FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-247 ISSUE 1

BLUETOOTH LOW ENERGY CERTIFICATION TEST REPORT

FOR

CELLULAR PHONE WITH BLUETOOTH AND WLAN RADIOS

MODEL NUMBER: A1778

FCC ID: BCG-E3091A
IC: 579C-E3091A

REPORT NUMBER: 16U23328-E2V5

ISSUE DATE: AUGUST 26, 2016

Prepared for
APPLE, INC.
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	07/07/2016	Initial Issue	Eric Yu
V2	0715/2016	Revised report to address TCB's questions	Tony Li
V3	07/28/2016	Revised Section 8.1 test procedure	Tina Chu
V4	08/24/2016	Updated Power, PSD for high power base on client new target power	Joe Vang
V5	08/26/2016	Updated Page 58.	Tina Chu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE, INC.
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: CELLULAR PHONE WITH BLUETOOTH AND WLAN RADIOS

MODEL: A1778

SERIAL NUMBER: C7CRP0NGHCWC (CONDUCTED);
C7CQV04NH2GR (RADIATED)

DATE TESTED: APRIL14, 2016 – AUGUST 26, 2016

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

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 any government.

Approved & Released For
UL Verification Services Inc. By:

CHIN PANG
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UL VERIFICATION SERVICES INC.

Prepared By:

ERIC YU
EMC ENGINEER
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 v03r05, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 Issue 1.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, 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
☐ Chamber A	☒ Chamber D
☐ Chamber B	☒ Chamber E
☐ Chamber C	☐ Chamber F
	☐ Chamber G
	☐ Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

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:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Radiated Disturbance,1000 to 18000 MHz	4.32 dB
Radiated Disturbance,18000 to 26000 MHz	4.45 dB
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. DESCRIPTION OF EUT

The EUT, Model A1778 is a mobile phone with multimedia functions (music, application support, and video), cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/LTE radio, IEEE 802.11a/b/g/n/ac, NFC and Bluetooth radio. The rechargeable battery is not user accessible.

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	16.60	45.71

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna Gain (dBi)
2.4	-2.54

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was BCM4355C0_14.1.39.180

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

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:

BLE: 1 Mbps.

There are two vendors of the WiFi/Bluetooth radio modules: variant 1 and variant 2. The Wi-Fi/Bluetooth radio modules have the same mechanical outline (e.g., the same package dimension and pin-out layout), use the same on-board antenna matching circuit, have an identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances.

Baseline testing was performed on the two variants to determine the worst case on all conducted power and radiated emissions.

For simultaneous transmission of multiple channels from the same antenna in the 2.4GHz and 5GHz bands, tests were conducted for various configurations having the highest power. No noticeable new emission was found.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Dell	Latitude 3540	9J6WQZ1	NA
Laptop Power Supply	Dell	LA65NM130	0JNKWD	NA

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	SMA	Un-Shielded	0.2	To spectrum Analyzer
2	USB	2	USB	Shielded	1	N/A

I/O CABLES (RADIATED ABOVE 1 GHZ)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
None Used						

I/O CABLES (AC POWER CONDUCTED TEST AND BELOW 1 GHZ)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	3	N/A

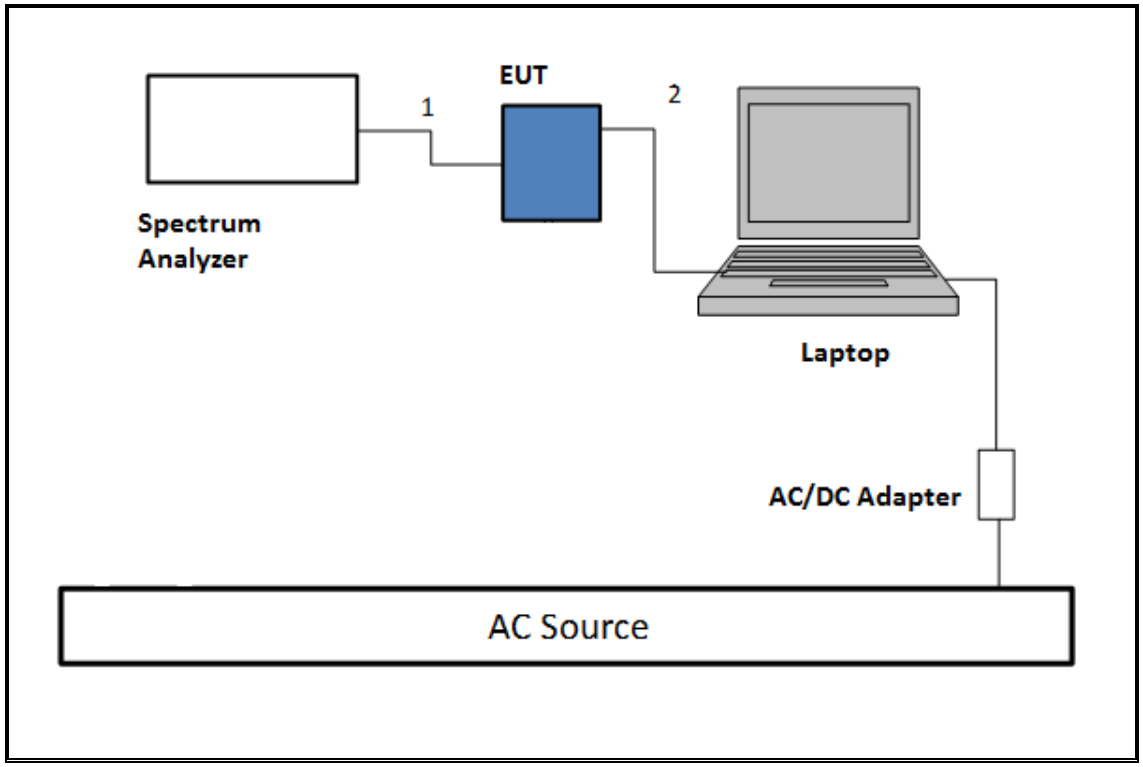
I/O CABLES (AC LINE CONDUCTED: AC/DC ADAPTER &LAPTOP CONFIGURATION)

I/O Cable List						
Cable No	Port	# of identical	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	3	N/A
2	Power Adapter	1	AC	Un-shielded	3	N/A

TEST SETUP- CONDUCTED PORT

The EUT was tested connected to a host Laptop via USB cable adapter and spectrum analyzer to antenna port. Test software exercised the EUT.

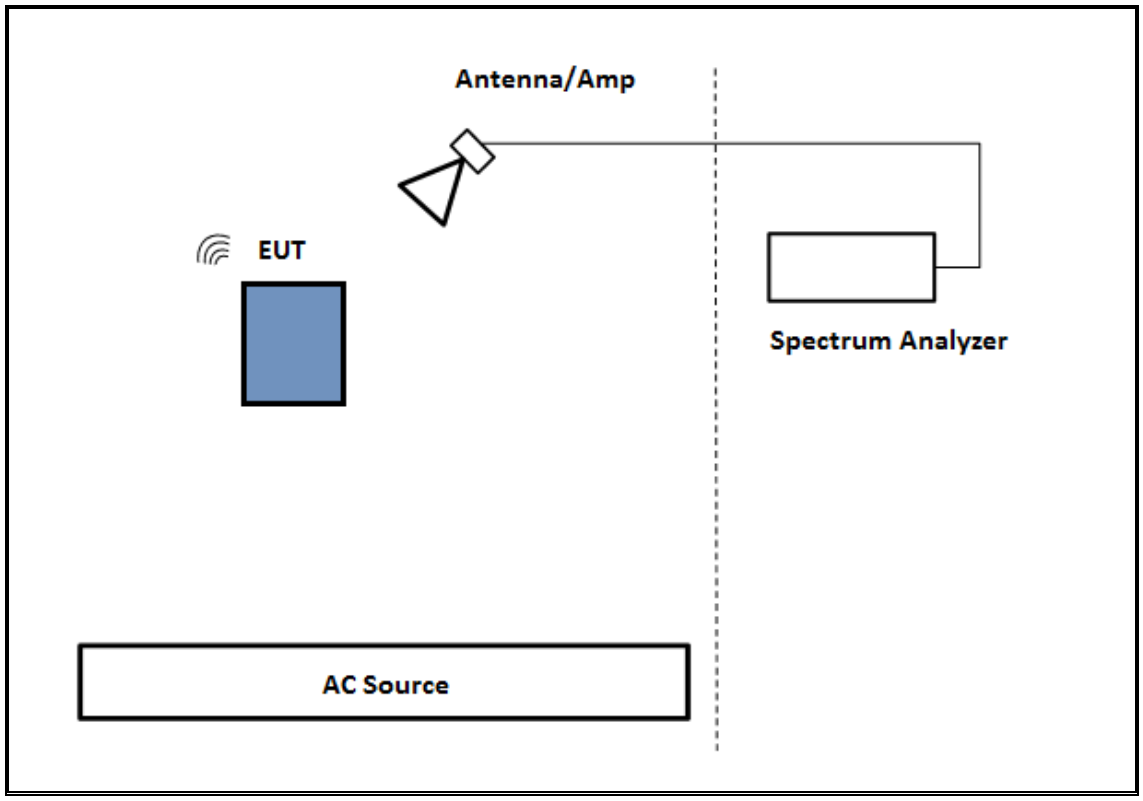
SETUP DIAGRAM



TEST SETUP- RADIATED-ABOVE 1 GHZ

The EUT was powered by battery. Test software exercised the EUT.

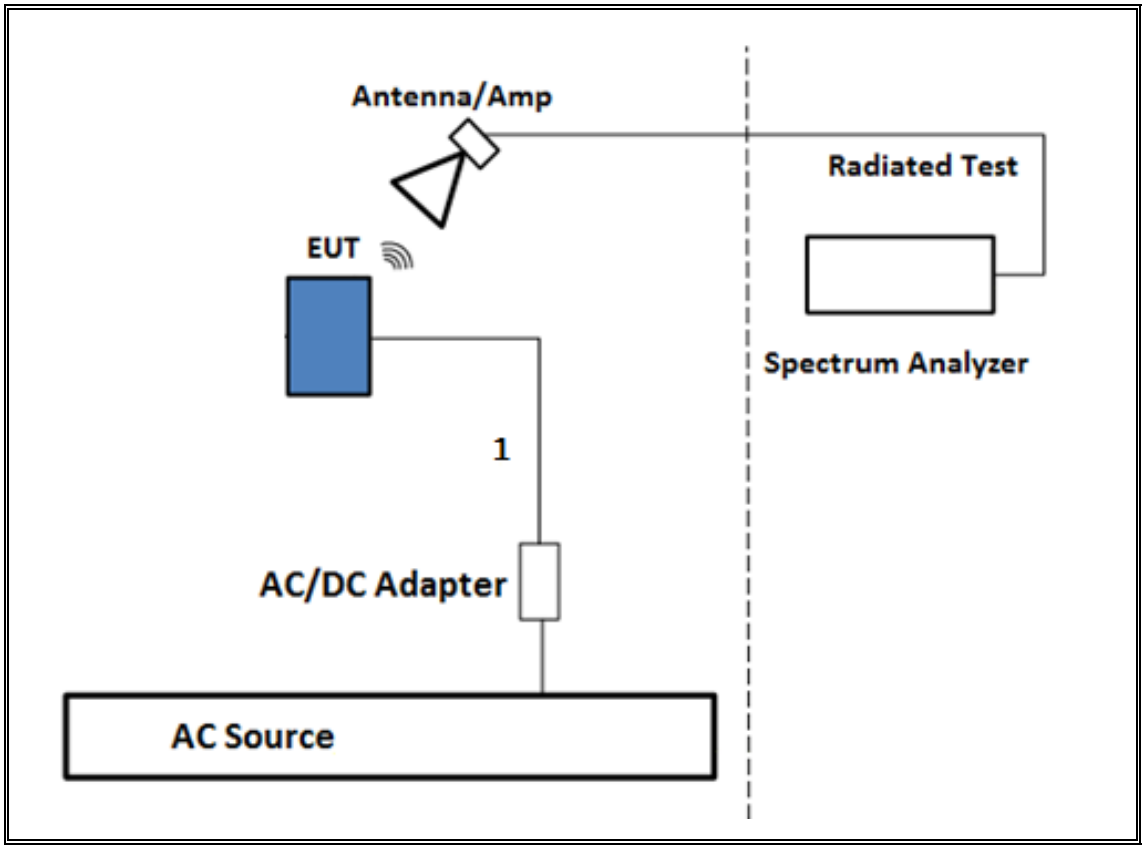
SETUP DIAGRAM



TEST SETUP- BELOW 1GHZ

The EUT was powered by AC cord. Test software exercised the EUT.

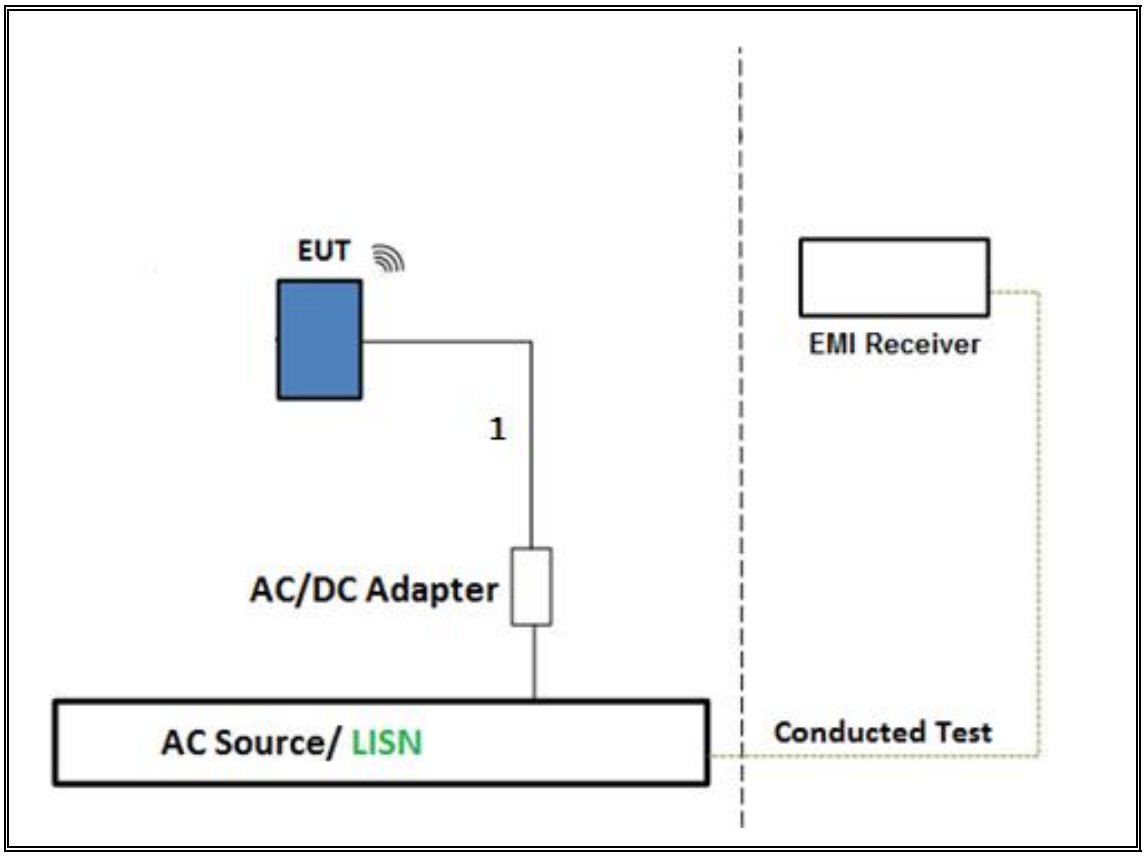
SETUP DIAGRAM



TEST SETUP- AC LINE CONDUCTED: AC/DC ADAPTER

The EUT was tested with powered by AC/DC adapter via USB cable. Test software exercised the EUT.

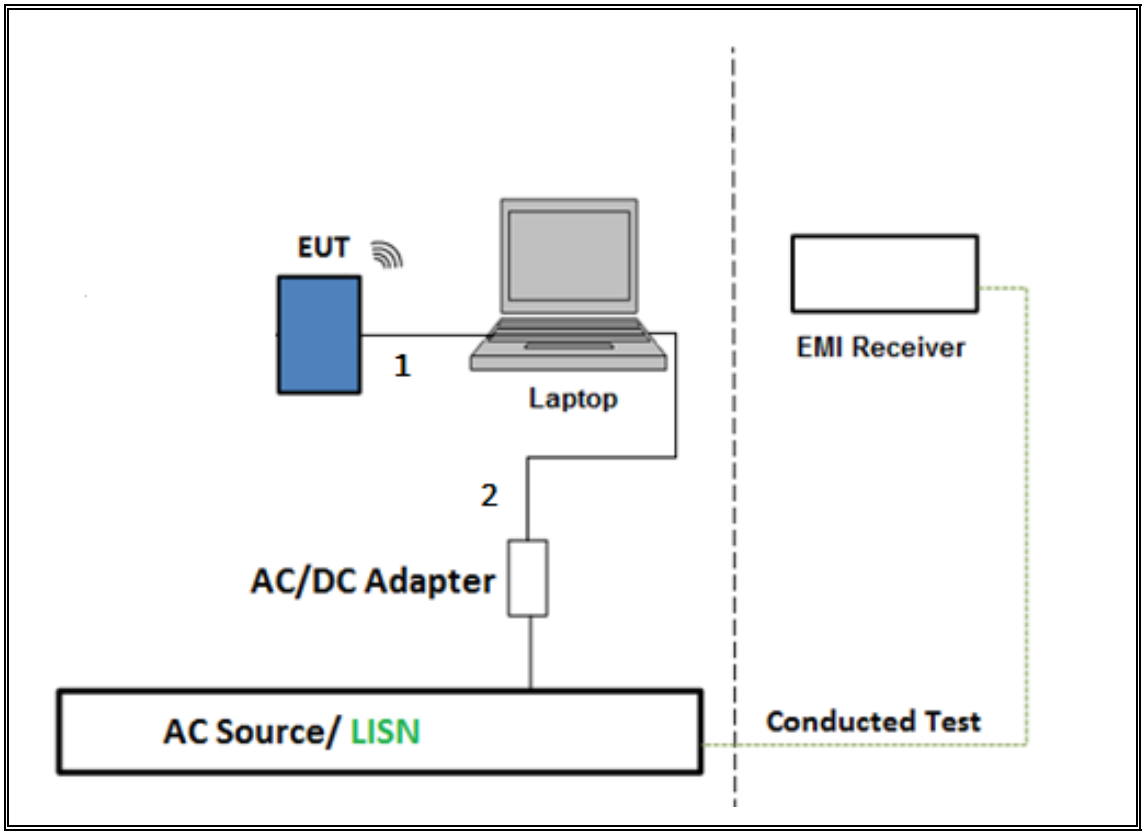
SETUP DIAGRAM



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION

The EUT was tested with powered by host PC via USB cable. Test software exercised the EUT.

SETUP DIAGRAM



6. 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**	**Asset**	**Cal Due**
Antenna, Horn 1-18GHz	ETS Lindgren	3117	00154522	1/12/2017
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	A022813-1	10/28/2016
Amplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	1782158	1/25/2017
***Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	323562	5/4/2017
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	MY52350675	11/15/2016
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	MY51380911	10/15/2016
Power Meter, P-series single channel	Agilent	N1911A	GB45100212	9/25/2016
**Power Sensor, P - series, 50MHz to 18GHz, Wideband	Agilent	N1921A	MY53260010	7/8/2016
***Power Sensor, P - series, 50MHz to 18GHz, Wideband	Agilent	N1921A	MY55200004	5/18/2017
***Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826	209336	5/26/2017
**Spectrum Analyzer, 40 GHz	Agilent	8564E	3943A01643	8/14/2016
**Amplifier, 1 to 26.5GHz, 23.5dB Gain minimum	Keysight	8449B	3008A04710	6/29/2016
AC Line Conducted				
EMI Test Receiver 9Khz-7GHz	Rohde & Schwarz	ESCI7	100935	9/10/2016
LISN for Conducted Emissions CISPR-16	Fischer	50/250-25-2	161124	9/16/2016
**Power Cable, Line Conducted Emissions	UL	PG1	N/A	7/28/2016
UL SOFTWARE				
* Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015	
* Conducted Software	UL	UL EMC	Ver 4.4, March 30, 2016	

Note: * indicates automation software version used in the compliance certification testing
** Testing is completed before equipment calibration expiration date.
*** Equipment was used after calibration.

