FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

BLUETOOTH LOW ENERGY CERTIFICATION TEST REPORT

FOR

2x2 802.11a/b/g/n +BT Module (SiP)

MODEL NUMBER: QCA6234

FCC ID: PPD-QCA6234
IC: 4104A-QCA6234

REPORT NUMBER: 13U14995-4, Revision B

ISSUE DATE: JULY 10, 2013

Prepared for
QUALCOMM ATHEROS, INC.
1700 TECHNOLOGY DRIVE
SAN JOSE, CA 95100

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/28/13	Initial Issue	F. Ibrahim
A	07/01/13	Corrected EUT Description	AAumentado
B	07/10/13	Removed Conducted Average Measurement	T. LEE

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: QUALCOMM ATHEROS, INC
1700 TECHNOLOGY DRIVE
SAN JOSE, CA 95100

EUT DESCRIPTION: 2x2 802.11a/b/g/n +BT Module (SiP)

MODEL: QCA6234

SERIAL NUMBER: 75720088, 75720080

DATE TESTED: MAY 17 – JUNE 21, 2013

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	PASS
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	PASS
INDUSTRY CANADA RSS-GEN Issue 3	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 CCS 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
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FRANK IBRAHIM
WiSE PROGRAM MANAGER
UL Verification Services Inc.

Tested By:

CHRIS XIONG
EMC ENGINEER
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, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is 2x2 802.11a/b/g/n +BT Module (SiP).

Three board variants are provided, no filter version, 3G filter version and LTE filter version. Test was done to worst case among the three boards.

The radio module is manufactured by Qualcomm Atheros, Inc.

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	7.080	5.105

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA 802.11a/b/g/n WLAN/BT antenna, with a maximum gain of 2 dBi.

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was ART2-GUI version 2.3, CART version 4.4

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 Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	T430 Thinkpad	QCA-REG17	DoC
Bluetooth to USB	Qualcomm Atheros	TB639-030-D0277	250-02293-C30	N/A
SD Card Express Adapter	Bplus	EC230	1100319	N/A

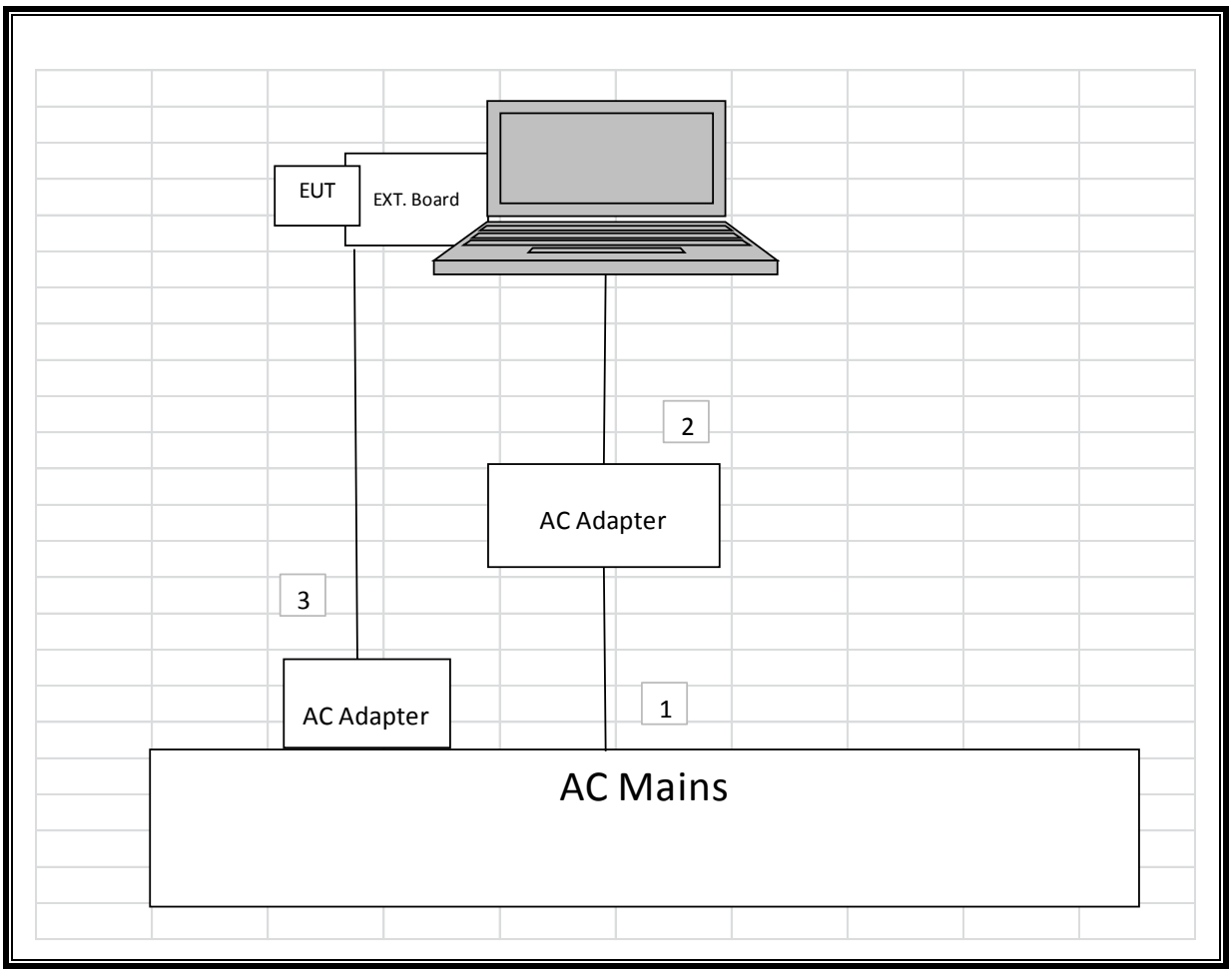
I/O CABLES

Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC Adapter	Un-Shielded	1m	NA
2	DC	1	DC	Un-Shielded	1.5m	NA
3	AC	1	AC Adapter	Un-Shielded	1m	NA

TEST SETUP

The EUT is installed in a host laptop computer during the tests. 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**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/12	12/20/13
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	02/26/13	02/26/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	02/13/13	02/13/14
Antenna, Horn, 18 GHz	ETS	3117	C01006	12/11/12	12/11/13
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	06/14/11	06/14/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	03/23/13	03/23/14
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	10/22/12	10/22/13
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/12	12/13/13
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/12	12/13/13
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/13	01/14/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/08/12	08/08/13

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

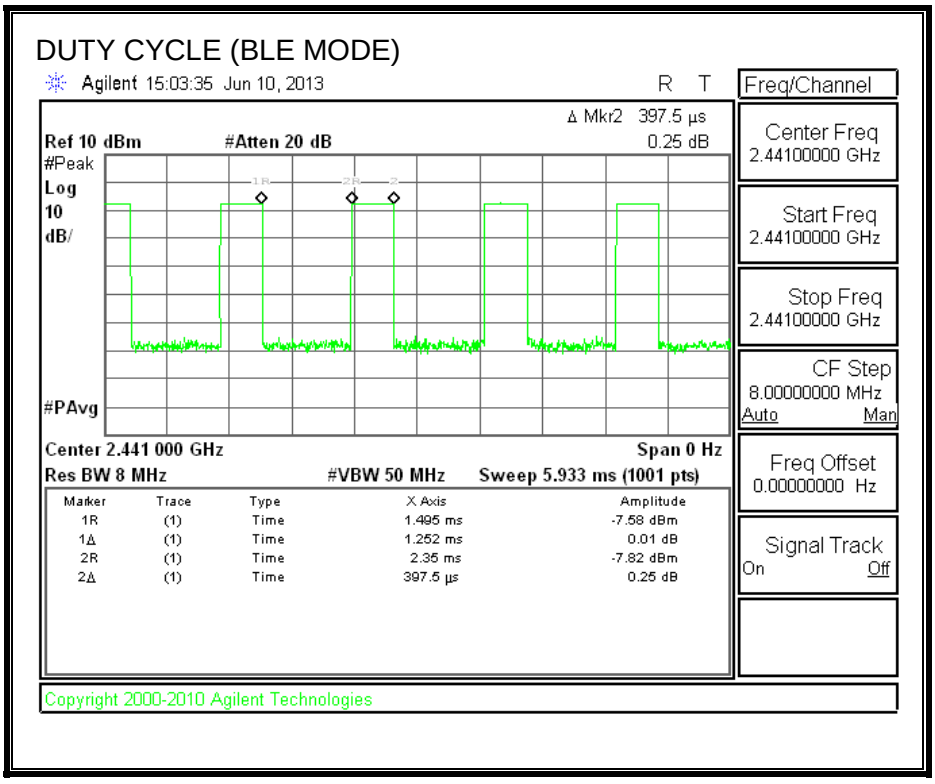
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

7.1.1. 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/T Minimum VBW (kHz)
BLE	0.398	1.25	0.317	31.7%	4.98	2.516

DUTY CYCLE (BLE MODE)



7.1.2. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v03r01, Section 8.1, Option 1.

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, Sections 11.

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

7.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

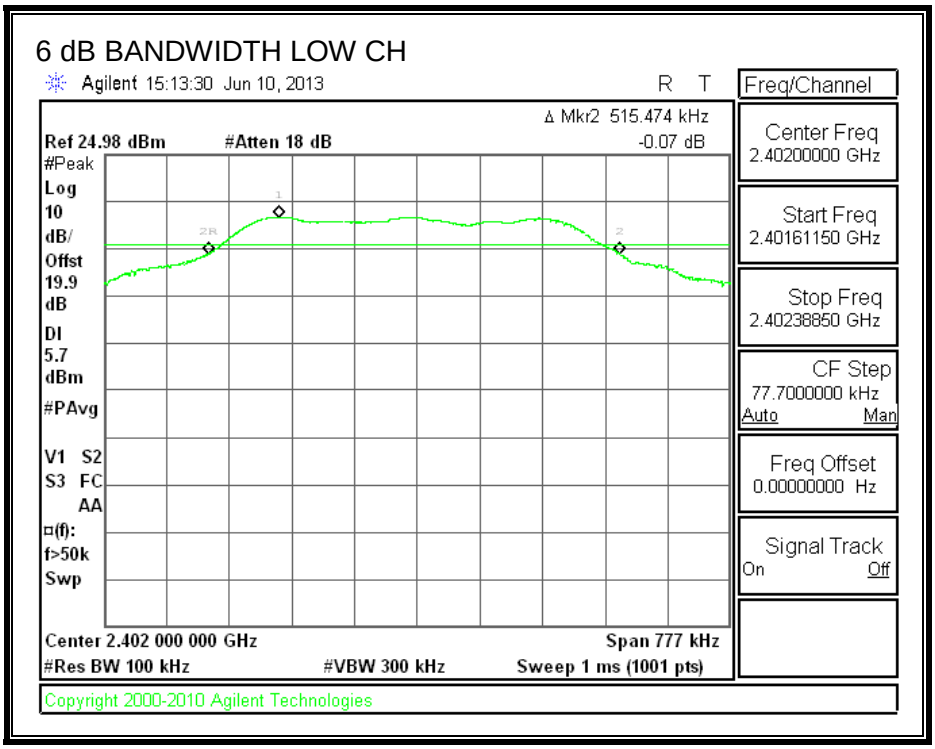
IC RSS-210 A8.2 (a)

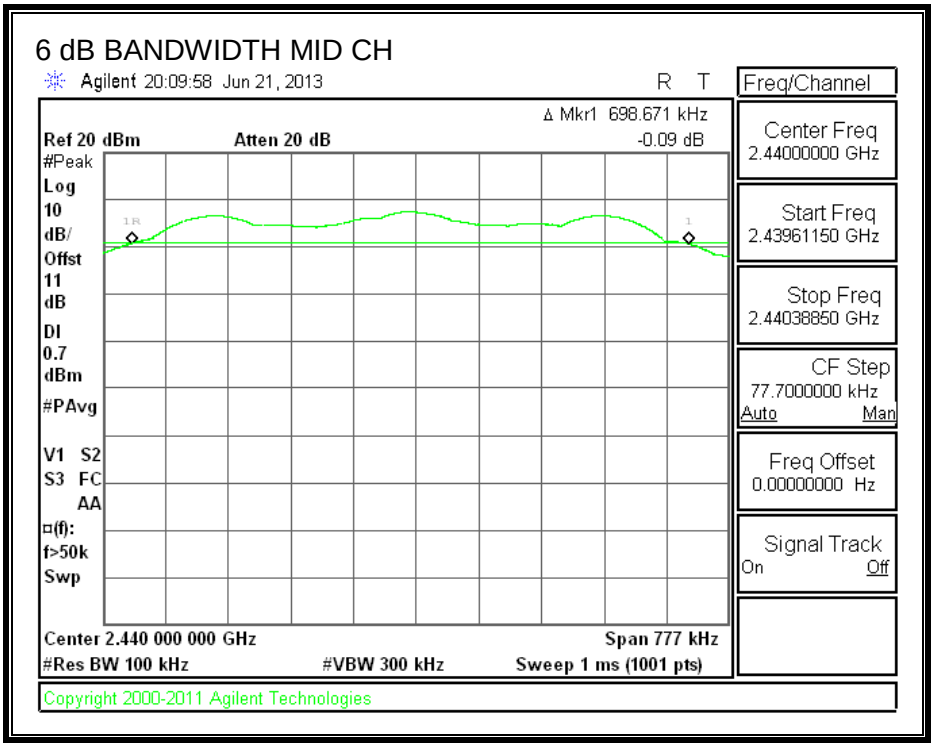
The minimum 6 dB bandwidth shall be at least 500 kHz.

