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

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: BCM94360CS

FCC ID: QDS-BRCM1069
IC: 4324A-BRCM1069

REPORT NUMBER: 12U14668-1, Revision B

ISSUE DATE: MAY 30, 2013

Prepared for

BROADCOM CORPORATION
190 MATHILDA PLACE
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	01/24/13	Initial Issue	F. Ibrahim
A	05/28/13	Added another set of antennas in section 5.3	F. Ibrahim
B	05/30/13	Updated product description in section 5.1 Added power table for BF modes Updated maximum power table section Changed “802.11n AC” to “802.11ac VHT” Updated antenna description section	F. Ibrahim

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

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

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

MODEL: BCM94360CS

SERIAL NUMBER: C8Y2426006LF5563EX & C8Y2426005LF5563EXTF563ET

DATE TESTED: OCTOBER 3, 2012 - JANUARY 23, 2012

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

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

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

Approved & Released For UL CCS By:

FRANK IBRAHIM
WiSE PROJECT LEAD
UL CCS

Tested By:

KRISTOPHER NGUYEN
EMC ENGINEER
UL CCS

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 C63.10-2003, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Broadcom 802.11a/g/n/ac 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	PK Power, Chain 0 (dBm)	PK Power, Chain 1 (dBm)	PK Power, Chain 2 (dBm)	Total PK power (dBm)	Total PK power (mW)
2412 - 2462	802.11b CDD 3TX	20.10	20.32	20.08	24.94	311.83
2412 - 2462	802.11g Legacy 1TX	20.12	N/A	N/A	20.12	102.80
2412 - 2462	802.11n HT20 3TX	20.08	20.04	20.15	24.86	306.30
2412 - 2462	802.11ac VHT20 BF 3TX	20.08	20.04	20.15	24.86	306.30
5725 - 5850 MHz Authorized Frequency Band						
Frequency Range (MHz)	Mode	PK Power, Chain 0 (dBm)	PK Power, Chain 1 (dBm)	PK Power, Chain2 (dBm)	Total PK power (dBm)	Total PK power (mW)
5745 - 5825	802.11n HT20 CDD 2TX	19.14	19.20	N/A	22.18	165.21
5745 - 5825	802.11n HT20 CDD 3TX	20.20	20.40	20.01	24.98	314.59
5745 - 5825	802.11ac VHT20 BF 3TX	20.20	20.40	20.01	24.98	314.59
5755 - 5795	802.11n HT40 2TX	16.77	16.90	N/A	19.85	96.51
5755 - 5795	802.11n HT40 3TX	20.35	20.87	20.44	25.33	341.24
5755 - 5795	802.11ac VHT40 BF 3TX	20.35	20.87	20.44	25.33	341.24
5775	802.11ac VHT80 3TX	16.34	15.84	15.99	20.83	121.14
5775	802.11ac VHT80 BF 3TX	16.34	15.84	15.99	20.83	121.14

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The following antennas are utilized for this device:

No	Antenna Manufacturer	Antenna Type	Model	Peak gain @ 2412, 2422, 2432MHz,	Peak gain (5150-5250MHz) @5200MHz	Peak gain (5250-5350MHz) @5320MHz	Peak gain (5470-5725MHz) @5500, 5700MHz	Peak gain (5725-5850MHz) @5785, 5805MHz	
1	Amphenol/Molex	802.11abgn WLAN Antenna	613-1143 Wi-Fi1	0.12	7.04	7.09	5.03	2.66	Host2 antenna
1	Amphenol/Molex	802.11abgn WLAN/BT Antenna	613-1143 Wi-Fi2	5.3	6.7	7.06	6.66	5.93	Host2 antenna
1	Amphenol/Molex	802.11abgn WLAN Antenna	613-1143 Wi-Fi3 & Bluetooth	4.69	3.79	3.58	3.94	6.04	Host2 antenna
2	Amphenol/Molex	802.11abgn WLAN Antenna	613-1631 Wi-Fi1	2.47	4.18	3.35	3.32	3.56	Host1 antenna
2	Amphenol/Molex	802.11abgn WLAN Antenna	613-1631 Wi-Fi2	2.64	4.22	3.44	2.41	3.68	Host1 antenna
2	Amphenol/Molex	802.11abgn WLAN Antenna	613-1631 Wi-Fi3 & Bluetooth	4.82	4.63	3.01	4.63	4.31	Host1 antenna

Antenna mapping:

WiFi 3	WiFi 2	WiFi 1
Chain 1	Chain 0	Chain 2

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was Broadcom, rev. 6.30.118.23.

The test utility software used during testing was BCM Internal, rev. 6.30.RC118.23.

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.

Worst-Case data rates, as provided by the client, were as follows:

For 2.4 GHz Band:
802.11b: 1 Mb/s.
802.11g: 6 Mb/s.
802.11n 20MHz: MCS0.

For 5.8 GHz Band:
802.11a: 6 Mb/s.
802.11n 20MHz: MCS0.
802.11n 40MHz: MCS0.
802.11n 80MHz: MCS0.

Worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was the mode and channel with the highest output power.

For Radiated Band Edge measurements preliminary testing showed that the worst case was vertical polarization, so some final measurements were performed with vertical polarization only.

For the modes where CH2 and CH10 were tested for output power, all other test items at CH1 and CH11 were performed with the higher power level between CH1 and CH2, and between CH10 and CH11 as worst-case scenario.

For all modes with single chain, chain 1 was selected per the software provided by the client. Based on the client a preliminary investigation was performed on the three chains and chain 1 was found to be worst-case.

For 802.11n HT20 CDD 3TX mode in the 5.8 GHz band, the output power for each chain used for the testing purpose was equal to the output power on single chain for 802.11a 1TX mode; therefore, 802.11n HT20 CDD 3TX mode covers 802.11a 1TX mode as worst-case scenario

For 802.11n HT20 CDD 3TX mode in both 2.4 GHz and 5.8 GHz bands, the output power for each chain used for the testing purpose was equal to the output power on single chain for 802.11n HT20 1TX mode; therefore, 802.11n HT20 CDD 3TX mode covers 802.11n HT20 1TX mode as worst-case scenario.

For 802.11n HT40 CDD 3TX mode, the output power for each chain used for the testing purpose was equal to the output power on single chain for 802.11n HT40 1TX mode; therefore, 802.11n HT40 CDD 3TX mode covers 802.11n HT40 1TX mode as worst-case scenario

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	679	CBU3475167	DoC
Laptop	Lenovo	4446	RA-CAD03 98/08	DoC
AC Adapter	Lenovo	ADP-65KH B	11S36001646ZZ10011FKY6	DoC
AC Adapter	Lenovo	PA-1650-02H	11S36001646ZZ1000AD9WJ	DoC
Adapter Board	Catalyst	MINI2EXP	N/A	N/A
Adapter Board	Catalyst	MINI2EXP	BRCM 2011-04	N/A
Adapter Board	Broadcom	BCM94331CSMFG	1504020	N/A
Adapter Board	Broadcom	BCM94331CSMFG	1504021	N/A

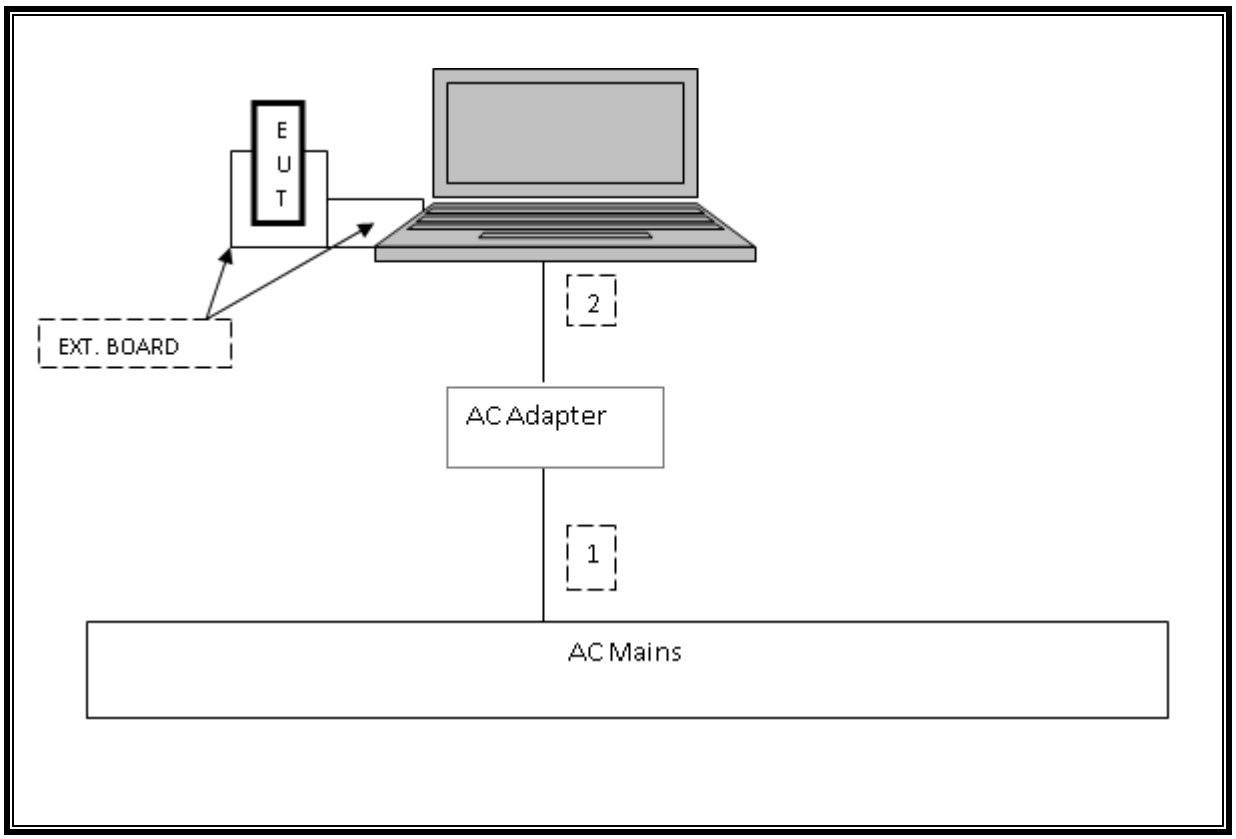
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	US 115V	Un-Shielded	1.0m	NA
2	DC	1	DC	Un-Shielded	1.8m	Ferrite at laptop's end

TEST SETUP

The EUT is attached to a jig board which is installed in the PCMCI slot of a host laptop computer during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List					
Description	**Manufacturer**	**Model**	**Asset**	**Cal Date**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/13/11	12/13/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	05/11/11	05/11/13
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	07/13/12	07/06/13
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/08/12	08/08/13
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/11	12/13/13
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/11	12/13/13
Antenna, Horn, 18 GHz	EMCO	3115	C00945	11/12/12	11/12/13
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00946	11/12/12	11/12/13
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	06/14/12	06/14/13
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C00682	02/07/12	02/07/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	02/21/12	02/21/13
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/12	10/22/13
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/02/11	08/02/13
LISN, 30 MHz	FCC	50/250-25-2	N02396	08/08/12	08/08/13
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRC13192	N02683	CNR	CNR
Reject Filter, 5.15-5.35 GHz	Micro-Tronics	BRC13190	N02680	CNR	CNR
Reject Filter, 5.47-5.725 GHz	Micro-Tronics	BRC13191	N02678	CNR	CNR
Reject Filter, 5.725-5.825 GHz	Micro-Tronics	BRC13192	N02676	CNR	CNR

7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

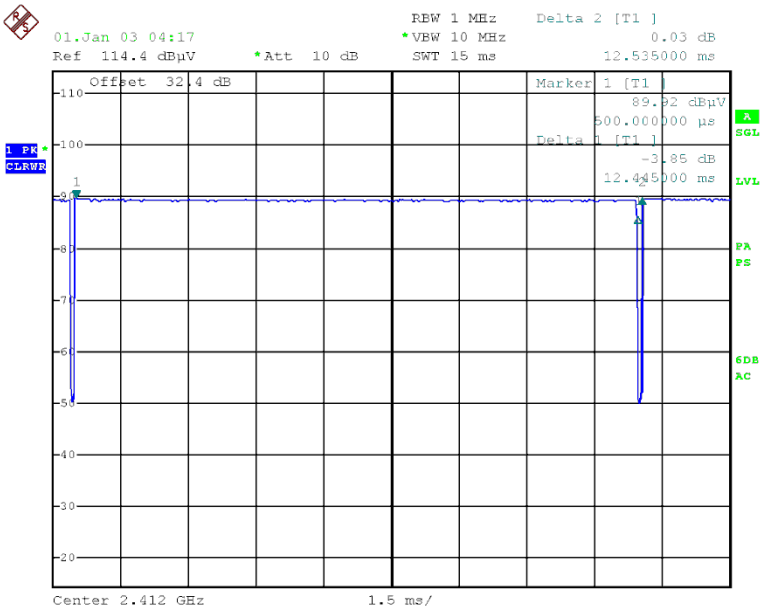
KDB 558074 D01 V02; Zero-Span Spectrum Analyzer Method.

7.1. ON TIME AND DUTY CYCLE RESULTS

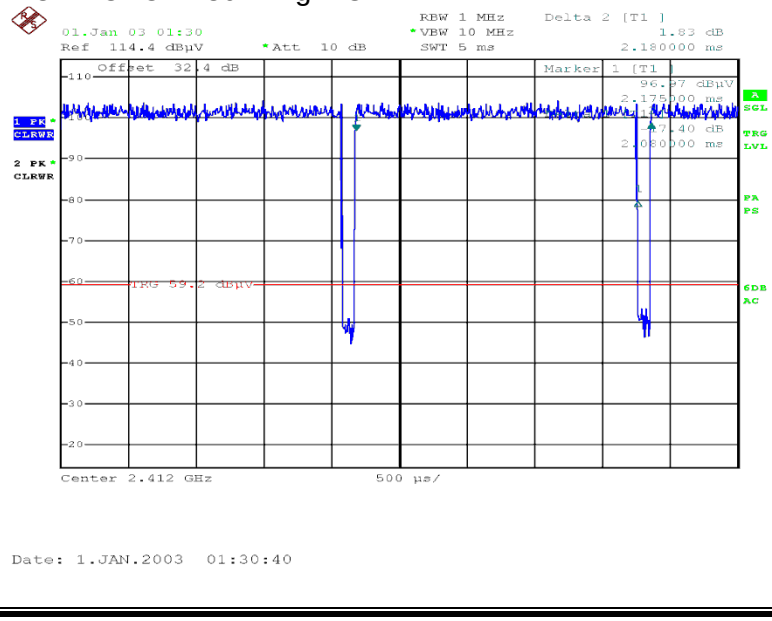
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
2.4GHz Band					
802.11b CDD	12.45	12.54	0.993	99.3%	0.03
802.11g Legacy	2.08	2.18	0.954	95.4%	0.20
802.11n HT20 CDD	1.94	2.04	0.951	95.1%	0.22
5GHz Band					
802.11a	2.08	2.19	0.950	95.0%	0.22
802.11n HT20 CDD	1.94	2.04	0.951	95.1%	0.22
802.11n HT20 STBC	1.93	2.04	0.949	94.9%	0.23
802.11n HT40 SISO	0.95	1.05	0.905	90.5%	0.43
802.11n HT40 CDD	0.95	1.05	0.905	90.5%	0.43
802.11n HT40 STBC	0.92	1.05	0.872	87.2%	0.59
802.11n AC80 SISO	0.46	0.56	0.828	82.8%	0.82
802.11n AC80 CDD	0.46	0.56	0.828	82.8%	0.82

7.2. DUTY CYCLE PLOTS

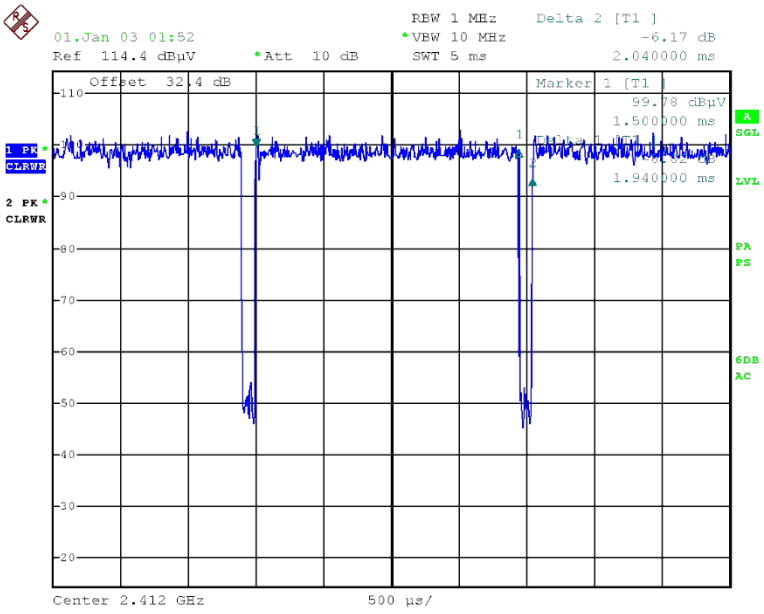
DUTY CYCLE 802.11b MODE



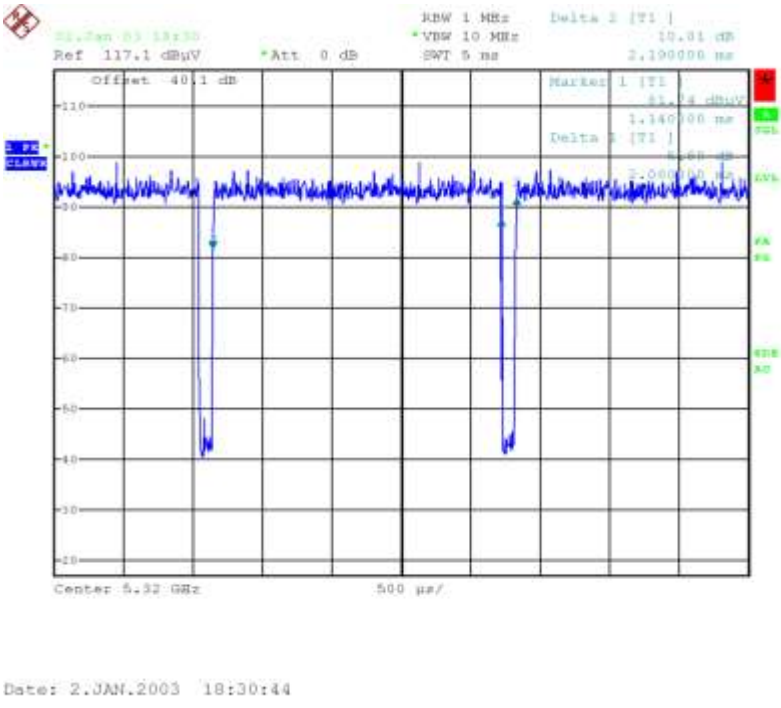
DUTY CYCLE 802.11g MODE



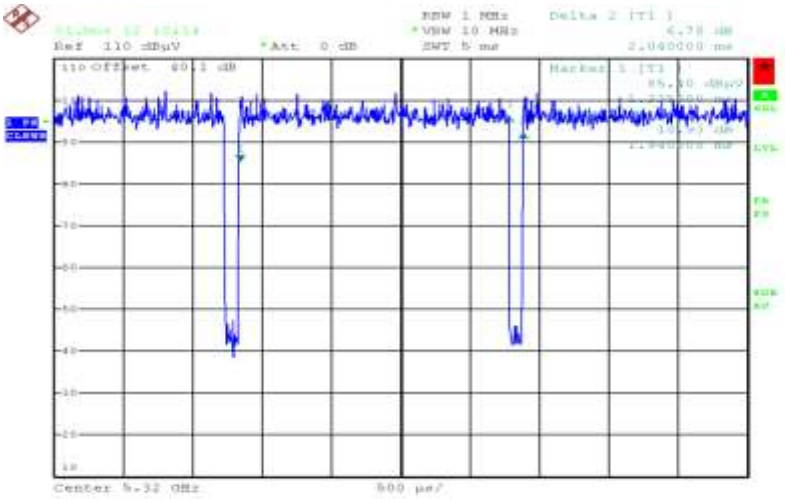
DUTY CYCLE 802.11n HT20 CDD MODE



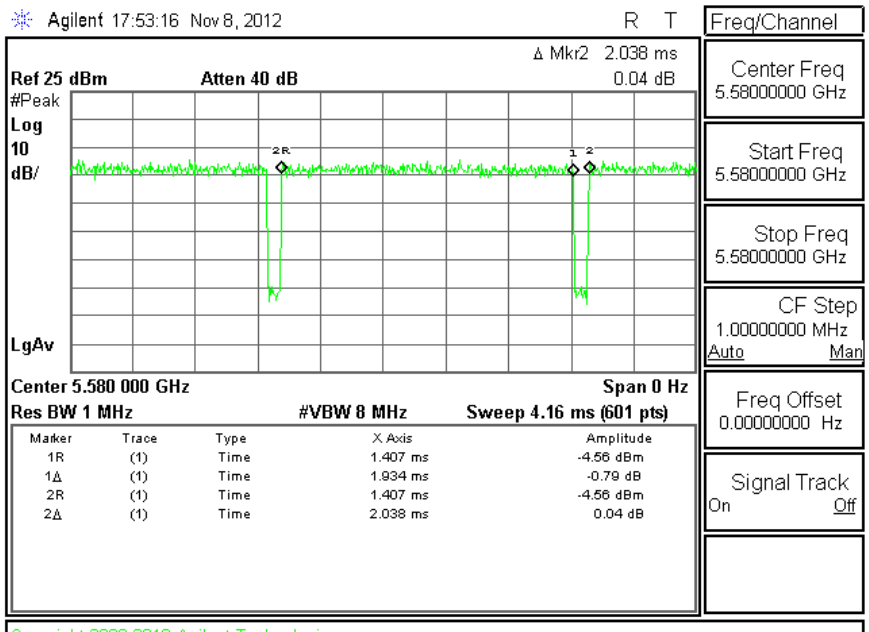
DUTY CYCLE 802.11a LEGACY MODE



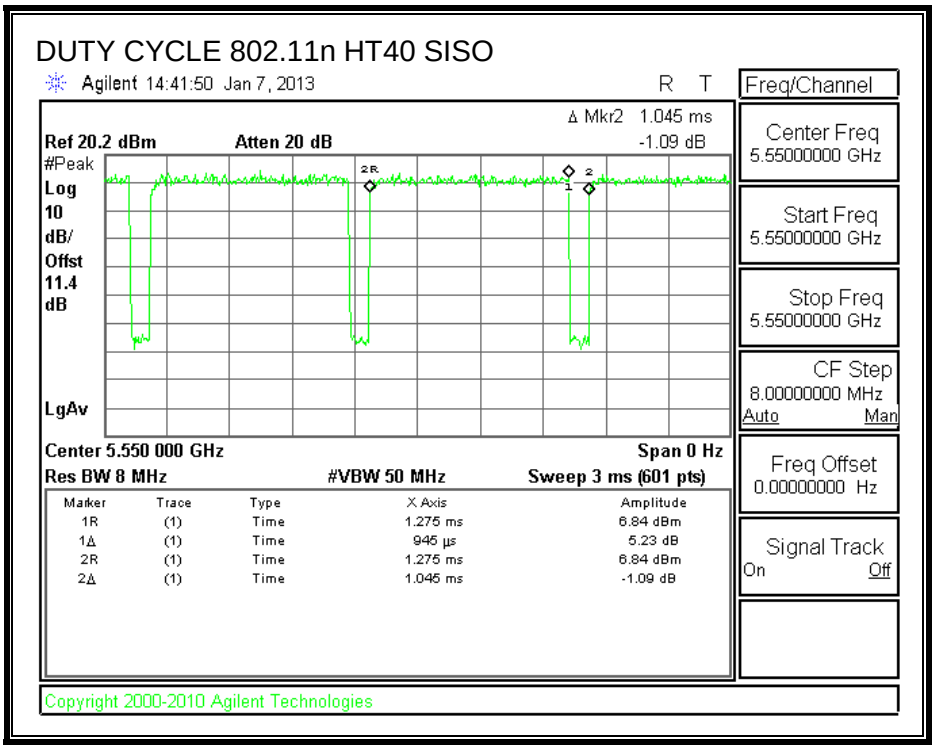
DUTY CYCLE 802.11n HT20 CDD MODE



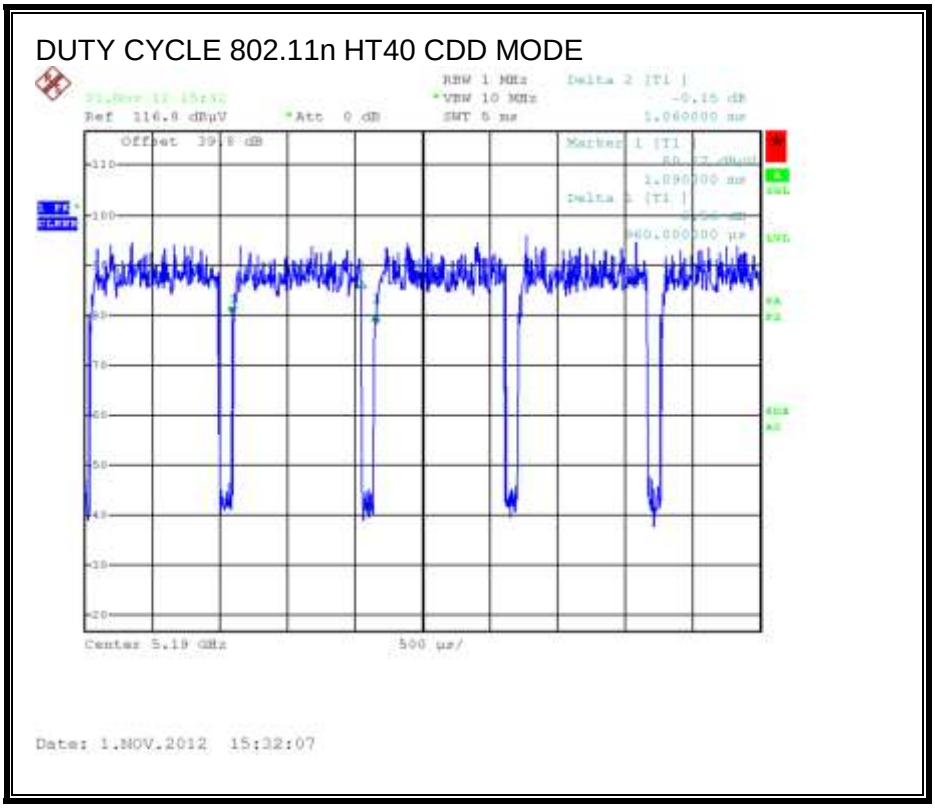
DUTY CYCLE 802.11n HT20 STBC MODE



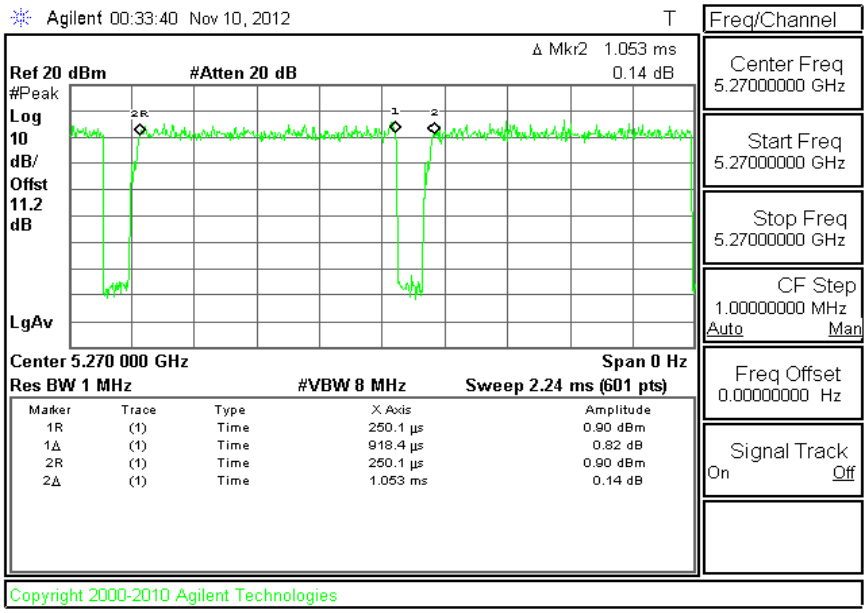
DUTY CYCLE 802.11n HT40 SISO



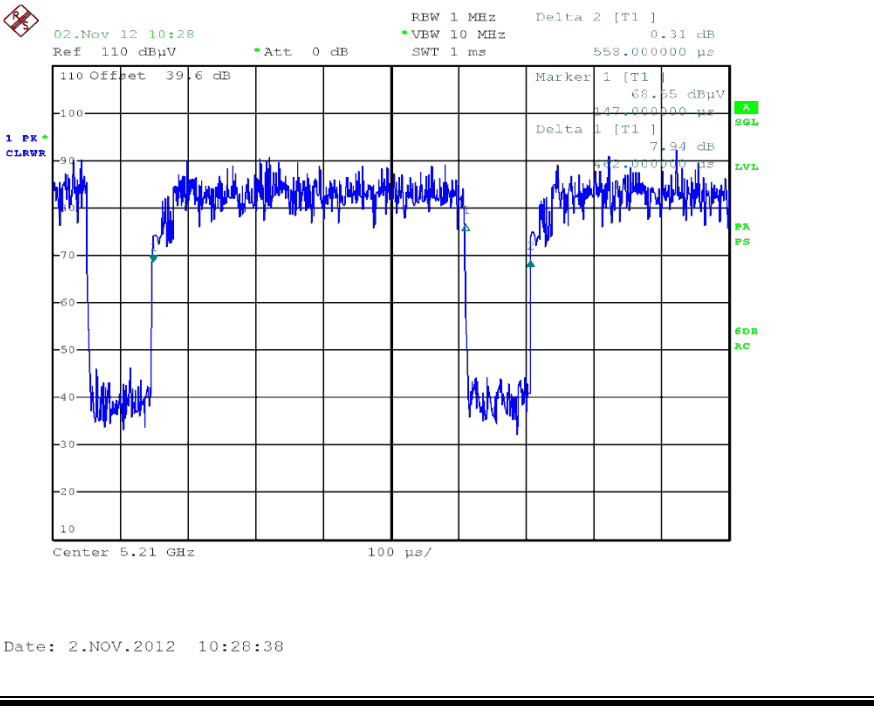
DUTY CYCLE 802.11n HT40 CDD MODE



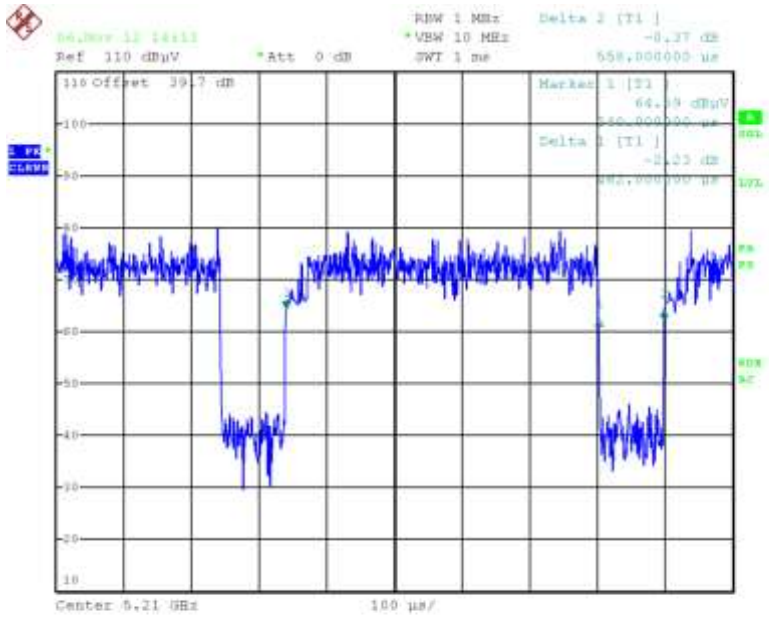
DUTY CYCLE 802.11n HT40 STBC MODE



DUTY CYCLE 802.11ac VHT80 SISO MODE



DUTY CYCLE 802.11ac VHT80 CDD MODE



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7.3. MEASUREMENT METHODS

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

Output Power: KDB 558074 D01 v02, Sections 8.2.3 and 8.2.4.

Power Spectral Density: KDB 558074 D01 v02, Sections 9.2 and 9.4.

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

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

8. ANTENNA PORT TEST RESULTS

8.1. 802.11b 1TX MODE IN THE 2.4 GHz BAND

Covered by testing 802.11b 3TX CDD mode at the same power level.

8.2. 802.11b 2TX CDD MODE IN THE 2.4 GHz BAND

Covered by testing 802.11b 3TX CDD mode at the same power level

8.3. 802.11b 3TX CDD MODE IN THE 2.4 GHz BAND

8.3.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

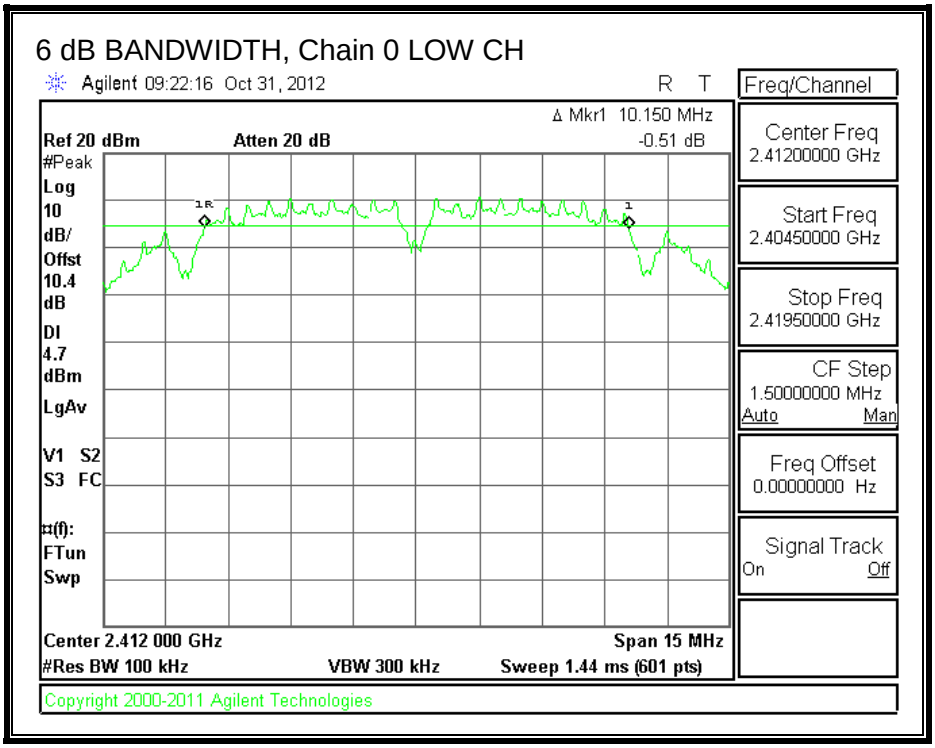
IC RSS-210 A8.2 (a)

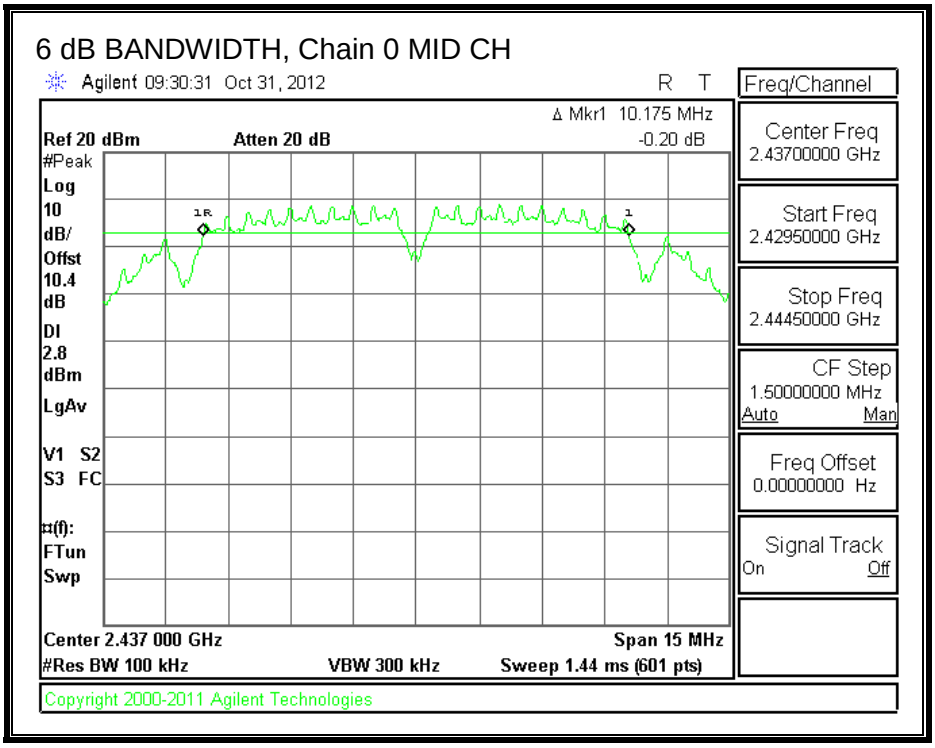
The minimum 6 dB bandwidth shall be at least 500 kHz.

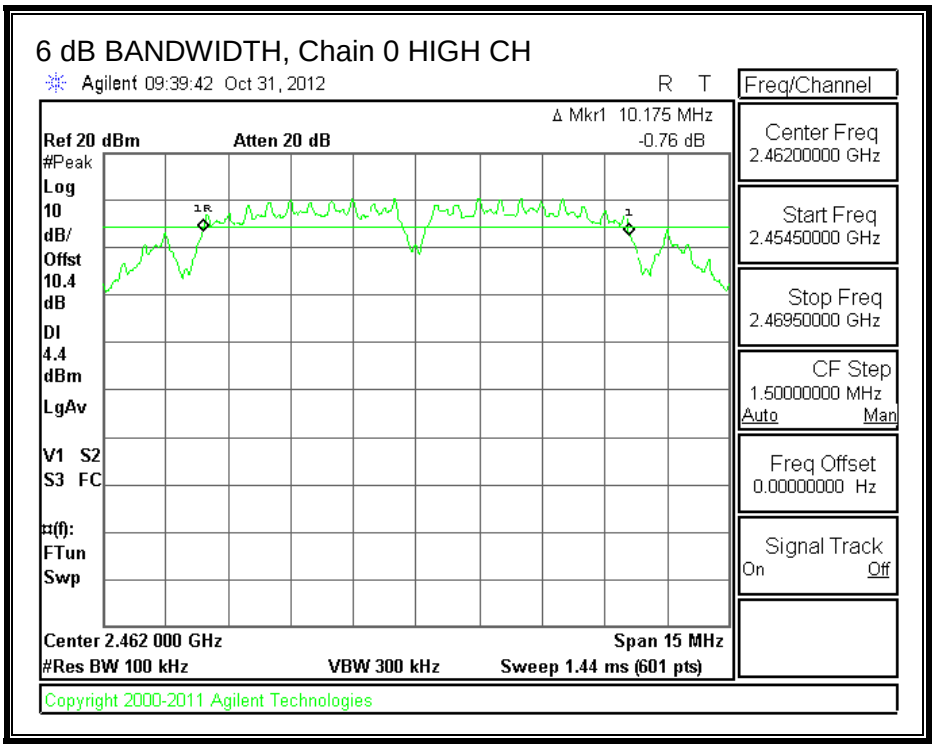
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	2412	10.150	10.175	10.175	0.5
Mid	2437	10.175	10.200	10.150	0.5
High	2462	10.175	10.150	10.200	0.5

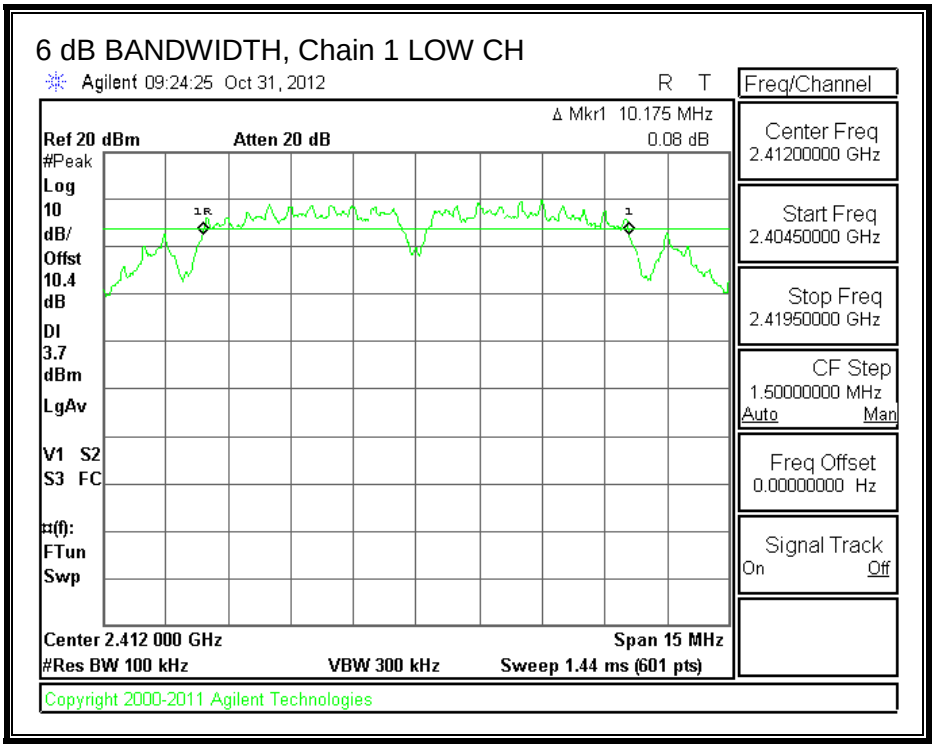
6 dB BANDWIDTH, Chain 0



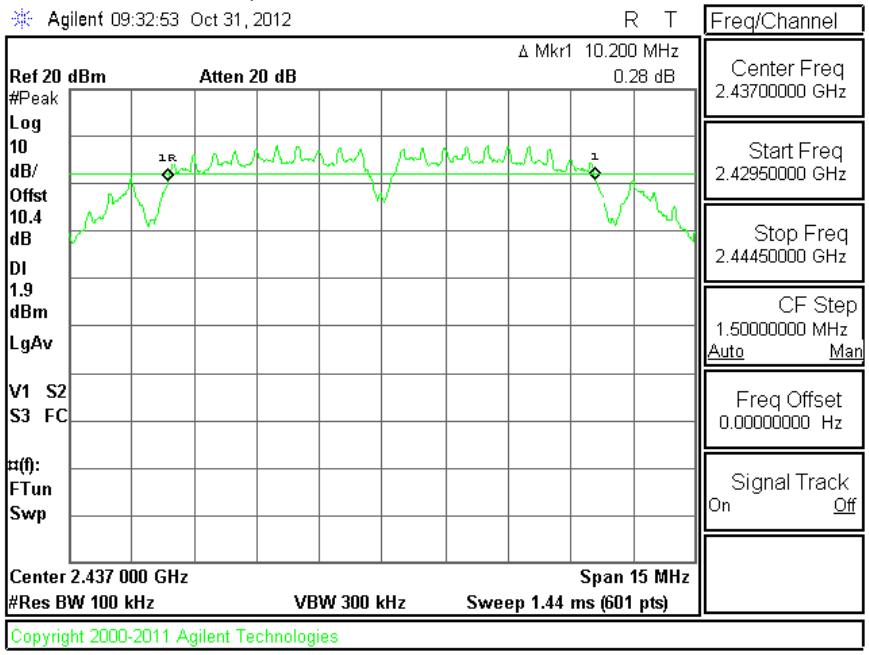




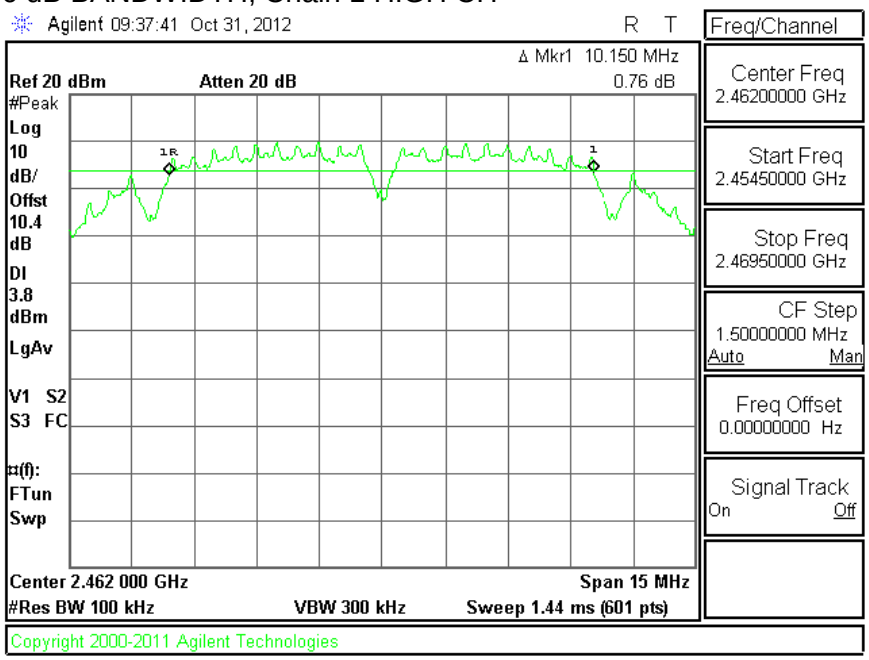
6 dB BANDWIDTH, Chain 1



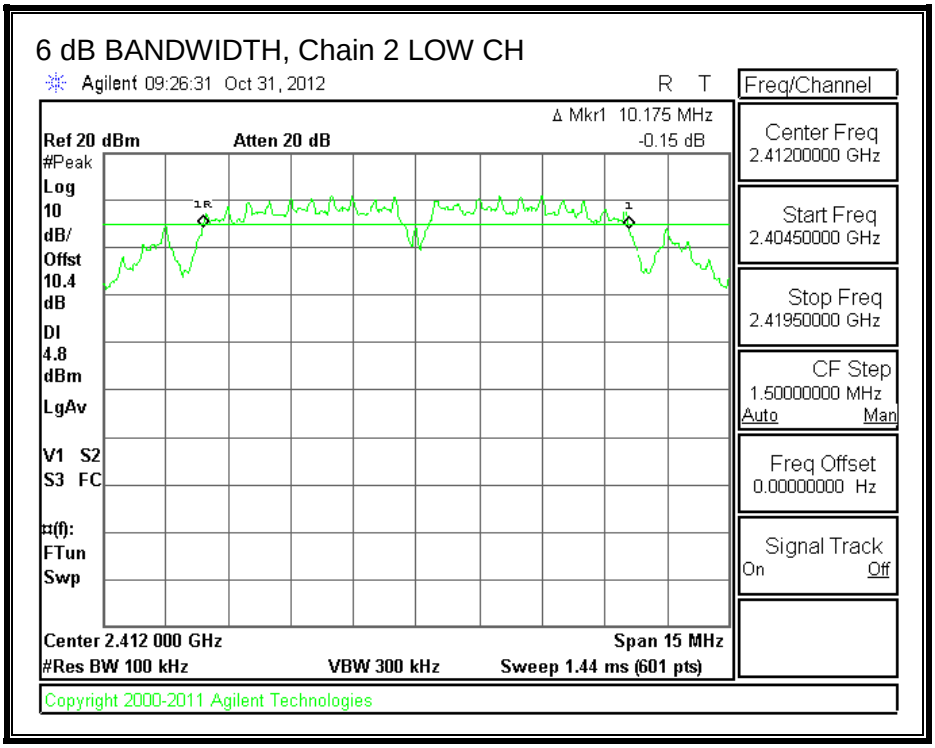
6 dB BANDWIDTH, Chain 1 MID CH

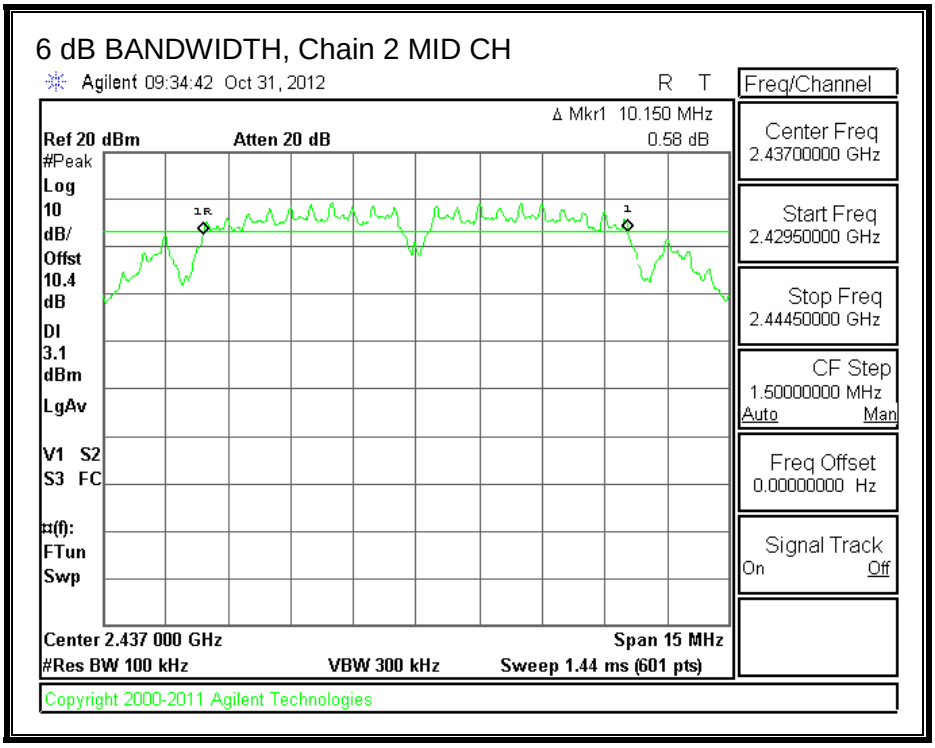


6 dB BANDWIDTH, Chain 1 HIGH CH

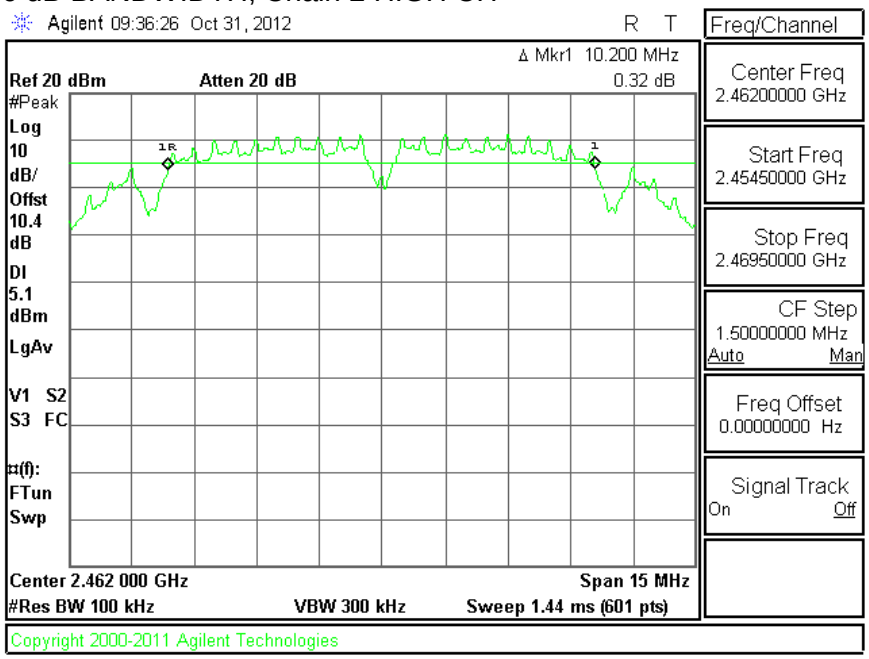


6 dB BANDWIDTH, Chain 2





6 dB BANDWIDTH, Chain 2 HIGH CH



8.3.2. 99% BANDWIDTH

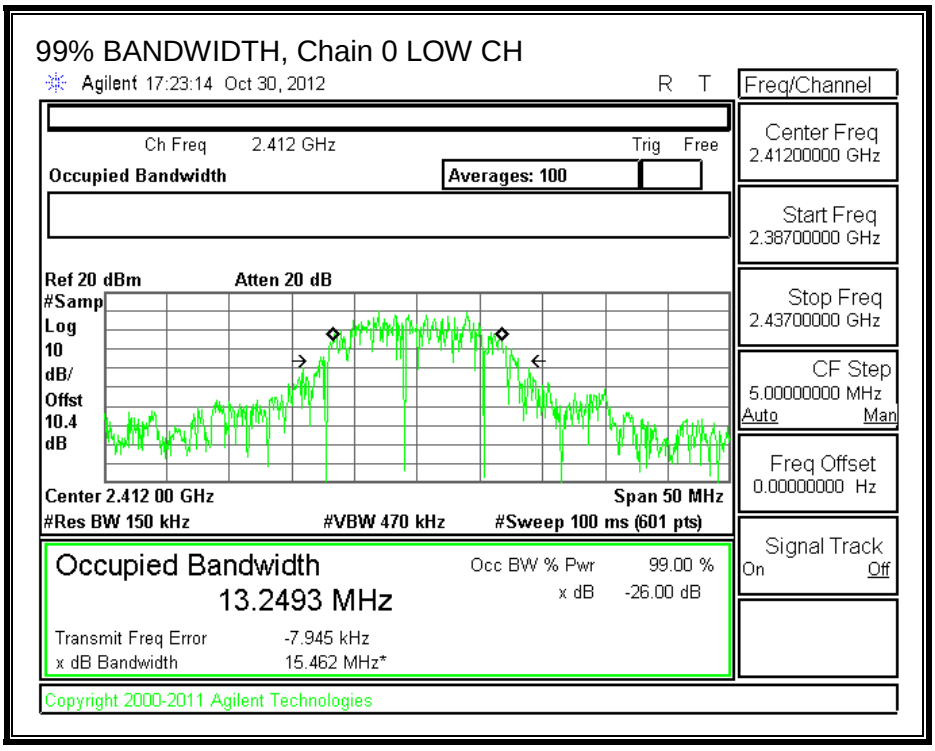
LIMITS

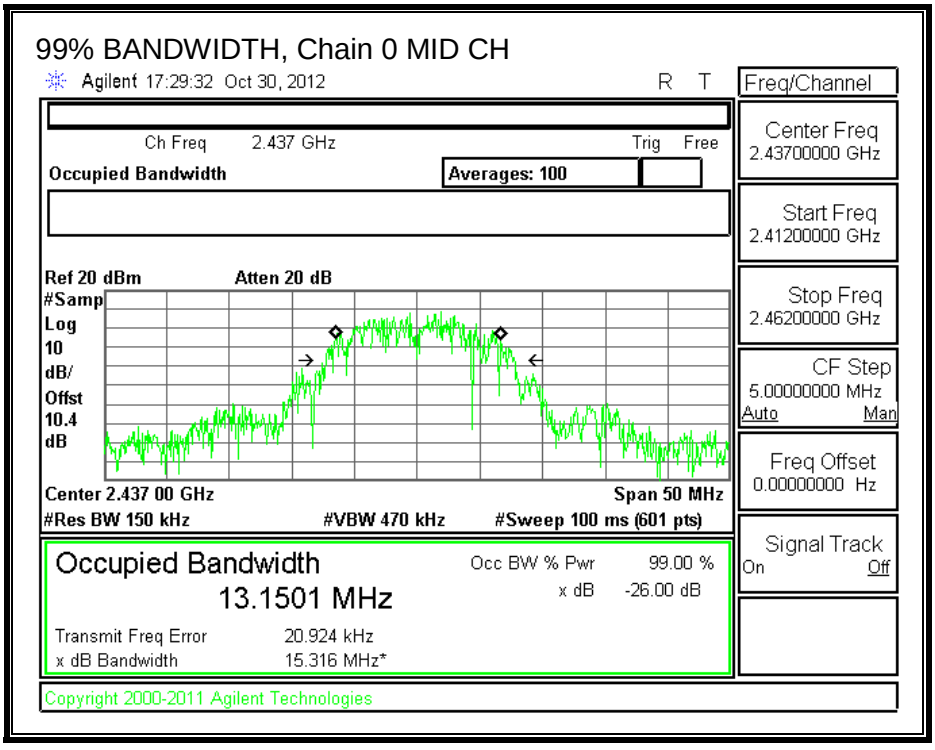
None; for reporting purposes only.

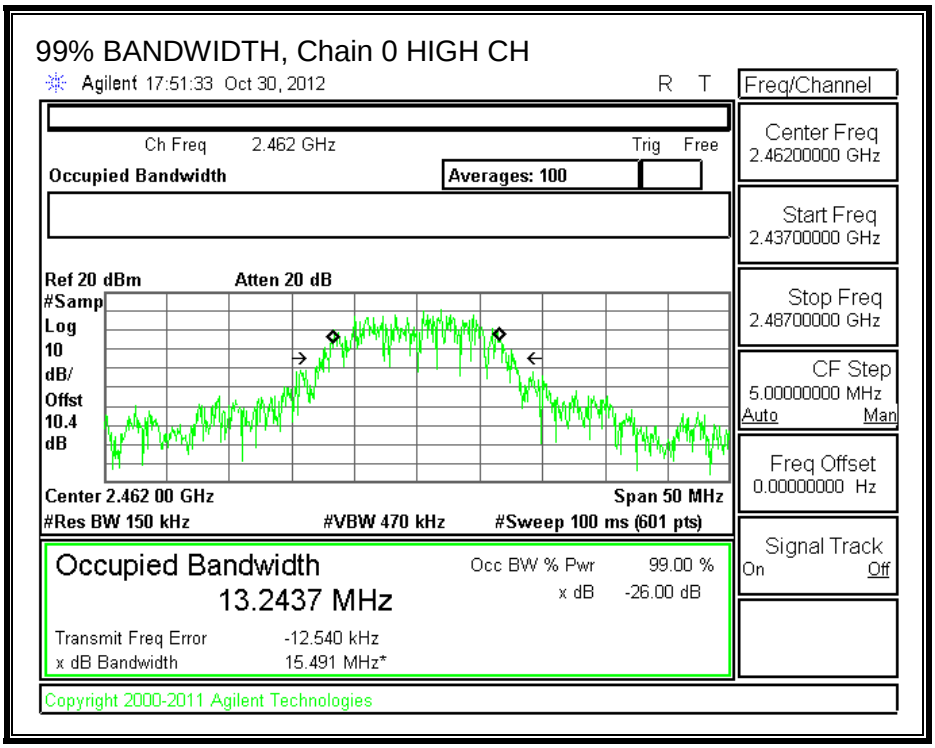
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	2412	13.2493	13.2852	13.2460
Mid	2437	13.1501	13.1333	13.0929
High	2462	13.2437	13.2095	13.3133

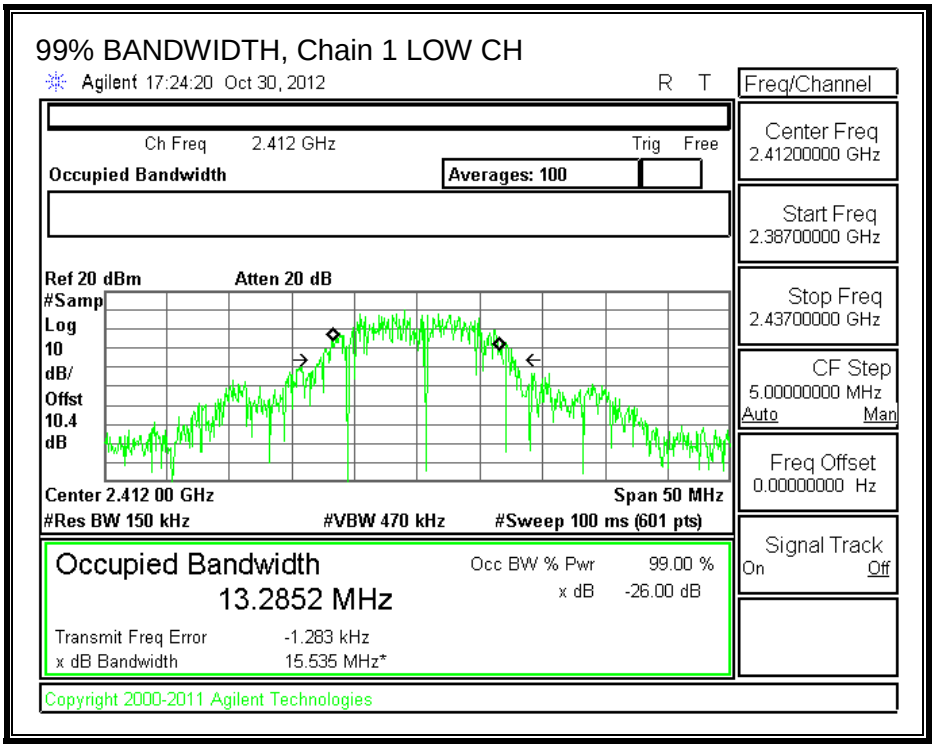
99% BANDWIDTH, Chain 0

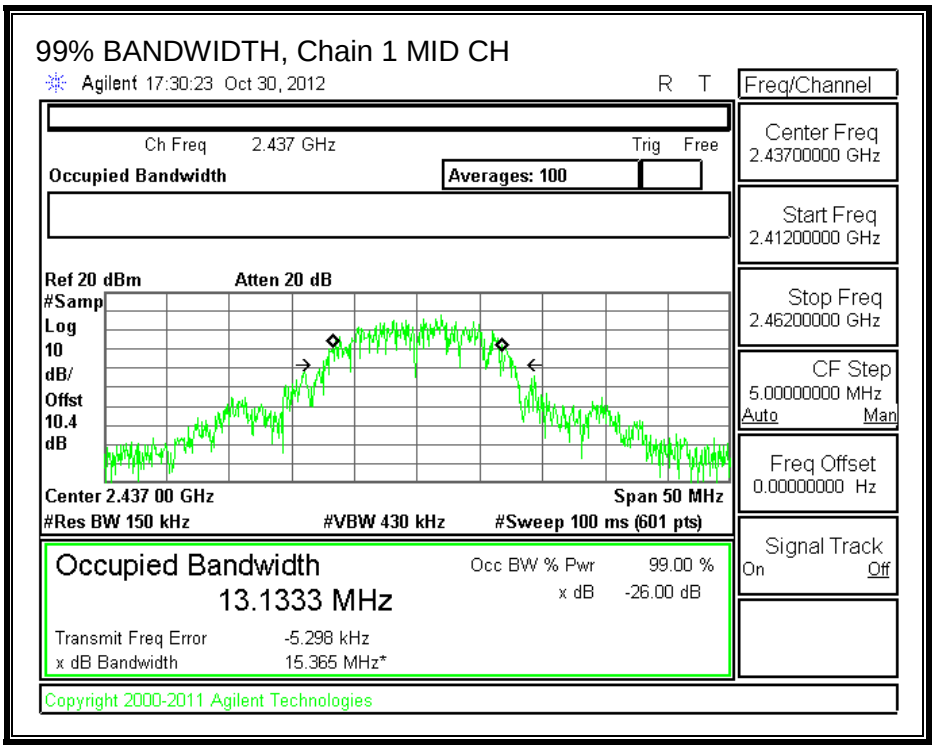


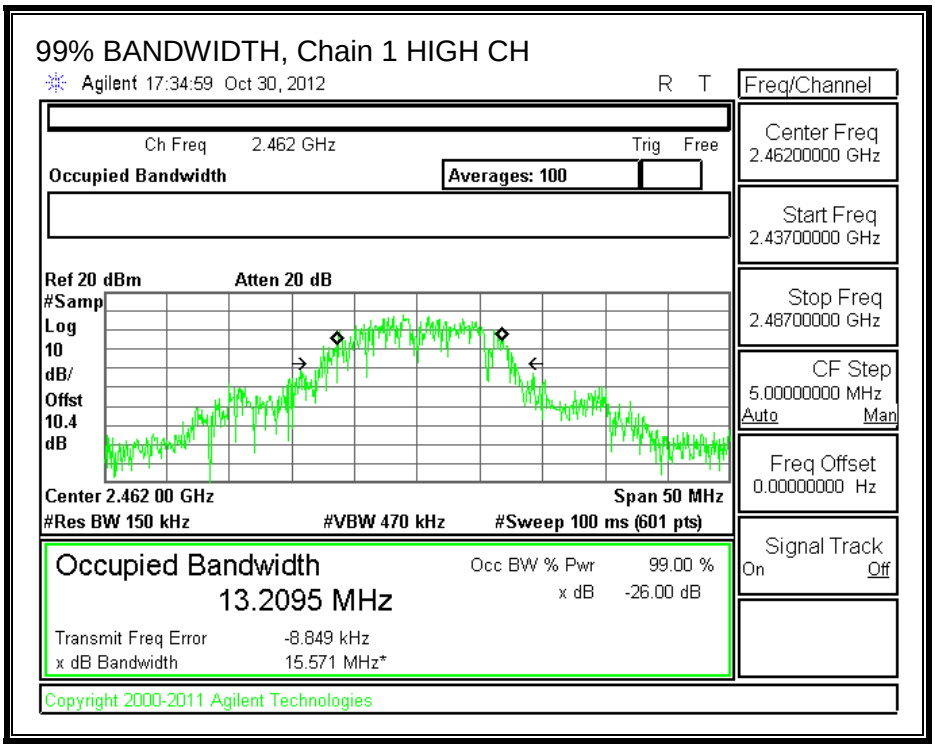




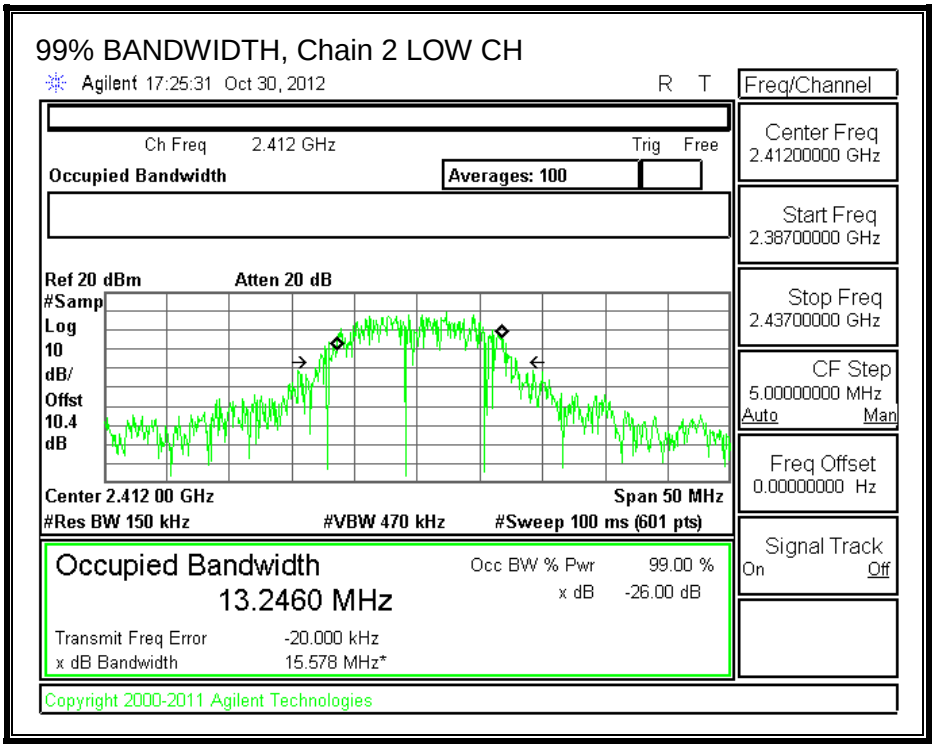
99% BANDWIDTH, Chain 1

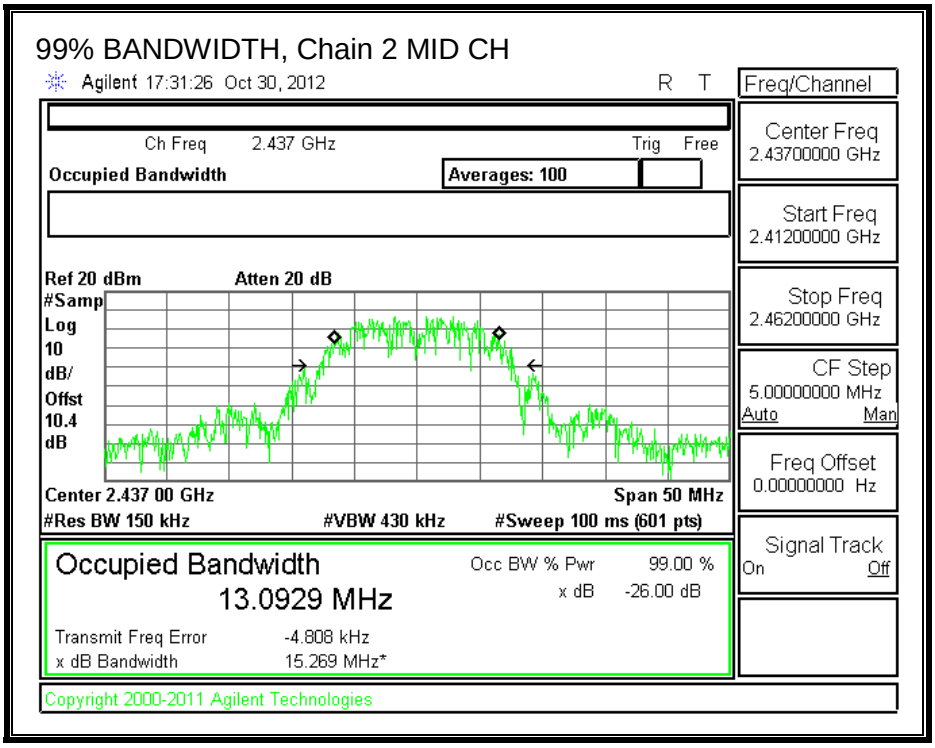


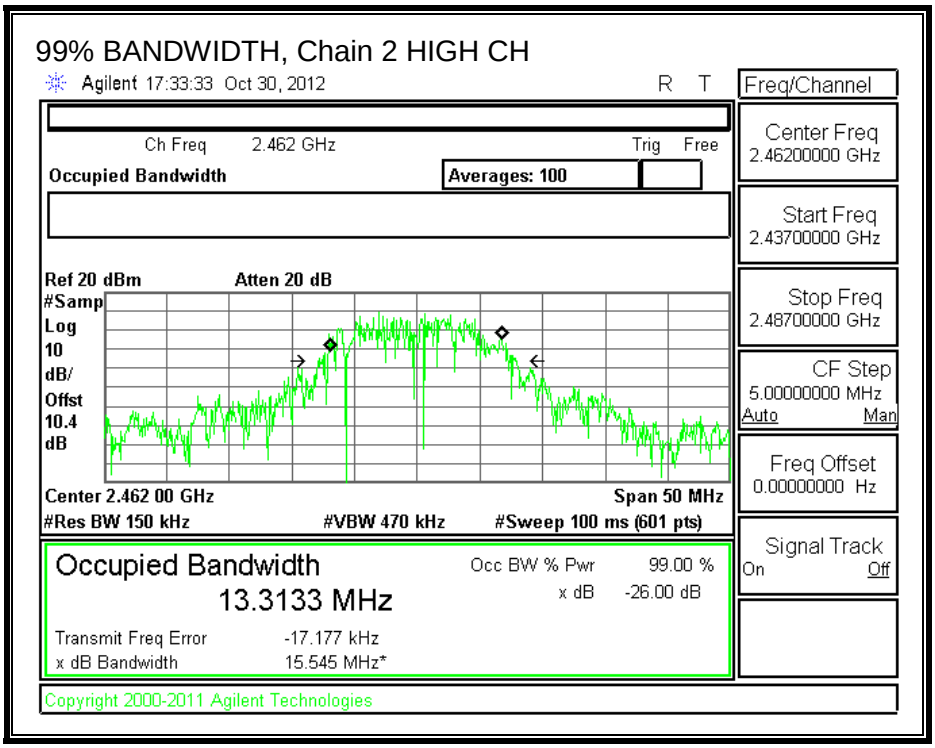




99% BANDWIDTH, Chain 2







8.3.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated for output power consideration and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
0.12	5.30	4.69	3.90

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	3.90	30.00	30	36	30.00
Mid	2437	3.90	30.00	30	36	30.00
High	2462	3.90	30.00	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)
Low	2412	20.10	20.32	20.08	24.94	30.00	-5.06
Mid	2437	20.03	20.12	20.07	24.84	30.00	-5.16
High	2462	19.70	18.50	19.00	23.87	30.00	-6.13

8.3.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

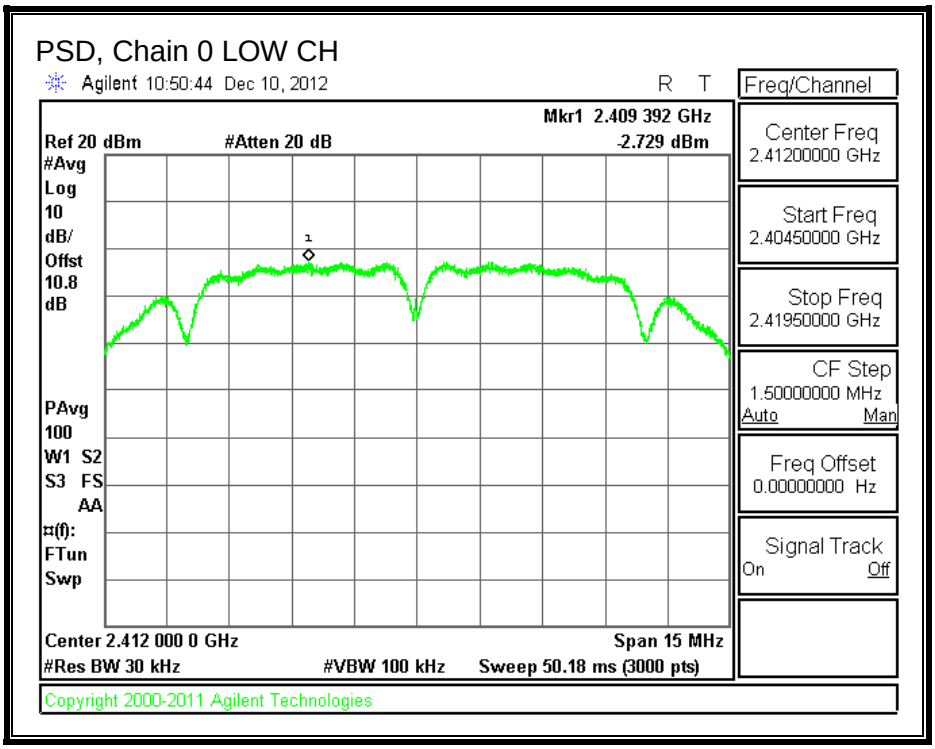
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

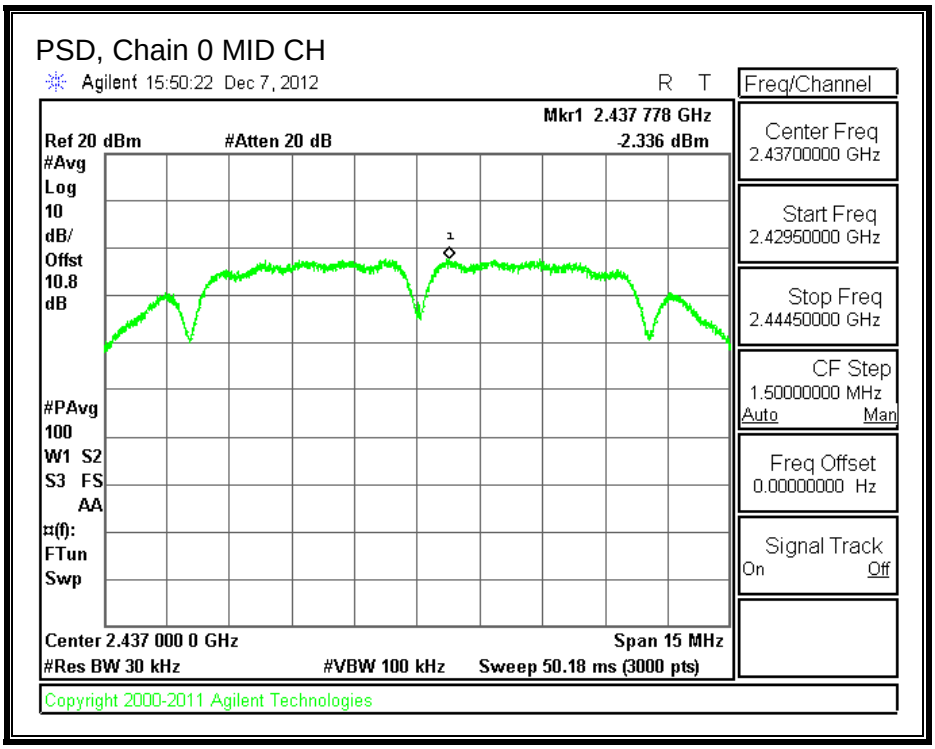
RESULTS

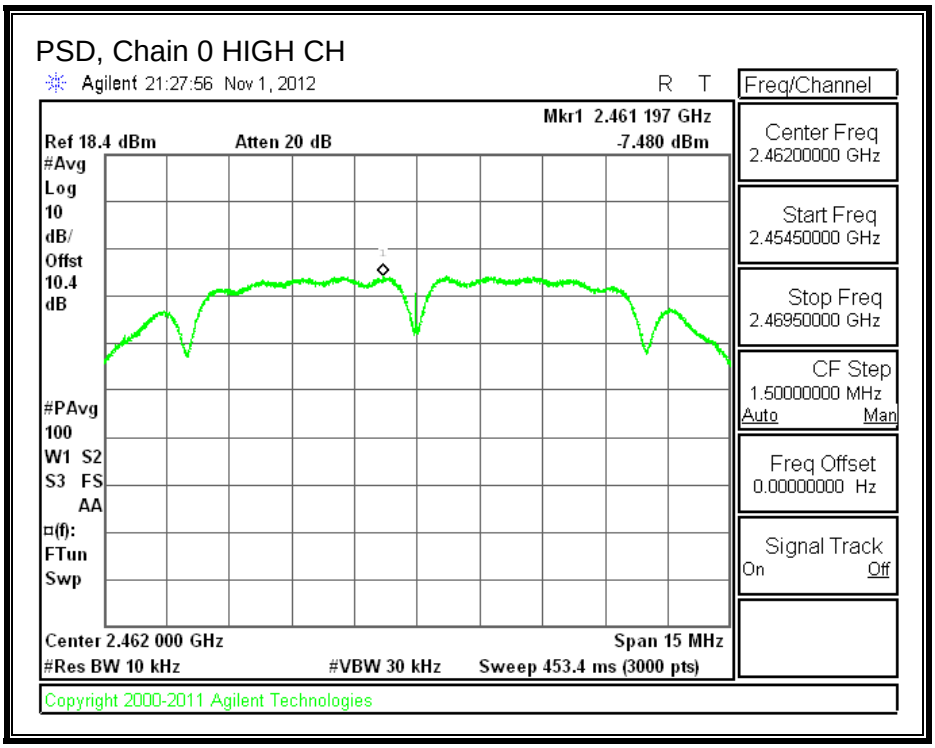
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-2.729	-4.238	-2.872	1.54	8.0	-6.5
Mid	2437	-2.336	-4.826	-2.276	1.78	8.0	-6.2
High	2462	-7.480	-8.789	-7.957	-3.27	8.0	-11.3

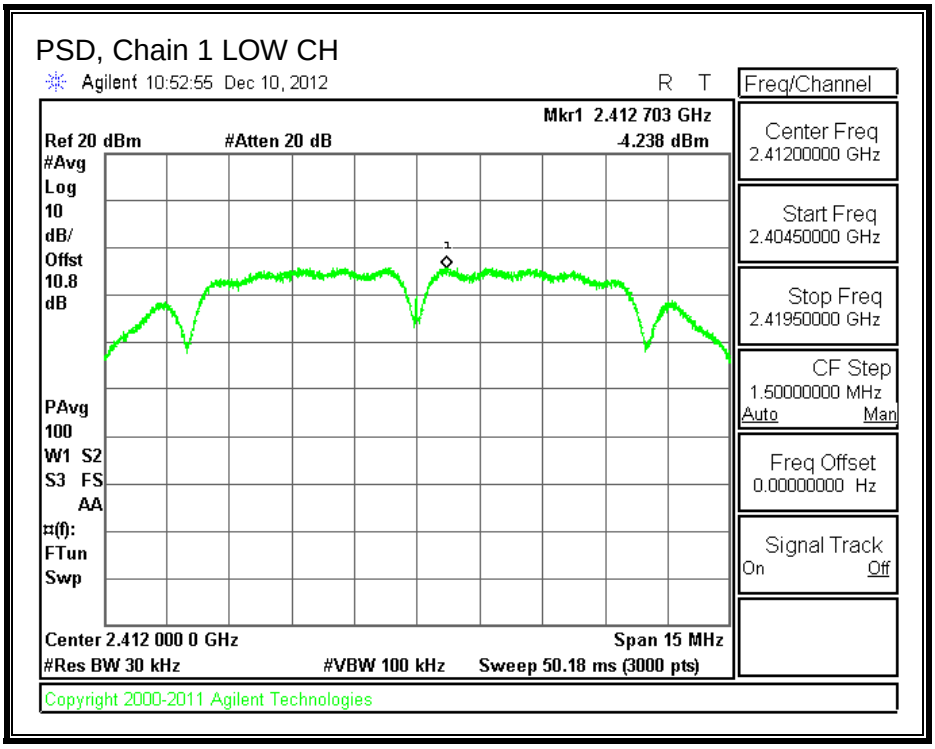
PSD, Chain 0

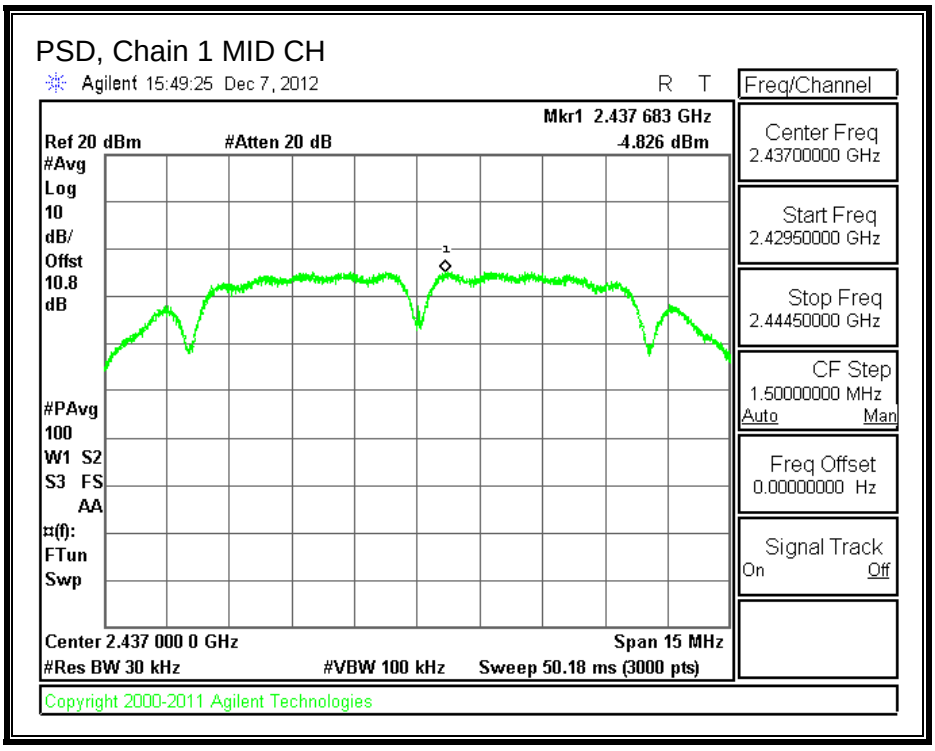


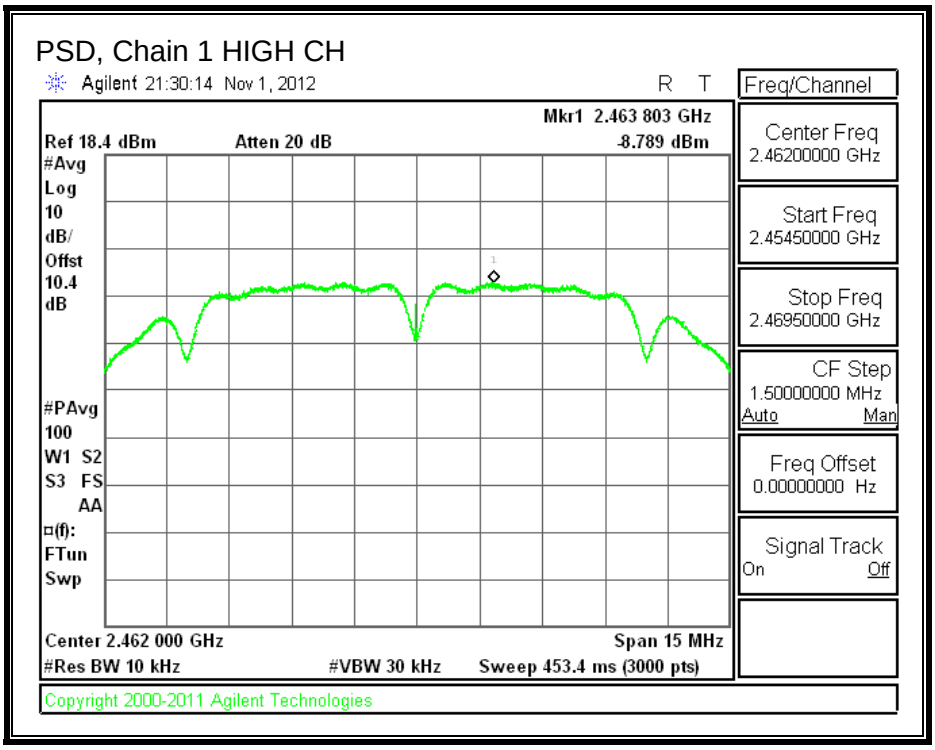




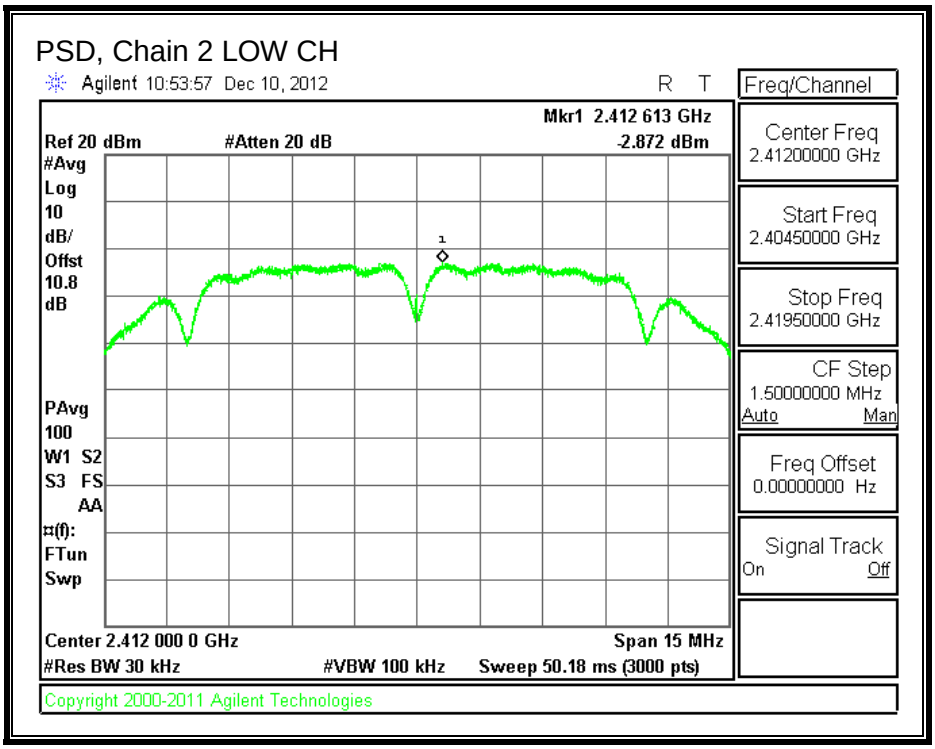
PSD, Chain 1

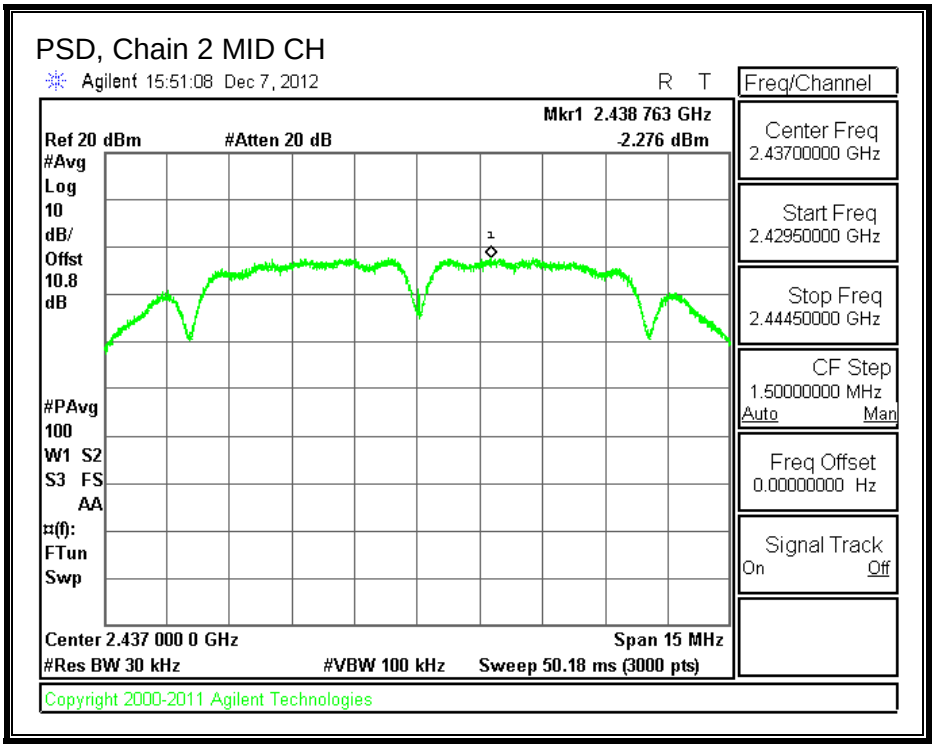


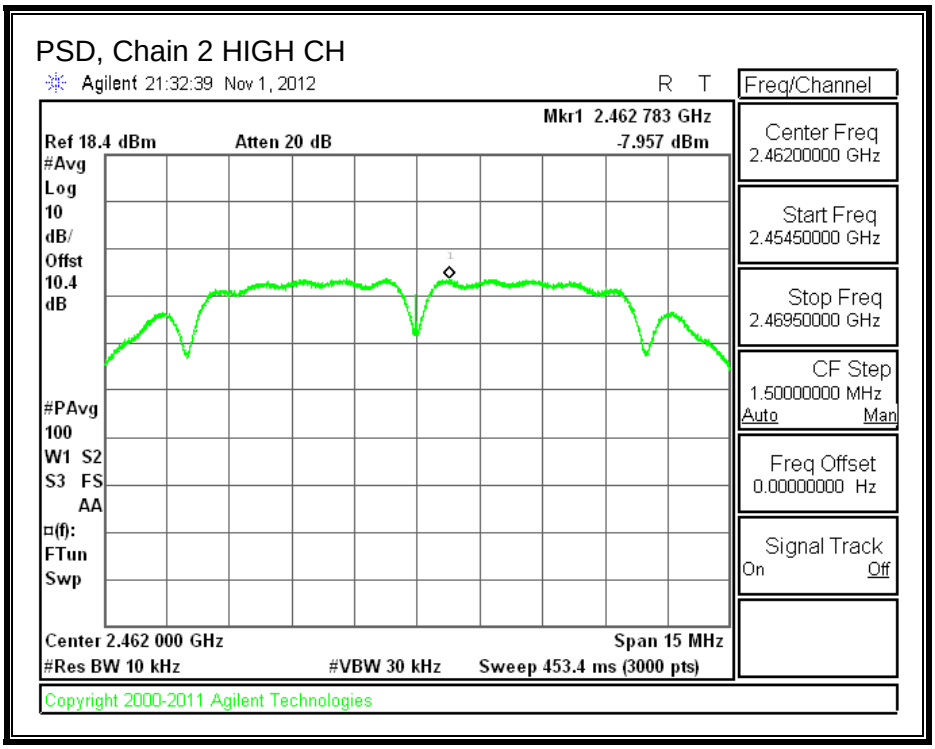




PSD, Chain 2







8.3.5. OUT-OF-BAND EMISSIONS

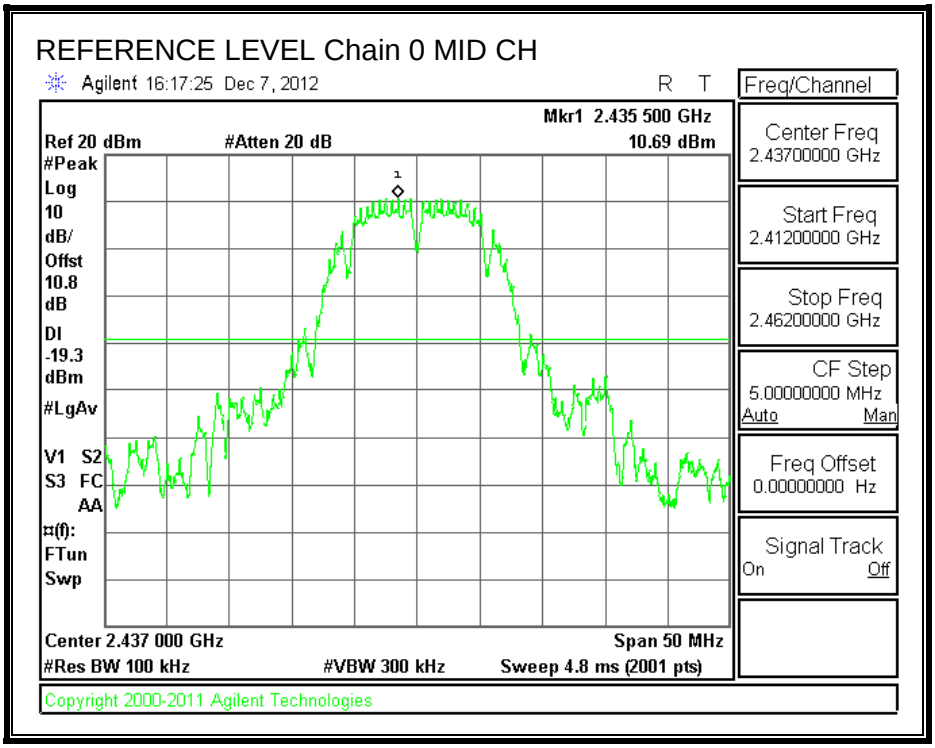
LIMITS

FCC §15.247 (d)

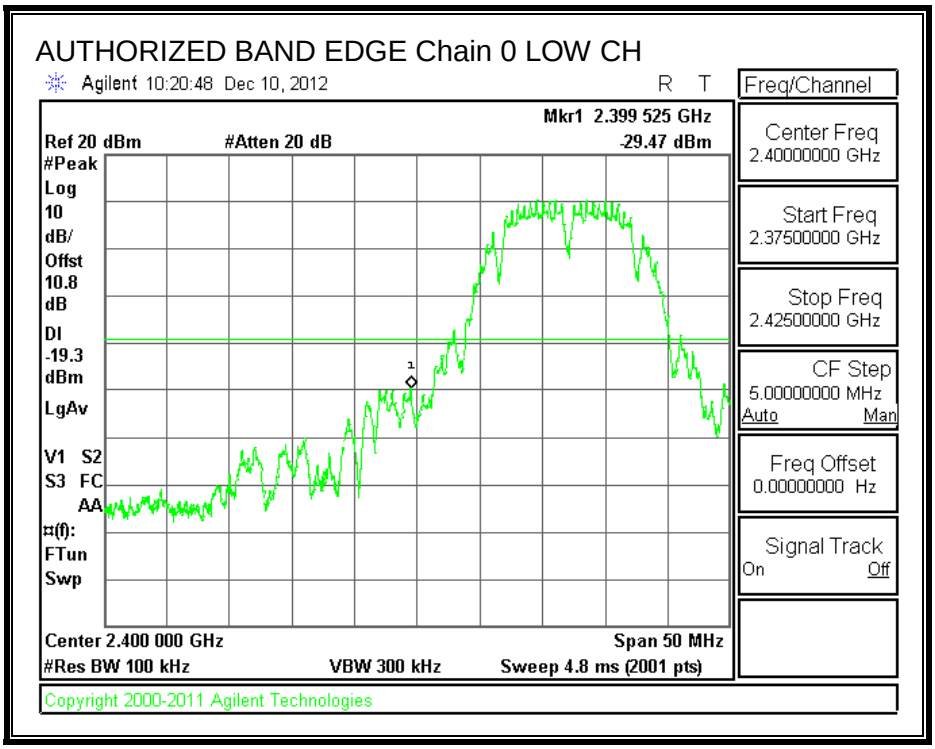
IC RSS-210 A8.5

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.

