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

CERTIFICATION TEST REPORT

FOR

WIRELESS SPEAKER

MODEL NUMBER: 419574

FCC ID: A94419574
IC: 3232A-419574

REPORT NUMBER: 16M22663 – E2V3

ISSUE DATE: AUGUST 8, 2016

Prepared for
BOSE CORPORATION
100 THE MOUNTAIN ROAD
FRAMINGHAM, MA 01701

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	03/15/2016	Initial Issue	Huda Mustapha
V2	7/21/2016	Updated antenna gain in section 5.1 Updated numbering of subsections under section 5	Huda Mustapha
V3	8/8/2016	Updated limits table in section 8.1 Added data for emissions below 30 GHz to section 8.3 Updated section 9 with set up photos for below 30 MHz emissions	Francisco de Anda

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: BOSE CORPORATION
100 THE MOUNTAIN ROAD
FRAMINGHAM, MA 01701

EUT DESCRIPTION: WIRELESS SPEAKER

MODEL: 419574

SERIAL NUMBER: RAD1 (RADIATED), COND1 (CONDUCTED)

DATE TESTED: February 24, 2016 – August 5, 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:

Huda Mustapha

HUDA MUSTAPHA
PROJECT LEAD
UL Verification Services Inc.

Prepared By:

CHRIS XIONG
EMC ENGINEER
UL Verification Services Inc.

FRANCISCO DE ANDA
PROGRAM MANAGER
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, 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, 0.15 to 30 MHz	± 3.52 dB
Radiated Disturbance, 30 to 1000 MHz	± 4.94 dB
Radiated Disturbance, 1 to 6 GHz	± 3.86 dB
Radiated Disturbance, 6 to 18 GHz	± 4.23 dB
Radiated Disturbance, 18 to 26 GHz	± 5.30 dB
Radiated Disturbance, 26 to 40 GHz	± 5.23 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a wireless speaker.

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	7.74	5.94

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PCB antenna, with a maximum gain of 3.24 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was version 0.4.4.

The test utility software used during testing was BlueTest3, version 2.5.8.

5.5. WORST-CASE CONFIGURATION AND MODE

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

All radiated testing was performed with the EUT in desktop orientation.

BLE: 1 Mbps.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	T420	PB-FFLT3	QDS-BCRM0146
AC/DC Adapter	Lenovo	9T54	92P1109	N/A

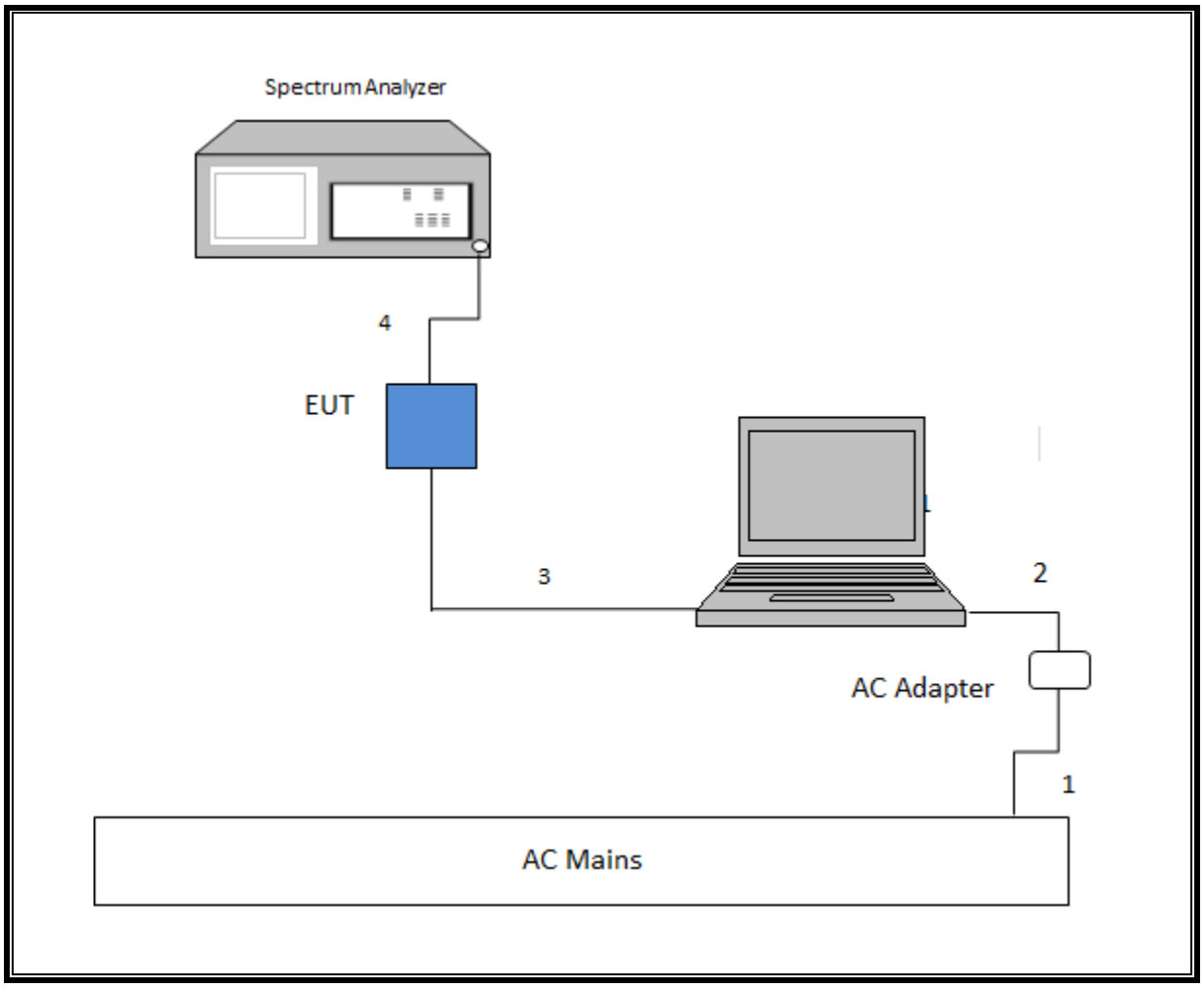
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	3-prong	Unshielded	1	
2	DC	1	Barrel	Unshielded	1.8	
3	USB/Micro USB	1	USB/Micro USB	Shielded	1.5	USB to Laptop/Micro USB to EUT
4	RF Input	1	SMA	Shielded	0.2	

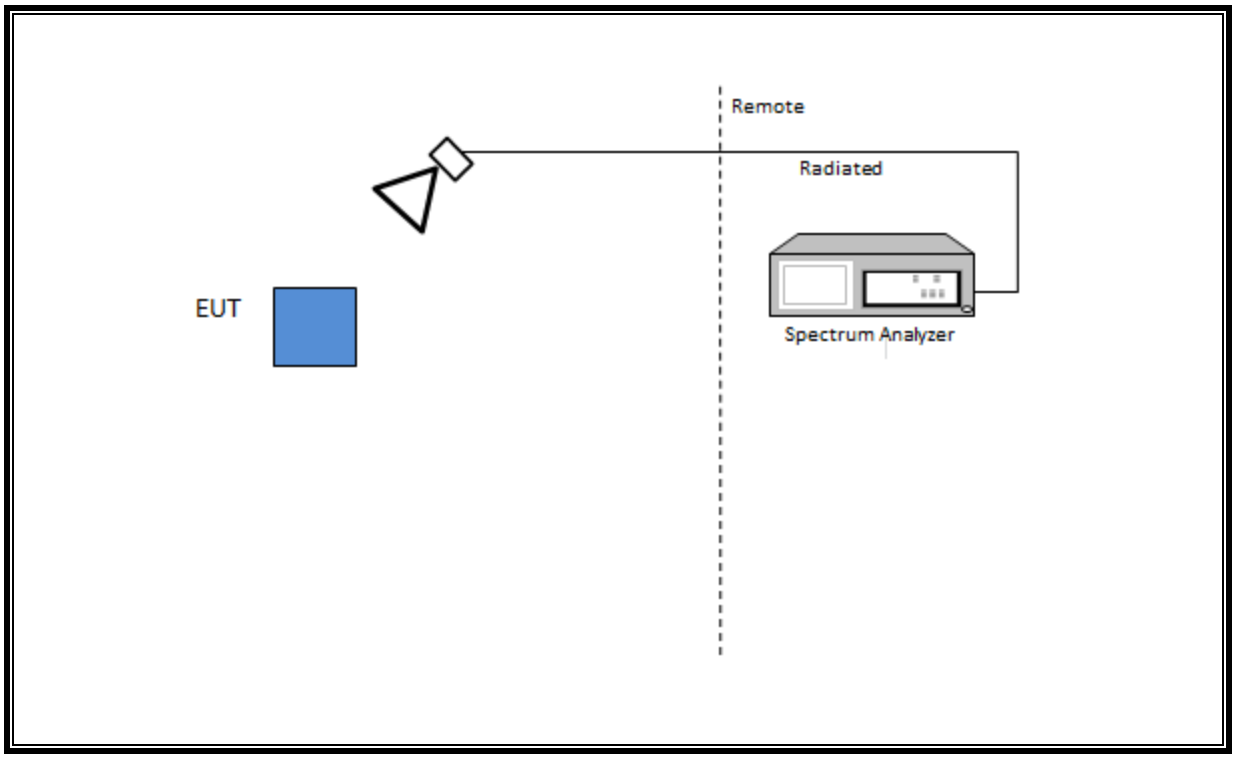
TEST SETUP

The EUT is a wireless speaker used as a stand-alone device. Test software exercised the radio card.

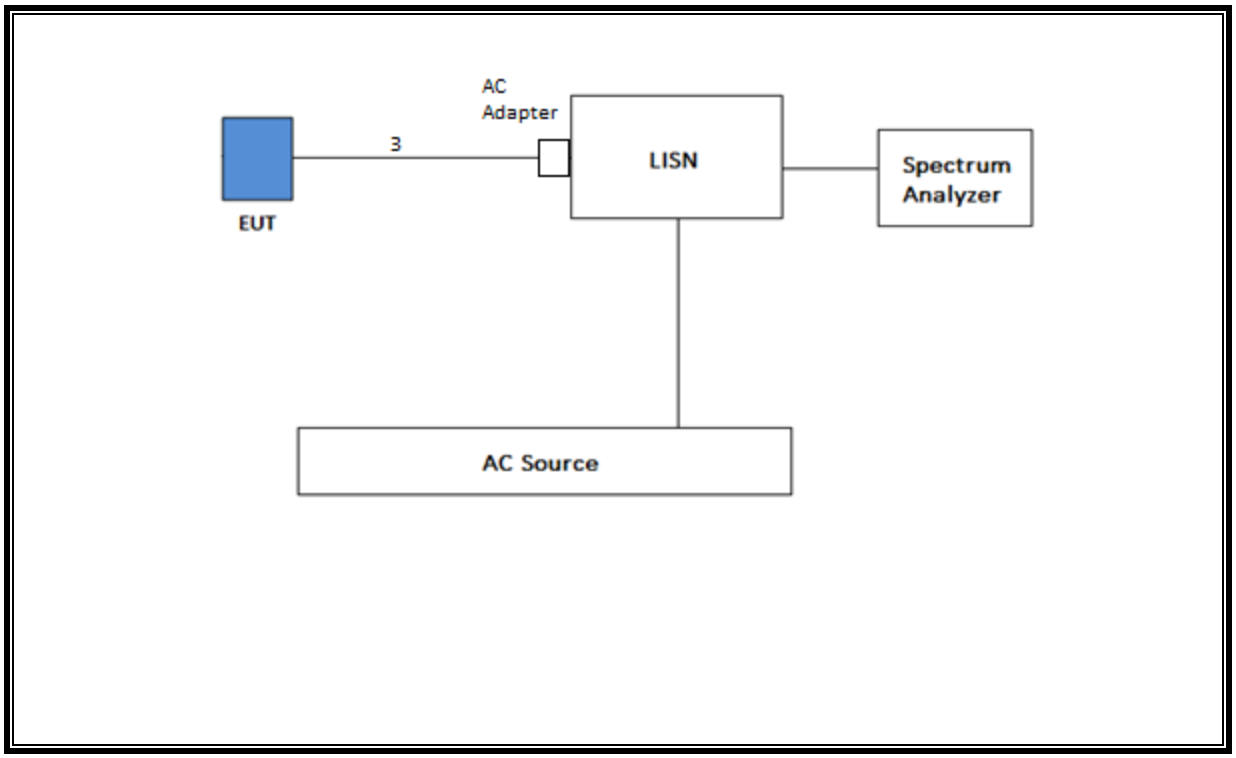
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATEDTESTS



SETUP DIAGRAM FOR LINE CONDUCTED TEST



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**	**T No.**	**Cal Due**
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014	
Conducted Software	UL	UL EMC	Ver 3.9.1, December 28, 2015	
Spectrum Analyzer 9kHz - 26.5GHz	Keysight	N9030A	PRE0123763	12/09/16
Antenna, Horn 1-18GHz	ETS Lindgren	3117	863	04/10/16
Antenna, Broadband Hybrid, 30MHz - 2000MHz	Sunol Science	JB3	900	04/10/16
Amplifier, 1-18GHz	Miteq	ASF42-00101800-25-S-42	495	10/22/16
Amplifier, 10KHz-1GHz, 32dB	Sonoma	310N	835	06/06/16
Amplifier, 1-8GHz, 35dB	Miteq	AMF-4D-01000800-30-29P	782	10/22/16
Spectrum Analyzer, 40GHz	Hewlett-Packard	8564E	106	08/14/16
Antenna, Horn 18-26GHz	ARA	MWH-1826	447	05/12/16
Amplifier, 1-26GHz	Keysight	8449B	404	06/29/16
EMI Test Receiver, 10Hz-7GHz	Rohde & Schwarz	ESR7	1436	12/19/16
LISN, Conducted Emissions CISPR-16	Fischer	FCC-LISN-50/250-25-2-01-CISPR16	1310	09/16/16
Spectrum Analyzer, PSA, 3Hz - 44GHz	Keysight	E4446A	123	10/22/16

7. ANTENNA PORT TEST RESULTS

7.1. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074, Section 6.0.