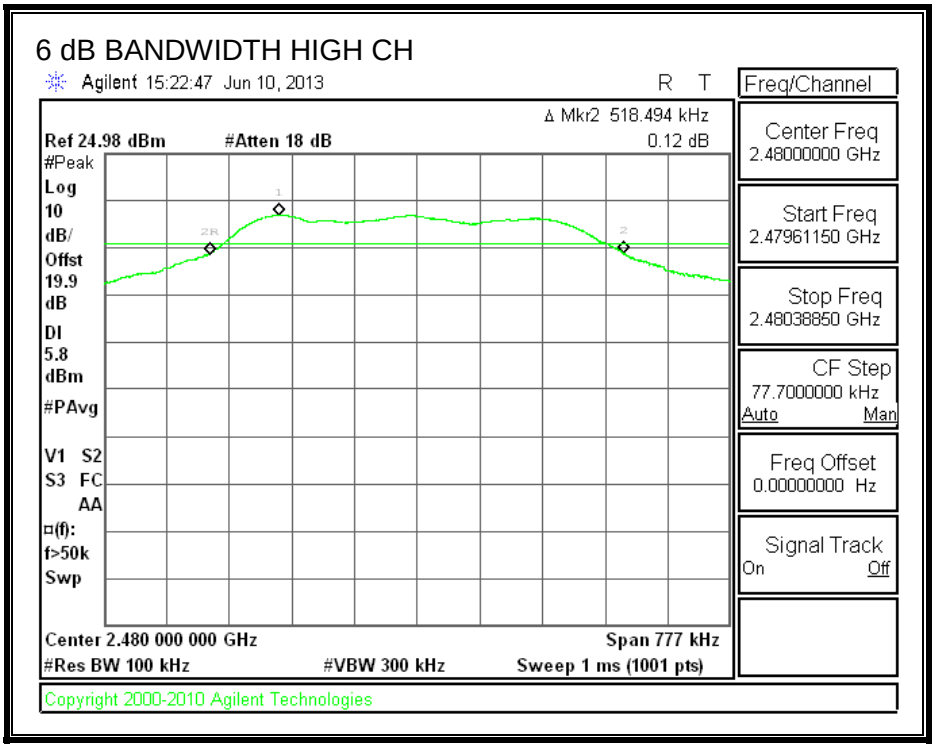
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.5155	0.5
Middle	2440	0.6987	0.5
High	2480	0.5185	0.5

6 dB BANDWIDTH







7.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

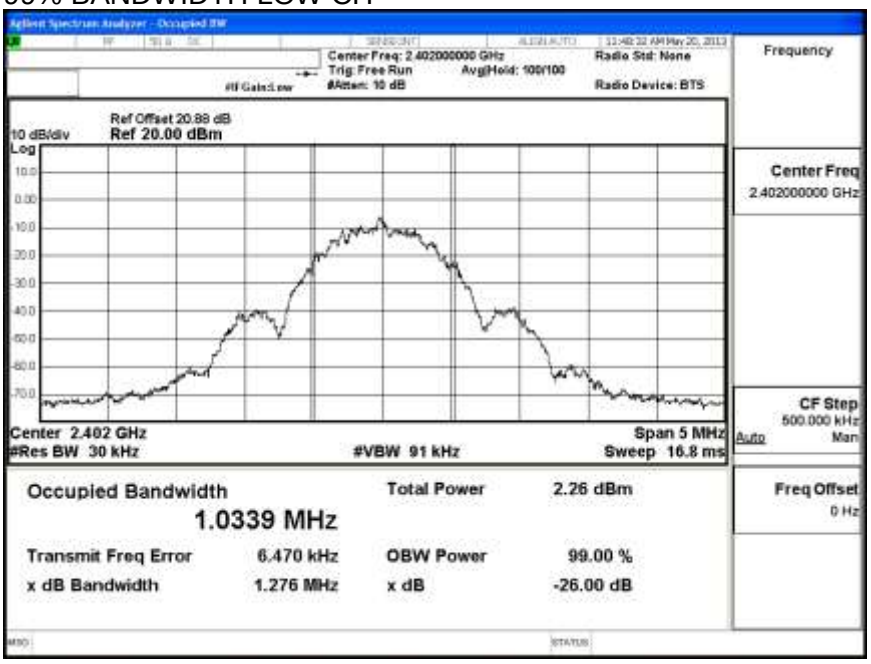
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

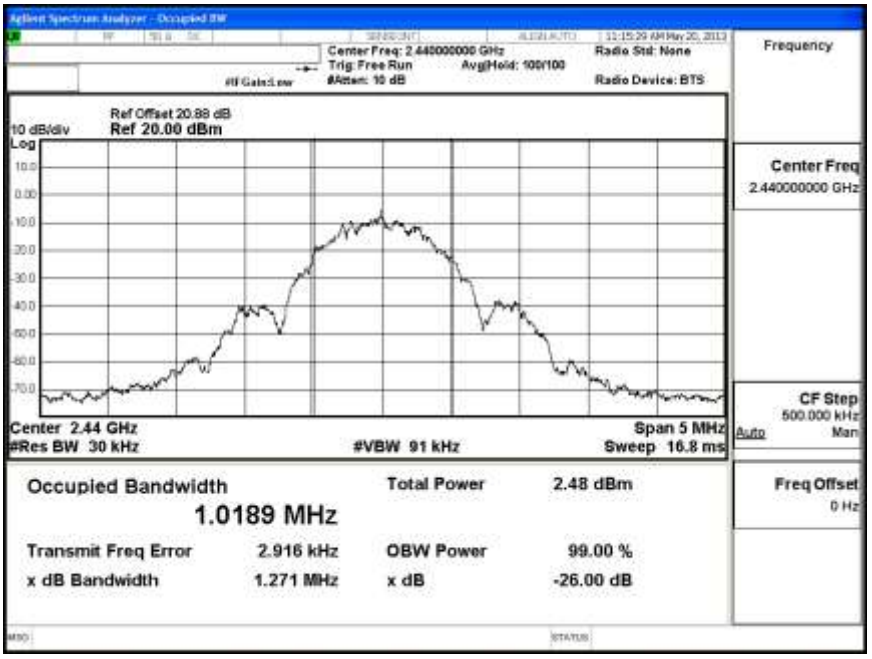
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0339
Middle	2440	1.0189
High	2480	1.0333

99% BANDWIDTH

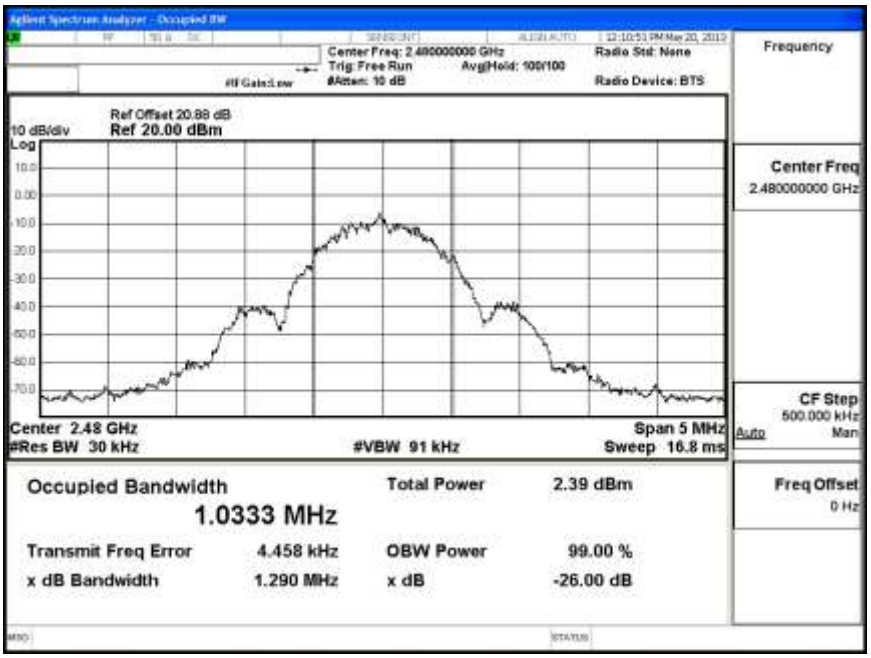
99% BANDWIDTH LOW CH



99% BANDWIDTH MID CH



99% BANDWIDTH HIGH CH



7.4. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

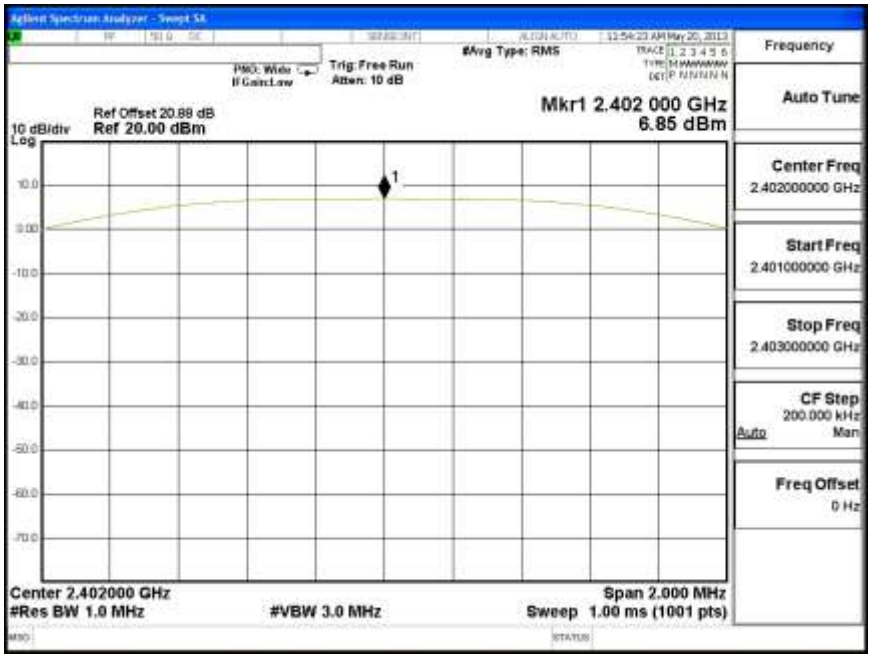
The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

RESULTS

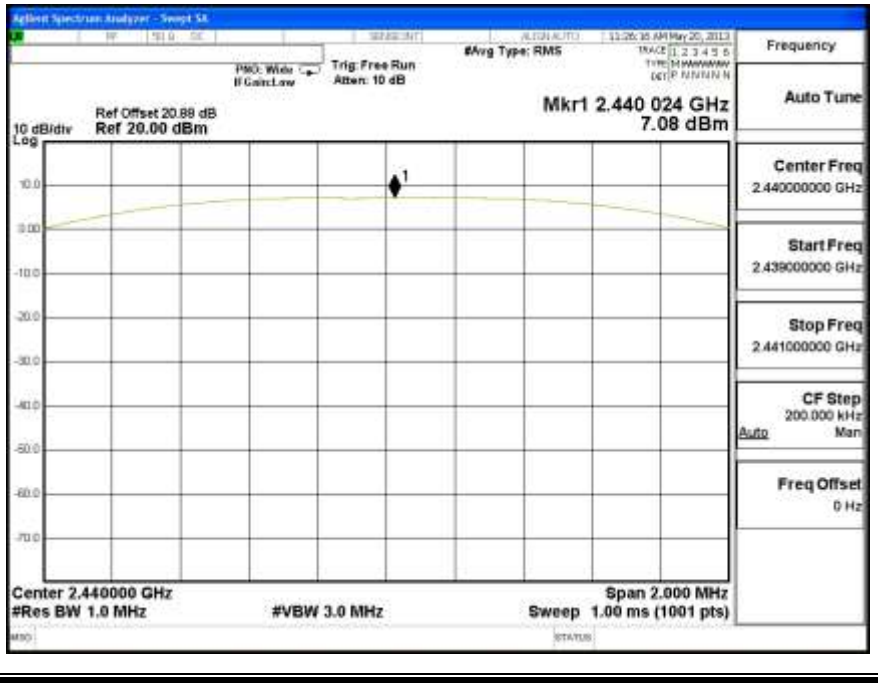
Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	6.850	30	-23.150
Middle	2440	7.080	30	-22.920
High	2480	7.064	30	-22.936

OUTPUT POWER

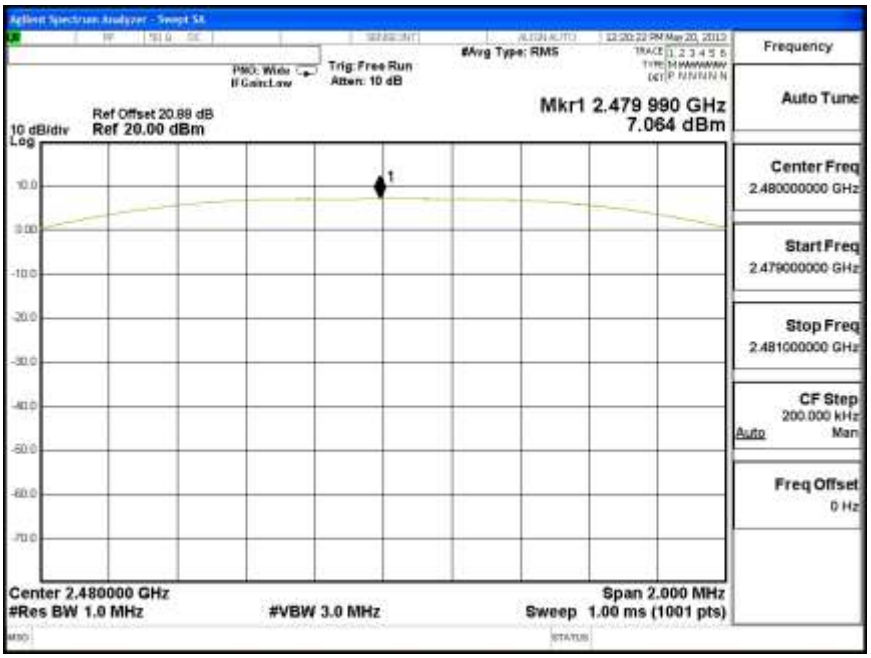
OUTPUT POWER LOW CH



OUTPUT POWER MID CH



OUTPUT POWER HIGH CH



7.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 24.88 dB (including two 10 dB pads, 3.4dB power splitter, and 1.48 dB cables) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	3.85
Middle	2440	4.01
High	2480	3.91

7.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

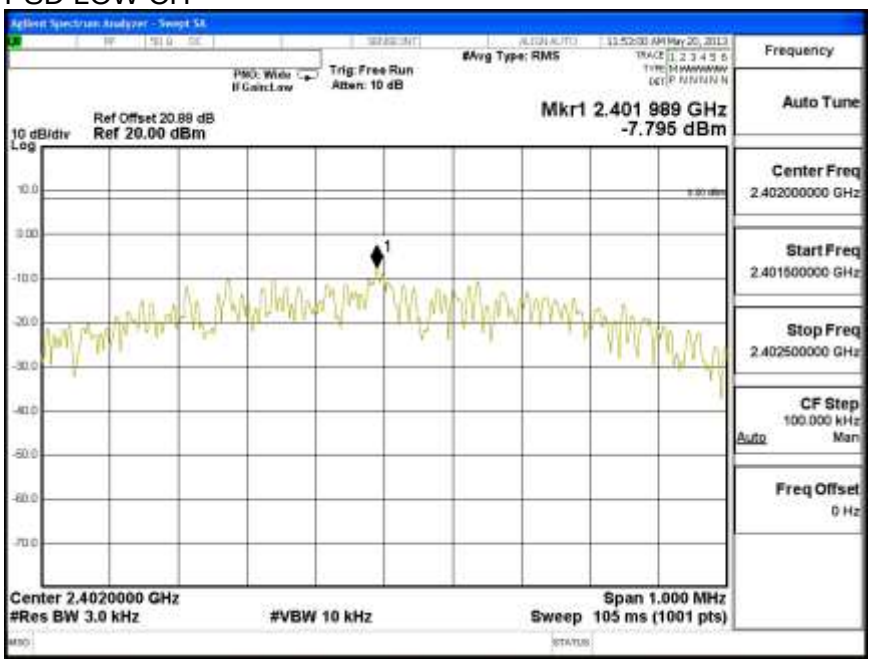
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