7. ANTENNA PORT TEST RESULTS

7.1. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v03r05, Section 8.1.

Output Power: KDB 558074 D01 v03r05, Section 9.1.2.

Power Spectral Density: KDB 558074 D01 v03r05, Section 10.2.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r05, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r05, Section 12.1.

Band-edge: KDB 558074 D01 v03r05, Section 12.1.

7.2. ON TIME, DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

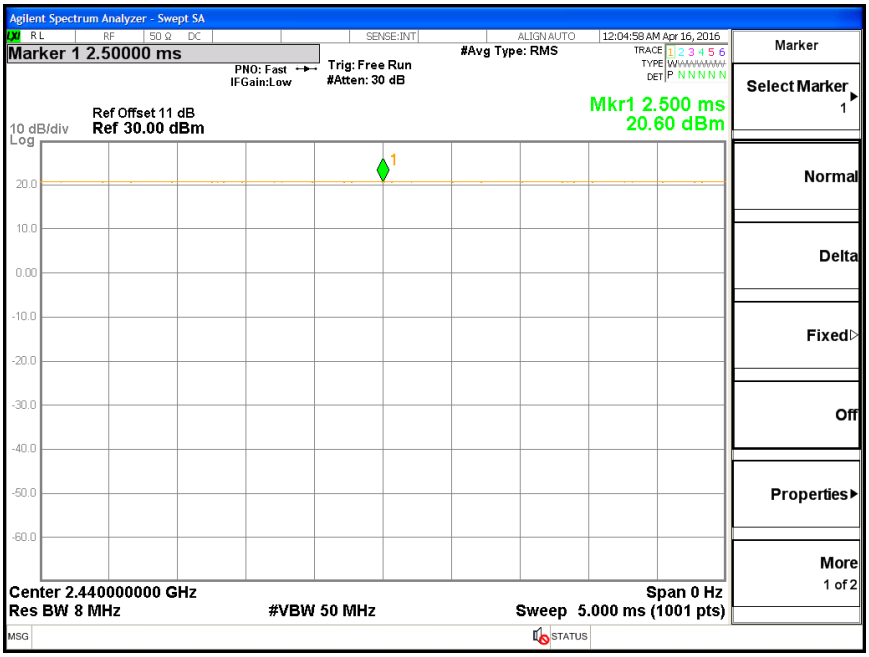
KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

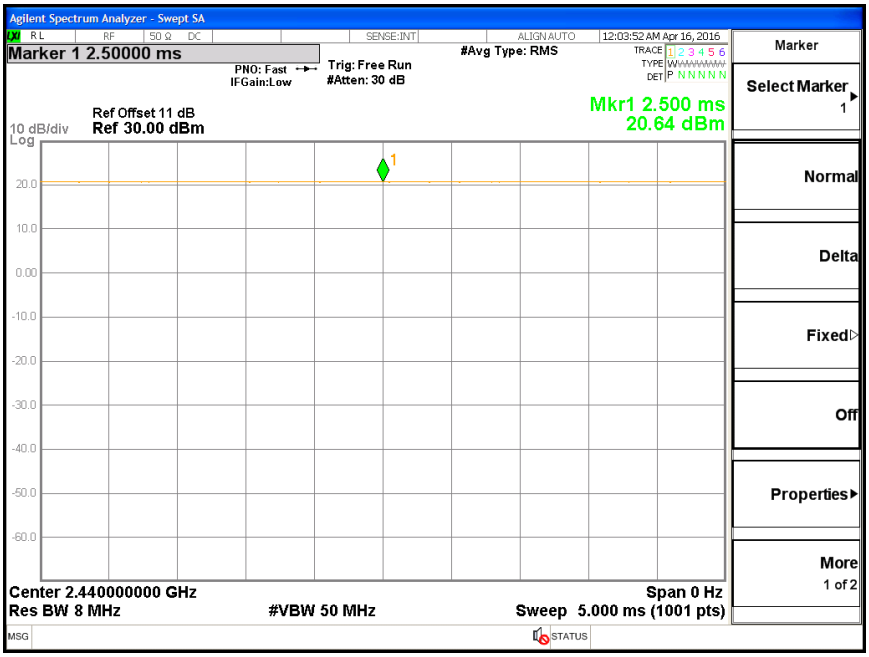
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
BLE LOW POWER	1.000	1.000	1.000	100.00%	0.00	0.010
BLE HIGH POWER	1.000	1.000	1.000	100.00%	0.00	0.010

DUTY CYCLE PLOTS

DUTY CYCLE BLE LOW POWER MODE



DUTY CYCLE BLE HIGH POWER MODE



7.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-247 (5.2) (1)

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

RESULTS

LOW POWER

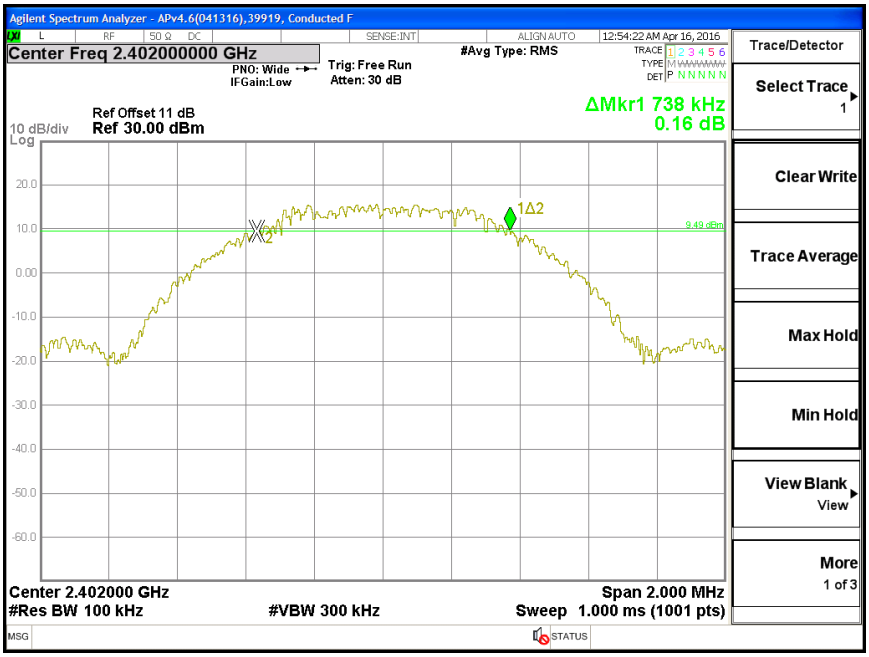
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.738	0.5
Middle	2440	0.744	0.5
High	2480	0.716	0.5

HIGH POWER

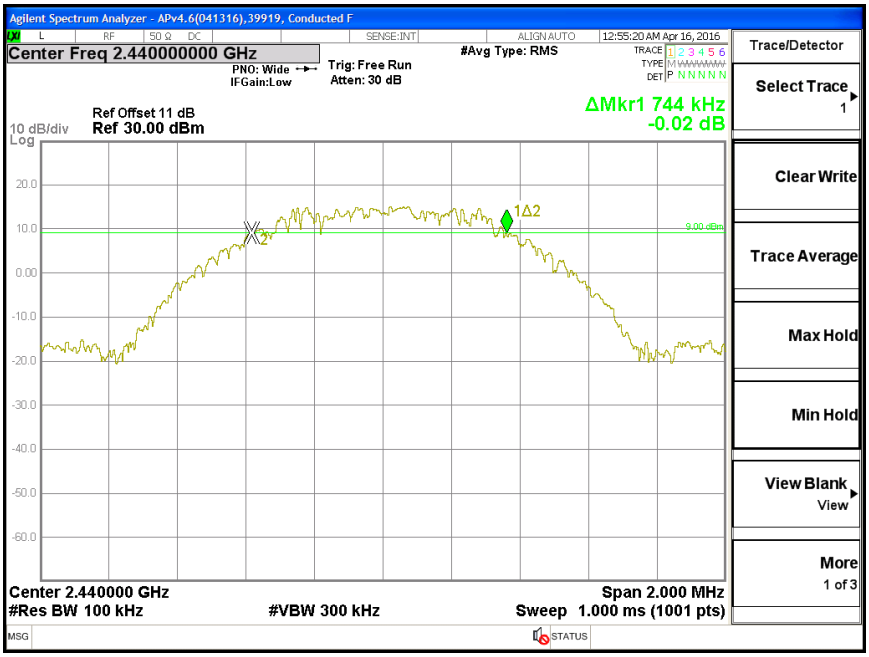
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.714	0.5
Middle	2440	0.736	0.5
High	2480	0.702	0.5

6 dB BANDWIDTH LOW POWER

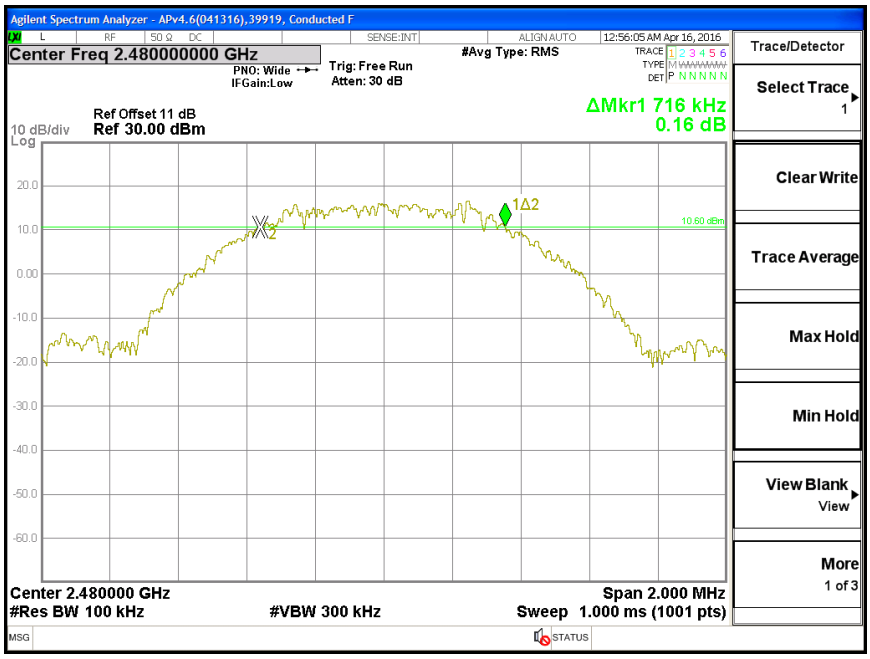
6 dB BANDWIDTH LOW CH



6 dB BANDWIDTH MID CH

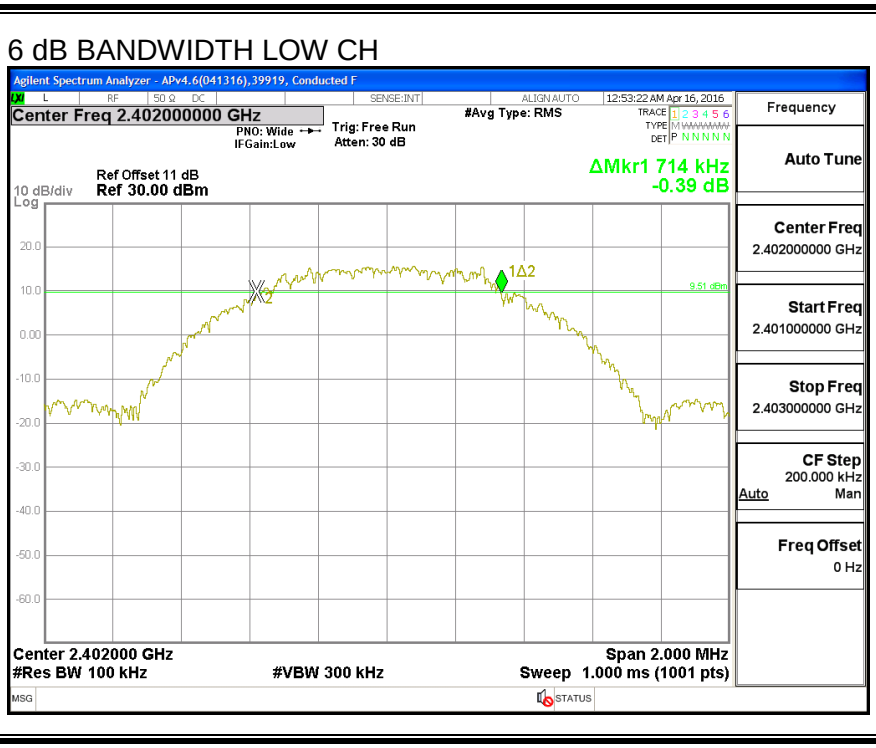


6 dB BANDWIDTH HIGH CH

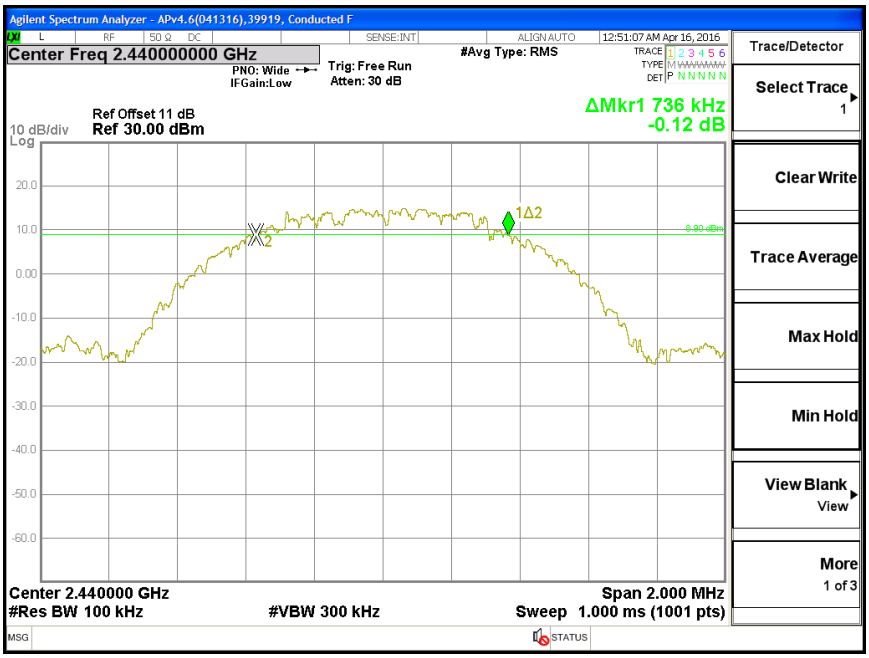


6 dB BANDWIDTH HIGH POWER

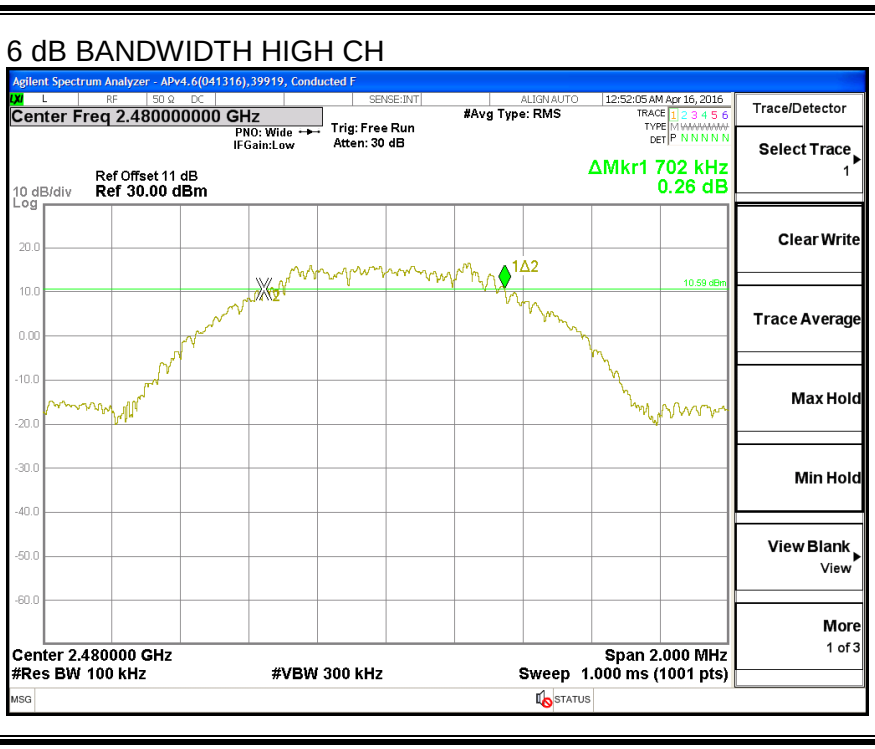
6 dB BANDWIDTH LOW CH



6 dB BANDWIDTH MID CH



6 dB BANDWIDTH HIGH CH



7.4. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth or to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

LOW POWER

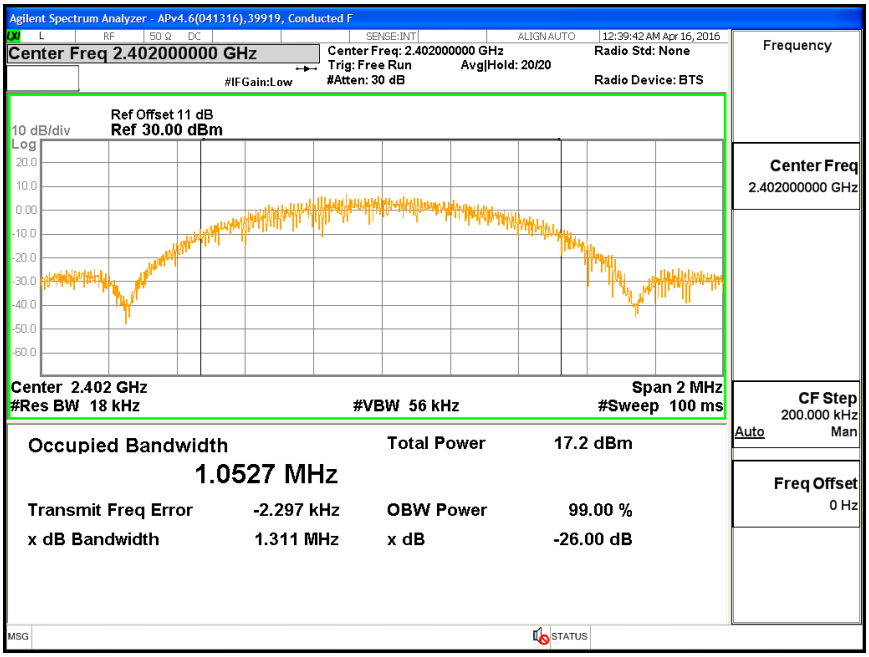
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0527
Middle	2440	1.0556
High	2480	1.0554

HIGH POWER

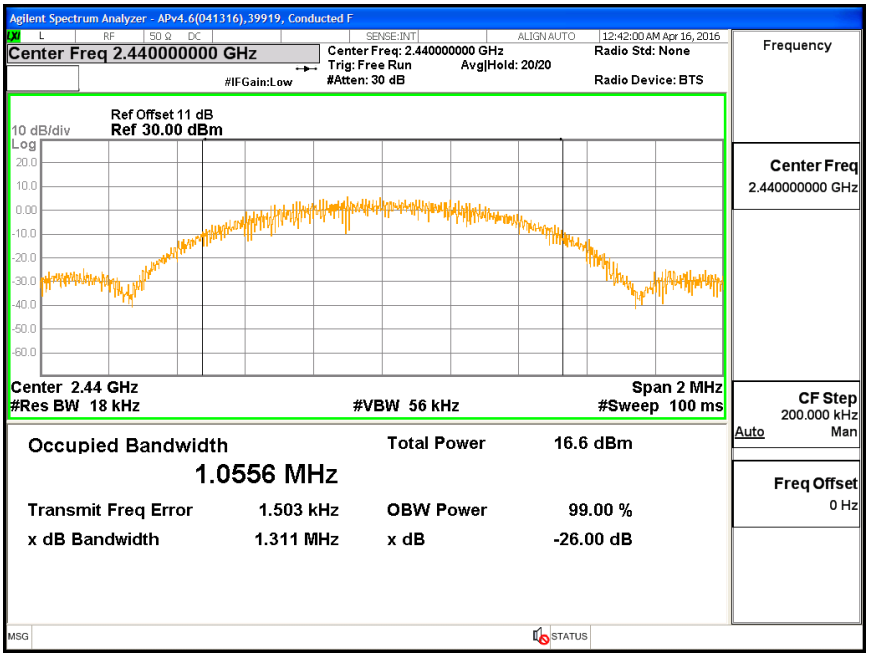
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0594
Middle	2440	1.0529
High	2480	1.0544

