



CERTIFICATION TEST REPORT

Report Number. : 12530276-E3V2

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

Model : SM-T927A

FCC ID : A3LSMT927A

EUT Description : WCDMA/LTE Tablet with BT, DTS/UNII a/b/g/n/ac

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C

Date Of Issue:

January 09, 2019

Prepared by:

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NVLAP Lab code: 200065-0

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	12/26/2018	Initial Issue	
V2	1/9/2019	Updated Section 2,5.5,6 and Removed GSM technology from the report.	K.Kedida

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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: WCDMA/LTE Tablet with BT, DTS/UNII a/b/g/n/ac

MODEL: SM-T927A

SERIAL NUMBER: Conducted: R32K7002LNR, R32K7002LVV
Radiated: R32K8001VAZ, R32K8001V7F

DATE TESTED: AUGUST 8 – DECEMBER 18, 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Compliant

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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.

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UL Verification Services Inc

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, KDB 558074 D01 v5, and ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. 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.

47173 Benicia Street	47266 Benicia Street	47658 Kato Rd.
<input type="checkbox"/> Chamber A (IC:2324B-1)	<input type="checkbox"/> Chamber D (IC:22541-1)	<input type="checkbox"/> Chamber I (IC: 2324A-5)
<input type="checkbox"/> Chamber B (IC:2324B-2)	<input type="checkbox"/> Chamber E (IC:22541-2)	<input type="checkbox"/> Chamber J (IC: 2324A-6)
<input type="checkbox"/> Chamber C (IC:2324B-3)	<input type="checkbox"/> Chamber F (IC:22541-3)	<input checked="" type="checkbox"/> Chamber K (IC: 2324A-1)
	<input type="checkbox"/> Chamber G (IC:22541-4)	<input checked="" type="checkbox"/> Chamber L (IC: 2324A-3)
	<input type="checkbox"/> Chamber H (IC:22541-5)	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

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

5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a WCDMA/LTE Tablet with BT, DTS/UNII a/b/g/n/ac.

5.2. 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	4.62	2.90

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antenna, with a maximum gain of 1.71 dBi.

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was T927A.001

5.5. 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 output power 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 and Z it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	EP-TA300	R37K5PK1GA3SE3	N/A
Earphone	Samsung	N/A	N/A	N/A

I/O CABLES (CONDUCTED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Antenna	1	RF	Shielded	0.2	To PSA
2	USB Type C	1	USB Type C	Un-shielded	1	EUT to AC Mains

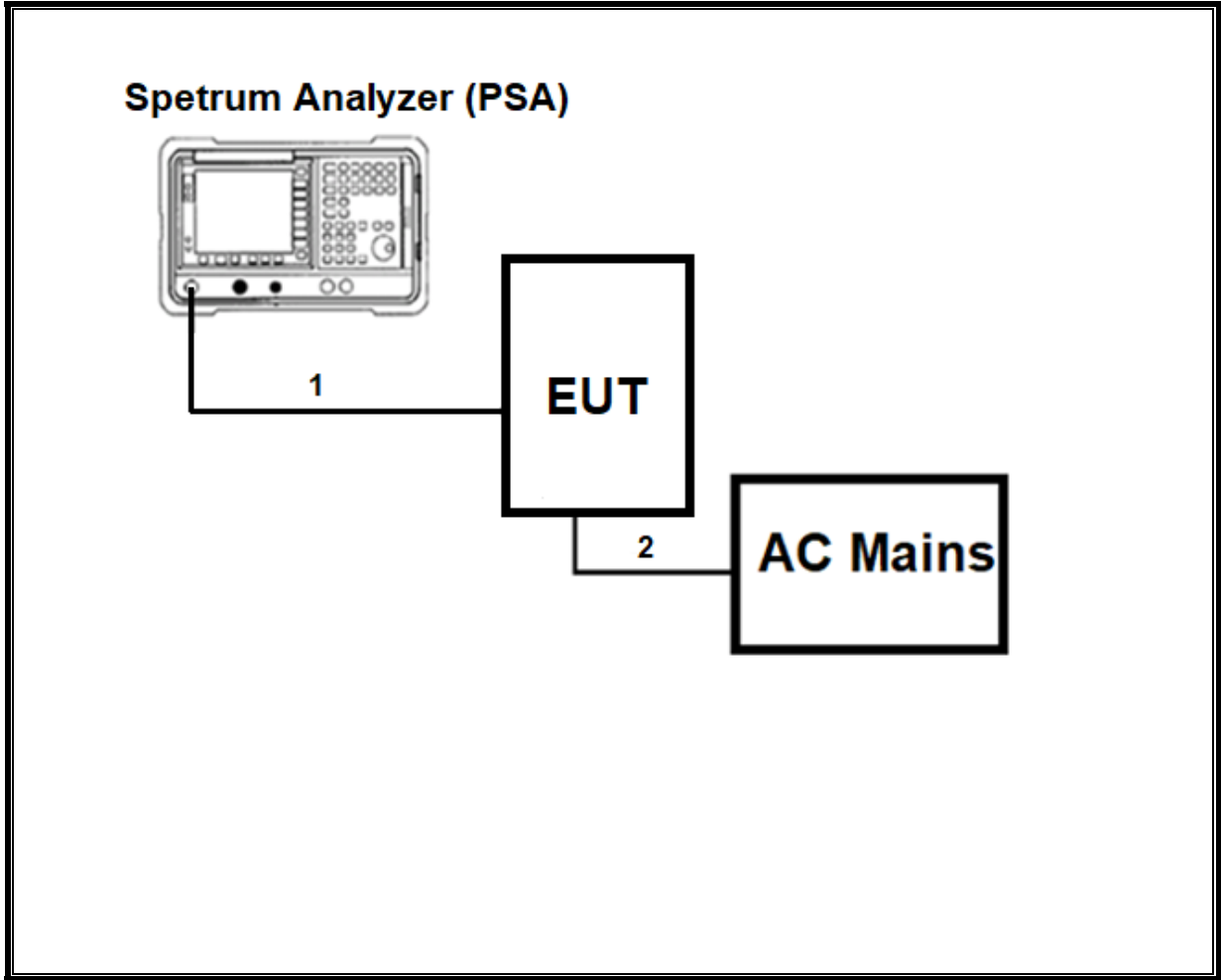
I/O CABLES (RADIATED AND CONDUCTED EMISSIONS)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB Type C	1	USB Type C	Shielded	1	N/A
2	earphone	1	3.5mm	Un-shielded	1	N/A

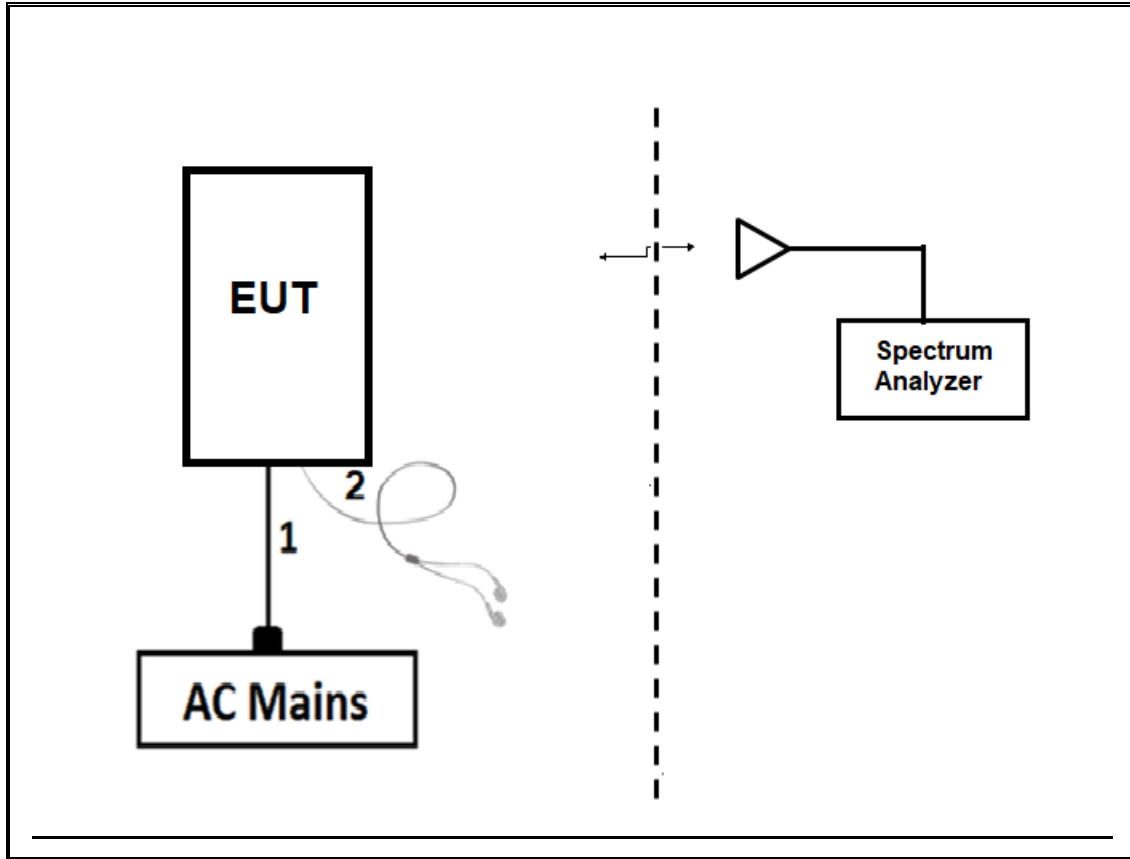
TEST SETUP

The EUT is a stand alone. Test software exercised the radio card.

CONDCUTED TEST SETUP DIAGRAM



RADIATED AND AC LINE CONDUCTED EMISSIONS SETUP DIAGRAM



6. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10-2013 Section 11.6.

6 dB BW: ANSI C63.10 Section 11.8.1. Option 1

Peak Output Power: ANSI C63.10-2013 Section 11.9.1.

Output Power: ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

Power Spectral Density: ANSI C63.10 Section 11.10.2 Method PKPSD.

Radiated emissions non-restricted frequency bands: ANSI C63.10 Section 11.11.

Radiated emissions restricted frequency bands: ANSI C63.10 Section 11.12.1.

Conducted emissions in restricted frequency bands: ANSI C63.10 Section 11.12.2.

