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

CERTIFICATION TEST REPORT

FOR

APPLE WATCH

MODEL NUMBER: A1553

FCC ID: BCG-E2870
IC: 579C-E2870

REPORT NUMBER: 14U19383-E3, REVISION C

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

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	02/20/15	Initial Issue	M. Mekuria
A	02/25/15	Change EUT name	M. Mekuria
B	02/27/15	Revised report to address TCB's questions	T. Chu
C	03/03/15	Revised report to address TCB's questions	T. Chu

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: APPLE WATCH

MODEL: A1553

SERIAL NUMBER: 227LGA-SiP (CONDUCTED), FH7P3054G9HN (ANTENNA 1 RADIATED), FH7P20CSG9HM (ANTENNA 2 RADIATED)

DATE TESTED: NOVEMBER 24, 2014 - FEBRUARY 09, 2015

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 4	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

MENGISTU MEKURIA
SENIOR ENGINEER
UL Verification Services Inc.

Tested By:

Francisco Guarnero
EMC ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.4-2009, RSS-GEN Issue 4, 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. The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☒ Chamber D
☐ Chamber B	☐ Chamber E
☐ Chamber C	☐ Chamber F
	☐ Chamber G
	☐ Chamber H

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	± 3.52 dB
Radiated Disturbance, 30 to 1000 MHz	± 4.94 dB
Radiated Disturbance, 1 to 6 GHz	± 3.86 dB
Radiated Disturbance, 6 to 18 GHz	± 4.23 dB
Radiated Disturbance, 18 to 26 GHz	± 5.30 dB
Radiated Disturbance, 26 to 40 GHz	± 5.23 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an Apple Watch with WLAN, Bluetooth and NFC support.

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 - 2472	802.11b, 1TX	21.56	143.22
2412 - 2472	802.11g, 1TX	26.44	440.55
2412 - 2472	802.11n, HT20 1TX	26.41	437.52

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Planar Inverted-F Antenna (PIFA) with a maximum gain as below table:

Frequency Band (GHz)	Antenna 1 Gain (dBi)	Antenna 2 Gain (dBi)
2.4	-12.1	-12.1

The EUT has one WiFi/BT antenna port. The antenna used in any given unit can be either antenna 1 or antenna 2.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 6.25.178.20

The test utility software used during testing was r503465 WLTEST

5.5. WORST-CASE CONFIGURATION AND MODE

EUT has 3 types of enclosures and various kinds of metallic and non-metallic wristbands. There are 2 types of metallic bands; Metal Links, and Metal Mesh. Worst case configuration was investigated; and it was found that the stainless steel enclosure and metal mesh wristband was the worst case. All testing are performed on the worst case.

The following configurations were investigated and EUT powered by AC/DC adapter was the worst-case scenario. AC power line and below 1G radiated tests were conducted on configuration 1.

Configuration	Descriptions
1	EUT powered by AC/DC adapter via USB cable with wireless charger
2	EUT powered by host PC via USB cable with wireless charger

Radiated emission, 30-1000MHz and 18-26GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

All testing was performed with the EUT in three orthogonal orientations X-orientation (flatbed), Y-orientation (landscape), and Z-orientation (portrait). It was found that Y-orientation (landscape) was the worst-case.

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0

The EUT has one WiFi/BT antenna port. The antenna used in any given unit can be either antenna 1 or antenna 2. Therefore, all radiated tests were performed on both antennas.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop AC/DC adapter	Apple	A1343	N/A	N/A
Laptop	Apple	A1278	C02HJ0A7DTY4	NA
Wireless Charger	Apple	A1570	DLC451508N5FTPG3K	BCGA1570
AC/DC adapter	Apple	A1265	1X3276SZZ08QZ	N/A

I/O CABLES (CONDUCTED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Antenna	1	SMA	Un-Shielded	0.2	To spectrum Analyzer
2	USB	1	USB to mini USB	Shielded	1	To laptop and fixture

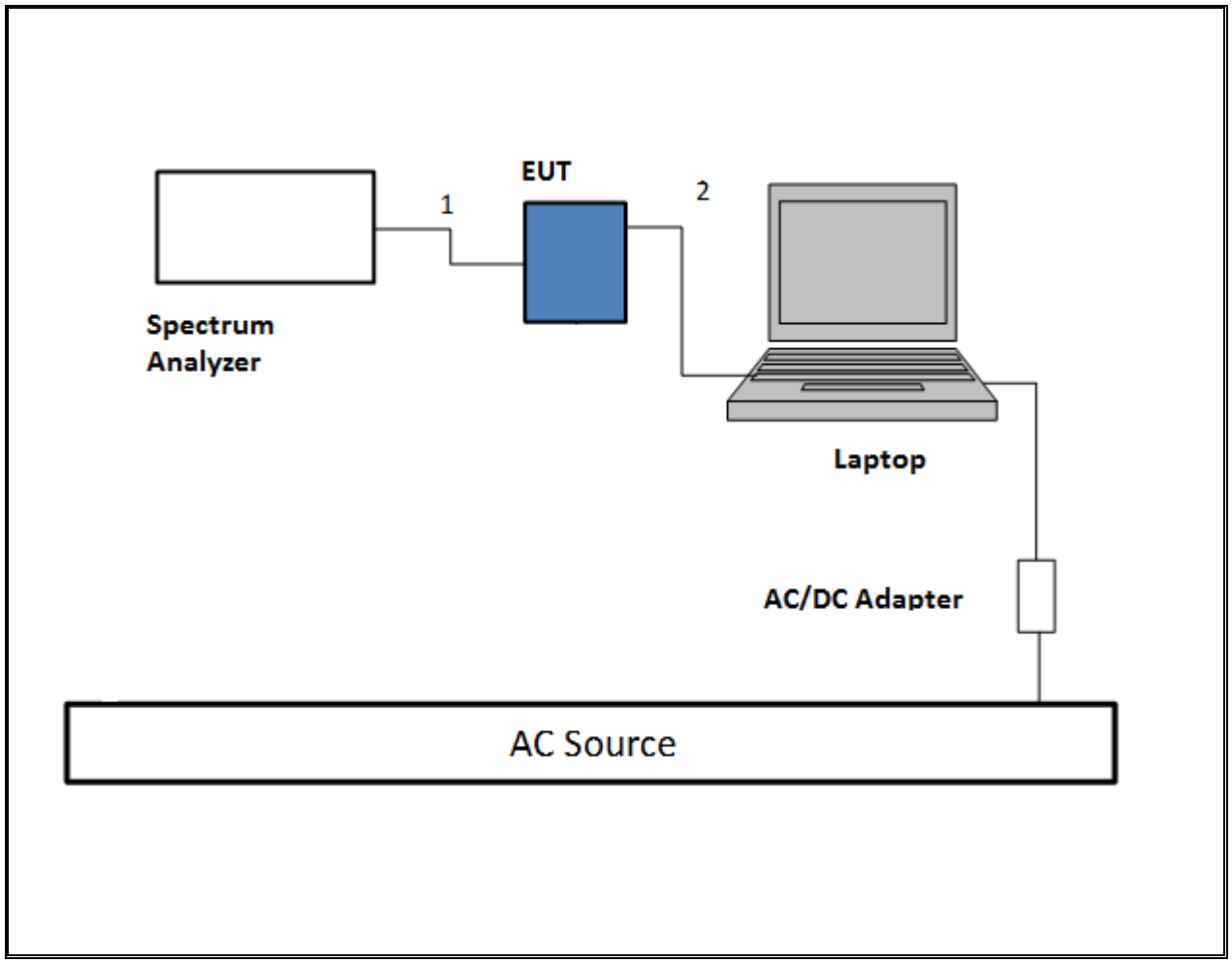
I/O CABLES (BELOW 1G RADIATED AND AC POWERLINE CONDUCTED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Un-Shielded	2	To AC/DC adapter

TEST SETUP- CONDUCTED PORT

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

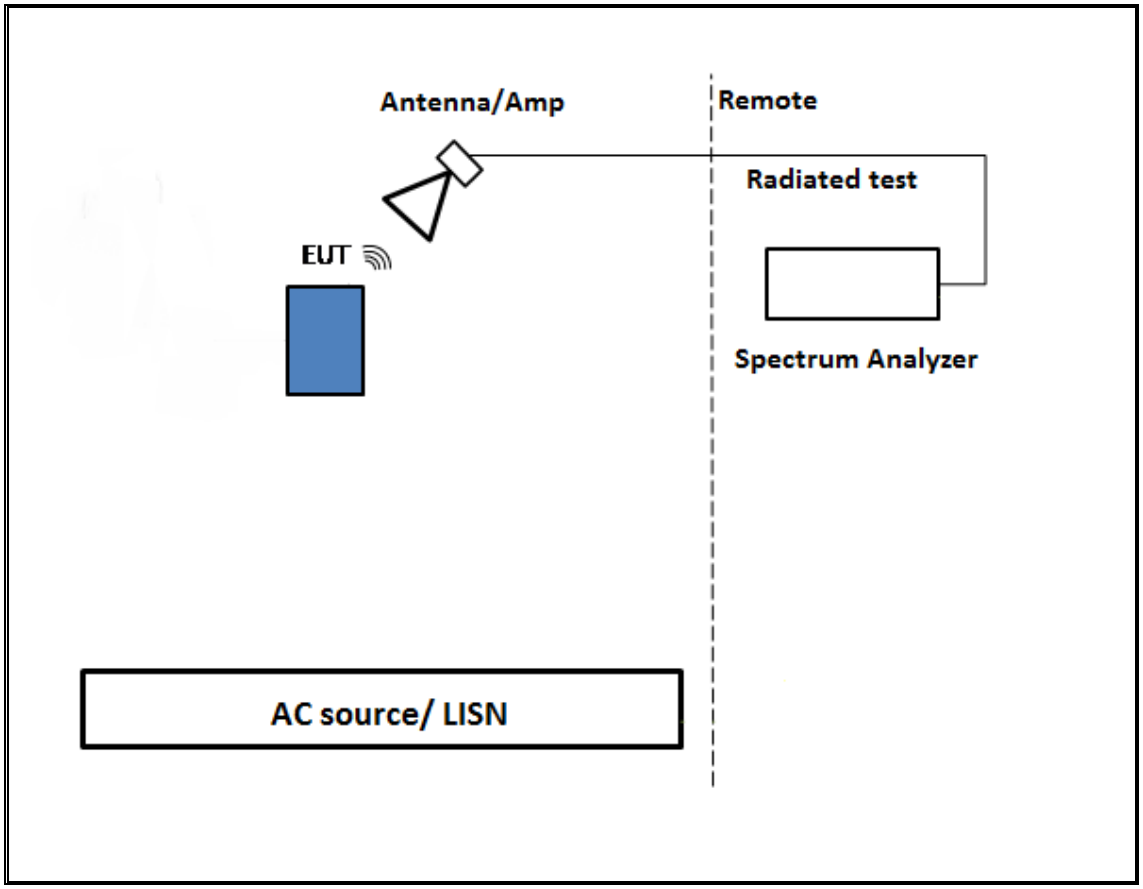
SETUP DIAGRAM



TEST SETUP- RADIATED-ABOVE 1 GHZ

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

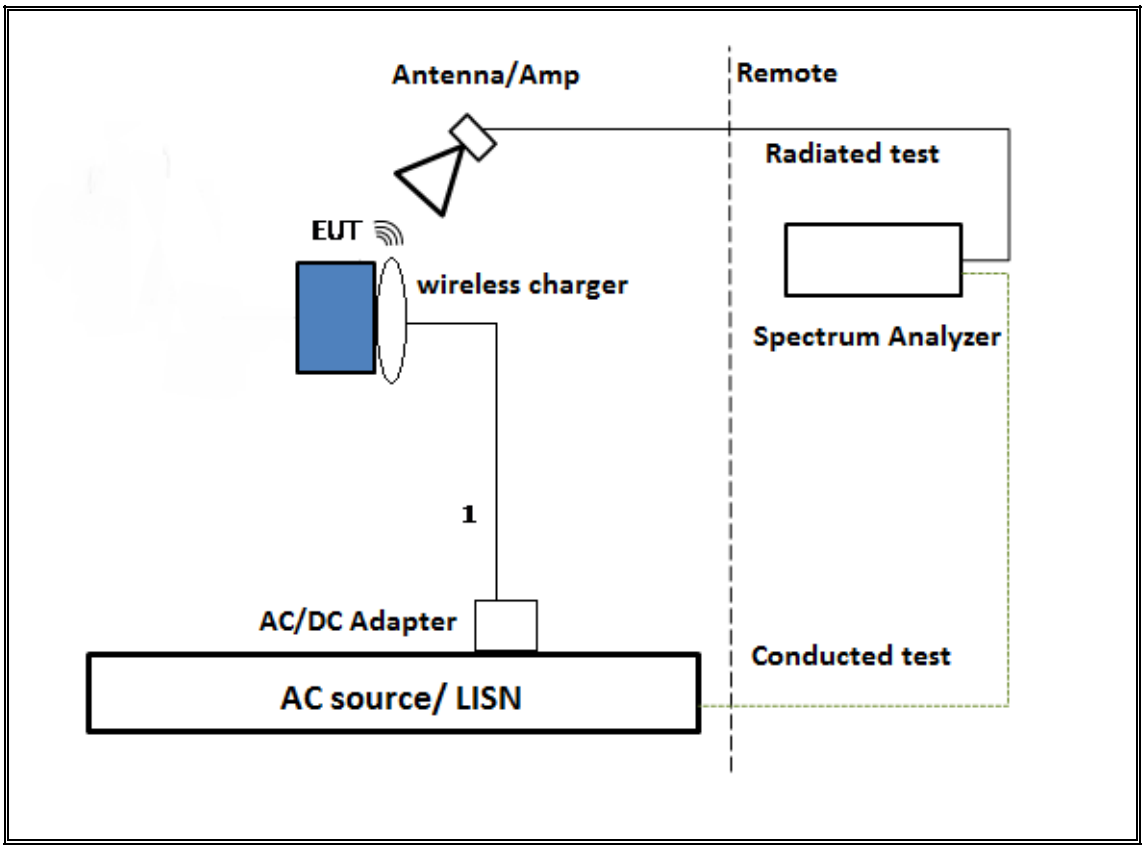
SETUP DIAGRAM



TEST SETUP- BELOW 1GHZ & AC LINE CONDUCTED TESTS

The EUT was powered by wireless charger. Test software exercised the EUT.

SETUP DIAGRAM



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**T Numbe**	**Cal Due**
PXA Signal Analyzer	Agilent	N9030A	T342	06/25/15
Power Meter	Agilent	N1911A	T382	04/09/15
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T119	01/15/16
Antenna, Hybrid 30MHz to 2GHz	Sunol Sciences	JB3	T407	05/05/15
PXA Signal Analyzer 3Hz to 44GHz	Agilent	N9030A	T340	03/11/15
Amplifier, 10KHz to 1GHz	Sonoma	310N	T286	04/23/15
Amplifier, 1 to 18GHz	Miteq	AFS42-00101	T740	01/26/16
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	T284	09/16/15
LISN, 30 MHz	FCC	LISN-50/250-25-2	T24	01/16/16
Amplifier, 1 to 26.5 Ghz	Agilent	8449B	T404	03/25/15
Antenna, Horn 18 to 26.5GHz	ARA	SWH-28	T125	05/09/15
Spectrum Analyzer	Agilent	8564E	T106	08/06/15

7. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v03r02, Section 8.1.

Output Power: KDB 558074 D01 v03r02, Section 9.2.3.1

Power Spectral Density: KDB 558074 D01 v03r02, Section 10.3.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r02, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r02, Section 12.0

Band-edge: KDB 558074 D01 v03r02, Section 13.3.2.

8. DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

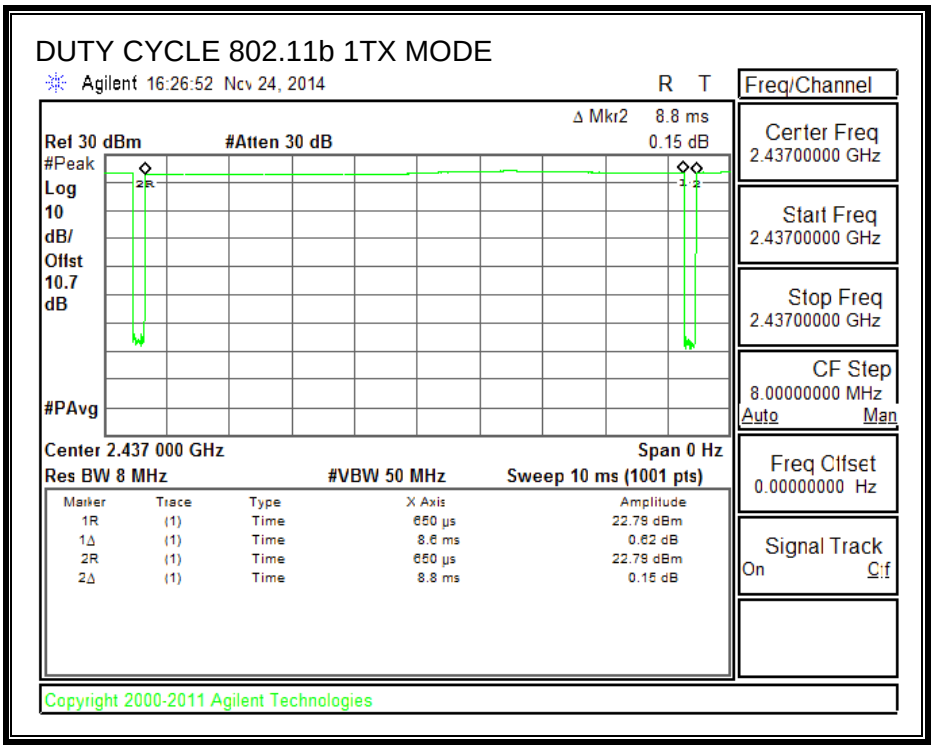
KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

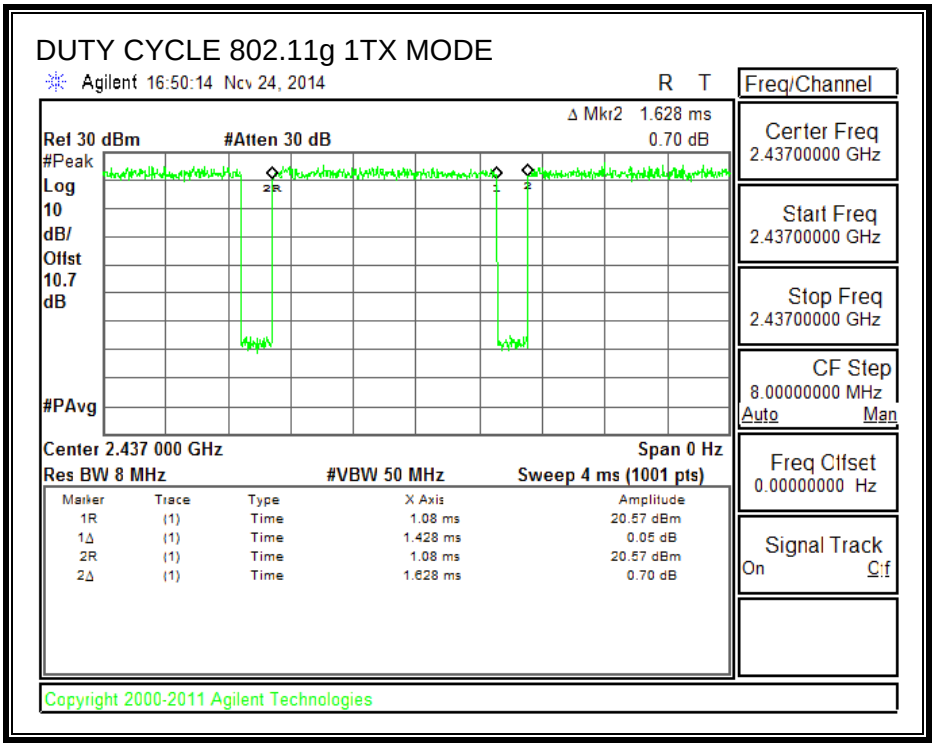
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b 1TX	8.600	8.800	0.977	97.73%	0.10	0.116
802.11g 1TX	1.428	1.628	0.877	87.71%	0.57	0.700
802.11n HT20 1TX	1.336	1.536	0.870	86.98%	0.61	0.749

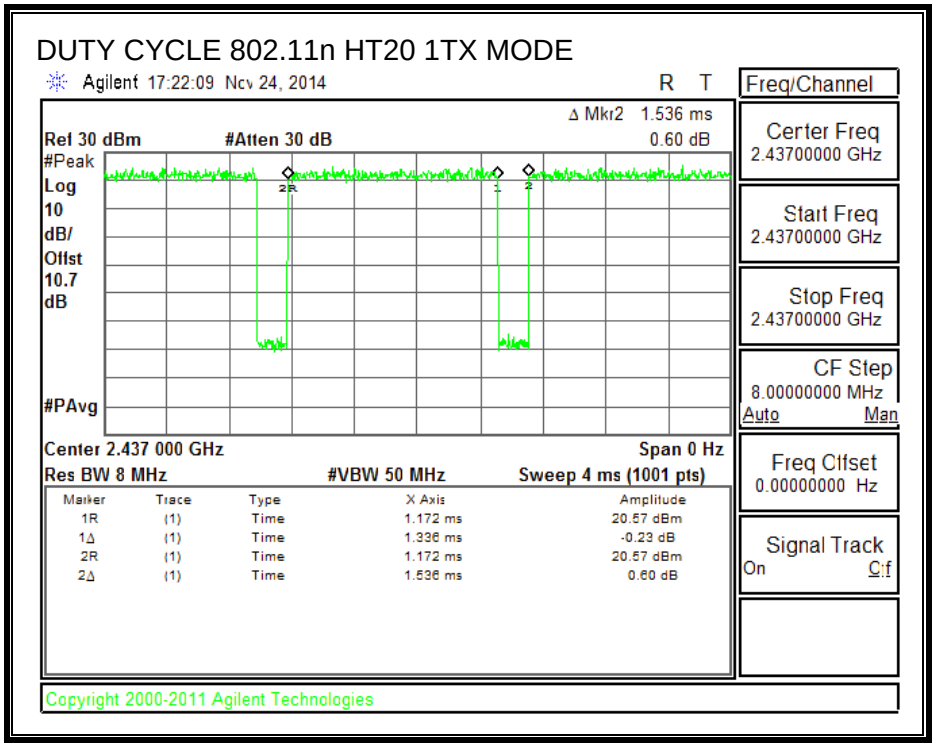
DUTY CYCLE PLOTS

DUTY CYCLE 802.11b 1TX MODE



DUTY CYCLE 802.11g 1TX MODE





9. ANTENNA PORT TEST RESULTS

9.1. 802.11b 1Tx MODE IN THE 2.4 GHz BAND

9.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

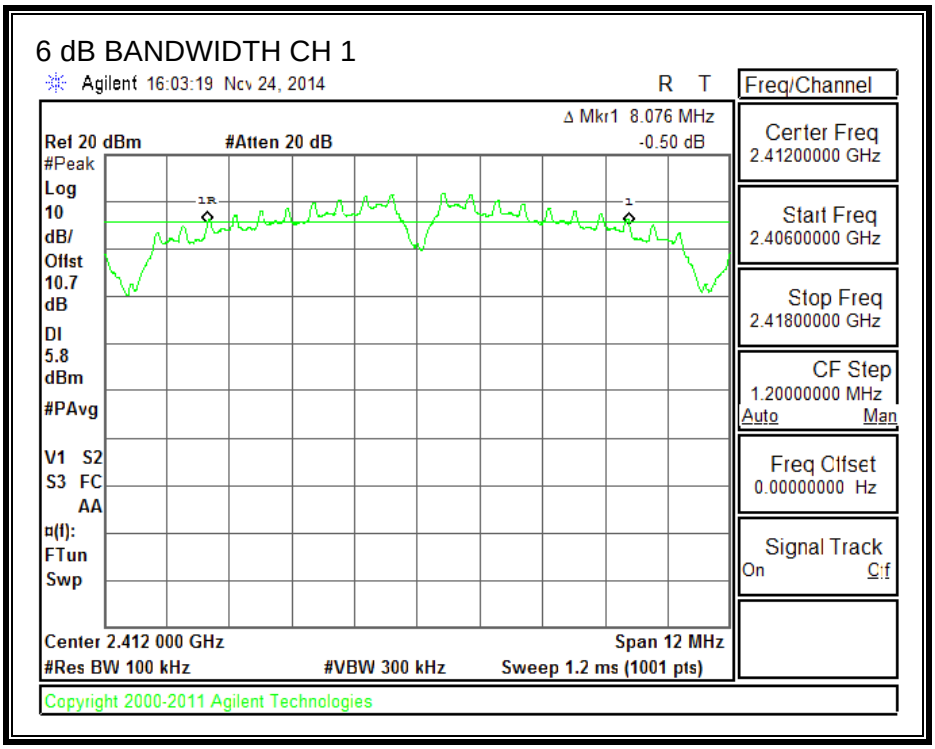
IC RSS-210 A8.2 (a)

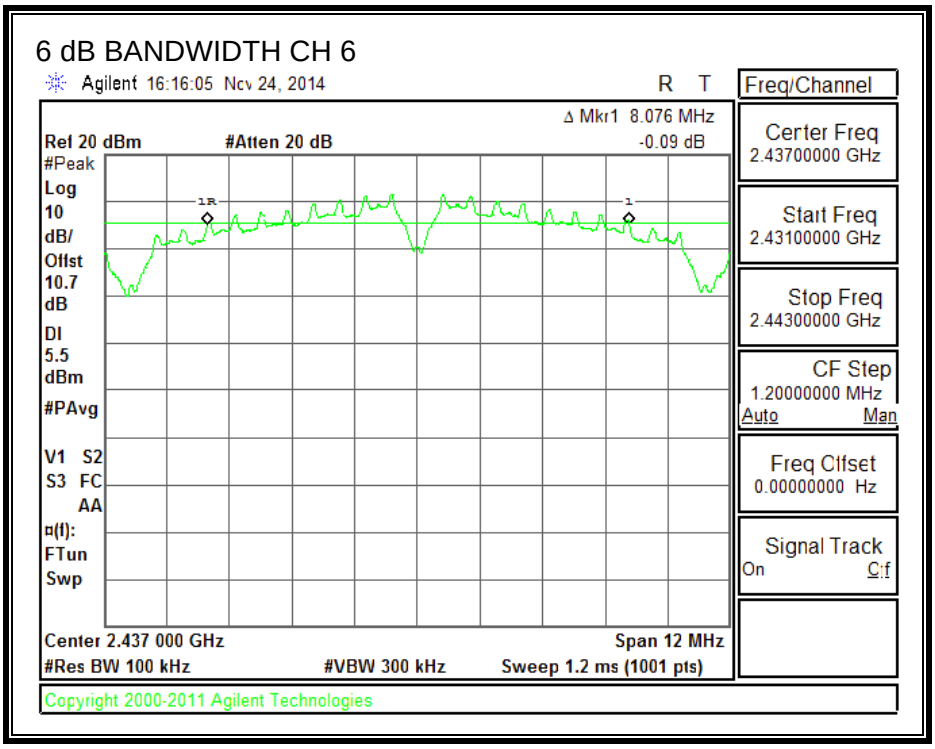
The minimum 6 dB bandwidth shall be at least 500 kHz.

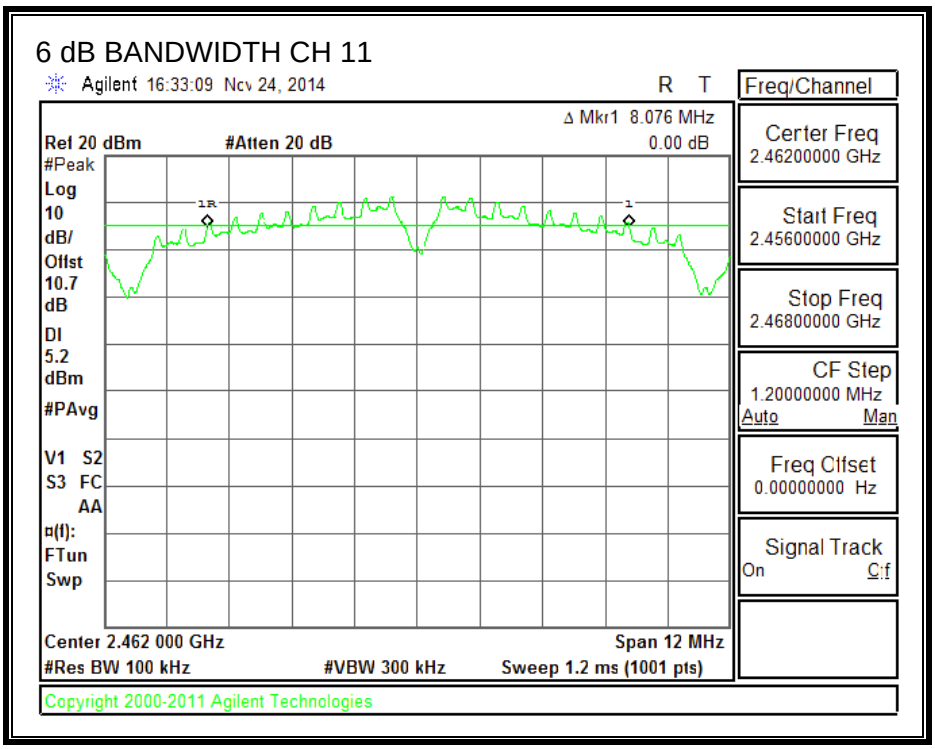
RESULTS

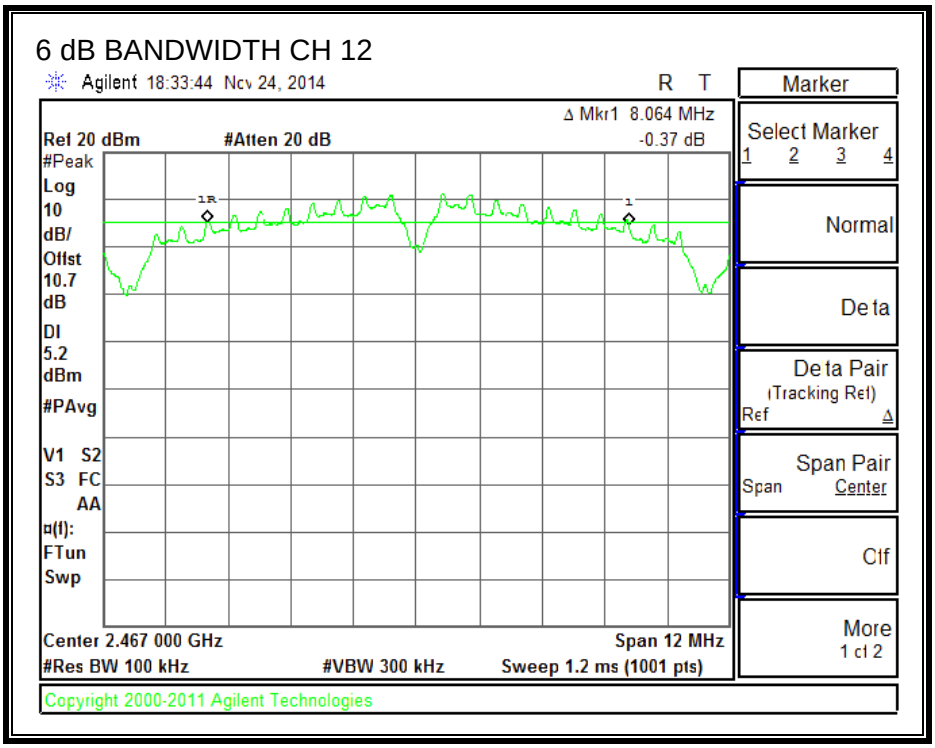
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	8.076	0.5
6	2437	8.076	0.5
11	2462	8.076	0.5
12	2467	8.064	0.5
13	2472	8.088	0.5

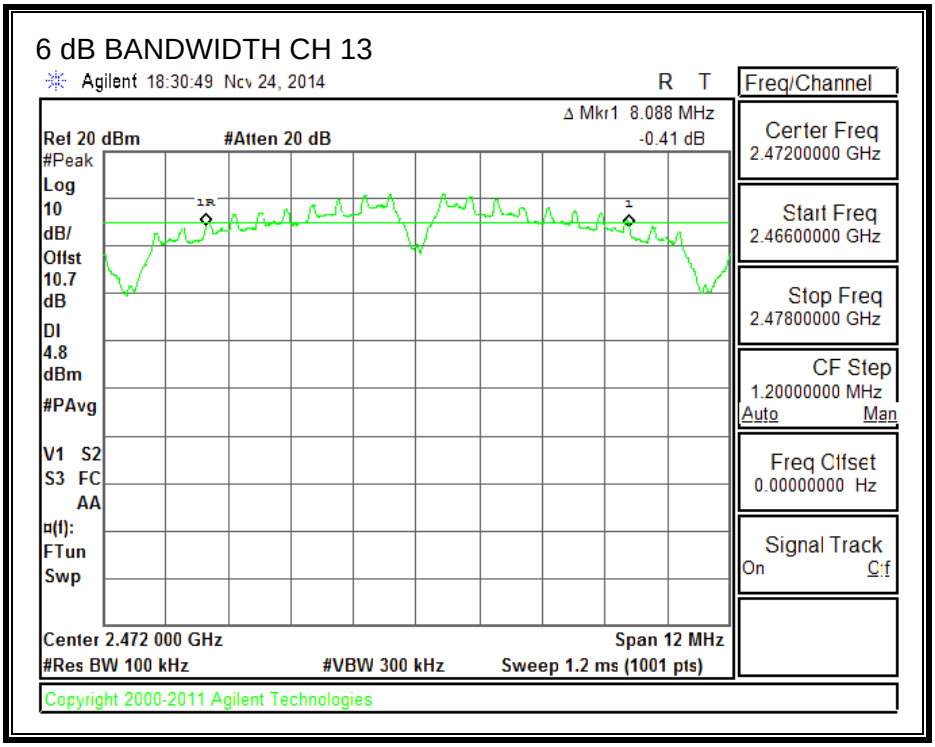
6 dB BANDWIDTH











9.1.2. 99% BANDWIDTH

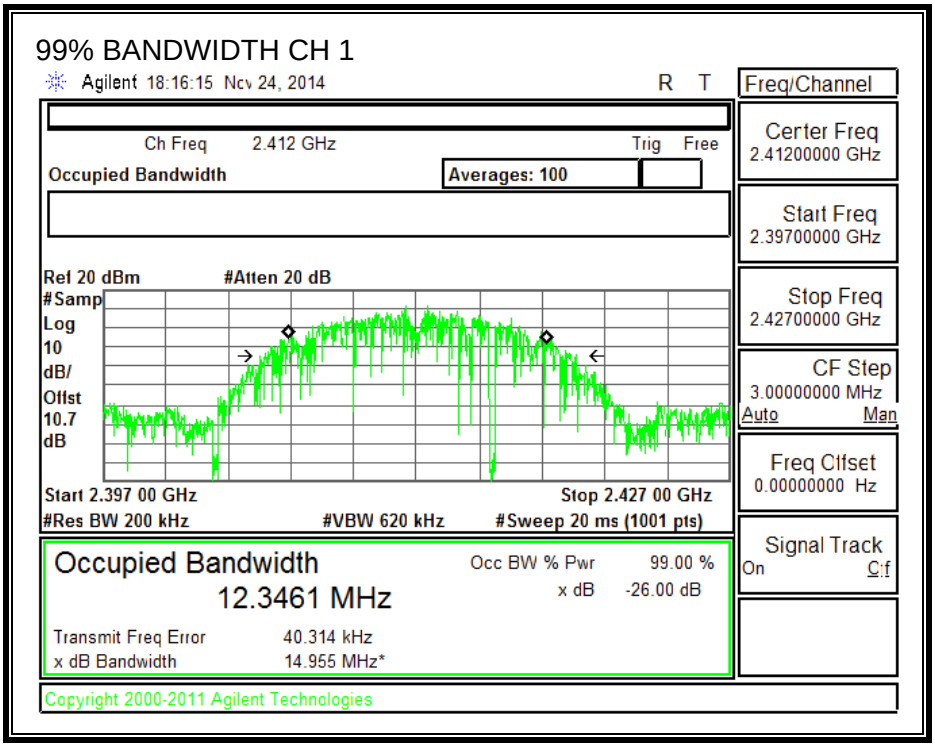
LIMITS

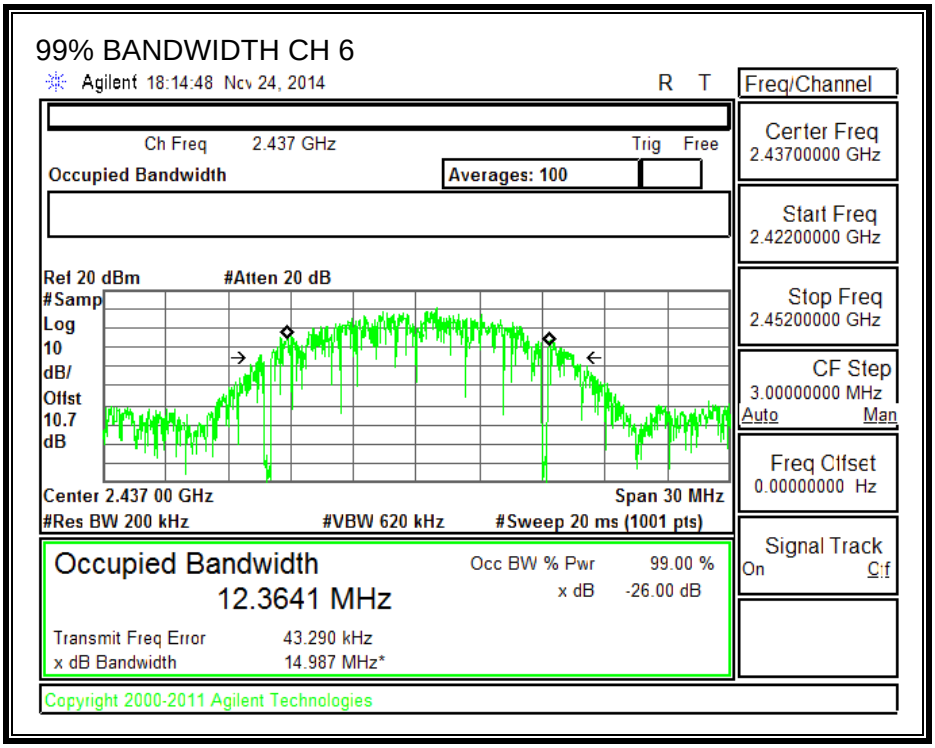
None; for reporting purposes only.

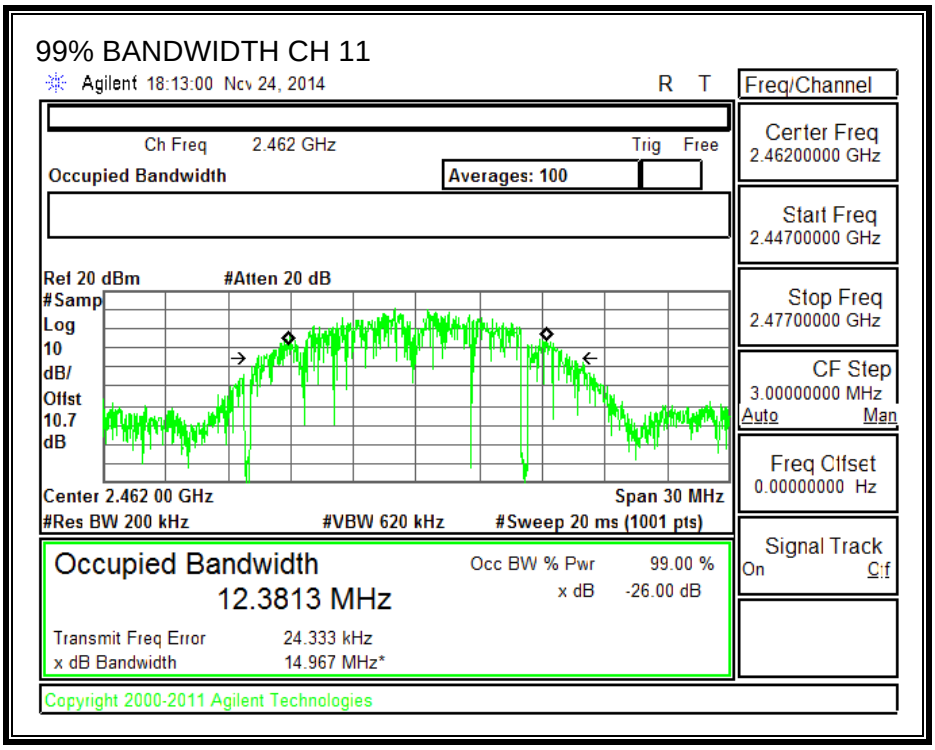
RESULTS

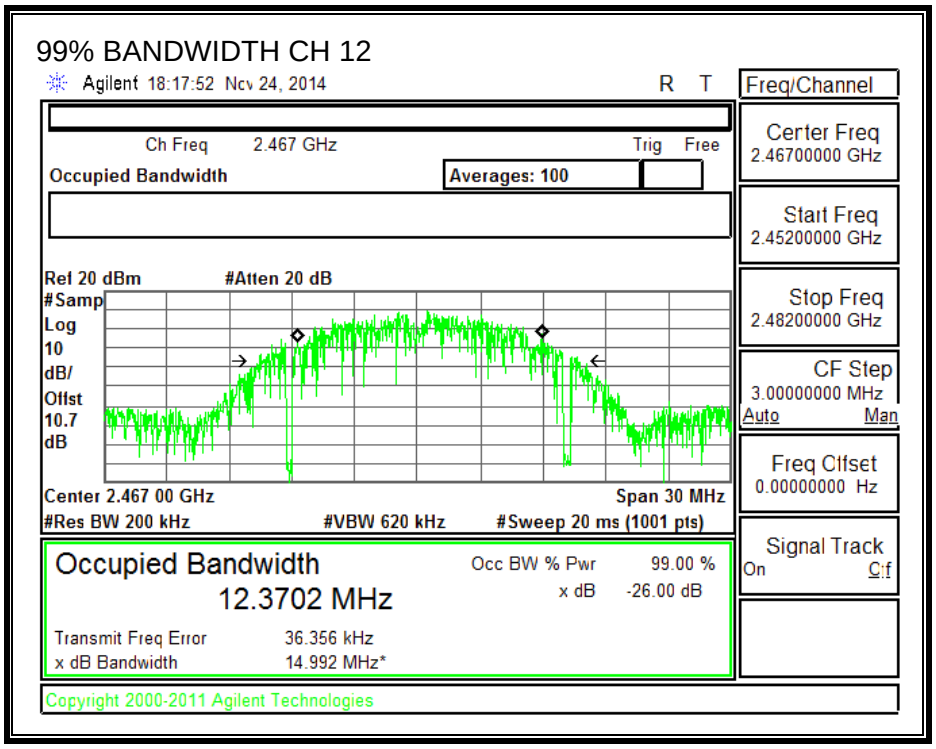
Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	12.3461
6	2437	12.3641
11	2462	12.3813
12	2467	12.3702
13	2472	12.3893

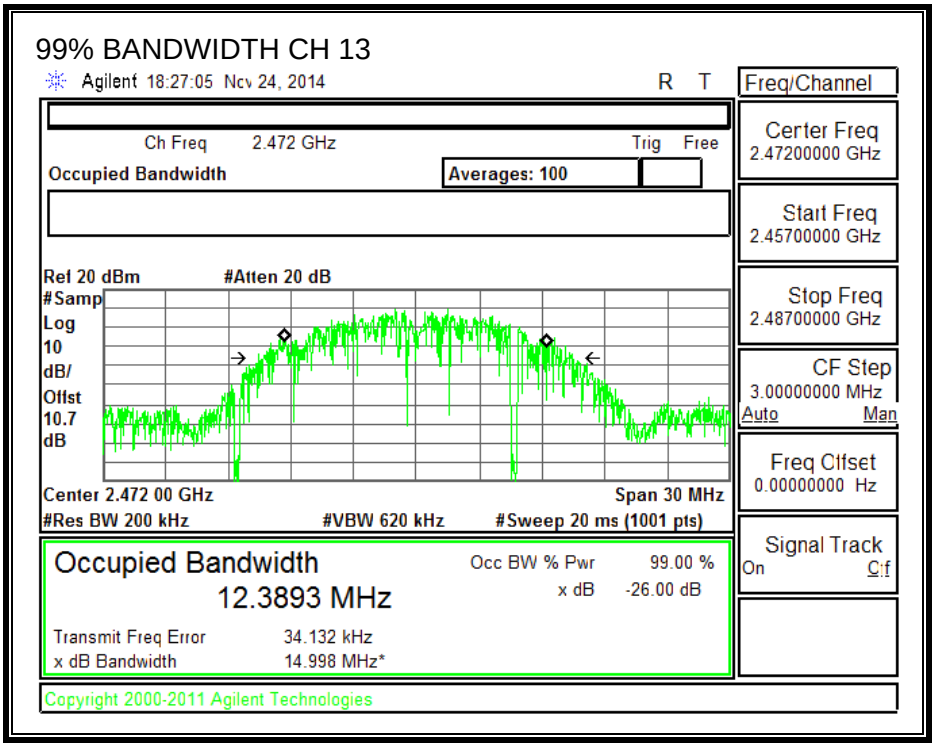
99% BANDWIDTH











9.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	19.30
Mid	2437	19.41
High	2462	19.31
High	2467	19.10
High	2472	18.96

9.1.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 2400–2483.5 MHz, based on the use of antennas with directional gains that do not exceed 6dBi. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.