6 dB Bandwidth: KDB 558074 D01 v03r01, Section 8.1.

99% Bandwidth: ANSI C63.10-2013, Sections 6.9.3.

Peak Output Power: KDB 558074 D01 v03r01, Section 9.1.1.

Power Spectral Density: KDB 558074 D01 v03r01, Section 10.2.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r01, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r01, Section 12.1.

Band-edge: KDB 558074 D01 v03r01, Section 13.3.2.

AC Power-line conducted emissions: ANSI C63.10-2009 and C63.10-2013, Section 6.2.

7.2. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

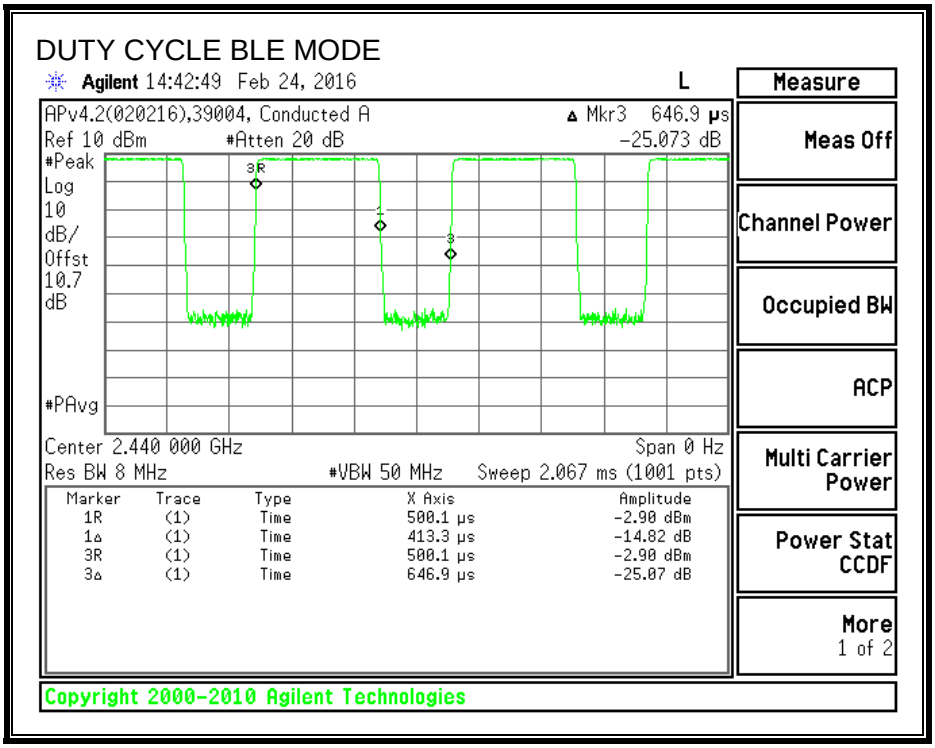
PROCEDURE

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	0.413	0.647	0.639	63.89%	1.95	2.420

DUTY CYCLE PLOT



7.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

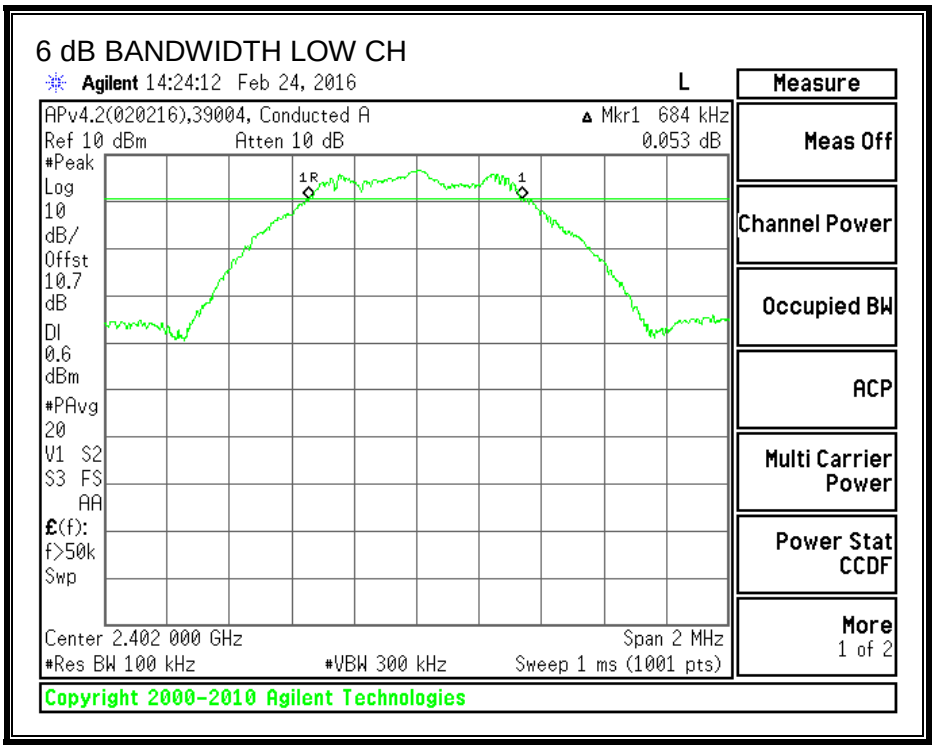
IC RSS-247 5.2 (1)

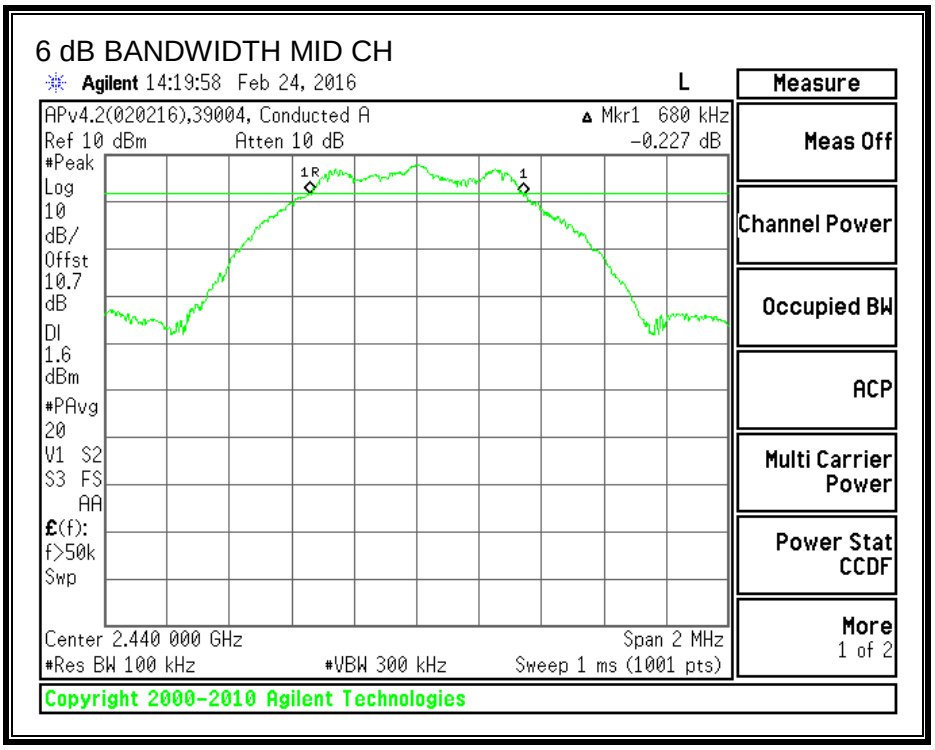
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

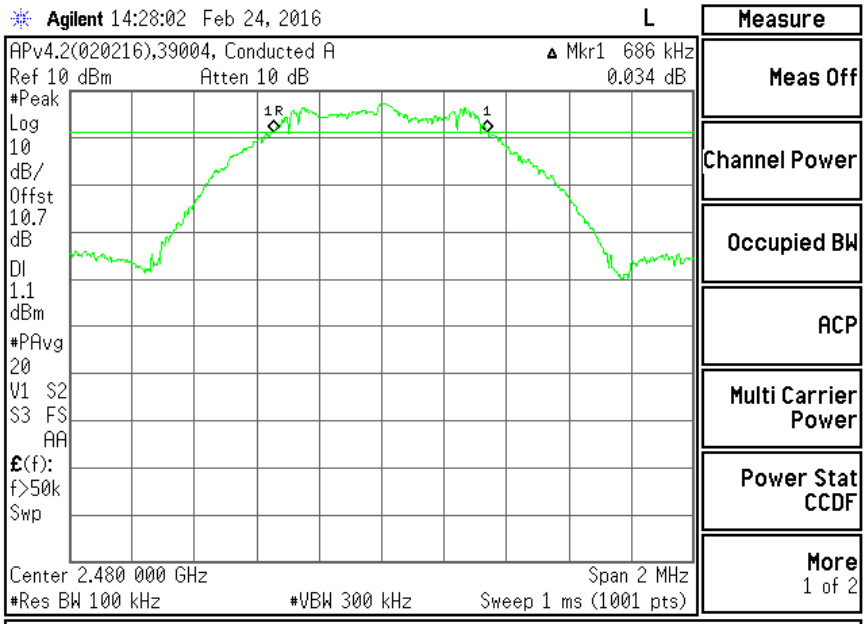
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.684	0.5
Middle	2440	0.680	0.5
High	2480	0.686	0.5

6 dB BANDWIDTH





6 dB BANDWIDTH HIGH CH



7.4. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

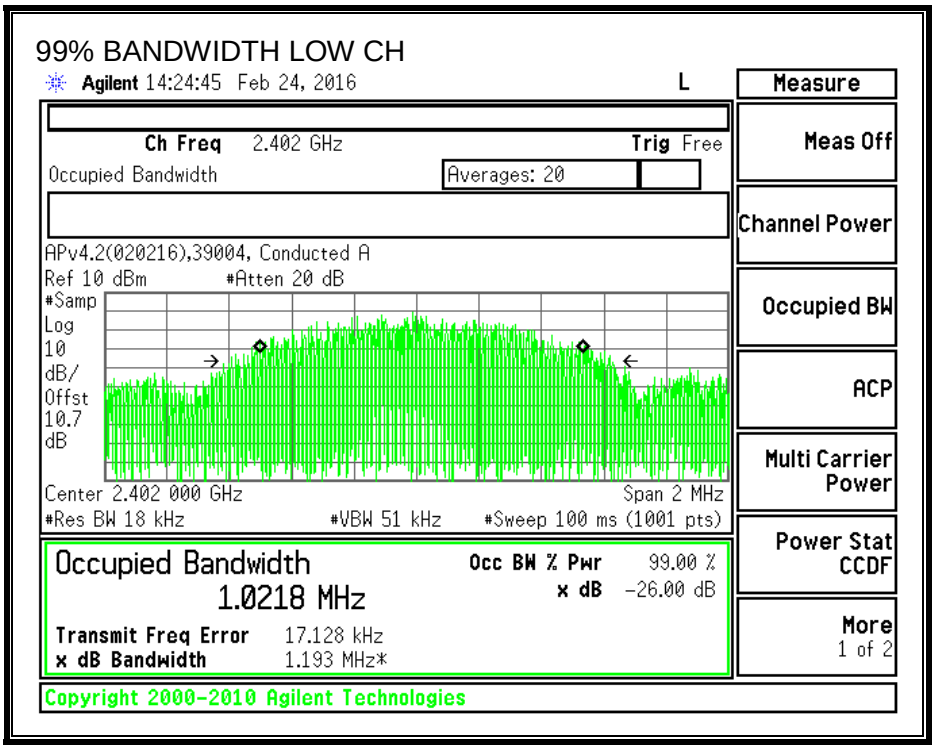
TEST PROCEDURE

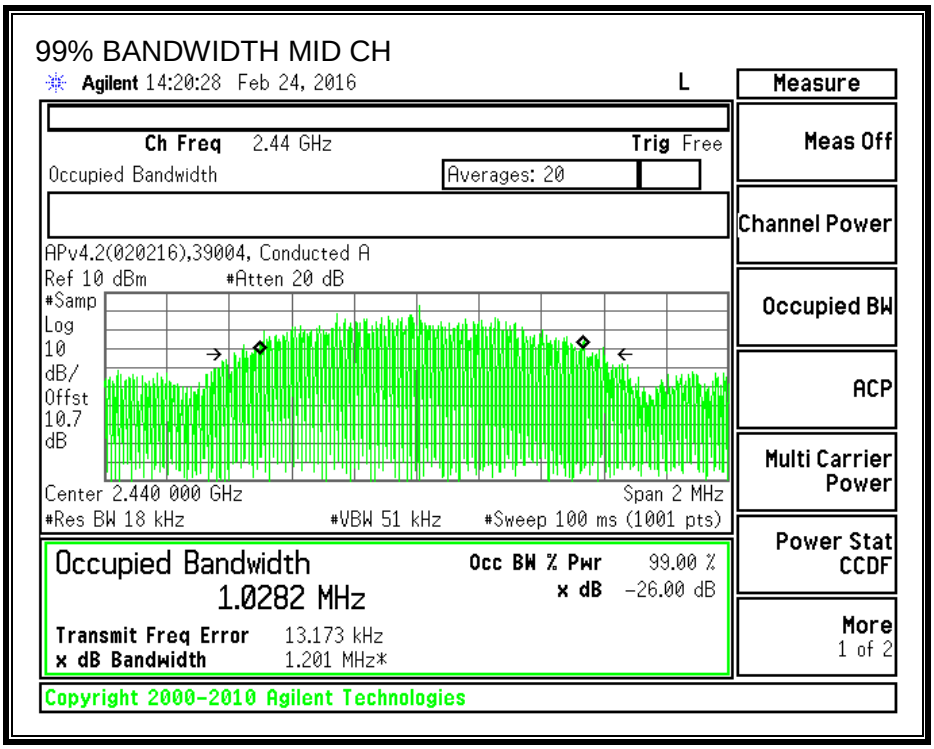
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