Band-edge: ANSI C63.10 Subclause -11.13.3.4 Integration method -Trace averaging across ON and OFF times DC correction

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

7. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T447	7/24/2019	7/24/2018
Amplifier, 10kHz to 1GHz, 32dB	Sonoma Instrument Co.	8447D	T15	08/14/2019	08/14/2018
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T345	04/25/2019	04/25/2018
RF Amplifier, 1-18GHz	MITEQ	AFS42-00101800-25-S-42	T1568	6/21/2019	6/21/2018
Antenna, Active Loop 9kHz-30MHz	Com-Power Corp.	AL-130R	T1866	10/10/2018	10/10/2017
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179375	5/8/2019	5/8/2018
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179522	5/11/2019	5/11/2018
18 - 26.5 GHz Horn Antenna	Seavey Division	MWH-1826/B	T89	01/18/2019	01/18/2018
Pre-Amp 1-26.5 GHz	Agilent	8449B	T404	03/09/2019	03/09/2018
EMI Reciever	Rohde & Schwarz	ESR	T1436	02/21/2019	02/21/2018
L.I.S.N.	FCC INC.	FCC LISN 50/250	T1310	06/15/2019	06/15/2018
L.I.S.N.	FCC INC.	FCC LISN 50/250	T24	03/06/2019	03/06/2018
Thermometer - Digital	Control Company	14-650-118	PRE0177861	02/26/2019	02/26/2018

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 8.5, Aug 12, 2018
Antenna Port Software	UL	UL RF	Ver 9.5, Dec 1, 2016

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

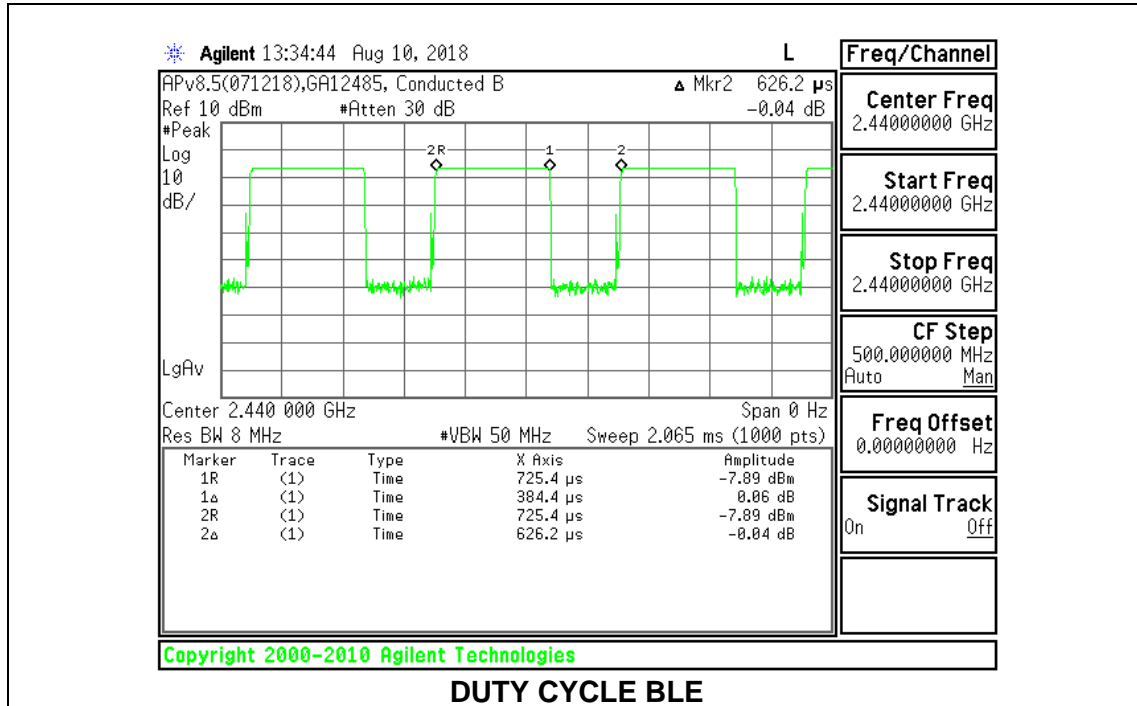
None; for reporting purposes only.

PROCEDURE

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						
BLE	0.384	0.626	0.614	61.39%	2.12	2.601

DUTY CYCLE PLOT



DUTY CYCLE BLE

8.2. 99% BANDWIDTH

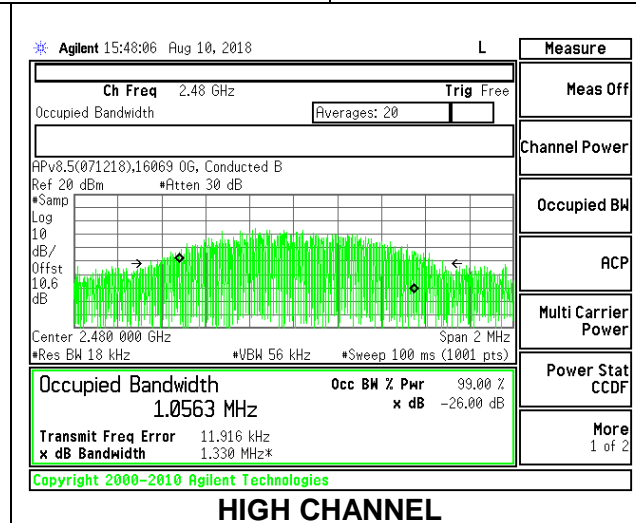
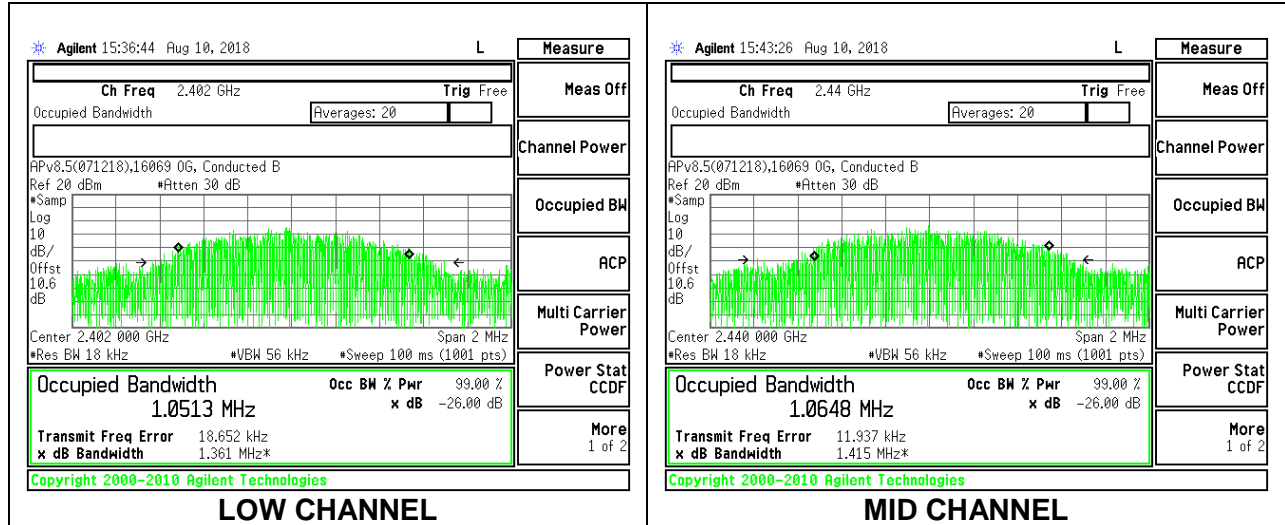
LIMITS

None; for reporting purposes only.

RESULTS

8.2.1. BLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0510
Middle	2440	1.0650
High	2480	1.0560



8.3. 6 dB BANDWIDTH

LIMITS

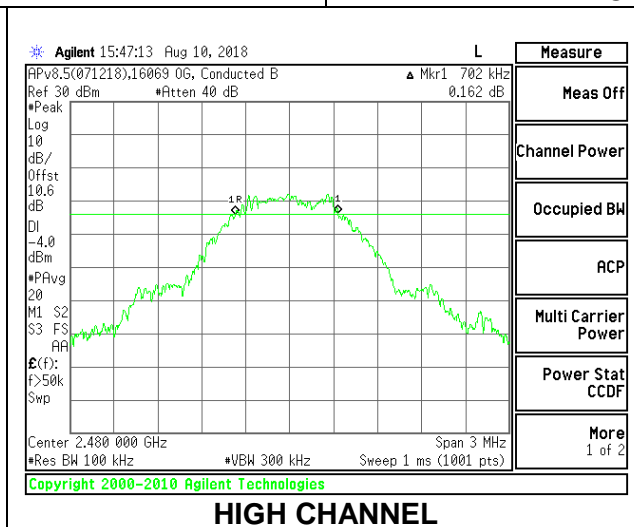
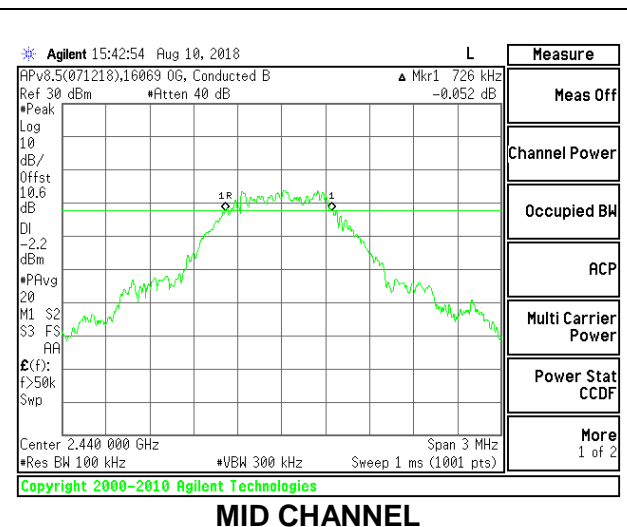
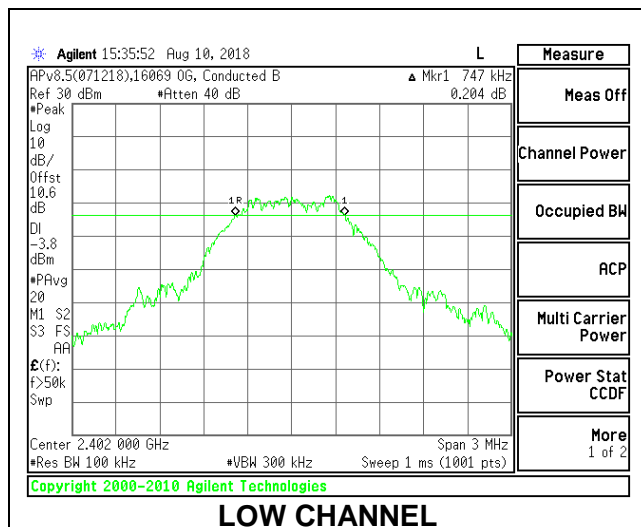
FCC §15.407 (e)

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

RESULTS

8.3.1. BLE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.7470	0.5
Middle	2440	0.7260	0.5
High	2480	0.7020	0.5



8.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

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 a power meter. The cable assembly insertion loss was entered as an offset in the power meter to allow for a gated peak reading of power.

RESULTS

8.4.1. BLE

Tested By:	16069 OG
Date:	8/10/2018

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	3.32	30	-26.68
Middle	2440	4.62	30	-25.38
High	2480	2.77	30	-27.23

8.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter. The cable assembly insertion loss was entered as an offset in the power meter to allow for a gated average reading of power.

