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

CERTIFICATION TEST REPORT

FOR

802.11a/g/n/ac 3X3 WLAN + Bluetooth PCI-E Custom Combination Card

MODEL NUMBER: BCM943602BAED

FCC ID: QDS-BRCM1088
IC: 4324A-BRCM1088

REPORT NUMBER: 15U20284-E5, Revision B

ISSUE DATE: JUNE 23, 2015

Prepared for
BROADCOM CORPORATION
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/09/15	Initial Issue	H. Mustapha
A	06/16/15	Revised sections 5.5 and 11	F. Ibrahim
B	06/23/15	Revised section 7	H. Mustapha

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	BROADCOM CORPORATION 190 MATHILDA PLACE SUNNYVALE, CA 94086, U.S.A.
EUT DESCRIPTION:	802.11a/g/n/ac 3X3 WLAN + Bluetooth PCI-E Custom Combination Card
MODEL:	BCM943602BAED
SERIAL NUMBER:	SN: 159 (Radiated Sample) and SN: 189 and 2205001201 (Conducted Sample)
DATE TESTED:	MARCH 14 - JUNE 2, 2015

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.

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UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 Issue 1.

Deviation from the above cited ANSI C63.10 standard: the EUT was test at 0.8 m height for all radiated testing.

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

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 an 802.11a/g/n/ac 3X3 WLAN + Bluetooth PCI-E Custom Combination Card.

The radio module is manufactured by Broadcom.

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	5.63	3.66

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The EUT utilizes an 802.11a/b/g/n/ac WLAN/BT antenna with a maximum gain of 3.33 dBi for BLE.

5.4. SOFTWARE AND DRIVER

The EUT driver software installed during testing was Broadcom, Ver. 5.6.0.9020.

The test utility software used during testing was Broadcom Blue Tool, Ver. 1.8.9.2.

5.5. WORST-CASE CONFIGURATION AND MODE

X,Y, Z investigation was performed and Y orientation was found to be worst-case, therefore, all final radiated emissions was performed using Y orientation. See setup photos section for details.

Radiated emission below 1 GHz, 18 to 26 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.

Chain J1 (WF3) was used for testing BLE.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	G560	CB06427681	DoC
AC Adapter	Lenovo	ADP65 KH B	206337	DoC
Catalyst PCIe. Board	Enterprises Inc.	NA	NA	N/A
Laptop	Dell	Latitude E6400	6MYFMJ1	DoC
AC Adapter	Dell	PA2 /CF745	CN-0CF745-48661	DoC

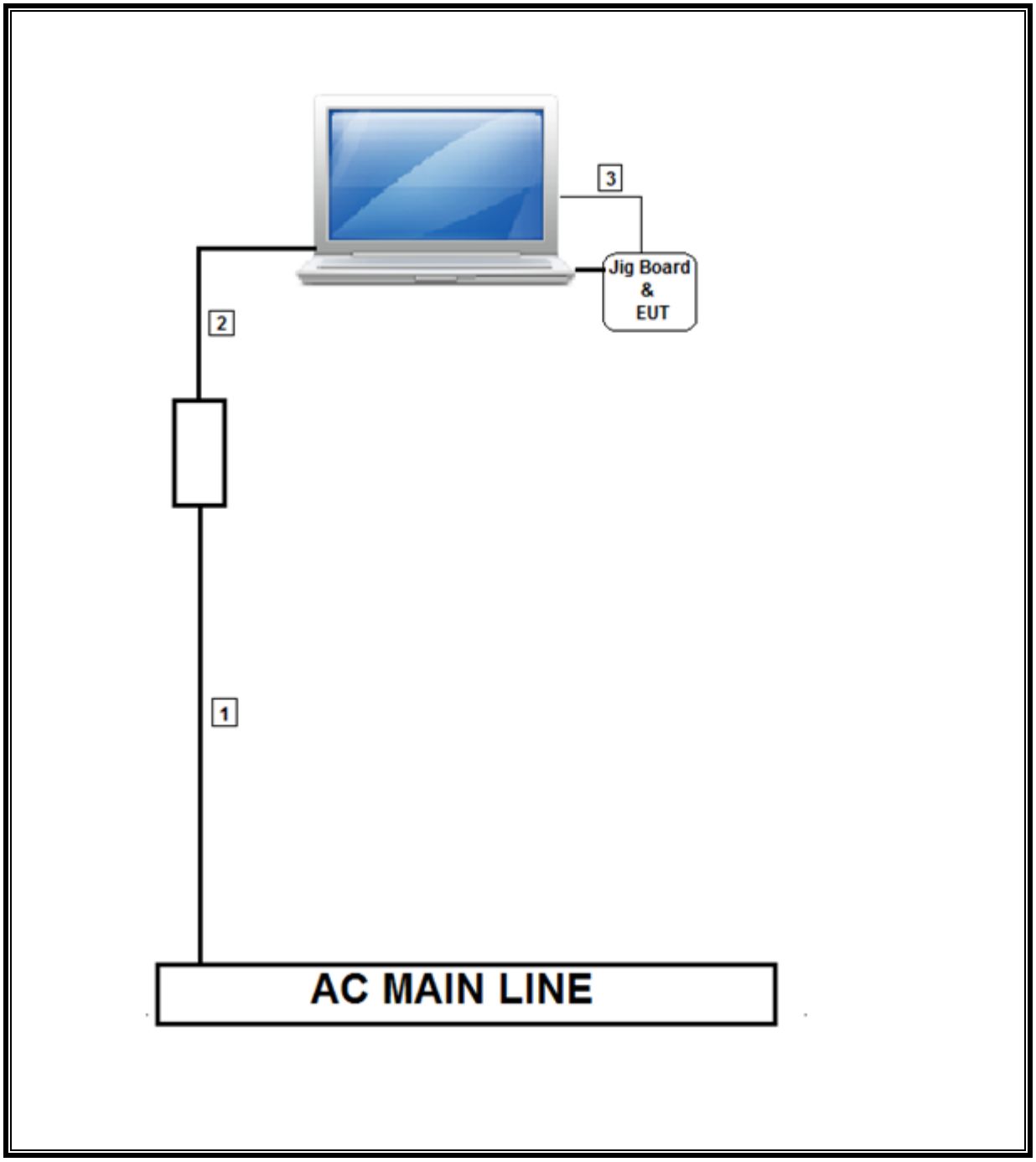
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	US 115V	Unshielded	1	
2	DC	1	DC	Unshielded	0.8	
3	USB	1	USB	Unshielded	0.8	

TEST SETUP

The EUT was installed on a jig board and was connected to the laptop with a USB cable. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



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 Date**	**Cal Due**
Radiated Software	UL	UL-EMC	Ver 9.5 July 22 2014		
Line Conducted Software	UL	UL EMC	Ver 9.5, May 17, 2012		
Spectrum Analyzer, 3 Hz-44GHz	Agilent	N9030A	T907	07/05/14	07/05/15
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	12/08/14	12/08/15
Antenna, Horn, 18 GHz	ETS Lindgren	3117	T345	03/05/15	03/05/16
Preamplifier, 1300 MHz	Agilent / HP	8447D	T10	01/16/15	01/16/16
EMI Test Receiver	Rohde & Schwarz	ECSI 7	212	08/14/14	08/14/15
Silver Box Amplifier	Miteq	AFS42-0010180	T740	08/30/14	08/30/15
Power Sensor	Agilent	E9323A	T378	08/07/14	08/07/15
Power Meter	Agilent	N1911A	T377	06/30/14	06/30/15
Spectrum Analyzer	HP	8564	T106	08/06/14	08/06/15
Preamplifier, 1-26.5GHz	Agilent	8449B	T404	04/06/15	04/06/16
BroadbandPreamplifier	Miteq	NSP4000-SP2	T88	09/03/14	09/03/15
Antenna Horn 18-26GHz	A.R.A	MMI1826	T89	12/17/14	12/17/15
LISN for Conducted Emissions	FCC	50/250-25-2	24	01/16/15	01/16/16

7. 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.

Conducted Rx Spurious Emissions: ANSI C63.10-2013, Sections 6.7.

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

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

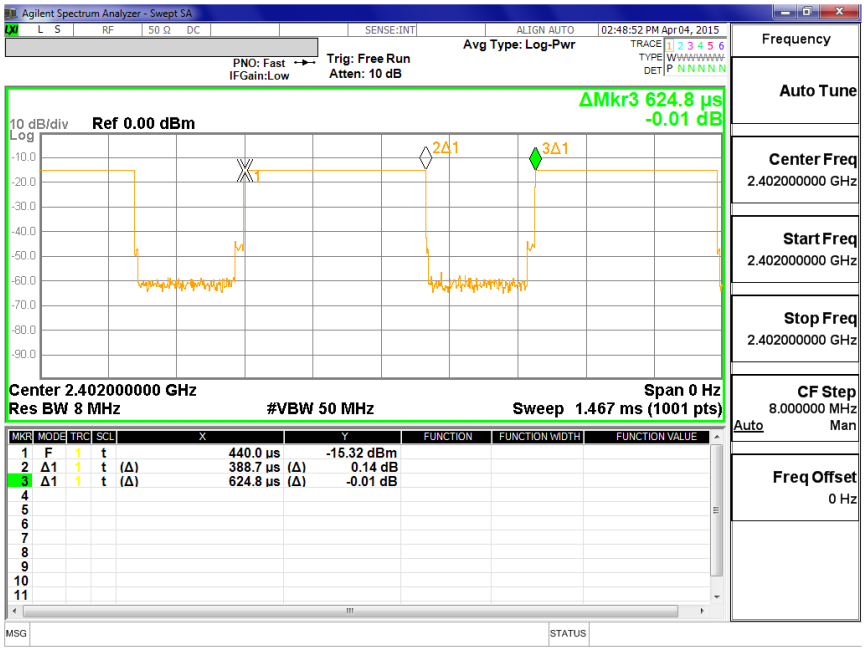
None; for reporting purposes only.

RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
BLE	0.3887	0.6248	0.622	62.21%	2.06

DUTY CYCLE PLOT

DUTY CYCLE BLE MODE



8.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

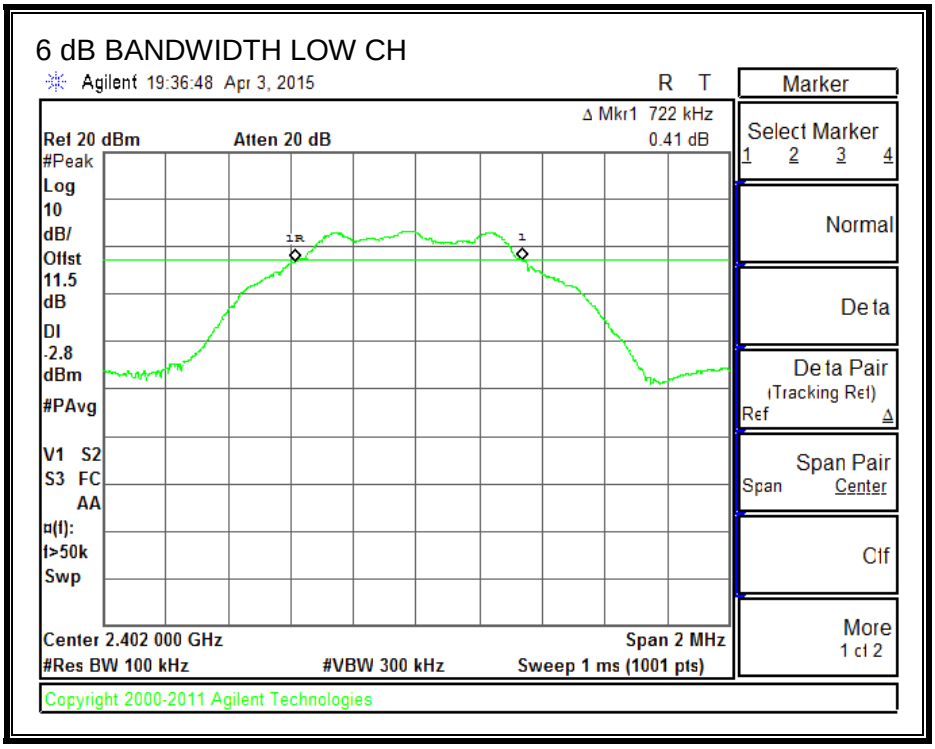
IC RSS-247 5.2 (1)