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	-12.10	30.00	30	36	30.00
Mid	2437	-12.10	30.00	30	36	30.00
High	2462	-12.10	30.00	30	36	30.00
High	2467	-12.10	30.00	30	36	30.00
High	2472	-12.10	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	21.42	21.42	30.00	-8.58
Mid	2437	21.56	21.56	30.00	-8.44
High	2462	21.47	21.47	30.00	-8.53
High	2467	21.20	21.20	30.00	-8.80
High	2472	21.26	21.26	30.00	-8.74

9.1.5. PSD

LIMITS

FCC §15.247

IC RSS-210 A8.2

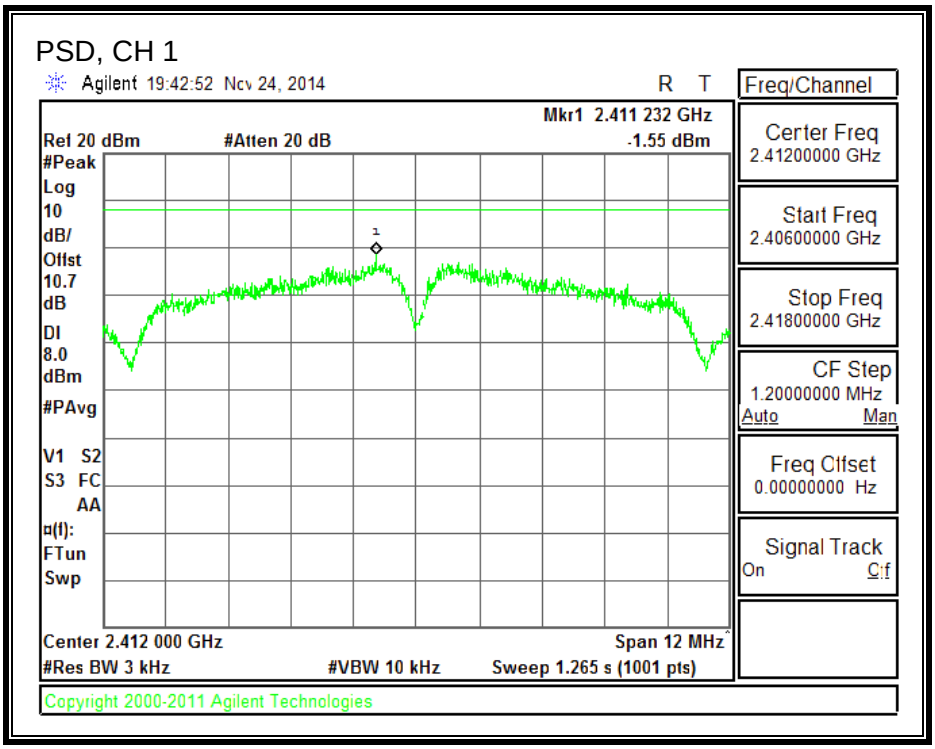
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

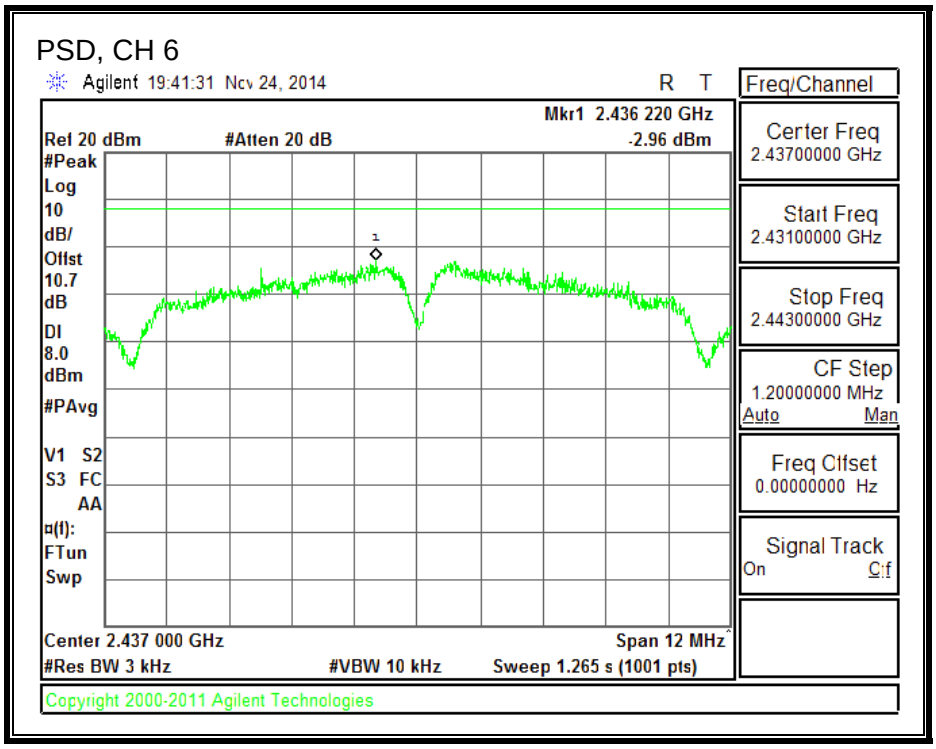
RESULTS

PSD Results

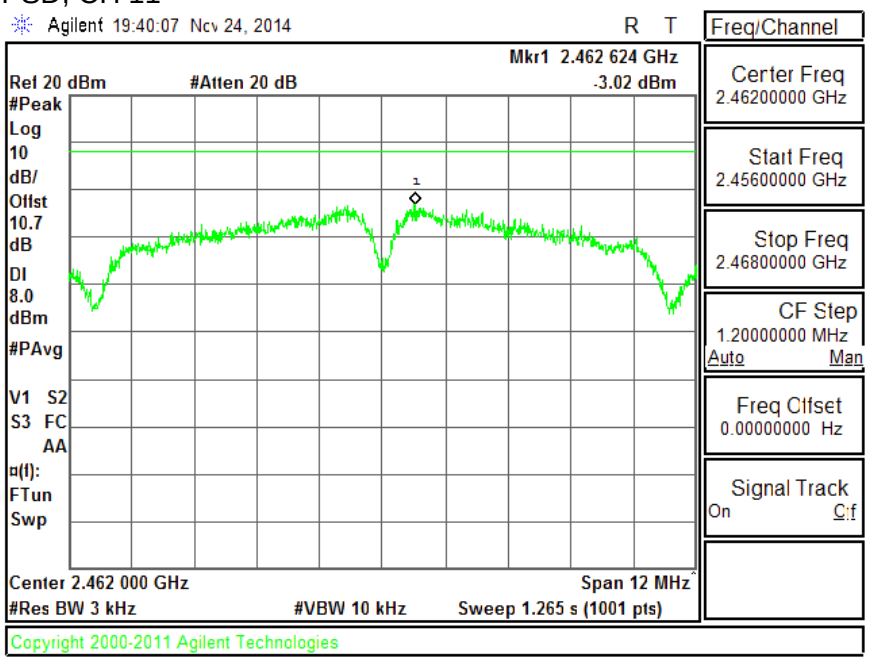
Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
1	2412	-1.55	8.0	-9.6
6	2437	-2.96	8.0	-11.0
11	2462	-3.02	8.0	-11.0
12	2467	-2.76	8.0	-10.8
13	2472	-2.60	8.0	-10.6

PSD

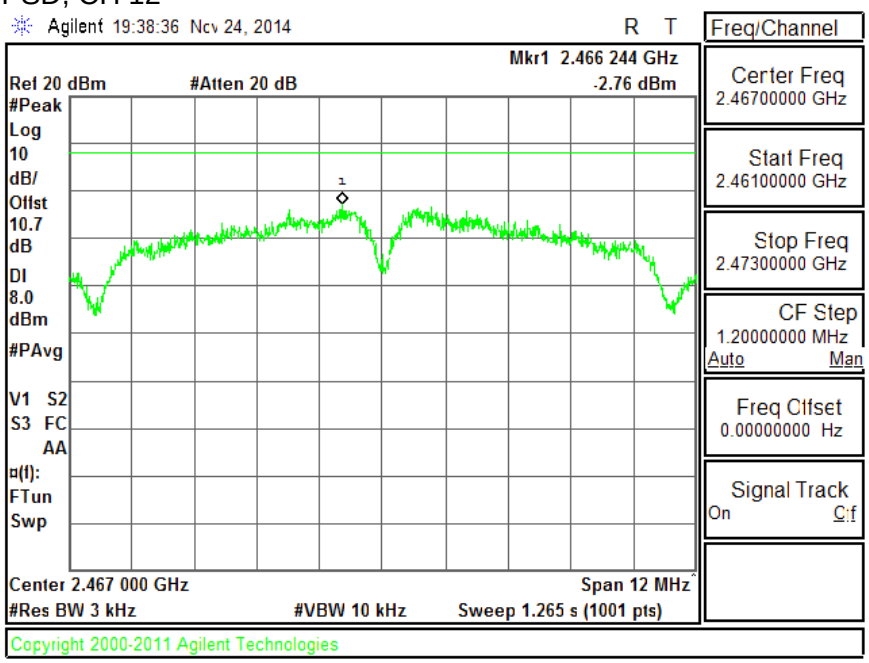




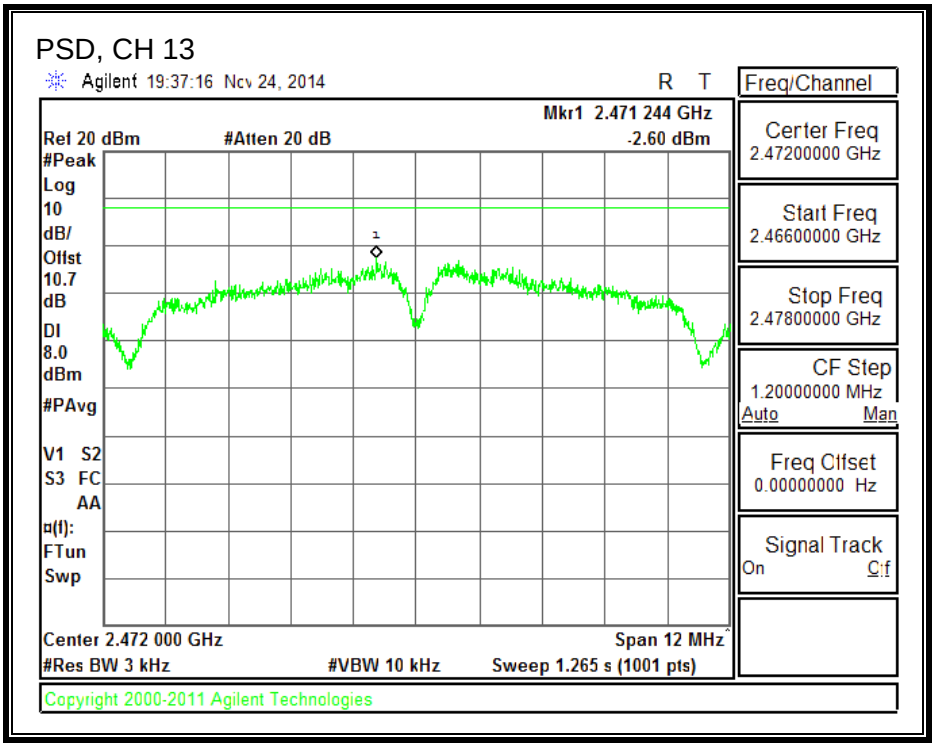
PSD, CH 11



PSD, CH 12



PSD, CH 13



9.1.6. OUT-OF-BAND EMISSIONS

LIMITS

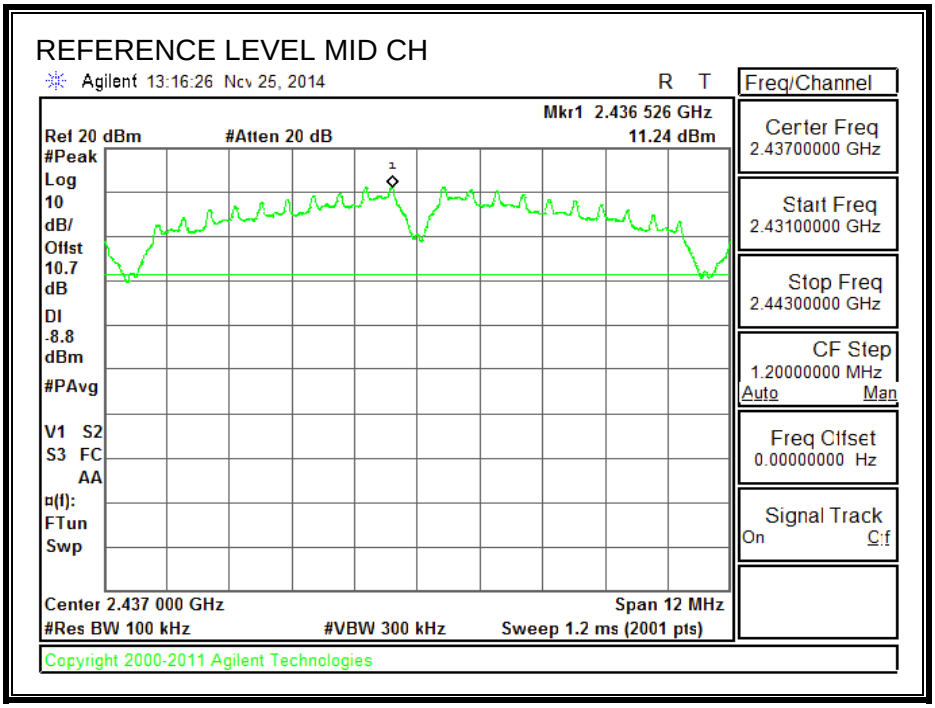
FCC §15.247 (d)

IC RSS-210 A8.5

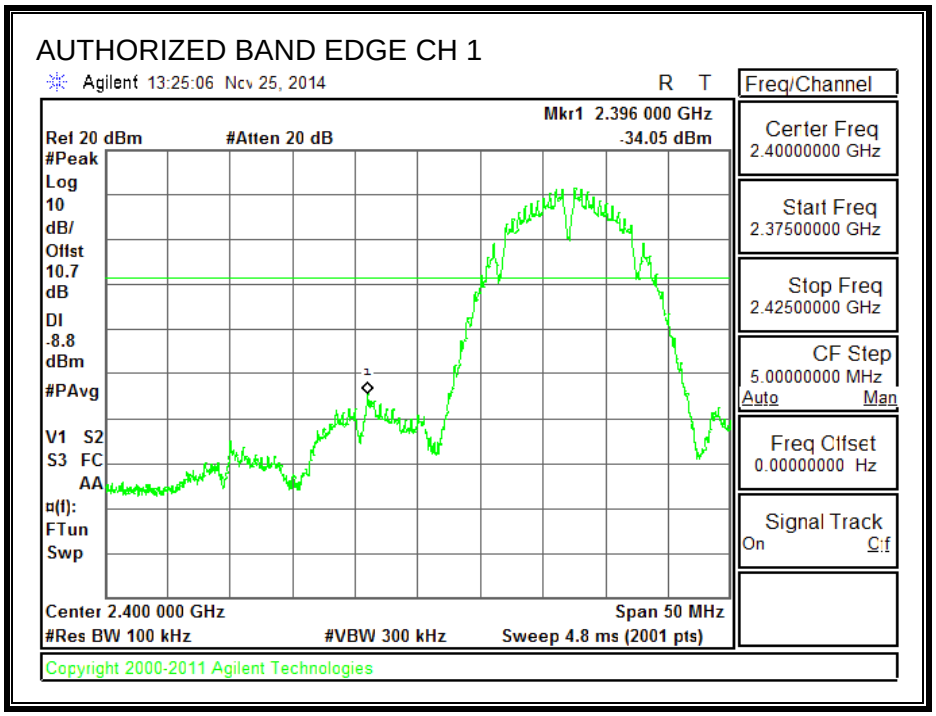
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

RESULTS

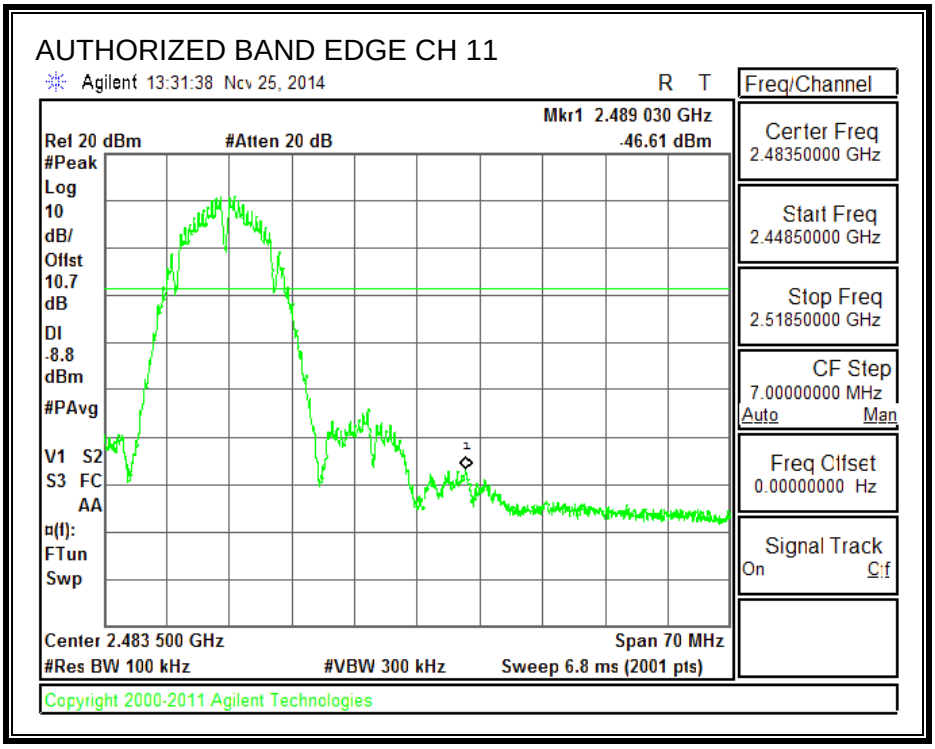
IN-BAND REFERENCE LEVEL

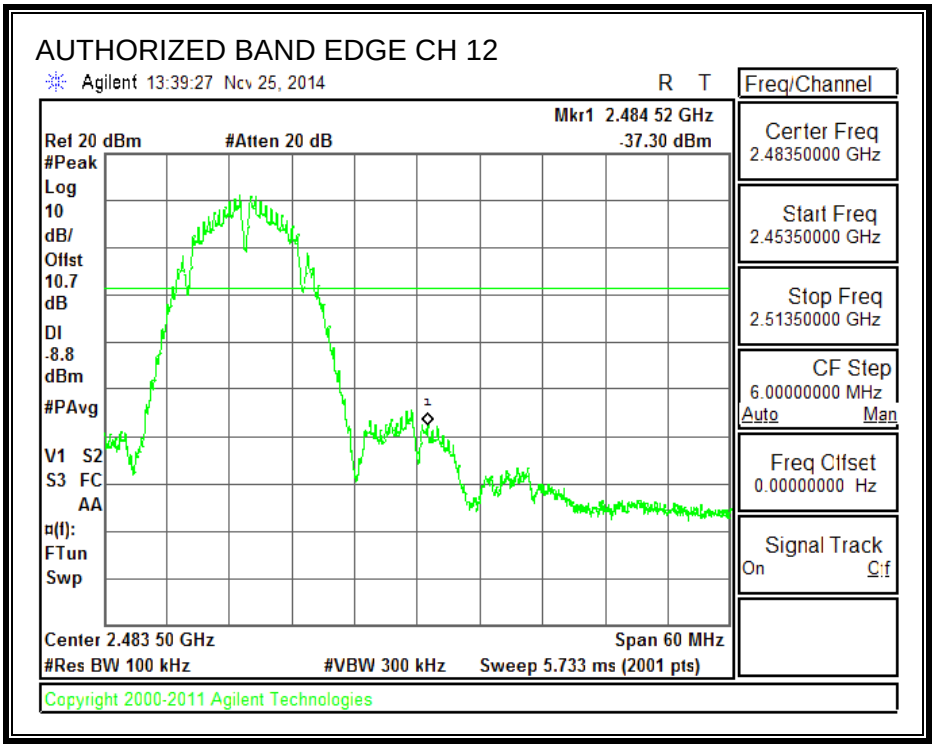


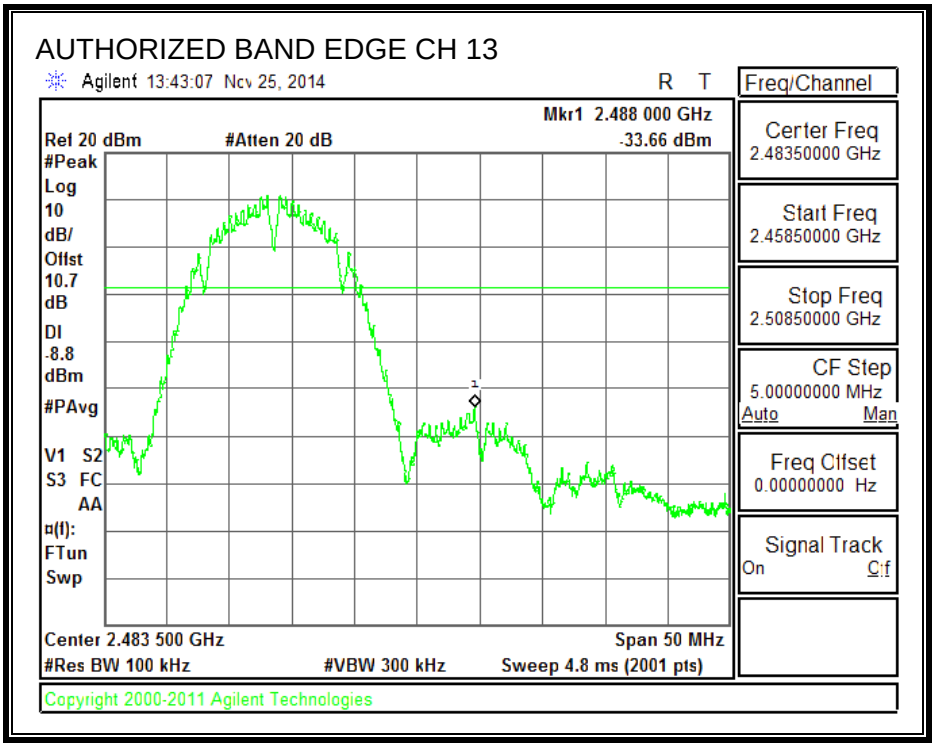
LOW CHANNEL BANDEDGE



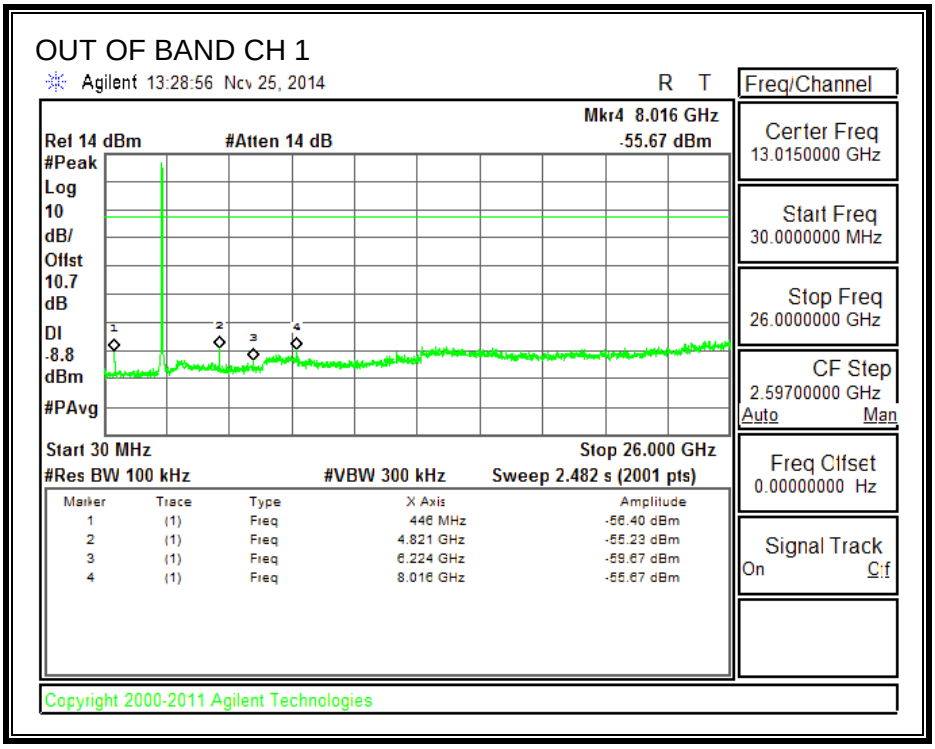
HIGH CHANNEL BANDEDGE

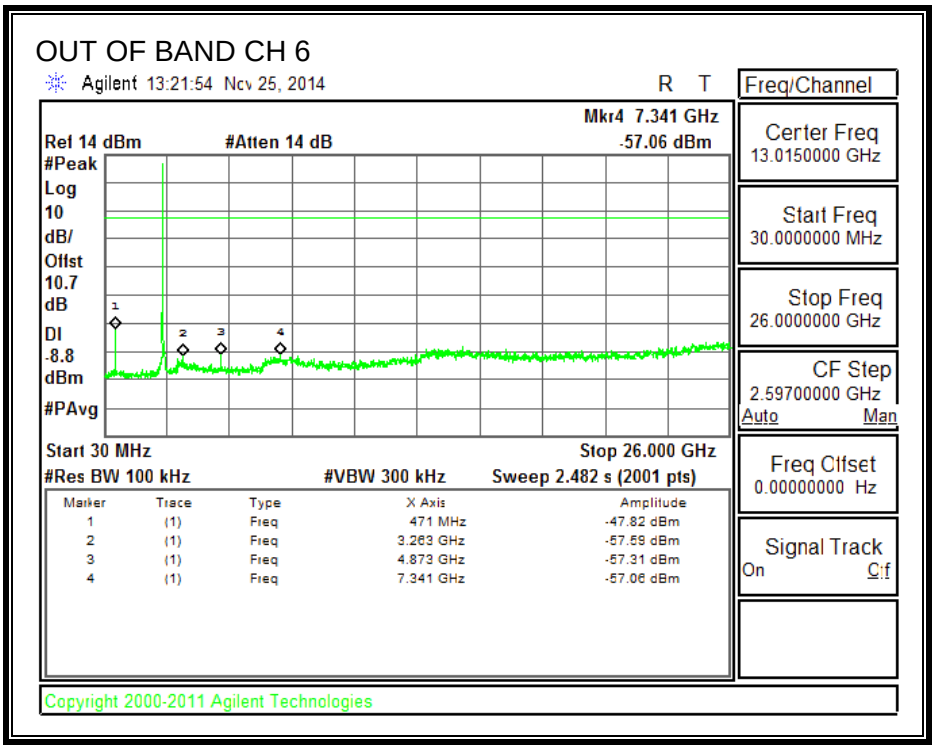


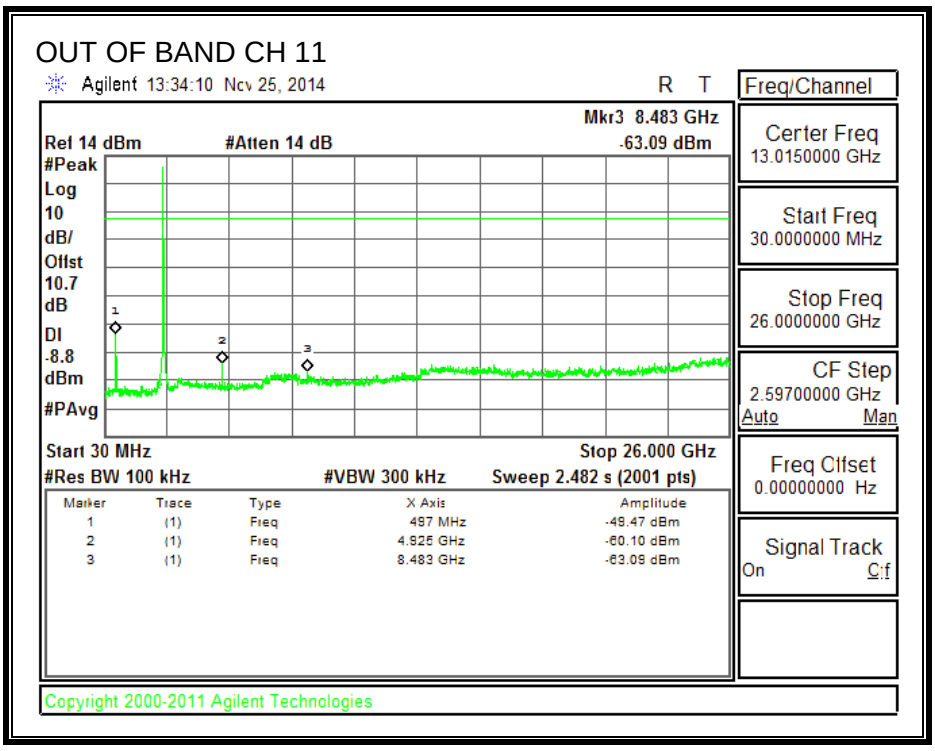




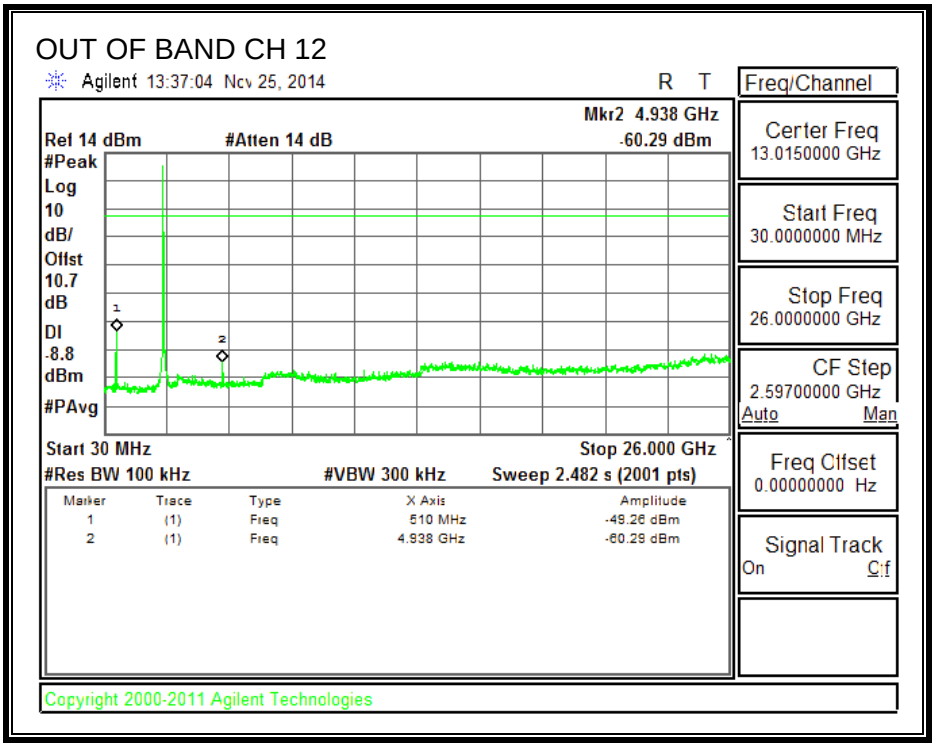
OUT-OF-BAND EMISSIONS



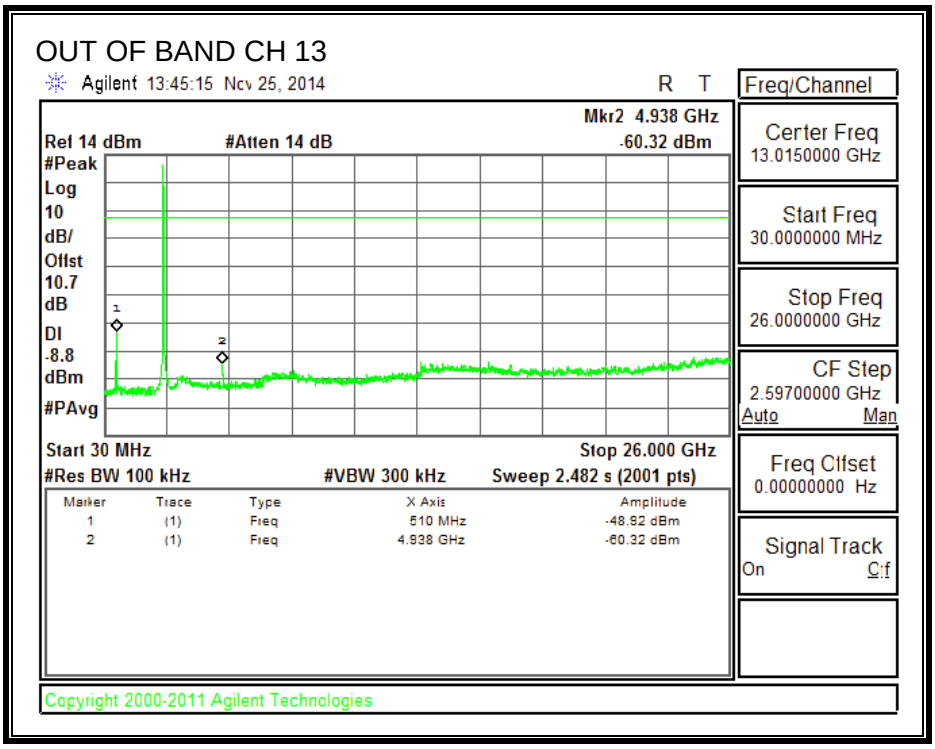




OUT OF BAND CH 12



OUT OF BAND CH 13



9.2. 802.11g 1Tx MODE IN THE 2.4 GHz BAND

9.2.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

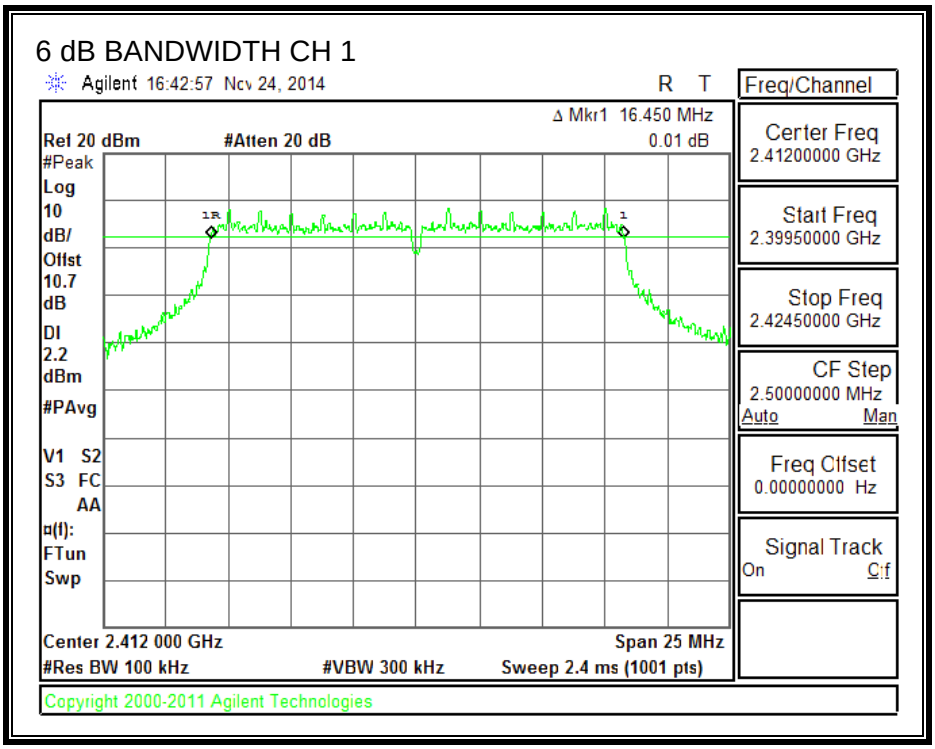
IC RSS-210 A8.2 (a)

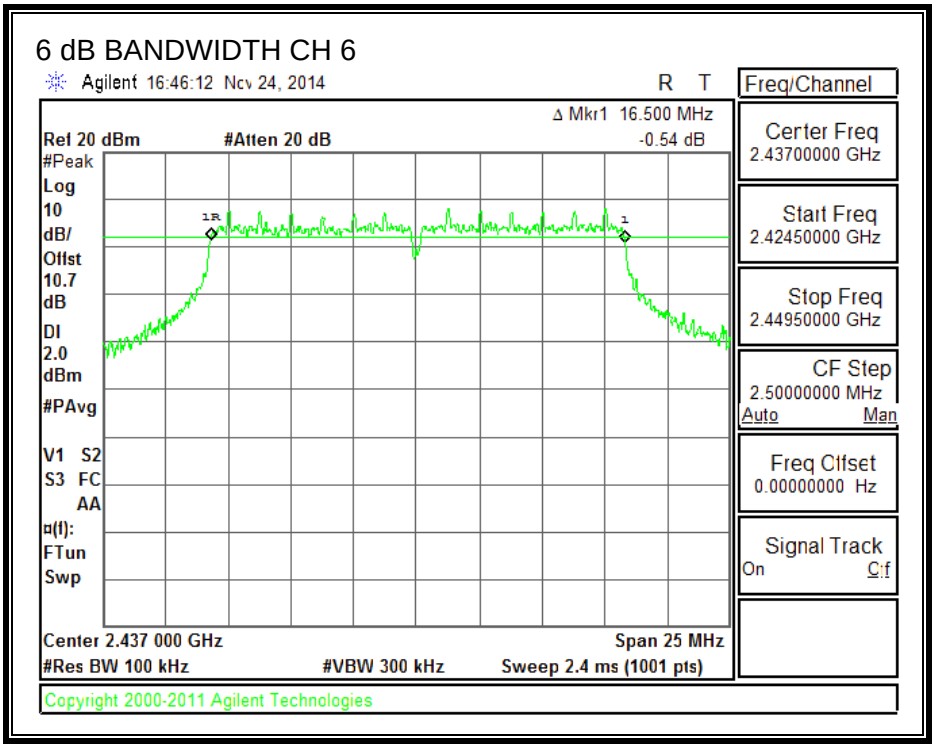
The minimum 6 dB bandwidth shall be at least 500 kHz.

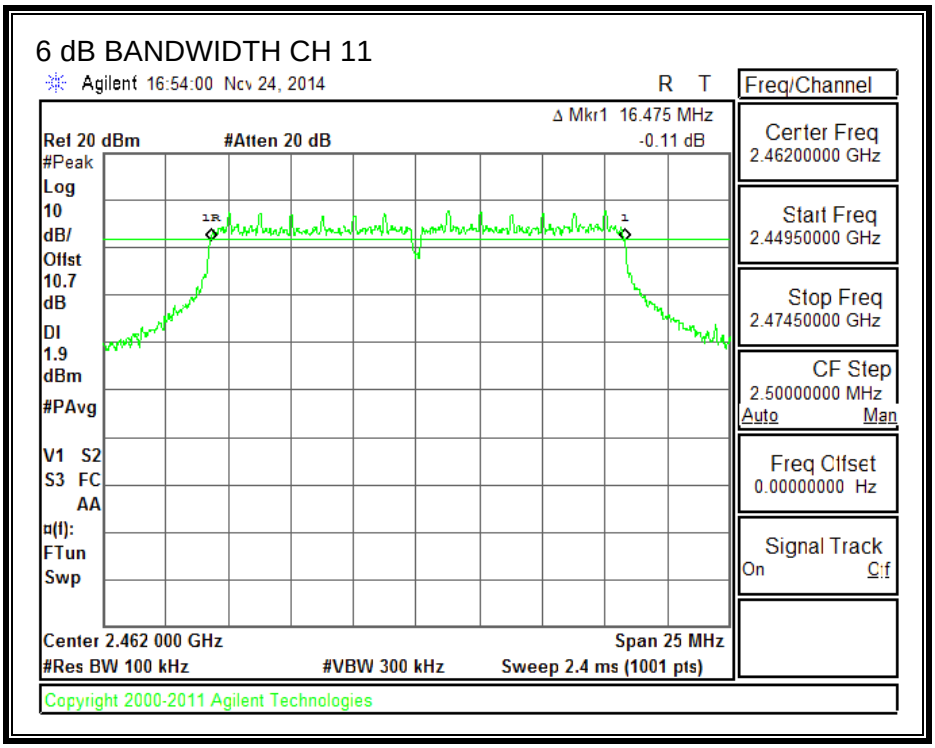
RESULTS

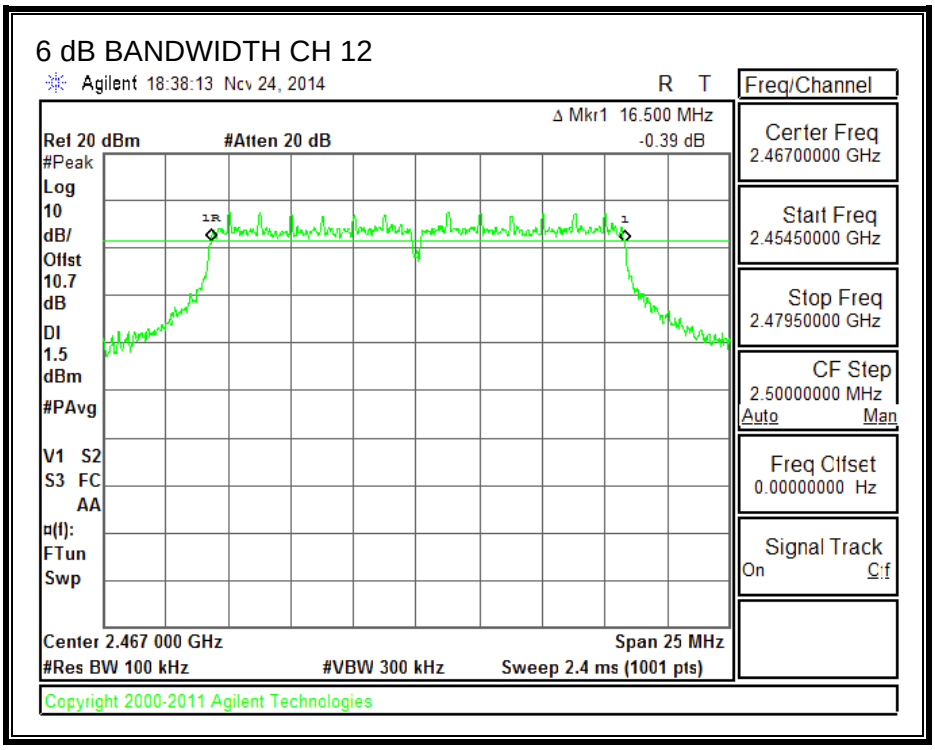
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	16.450	0.5
6	2437	16.500	0.5
11	2462	16.475	0.5
12	2467	16.500	0.5
13	2472	16.450	0.5

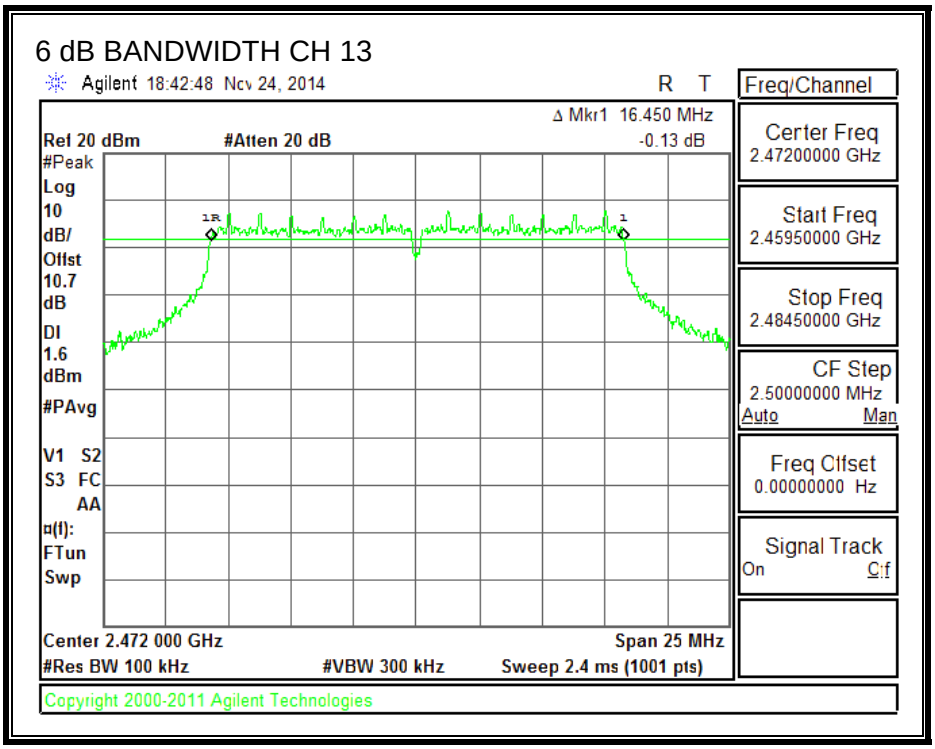
6 dB BANDWIDTH











9.2.2. 99% BANDWIDTH

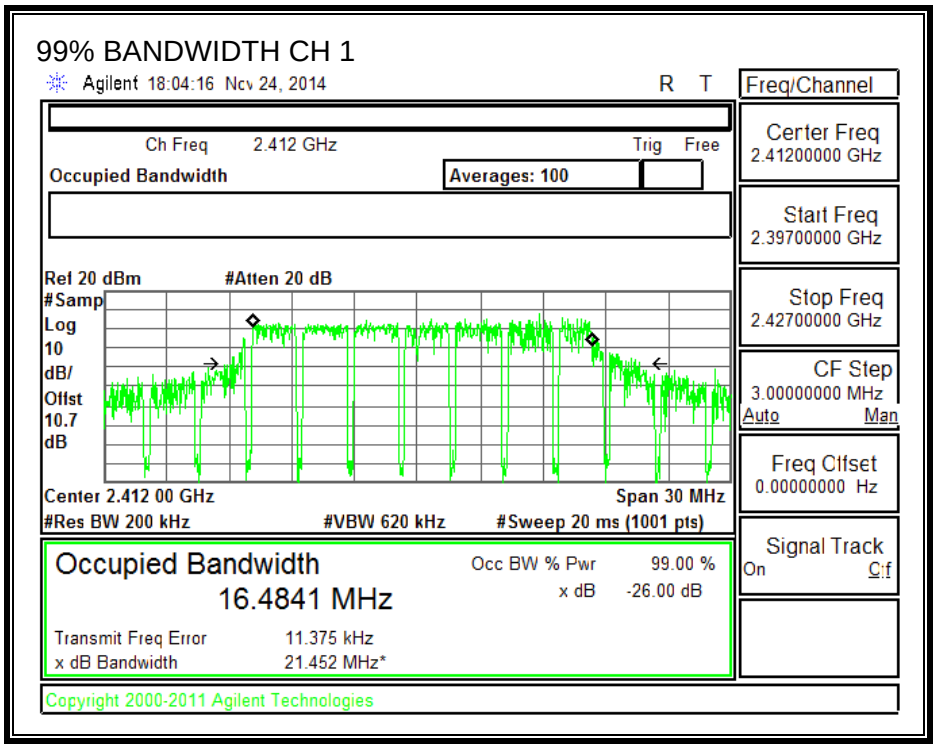
LIMITS

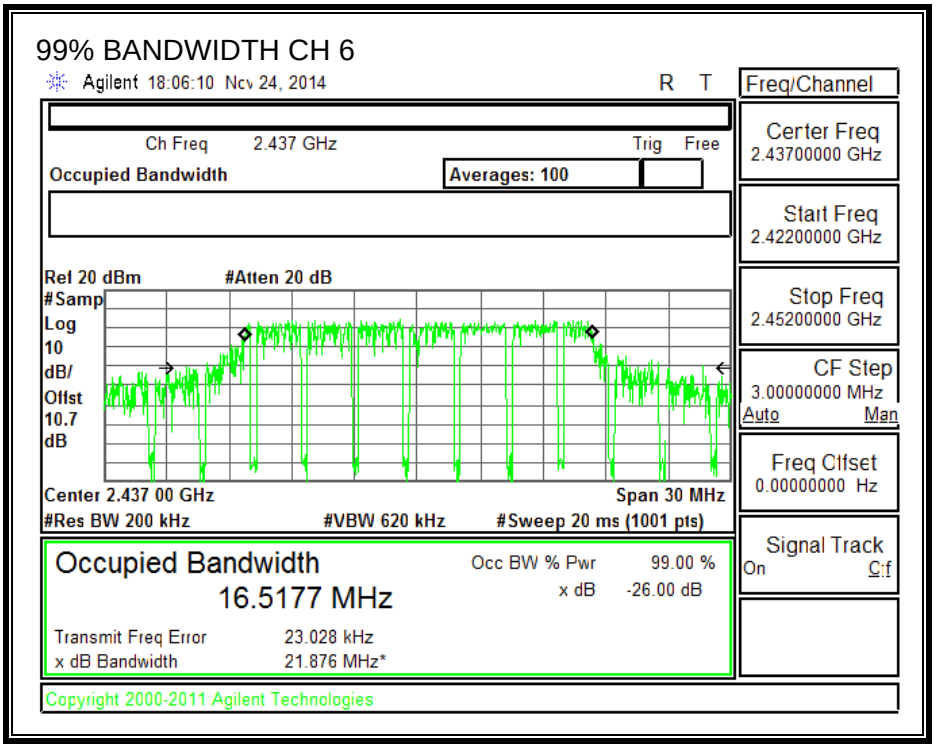
None; for reporting purposes only.