RESULTS

8.5.1. BLE

Tested By:	16069 OG
Date:	8/10/2018

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	2.72
Middle	2440	4.03
High	2480	2.23

8.6. POWER SPECTRAL DENSITY

LIMITS

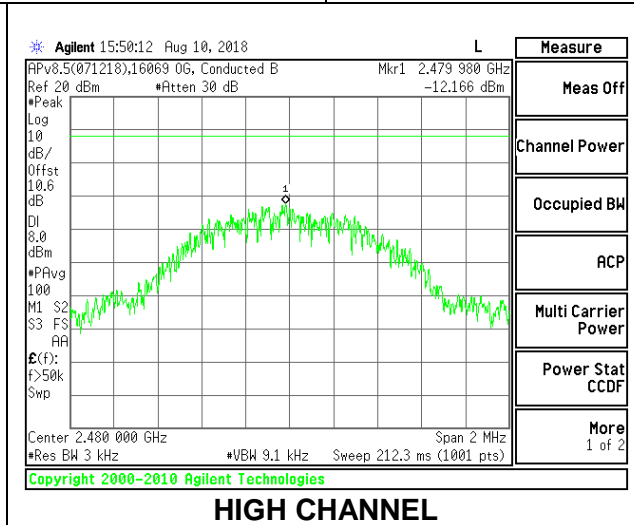
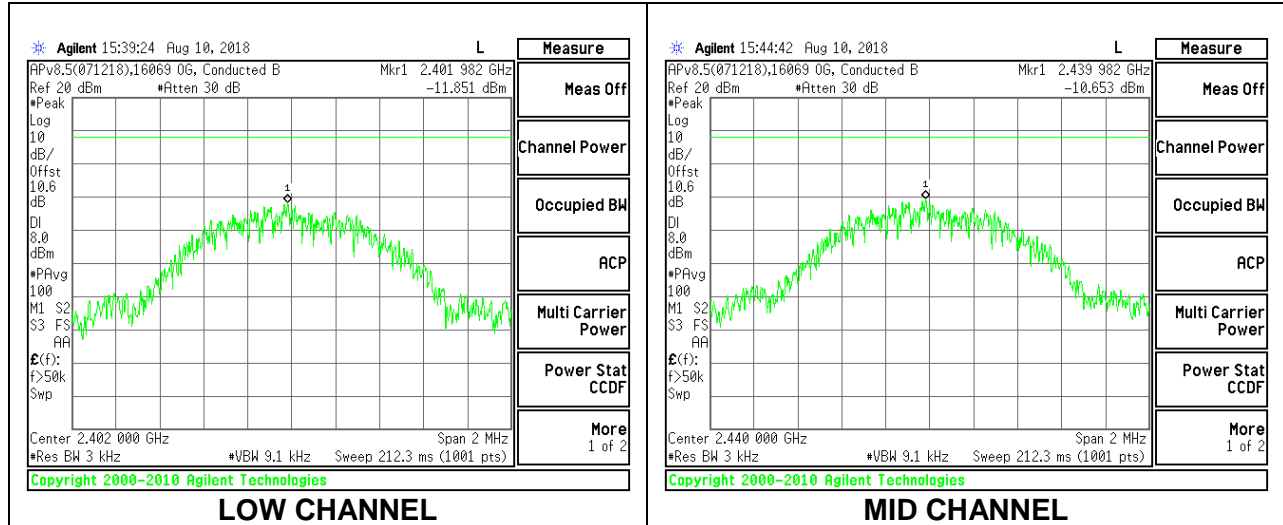
FCC §15.247 (e)

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

8.6.1. BLE

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-11.85	8	-19.85
Middle	2440	-10.65	8	-18.65
High	2480	-12.17	8	-20.17



8.7. CONDUCTED SPURIOUS EMISSIONS

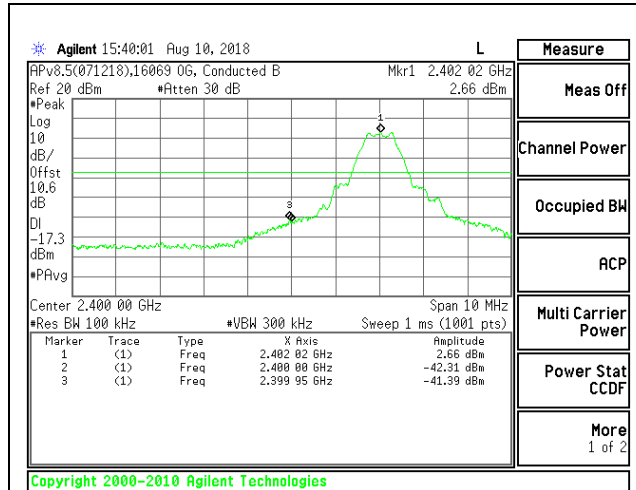
LIMITS

FCC §15.247 (d)

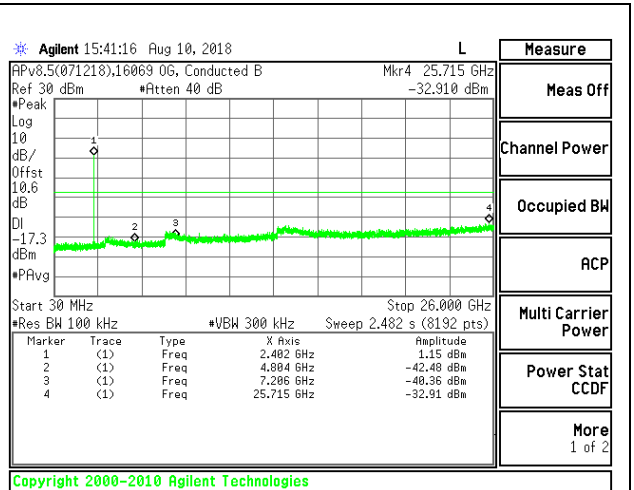
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS

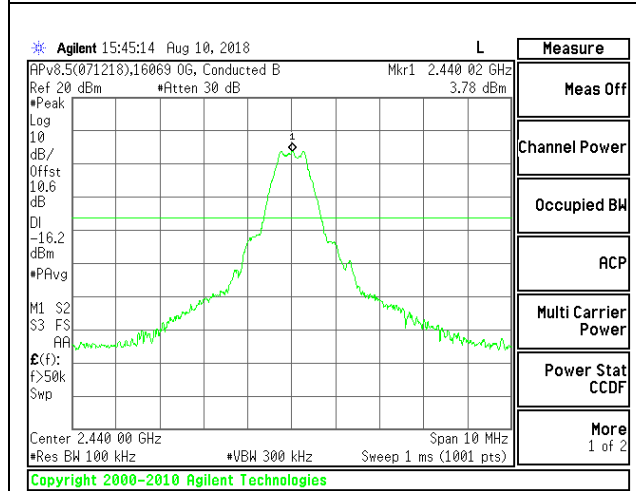
8.7.1. BLE



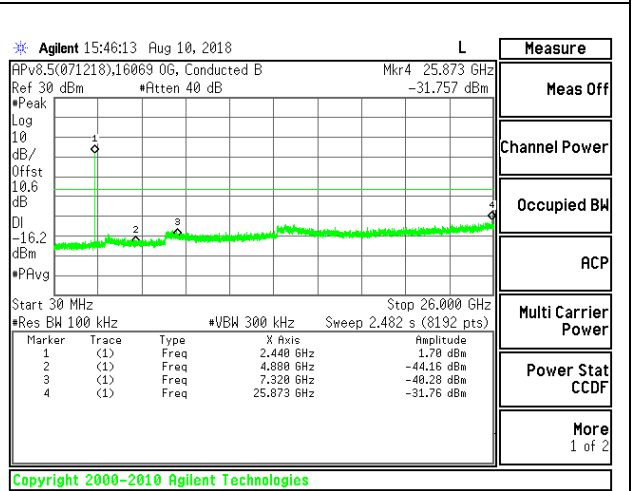
LOW CHANNEL BANDEGE



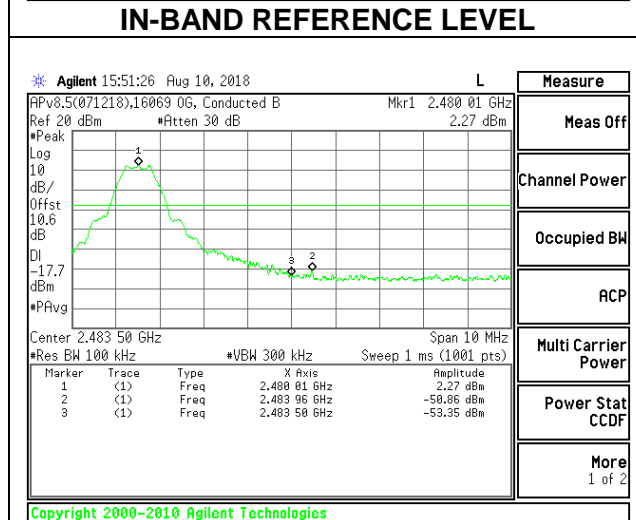
OUT-OF-BAND LOW CHANNEL



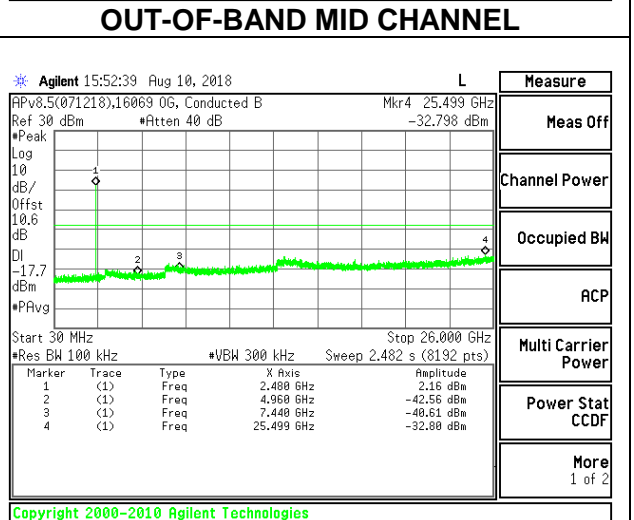
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEGE



OUT-OF-BAND HIGH CHANNEL

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

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.

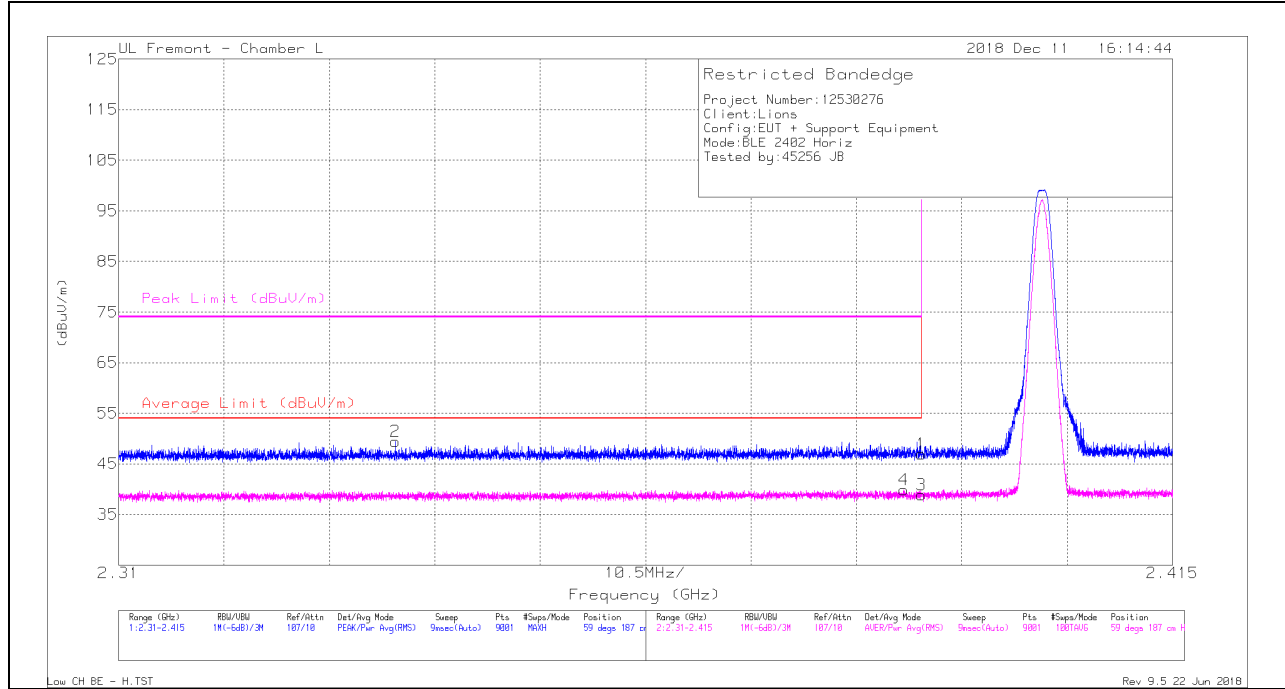
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. BLE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