99% BANDWIDTH LOW POWER

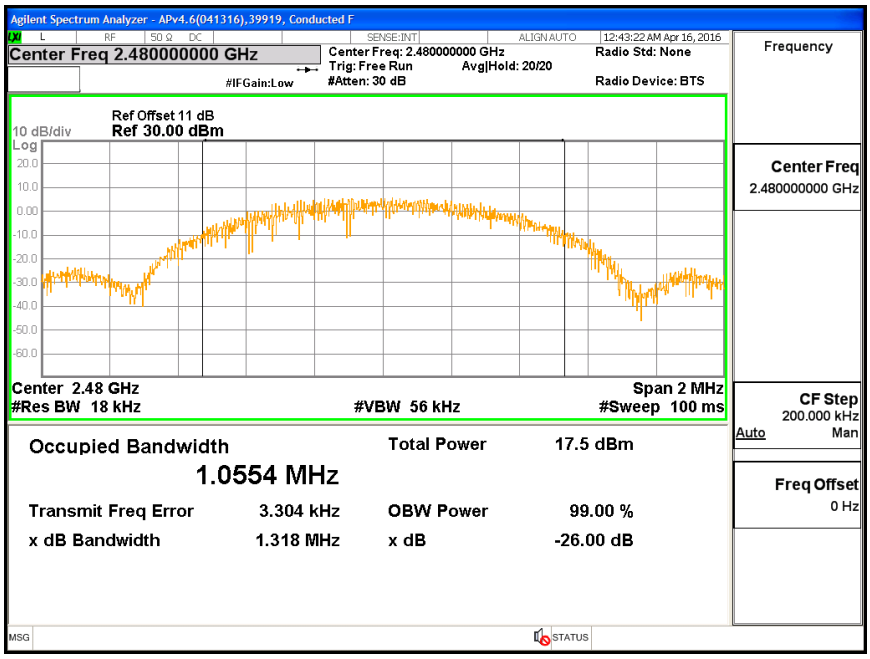
99% BANDWIDTH LOW CH



99% BANDWIDTH MID CH

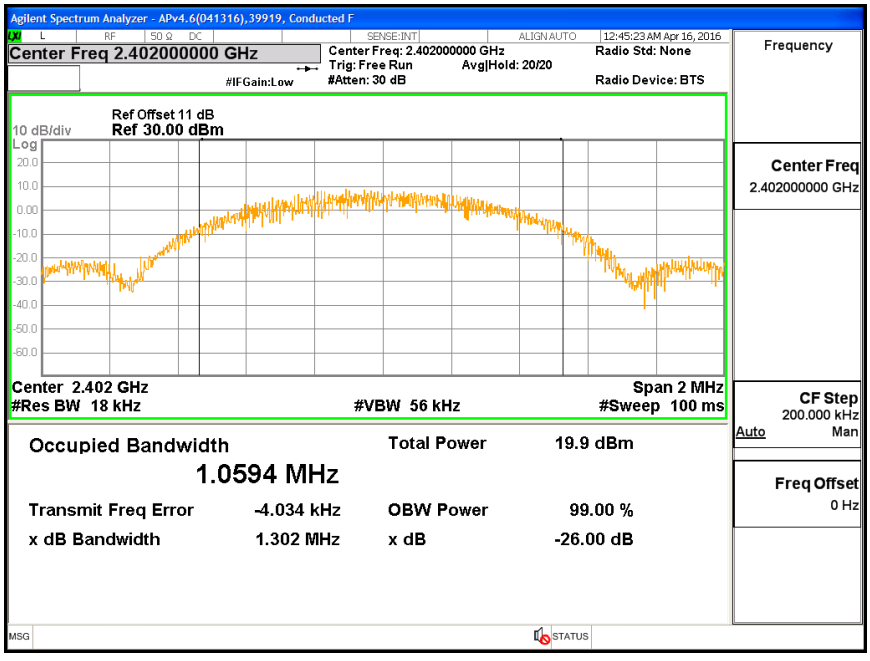


99% BANDWIDTH HIGH CH

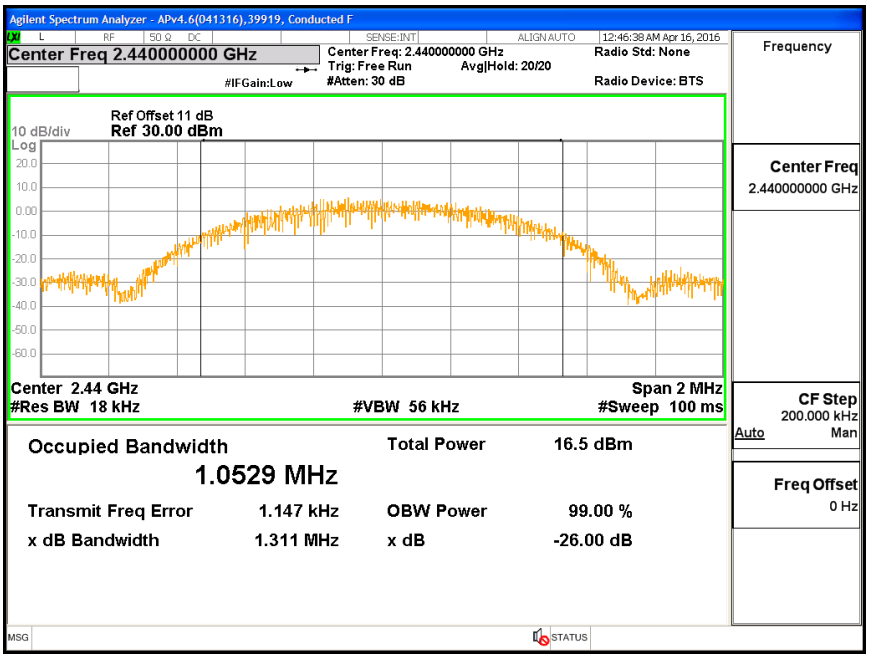


99% BANDWIDTH HIGH POWER

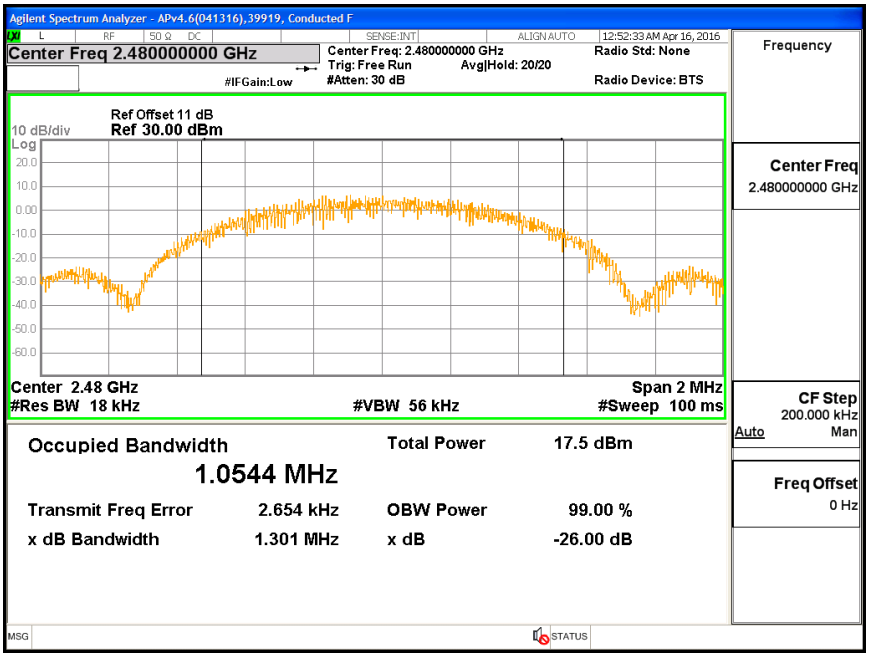
99% BANDWIDTH LOW CH



99% BANDWIDTH MID CH



99% BANDWIDTH HIGH CH



7.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

ID:	39919	**Date:**	8/24/16

LOW POWER

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.81
Middle	2440	9.92
High	2480	9.76

HIGH POWER

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	16.38
Middle	2440	16.42
High	2480	16.46

7.6. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (4)

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

RESULTS

ID:	39919	Date:	8/24/16

LOW POWER

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.96	30	-20.040
Middle	2440	10.11	30	-19.890
High	2480	9.93	30	-20.070

HIGH POWER

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	16.51	30	-13.490
Middle	2440	16.55	30	-13.450
High	2480	16.60	30	-13.400

7.7. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-247 (5.2) (2)

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

LOW POWER

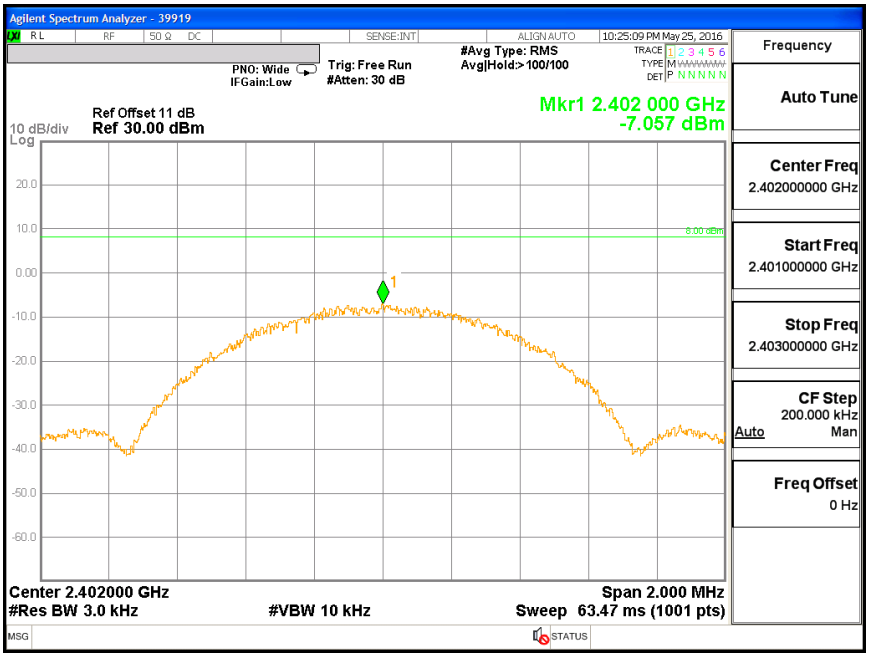
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-7.06	8	-15.06
Middle	2440	-7.11	8	-15.11
High	2480	-7.67	8	-15.67

HIGH POWER

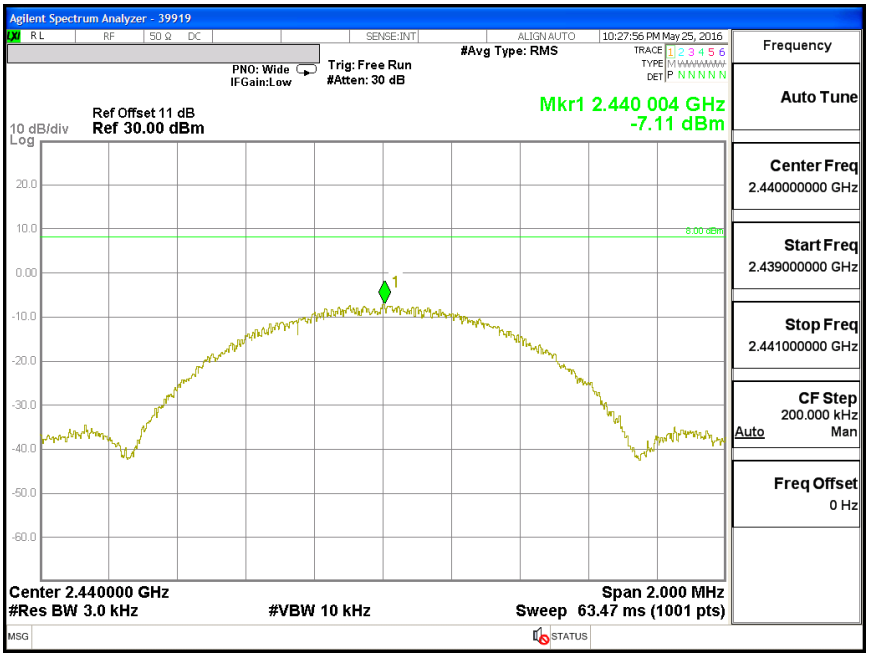
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	2.55	8	-5.45
Middle	2440	3.06	8	-4.94
High	2480	3.36	8	-4.64

POWER SPECTRAL DENSITY LOW POWER

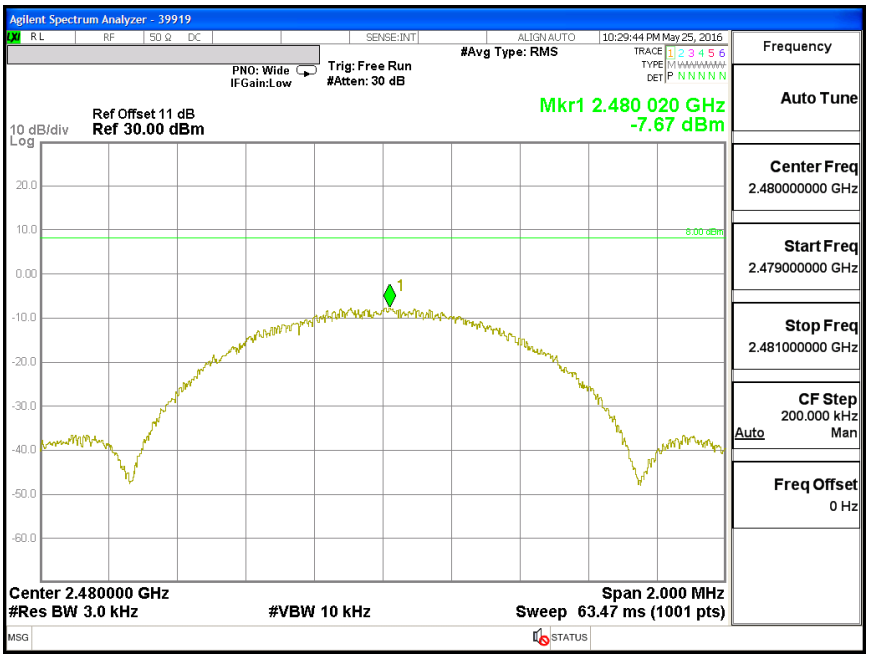
PSD LOW CH



PSD MID CH

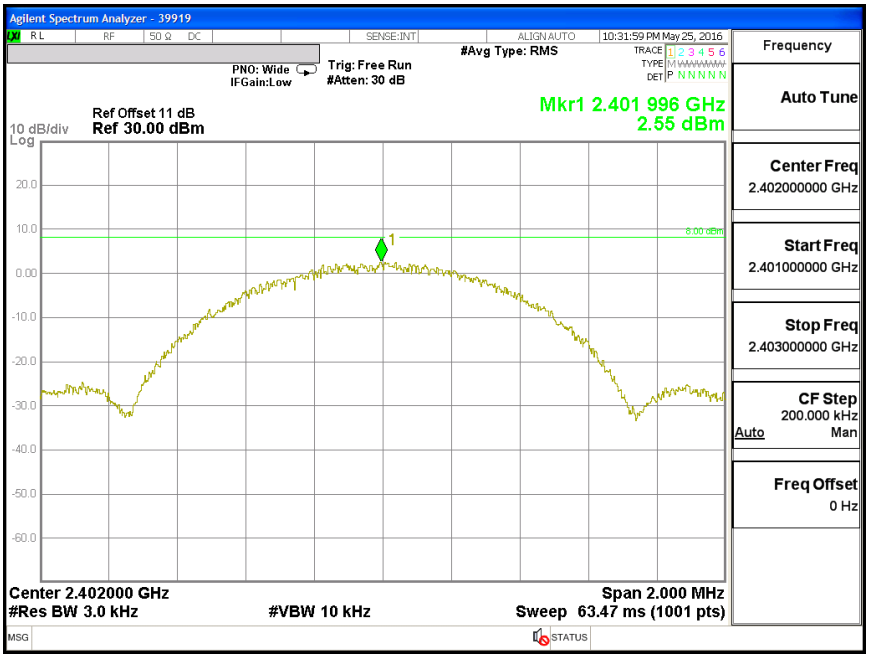


PSD HIGH CH

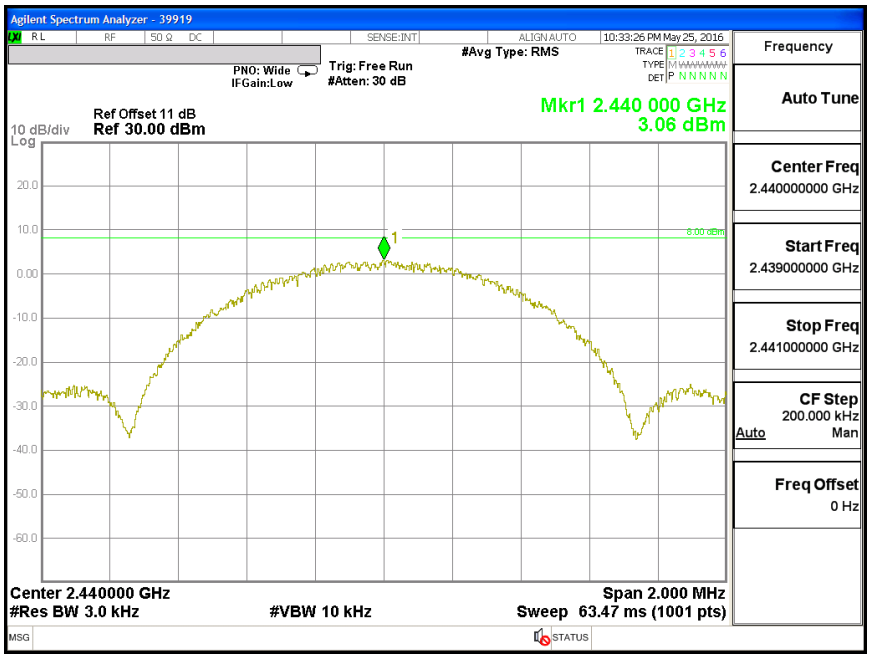


POWER SPECTRAL DENSITY HIGH POWER

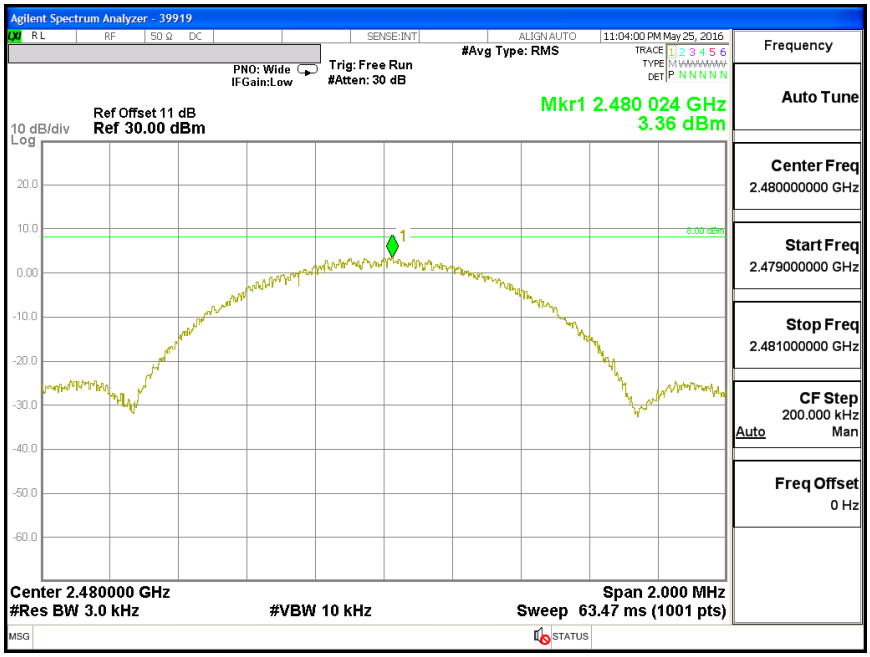
PSD LOW CH



PSD MID CH



PSD HIGH CH



7.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 (5.5)