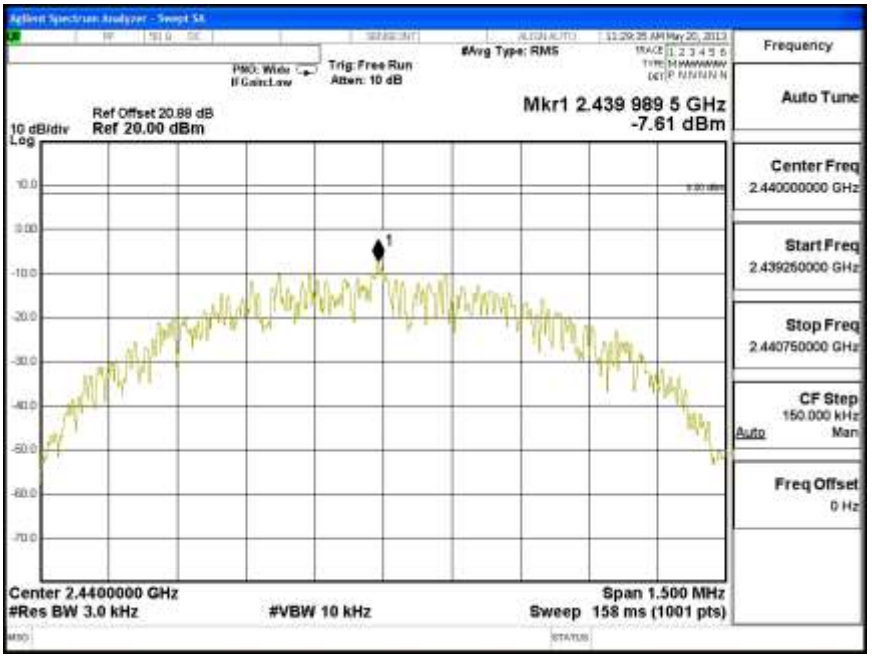
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-7.795	8	-15.795
Middle	2440	-7.610	8	-15.610
High	2480	-7.920	8	-15.920

POWER SPECTRAL DENSITY

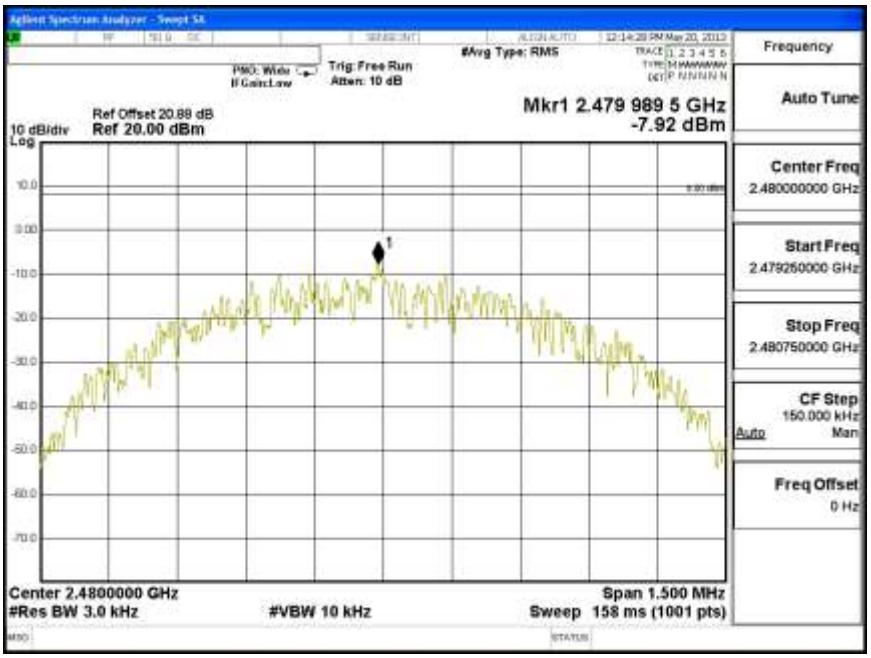
PSD LOW CH



PSD MID CH



PSD HIGH CH



7.7. CONDUCTED SPURIOUS EMISSIONS (-20 dBc)

LIMITS

FCC §15.247 (d)

