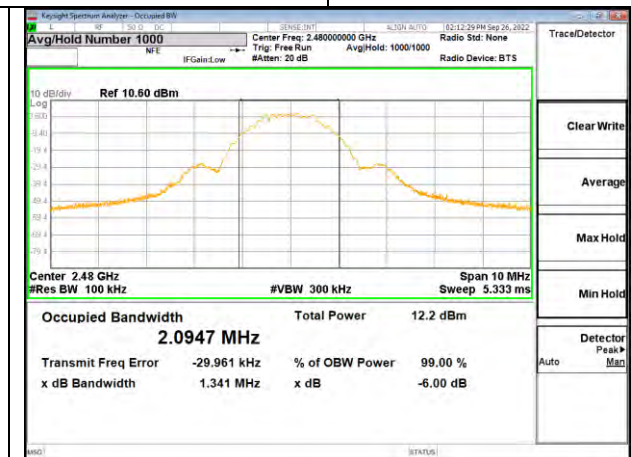
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.3420	0.5
Middle	2438	1.3430	0.5
High	2480	1.3410	0.5



LOW CHANNEL



MID CHANNEL

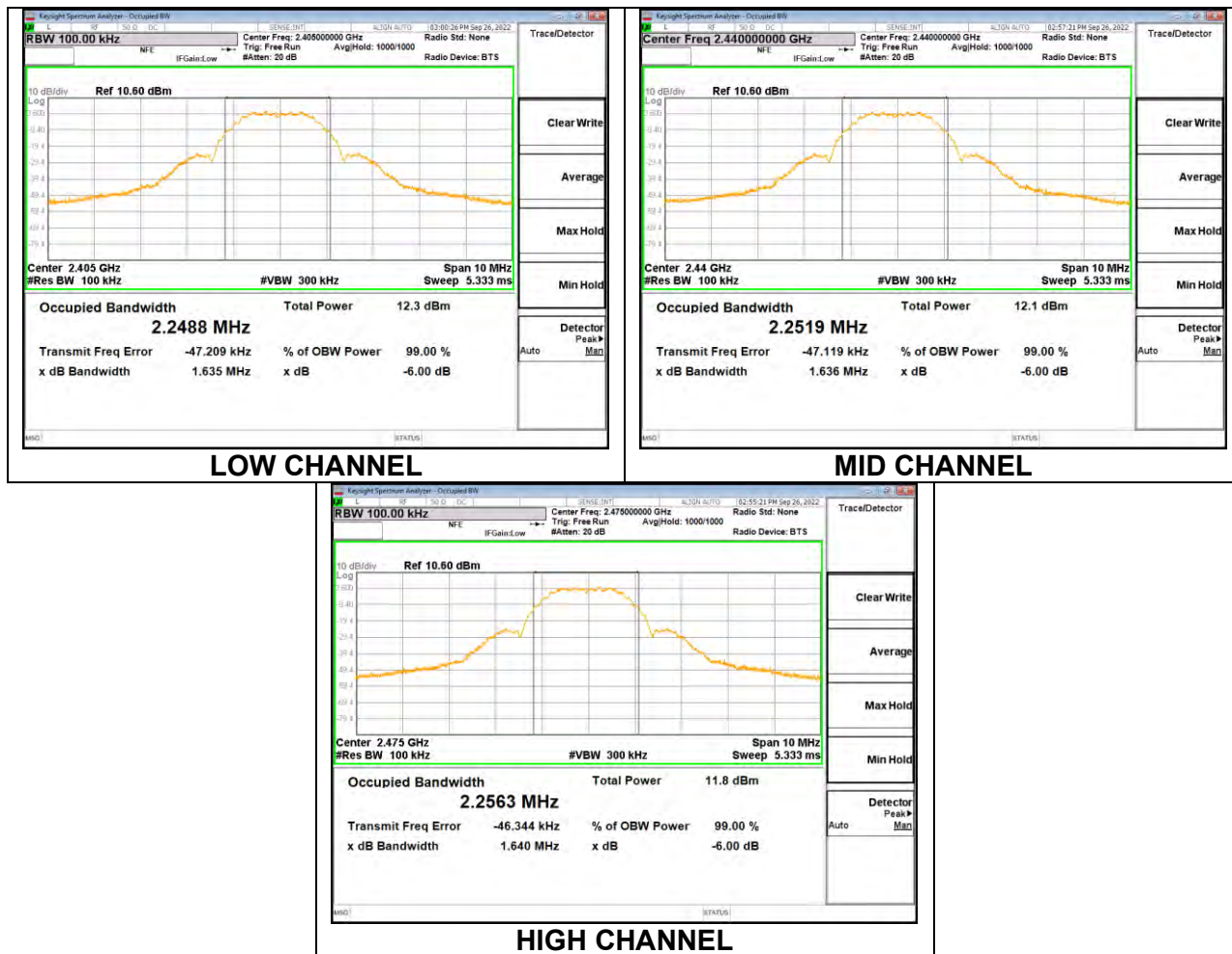


HIGH CHANNEL

9.3.3. Zigbee

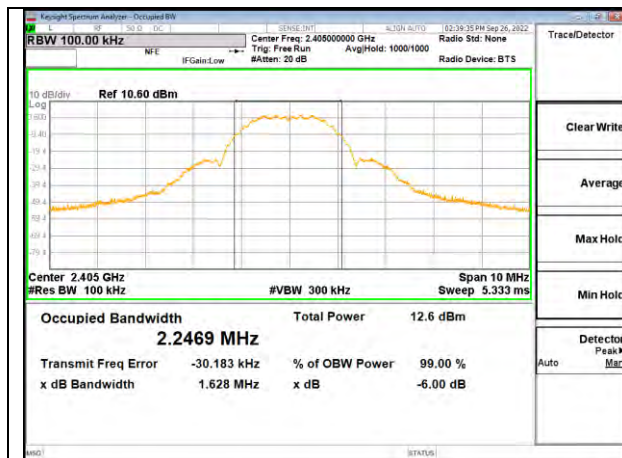
Sample s30

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2405	1.6350	0.5
Middle	2440	1.6360	0.5
High	2475	1.6400	0.5

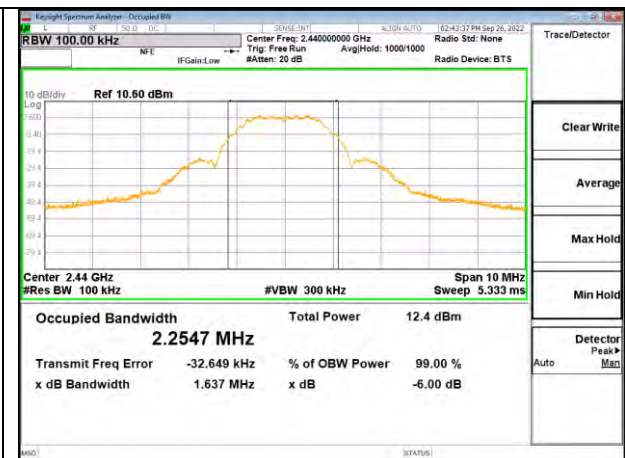


Sample s33

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2405	1.6280	0.5
Middle	2440	1.6370	0.5
High	2475	1.6400	0.5



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

9.4. OUTPUT POWER

Tested by: BM06740
Test Date: see data below

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to spectrum analyzer via cable and attenuator. The cable and attenuator factor is included in the software that captures the data from the spectrum analyzer.

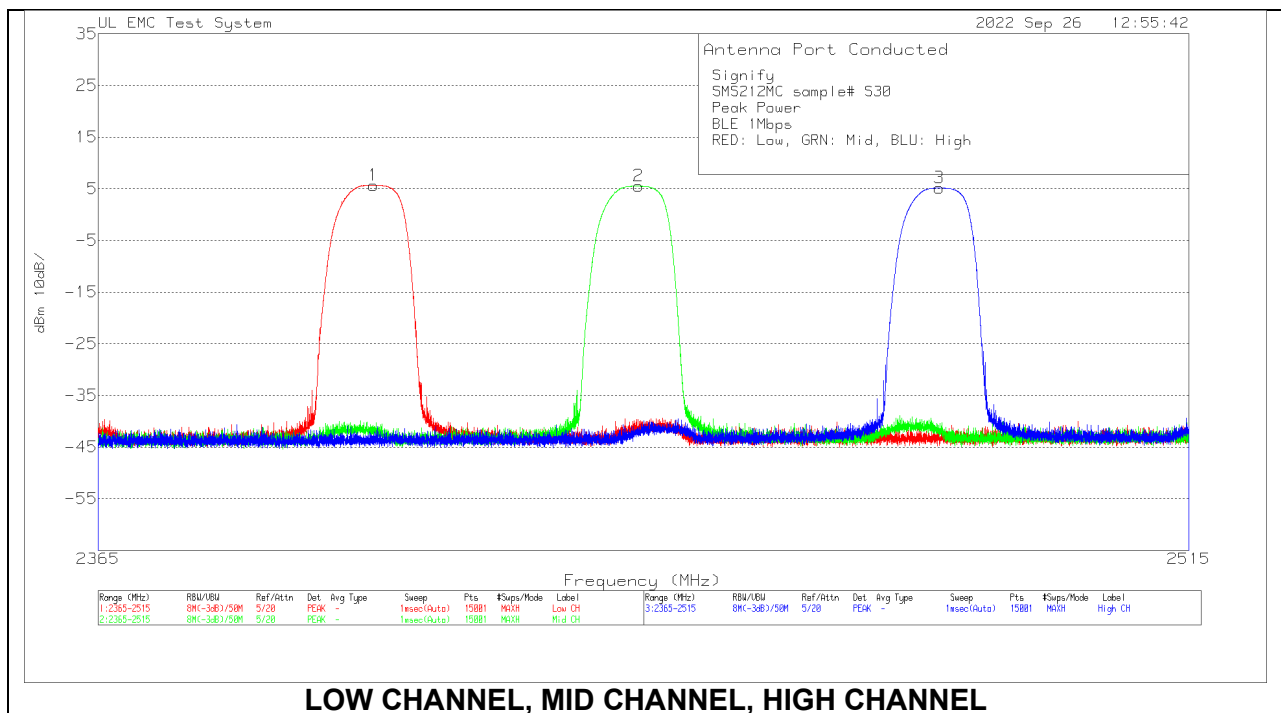
RESULTS

9.4.1. BLE (1Mbps)

Sample s30

Tested By:	BM06740
Date:	2022-09-26

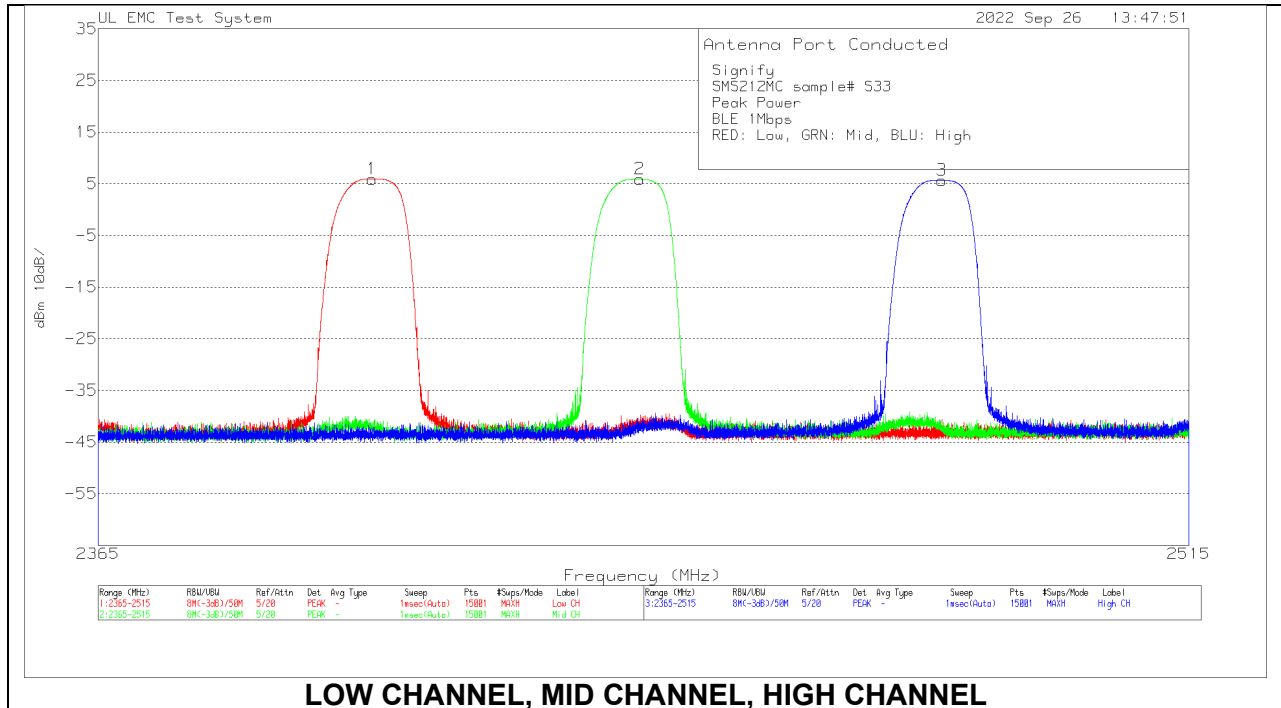
Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	5.680	30	-24.320
Middle	2438	5.490	30	-24.510
High	2480	5.120	30	-24.880



Sample s33

Tested By:	BM06740
Date:	2022-09-26

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	5.940	30	-24.060
Middle	2438	5.870	30	-24.130
High	2480	5.690	30	-24.310

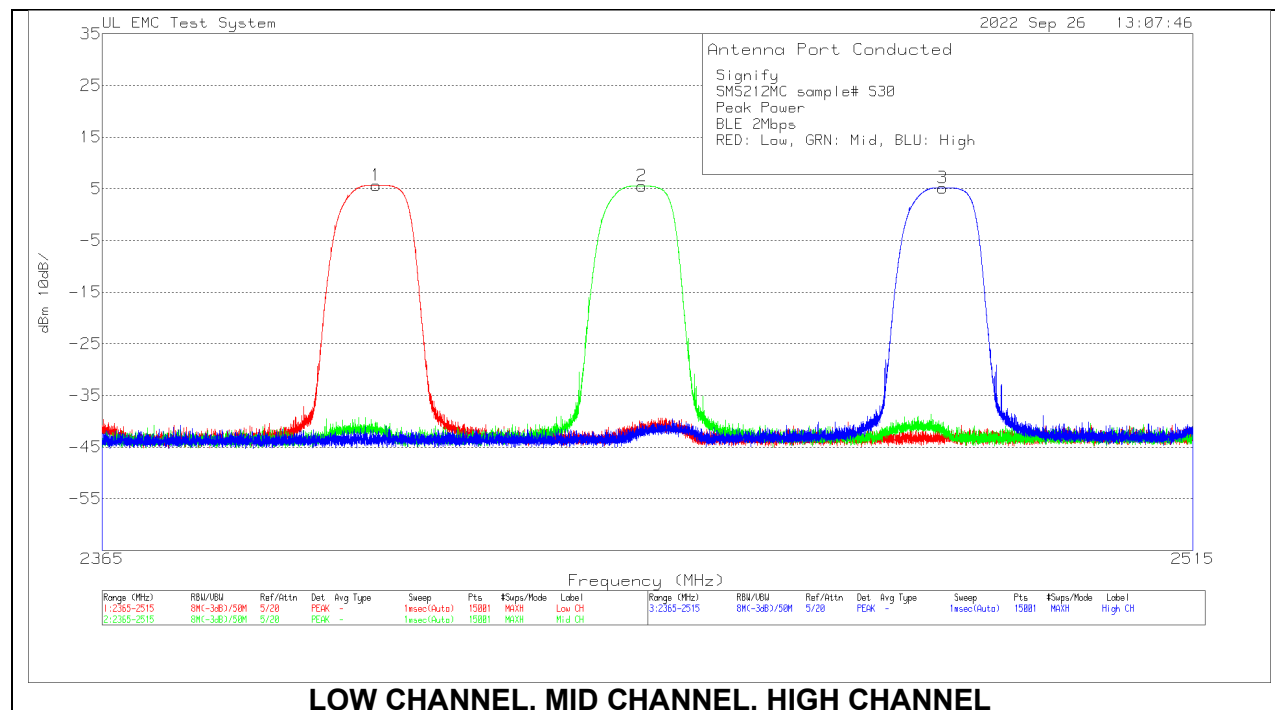


9.4.2. BLE (2Mbps)

Sample s30

Tested By:	BM06740
Date:	2022-06-26

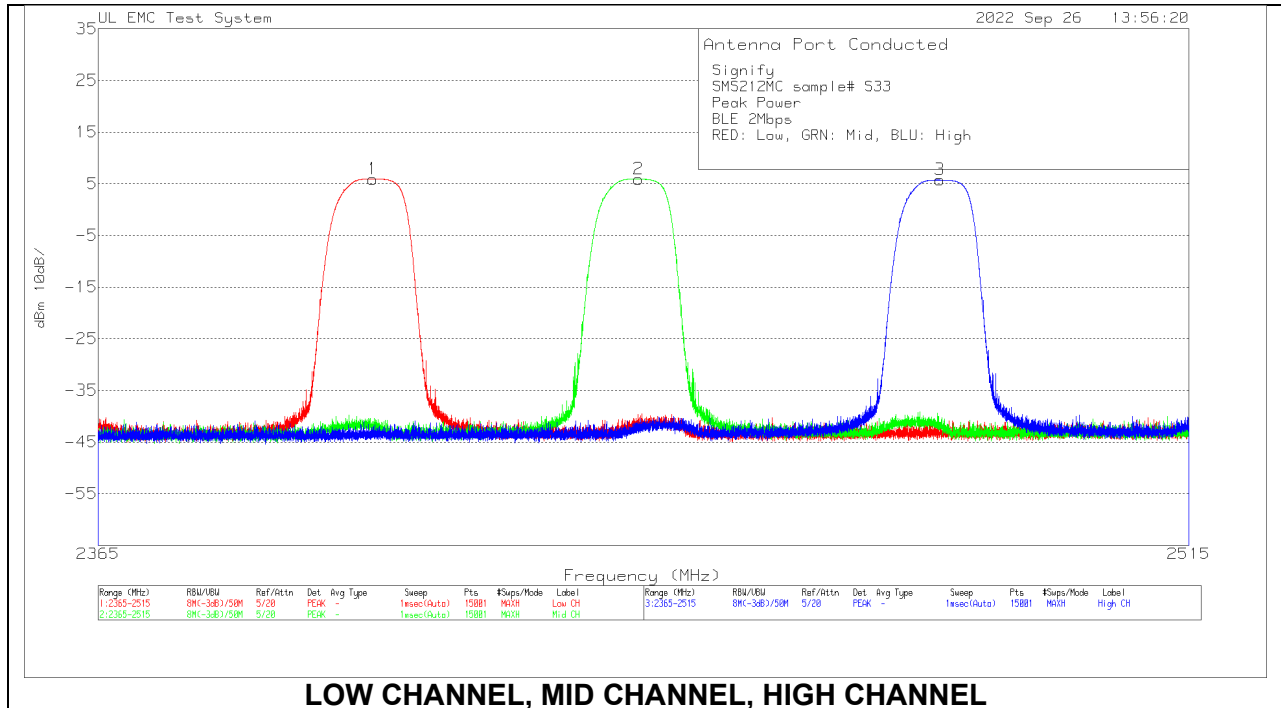
Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	5.710	30	-24.290
Middle	2438	5.540	30	-24.460
High	2480	5.200	30	-24.800



Sample s33

Tested By:	BM06740
Date:	2022-09-26

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	5.940	30	-24.060
Middle	2438	5.900	30	-24.100
High	2480	5.730	30	-24.270

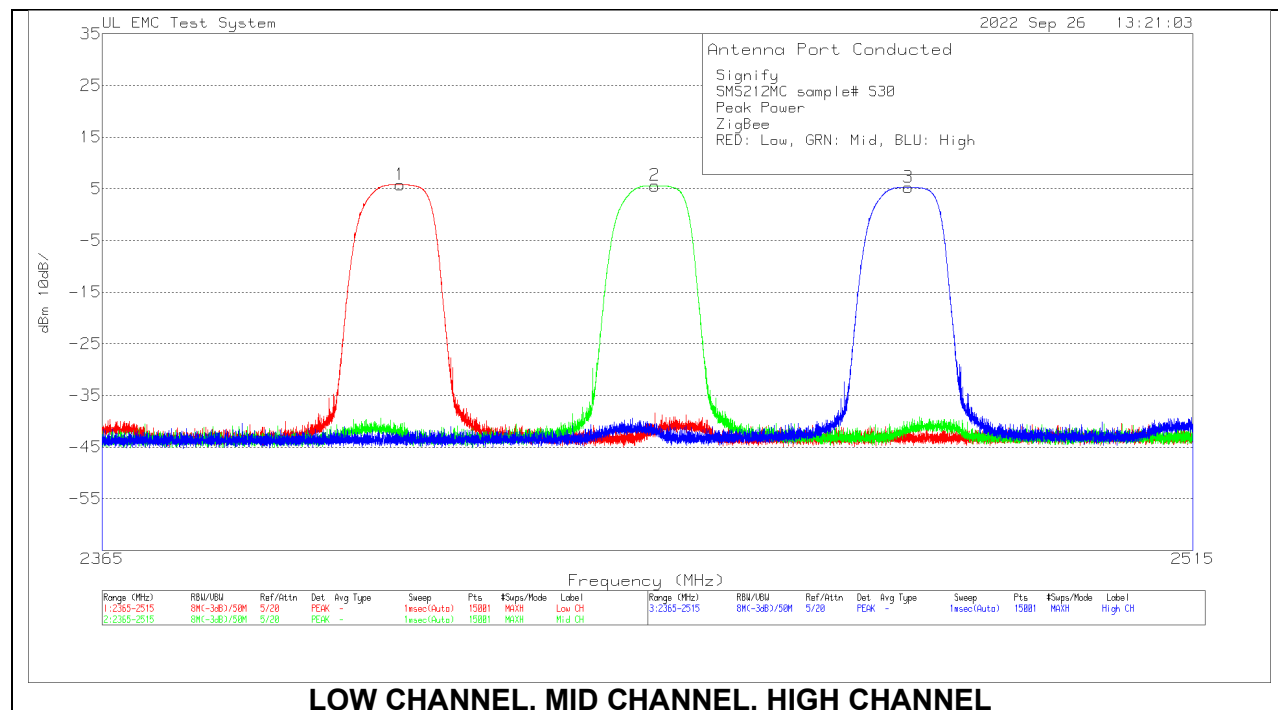


9.4.3. Zigbee

Sample s30

Tested By:	BM06740
Date:	2022-09-26

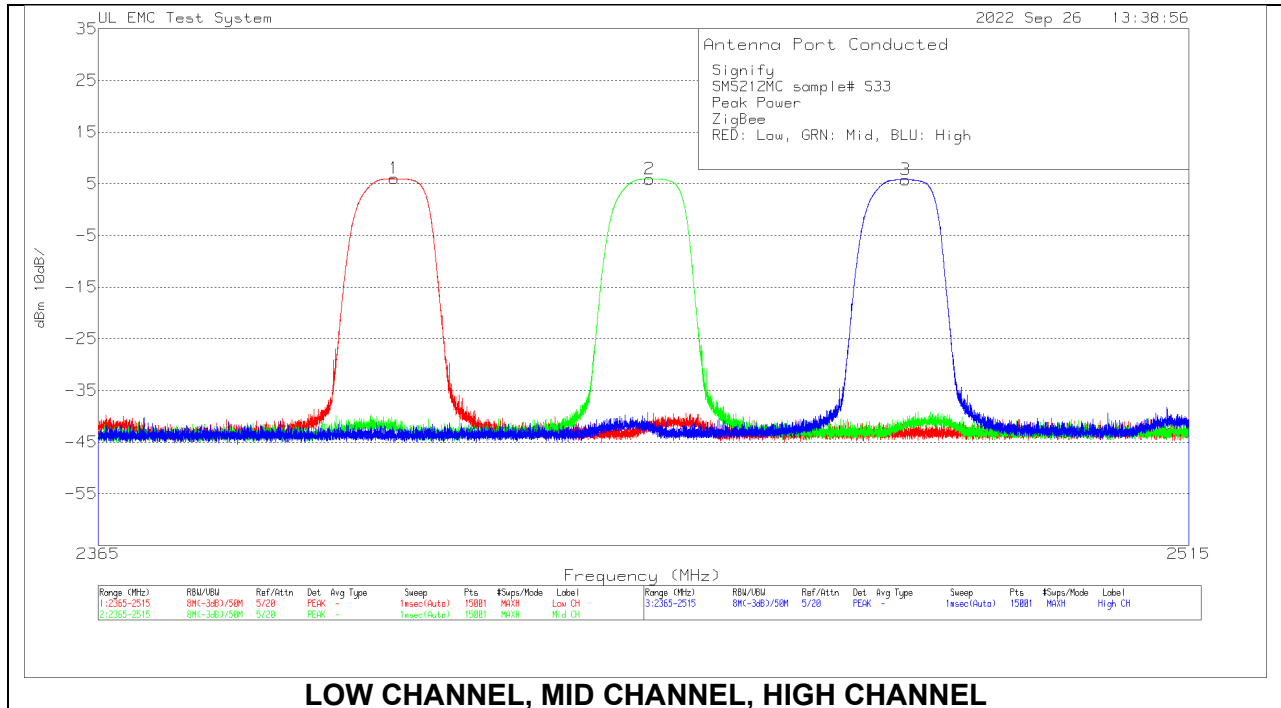
Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	5.780	30	-24.220
Middle	2440	5.600	30	-24.400
High	2475	5.290	30	-24.710



Sample s33

Tested By:	BM06740
Date:	2022-09-26

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	5.980	30	-24.020
Middle	2440	5.930	30	-24.070
High	2475	5.770	30	-24.230



9.5. POWER SPECTRAL DENSITY

Tested by: BM06740
Test Date: see data below

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

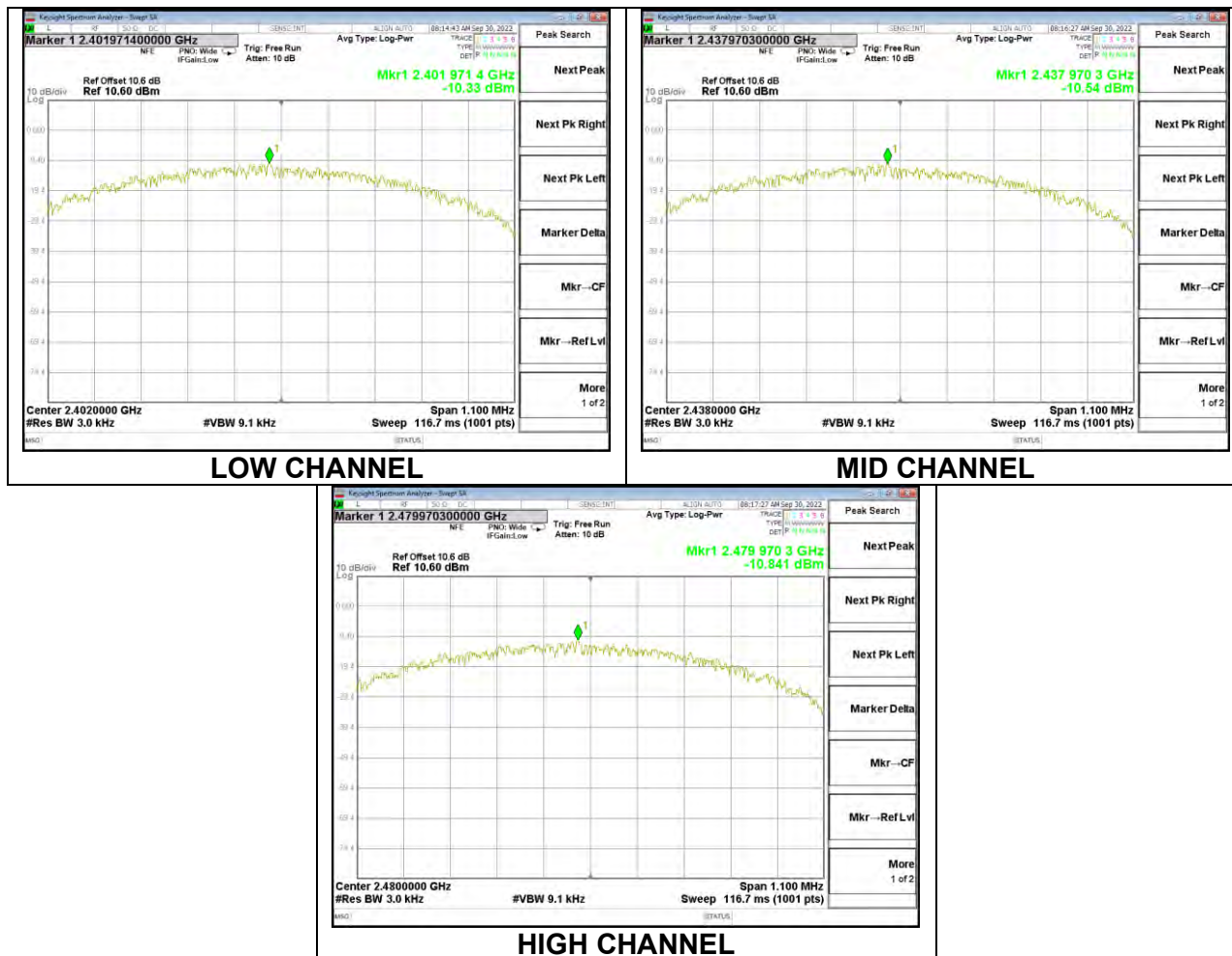
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

9.5.1. BLE (1Mbps)

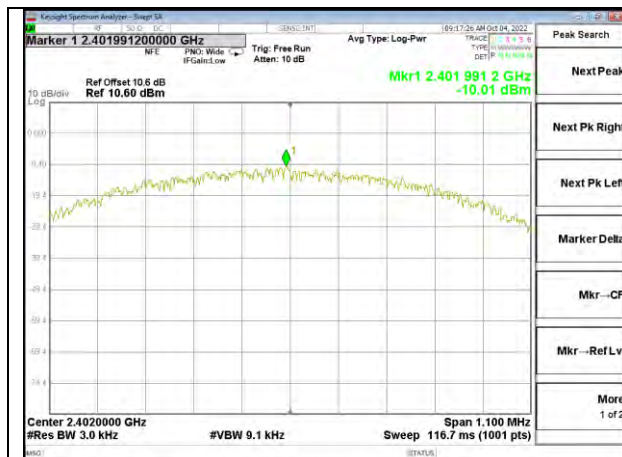
Sample s30

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-10.33	8	-18.33
Middle	2438	-10.54	8	-18.54
High	2480	-10.84	8	-18.84

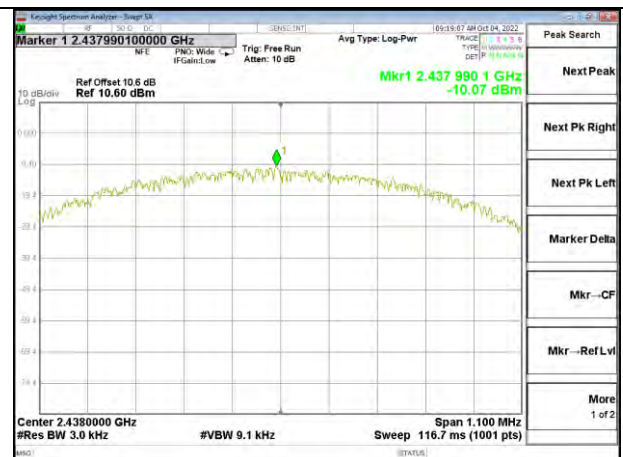


Sample s33

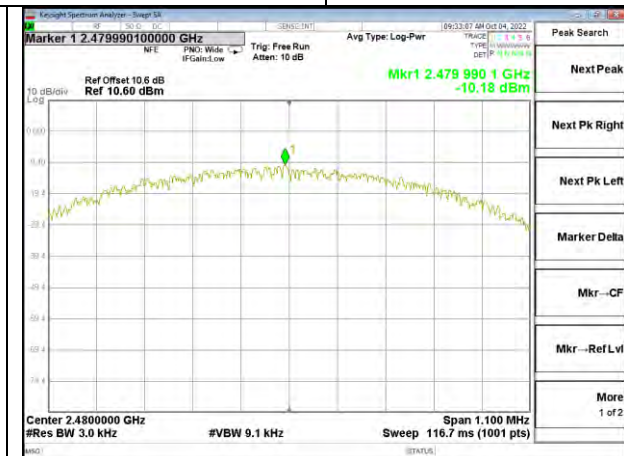
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-10.01	8	-18.01
Middle	2438	-10.07	8	-18.07
High	2480	-10.18	8	-18.18



LOW CHANNEL



MID CHANNEL

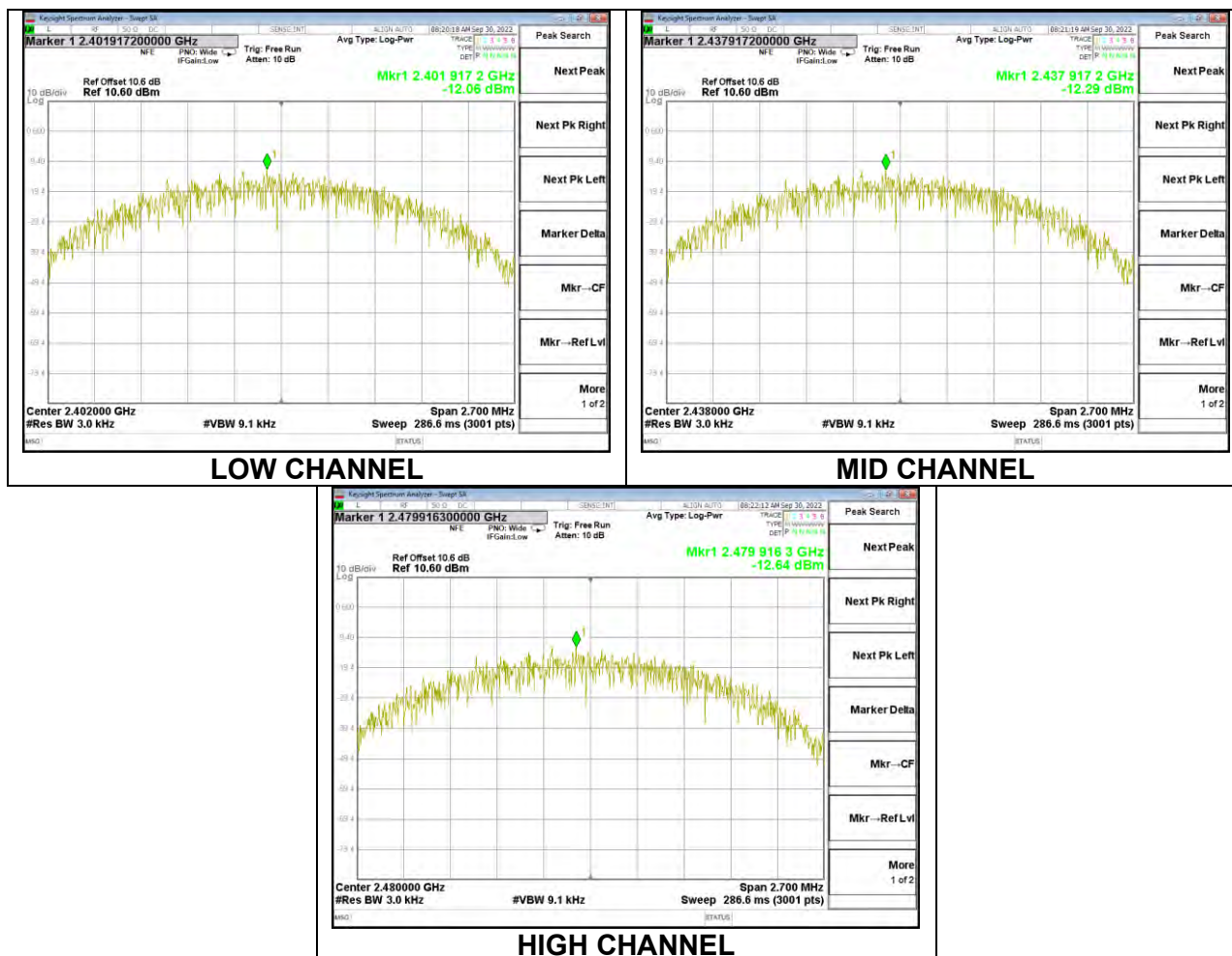


HIGH CHANNEL

9.5.2. BLE (2Mbps)

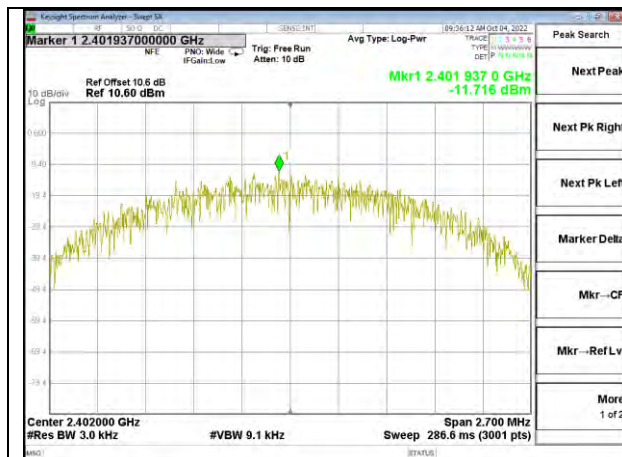
Sample s30

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-12.06	8	-20.06
Middle	2438	-12.29	8	-20.29
High	2480	-12.64	8	-20.64

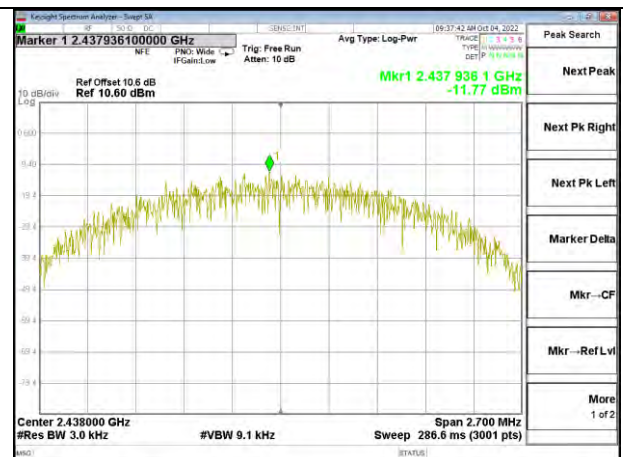


Sample s33

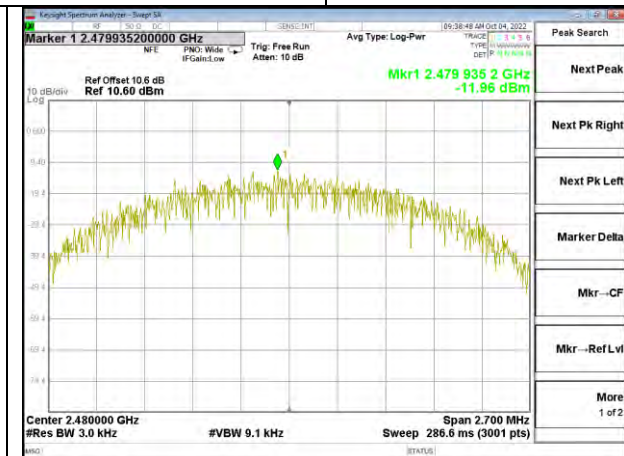
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-11.72	8	-19.72
Middle	2438	-11.77	8	-19.77
High	2480	-11.96	8	-19.96



LOW CHANNEL



MID CHANNEL

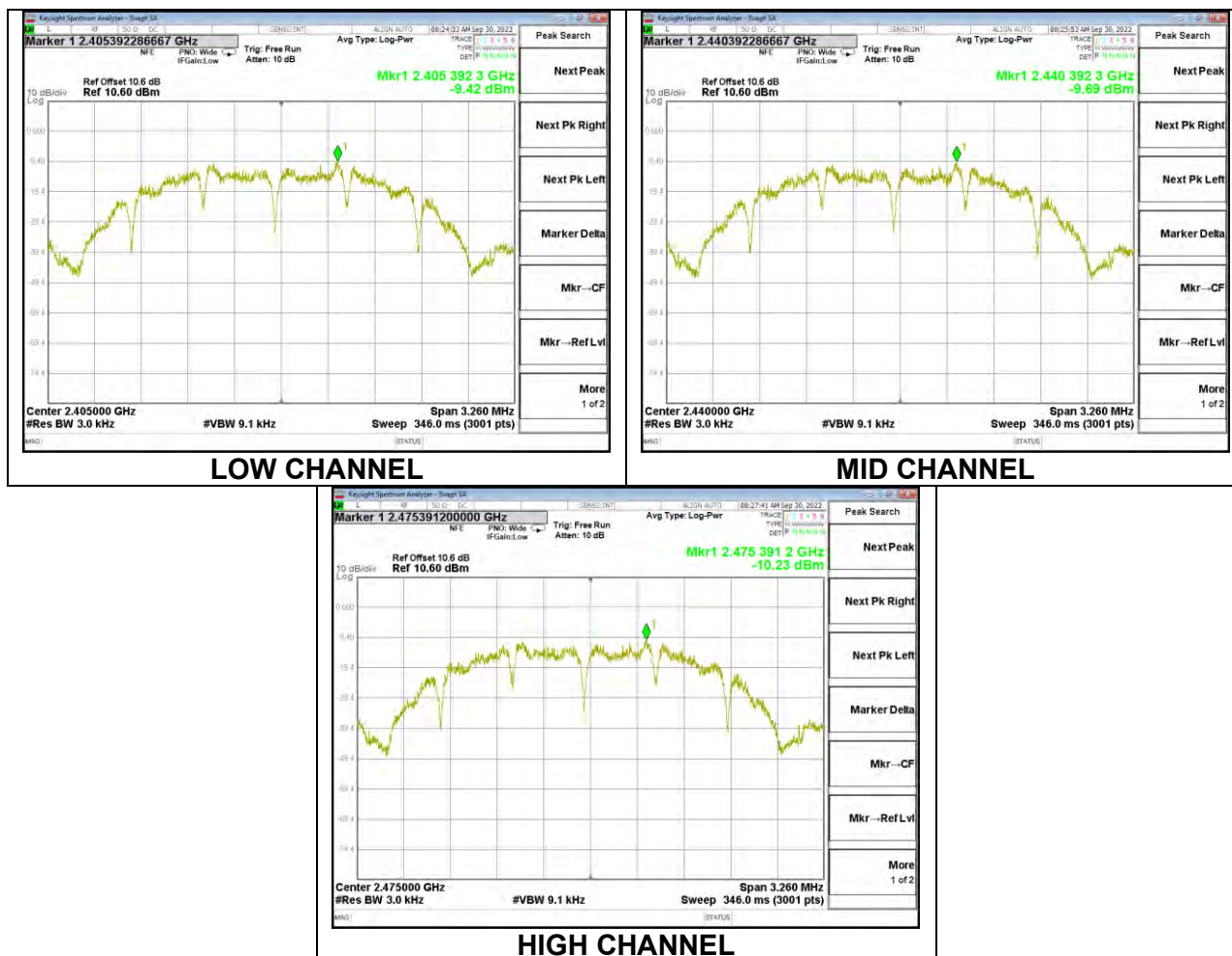


HIGH CHANNEL

9.5.3. Zigbee

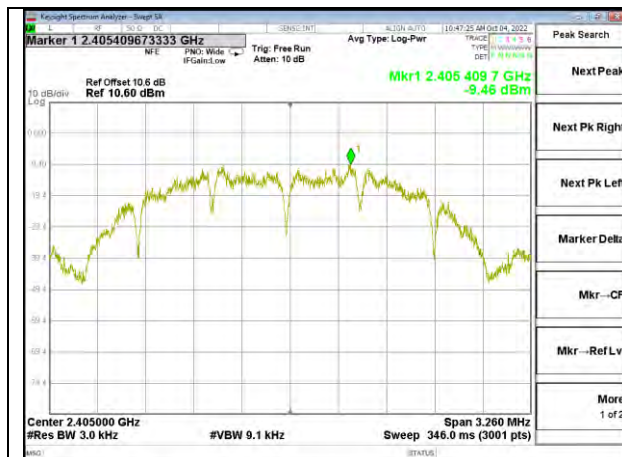
Sample s30

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2405	-9.42	8	-17.42
Middle	2440	-9.69	8	-17.69
High	2475	-10.23	8	-18.23

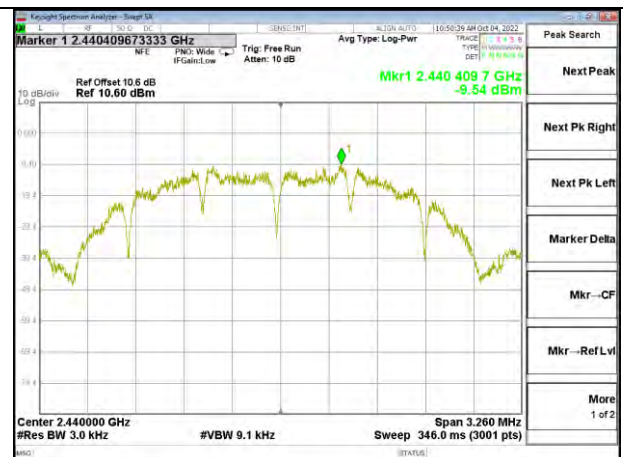


Sample s33

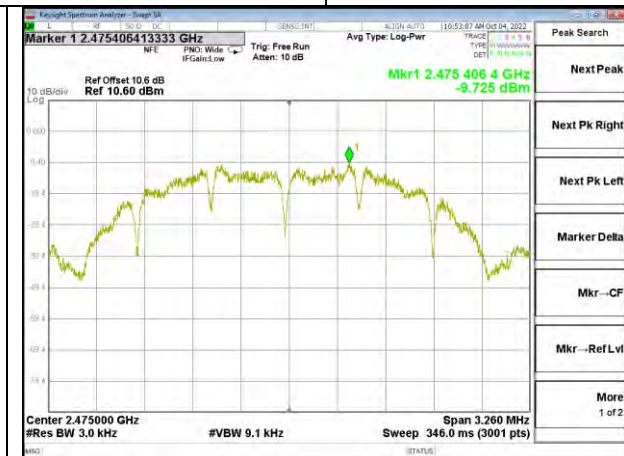
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2405	-9.46	8	-17.46
Middle	2440	-9.54	8	-17.54
High	2475	-9.73	8	-17.73



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

9.6. CONDUCTED SPURIOUS EMISSIONS

Tested by: BM06740
Test Date: see data below

LIMITS

FCC §15.247 (d)

RSS-247 5.5

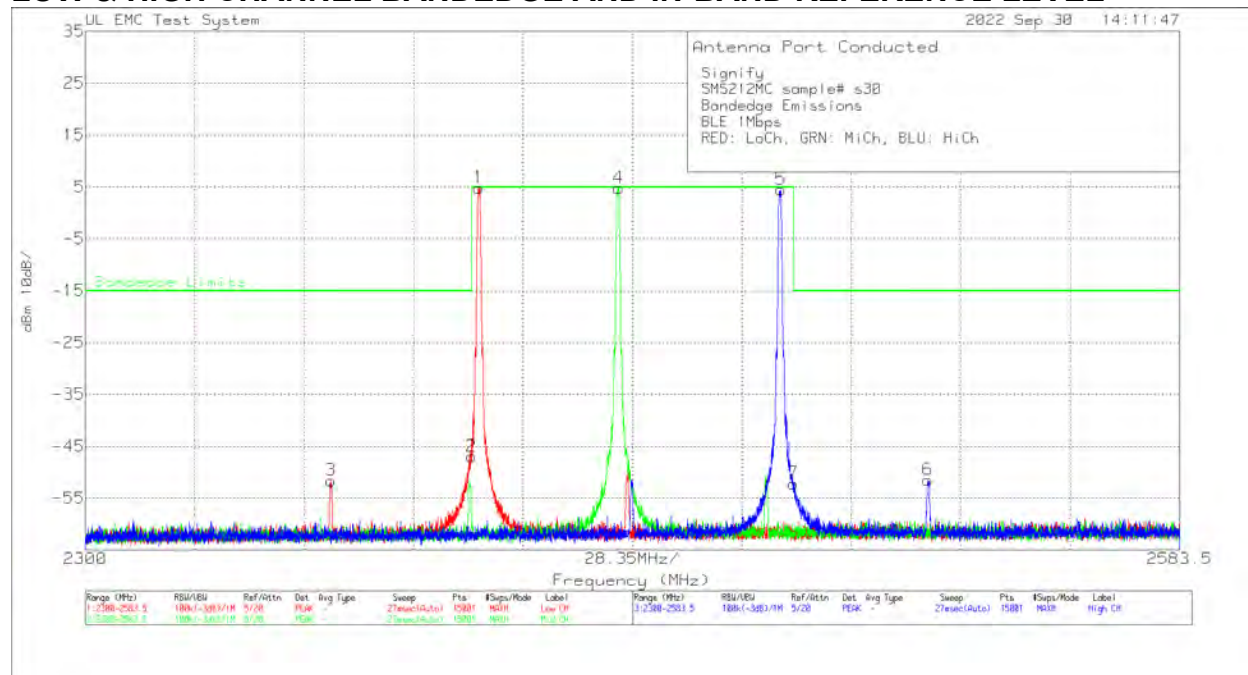
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS