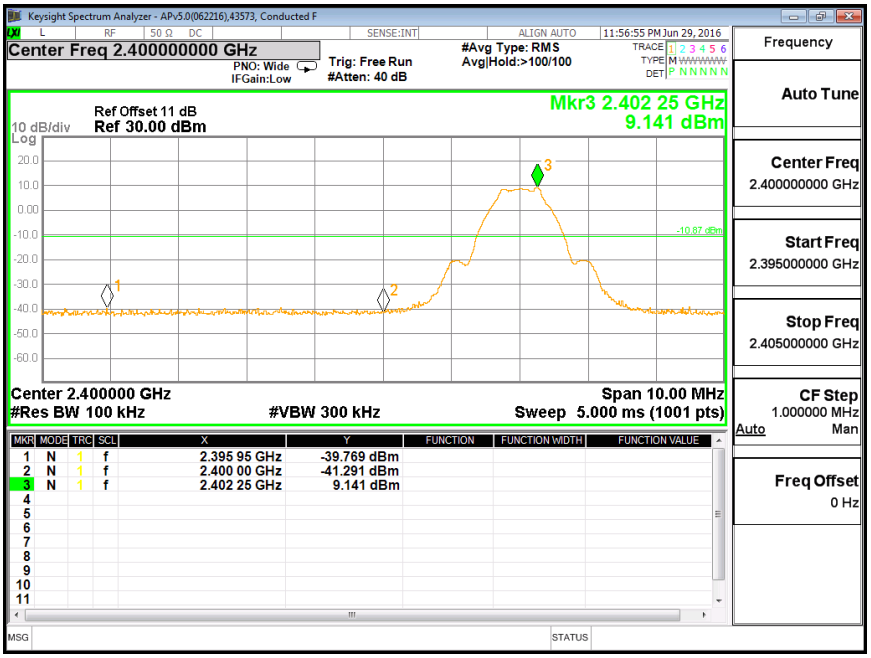
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS

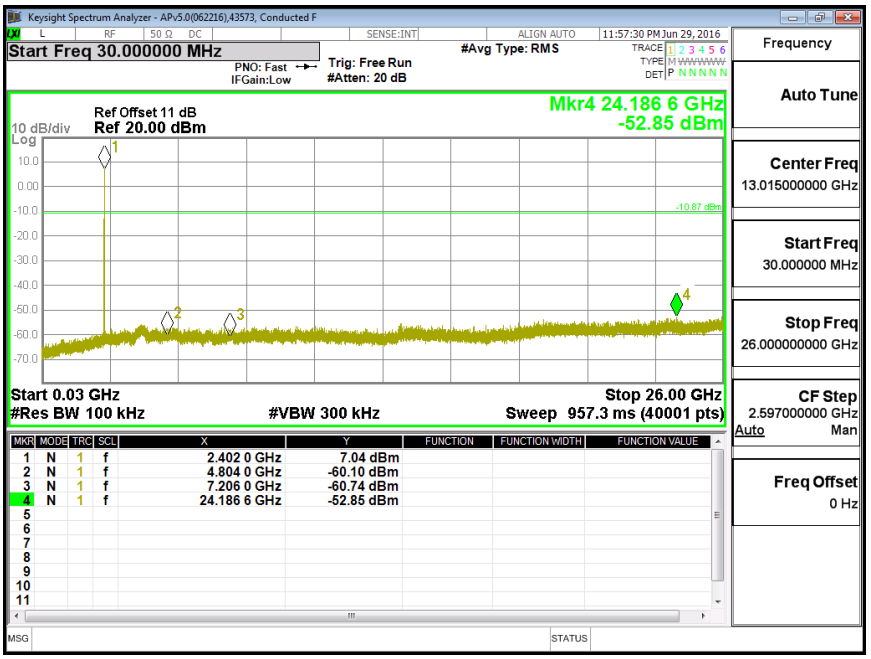
Note: Conducted Spurious Emissions to the high power mode was originally tested with high power than recorded power data of average power table.