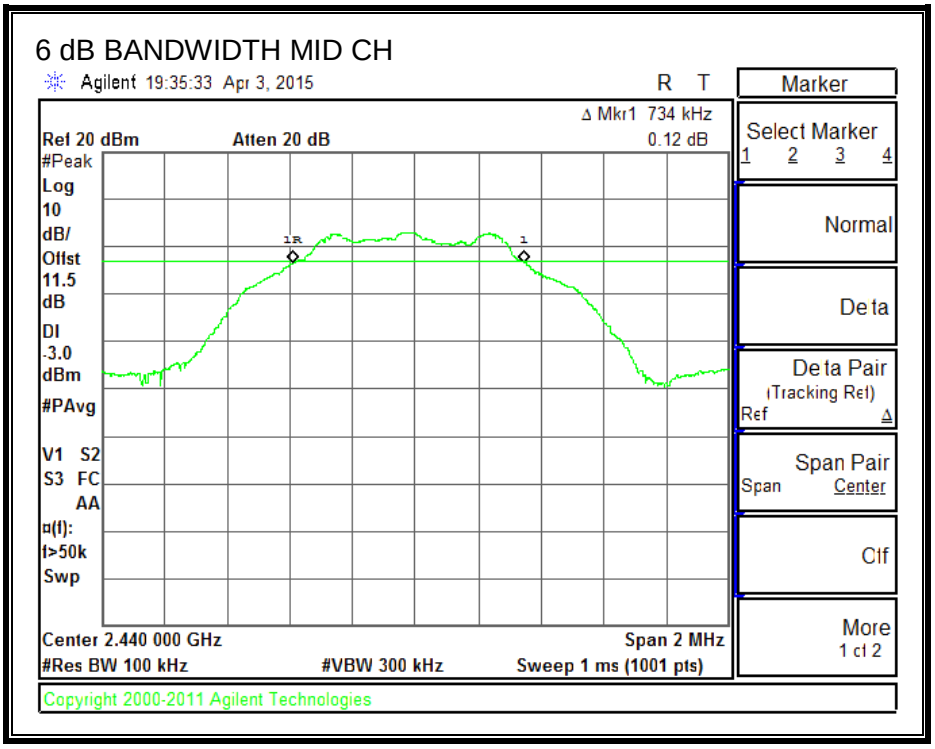
The minimum 6 dB bandwidth shall be at least 500 kHz.

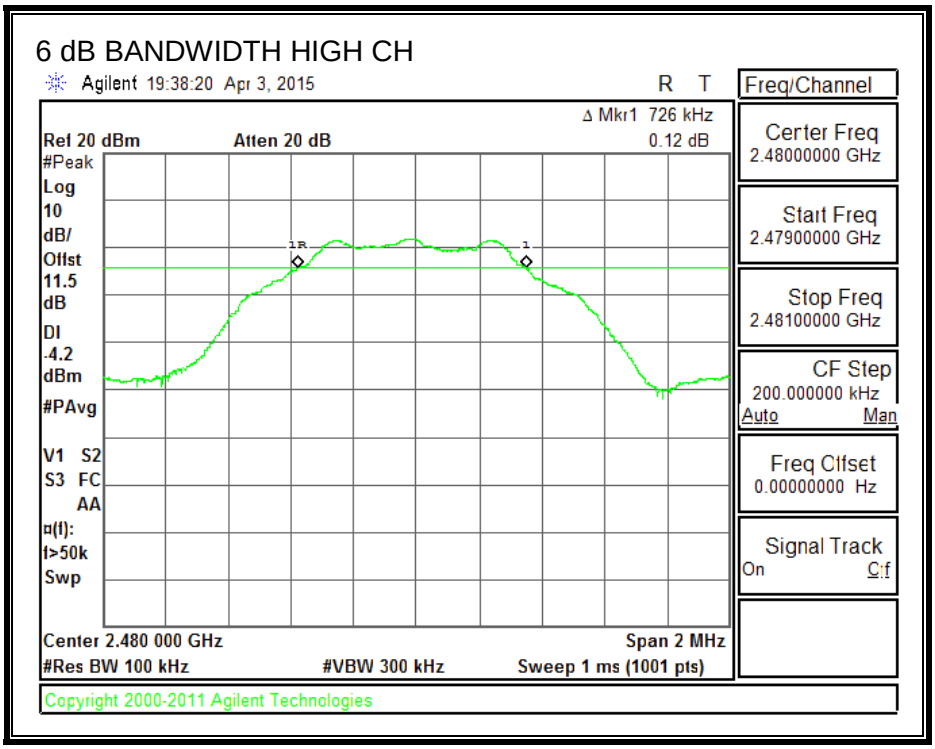
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.7220	0.5
Middle	2440	0.7340	0.5
High	2480	0.7260	0.5

6 dB BANDWIDTH







8.3. 99% BANDWIDTH

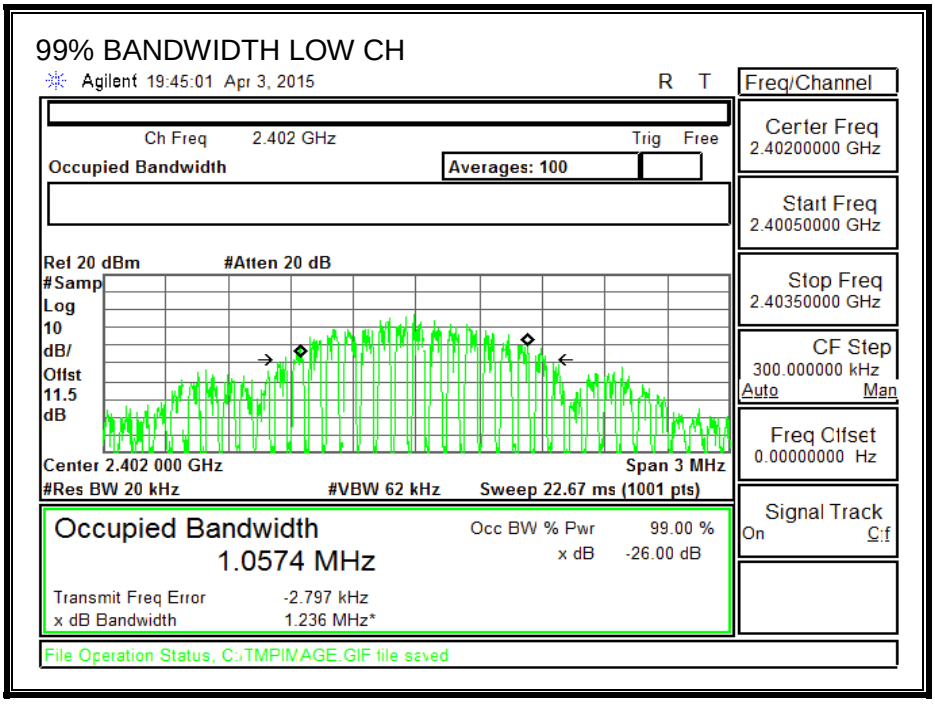
LIMITS

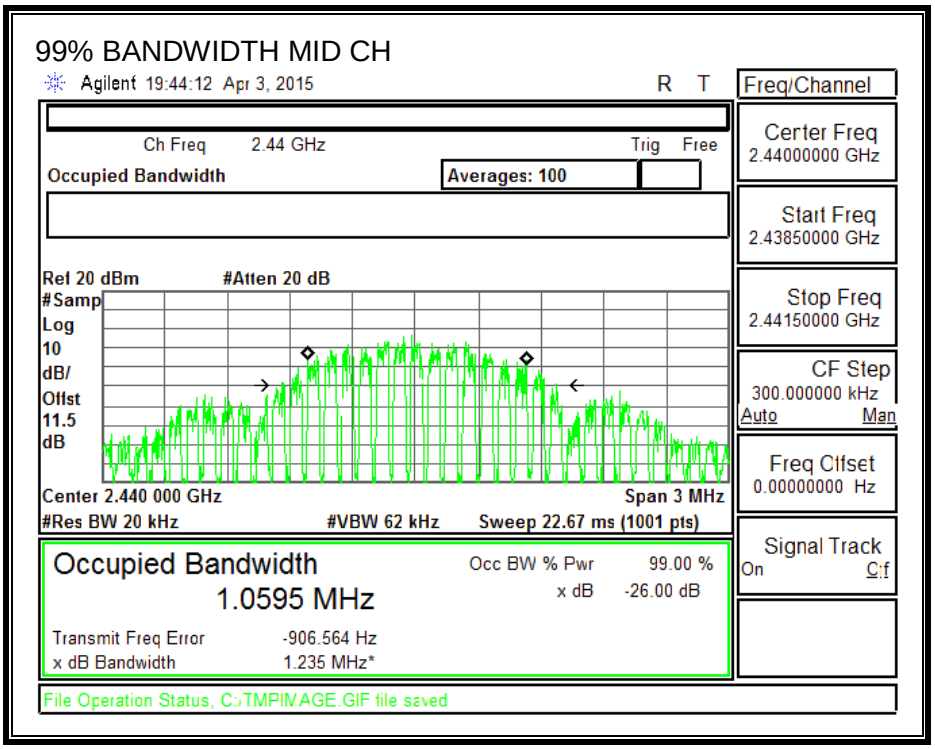
None; for reporting purposes only.

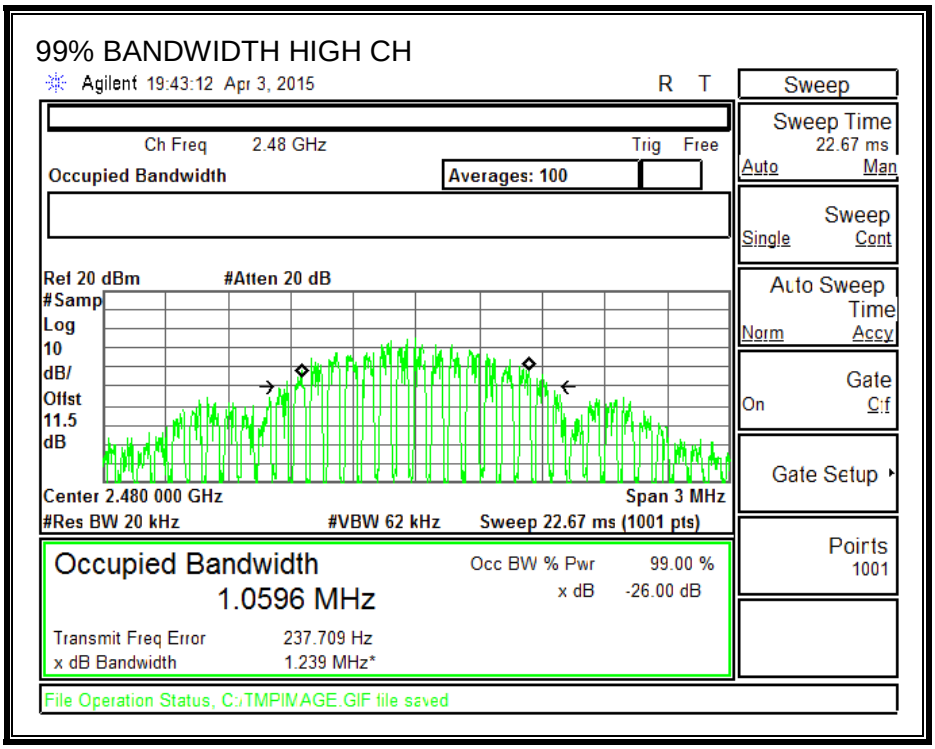
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0574
Middle	2440	1.0595
High	2480	1.0596

99% BANDWIDTH







8.4. PEAK OUTPUT POWER

LIMITS

FCC §15.247 (b)