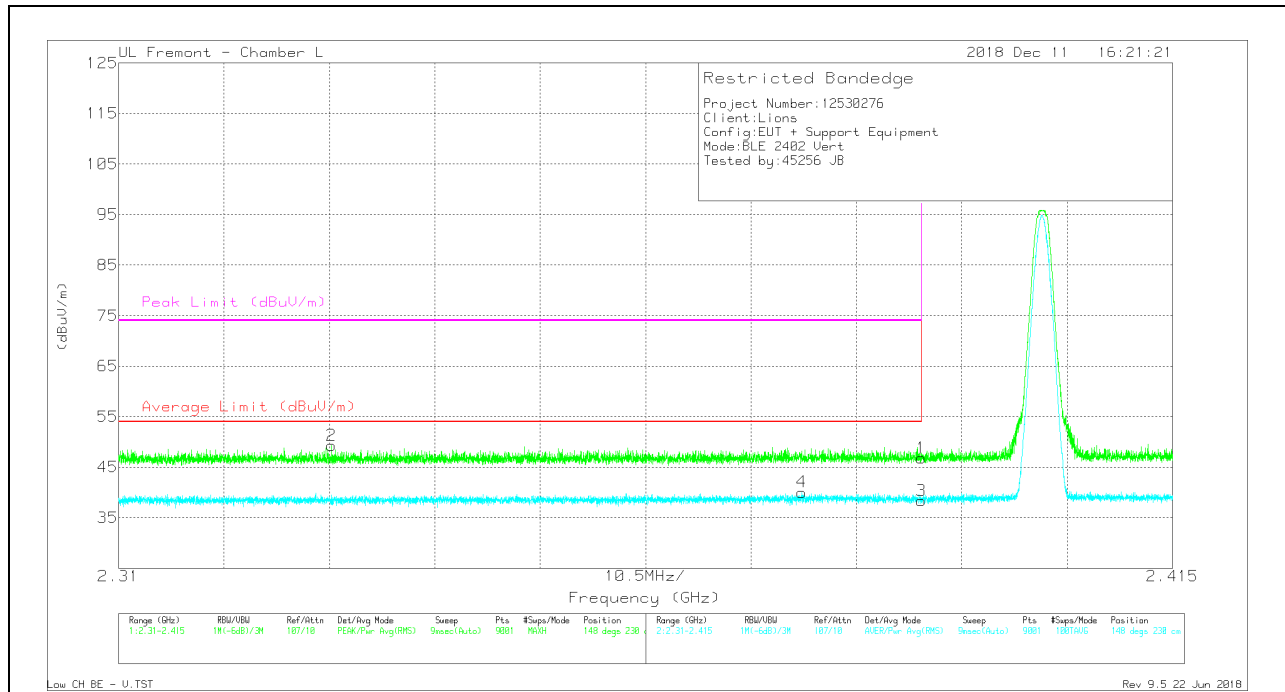
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (dB/m)	Amp/Cb/Fitr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.04	Pk	31.8	-22.9	0	46.94	-	-	74	-27.06	59	187	H
2	* 2.338	40.94	Pk	31.5	-23	0	49.44	-	-	74	-24.56	59	187	H
3	* 2.39	27.82	RMS	31.8	-22.9	2.12	38.84	54	-15.16	-	-	59	187	H
4	* 2.388	28.87	RMS	31.8	-22.9	2.12	39.89	54	-14.11	-	-	59	187	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/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	37.91	Pk	31.8	-22.9	0	46.81	-	-	74	-27.19	148	230	V
2	* 2.331	40.82	Pk	31.5	-23	0	49.32	-	-	74	-24.68	148	230	V
3	* 2.39	27.33	RMS	31.8	-22.9	2.12	38.35	54	-15.65	-	-	148	230	V
4	* 2.378	29.13	RMS	31.7	-22.9	2.12	40.05	54	-13.95	-	-	148	230	V

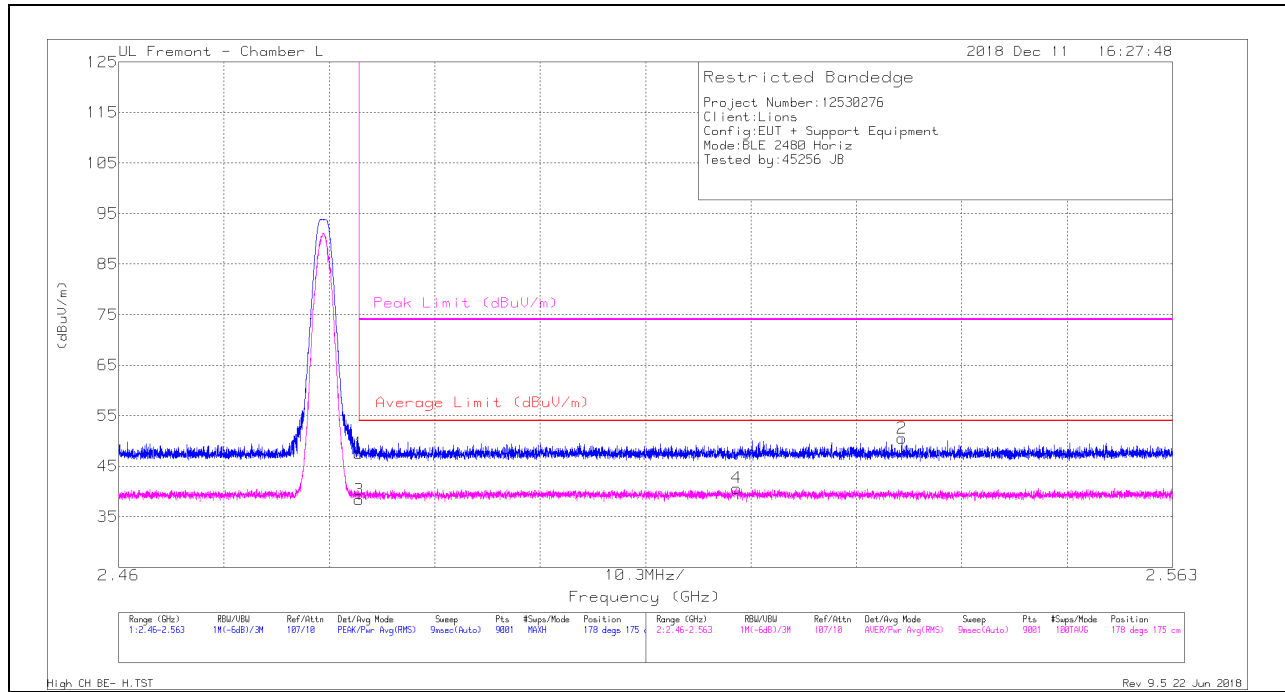
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

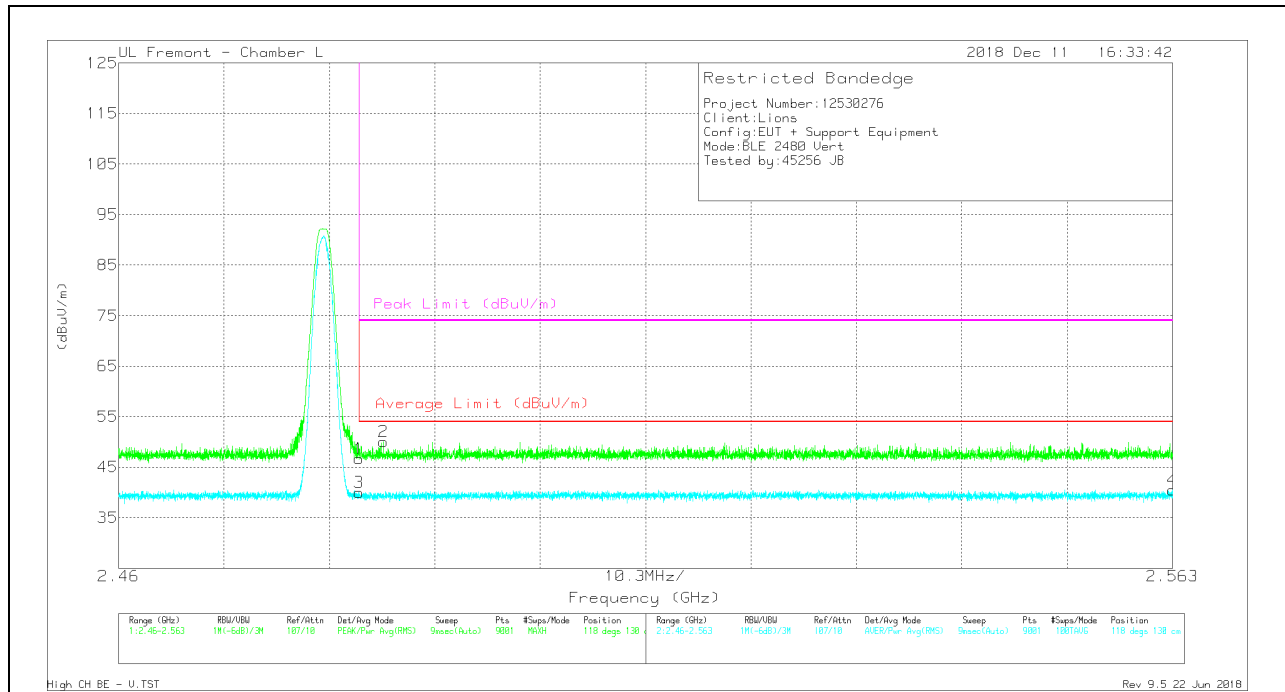
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.01	Pk	32.3	-22.7	0	47.61	-	-	74	-26.39	178	175	H
2	2.537	40.97	Pk	32.3	-22.7	0	50.57	-	-	74	-23.43	178	175	H
3	* 2.484	26.63	RMS	32.3	-22.7	2.12	38.35	54	-15.65	-	-	178	175	H
4	2.52	28.95	RMS	32.3	-22.7	2.12	40.67	54	-13.33	-	-	178	175	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/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	* 2.484	37.04	Pk	32.3	-22.7	0	46.64	-	-	74	-27.36	118	130	V
2	* 2.486	40.47	Pk	32.3	-22.7	0	50.07	-	-	74	-23.93	118	130	V
3	* 2.484	28.23	RMS	32.3	-22.7	2.12	39.95	54	-14.05	-	-	118	130	V
4	2.563	28.57	RMS	32.4	-22.6	2.12	40.49	54	-13.51	-	-	118	130	V