9.6.1. BLE (1Mbps)

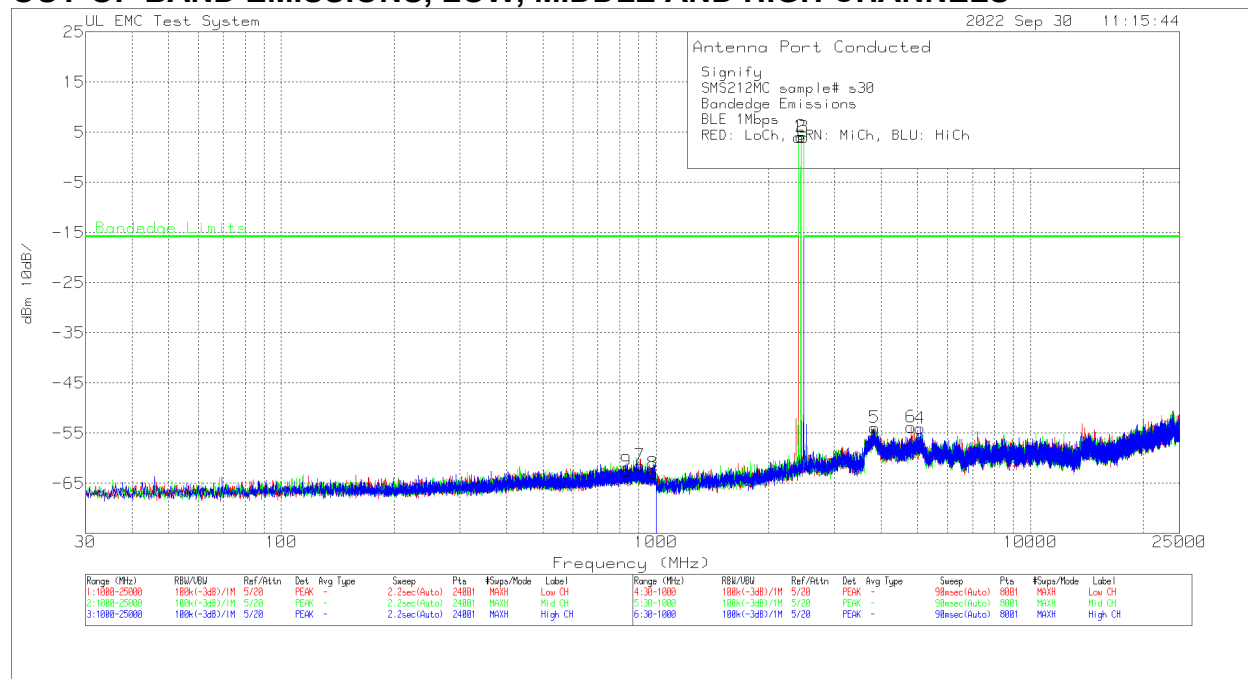
Sample s30

LOW & HIGH CHANNEL BANDEDGE AND IN-BAND REFERENCE LEVEL



Signify							
SMS212MC sample# s30							
Bandedge Emissions							
BLE 1Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
Low Channel							
1	2401.9466	-5.66	Pk	10.5	4.84	4.94	-0.1
2	2400	-57.4	Pk	10.5	-46.9	-15.06	-31.84
3	2363.6363	-62.06	Pk	10.5	-51.56	-15.06	-36.5
Middle Channel							
4	2438.1968	-5.77	Pk	10.6	4.83	4.94	-0.11
High Channel							
5	2480.1926	-6.12	Pk	10.6	4.48	4.94	-0.46
6	2518.2572	-62.04	Pk	10.6	-51.44	-15.06	-36.38
7	2483.5	-62.75	Pk	10.6	-52.15	-15.06	-37.09
Pk - Peak detector							

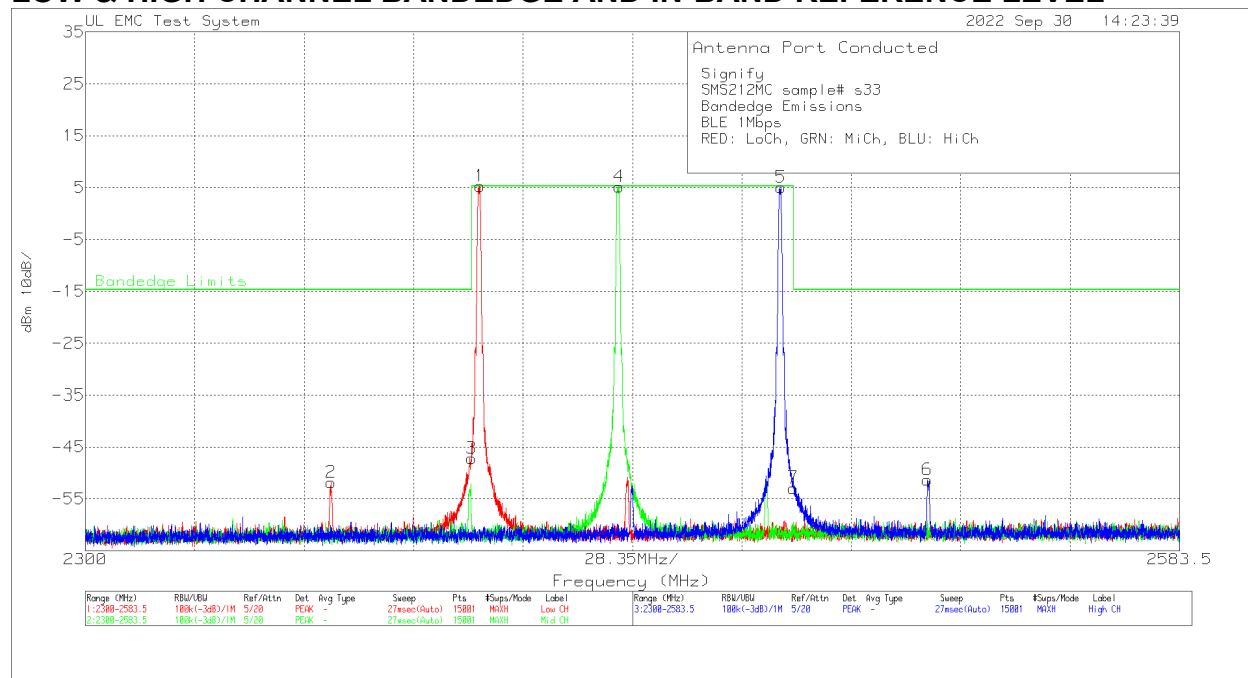
OUT-OF-BAND EMISSIONS, LOW, MIDDLE AND HIGH CHANNELS



Signify							
SMS212MC sample# s30							
Bandedge Emissions							
BLE 1Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Range 1: Low CH 1000 - 25000MHz							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
1	2402	-6.53	Pk	10.5	3.97	4.16	-0.19
6	4803	-64.57	Pk	10.8	-53.77	-15.84	-37.93
2	2438	-6.44	Pk	10.6	4.16	4.16	0
5	3839	-64.59	Pk	10.7	-53.89	-15.84	-38.05
3	2480	-6.59	Pk	10.6	4.01	4.16	-0.15
4	5076	-64.92	Pk	10.9	-54.02	-15.84	-38.18
7	906.51625	-71.64	Pk	10.2	-61.44	-15.84	-45.6
8	982.54	-73.18	Pk	10.2	-62.98	-15.84	-47.14
9	834.00875	-72.78	Pk	10.2	-62.58	-15.84	-46.74
Pk - Peak detector							

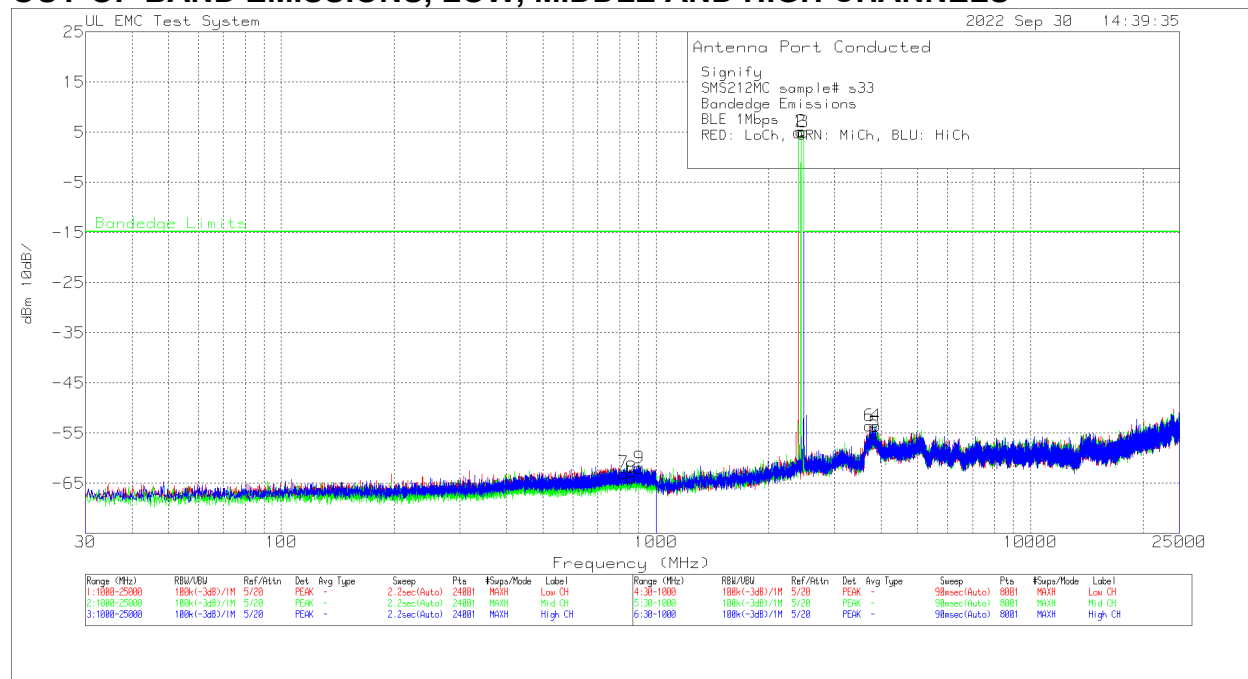
Sample s33

LOW & HIGH CHANNEL BANDEGE AND IN-BAND REFERENCE LEVEL



Signify							
SMS212MC sample# s30							
Bandedge Emissions							
BLE 1Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
Low Channel							
1	2401.9466	-5.66	Pk	10.5	4.84	4.94	-0.1
2	2400	-57.4	Pk	10.5	-46.9	-15.06	-31.84
3	2363.6363	-62.06	Pk	10.5	-51.56	-15.06	-36.5
Middle Channel							
4	2438.1968	-5.77	Pk	10.6	4.83	4.94	-0.11
High Channel							
5	2480.1926	-6.12	Pk	10.6	4.48	4.94	-0.46
6	2518.2572	-62.04	Pk	10.6	-51.44	-15.06	-36.38
7	2483.5	-62.75	Pk	10.6	-52.15	-15.06	-37.09
Pk - Peak detector							

OUT-OF-BAND EMISSIONS, LOW, MIDDLE AND HIGH CHANNELS

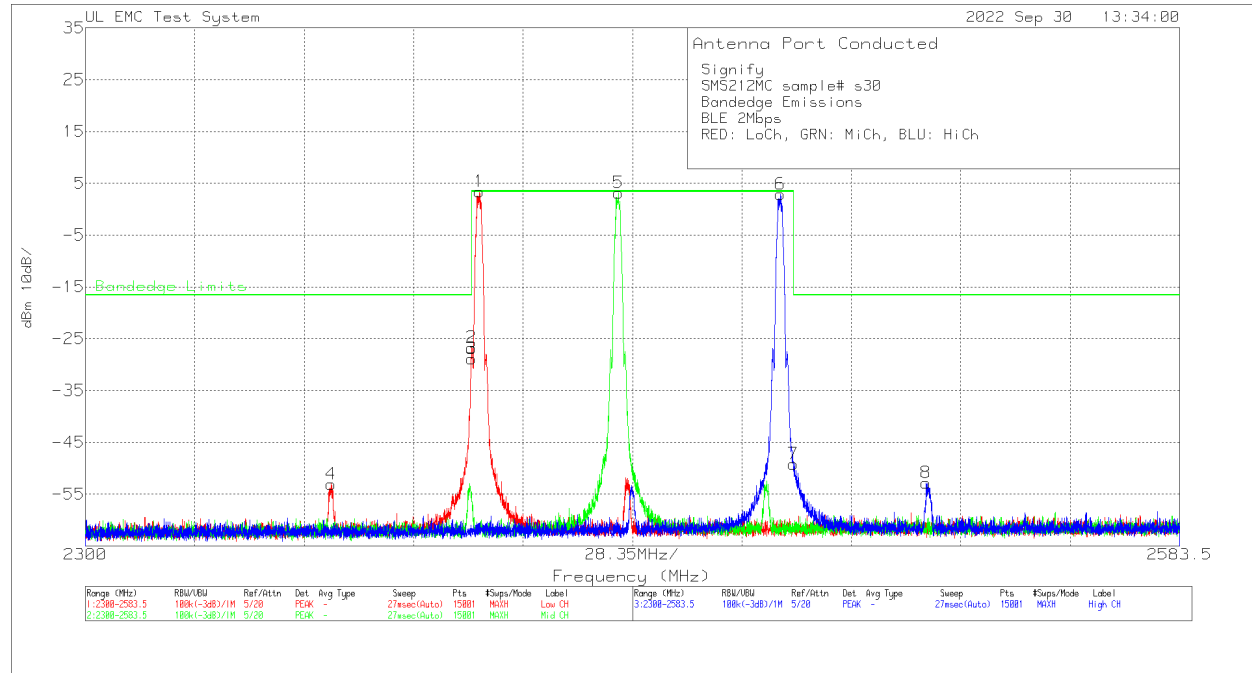


Signify							
SMS212MC sample# s33							
Bandedge Emissions							
BLE 1Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
1	2402	-5.52	Pk	10.5	4.98	5.12	-0.14
6	3714	-64.22	Pk	10.7	-53.52	-14.88	-38.64
2	2438	-5.48	Pk	10.6	5.12	5.12	0
5	3852	-65.61	Pk	10.7	-54.91	-14.88	-40.03
3	2480	-5.61	Pk	10.6	4.99	5.12	-0.13
4	3864	-64.18	Pk	10.7	-53.48	-14.88	-38.6
7	820.065	-73.13	Pk	10.2	-62.93	-14.88	-48.05
8	860.19875	-74.16	Pk	10.2	-63.96	-14.88	-49.08
9	903.2425	-72.2	Pk	10.2	-62	-14.88	-47.12
Pk - Peak detector							

9.6.2. BLE (2Mbps)

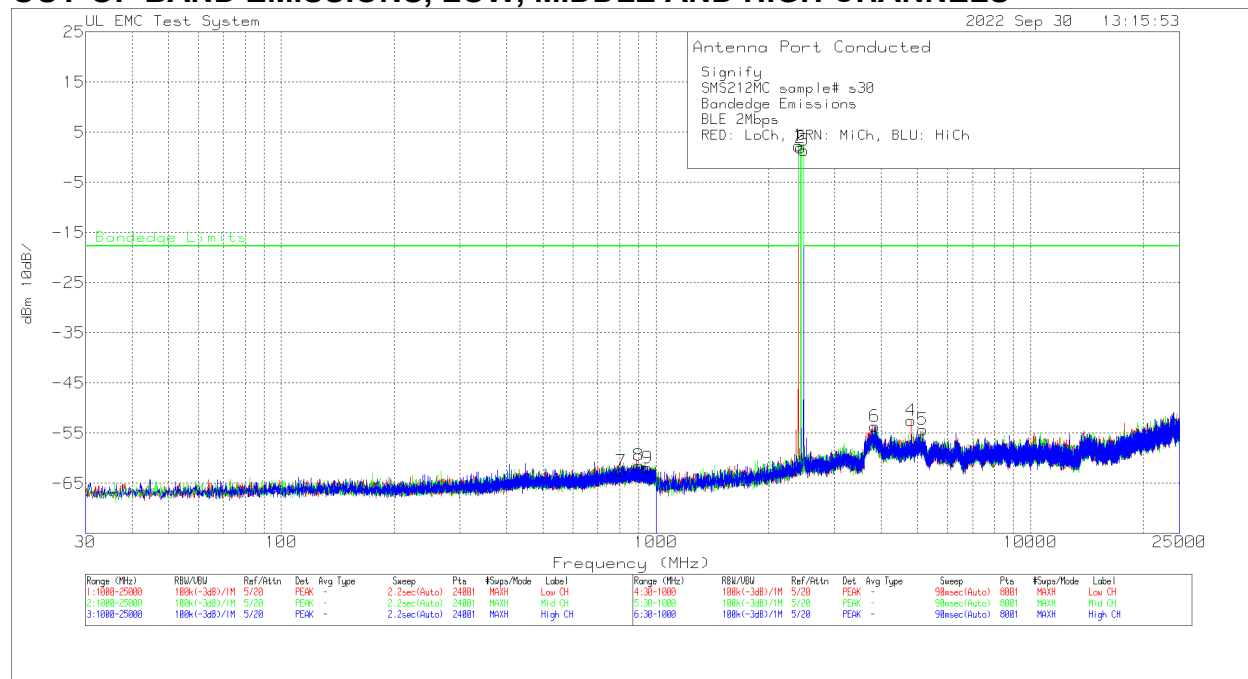
Sample s30

LOW & HIGH CHANNEL BANDEGE AND IN-BAND REFERENCE LEVEL



Signify							
SMS212MC sample# s30							
Bandedge Emissions							
BLE 2Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
Low Channel							
1	2402.1167	-7.09	Pk	10.5	3.41	3.41	0
2	2400.0944	-37.23	Pk	10.5	-26.73	3.41	-30.14
3	2400	-39.38	Pk	10.5	-28.88	-16.59	-12.29
4	2363.6552	-63.63	Pk	10.5	-53.13	-16.59	-36.54
Middle Channel							
5	2438.1023	-7.4	Pk	10.6	3.2	3.41	-0.21
High Channel							
6	2480.0981	-7.72	Pk	10.6	2.88	3.41	-0.53
7	2483.5	-59.8	Pk	10.6	-49.2	-16.59	-32.61
8	2517.8603	-63.38	Pk	10.6	-52.78	-16.59	-36.19
Pk - Peak detector							

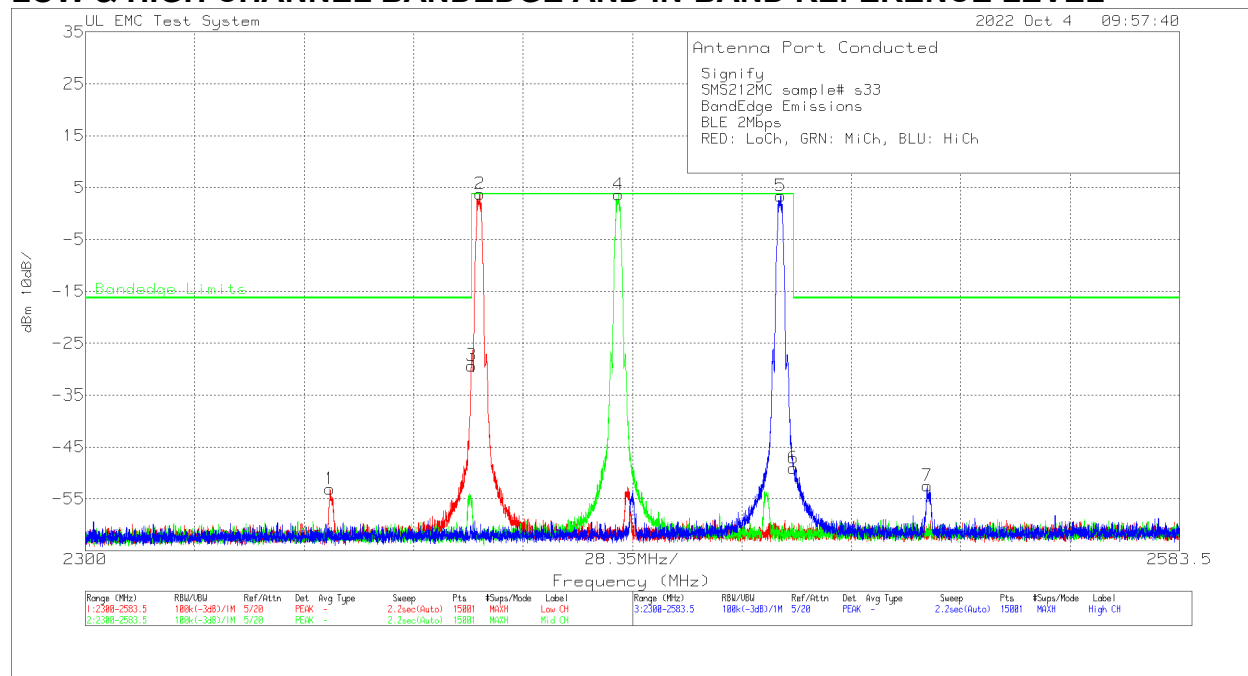
OUT-OF-BAND EMISSIONS, LOW, MIDDLE AND HIGH CHANNELS



Signify							
SMS212MC sample# s30							
Bandedge Emissions							
BLE 2Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
1	2402	-8.19	Pk	10.5	2.31	2.31	0.00
4	4805	-63.3	Pk	10.8	-52.5	-17.69	-34.81
2	2437	-8.7	Pk	10.6	1.9	2.31	-0.41
5	5158	-65.25	Pk	10.9	-54.35	-17.69	-36.66
3	2480	-9.24	Pk	10.6	1.36	2.31	-0.95
6	3837	-64.39	Pk	10.7	-53.69	-17.69	-36
7	808.91	-72.8	Pk	10.2	-62.6	-17.69	-44.91
8	898.15	-71.66	Pk	10.2	-61.46	-17.69	-43.77
9	950.7725	-72.14	Pk	10.2	-61.94	-17.69	-44.25
Pk - Peak detector							

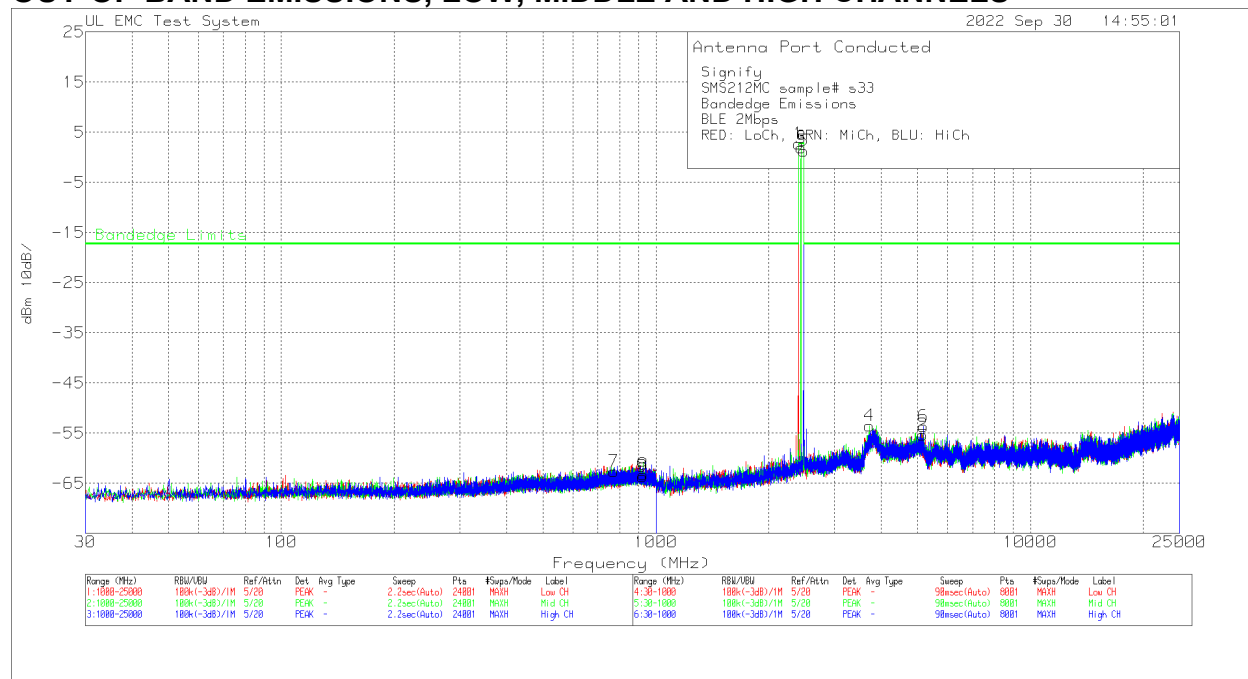
Sample s33

LOW & HIGH CHANNEL BANDEGE AND IN-BAND REFERENCE LEVEL



Signify							
SMS212MC sample# s33							
BandEdge Emissions							
BLE 2Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
Low Channel							
1	2363.3906	-63.6	Pk	10.5	-53.1	-16.27	-36.83
2	2402.1545	-6.77	Pk	10.5	3.73	3.73	0.00
3	2400.0188	-39.8	Pk	10.5	-29.3	3.73	-33.03
Middle Channel							
4	2438.1401	-6.92	Pk	10.6	3.68	3.73	-0.05
High Channel							
5	2480.1454	-7.16	Pk	10.6	3.44	3.73	-0.29
6	2483.5001	-59.66	Pk	10.6	-49.06	-16.27	-32.79
7	2518.0682	-63.09	Pk	10.6	-52.49	-16.27	-36.22
Pk - Peak detector							

OUT-OF-BAND EMISSIONS, LOW, MIDDLE AND HIGH CHANNELS

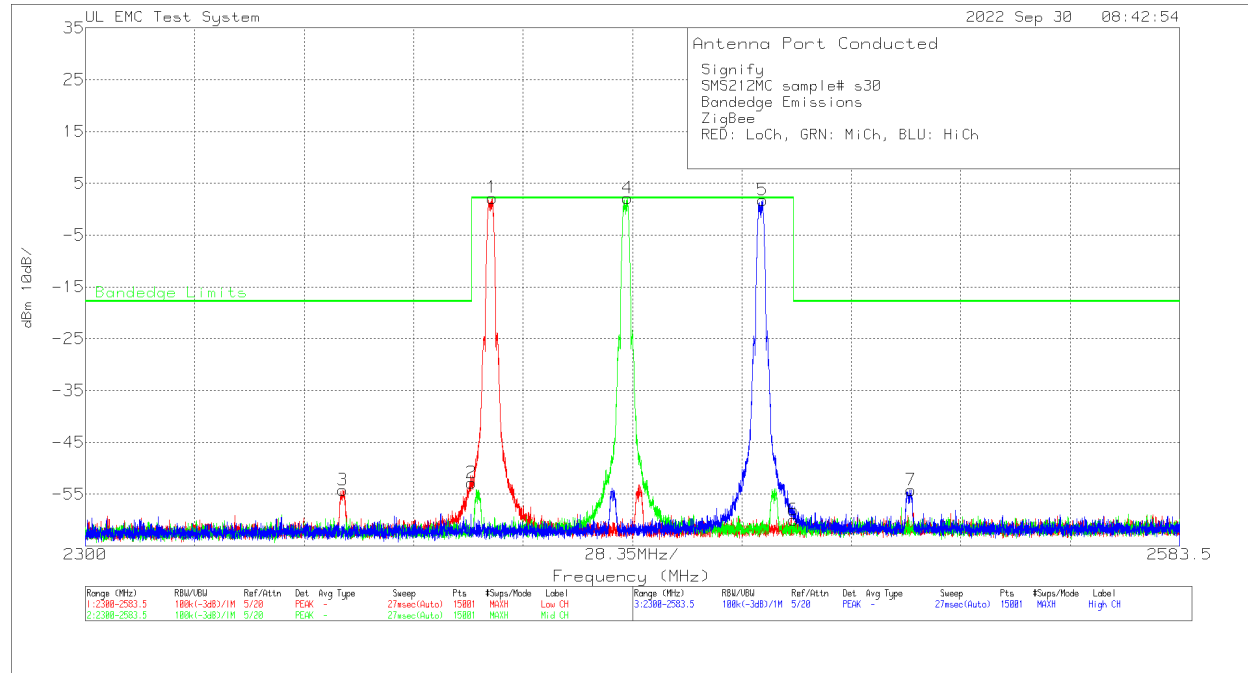


Signify							
SMS212MC sample# s33							
Bandedge Emissions							
BLE 2Mbps							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
1	2402	-7.77	Pk	10.5	2.73	2.73	0.00
2	5162	-66.23	Pk	10.9	-55.33	-17.27	-38.06
3	2438	-8.64	Pk	10.6	1.96	2.73	-0.77
4	3714	-64.23	Pk	10.7	-53.53	-17.27	-36.26
5	2480	-9.36	Pk	10.6	1.24	2.73	-1.49
6	5176	-64.52	Pk	10.9	-53.62	-17.27	-36.35
7	772.65625	-72.79	Pk	10.2	-62.59	-17.27	-45.32
8	924.70375	-73.47	Pk	10.2	-63.27	-17.27	-46
9	921.06625	-73.88	Pk	10.2	-63.68	-17.27	-46.41
Pk - Peak detector							

9.6.3. Zigbee

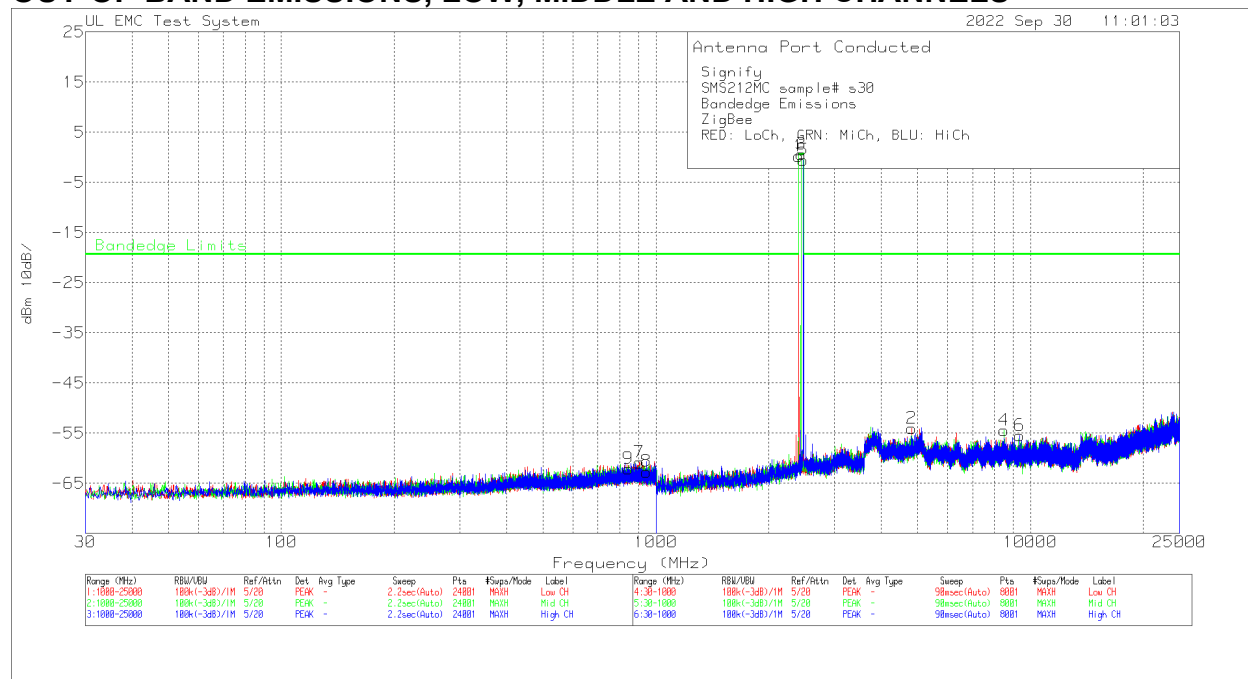
Sample s30

LOW & HIGH CHANNEL BANDEGE AND IN-BAND REFERENCE LEVEL



RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
Low Channel							
1	2405.462	-8.29	Pk	10.5	2.21	2.21	0.00
2	2400	-63.37	Pk	10.5	-52.87	-17.79	-35.08
3	2366.6603	-64.67	Pk	10.5	-54.17	-17.79	-36.38
Middle Channel							
4	2440.4554	-8.5	Pk	10.6	2.1	2.21	-0.11
High Channel							
5	2475.4487	-8.83	Pk	10.6	1.77	2.21	-0.44
6	2483.5	-70.63	Pk	10.6	-60.03	-17.79	-42.24
7	2513.8913	-64.85	Pk	10.6	-54.25	-17.79	-36.46
Pk - Peak detector							

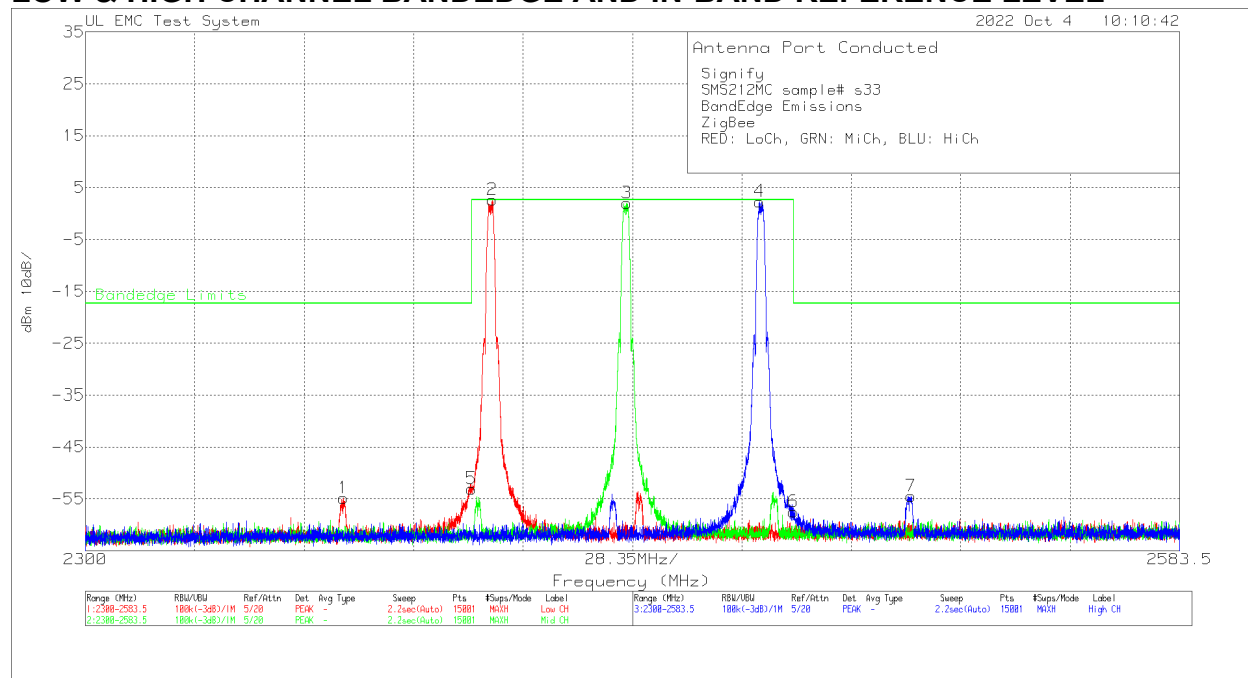
OUT-OF-BAND EMISSIONS, LOW, MIDDLE AND HIGH CHANNELS



Signify							
SMS212MC sample# s30							
Bandedge Emissions							
ZigBee							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
1	2404	-10.26	Pk	10.5	0.24	0.68	-0.44
2	4809	-64.79	Pk	10.8	-53.99	-19.32	-34.67
3	2441	-9.92	Pk	10.6	0.68	0.68	0.00
4	8503	-65.49	Pk	11.1	-54.39	-19.32	-35.07
5	2475	-11.17	Pk	10.6	-0.57	0.68	-1.25
6	9355	-66.72	Pk	11.2	-55.52	-19.32	-36.2
7	902.03	-71.05	Pk	10.2	-60.85	-19.32	-41.53
8	942.40625	-72.87	Pk	10.2	-62.67	-19.32	-43.35
9	843.5875	-72.28	Pk	10.2	-62.08	-19.32	-42.76
Pk - Peak detector							

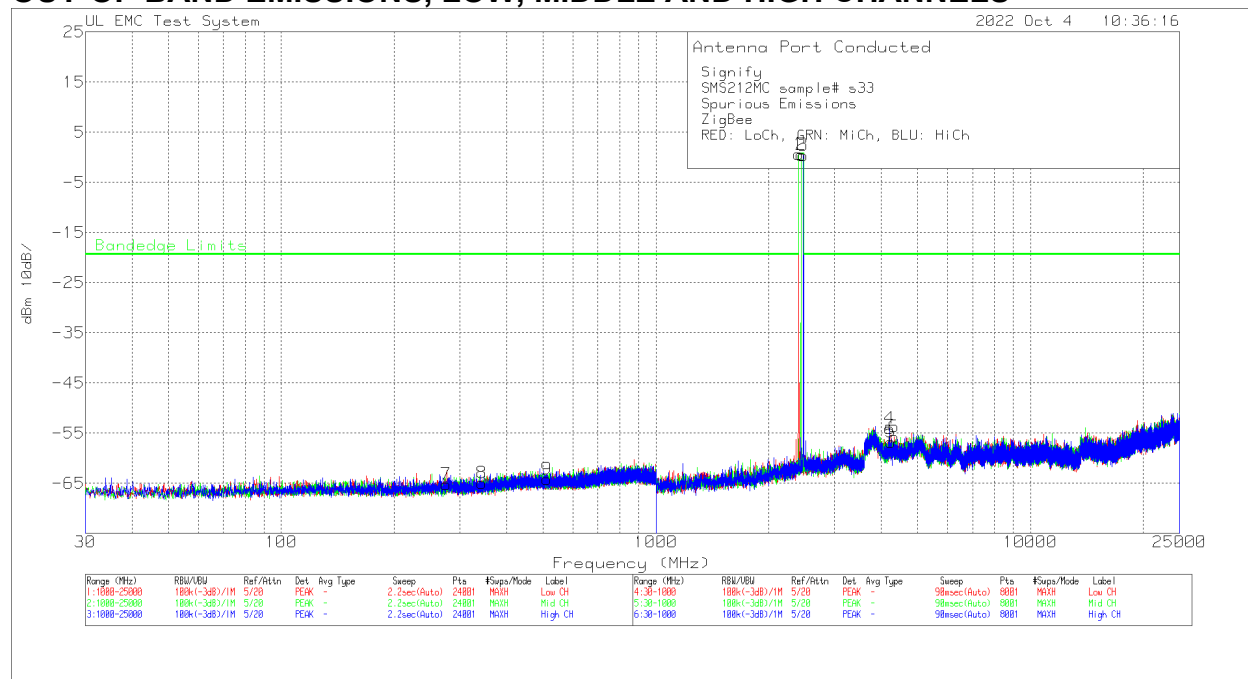
Sample s33

LOW & HIGH CHANNEL BANDEDGE AND IN-BAND REFERENCE LEVEL



Signify							
SMS212MC sample# s33							
BandEdge Emissions							
ZigBee							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
Low Channel							
1	2366.8777	-65.39	Pk	10.5	-54.89	-17.37	-37.52
2	2405.4809	-7.87	Pk	10.5	2.63	2.63	0
5	2400	-63.53	Pk	10.5	-53.03	-17.37	-35.66
Middle Channel							
3	2440.2569	-8.57	Pk	10.6	2.03	2.63	-0.6
High Channel							
4	2474.7211	-8.27	Pk	10.6	2.33	2.63	-0.3
6	2483.5	-68.06	Pk	10.6	-57.46	-17.37	-40.09
7	2513.8724	-65.08	Pk	10.6	-54.48	-17.37	-37.11
Pk - Peak detector							

OUT-OF-BAND EMISSIONS, LOW, MIDDLE AND HIGH CHANNELS



Signify							
SMS212MC sample# s33							
Spurious Emissions							
ZigBee							
RED: LoCh, GRN: MiCh, BLU: HiCh							
Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Cable and Attenuator dB	Corrected Reading dBm	Bandedge Limits	Margin (dB)
1	2405	-9.85	Pk	10.5	0.65	0.65	0.00
6	4330	-66.52	Pk	10.8	-55.72	-19.35	-36.37
2	2440	-10.05	Pk	10.6	0.55	0.65	-0.1
5	4234	-67.57	Pk	10.8	-56.77	-19.35	-37.42
3	2475	-10.17	Pk	10.6	0.43	0.65	-0.22
4	4204	-64.82	Pk	10.8	-54.02	-19.35	-34.67
7	275.1675	-75.11	Pk	9.9	-65.21	-19.35	-45.86
8	342.94625	-74.98	Pk	10	-64.98	-19.35	-45.63
9	512.21125	-74.21	Pk	10.1	-64.11	-19.35	-44.76
Pk - Peak detector							

10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters for frequencies below 30MHz and above 1GHz. Between 30MHz and 1GHz the antenna to EUT distance is 10m. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is varies based on frequency range scanned (information is shown in plots); the video bandwidth is set to 1MHz minimum.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements. Average measurements are conducted in power RMS mode with RBW set to 1MHz and VBW set to 3MHz.

The spectrum from 1 GHz to 25 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz worst case channel was tested based on measurements above 1GHz.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

2D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

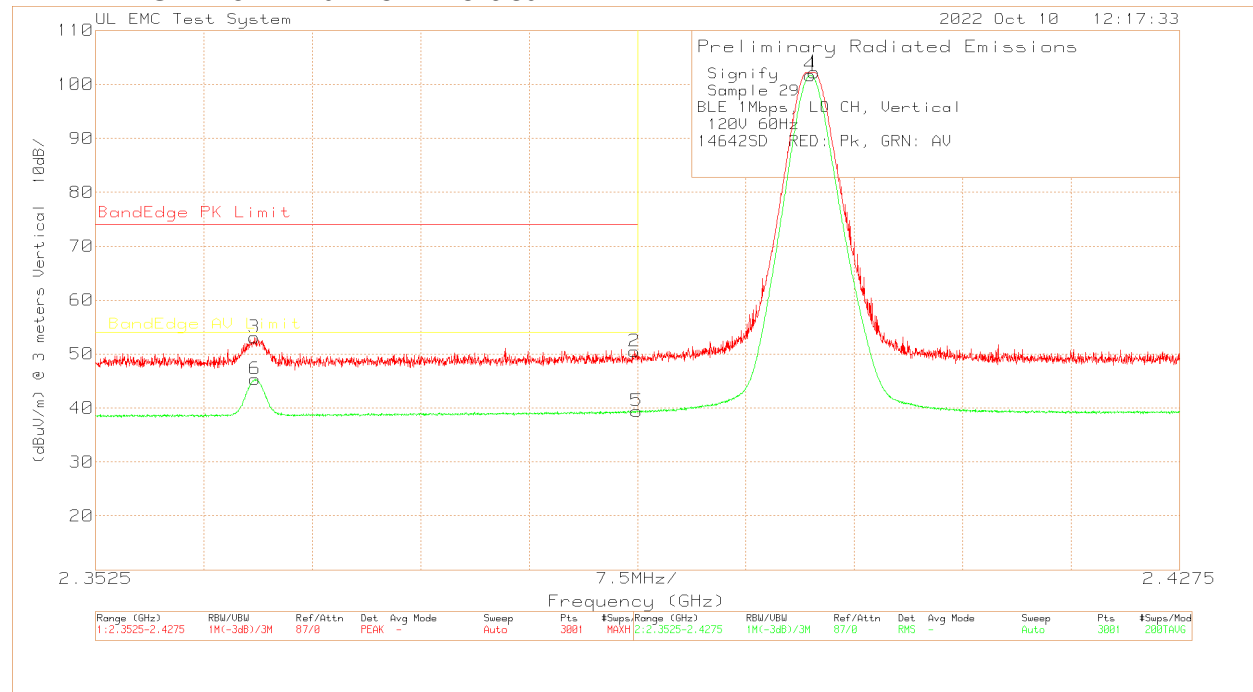
Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

In all radiated emissions results above 1GHz where detector is referred to as Av it is Power RMS detector.

KDB 414788 Open Field Site(OFS) and Chamber Correlation Justification

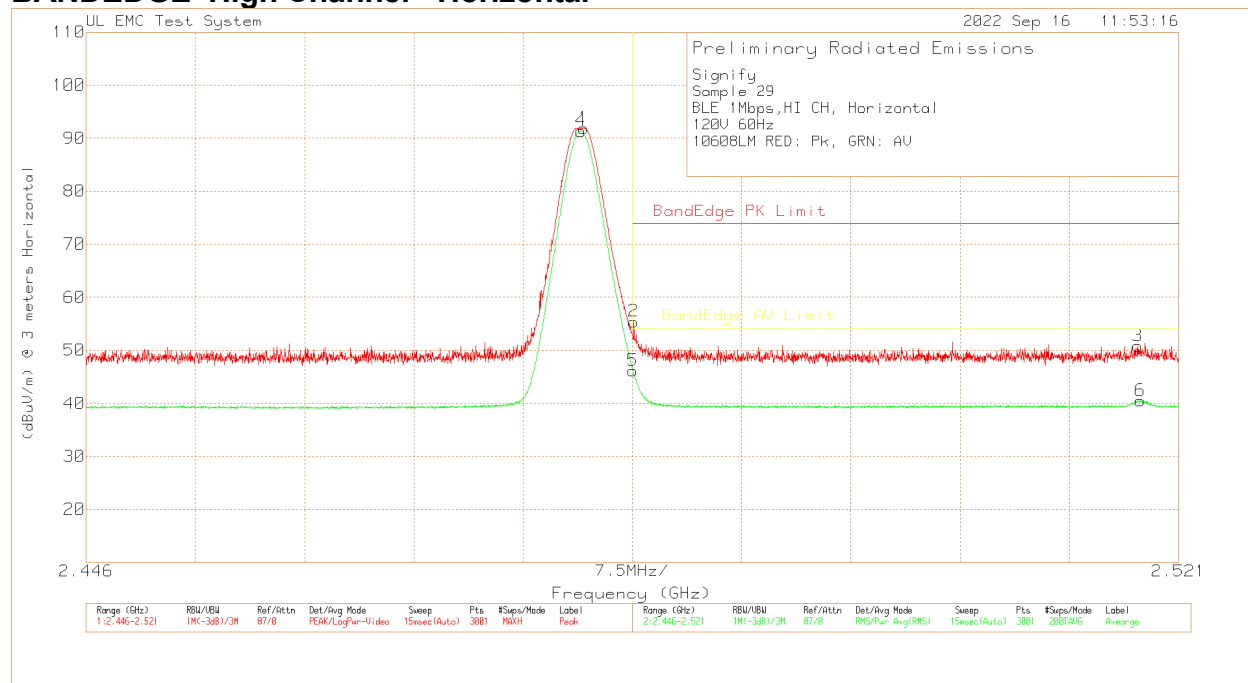
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

NOTE: The limits in 47 CFR Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table), using the free space impedance of 377 Ohms. For example the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to $Y - 51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.



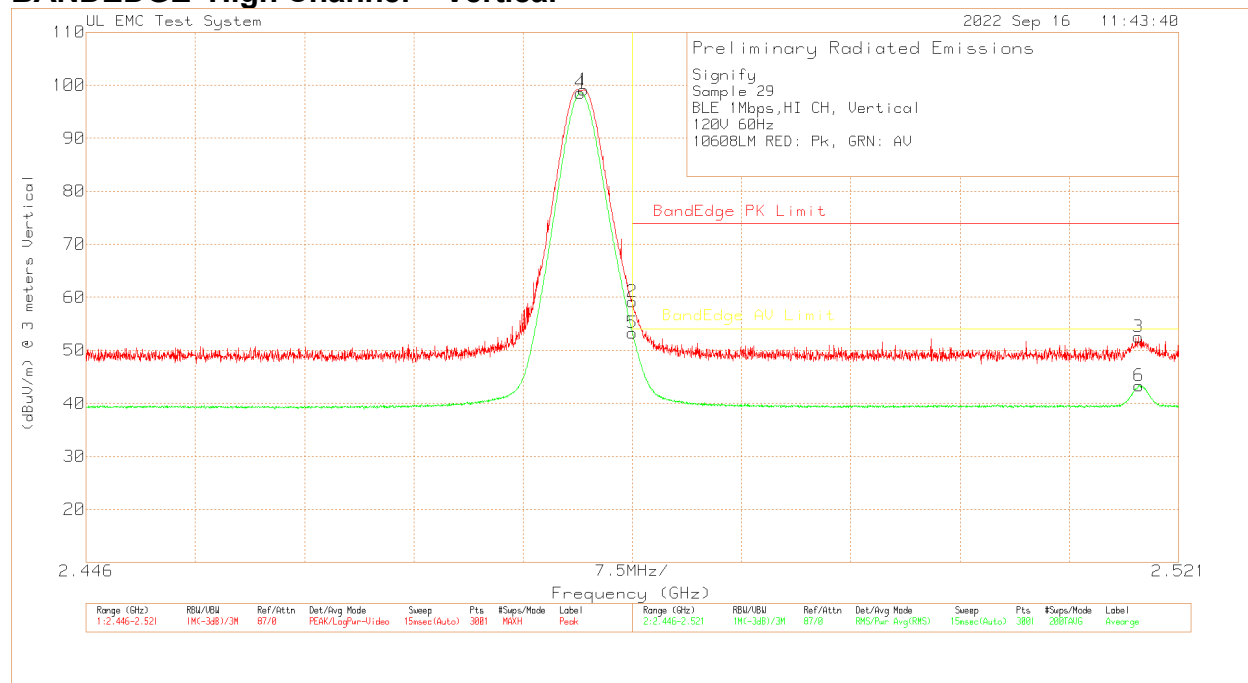
Signify															
Sample 29															
BLE 1Mbps, LO CH, Vertical															
120V 60Hz															
14642SD RED: Pk, GRN: AV															
Trace Markers															
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Deps]	Height [cm]	Polarity	
Peak															
1	2.402213	75.77	Pk	21.8	4.68		102.25	-	-	-	-	49	130	V	
2	2.39	24	Pk	21.8	4.72		50.52	74	-23.48	-	-	49	130	V	
3	2.363475	26.74	Pk	21.8	4.56		53.1	74	-20.9	-	-	49	130	V	
Average															
4	2.40195	75.21	RMS	21.8	4.68		101.69	-	-	-	-	49	130	V	
5	2.39	12.94	RMS	21.8	4.72		39.46	-	-	54	-14.54	49	130	V	
6	2.363525	18.99	RMS	21.8	4.56		45.35	-	-	54	-8.65	49	130	V	
Pk - Peak detector															
Av - Average Detector															
* Source based duty cyle factor not used, eut complies without using the factor.															