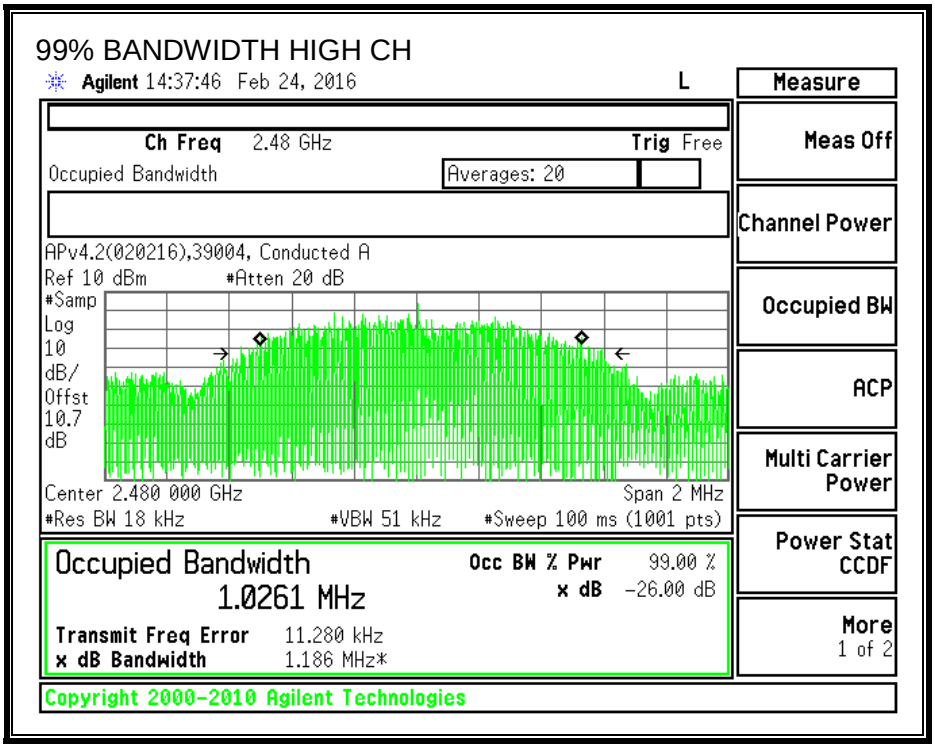
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0218
Middle	2440	1.0282
High	2480	1.0261

99% BANDWIDTH







7.5. OUTPUT POWER

LIMITS

FCC §15.247 (b)

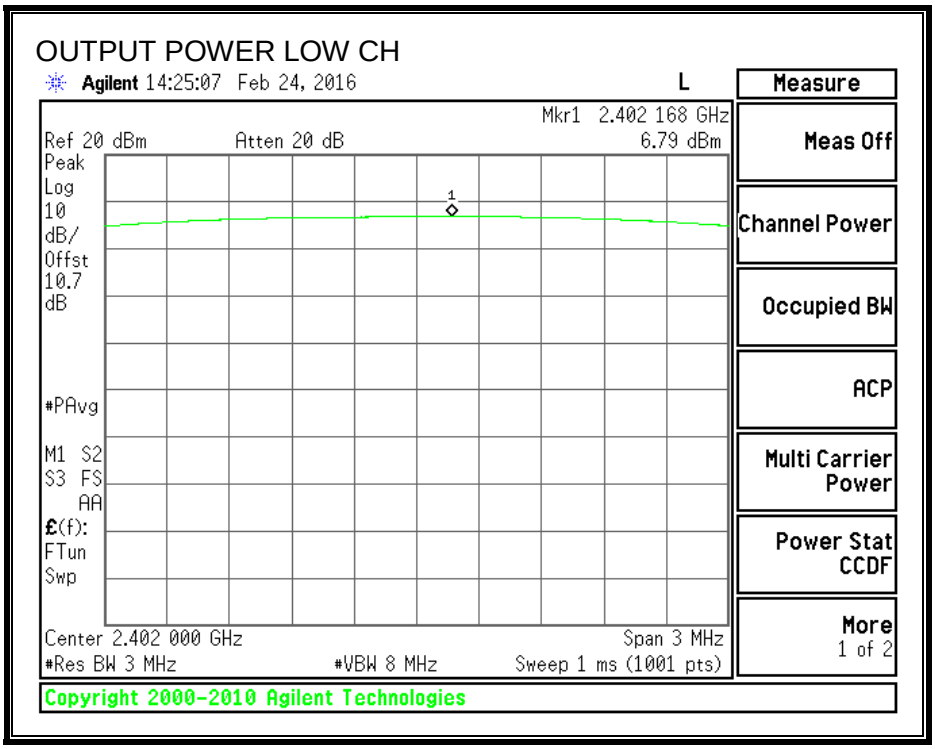
IC RSS-247 5.4 (4)

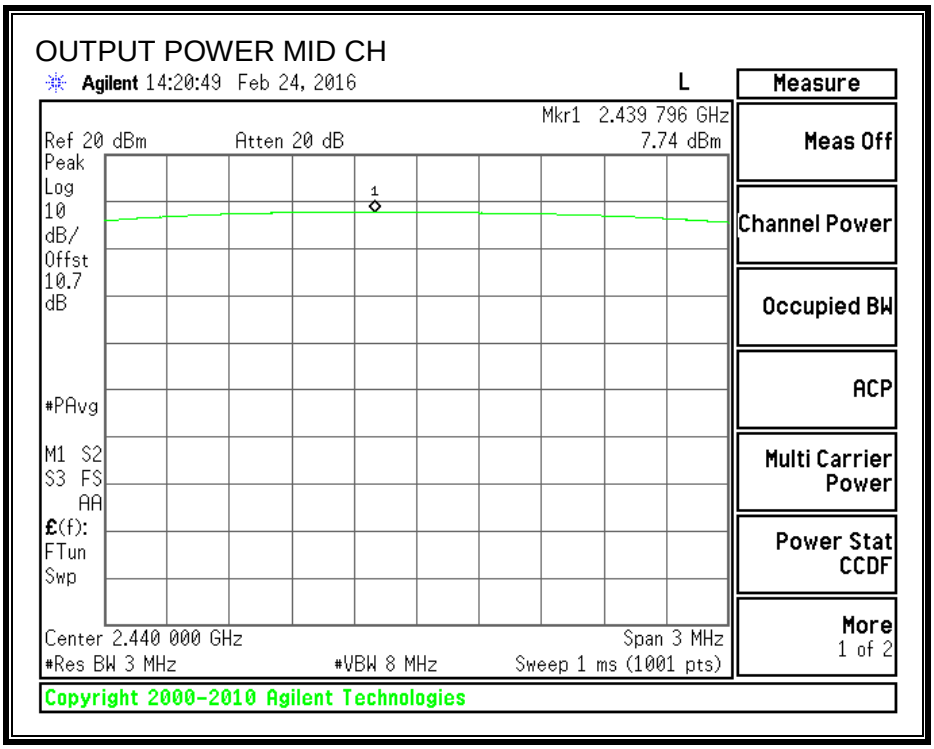
The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

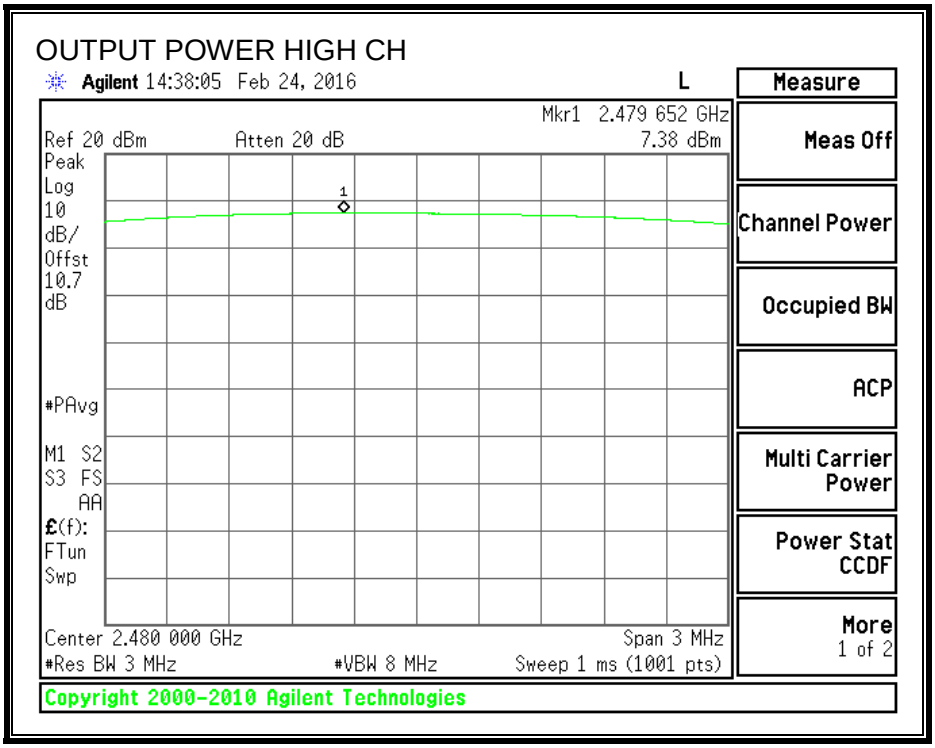
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	6.79	30	-23.210
Middle	2440	7.74	30	-22.260
High	2480	7.38	30	-22.620

OUTPUT POWER







7.6. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

The cable assembly insertion loss of 10.7 dB (including 10 dB pad and .7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	5.21
Middle	2440	5.03
High	2480	5.24

7.7. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-247 5.2 (2)

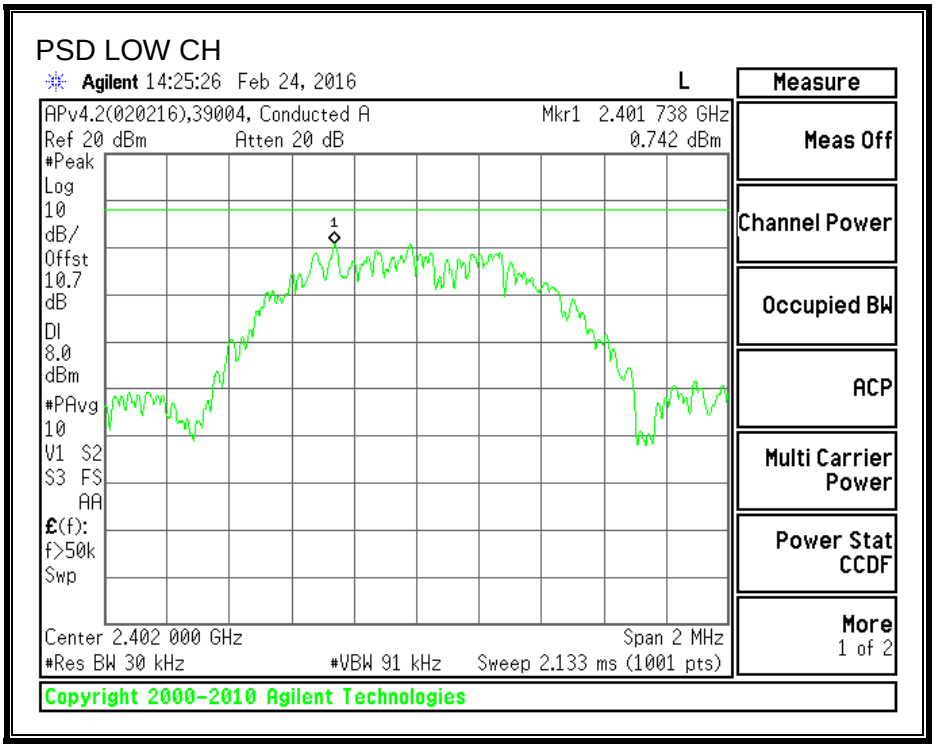
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