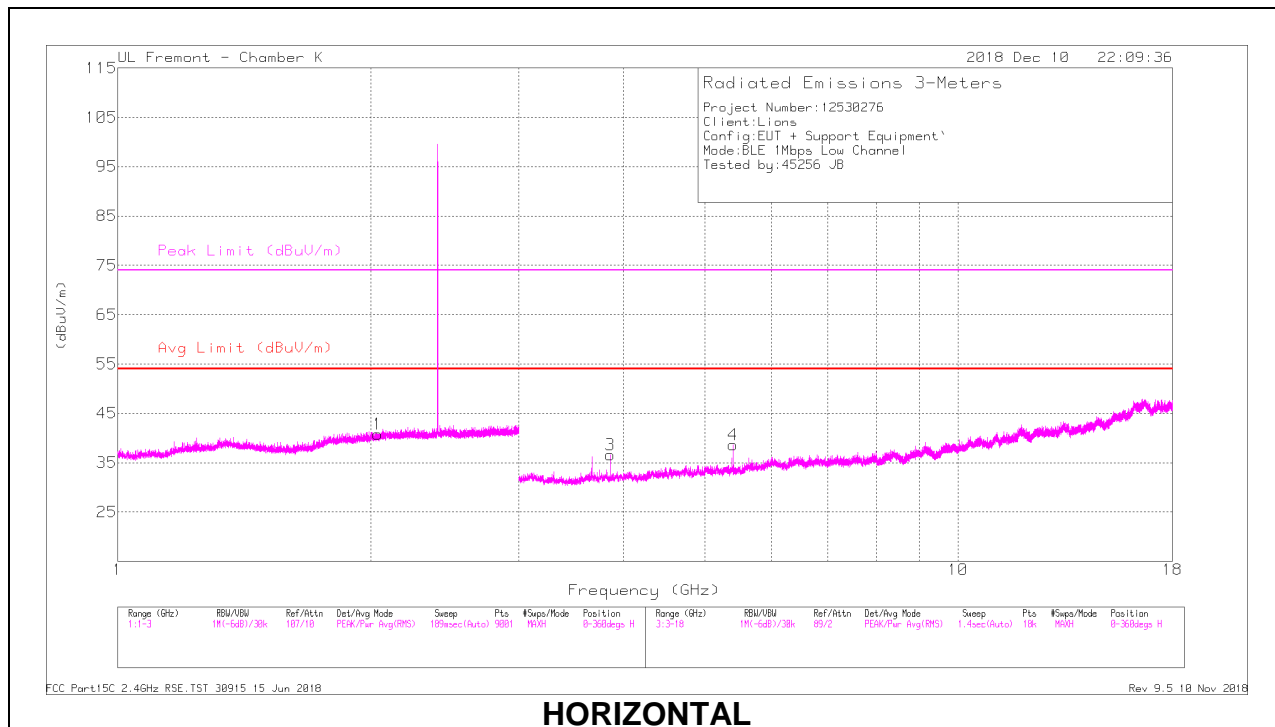
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

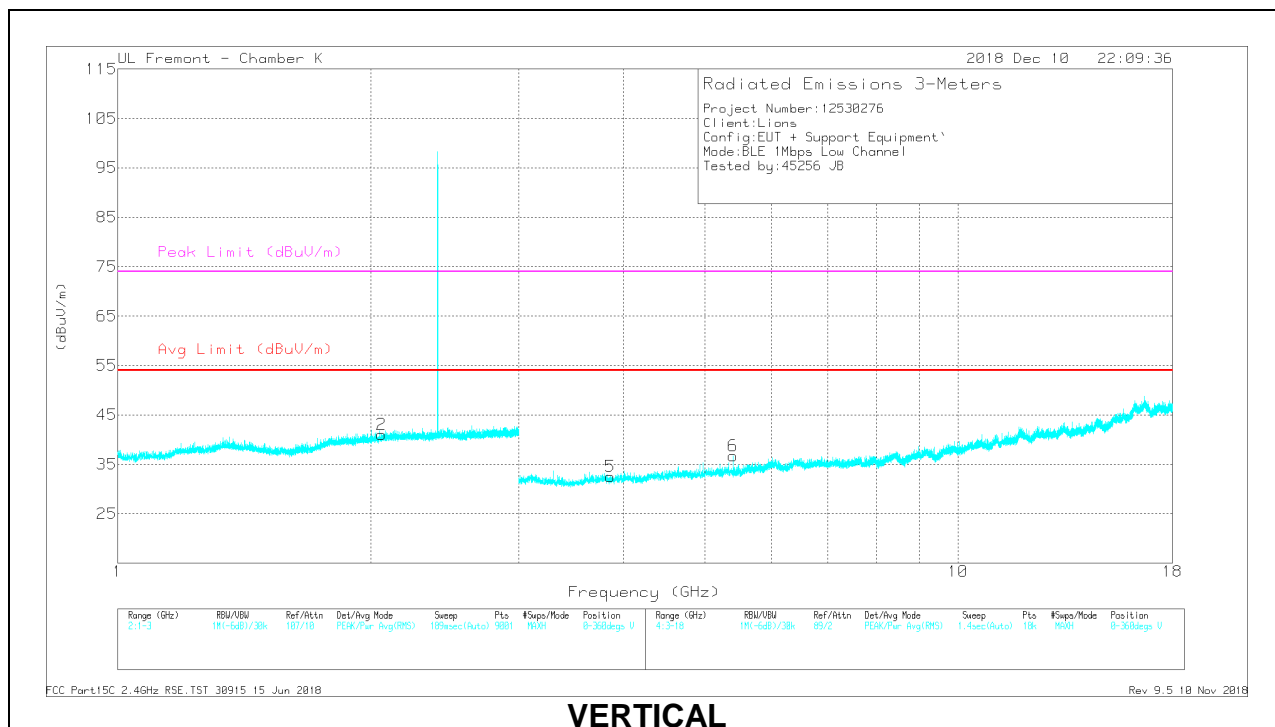
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

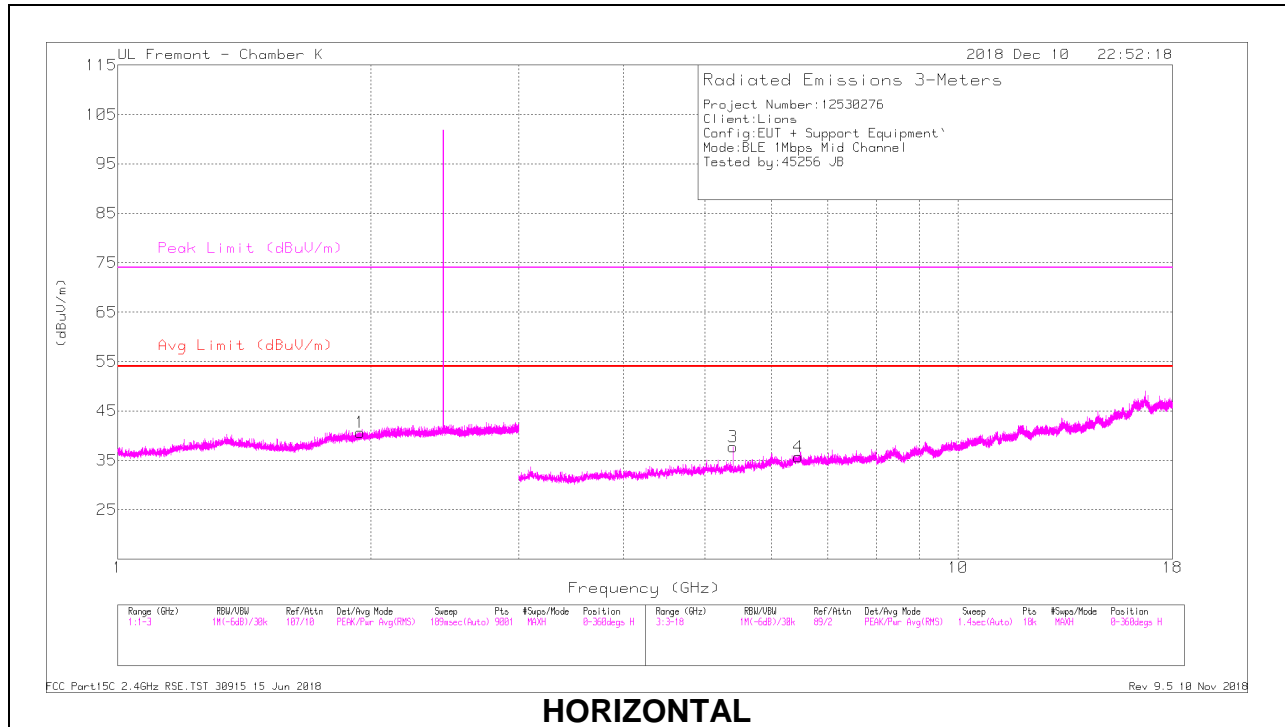
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 3.855	37.61	PK2	33.4	-31.3	0	39.71	-	-	74	-34.29	63	284	H
	* 3.854	28.57	MAv1	33.4	-31.3	2.12	32.79	54	-21.21	-	-	63	284	H
4	* 5.4	38.36	PK2	34.6	-29.5	0	43.46	-	-	74	-30.54	121	103	H
	* 5.4	31.96	MAv1	34.6	-29.5	2.12	39.18	54	-14.82	-	-	121	103	H
5	* 3.854	37.51	PK2	33.4	-31.3	0	39.61	-	-	74	-34.39	255	185	V
	* 3.853	28.53	MAv1	33.4	-31.4	2.12	32.65	54	-21.35	-	-	255	185	V
6	* 5.4	37.62	PK2	34.6	-29.5	0	42.72	-	-	74	-31.28	58	164	V
	* 5.4	29.16	MAv1	34.6	-29.5	2.12	36.38	54	-17.62	-	-	58	164	V
1	2.038	34.03	Pk	31.2	-24.5	0	40.73	-	-	-	-	0-360	200	H
2	2.061	34.21	Pk	31.3	-24.5	0	41.01	-	-	-	-	0-360	100	V

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

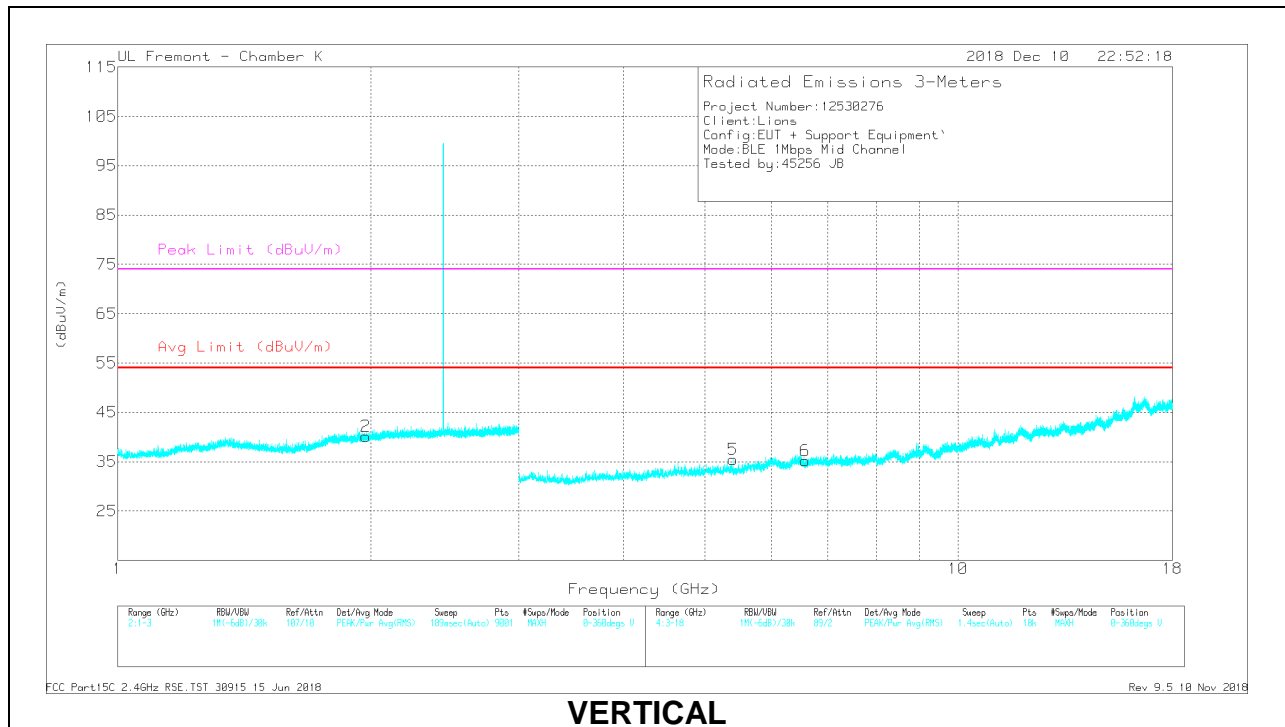
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