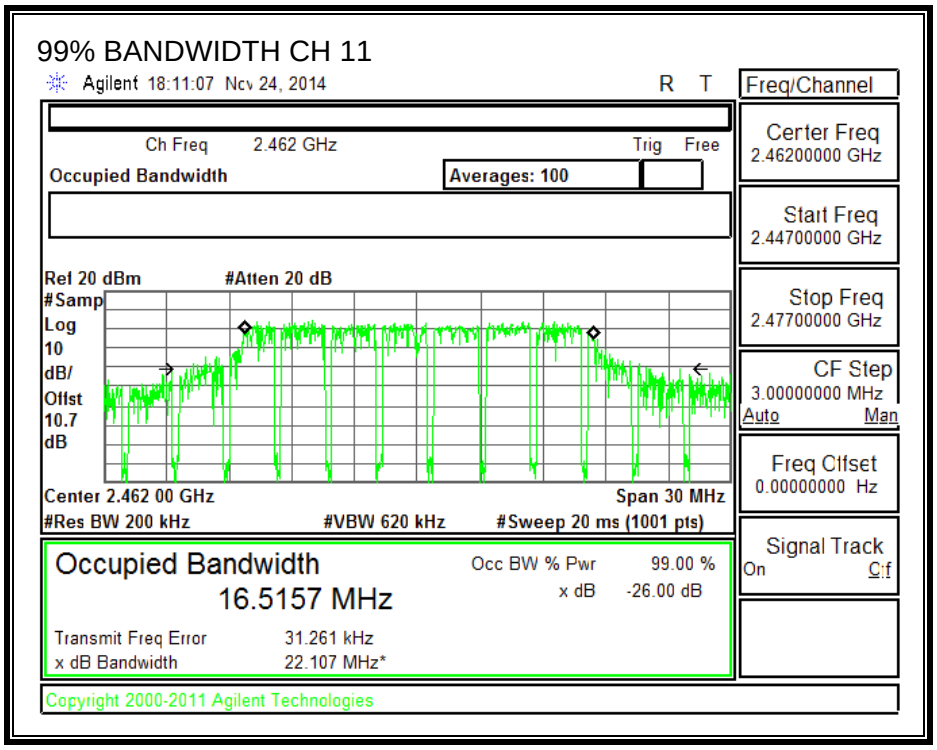
RESULTS

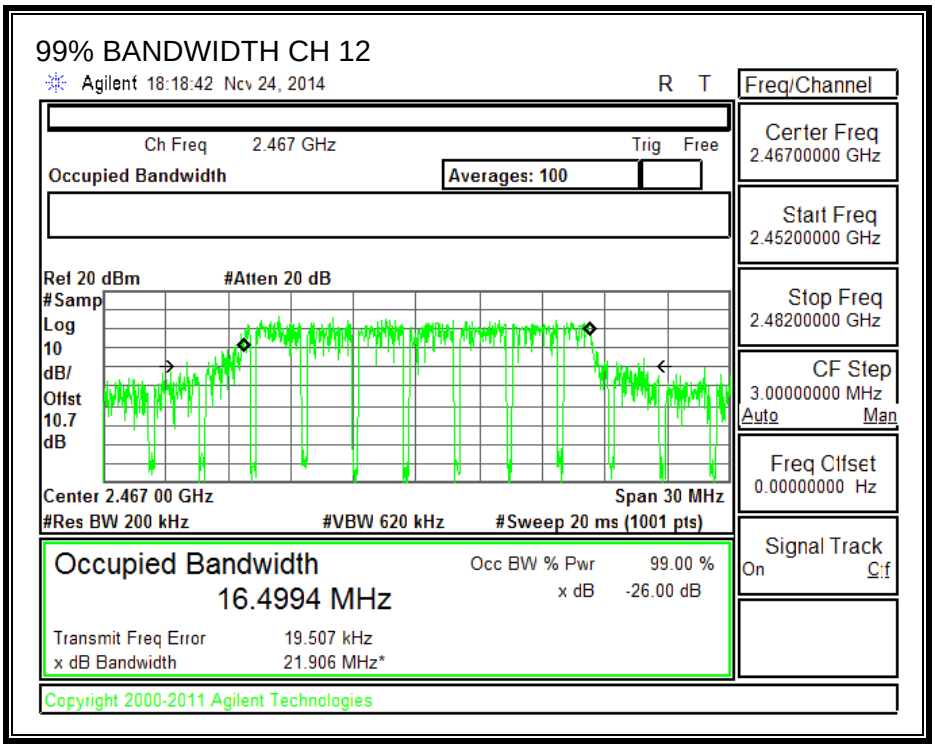
Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	16.4841
6	2437	16.5177
11	2462	16.5157
12	2467	16.4994
13	2472	16.5195

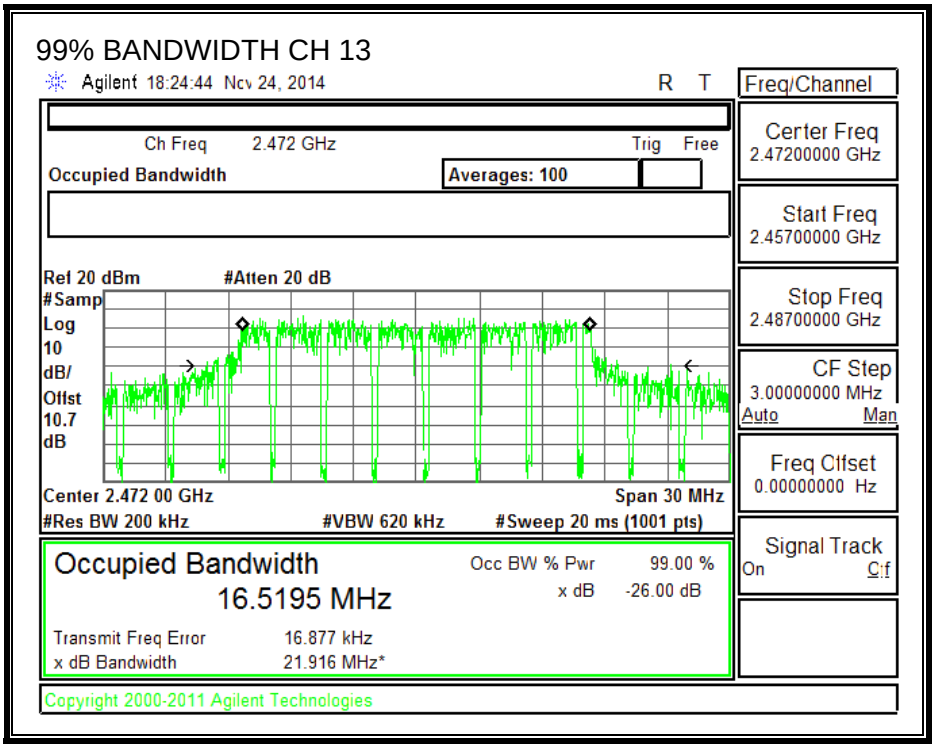
99% BANDWIDTH











9.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low, Ch 1	2412	17.72
Low, Ch 2	2417	19.36
Mid, Ch 6	2437	19.42
High, Ch 10	2457	19.32
High, Ch 11	2462	17.80
High, Ch 12	2467	16.46
High, Ch 13	2472	5.89

9.2.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 2400–2483.5 MHz, based on the use of antennas with directional gains that do not exceed 6dBi. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.

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	-12.10	30.00	30	36	30.00
Low	2417	-12.10	30.00	30	36	30.00
Mid	2437	-12.10	30.00	30	36	30.00
High	2457	-12.10	30.00	30	36	30.00
High	2462	-12.10	30.00	30	36	30.00
High	2467	-12.10	30.00	30	36	30.00
High	2472	-12.10	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	25.10	25.10	30.00	-4.90
Low	2417	26.37	26.37	30.00	-3.63
Mid	2437	26.44	26.44	30.00	-3.56
High	2457	26.27	26.27	30.00	-3.73
High	2462	25.00	25.00	30.00	-5.00
High	2467	23.78	23.78	30.00	-6.22
High	2472	13.16	13.16	30.00	-16.84

9.2.5. PSD

LIMITS

FCC §15.247

IC RSS-210 A8.2

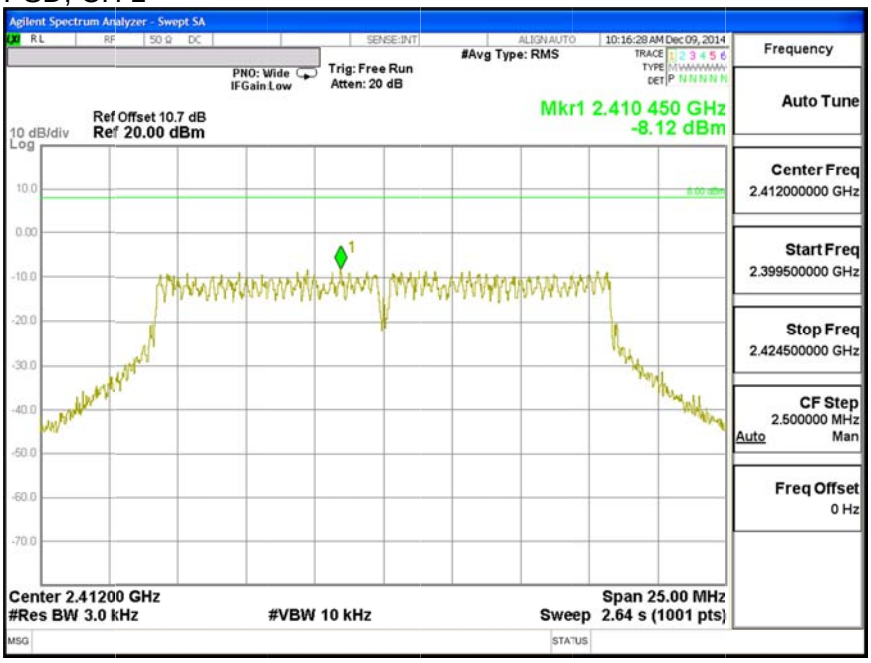
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

RESULTS

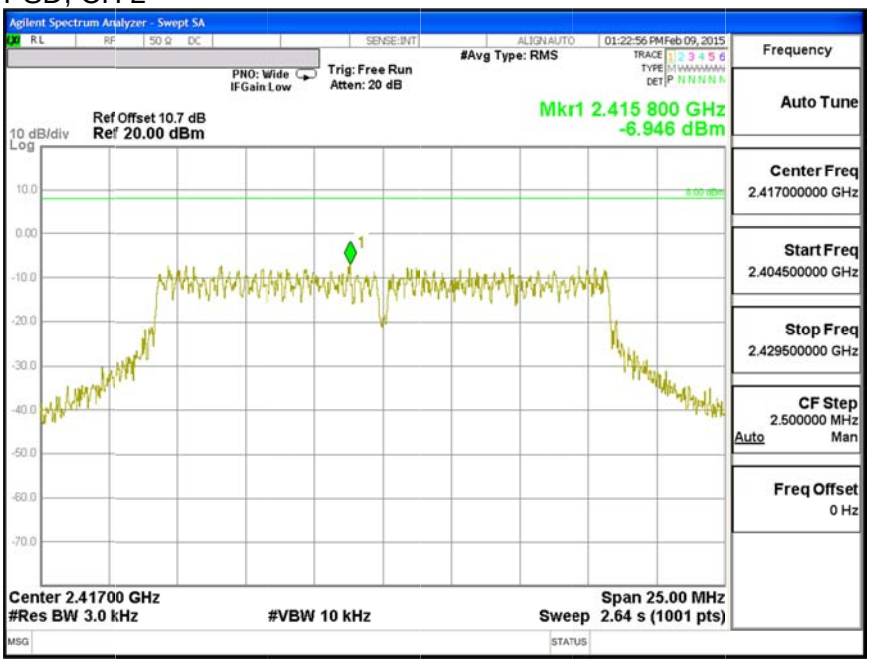
Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
1	2412	-8.12	8.0	-16.1
2	2417	-6.94	8.0	-14.9
6	2437	-6.64	8.0	-14.6
10	2457	-7.02	8.0	-15.0
11	2462	-7.10	8.0	-15.1
12	2467	-8.76	8.0	-16.8
13	2472	-17.76	8.0	-25.76

PSD

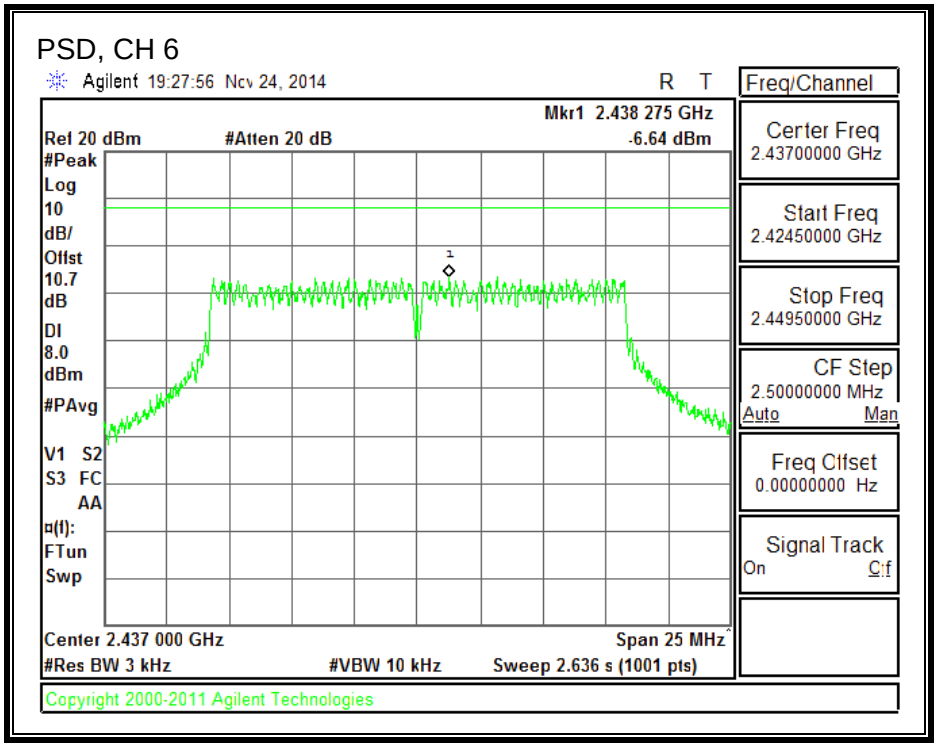
PSD, CH 1



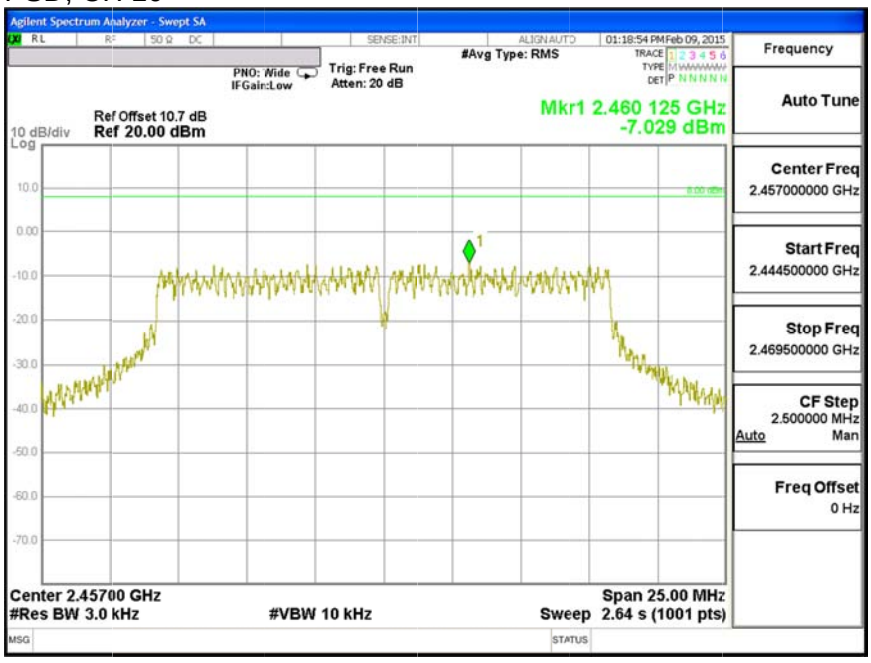
PSD, CH 2



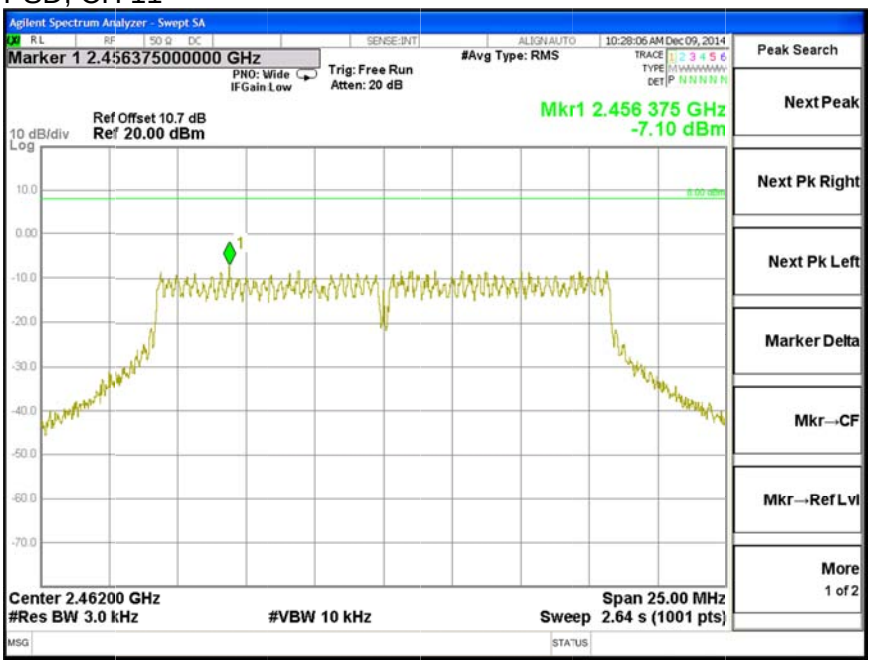
PSD, CH 6



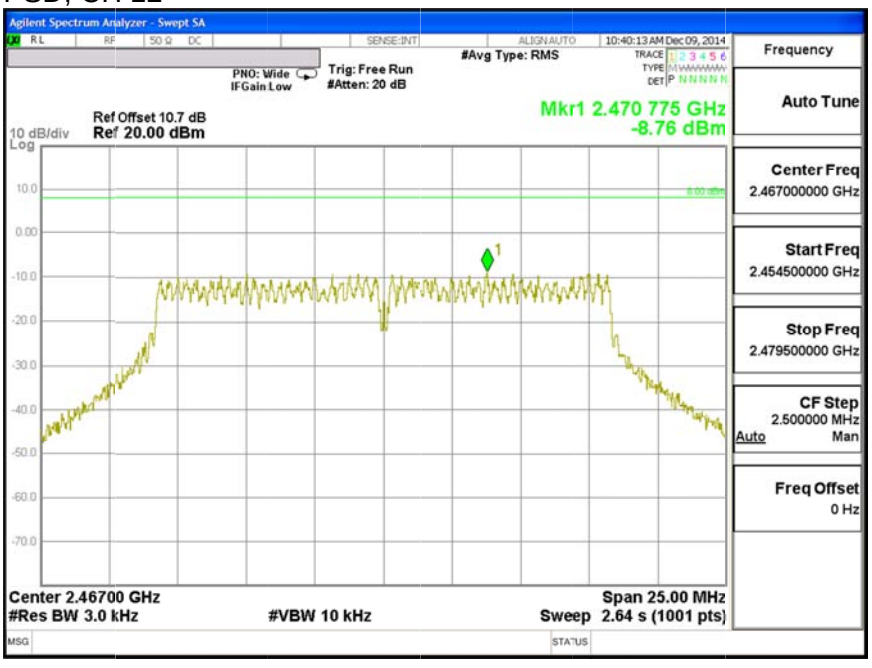
PSD, CH 10



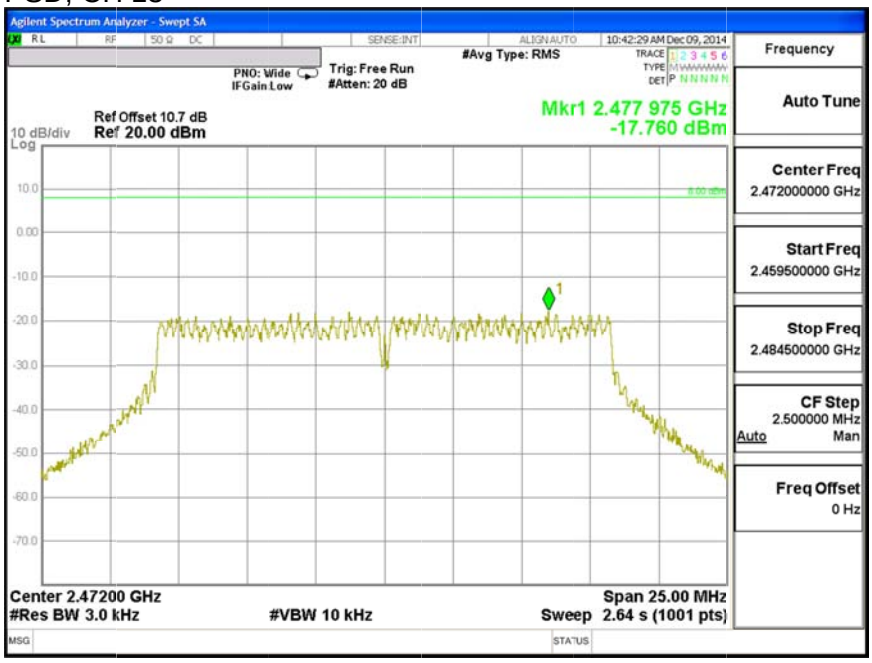
PSD, CH 11



PSD, CH 12



PSD, CH 13



9.2.6. OUT-OF-BAND EMISSIONS

LIMITS

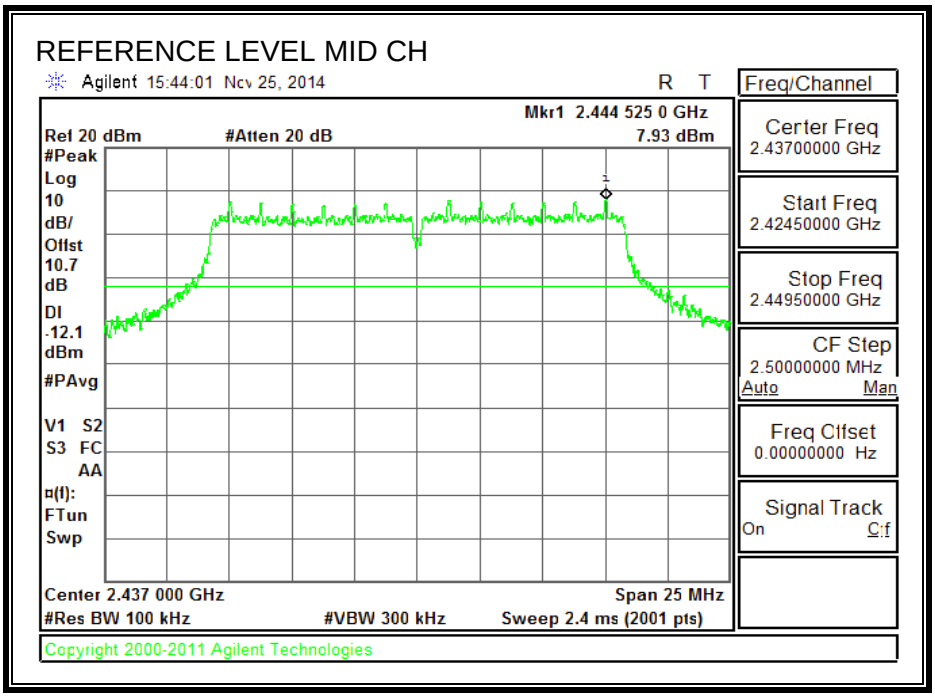
FCC §15.247 (d)

IC RSS-210 A8.5

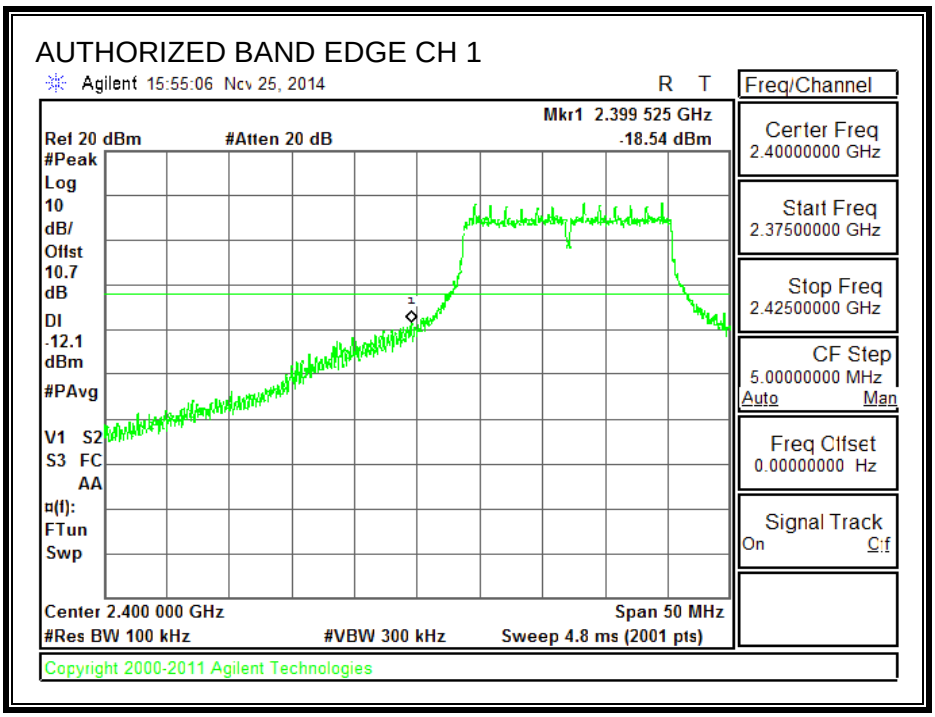
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

