FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

WLAN 802.11bgn 2.4GHz 1x1 and Bluetooth LE v4.0 Bridge

MODEL NUMBER: CA-FYX100

FCC ID: MHIFYX-1
IC: 3681C-FYX1

REPORT NUMBER: 12U14684-17A

ISSUE DATE: APRIL 26, 2013

Prepared for
CARD ACCESS, INC
11778 SOUTH ELECTION ROAD
SUITE 260
DRAPER, UT 84020, U.S.A.

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	04/26/13	Initial Issue	F. Ibrahim

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This report shall not be reproduced except in full, without the written approval of UL CCS.

This report shall not be reproduced except in full, without the written approval of UL CCS.

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: CARD ACCESS, INC
11778 SOUTH ELECTION ROAD
SUITE 260
DRAPER, UT 84020, U.S.A.

EUT DESCRIPTION: WLAN 802.11bgn 2.4GHz 1x1 and Bluetooth LE v4.0 Bridge

MODEL: CA-FYX100

SERIAL NUMBER: CONDUCTED (CB1), RADIATED (RF1)

DATE TESTED: JANUARY 30 - FEBRUARY 23, 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 CCS 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS 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 CCS By:

FRANK IBRAHIM
WiSE PROJECT LEAD
UL CCS

Tested By:

STEVE AGUILAR
EMC ENGINEER
UL CCS

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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 CCS 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%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a WLAN 802.11bgn 2.4GHz 1x1 and Bluetooth LE v4.0 Bridge.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	20.62	115.35
2412 - 2462	802.11g	25.23	333.43
2412 - 2462	802.11n HT20	24.45	278.61
2422 - 2452	802.11n HT40	21.01	126.18

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a stamped metal monopole antenna, with a maximum gain of 2.1 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 7505443.

The EUT driver software installed during testing was PuTTY rev 1.19.4.

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

WiFi is co-located with BT as follows:
WLAN and BT radios transmit at the same time, but not sharing the same antenna.

Protocol used for harmonics and spurious in the restricted bands was radiated for EUT with antenna.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	IBM	1871	L3-AWBA6	D of C
Power Supply	IBM	08K8204	11508k8204Z6LV3BW5NO	D of C
Development Board	Card Access Eng.	PCA-Gonfola	5C	--

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC,3P	Unshielded	1.8	3 prong
2	AC	1	AC,2P	Unshielded	1.9	2 prong
3	AC	1	AC,2P	Unshielded	2	3 prong
4	DC	1	Barrel	Shielded	1.8	Ferrite on Laptop side
5	LAN	1	RJ45	Unshielded	0.8	Ferrite on Laptop side
6	USB	1	USB to mini	Shielded	1	Testing only
7	RF	1	U.FL to SMA	Shielded	0.3	Testing only

TEST SETUP

The EUT is a stand -alone device.

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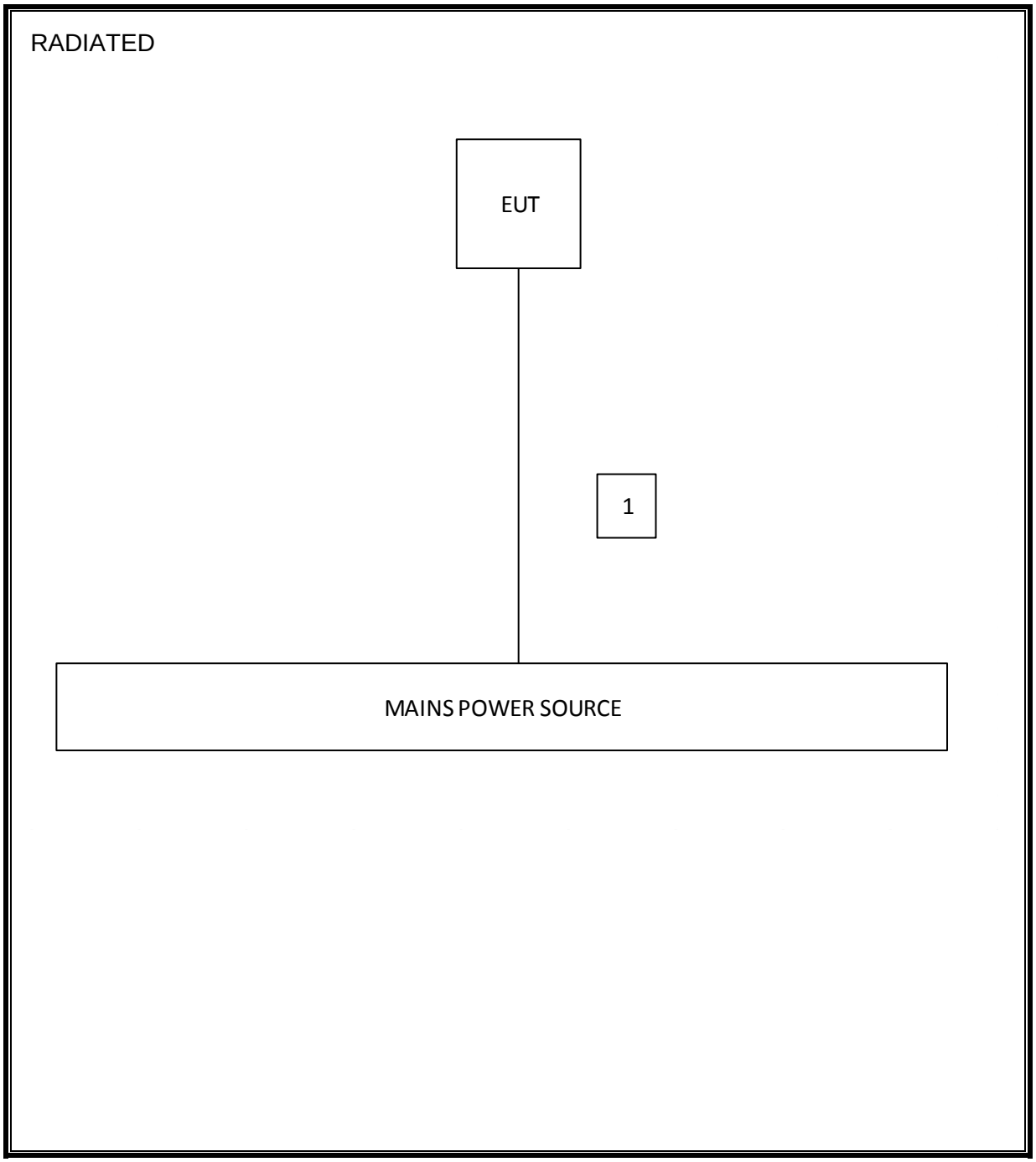
SETUP DIAGRAM FOR TESTS



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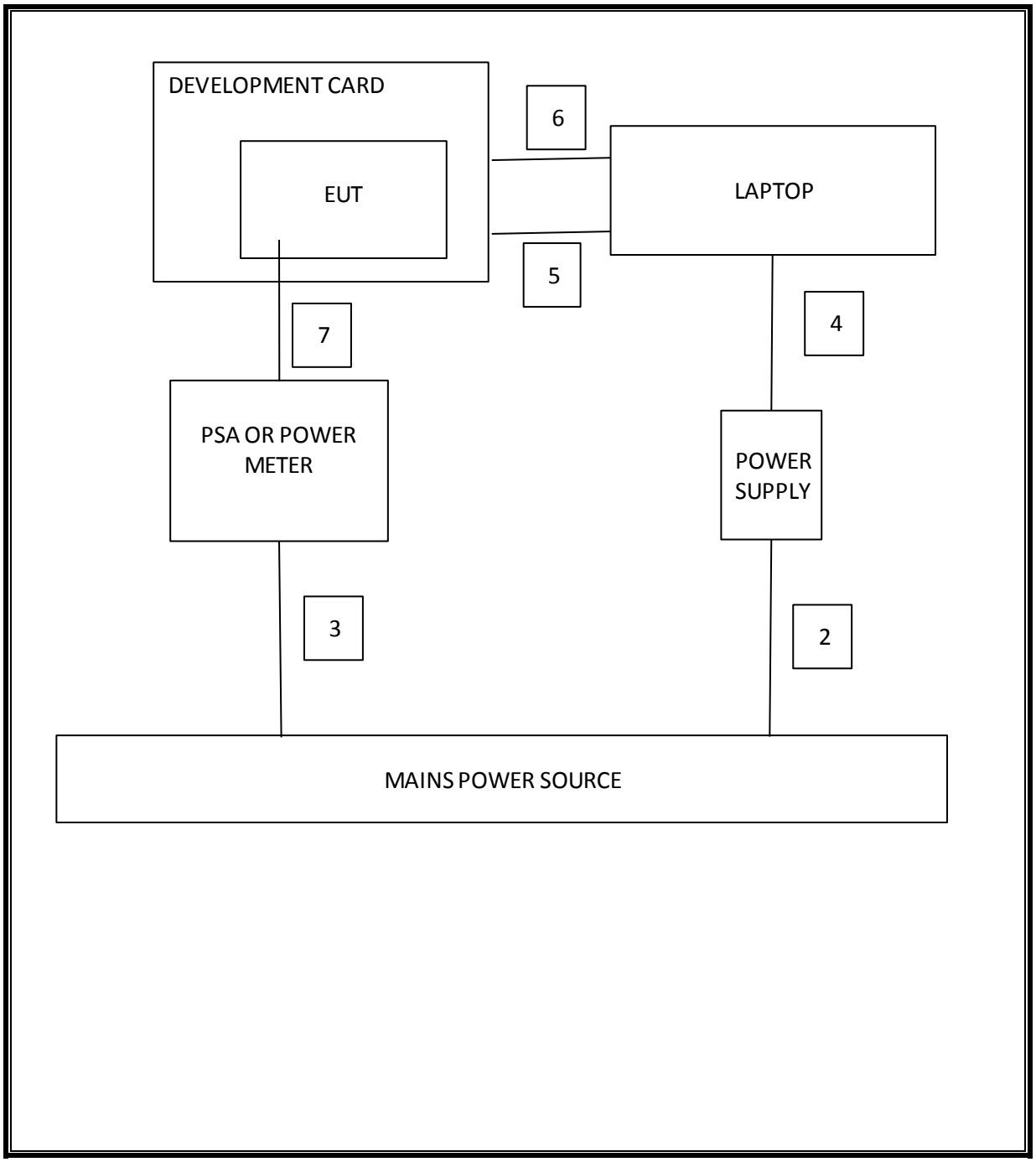
SETUP DIAGRAM FOR CONDUCTED TESTS



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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**
Power Meter	Agilent / HP	N1911A	--	07/27/12	07/27/13
Peak / Average Power Sensor	Agilent / HP	E9323A	--	07/26/12	07/26/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	03/22/12	03/22/13
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01176	12/13/12	12/13/13
Antenna, Horn, 18 GHz	EMCO	3115	C00872	12/11/12	12/11/13
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	10/19/12	10/19/13
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/08/12	08/08/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00996	05/11/12	05/11/13
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/12	10/25/13
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	10/22/12	10/22/13
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	03/23/12	03/23/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/28/13	01/28/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/08/12	08/08/13
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/13	01/14/14
Antenna, Horn, 18 GHz	ETS	3117	C01006	12/11/12	12/11/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	10/21/12	10/21/13
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/12	10/22/13
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/14/12	11/14/13

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7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 D01 v02; Zero-Span Spectrum Analyzer Method.

7.1. ON TIME AND DUTY CYCLE RESULTS done

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11b	8.1790	8.2300	0.99	99%	0.000
802.11g	1.3460	1.4120	0.95	95%	0.208
802.11n HT20	1.2650	1.3300	0.95	95%	0.218
802.11n HT40	0.6233	0.6700	0.93	93%	0.314

7.2. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v02, Section 7.0.

Output Power: KDB 558074 D01 v02, Sections 8.1.2.

Power Spectral Density: KDB 558074 D01 v02, Sections 9.1.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v02, Sections 10.1.

Out-of-band emissions in restricted bands: KDB 558074 D01 v02, Sections 10.2.1.

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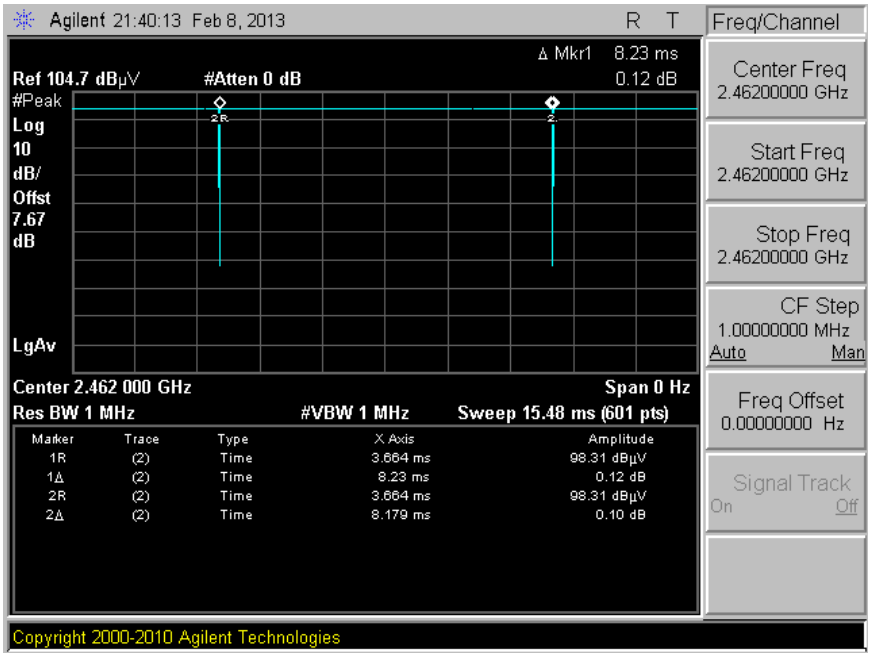
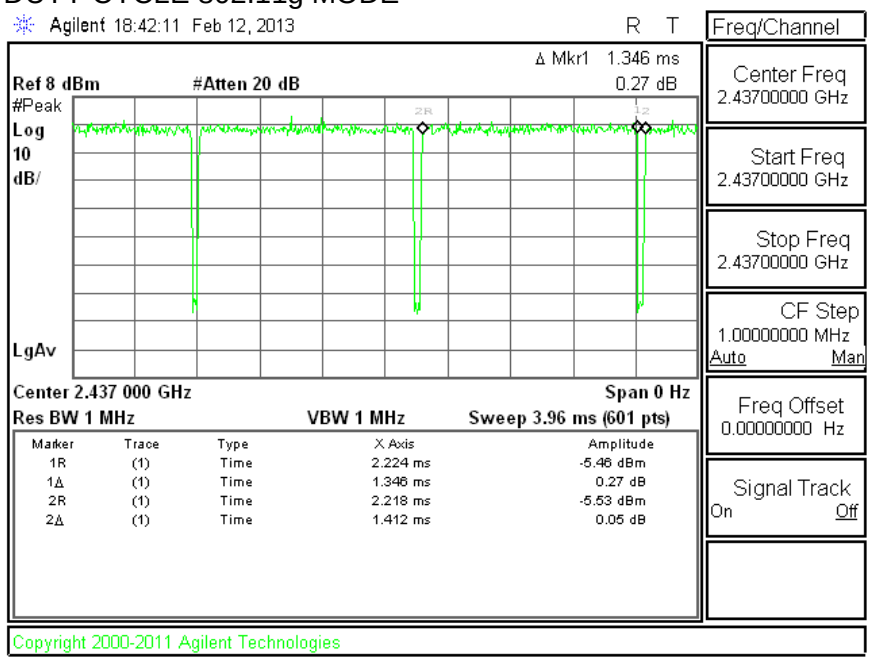
7.3. DUTY CYCLE PLOTS done

DUTY CYCLE 802.11b MODE



DUTY CYCLE 802.11g MODE



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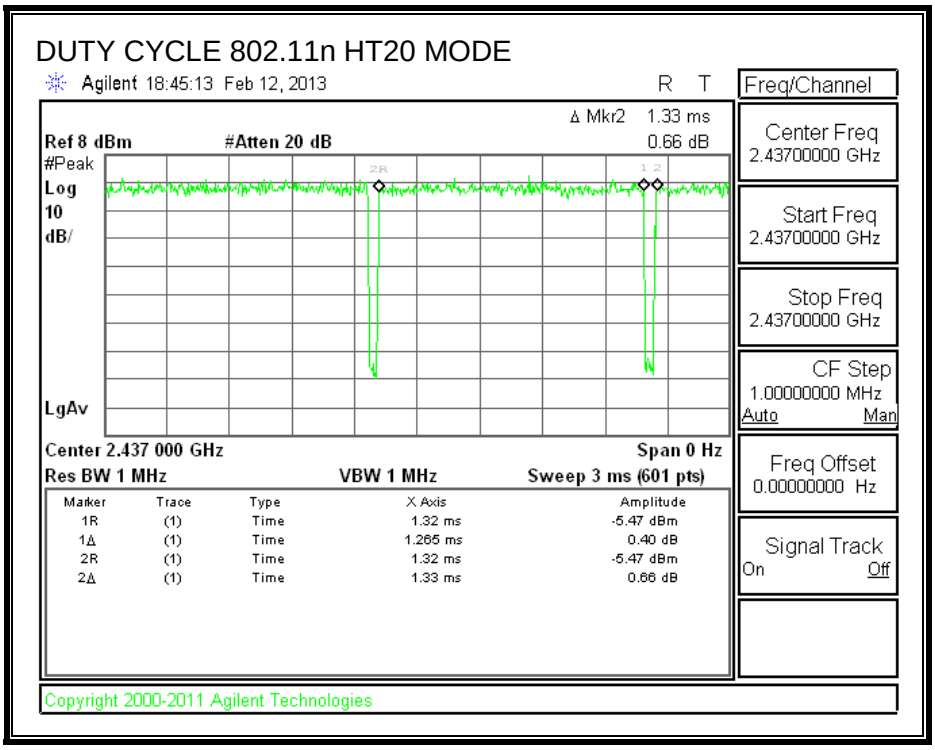
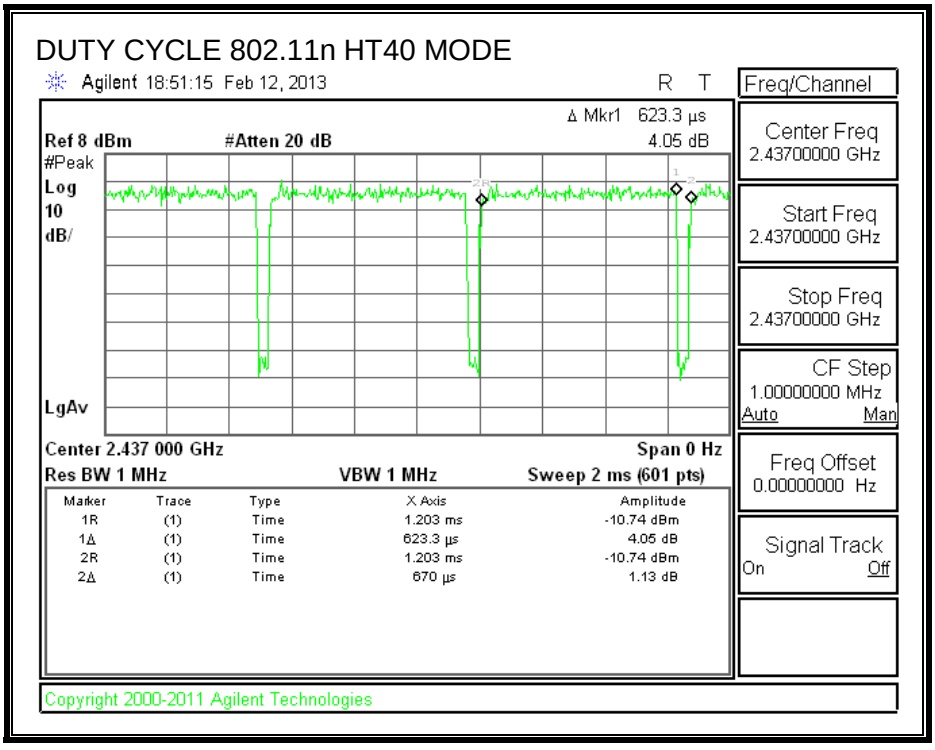
DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



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8. ANTENNA PORT TEST RESULTS

8.1. 802.11b MODE IN THE 2.4 GHz BAND

8.1.1. 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	2412	10.095	0.5
Mid	2437	10.110	0.5
High	2462	10.095	0.5

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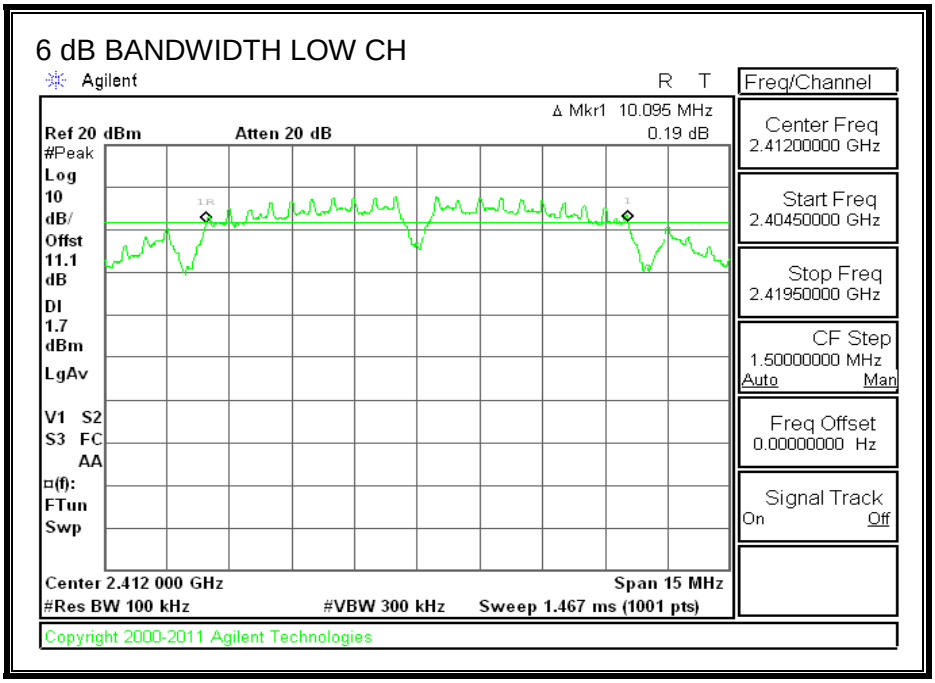
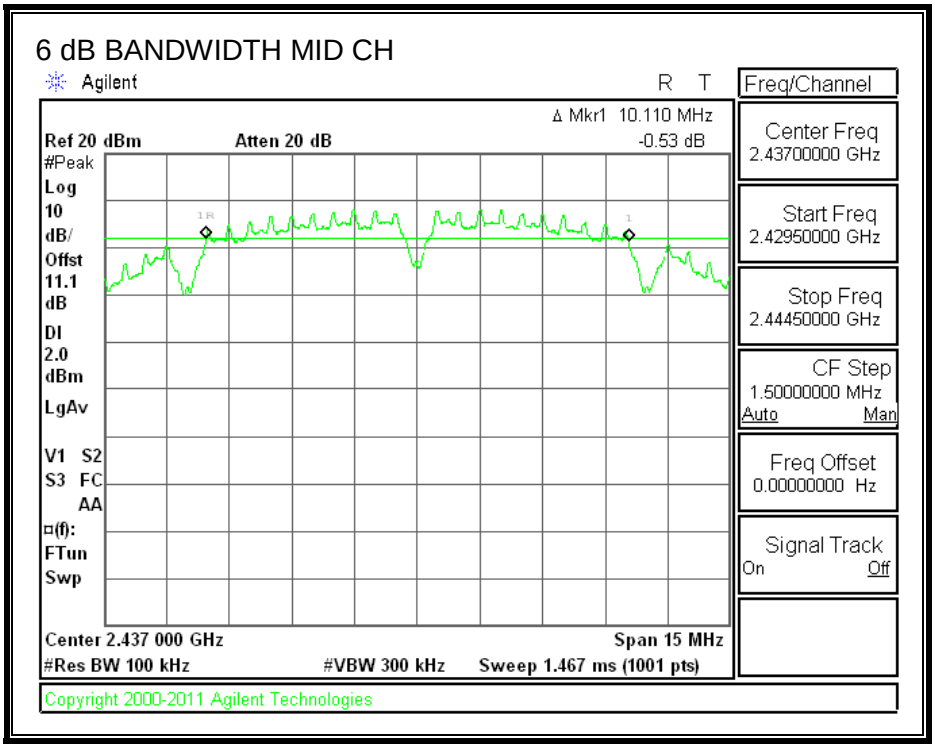
6 dB BANDWIDTH





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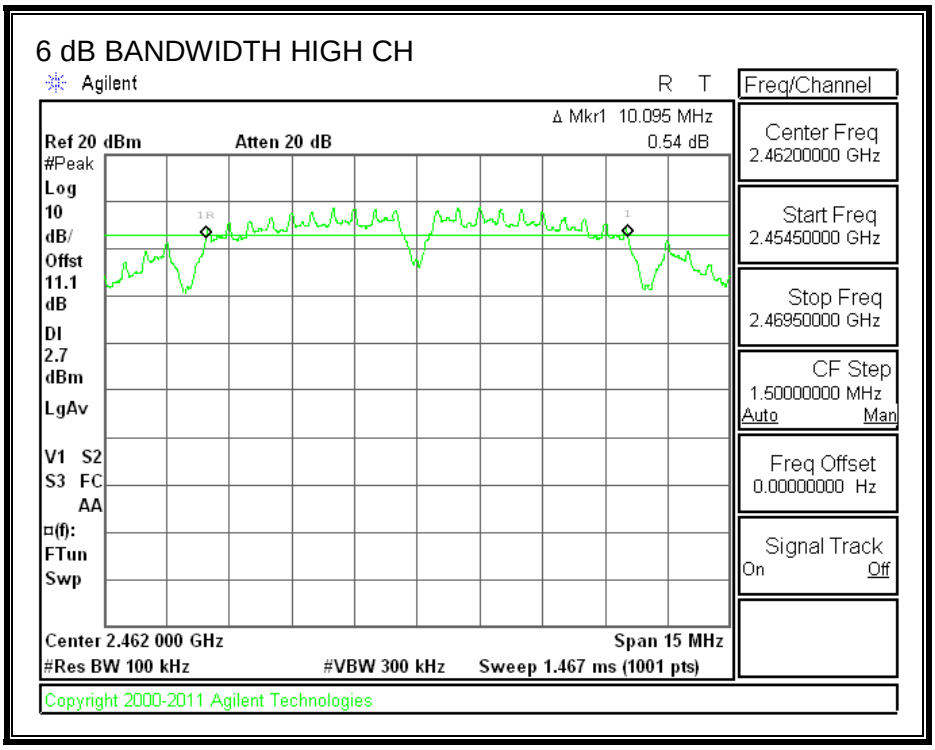

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8.1.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	14.2852
Mid	2437	14.2488
High	2462	14.2442

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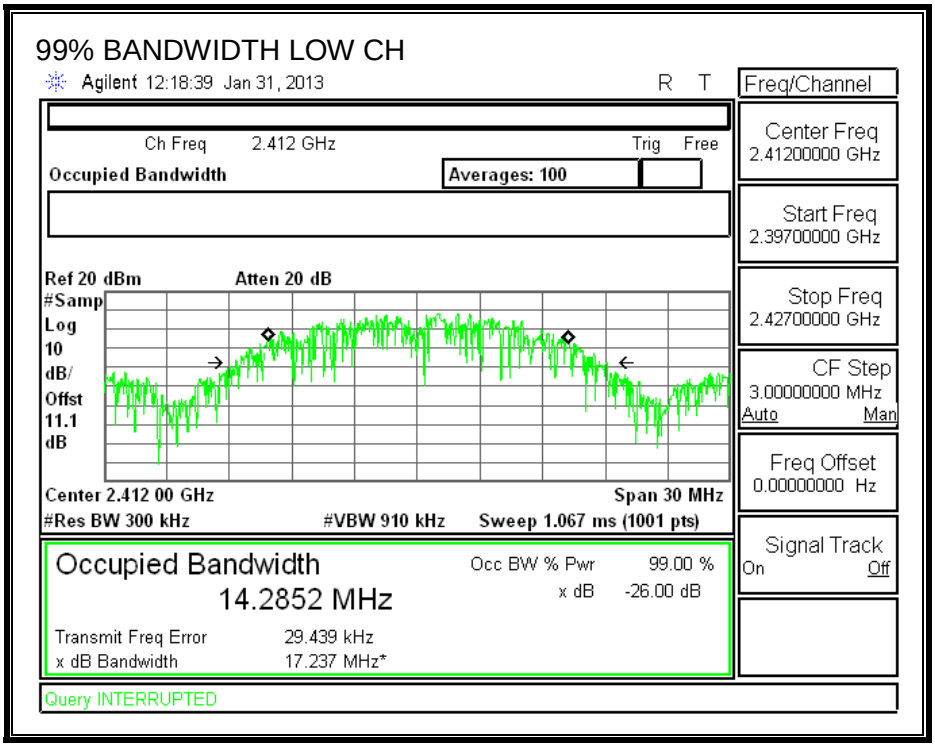
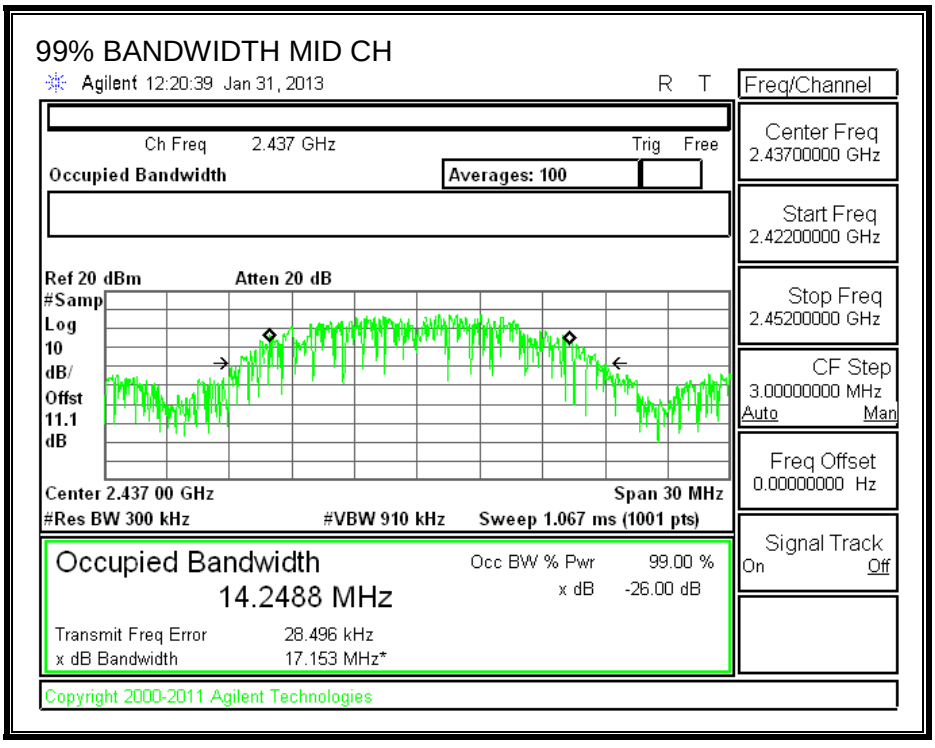
99% BANDWIDTH





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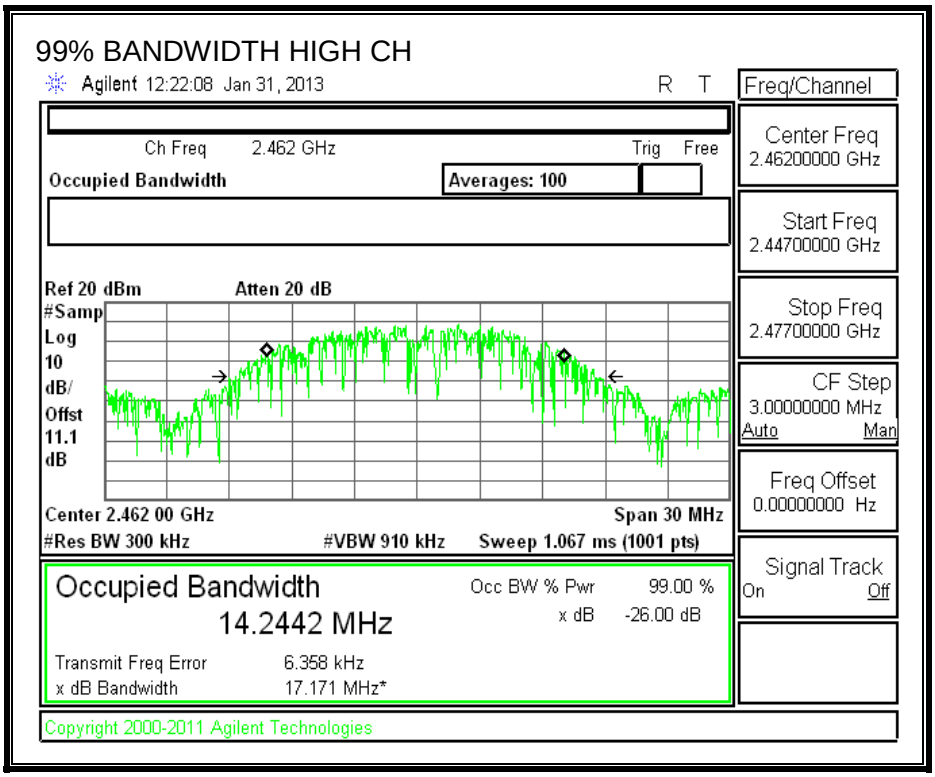

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8.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	17.09
Mid	2437	17.31
High	2462	17.80

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8.1.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.10	30.00	30	36	30.00
Mid	2437	2.10	30.00	30	36	30.00
High	2462	2.10	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	19.70	19.70	30.00	-10.30
Mid	2437	20.00	20.00	30.00	-10.00
High	2462	20.62	20.62	30.00	-9.38

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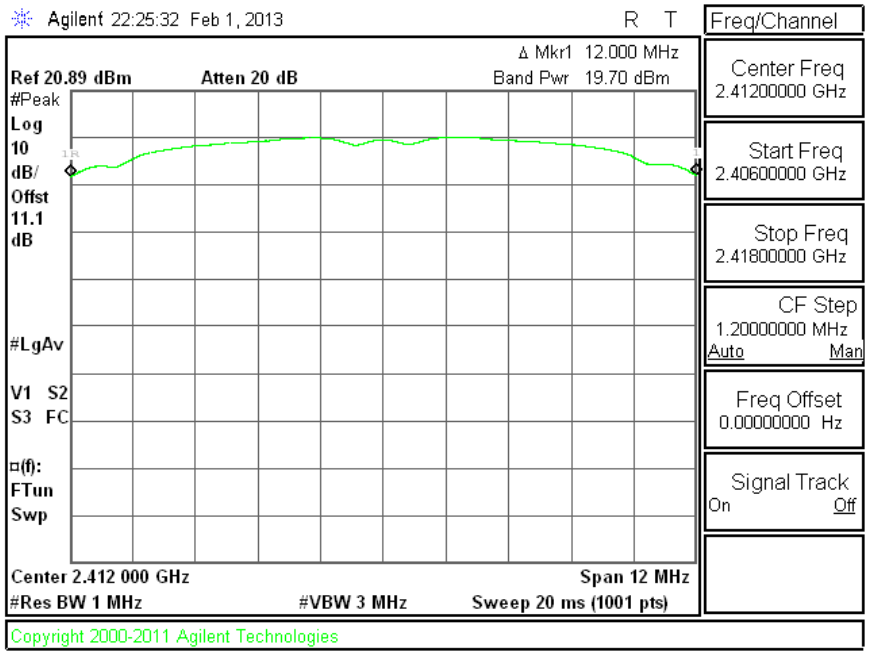
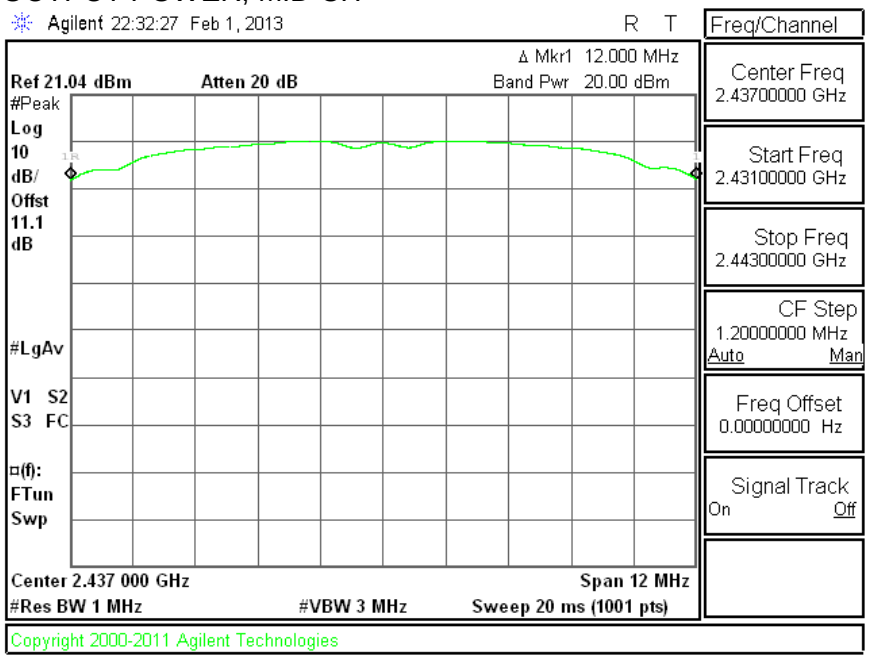
OUTPUT POWER, LOW CH Span should be between 1.05 times 6 dB BW