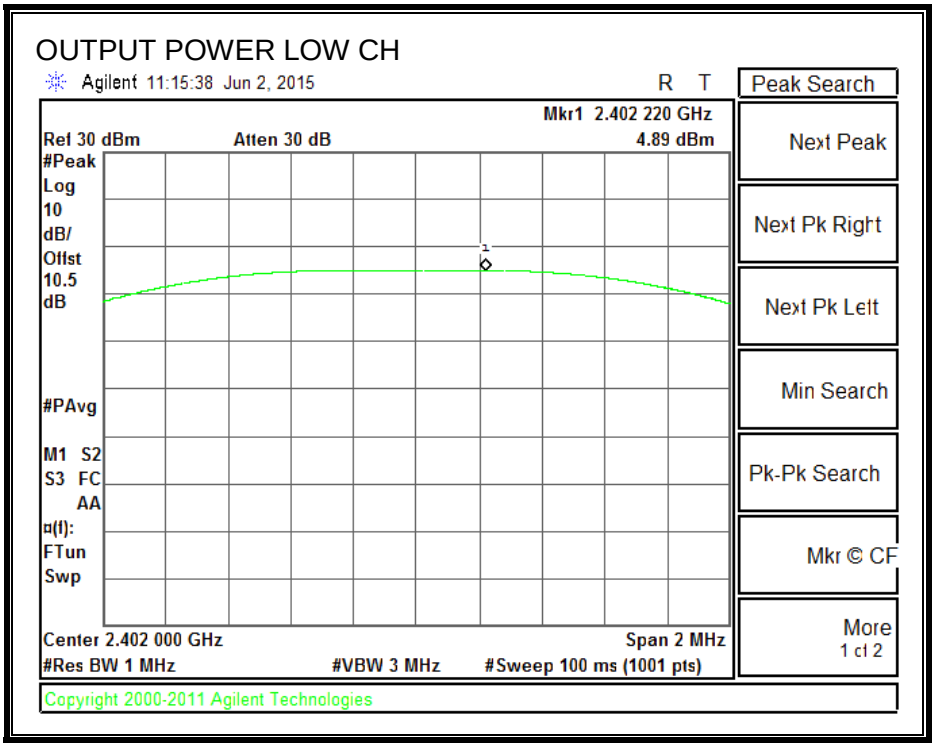
IC RSS-247 5.4 (4)

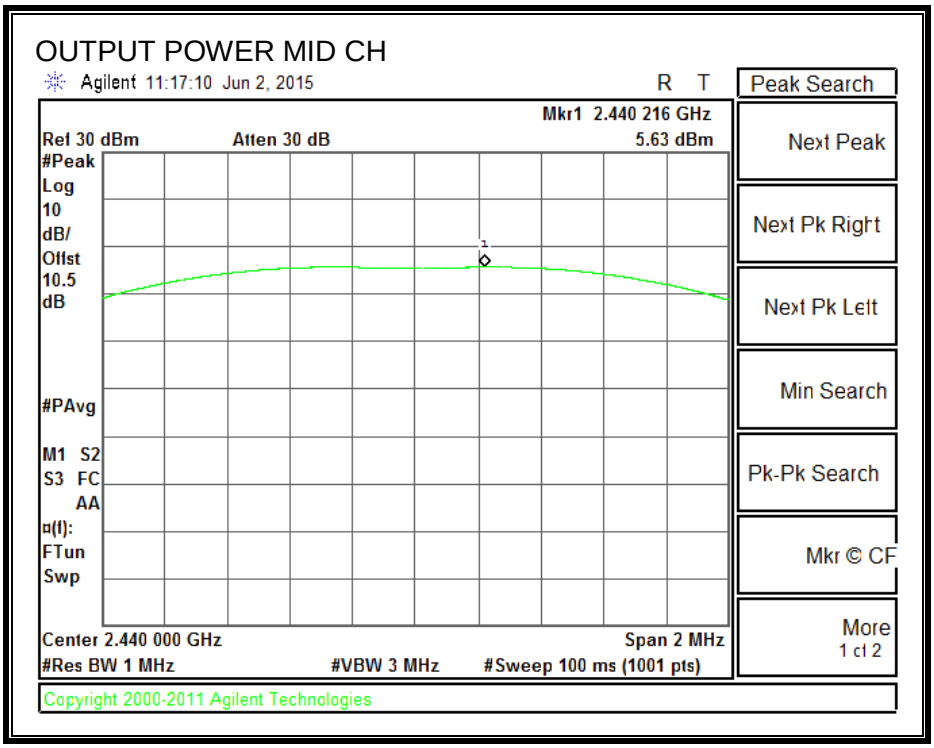
The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

RESULTS

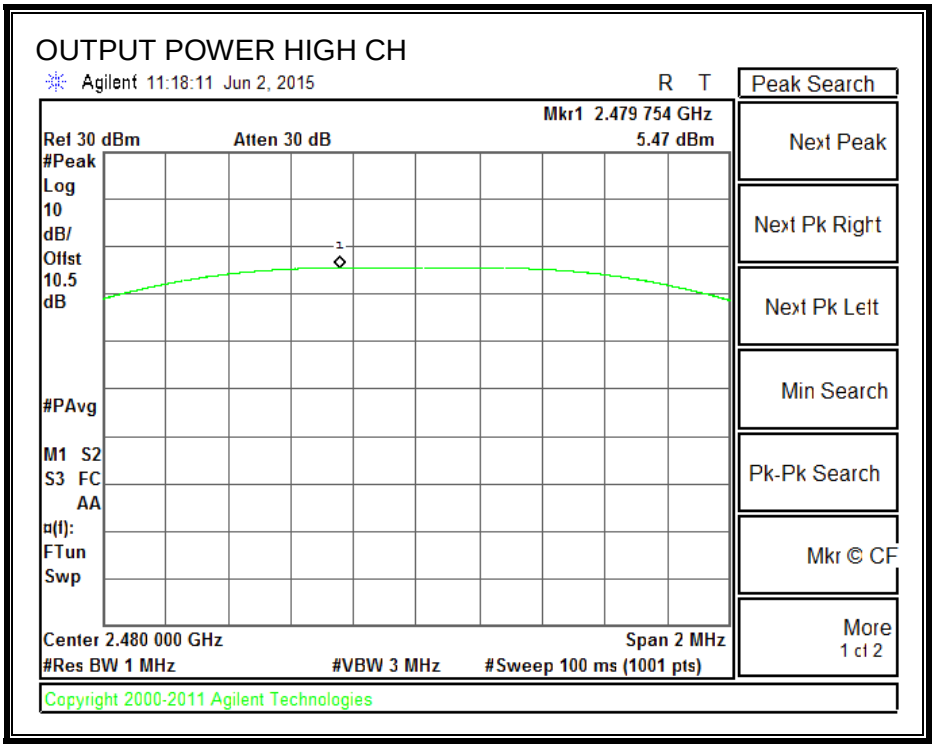
Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	4.89	30	-25.110
Middle	2440	5.63	30	-24.370
High	2480	5.47	30	-24.530

OUTPUT POWER





OUTPUT POWER HIGH CH



8.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	4.70
Middle	2440	4.95
High	2480	3.98

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

8.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

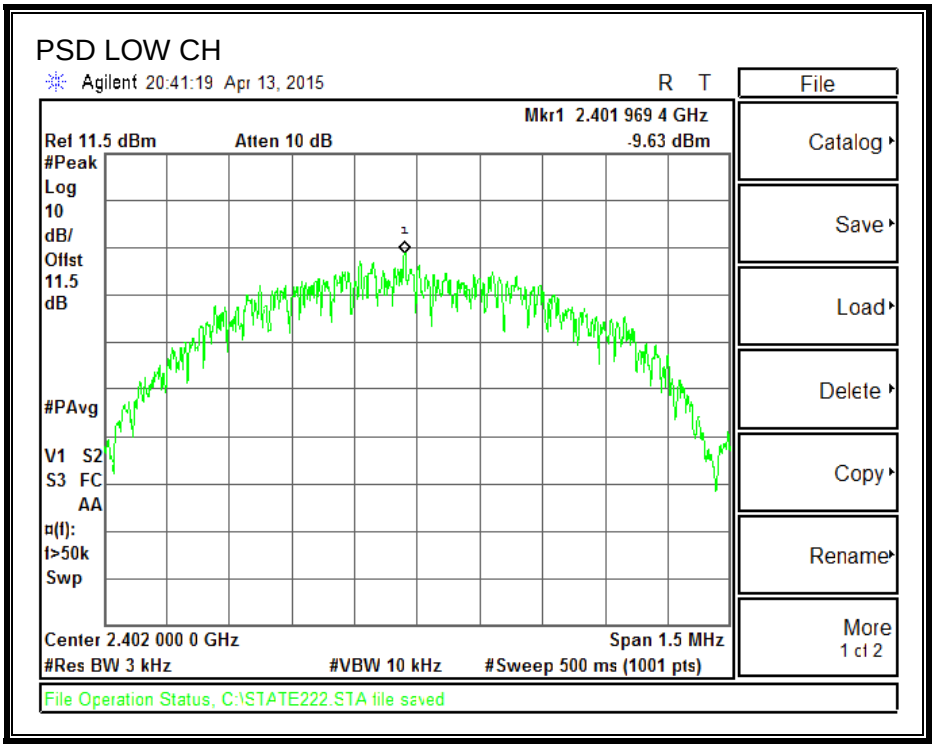
IC RSS-247 5.2 (2)

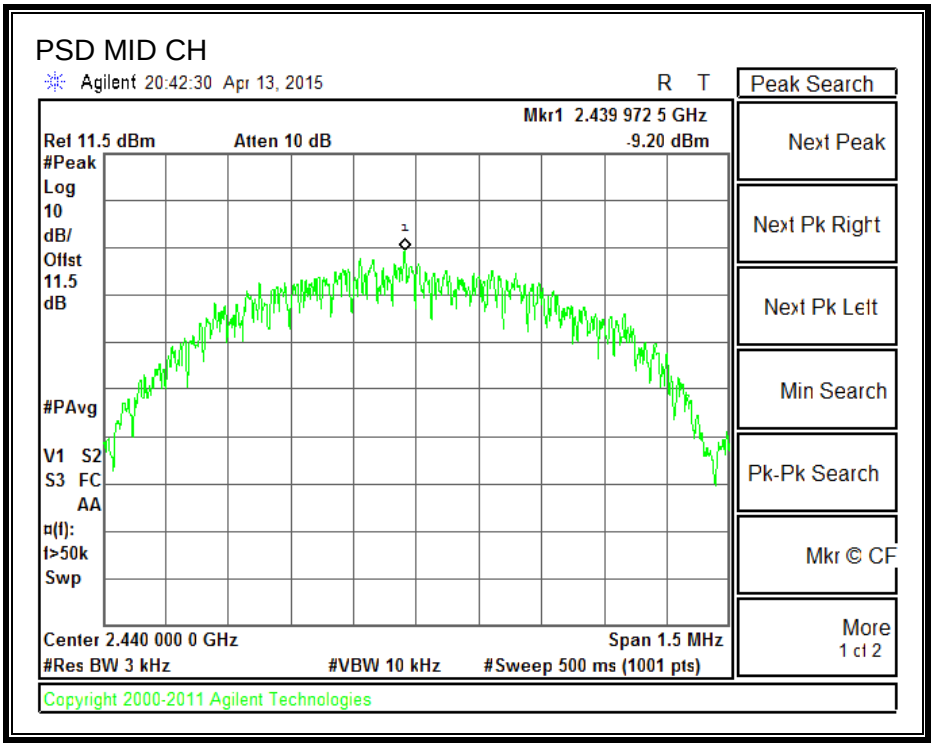
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