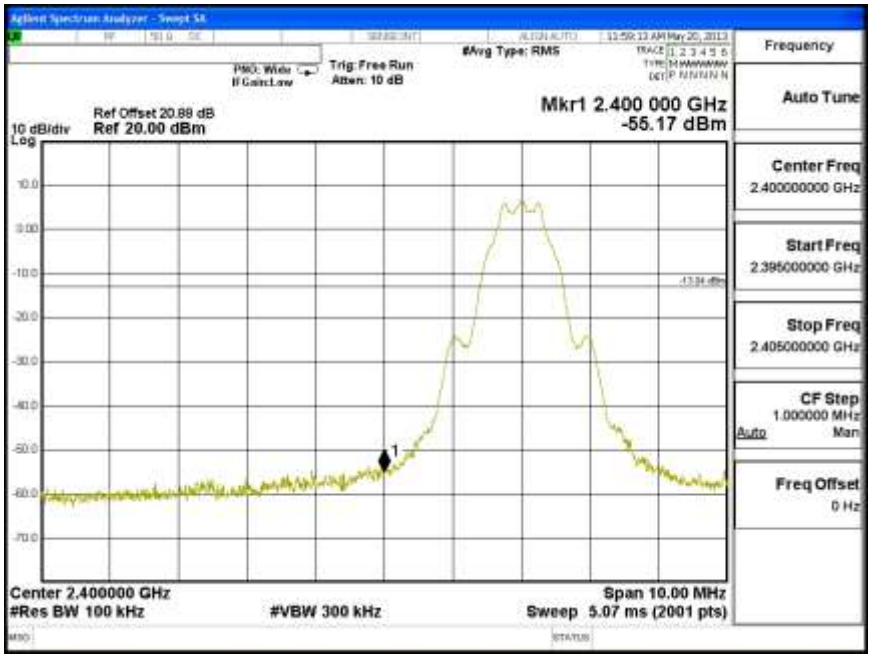
IC RSS-210 A8.5

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

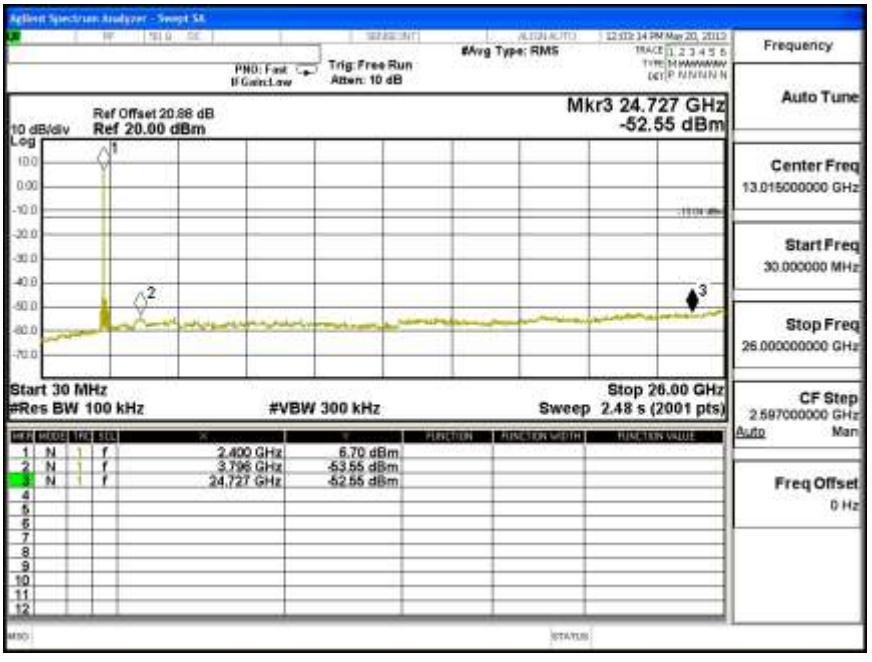
RESULTS

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CH BANDEDGE

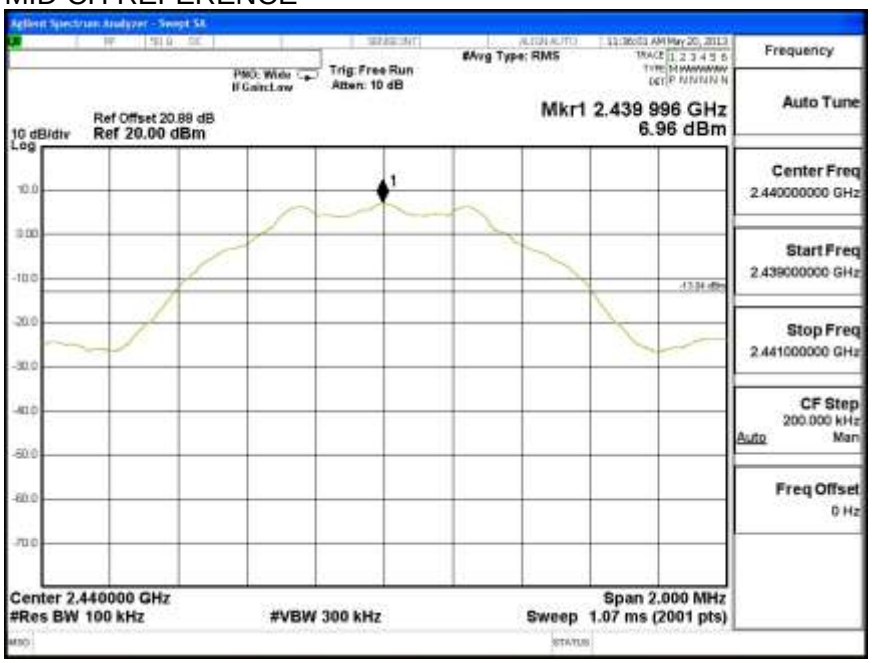


LOW CH SPURIOUS

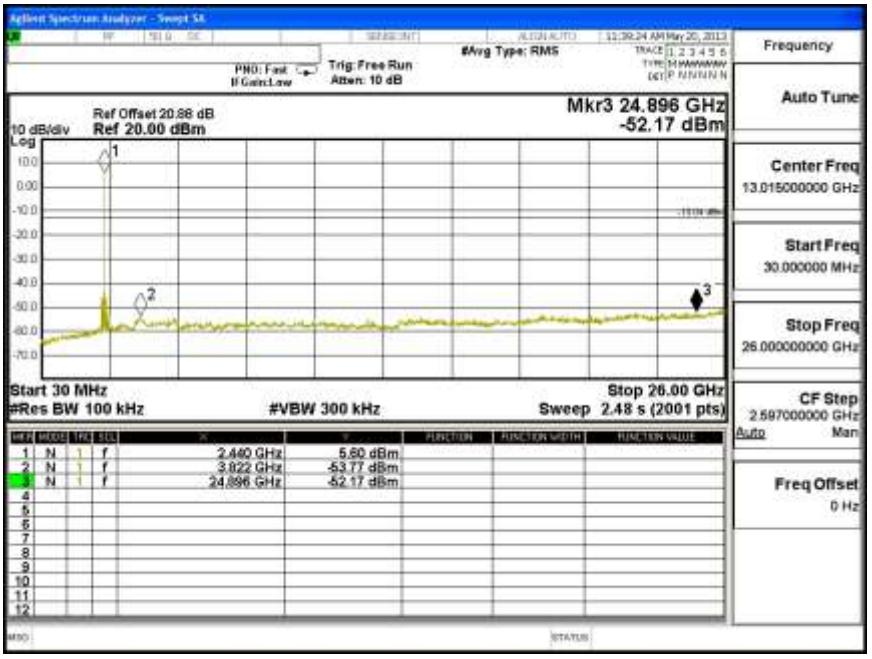


SPURIOUS EMISSIONS, MID CHANNEL

MID CH REFERENCE

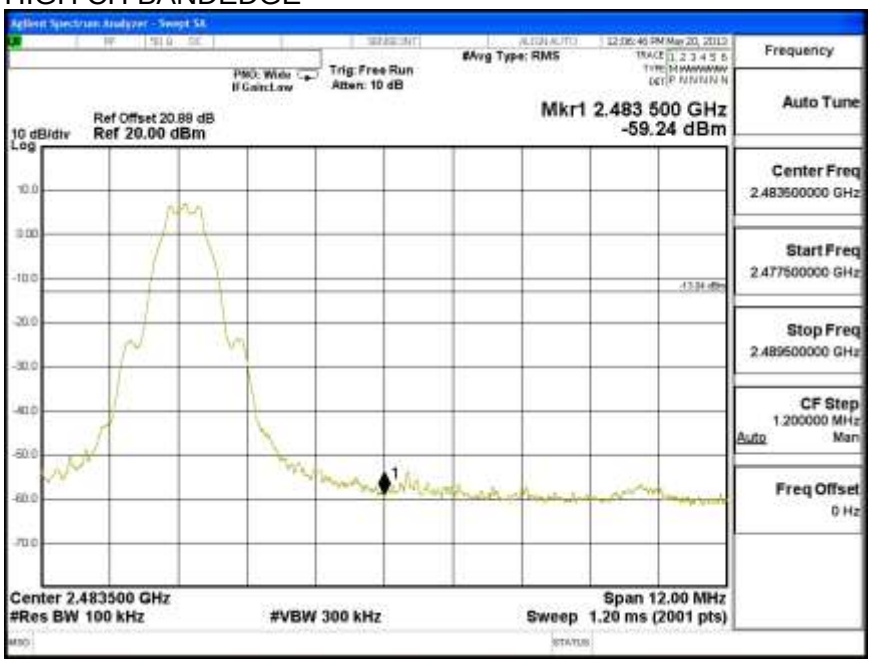


MID CH SPURIOUS

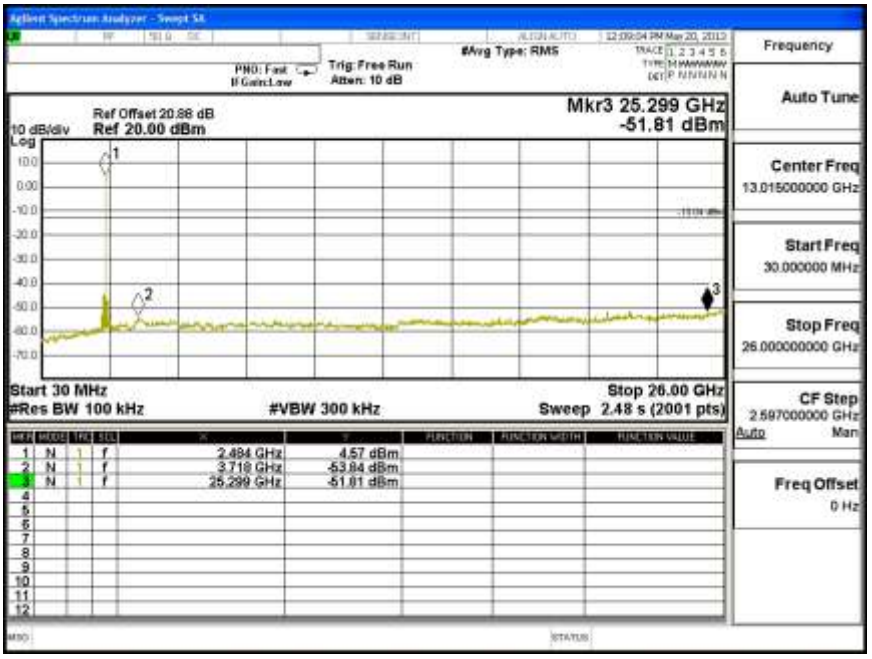


SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CH BANDEDGE

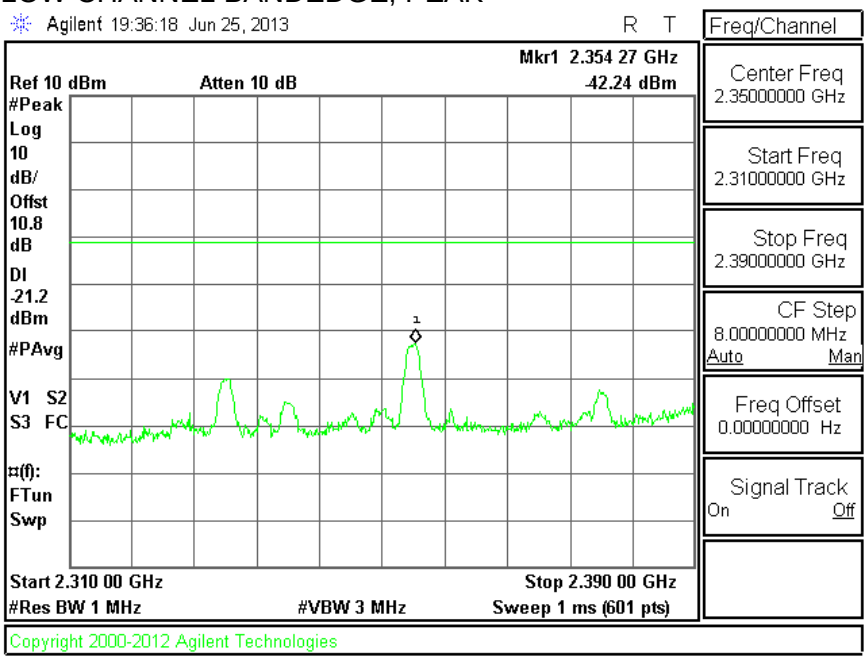


HIGH CH SPURIOUS

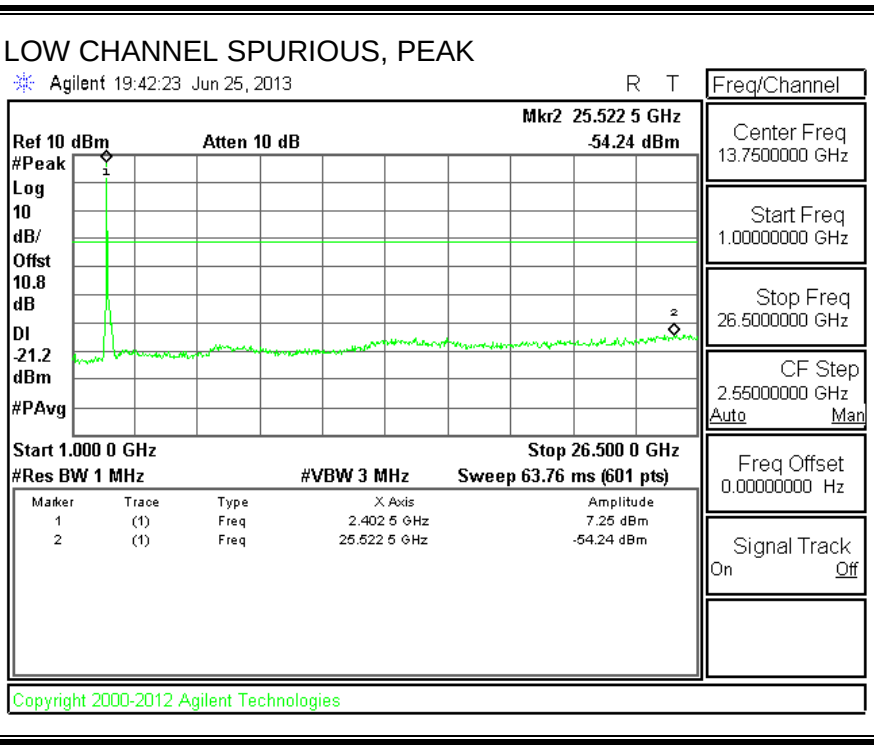


7.8. CONDUCTED BANDEDGE AND SPURIOUS TEST IN THE RESTRICTED BAND

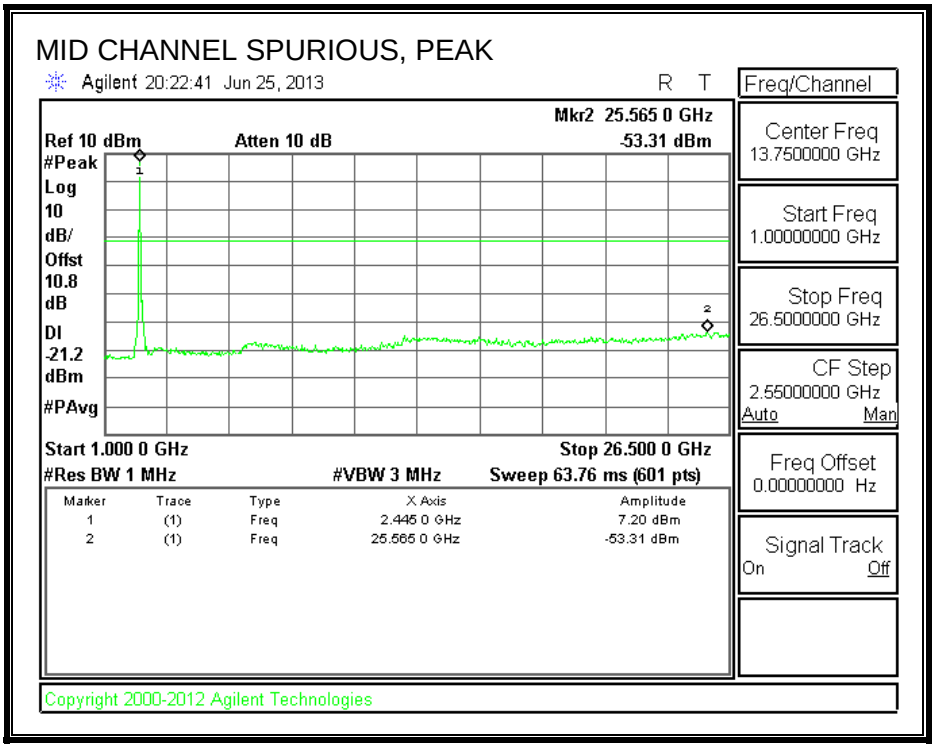
LOW CHANNEL BANDEDGE, PEAK



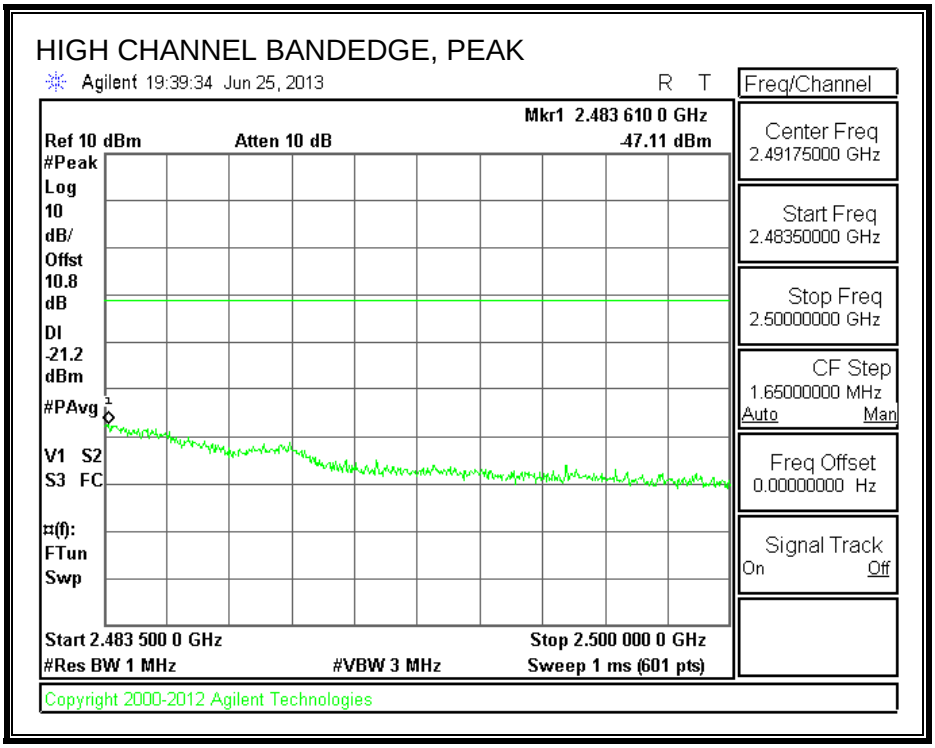
LOW CHANNEL SPURIOUS, PEAK

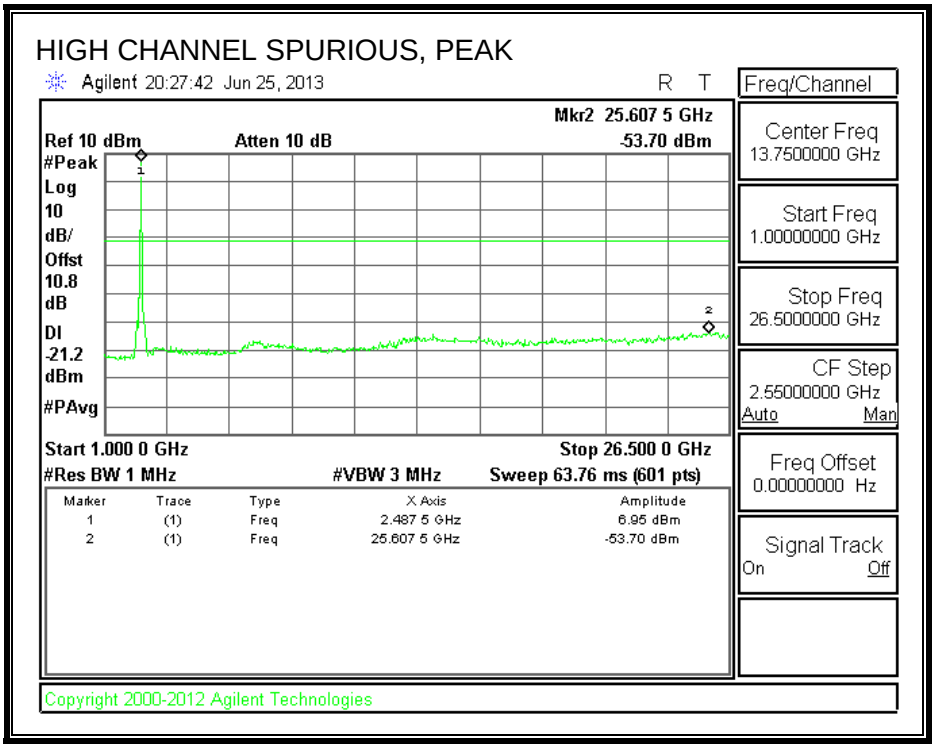


MID CHANNEL SPURIOUS, PEAK



HIGH CHANNEL BANDEDGE, PEAK





8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. 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 measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

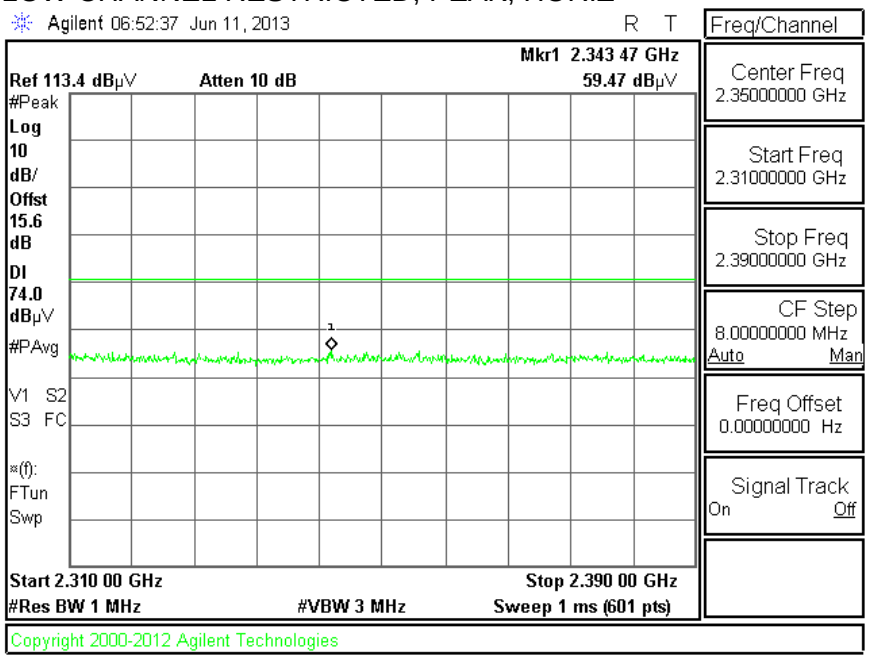
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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.