OUTPUT POWER, MID CH



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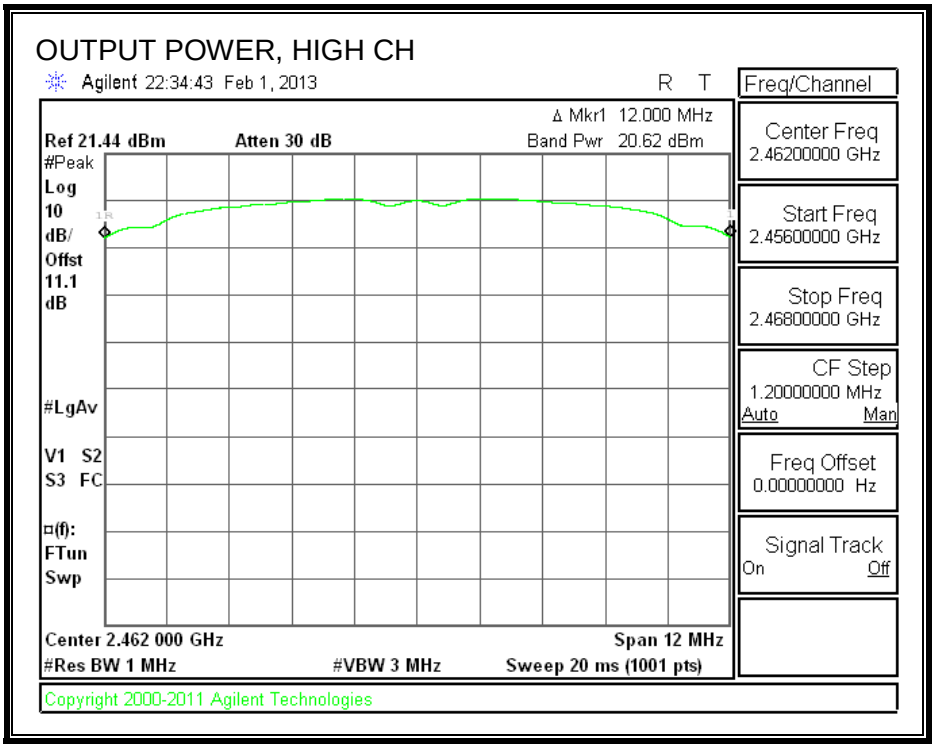

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8.1.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

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

PSD Results

Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-6.63	8.0	-14.6
Mid	2437	-6.92	8.0	-14.9
High	2462	-6.46	8.0	-14.5

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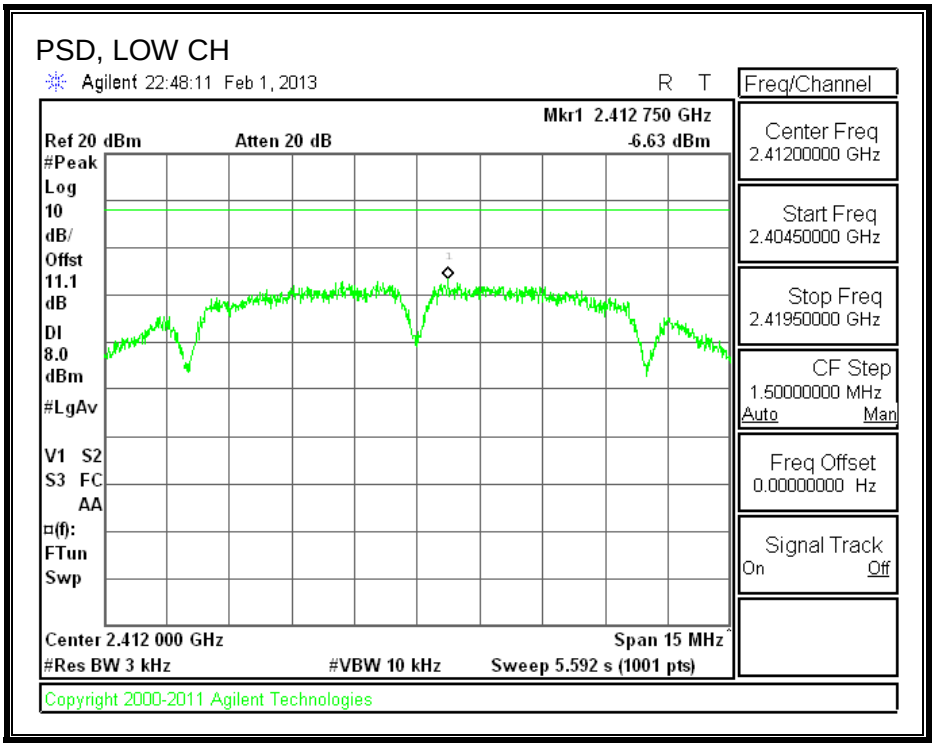
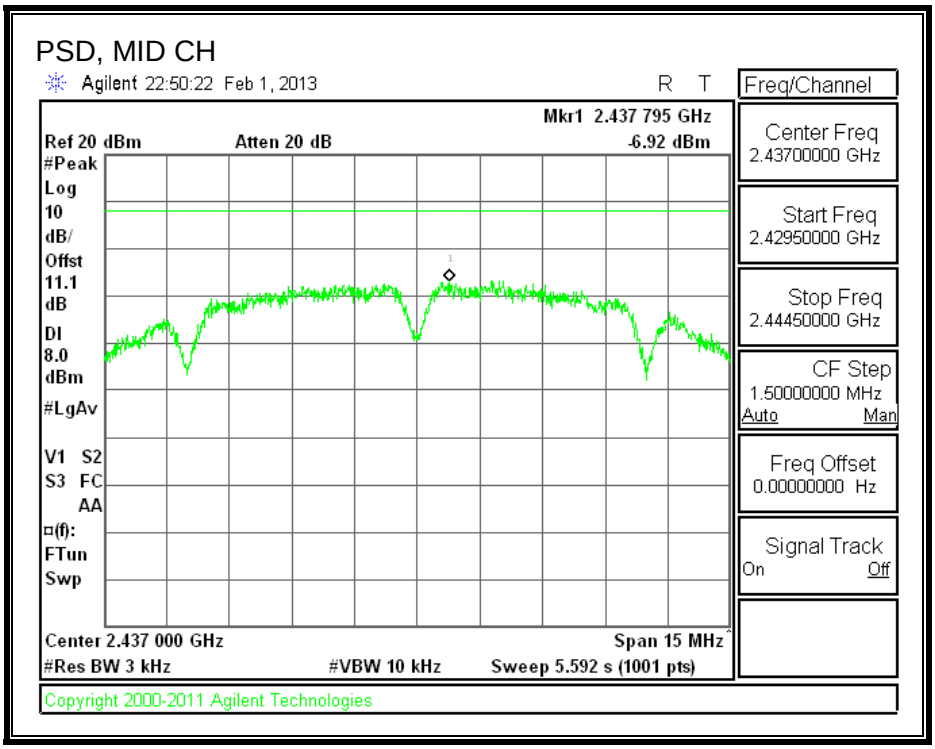
PSD, Chain 0





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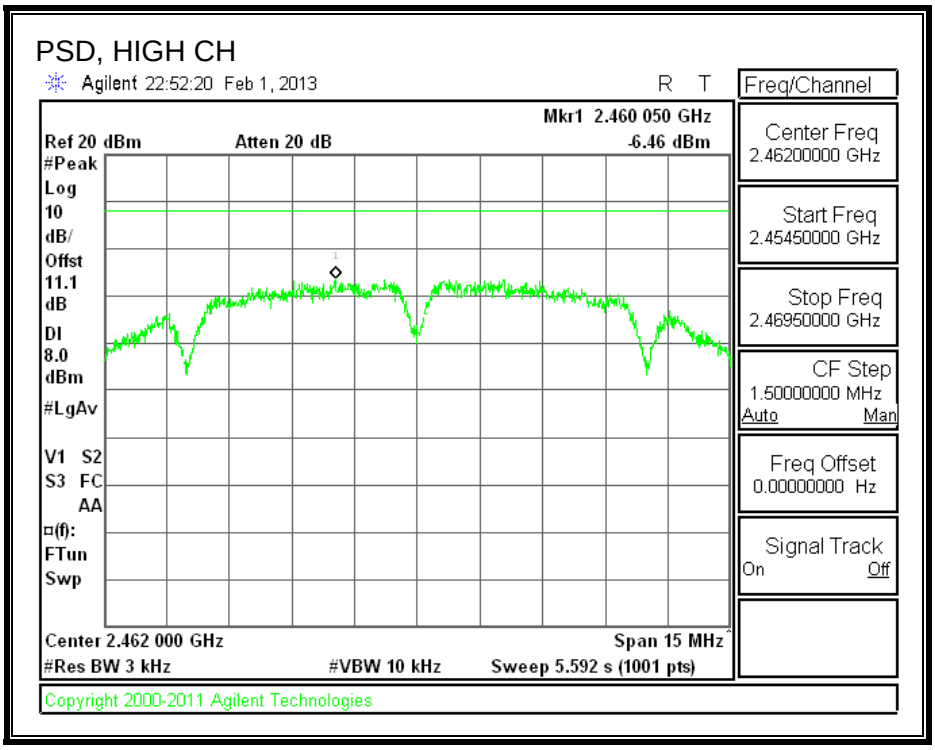

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8.1.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

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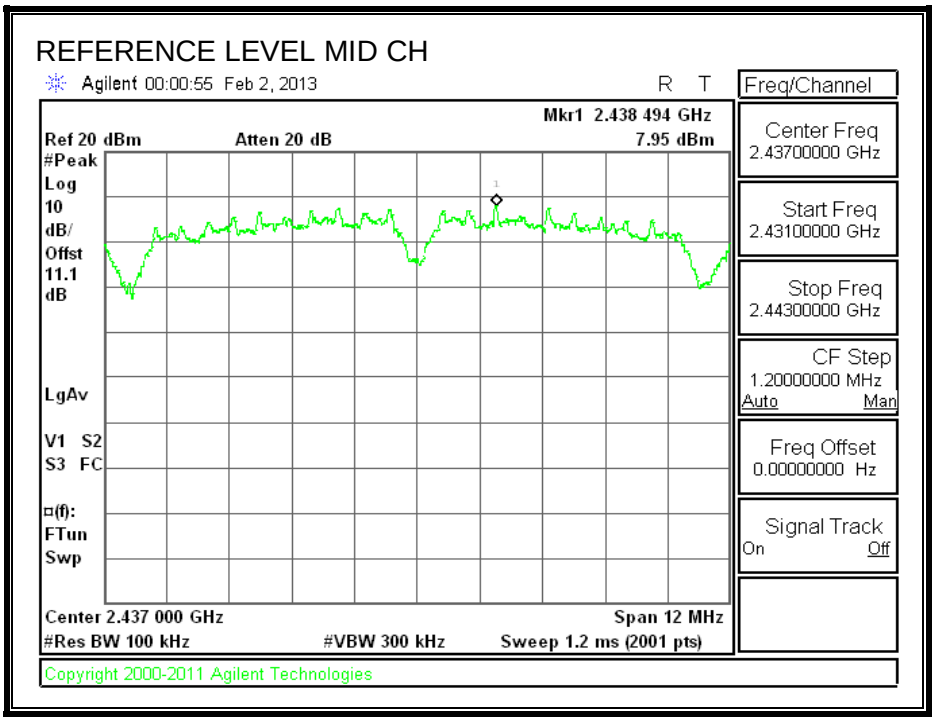
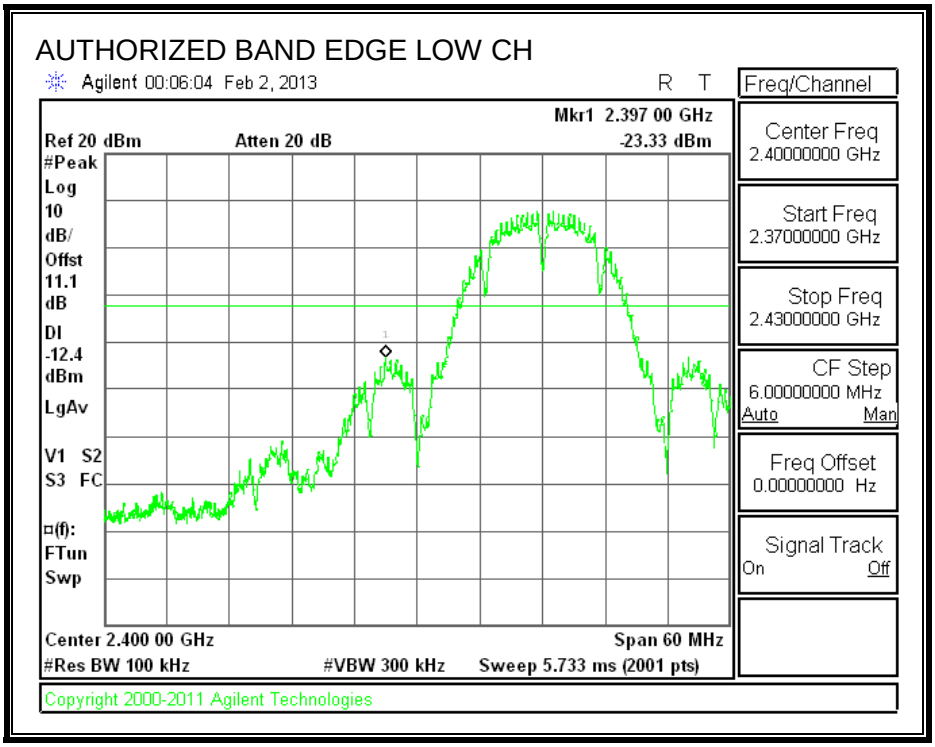
RESULTS

IN-BAND REFERENCE LEVEL



LOW CHANNEL BANDEDGE



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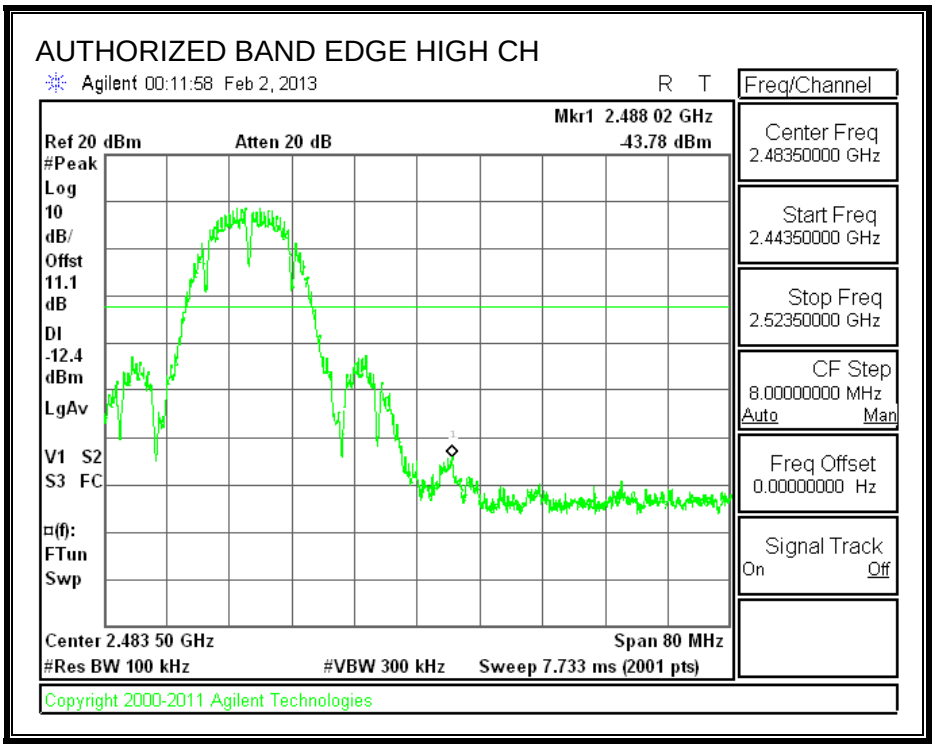
HIGH CHANNEL BANDEDGE



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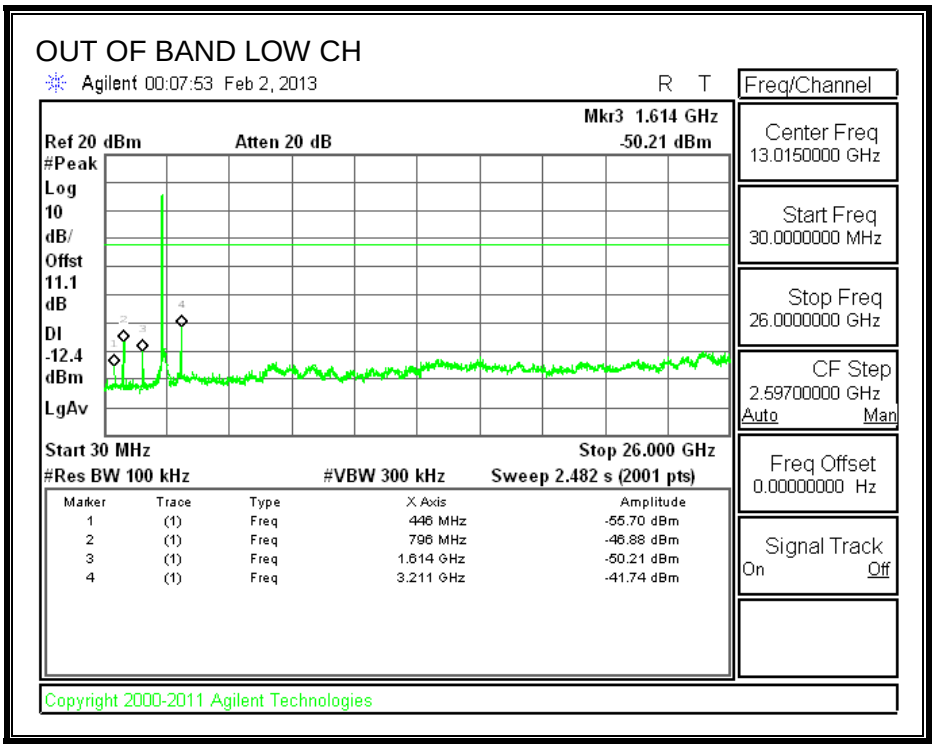
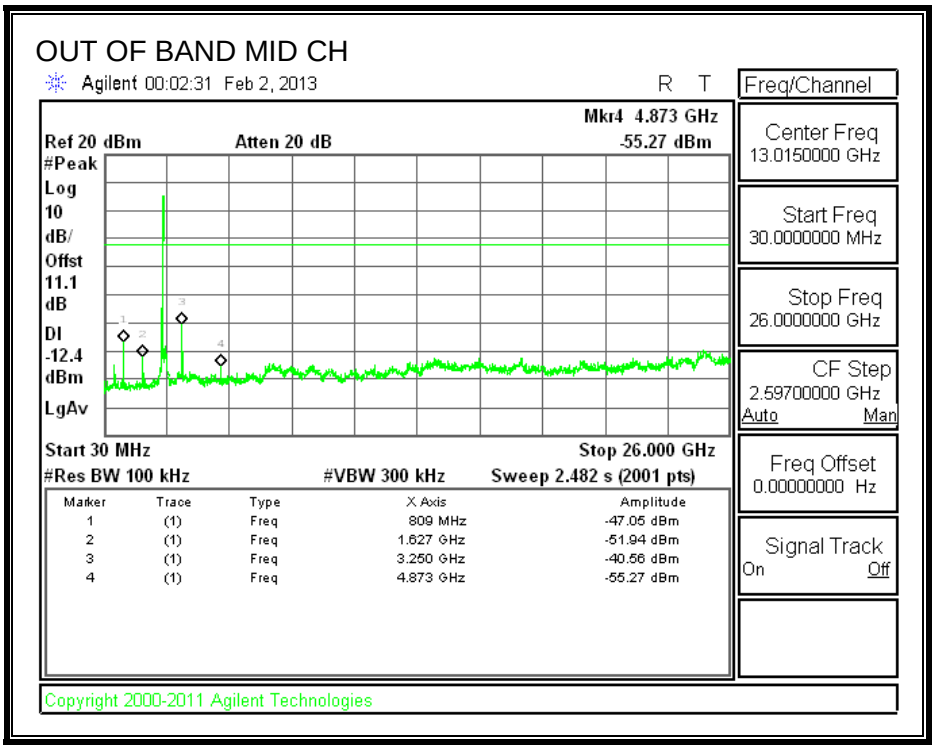
OUT-OF-BAND EMISSIONS





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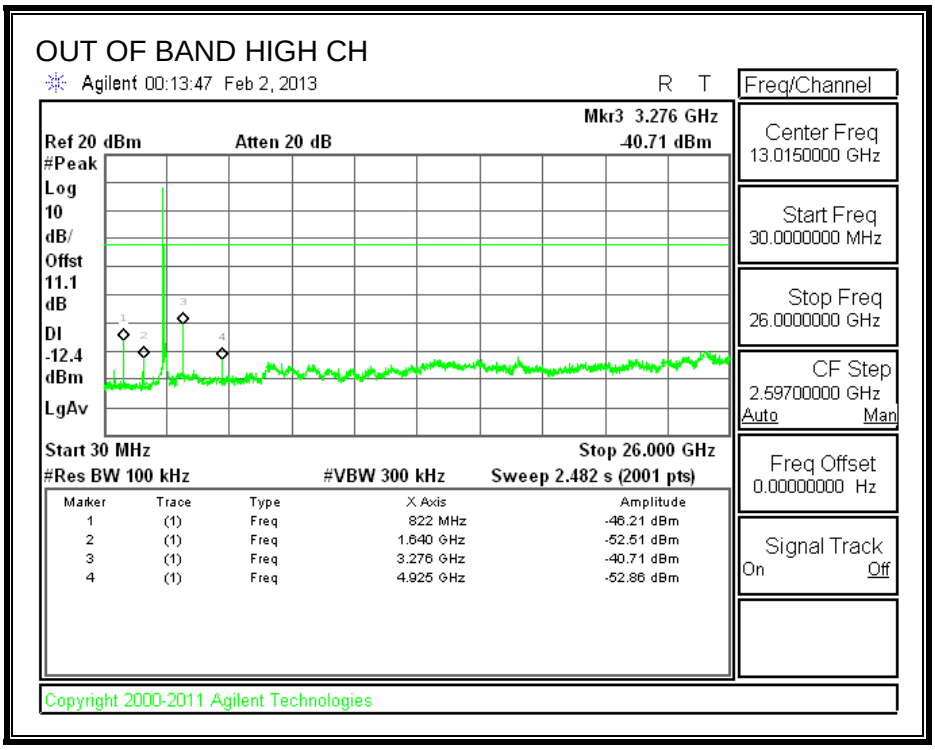

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8.2. 802.11g MODE IN THE 2.4 GHz BAND

8.2.1. 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	2412	16.375	0.5
Mid	2437	16.375	0.5
High	2462	16.350	0.5

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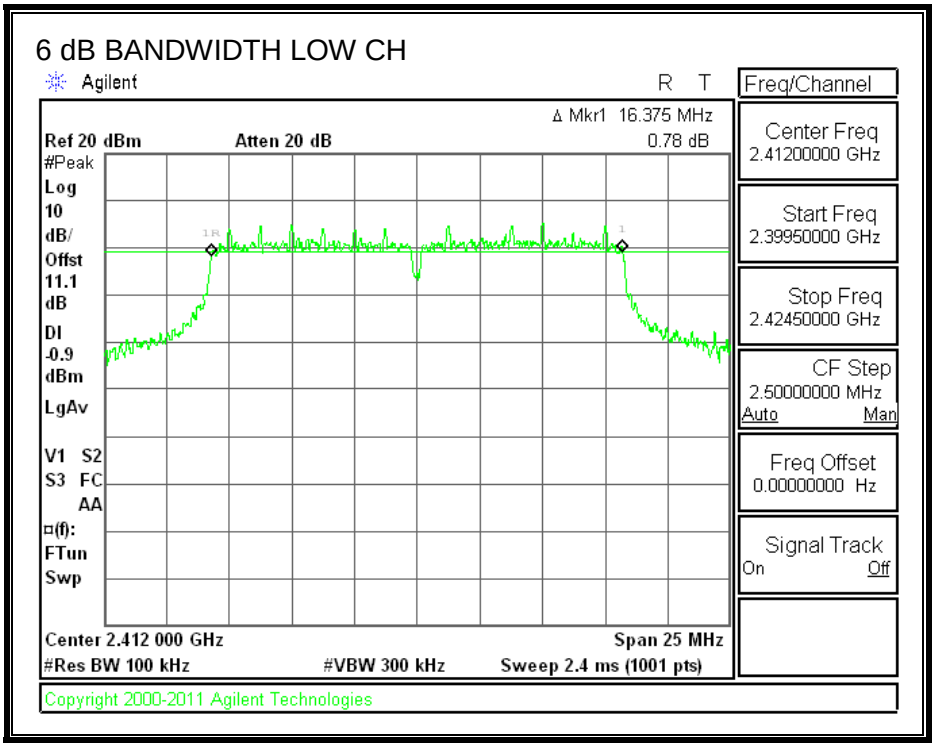
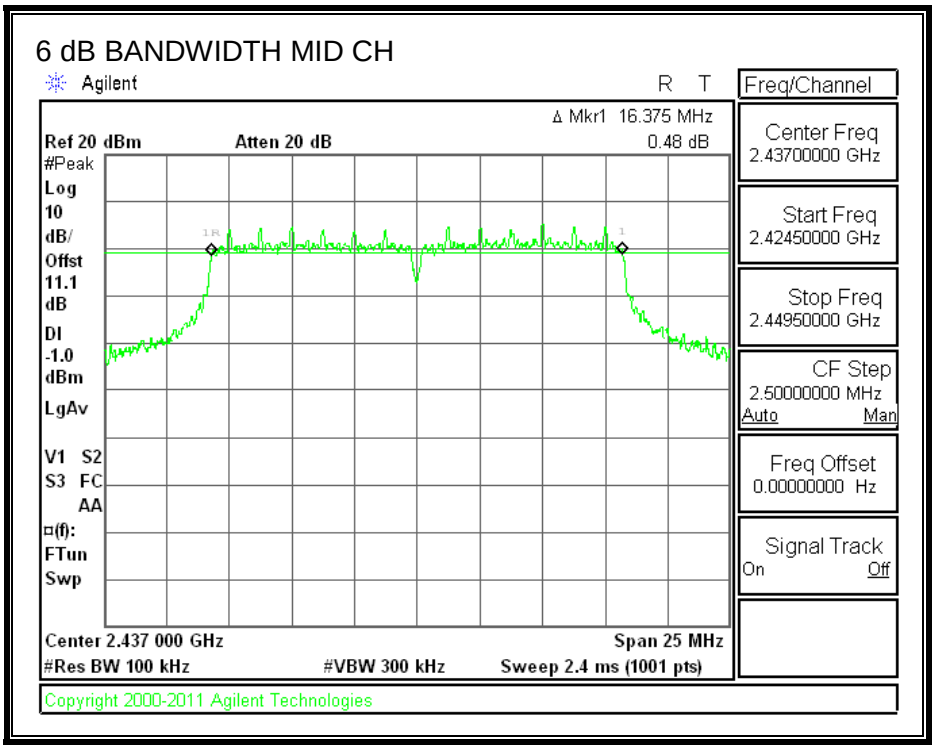
6 dB BANDWIDTH





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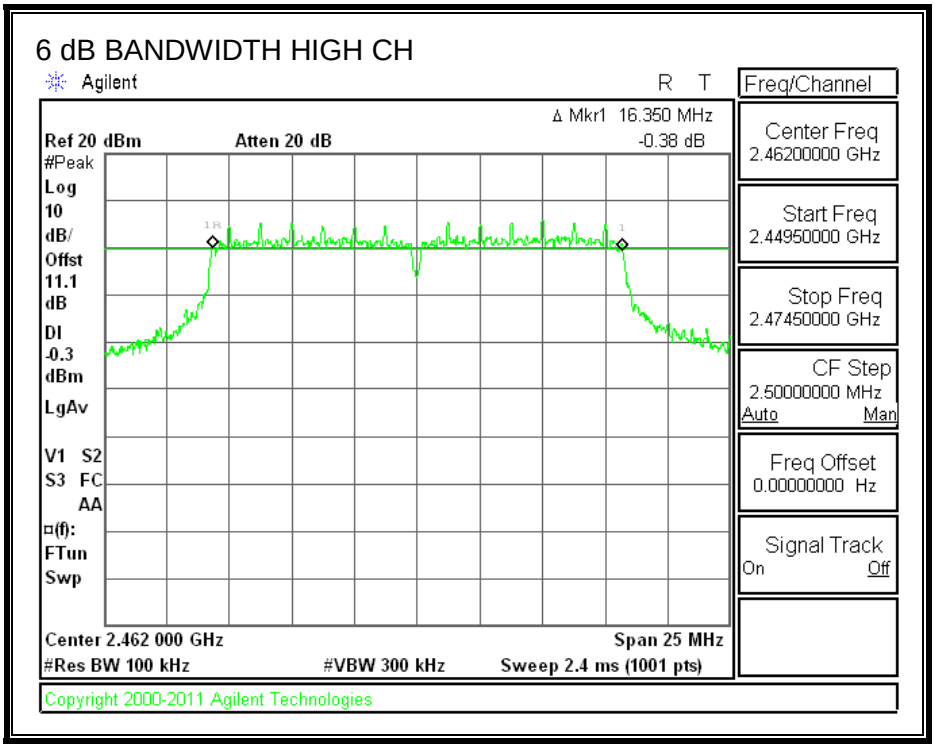

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8.2.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.5259
Mid	2437	16.5283
High	2462	16.4709

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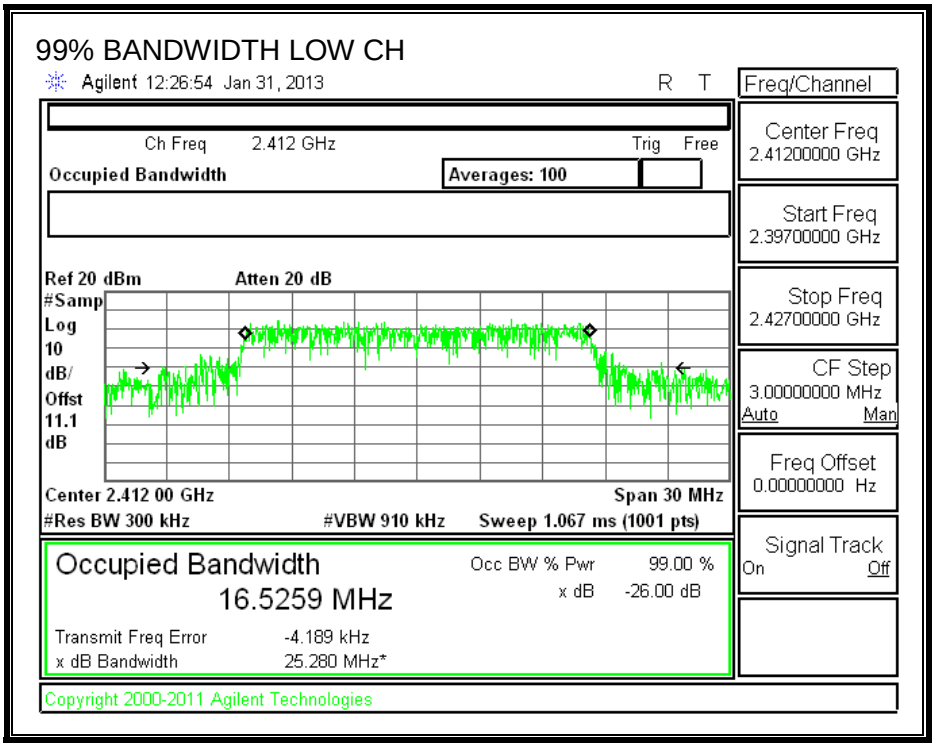
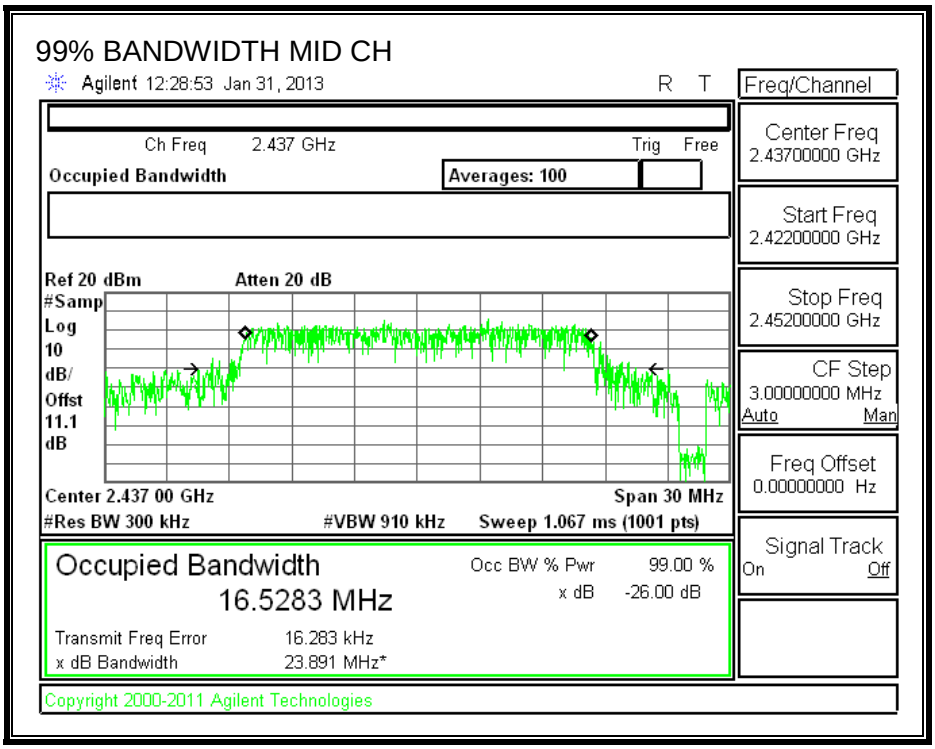
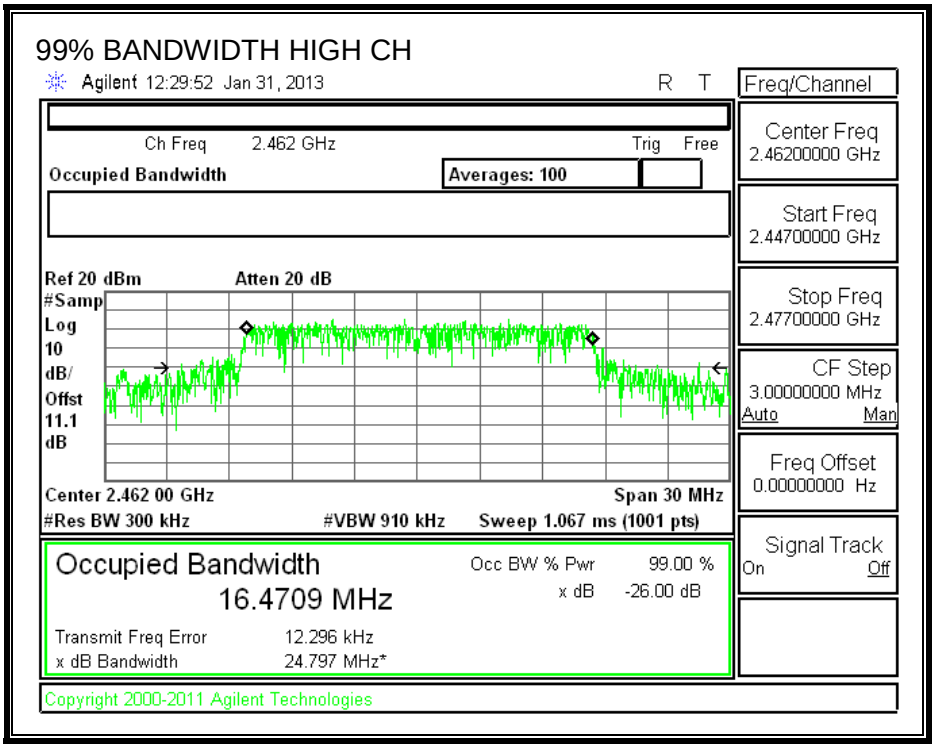
99% BANDWIDTH





This report shall not be reproduced except in full, without the written approval of UL CCS.



