FCC 47 CFR PART 15 SUBPART C

CLASS II PERMISSIVE CHANGE
(2.4 GHz and 5.8 GHz BAND) TEST REPORT

FOR

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

MODEL NUMBER: BCM943602BAED

FFC ID: QDS-BRCM1088

REPORT NUMBER: 15U21486-E1 Revision A

ISSUE DATE: August 24, 2015

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	8/06/15	Initial Issue	H. Mustapha
A	8/24/15	Updated section 5.4 Removed 99% BW data from entire report Updated section 7 by removing reference to 99% BW	H. Mustapha

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	BROADCOM CORPORATION 190 MATHILDA PLACE SUNNYVALE, CA 94086, U.S.A.
EUT DESCRIPTION:	802.11a/g/n/ac 3X3 WLAN + Bluetooth PCI-E Custom Combination Card
MODEL:	BCM943602BAED
SERIAL NUMBER:	Conducted: P103 S/N:0169 Radiated: P103 S/N:0027
DATE TESTED:	MARCH 17, 2015 – MAY 20, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass

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

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

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PROGRAM MANAGER
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, and KDB 558074 D01 v03r03.

3. FACILITIES AND ACCREDITATION

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

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

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

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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

The radio module is manufactured by Broadcom.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

2400 - 2483.5 MHz Authorized Frequency Band						
Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Power, Chain 2 (dBm)	Total power (dBm)	Total power (mW)
2412 - 2472	802.11b CDD 3Tx	20.55	20.71	20.61	25.40	346.34
2412 - 2472	802.11g Legacy 1TX	19.78			19.78	95.06
2412 - 2472	802.11n HT20 CDD 3TX	20.41	20.52	20.49	25.24	334.56
2412 - 2472	802.11n HT20 TxBF 3TX	20.41	20.52	20.49	25.24	334.56
2422 - 2462	802.11n HT40 1TX	18.16			18.16	65.46
2422 - 2462	802.11n HT40 CDD 2TX	19.75	19.78		22.78	189.47
2422 - 2462	802.11n HT40 CDD 3TX	15.79	15.72	15.25	20.36	108.75
2422 - 2462	802.11n HT40 TxBF 3TX	19.75	19.78	19.73	24.52	283.44
5725 - 5850 MHz Authorized Frequency Band						
Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Power, Chain 2 (dBm)	Total power (dBm)	Total power (mW)
5745 - 5825	802.11a Legacy 1Tx	19.00			19.00	79.43
5745 - 5825	802.11n HT20 CDD 2TX	18.90	19.2		22.06	160.80
5745 - 5825	802.11n HT20 CDD 3TX	19.15	19.05	18.98	23.83	241.64
5745 - 5825	802.11n HT20 TxBF 3TX	19.15	19.05	18.98	23.83	241.64
5755 - 5795	802.11n HT40 1TX	19.31			19.31	85.31
5755 - 5795	802.11n HT40 CDD 2TX	19.10	19.35		22.24	167.38
5755 - 5795	802.11n HT40 CDD 3TX	19.41	18.89	19.09	23.91	245.84
5755 - 5795	802.11n HT40 TxBF 3TX	19.41	18.89	19.09	23.91	245.84
5775	802.11ac VHT80 1TX	18.36			18.36	68.55
5775	802.11ac VHT80 CDD 3TX	16.05	16.53	16.51	21.14	130.02
5775	802.11ac VHT80 TxBF 3TX	16.05	16.53	16.51	21.14	130.02

List of test reductions (non-beamforming modes):

Antenna Port Testing		
Band	**Mode**	**Covered by**
2.4 GHz band	802.11b Legacy 1TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11b CDD 2TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11g CDD 2TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11g CDD 3TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11n HT20 1TX	802.11g Legacy 1TX
2.4 GHz band	802.11n HT20 CDD/SDM 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11a Legacy 1TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11a CDD 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11a CDD 3TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11n HT20 CDD/SDM/STBC 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11n HT40 1TX	802.11n HT40 CDD 3TX
5 GHz bands	802.11n HT40 CDD/SDM/STBC 2TX	802.11n HT40 CDD 3TX
5 GHz bands	802.11n HT40 STBC 3TX	802.11n HT40 CDD 3TX
5 GHz bands	802.11ac VHT80 1TX	802.11ac VHT80 CDD 3TX
5 GHz bands	802.11ac VHT80 CDD/SDM/STBC 2TX	802.11ac VHT80 CDD 3TX
5 GHz bands	802.11ac VHT80 STBC 3TX	802.11ac VHT80 CDD 3TX

Radiated Testing		
Band	**Mode**	**Covered by**
2.4 GHz band	802.11b Legacy 1TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11b CDD 2TX	802.11b HT20 CDD 3TX
2.4 GHz band	802.11g CDD 2TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11g CDD 3TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11n HT20 1TX	802.11g Legacy 1TX
2.4 GHz band	802.11n HT20 CDD/SDM 2TX	802.11n HT20 CDD 3TX
2.4 GHz band	802.11g Legacy 1TX (Harmonics)	802.11n HT20 CDD 3TX (Harmonics)
5 GHz bands	802.11a Legacy 1TX (Harmonics)	802.11n HT20 CDD 3TX (Harmonics)
5 GHz bands	802.11a CDD 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11a CDD 3TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11n HT20 CDD/SDM/STBC 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11n HT40 1TX (Harmonics)	802.11n HT40 CDD 3TX (Harmonics)
5 GHz bands	802.11n HT40 STBC 3TX	802.11n HT40 CDD 3TX
5 GHz bands	802.11ac VHT80 1TX (Harmonics)	802.11ac VHT80 CDD 3TX (Harmonics)
5 GHz bands	802.11ac VHT80 CDD/SDM/STBC 2TX	802.11ac VHT80 CDD 3TX
5 GHz bands	802.11ac VHT80 STBC 3TX	802.11ac VHT80 CDD 3TX

List of test reductions (beamforming modes):

Antenna Port Testing		
Band	**Mode**	**Covered by**
2.4 GHz band	802.11n HT20 BF 2Tx	802.11n HT20 CDD 3Tx
2.4 GHz band	802.11n HT20 BF 2Tx	802.11n HT20 CDD 3Tx
5 GHz bands	802.11n HT40 BF 2Tx	802.11n HT40 BF 3Tx
5 GHz bands	802.11ac VHT80 BF 2Tx	802.11ac VHT80 BF 3Tx

Radiated Testing		
Band	**Mode**	**Covered by**
2.4 GHz band	802.11g BF 2TX	802.11n HT20 BF 3Tx
2.4 GHz band	802.11g BF 3TX	802.11n HT20 BF 3Tx
2.4 GHz band	802.11n HT20 BF 1Tx	802.11n HT20 BF 3Tx
2.4 GHz band	802.11n HT20 BF 2Tx	802.11n HT20 BF 3Tx
5 GHz bands	802.11a BF 2TX	802.11n HT20 BF 3Tx
5 GHz bands	802.11a BF 3TX	802.11n HT20 BF 3Tx
5 GHz bands	802.11n HT20 BF 2Tx	802.11n HT20 BF 3Tx
5 GHz bands	802.11n HT40 BF 2Tx	802.11n HT40 BF 3Tx
5 GHz bands	802.11ac VHT80 BF 2Tx	802.11ac VHT80 BF 3Tx

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The EUT utilizes the following antenna:

No.	Antenna Manufacturer	Antenna Type	Model	Peak gain@ 2400-2483.5MHz	Peak gain@ 5725 -5850MHz
1	MagLayers	802.11abgn WLAN, Bluetooth Antenna	PCA-4077-25GC1-A1-RT	3.33dBi	6.21

5.4. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The purpose of this C2PC is to test the device described under section 5.1 of this report in accordance with part 15.247 Old Rules in the 5.8 GHz band. All data for the 2.4 GHz band was leveraged from original report no. 15U20284-E2A, as the EUT firmware and hardware remained unchanged. The original data was tested in accordance with part 15.247 New Rules.

5.5. SOFTWARE AND FIRMWARE

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

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

5.6. WORST-CASE CONFIGURATION AND MODE

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

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

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

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

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

Worst-case chains as provided by the client were:

For SISO modes:
- 2.4 and 5 GHz band: chain 0 (connector J0) connected to any antenna, as all three antennas have equal antenna gain.

For 2 TX modes:
- 2.4 and 5 GHz band: chain 0 (connector J0) connected to any antenna and chain 1 (connector J1) connected to any antenna, as all three antennas have equal antenna gain.

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11a mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0
802.11ac VHT80 mode: MCS0

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

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

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

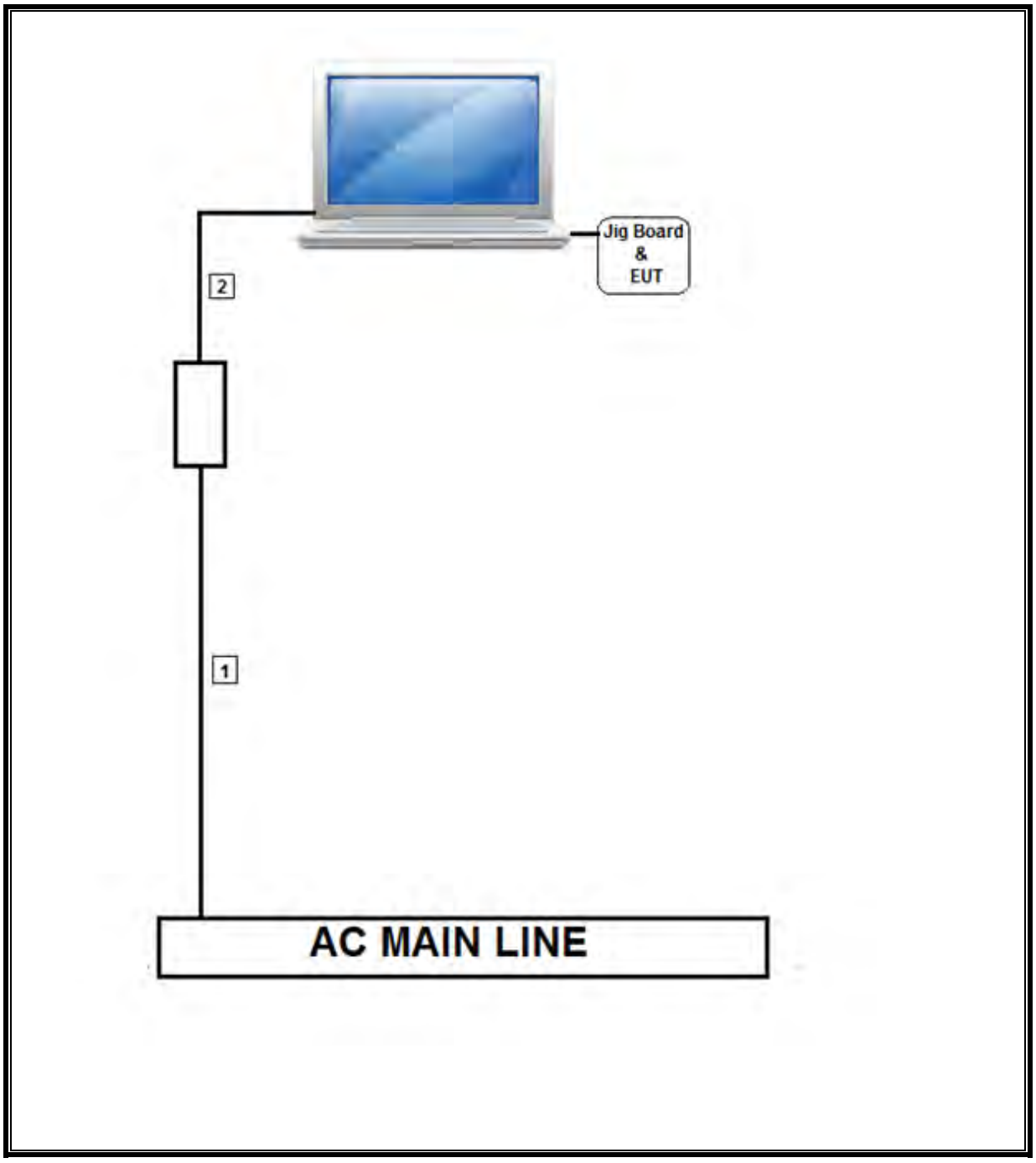
I/O CABLES

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

TEST SETUP

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

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

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

7. MEASUREMENT METHODS

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

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

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

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

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

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

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

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

ON TIME AND DUTY CYCLE RESULTS

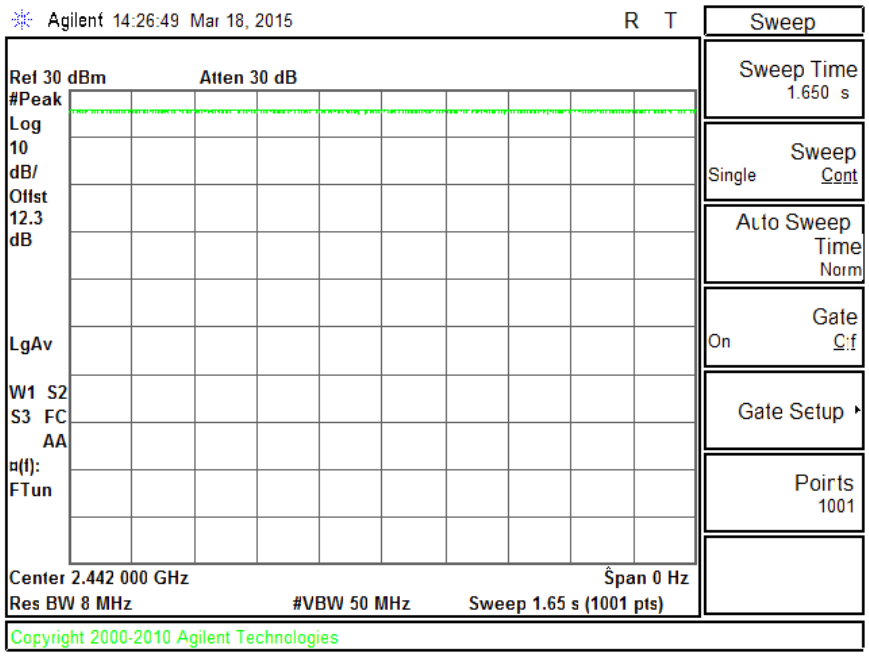
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b CDD 3TX	100.000	100.000	1.000	100.00%	0.00	0.010
802.11g 1TX	2.061	2.082	0.990	98.99%	0.00	0.010
802.11n HT20 CDD 3TX	1.920	1.941	0.989	98.92%	0.00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

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

DUTY CYCLE PLOTS

2.4 GHz BAND

DUTY CYCLE 802.11b CDD MODE



DUTY CYCLE 802.11g 1TX MODE

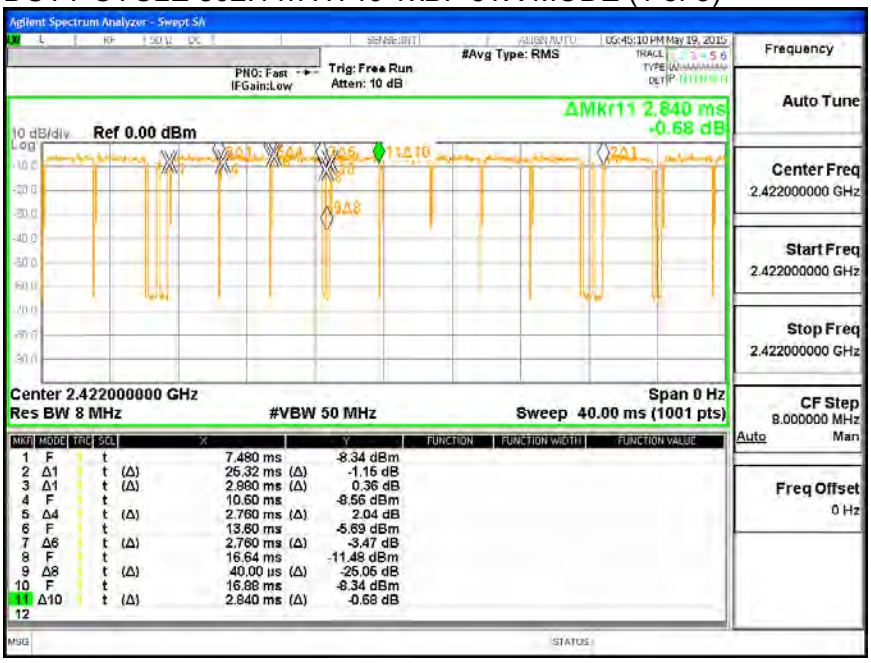
DUTY CYCLE 802.11n HT20 CDD 3TX MODE

DUTY CYCLE 802.11n HT20 TxBF 3TX MODE (1 of 2)

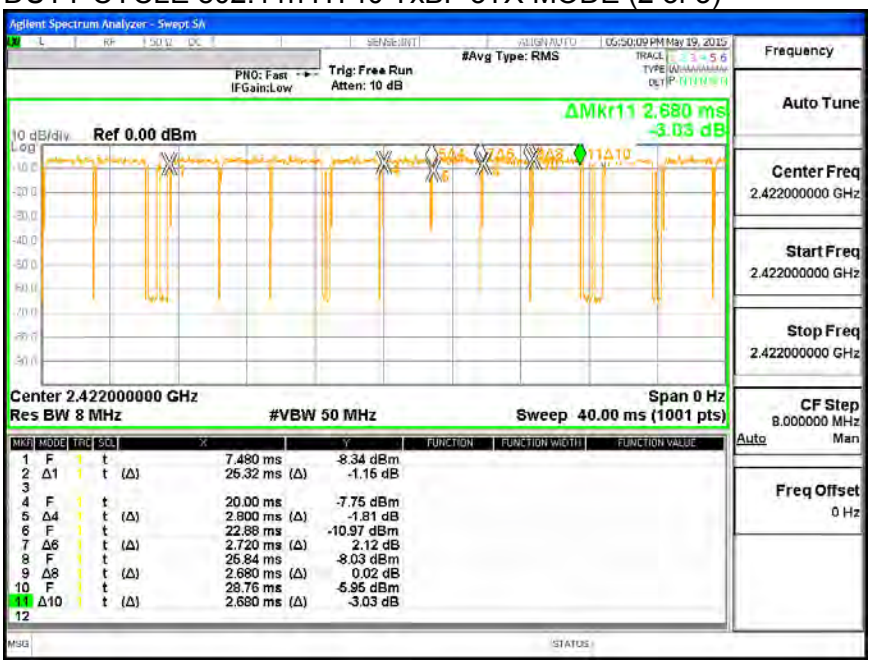
DUTY CYCLE 802.11n HT20 TxBF 3TX MODE (2 of 2)

DUTY CYCLE 802.11n HT40 CDD 3TX MODE

DUTY CYCLE 802.11n HT40 TxBF 3TX MODE (1 of 3)

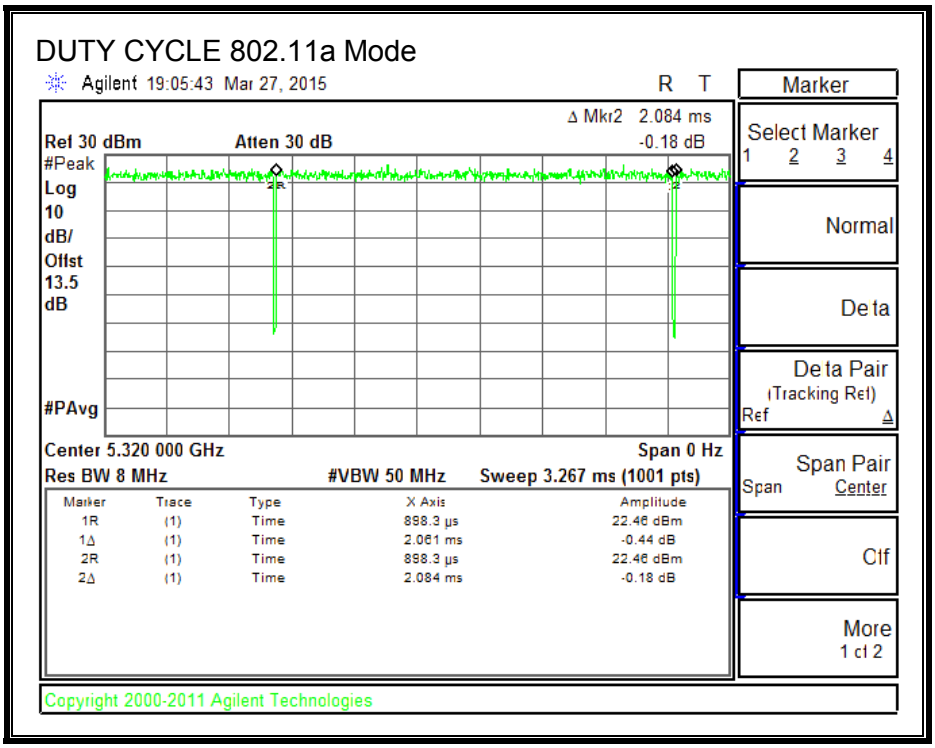


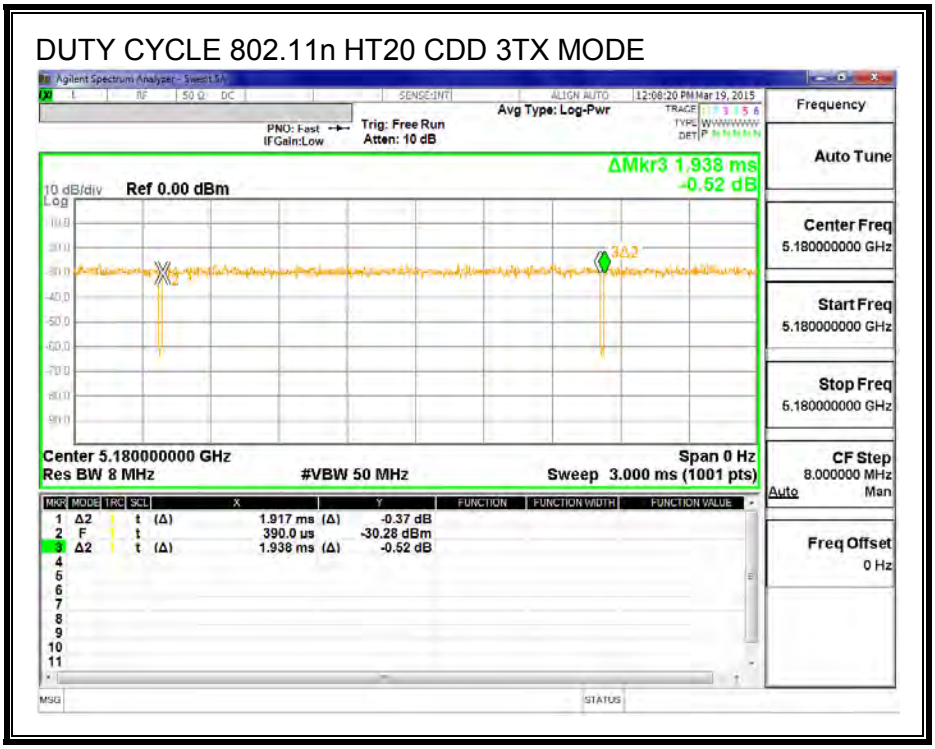
DUTY CYCLE 802.11n HT40 TxBF 3TX MODE (2 of 3)



DUTY CYCLE 802.11n HT40 TxBF 3TX MODE (3 of 3)

5 GHz BANDS





DUTY CYCLE 802.11n HT20 TxBF MODE (1 of 6)

DUTY CYCLE 802.11n HT20 TxBF MODE (2 of 6)

DUTY CYCLE 802.11n HT20 TxBF MODE (3 of 6)

DUTY CYCLE 802.11n HT20 TxBF MODE (4 of 6)

DUTY CYCLE 802.11n HT20 TxBF MODE (5 of 6)

DUTY CYCLE 802.11n HT20 TxBF MODE (6 of 6)

DUTY CYCLE 802.11n HT40 CDD 3TX MODE

DUTY CYCLE 802.11n HT40 TxBF MODE (1 OF 2)

DUTY CYCLE 802.11n HT40 TxBF MODE (2 OF 2)

DUTY CYCLE 802.11ac VHT80 CDD 3TX MODE

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

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

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

8.2.1. 6 dB BANDWIDTH

LIMITS

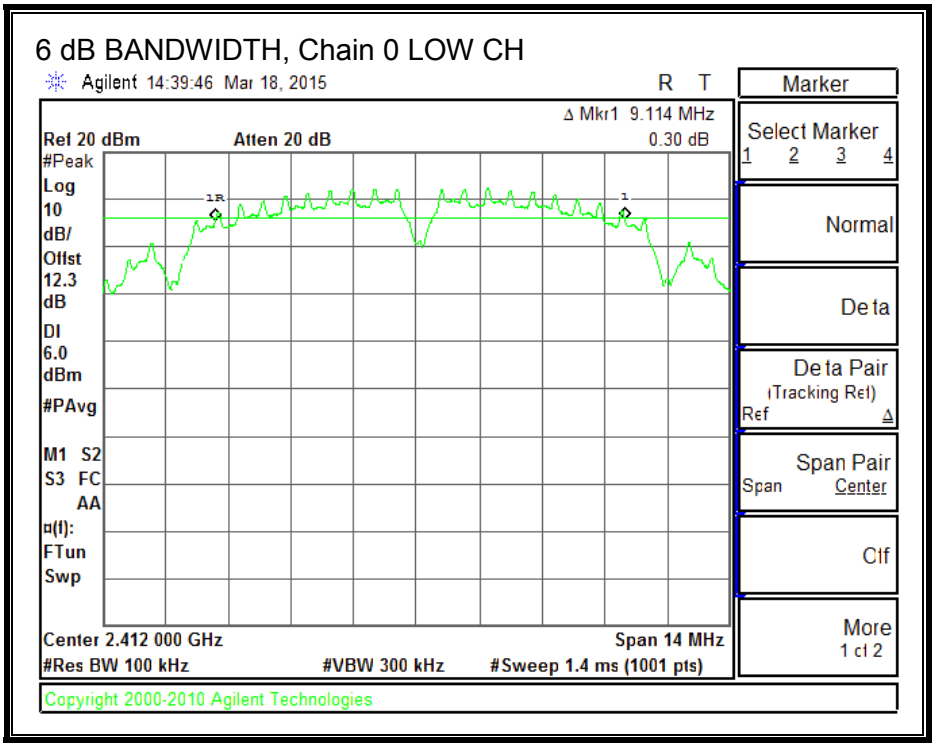
FCC §15.247 (a) (2)

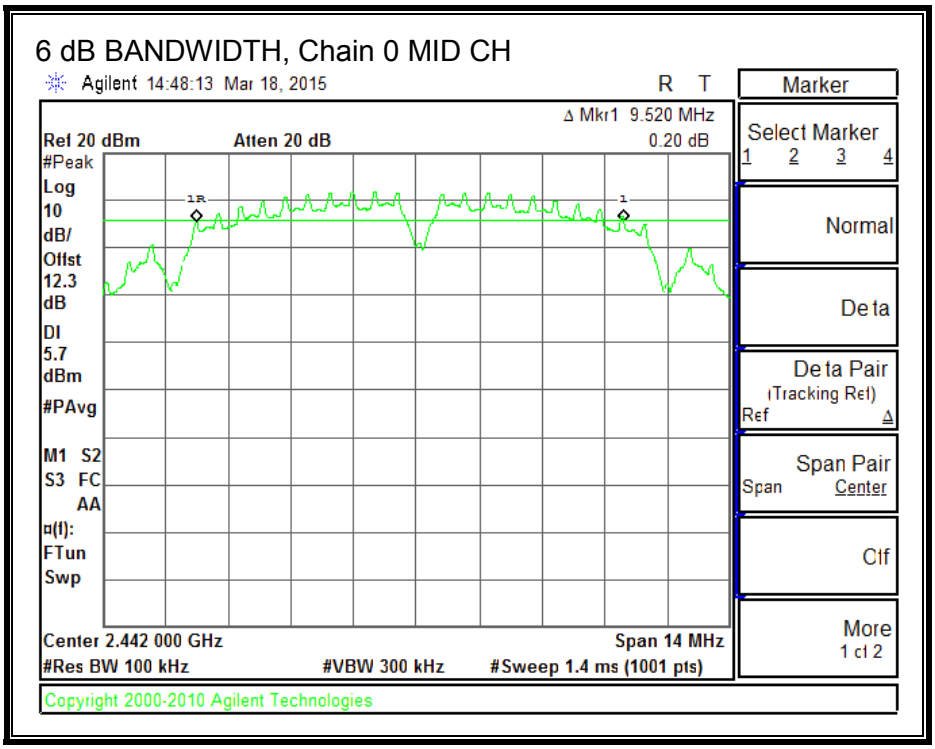
The minimum 6 dB bandwidth shall be at least 500 kHz.

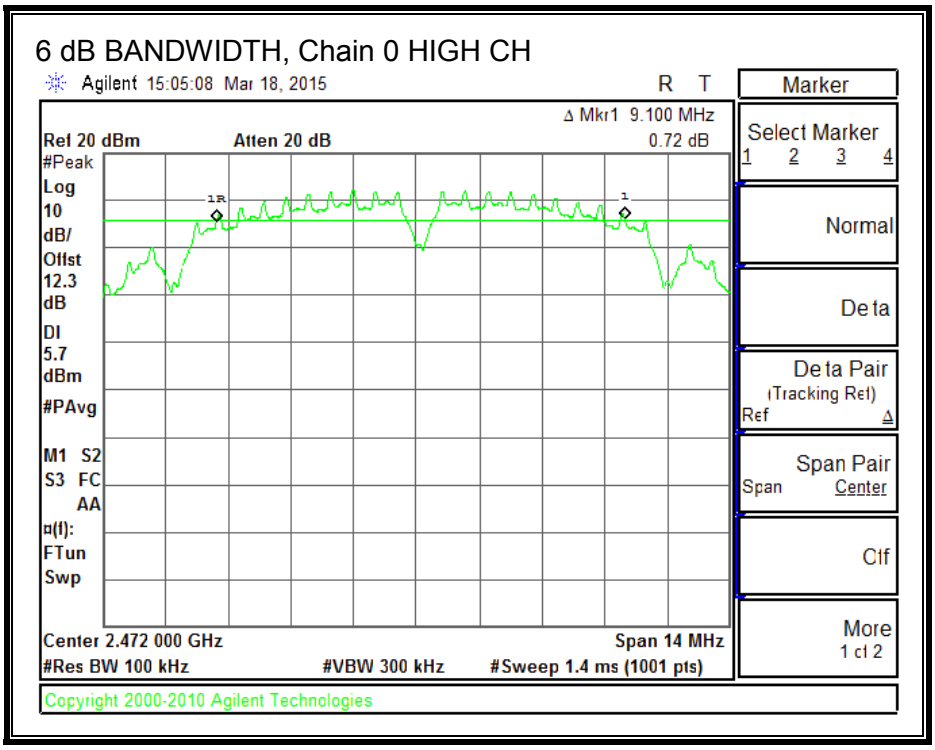
RESULTS

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

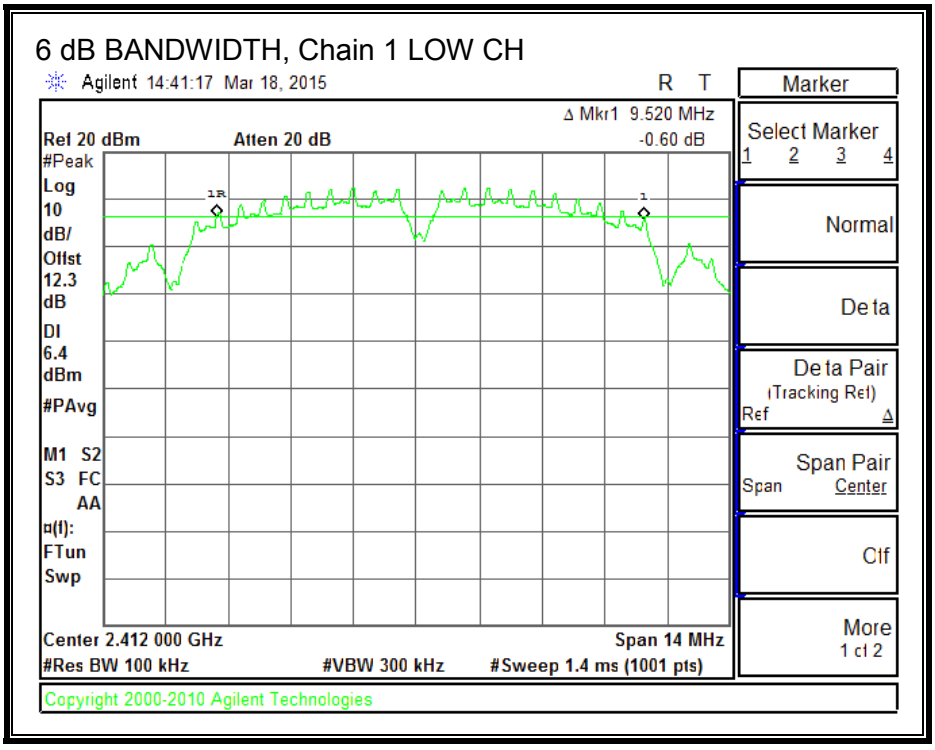
6 dB BANDWIDTH, Chain 0



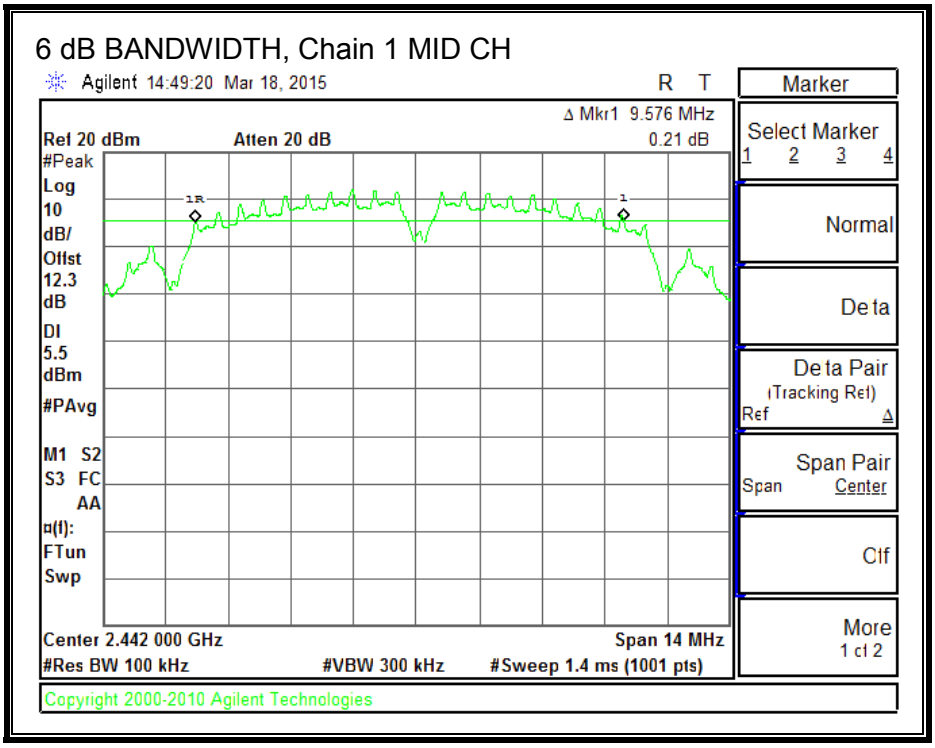




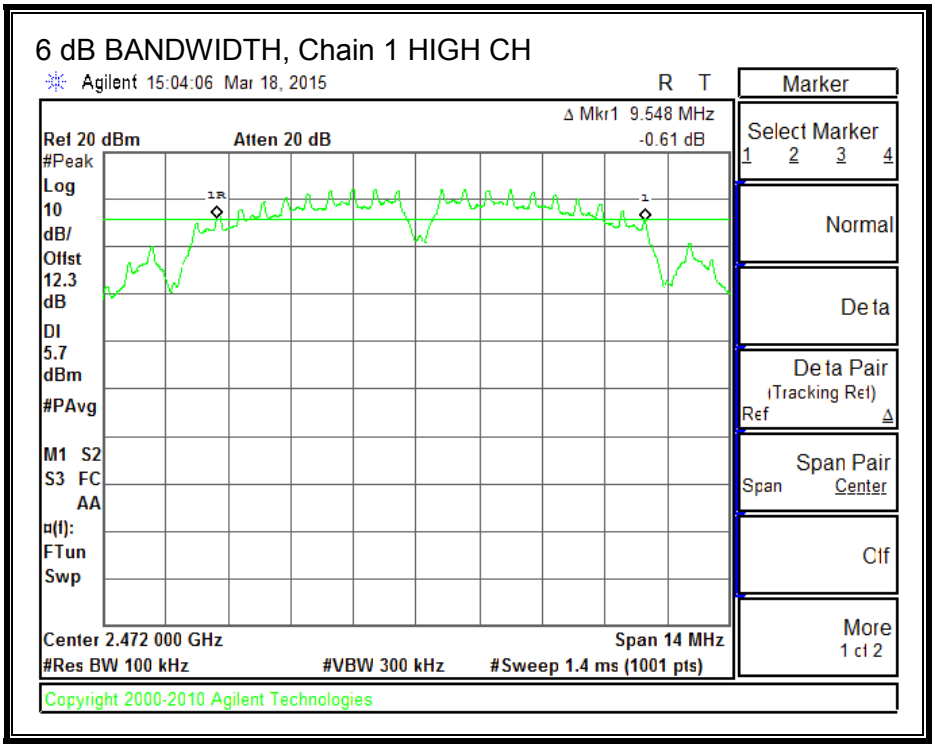
6 dB BANDWIDTH, Chain 1



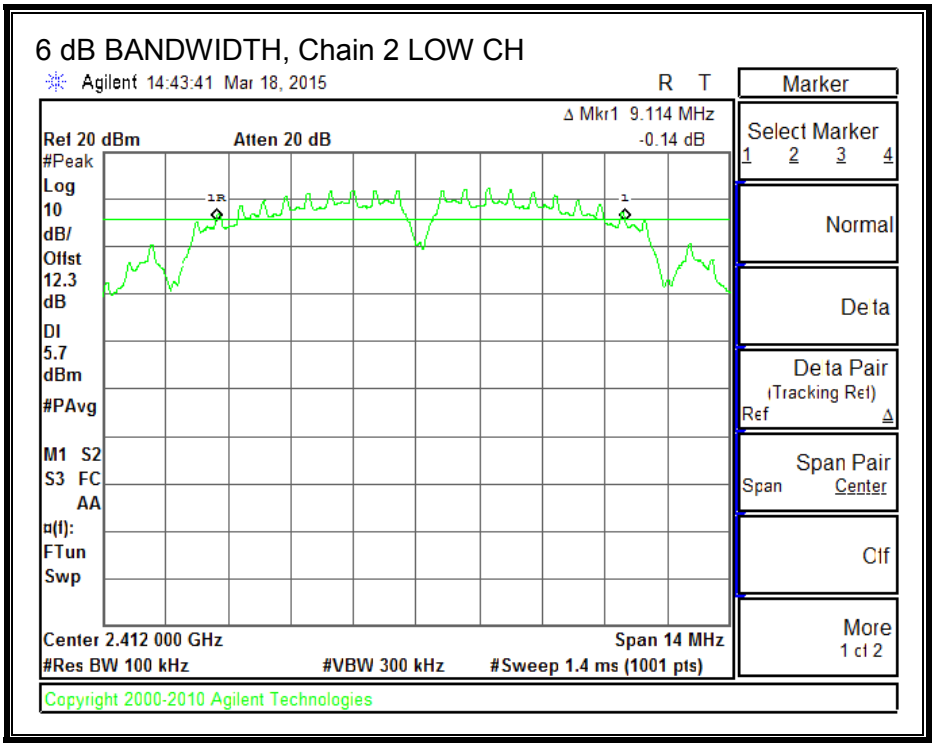
6 dB BANDWIDTH, Chain 1 MID CH

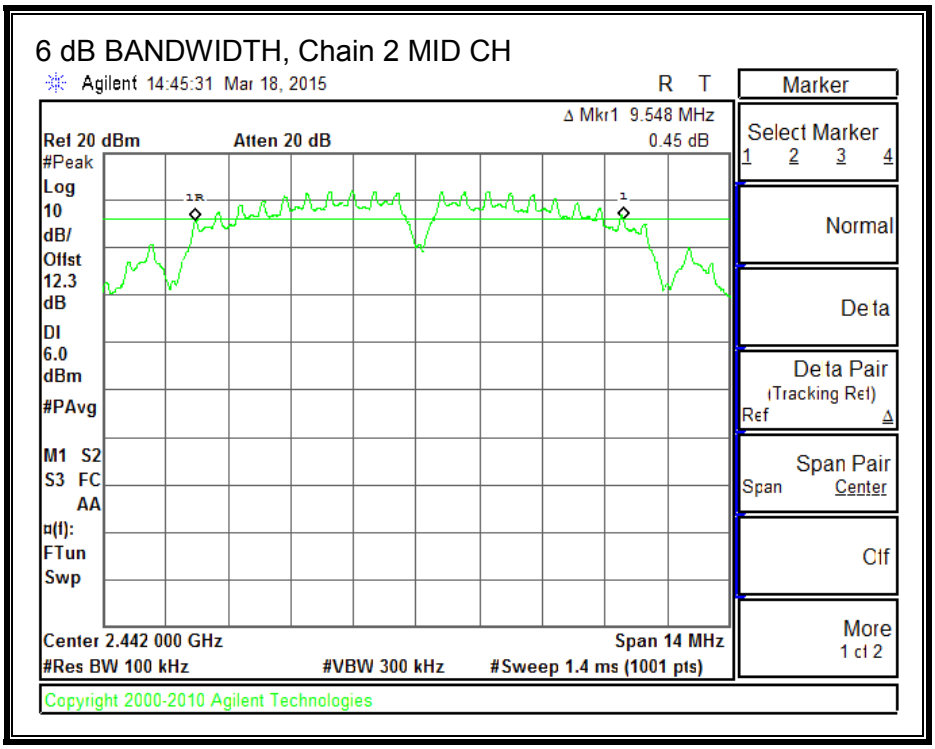


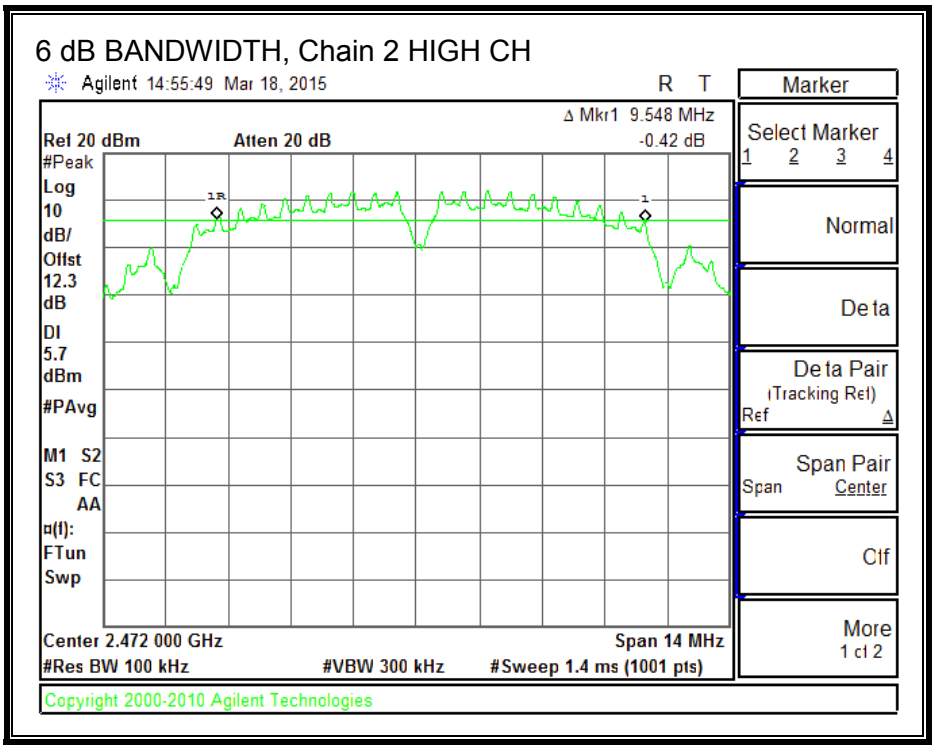
6 dB BANDWIDTH, Chain 1 HIGH CH



6 dB BANDWIDTH, Chain 2







8.2.2. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

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

Results

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

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

8.2.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4 (4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

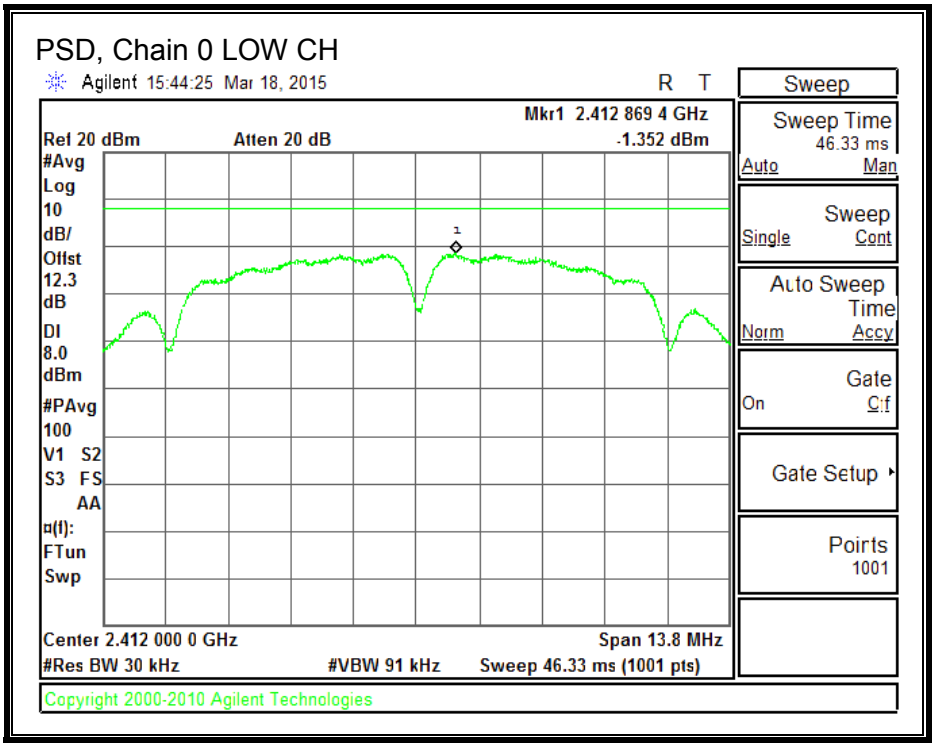
RESULTS

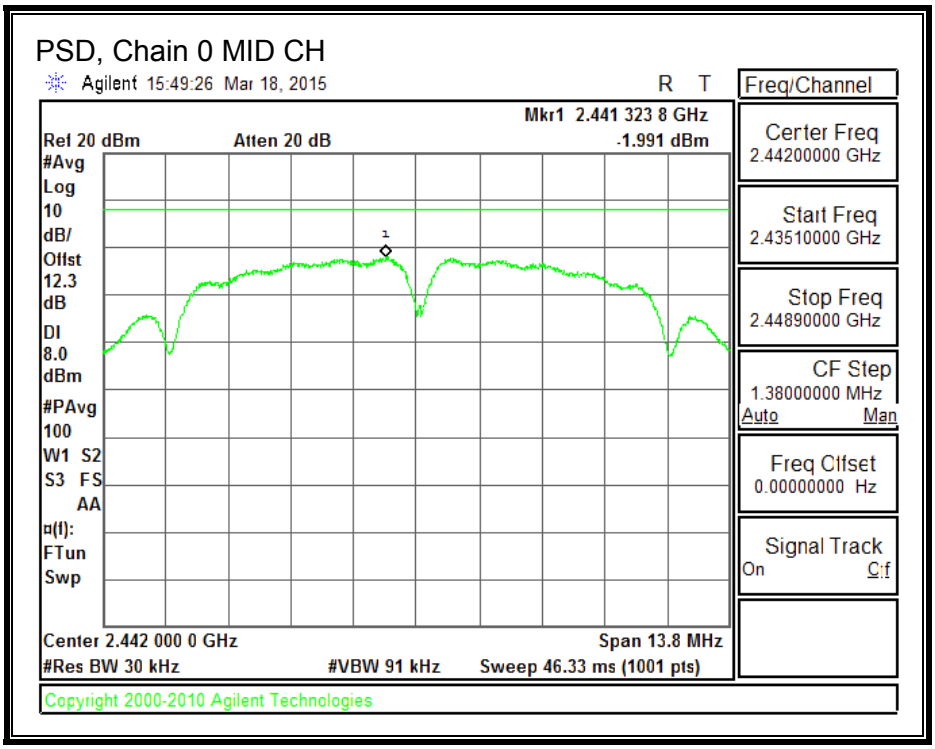
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