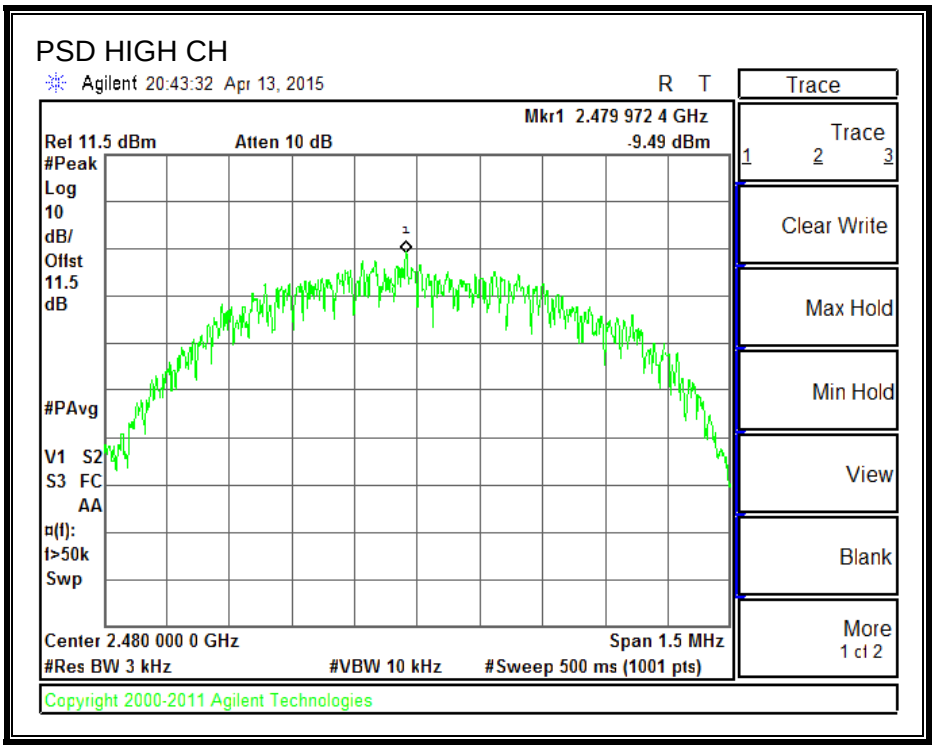
RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-9.63	8	-17.63
Middle	2440	-9.20	8	-17.20
High	2480	-9.49	8	-17.49

POWER SPECTRAL DENSITY







8.7. CONDUCTED SPURIOUS EMISSIONS

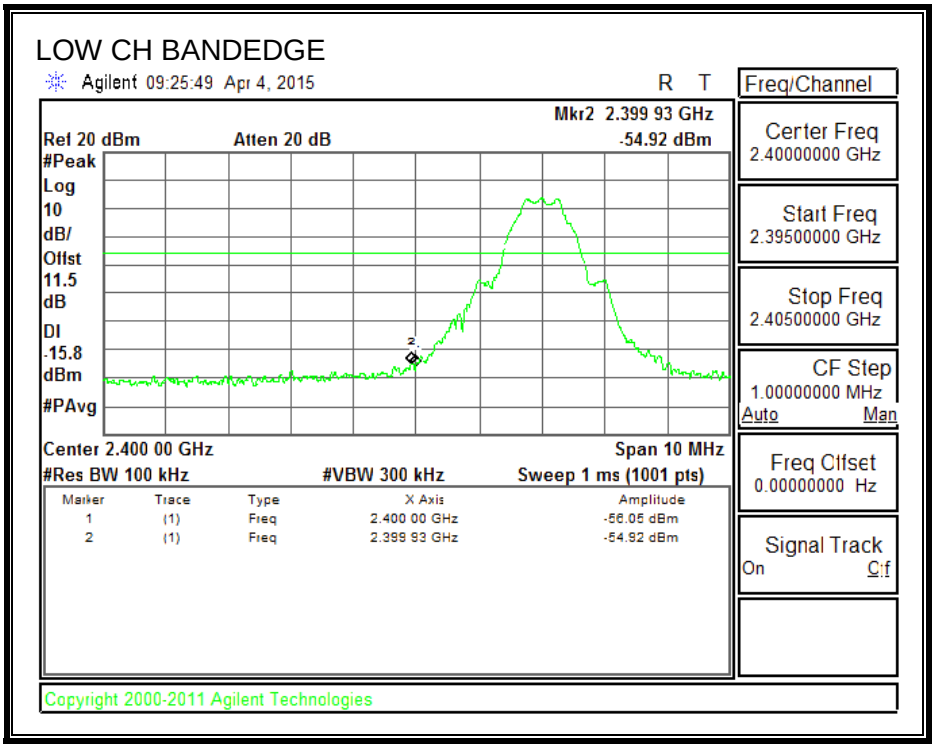
LIMITS

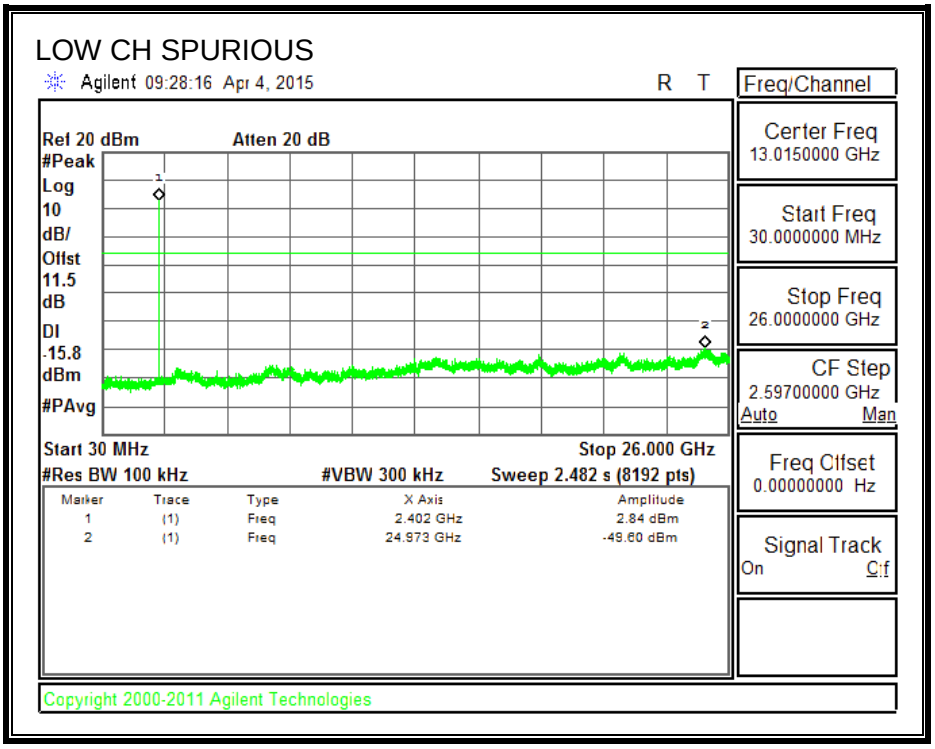
FCC §15.247 (d)

IC RSS-247 5.5

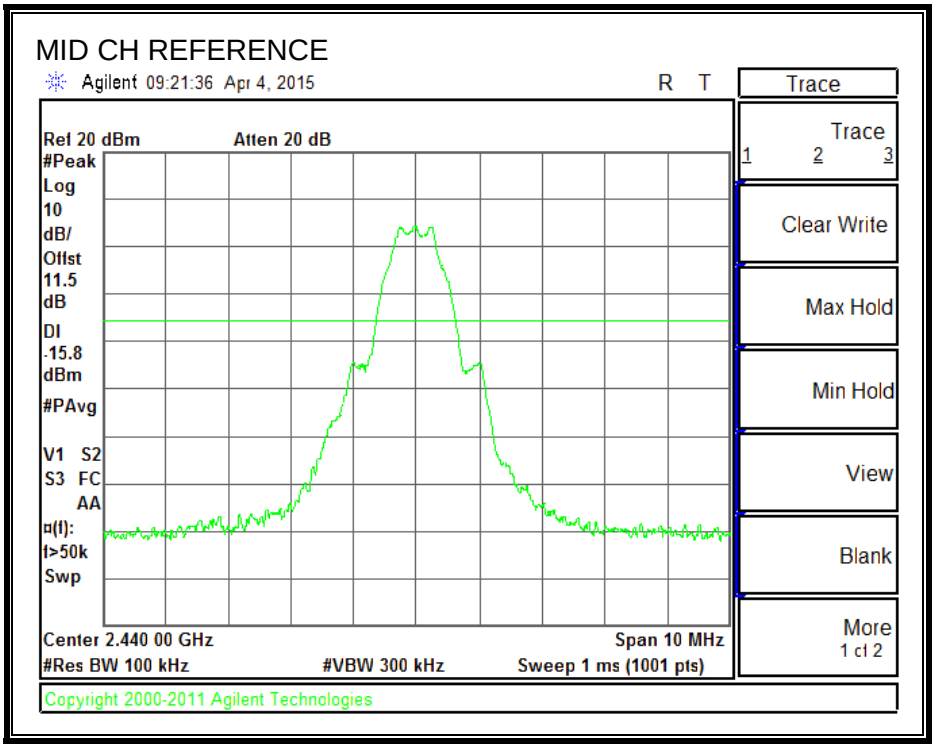
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