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8.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	15.38
Mid	2437	16.83
High	2462	16.53

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8.2.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.10	30.00	30	36	30.00
Mid	2437	2.10	30.00	30	36	30.00
High	2462	2.10	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	24.77	24.77	30.00	-5.23
Mid	2437	24.66	24.66	30.00	-5.34
High	2462	25.23	25.23	30.00	-4.77

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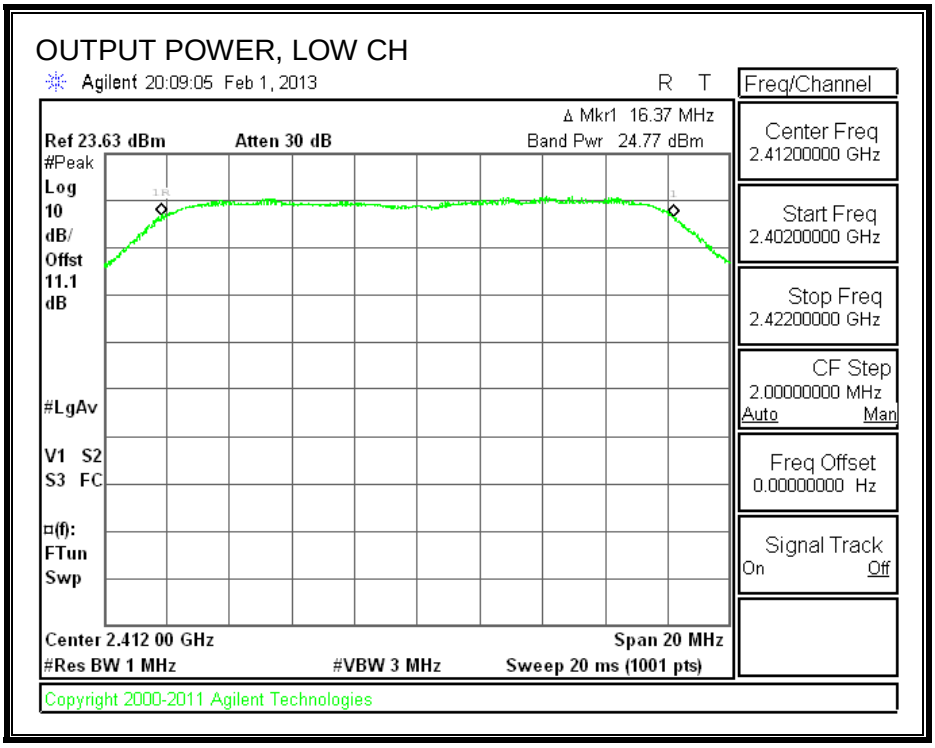
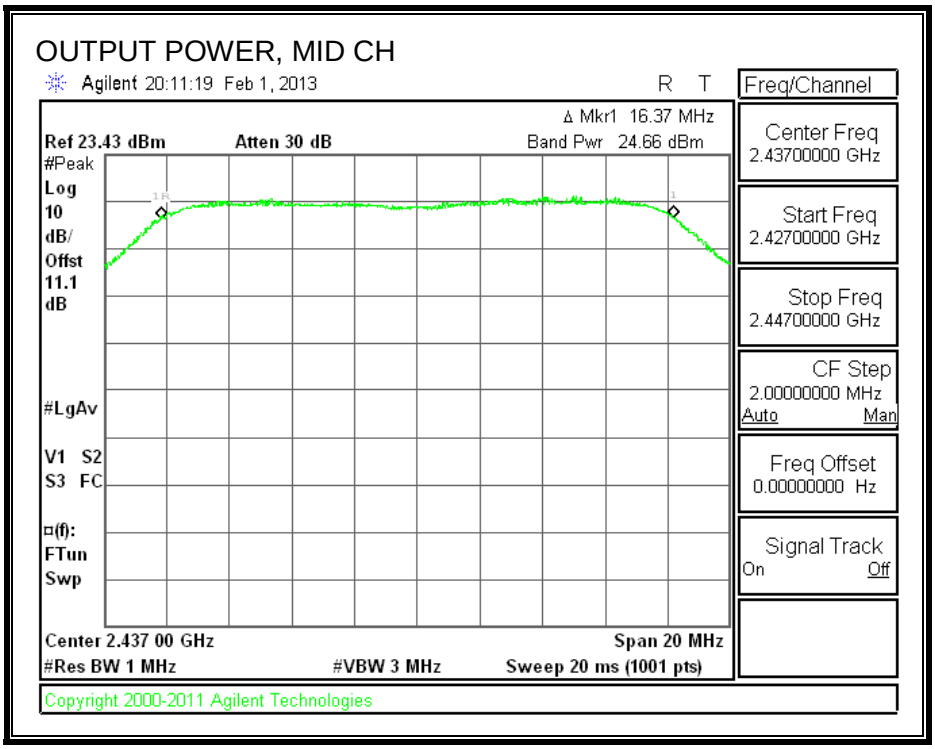
OUTPUT POWER





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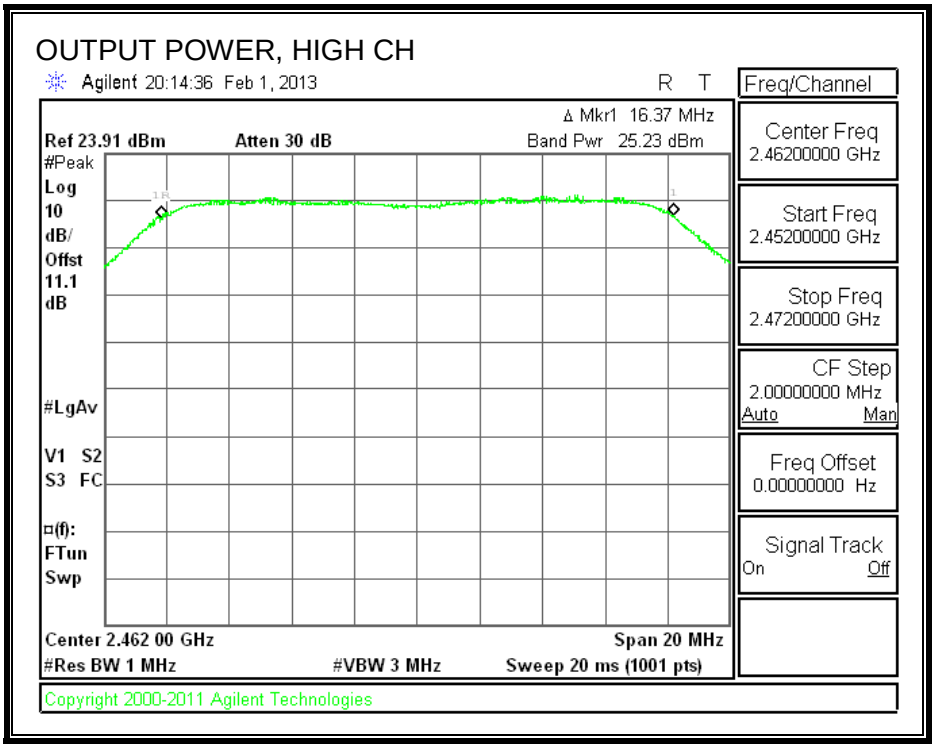
OUTPUT POWER, HIGH CH



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8.2.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

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

PSD Results

Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.47	8.0	-16.5
Mid	2437	-8.70	8.0	-16.7
High	2462	-7.40	8.0	-15.4

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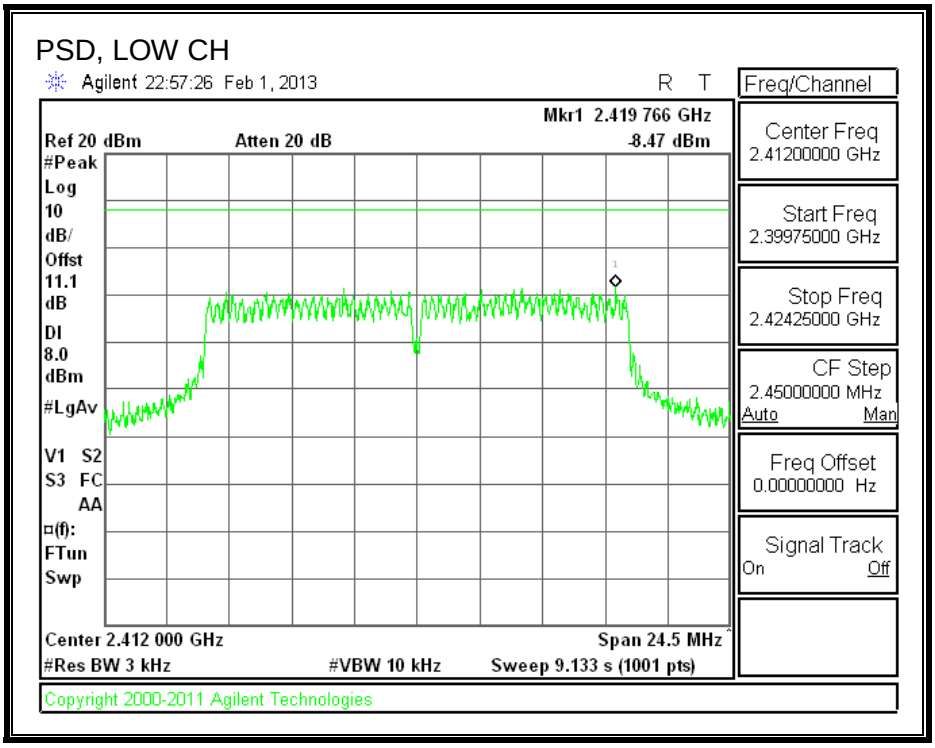
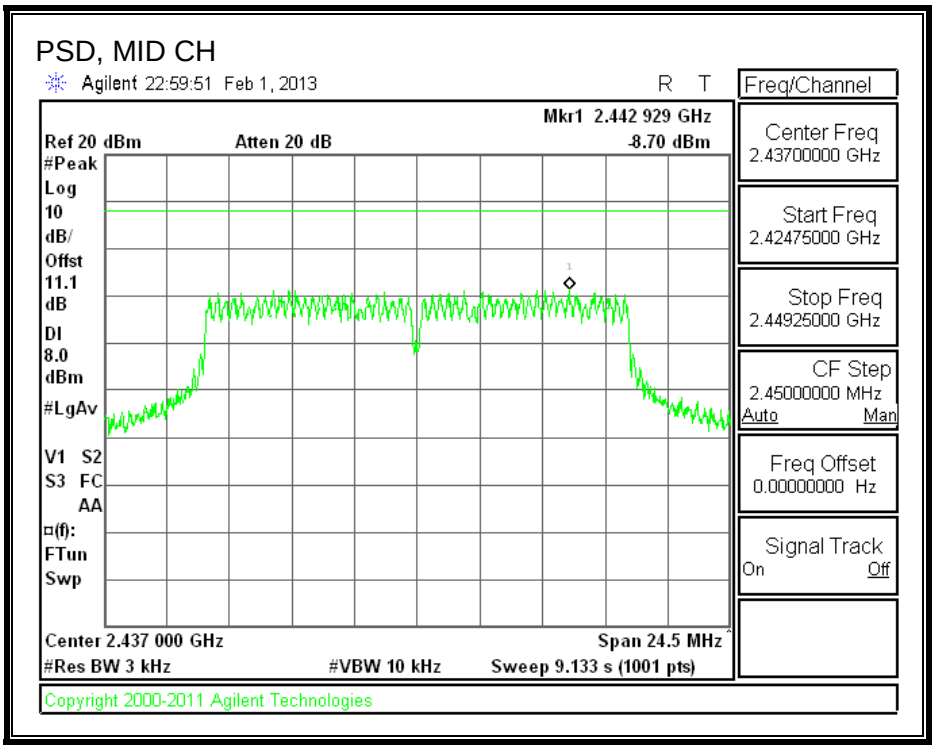
PSD, Chain 0

PSD, LOW CH



PSD, MID CH



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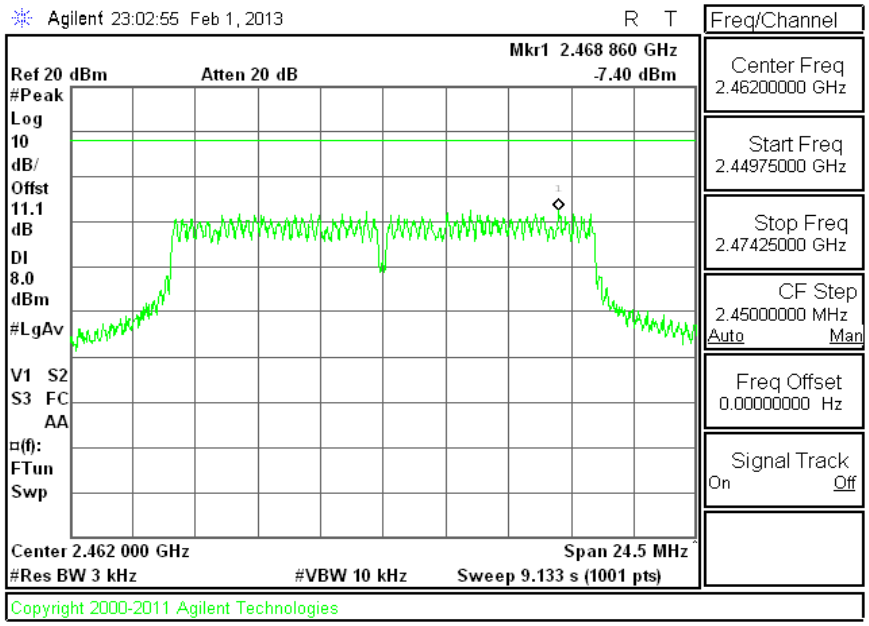
PSD, HIGH CH



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8.2.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

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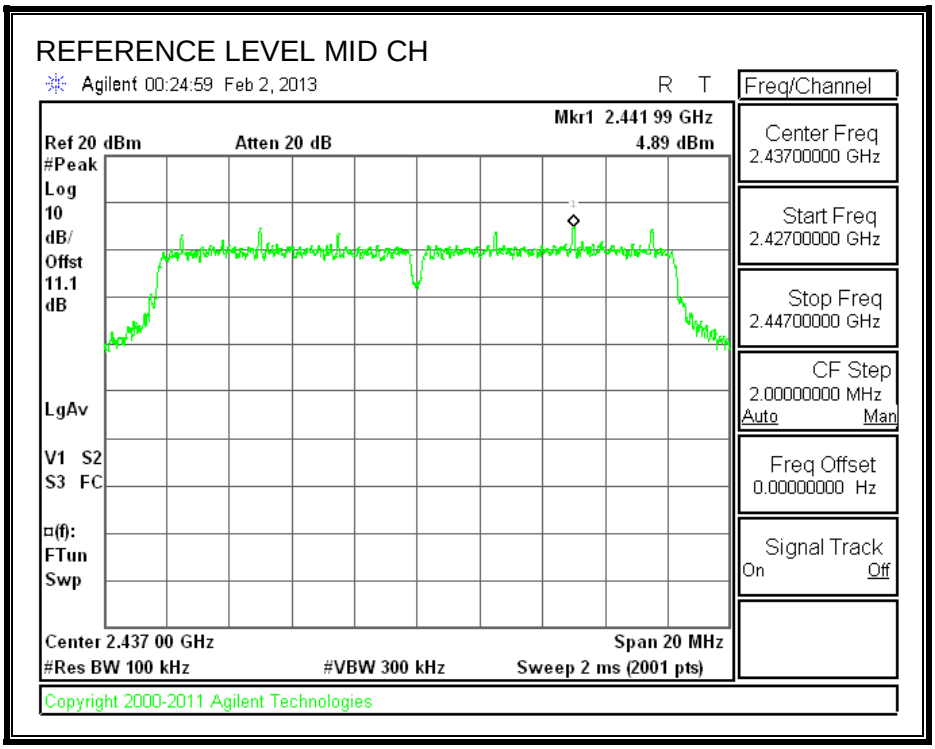
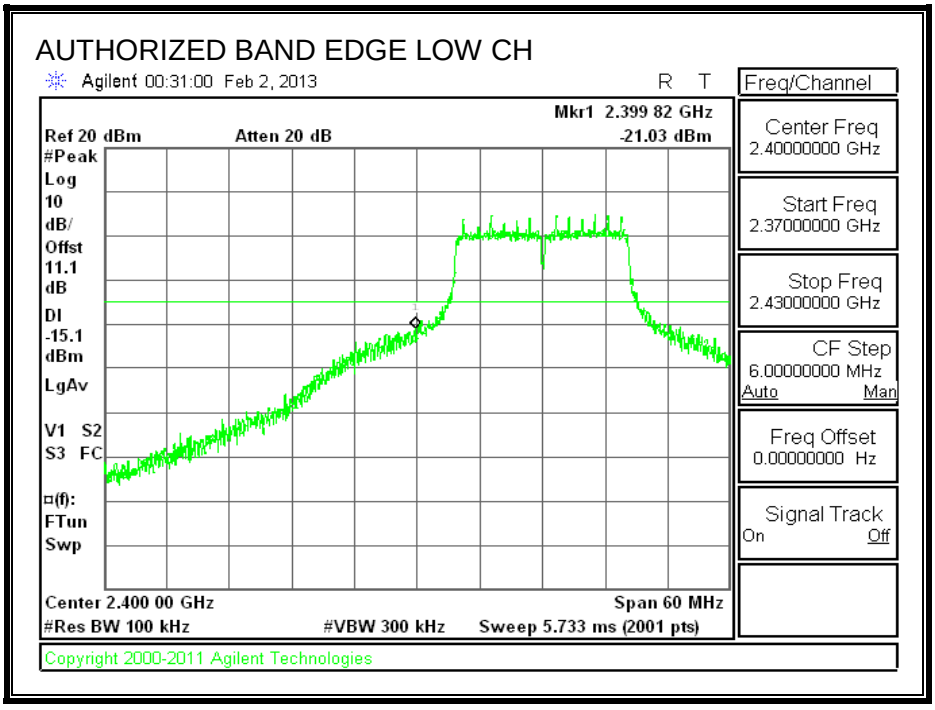
RESULTS

IN-BAND REFERENCE LEVEL



LOW CHANNEL BANDEDGE



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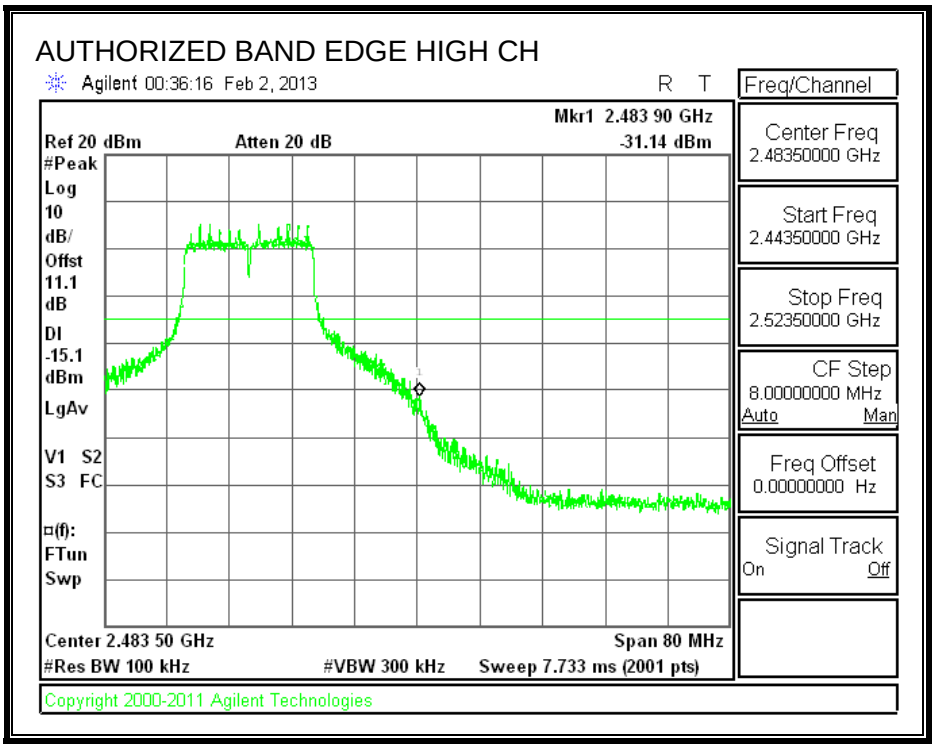
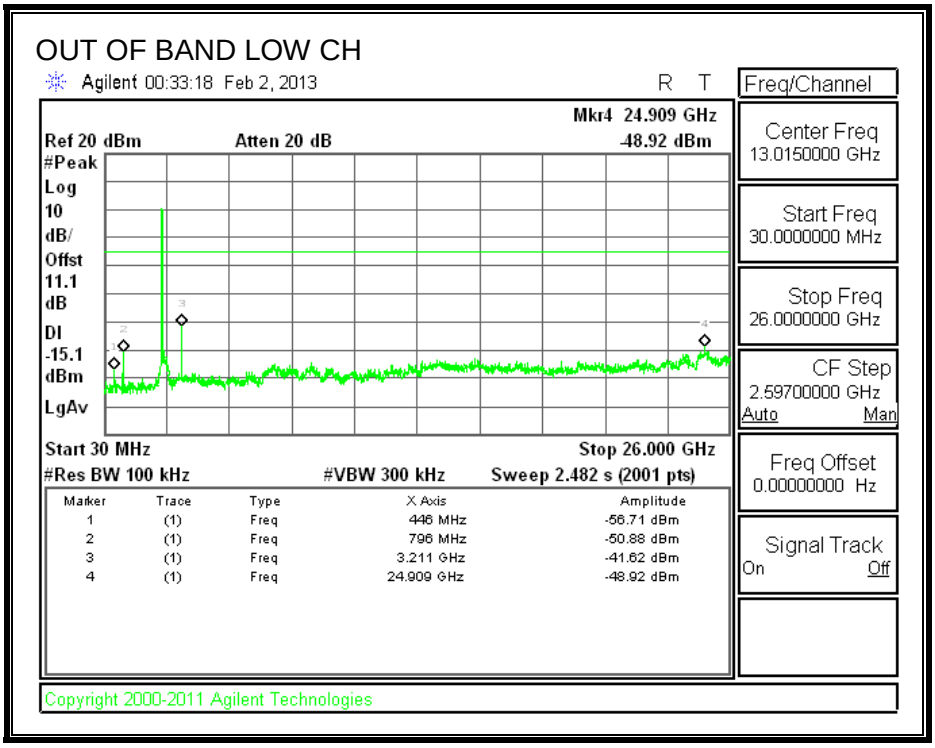
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS



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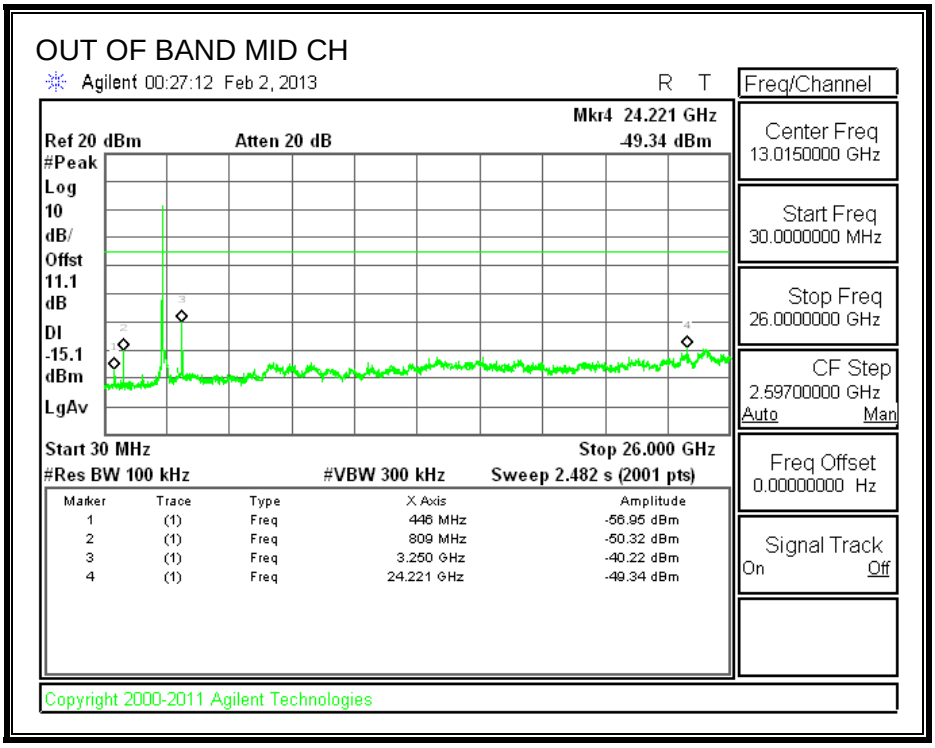

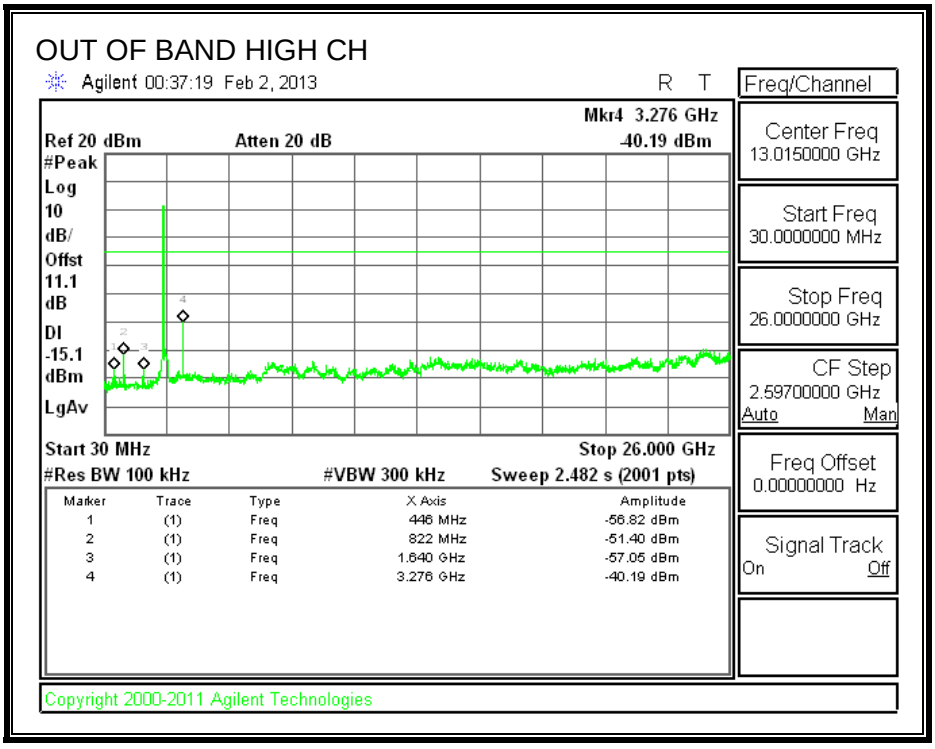

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8.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

8.3.1. 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	2412	17.576	0.5
Mid	2437	17.524	0.5
High	2462	17.576	0.5

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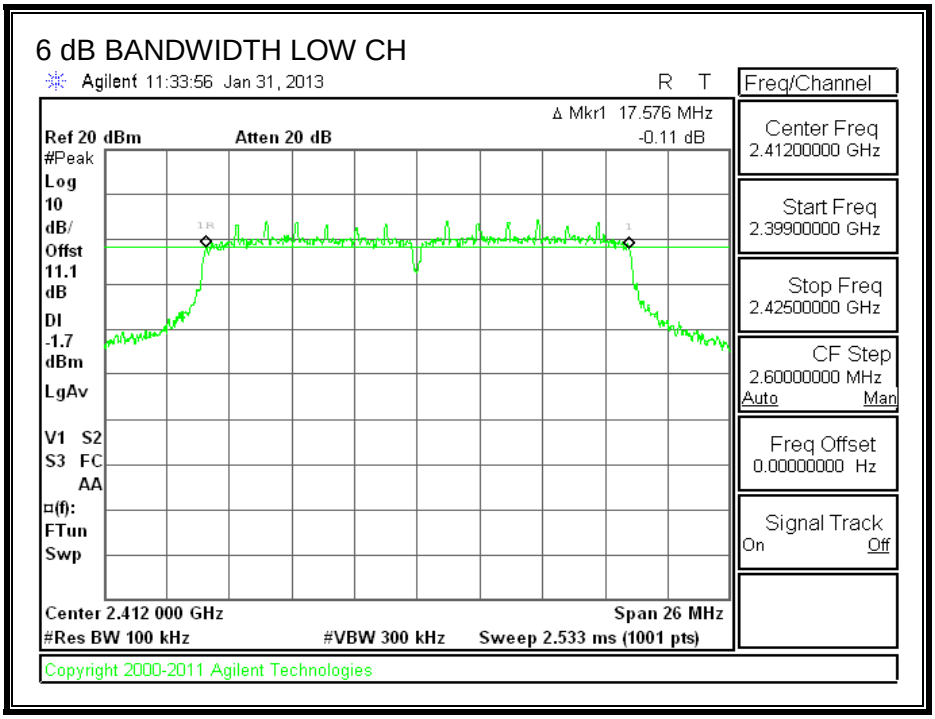
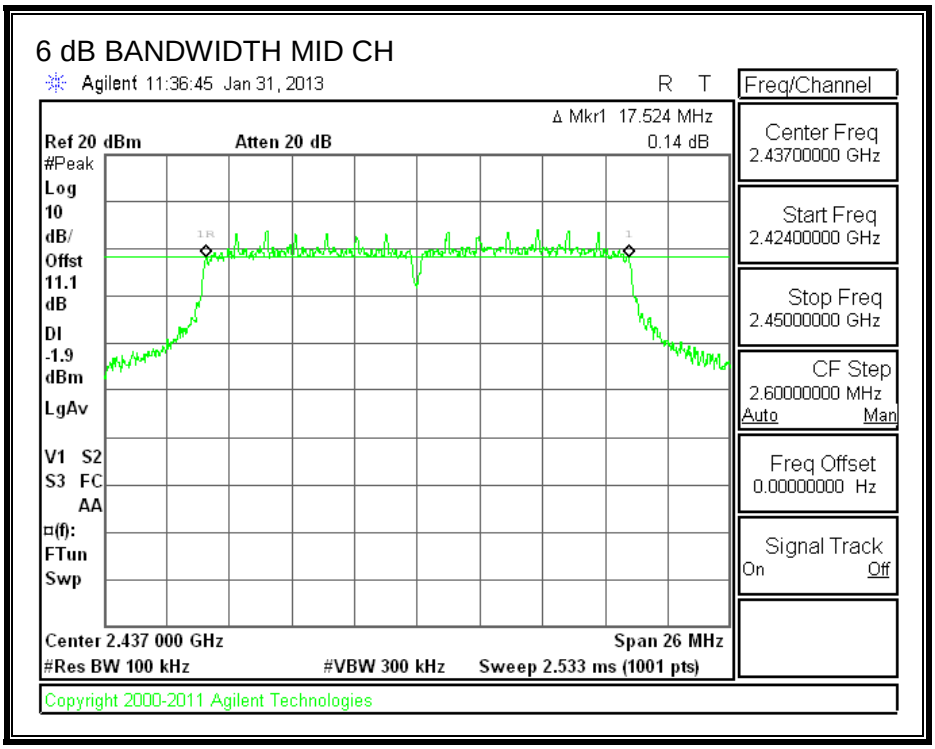
6 dB BANDWIDTH





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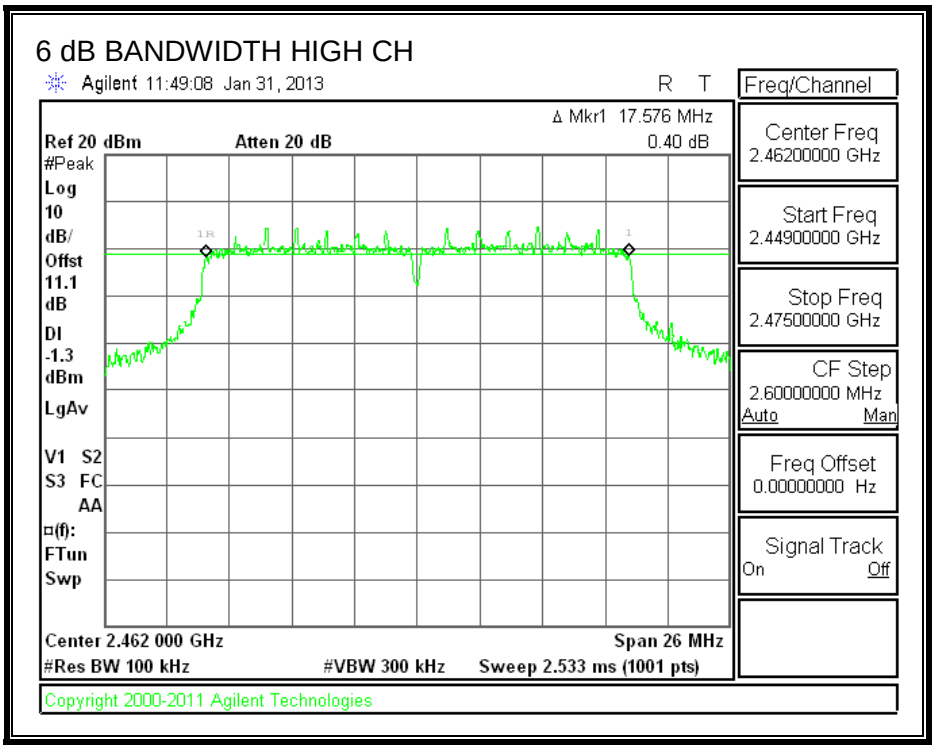

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8.3.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.6648
Mid	2437	17.6483
High	2462	17.6607

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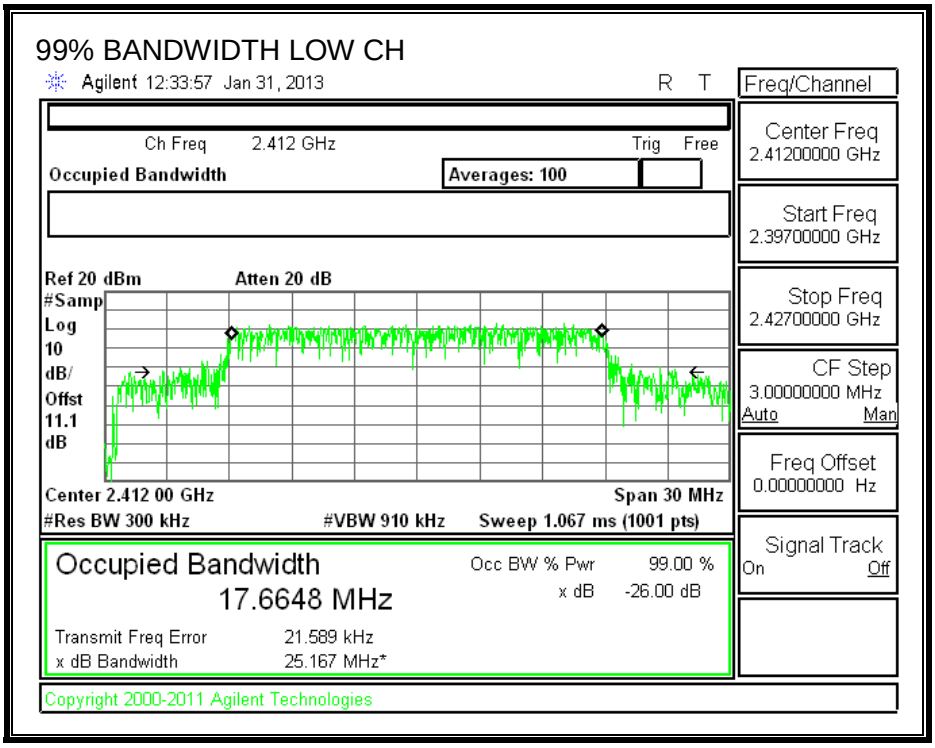
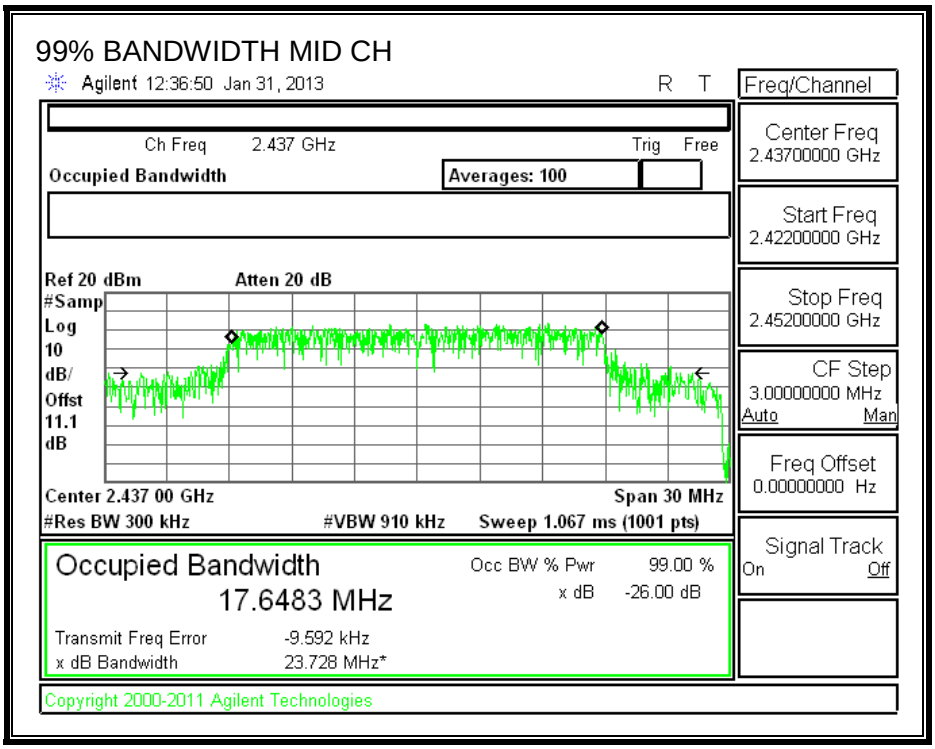
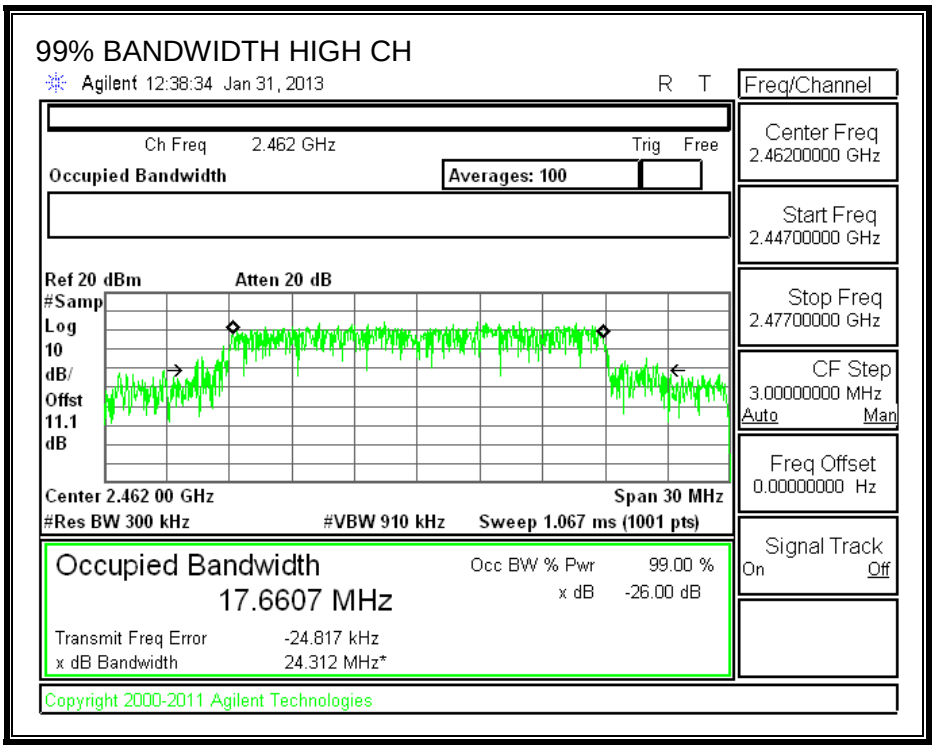
99% BANDWIDTH





This report shall not be reproduced except in full, without the written approval of UL CCS.



