



**FCC 47 CFR PART 15 SUBPART C
IC RSS 247: Issue 1**

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: BCM943602BAED

**FCC ID: QDS-BRCM1088
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--	06/09/15	Initial Issue	H. Mustapha
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: BROADCOM CORPORATION
190 MATHILDA PLACE
SUNNYVALE, CA 94086, U.S.A.

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

MODEL: BCM943602BAED

SERIAL NUMBER: Conducted: P103 S/N:0169
Radiated: P103 S/N:0027

DATE TESTED: MARCH 17, 2015 – MAY 20, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

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

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

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 Issue 1 and KDB 558074 D01 v03r02.

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

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 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:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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

The radio module is manufactured by Broadcom.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

2400 - 2483.5 MHz Authorized Frequency Band						
Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Power, Chain 2 (dBm)	Total power (dBm)	Total power (mW)
2412 - 2472	802.11b CDD 3Tx	20.55	20.71	20.61	25.40	346.34
2412 - 2472	802.11g Legacy 1TX	19.78			19.78	95.06
2412 - 2472	802.11n HT20 CDD 3TX	20.41	20.52	20.49	25.24	334.56
2412 - 2472	802.11n HT20 TxBF 3TX	20.41	20.52	20.49	25.24	334.56
2422 - 2462	802.11n HT40 1TX	18.16			18.16	65.46
2422 - 2462	802.11n HT40 CDD 2TX	19.75	19.78		22.78	189.47
2422 - 2462	802.11n HT40 CDD 3TX	15.79	15.72	15.25	20.36	108.75
2422 - 2462	802.11n HT40 TxBF 3TX	19.75	19.78	19.73	24.52	283.44

List of test reductions (non-beamforming modes):

Antenna Port Testing		
Band	Mode	Covered by
2.4 GHz band	802.11b Legacy 1TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11b CDD 2TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11g CDD 2TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11g CDD 3TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11n HT20 1TX	802.11g Legacy 1TX
2.4 GHz band	802.11n HT20 CDD/SDM 2TX	802.11n HT20 CDD 3TX

Radiated Testing		
Band	Mode	Covered by
2.4 GHz band	802.11b Legacy 1TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11b CDD 2TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11g CDD 2TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11g CDD 3TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11n HT20 1TX	802.11g Legacy 1TX
2.4 GHz band	802.11n HT20 CDD/SDM 2TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11g Legacy 1TX (Harmonics)	802.11n HT20 CDD 3TX (Harmonics)

List of test reductions (beamforming modes):

Antenna Port Testing		
Band	Mode	Covered by
2.4 GHz band	802.11n HT20 BF 2Tx	802.11n HT20 CDD 3Tx
2.4 GHz band	802.11n HT20 BF 2Tx	802.11n HT20 CDD 3Tx

Radiated Testing		
Band	Mode	Covered by
2.4 GHz band	802.11g BF 2TX	802.11n HT20 BF 3Tx
2.4 GHz band	802.11g BF 3TX	802.11n HT20 BF 3Tx
2.4 GHz band	802.11n HT20 BF 1Tx	802.11n HT20 BF 3Tx
2.4 GHz band	802.11n HT20 BF 2Tx	802.11n HT20 BF 3Tx

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The EUT utilizes the following antenna:

No.	Antenna Manufacturer	Antenna Type	Model	Peak gain@ 2400-2483.5MHz
1	MagLayers	802.11abgn WLAN, Bluetooth Antenna	PCA-4077- 25GC1-A1-RT	3.33dBi

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was Broadcom, rev.7.35.201.0.

The test utility software used during testing was Broadcom, rev. 7.15RC163.2 (r518356 WLTEST).

5.5. WORST-CASE CONFIGURATION AND MODE

The EUT was tested as an external module installed in a test jig board connected to a host Laptop PC.

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

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

For 2.4 GHz, band edge preliminary investigation showed that vertical polarization was worst case for 11b, 11n HT20, and 11n HT40 CDD. Therefore only vertical polarization was tested for these modes.

For 11g and 11n HT40 3Tx TxBF modes, preliminary investigation showed that horizontal polarization was worst case. Therefore only horizontal polarization was tested for these modes.

Worst-case chains as provided by the client were:

For SISO modes:

- 2.4 band: chain 0 (connector J0) connected to any antenna, as all three antennas have equal antenna gain.

For 2 TX modes:

- 2.4 GHz band: chain 0 (connector J0) connected to any antenna and chain 1 (connector J1) connected to any antenna, as all three antennas have equal antenna gain.

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11a mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0

For TxBF mode conducted testing, the bandwidth and duty cycle data were shared with CDD mode; the TxBF mode radiated portion has its own duty cycle.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	Lenovo G560	CBO6427681	N/A
AC / DC Adapter	Lenovo	ADP-65KHB	N/A	N/A
Laptop	DELL	Latitude E6400	7WCBYH1	N/A
AC / DC Adapter	DELL	DA90PM111	N/A	N/A
PCIe Card	Broadcom	BCM9NGFF2EC_1	1822863	N/A

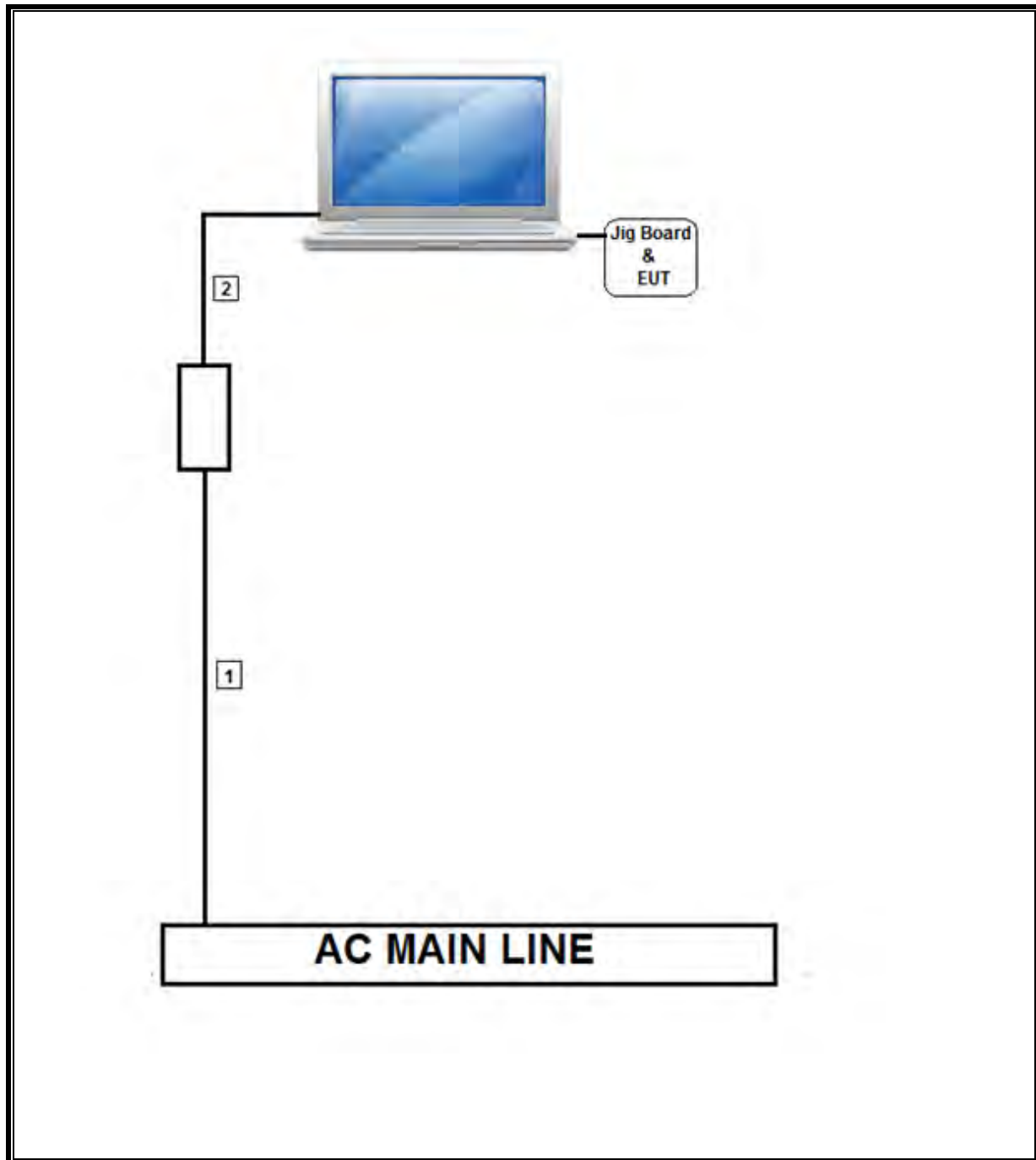
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	US115V	Unshielded	1	
2	DC	1	19.5 Vdc	Unshielded	1.5	

TEST SETUP

The EUT is connected to a host laptop via PCIe card. Test software exercised the EUT.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List					
Description	Manufacturer	Model	T No.	Cal Date	Cal Due
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014		
Line Conducted Software	UL	UL EMC	Ver 9.5, May 17, 2012		
Bilog Antenna 30-1000MHz	Sunol	JB1	136	09/10/14	09/10/15
Horn Antenna 1-18GHz	ETS	3117	345	03/03/15	03/03/16
Horn Antenna 18-26GHz	ARA	MWH-1826	89	12/17/14	12/17/15
Preamp 10kHz-1000MHz	Sonoma	310	300	11/01/14	11/01/15
Preamp 1-8GHz	Miteq	AMF-4D-01000800-30-29P	782	11/18/14	11/18/15
Preamp 1-18GHz	Miteq	AFS42-00101800-25-2-42	492	08/09/14	08/09/15
Preamp 1-26.5GHz	Agilent	8449B	404	04/13/15	04/13/16
Spectrum Analyzer 3kHz - 44GHz	Agilent	N9030A	908	09/05/14	09/05/15
Spectrum Analyzer 9kHz - 40GHz	HP	8564E	106	08/06/14	08/06/15
Coaxial Switchbox	Agilent	SP6T	927	09/15/14	09/15/15
3GHz HPF	Micro-Tronics	HPM17543	486	11/18/14	11/18/15
EMI Test Receiver	Rohde & Schwarz	ECSI 7	212	08/14/14	08/14/15
Spectrum Analyzer 3Hz to 44GHz	Agilent	E4440A	123	10/28/14	10/28/15
Power Meter	Agilent	N1911A	377	06/30/14	06/30/15
Power Sensor	Agilent	E9327A	117	03/09/15	03/09/16
Antenna, Horn 26.5 to 40GHz	ARA	MWH-2640/B	446	11/14/14	11/14/15
Amplifier, 26 - 40GHz	Miteq	NSP4000-SP2	88	9/3/2014	9/3/2015
EMI Test Receiver, 9KHz to 7GHz	Rohde & Schwarz	ESCI 7	284	09/16/14	09/16/15
LISN for Conducted Emission	FCC	50/250-25-2	24	01/16/15	01/16/16

7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074 D01 v03r03, Section 6.0.

6 dB BW: KDB 558074 D01 v03r03, Section 8.1.

99% BW: ANSI C63.10-2013, Section 6.9.3.

Output Power: KDB 558074 D01 v03r03, Section 9.2.3.2, and KDB 662911 D01 v02r01.

Power Spectral Density: KDB 558074 D01 v03r03, Section 10.3 and 10.5 and KDB 662911 D01 v02r01

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r03, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r03, Section 12.1.

AC Power Line Conducted Emissions: ANSI C63.10-2009 and ANSI C63.10-2013, Section 6.2.

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

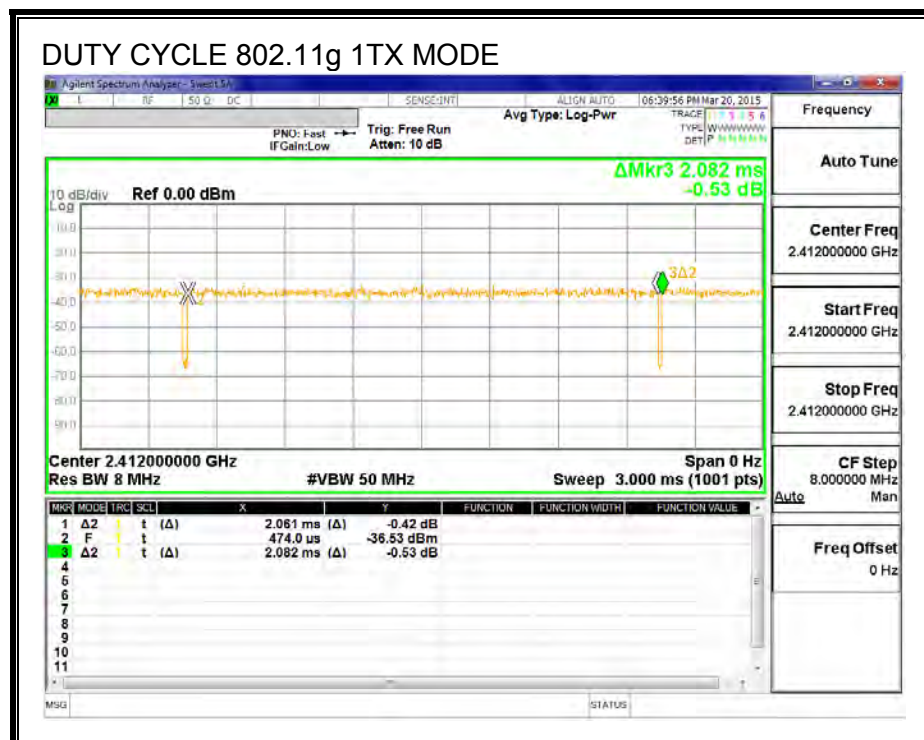
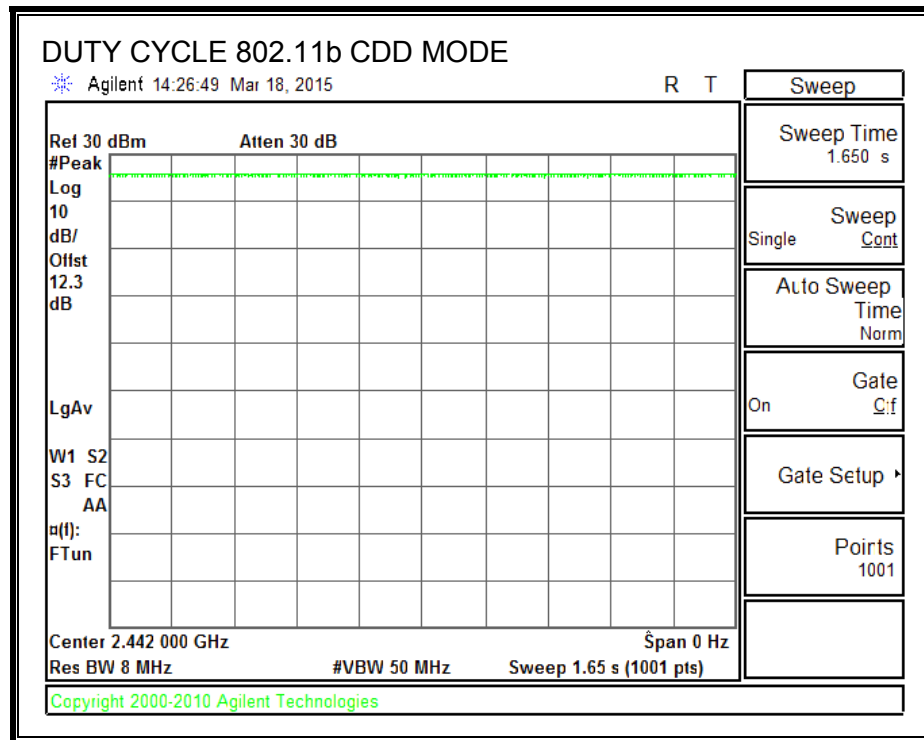
ON TIME AND DUTY CYCLE RESULTS

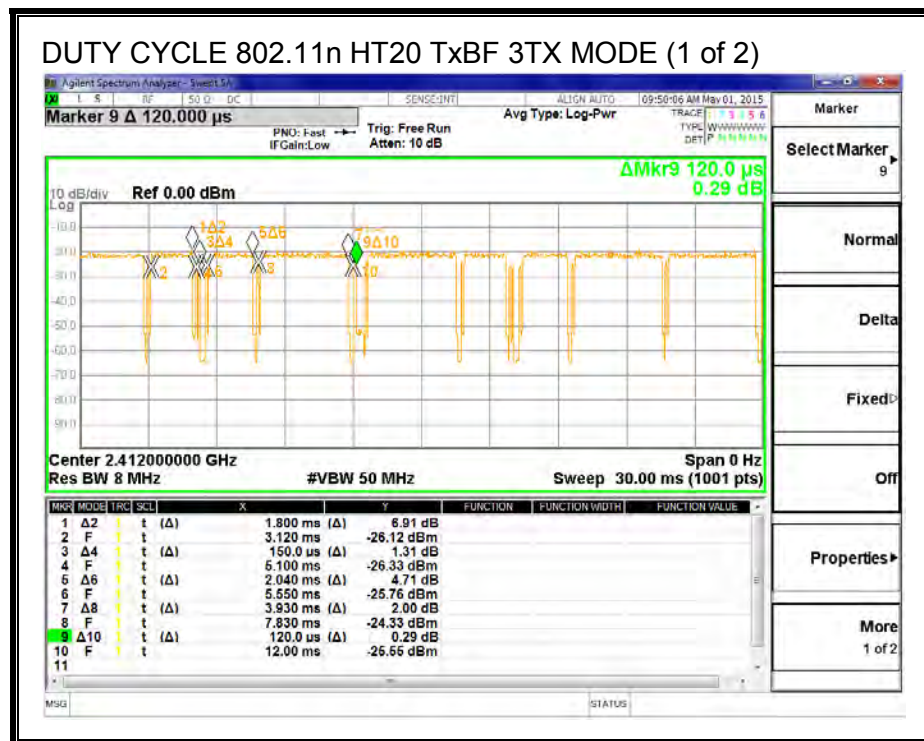
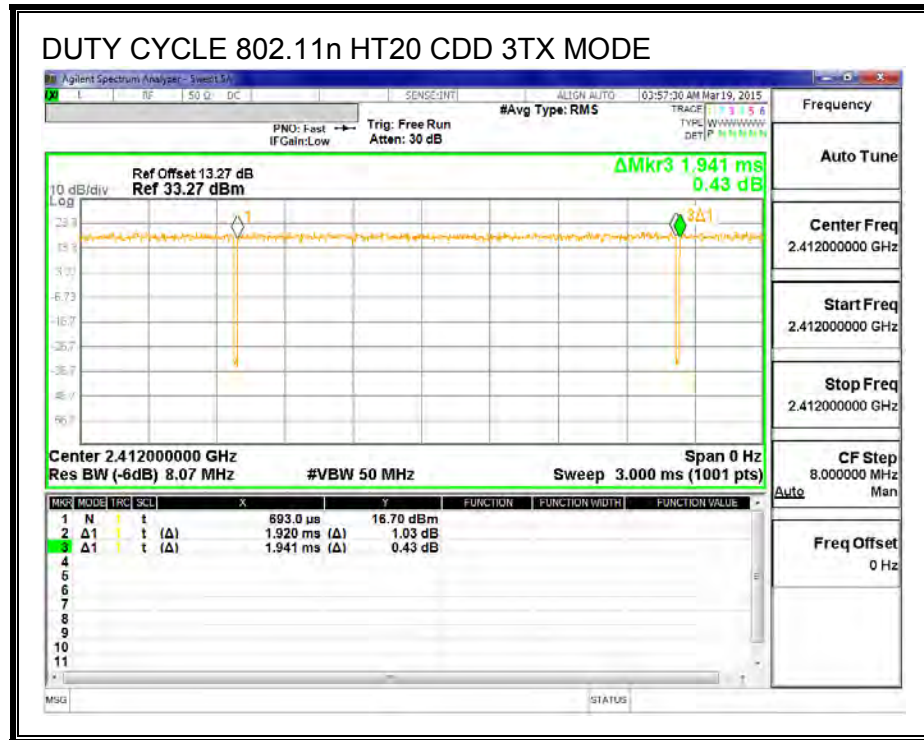
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b CDD 3TX	100.000	100.000	1.000	100.00%	0.00	0.010
802.11g 1TX	2.061	2.082	0.990	98.99%	0.00	0.010
802.11n HT20 CDD 3TX	1.920	1.941	0.989	98.92%	0.00	0.010
802.11n HT20 BF 3TX	12.120	13.770	0.880	88.02%	0.55	0.083
802.11n HT40 CDD 3TX	0.650	0.669	0.971	97.13%	0.13	1.539
802.11n HT40 BF 3TX	22.400	25.320	0.885	88.47%	0.53	0.045
5GHz Band						
802.11a 1TX	2.061	2.084	0.989	98.90%	0.00	0.010
802.11n HT20 CDD 3TX	1.917	1.938	0.989	98.92%	0.00	0.010
802.11n HT20 BF 3TX	24.000	27.880	0.861	86.08%	0.65	0.042
802.11n HT40 CDD 3TX	0.9440	0.9640	0.979	97.93%	0.09	1.059
802.11n HT40 BF 3TX	5.660	6.840	0.827	82.75%	0.82	0.177
802.11ac VHT80 CDD 3TX	0.4590	0.4780	0.960	96.03%	0.18	2.179
802.11ac VHT80 BF 3TX	2.7500	3.7500	0.733	73.33%	1.35	0.364

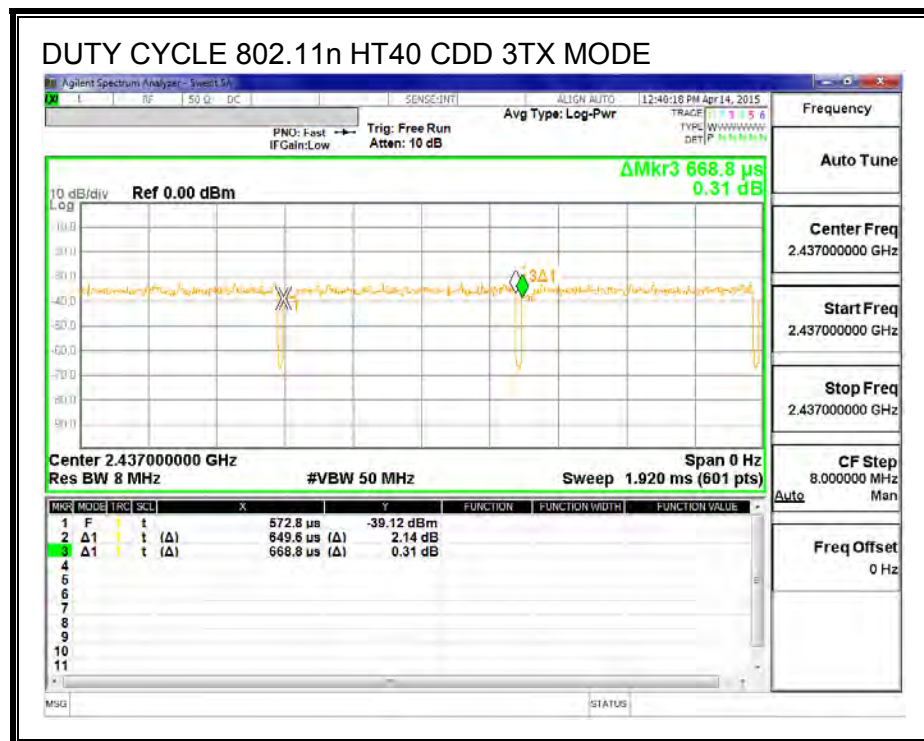
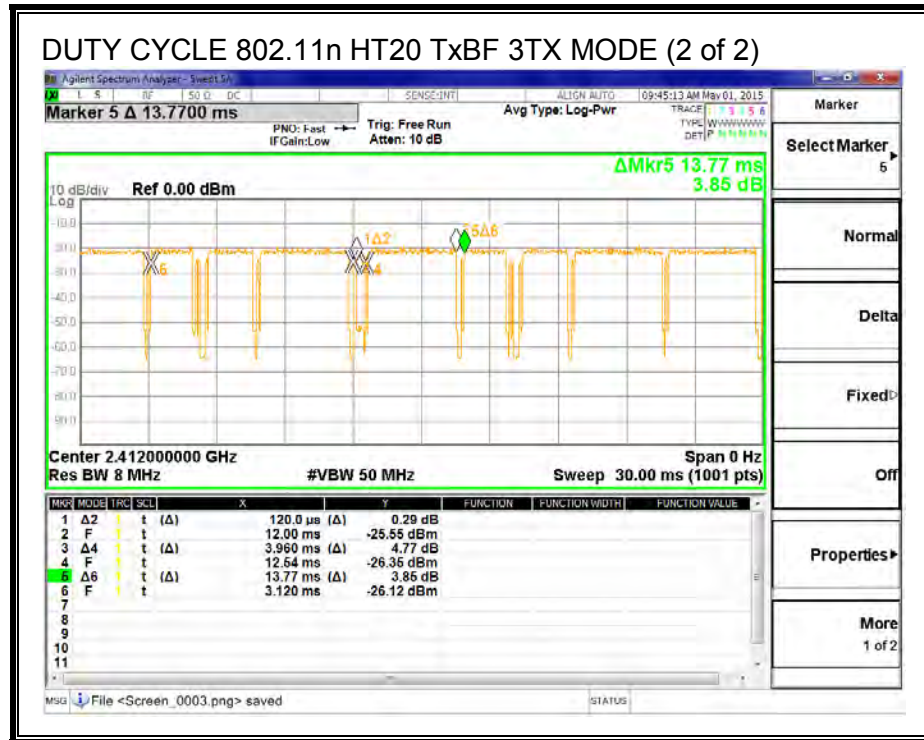
Note: CDD mode was also used for conducted BF testing. DCCF for BF was only used for radiated testing.

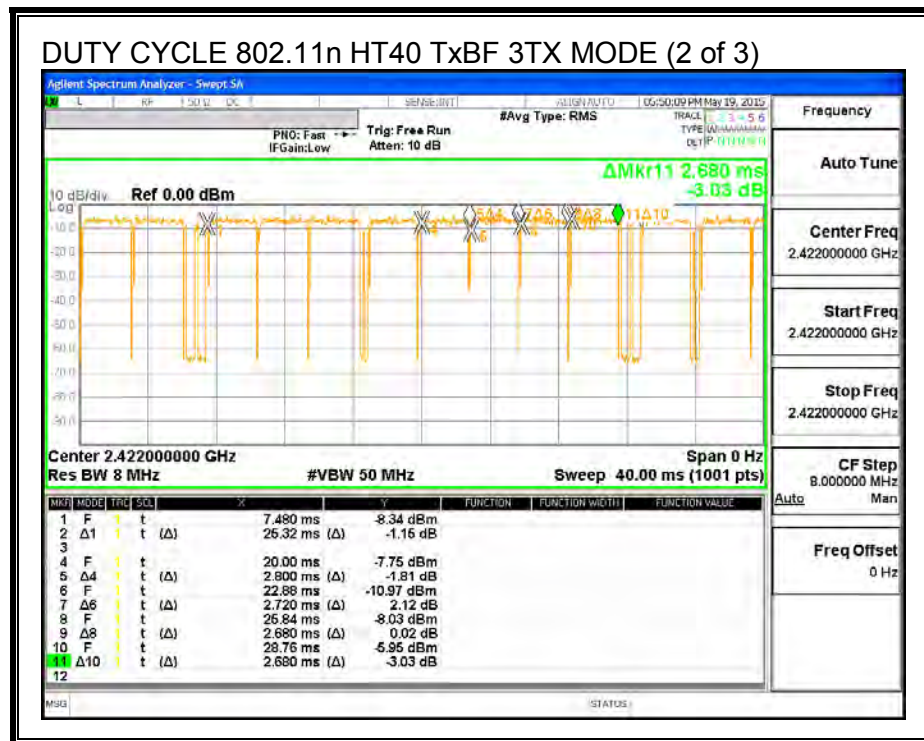
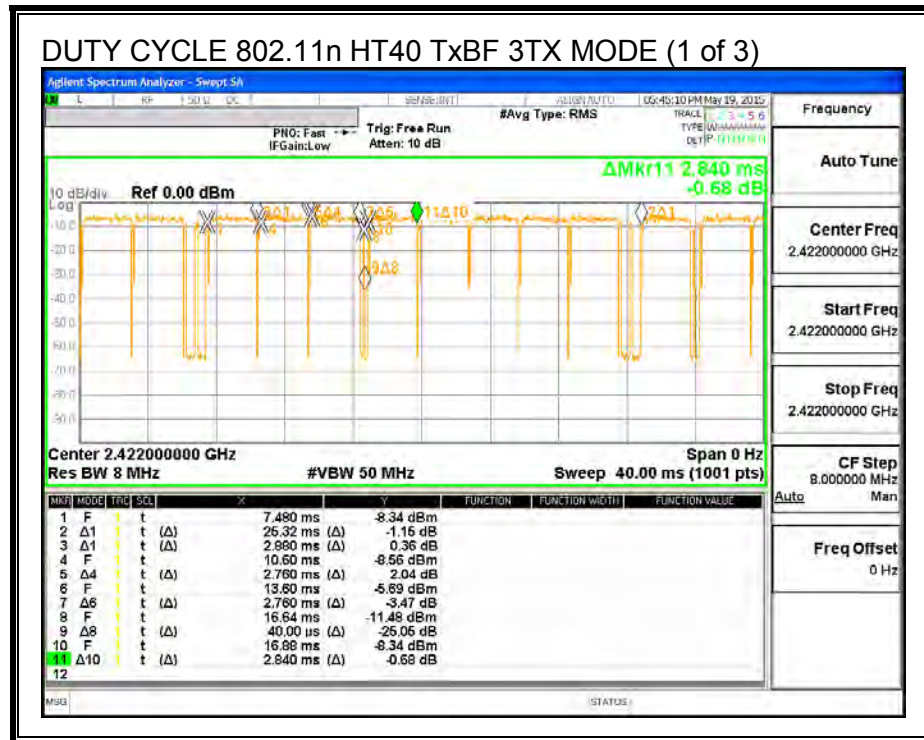
DUTY CYCLE PLOTS

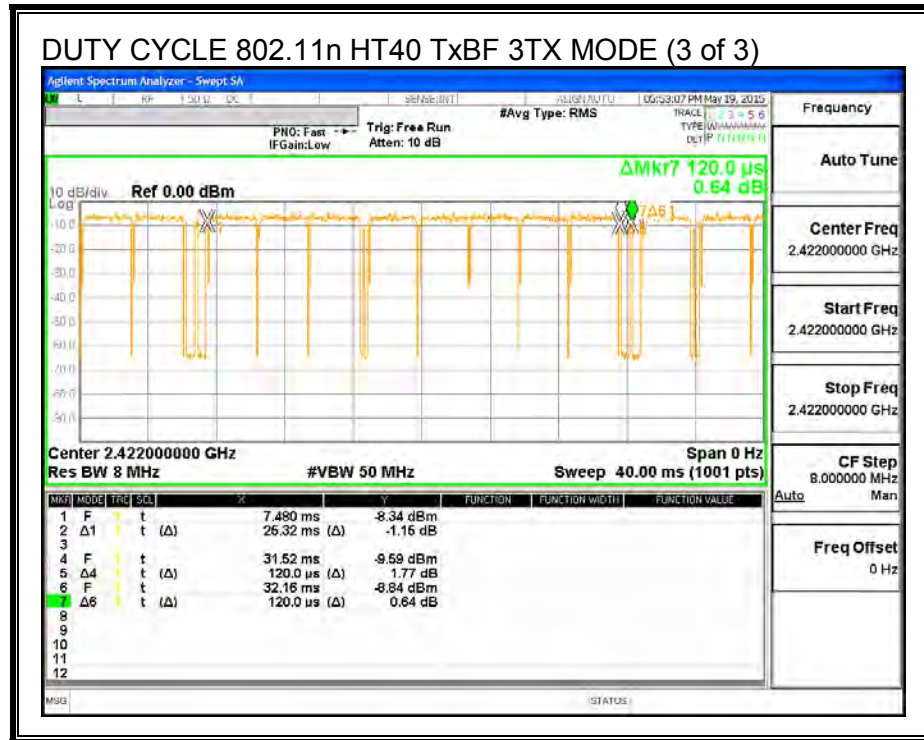
2.4 GHz BAND



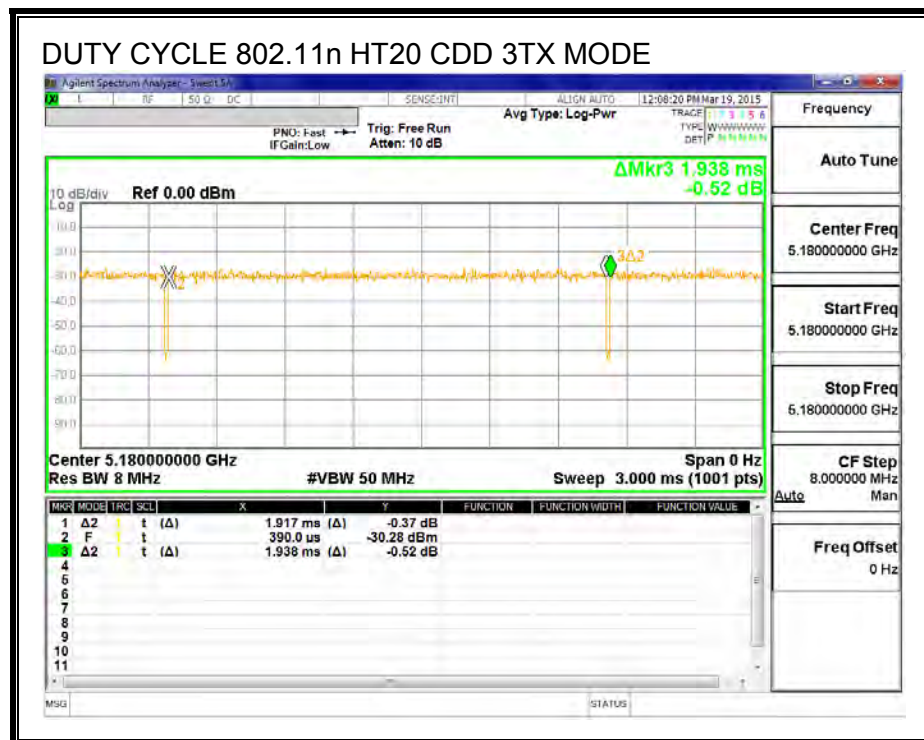
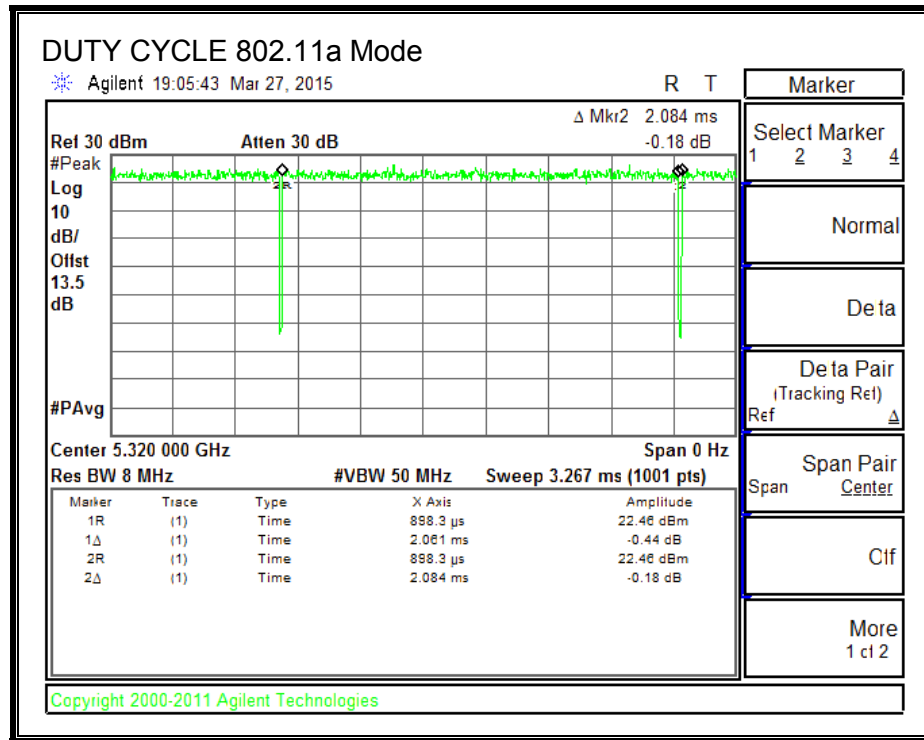


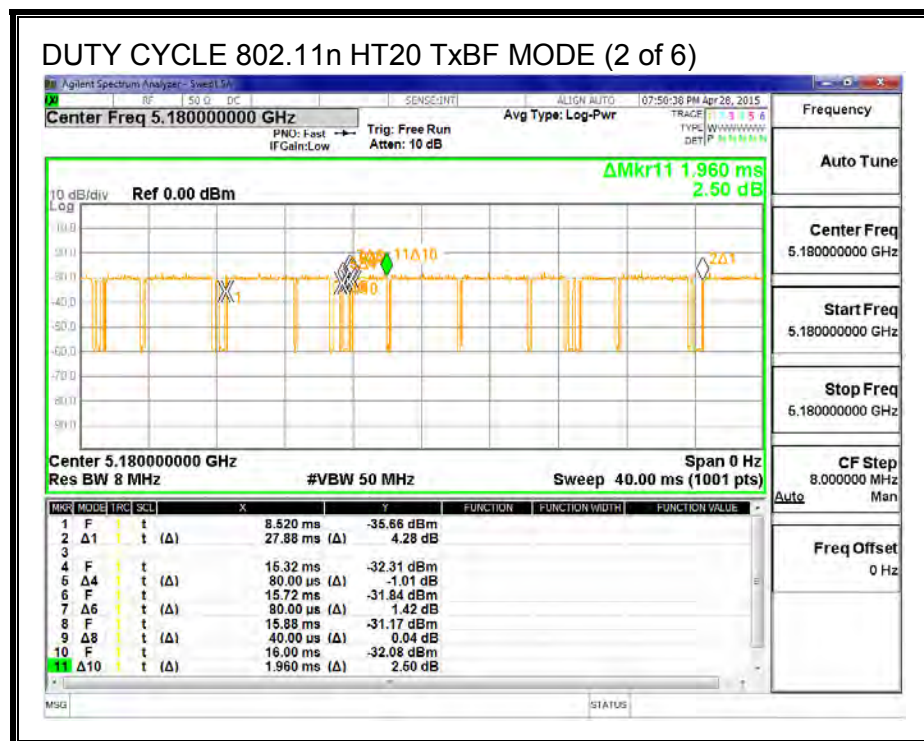
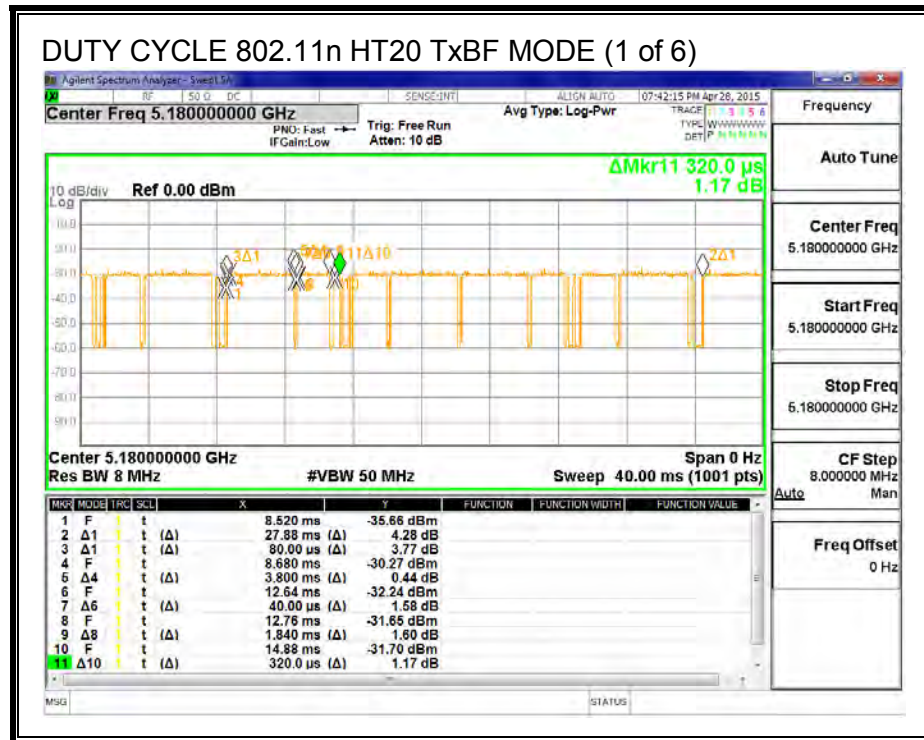


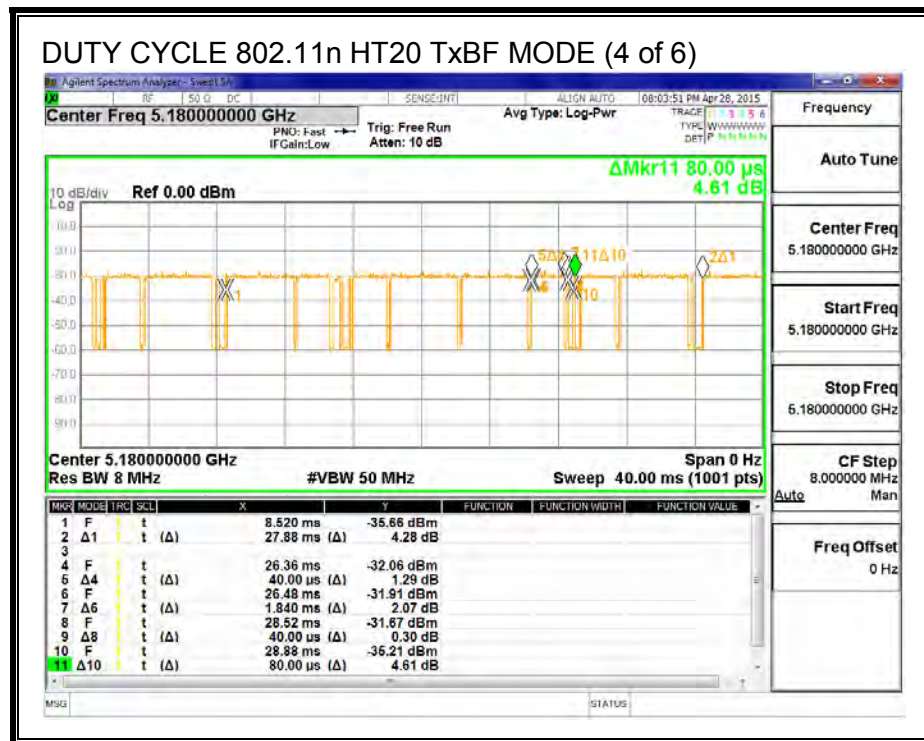
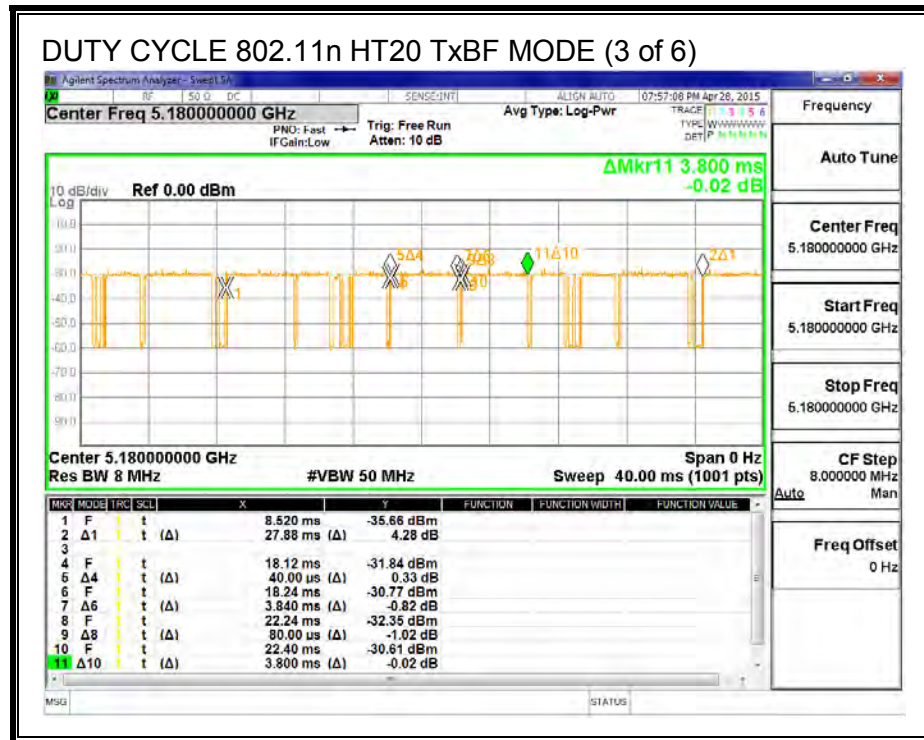


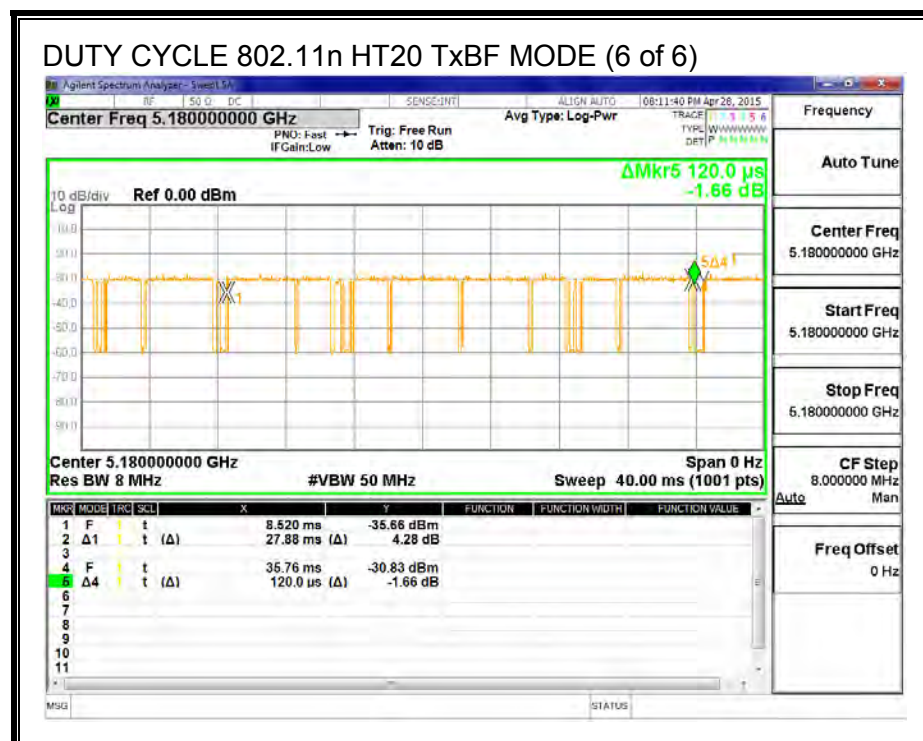


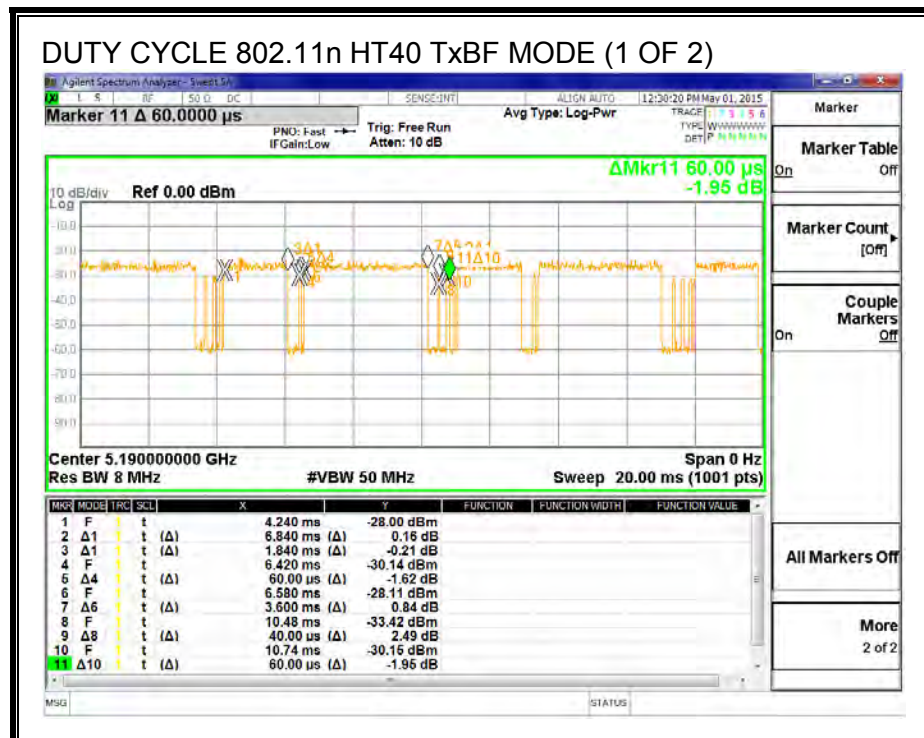
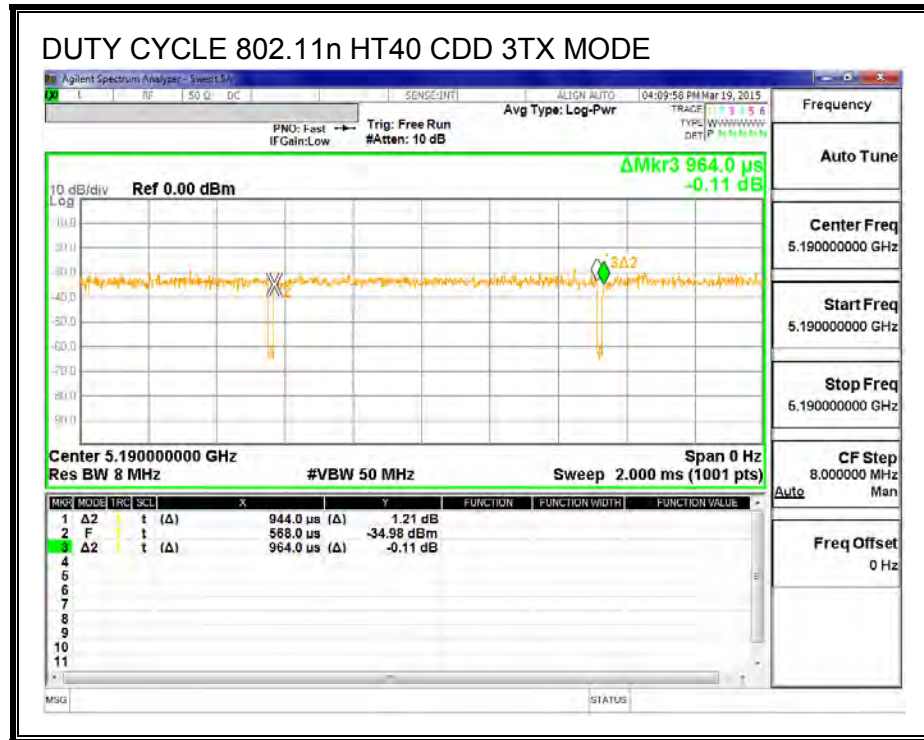
5 GHz BANDS

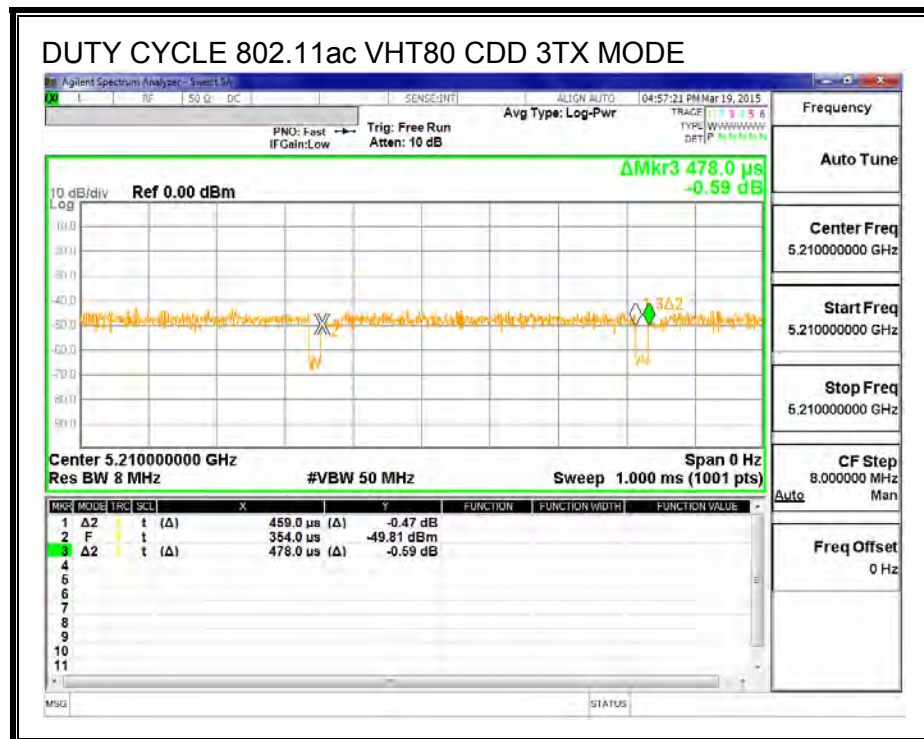
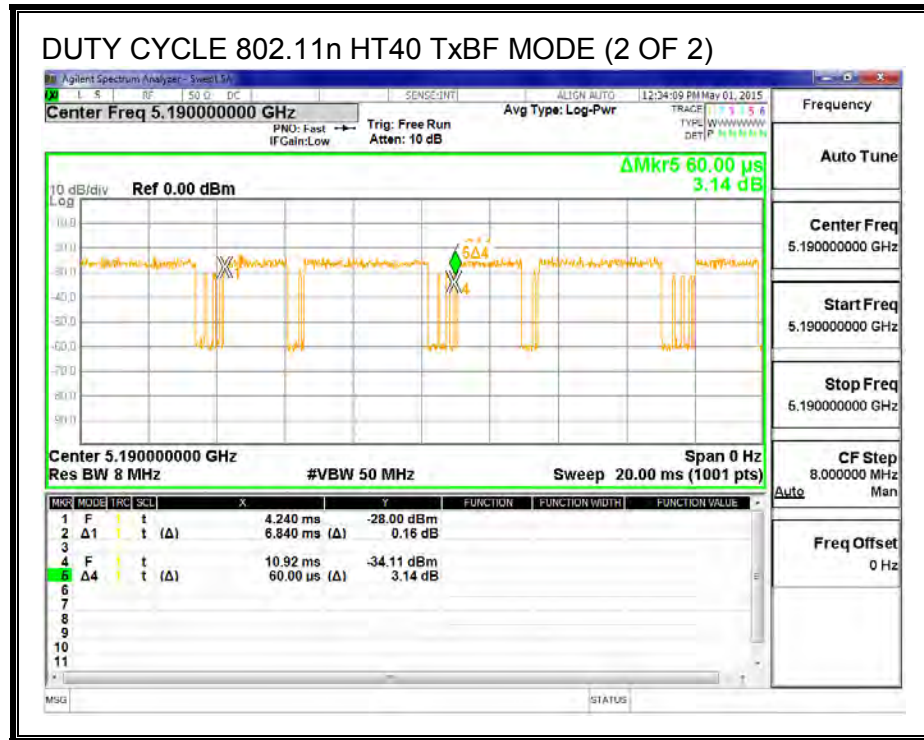