BANEDGE High Channel - Horizontal



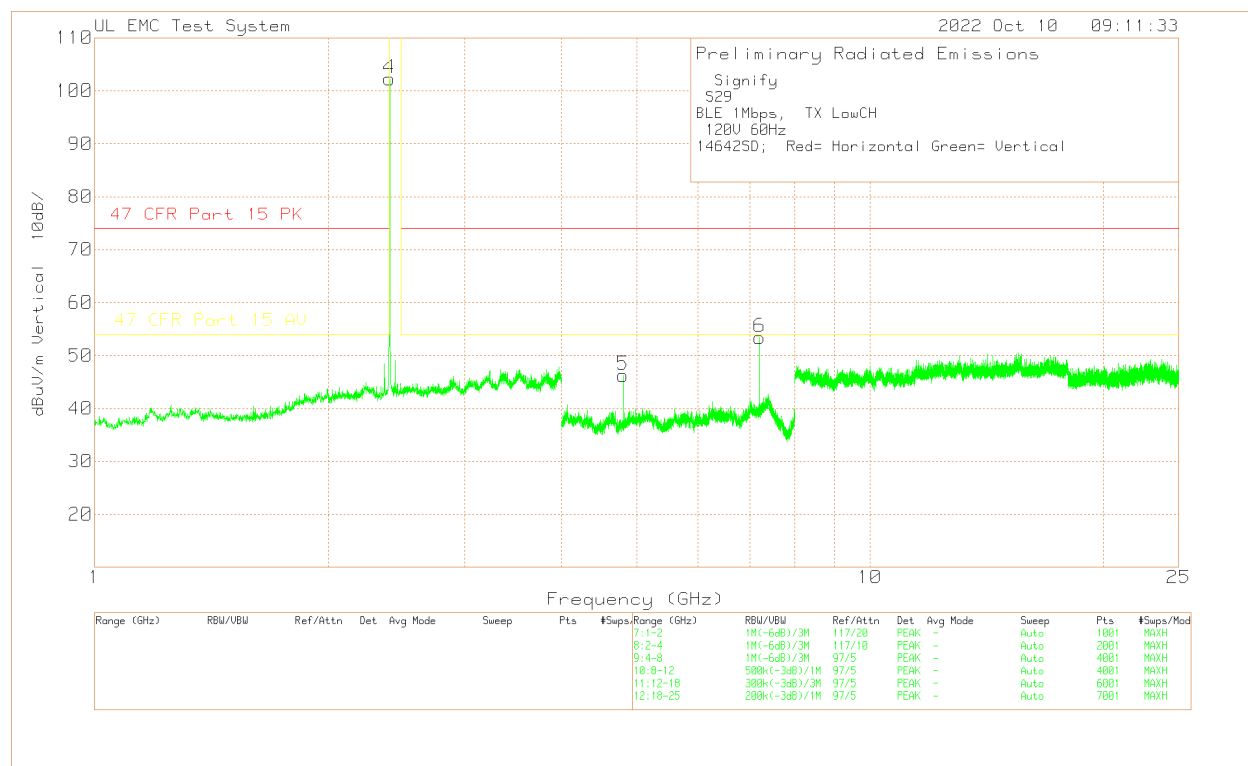
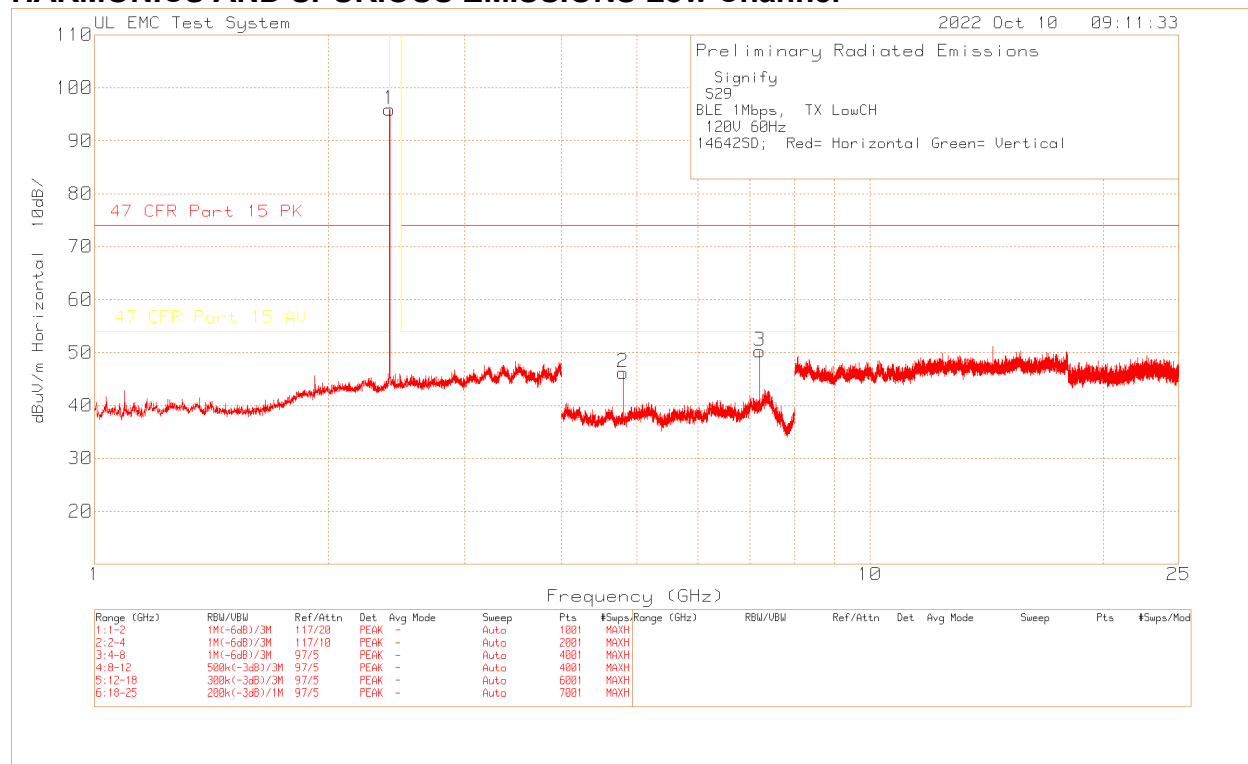
Signify														
S29														
BLE 1Mbps, TX LOCH														
120V 60Hz														
RED: PK, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.4802	65.44	Pk	22	4.46	-	91.9	-	-	-	-	28	272	H
2	2.4835	28.87	Pk	22.1	4.47	-	55.44	74	-18.56	-	-	28	272	H
3	2.5182	24.28	Pk	22.1	4.47	-	50.85	74	-23.15	-	-	28	272	H
Average														
*4	2.48	64.88	Av	22	4.46	-	91.34	-	-	-	-	28	272	H
*5	2.4835	19.57	Av	22.1	4.47	-	46.14	-	-	54	-7.86	28	272	H
*6	2.5184	13.95	Av	22.1	4.47	-	40.52	-	-	54	-13.48	28	272	H
Pk - Peak detector														
Av - Average Detector														
* Source based duty cycle factor not used, eut complies without using the factor.														

BANDEDGE High Channel – Vertical



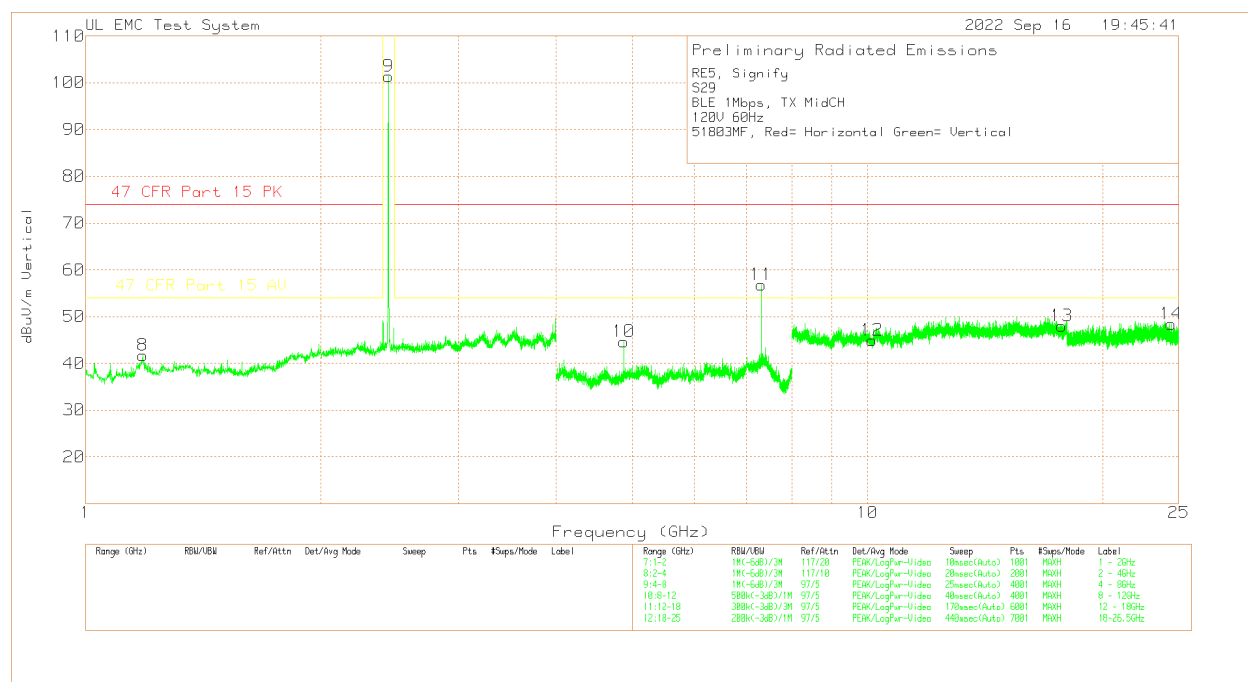
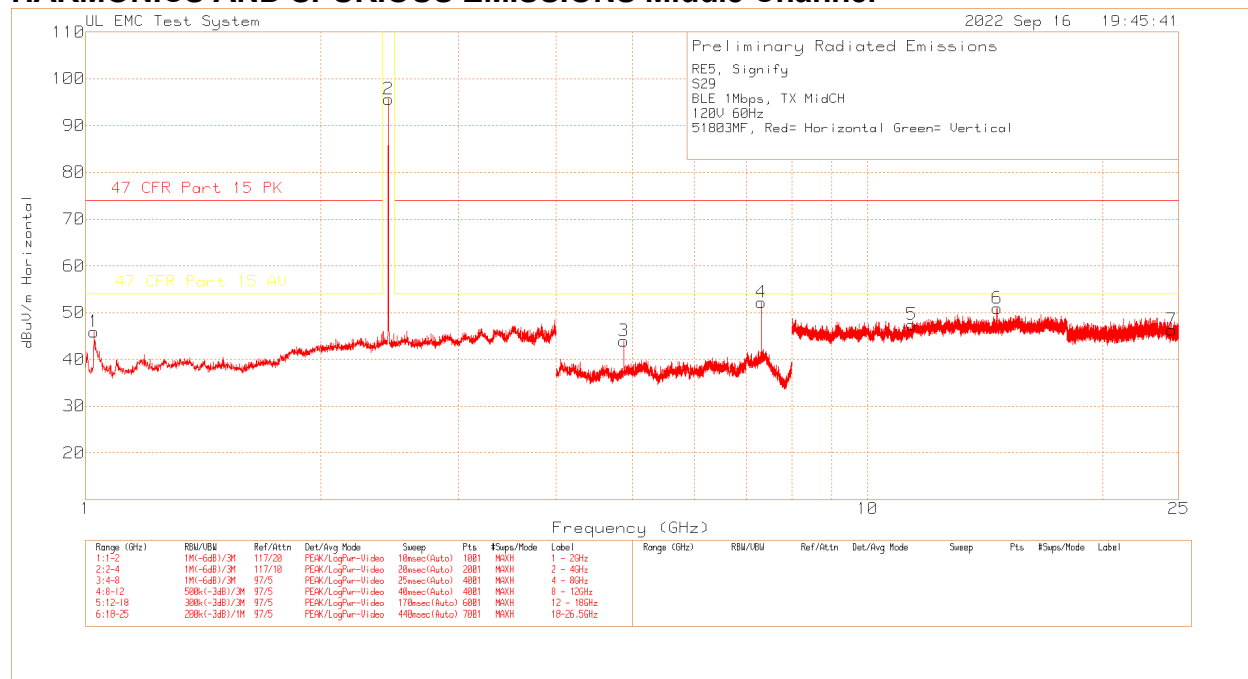
Signify															
S29															
BLE 1Mbps, TX HiCh															
120V 60Hz															
RED: PK, GRN: AV															
Trace Markers															
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degr]	Height [cm]	Polarity	
Peak															
1	2.4802	72.64	Pk	22	4.46	-	99.1	-	-	-	-	0	101	V	
2	2.4835	32.62	Pk	22.1	4.47	-	59.19	74	-14.81	-	-	0	101	V	
3	2.5182	25.97	Pk	22.1	4.47	-	52.54	74	-21.46	-	-	0	101	V	
Average															
4	2.4799	72.07	Av	22	4.46	-	98.53	-	-	-	-	0	101	V	
5	2.4835	26.74	Av	22.1	4.47	-	53.31	-	-	54	-0.69	0	101	V	
6	2.5183	16.77	Av	22.1	4.47	-	43.34	-	-	54	-10.66	0	101	V	
Pk - Peak detector															
Av - Average Detector															
* Source based duty cycle factor not used, but complies without using the factor.															

HARMONICS AND SPURIOUS EMISSIONS Low Channel



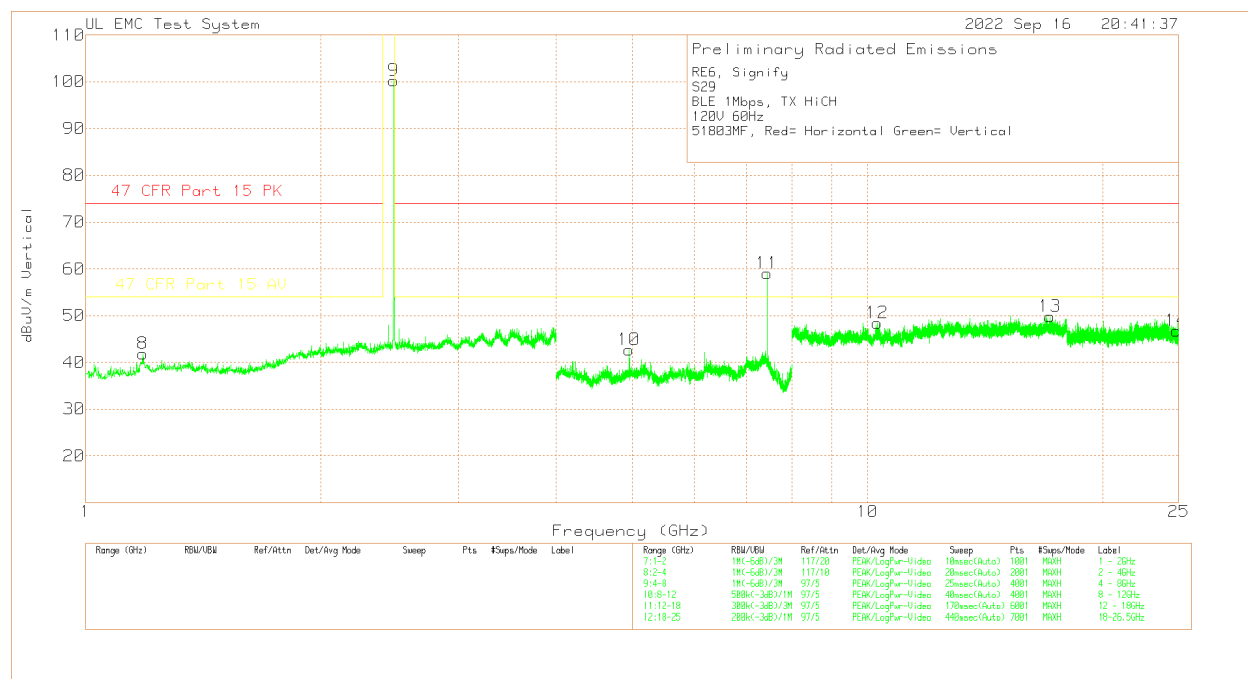
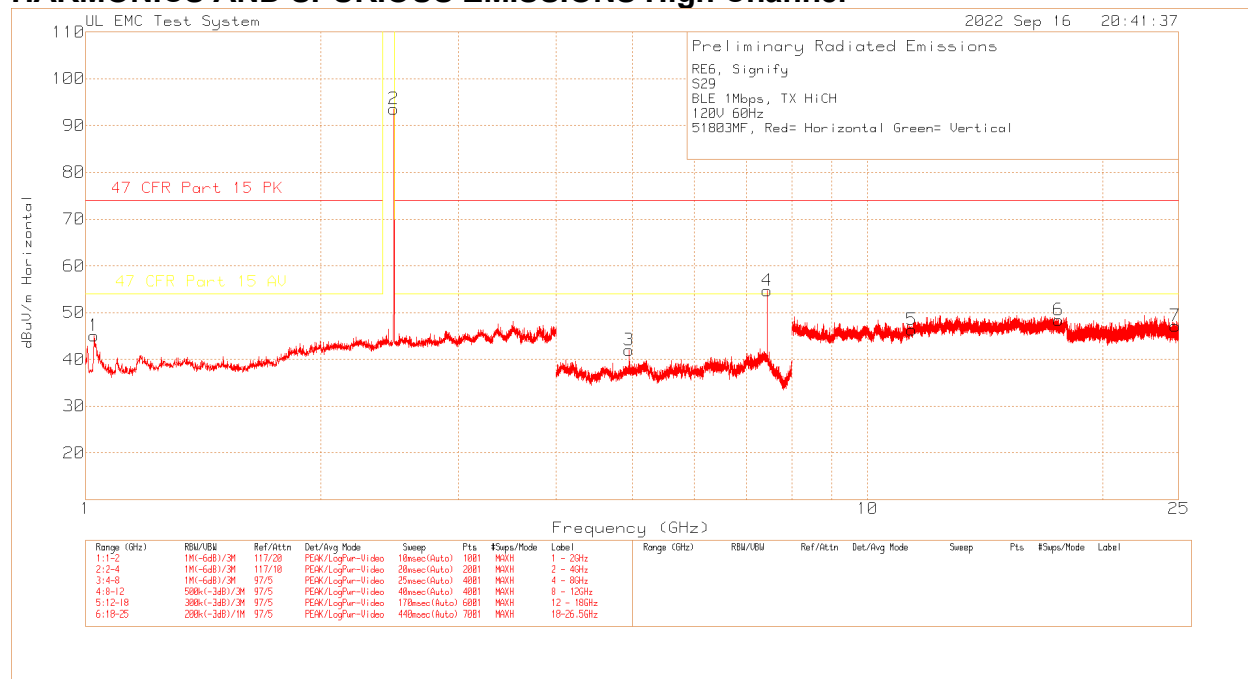
Signify														
S29														
BLE 1Mbps, TX Low CH														
120V 60Hz														
14642SD; Red= Horizontal Green= Vertical														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.401	113.59	Pk	21.8	-39.45	-	95.94	-	-	-	-	0-360	149	H
2	4.804	69.37	Pk	27.7	-50.84	-	46.23	74	-27.77	54	-7.77	0-360	199	H
3	7.207	66.54	Pk	29.8	-46.08	-	50.26	74	-23.74	54	-3.74	0-360	199	H
4	2.401	119.94	Pk	21.8	-39.45	-	102.29	-	-	-	-	0-360	101	V
5	4.804	69.41	Pk	27.7	-50.84	-	46.27	74	-27.73	54	-7.73	0-360	100	V
6	7.207	69.71	Pk	29.8	-46.08	-	53.43	74	-20.57	54	-0.57	0-360	100	V
Radiated Emission Data														
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.206426	68.58	Pk	29.7	-46.1	-	52.18	74	-21.82	54	-	220	199	H
*	7.206388	61.34	Av	29.7	-46.1	-26	18.94	74	-29.06	54	-35.06	220	199	H
	7.206507	72.13	Pk	29.7	-46.09	-	55.74	74	-18.26	54	-	281	102	V
*	7.206507	67.2	Av	29.7	-46.09	-26	24.81	74	-23.19	54	-29.19	281	102	V
Pk - Peak detector														
Av - Average detection														
* per FCC KDB 558074 D01 15.247 Meas Guidance v05r02 Source Based maximum operational duty cycle was added.														

HARMONICS AND SPURIOUS EMISSIONS Middle Channel



RE5, Signify														
S29														
BLE 1Mbps, TX MidCH														
120V 60Hz														
51803MF, Red= Horizontal Green= Vertical														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	1.026	74.96	Pk	27	-56	-	45.96	74	-28.04	54	-8.04	0-360	149	H
2	2.439	113.68	Pk	21.9	-39.95	-	95.63	-	-	-	-	0-360	101	H
3	4.88	66.16	Pk	27.7	-49.9	-	43.96	74	-30.04	54	-10.04	0-360	101	H
4	7.319	67.15	Pk	30.6	-45.53	-	52.22	74	-21.78	54	-1.78	0-360	199	H
5	11.4	56.59	Pk	37	-46.08	-	47.51	74	-26.49	54	-6.49	0-360	199	H
6	14.641	51.64	Pk	39.8	-40.44	-	51	74	-23	54	-3	0-360	100	H
7	24.526	52.75	Pk	40.3	-46.67	-	46.38	74	-27.62	54	-7.62	0-360	151	H
8	1.185	69.37	Pk	28.2	-55.82	-	41.75	74	-32.25	54	-12.25	0-360	101	V
9	2.439	119.45	Pk	21.9	-39.95	-	101.4	-	-	-	-	0-360	101	V
10	4.879	66.91	Pk	27.7	-50.02	-	44.59	74	-29.41	54	-9.41	0-360	101	V
11	7.319	71.68	Pk	30.6	-45.53	-	56.75	74	-17.25	54	2.75	0-360	101	V
12	10.138	57.61	Pk	36.3	-49.01	-	44.9	74	-29.1	54	-9.1	0-360	199	V
13	17.714	48.03	Pk	40	-40.04	-	47.99	74	-26.01	54	-6.01	0-360	101	V
14	24.477	55.05	Pk	40.3	-46.93	-	48.42	74	-25.58	54	-5.58	0-360	149	V
Radiated Emission Data														
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.3205	69.44	Pk	30.6	-45.54	-	54.5	74	-19.5	54	-	252	199	H
*	7.31993	62.98	Av	30.6	-45.5	-	48.08	74	-25.92	54	-5.92	252	199	H
	14.64122	58.12	Pk	39.8	-40.42	-	57.5	74	-16.5	54	-	360	100	H
*	14.64107	47.3	Av	39.8	-40.43	-	46.67	74	-27.33	54	-7.33	360	100	H
	7.32067	73.6	Pk	30.6	-45.55	-	58.65	74	-15.35	54	-	252	100	V
*	7.31989	68.22	Av	30.6	-45.5	-	53.32	74	-20.68	54	-0.68	252	100	V
	24.47778	61.41	Pk	40.3	-46.91	-	54.8	74	-19.2	54	-	0	148	V
*	24.47456	48.98	Av	40.3	-46.79	-	42.49	74	-31.51	54	-11.51	0	148	V
Pk - Peak detector														
Av - Average detection														
* Source based duty cycle factor not used, but complies without using the factor.														

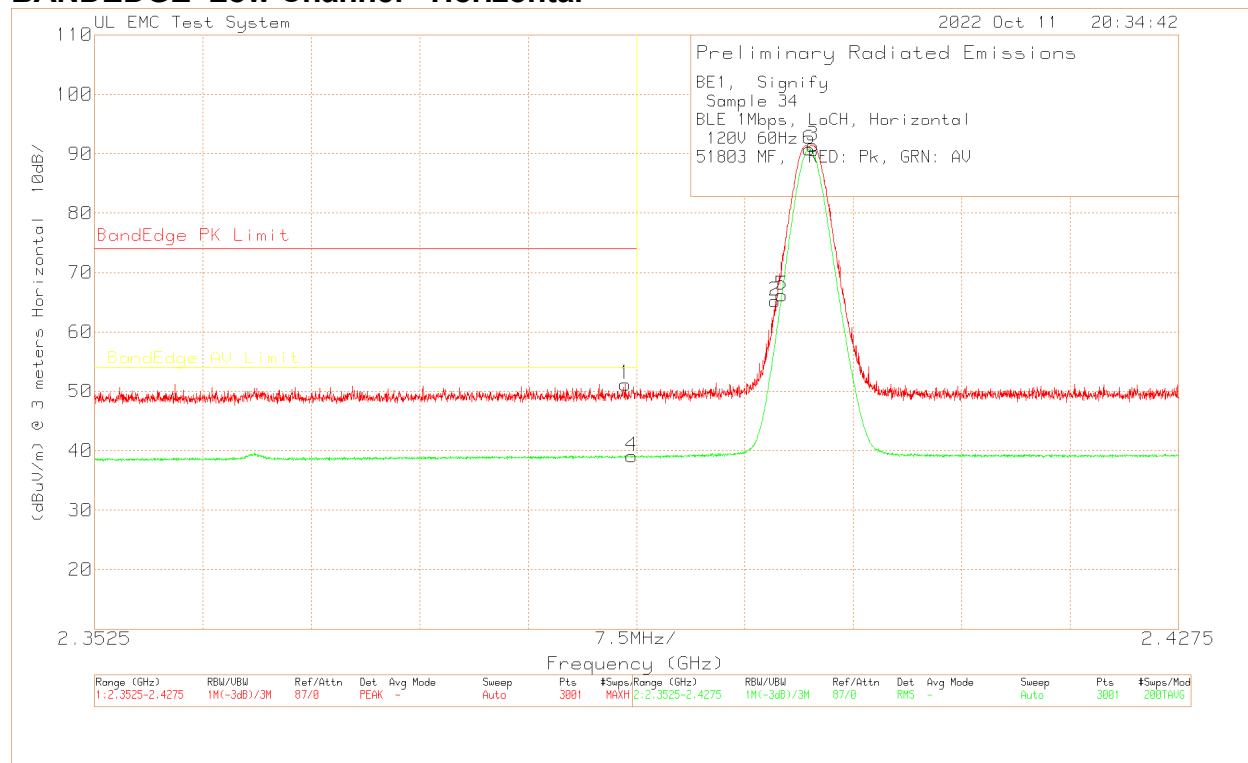
HARMONICS AND SPURIOUS EMISSIONS High Channel



RE6, Signify														
S29														
BLE 1Mbps, TX HiCH														
120V 60Hz														
51803MF, Red= Horizontal Green= Vertical														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	1.026	74.09	Pk	27	-56	-	45.09	74	-28.91	54	-8.91	0-360	149	H
2	2.479	111.62	Pk	22	-40.09	-	93.53	-	-	-	-	0-360	101	H
3	4.959	63.43	Pk	27.8	-49.2	-	42.03	74	-31.97	54	-11.97	0-360	101	H
4	7.441	70.88	Pk	30.5	-46.64	-	54.74	74	-19.26	54	0.74	0-360	199	H
5	11.388	55.46	Pk	37	-46.11	-	46.35	74	-27.65	54	-7.65	0-360	199	H
6	17.545	48.29	Pk	40	-39.88	-	48.41	74	-25.59	54	-5.59	0-360	199	H
7	24.765	53.07	Pk	40.3	-46.2	-	47.17	74	-26.83	54	-6.83	0-360	151	H
8	1.185	69.43	Pk	28.2	-55.82	-	41.81	74	-32.19	54	-12.19	0-360	101	V
9	2.479	118.28	Pk	22	-40.09	-	100.19	-	-	-	-	0-360	101	V
10	4.96	64.36	Pk	27.8	-49.45	-	42.71	74	-31.29	54	-11.29	0-360	101	V
11	7.439	75.12	Pk	30.6	-46.64	-	59.08	74	-14.92	54	5.08	0-360	101	V
12	10.291	59.59	Pk	36.2	-47.33	-	48.46	74	-25.54	54	-5.54	0-360	149	V
13	17.125	49.79	Pk	40.3	-40.31	-	49.78	74	-24.22	54	-4.22	0-360	199	V
14	24.84	52.3	Pk	40.3	-45.83	-	46.77	74	-27.23	54	-7.23	0-360	149	V
Radiated Emission Data														
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.44055	72.08	Pk	30.6	-46.72	-	55.96	74	-18.04	54	-	259	198	H
*	7.43987	66.41	Av	30.6	-46.78	-26	24.23	74	-23.77	54	-29.77	259	198	H
	17.54577	53.52	Pk	40	-40.02	-	53.5	74	-20.5	54	-	0	198	H
*	17.54272	41.56	Av	40	-39.95	-26	15.61	74	-32.39	54	-38.39	0	198	H
	7.44053	76.69	Pk	30.6	-46.72	-	60.57	74	-13.43	54	-	264	100	V
*	7.43991	71.76	Av	30.6	-46.79	-26	29.57	74	-18.43	54	-24.43	264	100	V
Pk - Peak detector														
Av - Average detection														
* per FCC KDB 558074 D01 15.247 Meas Guidance v05r02 Source Based maximum operational duty cycle was added.														

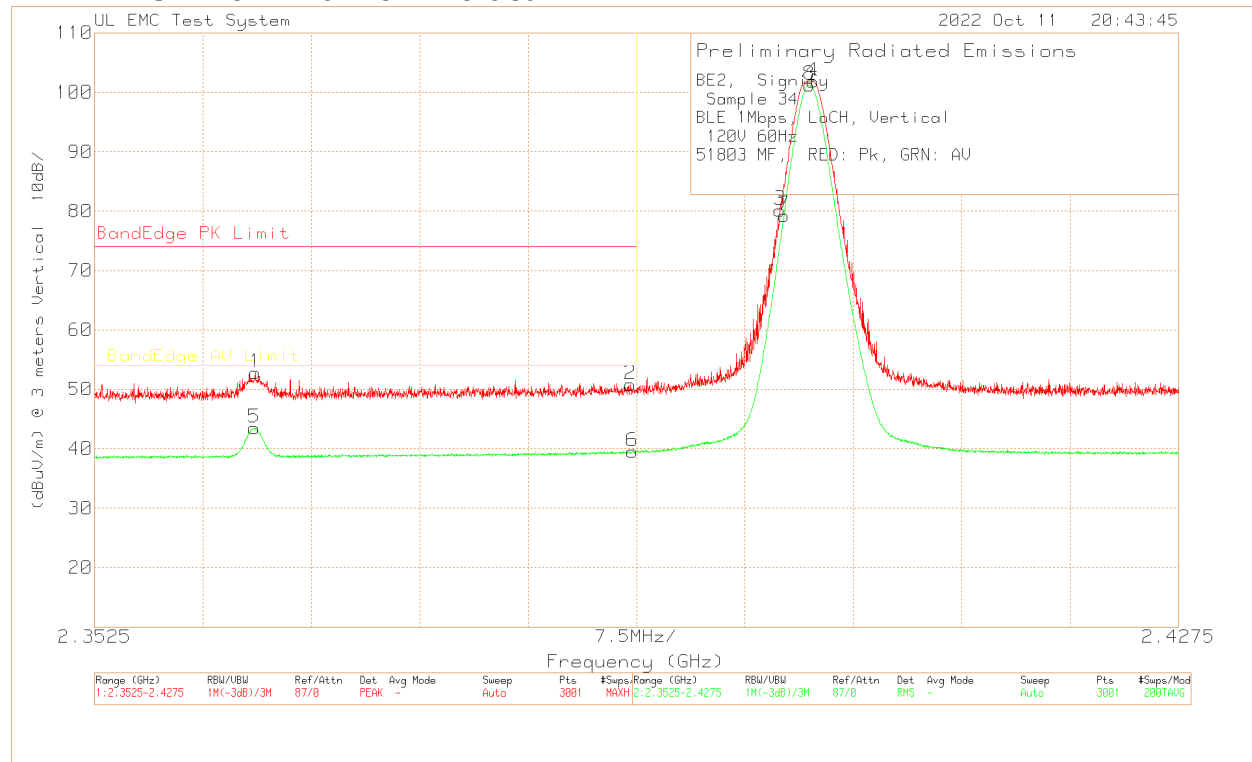
10.2.2. BLE, 1Mbps, Sample 34

BANDEDGE Low Channel - Horizontal



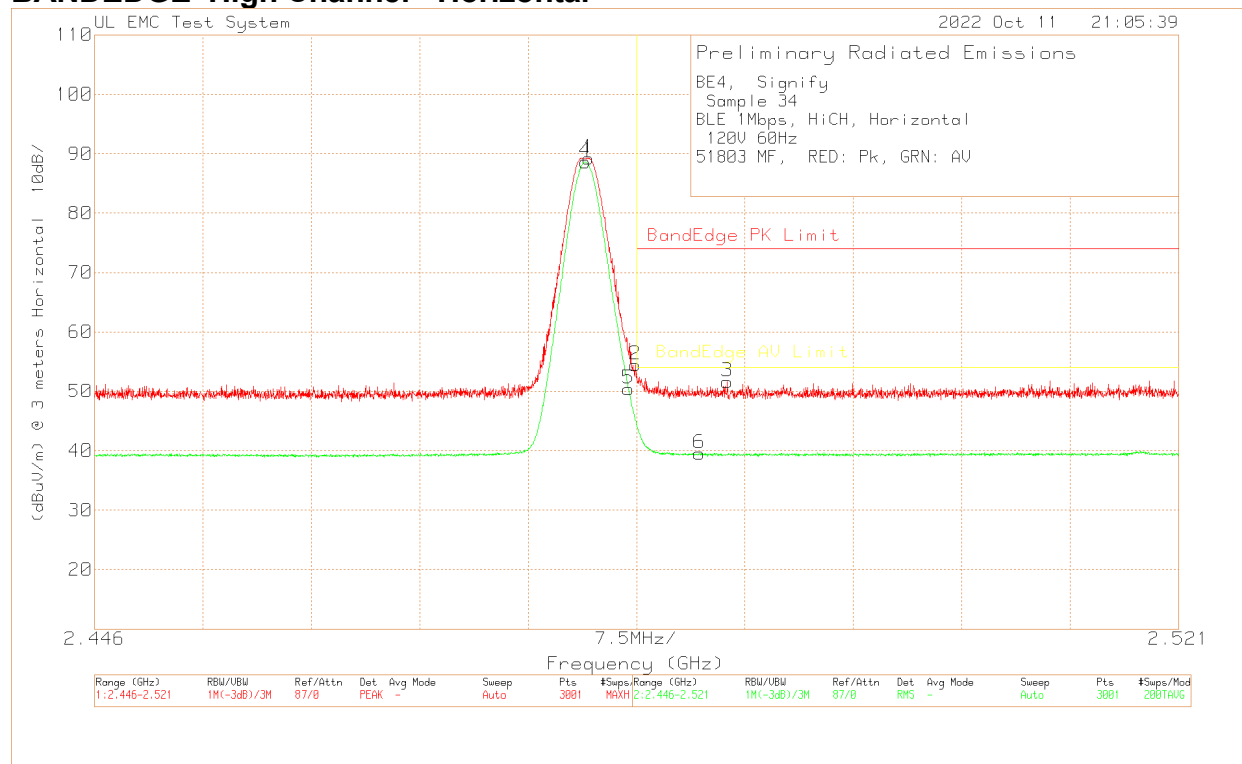
BE1, Signify														
Sample 34														
BLE 1Mbps,LoCH, Horizontal														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.389225	24.7	Pk	21.8	4.72	-	51.22	74	-22.78	-	-	252	199	H
2	2.39	38.73	Pk	21.8	4.71	-	65.24	-	-	-	-	252	199	H
3	2.4022	64.89	Pk	21.8	4.68	-	91.37	-	-	-	-	252	199	H
Average														
4	2.39	12.63	Av	21.8	4.72	-	39.15	-	-	54	-14.85	252	199	H
5	2.40005	39.69	Av	21.8	4.7	-	66.19	-	-	-	-	252	199	H
6	2.40195	64.3	Av	21.8	4.68	-	90.78	-	-	-	-	252	199	H
Pk - Peak detector														
Av - Average Detector														
* Source based duty cycle factor not used, but complies without using the factor.														

BANEDGE Low Channel – Vertical



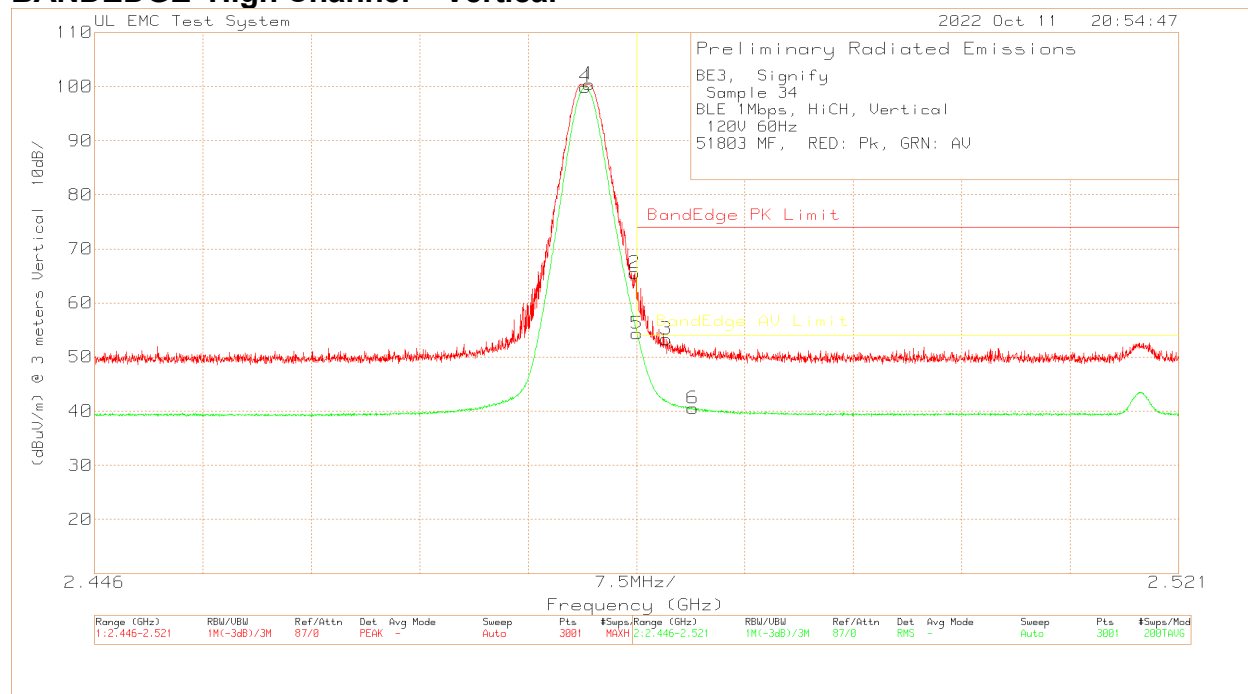
BE2, Signify														
Sample 34														
BLE 1Mbps, LoCH, Vertical														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.363625	26.48	Pk	21.8	4.56	-	52.84	74	-21.16	-	-	256	107	V
2	2.39	24.29	Pk	21.8	4.72	-	50.81	74	-23.19	-	-	256	107	V
3	2.399925	53.67	Pk	21.8	4.7	-	80.17	-	-	-	-	256	107	V
4	2.4022	75.35	Pk	21.8	4.68	-	101.83	-	-	-	-	256	107	V
Average														
5	2.36355	17.11	Av	21.8	4.56	-	43.47	-	-	54	-10.53	256	107	V
6	2.39	13.06	Av	21.8	4.72	-	39.58	-	-	54	-14.42	256	107	V
7	2.4002	52.8	Av	21.8	4.7	-	79.3	-	-	-	-	256	107	V
8	2.401963	74.76	Av	21.8	4.68	-	101.24	-	-	-	-	256	107	V
Pk - Peak detector														
Av - Average Detector														
* Source based duty cycle factor not used, eut complies without using the factor.														

BANEDGE High Channel - Horizontal



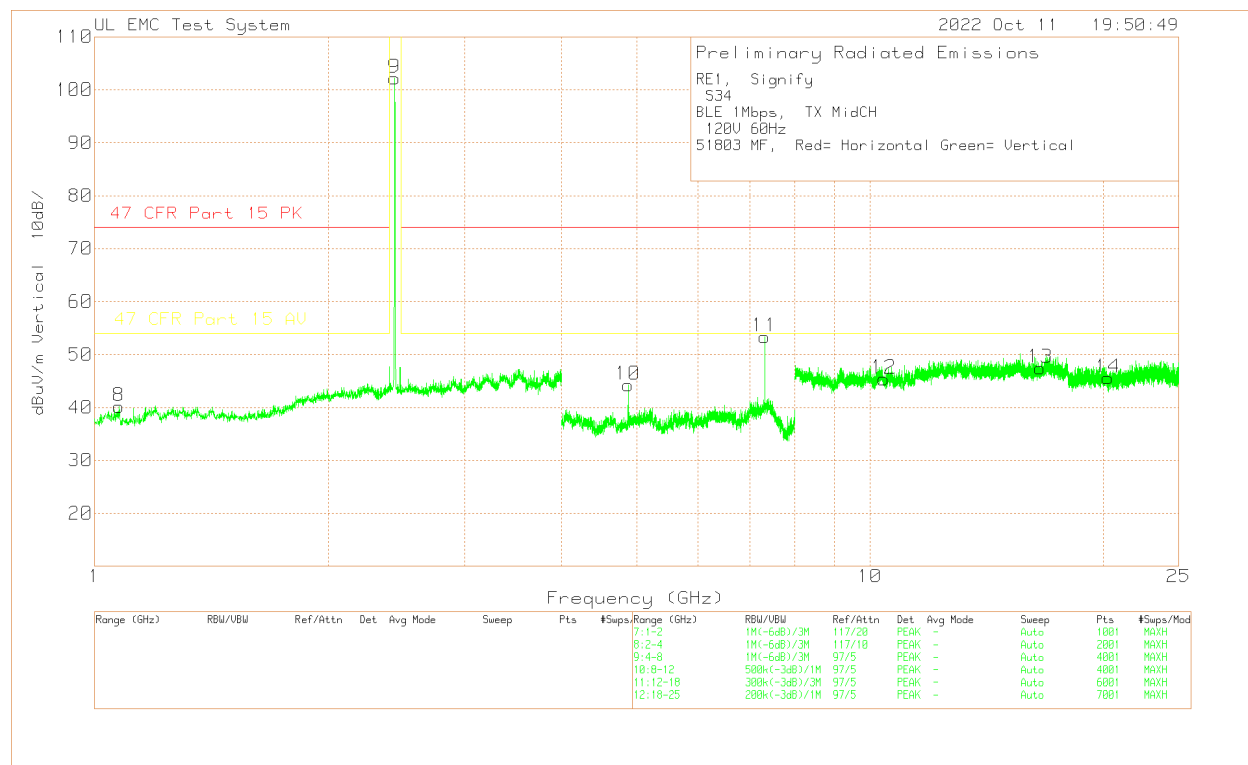
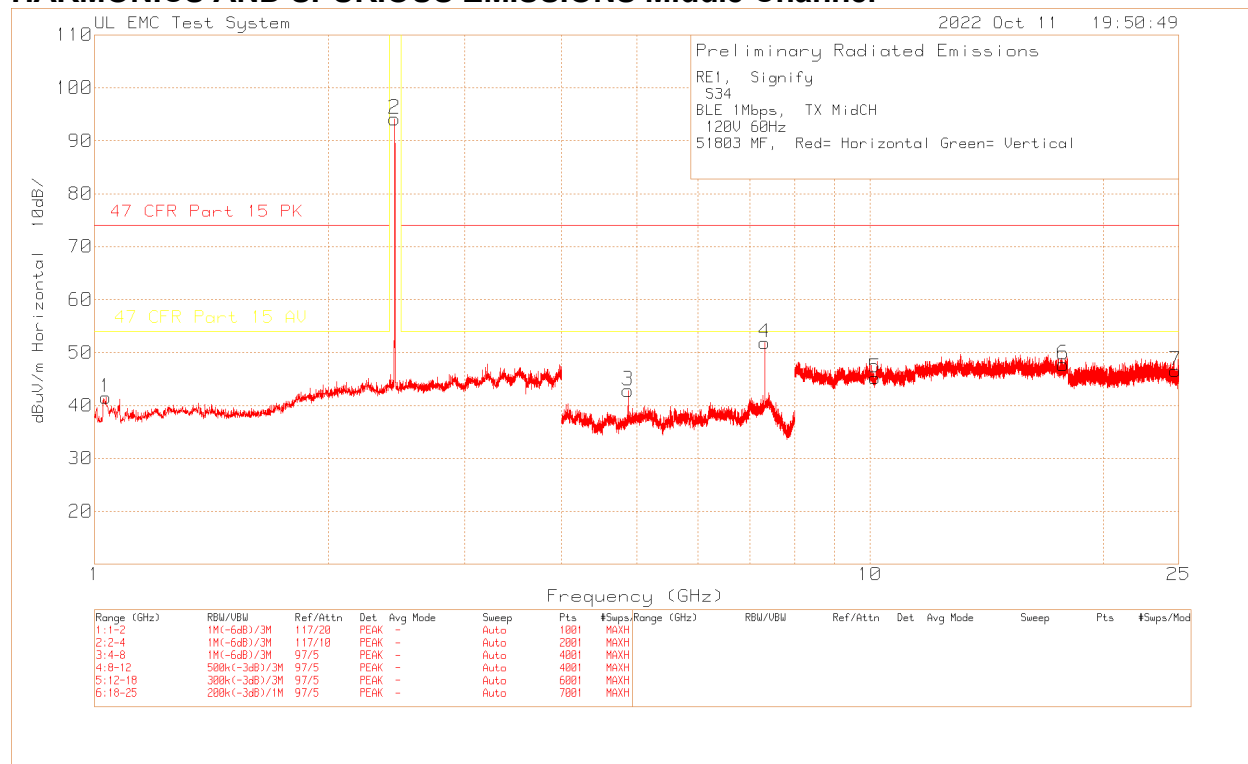
BE4, Signify														
Sample 34														
BLE 1Mbps, HiCH, Horizontal														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.480188	62.75	Pk	22	4.46	-	89.21	-	-	-	-	249	101	H
2	2.4835	27.88	Pk	22.1	4.47	-	54.45	74	-19.55	-	-	249	101	H
3	2.489775	25	Pk	22.1	4.51	-	51.61	74	-22.39	-	-	249	101	H
Average														
4	2.47995	62.17	Av	22	4.46	-	88.63	-	-	-	-	249	101	H
5	2.4835	23.94	Av	22	4.47	-	50.41	-	-	54	-3.59	249	101	H
6	2.48785	12.93	Av	22.1	4.5	-	39.53	-	-	54	-14.47	249	101	H
Pk - Peak detector														
Av - Average Detector														
* Source based duty cycle factor not used, eut complies without using the factor.														

BANDEDGE High Channel – Vertical

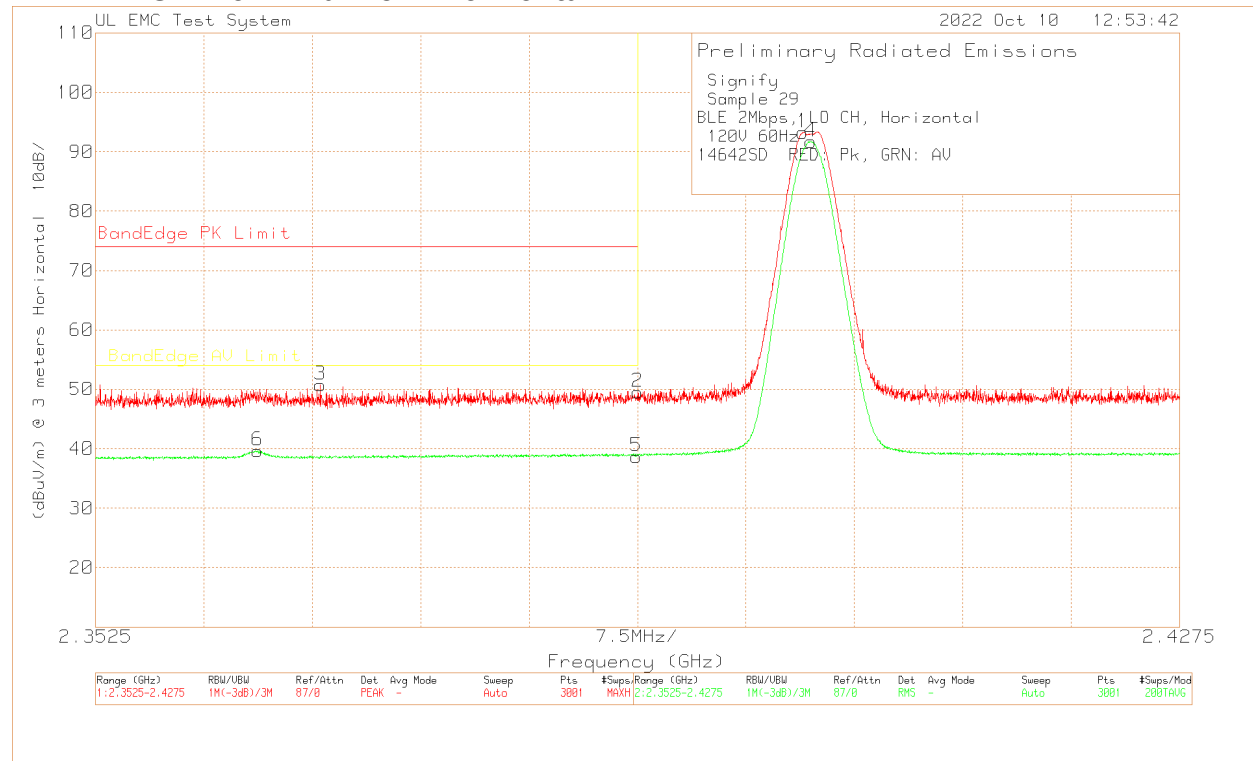


BE3, Signify														
Sample 34														
BLE 1Mbps, HiCH, Vertical														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Trace Markers														
1	2.480225	74	Pk	22	4.46	-	100.46	-	-	-	-	252	101	V
2	2.4835	39.01	Pk	22.1	4.47	-	65.58	74	-8.42	-	-	252	101	V
3	2.48555	26.72	Pk	22.1	4.49	-	53.31	74	-20.69	-	-	252	101	V
Average														
4	2.47995	73.45	Av	22	4.46	-	99.91	-	-	-	-	252	101	V
*5	2.4835	27.79	Av	22.1	4.47	-26	28.36	-	-	54	-25.64	252	101	V
*6	2.4874	13.94	Av	22.1	4.5	-26	14.54	-	-	54	-39.46	252	101	V
Pk - Peak detector														
Av - Average Detector														
* per FCC KDB 558074 D01 15.247 Meas Guidance v05r02 Source Based maximum operational duty cycle was added.														