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8.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.1dB (including 10 dB pad and 1.1dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	14.64
Mid	2437	16.22
High	2462	15.77

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8.3.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.10	30.00	30	36	30.00
Mid	2437	2.10	30.00	30	36	30.00
High	2462	2.10	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	23.95	23.95	30.00	-6.05
Mid	2437	23.83	23.83	30.00	-6.17
High	2462	24.45	24.45	30.00	-5.55

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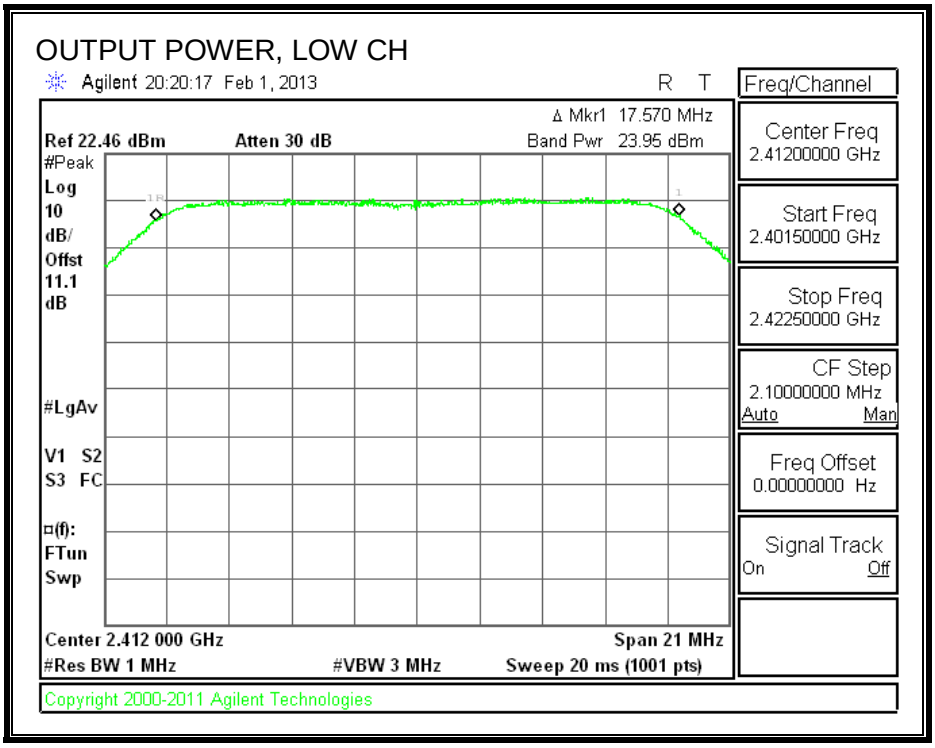
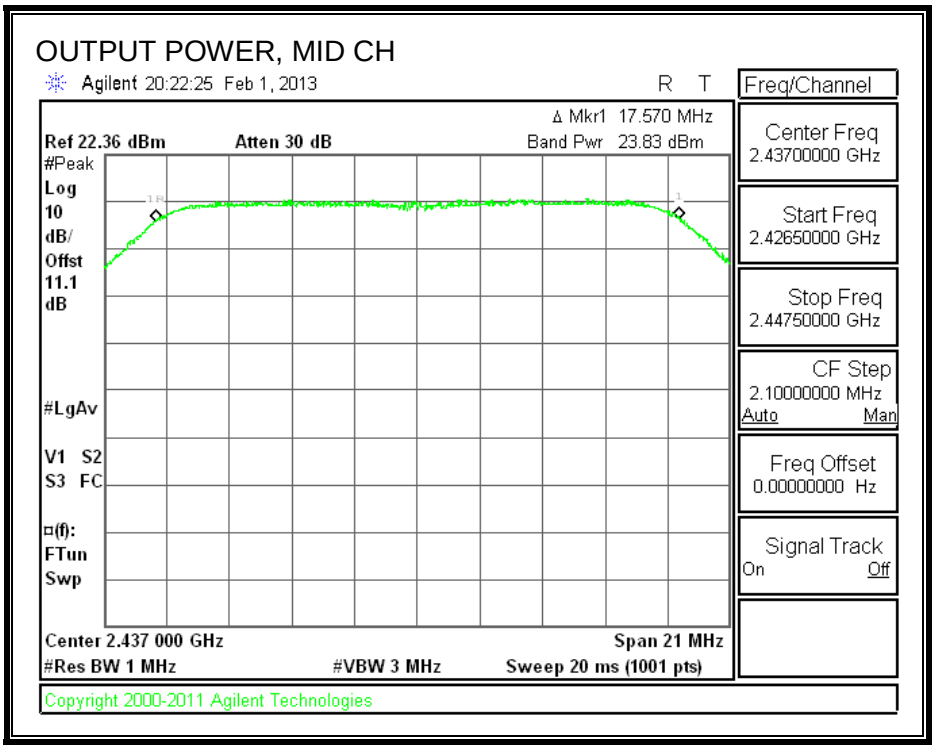
OUTPUT POWER





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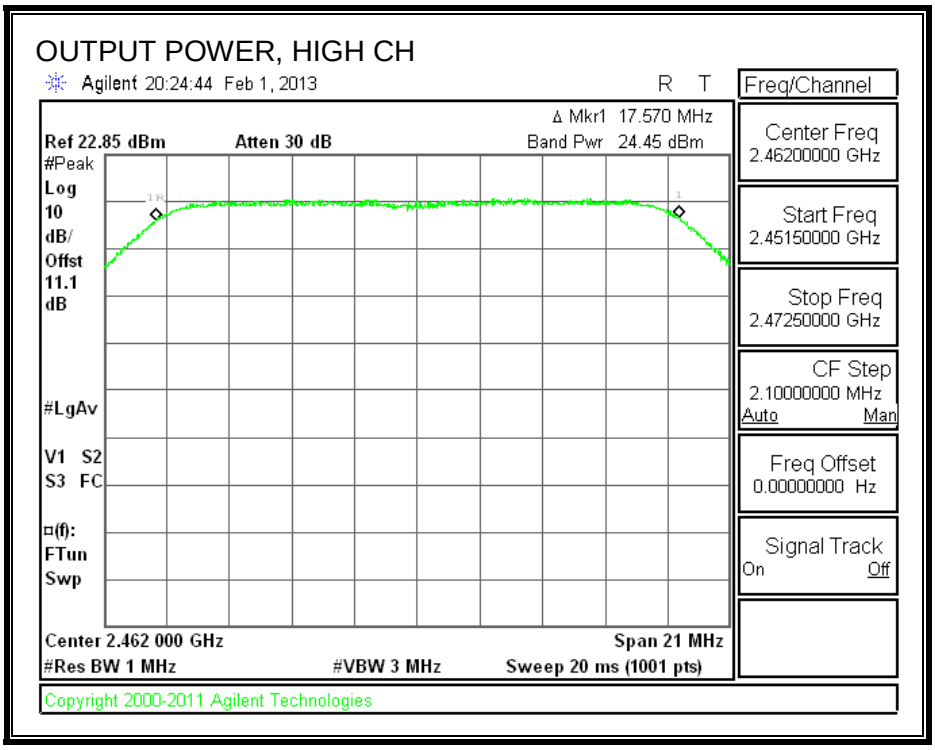

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8.3.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

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

PSD Results

Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-9.26	8.0	-17.3
Mid	2437	-10.61	8.0	-18.6
High	2462	-9.60	8.0	-17.6

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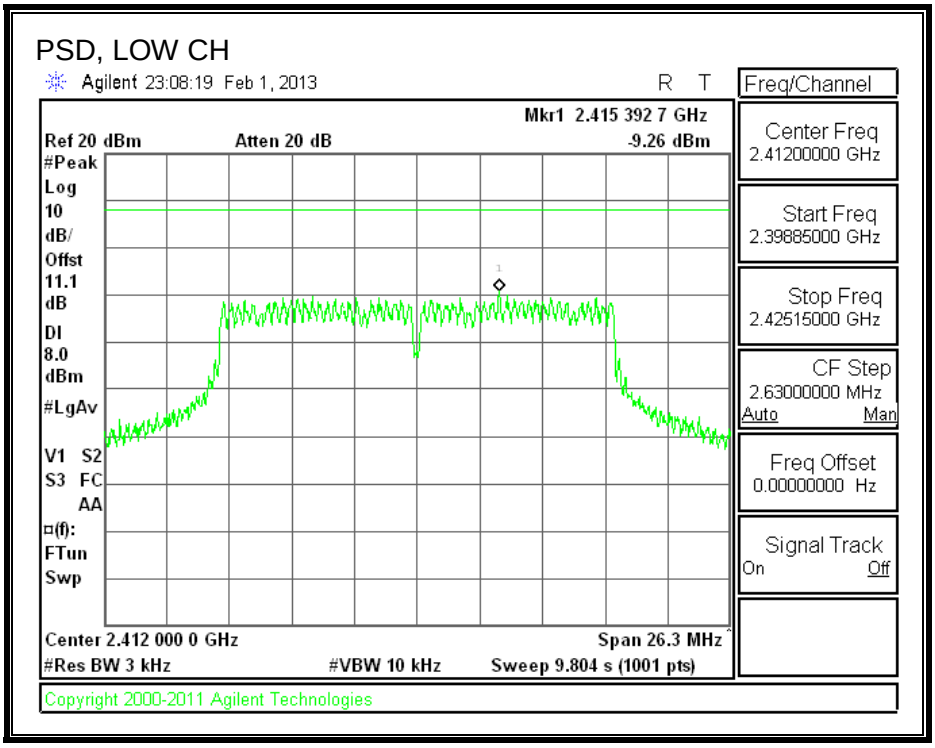
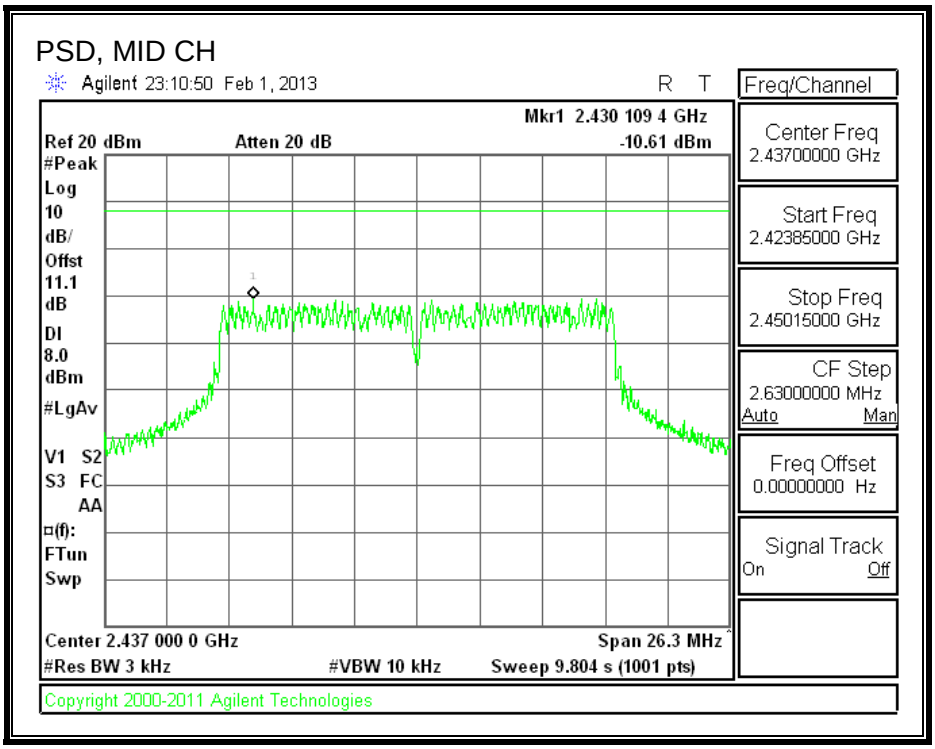
PSD, Chain 0





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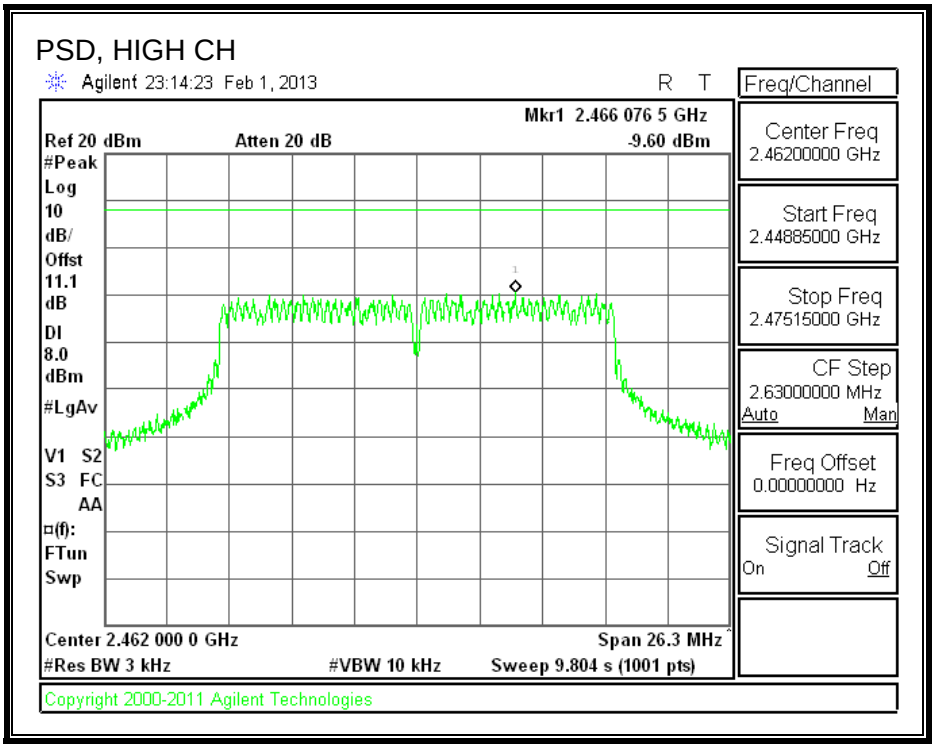
PSD, HIGH CH



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8.3.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

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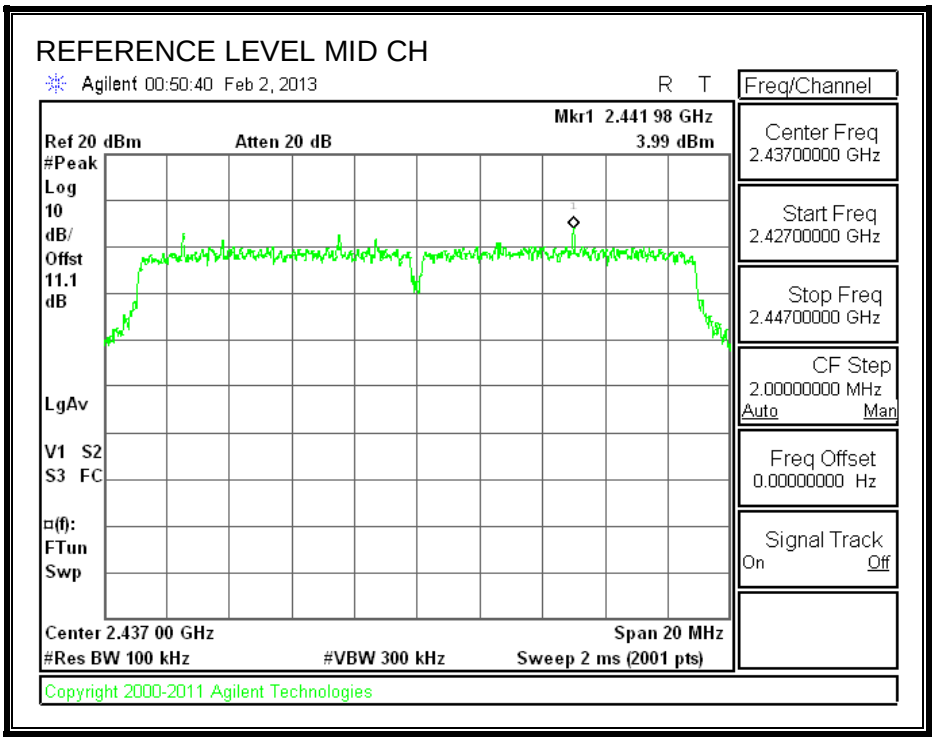
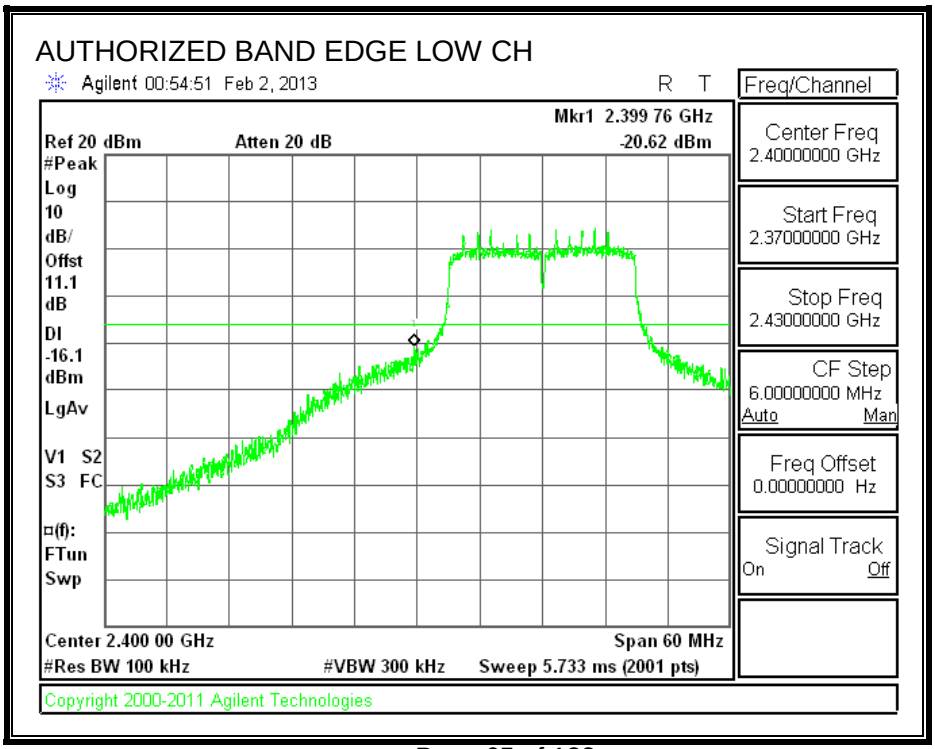
RESULTS

IN-BAND REFERENCE LEVEL



LOW CHANNEL BANDEDGE



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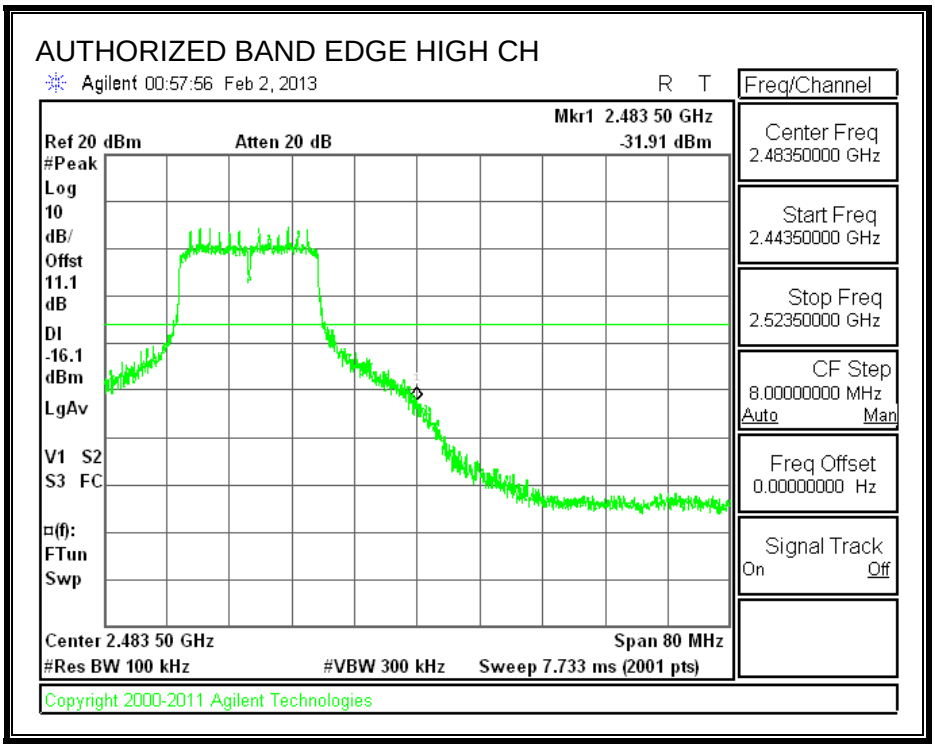
HIGH CHANNEL BANDEDGE



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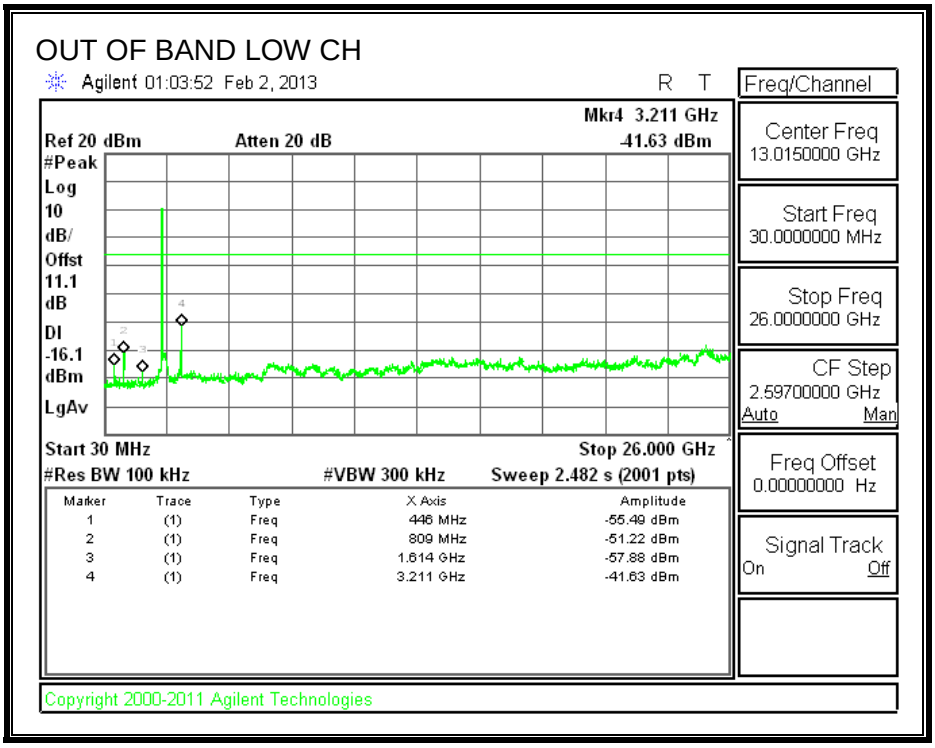
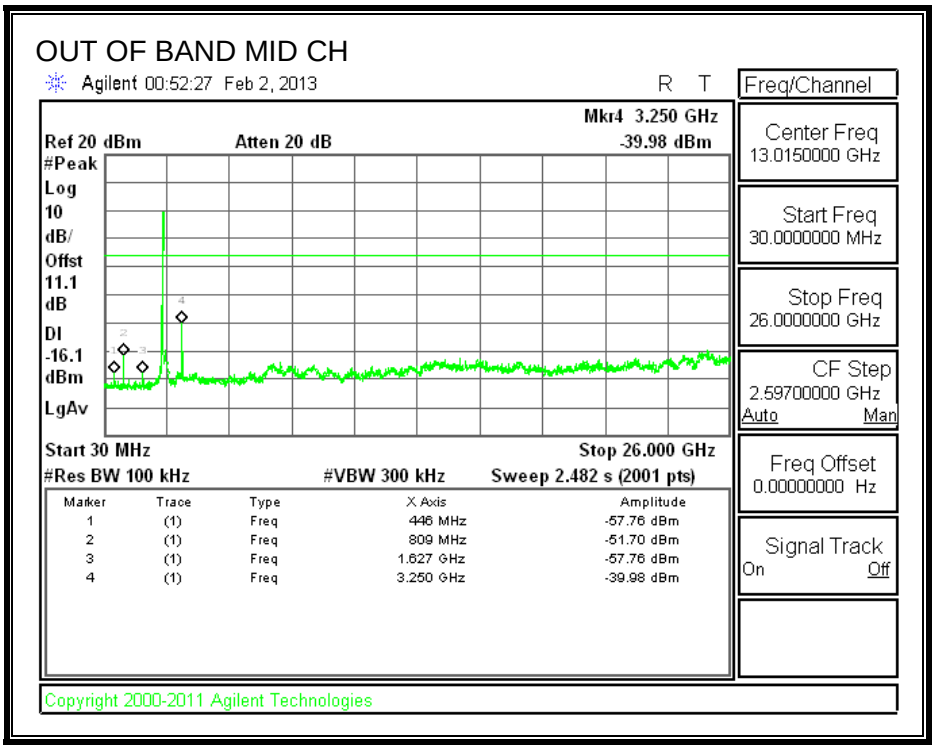
OUT-OF-BAND EMISSIONS





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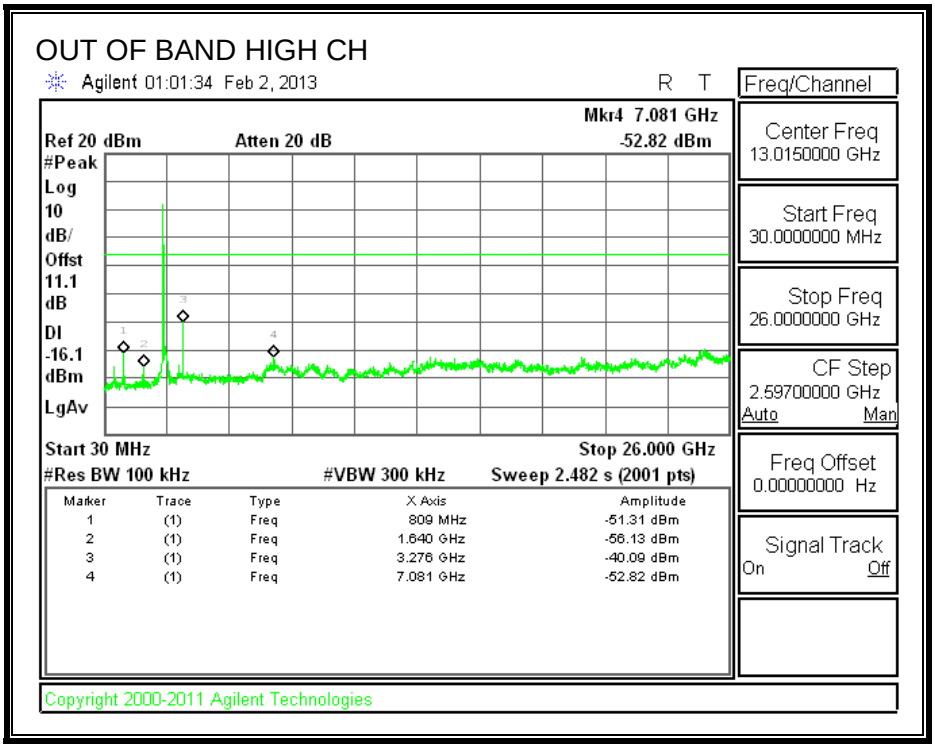

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8.4. 802.11n HT40 MODE IN THE 2.4 GHz BAND

8.4.1. 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.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with the RBW set between 1% and 5% of the EBW, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2422	36.410	0.5
Mid	2437	36.410	0.5
High	2452	36.410	0.5

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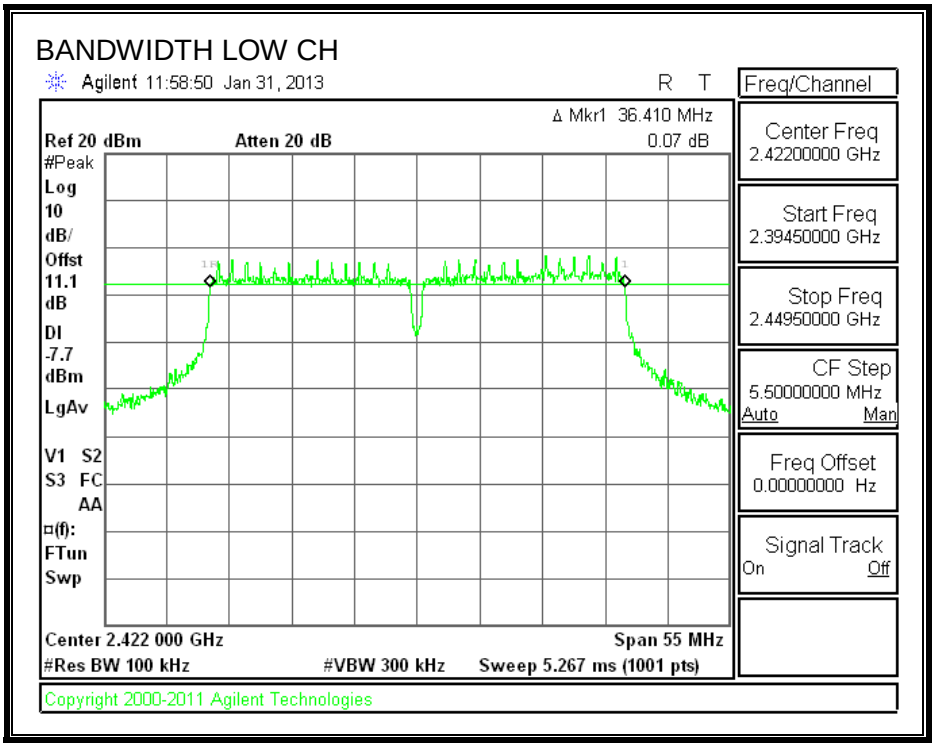
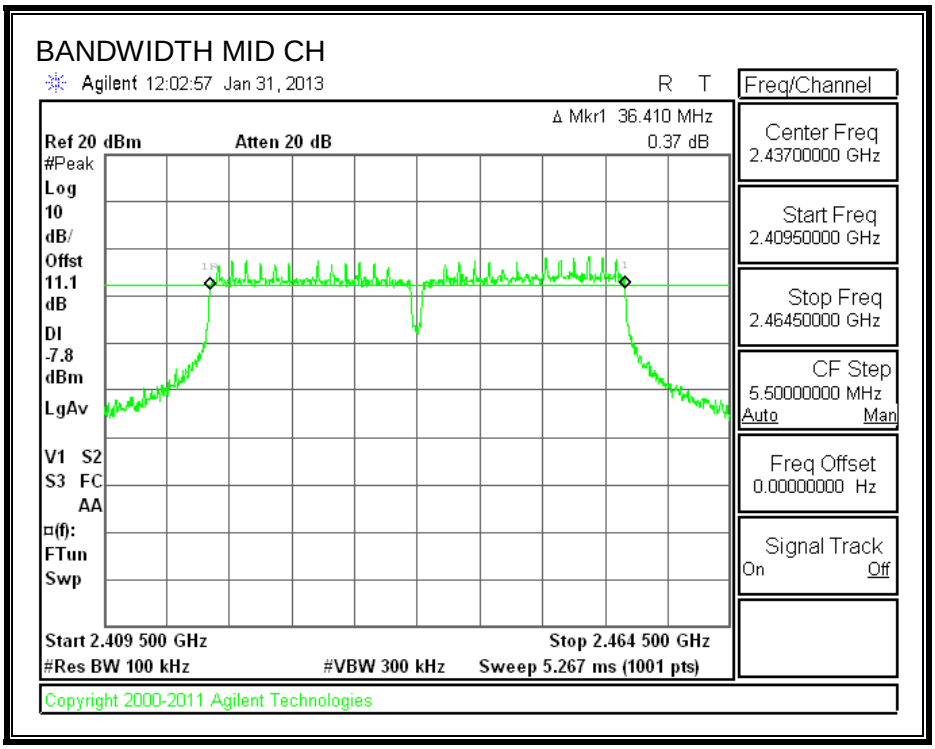
6 dB BANDWIDTH





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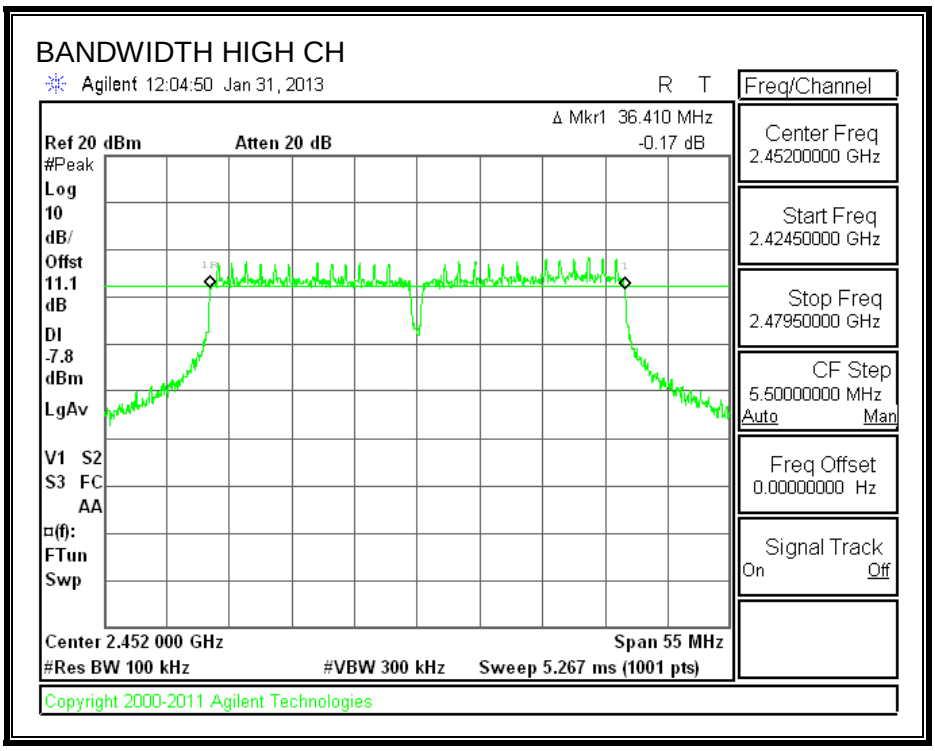

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8.4.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2422	36.6061
Mid	2437	36.6056
High	2452	36.5981

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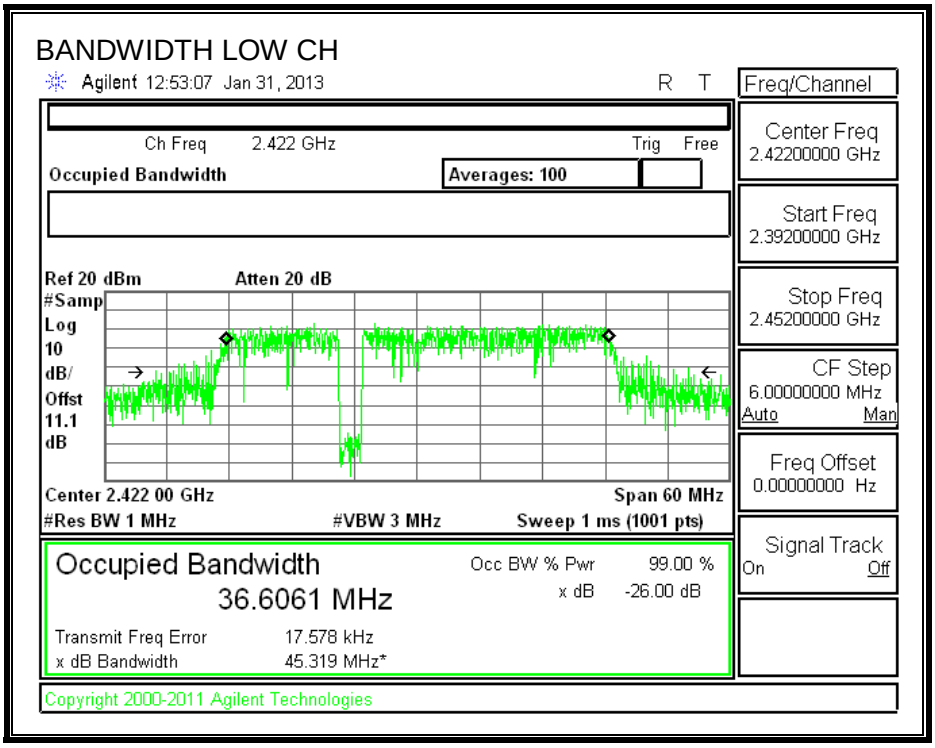
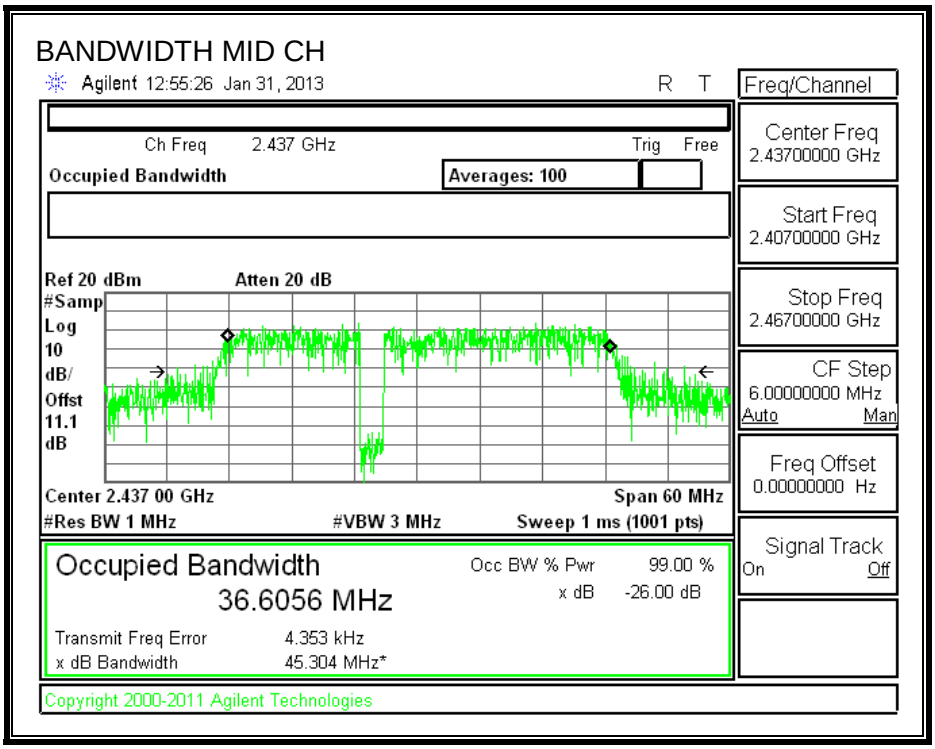
99% BANDWIDTH





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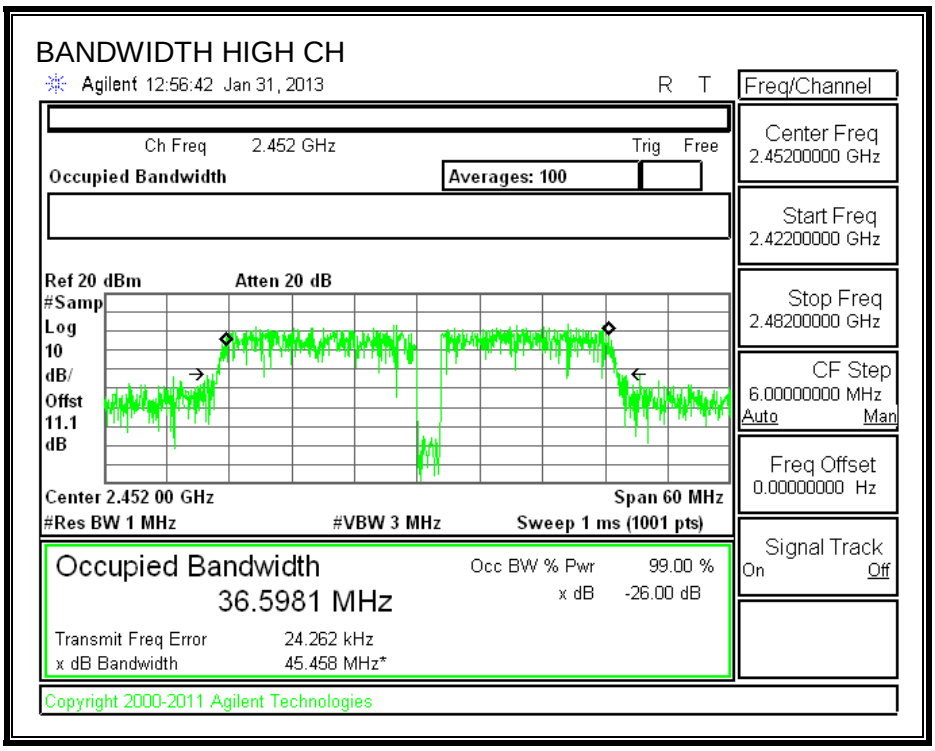