DUTY CYCLE 802.11ac VHT80 TxBF MODE (1 OF 2)



DUTY CYCLE 802.11ac VHT80 TxBF MODE (2 OF 2)



8.2. 802.11b CDD 3TX MODE IN THE 2.4 GHz BAND

8.2.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247

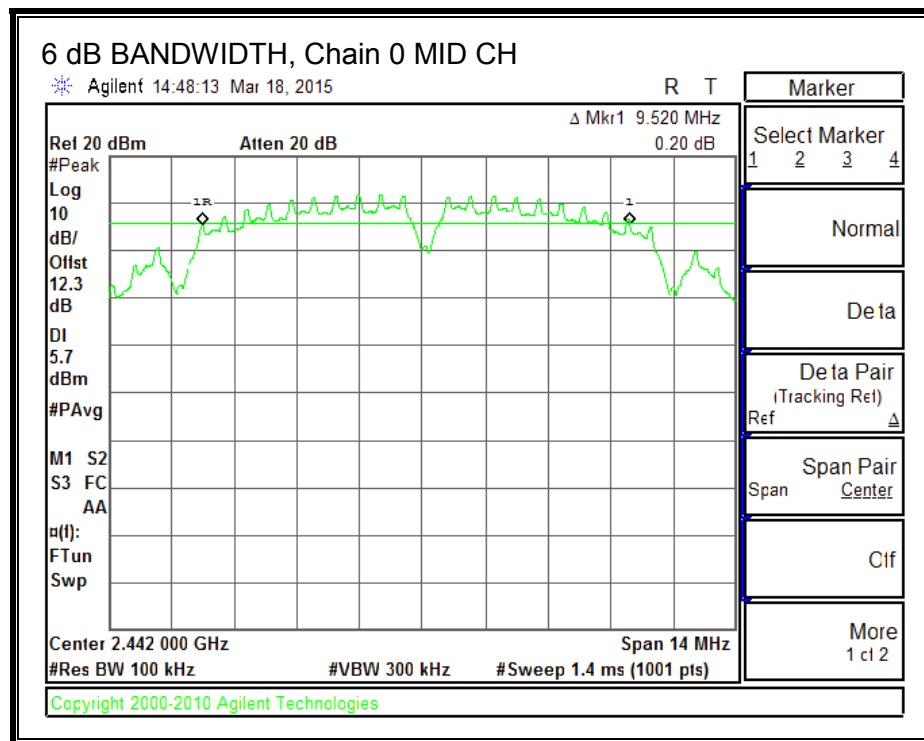
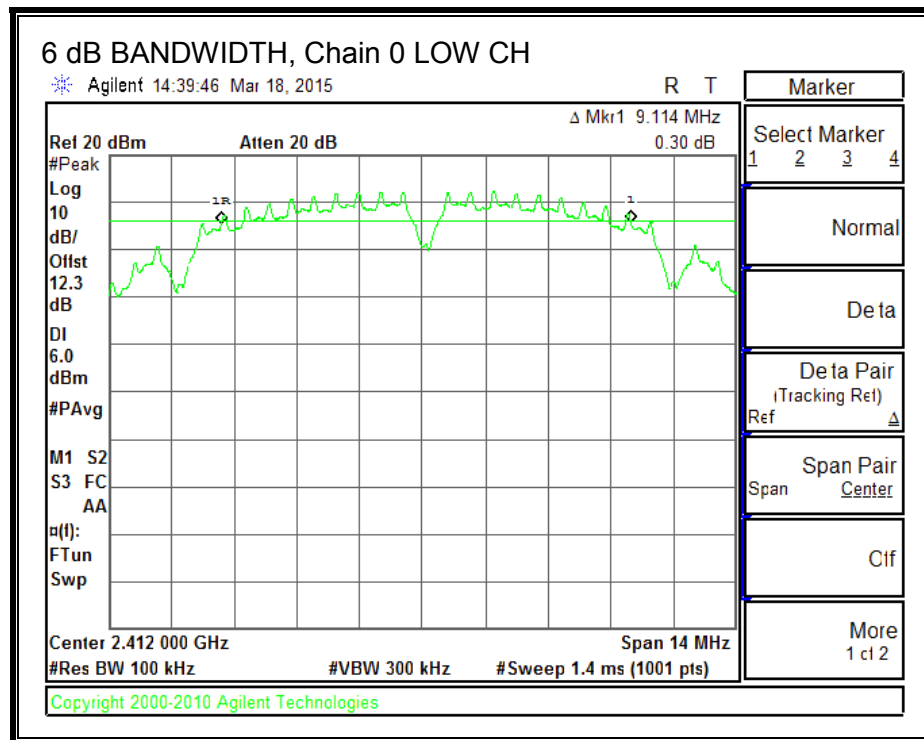
IC RSS-247 Clause 5.2 (1)

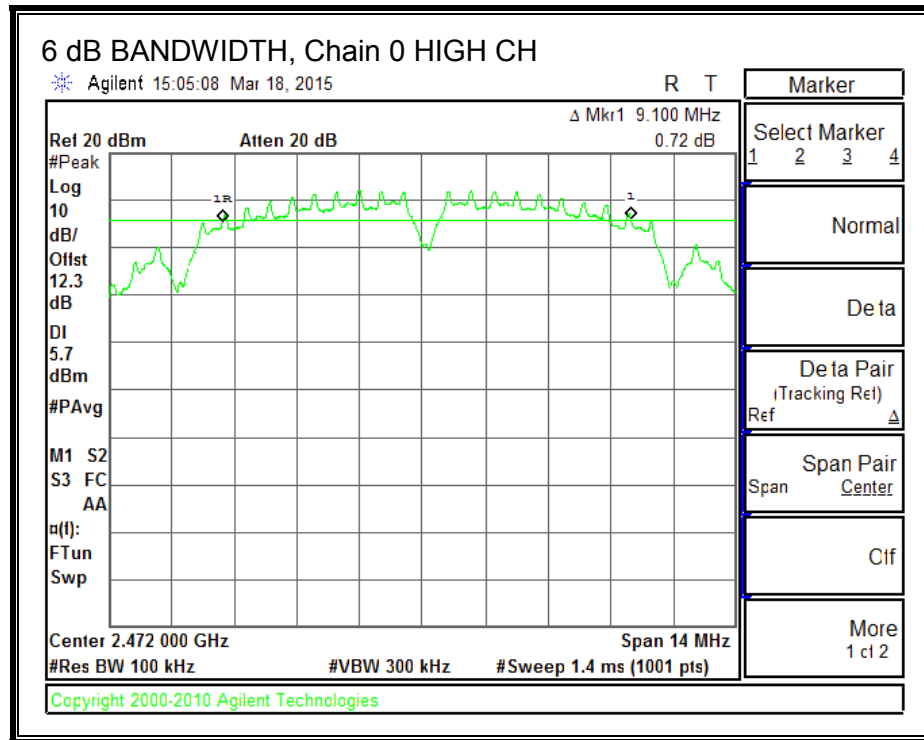
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

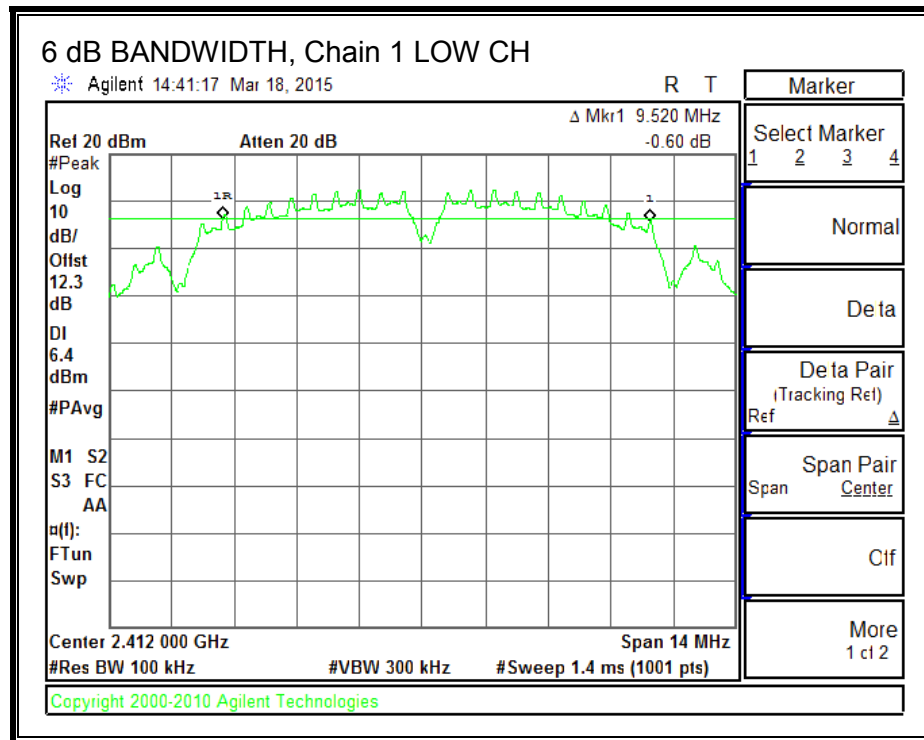
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	2412	9.114	9.520	9.114	0.5
Mid	2442	9.520	9.576	9.548	0.5
High	2472	9.100	9.548	9.548	0.5

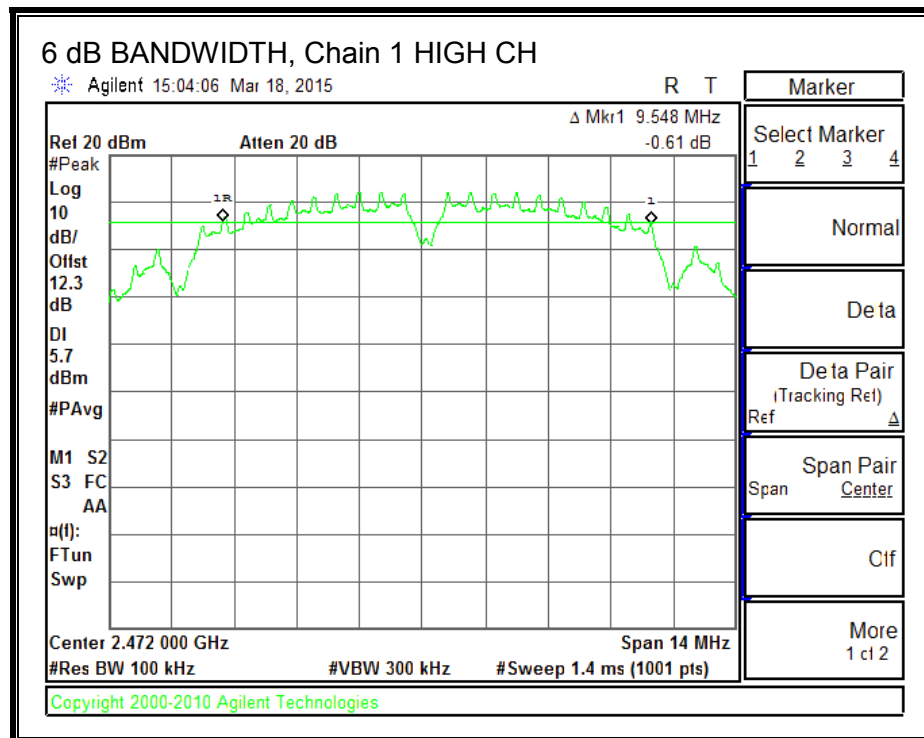
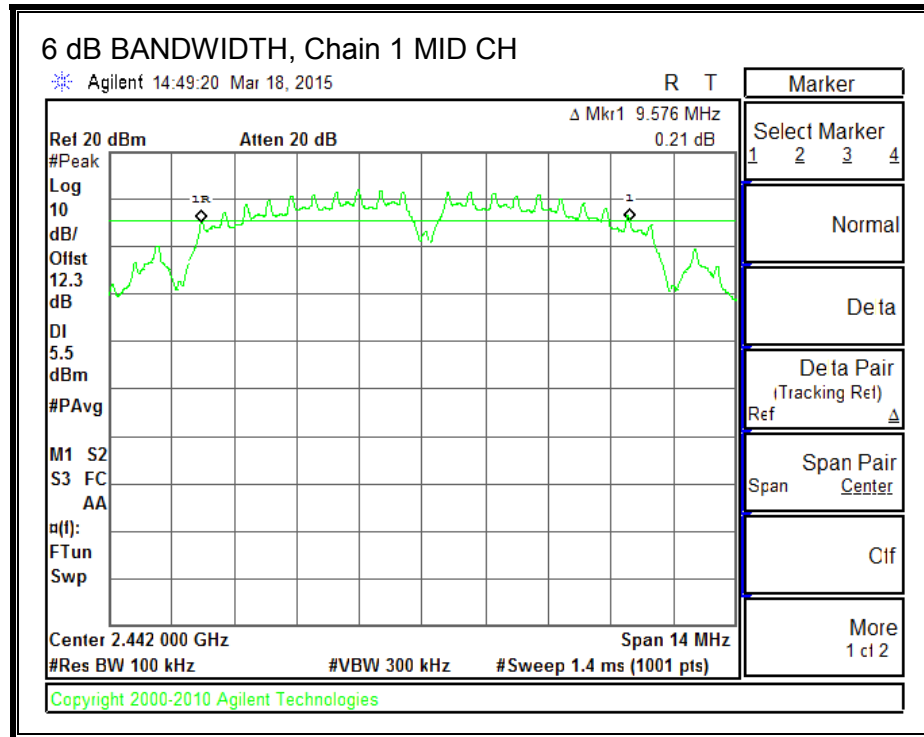
6 dB BANDWIDTH, Chain 0



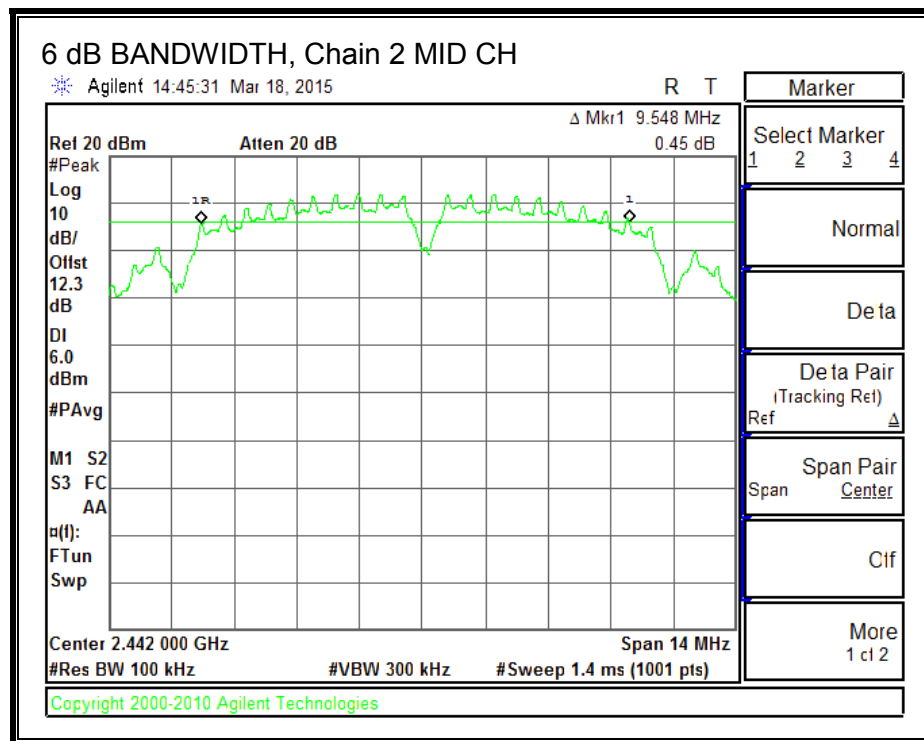
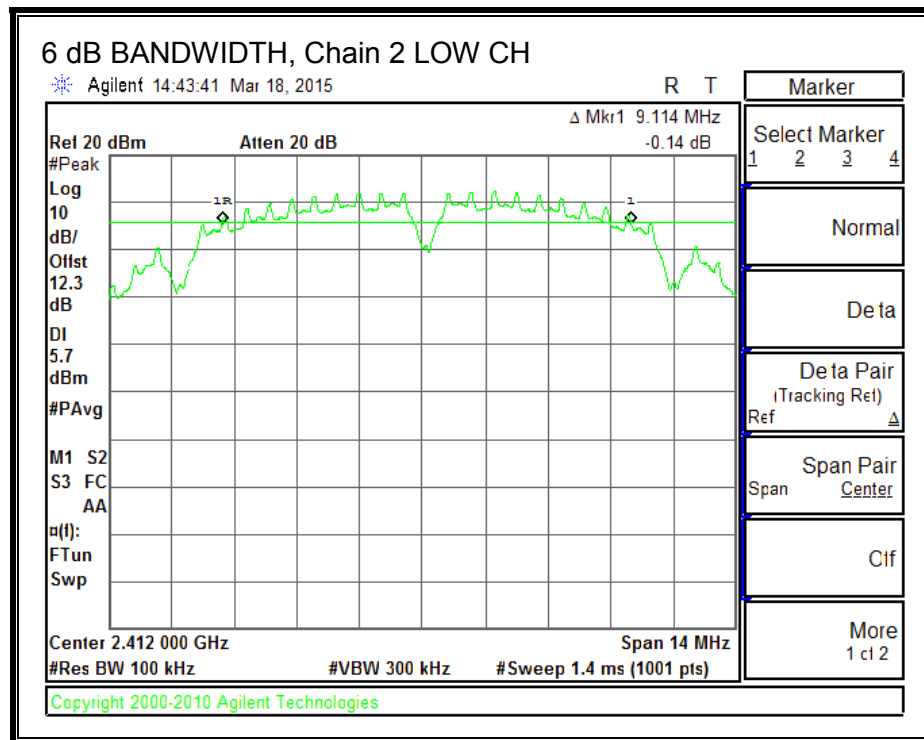


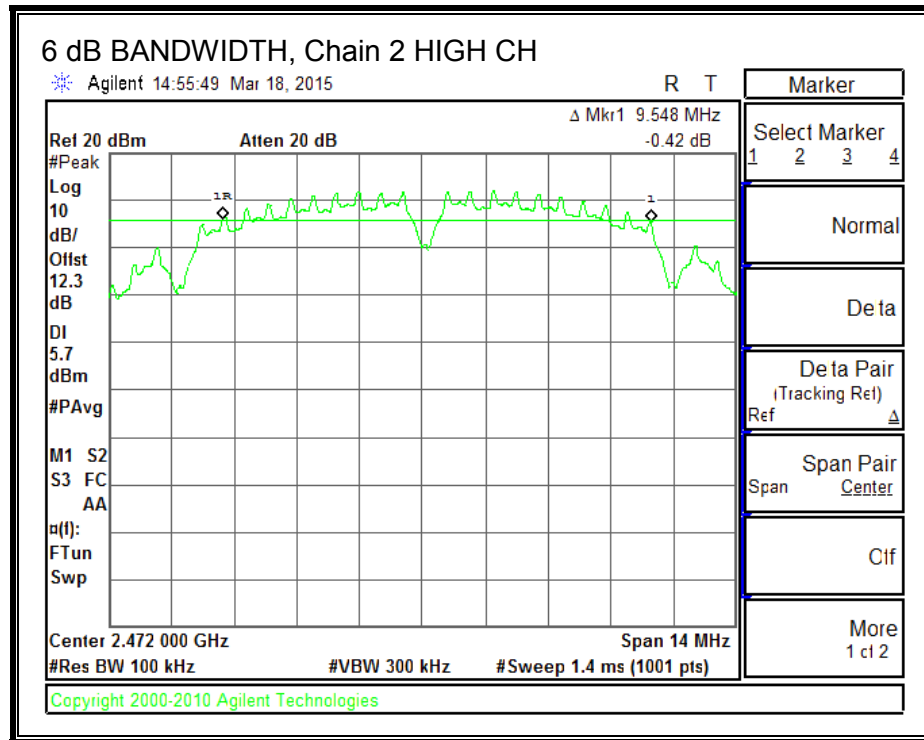
6 dB BANDWIDTH, Chain 1





6 dB BANDWIDTH, Chain 2





8.2.2. 99% BANDWIDTH

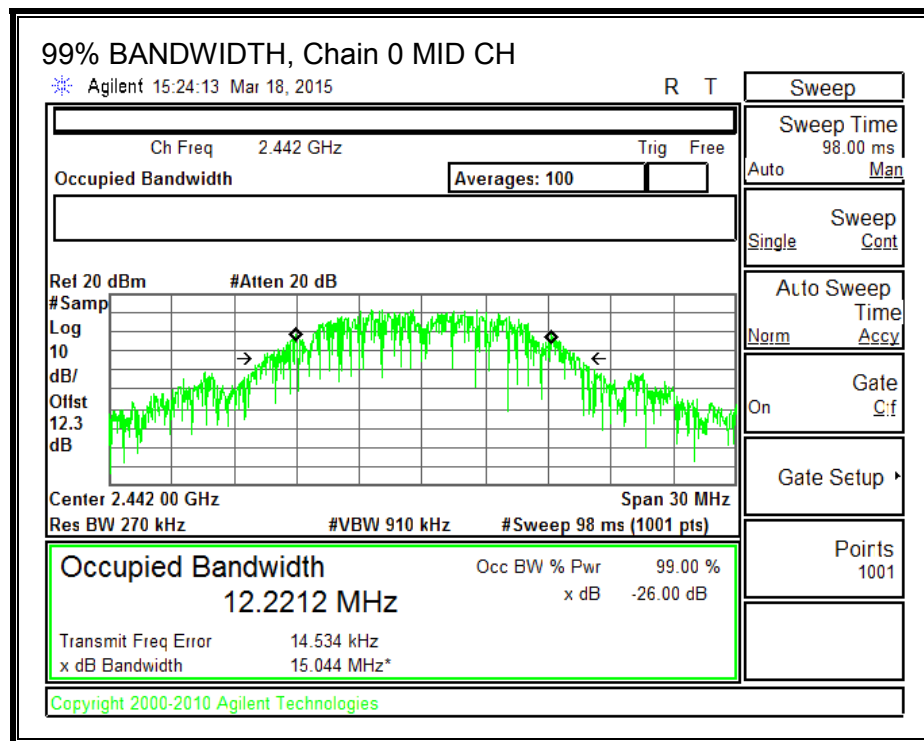
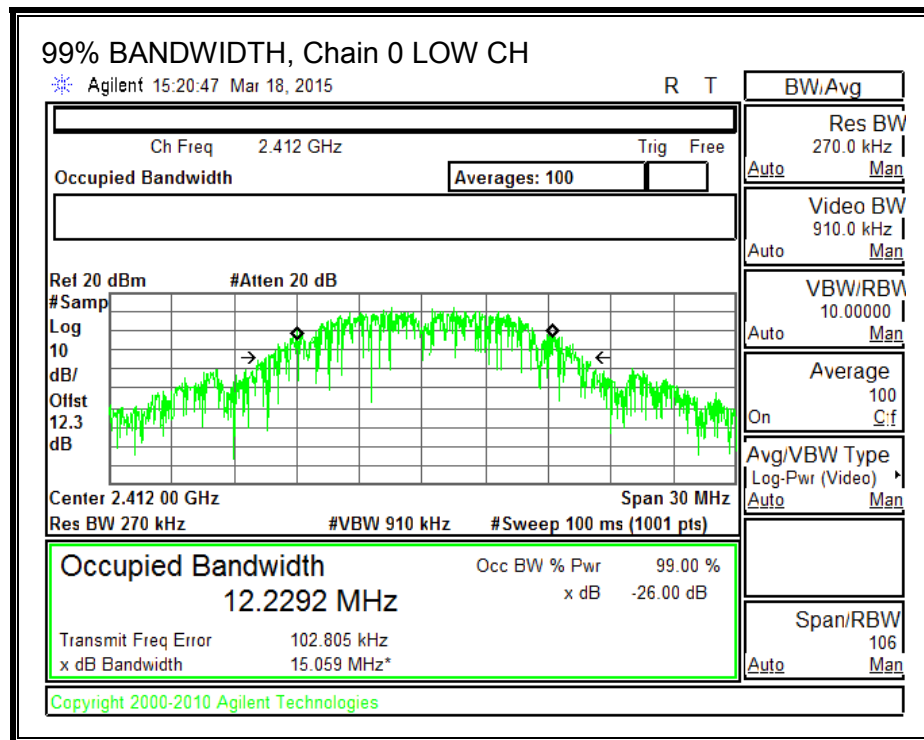
LIMITS

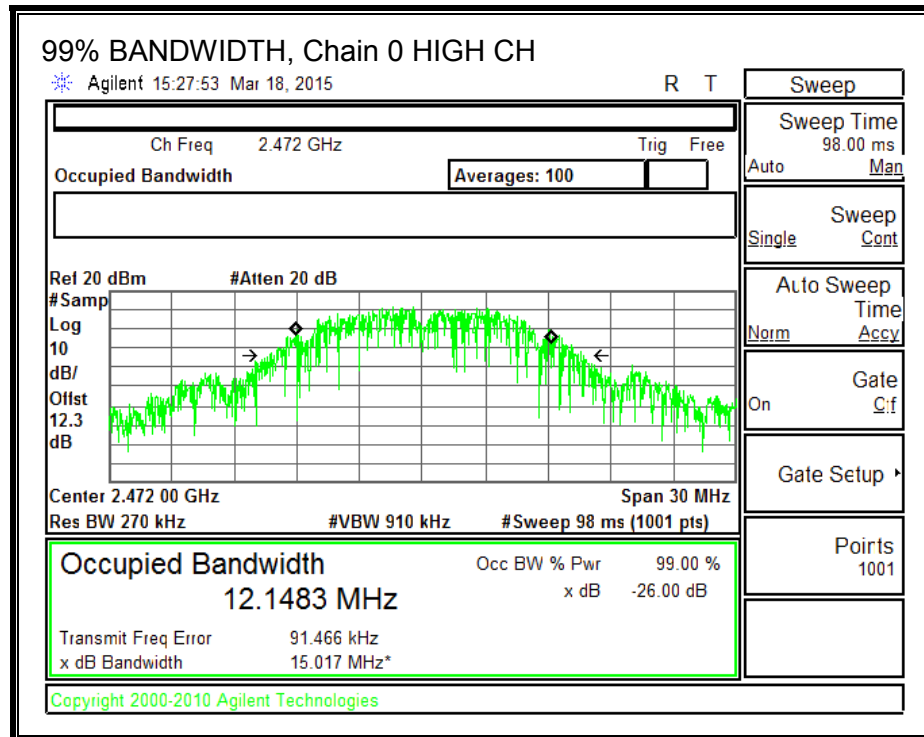
None; for reporting purposes only.

RESULTS

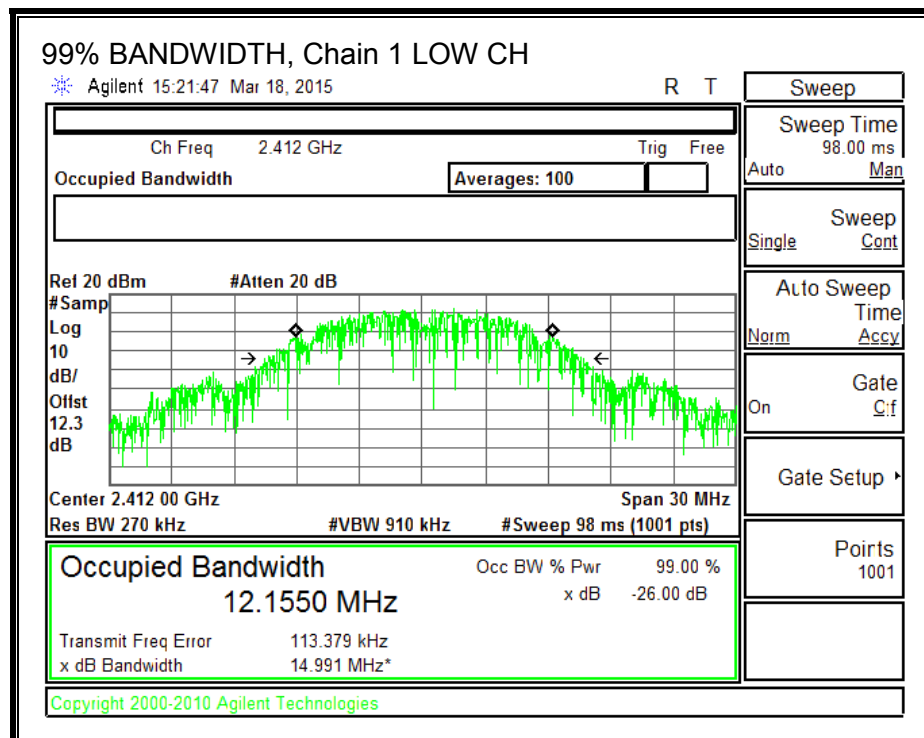
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	2412	12.2292	12.1550	12.1400
Mid	2442	12.2212	12.0302	12.1733
High	2472	12.1483	12.0702	12.1403

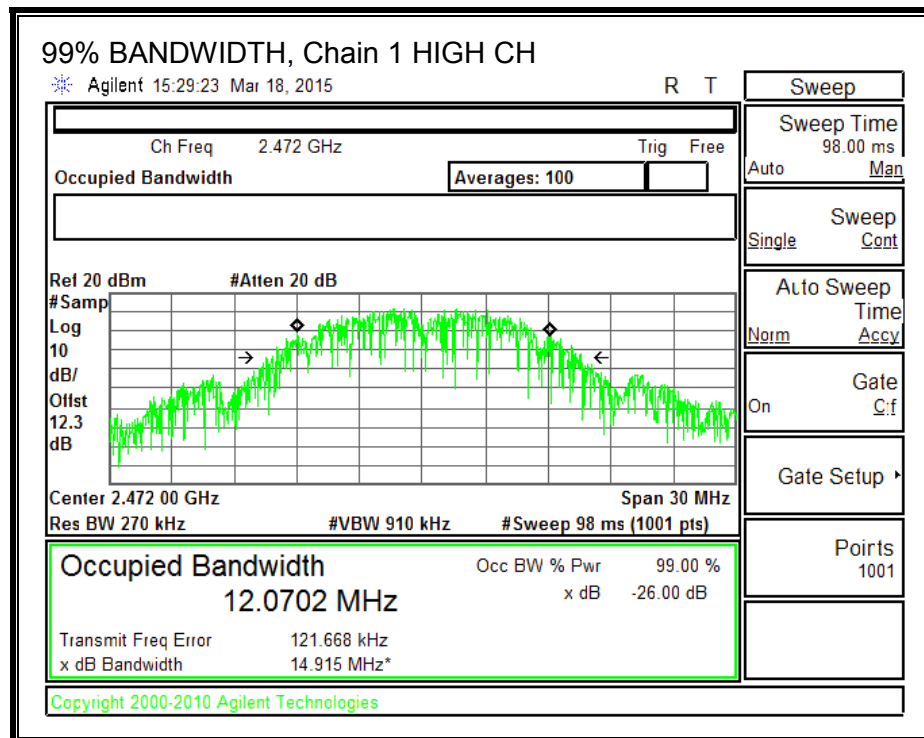
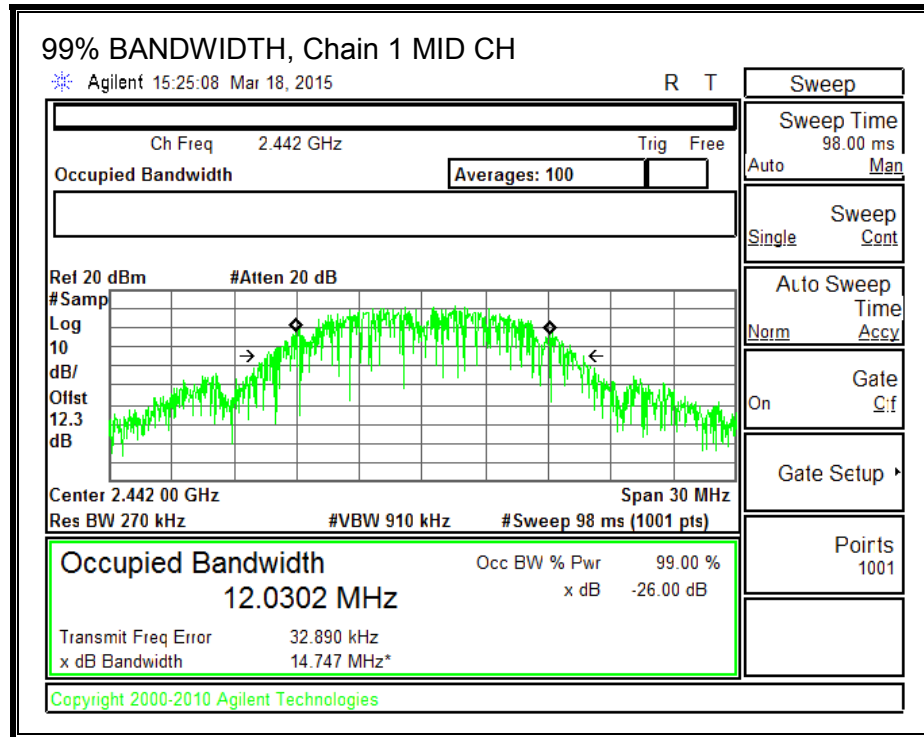
99% BANDWIDTH, Chain 0



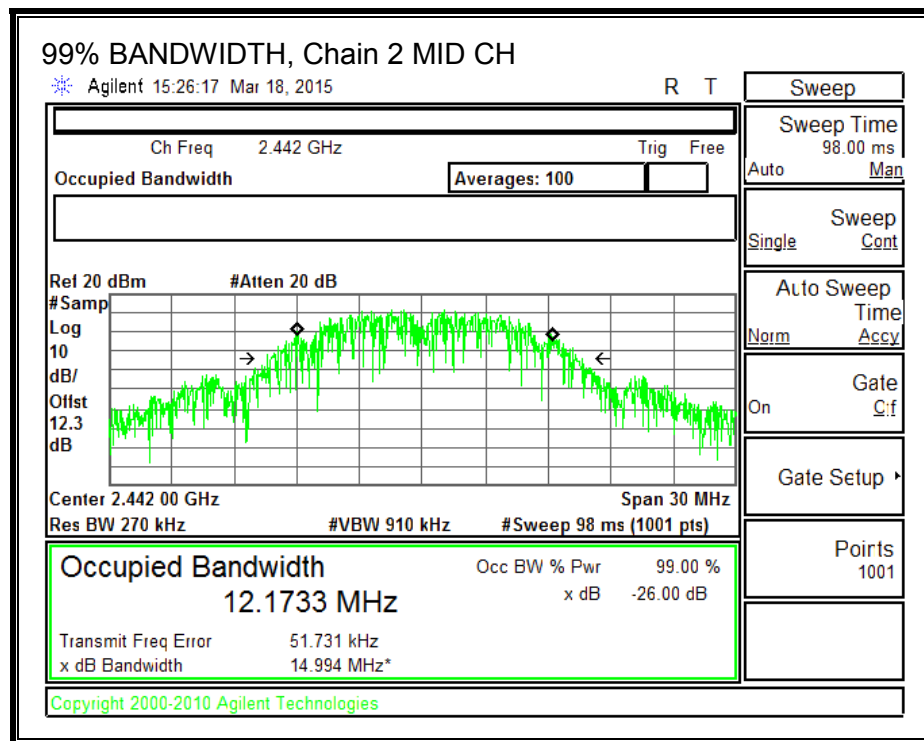
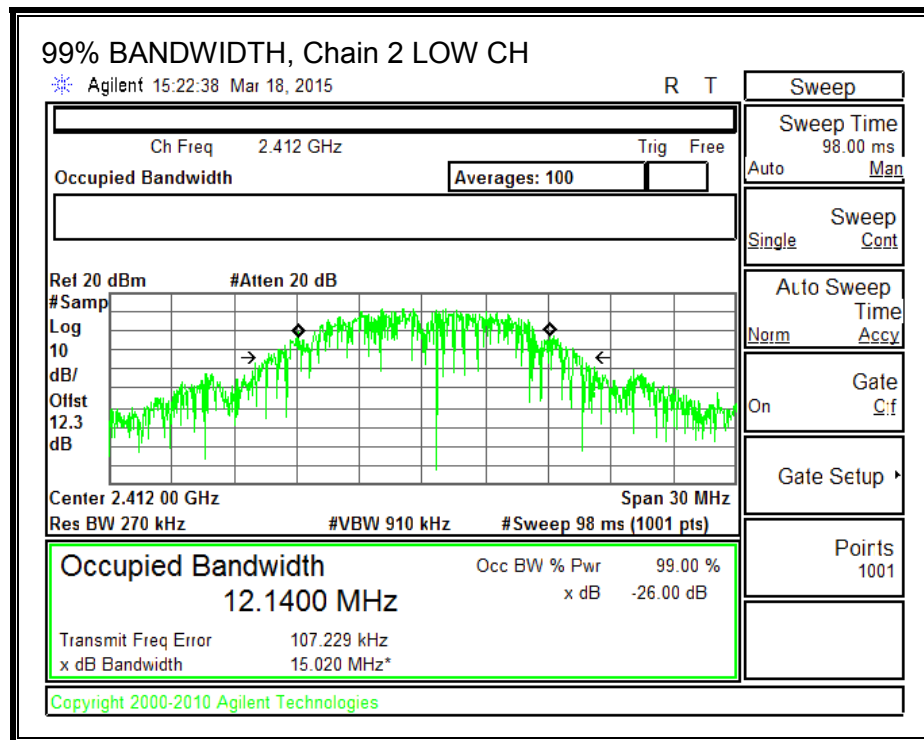


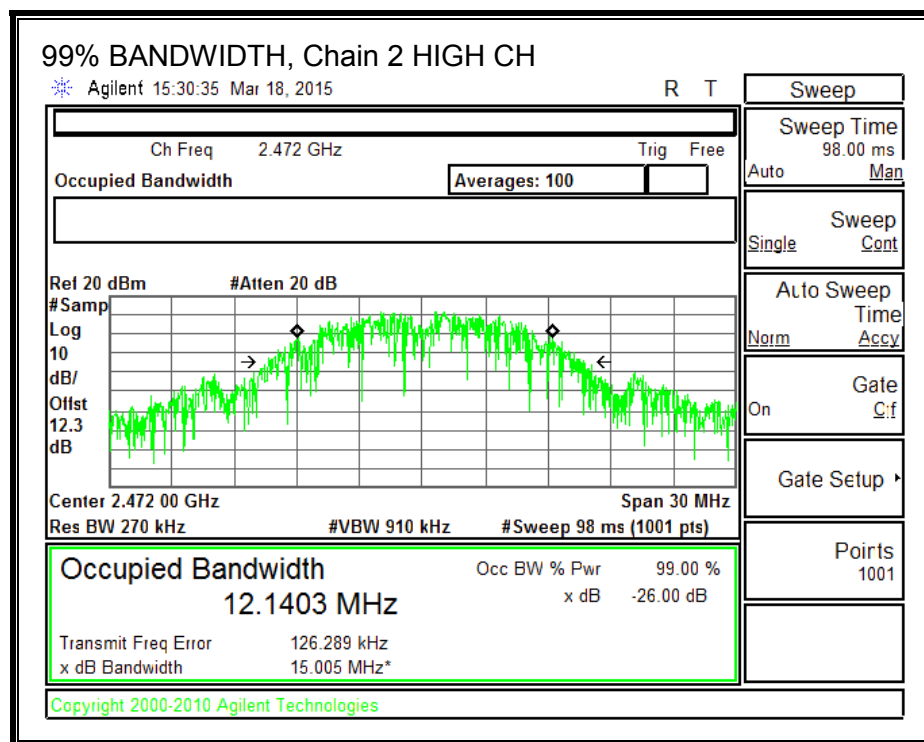
99% BANDWIDTH, Chain 1





99% BANDWIDTH, Chain 2





8.2.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 3.33 dBi.

RESULTS

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	3.33	30	30	36	30.00
7	2442	3.33	30	30	36	30.00
11	2462	3.33	30	30	36	30.00
12	2467	3.33	30	30	36	30.00
13	2472	3.33	30	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	20.68	20.62	20.53	25.38	30.00	-4.62
7	2442	20.55	20.37	20.57	25.27	30.00	-4.73
11	2462	20.55	20.71	20.61	25.40	30.00	-4.60
12	2467	18.54	18.88	19.10	23.62	30.00	-6.38
13	2472	14.78	14.96	15.31	19.79	30.00	-10.21

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

8.2.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

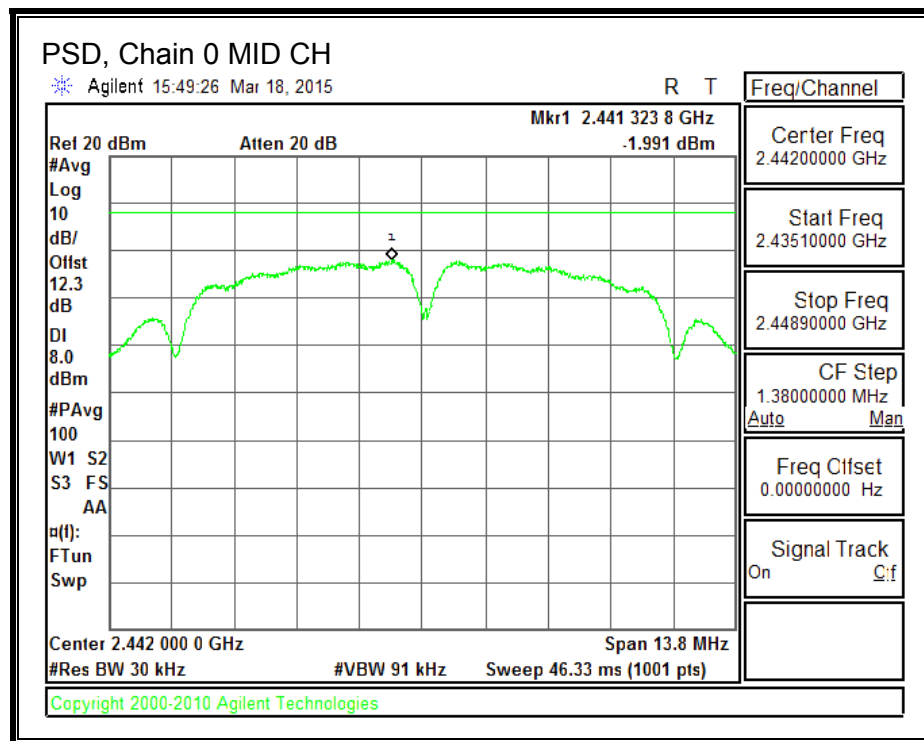
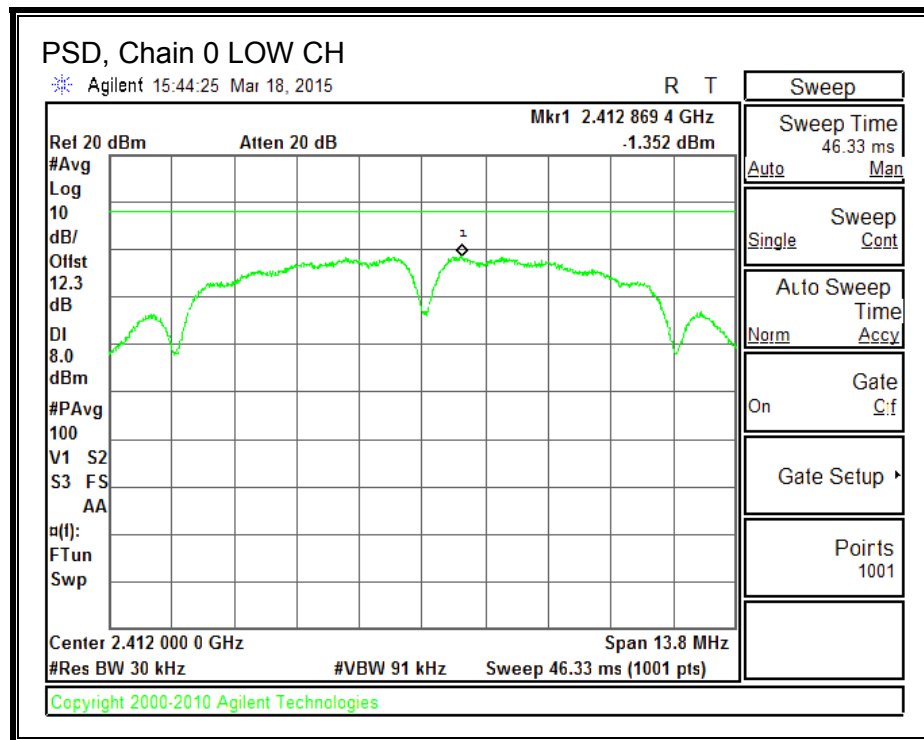
IC RSS-247 Clause 5.2 (2)

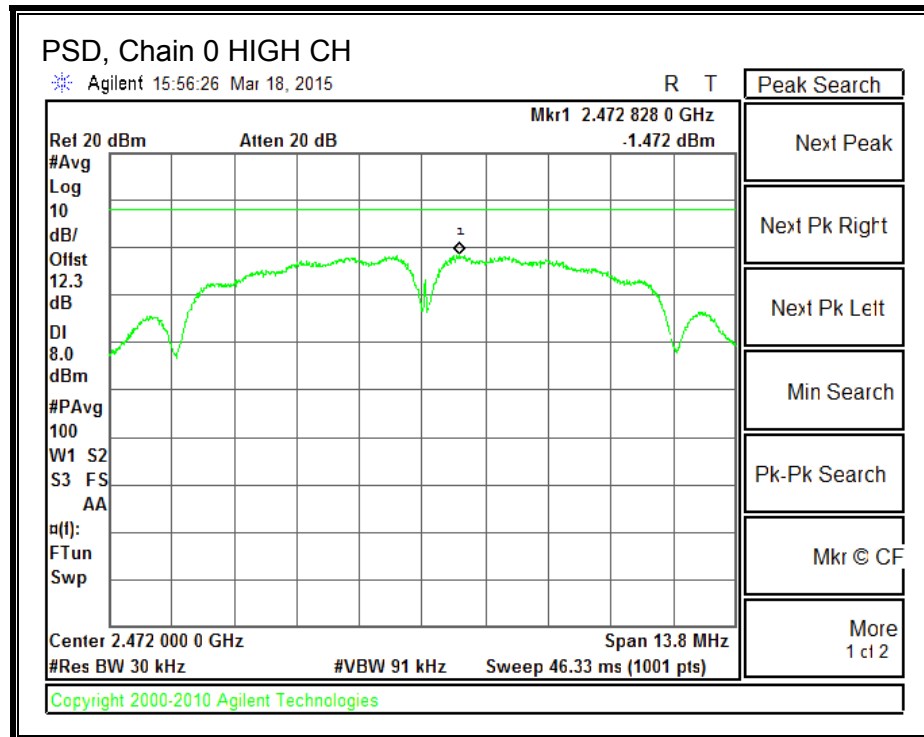
The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section A8.4 (4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

RESULTS

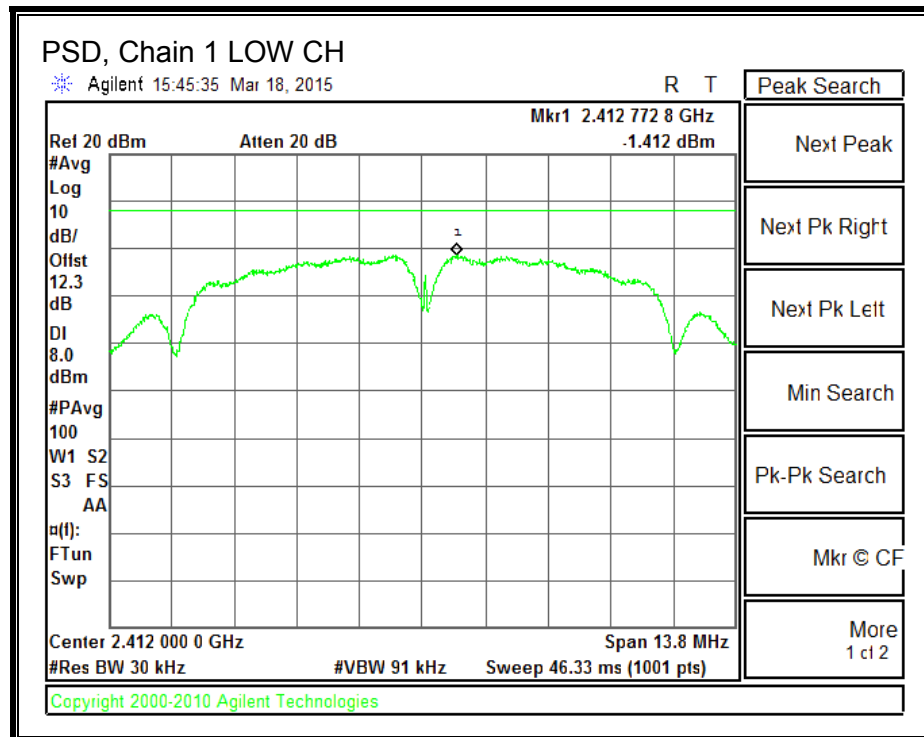
Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD				
PSD Results							
Channel	Frequency	Chain 0 Meas	Chain 1 Meas	Chain 2 Meas	Total Corr'd PSD	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	2412	-1.352	-1.412	-1.993	3.20	8.0	-4.80
Mid	2442	-1.991	-2.035	-1.938	2.78	8.0	-5.22
High	2472	-1.472	-1.876	-2.033	2.98	8.0	-5.02

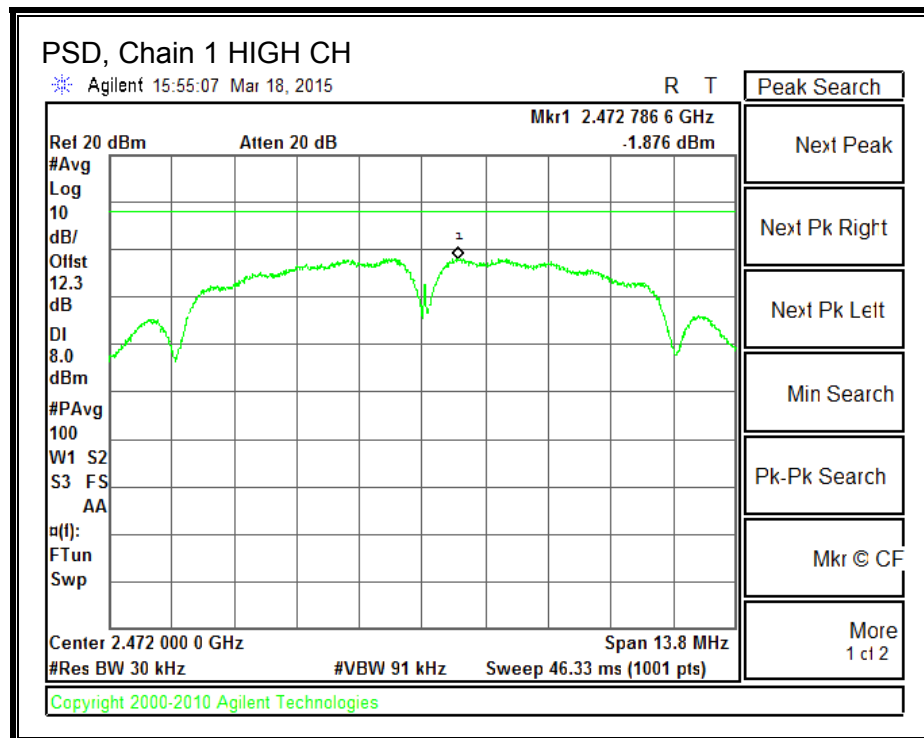
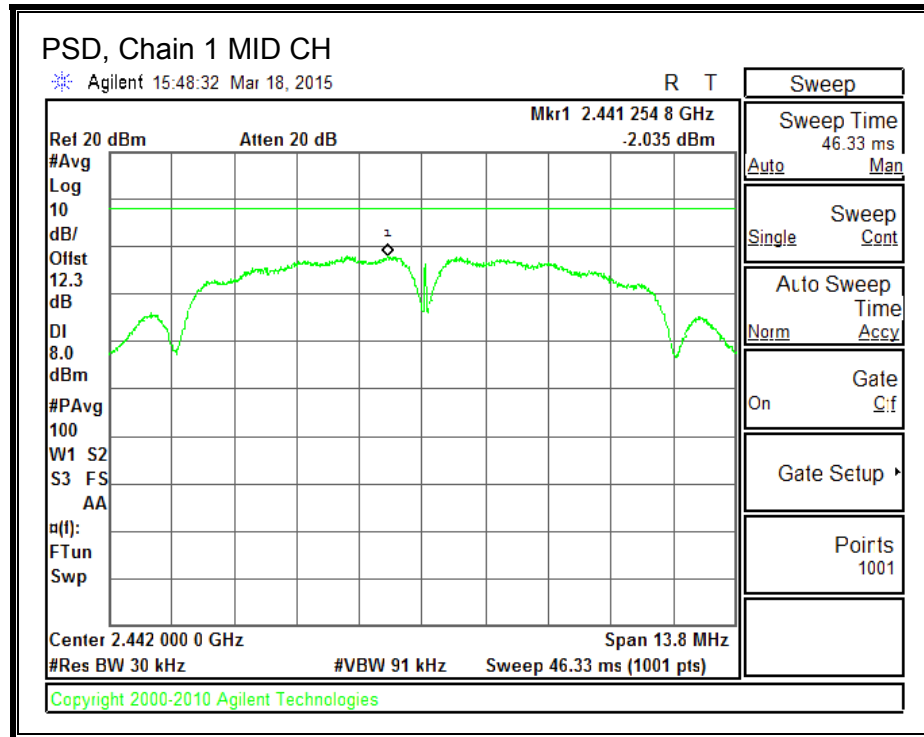
PSD, Chain 0