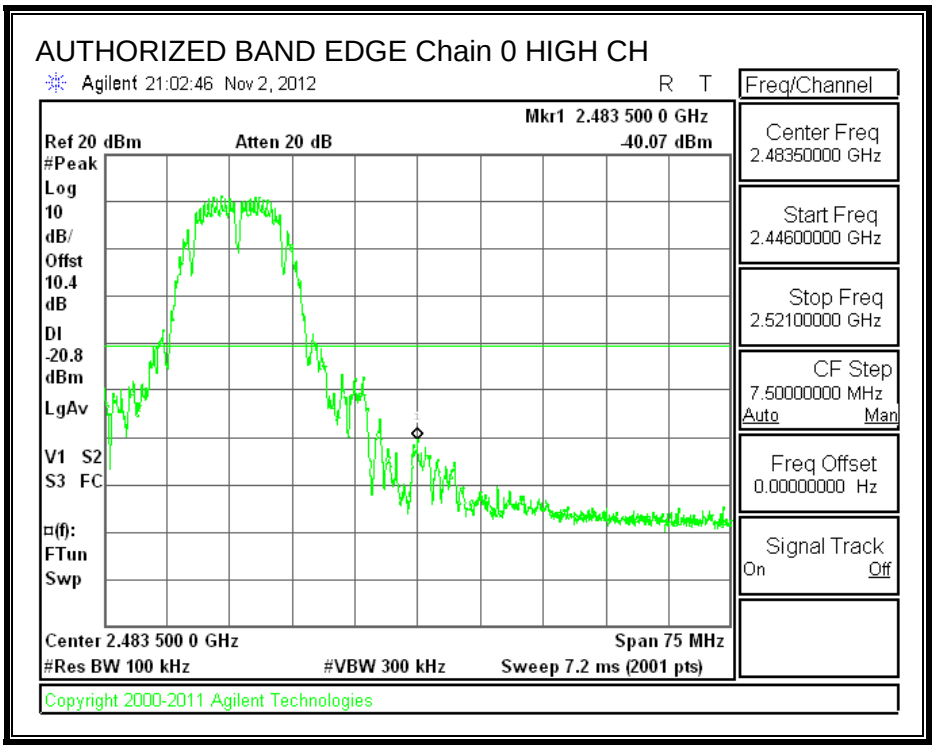
IN-BAND REFERENCE LEVEL, Chain 0



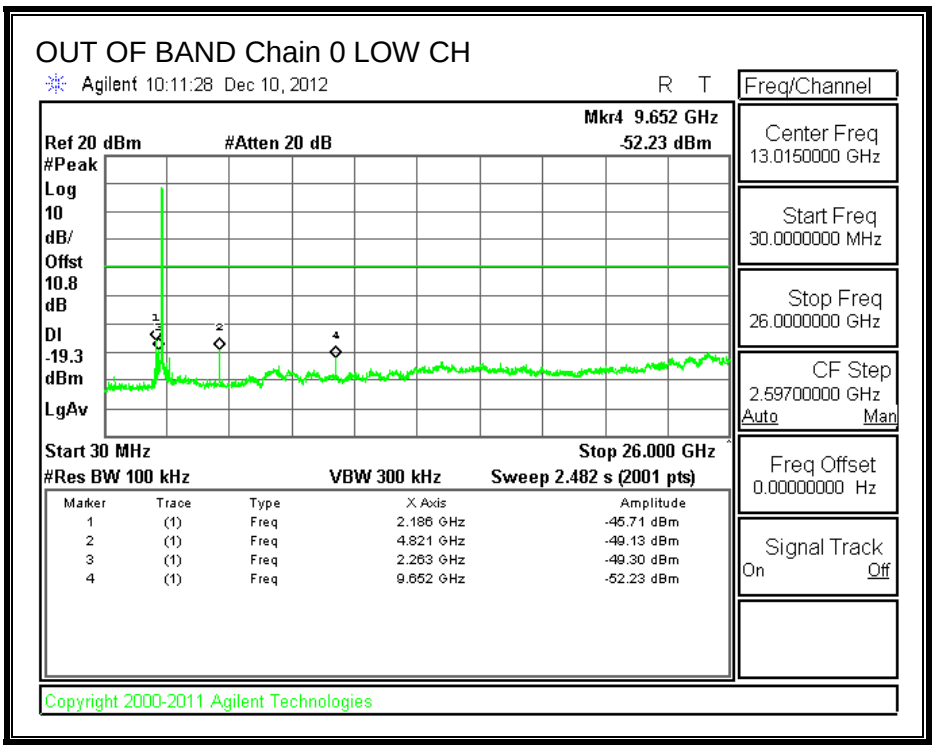
LOW CHANNEL BANDEDGE, Chain 0

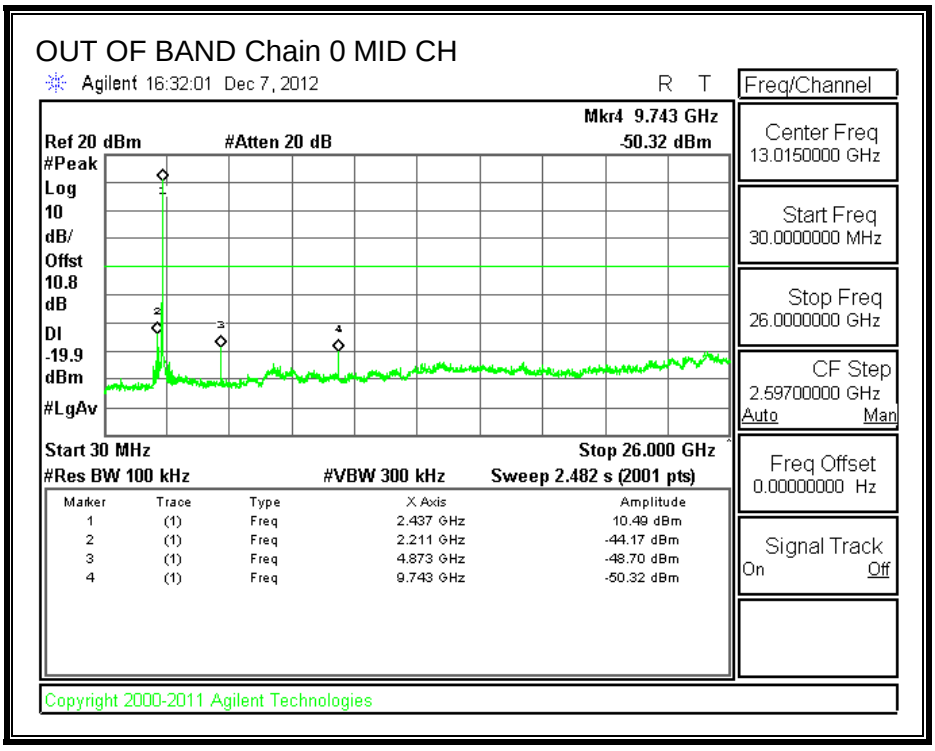


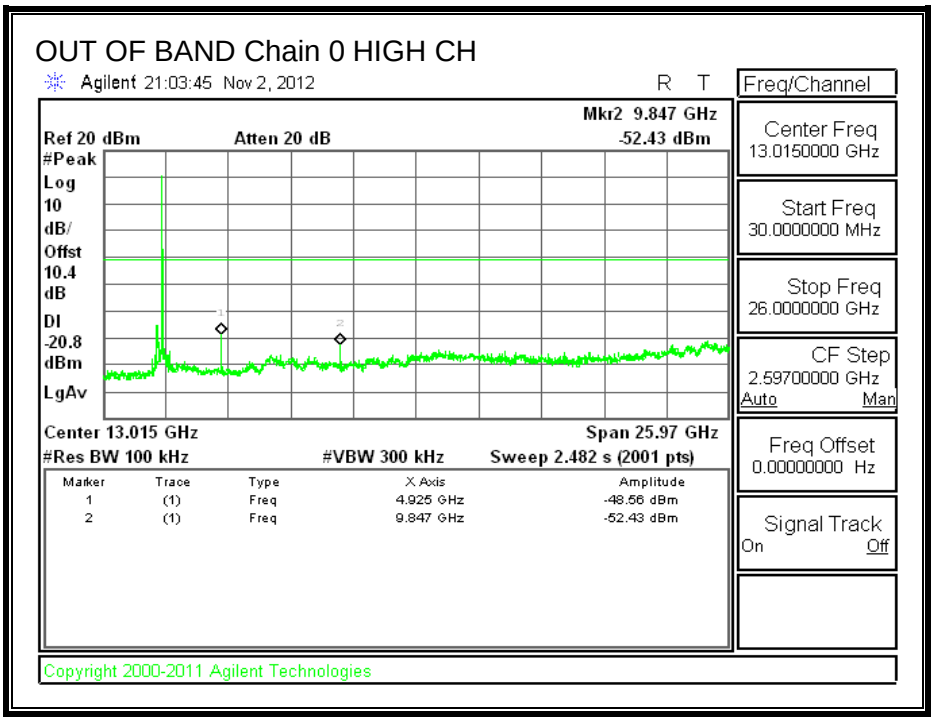
HIGH CHANNEL BANDEDGE, Chain 0



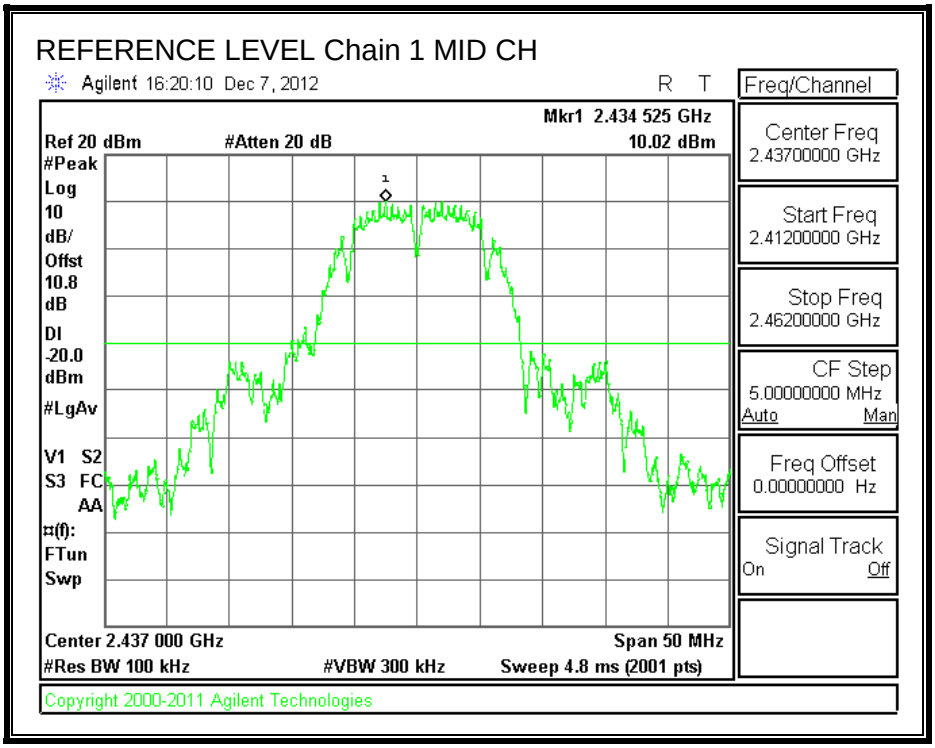
OUT-OF-BAND EMISSIONS, Chain 0



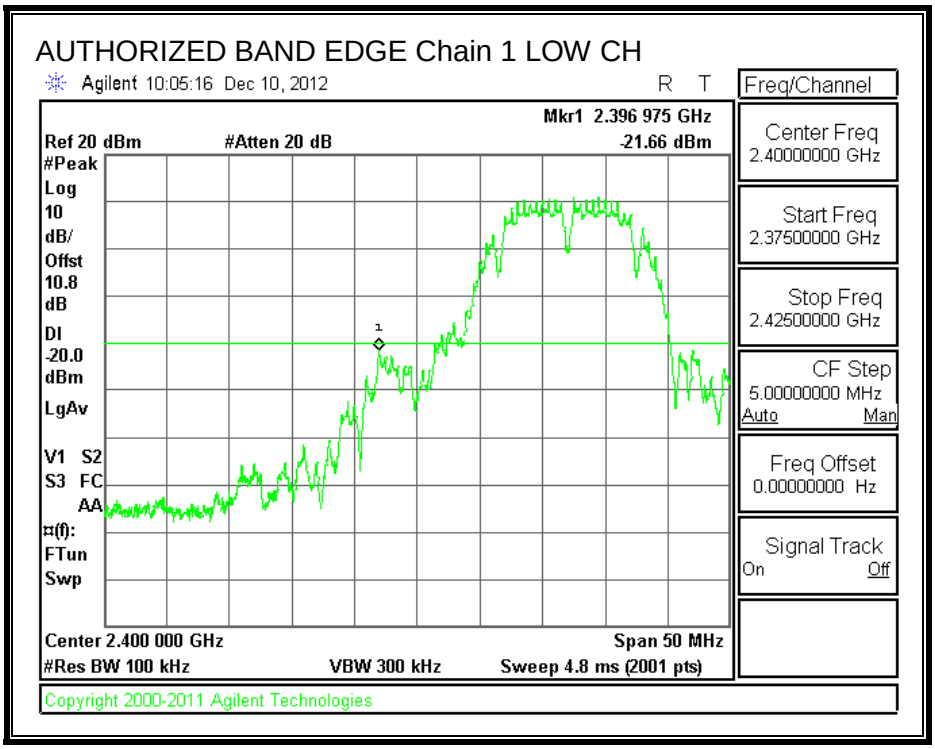




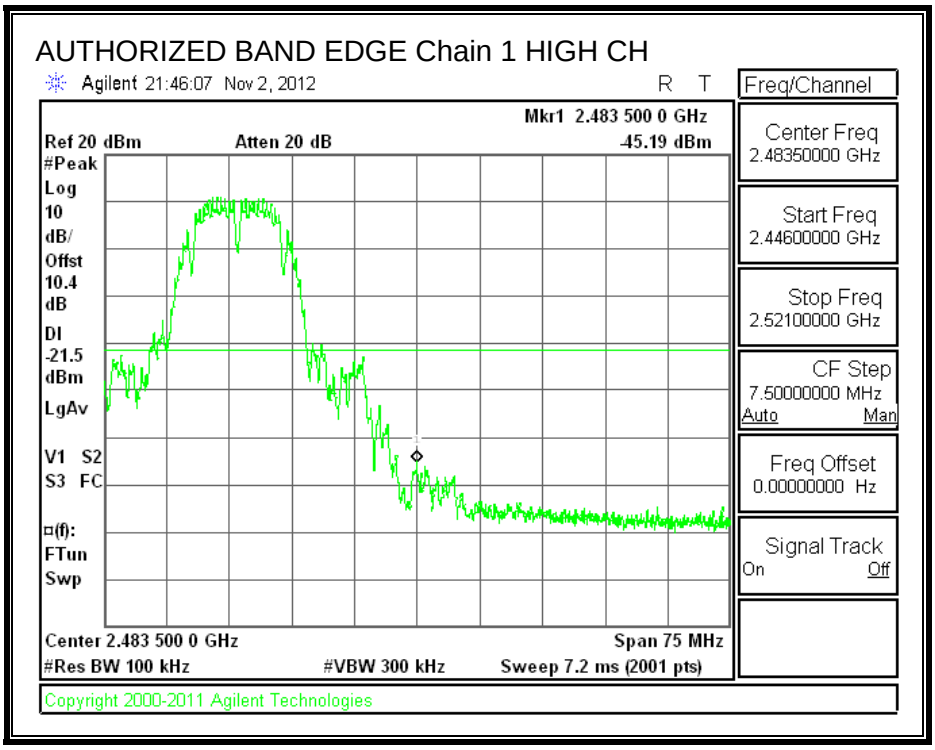
IN-BAND REFERENCE LEVEL, Chain 1



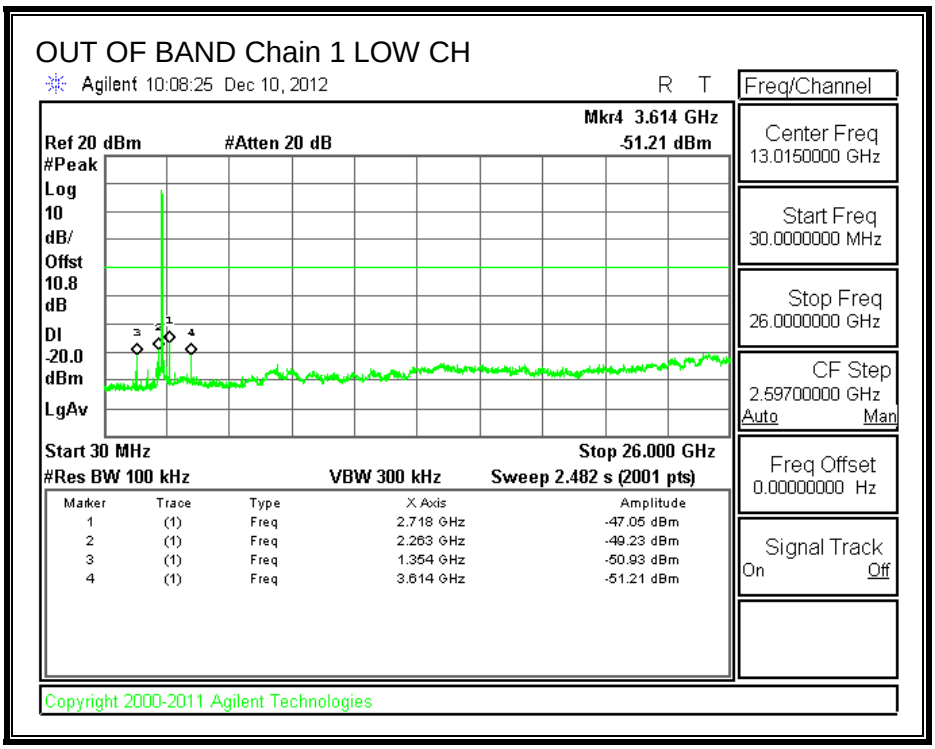
LOW CHANNEL BANDEDGE, Chain 1



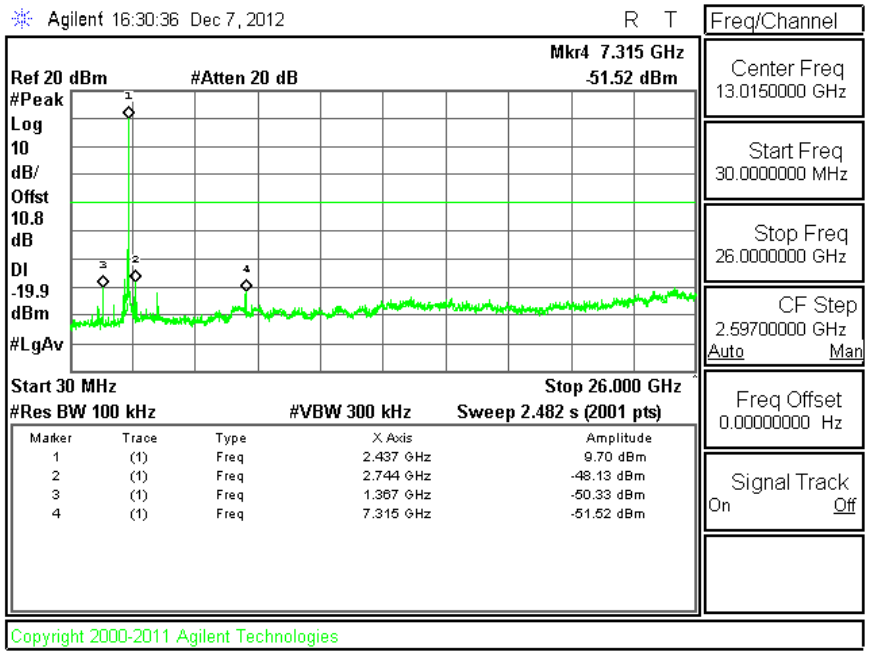
HIGH CHANNEL BANDEDGE, Chain 1



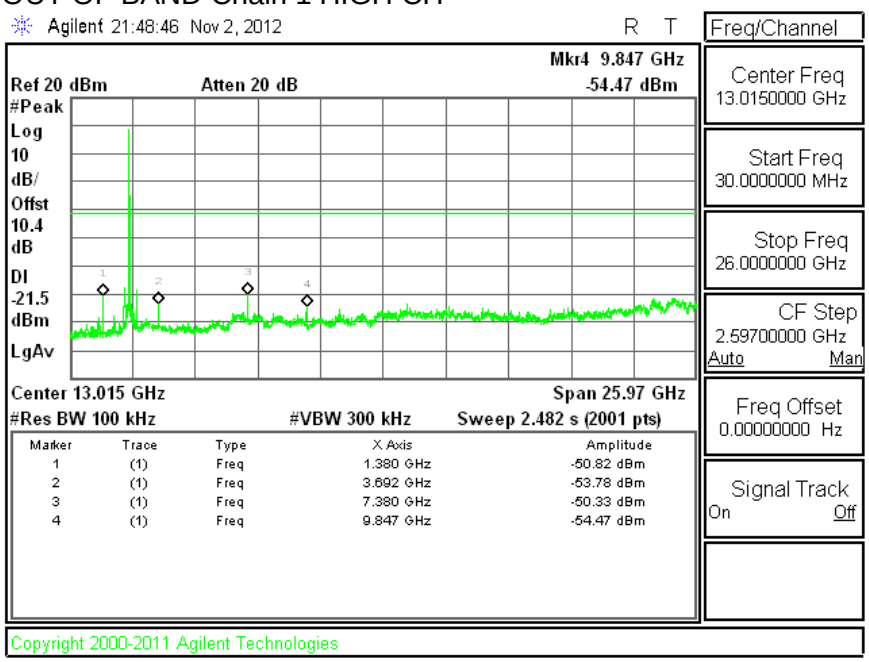
OUT-OF-BAND EMISSIONS, Chain 1



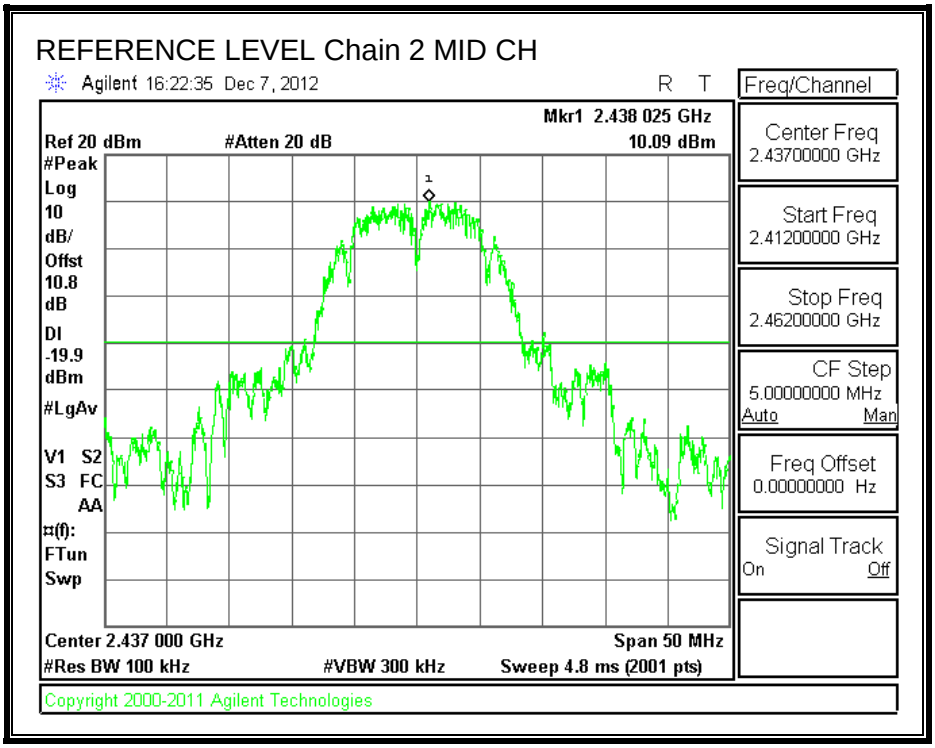
OUT OF BAND Chain 1 MID CH



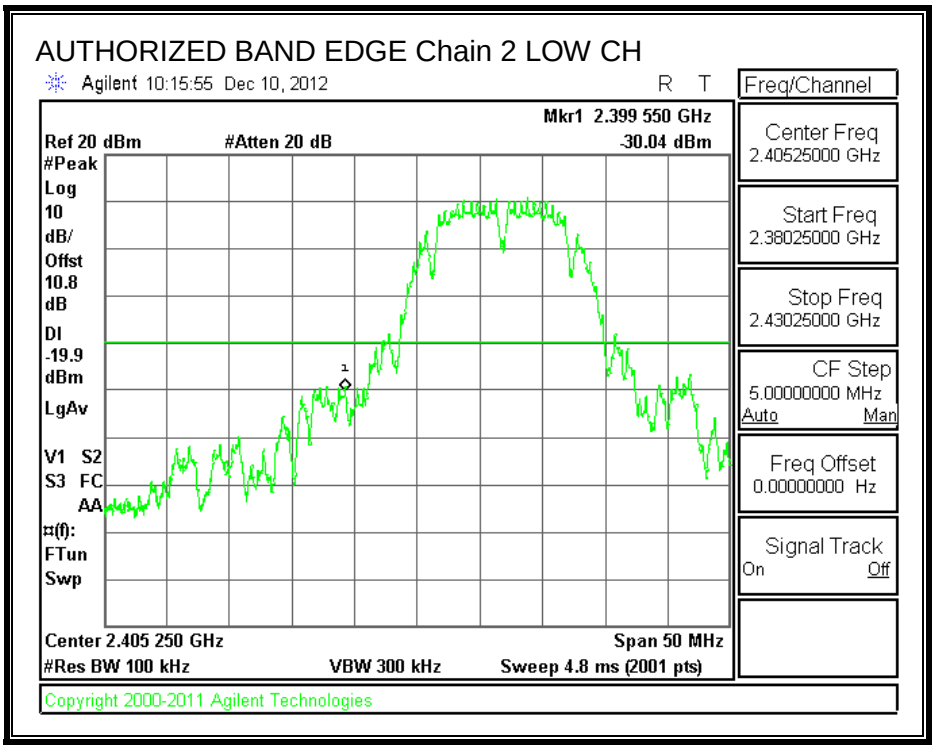
OUT OF BAND Chain 1 HIGH CH



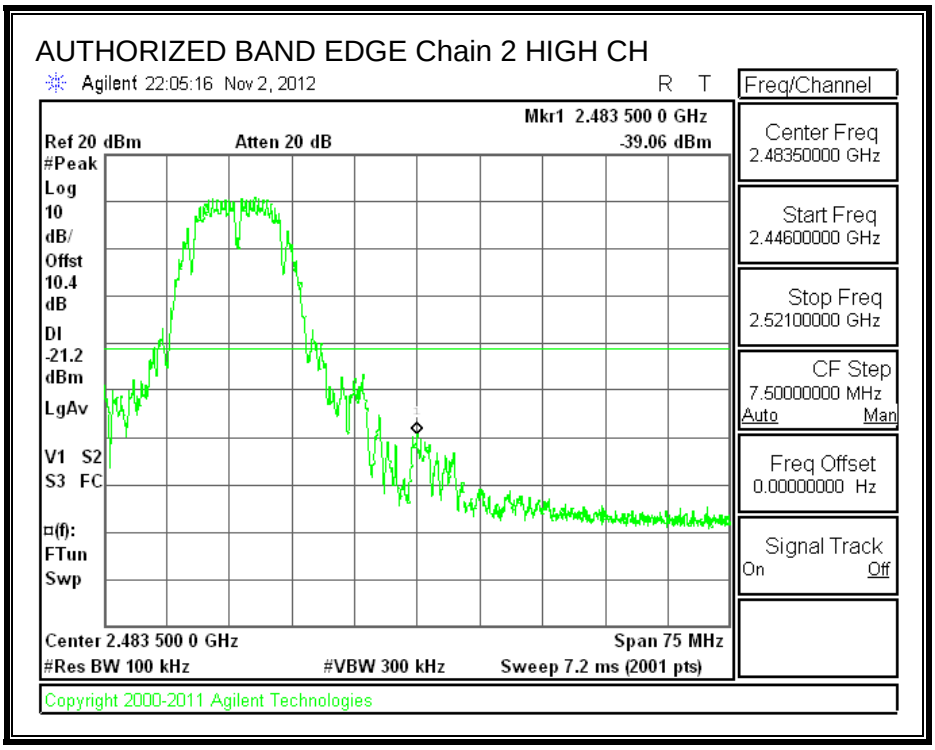
IN-BAND REFERENCE LEVEL, Chain 2



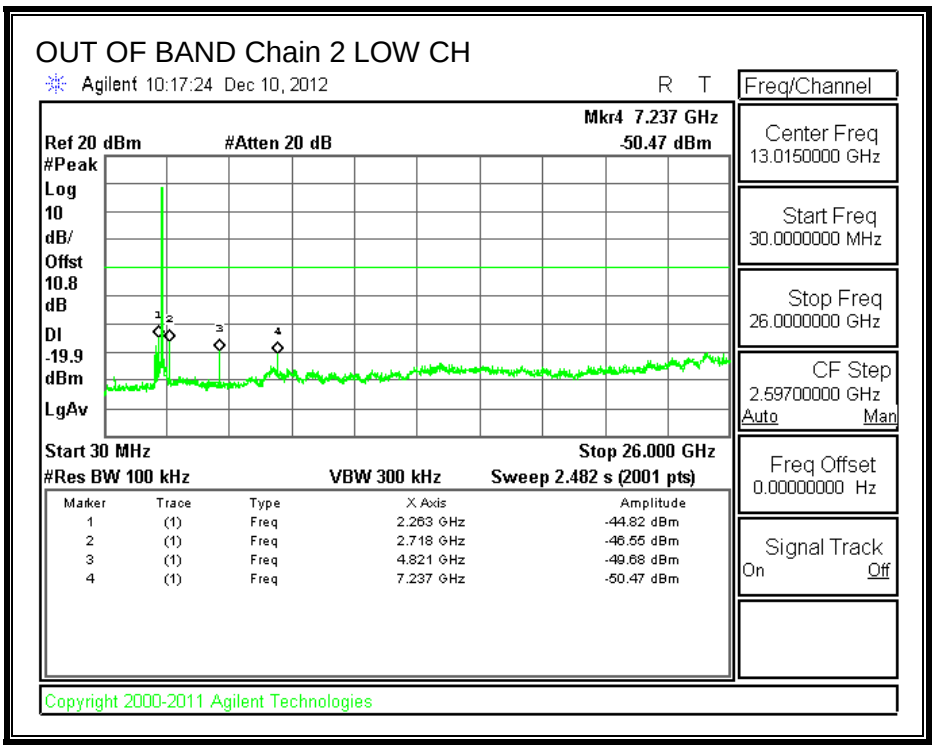
LOW CHANNEL BANDEDGE, Chain 2



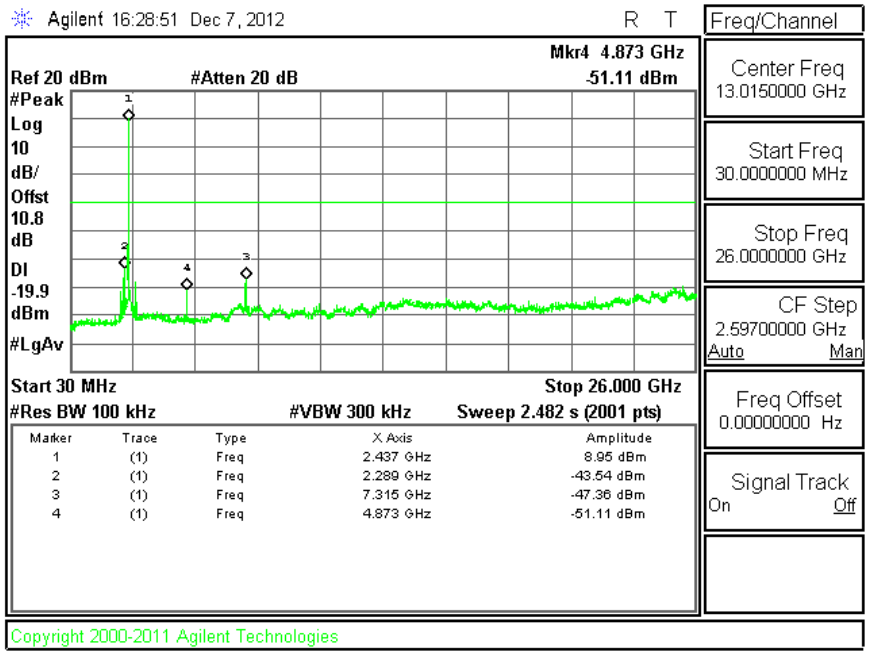
HIGH CHANNEL BANDEDGE, Chain 2



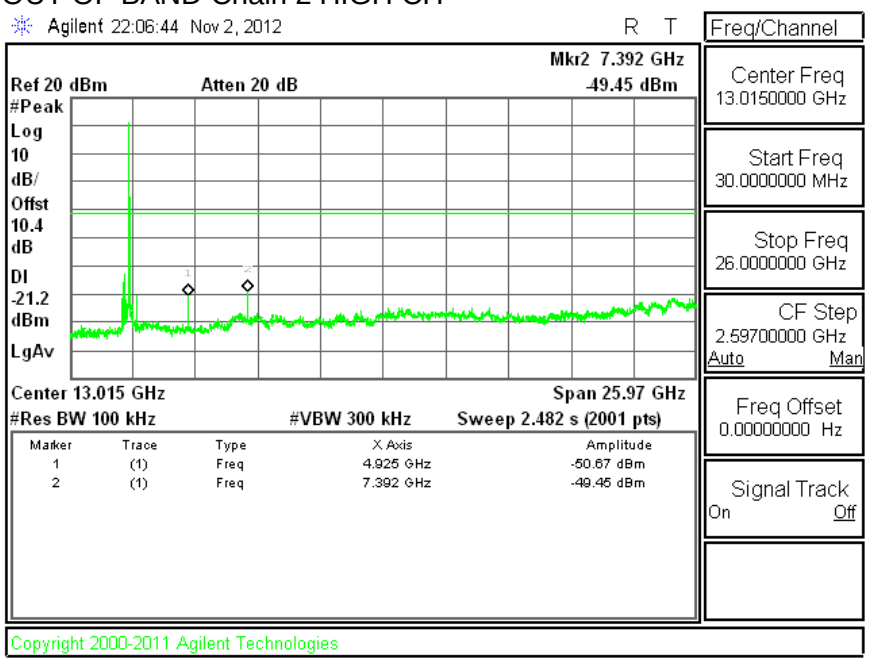
OUT-OF-BAND EMISSIONS, Chain 2



OUT OF BAND Chain 2 MID CH



OUT OF BAND Chain 2 HIGH CH



8.4. 802.11g 1TX MODE IN THE 2.4 GHz BAND

8.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

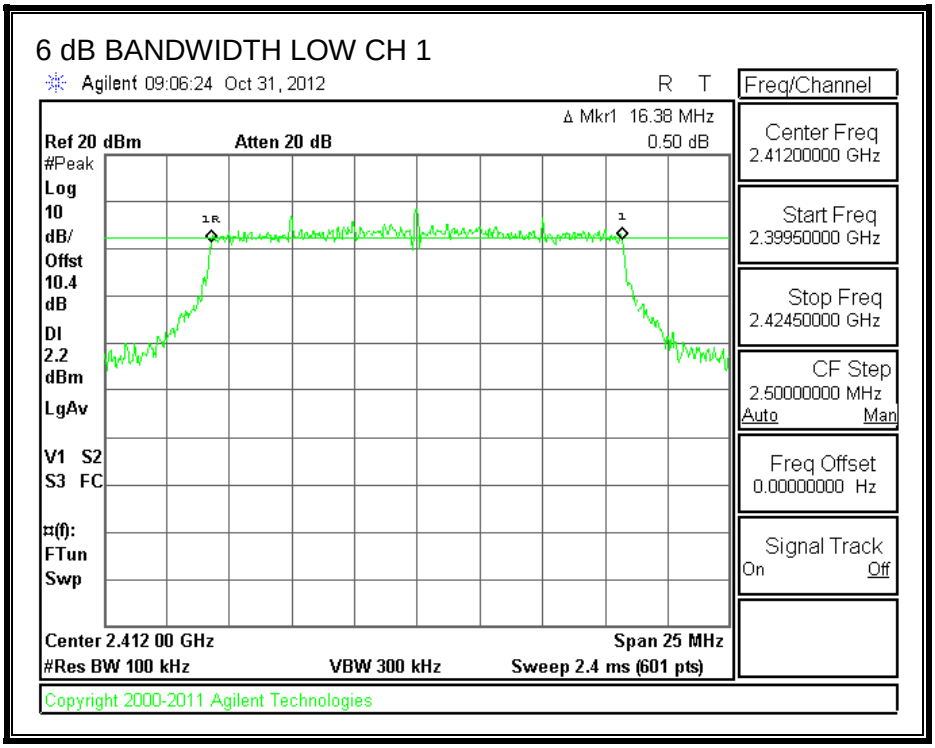
IC RSS-210 A8.2 (a)

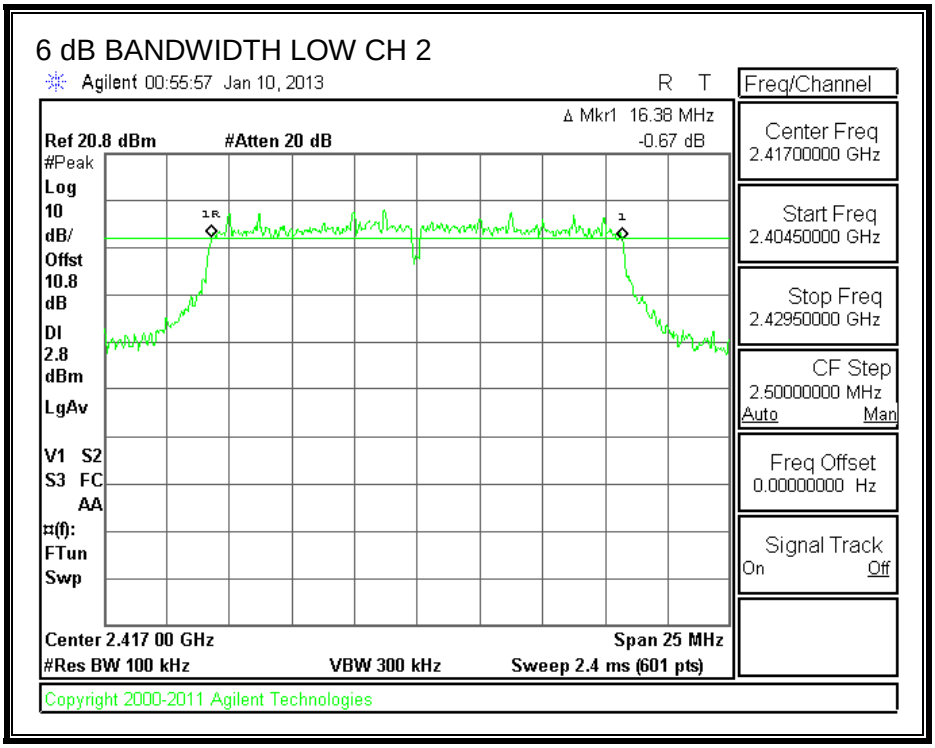
The minimum 6 dB bandwidth shall be at least 500 kHz.

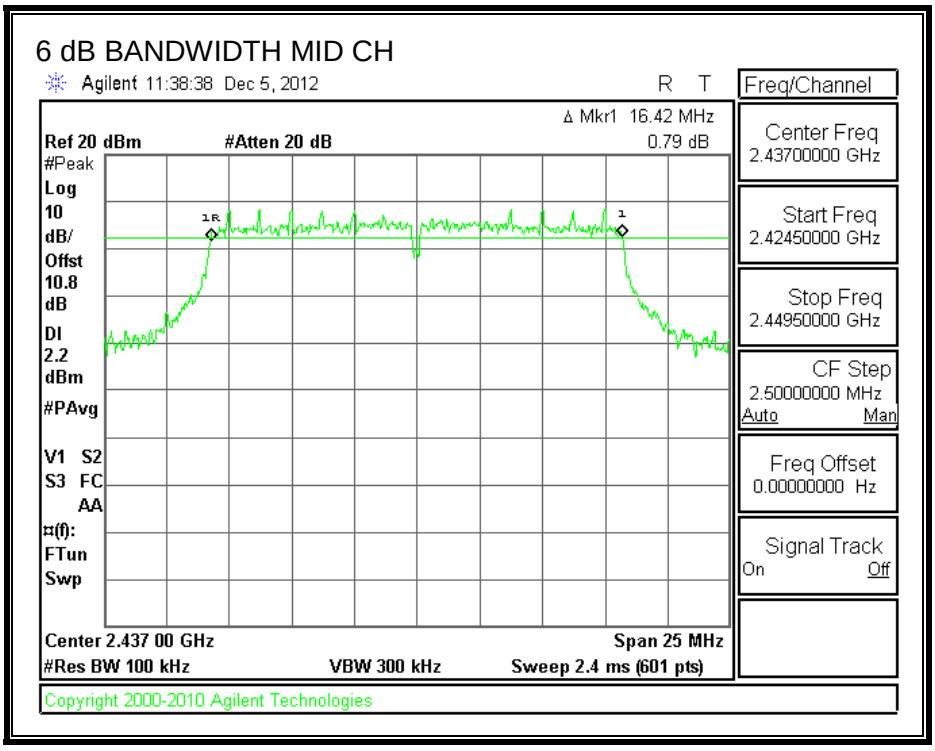
RESULTS

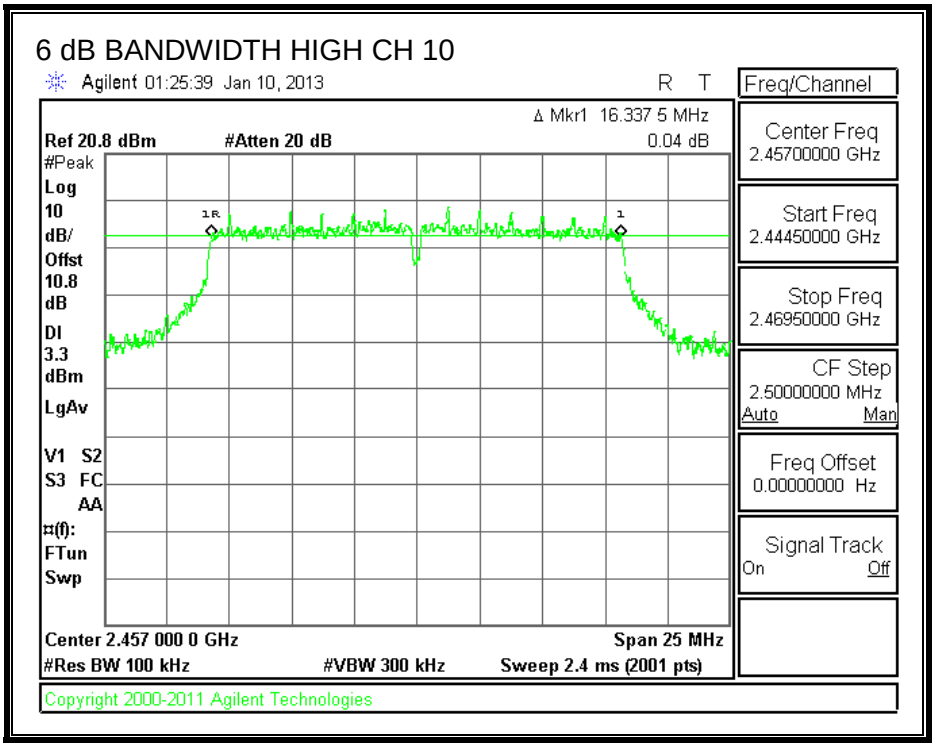
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	16.380	0.5
Low 2	2417	16.380	0.5
Mid	2437	16.420	0.5
High 2	2557	16.338	0.5
High 1	2462	16.380	0.5

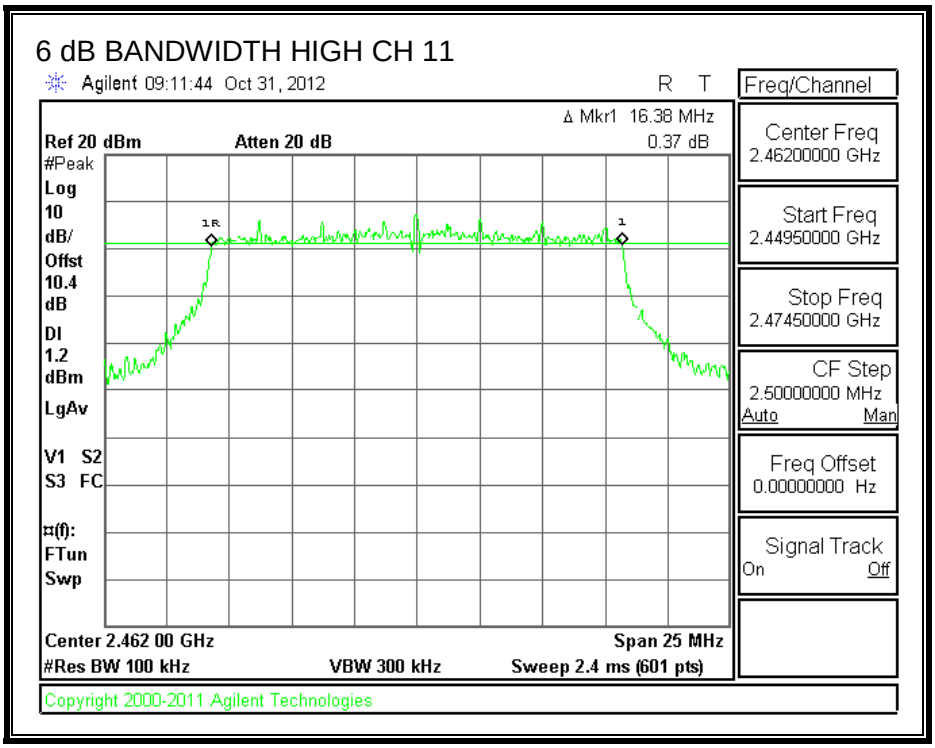
6 dB BANDWIDTH











8.4.2. 99% BANDWIDTH

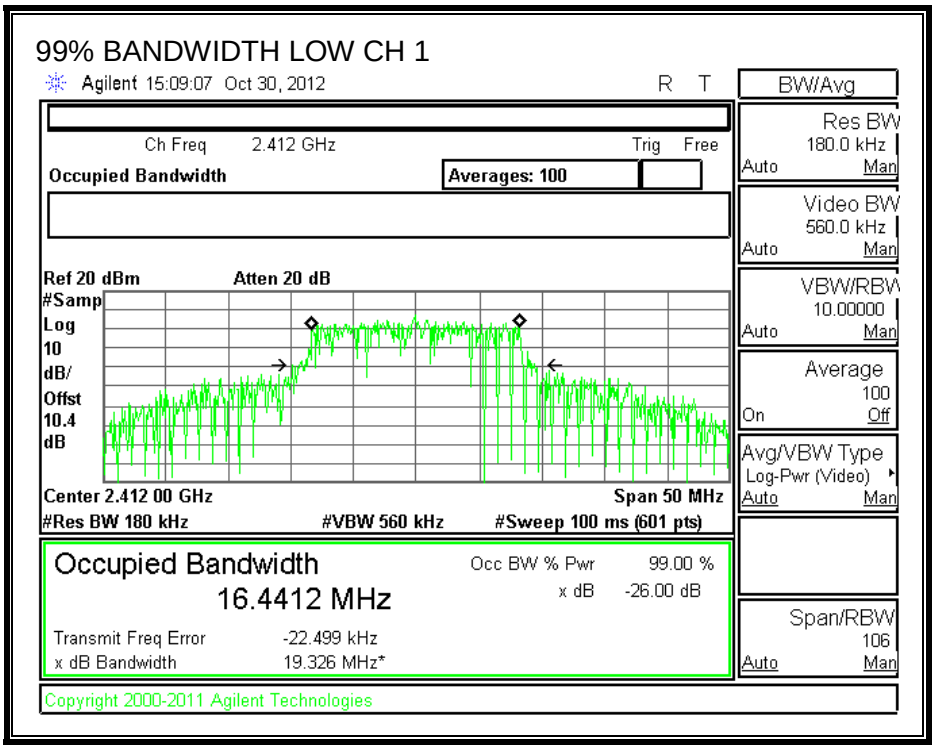
LIMITS

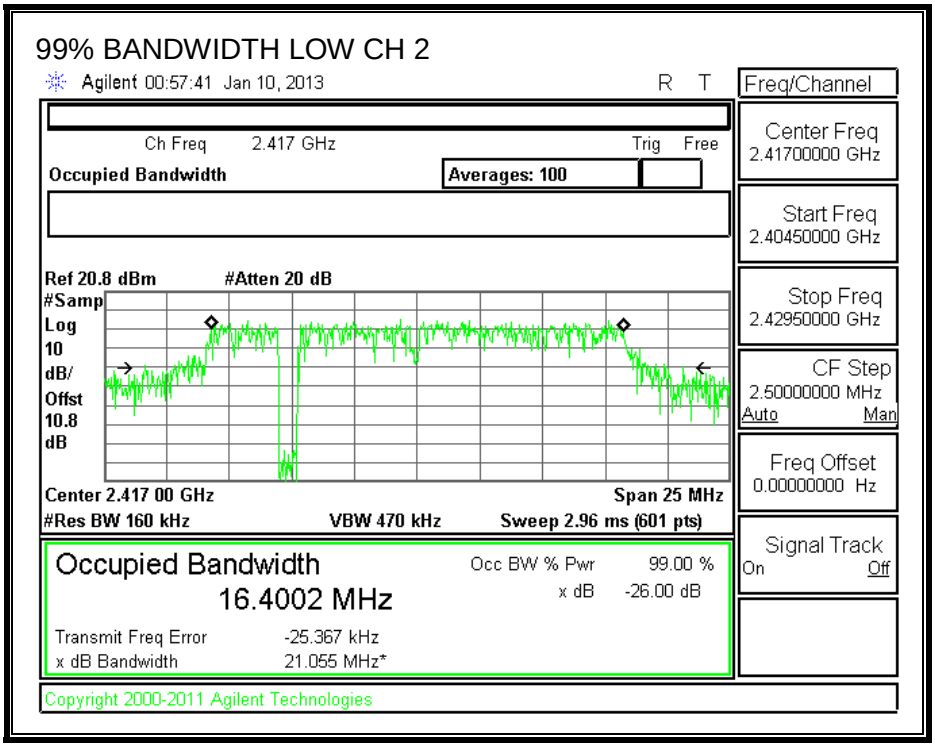
None; for reporting purposes only.

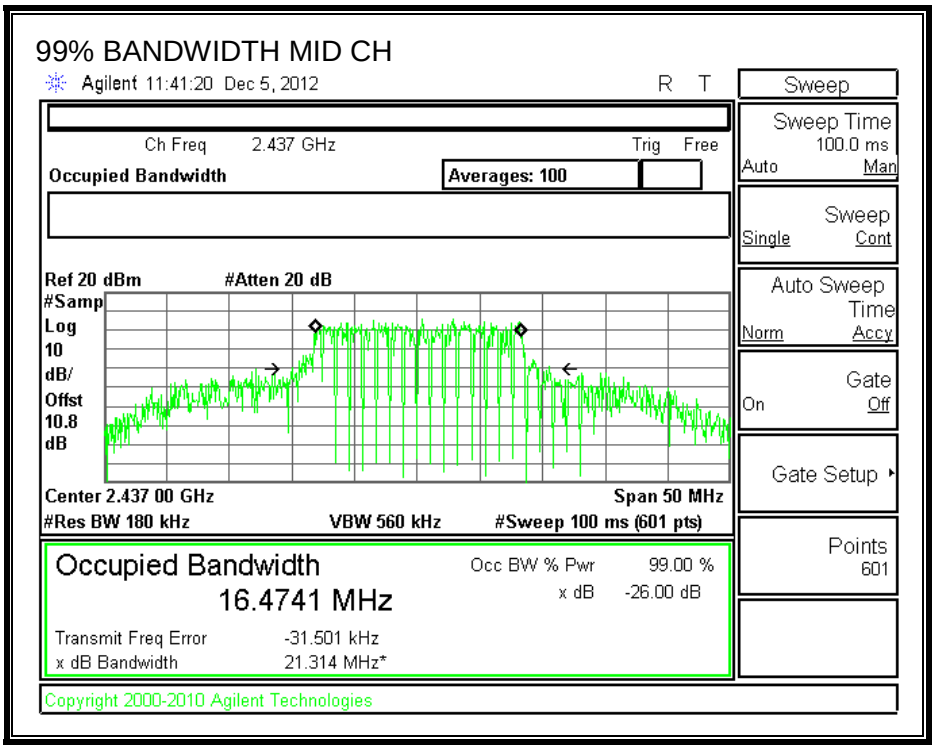
RESULTS

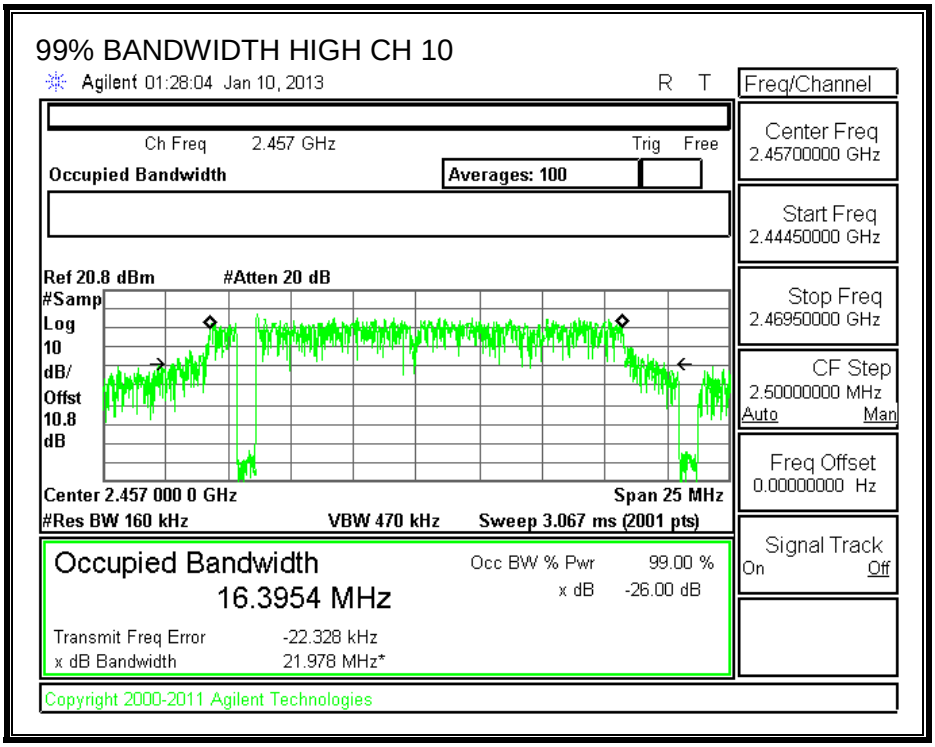
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	16.4412
Low 2	2417	16.4002
Mid	2437	16.4741
High 2	2457	16.3954
High 1	2462	16.4321

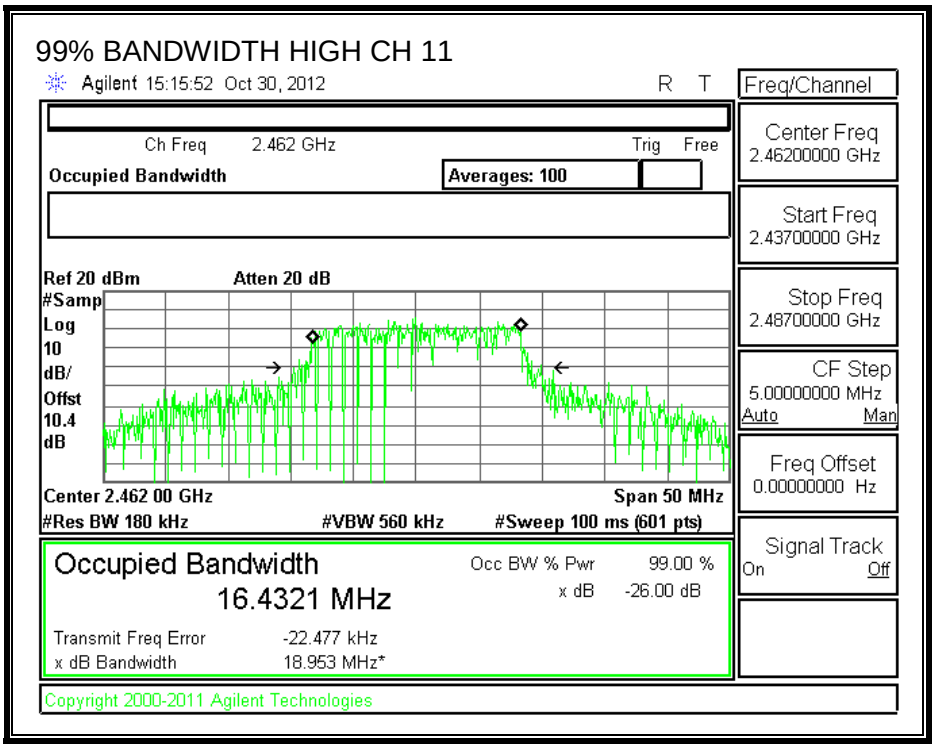
99% BANDWIDTH











8.4.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	5.30	30.00	30	36	30.00
Low 2	2417	5.30	30.00	30	36	30.00
Mid	2437	5.30	30.00	30	36	30.00
High 2	2457	5.30	30.00	30	36	30.00
High 1	2462	5.30	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	17.65	17.65	30.00	-12.35
Low 2	2417	20.02	20.02	30.00	-9.98
Mid	2437	20.12	20.12	30.00	-9.88
High 2	2457	20.04	20.04	30.00	-9.96
High 1	2462	18.00	18.00	30.00	-12.00

8.4.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

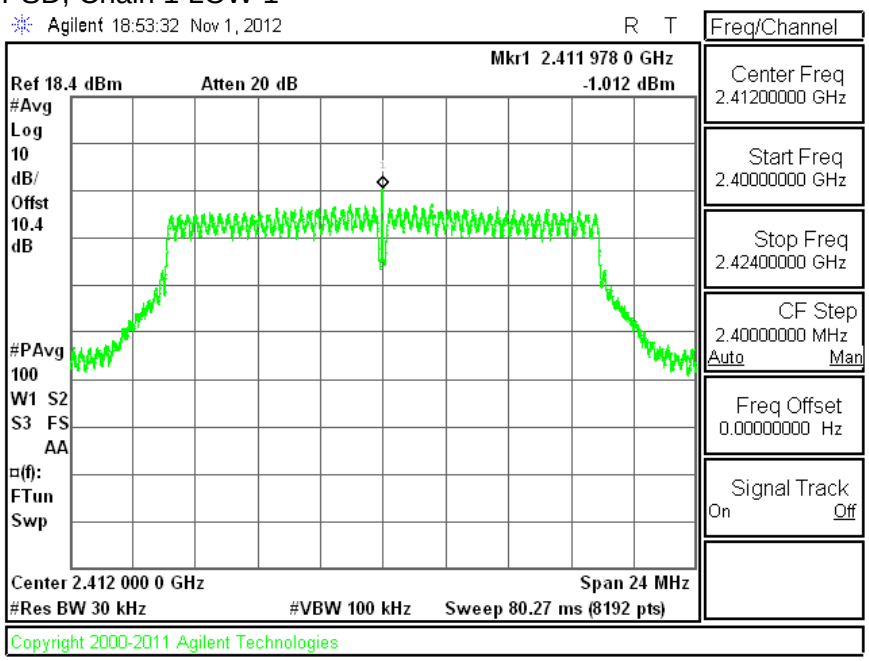
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

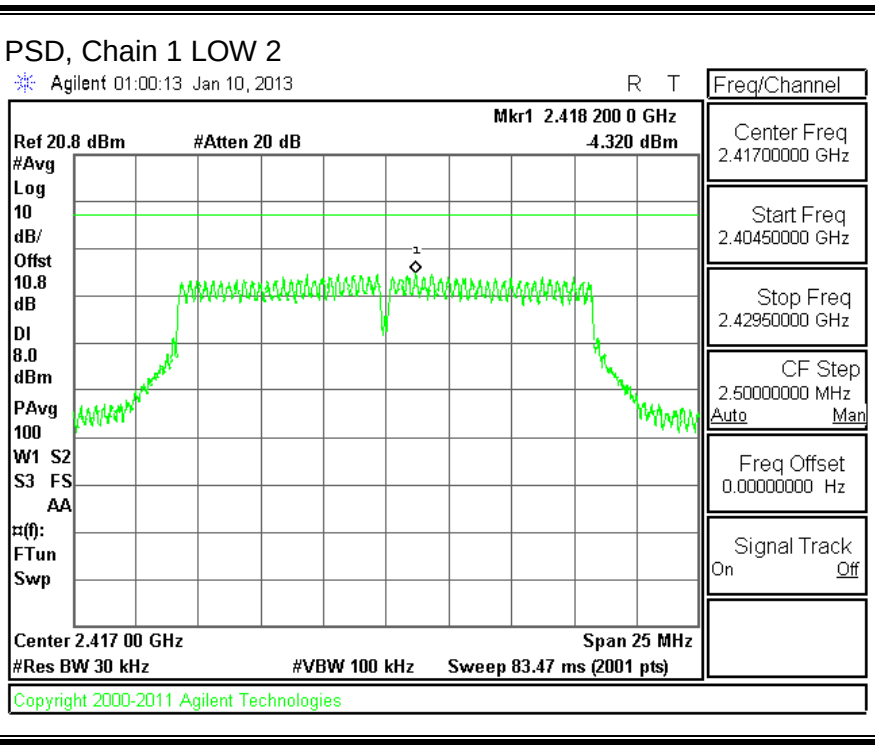
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas (dBm)	DCCF (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low 1	2412	-1.012	0.200	-0.812	8.0	-8.812
Low 2	2417	-4.320	0.200	-4.120	8.0	-12.120
Mid	2437	-2.594	0.200	-2.394	8.0	-10.394
High 2	2457	-4.113	0.200	-3.913	8.0	-11.913
High 1	2462	-2.649	0.200	-2.449	8.0	-10.449

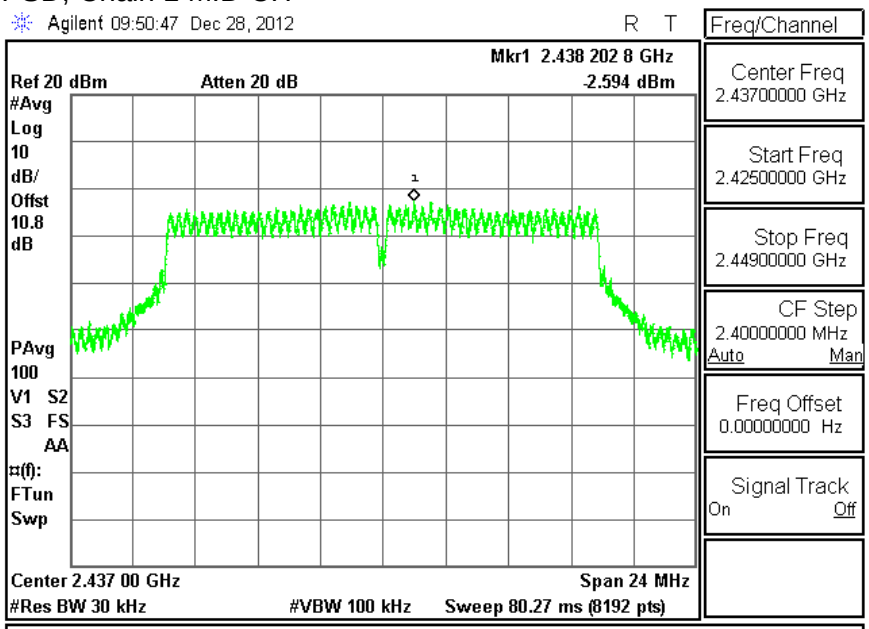
PSD, Chain 1 LOW 1



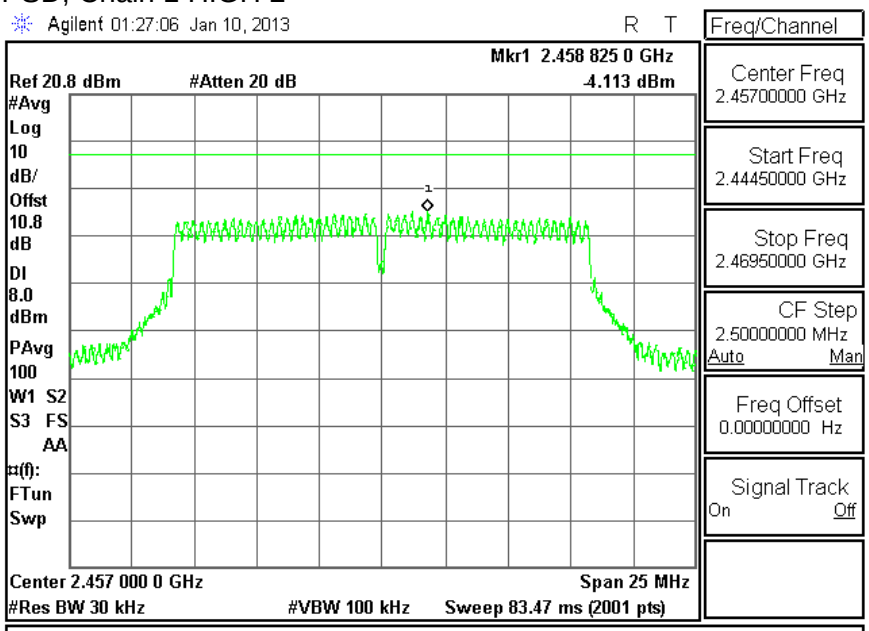
PSD, Chain 1 LOW 2

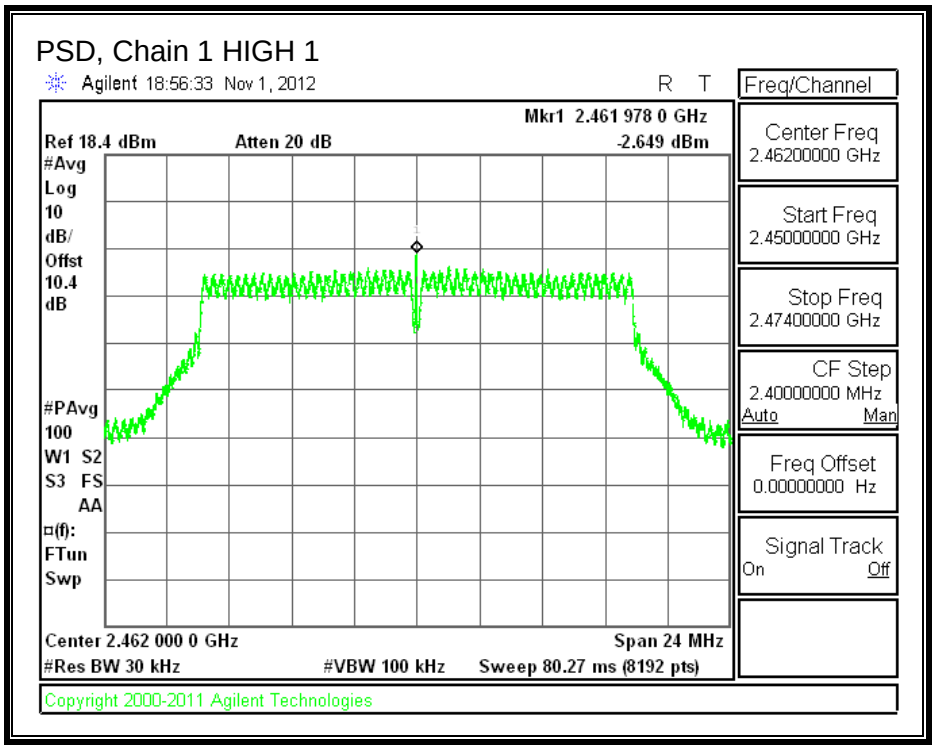


PSD, Chain 1 MID CH



PSD, Chain 1 HIGH 2





8.4.5. OUT-OF-BAND EMISSIONS

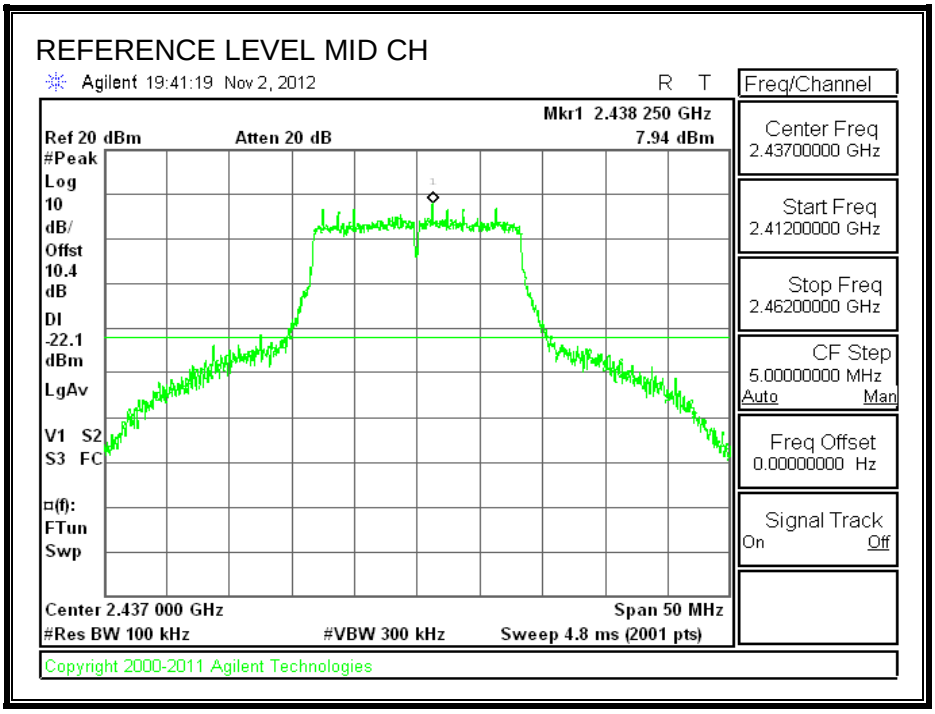
LIMITS

FCC §15.247 (d)

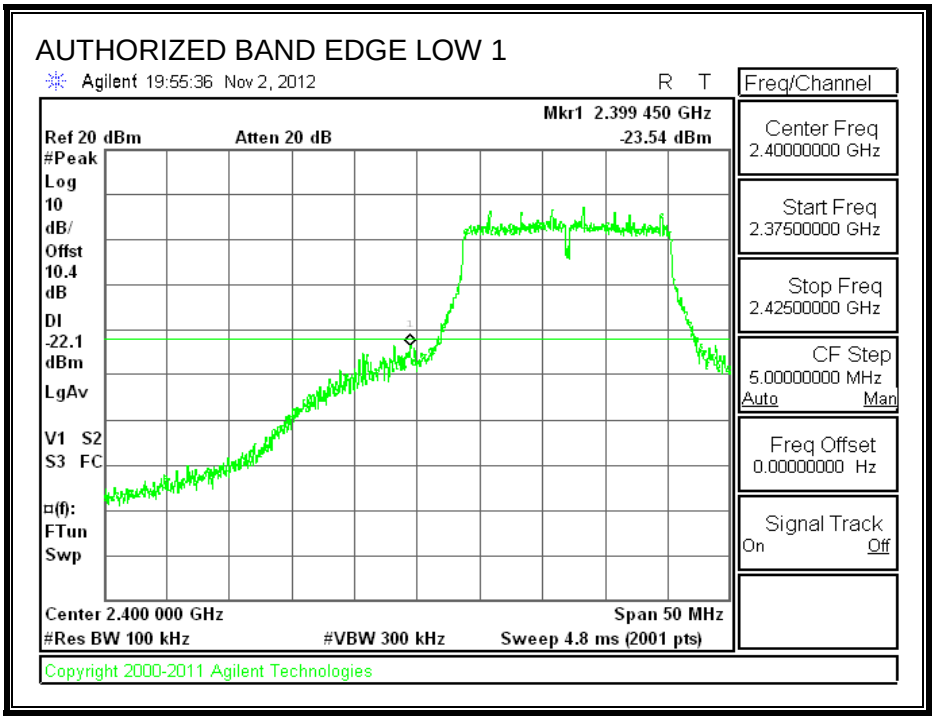
IC RSS-210 A8.5

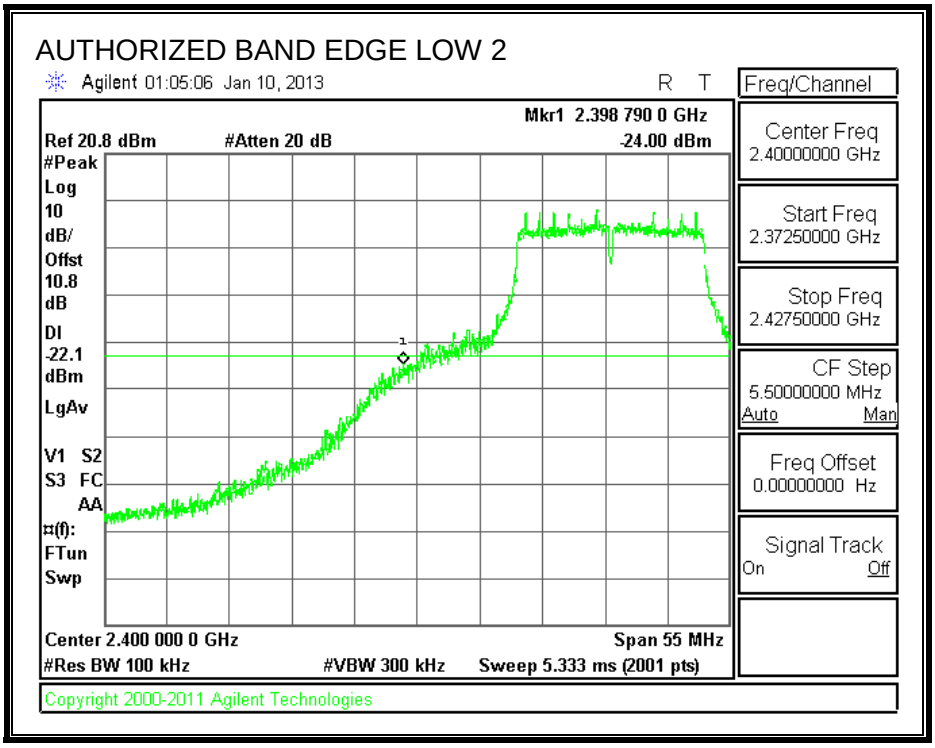
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

IN-BAND REFERENCE LEVEL RESULTS

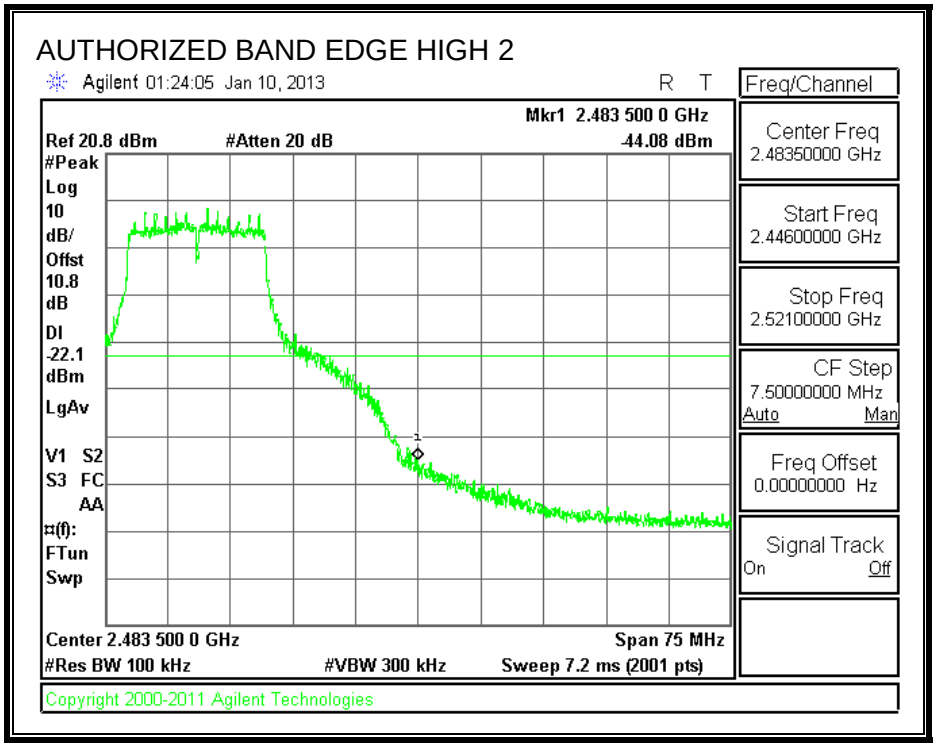


LOW CHANNEL BANDEDGE





HIGH CHANNEL BANDEDGE



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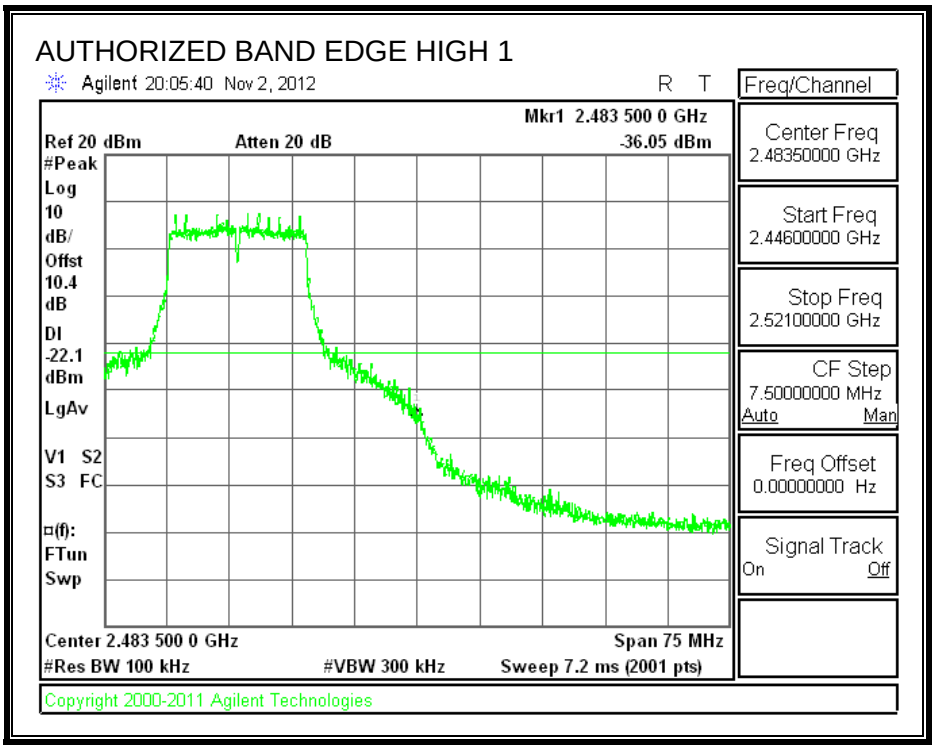
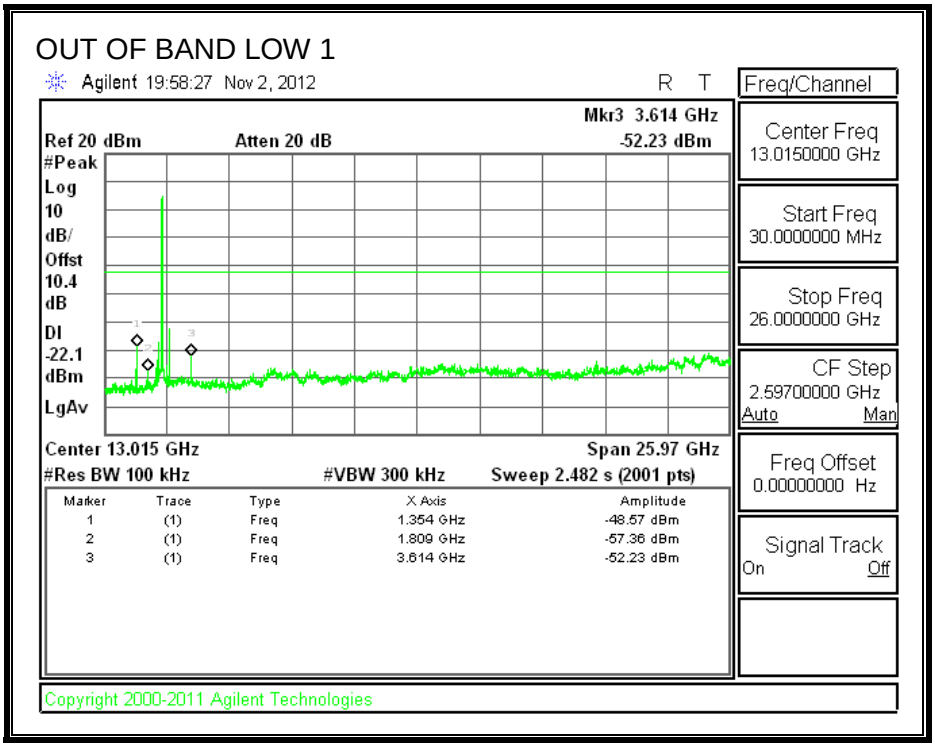
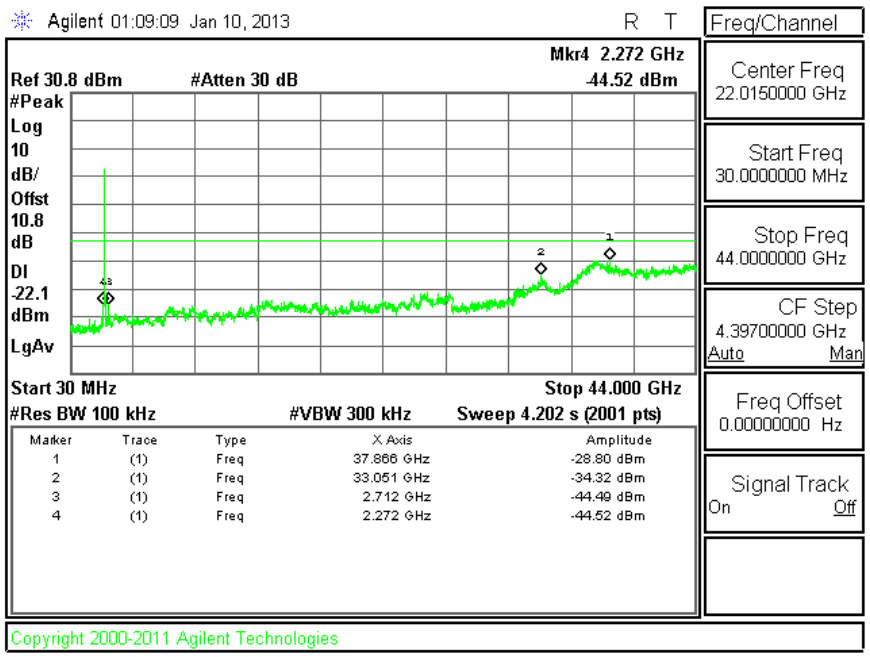


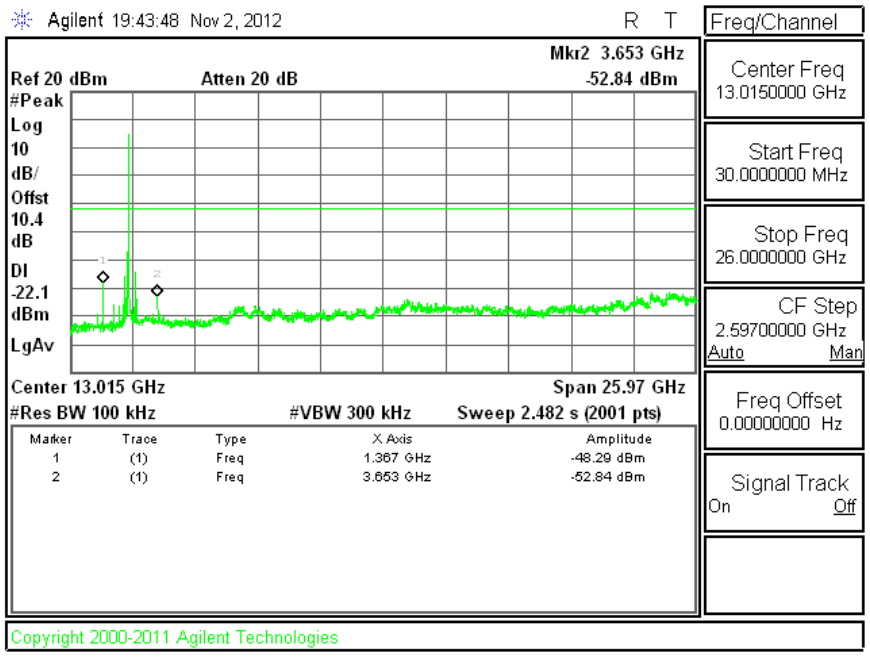
OUT-OF-BAND EMISSIONS



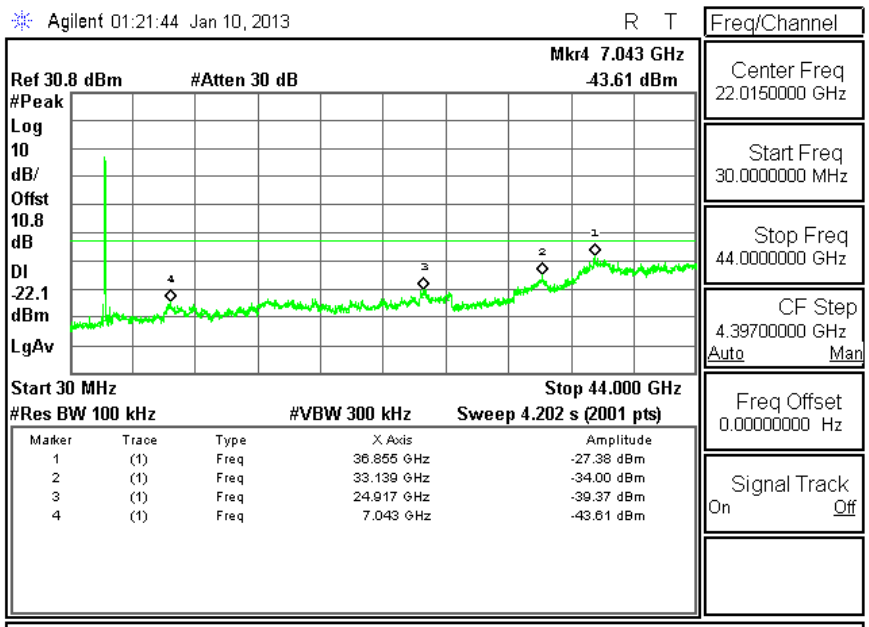
OUT OF BAND LOW 2



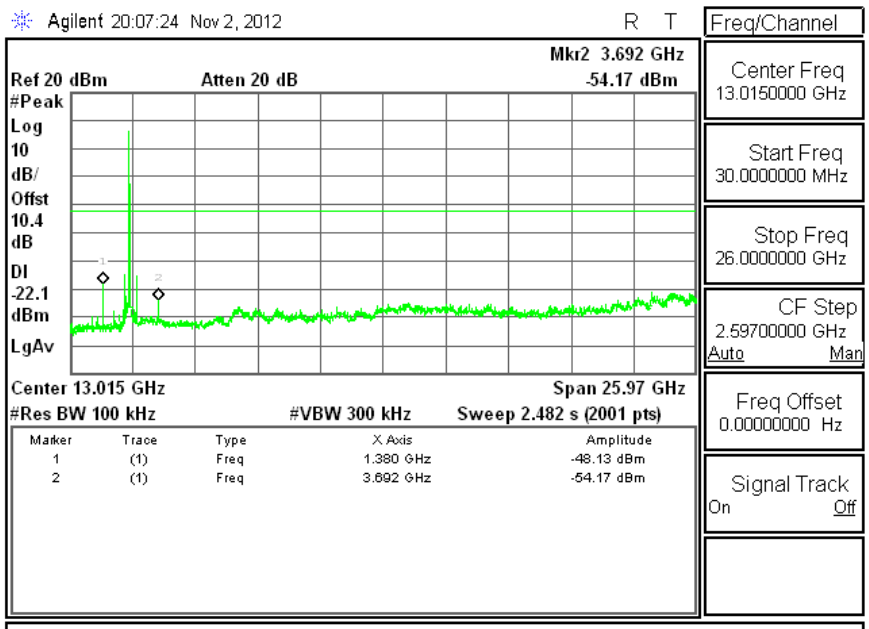
OUT OF BAND MID CH



OUT OF BAND HIGH 2



OUT OF BAND HIGH 1



8.5. 802.11g CDD 2TX MODE IN THE 2.4 GHz BAND

Covered by testing 11n HT20 CDD MCS0 3TX at the same power level.