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8.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2422	10.00
Mid	2437	15.00
High	2452	13.00

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8.4.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

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RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2422	2.10	30.00	30	36	30.00
Mid	2437	2.10	30.00	30	36	30.00
High	2452	2.10	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2422	20.94	20.94	30.00	-9.06
Mid	2437	20.99	20.99	30.00	-9.01
High	2452	21.01	21.01	30.00	-8.99

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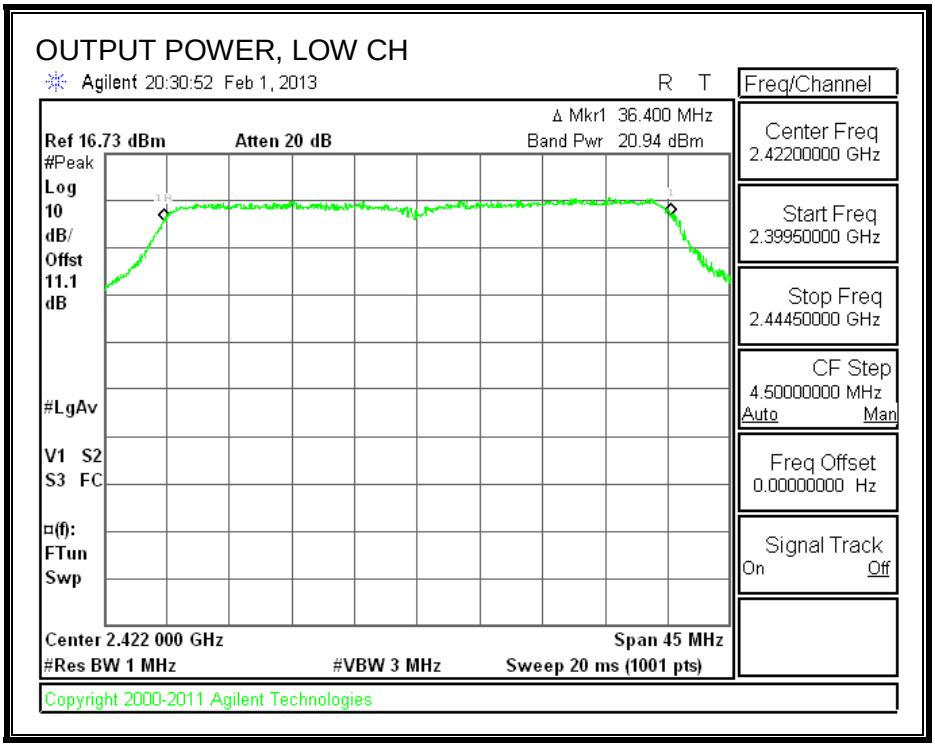
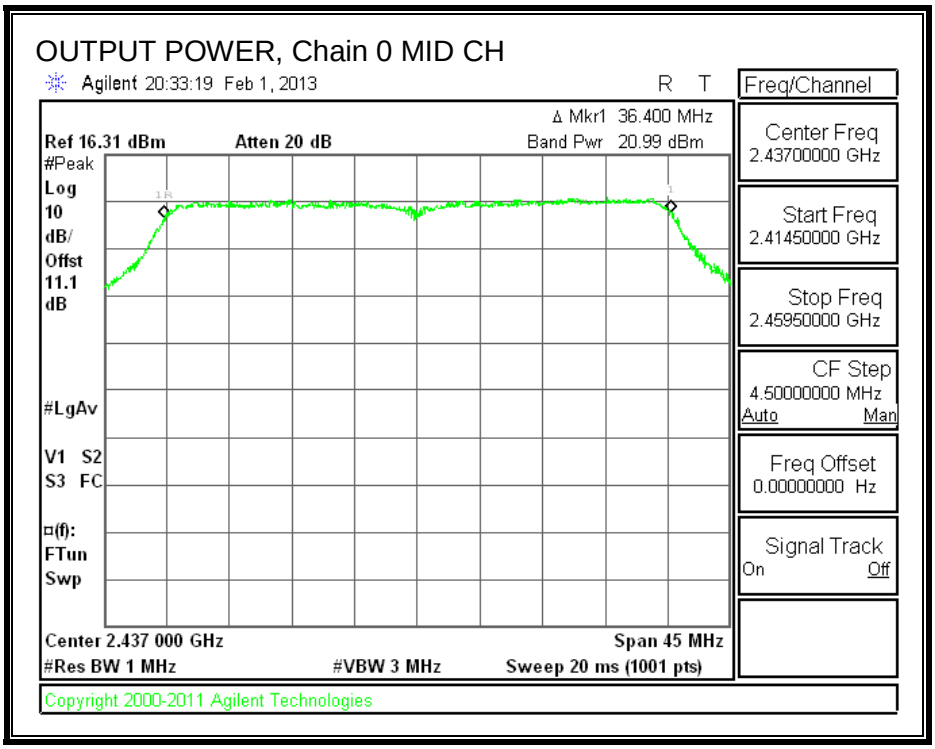
OUTPUT POWER





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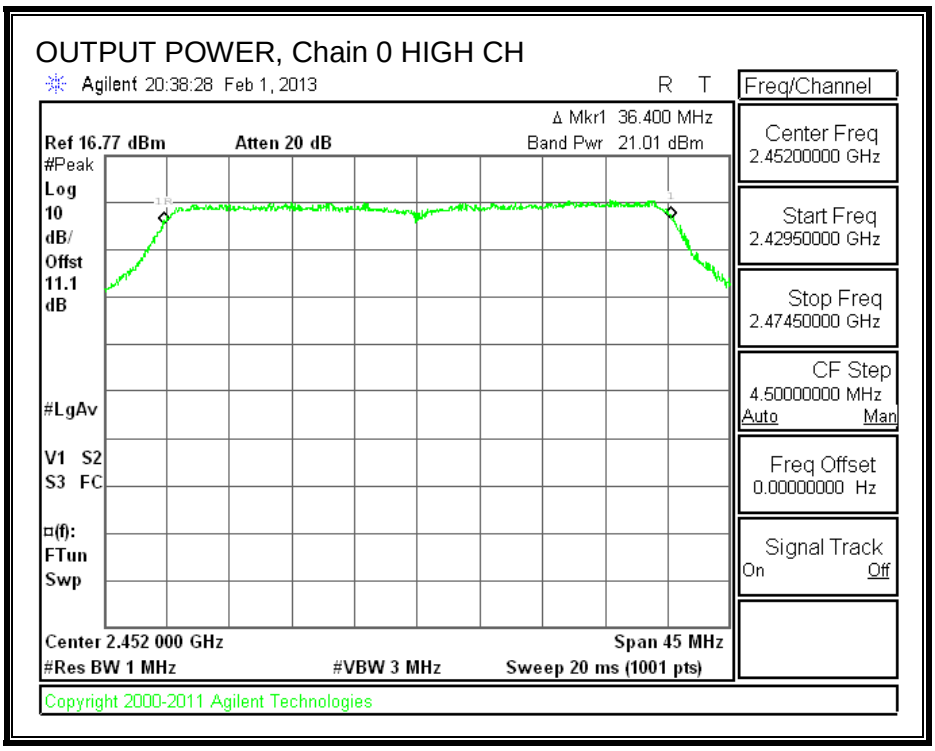

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8.4.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

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

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2422	-14.34	8.0	-22.3
Mid	2437	-15.00	8.0	-23.0
High	2452	-14.73	8.0	-22.7

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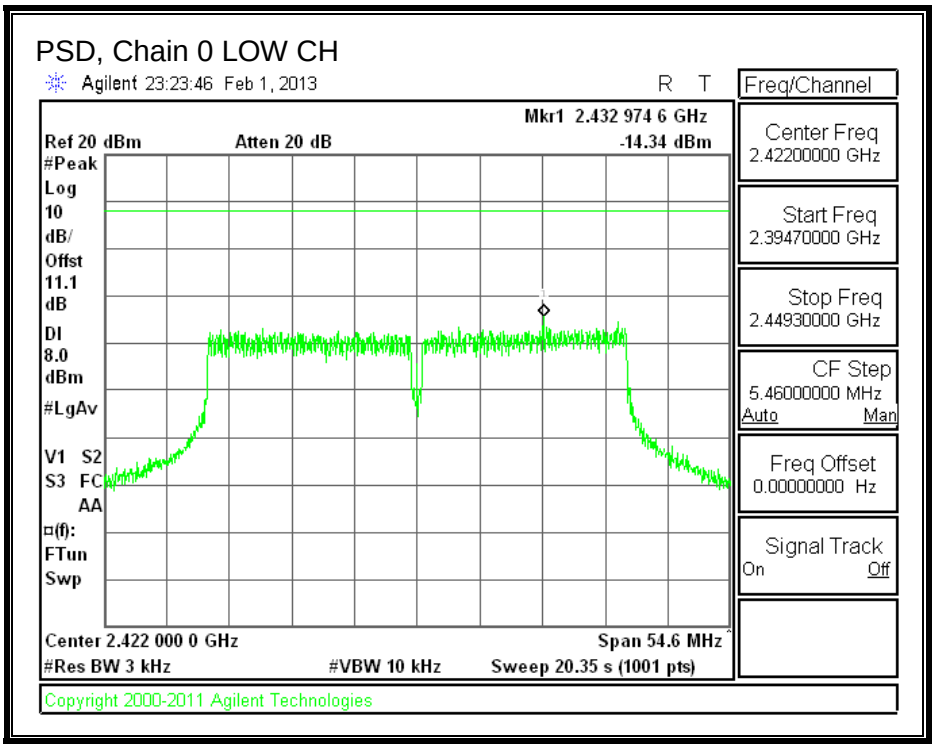
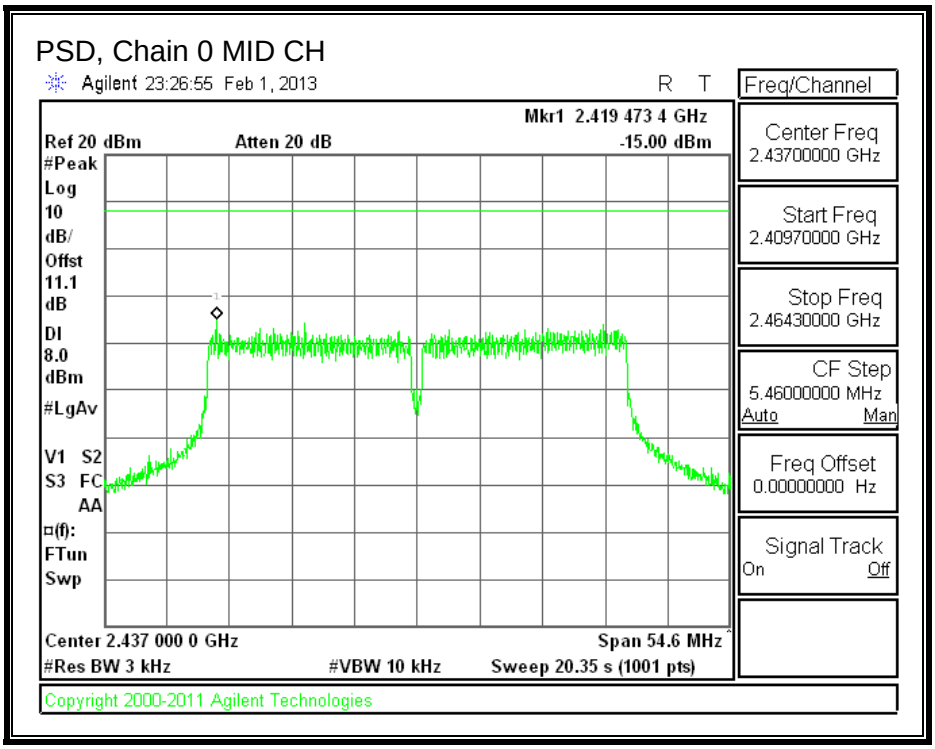
PSD, Chain 0





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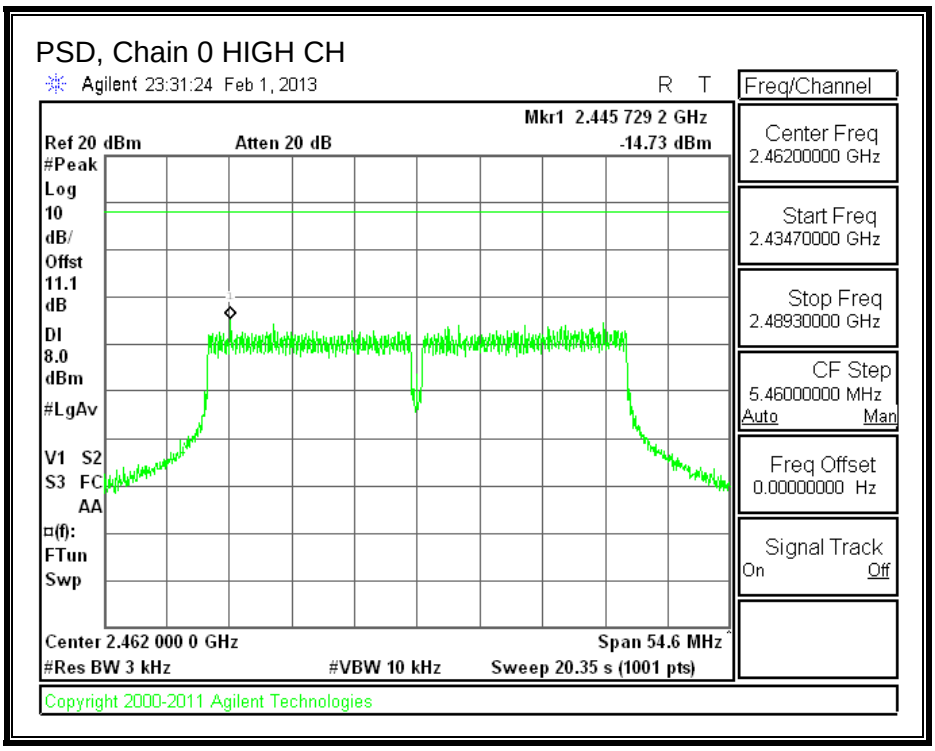
PSD, Chain 0 HIGH CH



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8.4.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

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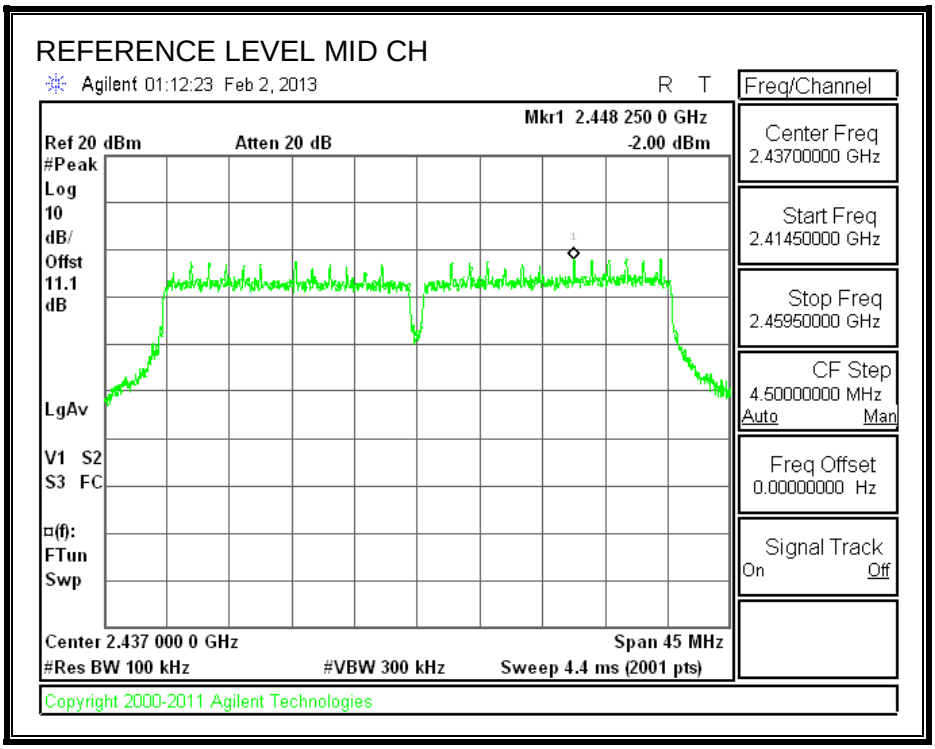
RESULTS

IN-BAND REFERENCE LEVEL



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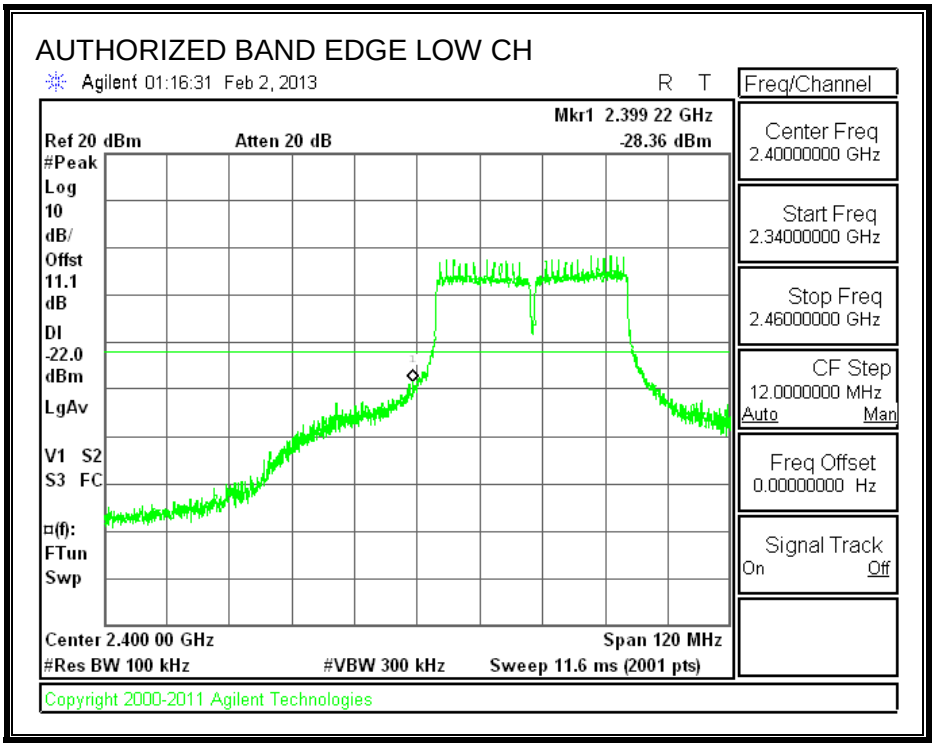
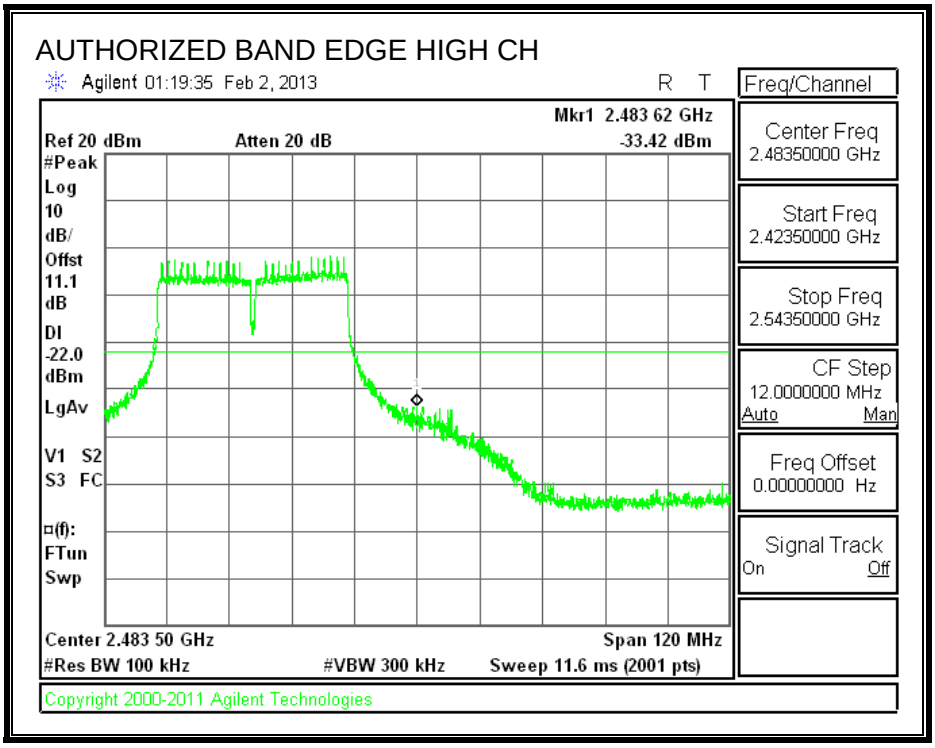
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



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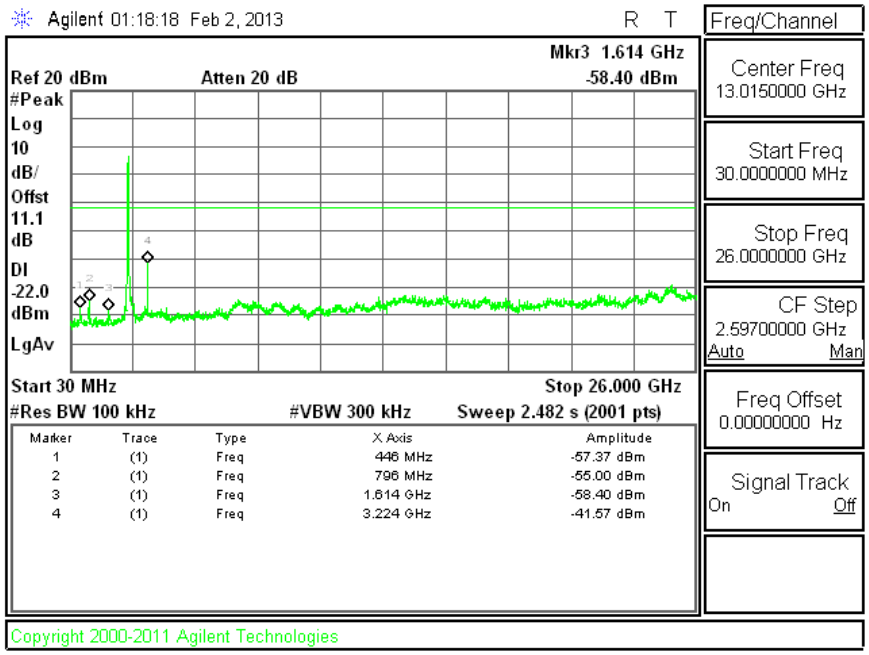
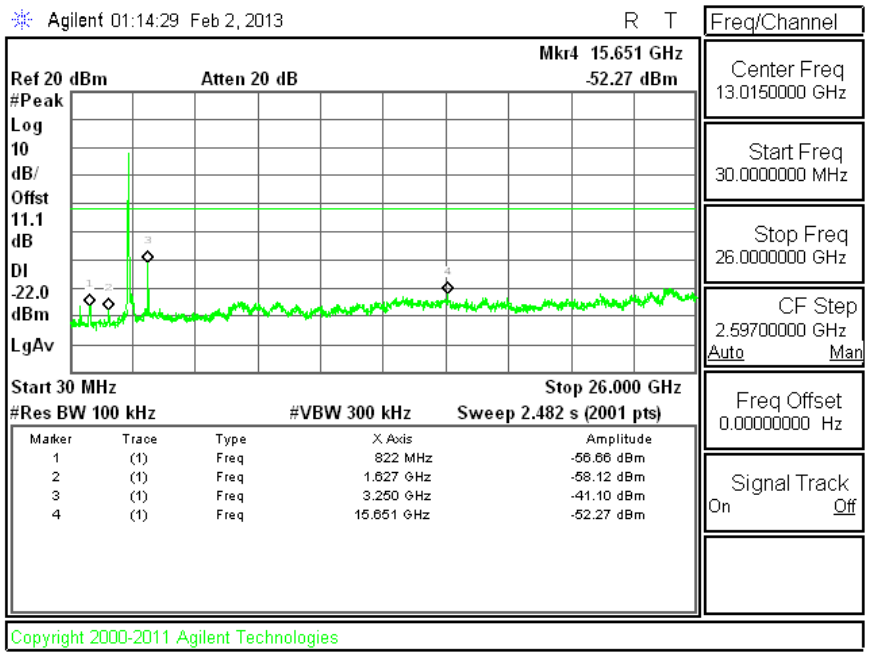
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



OUT OF BAND MID CH



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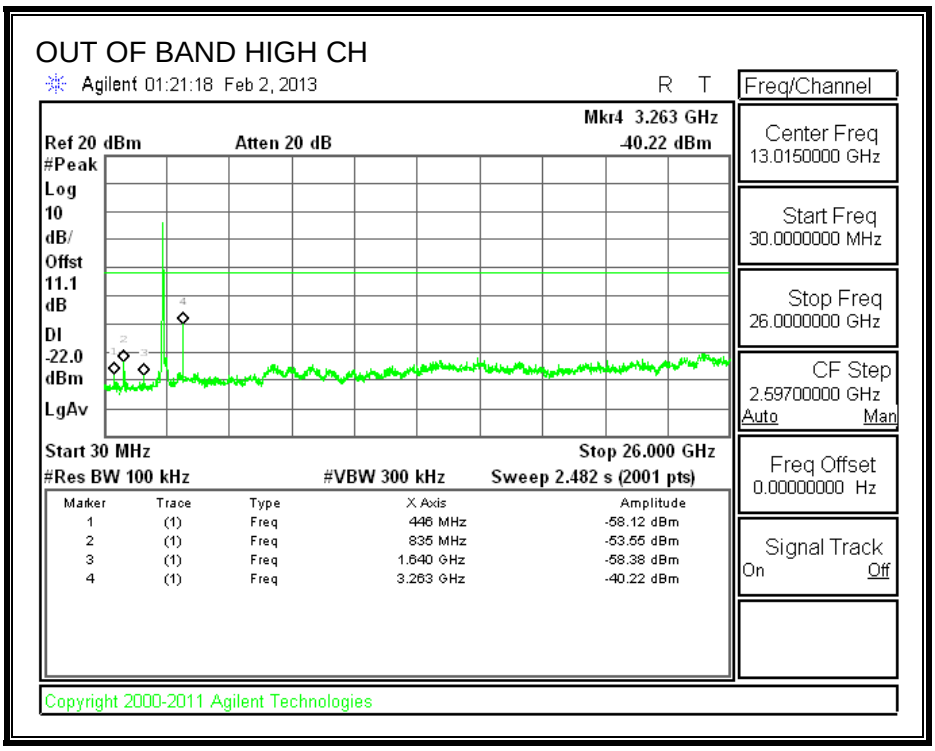

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9. RADIATED TEST RESULTS

9.1. 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.

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; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable 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.

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10. RADIATED TEST RESULTS

10.1. 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.

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; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable 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.

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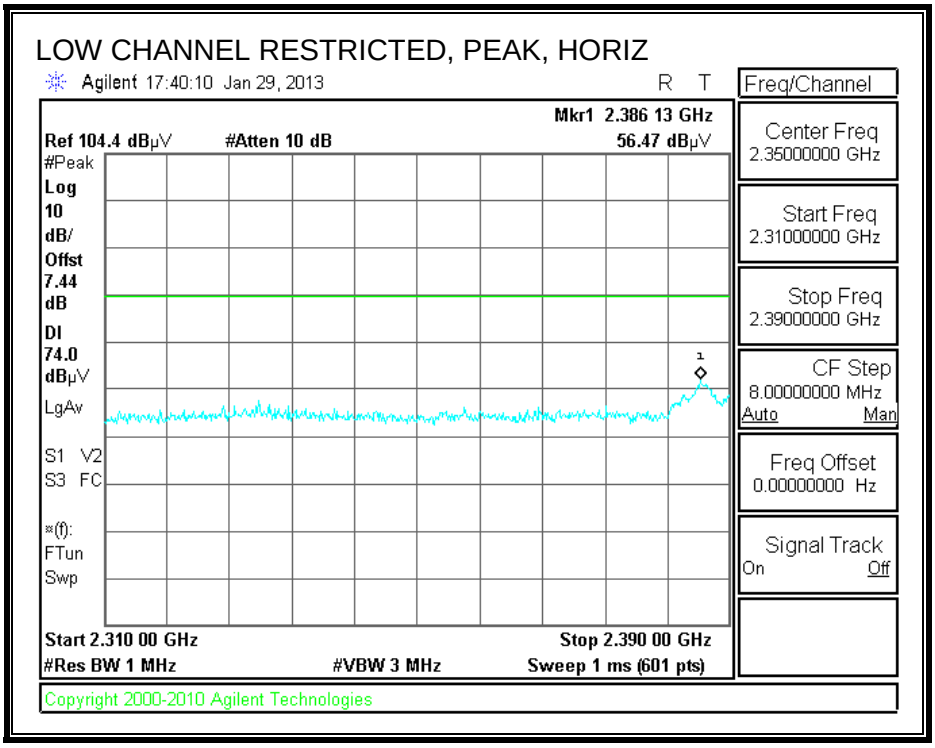
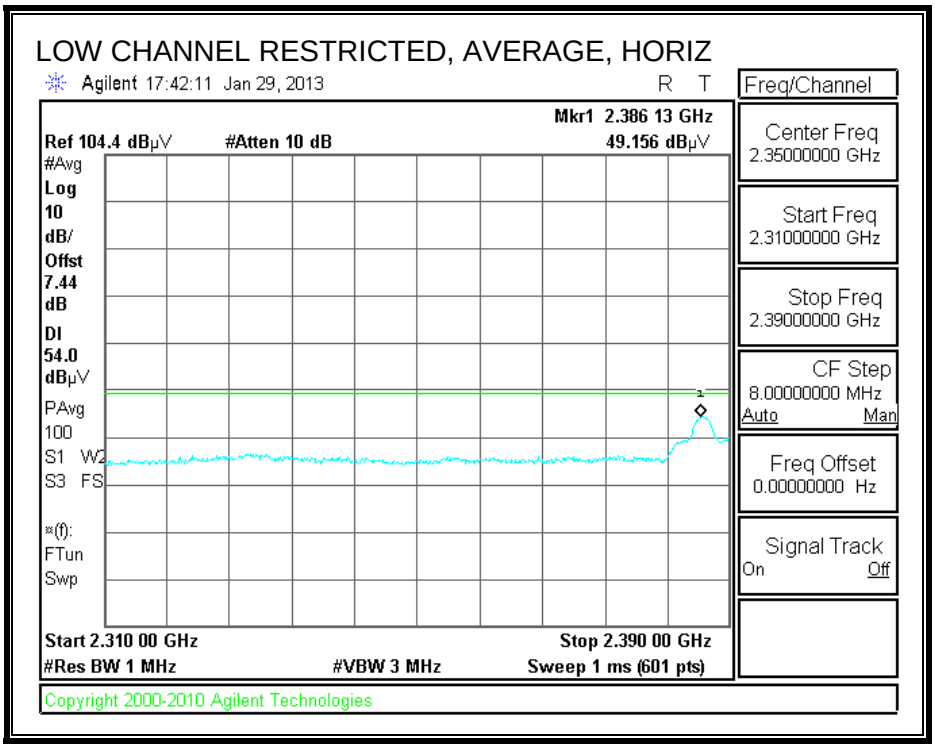
10.2. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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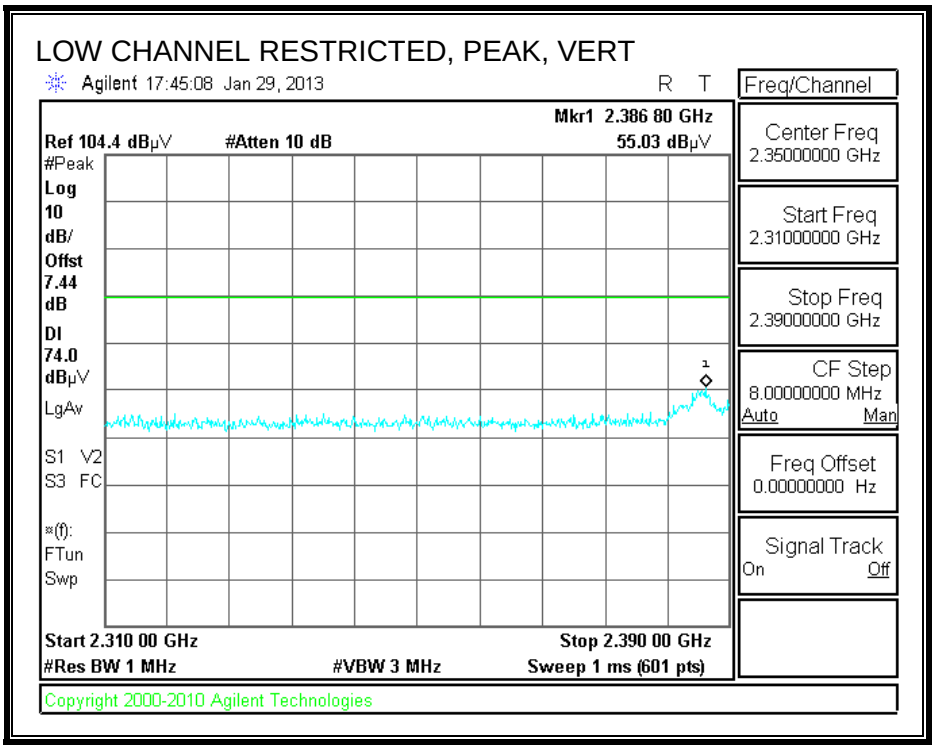
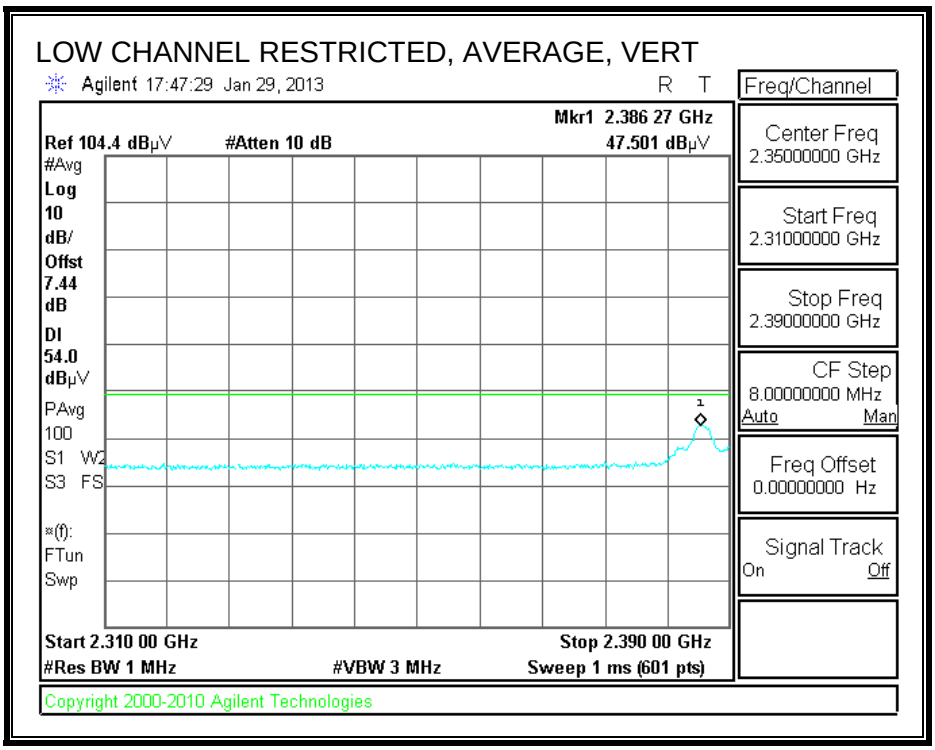
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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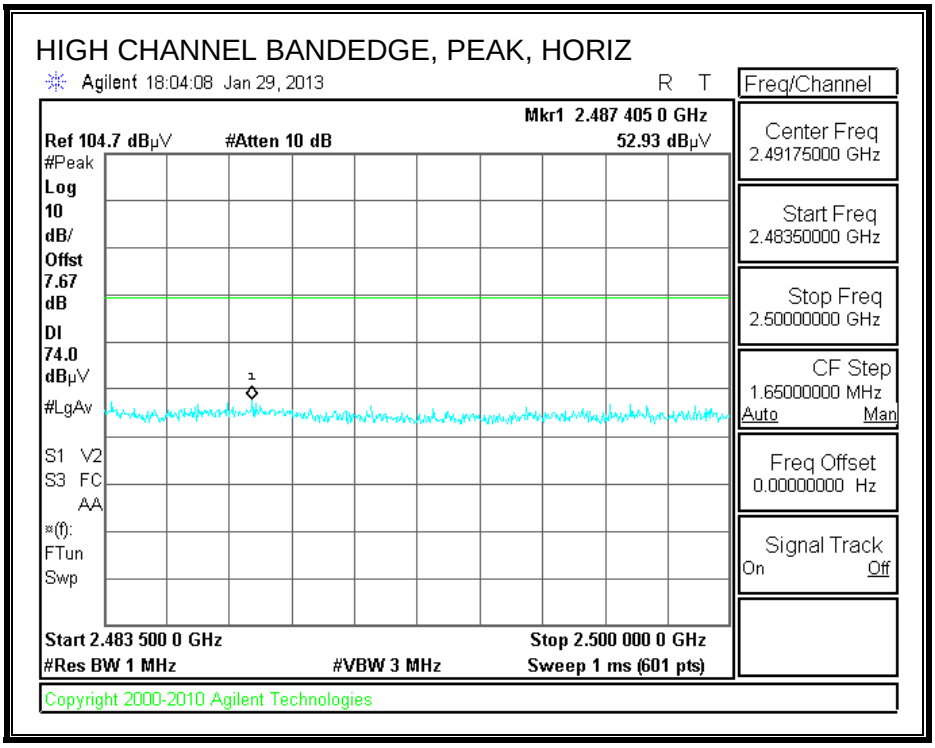
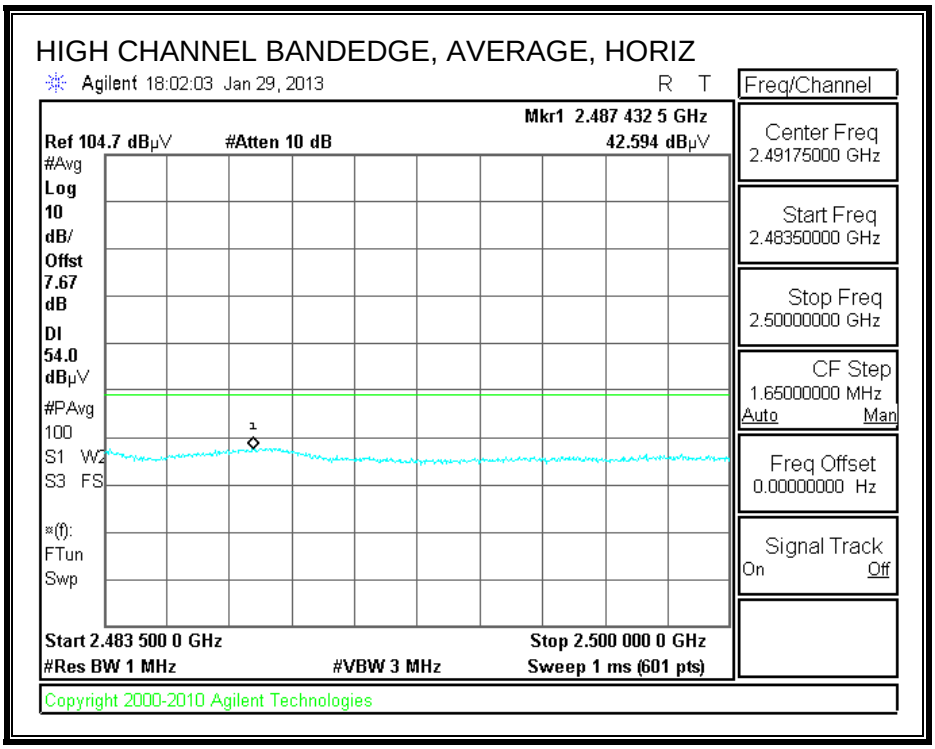
AUTHORIZED BANDEDGE (HIGH CHANNEL)