SPURIOUS EMISSIONS, LOW CHANNEL LOW POWER

LOW CH BANDEDGE

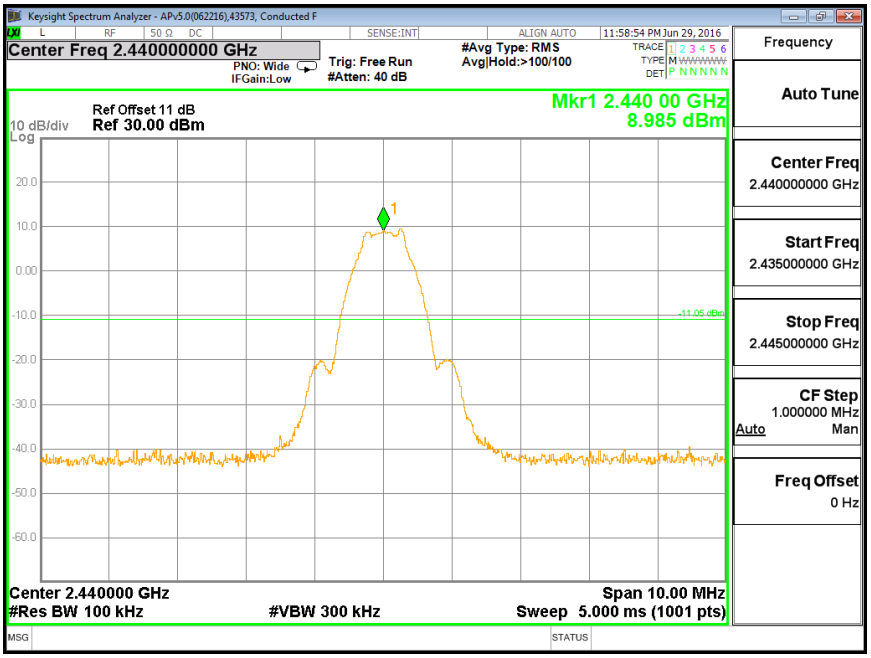


LOW CH SPURIOUS

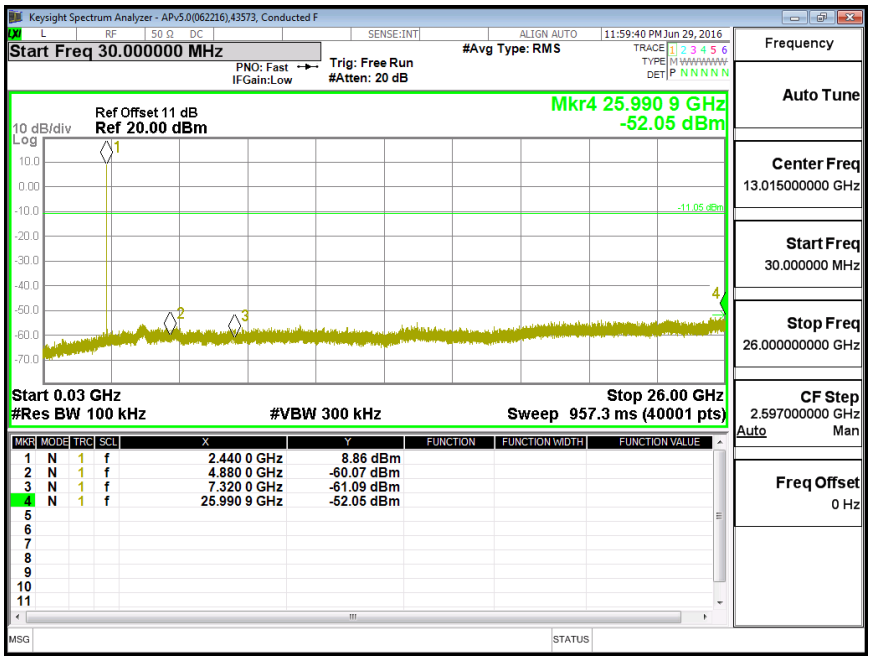


SPURIOUS EMISSIONS, MID CHANNEL LOW POWER

MID CH REFERENCE

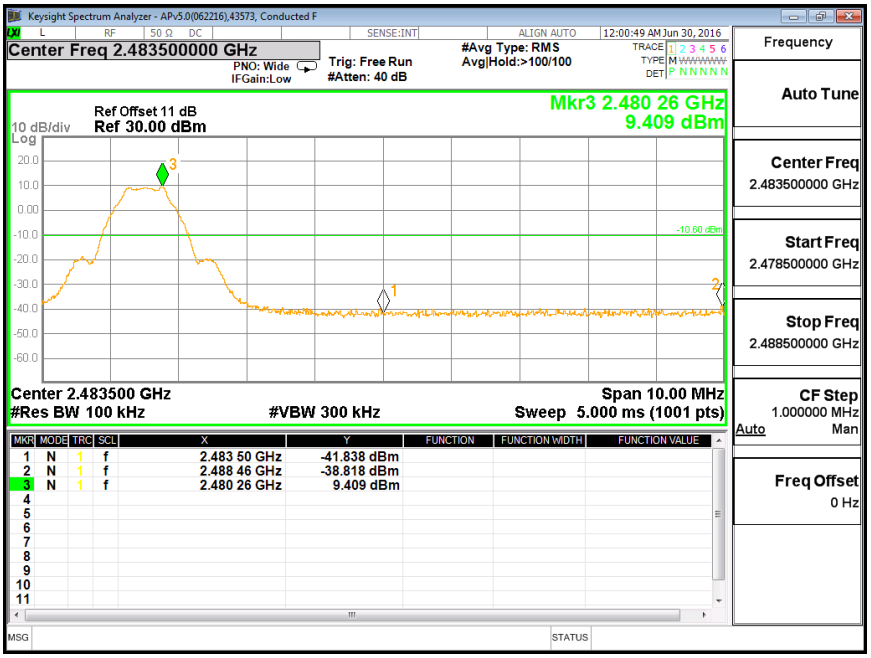


MID CH SPURIOUS

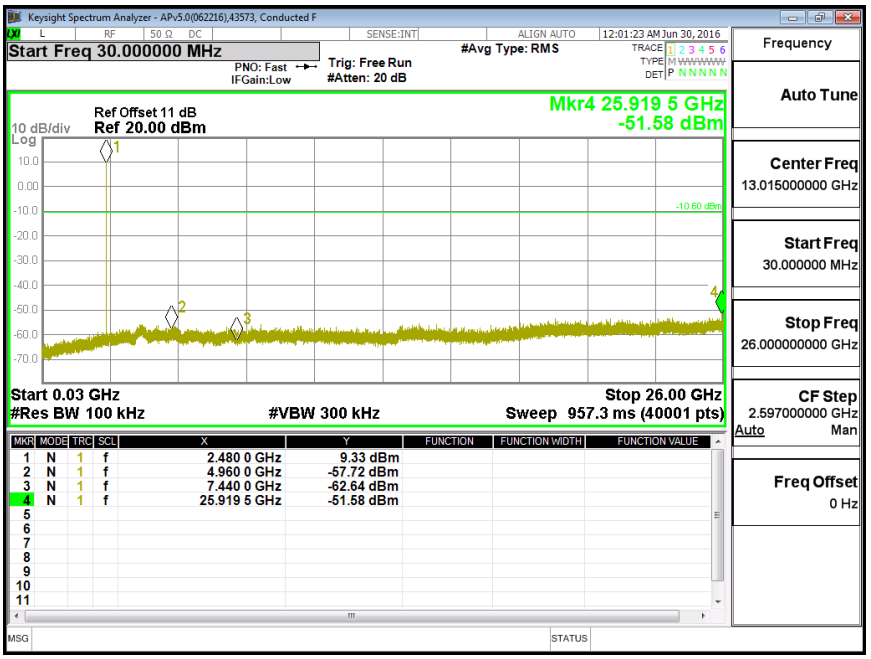


SPURIOUS EMISSIONS, HIGH CHANNEL LOW POWER

HIGH CH BANDEDGE

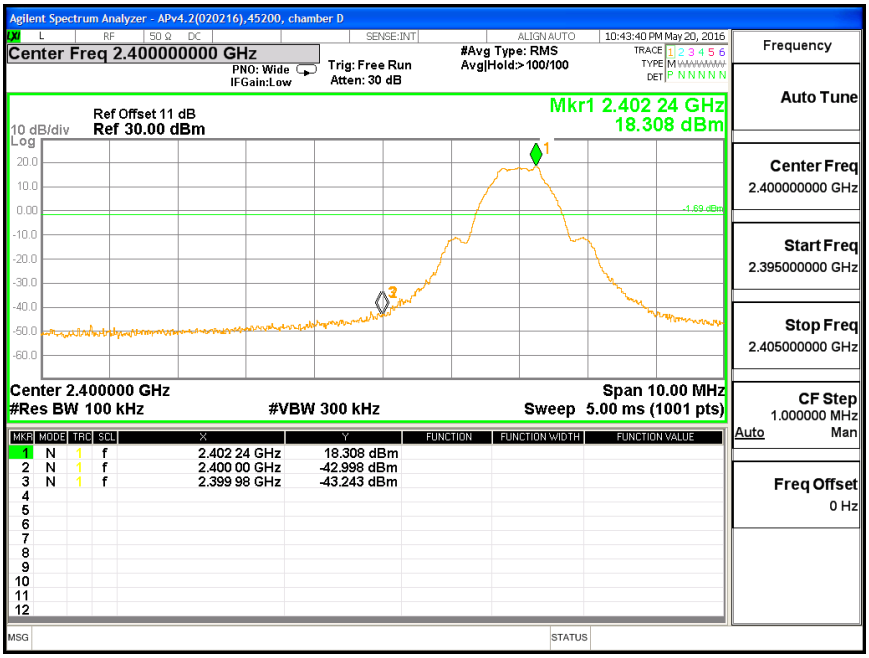


HIGH CH SPURIOUS

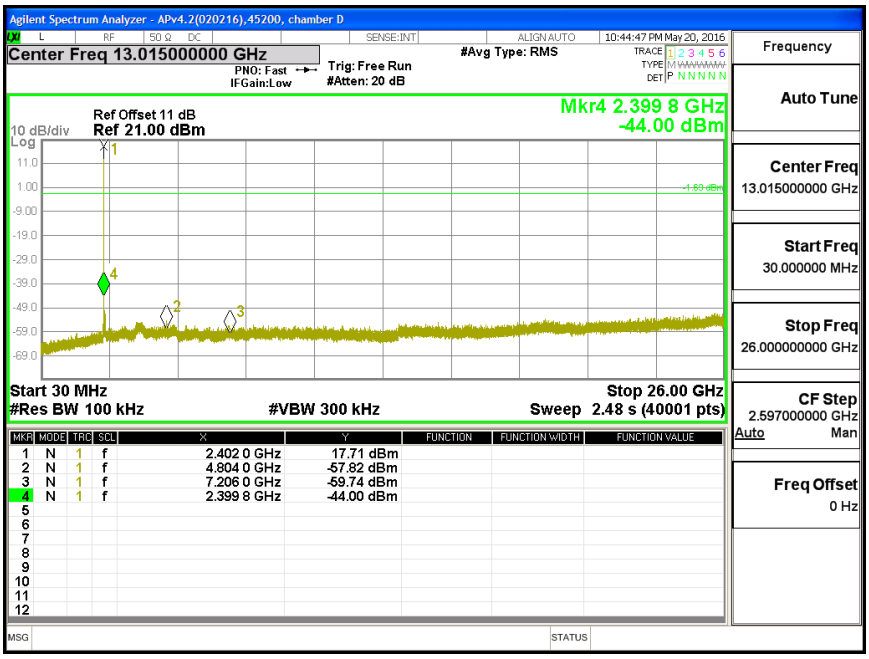


SPURIOUS EMISSIONS, LOW CHANNEL HIGH POWER

LOW CH BANDEDGE

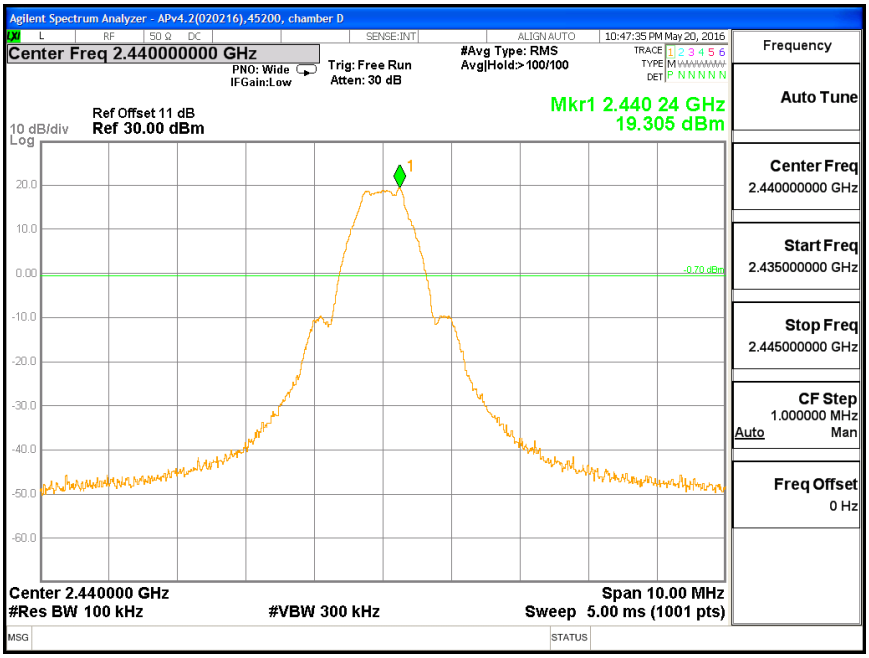


LOW CH SPURIOUS

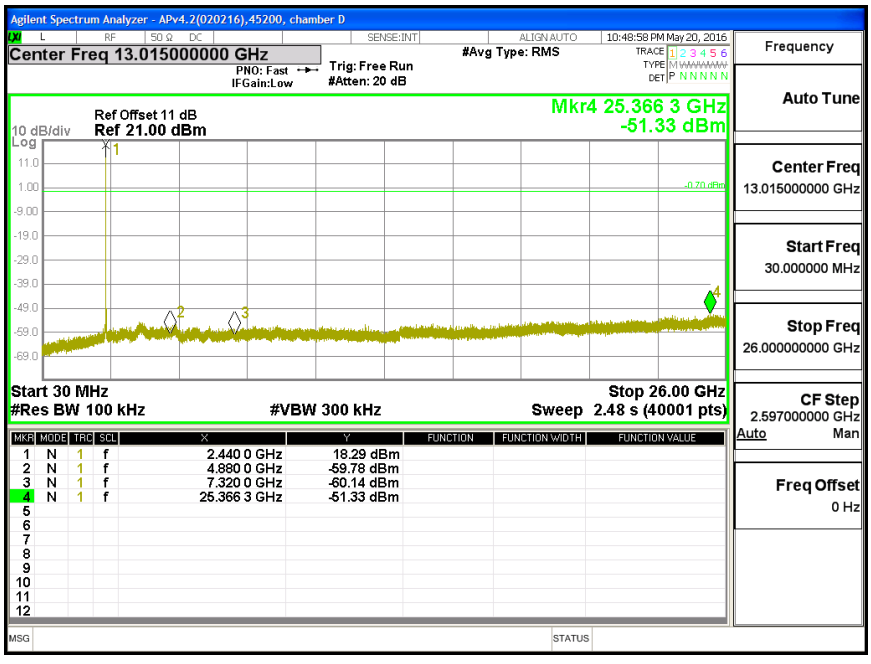


SPURIOUS EMISSIONS, MID CHANNEL HIGH POWER

MID CH REFERENCE

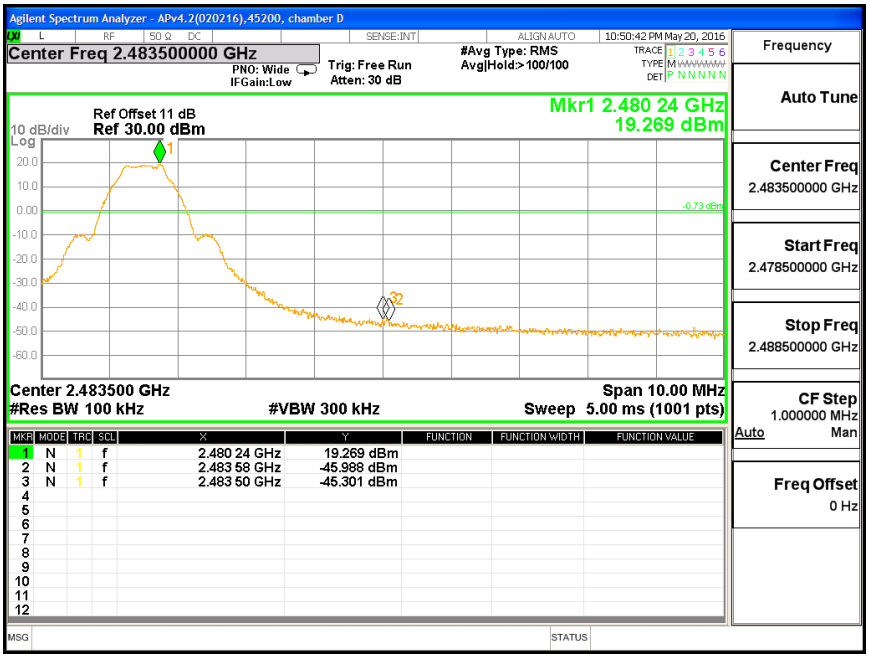


MID CH SPURIOUS

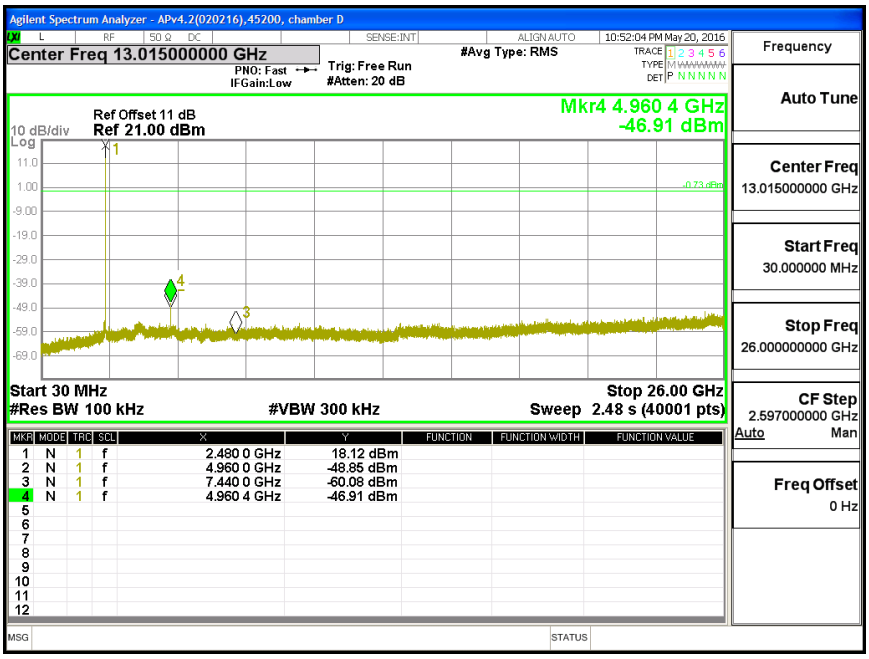


SPURIOUS EMISSIONS, HIGH CHANNEL HIGH POWER

HIGH CH BANDEDGE



HIGH CH SPURIOUS



8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
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.

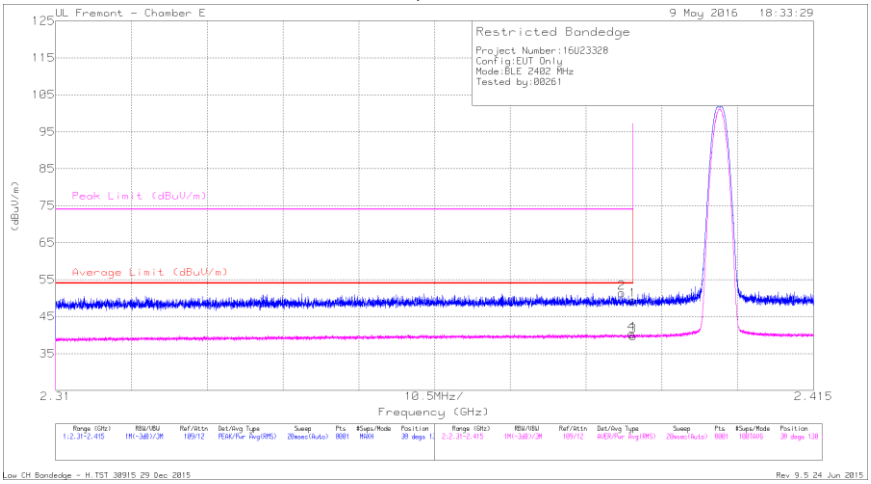
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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.

8.2. TRANSMITTER ABOVE 1 GHz

8.2.1. LOW POWER RESTRICTED BANDEDGE

LOW CHANNEL RESTRICTED, HORIZONTAL



DATA

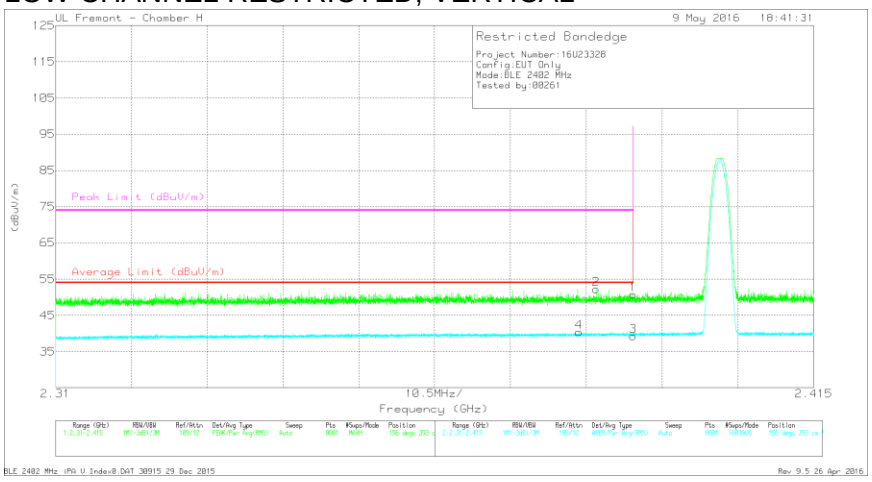
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.23	Pk	32.1	-19.9	49.43	-	-	74	-24.57	38	130	H
2	* 2.388	39.19	Pk	32.1	-19.9	51.39	-	-	74	-22.61	38	130	H
3	* 2.39	27.55	RMS	32.1	-19.9	39.75	54	-14.25	-	-	38	130	H
4	* 2.39	28.06	RMS	32.1	-19.9	40.26	54	-13.74	-	-	38	130	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, VERTICAL



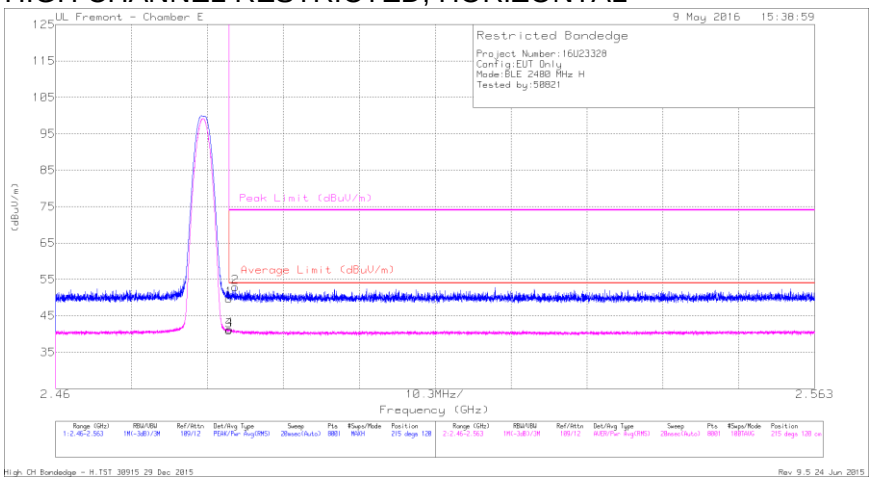
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/ Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.58	Pk	32.1	-19.9	50.78	-	-	74	-23.22	156	393	V
2	* 2.385	40.08	Pk	32.1	-19.9	52.28	-	-	74	-21.72	156	393	V
3	* 2.39	27.07	RMS	32.1	-19.9	39.27	54	-14.73	-	-	156	393	V
4	* 2.383	28.36	RMS	32	-19.9	40.46	54	-13.54	-	-	156	393	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

HIGH CHANNEL RESTRICTED, HORIZONTAL



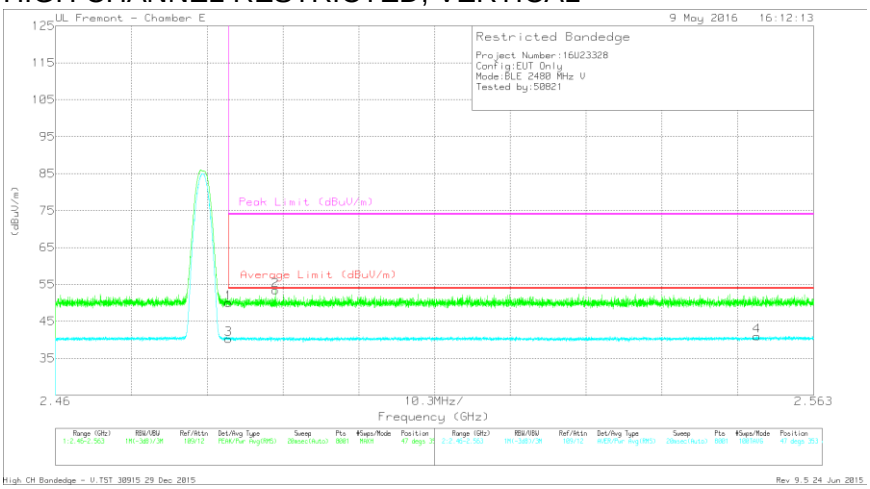
DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 2.484	37.4	Pk	32.3	-20	49.7	-	-	74	-24.3	215	120	H
2	* 2.484	40.6	Pk	32.3	-20	52.9	-	-	74	-21.1	215	120	H
3	* 2.484	28.66	RMS	32.3	-20	40.96	54	-13.04	-	-	215	120	H
4	* 2.484	28.95	RMS	32.3	-20	41.25	54	-12.75	-	-	215	120	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection
High CH Bandedge - H.TST 30915 29 Dec 2015
Rev 9.5 24 Jun 2015

HIGH CHANNEL RESTRICTED, VERTICAL



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 2.484	37.74	Pk	32.3	-20	50.04	-	-	74	-23.96	47	353	V
3	* 2.484	27.97	RMS	32.3	-20	40.27	54	-13.73	-	-	47	353	V
2	* 2.49	41.23	Pk	32.3	-20.1	53.43	-	-	74	-20.57	47	353	V
4	2.555	28.73	RMS	32.4	-20.1	41.03	54	-12.97	-	-	47	353	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

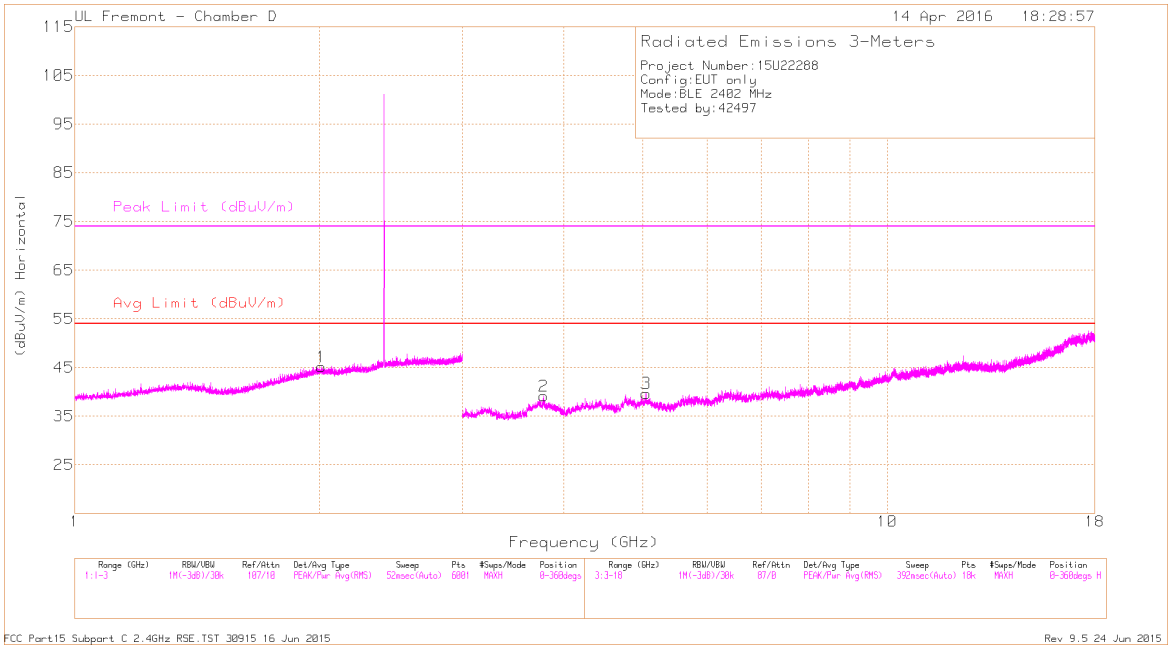
RMS - RMS detection

High CH Bandedge - V.TST 30915 29 Dec 2015

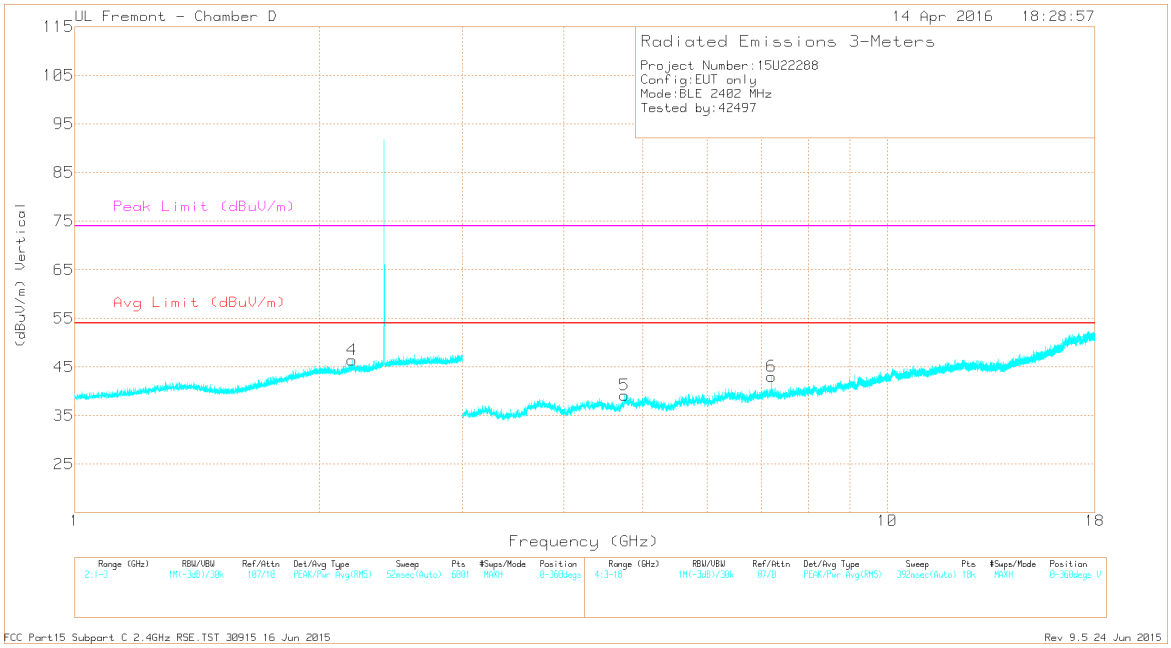
Rev 9.5 24 Jun 2015

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



DATA

Radiated Emissions

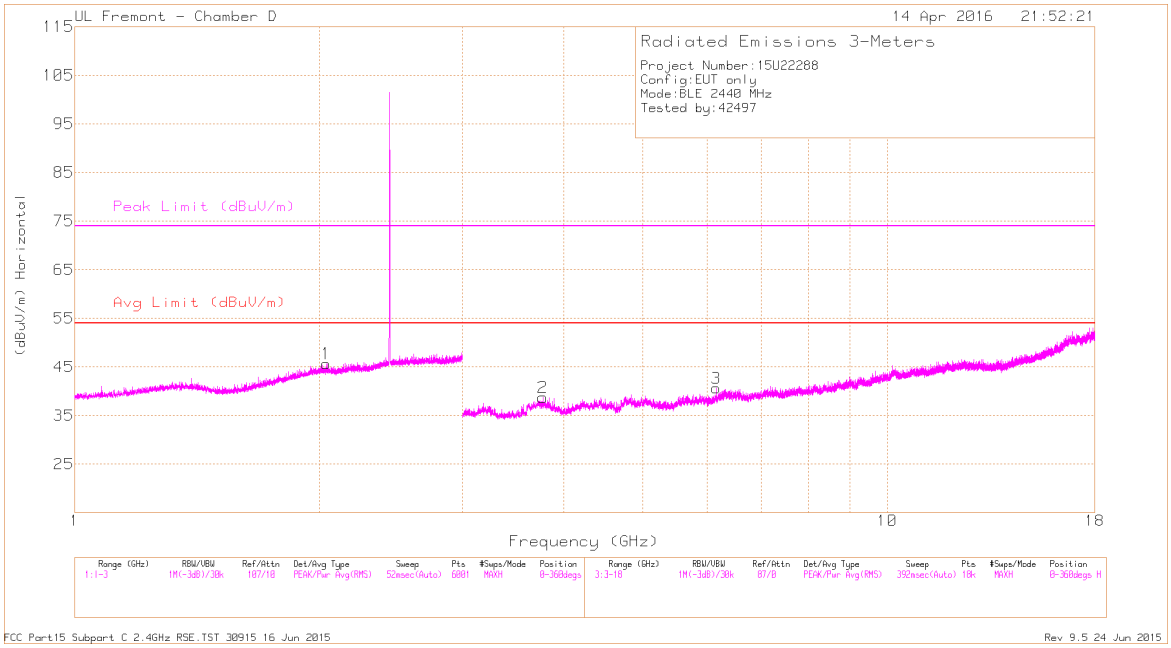
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.777	38.35	PK2	33.5	-28	43.85	-	-	74	-30.15	341	343	H
	* 3.779	26.84	MAv1	33.5	-28	32.34	54	-21.66	-	-	341	343	H
3	* 5.049	37.62	PK2	34	-26.4	45.22	-	-	74	-28.78	355	289	H
	* 5.05	25.83	MAv1	34	-26.4	33.43	54	-20.57	-	-	355	289	H
5	* 4.748	38.02	PK2	34	-26.5	45.52	-	-	74	-28.48	356	216	V
	* 4.746	26.4	MAv1	34	-26.5	33.9	54	-20.1	-	-	356	216	V
1	2.013	41.47	PK2	31.5	-21.1	51.87	-	-	-	-	153	239	H
	2.015	29.73	MAv1	31.5	-21.1	40.13	-	-	-	-	153	239	H
4	2.193	29.71	MAv1	31.6	-20.8	40.51	-	-	-	-	209	230	V
	2.194	42.14	PK2	31.6	-20.9	52.84	-	-	-	-	209	230	V
6	7.205	38.4	PK2	35.7	-24.6	49.5	-	-	-	-	4	202	V
	7.205	29.32	MAv1	35.7	-24.6	40.42	-	-	-	-	4	202	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