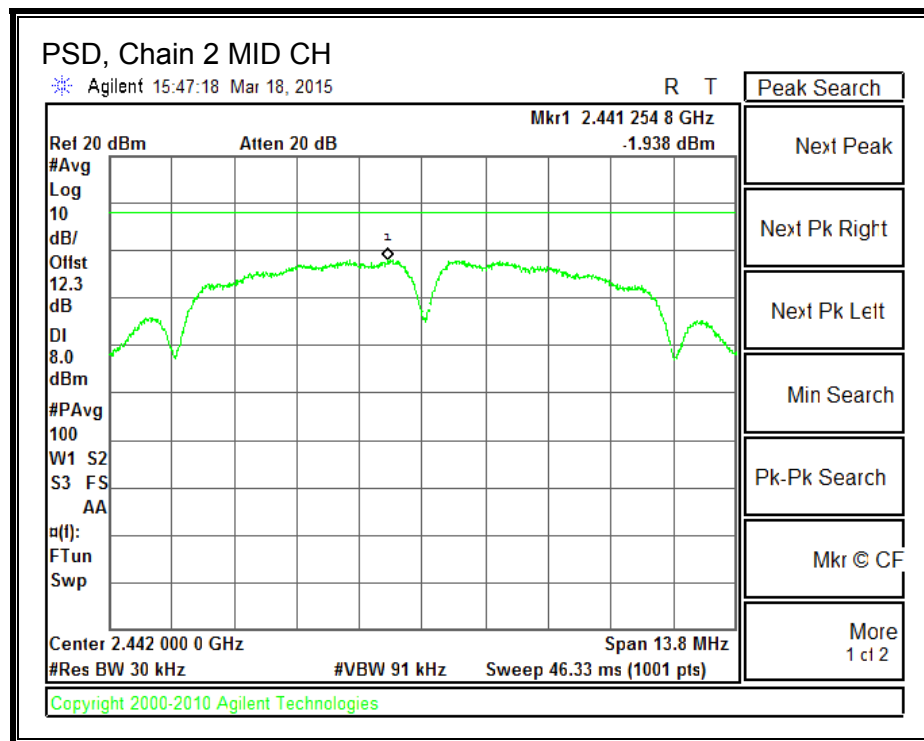
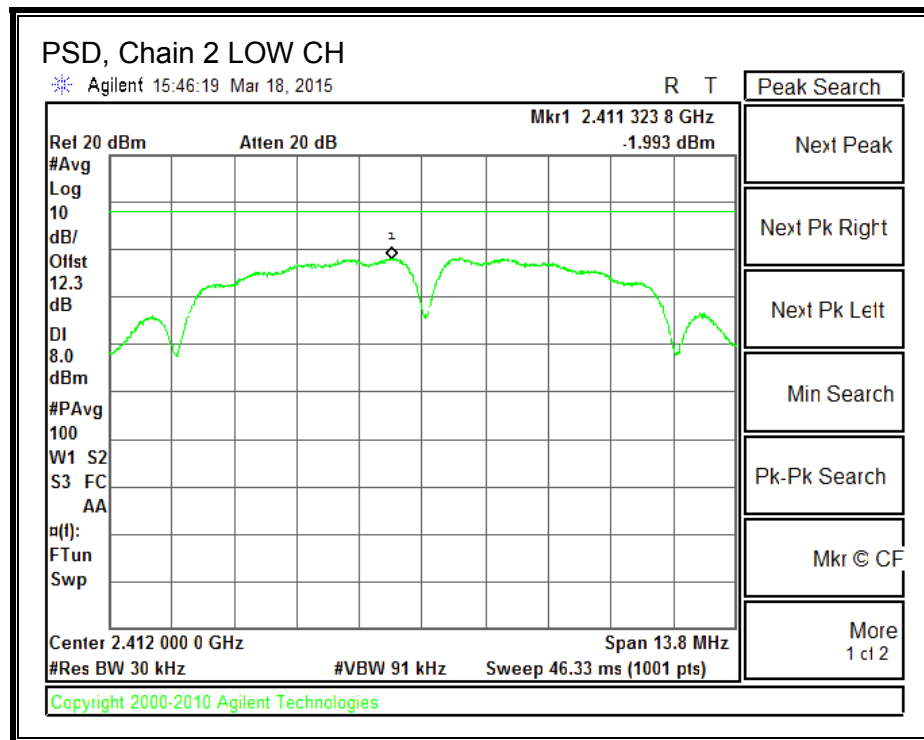


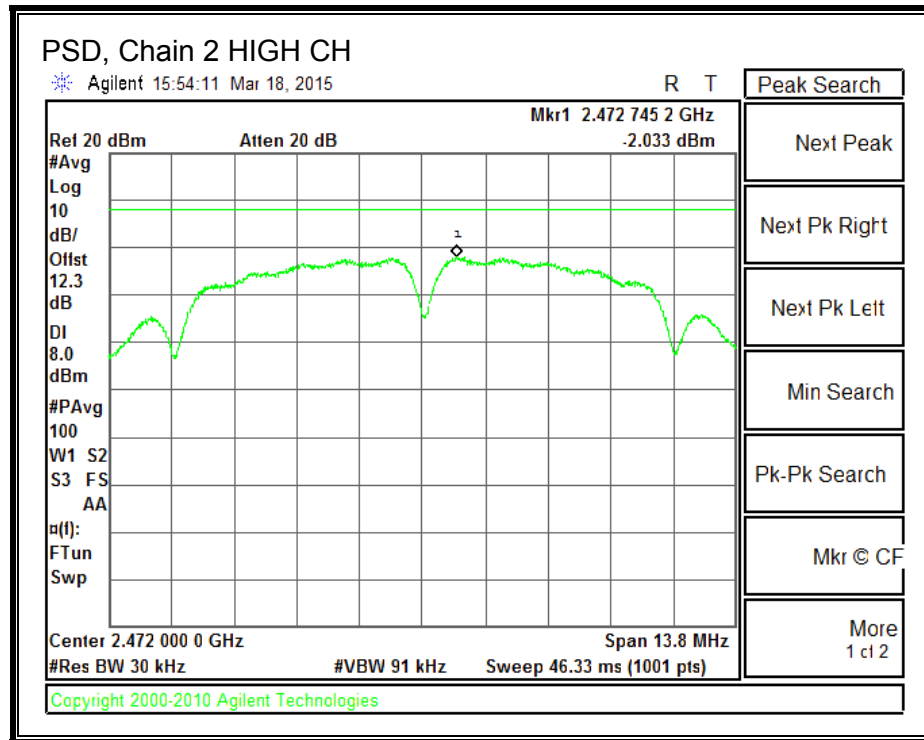
PSD, Chain 1





PSD, Chain 2





8.2.5. OUT-OF-BAND EMISSIONS

LIMITS

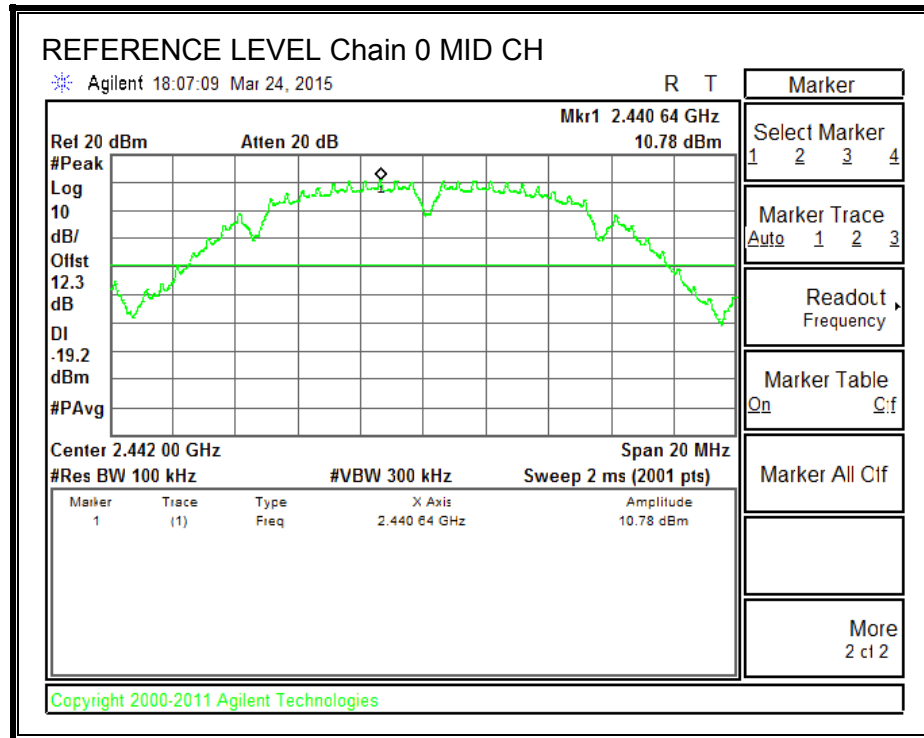
FCC §15.247

IC RSS-247 Clause 5.5

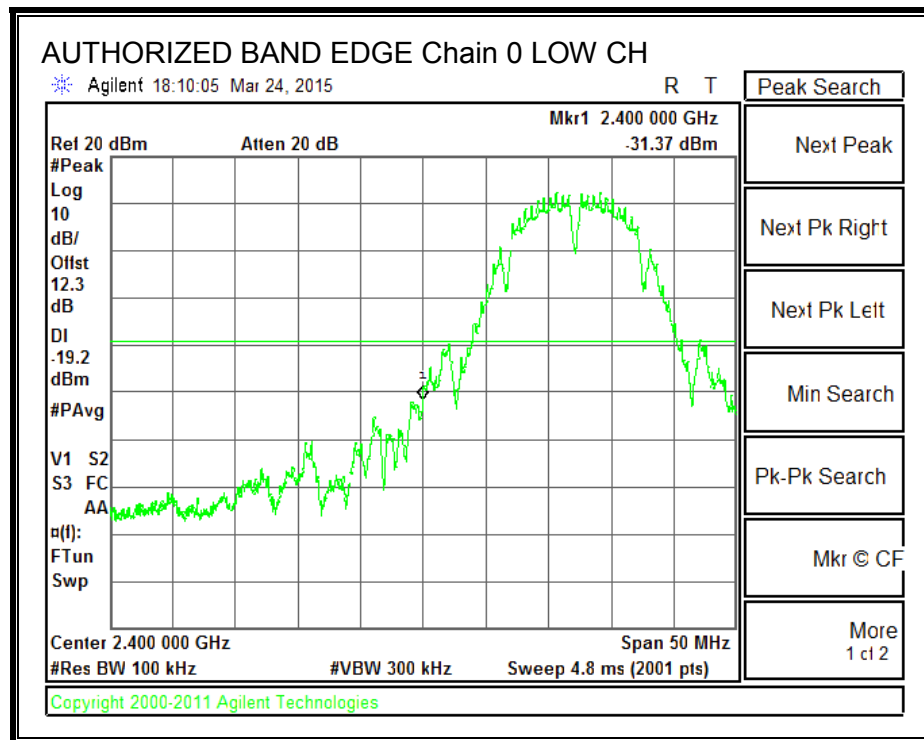
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

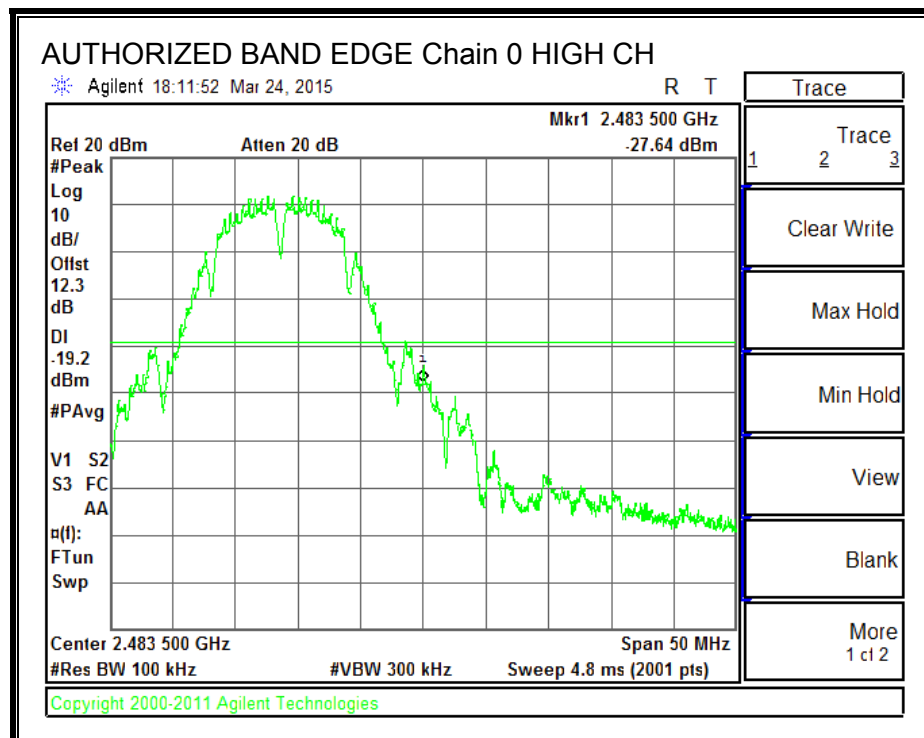
IN-BAND REFERENCE LEVEL, Chain 0



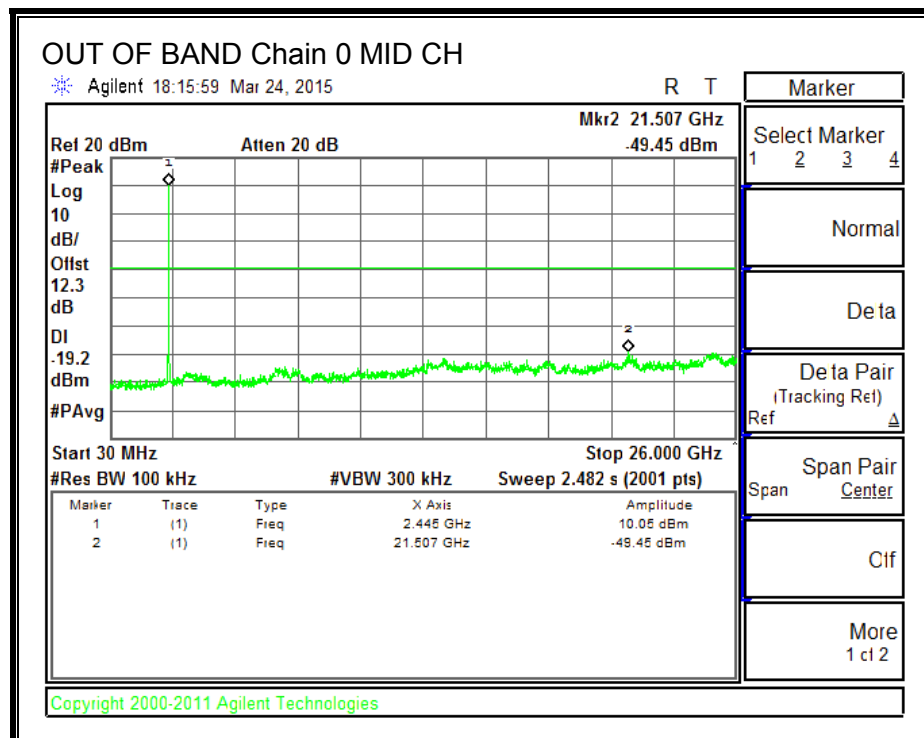
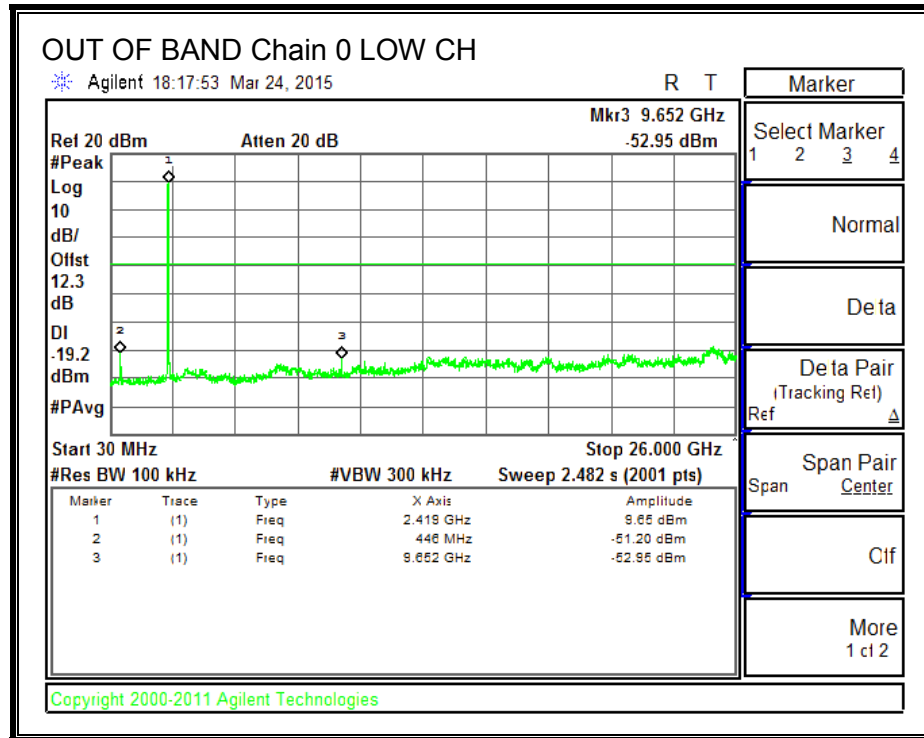
LOW CHANNEL BANDEDGE, Chain 0

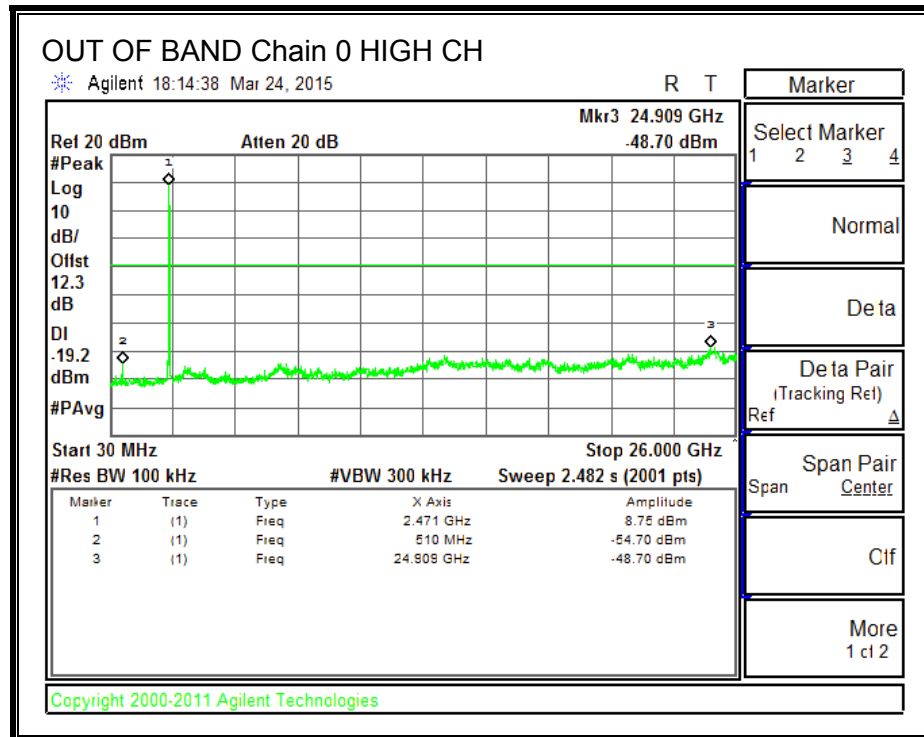


HIGH CHANNEL BANDEDGE, Chain 0

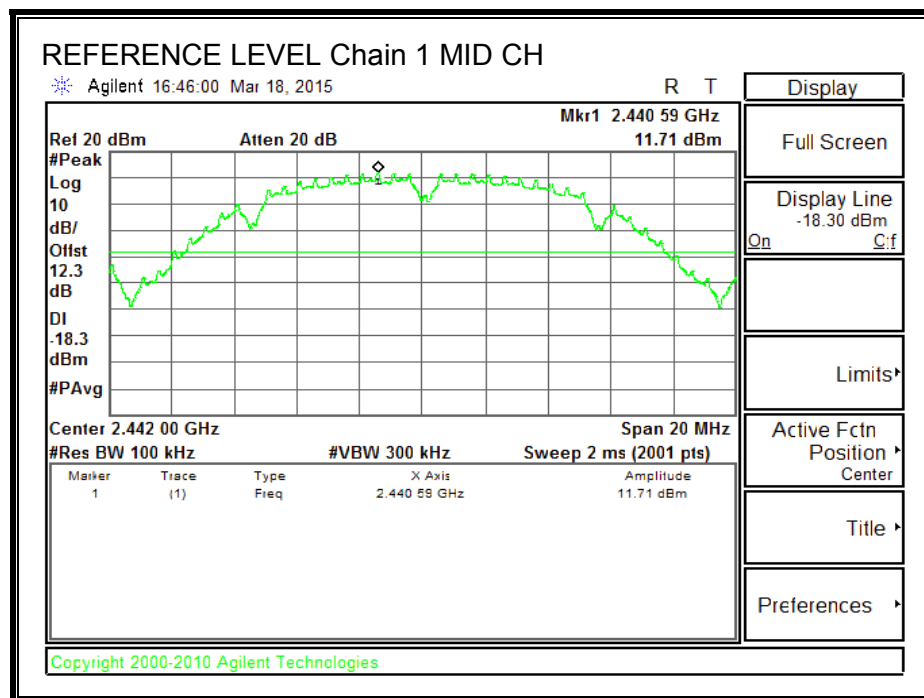


OUT-OF-BAND EMISSIONS, Chain 0

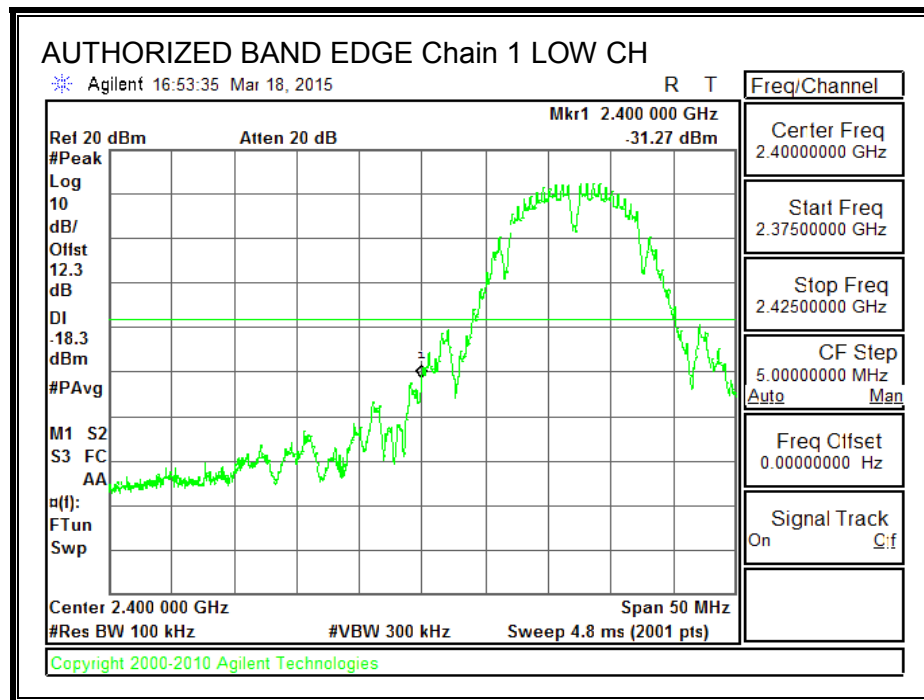




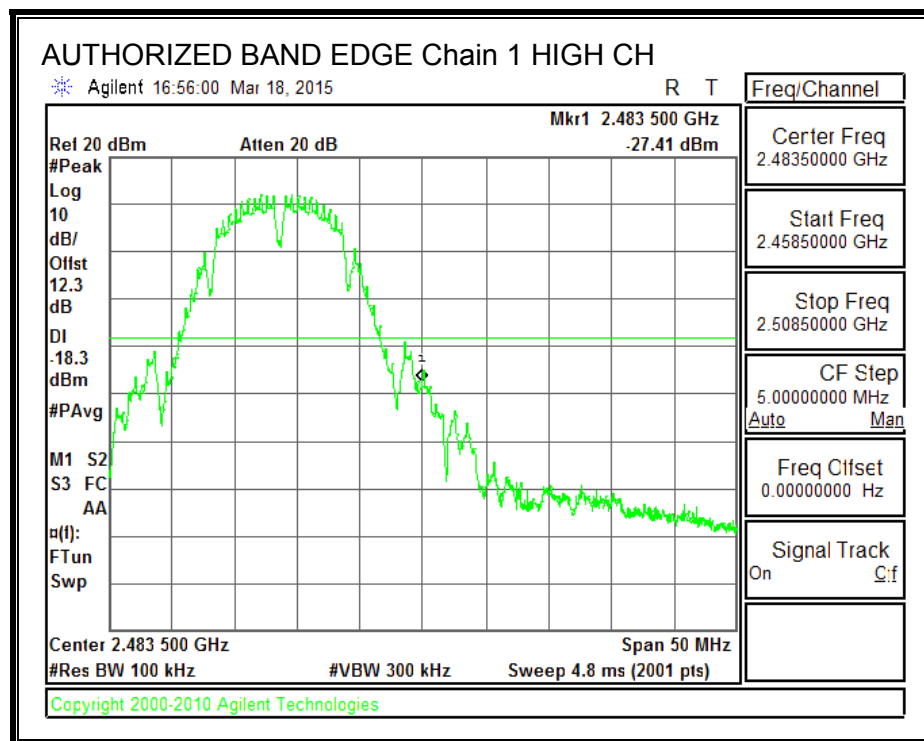
IN-BAND REFERENCE LEVEL, Chain 1



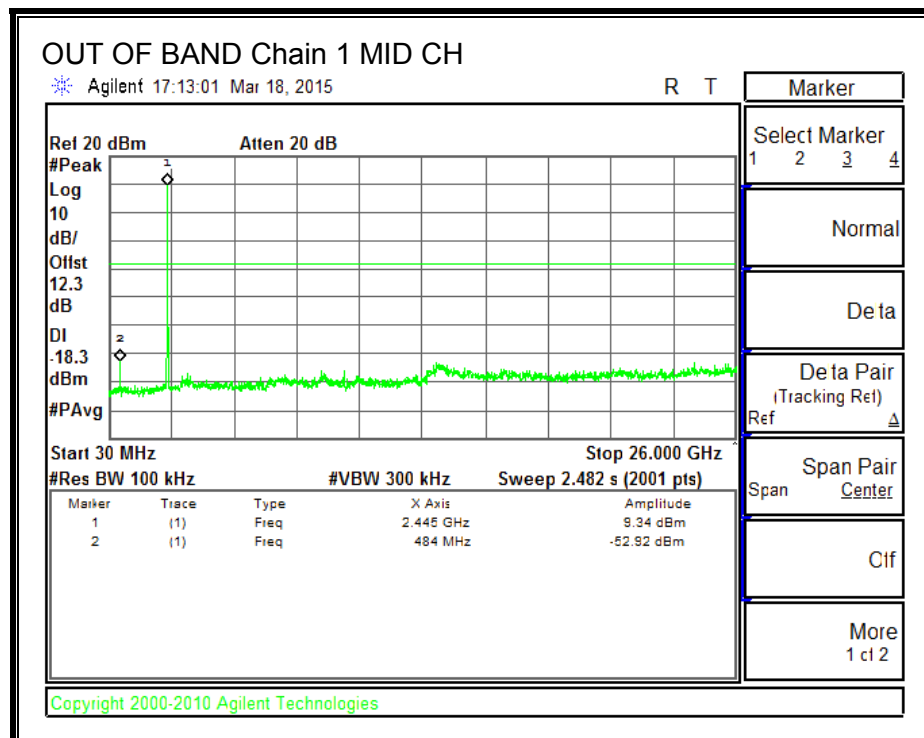
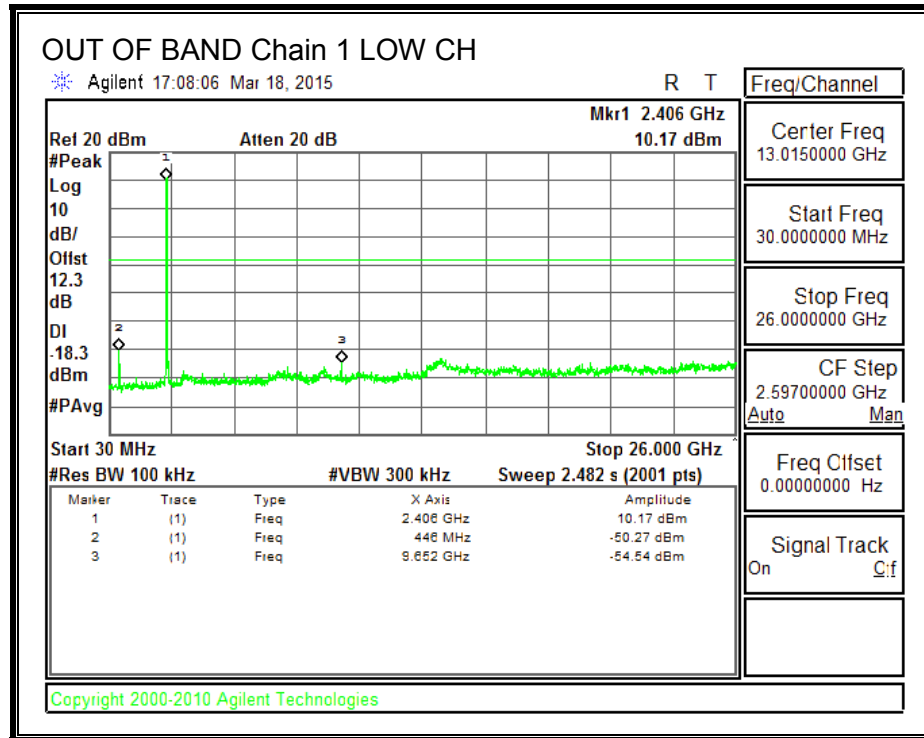
LOW CHANNEL BANDEDGE, Chain 1

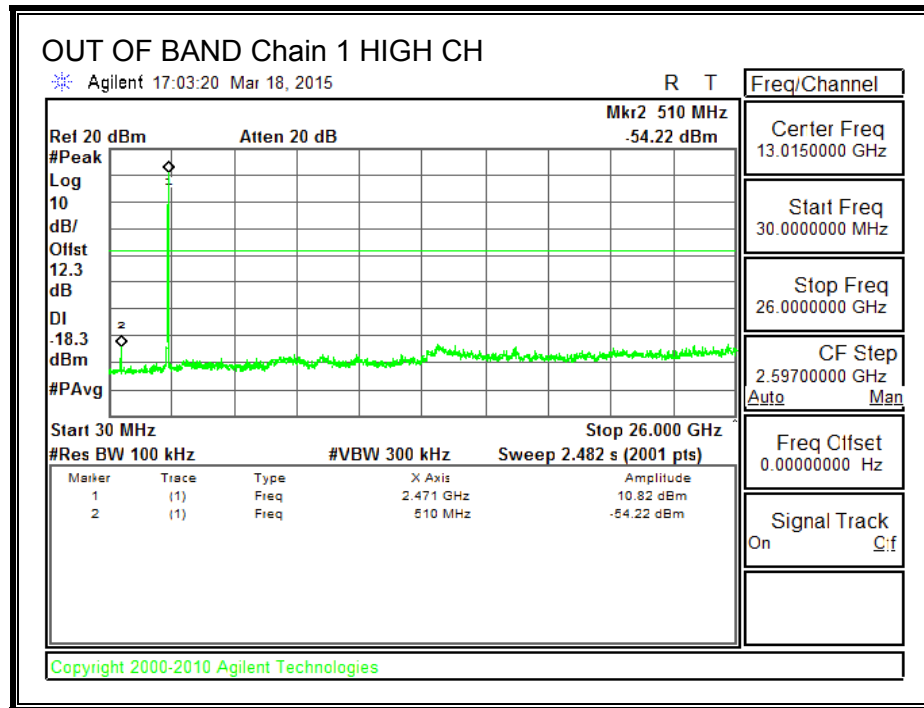


HIGH CHANNEL BANDEDGE, Chain 1

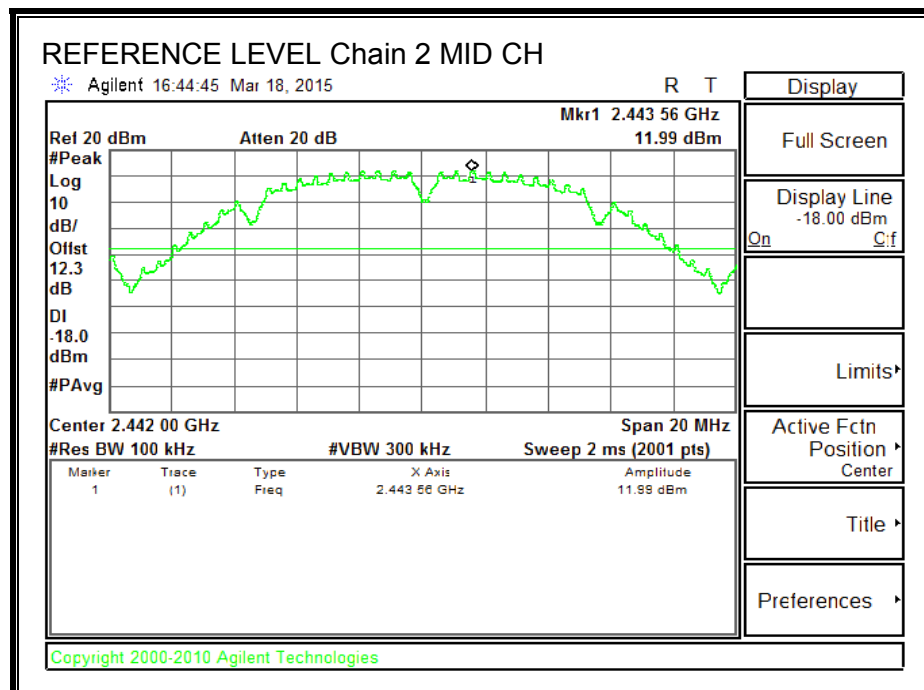


OUT-OF-BAND EMISSIONS, Chain 1

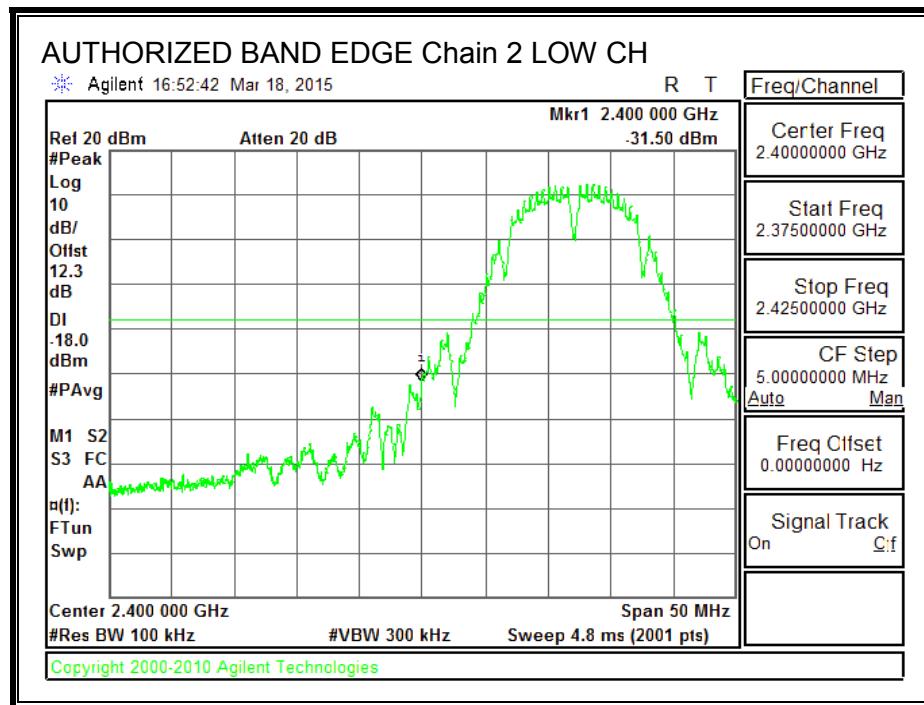




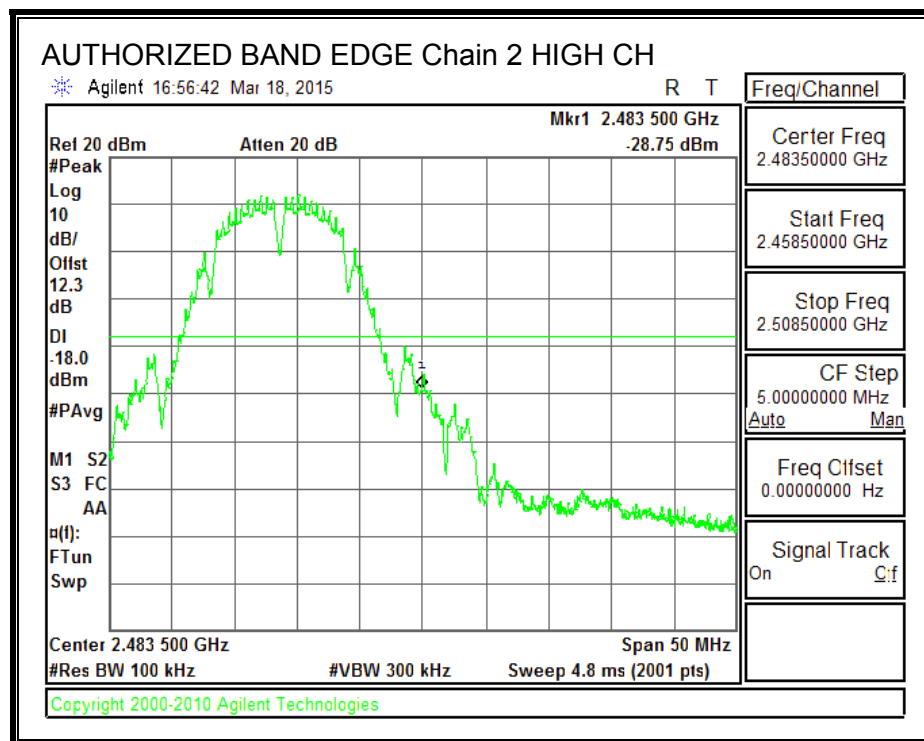
IN-BAND REFERENCE LEVEL, Chain 2



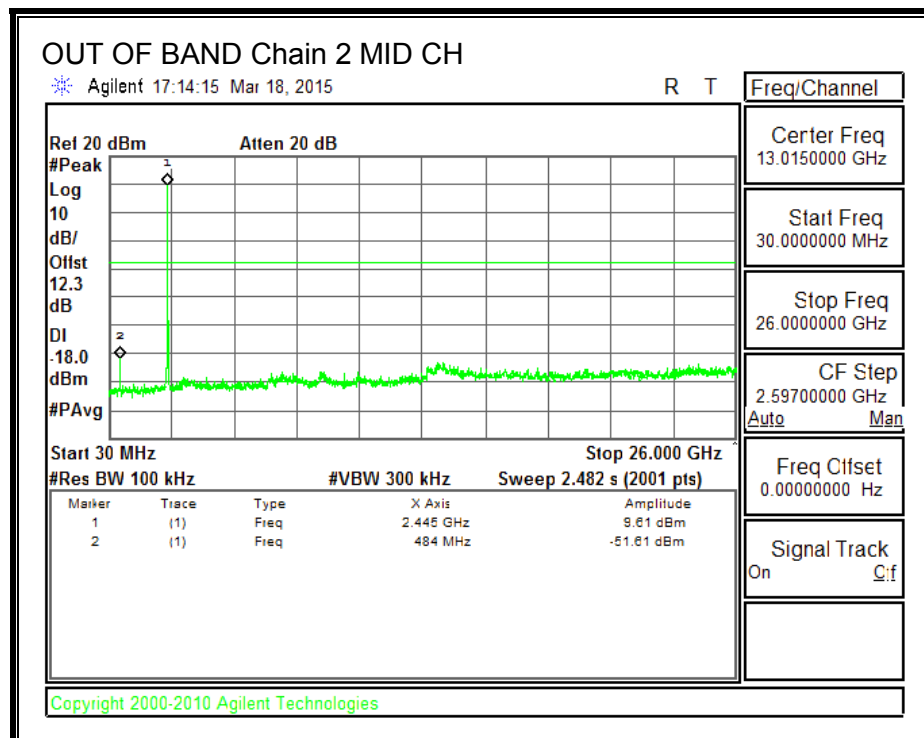
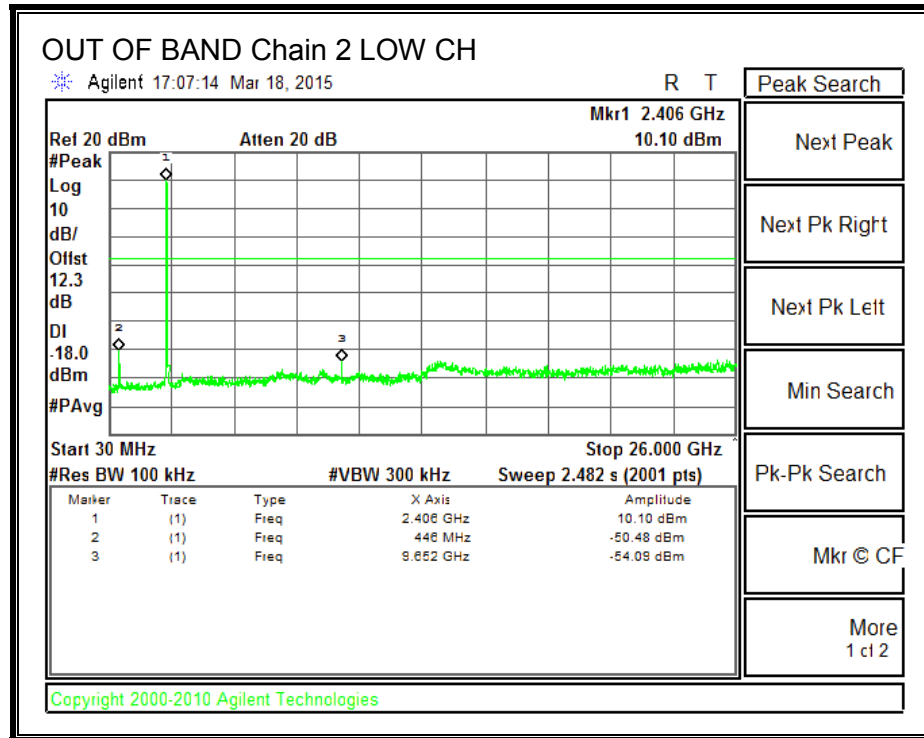
LOW CHANNEL BANDEDGE, Chain 2

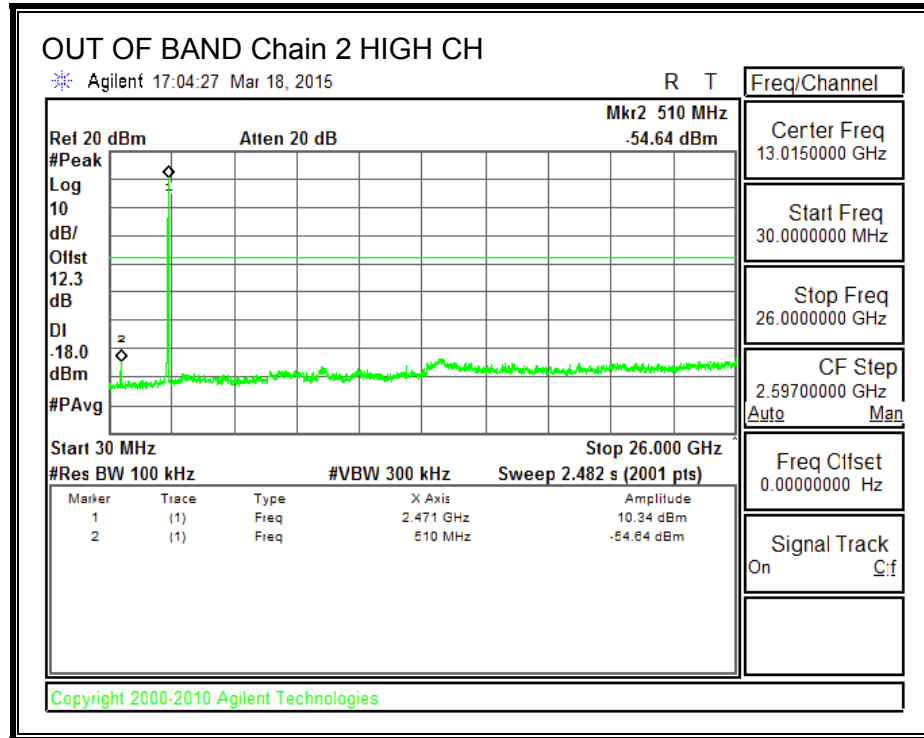


HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2





8.3. 802.11g LEGACY 1TX MODE IN THE 2.4 GHz BAND

8.3.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

DIRECTIONAL ANTENNA GAIN

This is SISO mode, AG is the highest (worst-case) = 3.33 dBi

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	3.33	30	30	36	30
2	2417	3.33	30	30	36	30
10	2457	3.33	30	30	36	30
11	2462	3.33	30	30	36	30
12	2467	3.33	30	30	36	30
13	2472	3.33	30	30	36	30

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	16.86	16.86	30	-13.14
2	2417	19.76	19.76	30	-10.24
10	2457	19.78	19.78	30	-10.22
11	2462	16.12	16.12	30	-13.88
12	2467	14.63	14.63	30	-15.37
13	2472	10.86	10.86	30	-19.14

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

8.4. 802.11n HT20 CDD 3TX MODE IN THE 2.4 GHz BAND

8.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247

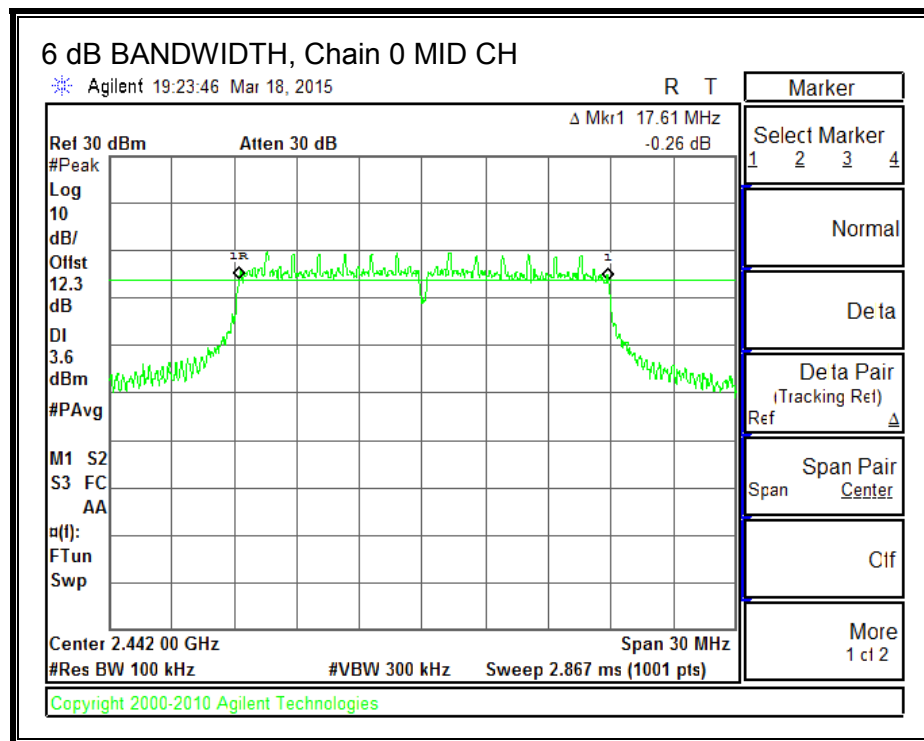
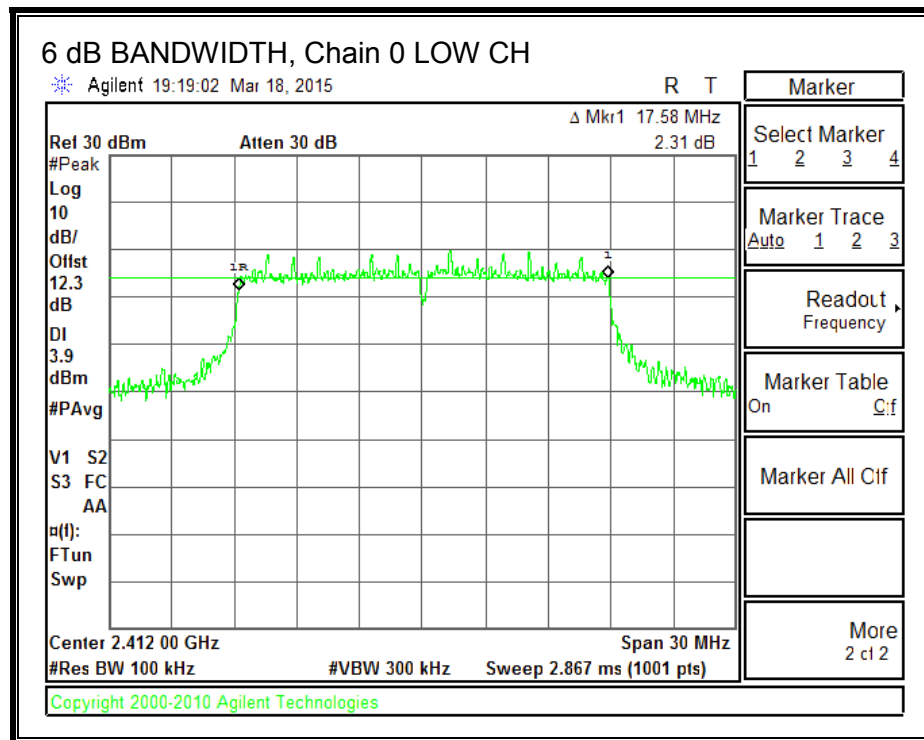
IC RSS-247 Clause 5.2 (1)

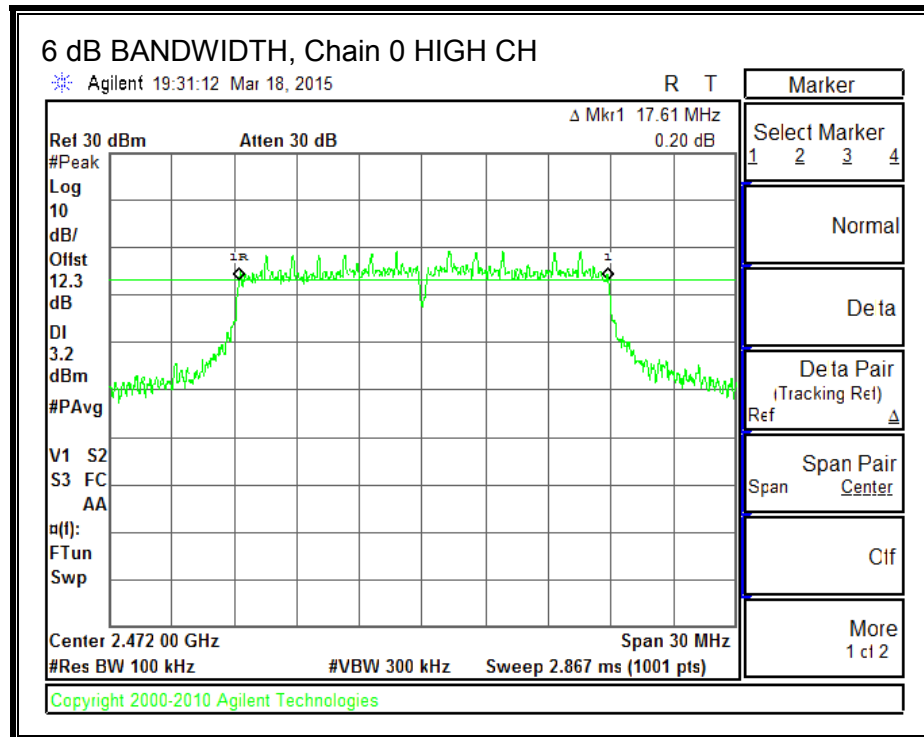
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

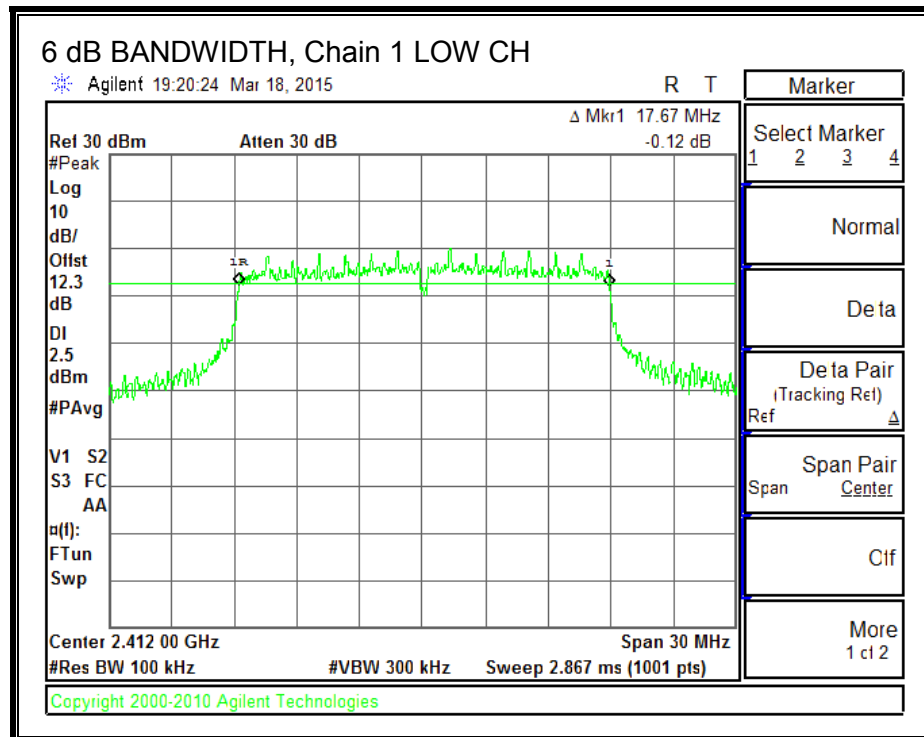
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	2412	17.58	17.67	17.61	0.5
Mid	2442	17.61	17.67	17.64	0.5
High	2472	17.61	17.64	17.49	0.5