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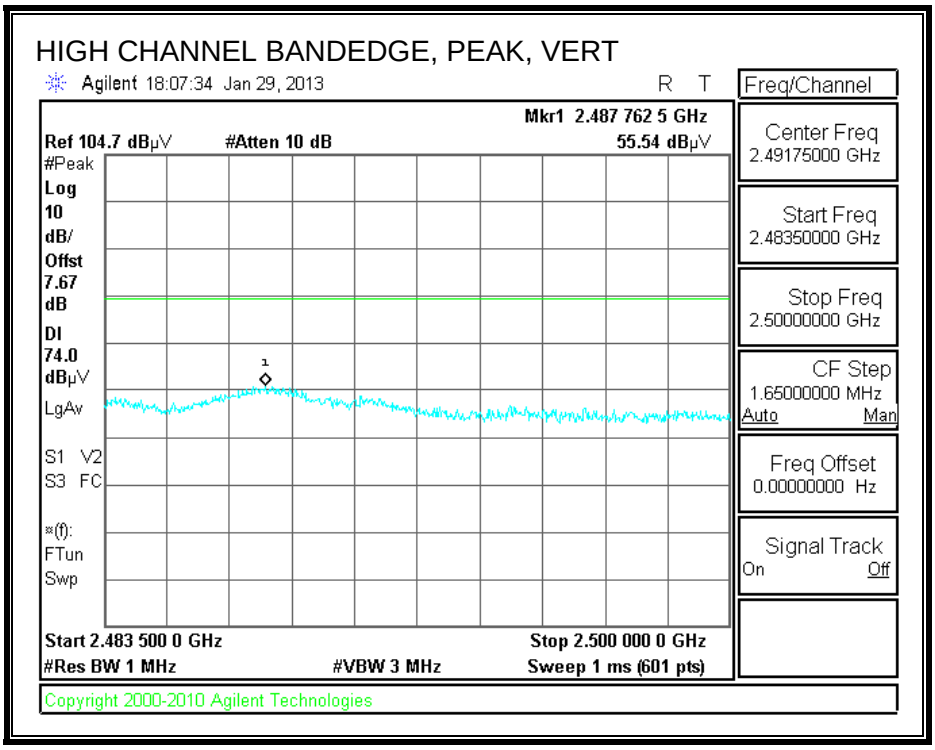

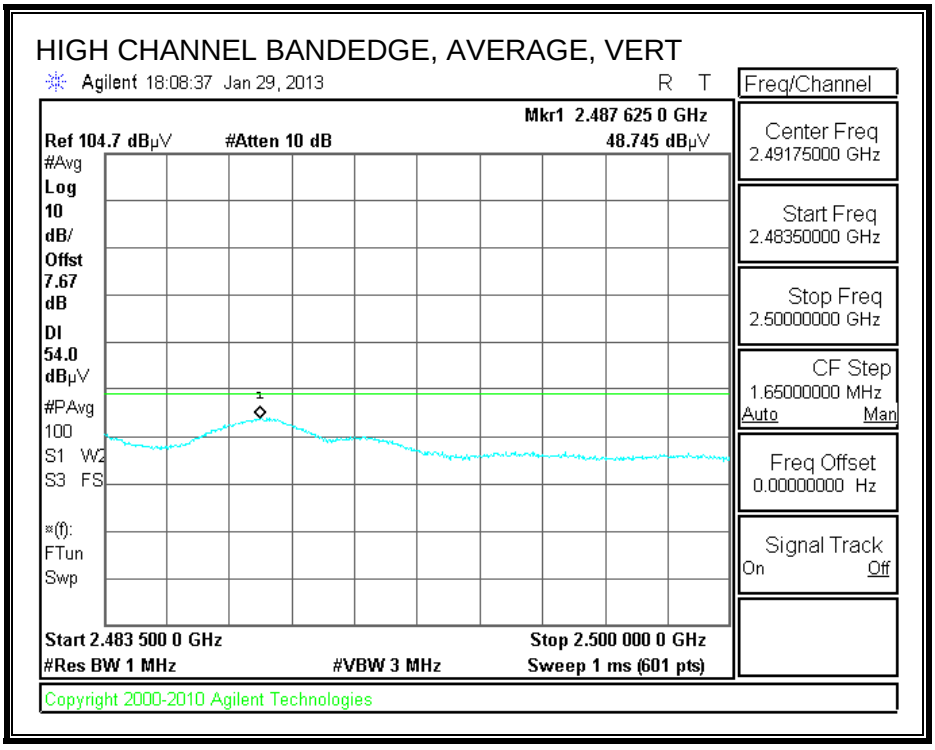

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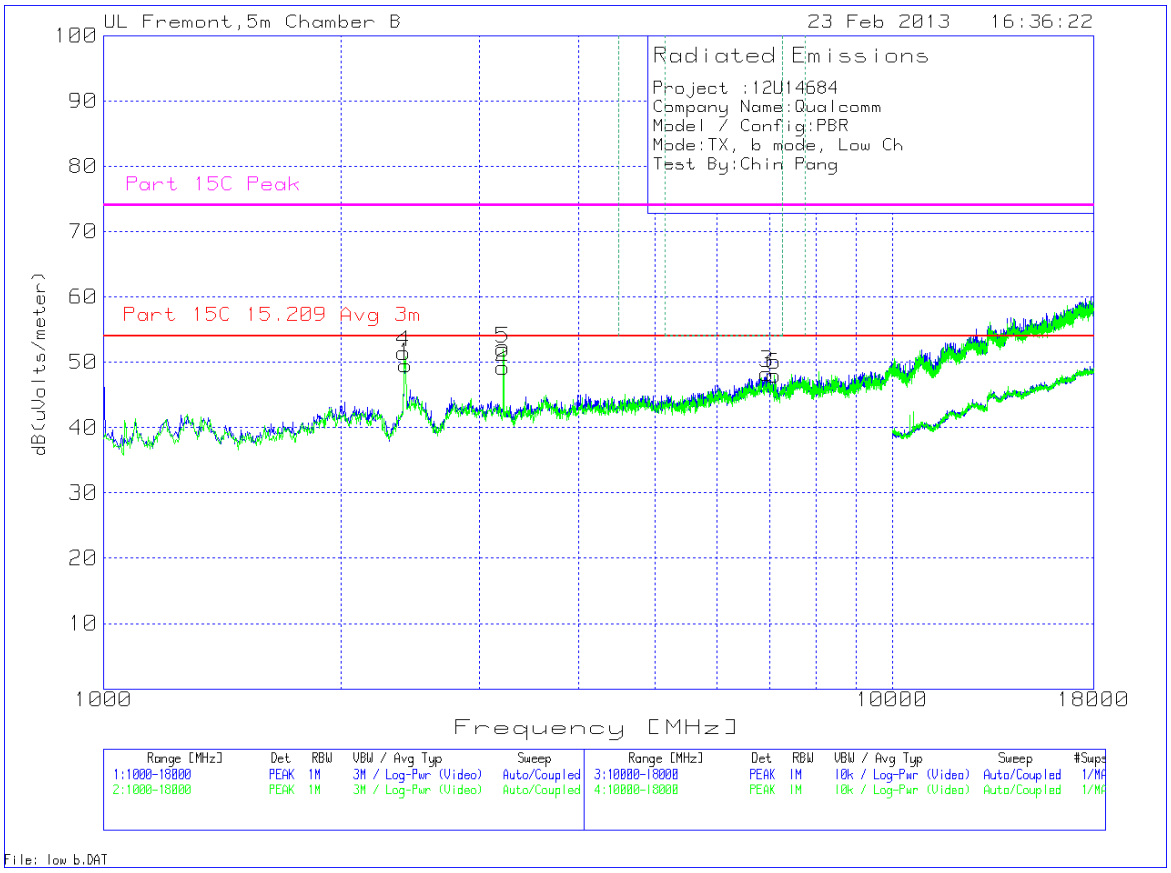
HARMONICS AND SPURIOUS EMISSIONS LOW CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading	Detector	ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin		Margin	Height [cm]	Polarity
1	2418.436	47.35	PK	32.1	-35	4.6	0.5	49.55	54	-4.45	74	-24.45	200	Horz
2	3212.591	45.47	PK	32.9	-35.1	5.5	0.5	49.27	54	-4.73	74	-24.73	200	Horz
3	6941.294	38.56	PK	35.6	-35	8.6	0.5	48.26	54	-5.74	74	-25.74	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading	Detector	ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2405.696	49.25	PK	32.1	-35	4.6	0.5	51.45	54	-2.55	74	-22.55	100	Vert
5	3212.591	48.18	PK	32.9	-35.1	5.5	0.5	51.98	54	-2.02	74	-22.02	100	Vert
6	7094.179	38.18	PK	35.6	-35	8.7	0.5	47.98	54	-6.02	74	-26.02	100	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3215.96	48.72	PK2	32.9	-35.1	5.5	0.5	52.52	54	-1.48	74	-21.48	78	141	Horz
3216.02	44.93	MAv1	32.9	-35.1	5.5	0.5	48.73	54	-5.27	-	-	78	141	Horz

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3215.87	48.71	PK2	32.9	-35.1	5.5	0.5	52.51	54	-1.49	74	-21.49	103	101	Vert
3216.1	45.06	MAv1	32.9	-35.1	5.5	0.5	48.86	54	-5.14	-	-	103	101	Vert

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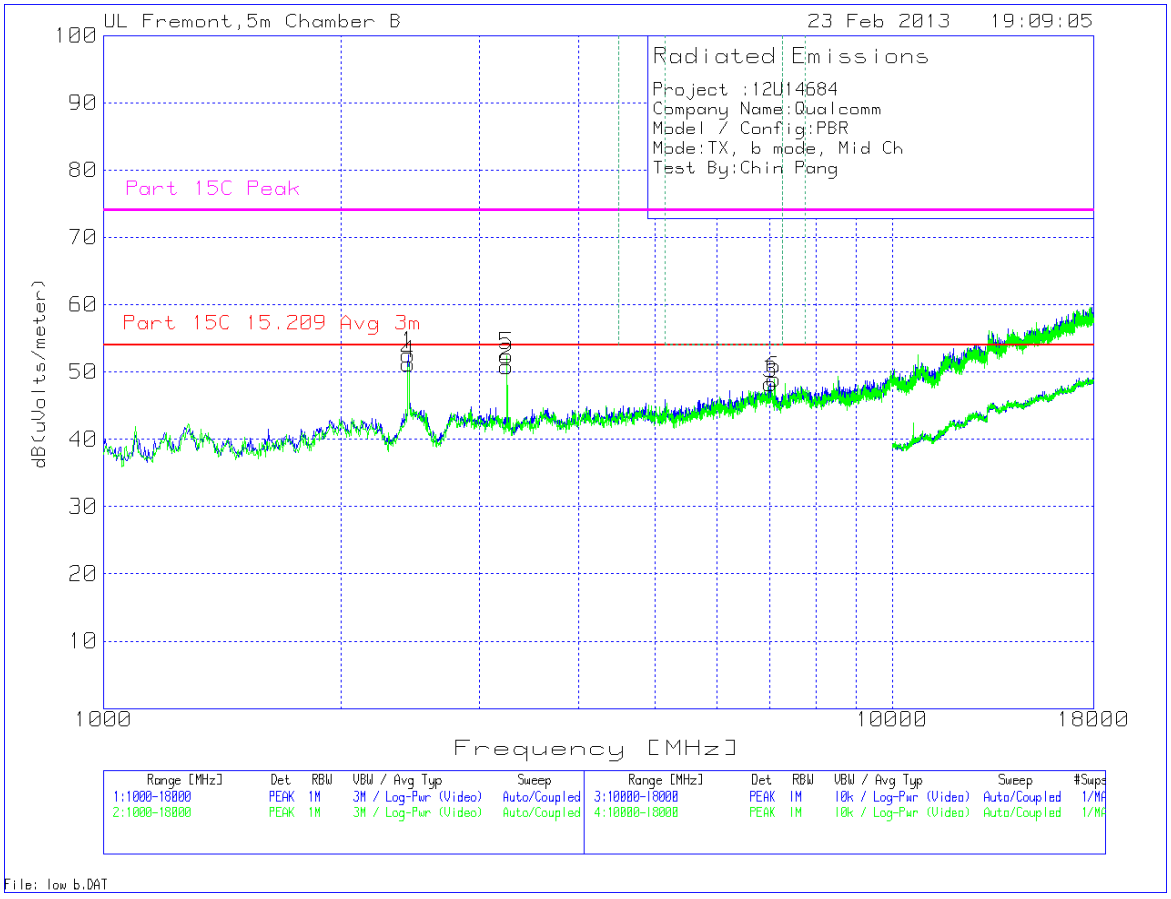
HARMONICS AND SPURIOUS EMISSIONS MID CH



Horizontal 1000 - 18000MHz														
Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2435.423	50.16	PK	32.2	-35	4.7	0.5	52.56	54	-1.44	74	-21.44	101	Horz
2	3246.565	47.03	PK	32.9	-35.1	5.5	0.5	50.83	54	-3.17	74	-23.17	101	Horz
3	7017.737	38.45	PK	35.6	-35	8.7	0.5	48.25	54	-5.75	74	-25.75	101	Horz

Vertical 1000 - 18000MHz														
Marker No.	Test Frequency MHz	Meter Reading	Detector	ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2435.423	48.81	PK	32.2	-35	4.7	0.5	51.21	54	-2.79	74	-22.79	100	Vert
5	3246.565	48.61	PK	32.9	-35.1	5.5	0.5	52.41	54	-1.59	74	-21.59	100	Vert
6	7094.179	39.1	PK	35.6	-35	8.7	0.5	48.9	54	-5.1	74	-25.1	100	Vert

AVG

Horizontal 1000 - 18000MHz														
Test Frequency MHz	Meter Reading	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3249.38	49.74	PK2	32.9	-35.1	5.5	0.5	53.54	54	-0.46	74	-20.46	76	108	Horz
3249.39	46.91	MAv1	32.9	-35.1	5.5	0.5	50.71	54	-3.29	-	-	76	108	Horz

Vertical 1000 - 18000MHz													
Test Frequency MHz	Meter Reading	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3249.2	48.96	PK2	32.9	-35.1	5.5	0.5	52.76	54	-1.24	74	-21.24	96	114	Vert
3249.45	46.05	MAv1	32.9	-35.1	5.5	0.5	49.85	54	-4.15	-	-	96	114	Vert

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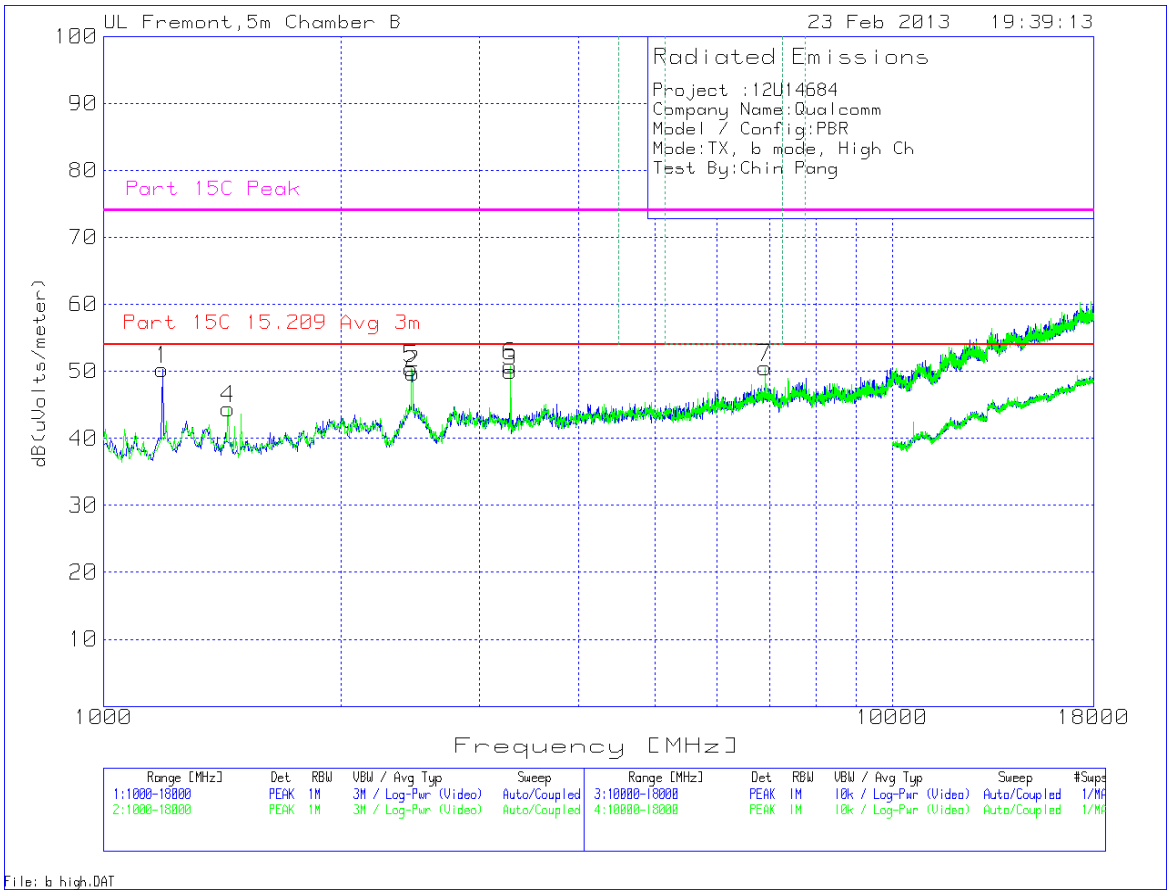
HARMONICS AND SPURIOUS EMISSIONS HIGH CH



Horizontal 1000 - 18000MHz														
Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	ETS Lindgren 3117	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	1186.86	53.11	PK	29	-35.7	3.4	0.5	50.31	54	-3.69	74	-23.69	200	Horz
2	2465.151	47.32	PK	32.2	-35	4.7	0.5	49.72	54	-4.28	74	-24.28	200	Horz
3	3280.54	46.17	PK	32.9	-35.1	5.5	0.5	49.97	54	-4.03	74	-24.03	100	Horz
Vertical 1000 - 18000MHz														
Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	ETS Lindgren 3117	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	1437.422	46.77	PK	28.9	-35.3	3.6	0.5	44.47	54	-9.53	74	-29.53	200	Vert
5	2456.658	48.05	PK	32.2	-35	4.7	0.5	50.45	54	-3.55	74	-23.55	200	Vert
6	3280.54	47.06	PK	32.9	-35.1	5.5	0.5	50.86	54	-3.14	74	-23.14	200	Vert
7	6907.32	40.85	PK	35.6	-35	8.6	0.5	50.55	54	-3.45	74	-23.45	200	Vert

AVG													
Horizontal 1000 - 18000MHz													
Test Frequency MHz	Meter Reading	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3282.86	47.75	PK2	32.9	-35.1	5.5	0.5	51.55	54	-2.45	74	-22.45	67	240	Horz
3282.72	45.01	MAv1	32.9	-35.1	5.5	0.5	48.81	54	-5.19	-	-	67	240	Horz

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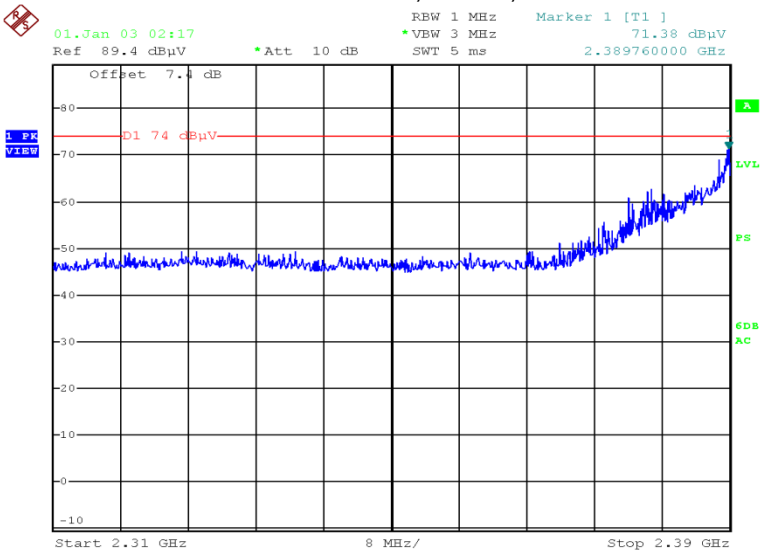
10.3. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

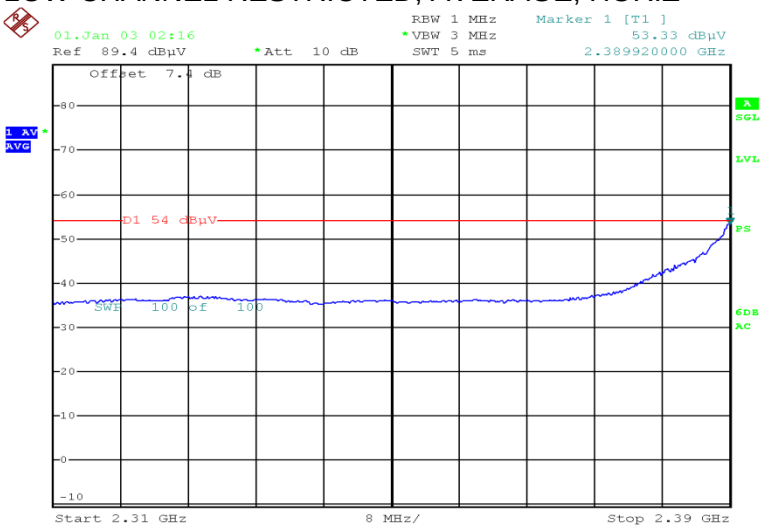
RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



Date: 1.JAN.2003 02:17:56

LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



Date: 1.JAN.2003 02:16:29

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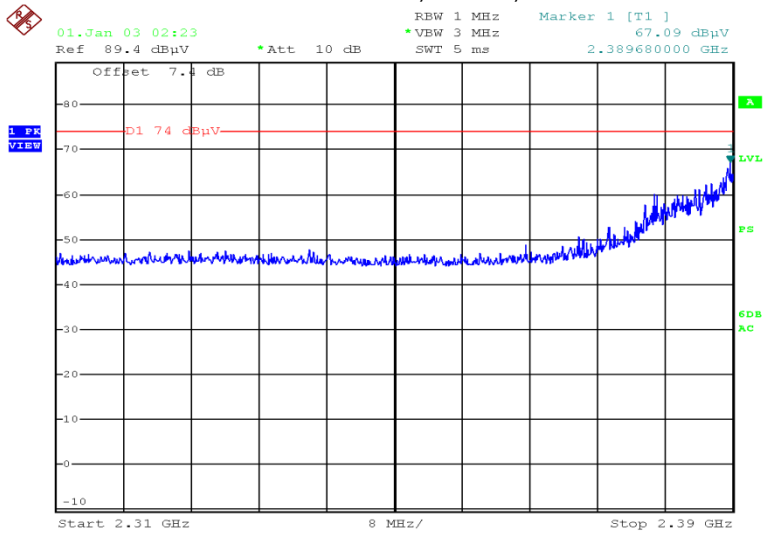
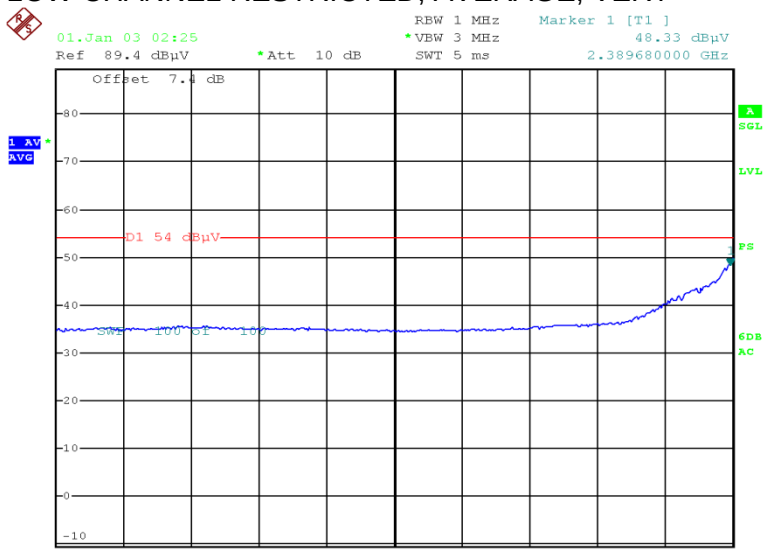
LOW CHANNEL RESTRICTED, PEAK, VERT



Date: 1.JAN.2003 02:23:09

LOW CHANNEL RESTRICTED, AVERAGE, VERT



Date: 1.JAN.2003 02:25:06

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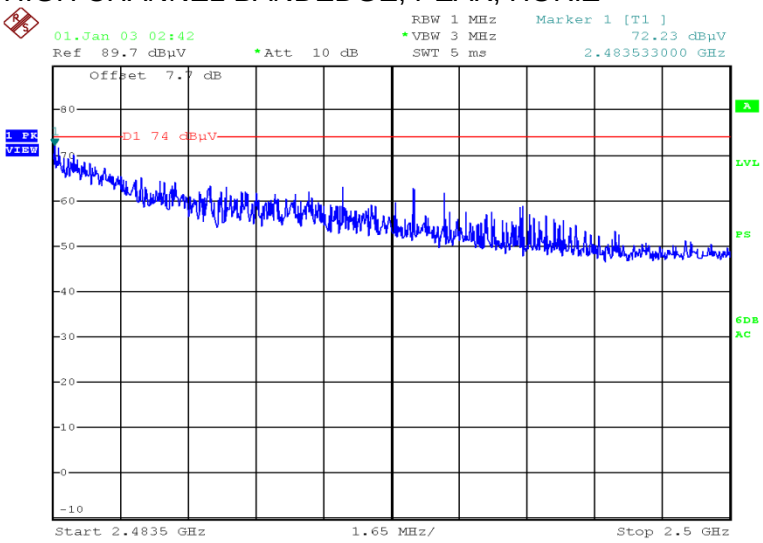
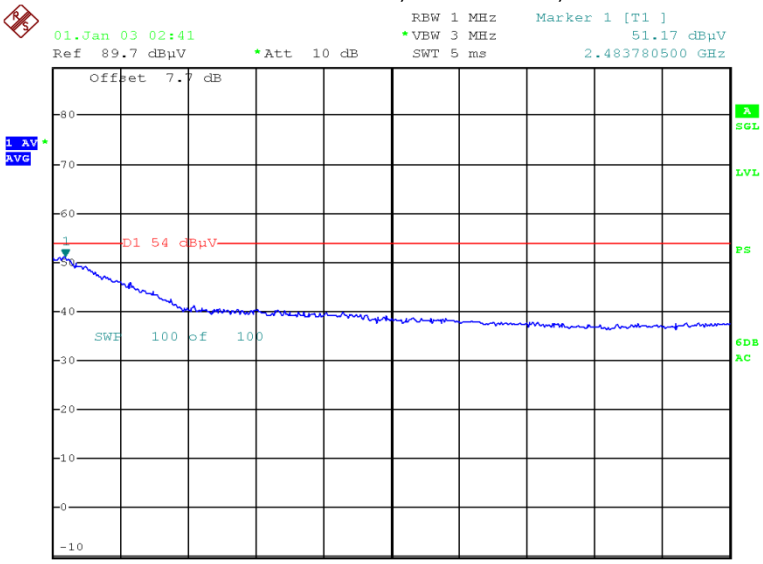
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



Date: 1.JAN.2003 02:42:55

HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



Date: 1.JAN.2003 02:41:23

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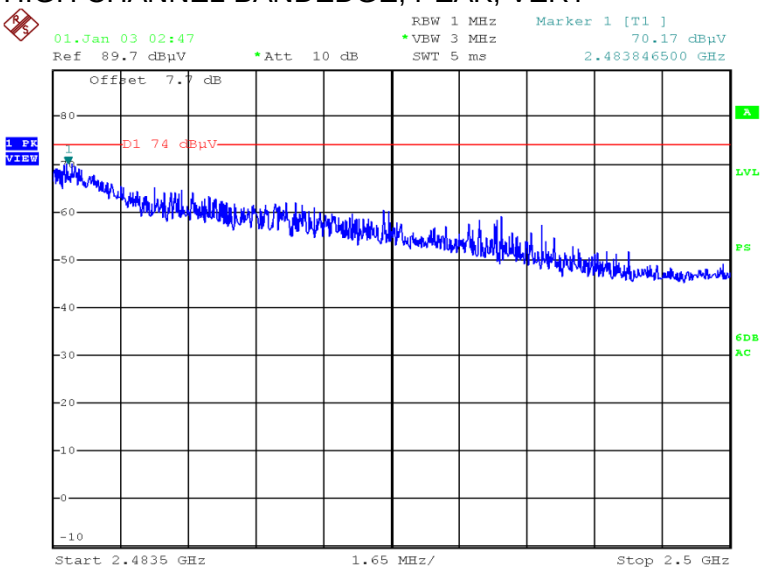
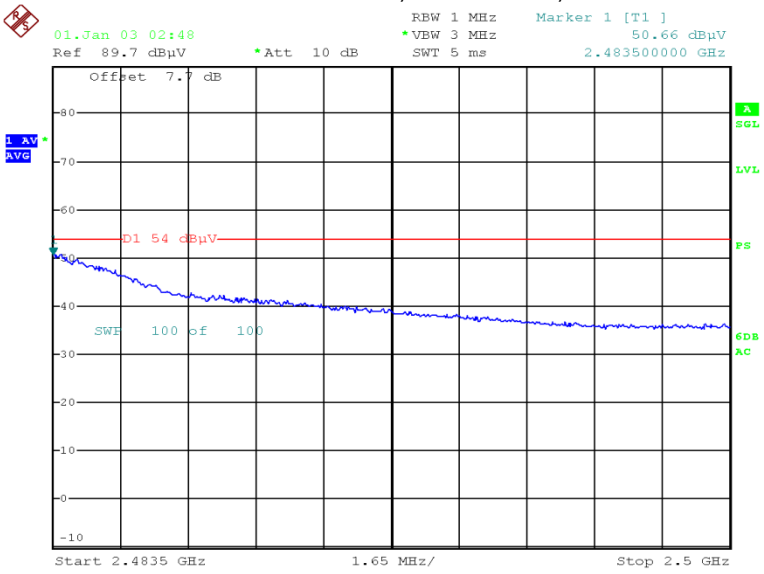
HIGH CHANNEL BANDEDGE, PEAK, VERT



Date: 1.JAN.2003 02:47:16

HIGH CHANNEL BANDEDGE, AVERAGE, VERT



Date: 1.JAN.2003 02:48:52

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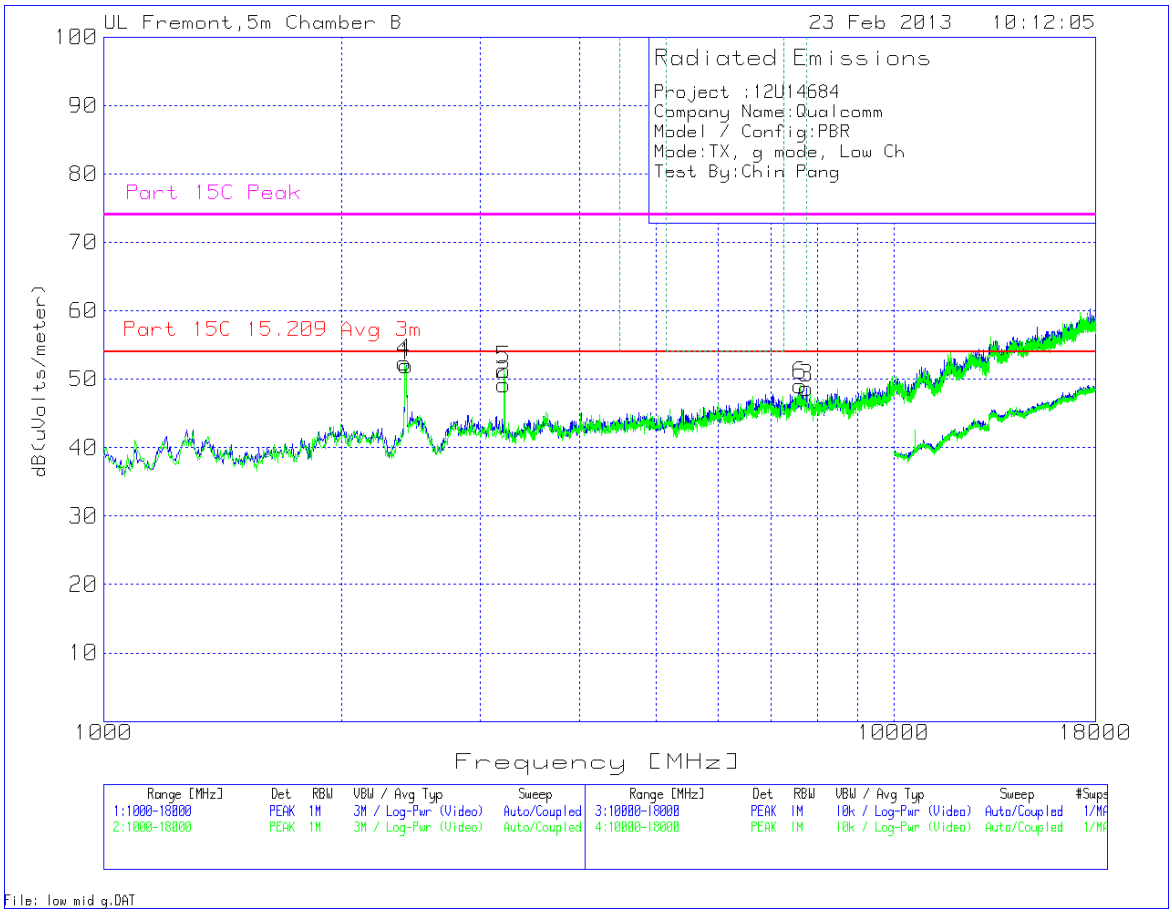
HARMONICS AND SPURIOUS EMISSIONS LOW CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	ETS Lindgren 3117 (dB)	Preamp (dB)	Cable Factor (dB)	BRF (dB)	Duty Cycle Corr (dB)	dB(uVolts/ meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2418.436	49.76	PK	32.1	-35	4.6	0.5	0	51.96	54	-2.04	74	-22.04	100	Horz
2	3212.591	45.42	PK	32.9	-35.1	5.5	0.5	0	49.22	54	-4.78	74	-24.78	100	Horz
3	7752.436	38.44	PK	35.8	-35.1	9.1	0.5	0	48.74	54	-5.26	74	-25.26	200	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	ETS Lindgren 3117 (dB)	Preamp (dB)	Cable Factor (dB)	BRF (dB)	Duty Cycle Corr (dB)	dB(uVolts/ meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2405.696	50.27	PK	32.1	-35	4.6	0.5	0	52.47	54	-1.53	74	-21.53	100	Vert
5	3212.591	47.55	PK	32.9	-35.1	5.5	0.5	0	51.35	54	-2.65	74	-22.65	100	Vert
6	7616.538	38.78	PK	35.8	-35.1	9.1	0.5	0	49.08	54	-4.92	74	-24.92	100	Vert

AVG

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolts/ meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3215.96	49.53	PK2	32.9	-35.1	5.5	0.5	0	53.33	54	-0.67	74	-20.67	64	103	Vert
3216.02	47.23	MAv1	32.9	-35.1	5.5	0.5	0.2	51.23	54	-2.77	-	-	64	103	Vert