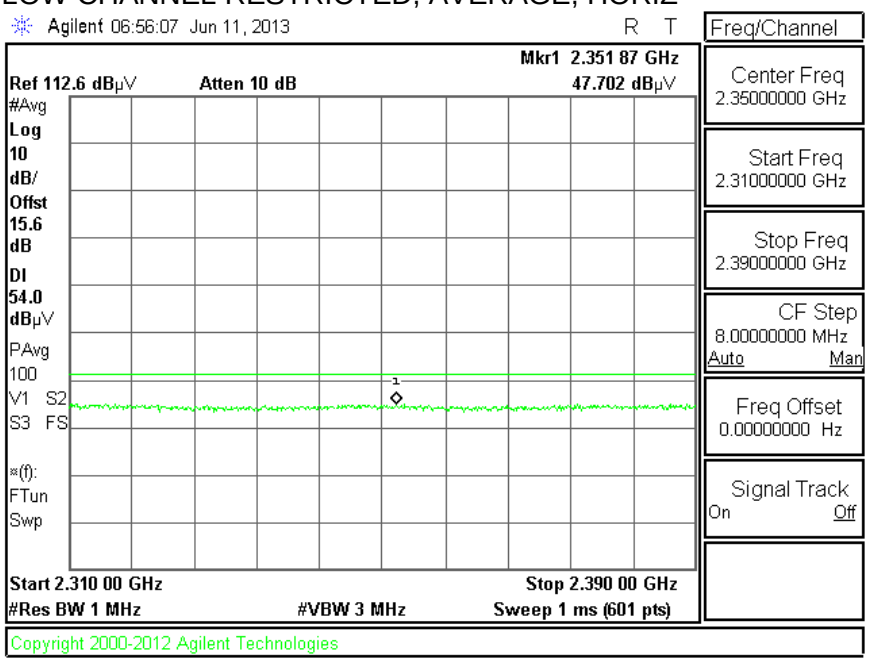
8.2. TRANSMITTER ABOVE 1 GHz

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ

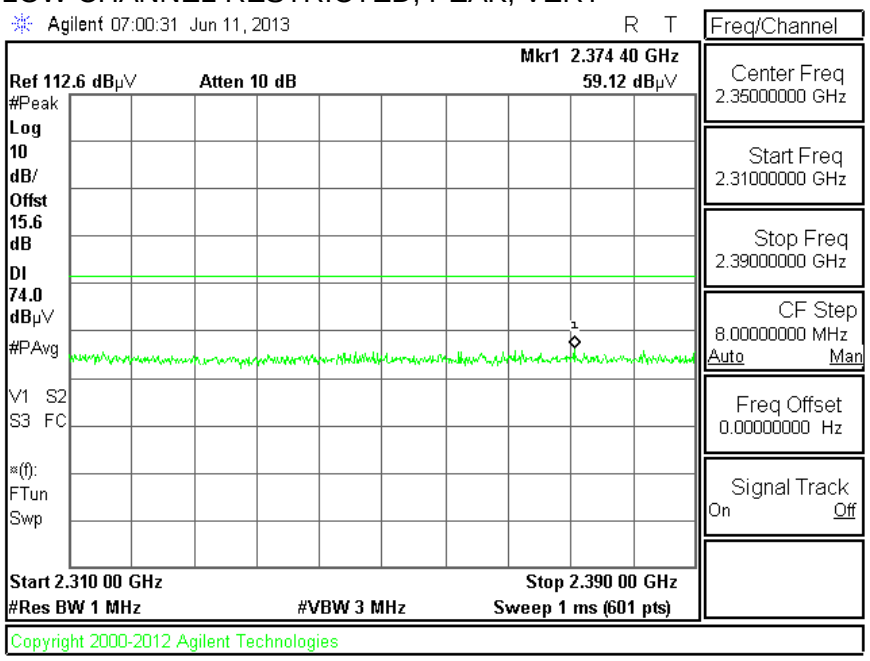


LOW CHANNEL RESTRICTED, AVERAGE, HORIZ

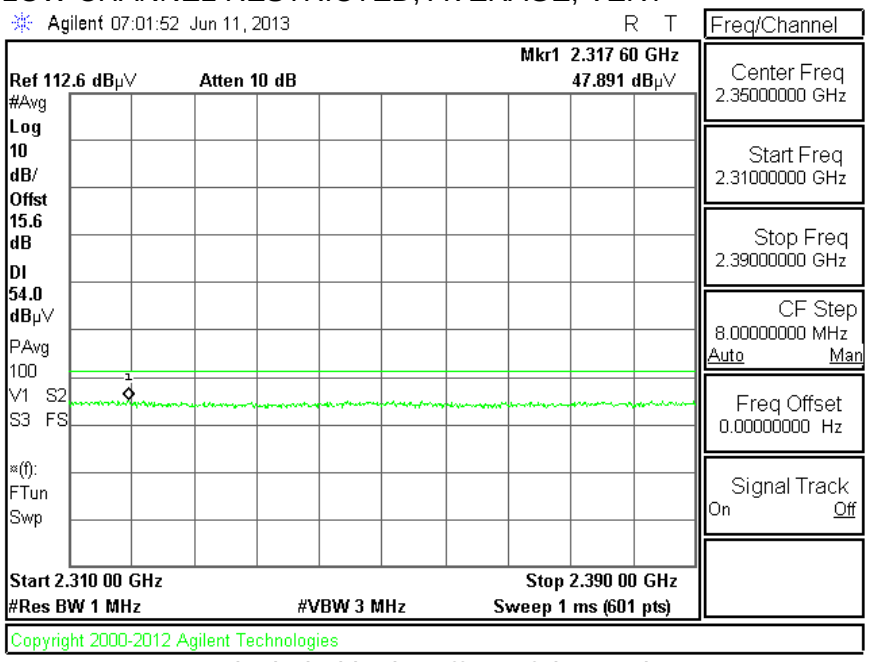


Note: DCCF was included in the offset of the analyzer.

LOW CHANNEL RESTRICTED, PEAK, VERT

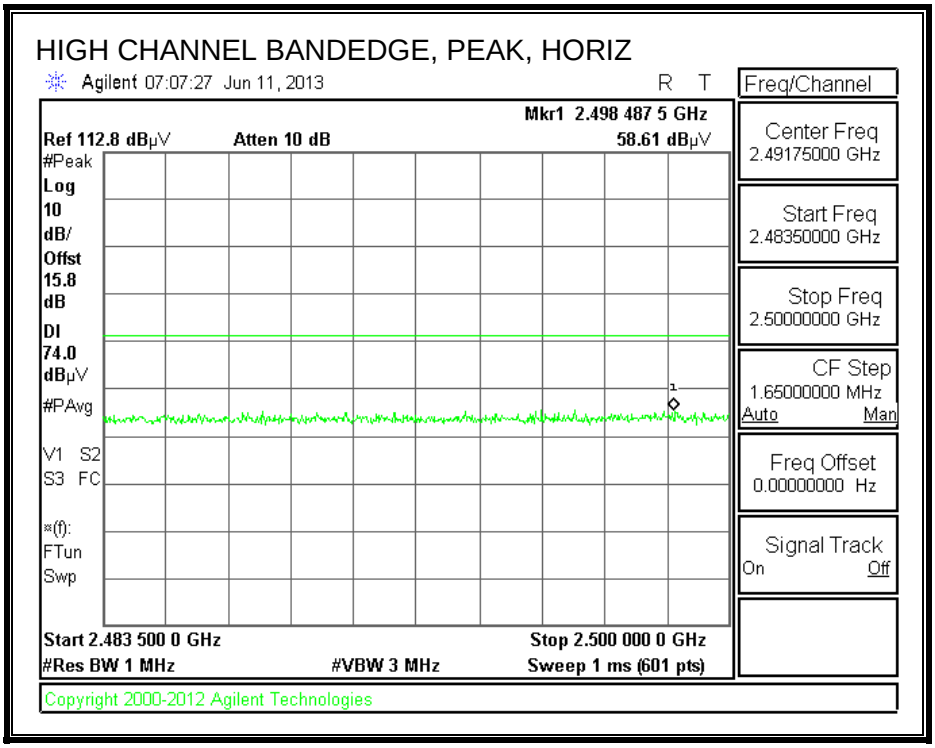


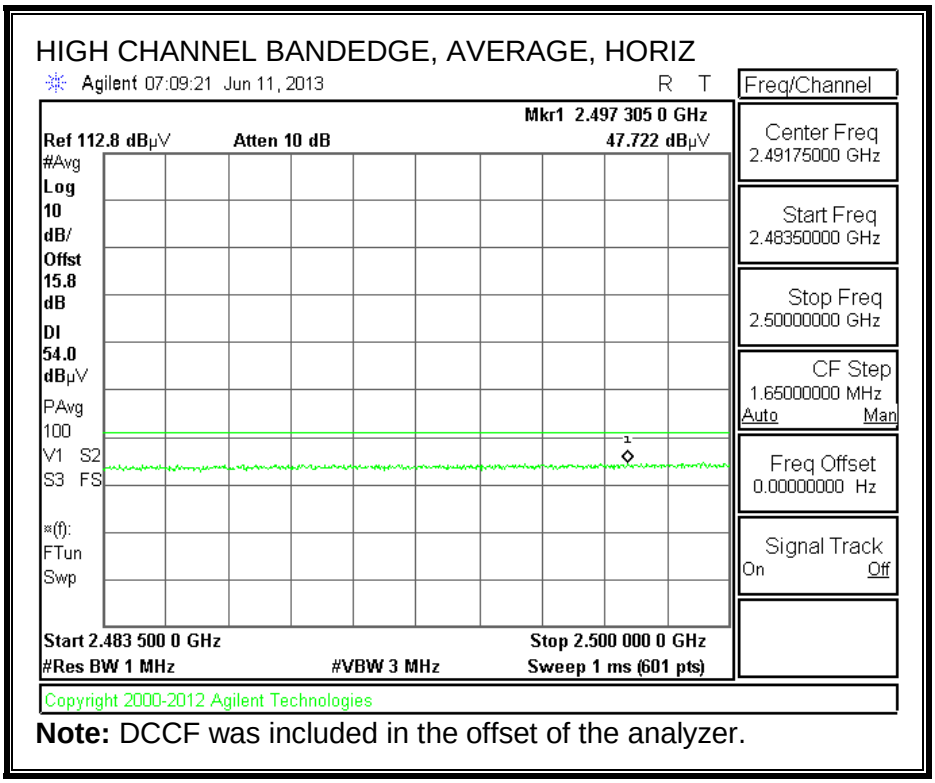
LOW CHANNEL RESTRICTED, AVERAGE, VERT



Note: DCCF was included in the offset of the analyzer.

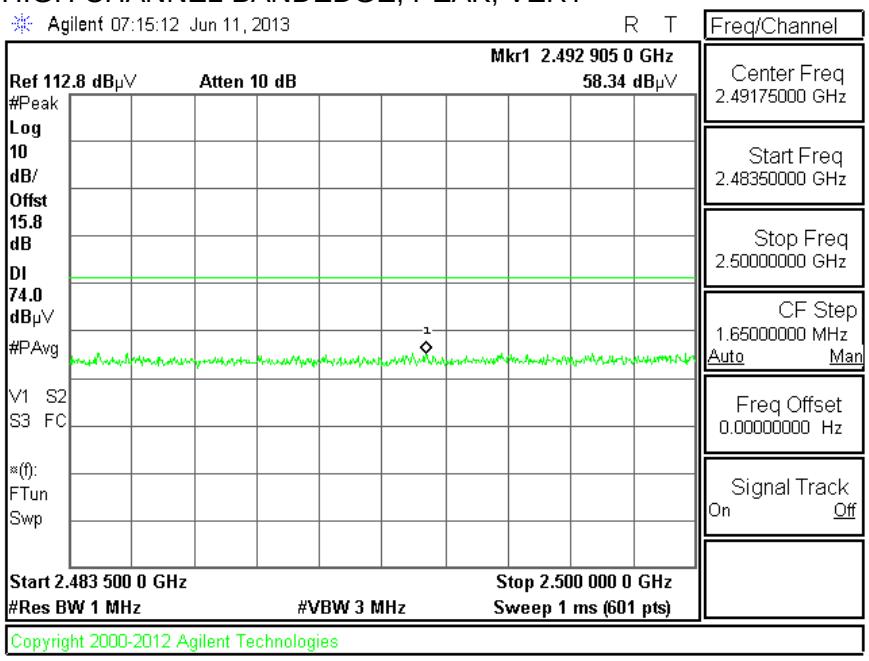
AUTHORIZED BANDEDGE (HIGH CHANNEL)



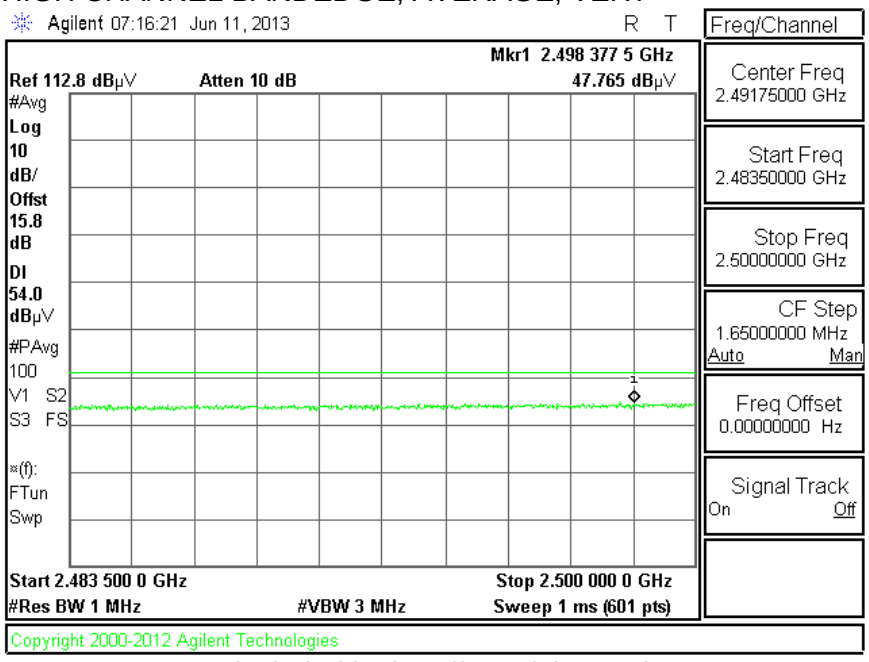


Note: DCCF was included in the offset of the analyzer.

HIGH CHANNEL BANDEDGE, PEAK, VERT



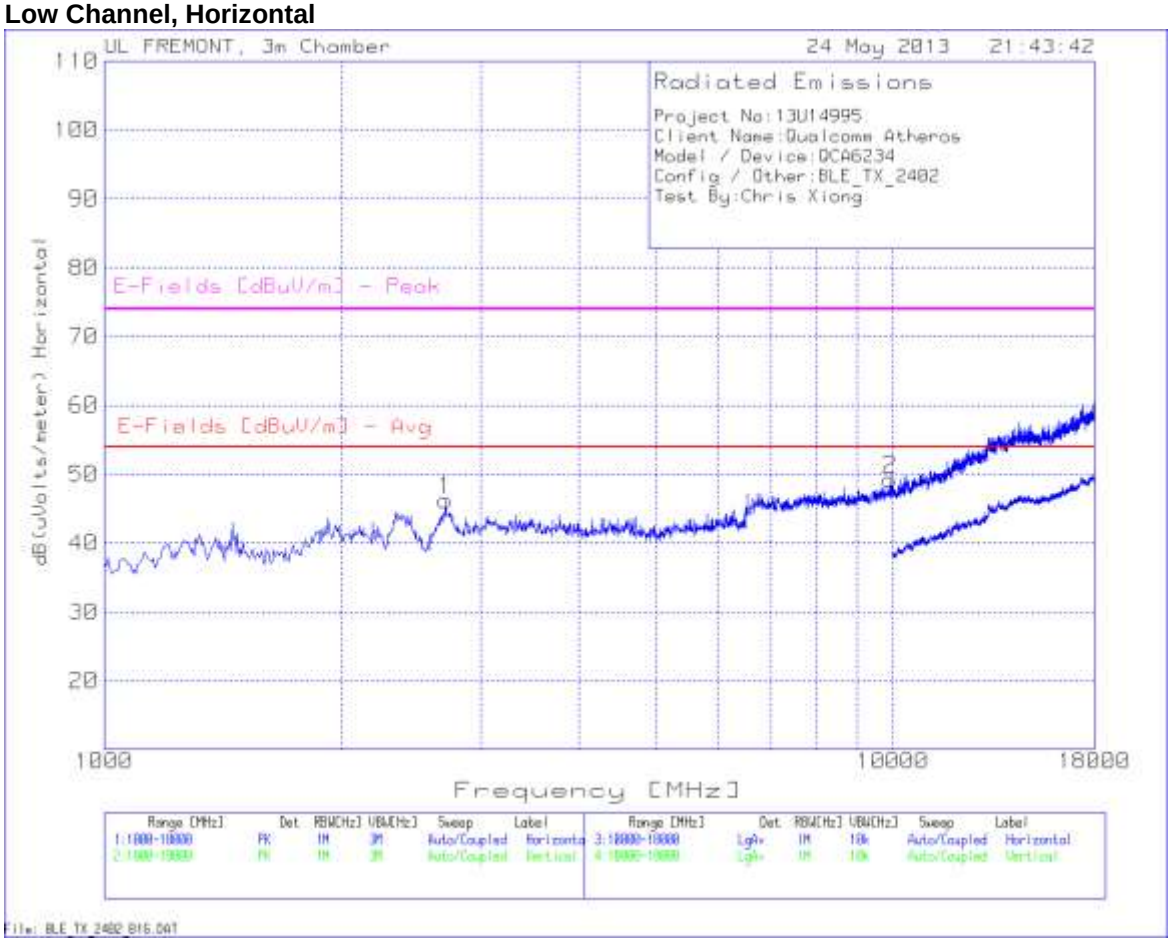
HIGH CHANNEL BANDEDGE, AVERAGE, VERT



Note: DCCF was included in the offset of the analyzer.