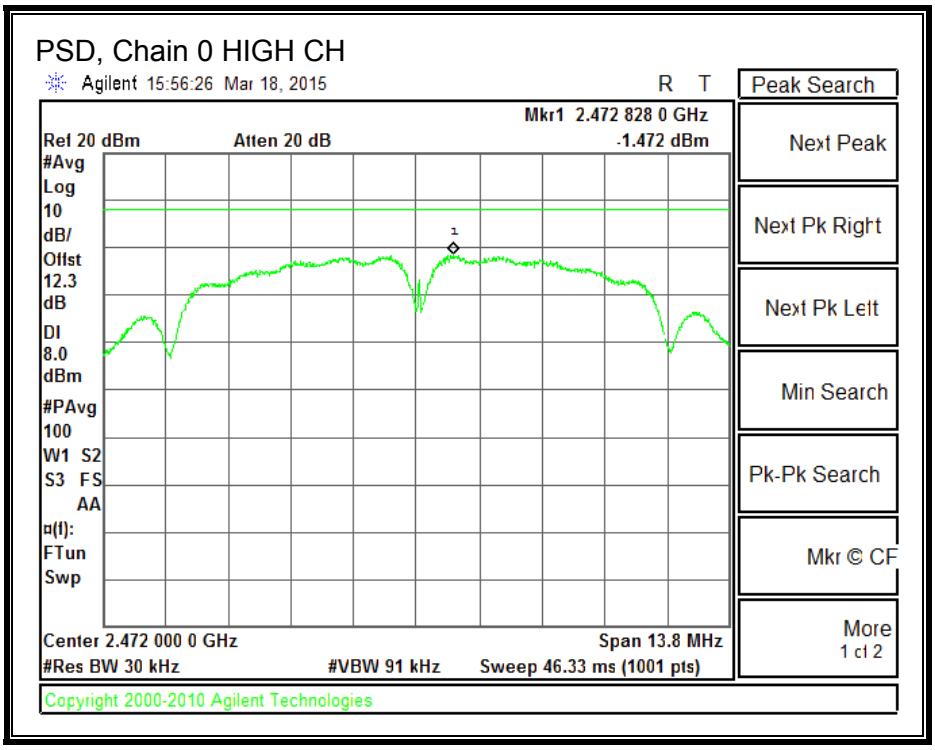
PSD Results

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

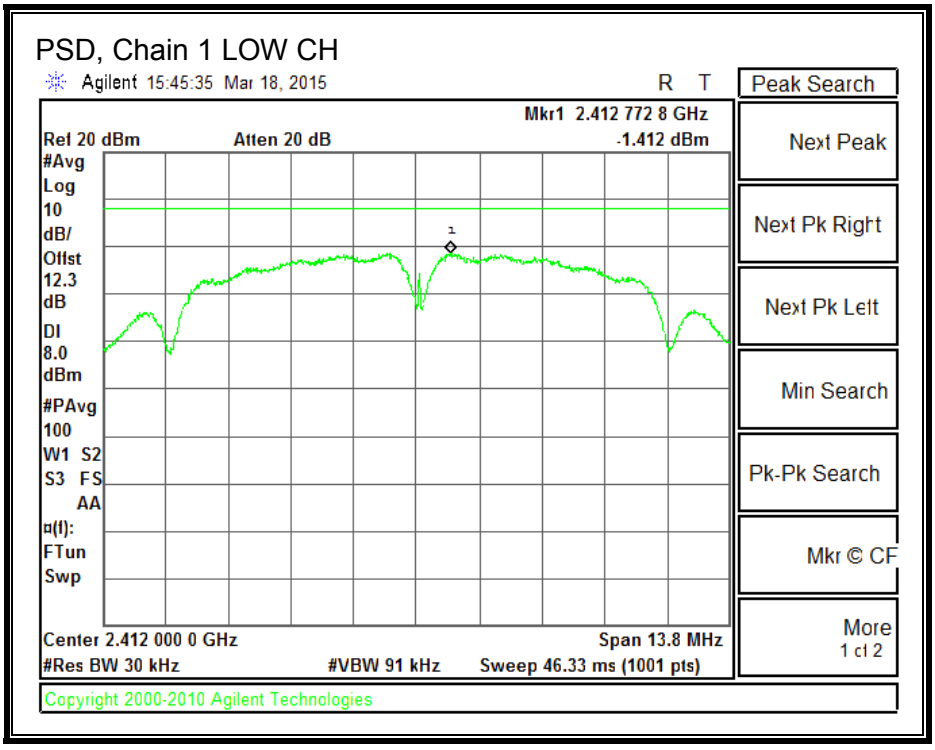
PSD, Chain 0

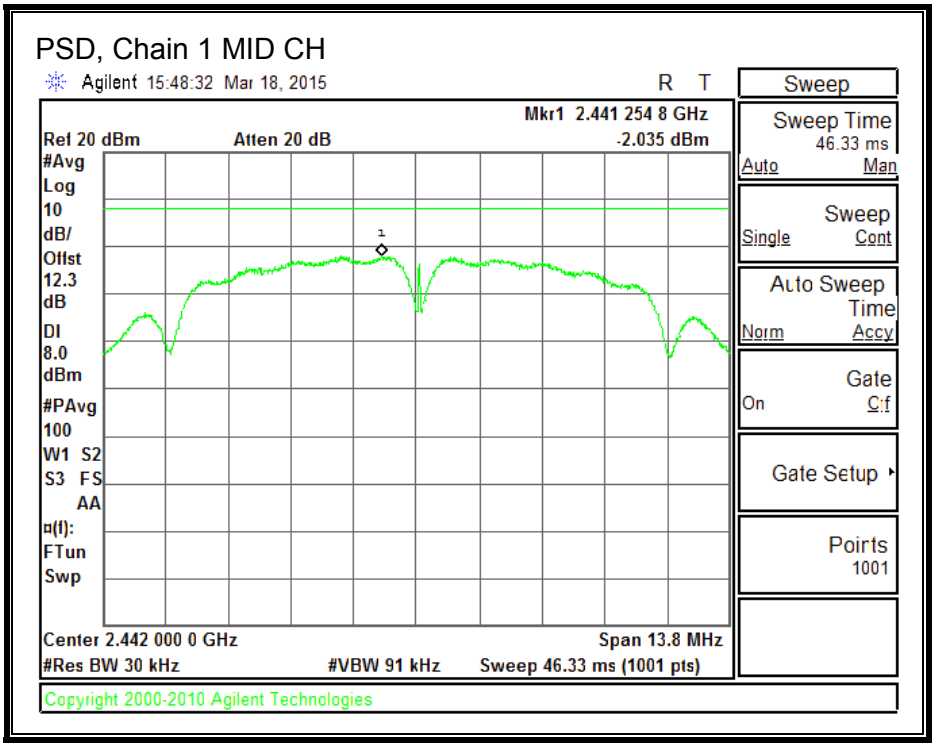


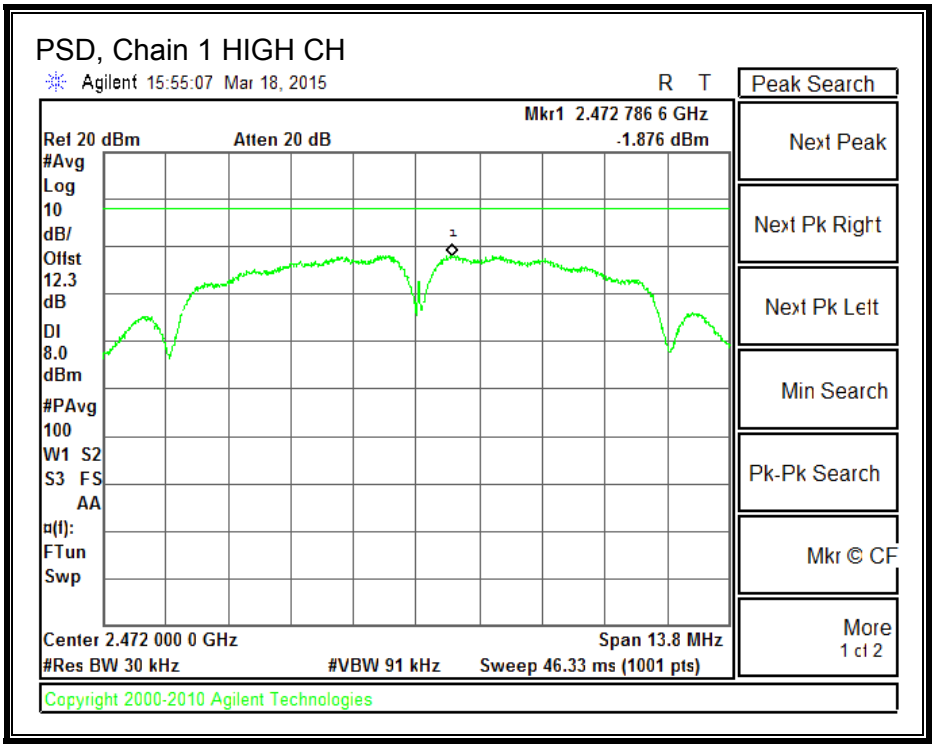




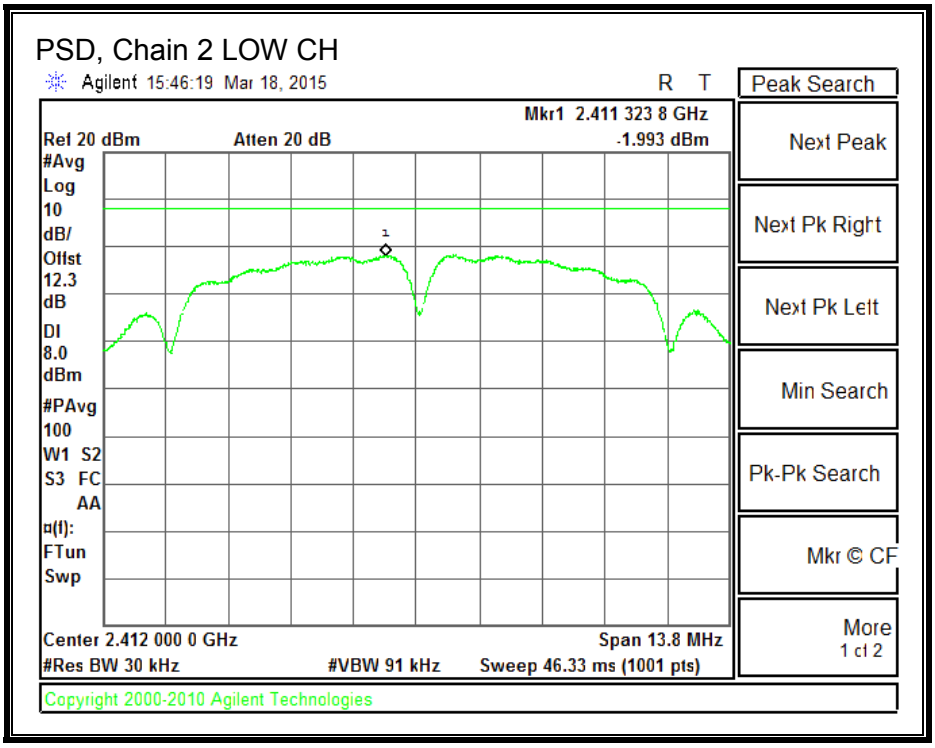
PSD, Chain 1

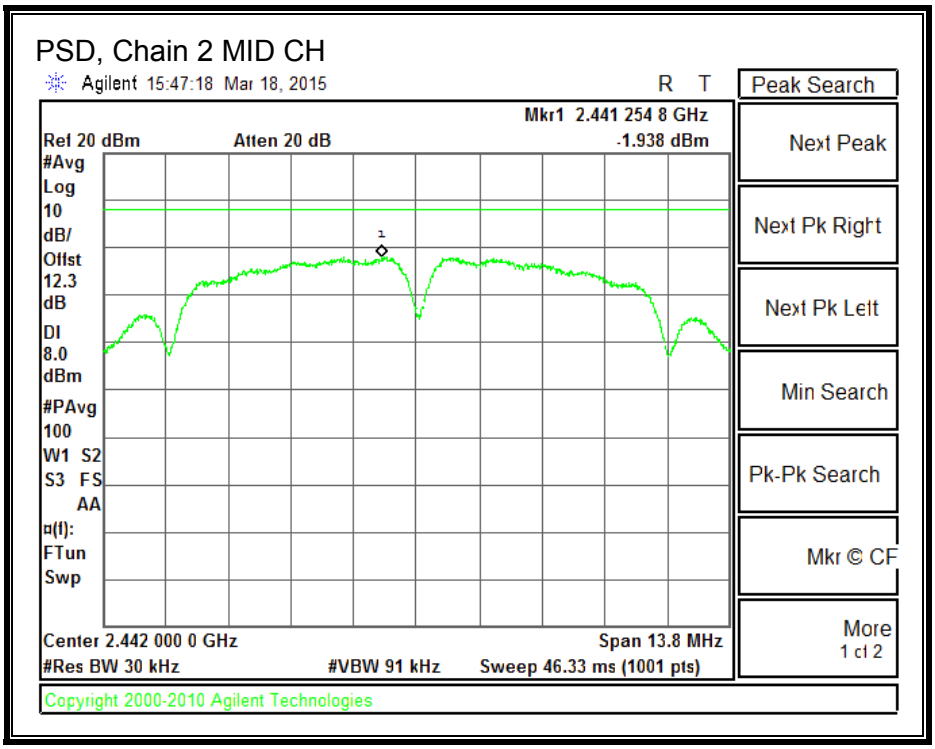


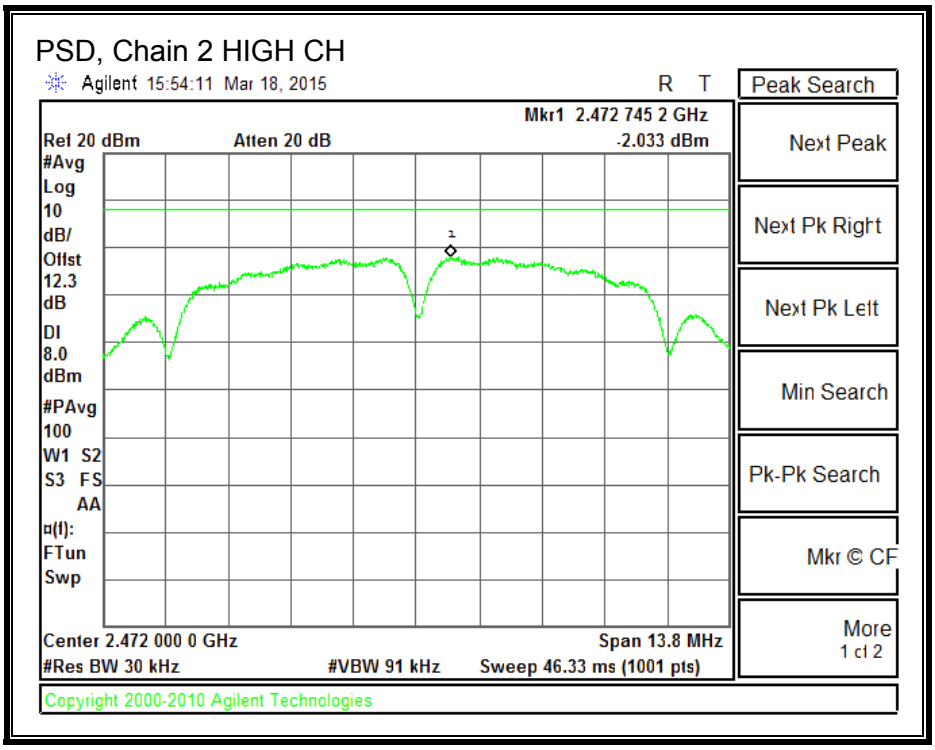




PSD, Chain 2







8.2.4. OUT-OF-BAND EMISSIONS

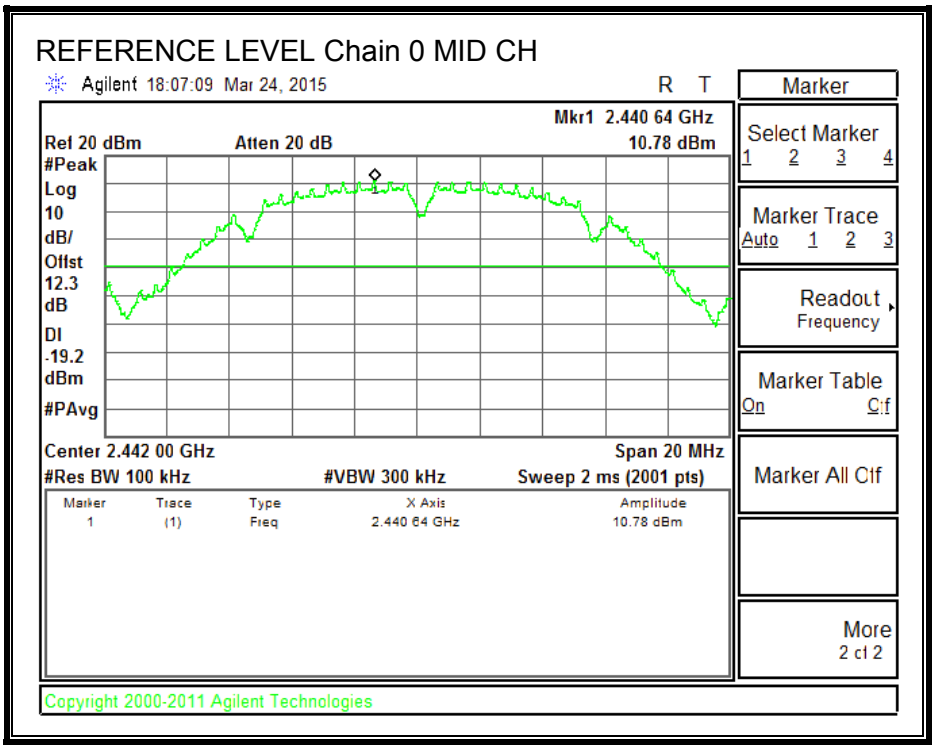
LIMITS

FCC §15.247 (d)

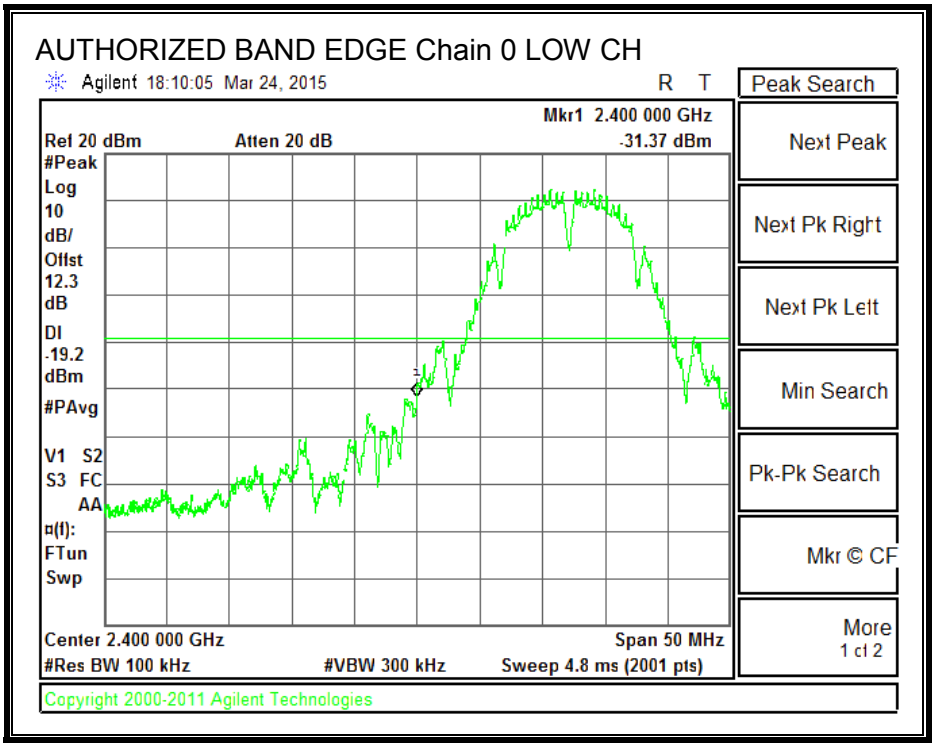
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

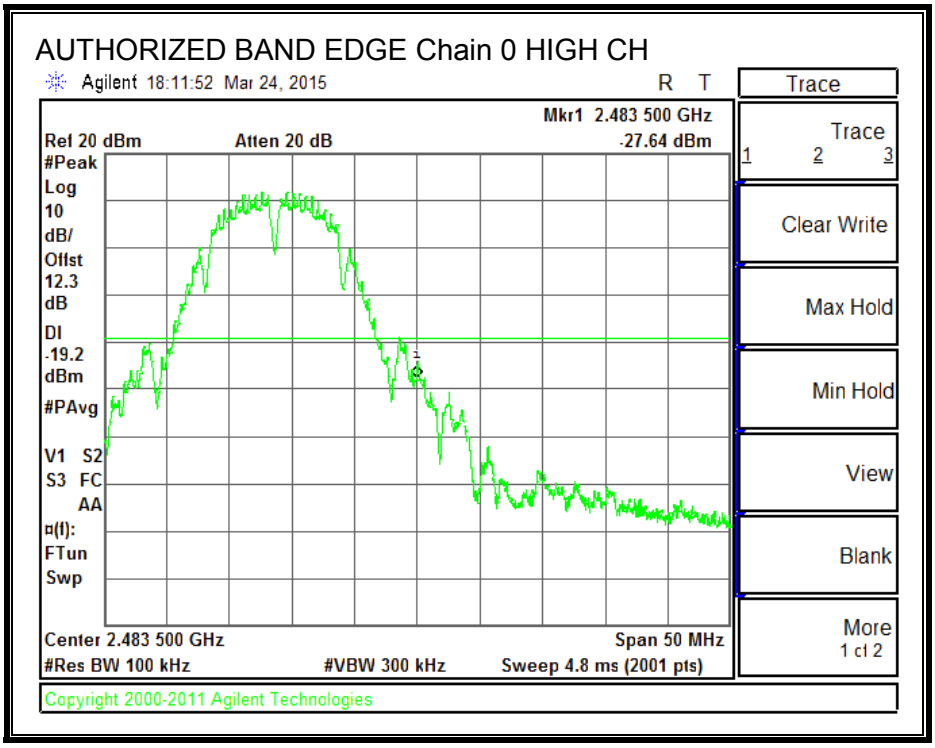
IN-BAND REFERENCE LEVEL, Chain 0



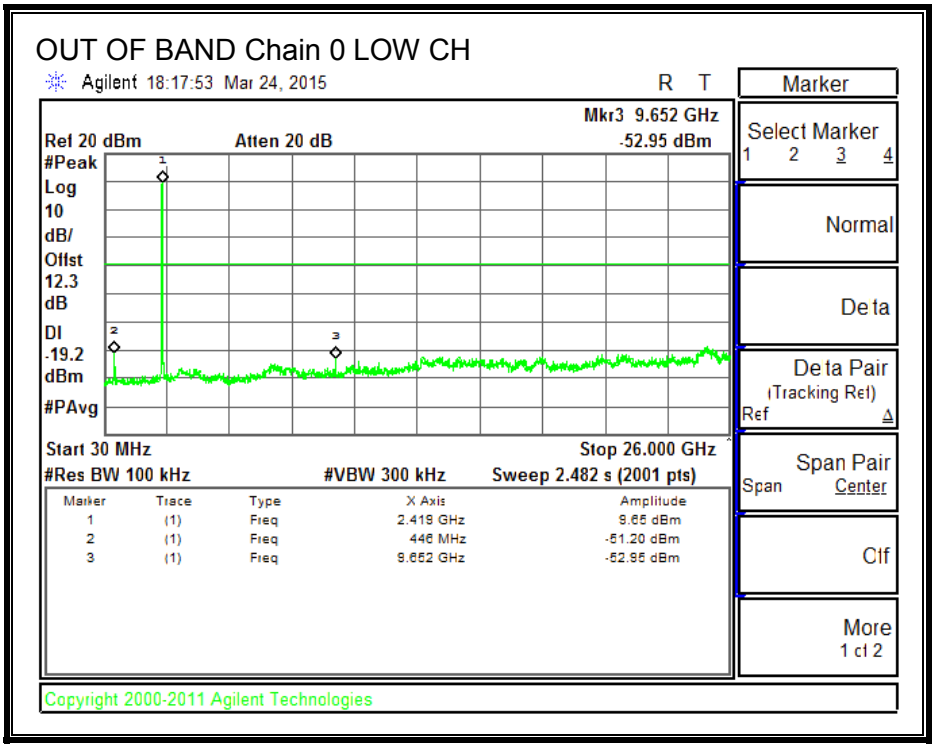
LOW CHANNEL BANDEDGE, Chain 0

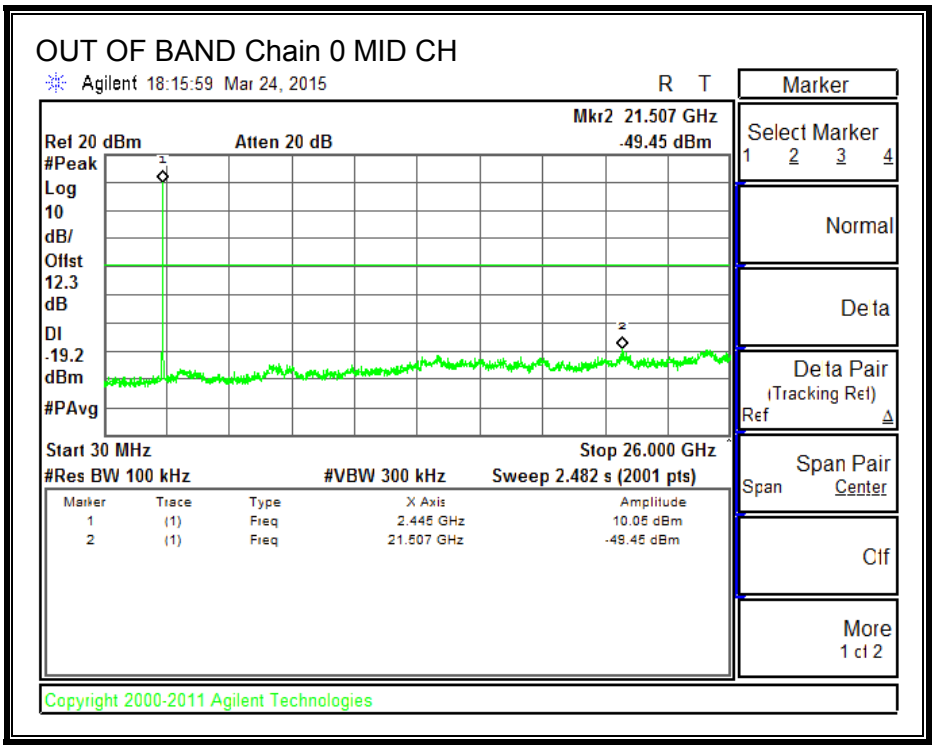


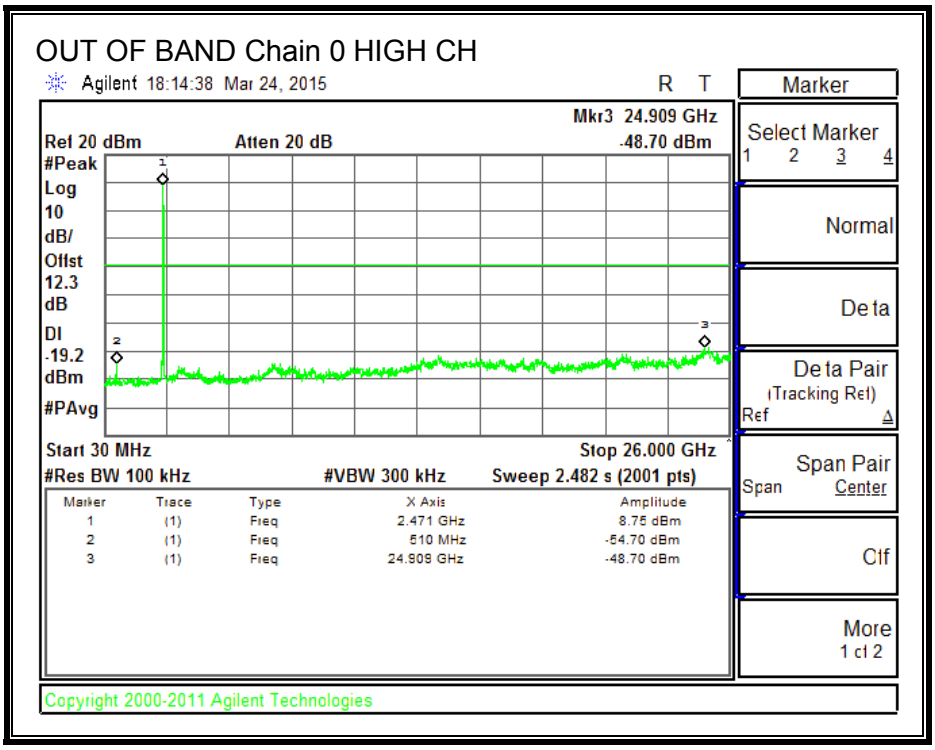
HIGH CHANNEL BANDEDGE, Chain 0



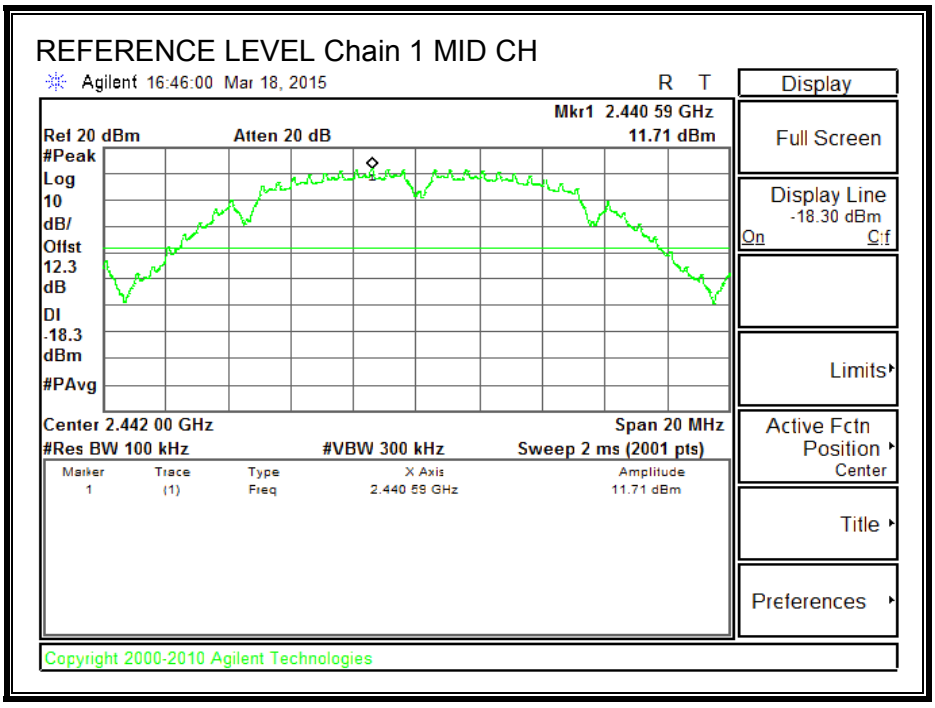
OUT-OF-BAND EMISSIONS, Chain 0



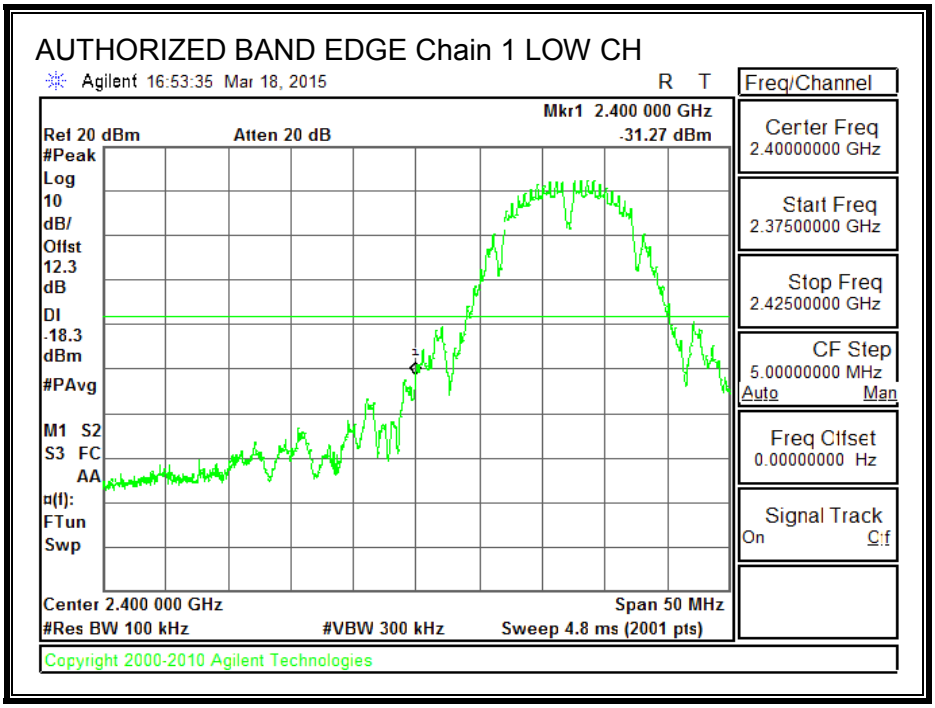




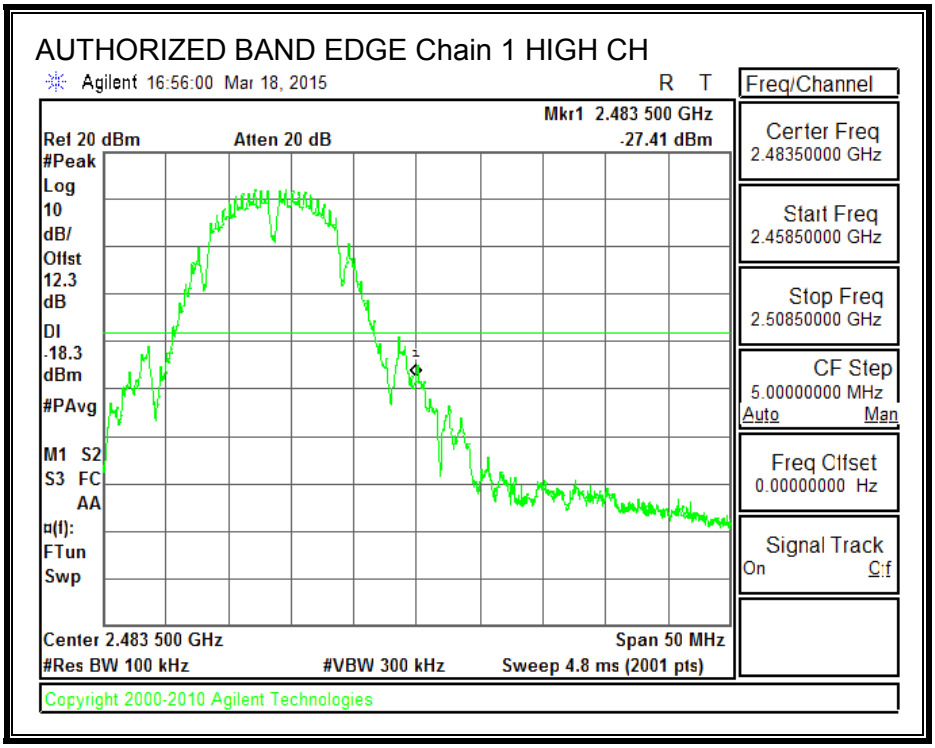
IN-BAND REFERENCE LEVEL, Chain 1



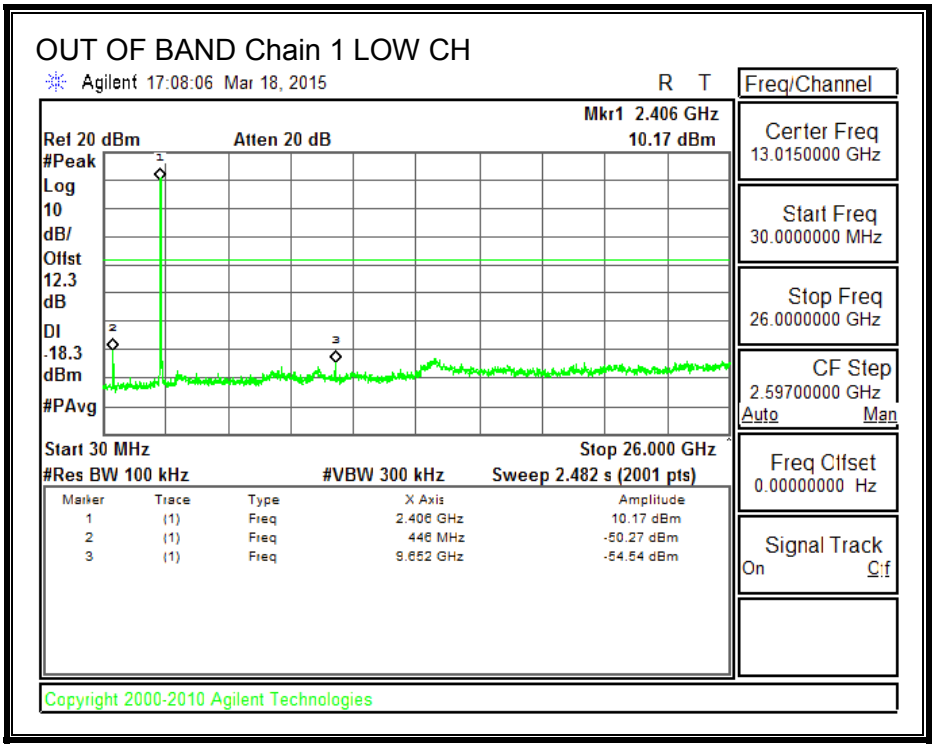
LOW CHANNEL BANDEDGE, Chain 1

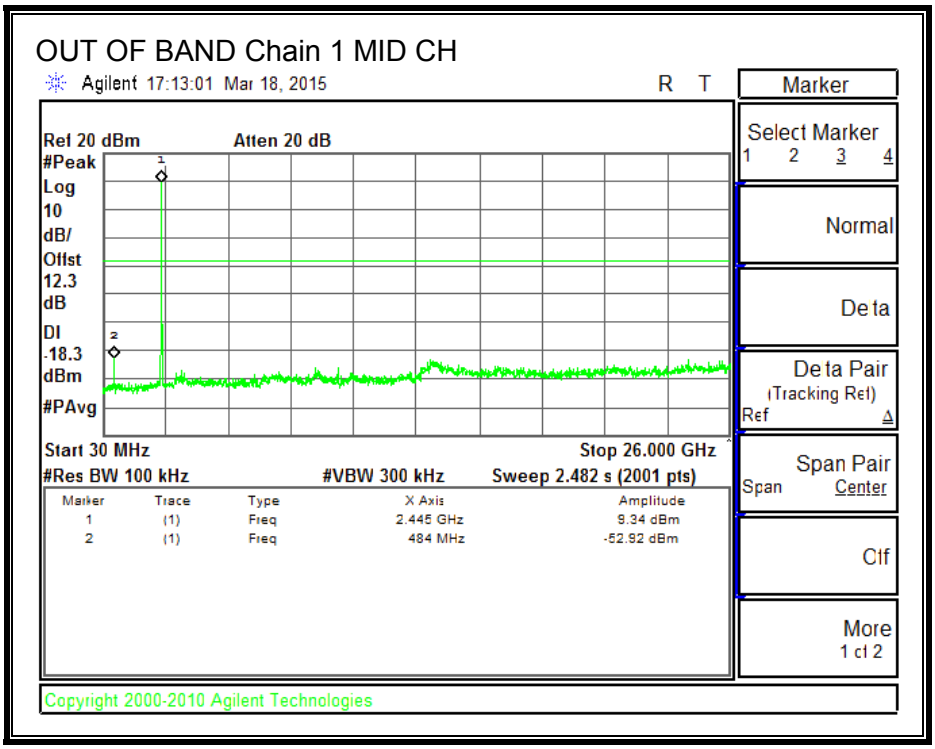


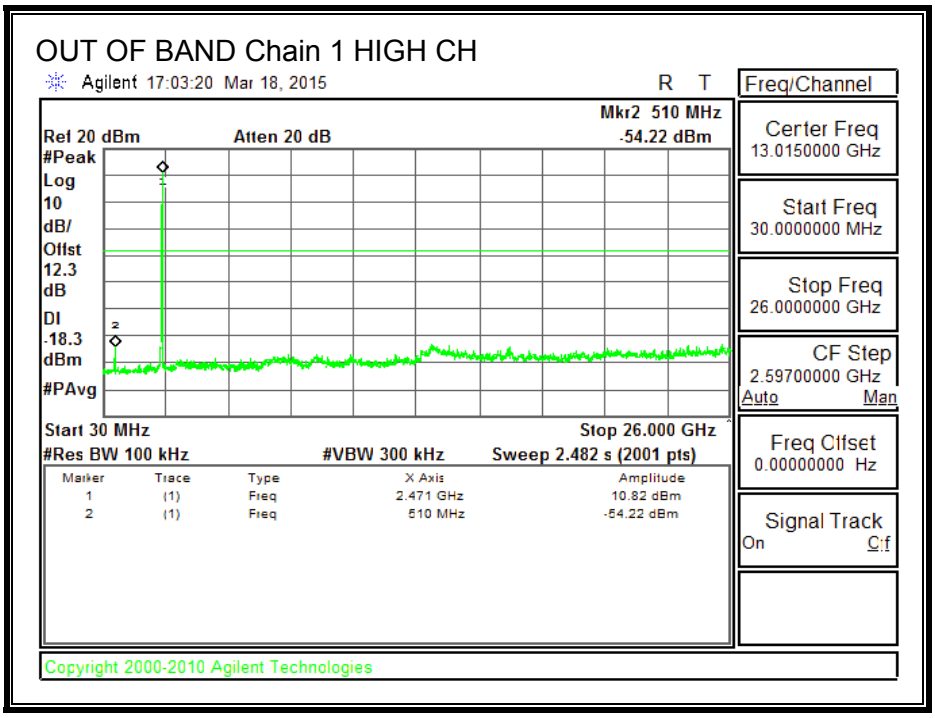
HIGH CHANNEL BANDEDGE, Chain 1



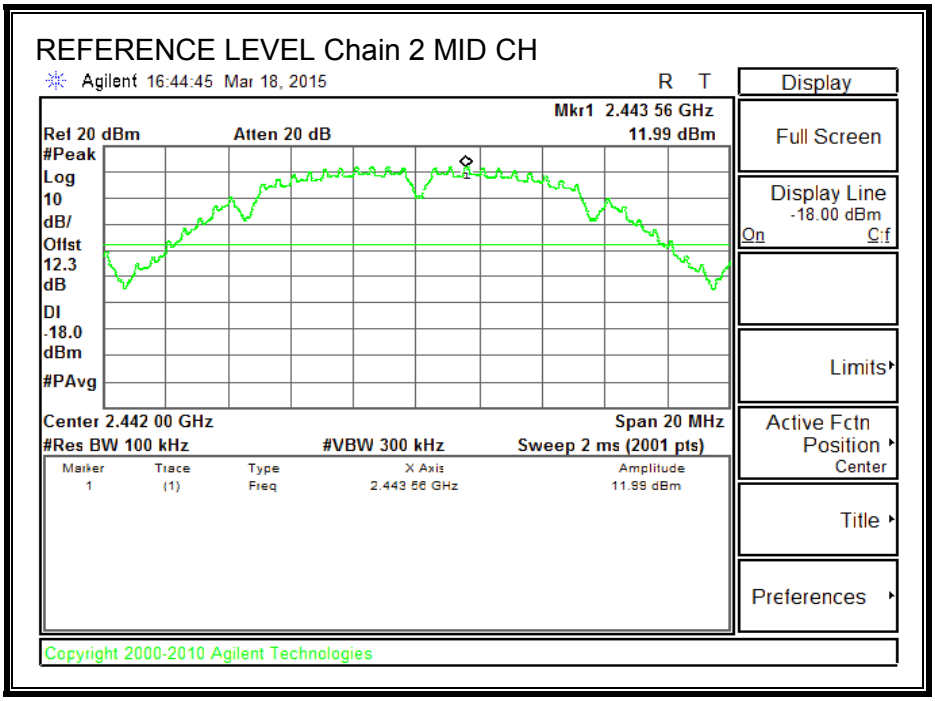
OUT-OF-BAND EMISSIONS, Chain 1



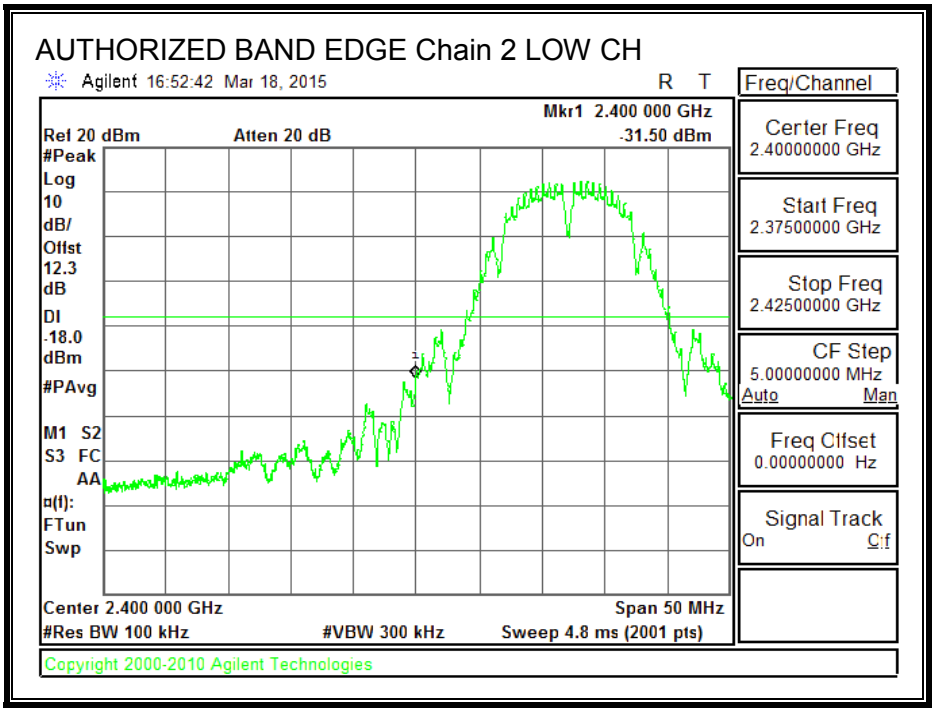




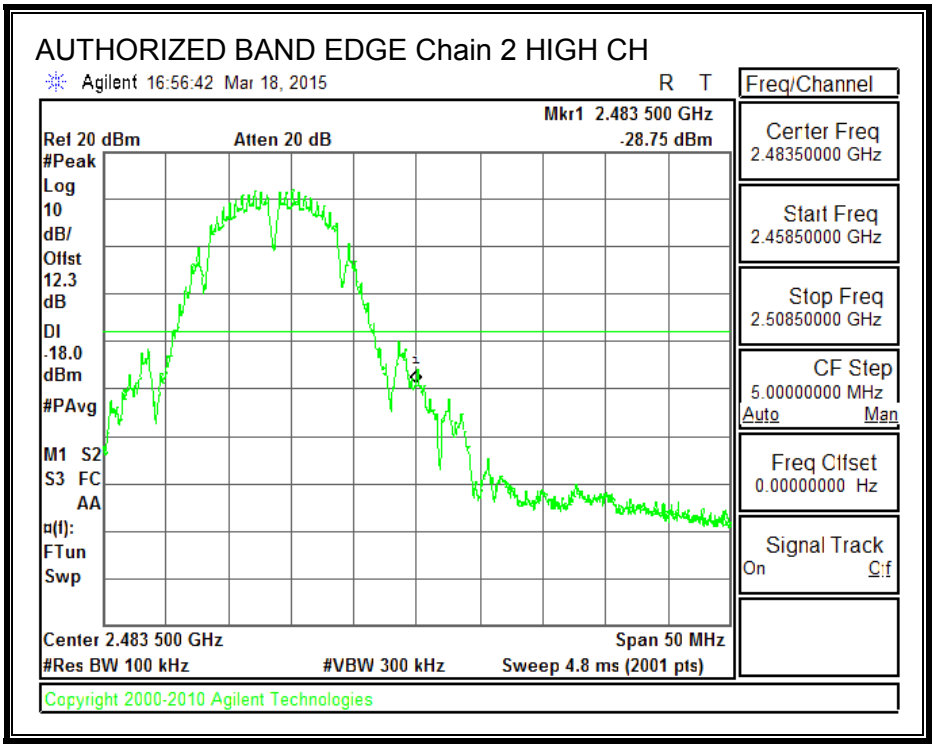
IN-BAND REFERENCE LEVEL, Chain 2



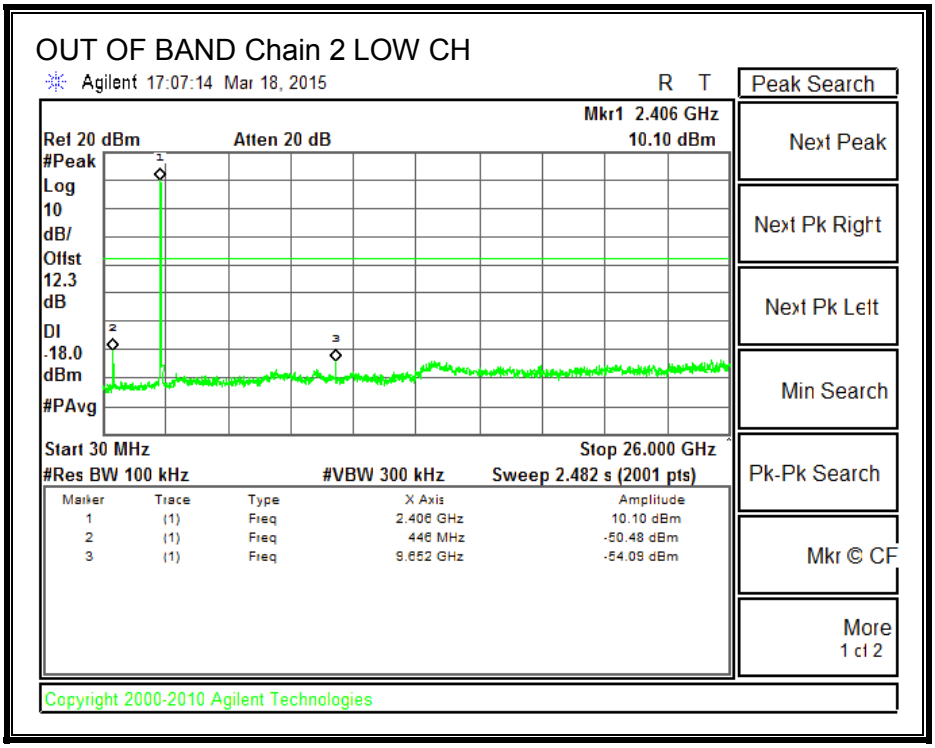
LOW CHANNEL BANDEDGE, Chain 2

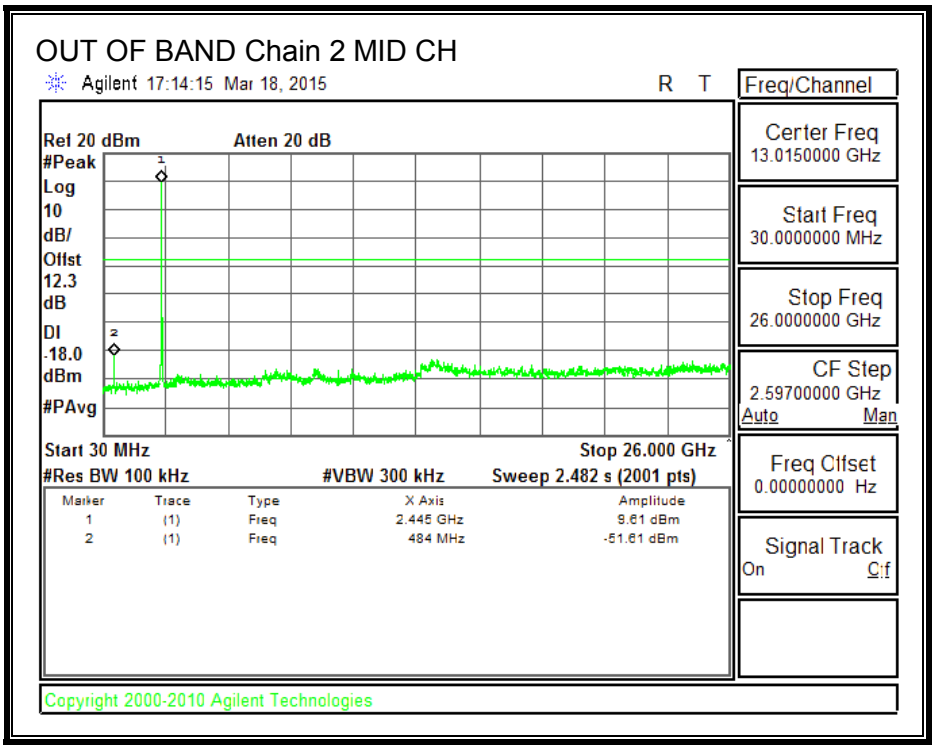


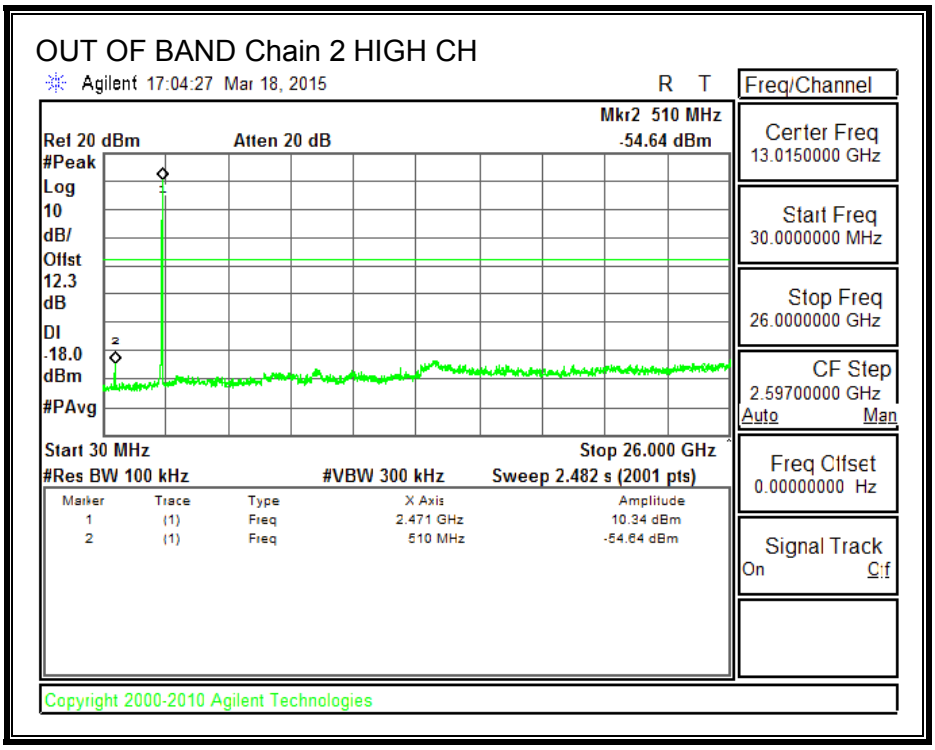
HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2







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

8.3.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Limits

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

Results

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

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

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

8.4.1. 6 dB BANDWIDTH

LIMITS

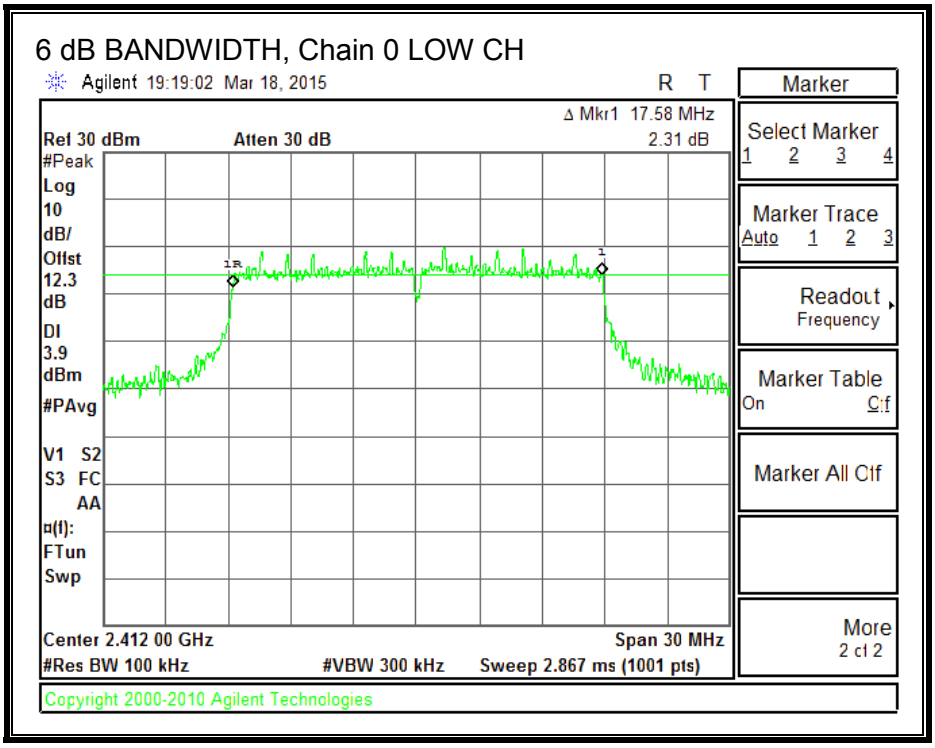
FCC §15.247 (a) (2)

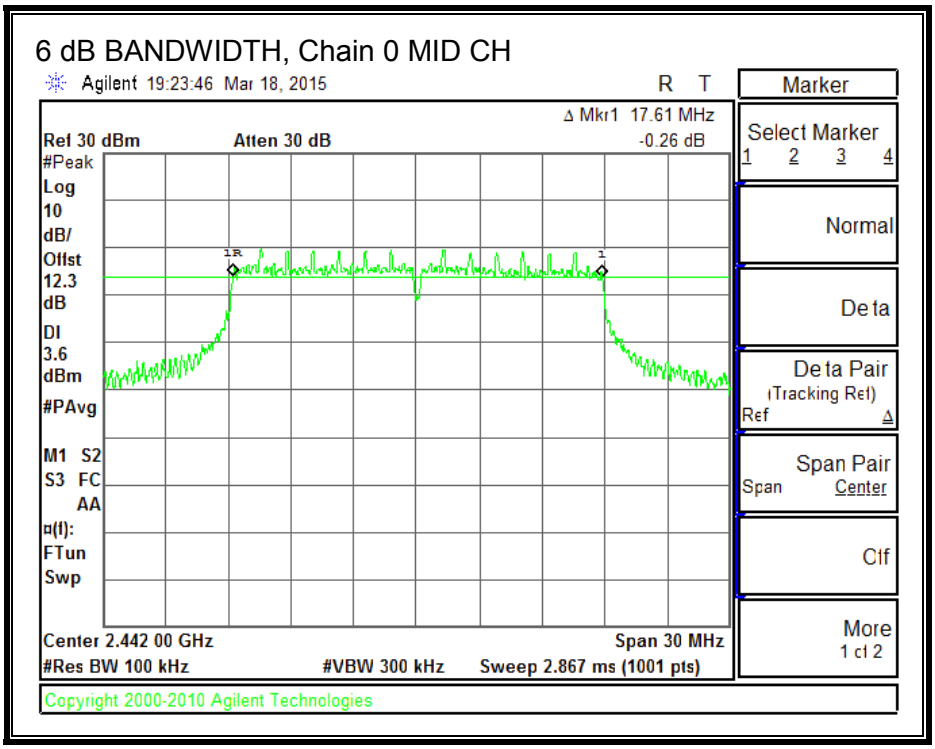
The minimum 6 dB bandwidth shall be at least 500 kHz.