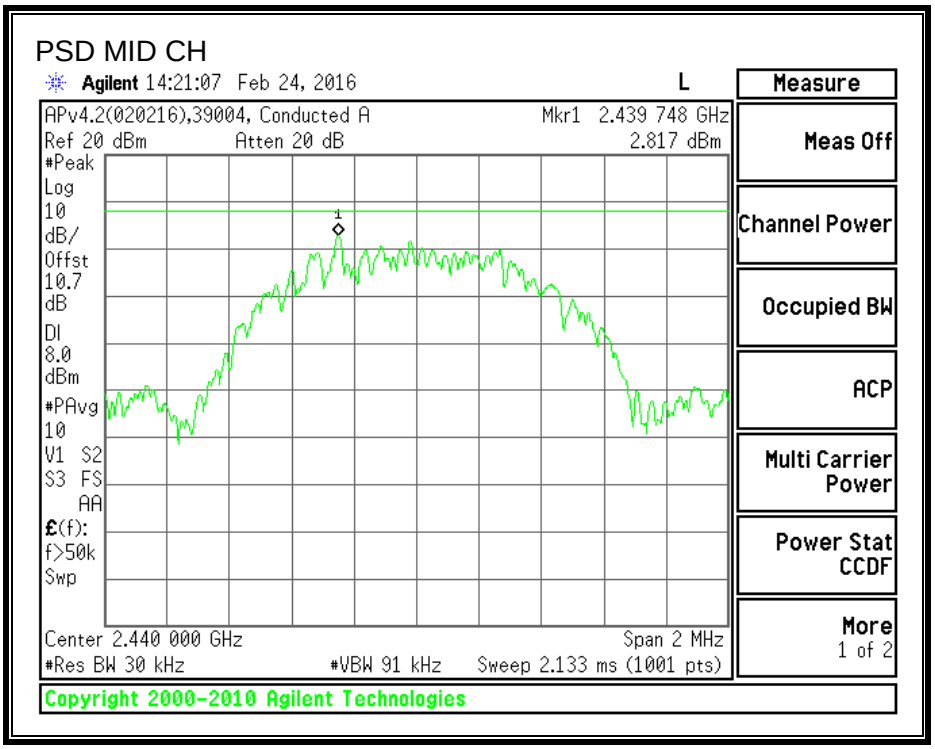
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	0.742	8	-7.26
Middle	2440	2.817	8	-5.18
High	2480	3.647	8	-4.35

POWER SPECTRAL DENSITY

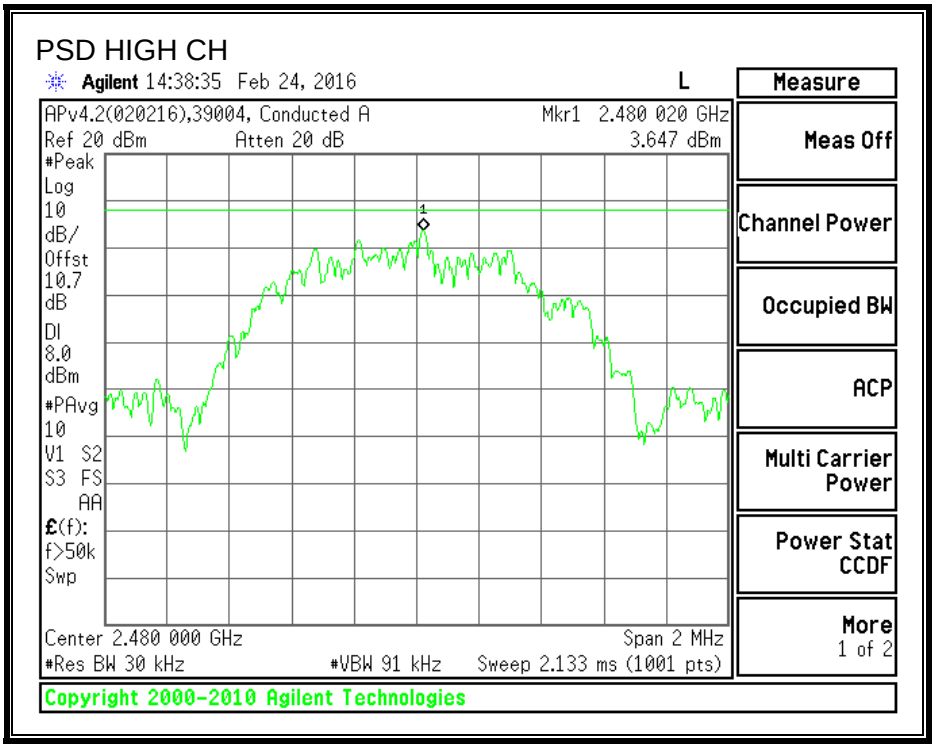
PSD LOW CH



PSD MID CH



PSD HIGH CH



7.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

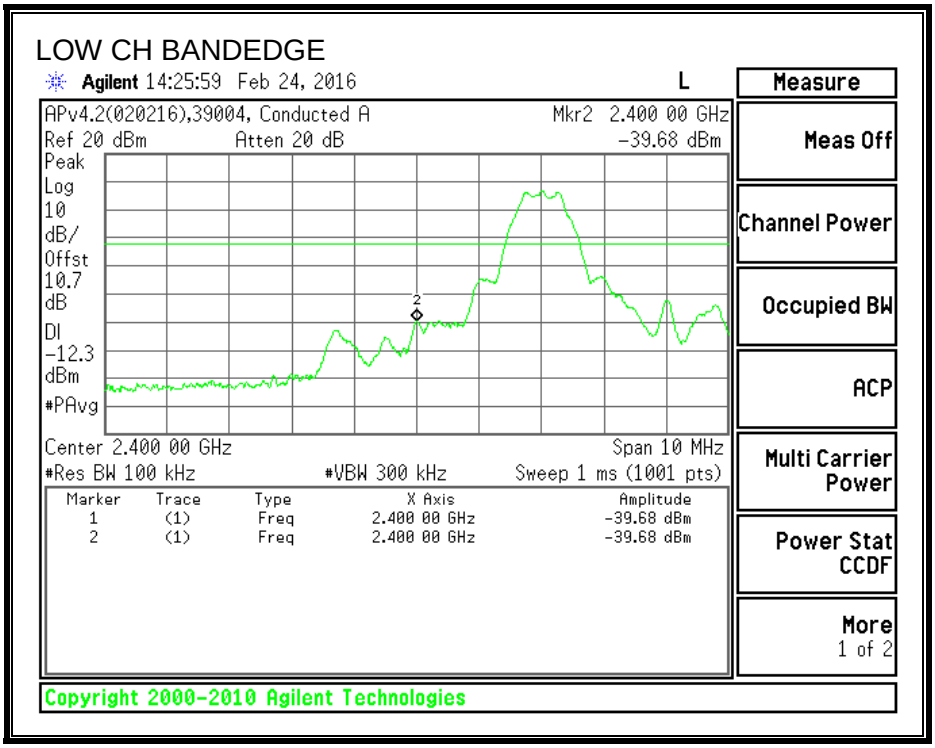
FCC §15.247 (d)

