TEST REPORT

Report Number : R13548896-E3

Applicant	:	Samsung Electronics Co., Ltd. 129 Samsung-Ro, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 16677, Korea
Model	:	SM-M127F, SM-M127F/DS
FCC ID	:	A3LSMM127F
EUT Description	:	GSM/WCDMA/LTE Phablet with BT/BLE and DTS b/g/n
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
2020-12-08

Prepared by:
UL LLC
12 Laboratory Dr.
Research Triangle Park, NC 27709 U.S.A.
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NVLAP TESTING

NVLAP Lab code: 200246-0

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2020-11-30	Initial Issue	Niklas Haydon
V2	2020-12-08	Editorial corrections/clarifications	Niklas Haydon

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Samsung Electronics Co, Ltd.
129 Samsung-Ro, Yeongtong-Gu
Suwon-Si, Gyeonggi-Do, 16677, Korea

EUT DESCRIPTION: GSM/WCDMA/LTE Phablet with BT/BLE and DTS b/g/n

MODEL: SM-M127F, SM-M127F/DS

SERIAL NUMBER: Radiated: TJG0333H
Conducted: TJF2546

SAMPLE RECEIPT DATE: 2020-10-23

DATE TESTED: 2020-10-27 to 2020-11-11

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	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.

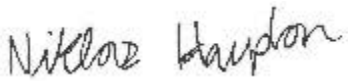
The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. 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. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For
UL LLC By:

Bob DeLisi
Principal Engineer
Consumer Technology Division
UL LLC

Prepared By:



Niklas Haydon
Operations Leader
Consumer Technology Division
UL LLC

2. TEST RESULTS SUMMARY

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		None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power		None.
See Comment		Average power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	RSS-247 5.2 (b)	PSD		None.
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions		None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions		None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions		None.

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3. TEST METHODOLOGY

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

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Drive, Research Triangle Park, North Carolina, USA and 2800 Perimeter Park Dr. Suite B, Morrisville, North Carolina, USA. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

12 Laboratory Dr.	2800 Suite Perimeter Park Dr.
☐ Chamber A RTP	☒ North Chamber
☐ Chamber C RTP	☒ South Chamber

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0

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	3.07 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.52 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.24 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.37 dB

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE Tablet with BT/BLE and DTS b/g/n. There are two models, SM-M127F and SM-M127/DS. The SM-M127F/DS was tested in this report.

The models are electronically equivalent with the only difference being that the SM-M127F/DS has dual sim capability.

This report covers the 2.4 GHz WLAN functions.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

2.4GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
1Tx			
2412 - 2472	802.11b	20.94	124.17
2412 - 2472	802.11g	23.02	200.45
2412 - 2472	802.11n HT20	23.25	211.35

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an antenna with a maximum gain of -0.8 dBi.

6.4. SOFTWARE AND FIRMWARE

The hardware installed during testing was REV 0.1.
The test utility software used during testing was [vendor.ril.sw_ver]: [M127FXXU0FCC_test.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest power spectral denisty as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Charging Adapter	Samsung	EP-TA200	R37M3FV0M01DK3	NA
Earbuds	NA	NA	NA	NA

I/O CABLES

I/O Cable List						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	USB-C	1	USB C	USB	<3	None
2	Aux	1	Aux	Aux	<3	None

TEST SETUP

Test software exercised the radio card.

SETUP DIAGRAM

Please refer to R13548896-EP1 for setup diagrams.

7. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10 Section 11.6

6 dB BW: ANSI C63.10 Subclause 11.8.1

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

Output Power: ANSI C63.10 Subclause 11.9.1.3 Method PKPM1 Peak-reading power meter

Output Power: ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM-G

PSD: ANSI C63.10 Subclause 11.10.2 Method PKPSD (Peak PSD)

Conducted Spurious Emissions: ANSI C63.10-2013 Section 7.8.8

Out-of-band emissions in non-restricted bands: ANSI C63.10-2013 Section 11.11 & 6.10.4

Out-of-band emissions in restricted bands: ANSI C63.10-2013 Section 11.12.1 & 6.10.5

General Radiated Emissions: ANSI C63.10:2013 Sections 6.3 – 6.6

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

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8. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Conducted Room 2				
SA027	Spectrum Analyzer	Keysight Technologies	N9030A	2020-06-10	2021-06-10
T177	Spectrum Analyzer	Agilent	E4446A	2020-04-30	2021-04-30
PWM001 (PRE0136343)	RF Power Meter	Keysight Technologies	N1912A	2020-07-17	2021-07-17
PWS002 (PRE0137348)	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2020-09-10	2021-09-10
HI0090 (PRE0191271)	Environmental Meter	Fisher Scientific	15-077-963	2020-06-26	2021-06-26
76021	DC Regulated Power Supply	CircuitSpecialists.Com	CSI3005X5	NA	NA
SOFTEMI	EMC Software	UL	Version 2020.10.14 Version 2020.10.22	NA	NA

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2020-03-26	2021-03-26
HI0091	Environmental Meter	Fisher Scientific	14-650-118	2020-06-26	2021-06-26
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2020-08-18	2021-08-18
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2020-08-18	2021-08-18
ATA222	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2020-03-26	2021-03-26
PS215	AC Power Source	Elgar	CW2501M (s/n 1523A02397)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Miscellaneous (if needed)				
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2020-08-08	2021-08-08

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville - South Chamber)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
AT0067	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2020-04-28	2021-04-28
	Gain-Loss Chains				
S-SAC03	Gain-loss string: 1-18GHz	Various	Various	2020-07-06	2020-07-06
	Receiver & Software				
SA0025	Spectrum Analyzer	Agilent	N9030A	2020-03-17	2021-03-17
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Additional Equipment used				
s/n 200037635	Environmental Meter	Fisher Scientific	06-662-4	2020-01-22	2022-01-22

Test Equipment Used – Radiated Disturbance Emissions Test Equipment (Morrisville – North Chamber)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	0.009-30MHz	**(Loop Ant.)**			
AT0079	Active Loop Antenna	ETS-Lindgren	6502	2020-08-20	2021-08-20
	30-1000 MHz				
AT0074	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2020-07-27	2021-07-27
	1-18 GHz				
AT0072	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2020-04-27	2021-04-27
	18-40 GHz				
AT0076	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2019-11-07	2020-11-07
	Gain-Loss Chains				
N-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2020-07-29	2021-07-29
N-SAC02	Gain-loss string: 25-1000MHz	Various	Various	2020-07-29	2021-07-29
N-SAC03	Gain-loss string: 1-18GHz	Various	Various	2020-07-28	2021-07-28
N-SAC04	Gain-loss string: 18-40GHz	Various	Various	2020-07-31	2021-07-31
	Receiver & Software				
SA0026	Spectrum Analyzer	Agilent	N9030A	2020-07-16	2021-07-16
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Additional Equipment used				
s/n 200037610	Environmental Meter	Fisher Scientific	06-662-4	2020-01-22	2022-01-22

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

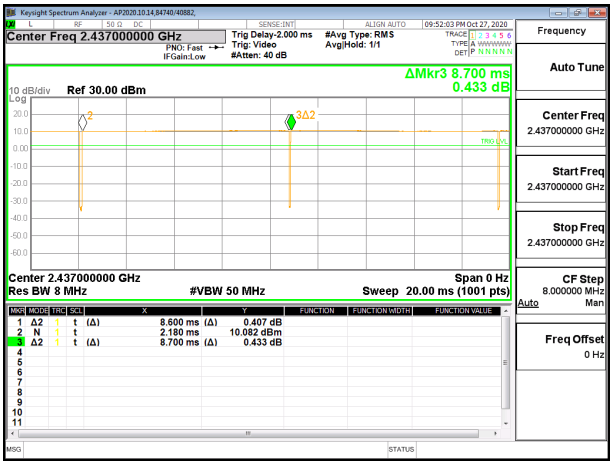
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

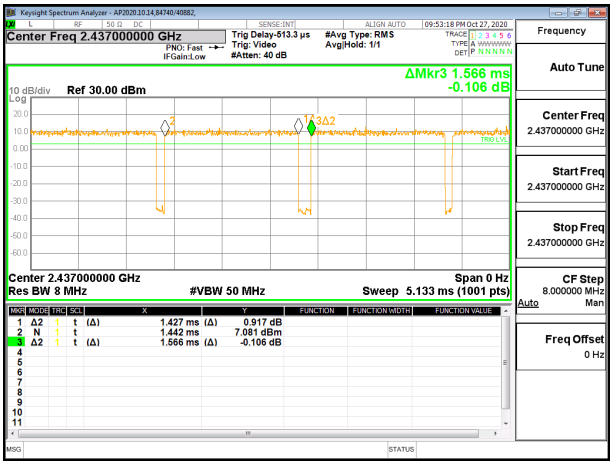
ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b 1TX	8.600	8.700	0.989	98.85%	0.00	0.010
802.11g 1TX	1.427	1.566	0.911	91.12%	0.81	0.701
802.11n HT20 1TX	1.335	1.445	0.924	92.39%	0.69	0.749

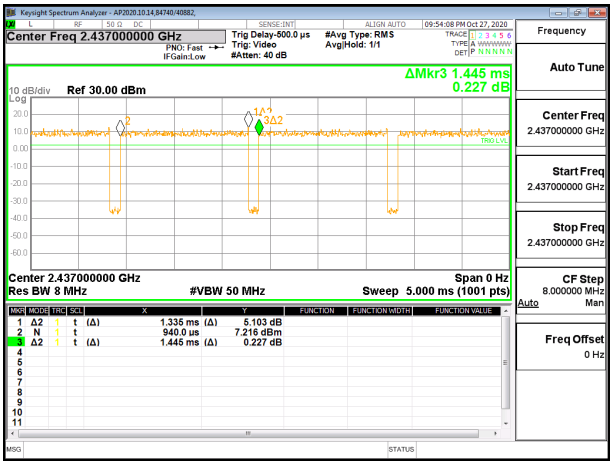
DUTY CYCLE PLOTS



DUTY CYCLE 802.11b 1TX MODE



DUTY CYCLE 802.11g 1TX MODE



DUTY CYCLE 802.11n HT20 1TX MODE

9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

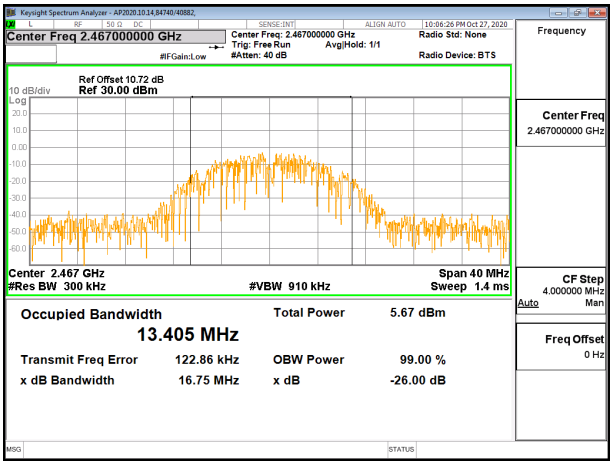
RESULTS

Only the worst case plots are reported.

9.2.1. 802.11b MODE

1TX Antenna 1 MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	13.965
Mid 6	2437	13.422
High 11	2462	13.548
High 12	2467	13.404
High 13	2472	13.453

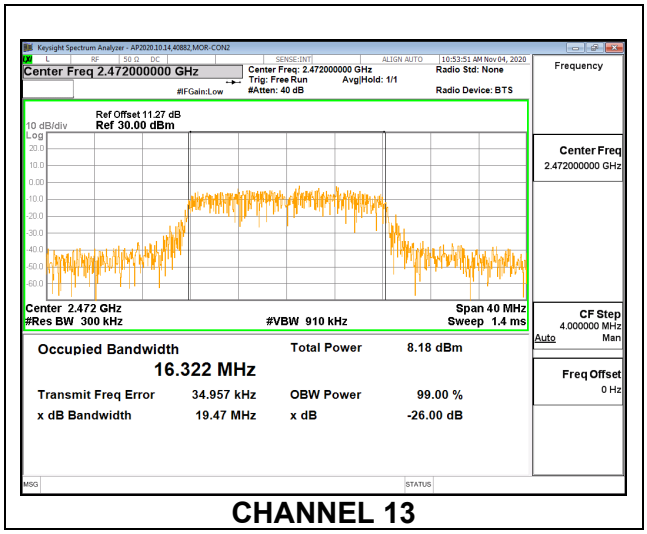


CHANNEL 12

9.2.2. 802.11g MODE

1TX Antenna 1 MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	16.386
Mid 6	2437	16.357
High 11	2462	16.334
High 12	2467	16.354
High 13	2472	16.321

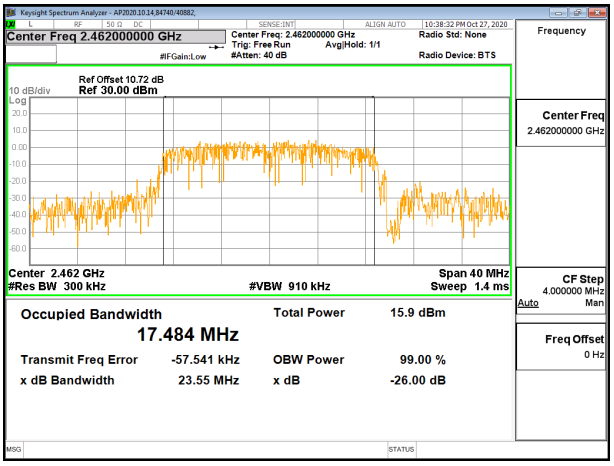


CHANNEL 13

9.2.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	17.499
Mid 6	2437	17.597
High 11	2462	17.484
High 12	2467	17.610
High 13	2472	17.521



CHANNEL 11

9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

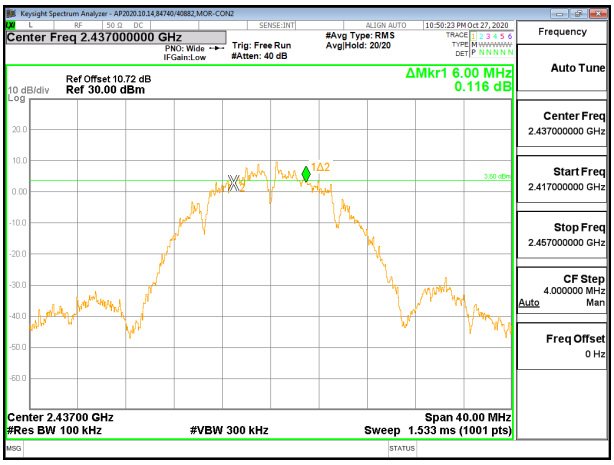
RESULTS

Only the worst case plots are reported.

9.3.1. 802.11b MODE

1TX Antenna 1 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	7.20	0.5
Mid 6	2437	6.00	0.5
High 11	2462	7.64	0.5
High 12	2467	8.24	0.5
High 13	2472	8.16	0.5

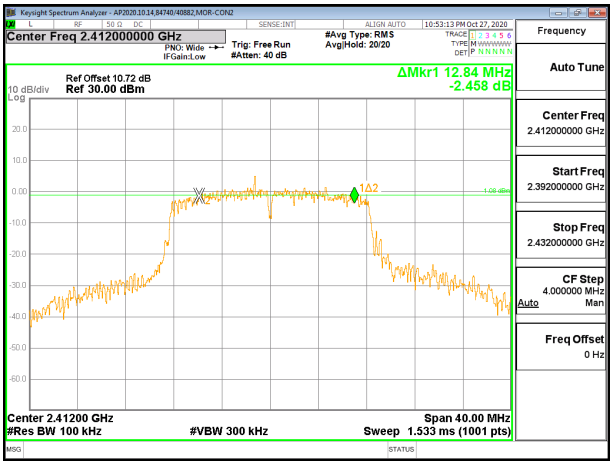


MID CHANNEL 6

9.3.2. 802.11g MODE

1TX Antenna 1 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	12.84	0.5
Mid 6	2437	16.40	0.5
High 11	2462	16.40	0.5
High 12	2467	15.80	0.5
High 13	2472	16.40	0.5

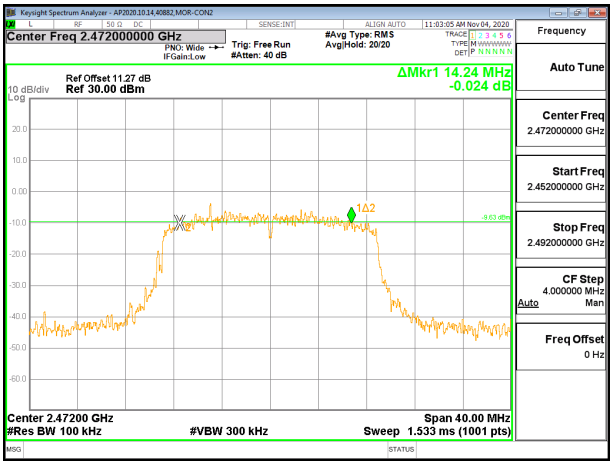


CHANNEL 1

9.3.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	15.12	0.5
Mid 6	2437	17.36	0.5
High 11	2462	16.36	0.5
High 12	2467	16.40	0.5
High 13	2472	14.24	0.5



CHANNEL 13

9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

The transmitter output is connected to a wideband peak power meter and sensor.

The cable assembly insertion loss of 10.72 dB (including 10.33 dB pad and 0.39 dB cable) was entered as an offset in the power meter. Measurement is a peak reading of power.

DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

9.4.1. 802.11b MODE

1TX Antenna 1 MODE

Test Engineer:	40882
Test Date:	2020-10-27

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	20.52	20.52	30.00	-9.48
Mid 6	2437	20.69	20.69	30.00	-9.31
High 11	2462	20.94	20.94	30.00	-9.06
High 12	2467	9.58	9.58	30.00	-20.42
High 13	2472	9.86	9.86	30.00	-20.14

9.4.2. 802.11g MODE

1TX Antenna 1 MODE

Test Engineer:	40882
Test Date:	2020-10-27

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	22.92	22.92	30.00	-7.08
Mid 6	2437	23.02	23.02	30.00	-6.98
High 10	2457	22.75	22.75	30.00	-7.25
High 11	2462	22.37	22.37	30.00	-7.63
High 12	2467	13.95	13.95	30.00	-16.05
High 13	2472	13.97	13.97	30.00	-16.03

9.4.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

Test Engineer:	40882
Test Date:	2020-10-27

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	22.96	22.96	30.00	-7.04
Mid 6	2437	23.25	23.25	30.00	-6.75
High 10	2457	22.44	22.44	30.00	-7.56
High 11	2462	22.30	22.30	30.00	-7.70
High 12	2467	13.76	13.76	30.00	-16.24
High 13	2472	14.37	14.37	30.00	-15.63

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

The transmitter output is connected to an average power meter and sensor.

The cable assembly insertion loss of 10.72 dB (including 10.33 dB pad and 0.39 dB cable) was entered as an offset in the power meter. Measurement is a gated average reading of power.

RESULTS

9.5.1. 802.11b MODE

1TX Antenna 1 MODE

Test Engineer:	40882
Test Date:	2020-10-27

Channel	Frequency (MHz)	Chain 0 Power (dBm)
Low 1	2412	18.26
Mid 6	2437	18.46
High 11	2462	18.74
High 12	2467	6.59
High 13	2472	6.78

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9.5.2. 802.11g MODE

1TX Antenna 1 MODE

Test Engineer:	40882
Test Date:	2020-10-27

Channel	Frequency (MHz)	Chain 0 Power (dBm)
Low 1	2412	15.92
Mid 6	2437	15.73
High 10	2457	16.10
High 11	2462	14.76
High 12	2467	4.64
High 13	2472	4.74

9.5.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

Test Engineer:	40882
Test Date:	2020-10-27

Channel	Frequency (MHz)	Chain 0 Power (dBm)
Low 1	2412	15.21
Mid 6	2437	15.79
High 10	2457	15.80
High 11	2462	14.86
High 12	2467	4.39
High 13	2472	4.93

9.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

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

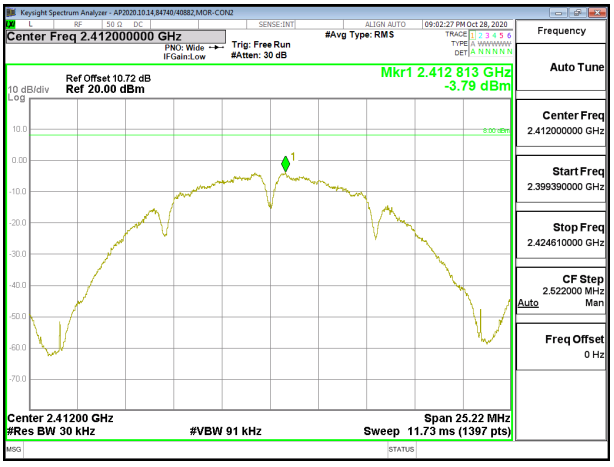
Only the worst case plots are reported.

9.6.1. 802.11b MODE

1TX Antenna 1 MODE

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.79	-3.79	8.0	-11.8
Mid 6	2437	-4.58	-4.58	8.0	-12.6
High 11	2462	-5.62	-5.62	8.0	-13.6
High 12	2467	-16.08	-16.08	8.0	-24.1
High 13	2472	-15.35	-15.35	8.0	-23.4



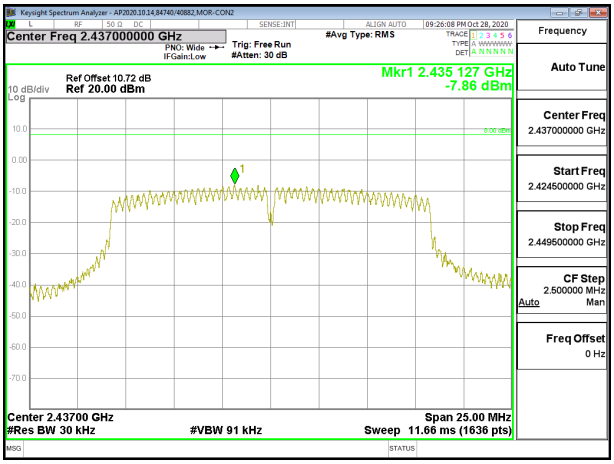
CHANNEL 1

9.6.2. 802.11g MODE

1TX Antenna 1 MODE

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-8.54	-8.54	8.0	-16.5
Mid 6	2437	-7.86	-7.86	8.0	-15.9
High 11	2462	-7.96	-7.96	8.0	-16.0
High 12	2467	-19.04	-19.04	8.0	-27.0
High 13	2472	-17.30	-17.30	8.0	-25.3



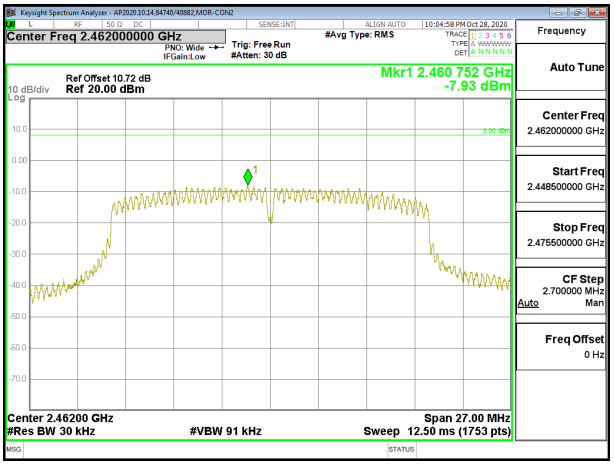
CHANNEL 6

9.6.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-8.79	-8.79	8.0	-16.8
Mid 6	2437	-8.15	-8.15	8.0	-16.2
High 11	2462	-7.93	-7.93	8.0	-15.9
High 12	2467	-19.33	-19.33	8.0	-27.3
High 13	2472	-18.58	-18.58	8.0	-26.6



CHANNEL 11

9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

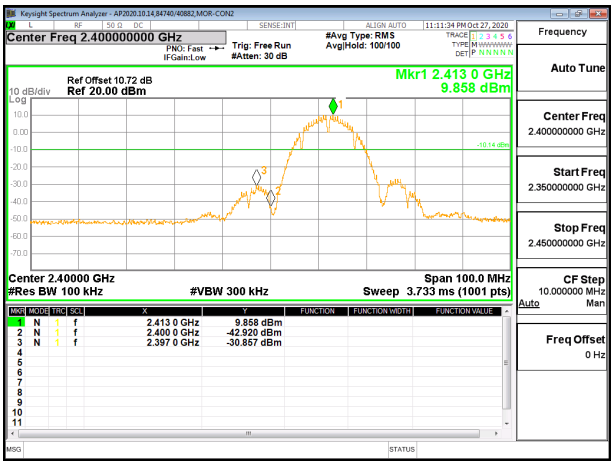
FCC §15.247 (d)

Output power was measured based on the use of peak measurement, therefore, spurious emissions are required to be 20 dBc.

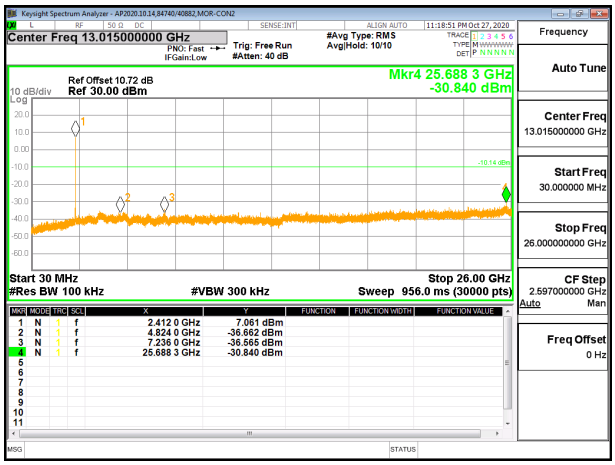
RESULTS

9.7.1. 802.11b MODE

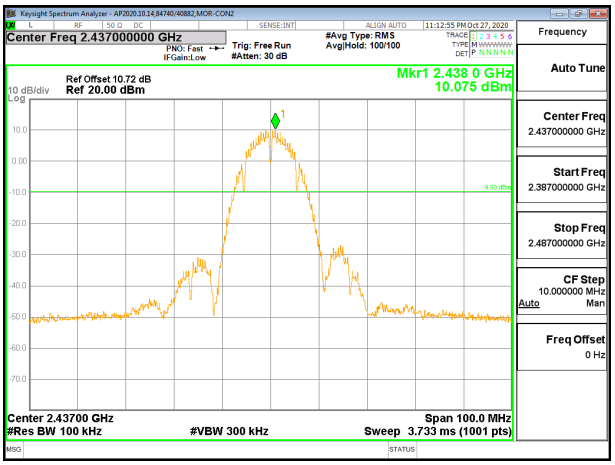
1TX Antenna 1 MODE



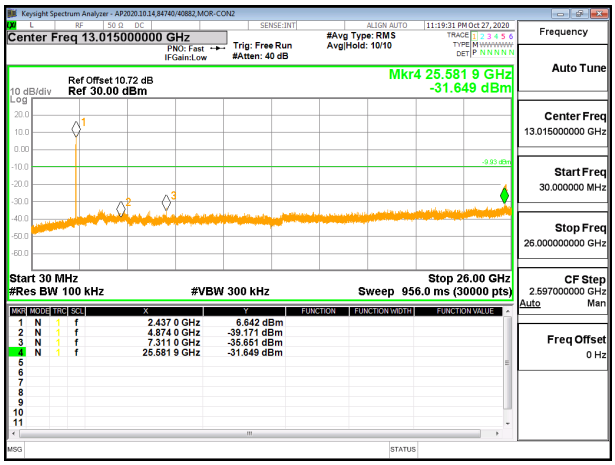
LOW CHANNEL 1 BANDEDGE



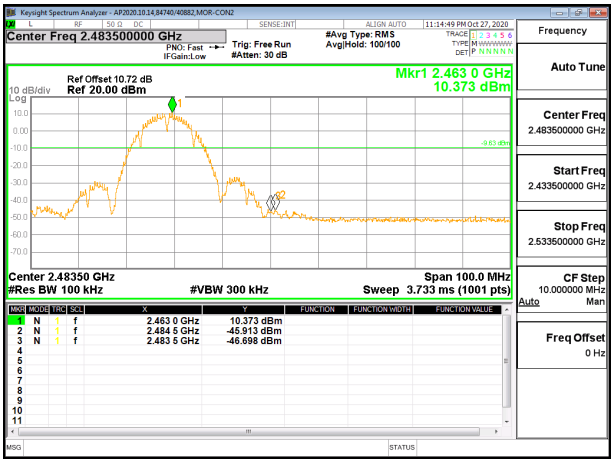
OUT-OF-BAND LOW CHANNEL 1



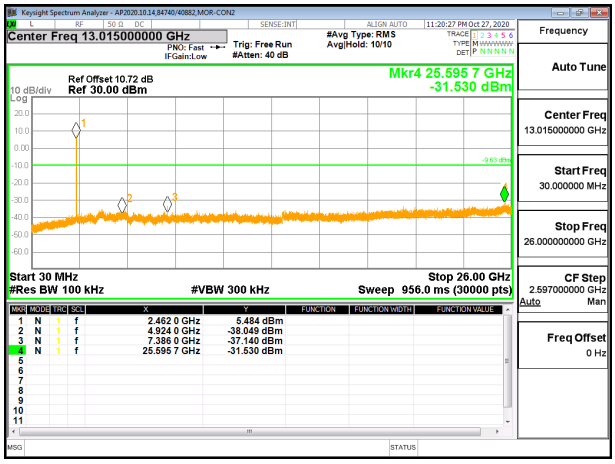
IN-BAND REFERNCE LEVEL



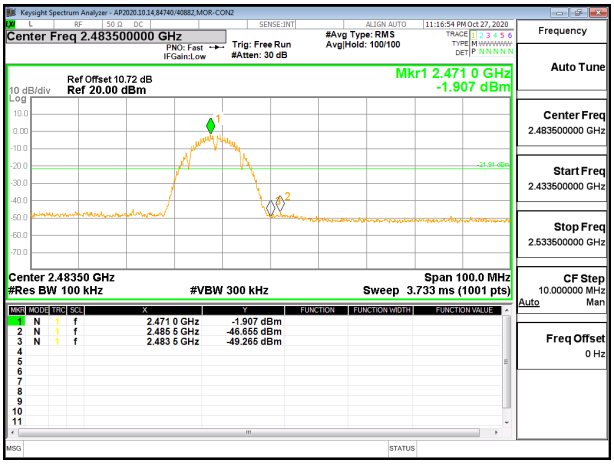
OUT-OF-BAND MID CHANNEL



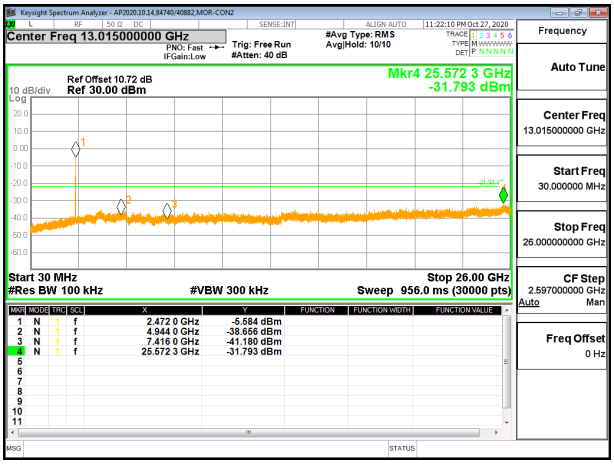
HIGH CHANNEL 11 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 11