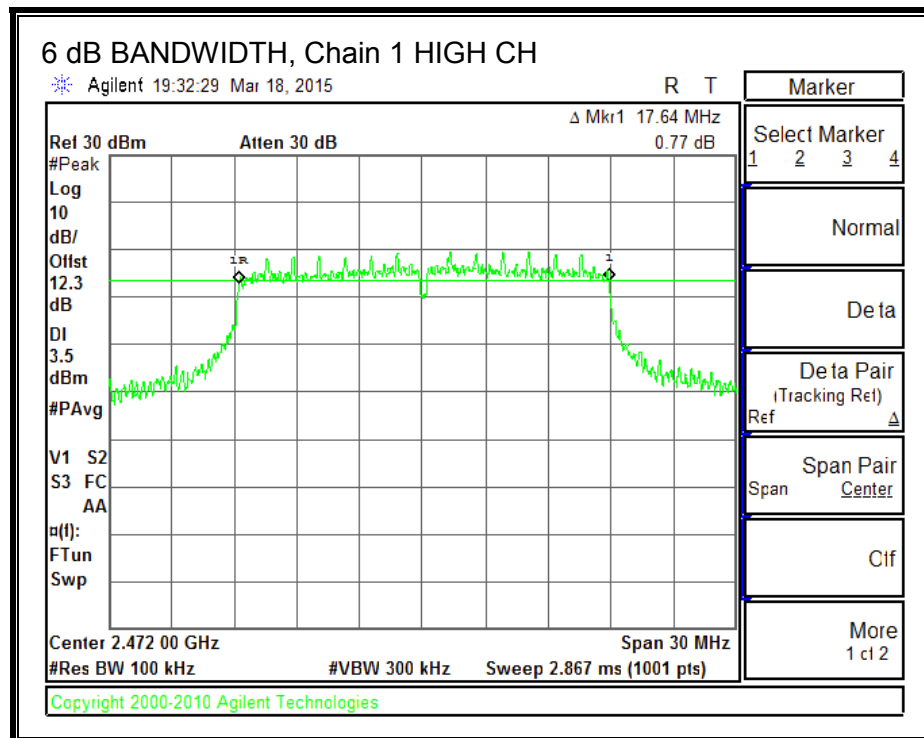
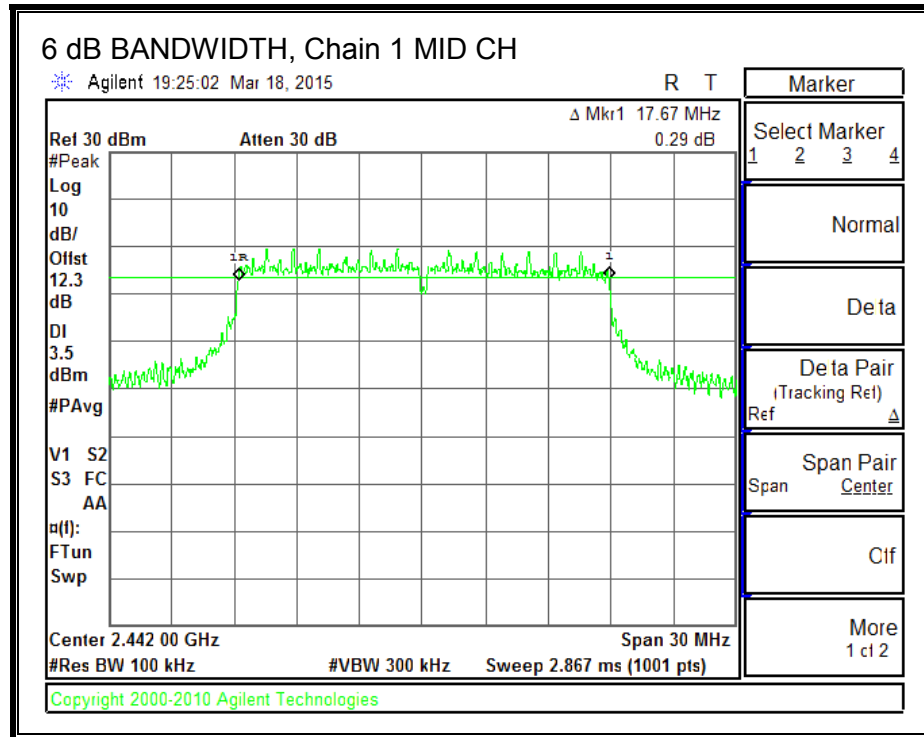
6 dB BANDWIDTH, Chain 0



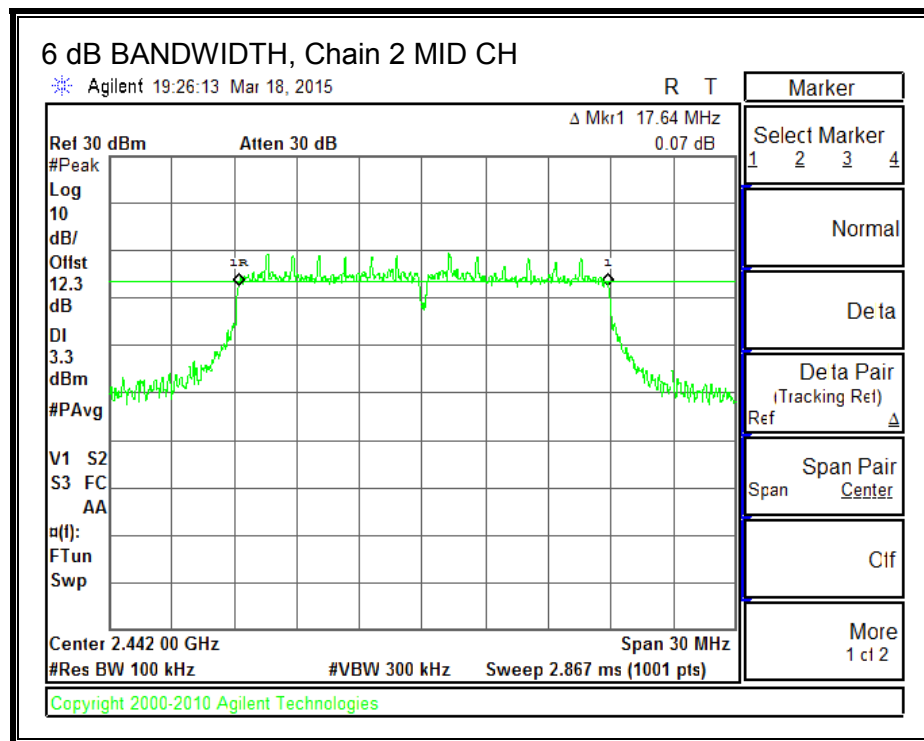
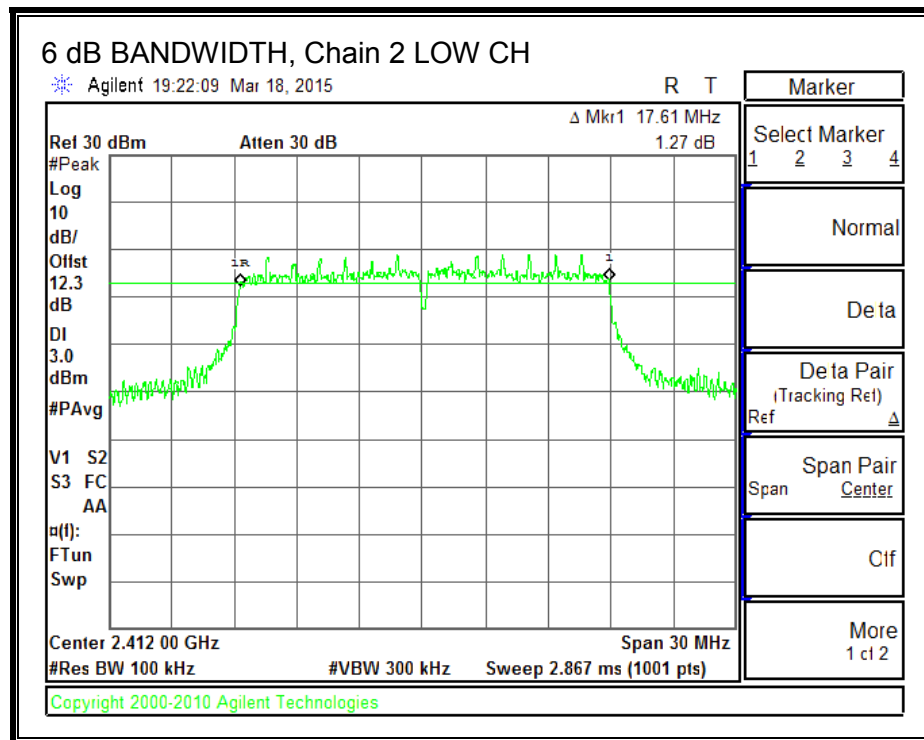


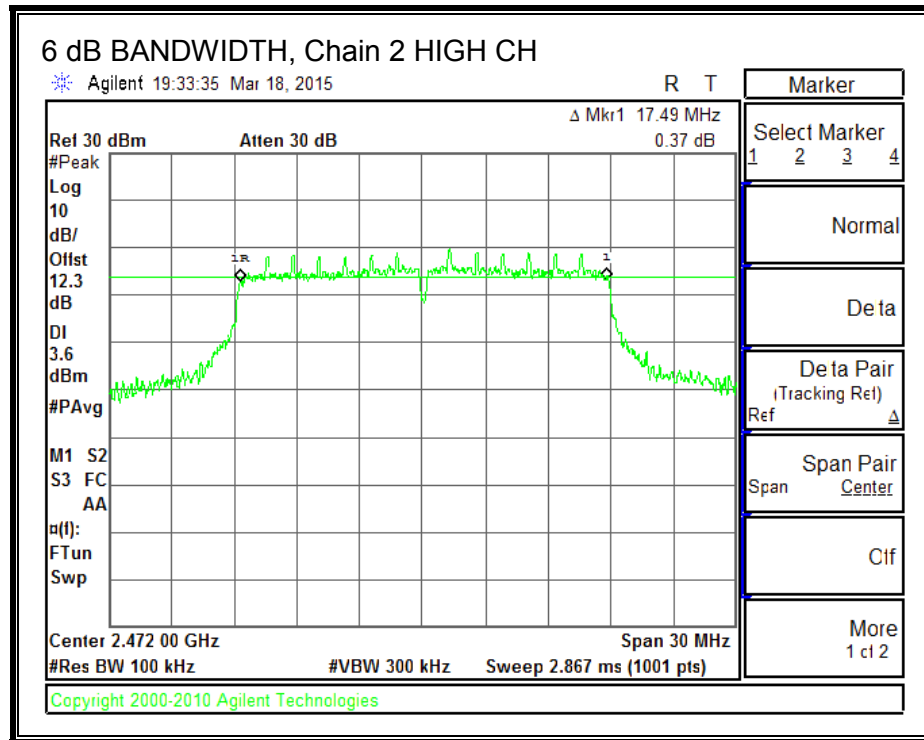
6 dB BANDWIDTH, Chain 1





6 dB BANDWIDTH, Chain 2





8.4.2. 99% BANDWIDTH

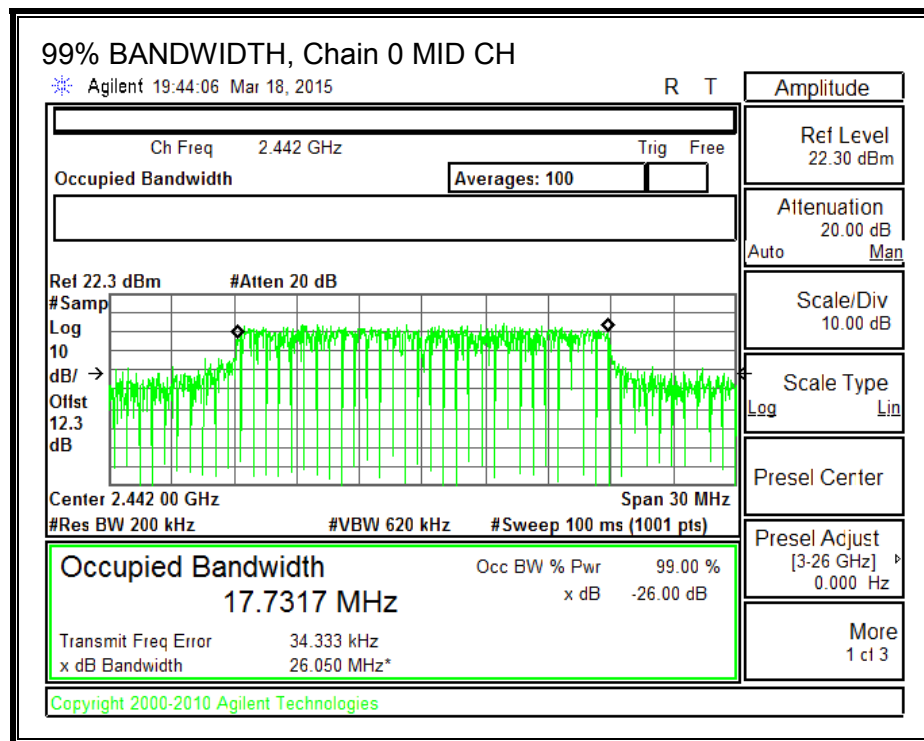
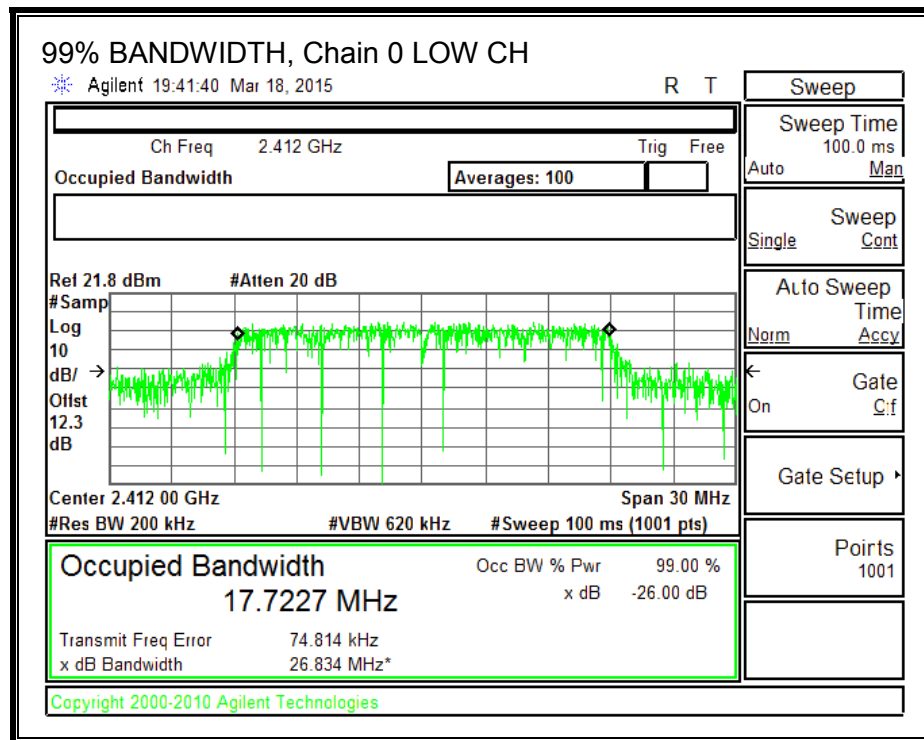
LIMITS

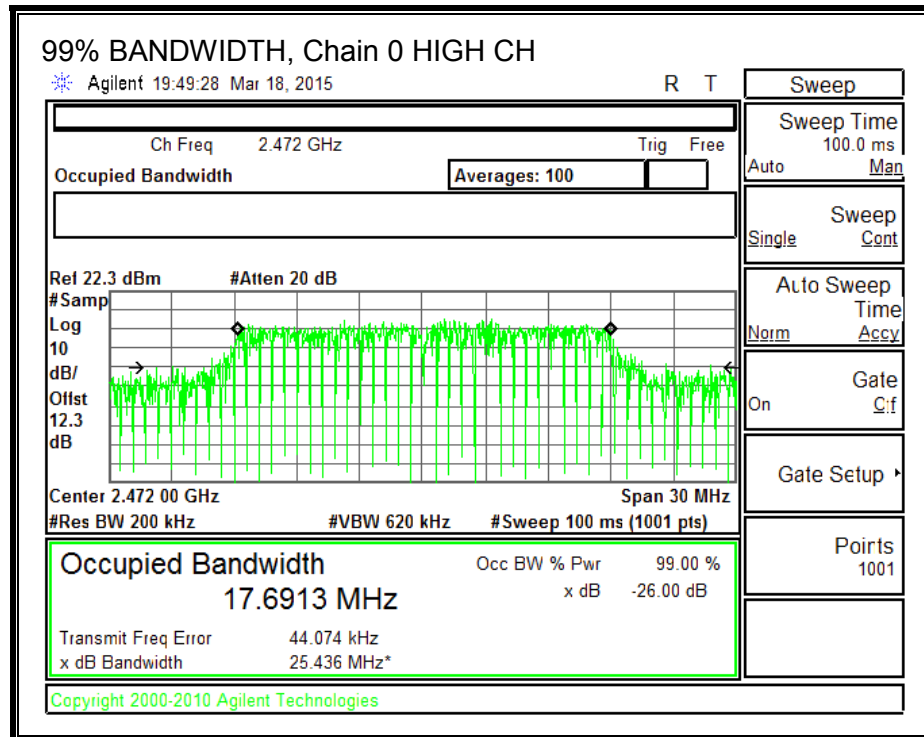
None; for reporting purposes only.

RESULTS

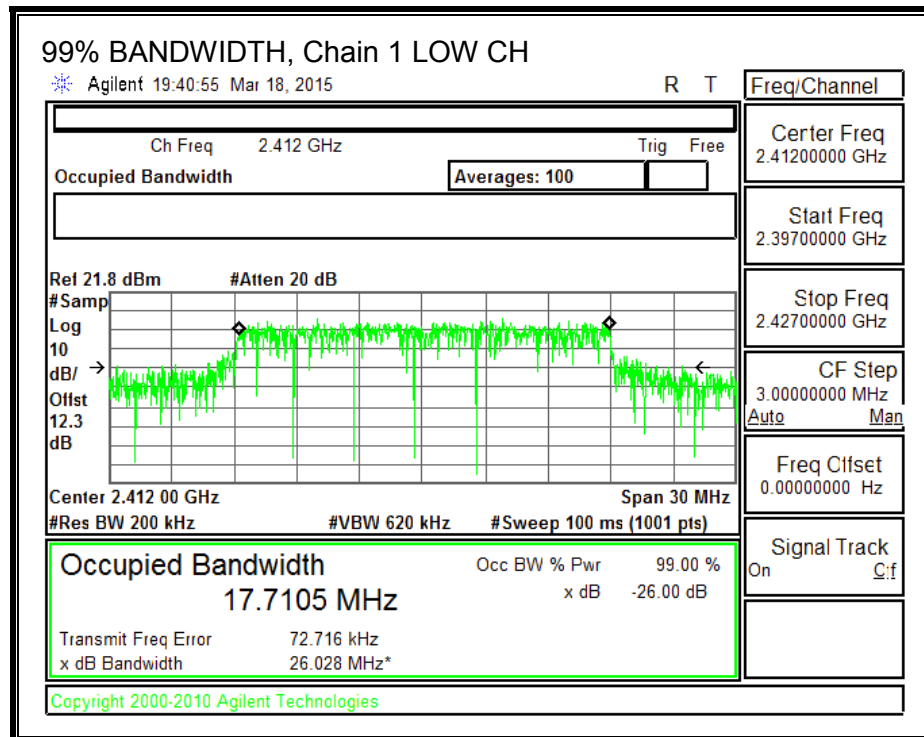
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	2412	17.7227	17.7105	17.6994
Mid	2442	17.7317	17.7195	17.7385
High	2472	17.6913	17.6988	17.6935

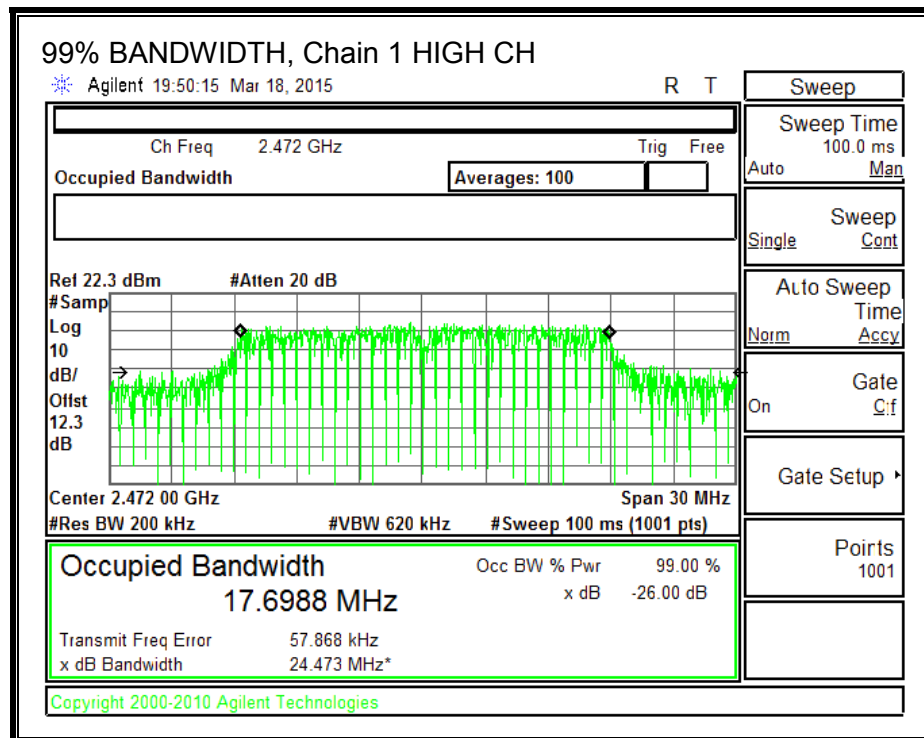
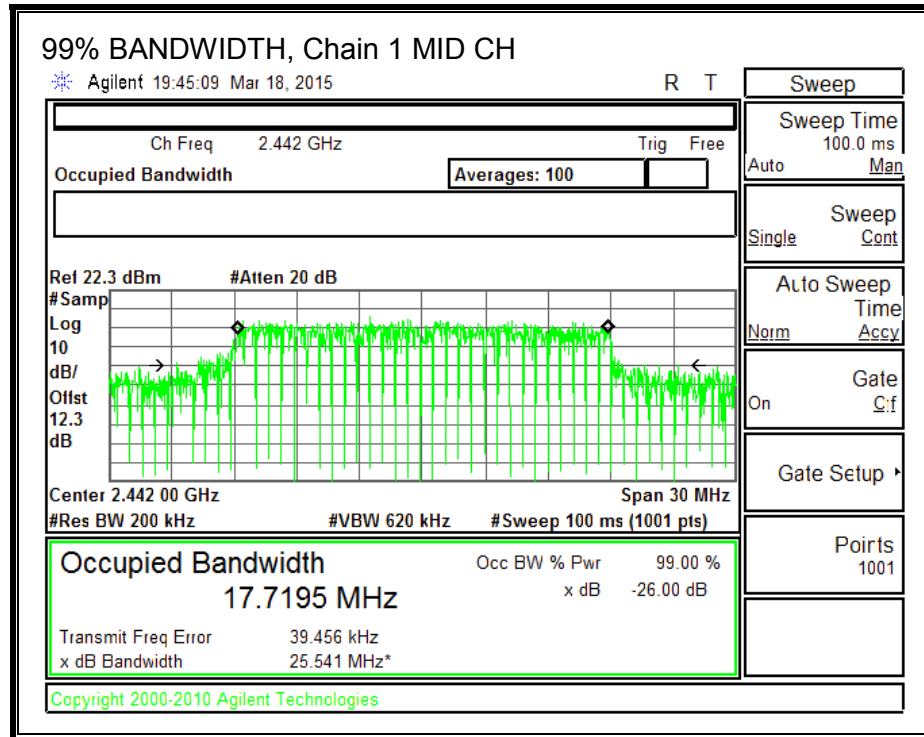
99% BANDWIDTH, Chain 0



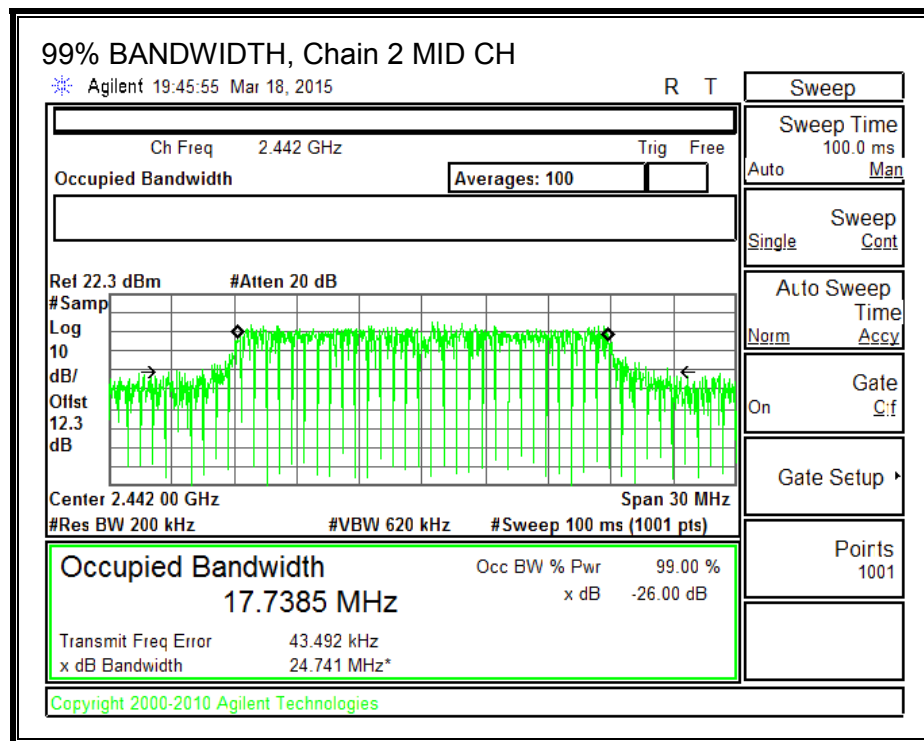
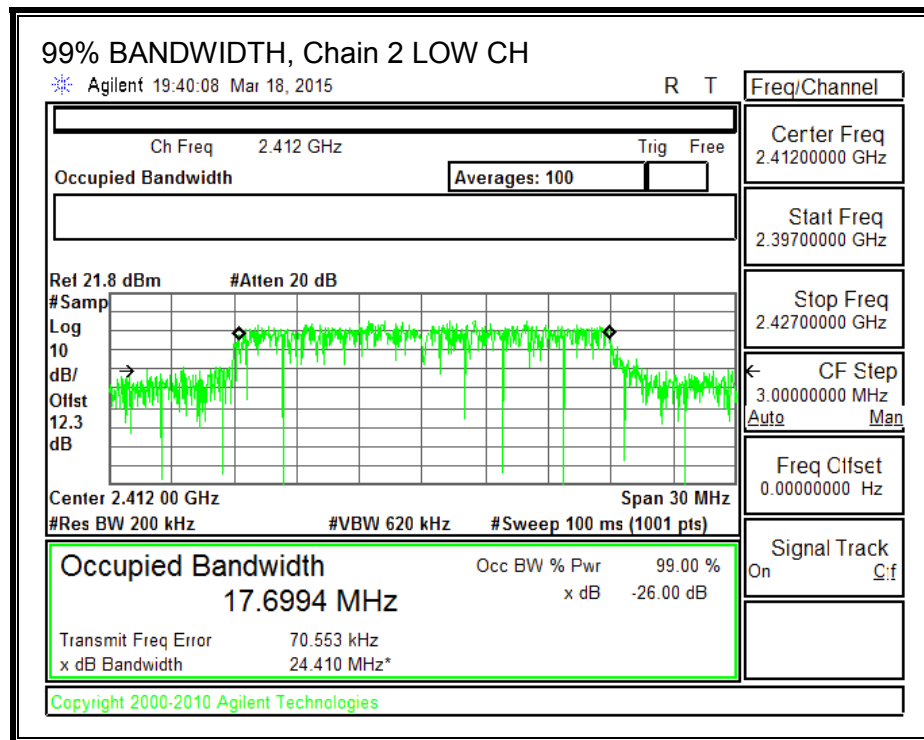


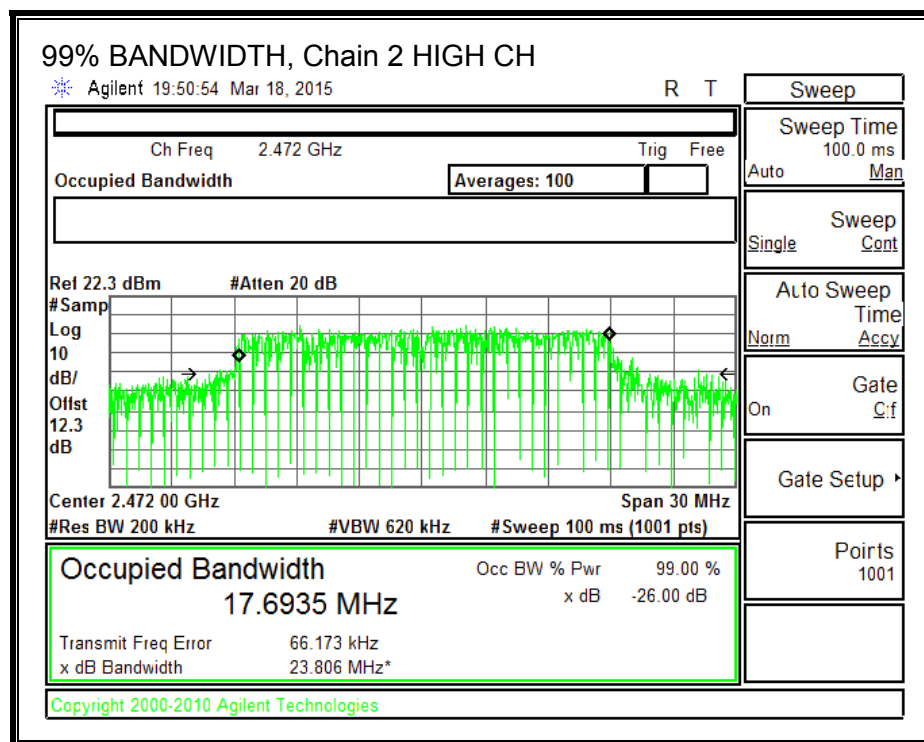
99% BANDWIDTH, Chain 1





99% BANDWIDTH, Chain 2





8.4.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 3.33 dBi.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	3.33	30	30	36	30.00
2	2417	3.33	30	30	36	30.00
7	2442	3.33	30	30	36	30.00
10	2457	3.33	30	30	36	30.00
11	2462	3.33	30	30	36	30.00
12	2467	3.33	30	30	36	30.00
13	2472	3.33	30	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	14.67	15.27	15.11	19.80	30.00	-10.20
2	2417	17.24	17.75	17.87	22.40	30.00	-7.60
7	2442	20.41	20.52	20.49	25.24	30.00	-4.76
10	2457	17.63	18.03	18.05	22.68	30.00	-7.32
11	2462	14.63	15.27	15.12	19.79	30.00	-10.21
12	2467	11.41	11.83	11.80	16.46	30.00	-13.54
13	2472	7.66	8.06	8.04	12.70	30.00	-17.30

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

8.4.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

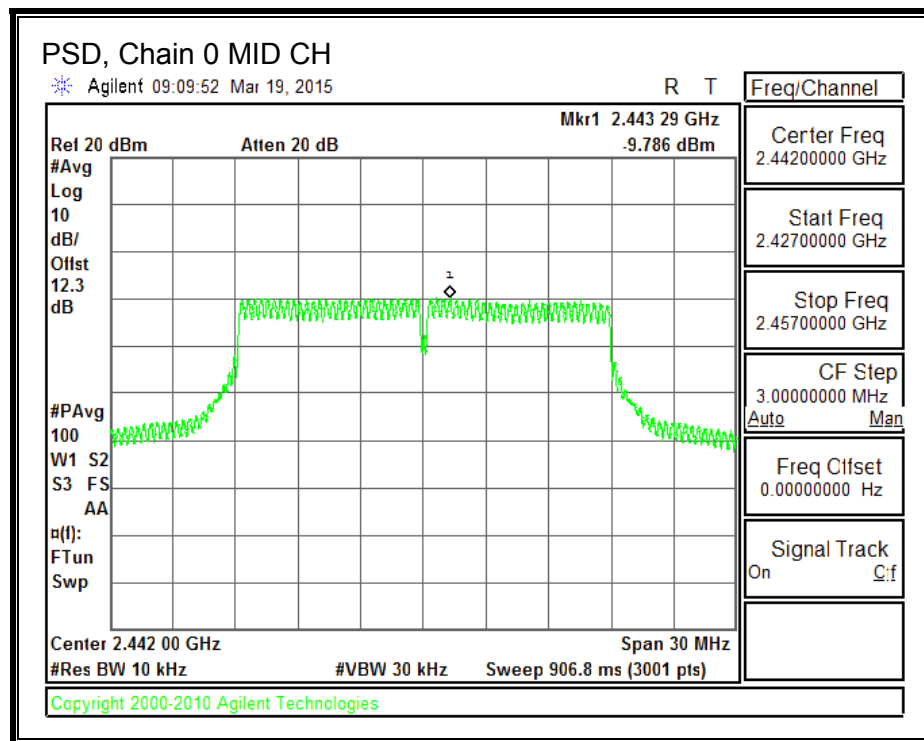
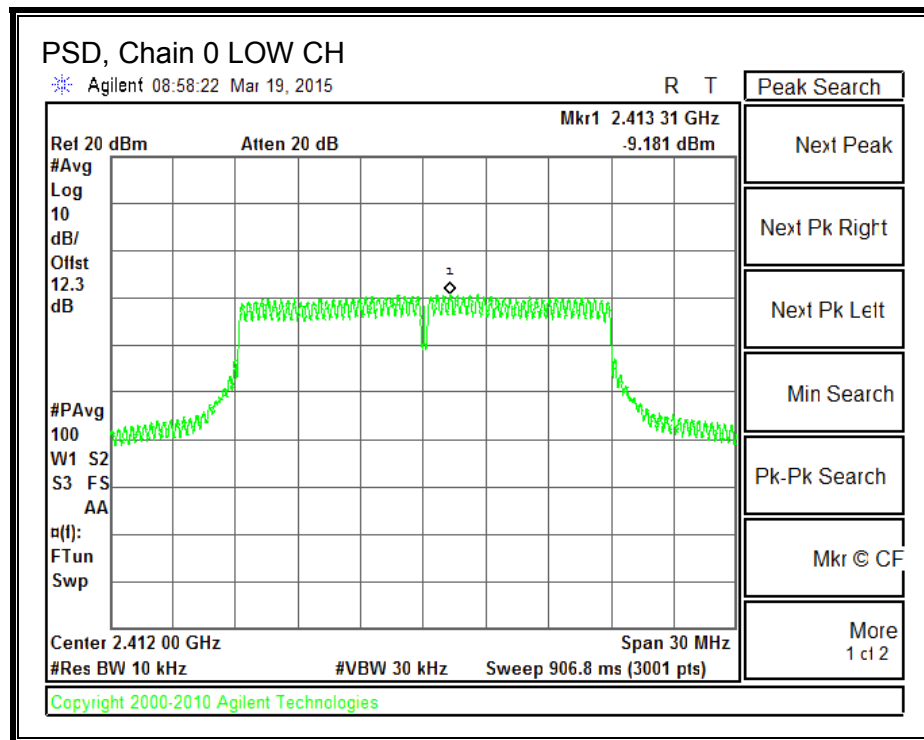
IC RSS-247 Clause 5.2 (2)

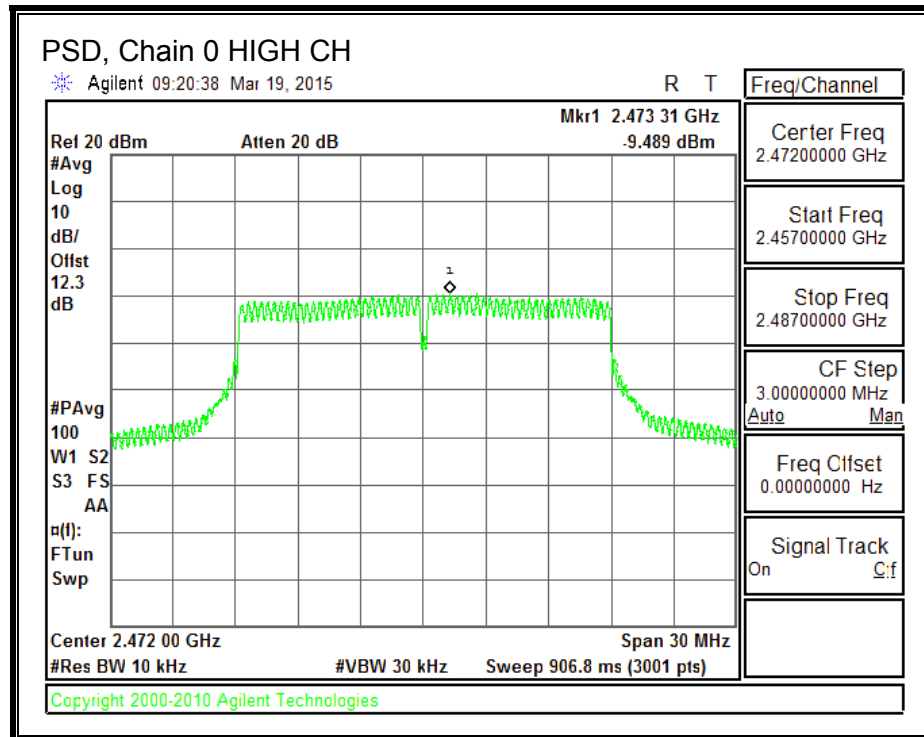
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

RESULTS

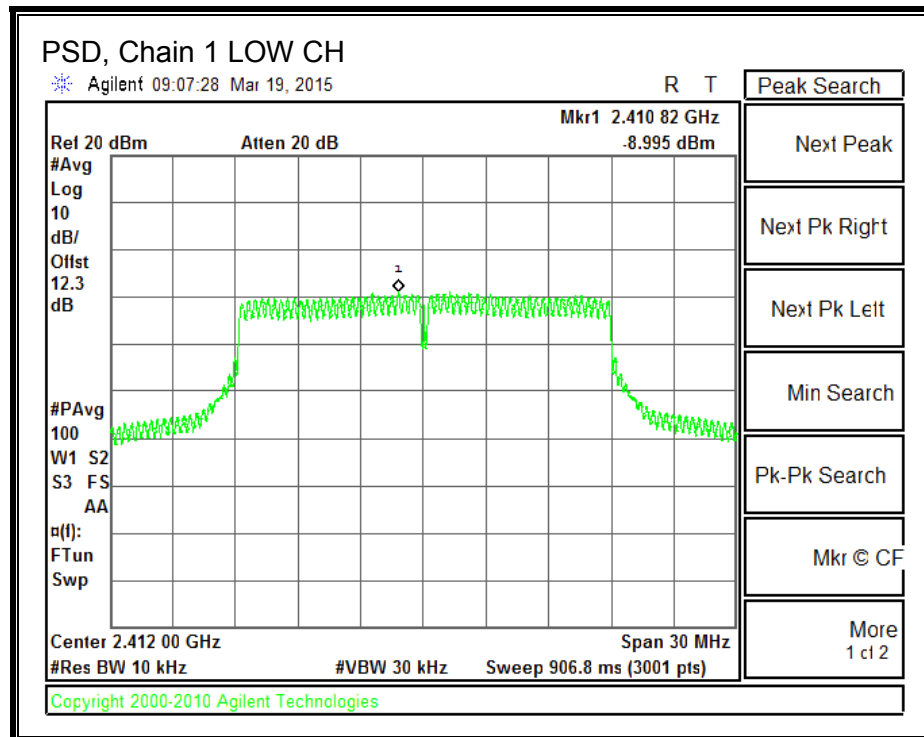
Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD				
PSD Results							
Channel	Frequency	Chain 0 Meas	Chain 1 Meas	Chain 2 Meas	Total Corr'd PSD	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	2412	-9.181	-8.995	-9.880	-4.56	8.0	-12.56
Mid	2442	-9.786	-9.887	-9.941	-5.10	8.0	-13.10
High	2472	-9.489	-10.224	-9.862	-5.08	8.0	-13.08

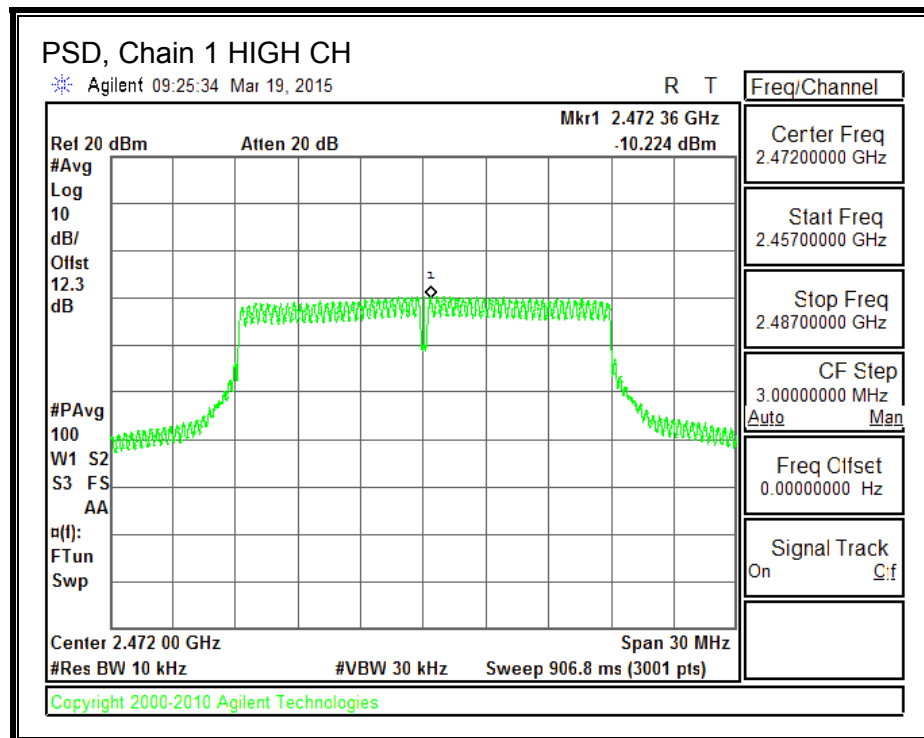
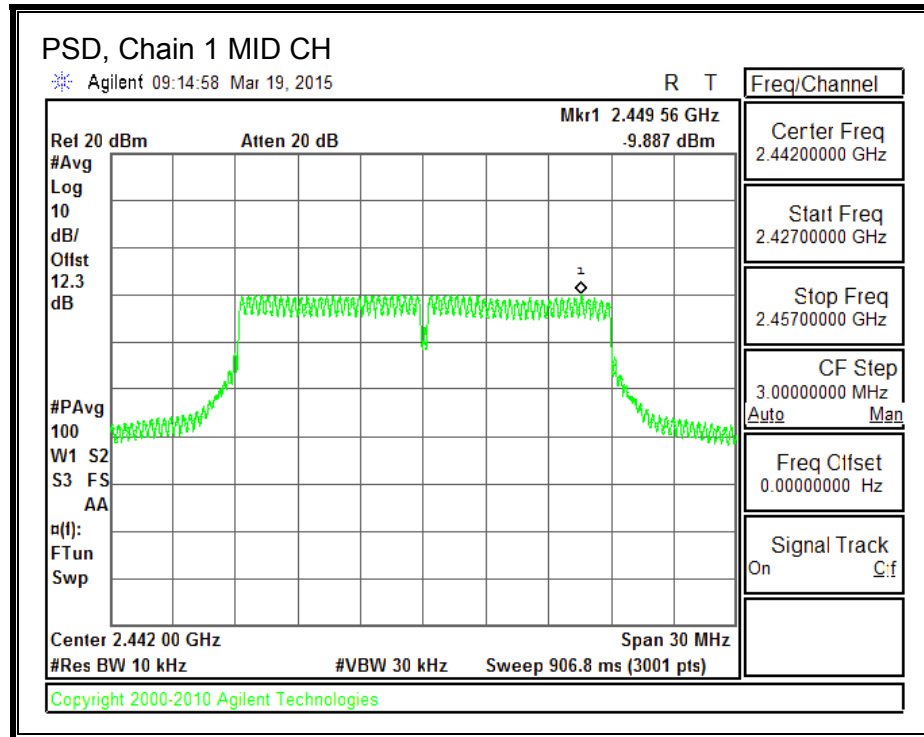
PSD, Chain 0



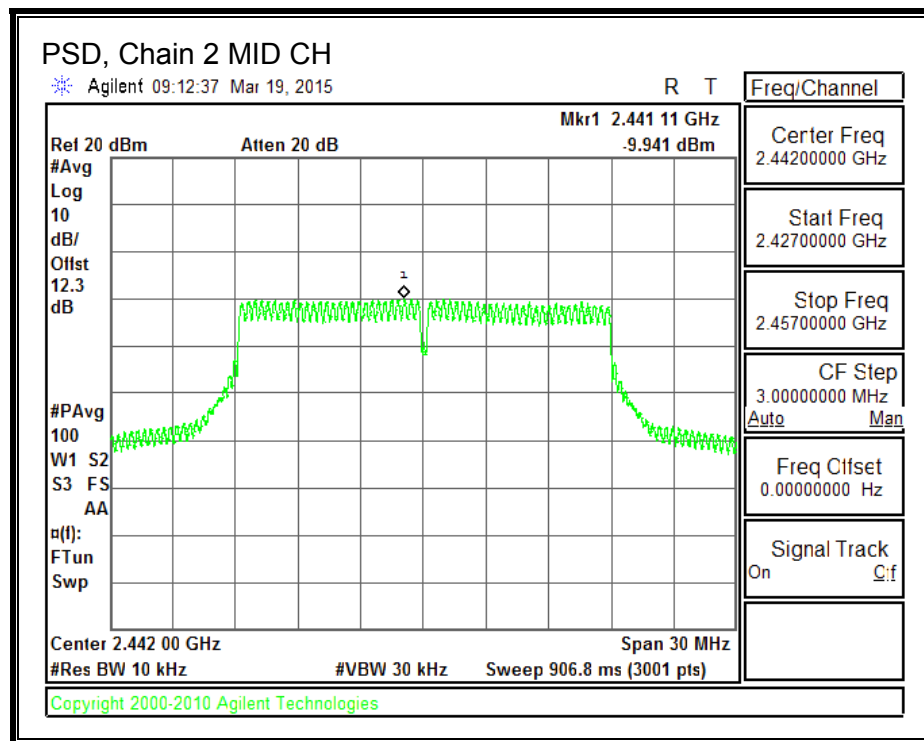
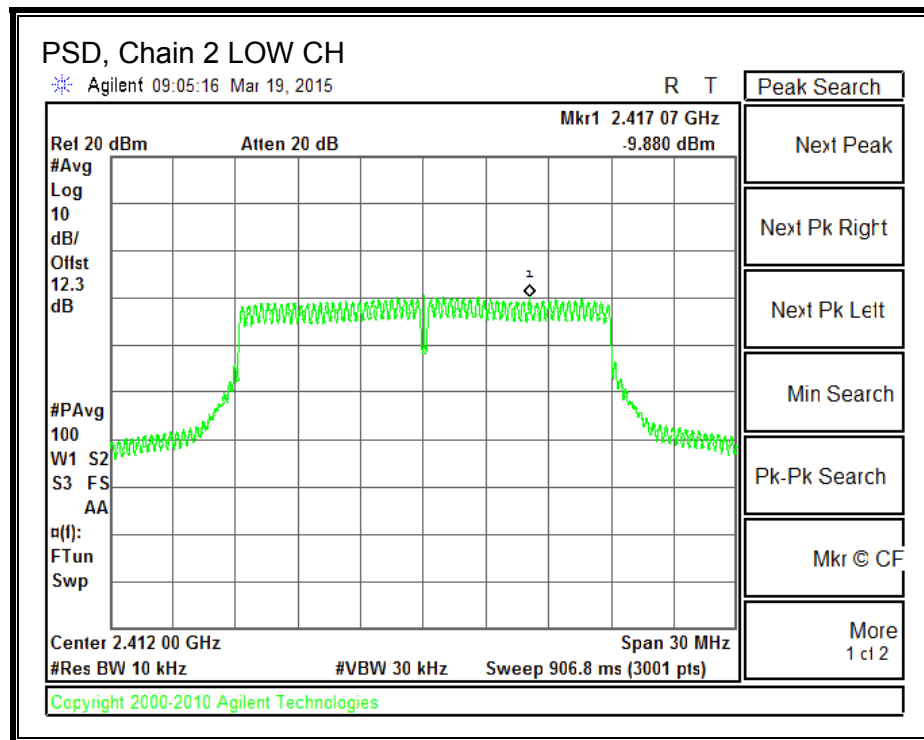


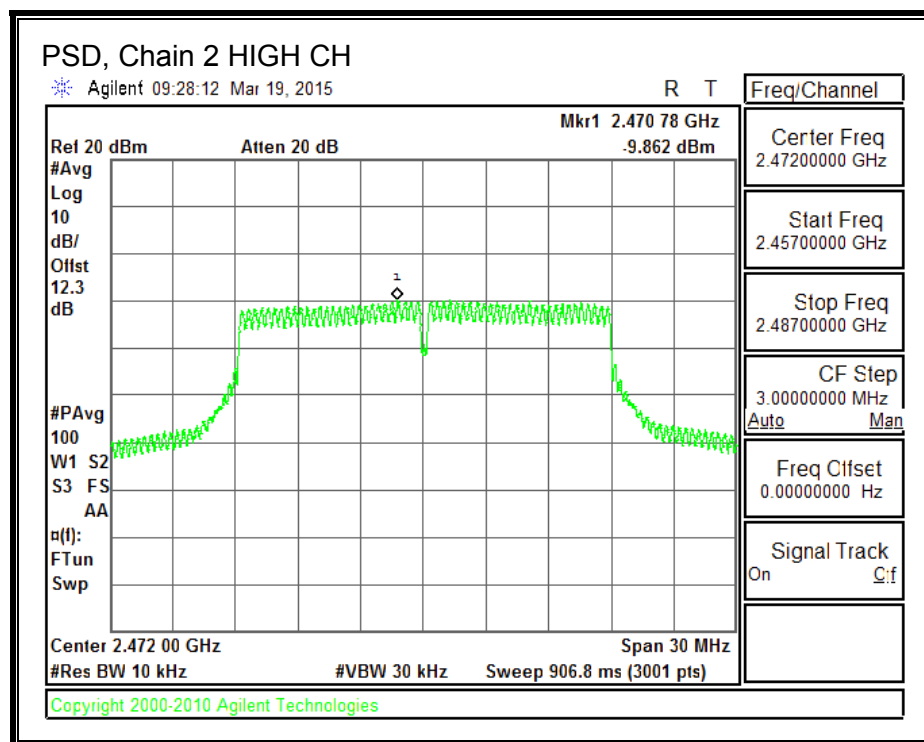
PSD, Chain 1





PSD, Chain 2





8.4.5. OUT-OF-BAND EMISSIONS

LIMITS

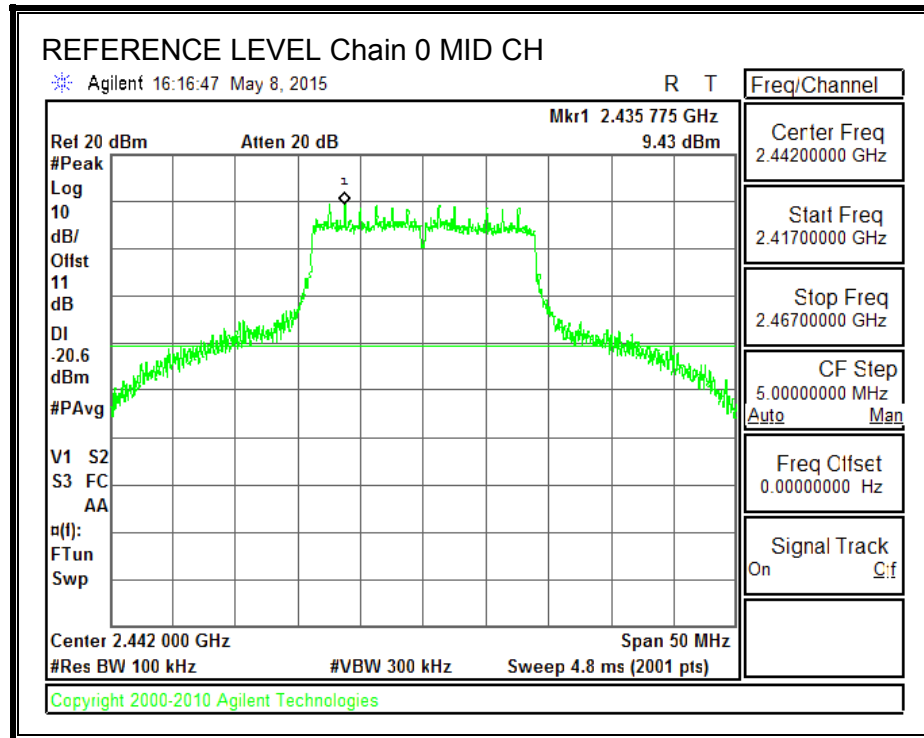
FCC §15.247

IC RSS-247 Clause 5.5

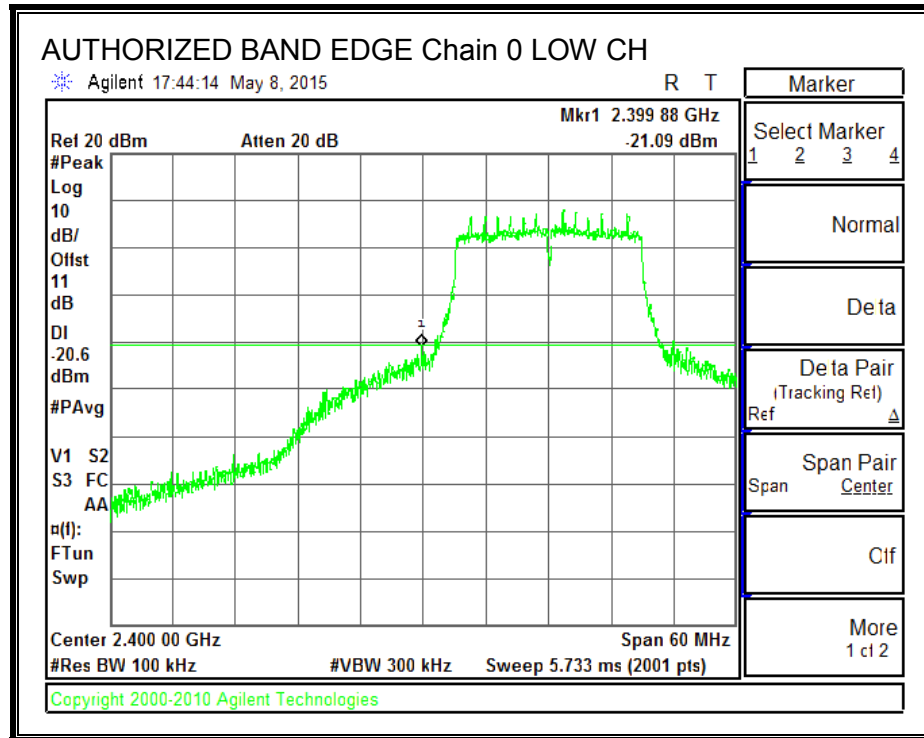
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