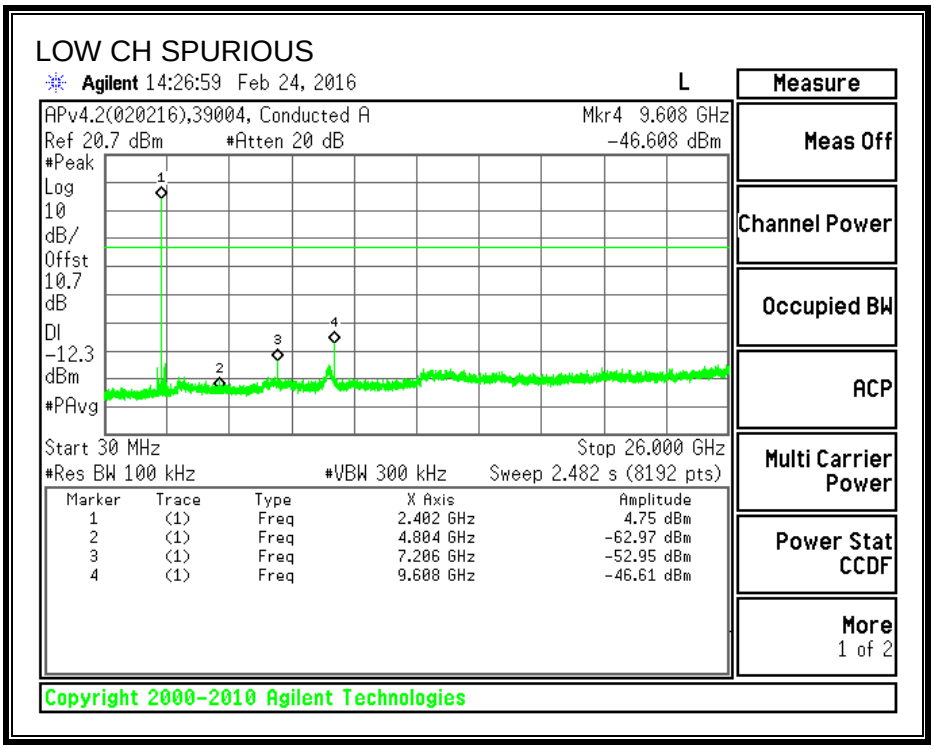
IC RSS-247 Clause 5.5

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

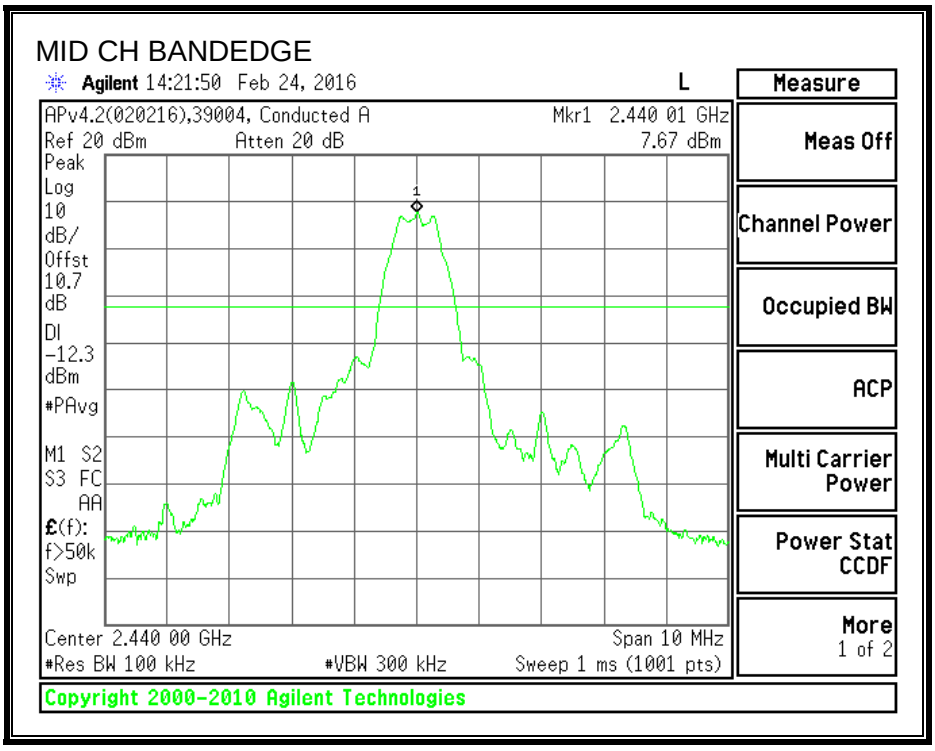
RESULTS

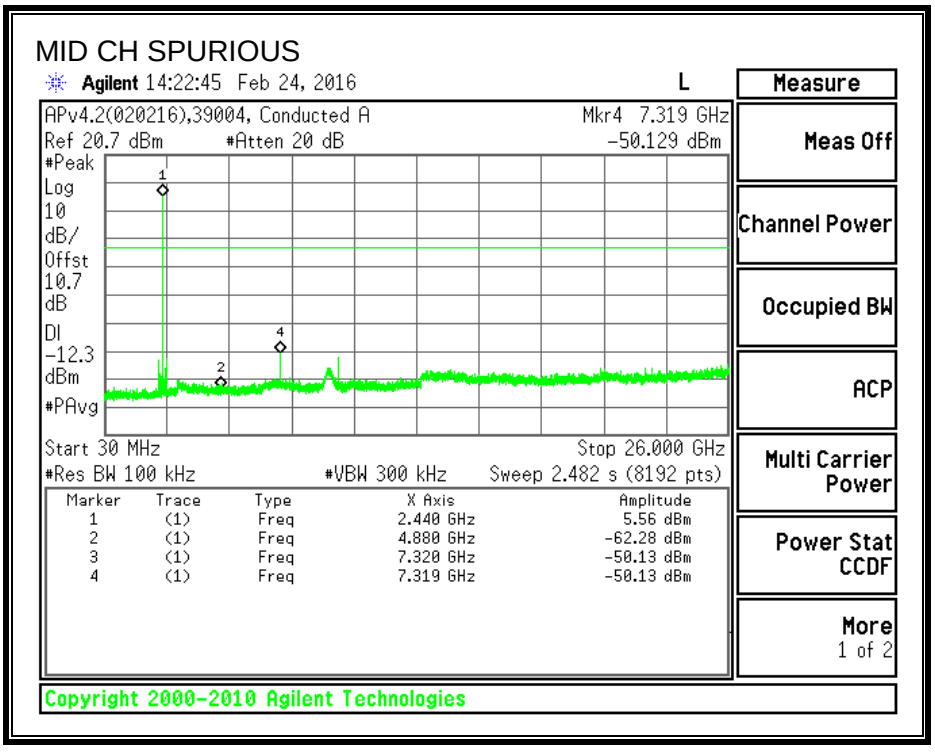
SPURIOUS EMISSIONS, LOW CHANNEL



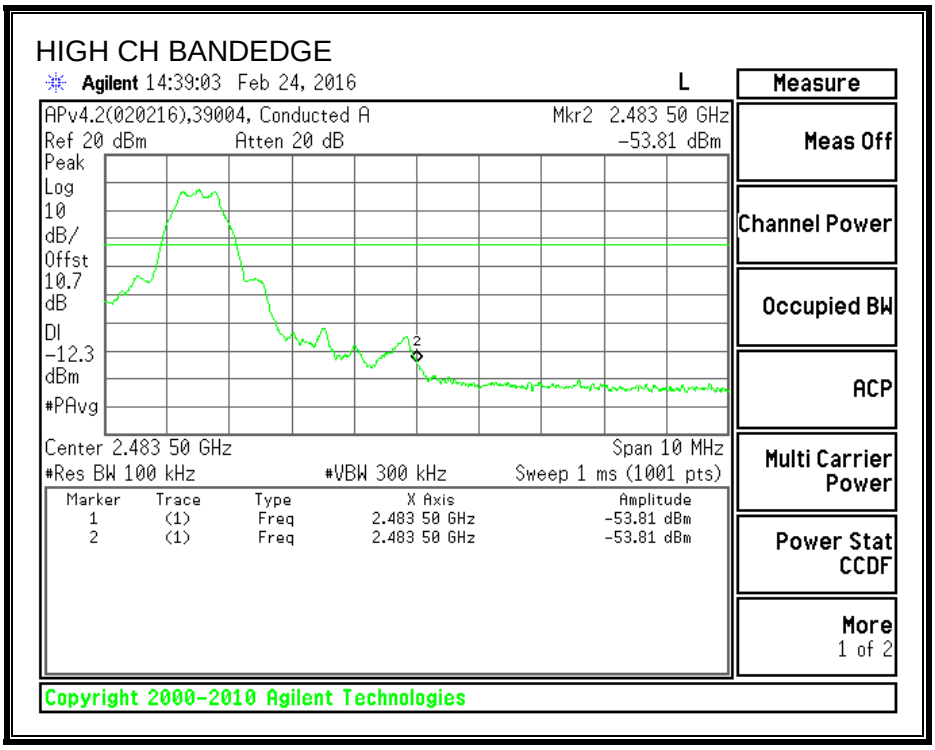


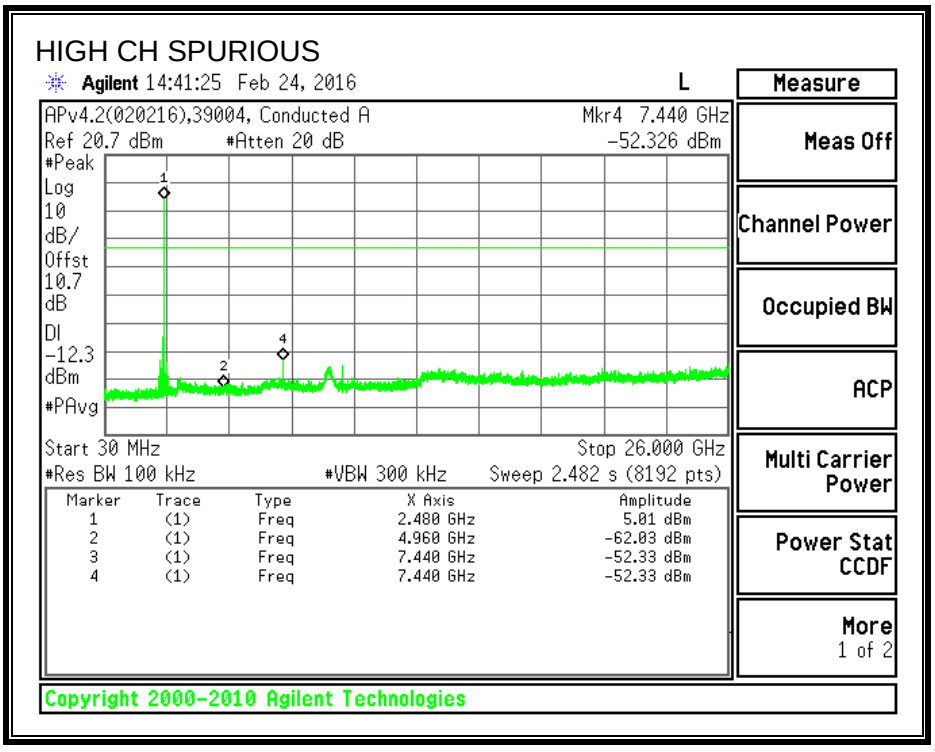
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

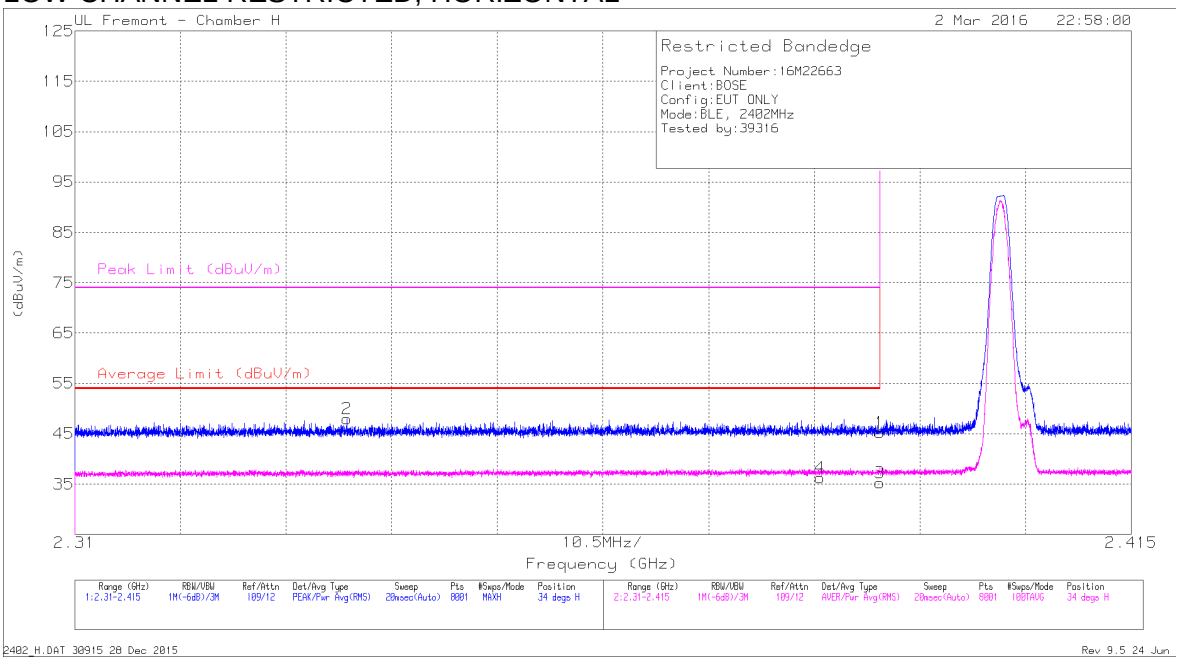
IC RSS-GEN Clause 8.9 (Transmitter)

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

8.2. TRANSMITTER ABOVE 1 GHz

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, HORIZONTAL



DATA

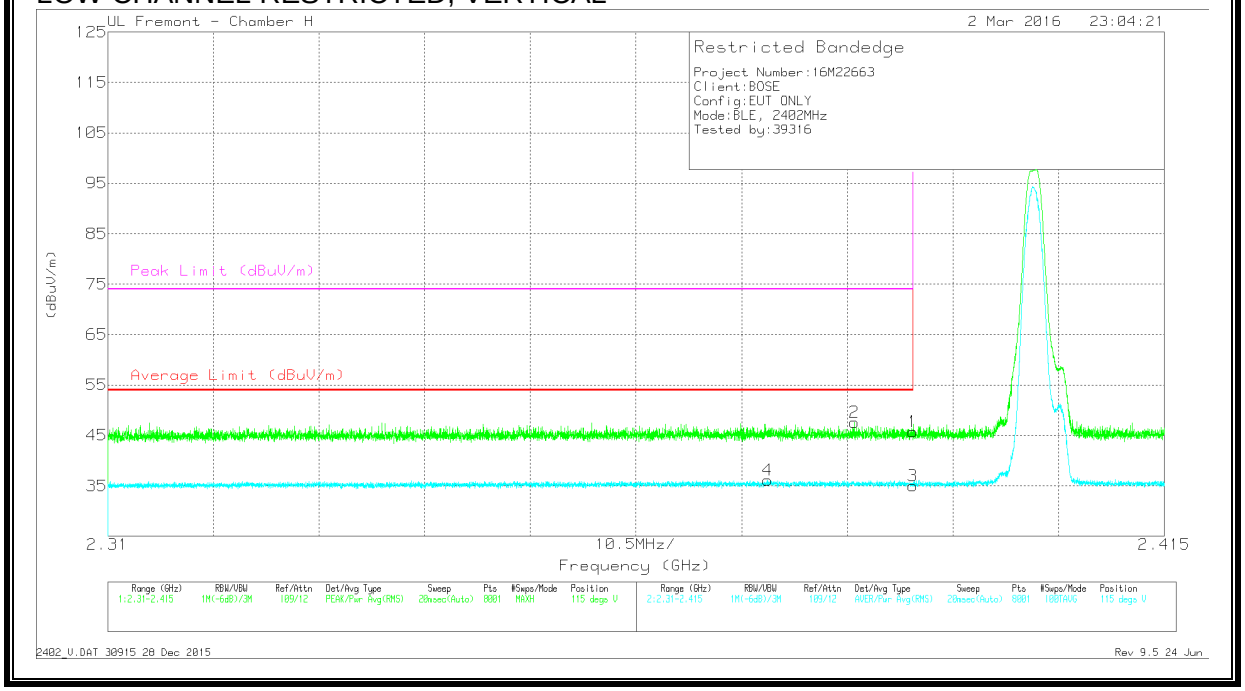
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	35.61	Pk	32	-22.4	0	45.21	-	-	74	-28.79	34	299	H
2	* 2.337	38.44	Pk	31.9	-22.4	0	47.94	-	-	74	-26.06	34	299	H
3	* 2.39	25.68	RMS	32	-22.4	1.95	37.23	54	-16.77	-	-	34	299	H
4	* 2.384	26.61	RMS	32	-22.4	1.95	38.16	54	-15.84	-	-	34	299	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, VERTICAL