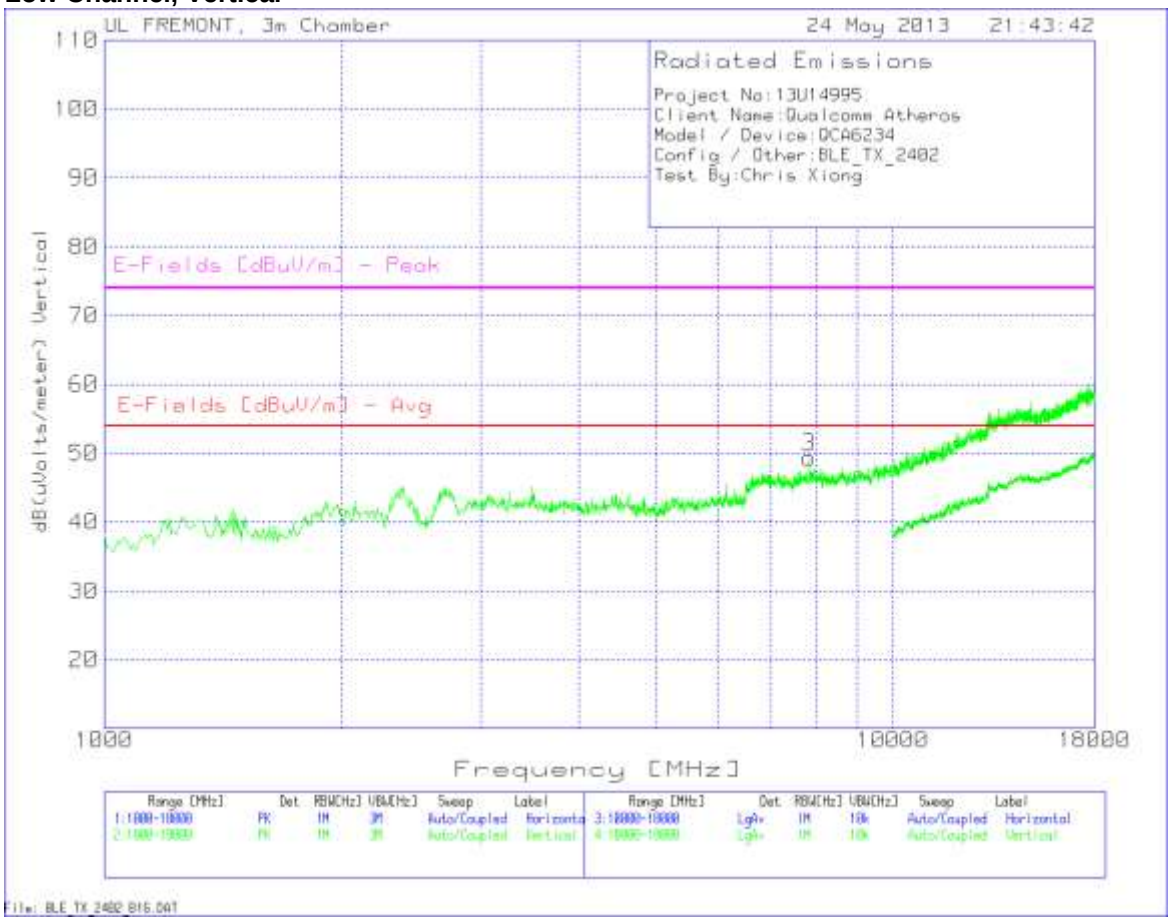
HARMONICS AND SPURIOUS EMISSIONS

Low Channel, Horizontal



Note: No other signals were detected above system noise floor level up to 26 GHz.

Low Channel, Vertical



Note: No other signals were detected above system noise floor level up to 26 GHz.

Low Channel, Data

Project No:13U14995
Client Name:Qualcomm Atheros
Model / Device:QCA6234
Config / Other:BLE_TX_2402
Test By:Chris Xiong

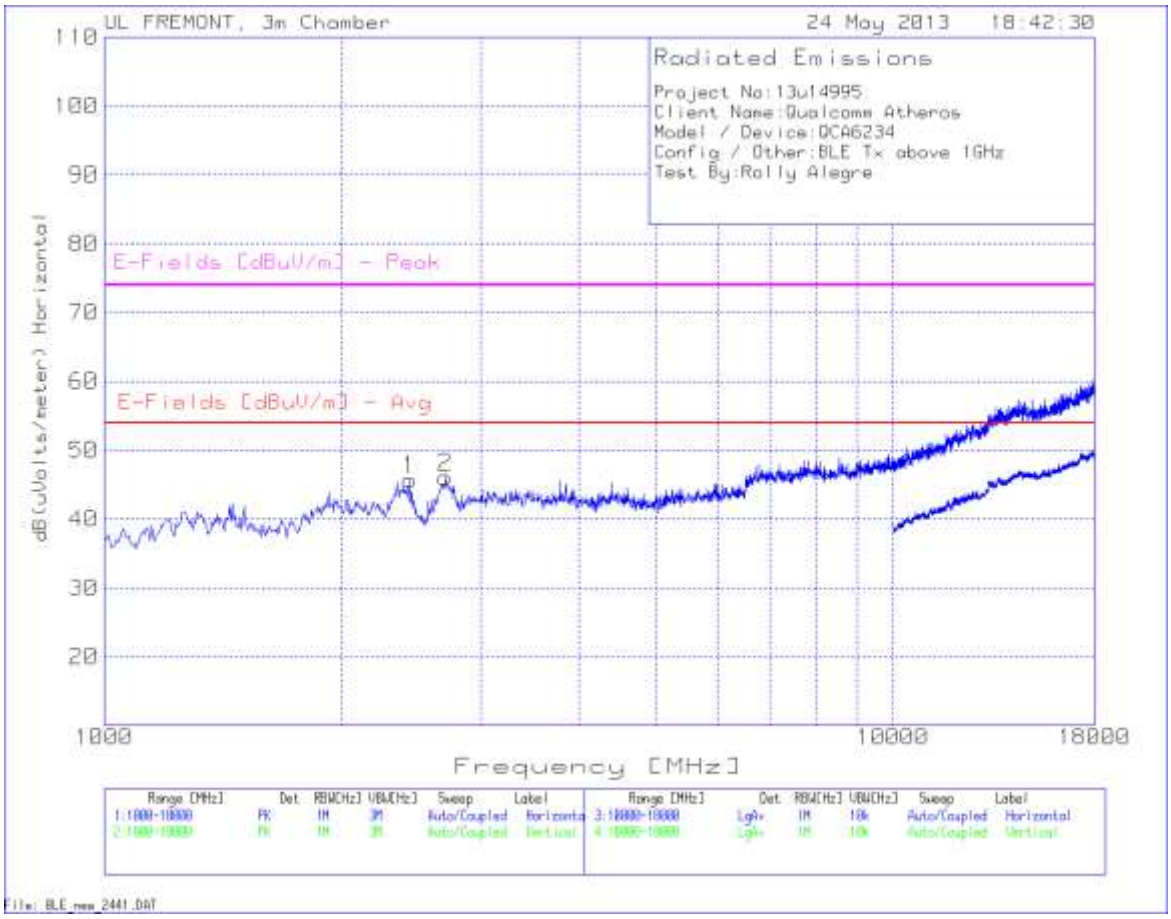
Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T119 Ant Factor [dB/m] (dB)	T34 Preamp/ Cable Loss [dB] (dB)	T160 BRF [dB] (dB)	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin	E-Fields [dBuV/m] - Peak	Margin
1	2710.193	41.7	PK	32.6	-29	0.9	46.2	54	-7.8	74	-27.8
2	9924.717	33.33	PK	36.9	-21.5	0.5	49.23	54	-4.77	74	-24.77

Vertical 1000 - 18000MHz

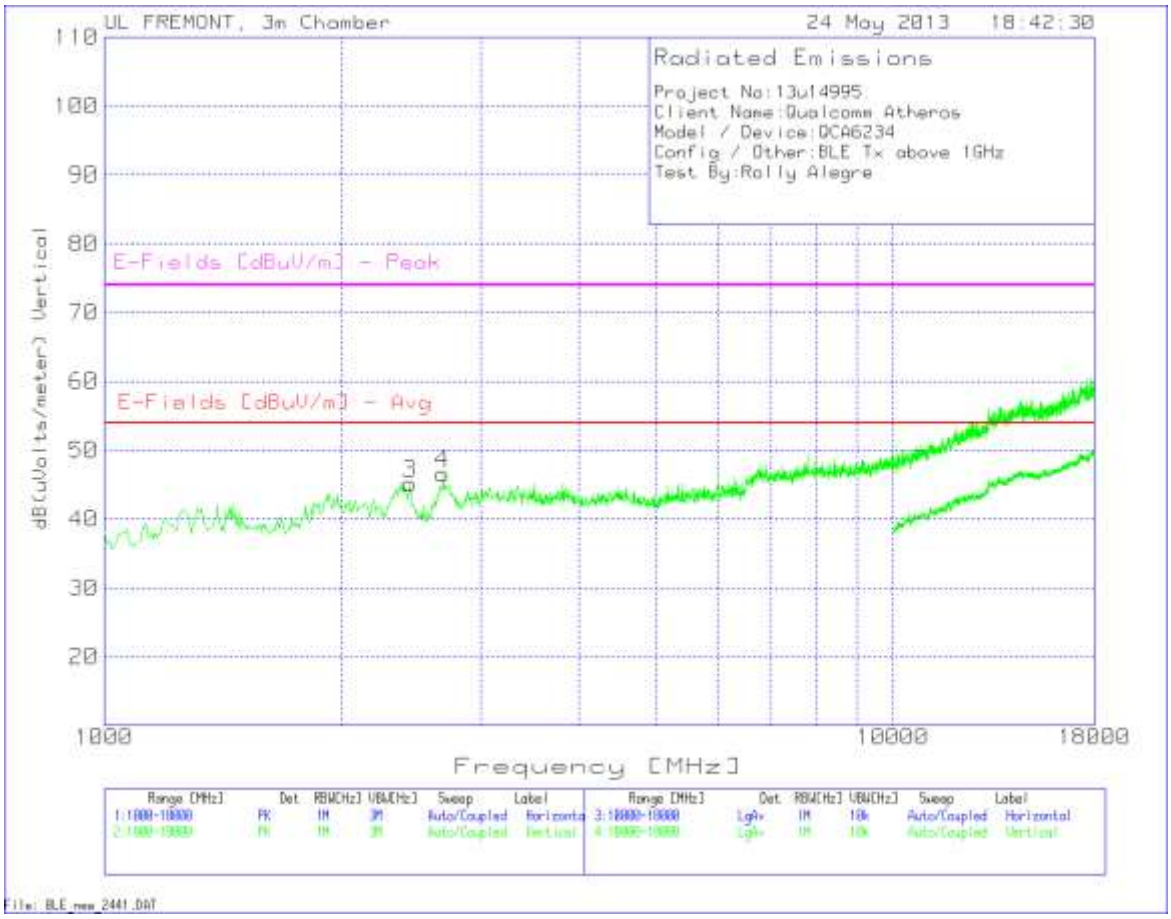
Marker No.	Test Frequency	Meter Reading	Detector	T119 Ant Factor [dB/m] (dB)	T34 Preamp/ Cable Loss [dB] (dB)	T160 BRF [dB] (dB)	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin	E-Fields [dBuV/m] - Peak	Margin
3	7823.784	36.1	PK	35.8	-22.7	0.2	49.4	54	-4.6	74	-24.6

Mid Channel, Horizontal



Note: No other signals were detected above system noise floor level up to 26 GHz.

Mid Channel, Vertical



Note: No other signals were detected above system noise floor level up to 26 GHz.