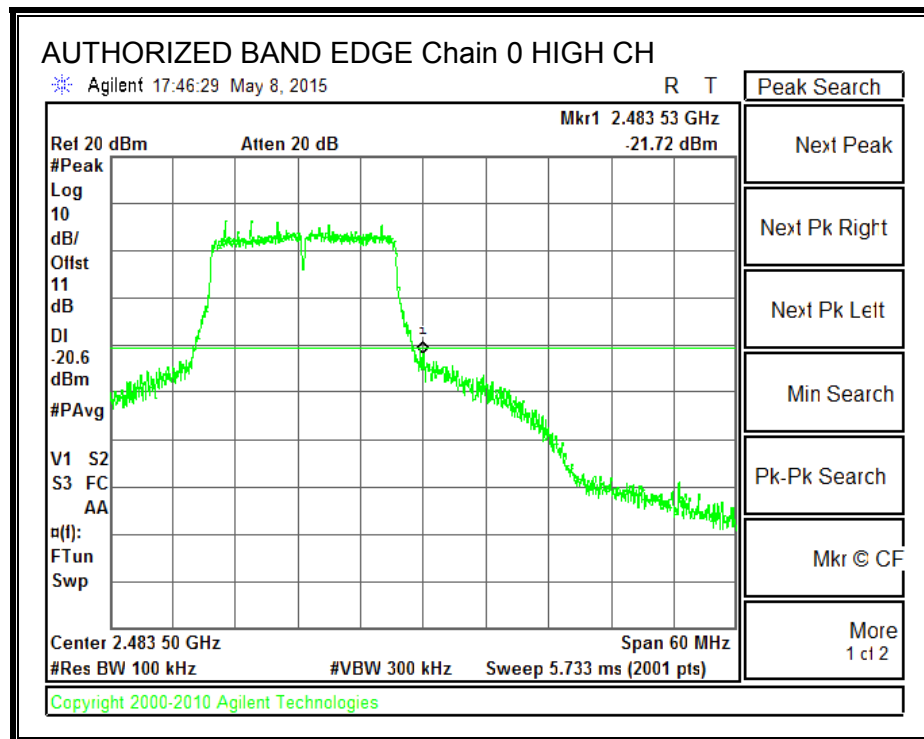
IN-BAND REFERENCE LEVEL, Chain 0



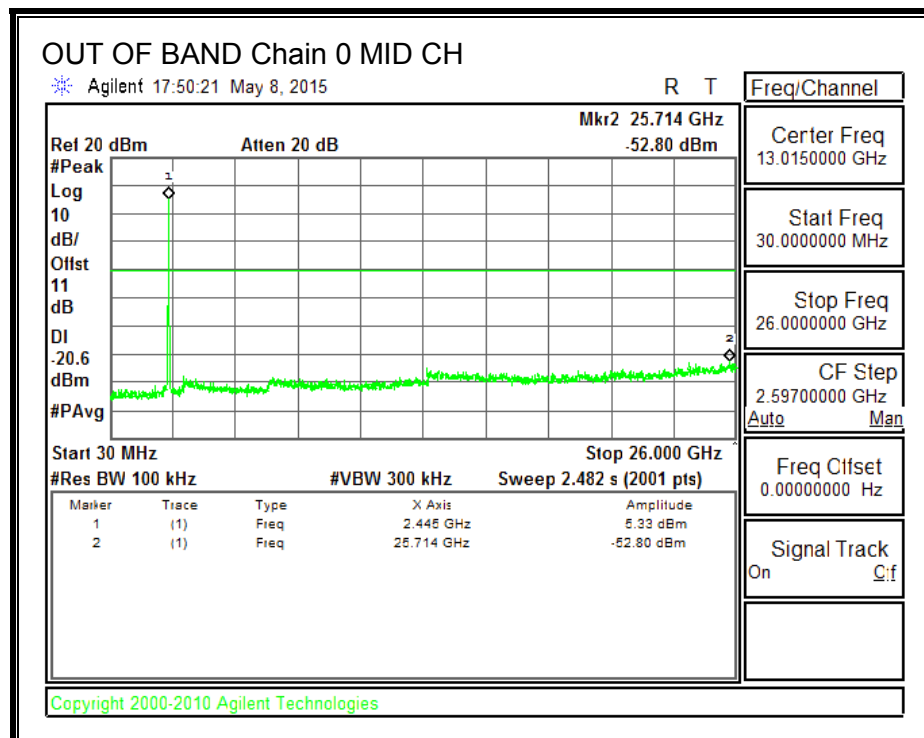
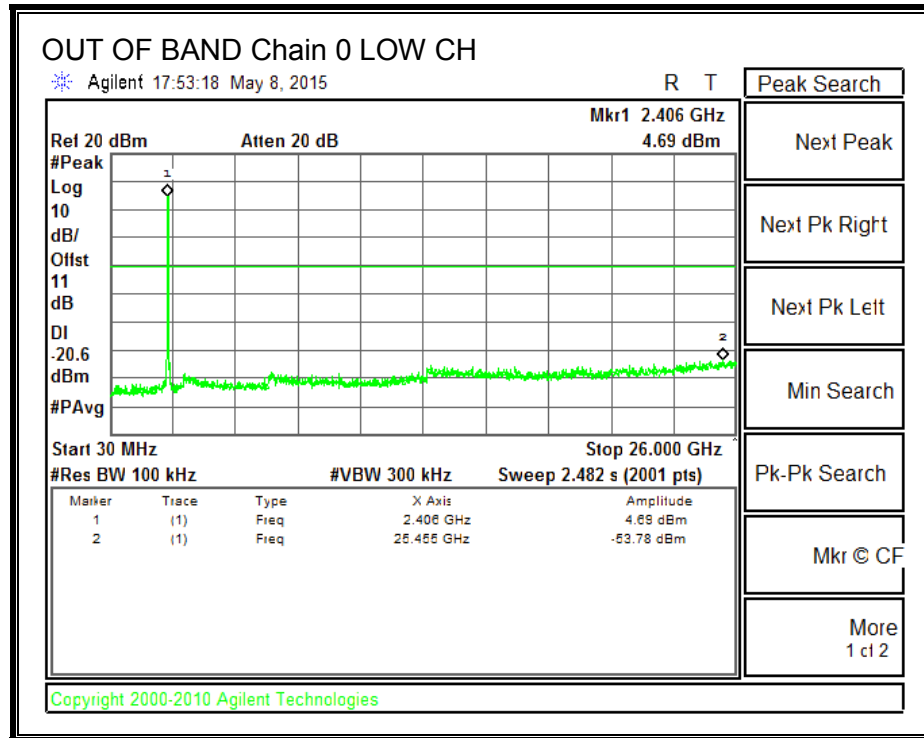
LOW CHANNEL BANDEDGE, Chain 0

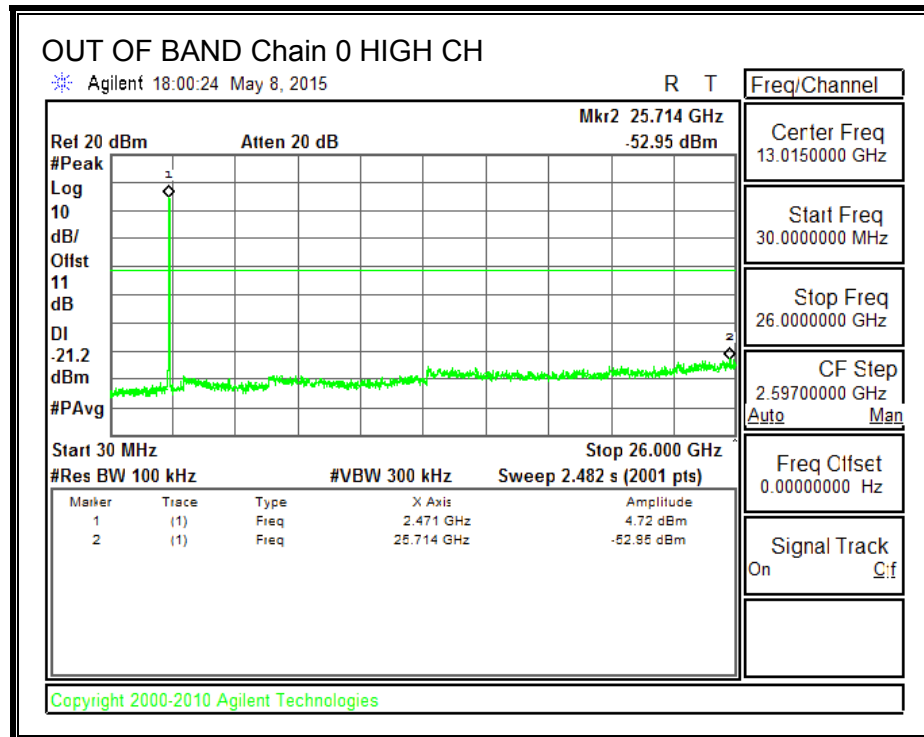


HIGH CHANNEL BANDEDGE, Chain 0

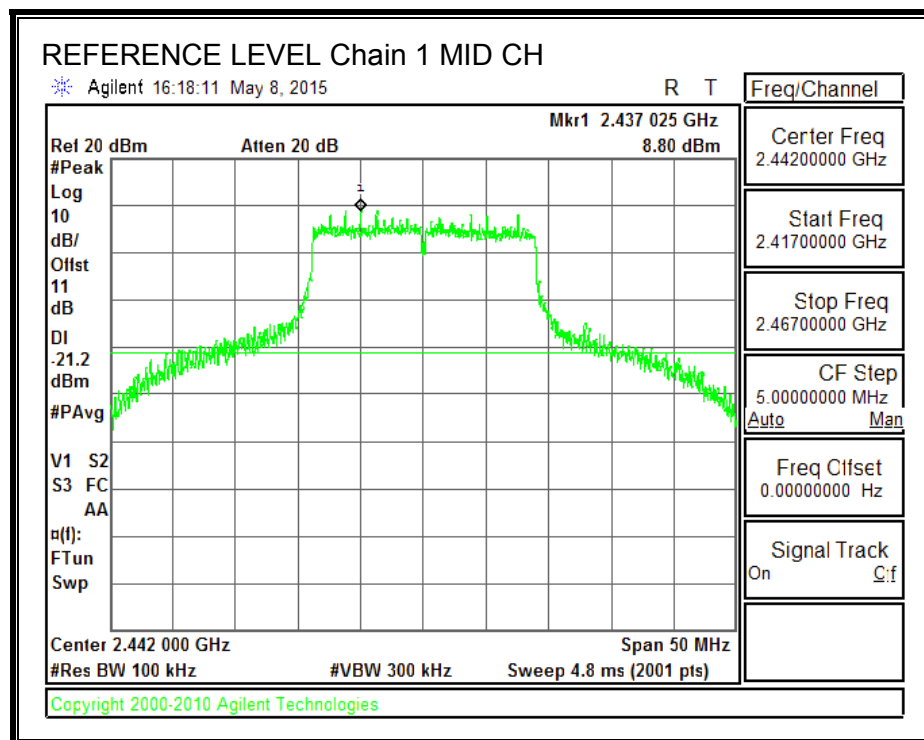


OUT-OF-BAND EMISSIONS, Chain 0

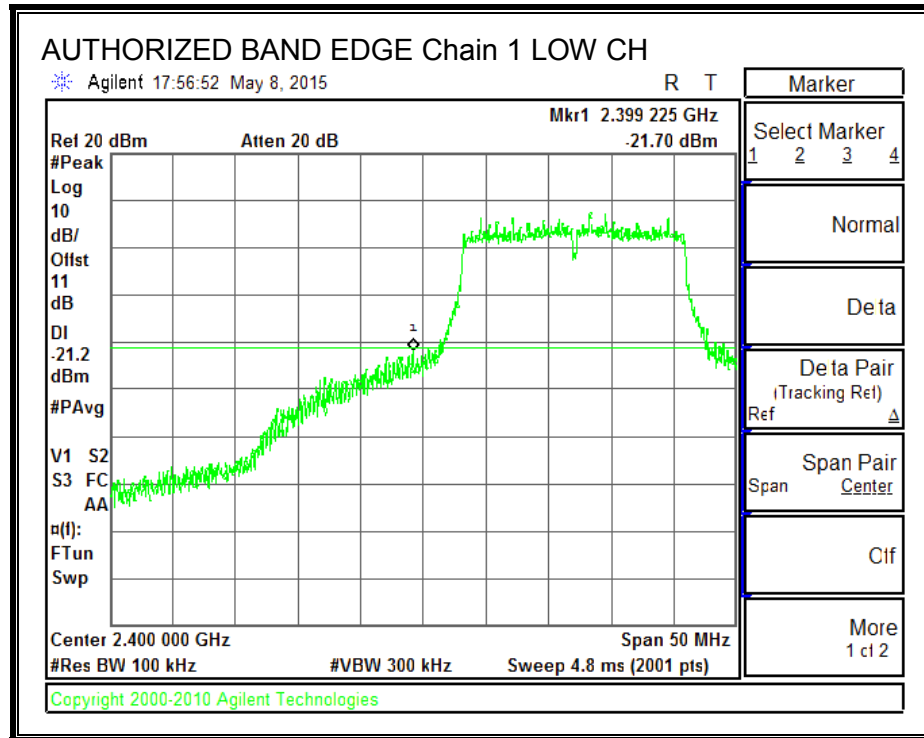




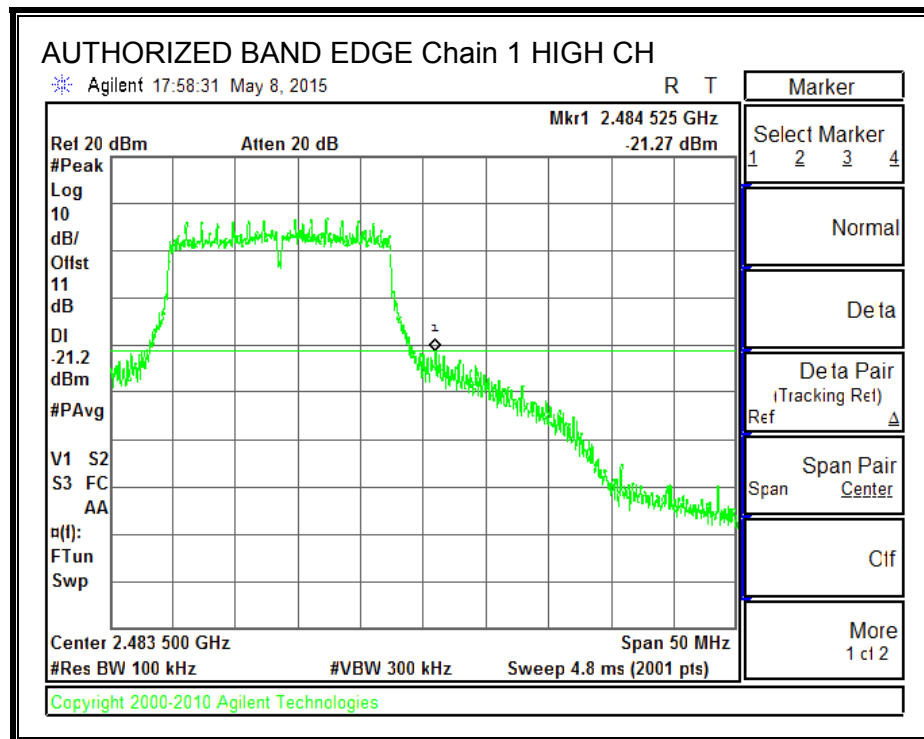
IN-BAND REFERENCE LEVEL, Chain 1



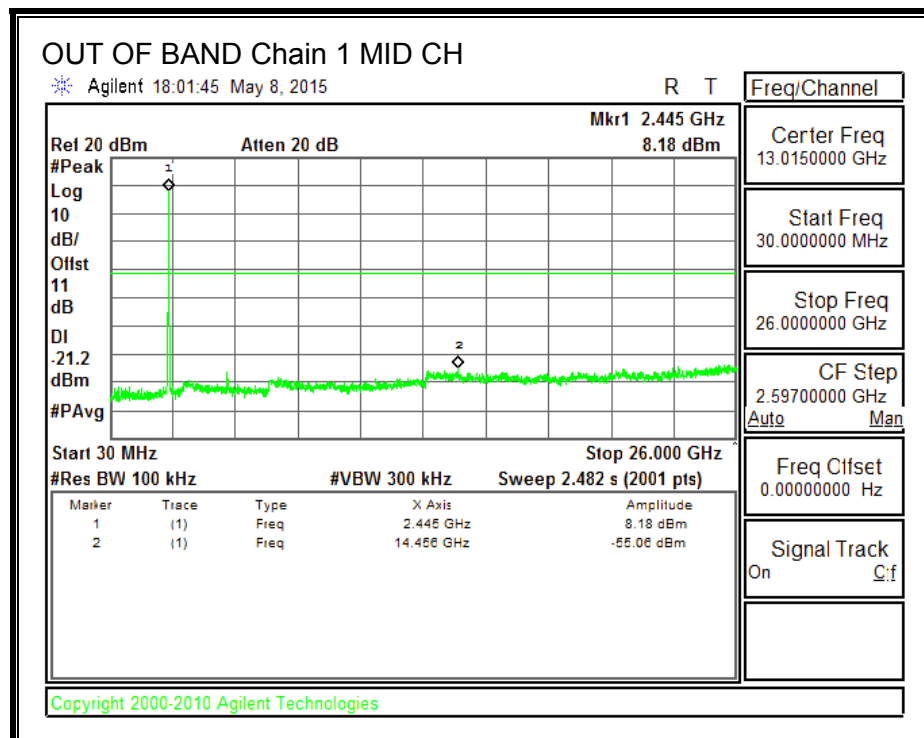
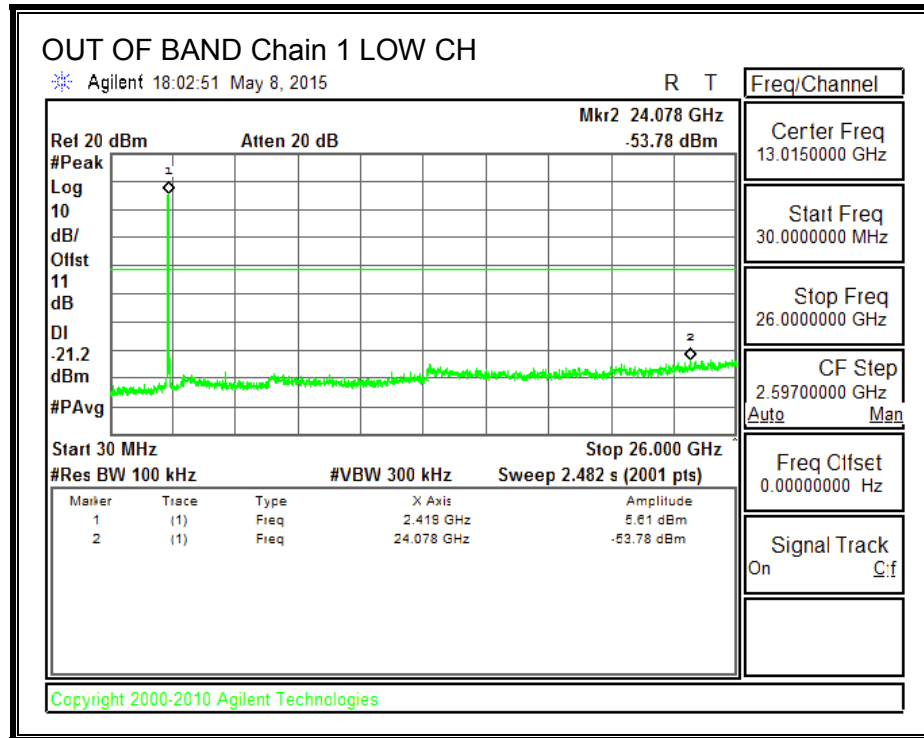
LOW CHANNEL BANDEDGE, Chain 1

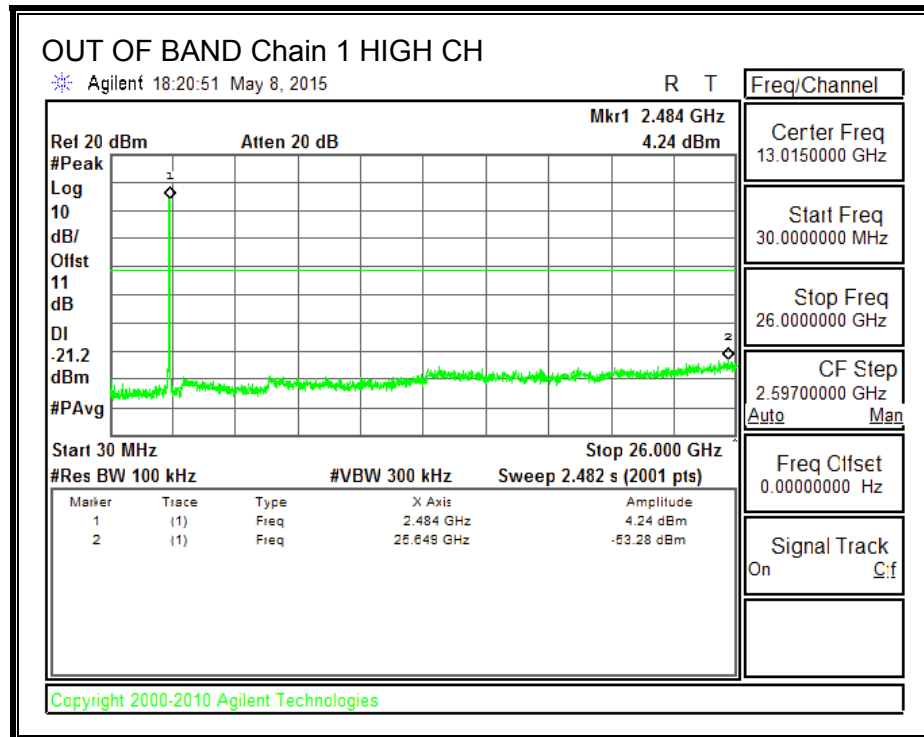


HIGH CHANNEL BANDEDGE, Chain 1

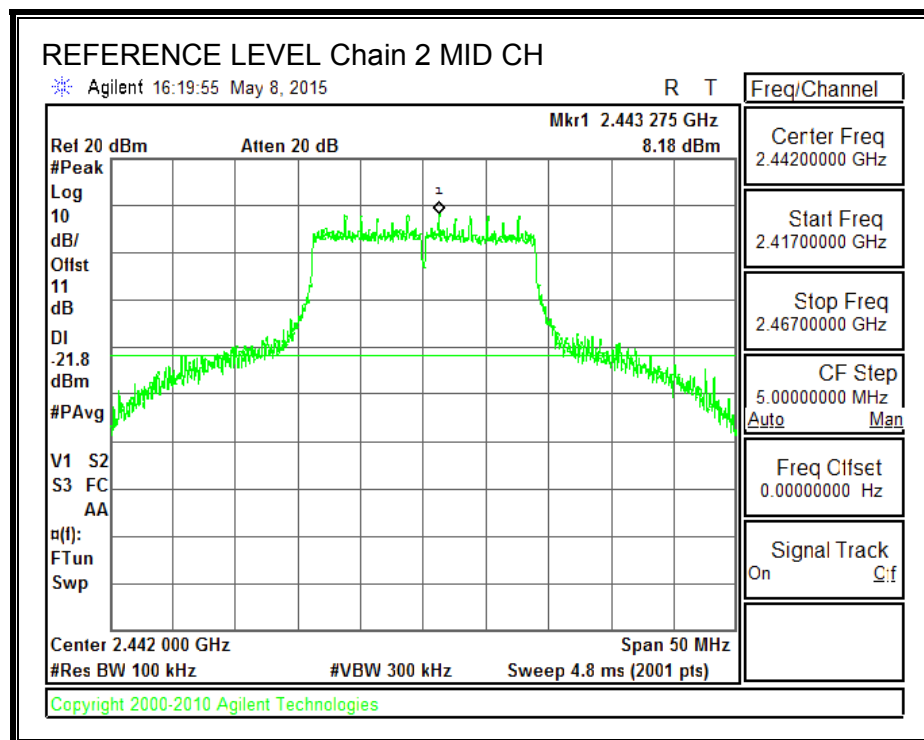


OUT-OF-BAND EMISSIONS, Chain 1

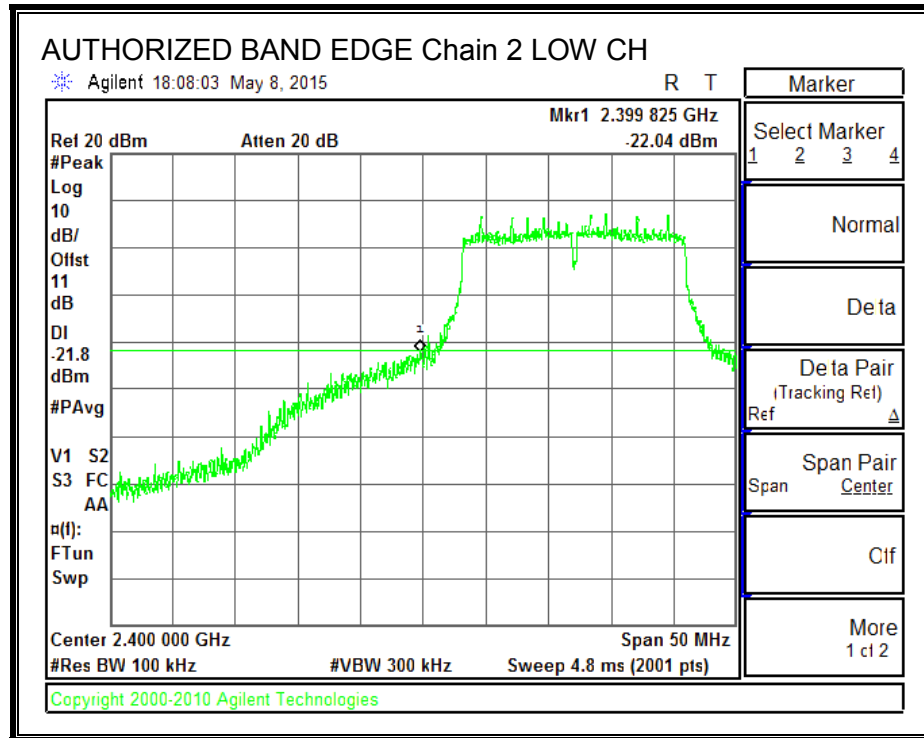




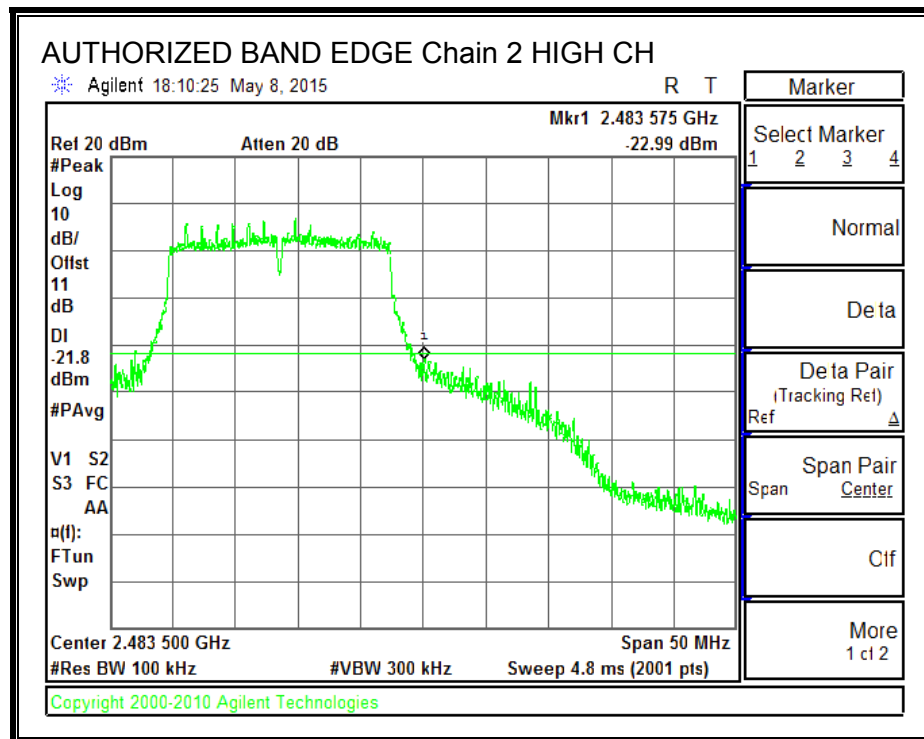
IN-BAND REFERENCE LEVEL, Chain 2



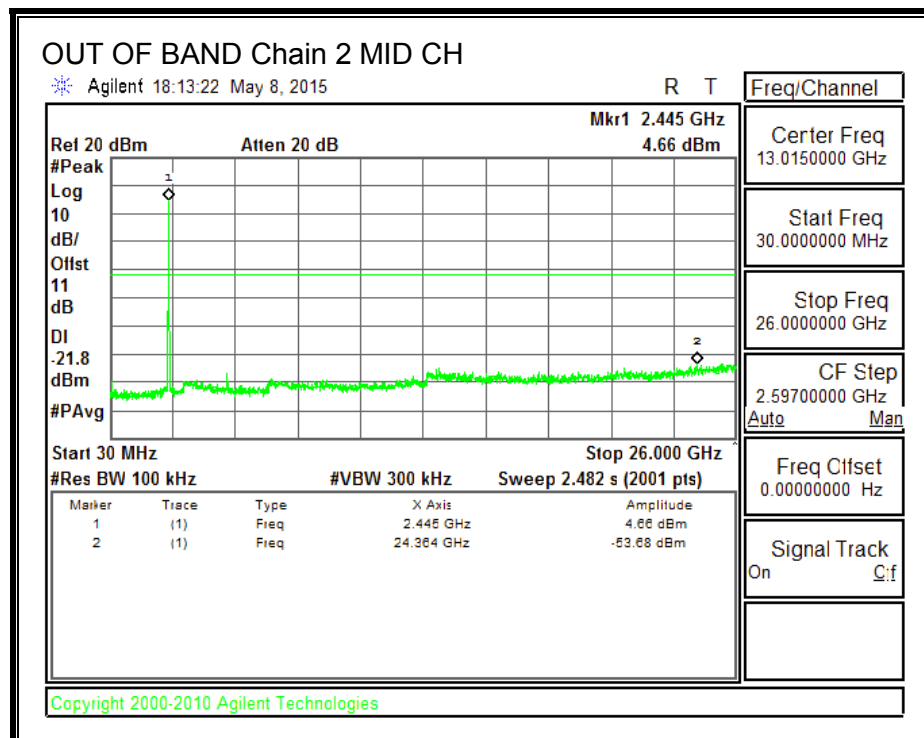
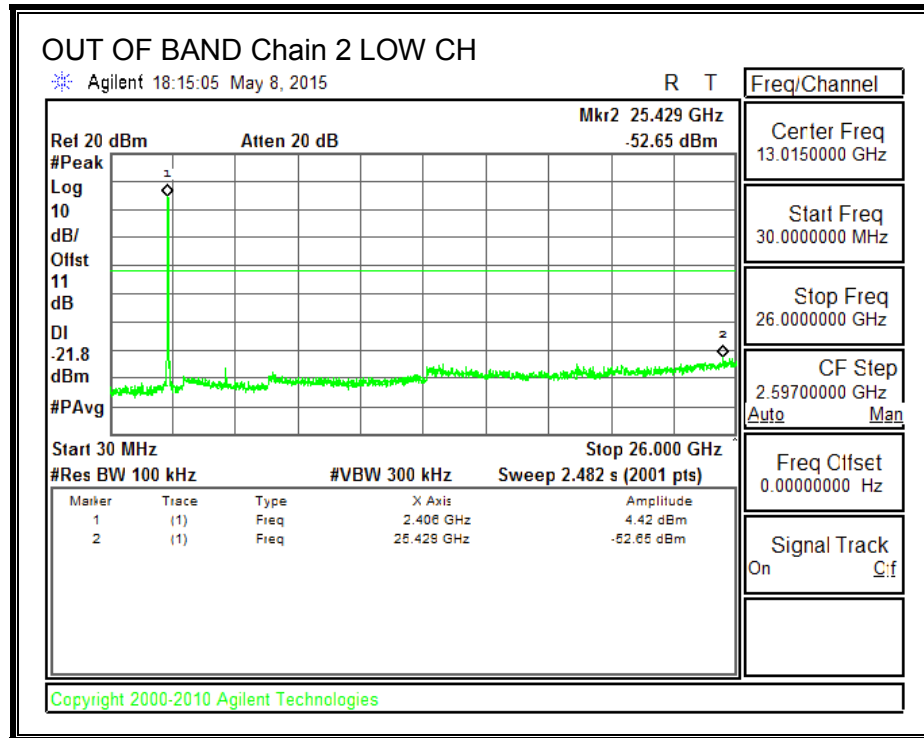
LOW CHANNEL BANDEDGE, Chain 2

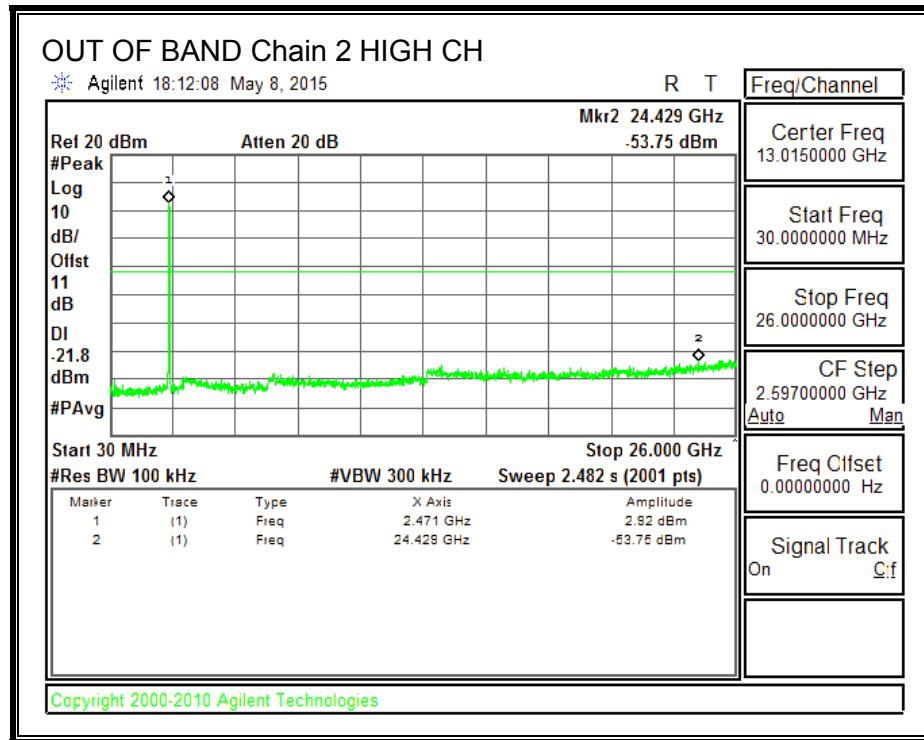


HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2





8.5. 802.11n HT20 TxBF 3TX MODE IN THE 2.4 GHz BAND

8.5.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
3.33	4.77	8.10

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	8.10	30	30	36	27.90
2	2417	8.10	30	30	36	27.90
7	2442	8.10	30	30	36	27.90
10	2457	8.10	30	30	36	27.90
11	2462	8.10	30	30	36	27.90
12	2467	8.10	30	30	36	27.90
13	2472	8.10	30	30	36	27.90

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	14.62	14.63	14.26	19.28	27.90	-8.62
2	2417	19.46	19.48	18.88	24.05	27.90	-3.85
7	2442	20.41	20.52	20.49	25.24	27.90	-2.66
10	2457	18.32	18.39	17.80	22.95	27.90	-4.95
11	2462	14.52	14.43	13.82	19.04	27.90	-8.86
12	2467	11.25	11.21	10.78	15.86	27.90	-12.04
13	2472	5.38	5.12	4.88	9.90	27.90	-18.00

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

8.6. 802.11n HT40 1TX MODE IN THE 2.4 GHz BAND

8.6.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

DIRECTIONAL ANTENNA GAIN

This is SISO mode, AG is the highest (worst-case) = 3.33 dBi

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
3	2422	3.33	30	30	36	30
4	2427	3.33	30	30	36	30
5	2432	3.33	30	30	36	30
6	2437	3.33	30	30	36	30
7	2442	3.33	30	30	36	30
8	2447	3.33	30	30	36	30
9	2452	3.33	30	30	36	30
10	2457	3.33	30	30	36	30
11	2462	3.33	30	30	36	30

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
3	2422	16.03	16.03	30	-13.97
4	2427	16.65	16.65	30	-13.35
5	2432	17.14	17.14	30	-12.86
6	2437	18.16	18.16	30	-11.84
7	2442	17.72	17.72	30	-12.28
8	2447	15.36	15.36	30	-14.64
9	2452	14.77	14.77	30	-15.23
10	2457	13.92	13.92	30	-16.08
11	2462	13.35	13.35	30	-16.65

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

8.7. 802.11n HT40 CDD 2TX MODE IN THE 2.4 GHz BAND

8.7.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 3.33 dBi.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
3	2422	3.33	30.00	30	36	30.00
4	2427	3.33	30.00	30	36	30.00
6	2437	3.33	30.00	30	36	30.00
8	2447	3.33	30.00	30	36	30.00
9	2452	3.33	30.00	30	36	30.00
10	2457	3.33	30.00	30	36	30.00
11	2462	3.33	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
3	2422	14.75	14.67	17.72	30.00	-12.28
4	2427	14.81	14.74	17.79	30.00	-12.21
6	2437	19.75	19.78	22.78	30.00	-7.22
8	2447	13.70	13.66	16.69	30.00	-13.31
9	2452	13.03	12.89	15.97	30.00	-14.03
10	2457	12.12	12.03	15.09	30.00	-14.91
11	2462	12.07	11.98	15.04	30.00	-14.96

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

8.8. 802.11n HT40 CDD 3TX MODE IN THE 2.4 GHz BAND

8.8.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247

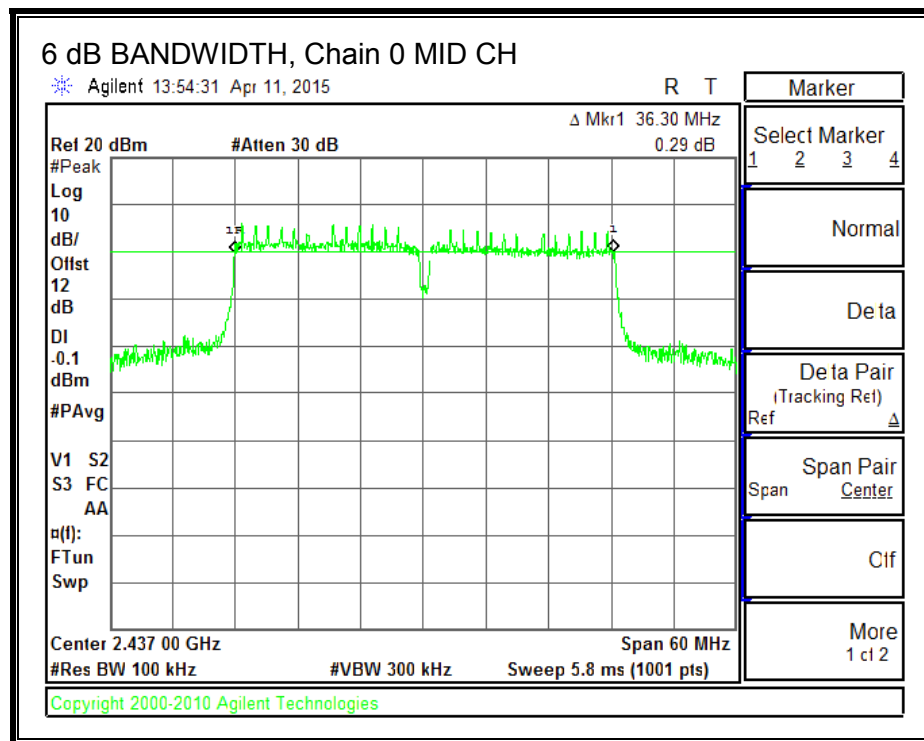
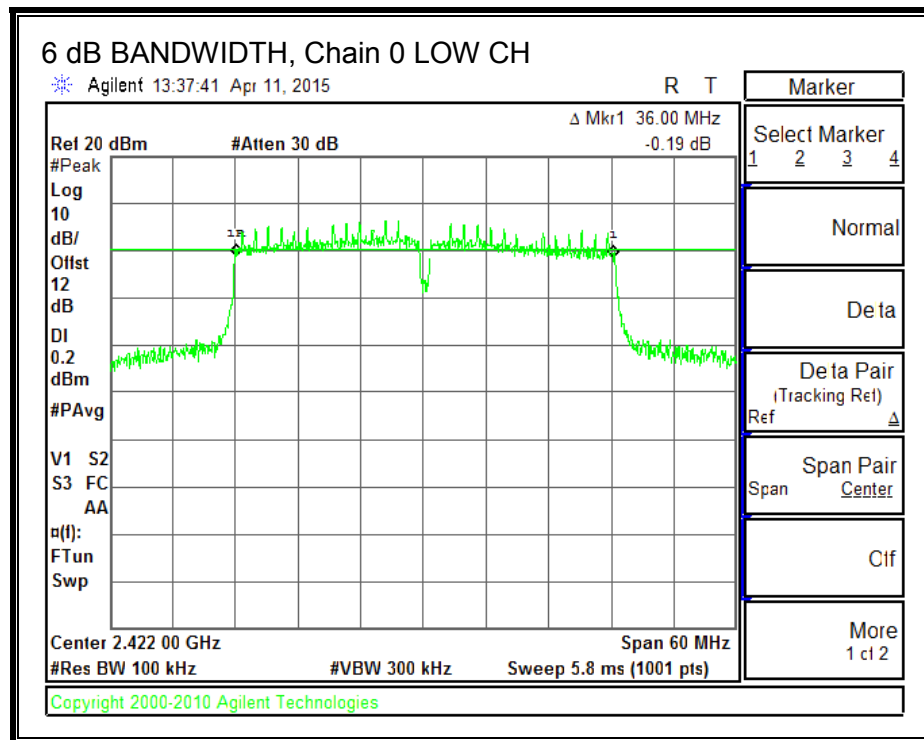
IC RSS-247 Clause 5.2 (1)

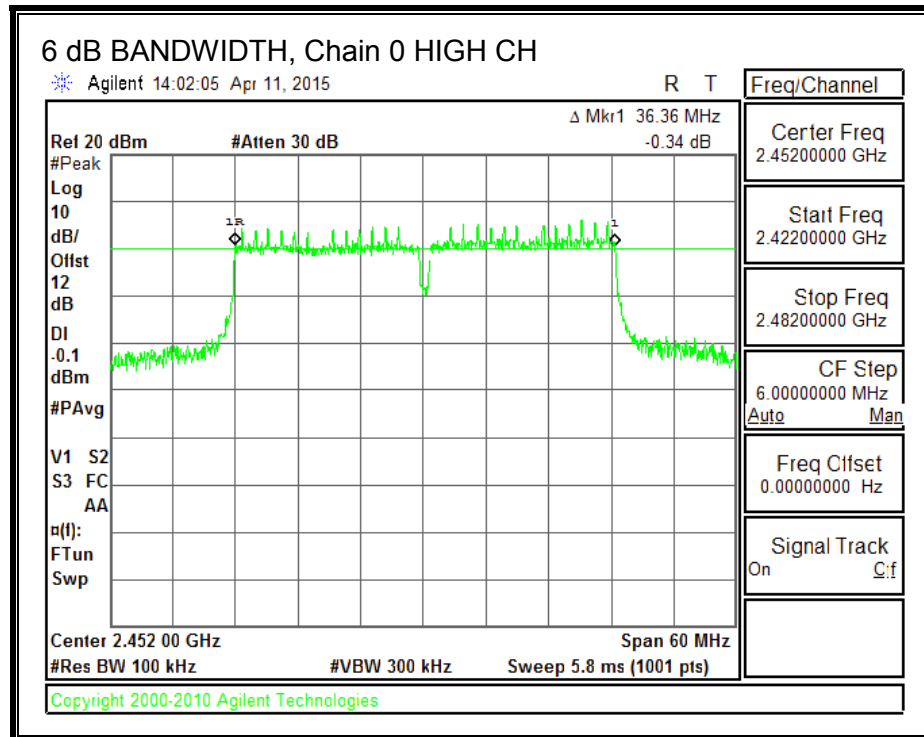
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

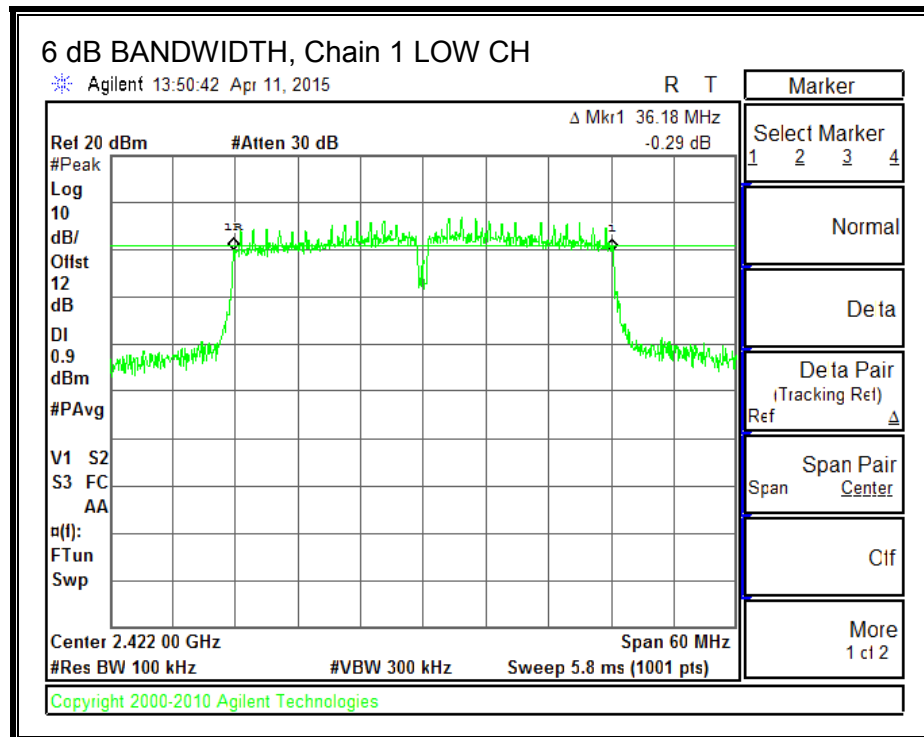
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	2422	36.00	36.18	35.82	0.5
Mid	2437	36.30	36.30	36.24	0.5
High	2452	36.36	36.48	36.42	0.5

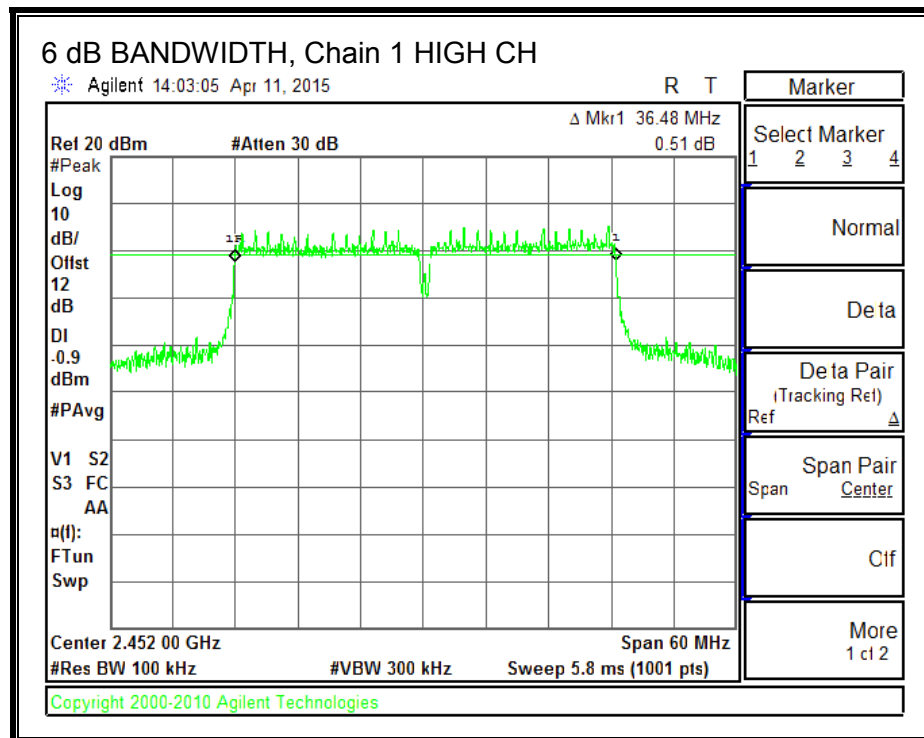
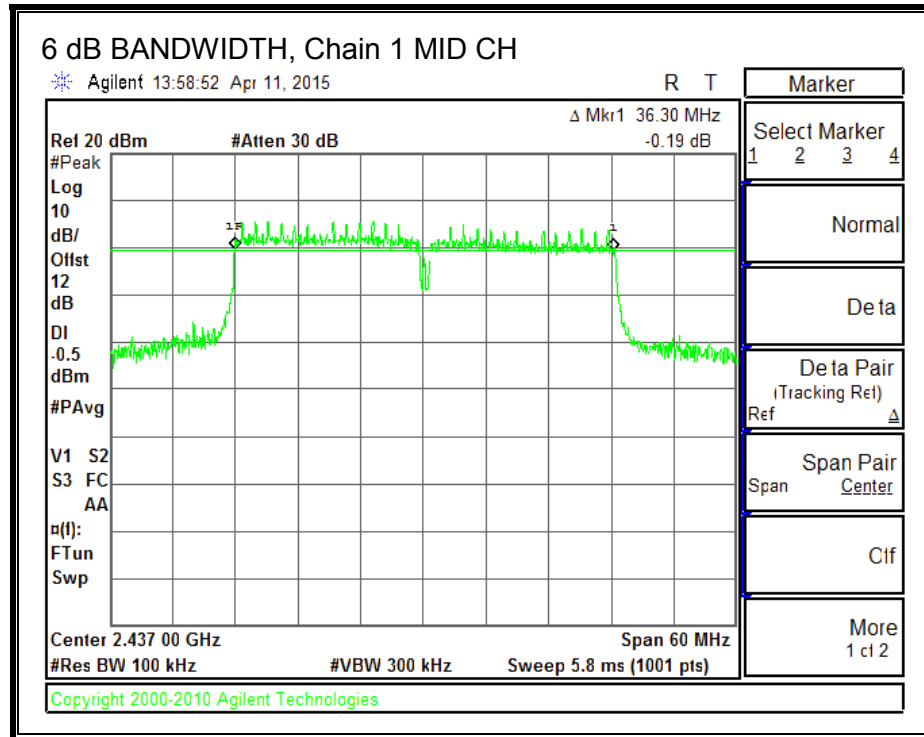
6 dB BANDWIDTH, Chain 0