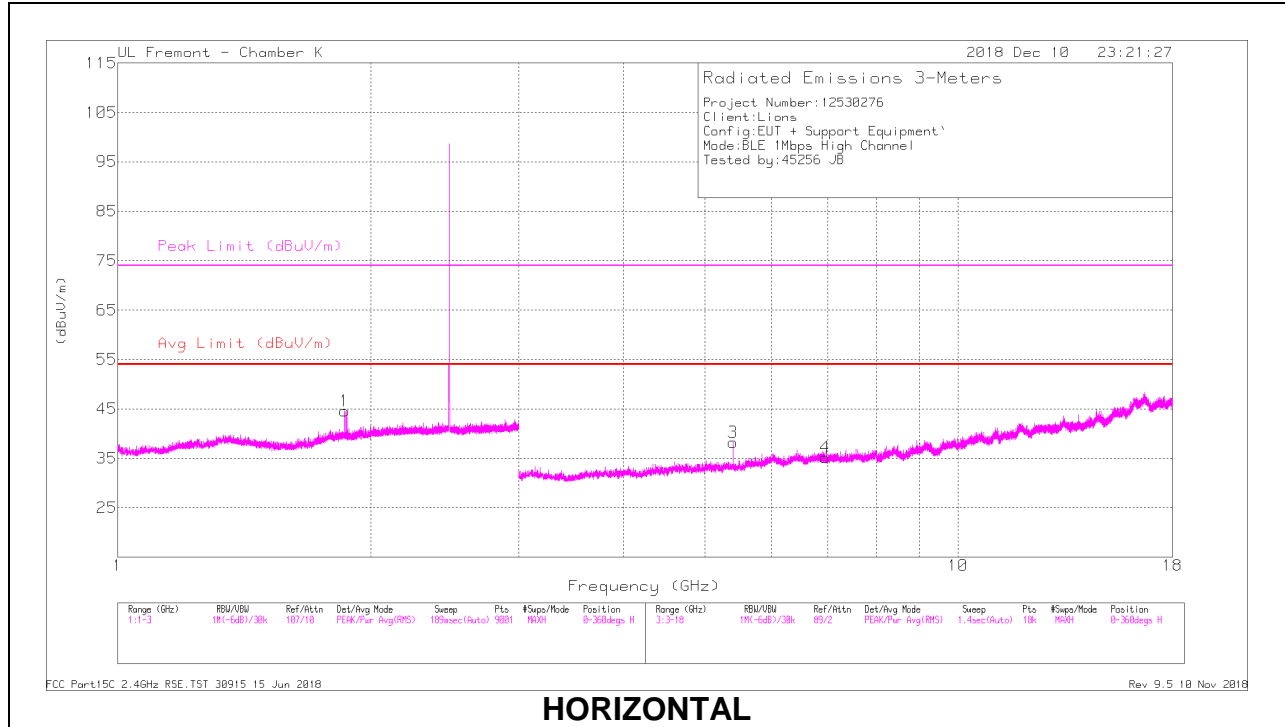
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 5.4	37.66	PK2	34.6	-29.5	0	42.76	-	-	74	-31.24	124	111	H
	* 5.4	32.57	MAv1	34.6	-29.5	2.12	39.79	54	-14.21	-	-	124	111	H
5	* 5.4	37.7	PK2	34.6	-29.4	0	42.9	-	-	74	-31.1	54	245	V
	* 5.4	29.81	MAv1	34.6	-29.5	2.12	37.03	54	-16.97	-	-	54	245	V
1	1.943	34.12	Pk	30.7	-24.2	0	40.62	-	-	-	-	0-360	200	H
2	1.973	33.67	Pk	30.9	-24.4	0	40.17	-	-	-	-	0-360	101	V
4	6.46	26.68	Pk	35.4	-26.4	0	35.68	-	-	-	-	0-360	200	H
6	6.584	27.04	Pk	35.5	-27.3	0	35.24	-	-	-	-	0-360	200	V

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

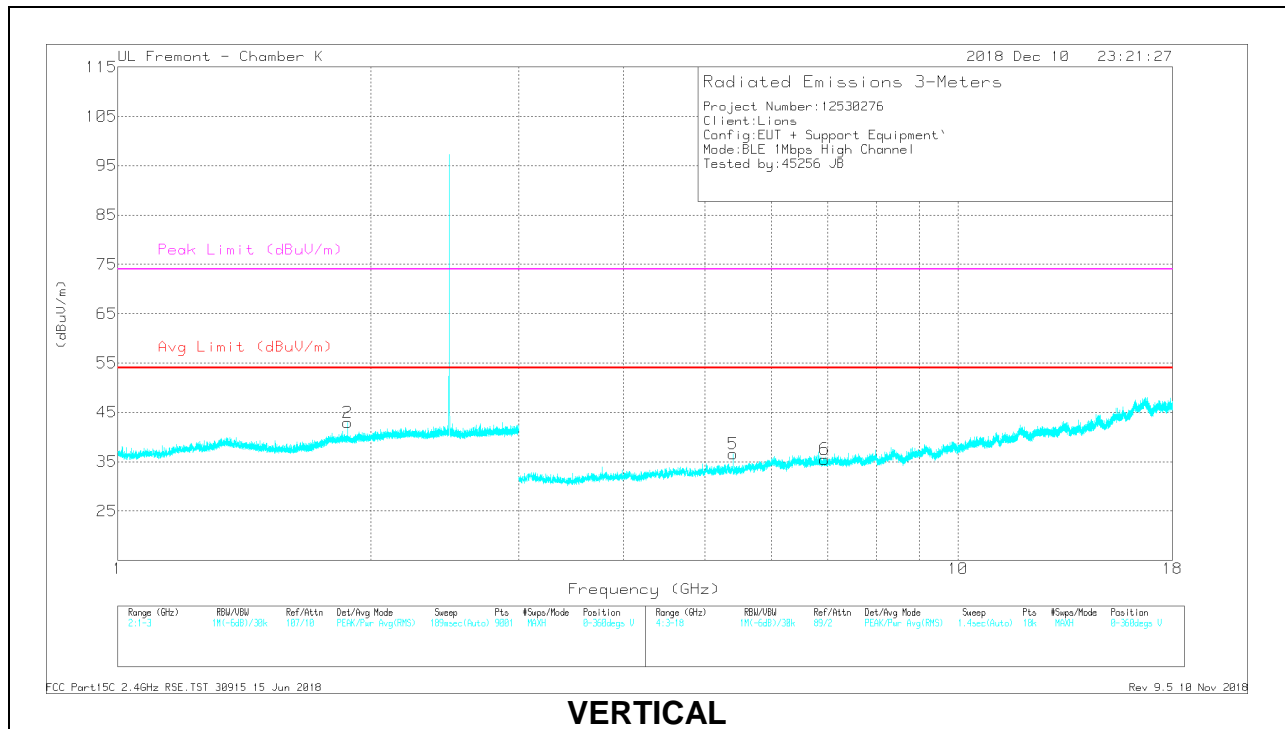
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/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
3	* 5.4	38.22	PK2	34.6	-29.5	0	43.32	-	-	74	-30.68	125	112	H
	* 5.4	32.12	MAv1	34.6	-29.5	2.12	39.34	54	-14.66	-	-	125	112	H
5	* 5.4	37.62	PK2	34.6	-29.4	0	42.82	-	-	74	-31.18	59	175	V
	* 5.4	29.85	MAv1	34.6	-29.5	2.12	37.07	54	-16.93	-	-	59	175	V
1	1.863	38.25	Pk	30.4	-24.1	0	44.55	-	-	-	-	0-360	201	H
2	1.877	36.74	Pk	30.4	-24.2	0	42.94	-	-	-	-	0-360	201	V
4	6.949	26.36	Pk	35.5	-26.7	0	35.16	-	-	-	-	0-360	101	H
6	6.934	26.51	Pk	35.5	-26.5	0	35.51	-	-	-	-	0-360	101	V

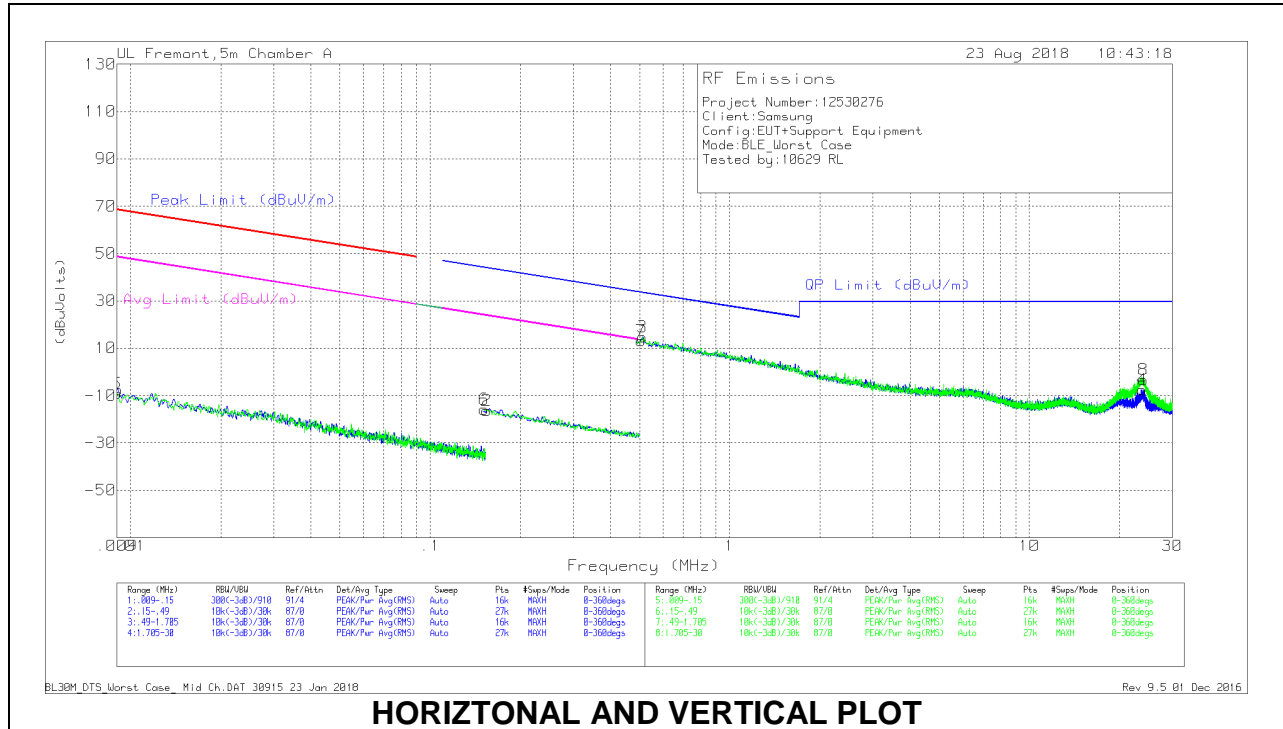
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.3. Worst Case Below 30 MHz

SPURIOUS EMISSIONS 9 kHz TO 30 MHz (WORST-CASE CONFIGURATION)



HORIZONTAL AND VERTICAL PLOT

Below 30 MHz Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
5	.00901	53.73	Pk	15.7	1.4	-80	-9.17	68.49	-77.66	48.49	-57.66	-	-	0-360
1	.00908	55.39	Pk	15.7	1.4	-80	-7.51	68.42	-75.93	48.42	-55.93	-	-	0-360
6	.15135	48.88	Pk	13.8	1.5	-80	-15.82	44.02	-59.84	24.02	-39.84	-	-	0-360
2	.15438	48.28	Pk	13.8	1.5	-80	-16.42	43.85	-60.27	23.85	-40.27	-	-	0-360