DATA

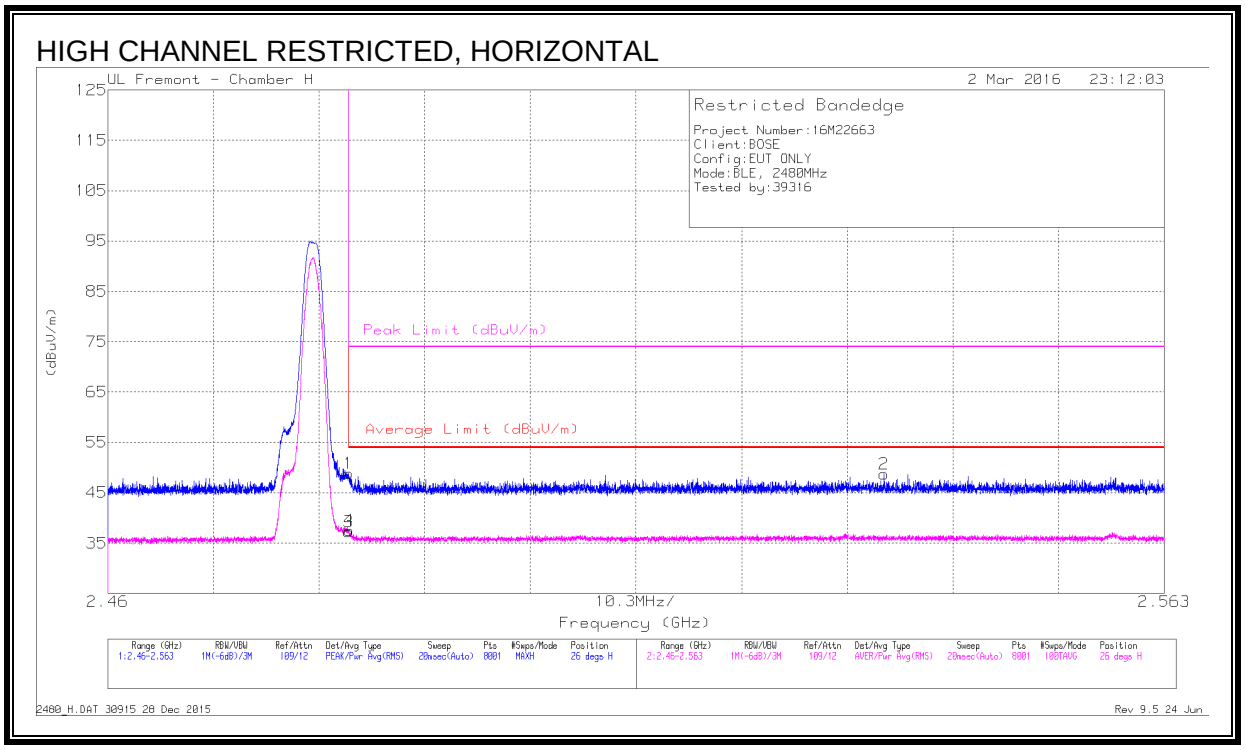
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	36.17	Pk	32	-22.4	0	45.77	-	-	74	-28.23	115	339	V
2	* 2.384	38.03	Pk	32	-22.4	0	47.63	-	-	74	-26.37	115	339	V
3	* 2.39	25.44	RMS	32	-22.4	1.95	36.99	54	-17.01	-	-	115	339	V
4	* 2.376	26.52	RMS	32	-22.4	1.95	38.07	54	-15.93	-	-	115	339	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

RESTRICTED BANDEDGE (HIGH CHANNEL)



DATA

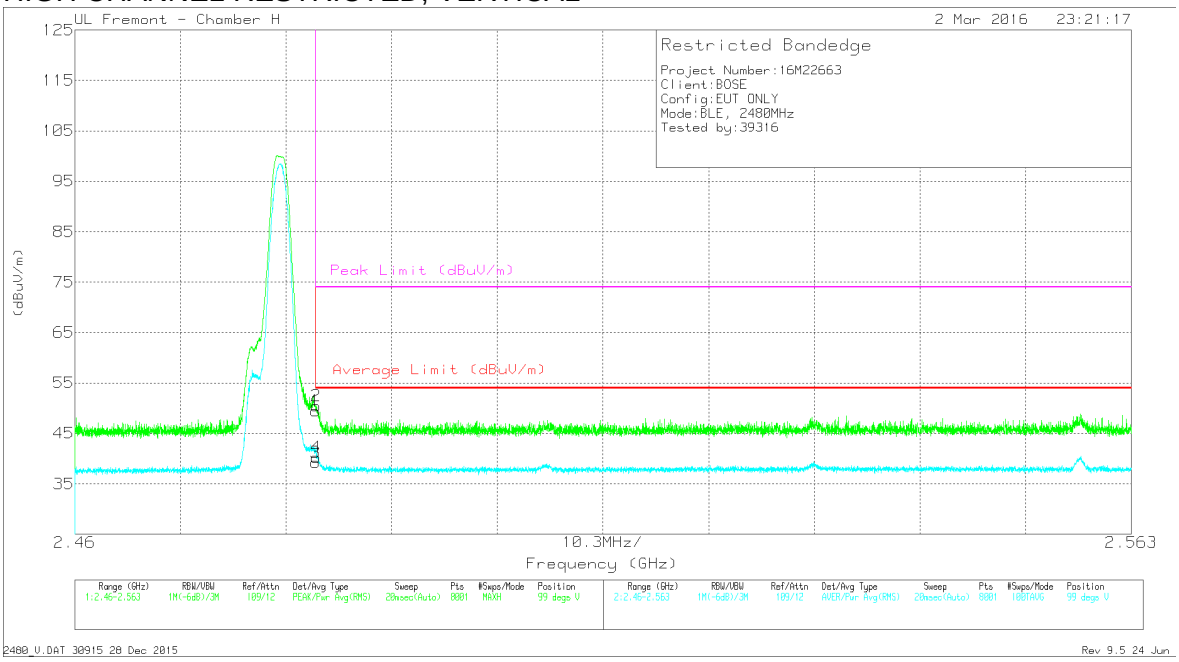
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.93	Pk	32.4	-22.5	0	48.83	-	-	74	-25.17	26	254	H
3	* 2.484	27.36	RMS	32.4	-22.5	1.95	39.12	54	-14.79	-	-	26	254	H
4	* 2.484	27.55	RMS	32.4	-22.5	1.95	39.4	54	-14.60	-	-	26	254	H
2	2.536	38.57	Pk	32.5	-22.4	0	48.67	-	-	74	-25.33	26	254	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

HIGH CHANNEL RESTRICTED, VERTICAL



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	* 2.484	39.62	Pk	32.4	-22.5	0	49.52	-	-	74	-24.48	99	289	V
2	* 2.484	40.63	Pk	32.4	-22.5	0	50.53	-	-	74	-23.47	99	289	V
3	* 2.484	29.4	RMS	32.4	-22.5	1.95	41.25	54	-12.75	-	-	99	289	V
4	* 2.484	30.35	RMS	32.4	-22.5	1.95	42.20	54	-11.80	-	-	99	289	V

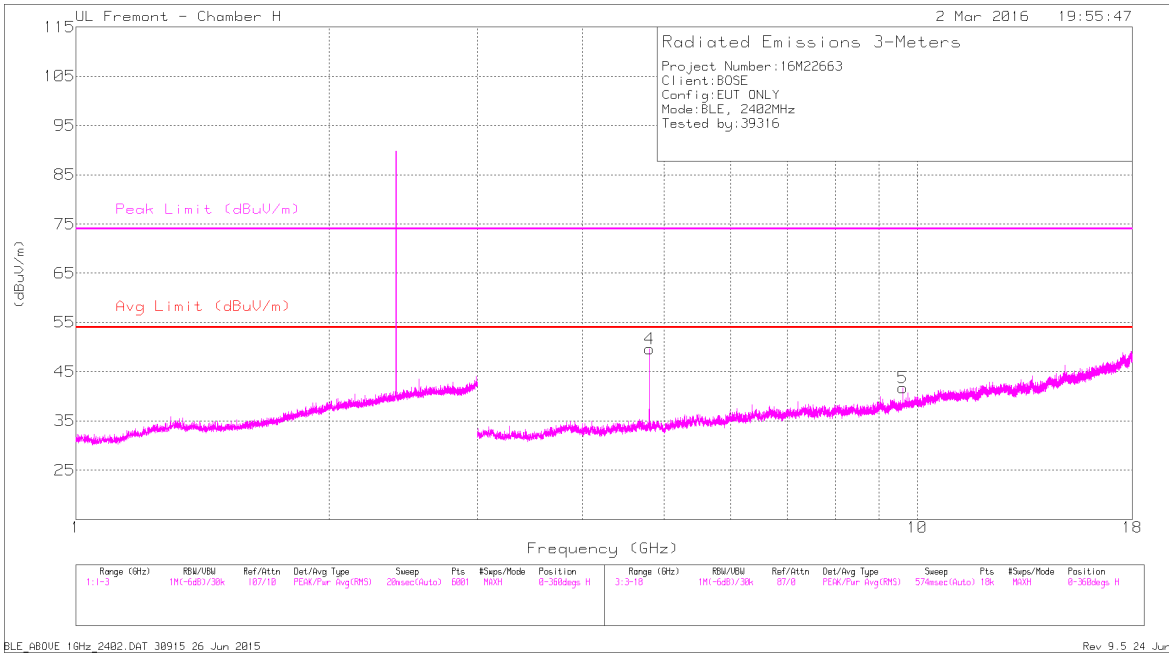
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

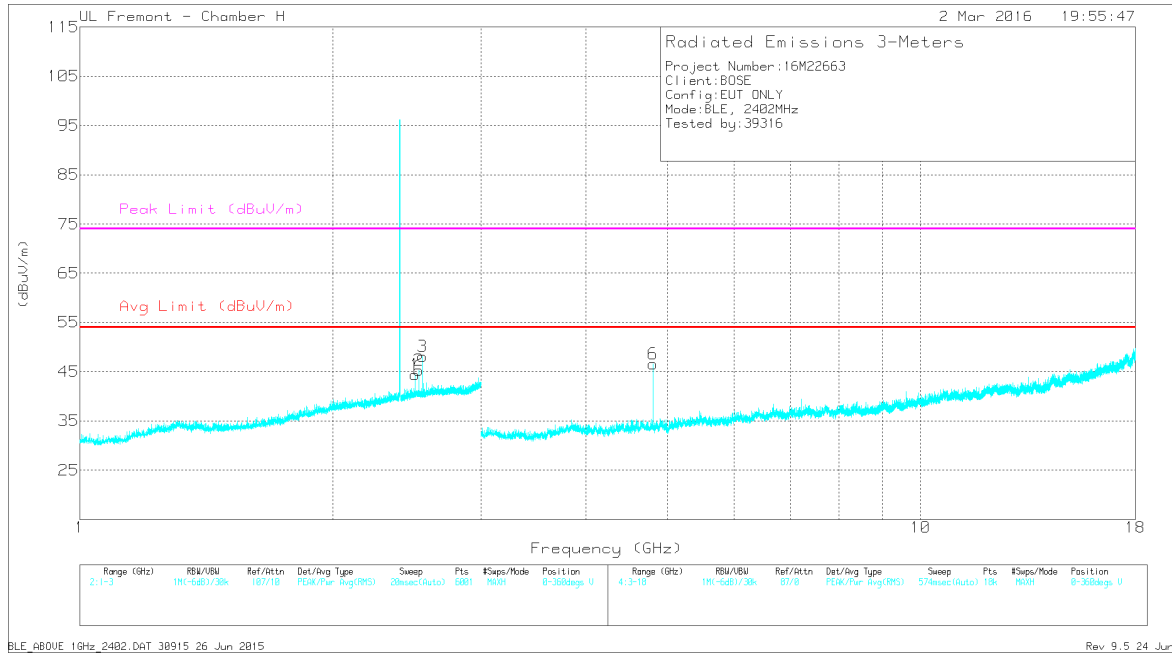
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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
4	* 4.804	49.95	PK2	34.2	-30.3	0	53.85	-	-	74	-20.15	98	193	H
	* 4.804	44	MAv1	34.2	-30.3	1.95	49.85	54	-4.15	-	-	98	193	H
6	* 4.804	47.72	PK2	34.2	-30.3	0	51.62	-	-	74	-22.38	78	129	V
	* 4.804	41.04	MAv1	34.2	-30.3	1.95	46.89	54	-7.11	-	-	78	129	V
1	2.506	34.39	Pk	32.5	-22.5	0	44.39	-	-	-	-	0-360	200	V
2	2.532	35.16	Pk	32.5	-22.4	0	45.26	-	-	-	-	0-360	200	V
3	2.558	37.96	Pk	32.5	-22.4	0	48.06	-	-	-	-	0-360	200	V
5	9.61	29.39	Pk	36.6	-24.2	0	41.79	-	-	-	-	0-360	201	H