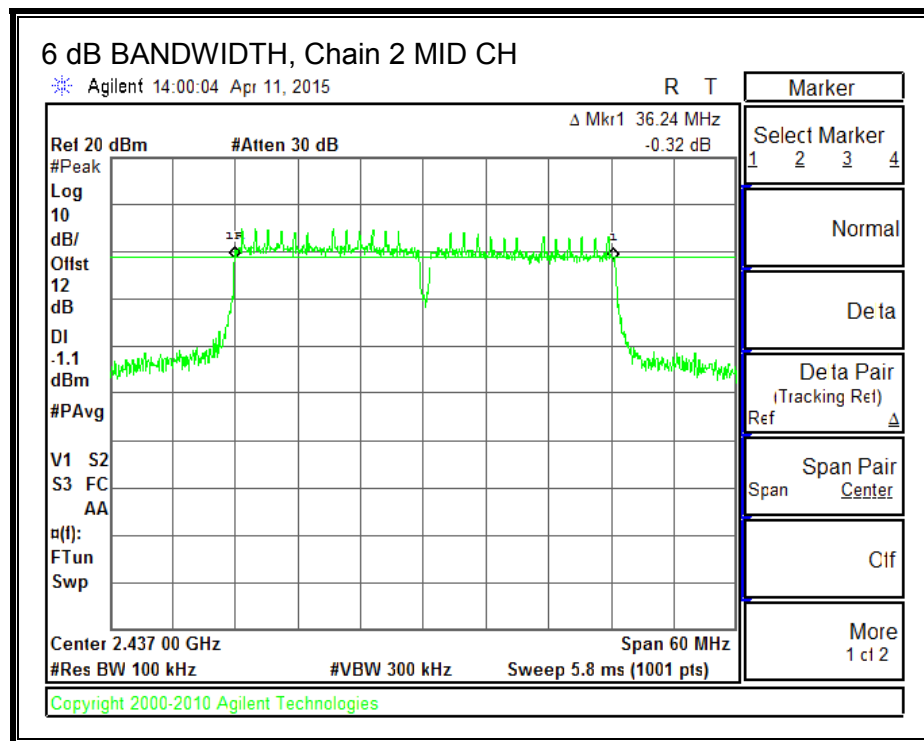
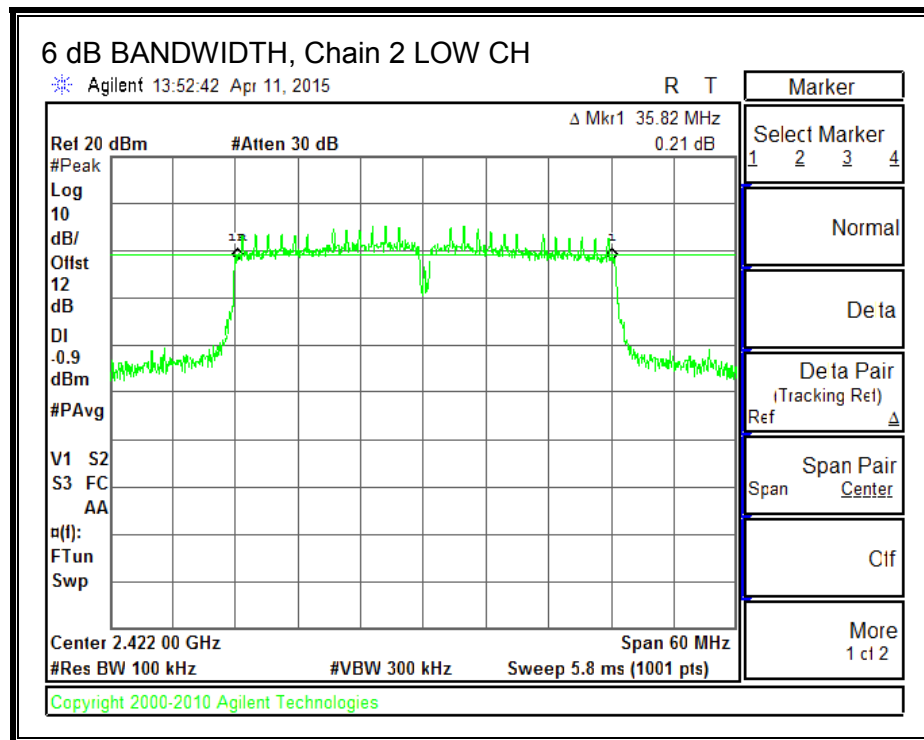


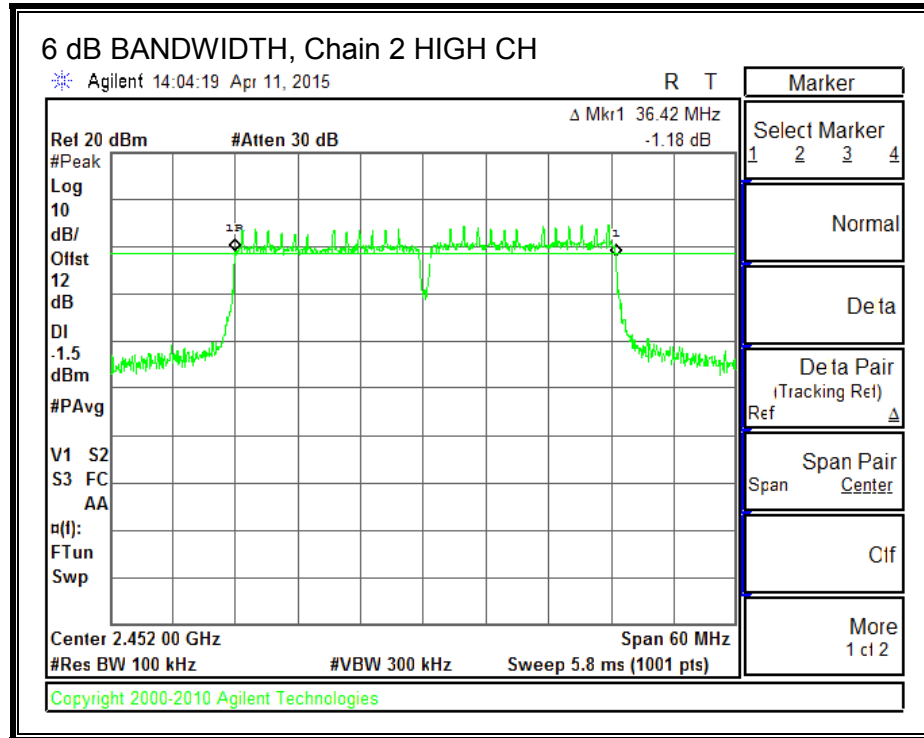
6 dB BANDWIDTH, Chain 1





6 dB BANDWIDTH, Chain 2





8.8.2. 99% BANDWIDTH

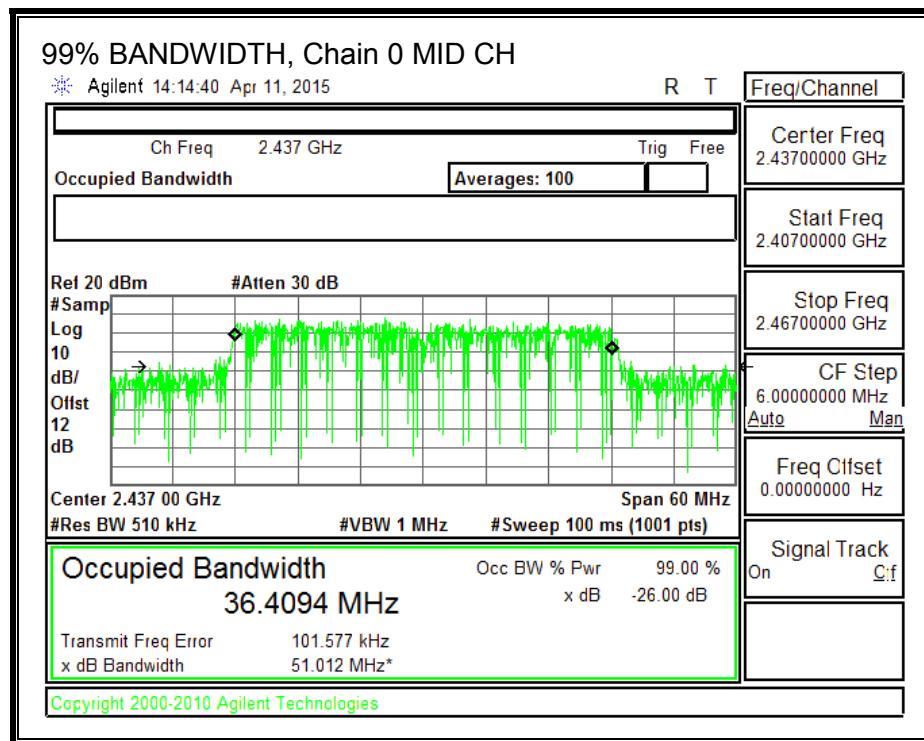
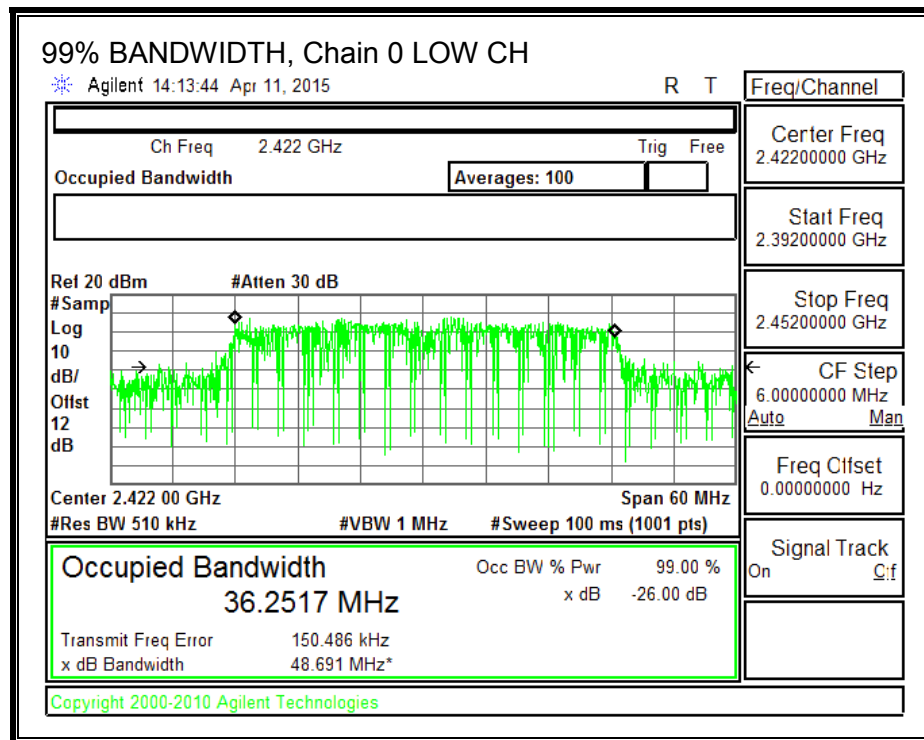
LIMITS

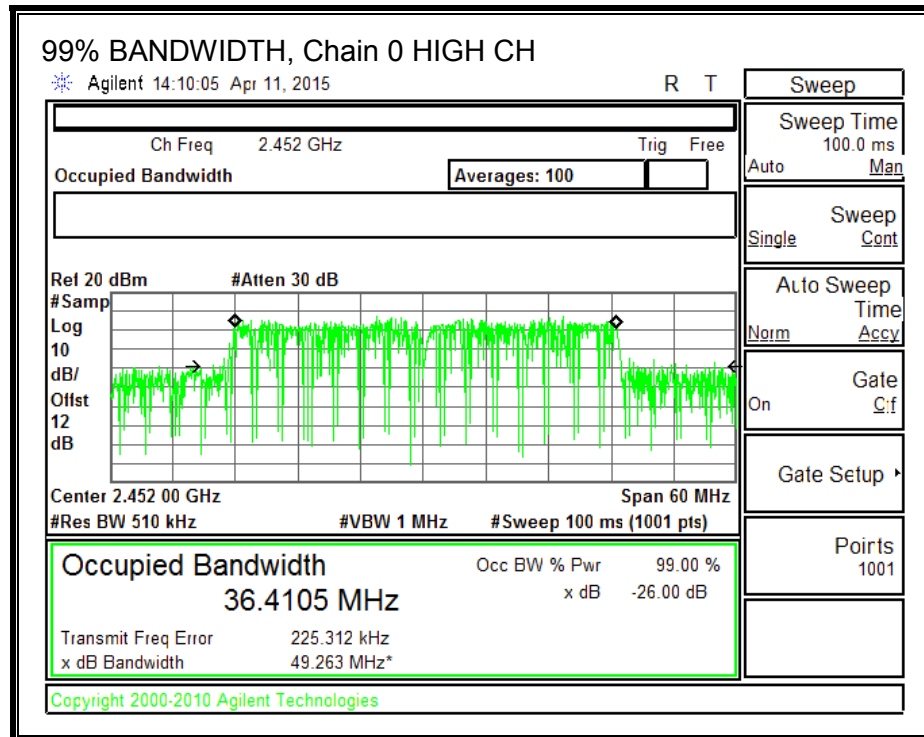
None; for reporting purposes only.

RESULTS

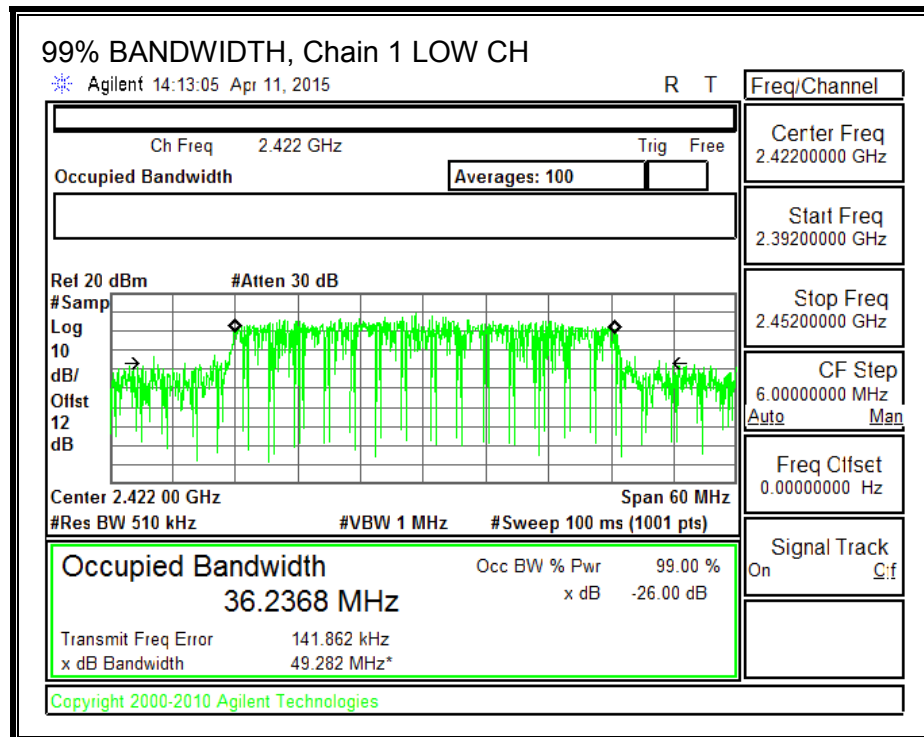
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	2422	36.2517	36.2368	36.2277
Mid	2437	36.4094	36.3903	36.3674
High	2452	36.4105	36.4020	36.3584

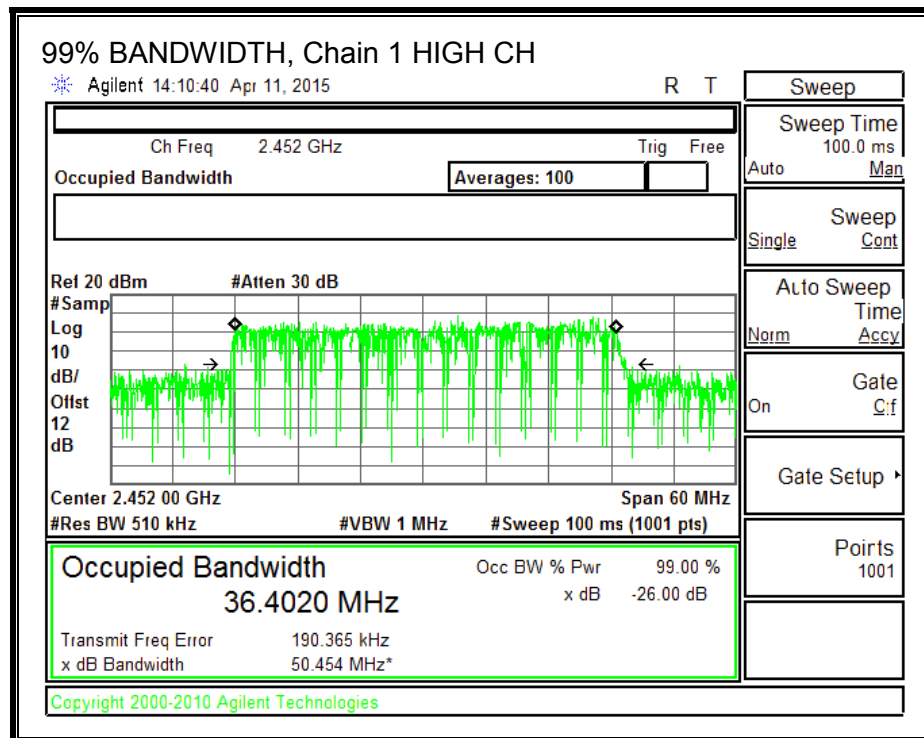
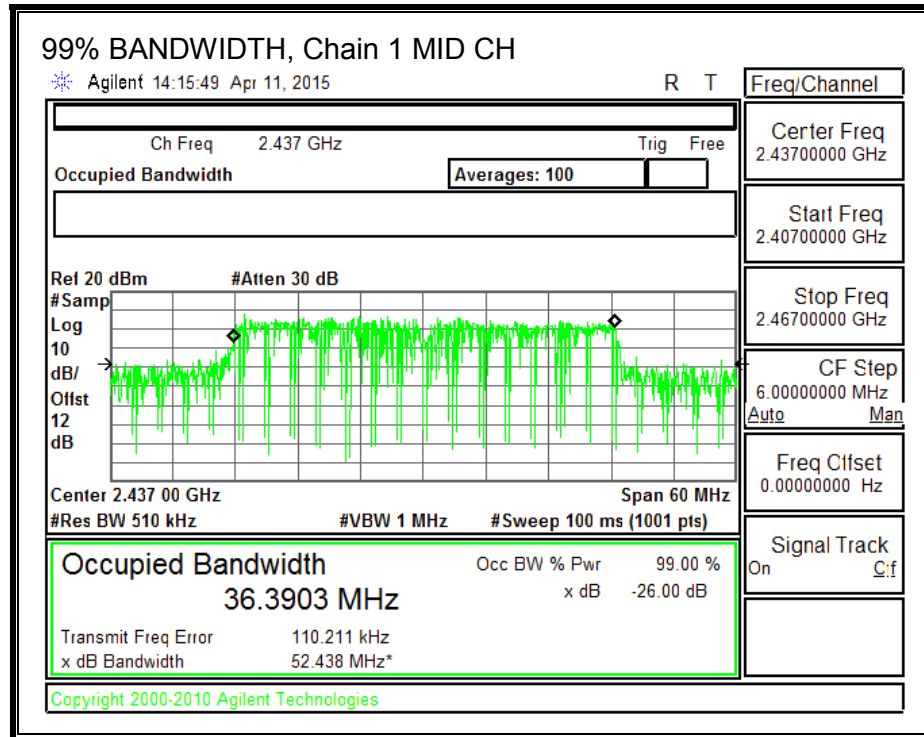
99% BANDWIDTH, Chain 0

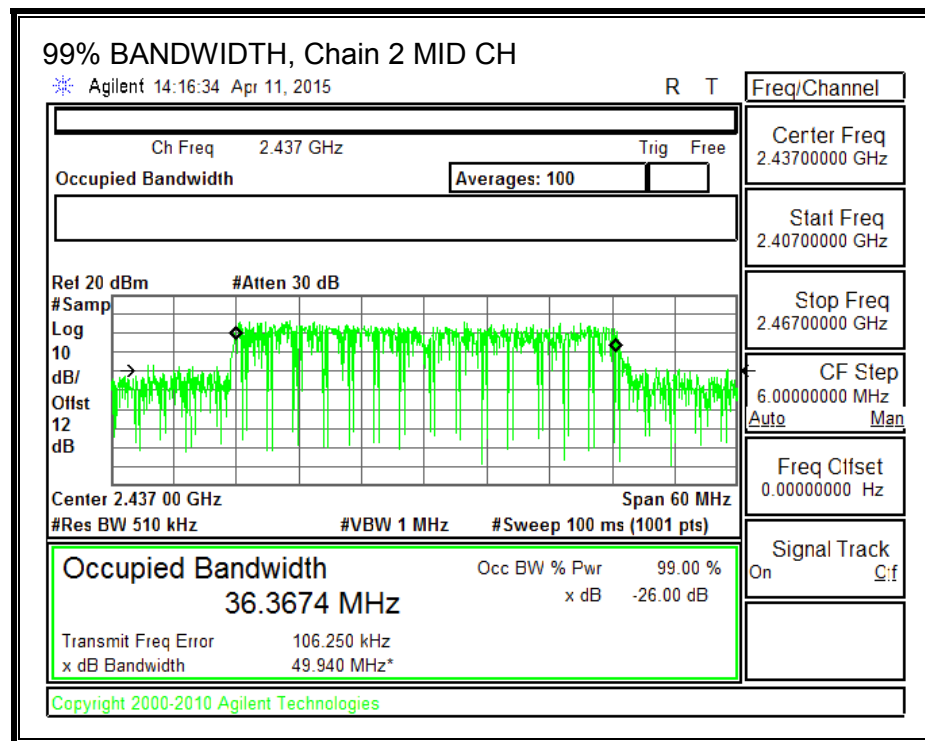
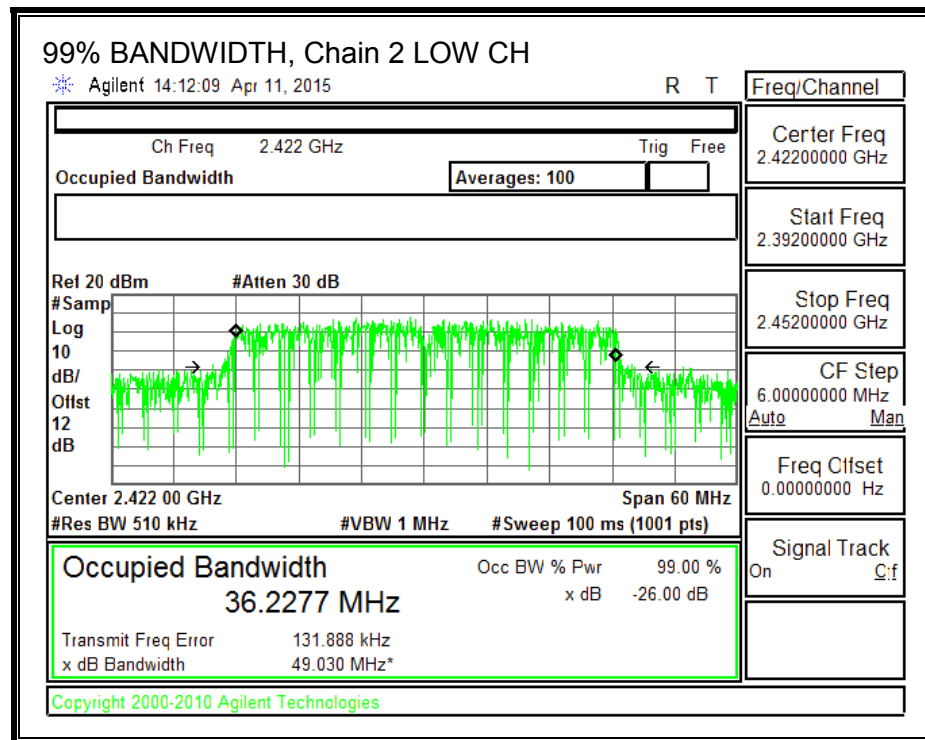


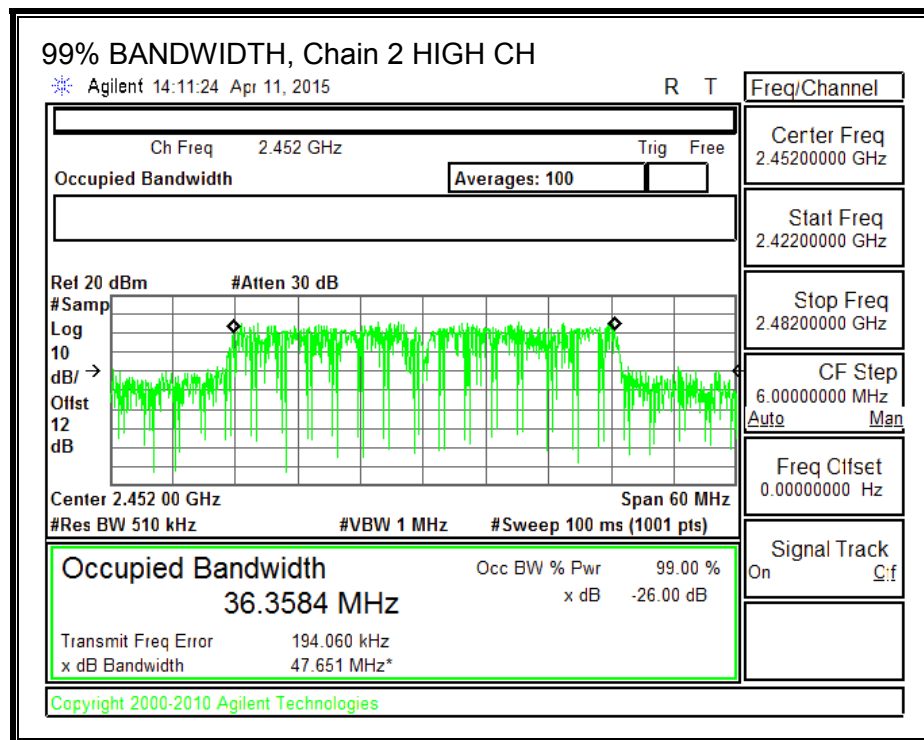


99% BANDWIDTH, Chain 1









8.8.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 3.33 dBi.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
3	2422	3.33	30	30	36	30.00
4	2427	3.33	30	30	36	30.00
5	2432	3.33	30	30	36	30.00
6	2437	3.33	30	30	36	30.00
7	2442	3.33	30	30	36	30.00
8	2447	3.33	30	30	36	30.00
9	2452	3.33	30	30	36	30.00
10	2457	3.33	30	30	36	30.00
11	2462	3.33	30	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
3	2422	13.22	13.13	12.71	17.80	30.00	-12.20
4	2427	13.18	13.00	12.63	17.71	30.00	-12.29
5	2432	15.21	15.25	14.81	19.87	30.00	-10.13
6	2437	15.79	15.72	15.25	20.36	30.00	-9.64
7	2442	14.70	14.69	14.34	19.35	30.00	-10.65
8	2447	11.87	11.73	11.30	16.41	30.00	-13.59
9	2452	11.94	11.87	11.25	16.47	30.00	-13.53
10	2457	10.97	10.84	10.51	15.55	30.00	-14.45
11	2462	10.44	10.39	10.01	15.06	30.00	-14.94

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

8.8.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

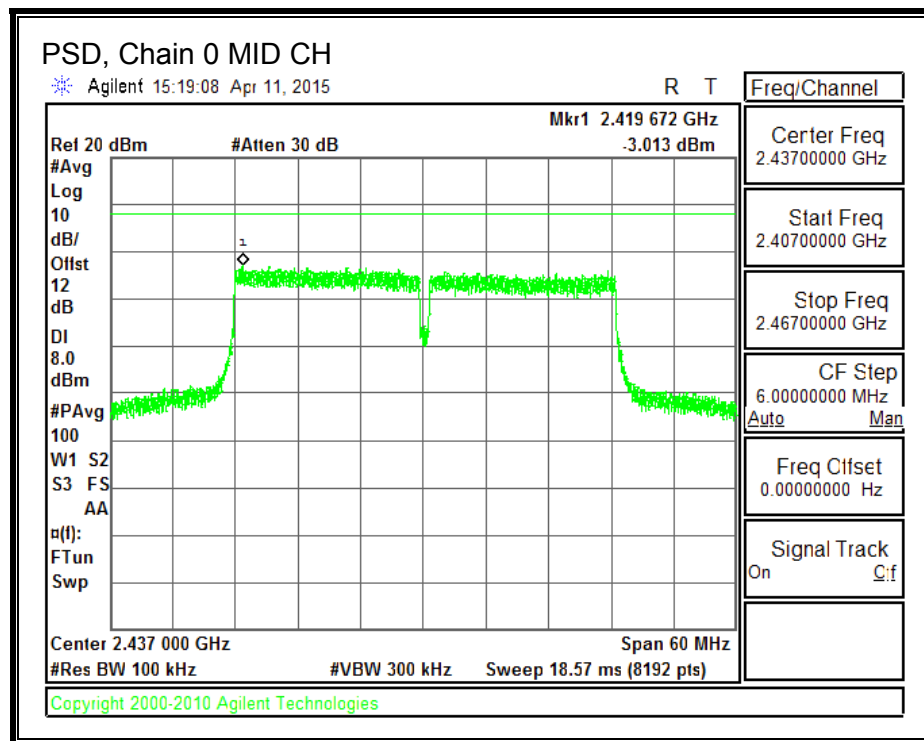
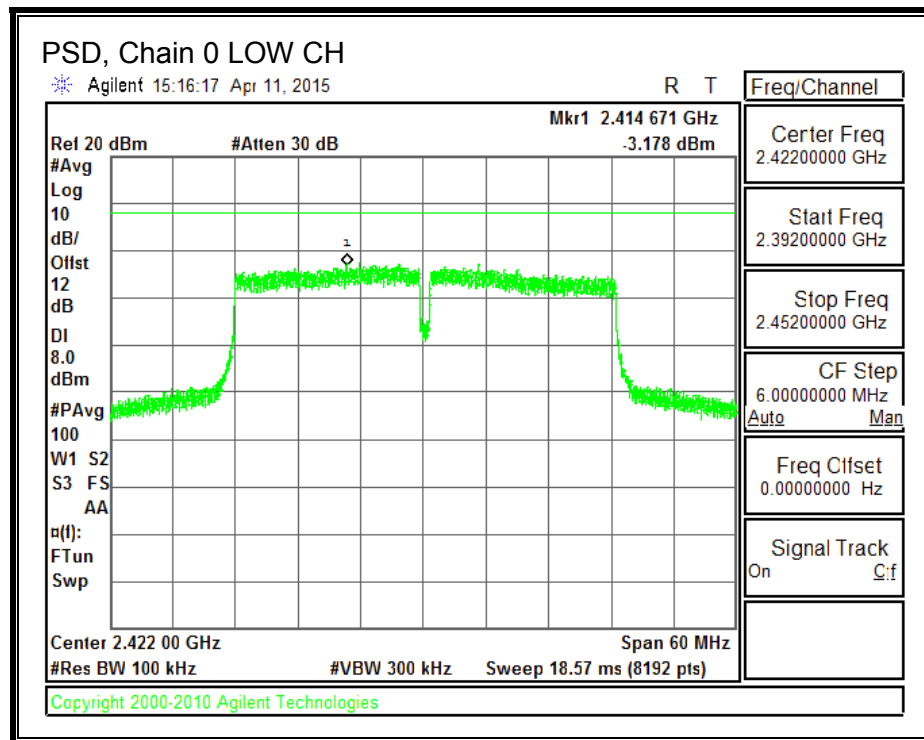
IC RSS-247 Clause 5.2 (2)

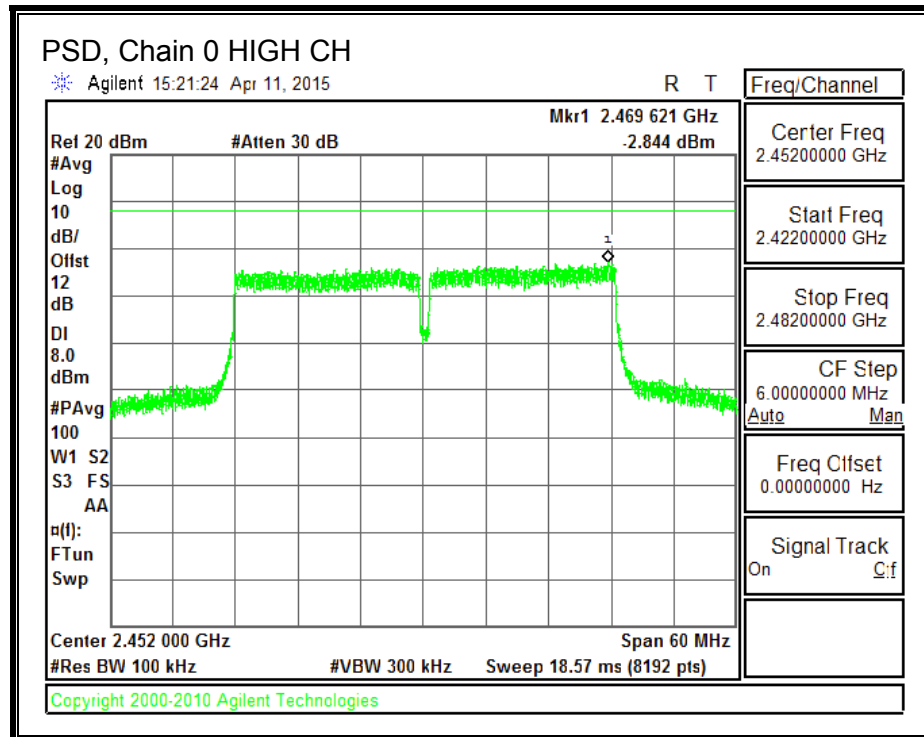
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

RESULTS

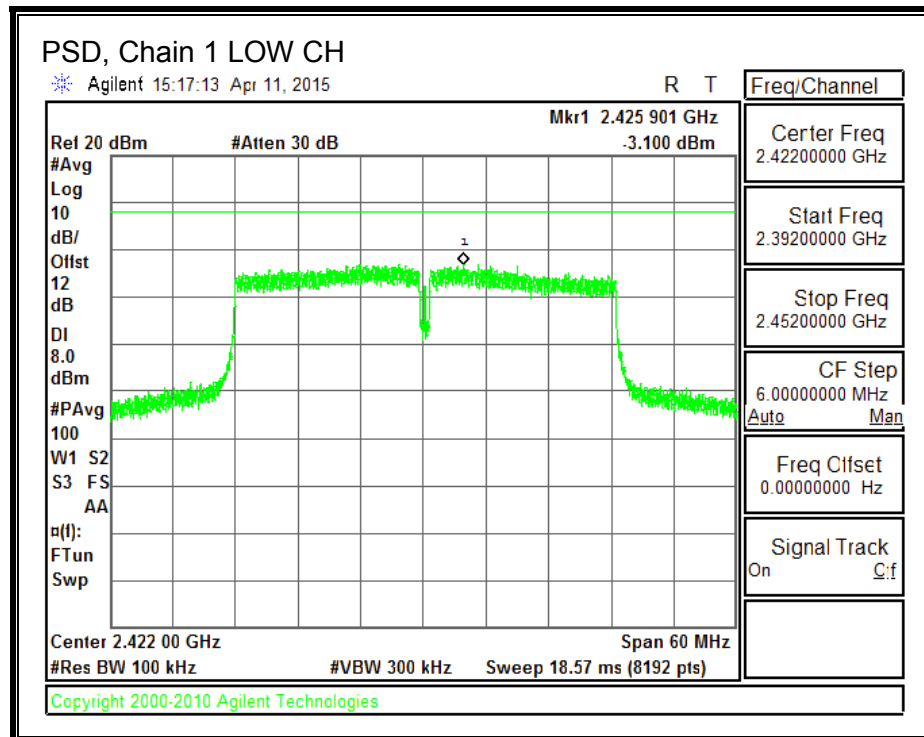
Duty Cycle CF (dB)		0.13	Included in Calculations of Corr'd PSD				
PSD Results							
Channel	Frequency	Chain 0 Meas	Chain 1 Meas	Chain 2 Meas	Total Corr'd PSD	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	2422	-3.178	-3.100	-3.437	1.67	8.0	-6.33
Mid	2437	-3.013	-3.209	-3.857	1.56	8.0	-6.44
High	2452	-2.844	-3.447	-4.356	1.40	8.0	-6.60

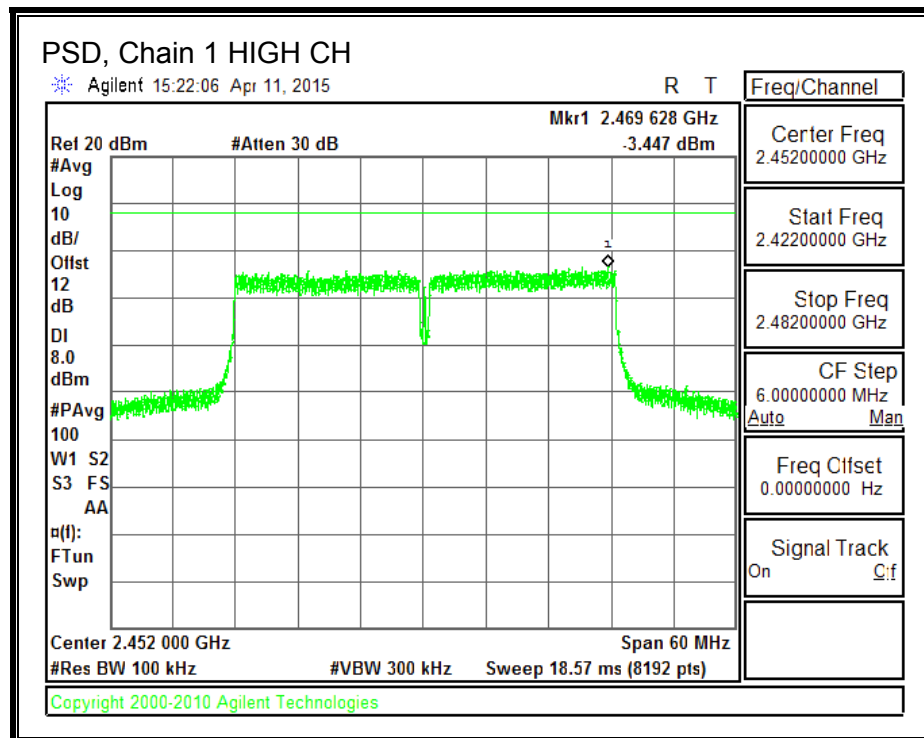
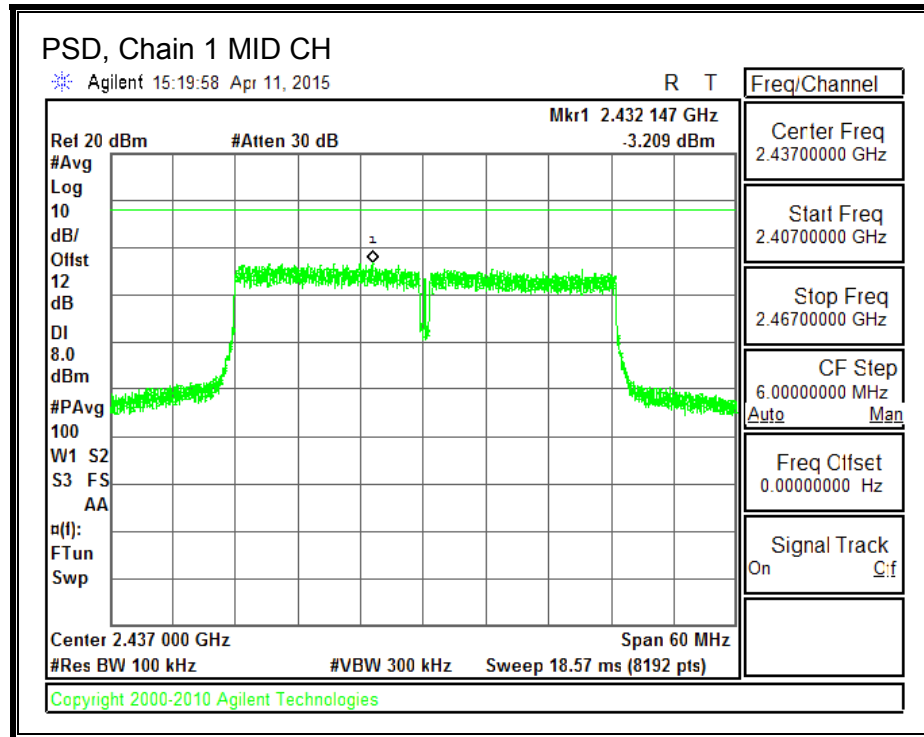
PSD, Chain 0



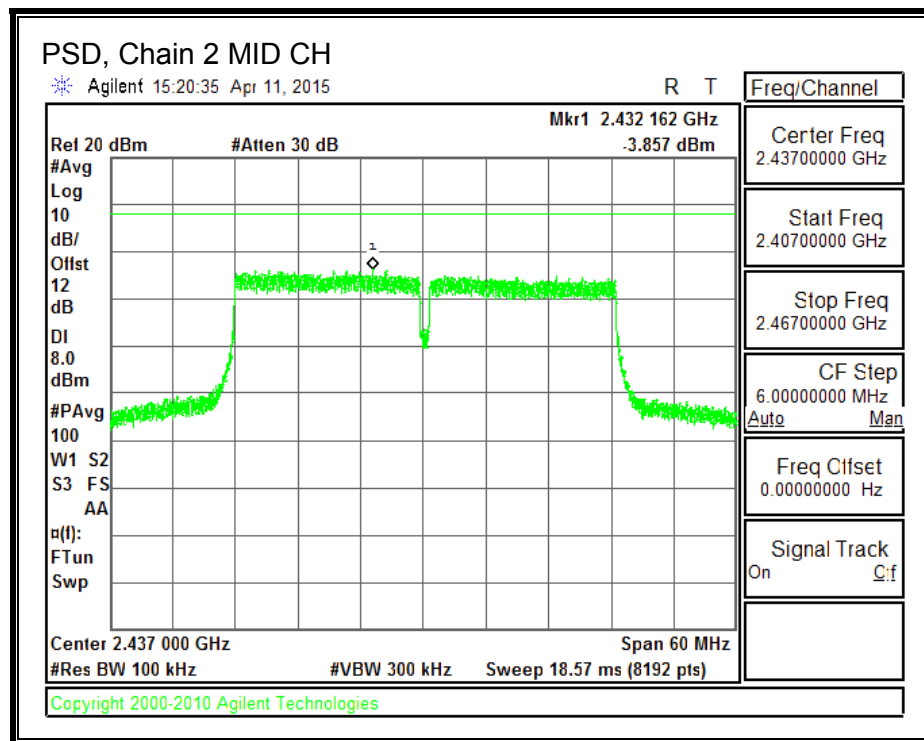
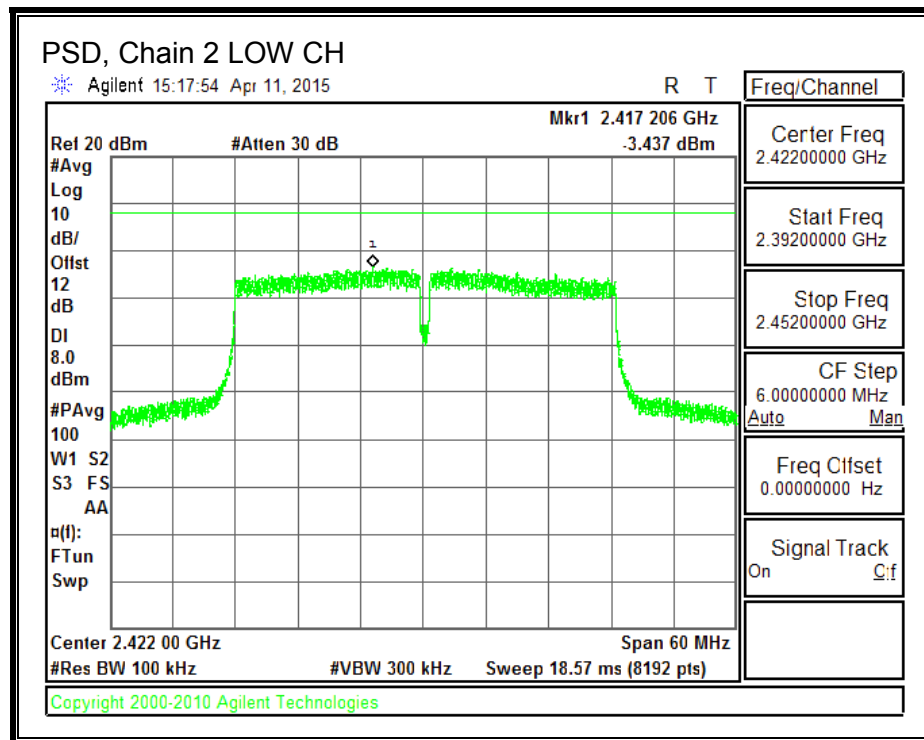


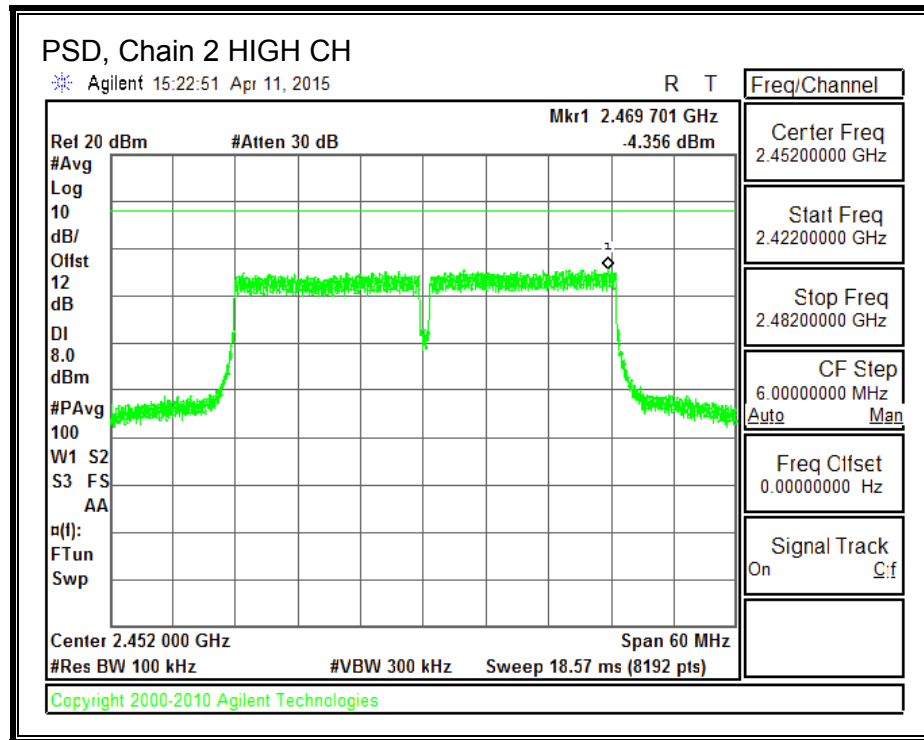
PSD, Chain 1





PSD, Chain 2





8.8.5. OUT-OF-BAND EMISSIONS

LIMITS

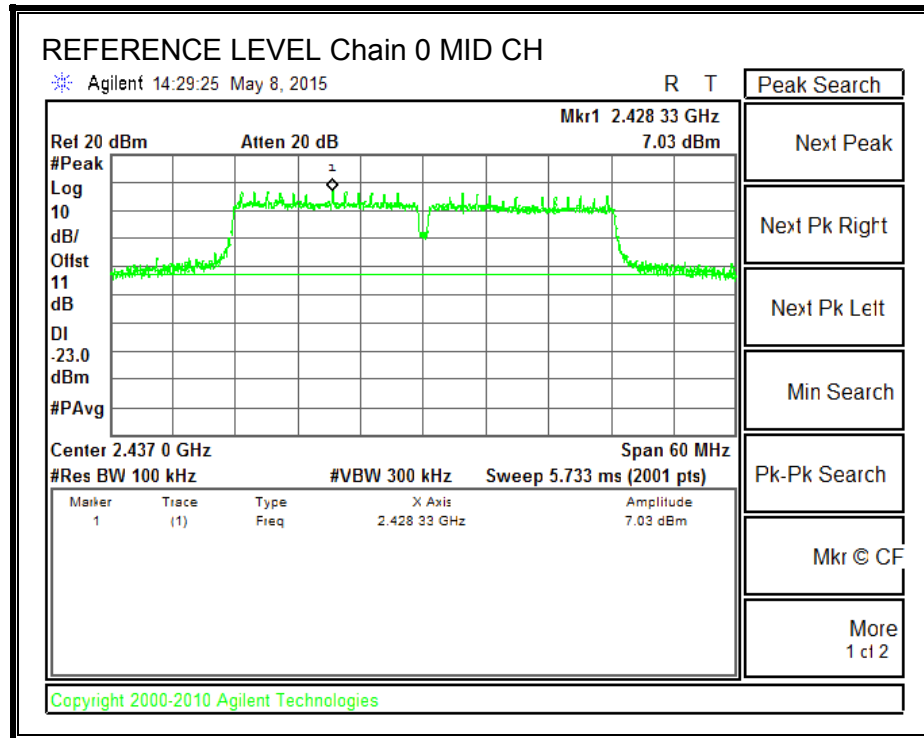
FCC §15.247

IC RSS-247 Clause 5.5

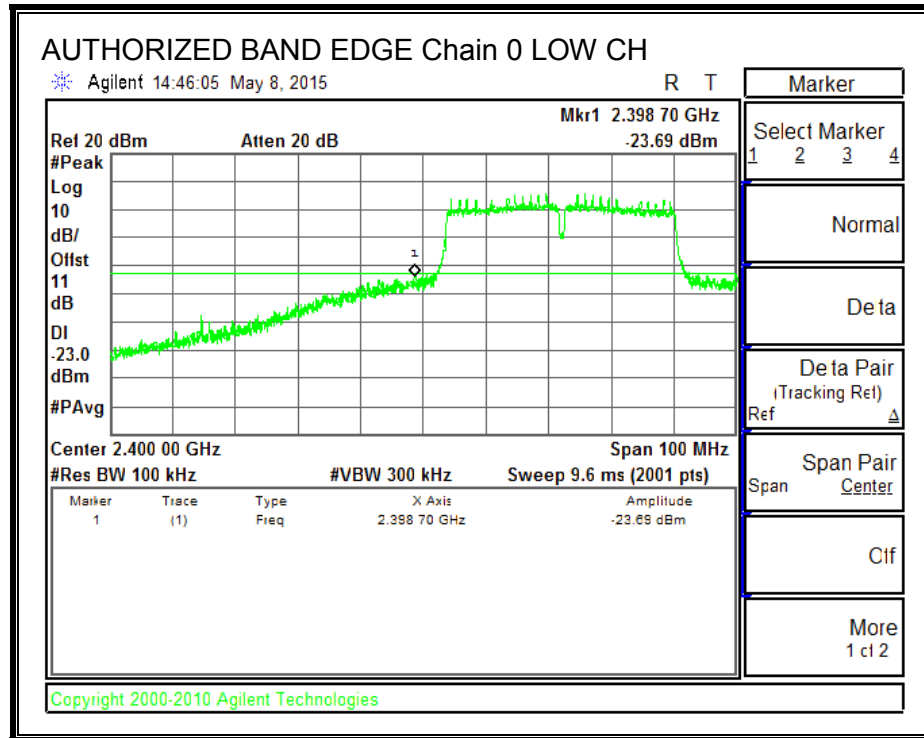
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

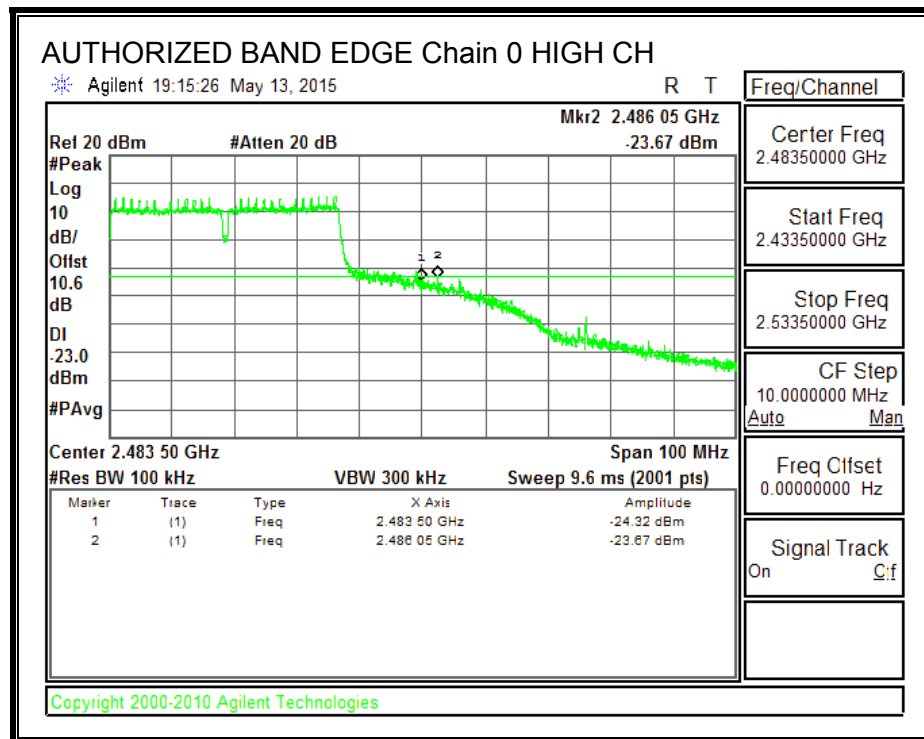
IN-BAND REFERENCE LEVEL, Chain 0



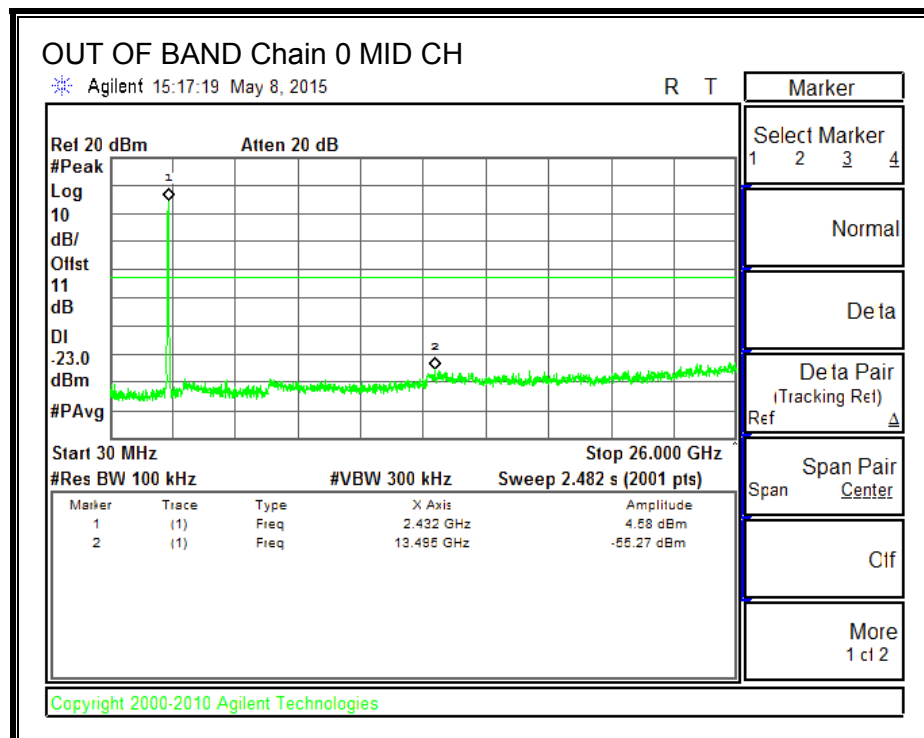
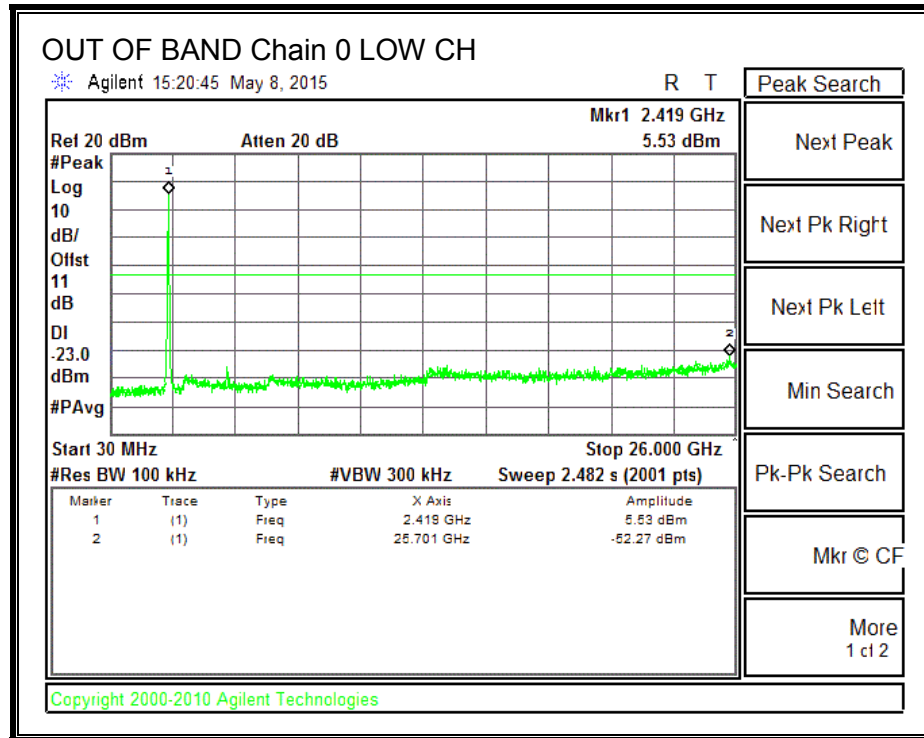
LOW CHANNEL BANDEDGE, Chain 0