8.6. 802.11g CDD 3TX MODE IN THE 2.4 GHz BAND

Covered by testing 11n HT20 CCD MCS0 3TX at the same power level.

8.7. 802.11g BF 2TX MODE IN THE 2.4 GHz BAND

Covered by testing 11ac VHT20 BF 3TX at the same power level.

8.8. 802.11g BF 3TX MODE IN THE 2.4 GHz BAND

Covered by testing 11ac VHT20 BF 3TX at the same power level.

8.9. 802.11n HT20 1TX MODE IN THE 2.4 GHz BAND

Covered by testing 11n HT20 CCD MCS0 3TX at the same power level.

8.10. 802.11n HT20 2TX MODE IN THE 2.4 GHz BAND

Covered by testing 11n HT20 CCD MCS0 3TX at the same power level.

8.11. 802.11n HT20 BF 2TX MODE IN THE 2.4 GHz BAND

Covered by testing 11ac VHT20 BF 3TX at the same power level.

8.12. 802.11ac VHT20 BF 2TX MODE IN THE 2.4 GHz BAND

Covered by testing 11ac VHT20 BF 3TX at the same power level.

8.13. 802.11n HT20 CDD MCS0 3TX MODE IN THE 2.4 GHz BAND

8.13.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

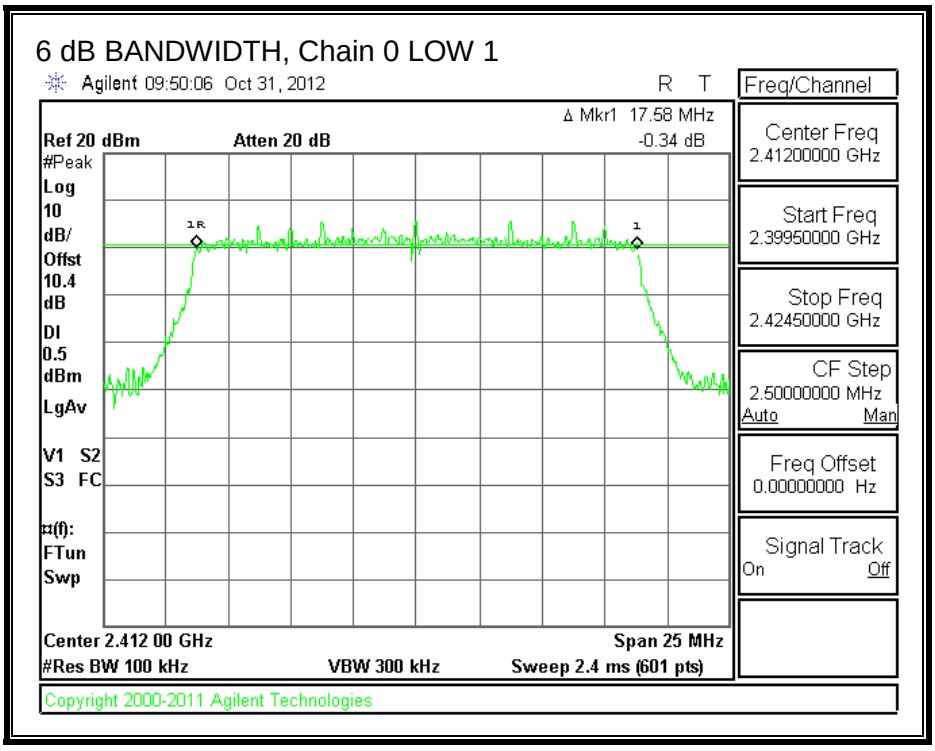
IC RSS-210 A8.2 (a)

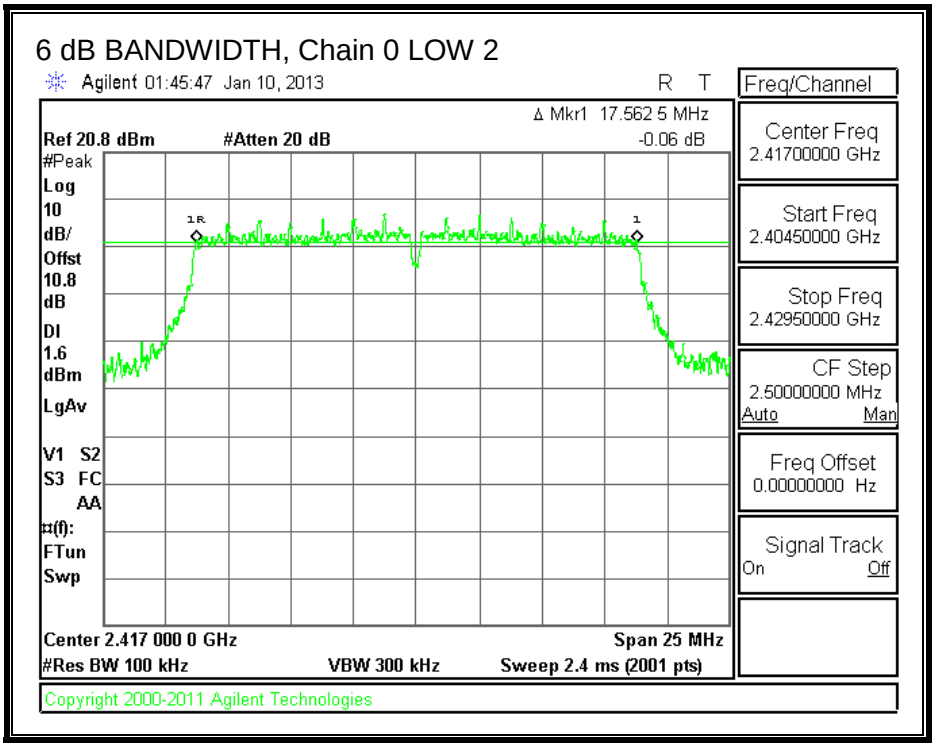
The minimum 6 dB bandwidth shall be at least 500 kHz.

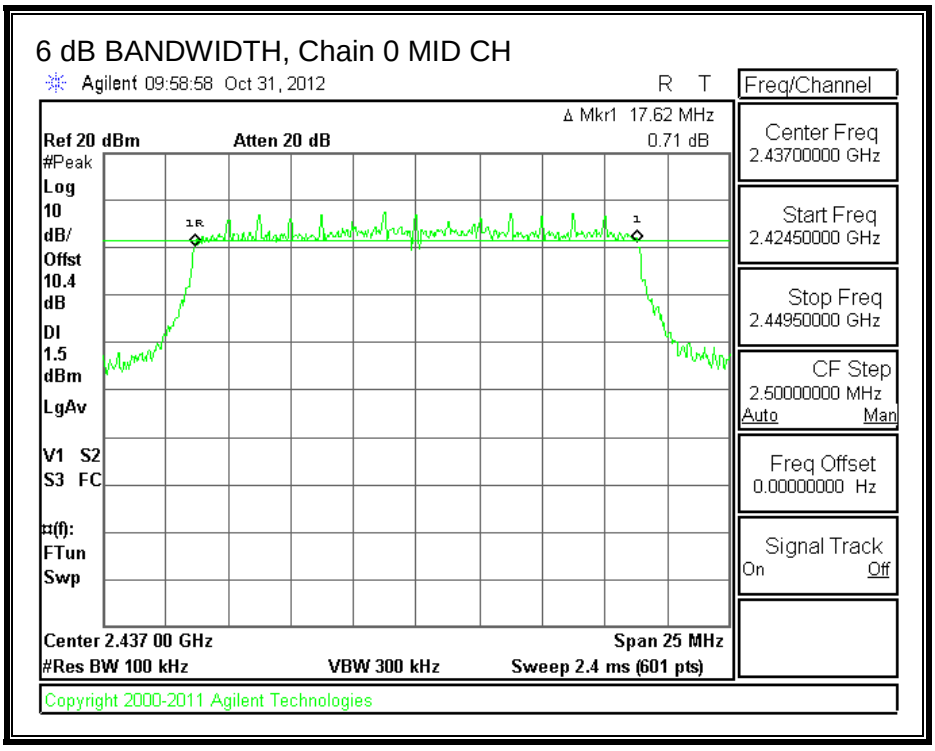
RESULTS

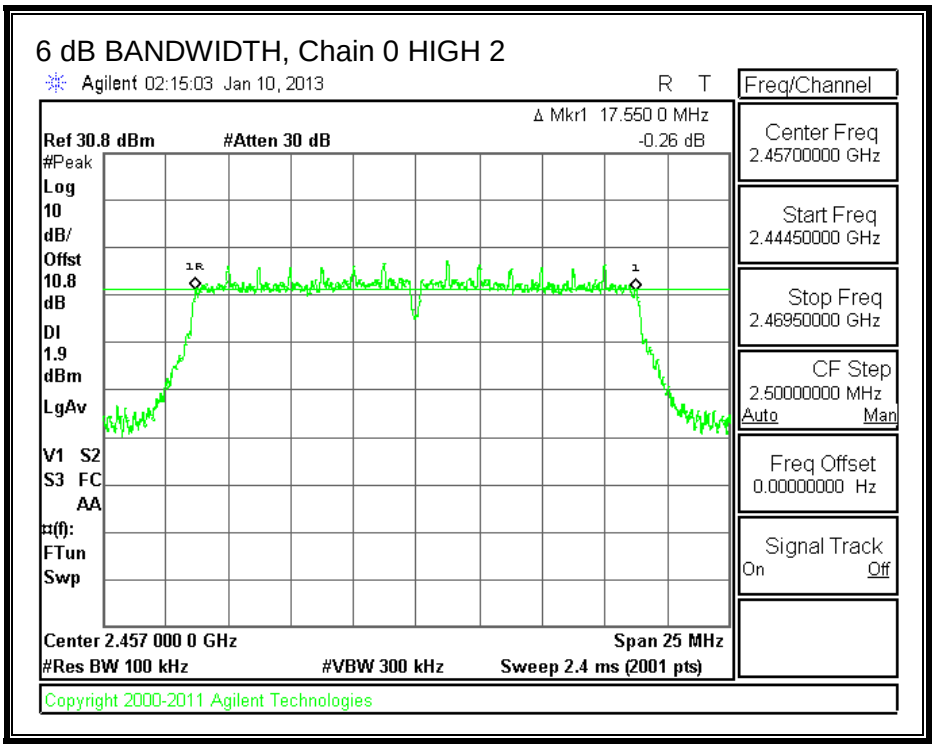
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low 1	2412	17.580	17.670	17.620	0.5
Low 2	2417	17.563	17.638	17.600	0.5
Mid	2437	17.620	17.620	17.620	0.5
High 2	2457	17.550	17.575	17.625	0.5
High 1	2462	17.460	17.670	17.620	0.5

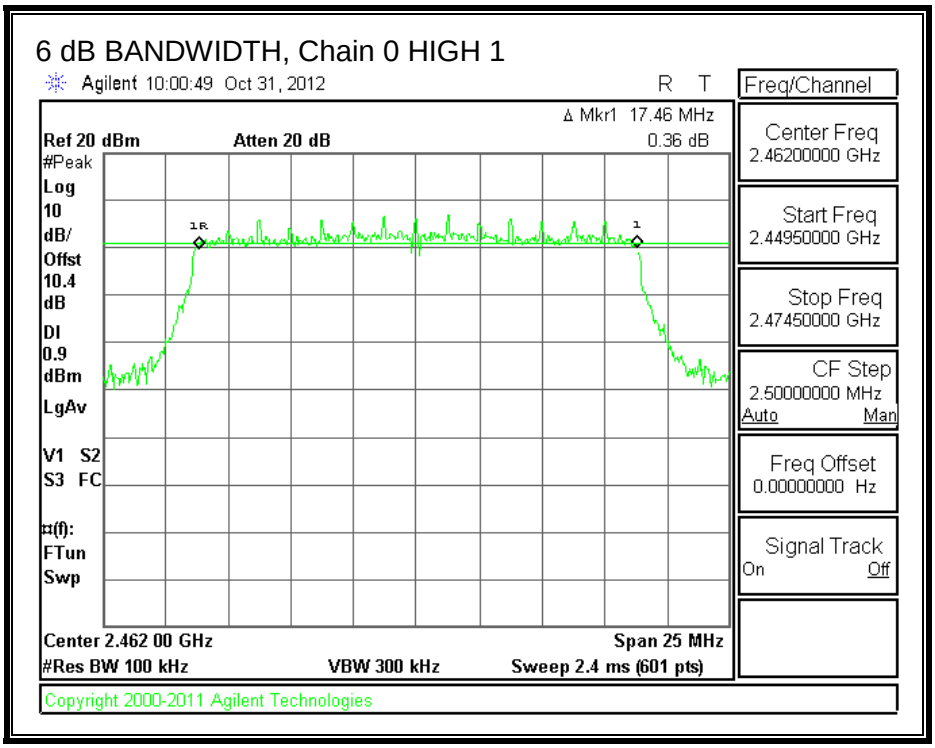
6 dB BANDWIDTH, Chain 0



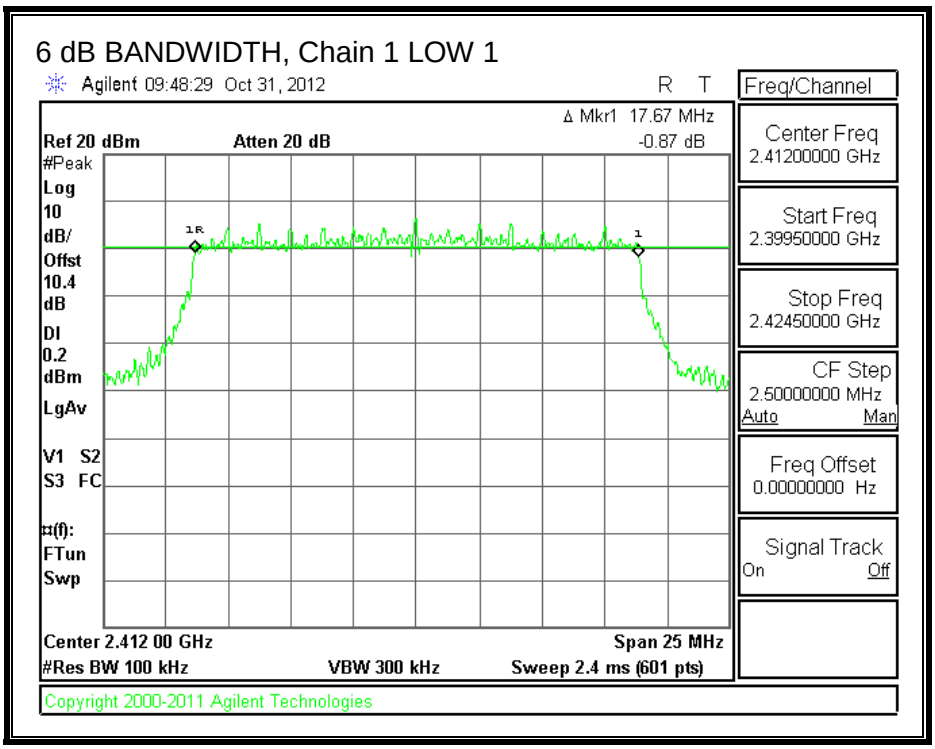


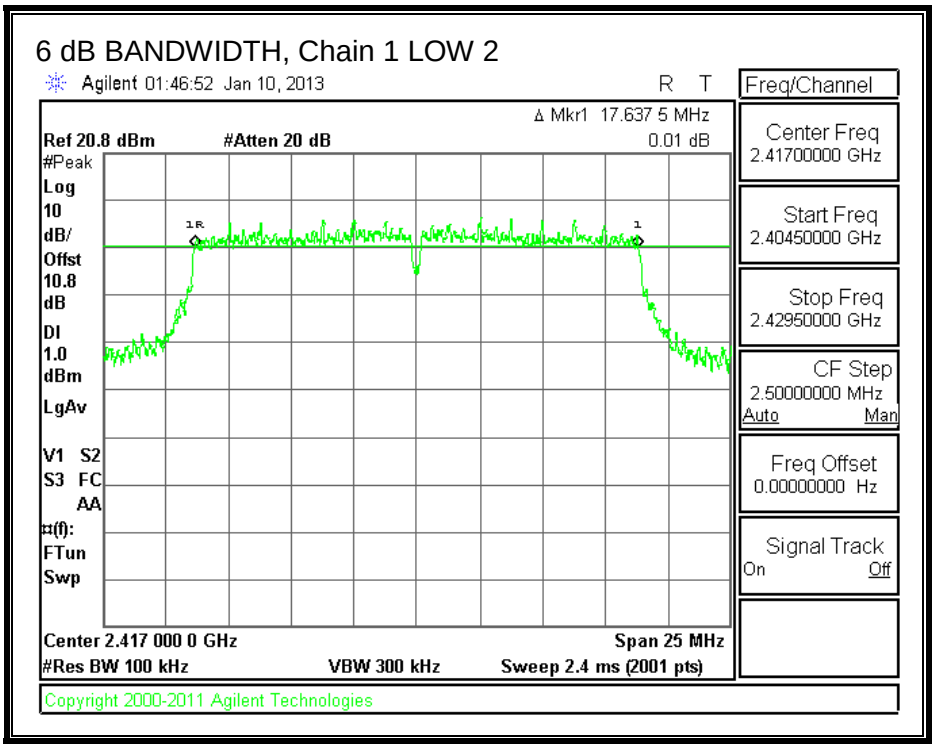


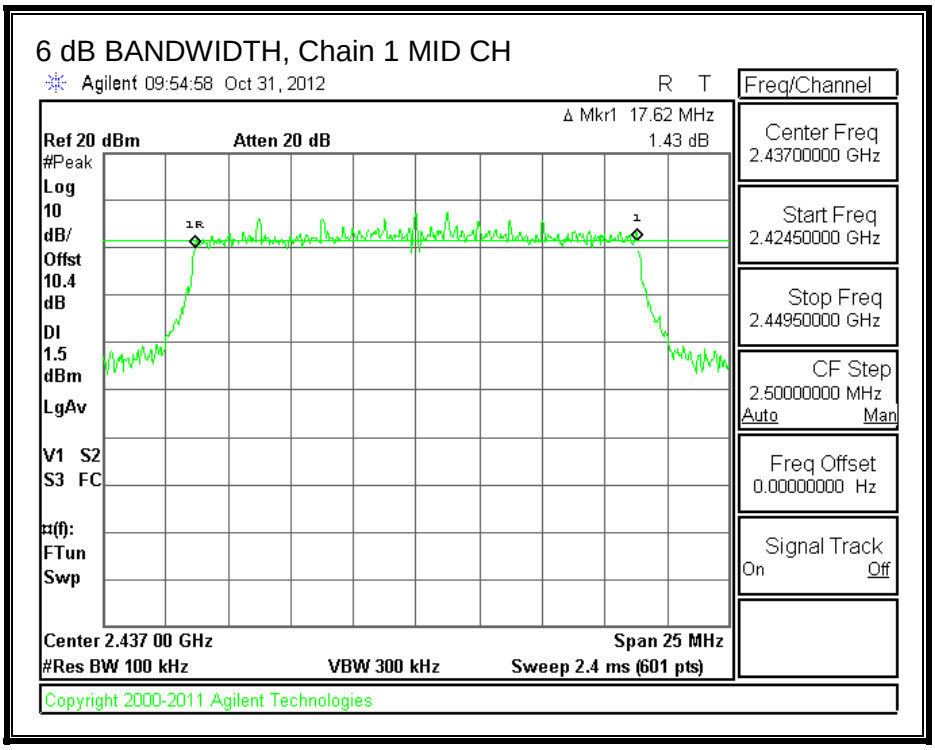


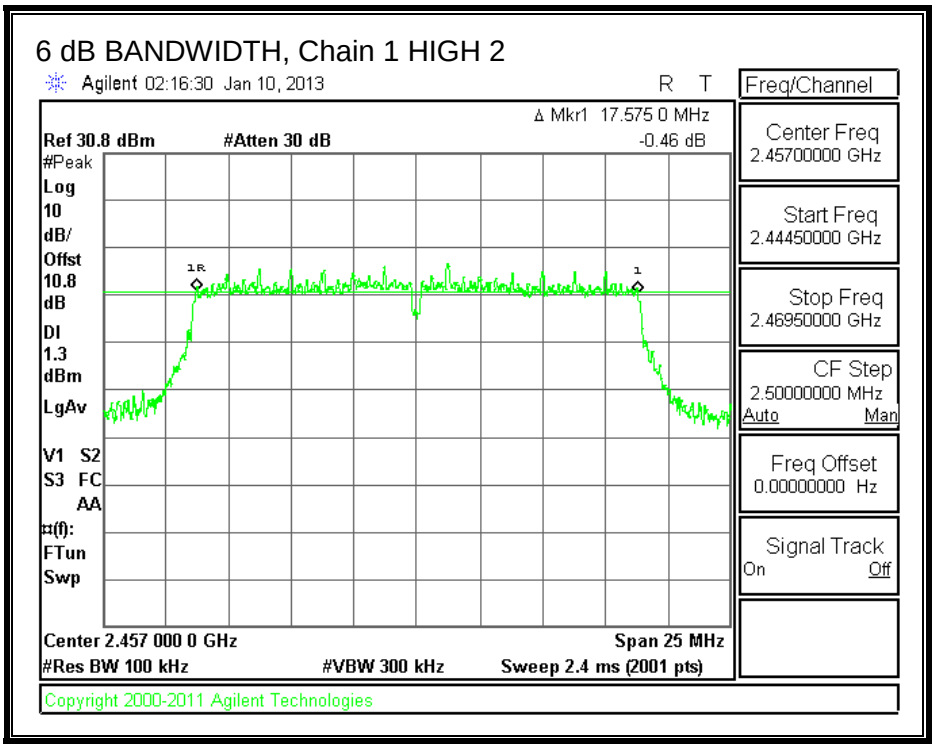


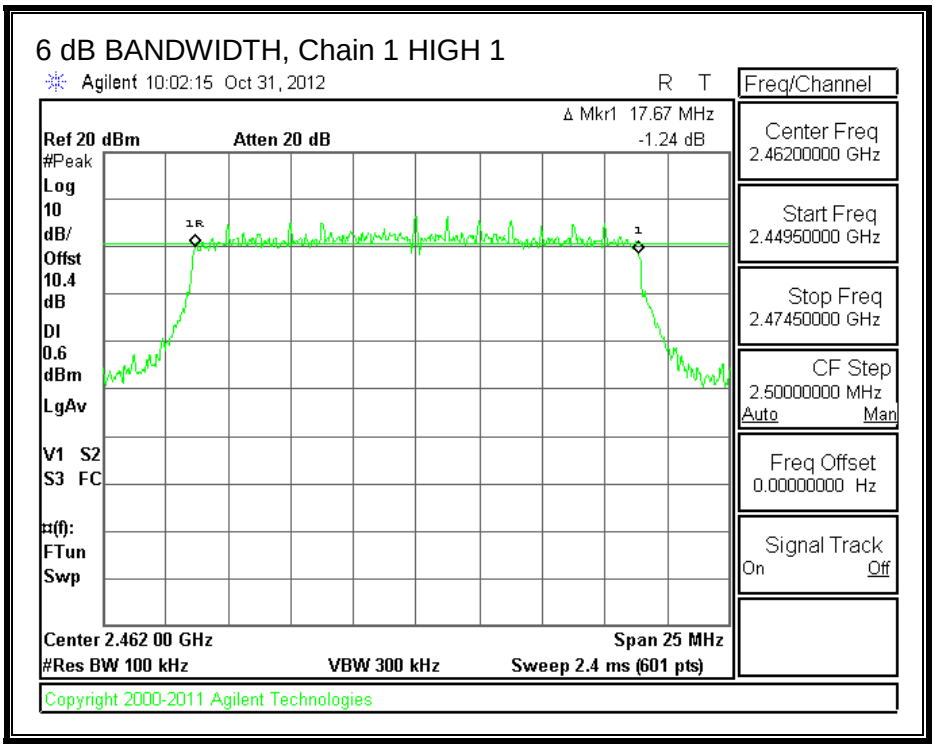
6 dB BANDWIDTH, Chain 1



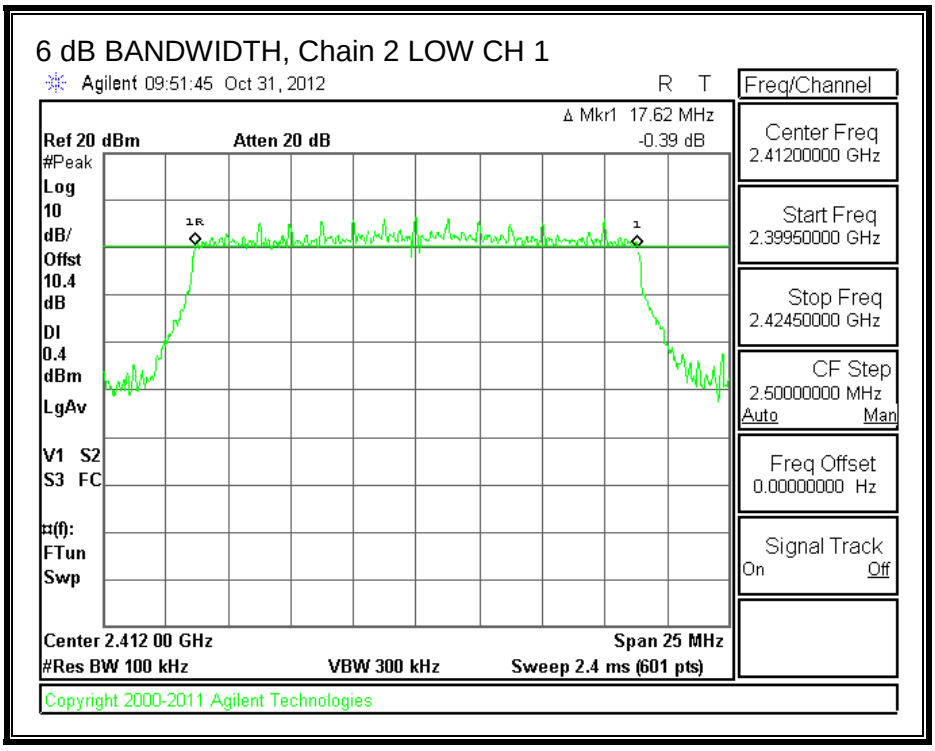


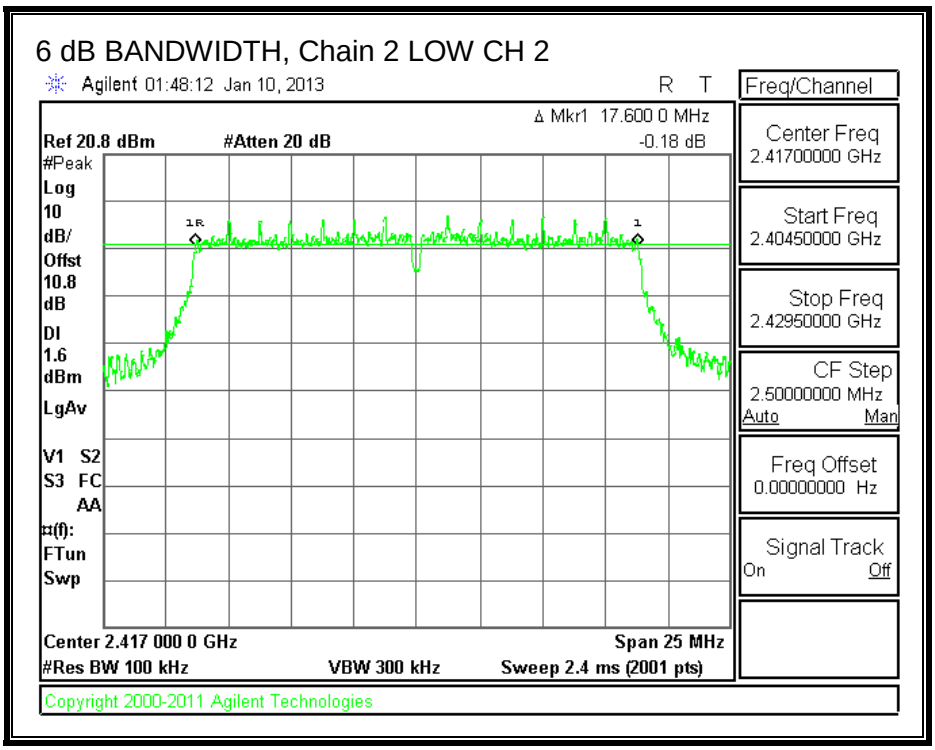


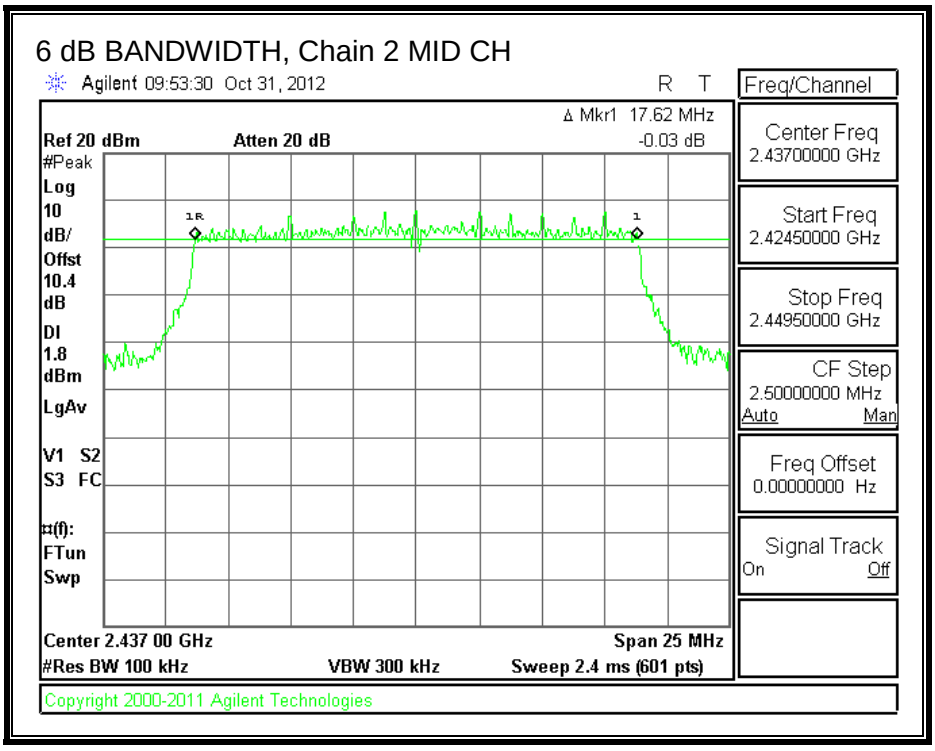


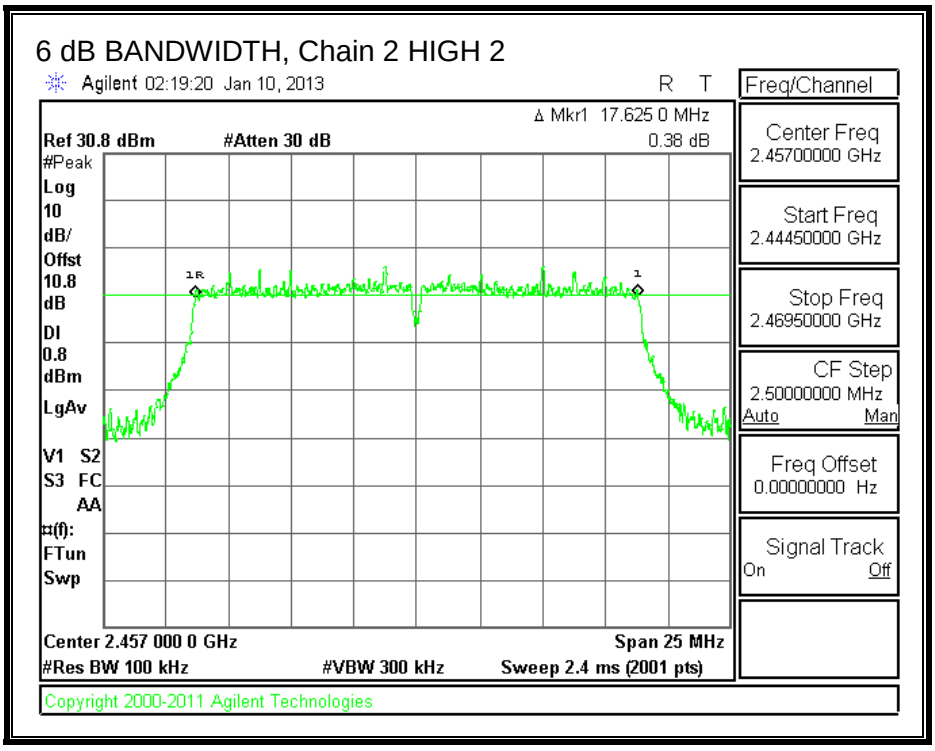


6 dB BANDWIDTH, Chain 2

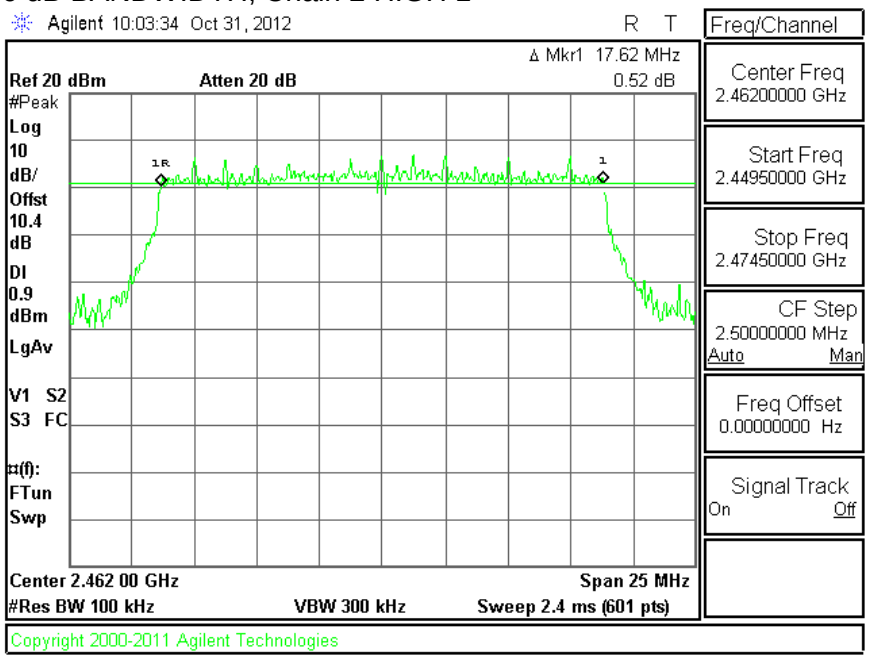








6 dB BANDWIDTH, Chain 2 HIGH 1



8.13.2. 99% BANDWIDTH

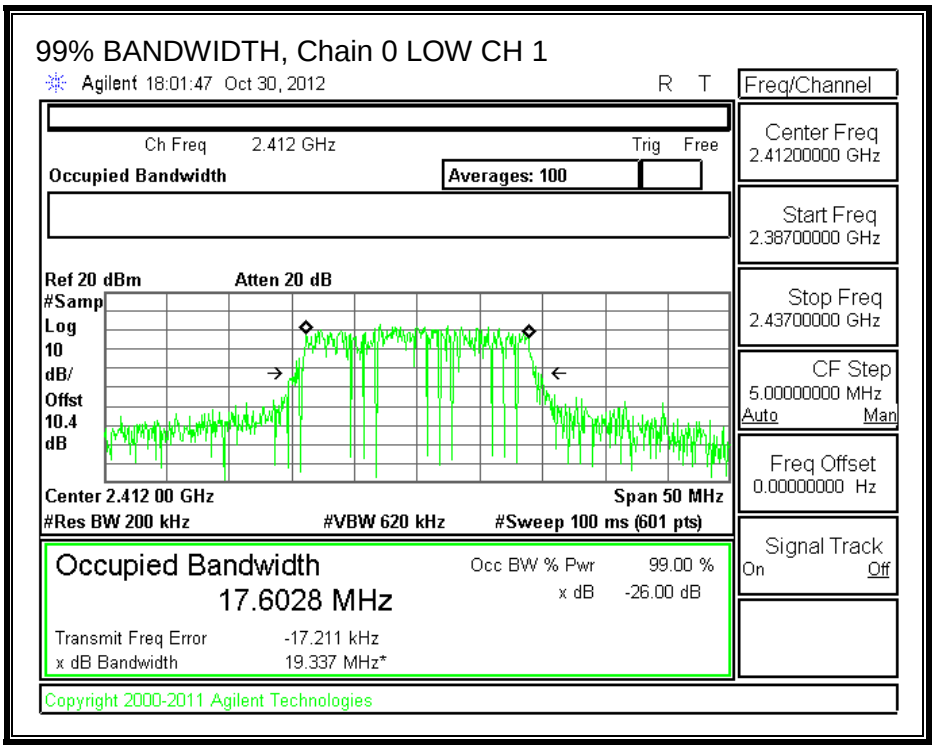
LIMITS

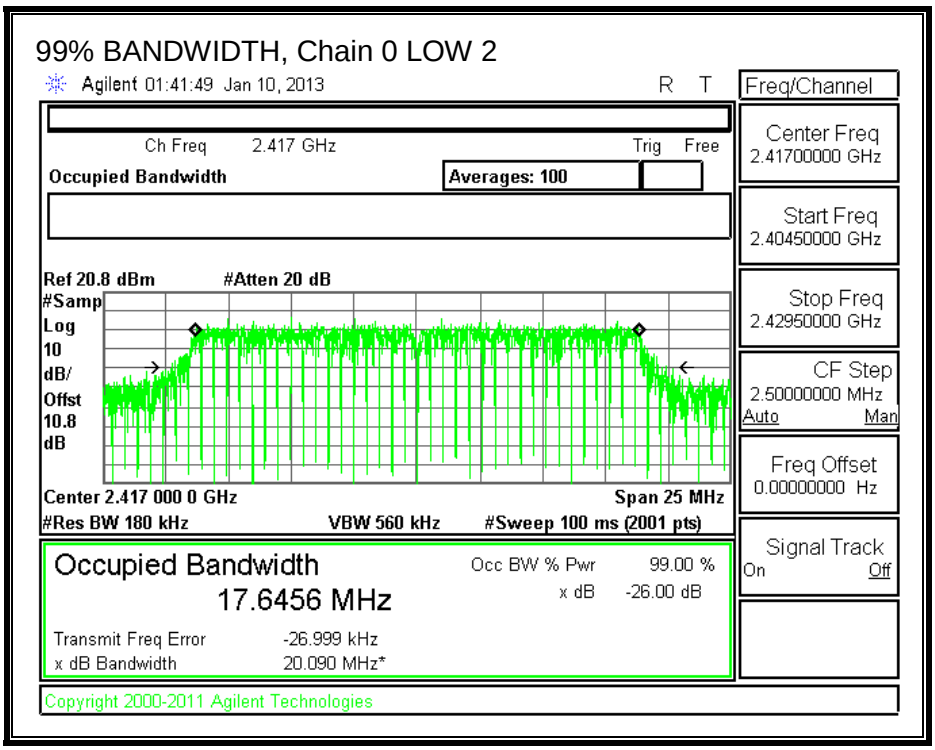
None; for reporting purposes only.

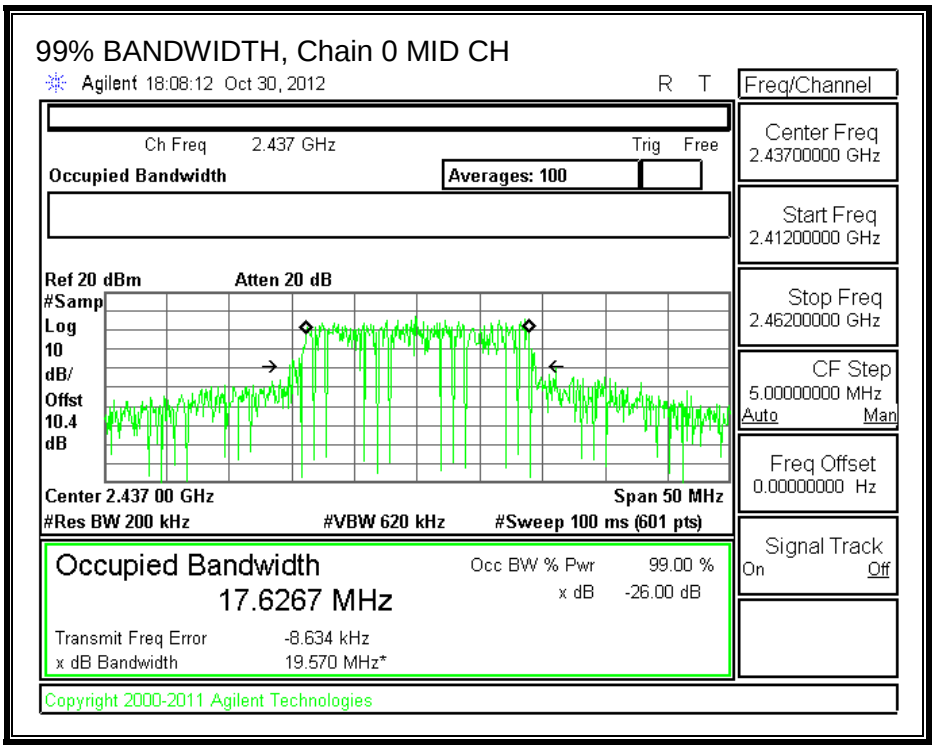
RESULTS

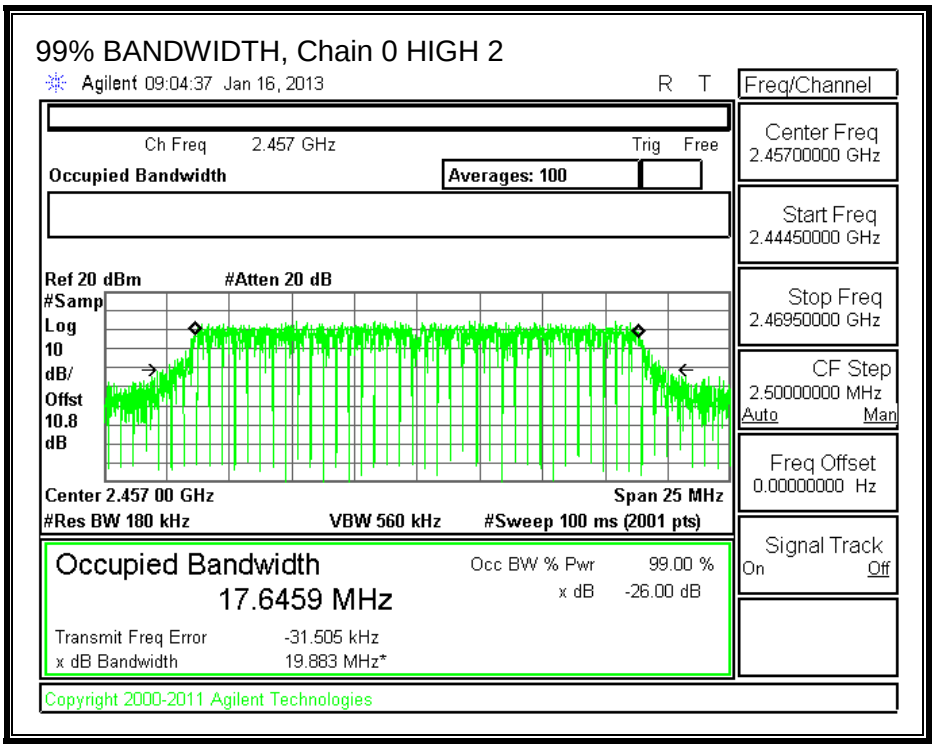
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low 1	2412	17.6028	17.6105	17.6232
Low 2	2417	17.6456	17.6671	17.6628
Mid	2437	17.6267	17.6241	17.6492
High 2	2457	17.6459	17.6467	17.6477
High 1	2462	17.6126	17.6249	17.6223

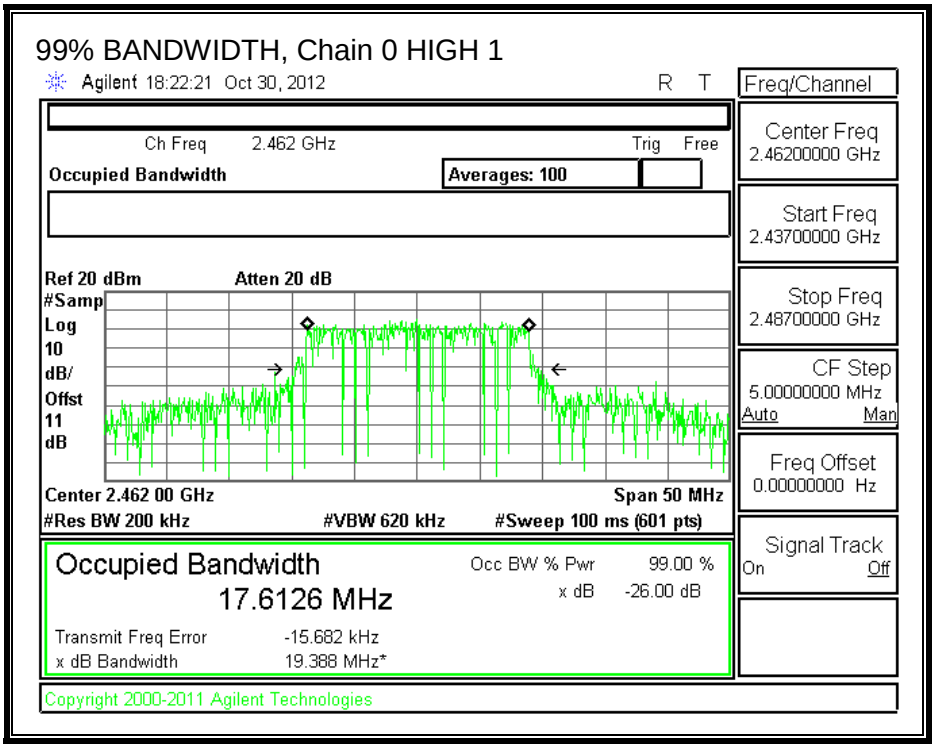
99% BANDWIDTH, Chain 0



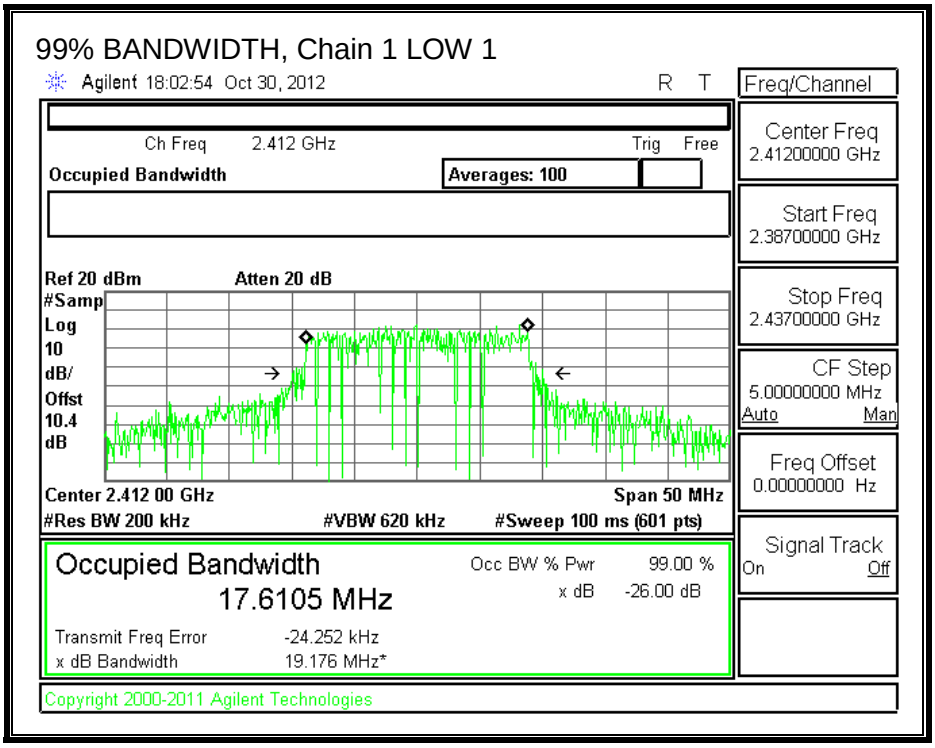


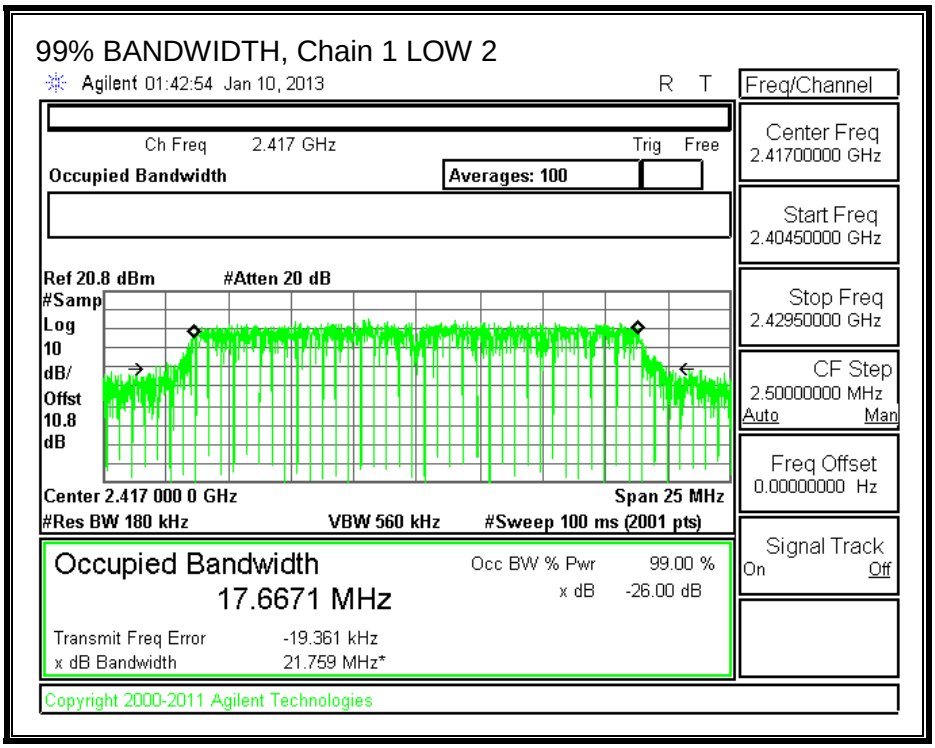


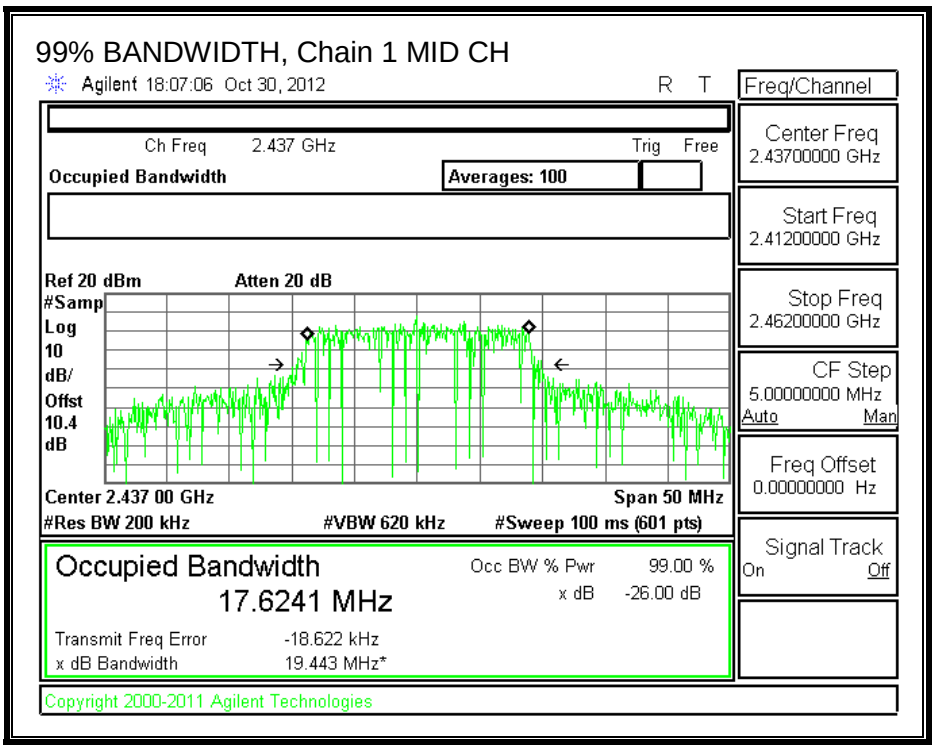


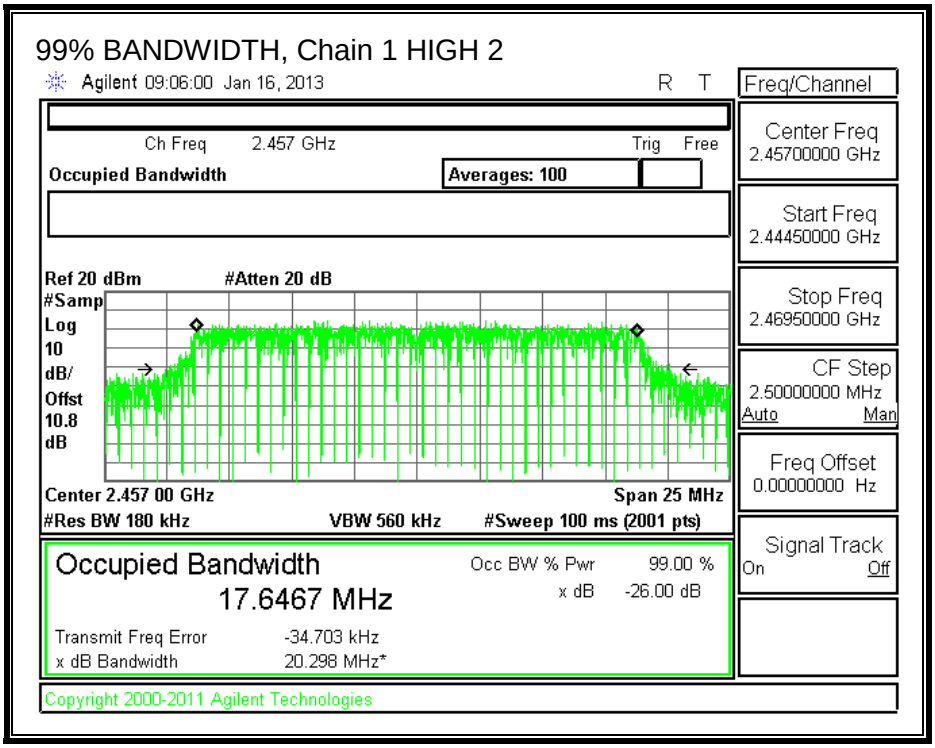


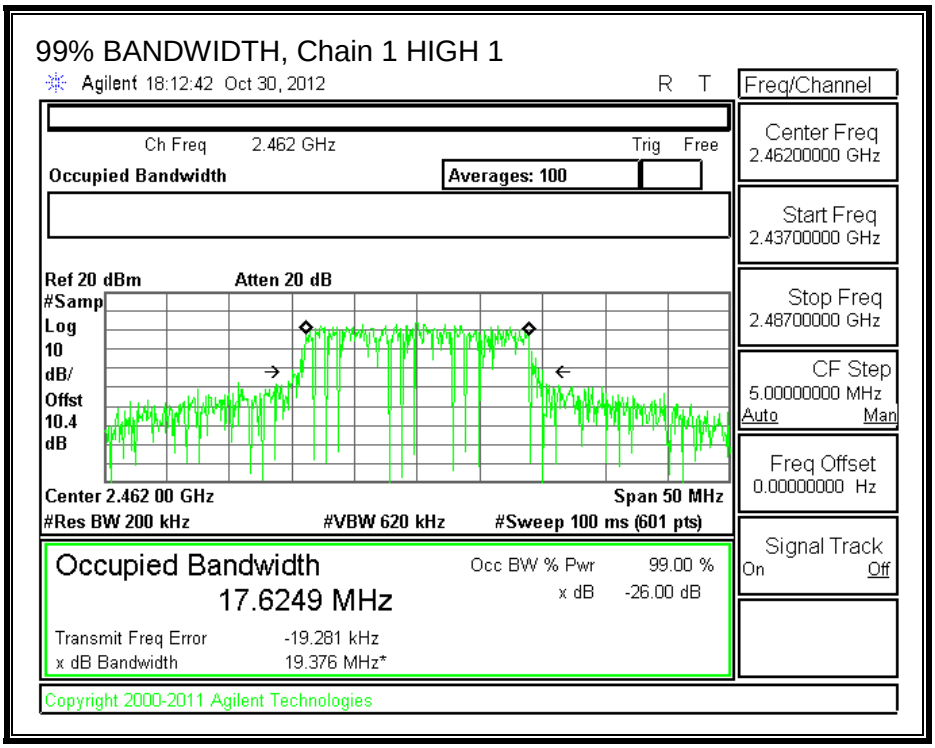
99% BANDWIDTH, Chain 1



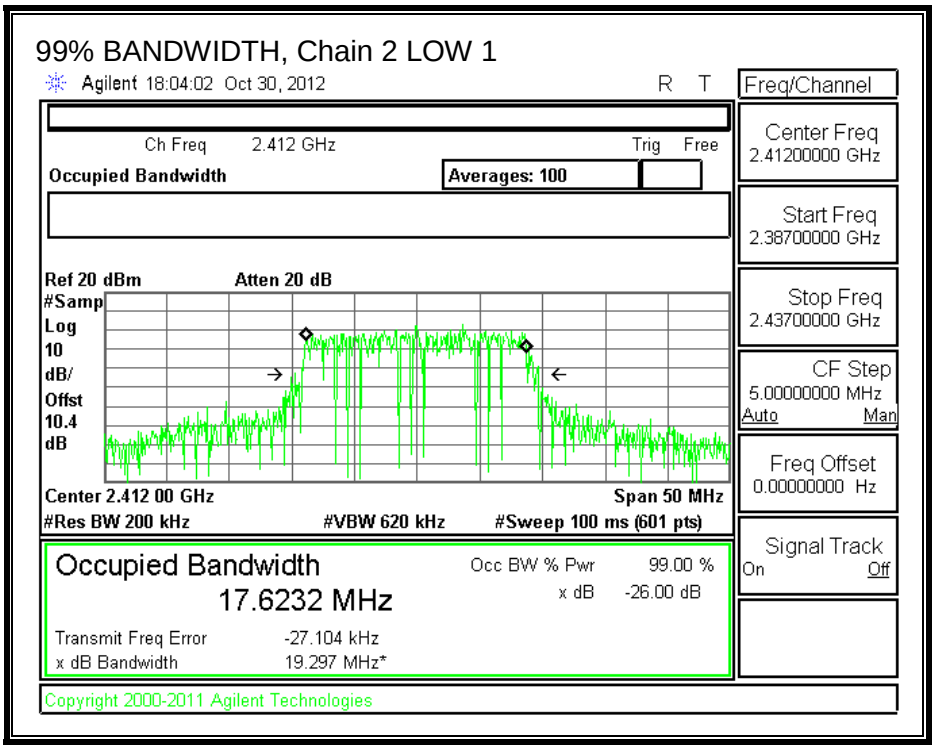


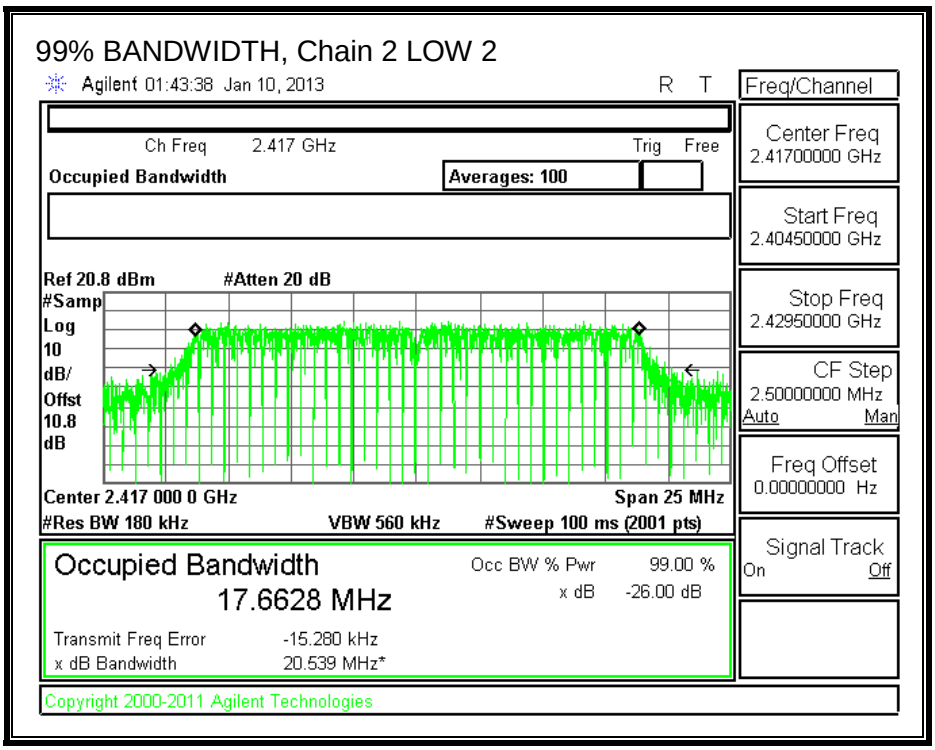


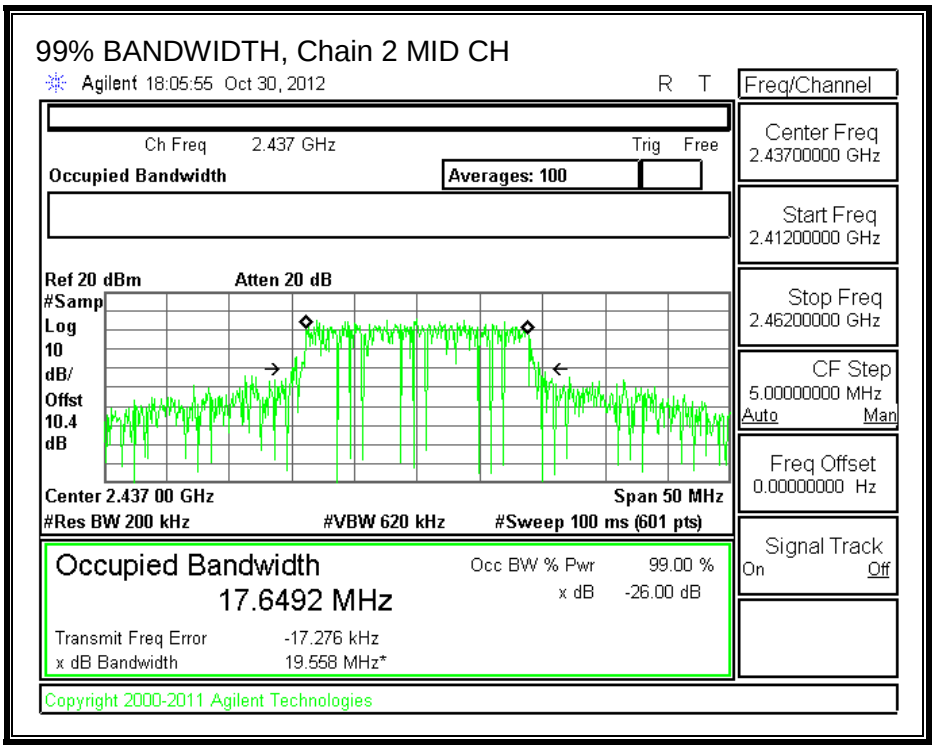


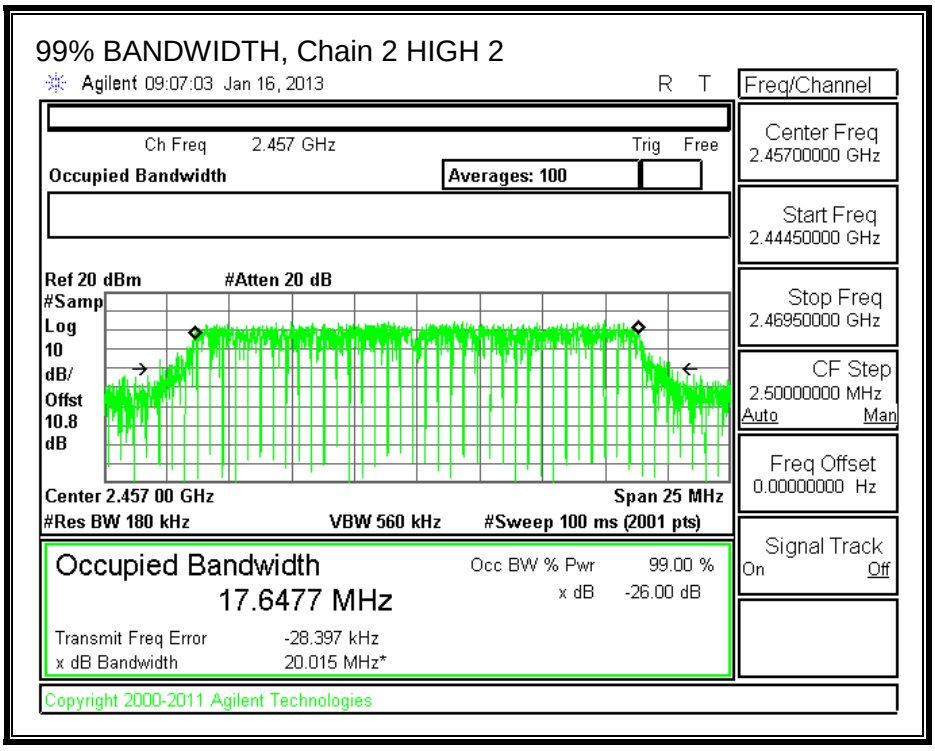


99% BANDWIDTH, Chain 2

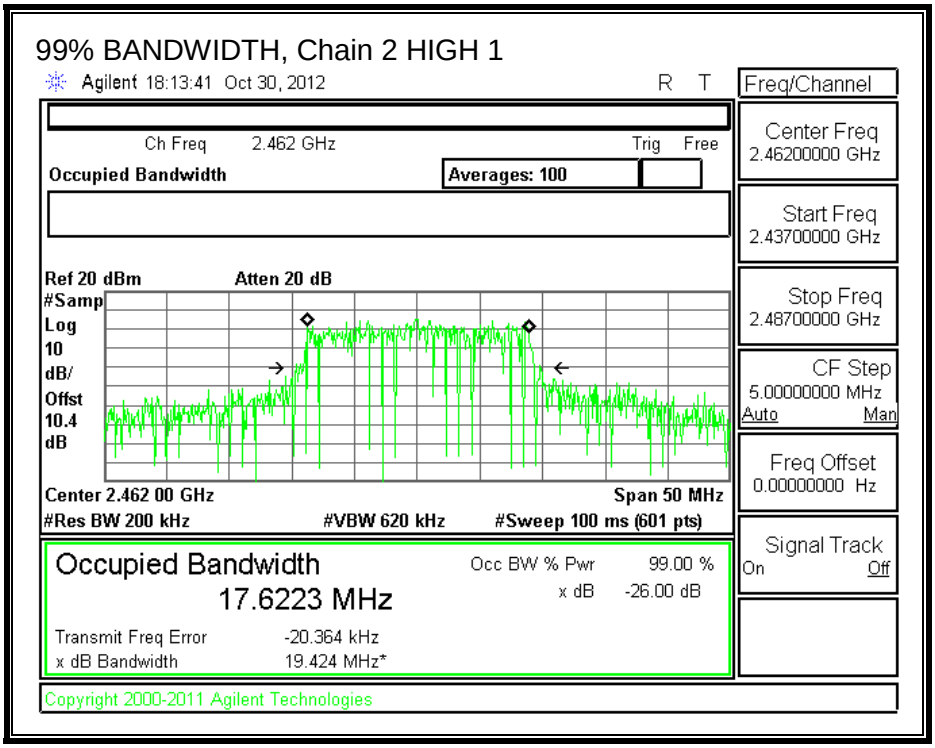








99% BANDWIDTH, Chain 2 HIGH 1



8.13.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated for output power consideration, and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
0.12	5.30	4.69	3.90

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	3.90	30.00	30	36	30.00
Low 2	2417	3.90	30.00	30	36	30.00
Mid	2437	3.90	30.00	30	36	30.00
High 2	2457	3.90	30.00	30	36	30.00
High 1	2462	3.90	30.00	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)
Low 1	2412	15.67	14.80	14.60	19.82	30.00	-10.18
Low 2	2417	19.20	18.80	19.00	23.77	30.00	-6.23
Mid	2437	20.08	20.04	20.15	24.86	30.00	-5.14
High 2	2457	19.09	18.45	18.40	23.43	30.00	-6.57
High 1	2462	17.20	16.80	17.00	21.77	30.00	-8.23

8.13.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

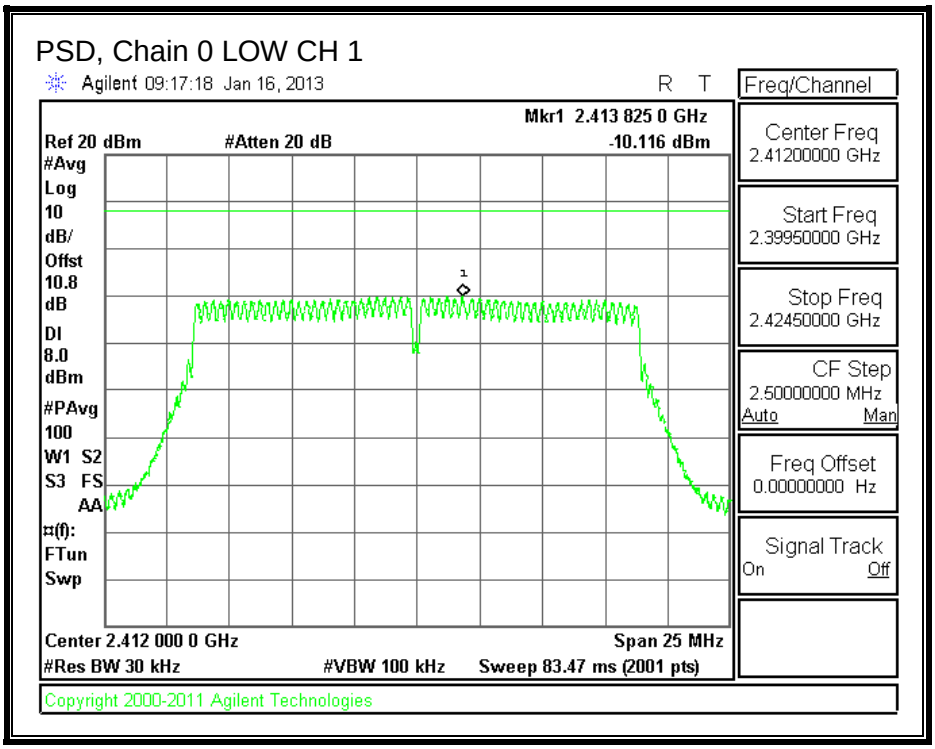
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

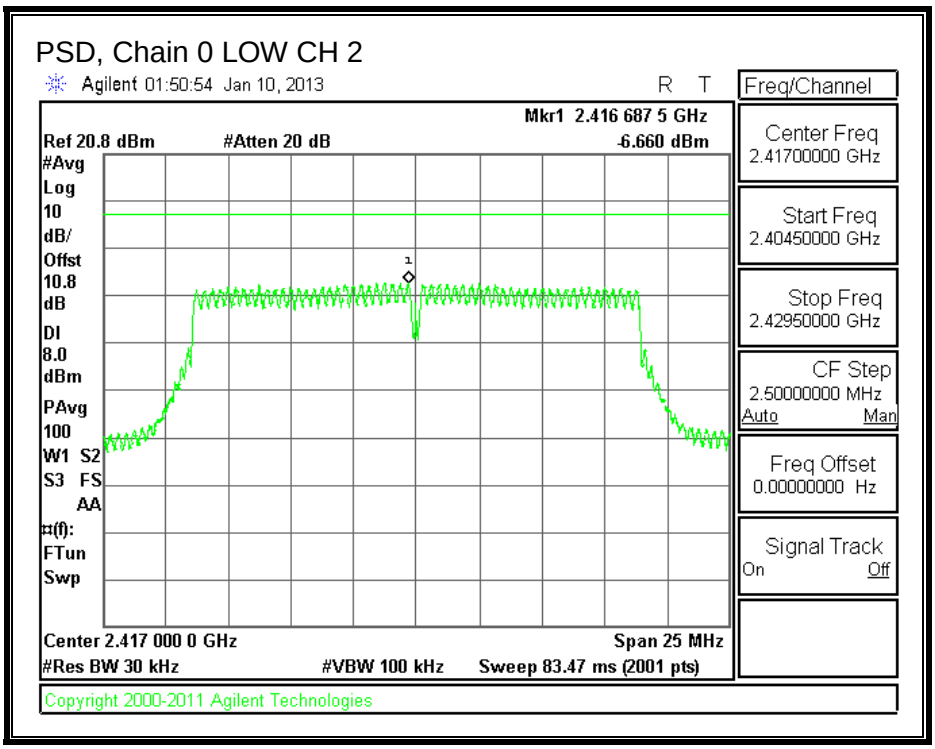
RESULTS

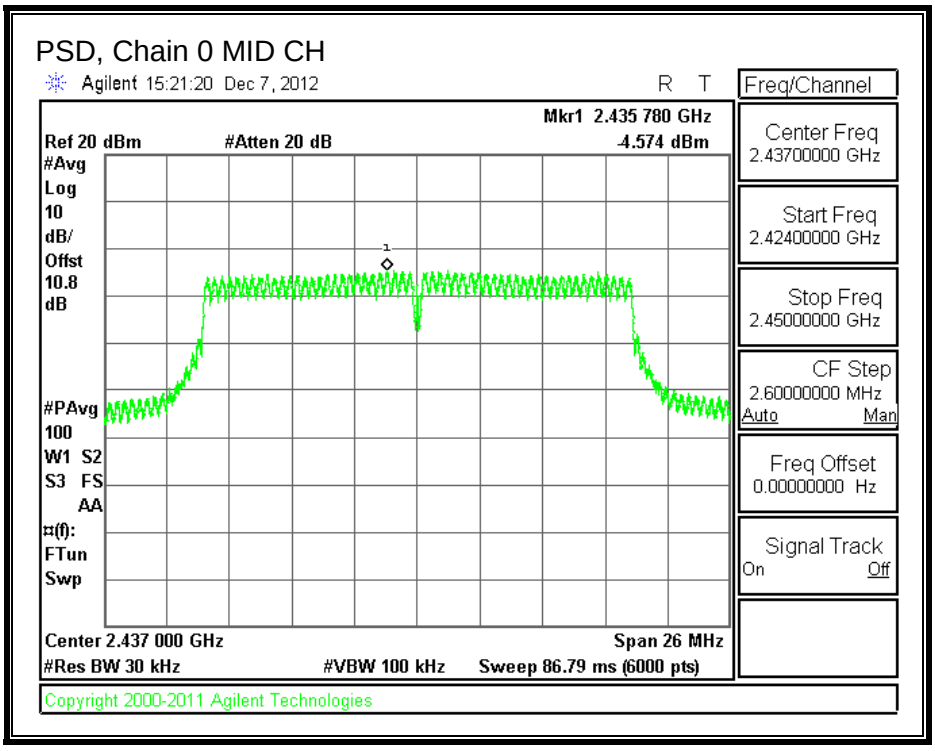
PSD Results

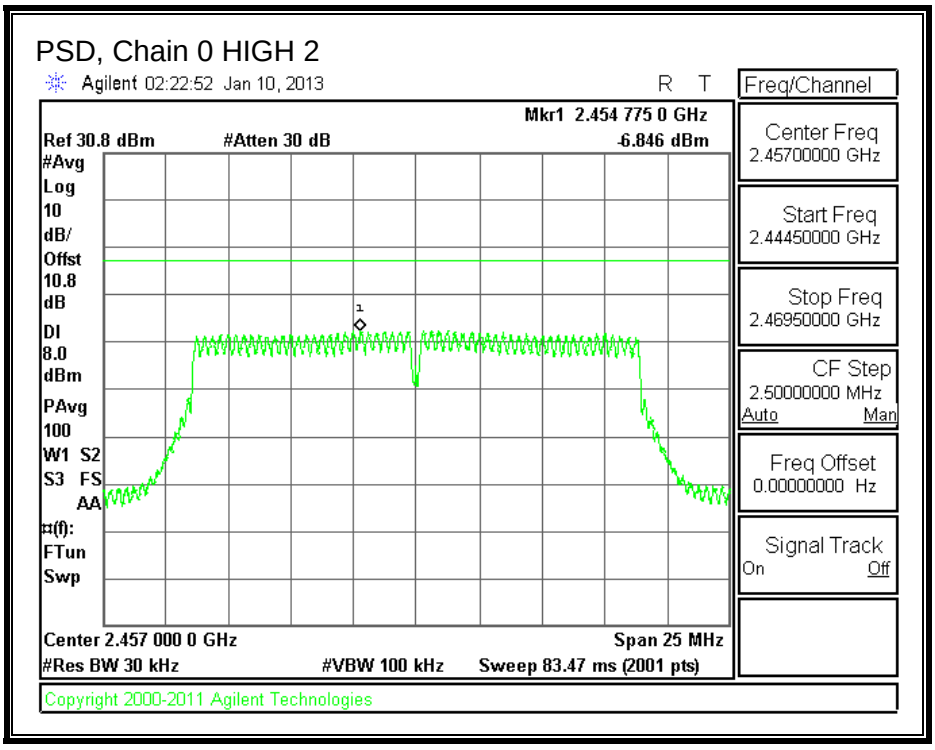
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	DCCF (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low 1	2412	-10.116	-10.165	-9.715	0.22	-0.175	8.0	-8.175
Low 2	2417	-6.660	-6.010	-6.483	0.22	1.307	8.0	-6.693
Mid	2437	-4.574	-4.375	-4.076	0.22	2.468	8.0	-5.532
High 2	2457	-6.846	-7.355	-6.919	0.22	0.983	8.0	-7.017
High 1	2462	-7.901	-8.433	-7.842	0.22	0.531	8.0	-7.469