RESULTS

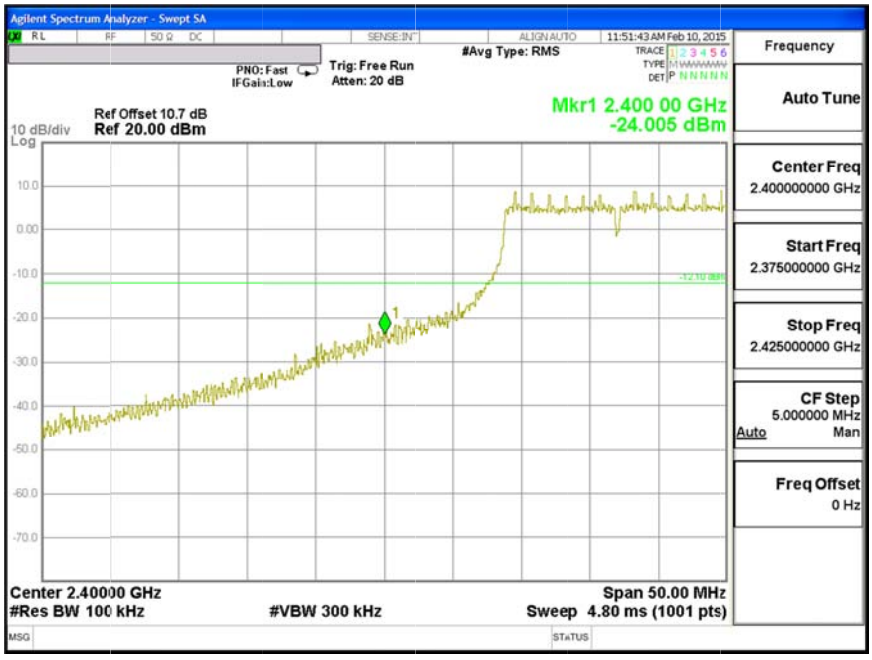
IN-BAND REFERENCE LEVEL



LOW CHANNEL BANDEDGE

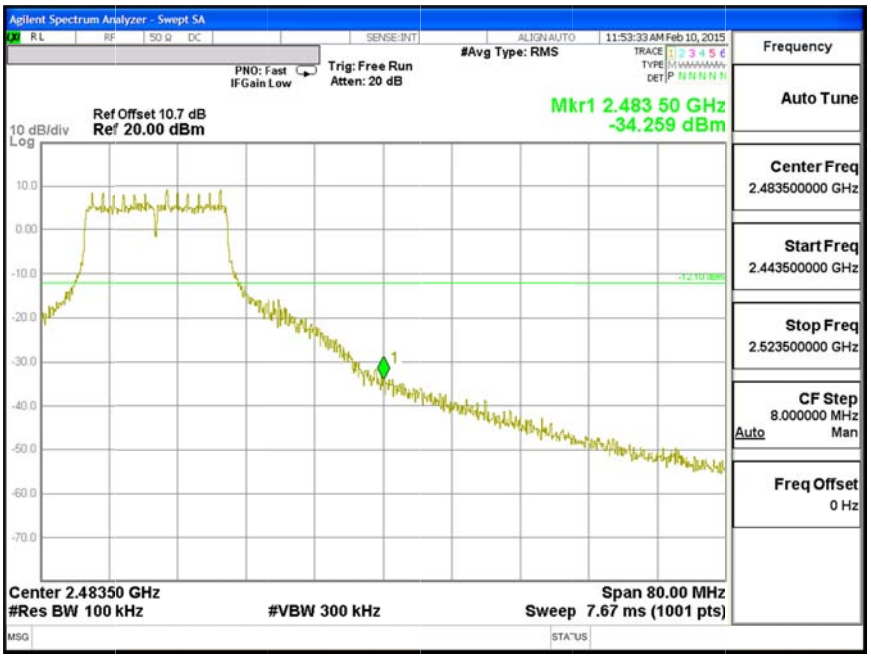


AUTHORIZED BAND EDGE CH 2

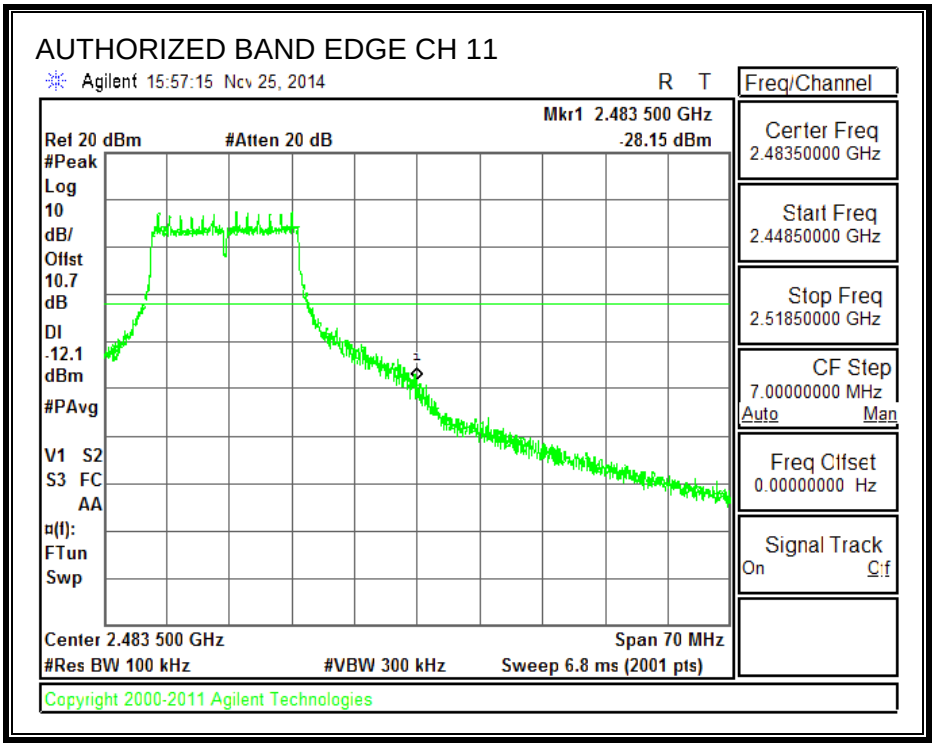


HIGH CHANNEL BANDEDGE

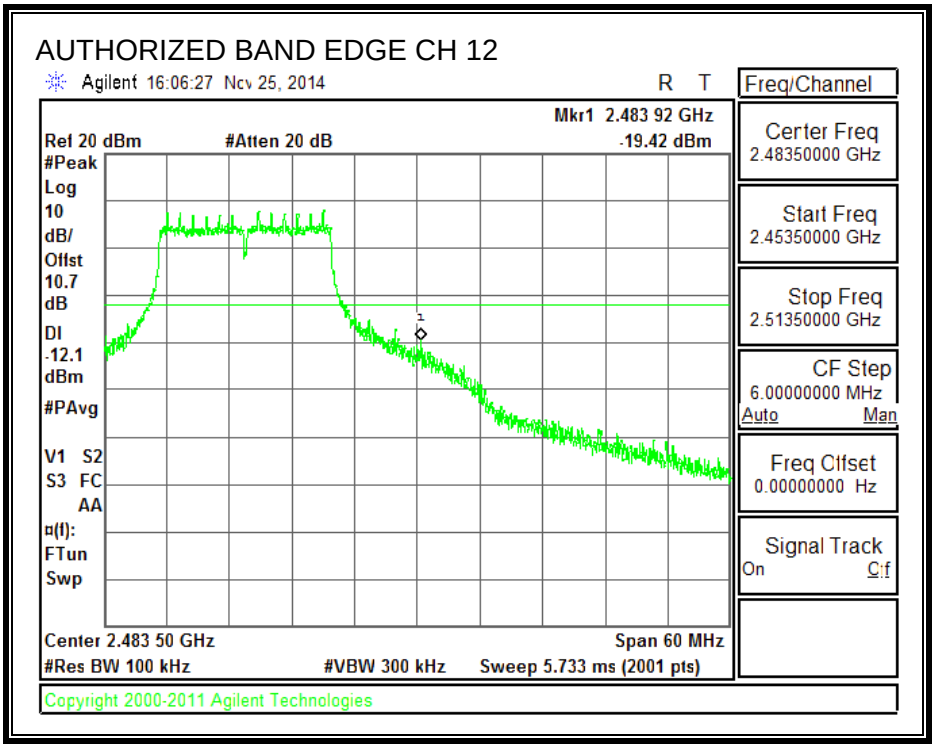
AUTHORIZED BAND EDGE CH 10

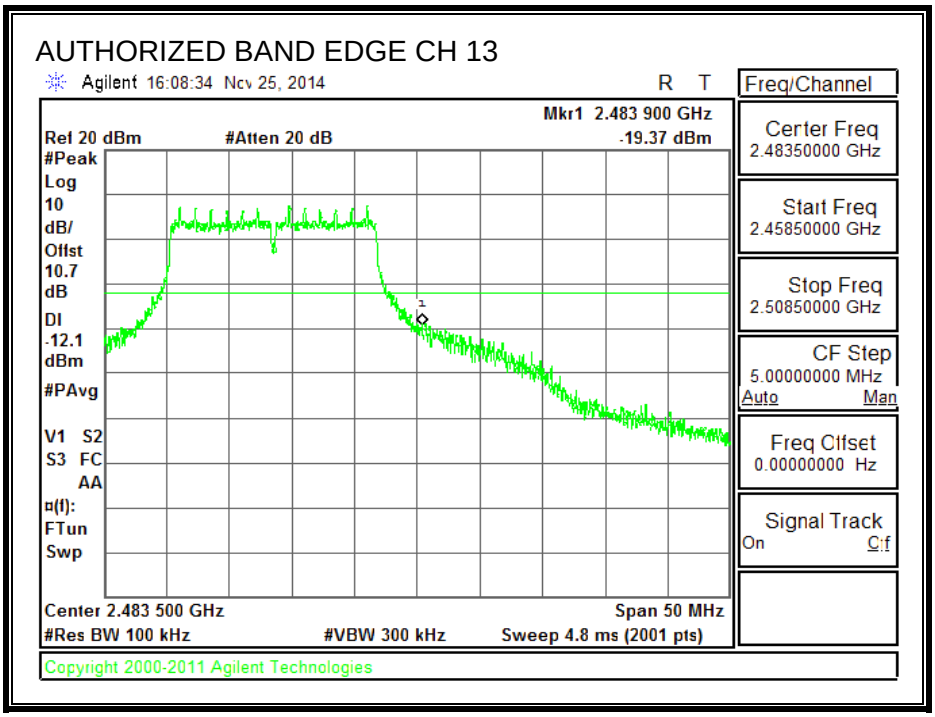


AUTHORIZED BAND EDGE CH 11

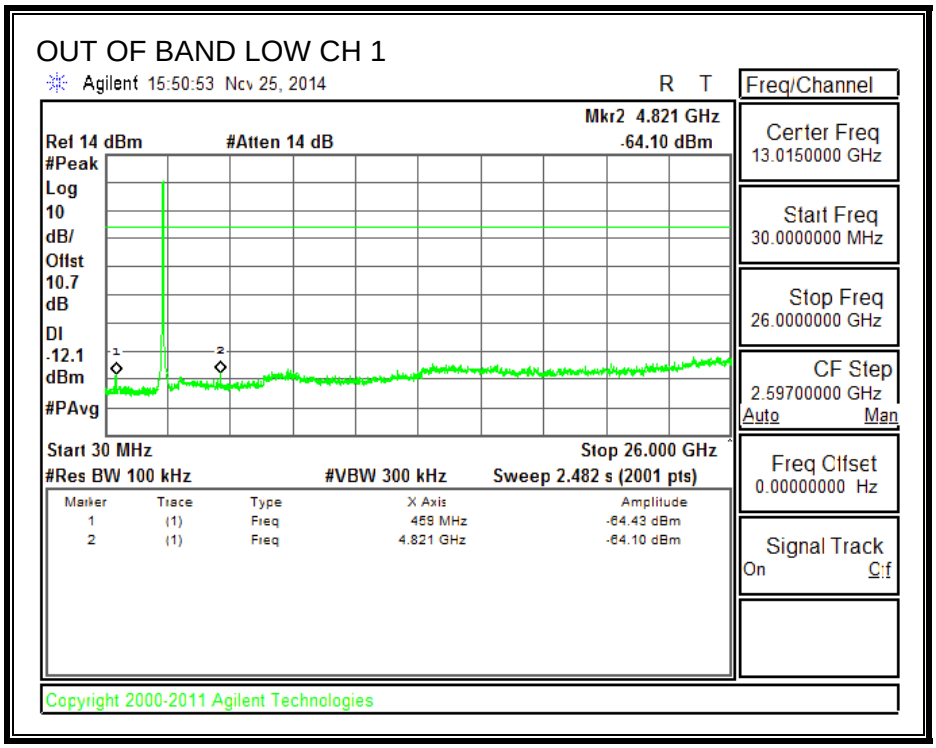


AUTHORIZED BAND EDGE CH 12

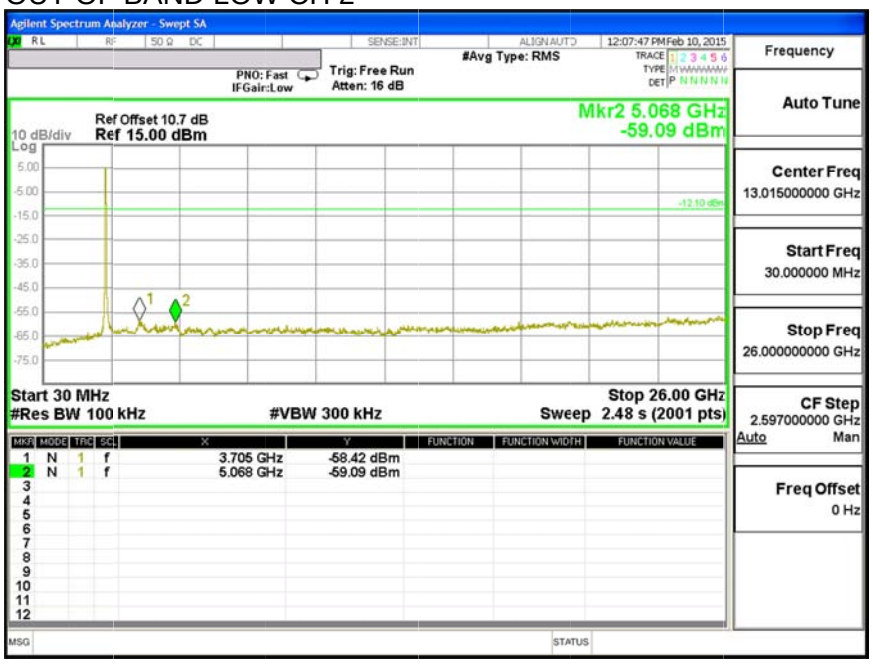




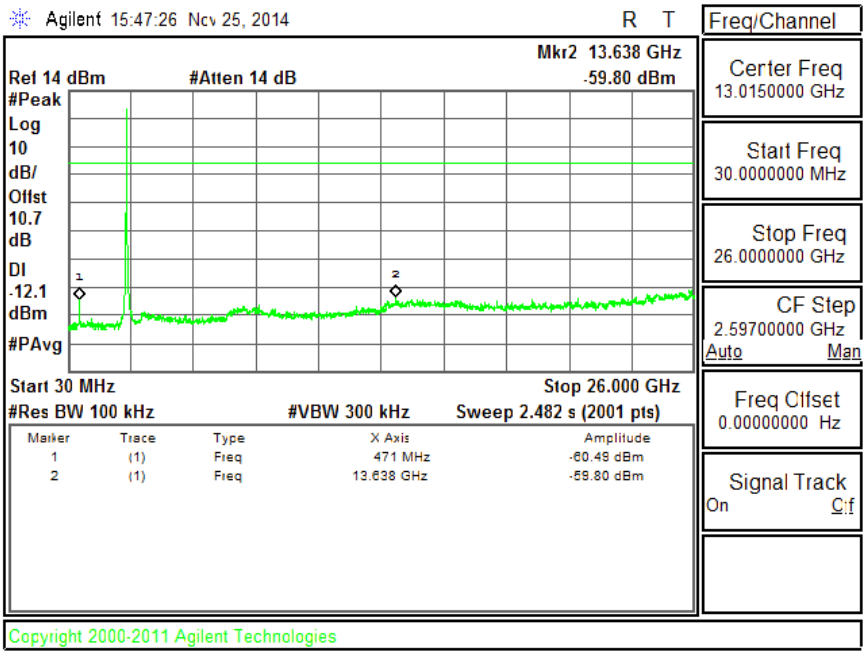
OUT-OF-BAND EMISSIONS



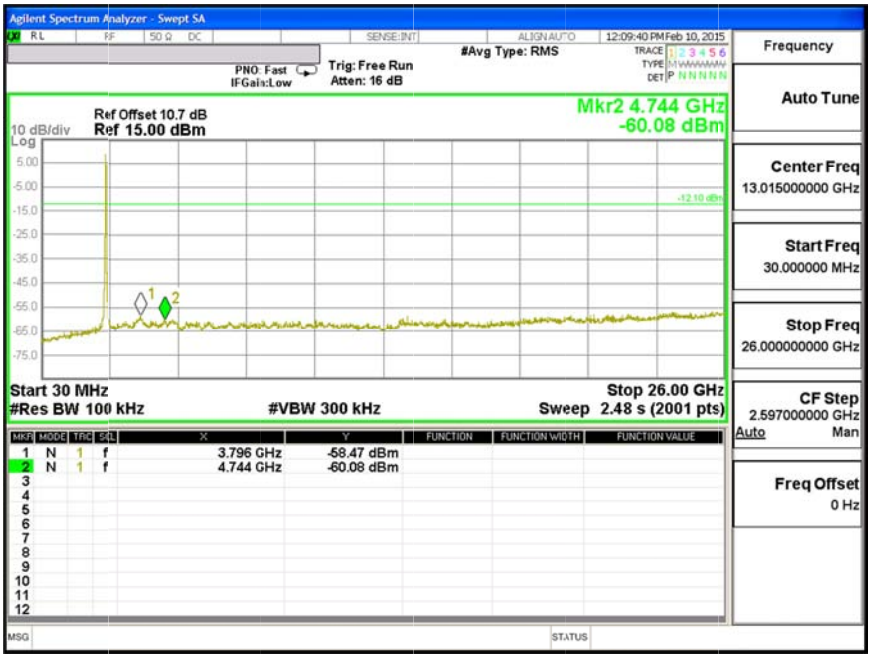
OUT OF BAND LOW CH 2



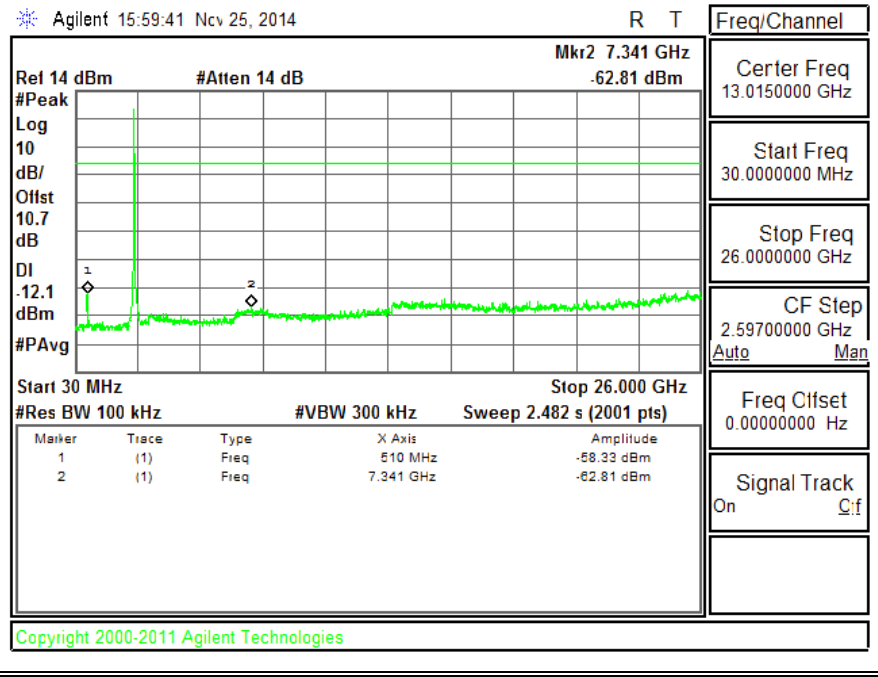
OUT OF BAND MID CH



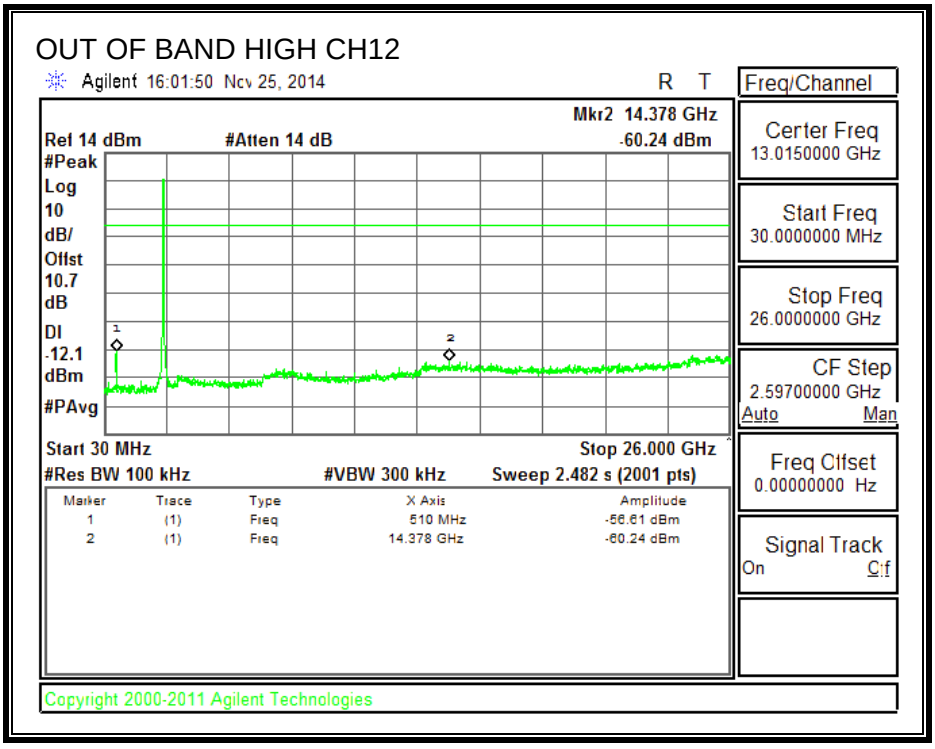
OUT OF BAND HIGH CH10



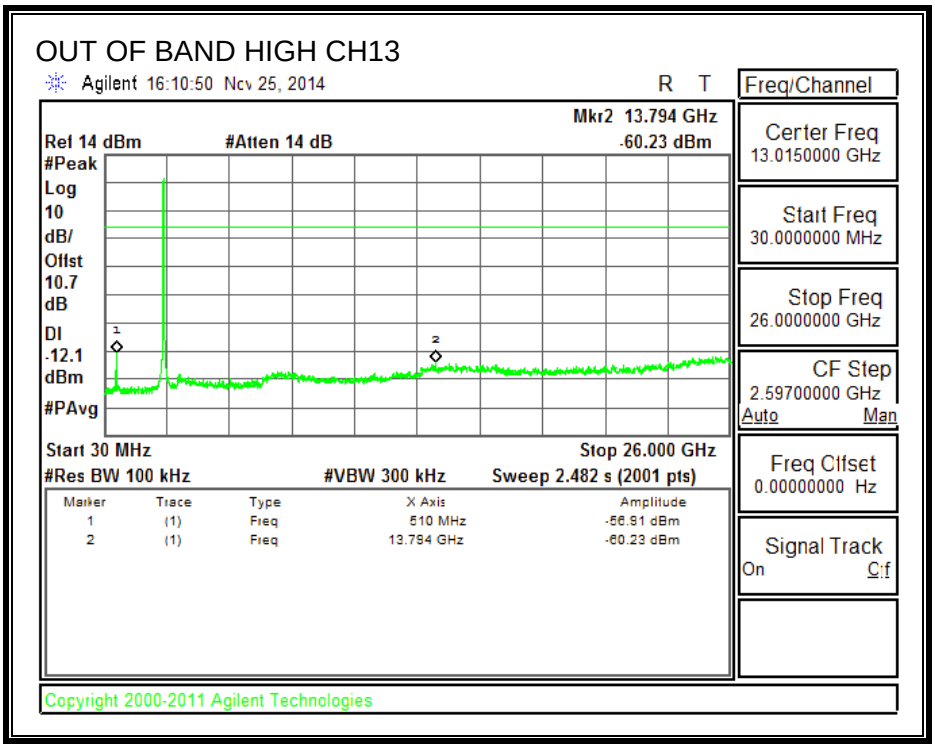
OUT OF BAND HIGH CH11



OUT OF BAND HIGH CH12



OUT OF BAND HIGH CH13



9.3. 802.11n HT20 1Tx MODE IN THE 2.4 GHz BAND

9.3.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

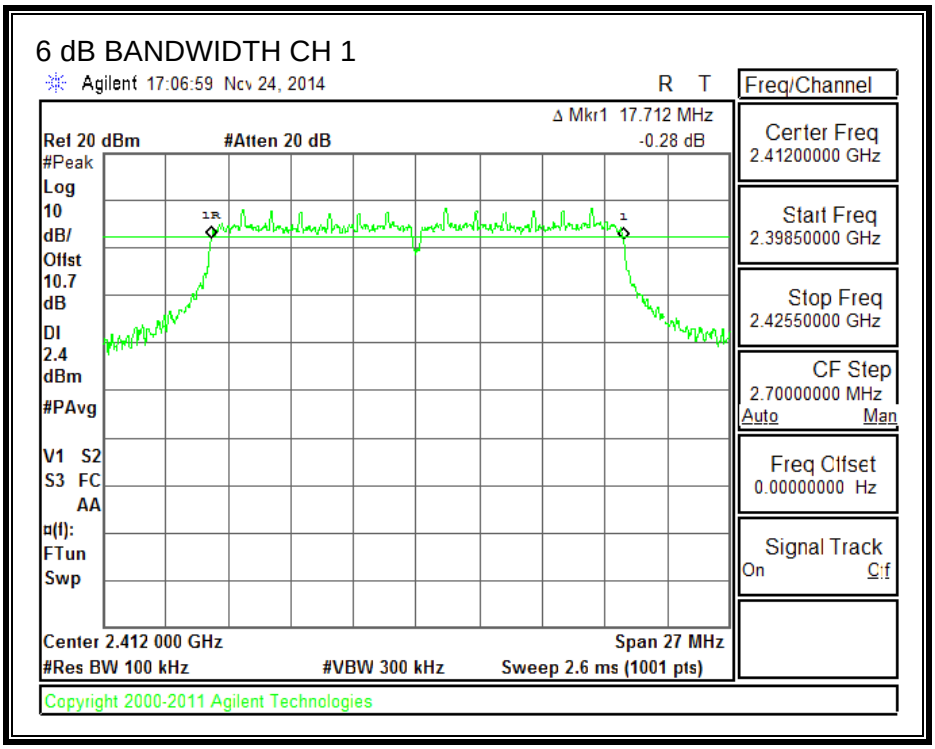
IC RSS-210 A8.2 (a)

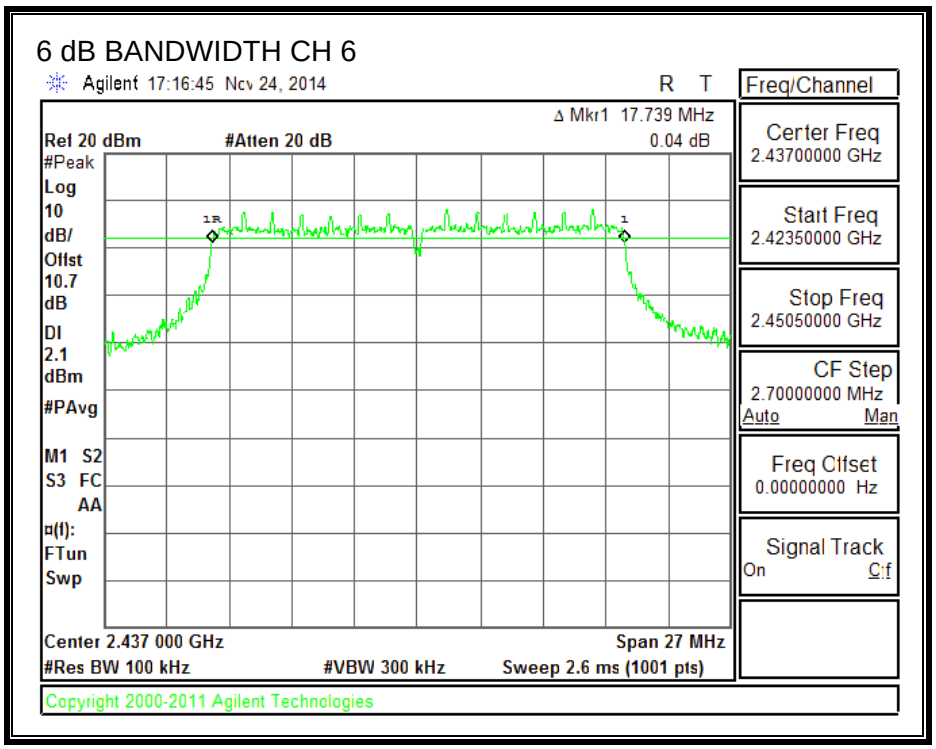
The minimum 6 dB bandwidth shall be at least 500 kHz.

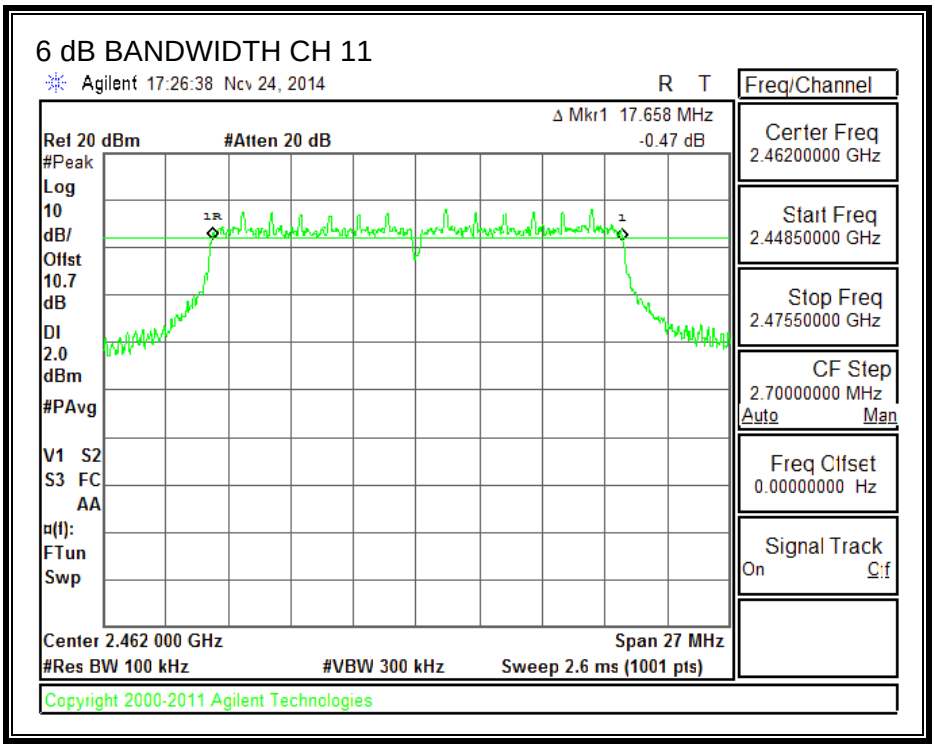
RESULTS

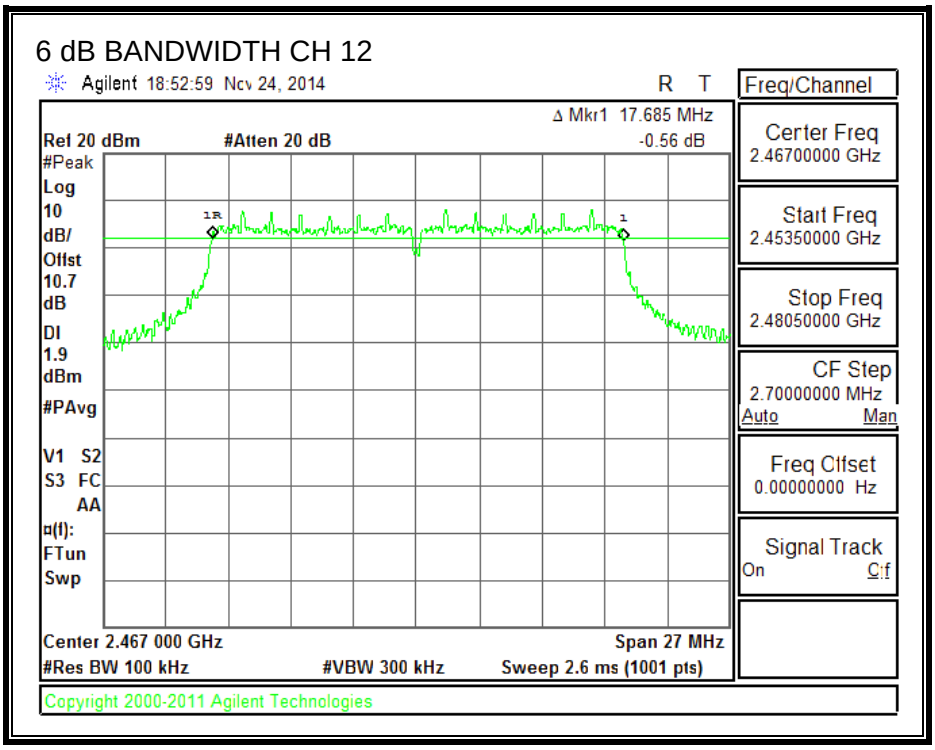
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	17.712	0.5
6	2437	17.739	0.5
11	2462	17.658	0.5
12	2467	17.685	0.5
13	2472	17.685	0.5

6 dB BANDWIDTH

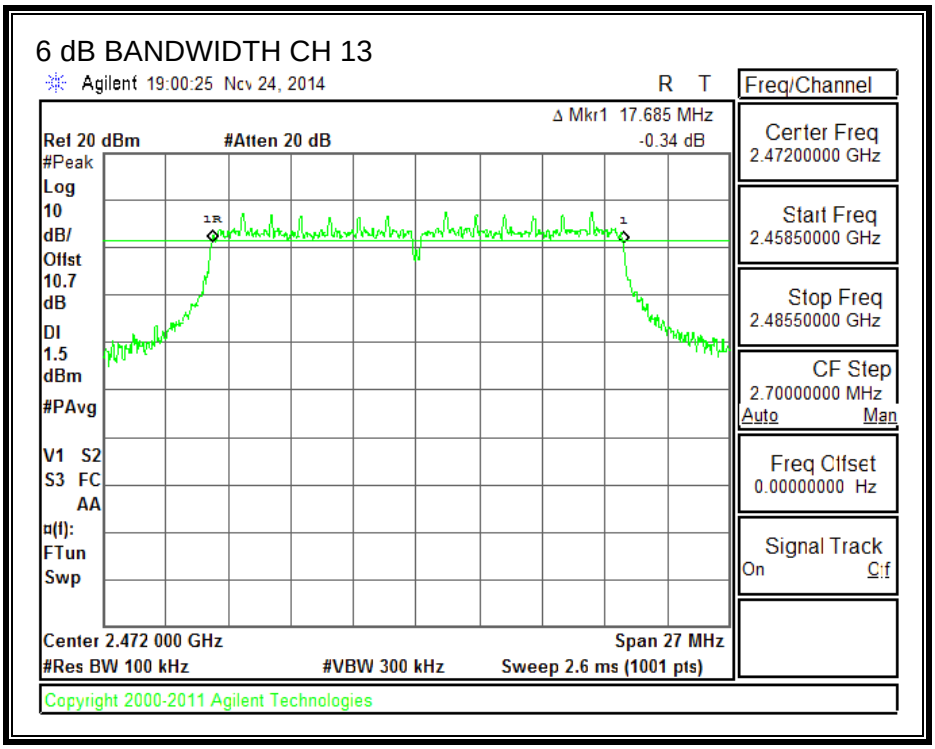








6 dB BANDWIDTH CH 13



9.3.2. 99% BANDWIDTH

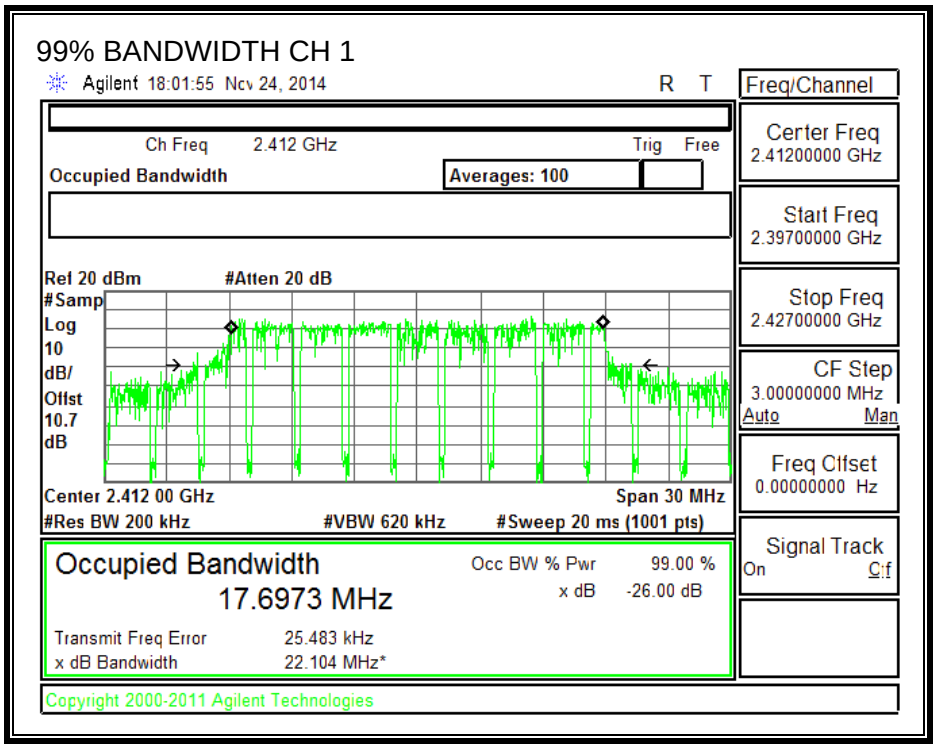
LIMITS

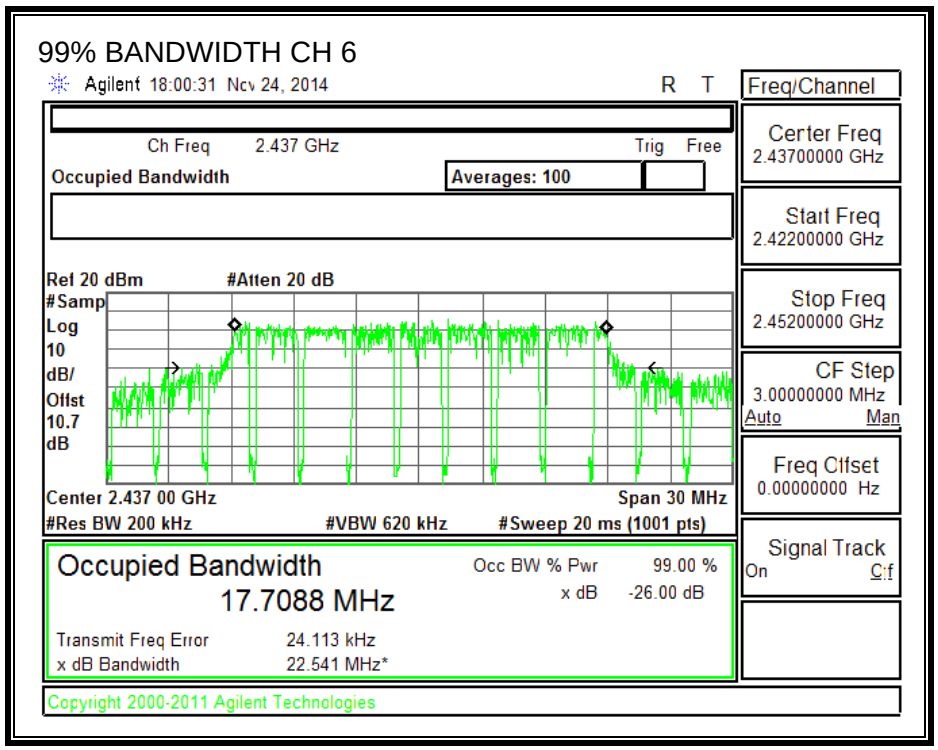
None; for reporting purposes only

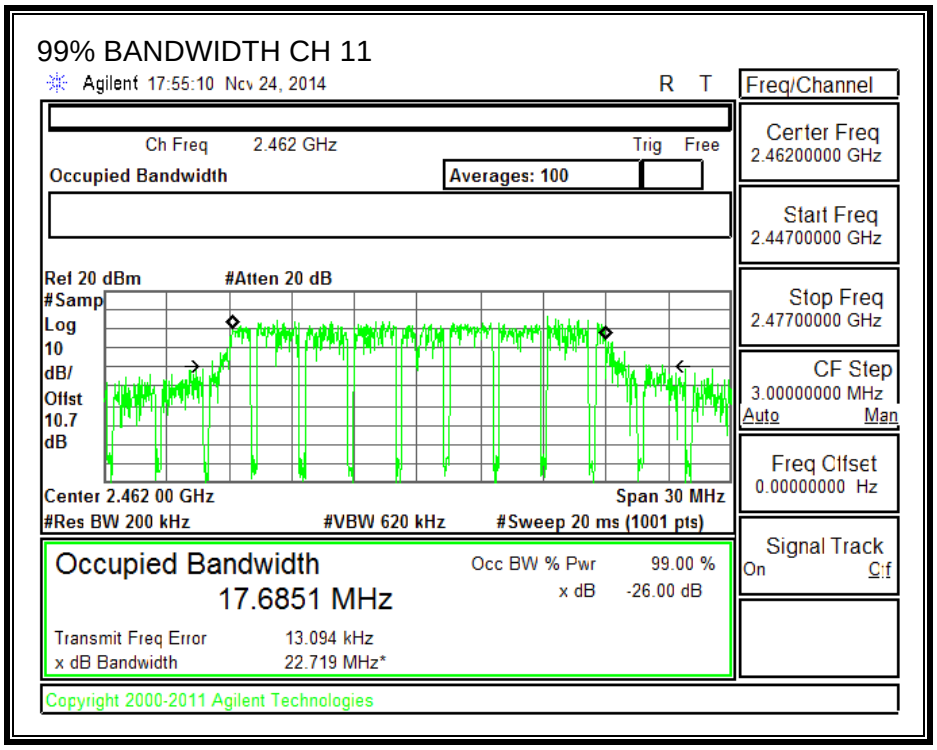
RESULTS

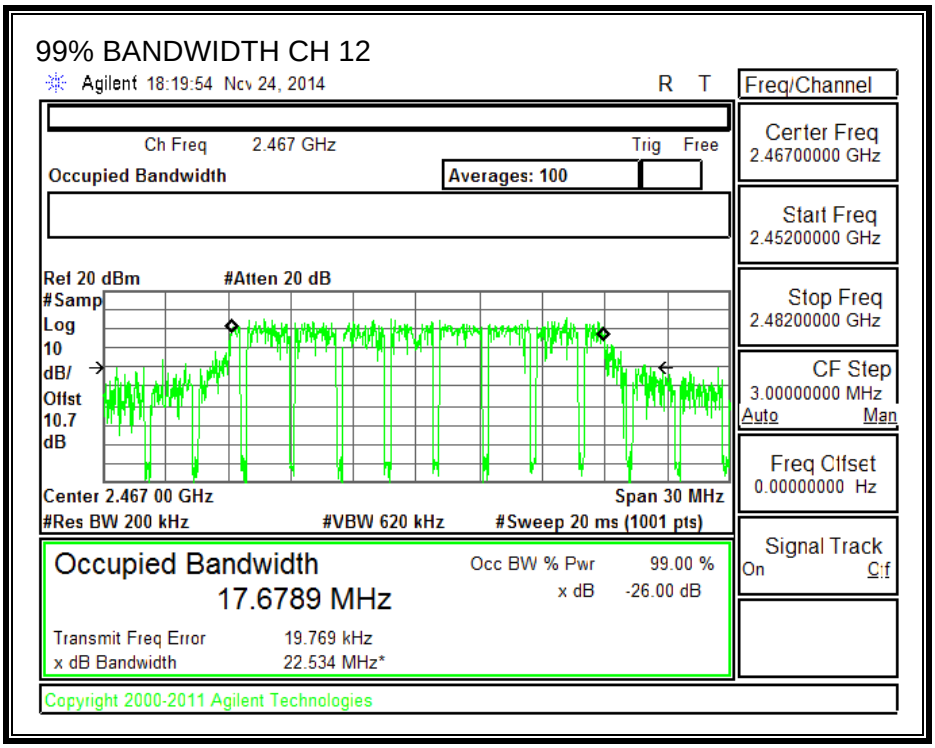
Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	17.6973
6	2437	17.7088
11	2462	17.6851
12	2467	17.6789
13	2472	17.7030

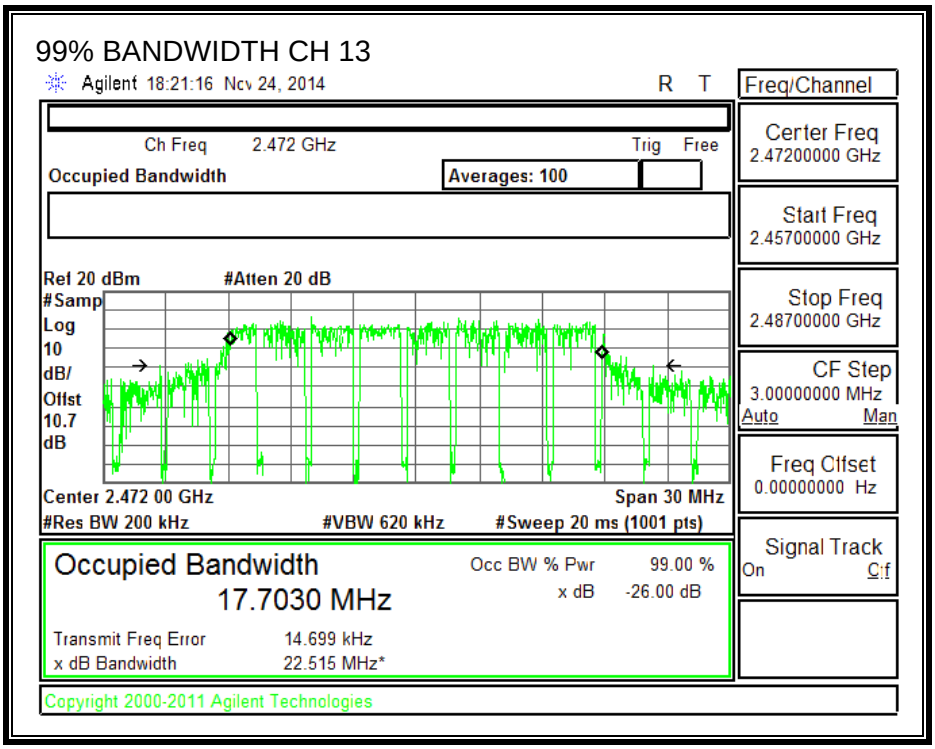
99% BANDWIDTH











9.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	17.82
Low	2417	19.24
Mid	2437	19.42
High	2457	19.31
High	2462	17.89
High	2467	16.33
High	2472	5.91

9.3.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 2400–2483.5 MHz, based on the use of antennas with directional gains that do not exceed 6dBi. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.

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	-12.10	30.00	30	36	30.00
Low	2417	-12.10	30.00	30	36	30.00
Mid	2437	-12.10	30.00	30	36	30.00
High	2457	-12.10	30.00	30	36	30.00
High	2462	-12.10	30.00	30	36	30.00
High	2467	-12.10	30.00	30	36	30.00
High	2472	-12.10	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	25.14	25.14	30.00	-4.86
Low	2417	26.10	26.10	30.00	-3.90
Mid	2437	26.41	27.14	30.00	-2.86
High	2457	26.30	26.30	30.00	-3.70
High	2462	25.01	25.01	30.00	-4.99
High	2467	24.96	24.96	30.00	-5.04
High	2472	16.04	13.97	30.00	-16.03

9.3.5. PSD

LIMITS

FCC §15.247

IC RSS-210 A8.2

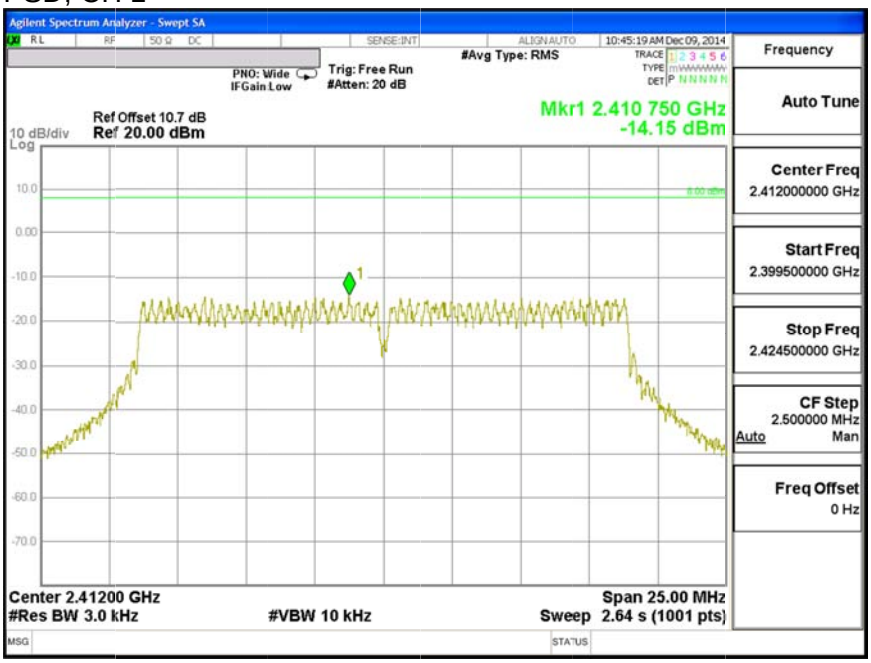
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

RESULTS

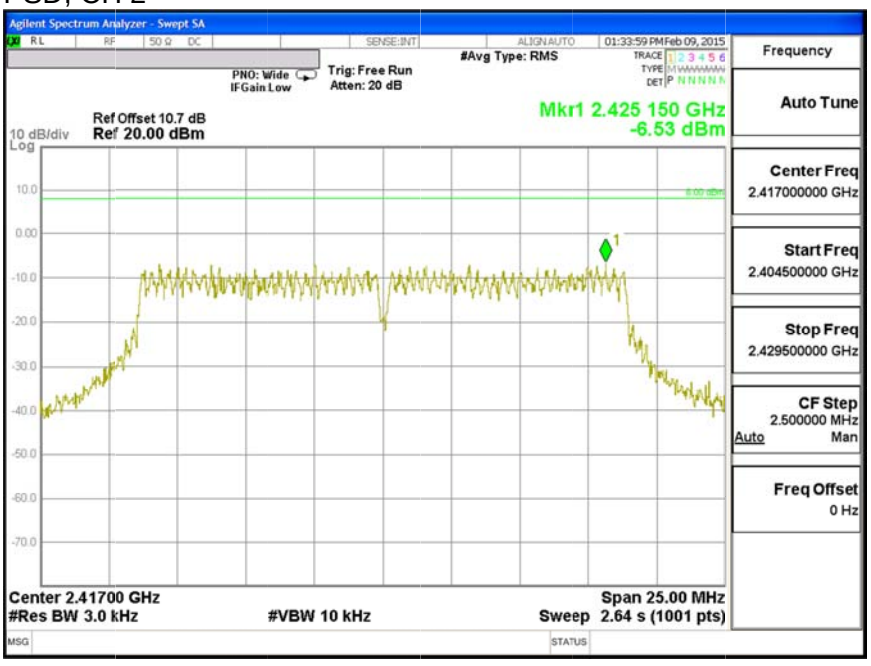
Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
1	2412	-14.15	8.00	-22.15
2	2417	-6.53	8.00	-14.53
6	2437	-6.24	8.00	-14.24
10	2457	-6.33	8.00	-14.33
11	2462	-6.81	8.00	-14.81
12	2467	-8.91	8.00	-16.91
13	2472	-18.62	8.00	-26.62

PSD

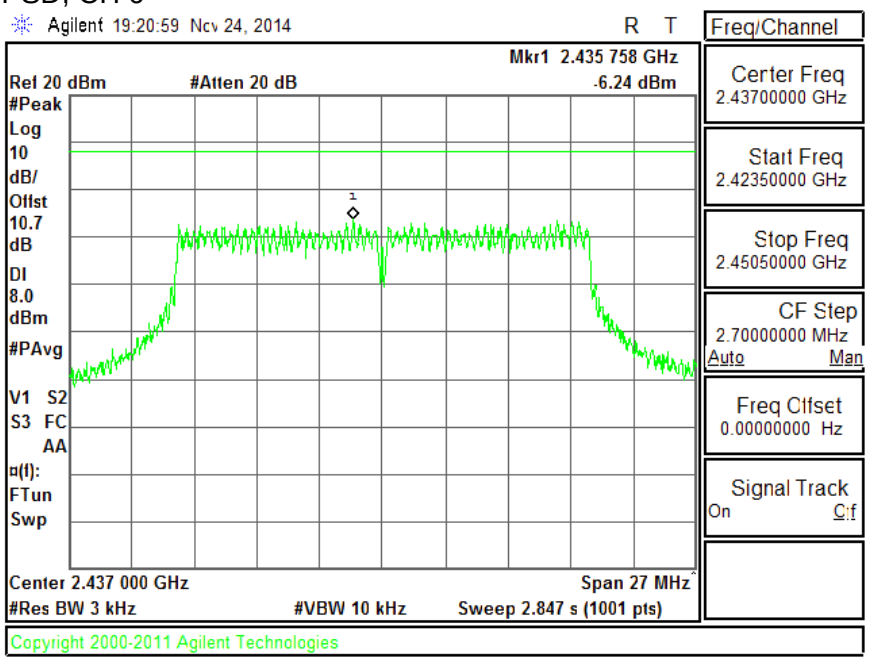
PSD, CH 1



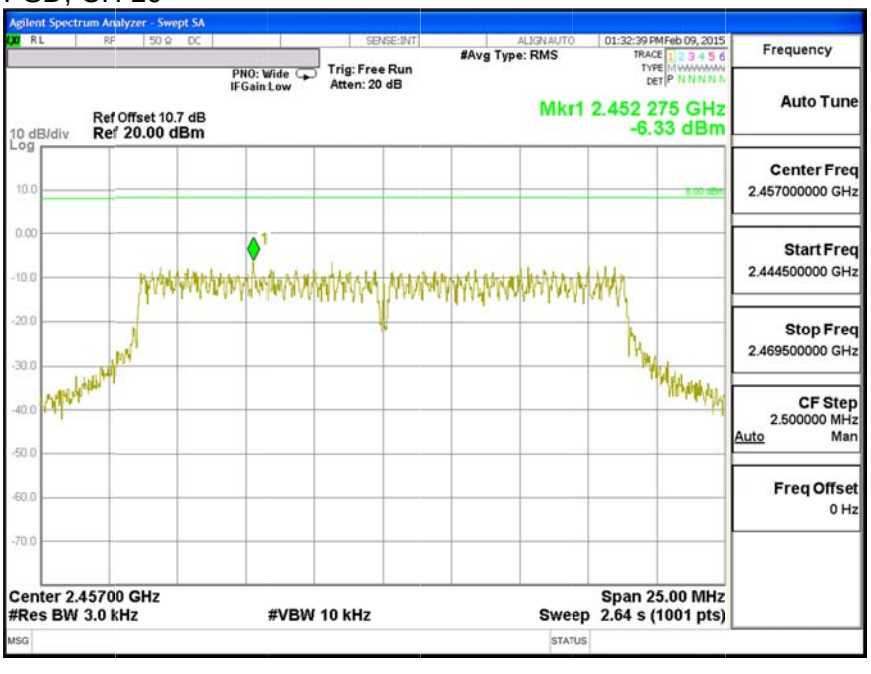
PSD, CH 2



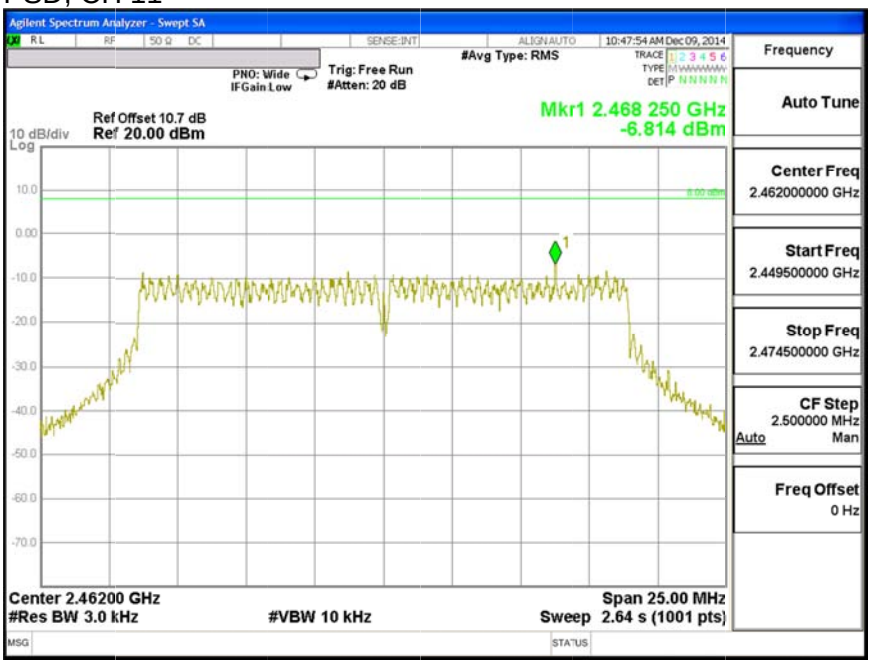
PSD, CH 6



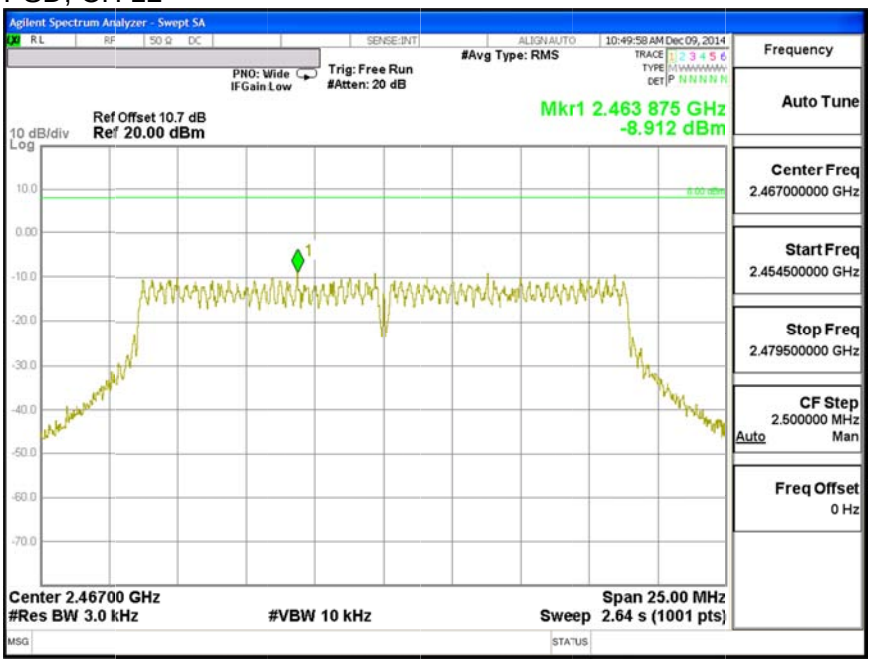
PSD, CH 10



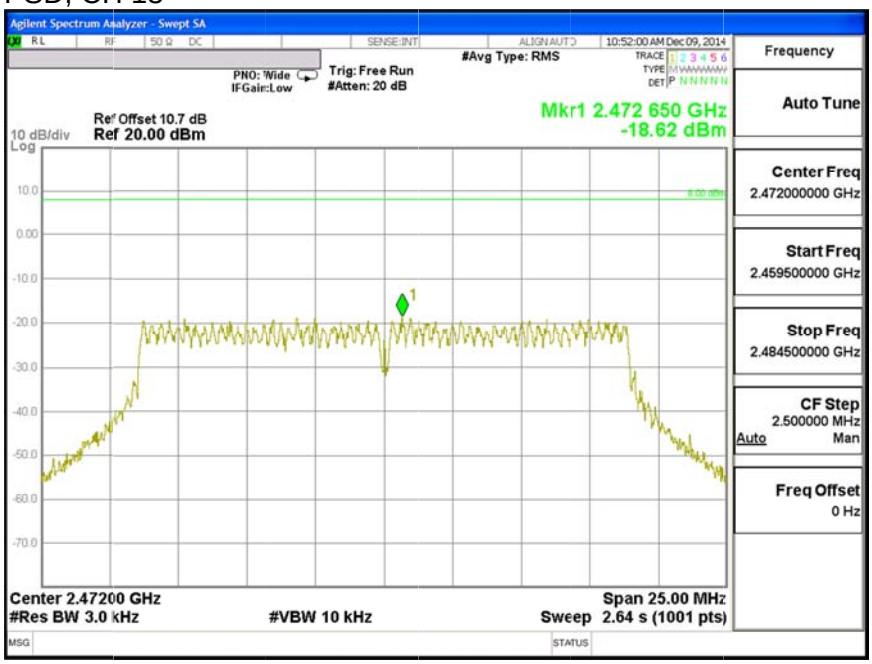
PSD, CH 11



PSD, CH 12



PSD, CH 13



9.3.6. OUT-OF-BAND EMISSIONS

LIMITS

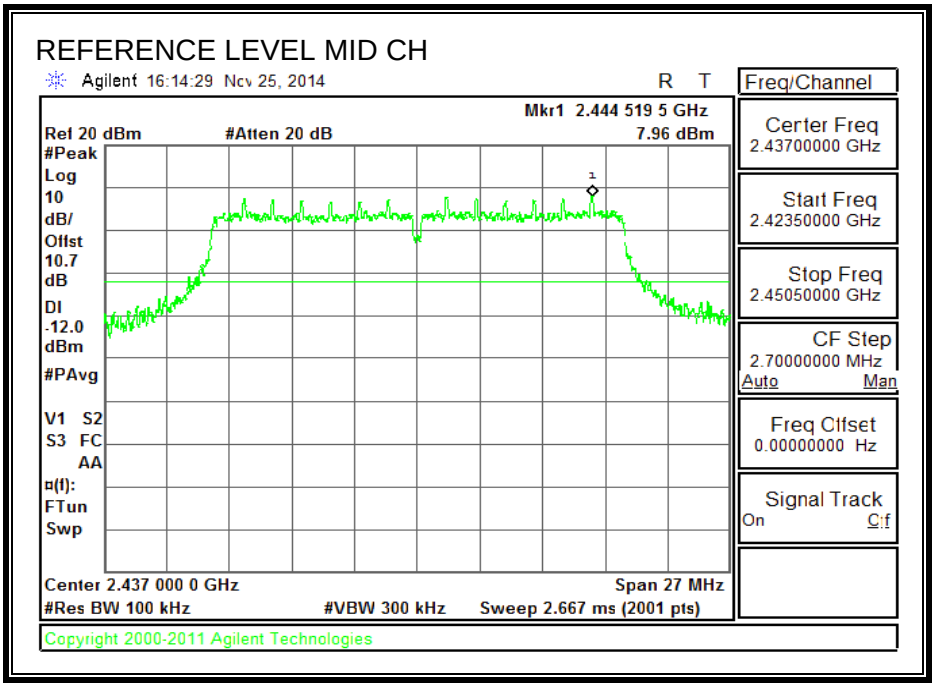
FCC §15.247 (d)