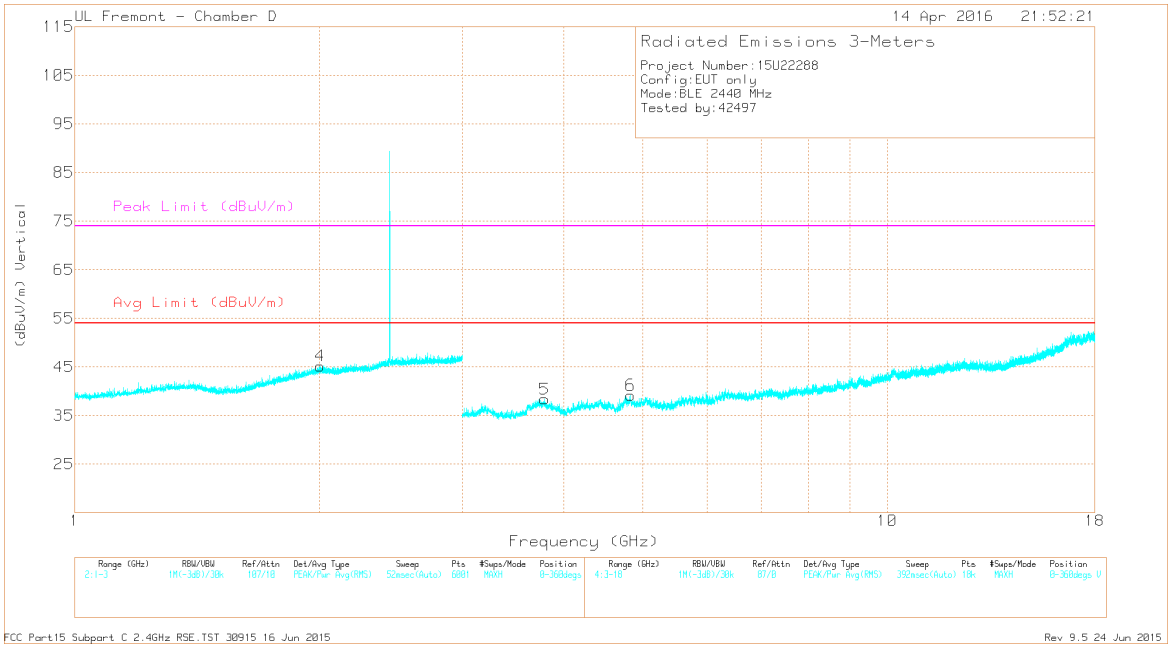
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



DATA

Radiated Emissions

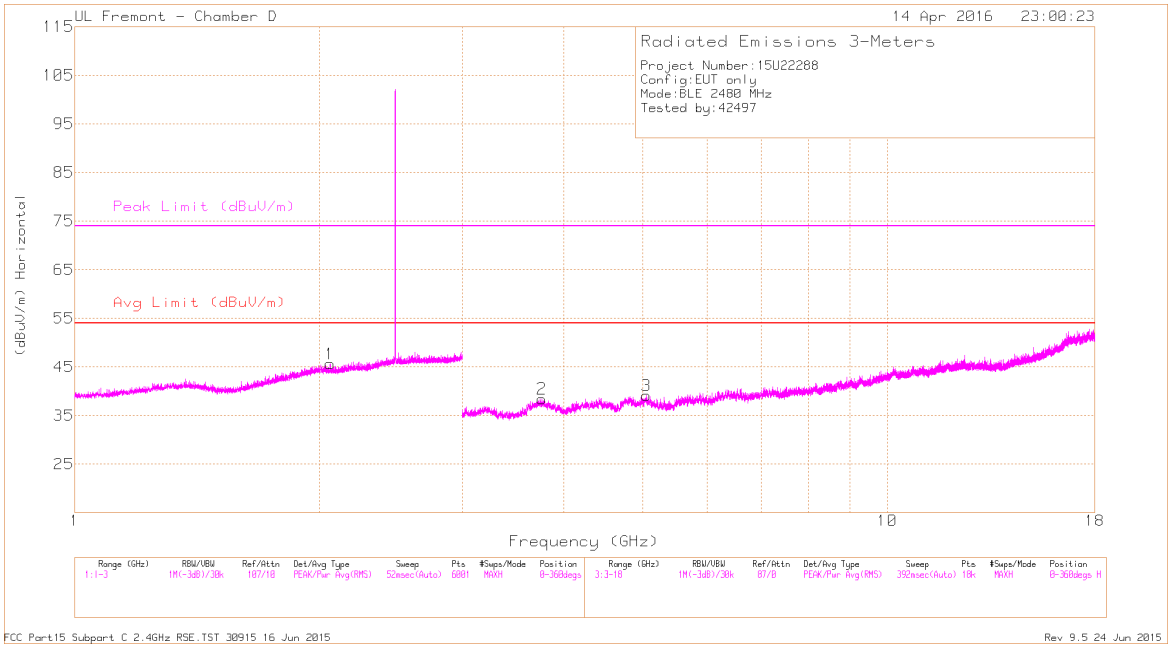
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.767	38.73	PK2	33.5	-28	44.23	-	-	74	-29.77	354	120	H
	* 3.769	26.7	MAv1	33.5	-28	32.2	54	-21.8	-	-	354	120	H
5	* 3.786	38.68	PK2	33.5	-28.1	44.08	-	-	74	-29.92	110	234	V
	* 3.787	26.84	MAv1	33.5	-28.1	32.24	54	-21.76	-	-	110	234	V
6	* 4.834	38.48	PK2	34.1	-27.3	45.28	-	-	74	-28.72	258	271	V
	* 4.832	26.42	MAv1	34.1	-27.3	33.22	54	-20.78	-	-	258	271	V
4	2.006	42.19	PK2	31.6	-21.2	52.59	-	-	-	-	158	204	V
	2.006	29.75	MAv1	31.6	-21.2	40.15	-	-	-	-	158	204	V
1	2.039	41.49	PK2	31.4	-21.1	51.79	-	-	-	-	125	122	H
	2.042	29.69	MAv1	31.4	-21	40.09	-	-	-	-	125	122	H
3	6.157	36.92	PK2	35.5	-26.5	45.92	-	-	-	-	53	171	H
	6.158	25.54	MAv1	35.5	-26.6	34.44	-	-	-	-	53	171	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

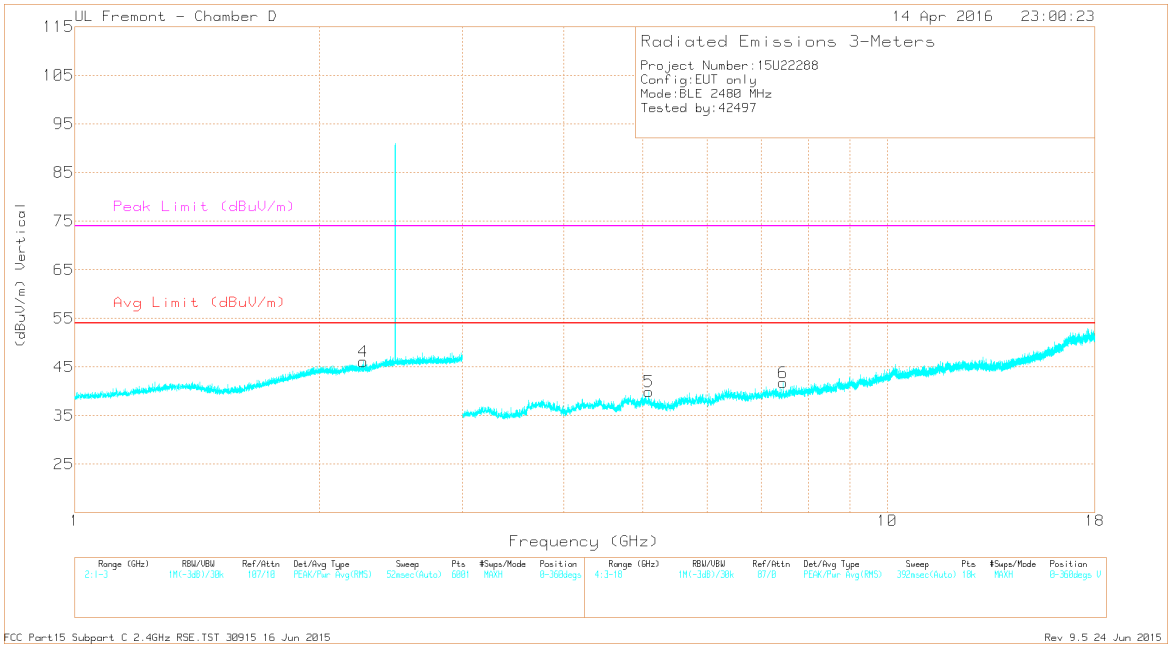
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



DATA

Radiated Emissions

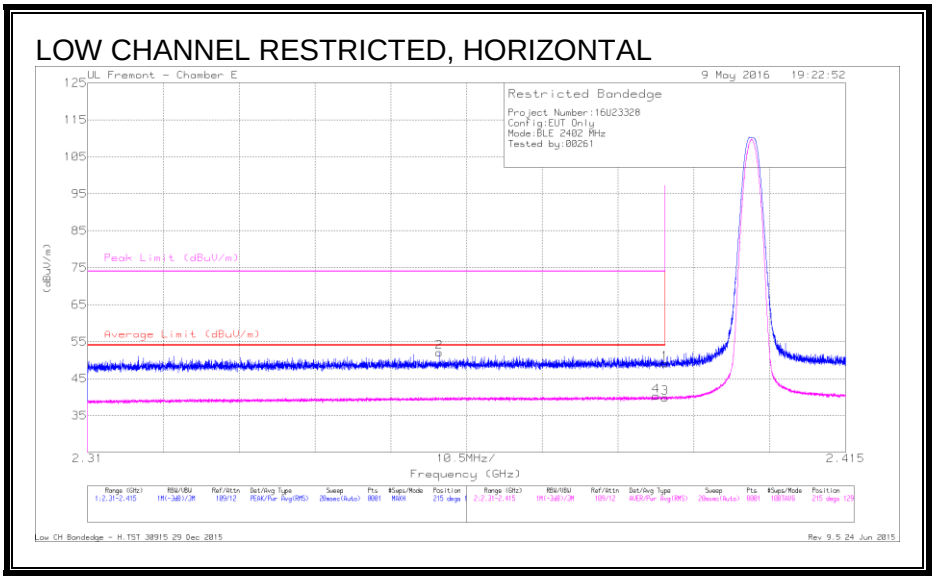
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.265	41.55	PK2	31.5	-20.7	52.35	-	-	74	-21.65	325	106	V
	* 2.266	29.71	MAv1	31.5	-20.8	40.41	54	-13.59	-	-	325	106	V
2	* 3.756	38.24	PK2	33.5	-28.2	43.54	-	-	74	-30.46	90	384	H
	* 3.757	26.62	MAv1	33.5	-28.2	31.92	54	-22.08	-	-	90	384	H
3	* 5.051	37.54	PK2	34	-26.4	45.14	-	-	74	-28.86	164	286	H
	* 5.052	25.88	MAv1	34	-26.4	33.48	54	-20.52	-	-	164	286	H
5	* 5.086	38.04	PK2	34	-26.7	45.34	-	-	74	-28.66	242	398	V
	* 5.09	26.34	MAv1	34	-26.7	33.64	54	-20.36	-	-	242	398	V
6	* 7.439	37.76	PK2	35.6	-24.2	49.16	-	-	74	-24.84	284	304	V
	* 7.439	27.97	MAv1	35.6	-24.2	39.37	54	-14.63	-	-	284	304	V
1	2.063	41.68	PK2	31.3	-21.1	51.88	-	-	-	-	308	350	H
	2.064	29.79	MAv1	31.3	-21.1	39.99	-	-	-	-	308	350	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

8.2.2. HIGH POWER RESTRICTED BANDEDGE



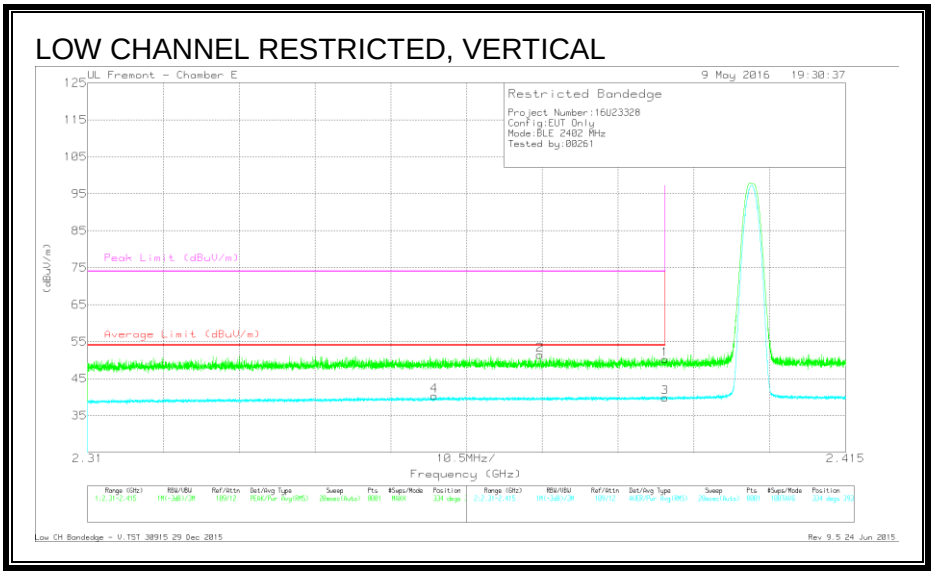
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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
2	* 2.359	40.19	Pk	31.9	-20	52.09	-	-	74	-21.91	215	129	H
4	* 2.389	28.09	RMS	32.1	-19.9	40.29	54	-13.71	-	-	215	129	H
1	* 2.39	36.93	Pk	32.1	-19.9	49.13	-	-	74	-24.87	215	129	H
3	* 2.39	27.61	RMS	32.1	-19.9	39.81	54	-14.19	-	-	215	129	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection



DATA

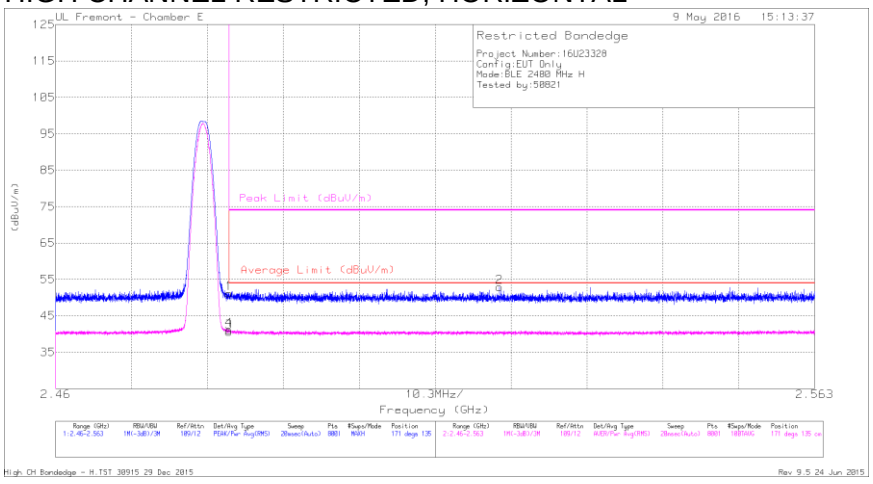
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.358	28.46	RMS	31.9	-20	40.36	54	-13.64	-	-	334	393	V
2	* 2.373	39.41	Pk	32	-20	51.41	-	-	74	-22.59	334	393	V
1	* 2.39	38.01	Pk	32.1	-19.9	50.21	-	-	74	-23.79	334	393	V
3	* 2.39	27.68	RMS	32.1	-19.9	39.88	54	-14.12	-	-	334	393	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

HIGH CHANNEL RESTRICTED, HORIZONTAL



DATA

Trace Markers

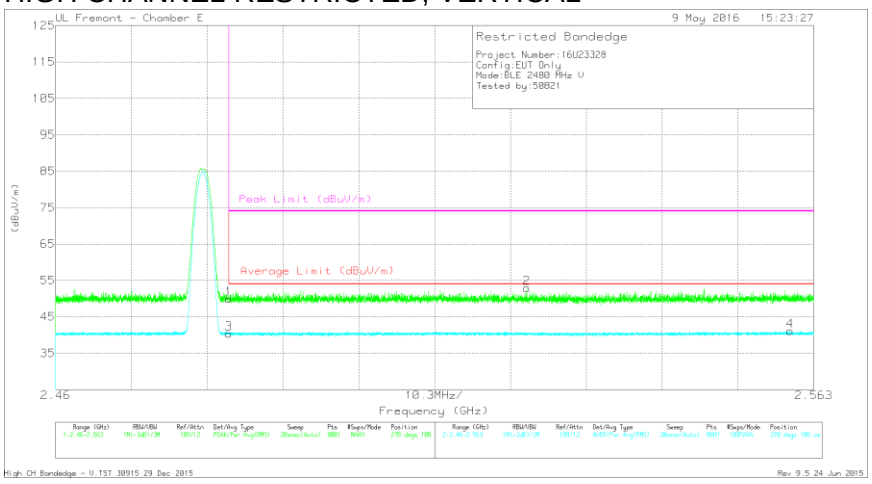
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.84	Pk	32.3	-20	51.14	-	-	74	-22.86	171	135	H
3	* 2.484	28.32	RMS	32.3	-20	40.62	54	-13.38	-	-	171	135	H
4	* 2.484	28.76	RMS	32.3	-20	41.06	54	-12.94	-	-	171	135	H
2	2.52	40.59	Pk	32.4	-20.1	52.89	-	-	74	-21.11	171	135	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

HIGH CHANNEL RESTRICTED, VERTICAL



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 2.484	37.66	Pk	32.3	-20	49.96	-	-	74	-24.04	270	108	V
3	* 2.484	28.12	RMS	32.3	-20	40.42	54	-13.58	-	-	270	108	V
2	2.524	40.56	Pk	32.4	-20.1	52.86	-	-	74	-21.14	270	108	V
4	2.56	28.69	RMS	32.5	-20.1	41.09	54	-12.91	-	-	270	108	V

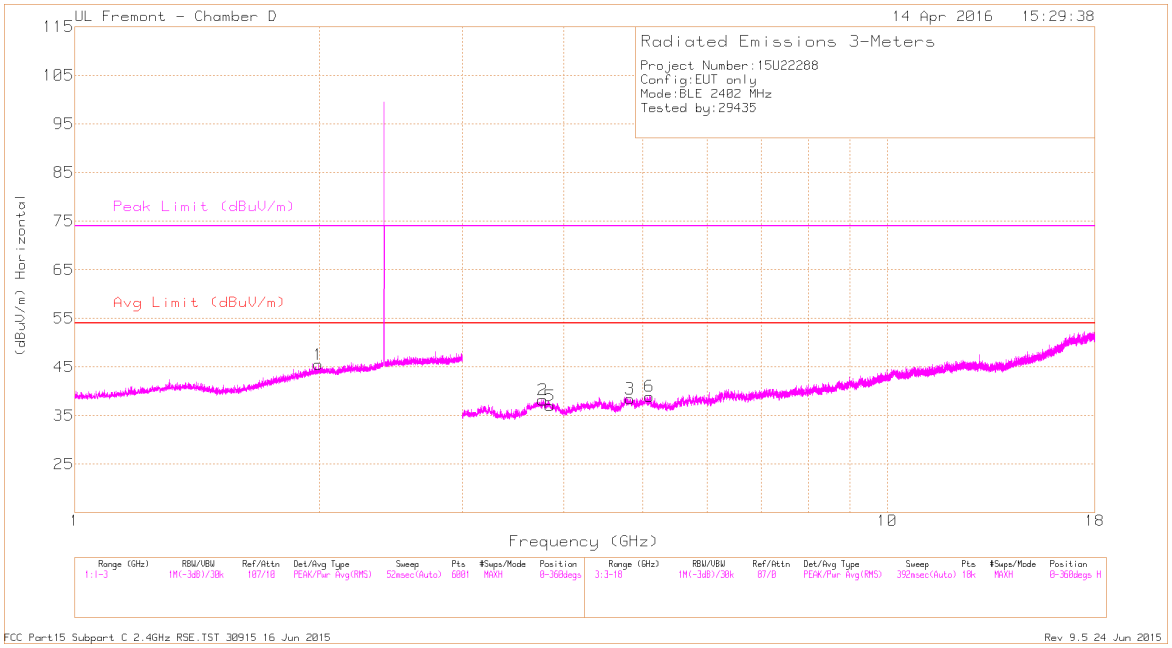
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