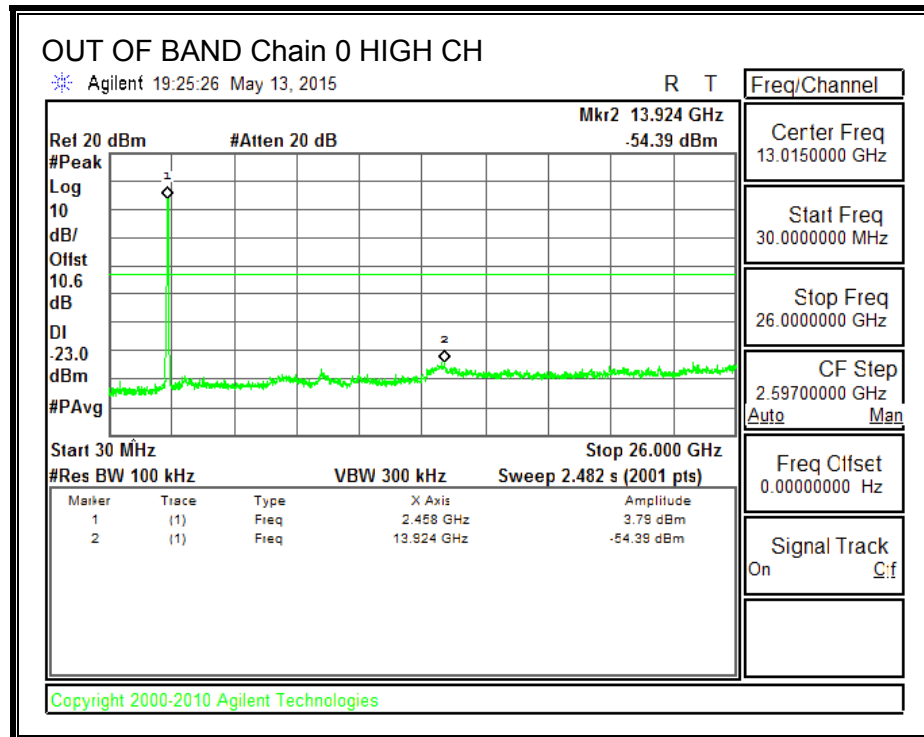


HIGH CHANNEL BANDEDGE, Chain 0

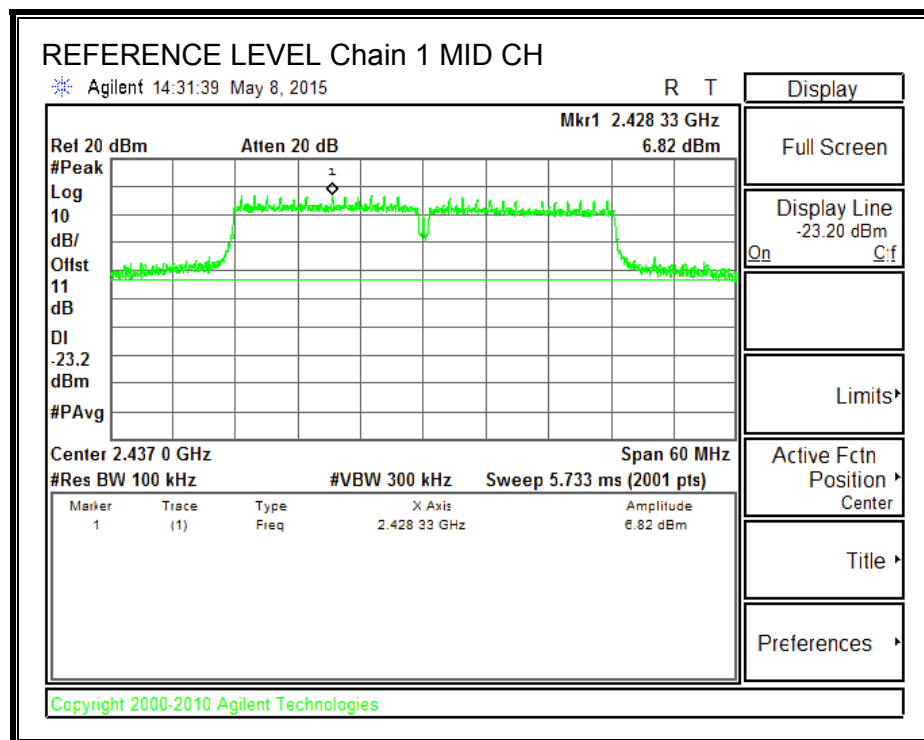


OUT-OF-BAND EMISSIONS, Chain 0

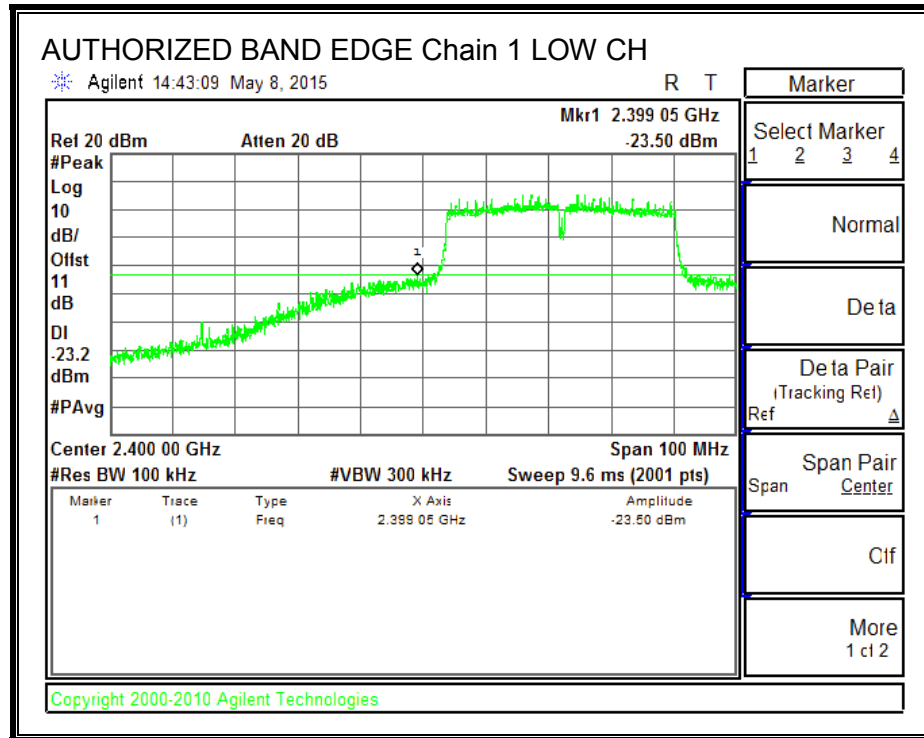




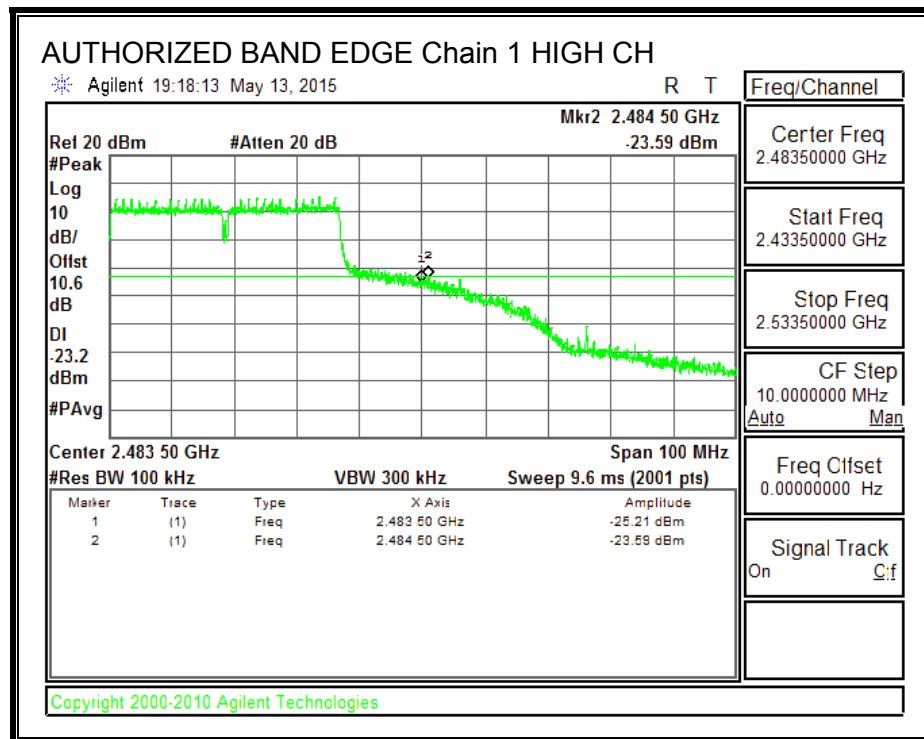
IN-BAND REFERENCE LEVEL, Chain 1



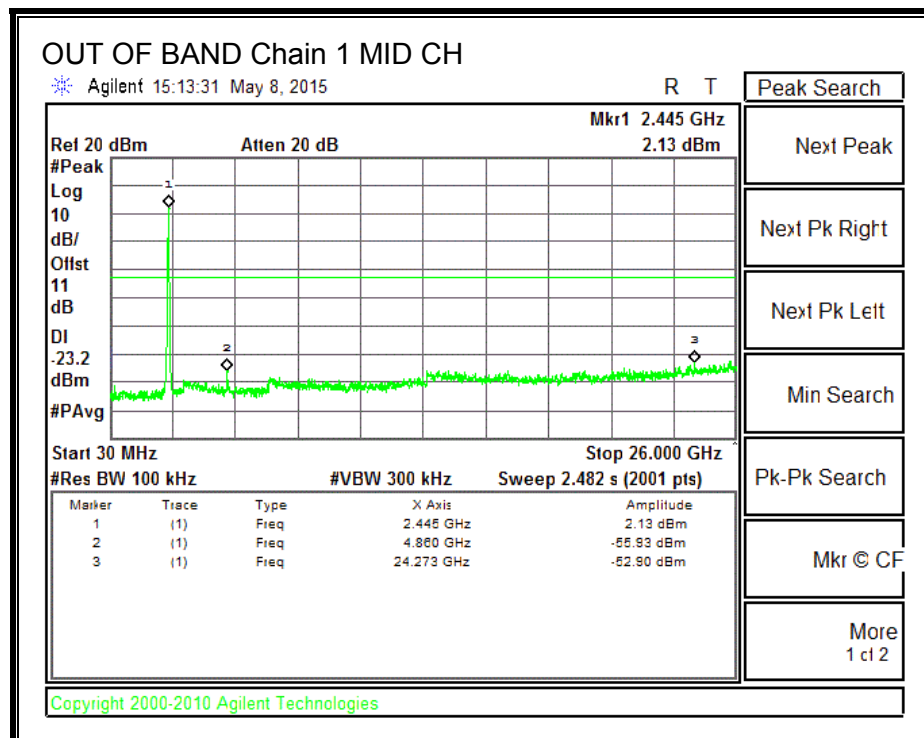
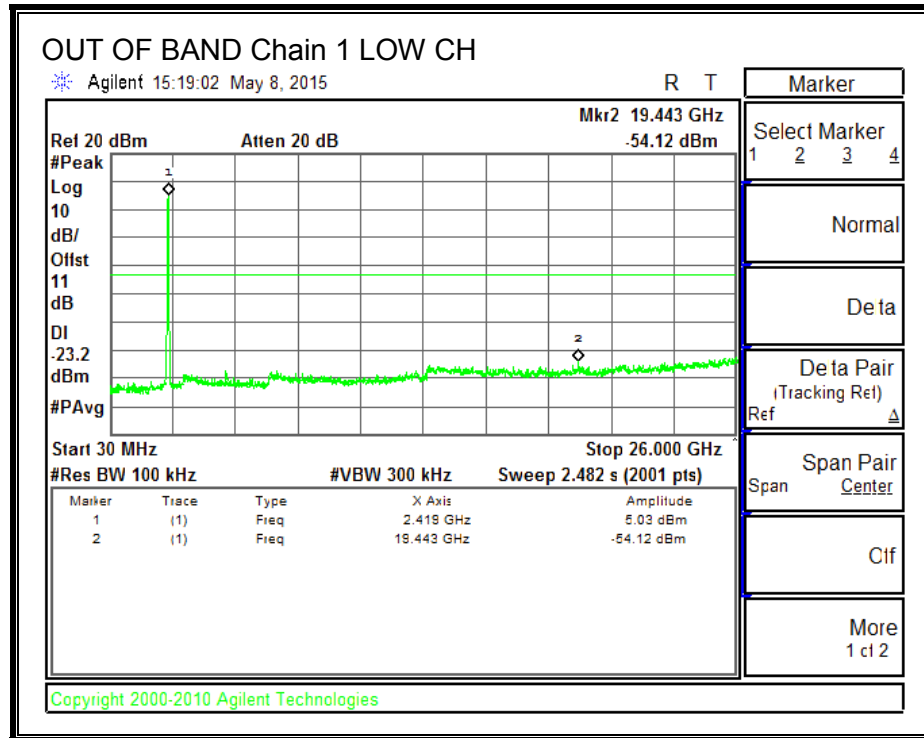
LOW CHANNEL BANDEDGE, Chain 1

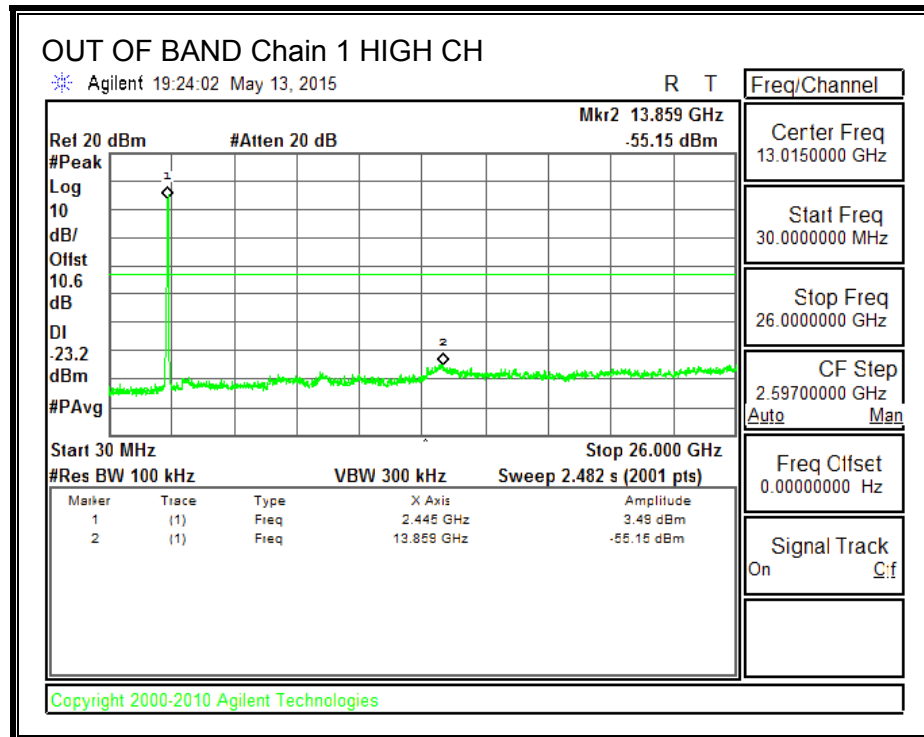


HIGH CHANNEL BANDEDGE, Chain 1

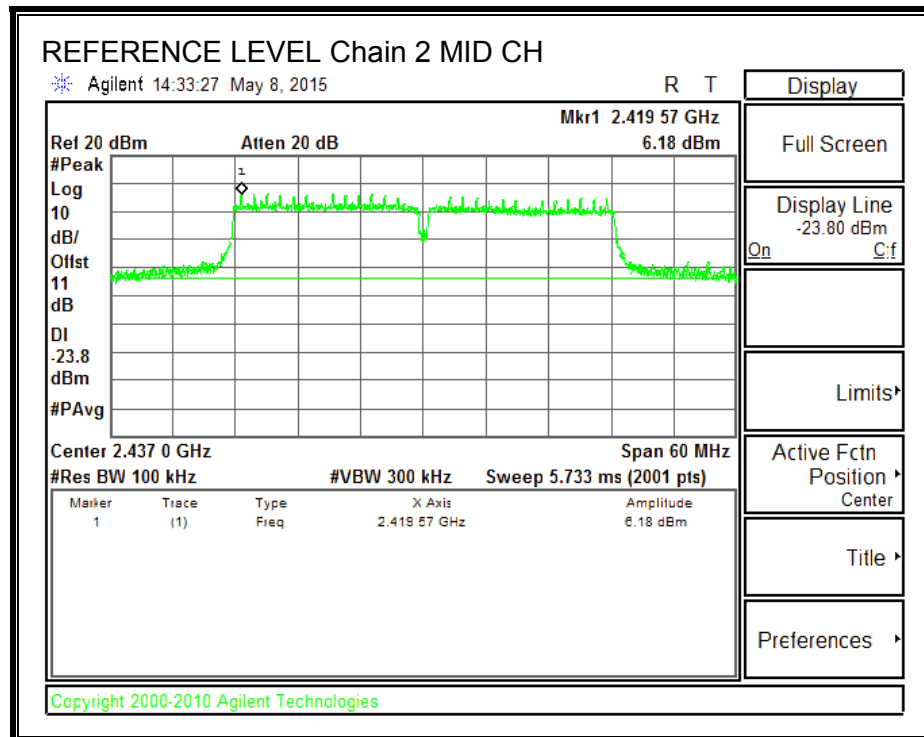


OUT-OF-BAND EMISSIONS, Chain 1

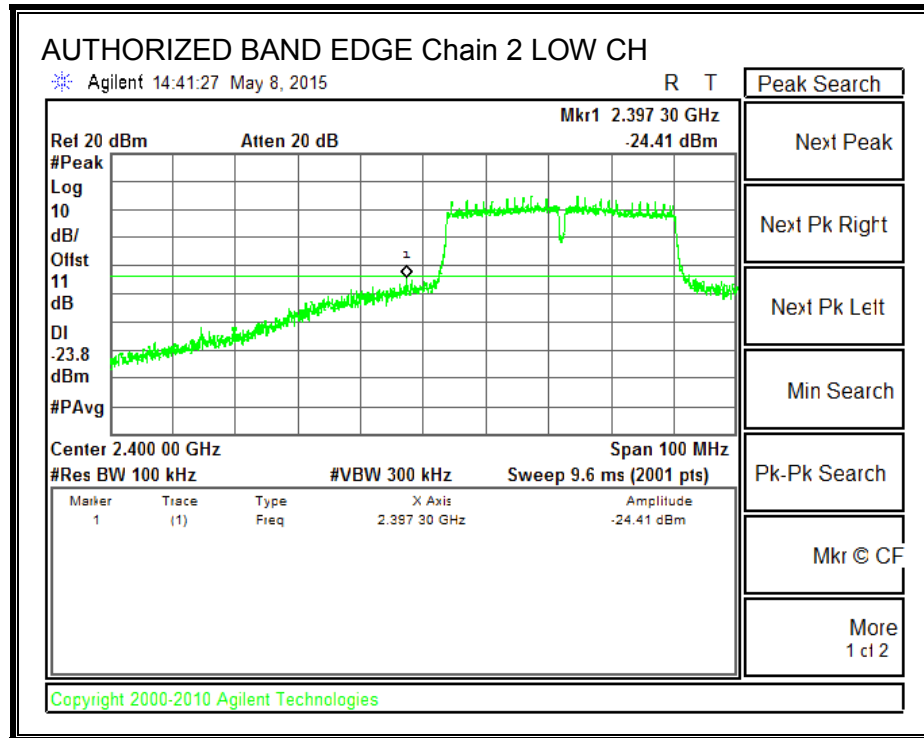




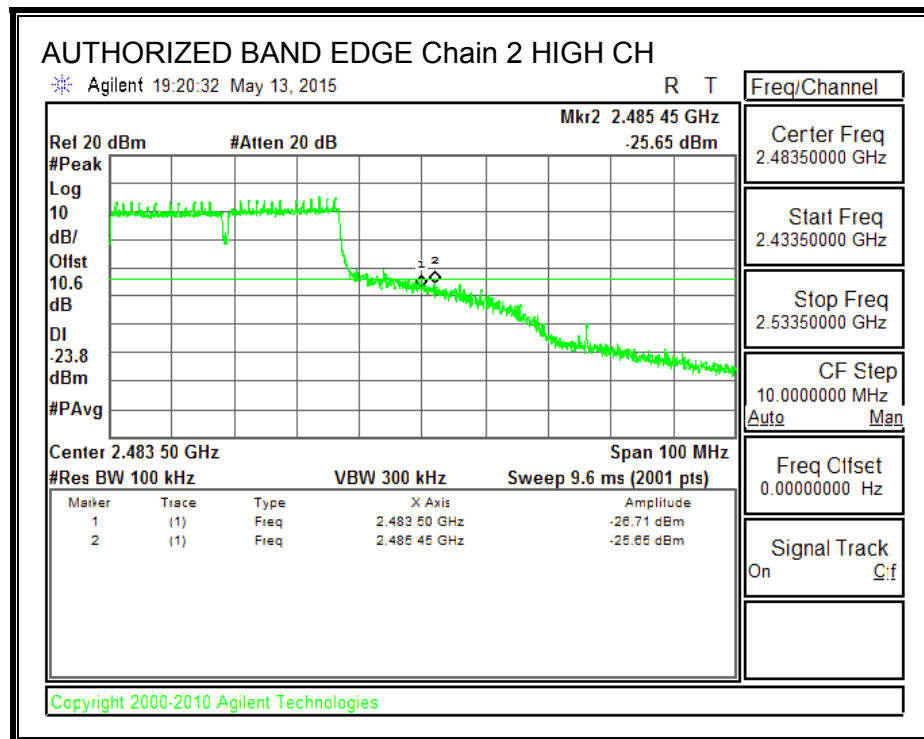
IN-BAND REFERENCE LEVEL, Chain 2



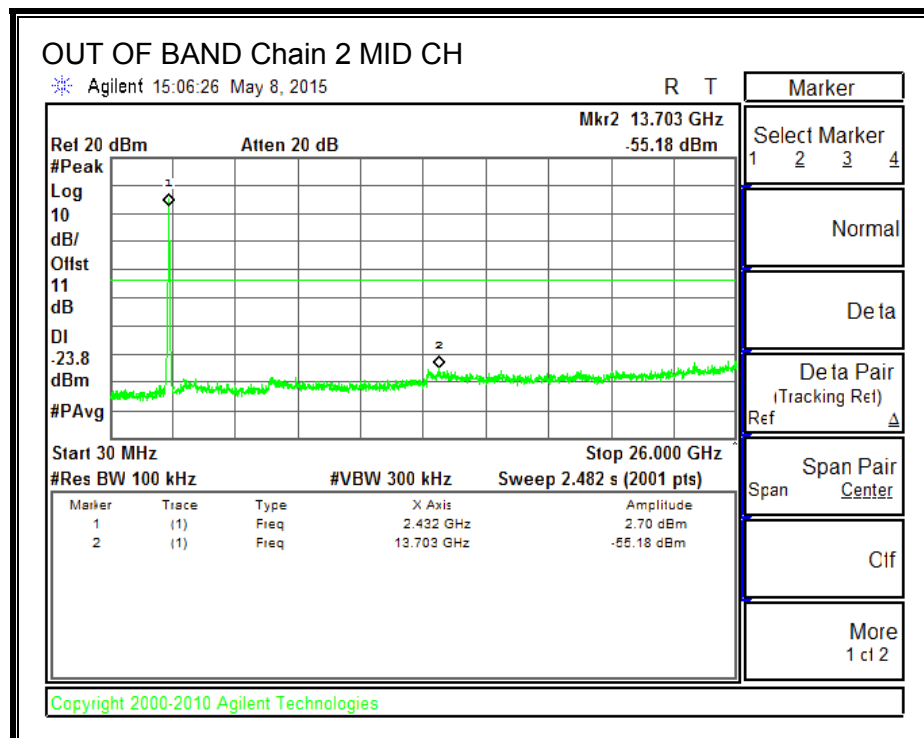
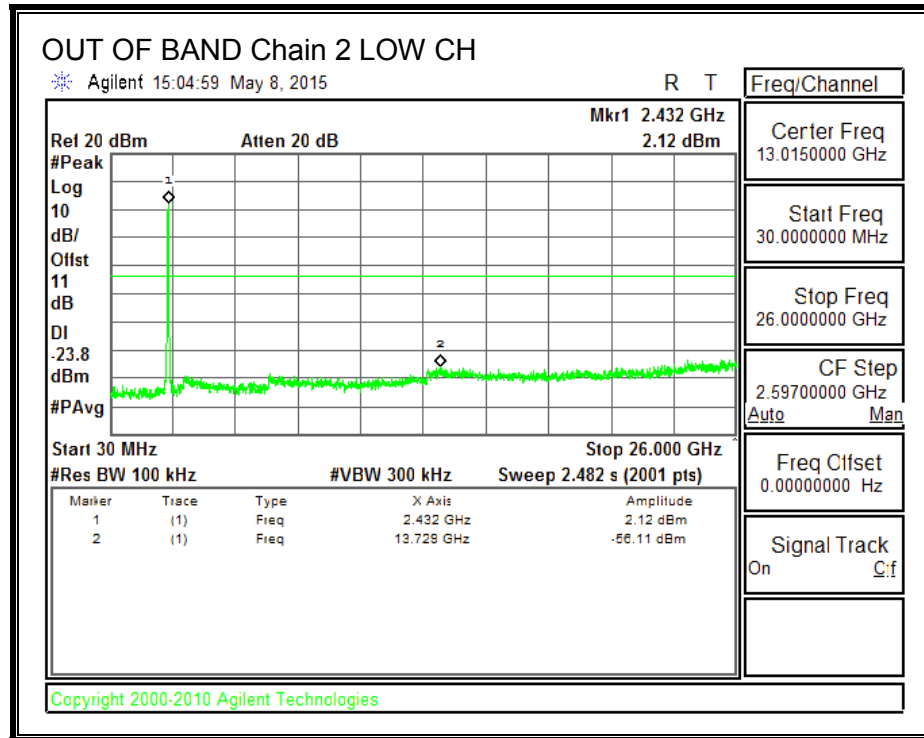
LOW CHANNEL BANDEDGE, Chain 2

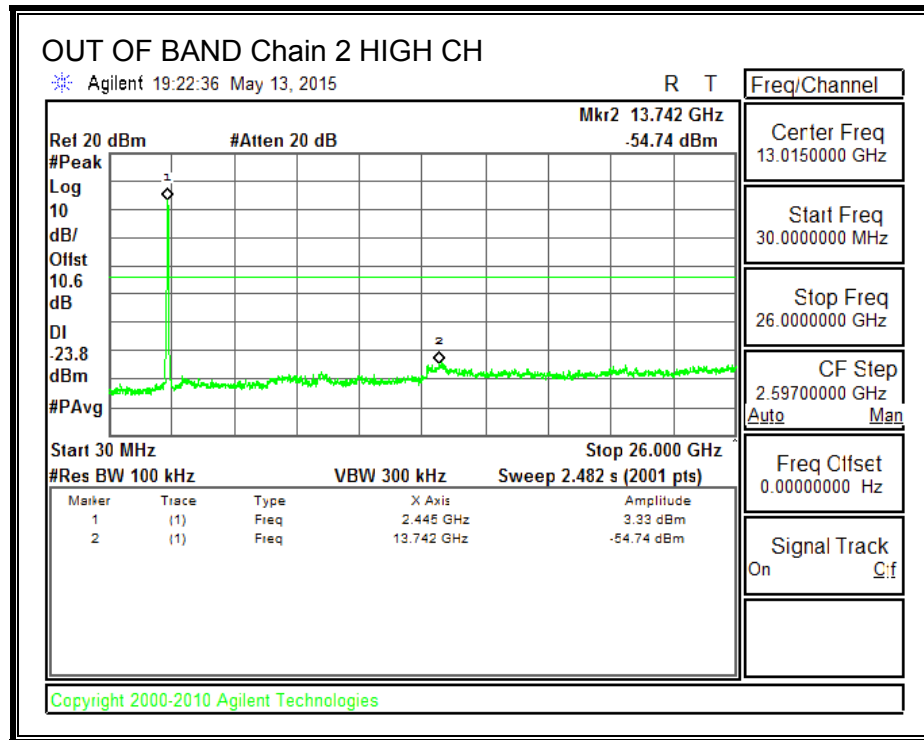


HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2





8.9. 802.11n HT40 TxBF 3TX MODE IN THE 2.4 GHz BAND

8.9.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 Clause 5.4 (4)

For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
3.33	4.77	8.10

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
3	2422	8.10	30	30	36	27.90
4	2427	8.10	30	30	36	27.90
6	2437	8.10	30	30	36	27.90
8	2447	8.10	30	30	36	27.90
9	2452	8.10	30	30	36	27.90
10	2457	8.10	30	30	36	27.90
11	2462	8.10	30	30	36	27.90

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
3	2422	14.22	14.05	13.88	18.82	27.90	-9.08
4	2427	15.34	15.21	15.02	19.96	27.90	-7.94
6	2437	19.75	19.78	19.73	24.52	27.90	-3.38
8	2447	15.28	15.12	14.99	19.90	27.90	-8.00
9	2452	14.01	13.84	13.69	18.62	27.90	-9.28
10	2457	14.05	13.76	13.71	18.61	27.90	-9.29
11	2462	11.74	11.48	11.22	16.26	27.90	-11.64

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

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

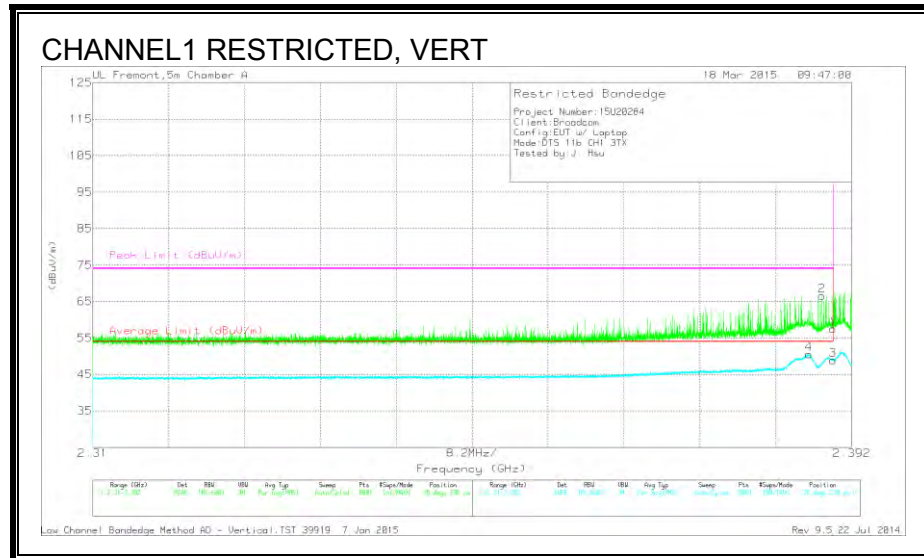
FCC §15.205 and §15.209

IC RSS-GEN Clause 8.9 (Transmitter)

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

9.2. TX ABOVE 1 GHz 802.11b 3Tx MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (CHANNEL 1)



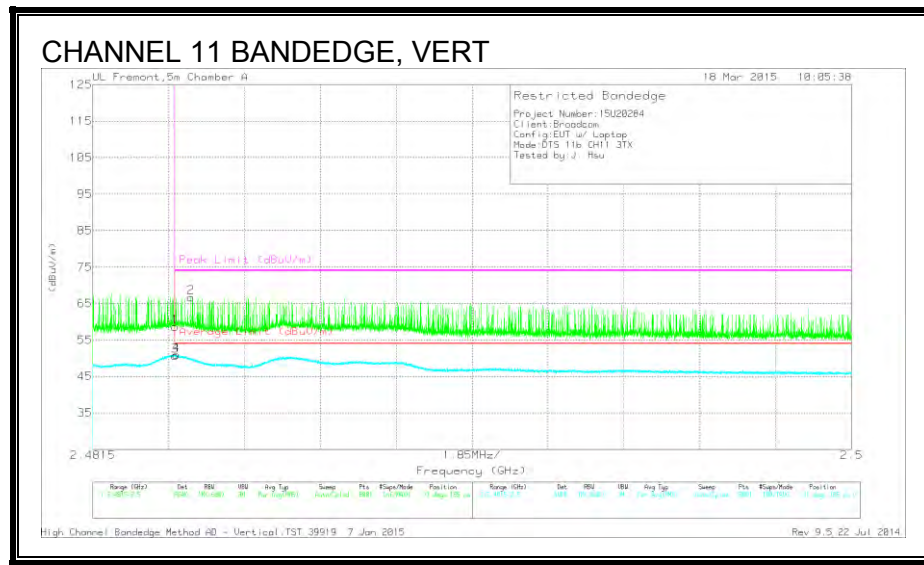
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	19.82	PK	32	5.7	57.52	-	-	74	-16.48	39	238	V
2	* 2.389	28.91	PK	32	5.7	66.61	-	-	74	-7.39	39	238	V
3	* 2.39	11.2	RMS	32	5.7	48.9	54	-5.1	-	-	39	238	V
4	* 2.387	12.82	RMS	32	5.7	50.52	54	-3.48	-	-	39	238	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 11)



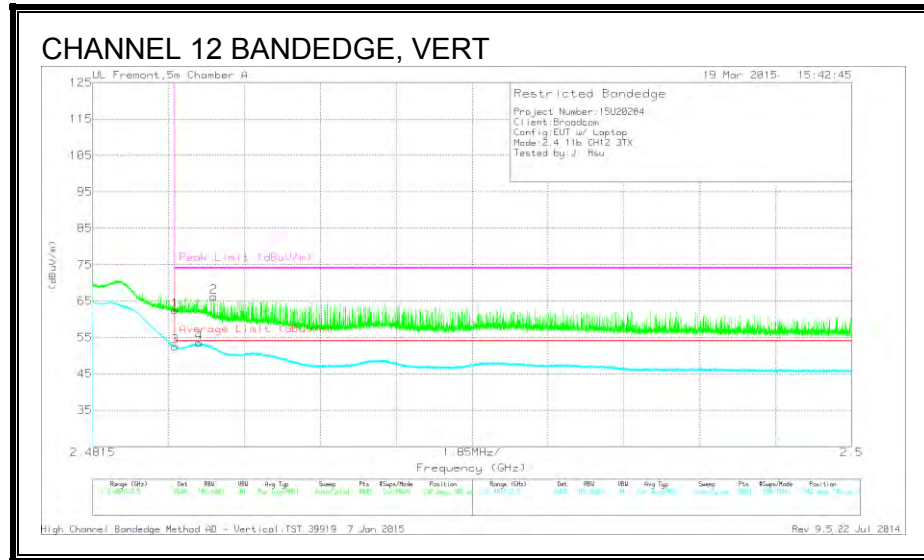
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	20.6	PK	32.1	5.9	58.6	-	-	74	-15.4	31	185	V
2	* 2.484	28.67	PK	32.1	5.9	66.67	-	-	74	-7.33	31	185	V
3	* 2.484	12.71	RMS	32.1	5.9	50.71	54	-3.29	-	-	31	185	V
4	* 2.484	12.87	RMS	32.1	5.9	50.87	54	-3.13	-	-	31	185	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 12)



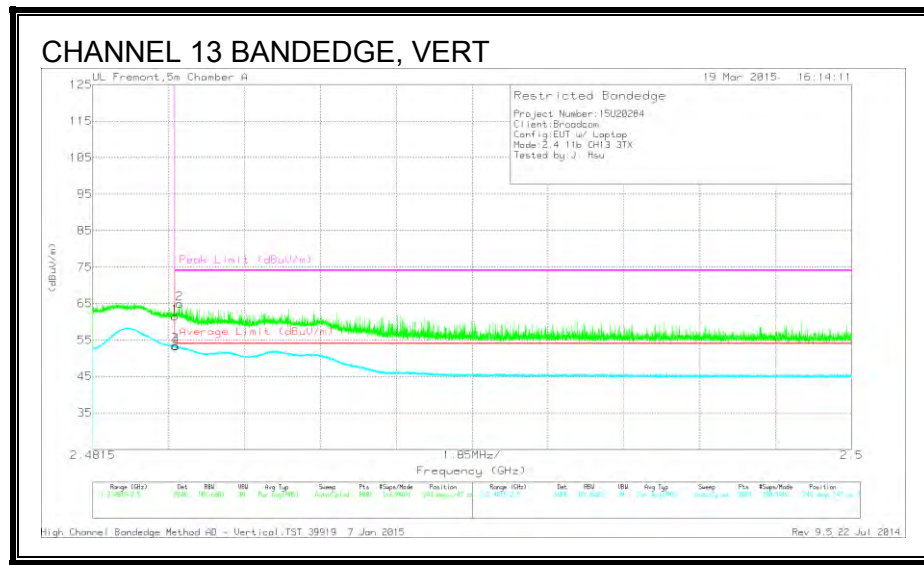
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	24.46	PK	32.1	5.9	62.46	-	-	74	-11.54	242	106	V
2	* 2.484	28.18	PK	32.1	5.9	66.18	-	-	74	-7.82	242	106	V
3	* 2.484	14.51	RMS	32.1	5.9	52.51	54	-1.49	-	-	242	106	V
4	* 2.484	15.58	RMS	32.1	5.9	53.58	54	-.42	-	-	242	106	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 13)



Trace Markers

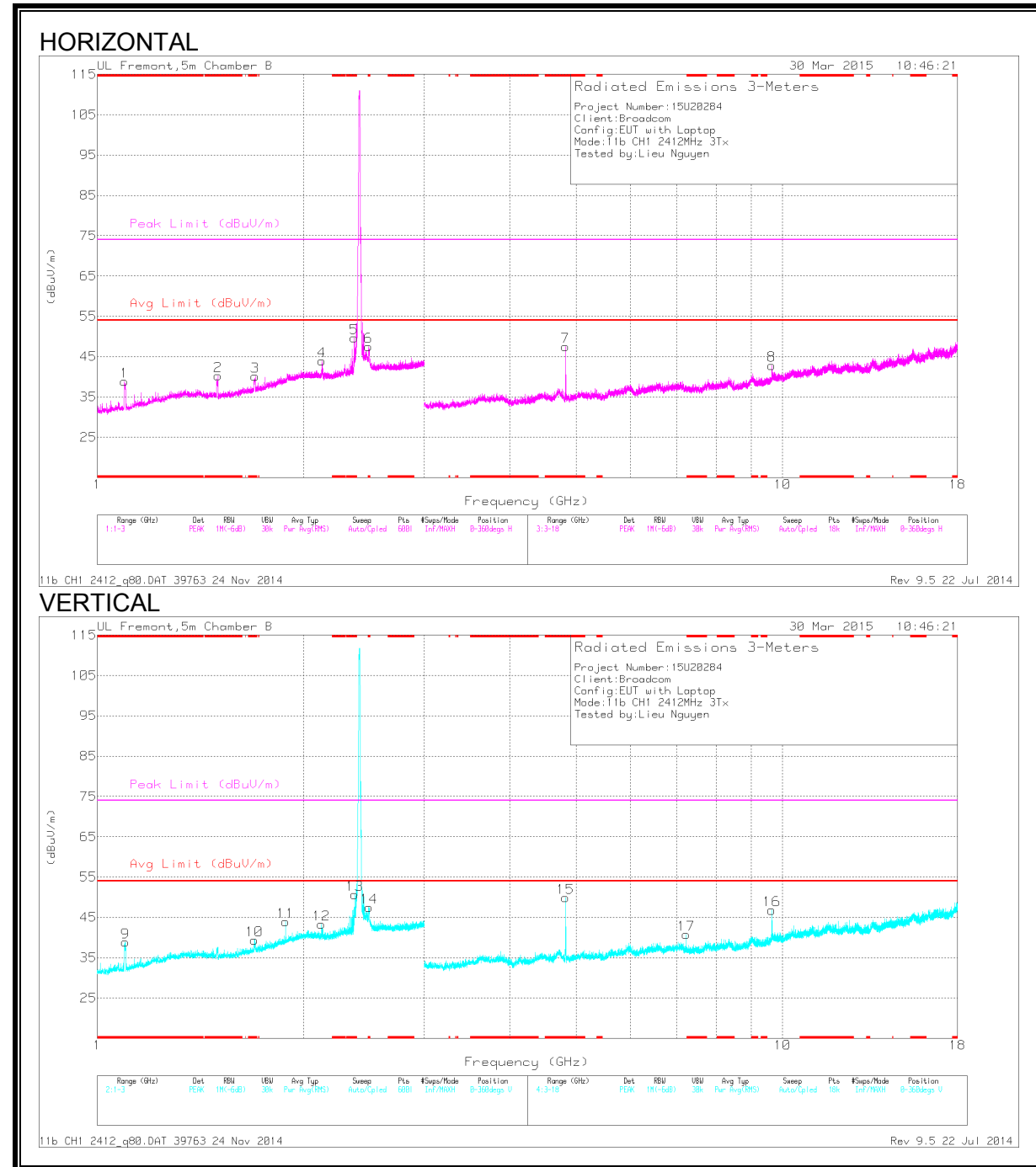
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	23.44	PK	32.1	5.9	61.44	-	-	74	-12.56	243	147	V
2	* 2.484	26.92	PK	32.1	5.9	64.92	-	-	74	-9.08	243	147	V
3	* 2.484	15.46	RMS	32.1	5.9	53.46	54	-5.4	-	-	243	147	V
4	* 2.484	15.33	RMS	32.1	5.9	53.33	54	-6.7	-	-	243	147	V

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

PK - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fitr/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	* 1.094	37.43	PK2	27.6	-22.9	0	42.13	-	-	74	-31.87	278	182	H
	* 1.096	24.22	MAv1	27.6	-23	0	28.82	54	-25.18	-	-	278	182	H
2	* 1.499	37.45	PK2	28.6	-21.4	0	44.65	-	-	74	-29.35	269	151	H
	* 1.499	24.69	MAv1	28.6	-21.4	0	31.89	54	-22.11	-	-	269	151	H
3	* 1.698	36.86	PK2	29.7	-21.2	0	45.36	-	-	74	-28.64	2	137	H
	* 1.701	24.93	MAv1	29.8	-21.3	0	33.43	54	-20.57	-	-	2	137	H
5	* 2.373	52.33	PK2	31.9	-20.9	0	63.33	-	-	74	-10.67	142	187	H
	* 2.374	29.83	MAv1	31.9	-20.9	0	40.83	54	-13.17	-	-	142	187	H
6	* 2.49	43.86	PK2	32.5	-20.9	0	55.46	-	-	74	-18.54	152	266	H
	* 2.49	33.55	MAv1	32.5	-20.9	0	45.15	54	-8.85	-	-	152	266	H
9	* 1.098	36.48	PK2	27.6	-22.9	0	41.18	-	-	74	-32.82	324	259	V
	* 1.099	24.18	MAv1	27.6	-22.8	0	28.98	54	-25.02	-	-	324	259	V
10	* 1.697	36.88	PK2	29.7	-21.2	0	45.38	-	-	74	-28.62	118	150	V
	* 1.697	24.91	MAv1	29.7	-21.2	0	33.41	54	-20.59	-	-	118	150	V
13	* 2.374	53.85	PK2	31.9	-20.9	0	64.85	-	-	74	-9.15	192	189	V
	* 2.374	30.96	MAv1	31.9	-20.9	0	41.96	54	-12.04	-	-	192	189	V
14	* 2.49	45.53	PK2	32.5	-20.9	0	57.13	-	-	74	-16.87	194	174	V
	* 2.49	35.01	MAv1	32.5	-20.9	0	46.61	54	-7.39	-	-	194	174	V
7	* 4.824	50.52	PK2	34.3	-29.7	0	55.12	-	-	74	-18.88	165	243	H
	* 4.824	47.89	MAv1	34.3	-29.7	0	52.49	54	-1.51	-	-	165	243	H
15	* 4.824	48.45	PK2	34.3	-29.7	0	53.05	-	-	74	-20.95	341	103	V
	* 4.824	44.97	MAv1	34.3	-29.7	0	49.57	54	-4.43	-	-	341	103	V
11	1.882	33.48	PK	31.6	-21.1	0	43.98	-	-	-	-	0-360	199	V
12	2.124	32.65	PK	31.6	-20.9	0	43.35	-	-	-	-	0-360	199	V
4	2.125	33.28	PK	31.6	-20.9	0	43.98	-	-	-	-	0-360	101	H
17	7.237	33.32	PK	35.3	-27.8	0	40.82	-	-	-	-	0-360	101	V
8	9.648	29.97	PK	36.7	-23.8	0	42.87	-	-	-	-	0-360	199	H
16	9.648	33.91	PK	36.7	-23.8	0	46.81	-	-	-	-	0-360	101	V

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

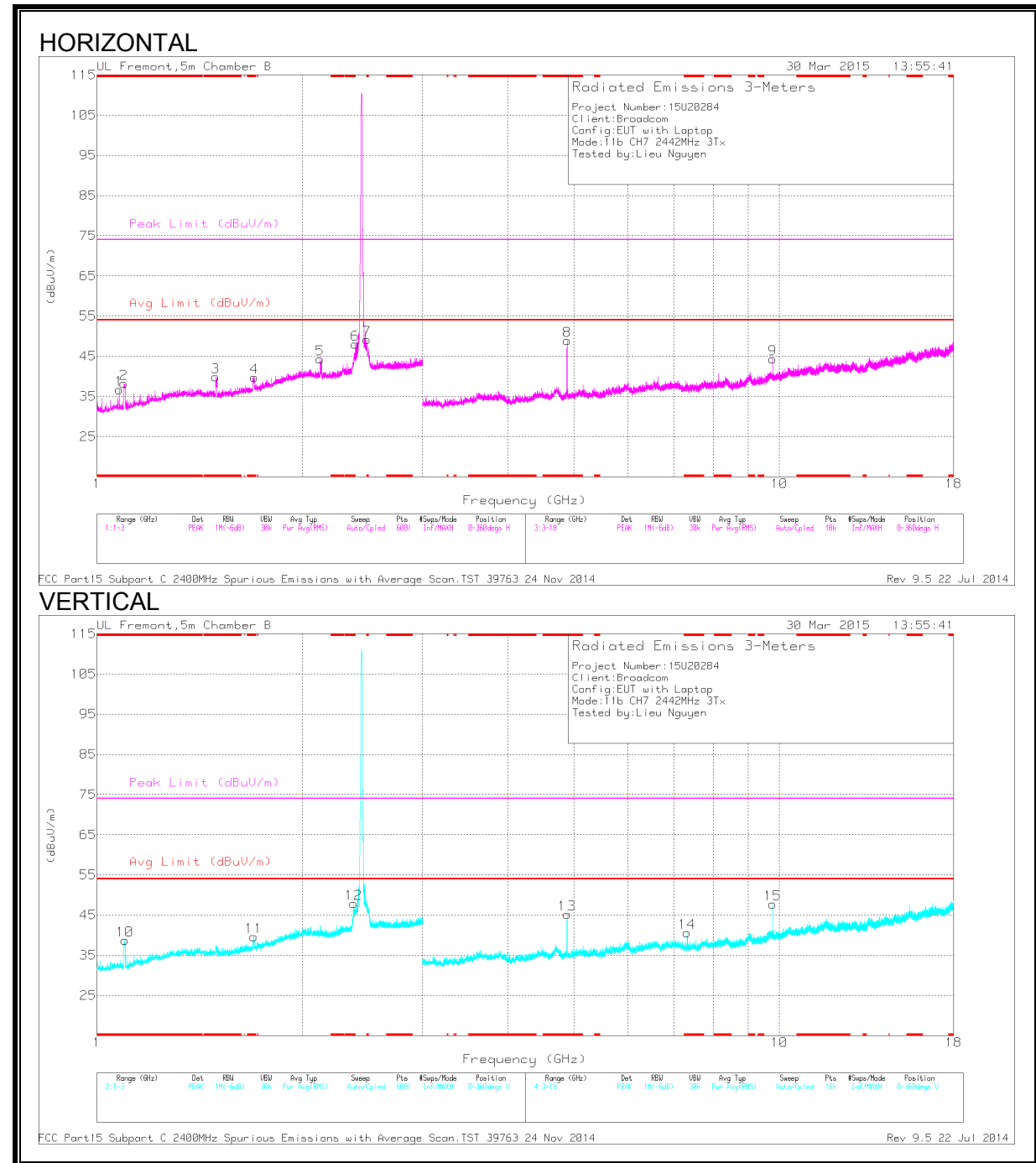
-Compliance for emissions in non-restricted bands shown in conducted out of band testing

PK - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fitr/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	* 1.078	36.04	PK2	27.5	-23	0	40.54	-	-	74	-33.46	119	213	H
	* 1.079	24.58	MAv1	27.6	-23	0	29.18	54	-24.82	-	-	119	213	H
2	* 1.097	41.98	PK2	27.6	-22.9	0	46.68	-	-	74	-27.32	289	182	H
	* 1.095	31.62	MAv1	27.6	-22.9	0	36.32	54	-17.68	-	-	289	182	H
3	* 1.495	40.47	PK2	28.7	-21.5	0	47.67	-	-	74	-26.33	173	202	H
	* 1.494	27.92	MAv1	28.7	-21.5	0	35.12	54	-18.88	-	-	173	202	H
4	* 1.699	40.39	PK2	29.7	-21.2	0	48.89	-	-	74	-25.11	80	263	H
	* 1.699	28.48	MAv1	29.8	-21.2	0	37.08	54	-16.92	-	-	80	263	H
7	* 2.488	47.13	PK2	32.5	-20.9	0	58.73	-	-	74	-15.27	168	254	H
	* 2.486	33.13	MAv1	32.5	-20.9	0	44.73	54	-9.27	-	-	168	254	H
10	* 1.099	41.28	PK2	27.6	-22.8	0	46.08	-	-	74	-27.92	13	191	V
	* 1.099	30.63	MAv1	27.6	-22.9	0	35.33	54	-18.67	-	-	13	191	V
11	* 1.699	37.16	PK2	29.8	-21.2	0	45.76	-	-	74	-28.24	66	167	V
	* 1.698	25.44	MAv1	29.7	-21.2	0	33.94	54	-20.06	-	-	66	167	V
12	* 2.378	47.79	PK2	31.9	-20.9	0	58.79	-	-	74	-15.21	11	301	V
	* 2.38	30.34	MAv1	31.9	-20.9	0	41.34	54	-12.66	-	-	11	301	V
8	* 4.884	48.22	PK2	34.2	-30.4	0	52.02	-	-	74	-21.98	21	239	H
	* 4.884	44.54	MAv1	34.2	-30.4	0	48.34	54	-5.66	-	-	21	239	H
13	* 4.884	46.6	PK2	34.2	-30.4	0	50.4	-	-	74	-23.6	68	108	V
	* 4.884	42.27	MAv1	34.2	-30.4	0	46.07	54	-7.93	-	-	68	108	V
14	* 7.325	42.01	PK2	35.3	-28.1	0	49.21	-	-	74	-24.79	113	281	V
	* 7.325	33.59	MAv1	35.3	-28.1	0	40.79	54	-13.21	-	-	113	281	V
5	2.124	33.61	PK	31.6	-20.9	0	44.31	-	-	-	-	0-360	100	H
6	2.391	36.97	PK	32	-20.9	0	48.07	-	-	-	-	0-360	100	H
9	9.768	31.45	PK	36.9	-24	0	44.35	-	-	-	-	0-360	199	H
15	9.768	34.86	PK	36.9	-24	0	47.76	-	-	-	-	0-360	199	V