IC RSS-210 A8.5

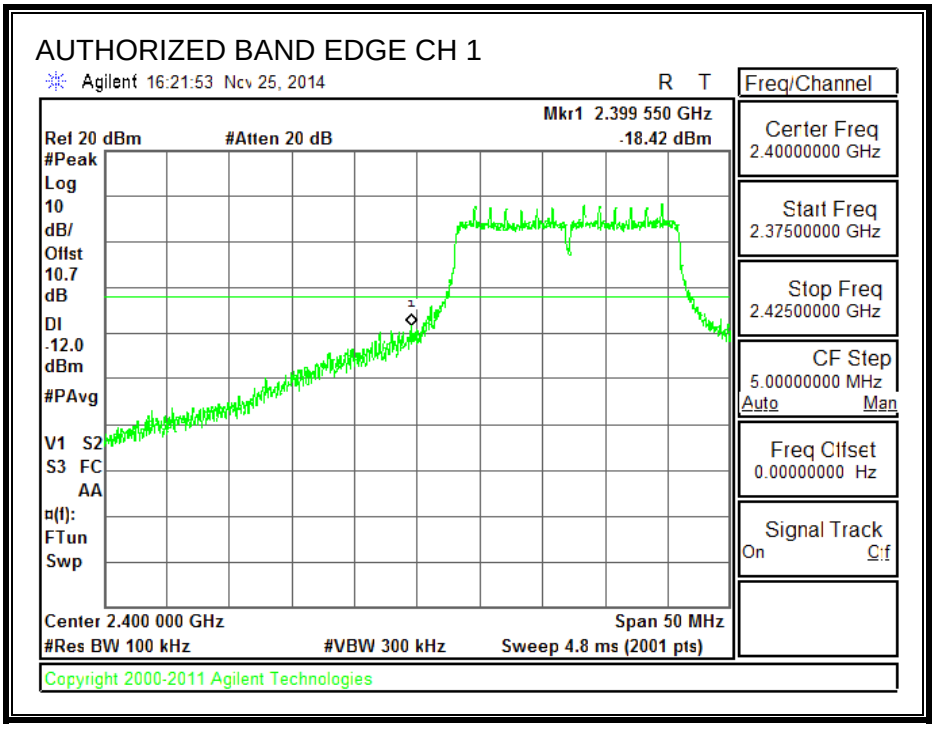
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

RESULTS

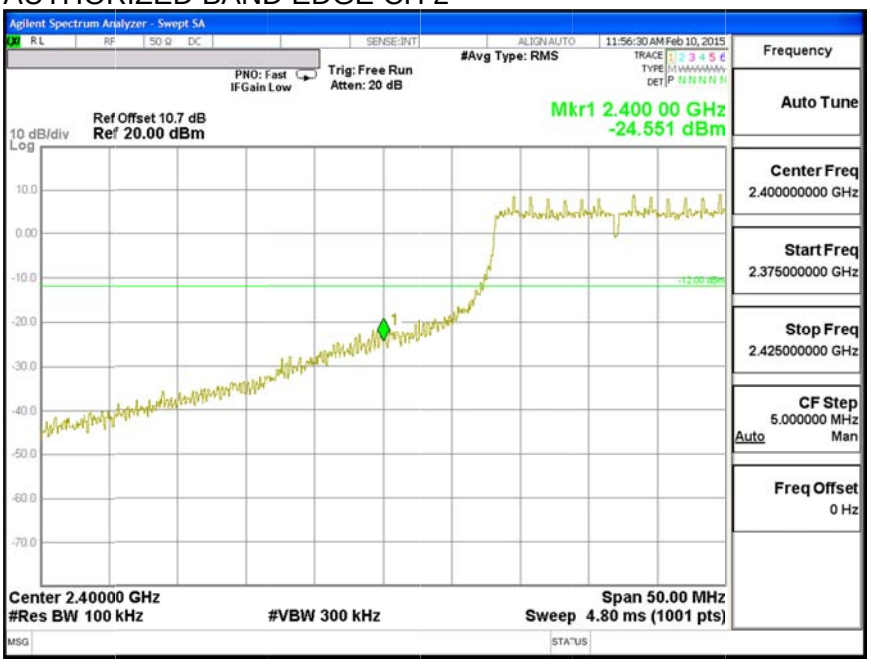
IN-BAND REFERENCE LEVEL



LOW CHANNEL BANDEDGE

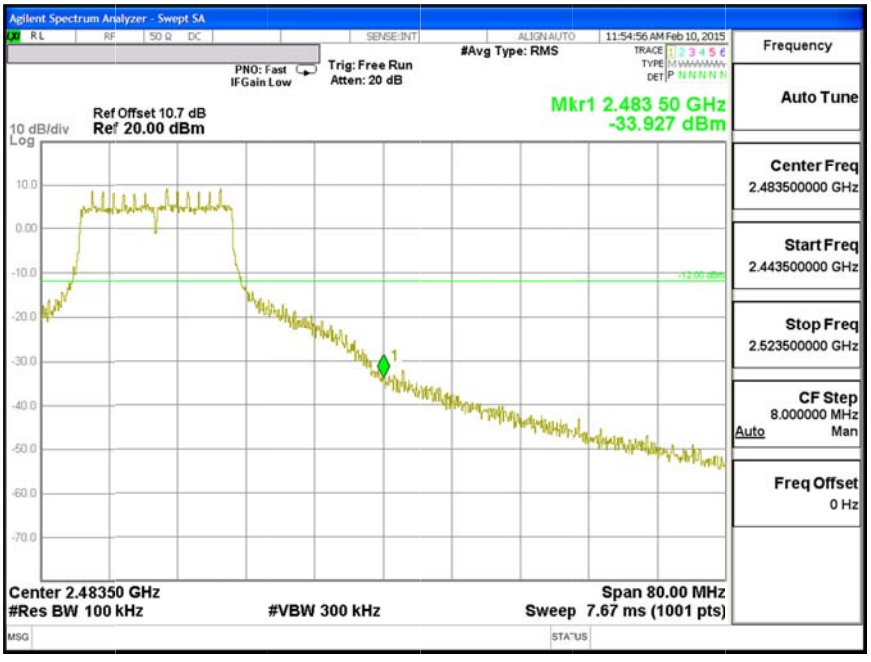


AUTHORIZED BAND EDGE CH 2

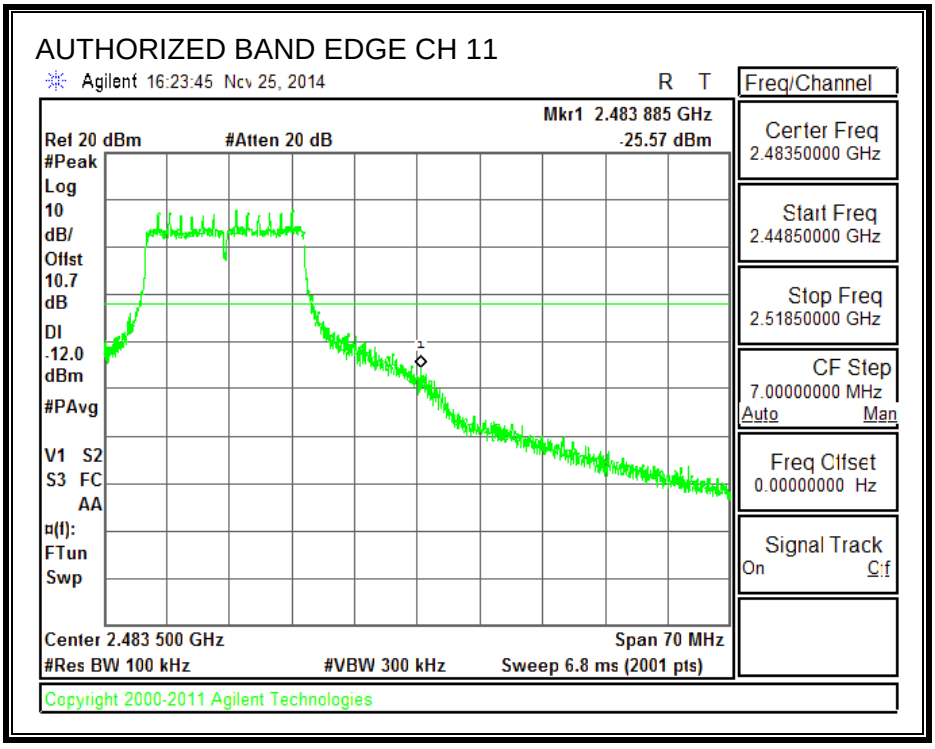


HIGH CHANNEL BANDEDGE

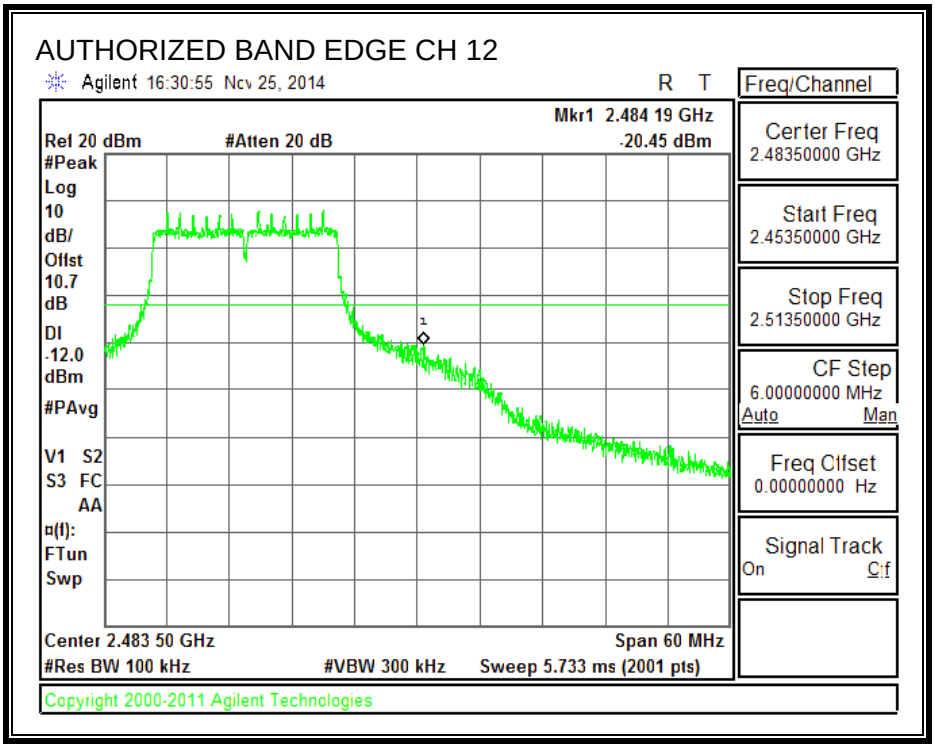
AUTHORIZED BAND EDGE CH 10

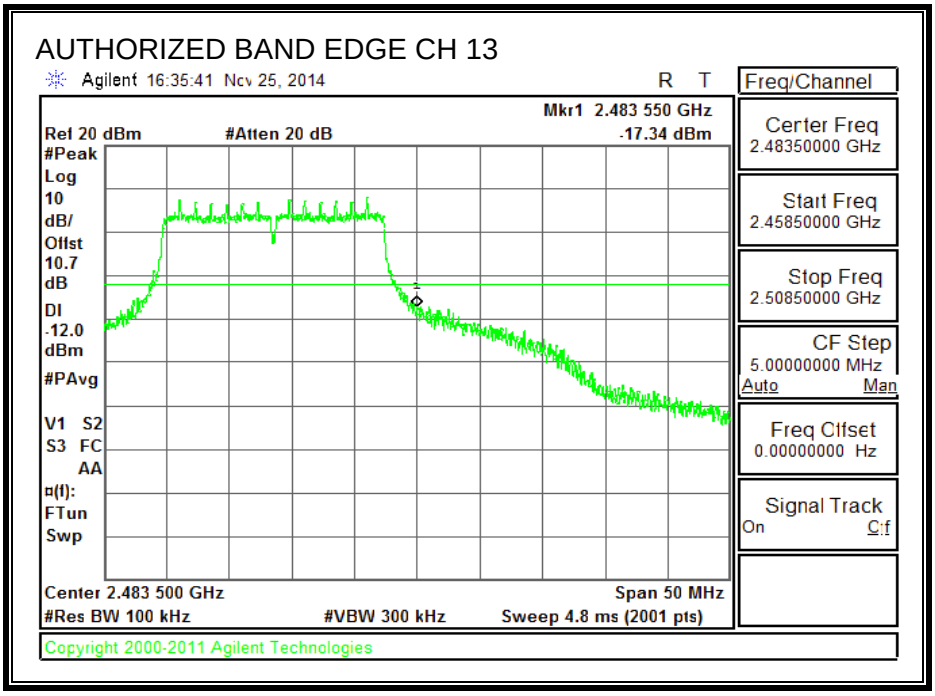


AUTHORIZED BAND EDGE CH 11

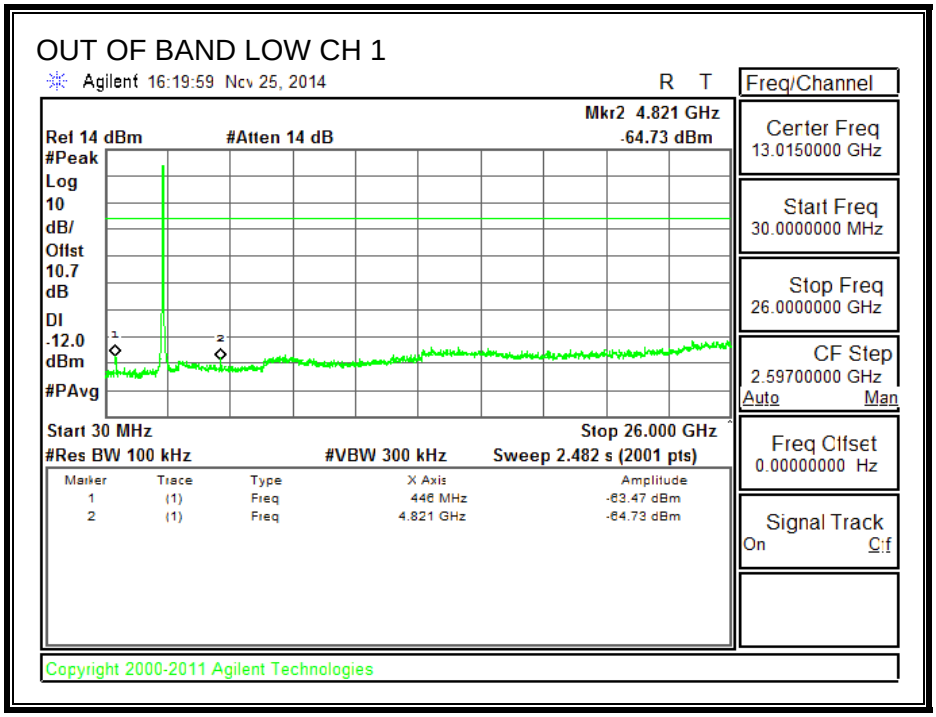


AUTHORIZED BAND EDGE CH 12



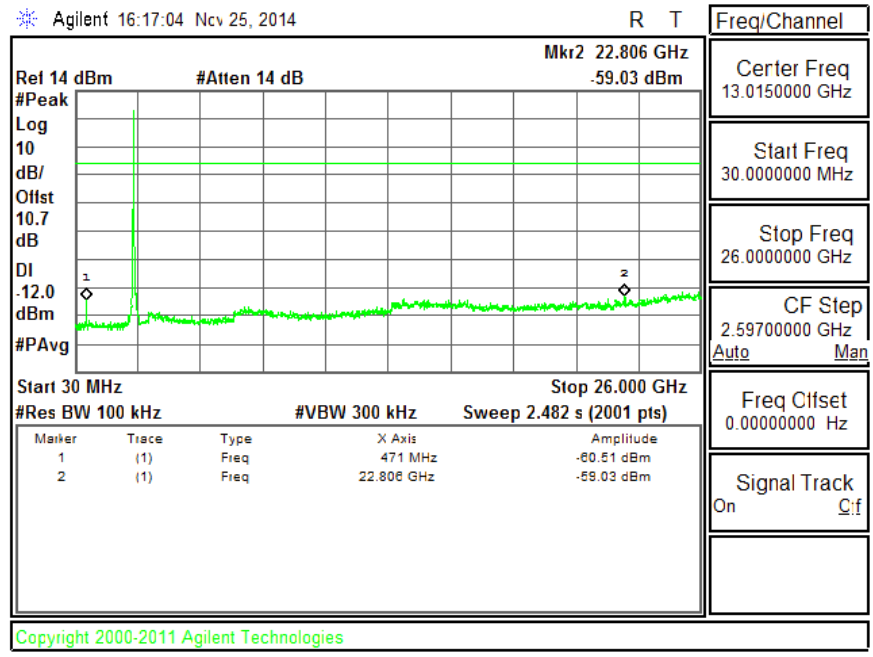


OUT-OF-BAND EMISSIONS



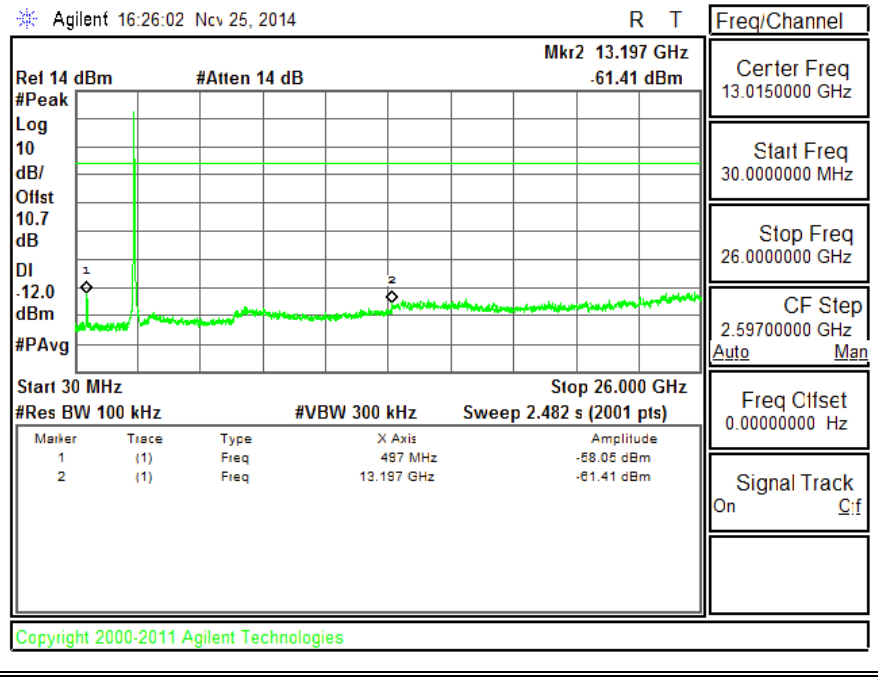
OUT OF BAND LOW CH 2

OUT OF BAND MID CH

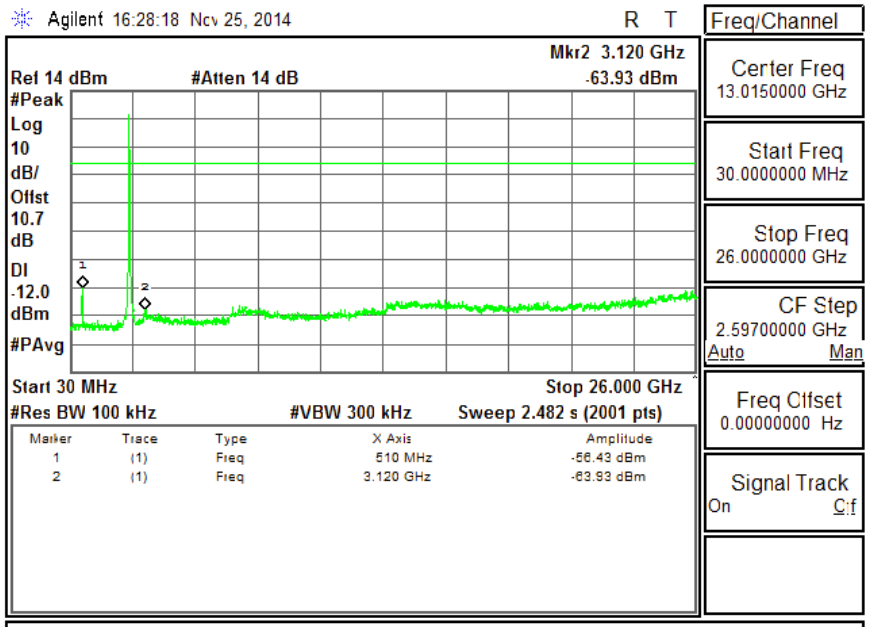


OUT OF BAND HIGH CH10

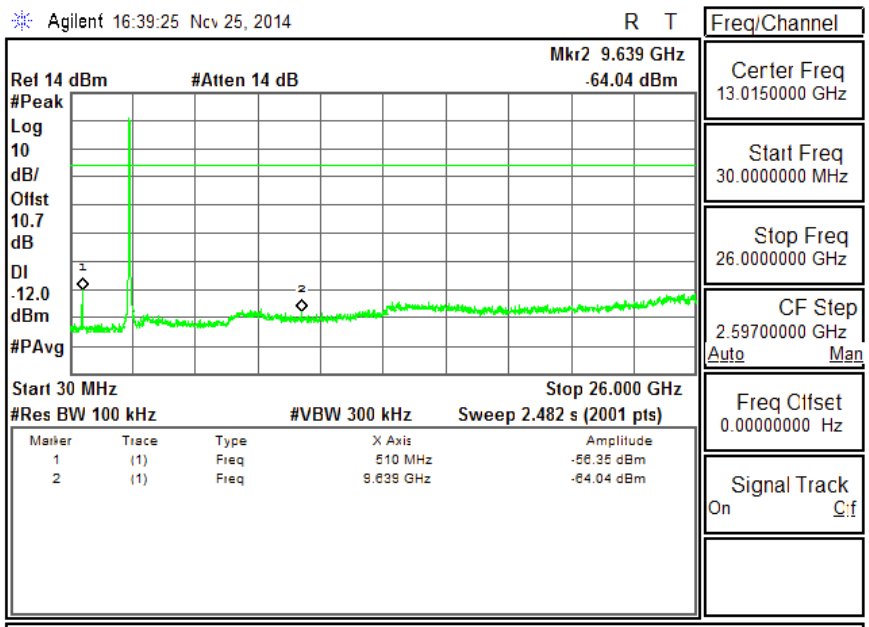
OUT OF BAND HIGH CH11



OUT OF BAND HIGH CH12



OUT OF BAND HIGH CH13



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.
IC RSS-GEN, Section 7 (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 3 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.

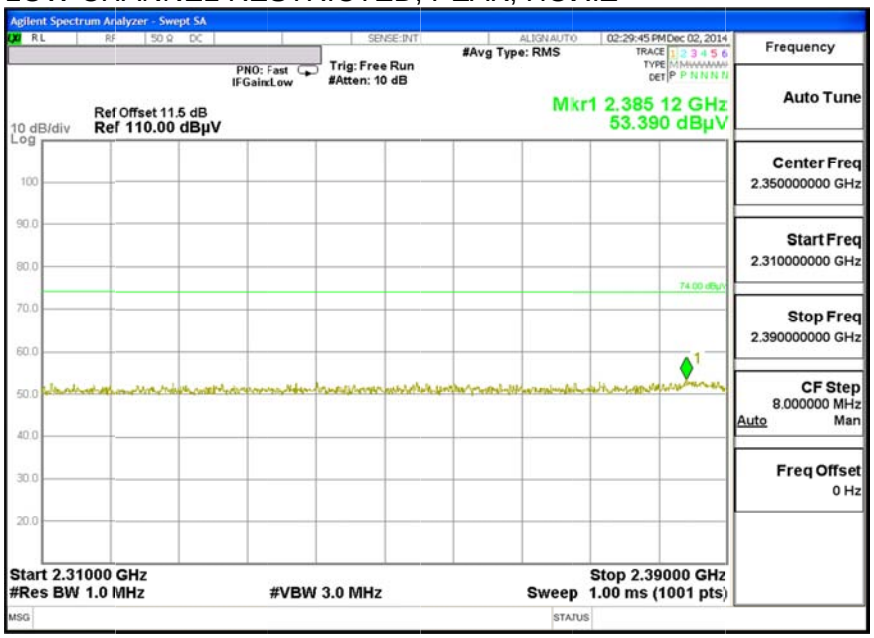
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

10.2. TX ABOVE 1 GHz ANTENNA 1

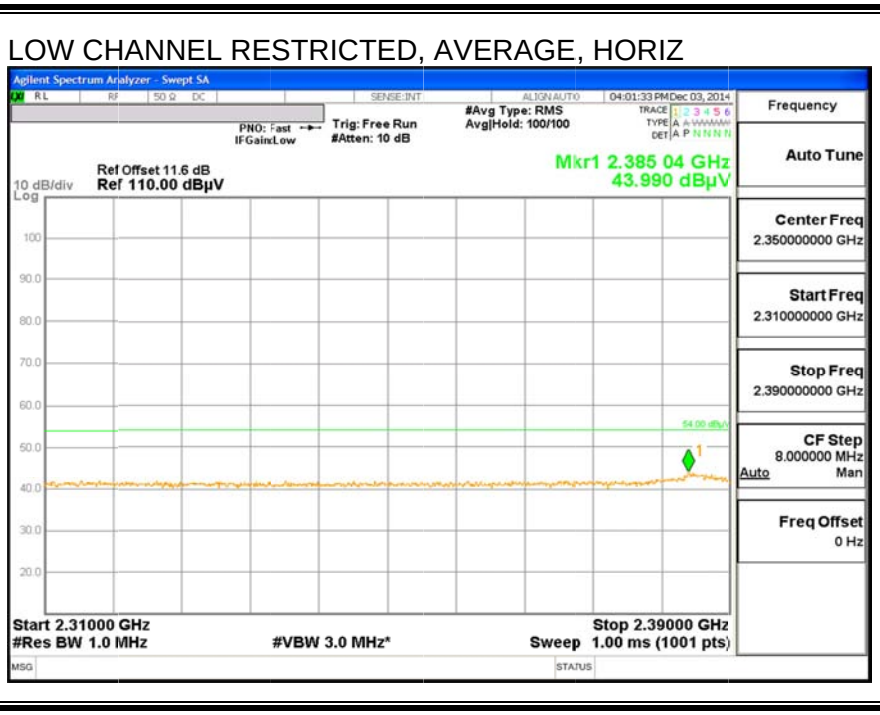
10.2.1. 802.11b 1Tx MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

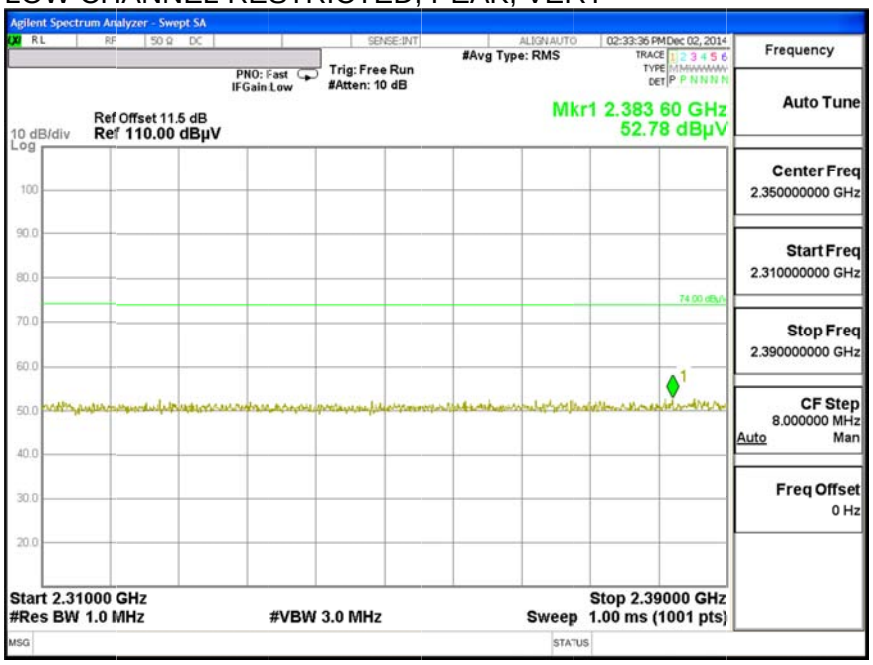
LOW CHANNEL RESTRICTED, PEAK, HORIZ



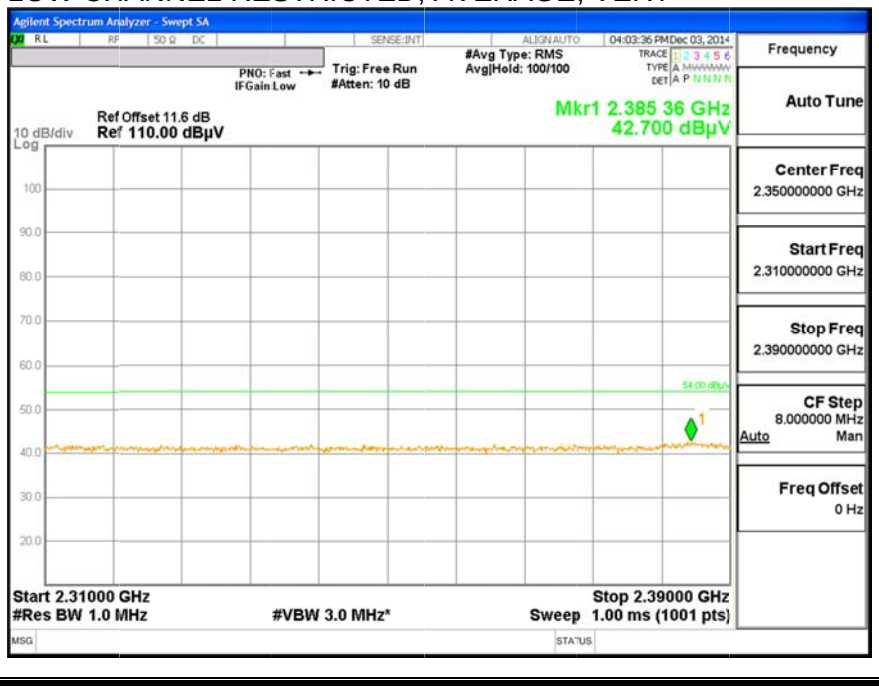
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

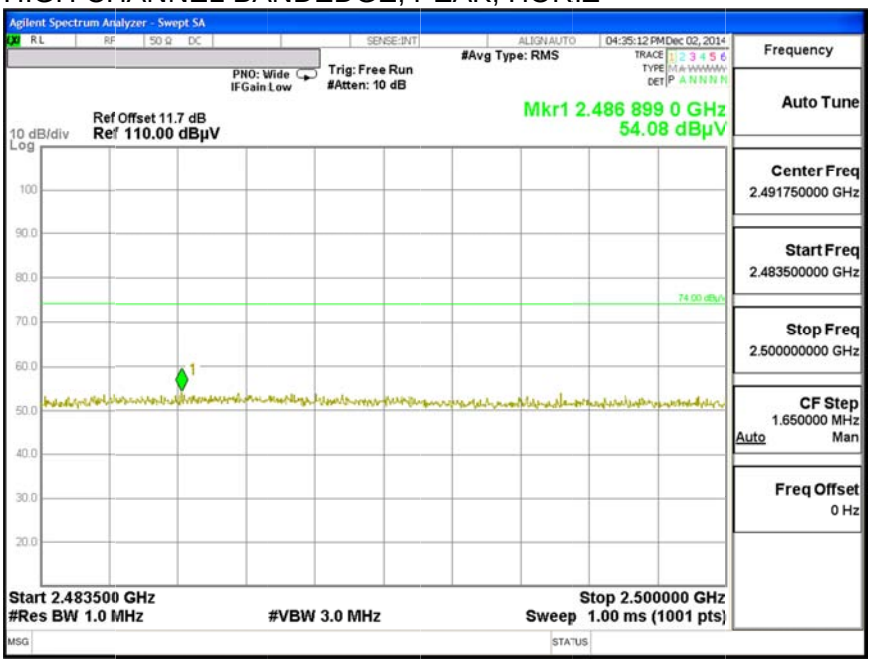


LOW CHANNEL RESTRICTED, AVERAGE, VERT

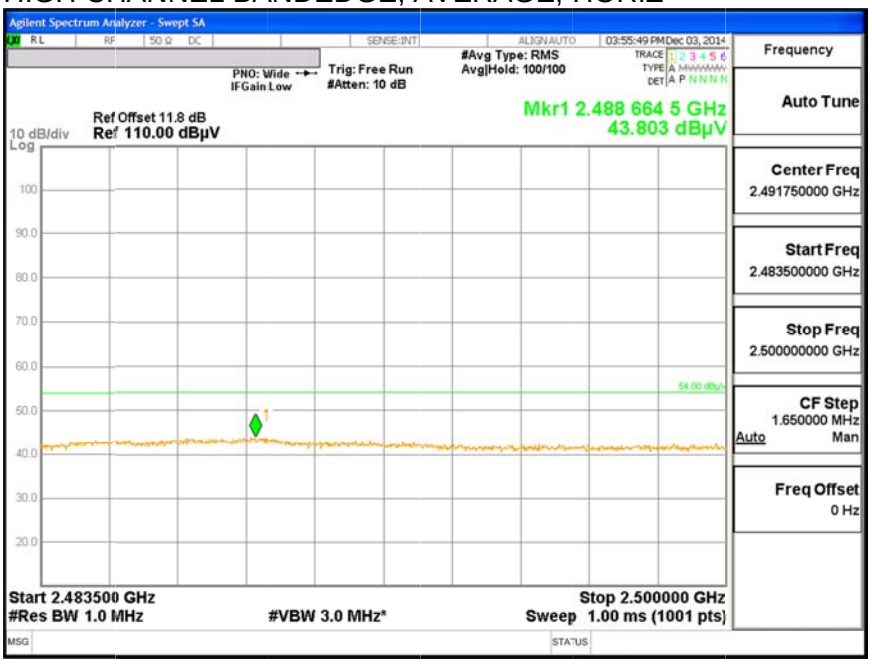


AUTHORIZED BANDEDGE (HIGH CHANNEL, CH 11)

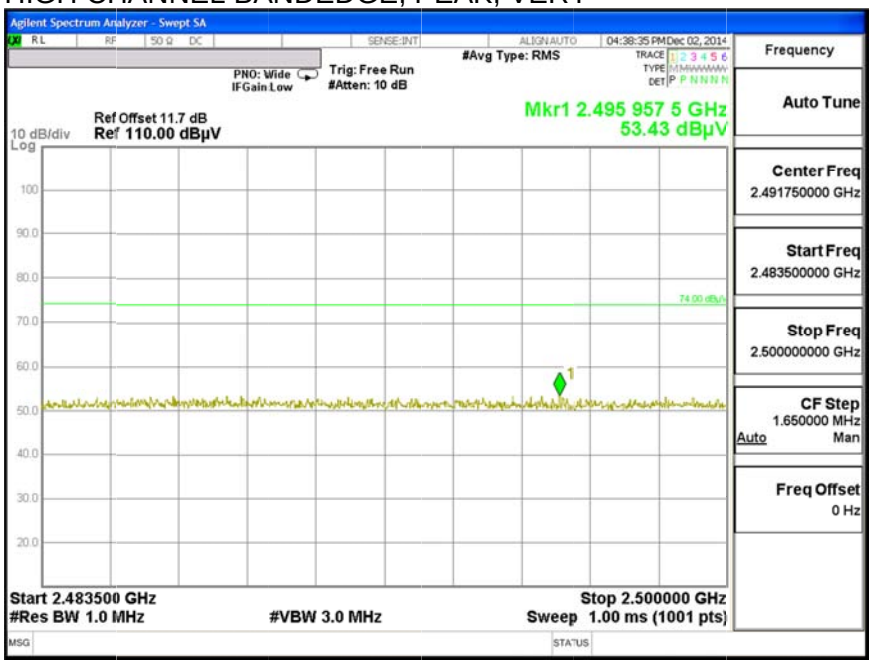
HIGH CHANNEL BANDEDGE, PEAK, HORIZ



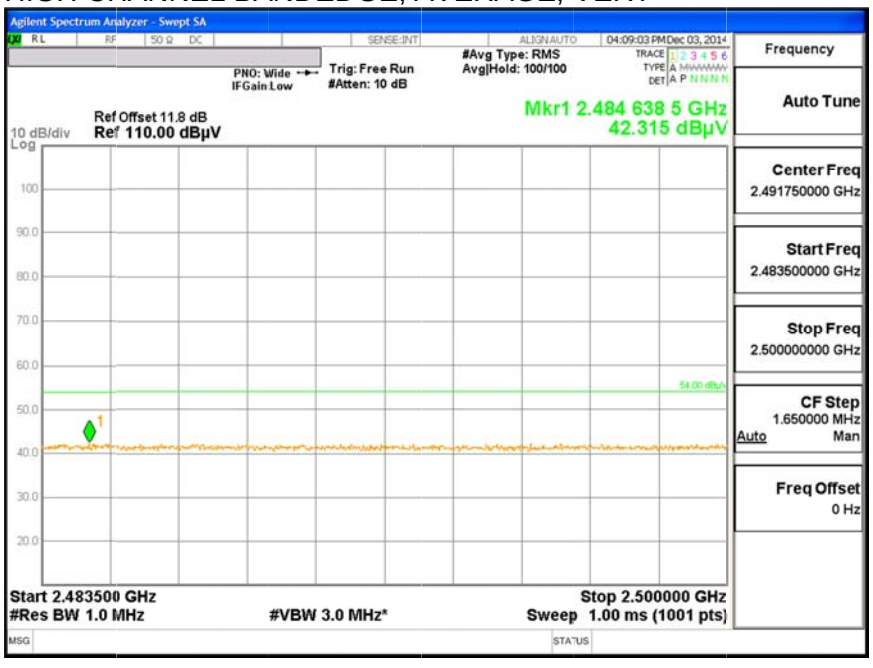
HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



HIGH CHANNEL BANDEDGE, PEAK, VERT

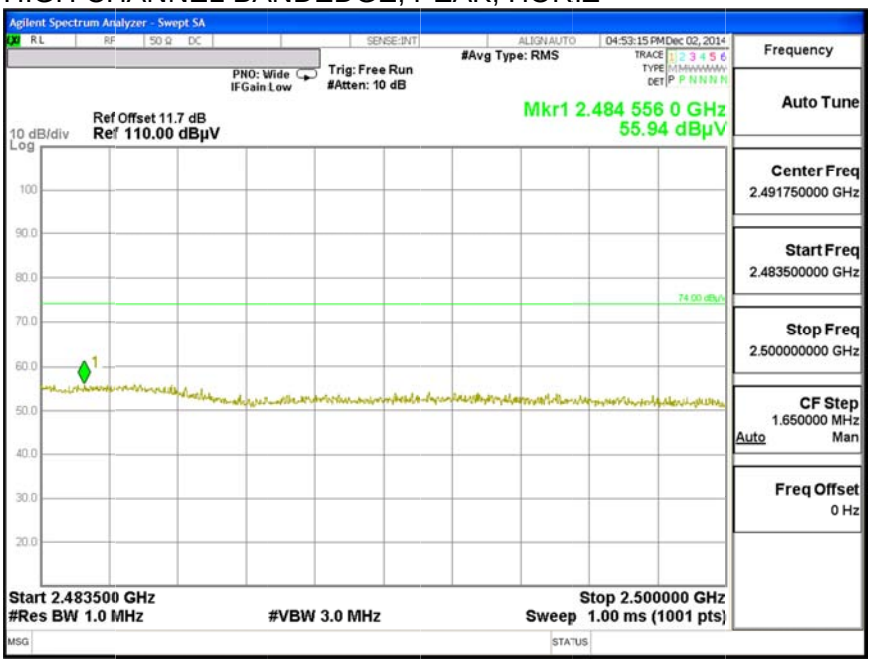


HIGH CHANNEL BANDEDGE, AVERAGE, VERT

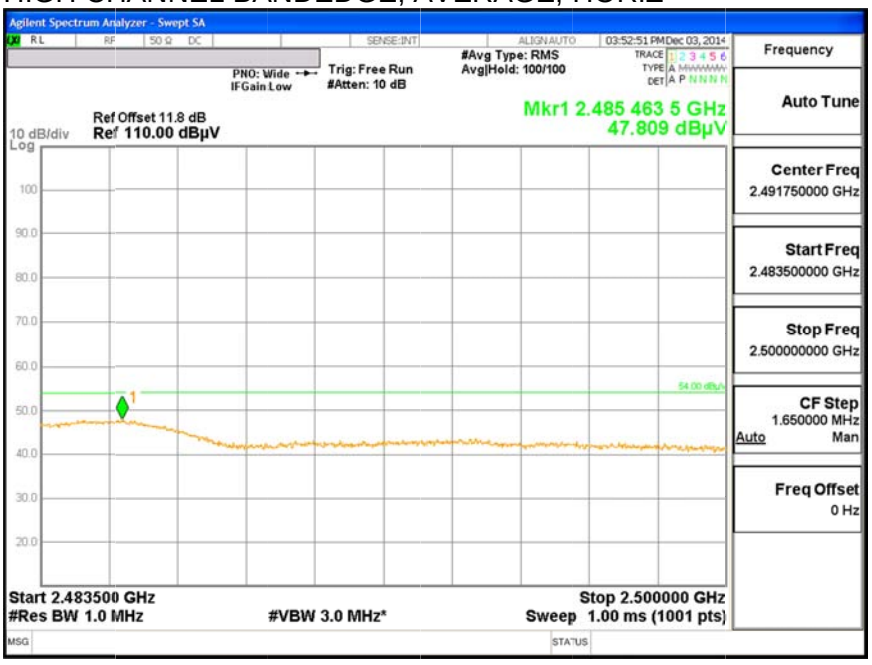


AUTHORIZED BANDEDGE (HIGH CHANNEL, CH 12)