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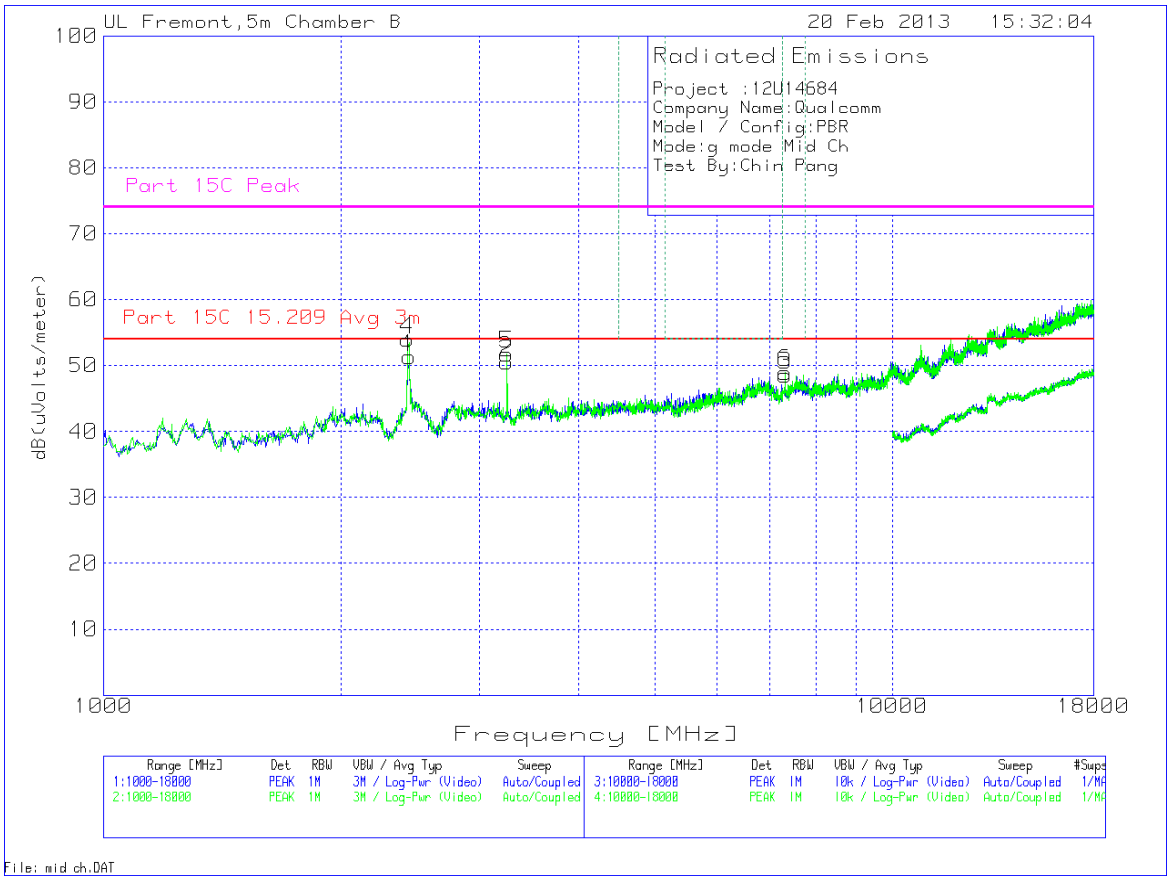
HARMONICS AND SPURIOUS EMISSIONS MID CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2435.423	50.16	PK	32.2	-35	4.7	0.5	52.56	54	-1.44	74	-21.44	101	Horz
2	3246.565	47.03	PK	32.9	-35.1	5.5	0.5	50.83	54	-3.17	74	-23.17	101	Horz
3	7017.737	38.45	PK	35.6	-35	8.7	0.5	48.25	54	-5.75	74	-25.75	101	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading	Detector	ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2435.423	48.81	PK	32.2	-35	4.7	0.5	51.21	54	-2.79	74	-22.79	100	Vert
5	3246.565	48.61	PK	32.9	-35.1	5.5	0.5	52.41	54	-1.59	74	-21.59	100	Vert
6	7094.179	39.1	PK	35.6	-35	8.7	0.5	48.9	54	-5.1	74	-25.1	100	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3249.38	49.74	PK2	32.9	-35.1	5.5	0.5	53.54	54	-0.46	74	-20.46	76	108	Horz
3249.39	46.91	MAv1	32.9	-35.1	5.5	0.5	50.71	54	-3.29	-	-	76	108	Horz

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3249.2	48.96	PK2	32.9	-35.1	5.5	0.5	52.76	54	-1.24	74	-21.24	96	114	Vert
3249.45	46.05	MAv1	32.9	-35.1	5.5	0.5	49.85	54	-4.15	-	-	96	114	Vert

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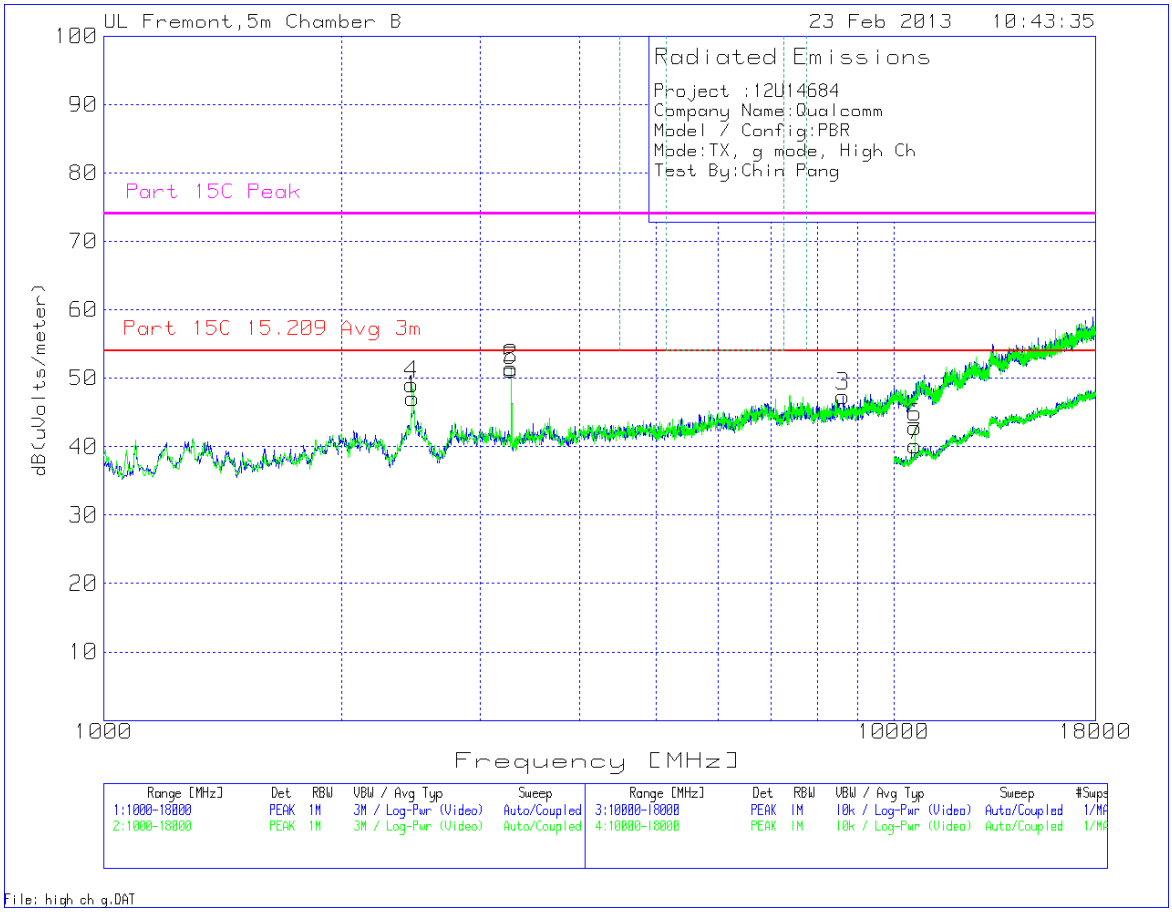
HARMONICS AND SPURIOUS EMISSIONS HIGH CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2460.904	44.64	PK	32.2	-35	4.7	0.5	0	47.04	54	-6.96	74	-26.96	200	Horz
2	3280.54	47.71	PK	32.9	-35.1	5.5	0.5	0	51.51	54	-2.49	74	-22.49	100	Horz
3	8635.773	36.59	PK	35.8	-35.2	9.7	0.5	0	47.39	54	-6.61	74	-26.61	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2456.658	46.66	PK	32.2	-35	4.7	0.5	0	49.06	54	-4.94	74	-24.94	200	Vert
5	3280.54	47.36	PK	32.9	-35.1	5.5	0.5	0	51.16	54	-2.84	74	-22.84	100	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3282.84	48.68	PK2	32.9	-35.1	5.5	0.5	0	52.48	54	-1.52	74	-21.52	84	239	Horz
3282.68	45.96	MAv1	32.9	-35.1	5.5	0.5	0.2	49.96	54	-4.04	-	-	84	239	Horz

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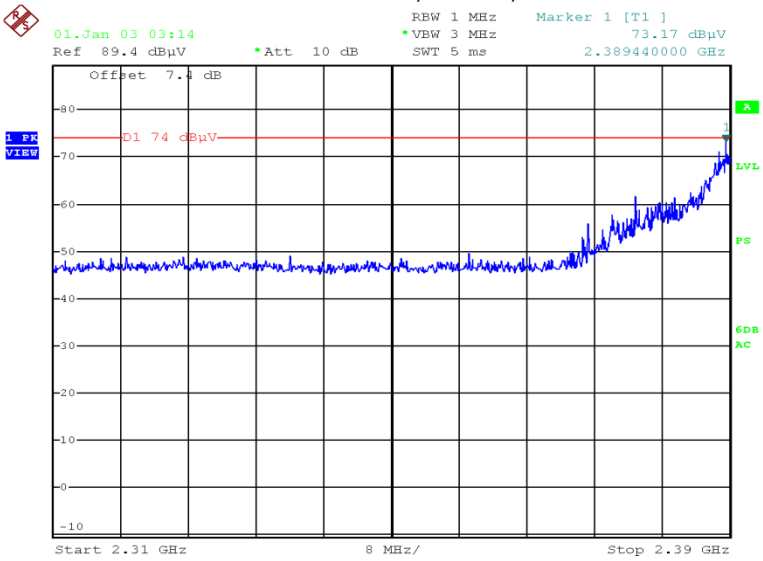
10.4. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

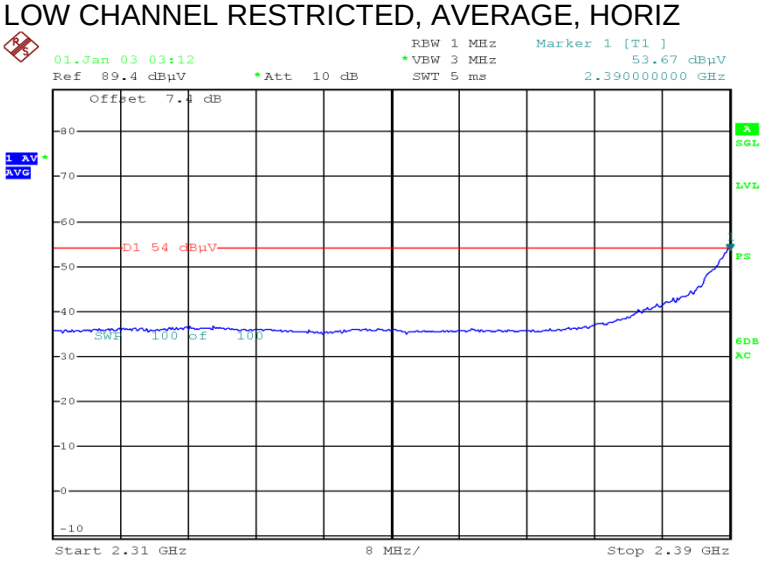
RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



Date: 1.JAN.2003 03:14:27

LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



Date: 1.JAN.2003 03:12:45

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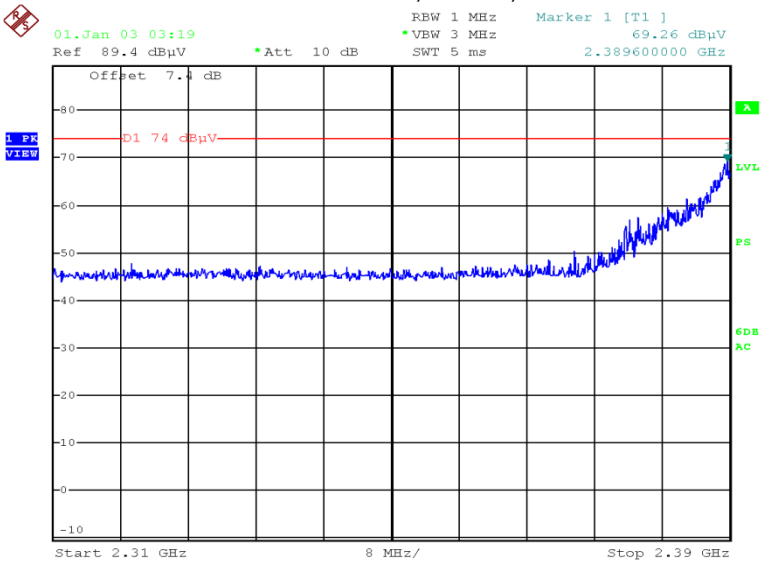
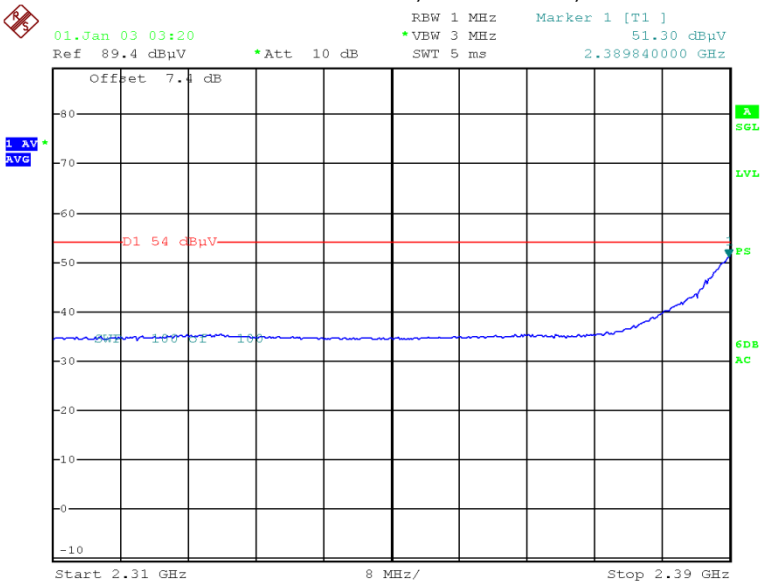
LOW CHANNEL RESTRICTED, PEAK, VERT



Date: 1.JAN.2003 03:19:35

LOW CHANNEL RESTRICTED, AVERAGE, VERT



Date: 1.JAN.2003 03:20:36

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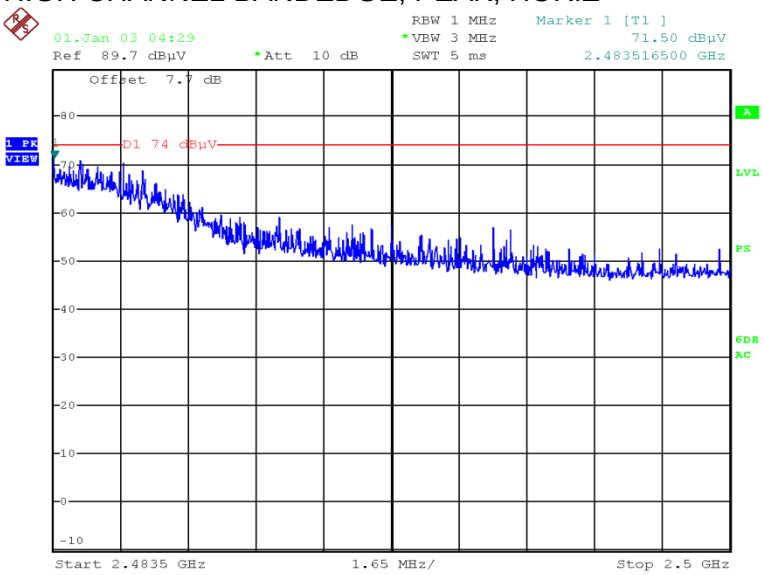
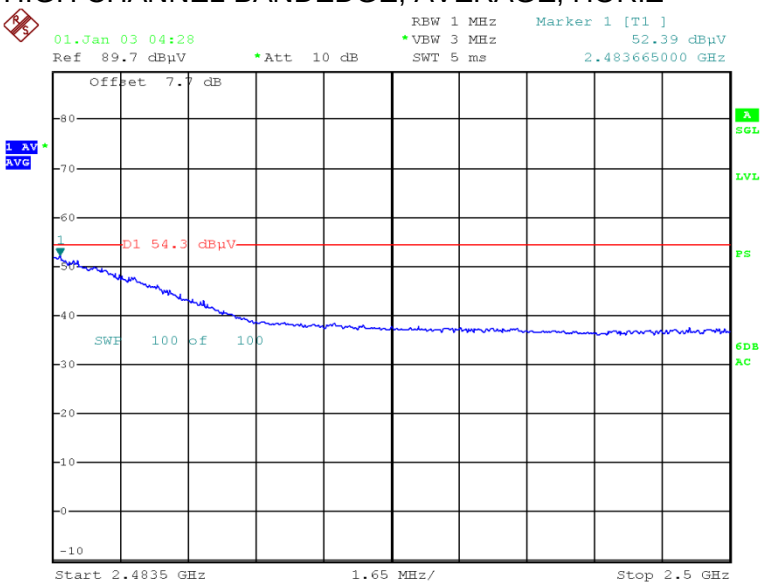
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



Date: 1.JAN.2003 04:29:44

HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



Date: 1.JAN.2003 04:28:22

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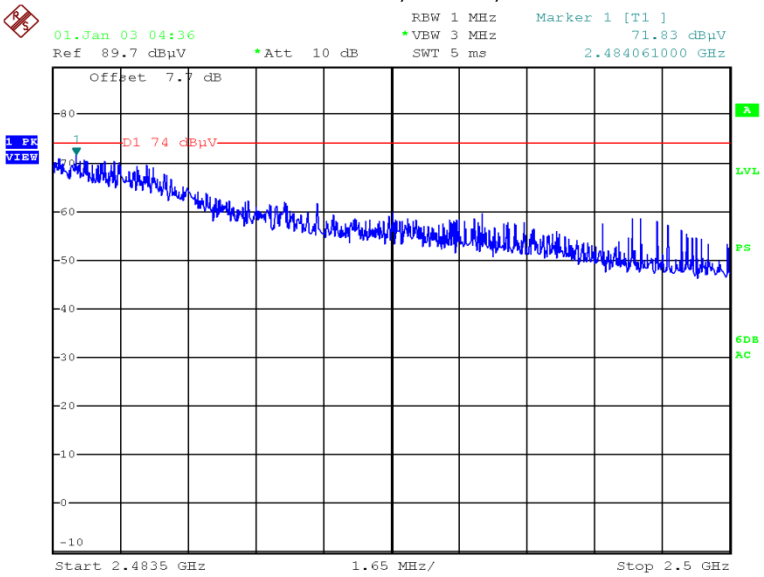
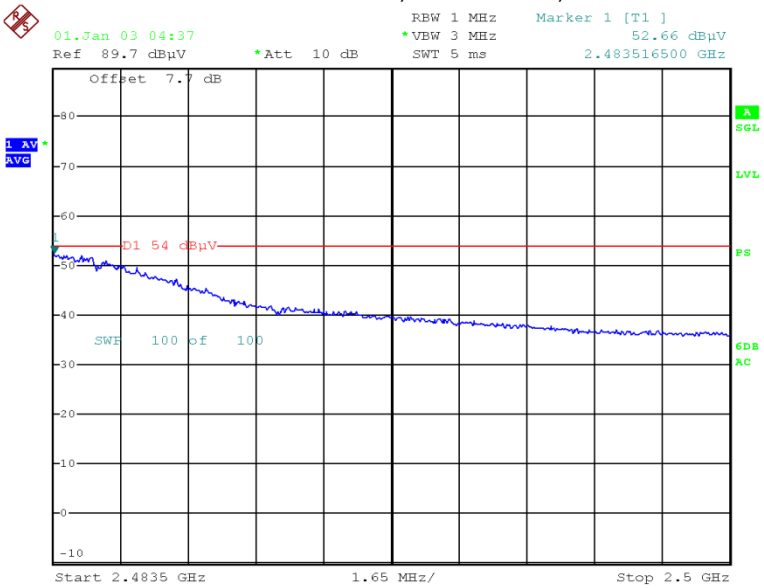
HIGH CHANNEL BANDEDGE, PEAK, VERT



Date: 1.JAN.2003 04:36:07

HIGH CHANNEL BANDEDGE, AVERAGE, VERT



Date: 1.JAN.2003 04:37:28

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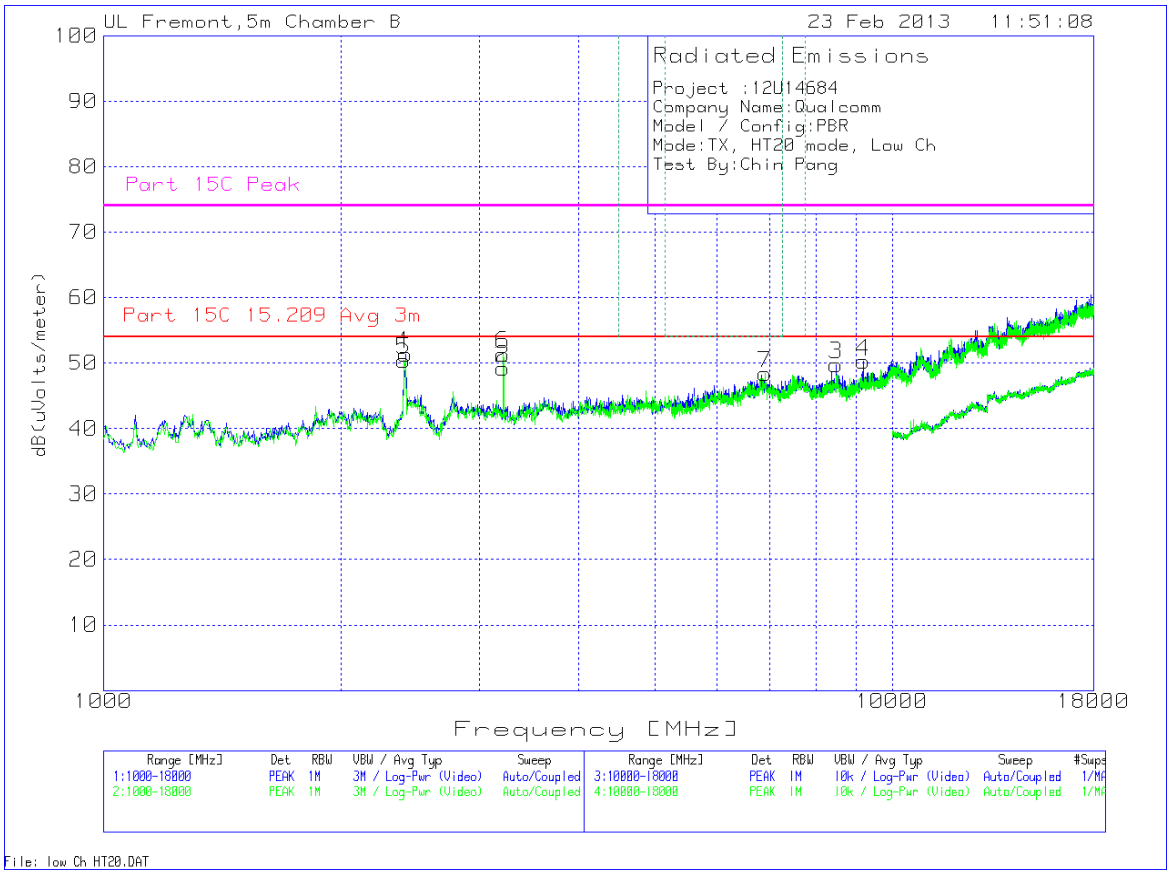
HARMONICS AND SPURIOUS EMISSIONS LOW CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2418.436	49.17	PK	32.1	-35	4.6	0.5	0	51.37	54	-2.63	74	-22.63	100	Horz
2	3212.591	45.46	PK	32.9	-35.1	5.5	0.5	0	49.26	54	-4.74	74	-24.74	200	Horz
3	8491.381	39.07	PK	35.8	-35.2	9.6	0.5	0	49.77	54	-4.23	74	-24.23	200	Horz
4	9183.612	38.73	PK	36.2	-35.2	10	0.5	0	50.23	54	-3.77	74	-23.77	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
5	2405.696	48.24	PK	32.1	-35	4.6	0.5	0	50.44	54	-3.56	74	-23.56	100	Vert
6	3212.591	47.6	PK	32.9	-35.1	5.5	0.5	0	51.4	54	-2.6	74	-22.6	100	Vert
7	6907.32	38.68	PK	35.6	-35	8.6	0.5	0	48.38	54	-5.62	74	-25.62	100	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3216.01	47.52	PK2	32.9	-35.1	5.5	0.5	0	51.32	54	-2.68	74	-22.68	51	117	Horz
3216	44.43	MAv1	32.9	-35.1	5.5	0.5	0.2	48.43	54	-5.57	-	-	51	117	Horz

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3215.97	49.92	PK2	32.9	-35.1	5.5	0.5	0	53.72	54	-0.28	74	-20.28	68	106	Vert
3216	47.61	MAv1	32.9	-35.1	5.5	0.5	0.2	51.61	54	-2.39	-	-	68	106	Vert

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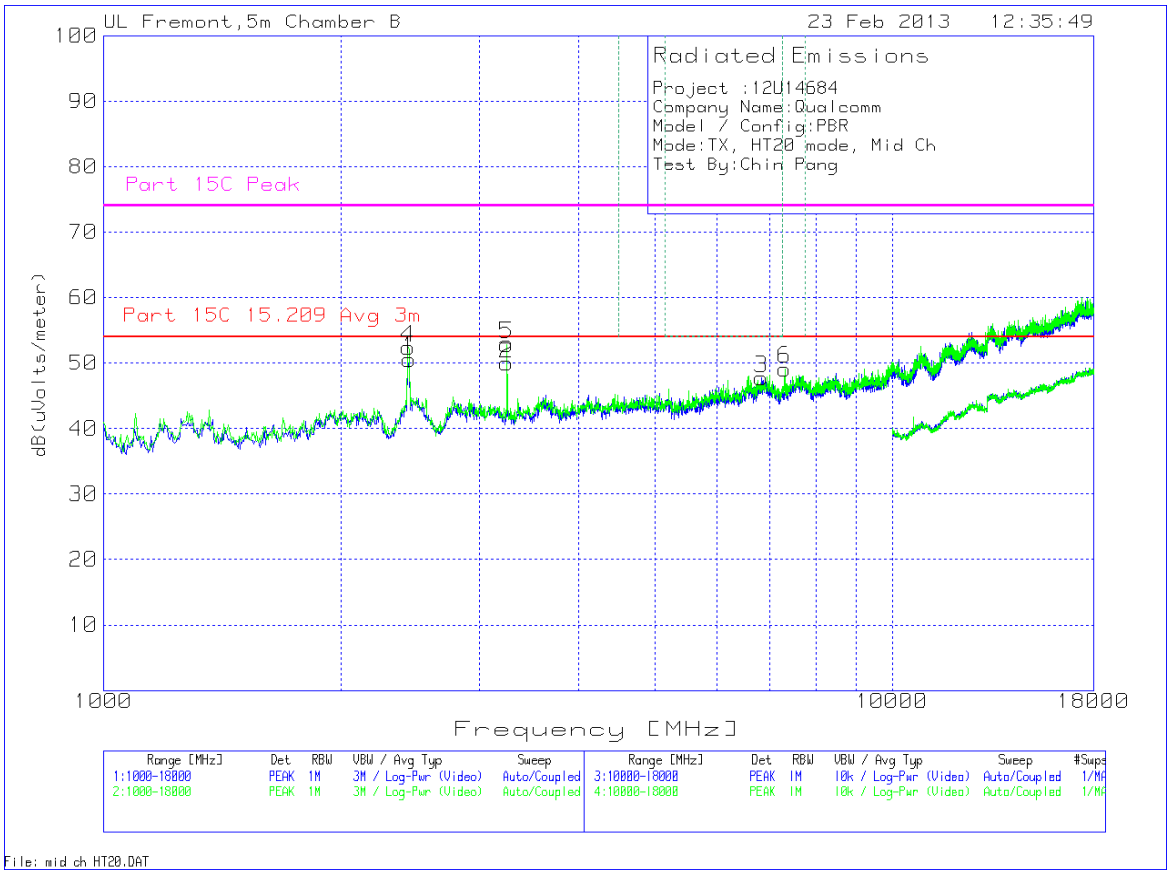
HARMONICS AND SPURIOUS EMISSIONS MID CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2439.67	48.21	PK	32.2	-35	4.7	0.5	0	50.61	54	-3.39	74	-23.39	100	Horz
2	3246.565	46.16	PK	32.9	-35.1	5.5	0.5	0	49.96	54	-4.04	74	-24.04	100	Horz
3	6835.124	38	PK	35.6	-35	8.6	0.5	0	47.7	54	-6.3	74	-26.3	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2433.3	49.96	PK	32.2	-35	4.7	0.5	0	52.36	54	-1.64	74	-21.64	200	Vert
5	3246.565	48.99	PK	32.9	-35.1	5.5	0.5	0	52.79	54	-1.21	74	-21.21	100	Vert
6	7306.52	39.14	PK	35.6	-35	8.9	0.5	0	49.14	54	-4.86	74	-24.86	100	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3249.23	48.15	PK2	32.9	-35.1	5.5	0.5	0	51.95	54	-2.05	74	-22.05	69	100	Horz
3249.33	44.78	MAv1	32.9	-35.1	5.5	0.5	0.2	48.78	54	-5.22	-	-	69	100	Horz

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3249.43	49.12	PK2	32.9	-35.1	5.5	0.5	0	52.92	54	-1.08	74	-21.08	28	100	Vert
3249.38	46.55	MAv1	32.9	-35.1	5.5	0.5	0.2	50.55	54	-3.45	-	-	28	100	Vert

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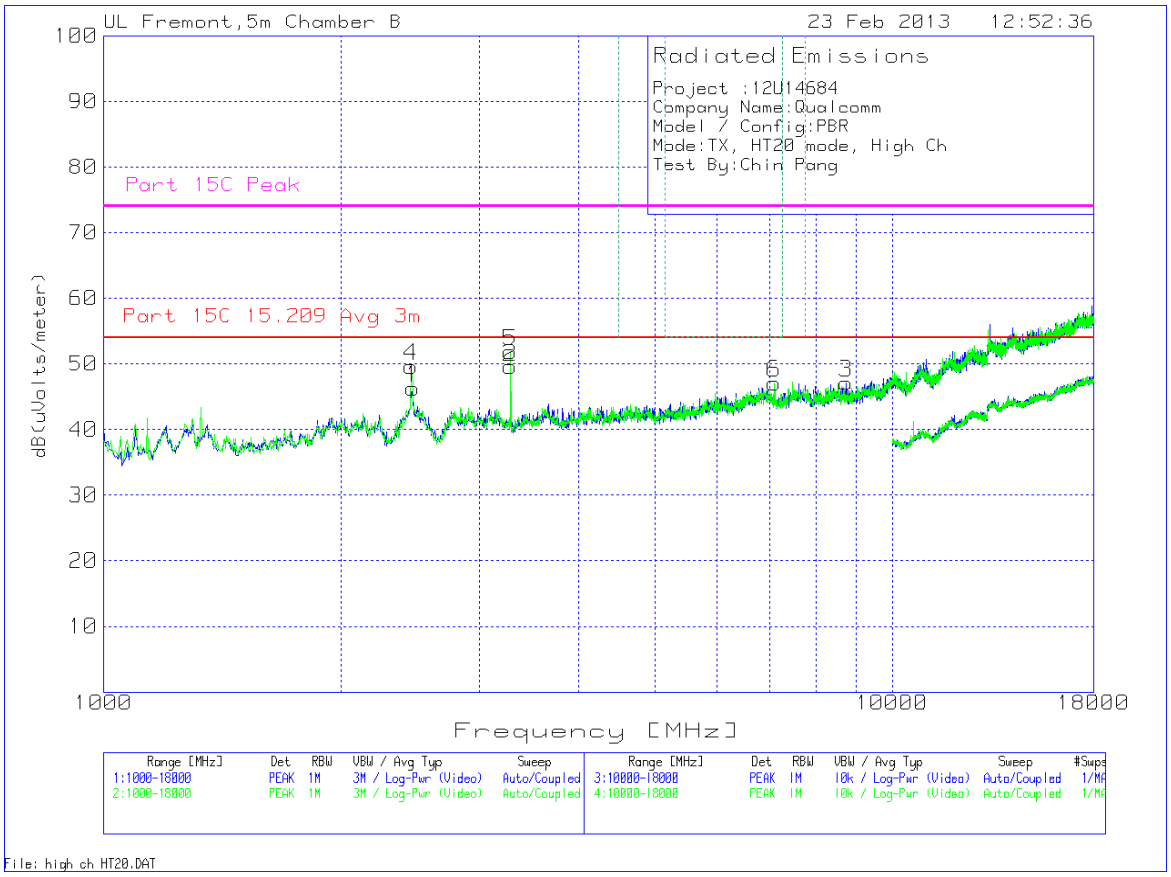
HARMONICS AND SPURIOUS EMISSIONS HIGH CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2465.151	43.95	PK	32.2	-35	4.7	0.5	0	46.35	54	-7.65	74	-27.65	200	Horz
2	3280.54	45.76	PK	32.9	-35.1	5.5	0.5	0	49.56	54	-4.44	74	-24.44	100	Horz
3	8741.944	36.25	PK	35.9	-35.2	9.7	0.5	0	47.15	54	-6.85	74	-26.85	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2452.411	47.24	PK	32.2	-35	4.7	0.5	0	49.64	54	-4.36	74	-24.36	200	Vert
5	3280.54	48.04	PK	32.9	-35.1	5.5	0.5	0	51.84	54	-2.16	74	-22.16	100	Vert
6	7094.179	37.26	PK	35.6	-35	8.7	0.5	0	47.06	54	-6.94	74	-26.94	200	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3282.73	41.94	PK2	32.9	-35.1	5.5	0.5	0	45.74	54	-8.26	74	-28.26	0	118	Horz
3282.72	35.51	MAv1	32.9	-35.1	5.5	0.5	0.2	39.51	54	-14.49	-	-	0	118	Horz

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3282.81	49.95	PK2	32.9	-35.1	5.5	0.5	0	53.75	54	-0.25	74	-20.25	63	149	Vert
3282.7	47.54	MAv1	32.9	-35.1	5.5	0.5	0.2	51.54	54	-2.46	-	-	63	149	Vert

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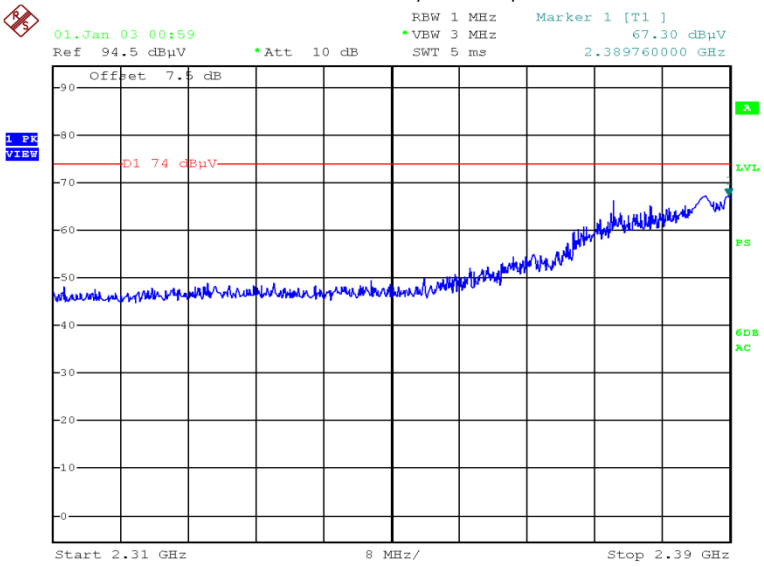
10.5. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 2.4 GHz BAND

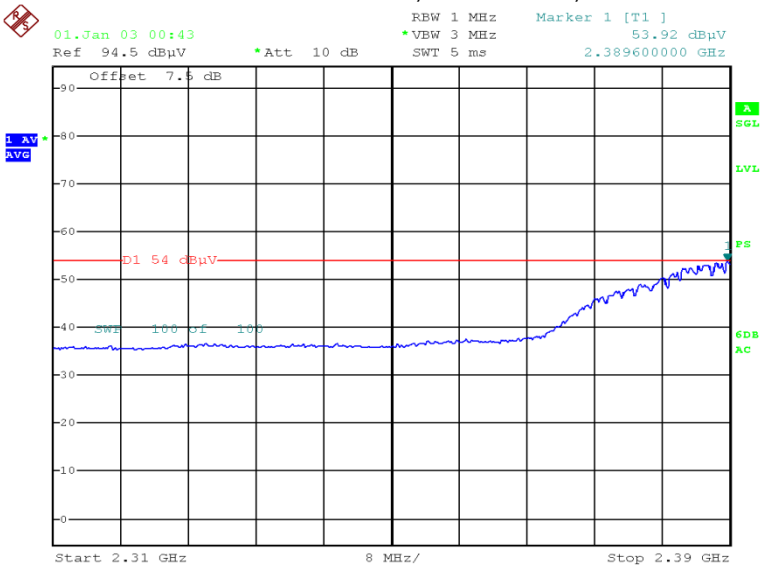
RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