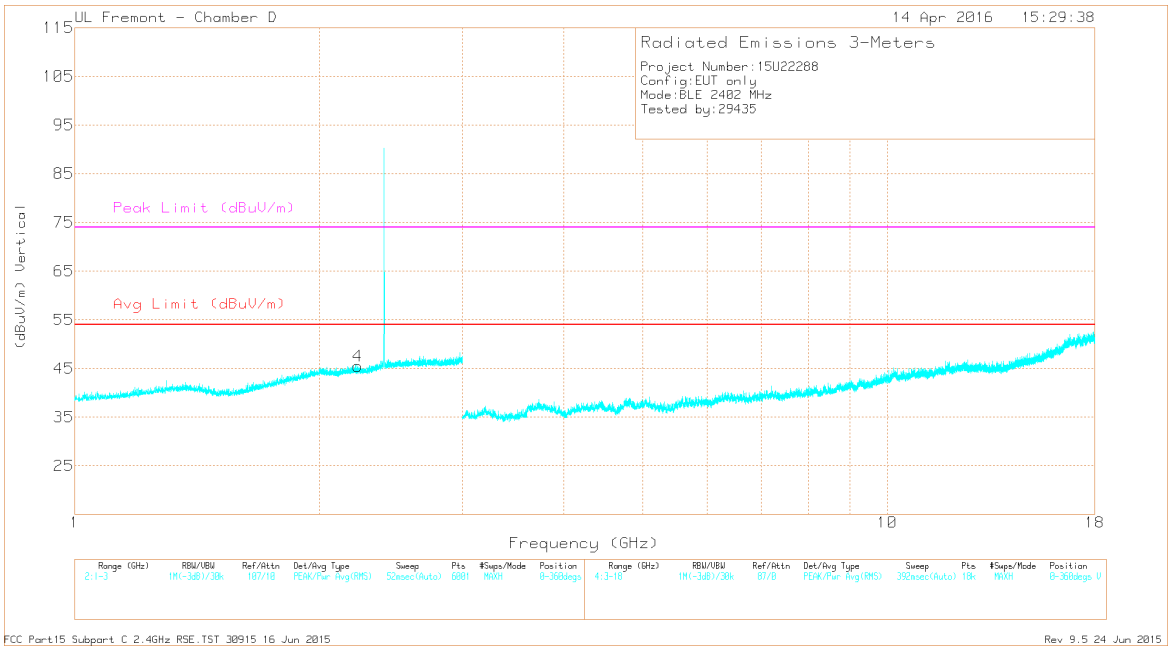
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
4	* 2.23	41.62	PK2	31.5	-20.8	52.32	-	-	74	-21.68	270	211	V
	* 2.23	30.19	MAv1	31.5	-20.8	40.89	54	-13.11	-	-	270	211	V
2	* 3.769	38.54	PK2	33.5	-28	44.04	-	-	74	-29.96	290	161	H
	* 3.77	27.42	MAv1	33.5	-28	32.92	54	-21.08	-	-	290	161	H
3	* 4.822	37.46	PK2	34.1	-27	44.56	-	-	74	-29.44	310	191	H
	* 4.822	26.7	MAv1	34.1	-27	33.8	54	-20.2	-	-	310	191	H
5	* 3.847	38.85	PK2	33.5	-28.5	43.85	-	-	74	-30.15	281	163	H
	* 3.846	27.77	MAv1	33.5	-28.5	32.77	54	-21.23	-	-	281	163	H
6	* 5.094	37.65	PK2	34	-26.7	44.95	-	-	74	-29.05	170	134	H
	* 5.095	26.89	MAv1	34	-26.7	34.19	54	-19.81	-	-	170	134	H
1	1.994	41.67	PK2	31.5	-21.2	51.97	-	-	-	-	290	183	H
	1.995	30.07	MAv1	31.6	-21.2	40.47	-	-	-	-	290	183	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

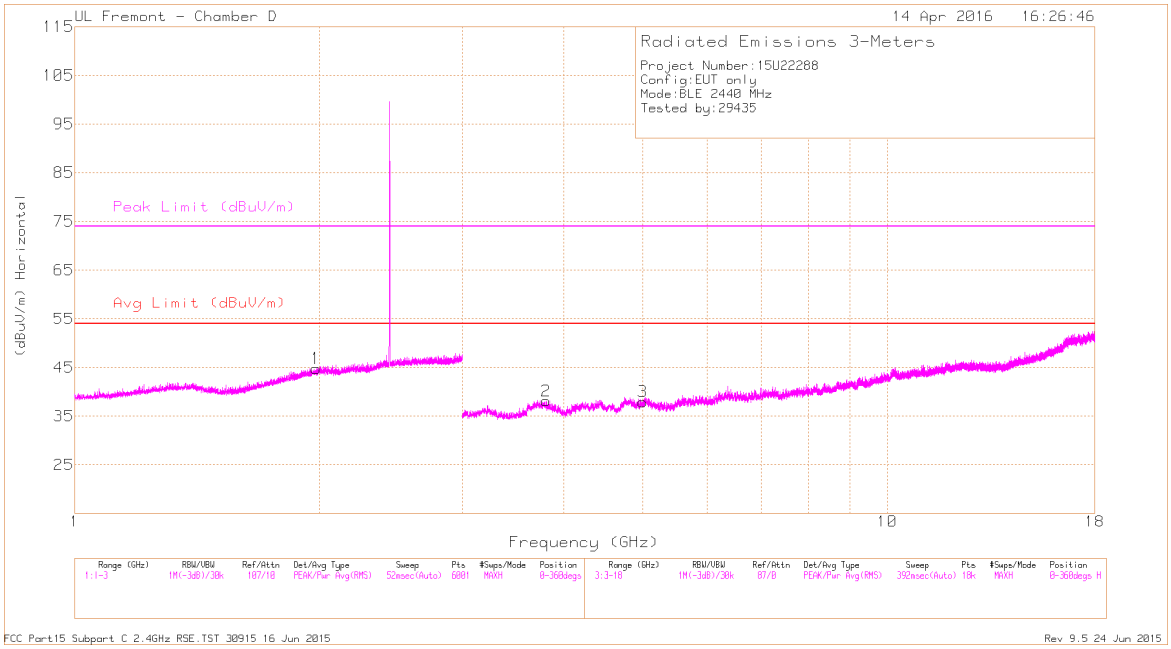
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

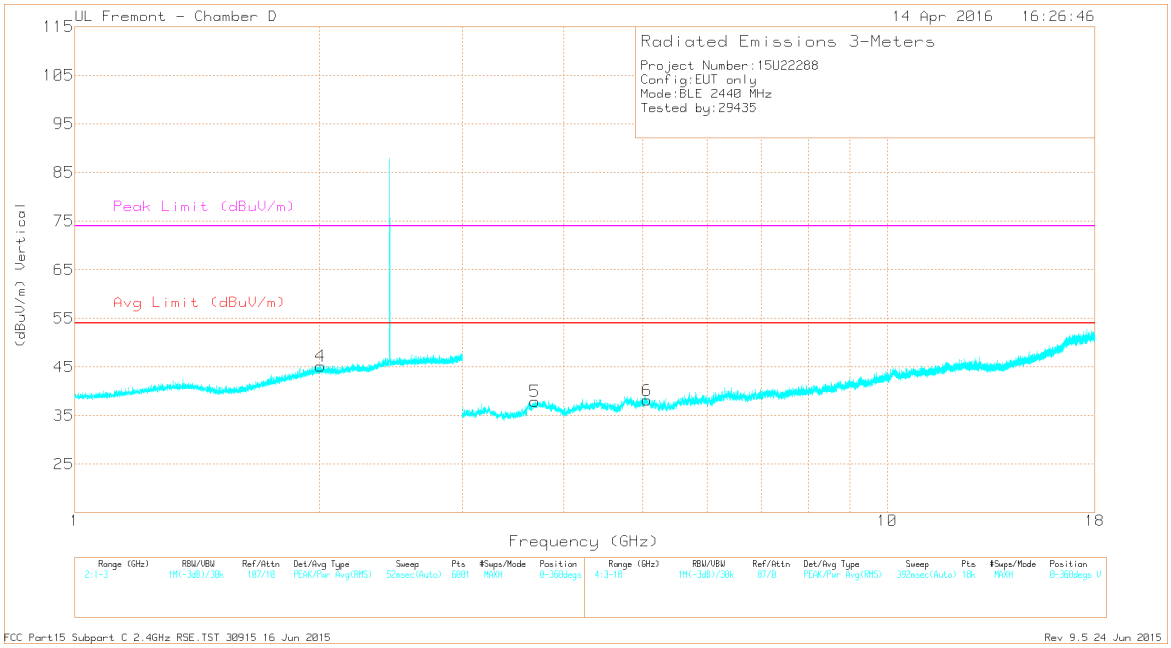
FCC Part15 Subpart C 2.4GHz RSE.TST 30915 16 Jun 2015

Rev 9.5 24 Jun 2015

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



DATA

Radiated Emissions

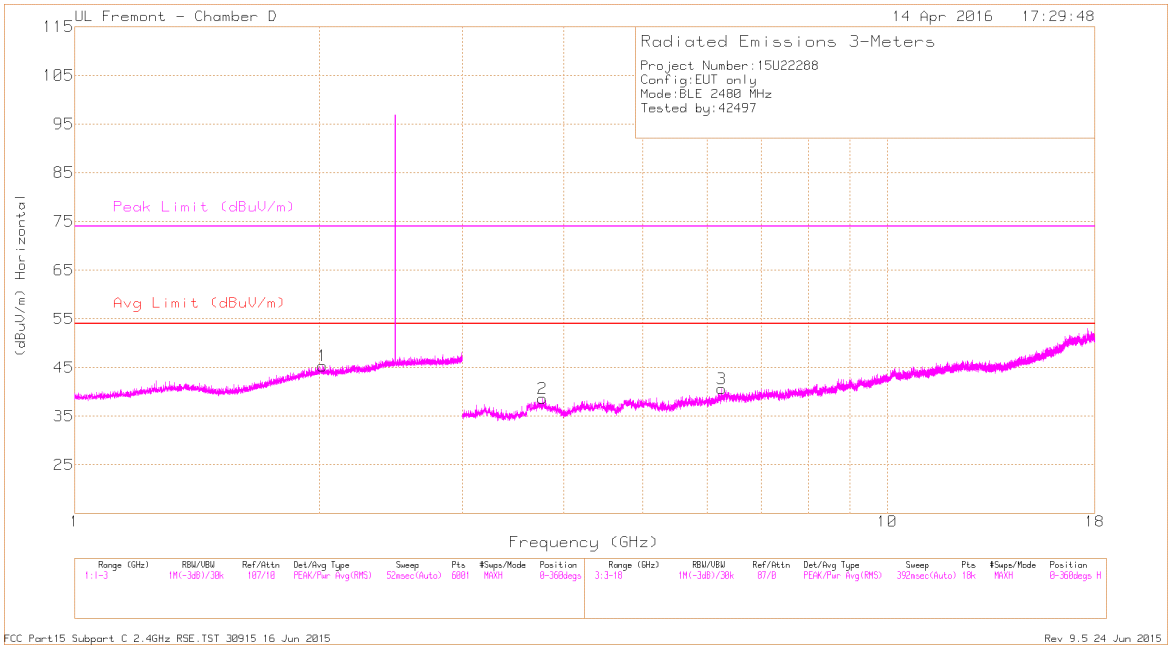
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.804	38.59	PK2	33.6	-28.2	43.99	-	-	74	-30.01	90	130	H
	* 3.808	27.58	MAv1	33.6	-28.2	32.98	54	-21.02	-	-	90	130	H
3	* 4.999	37.36	PK2	34	-26.9	44.46	-	-	74	-29.54	130	160	H
	* 5	26.31	MAv1	34	-26.9	33.41	54	-20.59	-	-	130	160	H
5	* 3.683	39.15	PK2	33.5	-28.9	43.75	-	-	74	-30.25	150	400	V
	* 3.683	27.71	MAv1	33.5	-28.9	32.31	54	-21.69	-	-	150	400	V
6	* 5.058	37.6	PK2	34	-26.6	45	-	-	74	-29	160	221	V
	* 5.059	26.37	MAv1	34	-26.6	33.77	54	-20.23	-	-	160	221	V
1	1.984	42.93	PK2	31.5	-21.2	53.23	-	-	-	-	56	187	H
	1.984	30.24	MAv1	31.5	-21.2	40.54	-	-	-	-	56	187	H
4	2.005	41.84	PK2	31.6	-21.2	52.24	-	-	-	-	75	146	V
	2.009	30.16	MAv1	31.5	-21.1	40.56	-	-	-	-	75	146	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

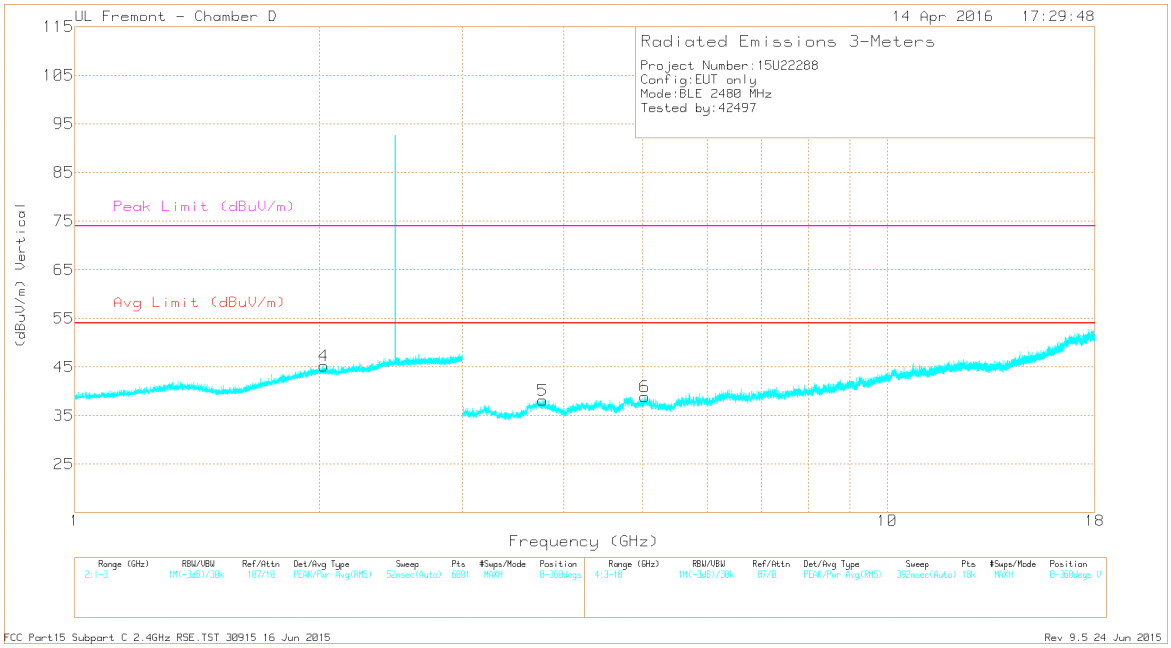
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
2	* 3.766	38.51	PK2	33.5	-28	44.01	-	-	74	-29.99	133	231	H
	* 3.769	26.82	MAv1	33.5	-28	32.32	54	-21.68	-	-	133	231	H
5	* 3.769	38.21	PK2	33.5	-28	43.71	-	-	74	-30.29	0	135	V
	* 3.768	26.66	MAv1	33.5	-28	32.16	54	-21.84	-	-	0	135	V
6	* 5.03	37.5	PK2	34	-26.4	45.1	-	-	74	-28.9	13	136	V
	* 5.033	25.76	MAv1	34	-26.3	33.46	54	-20.54	-	-	13	136	V
1	2.018	41.82	PK2	31.5	-21.1	52.22	-	-	-	-	223	112	H
	2.018	29.76	MAv1	31.5	-21.1	40.16	-	-	-	-	223	112	H
4	2.023	29.68	MAv1	31.5	-21.1	40.08	-	-	-	-	217	373	V
	2.024	41.84	PK2	31.5	-21.1	52.24	-	-	-	-	217	373	V
3	6.257	25.22	MAv1	35.6	-26.1	34.72	-	-	-	-	130	258	H
	6.258	36.56	PK2	35.6	-26.1	46.06	-	-	-	-	130	258	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

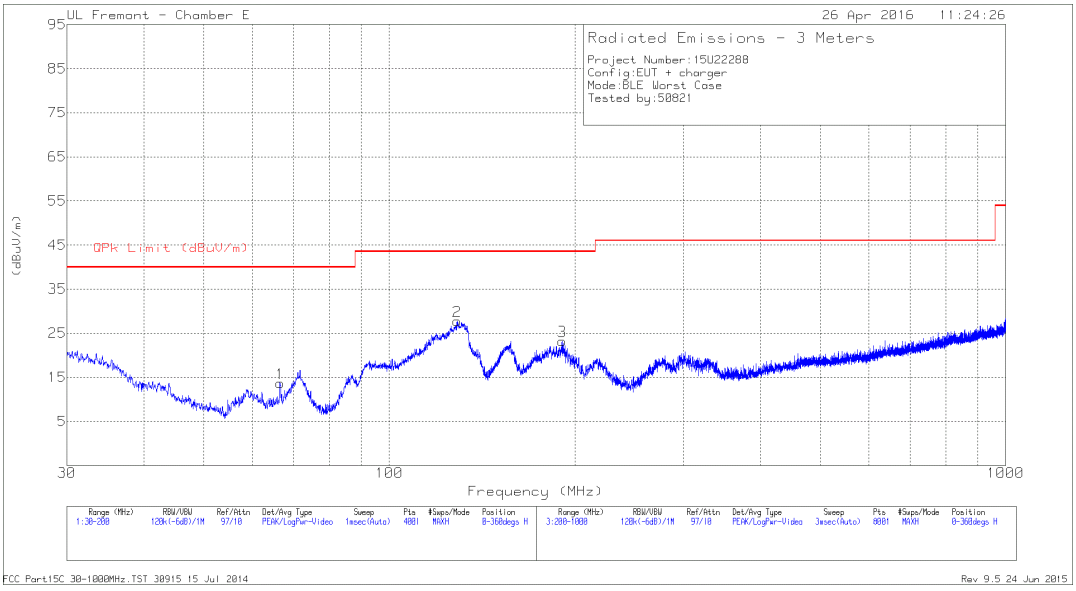
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