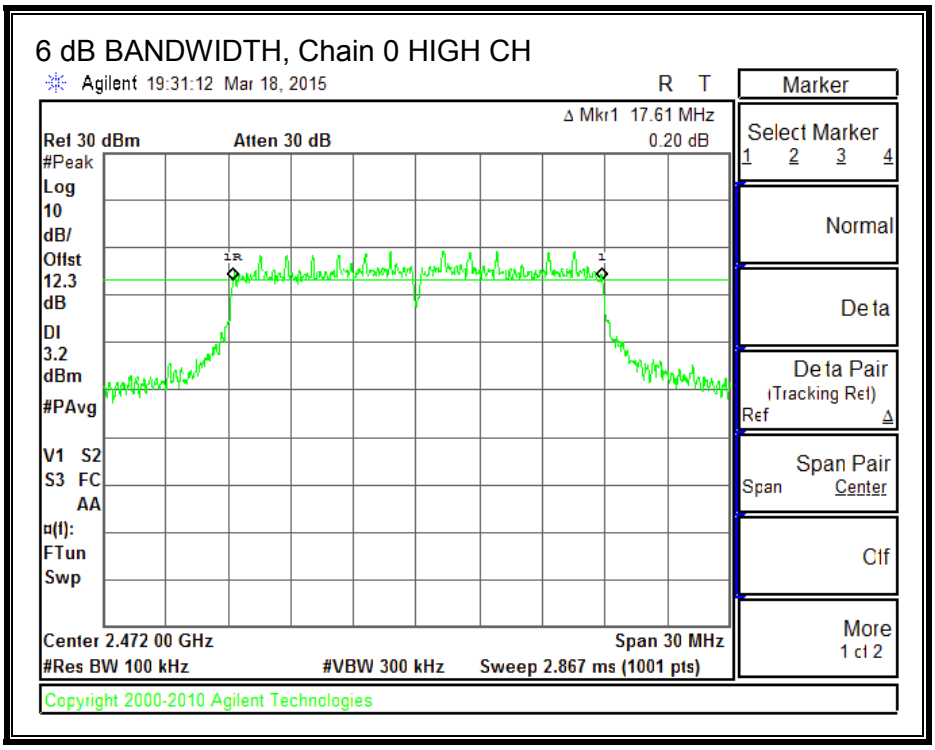
RESULTS

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

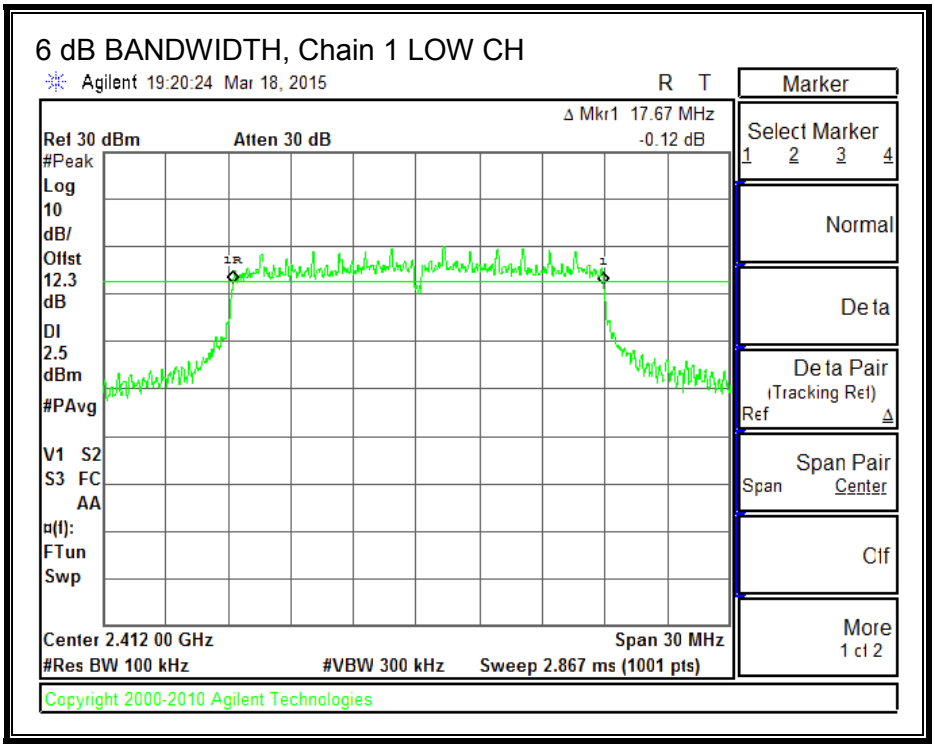
6 dB BANDWIDTH, Chain 0



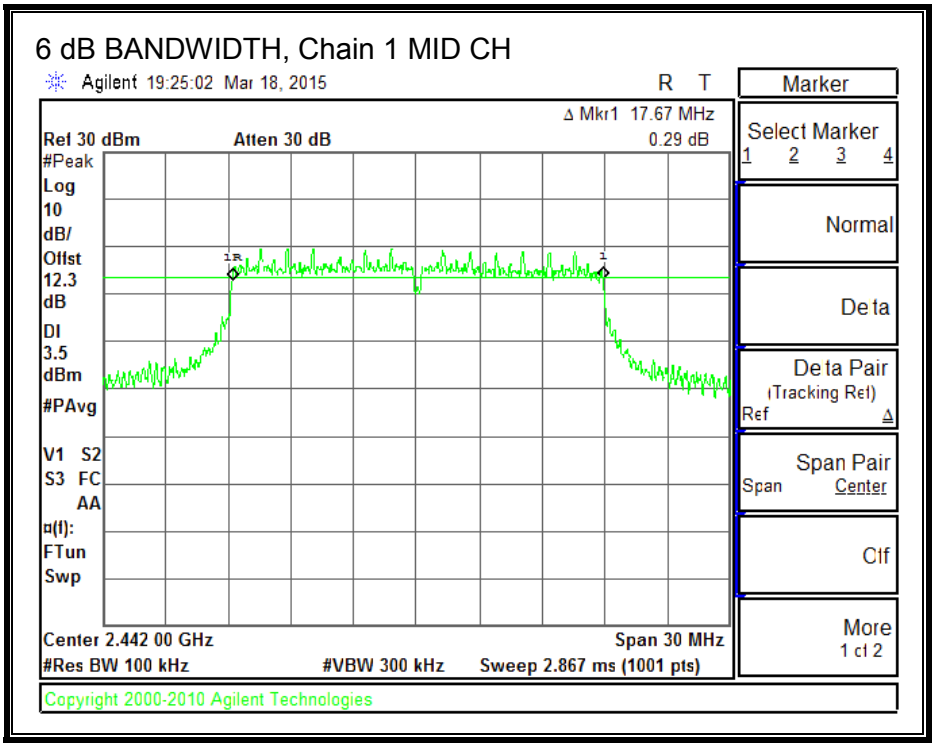




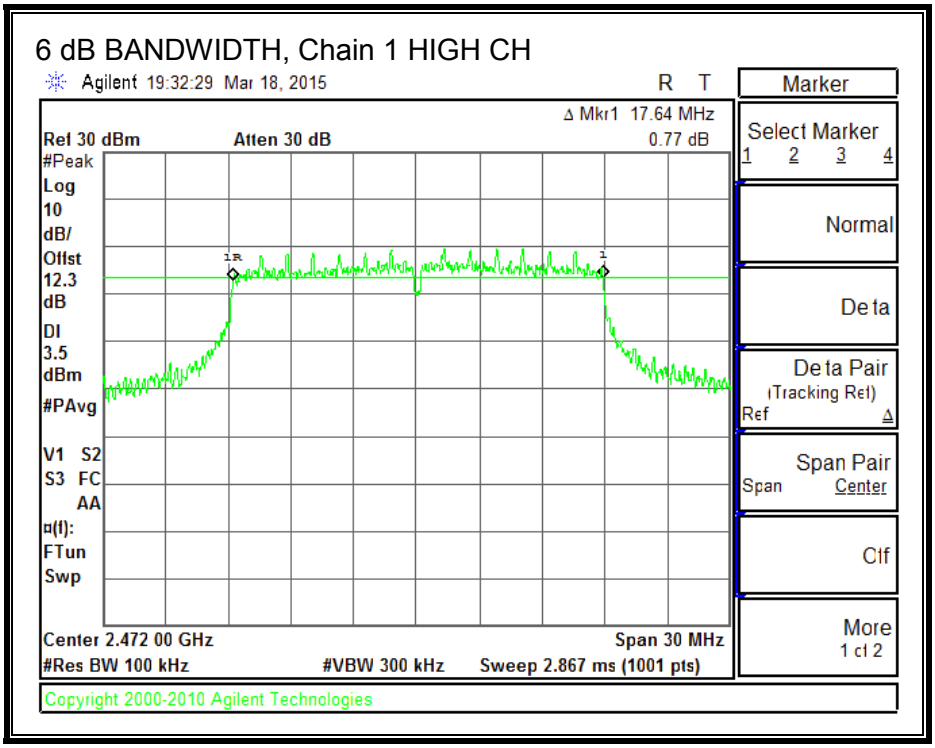
6 dB BANDWIDTH, Chain 1



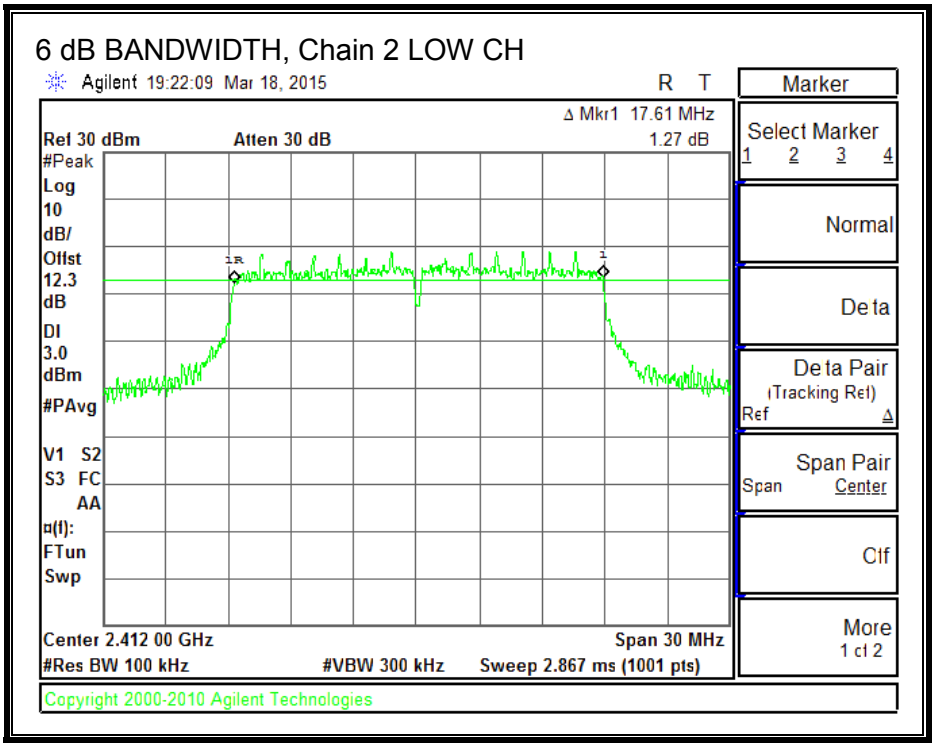
6 dB BANDWIDTH, Chain 1 MID CH

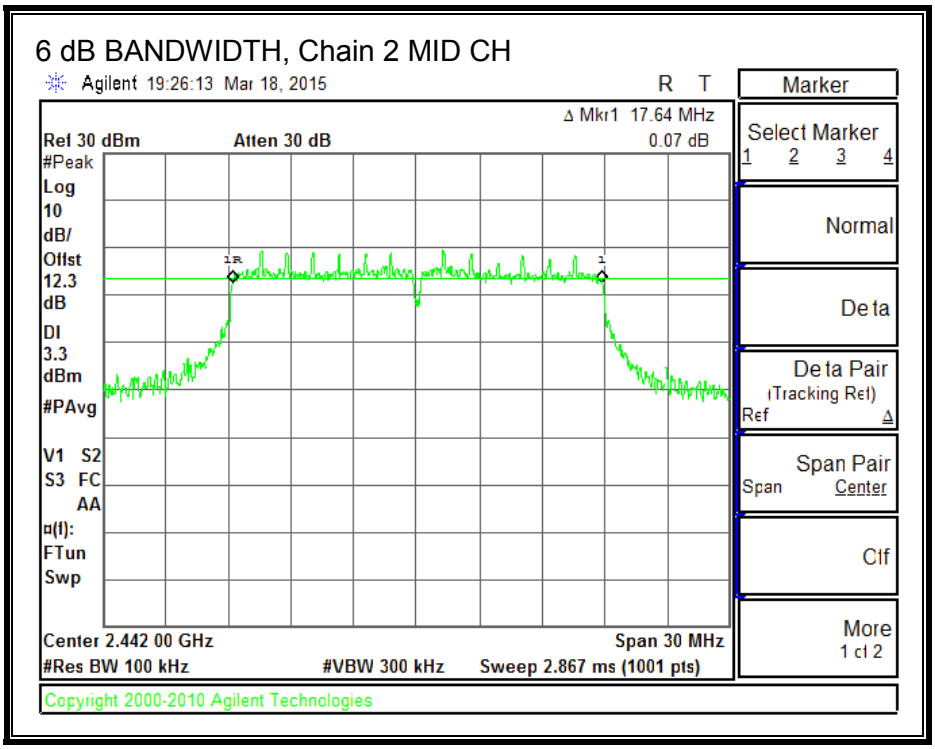


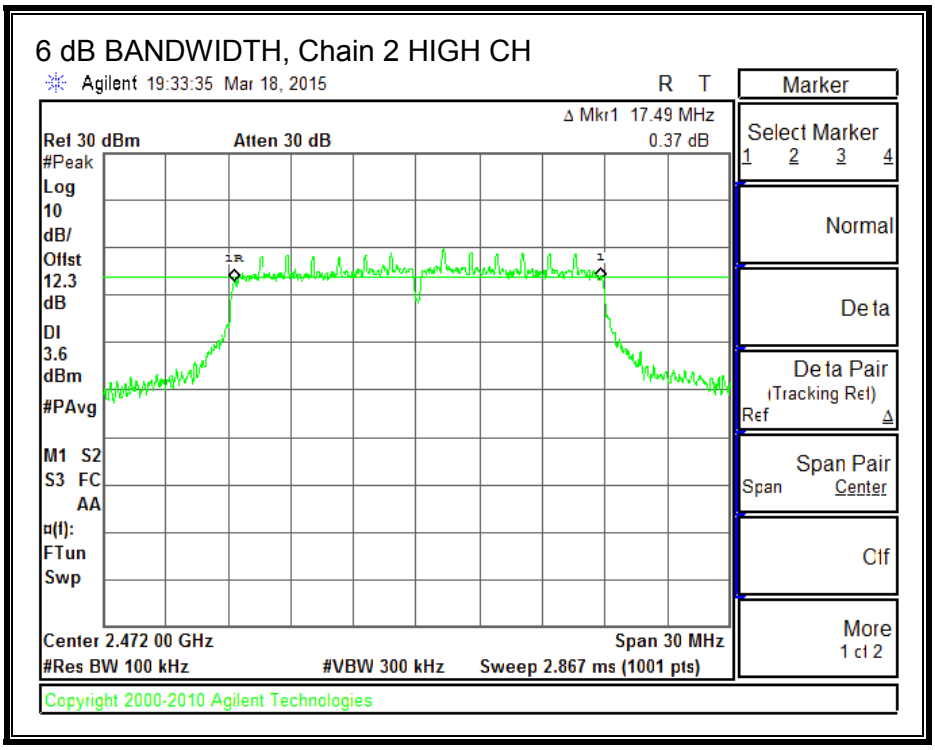
6 dB BANDWIDTH, Chain 1 HIGH CH



6 dB BANDWIDTH, Chain 2







8.4.2. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Limits

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

Results

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

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

8.4.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4 (4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

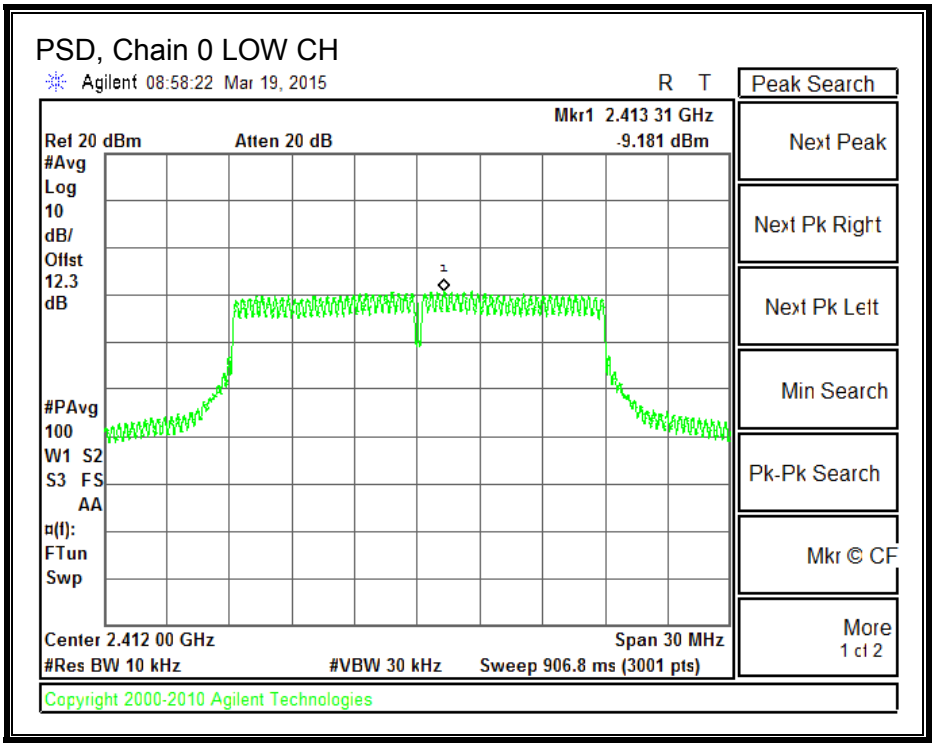
RESULTS

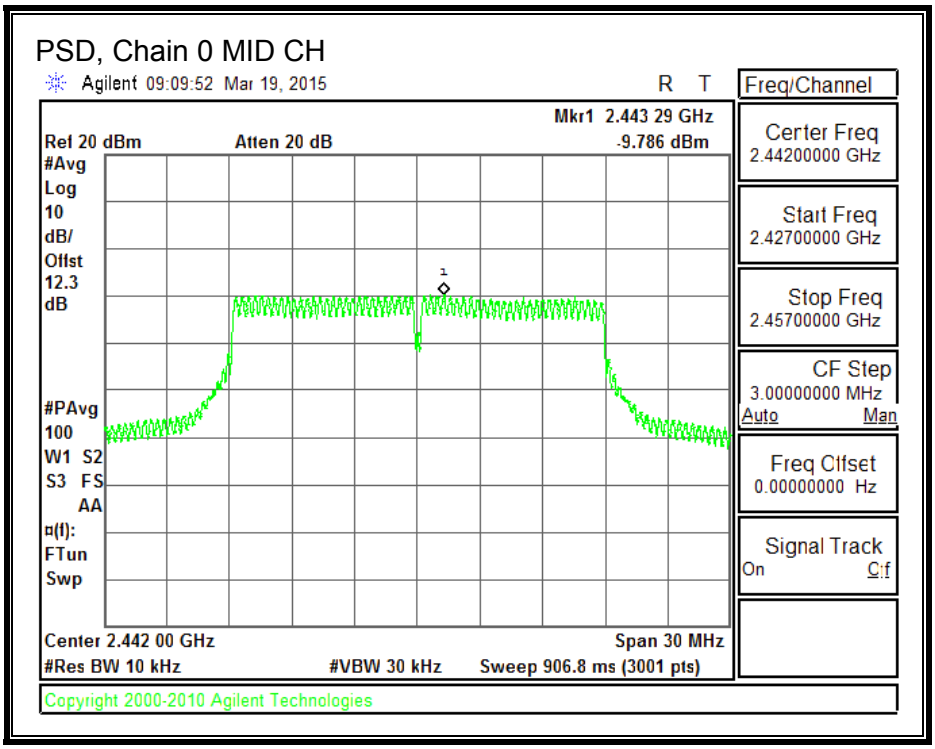
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

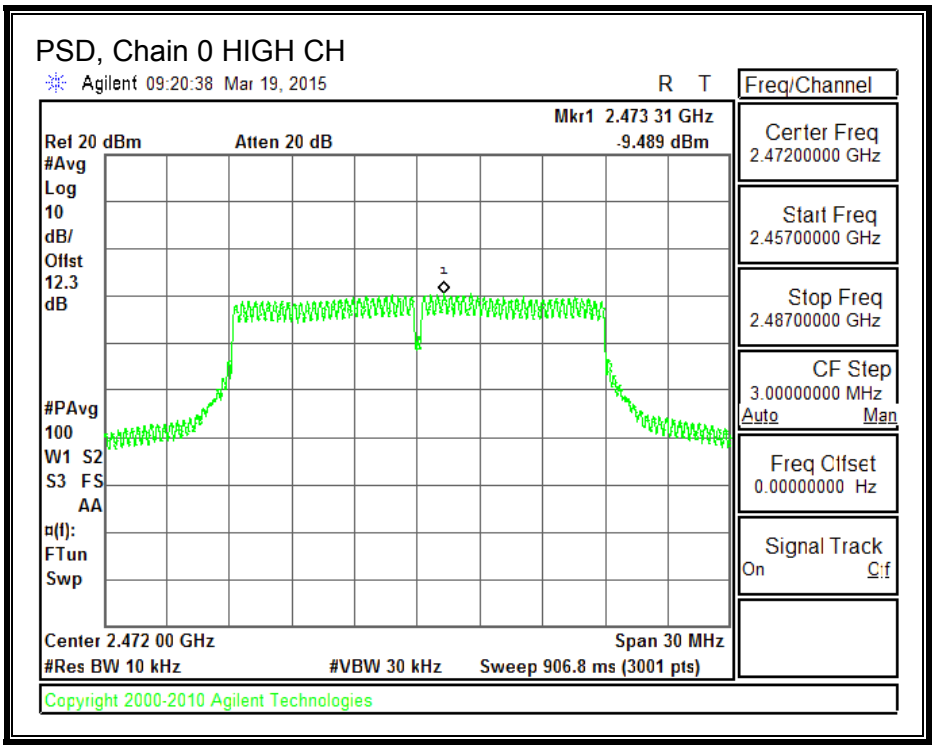
PSD Results

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

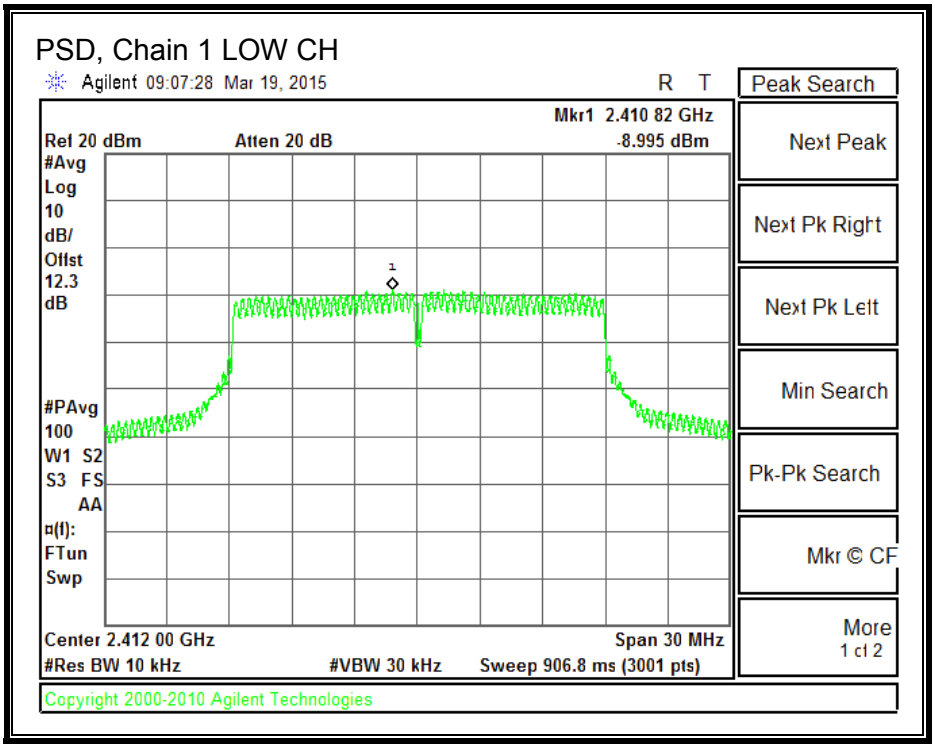
PSD, Chain 0

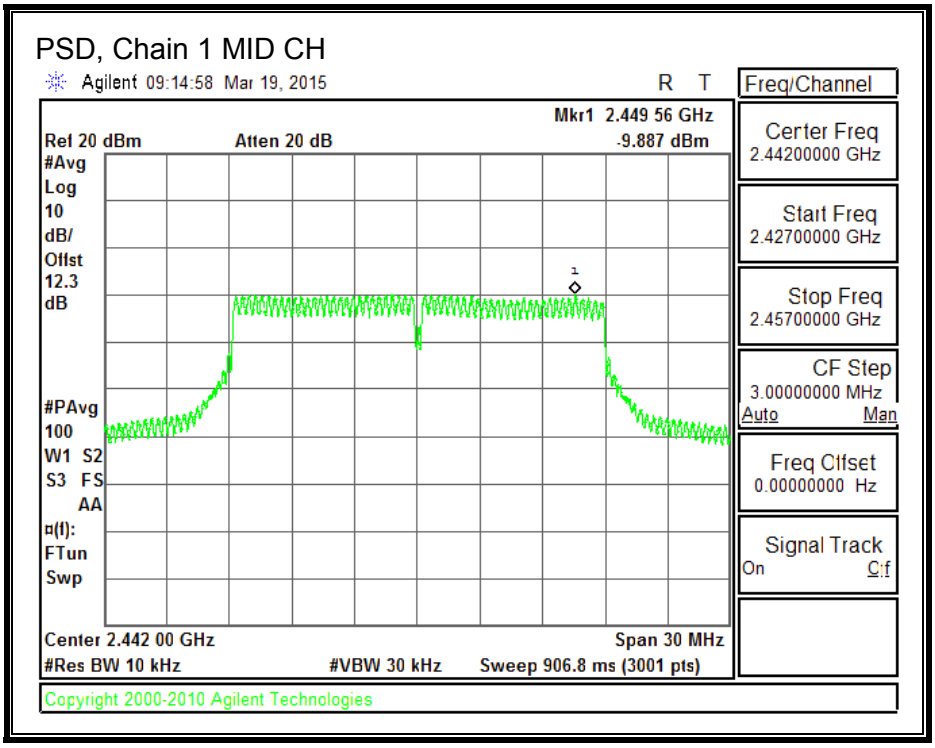


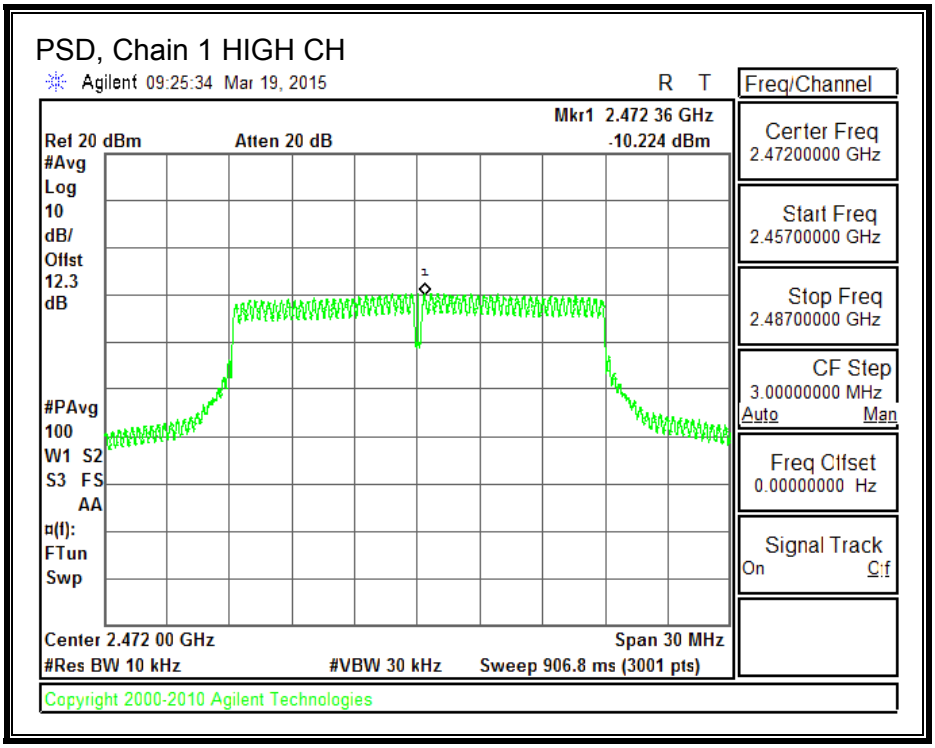




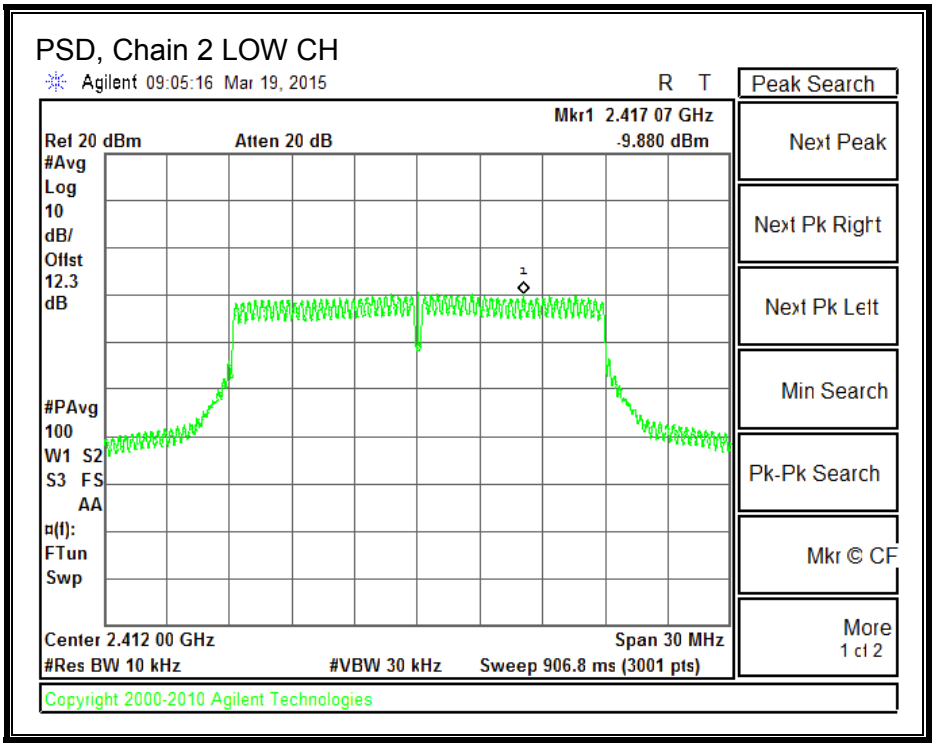
PSD, Chain 1

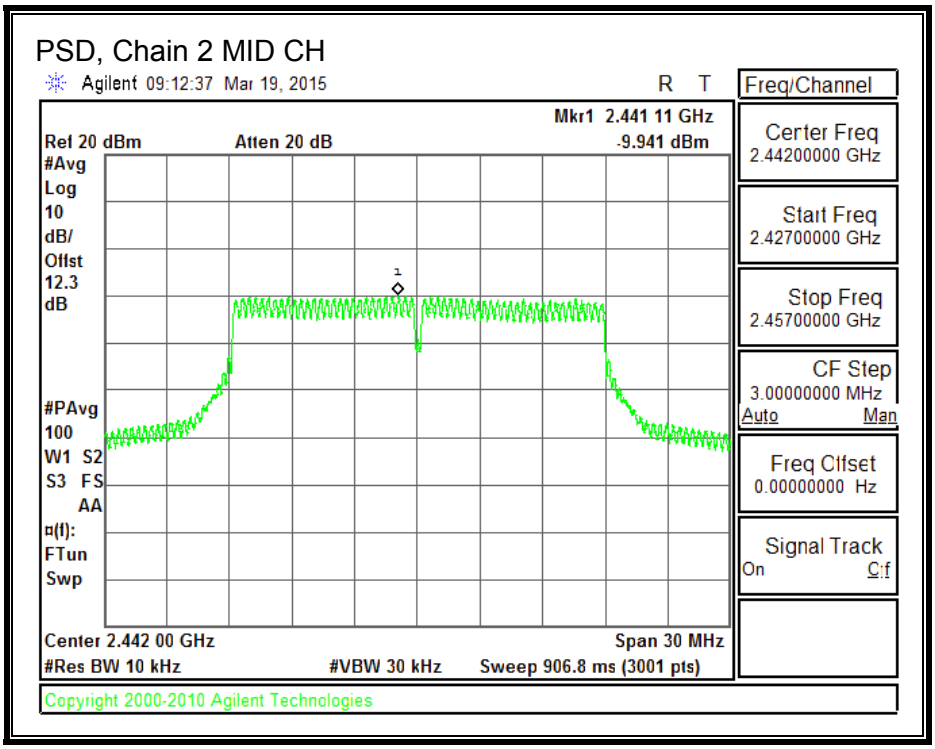


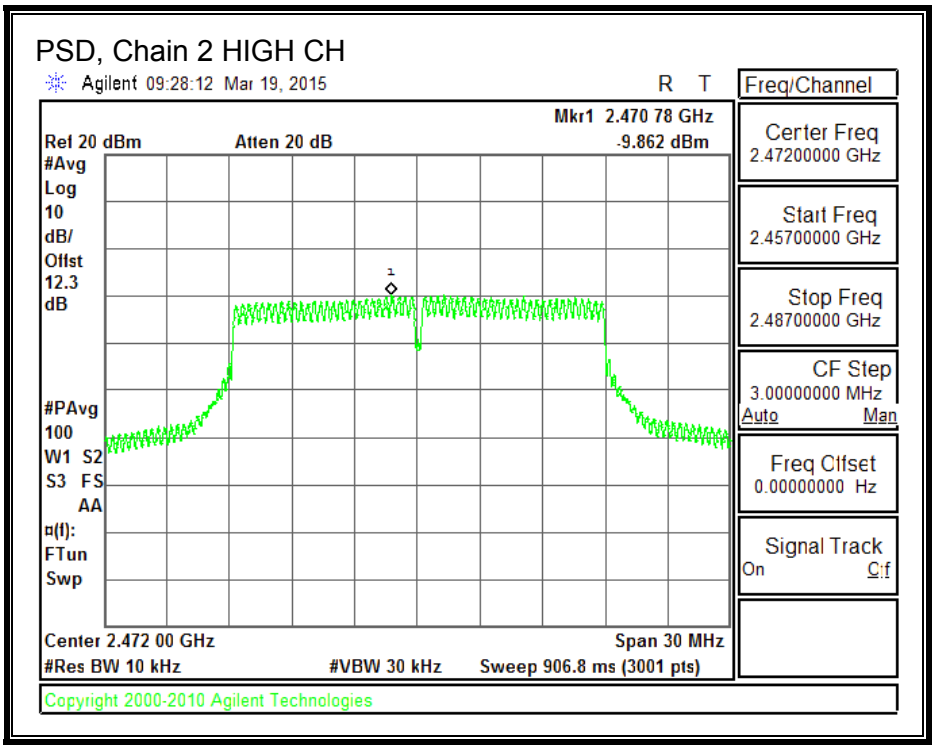




PSD, Chain 2







8.4.4. OUT-OF-BAND EMISSIONS

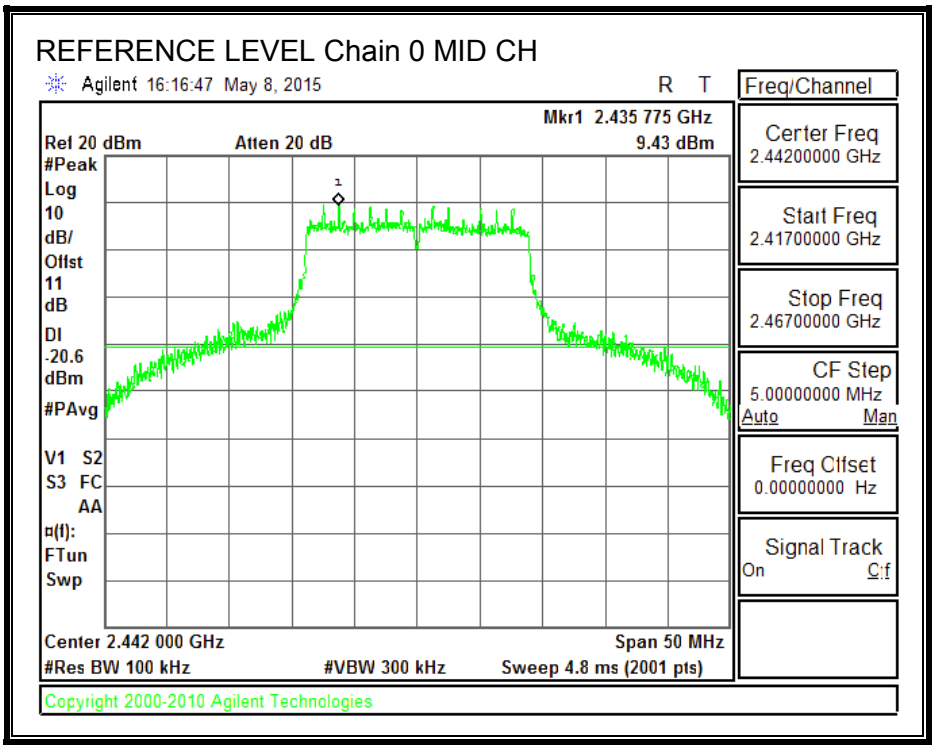
LIMITS

FCC §15.247 (d)

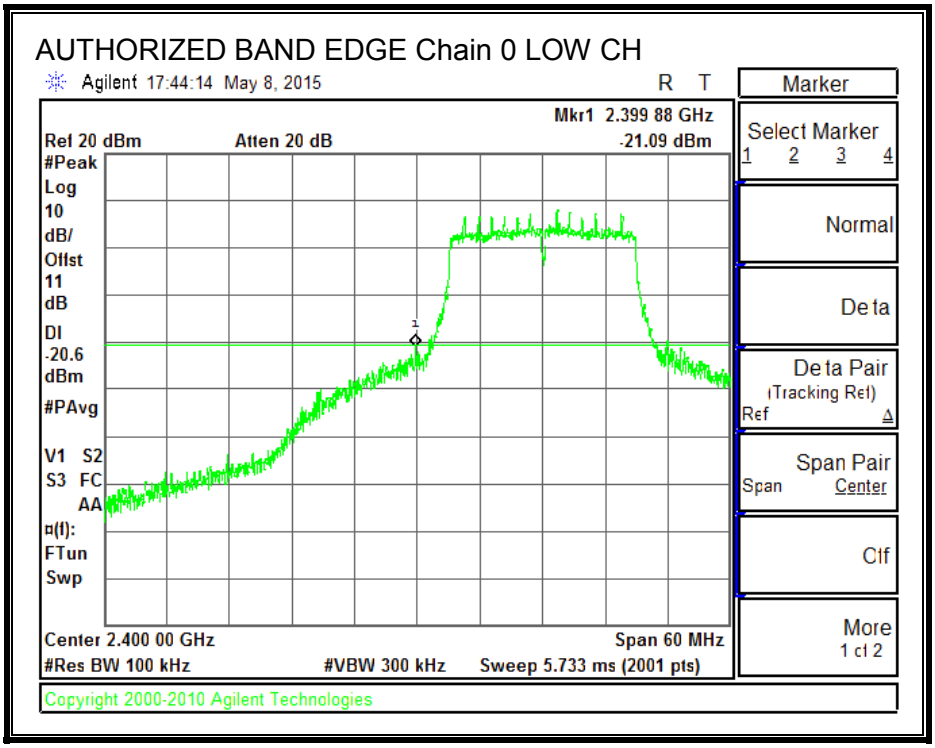
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