Mid Channel, Data

Project No:13u14995
Client Name:Qualcomm Atheros
Model / Device:QCA6234
Config / Other:BLE Tx above 1GHz
Test By:Rolly Alegre

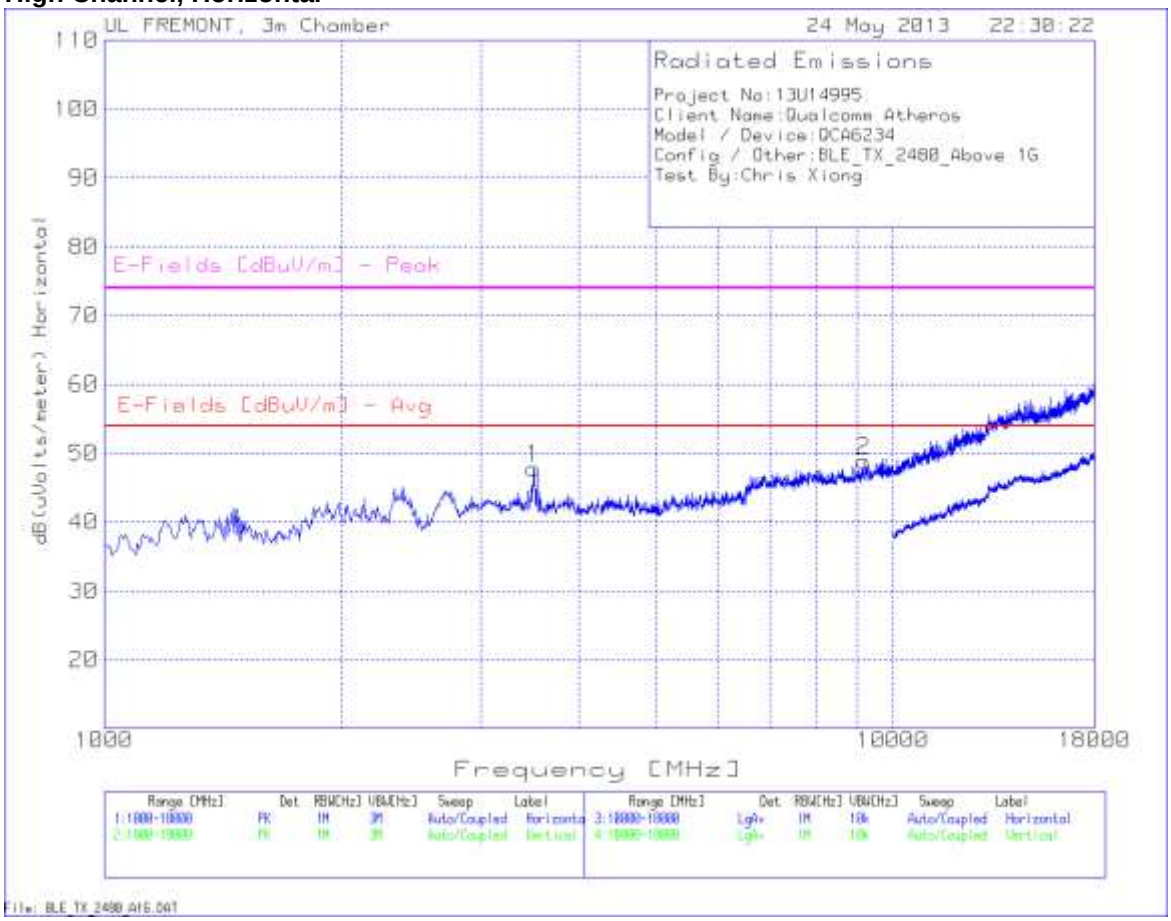
Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T119 Ant Factor [dB/m] (dB)	T34 Preamp/ Cable Loss [dB] (dB)	T160 BRF [dB] (dB)	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin	E-Fields [dBuV/m] - Peak	Margin
1	2438.374	42.19	PK	32.2	-29.6	0.9	45.69	54	-8.31	74	-28.31
2	2710.193	41.61	PK	32.6	-29	0.9	46.11	54	-7.89	74	-27.89

Vertical 1000 - 18000MHz

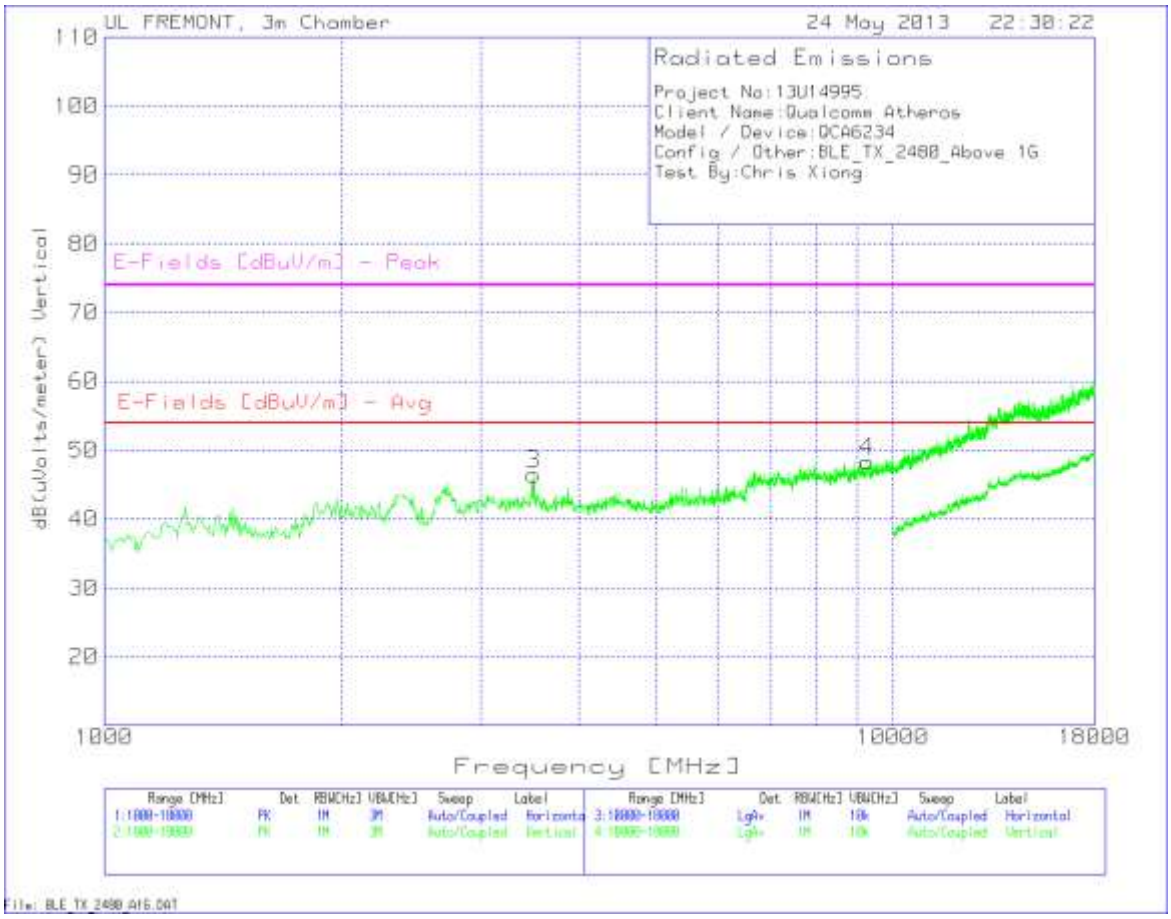
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T119 Ant Factor [dB/m] (dB)	T34 Preamp/ Cable Loss [dB] (dB)	T160 BRF [dB] (dB)	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin	E-Fields [dBuV/m] - Peak	Margin
3	2438.374	41.61	PK	32.2	-29.6	0.9	45.11	54	-8.89	74	-28.89
4	2687.542	42.12	PK	32.6	-29	0.9	46.62	54	-7.38	74	-27.38

High Channel, Horizontal



Note: No other signals were detected above system noise floor level up to 26 GHz.

High Channel, Vertical



Note: No other signals were detected above system noise floor level up to 26 GHz.

High Channel, Data

Project No:13U14995
Client Name:Qualcomm Atheros
Model / Device:QCA6234
Config / Other:BLE_TX_2480_Above 1G
Test By:Chris Xiong

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T119 Ant Factor [dB/m] (dB)	T34 Preamp/ Cable Loss [dB] (dB)	T160 BRF [dB] (dB)	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin	E-Fields [dBuV/m] - Peak	Margin
1	3502.998	41.47	PK	33	-27.2	0.5	47.77	54	-6.23	74	-26.23
2	9177.215	34.19	PK	36.2	-22	0.5	48.89	54	-5.11	74	-25.11

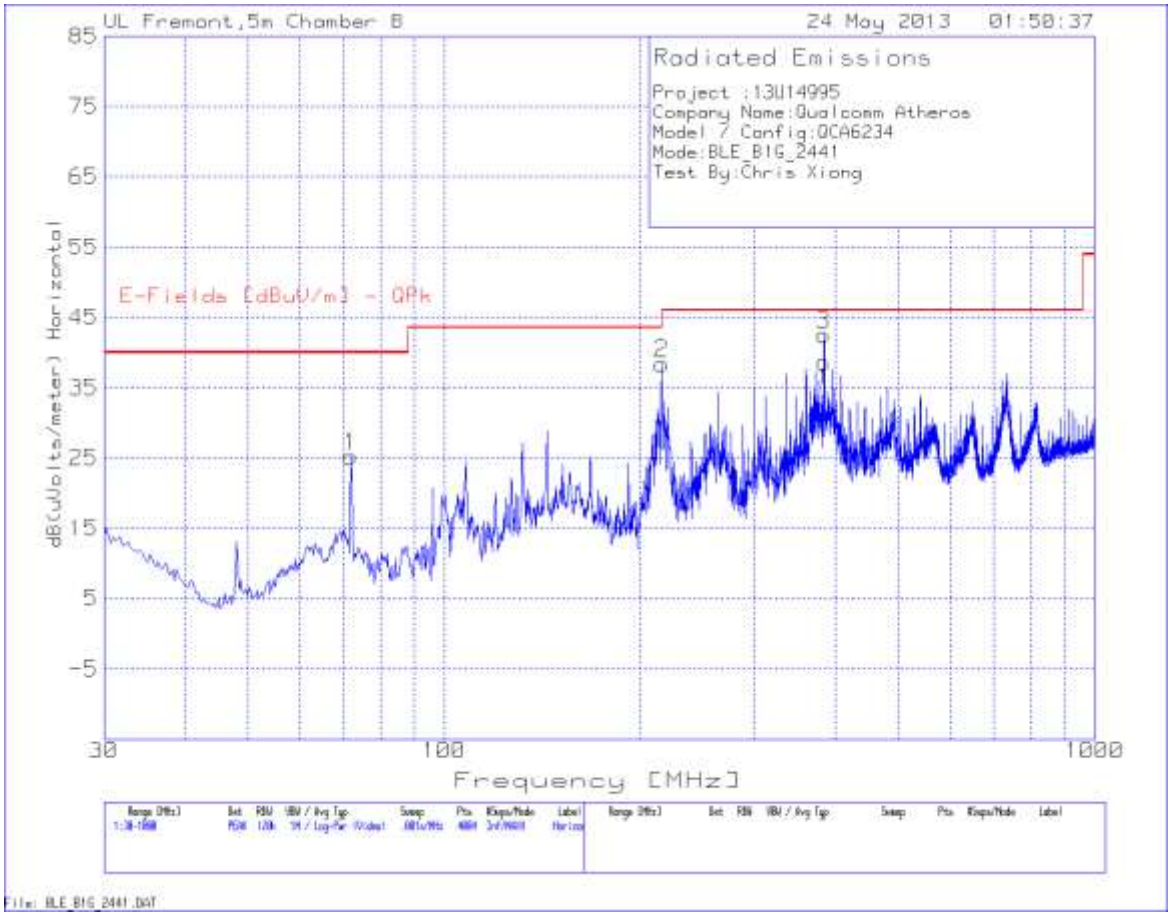
Vertical 1000 - 18000MHz

Marker No.	Test Frequency	Meter Reading	Detector	T119 Ant Factor [dB/m] (dB)	T34 Preamp/ Cable Loss [dB] (dB)	T160 BRF [dB] (dB)	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin	E-Fields [dBuV/m] - Peak	Margin
3	3502.998	40.22	PK	33	-27.2	0.5	46.52	54	-7.48	74	-27.48
4	9279.147	33.53	PK	36.3	-21.9	0.4	48.33	54	-5.67	74	-25.67

8.3. WORST-CASE BELOW 1 GHz

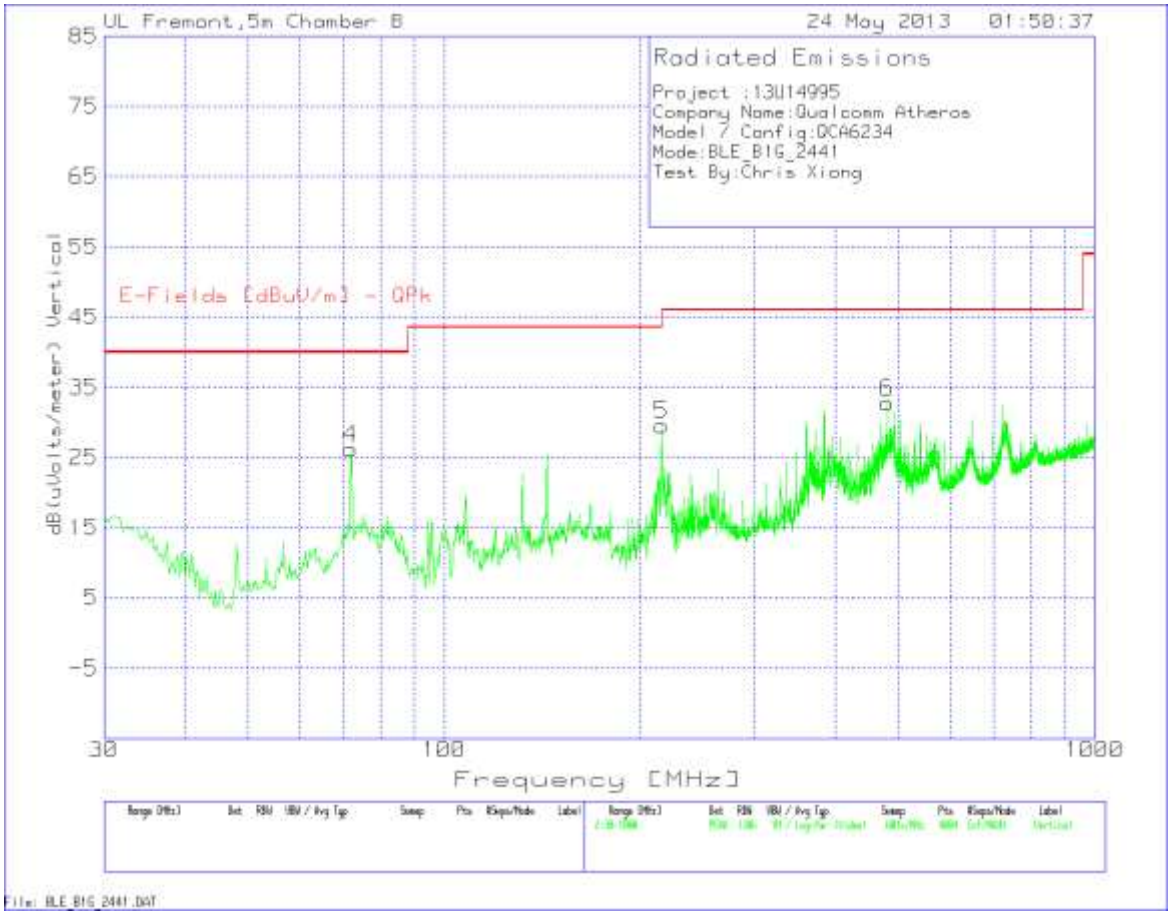
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

Project :13U14995
Company Name:Qualcomm Atheros
Model / Config:QCA6234
Mode:BLE_B1G_2441
Test By:Chris Xiong

Horizontal 30 - 1000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T243 Antenna Factor dB/m	T10 preamp/ Cable loss [dB]	dB(uVolts /meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
1	71.9211	45.96	PK	7.9	-28.7	25.16	40	-14.84	300	Horz
2	216.1004	54.96	PK	10.5	-27.1	38.36	46.02	-7.66	100	Horz
3	384.027	53.86	PK	15.1	-26.4	42.56	46.02	-3.46	100	Horz

Vertical 30 - 1000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T243 Antenna Factor dB/m	T10 preamp/ Cable loss [dB]	dB(uVolts /meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
4	71.9211	47.07	PK	7.9	-28.7	26.27	40	-13.73	200	Vert
5	215.8581	46.23	PK	10.5	-27.1	29.63	43.52	-13.89	200	Vert
6	479.985	41.6	PK	17.7	-26.5	32.8	46.02	-13.22	200	Vert

Horizontal 30 - 1000MHz

	Test Frequency (MHz)	**Meter Reading (dBuV)**	**Detector**	**T130 Ant Factor [dB/m] [dB]**	**T64 preamp/ cable loss [dB] [dB]**	**dB(uVolts /meter)**	**E-Fields [dBuV/m] - QPk**	**Margin**	**Height [cm]**	**Polarity**
	384.1331	40.11	QP	15.1	-25.3	29.91	46	-16.09	208	Horz

PK - Peak detector
QP - Quasi-Peak detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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

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 C63.4.