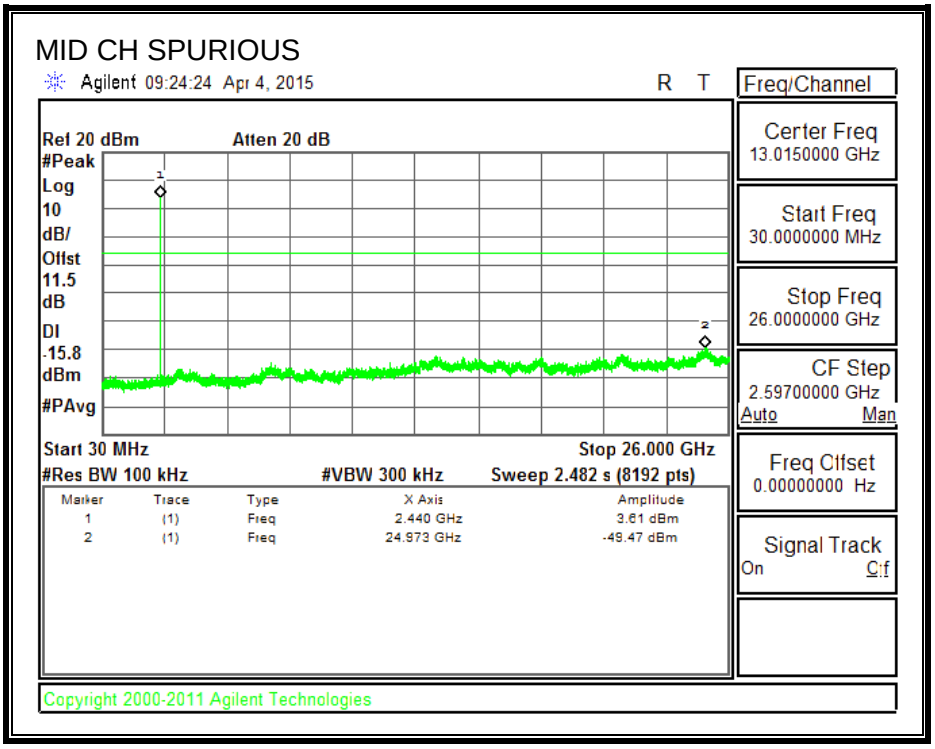
SPURIOUS EMISSIONS, LOW CHANNEL



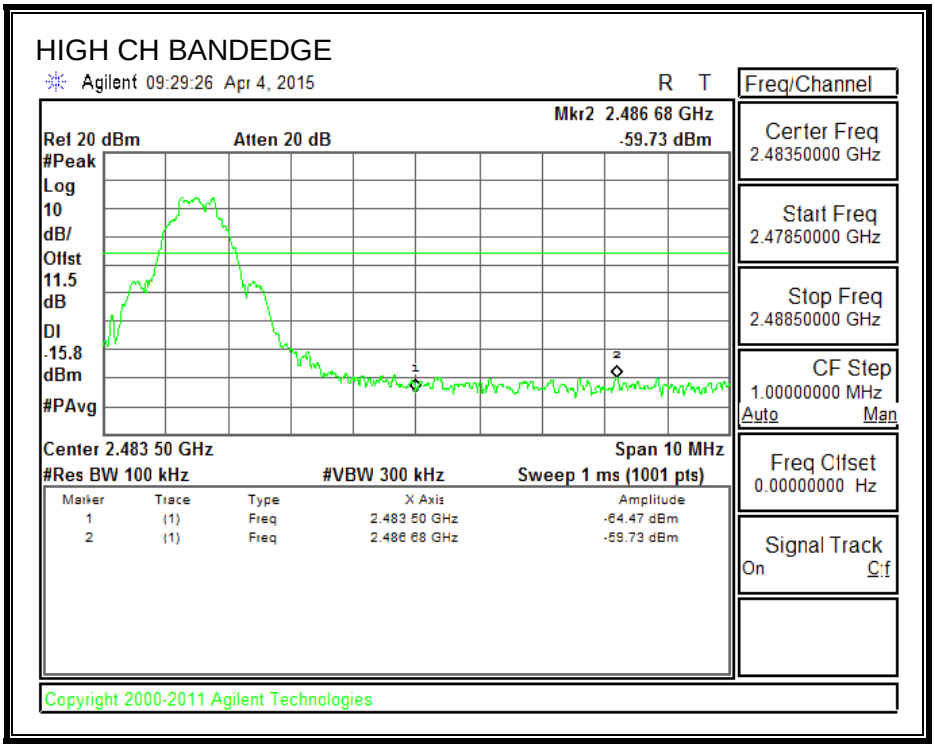


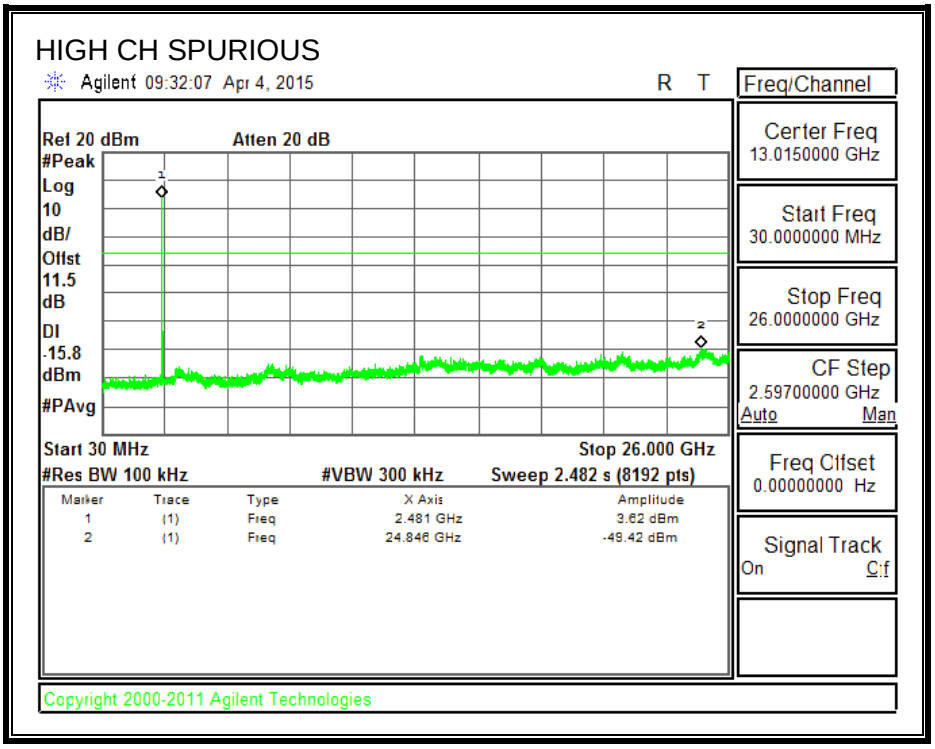
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





8.8. CONDUCTED RX SPURIOUS EMISSIONS

LIMITS

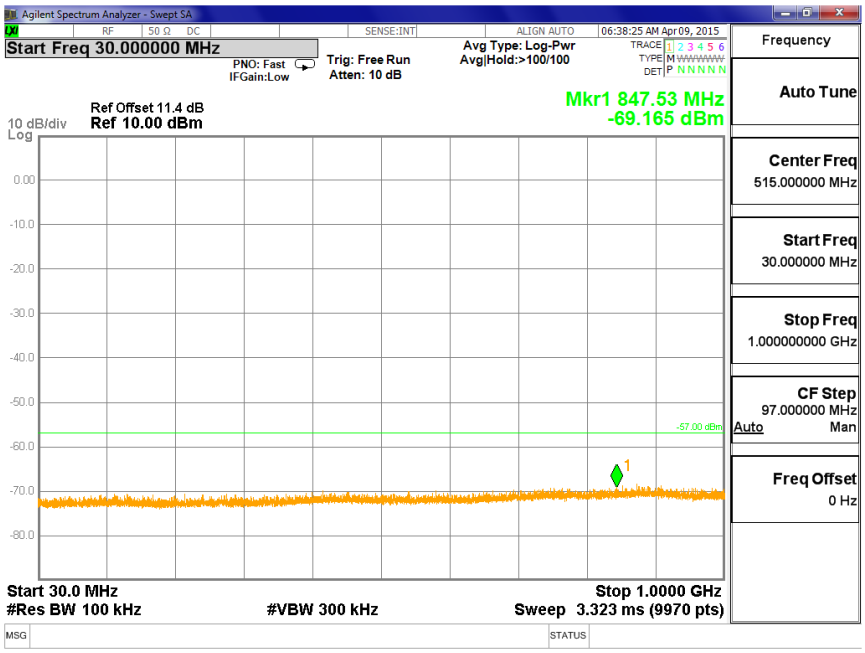
IC RSS GEN Issue 4, clause 7.1.3

Receiver-spurious emissions at any discrete frequency shall not exceed 2 nW in the band 30-1000 MHz, nor 5 nW above 1000MHz.

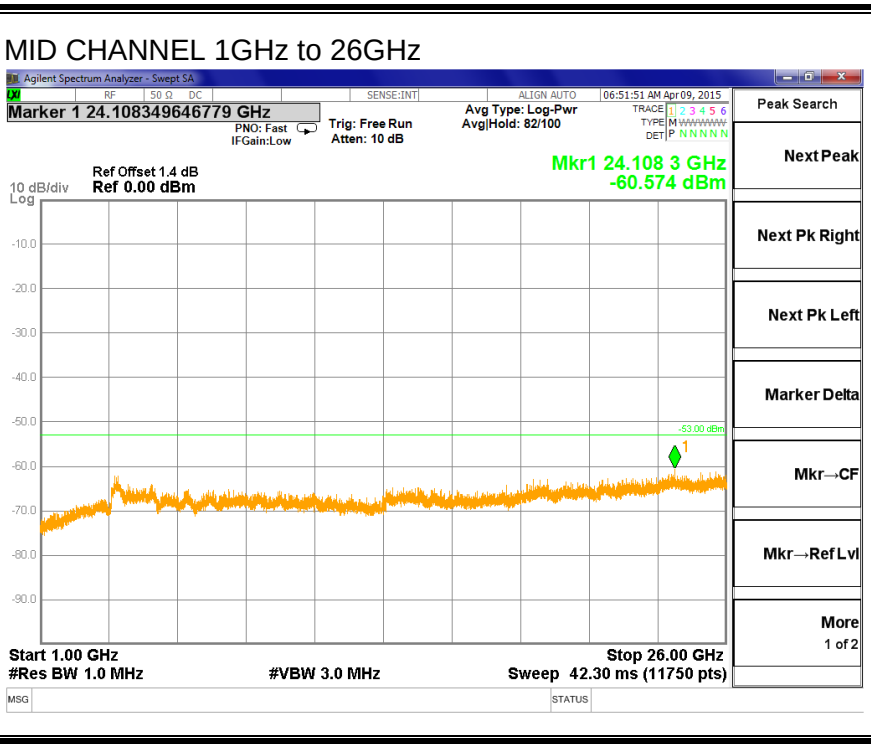
RESULTS

RX SPURIOUS EMISSIONS, MID CHANNEL

MID CHANNEL 30 to 1000MHz



MID CHANNEL 1GHz to 26GHz



9. RADIATED TEST RESULTS

9.1. LIMITS

FCC §15.205 and §15.209

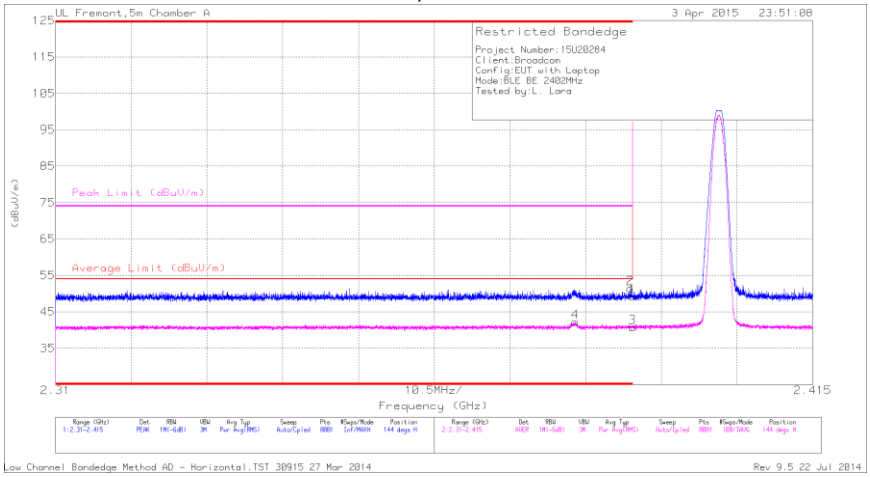
IC RSS-GEN Clause 8.9 (Transmitter)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

9.2. BLUETOOTH LOW ENERGY MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

LOW CHANNEL RESTRICTED, HORIZ



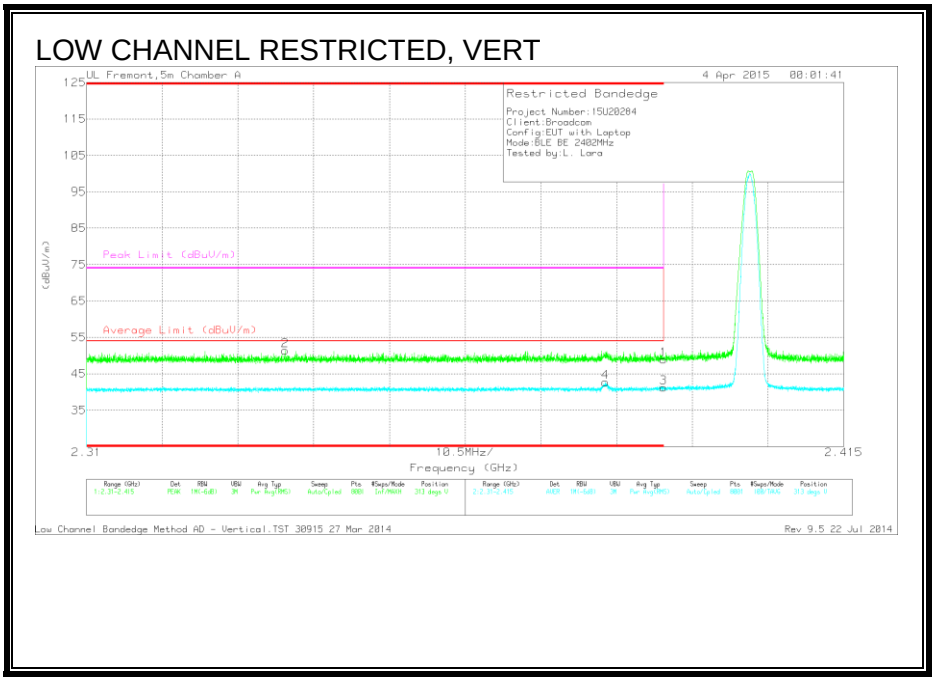
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
4	* 2.382	30.59	RMS	31.9	-22.3	2.06	42.25	54	-11.75	-	-	144	214	H
1	* 2.39	39.37	PK	32	-22.2	0	49.17	-	-	74	-24.83	144	214	H
2	* 2.39	41.67	PK	32	-22.2	0	51.47	-	-	74	-22.53	144	214	H
3	* 2.39	28.93	RMS	32	-22.2	2.06	40.79	54	-13.21	-	-	144	214	H