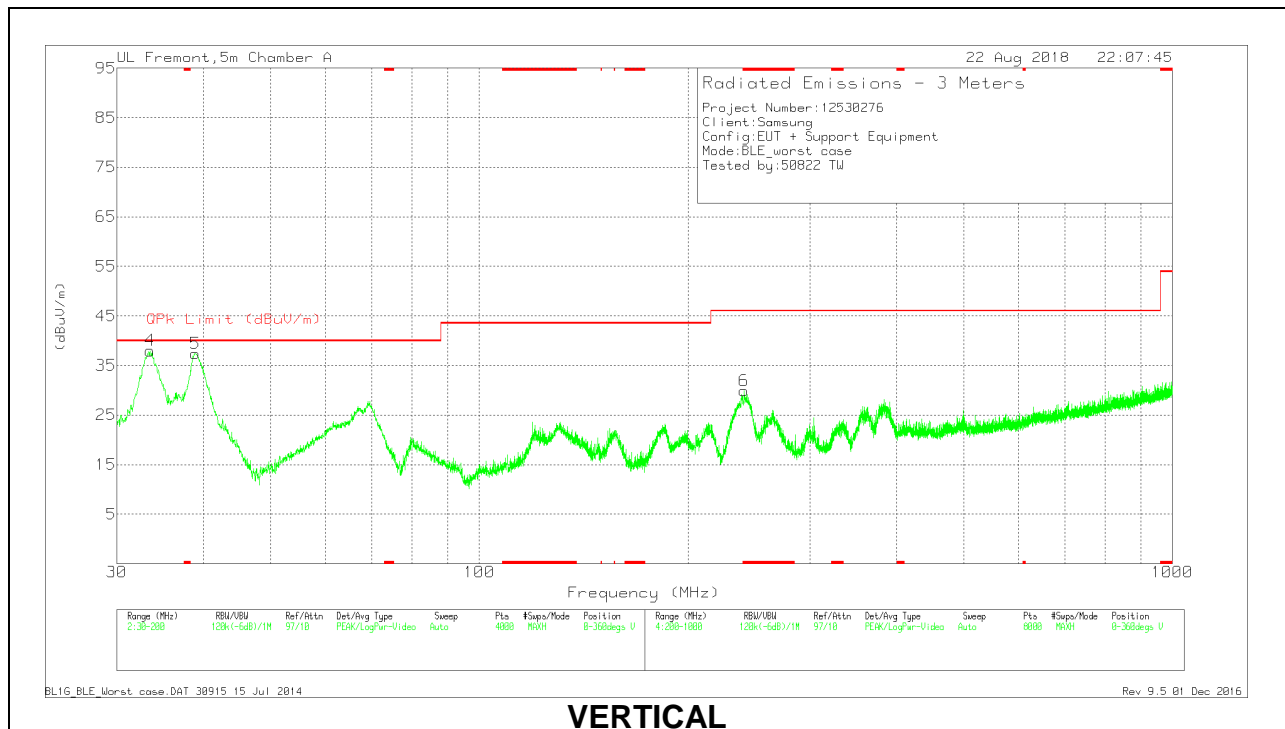
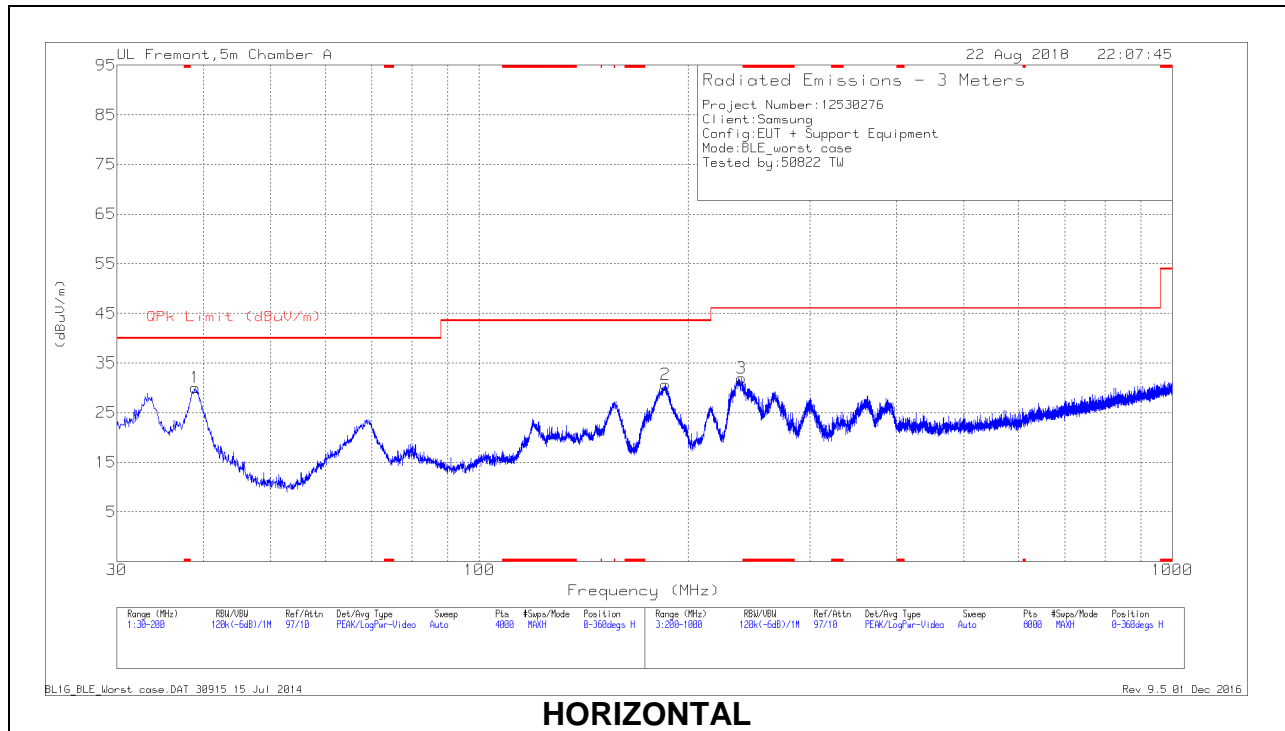
Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
7	.50611	37.76	Pk	13.9	1.5	-40	13.16	-	-	-	-	33.52	-20.36	0-360
3	.51098	39.23	Pk	13.9	1.5	-40	14.63	-	-	-	-	33.44	-18.81	0-360
4	23.77221	17.64	Pk	13.1	1.7	-40	-7.56	-	-	-	-	29.5	-37.06	0-360
8	24.01325	21.98	Pk	13	1.7	-40	-3.32	-	-	-	-	29.5	-32.82	0-360

Pk - Peak detector

9.4. Worst Case Below 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



Below 1GHz Data

Radiated Emissions

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 240.9053	42.52	Pk	17.4	-30	29.92	46.02	-16.1	0-360	101	V
4	33.4859	45.28	Pk	24.4	-31.7	37.98	40	-2.02	0-360	100	V
	33.5373	42.47	Qp	24.3	-31.7	35.07	40	-4.93	215	104	V
1	38.9273	41.2	Pk	20.4	-31.6	30	40	-10	0-360	399	H
5	38.9273	48.63	Pk	20.4	-31.6	37.43	40	-2.57	0-360	100	V
	39.0089	46	Qp	20.3	-31.6	34.7	40	-5.3	236	105	V
2	185.5052	44.02	Pk	17	-30.3	30.72	43.52	-12.8	0-360	199	H
3	239.2051	44.59	Pk	17.4	-30	31.99	46.02	-14.03	0-360	99	H

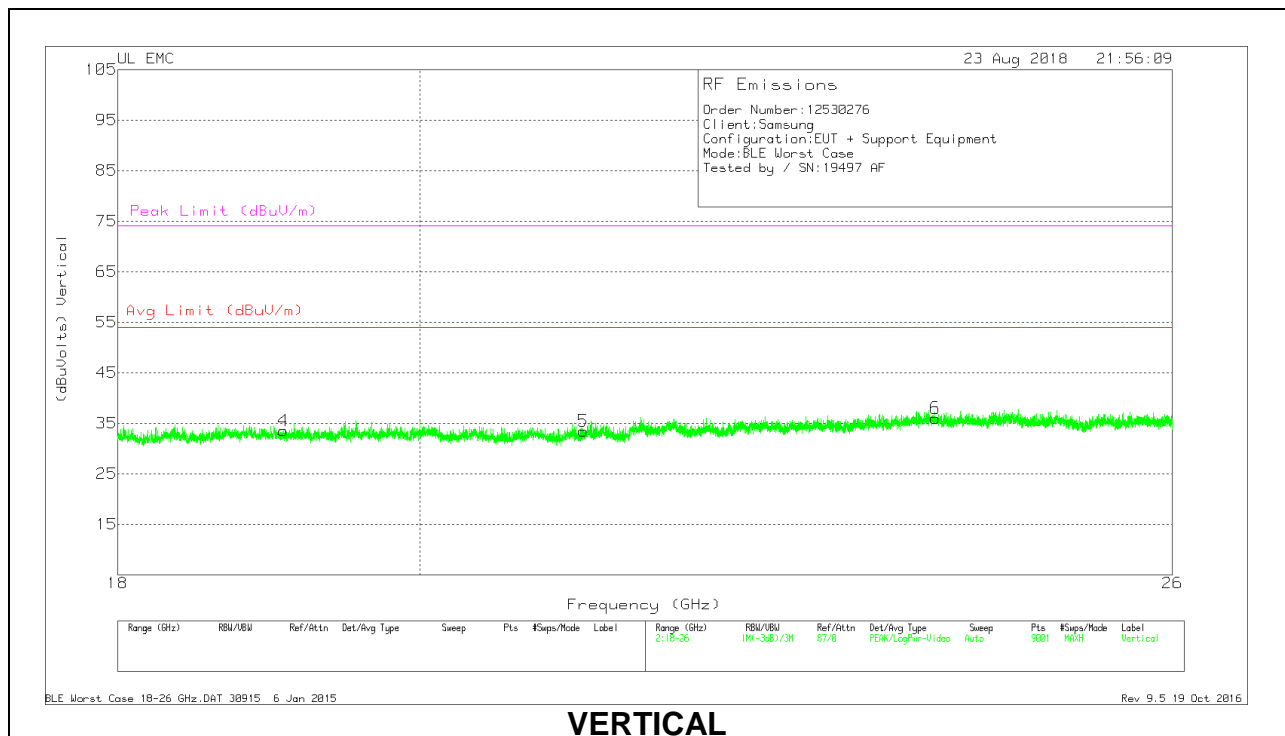
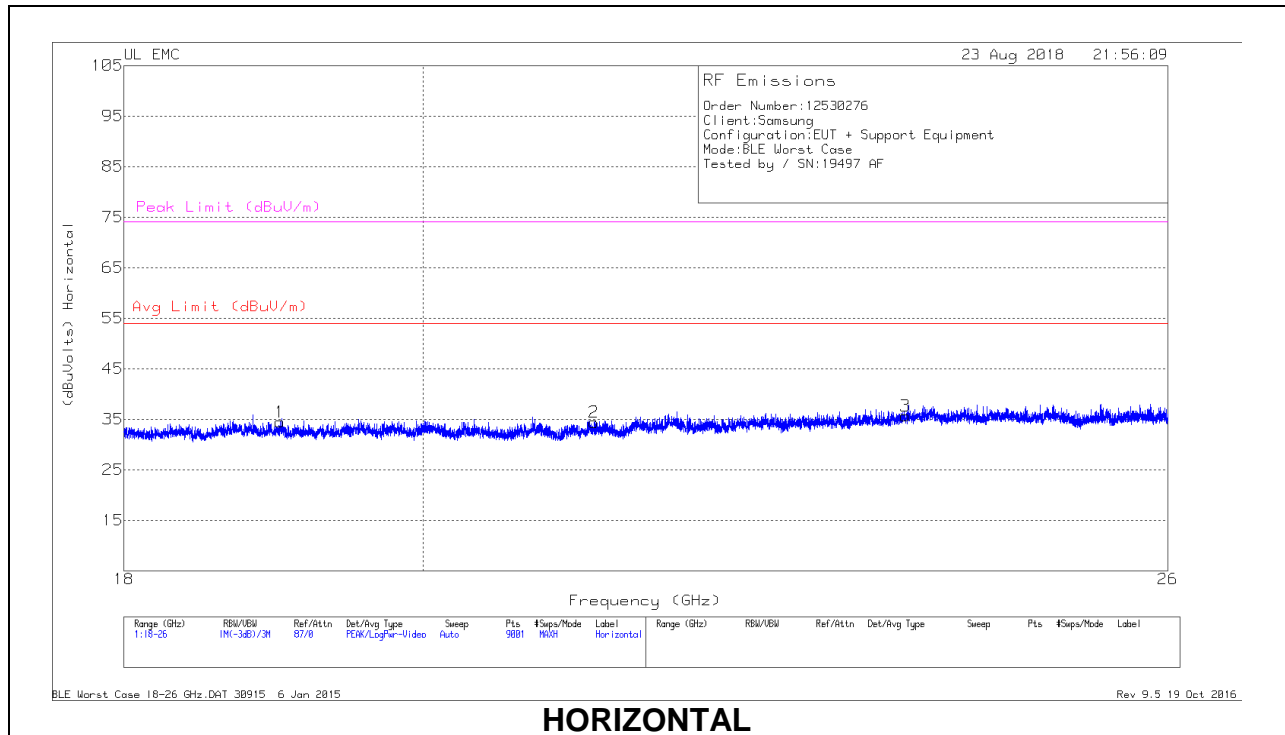
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