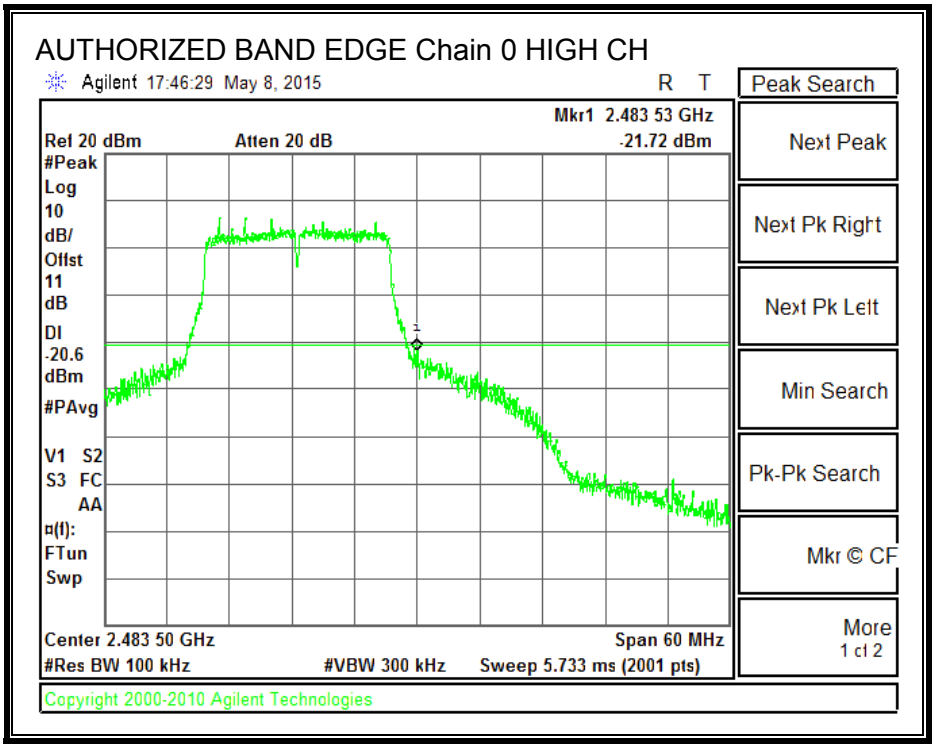
IN-BAND REFERENCE LEVEL, Chain 0



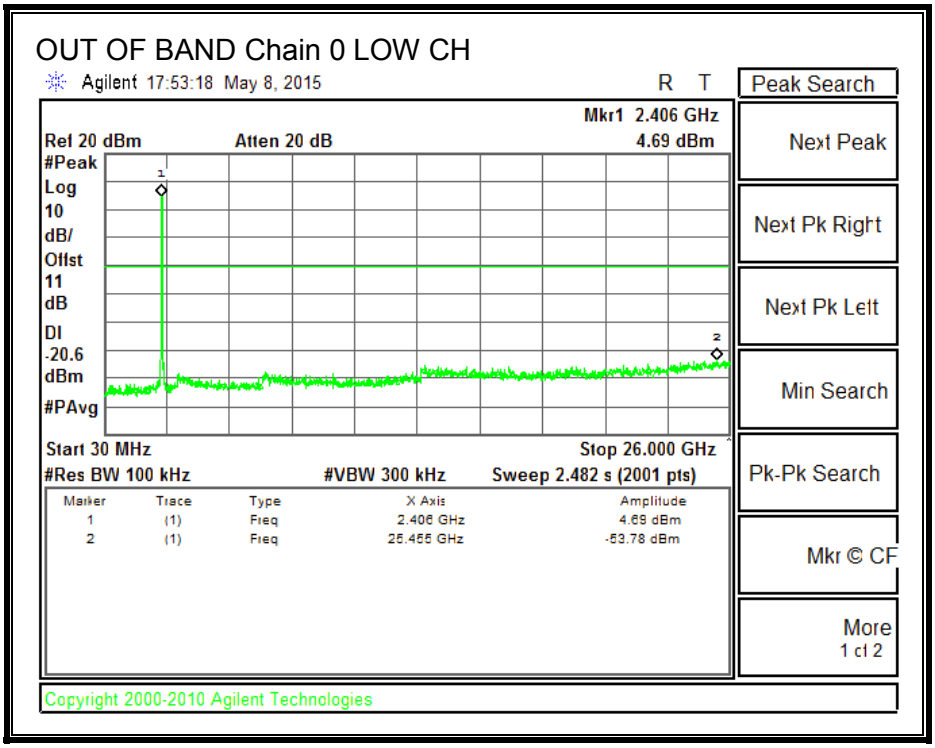
LOW CHANNEL BANDEDGE, Chain 0

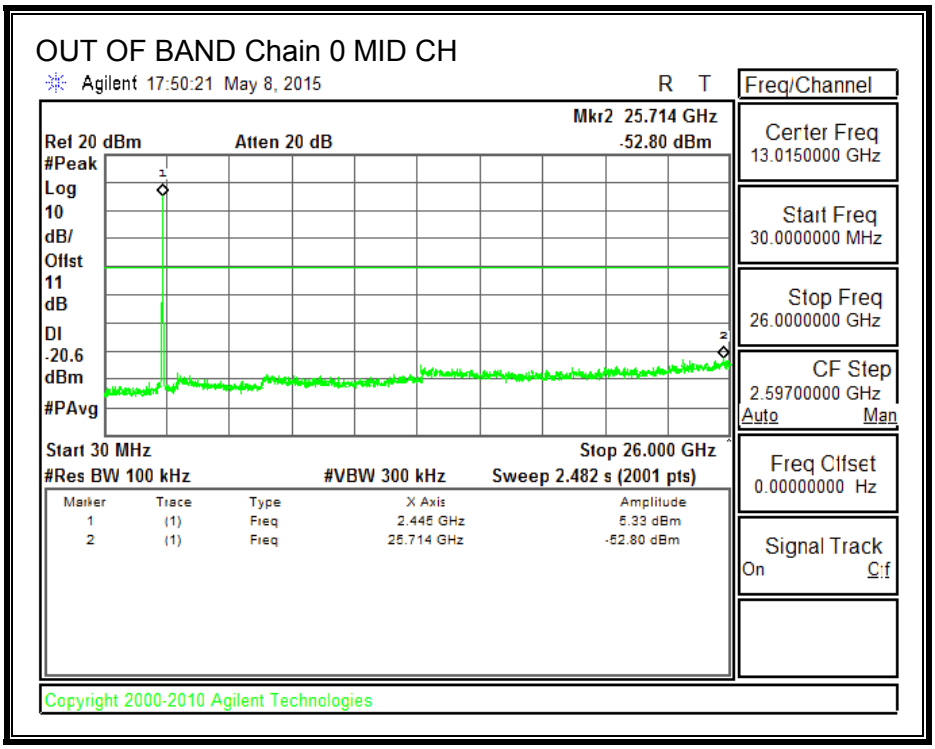


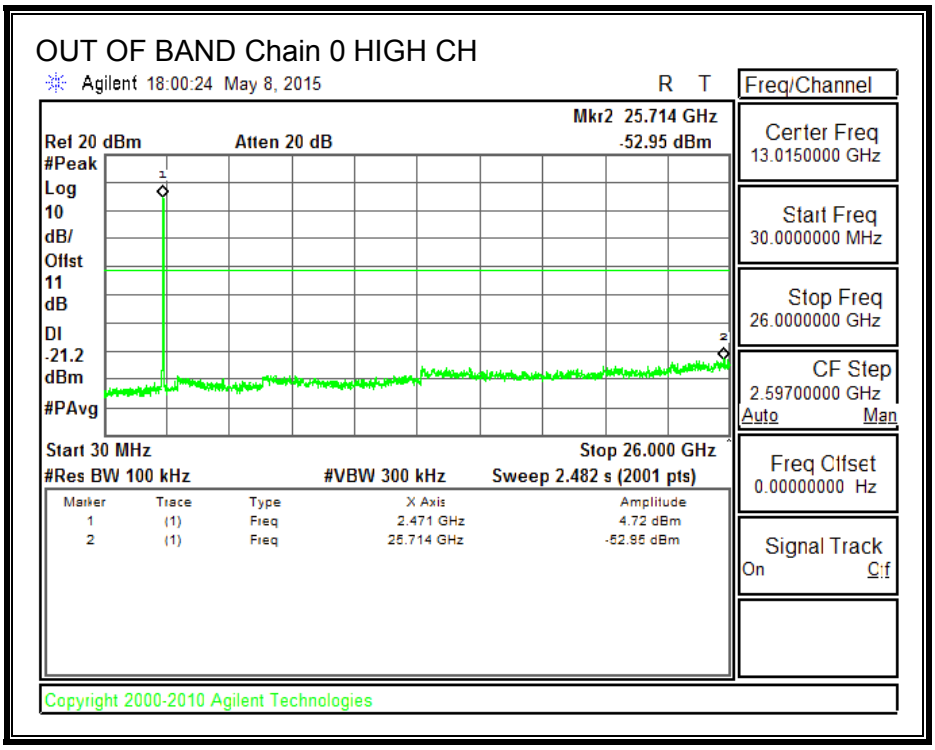
HIGH CHANNEL BANDEDGE, Chain 0



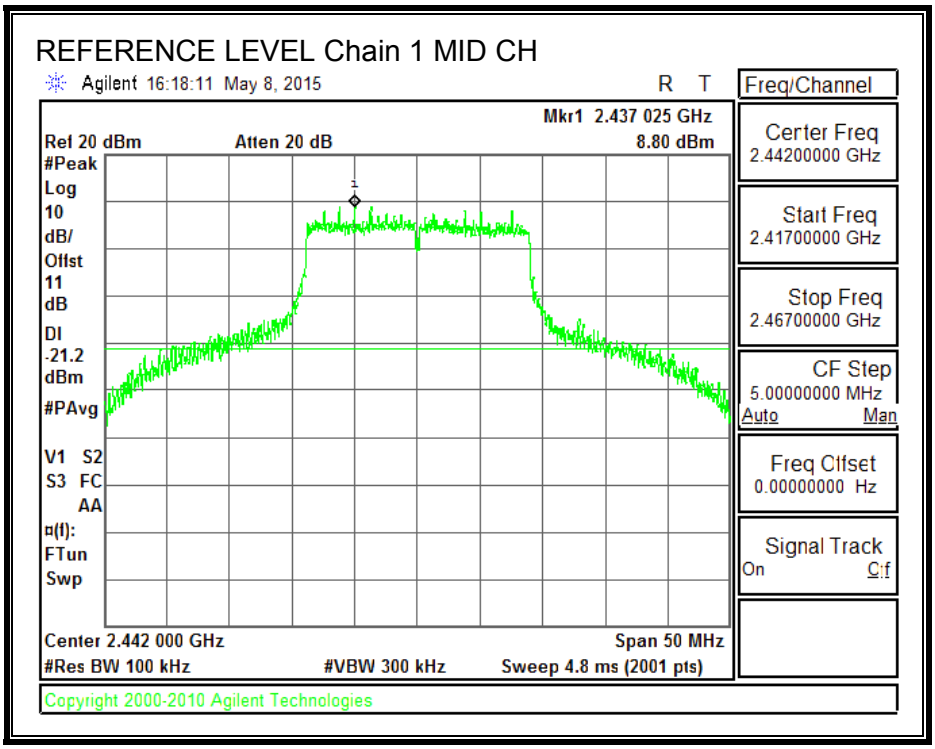
OUT-OF-BAND EMISSIONS, Chain 0



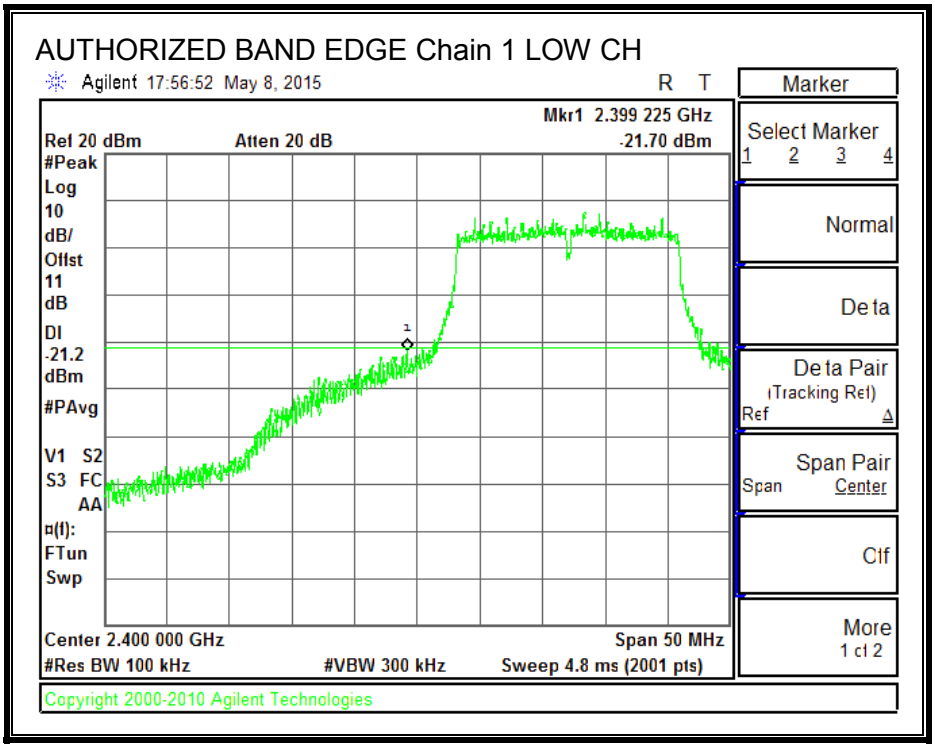




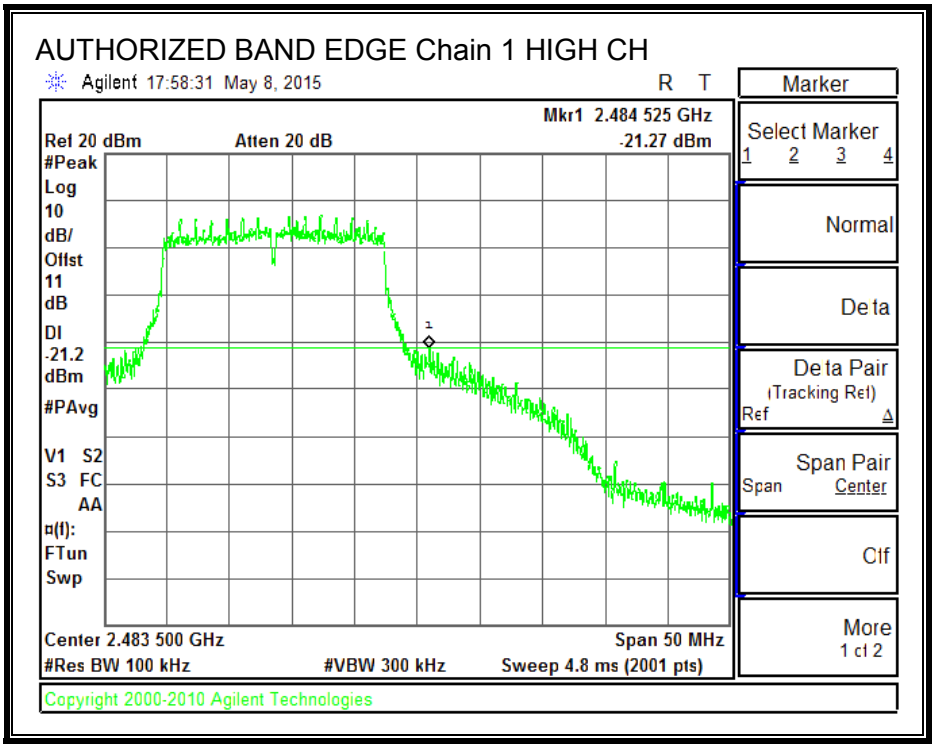
IN-BAND REFERENCE LEVEL, Chain 1



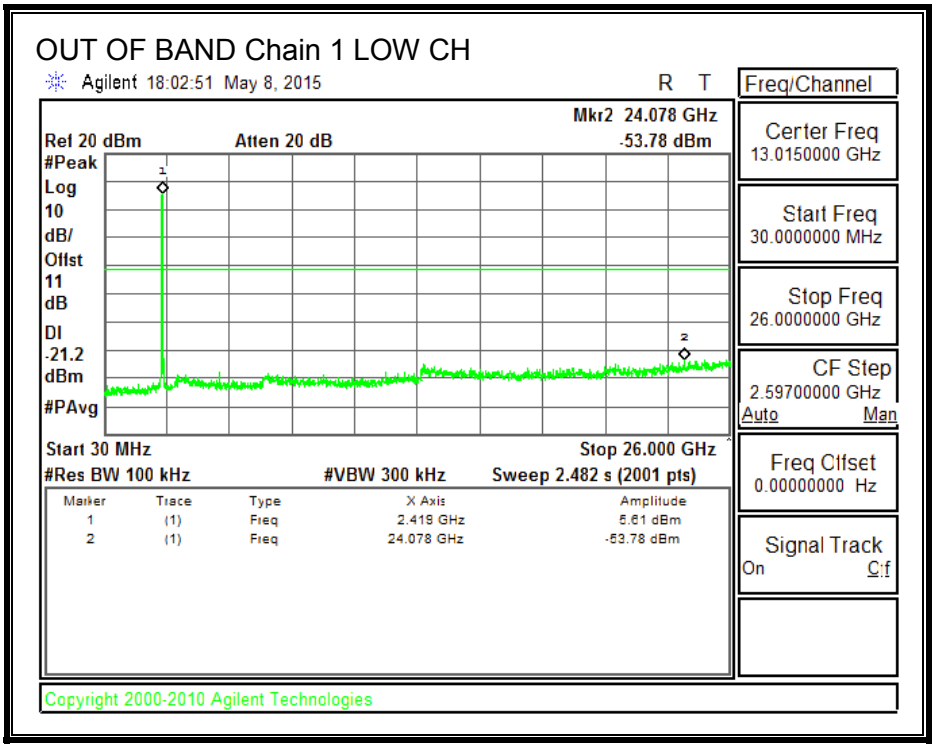
LOW CHANNEL BANDEDGE, Chain 1

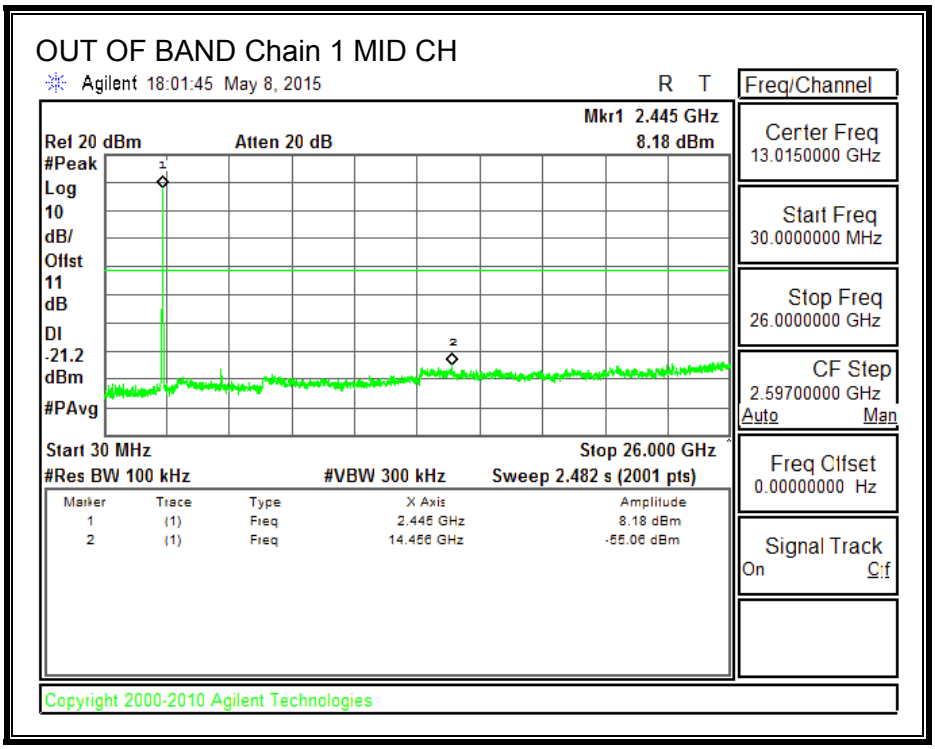


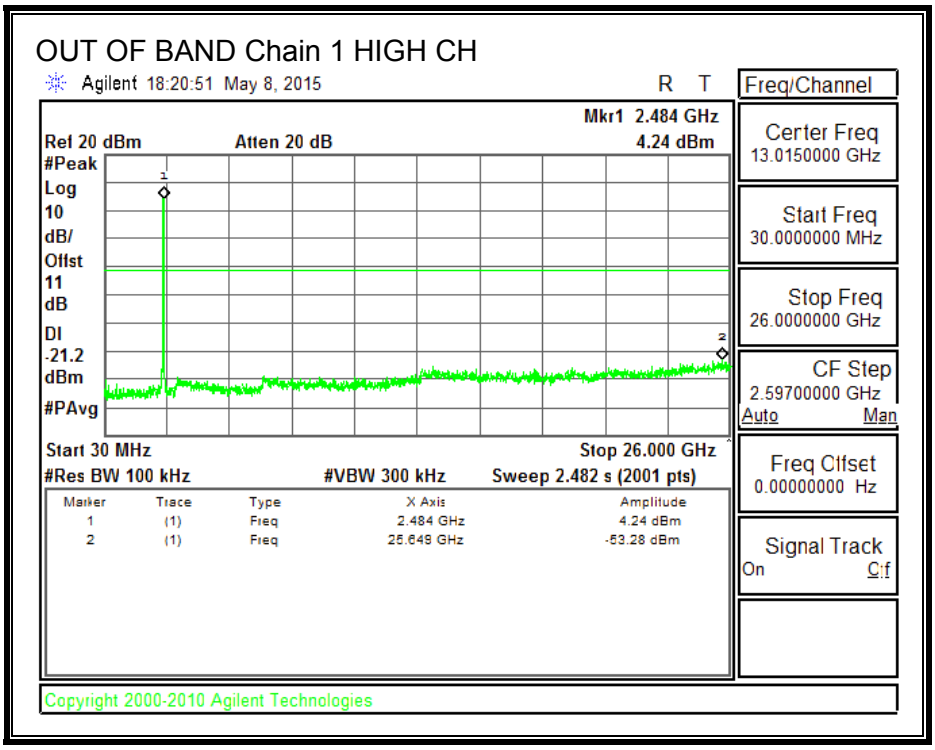
HIGH CHANNEL BANDEDGE, Chain 1



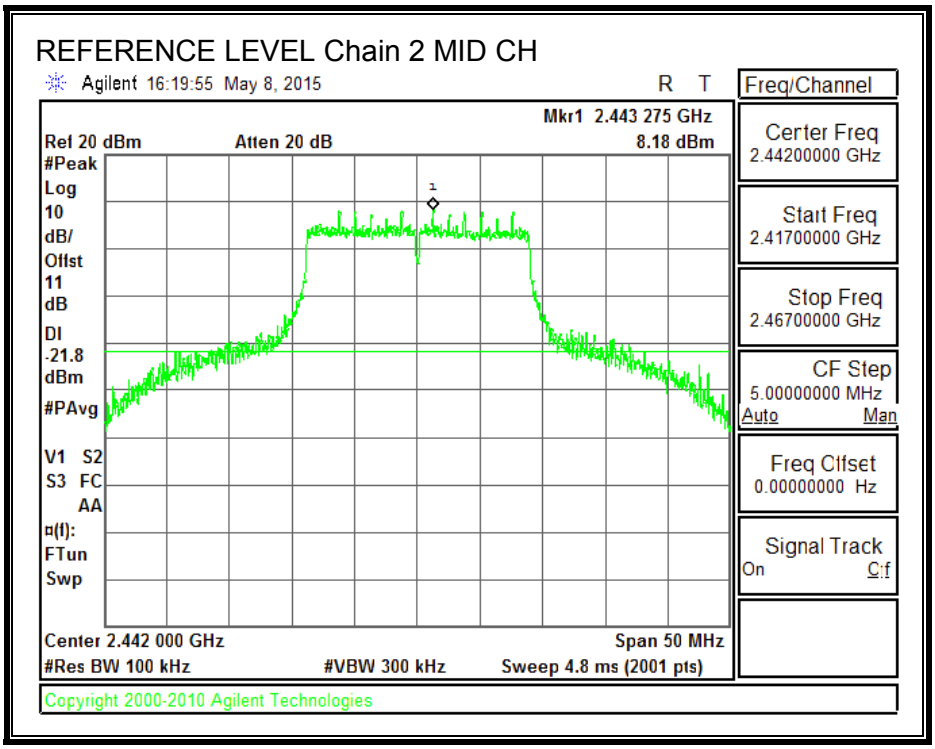
OUT-OF-BAND EMISSIONS, Chain 1



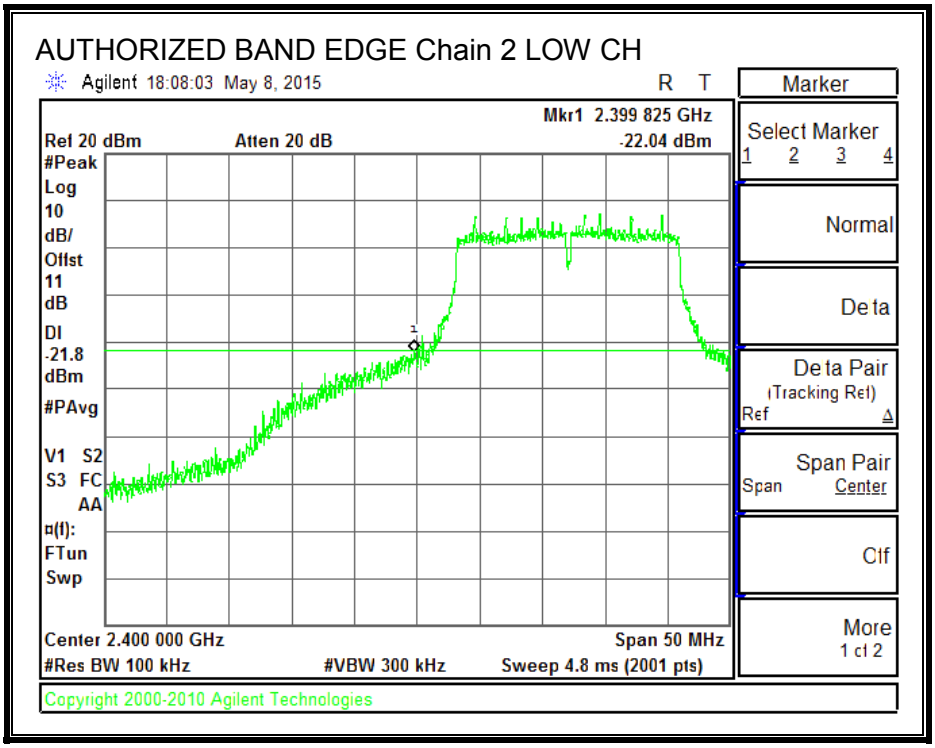




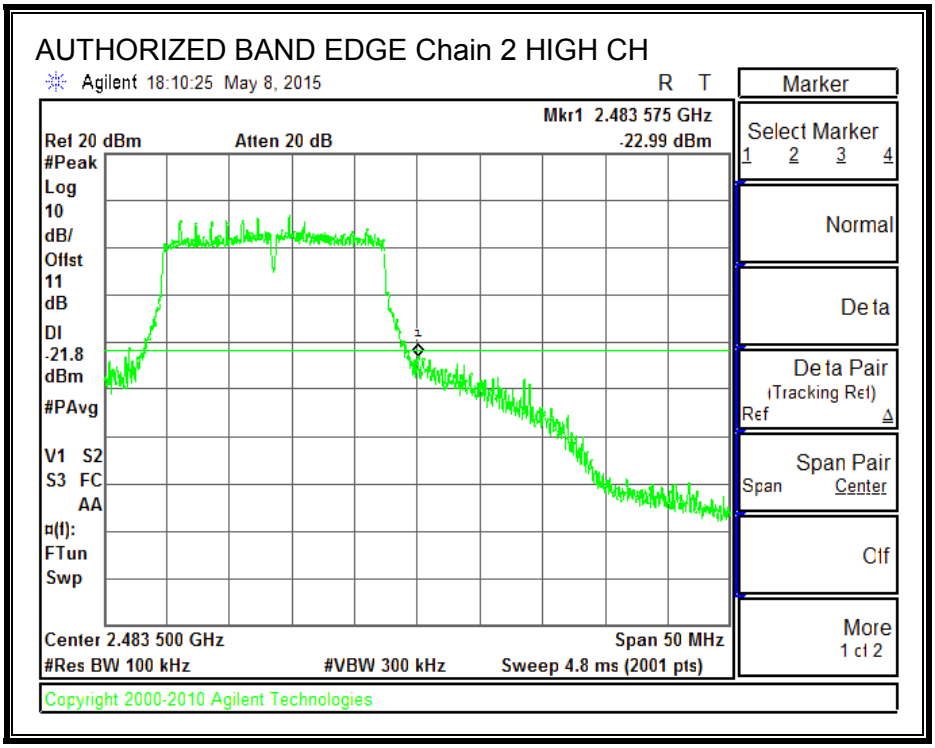
IN-BAND REFERENCE LEVEL, Chain 2



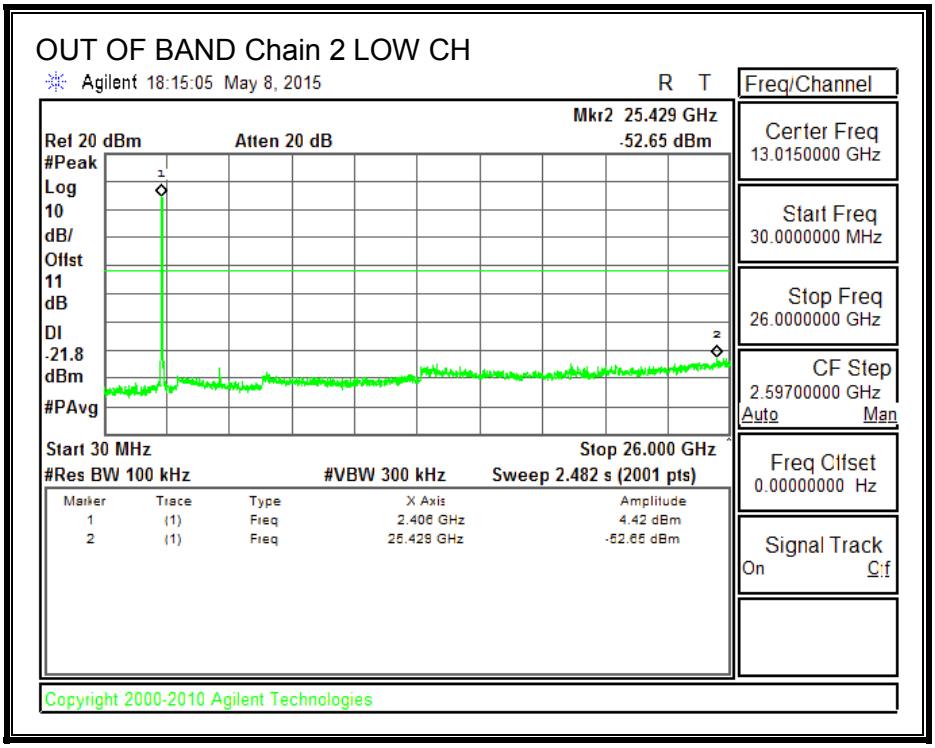
LOW CHANNEL BANDEDGE, Chain 2

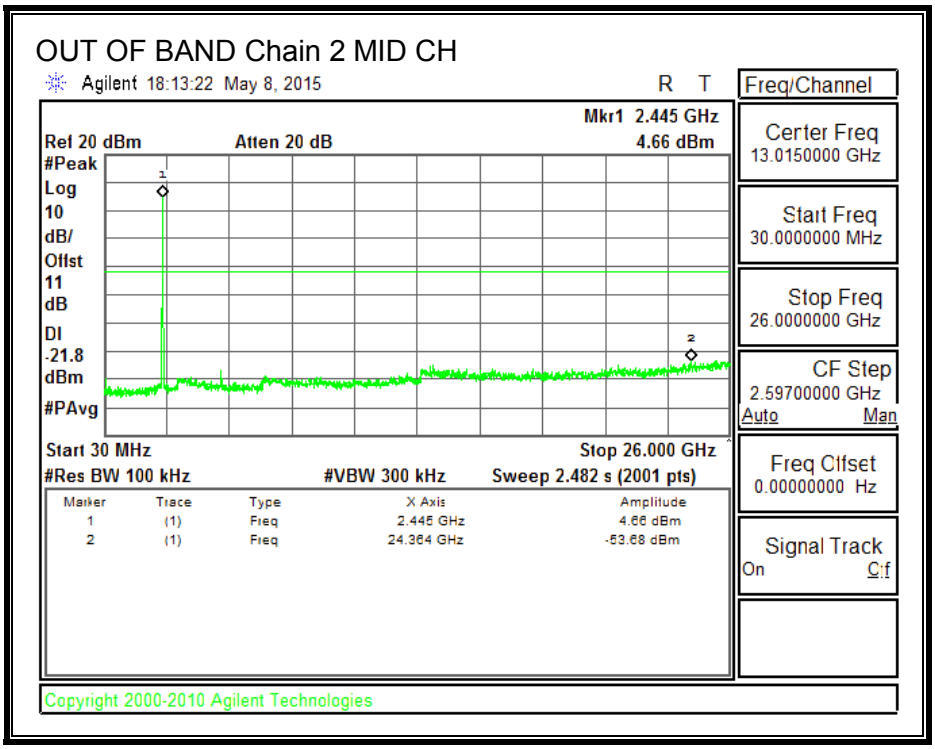


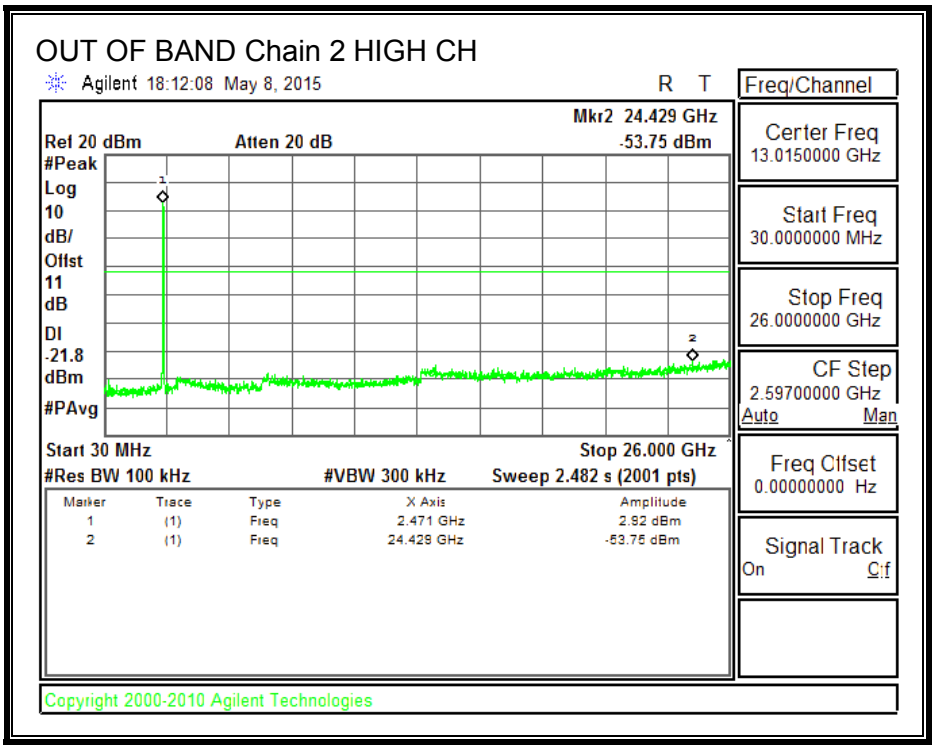
HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2







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

8.5.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

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

RESULTS

Limits

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

Results

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

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

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

8.6.1. OUTPUT POWER

LIMITS

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Limits

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

Results

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

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

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

8.7.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Limits

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

Results

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

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

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

8.8.1. 6 dB BANDWIDTH

LIMITS

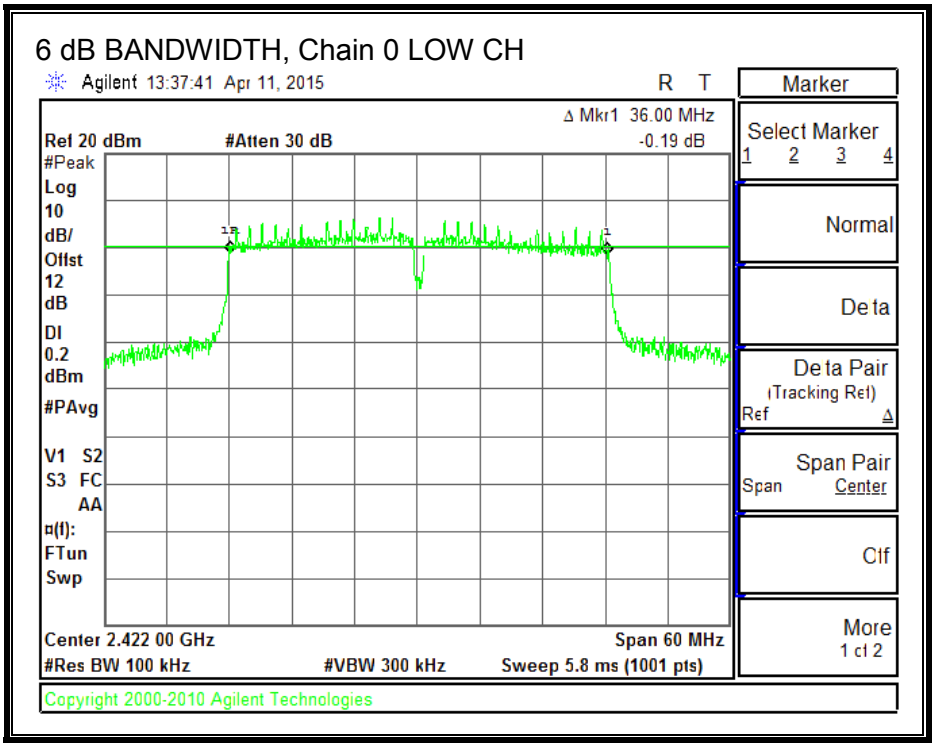
FCC §15.247 (a) (2)

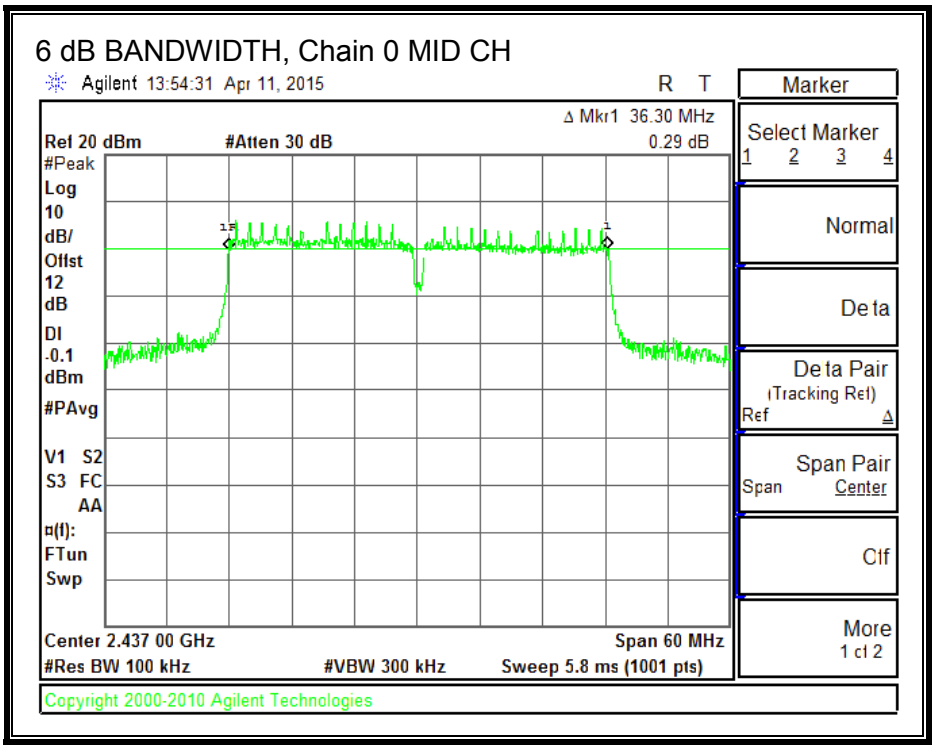
The minimum 6 dB bandwidth shall be at least 500 kHz.

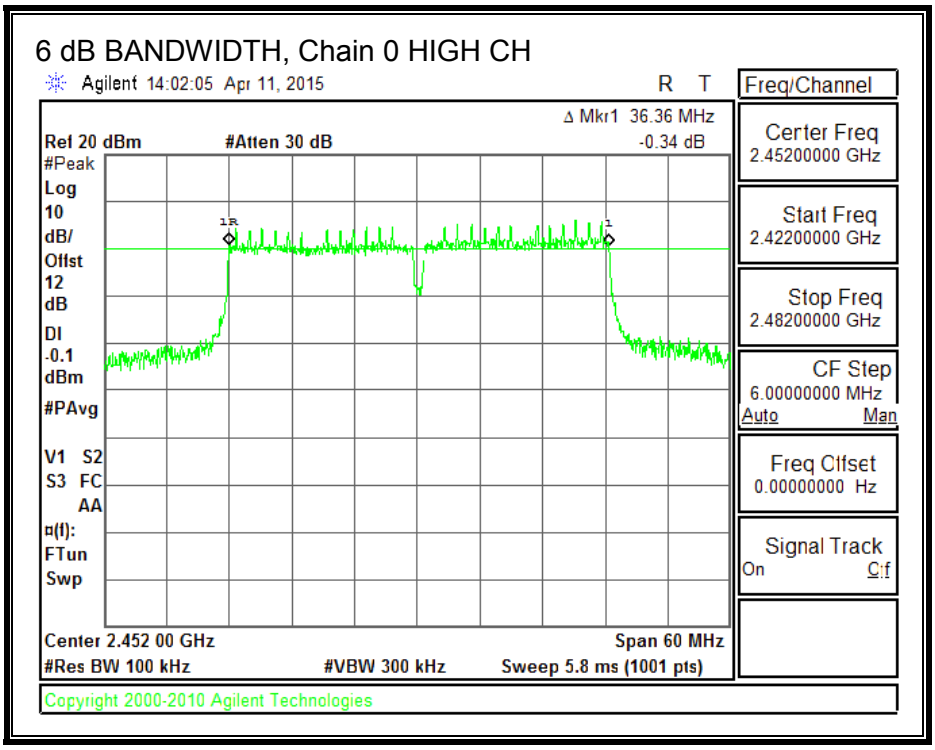
RESULTS

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

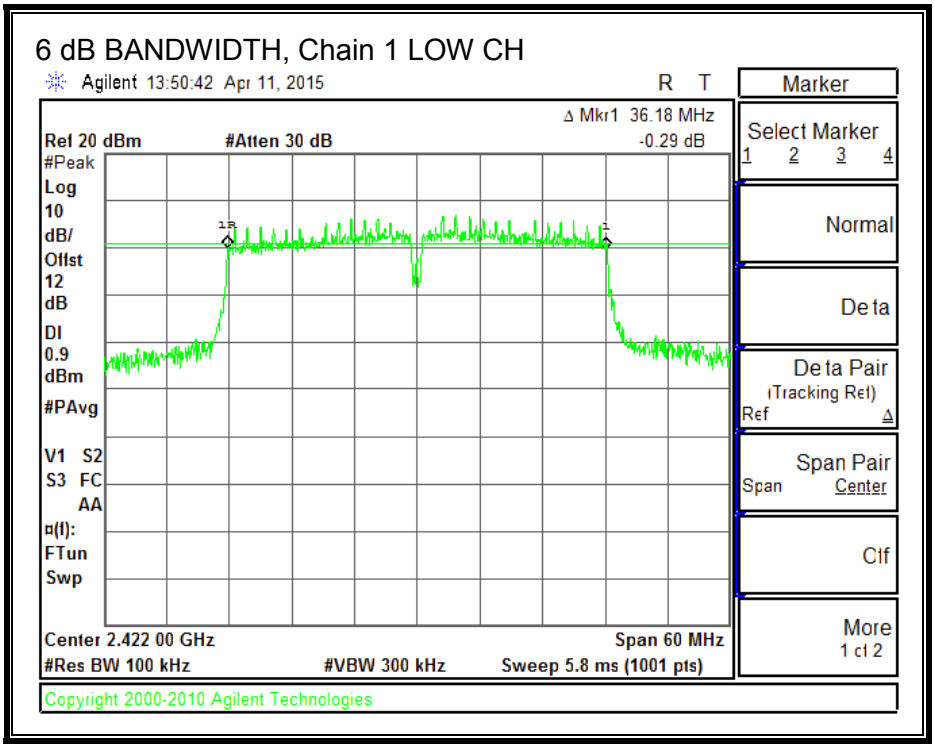
6 dB BANDWIDTH, Chain 0



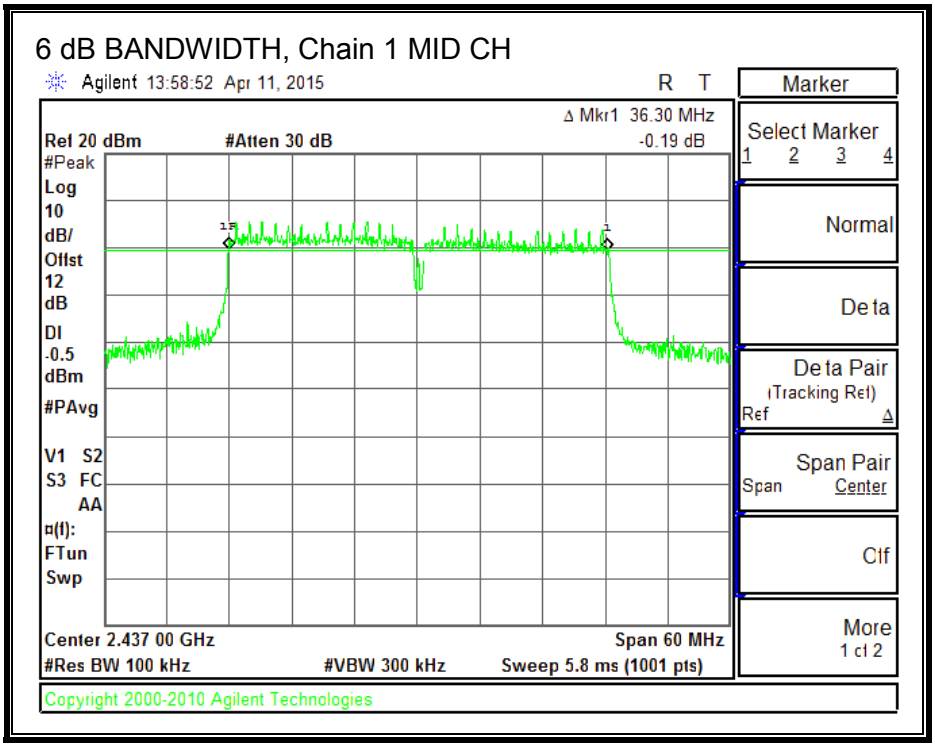




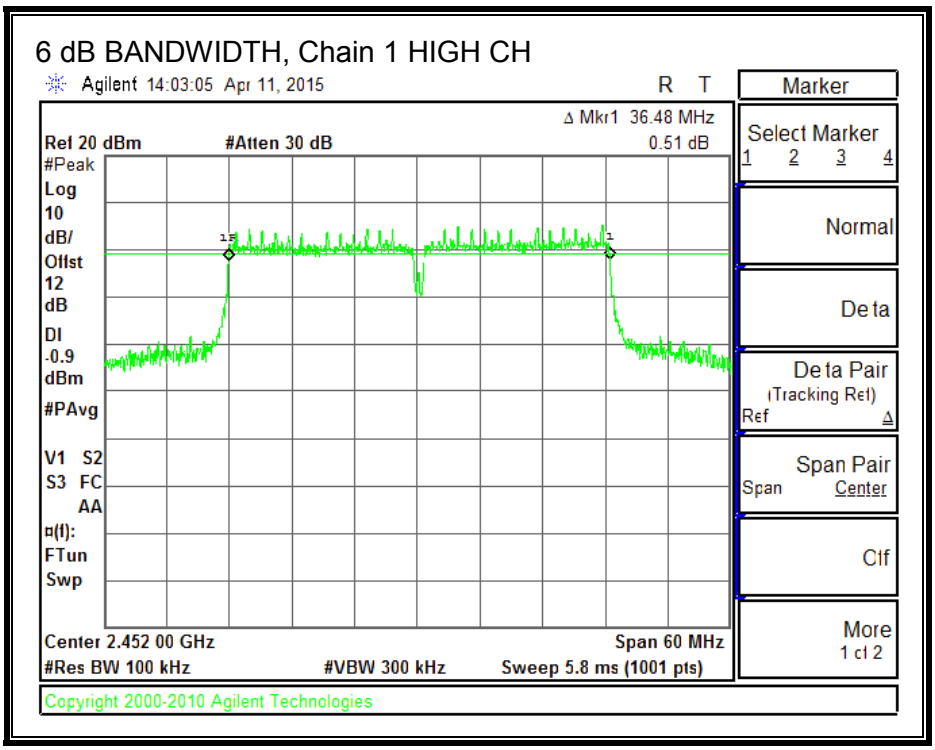
6 dB BANDWIDTH, Chain 1



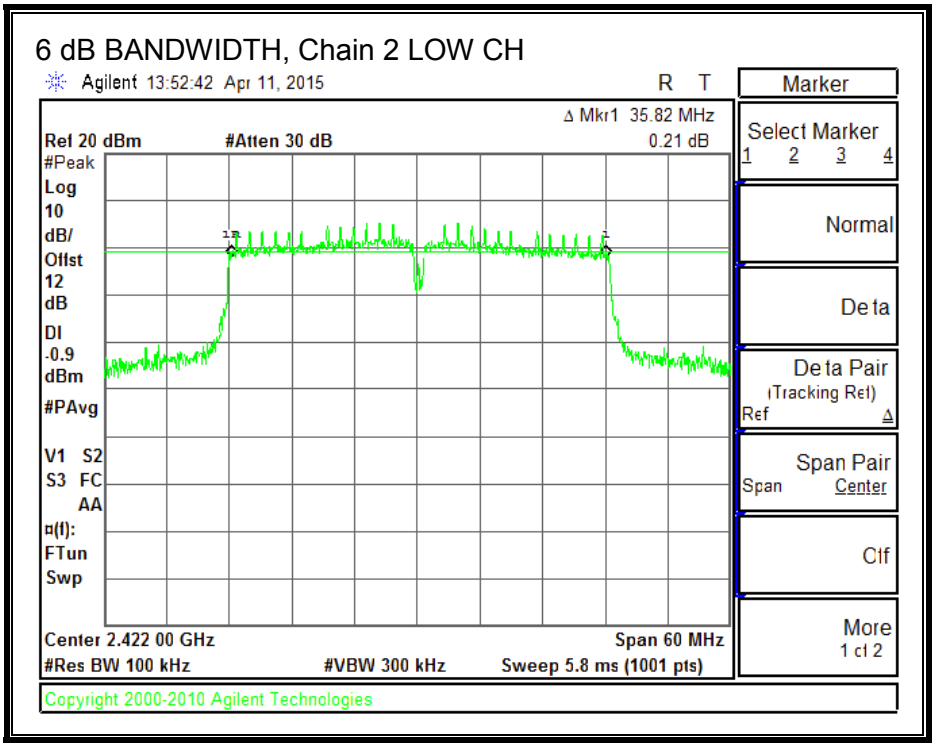
6 dB BANDWIDTH, Chain 1 MID CH

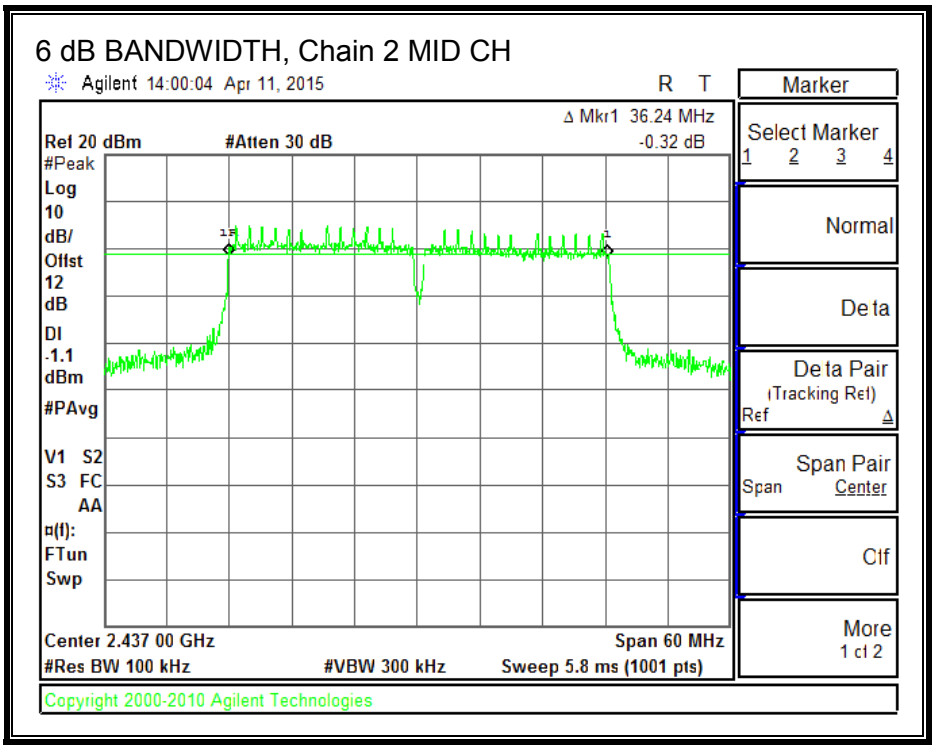


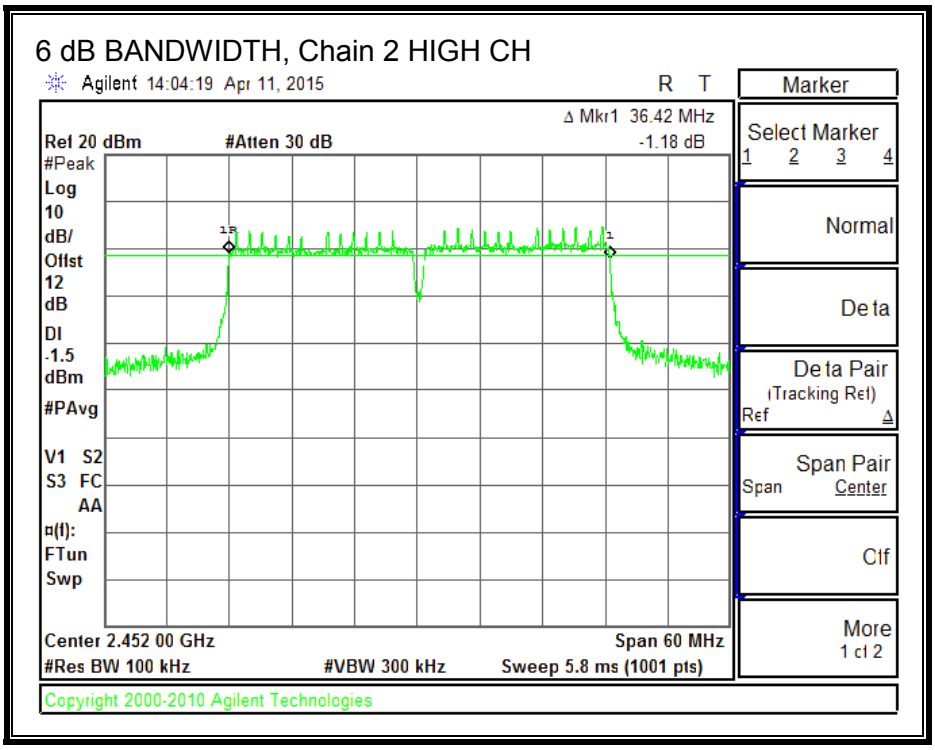
6 dB BANDWIDTH, Chain 1 HIGH CH



6 dB BANDWIDTH, Chain 2







8.8.2. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Limits

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

Results

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

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

8.8.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4 (4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

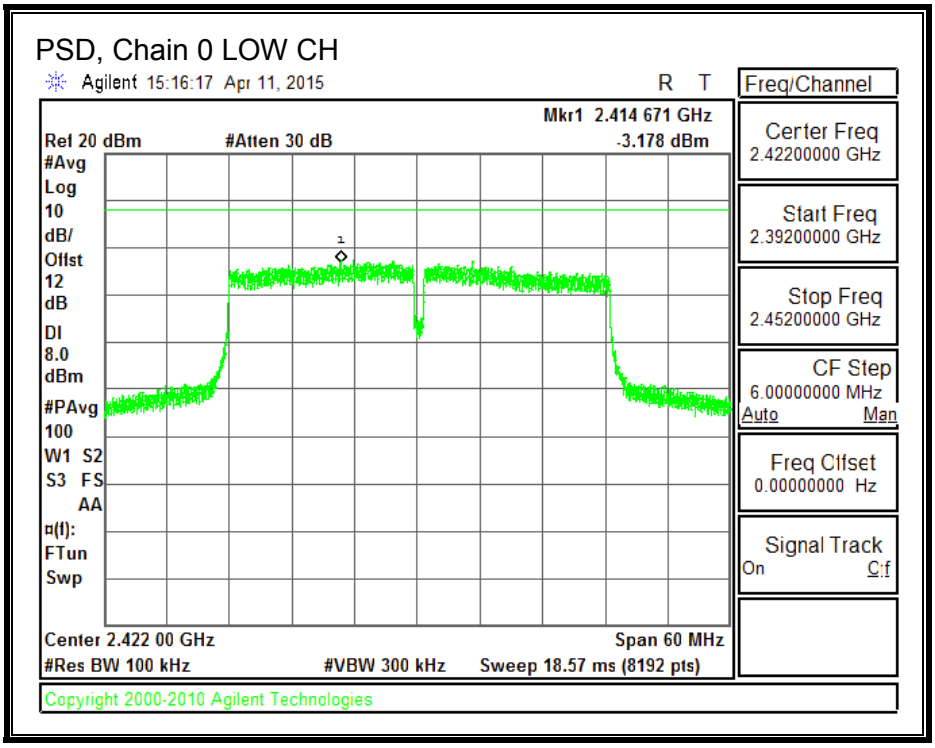
RESULTS

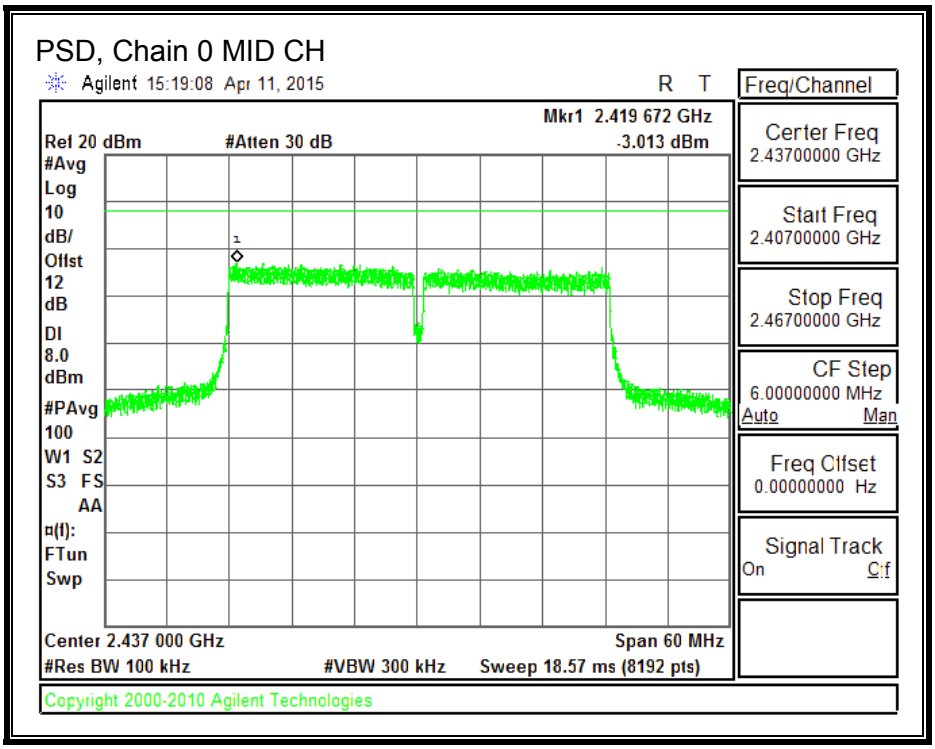
Duty Cycle CF (dB)	0.13	Included in Calculations of Corr'd PSD

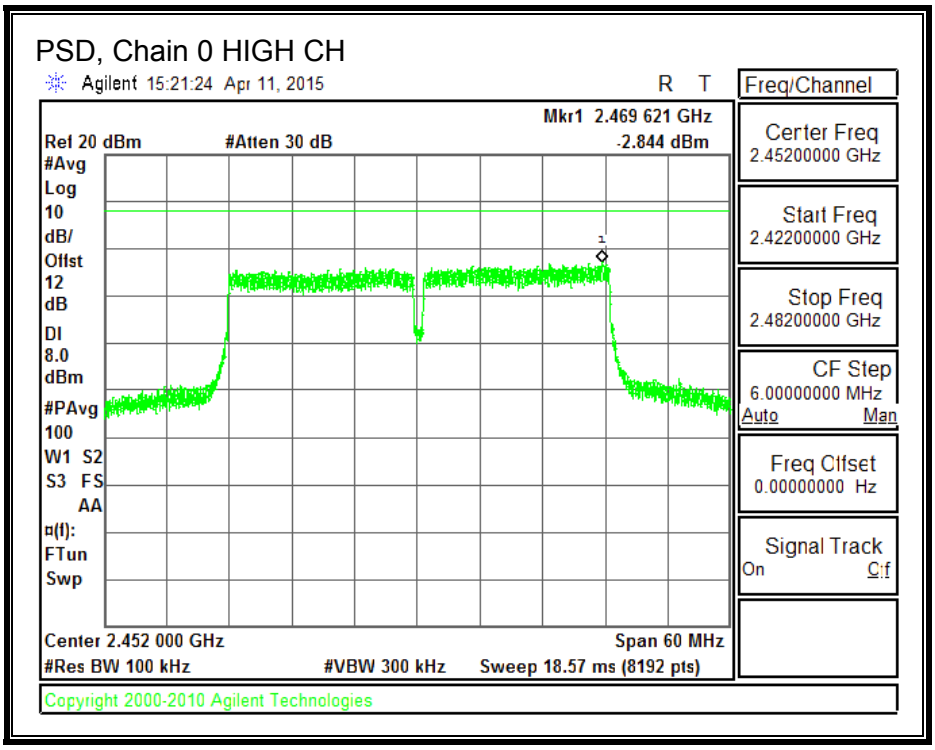
PSD Results

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

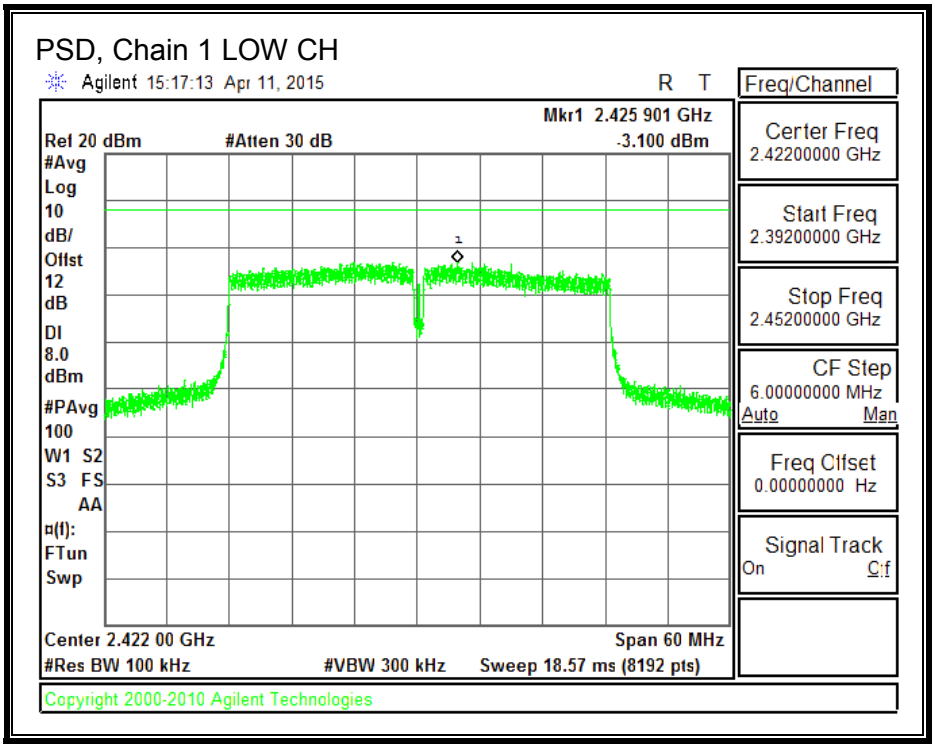
PSD, Chain 0



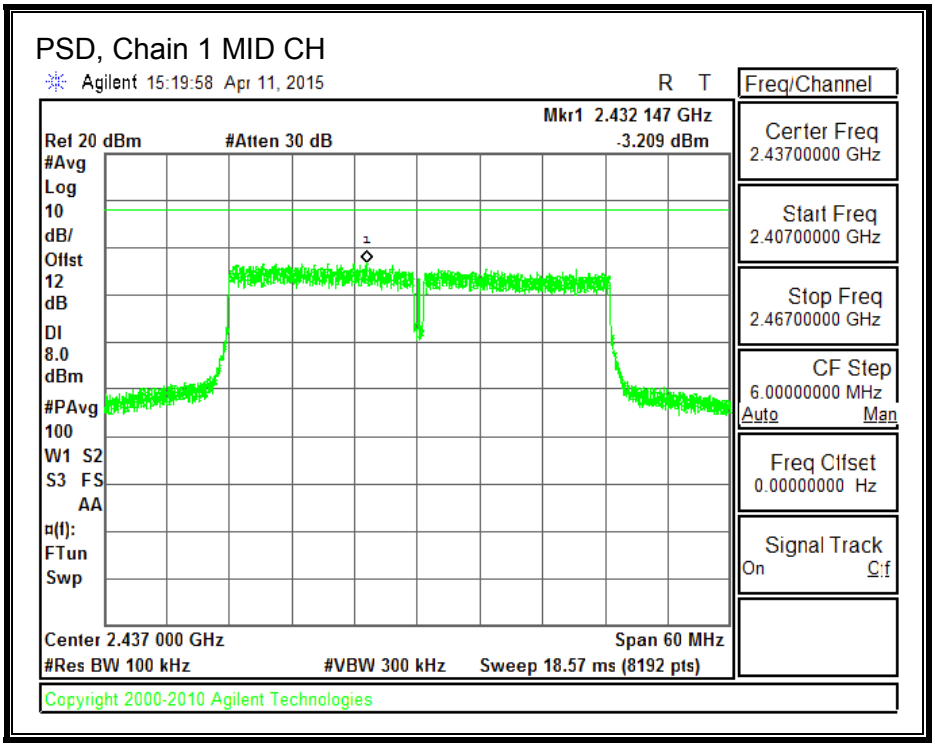




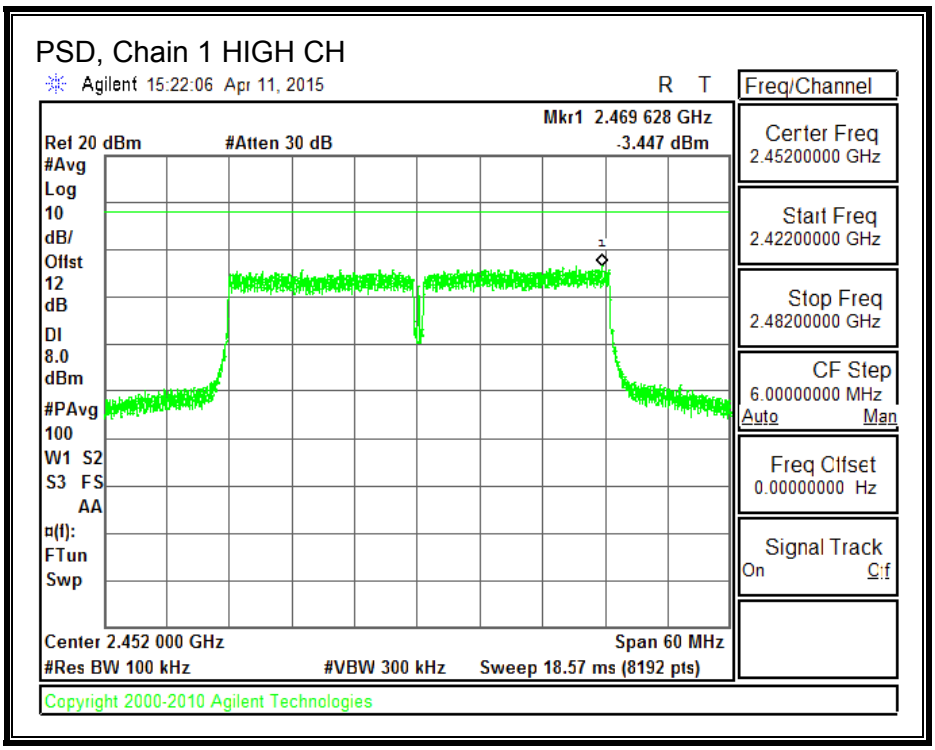
PSD, Chain 1



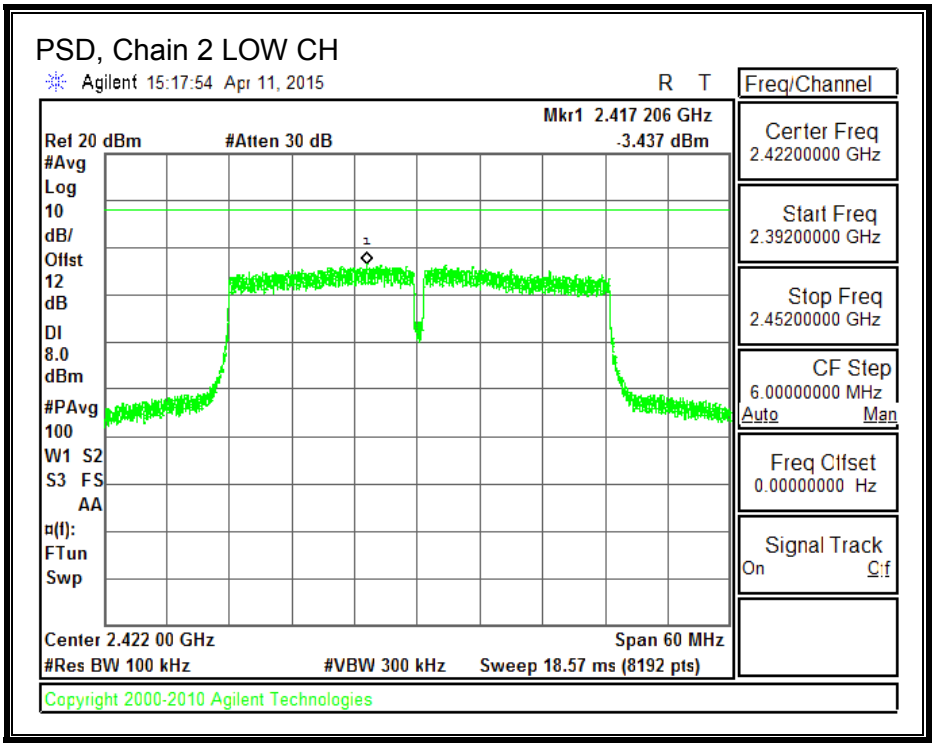
PSD, Chain 1 MID CH

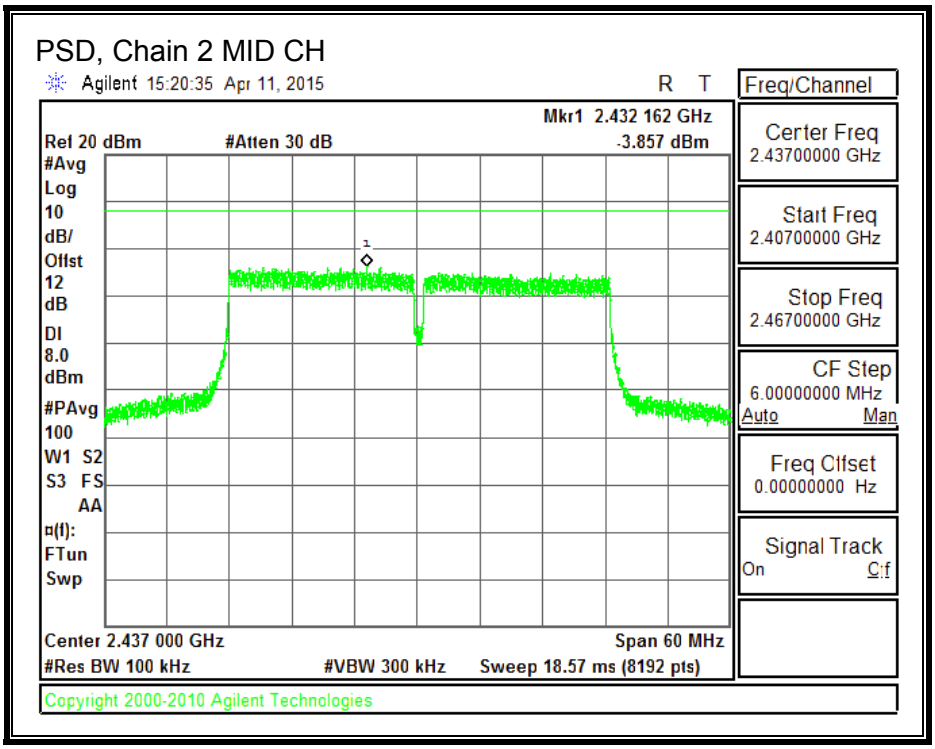


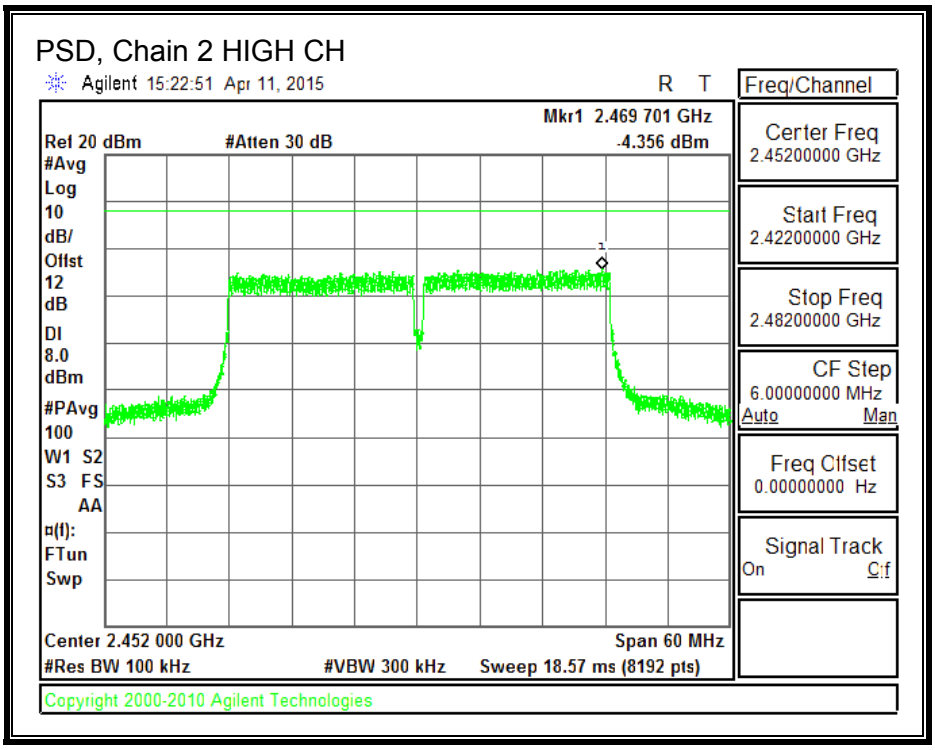
PSD, Chain 1 HIGH CH



PSD, Chain 2







8.8.4. OUT-OF-BAND EMISSIONS

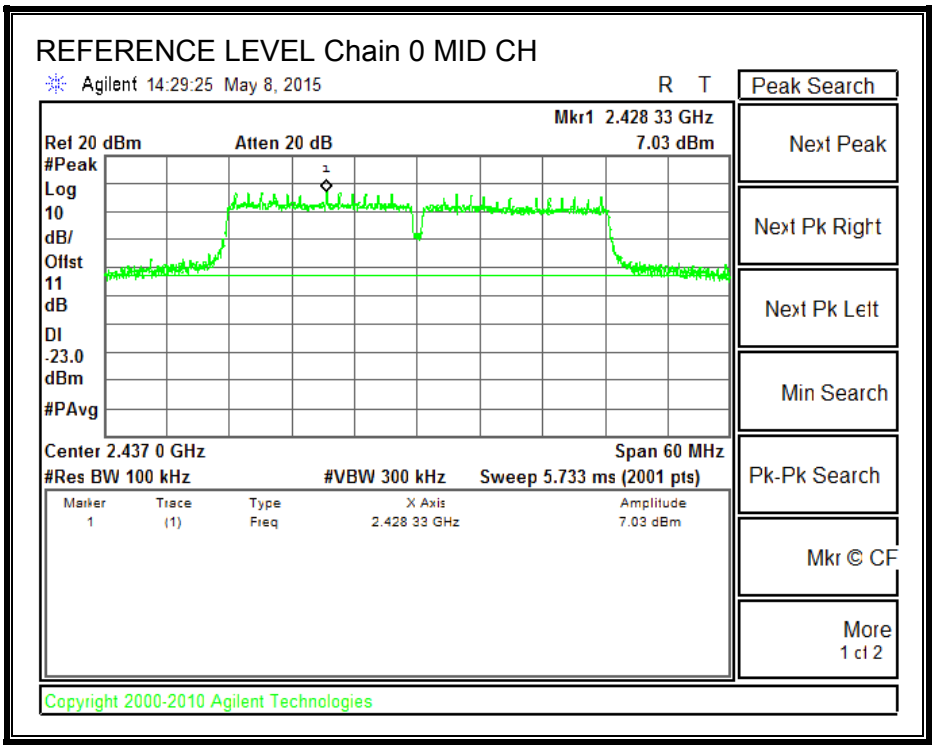
LIMITS

FCC §15.247 (d)