HARMONICS AND SPURIOUS EMISSIONS Middle Channel

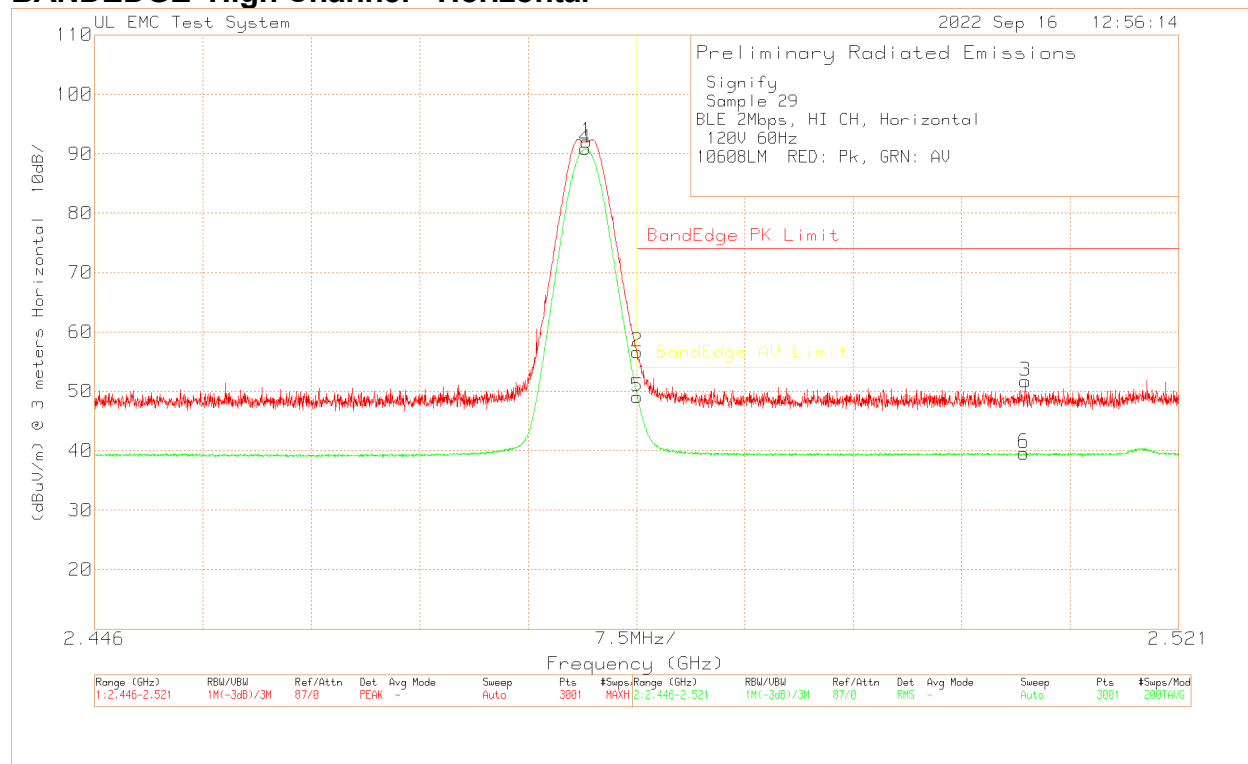


RE1, Signify														
S34														
BLE 1Mbps, TX MidCH														
120V 60Hz														
51803 MF, Red= Horizontal Green= Vertical														
Trace markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	1.034	70.85	Pk	26.9	-56.25		41.5	74	-32.5	54	-12.5	0-360	151	H
2	2.437	111.89	Pk	21.9	-39.63		94.16	-	-	-	-	0-360	199	H
3	4.875	65.1	Pk	27.7	-49.96		42.84	74	-31.16	54	-11.16	0-360	151	H
4	7.314	66.78	Pk	30.6	-45.49		51.89	74	-22.11	54	-2.11	0-360	199	H
5	10.151	57.99	Pk	36.3	-49.05		45.24	74	-28.76	54	-8.76	0-360	100	H
6	17.748	48.04	Pk	40	-40.3		47.74	74	-26.26	54	-6.26	0-360	151	H
7	24.77	52.41	Pk	40.3	-46.15		46.56	74	-27.44	54	-7.44	0-360	149	H
8	1.075	69.36	Pk	27	-56.2		40.16	74	-33.84	54	-13.84	0-360	199	V
9	2.437	119.94	Pk	21.9	-39.63		102.21	-	-	-	-	0-360	101	V
10	4.876	66.55	Pk	27.7	-50		44.25	74	-29.75	54	-9.75	0-360	101	V
11	7.315	68.32	Pk	30.6	-45.57		53.35	74	-20.65	54	-0.65	0-360	101	V
12	10.418	57.4	Pk	36.3	-48.28		45.42	74	-28.58	54	-8.58	0-360	150	V
13	16.578	48.03	Pk	39.8	-40.39		47.44	74	-26.56	54	-6.56	0-360	101	V
14	20.273	55.02	Pk	40.2	-49.66		45.56	74	-28.44	54	-8.44	0-360	151	V
Radiated Emissions Data														
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.313171	69.12	Pk	30.5	-45.56		54.06	74	-19.94	-	-	133	199	H
	7.31387	62.72	Av	30.6	-45.5		47.82	-	-	54	-6.18	133	199	H
	7.314554	71.54	Pk	30.6	-45.54		56.6	74	-17.4	-	-	139	101	V
	7.313826	65.64	Av	30.6	-45.51		50.73	-	-	54	-3.27	139	101	V
Pk - Peak detector														
Av - Average detection														
* Source based duty cycle factor not used, but complies without using the factor.														



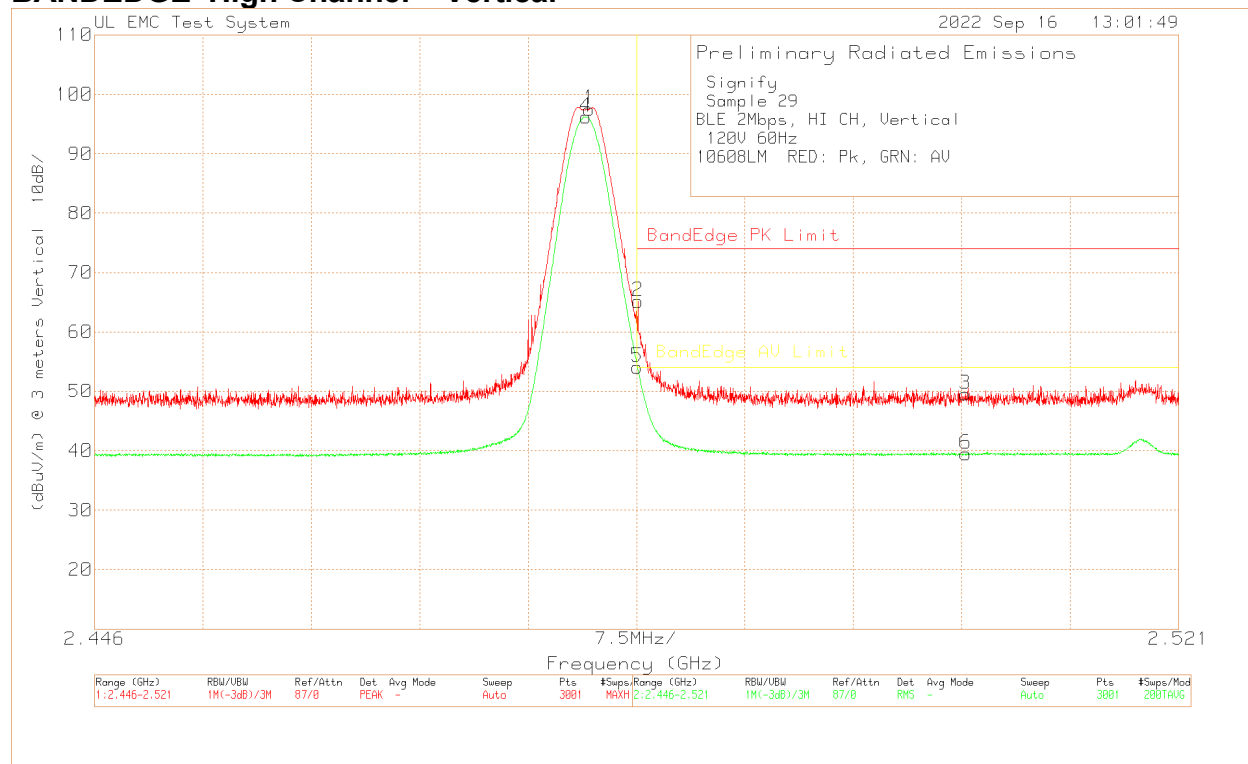
Signify															
Sample 29															
BLE 2Mbps,LO CH, Horizontal															
120V 60Hz															
14642SD RED: Pk, GRN: AV															
Trace Markers															
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
Peak															
1	2.401425	66.76	Pk	21.8	4.69		93.25	-	-	-	-	75	173	H	
2	2.39	23.03	Pk	21.8	4.73		49.56	74	-24.44	-	-	75	173	H	
3	2.36805	24.4	Pk	21.8	4.57		50.77	74	-23.23	-	-	75	173	H	
Average															
4	2.401988	65.22	Av	21.8	4.68		91.7	-	-	-	-	75	173	H	
5	2.39	12.16	Av	21.8	4.72		38.68	-	-	54	-15.32	75	173	H	
6	2.3637	13.29	Av	21.8	4.56		39.65	-	-	54	-14.35	75	173	H	
Pk - Peak detector															
Av - Average Detector															
* Source based duty cycle factor not used, eut complies without using the factor.															

BANDEDGE High Channel - Horizontal



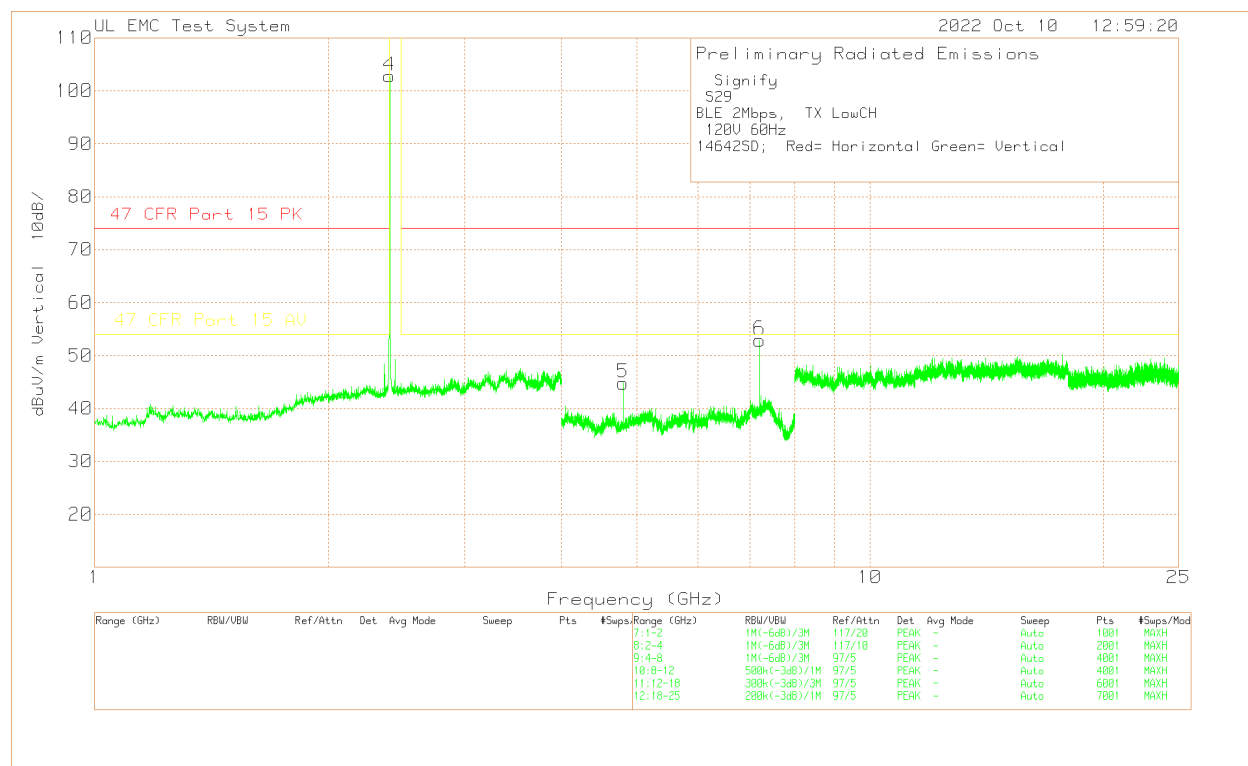
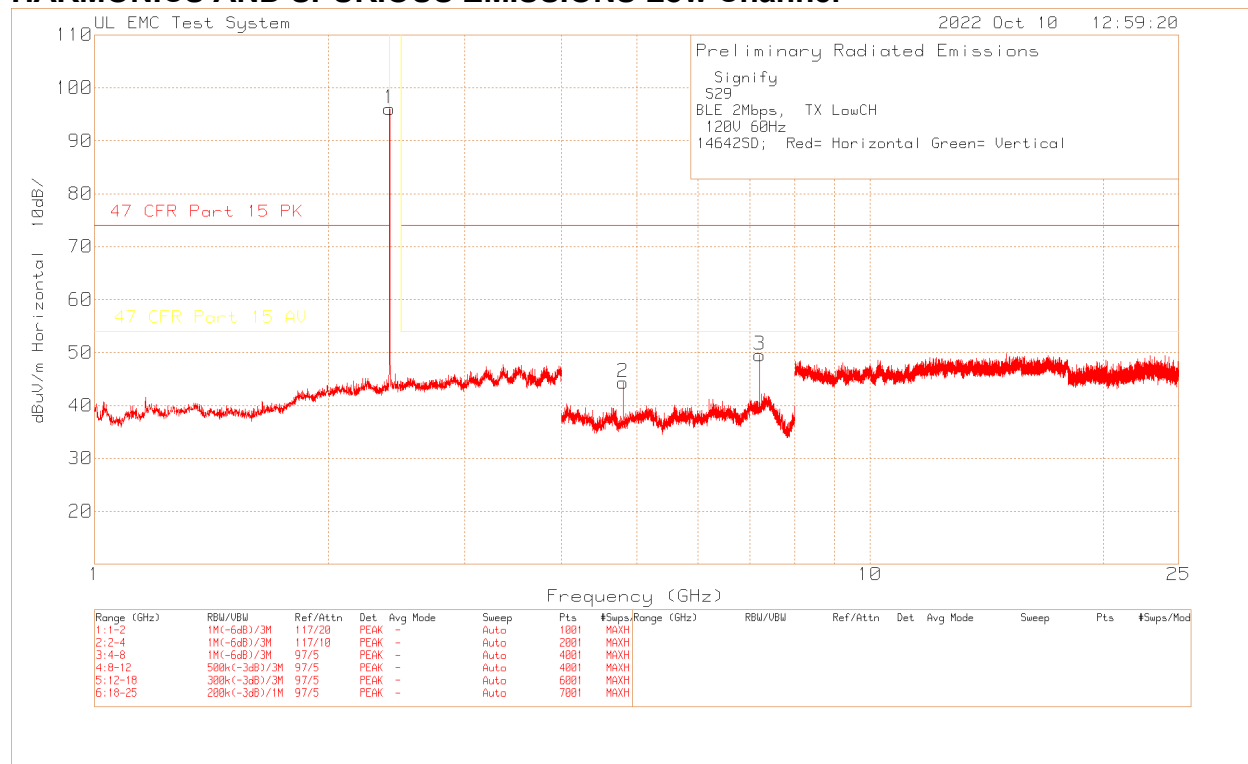
Signify															
Sample 29															
BLE 2Mbps, HI CH, Horizontal															
120V 60Hz															
10608LM RED: Pk, GRN: AV															
Trace Markers															
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
Peak															
1	2.48005	65.64	Pk	22	4.46	-	92.1	-	-	-	-	35	277	H	
2	2.4835	30.1	Pk	22.1	4.47	-	56.67	74	-17.33	-	-	35	277	H	
3	2.5104	25.13	Pk	22.1	4.5	-	51.73	74	-22.27	-	-	35	277	H	
Average															
4	2.47995	64.41	Av	22	4.46	-	90.87	-	-	-	-	35	277	H	
5	2.4835	22.52	Av	22.1	4.47	-	49.09	-	-	54	-4.91	35	277	H	
6	2.5103	13	Av	22.1	4.5	-	39.6	-	-	54	-14.4	35	277	H	
Pk - Peak detector															
Av - Average Detector															
* Source based duty cycle factor not used, but complies without using the factor.															

BANDEDGE High Channel – Vertical



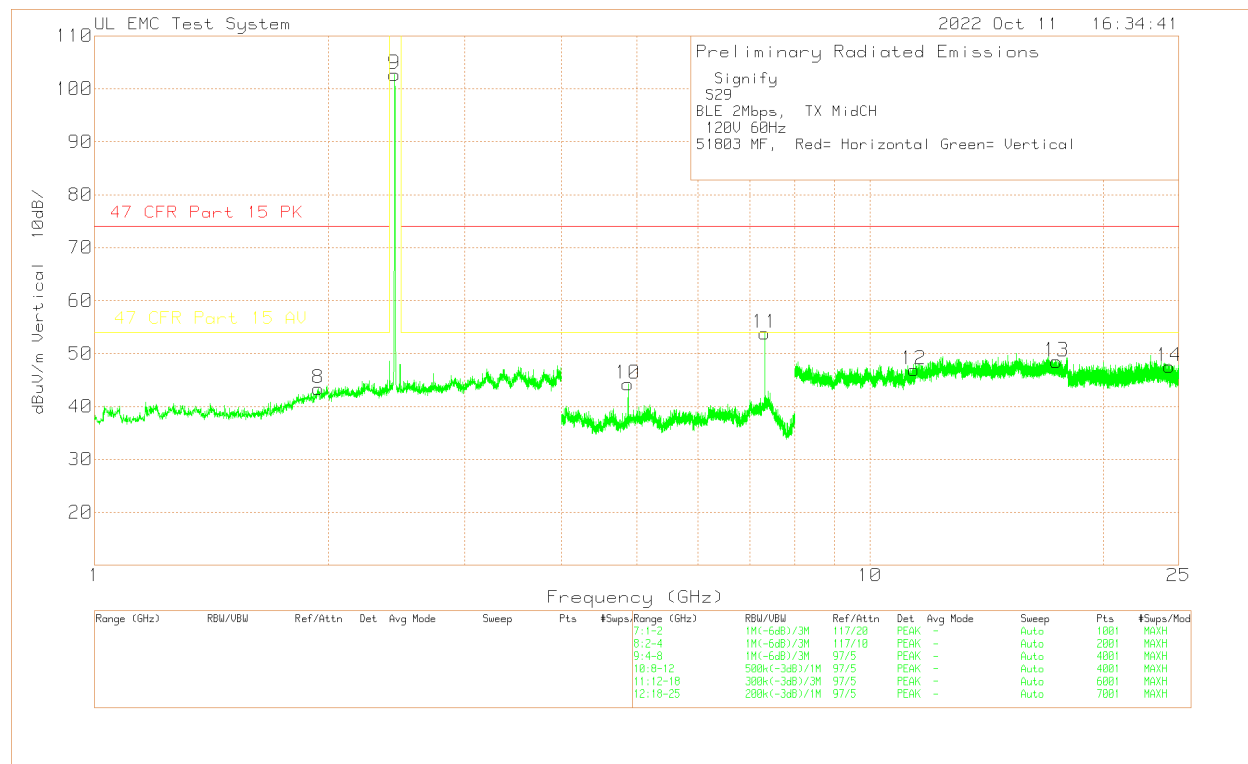
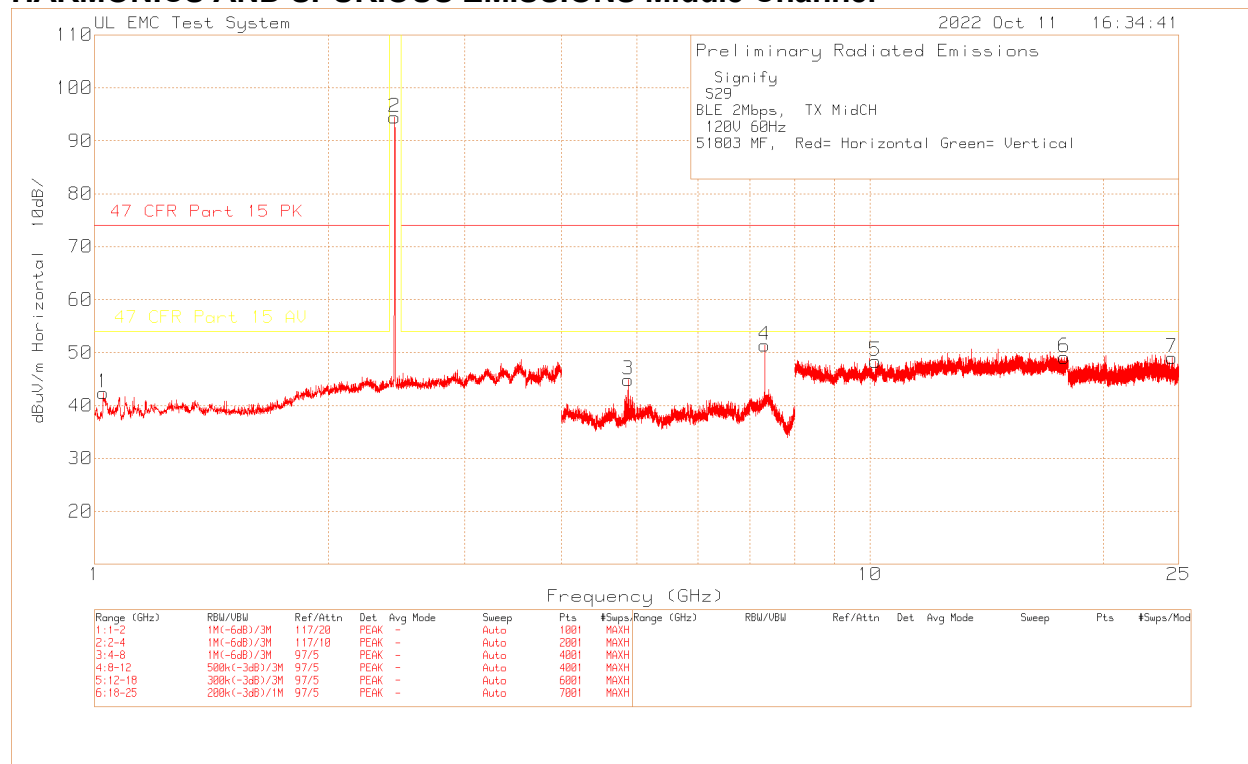
Signify															
Sample 29															
BLE 2Mbps, HI CH, Vertical															
120V 60Hz															
10608LM RED: Pk, GRN: AV															
Trace Markers															
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
Peak															
1	2.480225	71.04	Pk	22	4.46	-	97.5	-	-	-	-	215	150	V	
2	2.4836	38.59	Pk	22.1	4.47	-	65.16	74	-8.84	-	-	215	150	V	
3	2.50625	22.94	Pk	22.1	4.51	-	49.55	74	-24.45	-	-	215	150	V	
Average															
4	2.48	69.75	Av	22	4.46	-	96.21	-	-	-	-	215	150	V	
*5	2.48355	27.51	Av	22.1	4.47	-26	28.08	-	-	54	-25.92	215	150	V	
*6	2.506275	12.9	Av	22.1	4.51	-26	13.51	-	-	54	-40.49	215	150	V	
Pk - Peak detector															
Av - Average Detector															
* per FCC KDB 558074 D01 15.247 Meas Guidance v05r02 Source Based maximum operational duty cycle was added.															

HARMONICS AND SPURIOUS EMISSIONS Low Channel



Signify														
S29														
BLE 2Mbps, TX Low CH														
120V 60Hz														
14642SD; Red= Horizontal Green= Vertical														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.401	113.69	Pk	21.8	-39.45	-	96.04	-	-	-	-	0-360	149	H
2	4.802	67.65	Pk	27.7	-50.95	-	44.4	74	-29.6	54	-9.6	0-360	199	H
3	7.208	65.77	Pk	29.8	-46.02	-	49.55	74	-24.45	54	-4.45	0-360	199	H
4	2.401	120.47	Pk	21.8	-39.45	-	102.82	-	-	-	-	0-360	101	V
5	4.803	68.02	Pk	27.7	-50.9	-	44.82	74	-29.18	54	-9.18	0-360	101	V
6	7.205	69.21	Pk	29.7	-46	-	52.91	74	-21.09	54	-1.09	0-360	101	V
Radiated Emission Data														
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.207359	68.66	Pk	29.8	-46.06	-	52.4	74	-21.6	-	-	220	198	H
	7.207148	61.36	Av	29.8	-46.07	-	45.09	-	-	54	-8.91	220	198	H
	7.204598	69.24	Pk	29.7	-46.04	-	52.9	74	-21.1	-	-	275	149	V
	7.204379	62.87	Av	29.7	-46.06	-	46.51	-	-	54	-7.49	275	148	V
Pk - Peak detector														
Av - Average detection														
* Source based duty cycle factor not used, but complies without using the factor.														

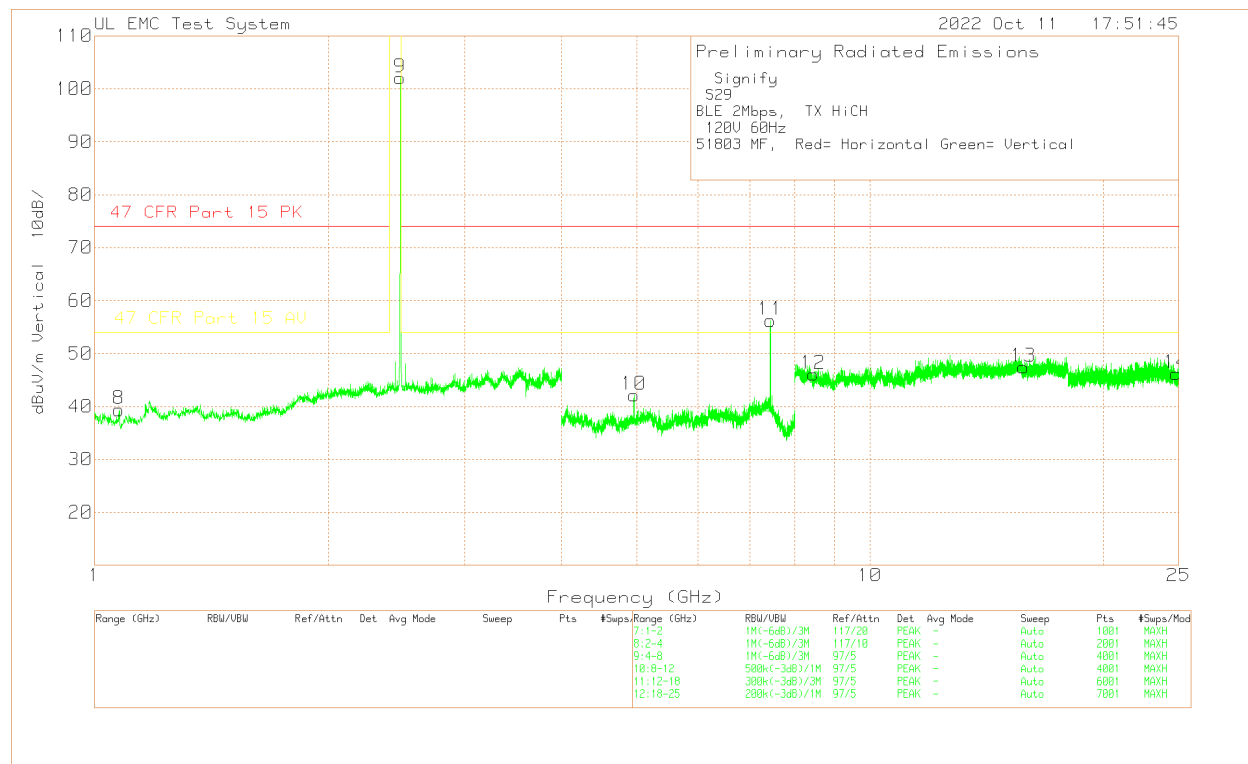
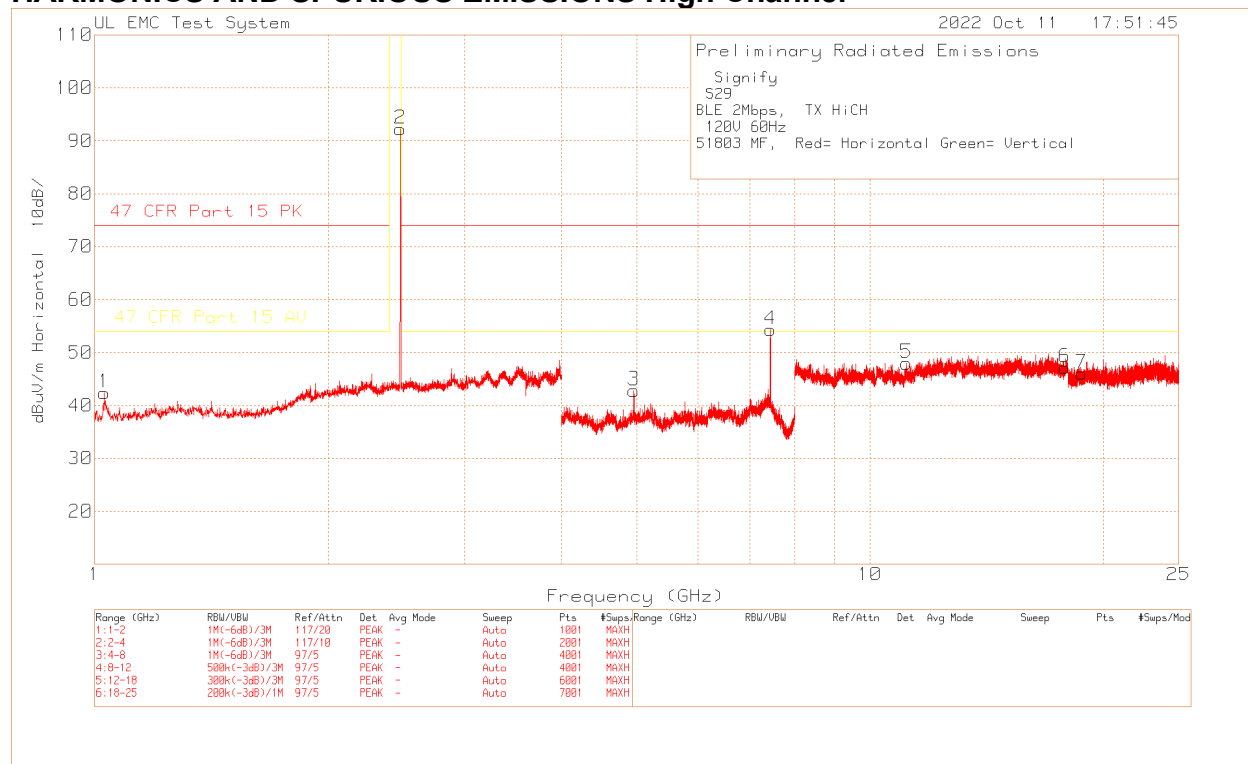
HARMONICS AND SPURIOUS EMISSIONS Middle Channel



Page 84 of 147

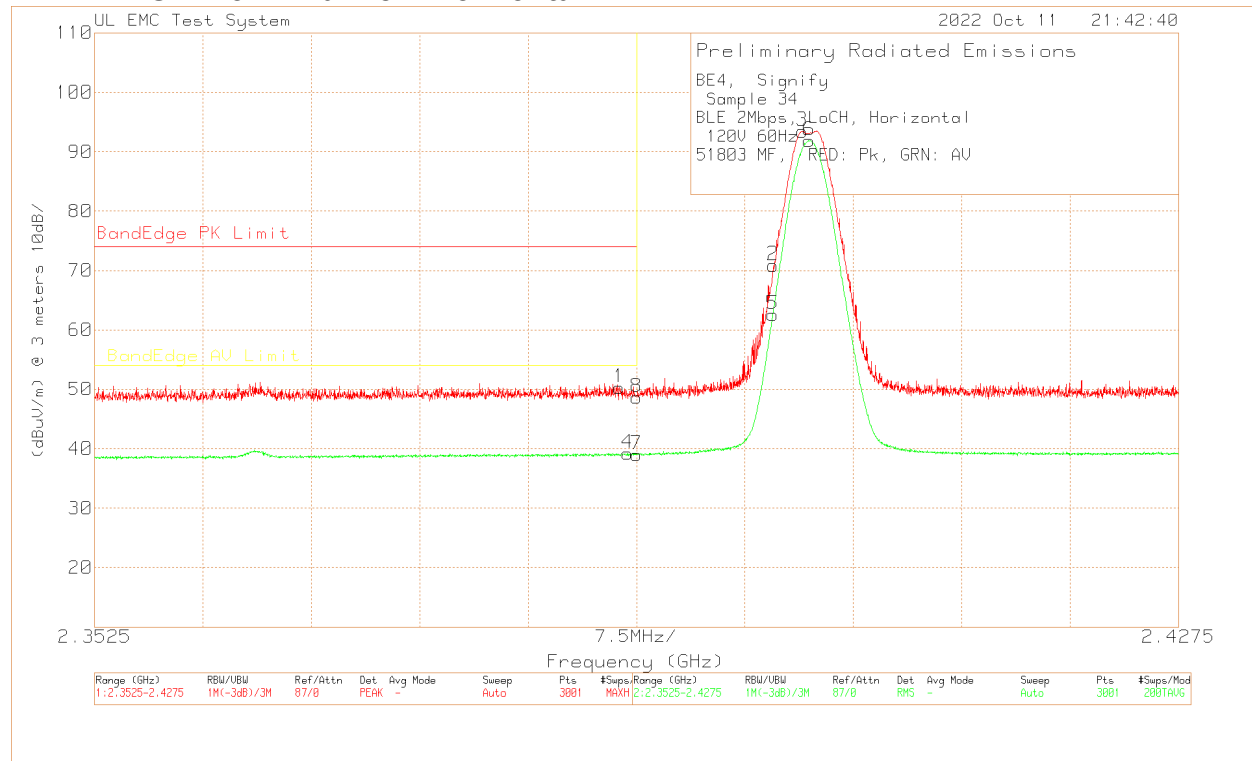
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HARMONICS AND SPURIOUS EMISSIONS High Channel



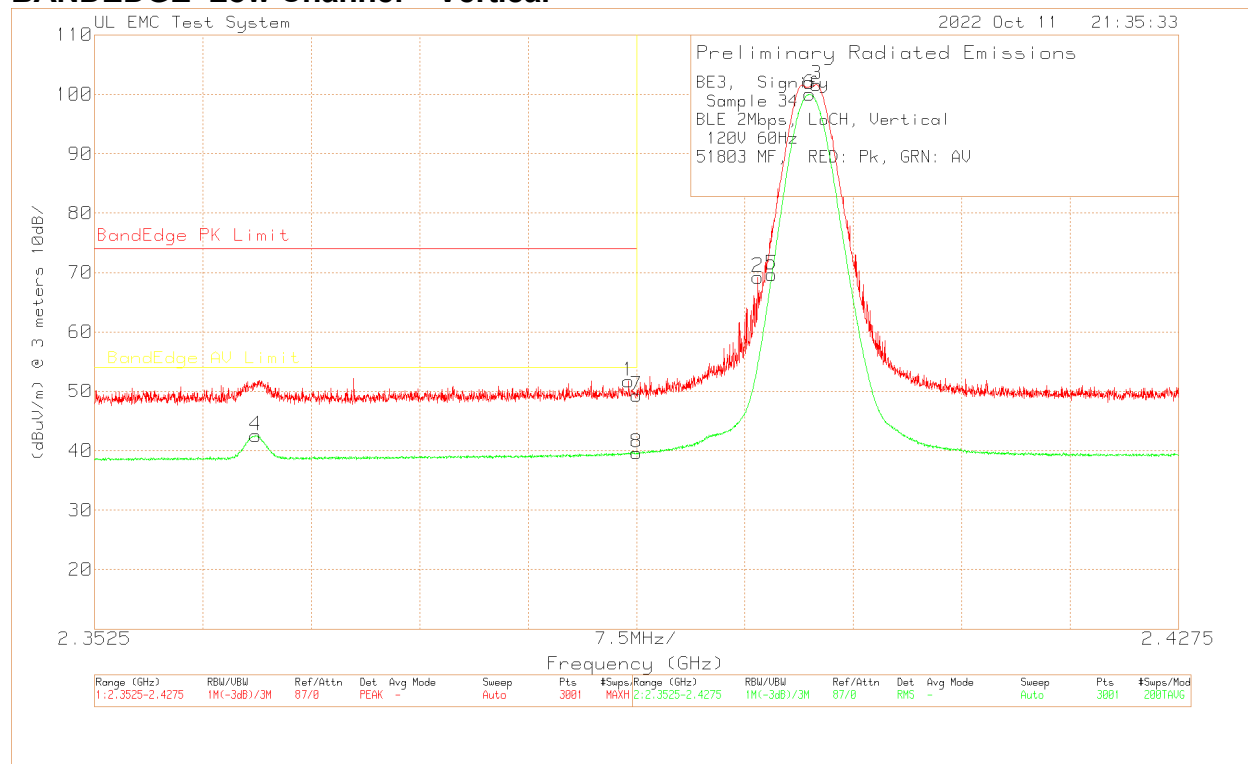
Signify														
S29														
BLE 2Mbps, TX HiCH														
120V 60Hz														
51803 MF, Red= Horizontal Green= Vertical														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	1.029	71.48	Pk	26.9	-55.96	-	42.42	74	-31.58	54	-11.58	0-360	149	H
2	2.48	110.35	Pk	22	-40.09	-	92.26	-	-	-	-	0-360	101	H
3	4.959	64.22	Pk	27.8	-49.2	-	42.82	74	-31.18	54	-11.18	0-360	199	H
4	7.439	70.34	Pk	30.6	-46.64	-	54.3	74	-19.7	54	0.3	0-360	199	H
5	11.148	57.46	Pk	36.6	-46.07	-	47.99	74	-26.01	54	-6.01	0-360	101	H
6	17.829	46.82	Pk	40.1	-39.71	-	47.21	74	-26.79	54	-6.79	0-360	101	H
7	18.743	57.42	Pk	40.1	-51.44	-	46.08	74	-27.92	54	-7.92	0-360	151	H
8	1.075	68.6	Pk	27	-56.2	-	39.4	74	-34.6	54	-14.6	0-360	199	V
9	2.479	120.14	Pk	22	-40.09	-	102.05	-	-	-	-	0-360	101	V
10	4.961	63.68	Pk	27.8	-49.34	-	42.14	74	-31.86	54	-11.86	0-360	101	V
11	7.442	72.46	Pk	30.5	-46.7	-	56.26	74	-17.74	54	2.26	0-360	199	V
12	8.453	58.3	Pk	36.6	-48.81	-	46.09	74	-27.91	54	-7.91	0-360	151	V
13	15.773	48.03	Pk	40	-40.55	-	47.48	74	-26.52	54	-6.52	0-360	199	V
14	24.824	52.4	Pk	40.3	-46.45	-	46.25	74	-27.75	54	-7.75	0-360	151	V
Radiated Emission Data														
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.438495	72.9	Pk	30.6	-46.68	-	56.82	74	-17.18	-	-	87	199	H
	7.441019	65.07	Av	30.5	-46.64	-	48.93	-	-	54	-5.07	87	199	H
	7.441346	74.65	Pk	30.5	-46.66	-	58.49	74	-15.51	-	-	77	199	V
	7.441026	67.31	Av	30.5	-46.64	-	51.17	-	-	54	-2.83	77	199	V
Pk - Peak detector														
Av - Average detection														
* Source based duty cycle factor not used, but complies without using the factor.														

10.2.4. BLE, 2Mbps, Sample 34 **BANDEDGE Low Channel - Horizontal**



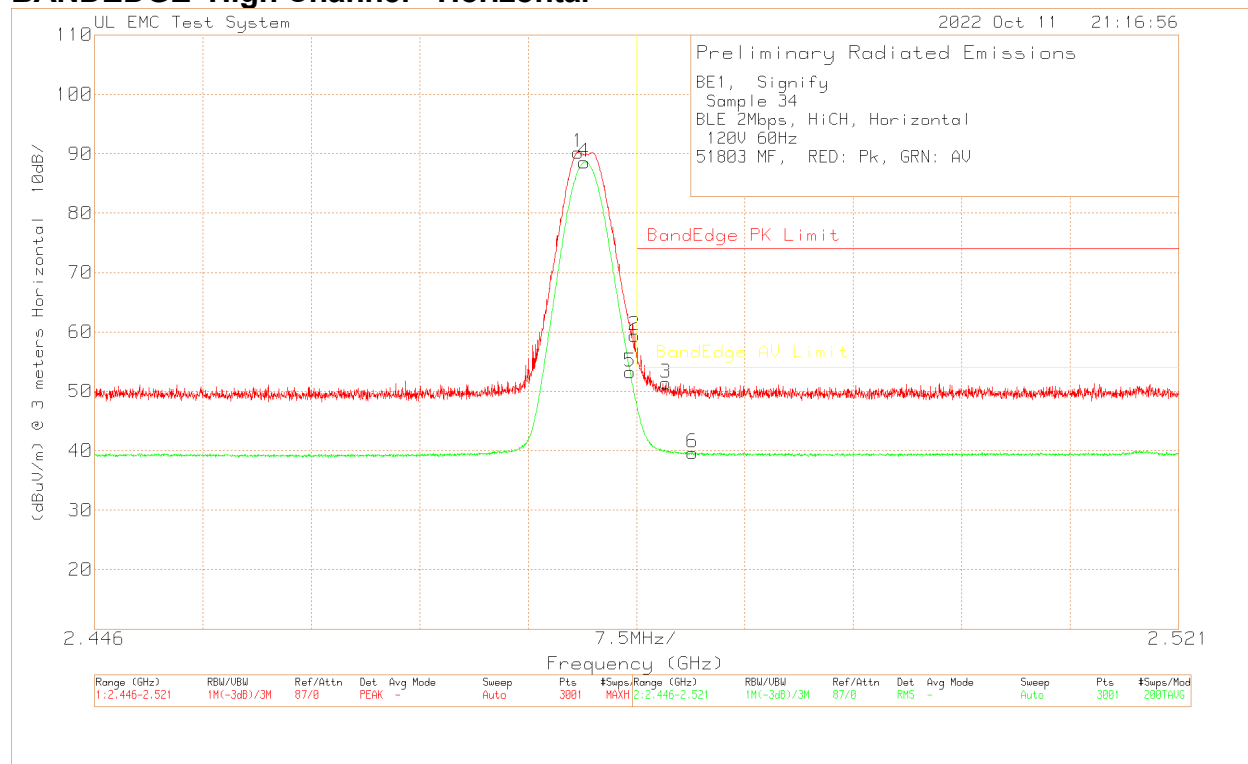
BE4, Signify														
Sample 34														
BLE 2Mbps, LoCH, Horizontal														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.3888	23.77	Pk	21.8	4.71	-	50.28	74	-23.72	-	-	253	199	H
2	2.39945	44.37	Pk	21.8	4.71	-	70.88	-	-	-	-	253	199	H
3	2.401475	66.96	Pk	21.8	4.69	-	93.45	-	-	-	-	253	199	H
8	2.39	22.14	Pk	21.8	4.73	-	48.67	74	-25.33	-	-	253	199	H
Average														
4	2.389375	12.71	Av	21.8	4.72	-	39.23	-	-	54	-14.77	253	199	H
5	2.399425	36.06	Av	21.8	4.71	-	62.57	-	-	-	-	253	199	H
6	2.401938	65.38	Av	21.8	4.68	-	91.86	-	-	-	-	253	199	H
7	2.39	12.45	Av	21.8	4.73	-	38.98	-	-	54	-15.02	253	199	H
Pk - Peak detector														
Av - Average Detector														
* Source based duty cycle factor not used, eut complies without using the factor.														

BANEDGE Low Channel – Vertical



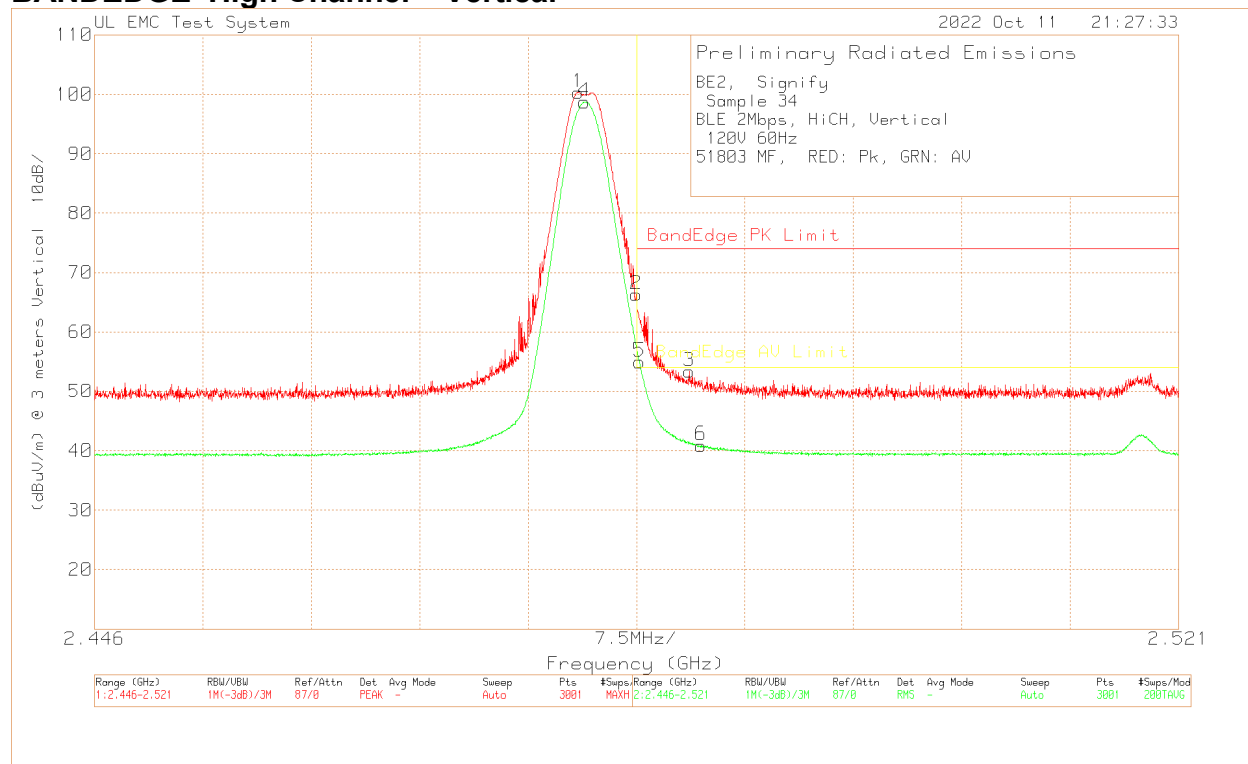
BE3, Signify														
Sample 34														
BLE 2Mbps,LoCH, Vertical														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.38945	25.22	Pk	21.8	4.72	-	51.74	74	-22.26	-	-	255	101	V
2	2.3984	42.71	Pk	21.8	4.72	-	69.23	-	-	-	-	255	101	V
3	2.40245	75.17	Pk	21.8	4.68	-	101.65	-	-	-	-	255	101	V
7	2.39	22.81	Pk	21.8	4.73	-	49.34	74	-24.66	-	-	255	101	V
Average														
4	2.36365	16.21	Av	21.8	4.56	-	42.57	-	-	54	-11.43	255	101	V
5	2.39935	43.16	Av	21.8	4.71	-	69.67	-	-	-	-	255	101	V
6	2.401975	73.57	Av	21.8	4.68	-	100.05	-	-	-	-	255	101	V
8	2.39	13.14	Av	21.8	4.73	-	39.67	-	-	54	-14.33	255	101	V
Pk - Peak detector														
Av - Average Detector														
* Source based duty cycle factor not used, eut complies without using the factor.														

BANEDGE High Channel - Horizontal



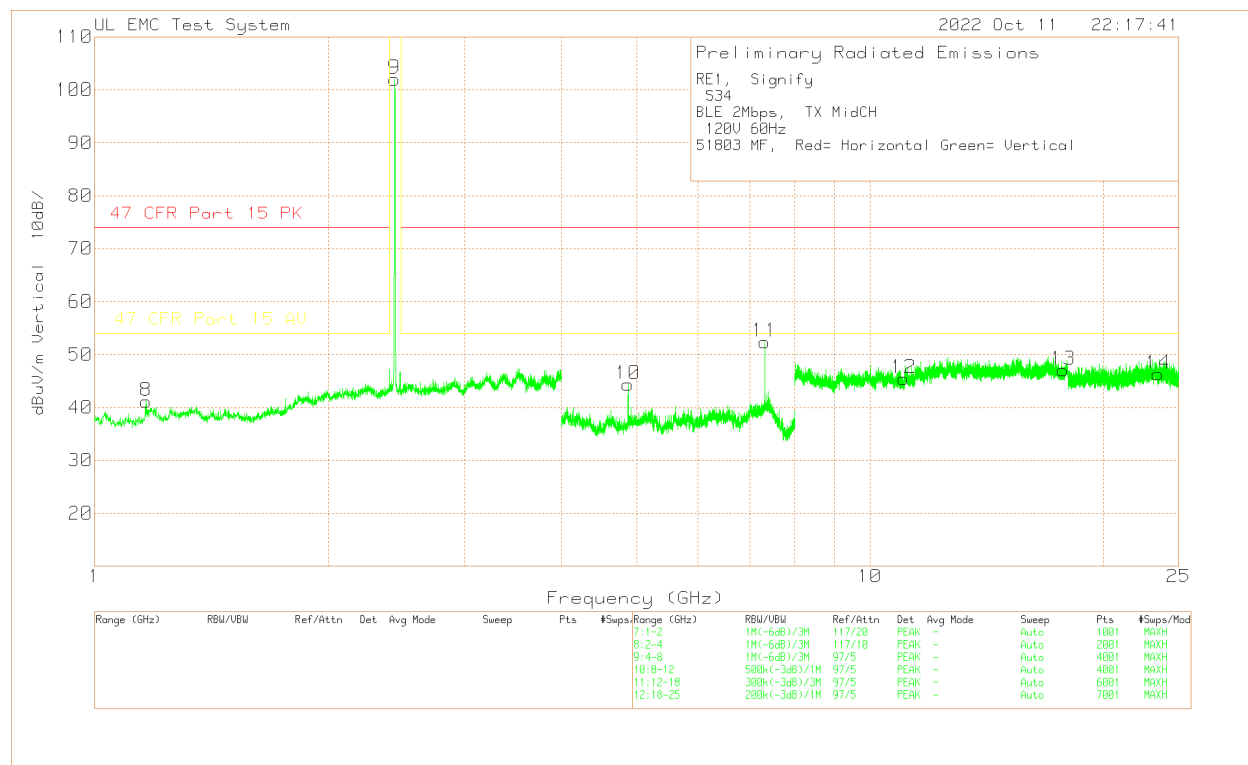
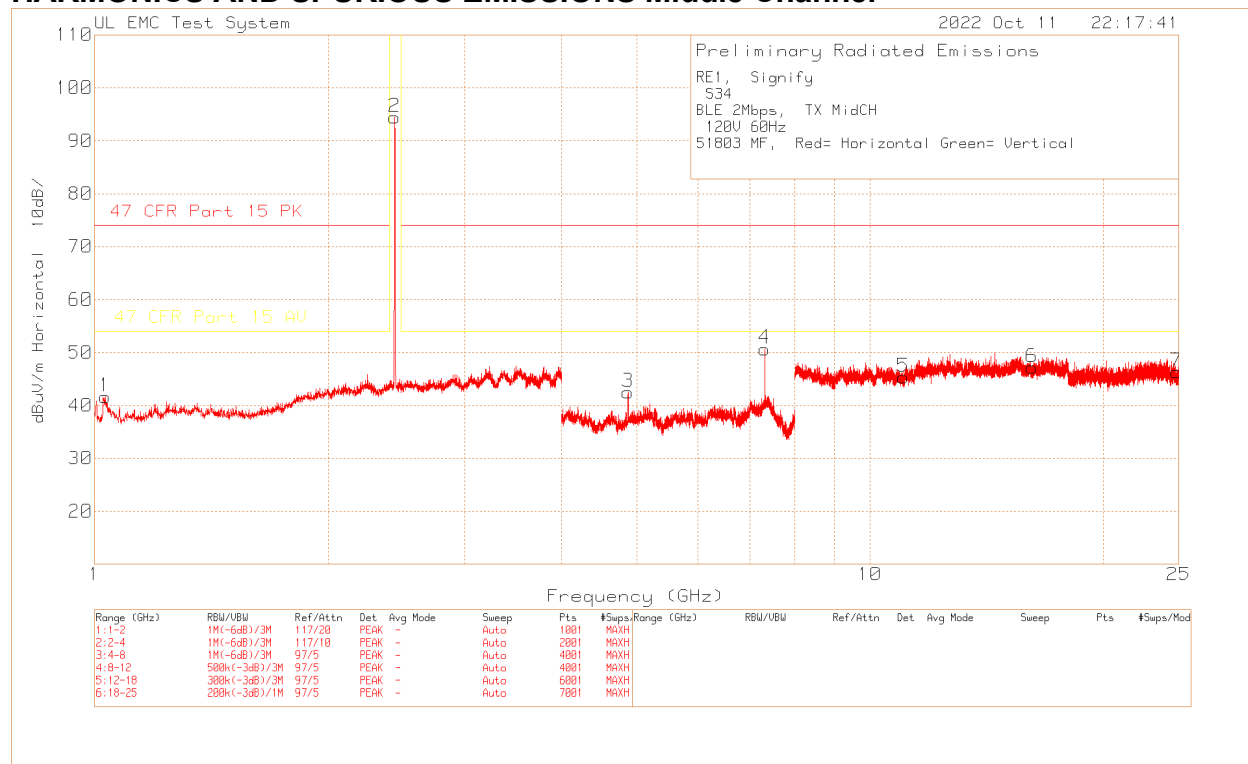
BE1, Signify														
Sample 34														
BLE 2Mbps, HiCH, Horizontal														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.479463	63.77	Pk	22	4.46	-	90.23	-	-	-	-	282	135	H
2	2.483375	32.86	Pk	22.1	4.47	-	59.43	-	-	-	-	282	135	H
3	2.485525	24.8	Pk	22.1	4.49	-	51.39	74	-22.61	-	-	282	135	H
7	2.4835	29.37	Pk	22.1	4.47	-	55.94	74	-18.06	-	-	282	135	H
Average														
4	2.479875	62.14	RMS	22	4.46	-	88.6	-	-	-	-	282	135	H
5	2.48305	26.76	RMS	22	4.47	-	53.23	-	-	-	-	282	135	H
6	2.487375	13.06	RMS	22.1	4.5	-	39.66	-	-	54	-14.34	282	135	H
8	2.4835	21.1	RMS	22.1	4.47	-	47.67	-	-	54	-6.33	282	135	H
Pk - Peak detector														
Av - Average Detector														
* Source based duty cycle factor not used, but complies without using the factor.														