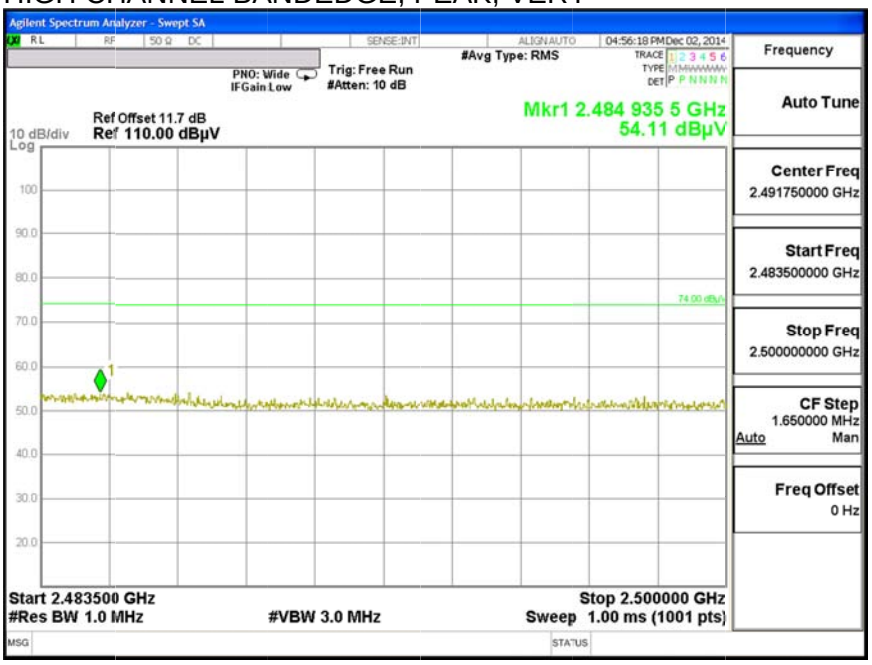
HIGH CHANNEL BANDEDGE, PEAK, HORIZ



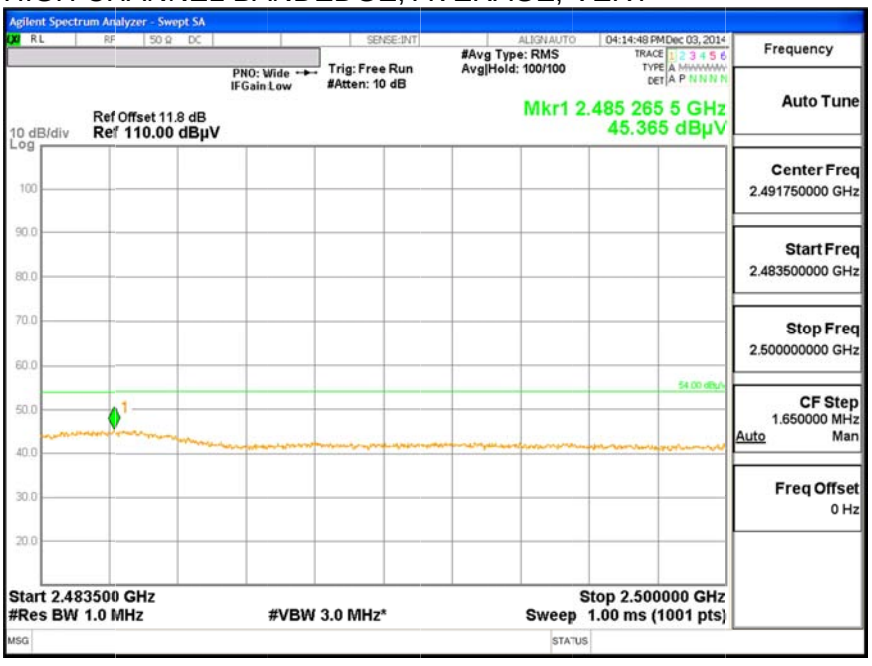
HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



HIGH CHANNEL BANDEDGE, PEAK, VERT

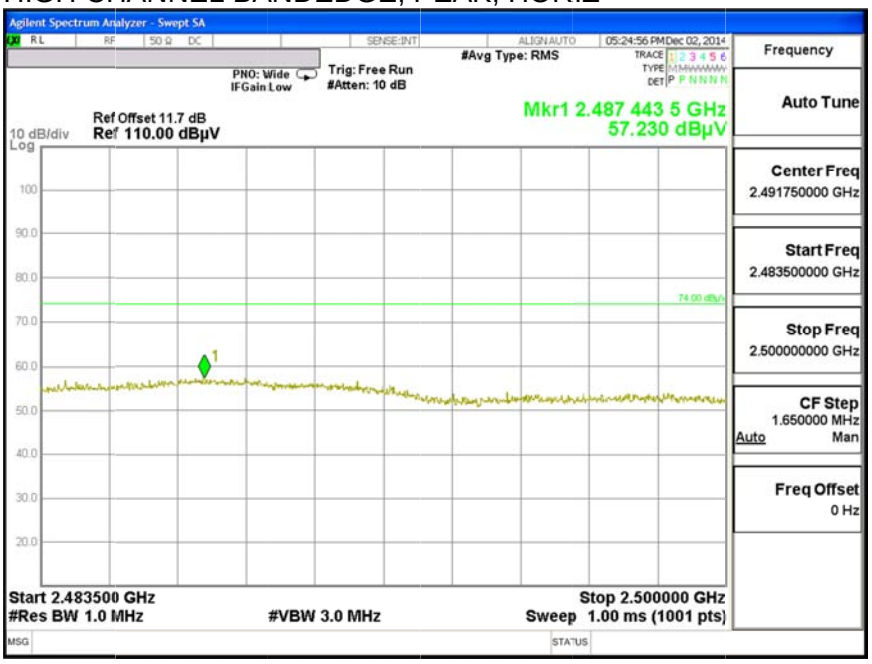


HIGH CHANNEL BANDEDGE, AVERAGE, VERT

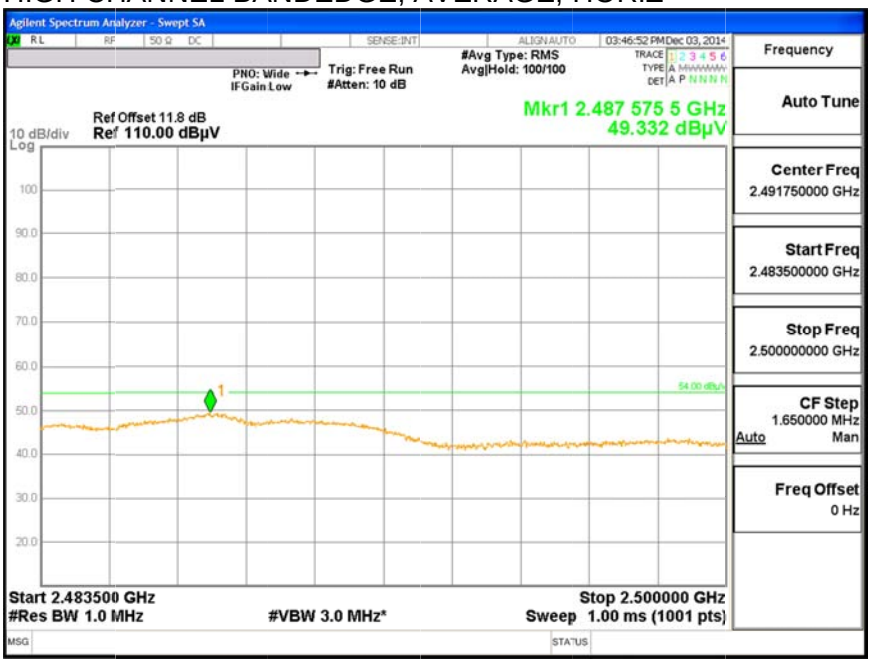


AUTHORIZED BANDEDGE (HIGH CHANNEL, CH 13)

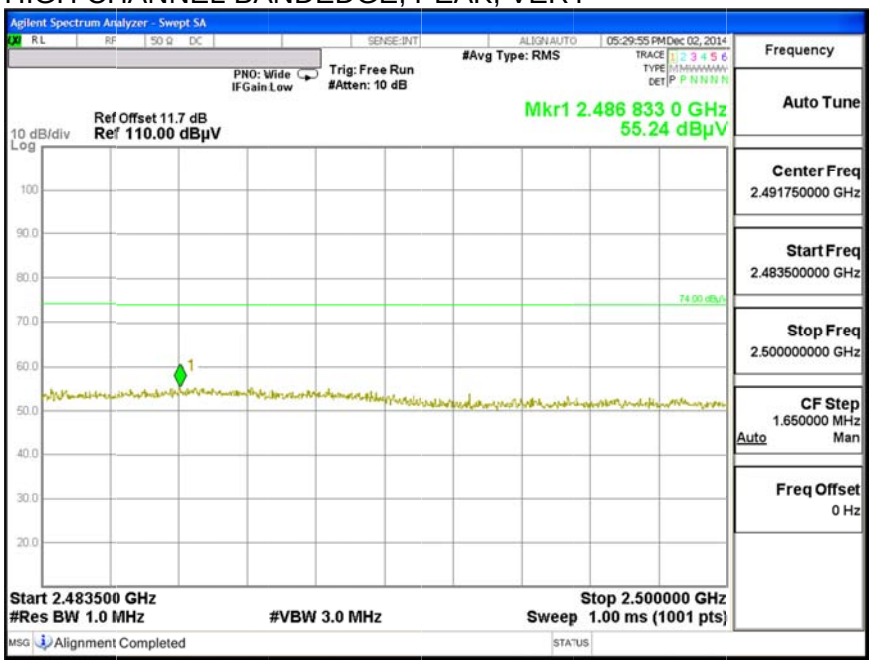
HIGH CHANNEL BANDEDGE, PEAK, HORIZ



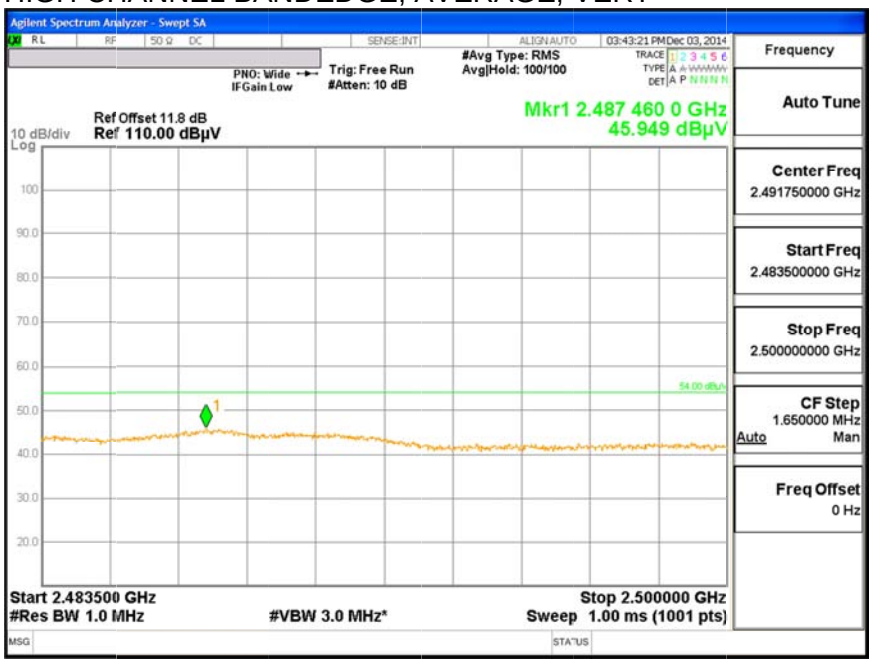
HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



HIGH CHANNEL BANDEDGE, PEAK, VERT

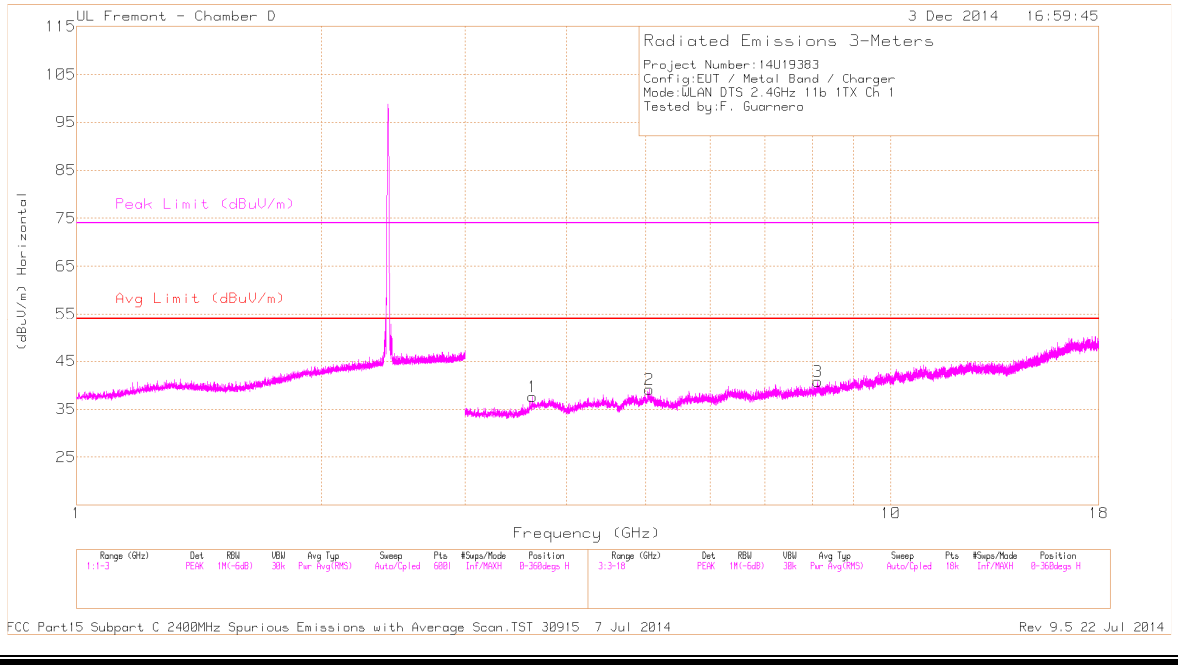


HIGH CHANNEL BANDEDGE, AVERAGE, VERT

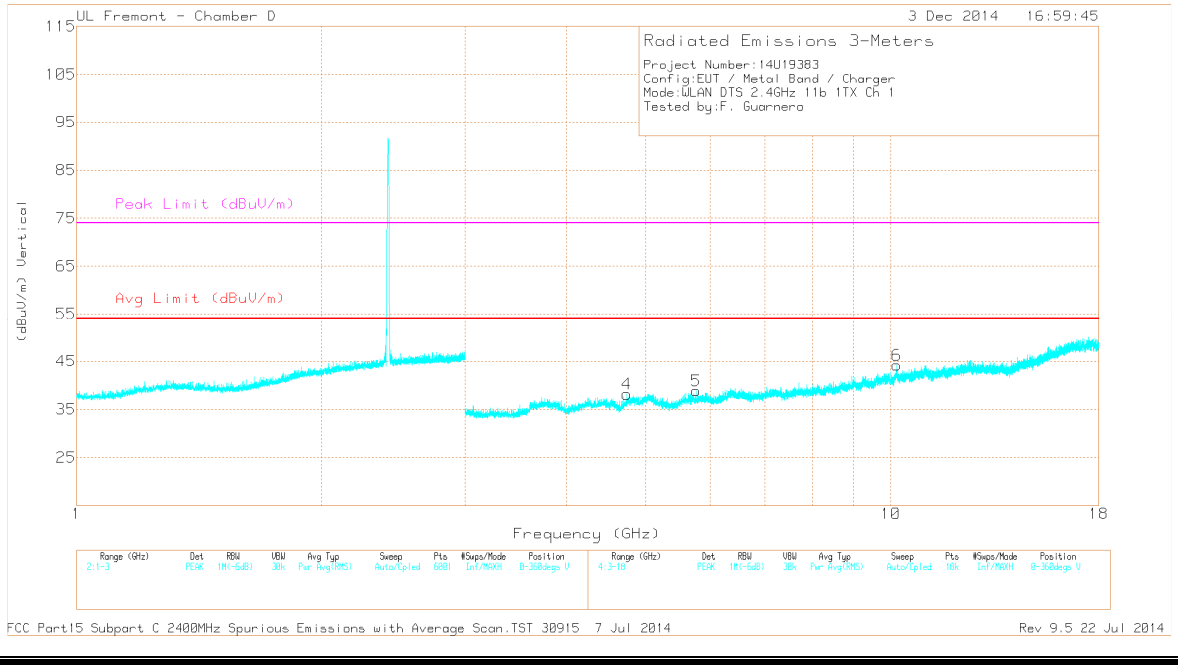


HARMONICS AND SPURIOUS EMISSIONS, CH 1

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.63	38.98	PK2	33.4	-28.7	0	43.68	-	-	74	-30.32	122	203	H
	* 3.631	27.02	MAv1	33.4	-28.7	.1	31.82	54	-22.18	-	-	122	203	H
2	* 5.047	38.2	PK2	34.3	-26.3	0	46.2	-	-	74	-27.8	282	203	H
	* 5.048	25.93	MAv1	34.3	-26.3	.1	34.03	54	-19.97	-	-	282	203	H
3	* 8.13	35.86	PK2	35.7	-23.4	0	48.16	-	-	74	-25.84	19	101	H
	* 8.13	23.6	MAv1	35.7	-23.4	.1	36	54	-18	-	-	19	101	H
4	* 4.739	39.07	PK2	34.1	-27	0	46.17	-	-	74	-27.83	36	101	V
	* 4.739	26.67	MAv1	34.1	-27	.1	33.87	54	-20.13	-	-	36	101	V
5	5.761	37.61	PK2	34.8	-27	0	45.41	-	-	-	-	15	203	V
6	10.172	33.89	PK2	37.2	-20.1	0	50.99	-	-	-	-	24	203	V

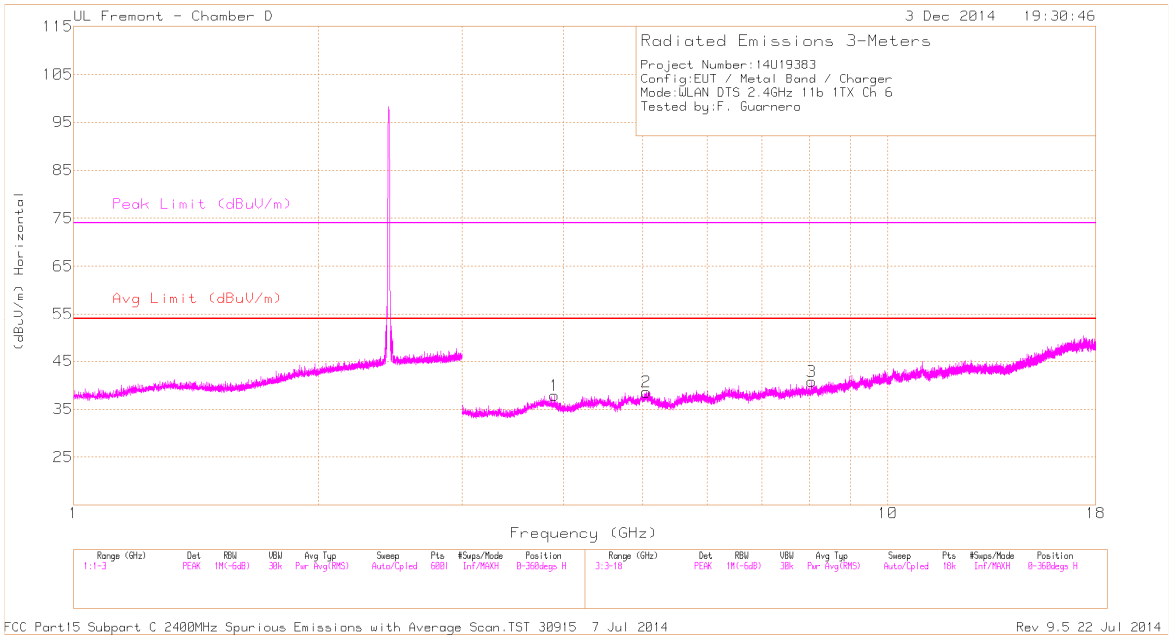
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

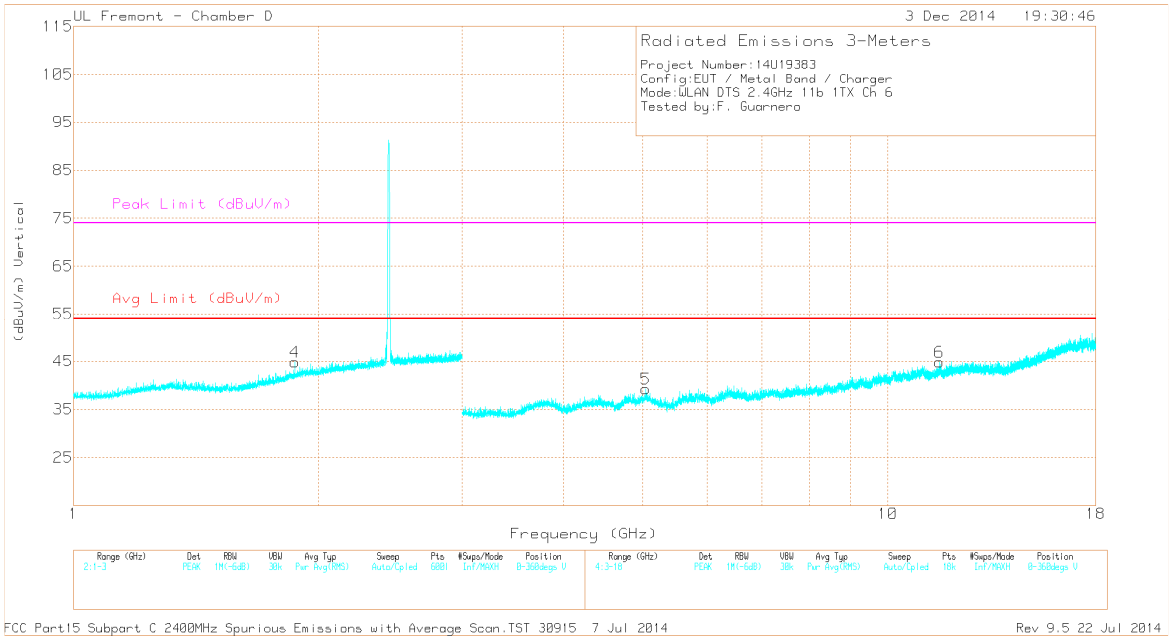
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, CH 6

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.896	38.23	PK2	33.5	-28.2	0	43.53	-	-	74	-30.47	223	304	H
	* 3.896	27.74	MAv1	33.5	-28.2	.1	33.14	54	-20.86	-	-	223	304	H
2	* 5.051	37.68	PK2	34.3	-26.4	0	45.58	-	-	74	-28.42	223	309	H
	* 5.054	26.75	MAv1	34.3	-26.4	.1	34.75	54	-19.25	-	-	223	309	H
3	* 8.06	35.6	PK2	35.8	-24	0	47.4	-	-	74	-26.6	227	312	H
	* 8.059	24.85	MAv1	35.8	-24	.1	36.75	54	-17.25	-	-	227	312	H
4	1.869	42.1	PK2	30.5	-21.2	0	51.4	-	-	-	-	294	367	V
5	* 5.042	37.49	PK2	34.3	-26.2	0	45.59	-	-	74	-28.41	227	101	V
	* 5.045	26.47	MAv1	34.3	-26.3	.1	34.57	54	-19.43	-	-	227	101	V
6	* 11.574	34.17	PK2	38.2	-20.9	0	51.47	-	-	74	-22.53	292	202	V
	* 11.573	22.98	MAv1	38.2	-20.9	.1	40.38	54	-13.62	-	-	292	202	V

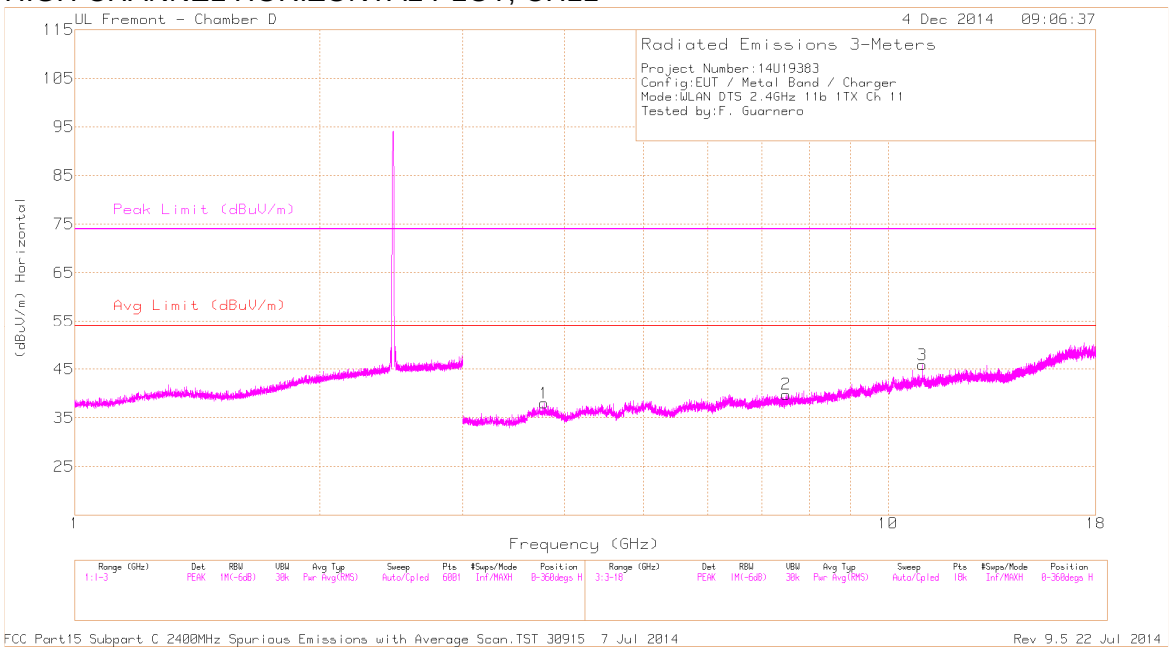
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

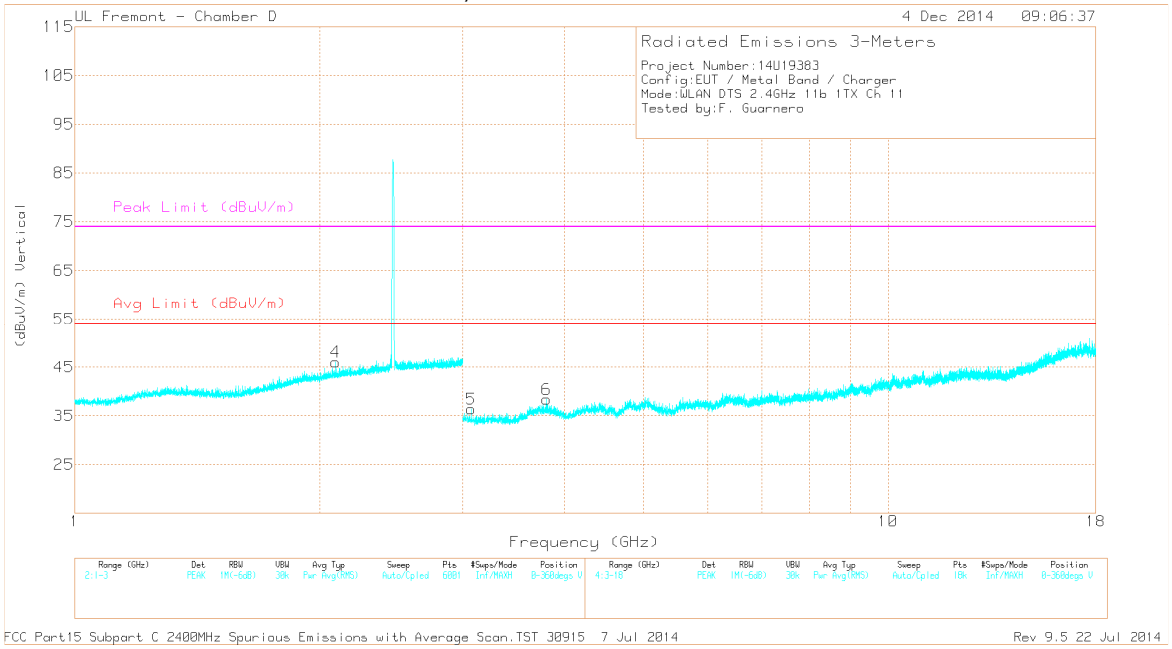
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, CH 11

HIGH CHANNEL HORIZONTAL PLOT, CH11



HIGH CHANNEL VERTICAL PLOT, CH11



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.78	38.86	PK2	33.4	-28.4	0	43.86	-	-	74	-30.14	168	304	H
	* 3.782	27.46	MAv1	33.4	-28.3	.1	32.66	54	-21.34	-	-	168	304	H
2	* 7.493	36.05	PK2	35.6	-24.8	0	46.85	-	-	74	-27.15	34	301	H
	* 7.491	24.61	MAv1	35.6	-24.8	.1	35.51	54	-18.49	-	-	34	301	H
3	* 11.024	33.36	PK2	38.1	-20.3	0	51.16	-	-	74	-22.84	325	390	H
	* 11.023	22.37	MAv1	38.1	-20.3	.1	40.27	54	-13.73	-	-	325	390	H
4	2.092	41.31	PK2	31.4	-20.9	0	51.81	-	-	-	-	15	348	V
5	3.071	39.42	PK2	32.8	-28.6	0	43.62	-	-	-	-	258	375	V
6	* 3.803	38.03	PK2	33.4	-28.1	0	43.33	-	-	74	-30.67	265	368	V
	* 3.804	27.45	MAv1	33.4	-28.1	.1	32.85	54	-21.15	-	-	265	368	V

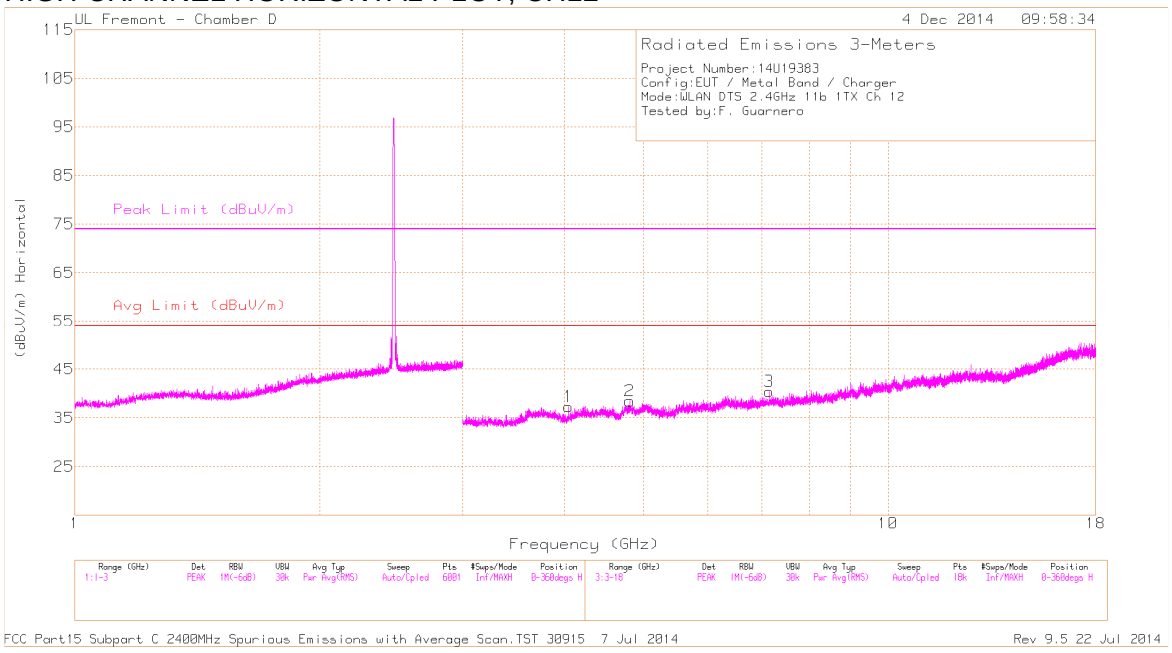
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

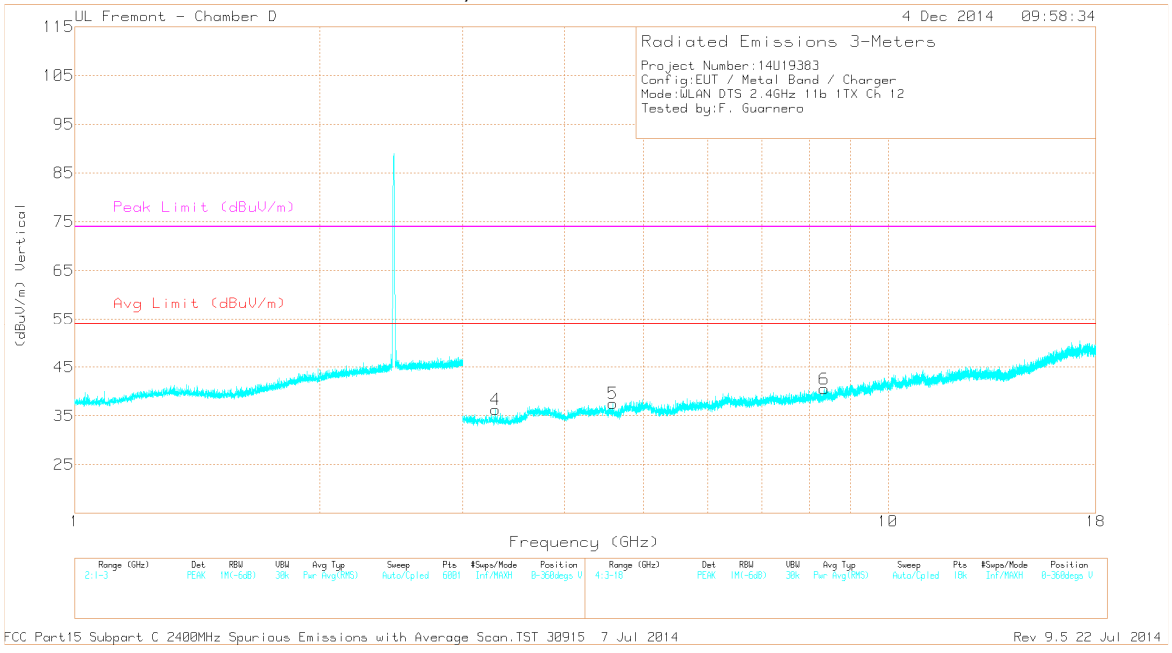
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, CH 12

HIGH CHANNEL HORIZONTAL PLOT, CH12



HIGH CHANNEL VERTICAL PLOT, CH12



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.045	38.81	PK2	33.4	-28.5	0	43.71	-	-	74	-30.29	223	302	H
	* 4.047	27.43	MAv1	33.4	-28.5	.1	32.43	54	-21.57	-	-	223	302	H
2	* 4.812	38.61	PK2	34.2	-26.9	0	45.91	-	-	74	-28.09	227	302	H
	* 4.813	26.91	MAv1	34.2	-26.9	.1	34.31	54	-19.69	-	-	227	302	H
3	7.142	37.51	PK2	35.7	-25.1	0	48.11	-	-	-	-	227	302	H
4	3.291	38.85	PK2	32.7	-28.1	0	43.45	-	-	-	-	296	371	V
5	* 4.586	38.59	PK2	34.1	-28.1	0	44.59	-	-	74	-29.41	290	376	V
	* 4.586	27.58	MAv1	34.1	-28.1	.1	33.68	54	-20.32	-	-	290	376	V
6	* 8.344	35.86	PK2	35.8	-23.5	0	48.16	-	-	74	-25.84	294	371	V
	* 8.345	24.57	MAv1	35.8	-23.5	.1	36.97	54	-17.03	-	-	294	371	V

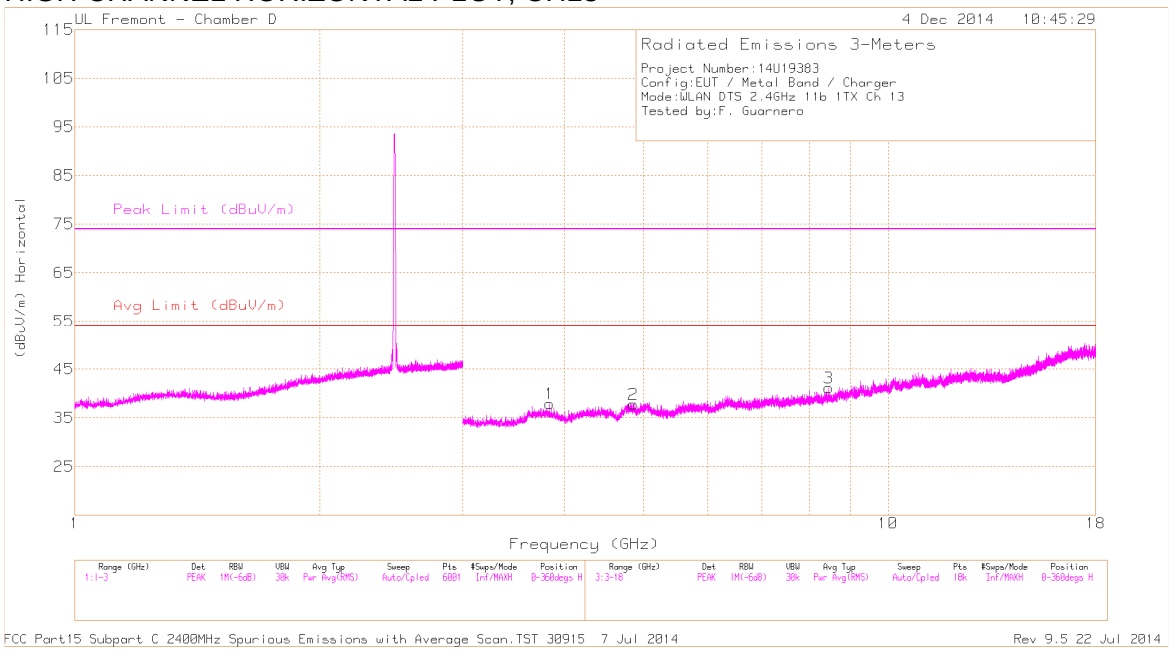
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

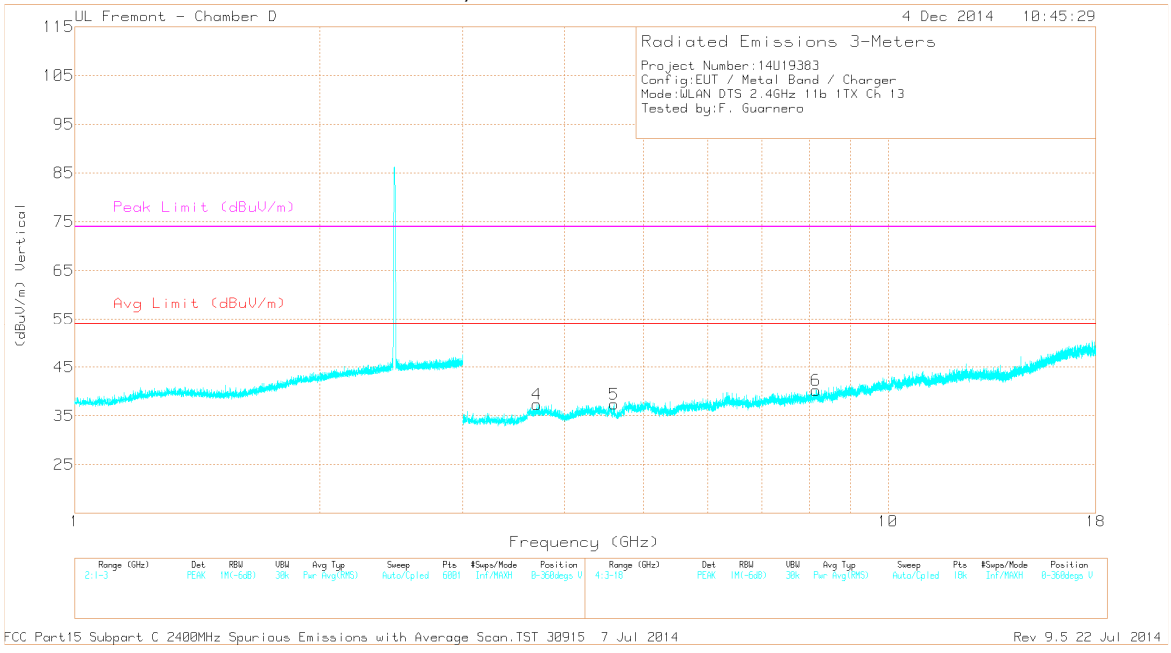
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, CH 13

HIGH CHANNEL HORIZONTAL PLOT, CH13



HIGH CHANNEL VERTICAL PLOT, CH13



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.839	39.10	PK2	33.4	-28.3	0	44.20	-	-	74	-29.8	209	301	H
	* 3.839	27.83	MAv1	33.4	-28.3	.1	33.03	54	-20.97	-	-	209	301	H
2	* 4.862	38.26	PK2	34.2	-27.7	0	44.76	-	-	74	-29.24	209	301	H
	* 4.861	26.73	MAv1	34.2	-27.7	.1	33.33	54	-20.67	-	-	209	301	H
3	* 8.453	35.79	PK2	35.8	-23.5	0	48.09	-	-	74	-25.91	209	301	H
	* 8.453	24.37	MAv1	35.8	-23.5	.1	36.77	54	-17.23	-	-	209	301	H
4	* 3.700	38.62	PK2	33.2	-28.7	0	43.12	-	-	74	-30.88	293	349	V
	* 3.700	27.52	MAv1	33.2	-28.7	.1	32.12	54	-21.88	-	-	293	349	V
5	* 4.606	39.18	PK2	34.1	-28.2	0	45.08	-	-	74	-28.92	293	349	V
	* 4.607	27.52	MAv1	34.1	-28.2	.1	33.52	54	-20.48	-	-	293	349	V
6	* 8.149	35.85	PK2	35.8	-23.4	0	48.25	-	-	74	-25.75	293	349	V
	* 8.148	24.23	MAv1	35.8	-23.4	.1	36.73	54	-17.27	-	-	293	349	V

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

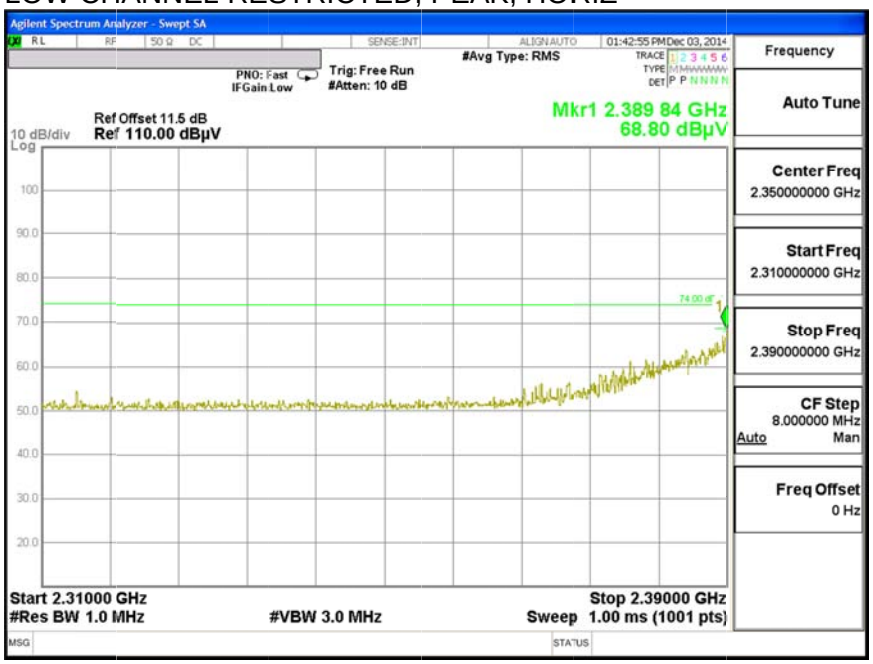
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