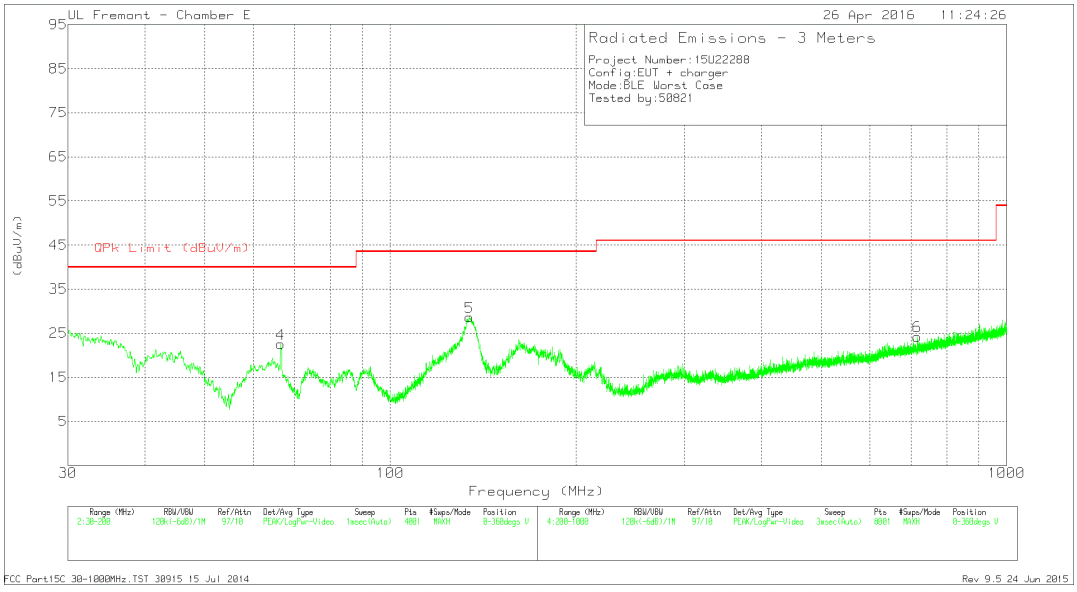
8.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL: PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 128.8125	41.03	Pk	17.9	-31.2	27.73	43.52	-15.79	0-360	201	H
5	* 134.465	42.18	Pk	17.6	-31.1	28.68	43.52	-14.84	0-360	100	V
4	66.4225	42.24	Pk	11.8	-31.5	22.54	40	-17.46	0-360	100	V
1	66.5925	33.25	Pk	11.9	-31.5	13.65	40	-26.35	0-360	201	H
3	190.65	38.65	Pk	15.4	-30.8	23.25	43.52	-20.27	0-360	100	H
6	716.7	29.17	Pk	24.2	-29.1	24.27	46.02	-21.75	0-360	99	V

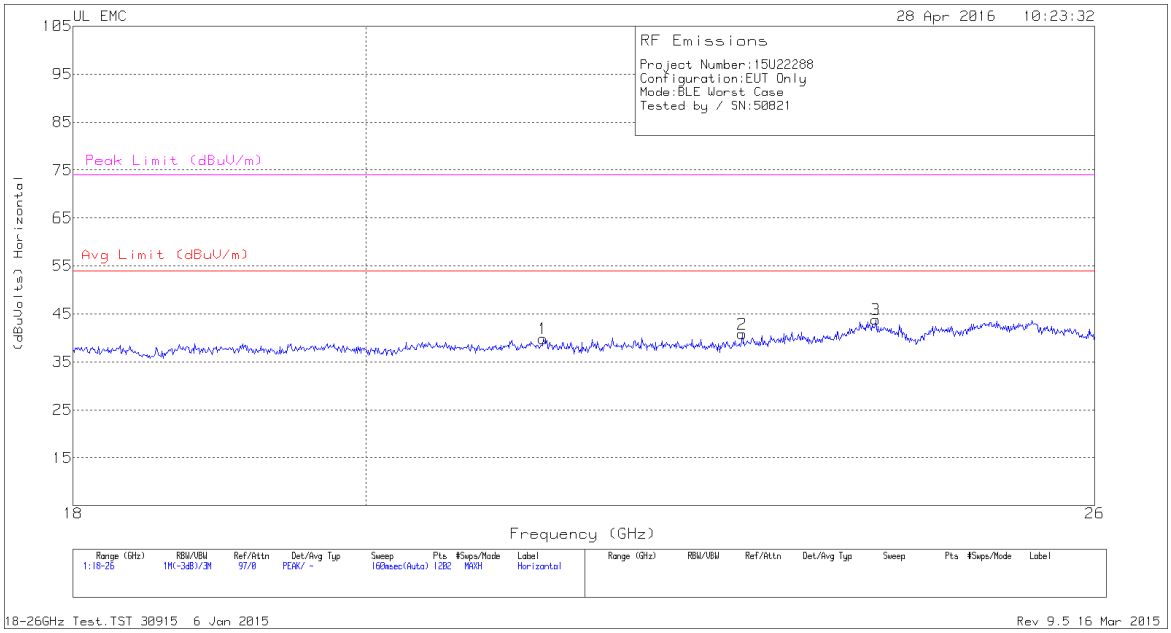
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

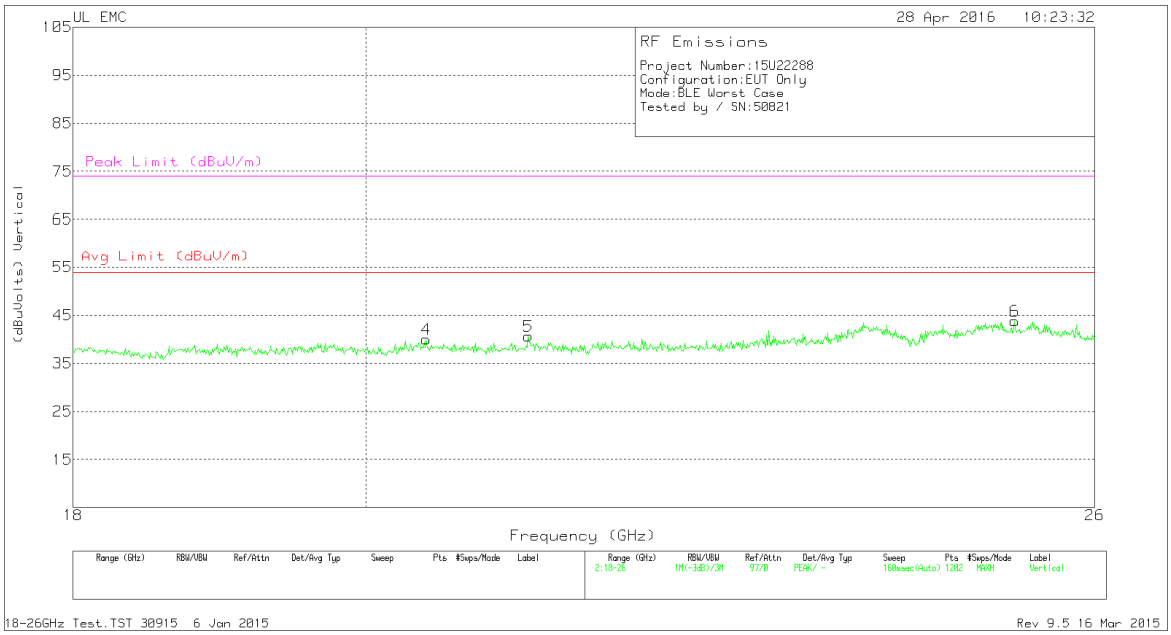
8.4. WORST-CASE 18 to 26 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T477 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	21.317	41.53	Pk	33	-25.2	-9.5	39.83	54	-14.17	74	-34.17
2	22.903	42.33	Pk	33.2	-25.2	-9.5	40.83	54	-13.17	74	-33.17
3	24.028	43.83	Pk	33.6	-24.1	-9.5	43.83	54	-10.17	74	-30.17
4	20.438	41.7	Pk	33	-25.2	-9.5	40	54	-14	74	-34
5	21.204	41.87	Pk	33	-24.7	-9.5	40.67	54	-13.33	74	-33.33
6	25.261	43.73	Pk	34.3	-24.7	-9.5	43.83	54	-10.17	74	-30.17

Pk - Peak detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	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.

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.

RESULTS

9.1. EUT POWERED BY AC/DC ADAPTER VIA USB CABLE

WORST EMISSIONS

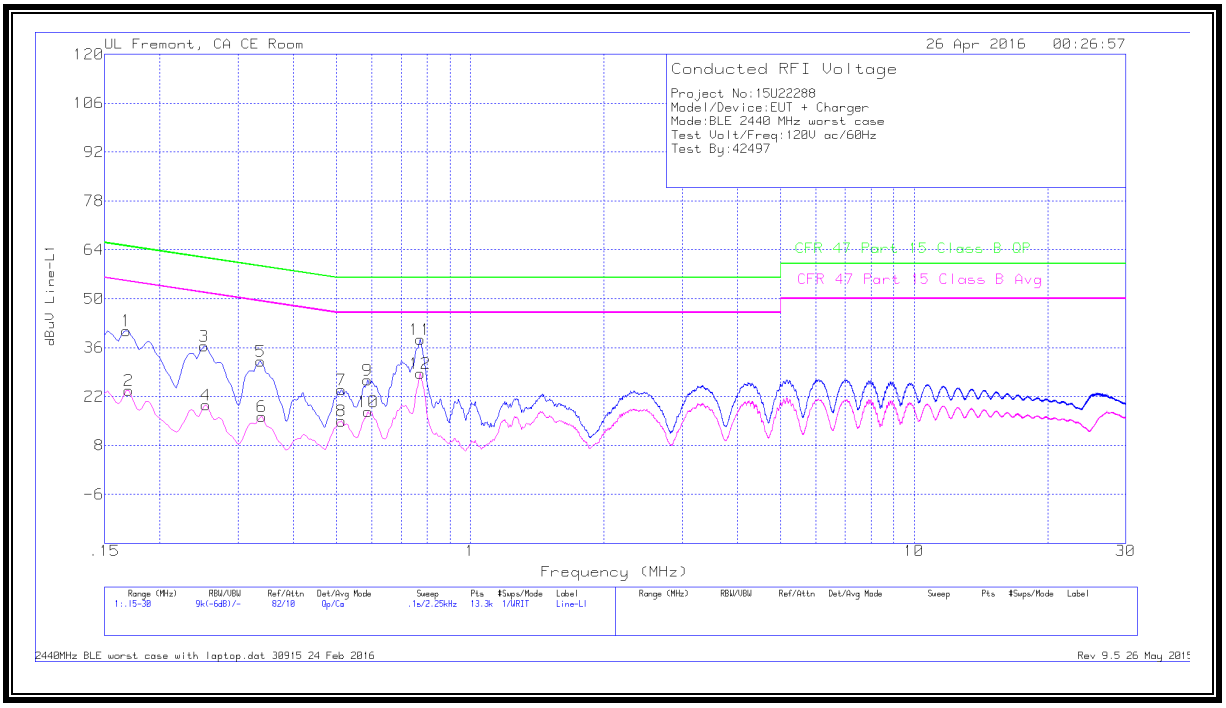
Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.168	29.57	Qp	1.2	0	10.1	40.87	65.06	-24.19	-	-
2	.17025	12.49	Ca	1.2	0	10.1	23.79	-	-	54.95	-31.16
3	.25125	25.6	Qp	.7	0	10.1	36.4	61.72	-25.32	-	-
4	.2535	8.82	Ca	.7	0	10.1	19.62	-	-	51.64	-32.02
5	.33675	21.47	Qp	.5	0	10.1	32.07	59.28	-27.21	-	-
6	.339	5.64	Ca	.5	0	10.1	16.24	-	-	49.23	-32.99
7	.51225	13.56	Qp	.3	0	10.1	23.96	56	-32.04	-	-
8	.51225	4.58	Ca	.3	0	10.1	14.98	-	-	46	-31.02
9	.5865	16.25	Qp	.3	0	10.1	26.65	56	-29.35	-	-
10	.58875	7.31	Ca	.3	0	10.1	17.71	-	-	46	-28.29
11	.771	27.89	Qp	.3	0	10.1	38.29	56	-17.71	-	-
12	.771	18.28	Ca	.3	0	10.1	28.68	-	-	46	-17.32

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	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	.168	30.2	Qp	1.3	0	10.1	41.6	65.06	-23.46	-	-
14	.17025	12.96	Ca	1.2	0	10.1	24.26	-	-	54.95	-30.69
15	.25125	25.94	Qp	.7	0	10.1	36.74	61.72	-24.98	-	-
16	.2535	9.78	Ca	.7	0	10.1	20.58	-	-	51.64	-31.06
17	.3345	20.81	Qp	.5	0	10.1	31.41	59.34	-27.93	-	-
18	.33787	6.04	Ca	.5	0	10.1	16.64	-	-	49.26	-32.62
19	.51225	14.97	Qp	.4	0	10.1	25.47	56	-30.53	-	-
20	.51225	4.92	Ca	.4	0	10.1	15.42	-	-	46	-30.58
21	.5865	16.22	Qp	.3	0	10.1	26.62	56	-29.38	-	-
22	.58875	7.94	Ca	.3	0	10.1	18.34	-	-	46	-27.66
23	.771	28.68	Qp	.3	0	10.1	39.08	56	-16.92	-	-
24	.771	18.68	Ca	.3	0	10.1	29.08	-	-	46	-16.92

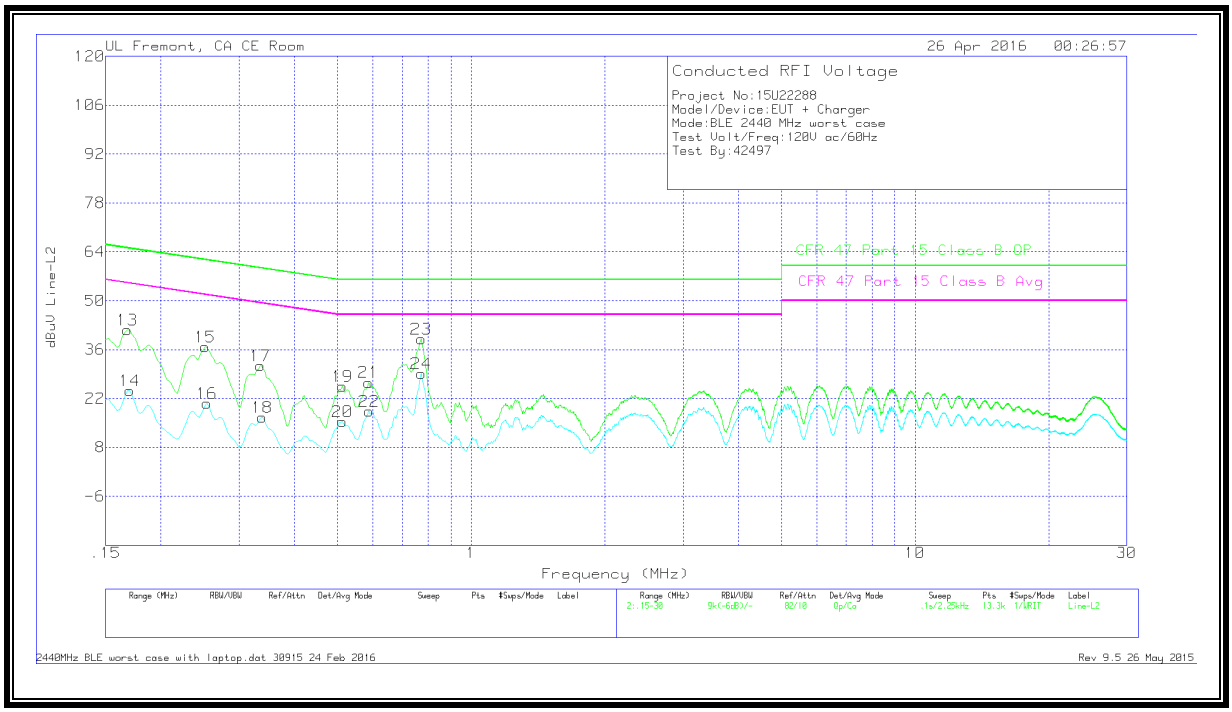
Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 1 RESULTS



LINE 2 RESULTS



9.2. EUT POWERED BY HOST PC VIA USB CABLE

WORST EMISSIONS

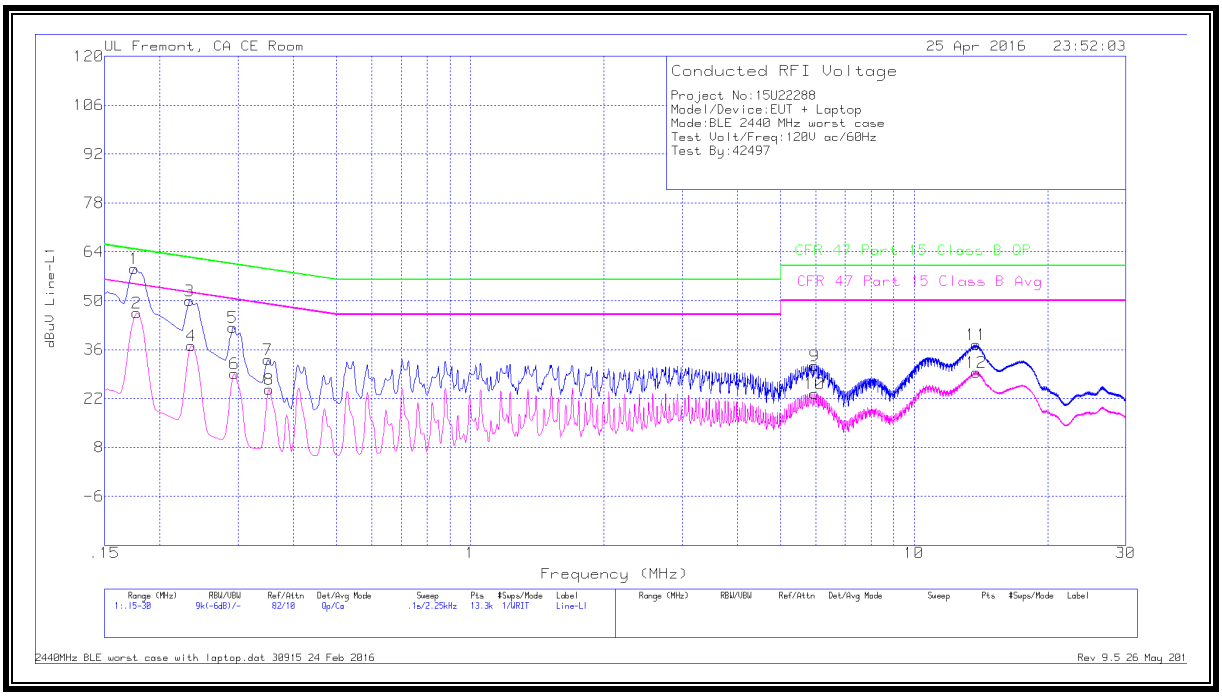
Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.17475	48.02	Qp	1.1	0	10.1	59.22	64.73	-5.51	-	-
2	.177	35.4	Ca	1.1	0	10.1	46.6	-	-	54.63	-8.03
3	.23325	39.12	Qp	.8	0	10.1	50.02	62.33	-12.31	-	-
4	.2355	26.24	Ca	.8	0	10.1	37.14	-	-	52.25	-15.11
5	.29175	31.64	Qp	.6	0	10.1	42.34	60.47	-18.13	-	-
6	.294	18.48	Ca	.6	0	10.1	29.18	-	-	50.41	-21.23
7	.35025	22.55	Qp	.5	0	10.1	33.15	58.96	-25.81	-	-
8	.3525	14.07	Ca	.5	0	10.1	24.67	-	-	48.9	-24.23
9	5.973	20.82	Qp	.2	.1	10.2	31.32	60	-28.68	-	-
10	5.97525	12.83	Ca	.2	.1	10.2	23.33	-	-	50	-26.67
11	13.821	26.85	Qp	.2	.2	10.2	37.45	60	-22.55	-	-
12	13.821	18.81	Ca	.2	.2	10.2	29.41	-	-	50	-20.59

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	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	48.4	Qp	1.2	0	10.1	59.7	64.73	-5.03	-	-
14	.177	35.74	Ca	1.2	0	10.1	47.04	-	-	54.63	-7.59
15	.23325	38.64	Qp	.8	0	10.1	49.54	62.33	-12.79	-	-
16	.2355	27.94	Ca	.8	0	10.1	38.84	-	-	52.25	-13.41
17	.29175	32.33	Qp	.6	0	10.1	43.03	60.47	-17.44	-	-
18	.294	22.66	Ca	.6	0	10.1	33.36	-	-	50.41	-17.05
19	.35025	22.86	Qp	.5	0	10.1	33.46	58.96	-25.5	-	-
20	.3525	13.31	Ca	.5	0	10.1	23.91	-	-	48.9	-24.99
21	5.43525	22.4	Qp	.2	.1	10.1	32.8	60	-27.2	-	-
22	5.4375	13.31	Ca	.2	.1	10.1	23.71	-	-	50	-26.29
23	14.037	25.16	Qp	.2	.2	10.2	35.76	60	-24.24	-	-
24	14.02575	18.94	Ca	.2	.2	10.2	29.54	-	-	50	-20.46

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 1 RESULTS



LINE 2 RESULTS