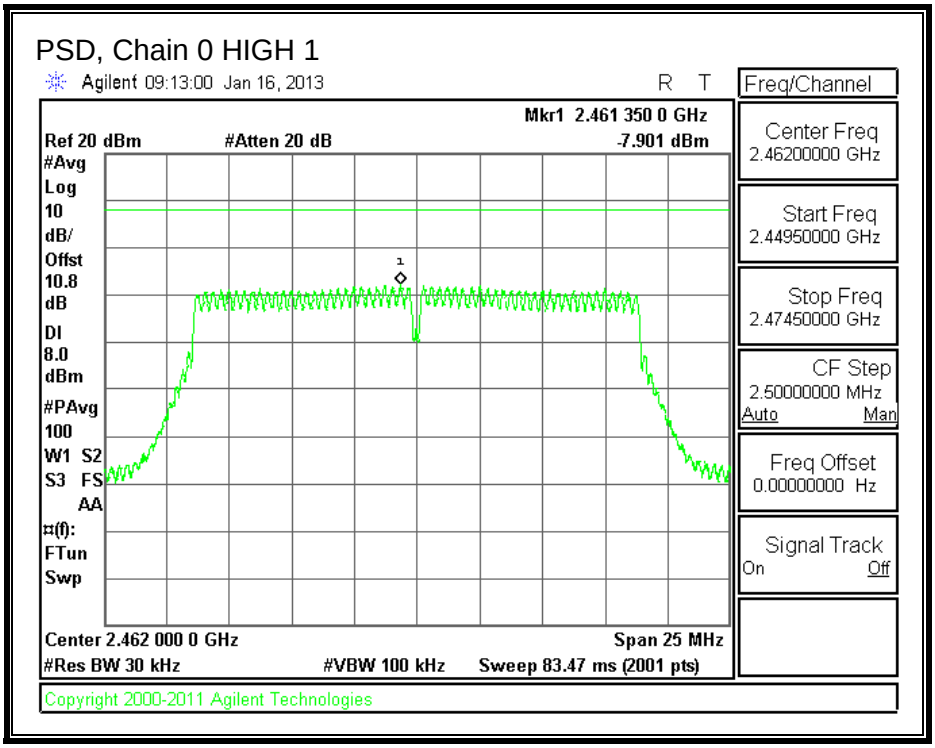
PSD, Chain 0



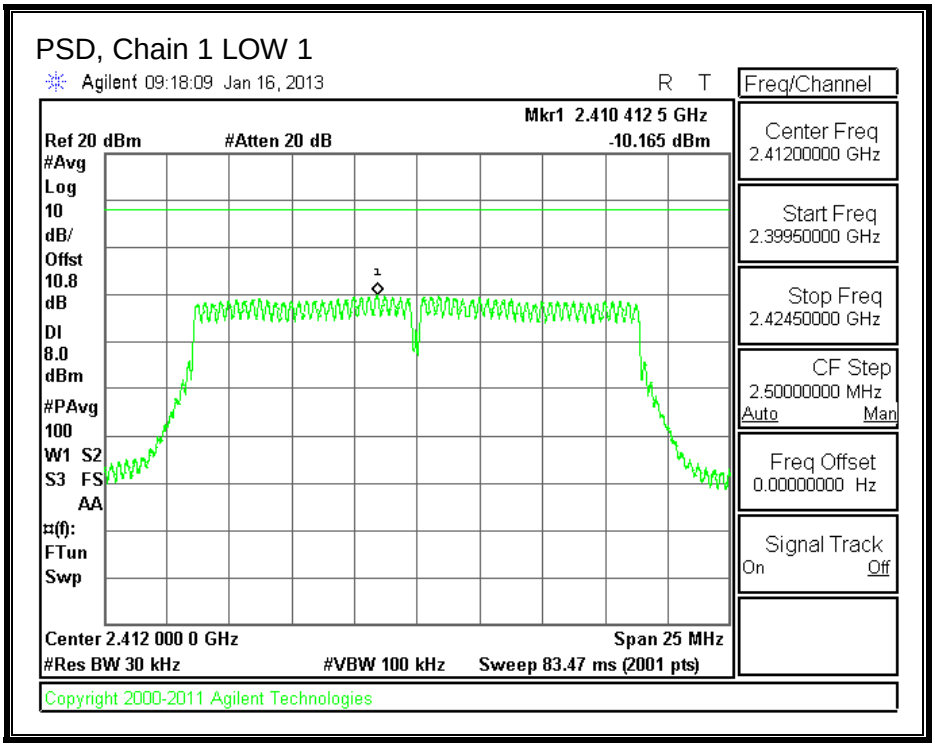


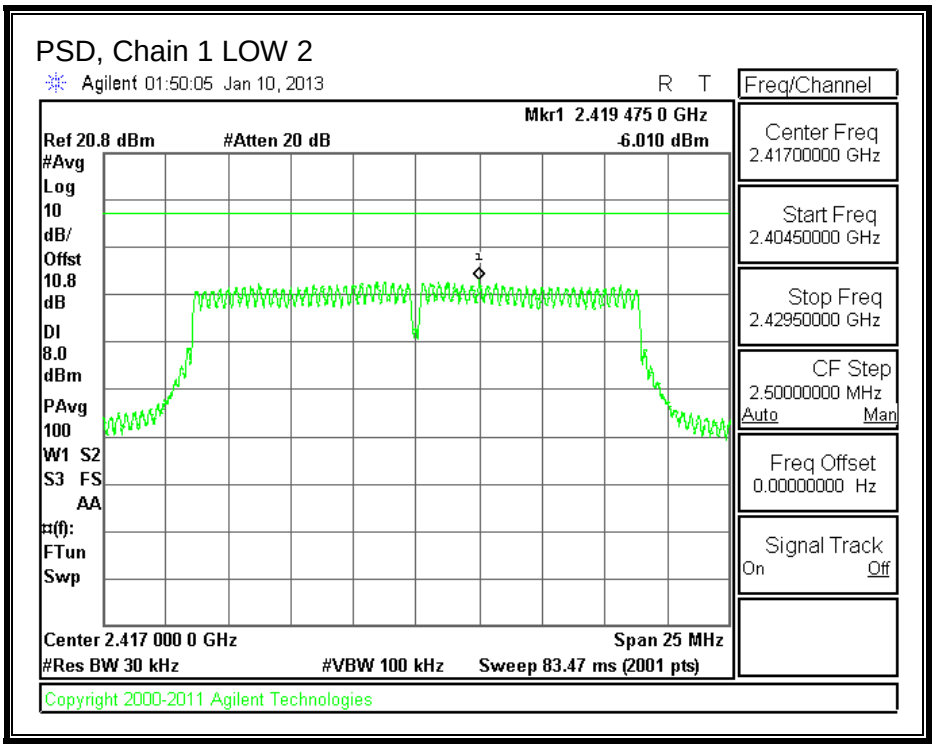


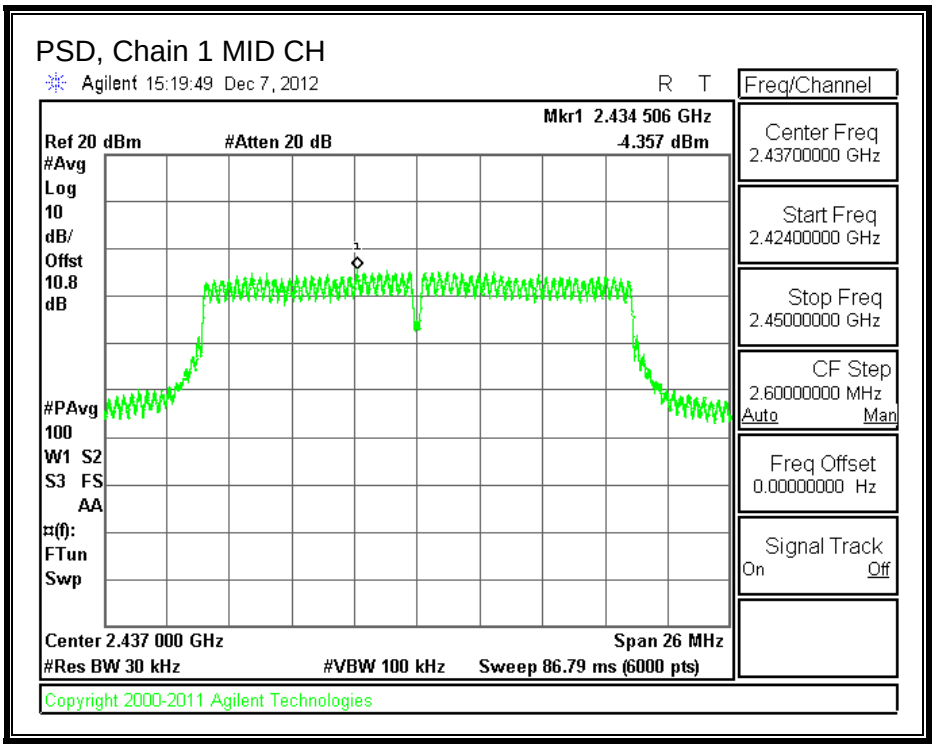


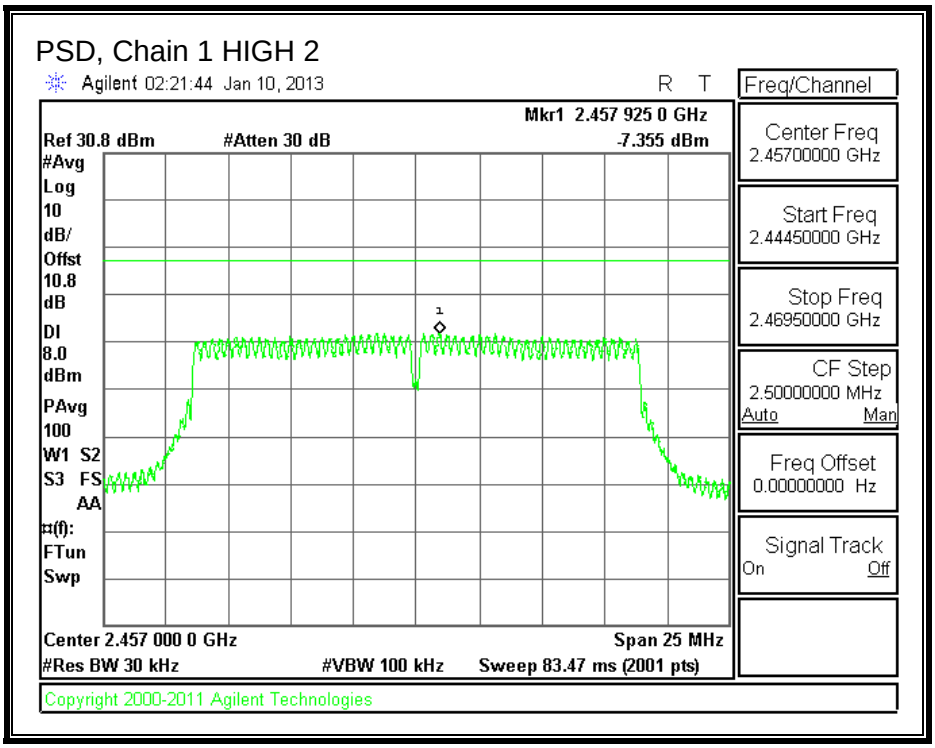


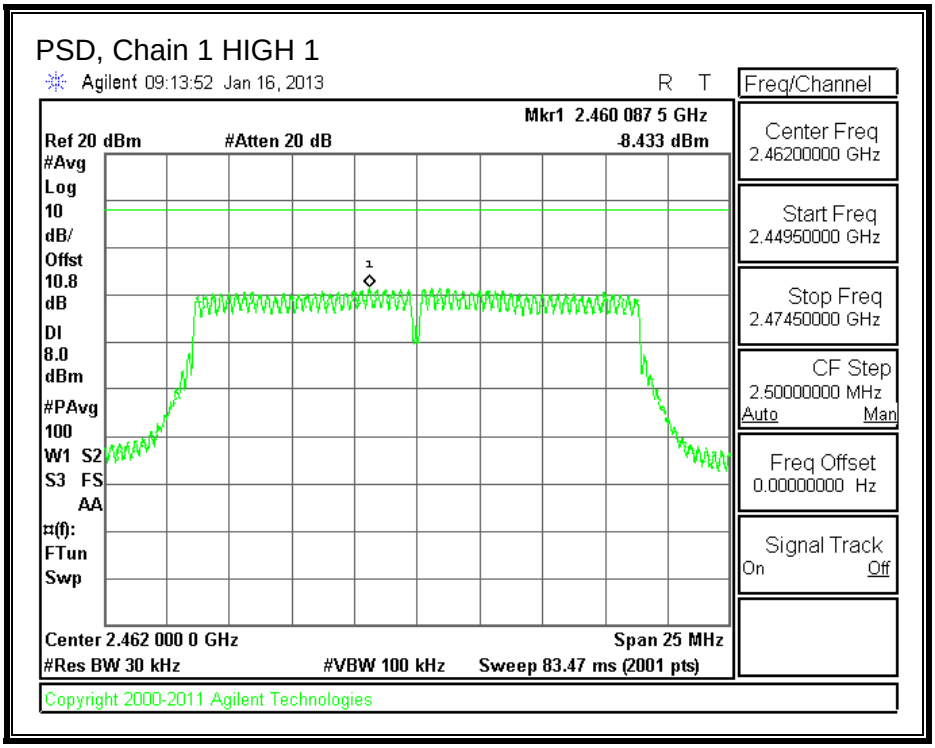
PSD, Chain 1



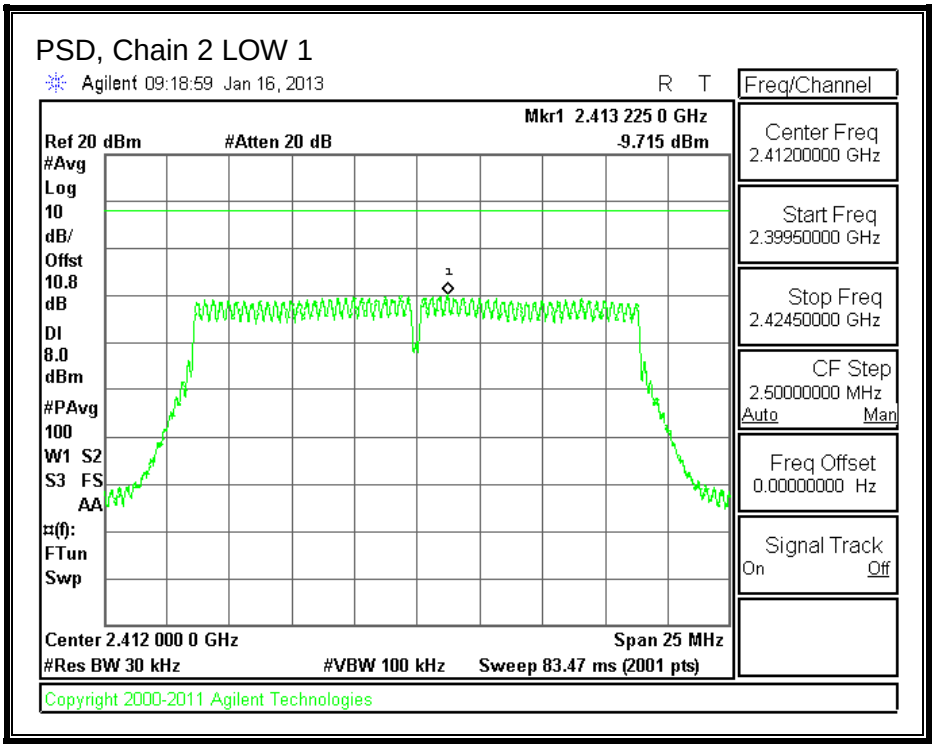


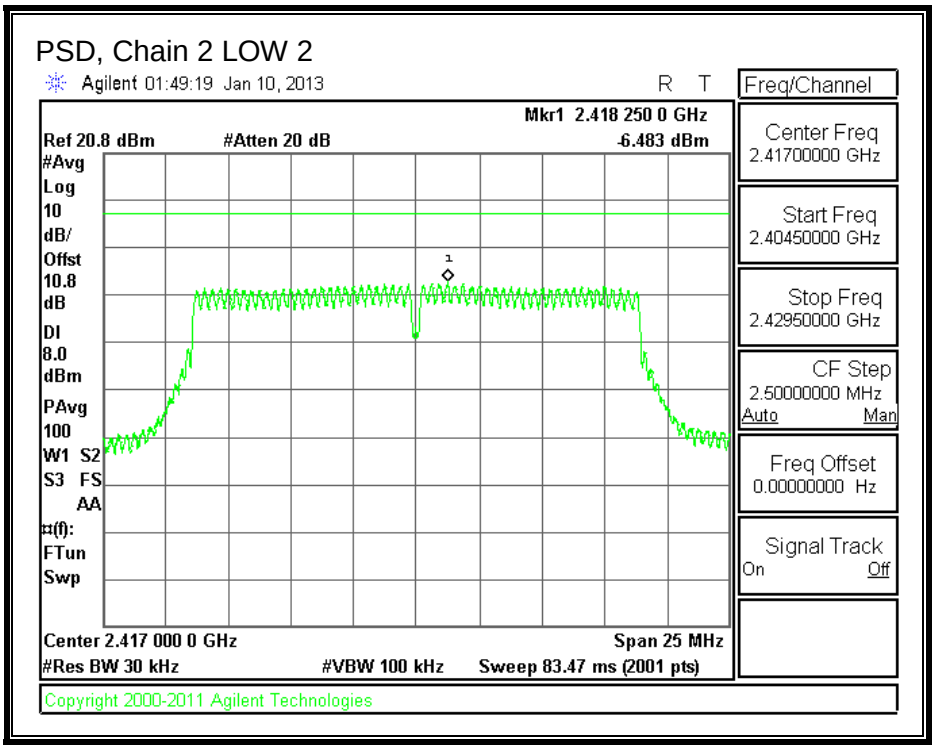


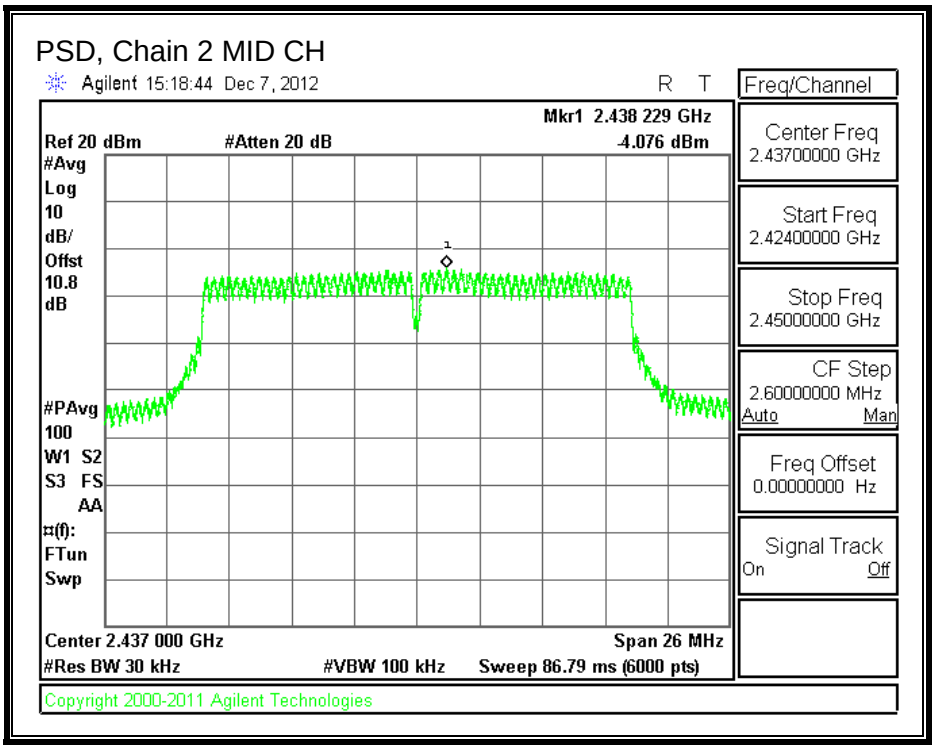


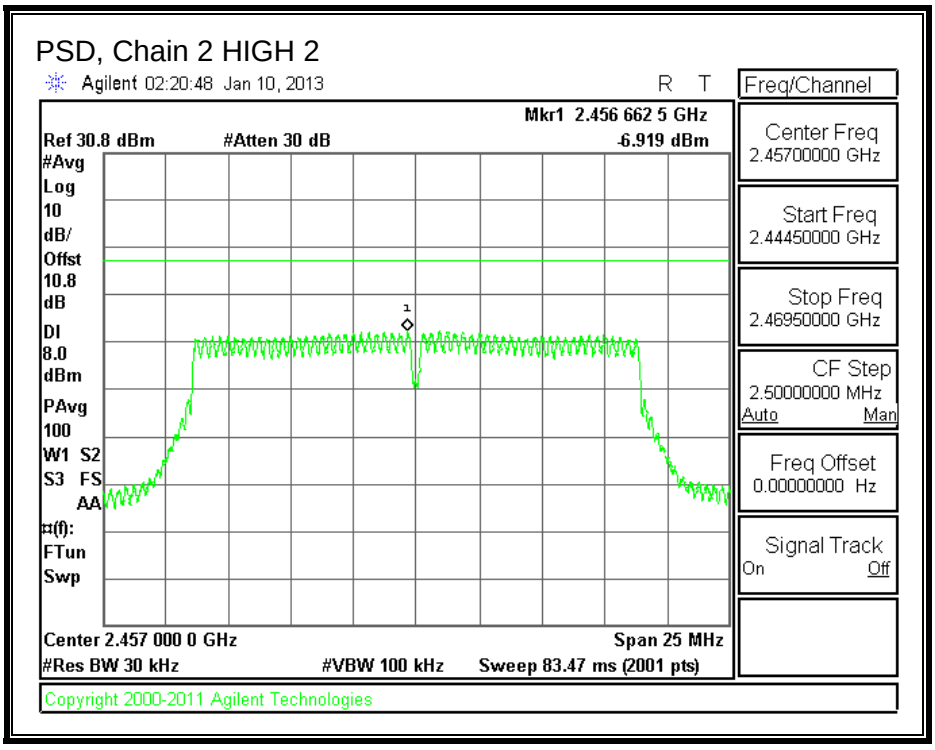


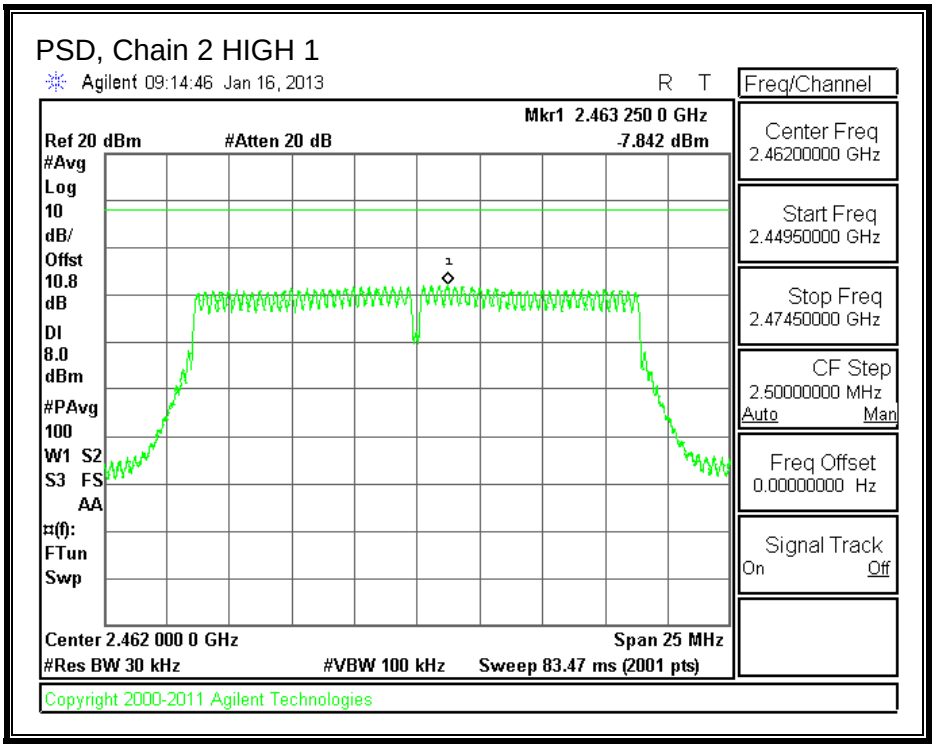
PSD, Chain 2











8.13.5. OUT-OF-BAND EMISSIONS

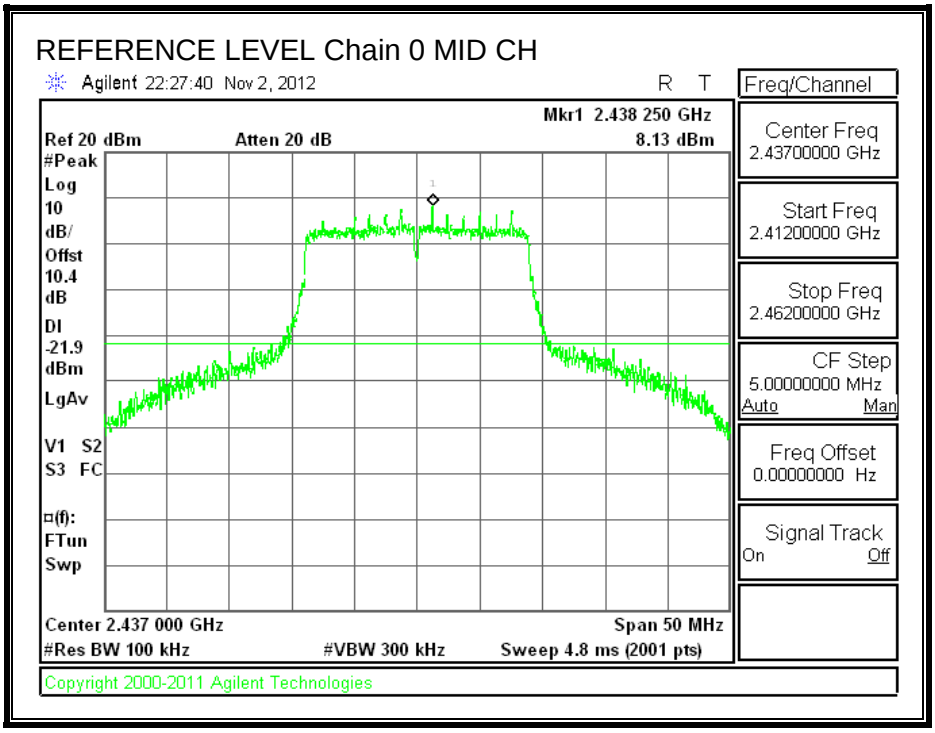
LIMITS

FCC §15.247 (d)

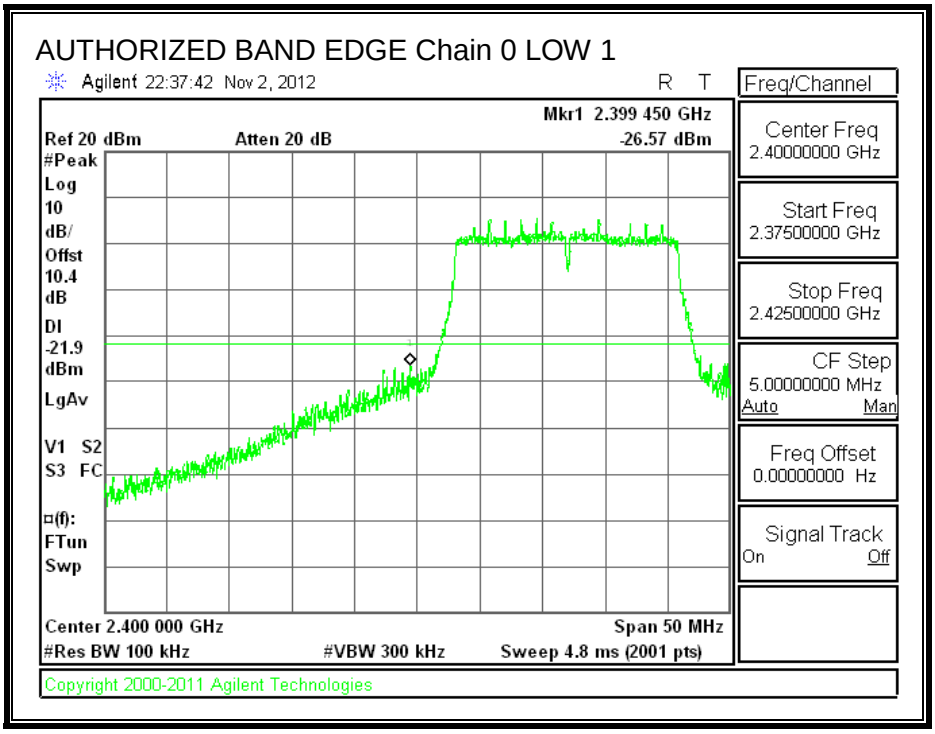
IC RSS-210 A8.5

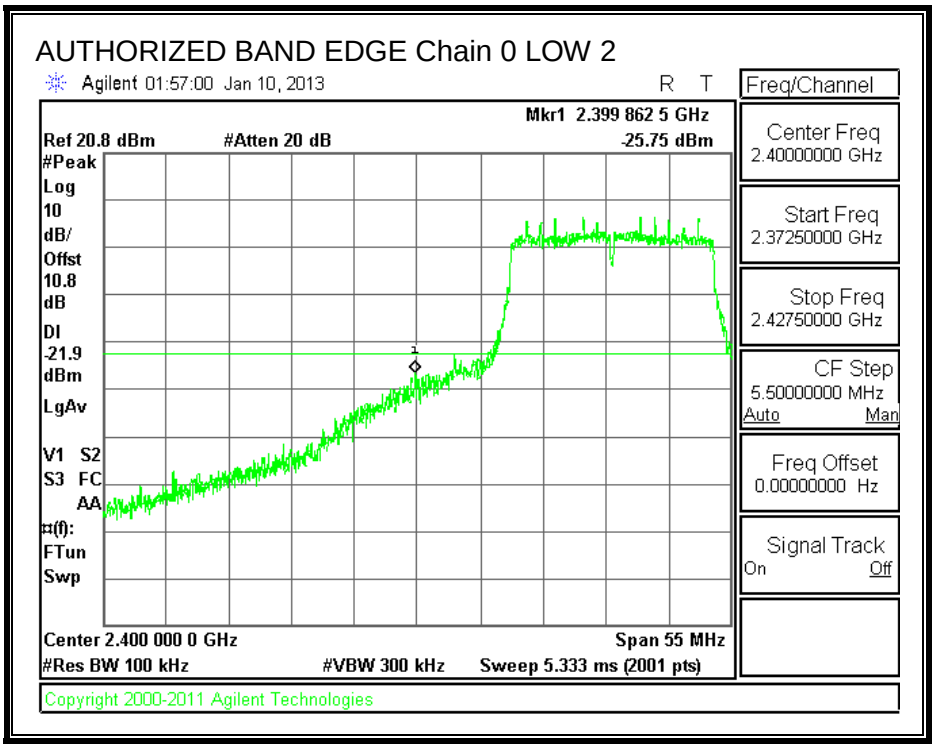
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

IN-BAND REFERENCE LEVEL, Chain 0

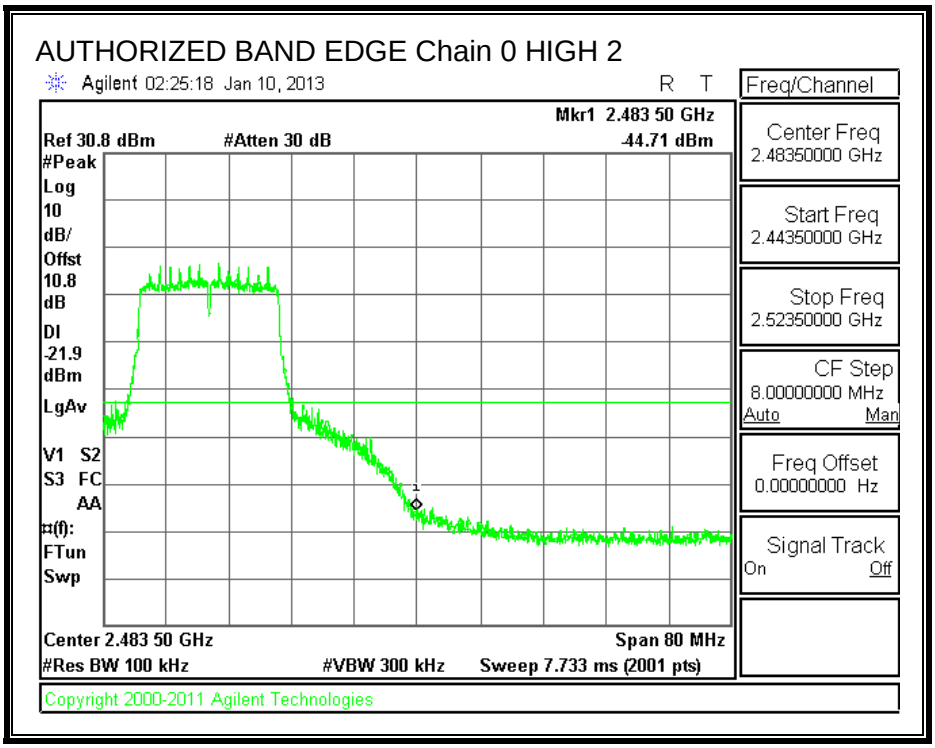


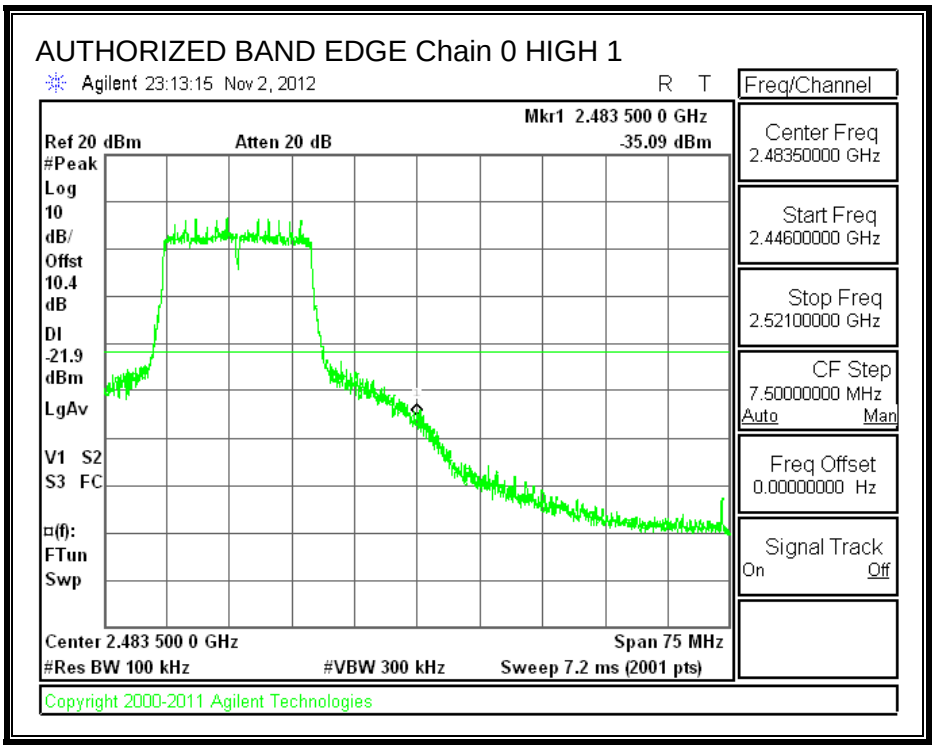
LOW CHANNEL BANDEDGE, Chain 0



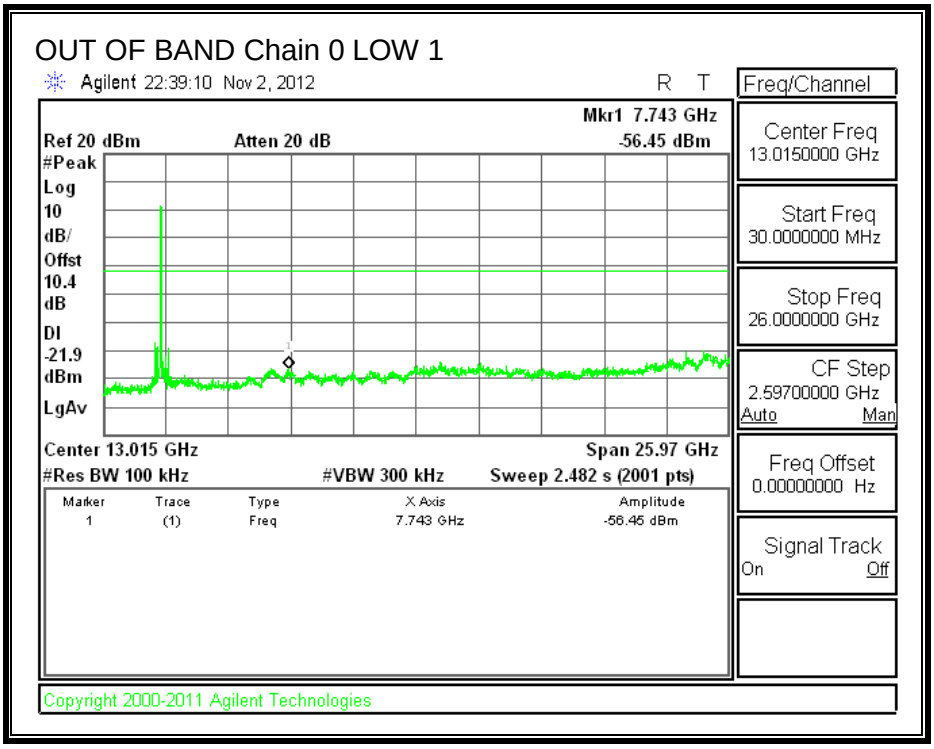


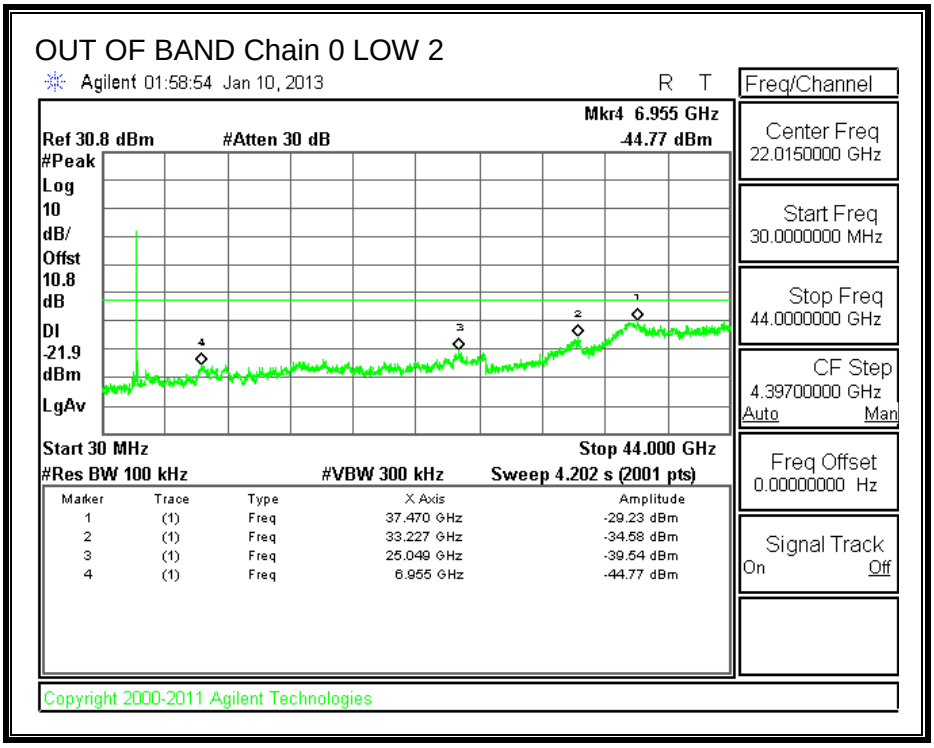
HIGH CHANNEL BANDEDGE, Chain 0

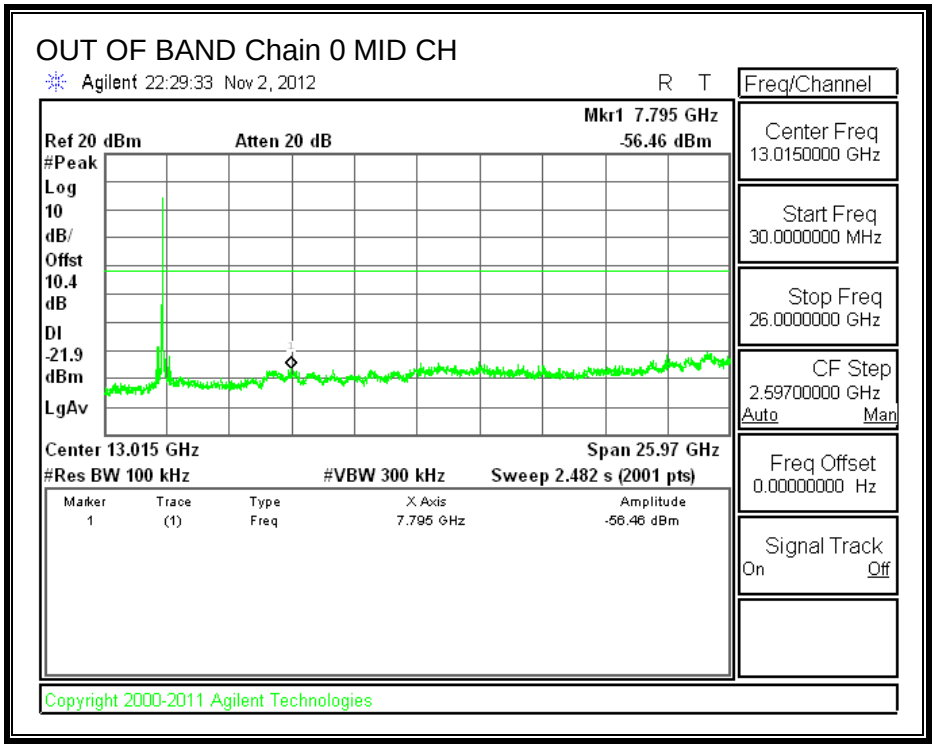


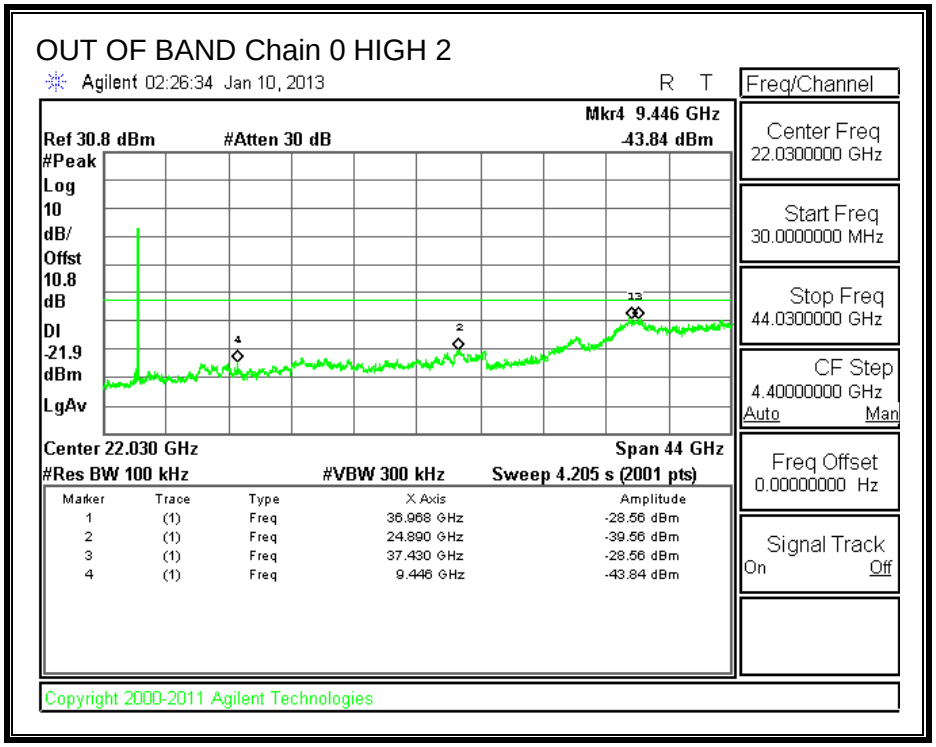


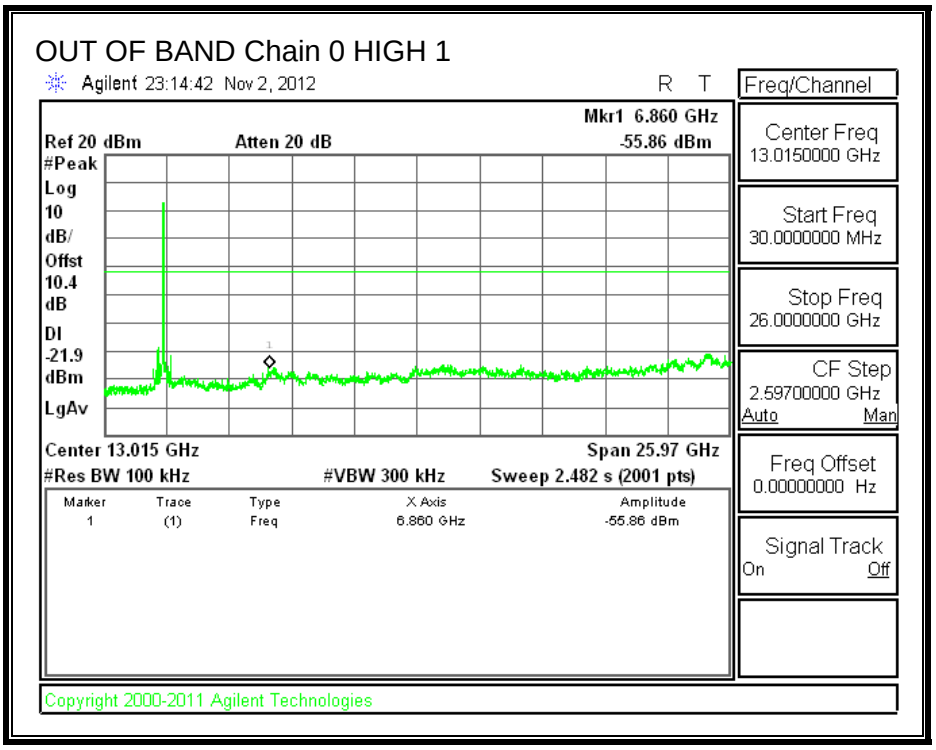
OUT-OF-BAND EMISSIONS, Chain 0



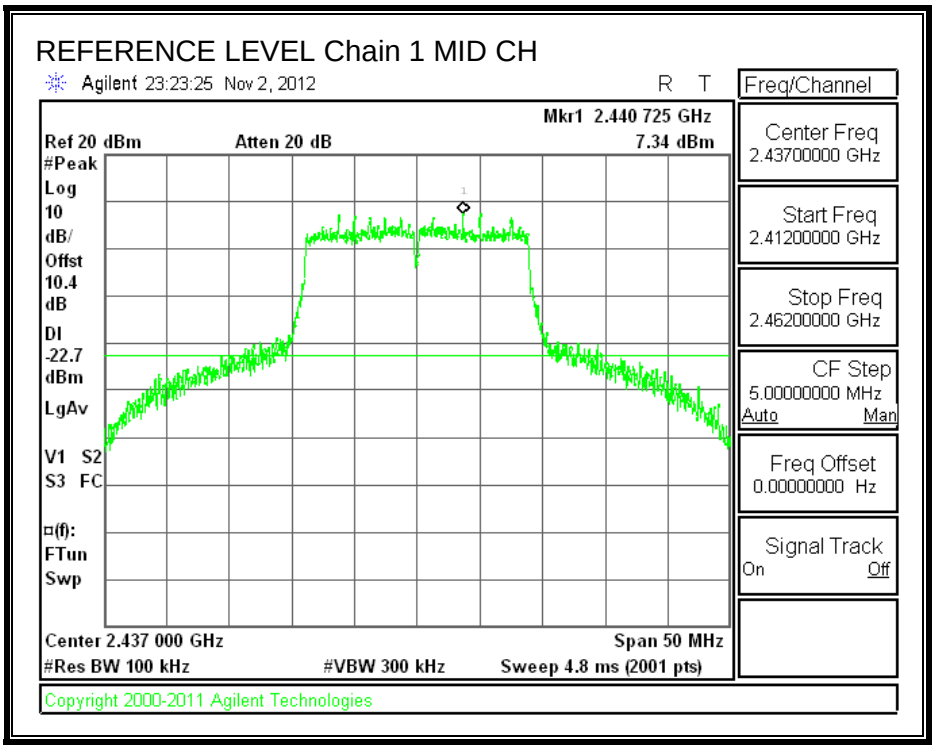




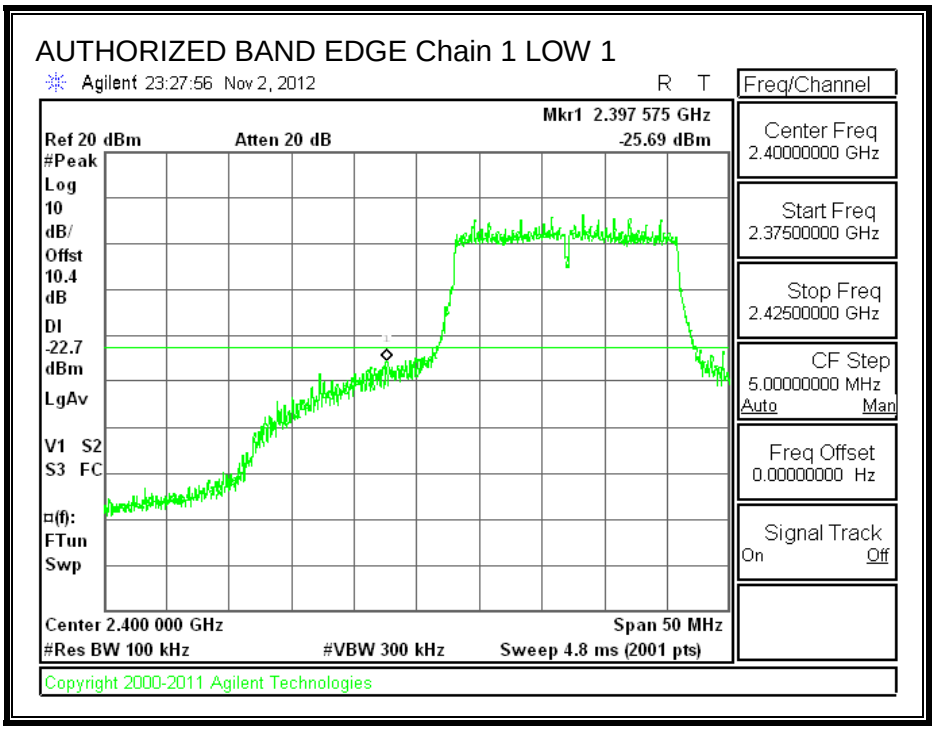


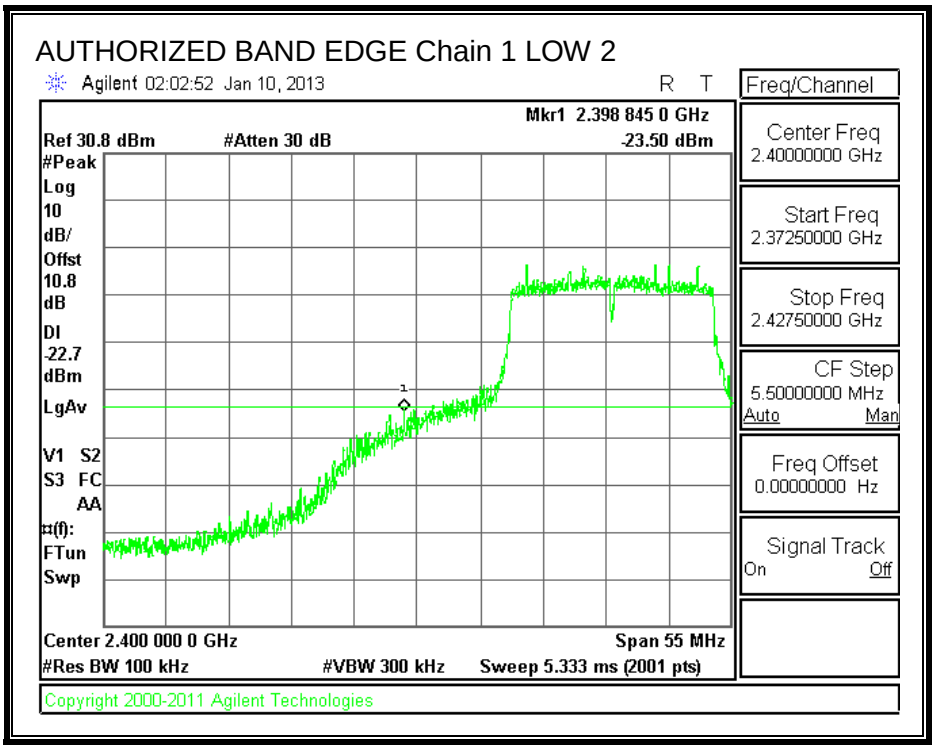


IN-BAND REFERENCE LEVEL, Chain 1



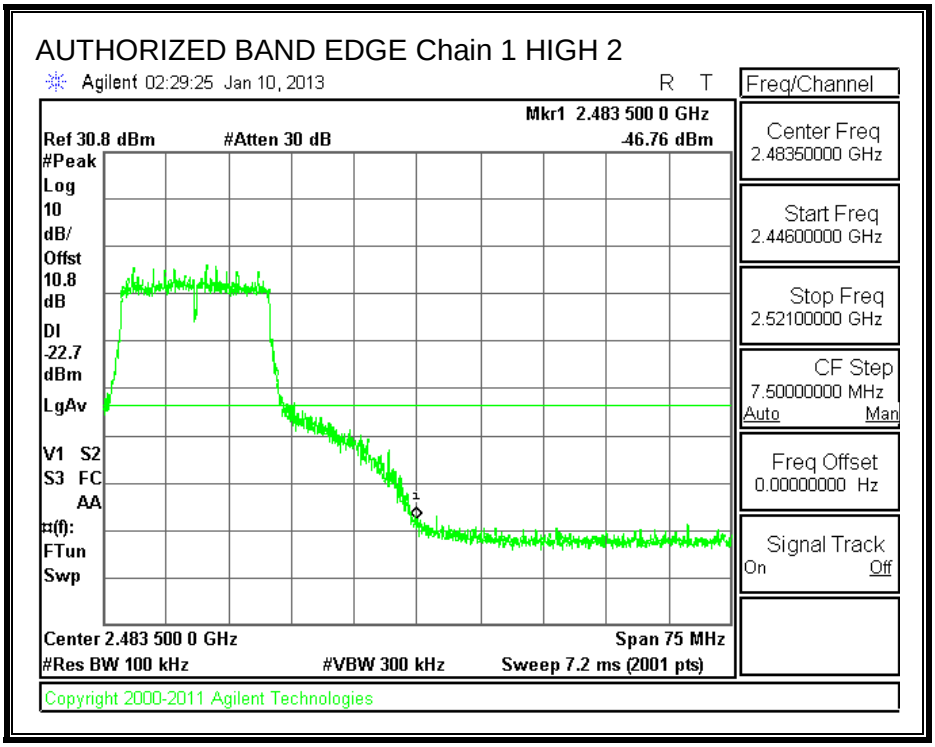
LOW CHANNEL BANDEDGE, Chain 1



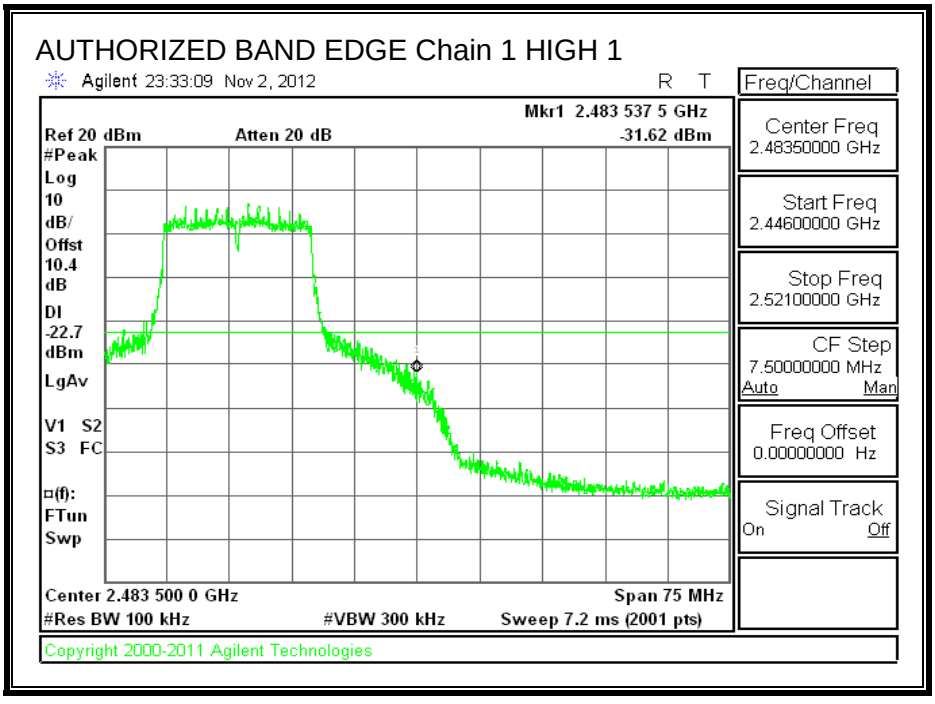


HIGH CHANNEL BANDEDGE, Chain 1

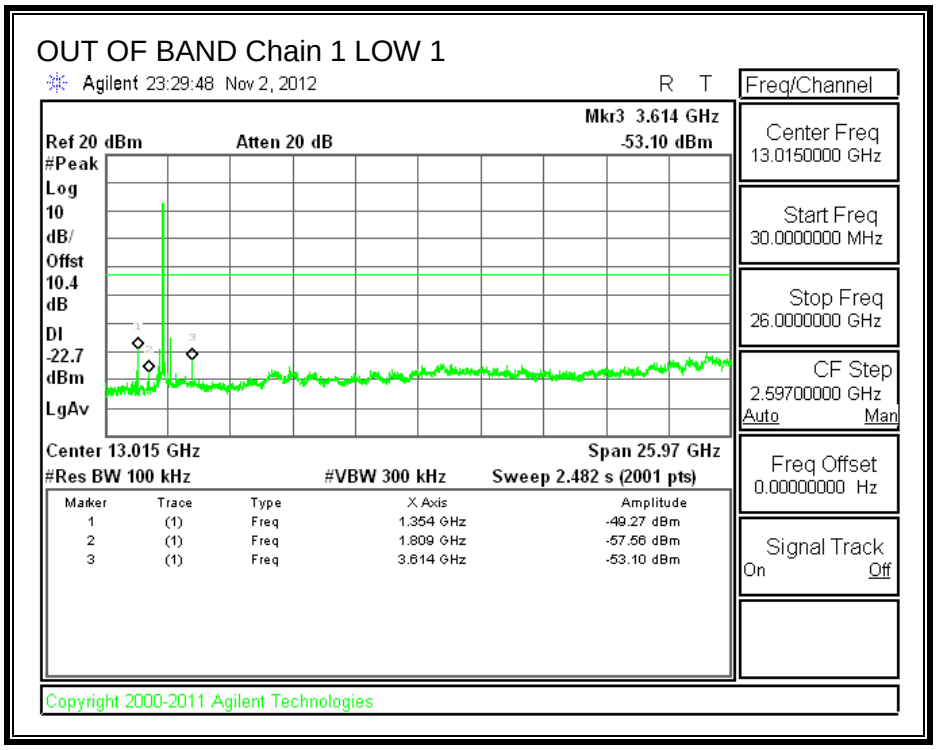
AUTHORIZED BAND EDGE Chain 1 HIGH 2

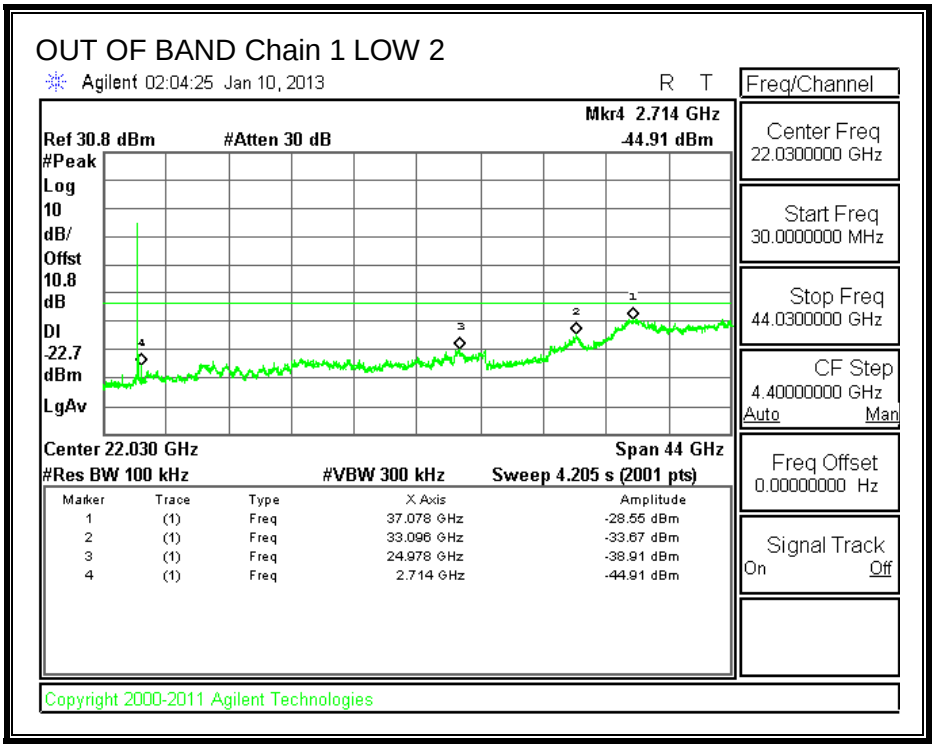


AUTHORIZED BAND EDGE Chain 1 HIGH 1

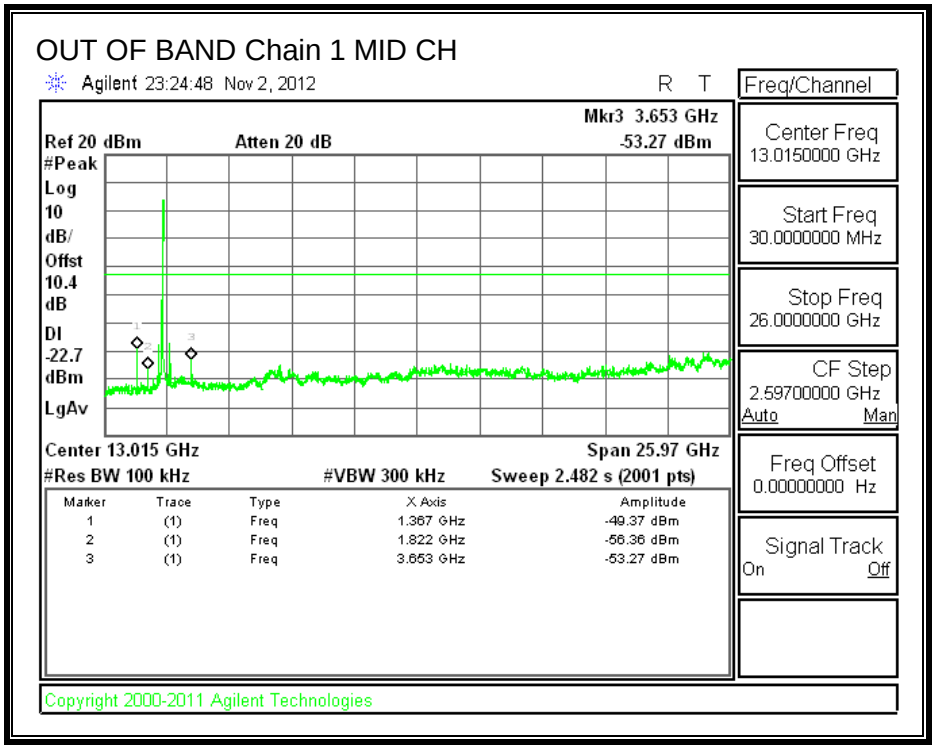


OUT-OF-BAND EMISSIONS, Chain 1

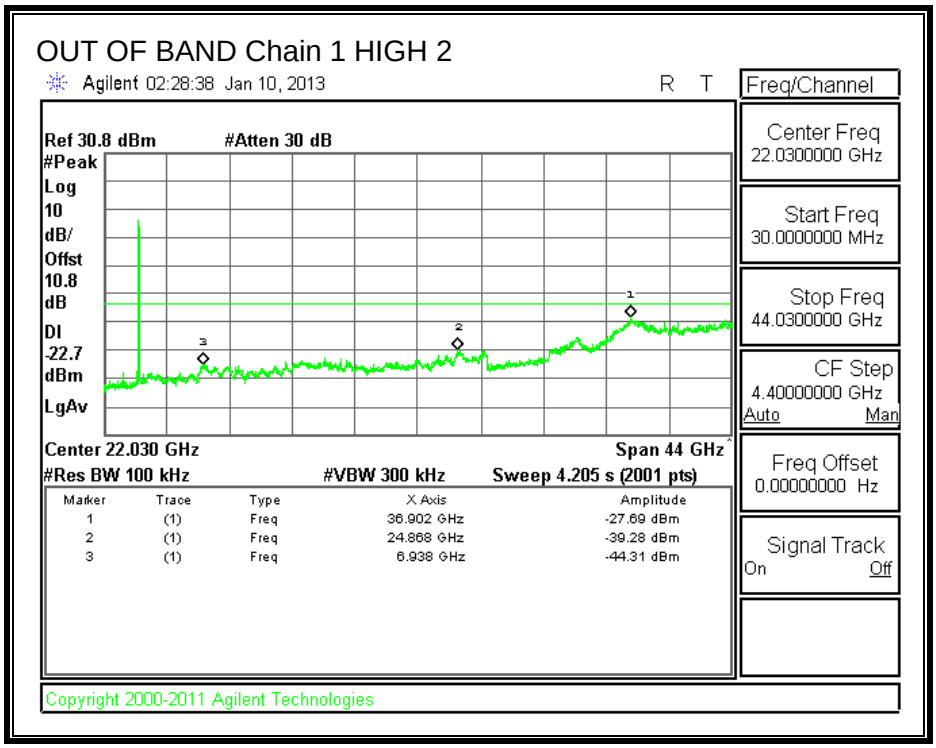


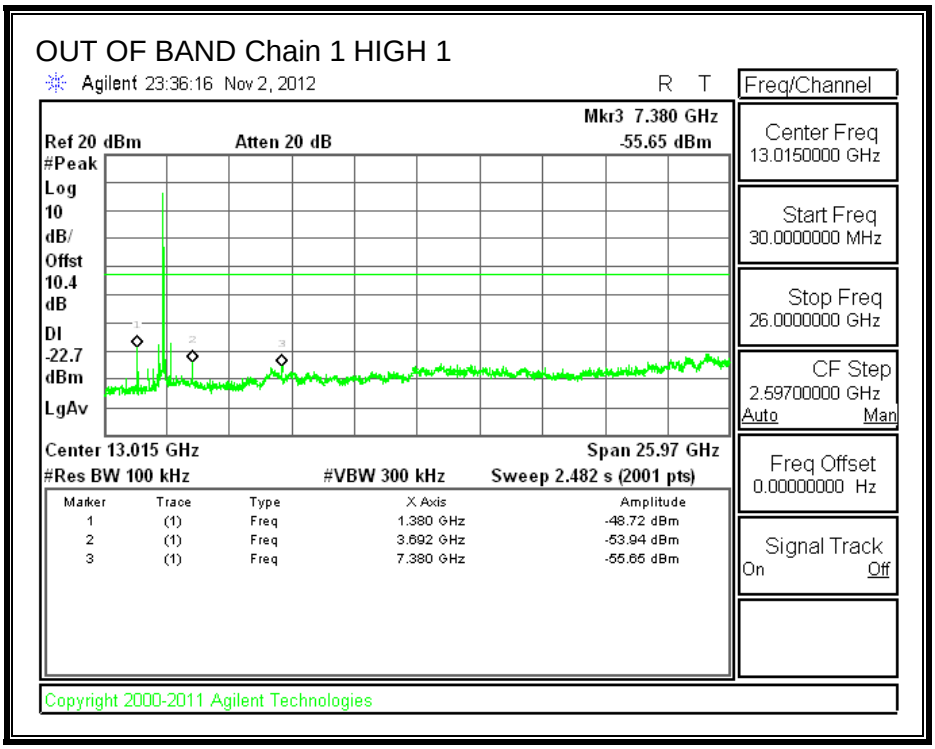


OUT OF BAND Chain 1 MID CH

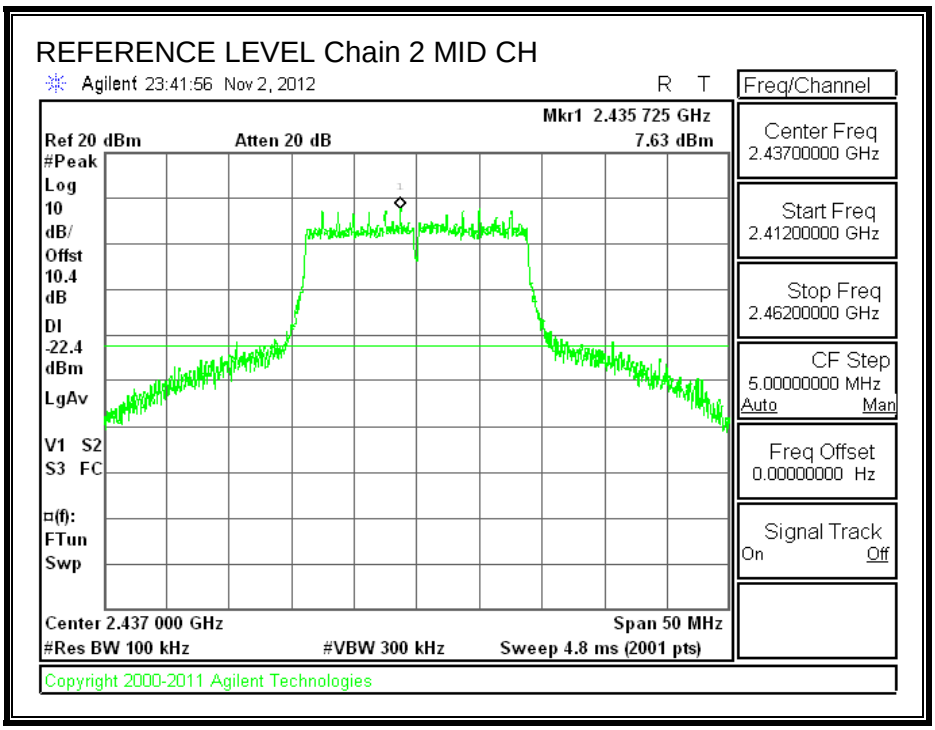


OUT OF BAND Chain 1 HIGH 2

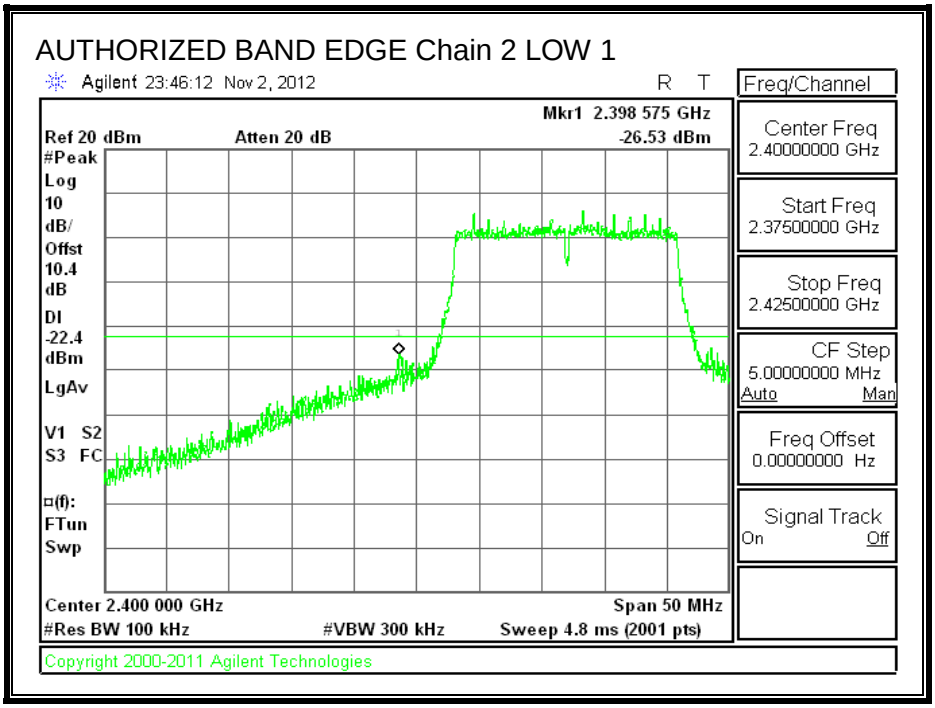


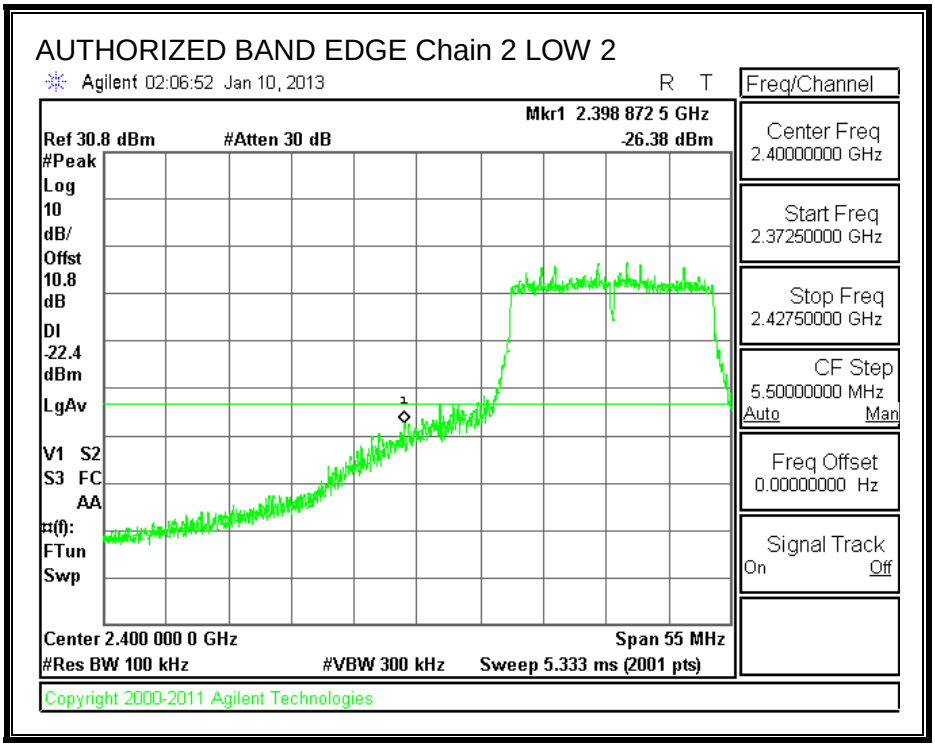


IN-BAND REFERENCE LEVEL, Chain 2

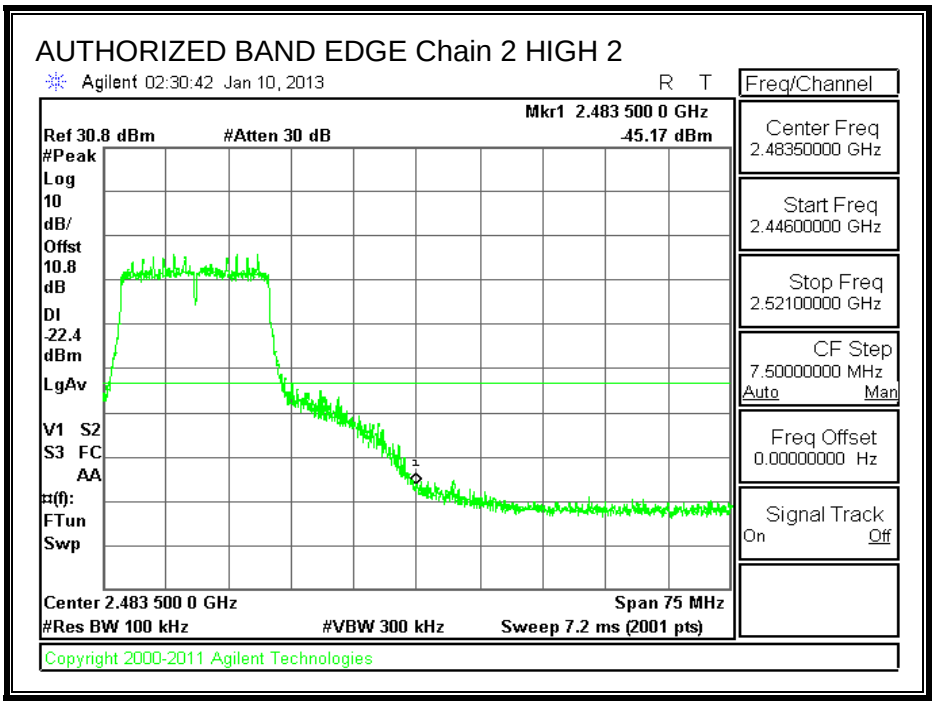


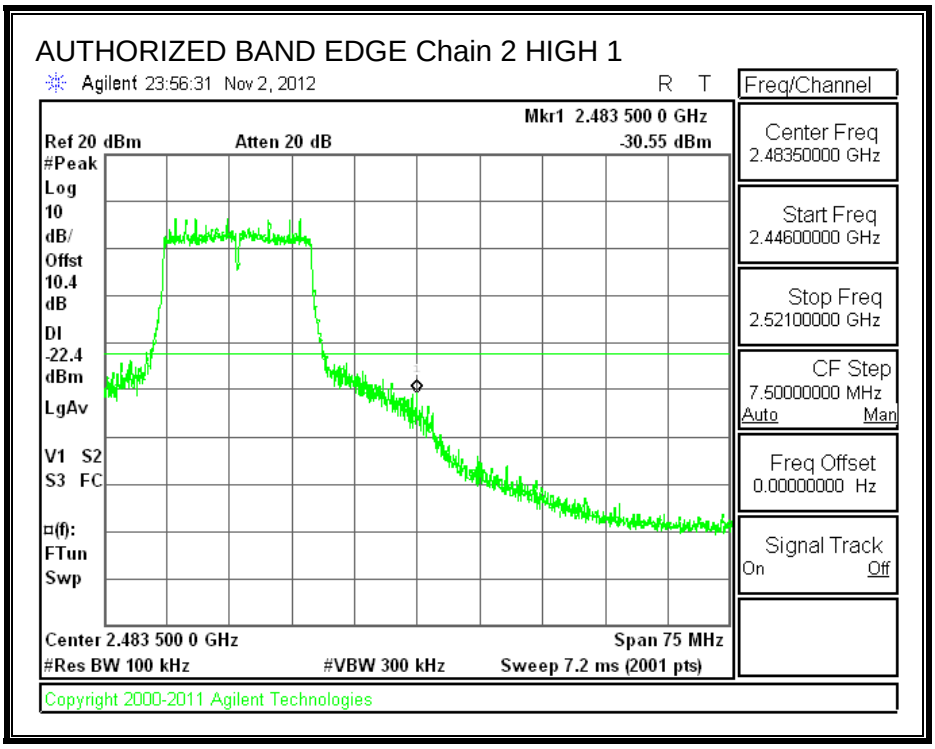
LOW CHANNEL BANDEDGE, Chain 2



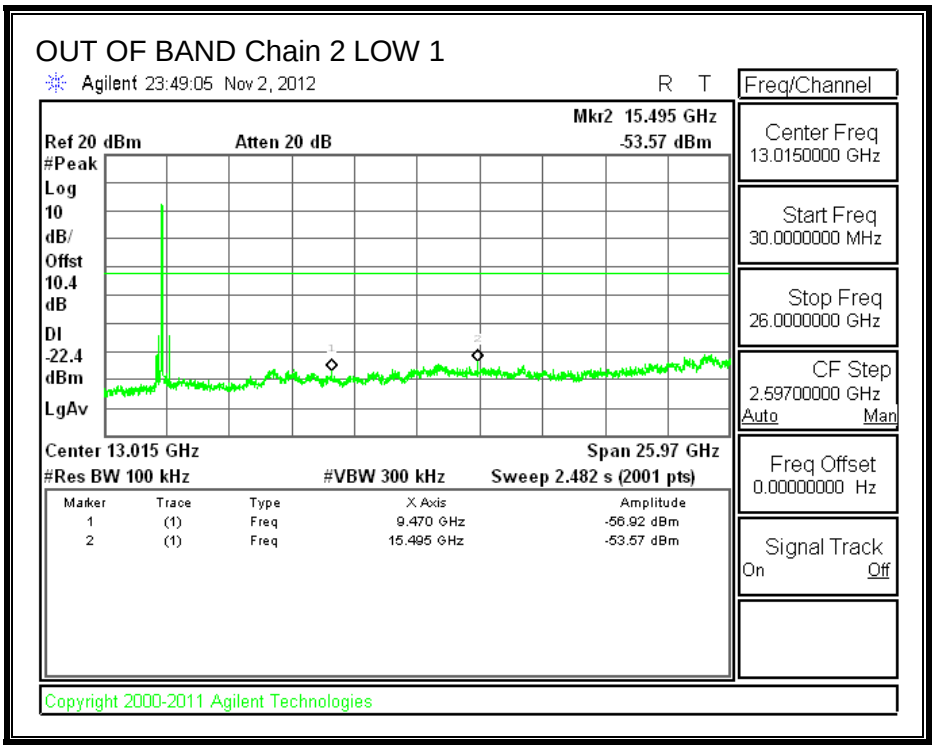


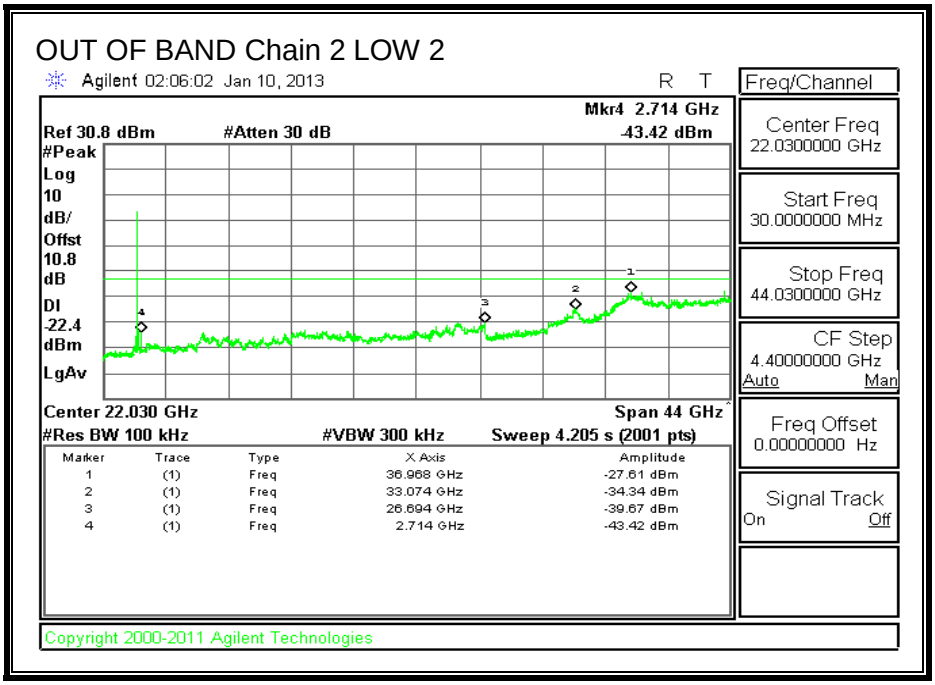
HIGH CHANNEL BANDEDGE, Chain 2

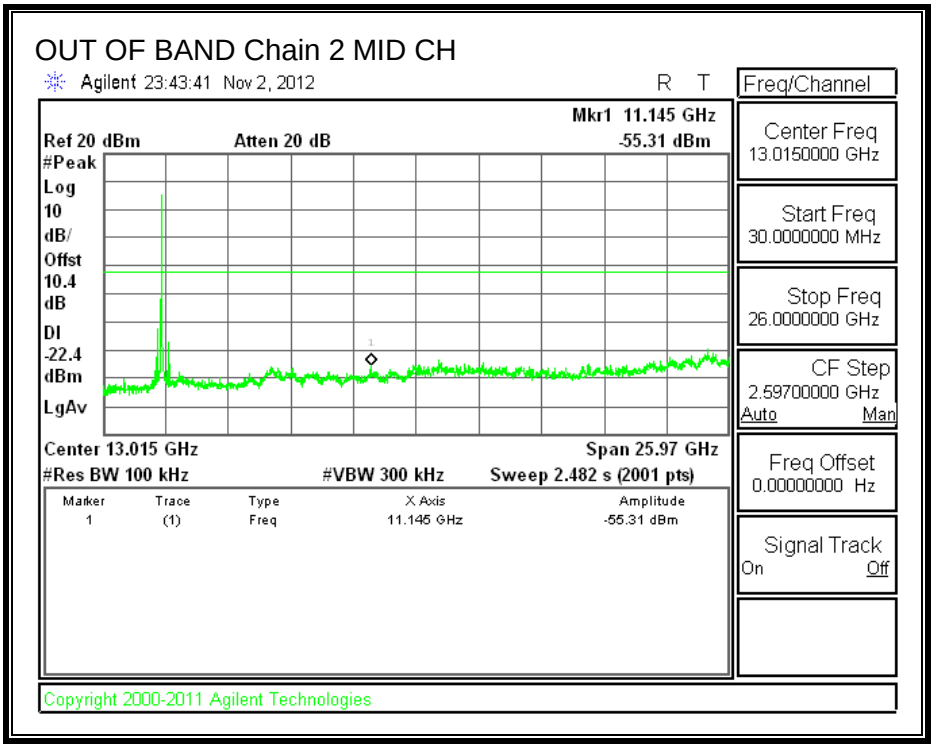


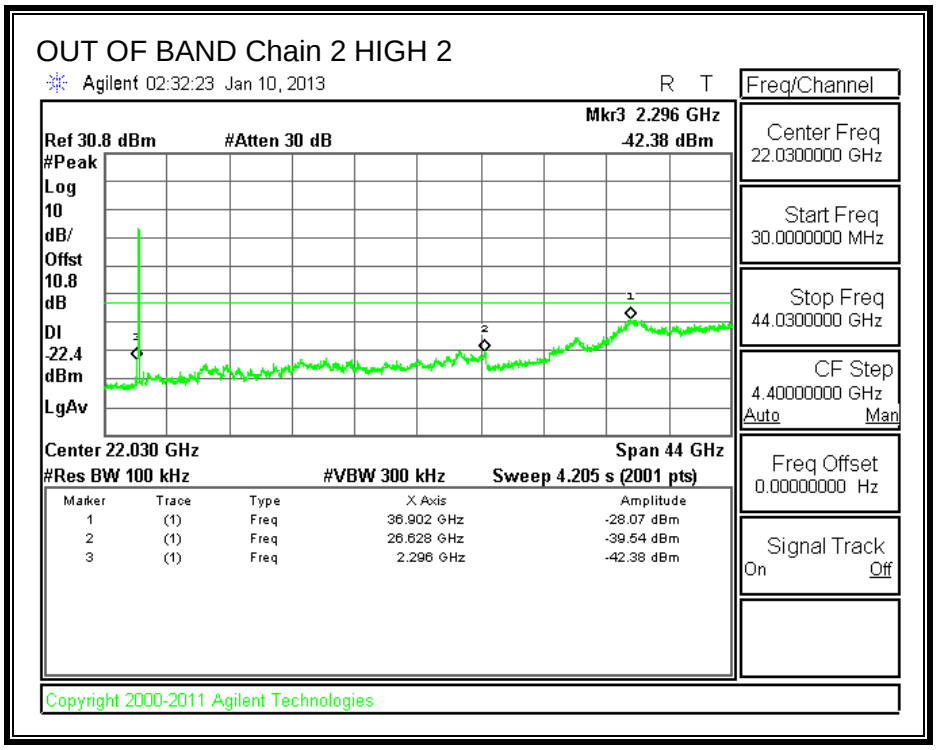


OUT-OF-BAND EMISSIONS, Chain 2

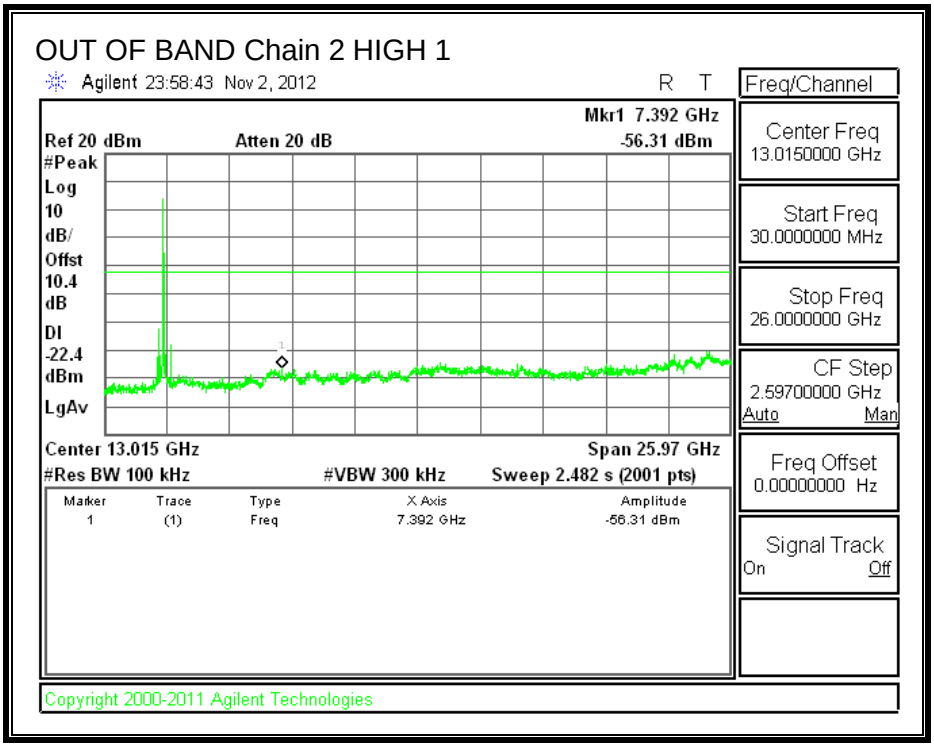








OUT OF BAND Chain 2 HIGH 1



8.14. 802.11ac VHT20 BF 3TX MODE IN THE 2.4 GHz BAND

This mode has the same antenna port test results as 802.11n HT20 CDD 3TX, except for output power, as shown below.

8.14.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated for output power consideration, and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
0.12	5.30	4.69	8.43

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	8.43	27.57	30	36	27.57
Low 2	2417	8.43	27.57	30	36	27.57
Mid	2437	8.43	27.57	30	36	27.57
High 2	2457	8.43	27.57	30	36	27.57
High 1	2462	8.43	27.57	30	36	27.57

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)
Low 1	2412	15.67	14.80	14.60	19.82	27.57	-7.75
Low 2	2417	19.20	18.80	19.00	23.77	27.57	-3.80
Mid	2437	20.08	20.04	20.15	24.86	27.57	-2.71
High 2	2457	19.09	18.45	18.40	23.43	27.57	-4.14
High 1	2462	17.20	16.80	17.00	21.77	27.57	-5.80

8.15. 802.11a 1TX MODE IN THE 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

8.16. 802.11a 2TX MODE IN THE 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

8.17. 802.11a 3TX MODE IN THE 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

8.18. 802.11a BF 2TX MODE IN THE 5.8 GHz BAND

Covered by testing 11ac VHT20 BF 3TX at the same power level.

8.19. 802.11a BF 3TX MODE IN THE 5.8 GHz BAND

Covered by testing 11ac VHT20 BF 3TX at the same power level.

8.20. 802.11n HT20 1TX MODE IN THE 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

8.21. 802.11n HT20 BF 2TX MODE IN THE 5.8 GHz BAND

Covered by testing 11ac VHT20 BF 3TX at the same power level.

8.22. 802.11n HT20 CDD MCS0 2TX MODE IN THE 5.8 GHz BAND

8.22.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

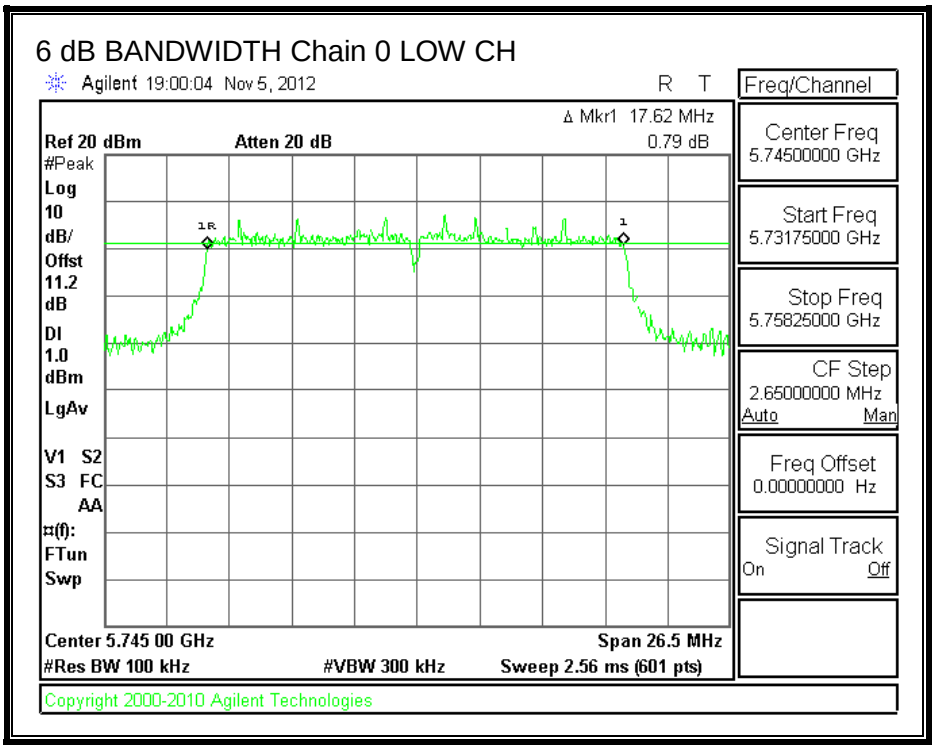
IC RSS-210 A8.2 (a)

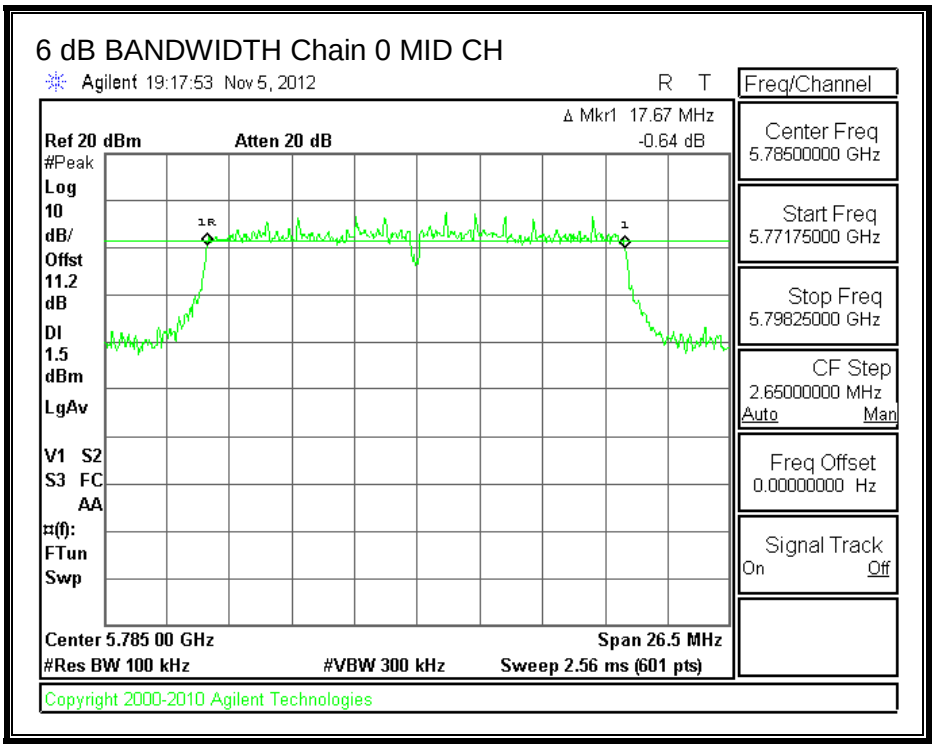
The minimum 6 dB bandwidth shall be at least 500 kHz.