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

PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



Trace Markers

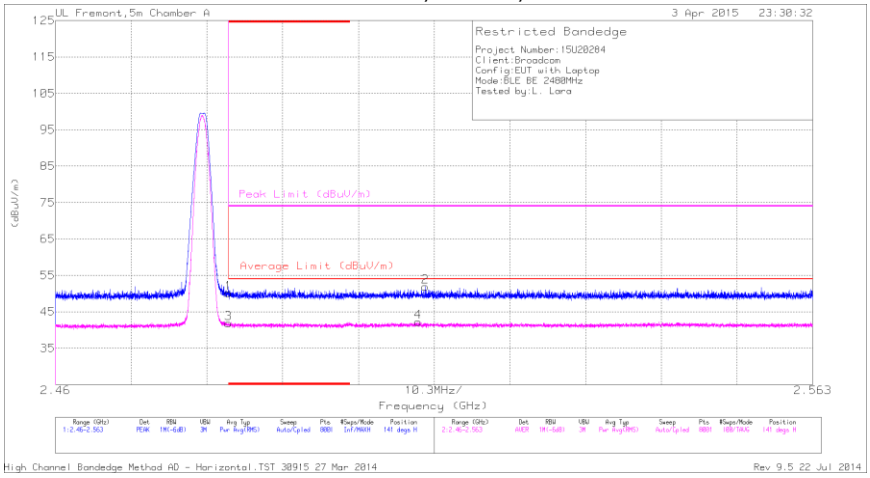
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.338	41.75	PK	31.9	-22.2	0	51.45	-	-	74	-22.55	313	180	V
4	* 2.382	31	RMS	31.9	-22.3	2.06	42.66	54	-11.34	-	-	313	180	V
1	* 2.39	39.08	PK	32	-22.2	0	48.88	-	-	74	-25.12	313	180	V
3	* 2.39	29.35	RMS	32	-22.2	2.06	41.21	54	-12.79	-	-	313	180	V

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

PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



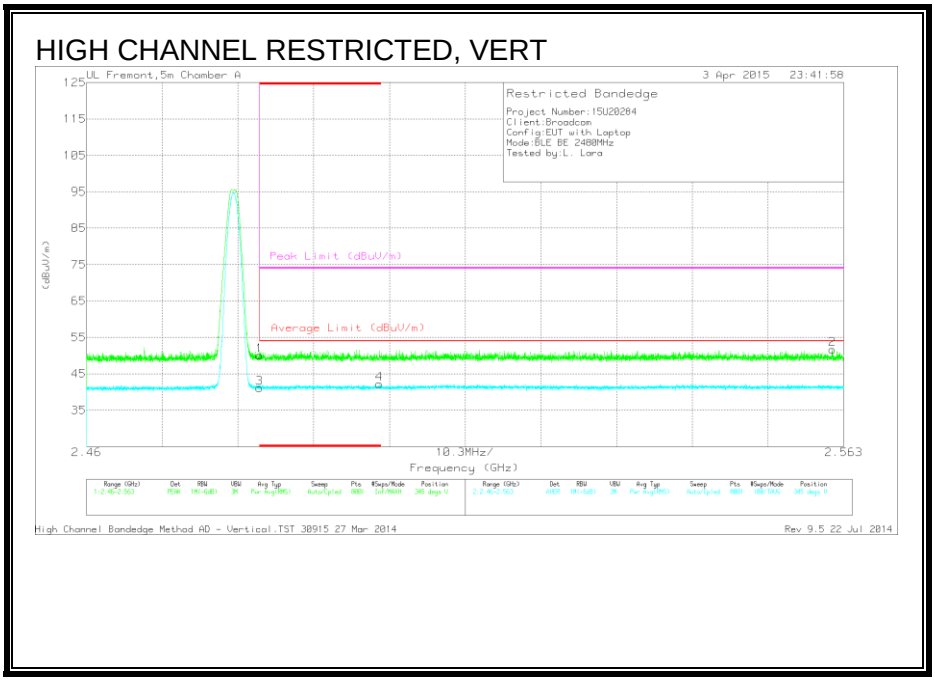
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	40.02	PK	32.1	-21.9	0	50.22	-	-	74	-23.78	141	312	H
3	* 2.484	29.61	RMS	32.1	-21.9	2.06	41.87	54	-12.13	-	-	141	312	H
4	2.509	29.67	RMS	32.1	-21.6	2.06	42.23	54	-11.77	-	-	141	312	H
2	2.51	41.49	PK	32.1	-21.7	0	51.89	-	-	74	-22.11	141	312	H

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

PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Trace Markers

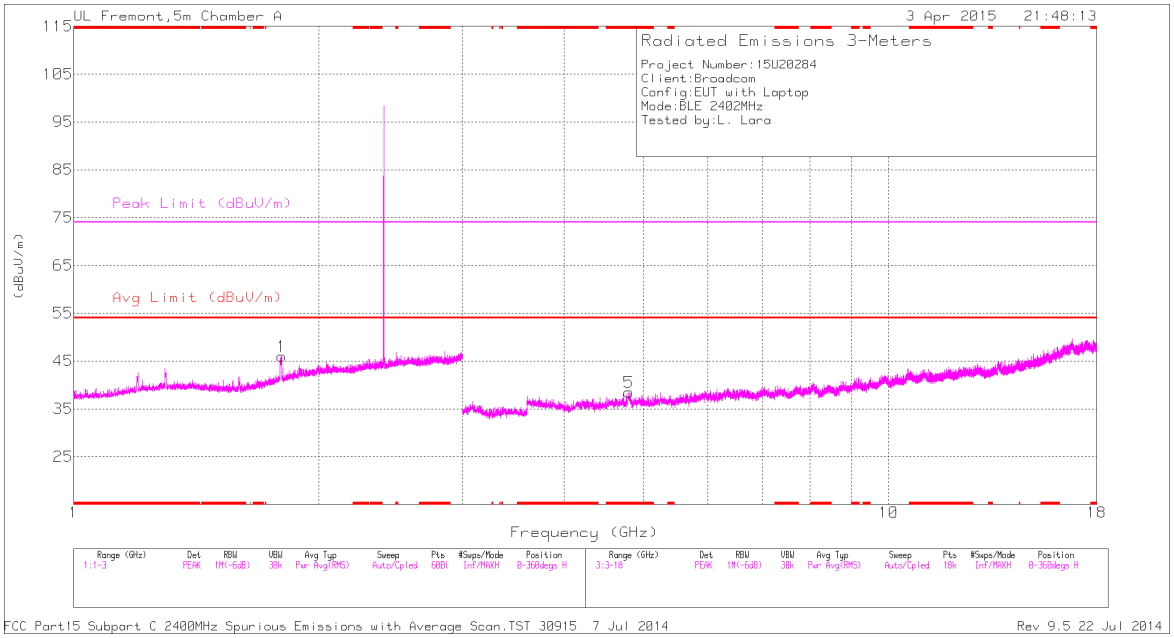
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.84	PK	32.1	-21.9	0	50.04	-	-	74	-23.96	345	105	V
3	* 2.484	28.83	RMS	32.1	-21.9	2.06	41.09	54	-12.91	-	-	345	105	V
4	* 2.5	30.1	RMS	32.1	-22	2.06	42.26	54	-11.74	-	-	345	105	V
2	2.561	41.12	PK	32.2	-21.6	0	51.72	-	-	74	-22.28	345	105	V

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

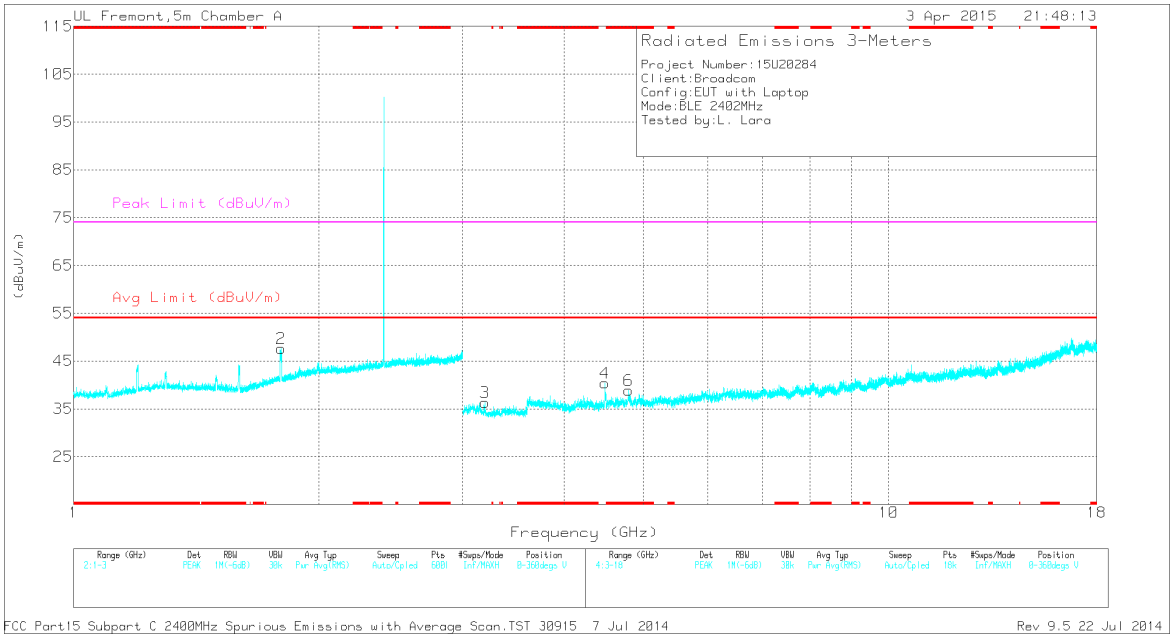
PK - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



LOW CHANNEL DATA

Trace Markers

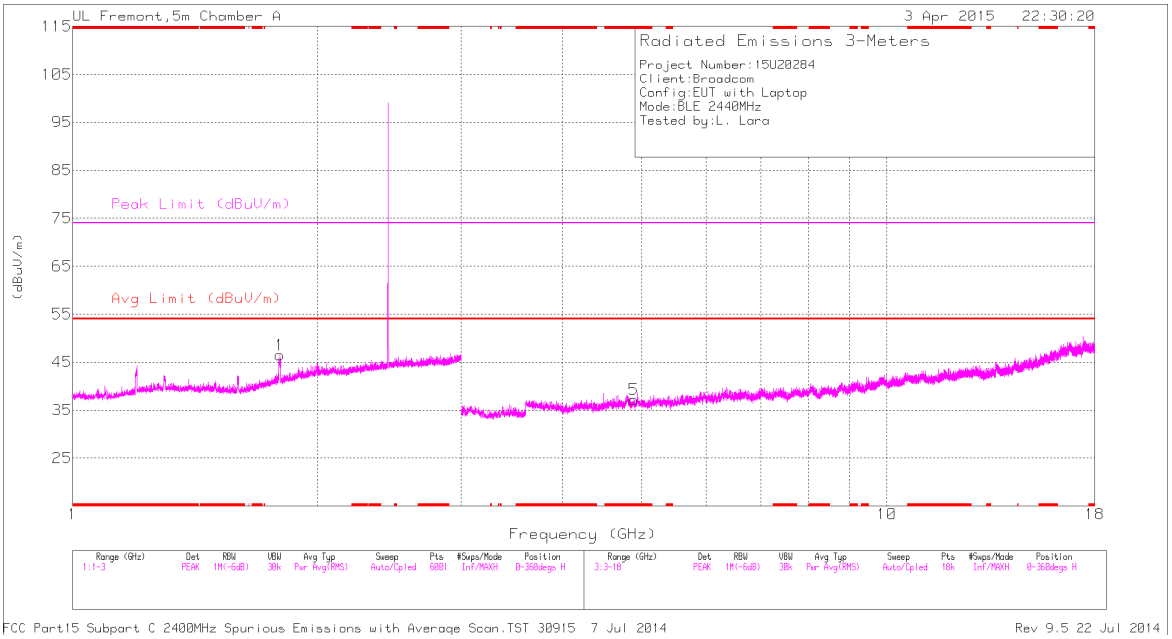
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 4.804	39.72	PK2	34	-28.4	0	45.32	-	-	74	-28.68	179	391	H
	* 4.8	29.07	MAv1	34	-28.4	2.06	36.73	54	-17.27	-	-	179	391	H
6	* 4.805	40.01	PK2	34	-28.4	0	45.61	-	-	74	-28.39	46	197	V
	* 4.804	29.51	MAv1	34	-28.4	2.06	37.17	54	-16.83	-	-	46	197	V
2	1.798	40.75	PK	30	-23.1	0	47.65	-	-	-	-	0-360	201	V
1	1.799	39.09	PK	30	-23.1	0	45.99	-	-	-	-	0-360	201	H
3	3.197	34.04	PK	32.7	-30.4	0	36.34	-	-	-	-	0-360	201	V
4	4.485	35.49	PK	33.9	-29	0	40.39	-	-	-	-	0-360	201	V