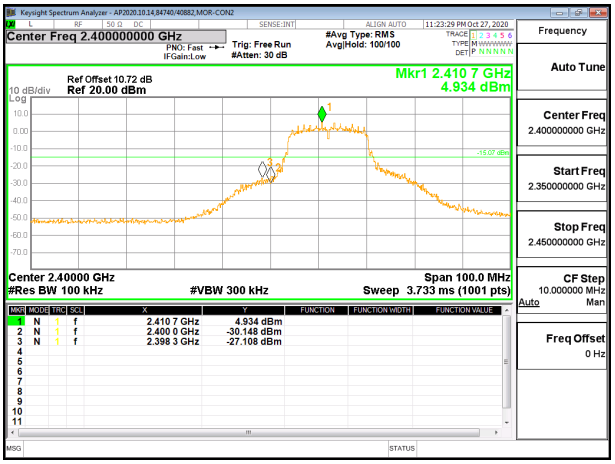
HIGH CHANNEL 13 BANDEDGE



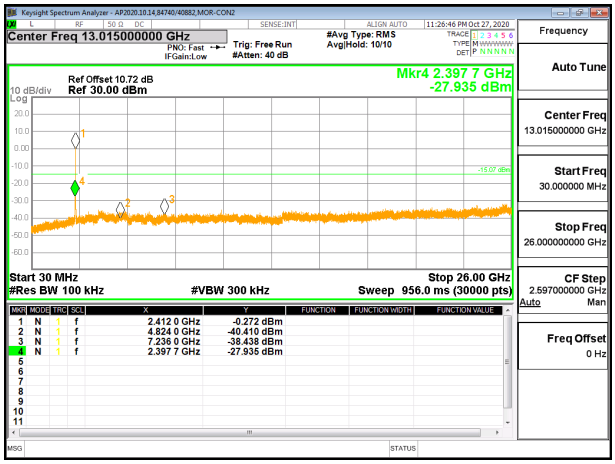
OUT-OF-BAND HIGH CHANNEL 13

9.7.2. 802.11g MODE

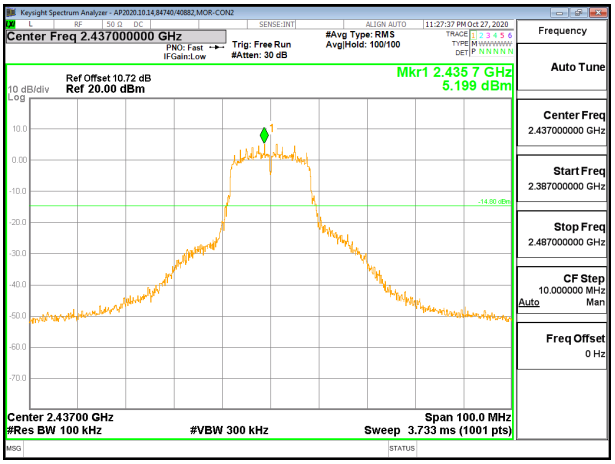
1TX Antenna 1 MODE



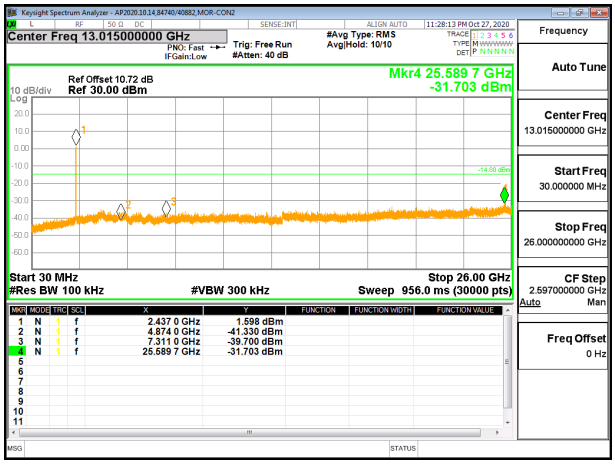
LOW CHANNEL 1 BANDEDGE



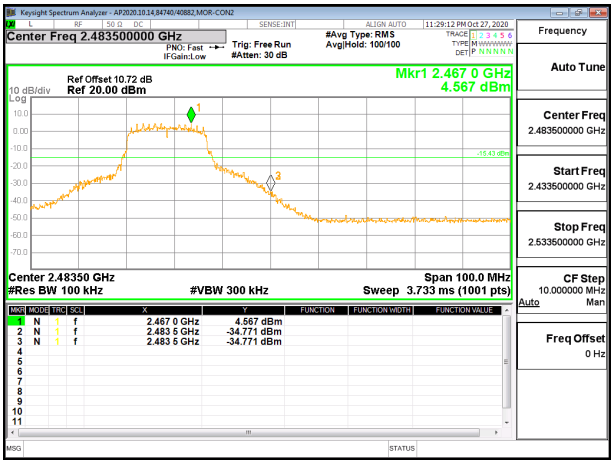
OUT-OF-BAND LOW CHANNEL 1



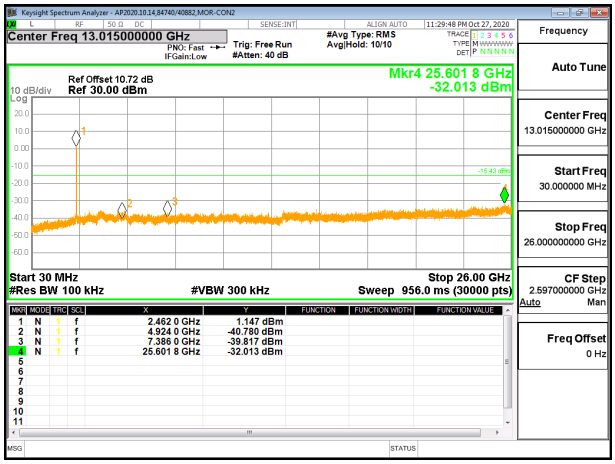
IN-BAND REFERNCE LEVEL



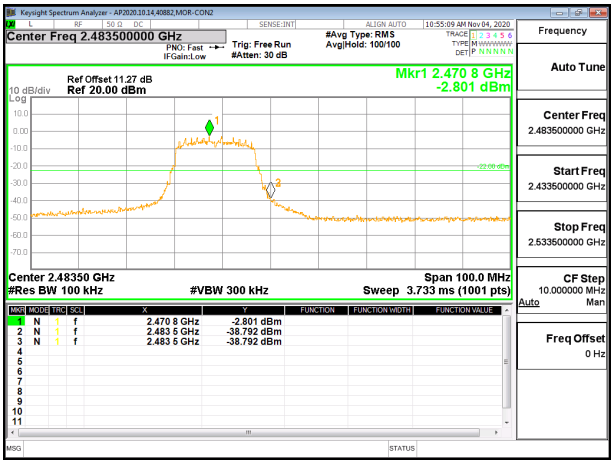
OUT-OF-BAND MID CHANNEL



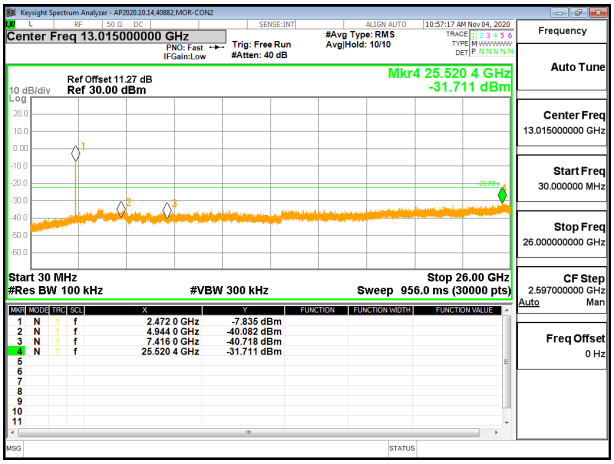
HIGH CHANNEL 11 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 11



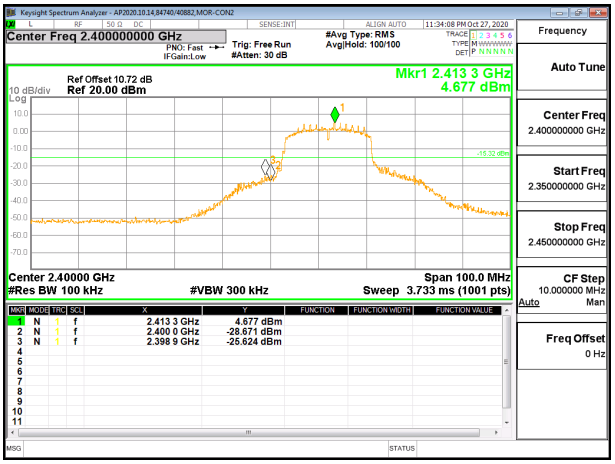
HIGH CHANNEL 13 BANDEDGE



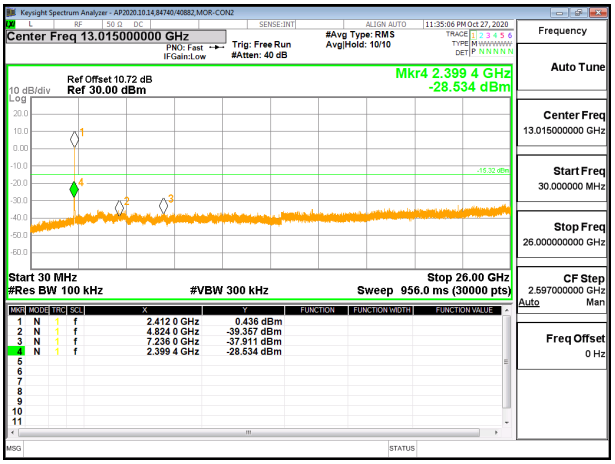
OUT-OF-BAND HIGH CHANNEL 13

9.7.3. 802.11n HT20 MODE

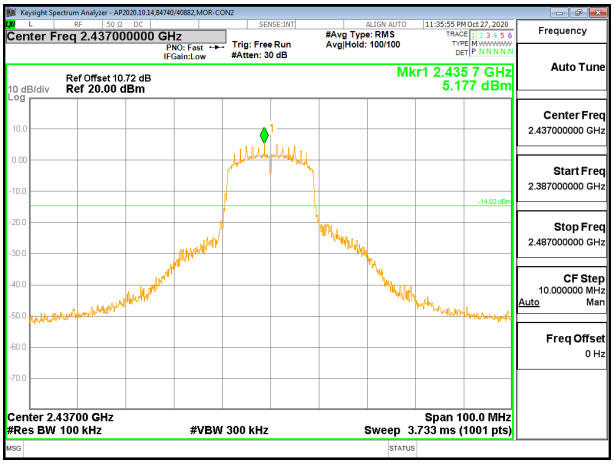
1TX Antenna 1 MODE



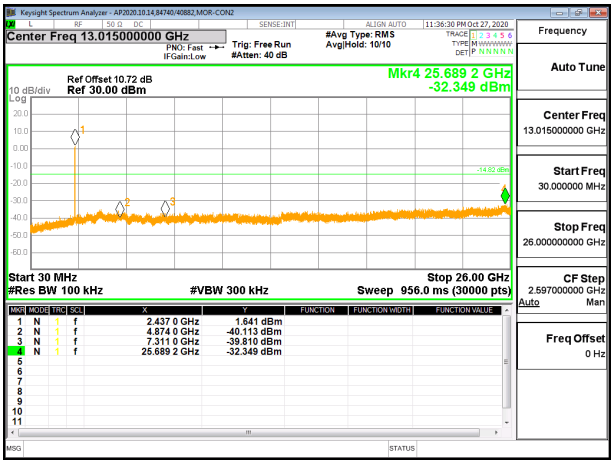
LOW CHANNEL 1 BANDEDGE



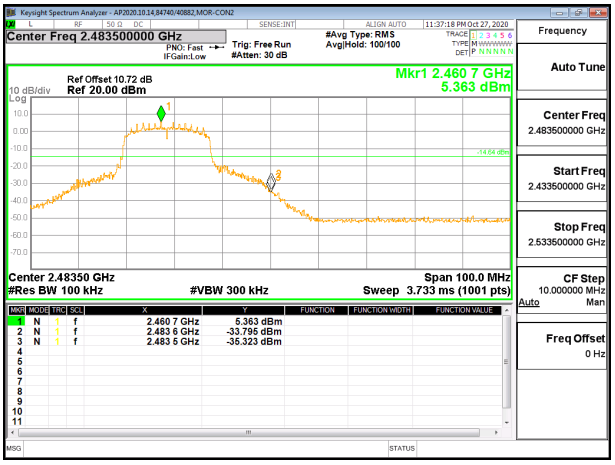
OUT-OF-BAND LOW CHANNEL 1



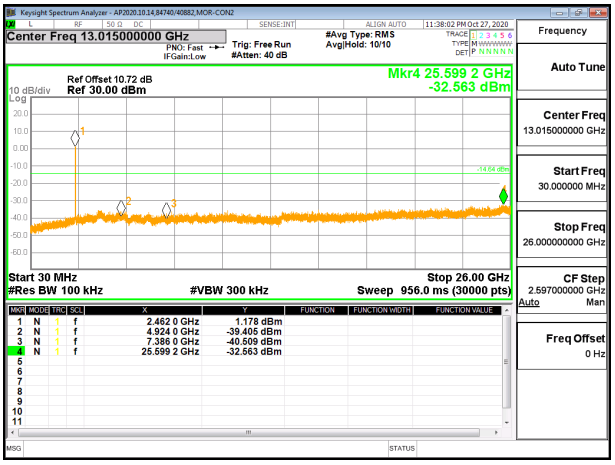
IN-BAND REFERNCE LEVEL



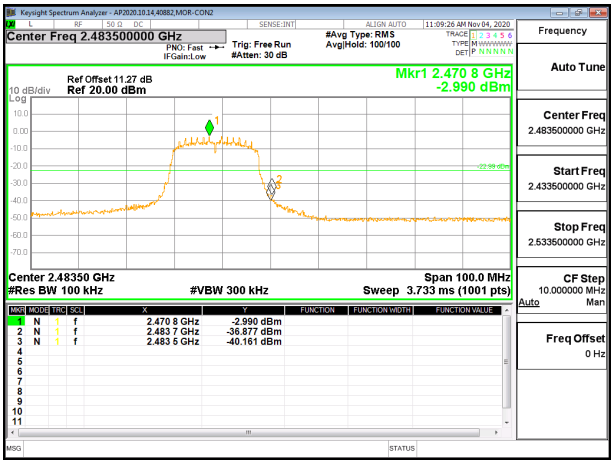
OUT-OF-BAND MID CHANNEL



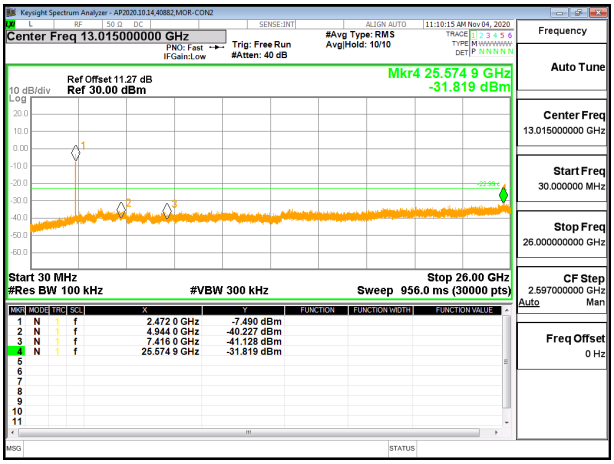
HIGH CHANNEL 11 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 11



HIGH CHANNEL 13 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 13

10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

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. 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. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

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 and as applicable for average measurements.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

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.

3D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

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

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.

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

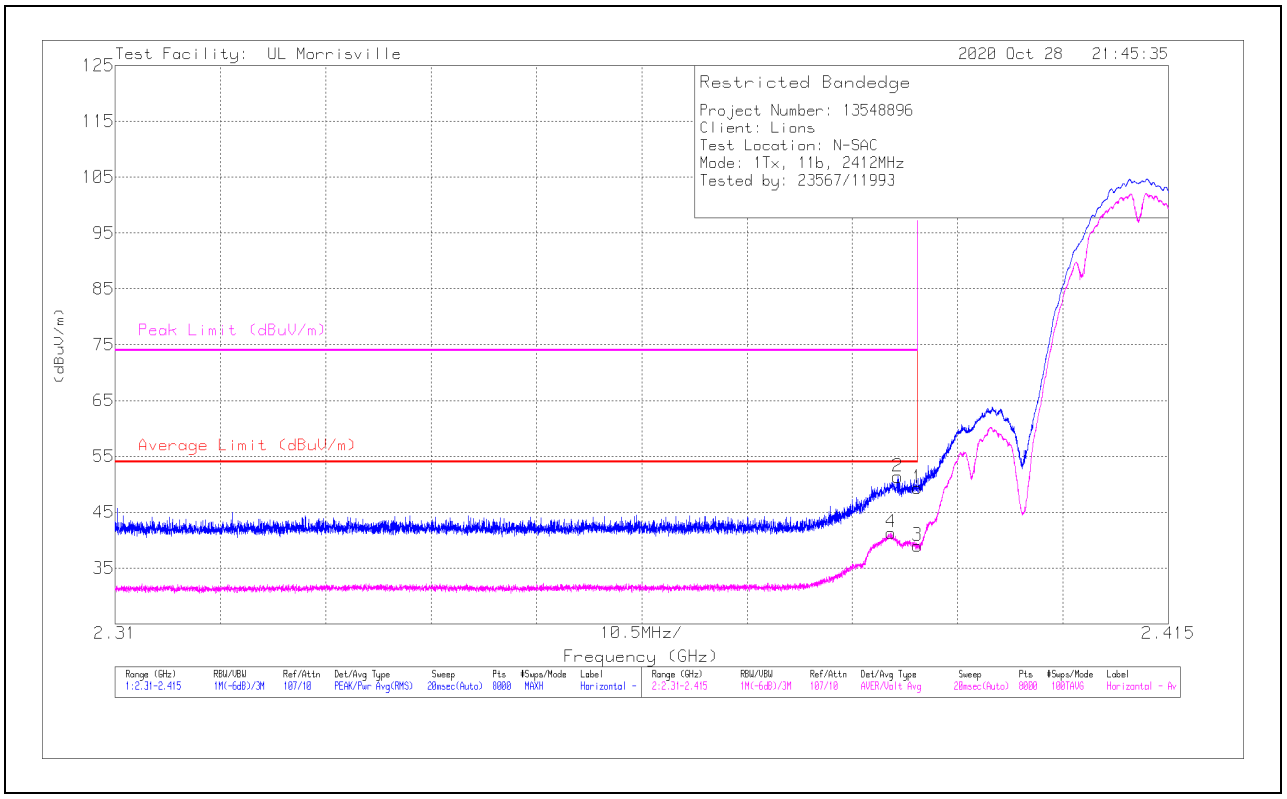
10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL, CH 1)

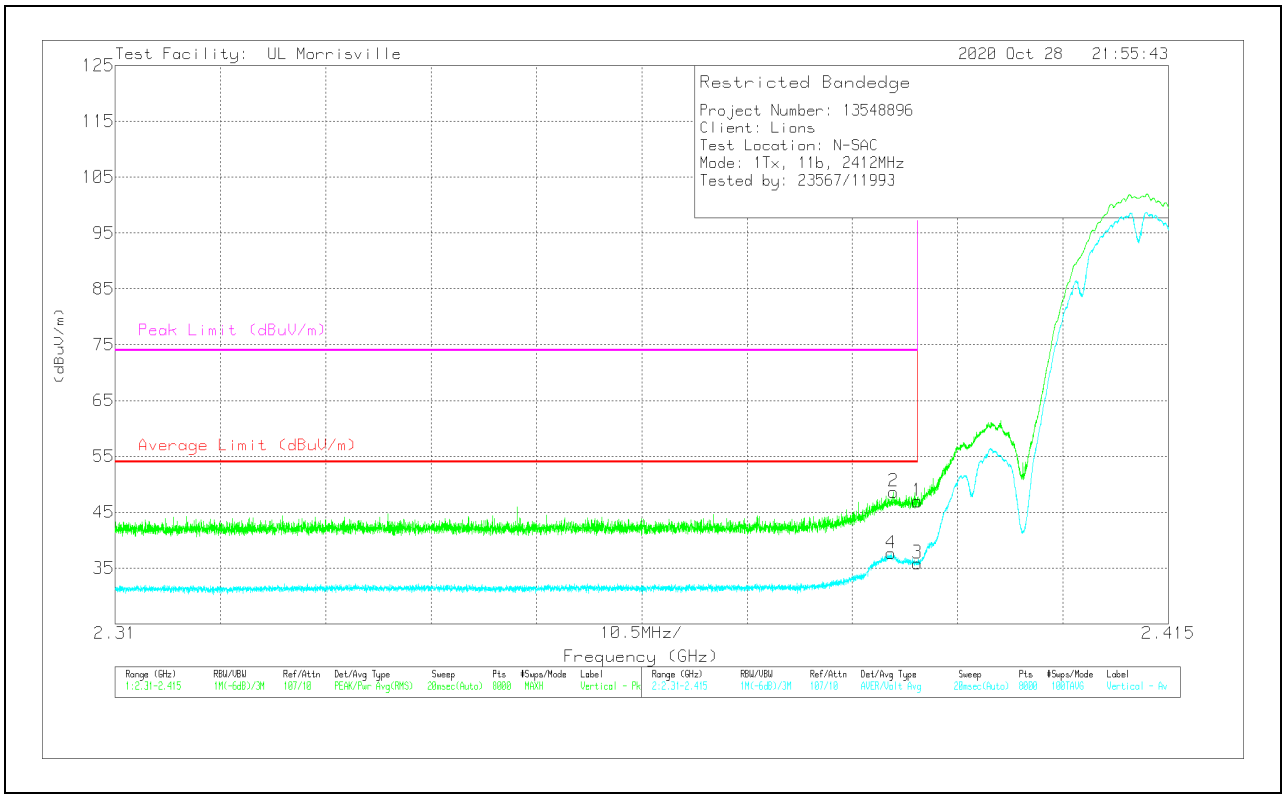
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/ Fltr/Pad (dB)	CorrectedReading(dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height(cm)	Polarity
1	* 2.39	41.95	Pk	31.8	-24.4	49.35	-	-	74	-24.65	122	255	H
2	* 2.38801	43.97	Pk	31.8	-24.4	51.37	-	-	74	-22.63	122	255	H
3	* 2.39	31.63	ADV	31.8	-24.4	39.03	54	-14.97	-	-	122	255	H
4	* 2.38734	33.96	ADV	31.8	-24.4	41.36	54	-12.64	-	-	122	255	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

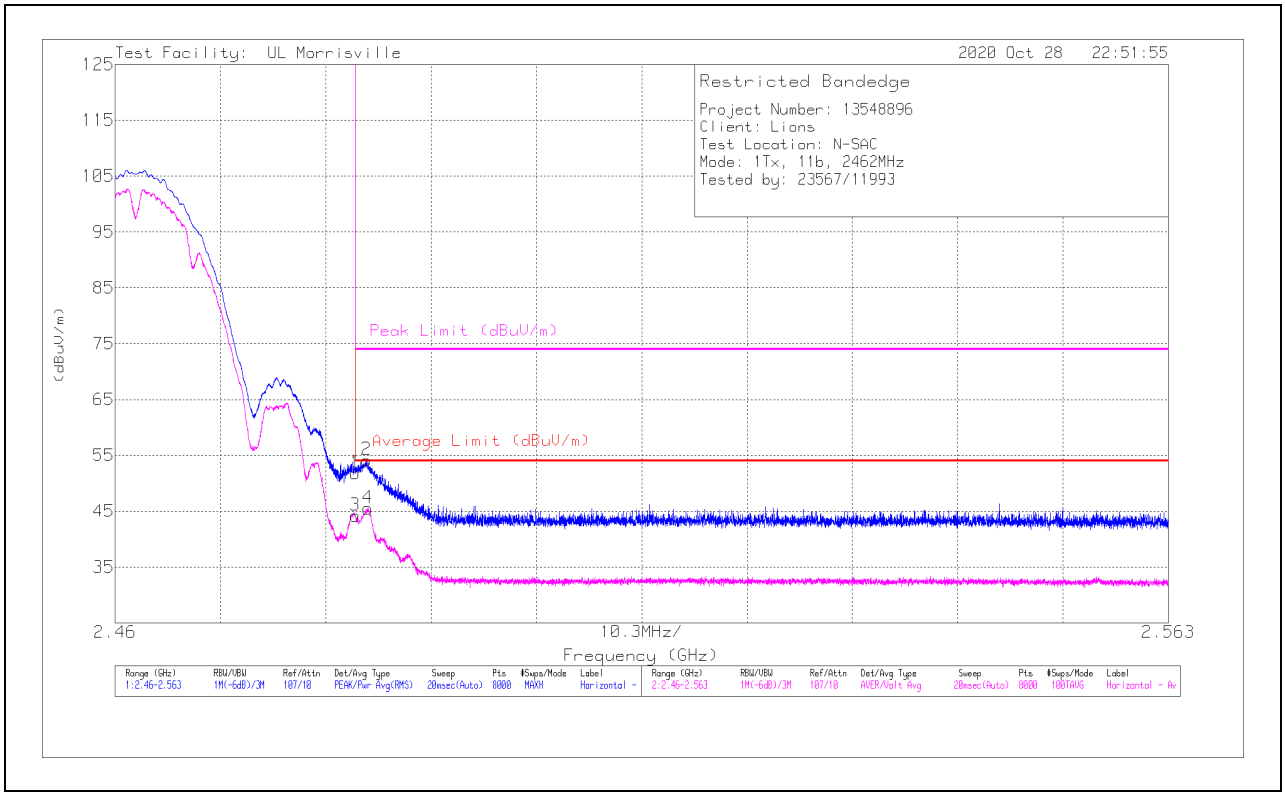


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.58	Pk	31.8	-24.4	46.98	-	-	74	-27.02	163	374	V
2	* 2.38761	41.27	Pk	31.8	-24.4	48.67	-	-	74	-25.33	163	374	V
3	* 2.39	28.46	ADV	31.8	-24.4	35.86	54	-18.14	-	-	163	374	V
4	* 2.38737	30.22	ADV	31.8	-24.4	37.62	54	-16.38	-	-	163	374	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 11)