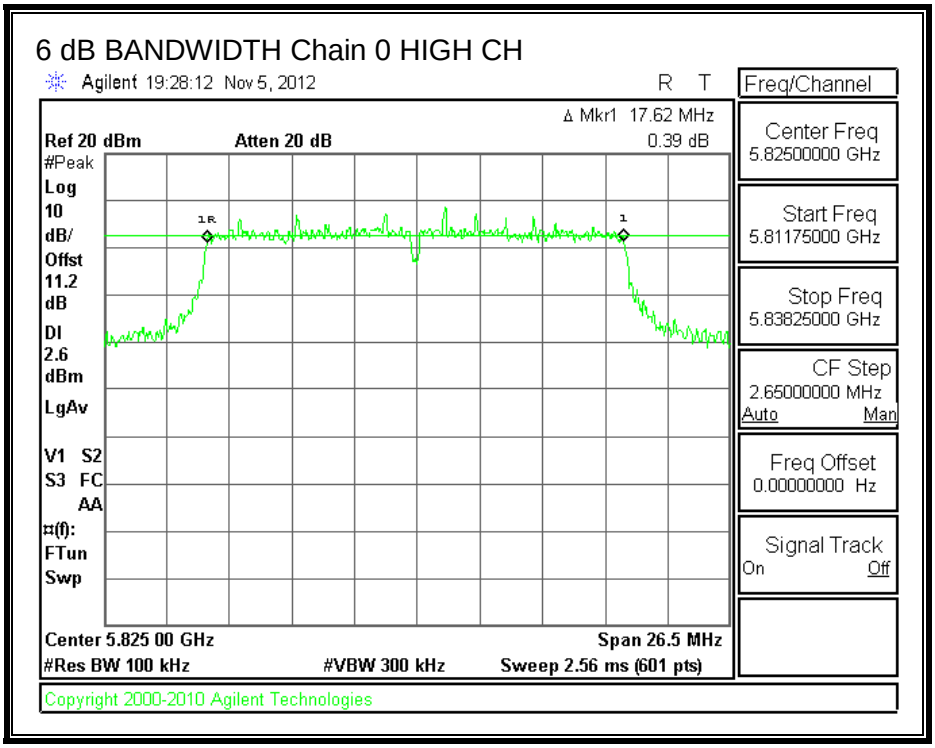
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	17.62	17.62	0.5
Mid	5785	17.67	17.67	0.5
High	5825	17.62	17.62	0.5

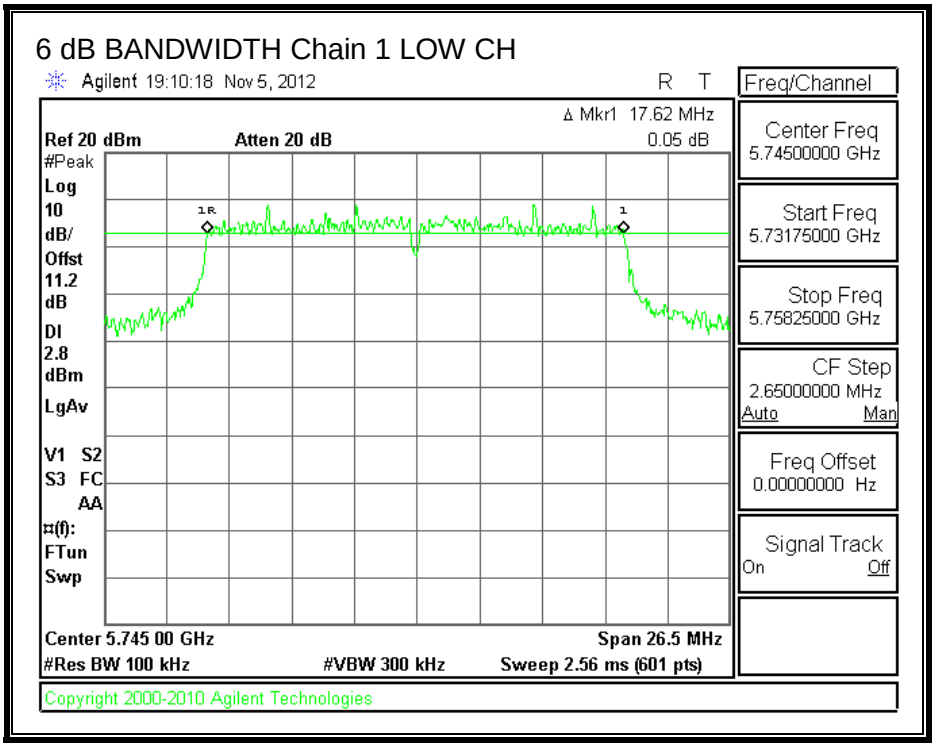
6 dB BANDWIDTH, Chain 0

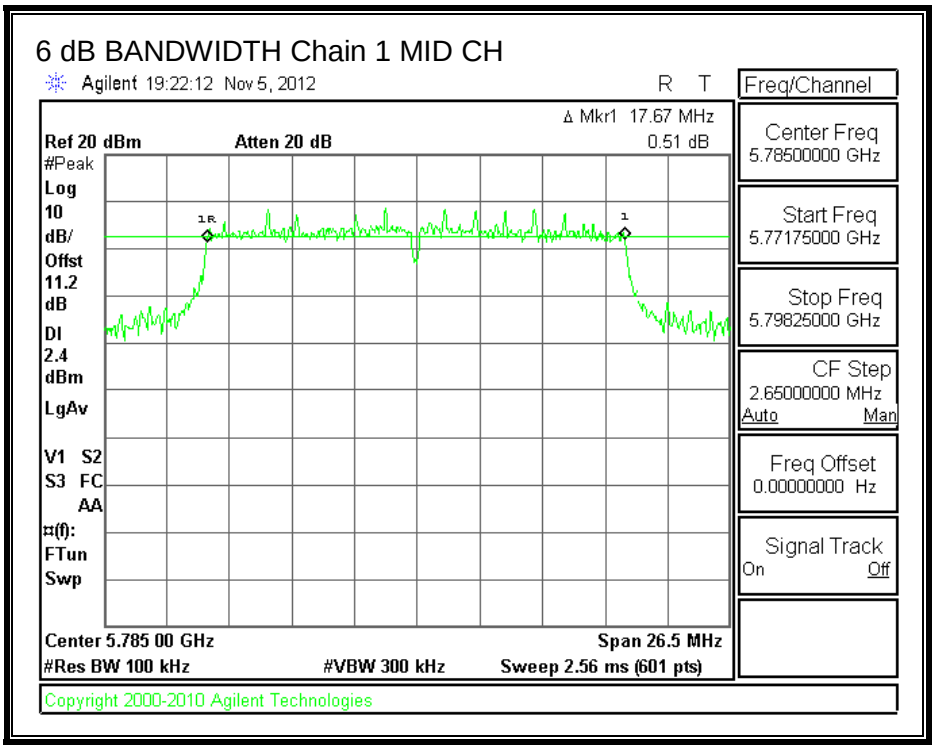


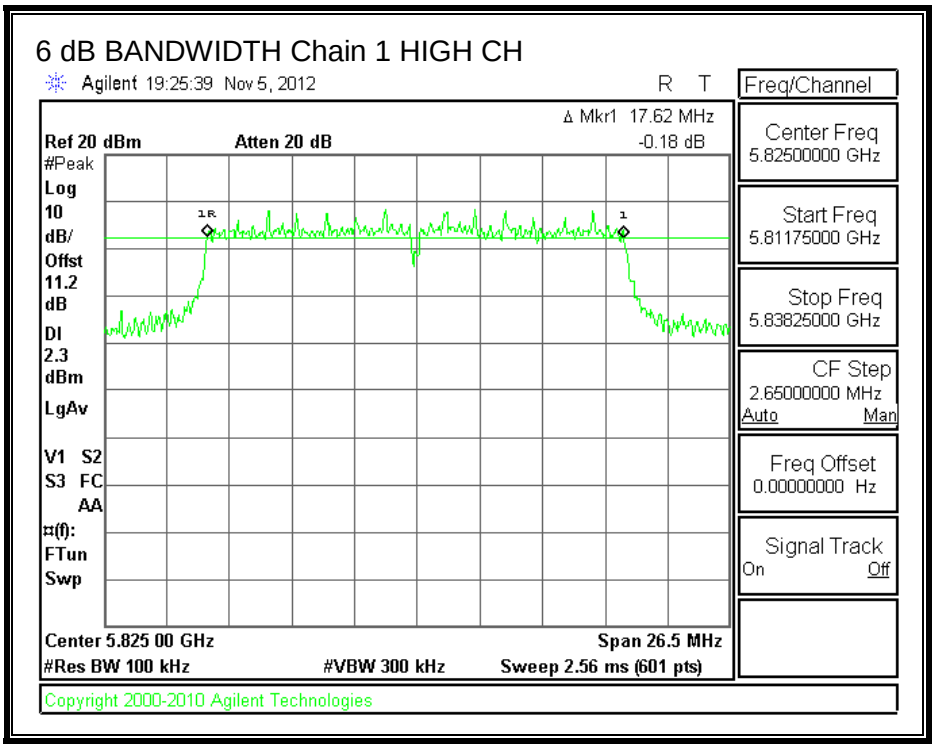




6 dB BANDWIDTH, Chain 1







8.22.2. 99% BANDWIDTH

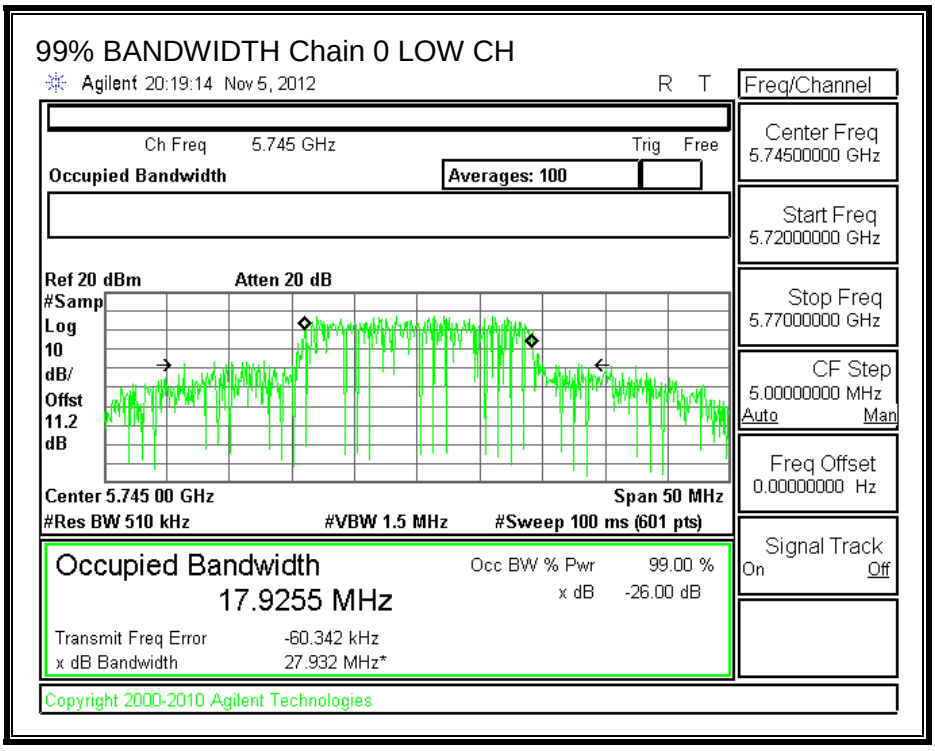
LIMITS

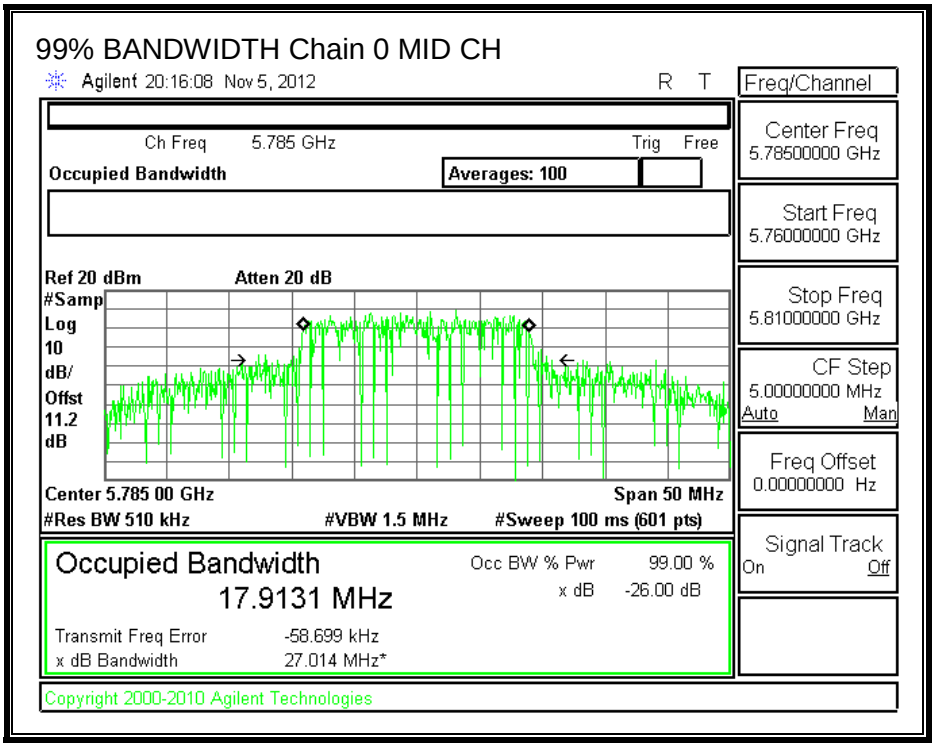
None; for reporting purposes only.

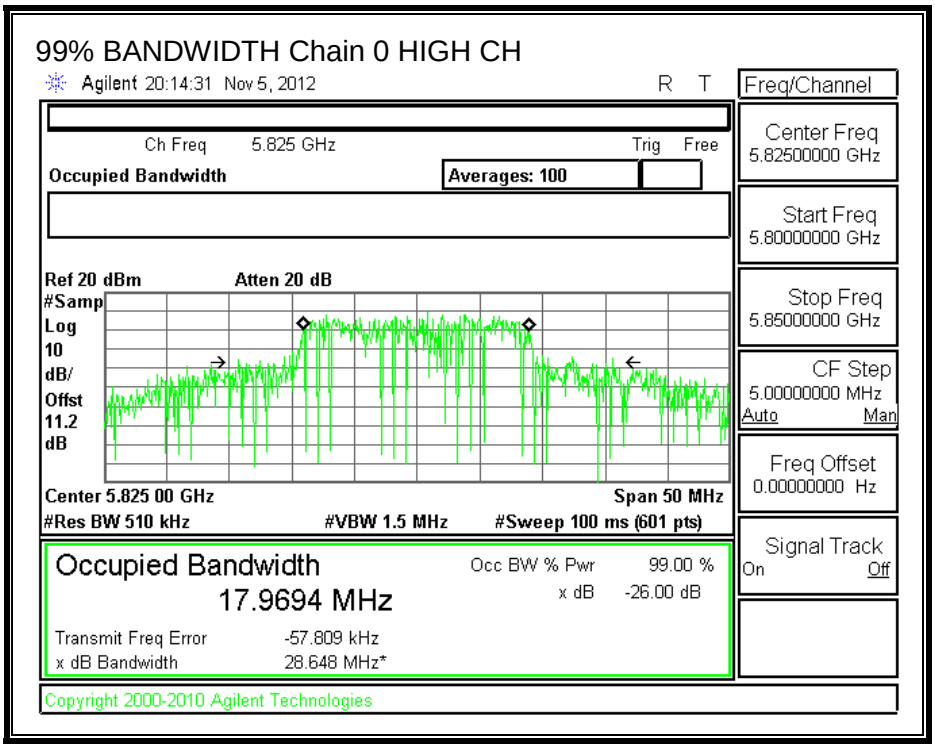
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	17.9255	18.1257
Mid	5785	17.9131	18.0669
High	5825	17.9694	18.0579

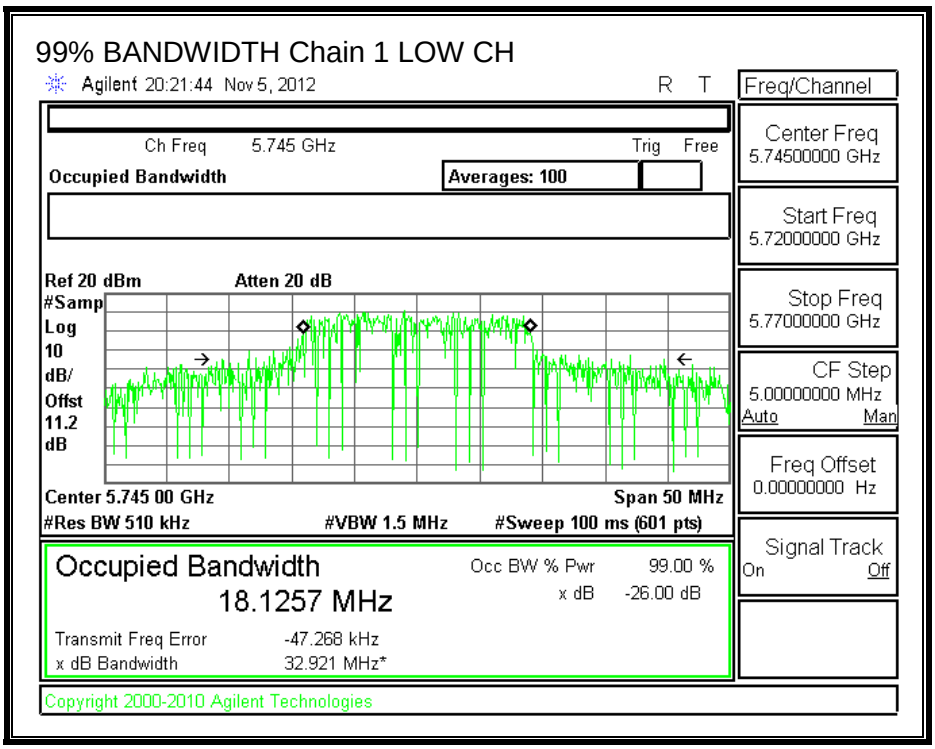
99% BANDWIDTH, Chain 0

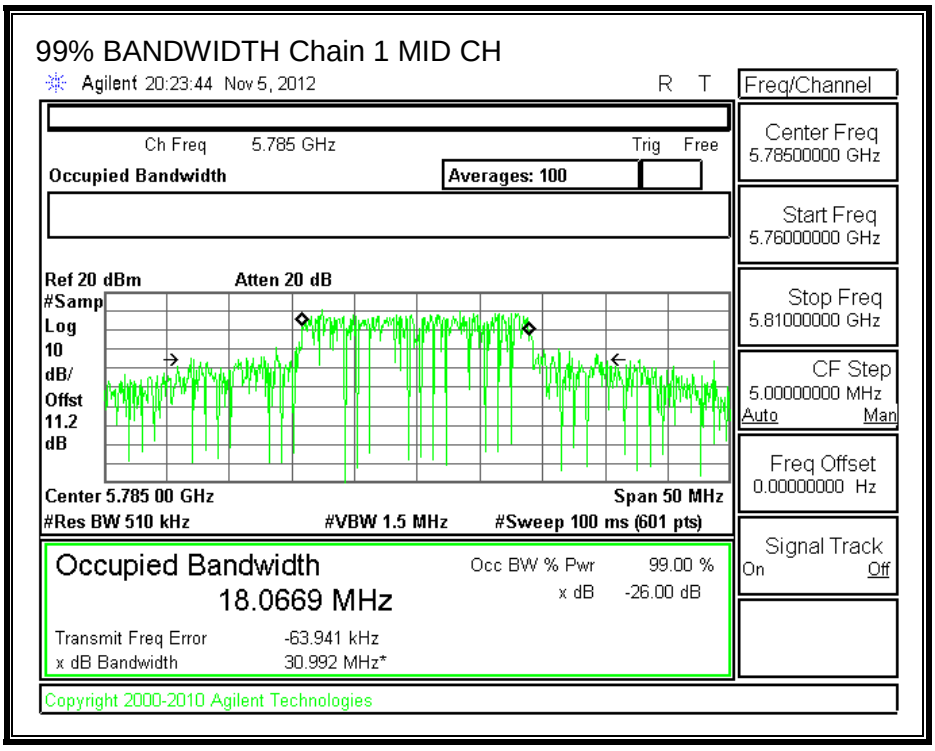


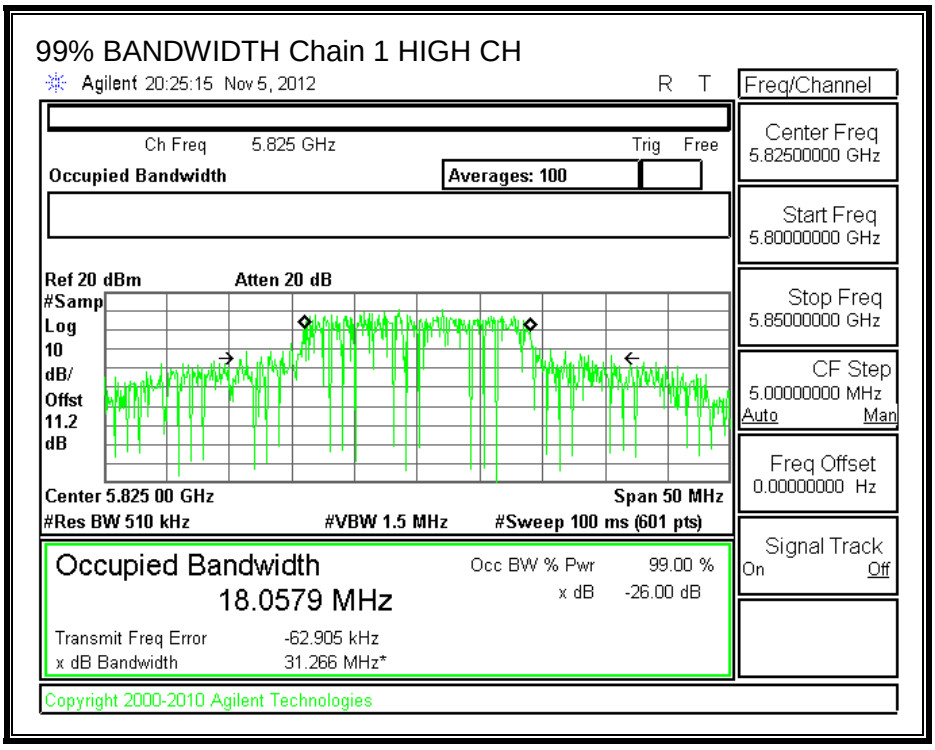




99% BANDWIDTH, Chain 1







8.22.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated for output power consideration, and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
5.93	6.04	5.99

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5745	5.99	30.00	30	36	30.00
Mid	5785	5.99	30.00	30	36	30.00
High	5825	5.99	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)
Low	5745	19.14	19.20	22.18	30.00	-7.82
Mid	5785	Covered by 802.11n HT20 CDD 3TX Mode testing				
High	5825	Covered by 802.11n HT20 CDD 3TX Mode testing				

8.22.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

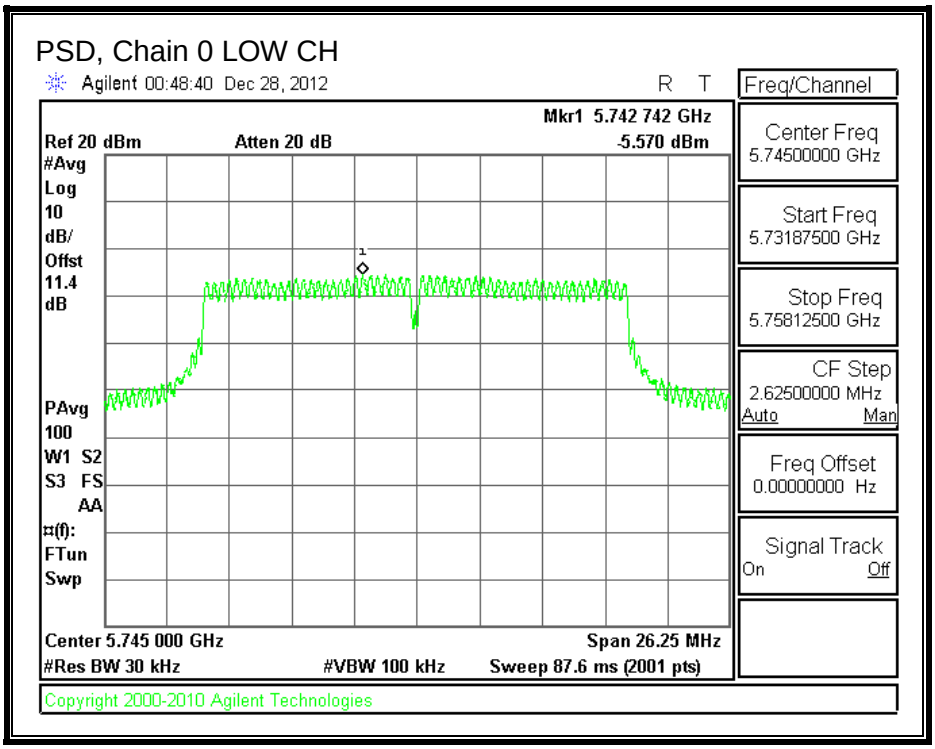
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

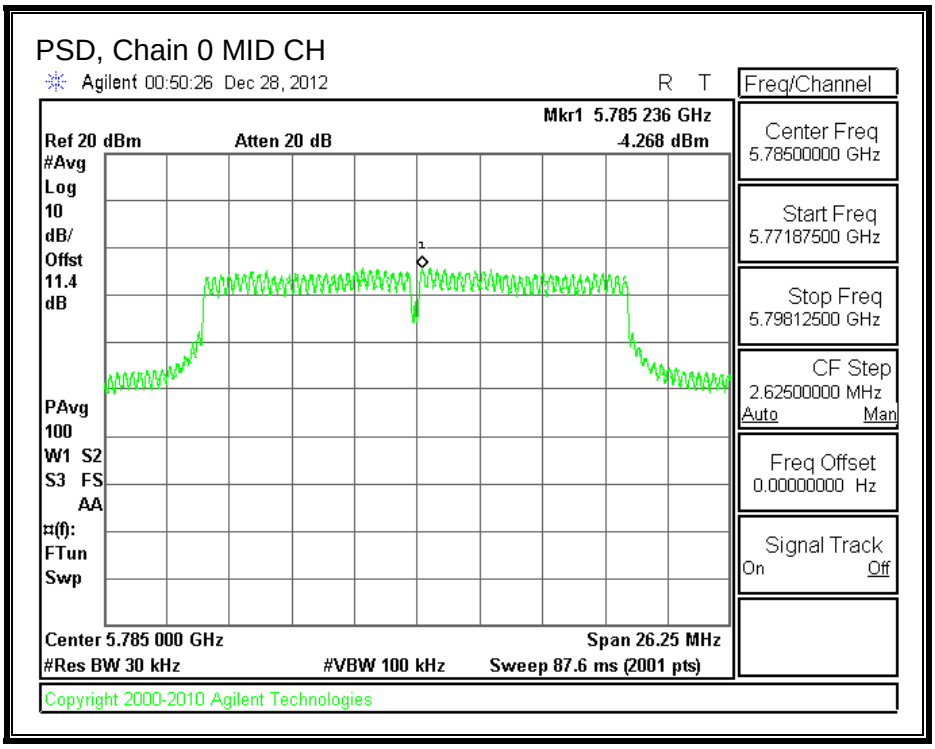
RESULTS

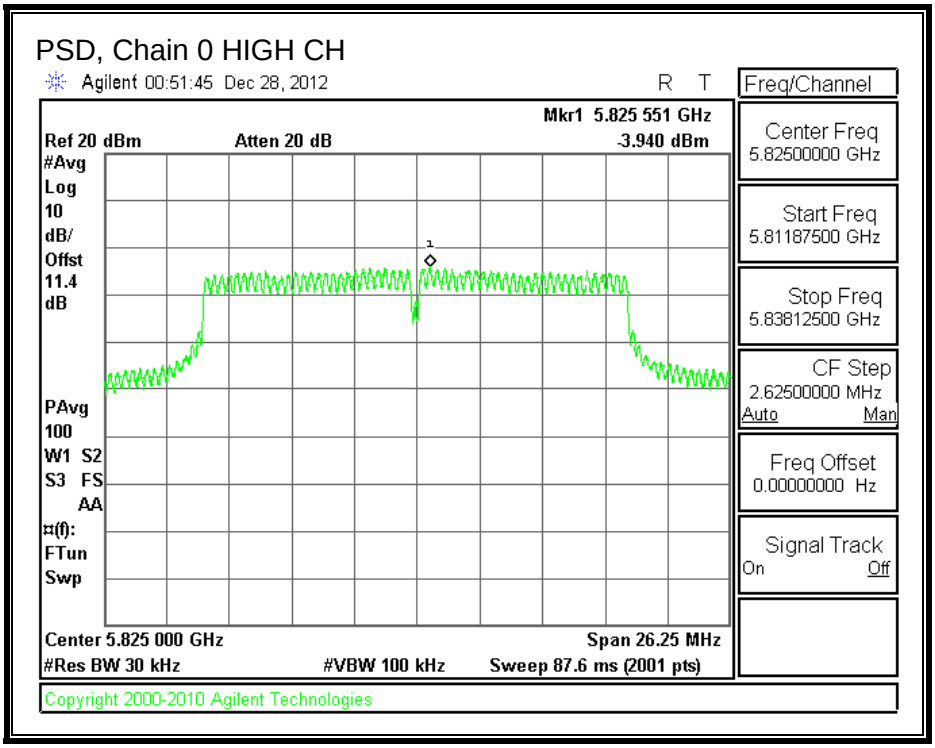
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	DCCF (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-5.570	-4.989	0.22	0.147	8.0	-7.853
Mid	5785	Covered by 802.11n HT20 CDD 3TX Mode testing					
High	5825	Covered by 802.11n HT20 CDD 3TX Mode testing					

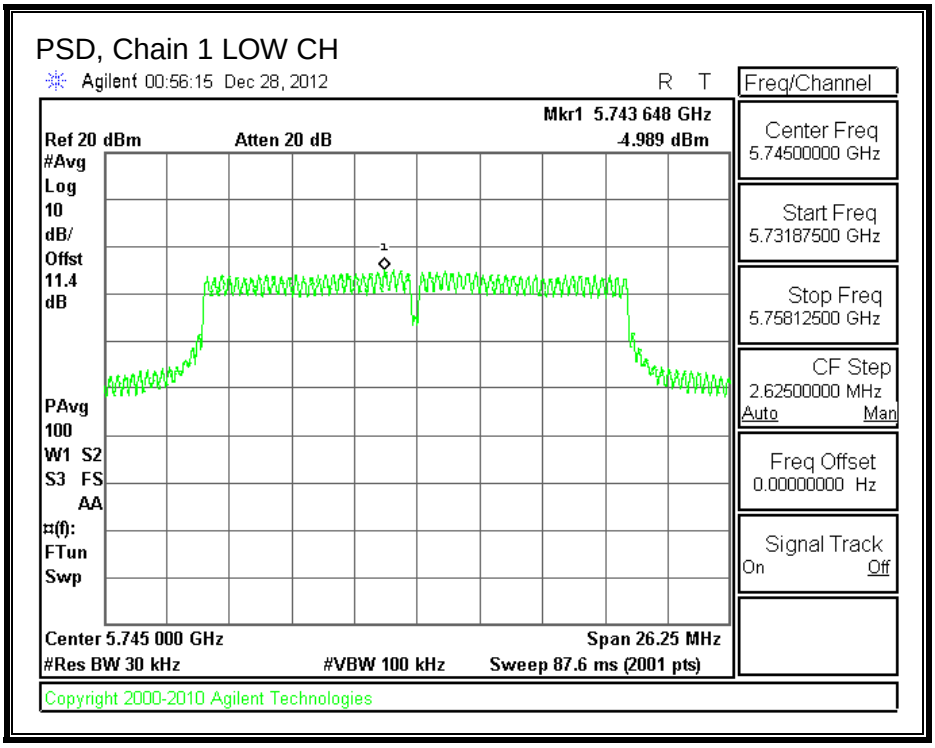
PSD, Chain 0

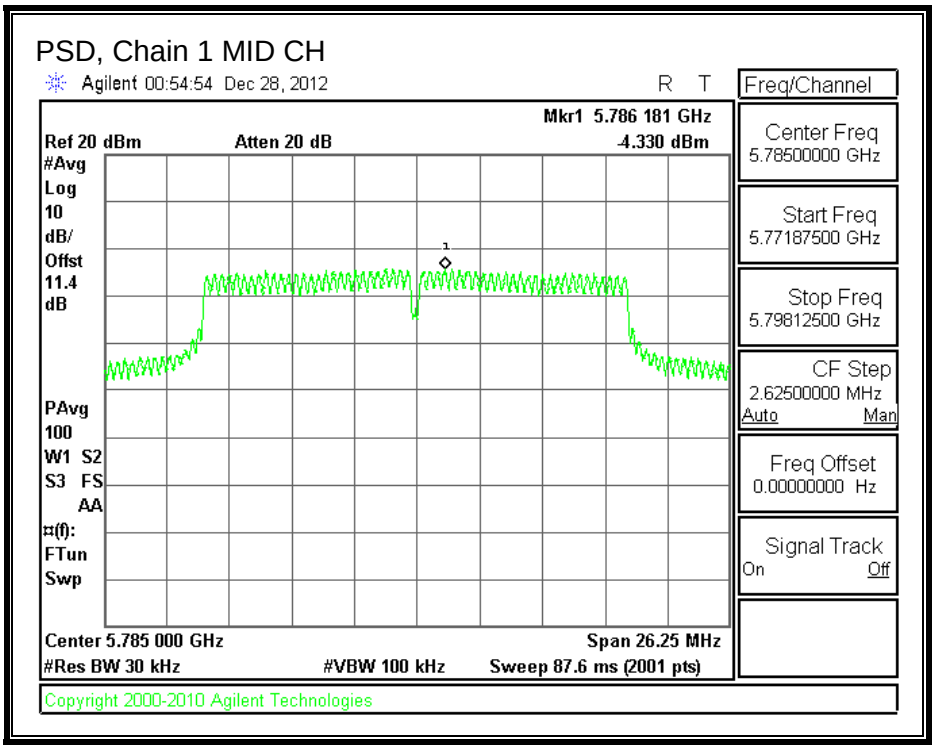


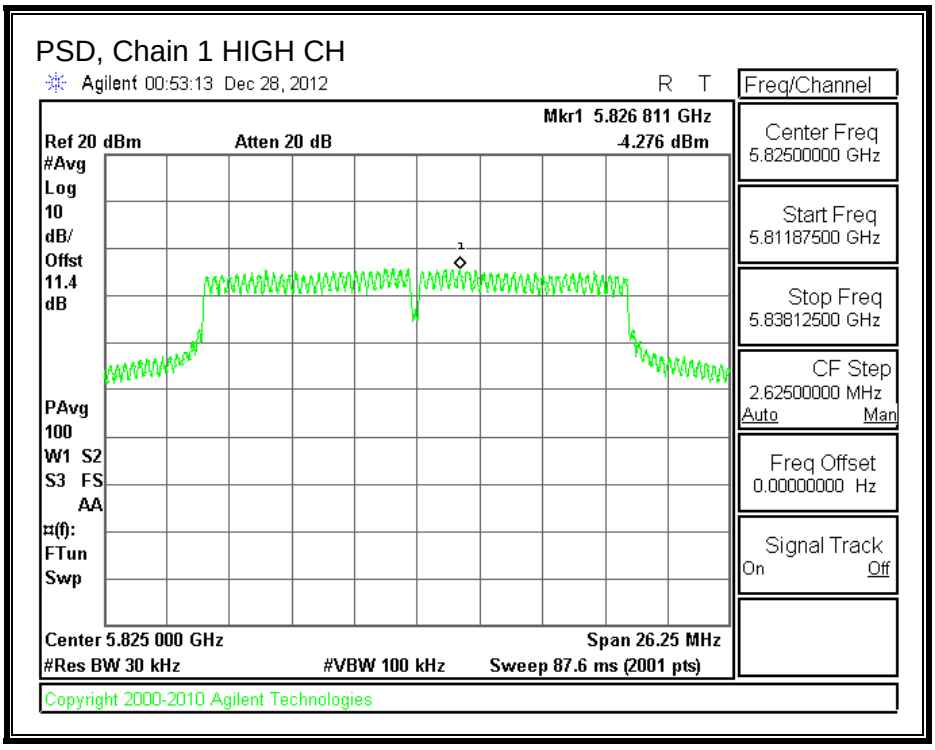




PSD, Chain 1







8.22.5. OUT-OF-BAND EMISSIONS

LIMITS

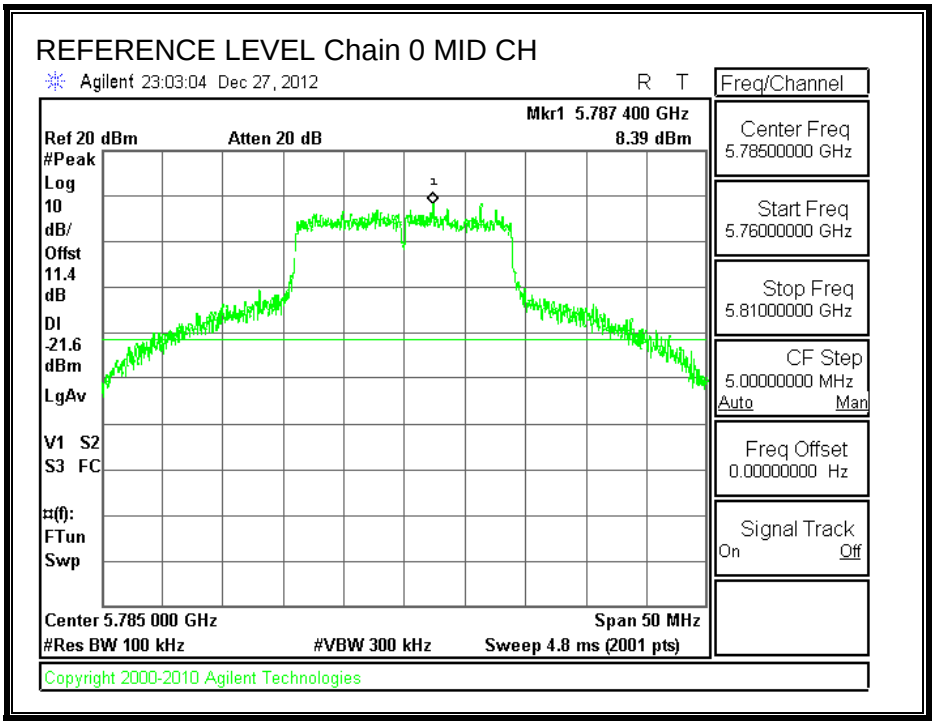
FCC §15.247 (d)

IC RSS-210 A8.5

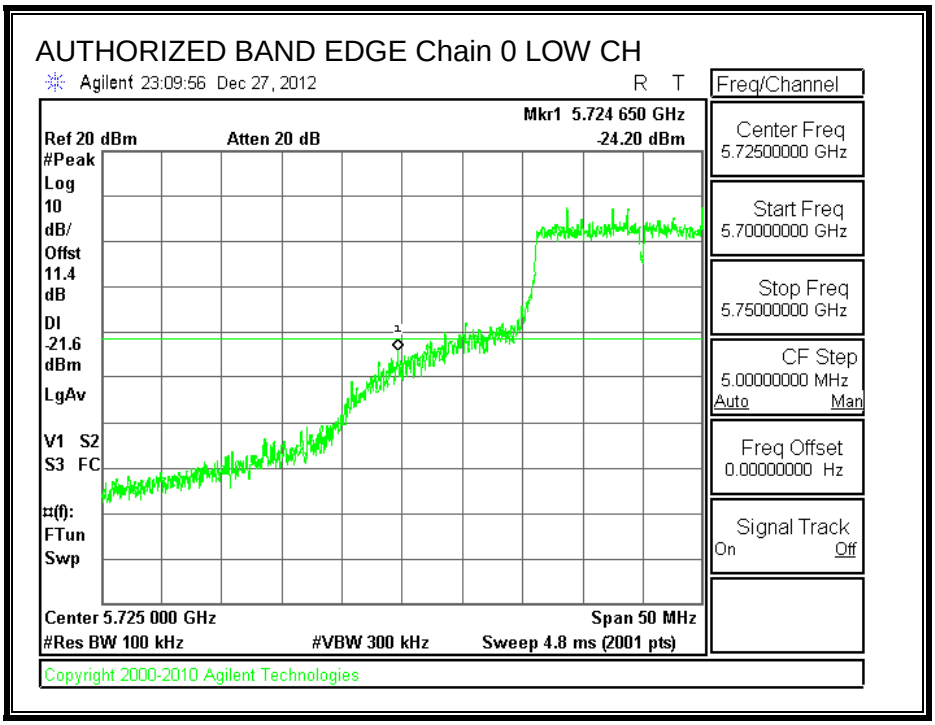
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

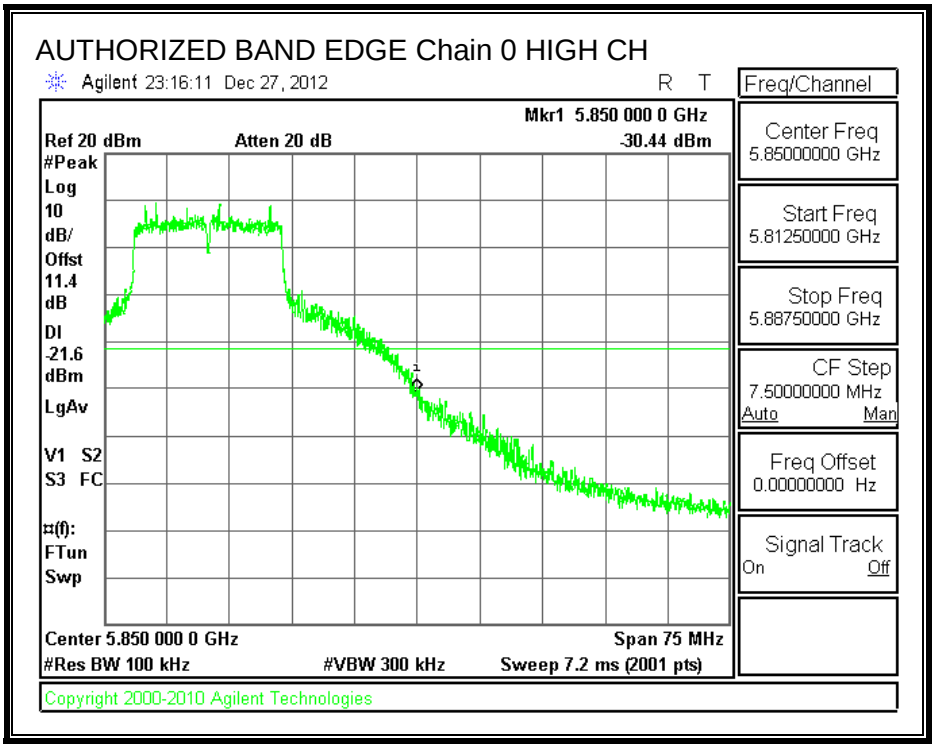
IN-BAND REFERENCE LEVEL, Chain 0



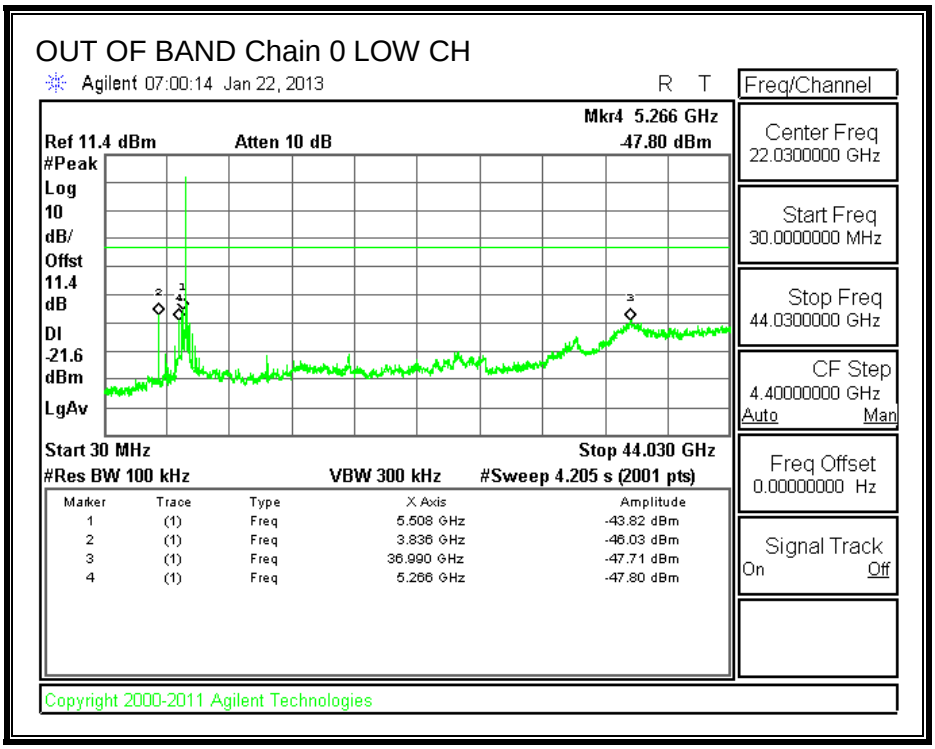
LOW CHANNEL BANDEDGE, Chain 0

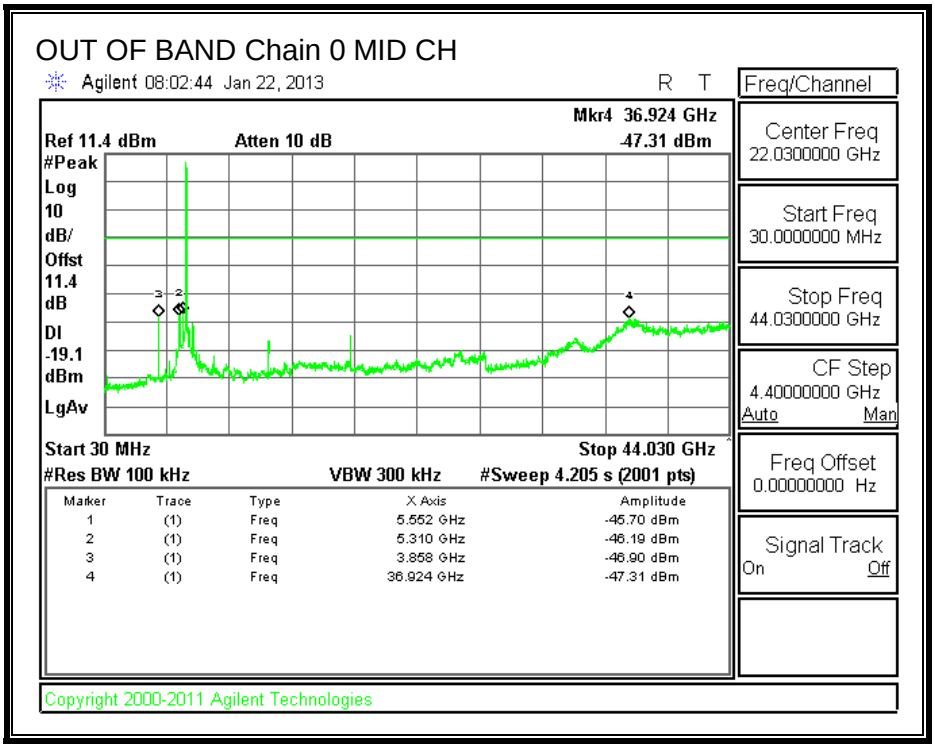


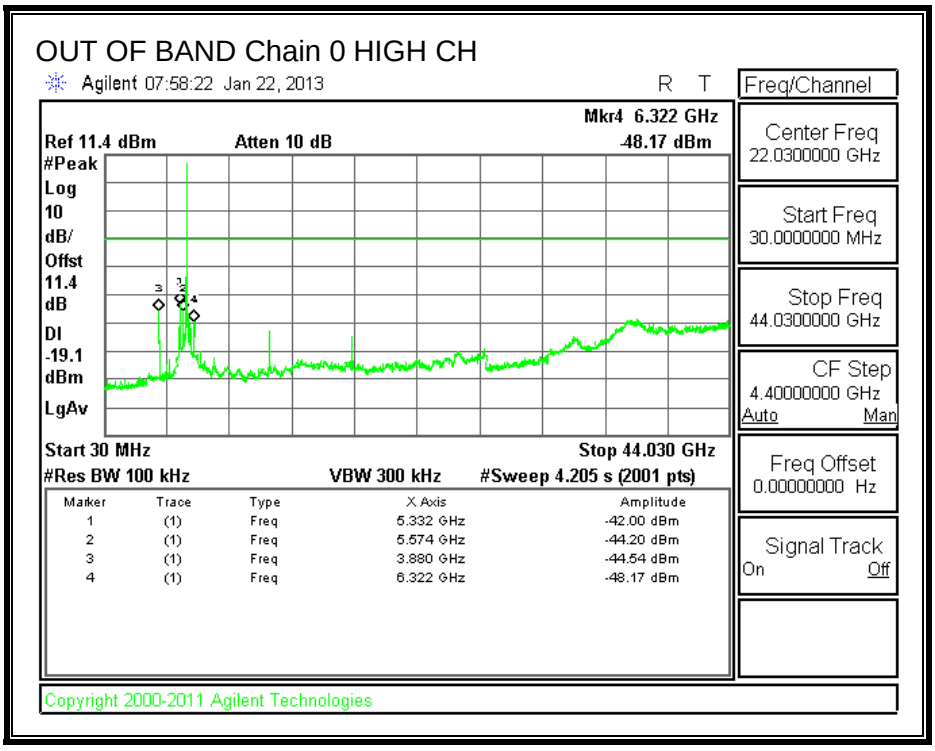
HIGH CHANNEL BANDEDGE, Chain 0



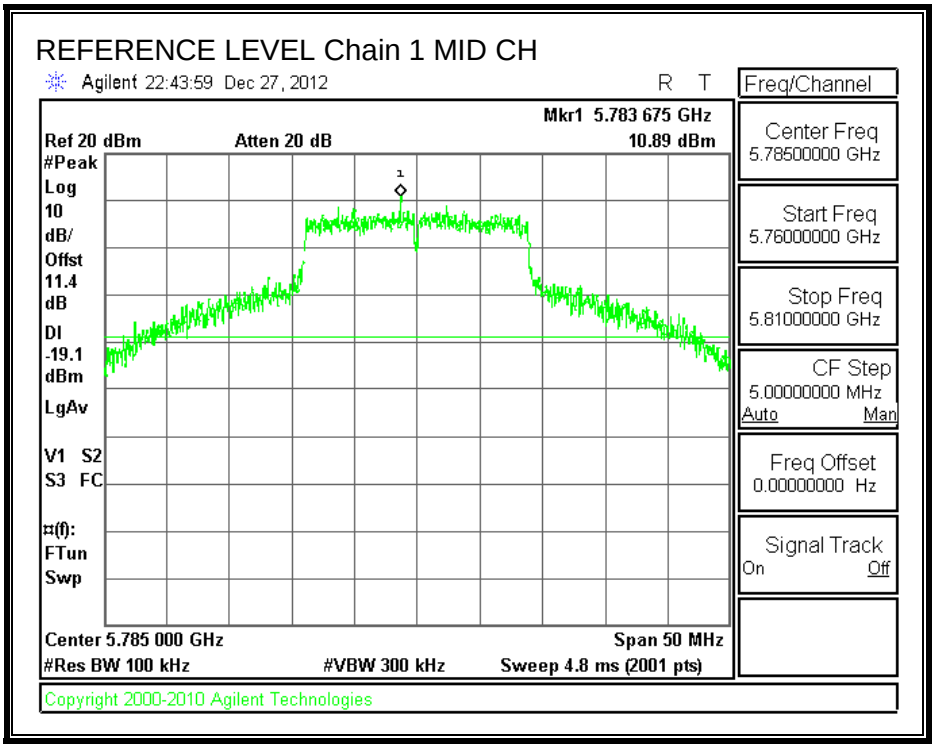
OUT-OF-BAND EMISSIONS, Chain 0



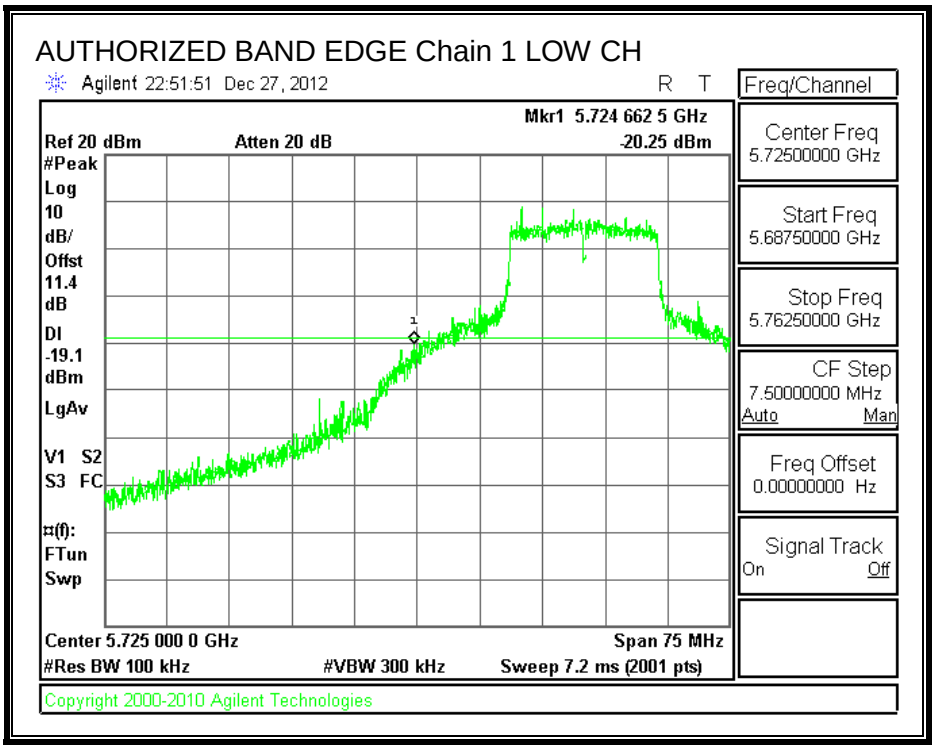




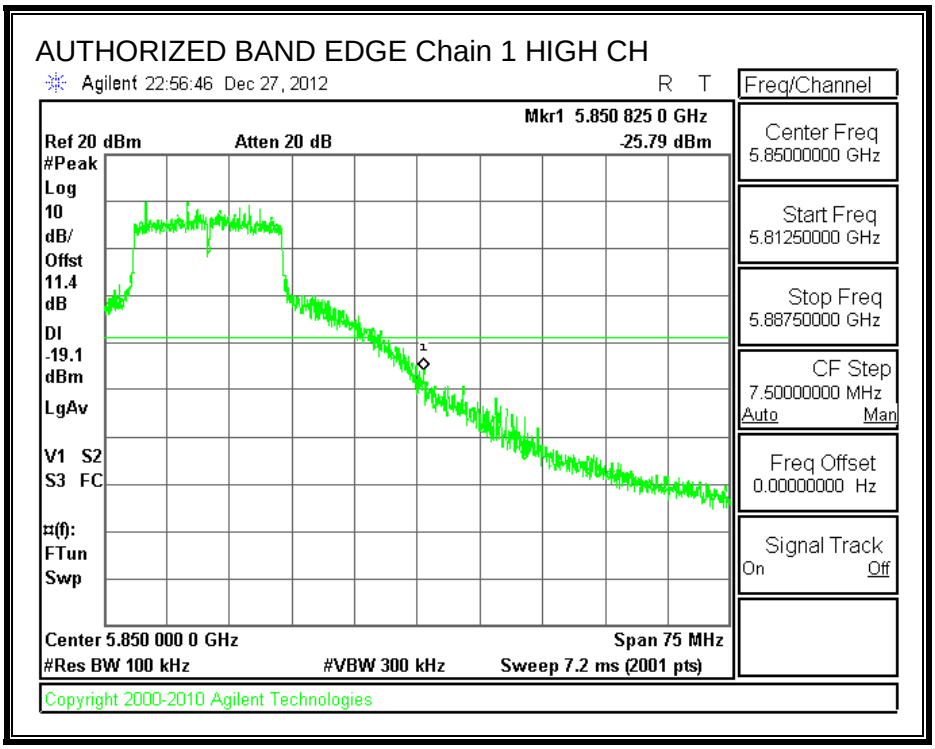
IN-BAND REFERENCE LEVEL, Chain 1



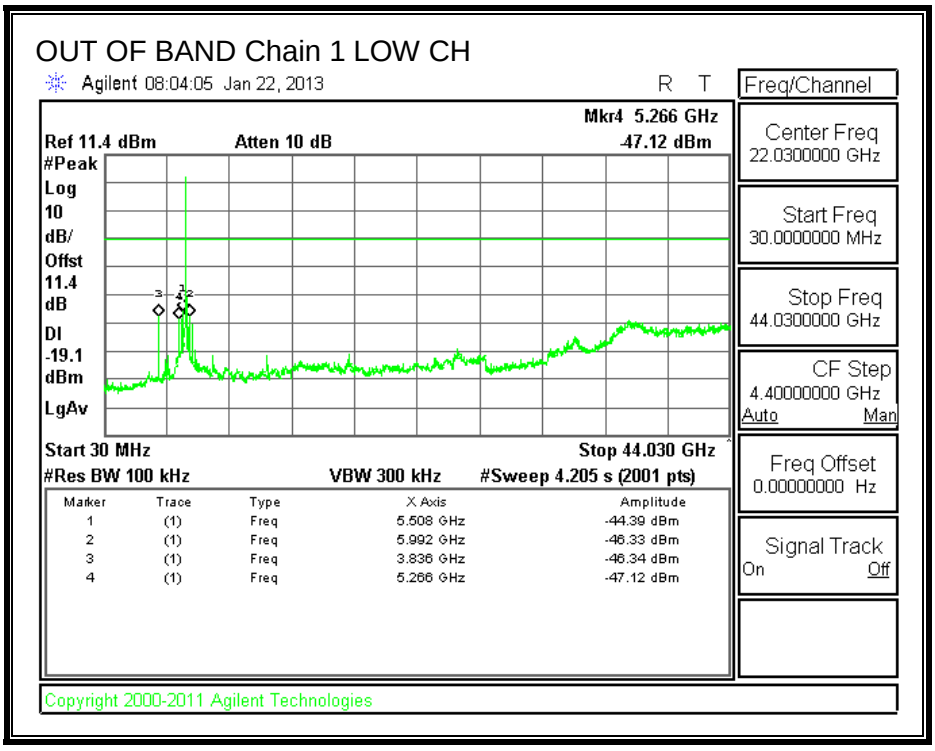
LOW CHANNEL BANDEDGE, Chain 1

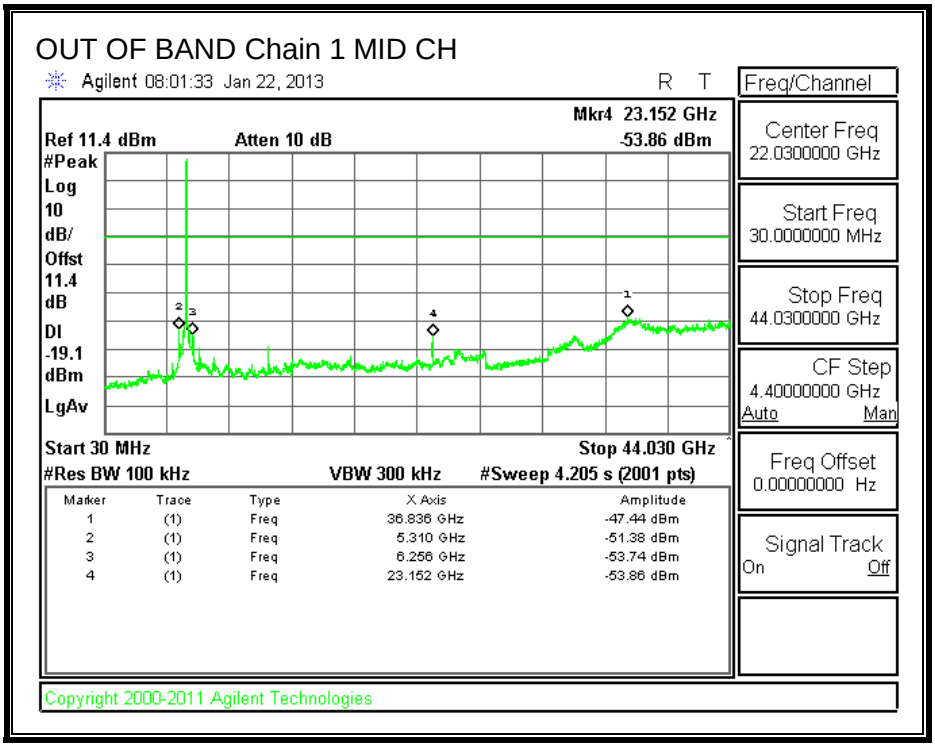


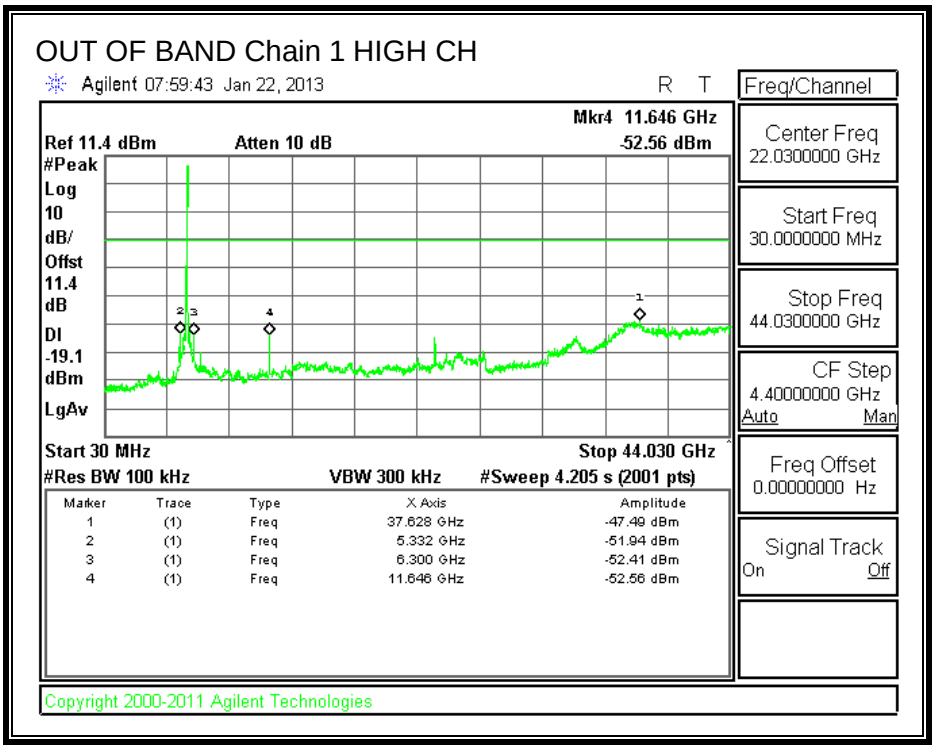
HIGH CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 1







8.23. 802.11n HT20 CDD MCS0 3TX MODE IN THE 5.8 GHz BAND

8.23.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

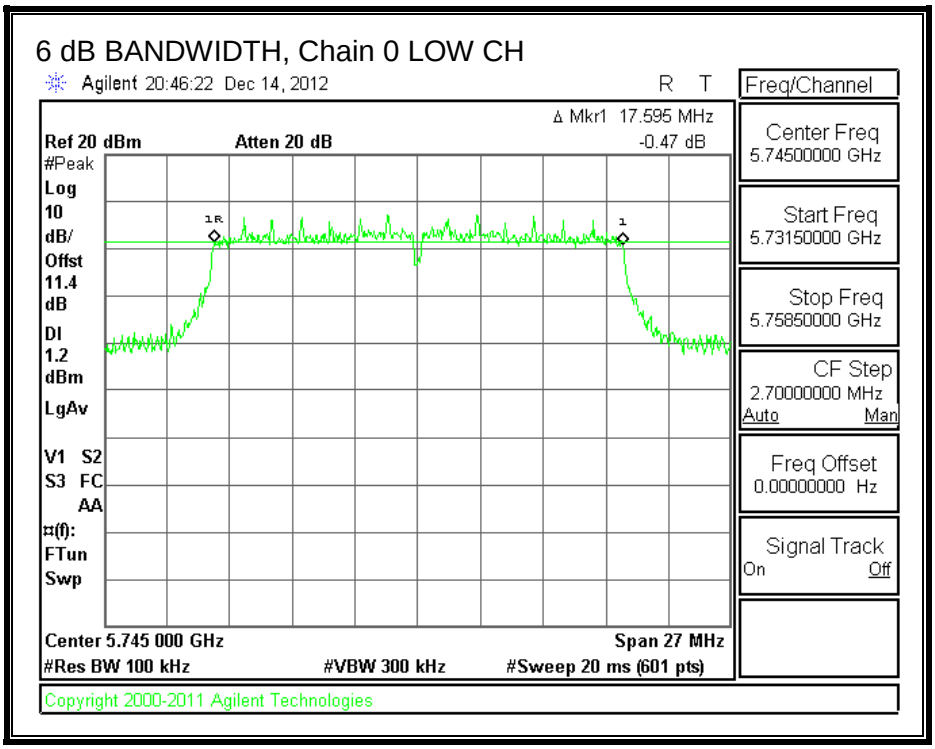
IC RSS-210 A8.2 (a)

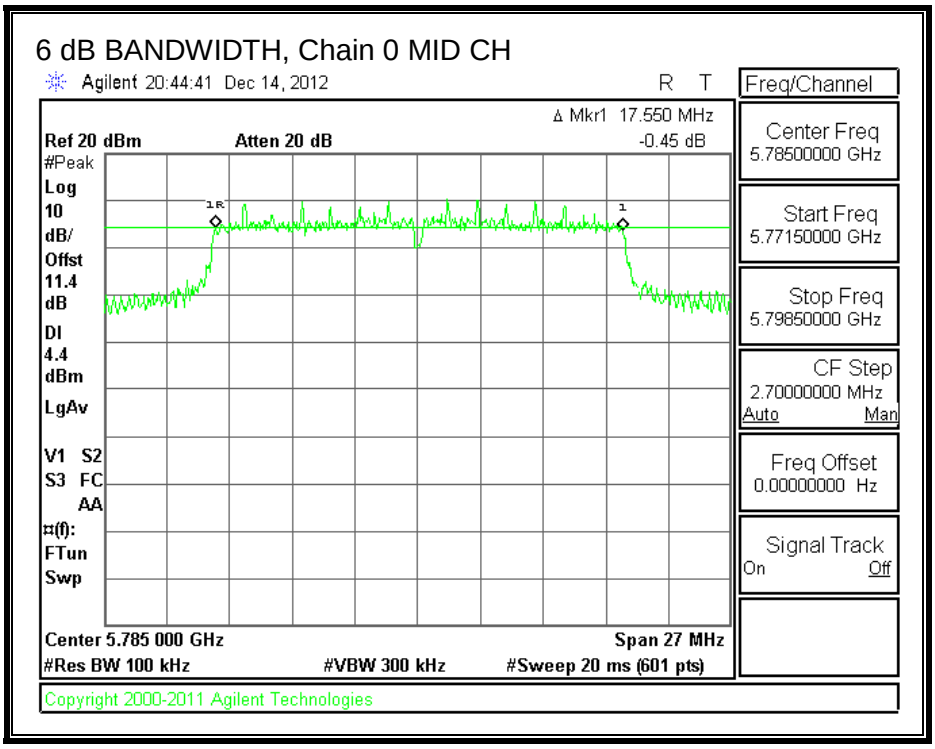
The minimum 6 dB bandwidth shall be at least 500 kHz.

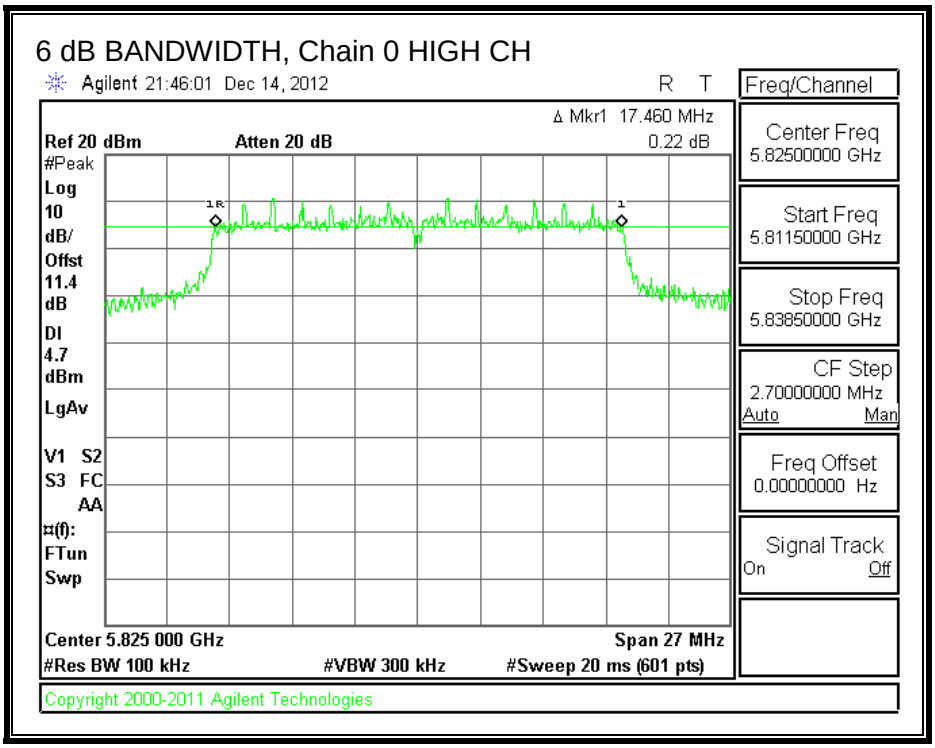
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	5745	17.595	17.640	17.550	0.5
Mid	5785	17.550	17.595	17.595	0.5
High	5825	17.460	17.595	17.640	0.5

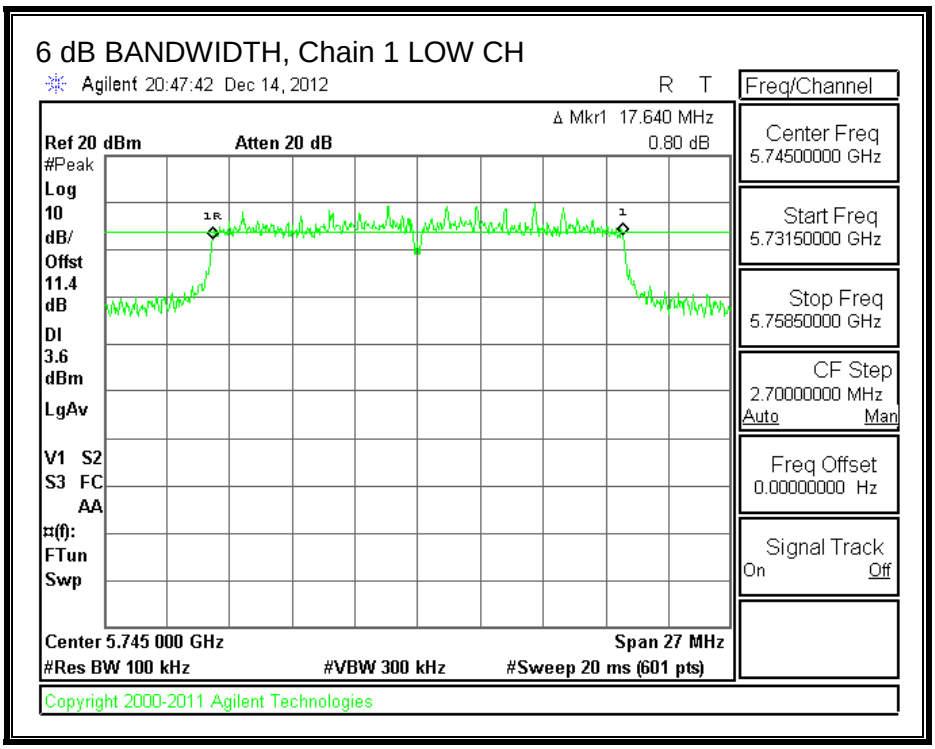
6 dB BANDWIDTH, Chain 0



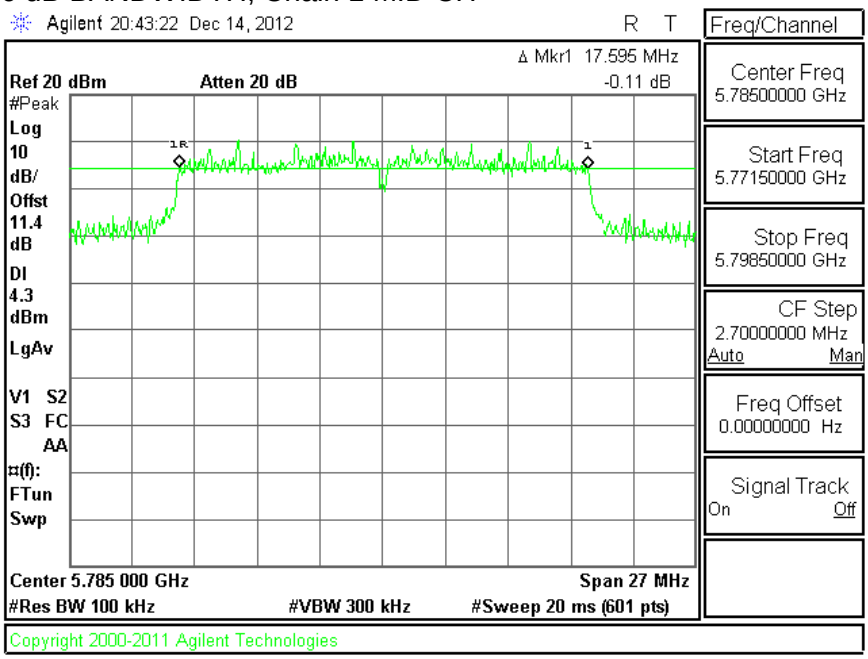




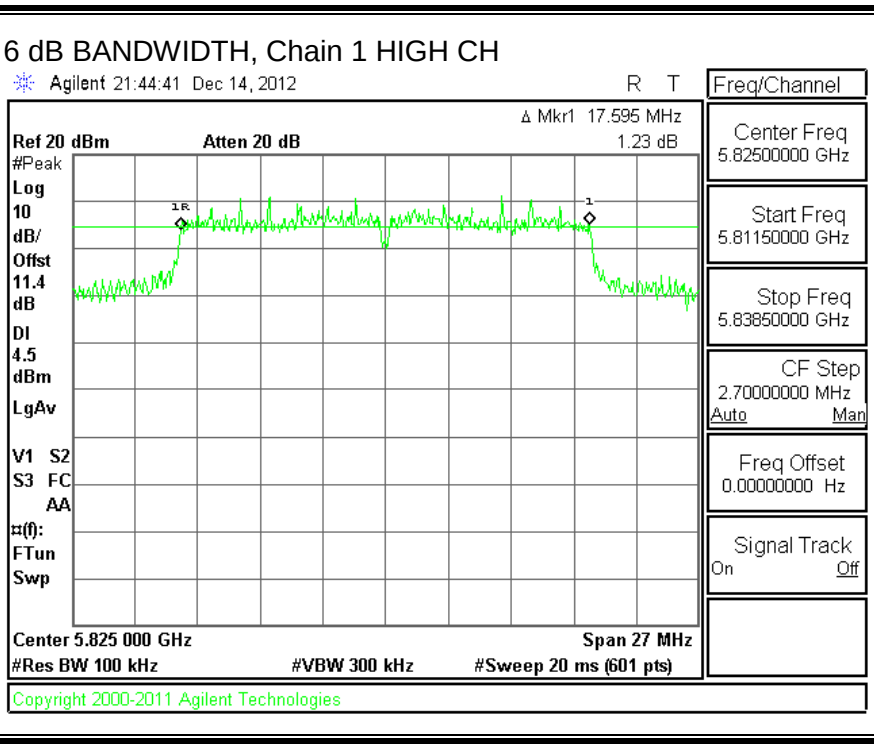
6 dB BANDWIDTH, Chain 1



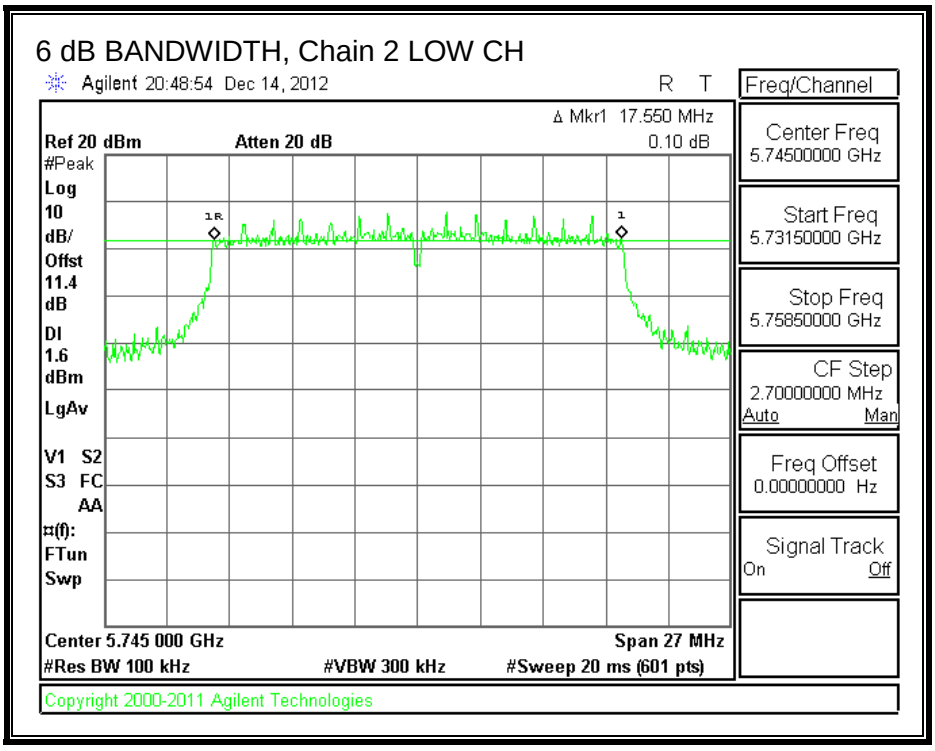
6 dB BANDWIDTH, Chain 1 MID CH

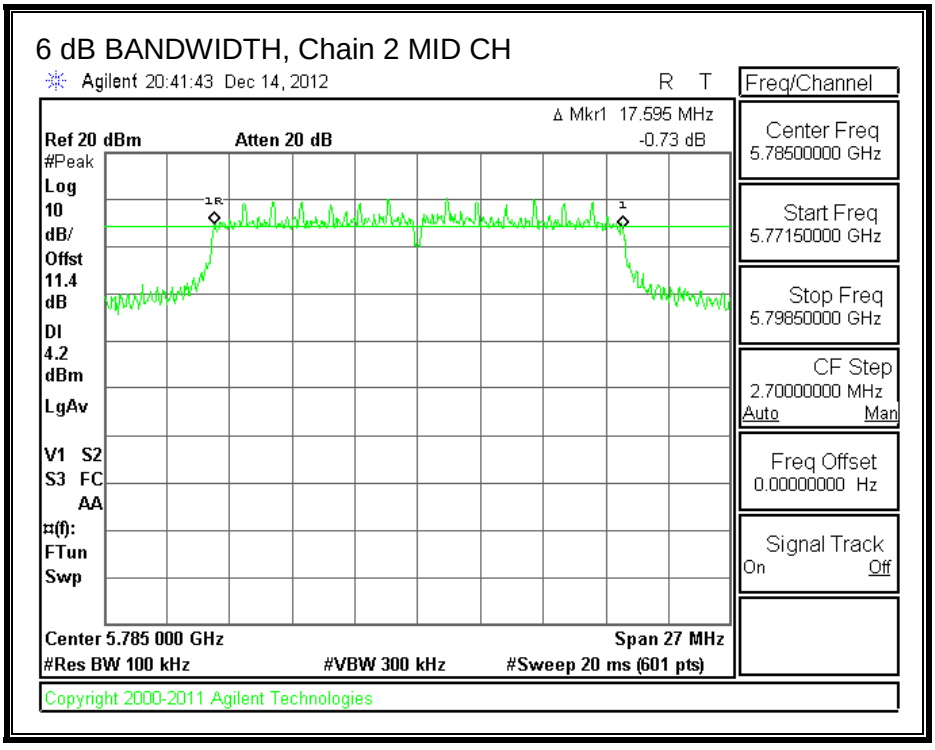


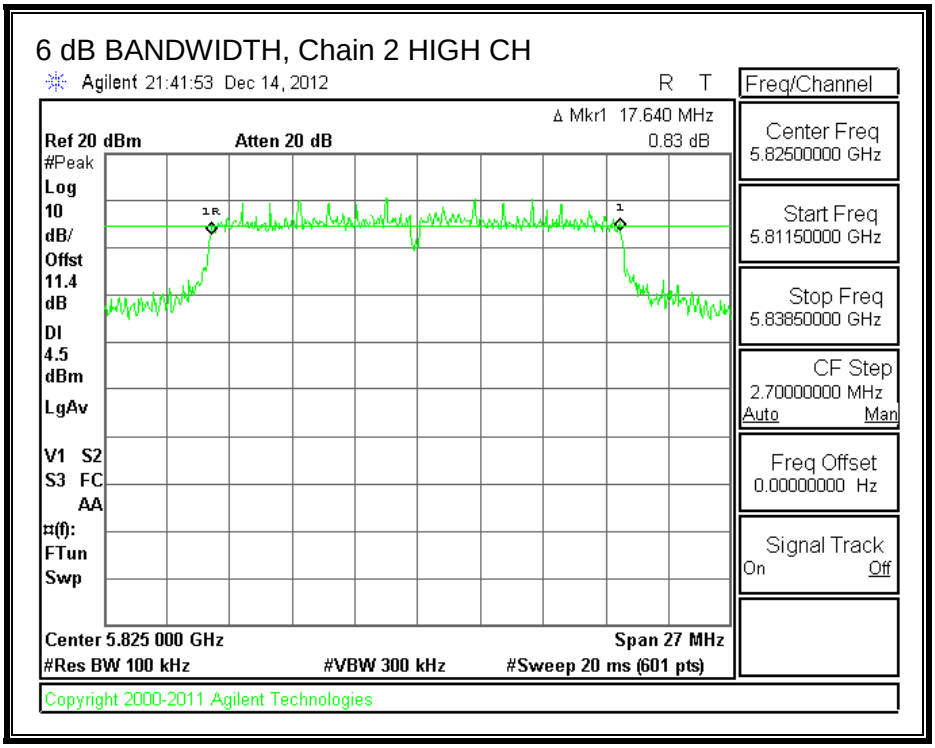
6 dB BANDWIDTH, Chain 1 HIGH CH



6 dB BANDWIDTH, Chain 2







8.23.2. 99% BANDWIDTH

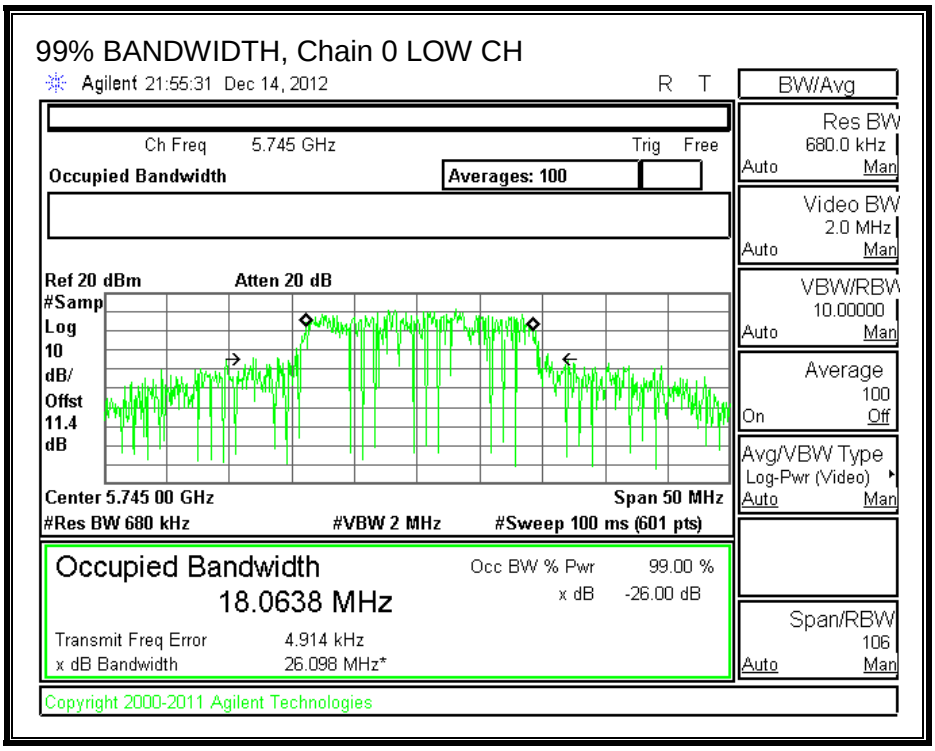
LIMITS

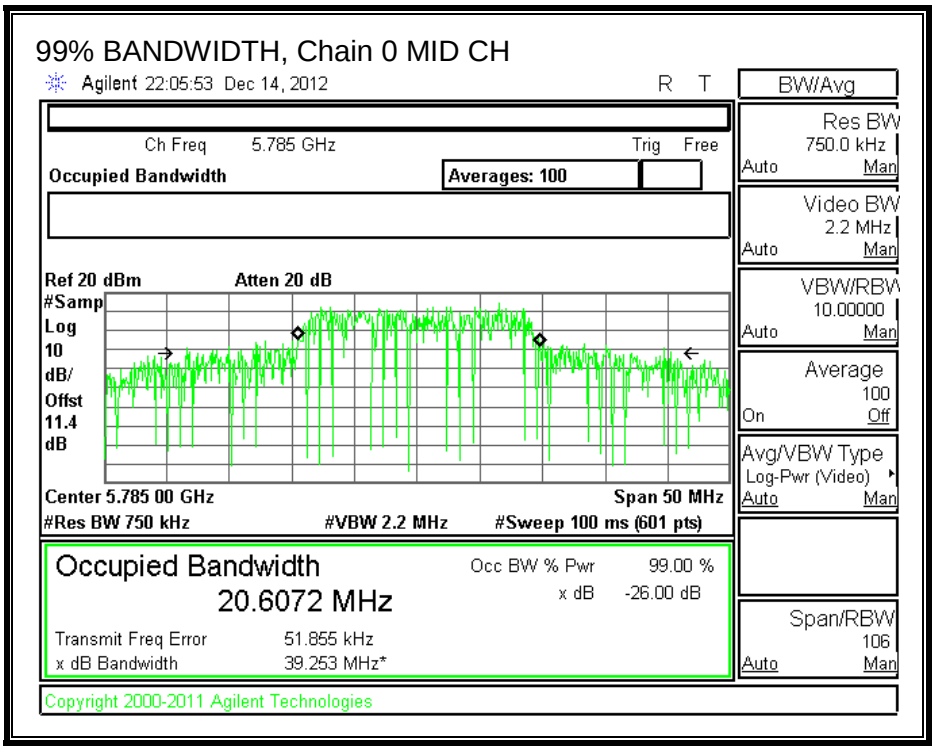
None; for reporting purposes only.