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

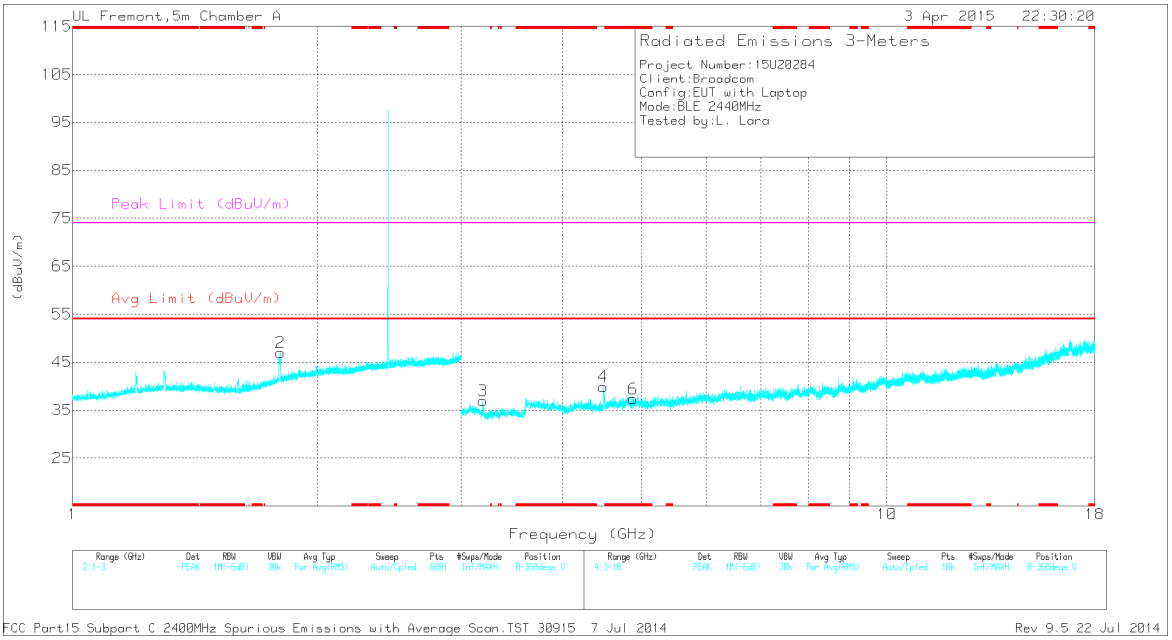
PK - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

Note: Signals in non-restricted bands are covered by -20 dBc antenna port spurious testing.

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



MID CHANNEL DATA

Trace Markers

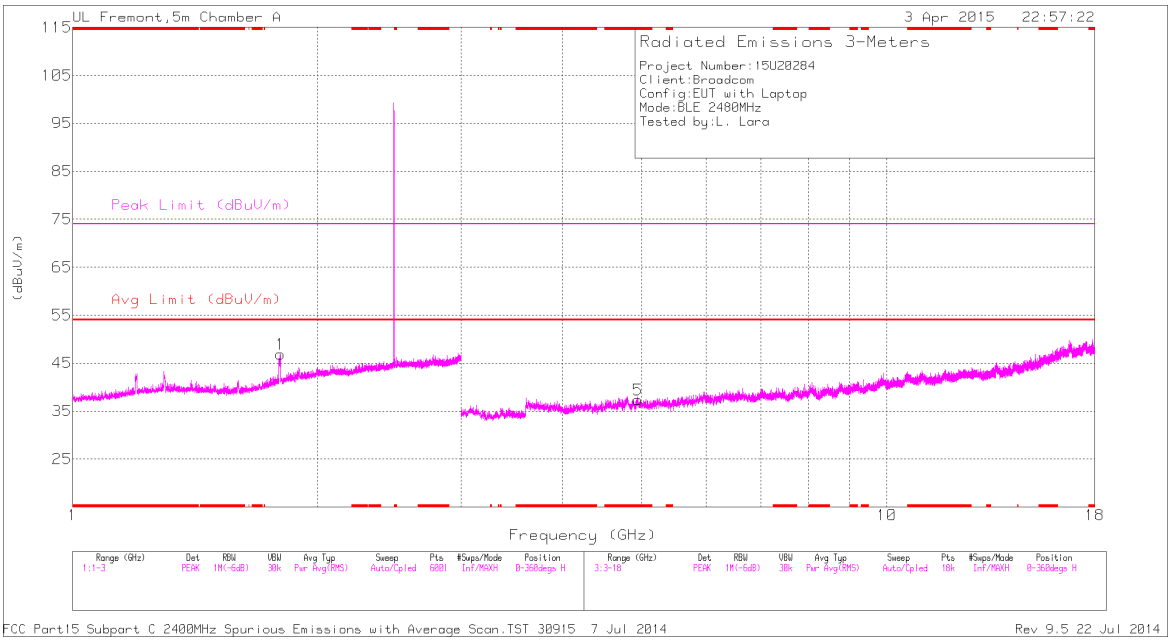
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 4.885	38.77	PK2	33.9	-27.7	0	44.97	-	-	74	-29.03	168	110	H
	* 4.884	27.36	MAv1	33.9	-27.7	2.06	35.62	54	-18.38	-	-	168	110	H
6	* 4.885	38.13	PK2	33.9	-27.7	0	44.33	-	-	74	-29.67	141	289	V
	* 4.884	27.29	MAv1	33.9	-27.7	2.06	35.55	54	-18.45	-	-	141	289	V
1	1.798	39.73	PK	30	-23.2	0	46.53	-	-	-	-	0-360	201	H
2	1.799	40.04	PK	30	-23.1	0	46.94	-	-	-	-	0-360	201	V
3	3.191	34.67	PK	32.7	-30.4	0	36.97	-	-	-	-	0-360	201	V
4	4.482	35.25	PK	33.8	-29.1	0	39.95	-	-	-	-	0-360	201	V

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

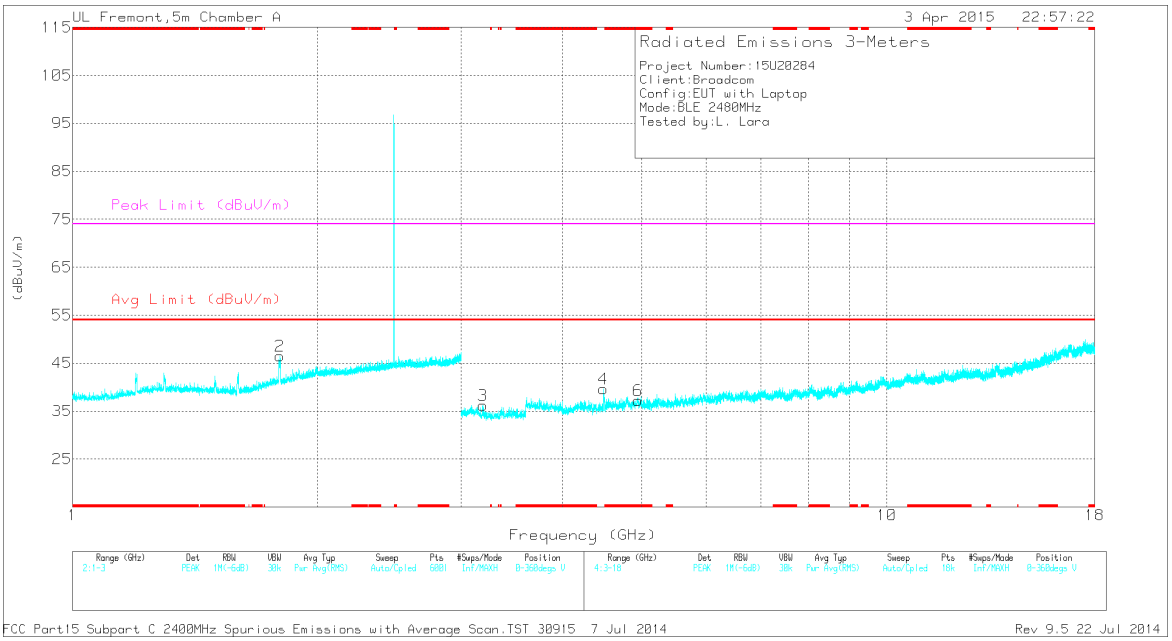
PK - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

Note: Signals in non-restricted bands are covered by -20 dBc antenna port spurious testing.

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
5	* 4.958	38.64	PK2	33.9	-28	0	44.54	-	-	74	-29.46	285	230	H
	* 4.958	27.21	MAv1	33.9	-28	2.06	35.17	54	-18.83	-	-	285	230	H
6	* 4.96	38.3	PK2	33.9	-28	0	44.2	-	-	74	-29.8	54	196	V
	* 4.96	27.36	MAv1	33.9	-28	2.06	35.32	54	-18.68	-	-	54	196	V
2	1.798	39.68	PK	30	-23.2	0	46.48	-	-	-	-	0-360	201	V
1	1.799	39.96	PK	30	-23.1	0	46.86	-	-	-	-	0-360	201	H
3	3.191	33.88	PK	32.7	-30.4	0	36.18	-	-	-	-	0-360	201	V
4	4.489	34.71	PK	33.9	-29	0	39.61	-	-	-	-	0-360	201	V

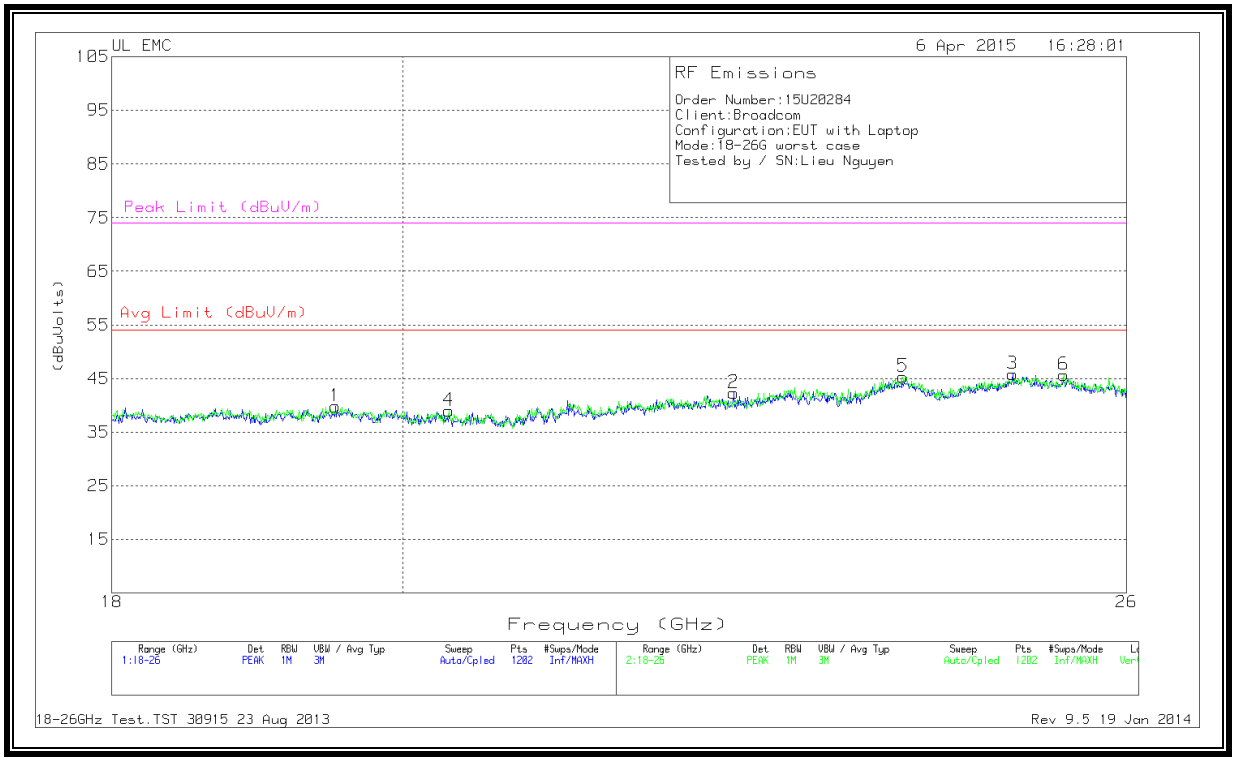
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

Note: Signals in non-restricted bands are covered by -20 dBc antenna port spurious testing.