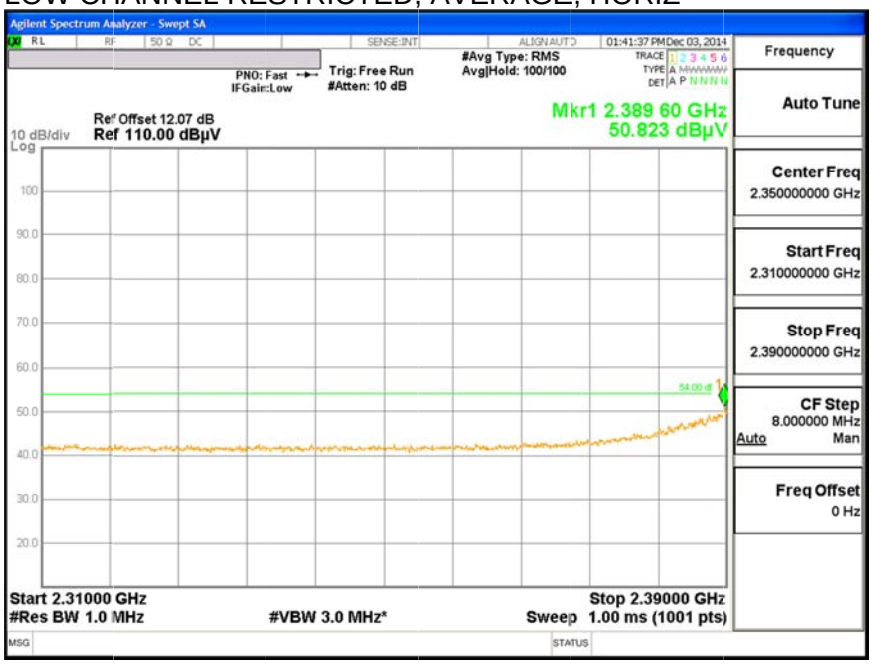
10.2.2. 802.11g 1Tx MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Channel 1)

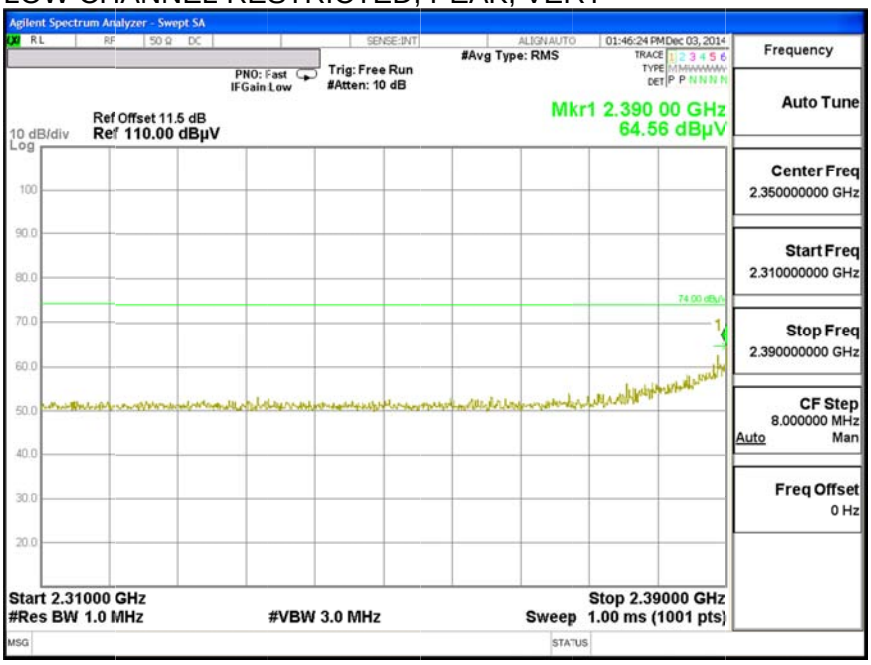
LOW CHANNEL RESTRICTED, PEAK, HORIZ



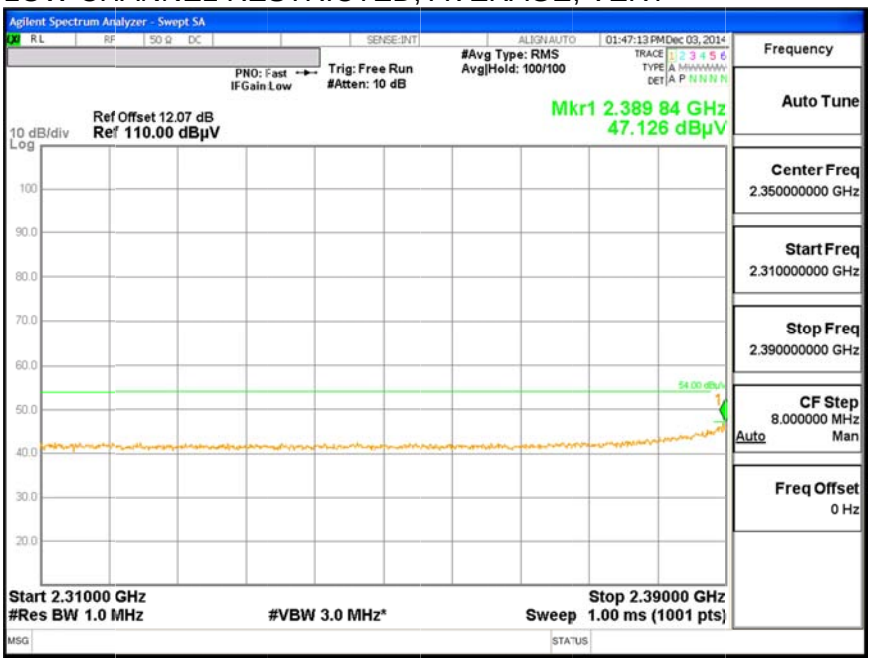
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

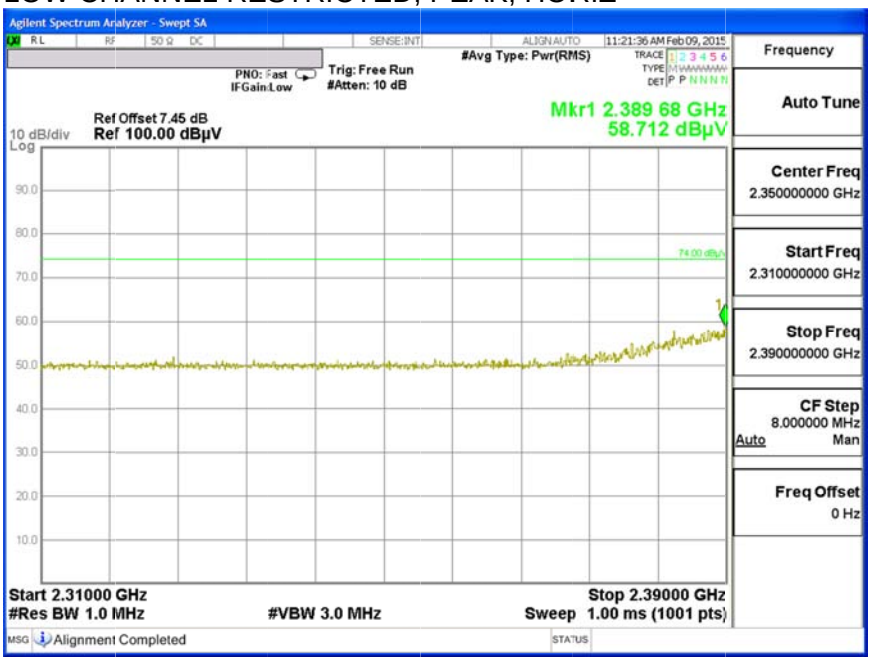


LOW CHANNEL RESTRICTED, AVERAGE, VERT

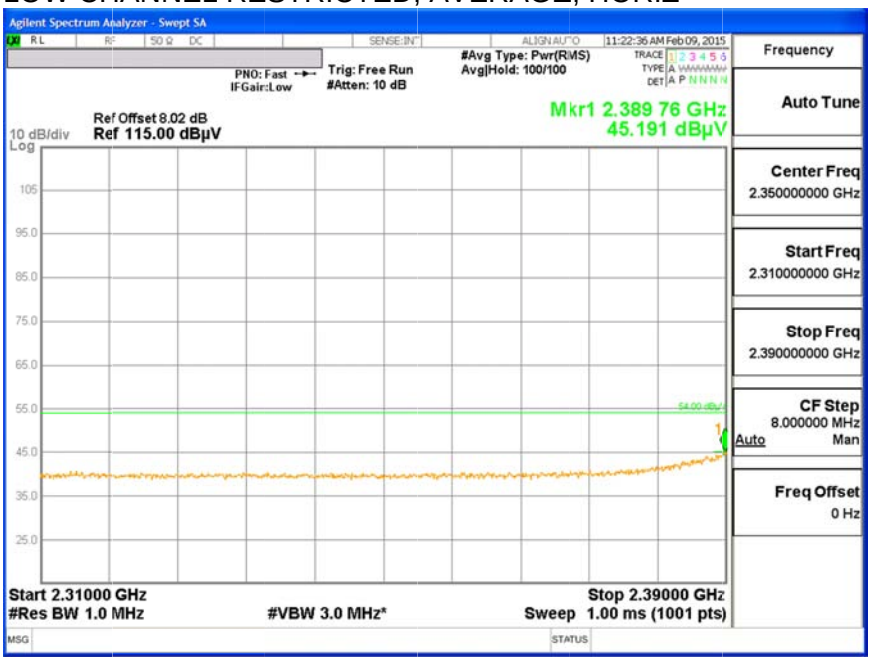


RESTRICTED BANDEDGE (LOW CHANNEL, Channel 2)

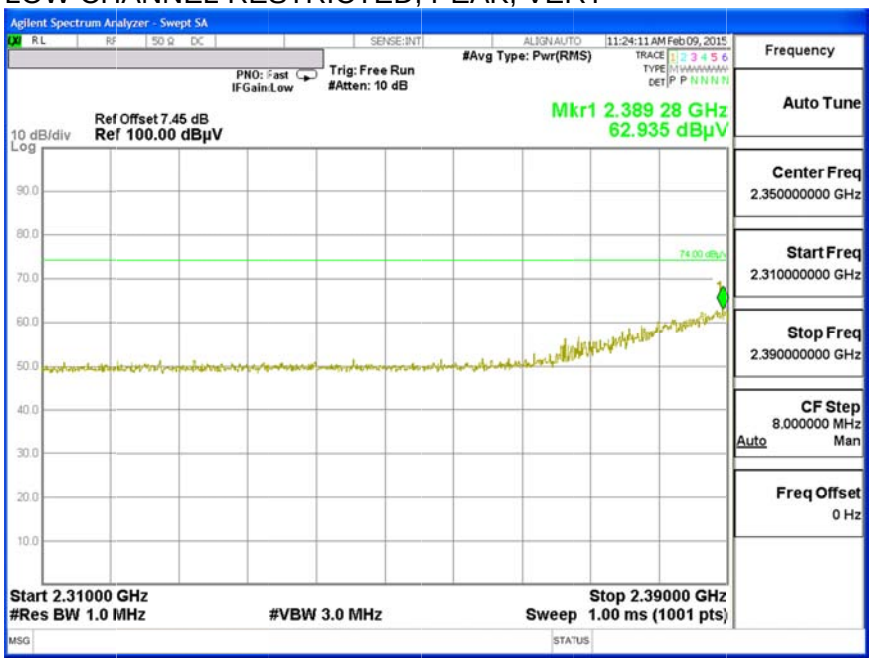
LOW CHANNEL RESTRICTED, PEAK, HORIZ



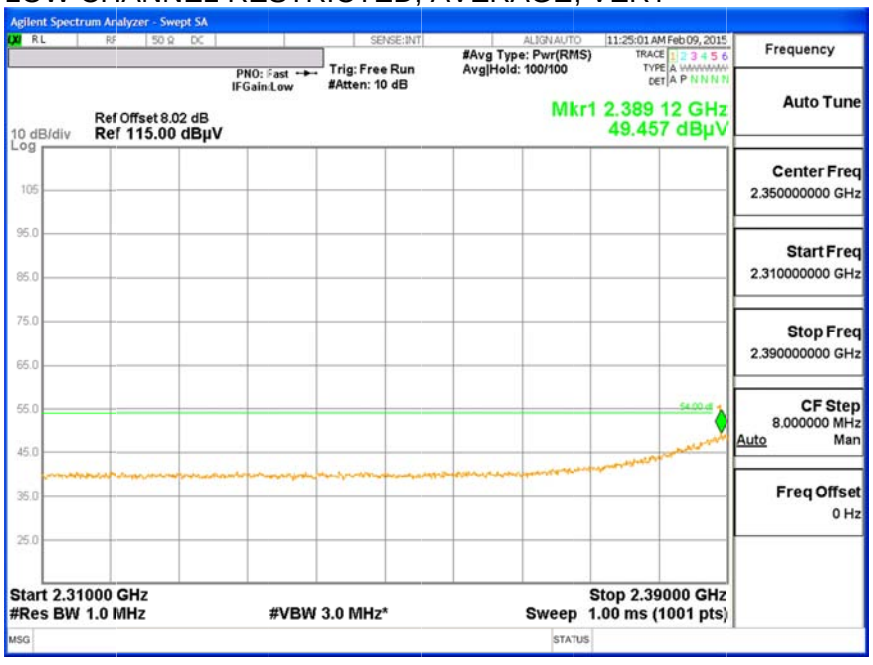
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

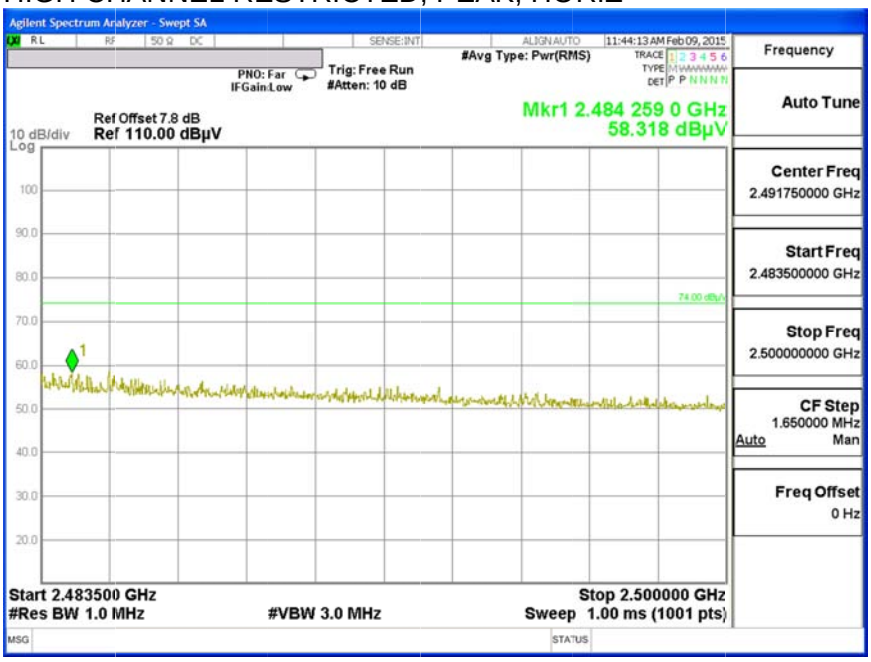


LOW CHANNEL RESTRICTED, AVERAGE, VERT

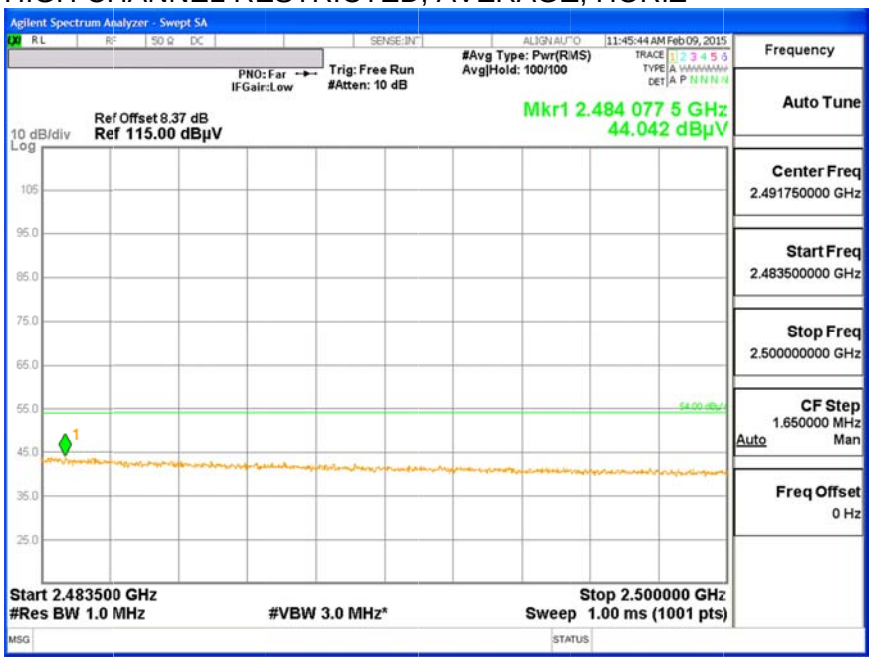


RESTRICTED BANDEDGE (HIGH CHANNEL, Channel 10)

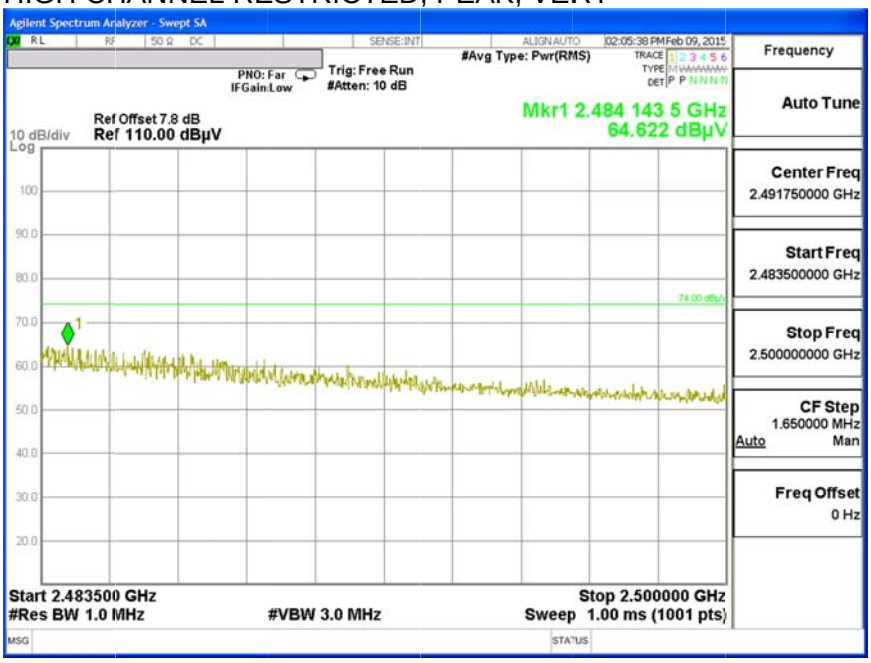
HIGH CHANNEL RESTRICTED, PEAK, HORIZ



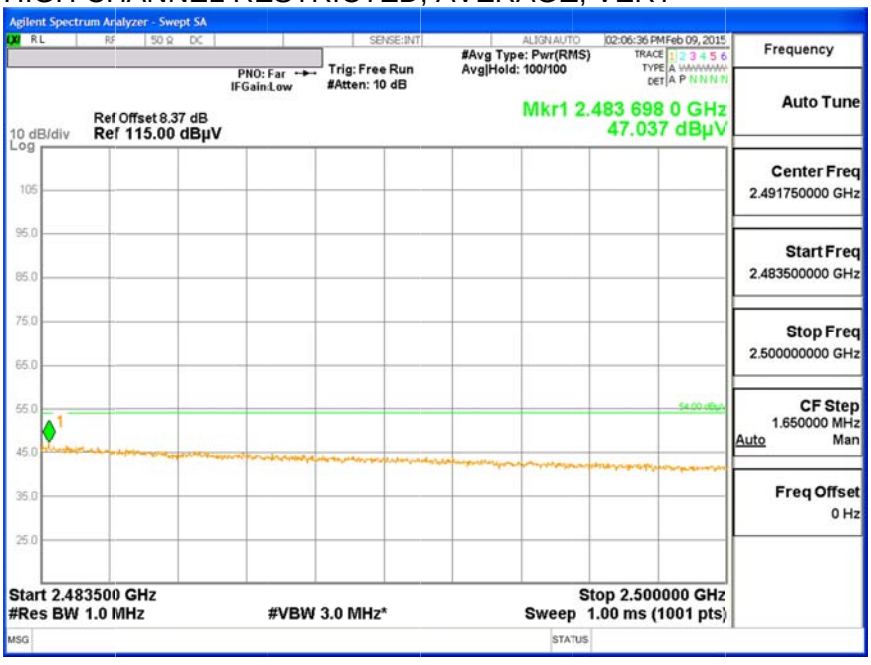
HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT

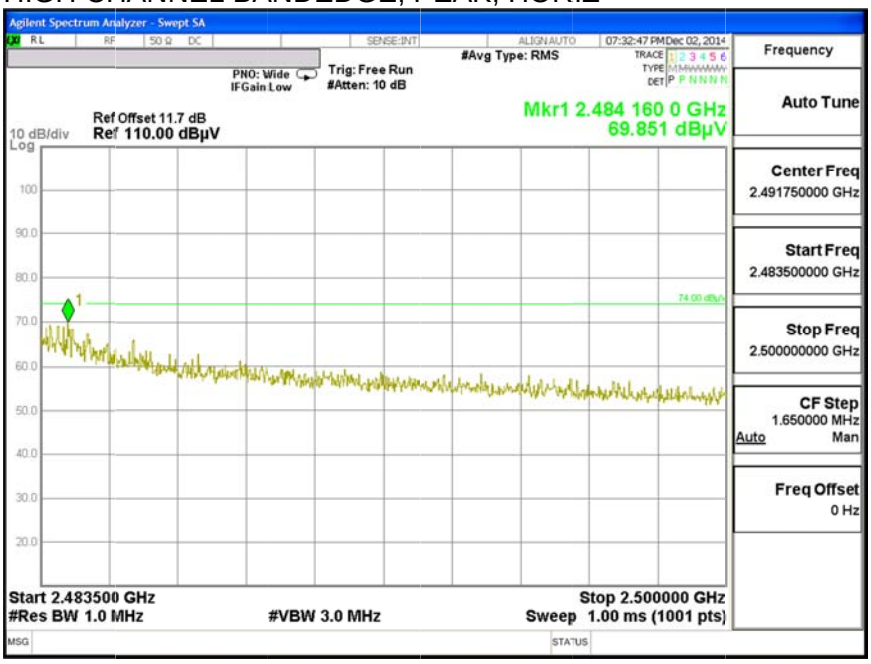


HIGH CHANNEL RESTRICTED, AVERAGE, VERT

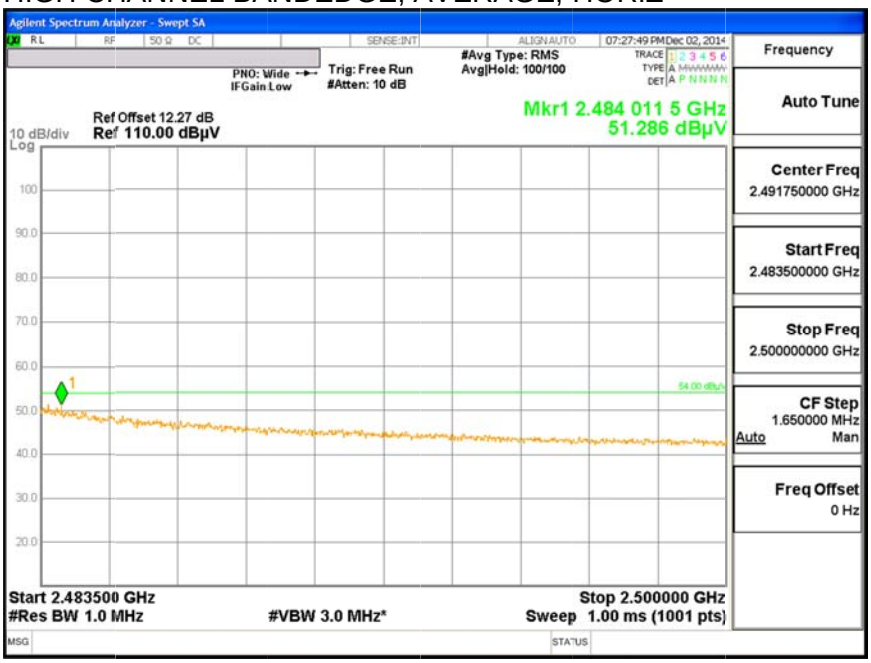


AUTHORIZED BANDEDGE (HIGH CHANNEL, Channel 11)

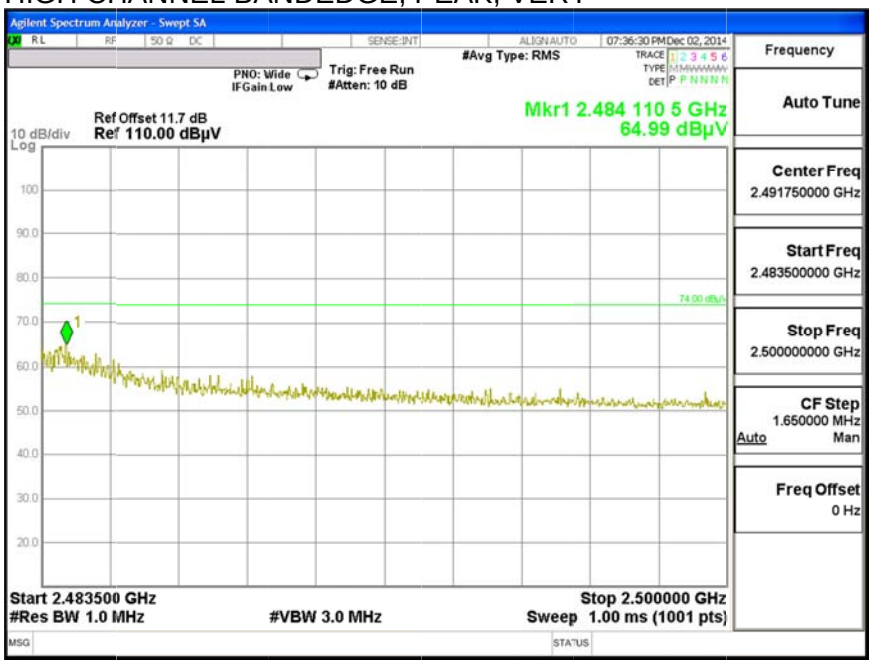
HIGH CHANNEL BANDEDGE, PEAK, HORIZ



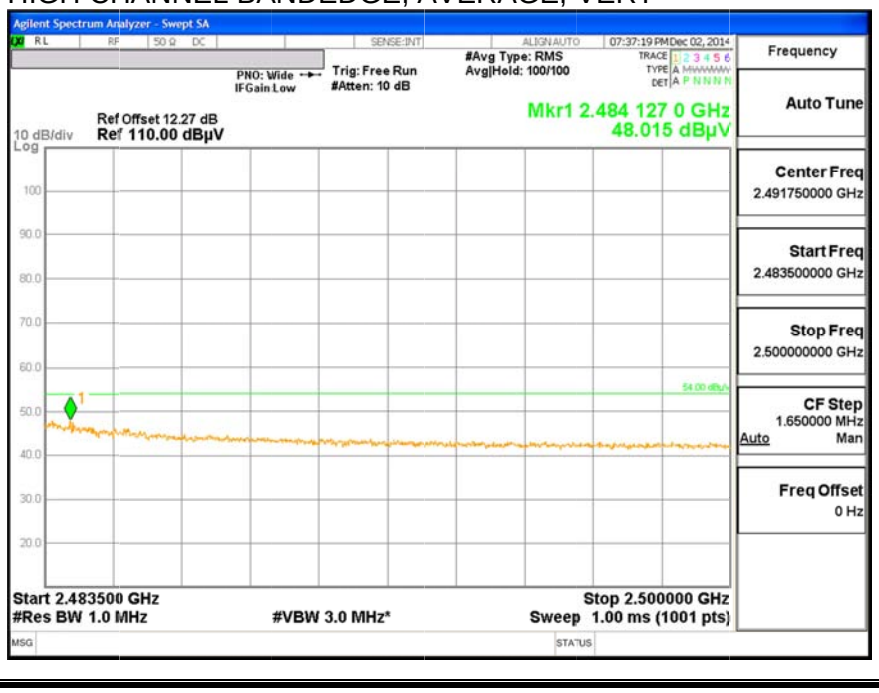
HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



HIGH CHANNEL BANDEDGE, PEAK, VERT

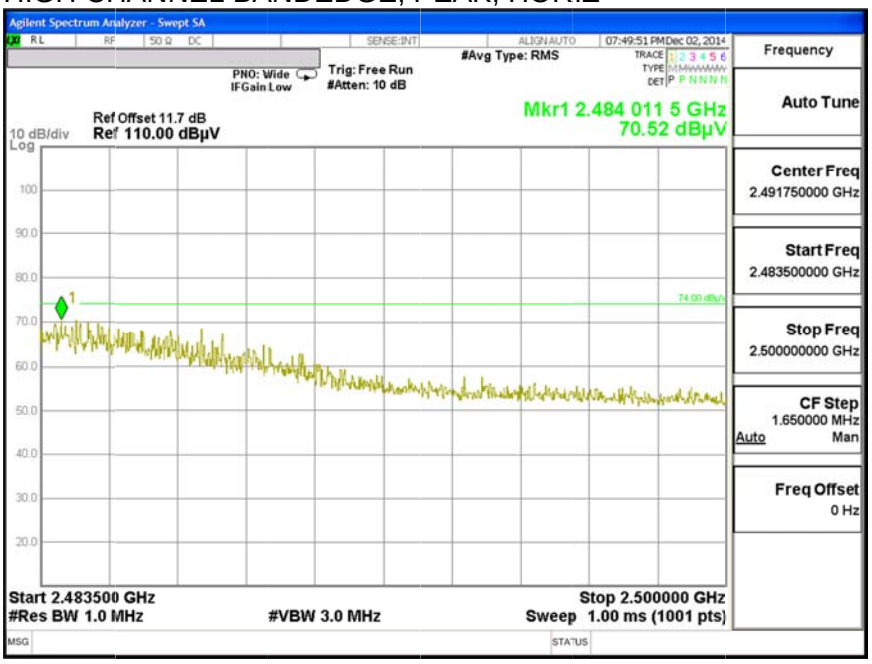


HIGH CHANNEL BANDEDGE, AVERAGE, VERT

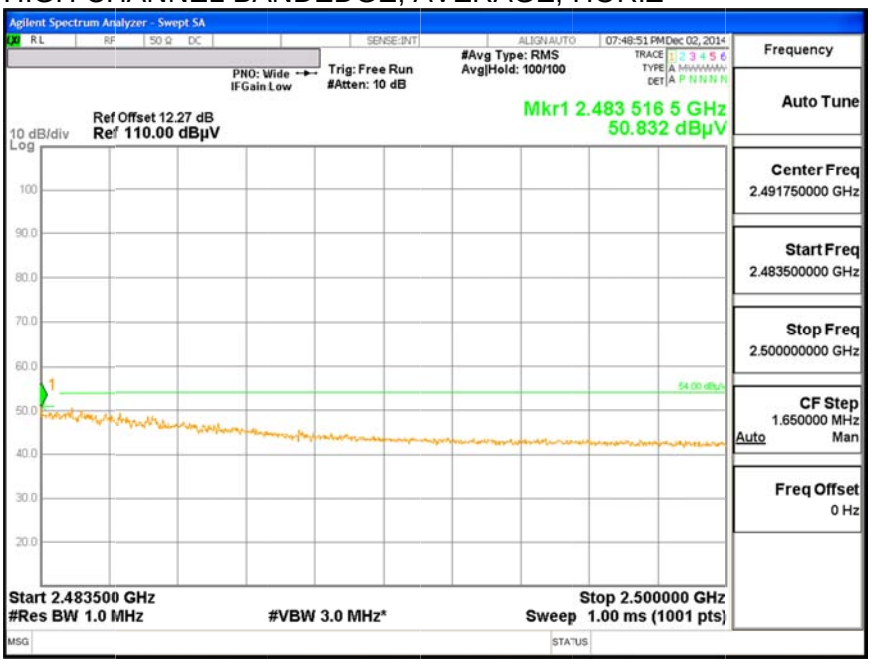


AUTHORIZED BANDEDGE (HIGH CHANNEL, Channel 12)

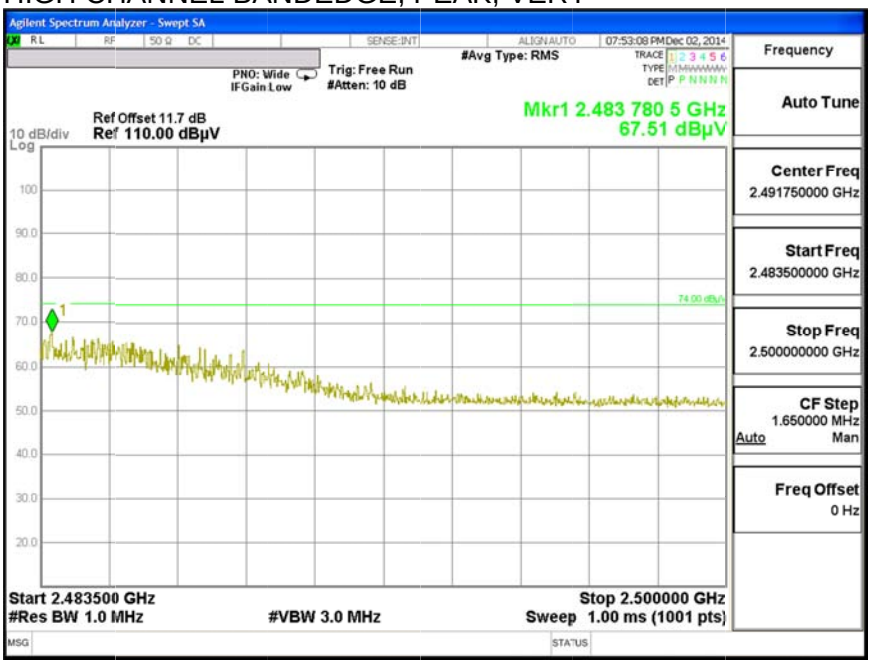
HIGH CHANNEL BANDEDGE, PEAK, HORIZ



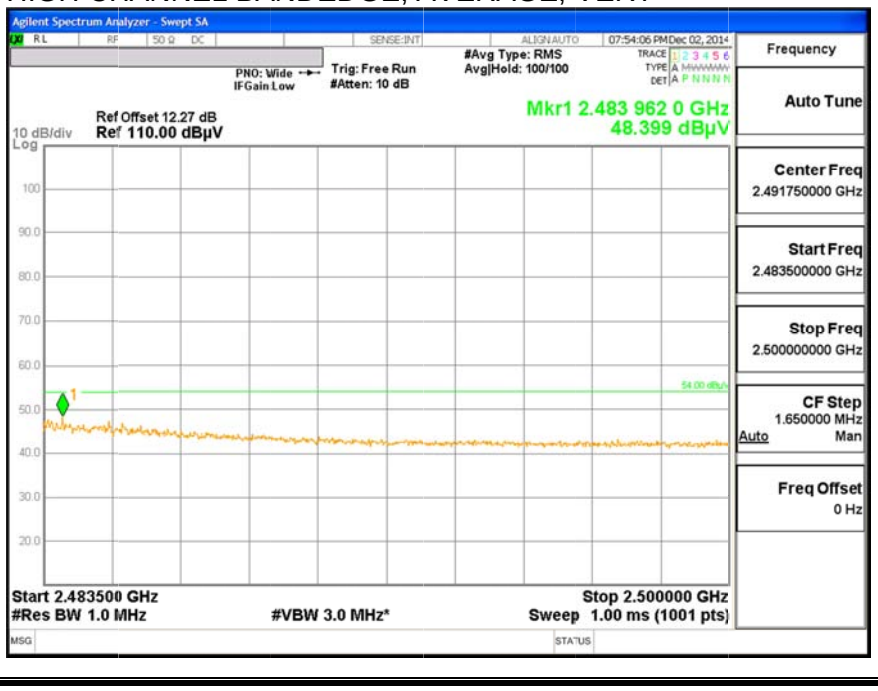
HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



HIGH CHANNEL BANDEDGE, PEAK, VERT

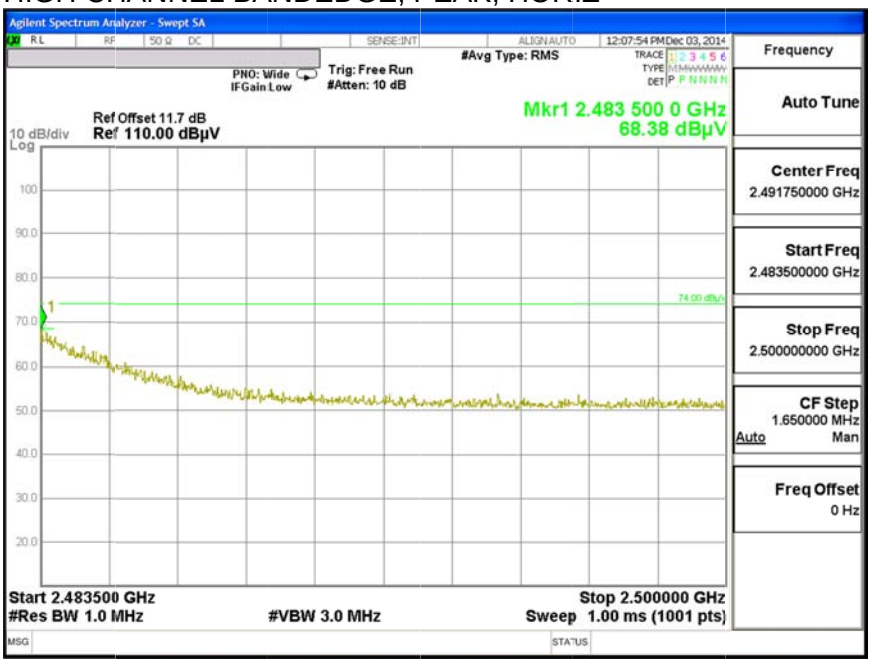


HIGH CHANNEL BANDEDGE, AVERAGE, VERT

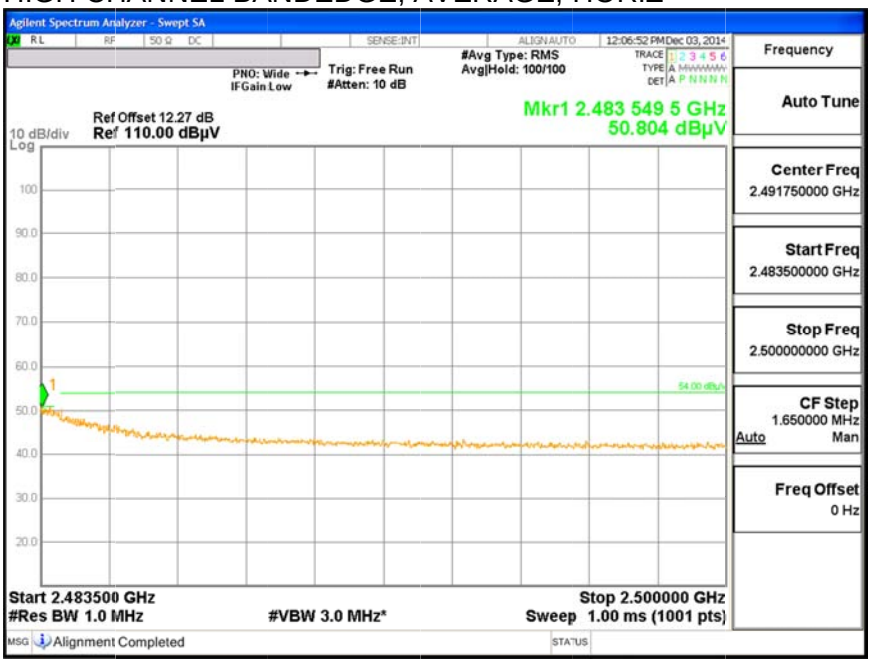


AUTHORIZED BANDEDGE (HIGH CHANNEL, Channel 13)

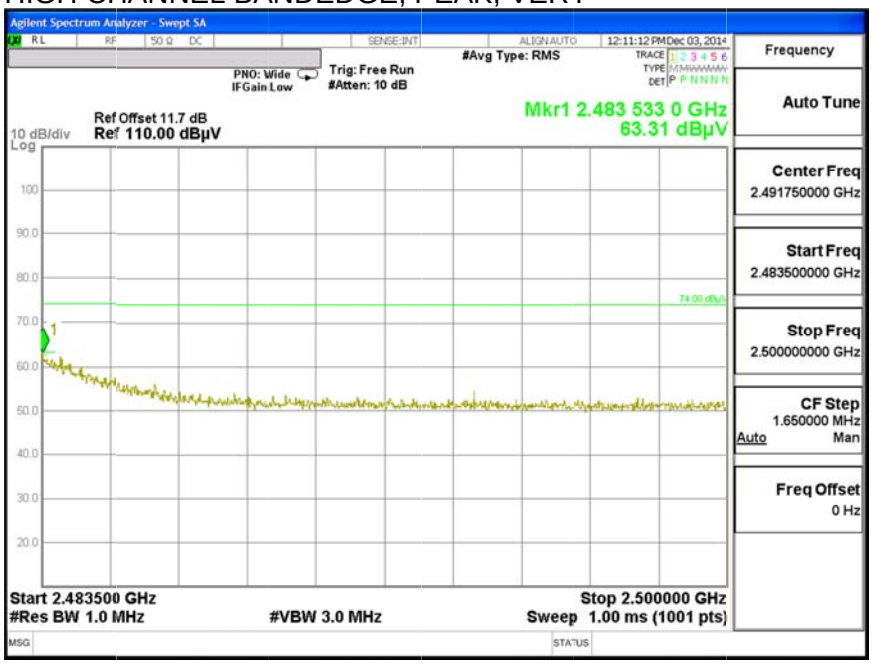
HIGH CHANNEL BANDEDGE, PEAK, HORIZ



HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ



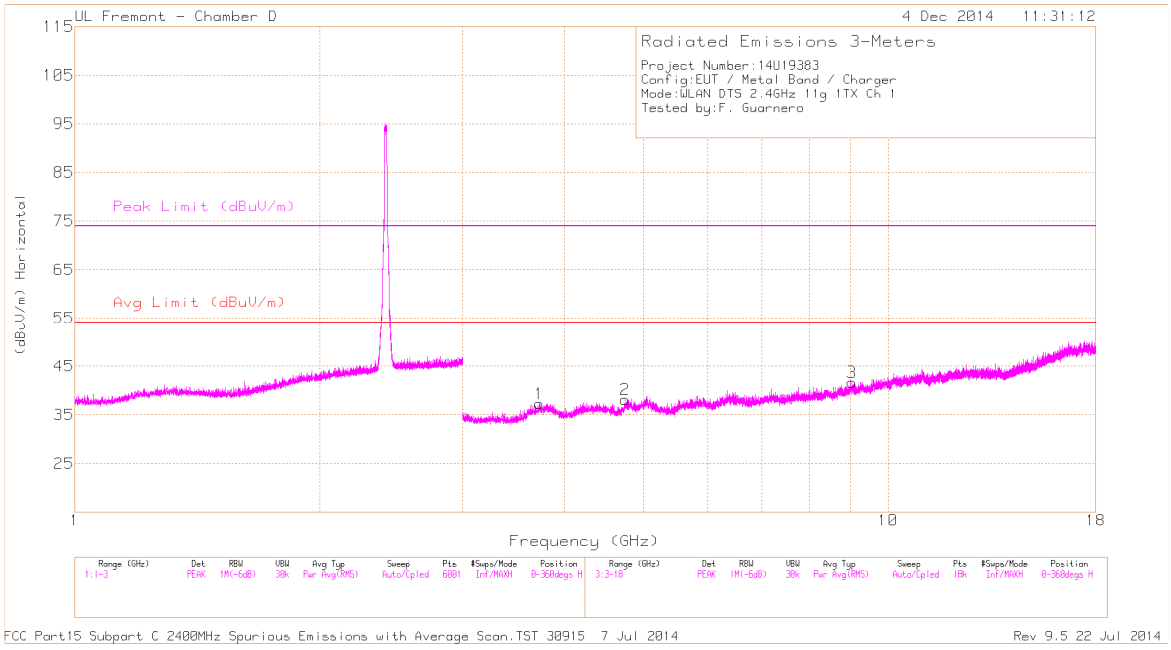
HIGH CHANNEL BANDEDGE, PEAK, VERT



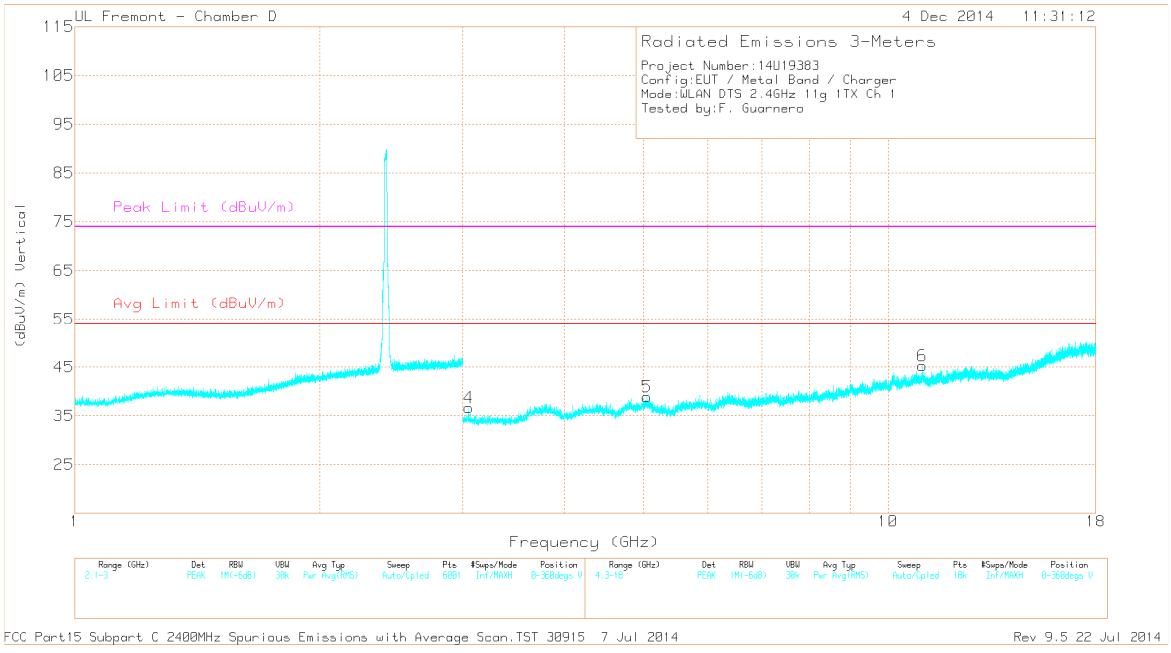
HIGH CHANNEL BANDEDGE, AVERAGE, VERT

HARMONICS AND SPURIOUS EMISSIONS, Channel 1

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.727	39.25	PK2	33.3	-28.7	0	43.85	-	-	74	-30.15	212	305	H
	* 3.728	27.61	MAv1	33.3	-28.7	.57	32.78	54	-21.22	-	-	212	305	H
2	* 4.75	38.28	PK2	34.1	-26.9	0	45.48	-	-	74	-28.52	211	300	H
	* 4.749	27.07	MAv1	34.1	-26.9	.57	34.84	54	-19.16	-	-	211	300	H
3	* 9.020	34.60	PK2	36.2	-21.7	0	49.10	-	-	74	-24.9	210	308	H
	* 9.019	23.52	MAv1	36.2	-21.8	.57	38.49	54	-15.51	-	-	210	308	H
4	3.050	39.19	PK2	32.8	-28.3	0	43.69	-	-	-	-	284	234	V
5	* 5.055	38.38	PK2	34.3	-26.4	0	46.28	-	-	74	-27.72	292	347	V
	* 5.055	26.05	MAv1	34.3	-26.4	.57	34.52	54	-19.48	-	-	292	347	V
6	* 11.022	33.69	PK2	38.1	-20.3	0	51.49	-	-	74	-22.51	190	253	V
	* 11.025	22.49	MAv1	38.1	-20.3	.57	40.86	54	-13.14	-	-	190	253	V