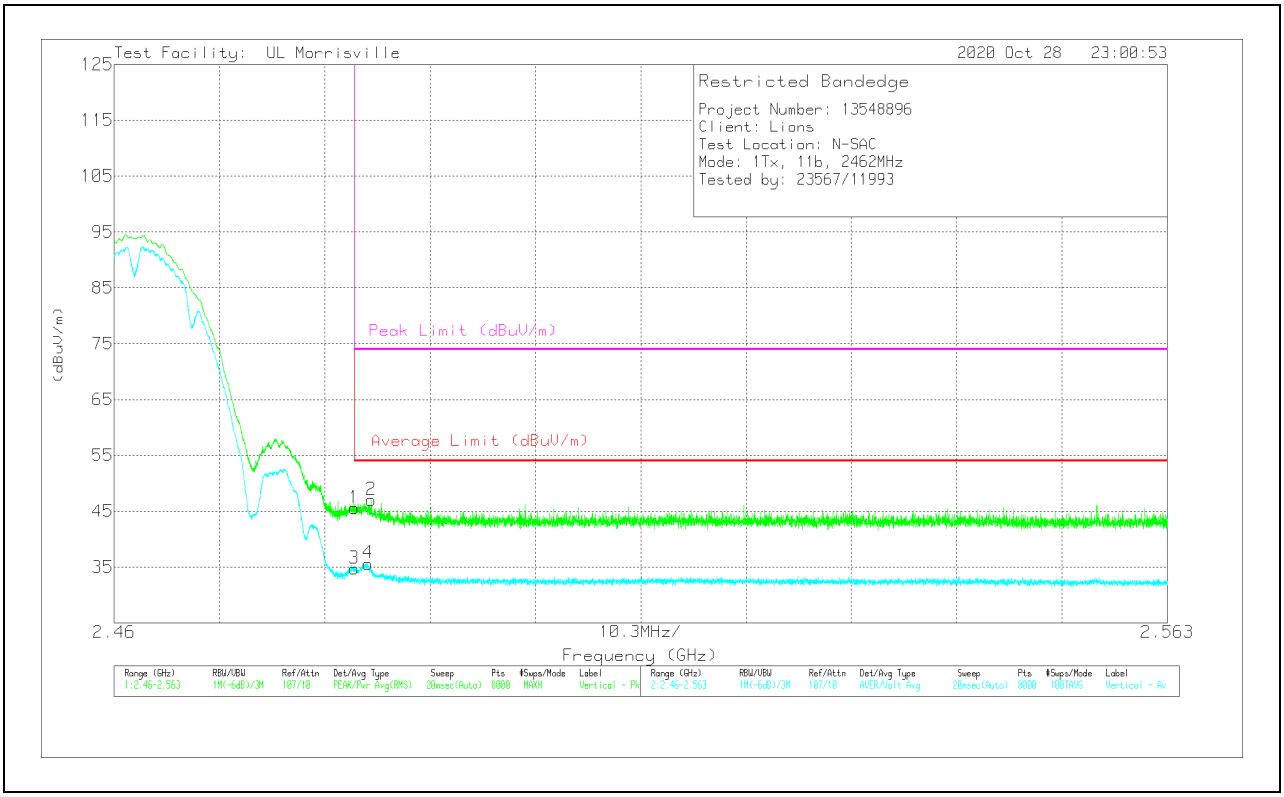
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	43.74	Pk	32.4	-24.3	51.84	-	-	74	-22.16	133	142	H
2	* 2.4846	46.05	Pk	32.4	-24.3	54.15	-	-	74	-19.85	133	142	H
3	* 2.4835	36.09	ADV	32.4	-24.3	44.19	54	-9.81	-	-	133	142	H
4	* 2.48472	37.32	ADV	32.5	-24.3	45.52	54	-8.48	-	-	133	142	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

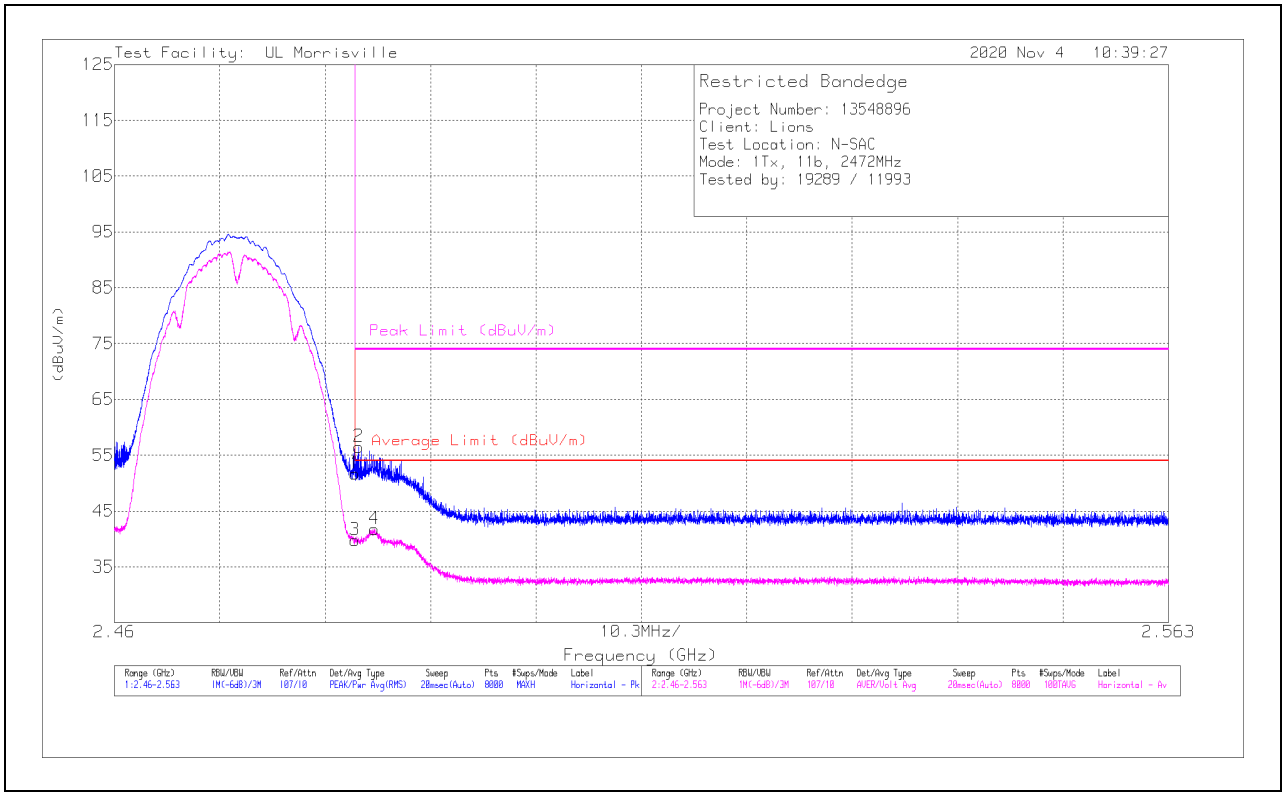


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	37.47	Pk	32.4	-24.3	45.57	-	-	74	-28.43	26	252	V
2	* 2.48516	38.8	Pk	32.5	-24.3	47	-	-	74	-27	26	252	V
3	* 2.4835	26.61	ADV	32.4	-24.3	34.71	54	-19.29	-	-	26	252	V
4	* 2.48484	27.44	ADV	32.5	-24.3	35.64	54	-18.36	-	-	26	252	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 13)

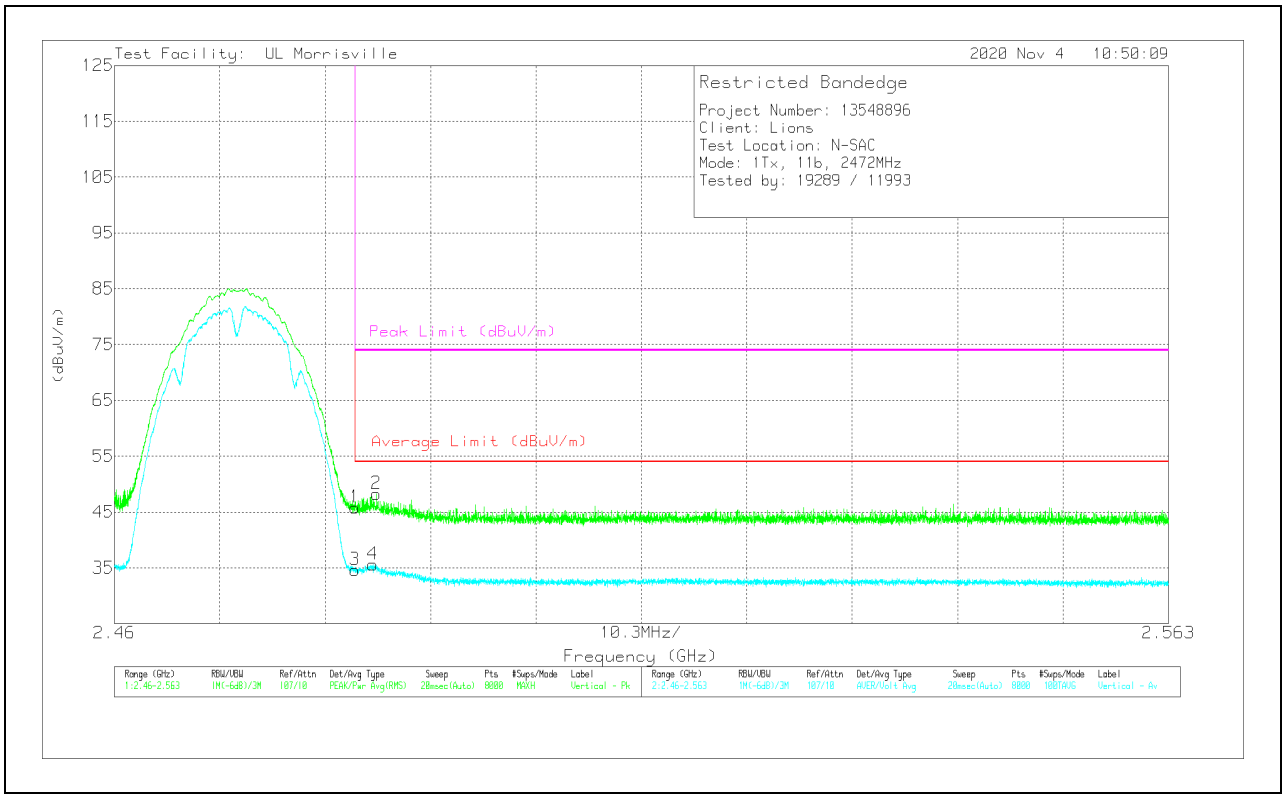
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	43.61	Pk	32.4	-24.3	51.71	-	-	74	-22.29	131	114	H
2	* 2.48386	48.39	Pk	32.4	-24.3	56.49	-	-	74	-17.51	131	114	H
3	* 2.4835	31.69	ADV	32.4	-24.3	39.79	54	-14.21	-	-	131	114	H
4	* 2.48541	33.53	ADV	32.5	-24.3	41.73	54	-12.27	-	-	131	114	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

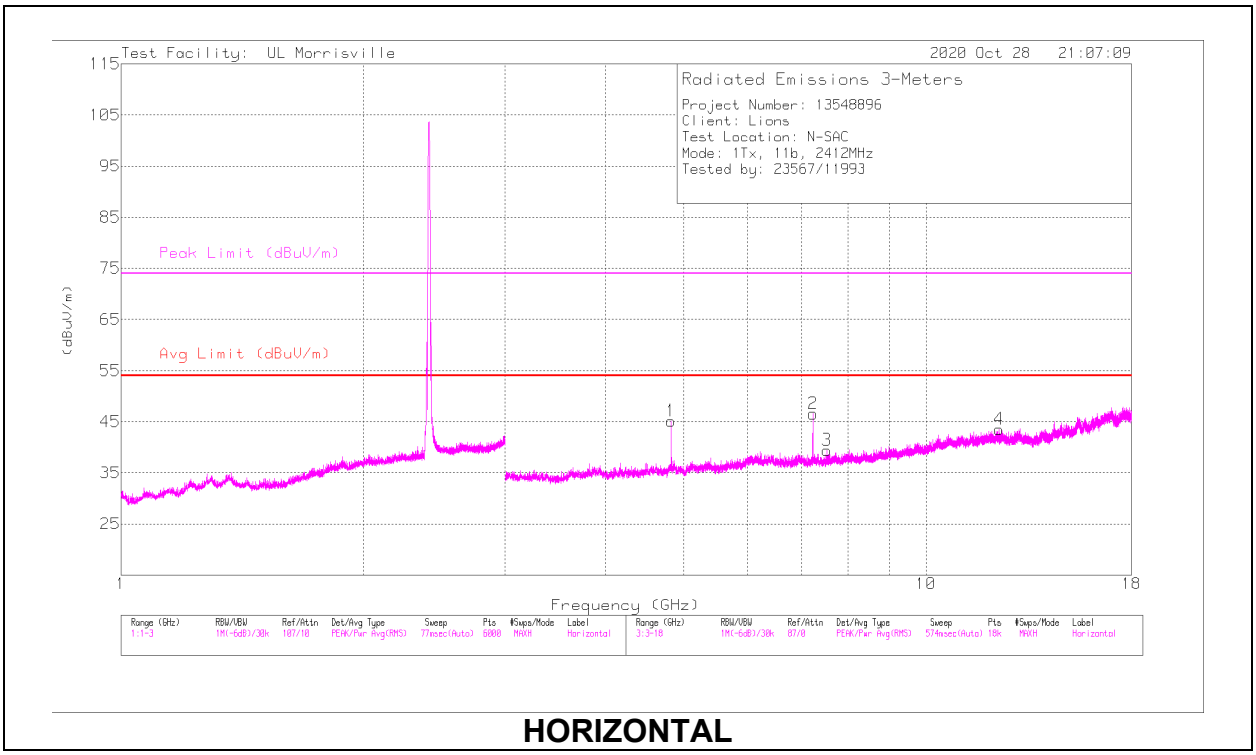


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	37.72	Pk	32.4	-24.3	45.82	-	-	74	-28.18	22	127	V
2	* 2.4856	40.04	Pk	32.5	-24.3	48.24	-	-	74	-25.76	22	127	V
3	* 2.4835	26.48	ADV	32.4	-24.3	34.58	54	-19.42	-	-	22	127	V
4	* 2.48525	27.38	ADV	32.5	-24.3	35.58	54	-18.42	-	-	22	127	V

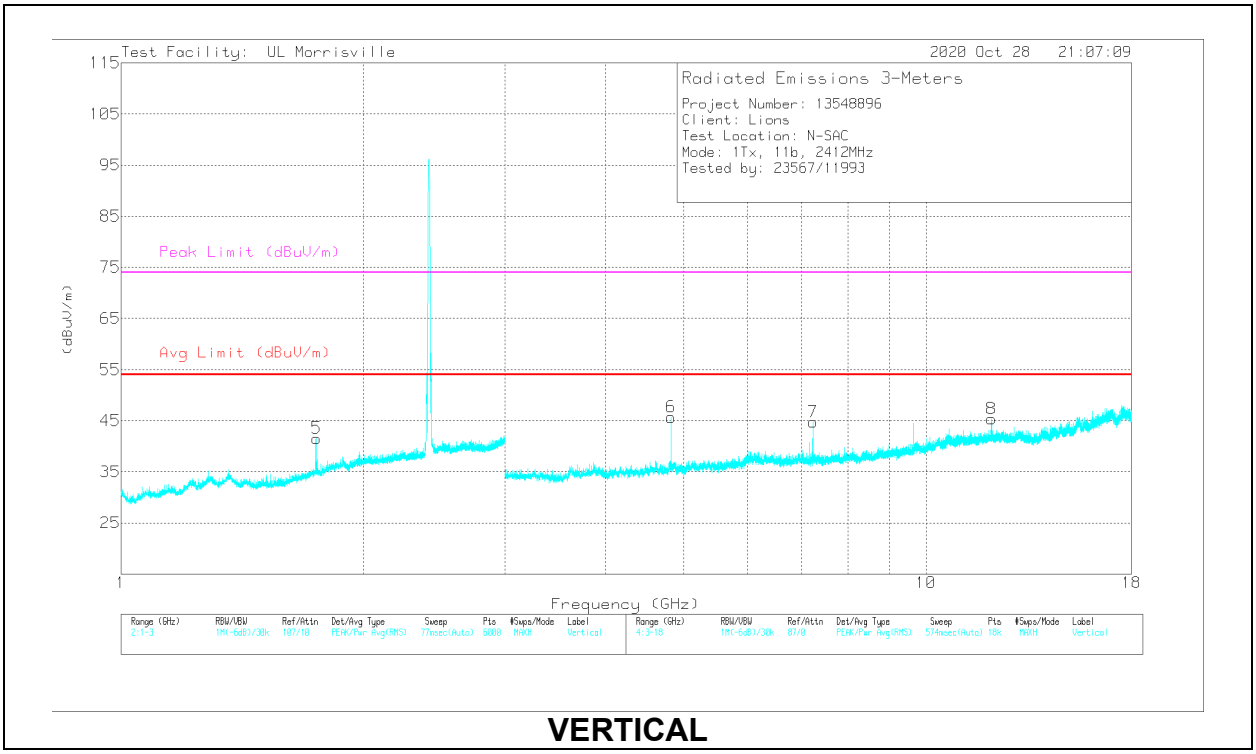
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



HORIZONTAL



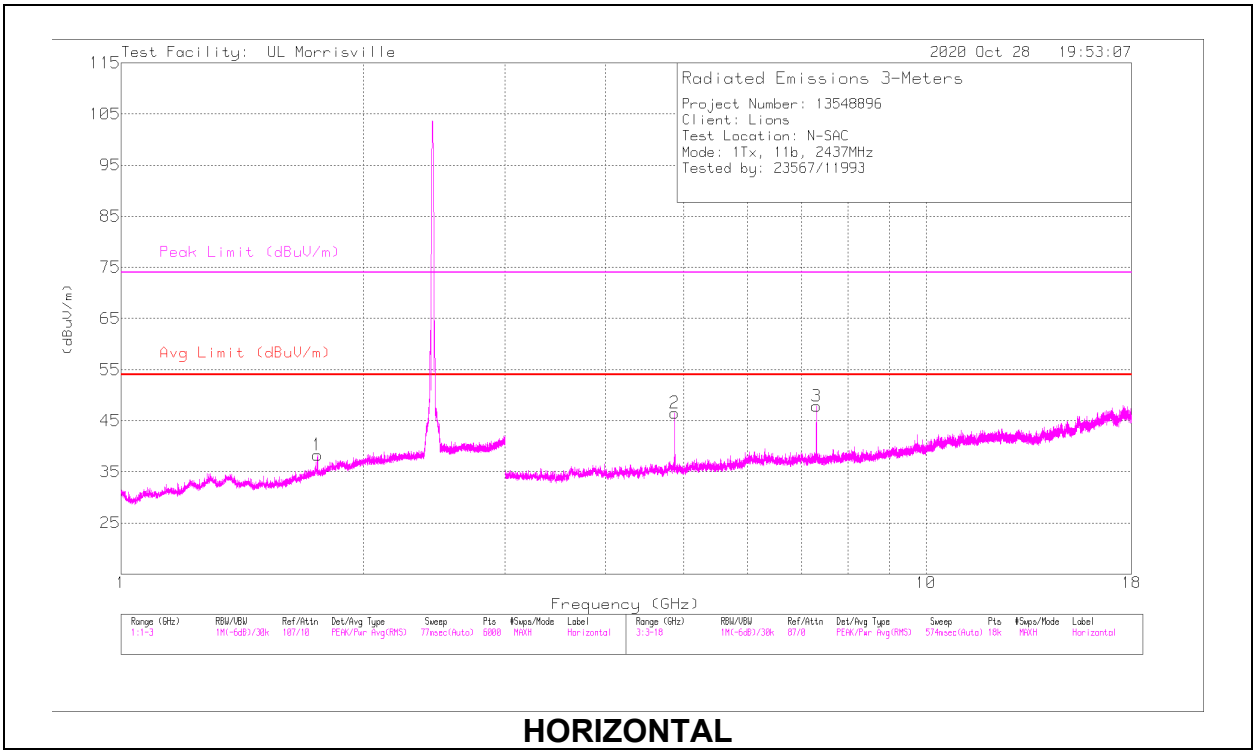
VERTICAL

RADIATED EMISSIONS

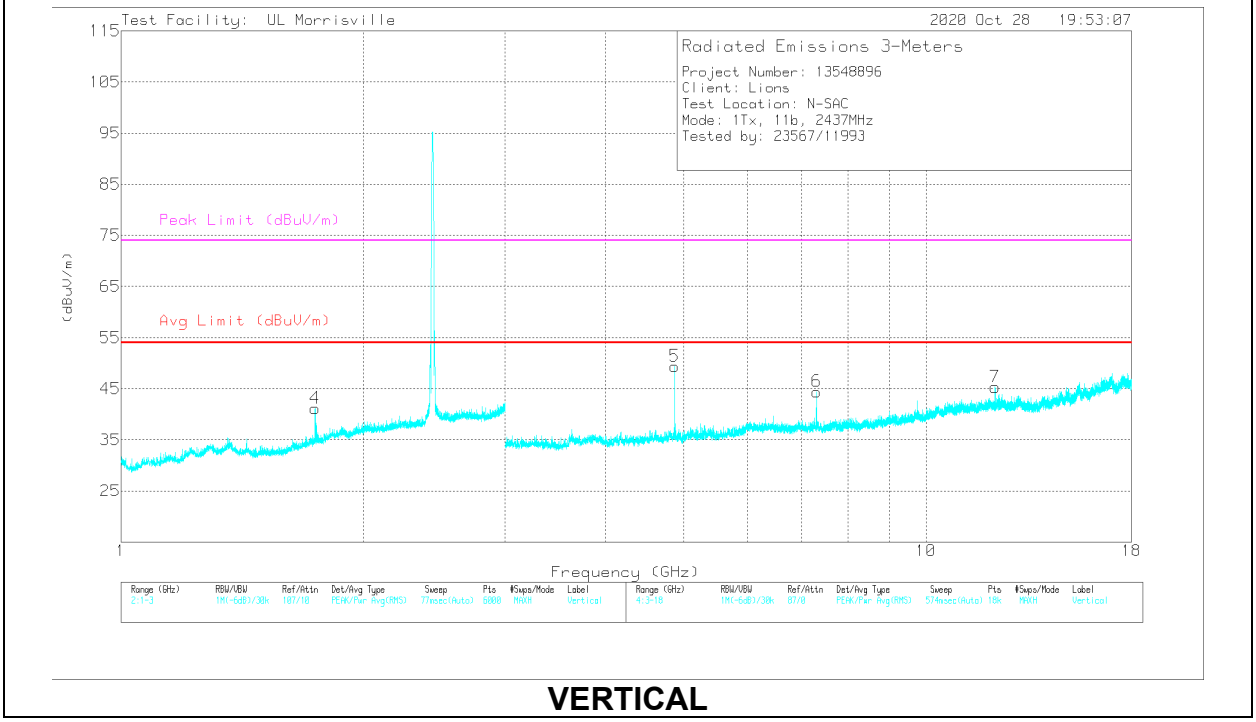
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	1.7495	37.43	PK2	29.6	-24.3	42.73	-	-	-	-	289	113	V
	1.75324	24.11	ADV	29.6	-24.4	29.31	-	-	-	-	289	113	V
1	* 4.82406	41	PK2	34.2	-31.4	43.8	-	-	74	-30.2	138	399	H
	* 4.82404	34.28	ADV	34.2	-31.4	37.08	54	-16.92	-	-	138	399	H
3	* 7.52991	38.54	PK2	35.7	-29.5	44.74	-	-	74	-29.26	215	275	H
	* 7.52885	25.49	ADV	35.7	-29.6	31.59	54	-22.41	-	-	215	275	H
4	* 12.31739	36.49	PK2	39	-25.9	49.59	-	-	74	-24.41	101	306	H
	* 12.31708	23	ADV	39	-25.9	36.1	54	-17.9	-	-	101	306	H
6	* 4.82414	41.49	PK2	34.2	-31.4	44.29	-	-	74	-29.71	360	102	V
	* 4.82398	30.94	ADV	34.2	-31.4	33.74	54	-20.26	-	-	360	102	V
8	* 12.05861	36.44	PK2	38.8	-26	49.24	-	-	74	-24.76	141	279	V
	* 12.0602	23.34	ADV	38.8	-26	36.14	54	-17.86	-	-	141	279	V
2	7.2369	40.48	Pk	35.7	-29.6	46.58	-	-	-	-	0-360	101	H
7	7.23857	38.72	Pk	35.6	-29.6	44.72	-	-	-	-	0-360	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak

MID CHANNEL, CH 6 RESULTS



HORIZONTAL



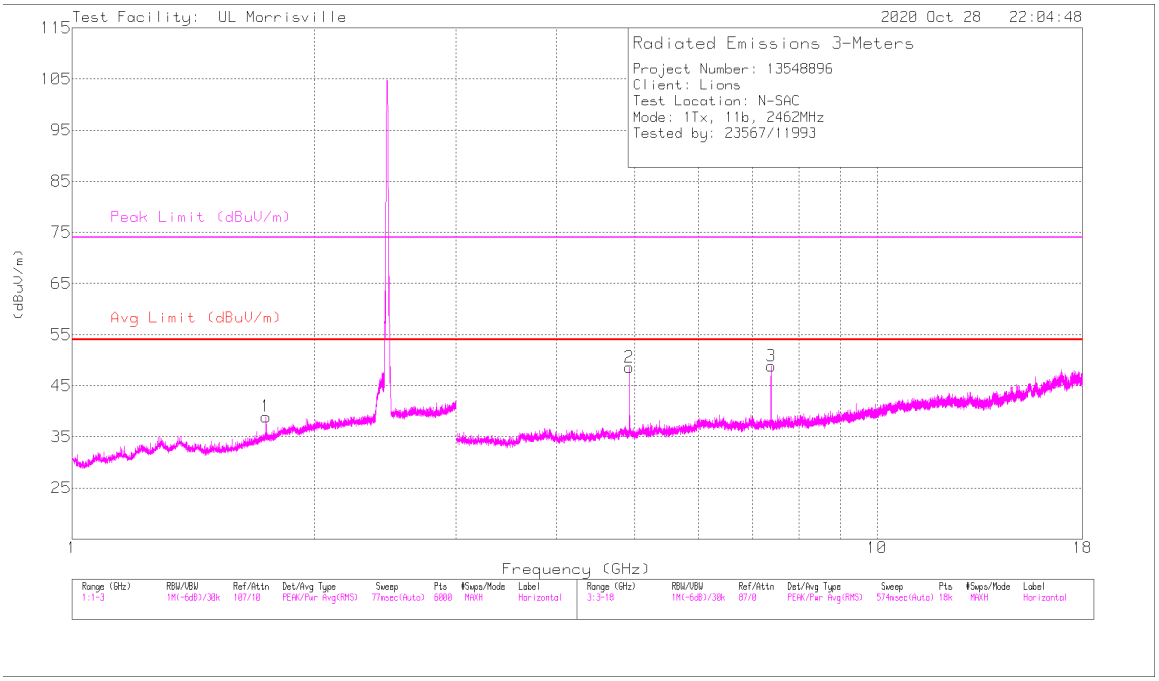
VERTICAL

RADIATED EMISSIONS

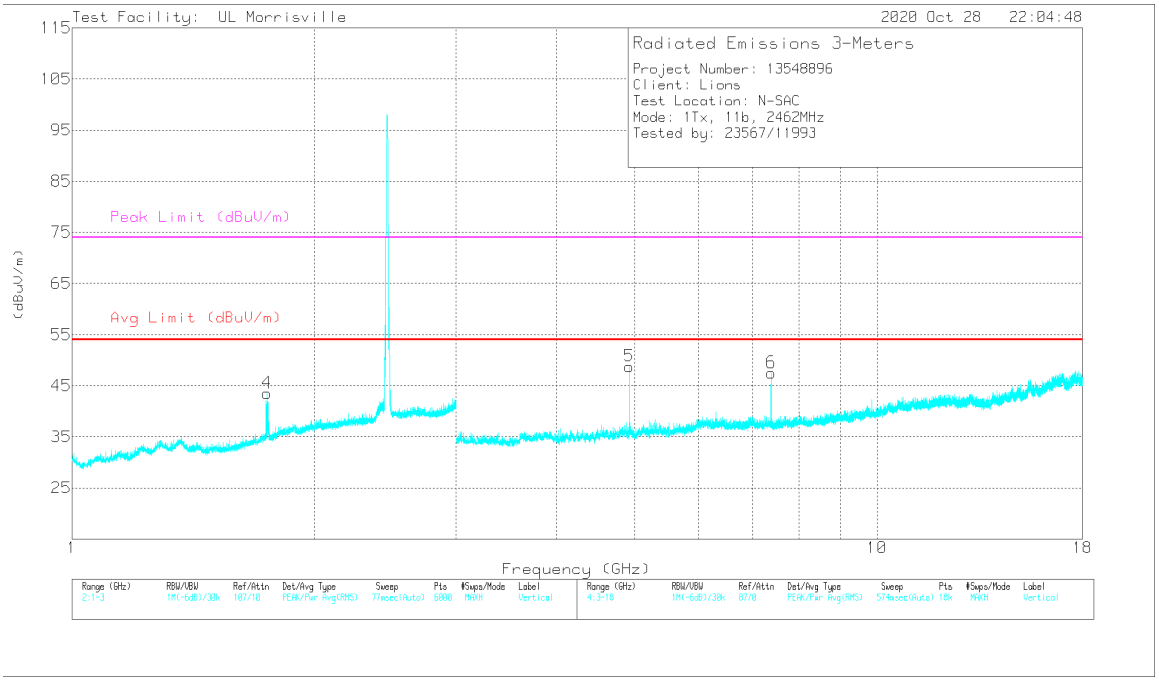
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.75324	45.81	PK2	29.6	-24.4	51.01	-	-	-	-	5	360	H
	1.75364	23.86	ADV	29.6	-24.4	29.06	-	-	-	-	5	360	H
4	1.74159	39.64	PK2	29.5	-24.3	44.84	-	-	-	-	89	102	V
	1.74167	23.56	ADV	29.5	-24.3	28.76	-	-	-	-	89	102	V
2	* 4.87406	46.6	PK2	34.1	-31.3	49.4	-	-	74	-24.6	147	156	H
	* 4.87404	31.2	ADV	34.1	-31.3	34	54	-20	-	-	147	156	H
3	* 7.31044	44.91	PK2	35.7	-29.3	51.31	-	-	74	-22.69	2	121	H
	* 7.31023	38.38	ADV	35.7	-29.3	44.78	54	-9.22	-	-	2	121	H
5	* 4.87389	42.81	PK2	34.1	-31.3	45.61	-	-	74	-28.39	0	101	V
	* 4.87404	32.36	ADV	34.1	-31.3	35.16	54	-18.84	-	-	0	101	V
6	* 7.31017	43.46	PK2	35.7	-29.3	49.86	-	-	74	-24.14	157	187	V
	* 7.31022	36.2	ADV	35.7	-29.3	42.6	54	-11.4	-	-	157	187	V
7	* 12.18365	37.27	PK2	38.9	-26.7	49.47	-	-	74	-24.53	190	110	V
	* 12.18368	23.71	ADV	38.9	-26.7	35.91	54	-18.09	-	-	190	110	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average