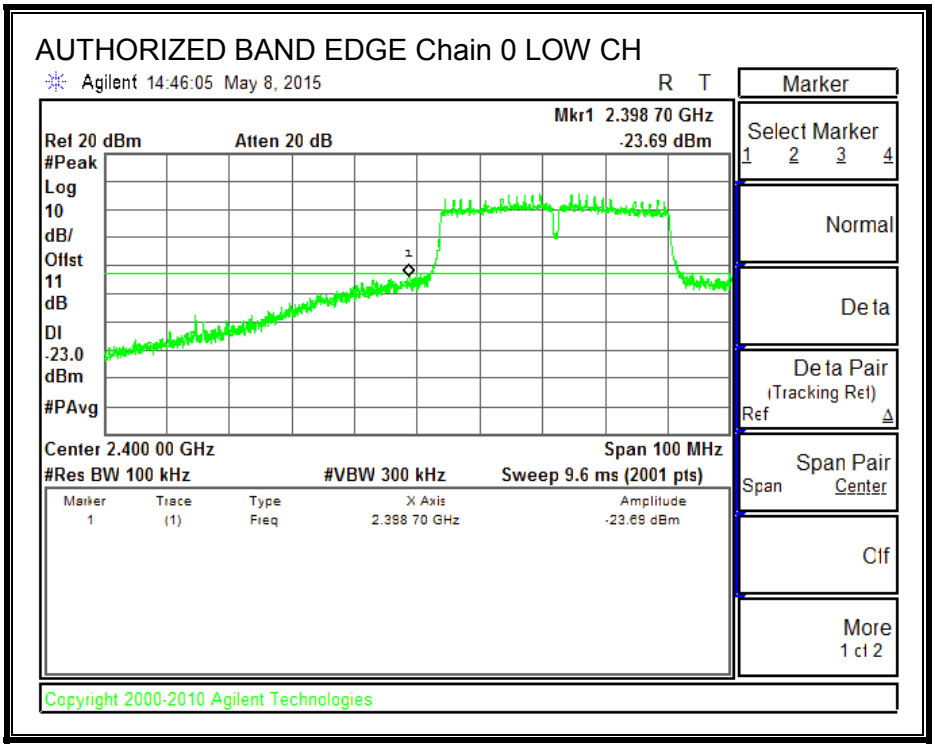
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

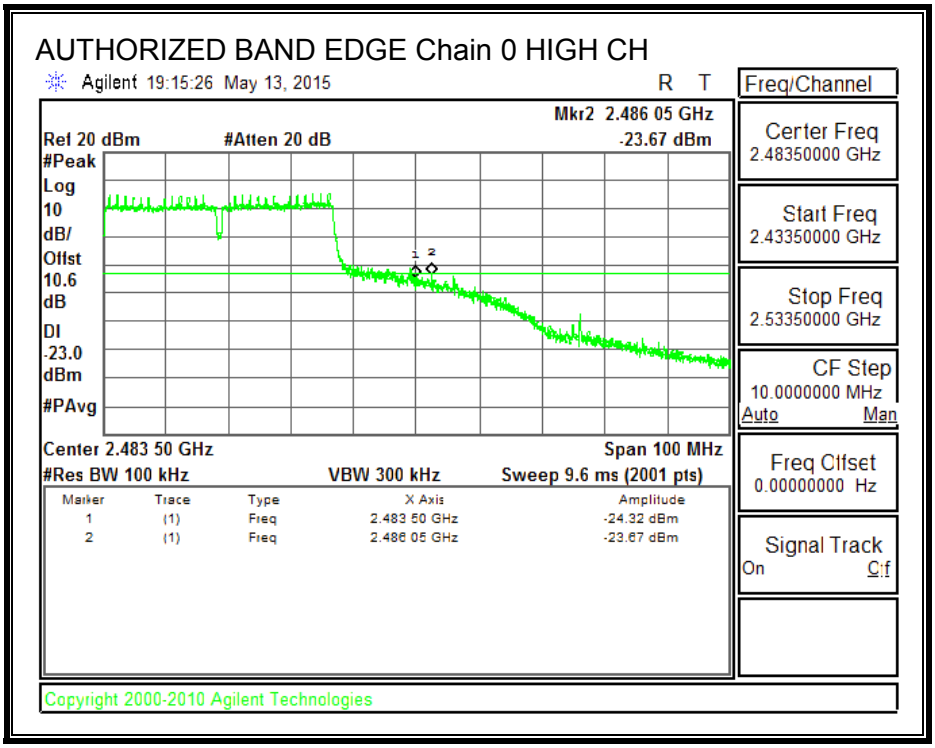
IN-BAND REFERENCE LEVEL, Chain 0



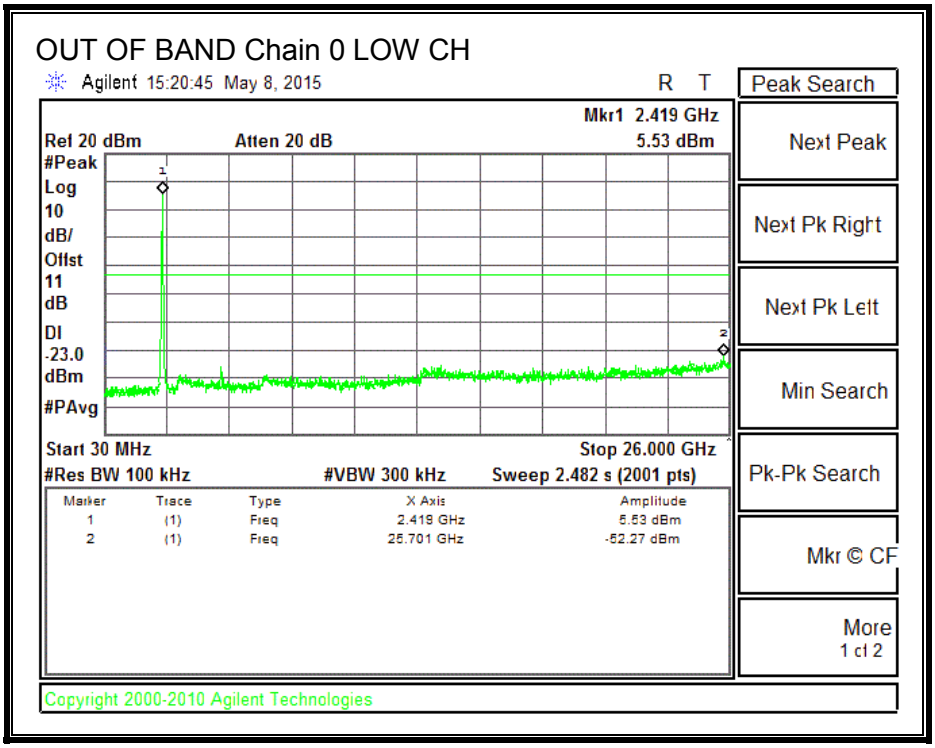
LOW CHANNEL BANDEDGE, Chain 0

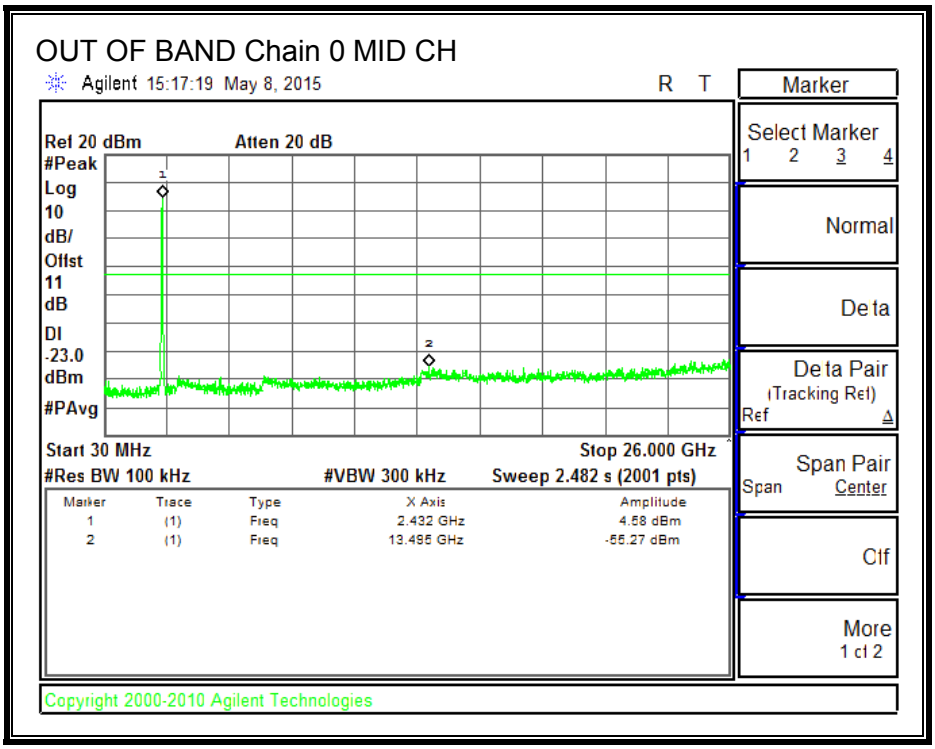


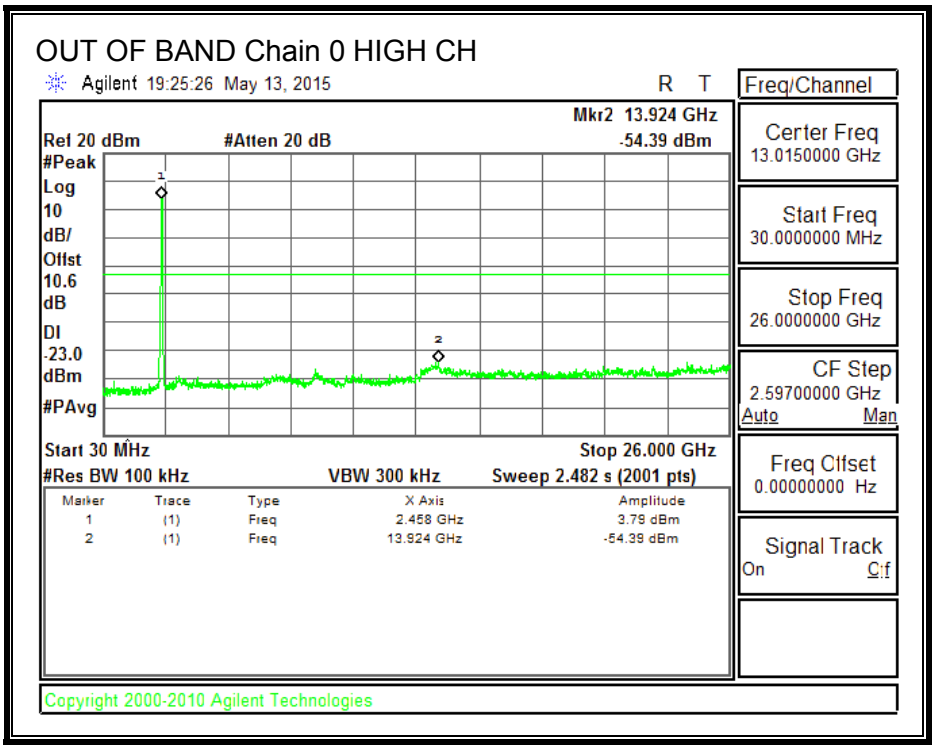
HIGH CHANNEL BANDEDGE, Chain 0



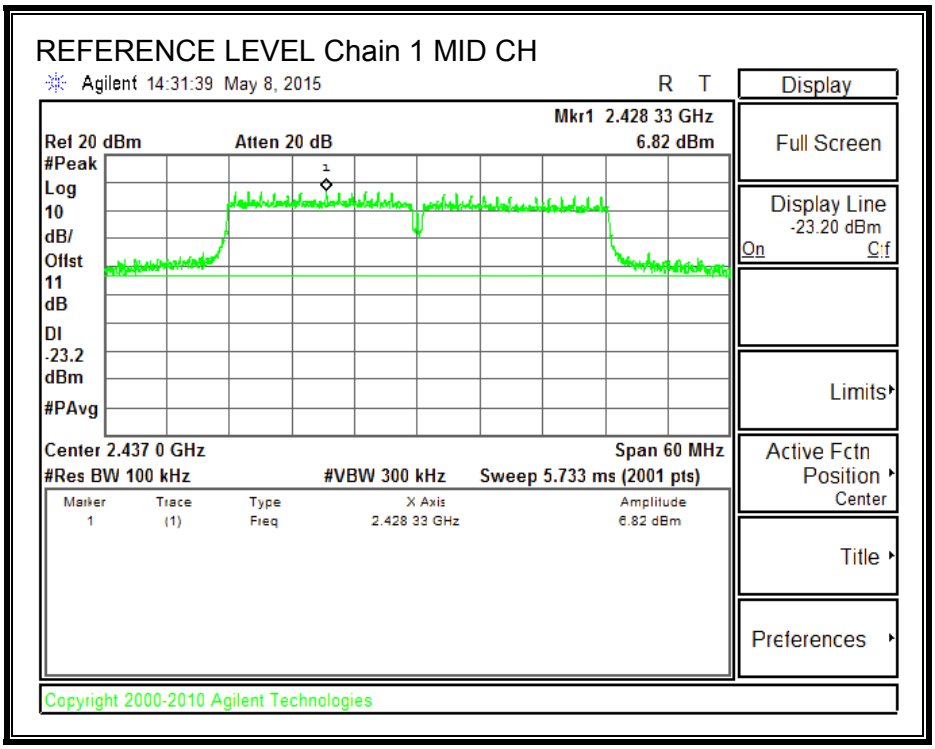
OUT-OF-BAND EMISSIONS, Chain 0



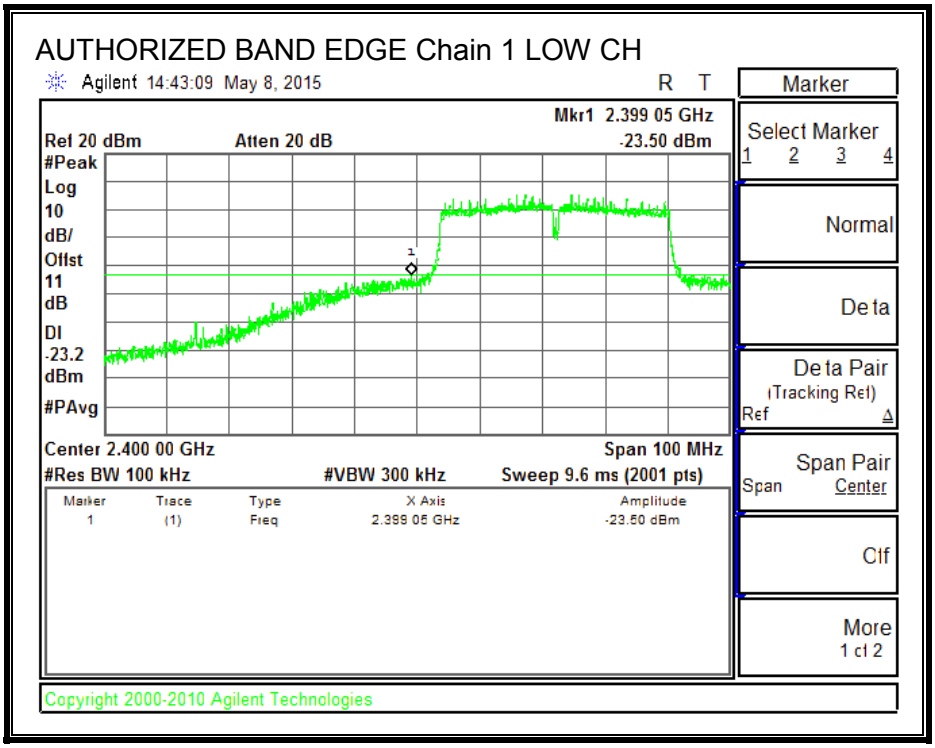




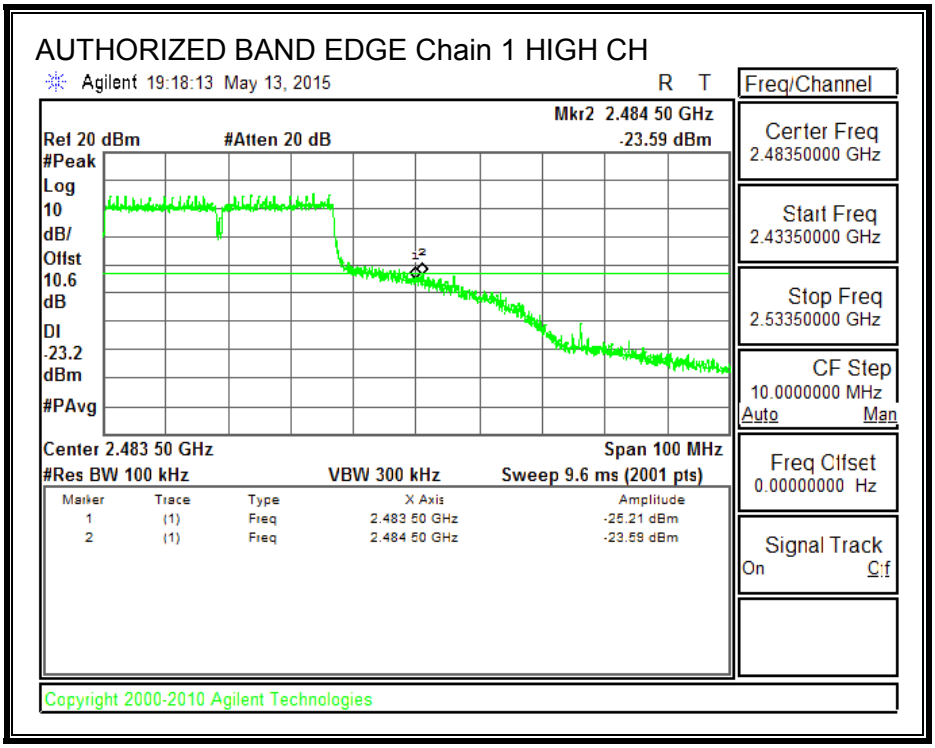
IN-BAND REFERENCE LEVEL, Chain 1



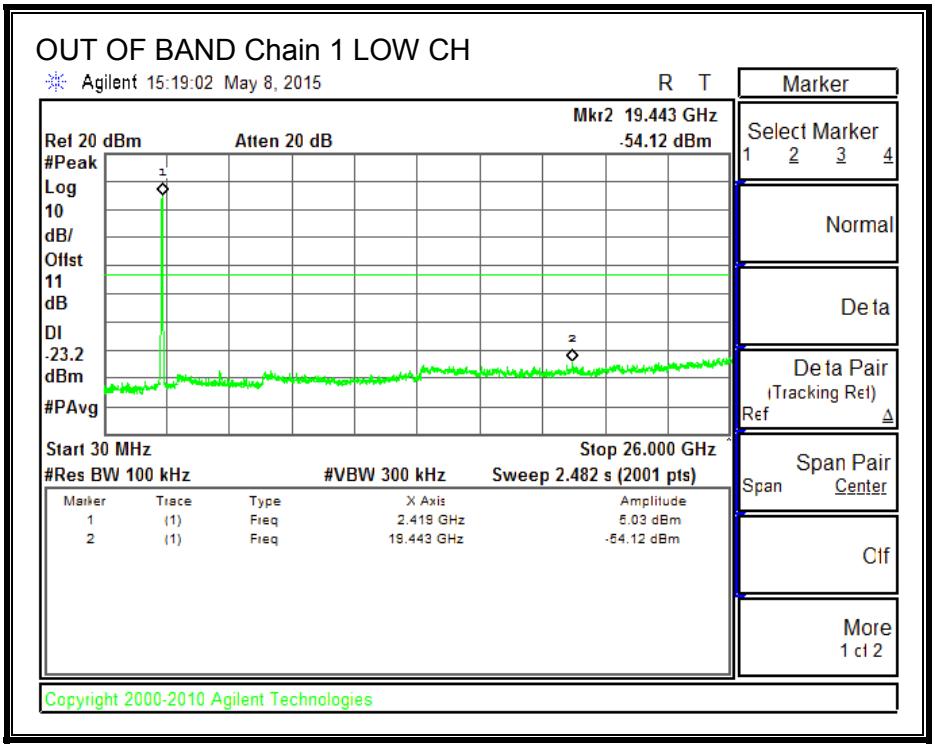
LOW CHANNEL BANDEDGE, Chain 1

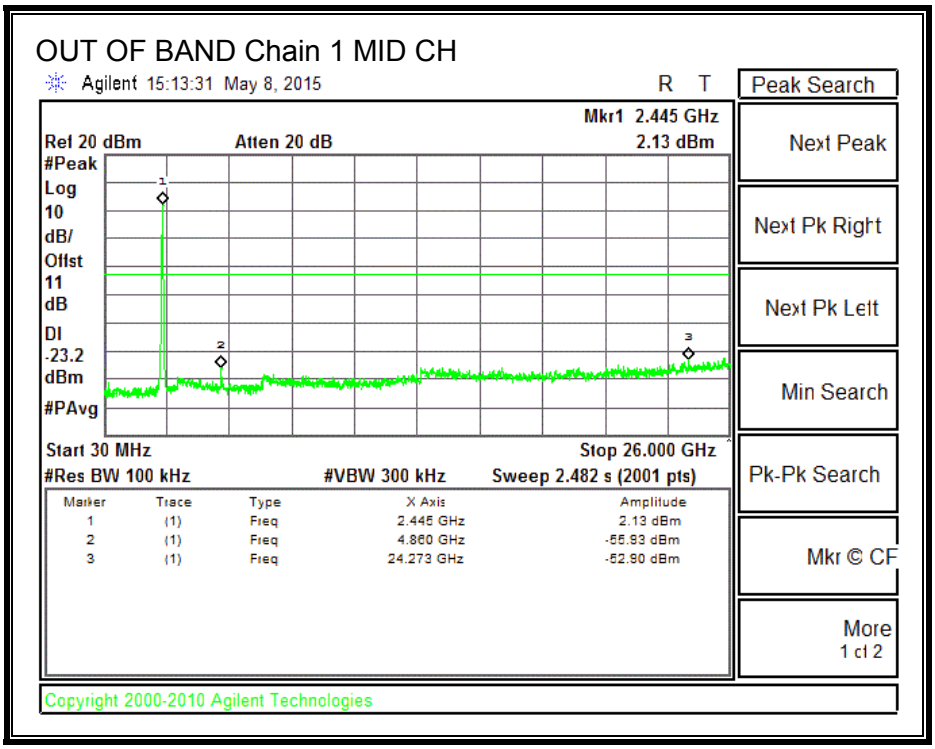


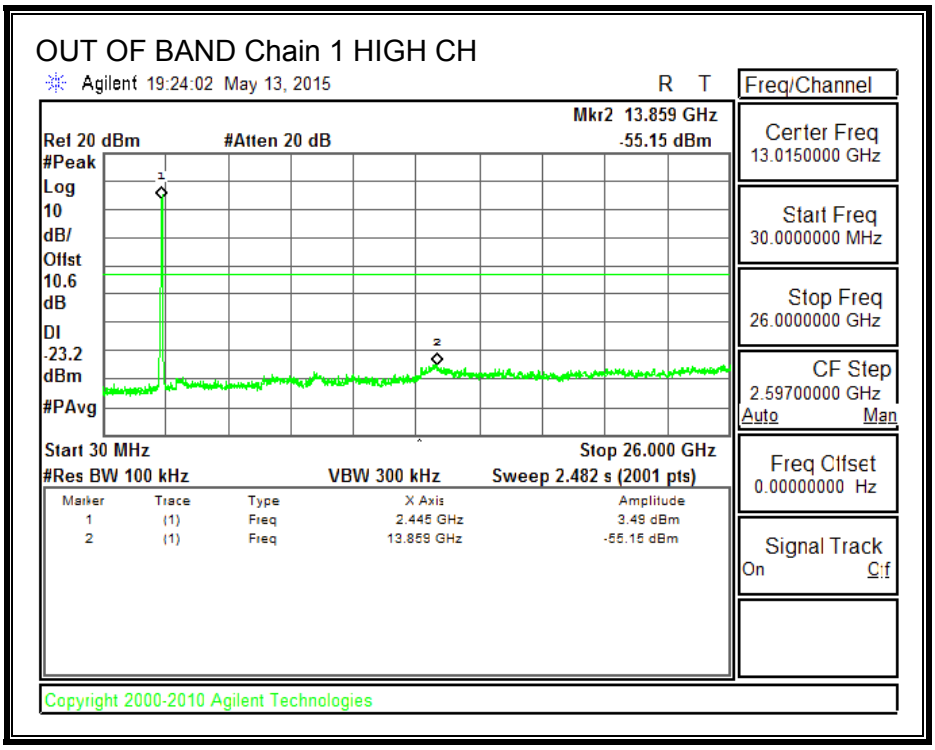
HIGH CHANNEL BANDEDGE, Chain 1



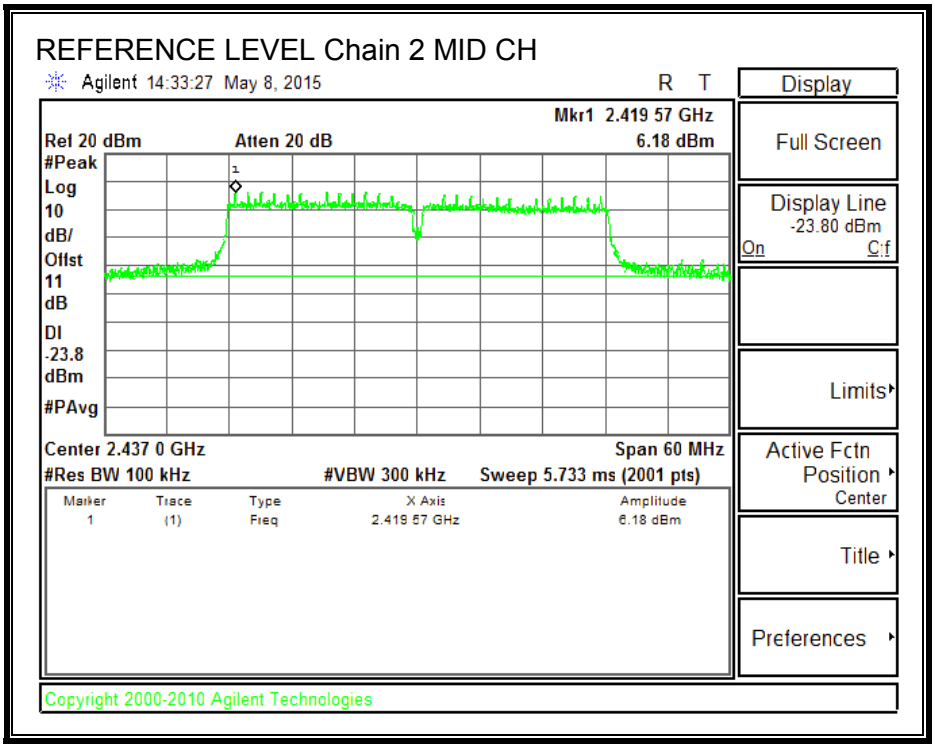
OUT-OF-BAND EMISSIONS, Chain 1



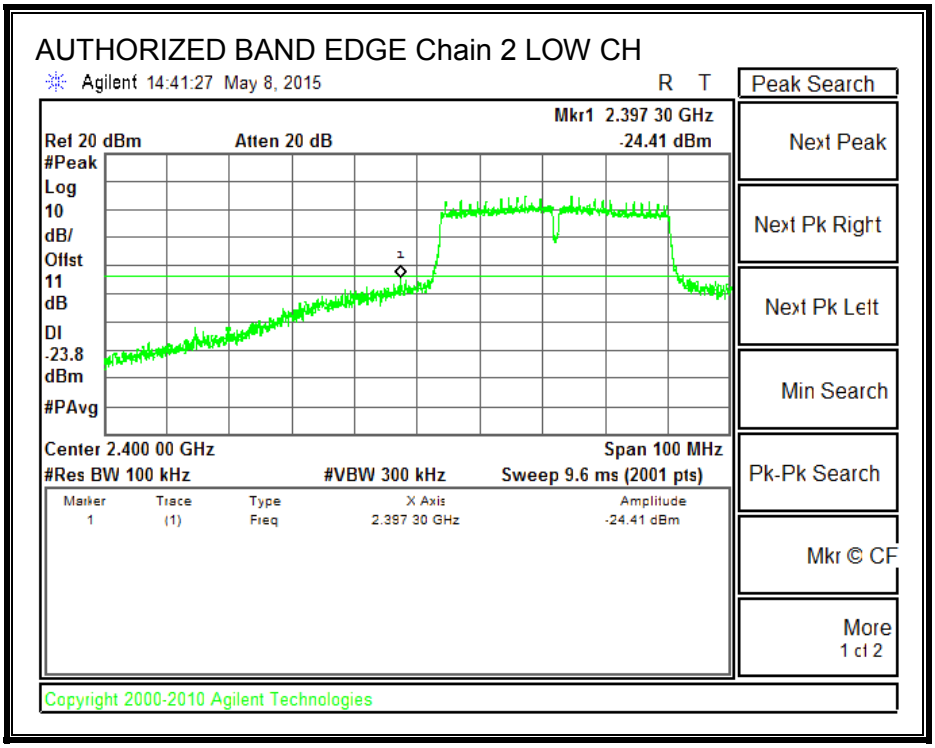




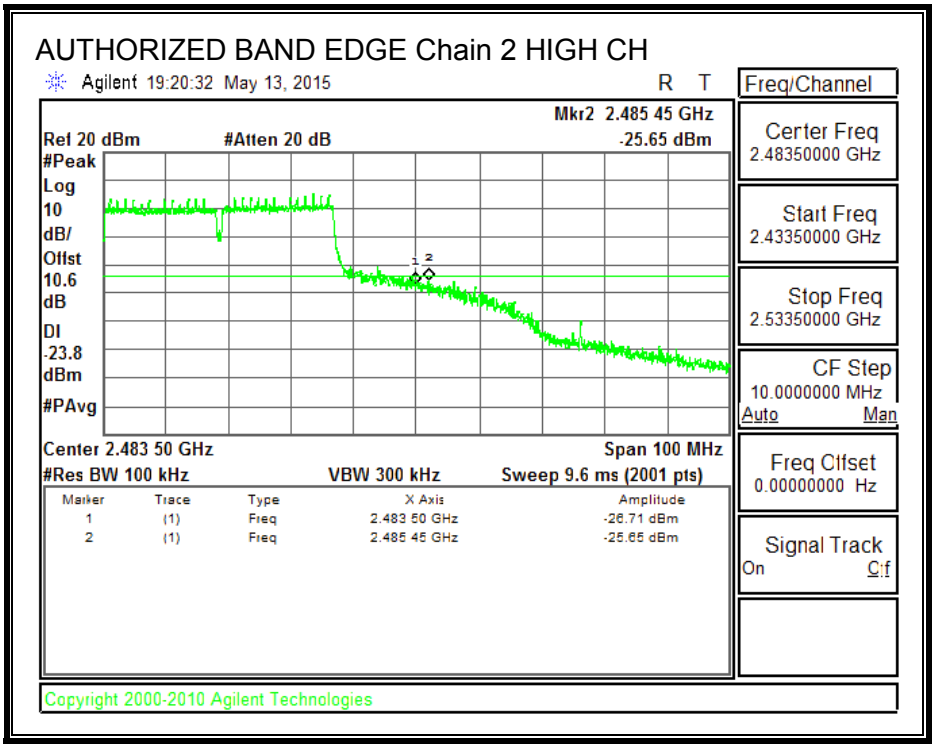
IN-BAND REFERENCE LEVEL, Chain 2



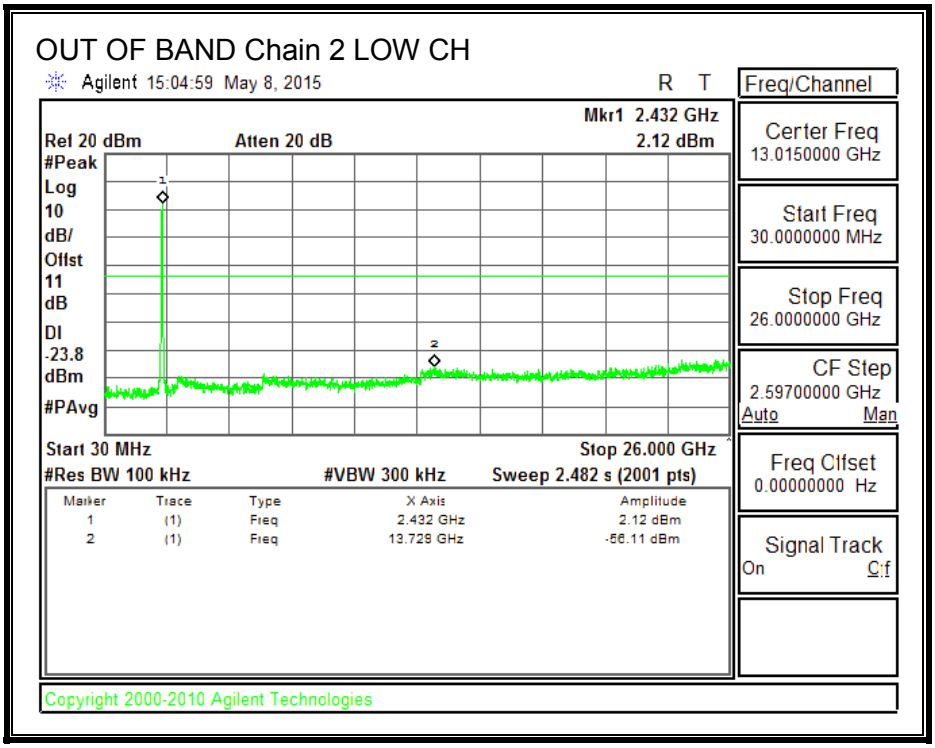
LOW CHANNEL BANDEDGE, Chain 2

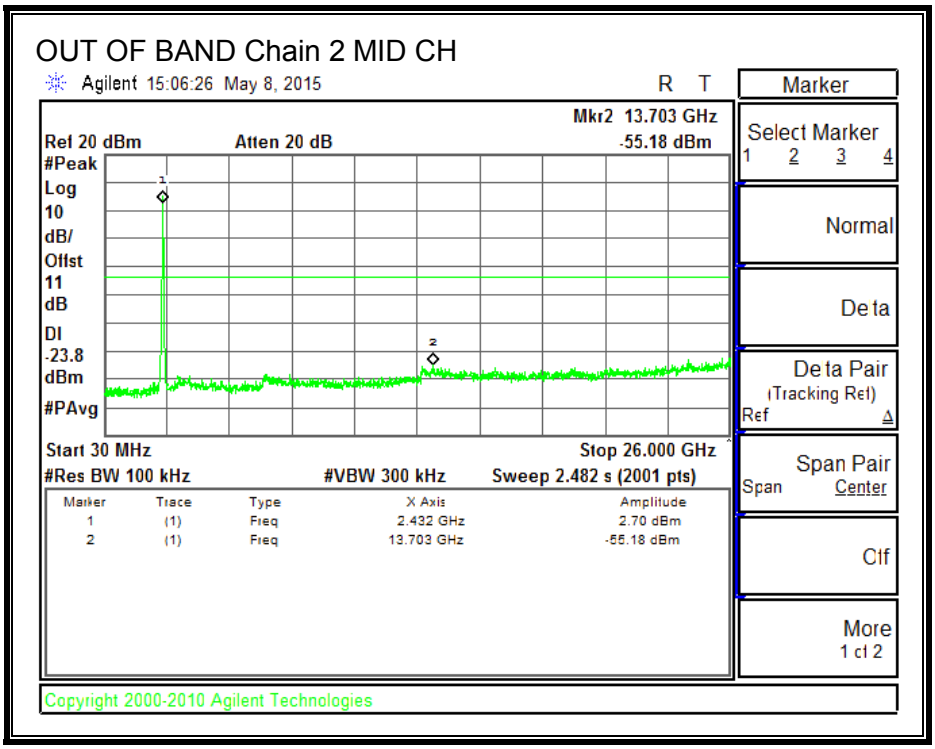


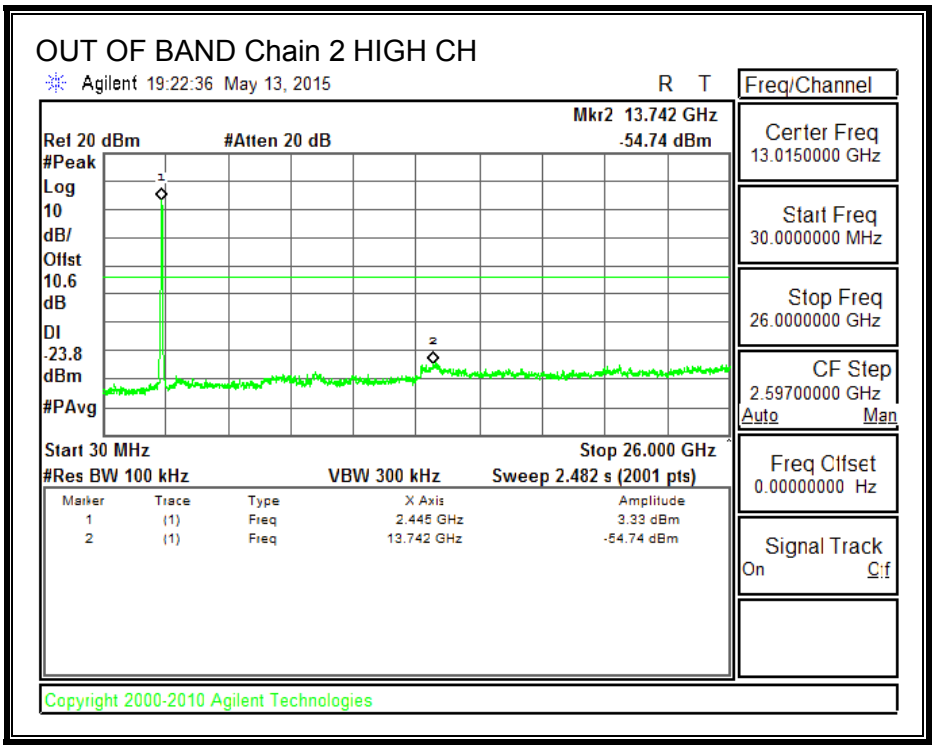
HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2







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

8.9.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

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

RESULTS

Limits

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

Results

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

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

8.10. 802.11a LEGACY MODE IN THE 5.8 GHz BAND

8.10.1. OUTPUT POWER

LIMITS

IC RSS-210 A8.4

For systems using digital modulation in the 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

This is SISO mode, AG is the highest (worst-case) = 6.21 dBi

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	6.21	N/A	30	36	29.79
High	5825	6.21	N/A	30	36	29.79

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	5745	19.00	19.00	29.79	-10.79
High	5825	18.90	18.90	29.79	-10.89

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

8.10.2. OUT-OF-BAND EMISSIONS

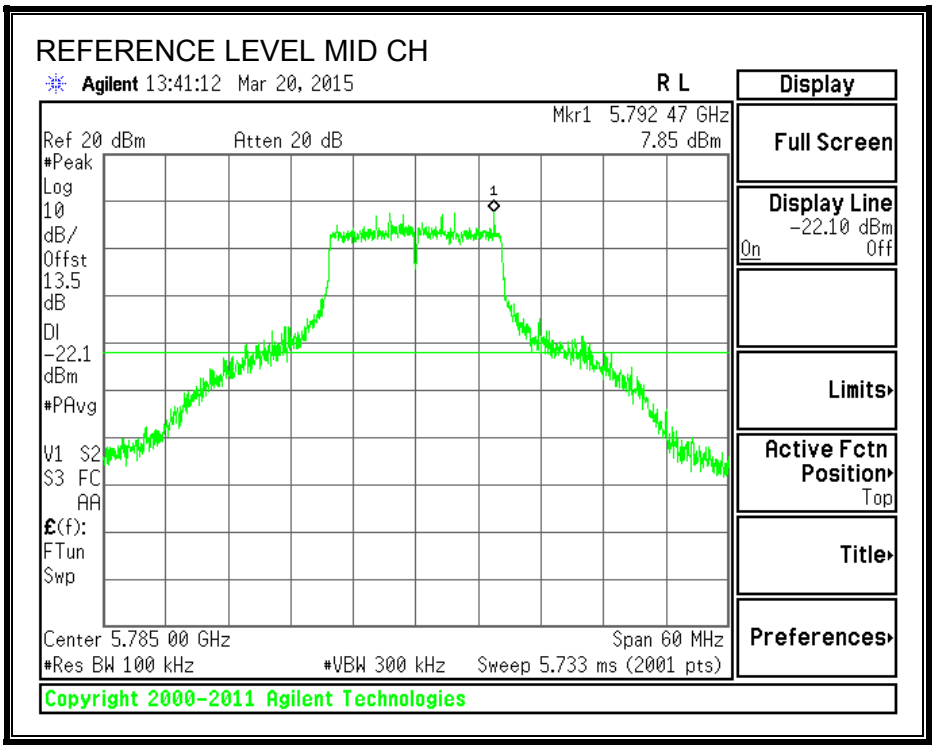
LIMITS

FCC §15.247 (d)

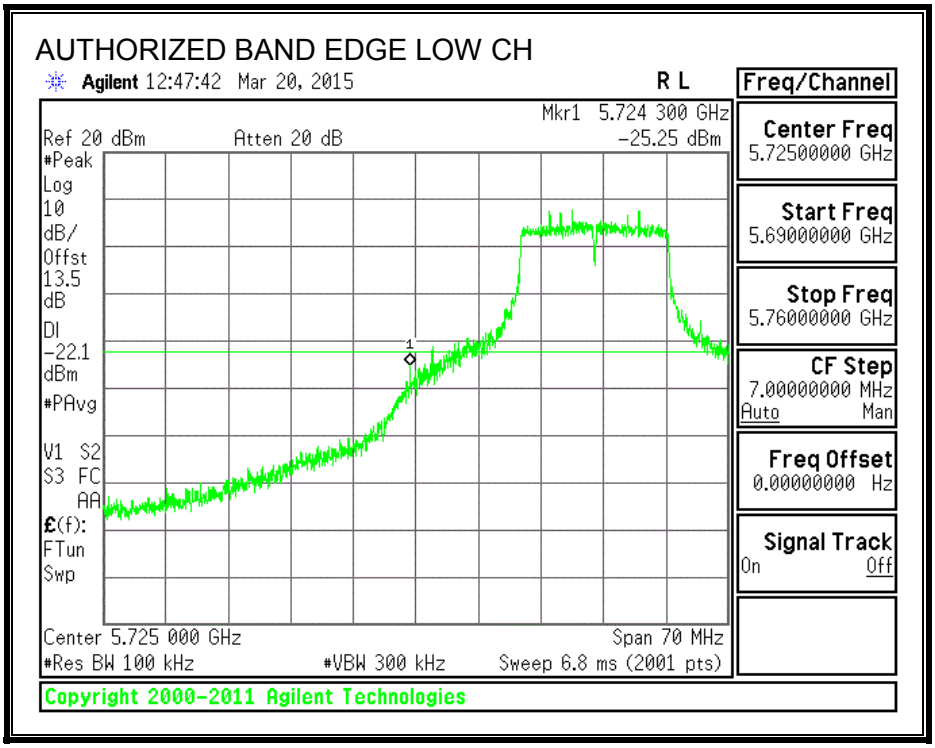
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

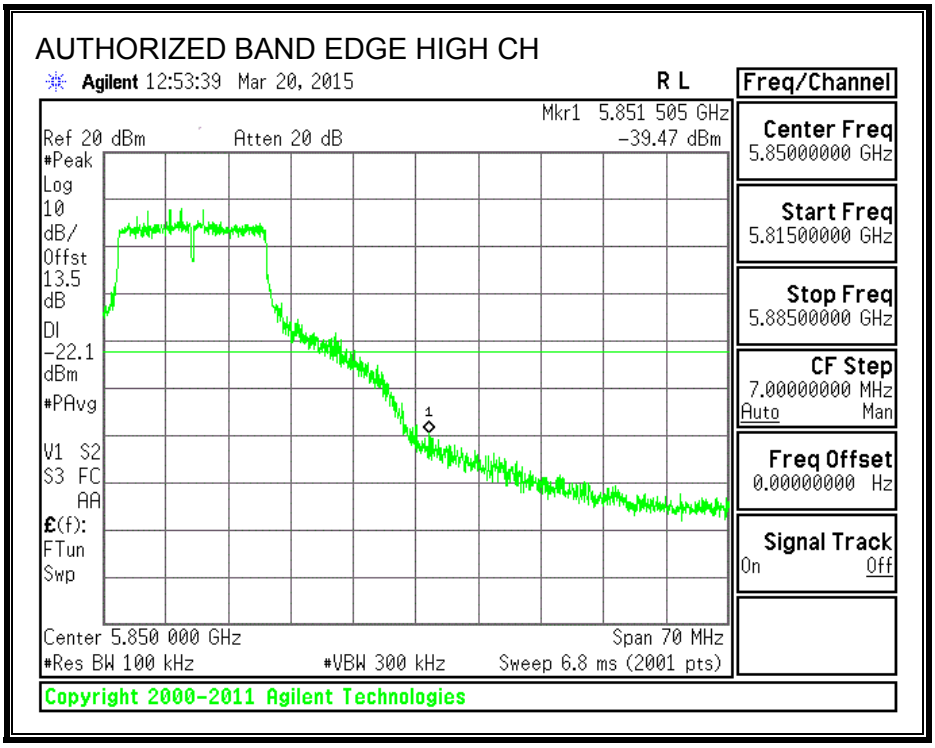
IN-BAND REFERENCE LEVEL



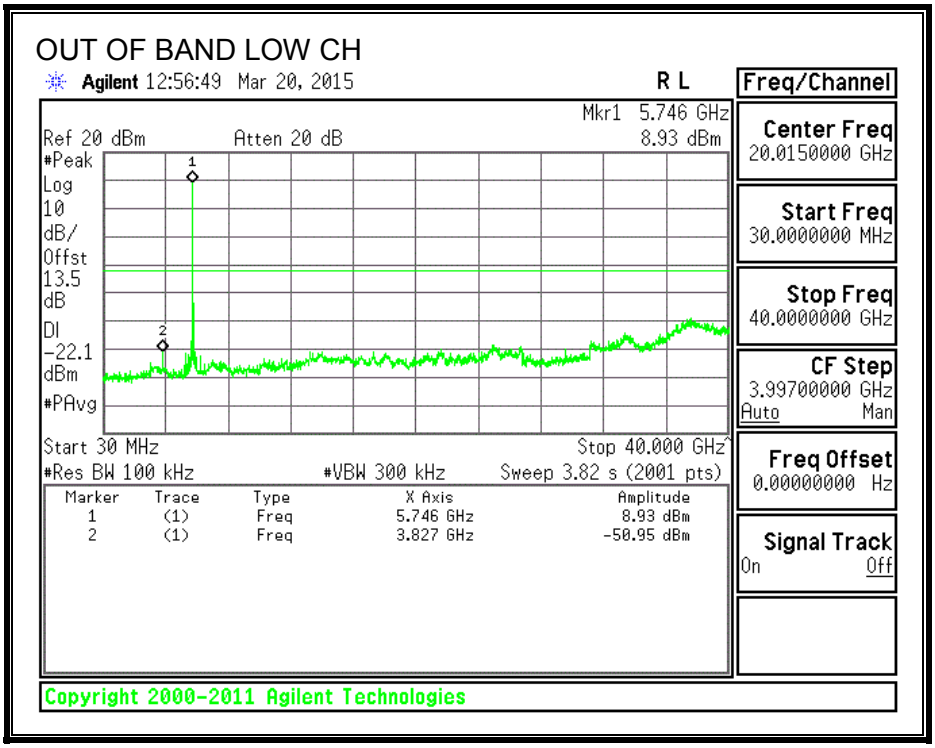
LOW CHANNEL BANDEDGE

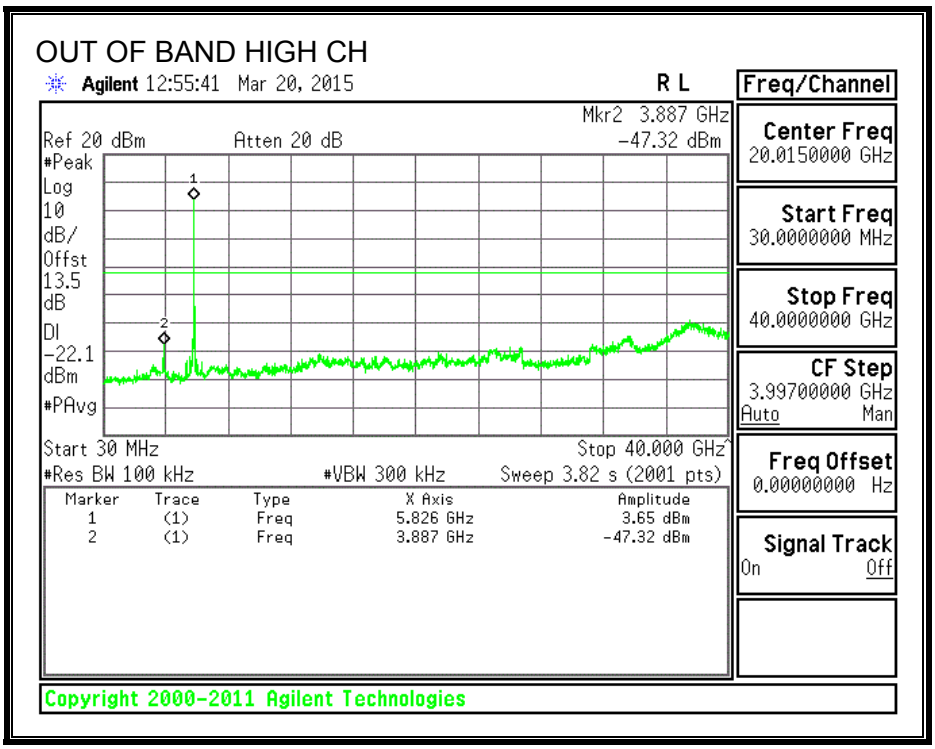


HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS





8.11. 802.11n HT20 CDD 2TX MODE IN THE 5.8 GHz BAND

8.11.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 6.21 dBi.

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	6.21	N/A	30	36	29.79
High	5825	6.21	N/A	30	36	29.79

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	18.78	19.10	21.95	29.79	-7.84
High	5825	18.90	19.20	22.06	29.79	-7.73

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

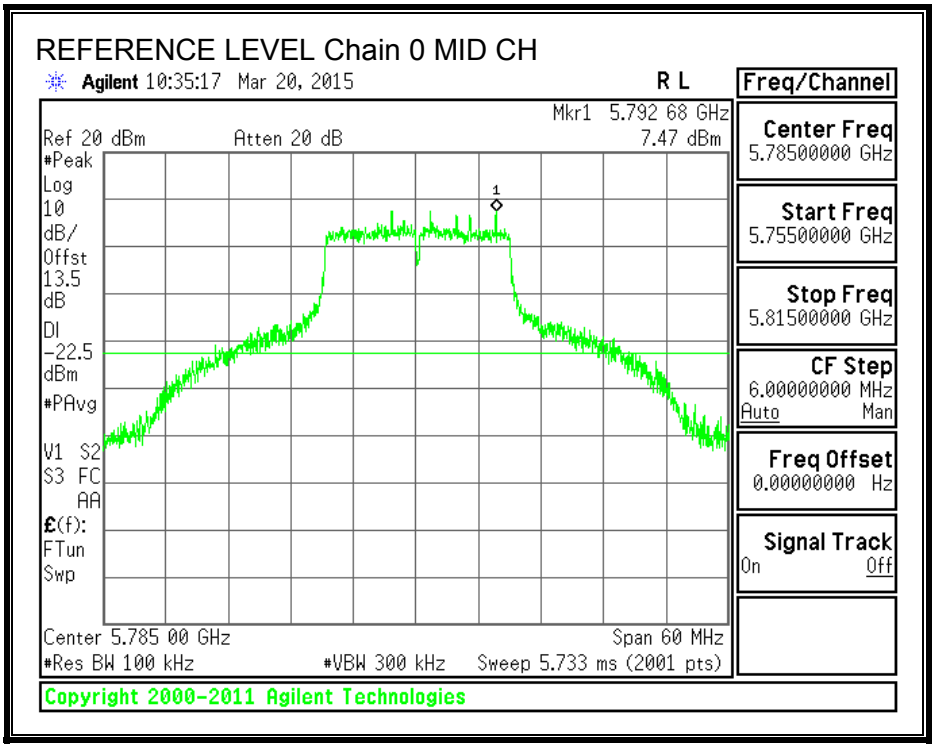
8.11.2. OUT-OF-BAND EMISSIONS

LIMITS

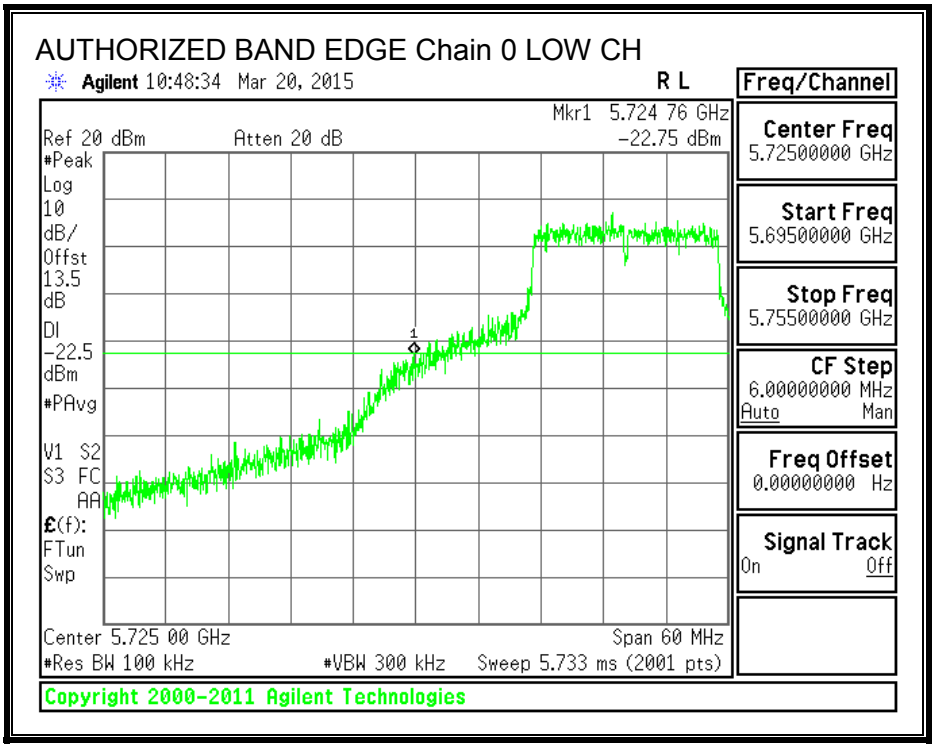
FCC §15.247 (d)

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.