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

6 WORST EMISSIONS

Laptop with EUT connected via USB cable

Project No:	13U14995
Client Name:	Qualcomm Atheros
Model/Device:	QCA6234
Test Volt/Freq:	120VAC/60Hz
Test By:	Chris Xiong
Mode:	Blutooth Worst Case, Laptop with USB cable to Bluetooth adapter board

Line-L1 .15 - 30MHz

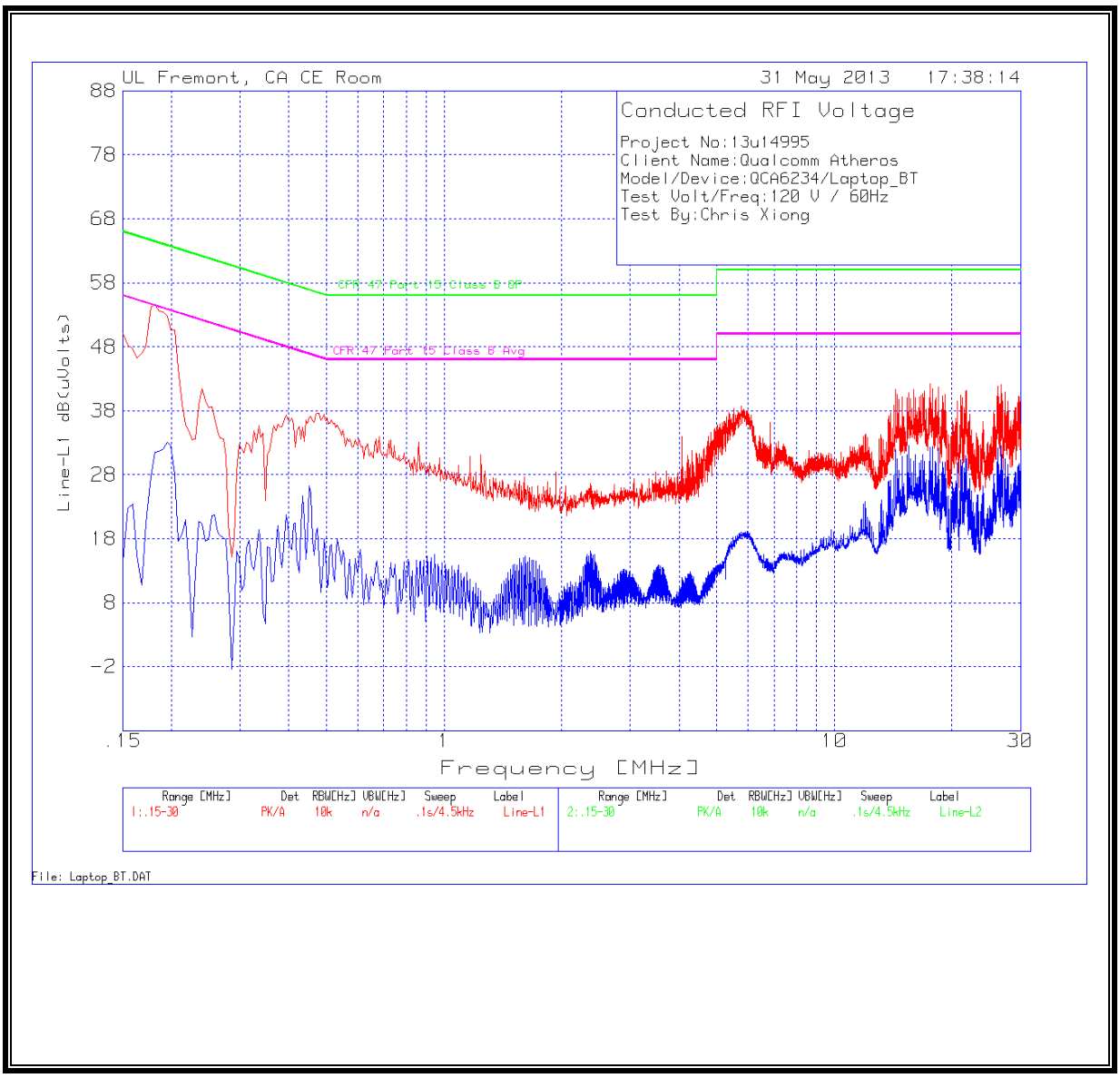
Test Frequency MHz	Meter Reading dBuv	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.1815	54.54	PK	0.1	0	54.64	64.4	-9.76	-	-
0.1815	31.46	Av	0.1	0	31.56	-	-	54.4	-22.84
5.775	38.51	PK	0.1	0.1	38.71	60	-21.29	-	-
5.775	18.79	Av	0.1	0.1	18.99	-	-	50	-31.01
26.7855	41.31	PK	0.5	0.3	42.11	60	-17.89	-	-
26.7855	31.74	Av	0.5	0.3	32.54	-	-	50	-17.46

Line-L2 .15 - 30MHz

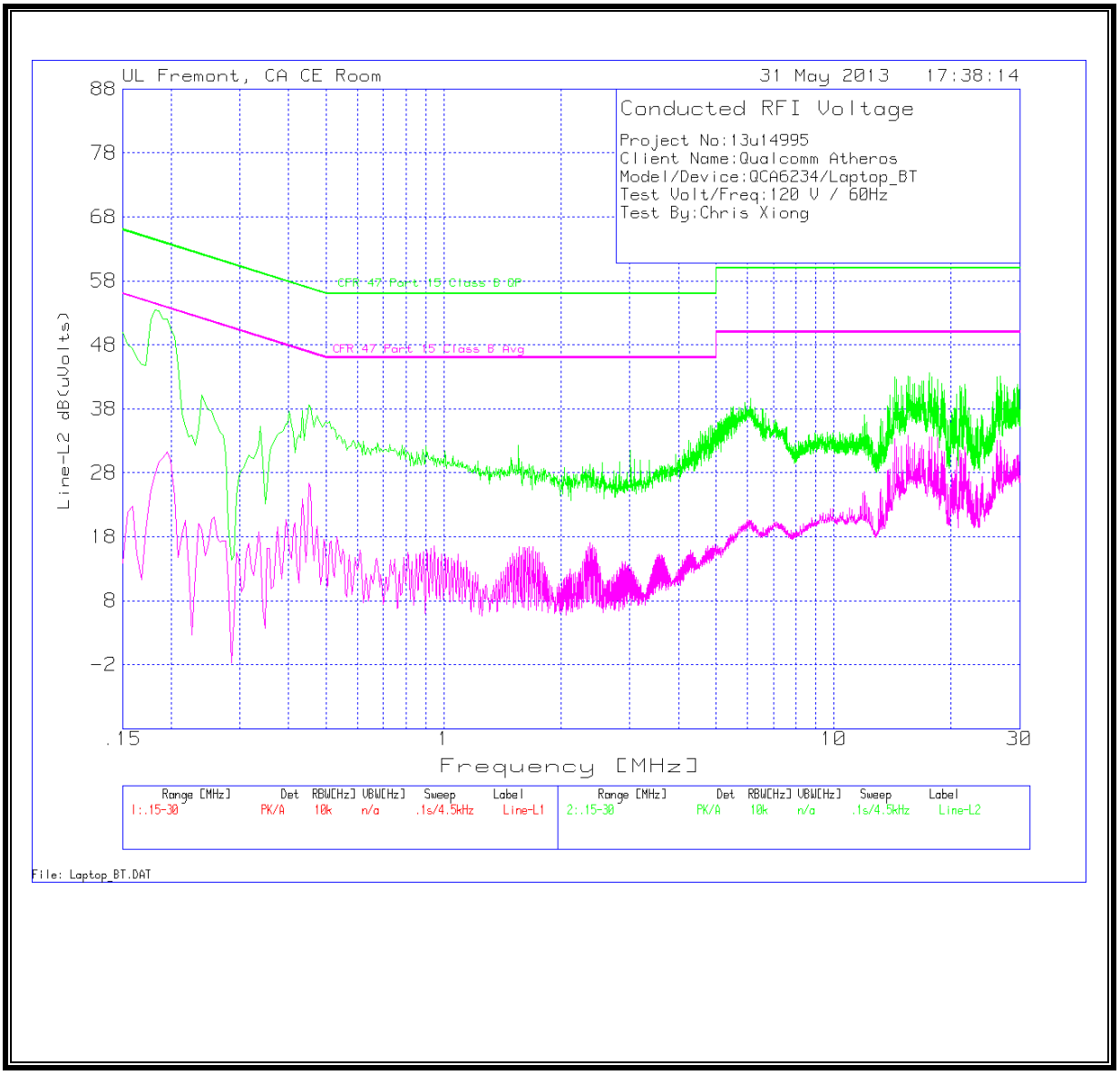
Test Frequency MHz	Meter Reading dBuv	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.1815	53.36	PK	0.1	0	53.46	64.4	-10.94	-	-
0.1815	27.58	Av	0.1	0	27.68	-	-	54.4	-26.72
0.4515	38.5	PK	0.1	0	38.6	56.8	-18.2	-	-
0.4515	26.26	Av	0.1	0	26.36	-	-	46.8	-20.44
6.108	39.44	PK	0.1	0.1	39.64	60	-20.36	-	-
6.108	20.19	Av	0.1	0.1	20.39	-	-	50	-29.61

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

LINE 1 RESULTS



LINE 2 RESULTS



6 WORST EMISSIONS

Bluetooth Test Board AC Adapter

Project No:	13U14995
Client Name:	Qualcomm Atheros
Model/Device:	QCA6234
Test Volt/Freq:	120VAC/60Hz
Test By:	Chris Xiong
Mode:	Blutooth Worst Case, Blutooth AC adapter to Bluetooth test board

Line-L1 .15 - 30MHz

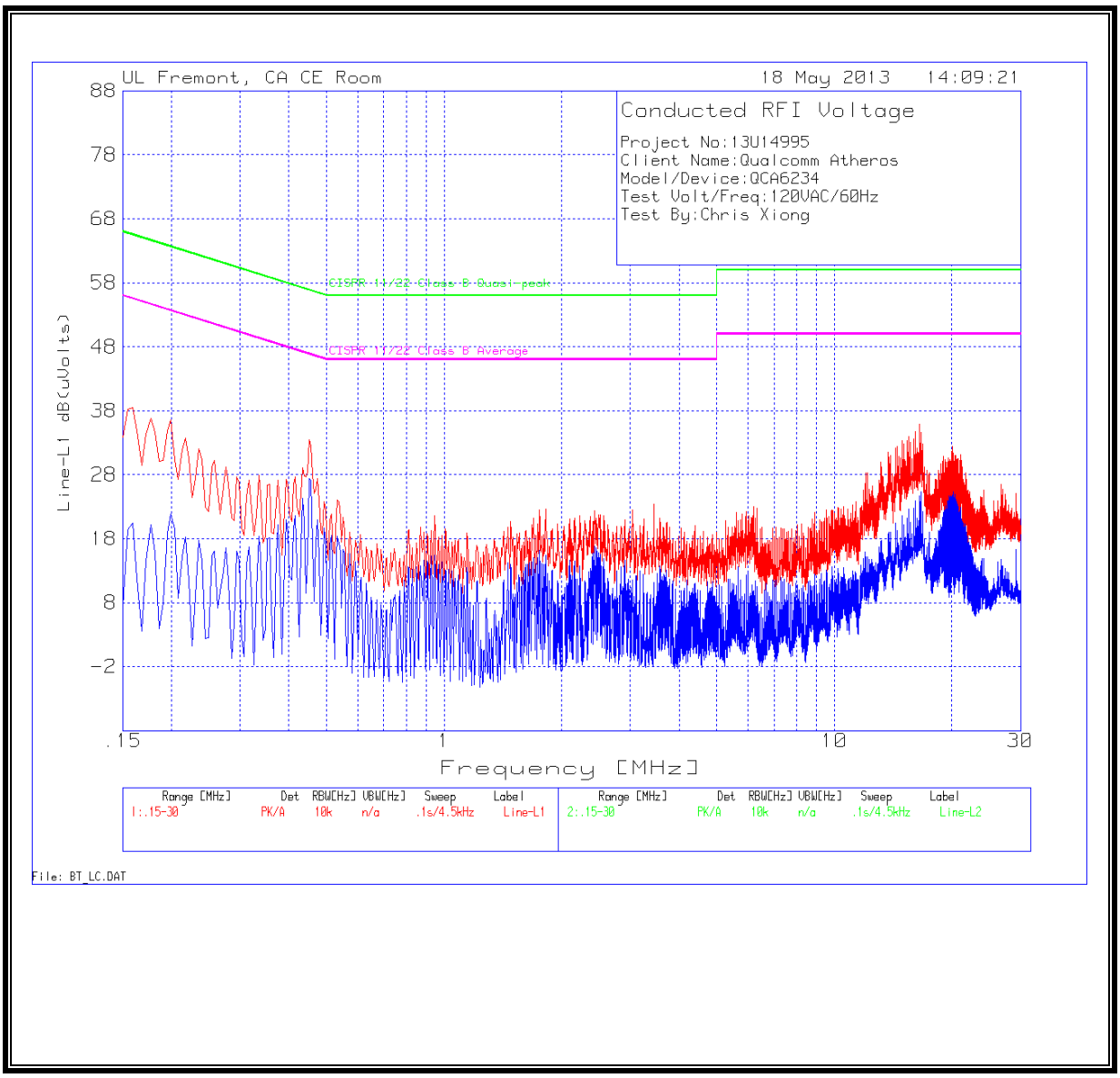
Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin	CISPR 11/22 Class B Average	Margin
0.4515	33.41	PK	0.1	0	33.51	56.8	-23.29	-	-
0.4515	27.33	Av	0.1	0	27.43	-	-	46.8	-19.37
3.444	23.26	PK	0.1	0.1	23.46	56	-32.54	-	-
3.444	10.81	Av	0.1	0.1	11.01	-	-	46	-34.99
16.5435	35.45	PK	0.2	0.2	35.85	60	-24.15	-	-
16.5435	24.31	Av	0.2	0.2	24.71	-	-	50	-25.29

Line-L2 .15 - 30MHz

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin	CISPR 11/22 Class B Average	Margin
0.159	39.53	PK	0.1	0	39.63	65.5	-25.87	-	-
0.159	19.71	Av	0.1	0	19.81	-	-	55.5	-35.69
2.3685	23.98	PK	0.1	0.1	24.18	56	-31.82	-	-
2.3685	18.43	Av	0.1	0.1	18.63	-	-	46	-27.37
16.6875	34.8	PK	0.2	0.2	35.2	60	-24.8	-	-
16.6875	24.98	Av	0.2	0.2	25.38	-	-	50	-24.62

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

LINE 1 RESULTS



LINE 2 RESULTS