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

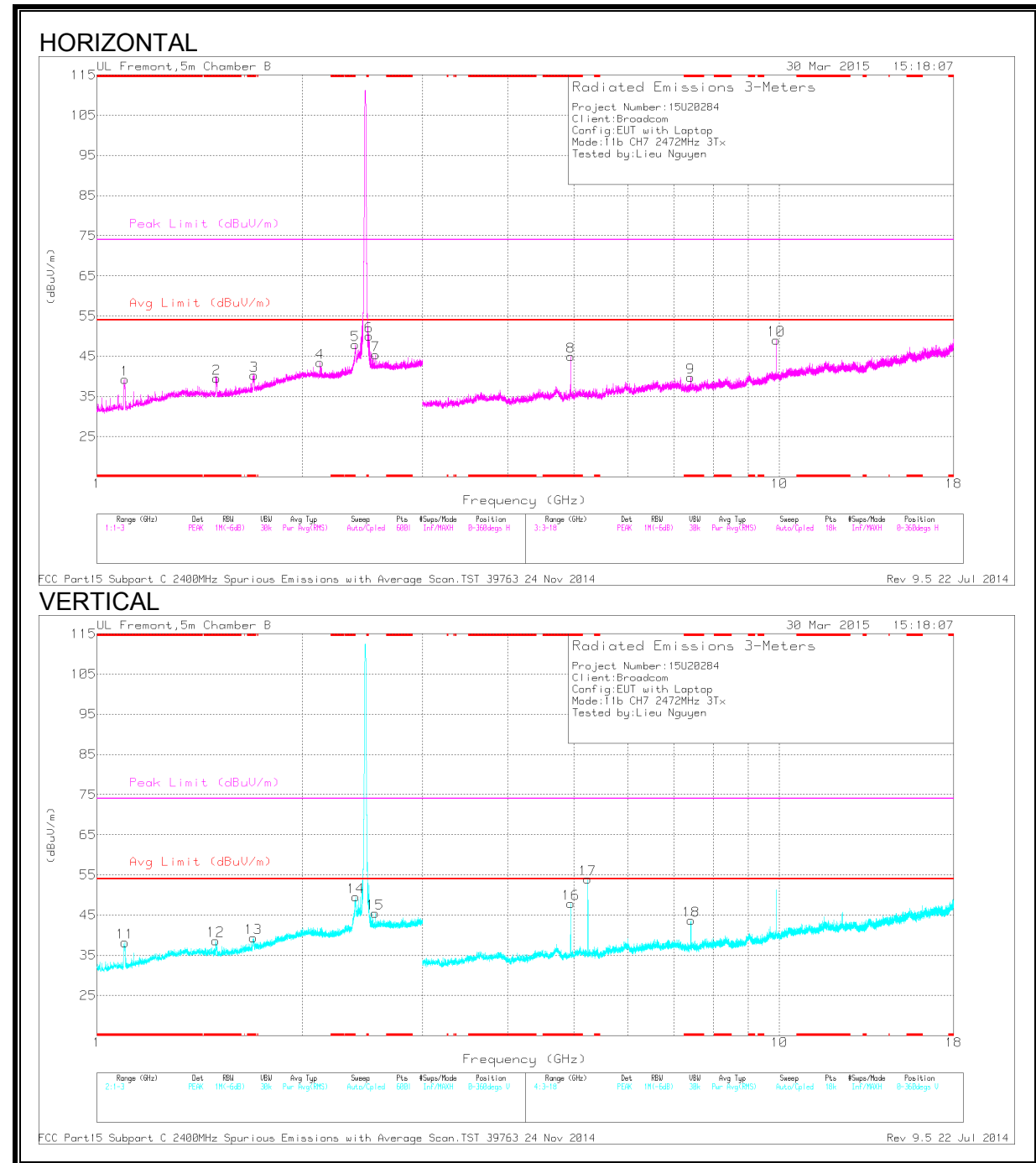
-Compliance for emissions in non-restricted bands shown in conducted out of band testing

PK - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Ftr /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	* 1.099	44.03	PK2	27.6	-22.9	0	48.73	-	-	74	-25.27	15	249	H
	* 1.099	35.09	MAv1	27.6	-22.9	0	39.79	54	-14.21	-	-	15	249	H
2	* 1.498	40.55	PK2	28.7	-21.4	0	47.85	-	-	74	-26.15	173	151	H
	* 1.499	28.01	MAv1	28.6	-21.4	0	35.21	54	-18.79	-	-	173	151	H
3	* 1.7	40.25	PK2	29.8	-21.2	0	48.85	-	-	74	-25.15	9	246	H
	* 1.699	28.12	MAv1	29.7	-21.2	0	36.62	54	-17.38	-	-	9	246	H
11	* 1.098	40.91	PK2	27.6	-22.9	0	45.61	-	-	74	-28.39	228	236	V
	* 1.099	30.55	MAv1	27.6	-22.9	0	35.25	54	-18.75	-	-	228	236	V
12	* 1.494	39.91	PK2	28.7	-21.5	0	47.11	-	-	74	-26.89	243	297	V
	* 1.494	27.39	MAv1	28.7	-21.5	0	34.59	54	-19.41	-	-	243	297	V
13	* 1.697	39.22	PK2	29.7	-21.2	0	47.72	-	-	74	-26.28	141	183	V
	* 1.693	26.79	MAv1	29.7	-21.3	0	35.19	54	-18.81	-	-	141	183	V
8	* 4.944	47.92	PK2	34.1	-30.4	0	51.62	-	-	74	-22.38	17	258	H
	* 4.944	43.59	MAv1	34.1	-30.4	0	47.29	54	-6.71	-	-	17	258	H
9	* 7.416	41.02	PK2	35.4	-27.3	0	49.12	-	-	74	-24.88	316	217	H
	* 7.417	32.54	MAv1	35.4	-27.3	0	40.64	54	-13.36	-	-	316	217	H
16	* 4.944	49.07	PK2	34.1	-30.4	0	52.77	-	-	74	-21.23	246	113	V
	* 4.944	45.18	MAv1	34.1	-30.4	0	48.88	54	-5.12	-	-	246	113	V
18	* 7.418	41.93	PK2	35.4	-27.3	0	50.03	-	-	74	-23.97	98	214	V
	* 7.417	34.23	MAv1	35.4	-27.3	0	42.33	54	-11.67	-	-	98	214	V
4	2.124	32.76	PK	31.6	-20.9	0	43.46	-	-	-	-	0-360	101	H
5	2.391	36.77	PK	32	-20.9	0	47.87	-	-	-	-	0-360	101	H
14	2.394	38.51	PK	32	-21	0	49.51	-	-	-	-	0-360	200	V
6	2.504	38.4	PK	32.5	-20.8	0	50.1	-	-	-	-	0-360	200	H
15	2.557	33.64	PK	32.7	-20.9	0	45.44	-	-	-	-	0-360	101	V
7	2.562	33.57	PK	32.7	-20.9	0	45.37	-	-	-	-	0-360	200	H
17	5.238	49.88	PK	34.3	-30.2	0	53.98	-	-	-	-	0-360	101	V
10	9.888	35.89	PK	37.1	-23.9	0	49.09	-	-	-	-	0-360	101	H

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

-Compliance for emissions in non-restricted bands shown in conducted out of band testing

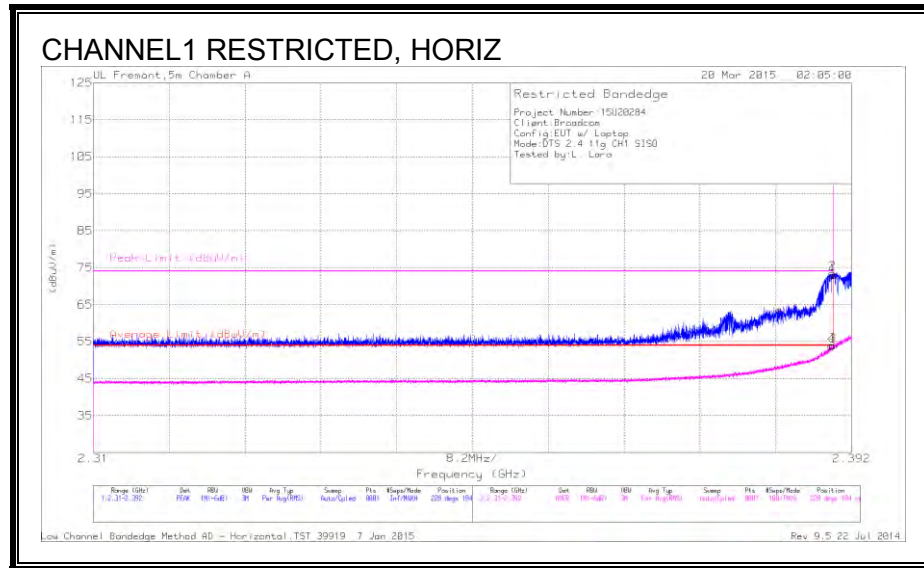
PK - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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

RESTRICTED BANDEDGE (CHANNEL 1)



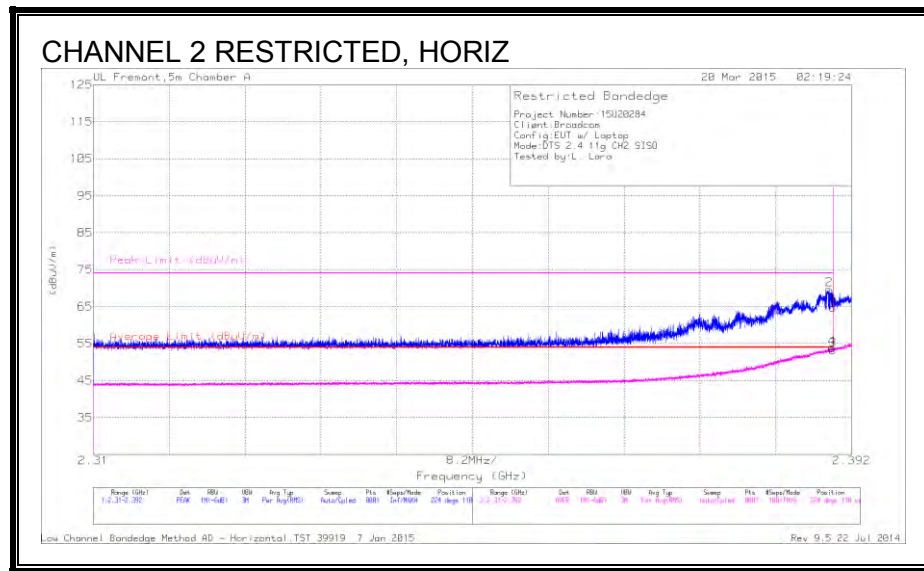
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	35.26	PK	32	5.7	72.96	-	-	74	-1.04	228	104	H
2	* 2.39	35.69	PK	32	5.7	73.39	-	-	74	-.61	228	104	H
3	* 2.39	16.24	RMS	32	5.7	53.94	54	-.06	-	-	228	104	H
4	* 2.39	16.12	RMS	32	5.7	53.82	54	-.18	-	-	228	104	H

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

PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (CHANNEL 2)



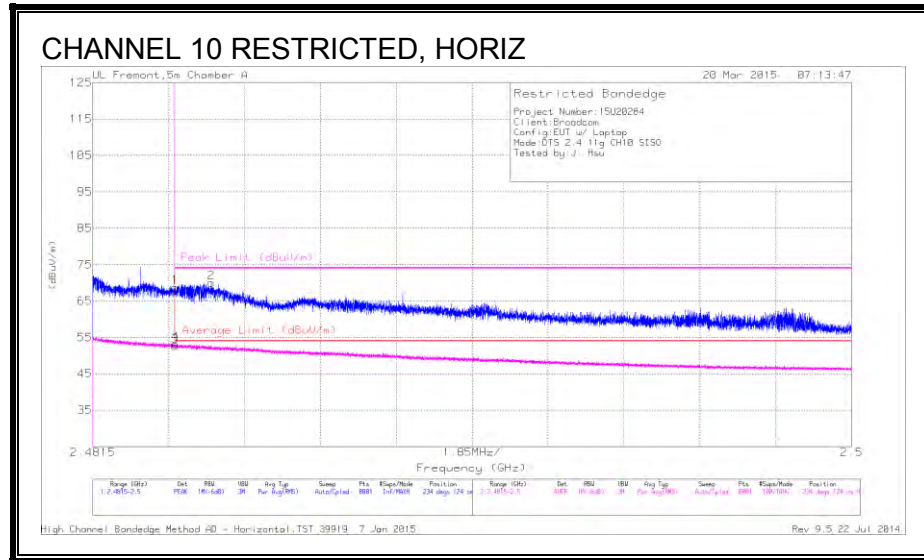
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	27.06	PK	32	5.7	64.76	-	-	74	-9.24	224	110	H
2	* 2.39	31.95	PK	32	5.7	69.65	-	-	74	-4.35	224	110	H
3	* 2.39	15.58	RMS	32	5.7	53.28	54	-72	-	-	224	110	H
4	* 2.39	15.98	RMS	32	5.7	53.68	54	-32	-	-	224	110	H

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

PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (CHANNEL 10)



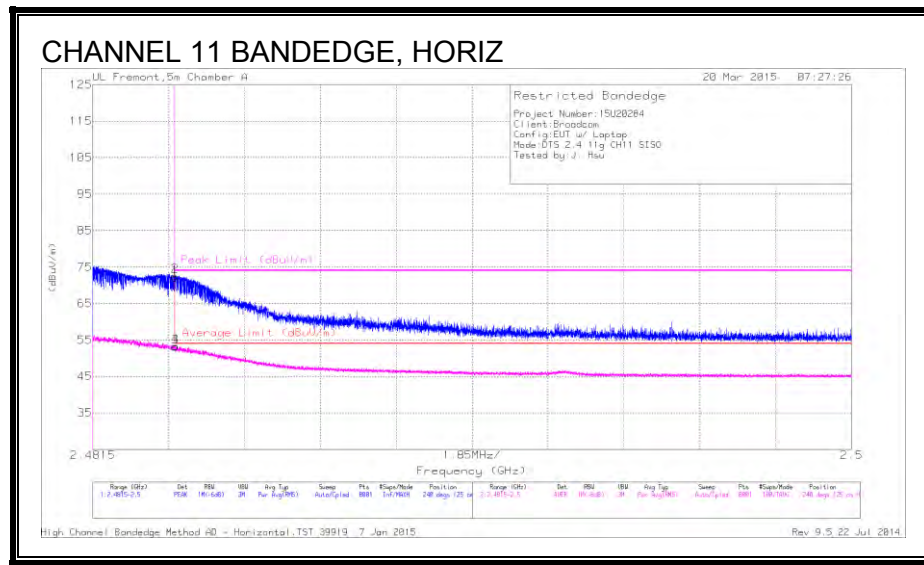
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	30.74	PK	32.1	5.9	68.74	-	-	74	-5.26	234	124	H
2	* 2.484	32.01	PK	32.1	5.9	70.01	-	-	74	-3.99	234	124	H
3	* 2.484	14.6	RMS	32.1	5.9	52.6	54	-1.4	-	-	234	124	H
4	* 2.484	15.12	RMS	32.1	5.9	53.12	54	-.88	-	-	234	124	H

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 11)



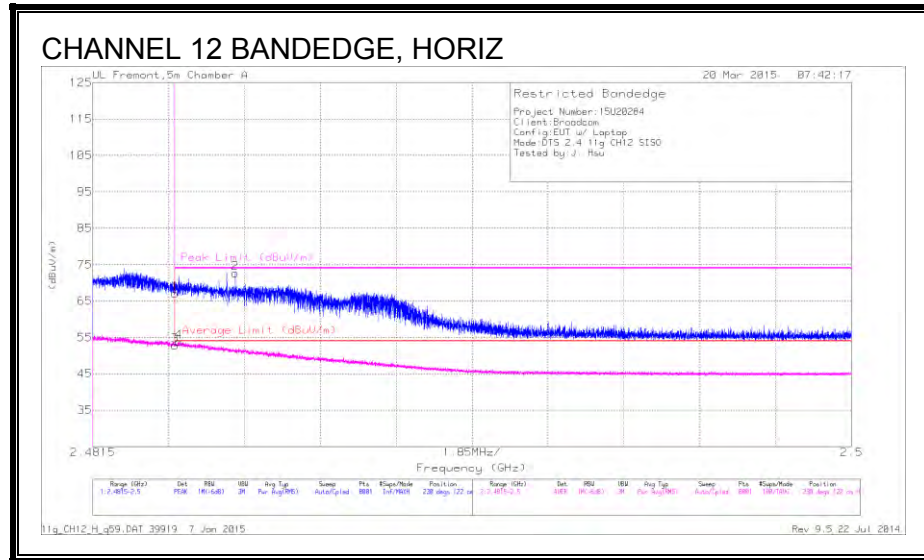
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	34.19	PK	32.1	5.9	72.19	-	-	74	-1.81	240	125	H
2	* 2.484	34.51	PK	32.1	5.9	72.51	-	-	74	-1.49	240	125	H
3	* 2.484	15.14	RMS	32.1	5.9	53.14	54	-.86	-	-	240	125	H
4	* 2.484	15.24	RMS	32.1	5.9	53.24	54	-.76	-	-	240	125	H

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 12)



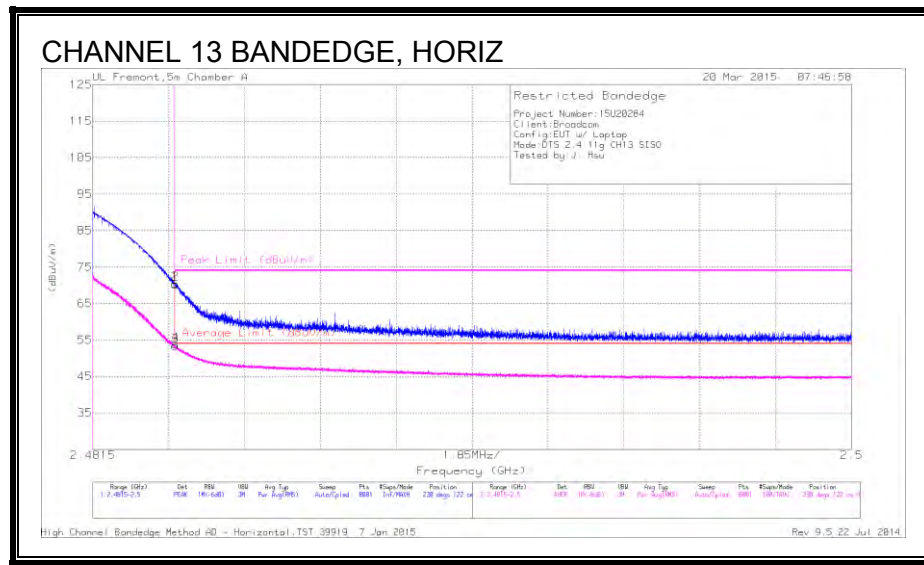
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	29	PK	32.1	5.9	67	-	-	74	-7	230	122	H
2	* 2.485	34.65	PK	32.1	5.9	72.65	-	-	74	-1.35	230	122	H
3	* 2.484	14.77	RMS	32.1	5.9	52.77	54	-1.23	-	-	230	122	H
4	* 2.484	15.73	RMS	32.1	5.9	53.73	54	-.27	-	-	230	122	H

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 13)



Trace Markers

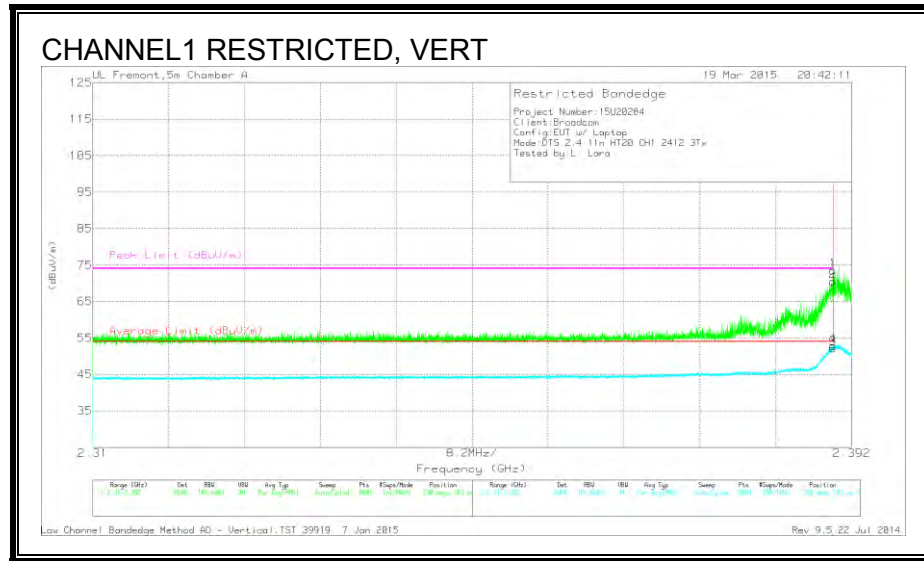
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	32.34	PK	32.1	5.9	70.34	-	-	74	-3.66	230	122	H
2	* 2.484	32.41	PK	32.1	5.9	70.41	-	-	74	-3.59	230	122	H
3	* 2.484	15.45	RMS	32.1	5.9	53.45	54	-.55	-	-	230	122	H
4	* 2.484	15.75	RMS	32.1	5.9	53.75	54	-.25	-	-	230	122	H

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

PK - Peak detector
RMS - RMS detection

9.4. TX ABOVE 1 GHz 802.11n HT20 CDD 3Tx MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (CHANNEL 1)



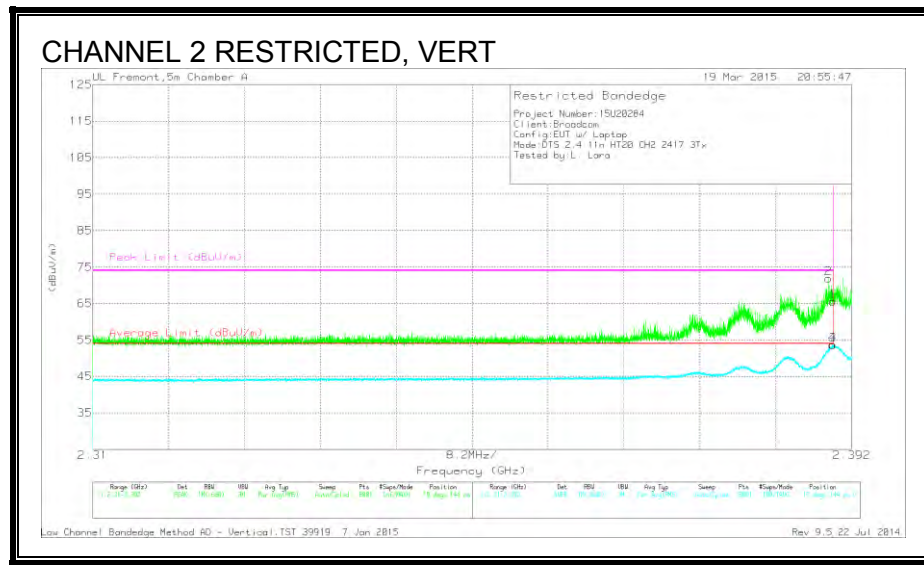
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	35.77	PK	32	5.7	73.47	-	-	74	-53	230	103	V
2	* 2.39	32.82	PK	32	5.7	70.52	-	-	74	-3.48	230	103	V
3	* 2.39	14.44	RMS	32	5.7	52.14	54	-1.86	-	-	230	103	V
4	* 2.39	15.11	RMS	32	5.7	52.81	54	-1.19	-	-	230	103	V

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

PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (CHANNEL 2)



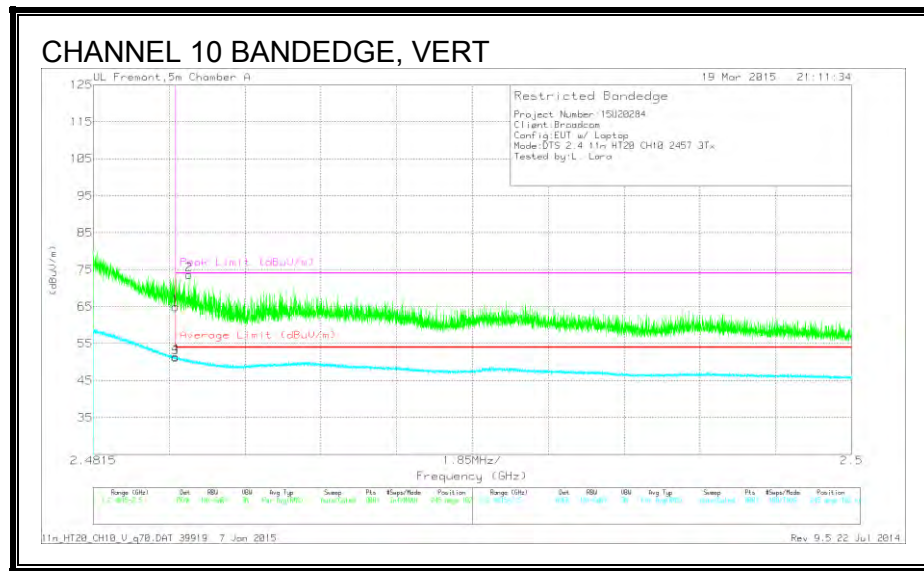
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBUV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBUV/m)	Average Limit (dBUV/m)	Margin (dB)	Peak Limit (dBUV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.389	34.19	PK	32	5.7	71.89	-	-	74	-2.11	19	144	V
1	* 2.39	27.92	PK	32	5.7	65.62	-	-	74	-8.38	19	144	V
3	* 2.39	16	RMS	32	5.7	53.7	54	-3	-	-	19	144	V
4	* 2.39	15.92	RMS	32	5.7	53.62	54	-3.8	-	-	19	144	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 10)



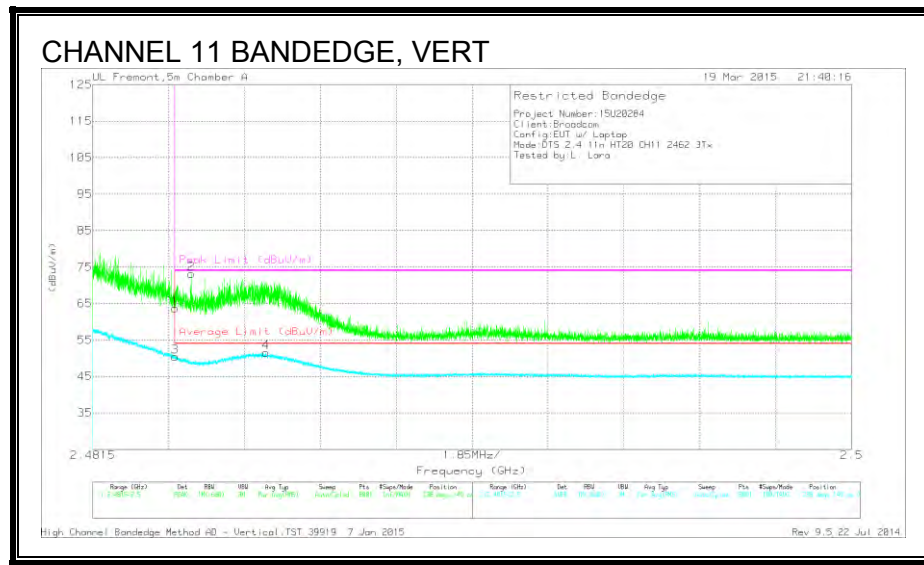
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	26.93	PK	32.1	5.9	64.93	-	-	74	-9.07	245	102	V
2	* 2.484	35.64	PK	32.1	5.9	73.64	-	-	74	-.36	245	102	V
3	* 2.484	13.21	RMS	32.1	5.9	51.21	54	-2.79	-	-	245	102	V
4	* 2.484	13.53	RMS	32.1	5.9	51.53	54	-2.47	-	-	245	102	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 11)



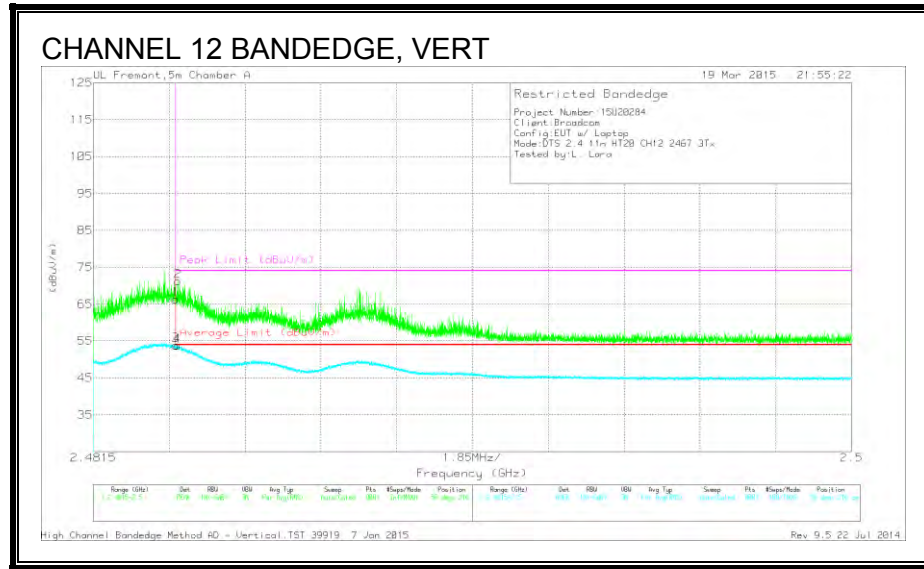
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	25.71	PK	32.1	5.9	63.71	-	-	74	-10.29	238	149	V
2	* 2.484	35.19	PK	32.1	5.9	73.19	-	-	74	-81	238	149	V
3	* 2.484	12.41	RMS	32.1	5.9	50.41	54	-3.59	-	-	238	149	V
4	* 2.486	13.59	RMS	32.1	5.9	51.59	54	-2.41	-	-	238	149	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 12)



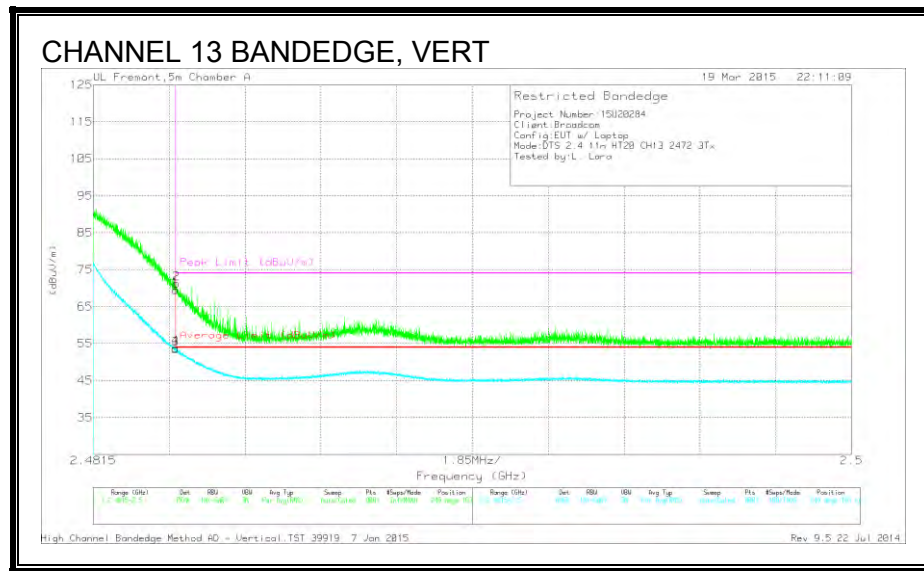
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	28.32	PK	32.1	5.9	66.32	-	-	74	-7.68	56	216	V
2	* 2.484	33.21	PK	32.1	5.9	71.21	-	-	74	-2.79	56	216	V
3	* 2.484	15.84	RMS	32.1	5.9	53.84	54	-1.16	-	-	56	216	V
4	* 2.484	15.66	RMS	32.1	5.9	53.66	54	-1.34	-	-	56	216	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 13)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	31.55	PK	32.1	5.9	69.55	-	-	74	-4.45	249	103	V
2	* 2.484	33.2	PK	32.1	5.9	71.2	-	-	74	-2.8	249	103	V
3	* 2.484	15.52	RMS	32.1	5.9	53.52	54	-48	-	-	249	103	V
4	* 2.484	15.78	RMS	32.1	5.9	53.78	54	-22	-	-	249	103	V

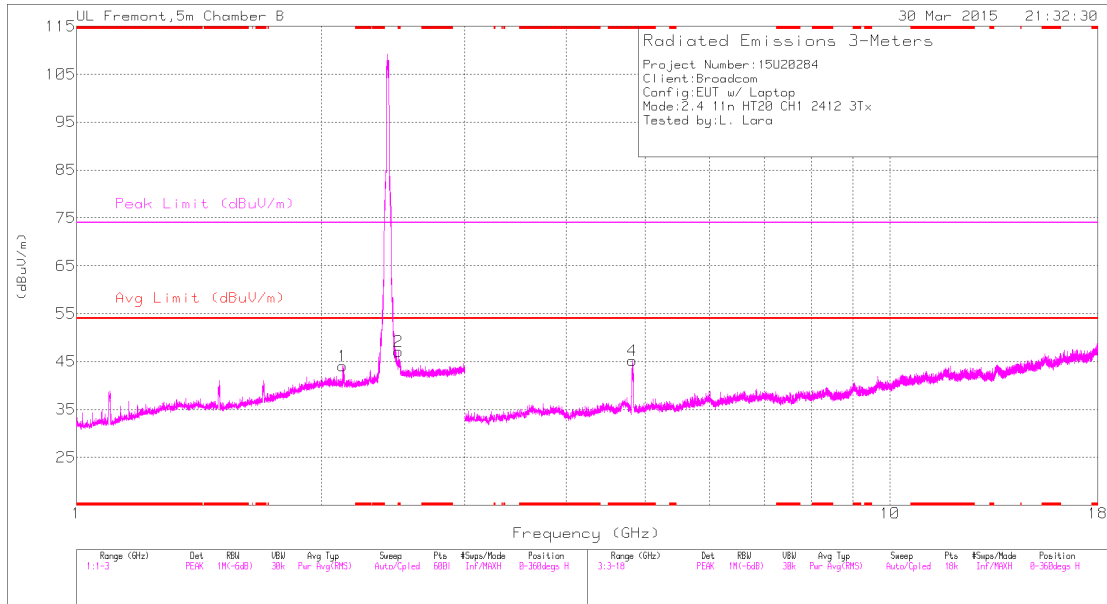
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK - Peak detector
RMS - RMS detection

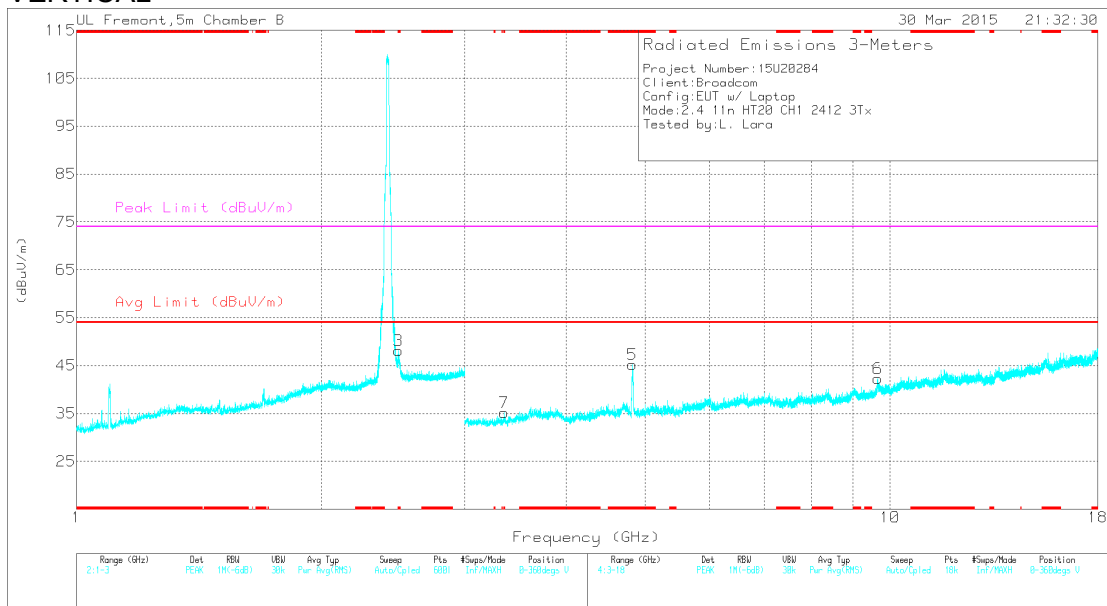
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

HORIZONTAL



VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.487	45.2	PK2	32.5	-20.9	56.8	-	-	74	-17.2	57	210	H
	* 2.487	35.52	MAv1	32.5	-20.9	47.12	54	-6.88	-	-	57	210	H
3	* 2.487	44.73	PK2	32.5	-20.9	56.33	-	-	74	-17.67	208	293	V
	* 2.487	34.7	MAv1	32.5	-20.9	46.3	54	-7.7	-	-	208	293	V
4	* 4.816	51.88	PK2	34.3	-29.6	56.58	-	-	74	-17.42	280	224	H
	* 4.826	38.79	MAv1	34.3	-29.7	43.39	54	-10.61	-	-	280	224	H
5	* 4.825	49.28	PK2	34.3	-29.7	53.88	-	-	74	-20.12	337	140	V
	* 4.825	36.19	MAv1	34.3	-29.7	40.79	54	-13.21	-	-	337	140	V
7	* 3.353	40.63	PK2	32.9	-31	42.53	-	-	74	-31.47	314	167	V
	* 3.354	28.64	MAv1	32.9	-31	30.54	54	-23.46	-	-	314	167	V
1	2.124	33.32	PK	31.6	-20.9	44.02	-	-	-	-	0-360	101	H
6	9.655	29.41	PK	36.7	-23.8	42.31	-	-	-	-	0-360	101	V

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

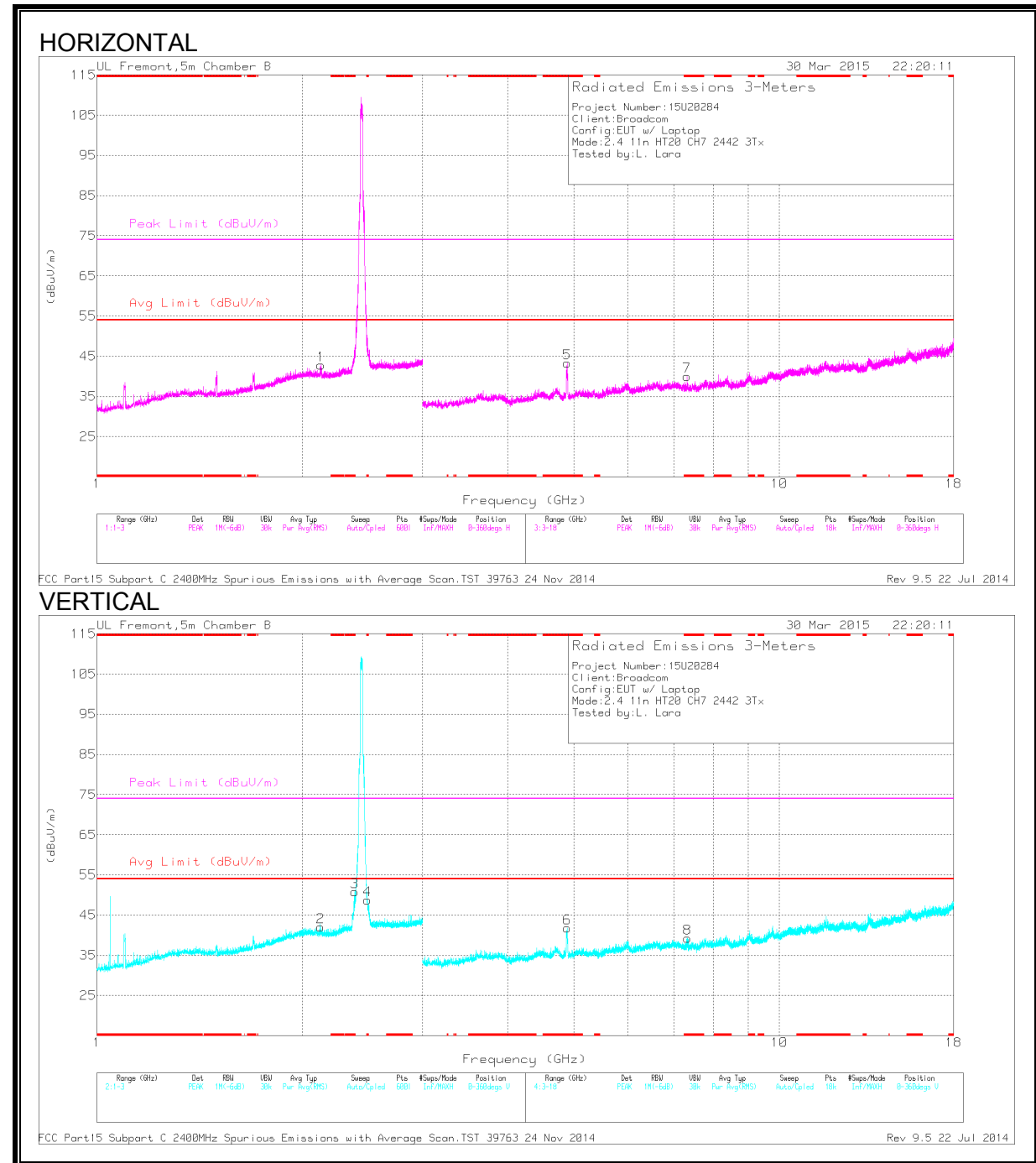
-Compliance for emissions in non-restricted bands shown in conducted out of band testing

PK - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 2.386	55.01	PK2	32	-20.9	66.11	-	-	74	-7.89	274	193	V
	* 2.386	34.34	MAv1	32	-20.9	45.44	54	-8.56	-	-	274	193	V
4	* 2.49	50.52	PK2	32.5	-20.9	62.12	-	-	74	-11.88	85	192	V
	* 2.49	34.41	MAv1	32.5	-20.9	46.01	54	-7.99	-	-	85	192	V
5	* 4.882	49.67	PK2	34.2	-30.4	53.47	-	-	74	-20.53	280	221	H
	* 4.881	37.6	MAv1	34.2	-30.4	41.4	54	-12.6	-	-	280	221	H
7	* 7.319	41.86	PK2	35.3	-28.2	48.96	-	-	74	-25.04	299	189	H
	* 7.323	30.39	MAv1	35.3	-28.2	37.49	54	-16.51	-	-	299	189	H
6	* 4.884	48.66	PK2	34.2	-30.4	52.46	-	-	74	-21.54	247	128	V
	* 4.884	35.72	MAv1	34.2	-30.4	39.52	54	-14.48	-	-	247	128	V
8	* 7.331	39.28	PK2	35.3	-28.1	46.48	-	-	74	-27.52	270	228	V
	* 7.326	28.68	MAv1	35.3	-28.1	35.88	54	-18.12	-	-	270	228	V
2	2.126	31.32	PK	31.6	-20.9	42.02	-	-	-	-	0-360	199	V
1	2.129	32.11	PK	31.6	-20.9	42.81	-	-	-	-	0-360	101	H

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

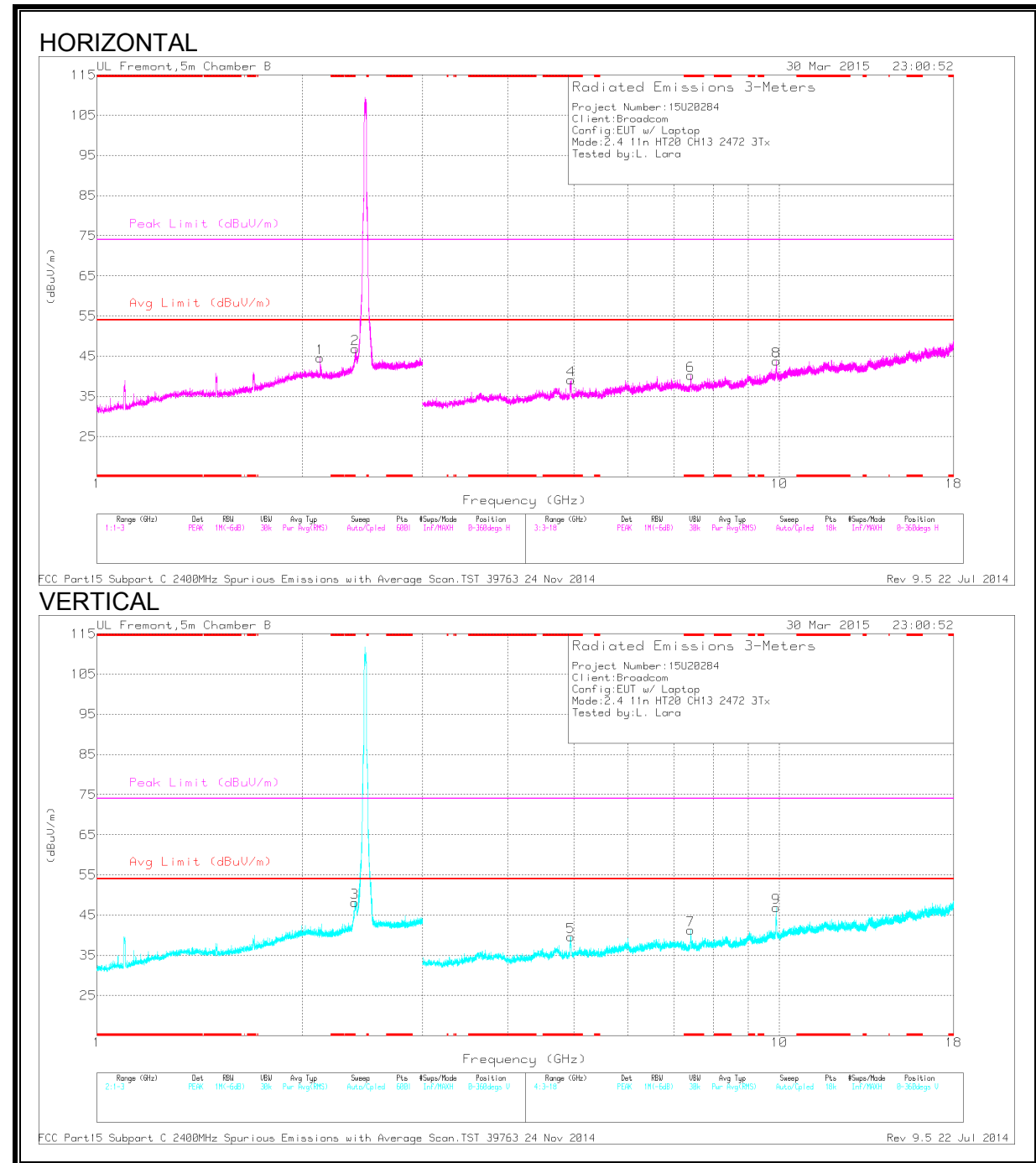
-Compliance for emissions in non-restricted bands shown in conducted out of band testing

PK - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.385	43.41	PK2	32	-20.9	54.51	-	-	74	-19.49	105	299	H
	* 2.39	32.55	MAv1	32	-20.9	43.65	54	-10.35	-	-	105	299	H
3	* 2.387	45.36	PK2	32	-20.9	56.46	-	-	74	-17.54	269	196	V
	* 2.386	34.77	MAv1	32	-20.9	45.87	54	-8.13	-	-	269	196	V
4	* 4.942	46.49	PK2	34.1	-30.4	50.19	-	-	74	-23.81	282	214	H
	* 4.947	34.9	MAv1	34.1	-30.4	38.6	54	-15.4	-	-	282	214	H
6	* 7.419	42.82	PK2	35.4	-27.3	50.92	-	-	74	-23.08	301	196	H
	* 7.418	31.59	MAv1	35.4	-27.3	39.69	54	-14.31	-	-	301	196	H
5	* 4.933	46.64	PK2	34.1	-30.5	50.24	-	-	74	-23.76	245	161	V
	* 4.944	34.59	MAv1	34.1	-30.4	38.29	54	-15.71	-	-	245	161	V
7	* 7.419	41.3	PK2	35.4	-27.3	49.4	-	-	74	-24.6	52	161	V
	* 7.418	30.57	MAv1	35.4	-27.3	38.67	54	-15.33	-	-	52	161	V
1	2.124	33.84	PK	31.6	-20.9	44.54	-	-	-	-	0-360	101	H
9	9.89	33.62	PK	37.1	-23.9	46.82	-	-	-	-	0-360	101	V
8	9.9	30.57	PK	37.1	-23.8	43.87	-	-	-	-	0-360	200	H

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

-Compliance for emissions in non-restricted bands shown in conducted out of band testing

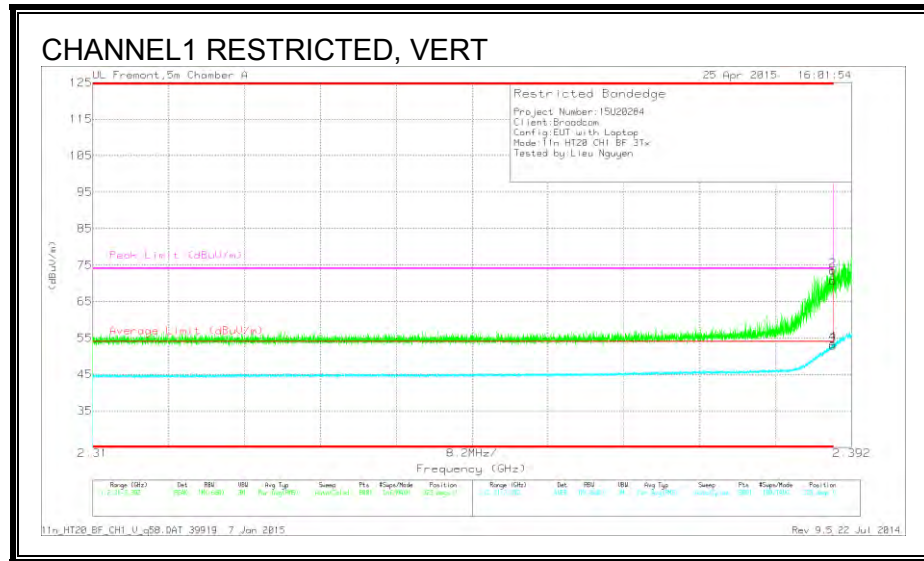
PK - Peak detector

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.5. TX ABOVE 1 GHz 802.11n HT20 Tx BF 3Tx MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (CHANNEL 1)



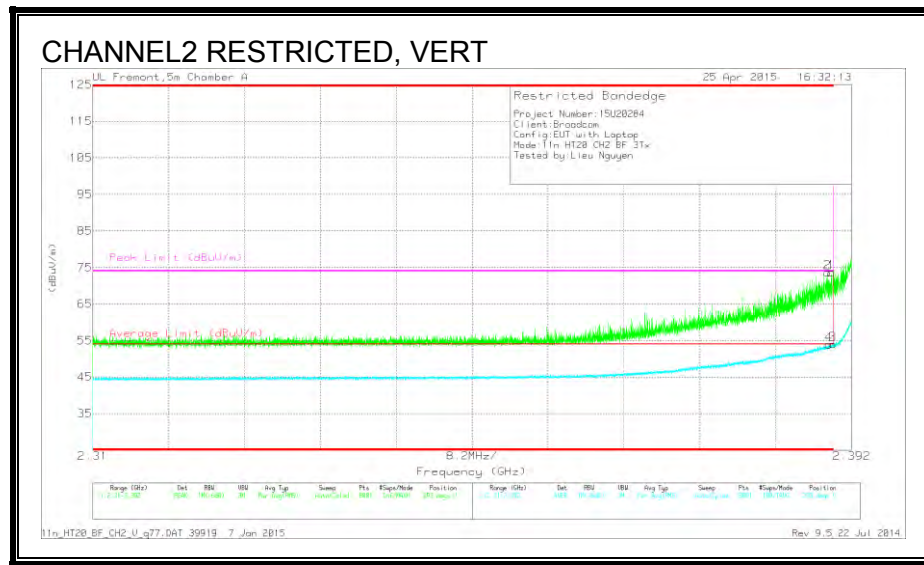
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	33.23	PK	32	4.9	0	70.13	-	-	74	-3.87	323	180	V
2	* 2.39	36.03	PK	32	4.9	0	72.93	-	-	74	-1.07	323	180	V
3	* 2.39	15.35	RMS	32	4.9	.55	52.8	54	-1.2	-	-	323	180	V
4	* 2.39	15.94	RMS	32	4.9	.55	53.39	54	-61	-	-	323	180	V

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

PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (CHANNEL 2)



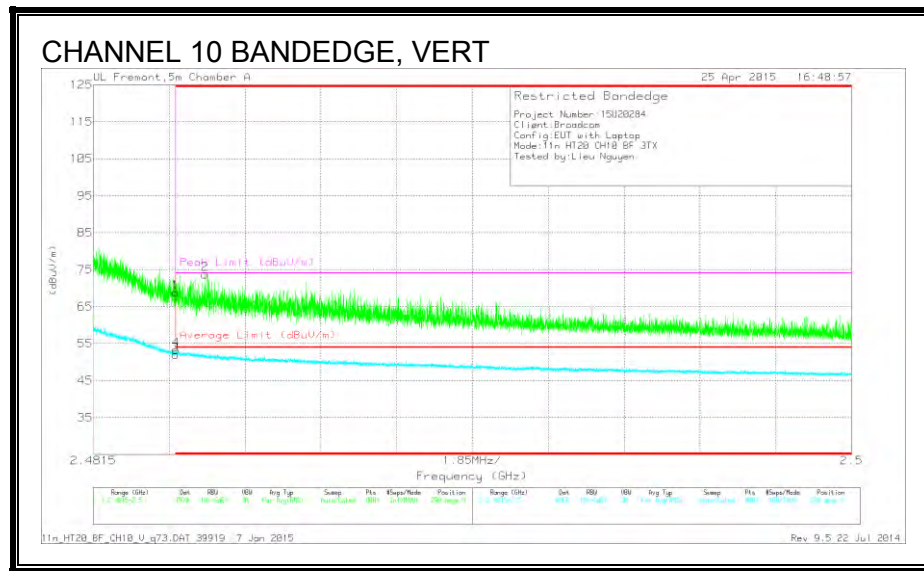
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	36.18	PK	32	4.9	0	73.08	-	-	74	-.92	293	162	V
2	* 2.389	36.08	PK	32	4.9	0	72.98	-	-	74	-1.02	293	162	V
3	* 2.39	16.53	RMS	32	4.9	.55	53.98	54	-.02	-	-	293	162	V
4	* 2.39	16.43	RMS	32	4.9	.55	53.88	54	-.12	-	-	293	162	V

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 10)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	31.72	PK	32.1	5	0	68.82	-	-	74	-5.18	298	228	V
2	* 2.484	36.66	PK	32.1	5	0	73.76	-	-	74	-24	298	228	V
3	* 2.484	14.29	RMS	32.1	5	.55	51.94	54	-2.06	-	-	298	228	V
4	* 2.484	15.69	RMS	32.1	5	.55	53.34	54	-.66	-	-	298	228	V

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

PK - Peak detector
RMS - RMS detection