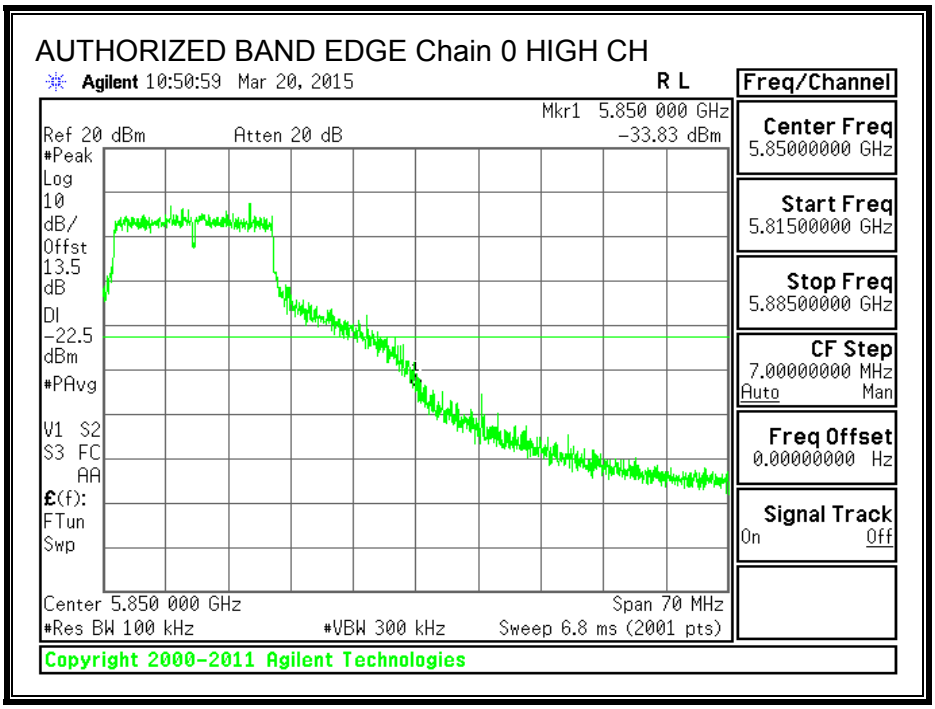
IN-BAND REFERENCE LEVEL, Chain 0



LOW CHANNEL BANDEDGE, Chain 0

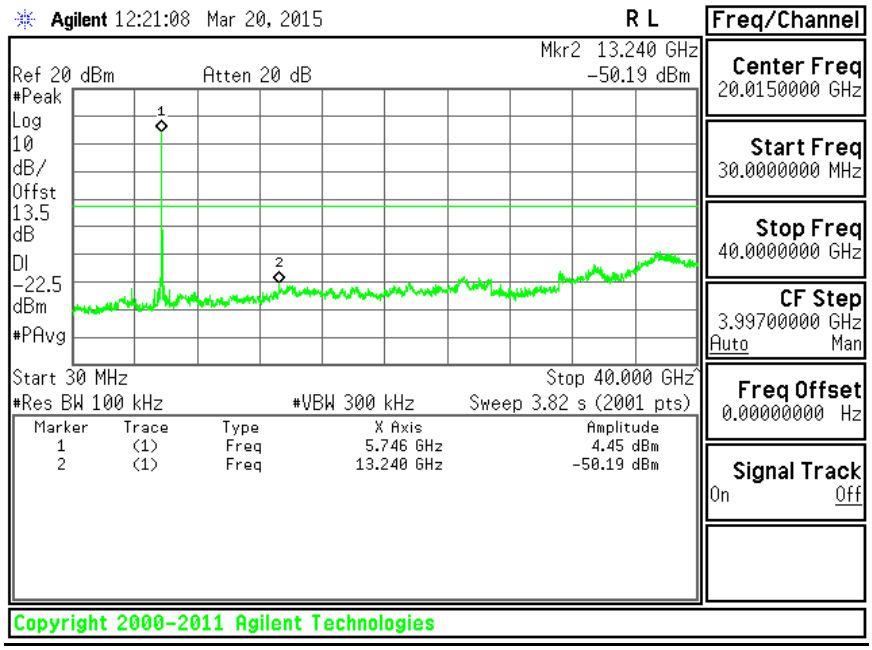


HIGH CHANNEL BANDEDGE, Chain 0

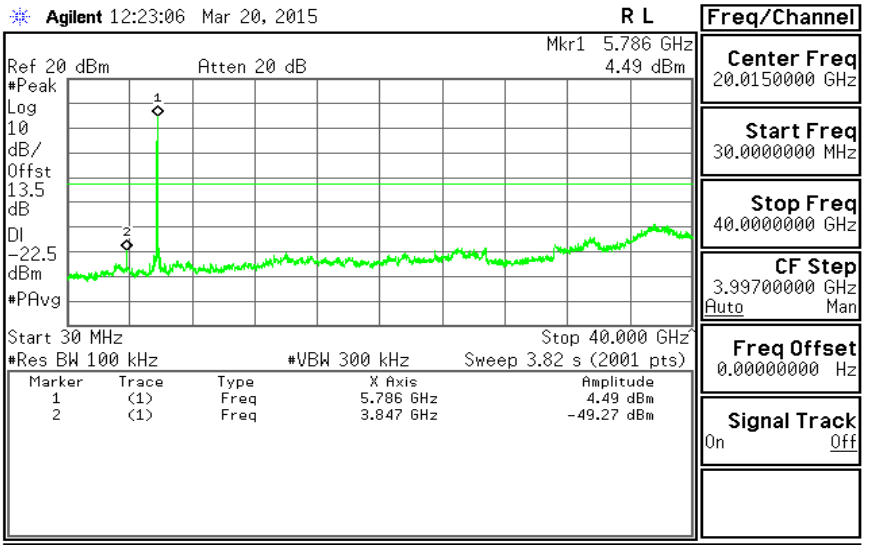


OUT-OF-BAND EMISSIONS, Chain 0

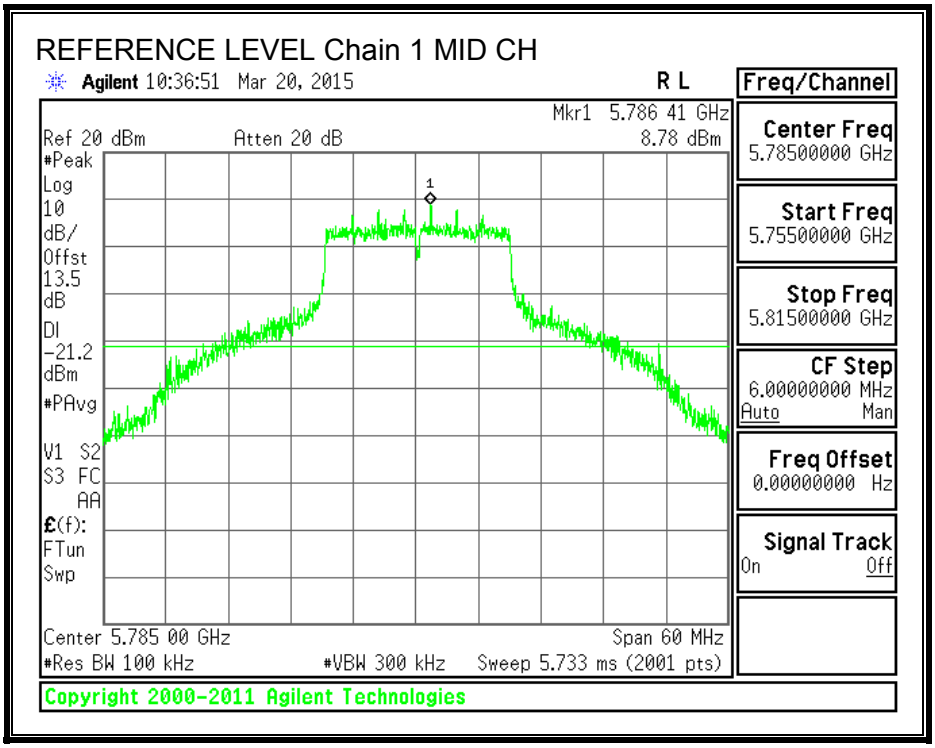
OUT OF BAND Chain 0 LOW CH



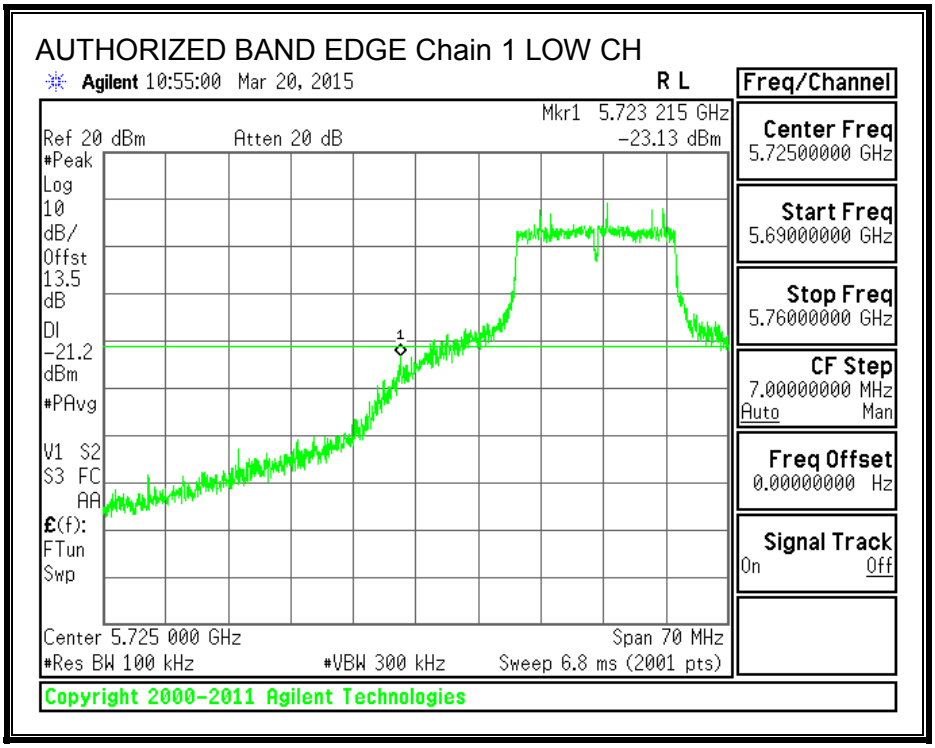
OUT OF BAND Chain 0 HIGH CH



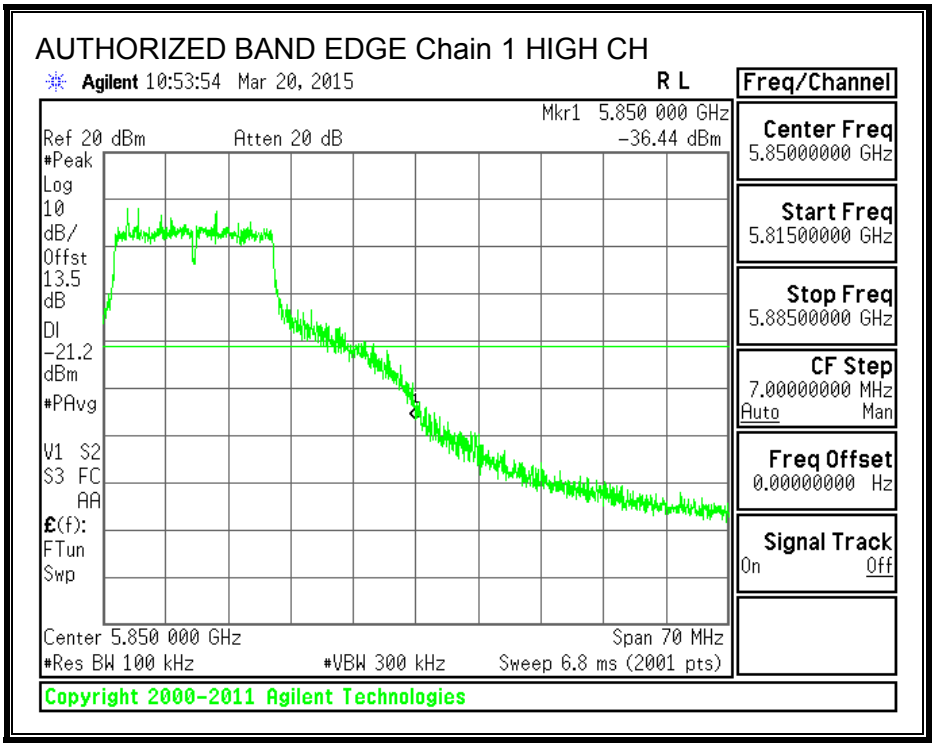
IN-BAND REFERENCE LEVEL, Chain 1



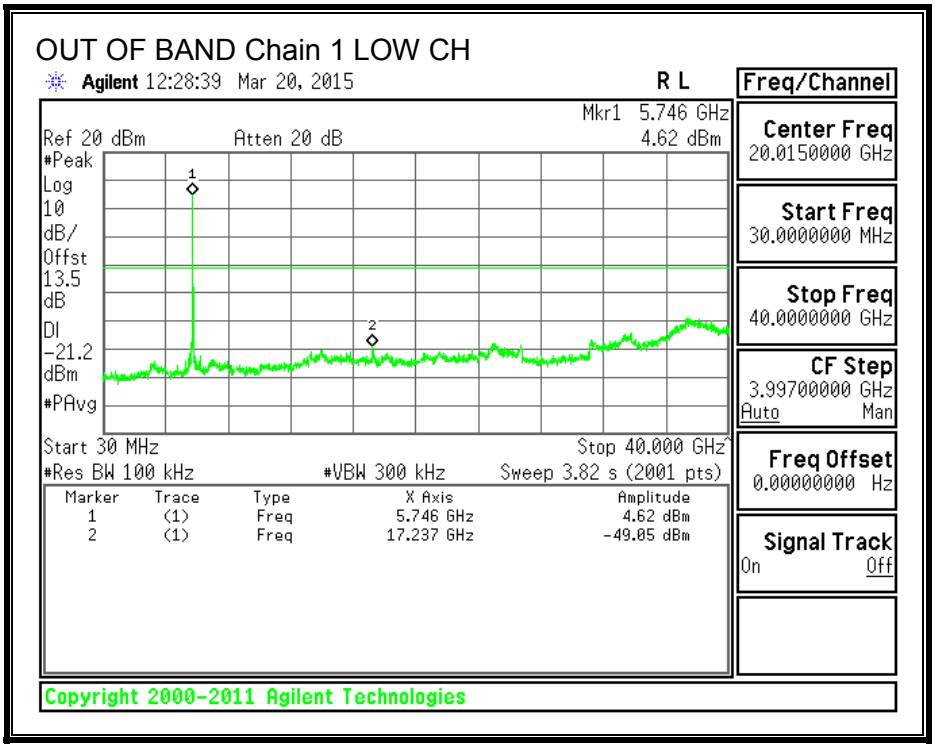
LOW CHANNEL BANDEDGE, Chain 1

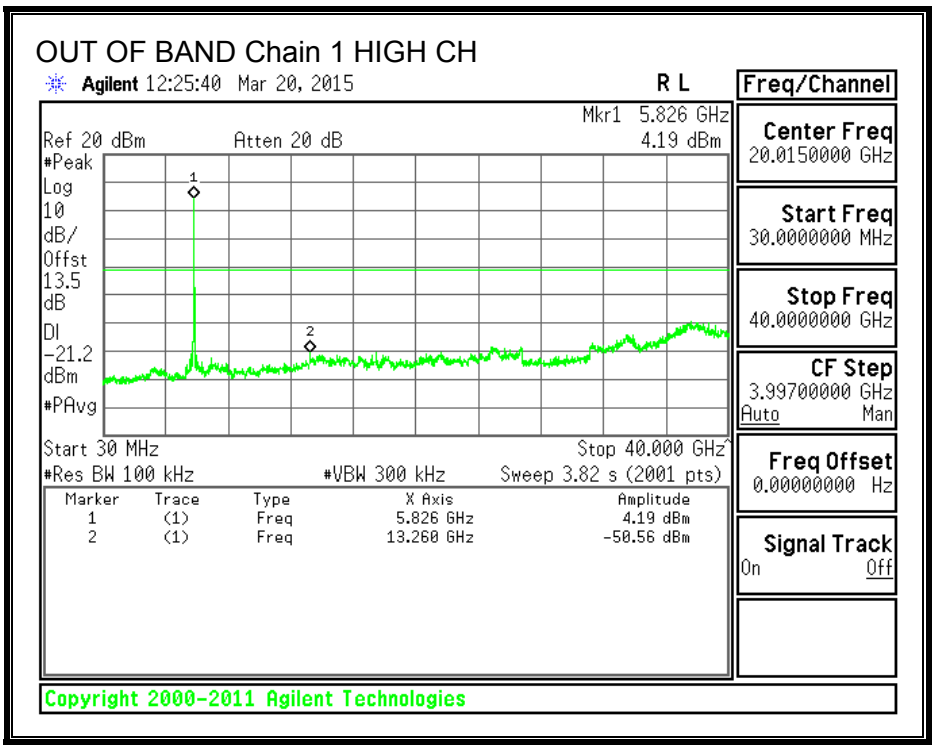


HIGH CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 1





8.12. 802.11n HT20 CDD 3TX MODE IN THE 5.8 GHz BAND

8.12.1. 6 dB BANDWIDTH

LIMITS

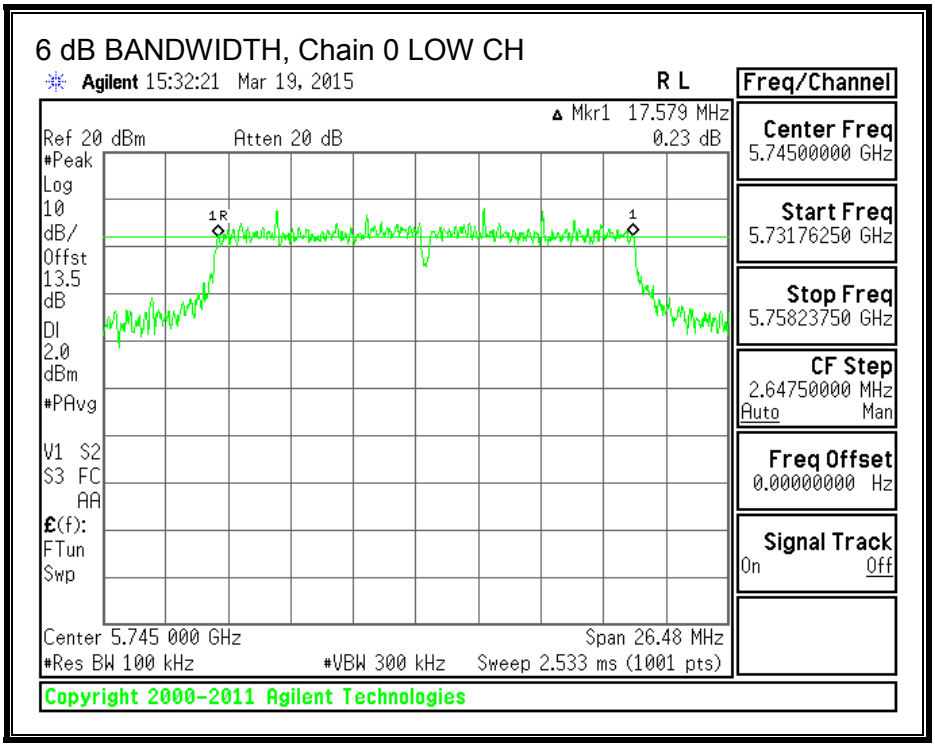
FCC §15.247 (a) (2)

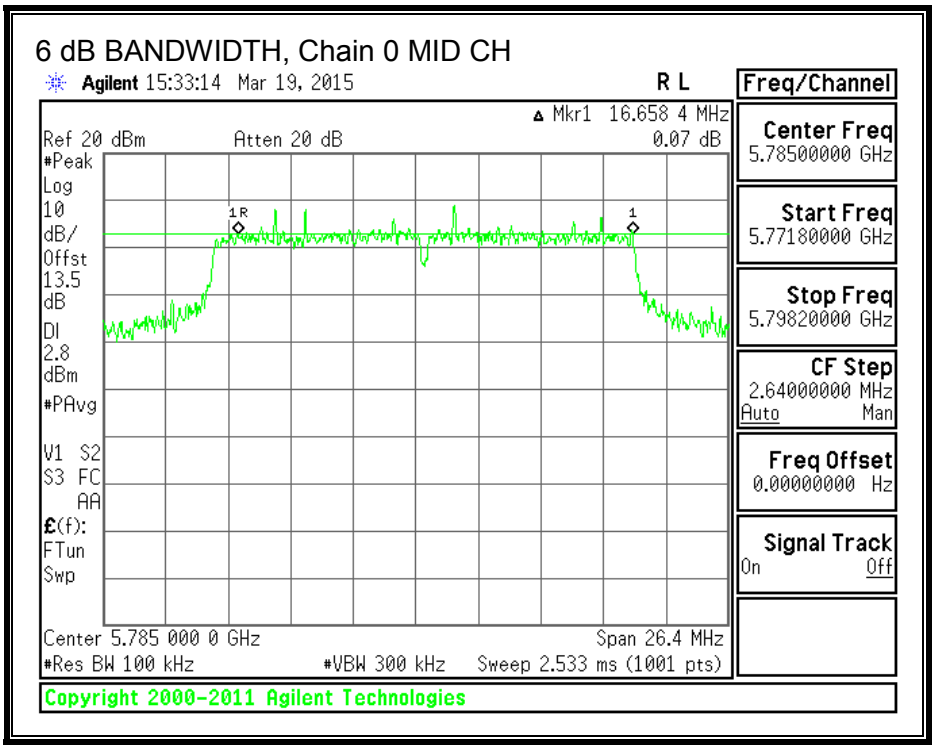
The minimum 6 dB bandwidth shall be at least 500 kHz.

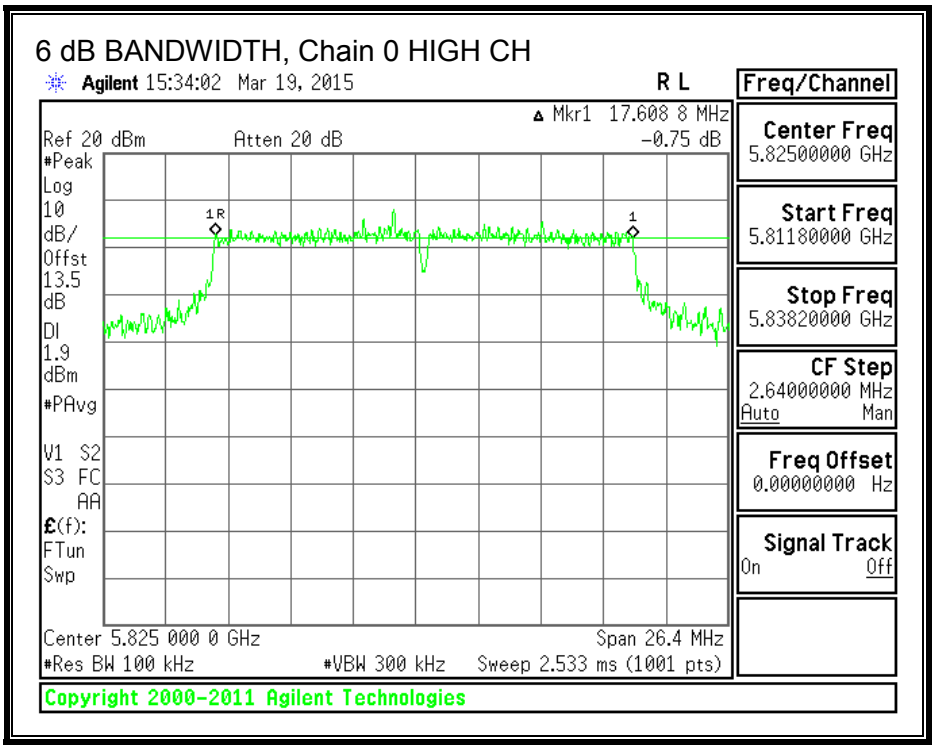
RESULTS

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	17.579	17.5824	17.611	0.5
Mid	5785	16.6584	17.585	17.632	0.5
High	5825	17.6088	17.6088	17.129	0.5

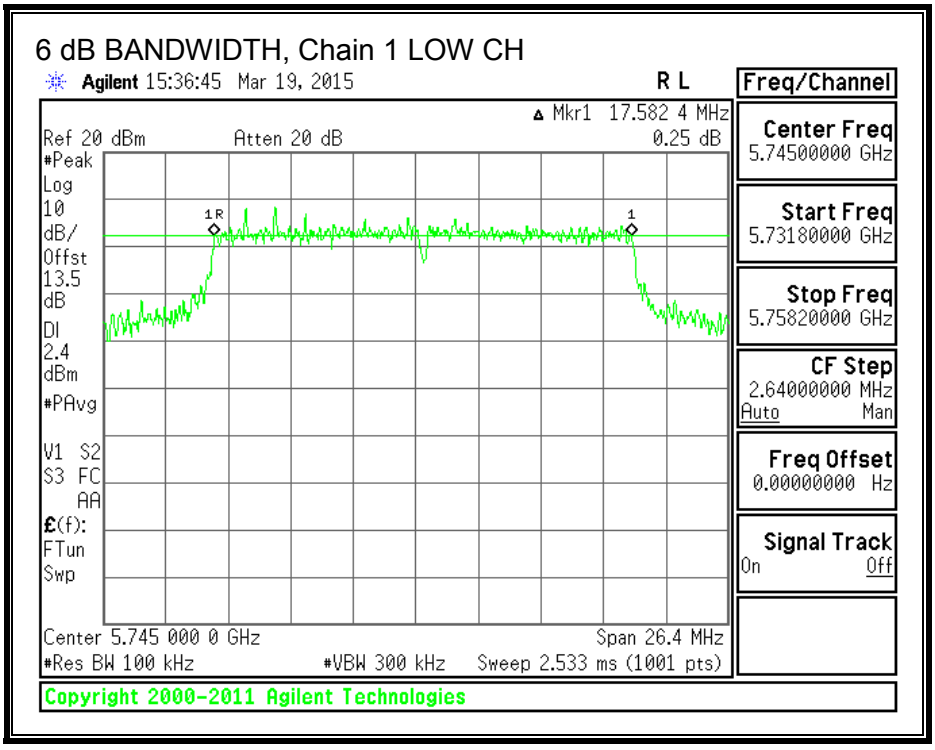
6 dB BANDWIDTH, Chain 0



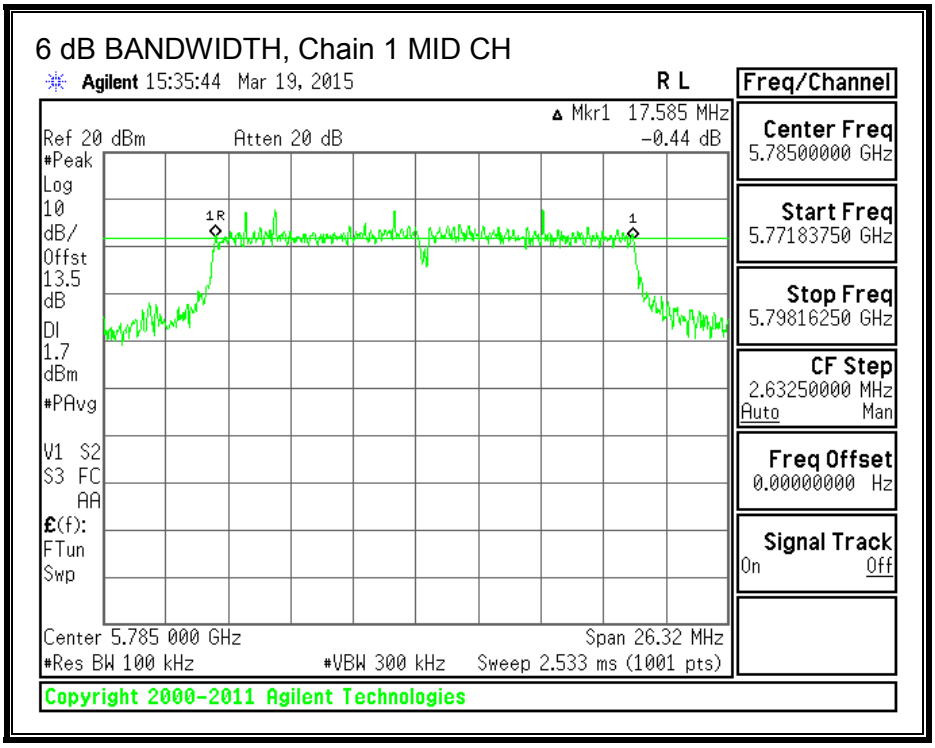




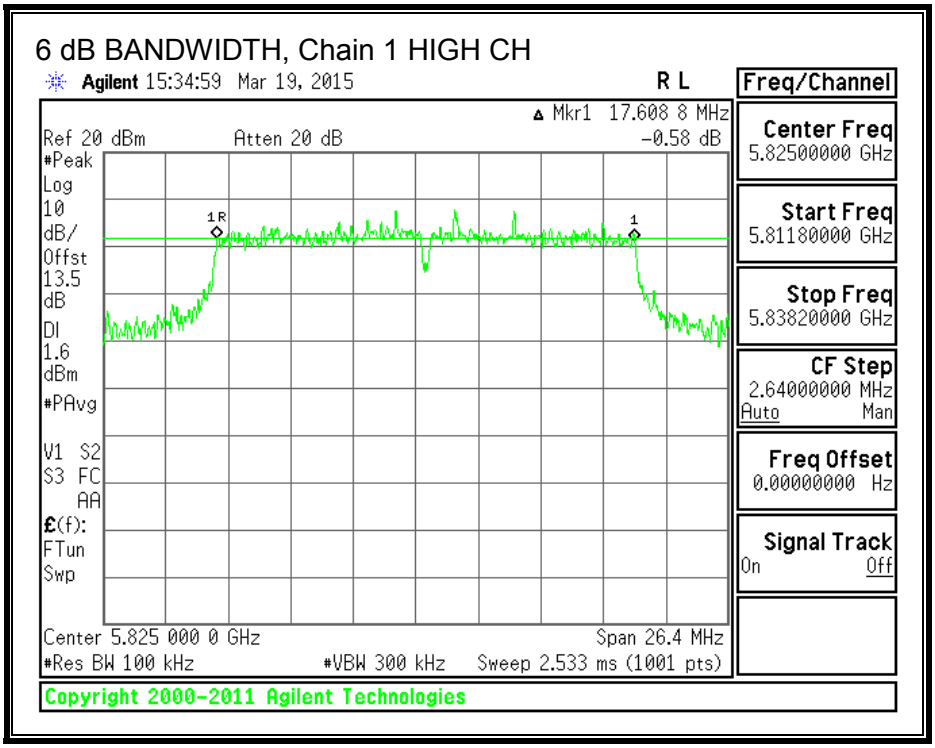
6 dB BANDWIDTH, Chain 1



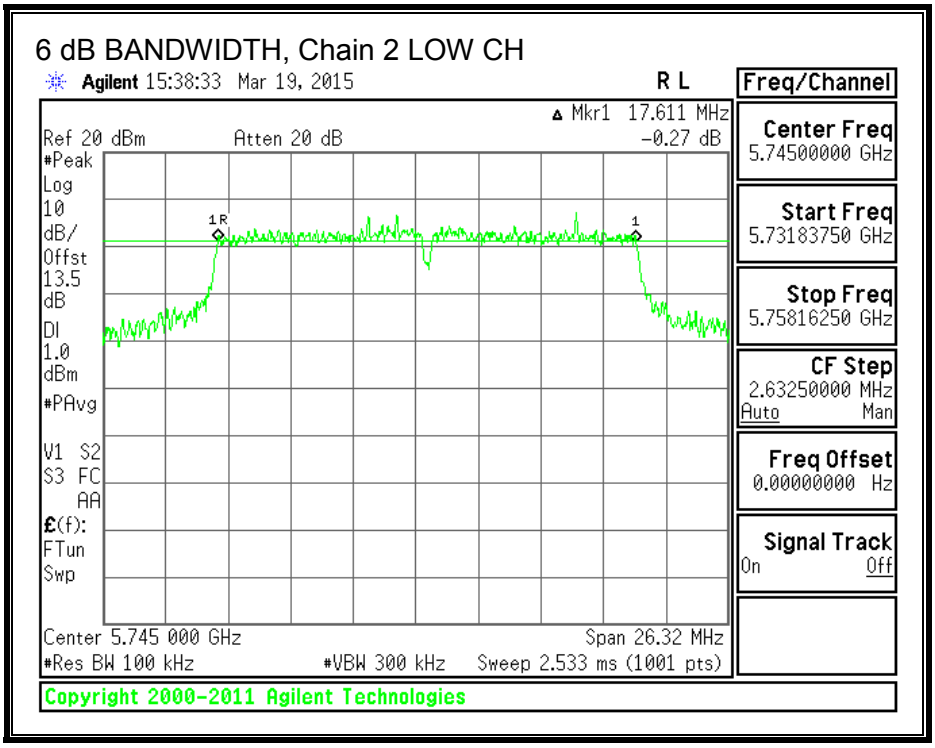
6 dB BANDWIDTH, Chain 1 MID CH

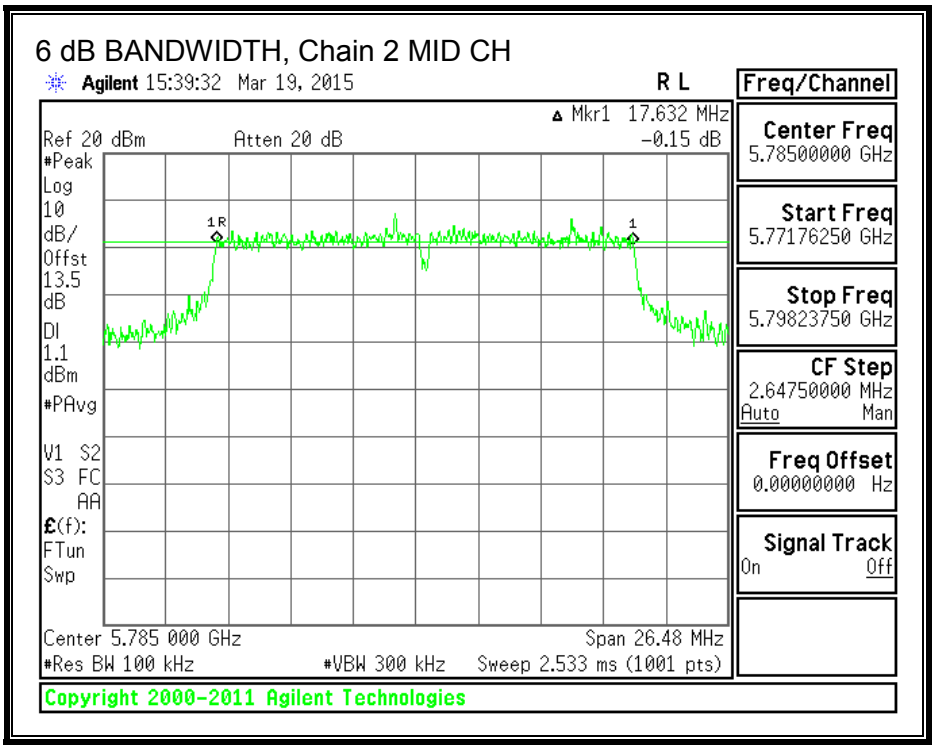


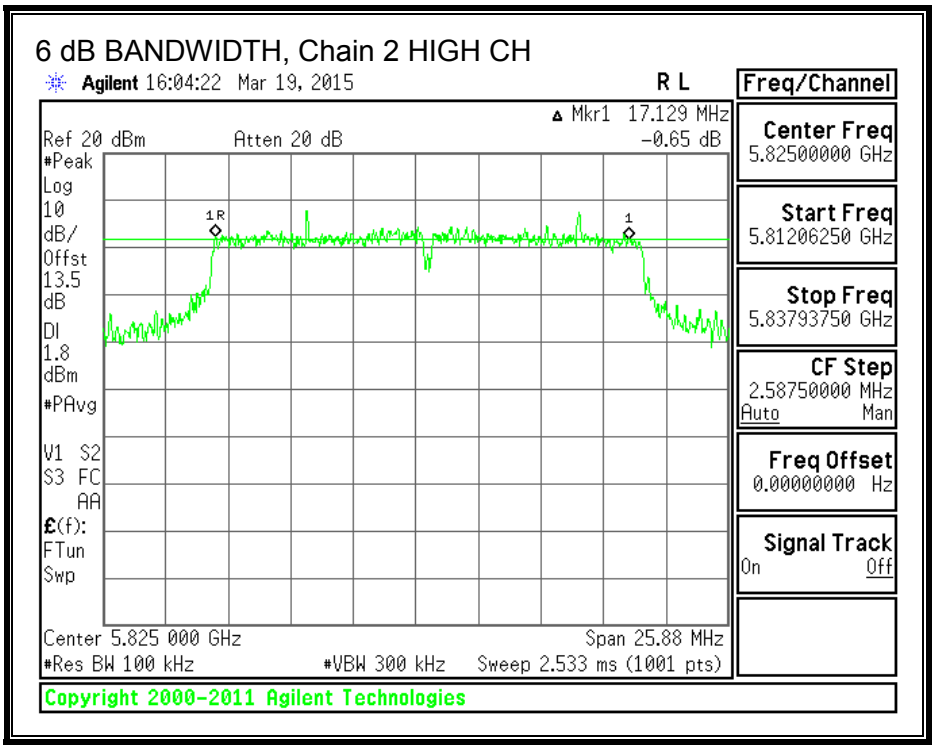
6 dB BANDWIDTH, Chain 1 HIGH CH



6 dB BANDWIDTH, Chain 2







8.12.2. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 6.21 dBi.

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	6.21	N/A	30	36	29.79
Mid	5785	6.21	N/A	30	36	29.79
High	5825	6.21	N/A	30	36	29.79

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	19.05	18.95	18.90	23.74	29.79	-6.05
Mid	5785	19.10	19.07	18.97	23.82	29.79	-5.97
High	5825	19.15	19.05	18.98	23.83	29.79	-5.96

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

8.12.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4 (4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

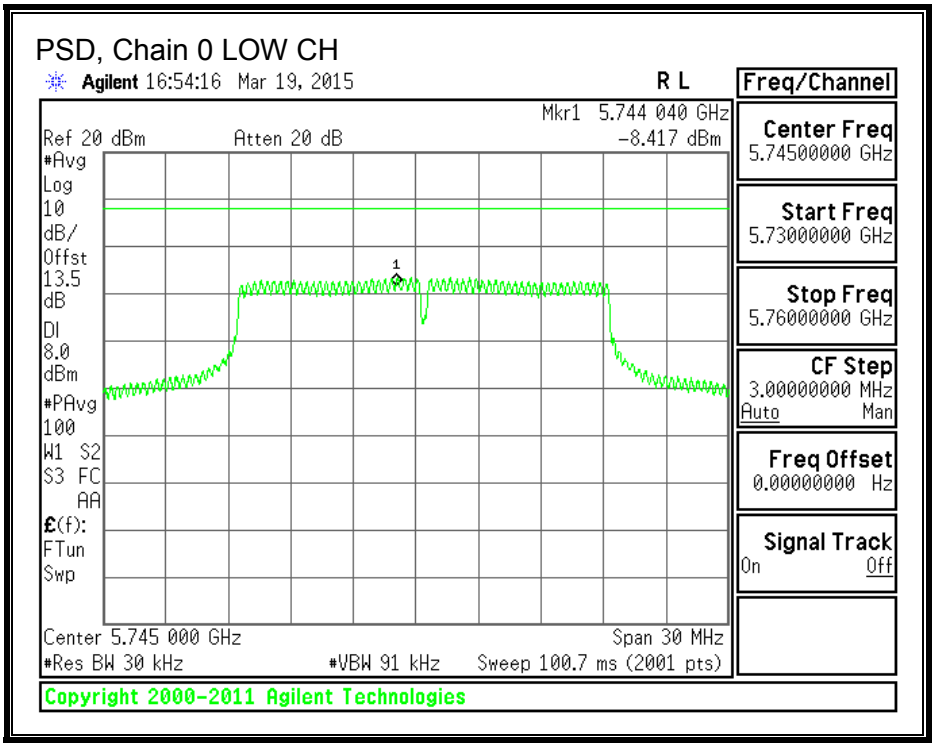
RESULTS

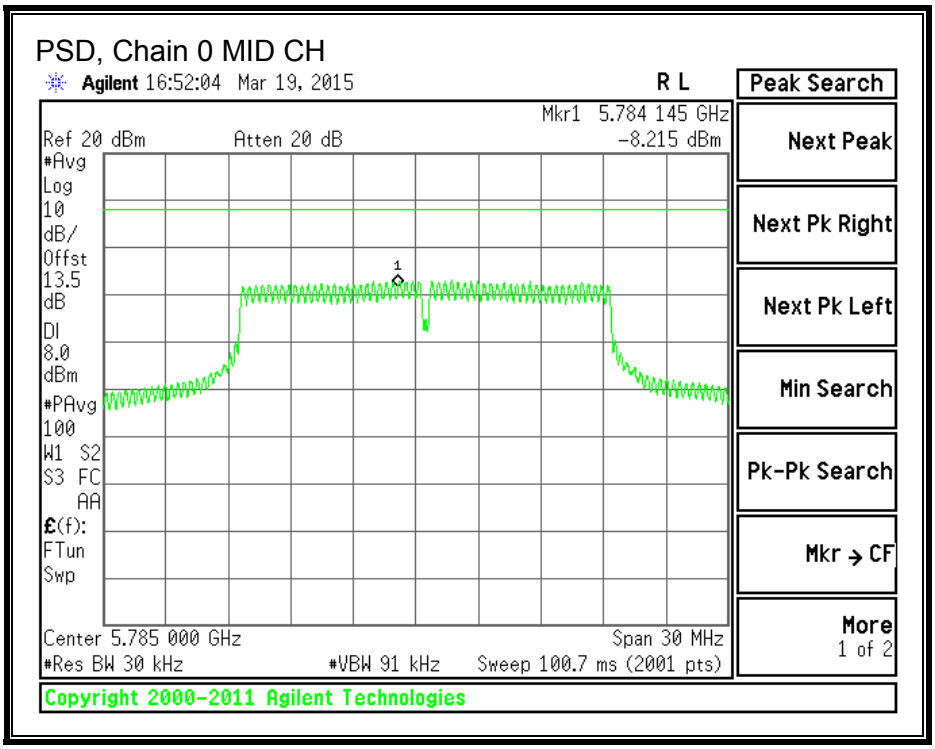
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

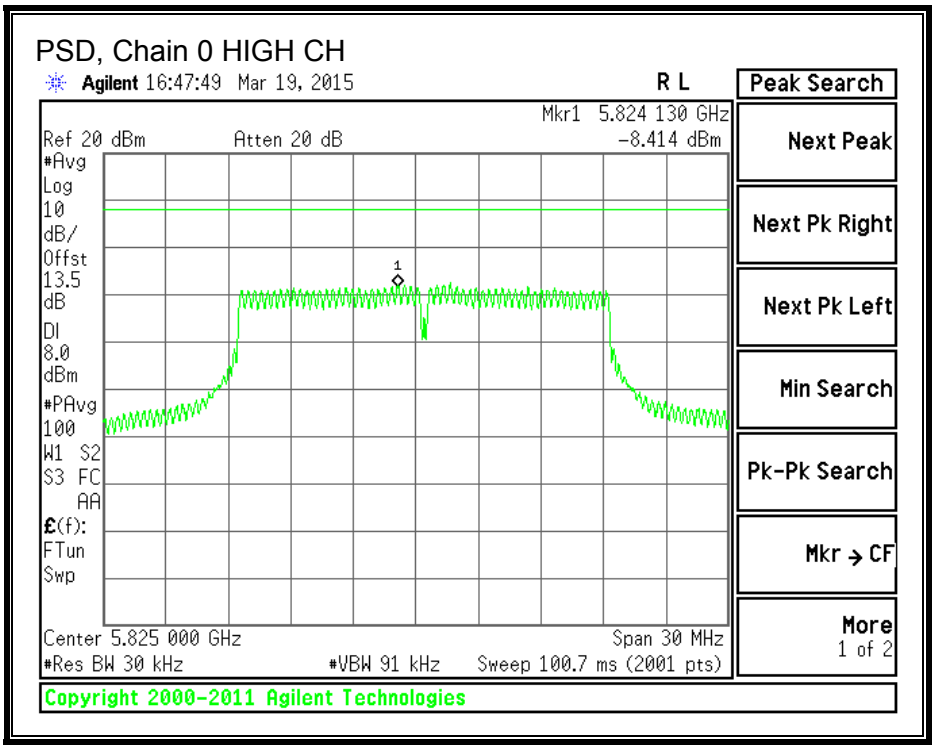
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-8.417	-6.744	-6.174	-2.24	8.0	-10.24
Mid	5785	-8.215	-6.547	-6.612	-2.29	8.0	-10.29
High	5825	-8.414	-6.604	-6.738	-2.41	8.0	-10.41

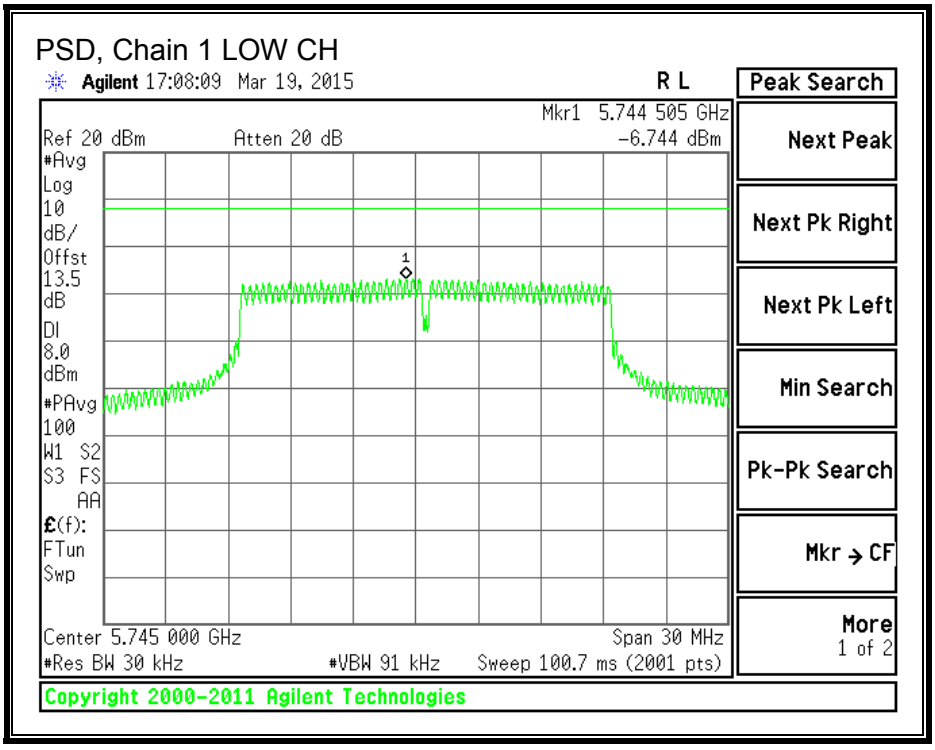
PSD, Chain 0



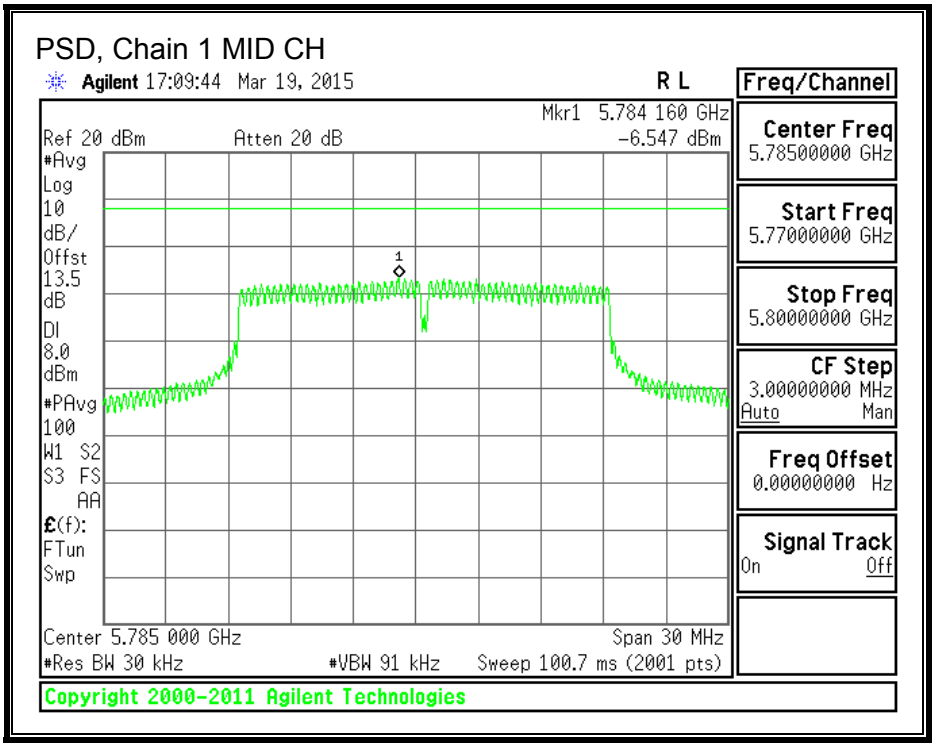




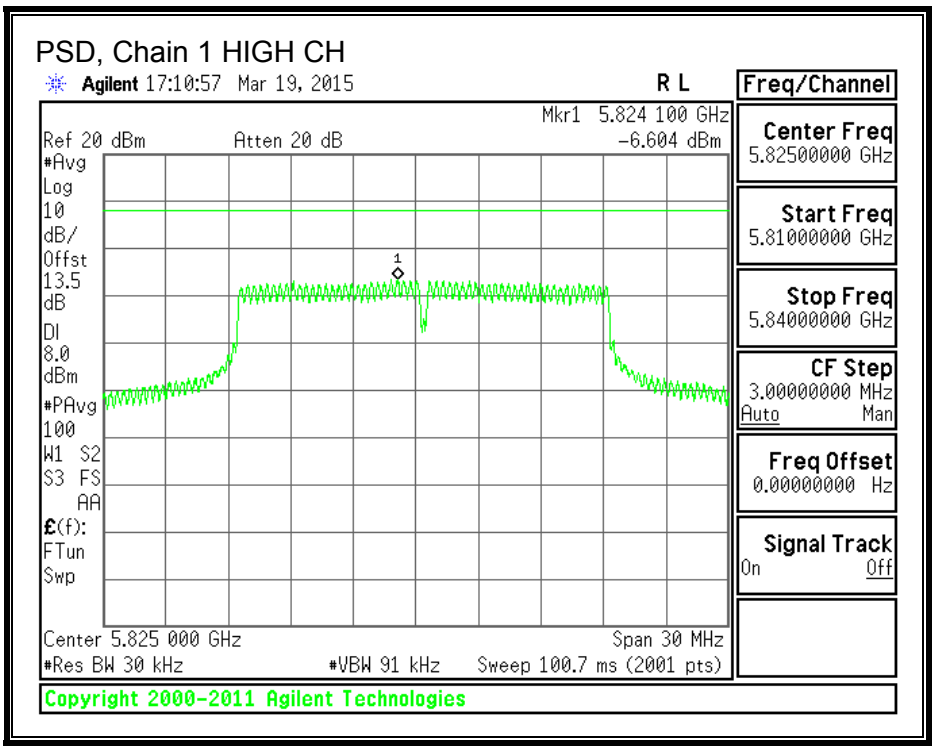
PSD, Chain 1



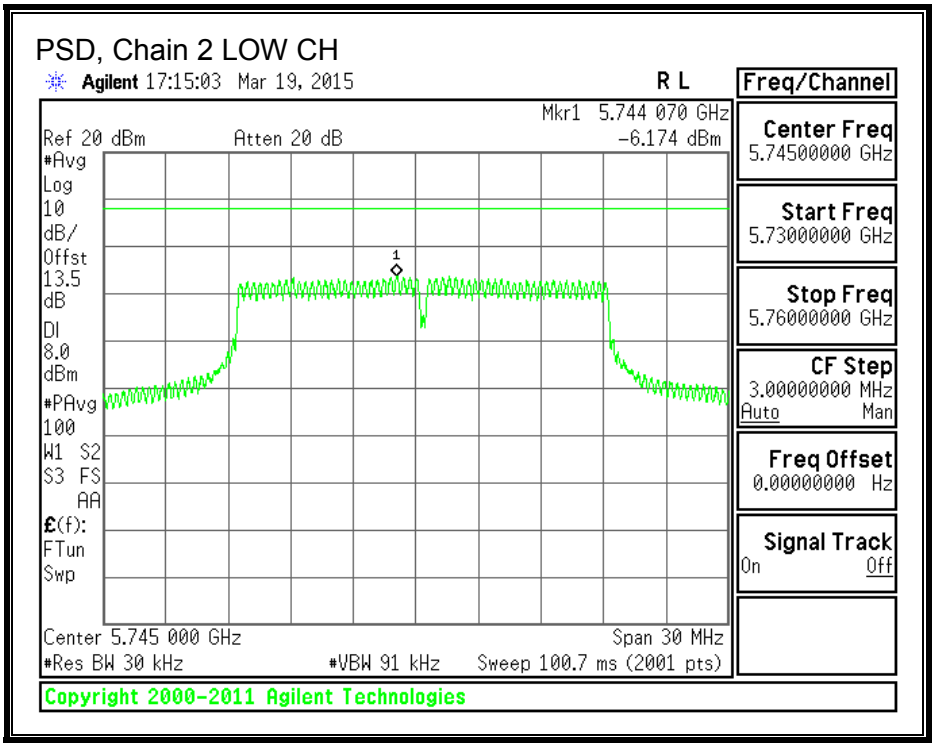
PSD, Chain 1 MID CH

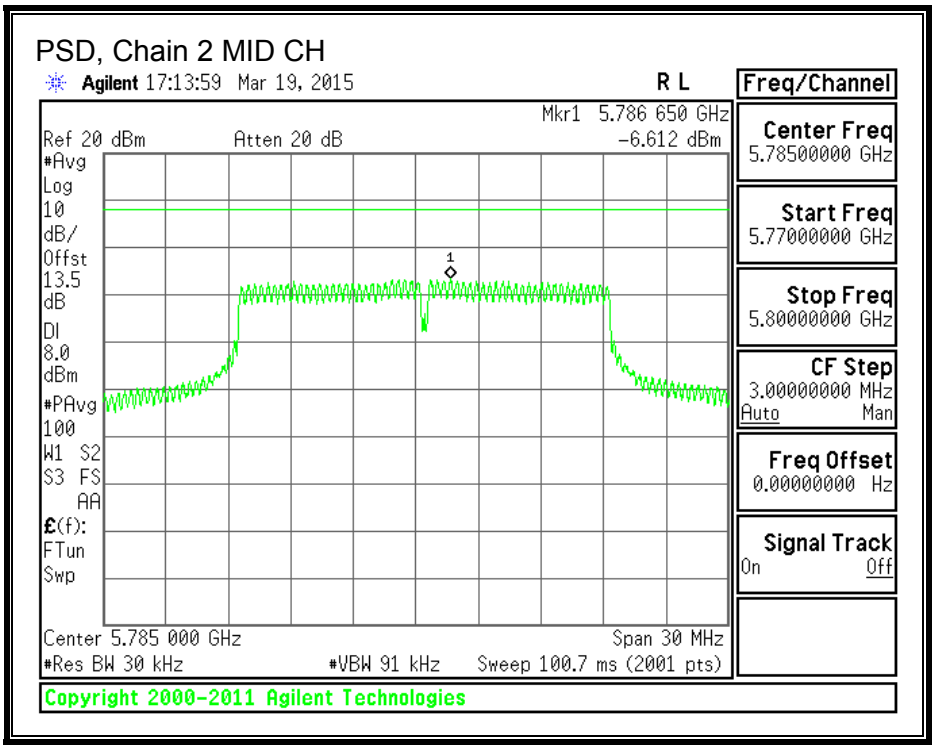


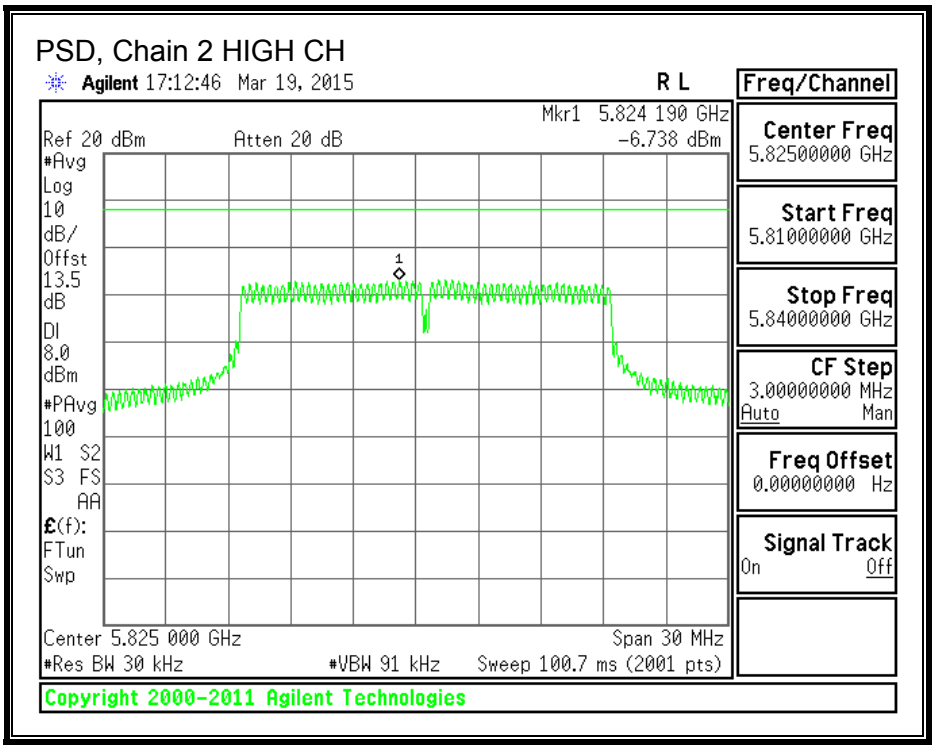
PSD, Chain 1 HIGH CH



PSD, Chain 2







8.12.4. OUT-OF-BAND EMISSIONS

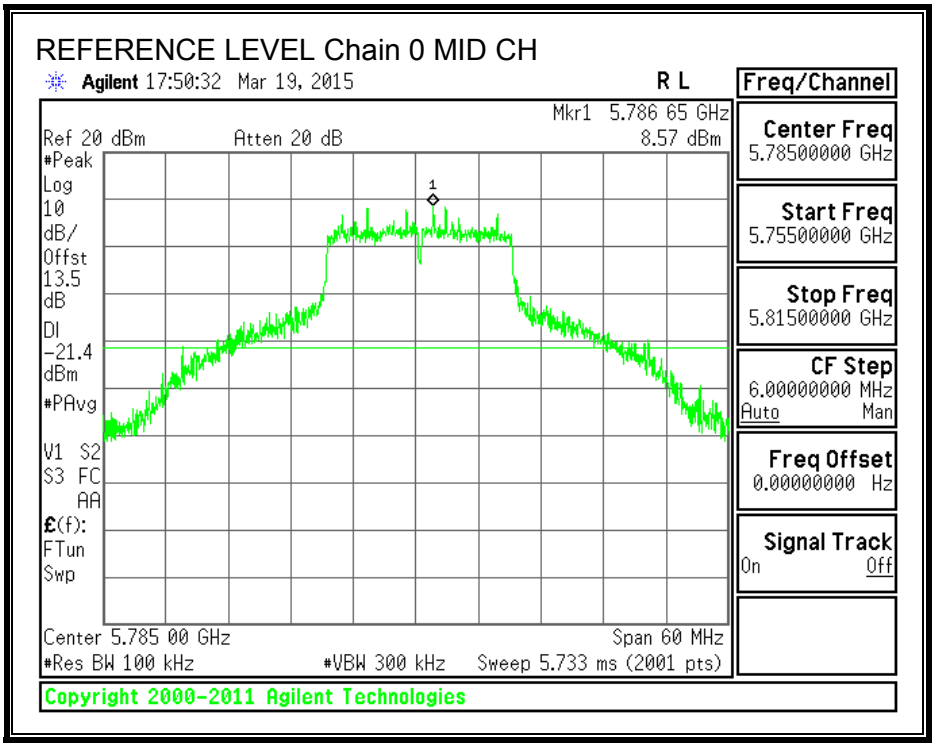
LIMITS

FCC §15.247 (d)