HIGH CHANNEL, CH 11 RESULTS



HORIZONTAL



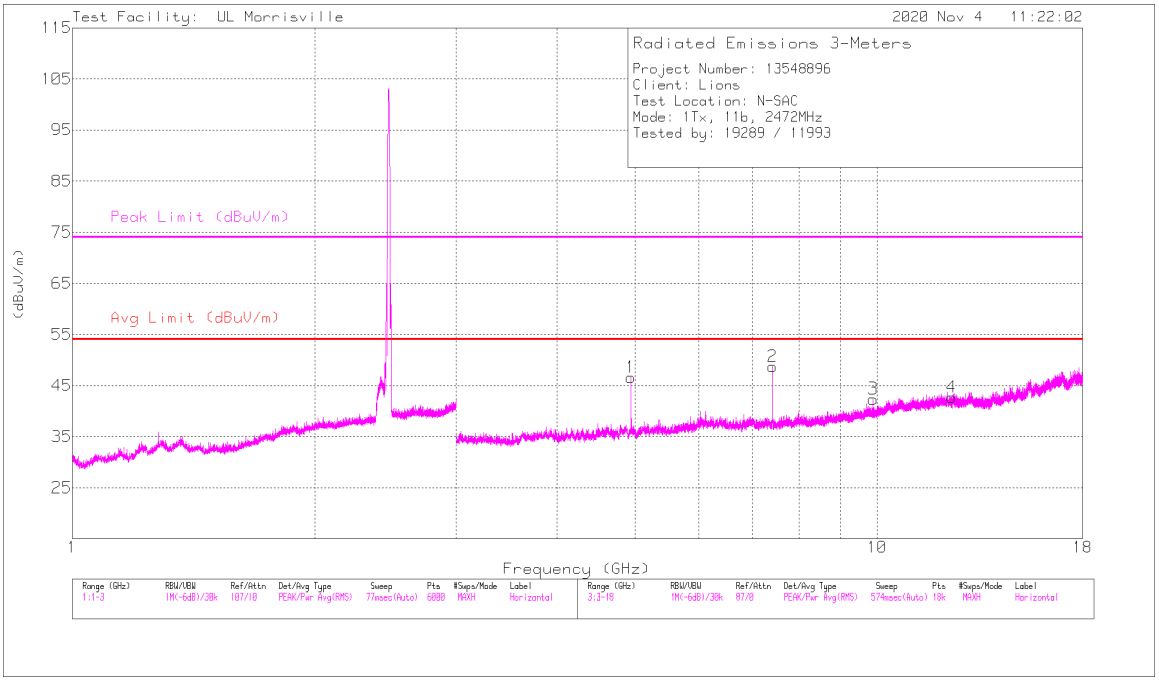
VERTICAL

RADIATED EMISSIONS

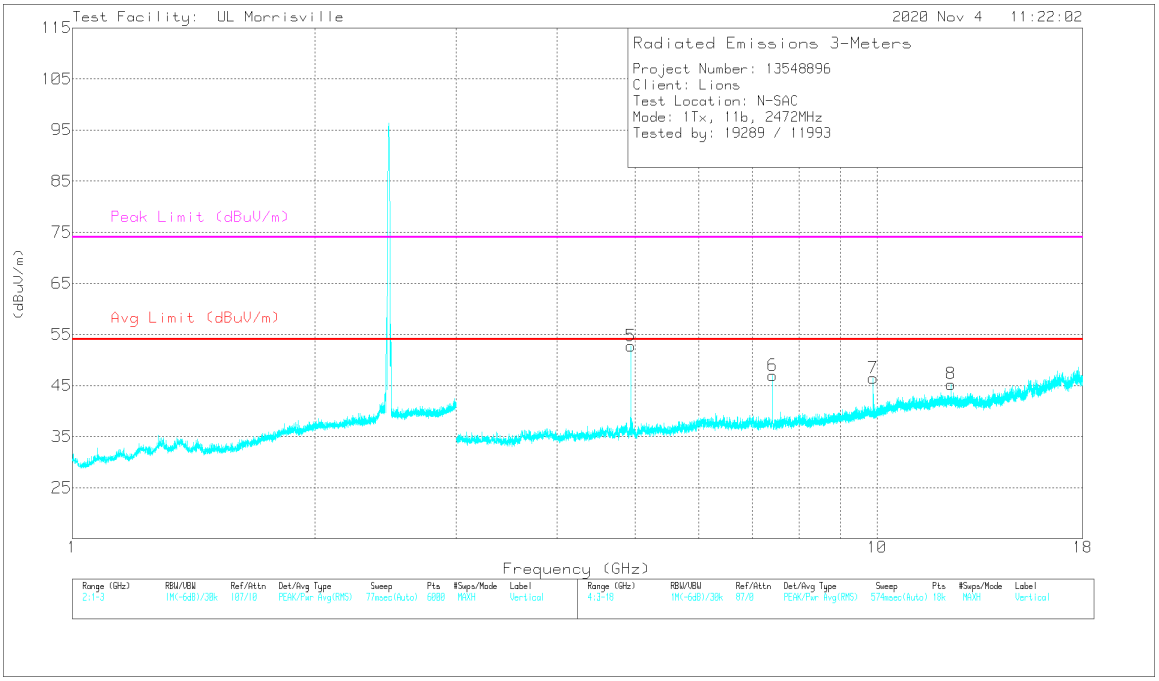
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.74248	36.46	PK2	29.5	-24.3	41.66	-	-	-	-	126	363	H
	1.74225	23.4	ADV	29.5	-24.3	28.6	-	-	-	-	126	363	H
4	1.74623	35.87	PK2	29.6	-24.3	41.17	-	-	-	-	73	294	V
	1.74763	23.44	ADV	29.6	-24.3	28.74	-	-	-	-	73	294	V
2	* 4.9238	44.07	PK2	34	-31.8	46.27	-	-	74	-27.73	358	104	H
	* 4.92397	41.98	ADV	34	-31.9	44.08	54	-9.92	-	-	358	104	H
3	* 7.38666	45.17	PK2	35.7	-29.2	51.67	-	-	74	-22.33	0	103	H
	* 7.38679	40.5	ADV	35.7	-29.2	47	54	-7	-	-	0	103	H
5	* 4.92402	43.48	PK2	34	-31.9	45.58	-	-	74	-28.42	27	102	V
	* 4.92395	33.3	ADV	34	-31.9	35.4	54	-18.6	-	-	27	102	V
6	* 7.38661	44.65	PK2	35.7	-29.2	51.15	-	-	74	-22.85	262	105	V
	* 7.38676	37.98	ADV	35.7	-29.2	44.48	54	-9.52	-	-	262	105	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average

HIGH CHANNEL, CH 13 RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.94423	48.71	PK2	34.1	-32.2	50.61	-	-	74	-23.39	319	263	H
	* 4.94402	36.52	ADV	34.1	-32.2	38.42	54	-15.58	-	-	319	263	H
2	* 7.41505	44.57	PK2	35.7	-29.2	51.07	-	-	74	-22.93	227	231	H
	* 7.41519	37.48	ADV	35.7	-29.3	43.88	54	-10.12	-	-	227	231	H
4	* 12.37431	36.67	PK2	39	-26.5	49.17	-	-	74	-24.83	220	189	H
	* 12.37413	23.63	ADV	39	-26.5	36.13	54	-17.87	-	-	220	189	H
5	* 4.94388	49.02	PK2	34.1	-32.2	50.92	-	-	74	-23.08	163	218	V
	* 4.94399	38.94	ADV	34.1	-32.2	40.84	54	-13.16	-	-	163	218	V
6	* 7.41496	44.84	PK2	35.7	-29.2	51.34	-	-	74	-22.66	156	190	V
	* 7.4152	38.75	ADV	35.7	-29.3	45.15	54	-8.85	-	-	156	190	V
8	* 12.35742	36.84	PK2	38.9	-26.5	49.24	-	-	74	-24.76	350	141	V
	* 12.35825	23.9	ADV	38.9	-26.5	36.3	54	-17.7	-	-	350	141	V
3	9.88789	33.07	Pk	37	-27.7	42.37	-	-	-	-	0-360	101	H
7	9.88789	37.15	Pk	37	-27.7	46.45	-	-	-	-	0-360	101	V

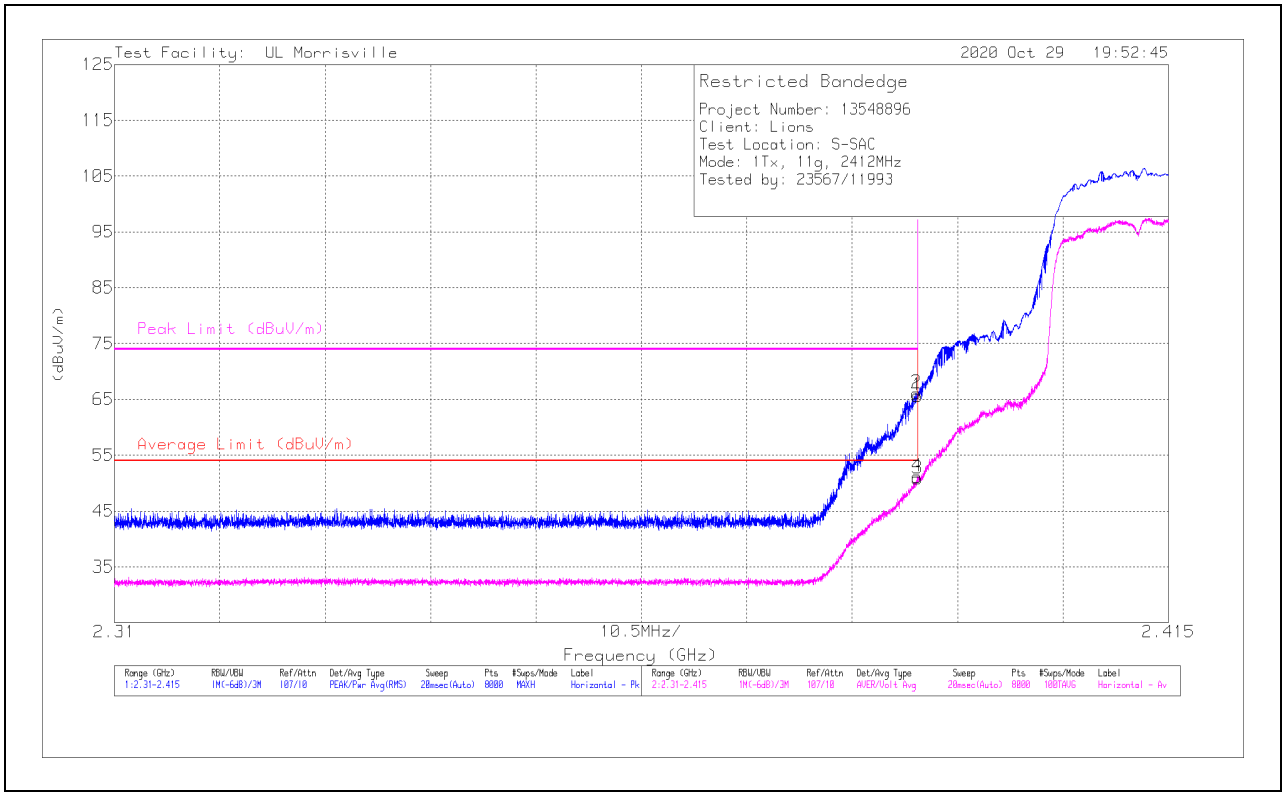
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak

10.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL, CH 1)

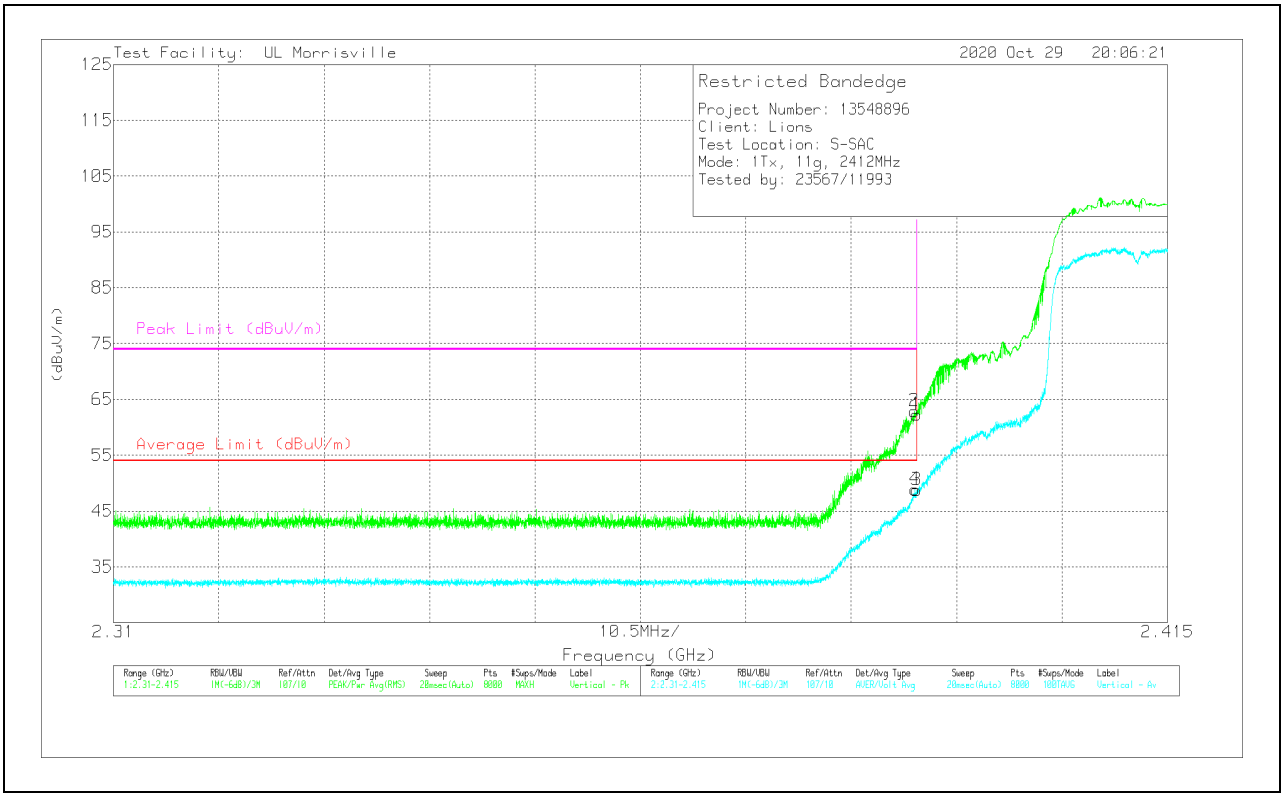
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	57.55	Pk	32.1	-24	0	65.65	-	-	74	-8.35	188	251	H
2	* 2.38989	58.01	Pk	32.1	-24	0	66.11	-	-	74	-7.89	188	251	H
3	* 2.39	41.91	ADV	32.1	-24	.81	50.82	54	-3.18	-	-	188	251	H
4	* 2.38998	42.25	ADV	32.1	-24	.81	51.16	54	-2.4	-	-	188	251	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

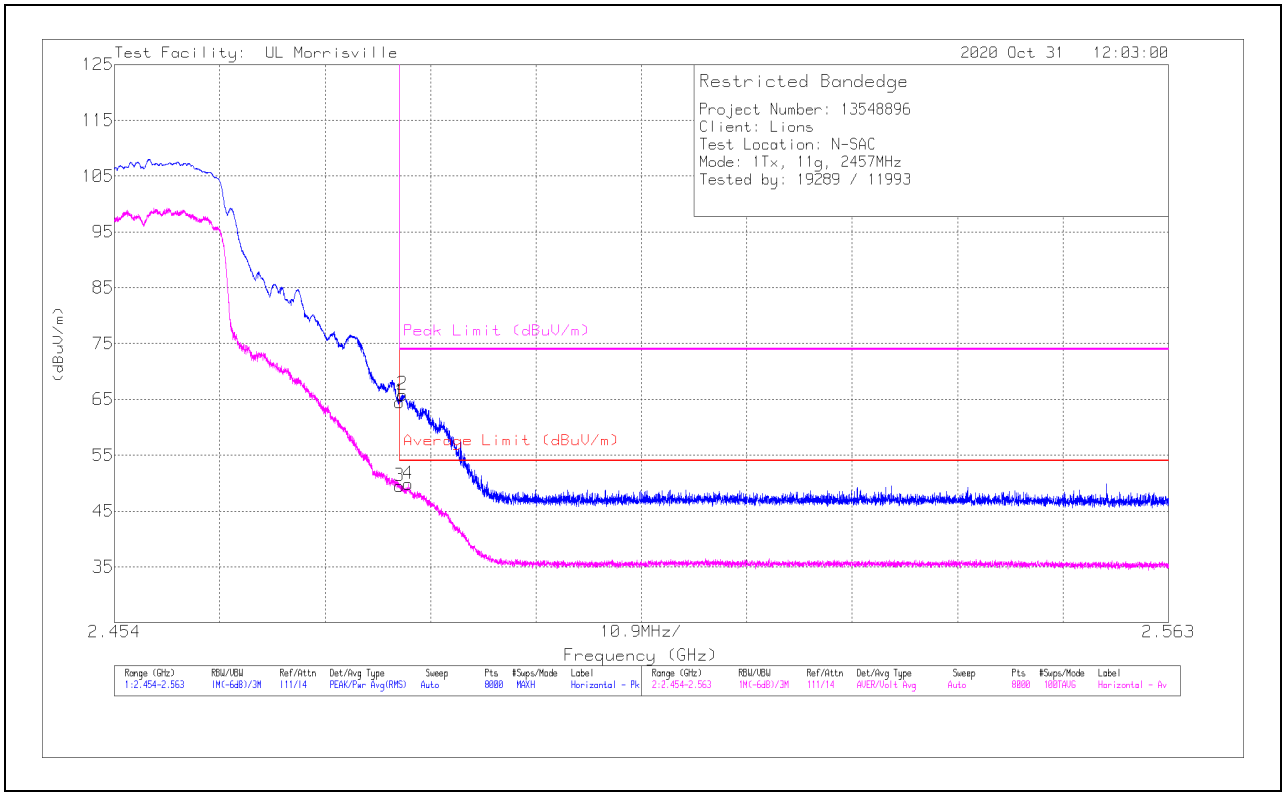


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.13	Pk	32.1	-24	0	62.23	-	-	74	-11.77	243	318	V
2	* 2.38977	54.78	Pk	32.1	-24	0	62.88	-	-	74	-11.12	243	318	V
3	* 2.39	39.83	ADV	32.1	-24	.81	48.74	54	-5.26	-	-	243	318	V
4	* 2.38985	39.96	ADV	32.1	-24	.81	48.87	54	-5.13	-	-	243	318	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 10)

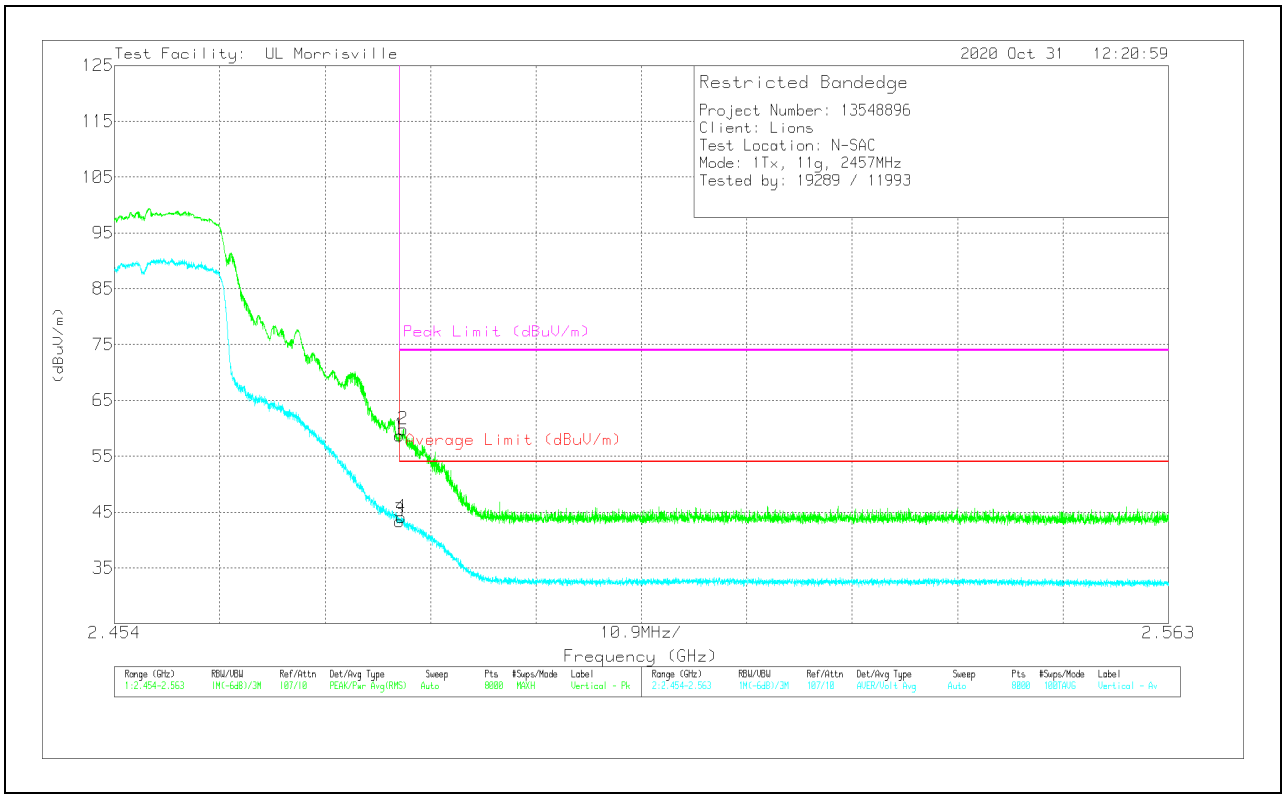
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	56.44	Pk	32.4	-24.3	0	64.54	-	-	74	-9.46	131	170	H
2	* 2.48378	57.77	Pk	32.4	-24.3	0	65.87	-	-	74	-8.13	131	170	H
3	* 2.4835	40.55	ADV	32.4	-24.3	.81	49.46	54	-4.54	-	-	131	169	H
4	* 2.48439	40.96	ADV	32.4	-24.3	.81	49.87	54	-4.13	-	-	131	169	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

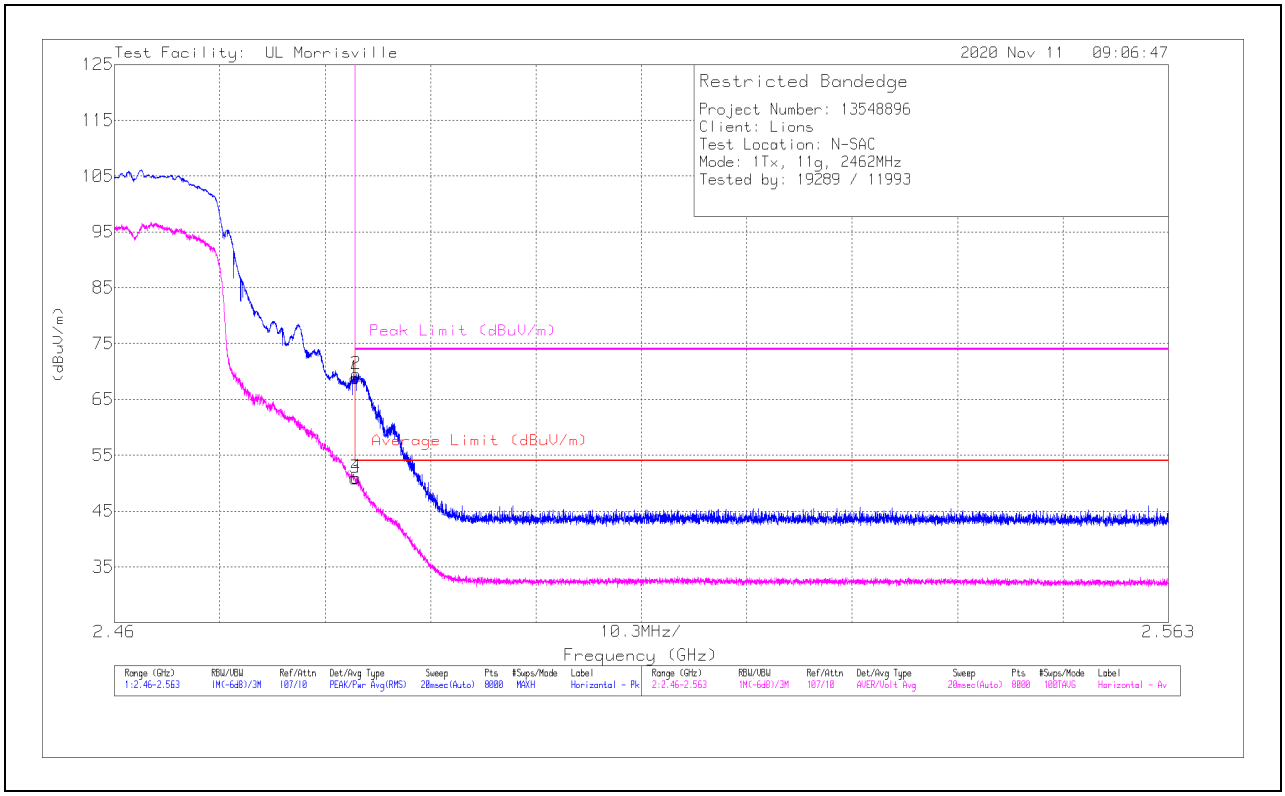


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	50.58	Pk	32.4	-24.3	0	58.68	-	-	74	-15.32	146	341	V
2	* 2.48387	51.7	Pk	32.4	-24.3	0	59.8	-	-	74	-14.2	146	341	V
3	* 2.4835	34.47	ADV	32.4	-24.3	.81	43.38	54	-10.62	-	-	146	341	V
4	* 2.48365	35.15	ADV	32.4	-24.3	.81	44.06	54	-9.94	-	-	146	341	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 11)

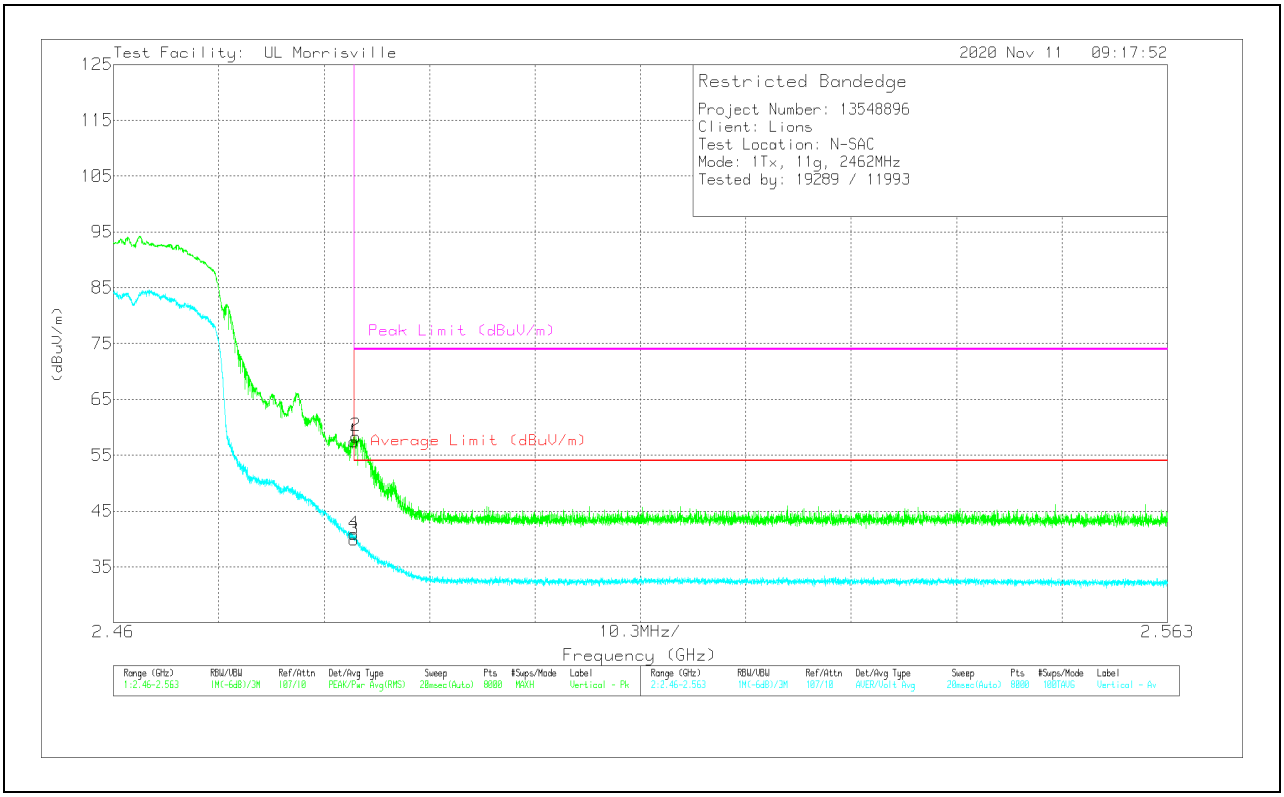
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.67	Pk	32.4	-24.3	0	68.77	-	-	74	-5.23	137	141	H
2	* 2.48363	61.38	Pk	32.4	-24.3	0	69.48	-	-	74	-4.52	137	141	H
3	* 2.4835	42	ADV	32.4	-24.3	.81	50.91	54	-3.09	-	-	137	141	H
4	* 2.48362	42.1	ADV	32.4	-24.3	.81	51.01	54	-2.99	-	-	137	141	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