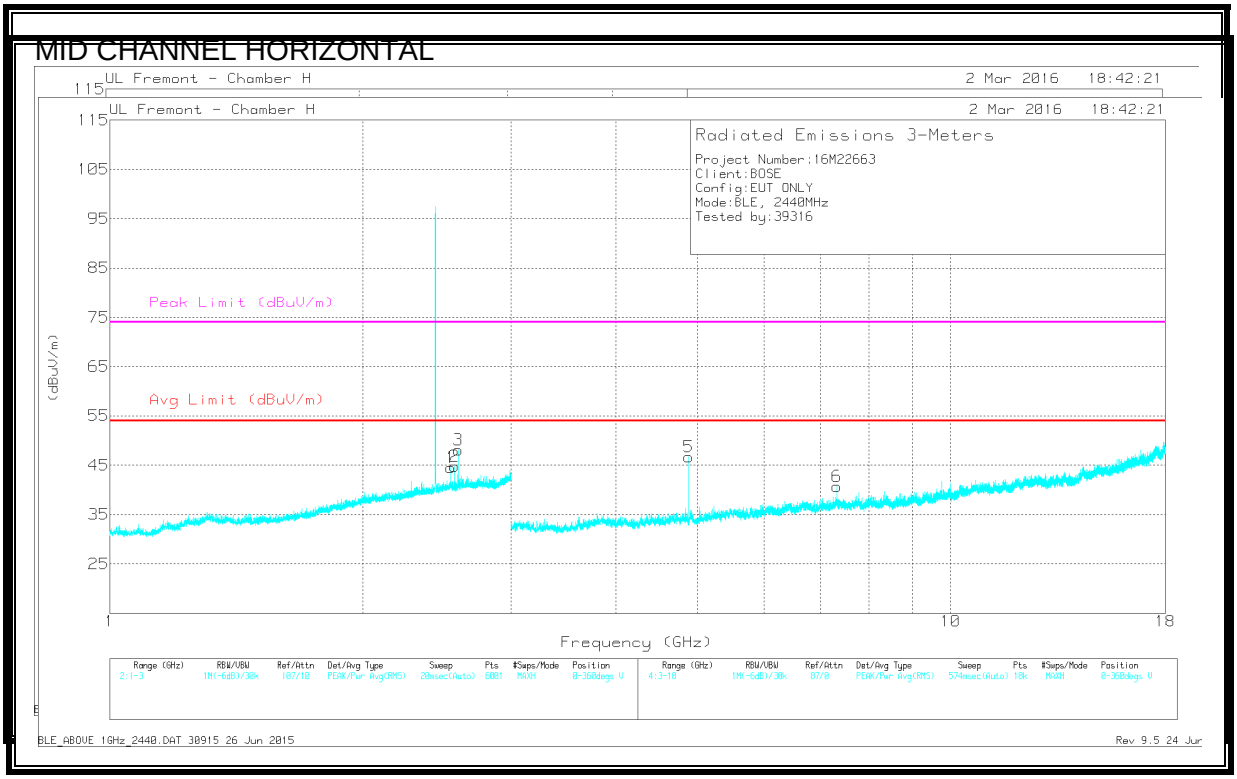
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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
4	* 4.879	49.09	PK2	34.2	-29.9	0	53.39	-	-	74	-20.61	191	200	H
	* 4.88	43.26	MAv1	34.2	-29.9	1.95	49.51	54	-4.49	-	-	191	200	H
5	* 4.88	47.56	PK2	34.2	-29.9	0	51.86	-	-	74	-22.14	88	104	V
	* 4.88	41.64	MAv1	34.2	-29.9	1.95	47.89	54	-6.10	-	-	88	104	V
6	* 7.32	38.04	PK2	36	-25.9	0	48.14	-	-	74	-25.86	114	104	V
	* 7.32	27.02	MAv1	36	-25.9	1.95	39.07	54	-14.93	-	-	114	104	V
1	2.544	34.46	Pk	32.5	-22.4	0	44.56	-	-	-	-	0-360	200	V
2	2.57	34.66	Pk	32.5	-22.4	0	44.76	-	-	-	-	0-360	200	V
3	2.596	37.73	Pk	32.6	-22.2	0	48.13	-	-	-	-	0-360	200	V

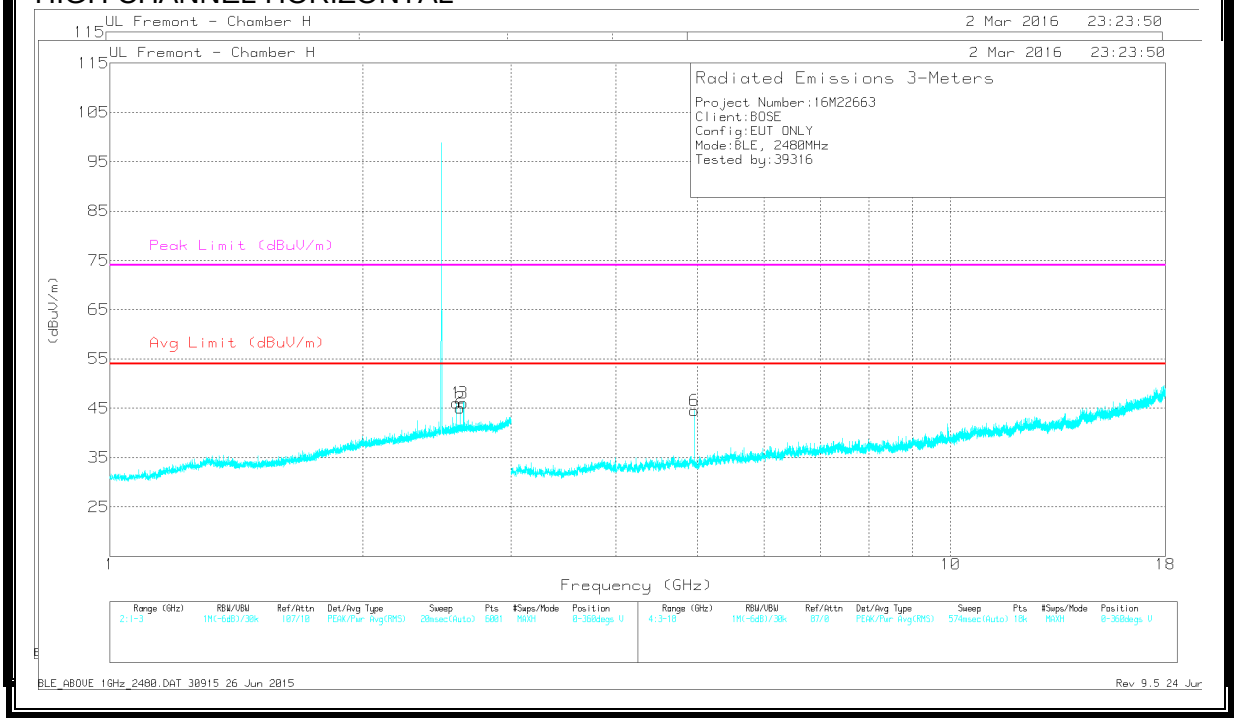
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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
4	* 4.96	47.75	PK2	34.2	-29.8	0	52.15	-	-	74	-21.85	205	248	H
	* 4.96	41.99	MAv1	34.2	-29.8	1.95	48.34	54	-5.66	-	-	205	248	H
6	* 4.959	46.35	PK2	34.2	-29.8	0	50.75	-	-	74	-23.25	85	310	V
	* 4.96	39.88	MAv1	34.2	-29.8	1.95	46.23	54	-7.77	-	-	85	310	V
1	2.584	35.87	Pk	32.5	-22.3	0	46.07	-	-	-	-	0-360	200	V
2	2.61	34.65	Pk	32.5	-22.1	0	45.05	-	-	-	-	0-360	200	V
3	2.636	35.58	Pk	32.5	-22	0	46.08	-	-	-	-	0-360	200	V
5	9.917	29.7	Pk	36.9	-24	0	42.6	-	-	-	-	0-360	201	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

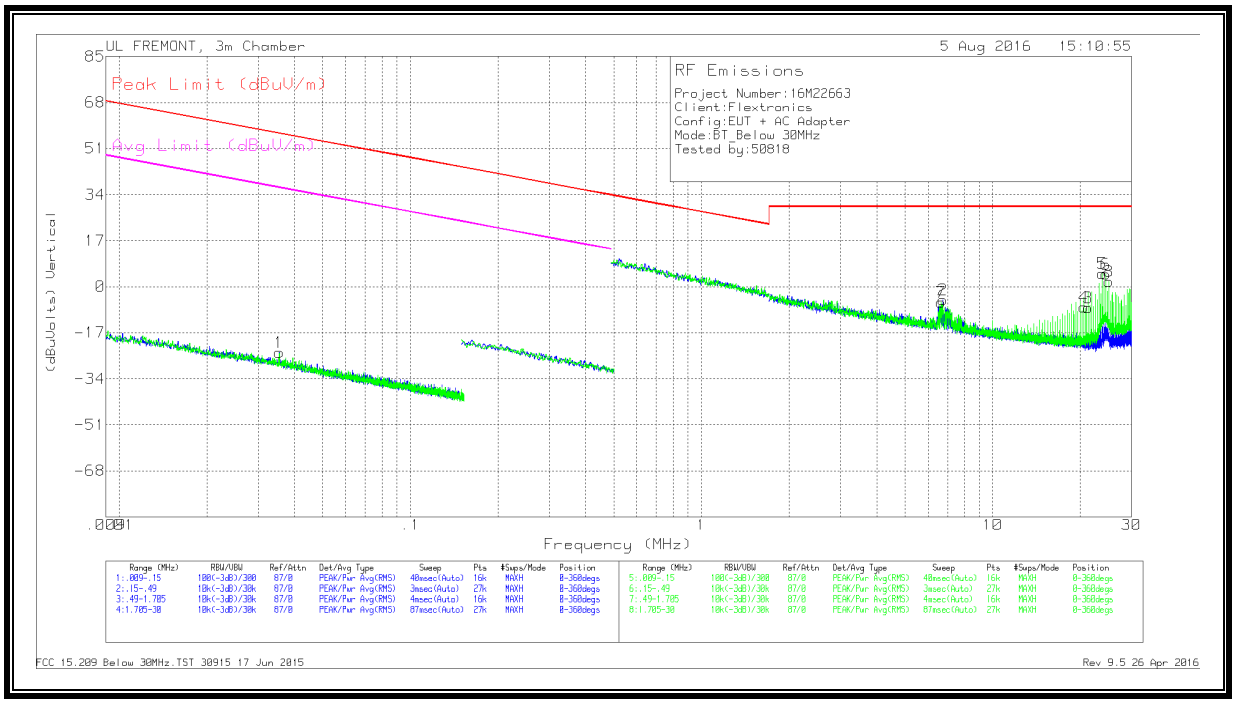
Pk - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

8.3. WORST-CASE BELOW 1 GHz

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



Trace Markers

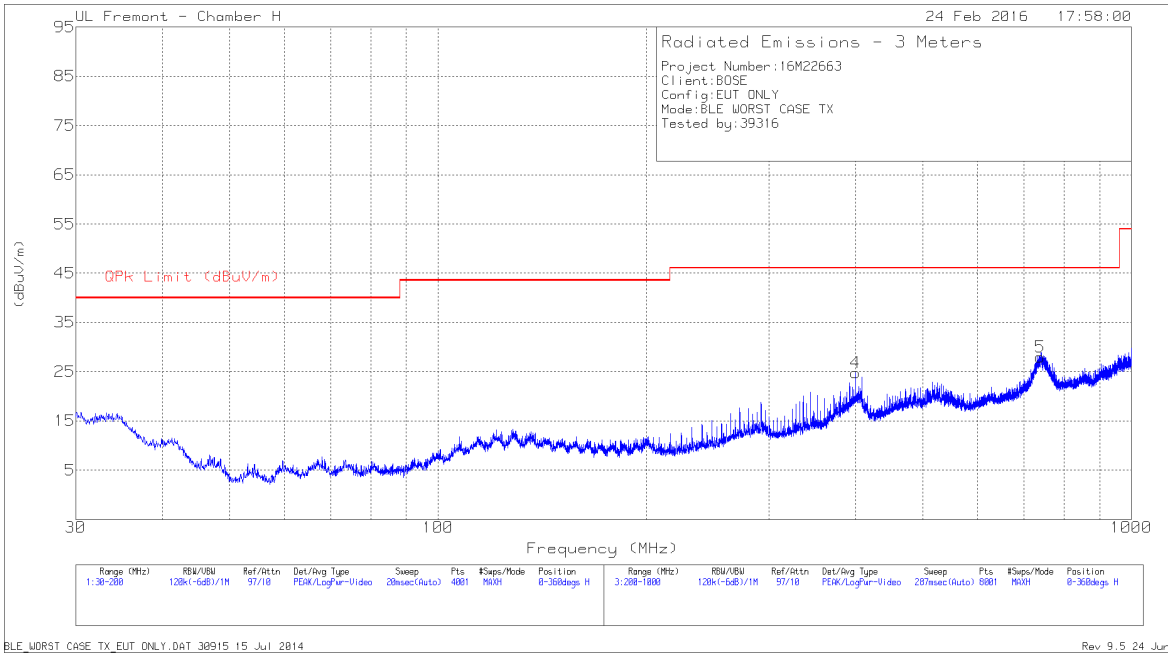
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.0355	41.91	Pk	12.5	1.4	-80	-24.19	56.6	-80.79	36.6	-60.79	0-360

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)	Azimuth (Degs)
7	6.65313	21.9	Pk	10.9	1.5	-40	-5.7	29.54	-35.24	-	-	0-360
2	6.75426	22.84	Pk	10.9	1.5	-40	-4.76	29.54	-34.3	-	-	0-360
4	20.60411	20.7	Pk	10	1.7	-40	-7.6	29.54	-37.14	-	-	0-360
3	21.2481	20.63	Pk	9.9	1.7	-40	-7.77	29.54	-37.31	-	-	0-360
5	23.82461	33.69	Pk	9.4	1.7	-40	4.79	29.54	-24.75	-	-	0-360
6	24.46808	33.66	Pk	9.3	1.7	-40	4.66	29.54	-24.88	-	-	0-360
8	25.11522	31.06	Pk	9.2	1.7	-40	1.96	29.54	-27.58	-	-	0-360