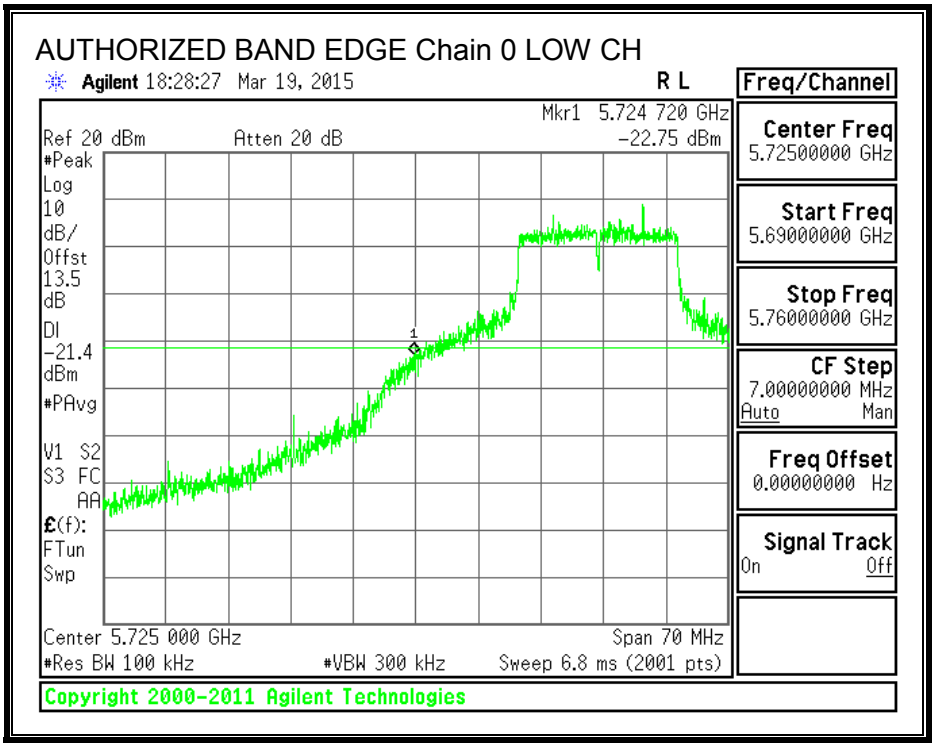
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

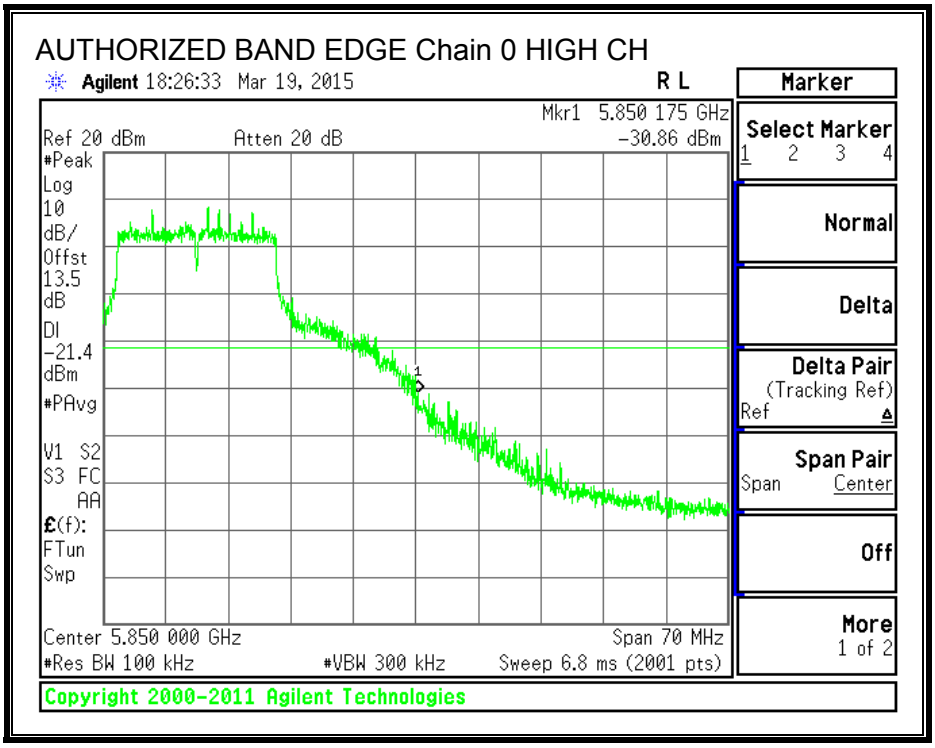
IN-BAND REFERENCE LEVEL, Chain 0



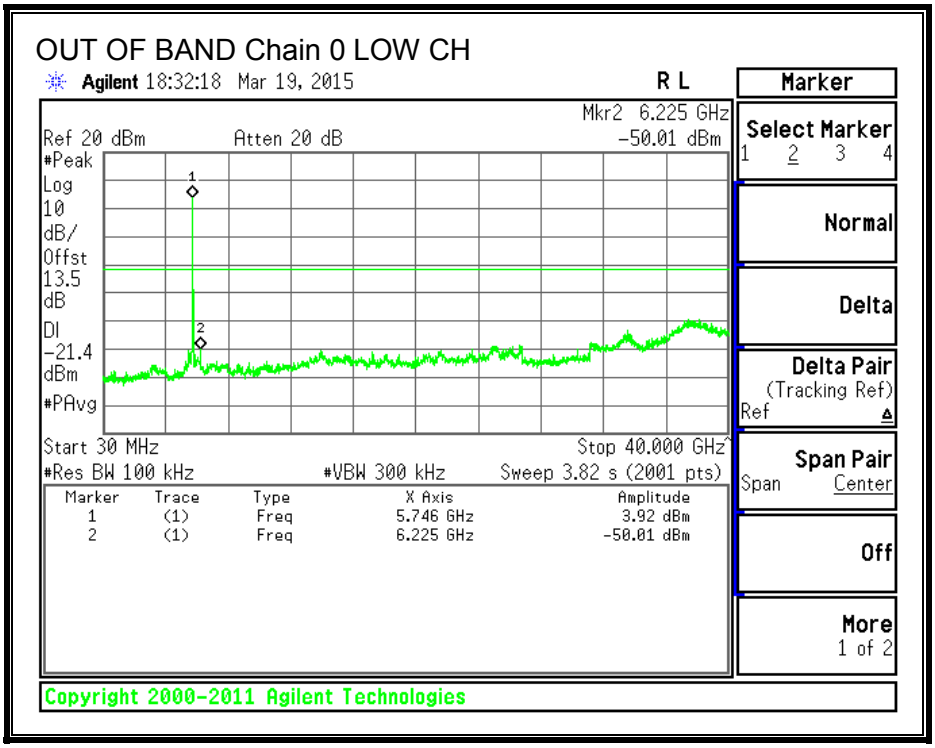
LOW CHANNEL BANDEDGE, Chain 0

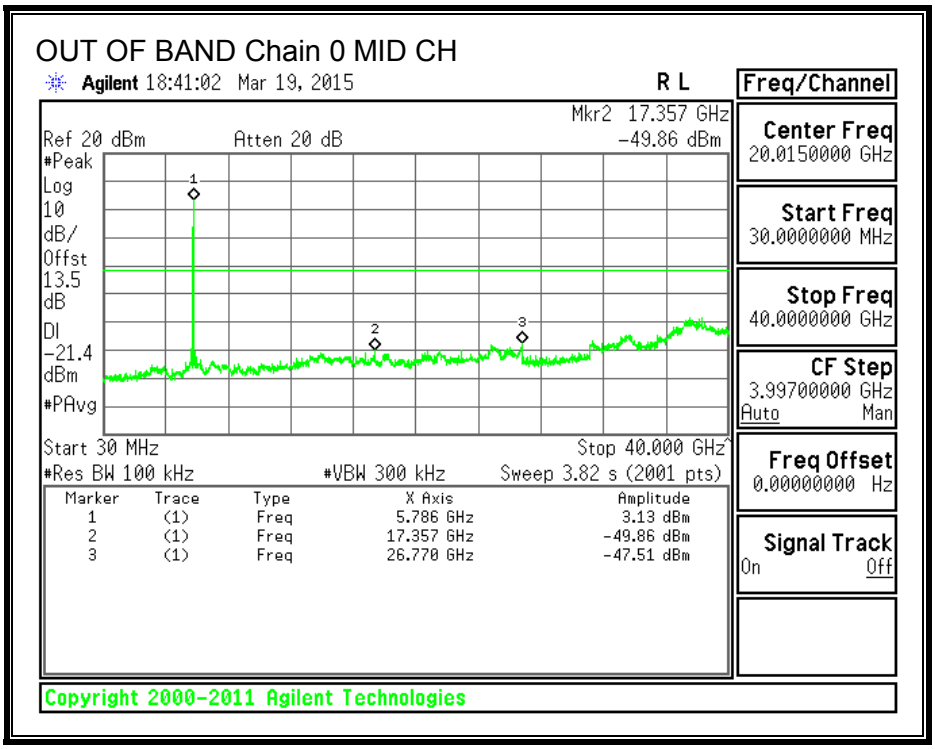


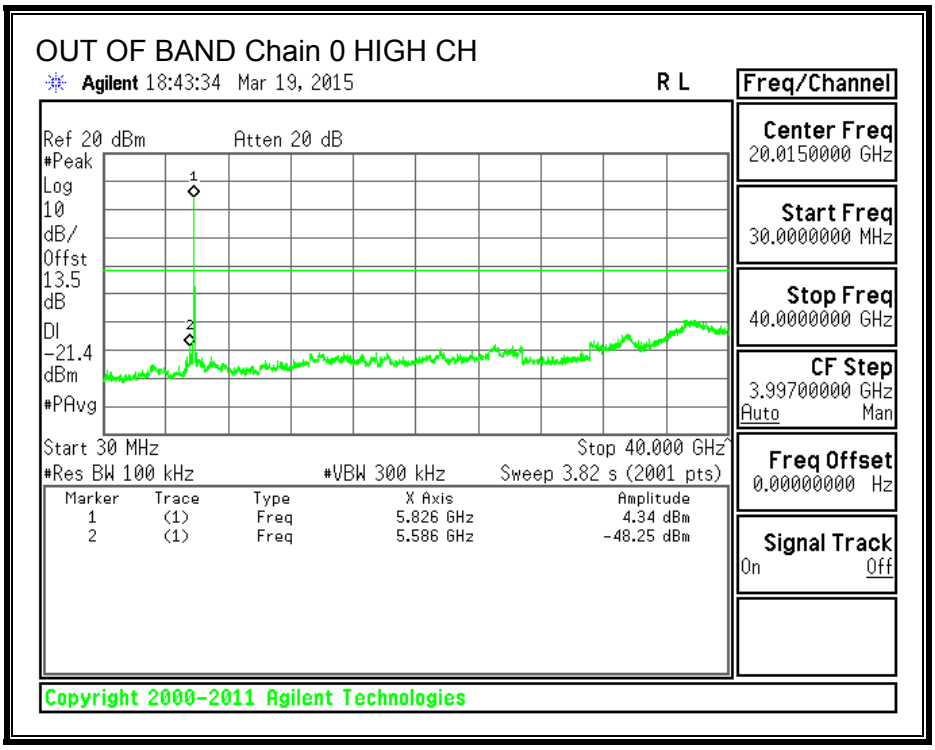
HIGH CHANNEL BANDEDGE, Chain 0



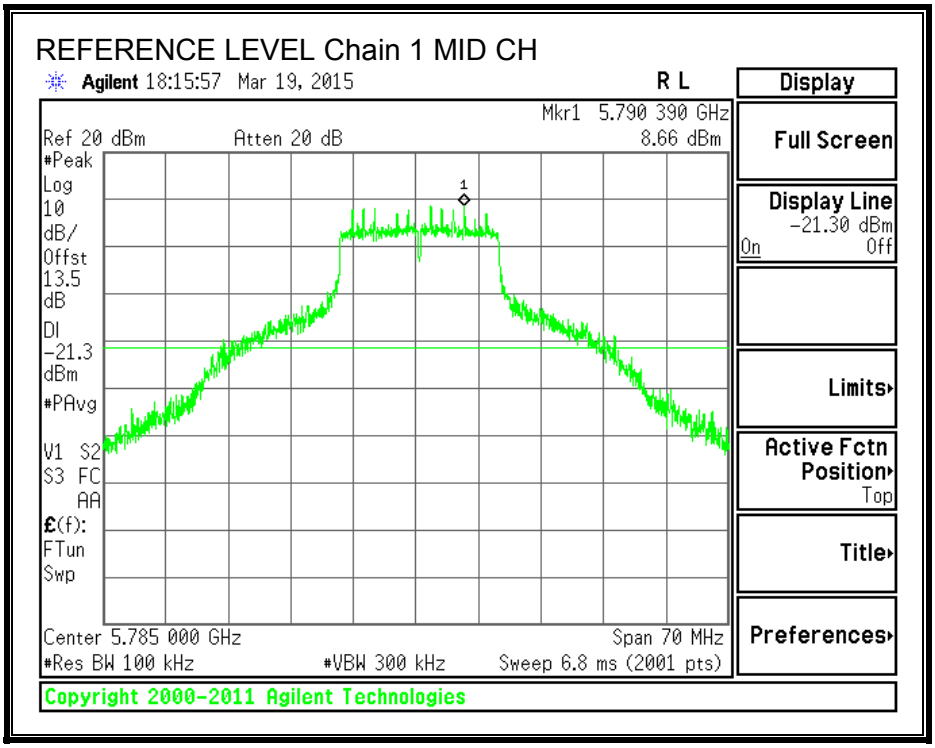
OUT-OF-BAND EMISSIONS, Chain 0



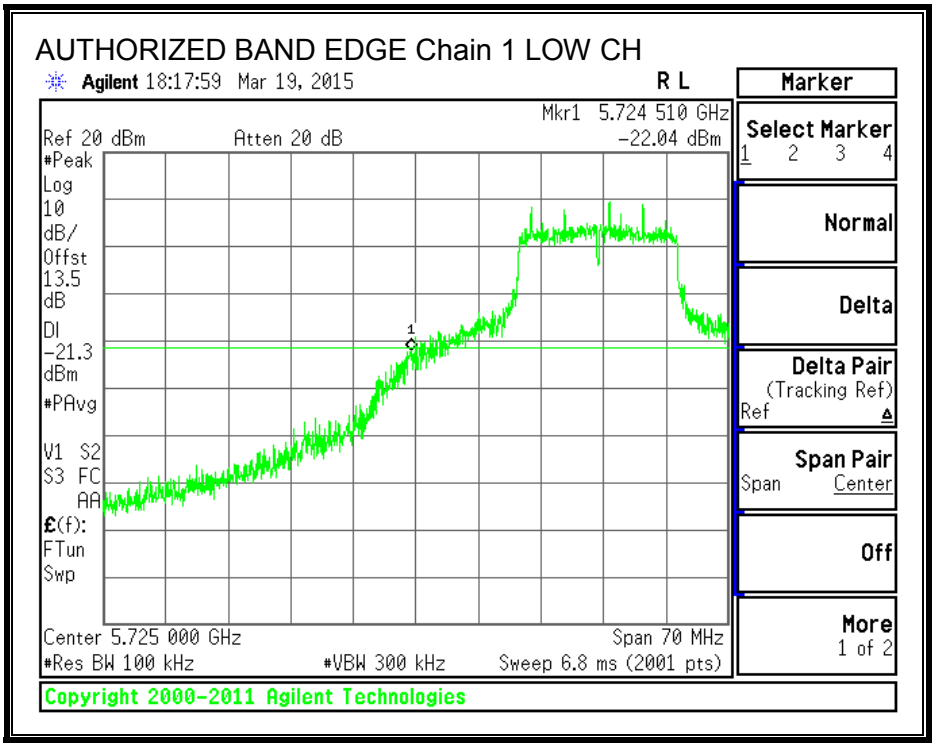




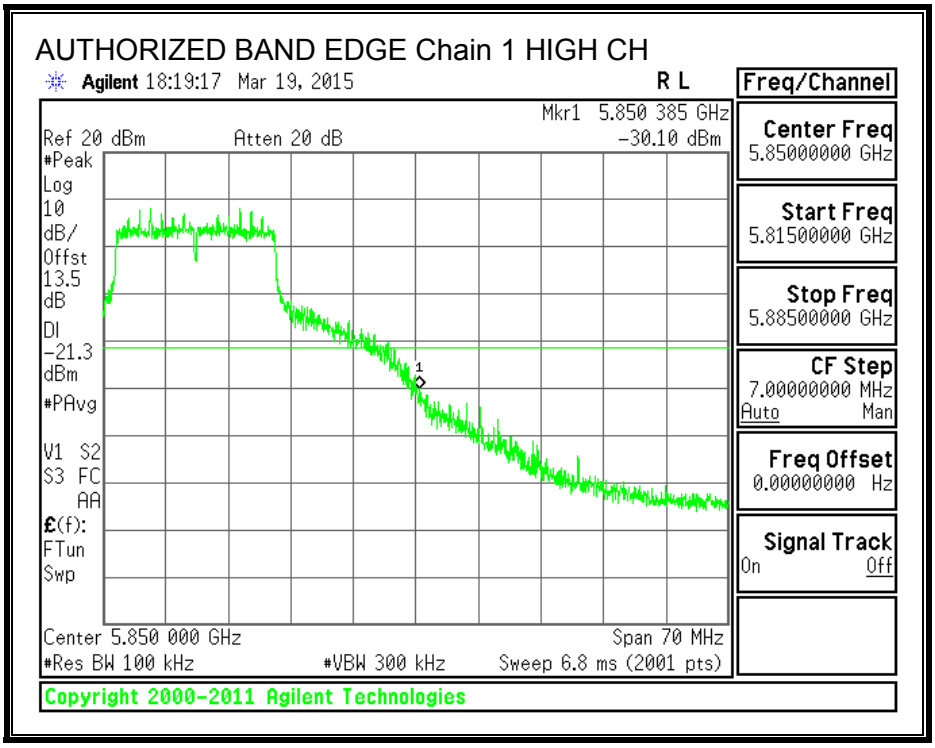
IN-BAND REFERENCE LEVEL, Chain 1



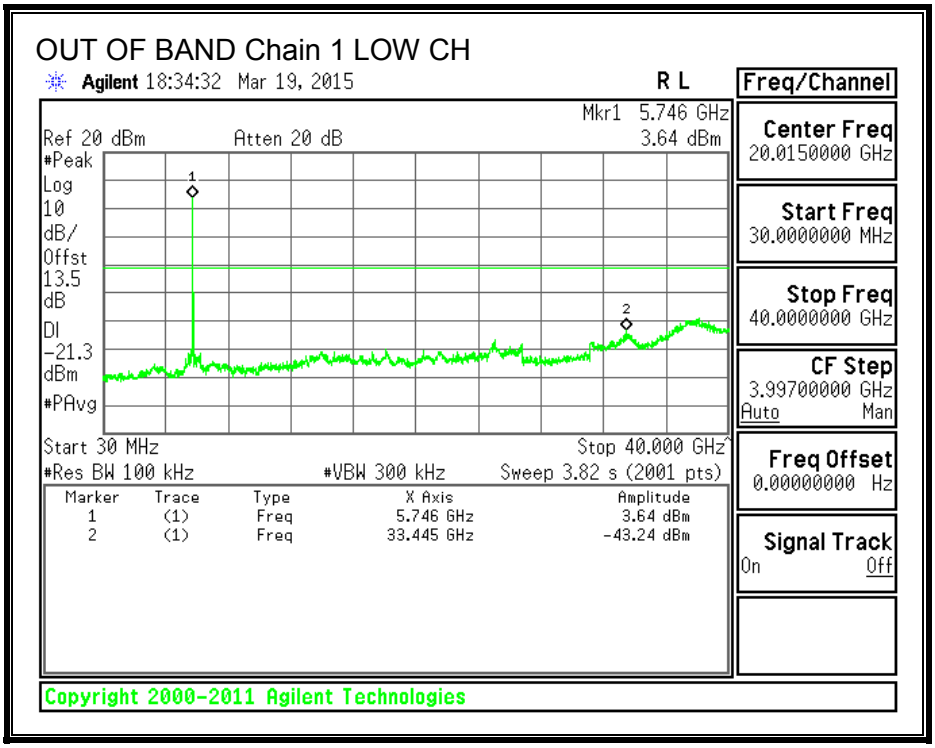
LOW CHANNEL BANDEDGE, Chain 1

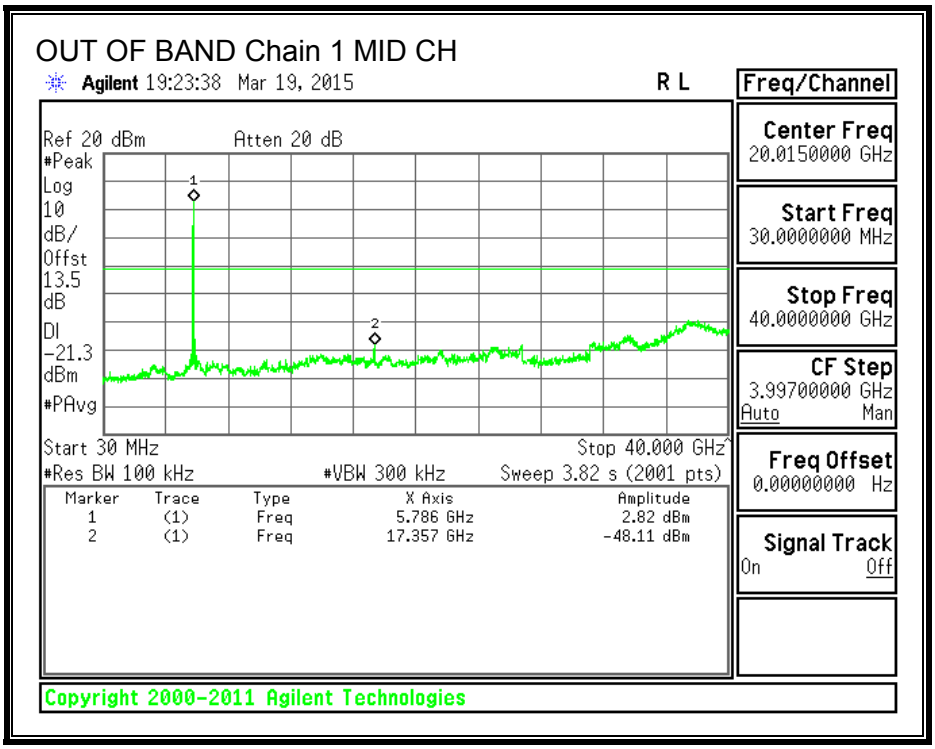


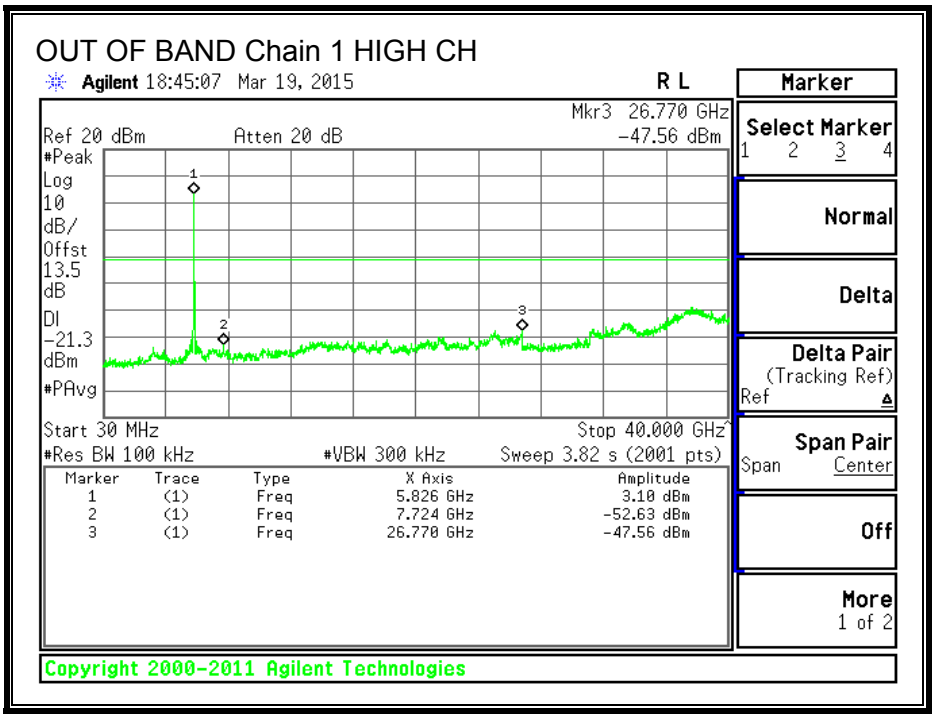
HIGH CHANNEL BANDEDGE, Chain 1



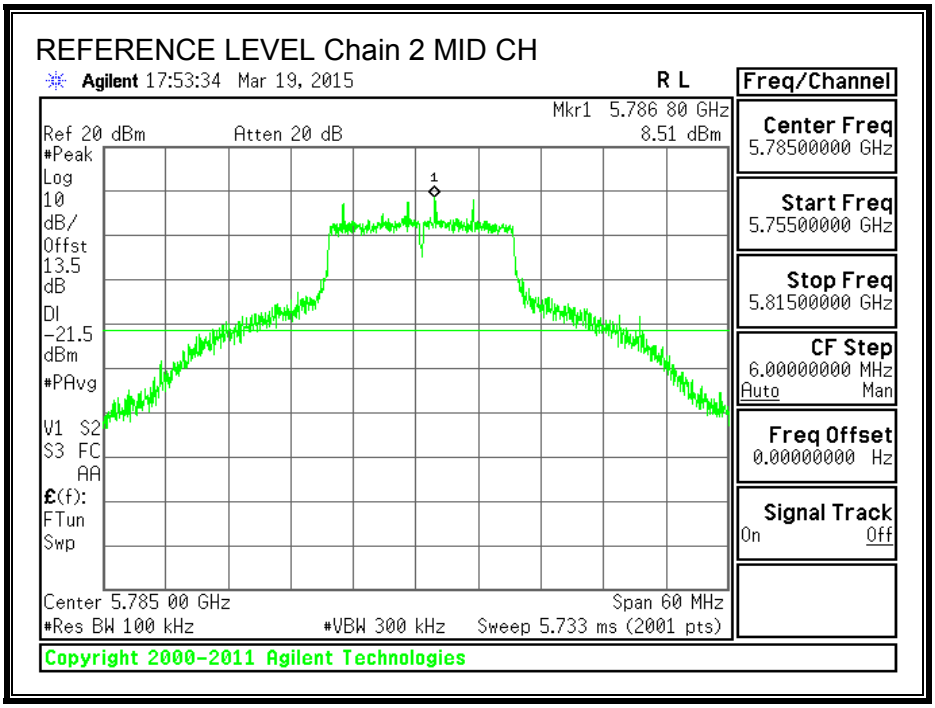
OUT-OF-BAND EMISSIONS, Chain 1



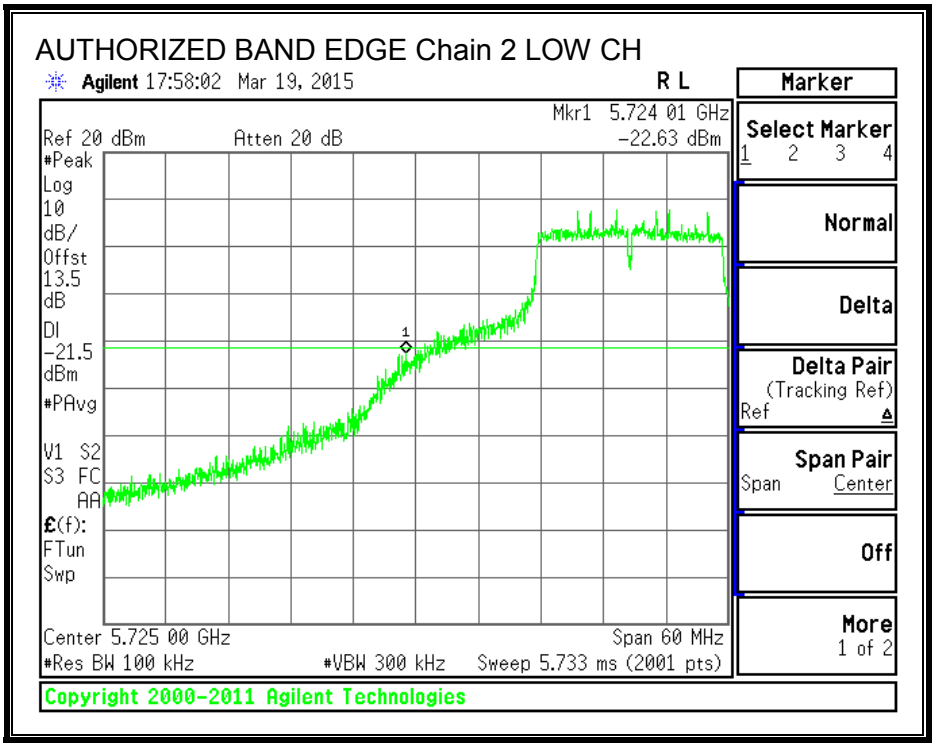




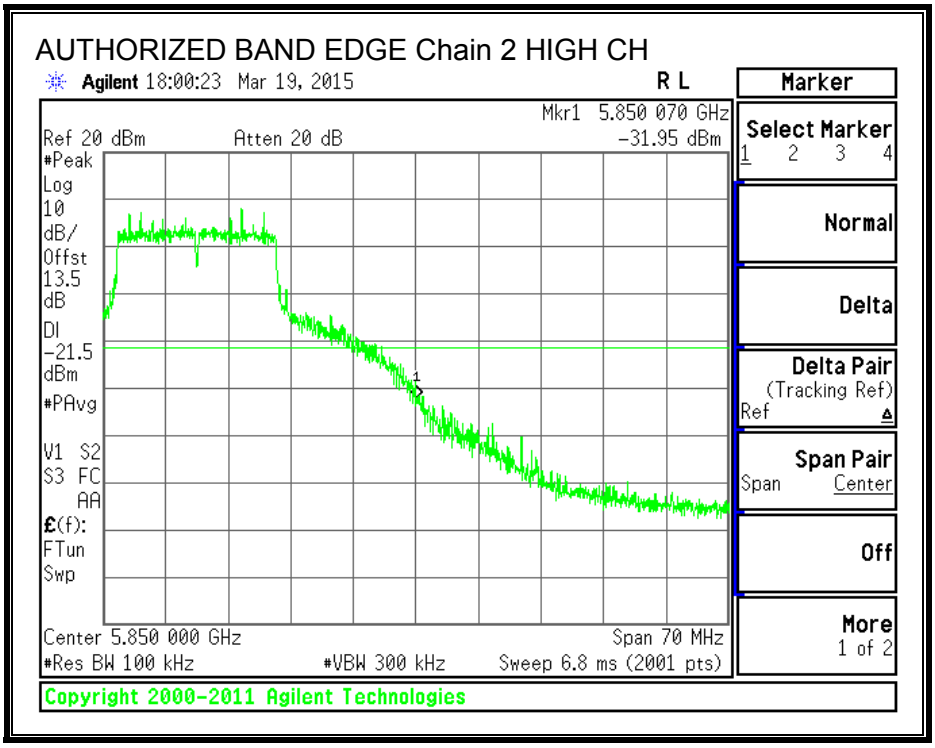
IN-BAND REFERENCE LEVEL, Chain 2



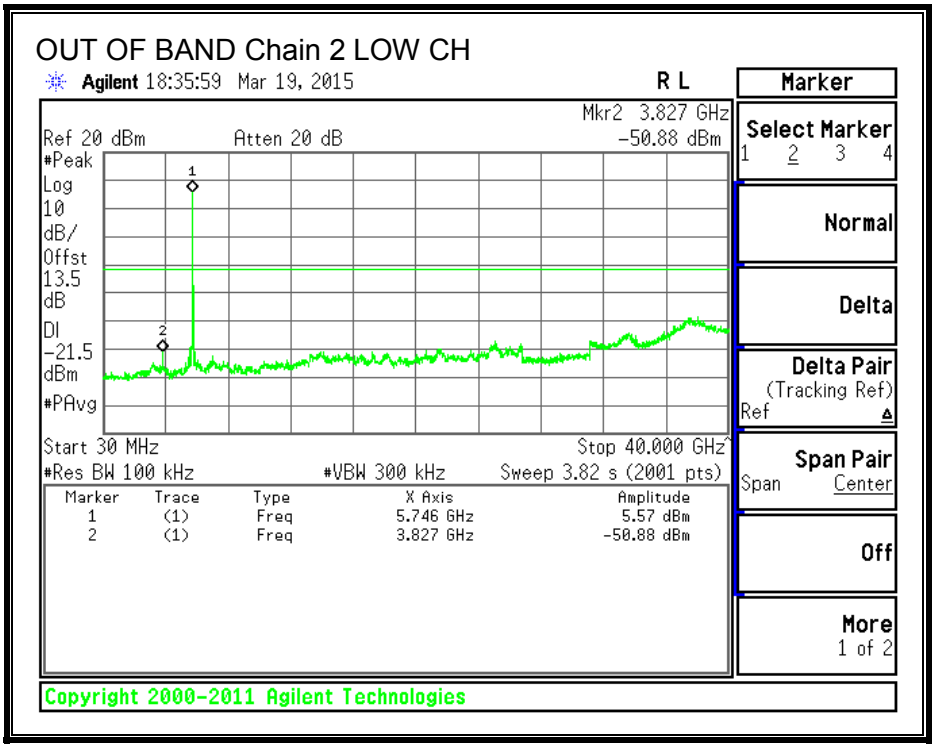
LOW CHANNEL BANDEDGE, Chain 2

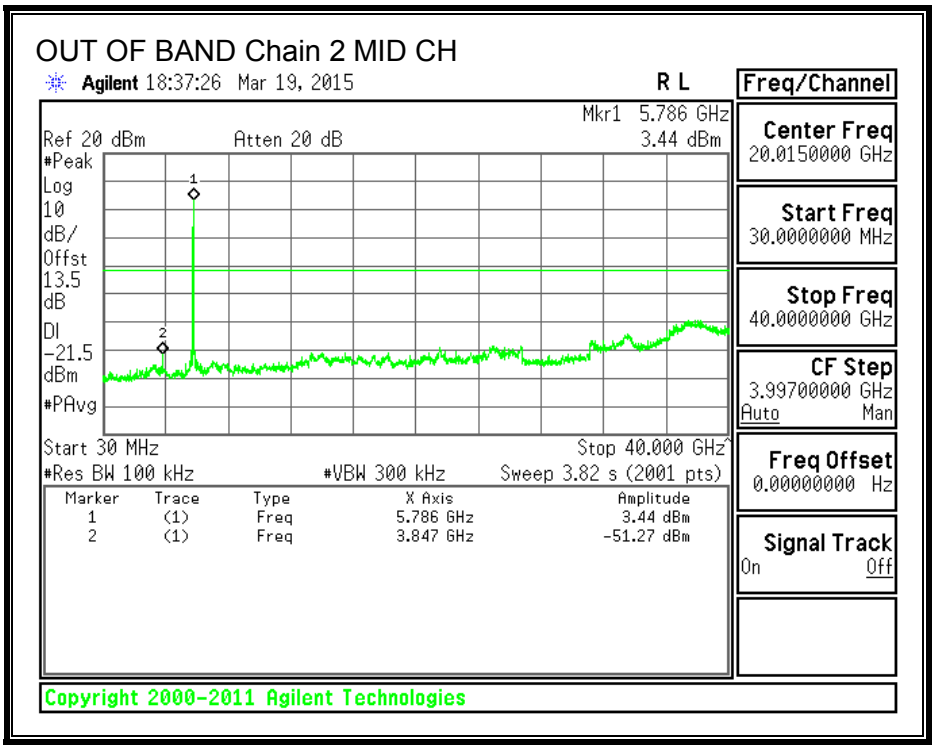


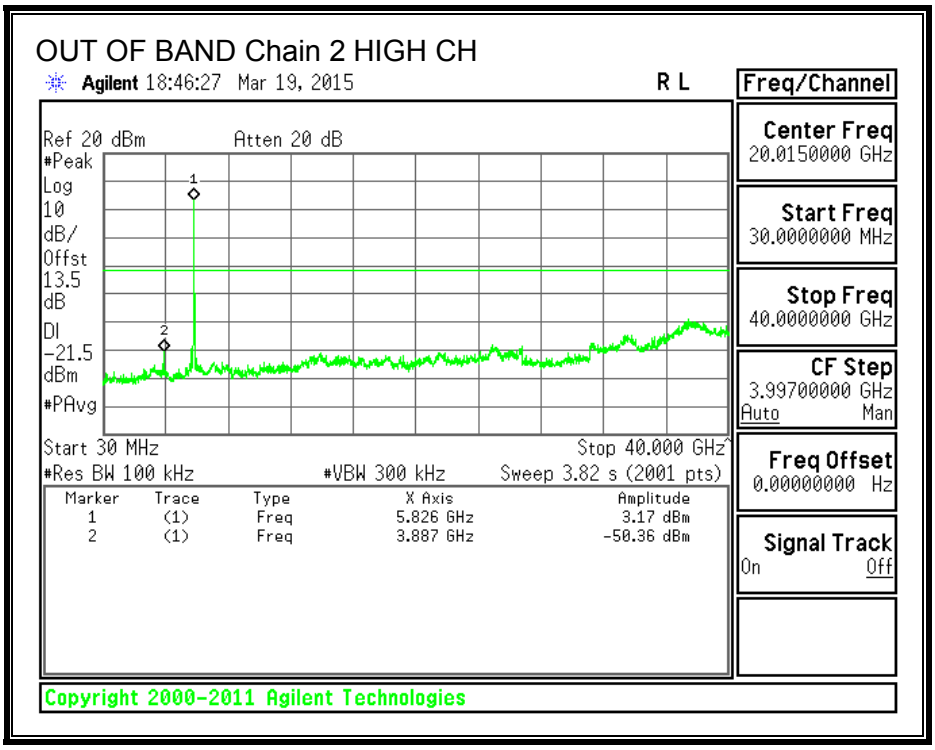
HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2







8.13. 802.11n HT20 TxBF 3TX MODE IN THE 5.8 GHz BAND

8.13.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

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

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
6.21	4.77	10.98

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	10.98	N/A	30	36	25.02
Mid	5785	10.98	N/A	30	36	25.02
High	5825	10.98	N/A	30	36	25.02

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	19.05	18.95	18.90	23.74	25.02	-1.28
Mid	5785	19.10	19.07	18.97	23.82	25.02	-1.20
High	5825	19.15	19.05	18.98	23.83	25.02	-1.19

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

8.14. 802.11n HT40 1TX MODE IN THE 5.8 GHz BAND

8.14.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

This is SISO mode, AG is the highest (worst-case) = 6.21 dBi

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	6.21	N/A	30	36	29.79
High	5795	6.21	N/A	30	36	29.79

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	5755	17.66	17.66	29.79	-12.13
High	5795	19.31	19.31	29.79	-10.48

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

8.14.2. OUT-OF-BAND EMISSIONS

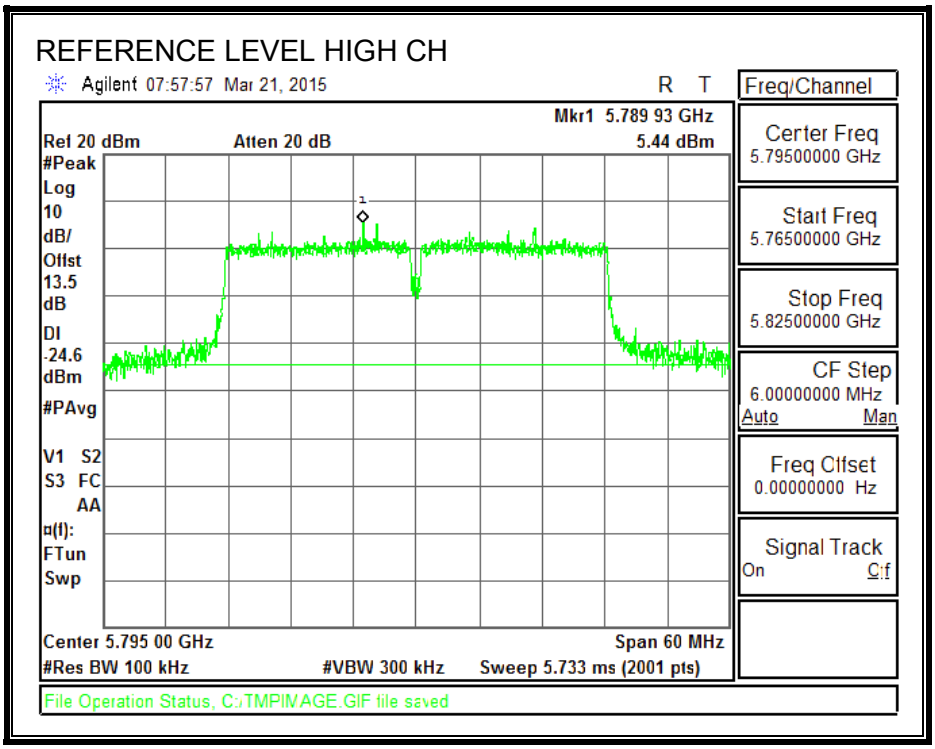
LIMITS

FCC §15.247 (d)

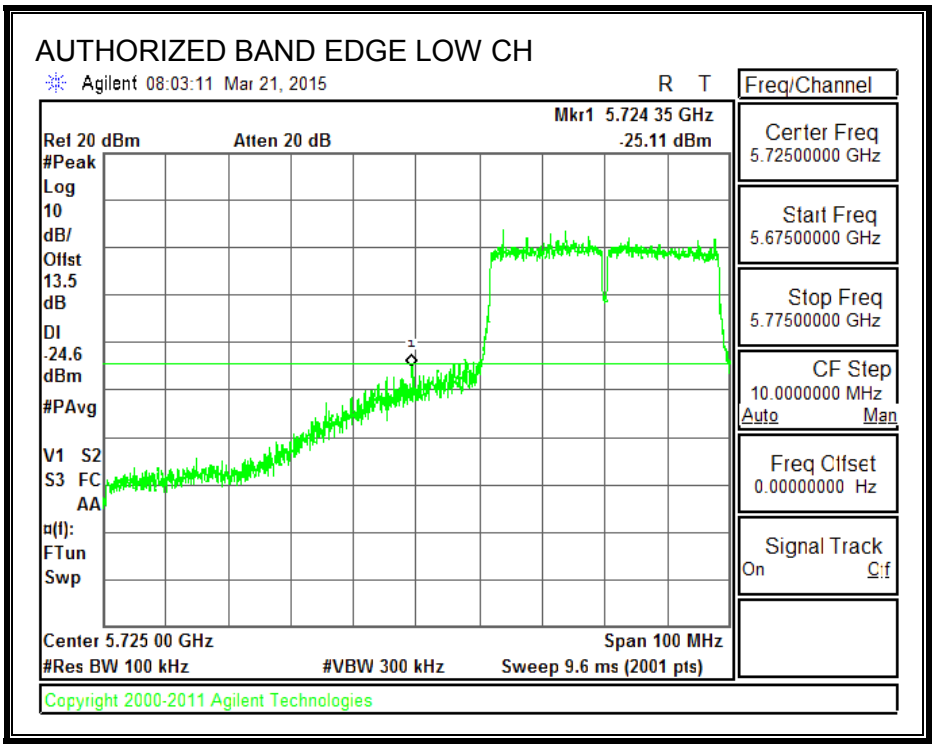
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

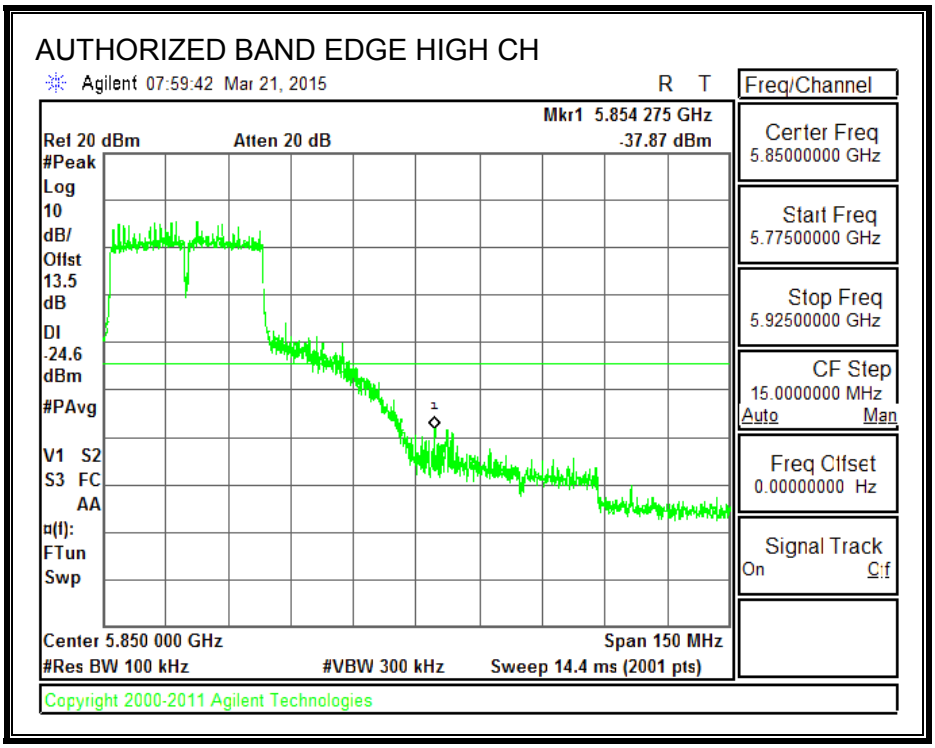
IN-BAND REFERENCE LEVEL



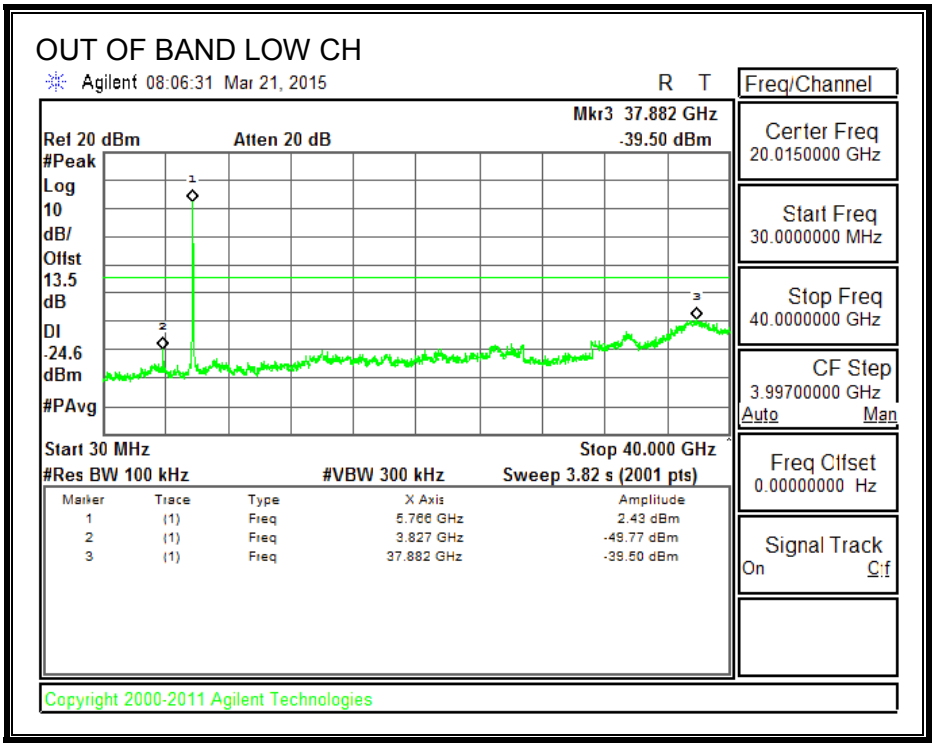
LOW CHANNEL BANDEDGE

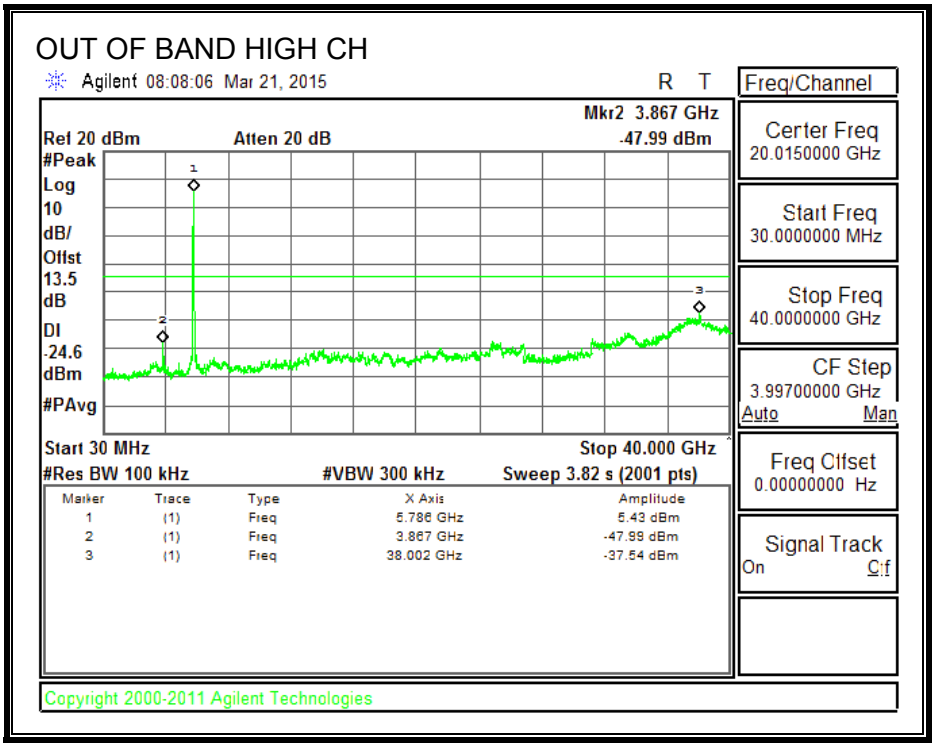


HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS





8.15. 802.11n HT40 CDD 2TX MODE IN THE 5.8 GHz BAND

8.15.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 6.21 dBi.