Date: 1.JAN.2003 00:59:09

LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



Date: 1.JAN.2003 00:43:03

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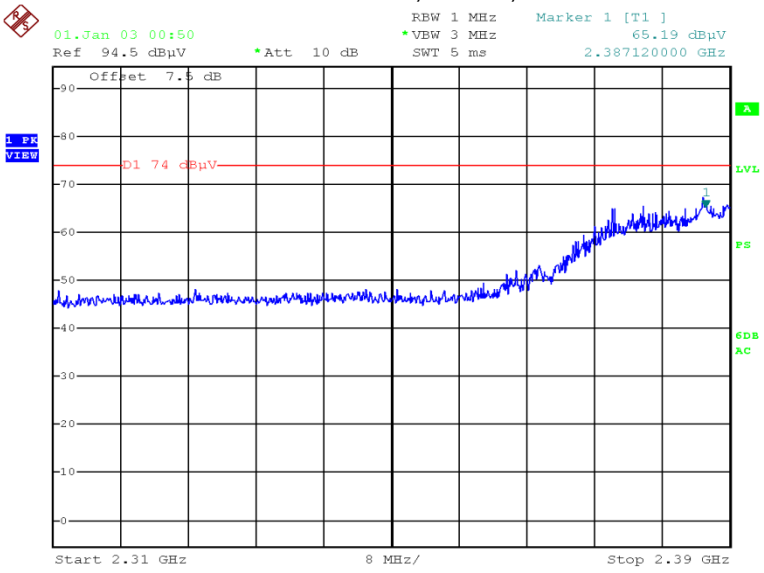
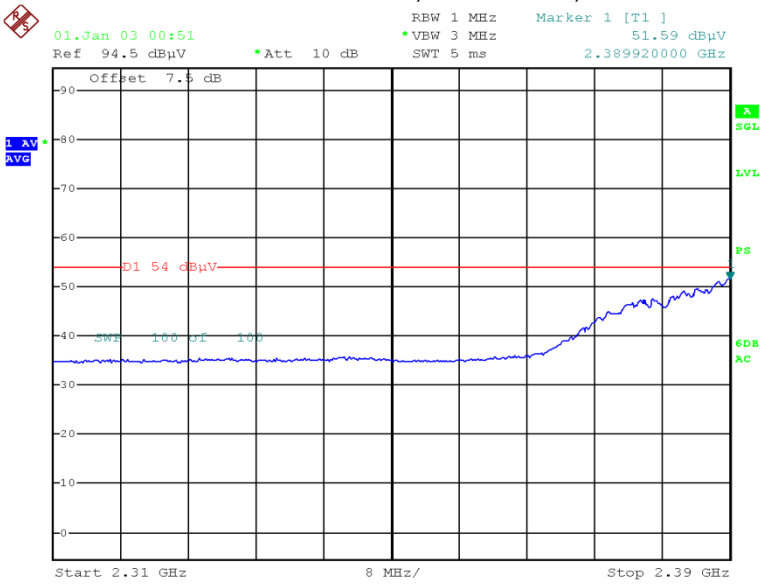
LOW CHANNEL RESTRICTED, PEAK, VERT



Date: 1.JAN.2003 00:50:04

LOW CHANNEL RESTRICTED, AVERAGE, VERT



Date: 1.JAN.2003 00:51:13

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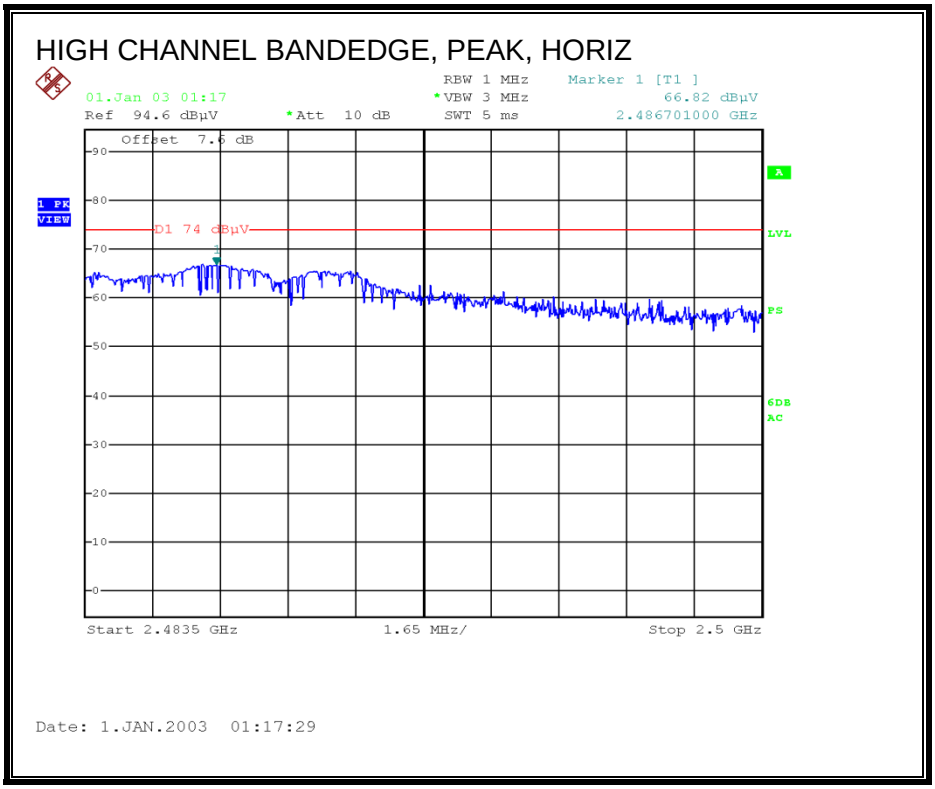
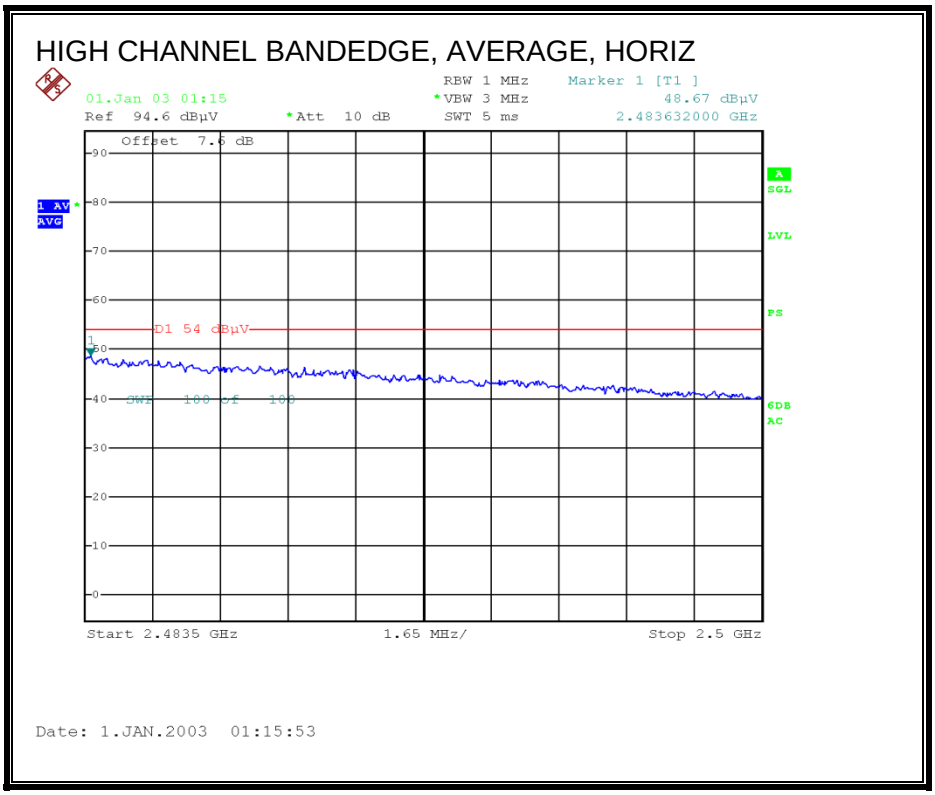
AUTHORIZED BANDEDGE (HIGH CHANNEL)





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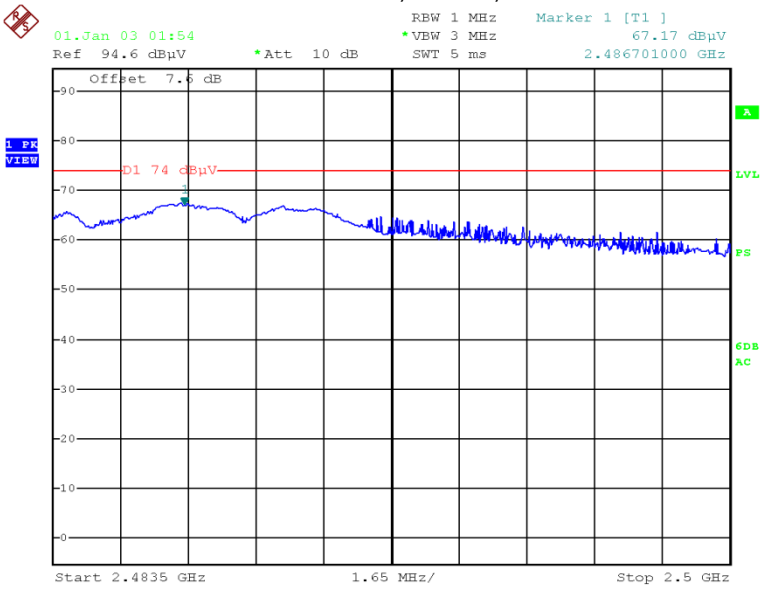
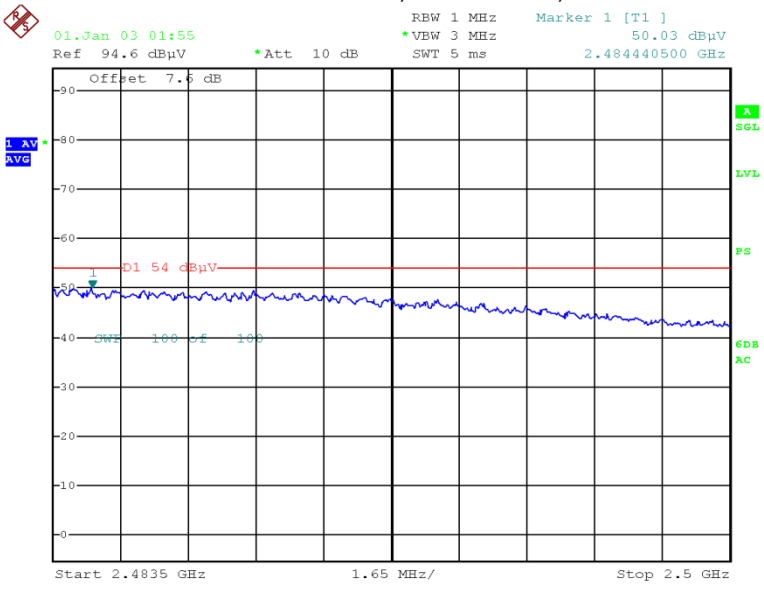
HIGH CHANNEL BANDEDGE, PEAK, VERT



Date: 1.JAN.2003 01:54:09

HIGH CHANNEL BANDEDGE, AVERAGE, VERT



Date: 1.JAN.2003 01:55:17

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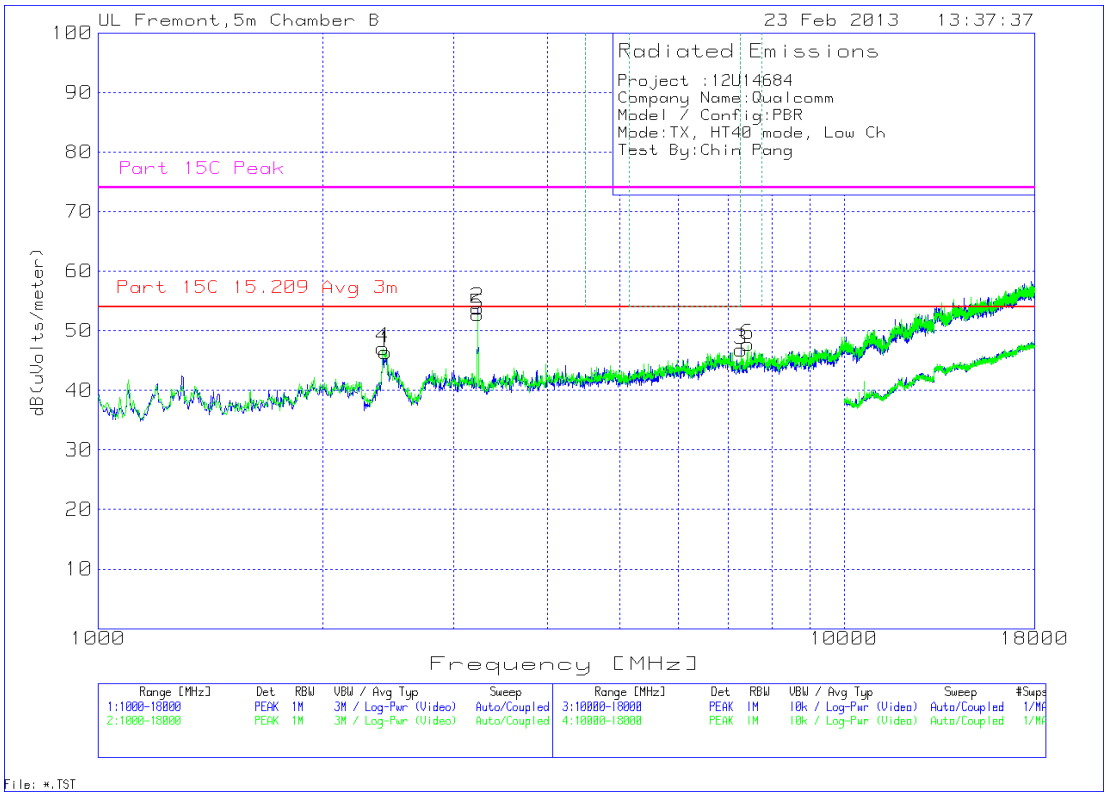
HARMONICS AND SPURIOUS EMISSIONS LOW CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2431.177	43.83	PK	32.2	-35	4.7	0.5	0.2	46.43	54	-7.57	74	-27.57	100	Horz
2	3229.578	49.81	PK	32.9	-35.1	5.5	0.5	0.2	53.81	54	-0.19	74	-20.19	100	Horz
3	7276.792	36.76	PK	35.6	-35	8.8	0.5	0.2	46.86	54	-7.14	74	-27.14	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	Duty Cycle Corr (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2409.943	44.72	PK	32.1	-35	4.6	0.5	0.2	47.12	54	-6.88	74	-26.88	200	Vert
5	3229.578	48.75	PK	32.9	-35.1	5.5	0.5	0.2	52.75	54	-1.25	74	-21.25	100	Vert
6	7425.431	37.4	PK	35.7	-35	8.9	0.5	0.2	47.7	54	-6.3	74	-26.3	100	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3229.28	49	PK2	32.9	-35.1	5.5	0.5	0.2	53	54	-1	74	-21	84	285	Horz
3229.27	46.26	MAv1	32.9	-35.1	5.5	0.5	0.2	50.26	54	-3.74	-	-	84	285	Horz
3229.46	49.18	PK2	32.9	-35.1	5.5	0.5	0.2	53.18	54	-0.82	74	-20.82	95	155	Vert
3229.38	46.68	MAv1	32.9	-35.1	5.5	0.5	0.2	50.68	54	-3.32	-	-	95	155	Vert

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	Duty Cycle Corr [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3229.46	49.18	PK2	32.9	-35.1	5.5	0.5	0.2	53.18	54	-0.82	74	-20.82	95	155	Vert
3229.38	46.68	MAv1	32.9	-35.1	5.5	0.5	0.2	50.68	54	-3.32	-	-	95	155	Vert

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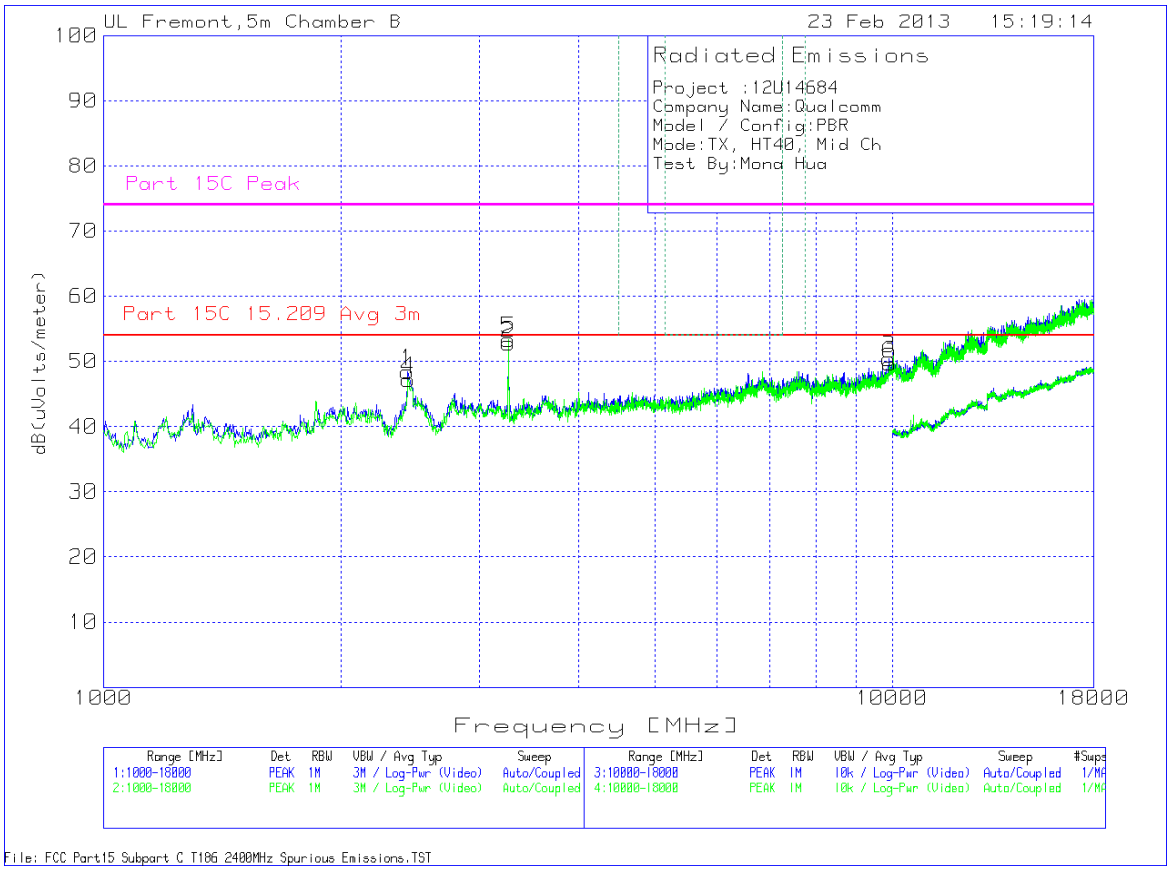
HARMONICS AND SPURIOUS EMISSIONS MID CH



Horizontal 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2431.177	46	PK	32.2	-35	4.7	0.5	48.4	54	-5.6	74	-25.6	100	Horz
2	3259.306	48.97	PK	32.9	-35.1	5.5	0.5	52.77	54	-1.23	74	-21.23	100	Horz
3	9892.83	37.5	PK	36.9	-34.9	10.4	0.5	50.4	54	-3.6	74	-23.6	200	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2435.423	44.81	PK	32.2	-35	4.7	0.5	47.21	54	-6.79	74	-26.79	100	Vert
5	3259.306	49.59	PK	32.9	-35.1	5.5	0.5	53.39	54	-0.61	74	-20.61	100	Vert
6	9939.545	36.78	PK	36.9	-34.9	10.4	0.5	49.68	54	-4.32	74	-24.32	100	Vert

AVG

Horizontal 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3262.52	48.51	PK2	32.9	-35.1	5.5	0.5	52.31	54	-1.69	74	-21.69	65	101	Horz
3262.75	45.68	MAv1	32.9	-35.1	5.5	0.5	49.48	54	-4.52	-	-	65	101	Horz

Vertical 1000 - 18000MHz

Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolts/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3262.6	48.87	PK2	32.9	-35.1	5.5	0.5	52.67	54	-1.33	74	-21.33	104	132	Vert
3262.62	46.17	MAv1	32.9	-35.1	5.5	0.5	49.97	54	-4.03	-	-	104	132	Vert

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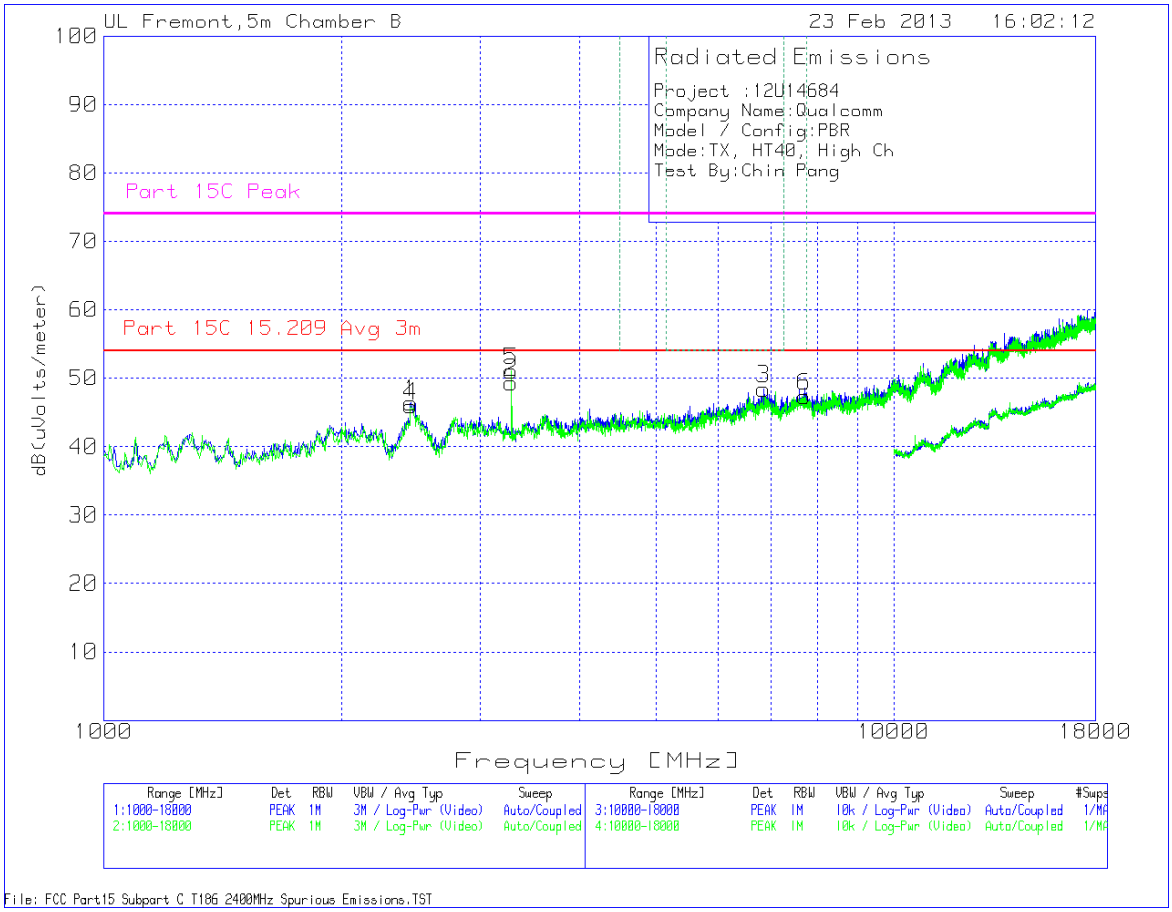
HARMONICS AND SPURIOUS EMISSIONS HIGH CH



Horizontal 1000 - 18000MHz														
Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
1	2448.164	43.99	PK	32.2	-35	4.7	0.5	46.39	54	-7.61	74	-27.61	100	Horz
2	3280.54	45.56	PK	32.9	-35.1	5.5	0.5	49.36	54	-4.64	74	-24.64	100	Horz
3	6852.111	38.78	PK	35.6	-35	8.6	0.5	48.48	54	-5.52	74	-25.52	100	Horz
Vertical 1000 - 18000MHz														
Marker No.	Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 (dB)	T145 Preamp (dB)	Cable Factor (dB)	T186 BRF (dB)	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Height [cm]	Polarity
4	2448.164	43.56	PK	32.2	-35	4.7	0.5	45.96	54	-8.04	74	-28.04	100	Vert
5	3280.54	47.25	PK	32.9	-35.1	5.5	0.5	51.05	54	-2.95	74	-22.95	100	Vert
6	7705.721	37.02	PK	35.8	-35.1	9.1	0.5	47.32	54	-6.68	74	-26.68	100	Vert

AVG														
Horizontal 1000 - 18000MHz														
Test Frequency MHz	Meter Reading (dBuV)	Detector	T119 ETS Lindgren 3117 [dB]	T145 Preamp [dB]	Cable Factor [dB]	T186 BRF [dB]	dB(uVolt s/meter)	Part 15C 15.209 Avg 3m	Margin	Part 15C Peak	Margin	Azimuth [Degs]	Height [cm]	Polarity
3282.66	48.92	PK2	32.9	-35.1	5.5	0.5	52.72	54	-1.28	74	-21.28	75	276	Horz
3282.77	46.49	MAv1	32.9	-35.1	5.5	0.5	50.29	54	-3.71	-	-	75	276	Horz

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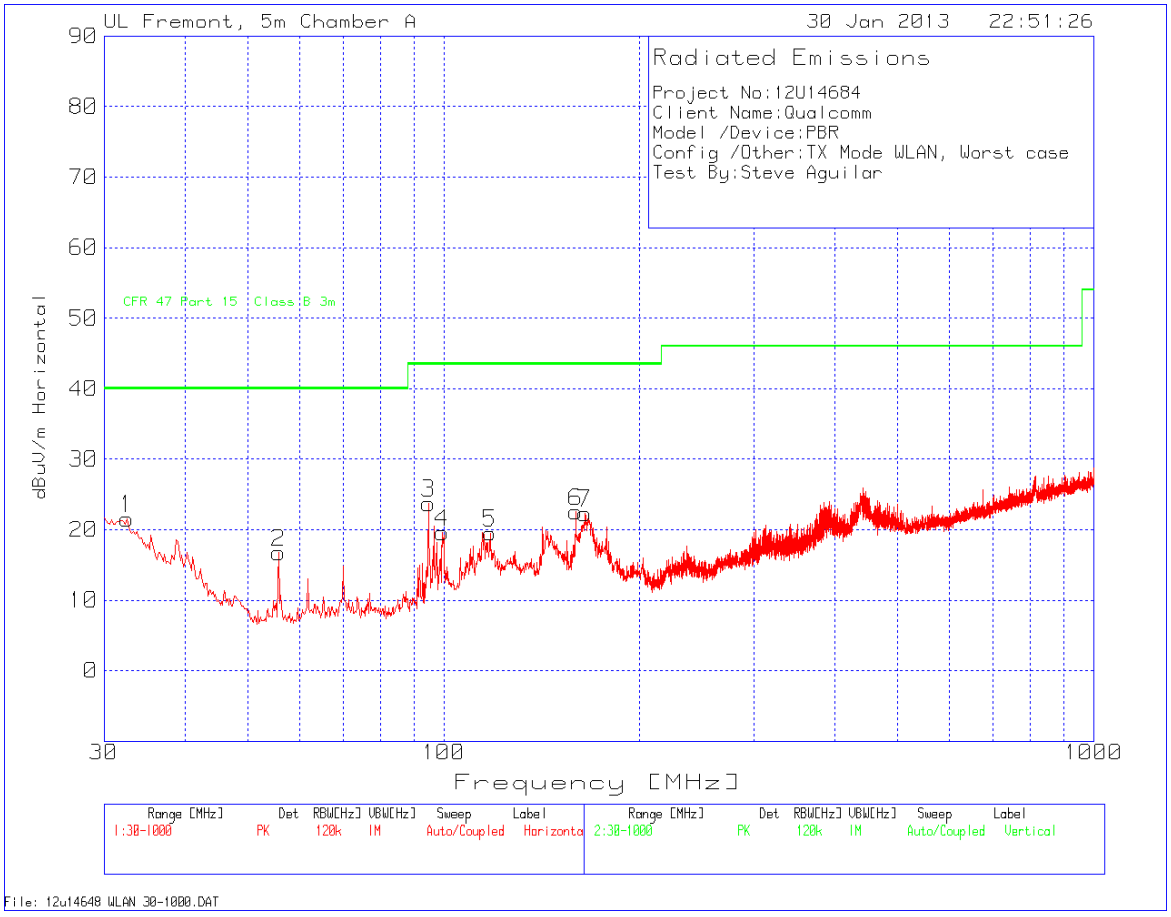
10.6. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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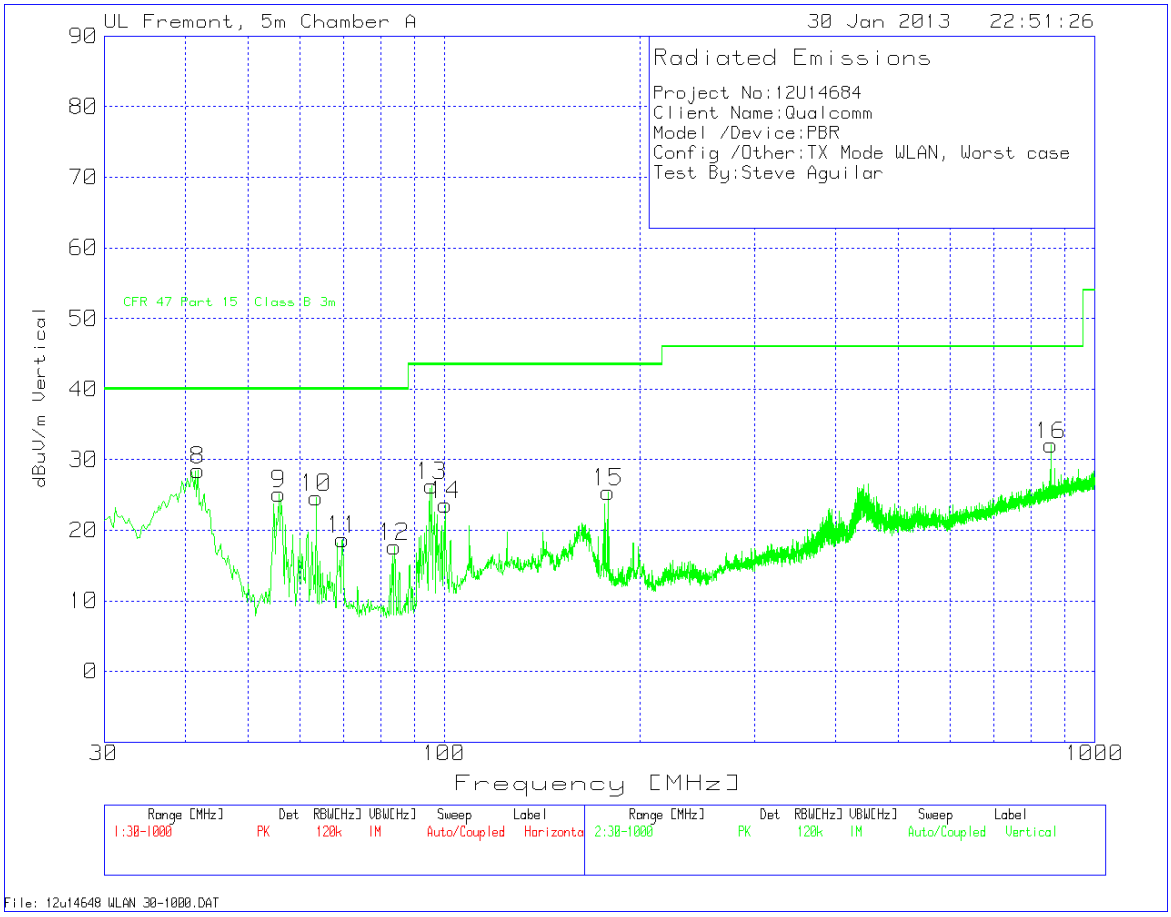
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



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HORIZONTAL AND VERTICAL DATA

Project No:12U14684
Client Name:Qualcomm
Model /Device:PBR
Config /Other:TX Mode WLAN, Worst case
Test By:Steve Aguilar

Horizontal 30 - 1000MHz

Marker No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector	Pre Amp Factor [dB]	Antenna Factor [dB/m]	Corrected [dB(uV/m)]	Class B limit [dB(uV/m)]	Margin [dB]	Height [cm]	Polarity
1	32.52	31.3	PK	19.5	-29.2	21.6	40	-18.4	300	Horz
2	55.7814	38.51	PK	7.2	-29	16.71	40	-23.29	400	Horz
3	94.7442	43.69	PK	8.7	-28.6	23.79	43.5	-19.71	300	Horz
4	99.3965	38.15	PK	10	-28.6	19.55	43.5	-23.95	300	Horz
5	117.8118	33.94	PK	13.9	-28.3	19.54	43.5	-23.96	400	Horz
6	159.4884	37.91	PK	12.5	-27.9	22.51	43.5	-20.99	300	Horz
7	165.1099	38.04	PK	12.2	-27.9	22.34	43.5	-21.16	200	Horz

Vertical 30 - 1000MHz Polarity

Marker No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector	Pre Amp Factor [dB]	Antenna Factor [dB/m]	Corrected [dB(uV/m)]	Class B limit [dB(uV/m)]	Margin [dB]	Height [cm]	Polarity
8	41.8245	45.25	PK	12.4	-29.2	28.45	40	-11.55	100	Vert
9	55.7814	46.96	PK	7.2	-29	25.16	40	-14.84	200	Vert
10	63.5352	45.68	PK	7.8	-28.9	24.58	40	-15.42	300	Vert
11	69.7382	39.26	PK	8.2	-28.8	18.66	40	-21.34	100	Vert
12	83.8889	38.7	PK	7.7	-28.7	17.7	40	-22.3	100	Vert
13	95.7134	45.95	PK	9	-28.6	26.35	43.5	-17.15	200	Vert
14	100.3657	41.85	PK	10.3	-28.6	23.55	43.5	-19.95	100	Vert
15	178.8729	41.96	PK	11.2	-27.8	25.36	43.5	-18.14	100	Vert
16	856.3609	35.45	PK	21.7	-25.1	32.05	46	-13.95	100	Vert

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector
CAV - CISPR Average detector

RMS - RMS detection
CRMS - CISPR RMS detection
TAVG - Trace Averaging RMS detection
Text File: 30-1000 WLAN.TXT
File: 12u14648 WLAN 30-1000.DAT

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11. 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.

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RESULTS

6 WORST EMISSIONS

Company Name:	Qualcomm
Project:	12U14684
Model/Device:	PBR
Date:	2/1/2013
Configuraiton:	WLAN TX Worst case
Test Voltage/Frequency:	120VAC/ 60Hz
Tested by:	Steve Aguilar

Line-L1 .15 - 30MHz

Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]
0.573	44.55	PK	0.1	0	44.65	56	-11.35	-
0.573	31.02	Av	0.1	0	31.12	-	-	46
0.6585	38.4	PK	0.1	0	38.5	56	-17.5	-
0.6585	24.32	Av	0.1	0	24.42	-	-	46
3.129	39.44	PK	0.1	0.1	39.64	56	-16.36	-
3.129	24.52	Av	0.1	0.1	24.72	-	-	46

Line-L2 .15 - 30MHz

Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]
0.5685	42.75	PK	0.1	0	42.85	56	-13.15	-
0.5685	29.35	Av	0.1	0	29.45	-	-	46
0.654	37.09	PK	0.1	0	37.19	56	-18.81	-
0.654	22.3	Av	0.1	0	22.4	-	-	46
3.138	37.69	PK	0.1	0.1	37.89	56	-18.11	-
3.138	22.2	Av	0.1	0.1	22.4	-	-	46

PK - Peak detector

QP - Quasi-Peak detector

Av - Average detector

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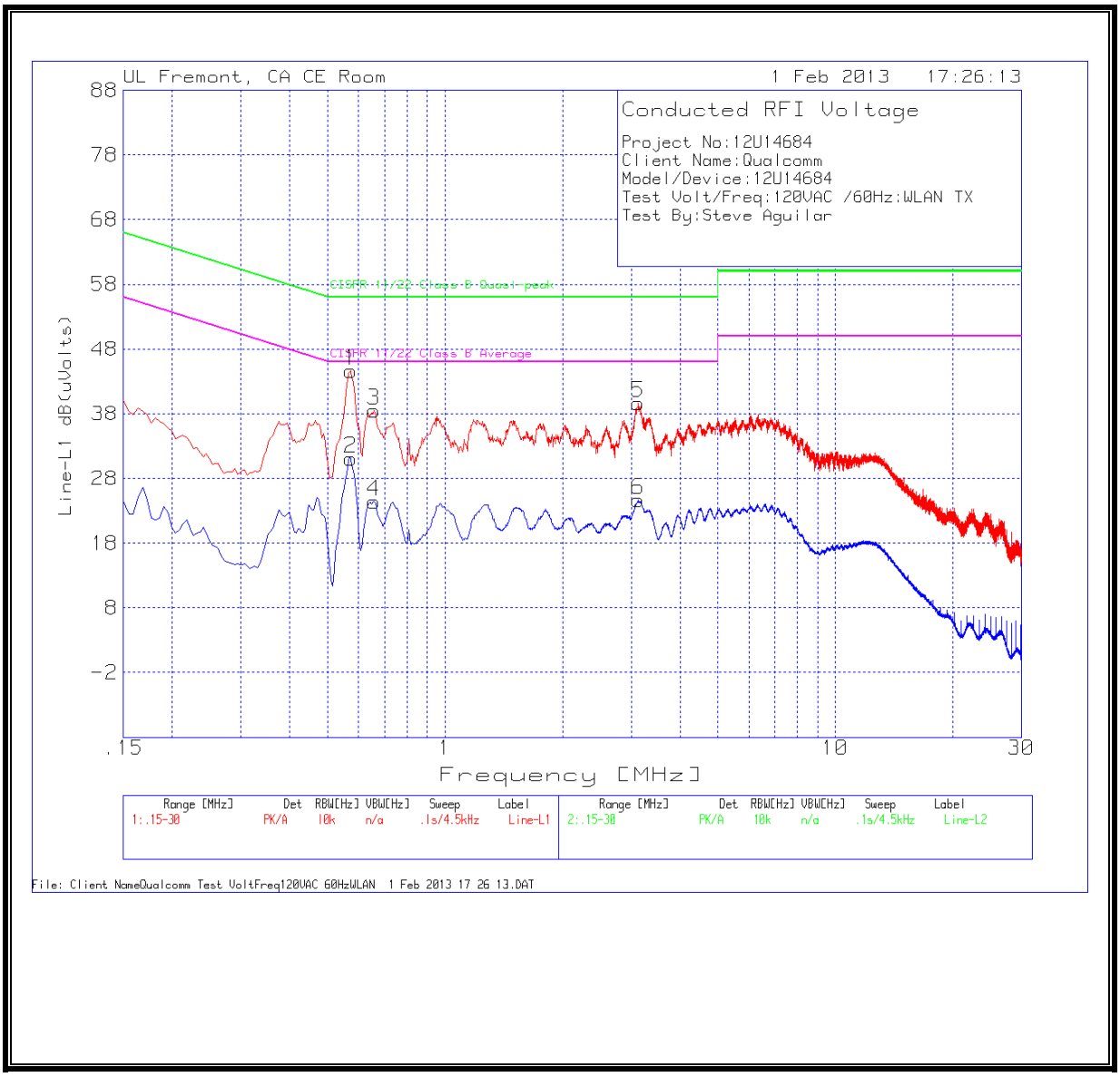
LINE 1 RESULTS



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