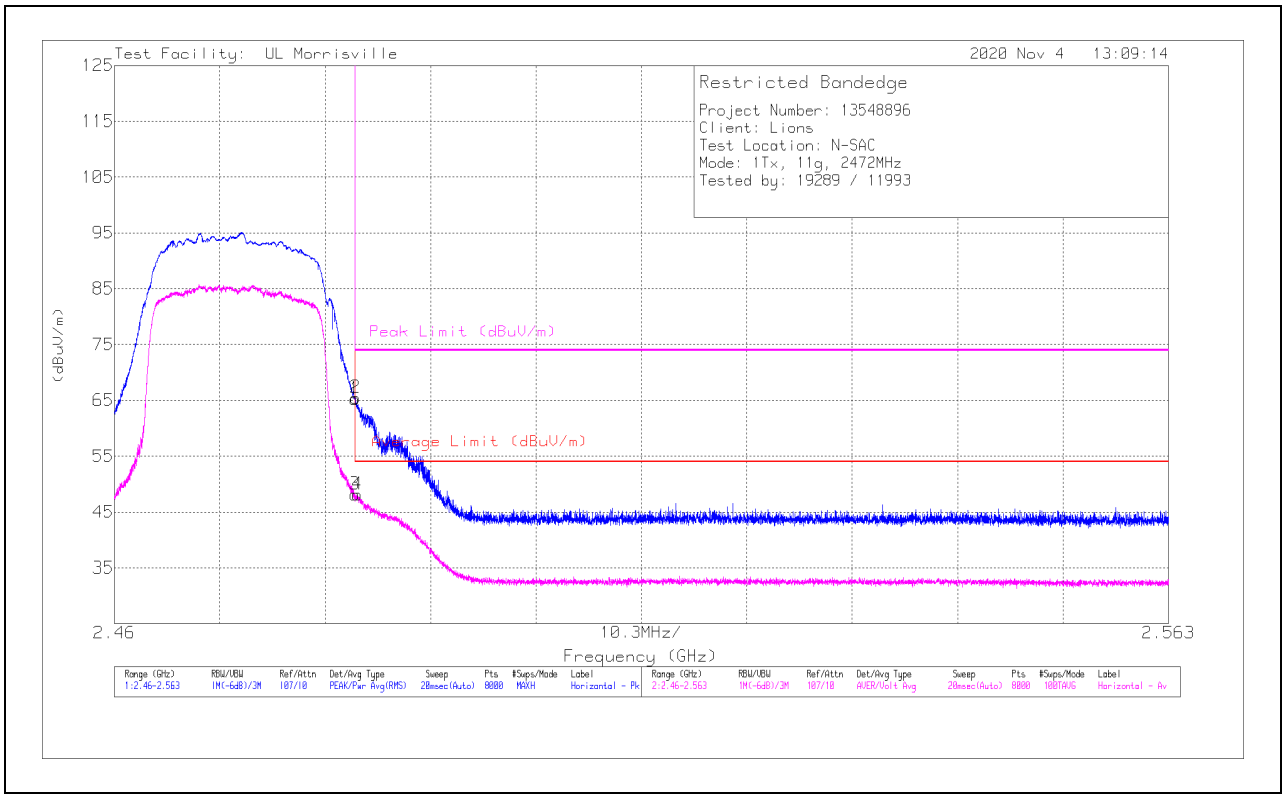


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	49.34	Pk	32.4	-24.3	0	57.44	-	-	74	-16.56	255	157	V
2	* 2.48368	50.29	Pk	32.4	-24.3	0	58.39	-	-	74	-15.61	255	157	V
3	* 2.4835	31	ADV	32.4	-24.3	.81	39.91	54	-14.09	-	-	255	157	V
4	* 2.48351	31.95	ADV	32.4	-24.3	.81	40.86	54	-13.14	-	-	255	157	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 13)

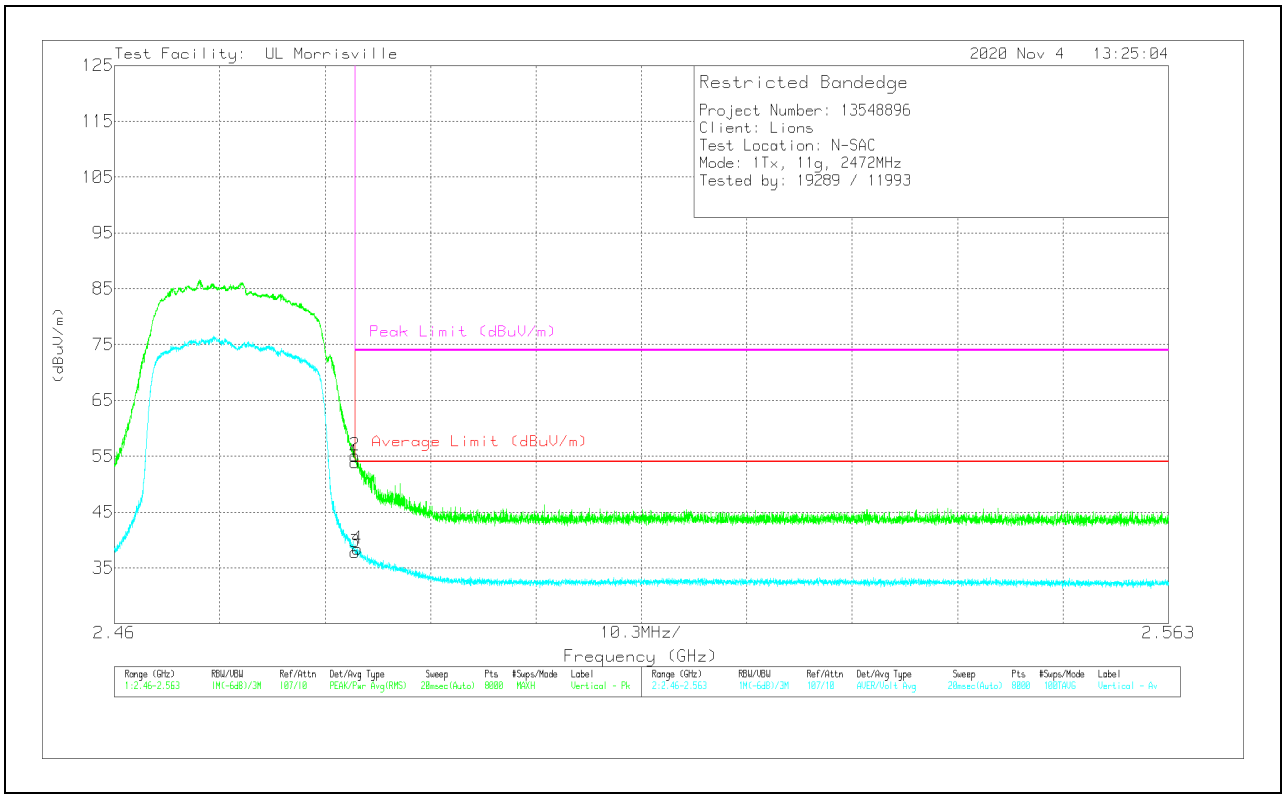
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	57.09	Pk	32.4	-24.3	0	65.19	-	-	74	-8.81	139	160	H
2	* 2.48355	57.35	Pk	32.4	-24.3	0	65.45	-	-	74	-8.55	139	160	H
3	* 2.4835	39.25	ADV	32.4	-24.3	.81	48.16	54	-5.84	-	-	139	160	H
4	* 2.48376	39.22	ADV	32.4	-24.3	.81	48.13	54	-5.87	-	-	139	160	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

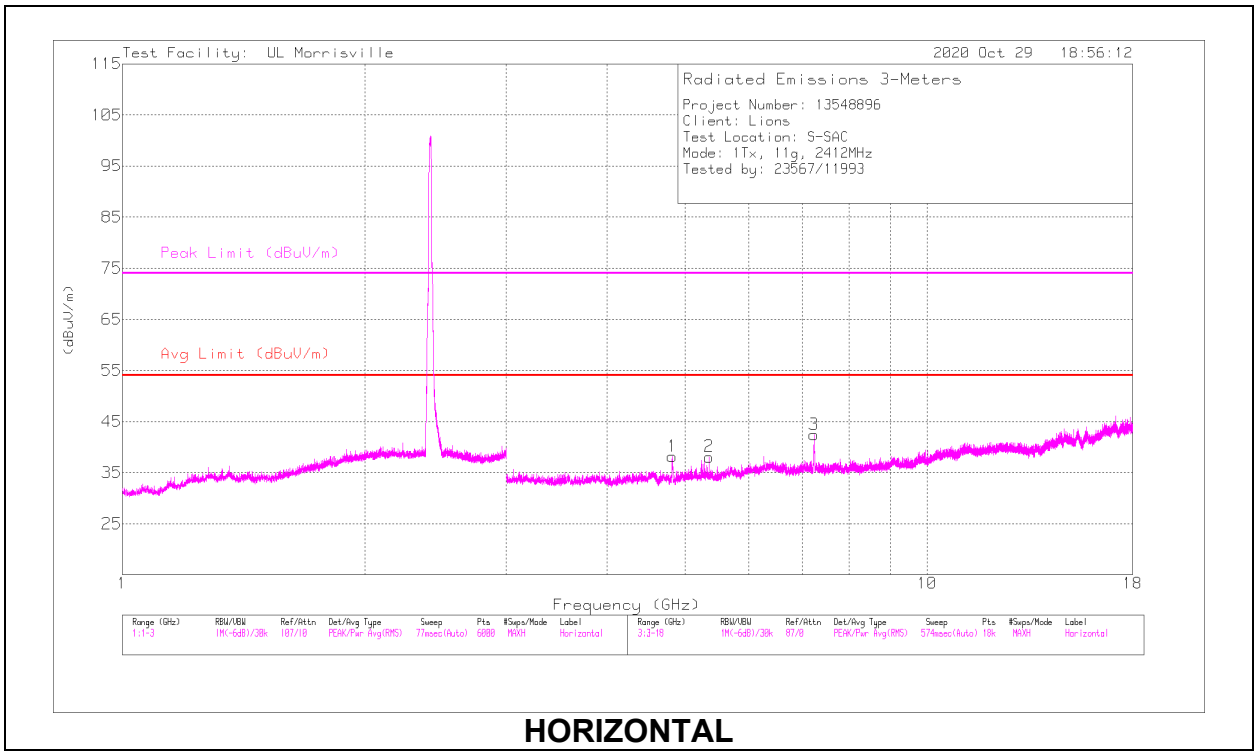


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	45.81	Pk	32.4	-24.3	0	53.91	-	-	74	-20.09	351	290	V
2	* 2.48351	46.99	Pk	32.4	-24.3	0	55.09	-	-	74	-18.91	351	290	V
3	* 2.4835	28.89	ADV	32.4	-24.3	.81	37.8	54	-16.2	-	-	351	290	V
4	* 2.48373	29.48	ADV	32.4	-24.3	.81	38.39	54	-15.61	-	-	351	290	V

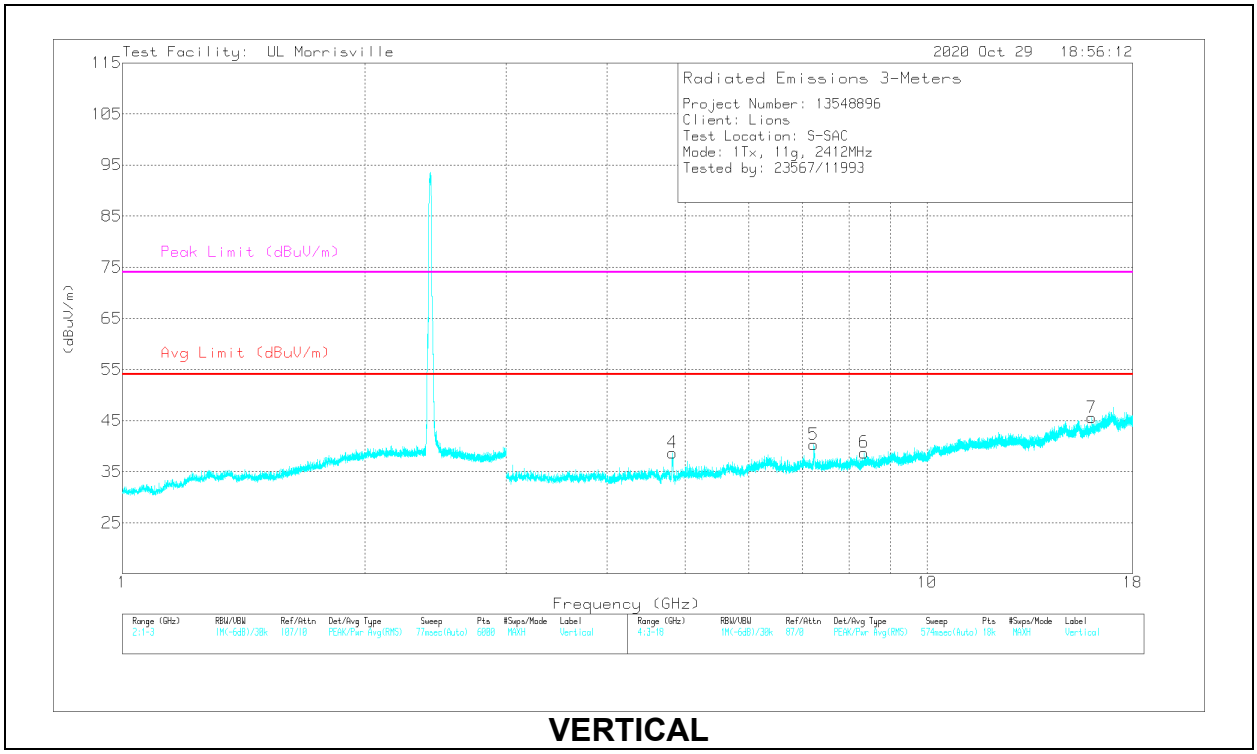
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



HORIZONTAL



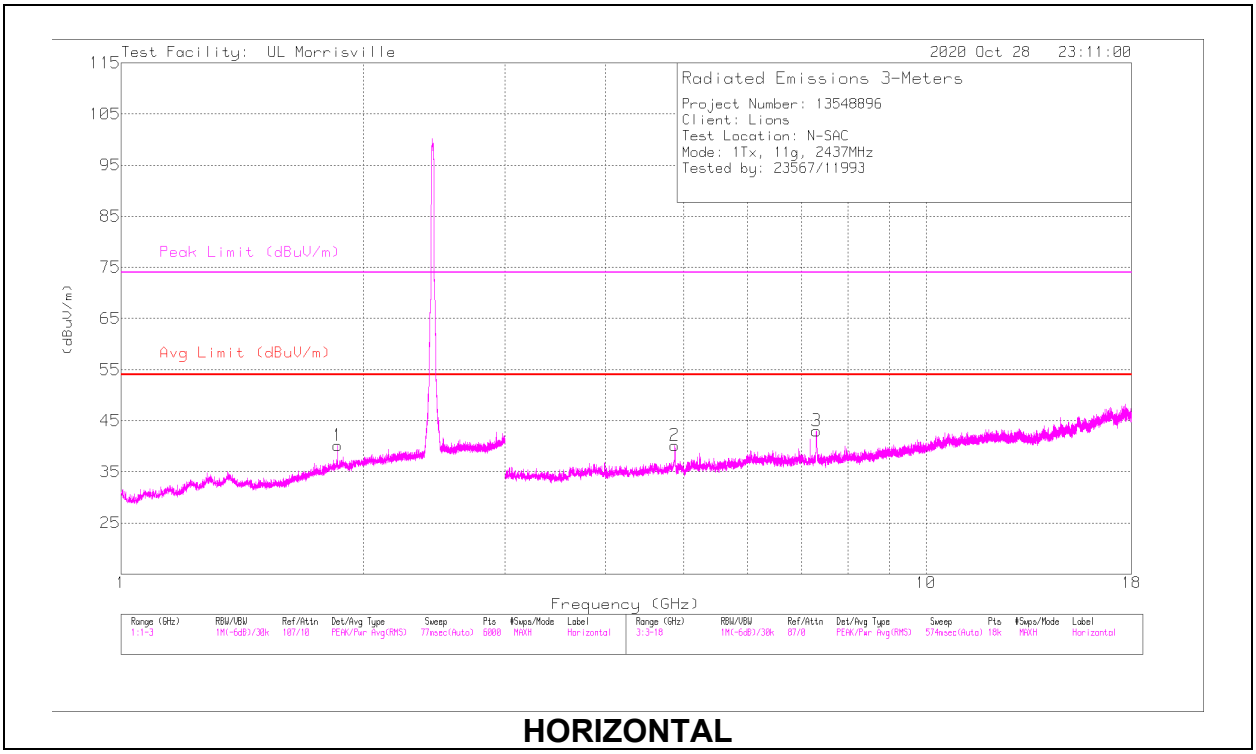
VERTICAL

RADIATED EMISSIONS

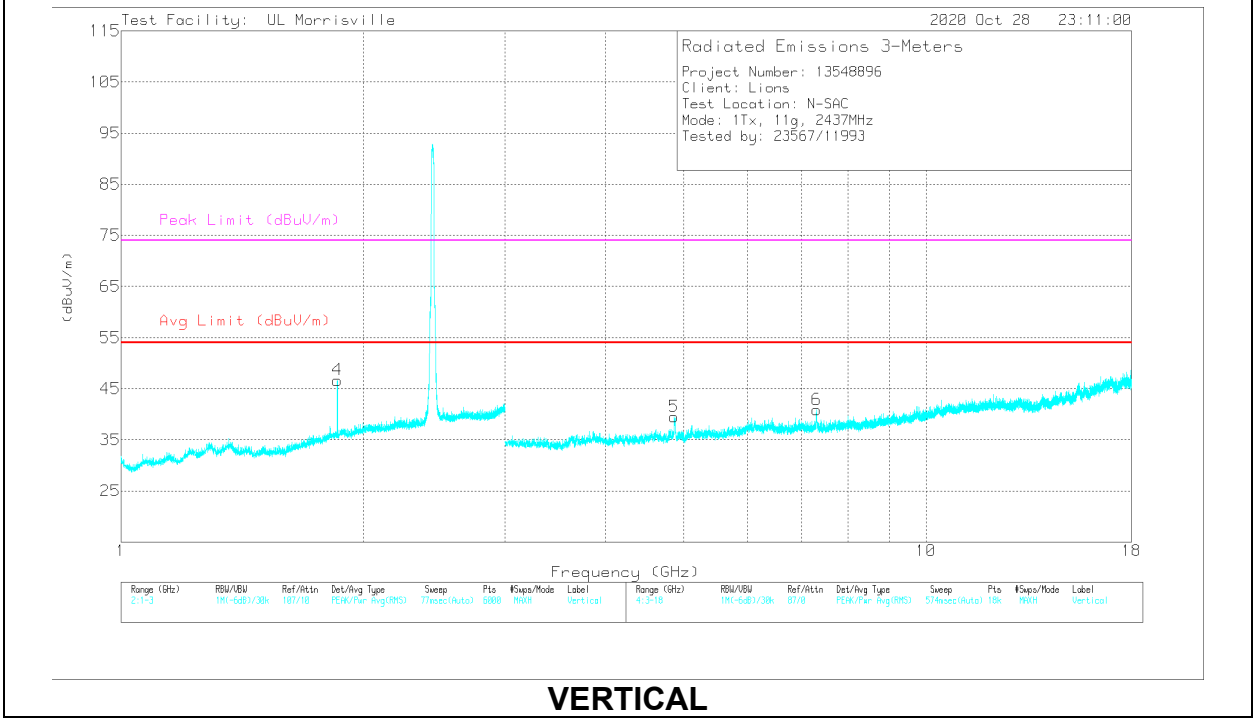
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.82042	40.44	PK2	34	-30.9	0	43.54	-	-	74	-30.46	40	207	H
	* 4.81994	25.39	ADV	34	-30.9	.81	29.3	54	-24.7	-	-	40	207	H
2	* 5.35856	37.24	PK2	34.5	-29.5	0	42.24	-	-	74	-31.76	345	256	H
	* 5.35818	24.03	ADV	34.5	-29.5	.81	29.84	54	-24.16	-	-	345	256	H
4	* 4.8245	38.66	PK2	34	-30.8	0	41.86	-	-	74	-32.14	106	346	V
	* 4.82367	25.68	ADV	34	-30.8	.81	29.69	54	-24.31	-	-	106	346	V
6	* 8.35034	35.72	PK2	35.8	-27.2	0	44.32	-	-	74	-29.68	193	392	V
	* 8.34934	22.66	ADV	35.8	-27.2	.81	32.07	54	-21.93	-	-	193	392	V
7	* 16.02429	35.58	PK2	40.5	-24	0	52.08	-	-	74	-21.92	21	318	V
	* 16.02506	22.19	ADV	40.5	-24	.81	39.5	54	-14.5	-	-	21	318	V
5	7.23149	32.53	Pk	35.6	-27.8	0	40.33	-	-	-	-	0-360	101	V
3	7.23357	34.66	Pk	35.6	-27.8	0	42.46	-	-	-	-	0-360	101	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak

MID CHANNEL, CH 6 RESULTS



HORIZONTAL



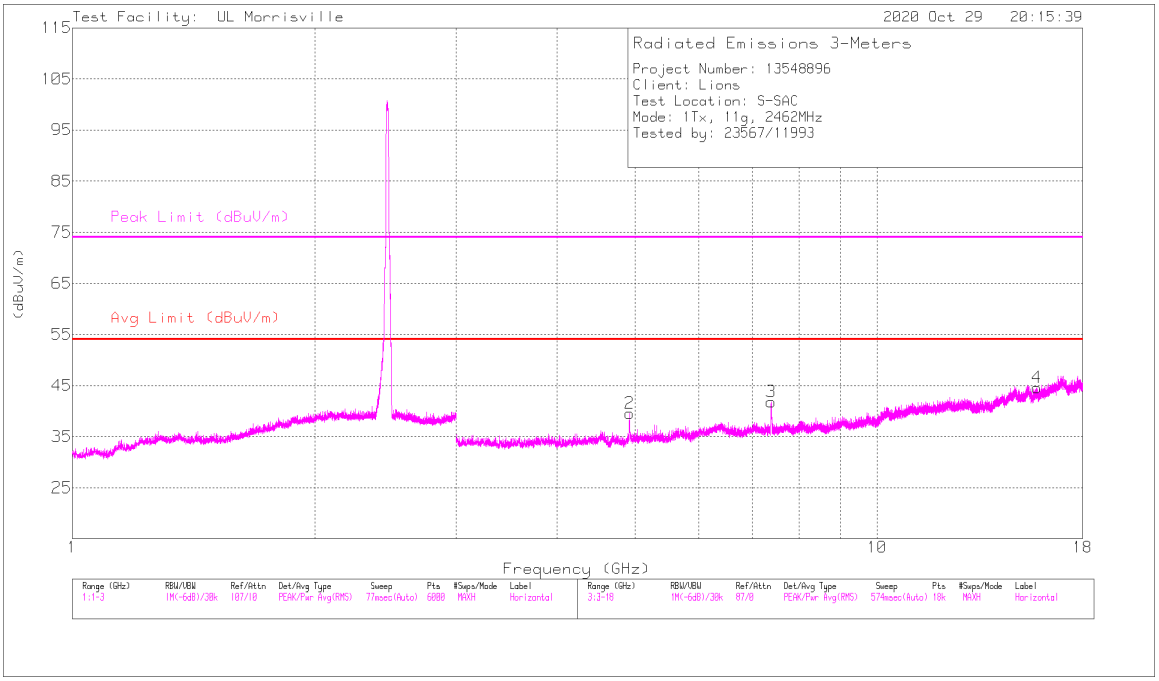
VERTICAL

RADIATED EMISSIONS

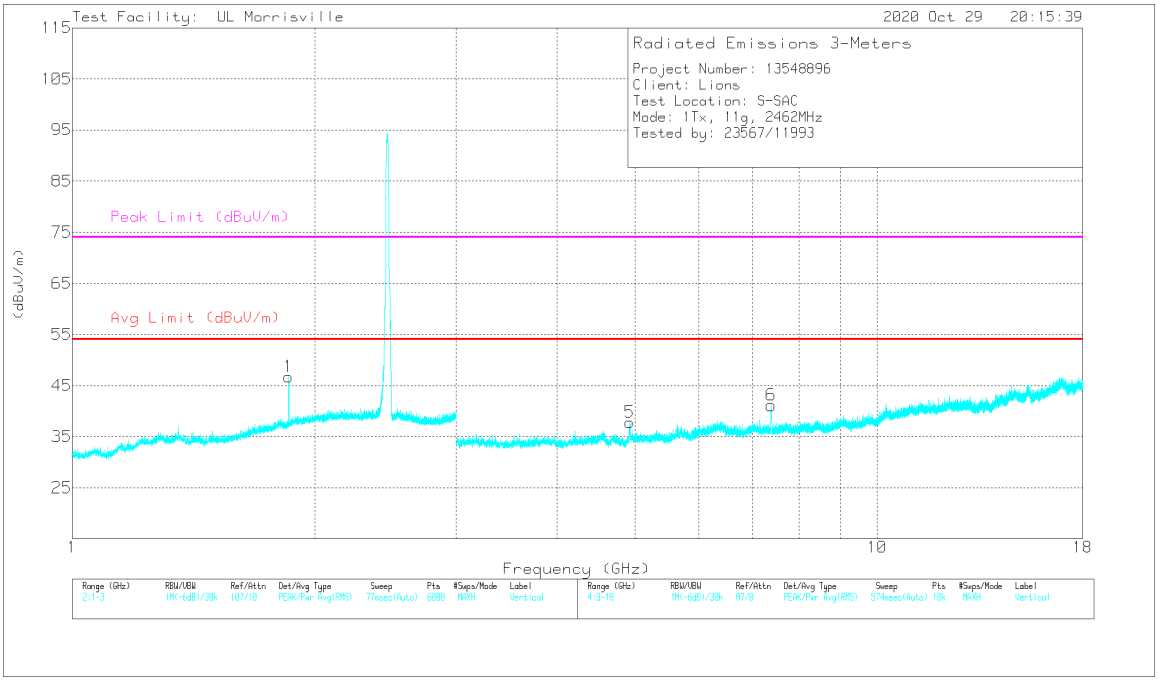
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.85878	45.35	PK2	30.9	-24.3	0	51.95	-	-	-	-	47	304	H
	1.85887	23.27	ADV	30.9	-24.3	.81	30.68	-	-	-	-	47	304	H
4	1.85739	42.4	PK2	30.9	-24.3	0	49	-	-	-	-	294	280	V
	1.85876	23.18	ADV	30.9	-24.3	.81	30.59	-	-	-	-	294	280	V
2	* 4.87262	42.04	PK2	34.1	-31.3	0	44.84	-	-	74	-29.16	9	116	H
	* 4.87268	28.95	ADV	34.1	-31.3	.81	32.56	54	-21.44	-	-	9	116	H
3	* 7.30946	43.76	PK2	35.7	-29.3	0	50.16	-	-	74	-23.84	354	101	H
	* 7.30977	30.34	ADV	35.7	-29.3	.81	37.55	54	-16.45	-	-	354	101	H
5	* 4.86744	43.02	PK2	34	-31.3	0	45.72	-	-	74	-28.28	58	121	V
	* 4.86586	28.09	ADV	34.1	-31.3	.81	31.7	54	-22.3	-	-	58	121	V
6	* 7.31419	40.95	PK2	35.6	-29.3	0	47.25	-	-	74	-26.75	157	129	V
	* 7.31337	27.72	ADV	35.6	-29.3	.81	34.83	54	-19.17	-	-	157	129	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average