9.3. WORST-CASE 18-26 GHz

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



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 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	19.519	40.83	PK	32.8	-24.3	-9.5	39.83	54	-14.16	74	-34.16
2	22.55	41.83	PK	33.7	-23.7	-9.5	42.33	54	-11.66	74	-31.66
3	24.948	43.43	PK	34.5	-22.6	-9.5	45.83	54	-8.16	74	-28.16
4	20.338	39.5	PK	32.9	-23.9	-9.5	39	54	-15	74	-35
5	23.975	43.23	PK	34.2	-22.6	-9.5	45.33	54	-8.66	74	-28.66
6	25.414	43.47	PK	34.6	-22.9	-9.5	45.66	54	-8.33	74	-28.33

PK - Peak detector

9.4. WORST-CASE BELOW 1 GHz

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

EMISSIONS DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 171.3125	45.92	PK	11.7	-30.1	27.52	43.52	-16	0-360	200	H
8	52.78	52.82	PK	7.3	-30.9	29.22	40	-10.78	0-360	101	V
9	99.615	43.45	PK	9.3	-30.6	22.15	43.52	-21.37	0-360	101	V
1	99.9125	45.04	PK	9.4	-30.6	23.84	43.52	-19.68	0-360	300	H
3	199.1646	56.76	QP	12.5	-29.9	39.36	43.52	-4.16	1	100	H
10	199.15	49.43	PK	12.5	-29.9	32.03	43.52	-11.49	0-360	101	V
11	298.7	40.1	PK	13.3	-29.4	24	46.02	-22.02	0-360	200	V
4	298.8	49.3	PK	13.3	-29.4	33.2	46.02	-12.82	0-360	101	H
12	398.3	38.48	PK	15.2	-29.1	24.58	46.02	-21.44	0-360	101	V
5	399.7	42.09	PK	15.2	-29.1	28.19	46.02	-17.83	0-360	101	H
13	499.7	40.08	PK	17.6	-28.7	28.98	46.02	-17.04	0-360	101	V
14	499.7	40.08	PK	17.6	-28.7	28.98	46.02	-17.04	0-360	101	V
6	499.8	41.37	PK	17.6	-28.7	30.27	46.02	-15.75	0-360	200	H
7	799.5	36.19	PK	21.3	-28.2	29.29	46.02	-16.73	0-360	101	H

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

PK - Peak detector

QP - Quasi-Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

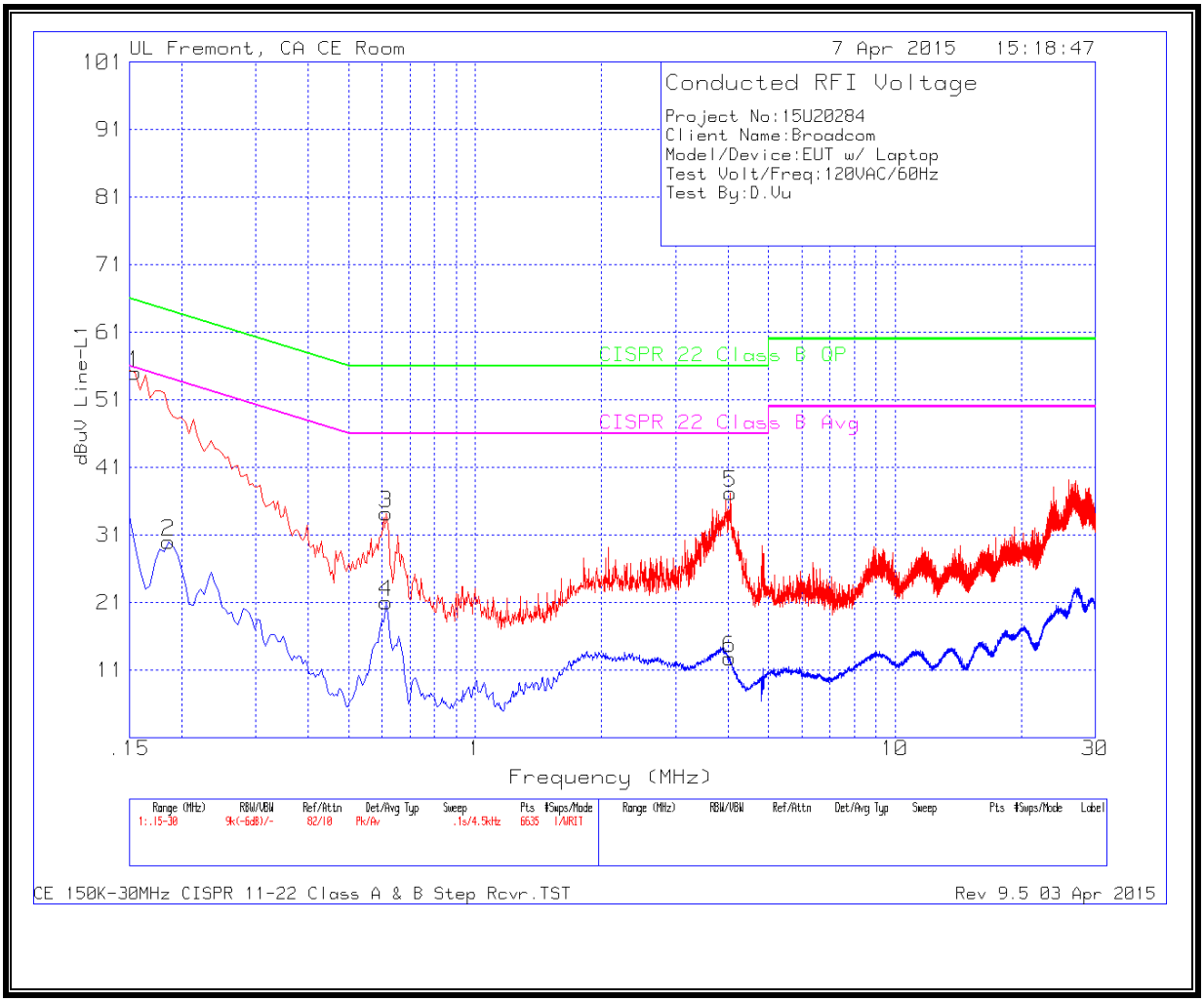
RSS-GEN Clause 8.8

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.

6 WORST EMISSIONS

LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz

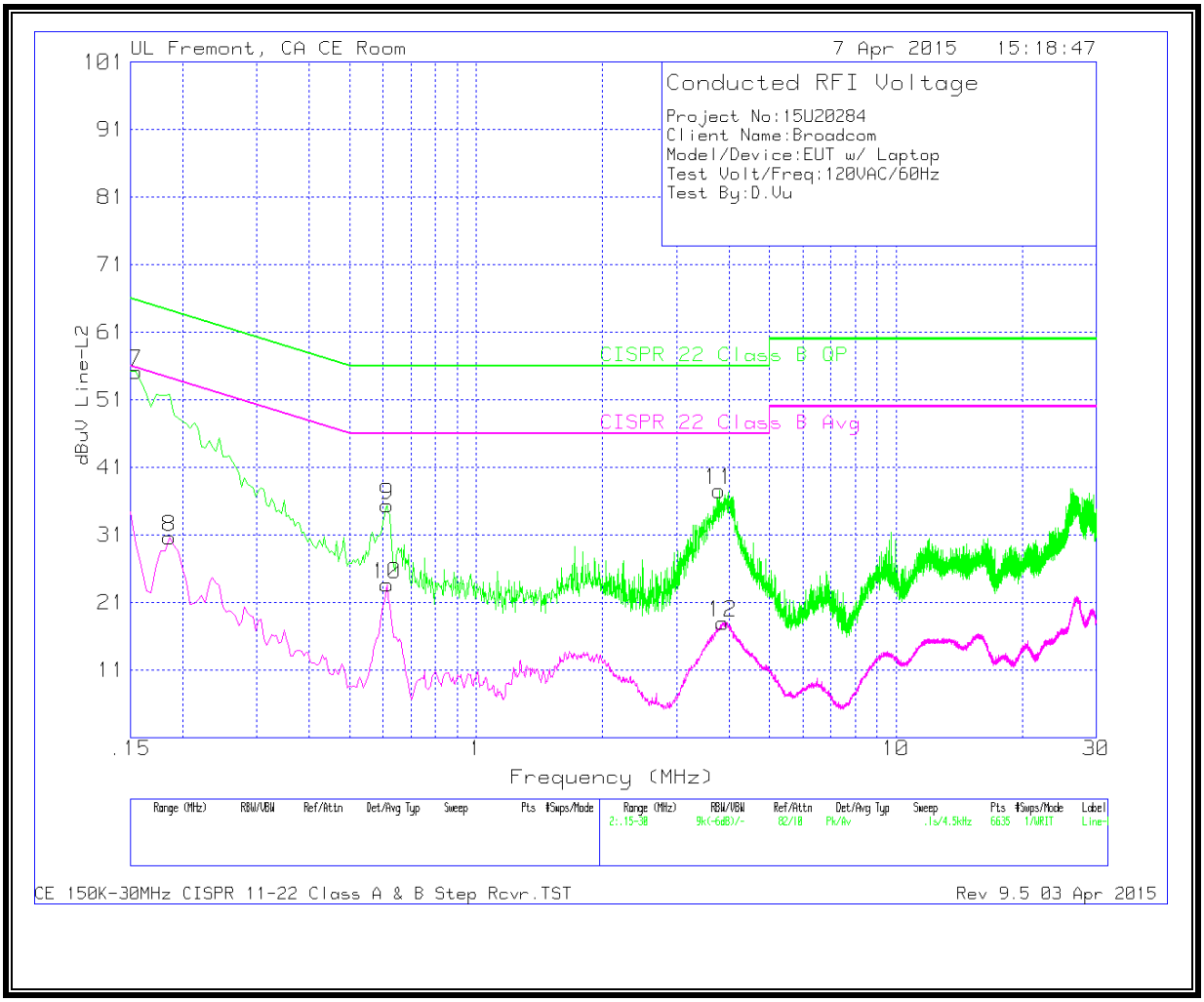
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	0.1545	53.74	Pk	1.3	0	55.04	-	-	55.75	-0.71
2	0.186	29.02	Av	1	0	30.02	64.21	-34.19	54.21	-24.19
3	0.6135	33.92	Pk	0.3	0	34.22	-	-	46	-11.78
4	0.6135	20.76	Av	0.3	0	21.06	56	-34.94	46	-24.94
5	4.056	36.91	Pk	0.2	0.1	37.21	-	-	46	-8.79
6	4.0335	12.49	Av	0.2	0.1	12.79	56	-43.21	46	-33.21

Range 1: Line-L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
0.15338	29.34	Ca	1.4	0	30.74	-	-	55.81	-25.07

Pk - Peak detector
Av - Average detection
Ca - CISPR average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
7	0.1545	53.77	Pk	1.4	0	55.17	-	-	55.75	-0.58
8	0.186	29.54	Av	1.1	0	30.64	64.21	-33.57	54.21	-23.57
9	0.6135	35.09	Pk	0.3	0	35.39	-	-	46	-10.61
10	0.6135	23.35	Av	0.3	0	23.65	56	-32.35	46	-22.35
11	3.7905	37.3	Pk	0.2	0.1	37.6	-	-	46	-8.4
12	3.867	17.7	Av	0.2	0.1	18	56	-38	46	-28

Range 2: Line-L2 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
0.15338	28.83	Ca	1.5	0	30.33	-	-	55.81	-25.48

Pk - Peak detector
Av - Average detection
Ca - CISPR average detection