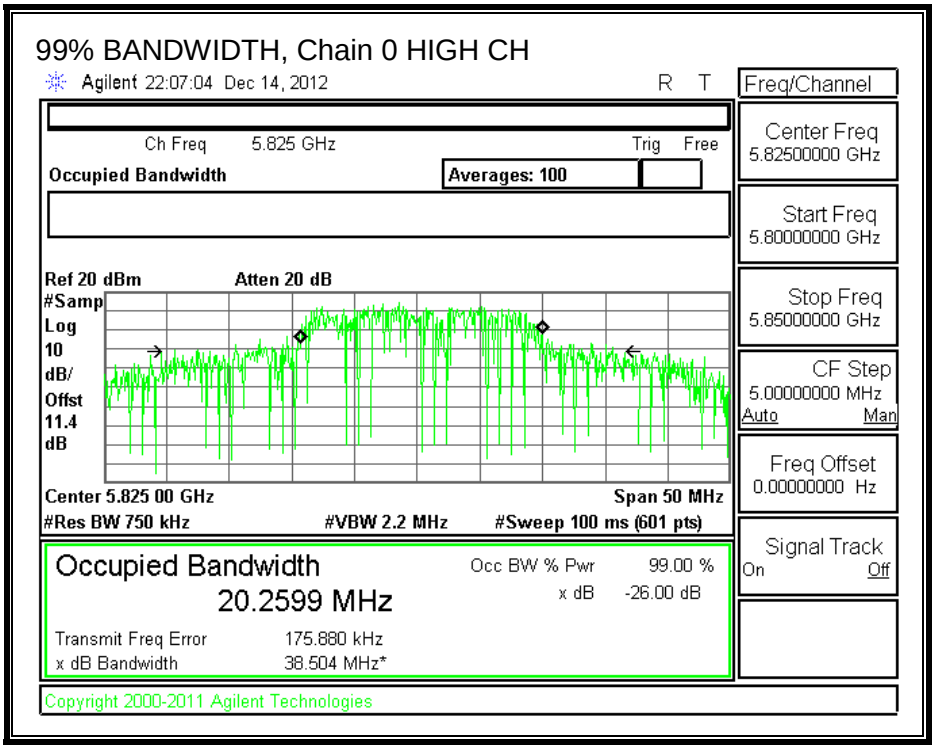
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5745	18.0638	20.2639	18.0342
Mid	5785	20.6072	25.3767	19.7147
High	5825	20.2599	25.0281	20.3644

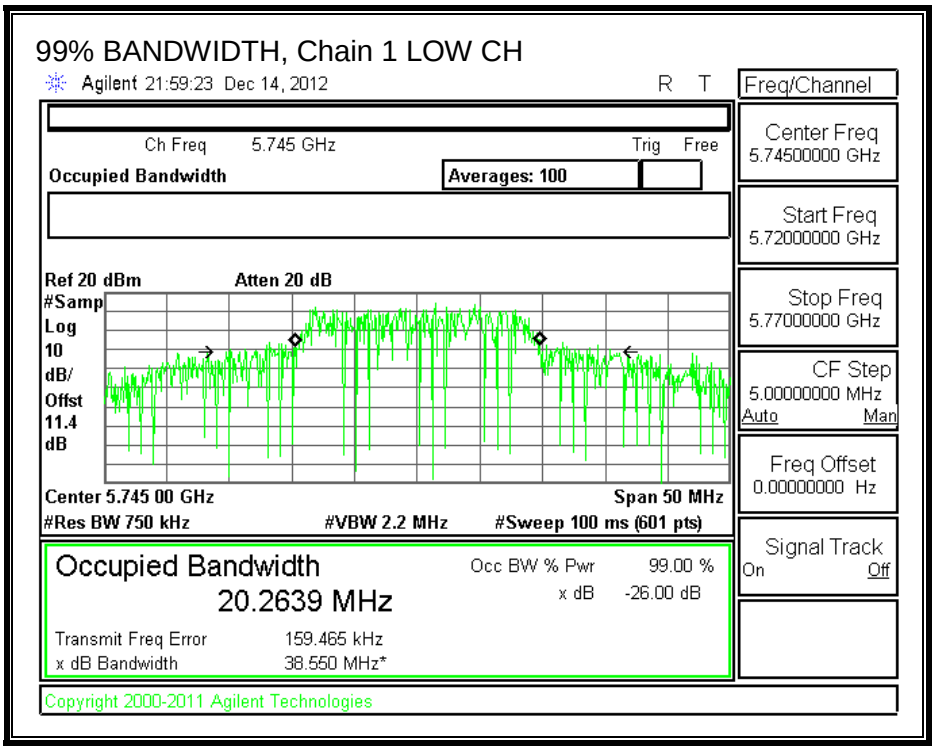
99% BANDWIDTH, Chain 0

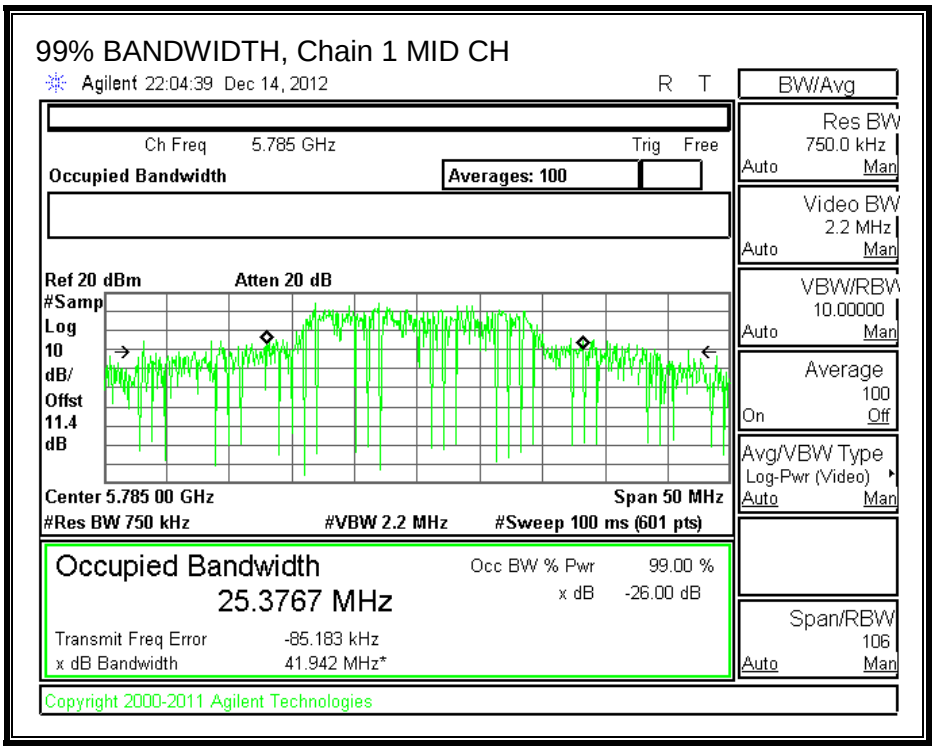


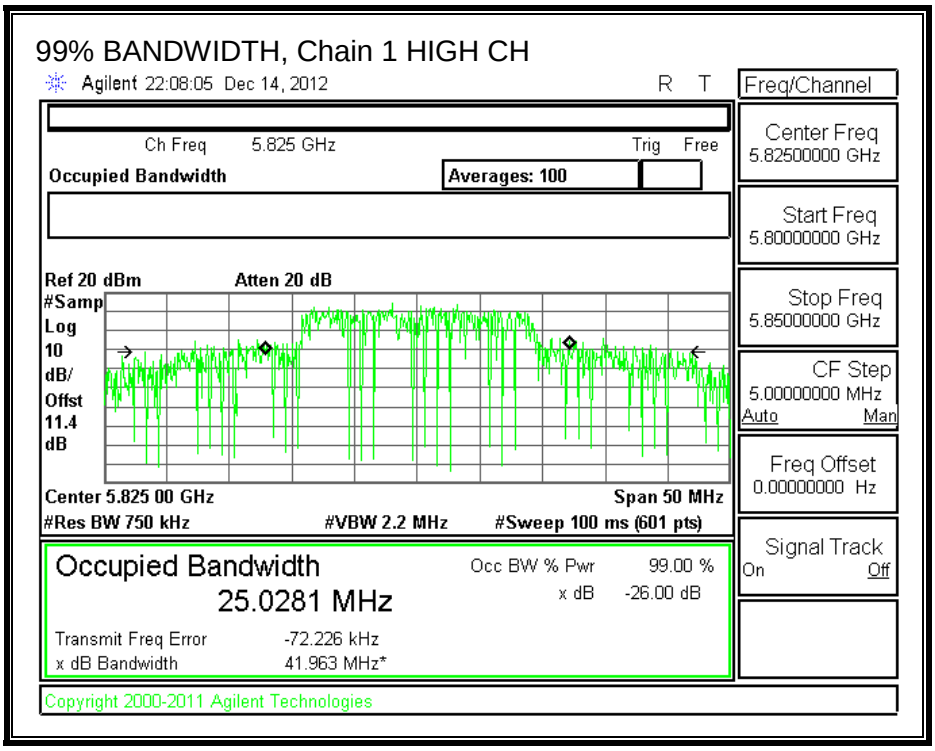




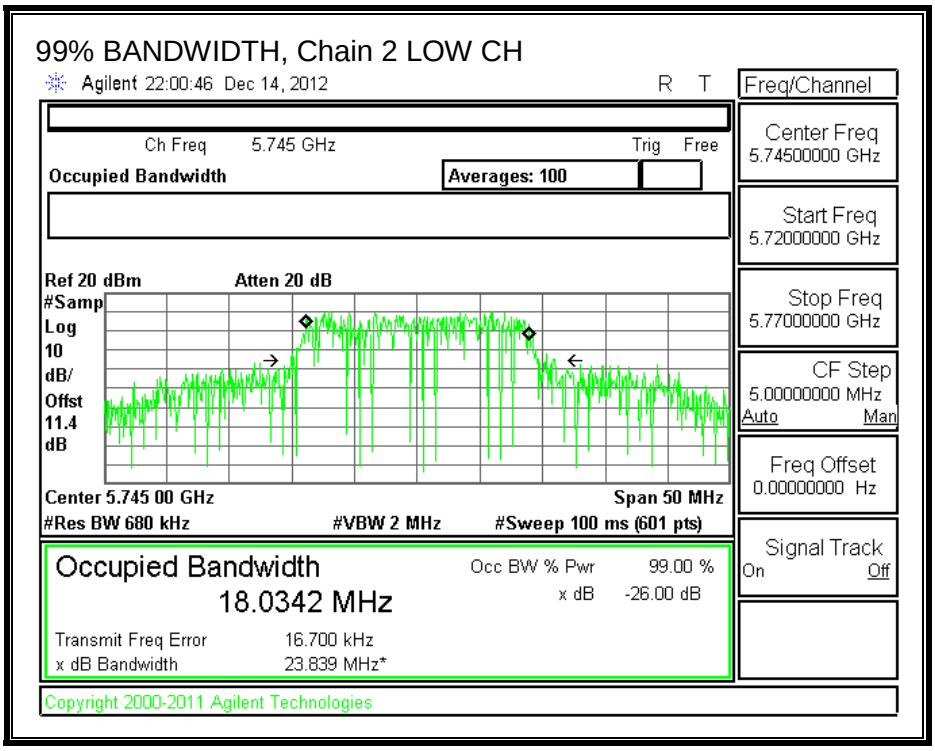
99% BANDWIDTH, Chain 1

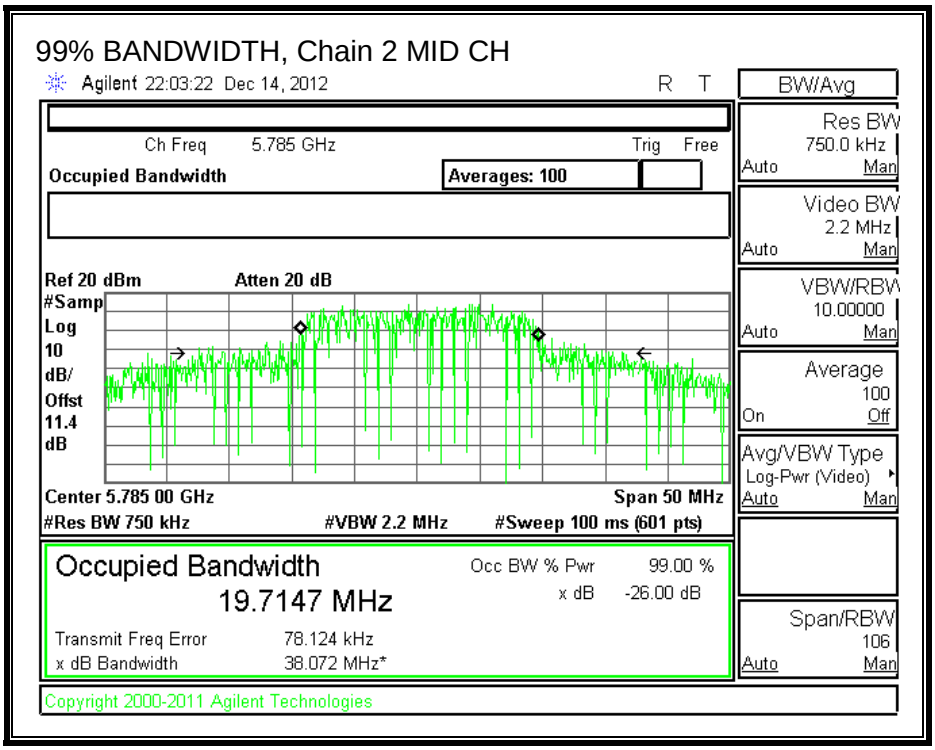


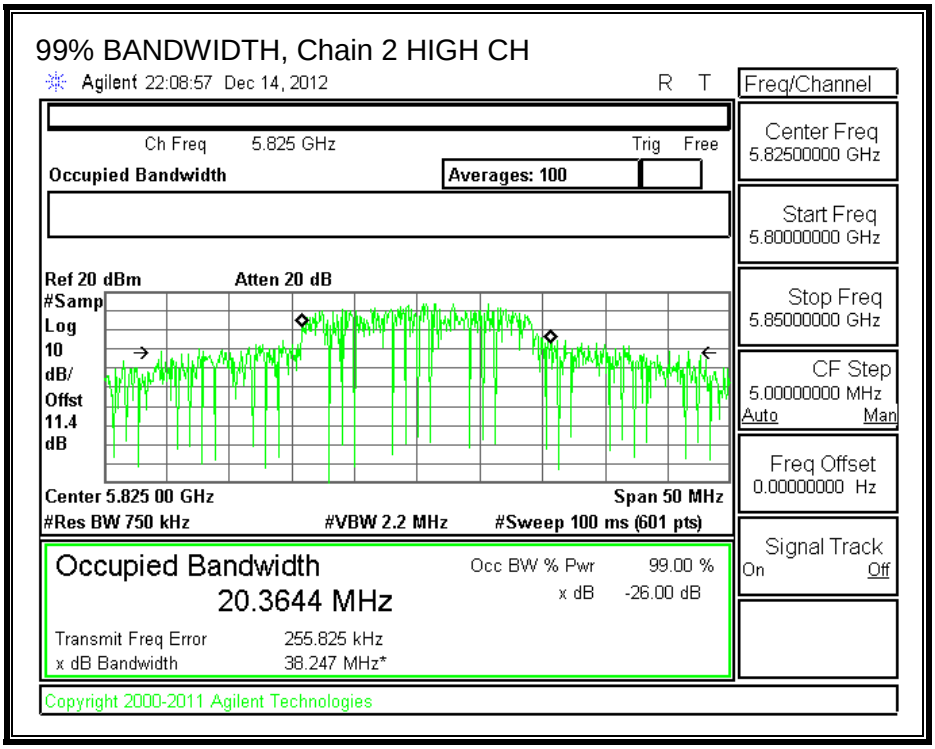




99% BANDWIDTH, Chain 2







8.23.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated for output power consideration, and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.66	5.93	6.04	5.13

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5745	5.13	30.00	30	36	30.00
Mid	5785	5.13	30.00	30	36	30.00
High	5825	5.13	30.00	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)
Low	5745	18.70	19.30	18.20	23.53	30.00	-6.47
Mid	5785	20.20	20.40	20.01	24.98	30.00	-5.02
High	5825	20.20	20.40	20.00	24.97	30.00	-5.03

8.23.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

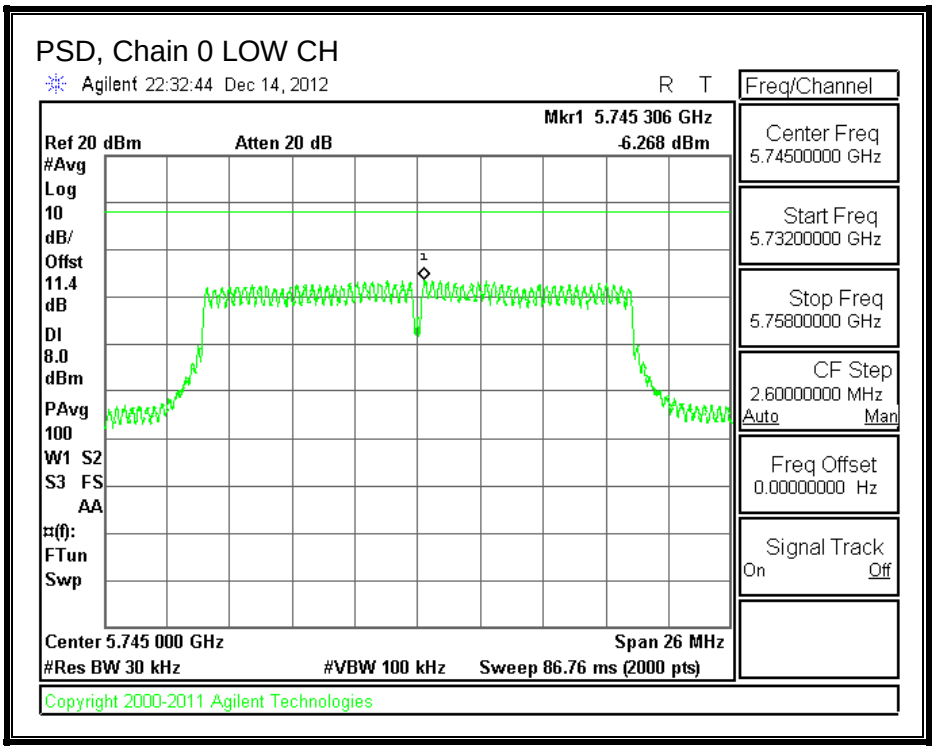
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

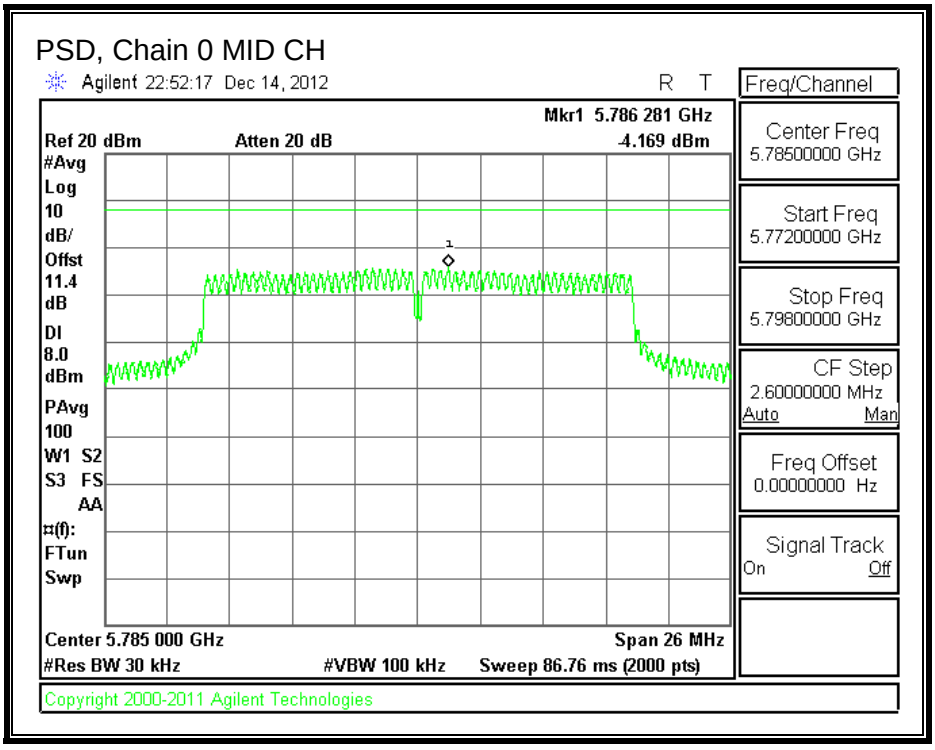
RESULTS

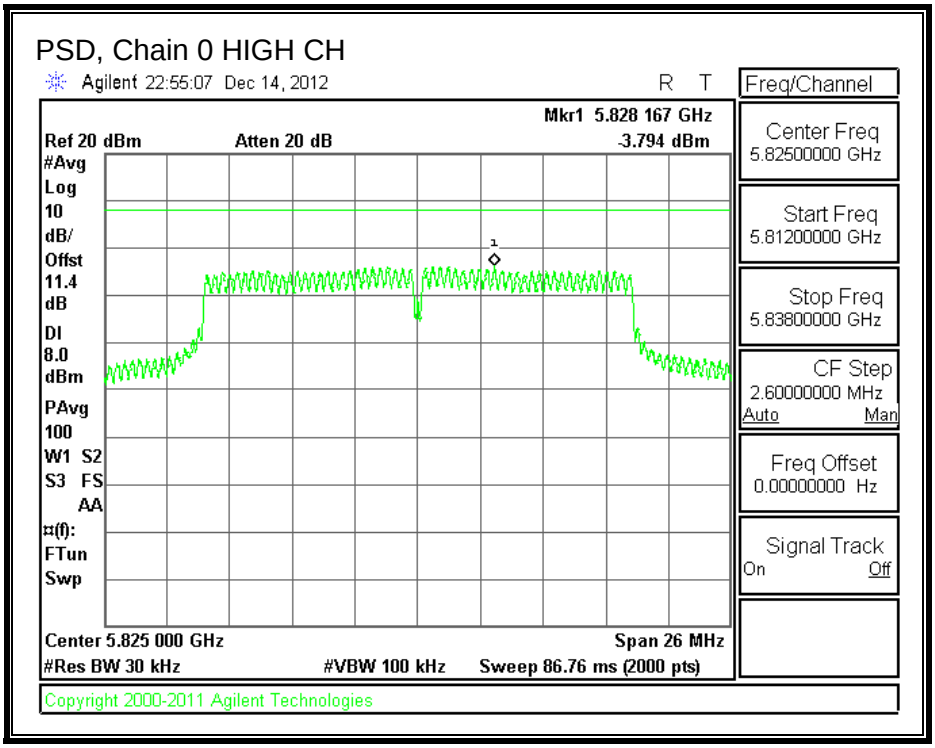
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	DCCF (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-6.268	-4.922	-6.767	0.22	1.549	8.0	-6.451
Mid	5785	-4.169	-4.158	-4.246	0.22	2.560	8.0	-5.440
High	5825	-3.794	-4.189	-4.195	0.22	2.646	8.0	-5.354

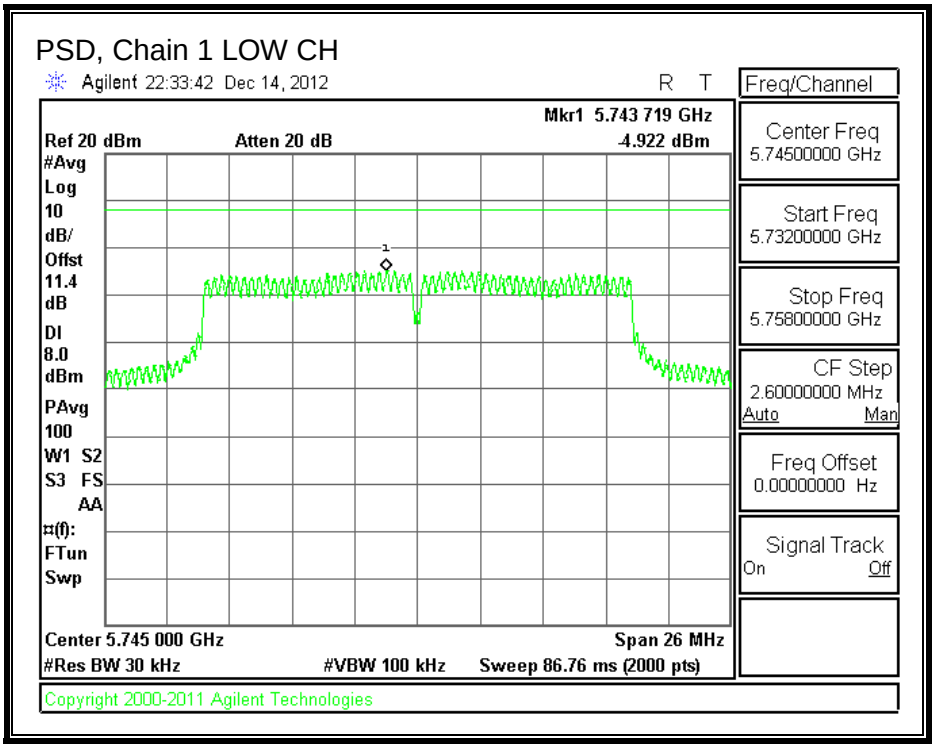
PSD, Chain 0

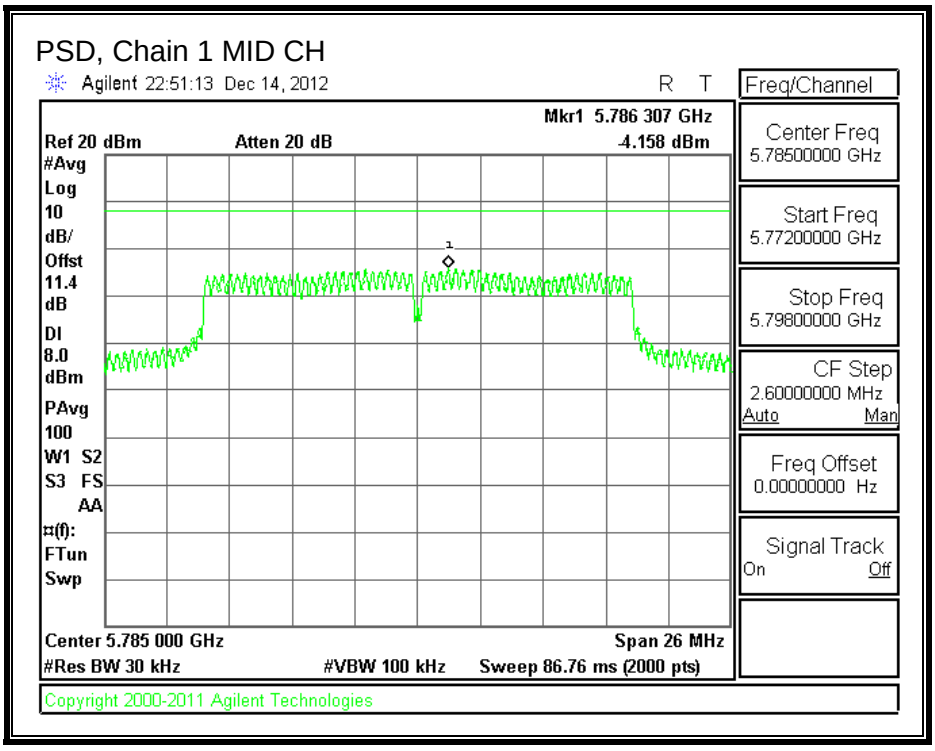


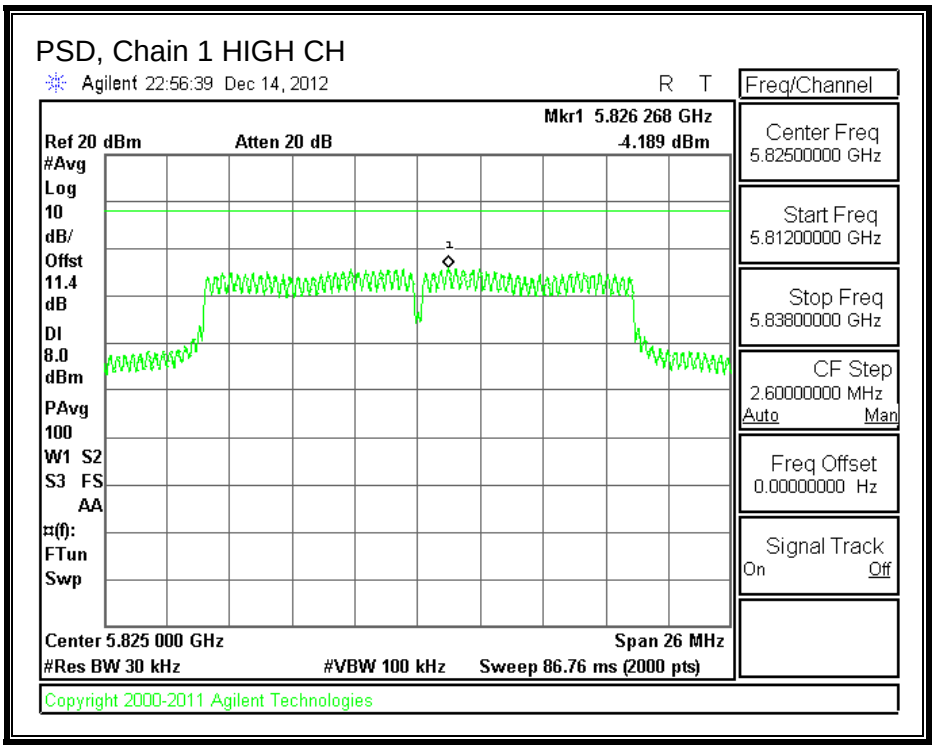




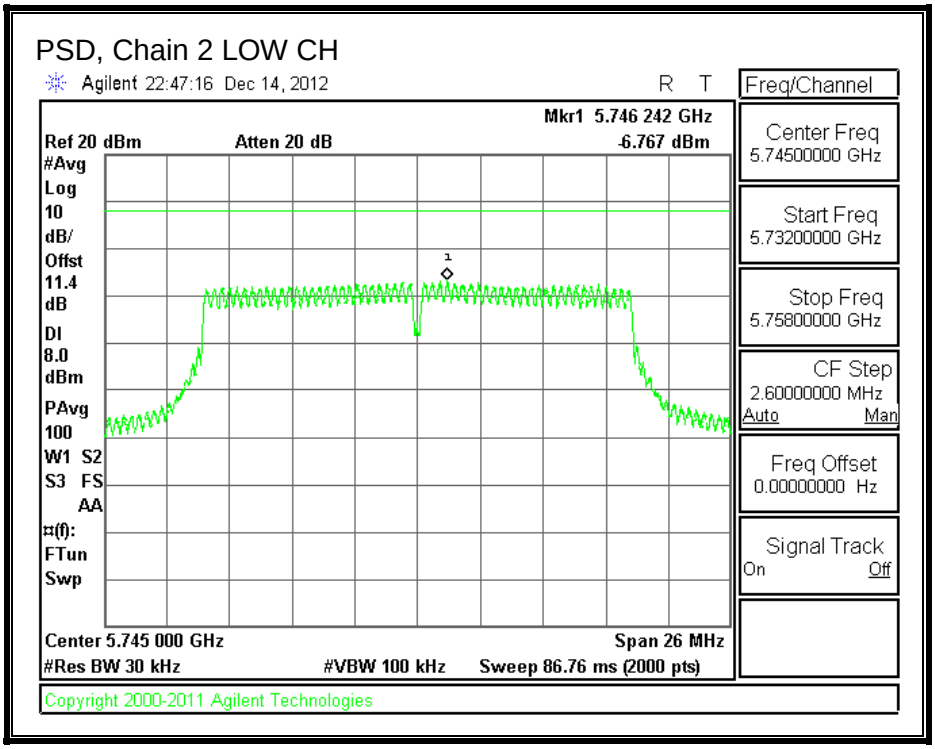
PSD, Chain 1

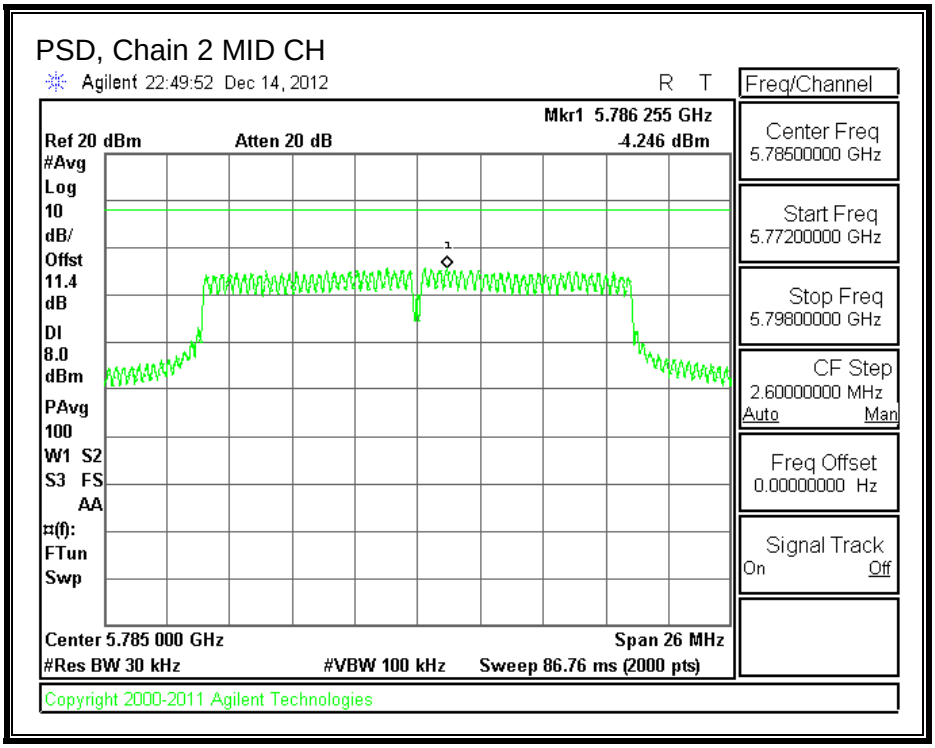


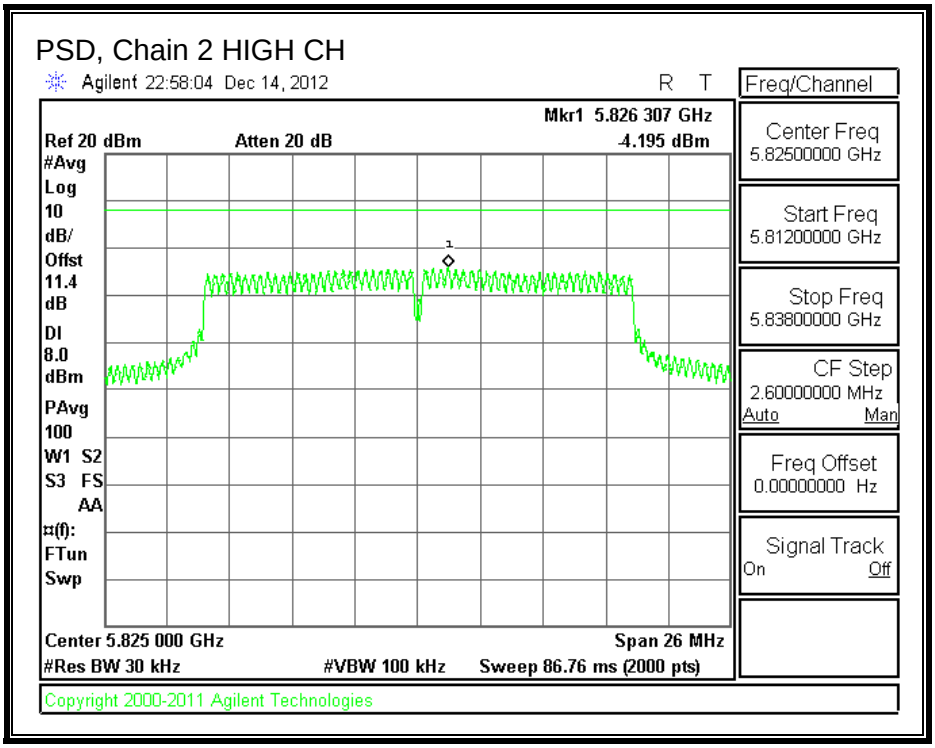




PSD, Chain 2







8.23.5. OUT-OF-BAND EMISSIONS

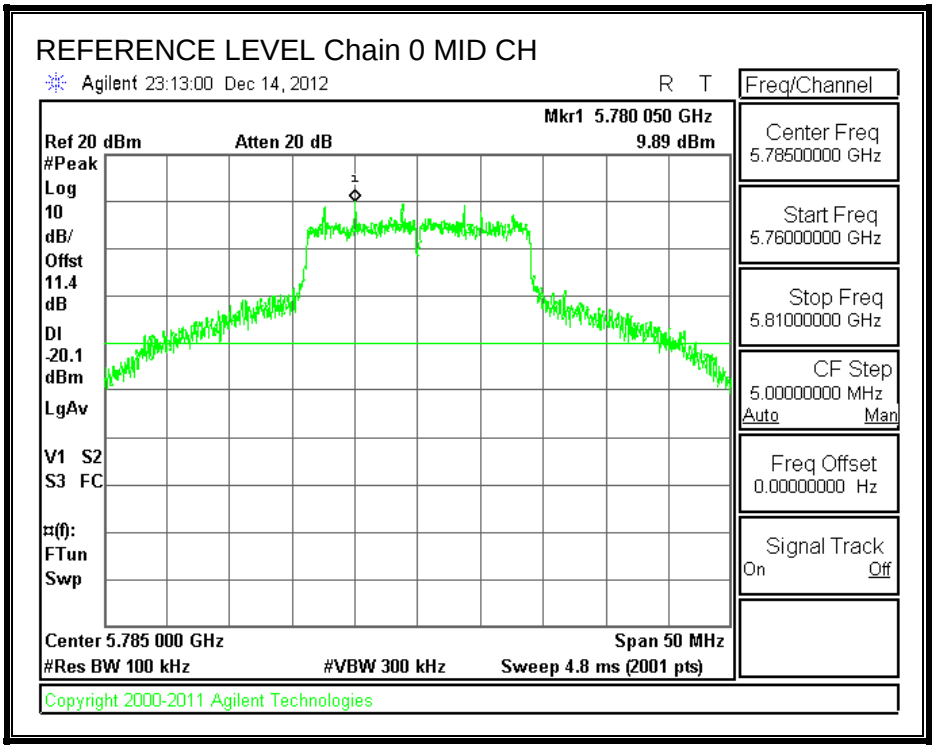
LIMITS

FCC §15.247 (d)

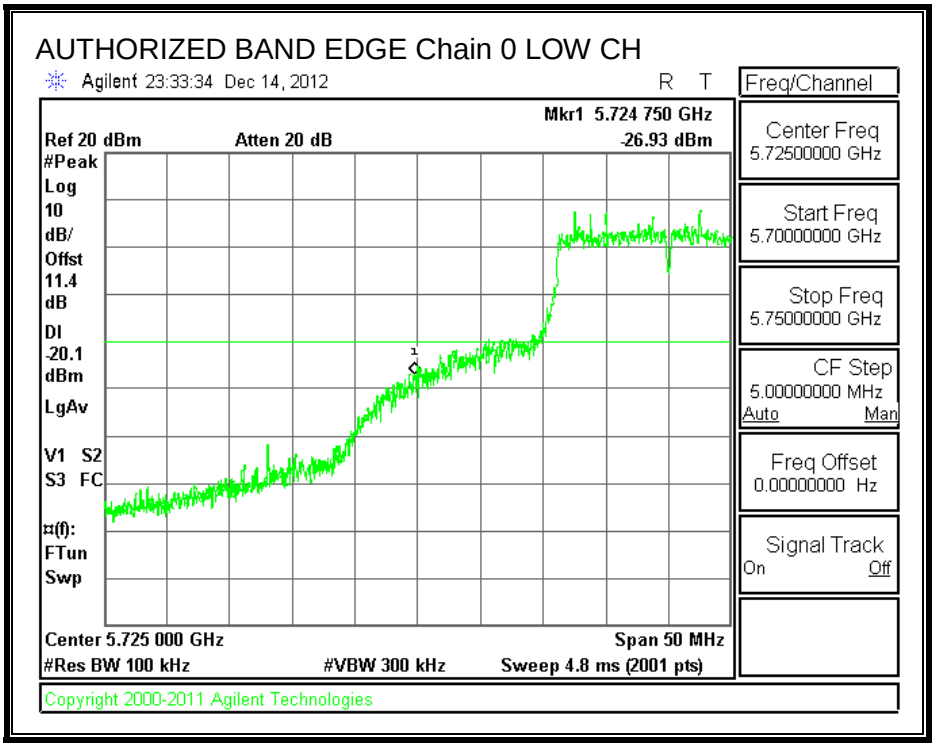
IC RSS-210 A8.5

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.

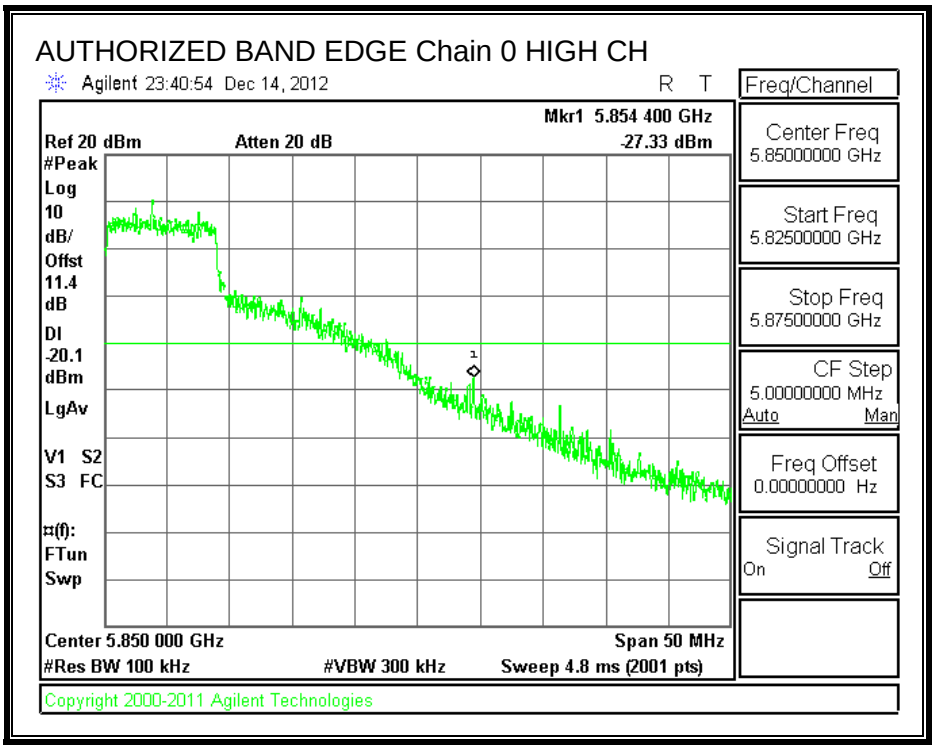
IN-BAND REFERENCE LEVEL, Chain 0



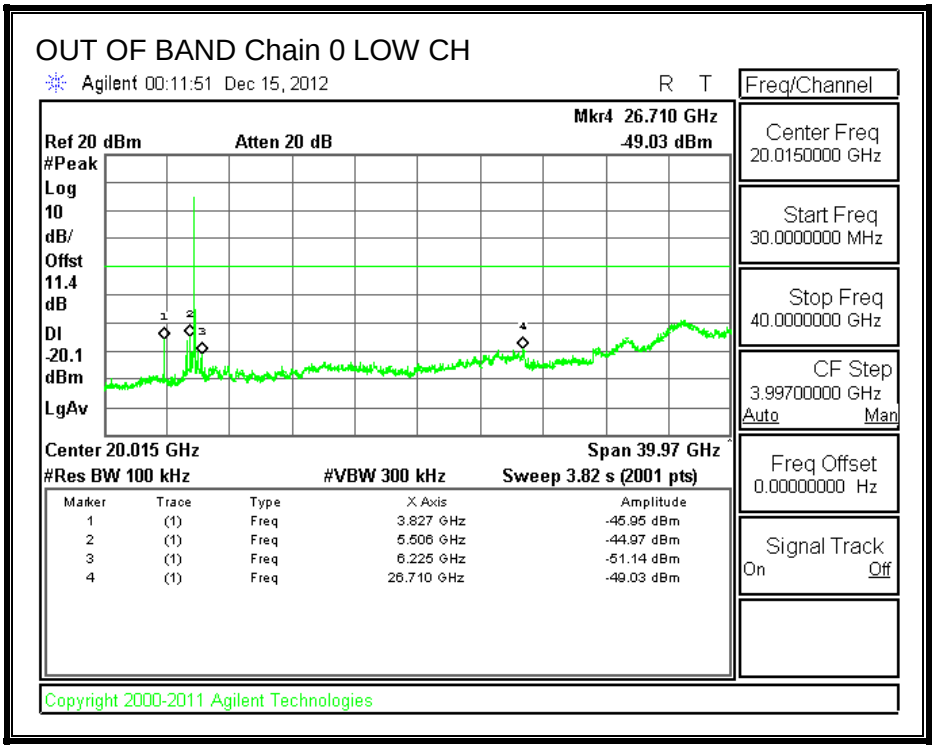
LOW CHANNEL BANDEDGE, Chain 0

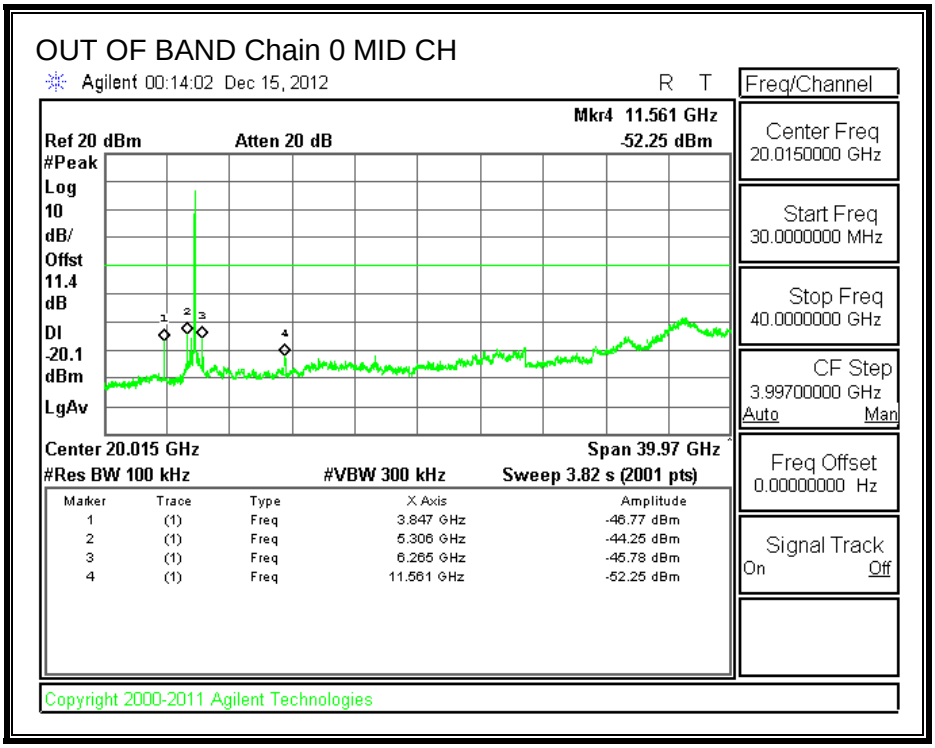


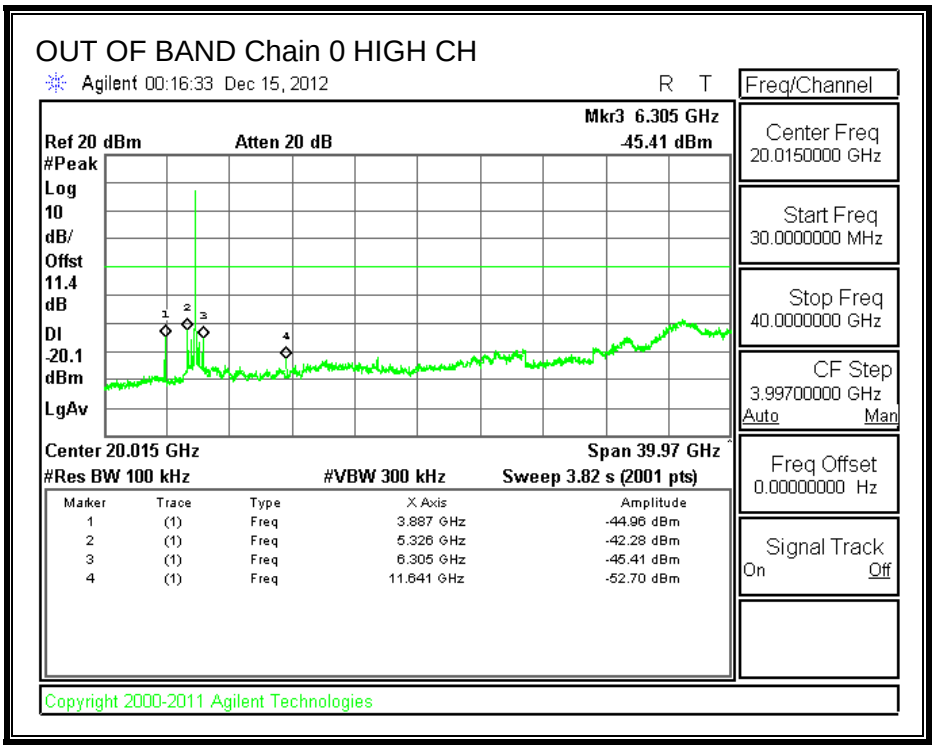
HIGH CHANNEL BANDEDGE, Chain 0



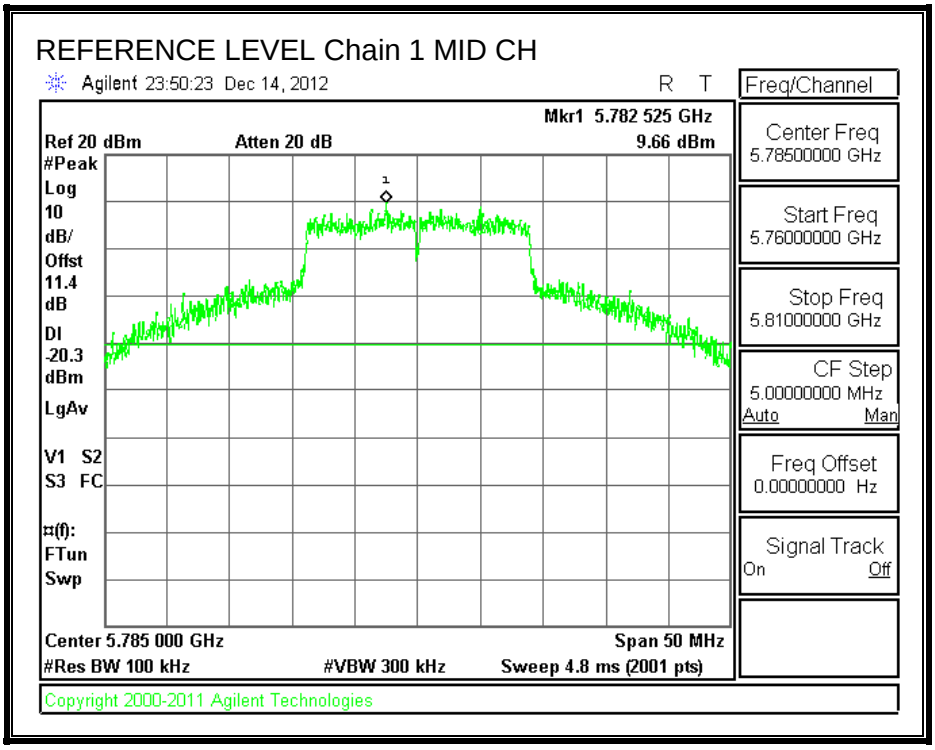
OUT-OF-BAND EMISSIONS, Chain 0



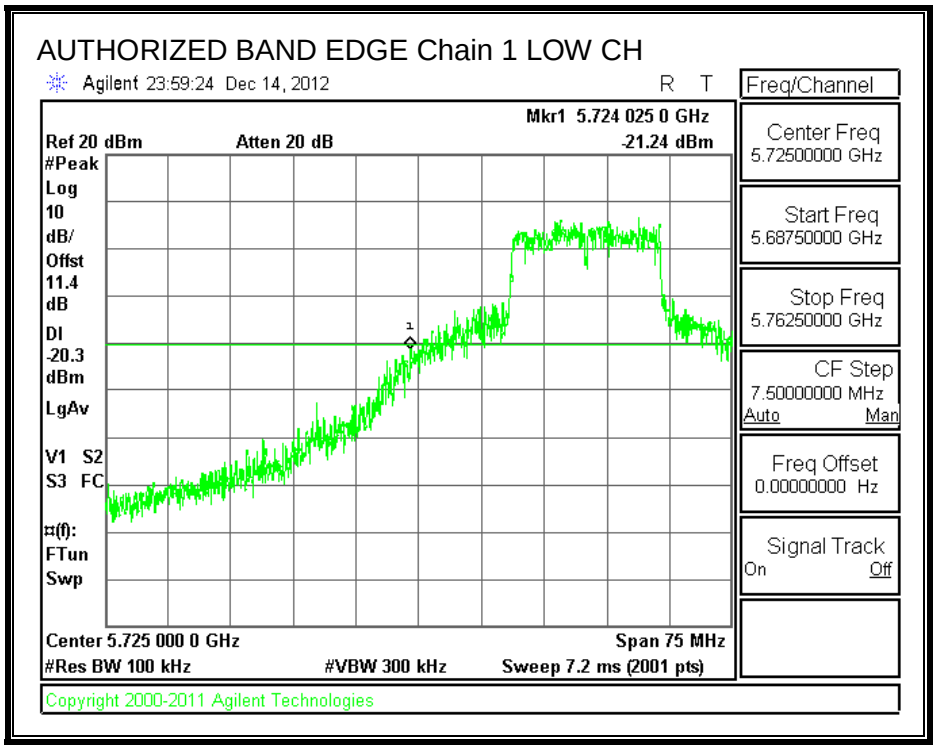




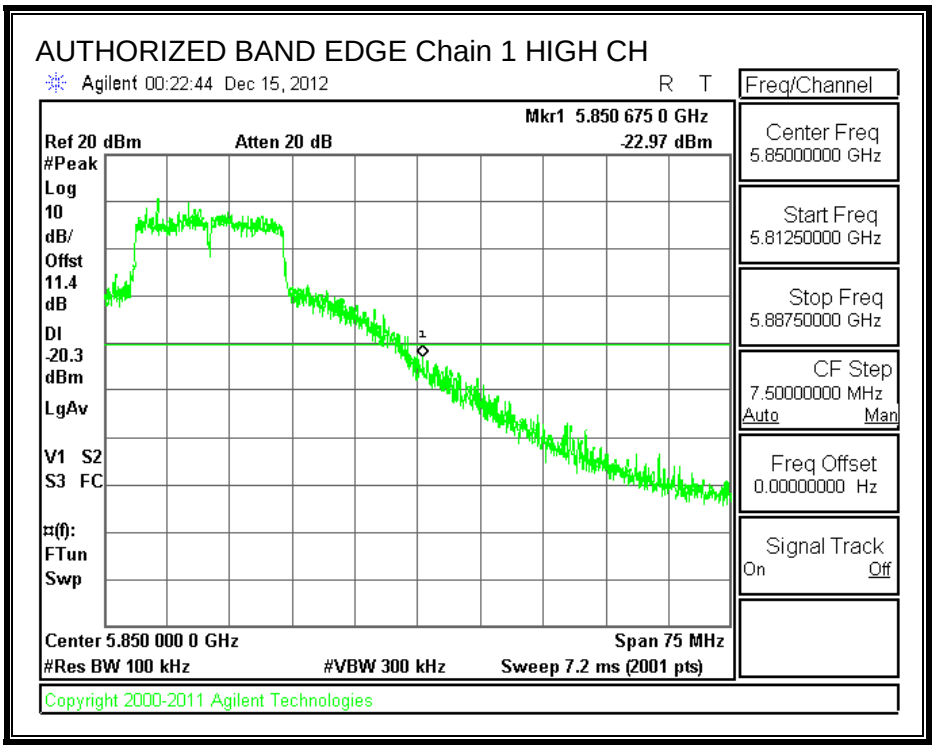
IN-BAND REFERENCE LEVEL, Chain 1



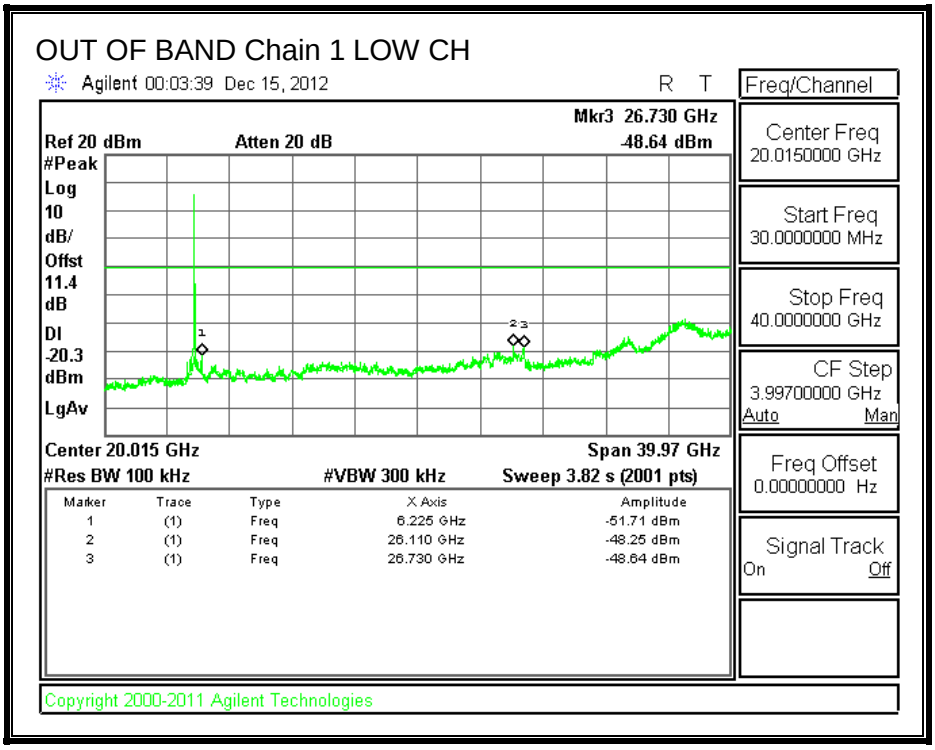
LOW CHANNEL BANDEDGE, Chain 1

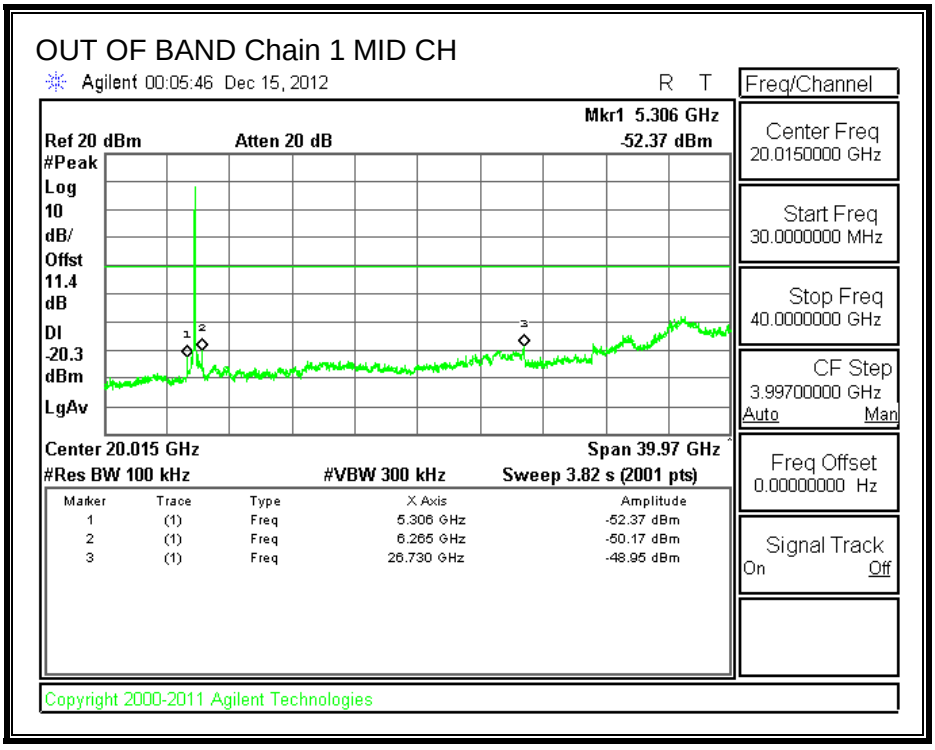


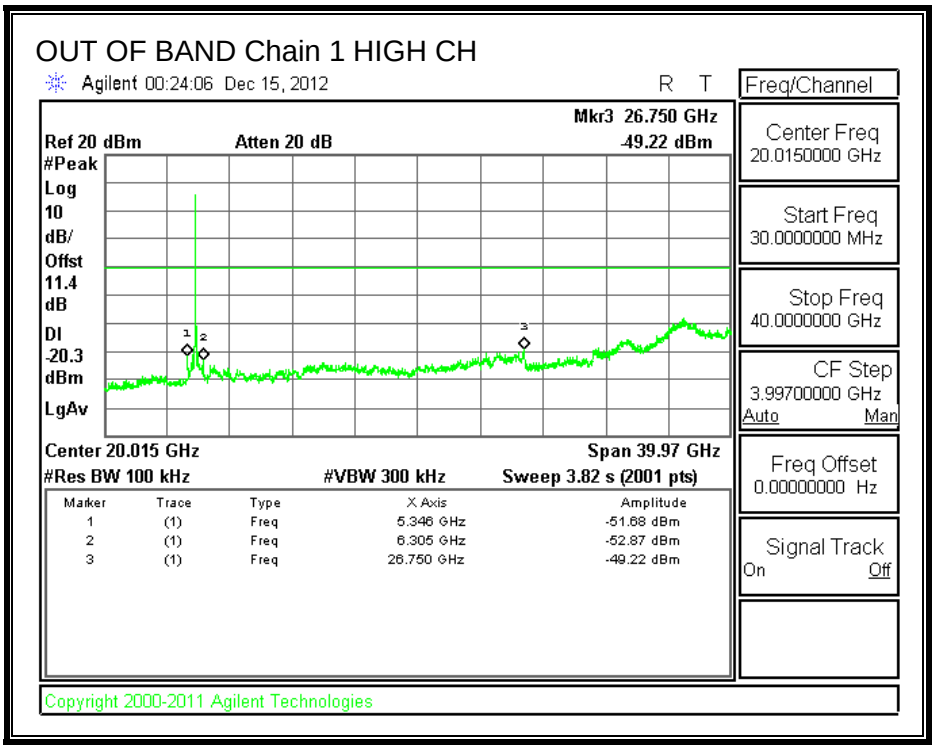
HIGH CHANNEL BANDEDGE, Chain 1



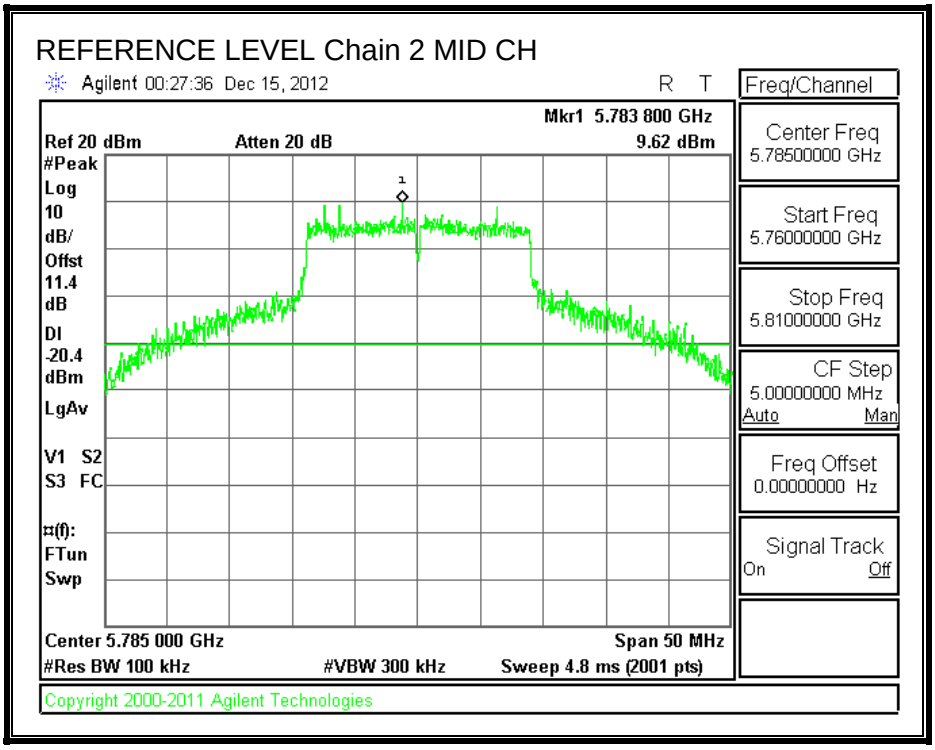
OUT-OF-BAND EMISSIONS, Chain 1



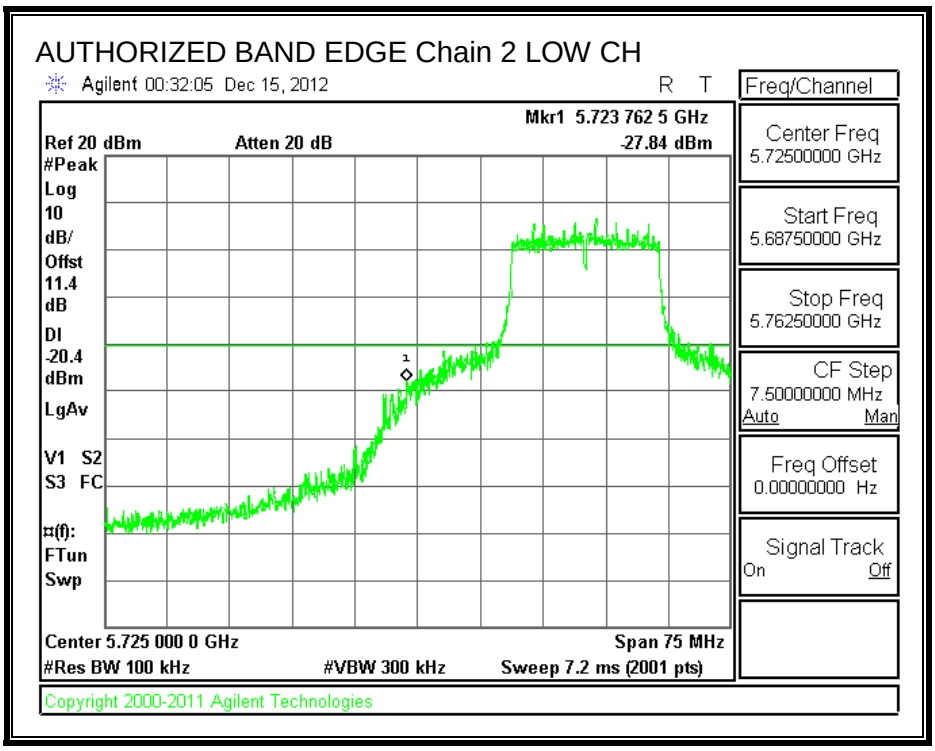




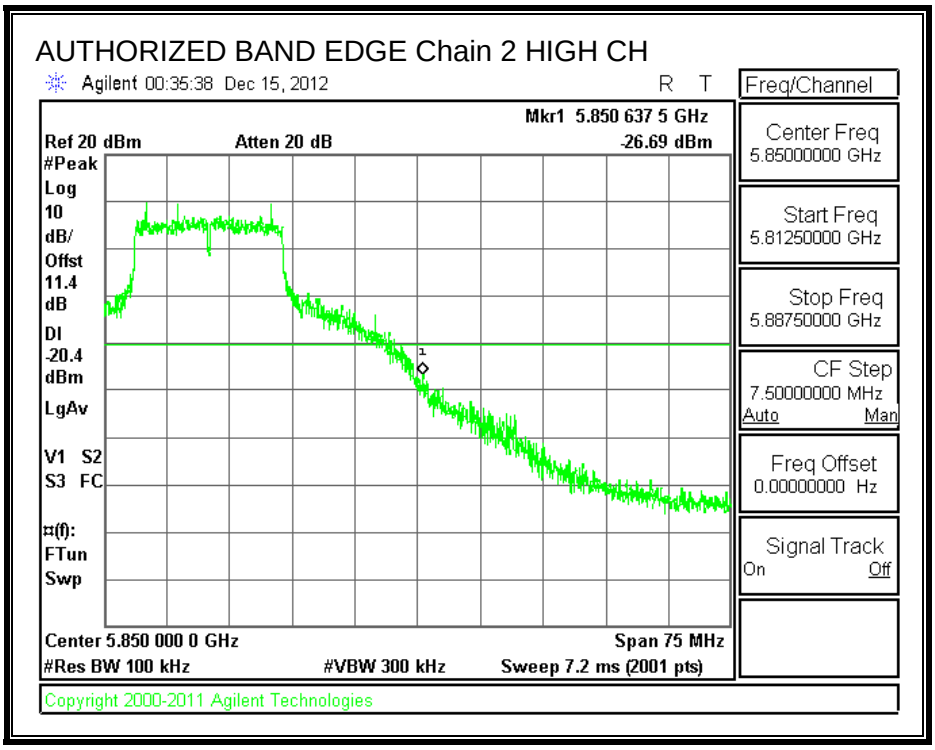
IN-BAND REFERENCE LEVEL, Chain 2



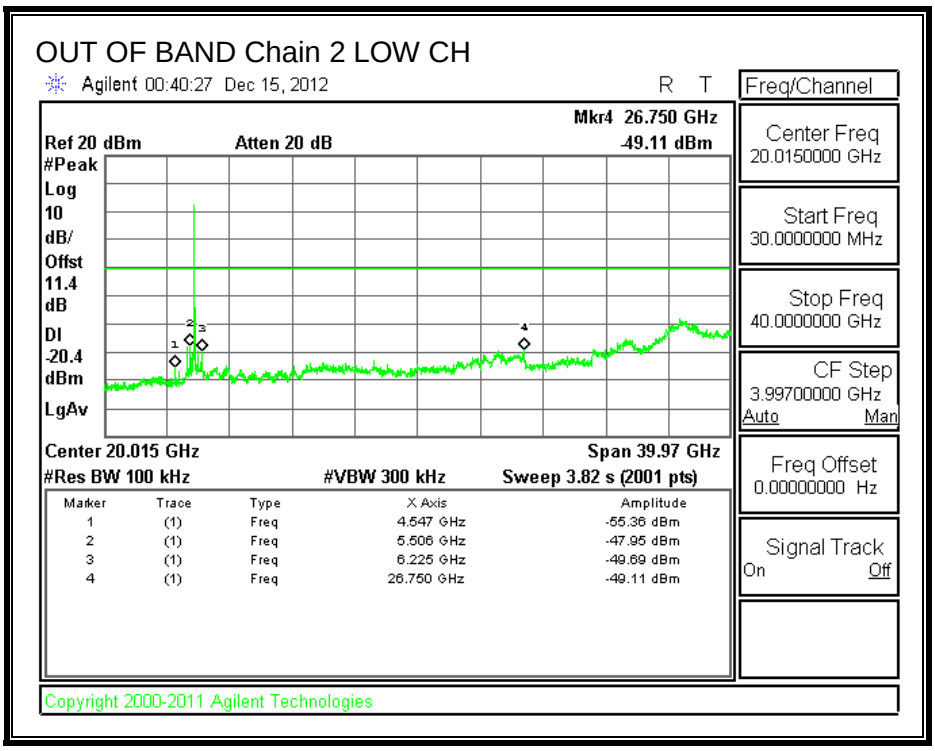
LOW CHANNEL BANDEDGE, Chain 2

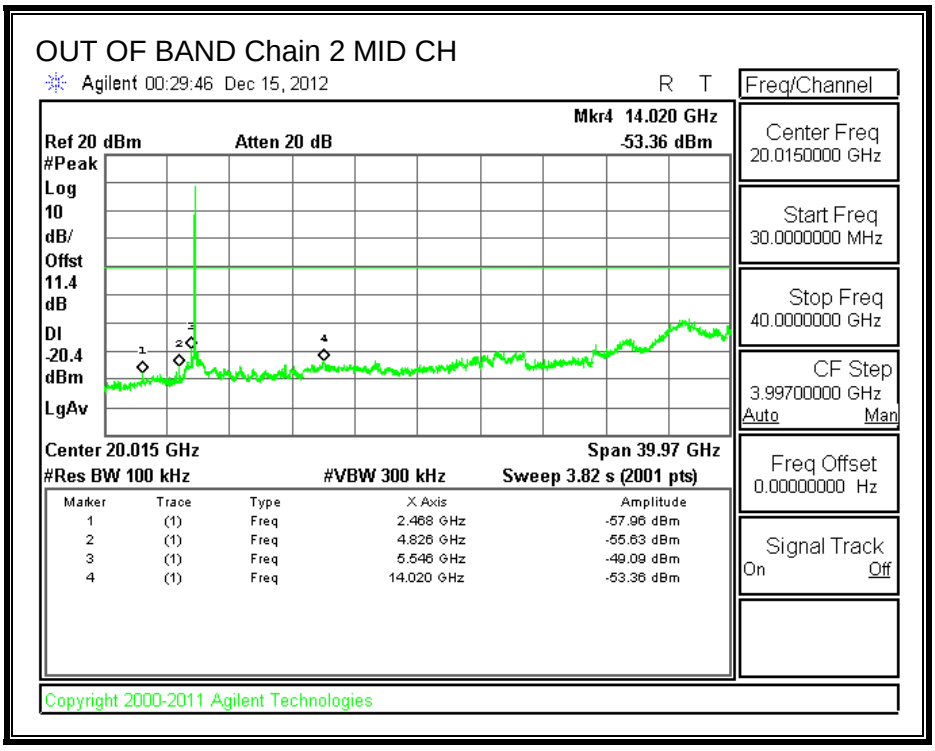


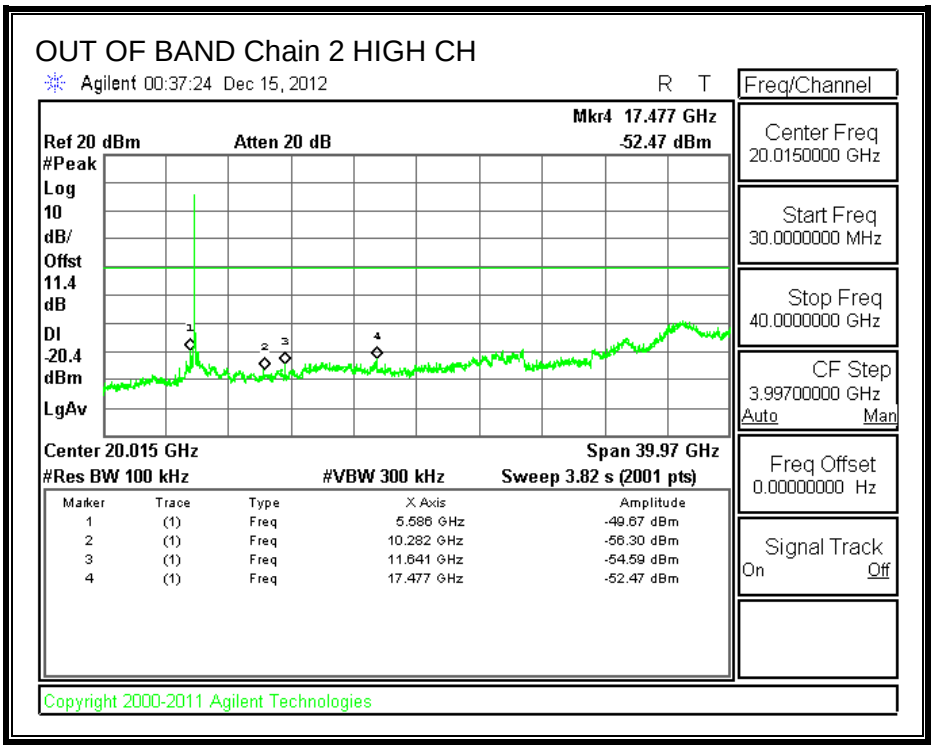
HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2







8.24. 802.11ac VHT20 BF 3TX MODE IN THE 5.8 GHz BAND

This mode has the same antenna port test results as 802.11n HT20 CDD 3TX mode, except for output power as shown below.

8.24.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated for output power consideration, and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.66	5.93	6.04	9.78

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5745	9.78	26.22	30	36	26.22
Mid	5785	9.78	26.22	30	36	26.22
High	5825	9.78	26.22	30	36	26.22

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)
Low	5745	18.70	19.30	18.20	23.53	26.22	-2.69
Mid	5785	20.20	20.40	20.01	24.98	26.22	-1.24
High	5825	20.20	20.40	20.00	24.97	26.22	-1.25

8.25. 802.11n HT40 1TX MODE IN THE 5.8 GHz BAND

Covered by testing HT40 CDD MCS0 3TX at the same power level.

8.26. 802.11n HT40 CDD MCS0 2TX MODE IN THE 5.8 GHz BAND

Note: this mode covers only low channel 5755 MHz, for high channel it is covered by testing to 11n HT40 3Tx (CDD). Power levels are the same. No testing is required.

8.26.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

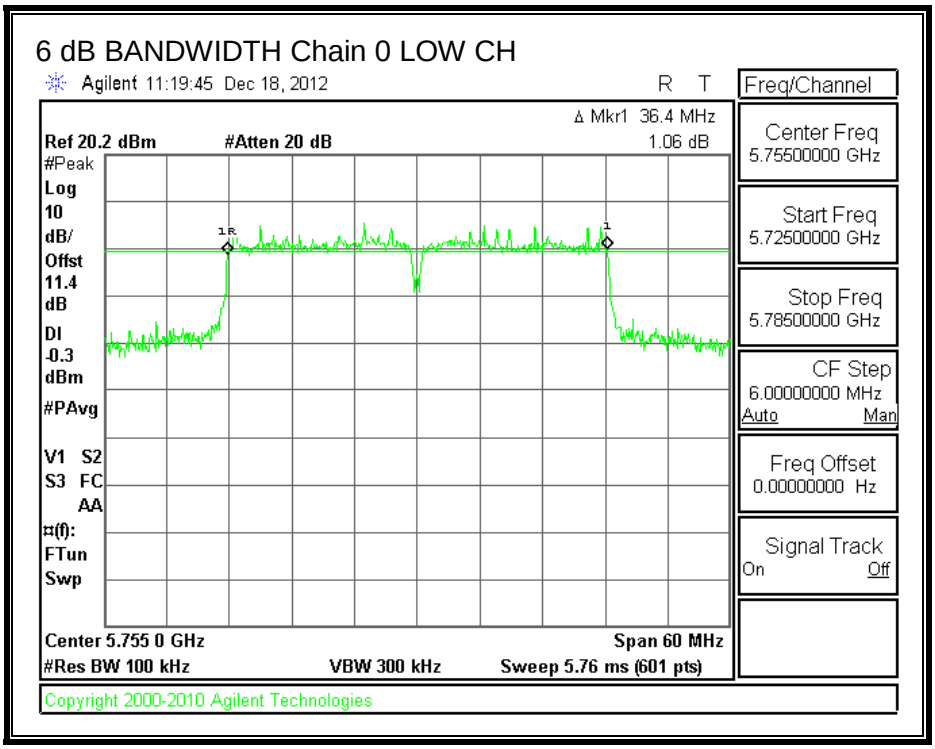
TEST PROCEDURE

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

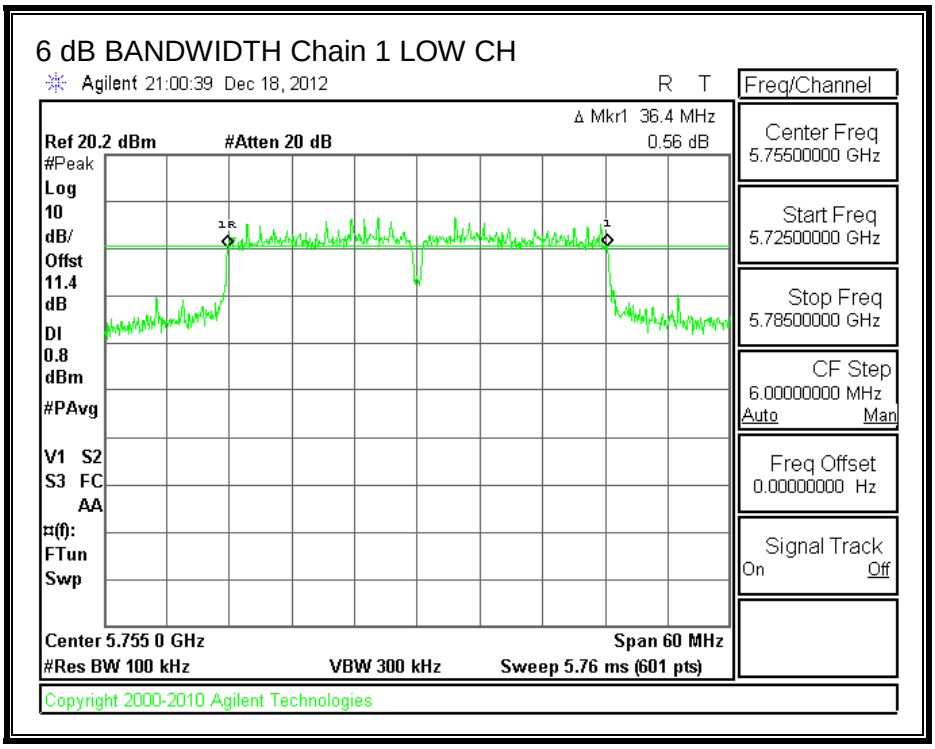
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5755	36.4	36.4	0.5

6 dB BANDWIDTH, Chain 0



6 dB BANDWIDTH, Chain 1



8.26.2. 99% BANDWIDTH

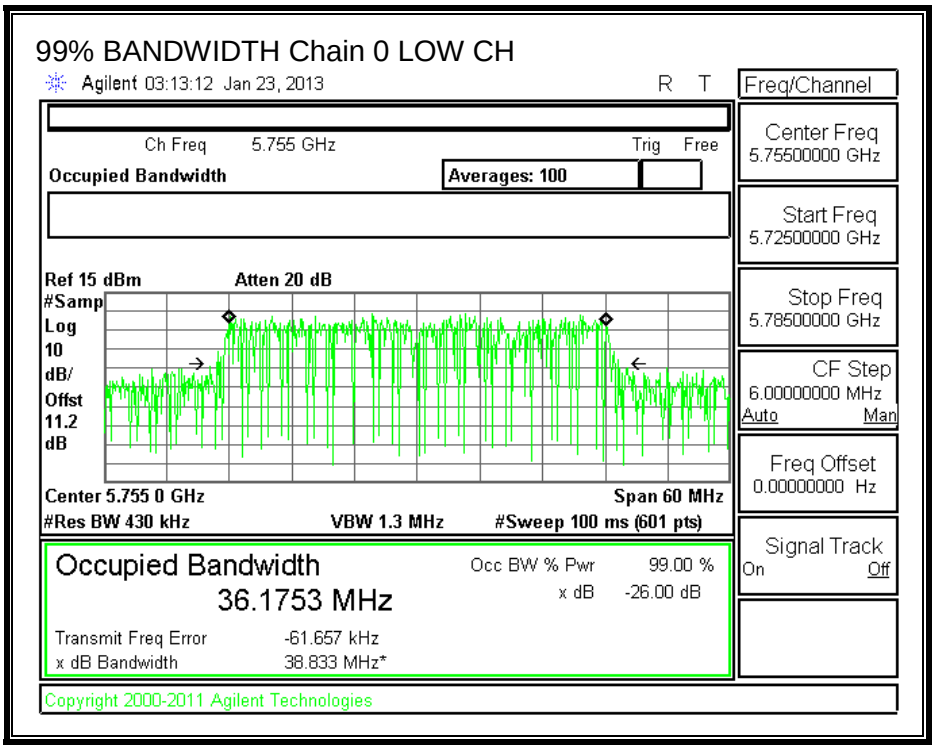
LIMITS

None; for reporting purposes only.

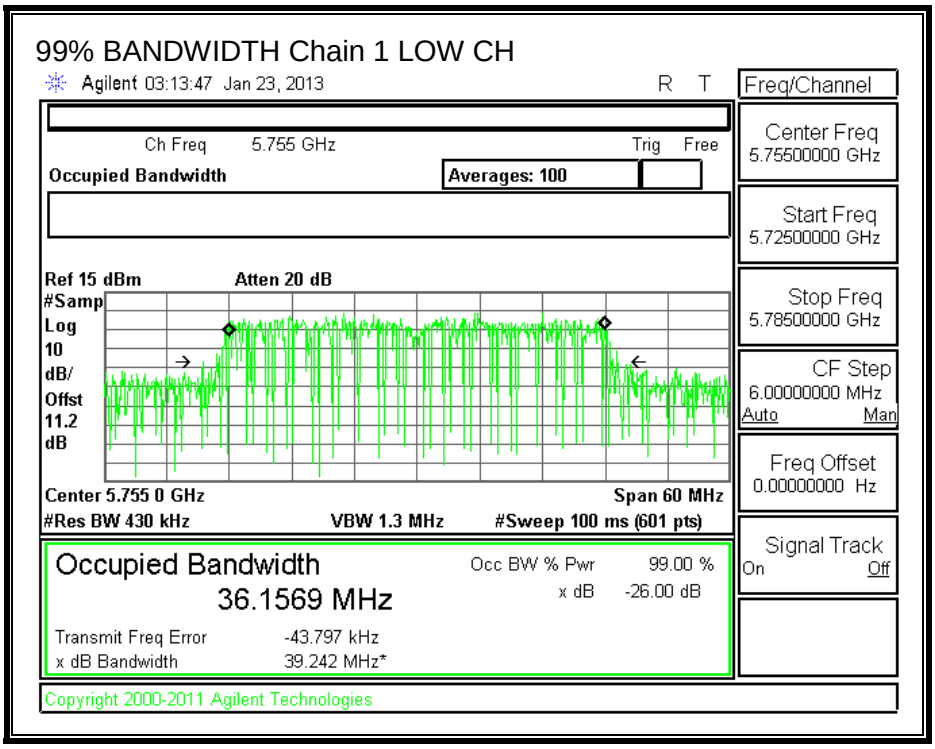
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5755	36.1753	36.1569

99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



8.26.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
5.93	6.04	5.99

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5755	5.99	30.00	30	36	30.00
High	5795	5.99	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)	Margi (dB)
Low	5755	16.77	16.90	19.85	30.00	-10.15
High	5795	Covered by 802.11n HT40 3TX Mode testing				

8.26.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

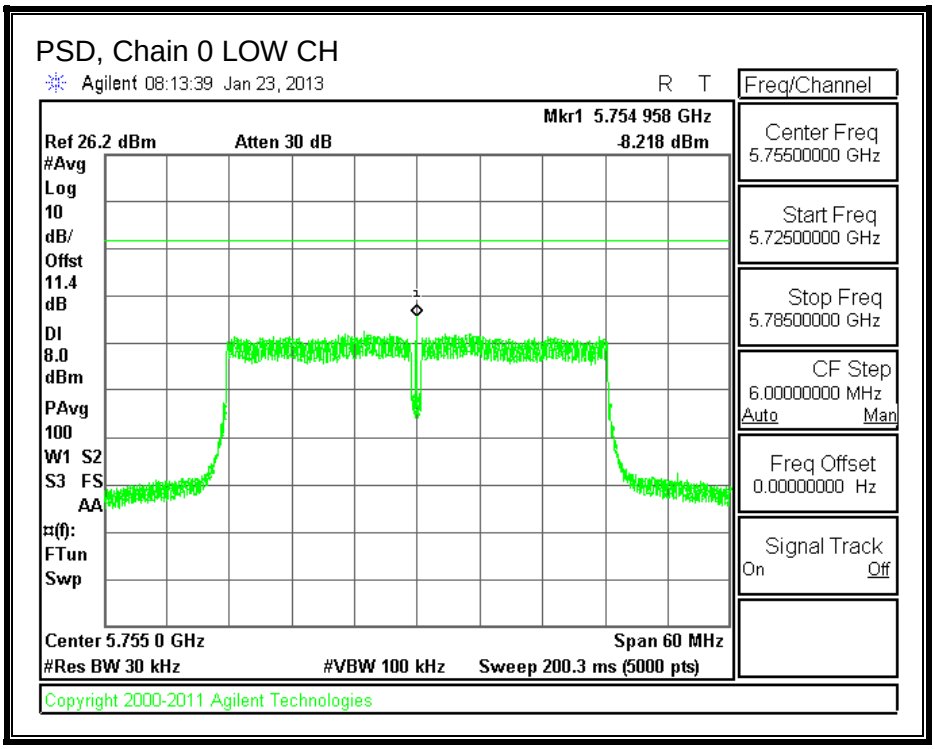
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

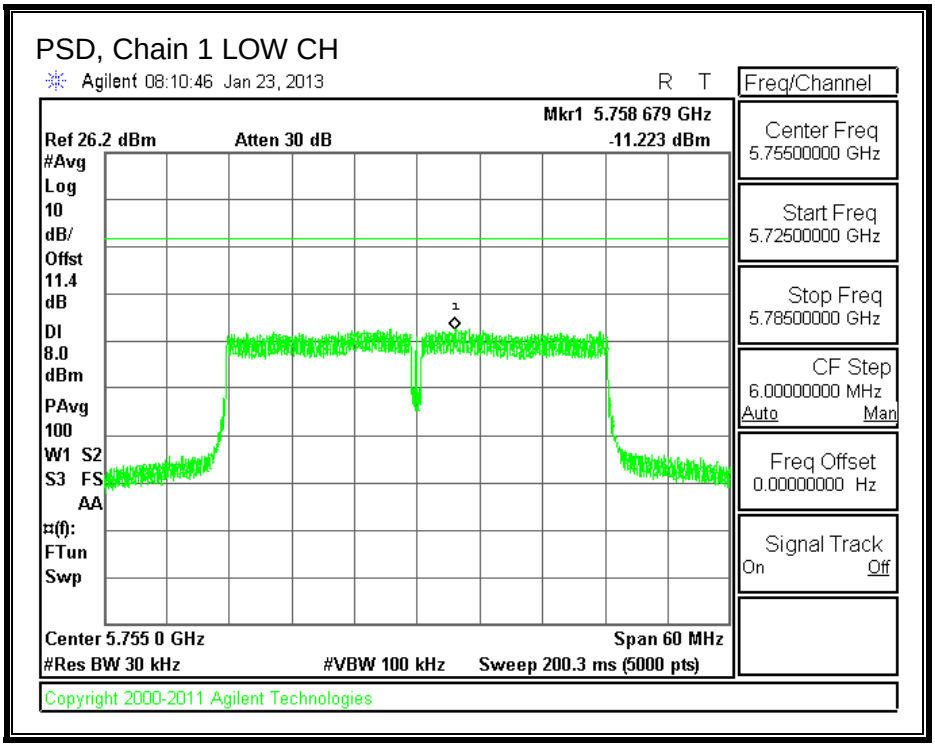
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	BW Corr (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-8.218	-11.223	-15.2	-21.66	8.0	-29.7
High	5795	Covered by 802.11n HT40 3TX Mode testing					

PSD, Chain 0



PSD, Chain 1



8.26.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

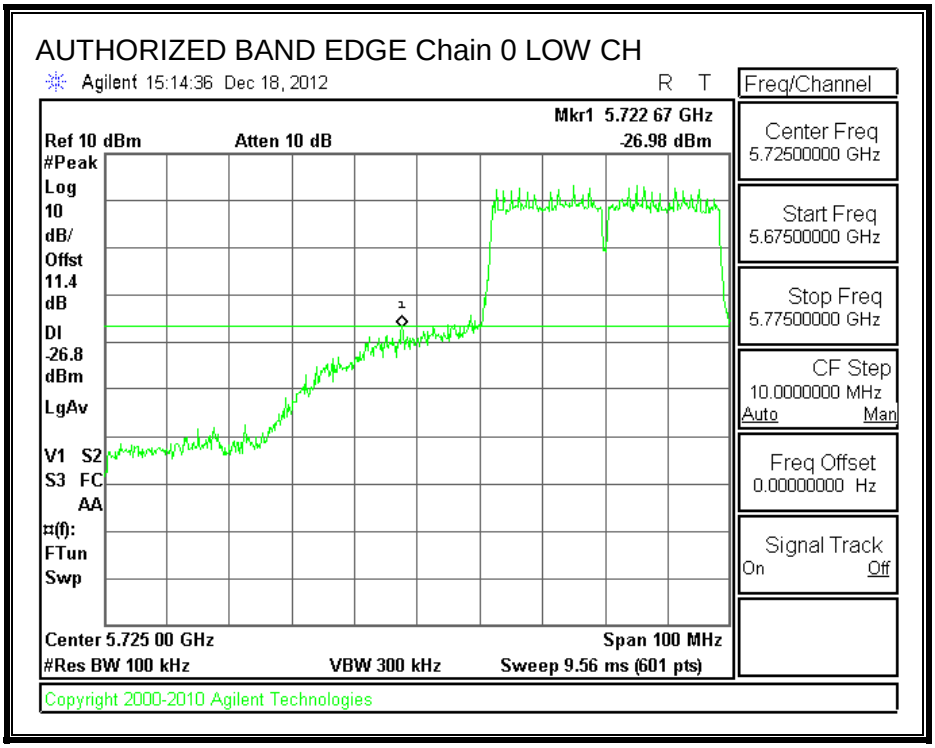
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

TEST PROCEDURE

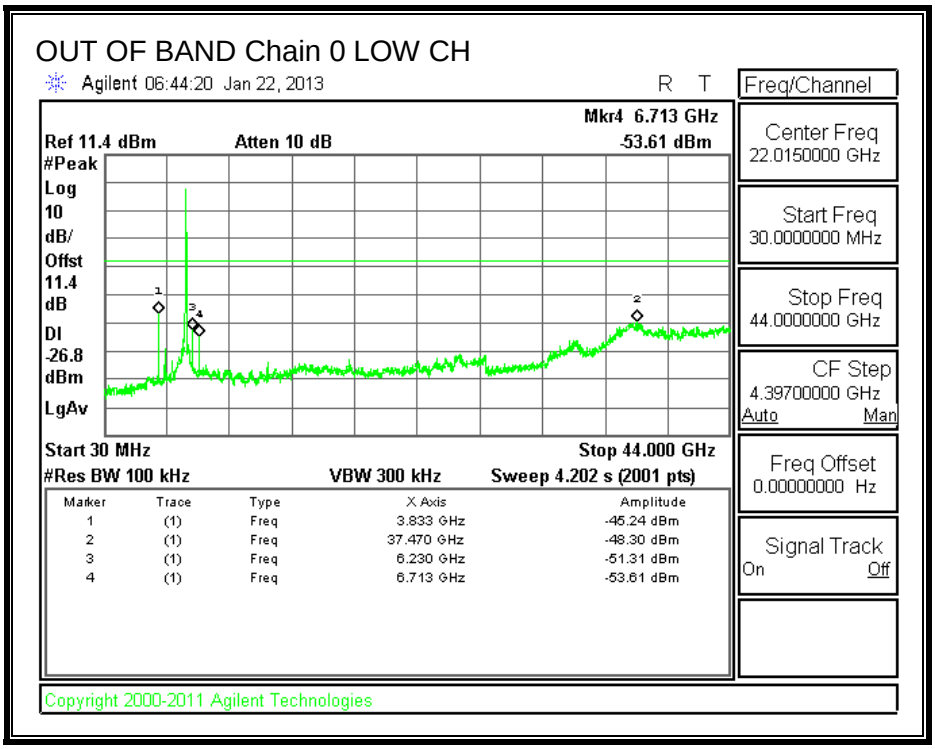
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

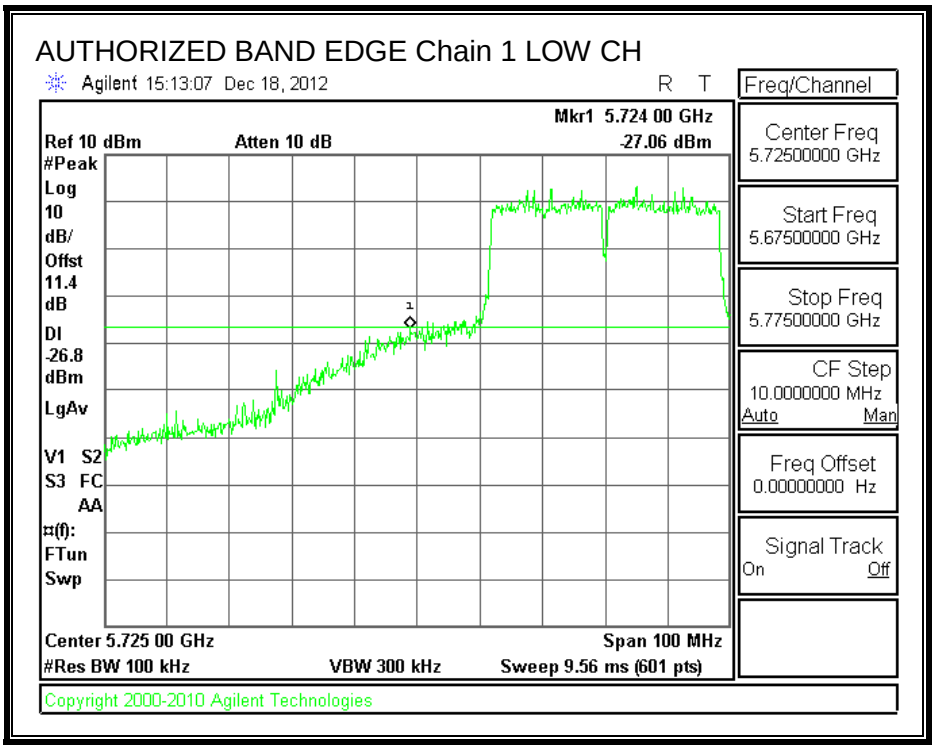
LOW CHANNEL BANDEDGE, Chain 0



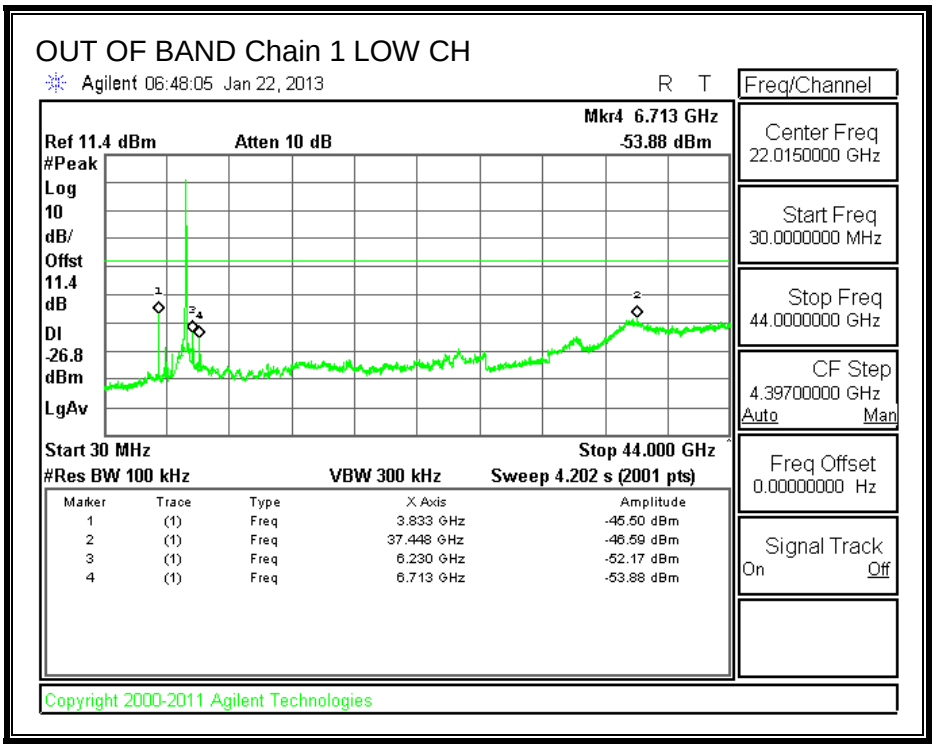
OUT-OF-BAND EMISSIONS, Chain 0



LOW CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 1



8.27. 802.11n HT40 BF 2TX MODE IN THE 5.8 GHz BAND

Covered by testing 802.11ac VHT40 BF 3TX at the same power level.