BANDEDGE High Channel – Vertical



BE2, Signify														
Sample 34														
BLE 2Mbps, HiCH, Vertical														
120V 60Hz														
51803 MF, RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Source Based DC Correction dB	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak														
1	2.479463	73.87	Pk	22	4.46	-	100.33	-	-	-	-	253	101	V
2	2.4835	39.76	Pk	22.1	4.47	-	66.33	74	-7.67	-	-	253	101	V
3	2.48715	26.79	Pk	22.1	4.5	-	53.39	74	-20.61	-	-	253	101	V
Average														
4	2.479888	72.28	Av	22	4.46	-	98.74	-	-	-	-	253	101	V
*5	2.4835	28.39	Av	22.1	4.47	-26	28.96	-	-	54	-25.04	253	101	V
*6	2.48795	14.31	Av	22.1	4.5	-26	14.91	-	-	54	-39.09	253	101	V
7	2.490925	13.31	Av	22.1	4.51	-26	13.92	-	-	54	-40.08	253	101	V
Pk - Peak detector														
Av - Average Detector														
* per FCC KDB 558074 D01 15.247 Meas Guidance v05r02 Source Based maximum operational duty cycle was added.														

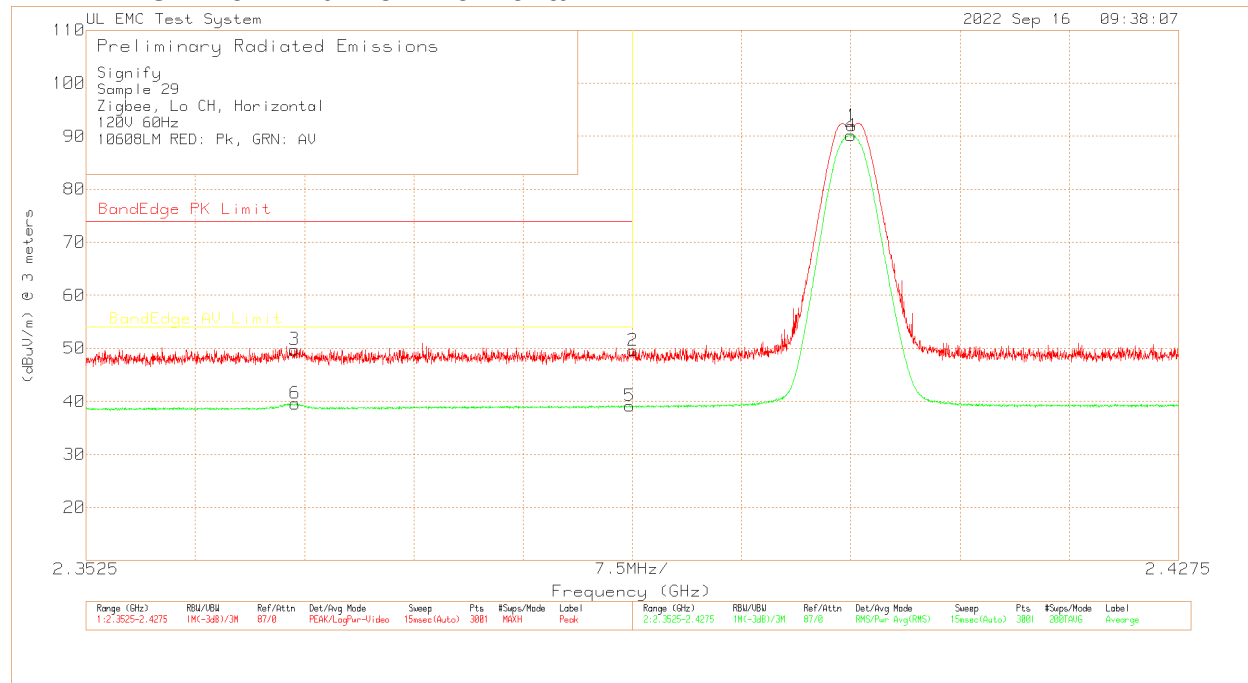
HARMONICS AND SPURIOUS EMISSIONS Middle Channel



[illegible]

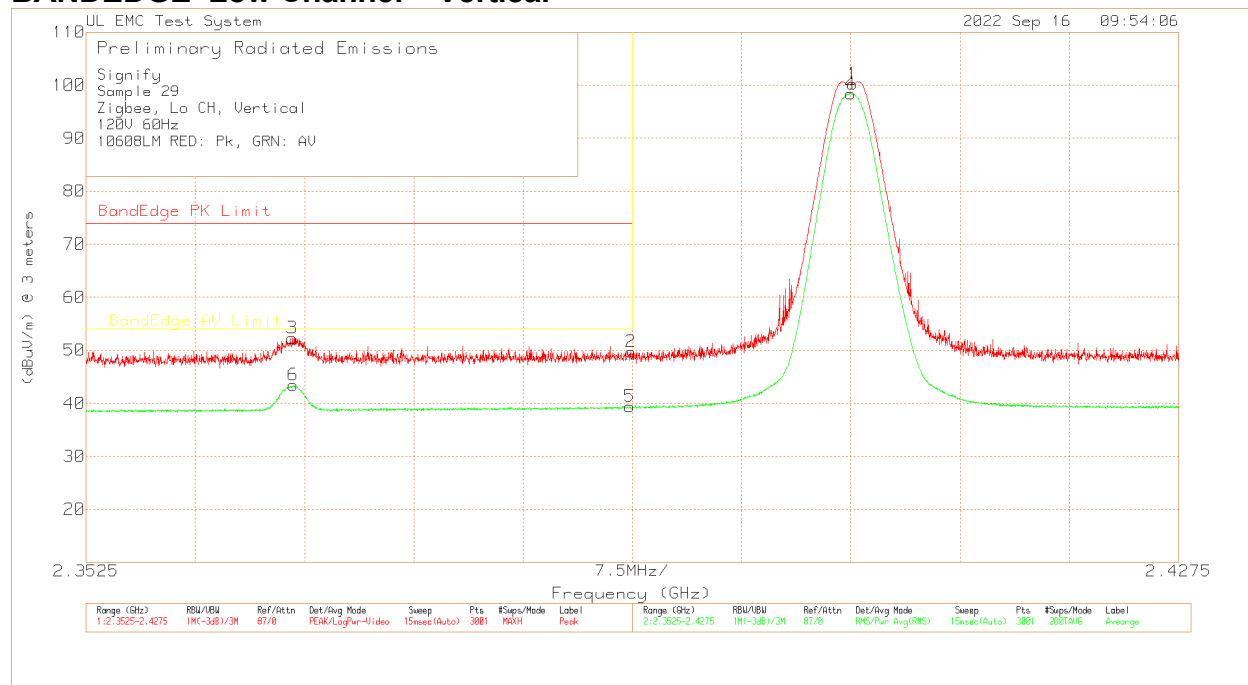
10.2.5. ZigBee, Sample 29

BANDEDGE Low Channel - Horizontal



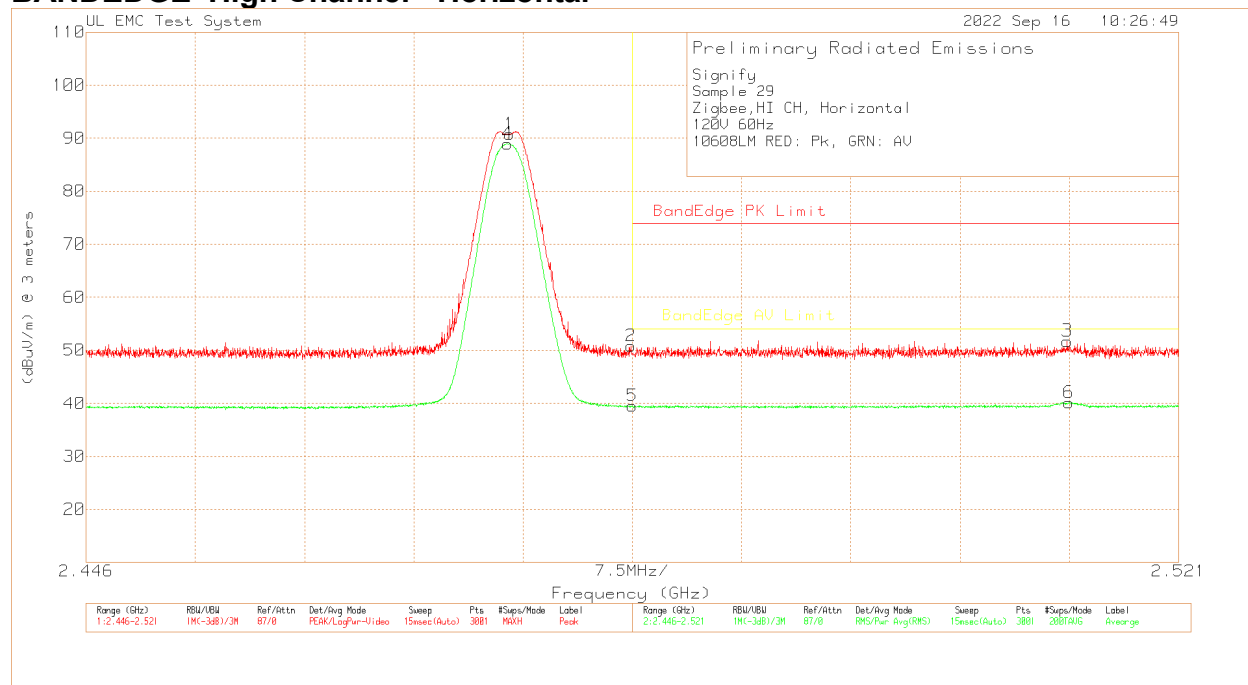
Signify														
Sample 29														
Zigbee, Lo CH, Horizontal														
120V 60Hz														
10608LM RED: Pk, GRN: AV														
Trace Markers														
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
Peak														
1	2.4051	65.52	Pk	21.8	4.68	92	-	-	-	-	0	322	H	
2	2.39	23.08	Pk	21.8	4.73	49.61	74	-24.39	-	-	0	322	H	
3	2.3668	23.4	Pk	21.8	4.57	49.77	74	-24.23	-	-	0	322	H	
Average														
4	2.405	63.68	Av	21.8	4.68	90.16	-	-	-	-	0	322	H	
5	2.39	12.6	Av	21.8	4.72	39.12	-	-	54	-14.88	0	322	H	
6	2.3669	13.22	Av	21.8	4.57	39.59	-	-	54	-14.41	0	322	H	
Pk - Peak detector														
Av - Average Detector														

BANEDGE Low Channel – Vertical



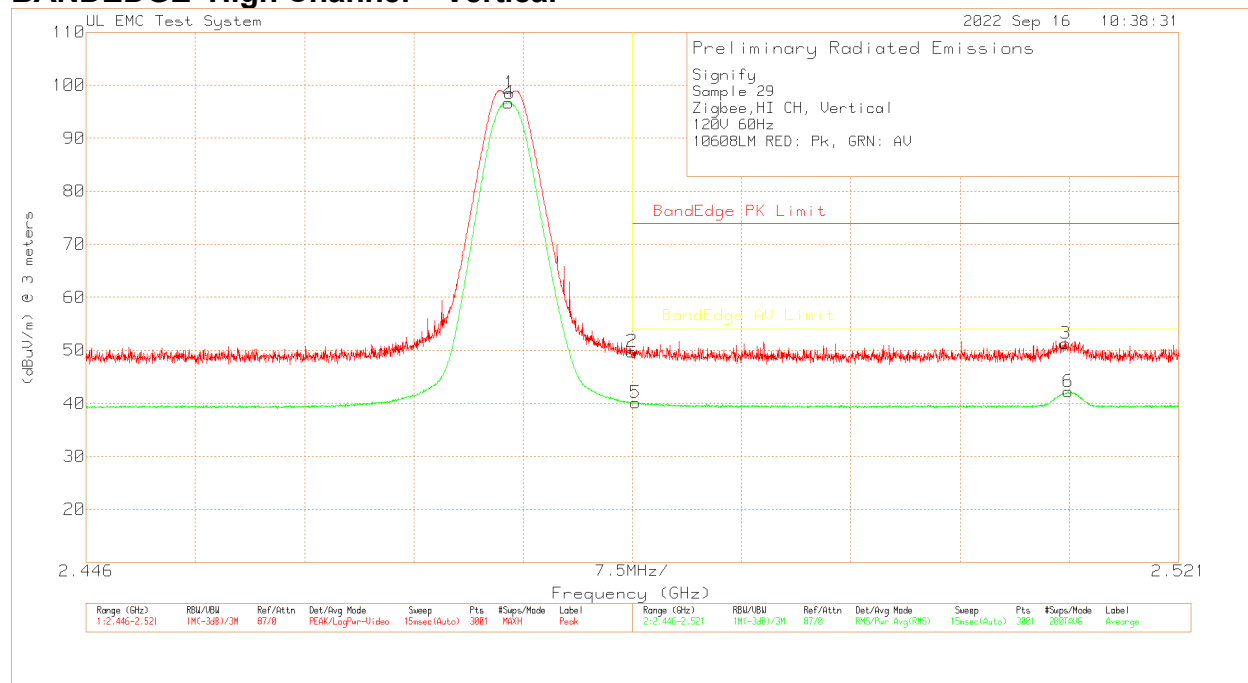
Signify													
Sample 29													
Zigbee, Lo CH, Vertical													
120V 60Hz													
10608LM RED: Pk, GRN: AV													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak													
1	2.4051	73.77	Pk	21.8	4.68	100.25	-	-	-	-	7	108	V
2	2.39	23.2	Pk	21.8	4.72	49.72	74	-24.28	-	-	7	108	V
3	2.3667	25.96	Pk	21.8	4.56	52.32	74	-21.68	-	-	7	108	V
Average													
4	2.405	71.92	Av	21.8	4.68	98.4	-	-	-	-	7	108	V
5	2.39	12.88	Av	21.8	4.72	39.4	-	-	54	-14.6	7	108	V
6	2.3667	17.07	Av	21.8	4.56	43.43	-	-	54	-10.57	7	108	V
Pk - Peak detector													
Av - Average Detector													

BANDEDGE High Channel - Horizontal



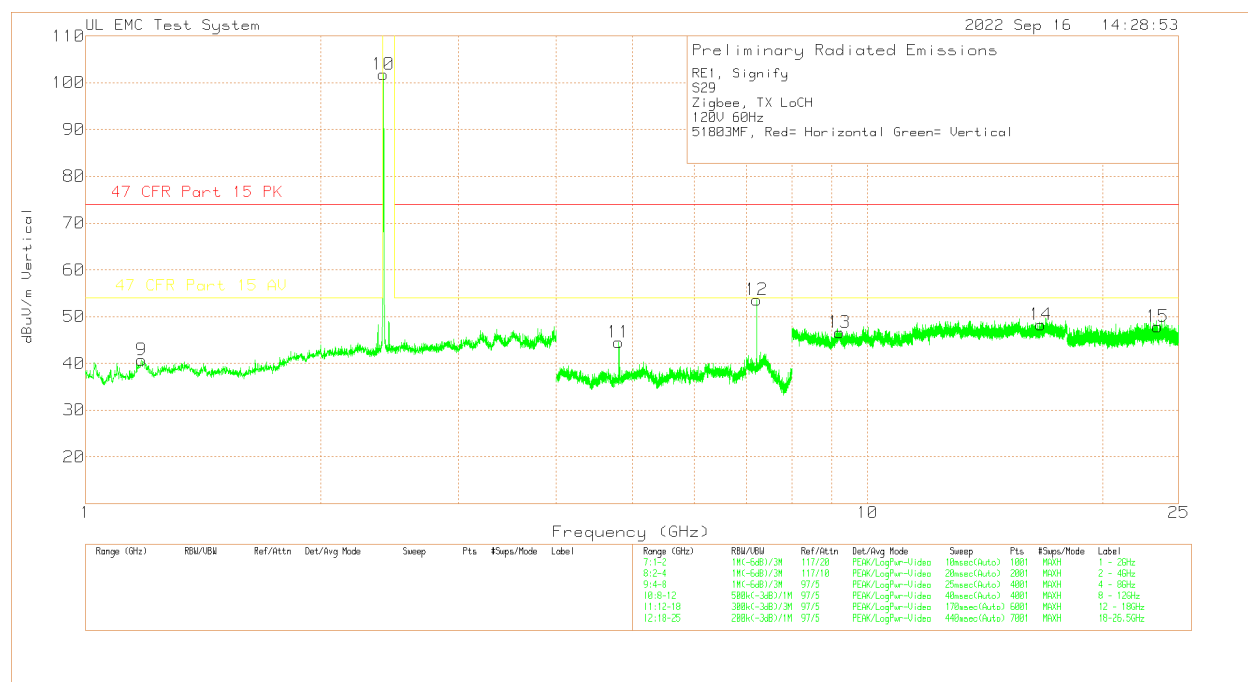
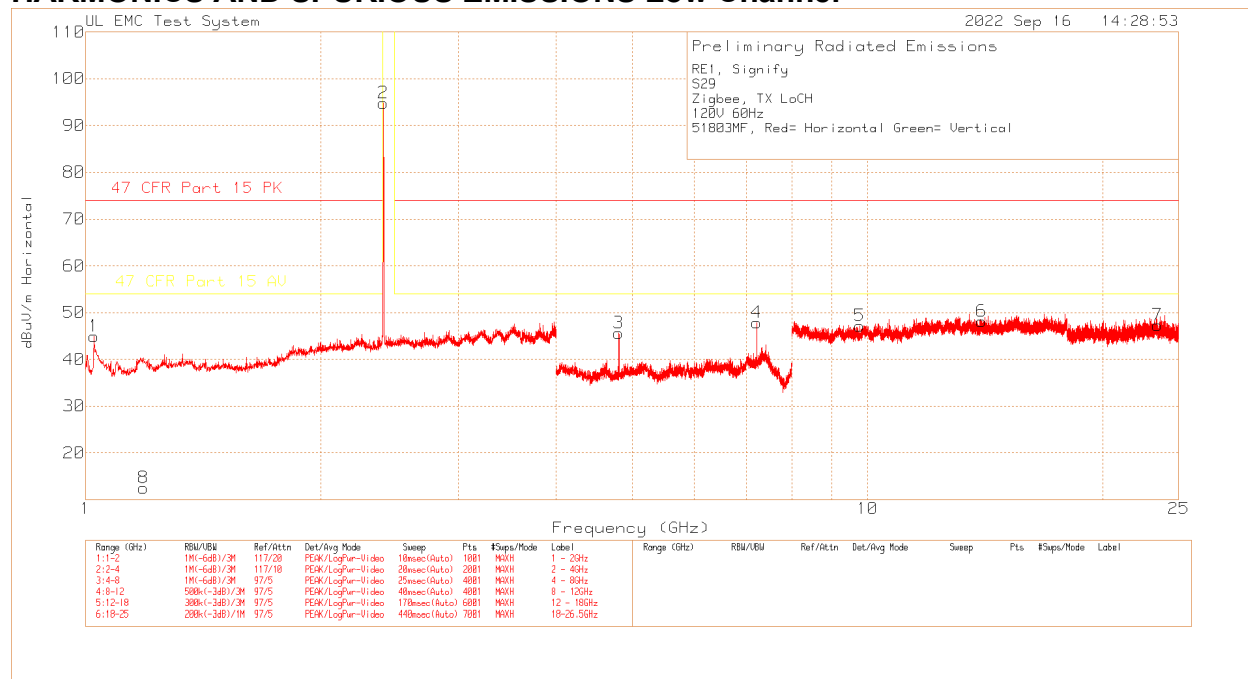
Signify													
Sample 29													
Zigbee, Hi CH, Horizontal													
120V 60Hz													
10608LM RED: Pk, GRN: AV													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak													
1	2.4751	64.31	Pk	22	4.48	90.79	-	-	-	-	219	111	H
2	2.4835	24.23	Pk	22.1	4.47	50.8	74	-23.2	-	-	219	111	H
3	2.5134	25.16	Pk	22.1	4.48	51.74	74	-22.26	-	-	219	111	H
Average													
4	2.475	62.49	Av	22	4.48	88.97	-	-	-	-	219	111	H
5	2.4835	12.92	Av	22.1	4.47	39.49	-	-	54	-14.51	219	111	H
6	2.5135	13.54	Av	22.1	4.48	40.12	-	-	54	-13.88	219	111	H
Pk - Peak detector													
Av - Average Detector													

BANEDGE High Channel – Vertical



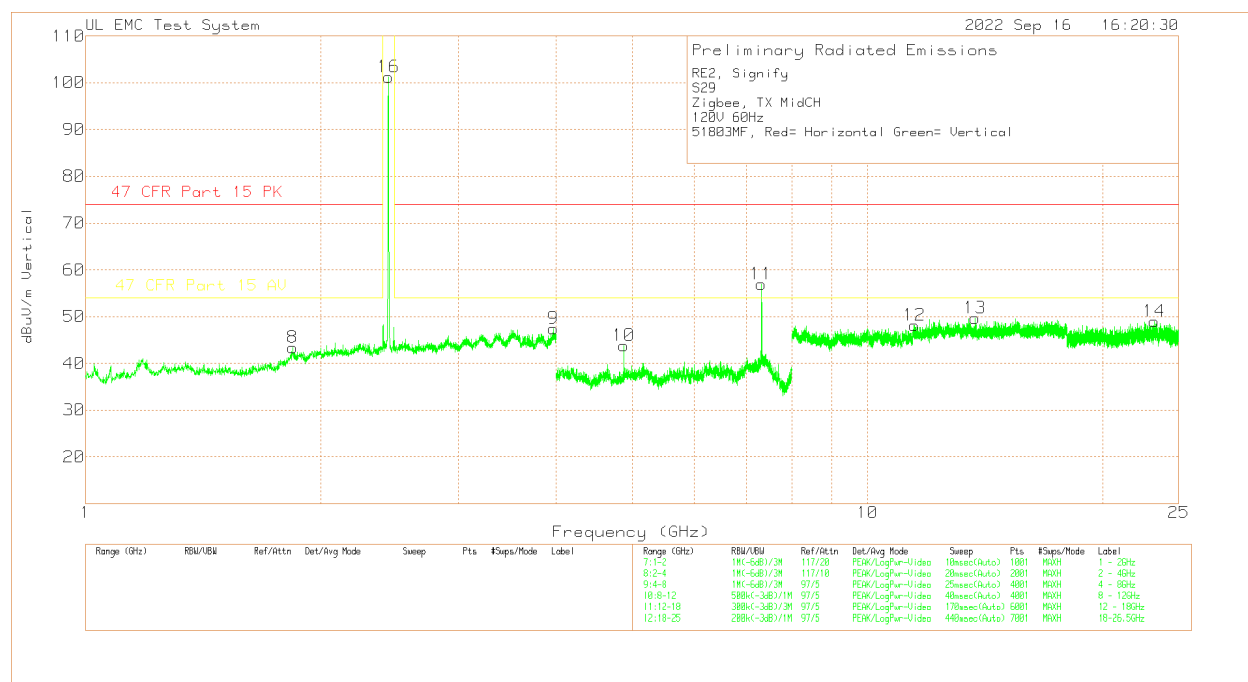
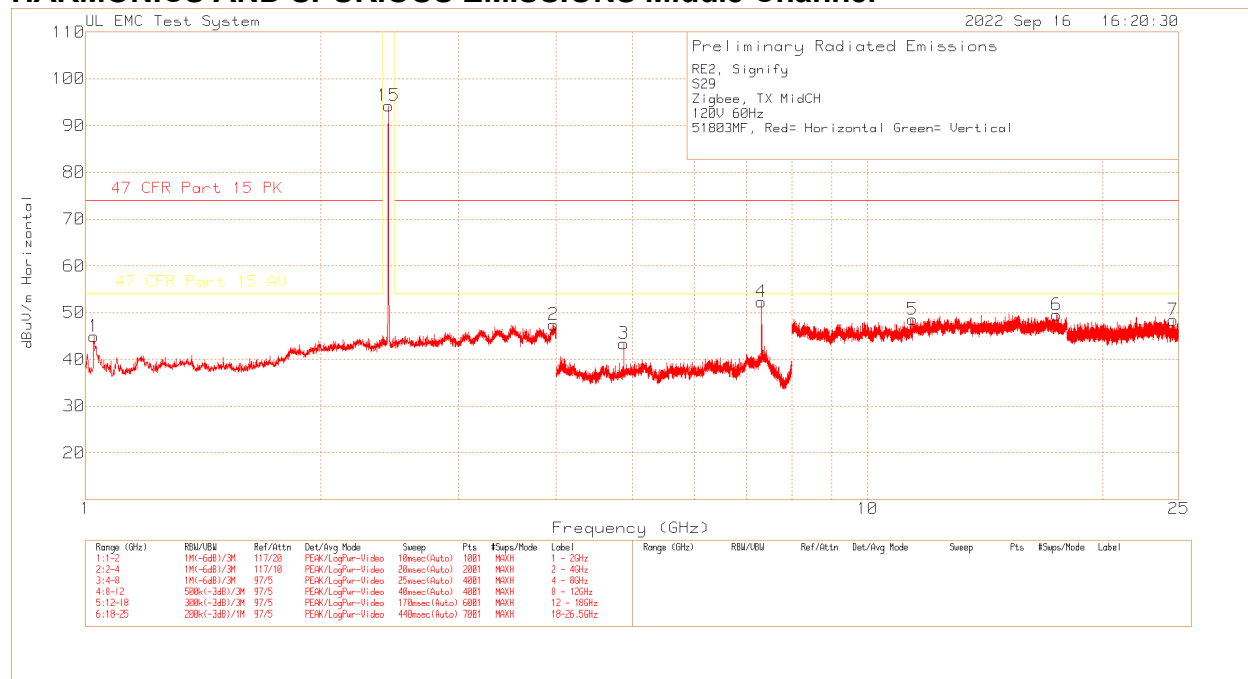
Signify													
Sample 29													
Zigbee, Hi CH, Vertical													
120V 60Hz													
10608LM RED: Pk, GRN: AV													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak													
1	2.4751	72.07	Pk	22	4.48	98.55	-	-	-	-	8	108	V
2	2.4835	23.21	Pk	22.1	4.47	49.78	74	-24.22	-	-	8	108	V
3	2.5133	24.76	Pk	22.1	4.48	51.34	74	-22.66	-	-	8	108	V
Average													
4	2.475	70.26	Av	22	4.48	96.74	-	-	-	-	8	108	V
5	2.4837	13.57	Av	22.1	4.47	40.14	-	-	54	-13.86	8	108	V
6	2.5134	15.62	Av	22.1	4.48	42.2	-	-	54	-11.8	8	108	V
Pk - Peak detector													
Av - Average Detector													

HARMONICS AND SPURIOUS EMISSIONS Low Channel



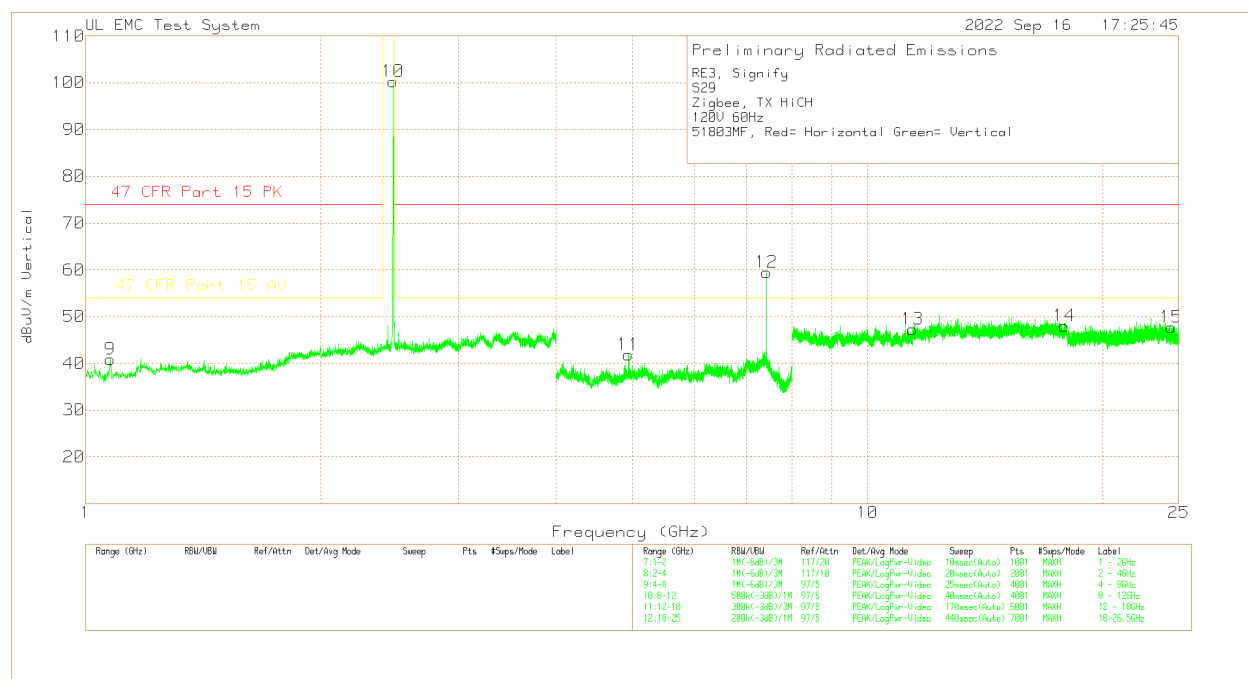
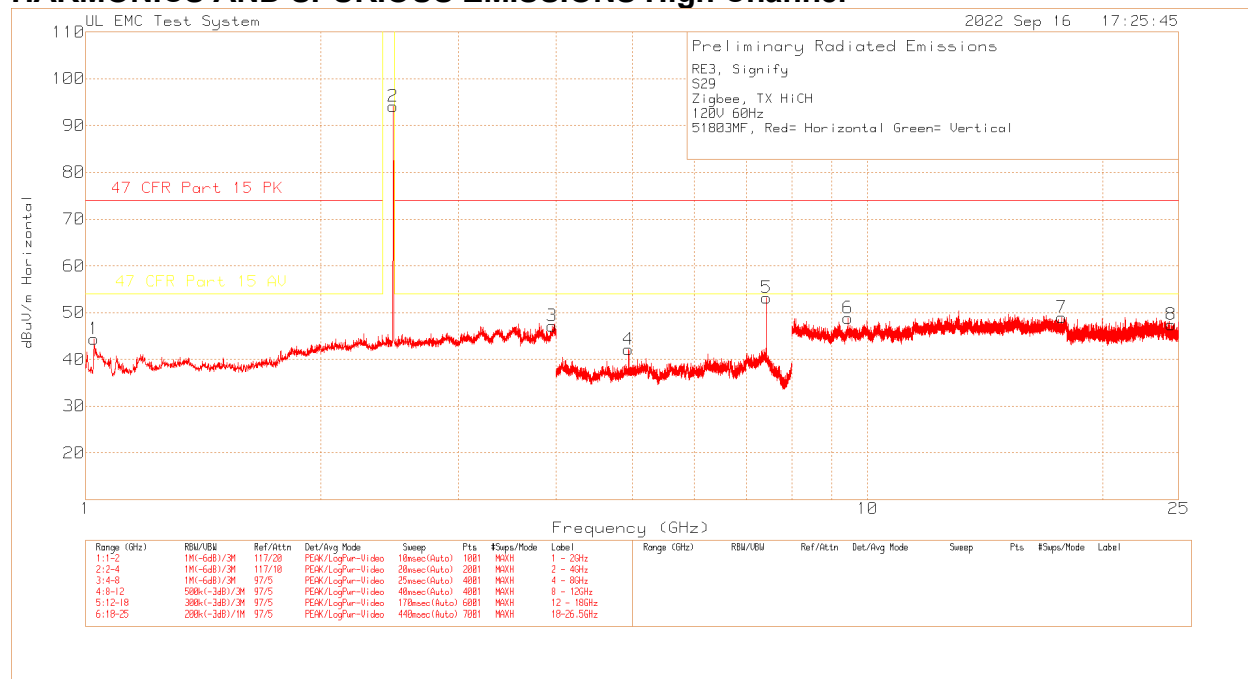
RE1, Signify													
S29													
Zigbee, TX LoCH													
120V 60Hz													
51803MF, Red= Horizontal Green= Vertical													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	1.026	73.94	Pk	27	-56	44.94	74	-29.06	54	-9.06	0-360	151	H
8	1.186	40.38	Pk	28.2	-56.07	12.51	74	-61.49	54	-41.49	0-360	151	H
2	2.405	112.71	Pk	21.8	-39.75	94.76	-	-	-	-	0-360	101	H
3	4.81	68.96	Pk	27.7	-51.02	45.64	74	-28.36	54	-8.36	0-360	100	H
4	7.213	64.07	Pk	29.8	-46.02	47.85	74	-26.15	54	-6.15	0-360	199	H
5	9.774	59.87	Pk	36.4	-49.15	47.12	74	-26.88	54	-6.88	0-360	149	H
6	14.003	50.48	Pk	39.9	-42.23	48.15	74	-25.85	54	-5.85	0-360	199	H
7	23.51	52.95	Pk	40.3	-45.92	47.33	74	-26.67	54	-6.67	0-360	149	H
9	1.18	68.64	Pk	28.1	-55.97	40.77	74	-33.23	54	-13.23	0-360	101	V
10	2.405	119.8	Pk	21.8	-39.75	101.85	-	-	-	-	0-360	101	V
11	4.809	67.55	Pk	27.7	-50.77	44.48	74	-29.52	54	-9.52	0-360	149	V
12	7.217	69.89	Pk	29.8	-46.11	53.58	74	-20.42	54	-0.42	0-360	101	V
13	9.203	57.65	Pk	36.3	-47.29	46.66	74	-27.34	54	-7.34	0-360	101	V
14	16.662	48.57	Pk	39.9	-40.15	48.32	74	-25.68	54	-5.68	0-360	101	V
15	23.506	53.53	Pk	40.3	-45.95	47.88	74	-26.12	54	-6.12	0-360	151	V
Radiated Emission Data													
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	14.00122	55.62	Pk	39.9	-42.5	53.02	74	-20.98	-	-	360	151	H
	14.00293	43.39	Av	39.9	-42.25	41.04	-	-	54	-12.96	360	151	H
	7.21641	71.59	Pk	29.8	-46.13	55.26	74	-18.74	-	-	247	100	V
	7.21633	63.47	Av	29.8	-46.13	47.14	-	-	54	-6.86	247	100	V
	16.66104	54.83	Pk	39.9	-40.11	54.62	74	-19.38	-	-	0	149	V
	16.66261	41.82	Av	39.9	-40.12	41.6	-	-	54	-12.4	0	149	V
Pk - Peak detector													
Av - Average detection													

HARMONICS AND SPURIOUS EMISSIONS Middle Channel



RE2, Signify													
S29													
Zigbee, TX MidCH													
120V 60Hz													
51803MF, Red= Horizontal Green= Vertical													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	1.026	73.92	Pk	27	-56	44.92	74	-29.08	54	-9.08	0-360	149	H
2	3.963	61.77	Pk	24.2	-38.57	47.4	74	-26.6	54	-6.6	0-360	199	H
15	2.439	112.31	Pk	21.9	-39.95	94.26	-	-	-	-	0-360	101	H
3	4.879	65.77	Pk	27.7	-50.02	43.45	74	-30.55	54	-10.55	0-360	199	H
4	7.319	67.27	Pk	30.6	-45.53	52.34	74	-21.66	54	-1.66	0-360	199	H
5	11.419	57.76	Pk	37	-46.26	48.5	74	-25.5	54	-5.5	0-360	151	H
6	17.446	49.66	Pk	40	-40.14	49.52	74	-24.48	54	-4.48	0-360	149	H
7	24.578	54.8	Pk	40.3	-46.67	48.43	74	-25.57	54	-5.57	0-360	151	H
8	1.842	65.6	Pk	31	-53.27	43.33	74	-30.67	54	-10.67	0-360	199	V
9	3.965	61.83	Pk	24.2	-38.62	47.41	74	-26.59	54	-6.59	0-360	149	V
16	2.439	119.31	Pk	21.9	-39.95	101.26	-	-	-	-	0-360	101	V
10	4.879	66.14	Pk	27.7	-50.02	43.82	74	-30.18	54	-10.18	0-360	101	V
11	7.322	71.73	Pk	30.6	-45.35	56.98	74	-17.02	54	2.98	0-360	101	V
12	11.494	56.8	Pk	37.1	-45.76	48.14	74	-25.86	54	-5.86	0-360	101	V
13	13.733	52.59	Pk	39.8	-42.68	49.71	74	-24.29	54	-4.29	0-360	151	V
14	23.288	53.88	Pk	40.3	-45.16	49.02	74	-24.98	54	-4.98	0-360	149	V
Radiated Emission Data													
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.31822	69.07	Pk	30.6	-45.47	54.2	74	-19.8	-	-	263	199	H
	7.32134	60.57	Av	30.6	-45.5	45.67	-	-	54	-8.33	263	199	H
	11.41988	59.97	Pk	37	-46.12	50.85	74	-23.15	-	-	0	152	H
	11.41899	47.8	Av	37	-46.26	38.54	-	-	54	-15.46	0	152	H
	17.44415	54.51	Pk	40	-40.3	54.21	74	-19.79	-	-	360	150	H
	17.44764	41.86	Av	40	-40.12	41.74	-	-	54	-12.26	360	150	H
	24.57732	61.04	Pk	40.3	-46.57	54.77	74	-19.23	-	-	0	150	H
	24.57666	48.84	Av	40.3	-46.7	42.44	-	-	54	-11.56	0	150	H
	7.32146	73.74	Pk	30.6	-45.47	58.87	74	-15.13	-	-	258	101	V
	7.32133	65.95	Av	30.6	-45.5	51.05	-	-	54	-2.95	258	101	V
	11.4955	60.78	Pk	37.1	-45.75	52.13	74	-21.87	-	-	360	101	V
	11.49317	47.8	Av	37.1	-45.9	39	-	-	54	-15	360	101	V
	13.7316	57.49	Pk	39.8	-42.96	54.33	74	-19.67	-	-	0	150	V
	13.73156	44.42	Av	39.8	-42.95	41.27	-	-	54	-12.73	0	150	V
	23.28803	61.2	Pk	40.3	-45.16	56.34	74	-17.66	-	-	360	150	V
	23.2864	48.38	Av	40.3	-45.26	43.42	-	-	54	-10.58	360	150	V
Pk - Peak detector													
Av - Average Detector													

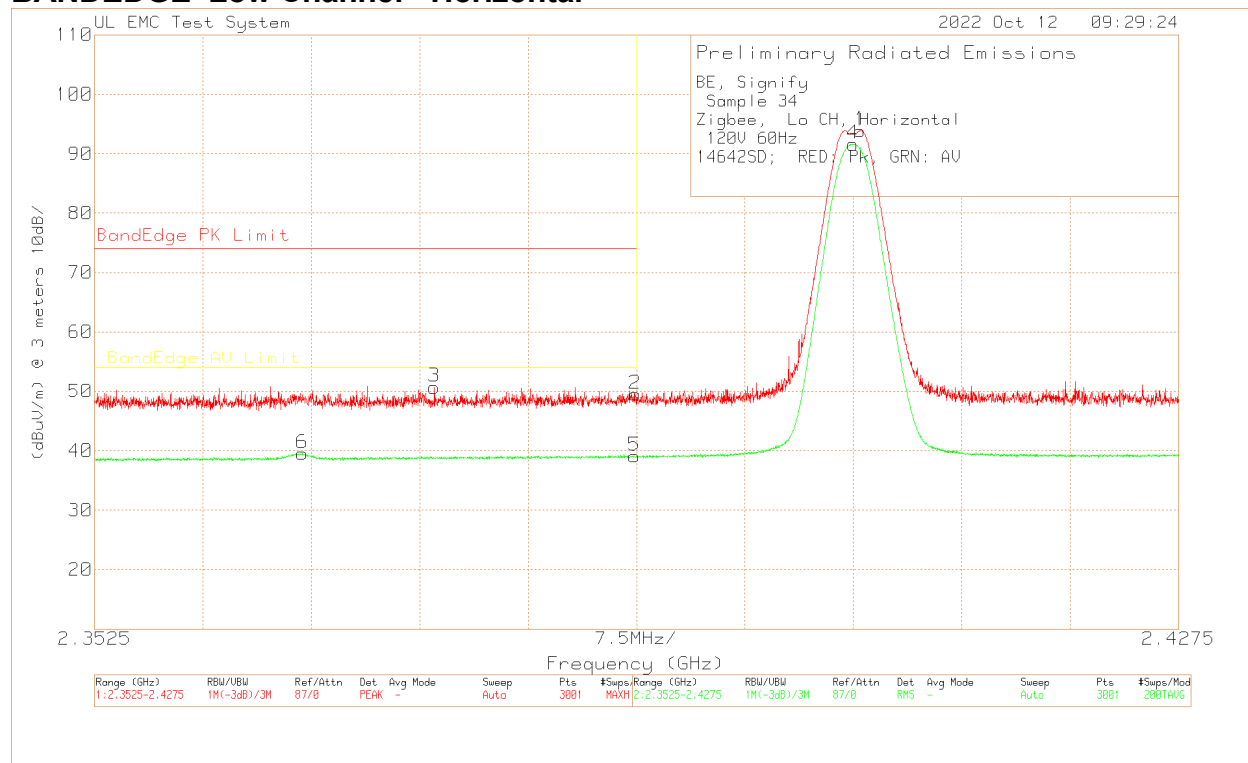
HARMONICS AND SPURIOUS EMISSIONS High Channel



RE3, Signify													
S29													
Zigbee, TX HiCH													
120V 60Hz													
51803MF, Red= Horizontal Green= Vertical													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	1.026	73.34	Pk	27	-56	44.34	74	-29.66	54	-9.66	0-360	151	H
2	2.474	112.2	Pk	22	-40.05	94.15	-	-	-	-	0-360	101	H
3	3.953	61.71	Pk	24.1	-38.59	47.22	74	-26.78	54	-6.78	0-360	149	H
4	4.95	63.7	Pk	27.8	-49.43	42.07	74	-31.93	54	-11.93	0-360	101	H
5	7.427	68.91	Pk	30.8	-46.6	53.11	74	-20.89	54	-0.89	0-360	199	H
6	9.436	61.28	Pk	36.4	-48.79	48.89	74	-25.11	54	-5.11	0-360	149	H
7	17.72	48.9	Pk	40	-39.89	49.01	74	-24.99	54	-4.99	0-360	199	H
8	24.442	53.92	Pk	40.3	-46.79	47.43	74	-26.57	54	-6.57	0-360	149	H
9	1.075	70.1	Pk	27	-56.2	40.9	74	-33.1	54	-13.1	0-360	101	V
10	2.474	118.25	Pk	22	-40.05	100.2	-	-	-	-	0-360	101	V
11	4.948	63.51	Pk	27.8	-49.47	41.84	74	-32.16	54	-12.16	0-360	149	V
12	7.424	75.05	Pk	30.8	-46.44	59.41	74	-14.59	54	5.41	0-360	101	V
13	11.428	56.36	Pk	37	-46.05	47.31	74	-26.69	54	-6.69	0-360	151	V
14	17.851	47.47	Pk	40.1	-39.53	48.04	74	-25.96	54	-5.96	0-360	199	V
15	24.48	54	Pk	40.3	-46.54	47.76	74	-26.24	54	-6.24	0-360	151	V
Radiated Emission Data													
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.42632	71.58	Pk	30.8	-46.65	55.73	74	-18.27	-	-	284	199	H
	7.42631	63.57	Av	30.8	-46.65	47.72	-	-	54	-6.28	284	199	H
	9.43491	62.39	Pk	36.4	-48.72	50.07	74	-23.93	-	-	0	150	H
	9.43639	49.76	Av	36.4	-48.74	37.42	-	-	54	-16.58	0	150	H
	17.72193	53.89	Pk	40	-40.17	53.72	74	-20.28	-	-	360	198	H
	17.72212	41.35	Av	40	-40.17	41.18	-	-	54	-12.82	360	198	H
	7.42311	75.73	Pk	30.8	-46.56	59.97	74	-14.03	-	-	251	100	V
	7.42335	68.43	Av	30.8	-46.53	52.7	-	-	54	-1.3	251	100	V
	17.85056	53.78	Pk	40.1	-39.56	54.32	74	-19.68	-	-	0	198	V
	17.85065	41	Av	40.1	-39.55	41.55	-	-	54	-12.45	0	198	V
Pk - Peak detector													
Av - Average Detector													

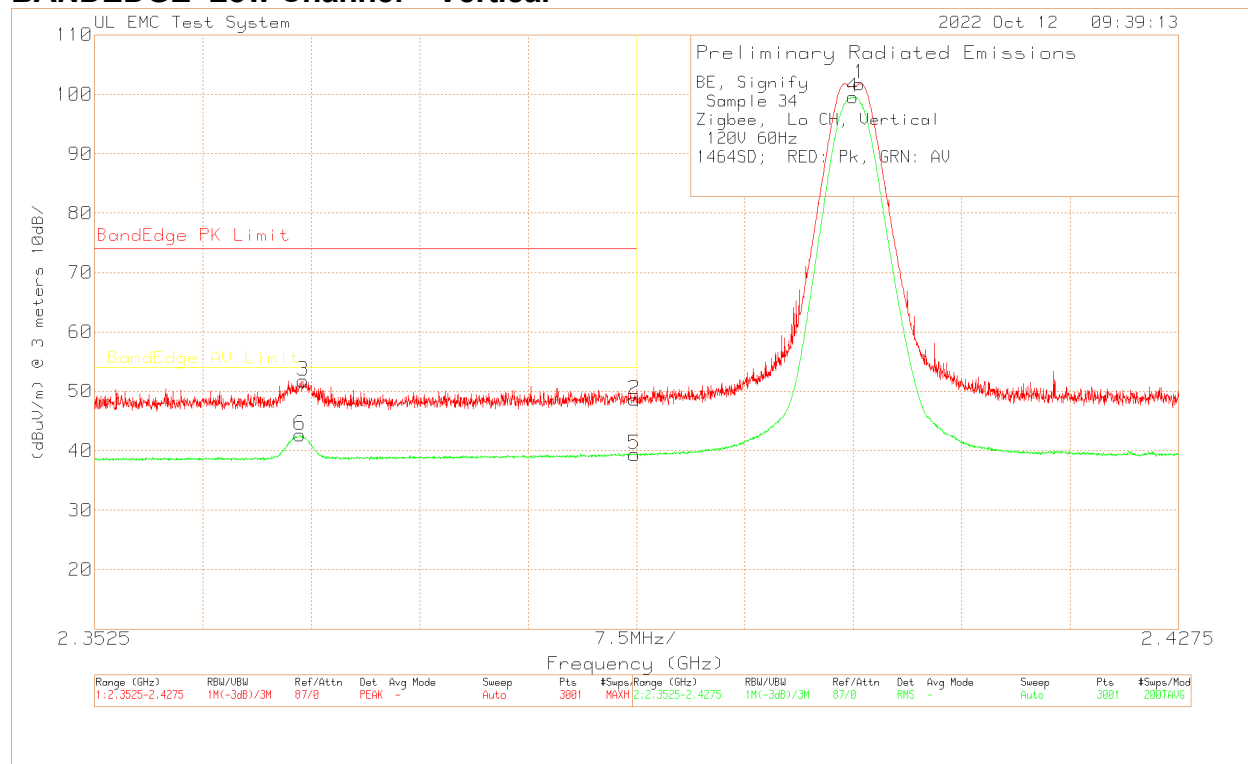
10.2.6. ZigBee, Sample 34

BANDEDGE Low Channel - Horizontal



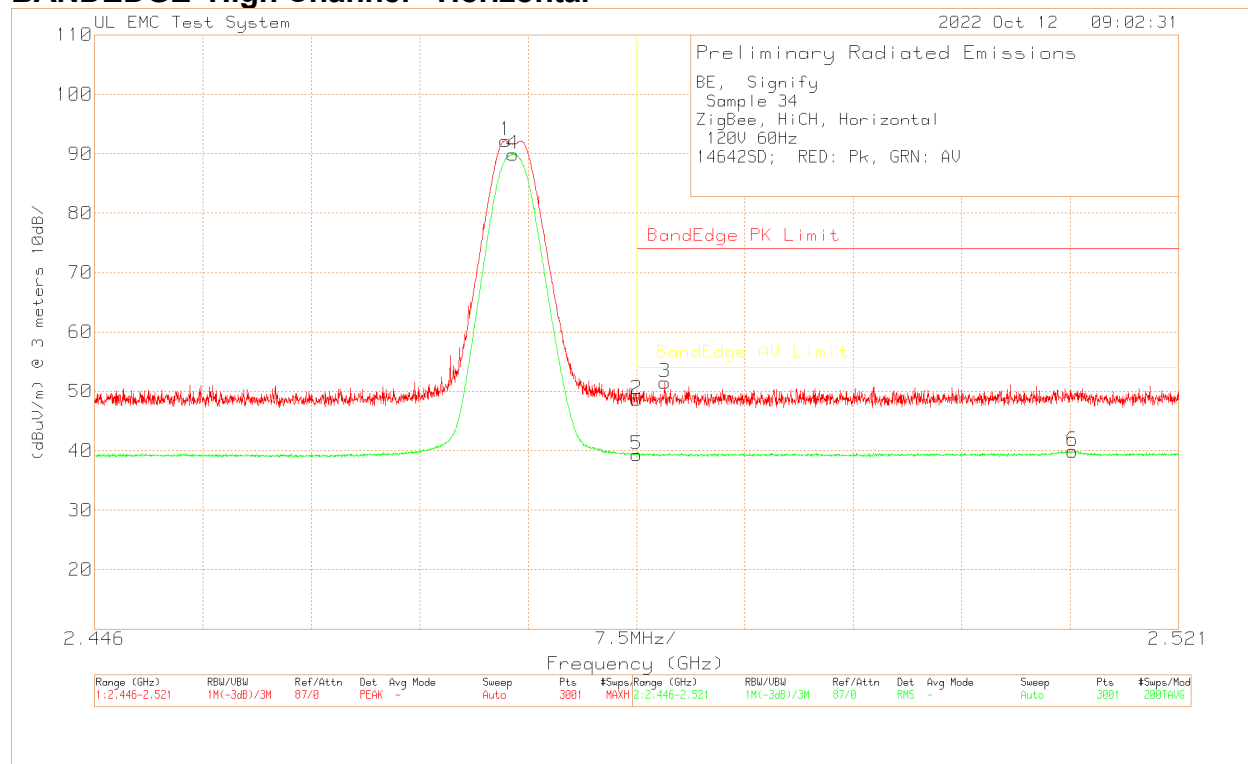
BE, Signify													
Sample 34													
Zigbee, Lo CH, Horizontal													
120V 60Hz													
14642SD; RED: Pk, GRN: AV													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak													
1	2.405475	67.4	Pk	21.8	4.68	93.88	-	-	-	-	252	261	H
2	2.3899	22.99	Pk	21.8	4.72	49.51	74	-24.49	-	-	252	261	H
3	2.376	24.24	Pk	21.8	4.66	50.7	74	-23.3	-	-	252	261	H
Average													
4	2.404975	65.13	Av	21.8	4.68	91.61	-	-	-	-	252	261	H
5	2.38985	12.57	Av	21.8	4.72	39.09	-	-	54	-14.91	252	261	H
6	2.366875	13.15	Av	21.8	4.57	39.52	-	-	54	-14.48	252	261	H
Pk - Peak detector													
Av - Average Detector													