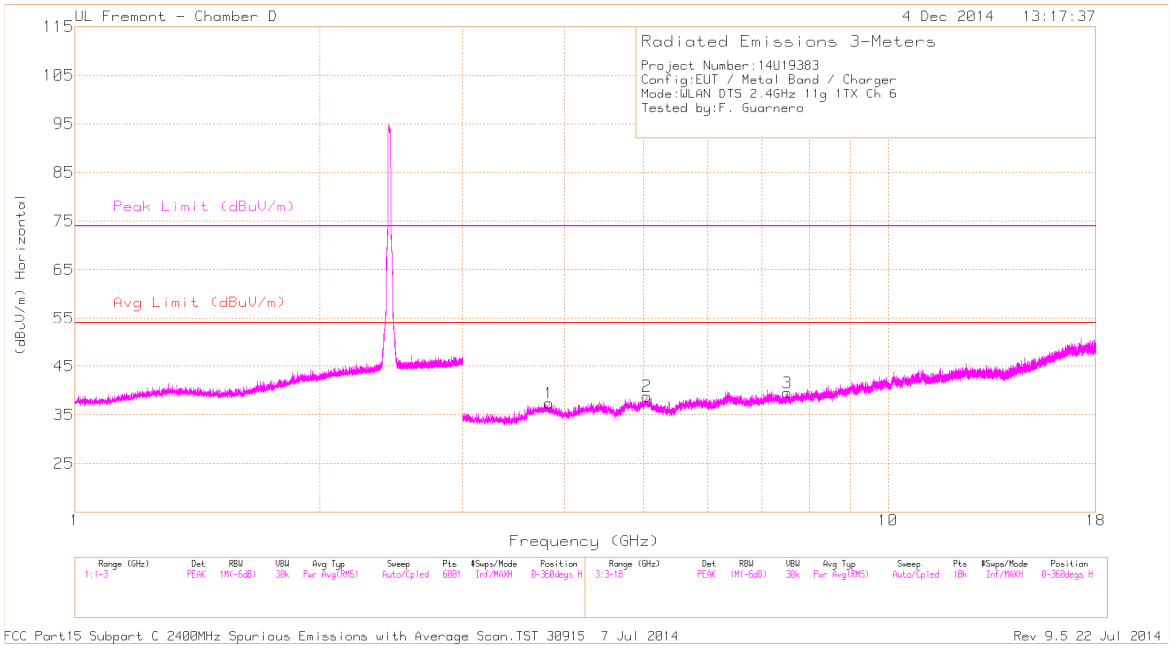
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

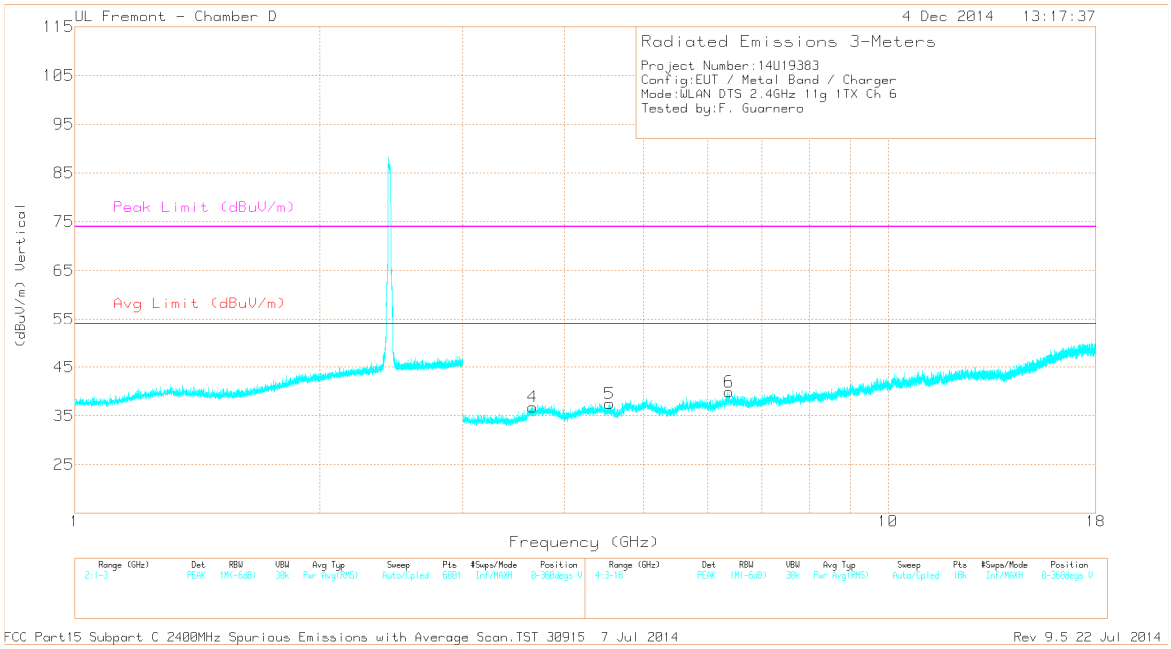
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, Channel 6

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.831	38.43	PK2	33.4	-28.3	0	43.53	-	-	74	-30.47	224	312	H
	* 3.833	28.04	MAv1	33.4	-28.3	.57	33.71	54	-20.29	-	-	224	312	H
2	* 5.056	37.87	PK2	34.3	-26.4	0	45.77	-	-	74	-28.23	220	300	H
	* 5.057	26.5	MAv1	34.3	-26.5	.57	34.87	54	-19.13	-	-	220	300	H
3	* 7.525	35.79	PK2	35.7	-24.7	0	46.79	-	-	74	-27.21	224	306	H
	* 7.525	24.73	MAv1	35.7	-24.7	.57	36.30	54	-17.70	-	-	224	306	H
4	* 3.654	39.24	PK2	33.4	-28.9	0	43.74	-	-	74	-30.26	300	369	V
	* 3.656	27.6	MAv1	33.3	-28.9	.57	32.57	54	-21.43	-	-	300	369	V
5	* 4.646	39.06	PK2	34.1	-28.1	0	45.06	-	-	74	-28.94	295	362	V
	* 4.644	27.28	MAv1	34.1	-28.1	.57	33.85	54	-20.15	-	-	295	362	V
6	6.373	36.92	PK2	35.6	-26.2	0	46.32	-	-	-	-	290	366	V

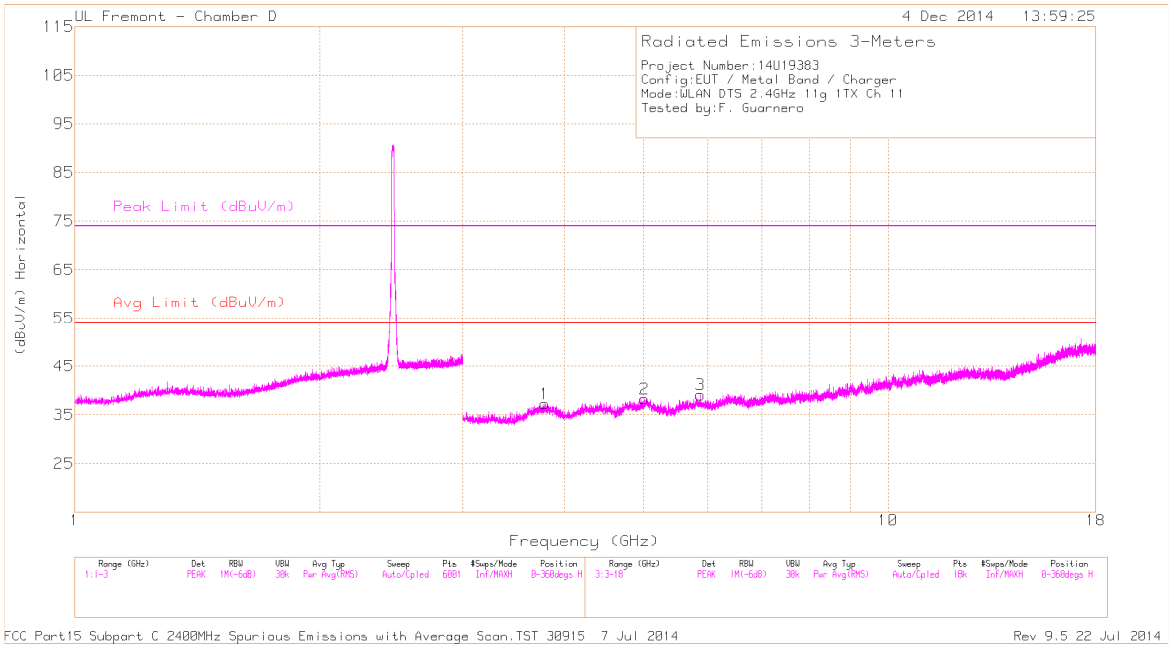
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

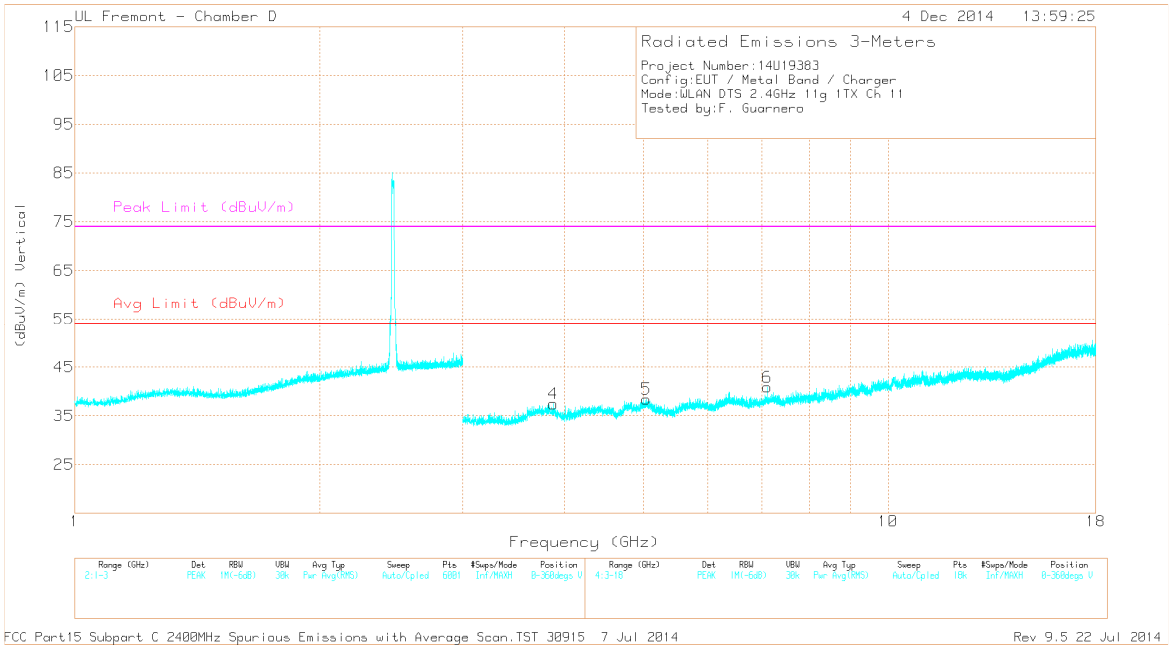
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, Channel 11

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.786	39.06	PK2	33.4	-28.3	0	44.16	-	-	74	-29.84	211	302	H
	* 3.785	27.53	MAv1	33.4	-28.3	.57	33.2	54	-20.80	-	-	211	302	H
2	* 5.014	38.02	PK2	34.2	-26.4	0	45.82	-	-	74	-28.18	205	317	H
	* 5.016	26.11	MAv1	34.2	-26.4	.57	34.48	54	-19.52	-	-	205	317	H
3	5.877	37.98	PK2	35.0	-26.8	0	46.18	-	-	-	-	209	317	H
4	* 3.877	38.88	PK2	33.5	-28.2	0	44.18	-	-	74	-29.82	288	361	V
	* 3.877	27.62	MAv1	33.5	-28.2	.57	33.49	54	-20.51	-	-	288	361	V
5	* 5.04	36.87	PK2	34.3	-26.2	0	44.97	-	-	74	-29.03	295	361	V
	* 5.04	26.25	MAv1	34.3	-26.2	.57	34.92	54	-19.08	-	-	295	361	V
6	7.100	36.27	PK2	35.6	-25.3	0	46.57	-	-	-	-	357	122	V

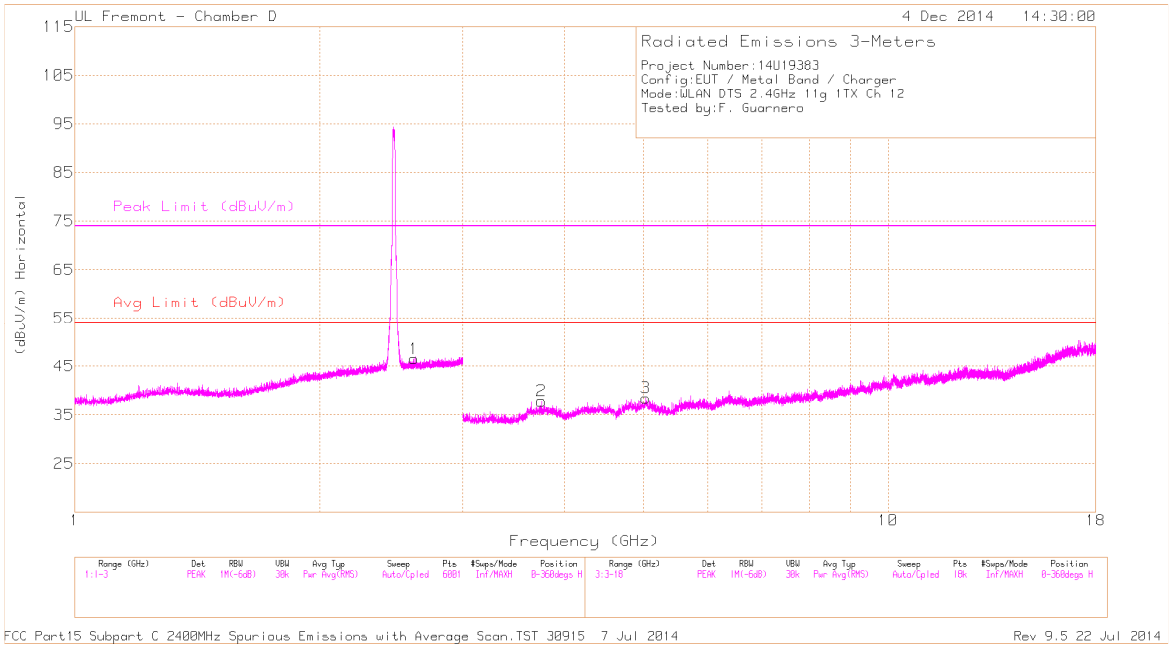
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

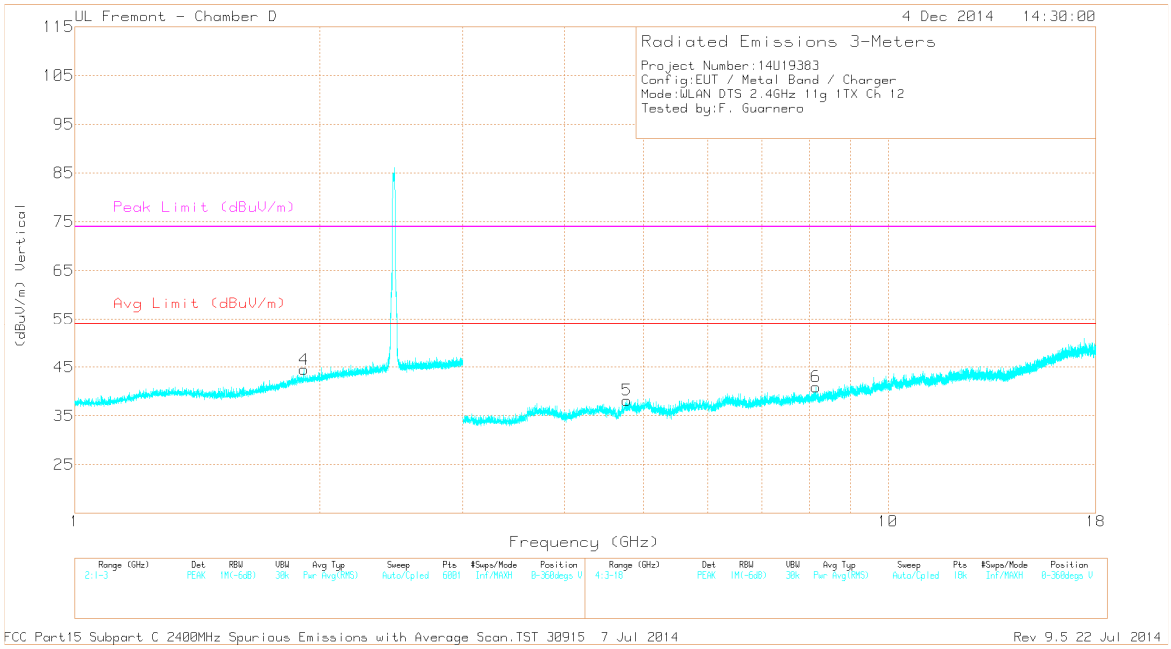
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, Channel 12

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.614	42.37	PK2	32.3	-20.3	0	54.37	-	-	-	-	227	311	H
2	* 3.747	38.79	PK2	33.3	-28.4	0	43.69	-	-	74	-30.31	213	296	H
	* 3.747	27.38	MAv1	33.3	-28.4	.57	32.85	54	-21.15	-	-	213	296	H
3	* 5.036	37.54	PK2	34.2	-26.2	0	45.54	-	-	74	-28.46	213	296	H
	* 5.036	26.51	MAv1	34.2	-26.2	.57	35.08	54	-18.92	-	-	213	296	H
4	1.913	41.55	PK2	30.9	-21.2	0	51.25	-	-	-	-	291	356	V
5	* 4.774	37.37	PK2	34.2	-26.9	0	44.67	-	-	74	-29.33	292	373	V
	* 4.777	27.09	MAv1	34.2	-26.9	.57	34.96	54	-19.04	-	-	292	373	V
6	* 8.155	35.85	PK2	35.8	-23.4	0	48.25	-	-	74	-25.75	292	373	V
	* 8.156	24.28	MAv1	35.8	-23.4	.57	37.25	54	-16.75	-	-	292	373	V

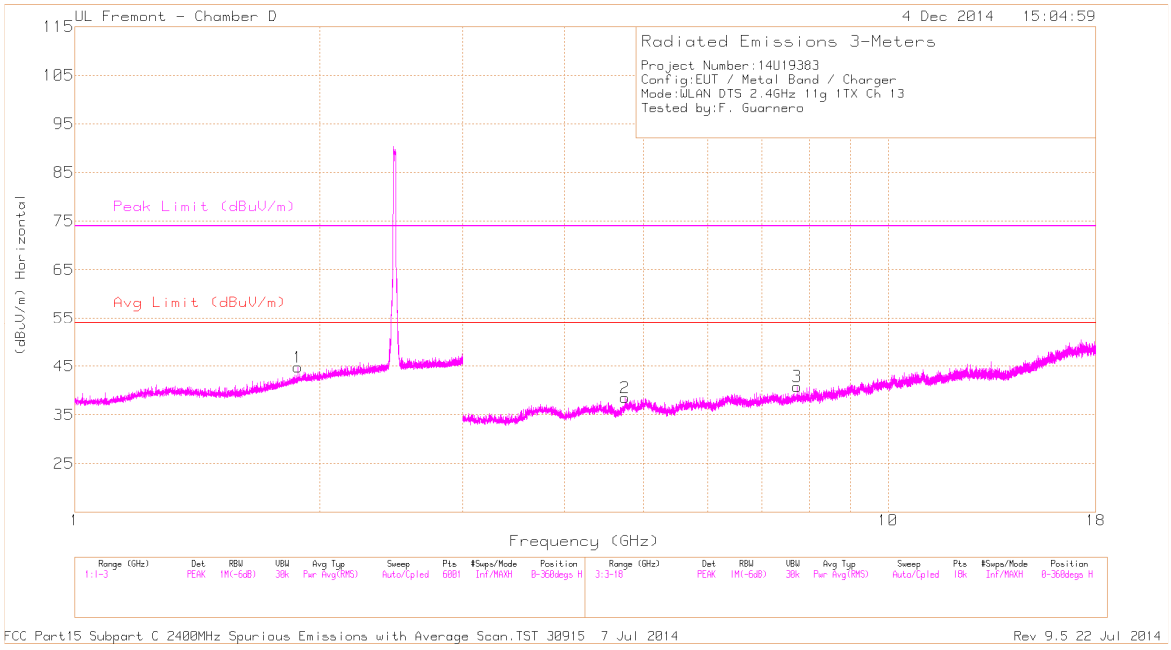
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

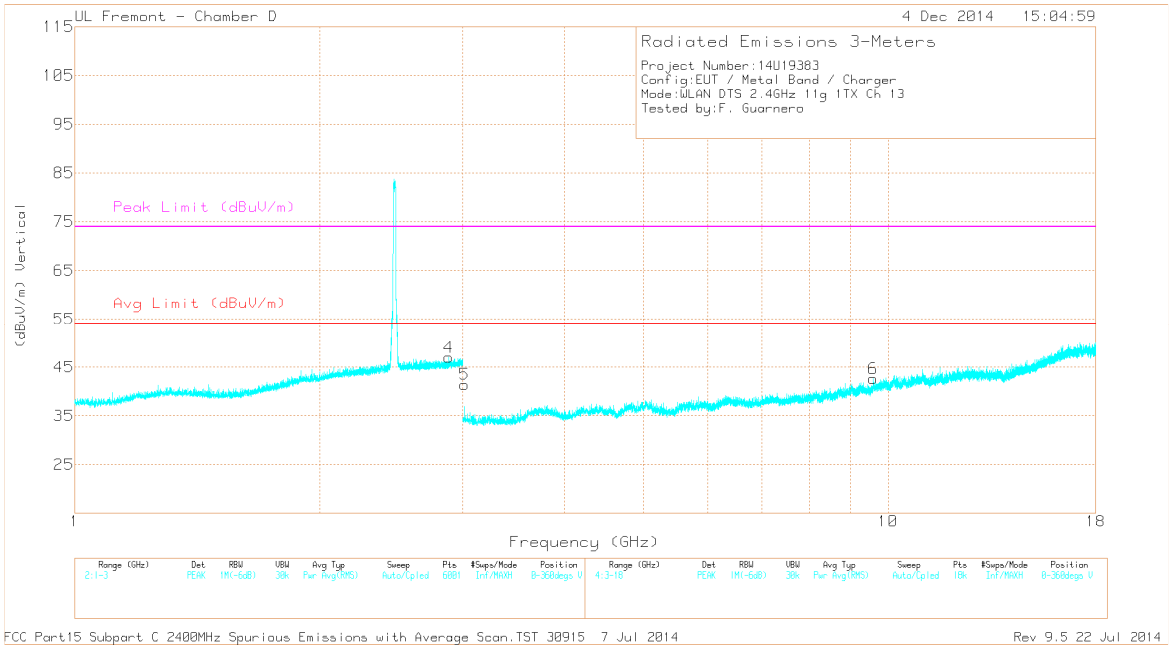
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS, Channel 13

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.882	41.75	PK2	30.7	-21.2	0	51.25	-	-	-	-	204	326	H
2	* 4.746	39.19	PK2	34.1	-26.9	0	46.39	-	-	74	-27.61	201	305	H
	* 4.747	27.11	MAv1	34.1	-26.9	.57	34.88	54	-19.12	-	-	201	305	H
3	* 7.725	36.56	PK2	35.8	-24.6	0	47.76	-	-	74	-26.24	201	305	H
	* 7.725	25.01	MAv1	35.8	-24.6	.57	36.78	54	-17.22	-	-	201	305	H
4	* 2.881	41.17	PK2	32.6	-20.0	0	53.77	-	-	74	-20.23	297	378	V
	* 2.883	29.96	MAv1	32.6	-20.0	.57	43.13	54	-10.87	-	-	297	378	V
5	3.017	38.57	PK2	32.7	-28.1	0	43.17	-	-	-	-	295	362	V
6	9.593	33.96	PK2	36.7	-20.9	0	49.76	-	-	-	-	295	362	V

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

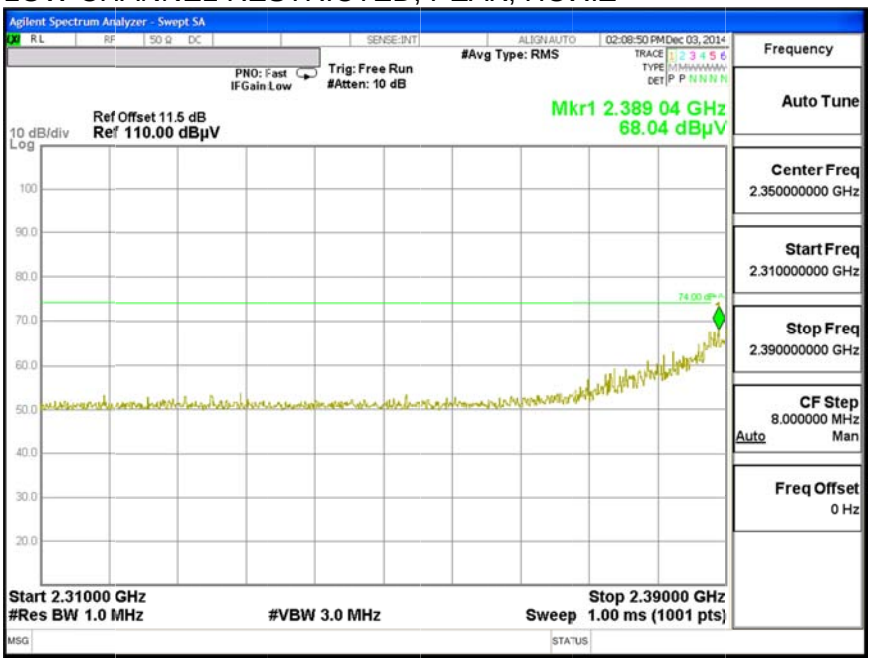
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

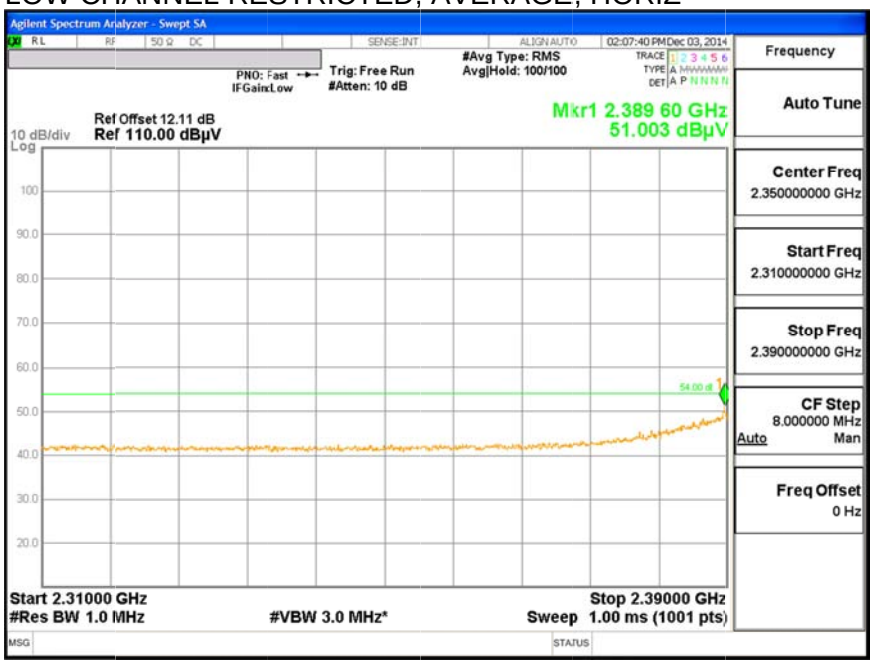
10.2.3. 802.11n HT20 1Tx MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Channel 1)

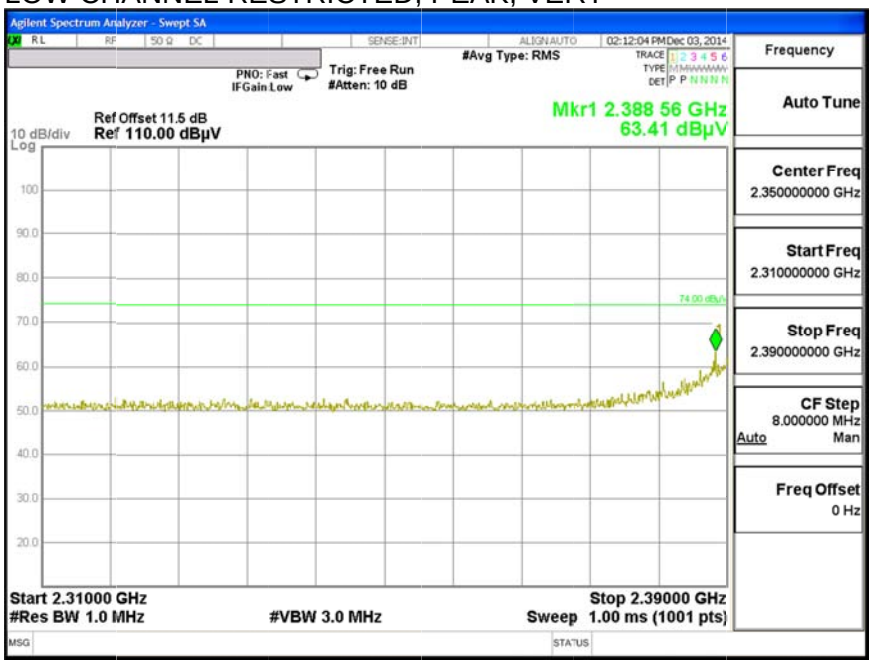
LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



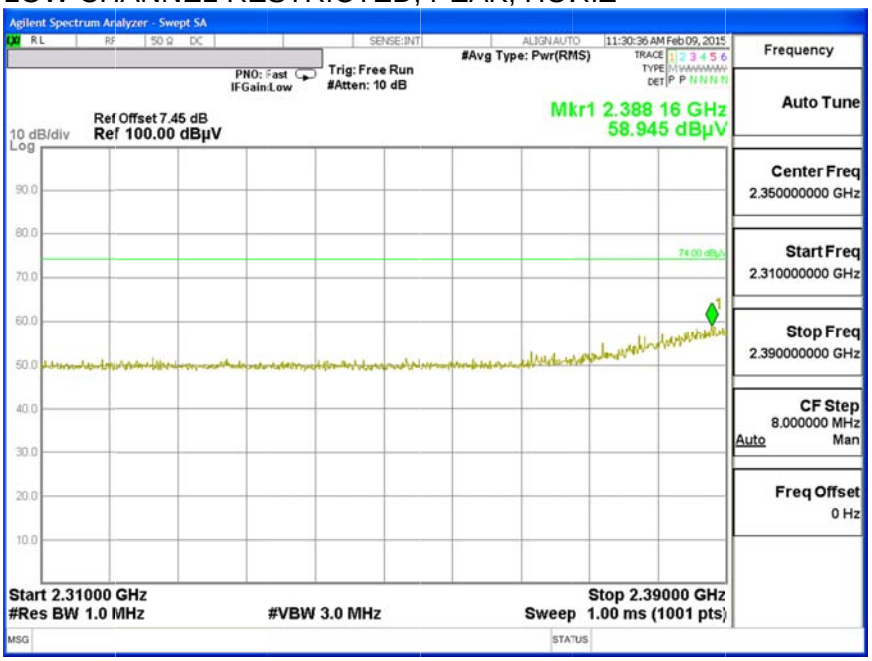
LOW CHANNEL RESTRICTED, PEAK, VERT



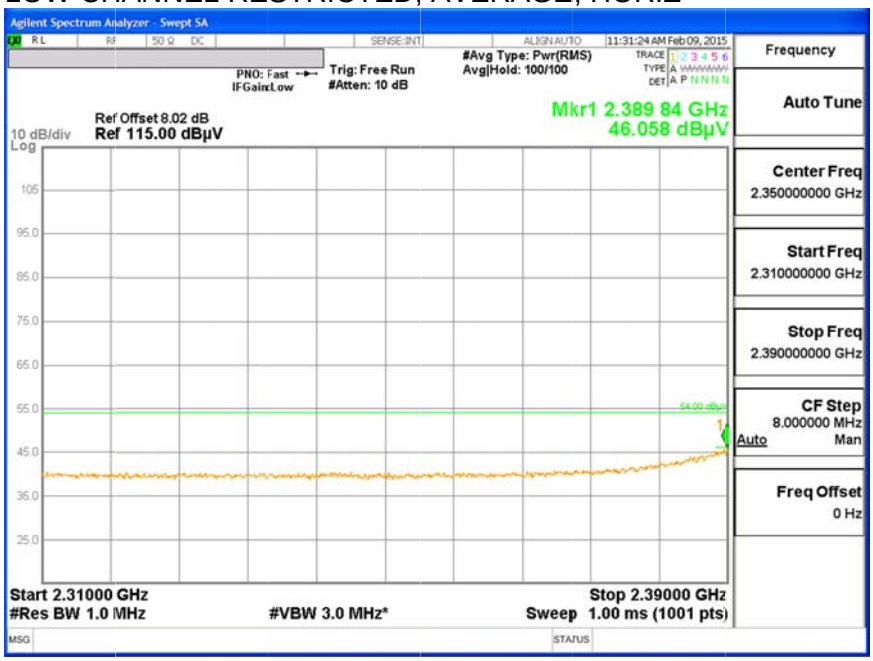
LOW CHANNEL RESTRICTED, AVERAGE, VERT

RESTRICTED BANDEDGE (LOW CHANNEL, Channel 2)

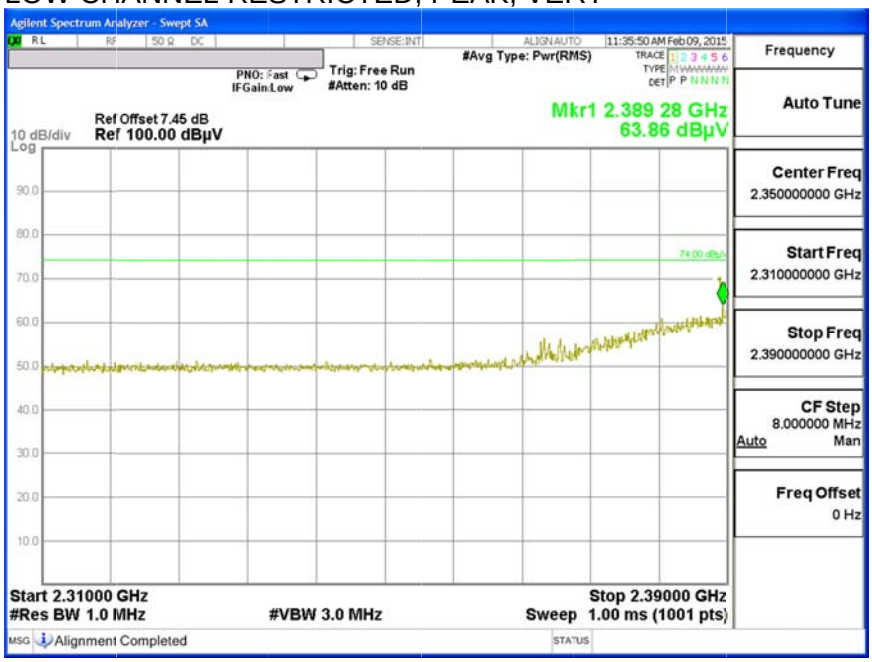
LOW CHANNEL RESTRICTED, PEAK, HORIZ



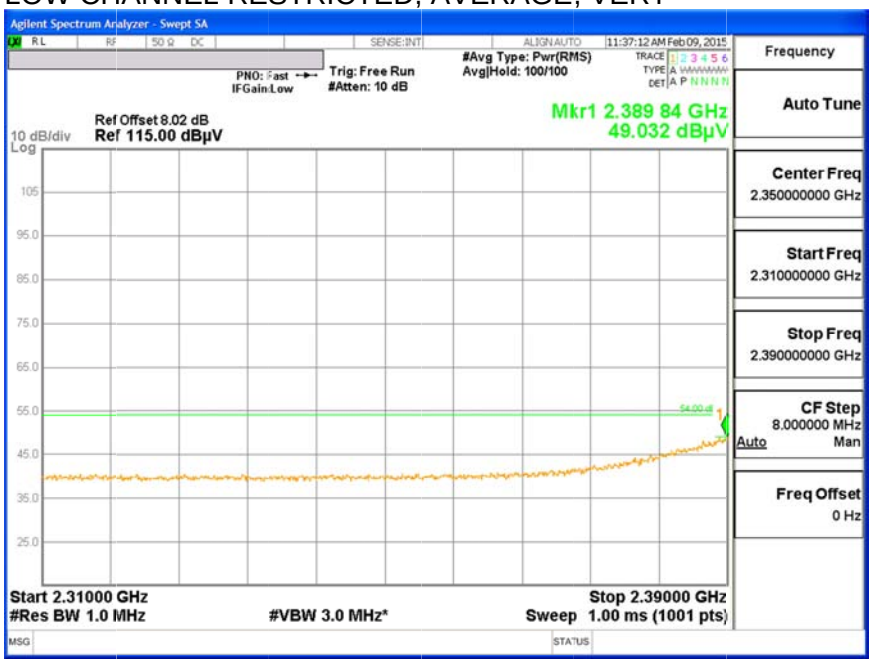
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

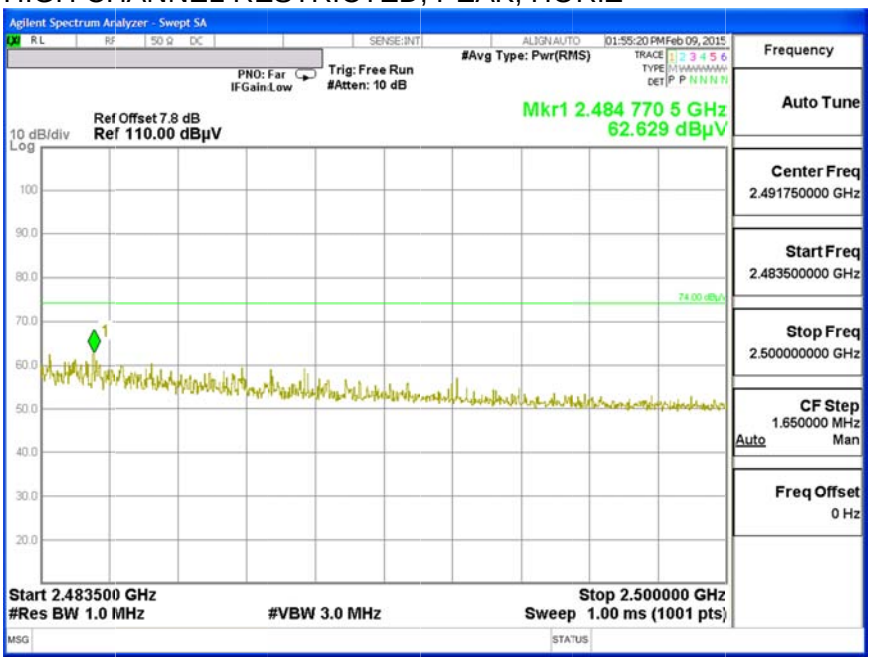


LOW CHANNEL RESTRICTED, AVERAGE, VERT

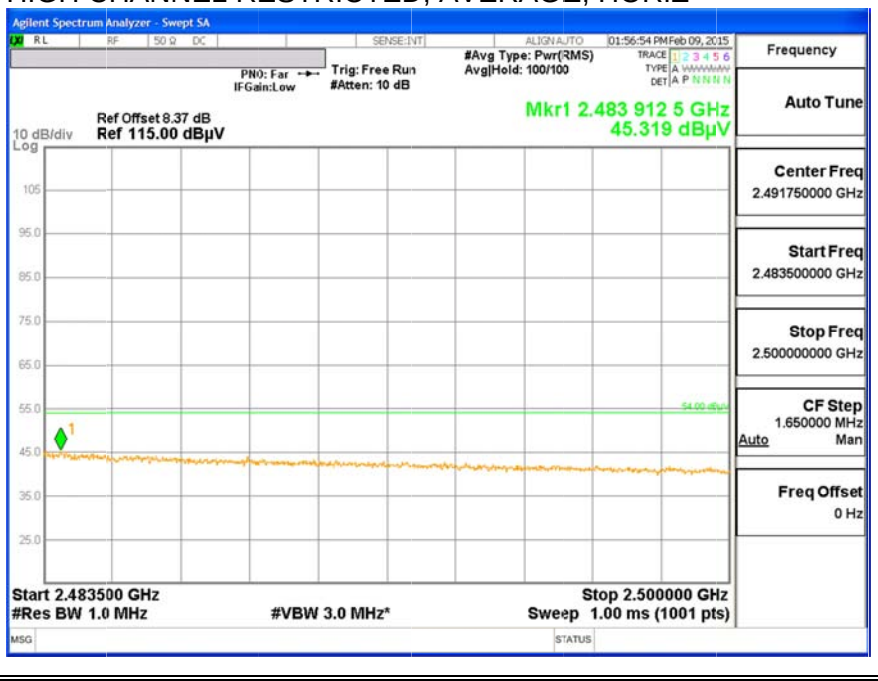


RESTRICTED BANDEDGE (HIGH CHANNEL, Channel 10)

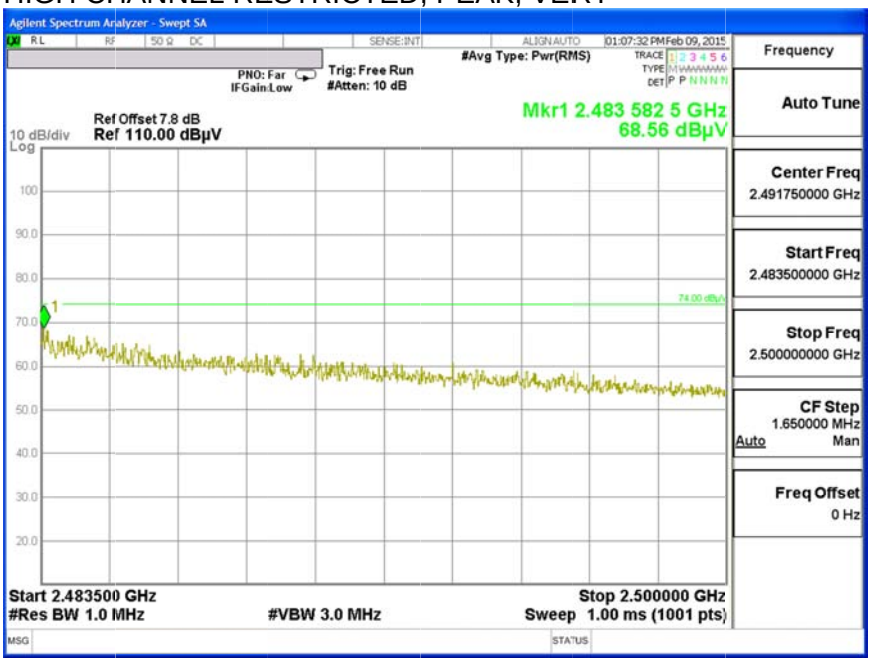
HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED, AVERAGE, VERT