8.28. 802.11n HT40 CDD MCS0 3TX MODE IN THE 5.8 GHz BAND

8.28.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

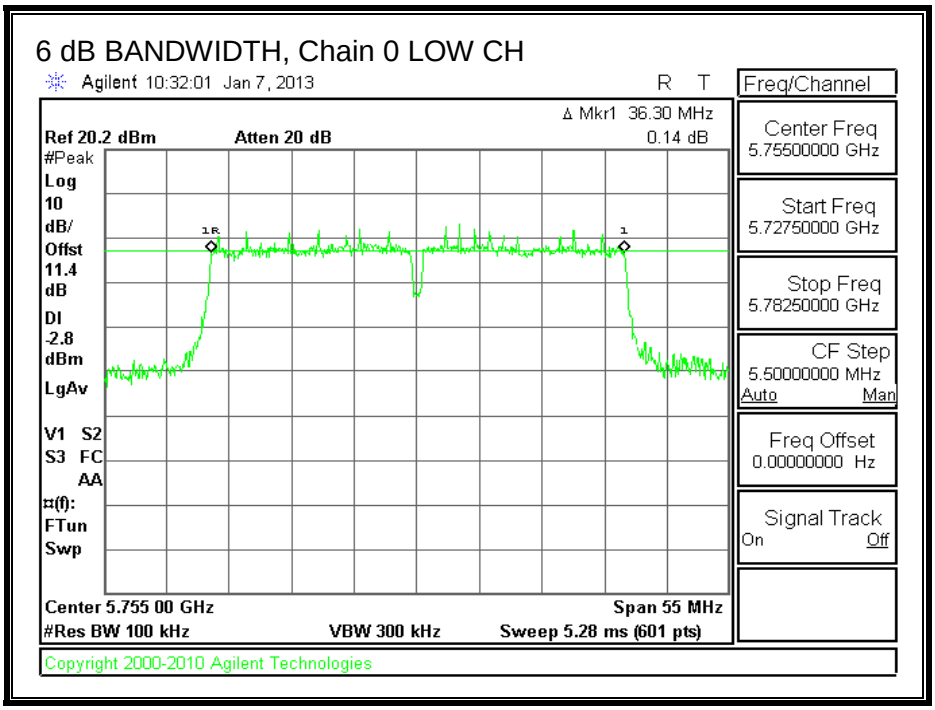
IC RSS-210 A8.2 (a)

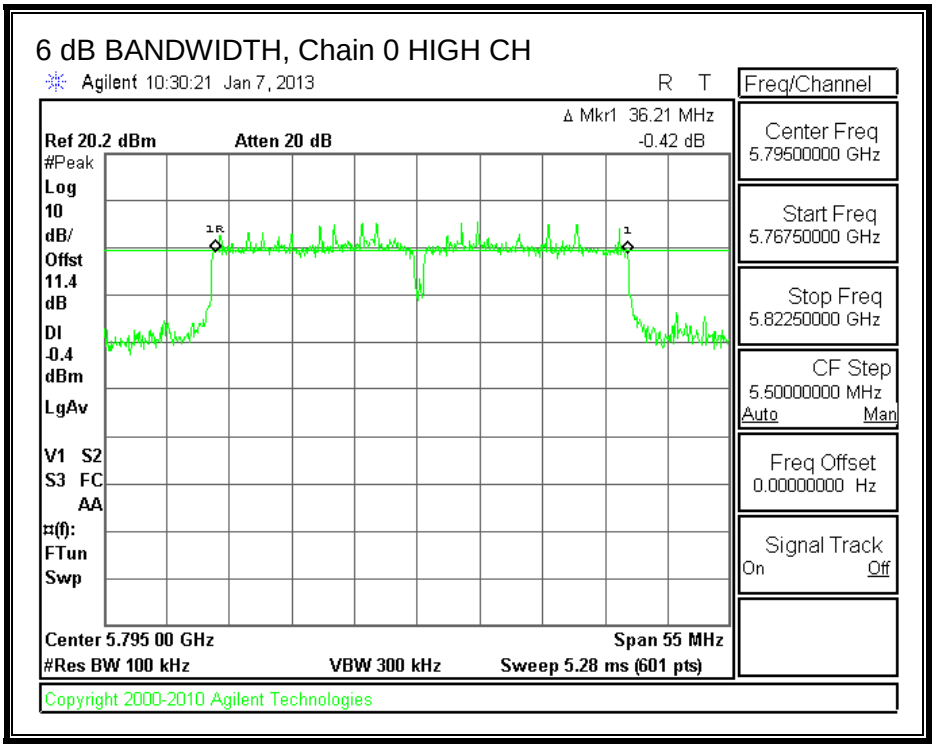
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

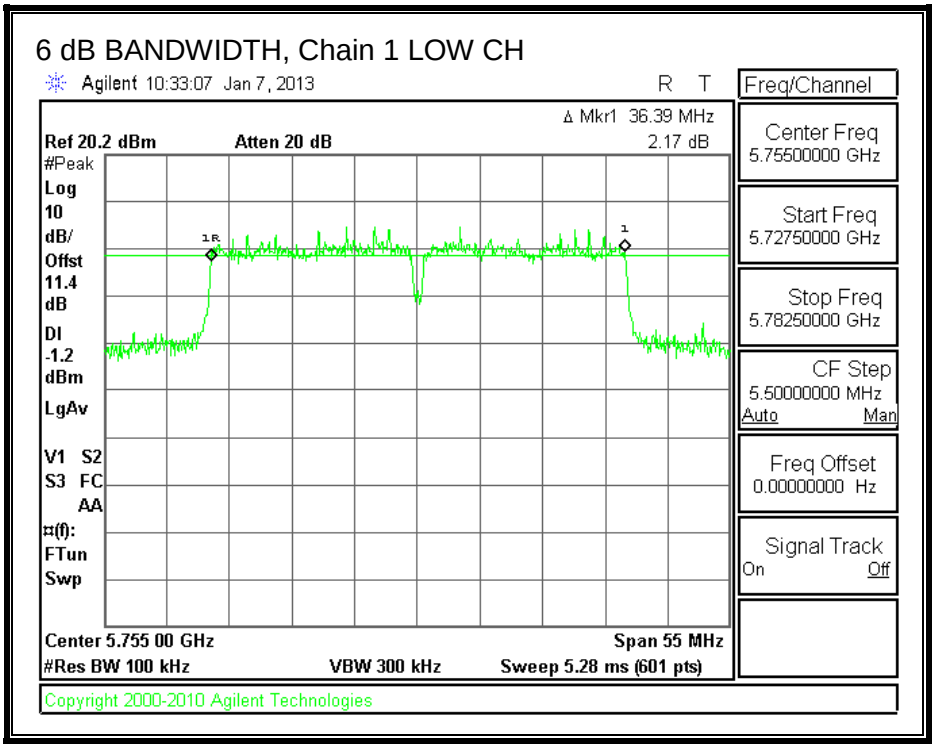
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	5755	36.30	36.39	36.39	0.5
High	5795	36.21	36.39	36.48	0.5

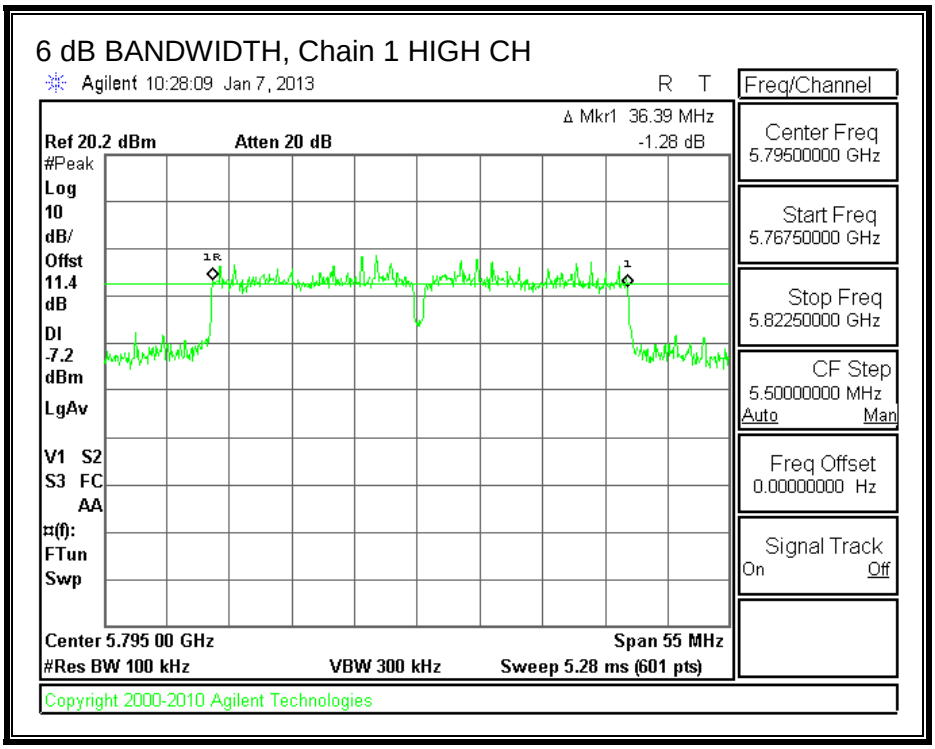
6 dB BANDWIDTH, Chain 0



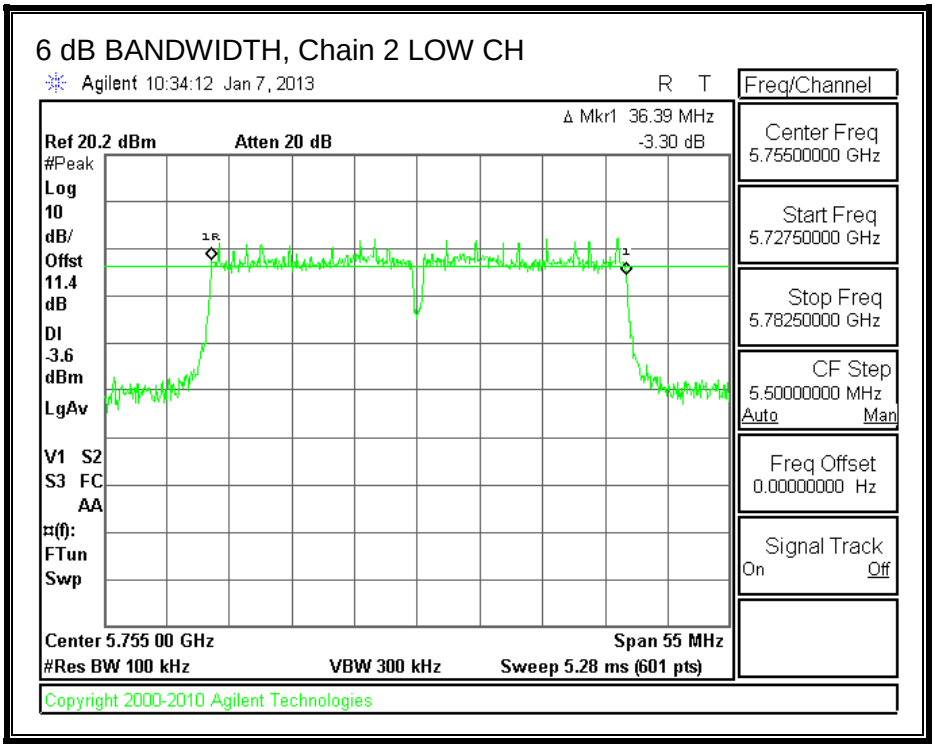


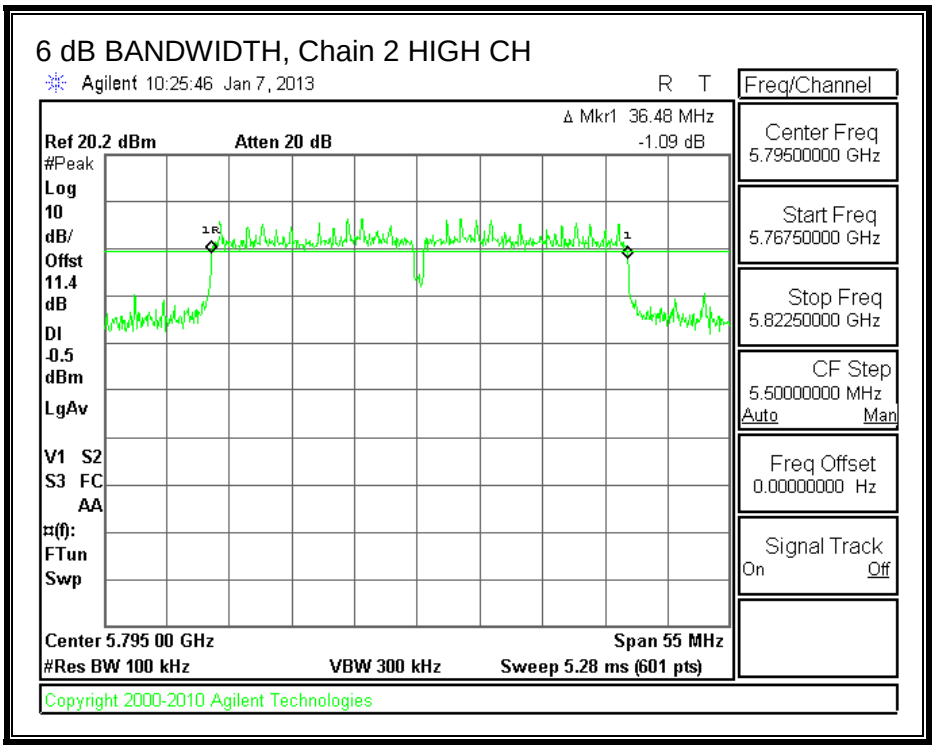
6 dB BANDWIDTH, Chain 1





6 dB BANDWIDTH, Chain 2





8.28.2. 99% BANDWIDTH

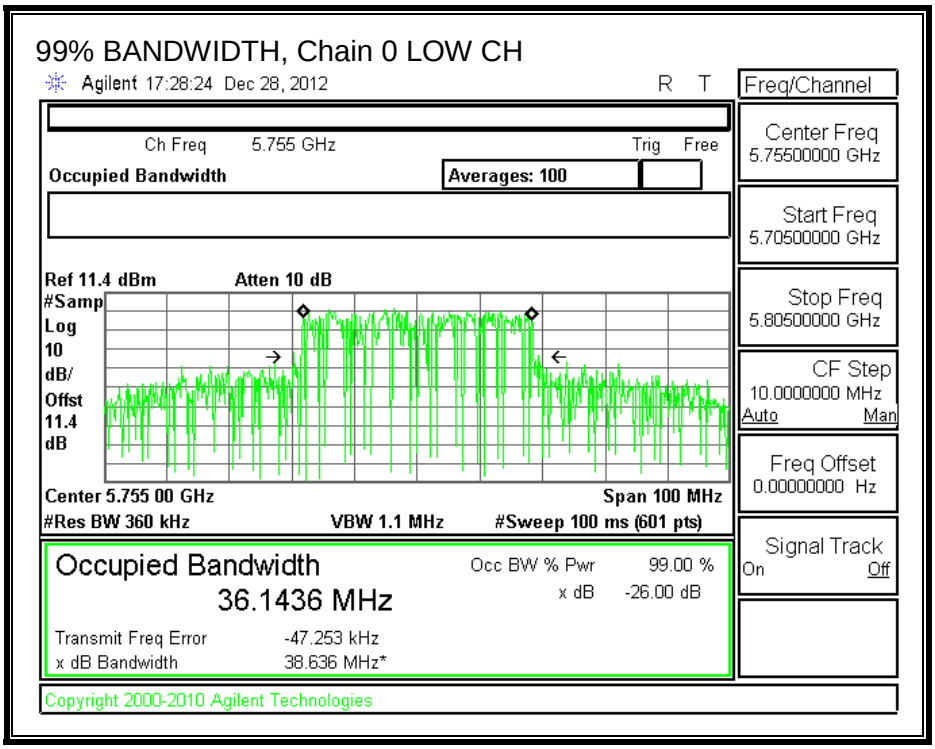
LIMITS

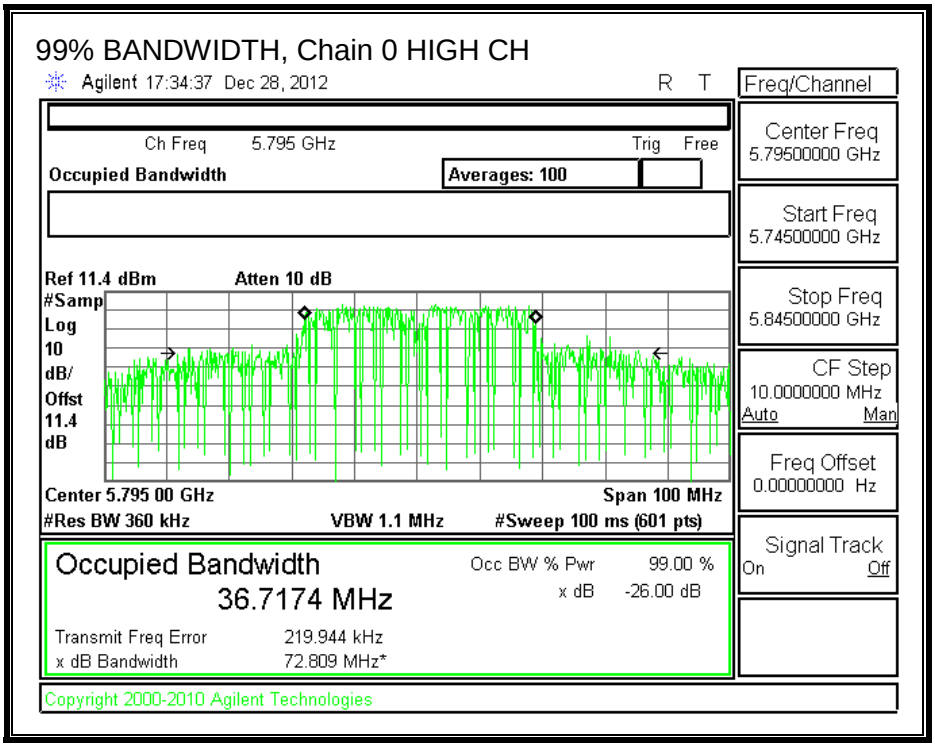
None; for reporting purposes only.

RESULTS

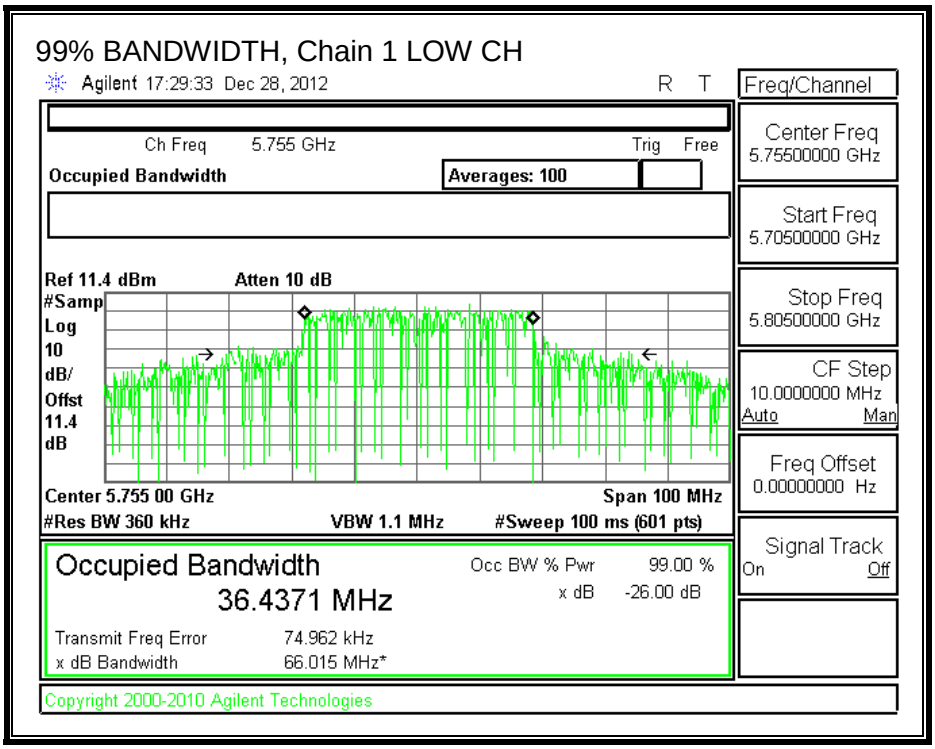
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5755	36.1436	36.4371	36.1702
High	5795	36.7174	45.3234	45.1906

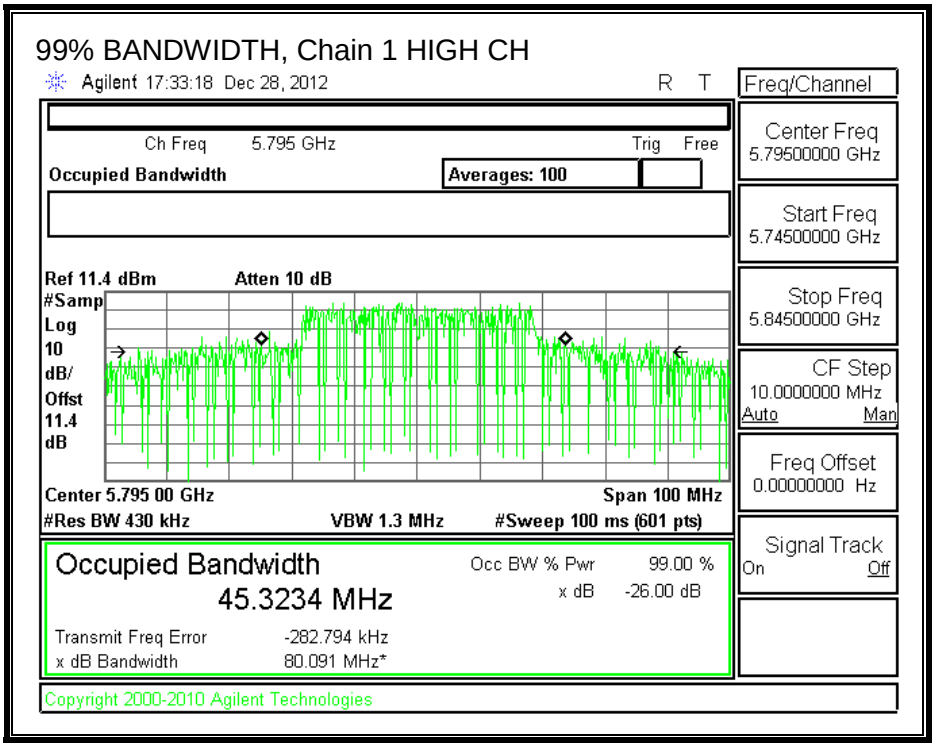
99% BANDWIDTH, Chain 0



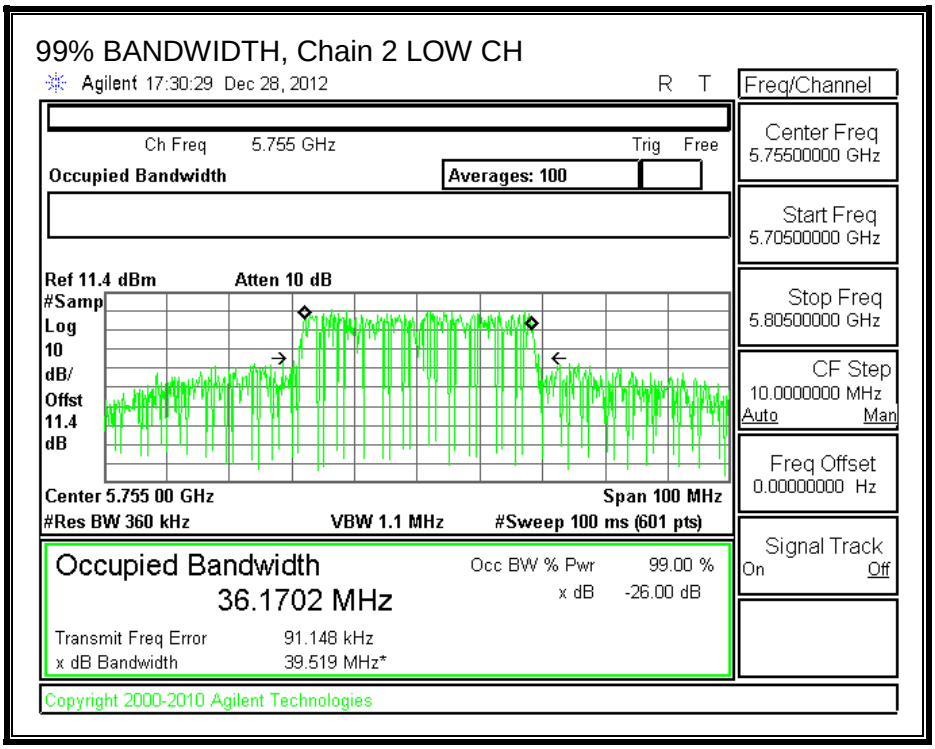


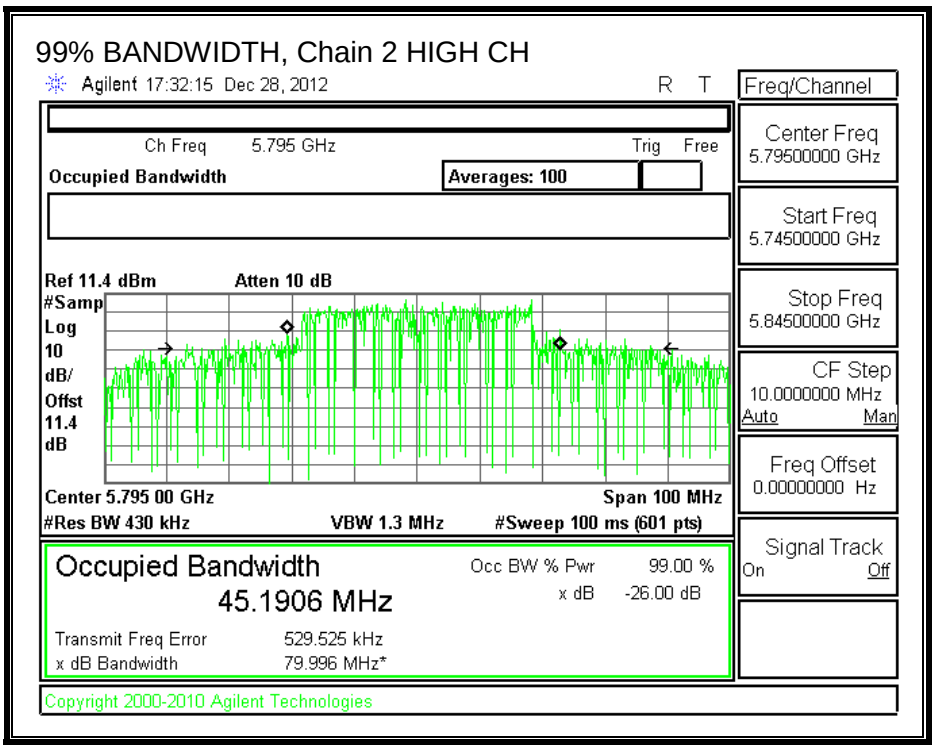
99% BANDWIDTH, Chain 1





99% BANDWIDTH, Chain 2





8.28.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated for output power consideration, and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.66	5.93	6.04	5.13

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5755	5.13	30.00	30	36	30.00
High	5795	5.13	30.00	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)
Low	5755	16.82	16.88	16.42	21.48	30.00	-8.52
High	5795	20.35	20.87	20.44	25.33	30.00	-4.67

8.28.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

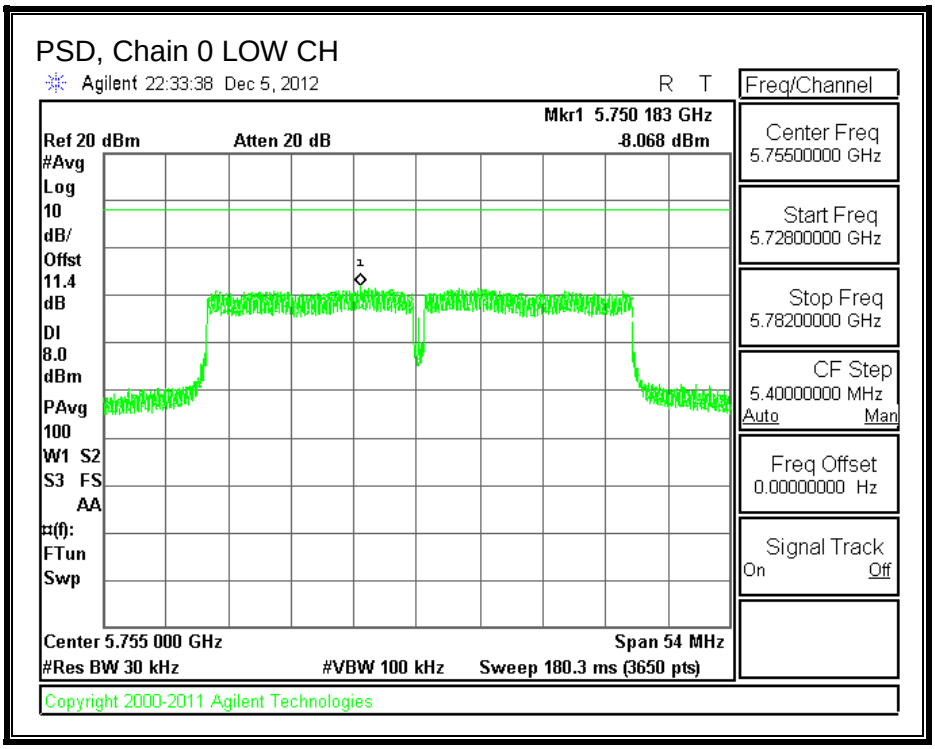
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

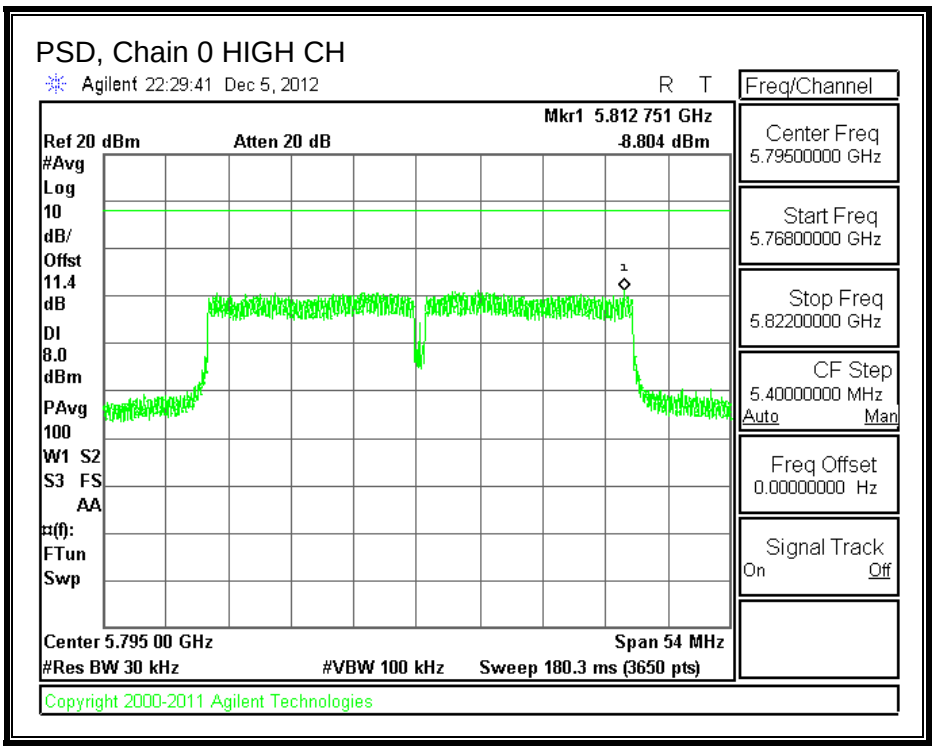
RESULTS

PSD Results

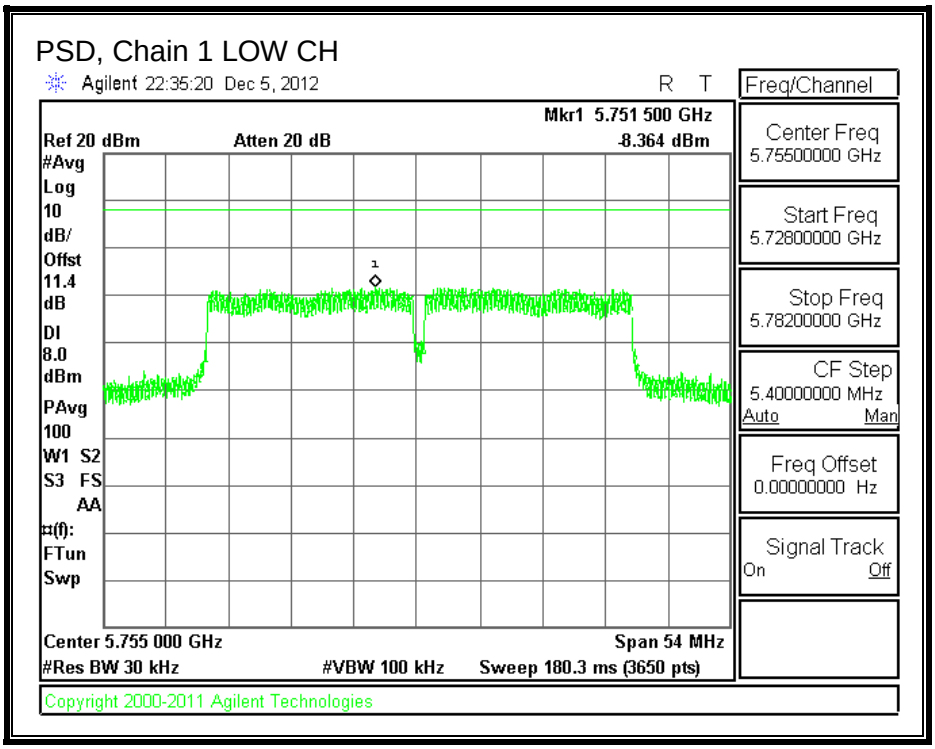
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	DCCF (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-8.068	-8.364	-7.697	0.43	2.459	8.0	-5.541
High	5795	-8.804	-8.474	-7.781	0.43	2.382	8.0	-5.618

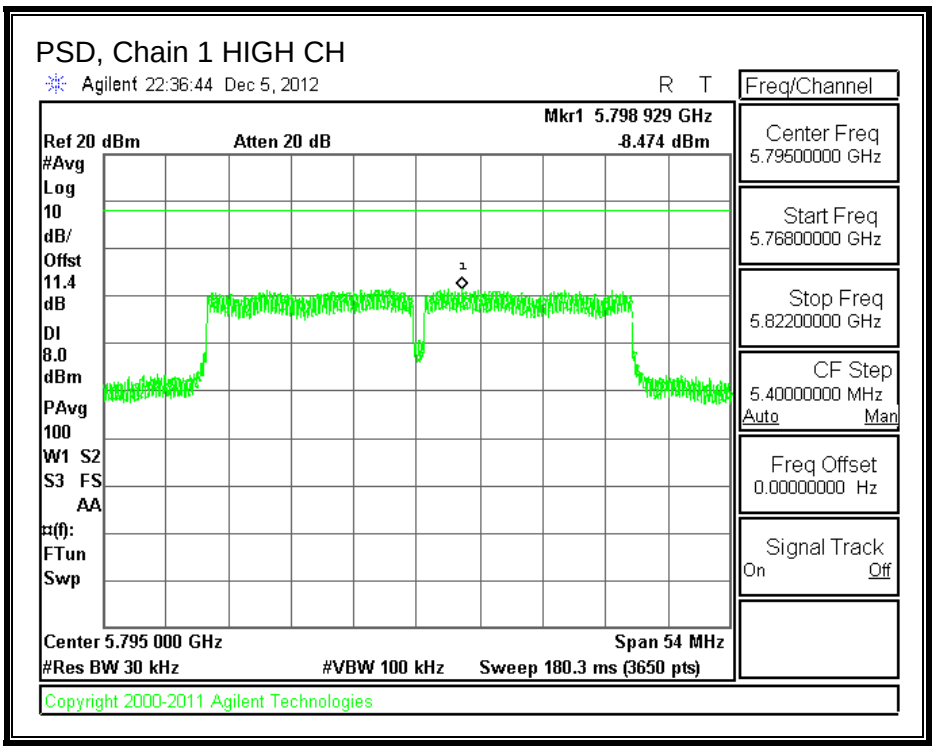
PSD, Chain 0





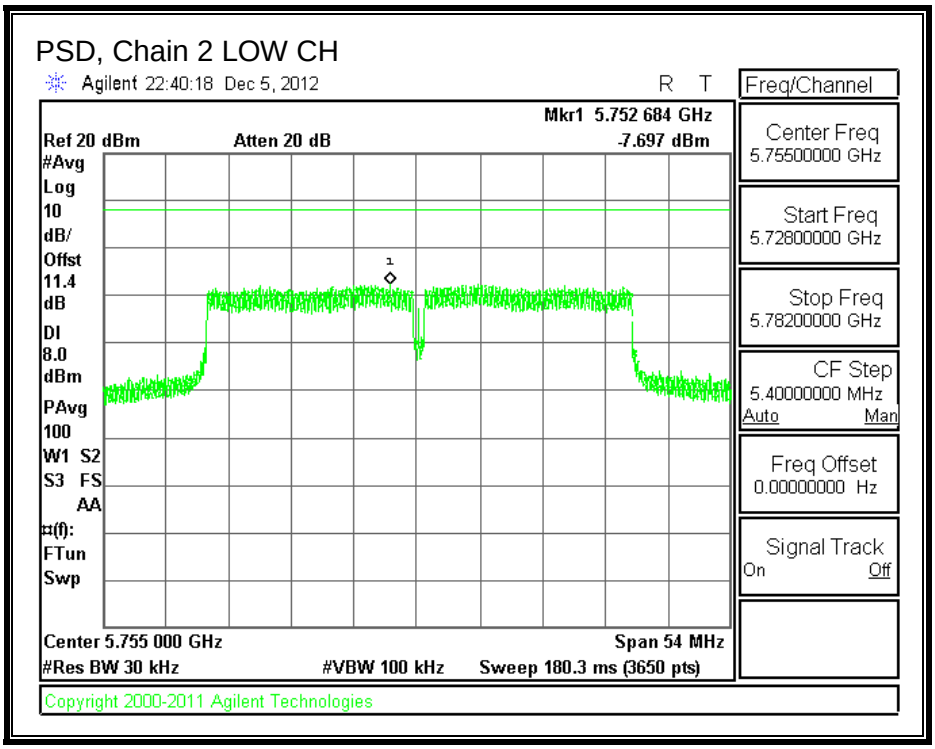
PSD, Chain 1



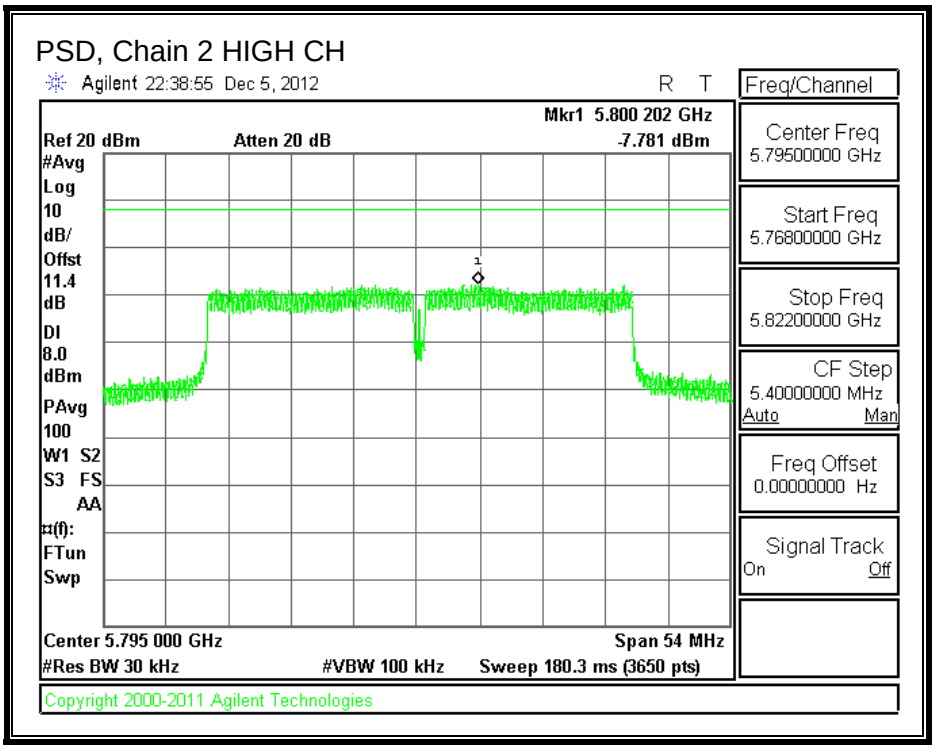


PSD, Chain 2

PSD, Chain 2 LOW CH



PSD, Chain 2 HIGH CH



8.28.5. OUT-OF-BAND EMISSIONS

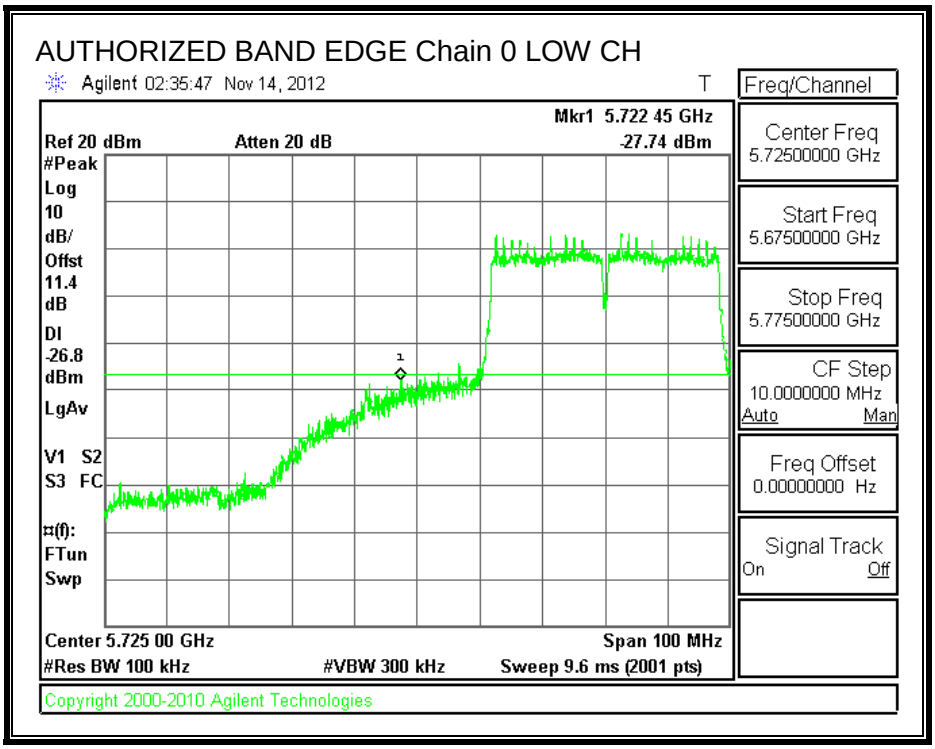
LIMITS

FCC §15.247 (d)

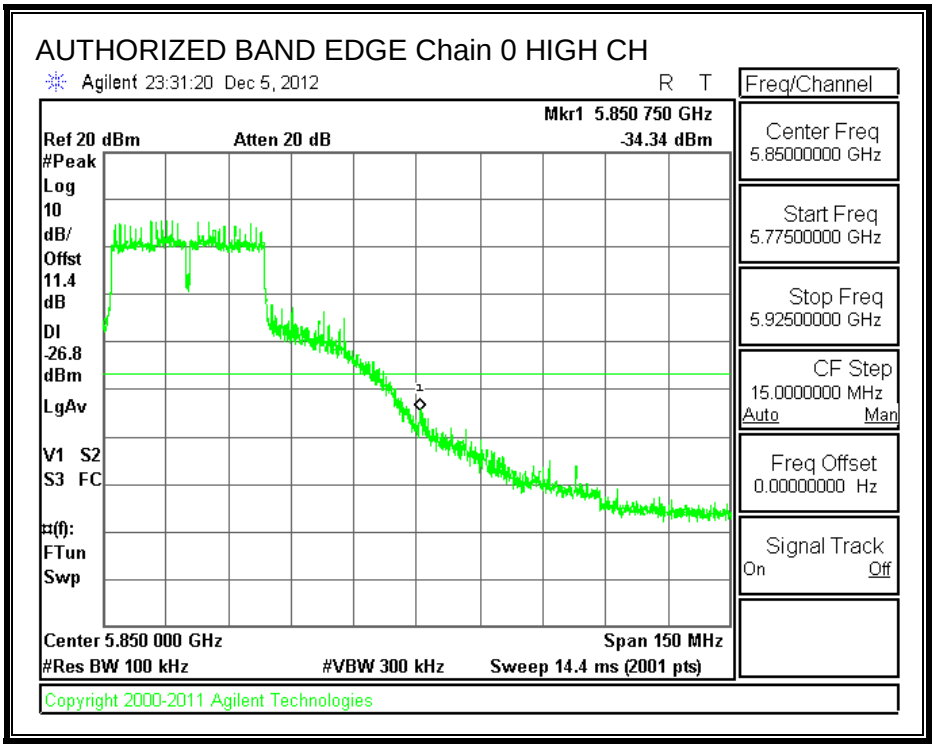
IC RSS-210 A8.5

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.

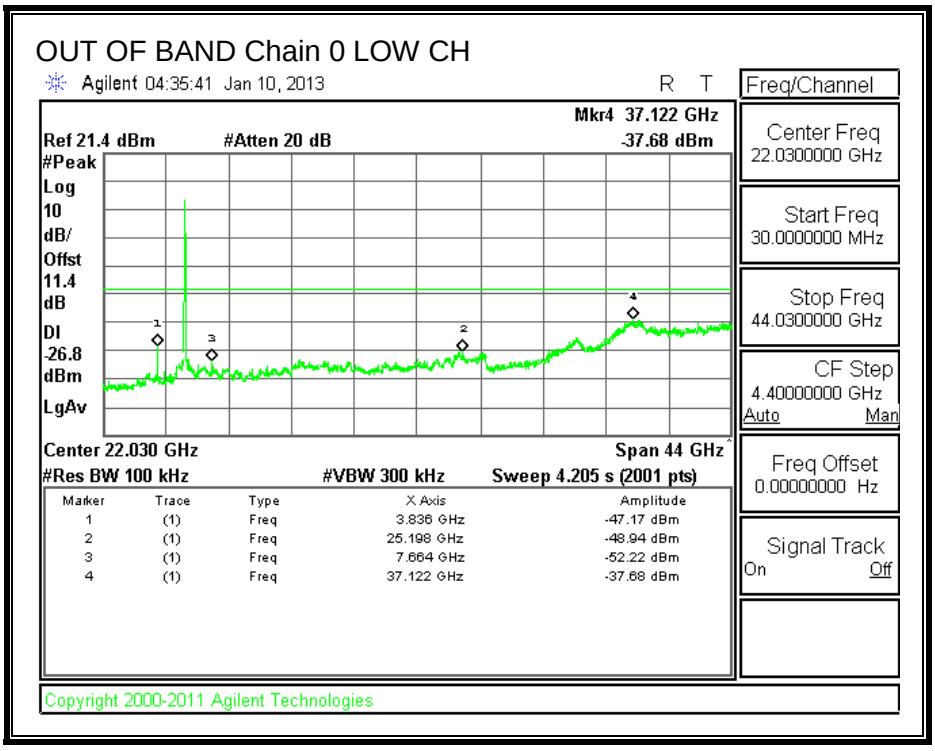
LOW CHANNEL BANDEDGE, Chain 0

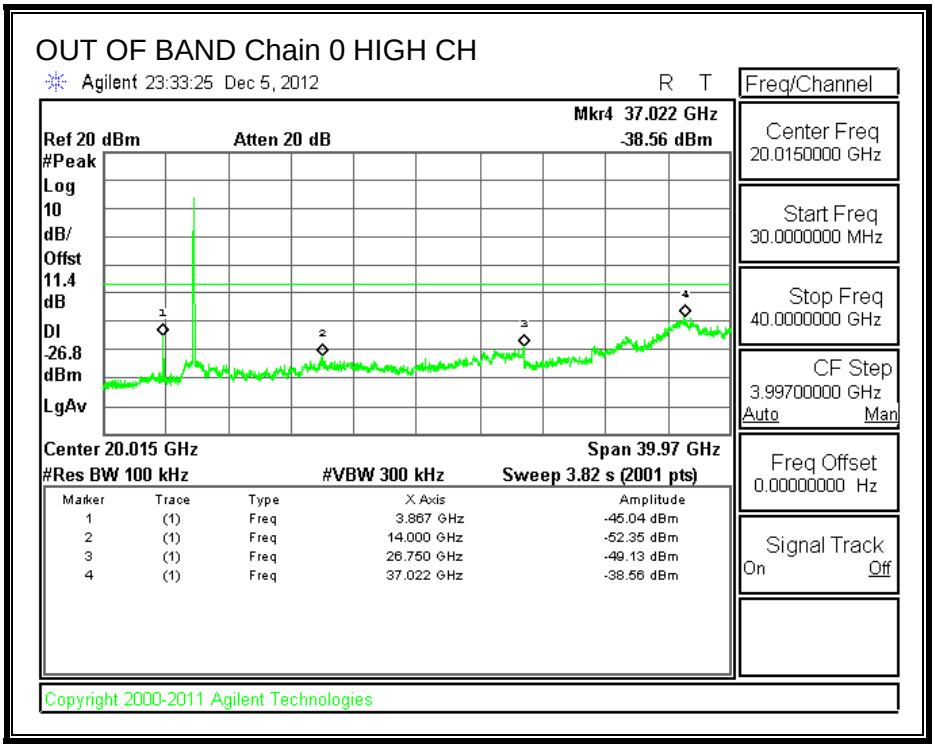


HIGH CHANNEL BANDEDGE, Chain 0

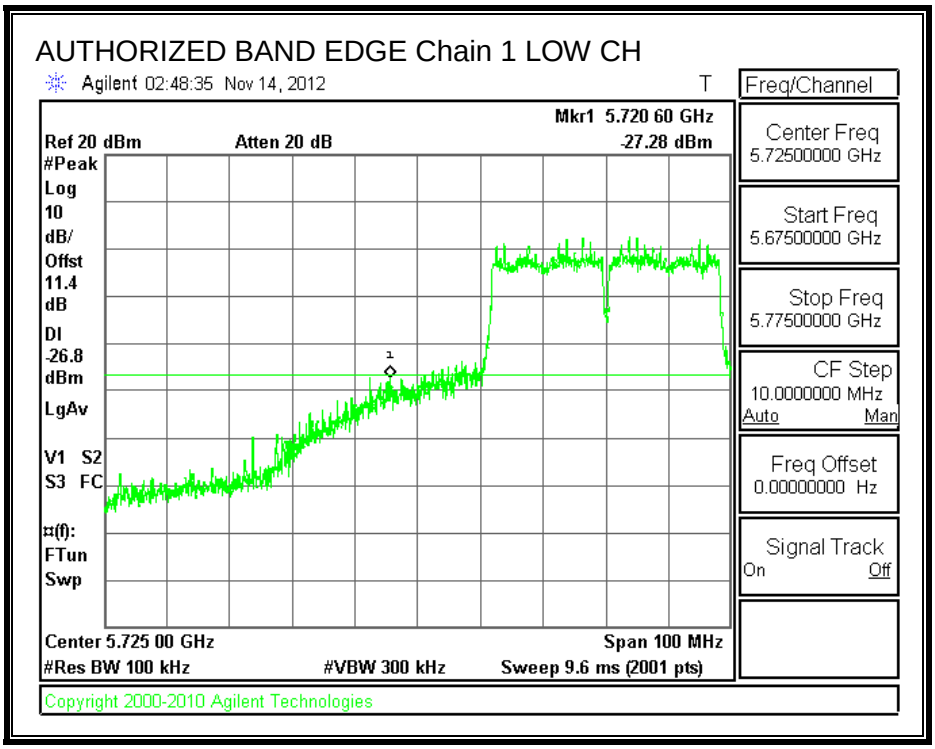


OUT-OF-BAND EMISSIONS, Chain 0

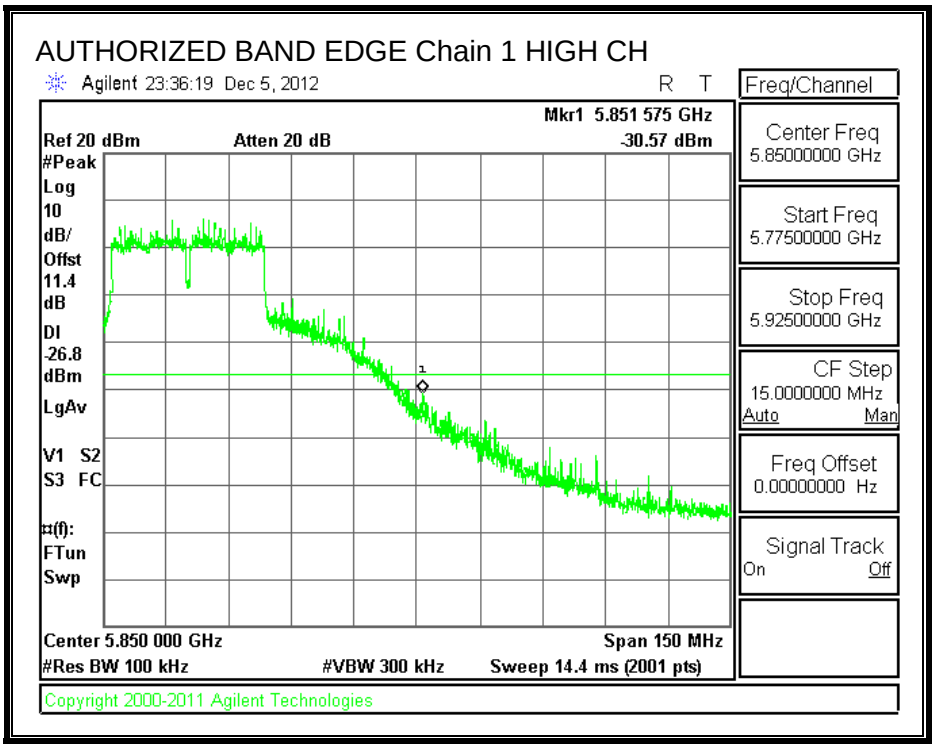




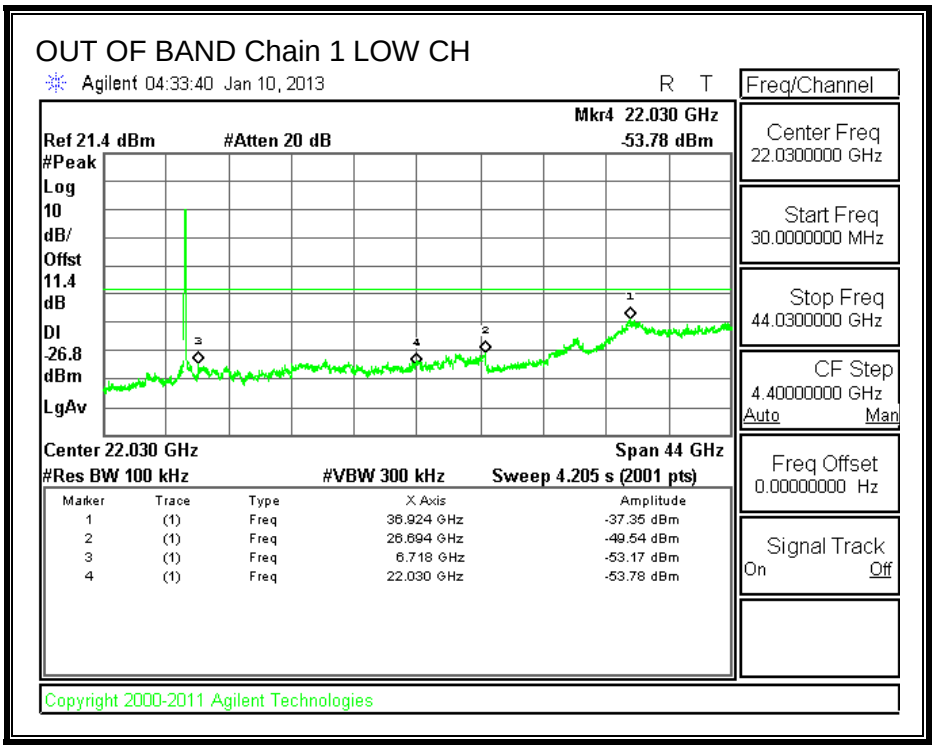
LOW CHANNEL BANDEDGE, Chain 1

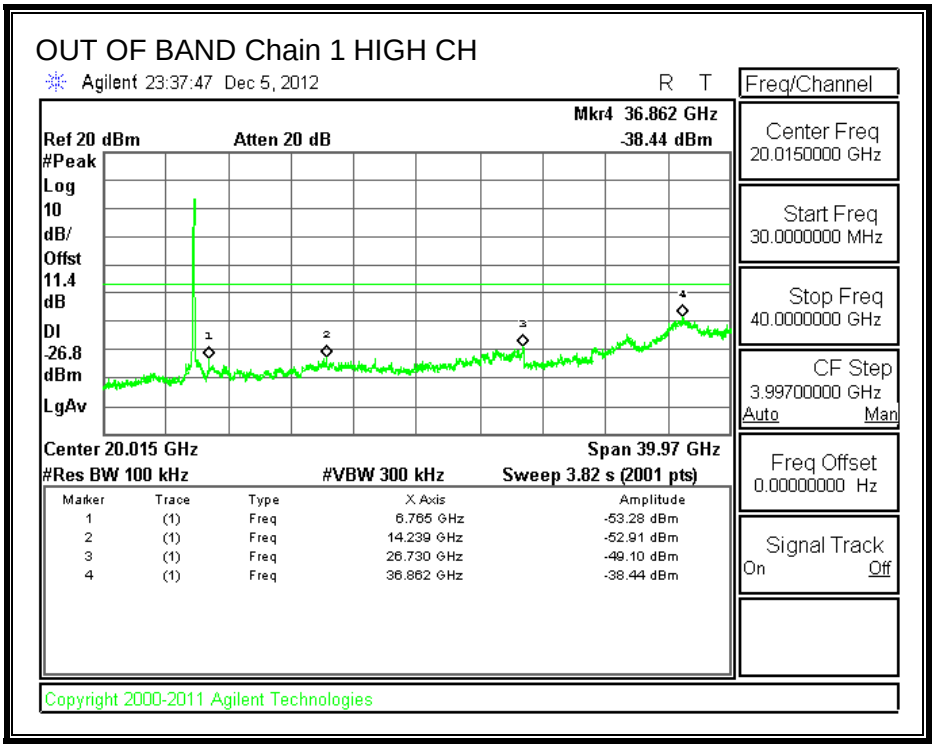


HIGH CHANNEL BANDEDGE, Chain 1

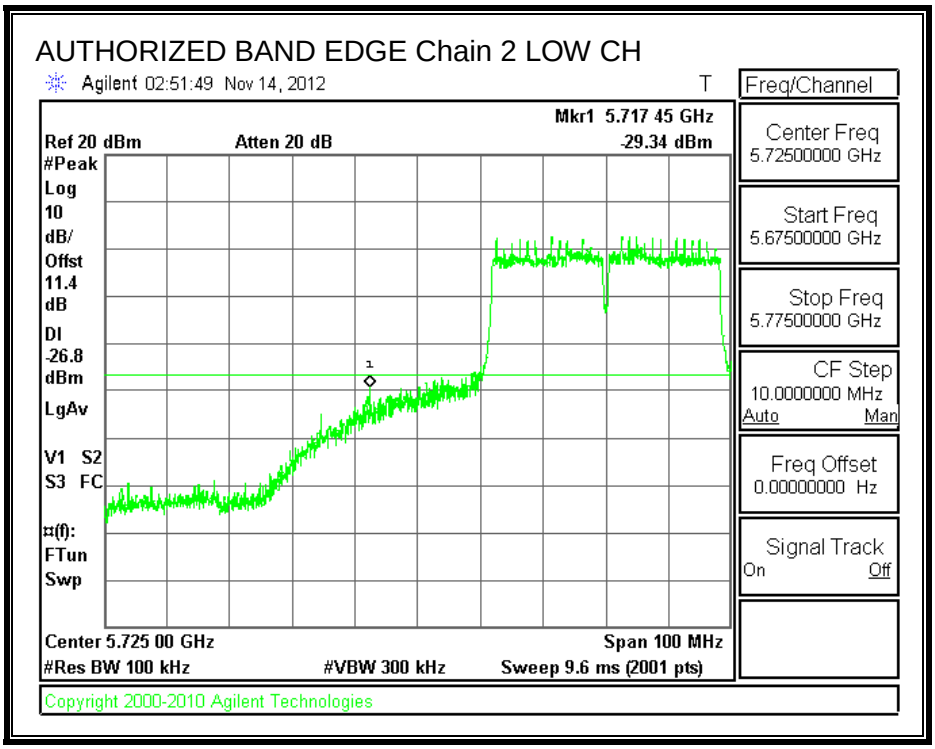


OUT-OF-BAND EMISSIONS, Chain 1

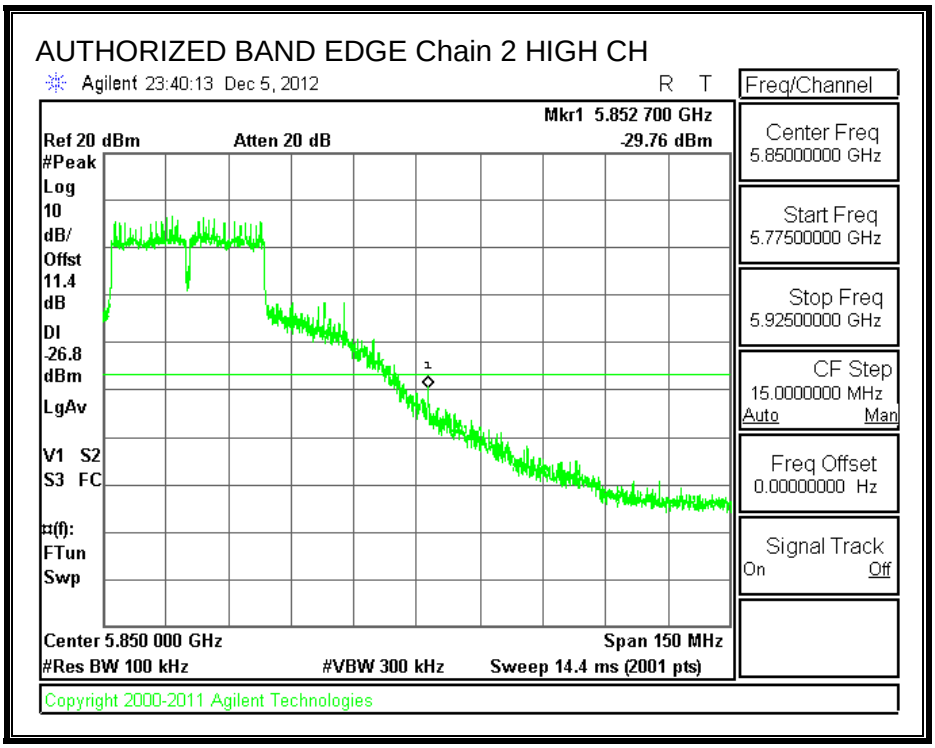




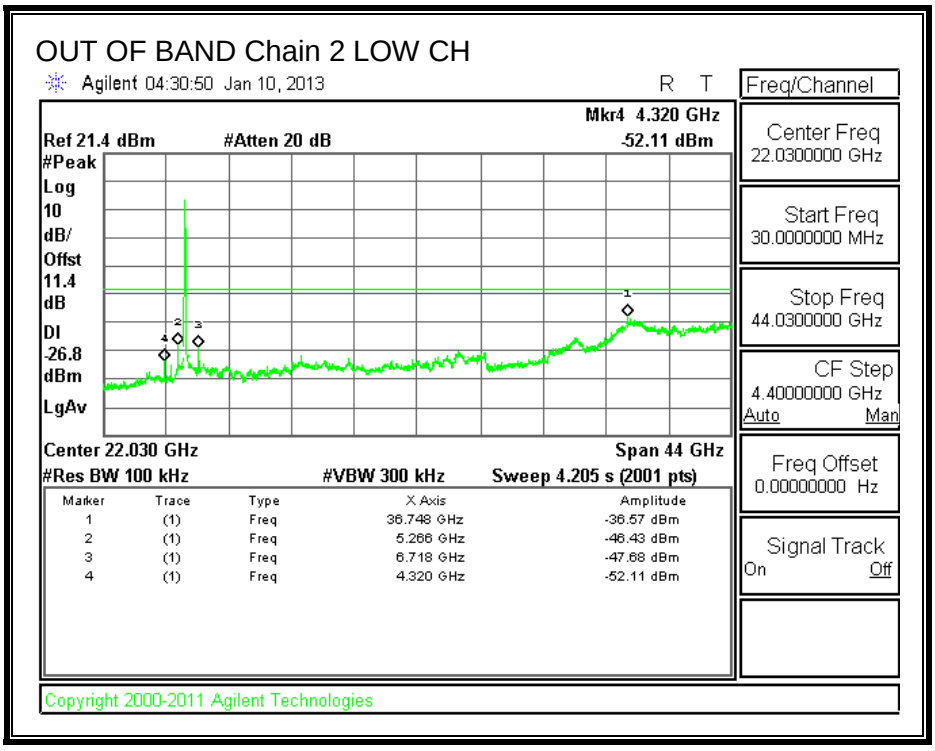
LOW CHANNEL BANDEDGE, Chain 2

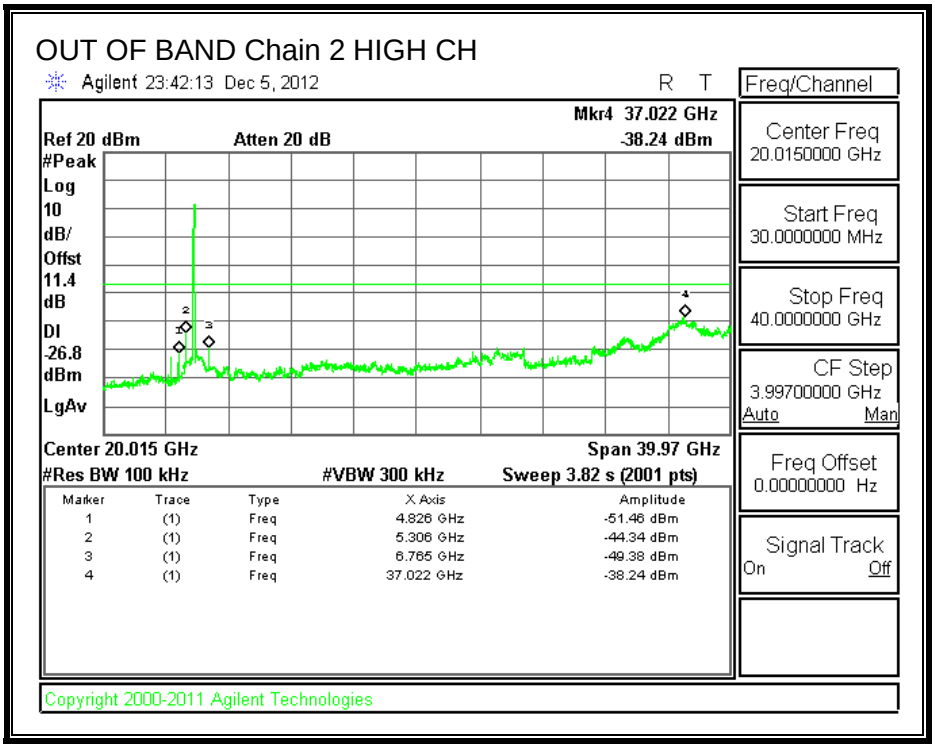


HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2





8.29. 802.11ac VHT40 BF 3TX MODE IN THE 5.8 GHz BAND

This mode has the same antenna port test results as 802.11n HT40 CDD 3TX, except for output power, as shown below.

8.29.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated for output power consideration, and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.66	5.93	6.04	9.78

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5755	9.78	26.22	30	36	26.22
High	5795	9.78	26.22	30	36	26.22

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)
Low	5755	16.82	16.88	16.42	21.48	26.22	-4.74
High	5795	20.35	20.87	20.44	25.33	26.22	-0.89

8.30. 802.11ac VHT80 1TX MODE IN THE 5.8 GHz BAND

Covered by testing HT80 CDD MCS0 3TX at the same power level.

8.31. 802.11ac VHT80 CDD MCS0 2TX MODE IN THE 5.8 GHz BAND

Covered by testing HT80 CDD MCS0 3TX at the same power level.

8.32. 802.11ac VHT80 BF 2TX MODE IN THE 5.8 GHz BAND

Covered by testing 802.11ac VHT40 BF 3TX at the same power level.

8.33. 802.11ac VHT80 CDD 3TX MODE IN THE 5.8 GHz BAND

8.33.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

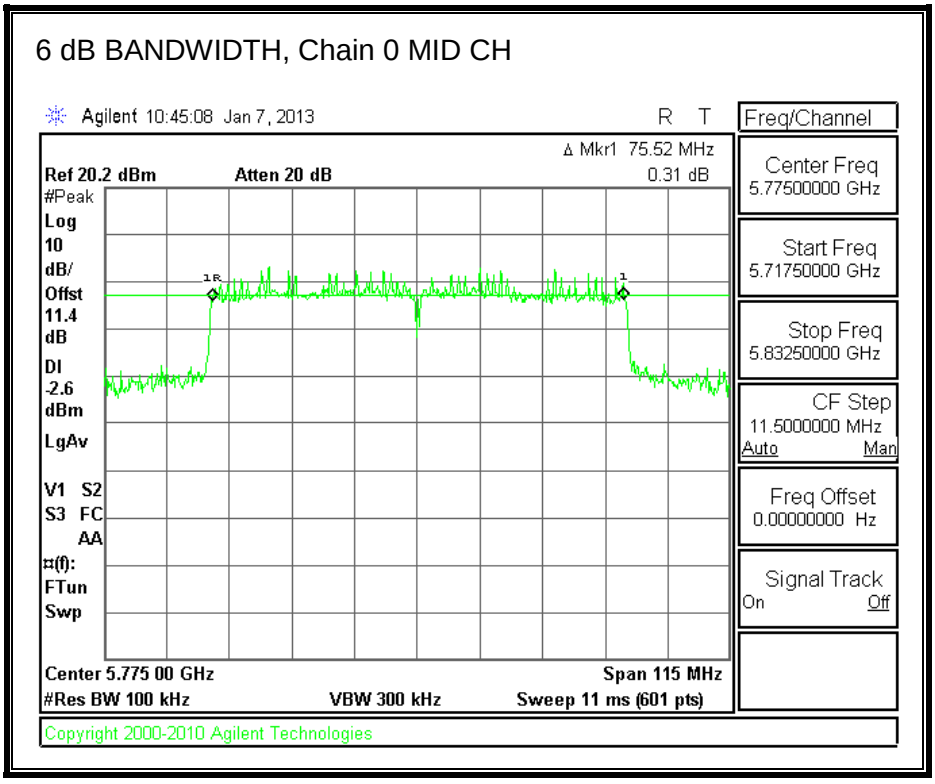
IC RSS-210 A8.2 (a)

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

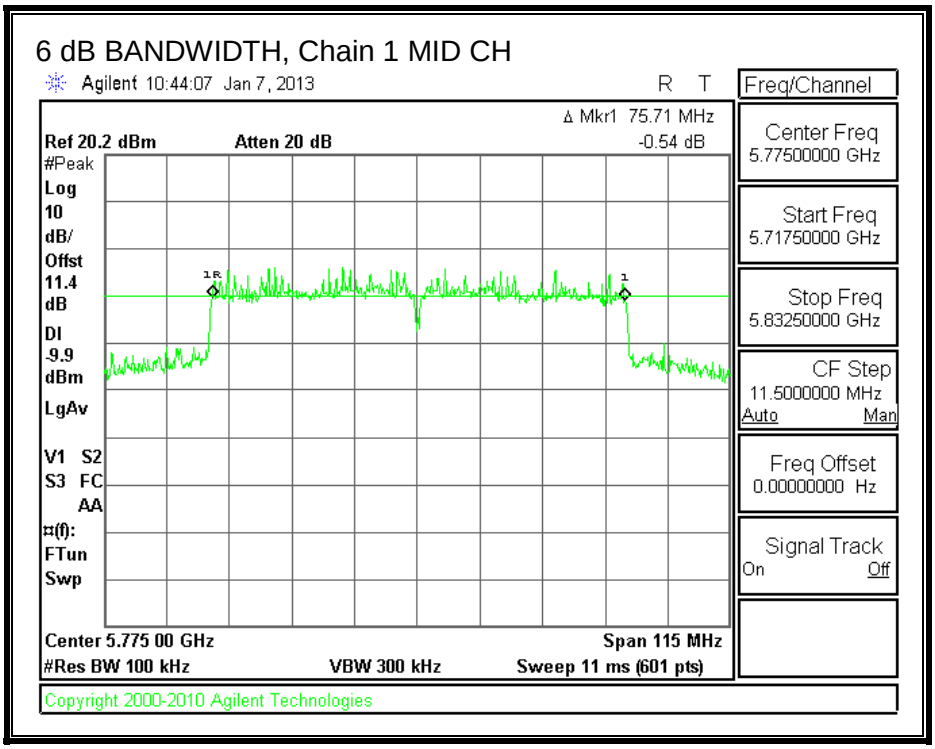
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Mid	5775	75.520	75.710	75.520	0.5

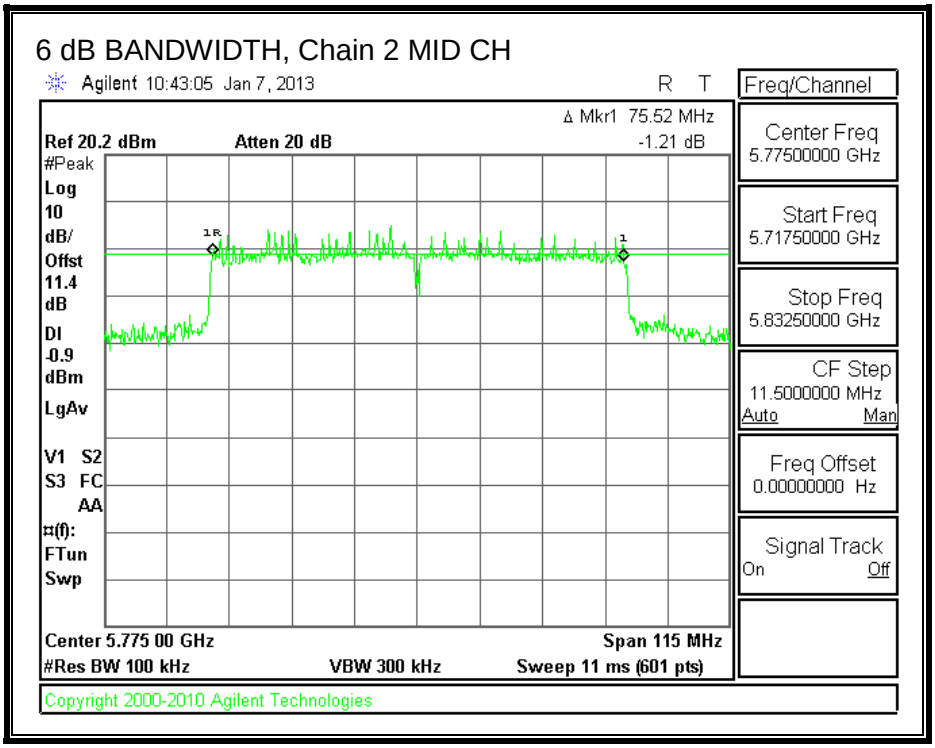
6 dB BANDWIDTH, Chain 0



6 dB BANDWIDTH, Chain 1



6 dB BANDWIDTH, Chain 2



8.33.2. 99% BANDWIDTH

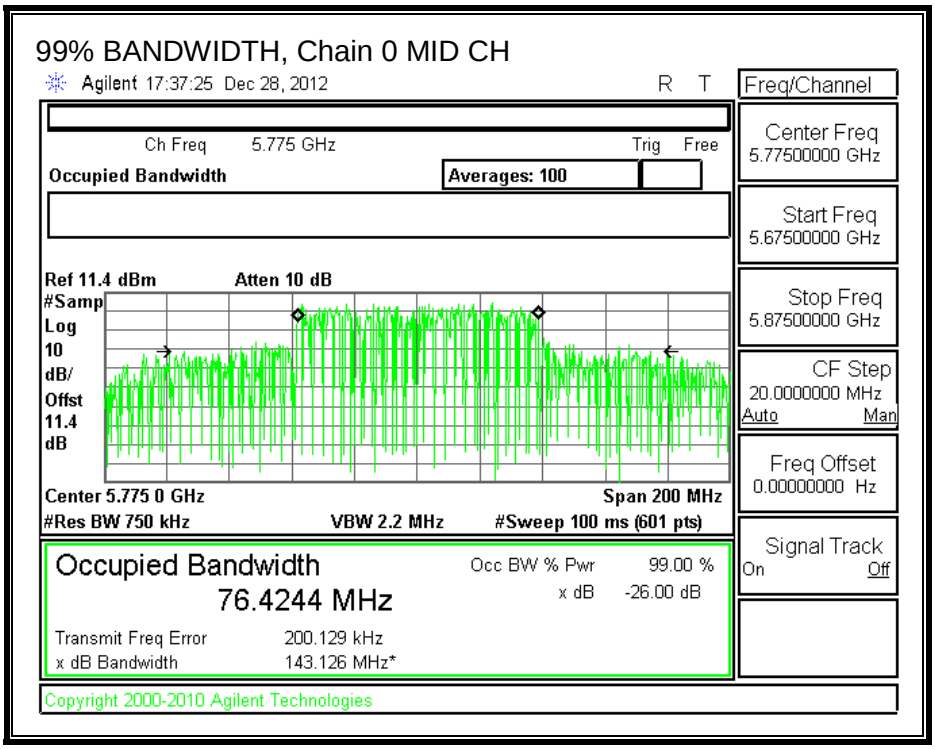
LIMITS

None; for reporting purposes only.

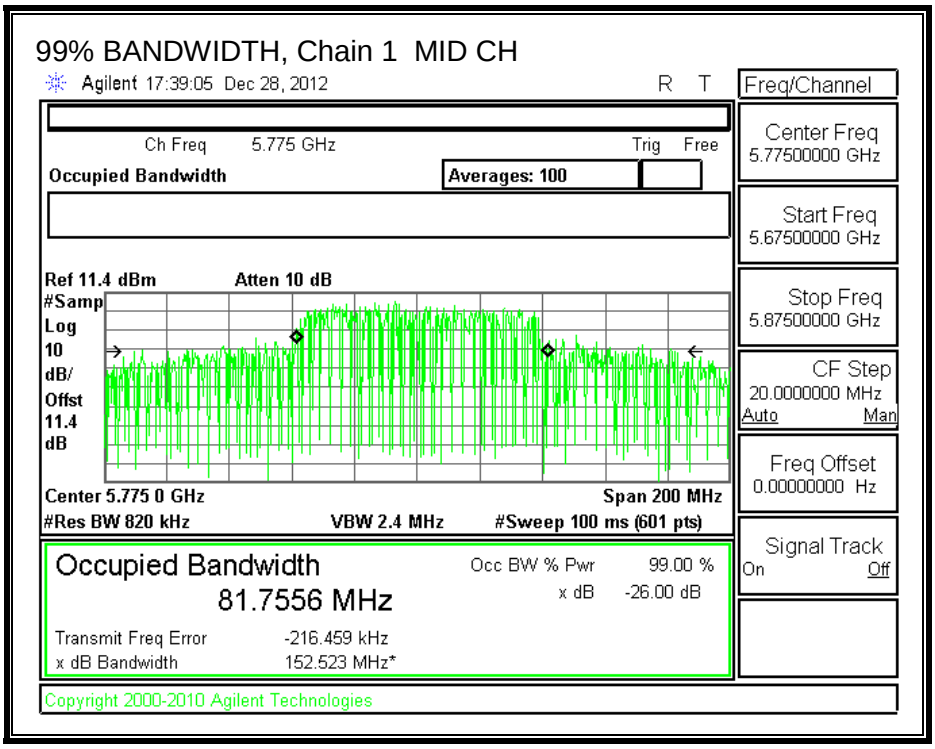
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
MID	5775	77.7455	81.0635	79.5738

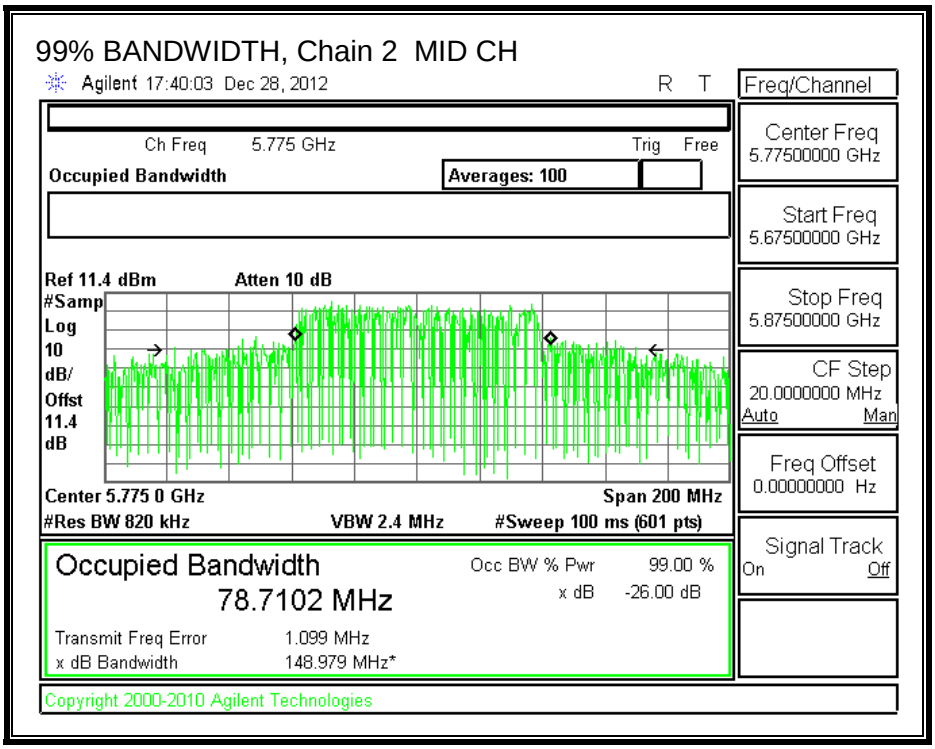
99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



99% BANDWIDTH, Chain 2



8.33.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated for output power consideration and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.66	5.93	6.04	5.13

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Mid	5755	5.13	30.00	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)
Mid	5755	16.34	15.84	15.99	20.83	30.00	-9.17

8.33.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

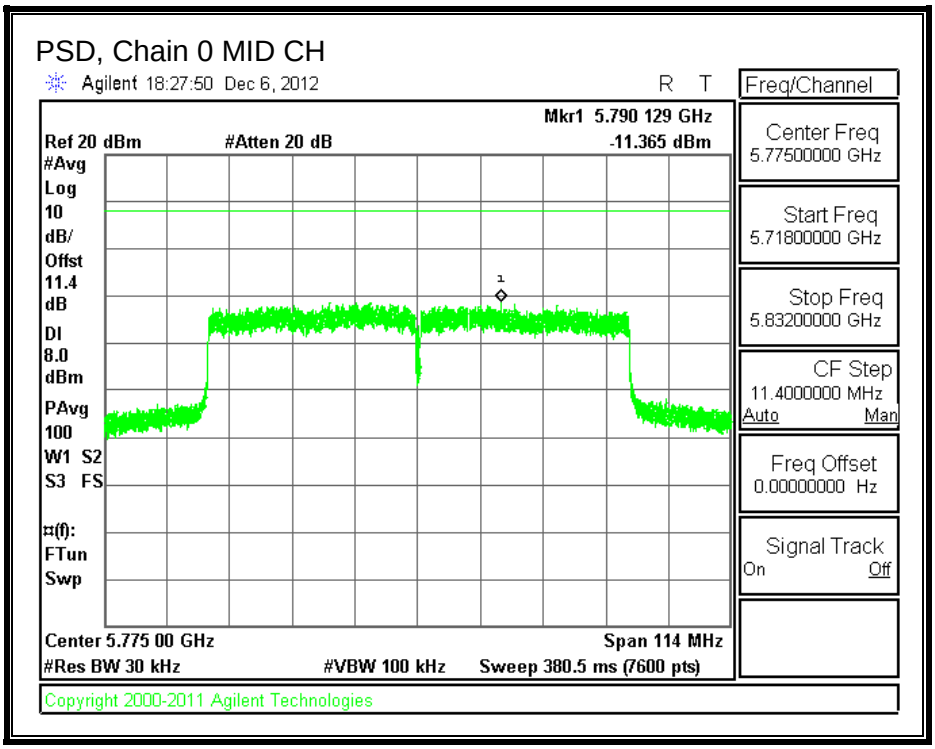
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

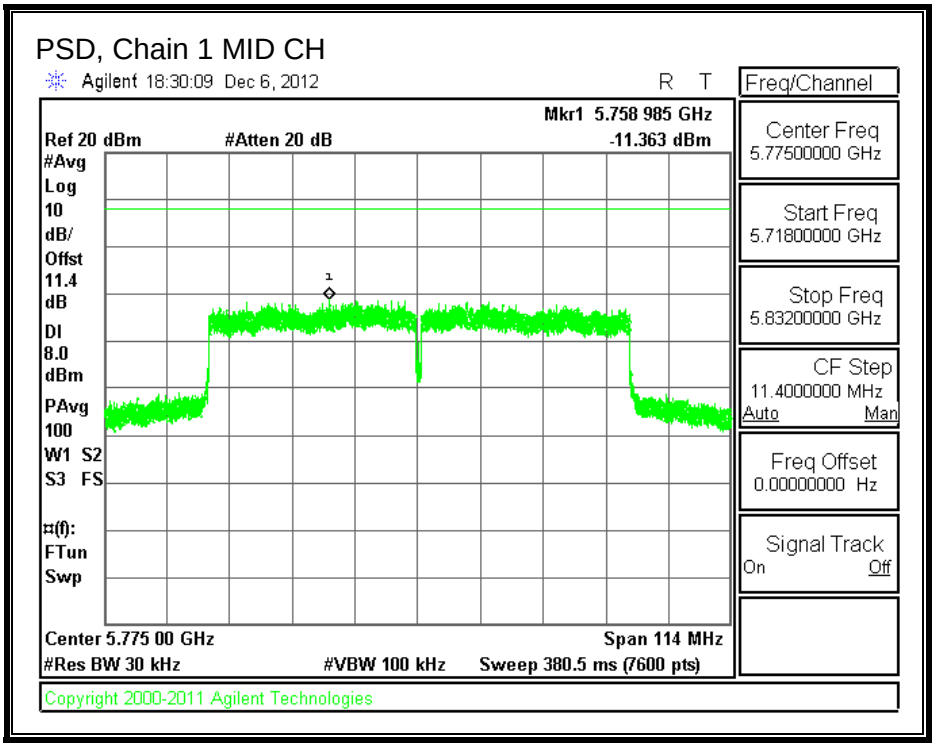
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	DCCF (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Mid	5755	-11.365	-11.363	-10.766	0.82	-5.564	8.0	-13.564

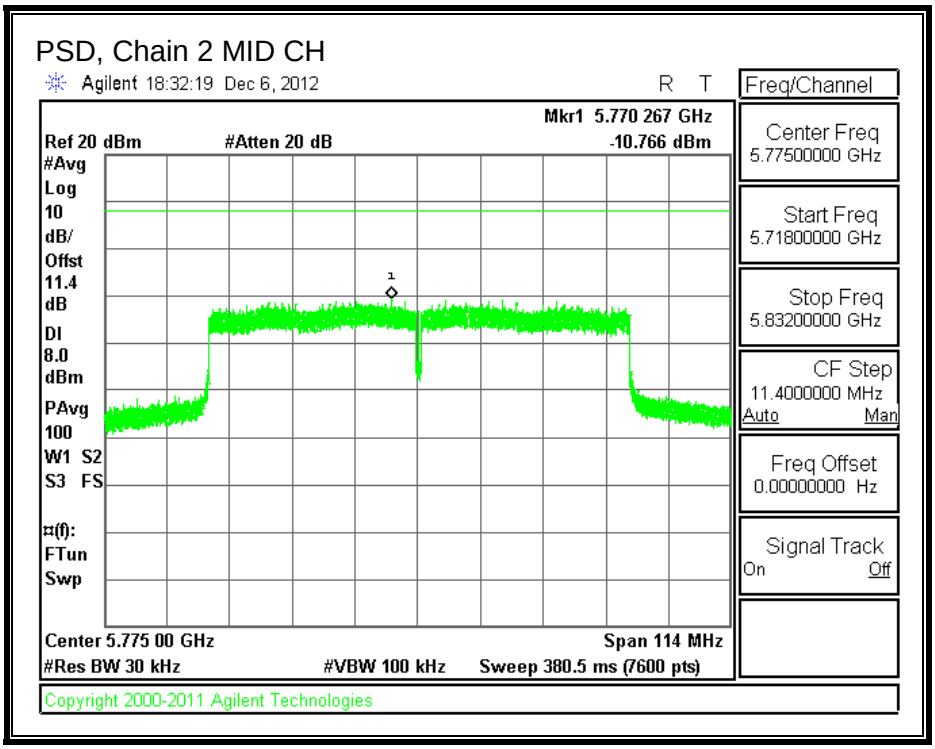
PSD, Chain 0



PSD, Chain 1



PSD, Chain 2



8.33.5. OUT-OF-BAND EMISSIONS

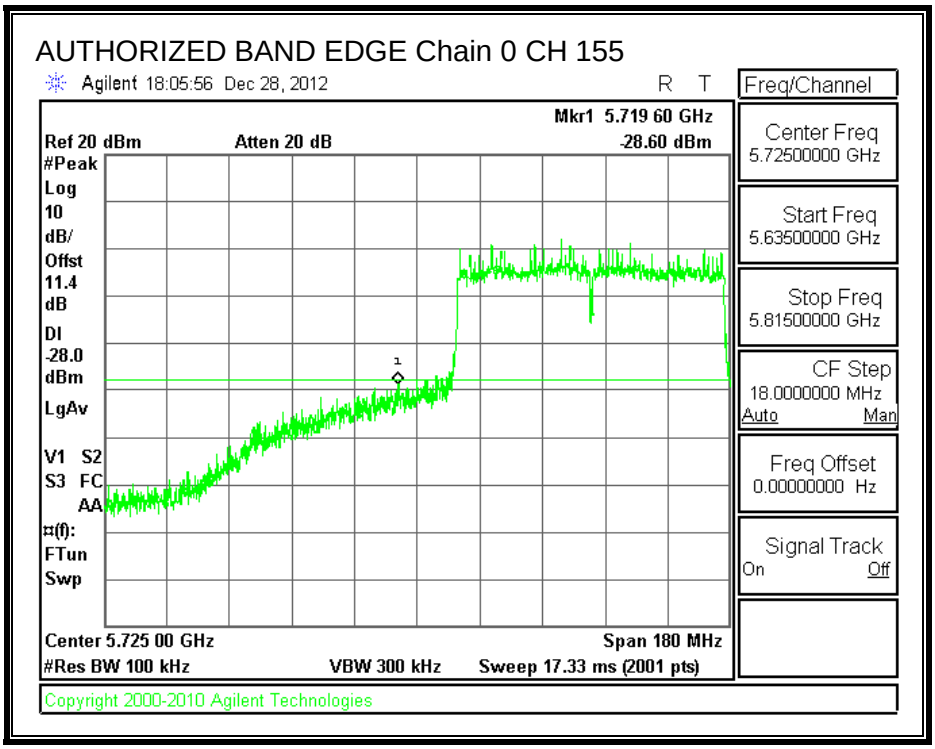
LIMITS

FCC §15.247 (d)

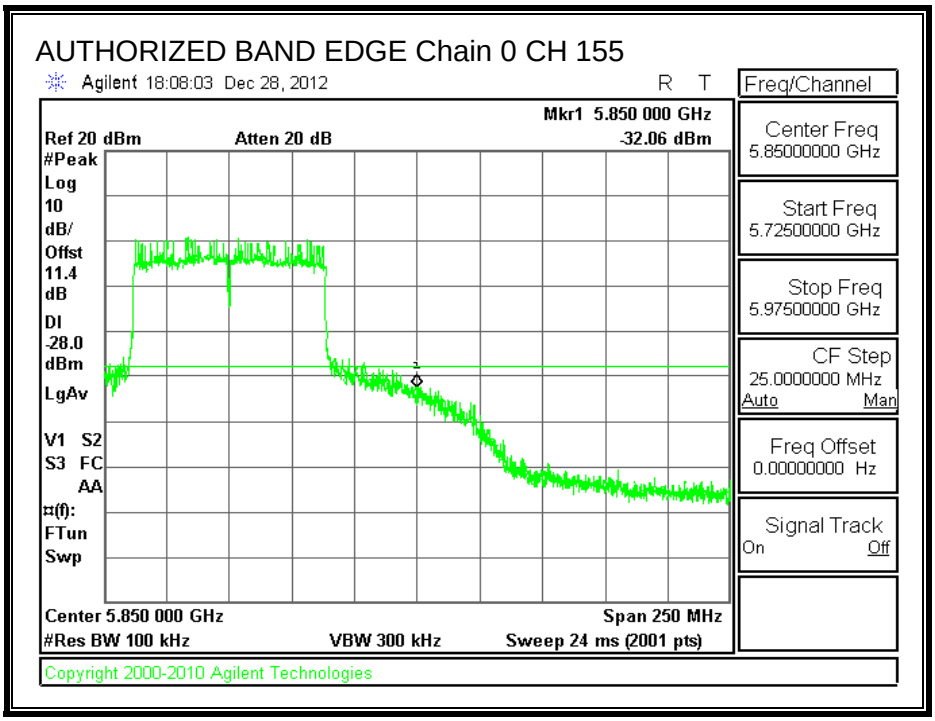
IC RSS-210 A8.5

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.