BANEDGE Low Channel – Vertical



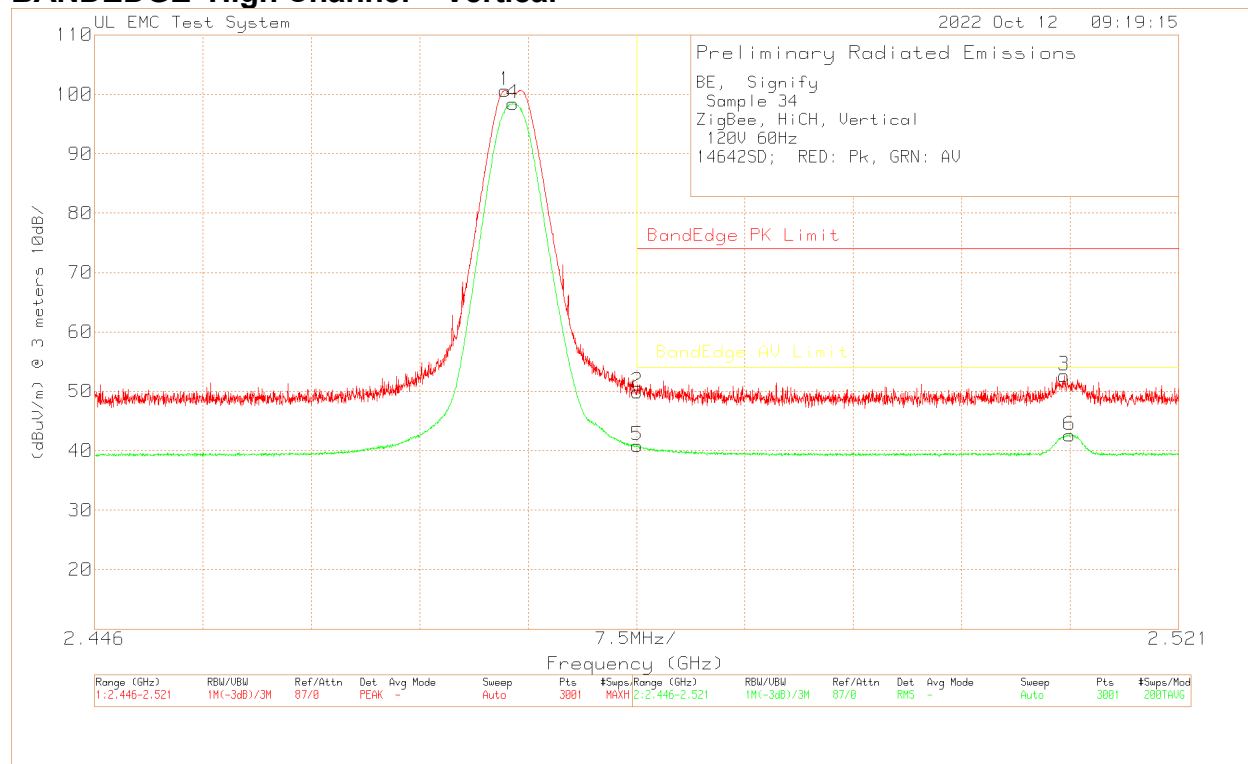
BE,Signify													
Sample 34													
Zigbee, Lo CH, Vertical													
120V 60Hz													
1464SD; RED: Pk, GRN: AV													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak													
1	2.405425	75.3	Pk	21.8	4.68	101.78	-	-	-	-	254	100	V
2	2.39	22.14	Pk	21.8	4.72	48.66	74	-25.34	-	-	254	100	V
3	2.366925	25.41	Pk	21.8	4.57	51.78	74	-22.22	-	-	254	100	V
Average													
4	2.404975	73.08	Av	21.8	4.68	99.56	-	-	-	-	254	100	V
5	2.39	12.86	Av	21.8	4.72	39.38	-	-	54	-14.62	254	100	V
6	2.3667	16.32	Av	21.8	4.56	42.68	-	-	54	-11.32	254	100	V
Pk - Peak detector													
Av - Average Detector													

BANDEDGE High Channel - Horizontal



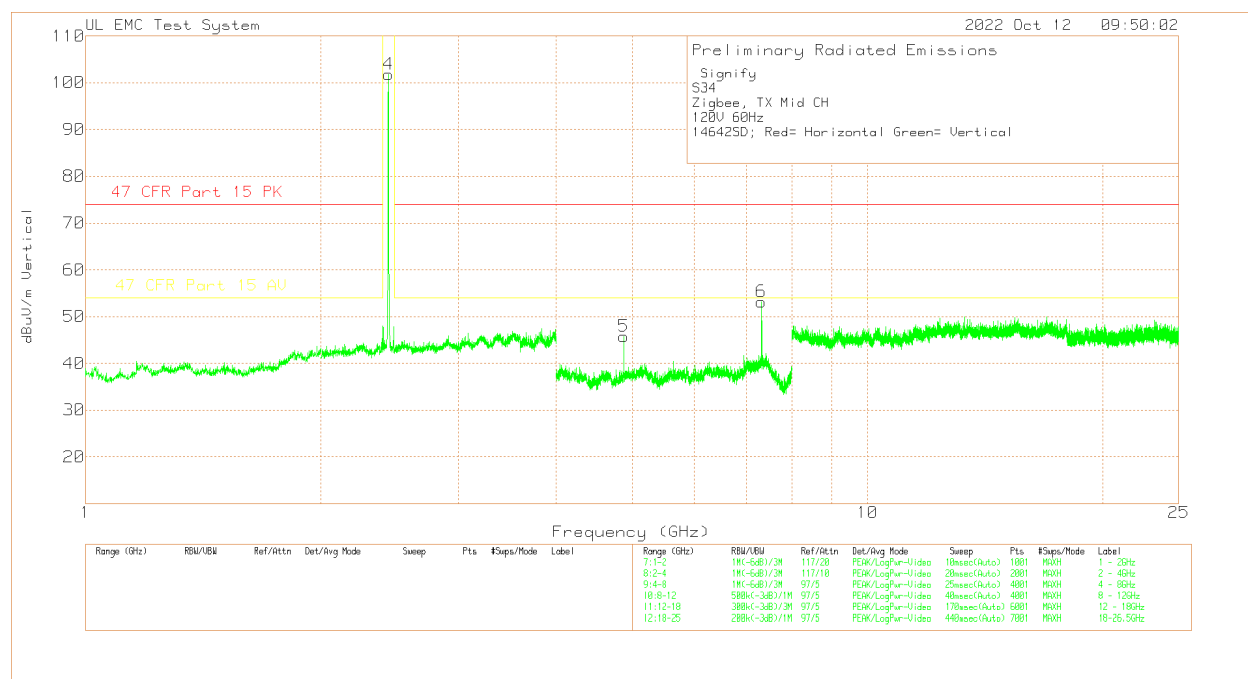
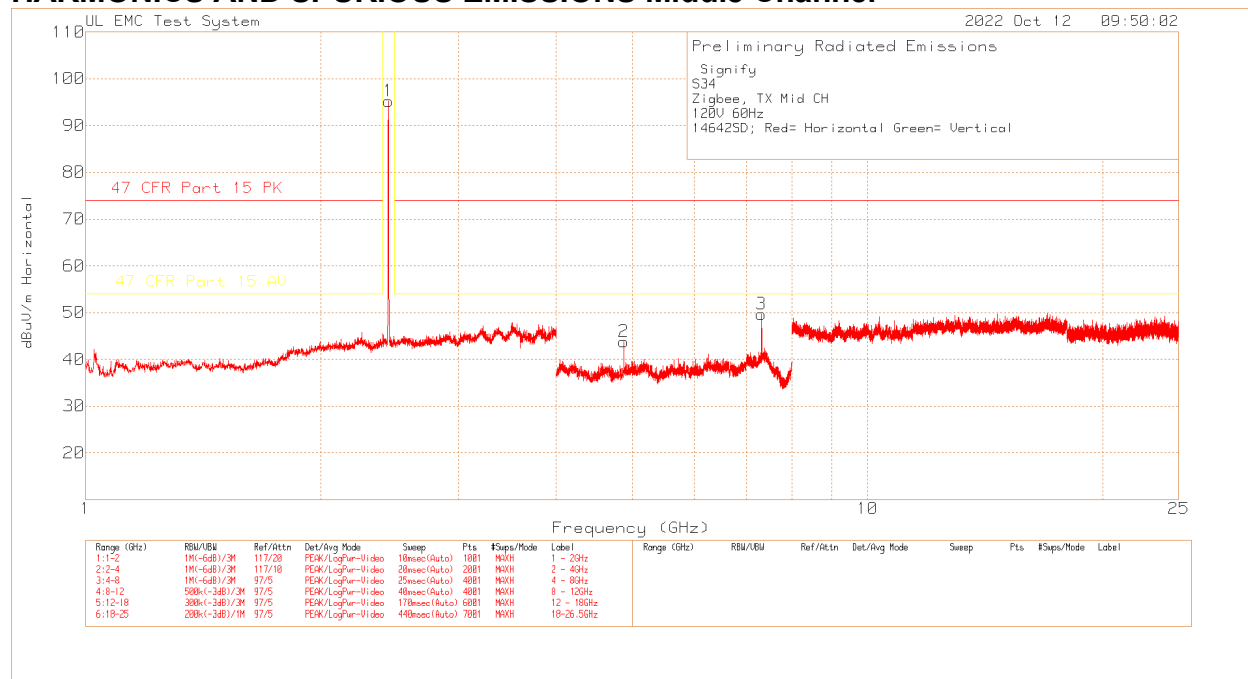
BE, Signify													
Sample 34													
ZigBee, HiCH, Horizontal													
120V 60Hz													
14642SD; RED: Pk, GRN: AV													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Peak													
1	2.474438	65.71	Pk	22	4.48	92.19	-	-	-	-	252	284	H
2	2.4835	22.07	Pk	22.1	4.47	48.64	74	-25.36	-	-	252	284	H
3	2.48545	24.95	Pk	22.1	4.48	51.53	74	-22.47	-	-	252	284	H
Average													
4	2.47495	63.43	Av	22	4.48	89.91	-	-	-	-	252	284	H
5	2.4835	12.77	Av	22.1	4.47	39.34	-	-	54	-14.66	252	284	H
6	2.513675	13.36	Av	22.1	4.48	39.94	-	-	54	-14.06	252	284	H
Pk - Peak detector													
Av - Average Detector													

BANDEDGE High Channel – Vertical



BE, Signify													
Sample 34													
ZigBee, HiCH, Vertical													
120V 60Hz													
14642SD; RED: Pk, GRN: AV													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degr]	Height [cm]	Polarity
Peak													
1	2.4744	74.19	Pk	22	4.48	100.67	-	-	-	-	252	103	V
2	2.4835	23.34	Pk	22.1	4.47	49.91	74	-24.09	-	-	252	103	V
3	2.513075	26.06	Pk	22.1	4.49	52.65	74	-21.35	-	-	252	103	V
Average													
4	2.47495	71.94	Av	22	4.48	98.42	-	-	-	-	252	103	V
5	2.4835	14.29	Av	22.1	4.47	40.86	-	-	54	-13.14	252	103	V
6	2.513475	16.06	Av	22.1	4.48	42.64	-	-	54	-11.36	252	103	V
Pk - Peak detector													
Av - Average Detector													

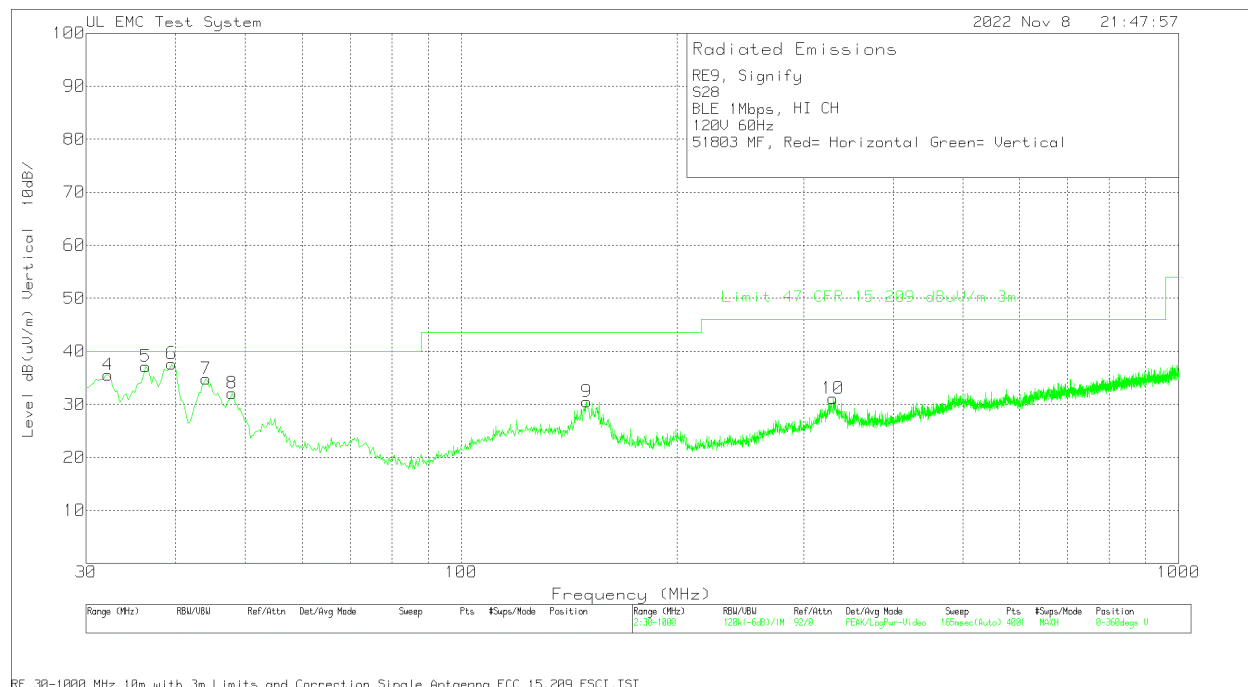
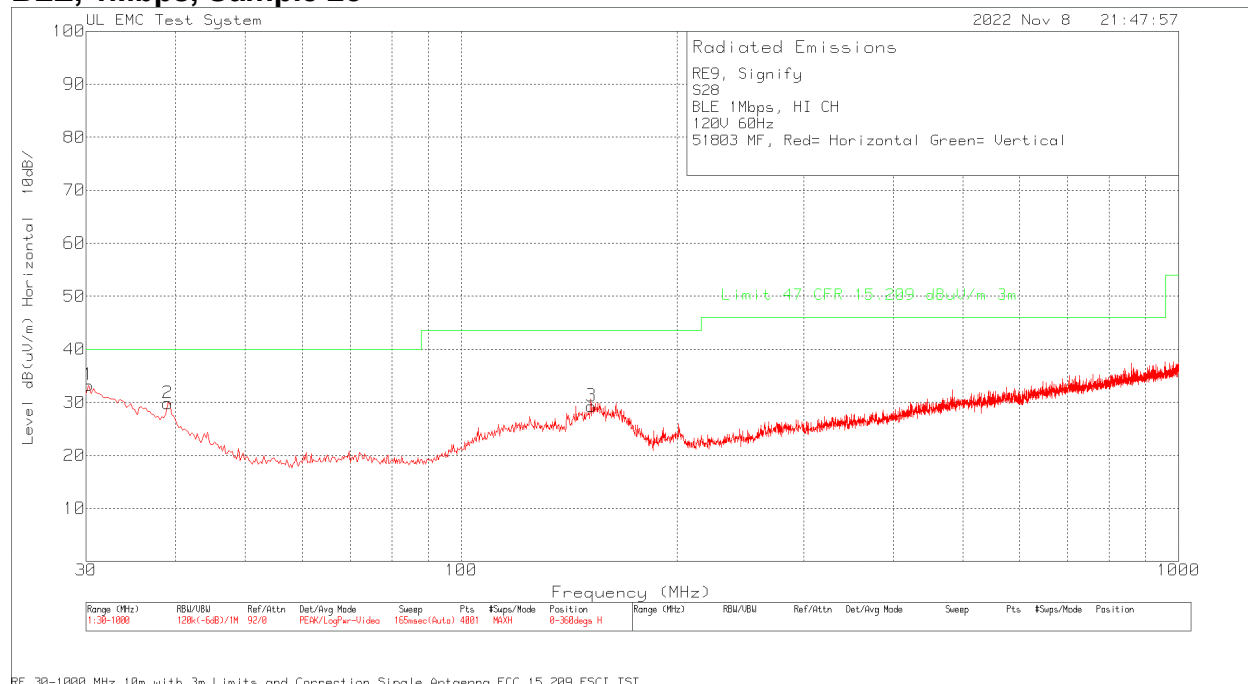
HARMONICS AND SPURIOUS EMISSIONS Middle Channel



Signify													
S34													
Zigbee, TX Mid CH													
120V 60Hz													
14642SD; Red= Horizontal Green= Vertical													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.439	113.23	Pk	21.9	-39.95	95.18	-	-	-	-	0-360	199	H
2	4.881	66.14	Pk	27.7	-49.97	43.87	74	-30.13	54	-10.13	0-360	149	H
3	7.322	64.41	Pk	30.6	-45.35	49.66	74	-24.34	54	-4.34	0-360	199	H
4	2.439	119.84	Pk	21.9	-39.95	101.79	-	-	-	-	0-360	101	V
5	4.879	68.04	Pk	27.7	-50.02	45.72	74	-28.28	54	-8.28	0-360	101	V
6	7.322	67.92	Pk	30.6	-45.35	53.17	74	-20.83	54	-0.83	0-360	101	V
Radiated Emission Data													
	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Gain/Loss (dB)	Corrected Reading dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
	7.321634	67.36	Pk	30.6	-45.43	52.53	74	-21.47	-	-	194	248	H
	7.321634	59.47	Av	30.6	-45.43	44.64	-	-	54	-9.36	194	248	H
	7.321596	71.91	Pk	30.6	-45.44	57.07	74	-16.93	-	-	134	267	V
	7.321417	65.65	Av	30.6	-45.48	50.77	-	-	54	-3.23	134	267	V
Pk - Peak detector													
Av - Average Detector													

10.3. SPURIOUS RADIATED EMISSIONS 30MHz-1GHz

BLE, 1Mbps, Sample 28



RE9, Signify
S28
BLE 1Mbps, HI CH
120V 60Hz
51803 MF, Red= Horizontal Green= Vertical

Trace Markers

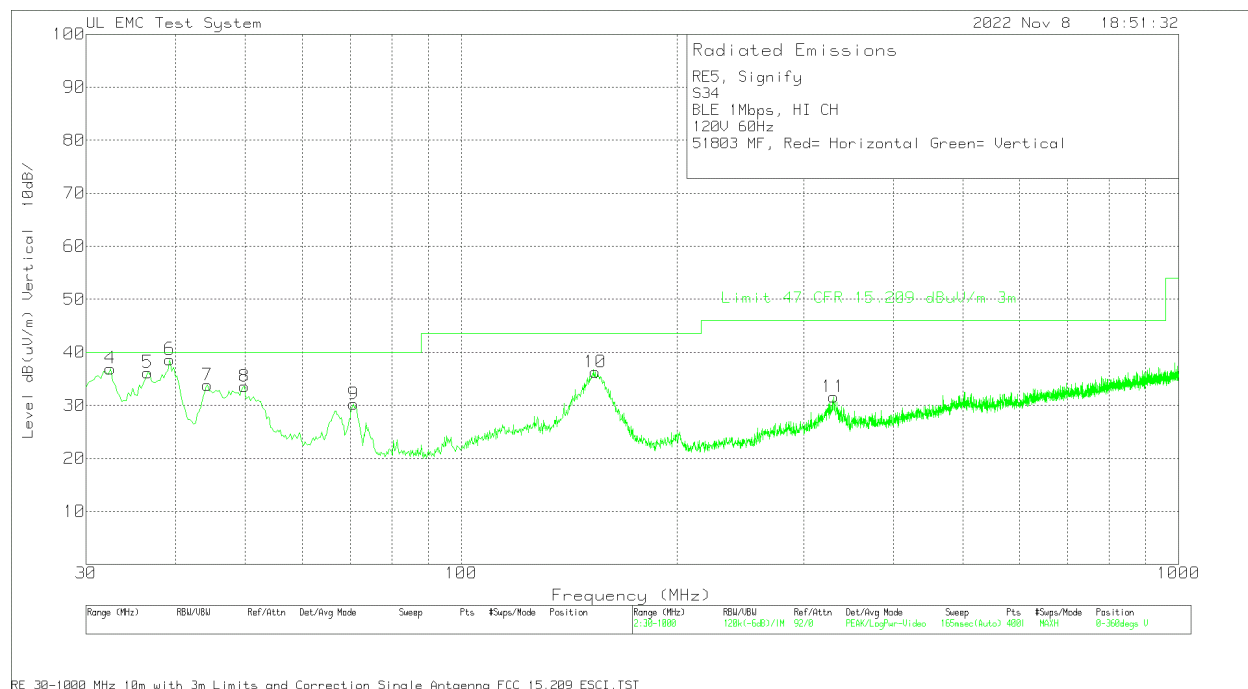
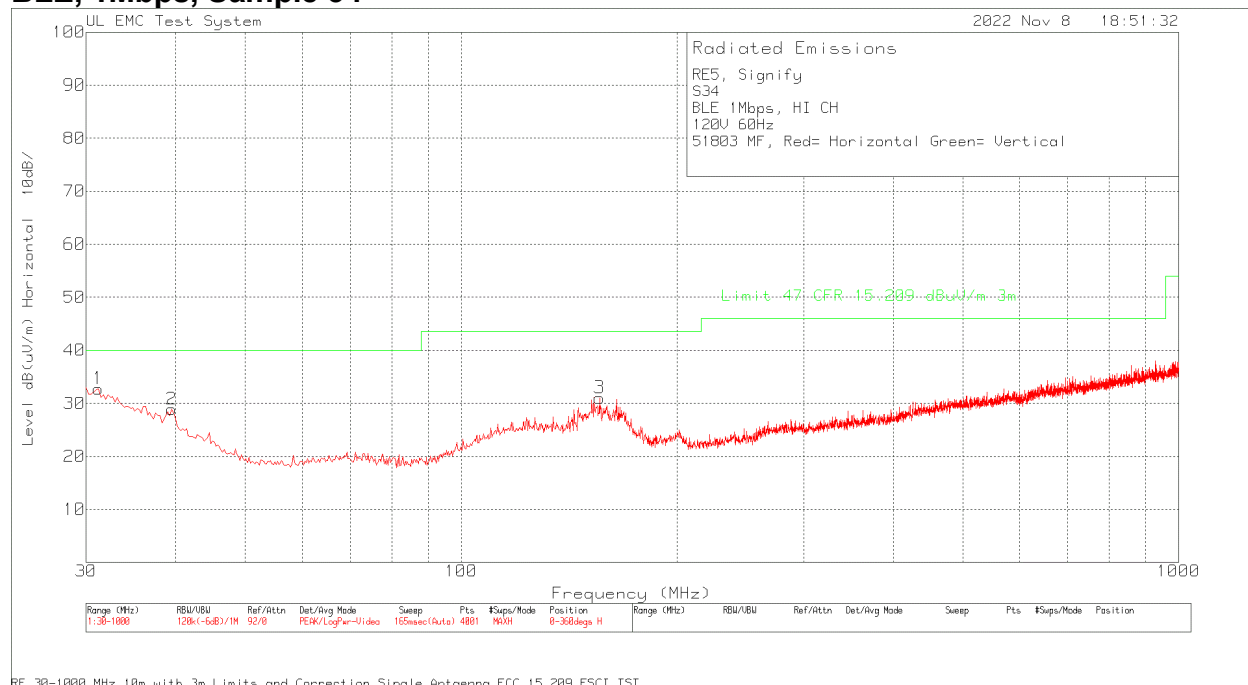
Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
1	30.2425	32.47dBuV Pk	27	-26.2	33.27	40
		Azimuth:0-360	Height:98	Horz	Margin (dB)	-6.73
2	38.9725	35.34dBuV Pk	20.7	-26.2	29.84	40
		Azimuth:0-360	Height:299	Horz	Margin (dB)	-10.16
3	151.735	36.43dBuV Pk	18.5	-25.6	29.33	43.52
		Azimuth:0-360	Height:299	Horz	Margin (dB)	-14.19
4	32.1825	36.04dBuV Pk	25.7	-26.2	35.54	40
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-4.46
5	36.305	40.57dBuV Pk	22.8	-26.2	37.17	40
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-2.83
6	39.4575	43.48dBuV Pk	20.4	-26.2	37.68	40
		Azimuth:0-360	Height:197	Vert	Margin (dB)	-2.32
7	44.065	43.89dBuV Pk	17	-26.1	34.79	40
		Azimuth:0-360	Height:197	Vert	Margin (dB)	-5.21
8	47.945	43.52dBuV Pk	14.7	-26.1	32.12	40
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-7.88
9	149.5525	37.37dBuV Pk	18.7	-25.6	30.47	43.52
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-13.05
10	329.9725	35.52dBuV Pk	20.1	-24.5	31.12	46.02
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-14.9

Radiated Emission Data

Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
32.138	32.08dBuV Qp	25.7	-26.2	31.58	40
	Azimuth: 259	Height:107	Vert	Margin (dB):	-8.42
36.421	36.32dBuV Qp	22.7	-26.2	32.82	40
	Azimuth: 314	Height:107	Vert	Margin (dB):	-7.18
39.556	39.72dBuV Qp	20.3	-26.2	33.82	40
	Azimuth: 14	Height:102	Vert	Margin (dB):	-6.18
44.279	39.13dBuV Qp	16.8	-26.1	29.83	40
	Azimuth: 0	Height:241	Vert	Margin (dB):	-10.17

LIMIT 1: Limit 47 CFR 15.209 dBuV/m 3m
Pk - Peak detector
Qp - Quasi-Peak detector

BLE, 1Mbps, Sample 34



RE5, Signify
S34
BLE 1Mbps, HI CH
120V 60Hz
51803 MF, Red= Horizontal Green= Vertical

Trace Markers

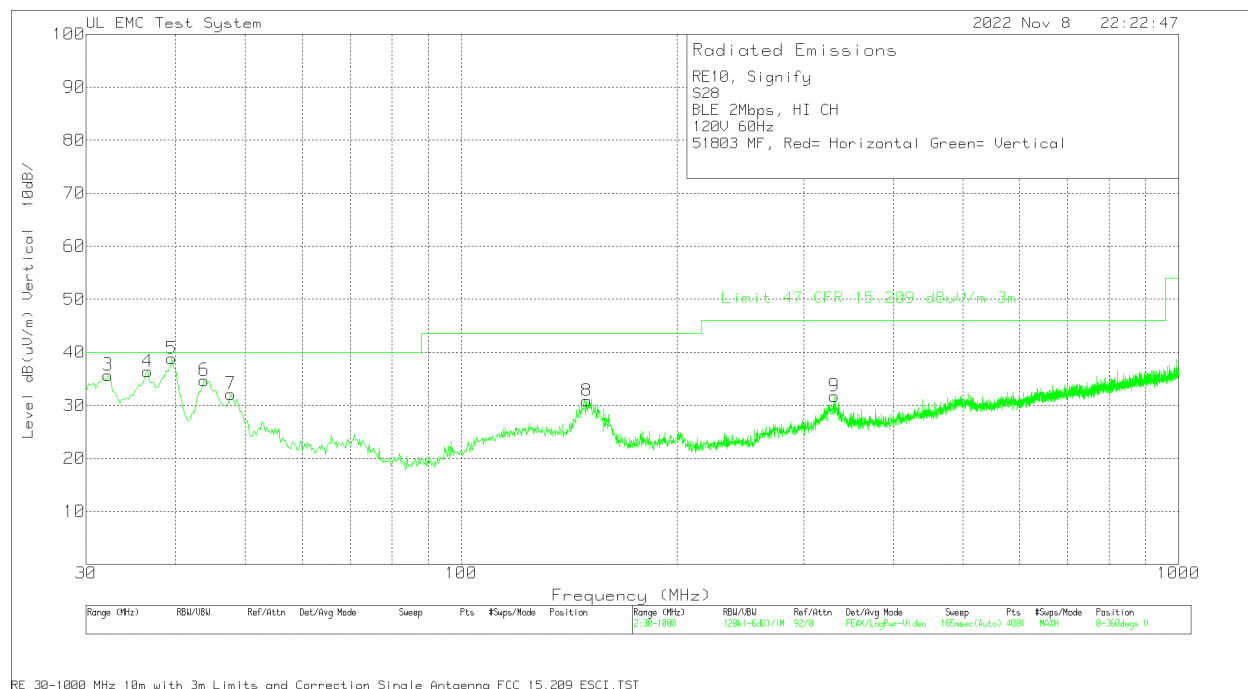
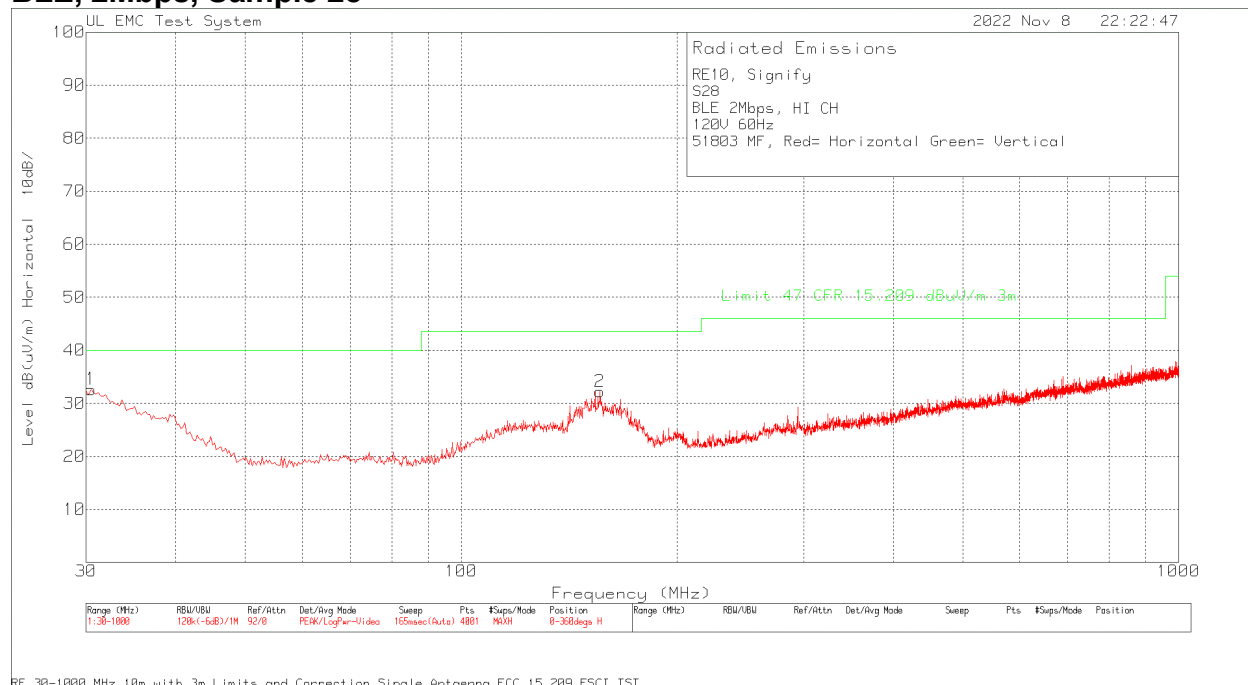
Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
=====						
1	31.2125	32.66dBuV Pk	26.3	-26.2	32.76	40
		Azimuth:0-360	Height:399	Horz	Margin (dB)	-7.24
2	39.4575	34.7dBuV Pk	20.4	-26.2	28.9	40
		Azimuth:0-360	Height:199	Horz	Margin (dB)	-11.1
3	155.8575	38.25dBuV Pk	18.4	-25.6	31.05	43.52
		Azimuth:0-360	Height:399	Horz	Margin (dB)	-12.47
4	32.425	37.66dBuV Pk	25.5	-26.2	36.96	40
		Azimuth:0-360	Height:198	Vert	Margin (dB)	-3.04
5	36.5475	39.79dBuV Pk	22.6	-26.2	36.19	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-3.81
6	39.215	44.37dBuV Pk	20.5	-26.2	38.67	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-1.33
7	44.3075	43.09dBuV Pk	16.8	-26.1	33.79	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-6.21
8	49.885	45.75dBuV Pk	13.9	-26.1	33.55	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-6.45
9	70.74	42.07dBuV Pk	14.2	-26	30.27	40
		Azimuth:0-360	Height:399	Vert	Margin (dB)	-9.73
10	153.675	43.49dBuV Pk	18.4	-25.6	36.29	43.52
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-7.23
11	330.215	36.02dBuV Pk	20.1	-24.5	31.62	46.02
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-14.4

Radiated Emission Data

Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
=====					
32.319	32.93dBuV Qp	25.6	-26.2	32.33	40
Azimuth: 337	Height:147			Margin (dB):	-7.67
36.634	32.71dBuV Qp	22.6	-26.2	29.11	40
Azimuth: 303	Height:169			Margin (dB):	-10.89
39.531	39.53dBuV Qp	20.3	-26.2	33.63	40
Azimuth: 0	Height:100			Margin (dB):	-6.37

LIMIT 1: Limit 47 CFR 15.209 dBuV/m 3m
Pk - Peak detector
Qp - Quasi-Peak detector

BLE, 2Mbps, Sample 28



RE10, Signify
S28
BLE 2Mbps, HI CH
120V 60Hz
51803 MF, Red= Horizontal Green= Vertical

Trace Markers

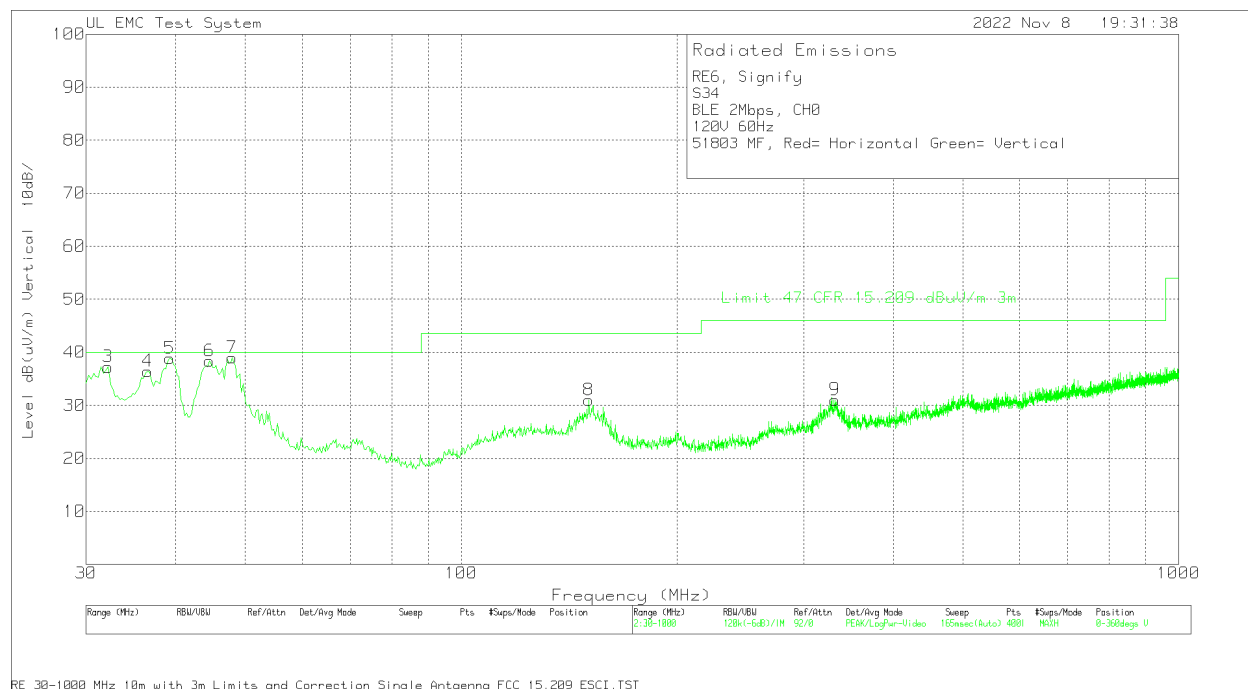
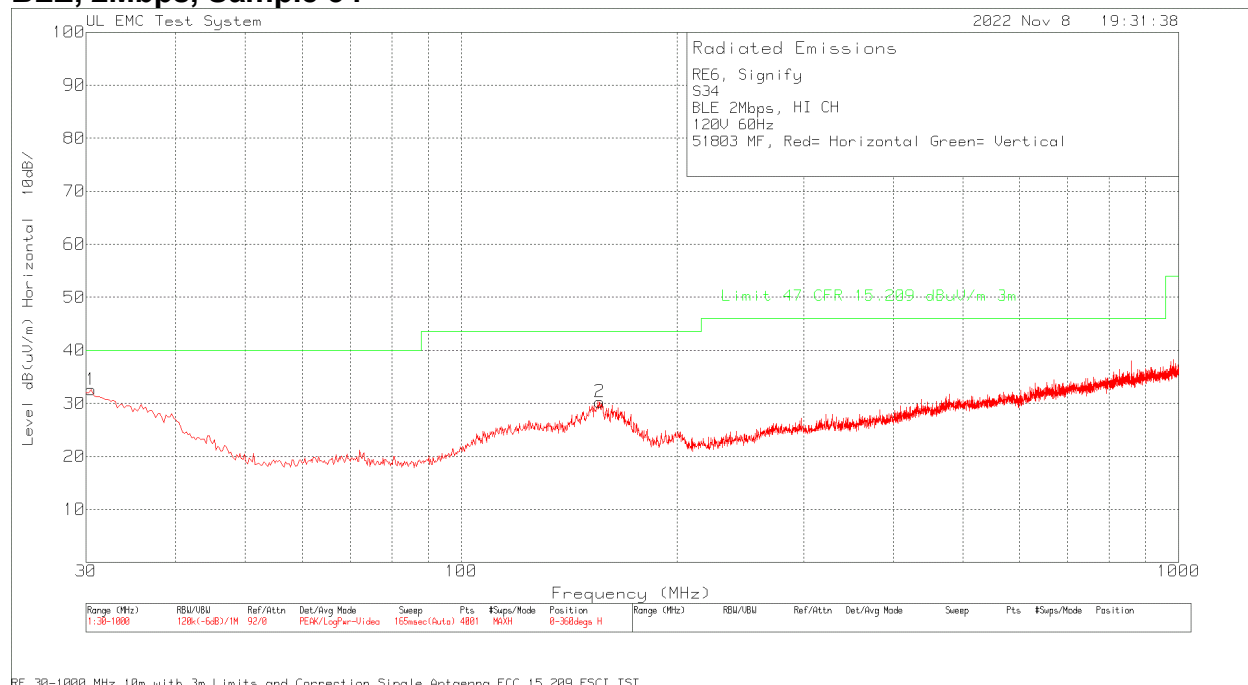
Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
1	30.485	32.04dBuV Pk	26.8	-26.2	32.64	40
		Azimuth:0-360	Height:399	Horz	Margin (dB)	-7.36
2	156.1	39.41dBuV Pk	18.4	-25.6	32.21	43.52
		Azimuth:0-360	Height:399	Horz	Margin (dB)	-11.31
3	32.1825	36.21dBuV Pk	25.7	-26.2	35.71	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-4.29
4	36.5475	39.98dBuV Pk	22.6	-26.2	36.38	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-3.62
5	39.4575	44.64dBuV Pk	20.4	-26.2	38.84	40
		Azimuth:0-360	Height:197	Vert	Margin (dB)	-1.16
6	43.8225	43.73dBuV Pk	17.1	-26.1	34.73	40
		Azimuth:0-360	Height:197	Vert	Margin (dB)	-5.27
7	47.7025	43.44dBuV Pk	14.8	-26.1	32.14	40
		Azimuth:0-360	Height:298	Vert	Margin (dB)	-7.86
8	149.5525	37.75dBuV Pk	18.7	-25.6	30.85	43.52
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-12.67
9	330.9425	36.17dBuV Pk	20.1	-24.5	31.77	46.02
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-14.25

Radiated Emission Data

Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
32.253	30.39dBuV Qp	25.6	-26.2	29.79	40
Azimuth: 156	Height:135			Margin (dB):	-10.21
36.459	35.13dBuV Qp	22.7	-26.2	31.63	40
Azimuth: 0	Height:190			Margin (dB):	-8.37
39.489	38.71dBuV Qp	20.4	-26.2	32.91	40
Azimuth: 255	Height:107			Margin (dB):	-7.09
44.082	40.15dBuV Qp	17	-26.1	31.05	40
Azimuth: 66	Height:110			Margin (dB):	-8.95

LIMIT 1: Limit 47 CFR 15.209 dBuV/m 3m
Pk - Peak detector
Qp - Quasi-Peak detector

BLE, 2Mbps, Sample 34



RE6, Signify
S34
BLE 2Mbps, HI CH
120V 60Hz
51803 MF, Red= Horizontal Green= Vertical

Trace Markers

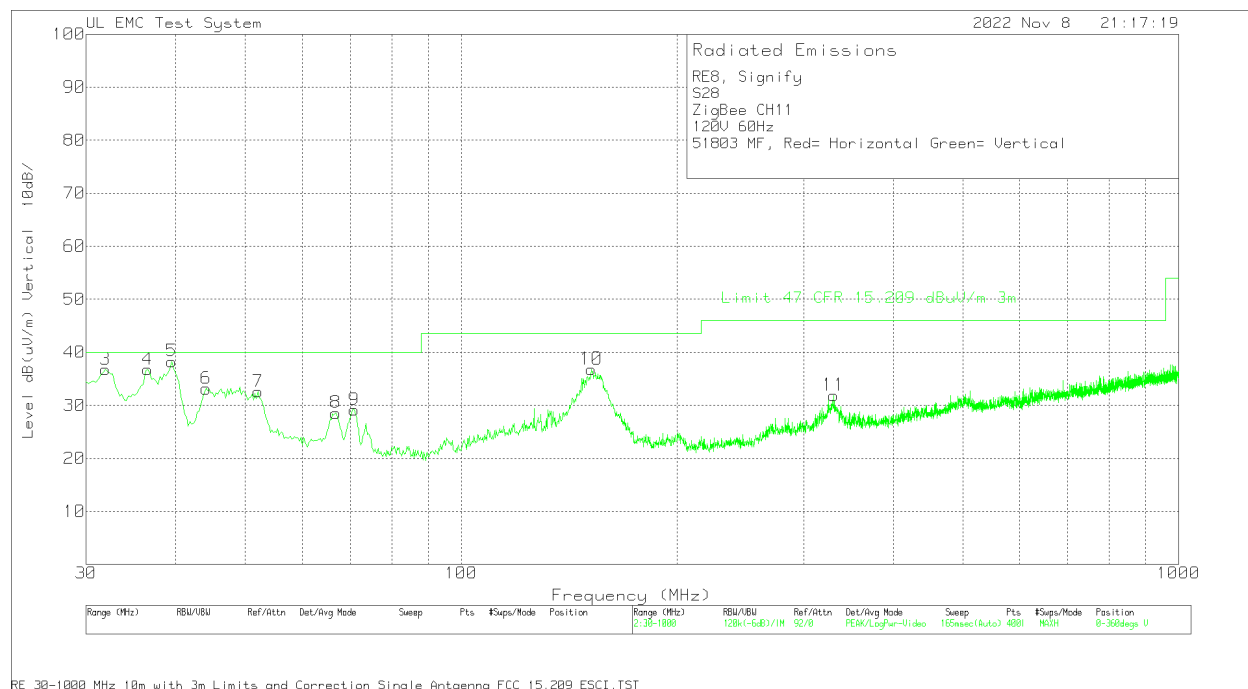
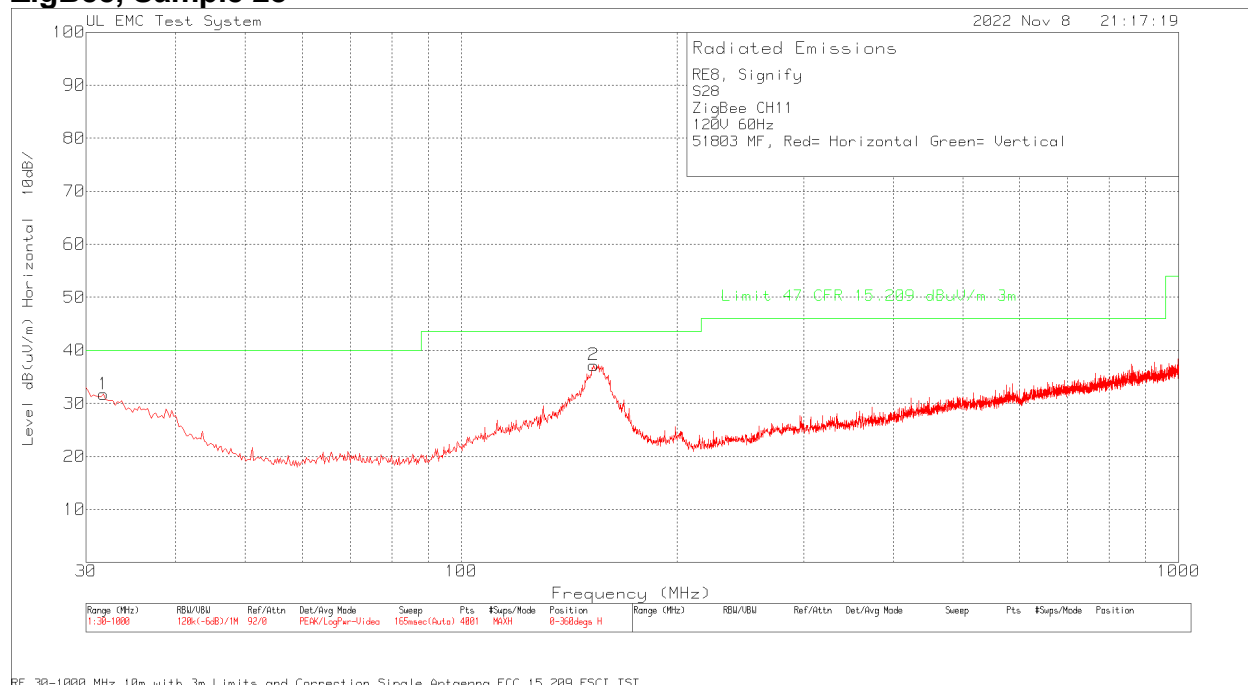
Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
1	30.485	31.99dBuV Pk	26.8	-26.2	32.59	40
		Azimuth:0-360	Height:99	Horz	Margin (dB)	-7.41
2	156.1	37.51dBuV Pk	18.4	-25.6	30.31	43.52
		Azimuth:0-360	Height:299	Horz	Margin (dB)	-13.21
3	32.1825	37.72dBuV Pk	25.7	-26.2	37.22	40
		Azimuth:0-360	Height:197	Vert	Margin (dB)	-2.78
4	36.5475	40.05dBuV Pk	22.6	-26.2	36.45	40
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-3.55
5	39.215	44.56dBuV Pk	20.5	-26.2	38.86	40
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-1.14
6	44.55	47.77dBuV Pk	16.7	-26.1	38.37	40
		Azimuth:0-360	Height:298	Vert	Margin (dB)	-1.63
7	47.945	50.4dBuV Pk	14.7	-26.1	39	40
		Azimuth:0-360	Height:197	Vert	Margin (dB)	-1
8	150.5225	37.92dBuV Pk	18.6	-25.5	31.02	43.52
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-12.5
9	331.67	35.44dBuV Pk	20.1	-24.5	31.04	46.02
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-14.98

Radiated Emission Data

Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
32.041	30.34dBuV Qp	25.8	-26.2	29.94	40
	Azimuth: 356	Height:188	Vert	Margin (dB):	-10.06
36.541	34.69dBuV Qp	22.6	-26.2	31.09	40
	Azimuth: 204	Height:168	Vert	Margin (dB):	-8.91
39.666	39.68dBuV Qp	20.2	-26.2	33.68	40
	Azimuth: 40	Height:141	Vert	Margin (dB):	-6.32
44.245	38.44dBuV Qp	16.9	-26.1	29.24	40
	Azimuth: 132	Height:100	Vert	Margin (dB):	-10.76
48.384	38.64dBuV Qp	14.5	-26.1	27.04	40
	Azimuth: 310	Height:107	Vert	Margin (dB):	-12.96

LIMIT 1: Limit 47 CFR 15.209 dBuV/m 3m
Pk - Peak detector
Qp - Quasi-Peak detector