Pk - Peak detector

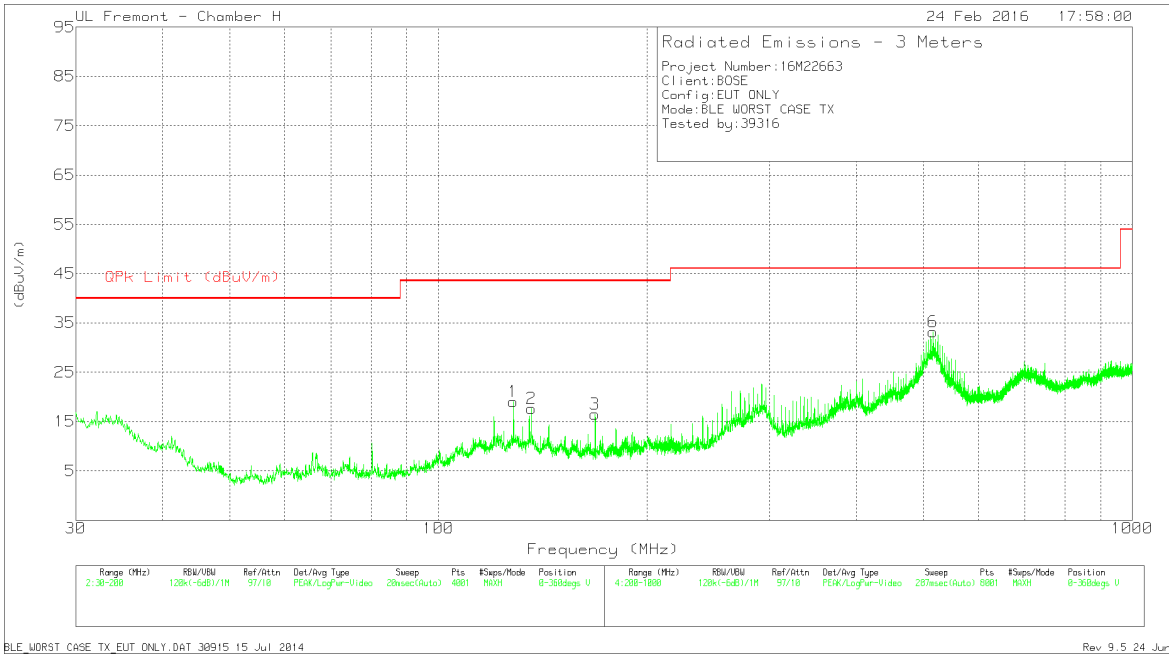
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T900 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 128.2175	35.42	Pk	13.8	-30.2	19.02	43.52	-24.5	0-360	100	V
2	* 136.2075	34.39	Pk	13.5	-30.2	17.69	43.52	-25.83	0-360	100	V
3	* 168.21	34.6	Pk	11.8	-29.9	16.5	43.52	-27.02	0-360	100	V
4	* 400.3	38.05	Pk	15.4	-28.6	24.85	46.02	-21.17	0-360	100	H
6	516.3	43.67	Pk	17.7	-28.2	33.17	46.02	-12.85	0-360	100	V
5	739	35.23	Pk	20.4	-27.6	28.03	46.02	-17.99	0-360	100	H

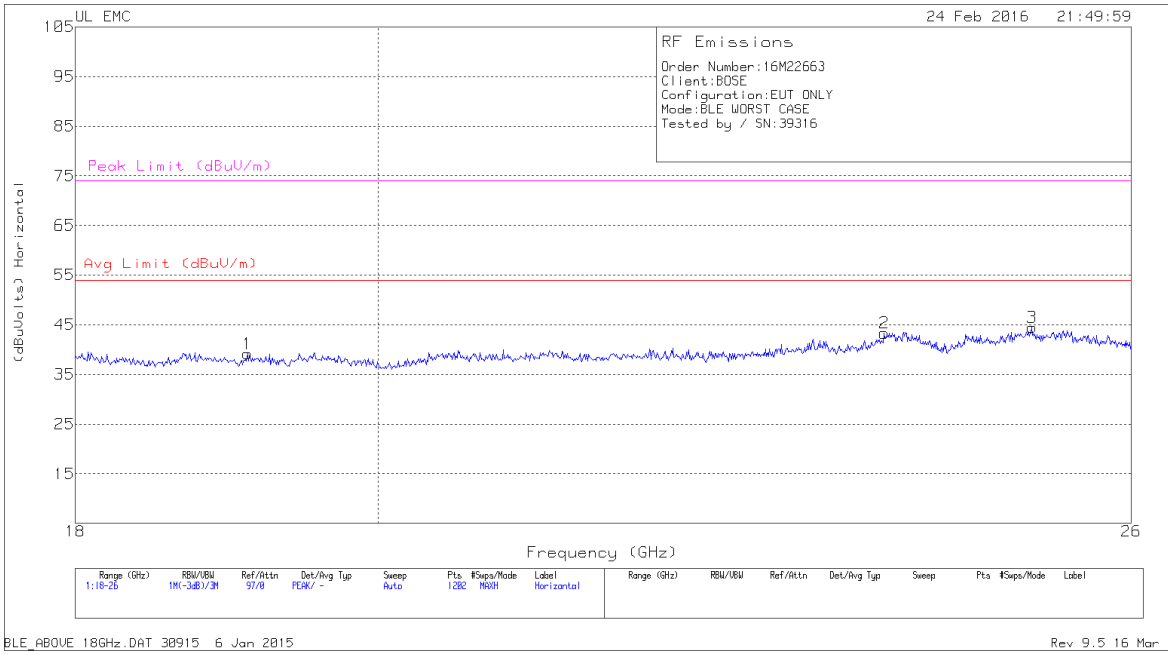
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

8.4. WORST-CASE 18 – 26 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT

DATA

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	19.112	40.77	Pk	32.6	-24.7	-9.5	39.16	54	-14.83	74	-34.83
2	23.855	43.23	Pk	33.7	-24.1	-9.5	43.33	54	-10.66	74	-30.66
3	25.114	44.3	Pk	34.2	-24.5	-9.5	44.5	54	-9.5	74	-29.5
4	19.579	40.9	Pk	32.7	-25.1	-9.5	39	54	-15	74	-35
5	21.224	41.83	Pk	33	-25	-9.5	40.33	54	-13.66	74	-33.66
6	24.028	43.33	Pk	33.6	-24.1	-9.5	43.33	54	-10.66	74	-30.66

Pk - Peak detector

8.5. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen Clause 8.8

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

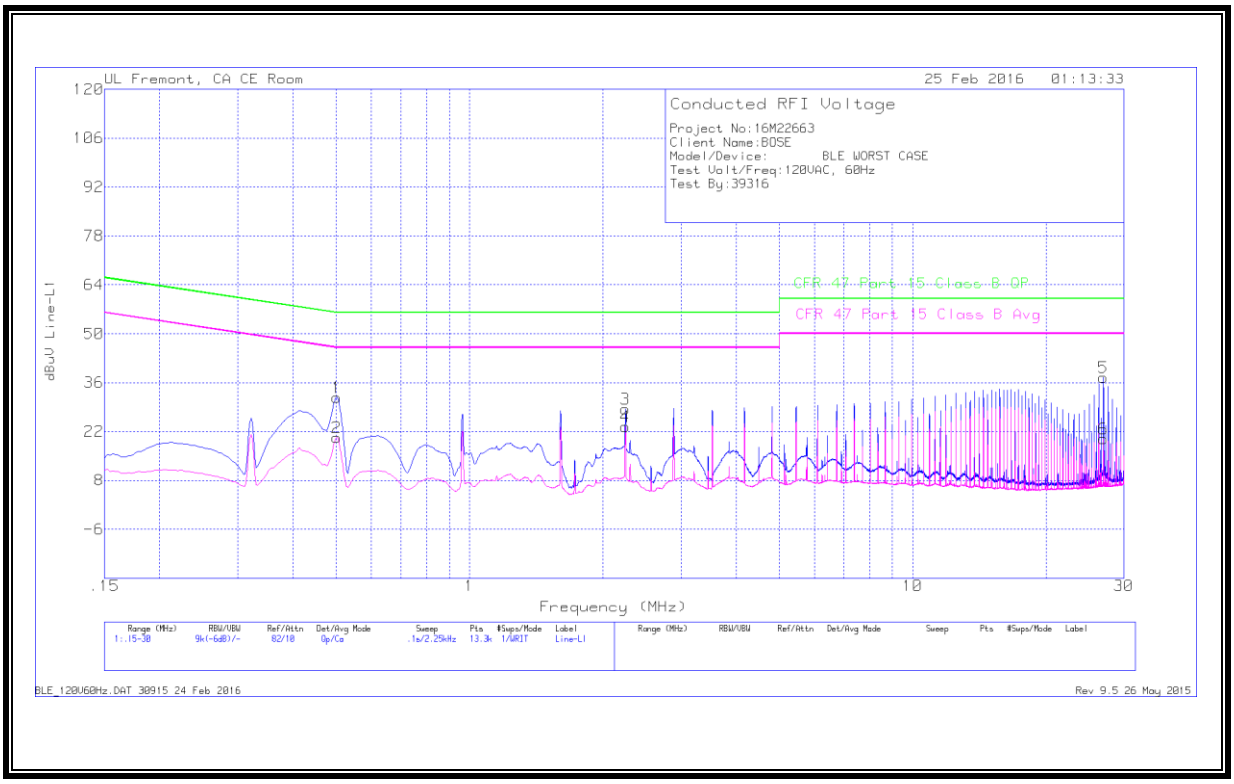
* Decreases with the logarithm of the frequency.

TEST PROCEDURE

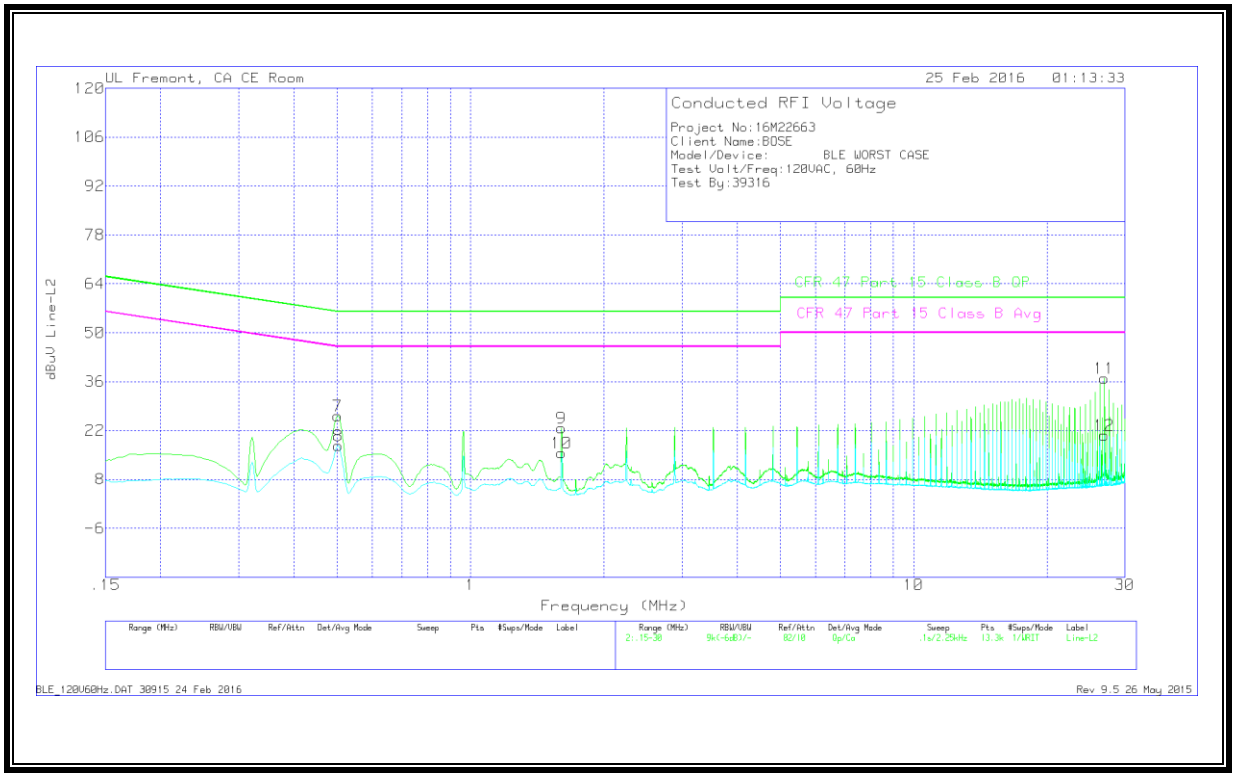
ANSI C63.4

RESULTS

LINE 1 RESULTS



LINE 2 RESULTS



DATA

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T1310 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	.501	21.7	Qp	0	0	10.1	31.8	56	-24.2	-	-
2	.501	10.19	Ca	0	0	10.1	20.29	-	-	46	-25.71
3	2.247	18.24	Qp	0	.1	10.1	28.44	56	-27.56	-	-
4	2.247	13.13	Ca	0	.1	10.1	23.33	-	-	46	-22.67
5	26.97675	26.75	Qp	0	.3	10.5	37.55	60	-22.45	-	-
6	26.97675	9.08	Ca	0	.3	10.5	19.88	-	-	50	-30.12

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T1310 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)
7	.50212	16.12	Qp	0	0	10.1	26.22	56	-29.78	-	-
8	.50325	7.6	Ca	0	0	10.1	17.7	-	-	46	-28.3
9	1.60575	12.49	Qp	0	.1	10.1	22.69	56	-33.31	-	-
10	1.60575	5.38	Ca	0	.1	10.1	15.58	-	-	46	-30.42
11	26.97225	26.14	Qp	.1	.3	10.5	37.04	60	-22.96	-	-
12	26.97225	9.8	Ca	.1	.3	10.5	20.7	-	-	50	-29.3

Qp - Quasi-Peak detector