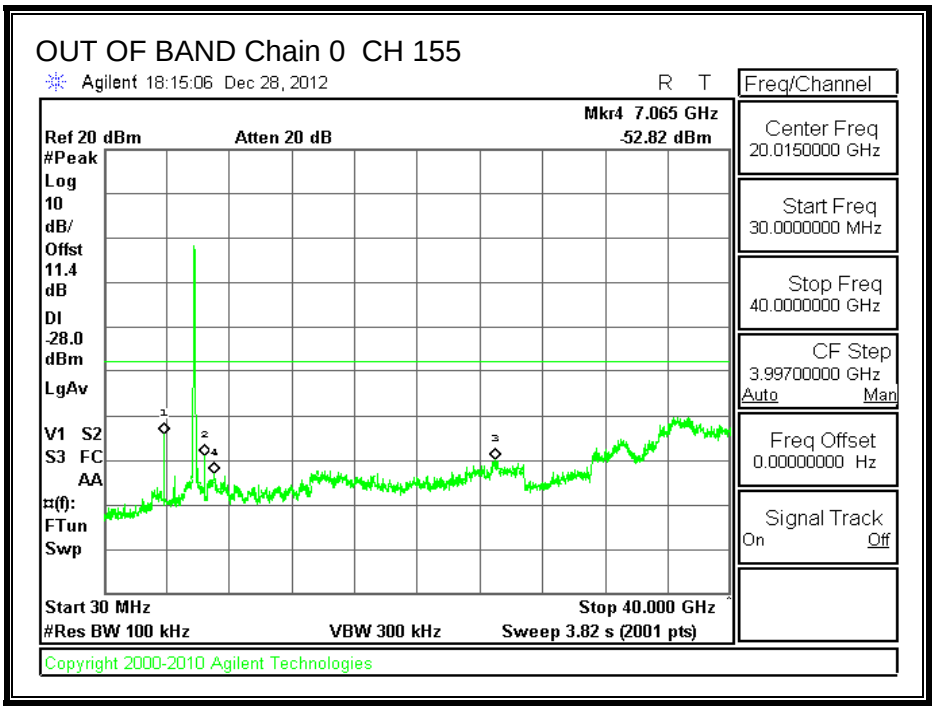
LOW CHANNEL BANDEDGE, Chain 0



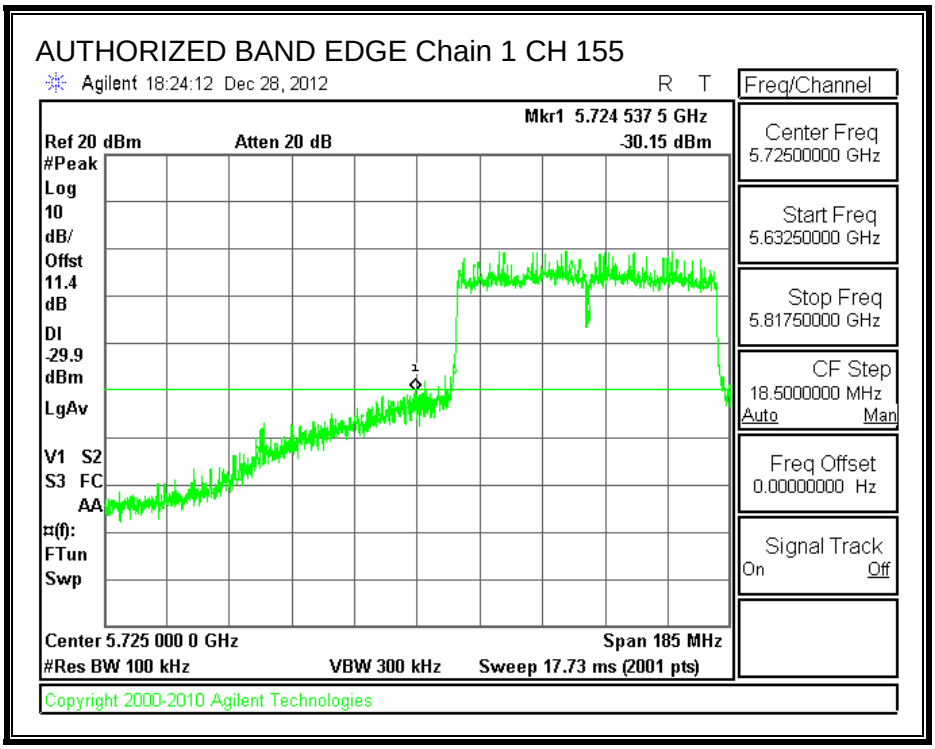
HIGH CHANNEL BANDEDGE, Chain 0



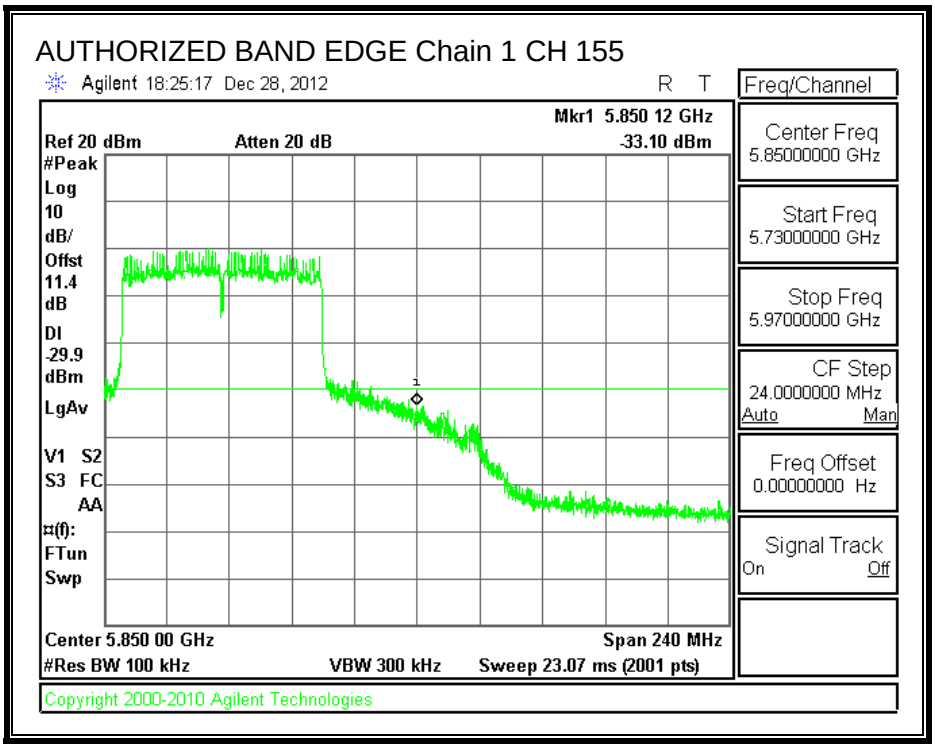
OUT-OF-BAND EMISSIONS, Chain 0



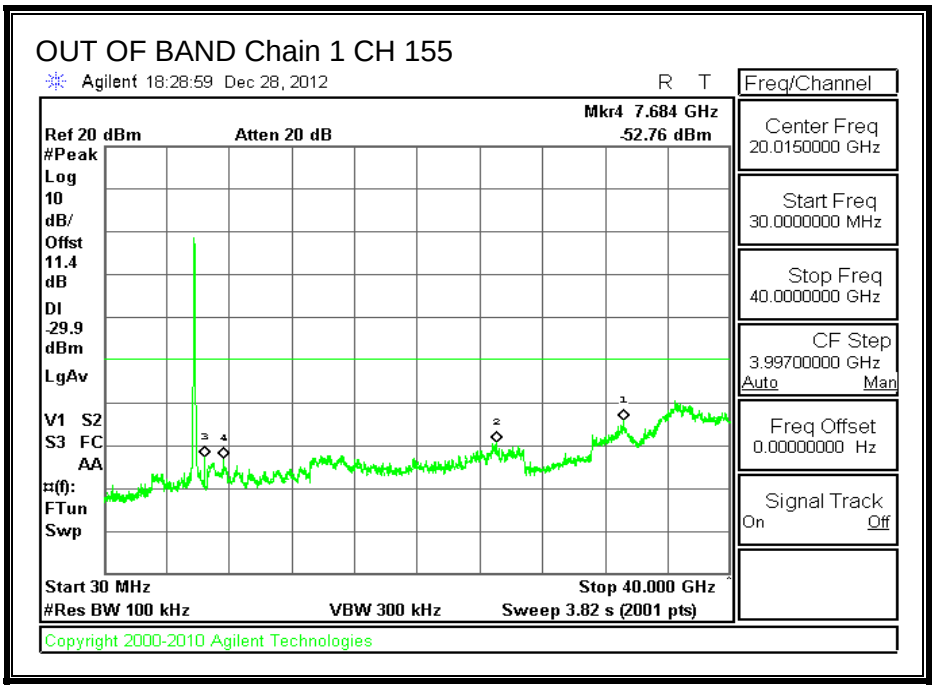
LOW CHANNEL BANDEDGE, Chain 1



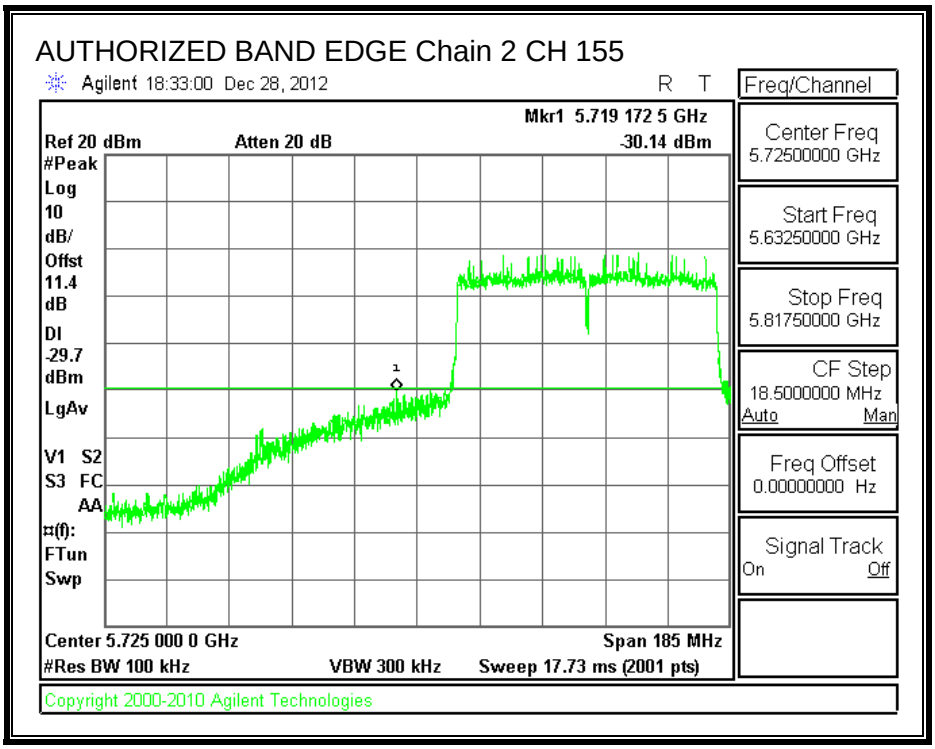
HIGH CHANNEL BANDEDGE, Chain 1



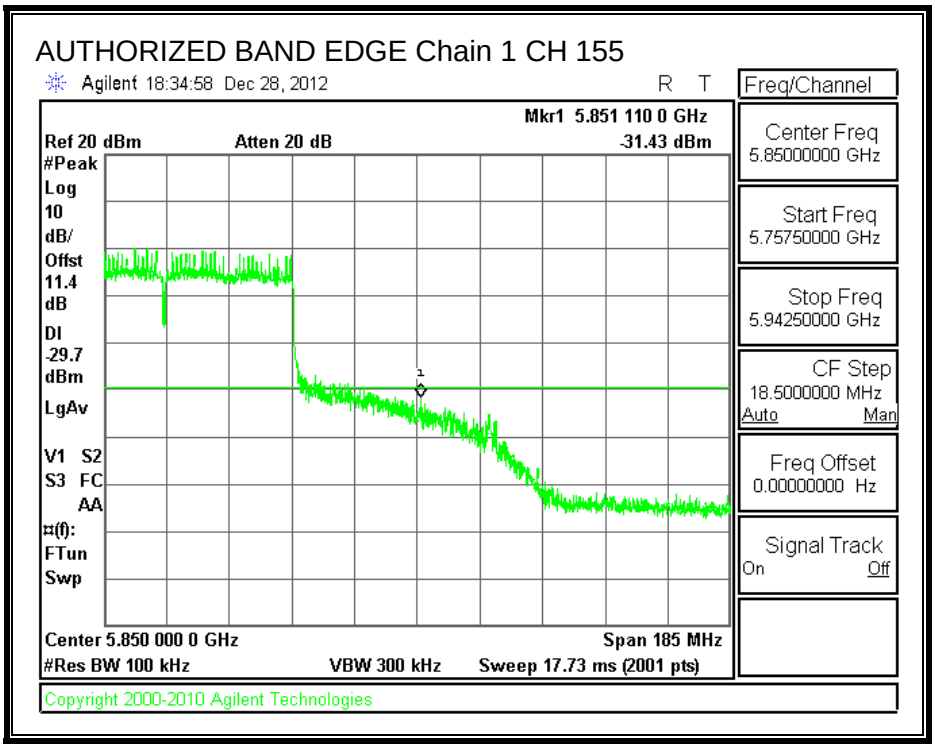
OUT-OF-BAND EMISSIONS, Chain 1



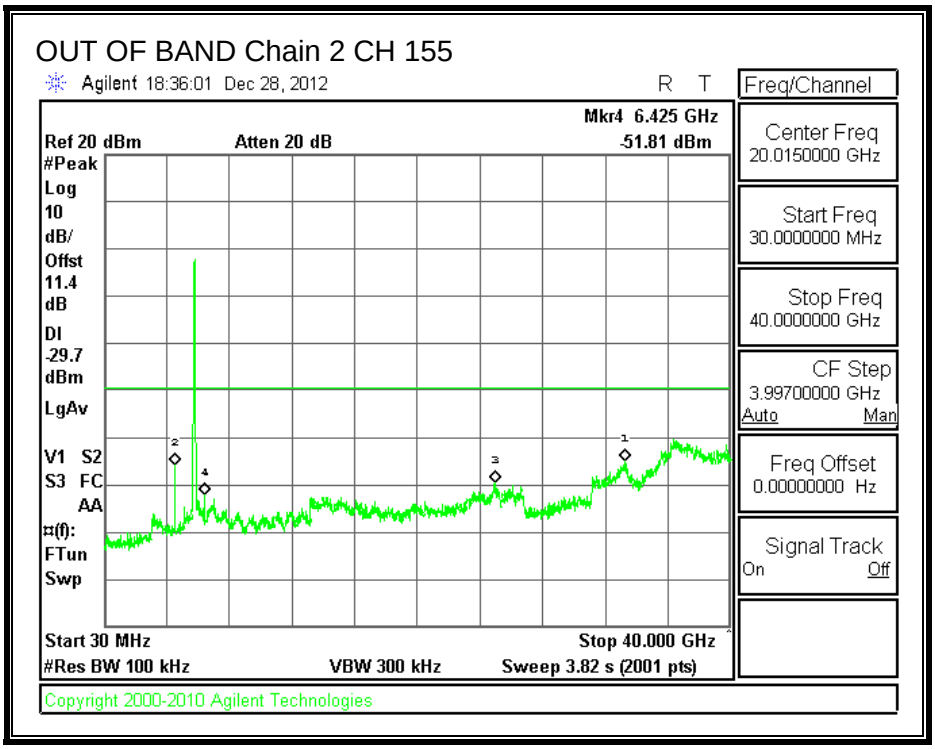
LOW CHANNEL BANDEDGE, Chain 2



HIGH CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 2



8.34. 802.11ac VHT80 BF 3TX MODE IN THE 5.8 GHz BAND

This mode has the same antenna port test results as 802.11ac VHT80 CDD 3TX, except for output power, as shown below.

8.34.1. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated for output power consideration and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.66	5.93	6.04	9.78

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Mid	5755	9.78	26.22	30	36	26.22

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)
Mid	5755	16.34	15.84	15.99	20.83	26.22	-5.39

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

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

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

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

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. 802.11b 1TX MODE, 2.4 GHz BAND

Covered by testing 802.11b 3TX CDD mode at the same power level.

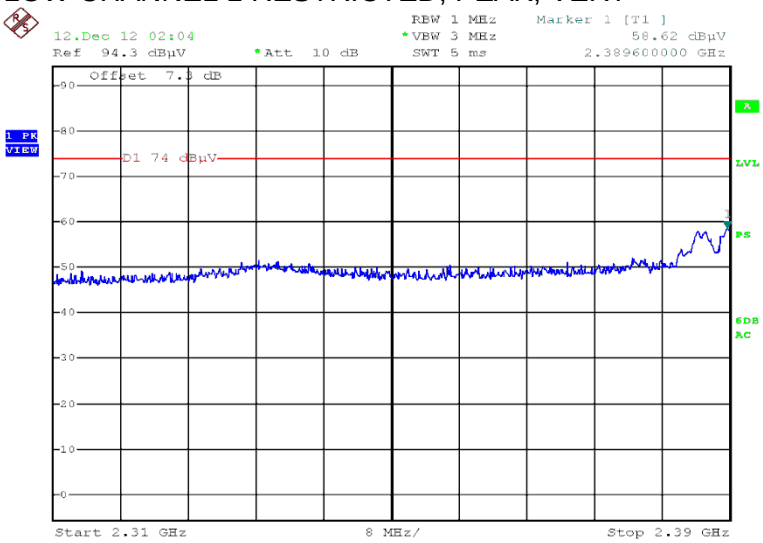
9.2.2. 802.11b 2TX CDD MODE, 2.4 GHz BAND

Covered by testing 802.11b 3TX CDD mode at the same power level.

9.2.3. 802.11b 3TX CDD MODE, 2.4 GHz BAND

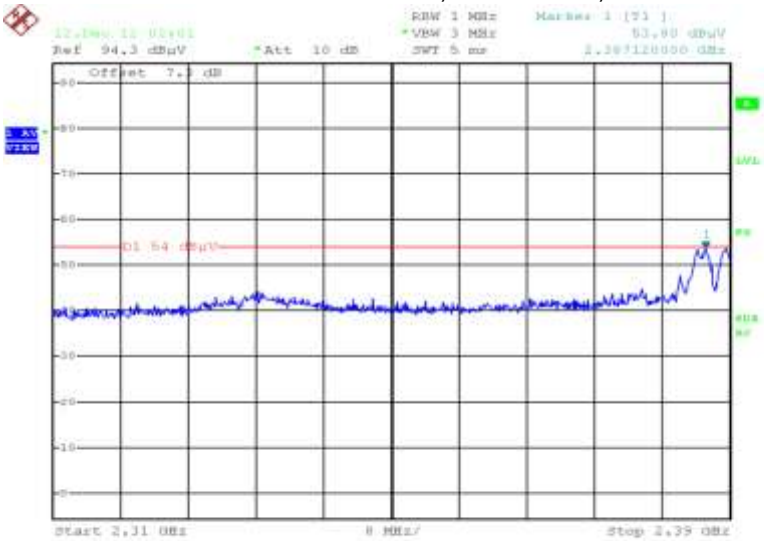
RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL 1 RESTRICTED, PEAK, VERT



Date: 12.DEC.2012 02:04:28

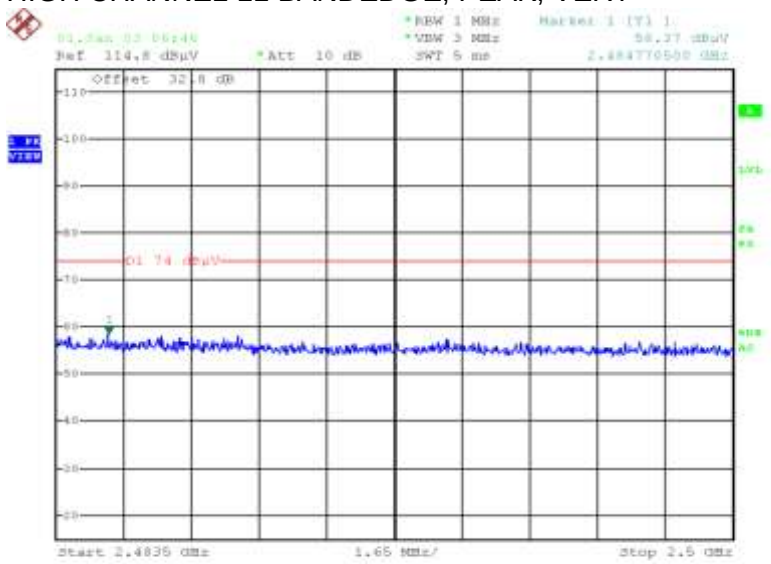
LOW CHANNEL 1 RESTRICTED, AVERAGE, VERT



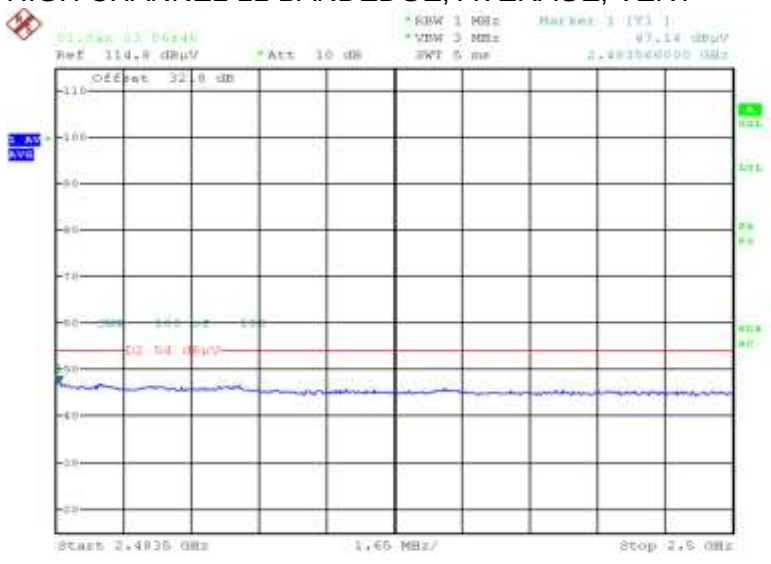
Date: 12.DEC.2012 02:01:04

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL 11 BANDEDGE, PEAK, VERT



HIGH CHANNEL 11 BANDEDGE, AVERAGE, VERT



HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Test Engr: K. Nguyen / S.Aguilar
Date: 12/11/12
Project #: 12U14668
Company: Broadcom
Test Target: FCC 15.247
Mode Oper: Continuous TX_11b CDD 3TX

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

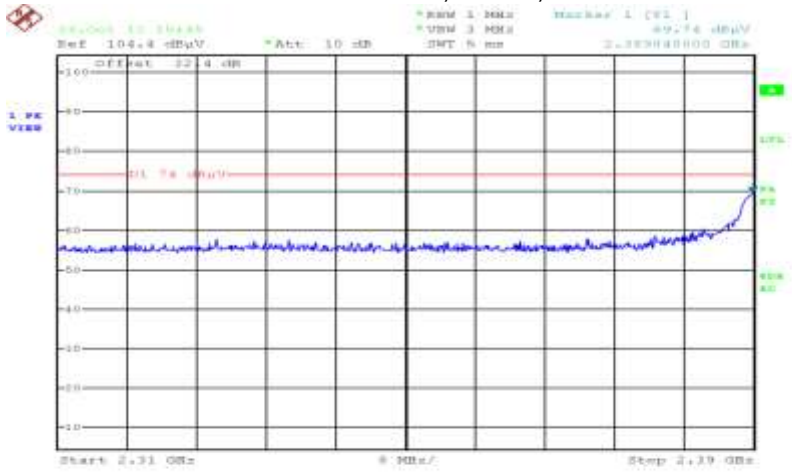
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Channel 1, 2412 MHz													
4.824	3.0	40.1	33.4	6.8	-34.1	0.0	0.0	46.3	74.0	-27.7	H	P	
4.824	3.0	35.5	33.4	6.8	-34.1	0.0	0.0	41.7	54.0	-12.30	H	A	
4.824	3.0	44.7	33.4	6.8	-34.1	0.0	0.0	50.9	74.0	-23.11	V	P	
4.824	3.0	42.2	33.4	6.8	-34.1	0.0	0.0	48.3	54.0	-5.65	V	A	
7.236	3.0	41.9	35.7	9.1	-33.2	0.0	0.0	53.6	74.0	-20.44	H	P	
7.236	3.0	36.2	35.7	9.1	-33.2	0.0	0.0	47.8	54.0	-6.16	H	A	
7.236	3.0	44.5	35.7	9.1	-33.2	0.0	0.0	56.1	74.0	-17.89	V	P	
7.236	3.0	38.3	35.7	9.1	-33.2	0.0	0.0	49.9	54.0	-4.11	V	A	
Spur 1-18 GHz													
1.600	3.0	46.6	26.2	3.5	-36.9	0.0	0.0	39.4	74.0	-34.62	H	P	
1.600	3.0	36.7	26.2	3.5	-36.9	0.0	0.0	29.5	54.0	-24.47	H	A	
1.600	3.0	44.1	26.2	3.5	-36.9	0.0	0.0	36.9	74.0	-37.10	V	P	
1.600	3.0	34.0	26.2	3.5	-36.9	0.0	0.0	26.8	54.0	-27.22	V	A	
Channel 6, 2437 MHz													
4.874	3.0	39.4	33.1	6.8	-34.0	0.0	0.0	45.3	74.0	-28.67	H	P	
4.874	3.0	33.4	33.1	6.8	-34.0	0.0	0.0	39.3	54.0	-14.75	H	A	
4.874	3.0	39.5	33.1	6.8	-34.0	0.0	0.0	45.4	74.0	-28.63	V	P	
4.874	3.0	33.4	33.1	6.8	-34.0	0.0	0.0	39.3	54.0	-14.67	V	A	
7.311	3.0	40.8	35.8	9.1	-33.1	0.0	0.0	52.6	74.0	-21.39	H	P	
7.311	3.0	34.2	35.8	9.1	-33.1	0.0	0.0	46.1	54.0	-7.95	H	A	
Spur 1-18 GHz													
1.085	3.0	50.7	24.4	2.9	-37.7	0.0	0.0	40.3	74.0	-33.73	H	P	
1.085	3.0	35.0	24.4	2.9	-37.7	0.0	0.0	24.5	54.0	-29.47	H	A	
Channel 11, 2462 MHz													
4.924	3.0	46.1	33.2	6.8	-34.0	0.0	0.0	52.1	74.0	-21.86	H	P	
4.924	3.0	42.5	33.2	6.8	-34.0	0.0	0.0	48.5	54.0	-5.49	H	A	
7.386	3.0	45.9	36.4	9.1	-33.1	0.0	0.0	58.3	74.0	-15.66	H	P	
7.386	3.0	40.3	36.4	9.1	-33.1	0.0	0.0	52.7	54.0	-1.27	H	A	
4.924	3.0	47.0	33.2	6.8	-34.0	0.0	0.0	53.0	74.0	-20.99	V	P	
4.924	3.0	44.5	33.2	6.8	-34.0	0.0	0.0	50.5	54.0	-3.49	V	A	
7.386	3.0	47.1	36.4	9.1	-33.1	0.0	0.0	59.5	74.0	-14.48	V	P	
7.386	3.0	41.5	36.4	9.1	-33.1	0.0	0.0	53.9	54.0	-0.07	V	A	
Spur 1-18GHz													
2.230	3.0	44.0	28.3	4.3	-36.0	0.0	0.0	40.7	74.0	-33.3	H	P	
2.230	3.0	35.7	28.3	4.3	-36.0	0.0	0.0	32.4	54.0	-21.6	H	A	
2.230	3.0	48.5	28.3	4.3	-36.0	0.0	0.0	45.2	74.0	-28.8	V	P	
2.230	3.0	42.9	28.3	4.3	-36.0	0.0	0.0	39.6	54.0	-14.4	V	A	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

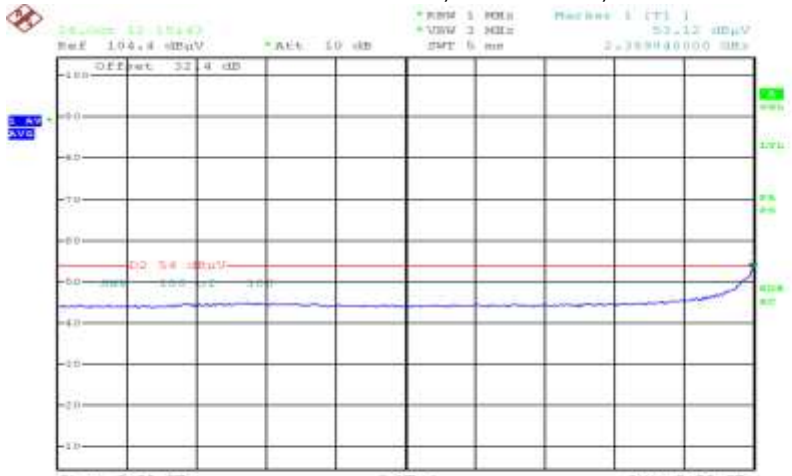
9.2.4. 802.11g 1TX MODE, 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL 1 RESTRICTED, PEAK, VERT



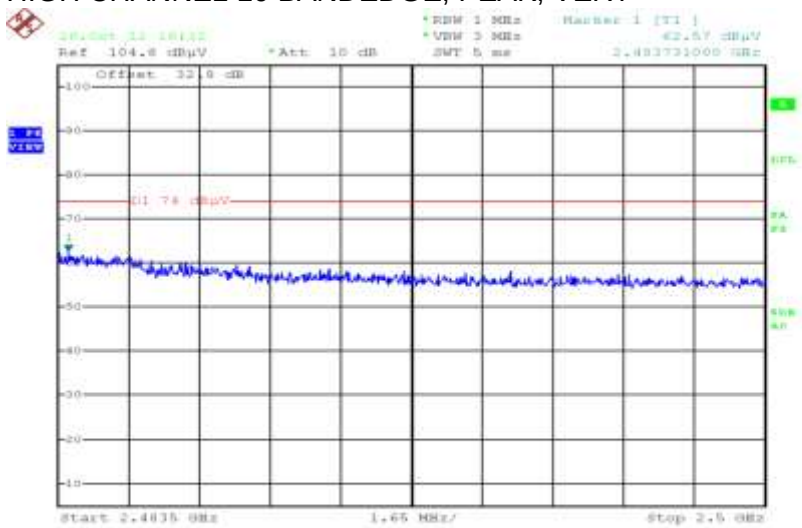
LOW CHANNEL 1 RESTRICTED, AVERAGE, VERT



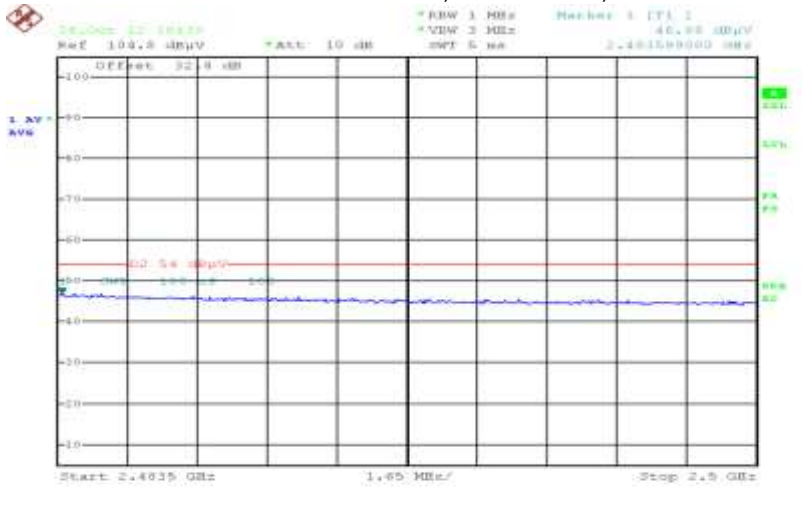
Frequency	Measured Average	Duty Cycle Factor	Total	Margin
(MHz)	(dBuV)	(dB)	(dBuV)	(dB)
2.3898	53.12	0.20	53.32	-0.68

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL 10 BANDEDGE, PEAK, VERT

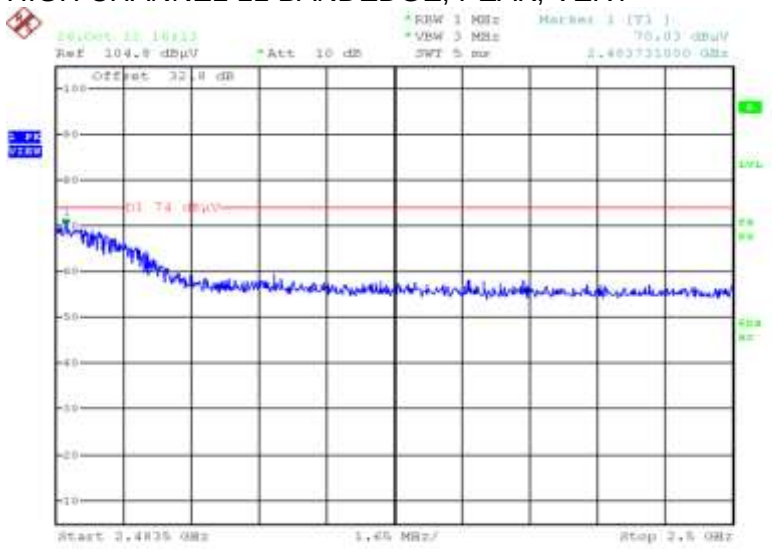


HIGH CHANNEL 10 BANDEDGE, AVERAGE, VERT



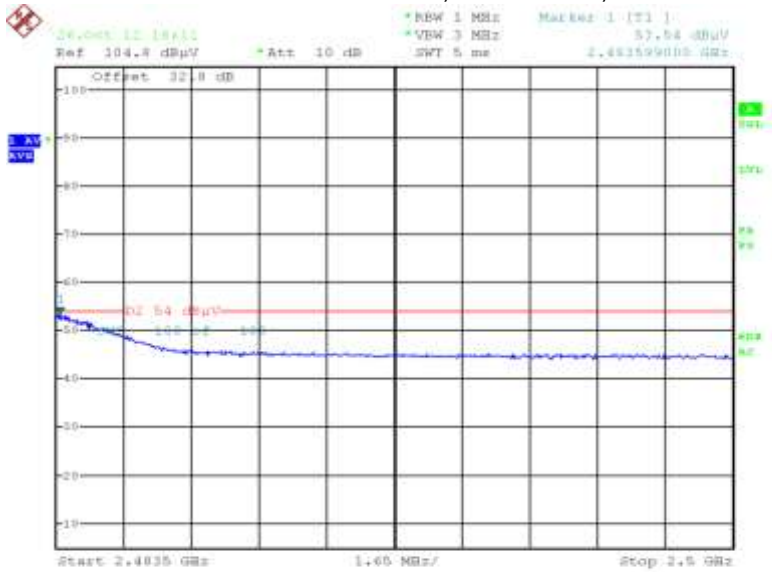
Frequency	Measured Average	Duty Cycle Factor	Total	Margin
(MHz)	(dBuV)	(dB)	(dBuV)	(dB)
2.4835	46.88	0.20	47.08	-6.92

HIGH CHANNEL 11 BANDEDGE, PEAK, VERT



Date: 26.OCT.2012 16:13:43

HIGH CHANNEL 11 BANDEDGE, AVERAGE, VERT



Date: 26.OCT.2012 16:11:36

Frequency (MHz)	Measured Average (dBuV)	Duty Cycle Factor (dB)	Total (dBuV)	Margin (dB)
2.4835	53.54	0.20	53.74	-0.26

HARMONICS AND SPURIOUS EMISSIONS

Covered by testing to HT20 CDD MCS0 3TX at 20dBm

9.2.5. 802.11g 2TX MODE, 2.4 GHz BAND

Covered by testing 11n HT20 CDD MCS0 3TX at the same power level.

9.2.6. 802.11g 3TX MODE, 2.4 GHz BAND

Covered by testing 11n HT20 CCD MCS0 3TX at the same power level.

9.2.7. 802.11g Beam-Forming 2TX MODE, 2.4 GHz BAND

Covered by testing 11ac VHT20 CCD MCS0 3TX at the same power level.

9.2.8. 802.11g Beam-Forming 3TX MODE, 2.4 GHz BAND

Covered by testing 11ac VHT20 CCD MCS0 3TX at the same power level.

9.2.9. 802.11n HT20 1TX MODE, 2.4 GHz BAND

Covered by testing 11n HT20 CCD MCS0 3TX at the same power level.

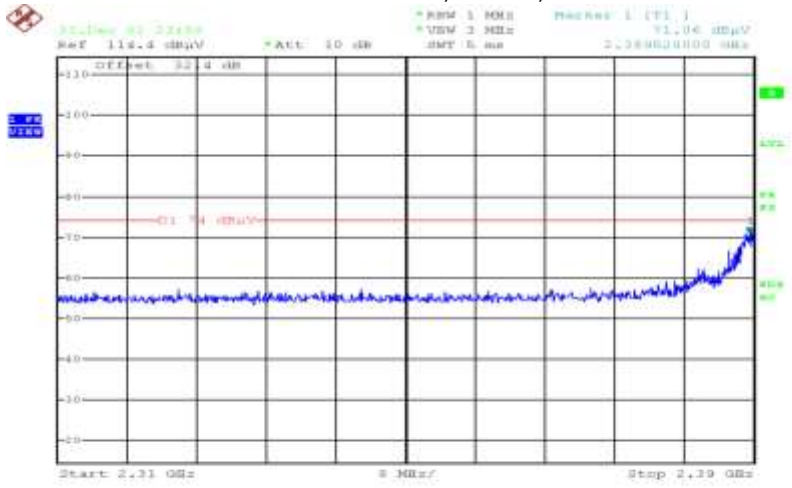
9.2.10. 802.11n HT20 2TX MODE, 2.4 GHz BAND

Covered by testing 11n HT20 CCD MCS0 3TX at the same power level.

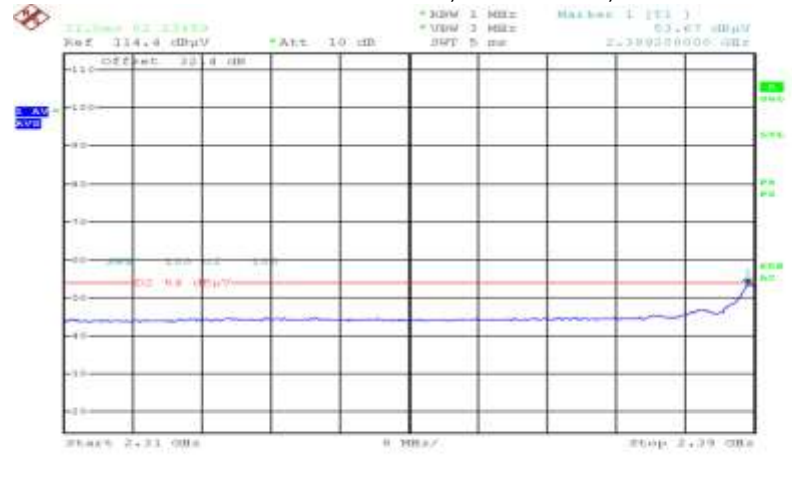
9.2.11. 802.11n HT20 CDD 3TX MODE, 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL 1 RESTRICTED, PEAK, VERT

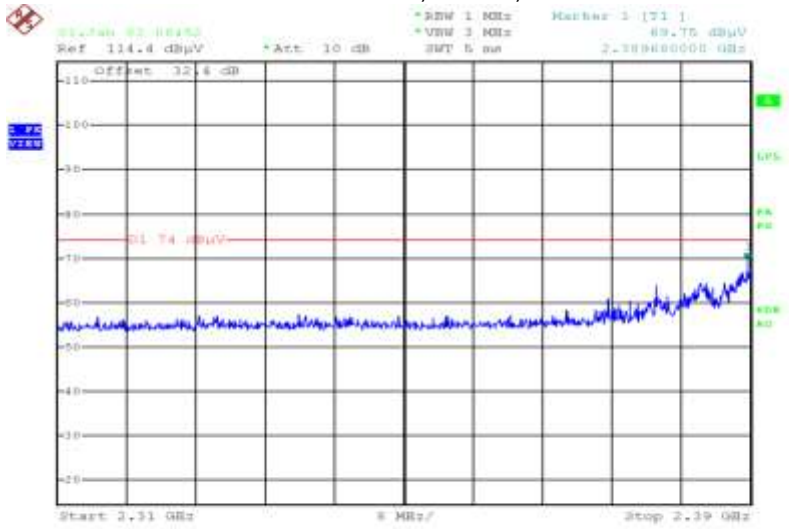


LOW CHANNEL 1 RESTRICTED, AVERAGE, VERT

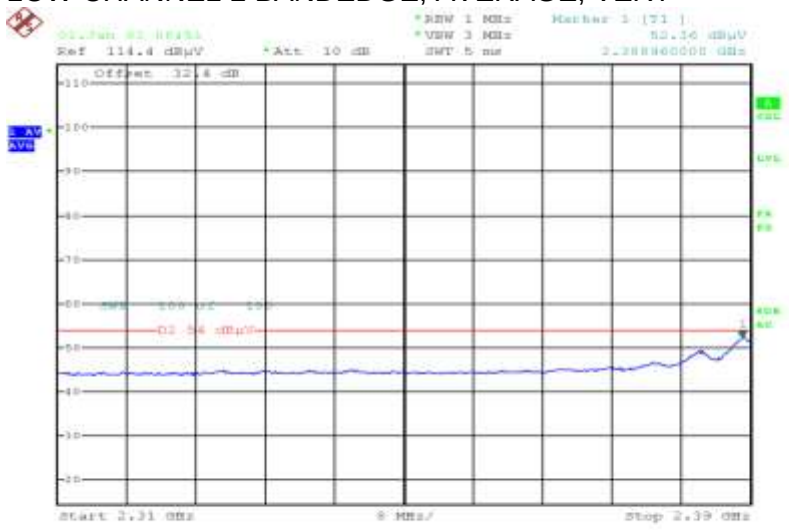


Frequency (MHz)	Measured Average (dBuV)	Duty Cycle Factor (dB)	Total (dBuV)	Margin (dB)
2.3892	53.67	0.22	53.89	-0.11

LOW CHANNEL 2 BANDEDGE, PEAK, VERT



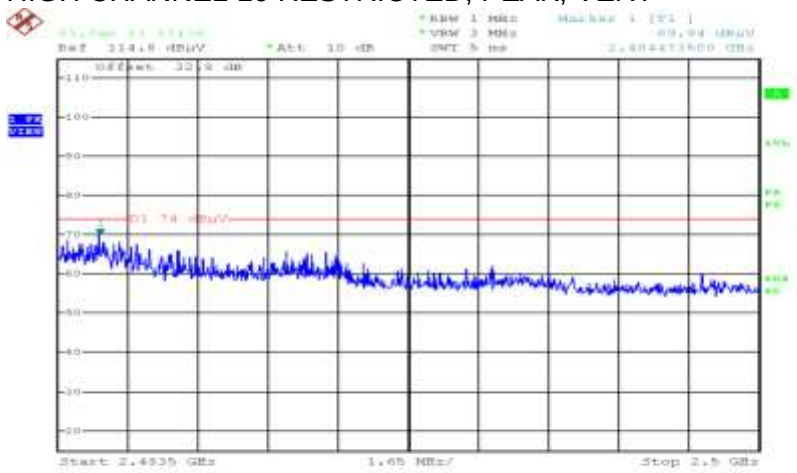
LOW CHANNEL 2 BANDEDGE, AVERAGE, VERT



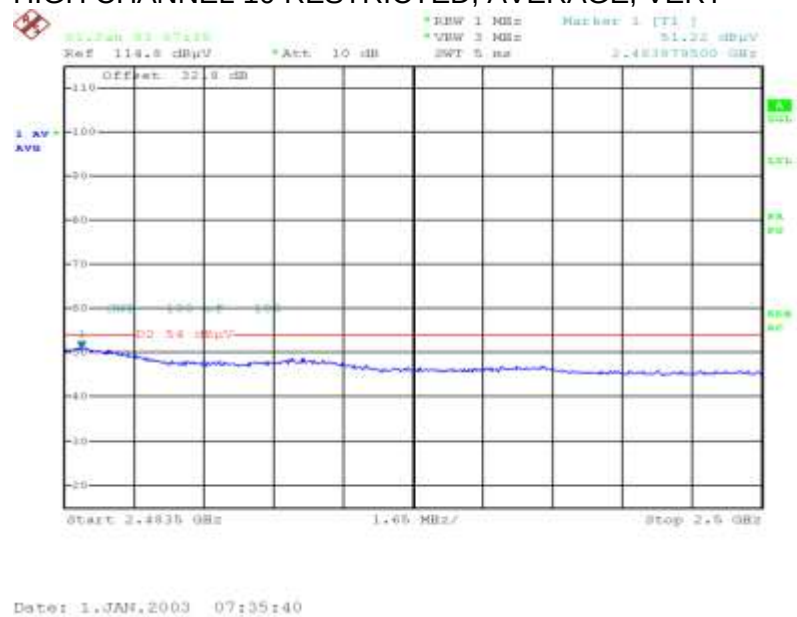
Frequency (MHz)	Measured Average (dBuV)	Duty Cycle Factor (dB)	Total (dBuV)	Margin (dB)
2.3889	52.36	0.22	52.58	-1.42

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL 10 RESTRICTED, PEAK, VERT

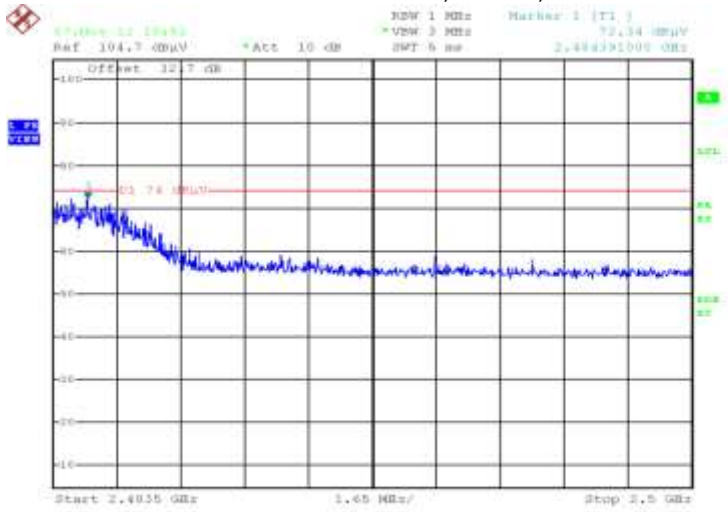


HIGH CHANNEL 10 RESTRICTED, AVERAGE, VERT

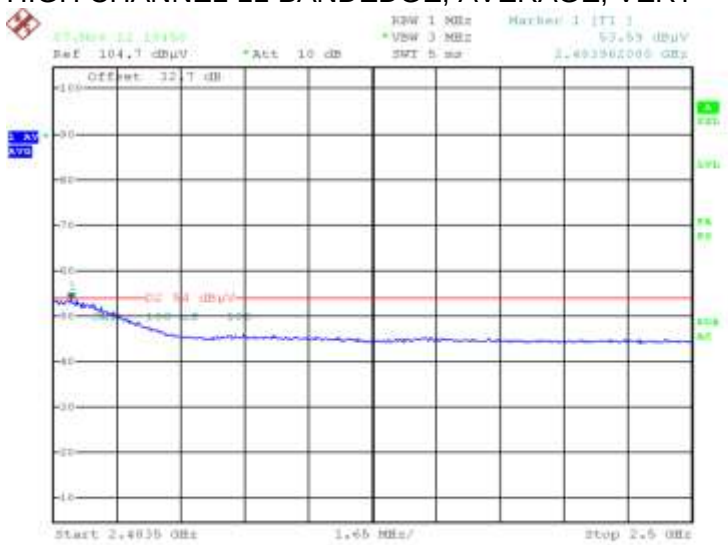


Frequency (MHz)	Measured Average (dBuV)	Duty Cycle Factor (dB)	Total (dBuV)	Margin (dB)
2.4838	51.22	0.22	51.44	-2.56

HIGH CHANNEL 11 BANDEDGE, PEAK, VERT



HIGH CHANNEL 11 BANDEDGE, AVERAGE, VERT



Frequency	Measured Average	Duty Cycle Factor	Total	Margin
(MHz)	(dBuV)	(dB)	(dBuV)	(dB)
2.4839	53.59	0.22	53.81	-0.19

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Kristopher Nguyen / Vien Tran
Date: 12/11/12
Project #: 12U14668
Company: Broadcom
Test Target: FCC 15.247
Mode Oper: 11n HT20 CDD MCS0 3TX

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Channel, 2412 MHz													
4.824	3.0	47.5	33.4	6.3	-35.5	0.0	0.0	51.7	74.0	-22.3	V	P	
4.824	3.0	31.4	33.4	6.3	-35.5	0.0	0.0	35.6	54.0	-18.2	V	A	
12.060	3.0	40.5	39.3	11.1	-35.4	0.0	0.0	55.5	74.0	-18.5	V	P	
12.060	3.0	23.8	39.3	11.1	-35.4	0.0	0.0	38.8	54.0	-15.0	V	A	
4.824	3.0	47.8	33.4	6.3	-35.5	0.0	0.0	52.0	74.0	-22.0	H	P	
4.824	3.0	31.0	33.4	6.3	-35.5	0.0	0.0	35.2	54.0	-18.6	H	A	
12.060	3.0	35.2	39.3	11.1	-35.4	0.0	0.0	50.2	74.0	-23.8	H	P	
12.060	3.0	21.6	39.3	11.1	-35.4	0.0	0.0	36.6	54.0	-17.2	H	A	
Mid Channel, 2437 MHz													
4.874	3.0	44.0	33.5	6.3	-35.5	0.0	0.0	48.3	74.0	-25.7	V	P	
4.874	3.0	28.0	33.5	6.3	-35.5	0.0	0.0	32.3	54.0	-21.5	V	A	
7.311	3.0	46.6	35.8	9.1	-33.1	0.0	0.0	58.4	74.0	-15.6	V	P	
7.311	3.0	35.7	35.8	9.1	-33.1	0.0	0.0	47.5	54.0	-6.5	V	A	
12.185	3.0	34.4	39.3	11.1	-35.3	0.0	0.0	49.5	74.0	-24.5	V	P	
12.185	3.0	22.1	39.3	11.1	-35.3	0.0	0.0	37.2	54.0	-16.6	V	A	
4.874	3.0	40.9	33.5	6.3	-35.5	0.0	0.0	45.2	74.0	-28.8	H	P	
4.874	3.0	26.0	33.5	6.3	-35.5	0.0	0.0	30.3	54.0	-23.5	H	A	
7.311	3.0	49.8	35.7	8.5	-35.4	0.0	0.0	58.6	74.0	-15.4	H	P	
7.311	3.0	33.1	35.7	8.5	-35.4	0.0	0.0	41.9	54.0	-11.9	H	A	
12.185	3.0	35.4	39.3	11.1	-35.3	0.0	0.0	50.5	74.0	-23.5	H	P	
12.185	3.0	22.0	39.3	11.1	-35.3	0.0	0.0	37.0	54.0	-16.7	H	A	
High Channel, 2462 MHz													
4.924	3.0	51.2	33.5	6.3	-35.5	0.0	0.0	55.6	74.0	-18.4	V	P	
4.924	3.0	33.9	33.5	6.3	-35.5	0.0	0.0	38.3	54.0	-15.5	V	A	
7.386	3.0	55.7	35.8	8.5	-35.5	0.0	0.0	64.6	74.0	-9.4	V	P	
7.386	3.0	40.6	35.8	8.5	-35.5	0.0	0.0	49.5	54.0	-4.3	V	A	
12.310	3.0	34.4	39.3	11.2	-35.3	0.0	0.0	49.6	74.0	-24.4	V	P	
12.310	3.0	21.9	39.3	11.2	-35.3	0.0	0.0	37.0	54.0	-16.7	V	A	
4.924	3.0	46.0	33.5	6.3	-35.5	0.0	0.0	50.4	74.0	-23.6	H	P	
4.924	3.0	28.9	33.5	6.3	-35.5	0.0	0.0	33.3	54.0	-20.5	H	A	
7.386	3.0	51.4	35.8	8.5	-35.5	0.0	0.0	60.3	74.0	-13.7	H	P	
7.386	3.0	37.9	35.8	8.5	-35.5	0.0	0.0	46.8	54.0	-7.0	H	A	
12.310	3.0	34.5	39.3	11.2	-35.3	0.0	0.0	49.6	74.0	-24.4	H	P	
12.310	3.0	21.8	39.3	11.2	-35.3	0.0	0.0	37.0	54.0	-16.8	H	A	

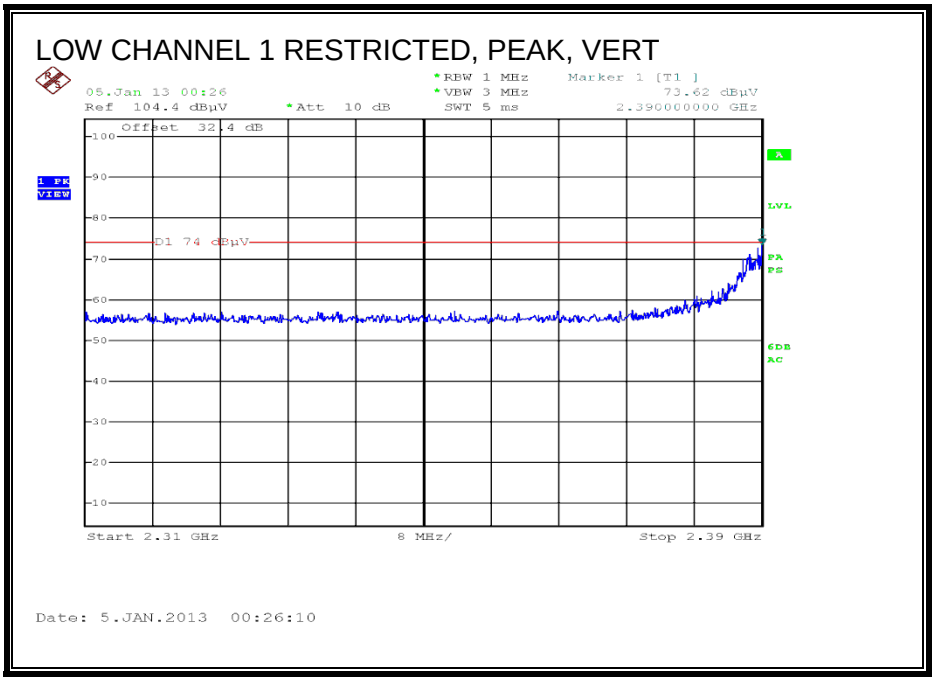
Rev. 4.1.2.7
Note: A 0.22 dB duty cycle correction was added to the average readings. No other emissions were detected above the system noise floor.

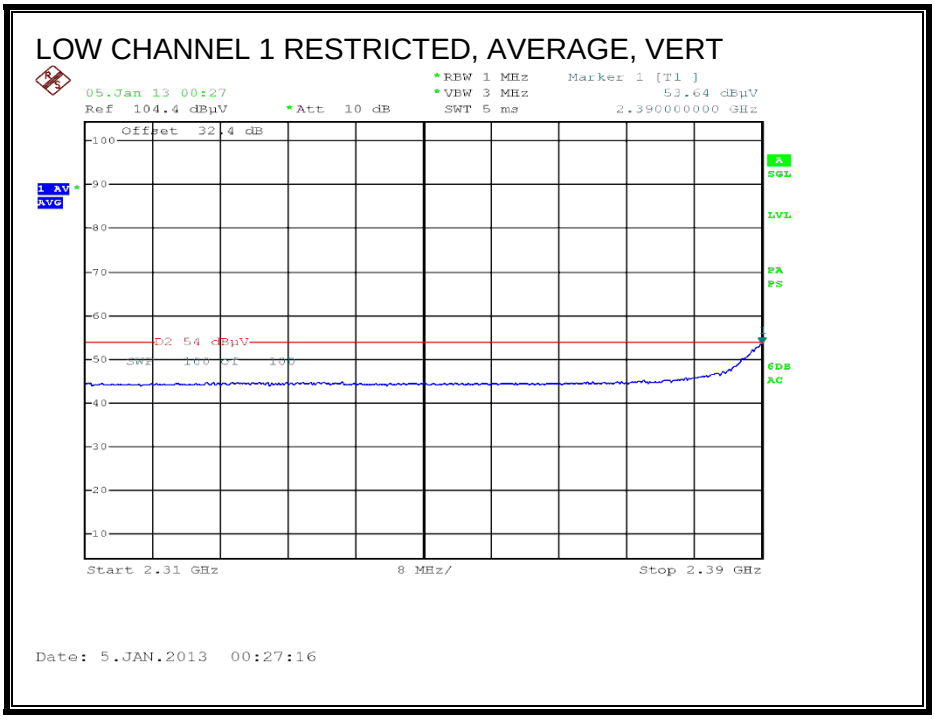
9.2.12. 802.11n HT20 2TX Beam-Forming MODE, 2.4 GHz BAND

Covered by testing 11ac VHT20 CCD MCS0 3TX at the same power level.

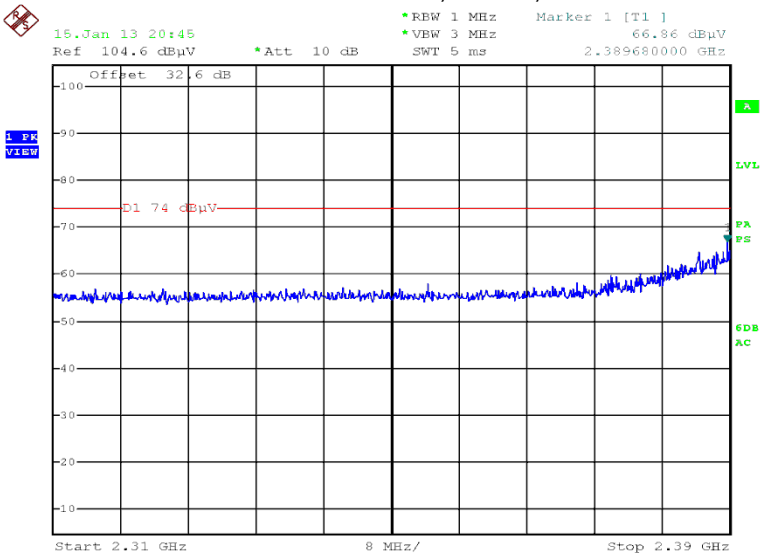
9.2.13. 802.11ac VHT20 3TX Beam-Forming MODE, 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



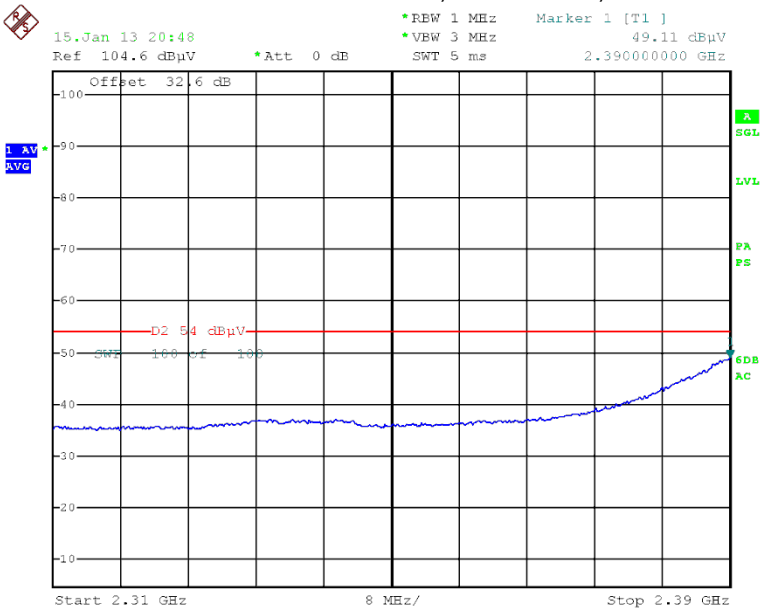


LOW CHANNEL 2 RESTRICTED, PEAK, VERT



Date: 15.JAN.2013 20:45:44

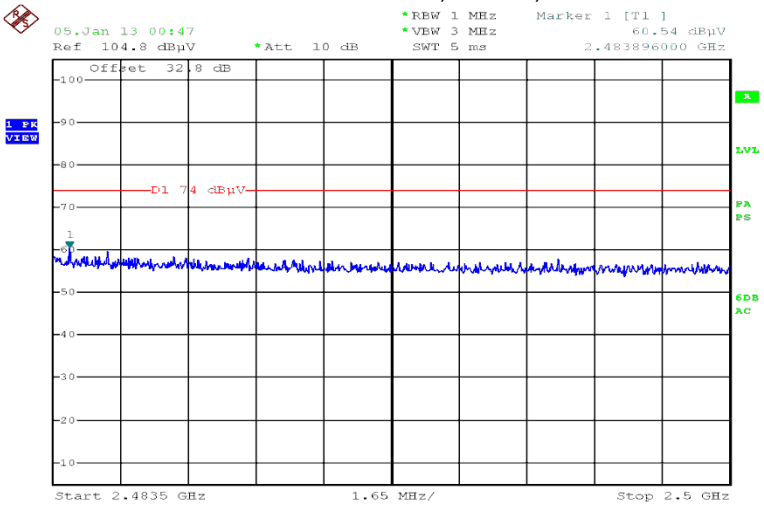
LOW CHANNEL 2 RESTRICTED, AVERAGE, VERT



Date: 15.JAN.2013 20:48:59

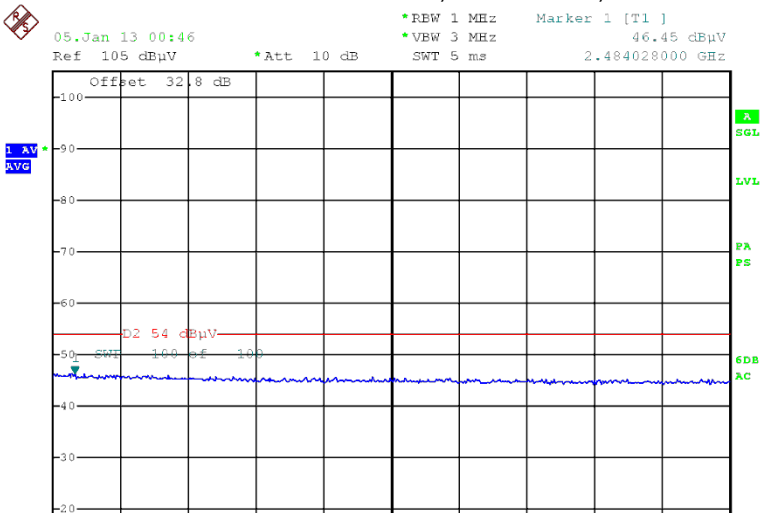
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL 10 BANDEDGE, PEAK, VERT



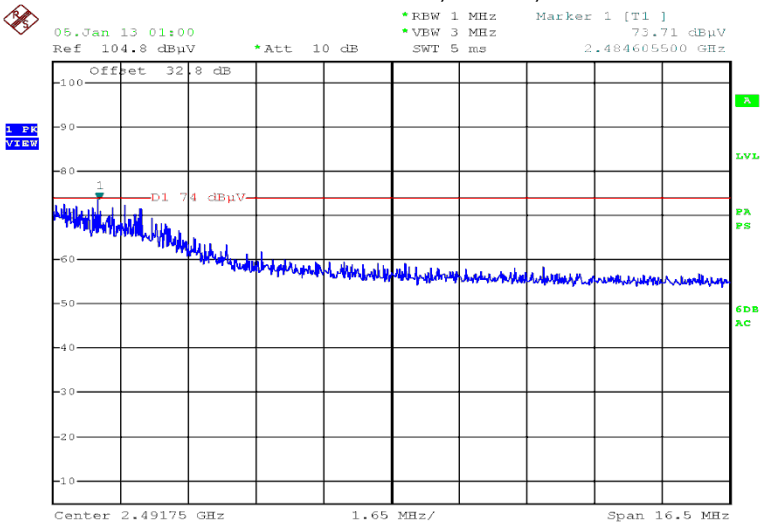
Date: 5.JAN.2013 00:47:48

HIGH CHANNEL 10 BANDEDGE, AVERAGE, VERT



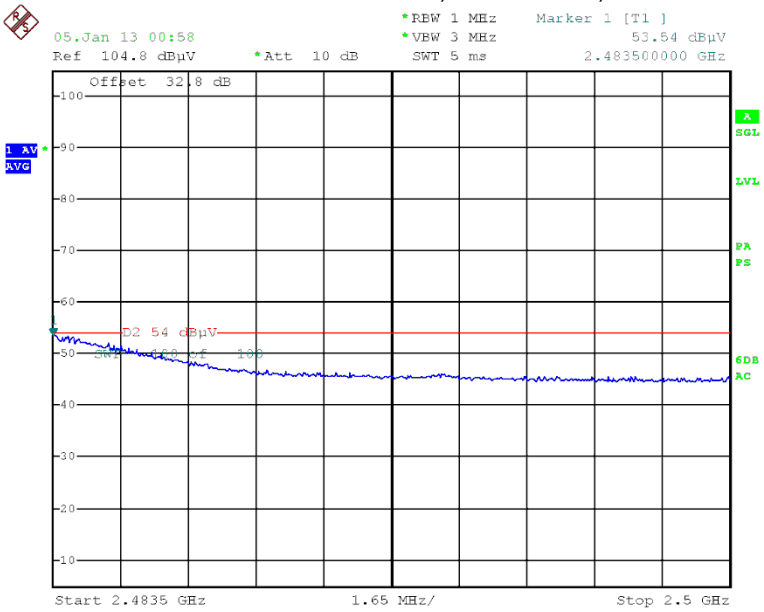
Date: 5.JAN.2013 00:46:17

HIGH CHANNEL 11 BANDEDGE, PEAK, VERT



Date: 5.JAN.2013 01:00:14

HIGH CHANNEL 11 BANDEDGE, AVERAGE, VERT



Date: 5.JAN.2013 00:58:50

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: S. Aguilar
Date: 01/04/13
Project #: 12U14668
Company: Broadcom
Test Target: FCC 15.247
Mode Oper: EUT with antenna setup, laptop and AC Adapter_2.4G 11ac 20Mhz 3TX Beamforming
Laptop with antenna and adapter setup as Beamformee setup in chamber.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
LOW CHANNEL (1) 2412MHz															
4.824	3.0	40.64	33.4	6.3	-35.5	0.0	0.0	44.8	74.0	-29.2	H	P	104.5	13.0	
4.824	3.0	29.72	33.4	6.3	-35.5	0.0	0.0	33.9	54.0	-20.1	H	A	104.5	13.0	
4.824	3.0	47.89	33.4	6.3	-35.5	0.0	0.0	52.1	74.0	-21.9	V	P	121.8	307.7	
4.824	3.0	33.90	33.4	6.3	-35.5	0.0	0.0	38.1	54.0	-15.9	V	A	121.8	307.7	
12.060	3.0	34.41	39.3	11.1	-35.4	0.0	0.0	49.4	74.0	-24.6	H	P	189.9	160.7	
12.060	3.0	24.33	39.3	11.1	-35.4	0.0	0.0	39.3	54.0	-14.7	H	A	189.9	160.7	
12.060	3.0	37.81	39.3	11.1	-35.4	0.0	0.0	52.8	74.0	-21.2	V	P	145.7	278.2	
12.060	3.0	26.28	39.3	11.1	-35.4	0.0	0.0	41.3	54.0	-12.7	V	A	145.7	278.2	
LOW CHANNEL (2) 2417MHz															
4.834	3.0	39.94	33.5	6.3	-35.5	0.0	0.0	44.2	74.0	-29.8	H	P	145.5	274.8	
4.834	3.0	28.62	33.5	6.3	-35.5	0.0	0.0	32.8	54.0	-21.2	H	A	145.5	274.8	
4.834	3.0	41.87	33.5	6.3	-35.5	0.0	0.0	46.1	74.0	-27.9	V	P	127.4	191.2	
4.834	3.0	30.11	33.5	6.3	-35.5	0.0	0.0	34.3	54.0	-19.7	V	A	127.4	191.2	
7.251	3.0	51.86	35.6	8.5	-35.4	0.0	0.0	60.5	74.0	-13.5	H	P	167.9	62.4	
7.251	3.0	40.75	35.6	8.5	-35.4	0.0	0.0	49.4	54.0	-4.6	H	A	167.9	62.4	
7.251	3.0	50.61	35.6	8.5	-35.4	0.0	0.0	59.3	74.0	-14.7	V	P	113.7	231.8	
7.251	3.0	39.47	35.6	8.5	-35.4	0.0	0.0	48.1	54.0	-5.9	V	A	113.7	231.8	
MID CHANNEL (6) 2437MHz															
4.874	3.0	44.53	33.5	6.3	-35.5	0.0	0.0	48.8	74.0	-25.2	H	P	199.8	331.9	
4.874	3.0	29.93	33.5	6.3	-35.5	0.0	0.0	34.2	54.0	-19.8	H	A	199.8	331.9	
4.874	3.0	50.62	33.5	6.3	-35.5	0.0	0.0	54.9	74.0	-19.1	V	P	100.0	325.5	
4.874	3.0	37.95	33.5	6.3	-35.5	0.0	0.0	42.2	54.0	-11.8	V	A	100.0	325.5	
7.311	3.0	45.22	35.7	8.5	-35.4	0.0	0.0	54.0	74.0	-20.0	H	P	158.3	224.2	
7.311	3.0	29.56	35.7	8.5	-35.4	0.0	0.0	38.3	54.0	-15.7	H	A	158.3	224.2	
7.311	3.0	54.45	35.7	8.5	-35.4	0.0	0.0	63.2	74.0	-10.8	V	P	134.6	233.1	
7.311	3.0	43.16	35.7	8.5	-35.4	0.0	0.0	51.9	54.0	-2.1	V	A	134.6	233.1	
HIGH CHANNEL (11) 2462MHz															
4.924	3.0	48.98	33.5	6.3	-35.5	0.0	0.0	53.4	74.0	-20.6	H	P	153.2	281.3	
4.924	3.0	37.29	33.5	6.3	-35.5	0.0	0.0	41.7	54.0	-12.3	H	A	153.2	281.3	
4.924	3.0	55.30	33.5	6.3	-35.5	0.0	0.0	59.7	74.0	-14.3	V	P	138.2	316.7	
4.924	3.0	41.05	33.5	6.3	-35.5	0.0	0.0	45.4	54.0	-8.6	V	A	138.2	316.7	
7.386	3.0	45.77	35.8	8.5	-35.5	0.0	0.0	54.7	74.0	-19.3	H	P	118.6	256.5	
7.386	3.0	35.02	35.8	8.5	-35.5	0.0	0.0	43.9	54.0	-10.1	H	A	118.6	256.5	
7.386	3.0	52.23	35.8	8.5	-35.5	0.0	0.0	61.2	74.0	-12.8	V	P	137.4	227.5	
7.386	3.0	40.21	35.8	8.5	-35.5	0.0	0.0	49.1	54.0	-4.9	V	A	137.4	227.5	

Rev. 4.1.2.7
Note:A 0.22 dB duty cycle correction factor was added to the average reading. No other emissions were detected above the system noise floor.

9.2.14. 802.11a 1TX MODE, 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

9.2.15. 802.11a 2TX MODE, 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

9.2.16. 802.11a 3TX MODE, 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

9.2.17. 802.11n HT20 1TX MODE, 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

9.2.18. 802.11n HT20 CDD MCS0 2TX MODE, 5.8 GHz BAND

Covered by testing HT20 CDD MCS0 3TX at the same power level.

9.2.19. 802.11n HT20 CDD 3TX MODE, 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Steve Aguilar
Date: 12/04/12
Project #: 12U14668
Company: Broadcom Corporation
Test Target: FCC 15.247
Mode Oper: EUT with antenna setup, laptop and AC adapter. HT20 CDD MCS0 3TX 5.8GHz band.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Channel 5745 MHz															
11.490	3.0	35.62	38.8	10.5	-32.9	0.0	0.7	52.8	74.0	-21.2	H	P	231.9	358.8	
11.490	3.0	24.92	38.8	10.5	-32.9	0.0	0.7	42.1	54.0	-11.9	H	A	231.9	358.8	
11.490	3.0	38.59	38.8	10.5	-32.9	0.0	0.7	55.8	74.0	-18.2	V	P	103.1	25.3	
11.490	3.0	28.03	38.8	10.5	-32.9	0.0	0.7	45.2	54.0	-8.8	V	A	103.1	25.3	
Mid Channel 5785 MHz															
11.570	3.0	35.22	38.9	10.6	-32.8	0.0	0.7	52.6	74.0	-21.4	H	P	247.8	153.0	
11.570	3.0	25.13	38.9	10.6	-32.8	0.0	0.7	42.6	54.0	-11.4	H	A	247.8	153.0	
11.570	3.0	37.07	38.9	10.6	-32.8	0.0	0.7	54.5	74.0	-19.5	V	P	106.3	33.1	
11.570	3.0	26.47	38.9	10.6	-32.8	0.0	0.7	43.9	54.0	-10.1	V	A	106.3	33.1	
High Channel 5825MHz															
11.650	3.0	36.29	39.0	10.7	-32.7	0.0	0.7	54.0	74.0	-20.0	H	P	154.9	42.6	
11.650	3.0	26.40	39.0	10.7	-32.7	0.0	0.7	44.1	54.0	-9.9	H	A	154.9	42.6	
11.650	3.0	41.45	39.0	10.7	-32.7	0.0	0.7	59.1	74.0	-14.9	V	P	147.0	290.0	
11.650	3.0	31.16	39.0	10.7	-32.7	0.0	0.7	48.8	54.0	-5.2	V	A	147.0	290.0	

Rev. 4.1.2.7
Note: A 0.22 dB duty cycle correction factor was added to the average readings. No other emissions were detected above the system noise floor.

9.2.20. 802.11a BF 2TX MODE, 5.8 GHz BAND

Covered by testing AC20 CDD MCS0 3TX at the same power level.

9.2.21. 802.11a BF 3TX MODE, 5.8 GHz BAND

Covered by testing AC20 CDD MCS0 3TX at the same power level.

9.2.22. 802.11n BF 2TX MODE, 5.8 GHz BAND

Covered by testing AC20 CDD MCS0 3TX at the same power level.

9.2.23. 802.11ac VHT20 Beam-Forming 3TX MODE, 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: S. Aguilar
Date: 01/03/13
Project #: 12U14668
Company: Broadcom
Test Target: FCC 15.247
Mode Oper: EUT with antenna setup, laptop and AC Adapter_5.8 G HT20 MCS0 3TX TX Beamforming
Laptop with antenna and adapter setup as Beamformee setup in chamber.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Channel (149) 5745MHz															
11.490	3.0	36.36	38.8	10.5	-32.9	0.0	0.7	53.54	74.0	-20.46	H	P	100.4	13.4	
11.490	3.0	26.82	38.8	10.5	-32.9	0.0	0.7	44.00	54.0	-10.00	H	A	100.4	13.4	
11.490	3.0	39.43	38.8	10.5	-32.9	0.0	0.7	56.60	74.0	-17.40	V	P	139.3	14.0	
11.490	3.0	29.29	38.8	10.5	-32.9	0.0	0.7	46.47	54.0	-7.53	V	A	139.3	14.0	
MID CHANNEL (157) 5785 MHz															
11.570	3.0	35.65	38.9	10.6	-32.8	0.0	0.7	53.08	74.0	-20.92	H	P	181.7	348.2	
11.570	3.0	24.69	38.9	10.6	-32.8	0.0	0.7	42.12	54.0	-11.88	H	A	181.7	348.2	
11.570	3.0	40.01	38.9	10.6	-32.8	0.0	0.7	57.43	74.0	-16.57	V	P	109.7	12.0	
11.570	3.0	29.49	38.9	10.6	-32.8	0.0	0.7	46.92	54.0	-7.08	V	A	109.7	12.0	
HIGH CHANNEL (165) 5825 MHZ															
11.650	3.0	36.50	39.0	10.7	-32.7	0.0	0.7	54.18	74.0	-19.82	H	P	141.9	12.1	
11.650	3.0	26.80	39.0	10.7	-32.7	0.0	0.7	44.48	54.0	-9.52	H	A	141.9	12.1	
11.650	3.0	37.61	39.0	10.7	-32.7	0.0	0.7	55.28	74.0	-18.72	V	P	168.0	10.7	
11.650	3.0	27.41	39.0	10.7	-32.7	0.0	0.7	45.09	54.0	-8.91	V	A	168.0	10.7	

Rev. 4.1.2.7
Note: A 0.22 dB duty cycle correction factor was added to the average reading. No other emissions were detected above the system noise floor.

9.2.24. 802.11n HT40 1TX MODE, 5.8 GHz BAND

Covered by testing HT40 CDD MCS0 3TX at the same power level.

9.2.25. 802.11n HT40 CDD MCS0 2TX MODE, 5.8 GHz BAND

Covered by testing HT40 CDD MCS0 3TX at the same power level.

9.2.26. 802.11n HT40 CDD 3TX MODE, 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Steve Aguilar
Date: 12/04/12
Project #: 12U14668
Company: Broadcom Corporation
Test Target: FCC 15.247
Mode Oper: EUT with antenna setup, laptop and AC adapter. HT40 CDD MCS0 3TX 5.8GHz band.

f	Measurement Frequency	Amp	Preamp Gain	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter	

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Channel 5755 MHz															
11.510	3.0	35.62	38.8	10.6	-32.8	0.0	0.7	52.2	74.0	-21.8	H	P	149.7	317.9	
11.510	3.0	25.67	38.8	10.6	-32.8	0.0	0.7	42.2	54.0	-11.8	H	A	149.7	317.9	
11.510	3.0	36.53	38.8	10.6	-32.8	0.0	0.7	53.1	74.0	-20.9	V	P	133.2	327.6	
11.510	3.0	27.06	38.8	10.6	-32.8	0.0	0.7	43.6	54.0	-10.4	V	A	133.2	327.6	
High Channel 5795 MHz															
11.590	3.0	35.81	38.9	10.6	-32.7	0.0	0.7	52.6	74.0	-21.4	H	P	101.7	88.6	
11.590	3.0	25.53	38.9	10.6	-32.7	0.0	0.7	42.3	54.0	-11.7	H	A	101.7	88.6	
11.590	3.0	38.15	38.9	10.6	-32.7	0.0	0.7	54.9	74.0	-19.1	V	P	137.5	29.7	
11.590	3.0	27.35	38.9	10.6	-32.7	0.0	0.7	44.1	54.0	-9.9	V	A	137.5	29.7	

Rev. 4.1.2.7
Note:A 0.43 dB duty cycle correction factor was added to the average readings. No other emissions were detected above the system noise floor.

9.2.27. 802.11n HT40 Beam-Forming 2TX MODE, 5.8 GHz BAND

Covered by testing AC40 CDD MCS0 3TX at the same power level.

9.2.28. 802.11ac VHT40 Beam-Forming 3TX MODE, 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: S. Aguilar
Date: 01/03/13
Project #: 12U14668
Company: Broadcom
Test Target: FCC 15.247
Mode Oper: EUT with antenna setup, laptop and AC Adapter. 5.8 G HT40 MCS0 3TX Beamforming
Laptop with antenna and adapter setup as Beamformee setup in chamber.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Mid Channel (151) 5755 MHz															
11.510	3.0	35.60	38.8	10.6	-32.8	0.0	0.7	52.84	74.0	-21.2	H	P	199.7	16.7	
11.510	3.0	28.77	38.8	10.6	-32.8	0.0	0.7	46.01	54.0	-8.0	H	A	199.7	16.7	
11.510	3.0	38.72	38.8	10.6	-32.8	0.0	0.7	55.96	74.0	-18.0	V	P	148.3	301.5	
11.510	3.0	29.85	38.8	10.6	-32.8	0.0	0.7	47.09	54.0	-6.9	V	A	148.3	301.5	
High Channel (159) 5795 MHz															
11.590	3.0	35.63	38.9	10.6	-32.7	0.0	0.7	53.12	74.0	-20.9	H	P	113.9	50.9	
11.590	3.0	26.67	38.9	10.6	-32.7	0.0	0.7	44.16	54.0	-9.8	H	A	113.9	50.9	
11.590	3.0	42.30	38.9	10.6	-32.7	0.0	0.7	59.79	74.0	-14.2	V	P	146.3	320.0	
11.590	3.0	32.76	38.9	10.6	-32.7	0.0	0.7	50.25	54.0	-3.8	V	A	146.3	320.0	

Rev. 4.1.2.7
Note: A 0.43 dB duty cycle correction factor was added to the average reading. No other emissions were detected above the system noise floor.

9.2.29. 802.11ac VHT80 1TX MODE, 5.8 GHz BAND

Covered by testing AC80 3TX at the same power level.

9.2.30. 802.11ac VHT80 2TX MODE, 5.8 GHz BAND

Covered by testing AC80 3TX at the same power level.

9.2.31. 802.11ac VHT80 CDD 3TX MODE, 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Steve Aguilar
Date: 12/04/12
Project #: 12U14668
Company: Broadcom Corporation
Test Target: FCC 15.247
Mode Oper: EUT with antenna setup, laptop and AC adapter. HT80 CDD MCS0 3TX 5.8GHz band.

f	Measurement Frequency	Amp	Preamp Gain	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter	

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Channel 155 (5775 MHz)															
11.550	3.0	36.24	38.9	10.6	-32.8	0.0	0.7	53.6	74.0	-20.4	H	P	145.7	299.7	
11.550	3.0	26.05	38.9	10.6	-32.8	0.0	0.7	43.4	54.0	-10.6	H	A	145.7	299.7	
11.550	3.0	35.16	38.9	10.6	-32.8	0.0	0.7	52.5	74.0	-21.5	V	P	100.8	148.8	
11.550	3.0	23.19	38.9	10.6	-32.8	0.0	0.7	40.6	54.0	-13.4	V	A	100.8	148.8	

Rev. 4.1.2.7
Note: A 0.82 dB duty cycle correction factor was added to the average readings. No other emissions were detected above the system noise floor.

9.2.32. 802.11ac VHT80 Beam-Forming 2TX MODE, 5.8 GHz BAND

Covered by testing AC80 BF 3TX at the same power level.

9.2.33. 802.11ac VHT80 Beam-Forming 3TX MODE, 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: S. Aguilar
Date: 01/03/13
Project #: 12U14668
Company: Broadcom
Test Target: FCC 15.247
Mode Oper: EUT with antenna setup, laptop and AC Adapter_5.8 G11ac 80Mhz 3TX Beamforming
Laptop with antenna and adapter setup as Beamformee setup in chamber.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Mid Channel 155 5775 MHz															
11.550	3.0	35.14	38.9	10.6	-32.8	0.0	0.7	52.51	74.0	-21.5	H	P	101.1	342.8	
11.550	3.0	26.60	38.9	10.6	-32.8	0.0	0.7	43.96	54.0	-10.0	H	A	101.1	342.8	
11.550	3.0	35.64	38.9	10.6	-32.8	0.0	0.7	53.00	74.0	-21.0	V	P	197.9	0.0	
11.550	3.0	26.61	38.9	10.6	-32.8	0.0	0.7	43.97	54.0	-10.0	V	A	197.9	0.0	

Rev. 4.1.2.7
Note: A 0.82 dB duty cycle correction factor was added to the average reading. No other emissions were detected above the system noise floor.

9.3. WORST-CASE BELOW 1 GHz

HORIZONTAL & VERTICAL DATA

Project No: 12U14668
Client Name:Broadcom Corporation
Model / Device: BCM94360CS
Config / Other:EUT with Laptop and AC adapter; Tx Worst Case
Test By:Kristopher Nguyen

Horizontal 30 - 1000MHz

Test Frequency	Meter Reading	Detector	25MHz-1GHz Chamber-A Amplified (dB)	T243 Sunol Bilog (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Height [cm]	Polarity
184.23	51.65	PK	11.1	-28	34.75	43.5	-8.75	200	Horz
230.79	55.46	PK	10.9	-28	38.36	46	-7.64	100	Horz
240.49	53.89	PK	11.4	-28	37.29	46	-8.71	100	Horz
399.57	54.74	PK	15.6	-27.9	42.44	46	-3.56	100	Horz
697.36	44.03	PK	19.6	-27	36.63	46	-9.37	100	Horz

Vertical 30 - 1000MHz

Test Frequency	Meter Reading	Detector	25MHz-1GHz Chamber-A Amplified (dB)	T243 Sunol Bilog (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Height [cm]	Polarity
33.88	43.34	PK	18.4	-28.2	33.54	40	-6.46	100	Vert
144.46	58.61	PK	12.4	-28.1	42.91	43.5	-0.59	200	Vert
144.46	49.29	QP	12.4	-28.1	33.59	43.5	-9.91	200	Vert
199.75	55.54	PK	12.3	-28	39.84	43.5	-3.66	200	Vert
497.54	53.99	PK	17.5	-27.6	43.89	46	-2.11	100	Vert
796.3	38.41	PK	20.9	-27.1	32.21	46	-13.79	200	Vert

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector
CAV - CISPR Average detector
RMS - RMS detection
CRMS - CISPR RMS detection
TAVG - Trace Averaging RMS detection

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

6 WORST EMISSIONS

Company Name:	Broadcom
Project:	12U14668
Model/Device:	BCM94360CS
Date:	12/21/2012
Configuraiton:	TX WLAN Worst case
Test Voltage/Frequency:	120VAC 60Hz
Tested by:	Steve Aguilar

Line-L1 .15 - 30MHz

Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]	Av Margin [dB]
0.1545	55.11	PK	0.1	0	55.21	65.8	-10.59	-	-
0.1545	39.99	Av	0.1	0	40.09	-	-	55.8	-15.71
0.1815	53.37	PK	0.1	0	53.47	64.4	-10.93	-	-
0.1815	22.05	Av	0.1	0	22.15	-	-	54.4	-32.25
0.2085	48.17	PK	0.1	0	48.27	63.3	-15.03	-	-
0.2085	31.45	Av	0.1	0	31.55	-	-	53.3	-21.75

Line-L2 .15 - 30MHz

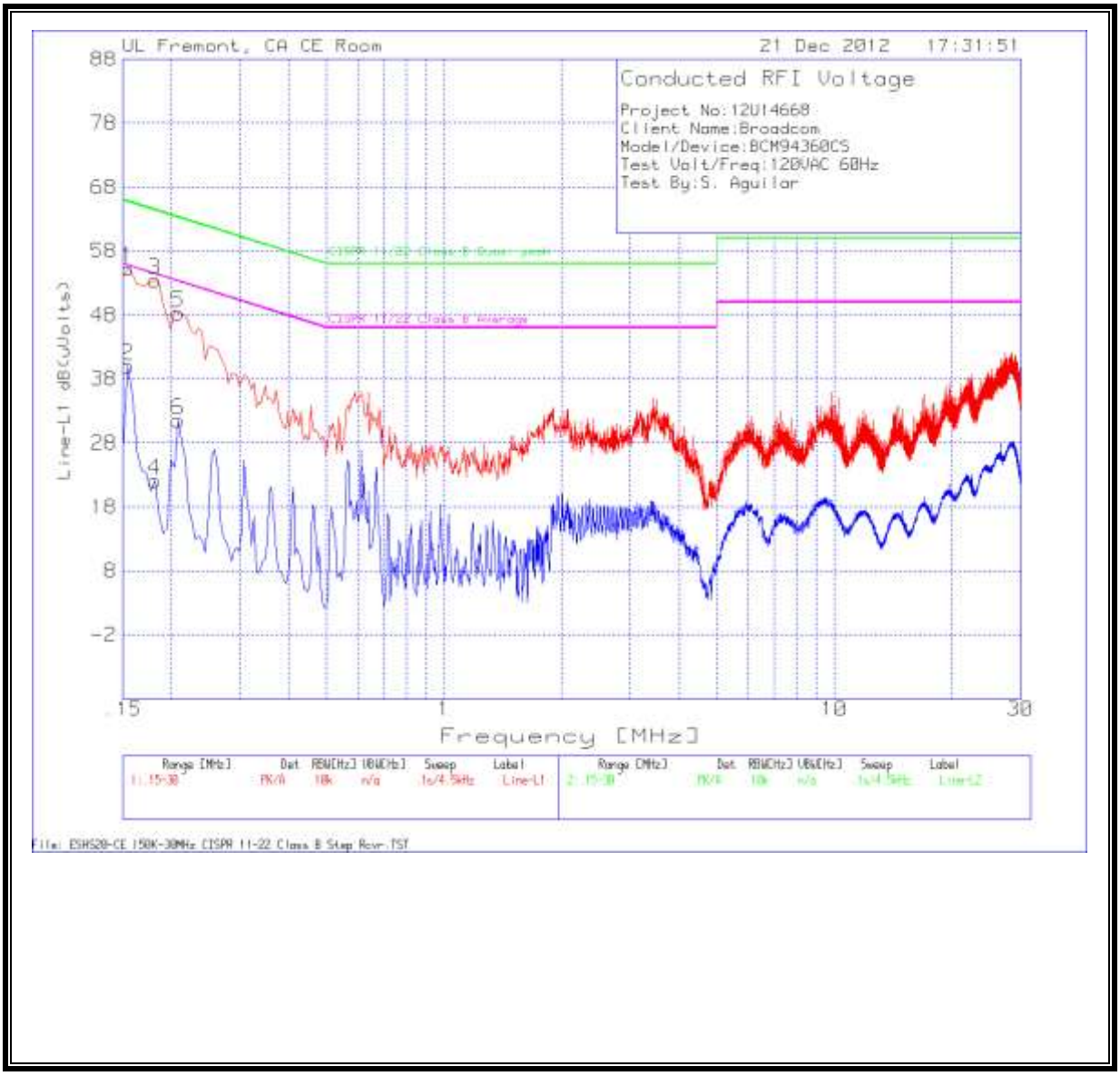
Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]	Av Margin [dB]
0.1545	52.78	PK	0.1	0	52.88	65.8	-12.92	-	-
0.1545	34.68	Av	0.1	0	34.78	-	-	55.8	-21.02
0.168	50.95	PK	0.1	0	51.05	65.1	-14.05	-	-
0.168	22.76	Av	0.1	0	22.86	-	-	55.1	-32.24
0.204	47.04	PK	0.1	0	47.14	63.4	-16.26	-	-
0.204	30.88	Av	0.1	0	30.98	-	-	53.4	-22.42

PK - Peak detector

QP - Quasi-Peak detector

Av - Average detector

LINE 1 RESULTS



LINE 2 RESULTS