ZigBee, Sample 28



RE8, Signify
S28
ZigBee CH11
120V 60Hz
51803 MF, Red= Horizontal Green= Vertical

Trace Markers

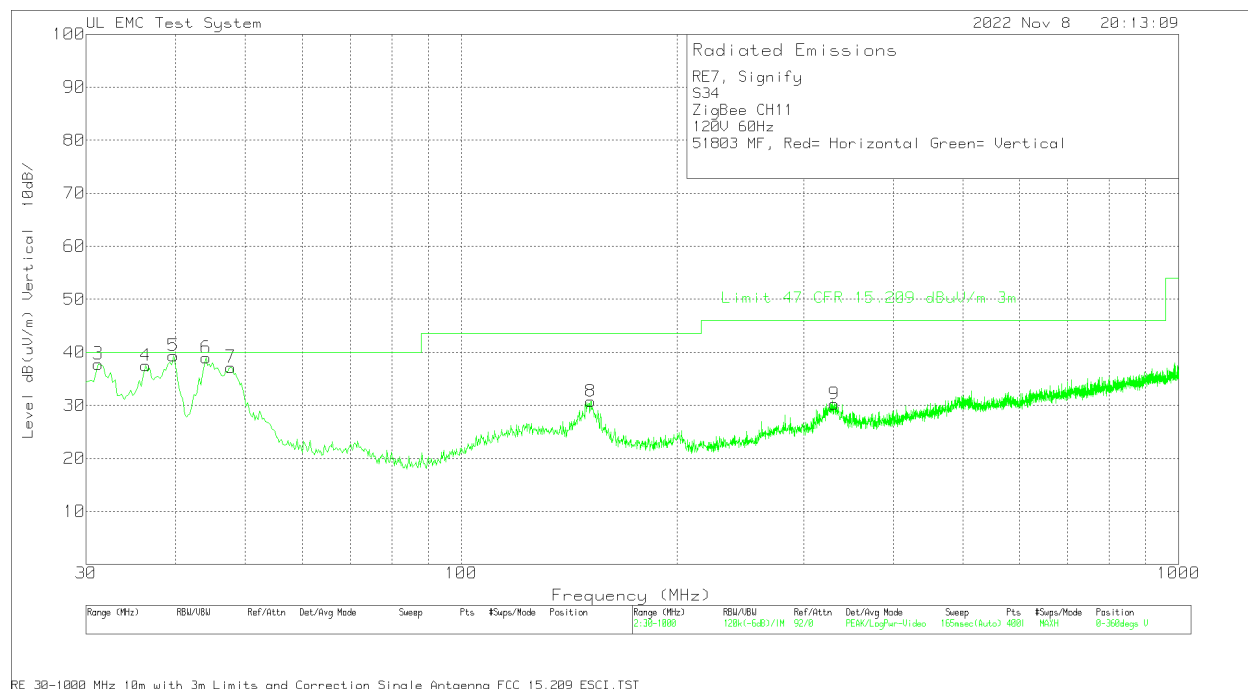
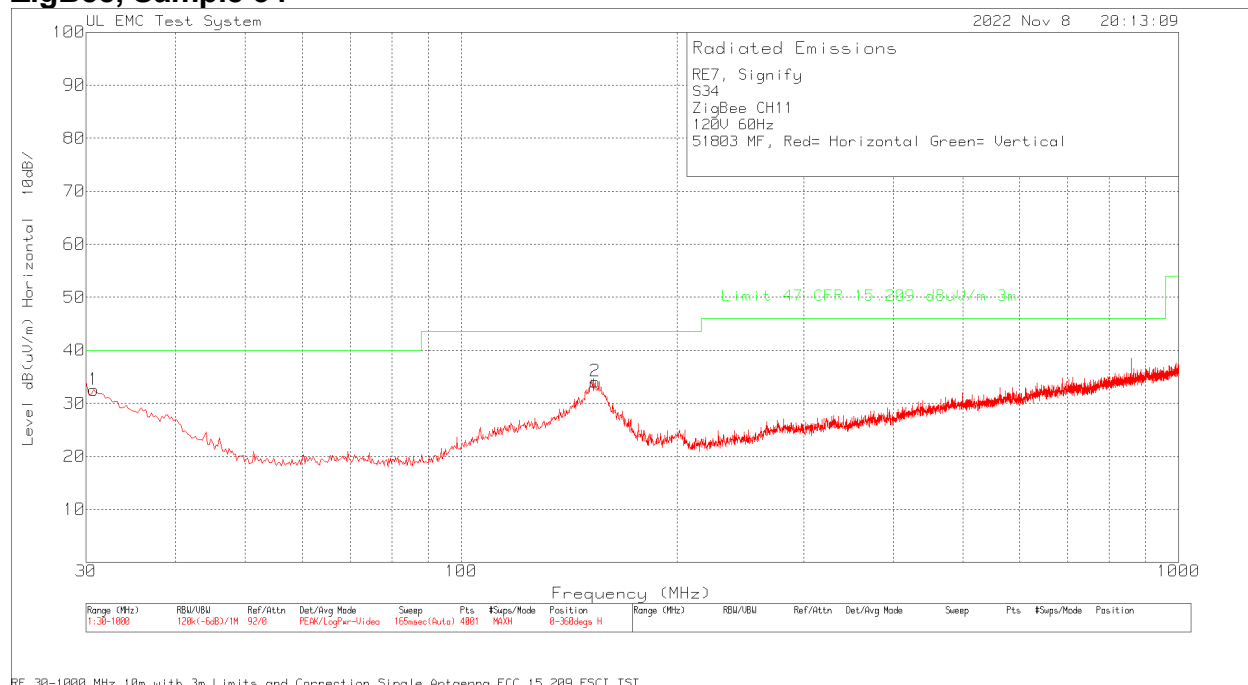
Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
=====						
1	31.6975	31.91dBuV Pk	26	-26.2	31.71	40
		Azimuth:0-360	Height:299	Horz	Margin (dB)	-8.29
2	152.9475	44.3dBuV Pk	18.5	-25.6	37.2	43.52
		Azimuth:0-360	Height:299	Horz	Margin (dB)	-6.32
3	31.94	37.2dBuV Pk	25.8	-26.2	36.8	40
		Azimuth:0-360	Height:197	Vert	Margin (dB)	-3.2
4	36.5475	40.36dBuV Pk	22.6	-26.2	36.76	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-3.24
5	39.4575	44.11dBuV Pk	20.4	-26.2	38.31	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-1.69
6	44.065	42.26dBuV Pk	17	-26.1	33.16	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-6.84
7	52.0675	45.4dBuV Pk	13.3	-26.1	32.6	40
		Azimuth:0-360	Height:298	Vert	Margin (dB)	-7.4
8	66.86	40.6dBuV Pk	14	-26	28.6	40
		Azimuth:0-360	Height:298	Vert	Margin (dB)	-11.4
9	70.9825	40.97dBuV Pk	14.2	-26	29.17	40
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-10.83
10	151.735	43.93dBuV Pk	18.5	-25.6	36.83	43.52
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-6.69
11	330.7	36.3dBuV Pk	20.1	-24.5	31.9	46.02
		Azimuth:0-360	Height:97	Vert	Margin (dB)	-14.12

Radiated Emission Data

Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
=====					
32.058	32.97dBuV Qp	25.8	-26.2	32.57	40
Azimuth: 357	Height:102			Margin (dB):	-7.43
36.696	37.13dBuV Qp	22.5	-26.2	33.43	40
Azimuth: 355	Height:100			Margin (dB):	-6.57
39.618	40.21dBuV Qp	20.3	-26.2	34.31	40
Azimuth: 26	Height:174			Margin (dB):	-5.69

LIMIT 1: Limit 47 CFR 15.209 dBuV/m 3m
Pk - Peak detector
Qp - Quasi-Peak detector

ZigBee, Sample 34



RE7, Signify
S34
ZigBee CH11
120V 60Hz
51803 MF, Red= Horizontal Green= Vertical

Trace Markers

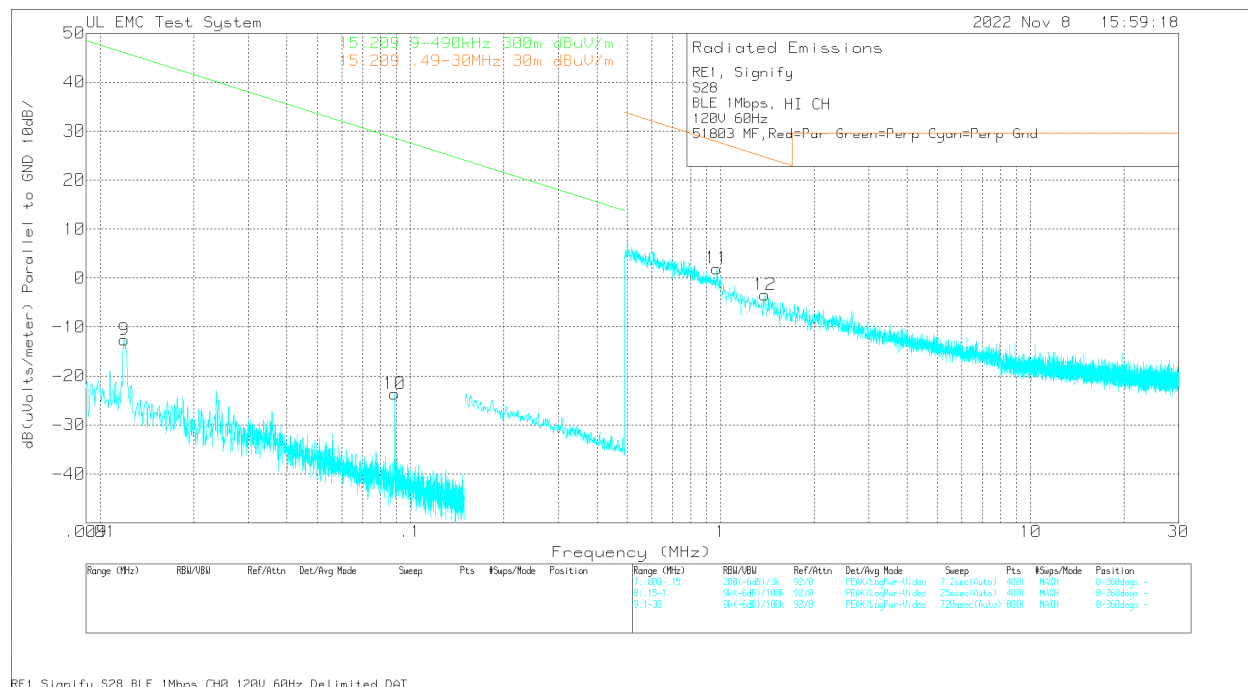
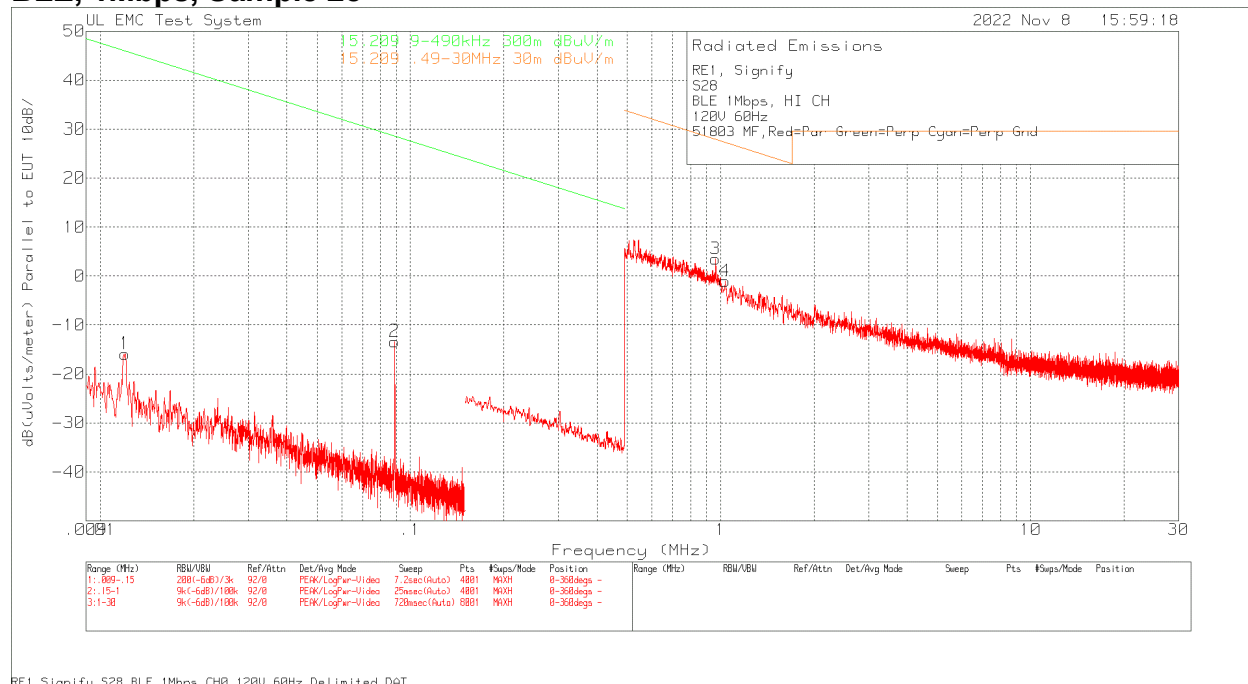
Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
=====						
1	30.7275	32.15dBuV Pk	26.6	-26.2	32.55	40
		Azimuth:0-360	Height:199	Horz	Margin (dB)	-7.45
2	153.675	41.33dBuV Pk	18.4	-25.6	34.13	43.52
		Azimuth:0-360	Height:299	Horz	Margin (dB)	-9.39
3	31.2125	37.71dBuV Pk	26.3	-26.2	37.81	40
		Azimuth:0-360	Height:198	Vert	Margin (dB)	-2.19
4	36.305	40.87dBuV Pk	22.8	-26.2	37.47	40
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-2.53
5	39.7	45.34dBuV Pk	20.2	-26.2	39.34	40
		Azimuth:0-360	Height:297	Vert	Margin (dB)	-.66
6	44.065	48.05dBuV Pk	17	-26.1	38.95	40
		Azimuth:0-360	Height:198	Vert	Margin (dB)	-1.05
7	47.7025	48.49dBuV Pk	14.8	-26.1	37.19	40
		Azimuth:0-360	Height:198	Vert	Margin (dB)	-2.81
8	151.4925	37.75dBuV Pk	18.6	-25.6	30.75	43.52
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-12.77
9	330.9425	34.63dBuV Pk	20.1	-24.5	30.23	46.02
		Azimuth:0-360	Height:98	Vert	Margin (dB)	-15.79

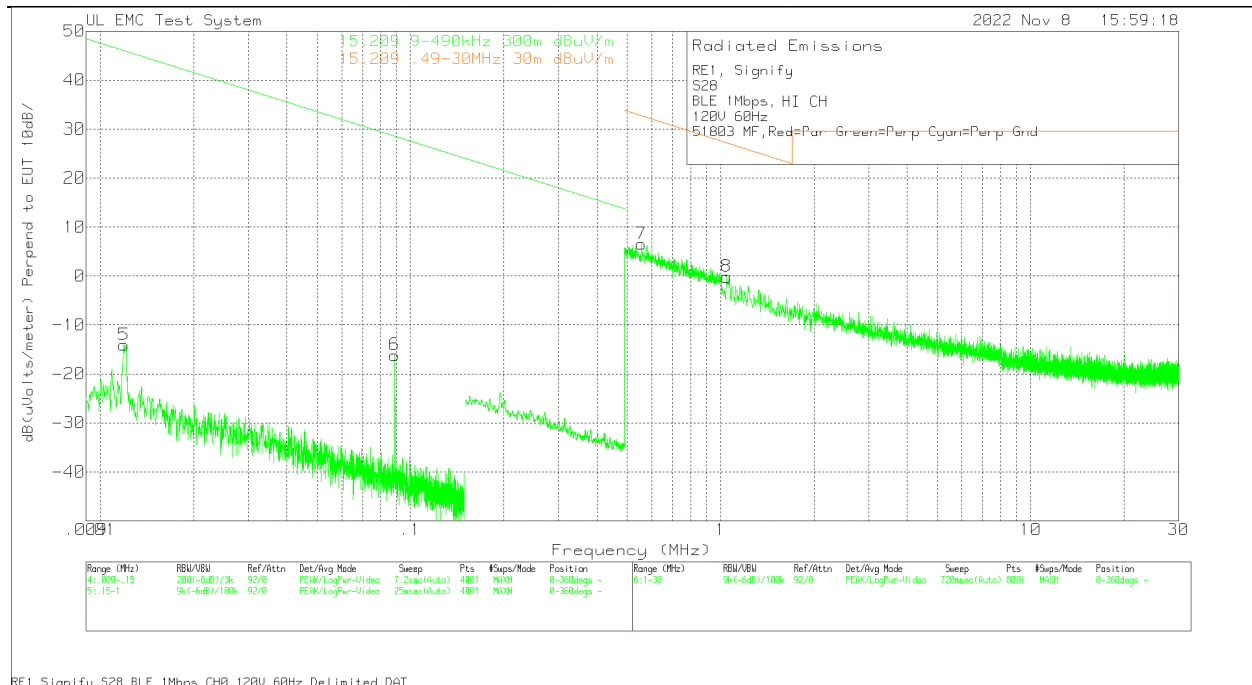
Radiated Emission Data

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading Level	Limit:1 dB(uV/m)
=====						
32.331		32.88dBuV Qp	25.6	-26.2	32.28	40
	Azimuth: 340	Height:113			Margin (dB):	-7.72
36.507		35.63dBuV Qp	22.6	-26.2	32.03	40
	Azimuth: 338	Height:100			Margin (dB):	-7.97
39.784		38.93dBuV Qp	20.2	-26.2	32.93	40
	Azimuth: 3	Height:110			Margin (dB):	-7.07
44.377		38.31dBuV Qp	16.8	-26.1	29.01	40
	Azimuth: 127	Height:115			Margin (dB):	-10.99
48.364		44.38dBuV Qp	14.5	-26.1	32.78	40
	Azimuth: 134	Height:100			Margin (dB):	-7.22

LIMIT 1: Limit 47 CFR 15.209 dBuV/m 3m
Pk - Peak detector
Qp - Quasi-Peak detector

10.4. SPURIOUS RADIATED EMISSIONS 9kHz-30MHz **BLE, 1Mbps, Sample 28**





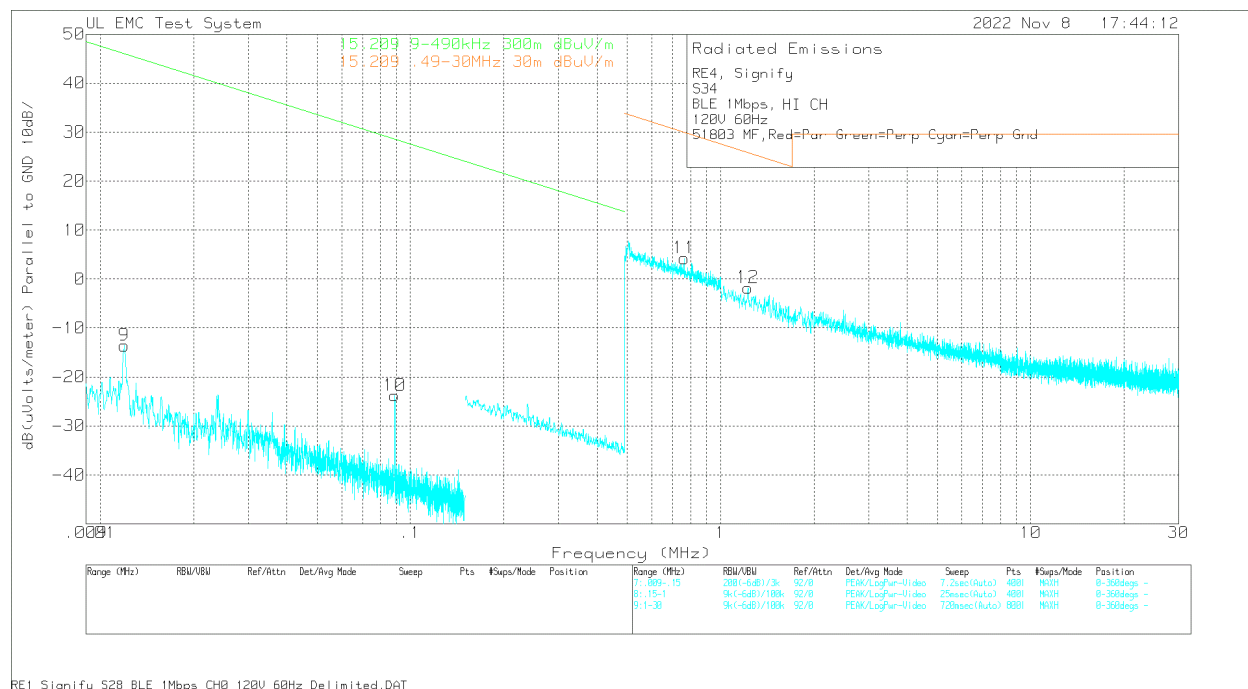
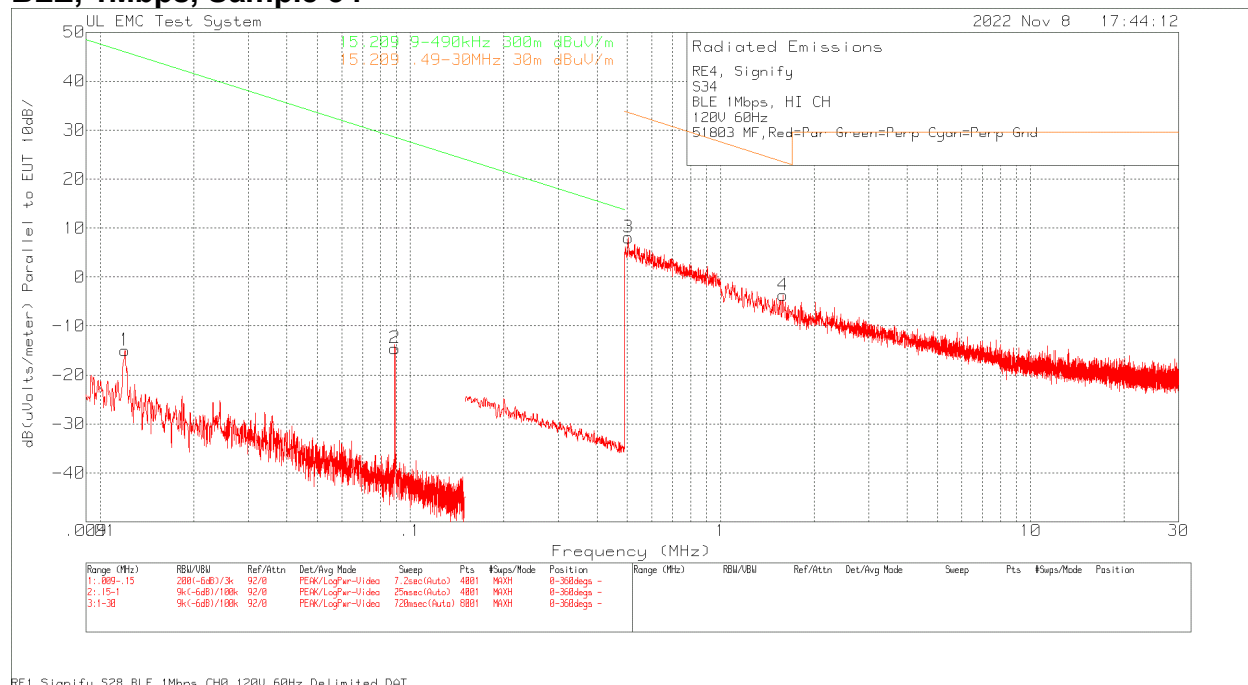
RE1, Signify
S28
BLE 1Mbps, HI CH
120V 60Hz
51803 MF, Red=Par Green=Perp Cyan=Perp Gnd

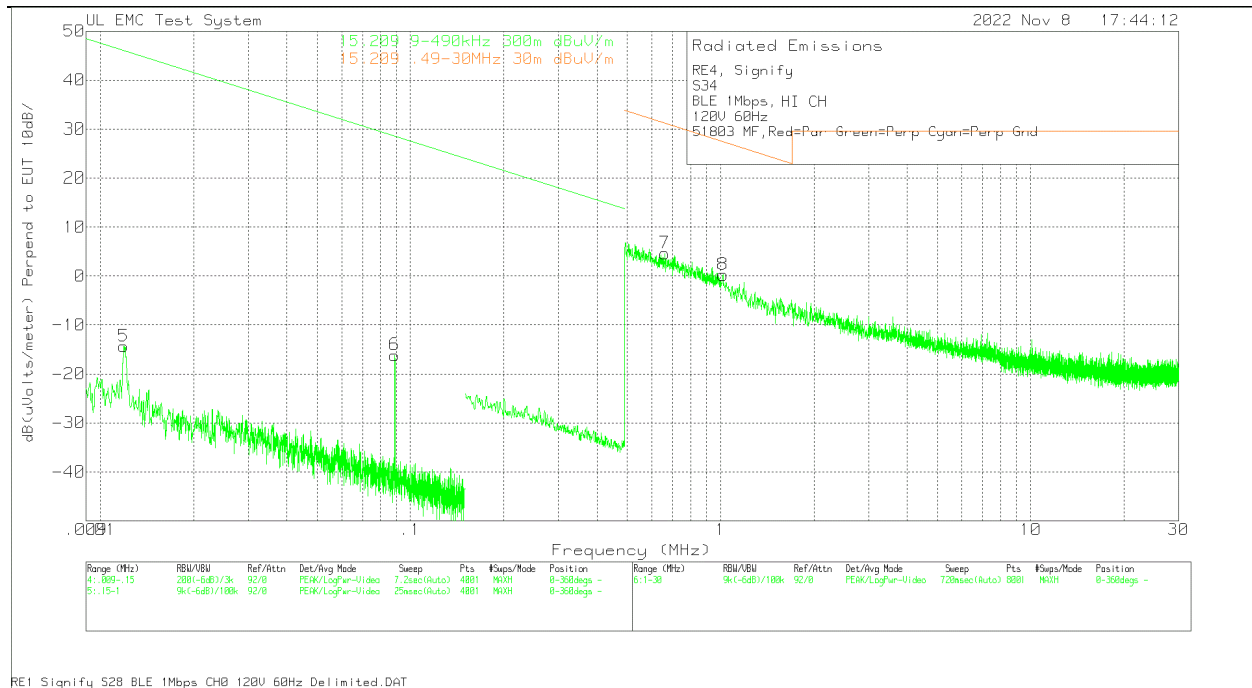
Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit:1	2
Parallel to EUT							
1	.012	40.3dBuV Pk	23.7	-79.9	-15.9	46	-
		Azimuth:0-360			Margin (dB)	-61.9	-
2	.089	53.64dBuV Pk	12.9	-79.9	-13.36	28.61	-
		Azimuth:0-360			Margin (dB)	-41.97	-
3	.9639	31.32dBuV Pk	12.1	-39.9	3.52	-	27.92
		Azimuth:0-360			Margin (dB)	-	-24.4
4	1.0326	26.67dBuV Pk	12.2	-39.9	-1.03	-	27.32
		Azimuth:0-360			Margin (dB)	-	-28.35
Perpendicular to EUT							
5	.0119	42.1dBuV Pk	23.7	-79.9	-14.1	46.07	-
		Azimuth:0-360			Margin (dB)	-60.17	-
6	.089	50.86dBuV Pk	12.9	-79.9	-16.14	28.61	-
		Azimuth:0-360			Margin (dB)	-44.75	-
7	.5558	34.56dBuV Pk	11.9	-39.9	6.56	-	32.71
		Azimuth:0-360			Margin (dB)	-	-26.15
8	1.0435	27.55dBuV Pk	12.2	-39.9	-.15	-	27.23
		Azimuth:0-360			Margin (dB)	-	-27.38
Parallel to Ground							
9	.0119	43.55dBuV Pk	23.7	-79.9	-12.65	46.06	-
		Azimuth:0-360			Margin (dB)	-58.71	-
10	.089	43.33dBuV Pk	12.9	-79.9	-23.67	28.61	-
		Azimuth:0-360			Margin (dB)	-52.28	-
11	.9723	29.76dBuV Pk	12.1	-39.9	1.96	-	27.84
		Azimuth:0-360			Margin (dB)	-	-25.88
12	1.3915	24.23dBuV Pk	12.2	-39.9	-3.47	-	24.73
		Azimuth:0-360			Margin (dB)	-	-28.2

LIMIT 1: 15.209 9-490kHz 300m dBuV/m
LIMIT 2: 15.209 .49-30MHz 30m dBuV/m
Pk - Peak detector

BLE, 1Mbps, Sample 34





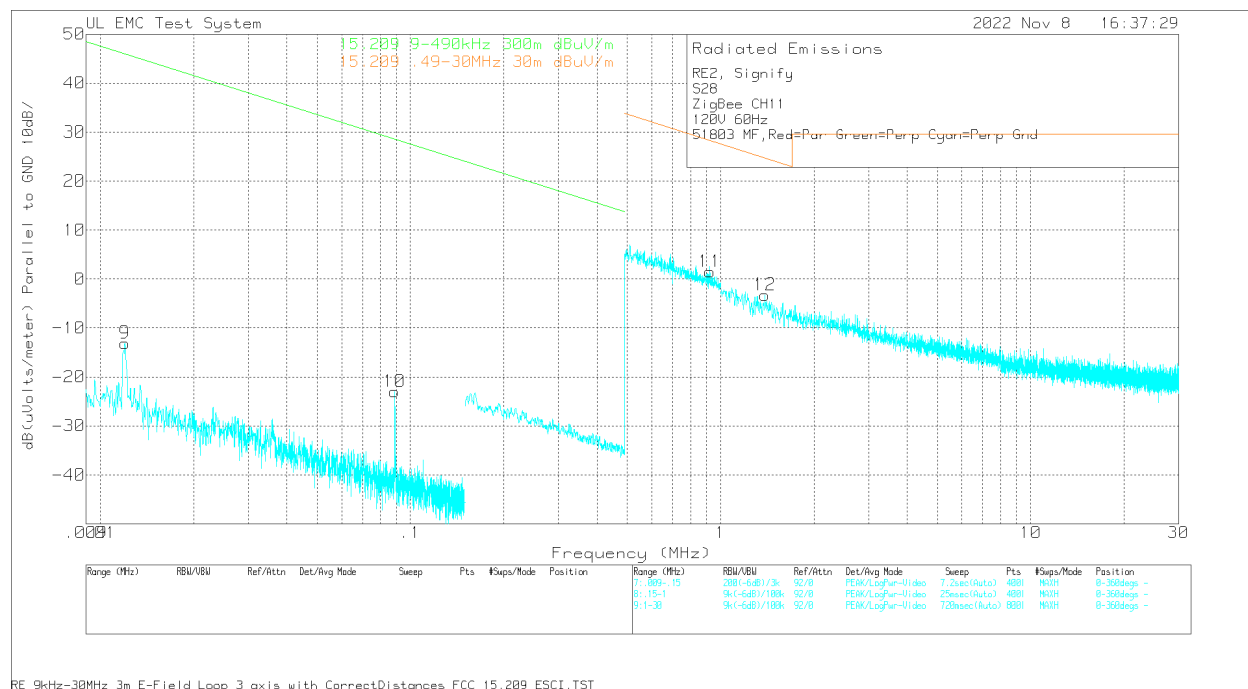
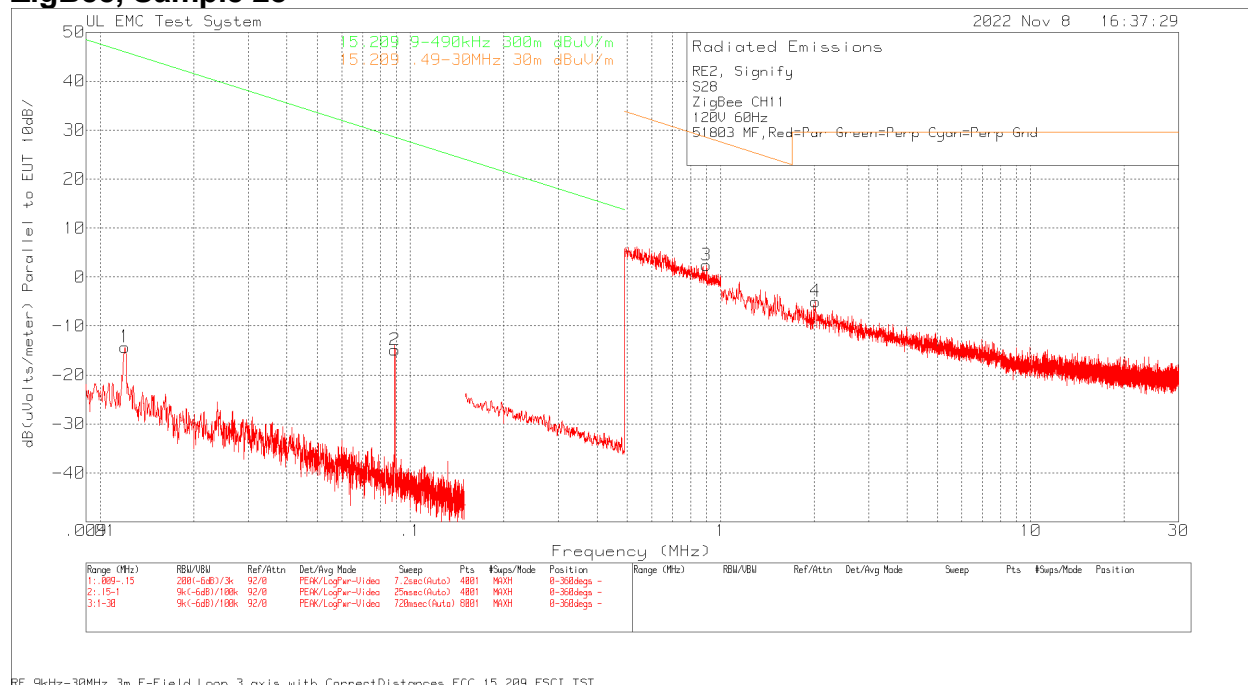
RE4, Signify
S34
BLE 1Mbps, HI CH
120V 60Hz
51803 MF, Red=Par Green=Perp Cyan=Perp Gnd

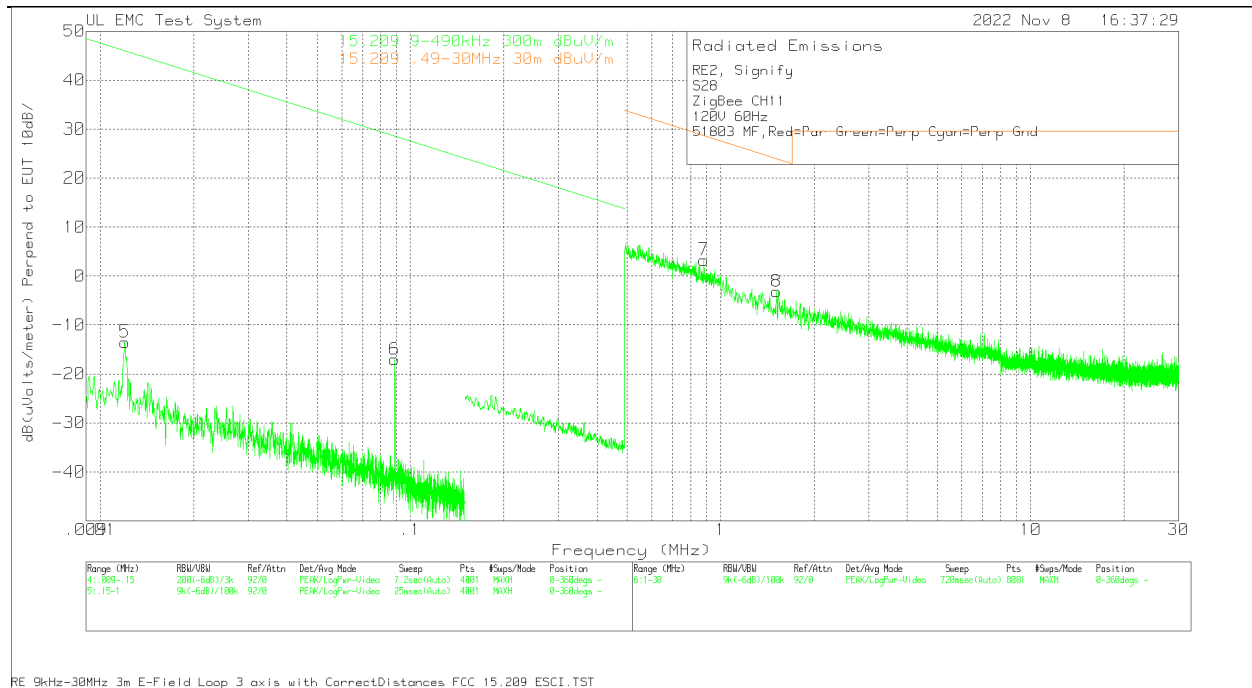
Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit:1	2
Parallel to EUT							
1	.012	41.24dBuV Pk	23.7	-79.9	-14.96	46	-
		Azimuth:0-360			Margin (dB)	-60.96	-
2	.0891	52.46dBuV Pk	12.9	-79.9	-14.54	28.6	-
		Azimuth:0-360			Margin (dB)	-43.14	-
3	.5044	36.19dBuV Pk	11.8	-39.9	8.09	-	33.55
		Azimuth:0-360			Margin (dB)	-	-25.46
4	1.5873	23.98dBuV Pk	12.2	-39.9	-3.72	-	23.58
		Azimuth:0-360			Margin (dB)	-	-27.3
Perpendicular to EUT							
5	.0119	41.86dBuV Pk	23.7	-79.9	-14.34	46.08	-
		Azimuth:0-360			Margin (dB)	-60.42	-
6	.089	50.86dBuV Pk	12.9	-79.9	-16.14	28.61	-
		Azimuth:0-360			Margin (dB)	-44.75	-
7	.661	32.63dBuV Pk	11.9	-39.9	4.63	-	31.2
		Azimuth:0-360			Margin (dB)	-	-26.57
8	1.0181	27.95dBuV Pk	12.2	-39.9	.25	-	27.44
		Azimuth:0-360			Margin (dB)	-	-27.19
Parallel to Ground							
9	.012	42.61dBuV Pk	23.7	-79.9	-13.59	46.03	-
		Azimuth:0-360			Margin (dB)	-59.62	-
10	.089	43.2dBuV Pk	12.9	-79.9	-23.8	28.61	-
		Azimuth:0-360			Margin (dB)	-52.41	-
11	.7628	32.23dBuV Pk	11.9	-39.9	4.23	-	29.95
		Azimuth:0-360			Margin (dB)	-	-25.72
12	1.2248	25.93dBuV Pk	12.2	-39.9	-1.77	-	25.84
		Azimuth:0-360			Margin (dB)	-	-27.61

LIMIT 1: 15.209 9-490kHz 300m dBuV/m
LIMIT 2: 15.209 .49-30MHz 30m dBuV/m
Pk - Peak detector

ZigBee, Sample 28





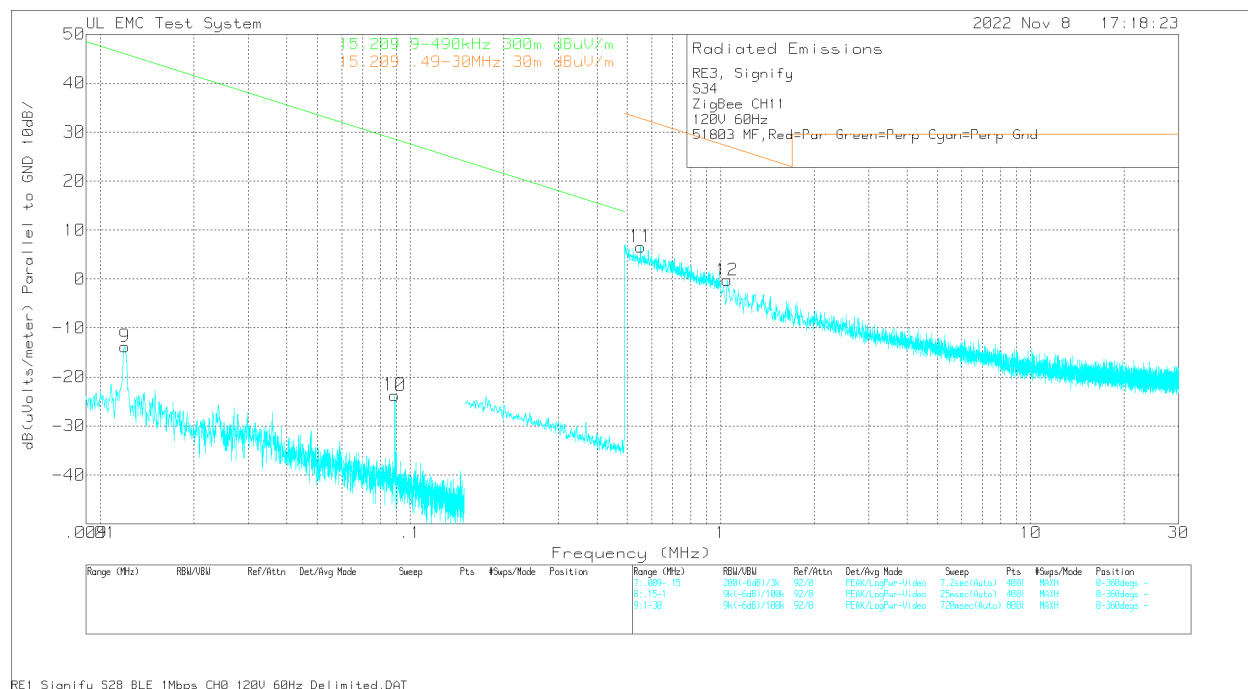
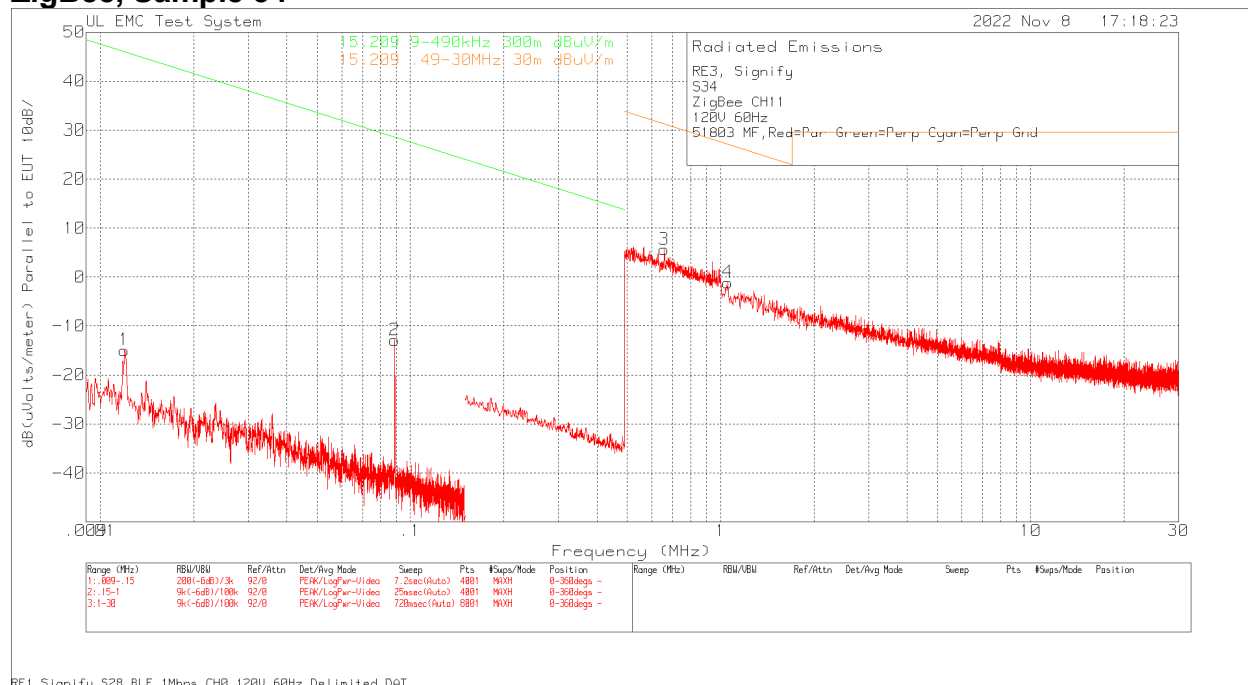
RE2, Signify
S28
ZigBee CH11
120V 60Hz
51803 MF, Red=Par Green=Perp Cyan=Perp Gnd

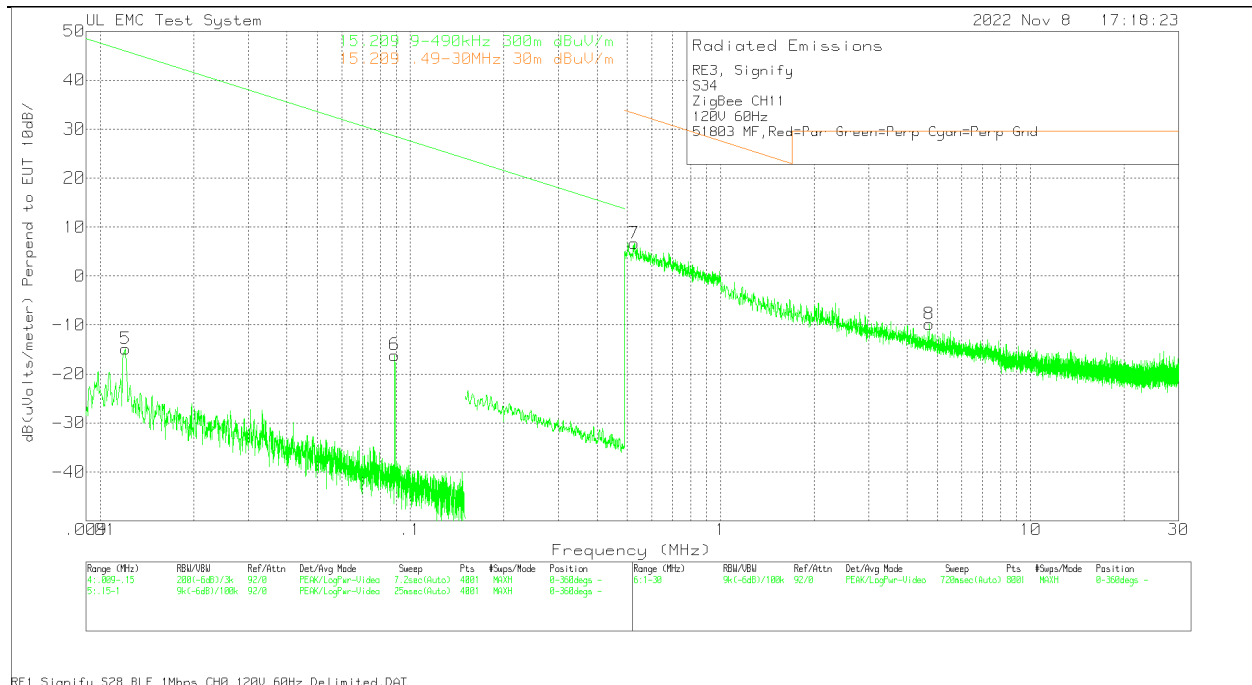
Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit:1	2
Parallel to EUT							
1	.012	41.91dBuV Pk	23.7	-79.9	-14.29	46	-
		Azimuth:0-360			Margin (dB)	-60.29	-
2	.0891	52.11dBuV Pk	12.9	-79.9	-14.89	28.6	-
		Azimuth:0-360			Margin (dB)	-43.49	-
3	.9015	30.39dBuV Pk	11.9	-39.9	2.39	-	28.5
		Azimuth:0-360			Margin (dB)	-	-26.11
4	2.0223	22.63dBuV Pk	12.2	-39.8	-4.97	-	29.54
		Azimuth:0-360			Margin (dB)	-	-34.51
Perpendicular to EUT							
5	.012	42.7dBuV Pk	23.7	-79.9	-13.5	46	-
		Azimuth:0-360			Margin (dB)	-59.5	-
6	.089	49.98dBuV Pk	12.9	-79.9	-17.02	28.61	-
		Azimuth:0-360			Margin (dB)	-45.63	-
7	.8834	31.26dBuV Pk	11.9	-39.9	3.26	-	28.68
		Azimuth:0-360			Margin (dB)	-	-25.42
8	1.5184	24.5dBuV Pk	12.2	-39.9	-3.2	-	23.97
		Azimuth:0-360			Margin (dB)	-	-27.17
Parallel to Ground							
9	.012	43.09dBuV Pk	23.7	-79.9	-13.11	46	-
		Azimuth:0-360			Margin (dB)	-59.11	-
10	.089	43.97dBuV Pk	12.9	-79.9	-23.03	28.61	-
		Azimuth:0-360			Margin (dB)	-51.64	-
11	.924	29.38dBuV Pk	12	-39.9	1.48	-	28.29
		Azimuth:0-360			Margin (dB)	-	-26.81
12	1.3879	24.44dBuV Pk	12.2	-39.9	-3.26	-	24.75
		Azimuth:0-360			Margin (dB)	-	-28.01

LIMIT 1: 15.209 9-490kHz 300m dBuV/m
LIMIT 2: 15.209 .49-30MHz 30m dBuV/m
Pk - Peak detector

ZigBee, Sample 34





RE3, Signify
S34
ZigBee CH11
120V 60Hz
51803 MF, Red=Par Green=Perp Cyan=Perp Gnd

Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit:1	2
Parallel to EUT							
1	.012	41.26dBuV Pk	23.7	-79.9	-14.94	46.03	-
		Azimuth:0-360			Margin (dB)	-60.97	-
2	.089	54.14dBuV Pk	12.9	-79.9	-12.86	28.61	-
		Azimuth:0-360			Margin (dB)	-41.47	-
3	.658	33.64dBuV Pk	11.9	-39.9	5.64	-	31.24
		Azimuth:0-360			Margin (dB)	-	-25.6
4	1.0544	26.59dBuV Pk	12.2	-39.9	-1.11	-	27.14
		Azimuth:0-360			Margin (dB)	-	-28.25
Perpendicular to EUT							
5	.012	41.39dBuV Pk	23.6	-79.9	-14.91	45.98	-
		Azimuth:0-360			Margin (dB)	-60.89	-
6	.089	50.86dBuV Pk	12.9	-79.9	-16.14	28.61	-
		Azimuth:0-360			Margin (dB)	-44.75	-
7	.5274	34.81dBuV Pk	11.8	-39.9	6.71	-	33.16
		Azimuth:0-360			Margin (dB)	-	-26.45
8	4.7048	17.76dBuV Pk	12.2	-39.8	-9.84	-	29.54
		Azimuth:0-360			Margin (dB)	-	-39.38
Parallel to Ground							
9	.012	42.43dBuV Pk	23.7	-79.9	-13.77	46	-
		Azimuth:0-360			Margin (dB)	-59.77	-
10	.089	43.26dBuV Pk	12.9	-79.9	-23.74	28.61	-
		Azimuth:0-360			Margin (dB)	-52.35	-
11	.5528	34.6dBuV Pk	11.9	-39.9	6.6	-	32.75
		Azimuth:0-360			Margin (dB)	-	-26.15
12	1.0508	27.48dBuV Pk	12.2	-39.9	-.22	-	27.17
		Azimuth:0-360			Margin (dB)	-	-27.39