9.5. Worst Case 18-26 GHz

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



18 – 26GHz DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	DC Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	19.017	36.47	Pk	32.2	-24.7	-9.5	0	34.47	54	-19.53	74	-39.53
2	21.242	35.98	Pk	33.2	-25.3	-9.5	0	34.38	54	-19.62	74	-39.62
3	23.702	35.76	Pk	33.7	-24.3	-9.5	0	35.66	54	-18.34	74	-38.34
4	19.07	35.76	Pk	32.2	-24.9	-9.5	0	33.56	54	-20.44	74	-40.44
5	21.172	35.13	Pk	33	-25.2	-9.5	0	33.43	54	-20.57	74	-40.57
6	23.938	36.19	Pk	33.4	-24.1	-9.5	0	35.99	54	-18.01	74	-38.01

Pk - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

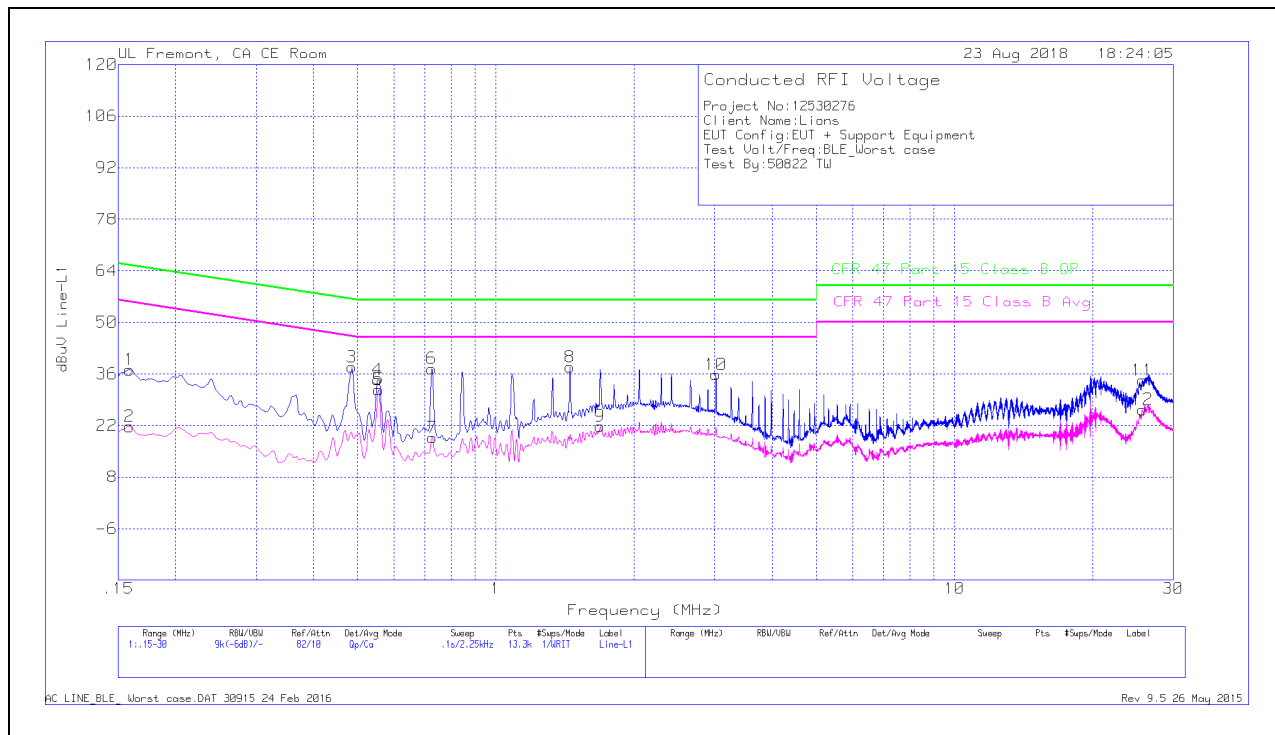
Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

RESULTS

10.1.1. AC Power Line Norm

LINE 1 RESULTS

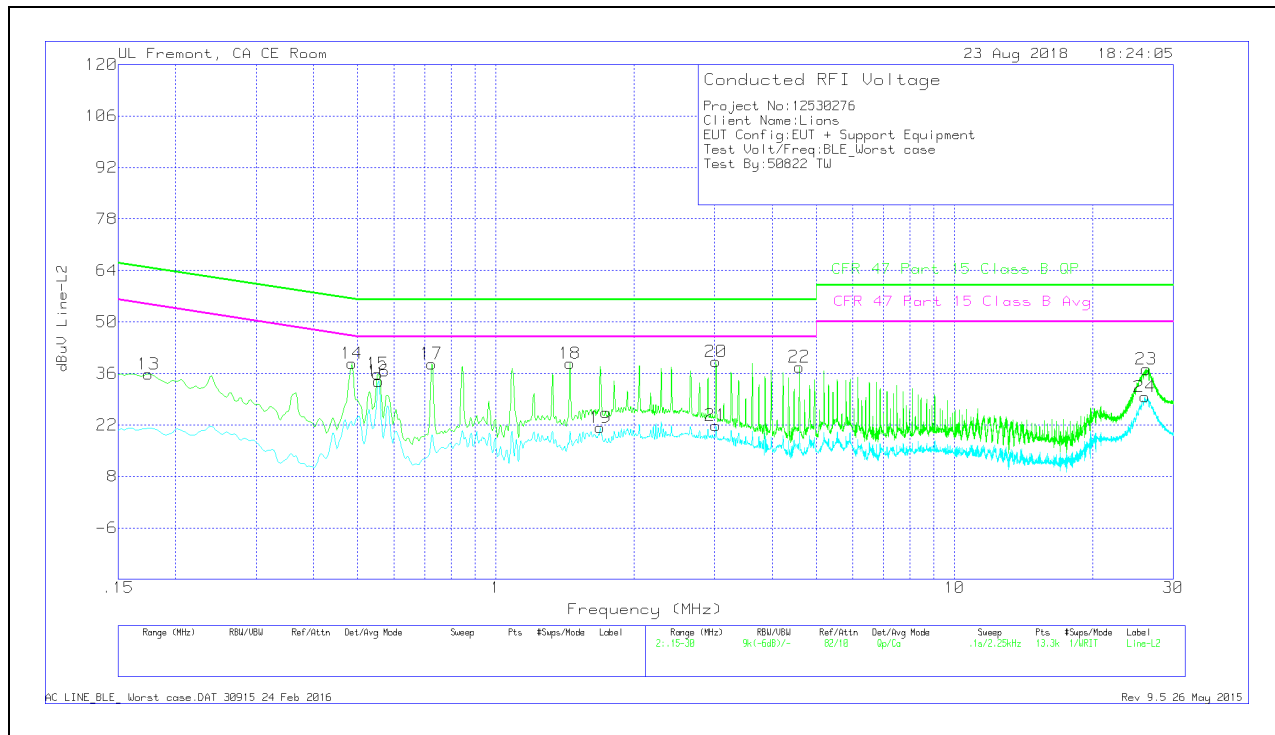


Trace Markers

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.159	26.92	Qp	.1	0	10.1	37.12	65.52	-28.4	-	-
2	.159	11.52	Ca	.1	0	10.1	21.72	-	-	55.52	-33.8
3	.48525	27.72	Qp	0	0	10.1	37.82	56.25	-18.43	-	-
4	.55275	24.3	Qp	0	0	10.1	34.4	56	-21.6	-	-
5	.555	21.68	Ca	0	0	10.1	31.78	-	-	46	-14.22
6	.72375	27.33	Qp	0	0	10.1	37.43	56	-18.57	-	-
7	.726	8.62	Ca	0	0	10.1	18.72	-	-	46	-27.28
8	1.4505	27.67	Qp	0	.1	10.1	37.87	56	-18.13	-	-
9	1.689	11.62	Ca	0	.1	10.1	21.82	-	-	46	-24.18
10	3.01875	25.58	Qp	0	.1	10.1	35.78	56	-20.22	-	-
11	25.69875	23.32	Qp	.1	.3	10.5	34.22	60	-25.78	-	-
12	25.6965	15.38	Ca	.1	.3	10.5	26.28	-	-	50	-23.72

Qp - Quasi-Peak detector
 Ca - CISPR average detection

LINE 2 RESULTS



Trace Markers

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.17475	25.72	Qp	0	0	10.1	35.82	64.73	-28.91	-	-
14	.48525	28.58	Qp	0	0	10.1	38.68	56.25	-17.57	-	-
15	.55275	25.75	Qp	0	0	10.1	35.85	56	-20.15	-	-
16	.555	23.78	Ca	0	0	10.1	33.88	-	-	46	-12.12
17	.72375	28.49	Qp	0	0	10.1	38.59	56	-17.41	-	-
18	1.4505	28.47	Qp	0	.1	10.1	38.67	56	-17.33	-	-
19	1.689	11.06	Ca	0	.1	10.1	21.26	-	-	46	-24.74
20	3.01875	29.05	Qp	0	.1	10.1	39.25	56	-16.75	-	-
21	3.01875	11.65	Ca	0	.1	10.1	21.85	-	-	46	-24.15
22	4.587	27.56	Qp	0	.1	10.1	37.76	56	-18.24	-	-
23	26.196	26.21	Qp	.1	.3	10.5	37.11	60	-22.89	-	-
24	25.998	18.71	Ca	.1	.3	10.5	29.61	-	-	50	-20.39

Qp - Quasi-Peak detector
 Ca - CISPR average detection