HIGH CHANNEL, CH 11 RESULTS



HORIZONTAL



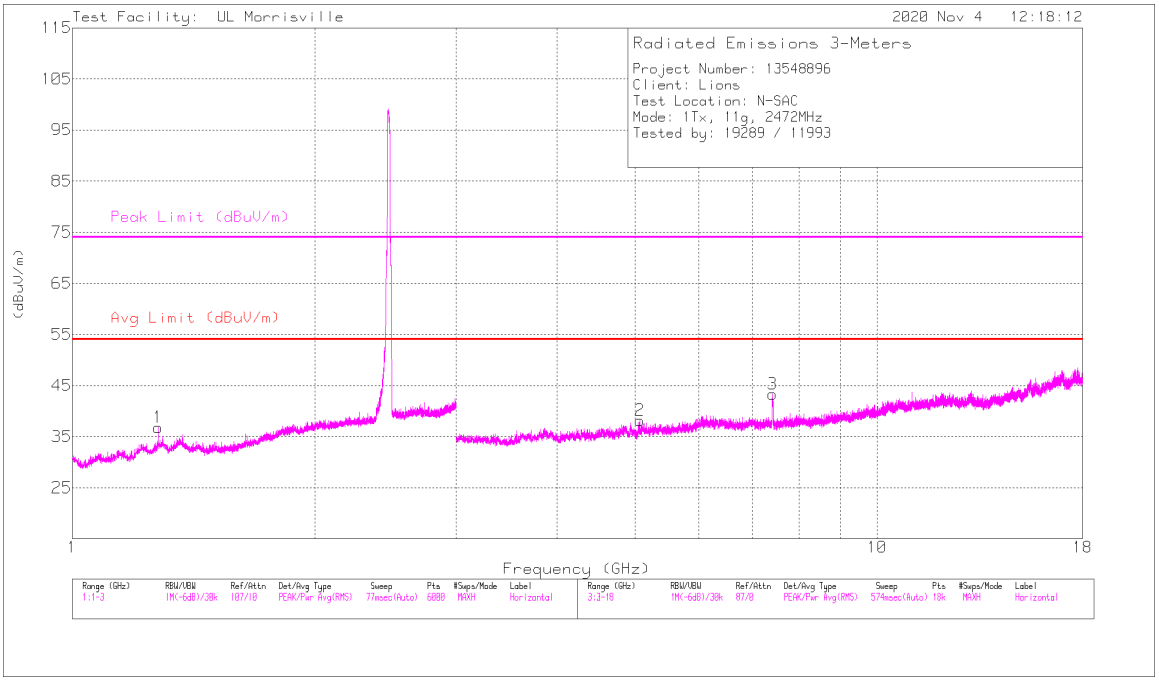
VERTICAL

RADIATED EMISSIONS

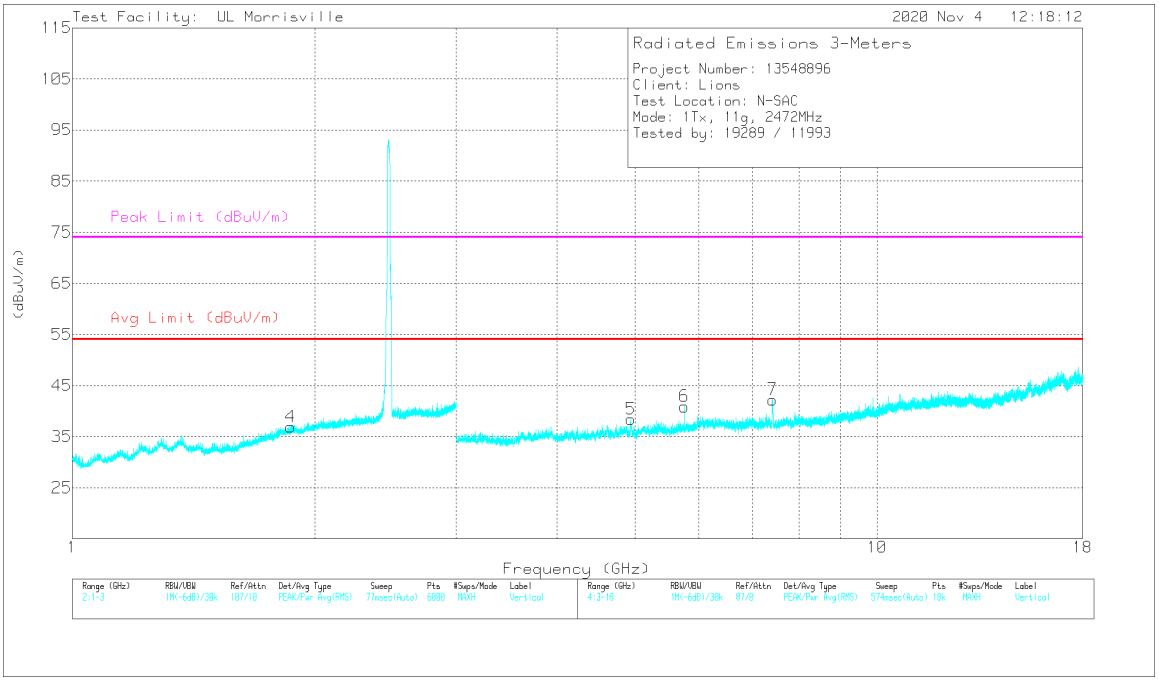
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.8571	35.65	PK2	30.8	-22.3	0	44.15	-	-	-	-	15	256	V
	1.85849	22.57	ADV	30.8	-22.2	.81	31.98	-	-	-	-	15	256	V
2	* 4.92485	40.45	PK2	33.9	-30.9	0	43.45	-	-	74	-30.55	237	346	H
	* 4.92416	25.56	ADV	33.9	-30.9	.81	29.37	54	-24.63	-	-	237	346	H
3	* 7.38414	41.83	PK2	35.6	-27.5	0	49.93	-	-	74	-24.07	52	109	H
	* 7.38468	28.35	ADV	35.6	-27.5	.81	37.26	54	-16.74	-	-	52	109	H
4	* 15.8035	33.69	PK2	40.3	-23.5	0	50.49	-	-	74	-23.51	211	311	H
	* 15.80465	20.79	ADV	40.3	-23.5	.81	38.4	54	-15.6	-	-	211	311	H
5	* 4.92417	38.5	PK2	33.9	-30.9	0	41.5	-	-	74	-32.5	179	296	V
	* 4.92412	26.41	ADV	33.9	-30.9	.81	30.22	54	-23.78	-	-	179	296	V
6	* 7.38452	39.83	PK2	35.6	-27.5	0	47.93	-	-	74	-26.07	220	190	V
	* 7.38488	25.93	ADV	35.6	-27.5	.81	34.84	54	-19.16	-	-	220	190	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average

HIGH CHANNEL, CH 13 RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.27803	39.48	PK2	29.6	-25.7	0	43.38	-	-	74	-30.62	126	292	H
	* 1.27801	29.06	ADV	29.6	-25.7	.81	33.77	54	-20.23	-	-	126	292	H
4	1.86864	35.9	PK2	31	-24.3	0	42.6	-	-	-	-	36	372	V
	1.86829	23.25	ADV	31	-24.3	.81	30.76	-	-	-	-	36	372	V
2	* 5.06914	40.95	PK2	34.2	-31.8	0	43.35	-	-	74	-30.65	62	162	H
	* 5.06905	27.95	ADV	34.2	-31.8	.81	31.16	54	-22.84	-	-	62	162	H
3	* 7.414	43.23	PK2	35.7	-29.2	0	49.73	-	-	74	-24.27	132	161	H
	* 7.41412	29.18	ADV	35.7	-29.2	.81	36.49	54	-17.51	-	-	132	161	H
5	* 4.94511	43.79	PK2	34.1	-32.2	0	45.69	-	-	74	-28.31	136	181	V
	* 4.94451	28.78	ADV	34.1	-32.2	.81	31.49	54	-22.51	-	-	136	181	V
7	* 7.40977	44.05	PK2	35.6	-29.2	0	50.45	-	-	74	-23.55	150	198	V
	* 7.40974	29.16	ADV	35.6	-29.2	.81	36.37	54	-17.63	-	-	150	198	V
6	5.76182	37.69	Pk	34.7	-31.5	0	40.89	-	-	-	-	0-360	101	V

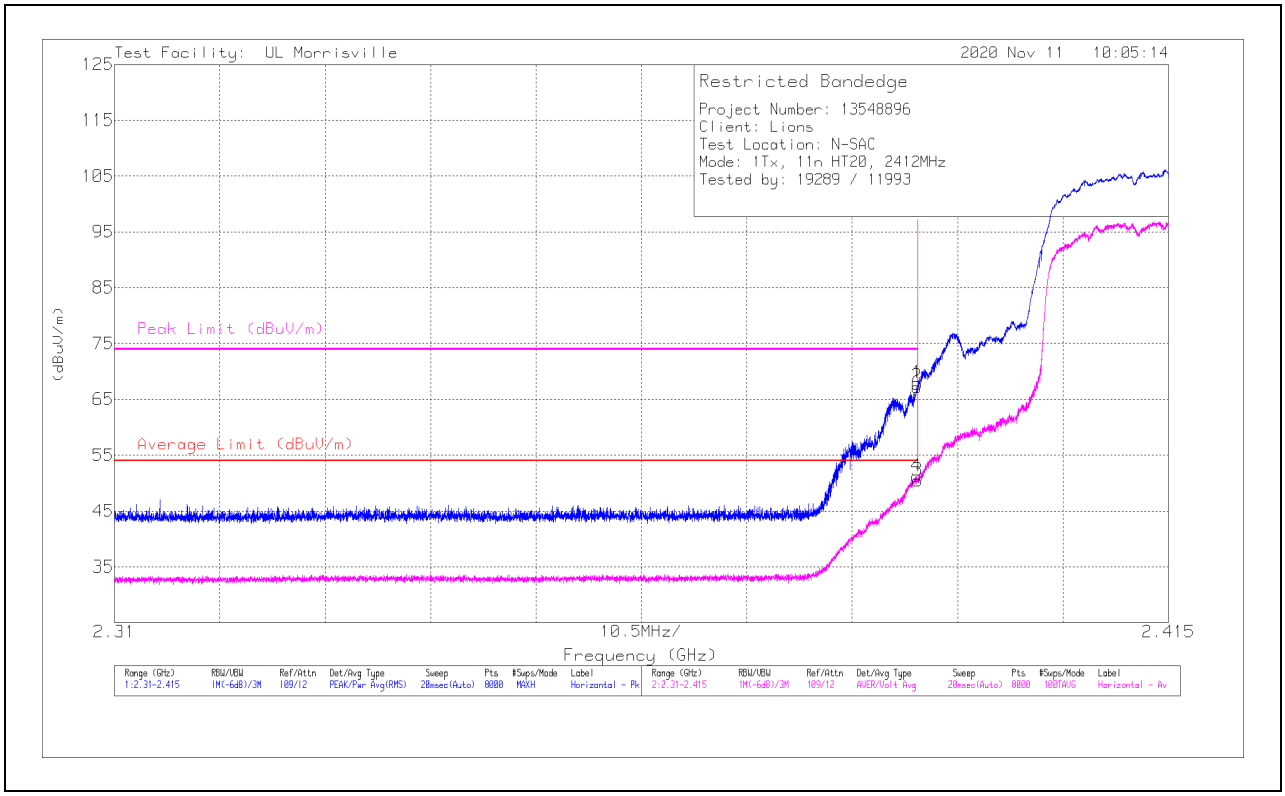
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak

10.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL, CH 1)

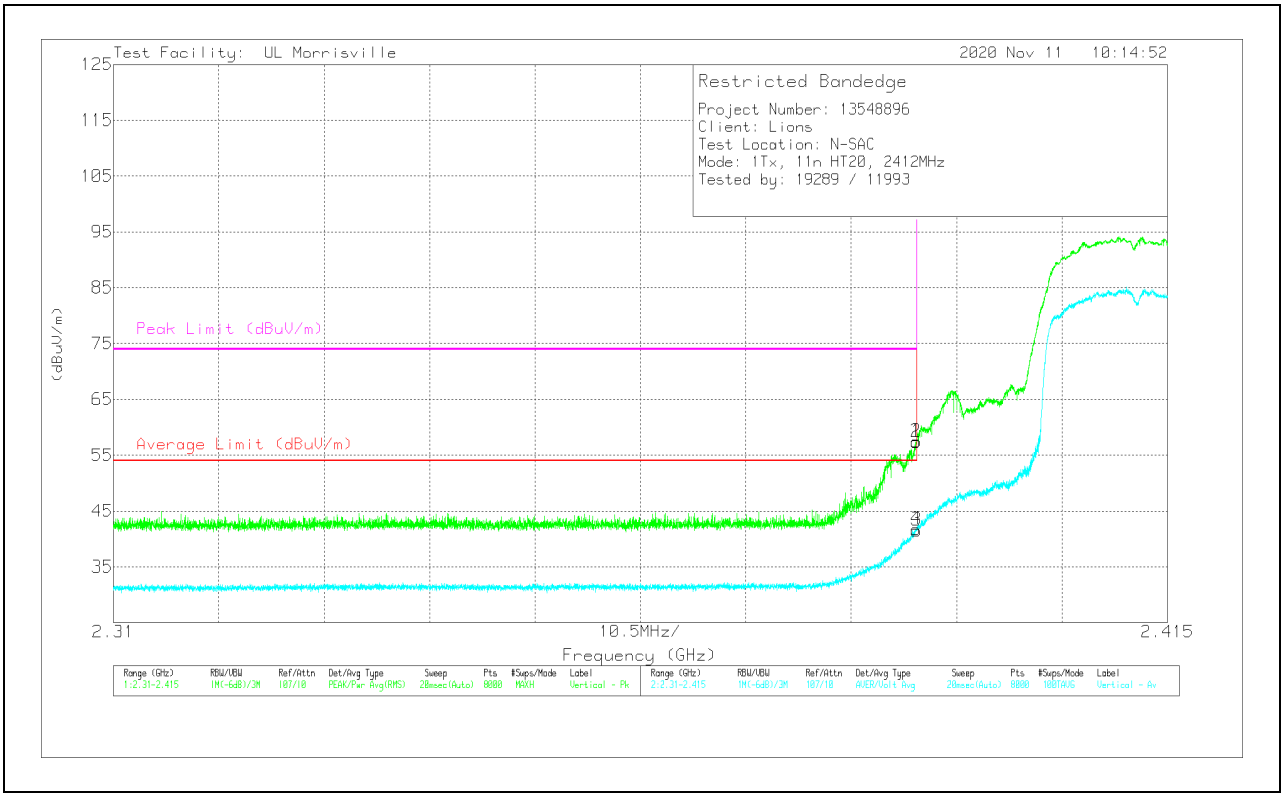
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.47	Pk	31.8	-24.4	0	67.87	-	-	74	-6.13	135	130	H
2	* 2.38997	59.83	Pk	31.8	-24.4	0	67.23	-	-	74	-6.77	135	130	H
3	* 2.39	42.4	ADV	31.8	-24.4	.69	50.49	54	-3.51	-	-	135	130	H
4	* 2.38992	43.14	ADV	31.8	-24.4	.69	51.23	54	-2.77	-	-	135	130	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

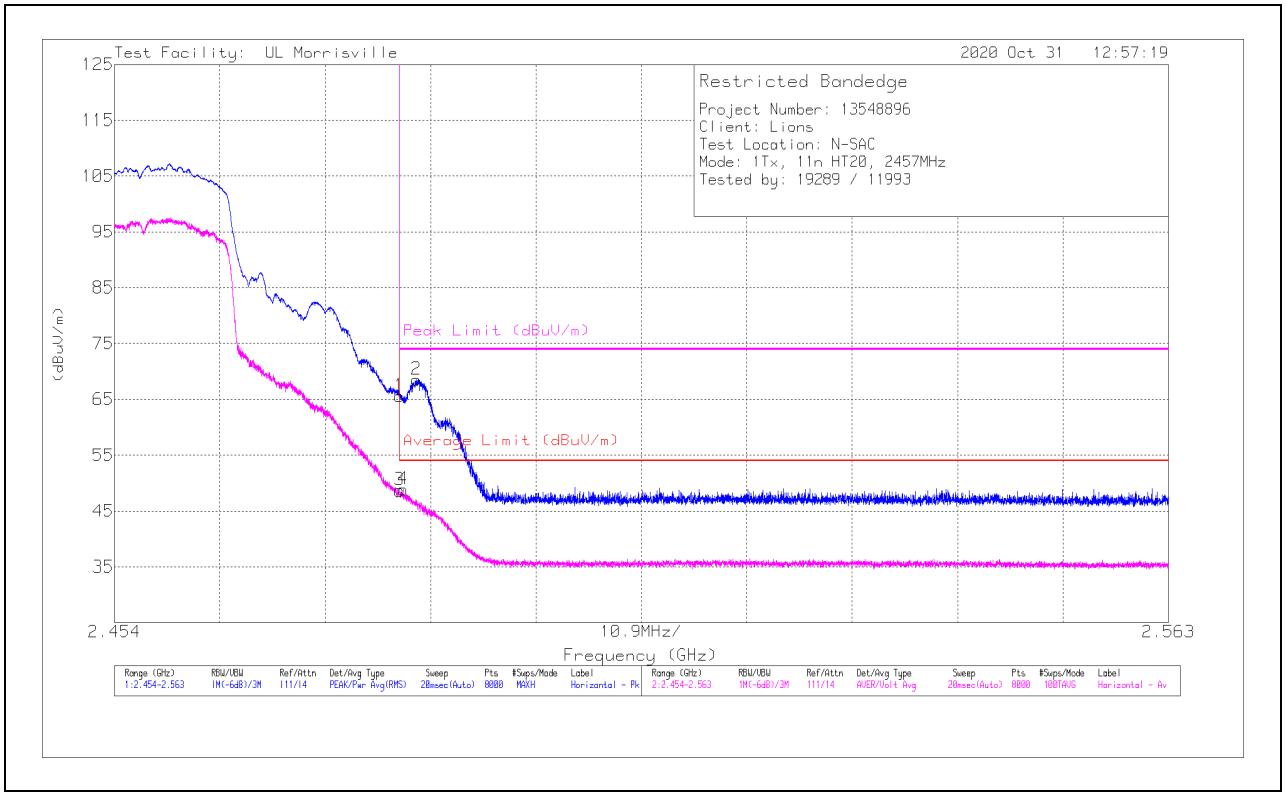


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	50.04	Pk	31.8	-24.4	0	57.44	-	-	74	-16.56	349	158	V
2	* 2.38997	49.99	Pk	31.8	-24.4	0	57.39	-	-	74	-16.61	349	158	V
3	* 2.39	33.46	ADV	31.8	-24.4	.69	41.55	54	-12.45	-	-	349	158	V
4	* 2.38998	33.66	ADV	31.8	-24.4	.69	41.75	54	-12.25	-	-	349	158	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 10)

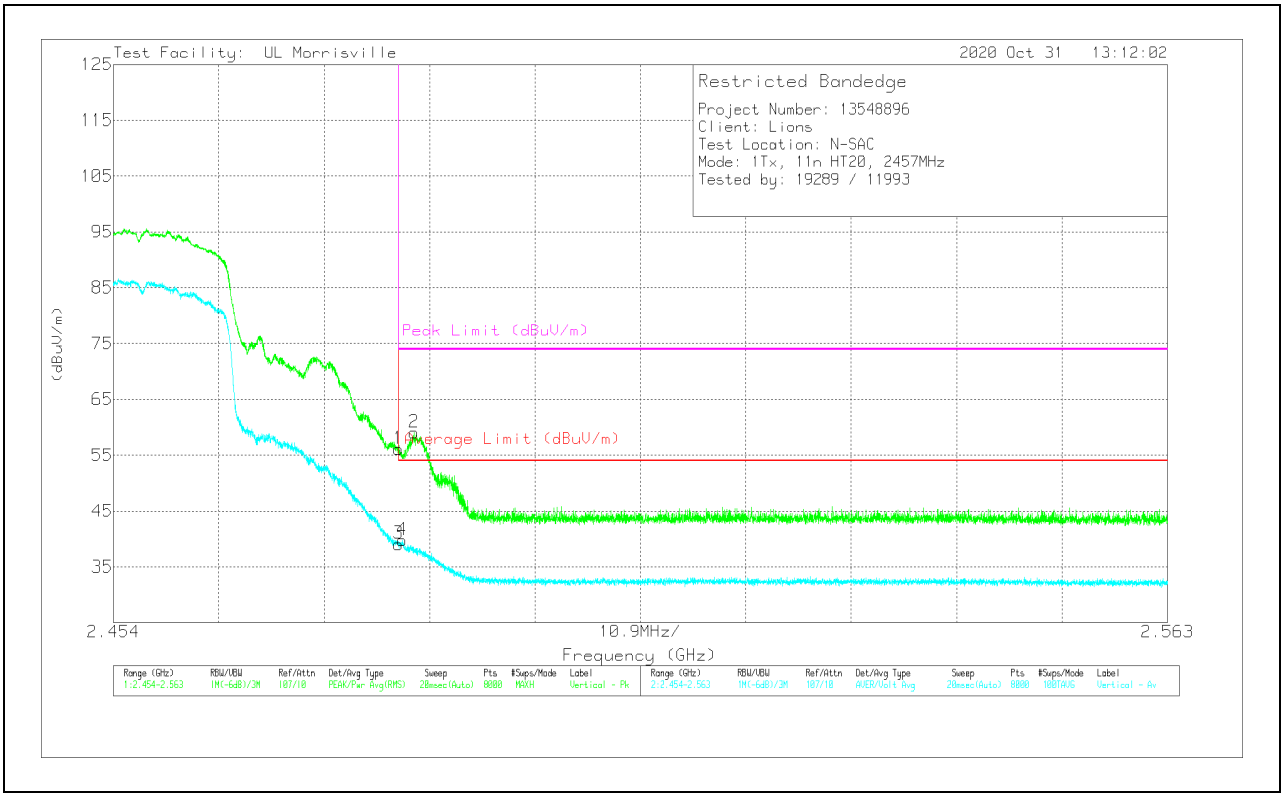
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	57.46	Pk	32.4	-24.3	0	65.56	-	-	74	-8.44	130	220	H
2	* 2.48521	60.36	Pk	32.5	-24.3	0	68.56	-	-	74	-5.44	130	220	H
3	* 2.4835	39.91	ADV	32.4	-24.3	.69	48.7	54	-5.3	-	-	130	220	H
4	* 2.48386	40.05	ADV	32.4	-24.3	.69	48.84	54	-5.16	-	-	130	220	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

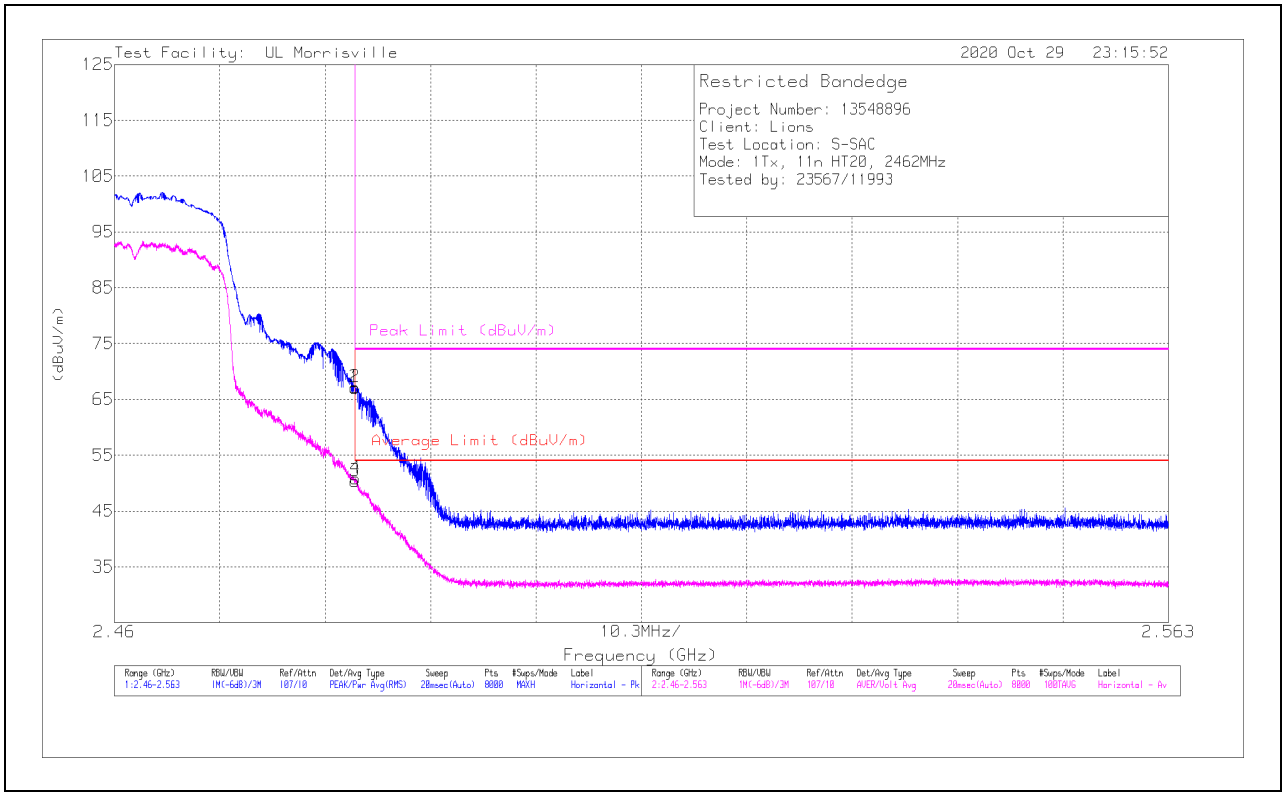


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	48.05	Pk	32.4	-24.3	0	56.15	-	-	74	-17.85	1	266	V
2	* 2.48511	50.85	Pk	32.5	-24.3	0	59.05	-	-	74	-14.95	1	266	V
3	* 2.4835	30.31	ADV	32.4	-24.3	.69	39.1	54	-14.9	-	-	1	266	V
4	* 2.48384	30.96	ADV	32.4	-24.3	.69	39.75	54	-14.25	-	-	1	266	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 11)

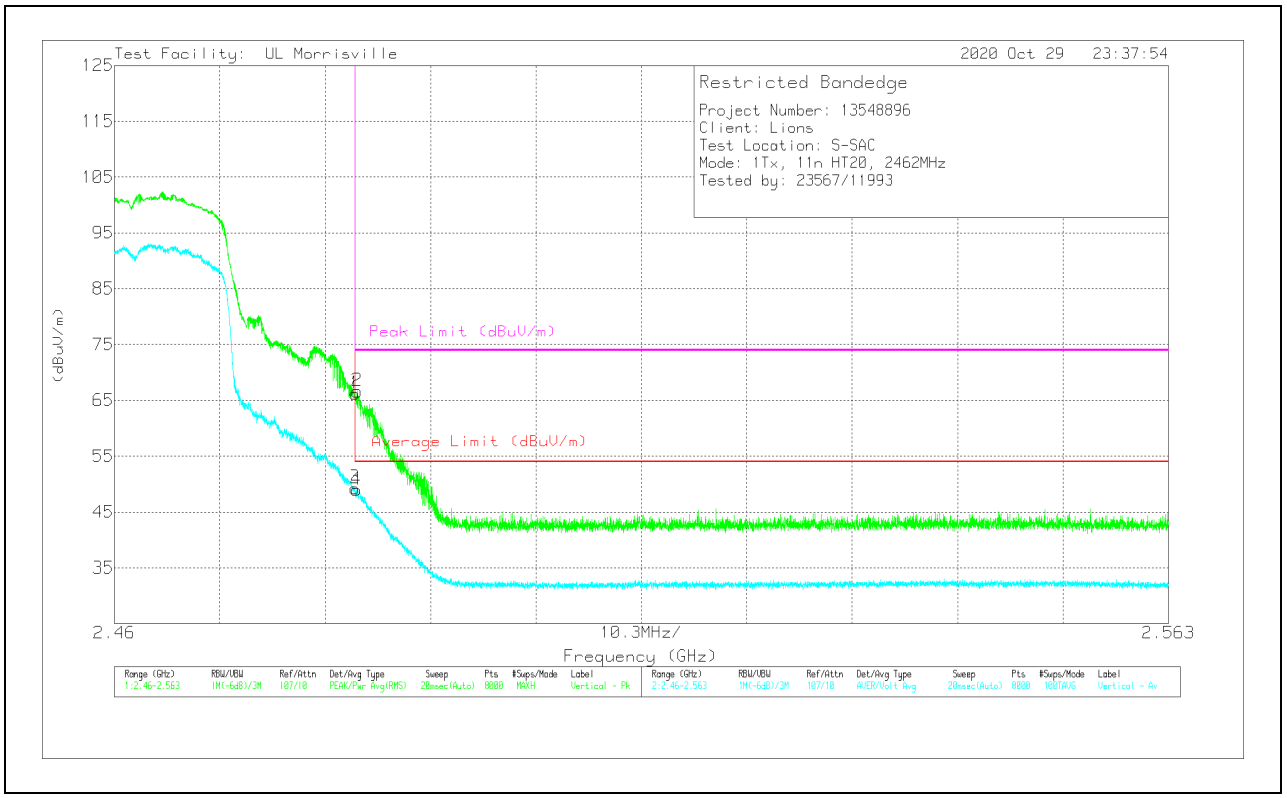
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	59.03	Pk	32.4	-24.4	0	67.03	-	-	74	-6.97	191	261	H
2	* 2.48351	59.14	Pk	32.4	-24.4	0	67.14	-	-	74	-6.86	191	261	H
3	* 2.4835	41.64	ADV	32.4	-24.4	.68	50.32	54	-3.68	-	-	191	261	H
4	* 2.48359	42.15	ADV	32.4	-24.4	.68	50.83	54	-3.17	-	-	191	261	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