LIMIT 1: 15.209 9-490kHz 300m dBuV/m
LIMIT 2: 15.209 .49-30MHz 30m dBuV/m
Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

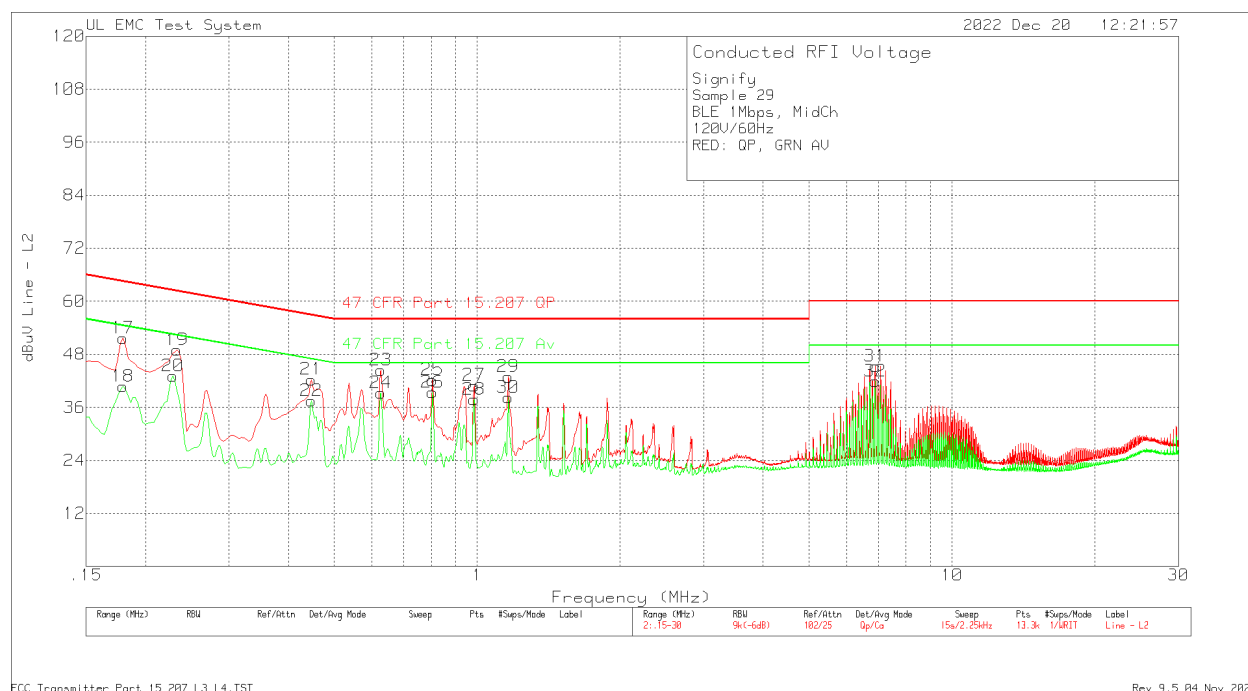
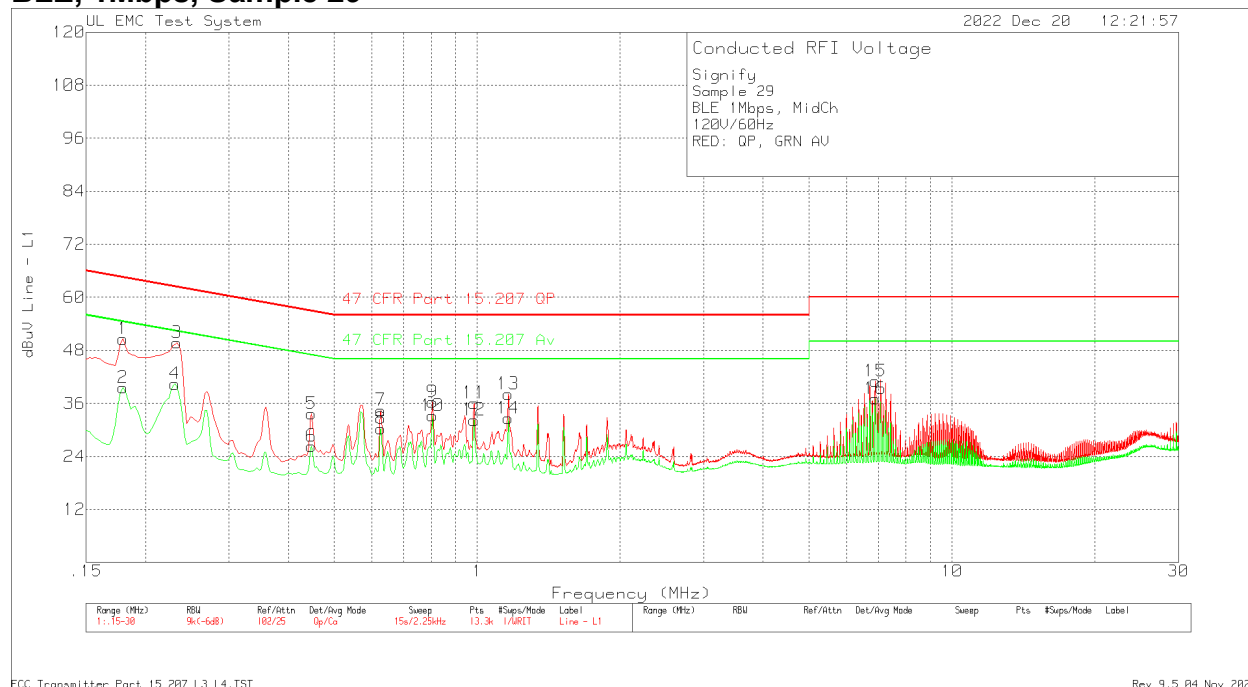
RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

RESULTS

BLE, 1Mbps, Sample 29



Signify
Sample 29
BLE 1Mbps, MidCh
120V/60Hz
RED: QP, GRN AV

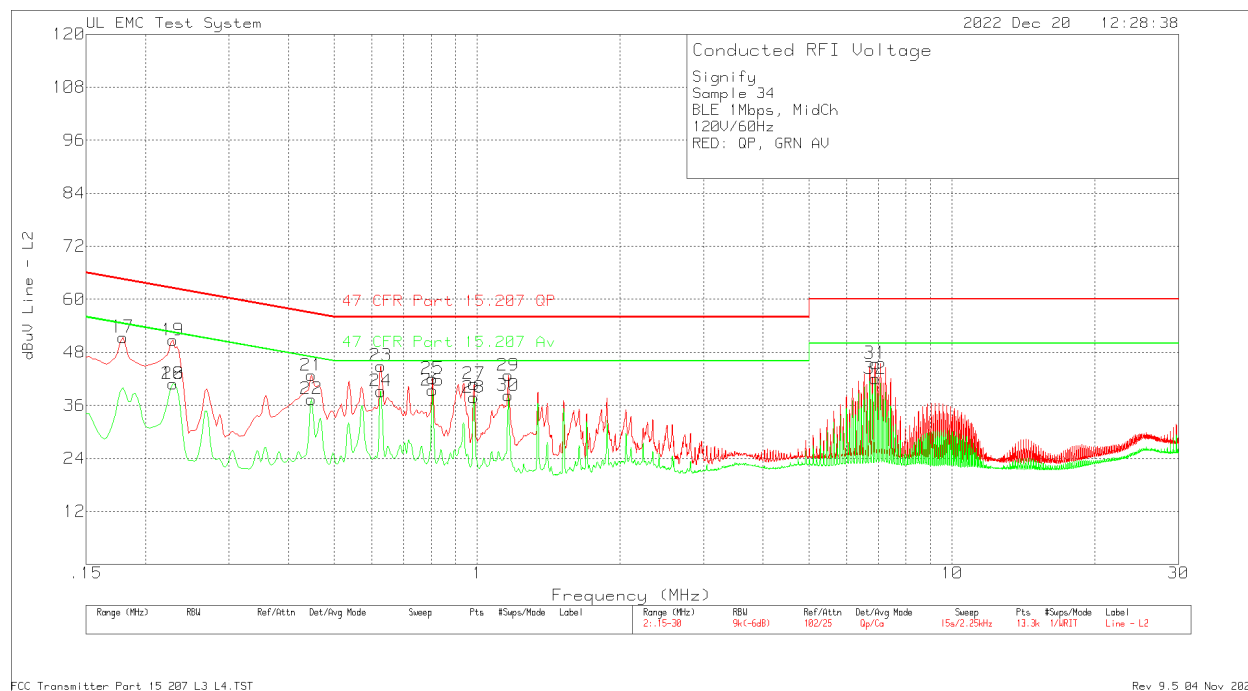
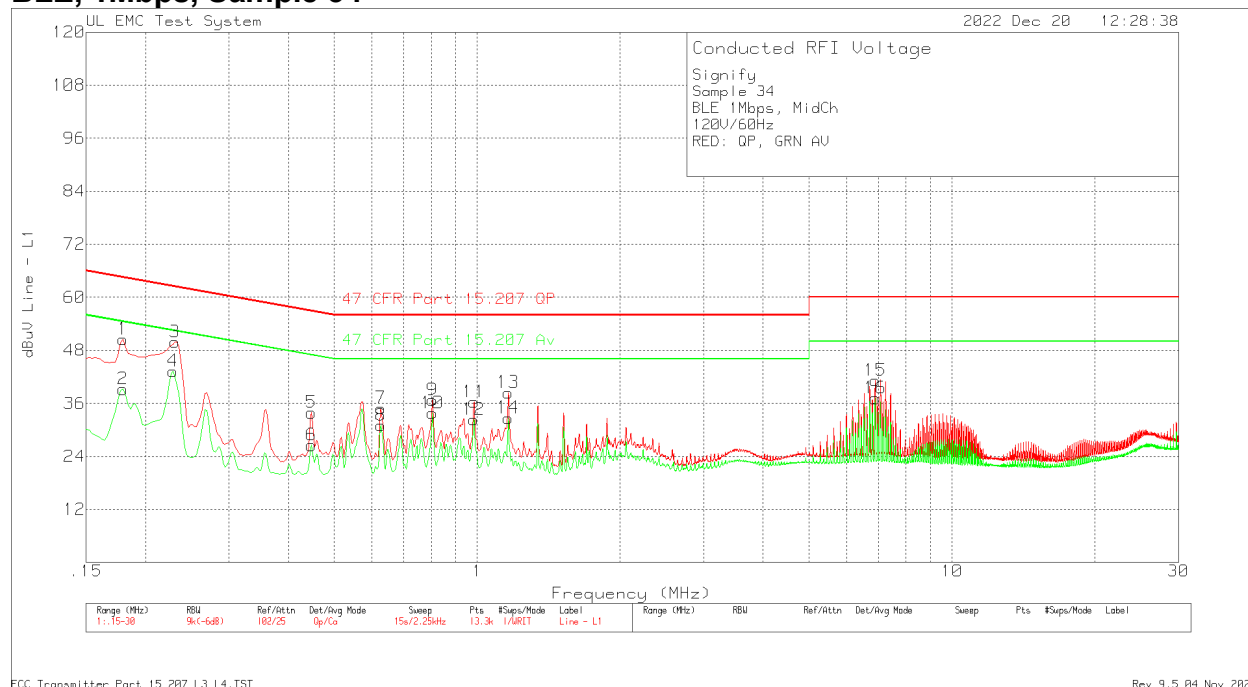
Trace Markers

No.	Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading	Limit:1	2
=====							
Line							
1	.17925	38.66dBuV Qp	.1	11.8	50.56	64.52	54.52
					Margin (dB)	-13.96	-3.96
2	.17925	27.61dBuV Ca	.1	11.8	39.51	64.52	54.52
					Margin (dB)	-25.01	-15.01
3	.23325	38.26dBuV Qp	.1	11.4	49.76	62.33	52.33
					Margin (dB)	-12.57	-2.57
4	.231	28.88dBuV Ca	.1	11.4	40.38	62.41	52.41
					Margin (dB)	-22.03	-12.03
5	.447	22.91dBuV Qp	0	10.7	33.61	56.93	46.93
					Margin (dB)	-23.32	-13.32
6	.447	15.63dBuV Ca	0	10.7	26.33	56.93	46.93
					Margin (dB)	-30.6	-20.6
7	.627	23.86dBuV Qp	0	10.6	34.46	56	46
					Margin (dB)	-21.54	-11.54
8	.627	19.66dBuV Ca	0	10.6	30.26	56	46
					Margin (dB)	-25.74	-15.74
9	.80475	25.74dBuV Qp	0	10.6	36.34	56	46
					Margin (dB)	-19.66	-9.66
10	.80475	22.59dBuV Ca	0	10.6	33.19	56	46
					Margin (dB)	-22.81	-12.81
11	.98475	25.48dBuV Qp	0	10.6	36.08	56	46
					Margin (dB)	-19.92	-9.92
12	.98475	21.64dBuV Ca	0	10.6	32.24	56	46
					Margin (dB)	-23.76	-13.76
13	1.1625	27.52dBuV Qp	0	10.6	38.12	56	46
					Margin (dB)	-17.88	-7.88
14	1.1625	21.98dBuV Ca	0	10.6	32.58	56	46
					Margin (dB)	-23.42	-13.42
15	6.8865	30.2dBuV Qp	0	10.8	41	60	50
					Margin (dB)	-19	-9
16	6.88425	26.26dBuV Ca	0	10.8	37.06	60	50
					Margin (dB)	-22.94	-12.94
Neutral							
17	.17925	39.71dBuV Qp	.1	11.8	51.61	64.52	54.52
					Margin (dB)	-12.91	-2.91
18	.17925	28.86dBuV Ca	.1	11.8	40.76	64.52	54.52
					Margin (dB)	-23.76	-13.76
19	.23325	37.53dBuV Qp	.1	11.4	49.03	62.33	52.33
					Margin (dB)	-13.3	-3.3
20	.22875	31.6dBuV Ca	.1	11.4	43.1	62.49	52.49
					Margin (dB)	-19.39	-9.39
21	.447	31.49dBuV Qp	.1	10.7	42.29	56.93	46.93
					Margin (dB)	-14.64	-4.64
22	.447	26.68dBuV Ca	.1	10.7	37.48	56.93	46.93
					Margin (dB)	-19.45	-9.45
23	.627	33.69dBuV Qp	.1	10.6	44.39	56	46
					Margin (dB)	-11.61	-1.61
24	.627	28.54dBuV Ca	.1	10.6	39.24	56	46
					Margin (dB)	-16.76	-6.76
25	.80475	31.46dBuV Qp	.1	10.6	42.16	56	46
					Margin (dB)	-13.84	-3.84
26	.80475	28.69dBuV Ca	.1	10.6	39.39	56	46
					Margin (dB)	-16.61	-6.61
27	.98475	30.34dBuV Qp	0	10.6	40.94	56	46
					Margin (dB)	-15.06	-5.06
28	.98475	27.15dBuV Ca	0	10.6	37.75	56	46
					Margin (dB)	-18.25	-8.25
29	1.1625	32.29dBuV Qp	0	10.6	42.89	56	46
					Margin (dB)	-13.11	-3.11
30	1.1625	27.6dBuV Ca	0	10.6	38.2	56	46
					Margin (dB)	-17.8	-7.8
31	6.88425	34.53dBuV Qp	0	10.8	45.33	60	50
					Margin (dB)	-14.67	-4.67
32	6.88425	31.1dBuV Ca	0	10.8	41.9	60	50
					Margin (dB)	-18.1	-8.1

LIMIT 1: 47 CFR Part 15.207 QP
LIMIT 2: 47 CFR Part 15.207 Av

Qp - Quasi-Peak detector
Ca - CISPR Average detection

BLE, 1Mbps, Sample 34



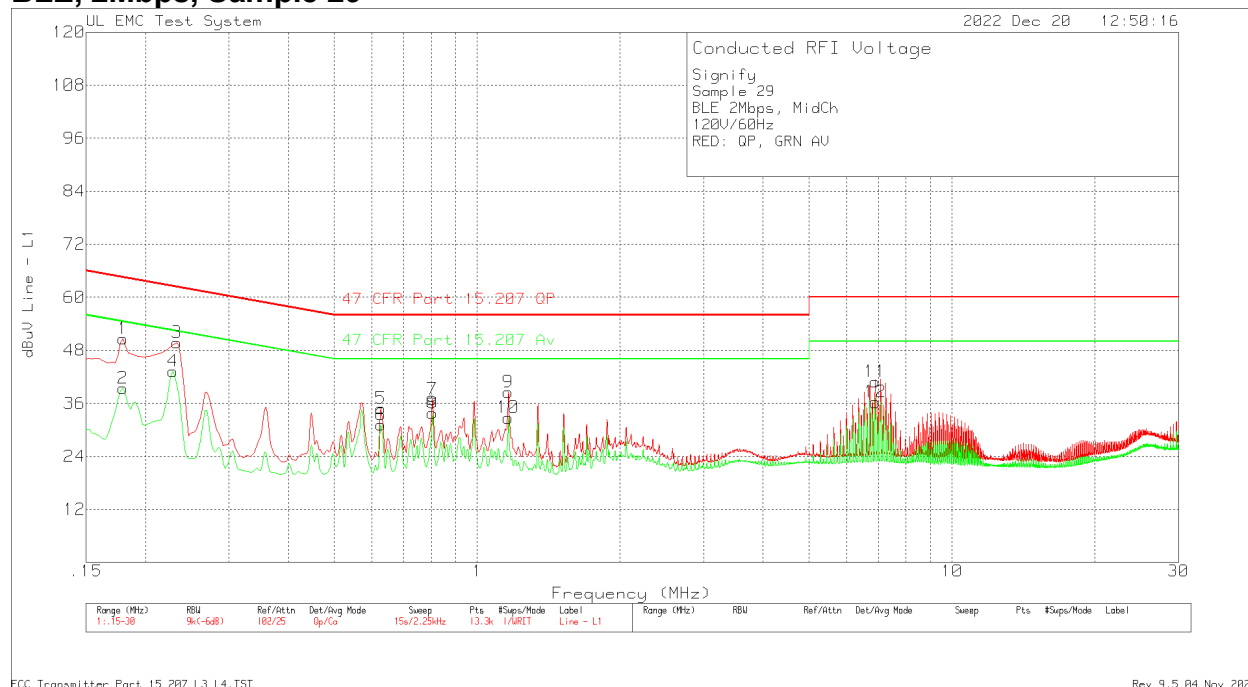
Signify
Sample 34
BLE 1Mbps, MidCh
120V/60Hz
RED: QP, GRN AV

Trace Markers

No.	Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading dBuV	Limit:1	2
Line							
1	.17925	38.63dBuV Qp	.1	11.8	50.53	64.52	54.52
					Margin (dB)	-13.99	-3.99
2	.17925	27.3dBuV Ca	.1	11.8	39.2	64.52	54.52
					Margin (dB)	-25.32	-15.32
3	.231	38.35dBuV Qp	.1	11.4	49.85	62.41	52.41
					Margin (dB)	-12.56	-2.56
4	.22875	31.8dBuV Ca	.1	11.4	43.3	62.49	52.49
					Margin (dB)	-19.19	-9.19
5	.447	23.19dBuV Qp	0	10.7	33.89	56.93	46.93
					Margin (dB)	-23.04	-13.04
6	.447	15.82dBuV Ca	0	10.7	26.52	56.93	46.93
					Margin (dB)	-30.41	-20.41
7	.627	24.31dBuV Qp	0	10.6	34.91	56	46
					Margin (dB)	-21.09	-11.09
8	.627	20.39dBuV Ca	0	10.6	30.99	56	46
					Margin (dB)	-25.01	-15.01
9	.80475	26.19dBuV Qp	0	10.6	36.79	56	46
					Margin (dB)	-19.21	-9.21
10	.80475	23.19dBuV Ca	0	10.6	33.79	56	46
					Margin (dB)	-22.21	-12.21
11	.98475	25.71dBuV Qp	0	10.6	36.31	56	46
					Margin (dB)	-19.69	-9.69
12	.9825	21.72dBuV Ca	0	10.6	32.32	56	46
					Margin (dB)	-23.68	-13.68
13	1.1625	27.83dBuV Qp	0	10.6	38.43	56	46
					Margin (dB)	-17.57	-7.57
14	1.1625	22.09dBuV Ca	0	10.6	32.69	56	46
					Margin (dB)	-23.31	-13.31
15	6.88425	30.36dBuV Qp	0	10.8	41.16	60	50
					Margin (dB)	-18.84	-8.84
16	6.882	26.34dBuV Ca	0	10.8	37.14	60	50
					Margin (dB)	-22.86	-12.86
Neutral							
17	.17925	39.5dBuV Qp	.1	11.8	51.4	64.52	54.52
					Margin (dB)	-13.12	-3.12
18	.22875	29.42dBuV Ca	.1	11.4	40.92	62.49	52.49
					Margin (dB)	-21.57	-11.57
19	.22875	39.28dBuV Qp	.1	11.4	50.78	62.49	52.49
					Margin (dB)	-11.71	-1.71
20	.22875	29.42dBuV Ca	.1	11.4	40.92	62.49	52.49
					Margin (dB)	-21.57	-11.57
21	.447	31.98dBuV Qp	.1	10.7	42.78	56.93	46.93
					Margin (dB)	-14.15	-4.15
22	.447	26.62dBuV Ca	.1	10.7	37.42	56.93	46.93
					Margin (dB)	-19.51	-9.51
23	.627	34.24dBuV Qp	.1	10.6	44.94	56	46
					Margin (dB)	-11.06	-1.06
24	.627	28.51dBuV Ca	.1	10.6	39.21	56	46
					Margin (dB)	-16.79	-6.79
25	.80475	31.39dBuV Qp	.1	10.6	42.09	56	46
					Margin (dB)	-13.91	-3.91
26	.80475	28.74dBuV Ca	.1	10.6	39.44	56	46
					Margin (dB)	-16.56	-6.56
27	.98475	30.22dBuV Qp	0	10.6	40.82	56	46
					Margin (dB)	-15.18	-5.18
28	.9825	27.14dBuV Ca	0	10.6	37.74	56	46
					Margin (dB)	-18.26	-8.26
29	1.1625	32.23dBuV Qp	0	10.6	42.83	56	46
					Margin (dB)	-13.17	-3.17
30	1.1625	27.66dBuV Ca	0	10.6	38.26	56	46
					Margin (dB)	-17.74	-7.74
31	6.88425	34.71dBuV Qp	0	10.8	45.51	60	50
					Margin (dB)	-14.49	-4.49
32	6.882	31.29dBuV Ca	0	10.8	42.09	60	50
					Margin (dB)	-17.91	-7.91

LIMIT 1: 47 CFR Part 15.207 QP
LIMIT 2: 47 CFR Part 15.207 Av
Qp - Quasi-Peak detector
Ca - CISPR Average detection

BLE, 2Mbps, Sample 29



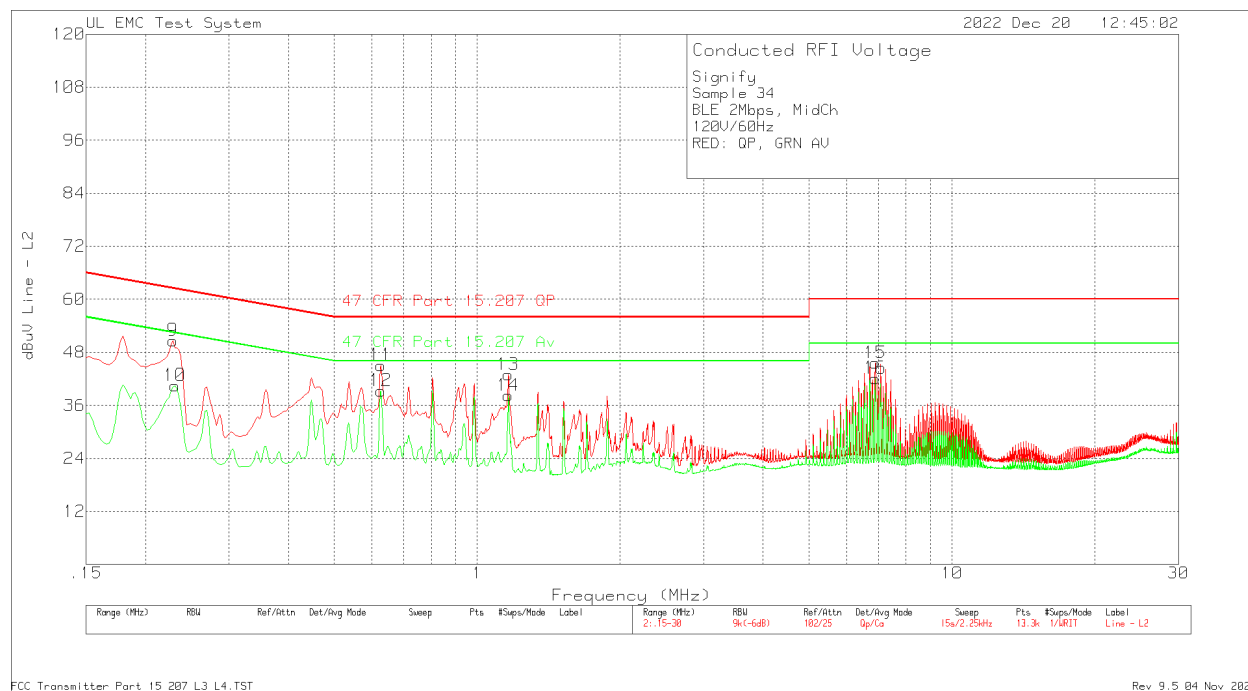
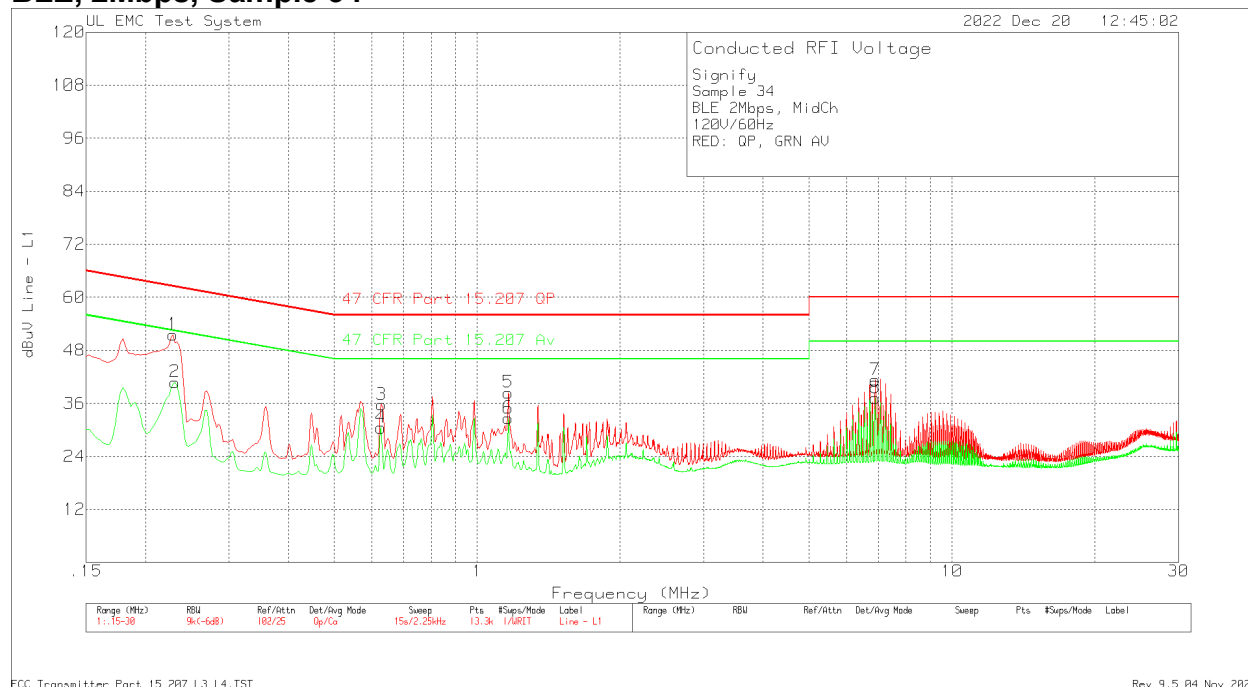
Signify
Sample 29
BLE 2Mbps, MidCh
120V/60Hz
RED: QP, GRN AV

Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading	Limit:1 dBuV	2
=====							
Line							
1	.17925	38.73dBuV Qp	.1	11.8	50.63	64.52	54.52
					Margin (dB)	-13.89	-3.89
2	.17925	27.48dBuV Ca	.1	11.8	39.38	64.52	54.52
					Margin (dB)	-25.14	-15.14
3	.23325	38.25dBuV Qp	.1	11.4	49.75	62.33	52.33
					Margin (dB)	-12.58	-2.58
4	.22875	31.77dBuV Ca	.1	11.4	43.27	62.49	52.49
					Margin (dB)	-19.22	-9.22
5	.627	24.27dBuV Qp	0	10.6	34.87	56	46
					Margin (dB)	-21.13	-11.13
6	.627	20.55dBuV Ca	0	10.6	31.15	56	46
					Margin (dB)	-24.85	-14.85
7	.80475	26.31dBuV Qp	0	10.6	36.91	56	46
					Margin (dB)	-19.09	-9.09
8	.80475	23.23dBuV Ca	0	10.6	33.83	56	46
					Margin (dB)	-22.17	-12.17
9	1.1625	27.88dBuV Qp	0	10.6	38.48	56	46
					Margin (dB)	-17.52	-7.52
10	1.1625	22.11dBuV Ca	0	10.6	32.71	56	46
					Margin (dB)	-23.29	-13.29
11	6.88875	30.05dBuV Qp	0	10.8	40.85	60	50
					Margin (dB)	-19.15	-9.15
12	6.88875	25.45dBuV Ca	0	10.8	36.25	60	50
					Margin (dB)	-23.75	-13.75
Neutral							
13	.17925	39.59dBuV Qp	.1	11.8	51.49	64.52	54.52
					Margin (dB)	-13.03	-3.03
14	.22875	29.41dBuV Ca	.1	11.4	40.91	62.49	52.49
					Margin (dB)	-21.58	-11.58
15	.22875	39.37dBuV Qp	.1	11.4	50.87	62.49	52.49
					Margin (dB)	-11.62	-1.62
16	.22875	29.41dBuV Ca	.1	11.4	40.91	62.49	52.49
					Margin (dB)	-21.58	-11.58
17	.627	34.31dBuV Qp	.1	10.6	45.01	56	46
					Margin (dB)	-10.99	-.99
18	.627	28.64dBuV Ca	.1	10.6	39.34	56	46
					Margin (dB)	-16.66	-6.66
19	1.1625	32.28dBuV Qp	0	10.6	42.88	56	46
					Margin (dB)	-13.12	-3.12
20	1.1625	27.6dBuV Ca	0	10.6	38.2	56	46
					Margin (dB)	-17.8	-7.8
21	6.8865	34.82dBuV Qp	0	10.8	45.62	60	50
					Margin (dB)	-14.38	-4.38
22	6.88425	31.35dBuV Ca	0	10.8	42.15	60	50
					Margin (dB)	-17.85	-7.85

LIMIT 1: 47 CFR Part 15.207 QP
LIMIT 2: 47 CFR Part 15.207 Av
Qp - Quasi-Peak detector
Ca - CISPR Average detection

BLE, 2Mbps, Sample 34



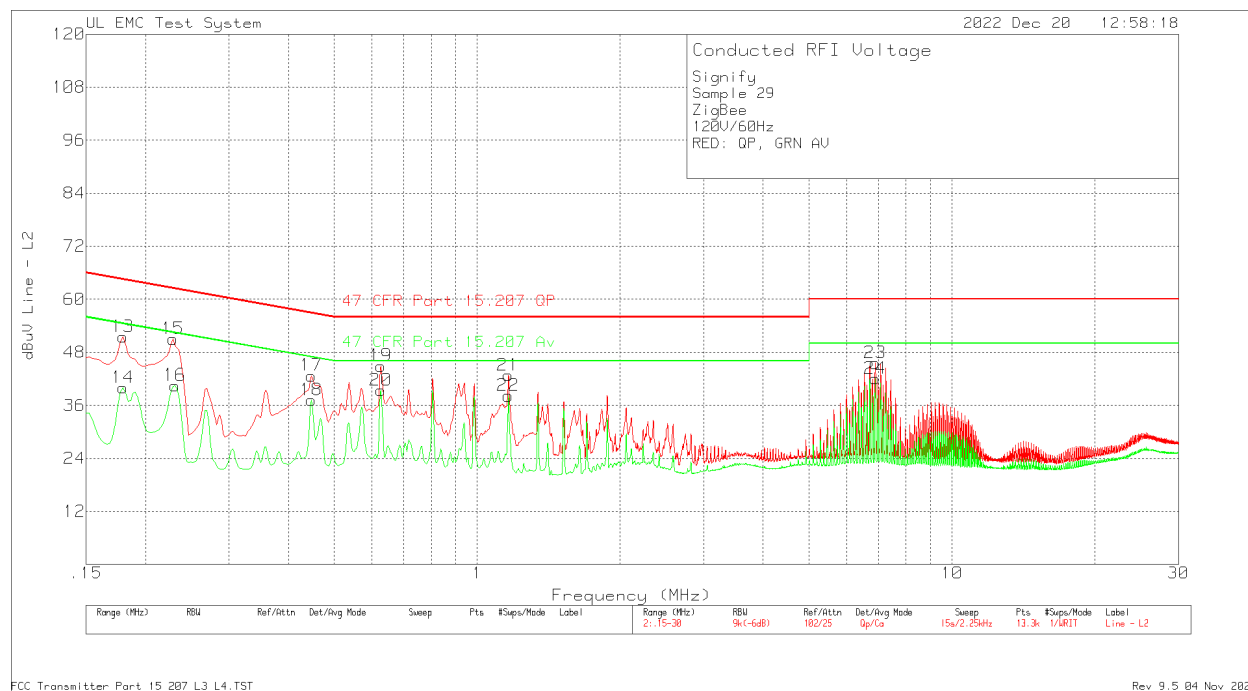
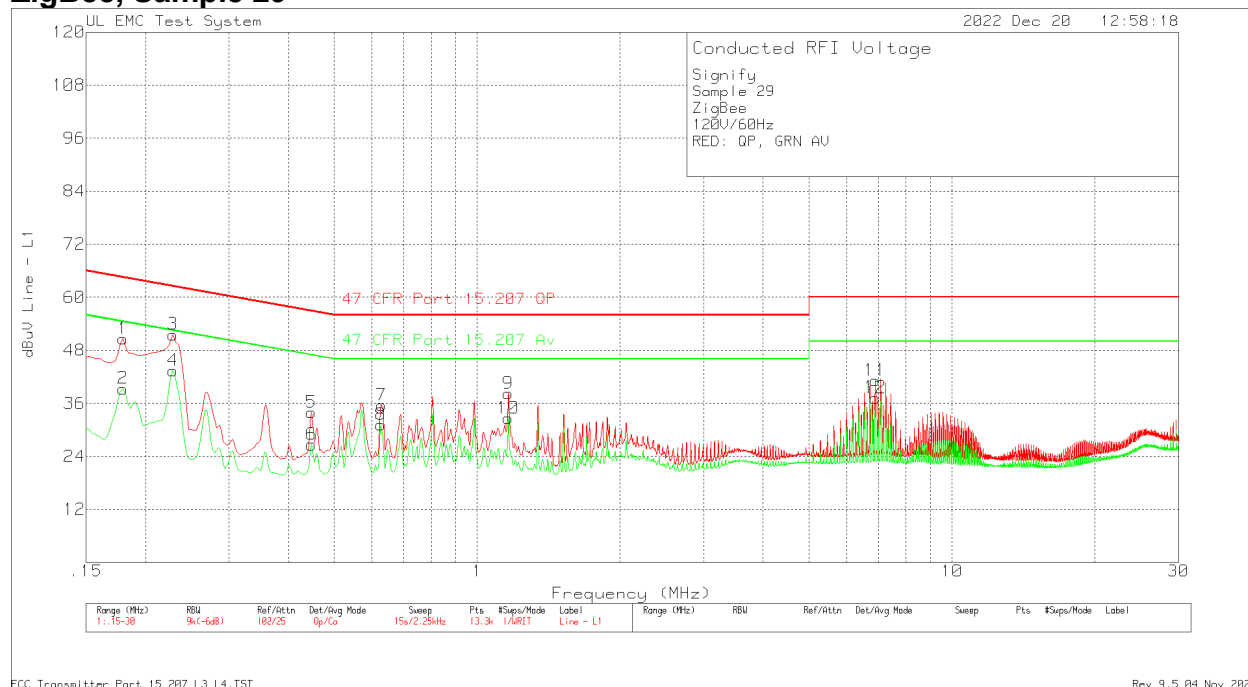
Signify
Sample 34
BLE 2Mbps, MidCh
120V/60Hz
RED: QP, GRN AV

Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading dBuV	Limit:1	2
=====							
Line							
1	.22875	40.05dBuV Qp	.1	11.4	51.55	62.49	52.49
					Margin (dB)	-10.94	-.94
2	.231	29.31dBuV Ca	.1	11.4	40.81	62.41	52.41
					Margin (dB)	-21.6	-11.6
3	.62925	25.13dBuV Qp	0	10.6	35.73	56	46
					Margin (dB)	-20.27	-10.27
4	.627	19.9dBuV Ca	0	10.6	30.5	56	46
					Margin (dB)	-25.5	-15.5
5	1.1625	27.85dBuV Qp	0	10.6	38.45	56	46
					Margin (dB)	-17.55	-7.55
6	1.1625	22.07dBuV Ca	0	10.6	32.67	56	46
					Margin (dB)	-23.33	-13.33
7	6.8865	30.5dBuV Qp	0	10.8	41.3	60	50
					Margin (dB)	-18.7	-8.7
8	6.88425	26.4dBuV Ca	0	10.8	37.2	60	50
					Margin (dB)	-22.8	-12.8
Neutral							
9	.22875	39.16dBuV Qp	.1	11.4	50.66	62.49	52.49
					Margin (dB)	-11.83	-1.83
10	.231	28.98dBuV Ca	.1	11.4	40.48	62.41	52.41
					Margin (dB)	-21.93	-11.93
11	.627	34.38dBuV Qp	.1	10.6	45.08	56	46
					Margin (dB)	-10.92	-.92
12	.627	28.62dBuV Ca	.1	10.6	39.32	56	46
					Margin (dB)	-16.68	-6.68
13	1.1625	32.31dBuV Qp	0	10.6	42.91	56	46
					Margin (dB)	-13.09	-3.09
14	1.1625	27.59dBuV Ca	0	10.6	38.19	56	46
					Margin (dB)	-17.81	-7.81
15	6.8865	34.79dBuV Qp	0	10.8	45.59	60	50
					Margin (dB)	-14.41	-4.41
16	6.88425	31.32dBuV Ca	0	10.8	42.12	60	50
					Margin (dB)	-17.88	-7.88

LIMIT 1: 47 CFR Part 15.207 QP
LIMIT 2: 47 CFR Part 15.207 Av
Qp - Quasi-Peak detector
Ca - CISPR Average detection

ZigBee, Sample 29



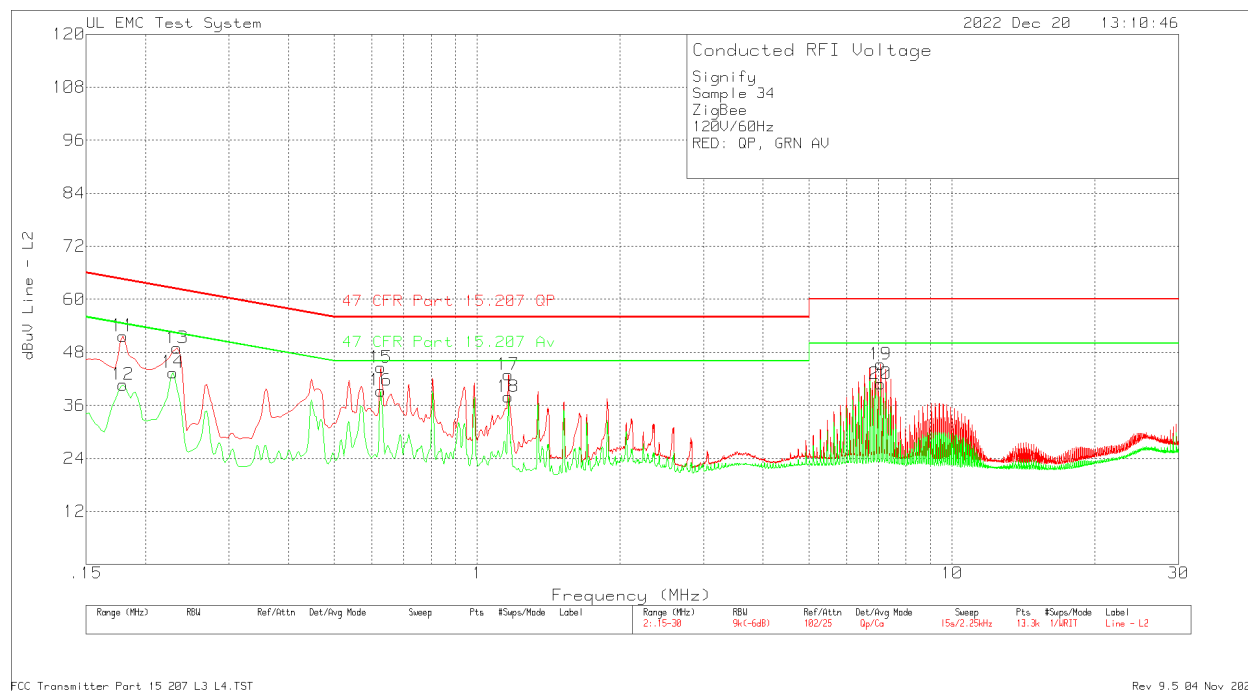
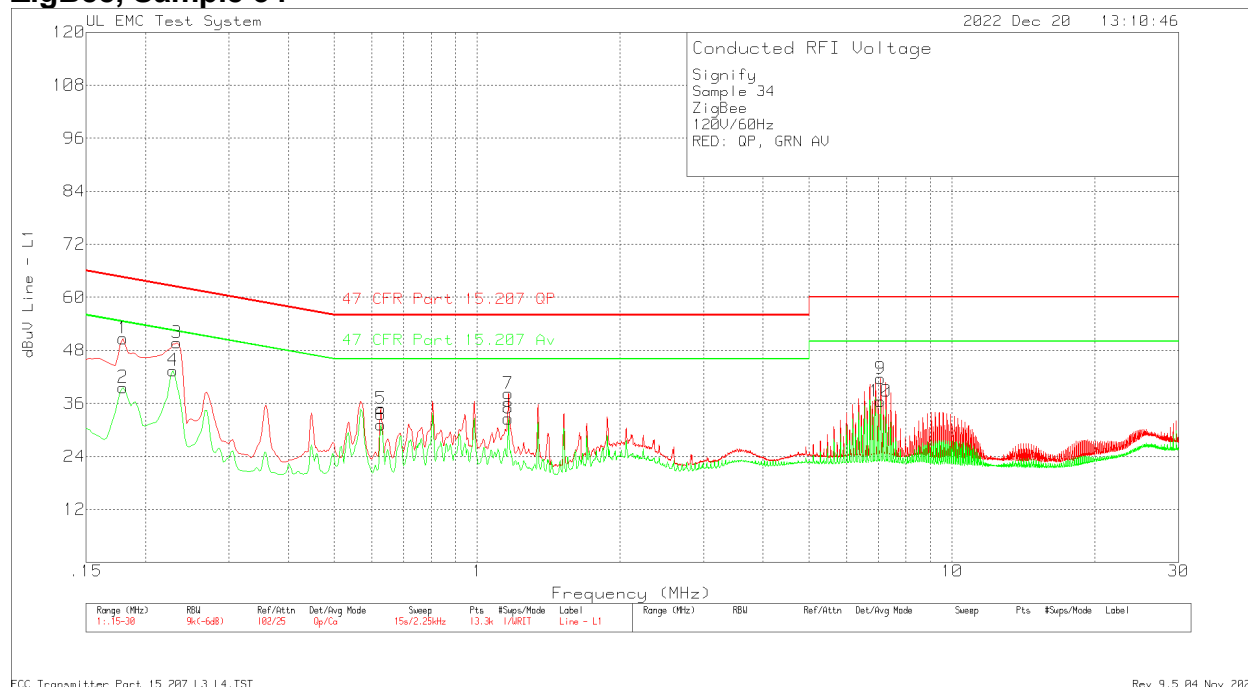
Signify
Sample 29
ZigBee
120V/60Hz
RED: QP, GRN AV

Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading	Limit:1 dBuV	2
=====							
Line							
1	.17925	38.73dBuV Qp	.1	11.8	50.63	64.52	54.52
					Margin (dB)	-13.89	-3.89
2	.17925	27.44dBuV Ca	.1	11.8	39.34	64.52	54.52
					Margin (dB)	-25.18	-15.18
3	.22875	40.08dBuV Qp	.1	11.4	51.58	62.49	52.49
					Margin (dB)	-10.91	-.91
4	.22875	31.91dBuV Ca	.1	11.4	43.41	62.49	52.49
					Margin (dB)	-19.08	-9.08
5	.447	23.25dBuV Qp	0	10.7	33.95	56.93	46.93
					Margin (dB)	-22.98	-12.98
6	.447	15.96dBuV Ca	0	10.7	26.66	56.93	46.93
					Margin (dB)	-30.27	-20.27
7	.62925	25.01dBuV Qp	0	10.6	35.61	56	46
					Margin (dB)	-20.39	-10.39
8	.627	20.52dBuV Ca	0	10.6	31.12	56	46
					Margin (dB)	-24.88	-14.88
9	1.1625	27.65dBuV Qp	0	10.6	38.25	56	46
					Margin (dB)	-17.75	-7.75
10	1.1625	22.02dBuV Ca	0	10.6	32.62	56	46
					Margin (dB)	-23.38	-13.38
11	6.88875	30.4dBuV Qp	0	10.8	41.2	60	50
					Margin (dB)	-18.8	-8.8
12	6.88425	26.45dBuV Ca	0	10.8	37.25	60	50
					Margin (dB)	-22.75	-12.75
Neutral							
13	.17925	39.59dBuV Qp	.1	11.8	51.49	64.52	54.52
					Margin (dB)	-13.03	-3.03
14	.17925	28.13dBuV Ca	.1	11.8	40.03	64.52	54.52
					Margin (dB)	-24.49	-14.49
15	.22875	39.51dBuV Qp	.1	11.4	51.01	62.49	52.49
					Margin (dB)	-11.48	-1.48
16	.231	28.99dBuV Ca	.1	11.4	40.49	62.41	52.41
					Margin (dB)	-21.92	-11.92
17	.447	31.93dBuV Qp	.1	10.7	42.73	56.93	46.93
					Margin (dB)	-14.2	-4.2
18	.447	26.43dBuV Ca	.1	10.7	37.23	56.93	46.93
					Margin (dB)	-19.7	-9.7
19	.627	34.22dBuV Qp	.1	10.6	44.92	56	46
					Margin (dB)	-11.08	-1.08
20	.627	28.66dBuV Ca	.1	10.6	39.36	56	46
					Margin (dB)	-16.64	-6.64
21	1.1625	32.22dBuV Qp	0	10.6	42.82	56	46
					Margin (dB)	-13.18	-3.18
22	1.1625	27.57dBuV Ca	0	10.6	38.17	56	46
					Margin (dB)	-17.83	-7.83
23	6.8865	34.75dBuV Qp	0	10.8	45.55	60	50
					Margin (dB)	-14.45	-4.45
24	6.88425	31.27dBuV Ca	0	10.8	42.07	60	50
					Margin (dB)	-17.93	-7.93

LIMIT 1: 47 CFR Part 15.207 QP
LIMIT 2: 47 CFR Part 15.207 Av
Qp - Quasi-Peak detector
Ca - CISPR Average detection

ZigBee, Sample 34



Signify
Sample 34
ZigBee
120V/60Hz
RED: QP, GRN AV

Trace Markers

Test No.	Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading dBuV	Limit:1	2
=====							
Line							
1	.17925	38.8dBuV Qp	.1	11.8	50.7	64.52	54.52
					Margin (dB)	-13.82	-3.82
2	.17925	27.7dBuV Ca	.1	11.8	39.6	64.52	54.52
					Margin (dB)	-24.92	-14.92
3	.23325	38.21dBuV Qp	.1	11.4	49.71	62.33	52.33
					Margin (dB)	-12.62	-2.62
4	.22875	31.95dBuV Ca	.1	11.4	43.45	62.49	52.49
					Margin (dB)	-19.04	-9.04
5	.627	24.24dBuV Qp	0	10.6	34.84	56	46
					Margin (dB)	-21.16	-11.16
6	.627	20.55dBuV Ca	0	10.6	31.15	56	46
					Margin (dB)	-24.85	-14.85
7	1.1625	27.6dBuV Qp	0	10.6	38.2	56	46
					Margin (dB)	-17.8	-7.8
8	1.1625	21.96dBuV Ca	0	10.6	32.56	56	46
					Margin (dB)	-23.44	-13.44
9	7.06875	30.85dBuV Qp	0	10.8	41.65	60	50
					Margin (dB)	-18.35	-8.35
10	7.0665	25.61dBuV Ca	0	10.8	36.41	60	50
					Margin (dB)	-23.59	-13.59
Neutral							
11	.17925	39.8dBuV Qp	.1	11.8	51.7	64.52	54.52
					Margin (dB)	-12.82	-2.82
12	.17925	28.77dBuV Ca	.1	11.8	40.67	64.52	54.52
					Margin (dB)	-23.85	-13.85
13	.23325	37.49dBuV Qp	.1	11.4	48.99	62.33	52.33
					Margin (dB)	-13.34	-3.34
14	.22875	31.95dBuV Ca	.1	11.4	43.45	62.49	52.49
					Margin (dB)	-19.04	-9.04
15	.627	33.87dBuV Qp	.1	10.6	44.57	56	46
					Margin (dB)	-11.43	-1.43
16	.627	28.63dBuV Ca	.1	10.6	39.33	56	46
					Margin (dB)	-16.67	-6.67
17	1.1625	32.34dBuV Qp	0	10.6	42.94	56	46
					Margin (dB)	-13.06	-3.06
18	1.1625	27.31dBuV Ca	0	10.6	37.91	56	46
					Margin (dB)	-18.09	-8.09
19	7.06875	34.52dBuV Qp	0	10.8	45.32	60	50
					Margin (dB)	-14.68	-4.68
20	7.0665	30.07dBuV Ca	0	10.8	40.87	60	50
					Margin (dB)	-19.13	-9.13

LIMIT 1: 47 CFR Part 15.207 QP
LIMIT 2: 47 CFR Part 15.207 Av
Qp - Quasi-Peak detector
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