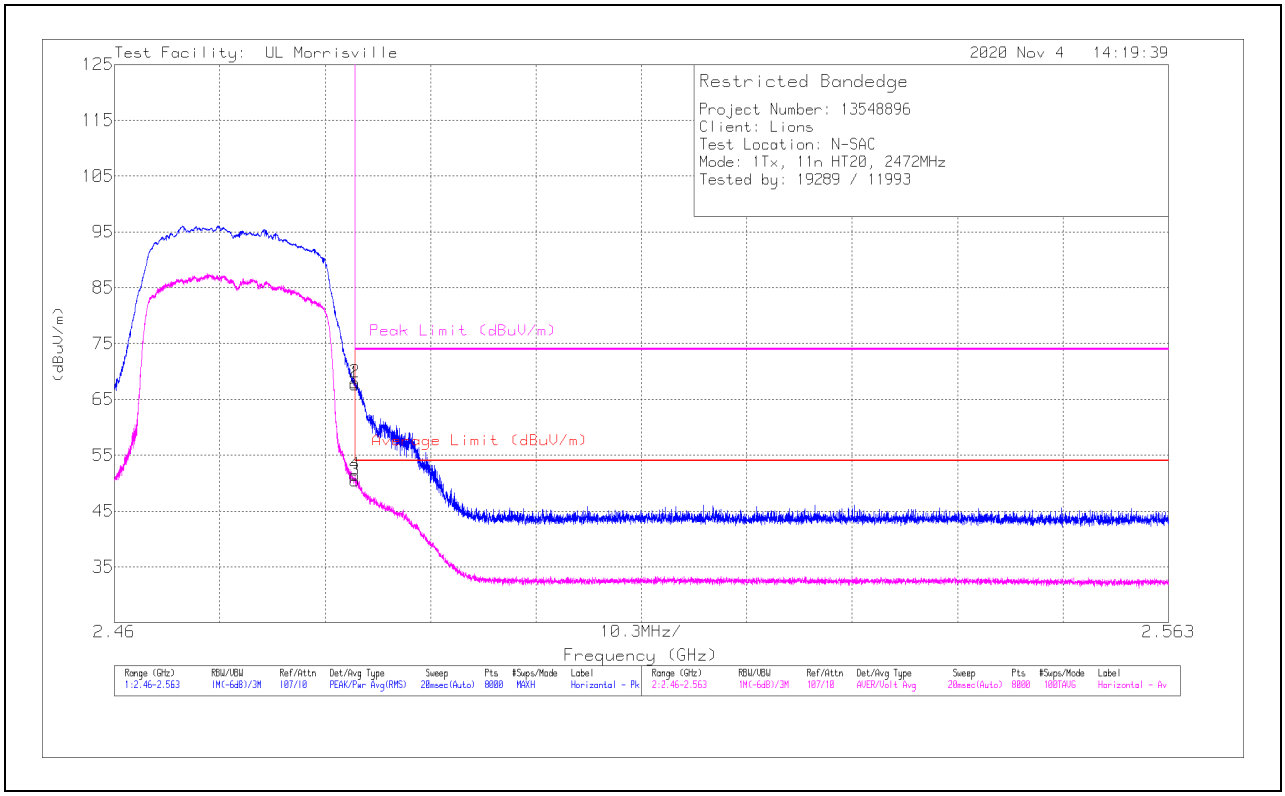


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	58.17	Pk	32.4	-24.4	0	66.17	-	-	74	-7.83	239	345	V
2	* 2.48372	58.64	Pk	32.4	-24.4	0	66.64	-	-	74	-7.36	239	345	V
3	* 2.4835	40.6	ADV	32.4	-24.4	.68	49.28	54	-4.72	-	-	239	345	V
4	* 2.48366	40.32	ADV	32.4	-24.4	.68	49	54	-5	-	-	239	345	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 13)

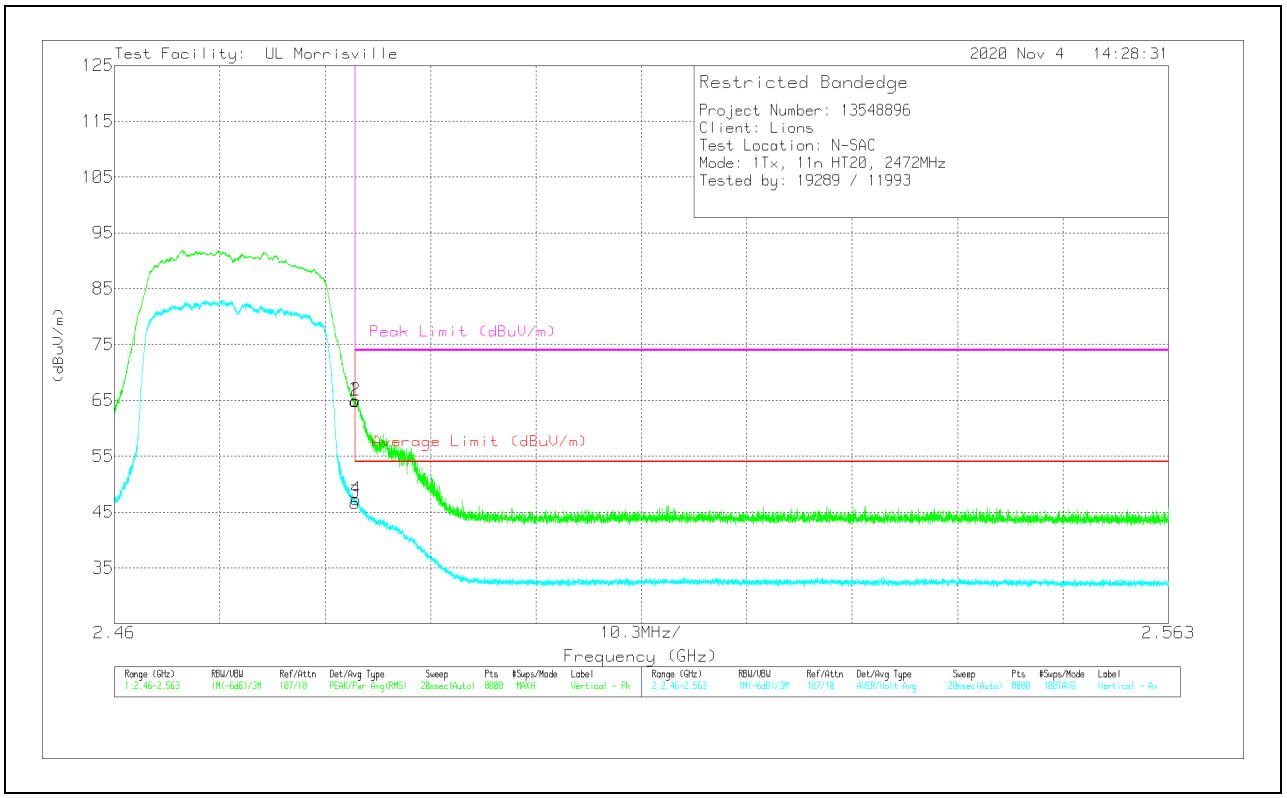
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	59.61	Pk	32.4	-24.3	0	67.71	-	-	74	-6.29	131	239	H
2	* 2.48351	59.93	Pk	32.4	-24.3	0	68.03	-	-	74	-5.97	131	239	H
3	* 2.4835	41.68	ADV	32.4	-24.3	.69	50.47	54	-3.53	-	-	131	239	H
4	* 2.48353	42.67	ADV	32.4	-24.3	.69	51.46	54	-2.54	-	-	131	239	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

VERTICAL RESULT

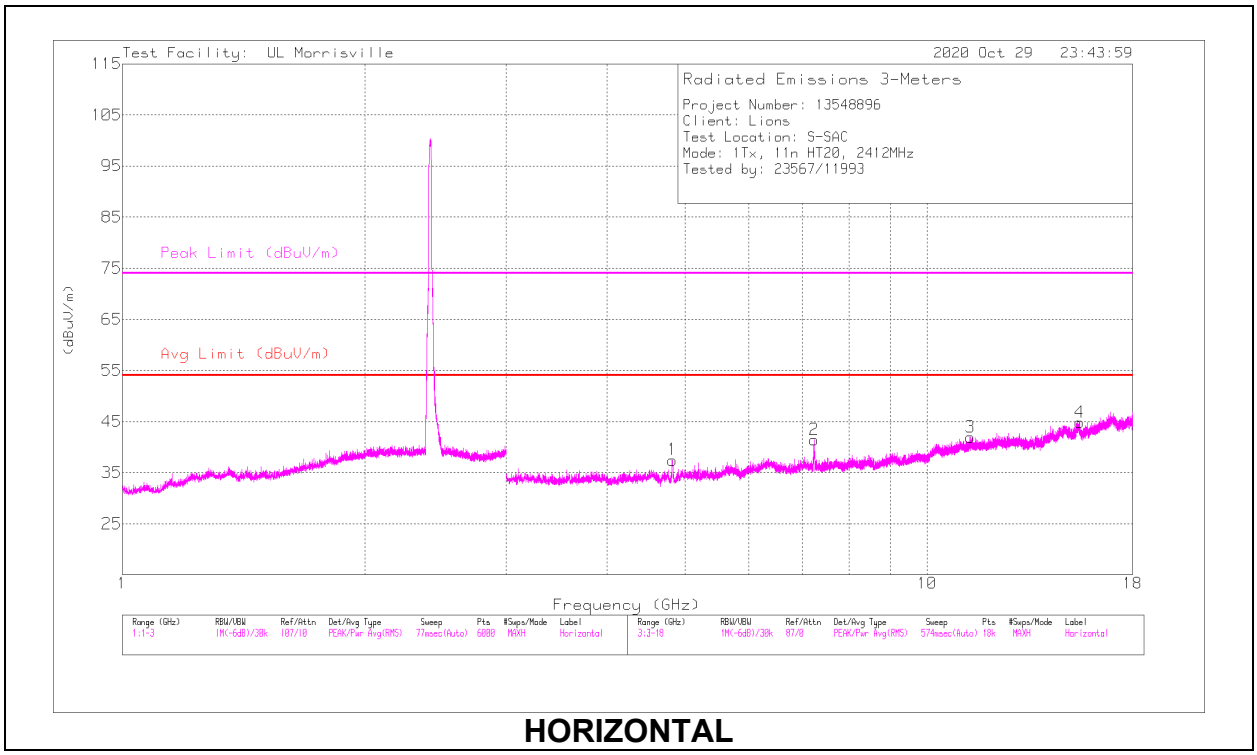


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	56.79	Pk	32.4	-24.3	0	64.89	-	-	74	-9.11	180	389	V
2	* 2.48358	56.83	Pk	32.4	-24.3	0	64.93	-	-	74	-9.07	180	389	V
3	* 2.4835	37.85	ADV	32.4	-24.3	.69	46.64	54	-7.36	-	-	180	389	V
4	* 2.48364	38.46	ADV	32.4	-24.3	.69	47.25	54	-6.75	-	-	180	389	V

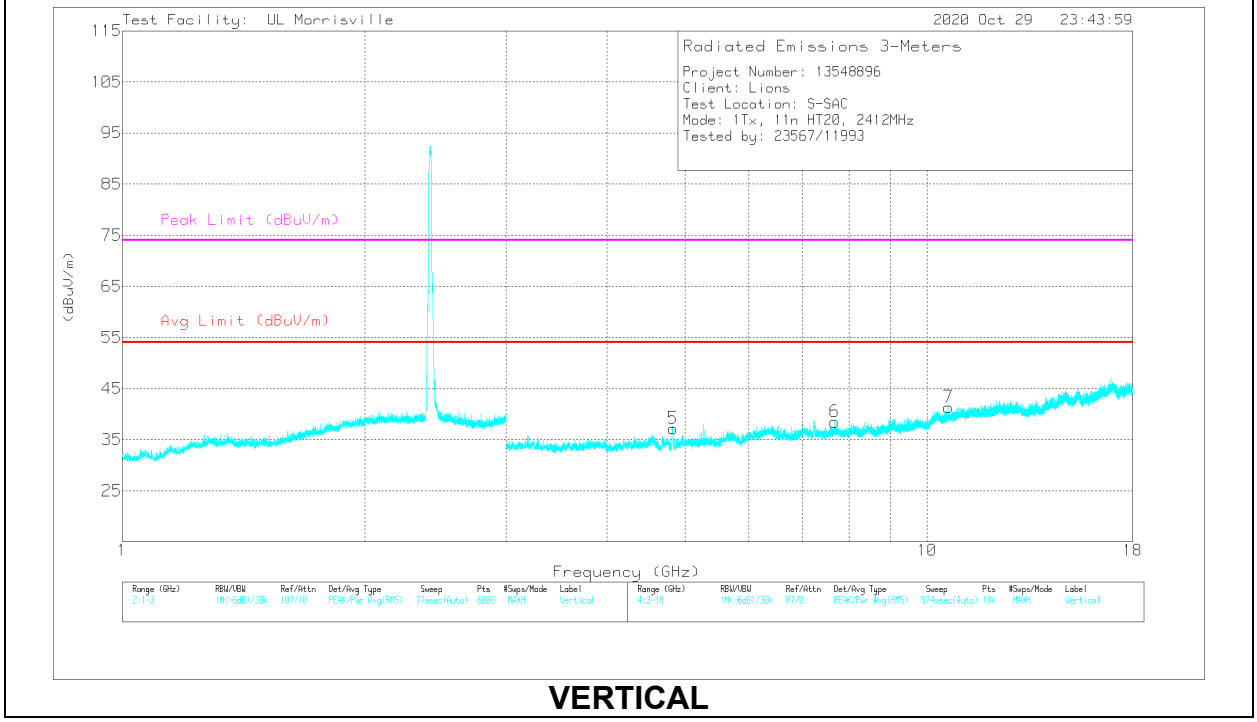
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



HORIZONTAL



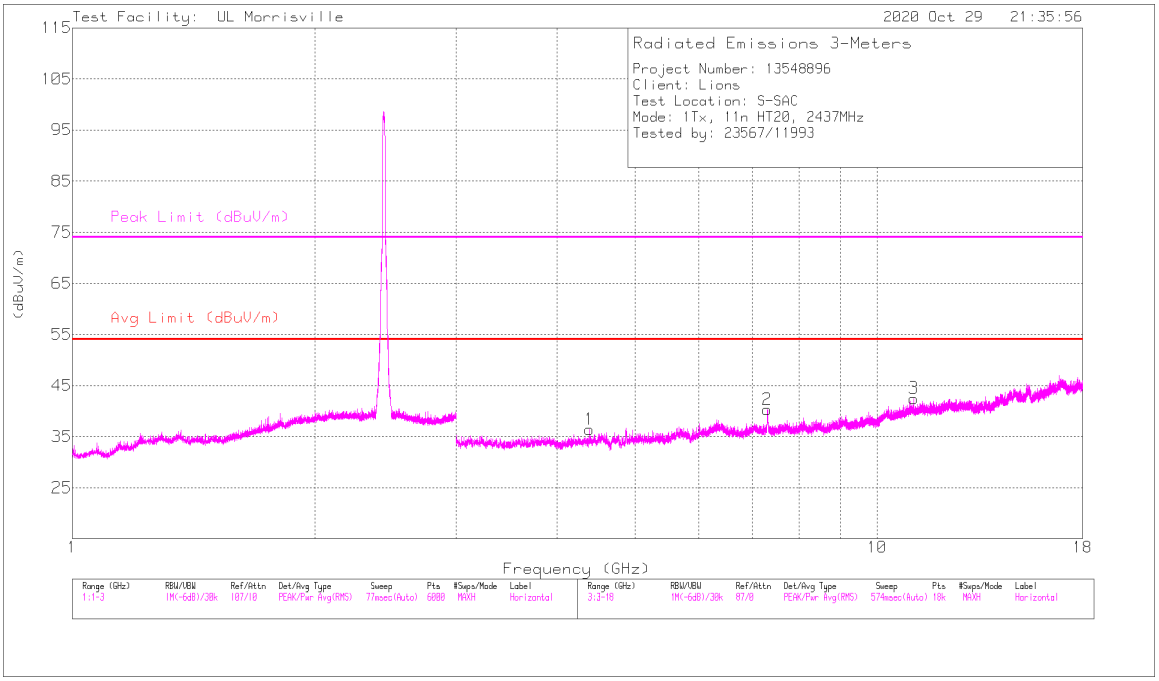
VERTICAL

RADIATED EMISSIONS

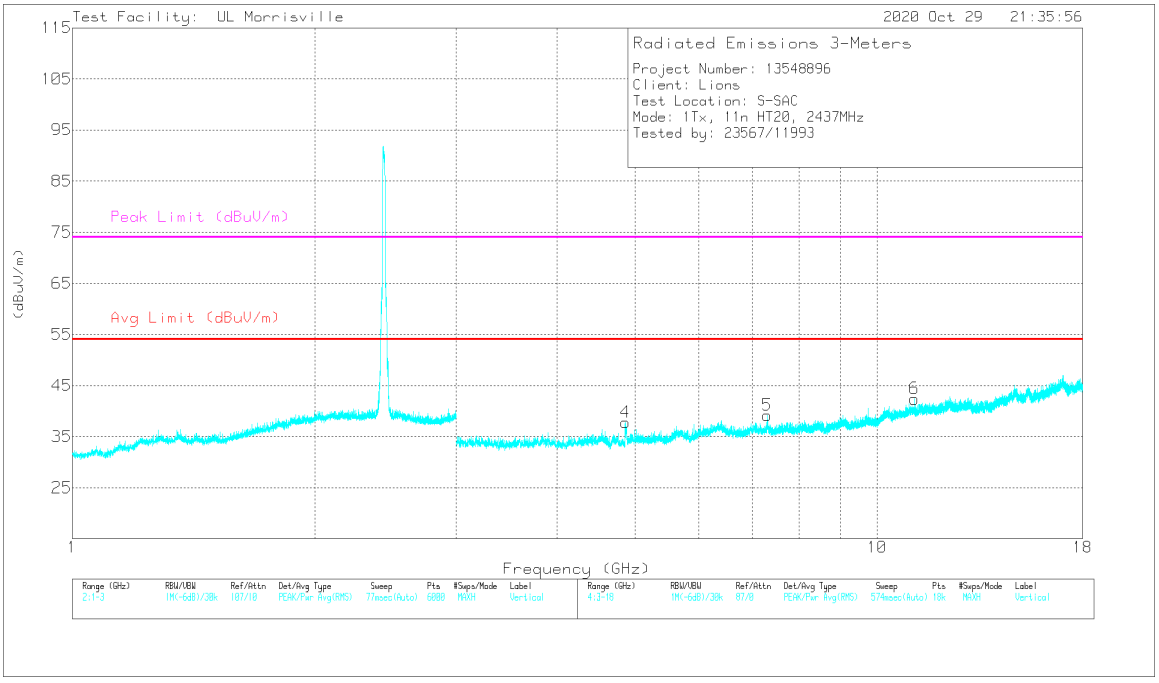
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.82425	39.87	PK2	34	-30.8	0	43.07	-	-	74	-30.93	177	383	H
	* 4.8251	25.11	ADV	34	-30.8	.69	29	54	-25	-	-	177	383	H
3	* 11.32296	32.83	PK2	38.1	-23.1	0	47.83	-	-	74	-26.17	103	369	H
	* 11.32387	19.89	ADV	38.1	-23.1	.69	35.58	54	-18.42	-	-	103	369	H
4	* 15.47983	33.15	PK2	40.3	-23.1	0	50.35	-	-	74	-23.65	183	299	H
	* 15.47954	20.47	ADV	40.3	-23.1	.69	38.36	54	-15.64	-	-	183	299	H
5	* 4.83046	38.53	PK2	34	-30.8	0	41.73	-	-	74	-32.27	12	111	V
	* 4.82964	25.02	ADV	34	-30.8	.69	28.91	54	-25.09	-	-	12	111	V
6	* 7.67513	36.66	PK2	35.7	-27.5	0	44.86	-	-	74	-29.14	348	217	V
	* 7.67614	22.8	ADV	35.7	-27.5	.69	31.69	54	-22.31	-	-	348	217	V
7	* 10.63009	33.41	PK2	37.9	-24.5	0	46.81	-	-	74	-27.19	178	199	V
	* 10.63042	20.61	ADV	37.9	-24.5	.69	34.7	54	-19.3	-	-	178	199	V
2	7.24024	33.53	Pk	35.6	-27.7	0	41.43	-	-	-	-	0-360	101	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak

MID CHANNEL, CH 6 RESULTS



HORIZONTAL



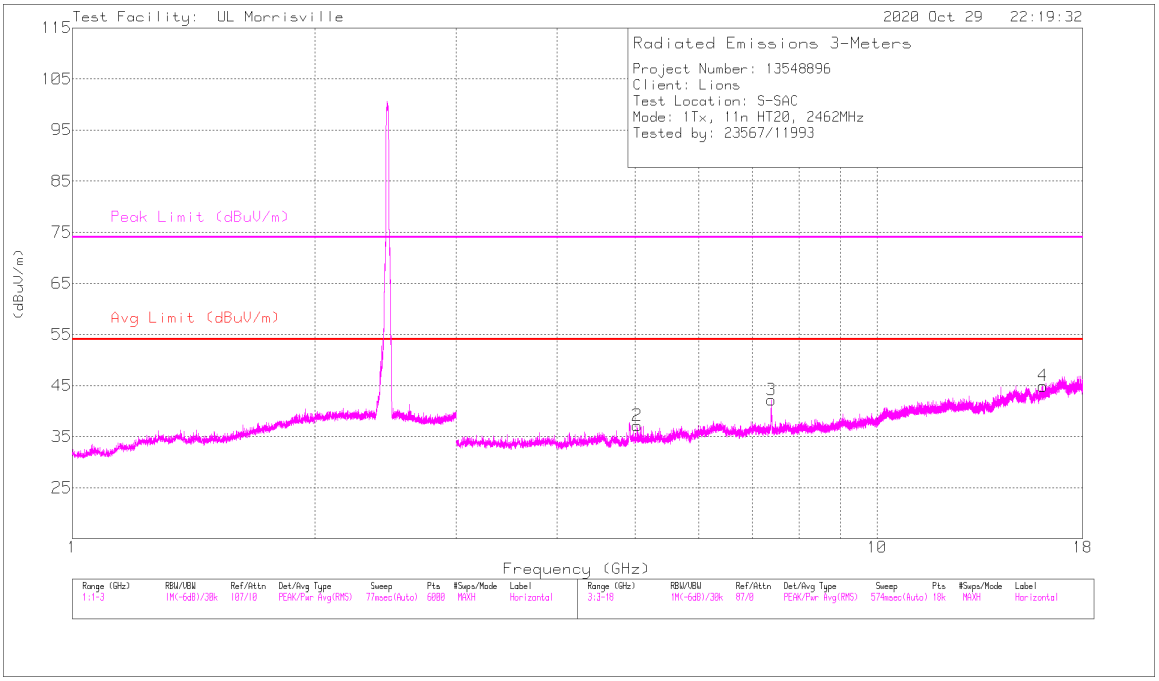
VERTICAL

RADIATED EMISSIONS

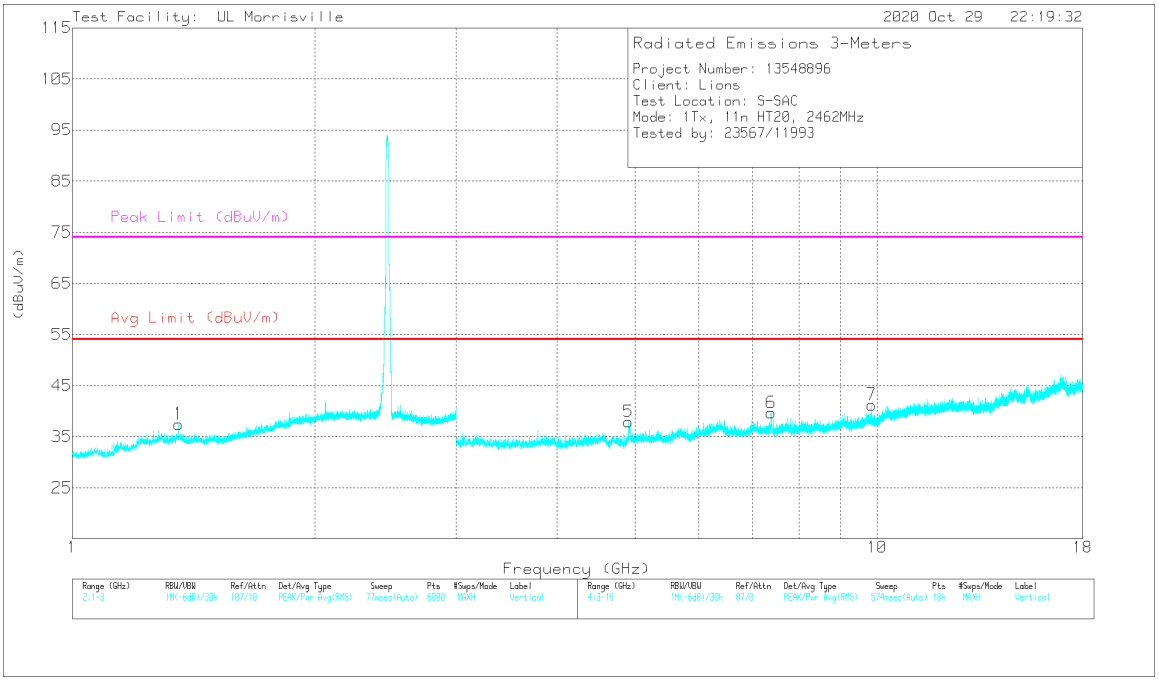
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.392	40.4	PK2	33.7	-32.1	0	42	-	-	74	-32	333	129	H
	* 4.39107	27.18	ADV	33.7	-32.1	.69	29.47	54	-24.53	-	-	333	129	H
2	* 7.30398	39.08	PK2	35.6	-27.5	0	47.18	-	-	74	-26.82	312	141	H
	* 7.3031	24.8	ADV	35.6	-27.5	.69	33.59	54	-20.41	-	-	312	141	H
3	* 11.10421	33.97	PK2	38.1	-24.2	0	47.87	-	-	74	-26.13	333	367	H
	* 11.10339	20.74	ADV	38.1	-24.2	.69	35.33	54	-18.67	-	-	333	367	H
4	* 4.86936	40.24	PK2	34	-30.9	0	43.34	-	-	74	-30.66	0	261	V
	* 4.86922	24.94	ADV	34	-30.9	.69	28.73	54	-25.27	-	-	0	261	V
5	* 7.30657	39.89	PK2	35.6	-27.5	0	47.99	-	-	74	-26.01	13	101	V
	* 7.30669	25.58	ADV	35.6	-27.5	.69	34.37	54	-19.63	-	-	13	101	V
6	* 11.12512	34.06	PK2	38.1	-24.3	0	47.86	-	-	74	-26.14	168	268	V
	* 11.12492	20.83	ADV	38.1	-24.3	.69	35.32	54	-18.68	-	-	168	268	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average

HIGH CHANNEL, CH 11 RESULTS



HORIZONTAL



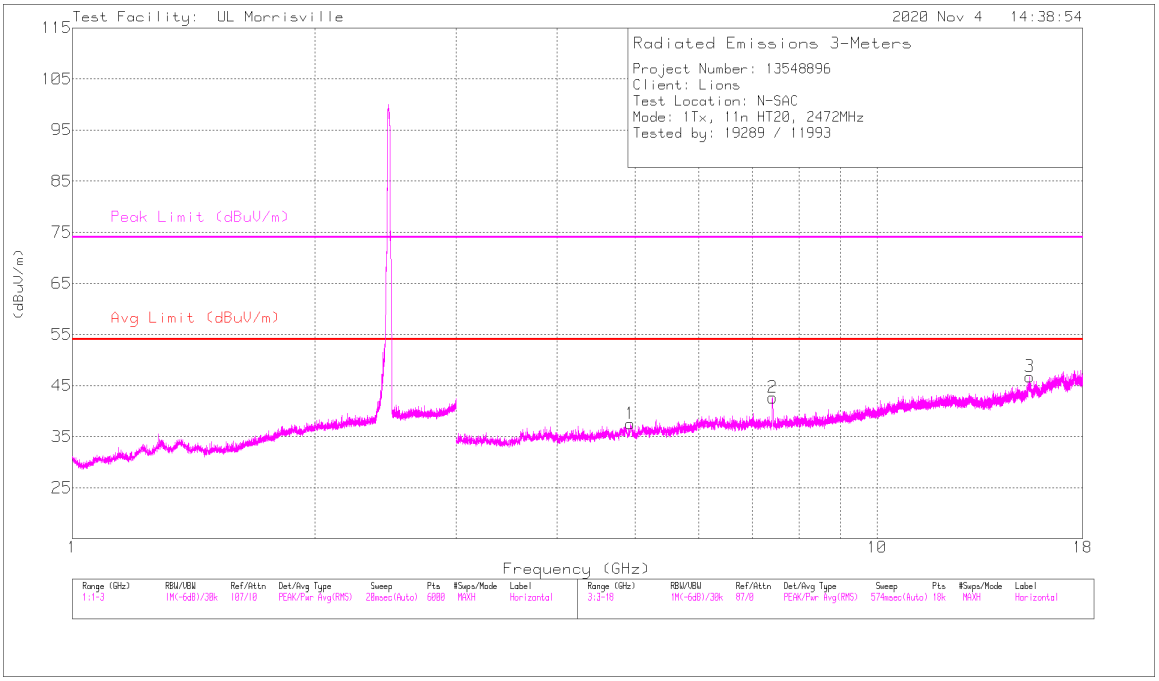
VERTICAL

RADIATED EMISSIONS

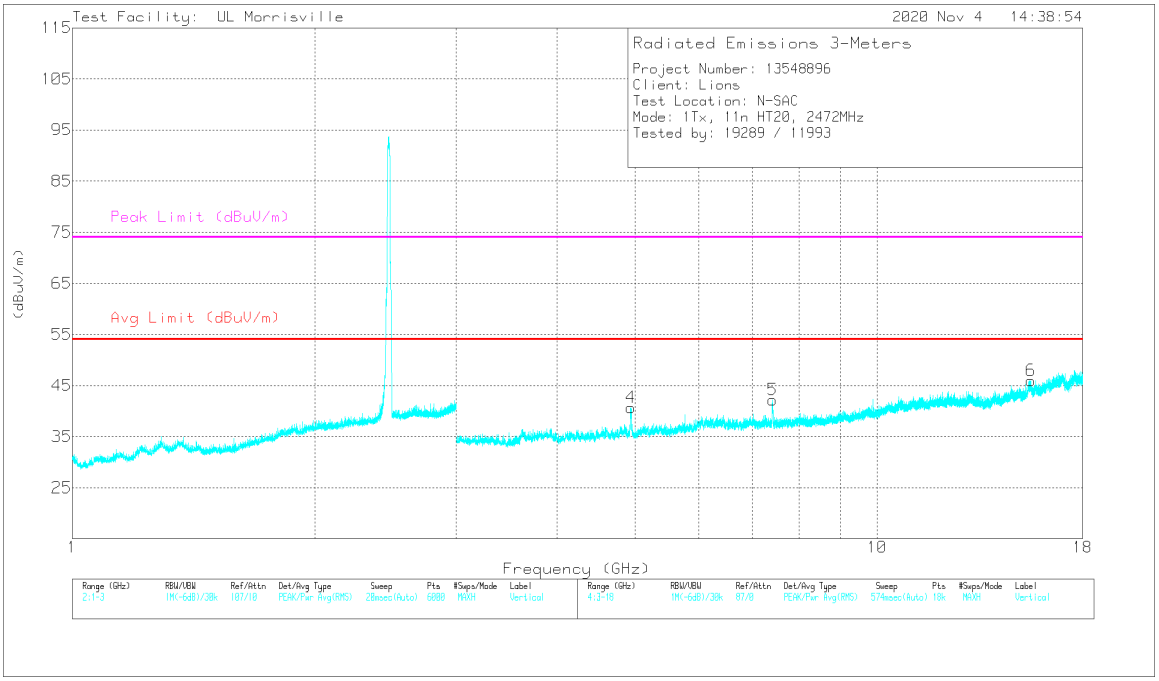
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.35861	36.02	PK2	28.9	-22.9	0	42.02	-	-	74	-31.98	111	281	V
	* 1.35812	22.99	ADV	28.9	-22.9	.69	29.68	54	-24.32	-	-	111	281	V
2	* 5.03374	39.31	PK2	34	-31.4	0	41.91	-	-	74	-32.09	290	398	H
	* 5.0333	26.34	ADV	34	-31.4	.69	29.63	54	-24.37	-	-	290	398	H
3	* 7.38427	42.33	PK2	35.6	-27.5	0	50.43	-	-	74	-23.57	56	109	H
	* 7.38367	28.01	ADV	35.6	-27.5	.69	36.8	54	-17.2	-	-	56	109	H
4	* 16.07178	35.56	PK2	40.5	-24.6	0	51.46	-	-	74	-22.54	347	230	H
	* 16.07165	22.24	ADV	40.5	-24.6	.69	38.83	54	-15.17	-	-	347	230	H
5	* 4.91291	39.17	PK2	33.9	-30.9	0	42.17	-	-	74	-31.83	204	222	V
	* 4.91246	25.52	ADV	33.9	-30.9	.69	29.21	54	-24.79	-	-	204	222	V
6	* 7.38439	39.89	PK2	35.6	-27.5	0	47.99	-	-	74	-26.01	222	174	V
	* 7.38408	25.48	ADV	35.6	-27.5	.69	34.27	54	-19.73	-	-	222	174	V
7	9.84788	30.04	Pk	36.9	-25.7	0	41.24	-	-	-	-	0-360	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak

HIGH CHANNEL, CH 13 RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.93889	42.26	PK2	34.1	-32.2	0	44.16	-	-	74	-29.84	177	392	H
	* 4.93886	28.39	ADV	34.1	-32.2	.69	30.98	54	-23.02	-	-	177	392	H
2	* 7.41167	42.59	PK2	35.6	-29.2	0	48.99	-	-	74	-25.01	267	260	H
	* 7.41176	27.79	ADV	35.6	-29.2	.69	34.88	54	-19.12	-	-	267	260	H
3	* 15.48255	36.82	PK2	40.2	-24	0	53.02	-	-	74	-20.98	11	217	H
	* 15.48253	23.09	ADV	40.2	-24	.69	39.98	54	-14.02	-	-	11	217	H
4	* 4.943	41.86	PK2	34.1	-32.2	0	43.76	-	-	74	-30.24	351	108	V
	* 4.94263	28.57	ADV	34.1	-32.2	.69	31.16	54	-22.84	-	-	351	108	V
5	* 7.41194	42.03	PK2	35.6	-29.2	0	48.43	-	-	74	-25.57	302	333	V
	* 7.41205	27.6	ADV	35.6	-29.2	.69	34.69	54	-19.31	-	-	302	333	V
6	* 15.52464	36.37	PK2	40.2	-24.2	0	52.37	-	-	74	-21.63	151	236	V
	* 15.52468	23.26	ADV	40.2	-24.2	.69	39.95	54	-14.05	-	-	151	236	V

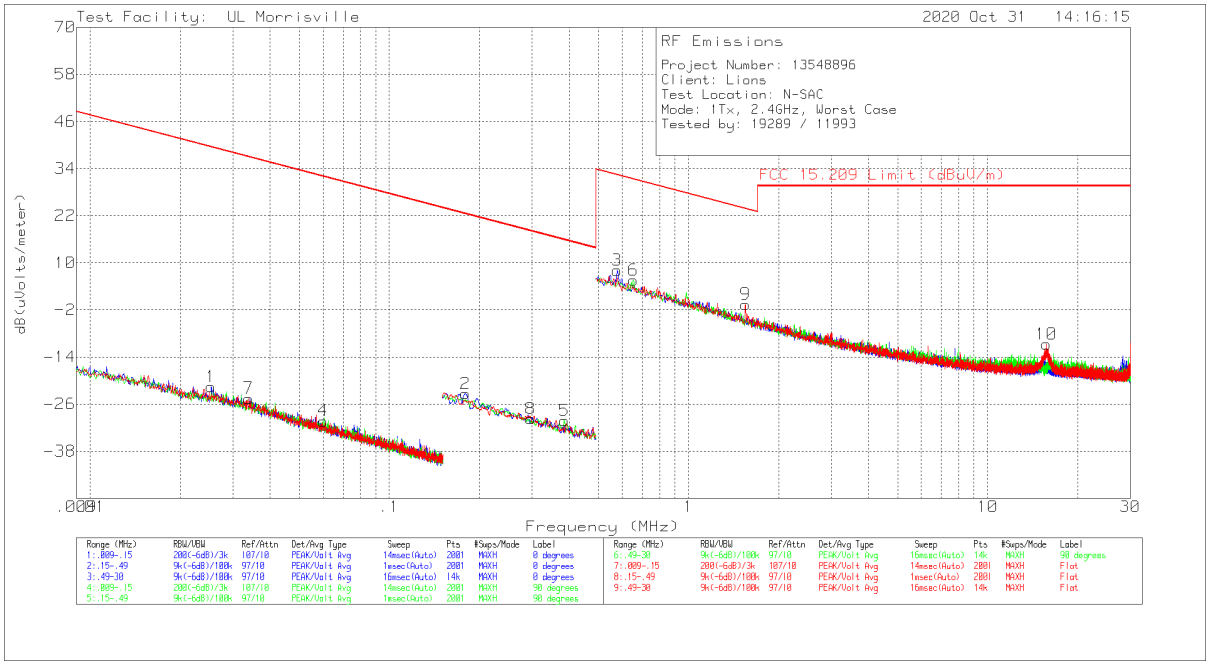
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - Maximum Peak
ADV - Linear Voltage Average

10.2. WORST CASE BELOW 30MHZ

Note for below 30 MHz scans: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).

The below 30 MHz limits in CFR 47, 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 377Ω. For example, the measurement frequency 25.4 KHz resulted in a level of -21.58 dBuV/m, which is equivalent to -21.58-51.5 = -73.08 dBuA/m, which has the same margin, -61.09 dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



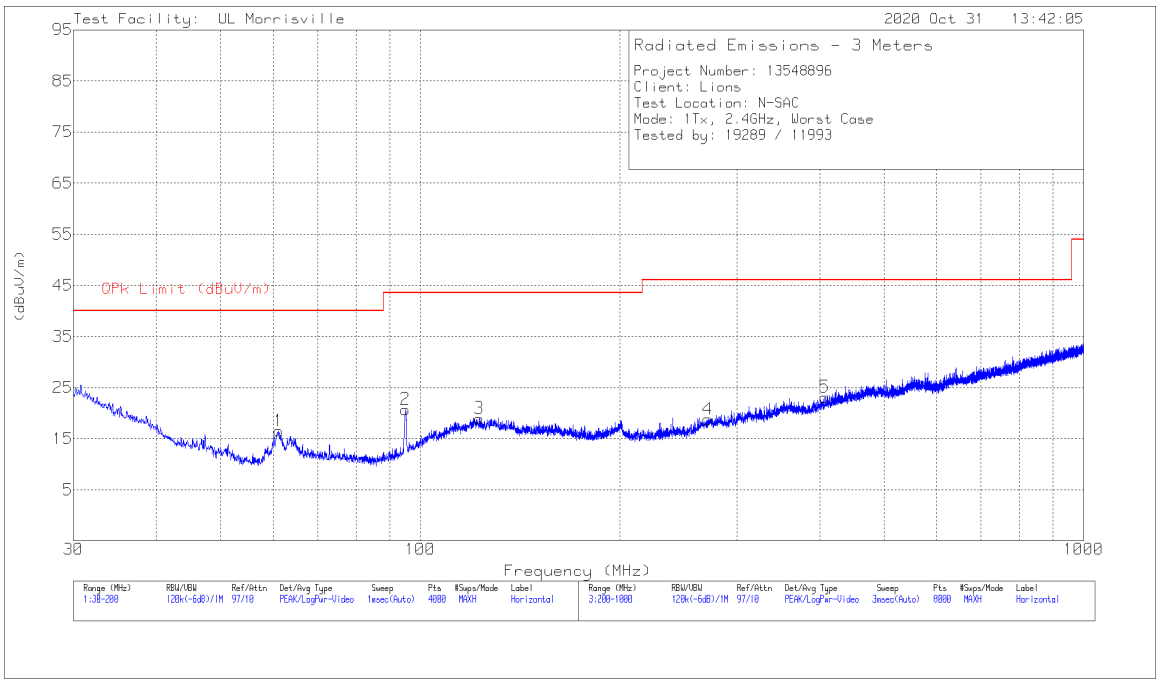
ANTENNA- THREE ORIENTATIONS

Below 30MHz Data

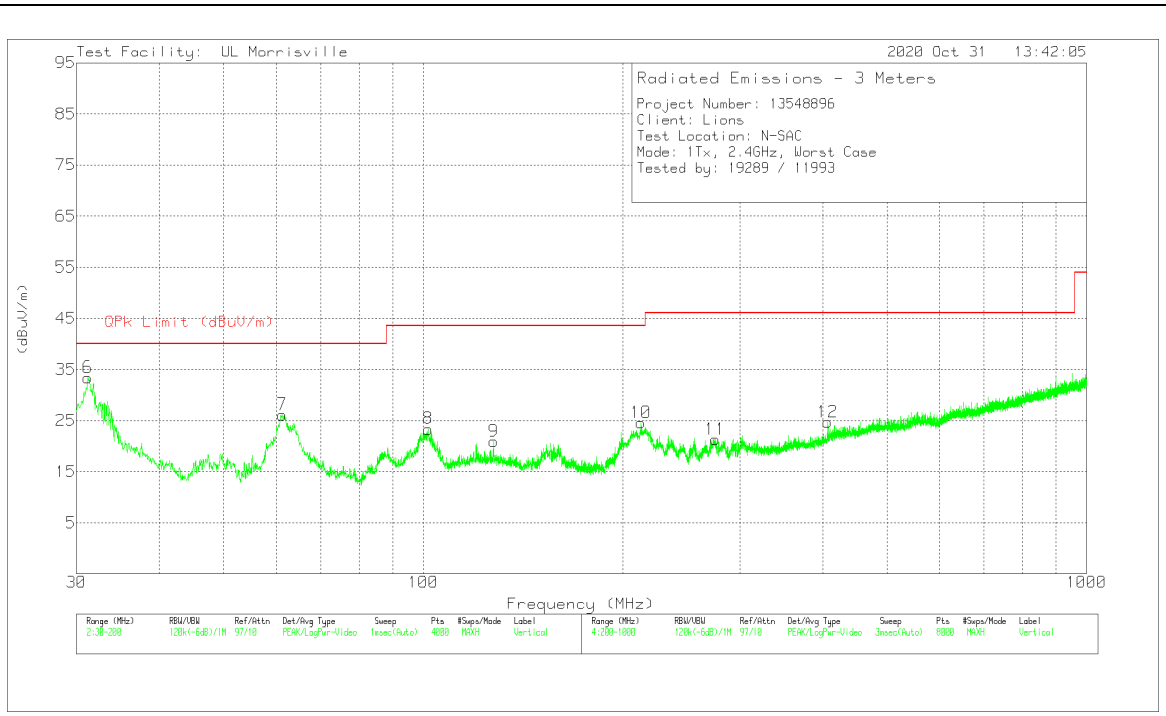
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	FCC 15.209 QP/Avg Limit (dBuV/m)	FCC 15.209 Pk Limit (dBuV/m)	Worst Case Margin (dB)	Azimuth (Degs)
1	.0254	44.82	Pk	13.5	.1	-80	-21.58	39.51	-	-61.09	0-360
7	.03392	42.45	Pk	12.9	.1	-80	-24.55	37	-	-61.55	0-360
4	.06005	38.11	Pk	11.5	.1	-80	-30.29	32.03	-	-62.32	0-360
2	.17967	45.74	Pk	10.8	.1	-80	-23.36	22.51	-	-45.87	0-360
8	.29739	39.48	Pk	10.7	.1	-80	-29.72	18.14	-	-47.86	0-360
5	.38435	39.12	Pk	10.6	.1	-80	-30.18	15.91	-	-46.09	0-360
3	.57854	37.06	Pk	10.8	.2	-40	8.06	32.36	52.36	-24.3	0-360
6	.65442	34.52	Pk	10.8	.2	-40	5.52	31.29	51.29	-25.77	0-360
9	1.55032	28.11	Pk	11.1	.2	-40	-.59	23.8	43.8	-24.39	0-360
10	15.72662	18.14	Pk	10.3	.8	-40	-10.76	29.54	49.54	-40.3	0-360

Pk - Peak detector

10.3. WORST CASE BELOW 1 GHZ



HORIZONTAL



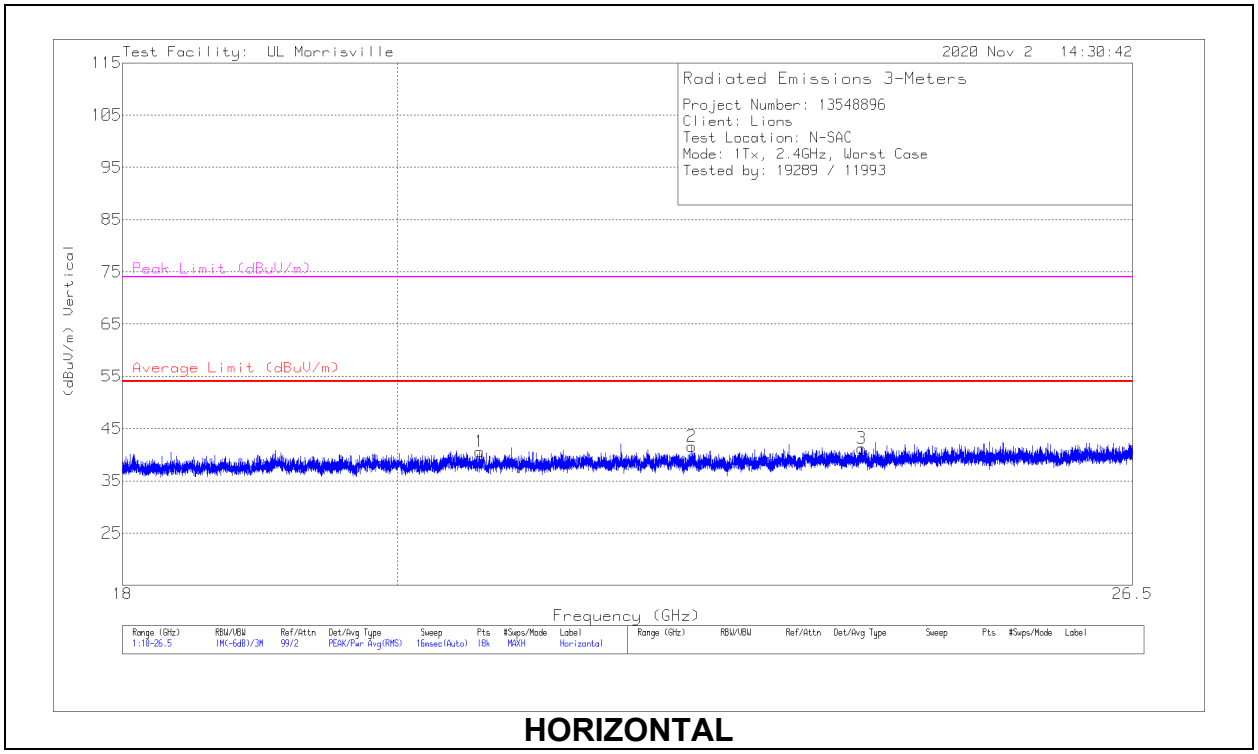
VERTICAL

Below 1GHz DATA

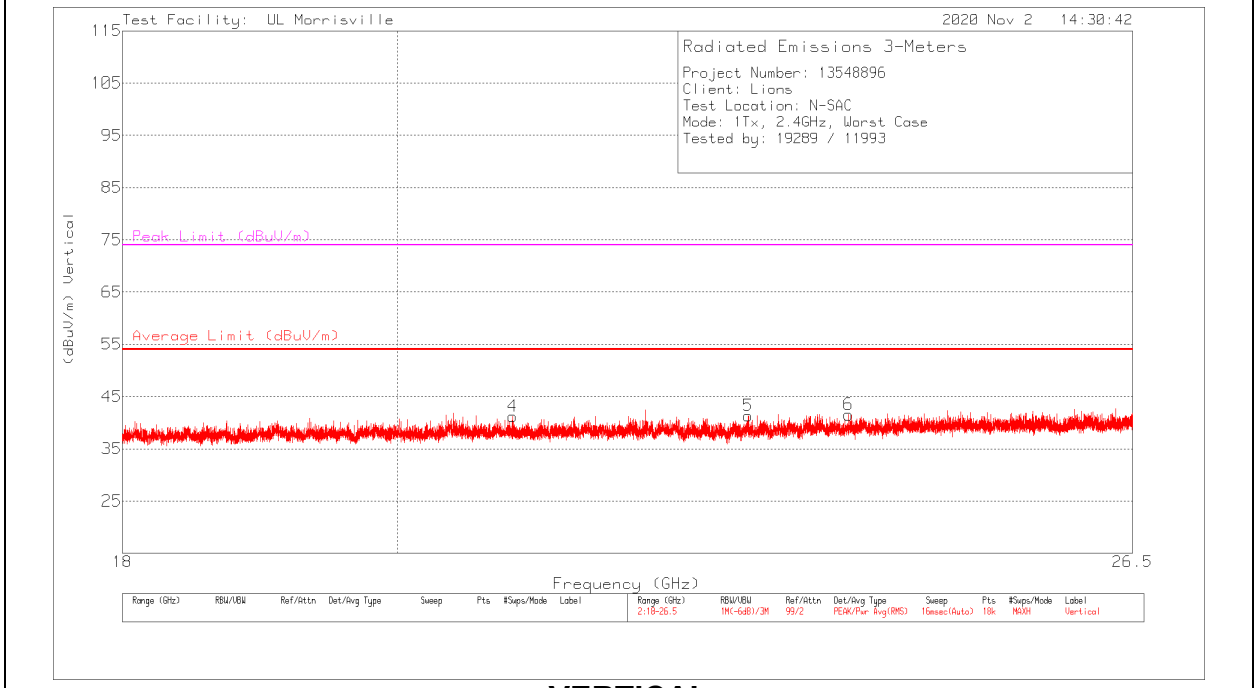
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0074 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 122.844	29.16	Pk	20	-30.2	18.96	43.52	-24.56	0-360	99	H
9	* 127.6478	31.04	Pk	20	-30.1	20.94	43.52	-22.58	0-360	100	V
4	* 271.4093	28.33	Pk	19.3	-28.8	18.83	46.02	-27.19	0-360	299	H
5	* 407.1269	29.02	Pk	22	-27.9	23.12	46.02	-22.9	0-360	299	H
11	* 275.7098	30.68	Pk	19.4	-28.8	21.28	46.02	-24.74	0-360	100	V
12	* 407.2269	30.63	Pk	22	-27.9	24.73	46.02	-21.29	0-360	100	V
6	31.1903	38.71	Pk	26.1	-31.4	33.41	-	-	0-360	100	V
1	61.2031	33.93	Pk	13.6	-31	16.53	-	-	0-360	200	H
7	61.2881	43.52	Pk	13.6	-31	26.12	-	-	0-360	100	V
2	95.0418	36.33	Pk	14.9	-30.5	20.73	-	-	0-360	400	H
8	101.7161	36.99	Pk	16.8	-30.4	23.39	-	-	0-360	100	V
10	213.0017	37.24	Pk	16.6	-29.3	24.54	-	-	0-360	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

10.4. WORST CASE 18-26 GHZ



HORIZONTAL



VERTICAL

18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0076 AF (dB/m)	Amp/CBL (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 20.63703	48.36	Pk	33	-40.8	40.56	54	-13.44	74	-33.44	0-360	250	H
2	* 22.38293	48.89	Pk	33.6	-40.9	41.59	54	-12.41	74	-32.41	0-360	200	H
3	* 23.88846	47.62	Pk	34.1	-40.5	41.22	54	-12.78	74	-32.78	0-360	101	H
4	* 20.90055	48.78	Pk	33.2	-40.8	41.18	54	-12.82	74	-32.82	0-360	150	V
5	* 22.87265	48.54	Pk	33.7	-40.9	41.34	54	-12.66	74	-32.66	0-360	300	V
6	* 23.76993	48.03	Pk	34	-40.5	41.53	54	-12.47	74	-32.47	0-360	150	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

UL LLC
12 Laboratory Dr., RTP, NC 27709; USA TEL:(919) 549-1400

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

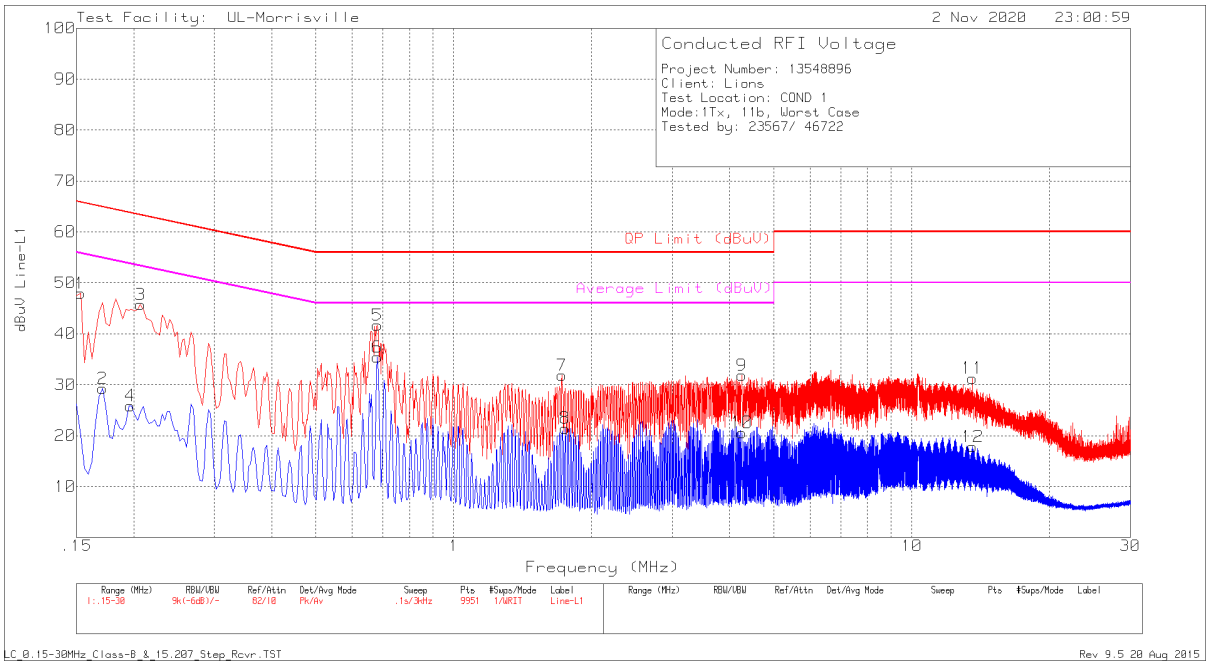
TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

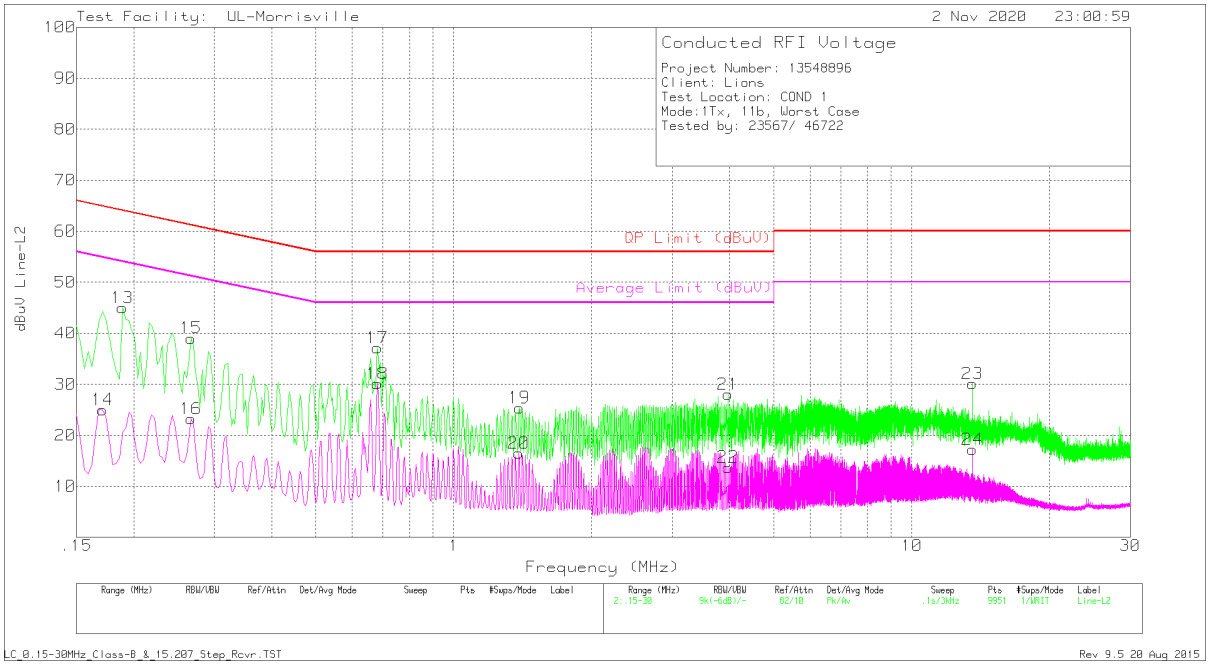
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.153	38.04	Pk	.2	9.7	47.94	65.84	-17.9	-	-
2	.171	19.39	Av	.2	9.7	29.29	-	-	54.91	-25.62
3	.207	35.95	Pk	.1	9.7	45.75	63.32	-17.57	-	-
4	.1965	15.98	Av	.2	9.7	25.88	-	-	53.76	-27.88
5	.681	31.86	Pk	0	9.8	41.66	56	-14.34	-	-
6	.681	25.58	Av	0	9.8	35.38	-	-	46	-10.62
7	1.722	22.07	Pk	0	9.8	31.87	56	-24.13	-	-
8	1.752	11.66	Av	0	9.8	21.46	-	-	46	-24.54
9	4.254	21.93	Pk	0	9.9	31.83	56	-24.17	-	-
10	4.257	10.7	Av	0	9.9	20.6	-	-	46	-25.4
11	13.557	21.19	Pk	.1	10	31.29	60	-28.71	-	-
12	13.578	7.74	Av	.1	10	17.84	-	-	50	-32.16

Pk - Peak detector
Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	**Frequency (MHz)**	**Meter Reading (dBuV)**	**Det**	**LISN VCF (dB)**	**Cbl/Limiter (dB)**	**Corrected Reading dBuV**	**QP Limit (dBuV)**	**Margin (dB)**	**Average Limit (dBuV)**	**Margin (dB)**
13	.189	35.1	Pk	.2	9.7	45	64.08	-19.08	-	-
14	.171	15.11	Av	.2	9.7	25.01	-	-	54.91	-29.9
15	.267	29.25	Pk	.1	9.7	39.05	61.21	-22.16	-	-
16	.267	13.46	Av	.1	9.7	23.26	-	-	51.21	-27.95
17	.681	27.37	Pk	0	9.8	37.17	56	-18.83	-	-
18	.681	20.31	Av	0	9.8	30.11	-	-	46	-15.89
19	1.389	15.59	Pk	0	9.8	25.39	56	-30.61	-	-
20	1.386	6.66	Av	0	9.8	16.46	-	-	46	-29.54
21	3.969	18.16	Pk	0	9.9	28.06	56	-27.94	-	-
22	3.969	3.82	Av	0	9.9	13.72	-	-	46	-32.28
23	13.56	20.02	Pk	.1	10	30.12	60	-29.88	-	-
24	13.56	7.13	Av	.1	10	17.23	-	-	50	-32.77

Pk - Peak detector
Av - Average detection

12. SETUP PHOTOS

Please refer to R13548896-EP1 for setup photos.

END OF TEST REPORT