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	6.21	N/A	30	36	29.79
High	5795	6.21	N/A	30	36	29.79

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	5755	17.11	16.99	20.06	29.79	-9.73
High	5795	19.10	19.35	22.24	29.79	-7.55

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

8.15.2. OUT-OF-BAND EMISSIONS

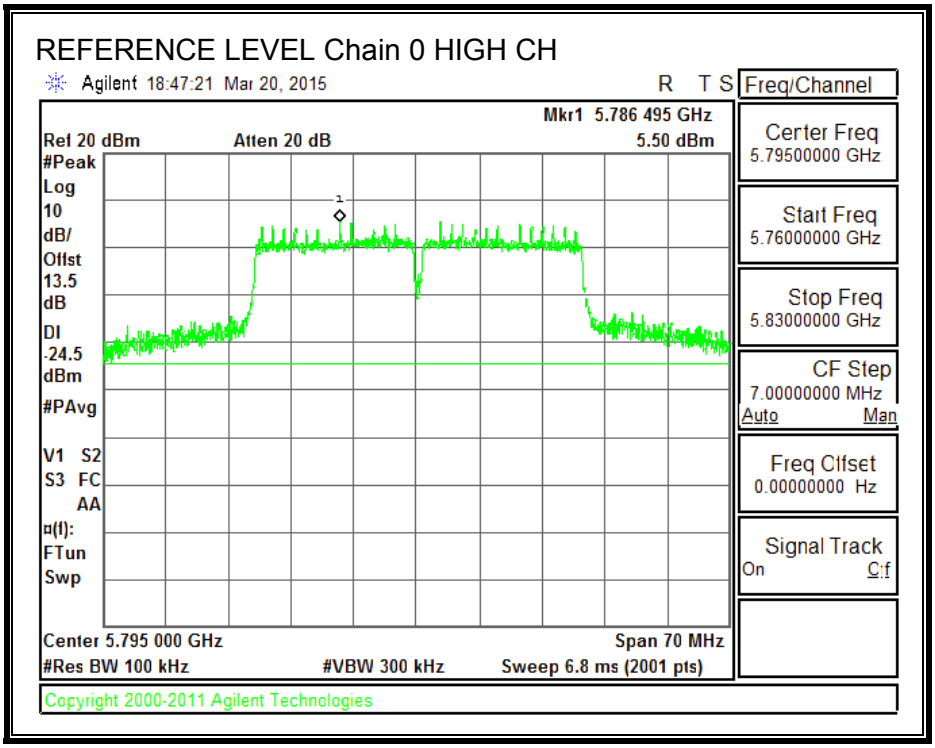
LIMITS

FCC §15.247 (d)

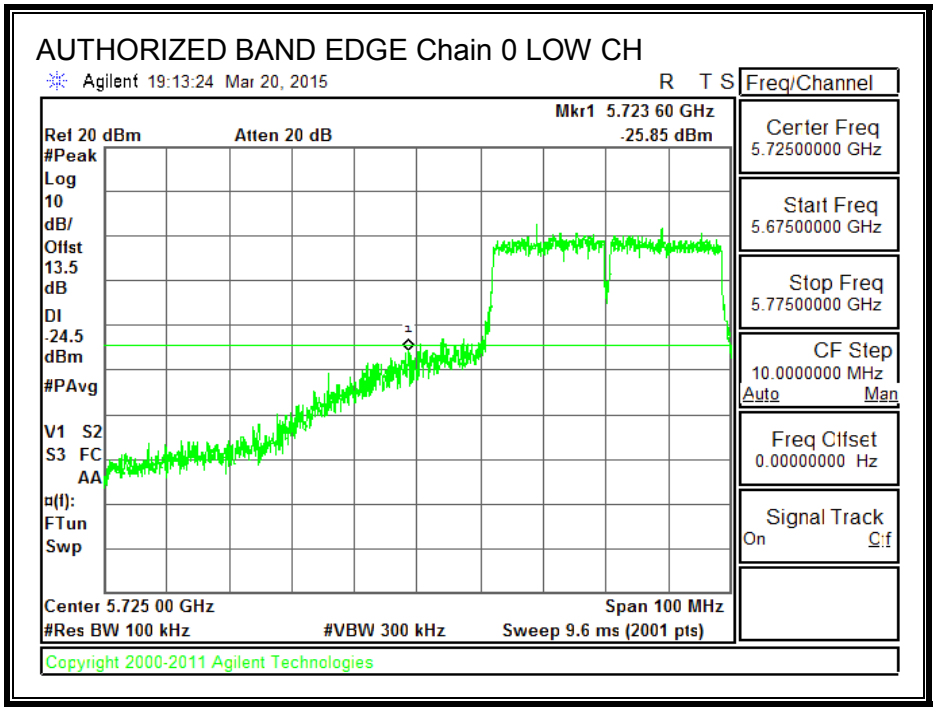
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

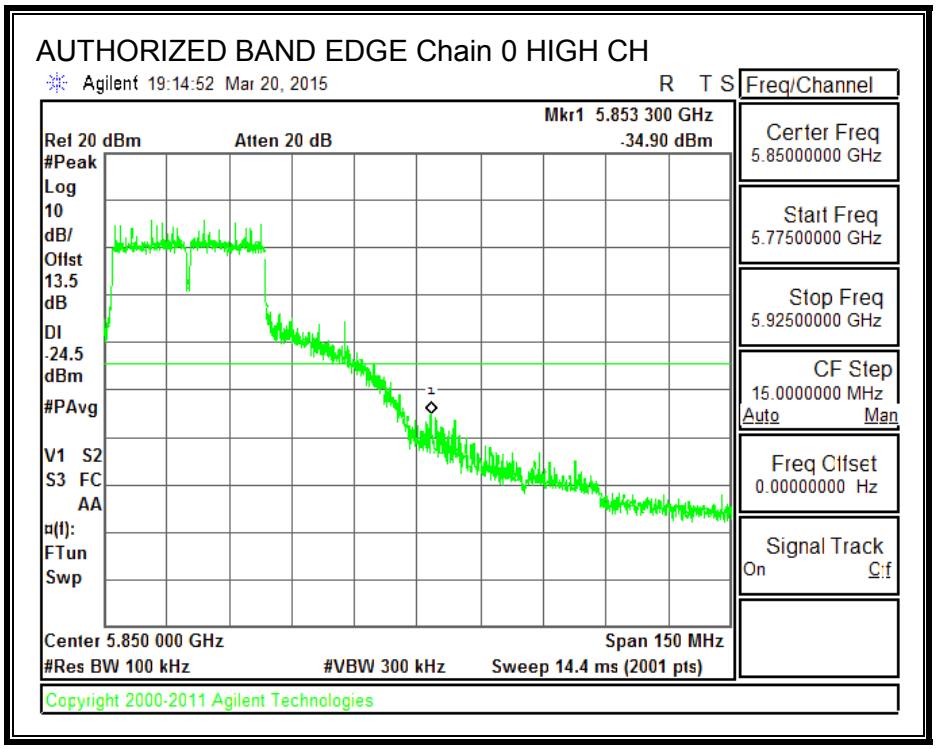
IN-BAND REFERENCE LEVEL



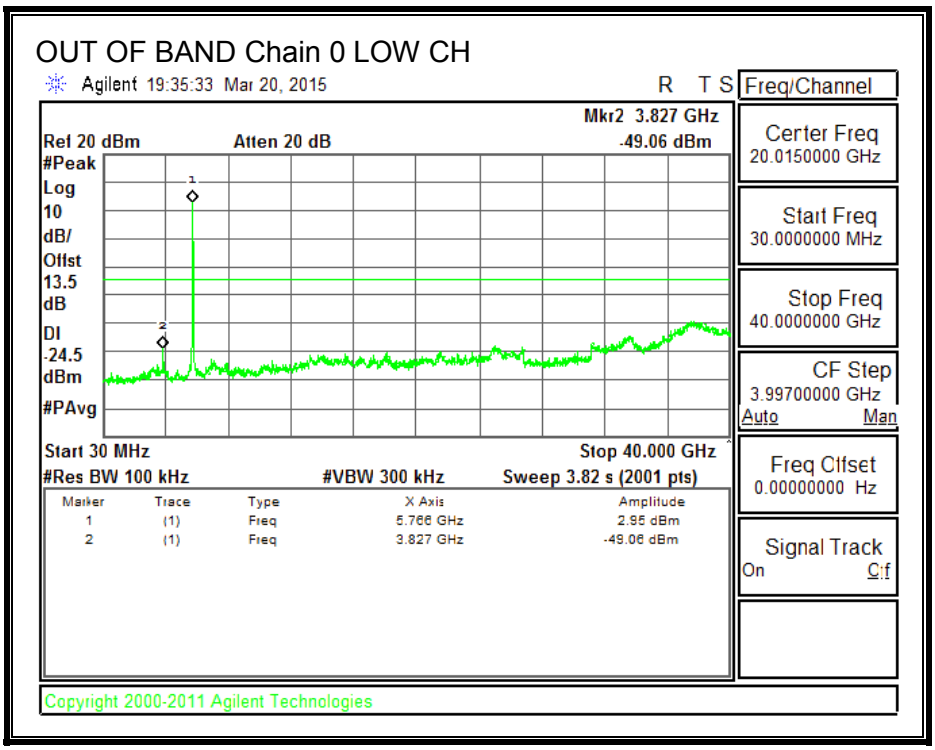
LOW CHANNEL BANDEDGE, Chain 0

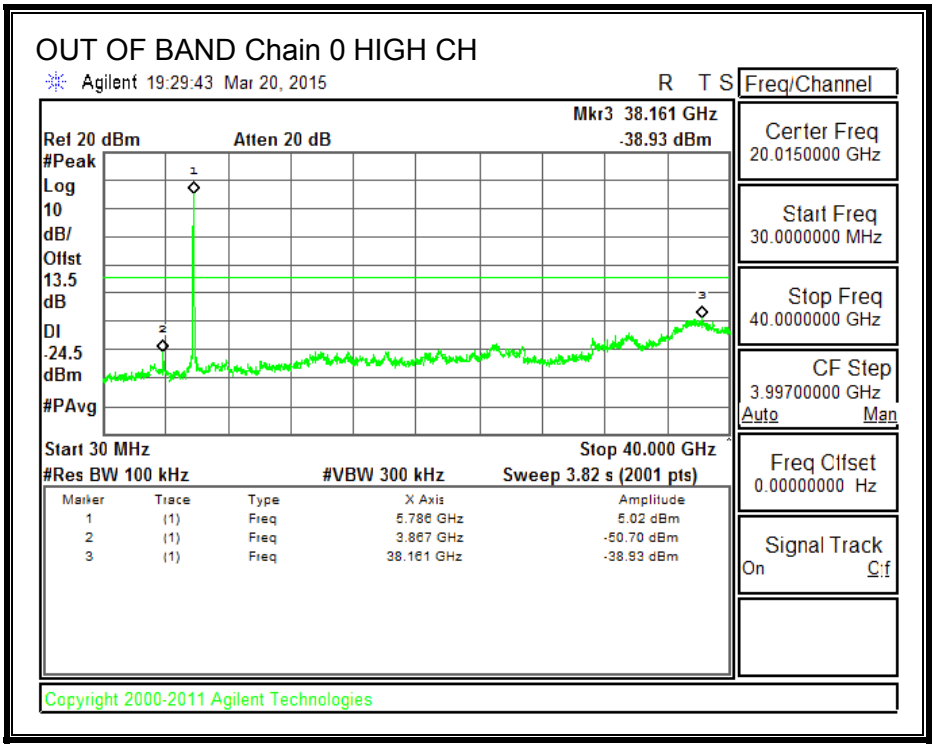


HIGH CHANNEL BANDEDGE, Chain 0

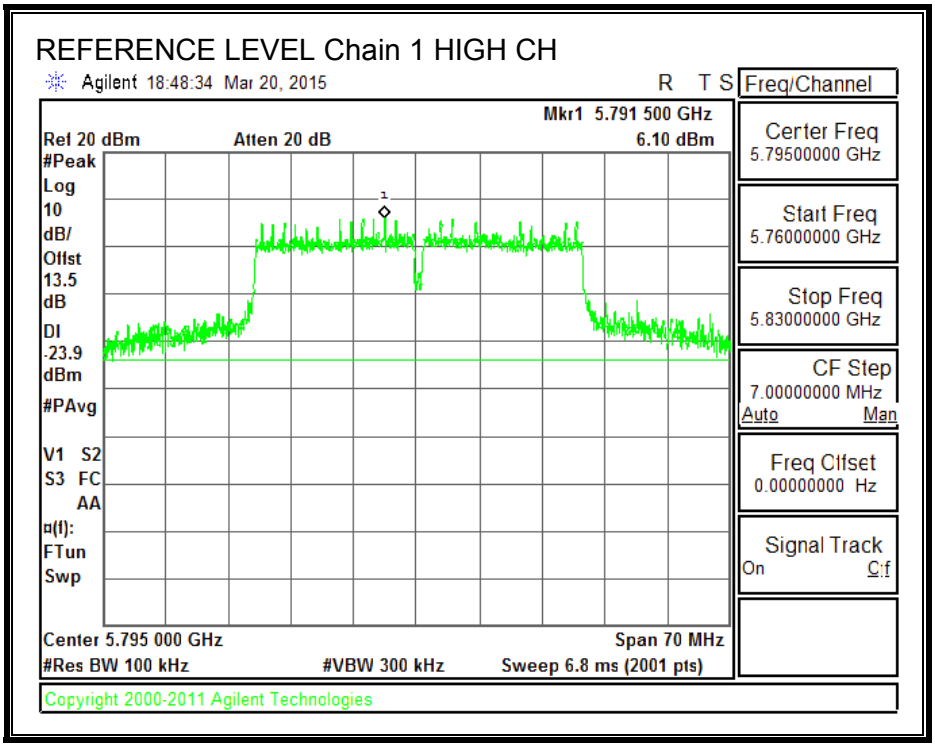


OUT-OF-BAND EMISSIONS, Chain 0

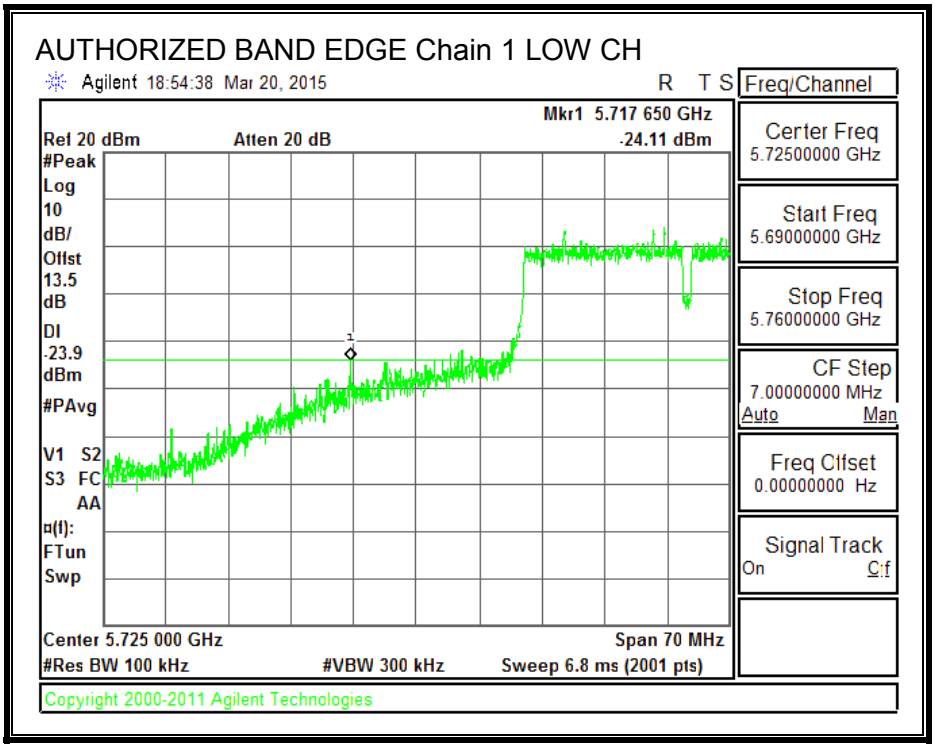




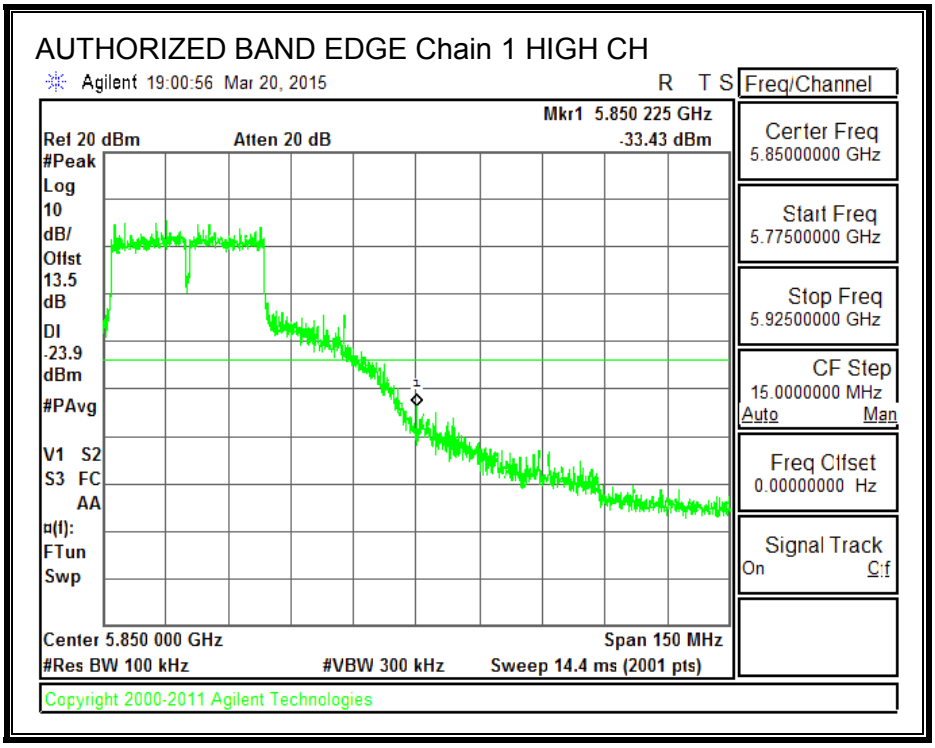
IN-BAND REFERENCE LEVEL



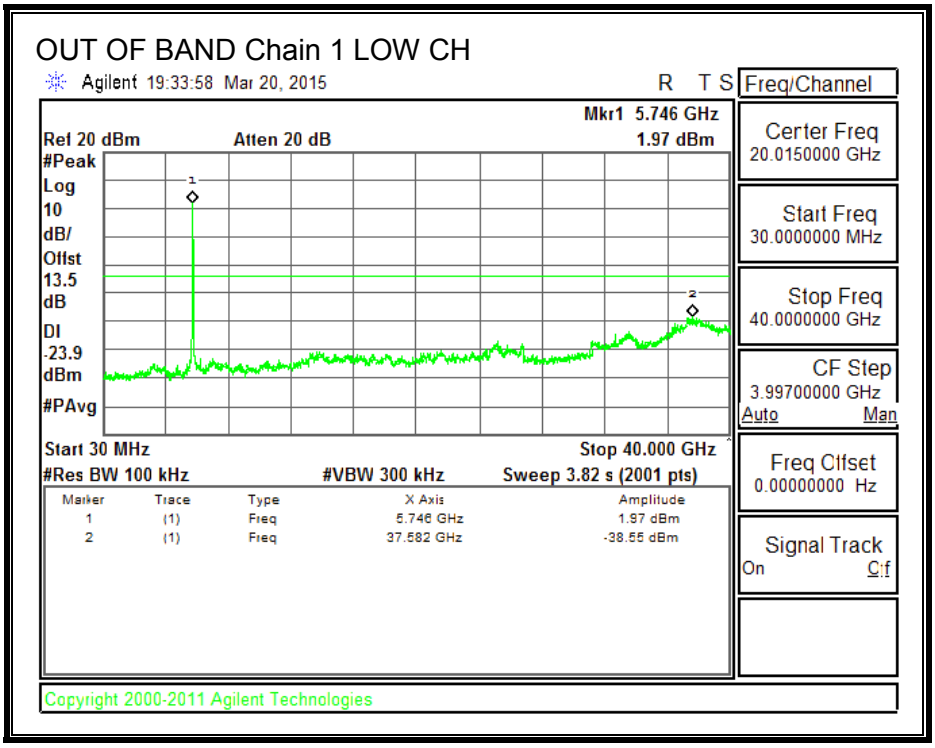
LOW CHANNEL BANDEDGE, Chain 1

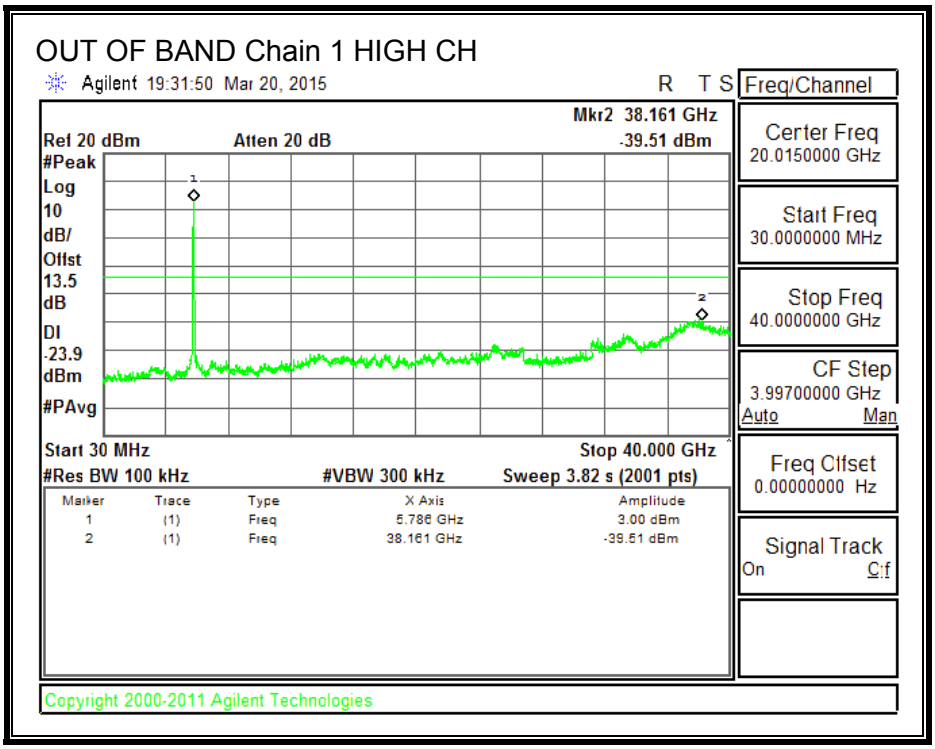


HIGH CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 1





8.16. 802.11n HT40 CDD 3TX MODE IN THE 5.8 GHz BAND

8.16.1. 6 dB BANDWIDTH

LIMITS

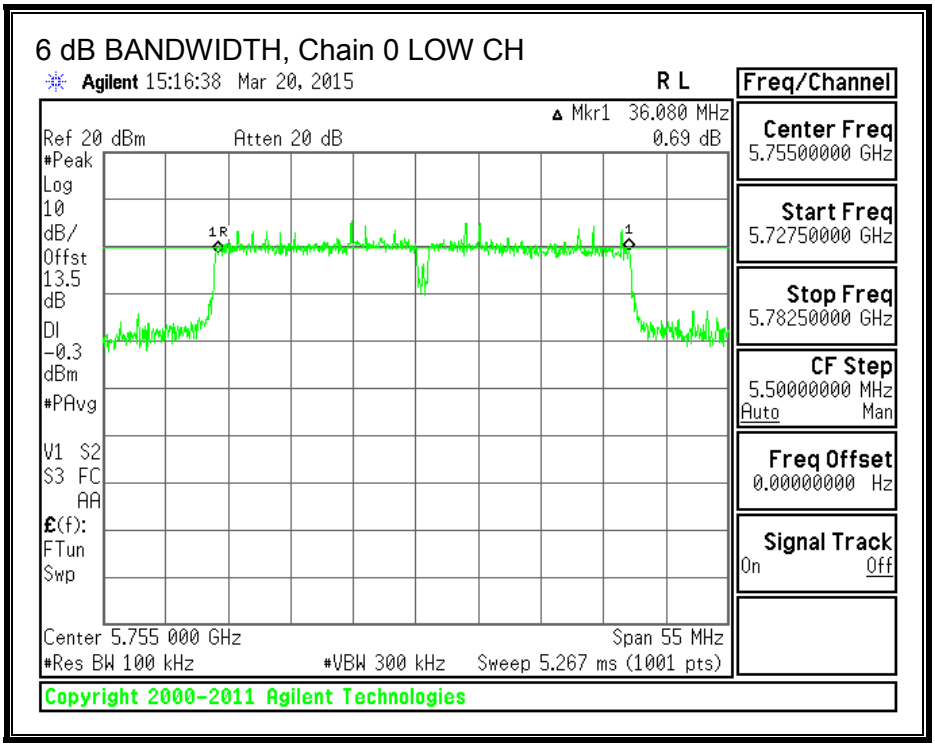
FCC §15.247 (a) (2)

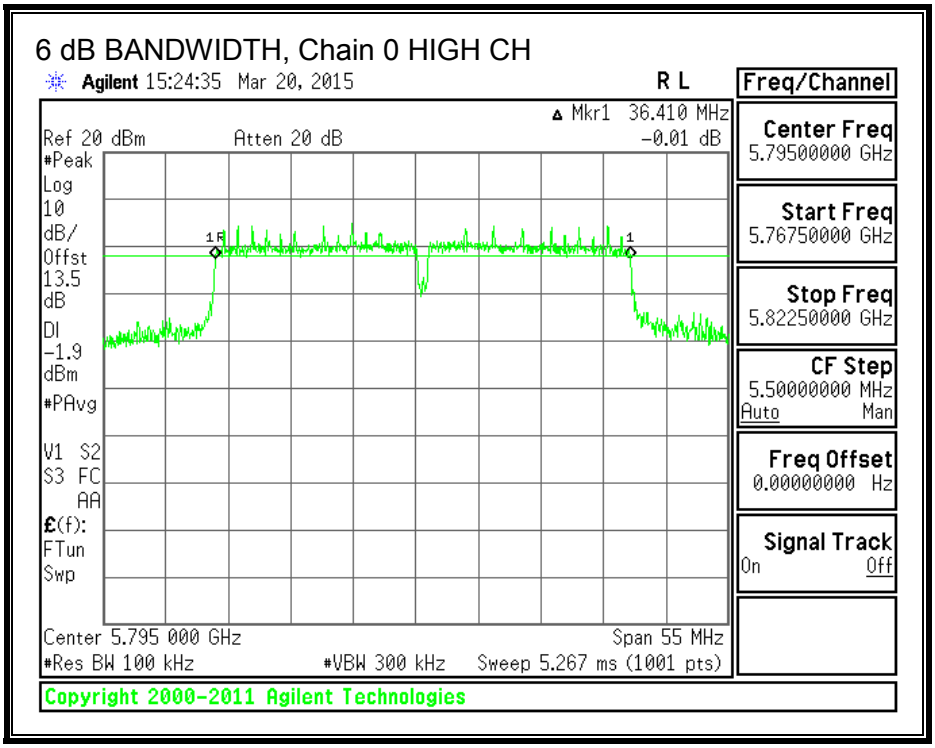
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

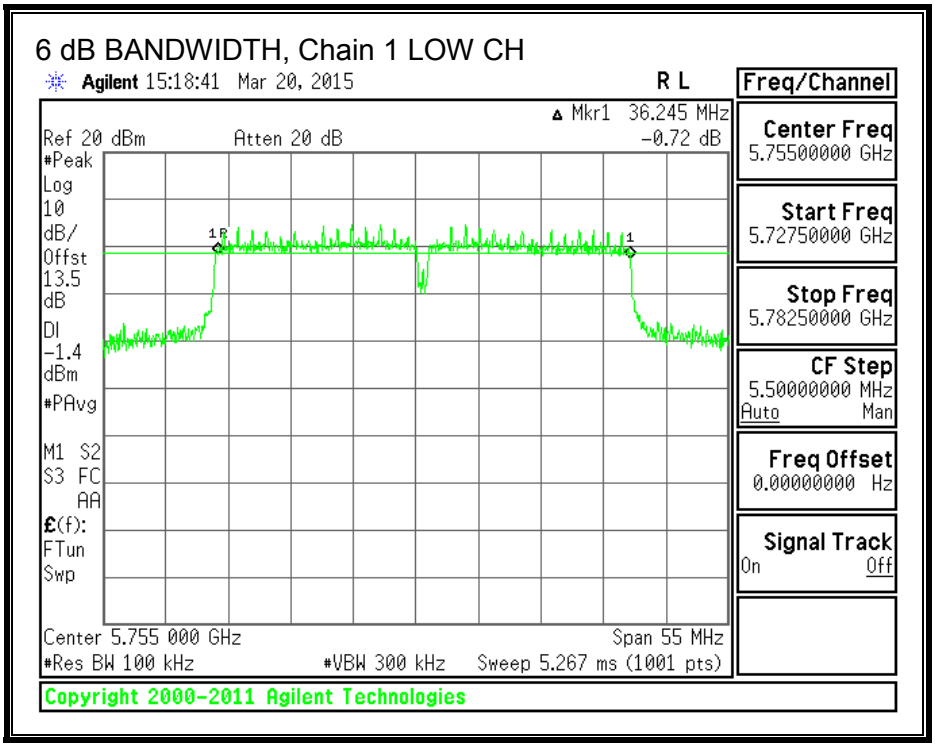
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	5755	36.080	36.245	36.300	0.5
High	5795	36.410	36.410	36.410	0.5

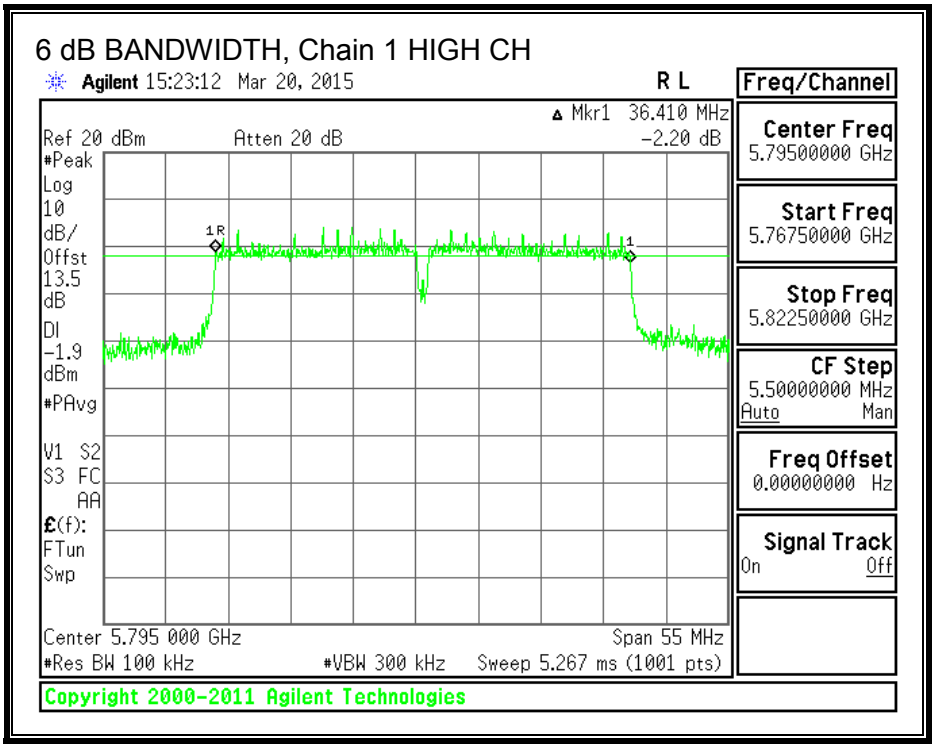
6 dB BANDWIDTH, Chain 0



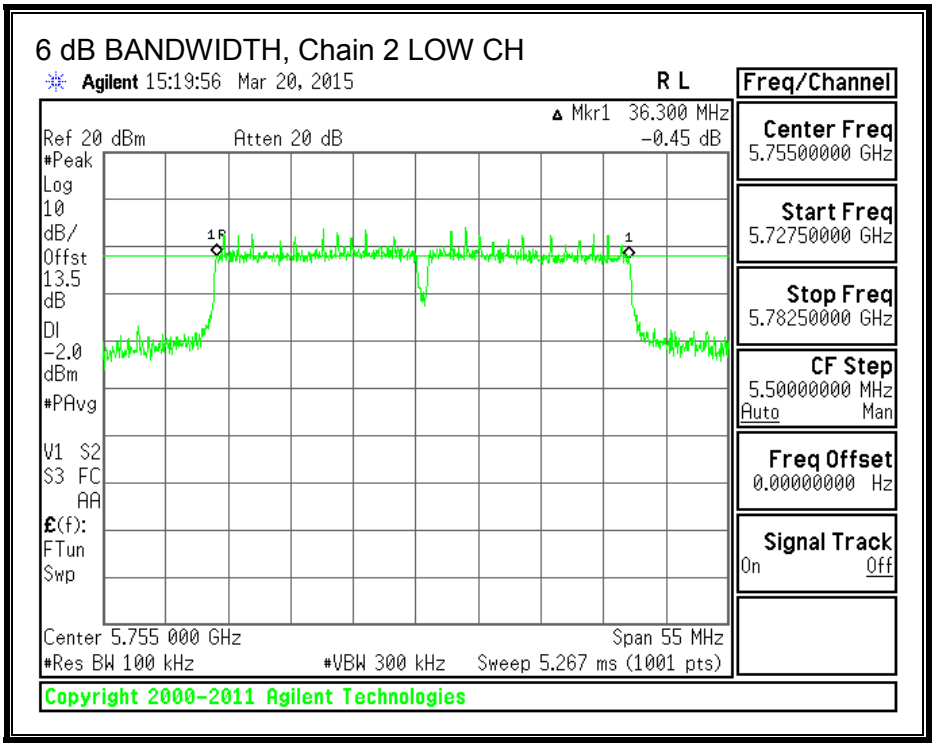


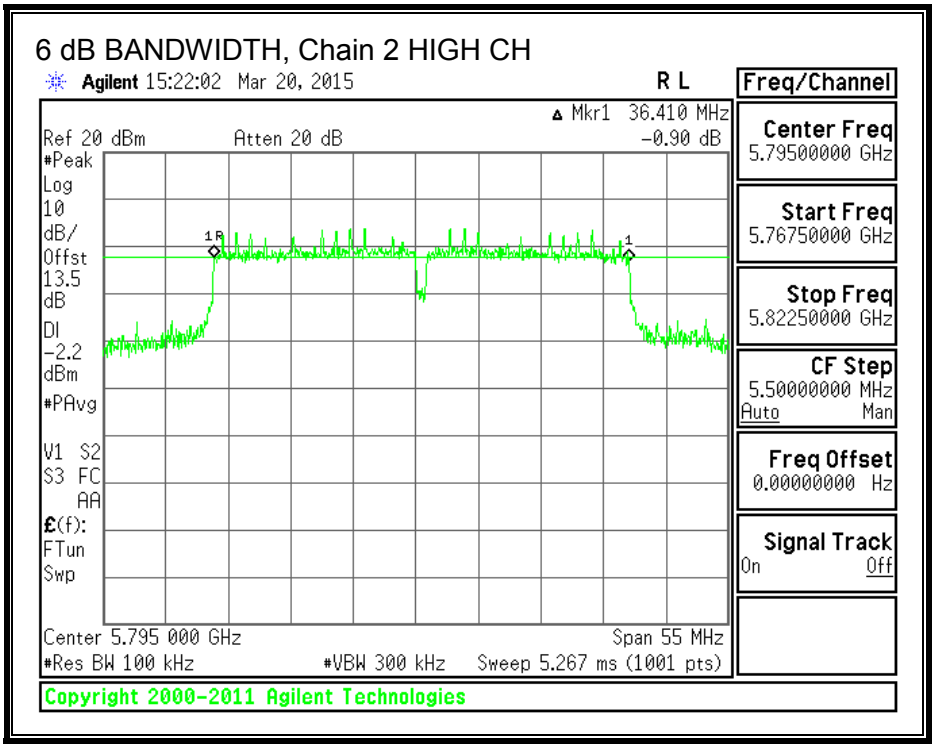
6 dB BANDWIDTH, Chain 1





6 dB BANDWIDTH, Chain 2





8.16.2. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 6.21 dBi.

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	6.21	N/A	30	36	29.79
High	5795	6.21	N/A	30	36	29.79

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	16.54	16.28	16.22	21.12	29.79	-8.67
High	5795	19.41	18.89	19.09	23.91	29.79	-5.88

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

8.16.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4 (4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

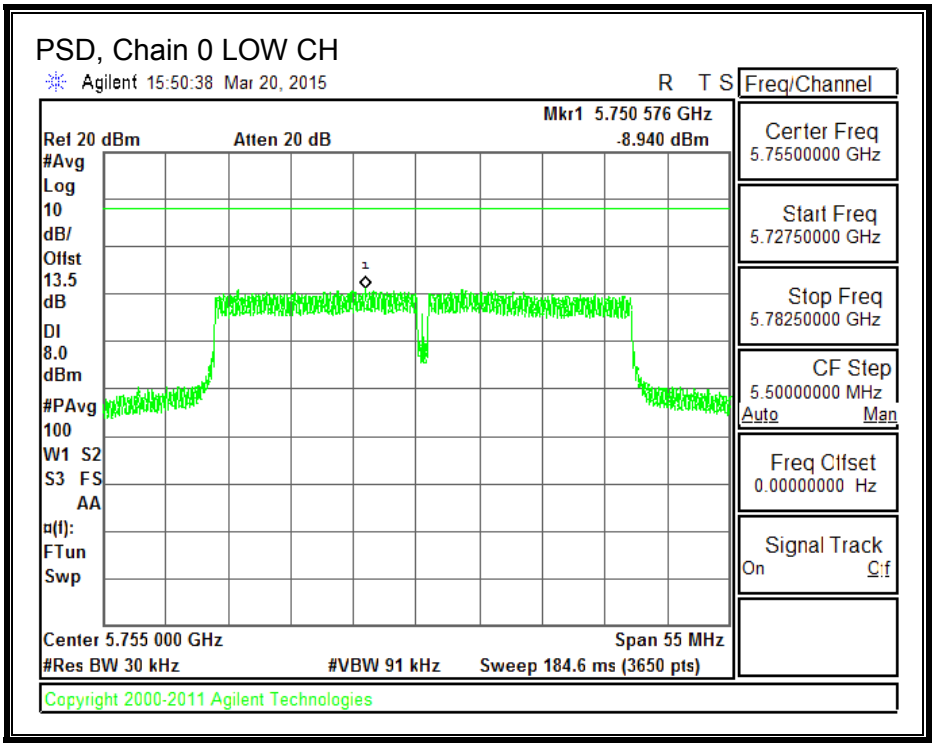
RESULTS

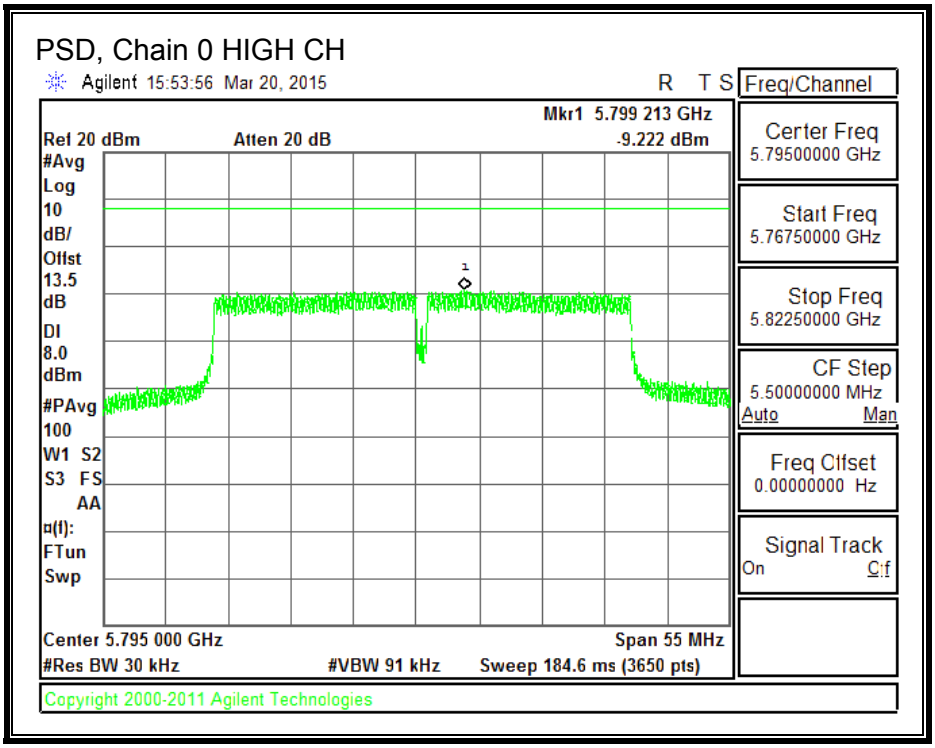
Duty Cycle CF (dB)	0.09	Included in Calculations of Corr'd PSD

PSD Results

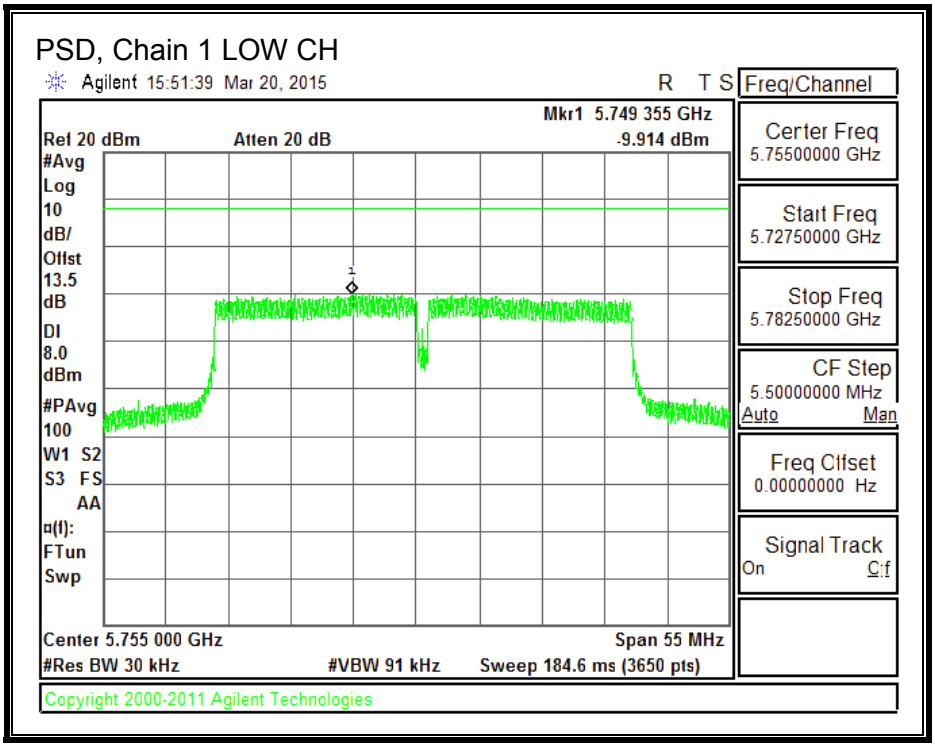
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-8.940	-9.914	-10.684	-4.93	8.0	-12.93
High	5795	-9.222	-10.169	-11.059	-5.22	8.0	-13.22

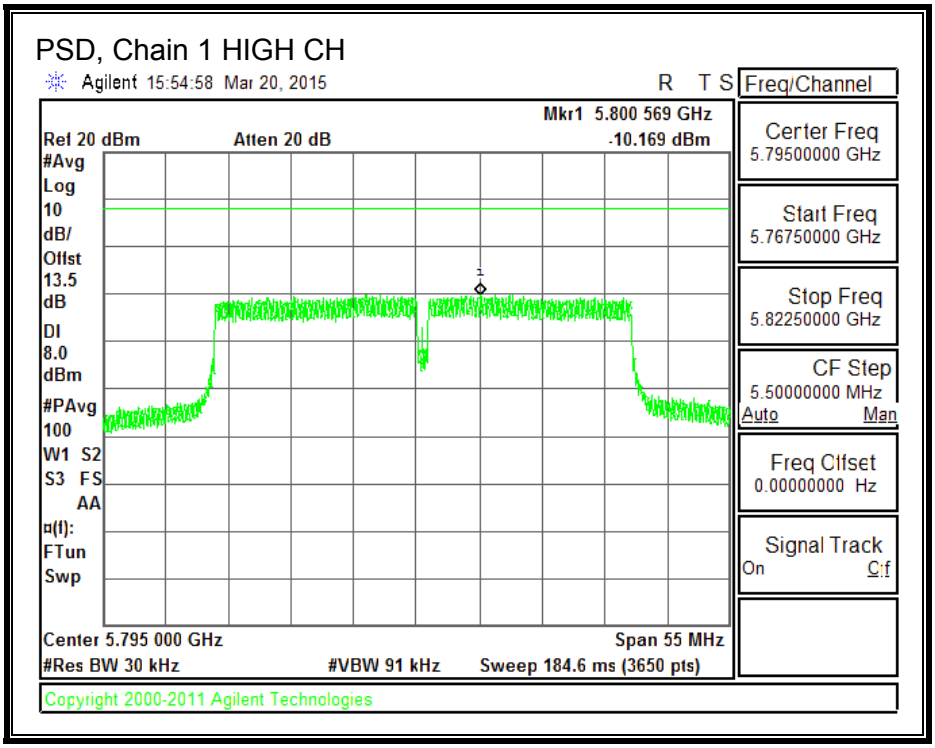
PSD, Chain 0



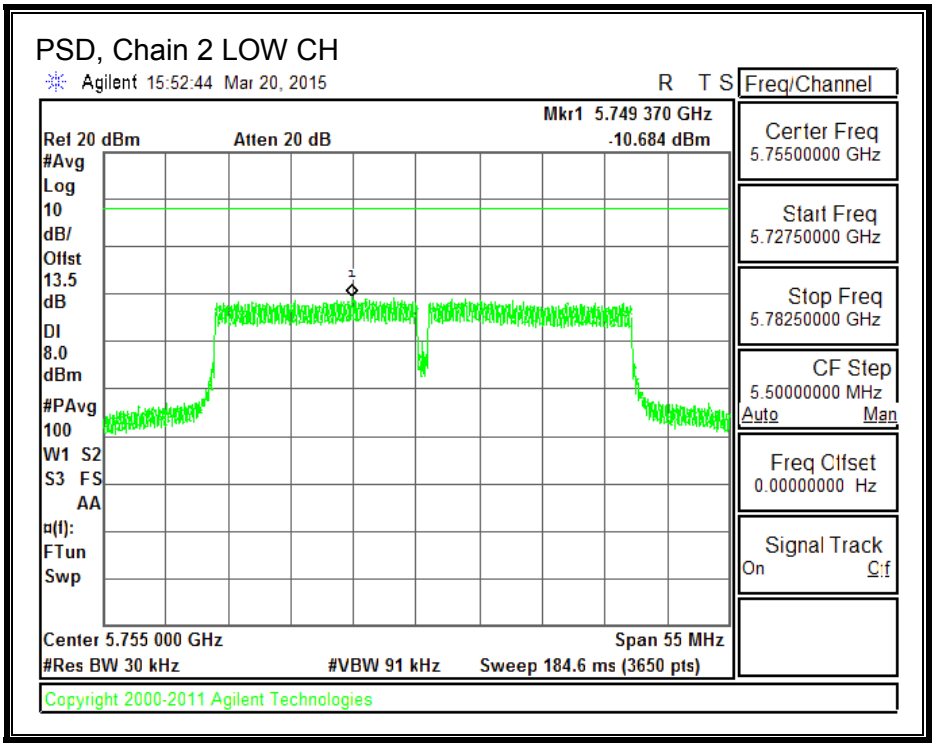


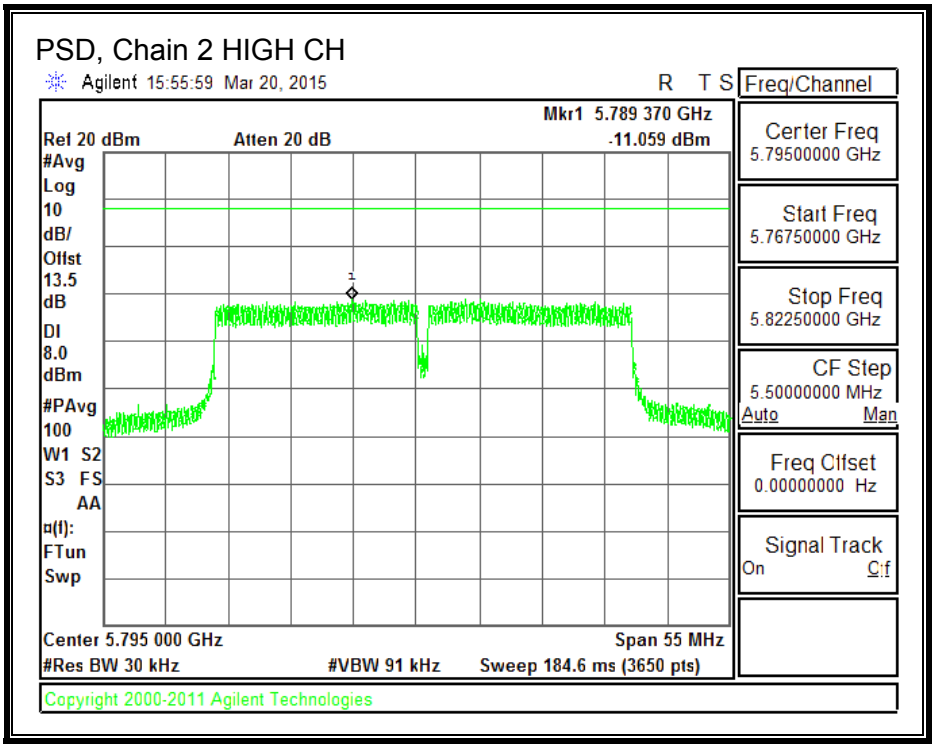
PSD, Chain 1





PSD, Chain 2





8.16.4. OUT-OF-BAND EMISSIONS

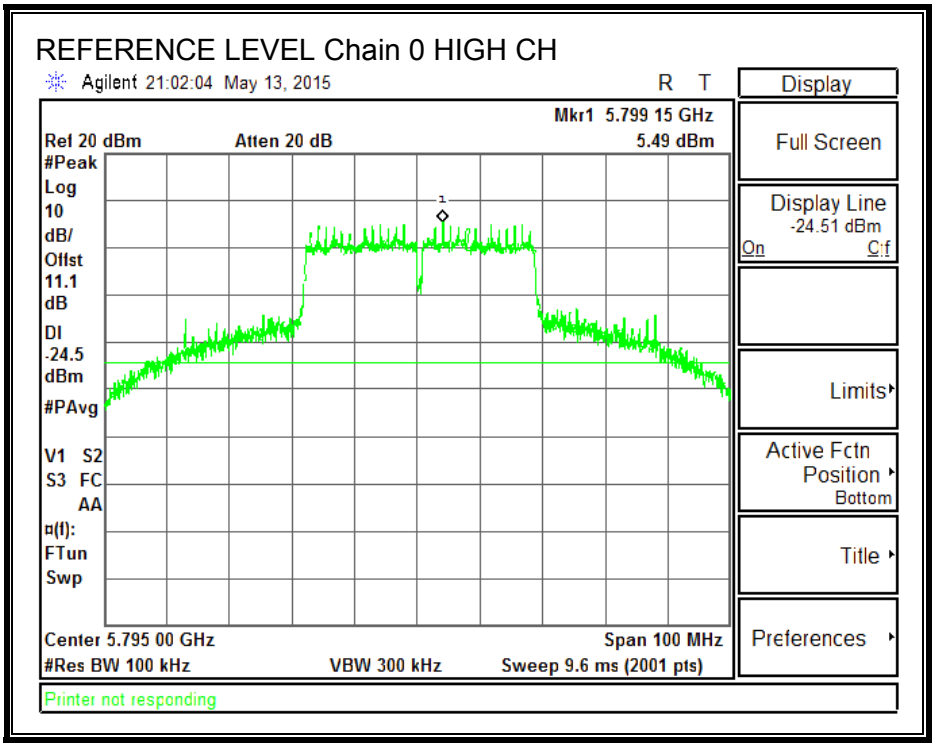
LIMITS

FCC §15.247 (d)

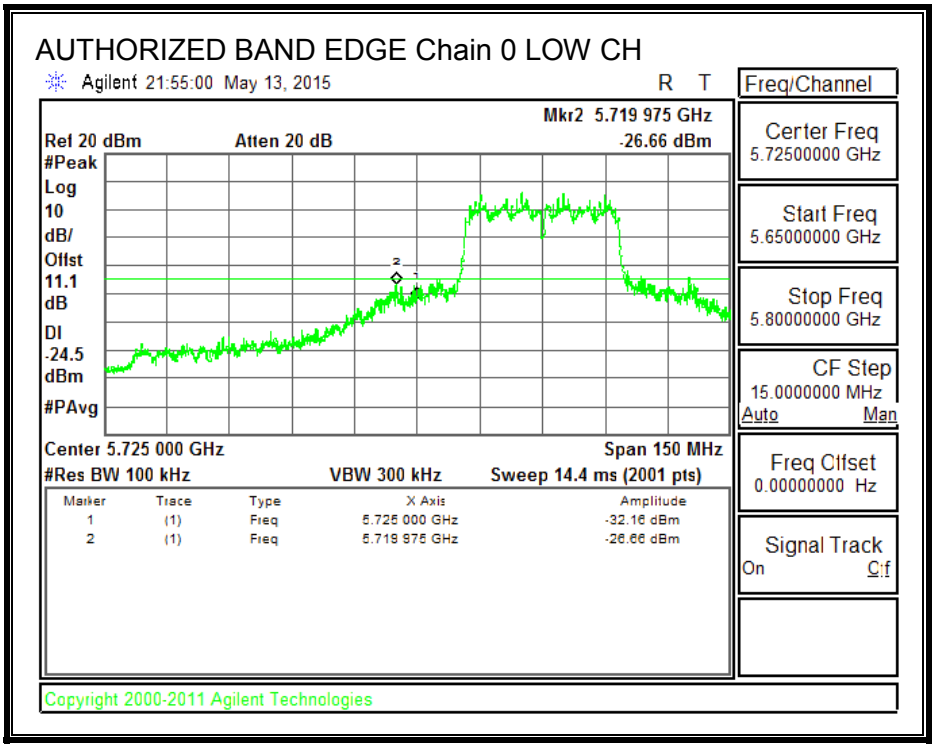
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

RESULTS

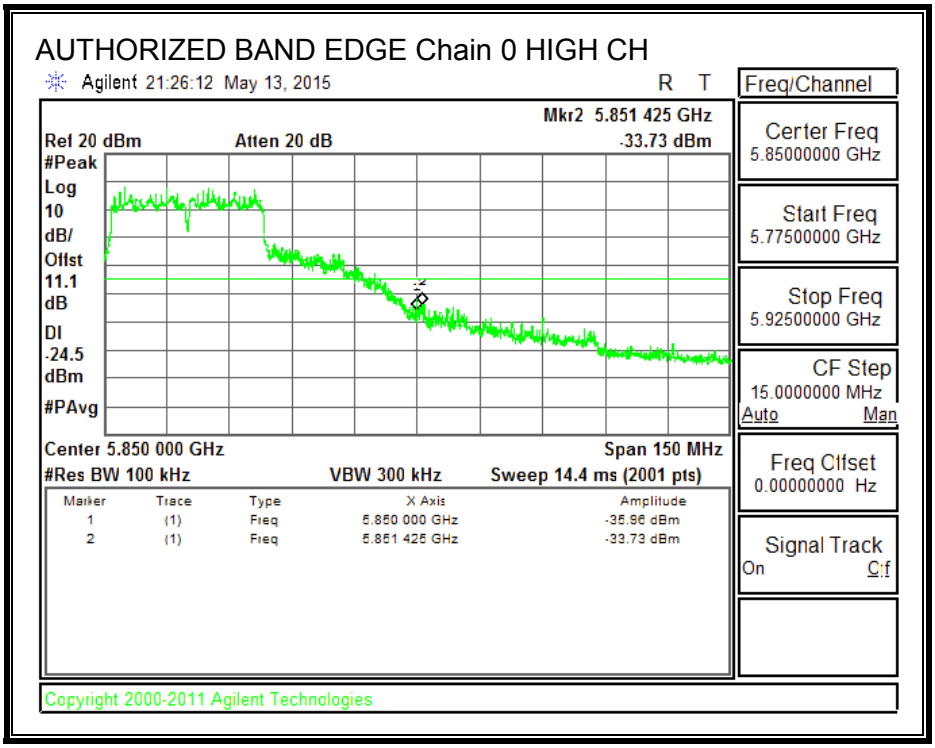
IN BAND REFERENCE LEVEL, Chain 0



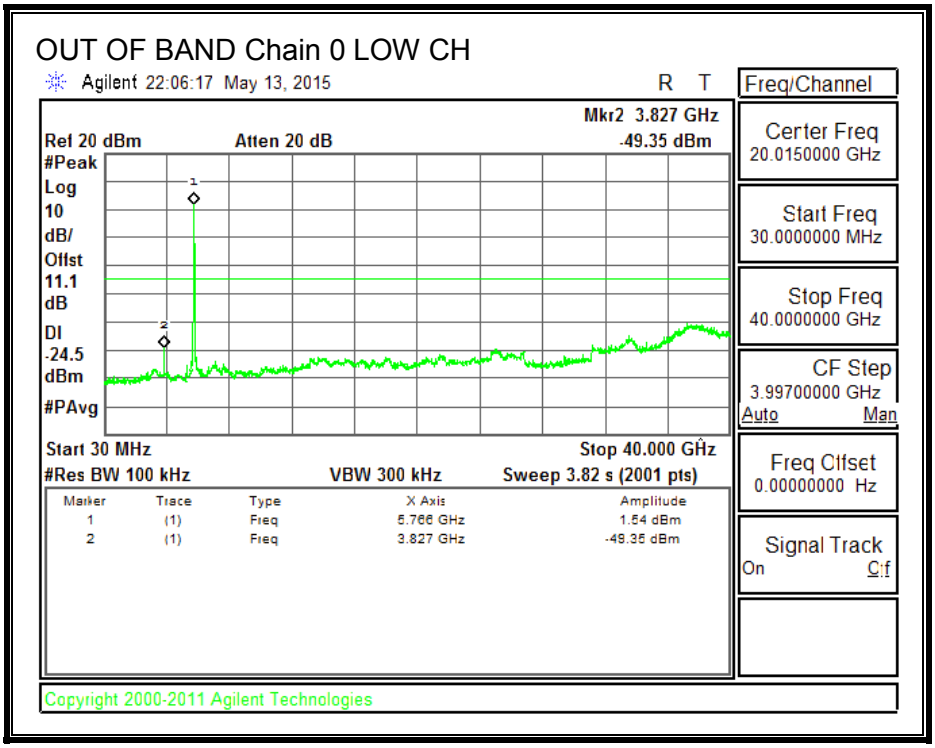
LOW CHANNEL BANDEDGE, Chain 0

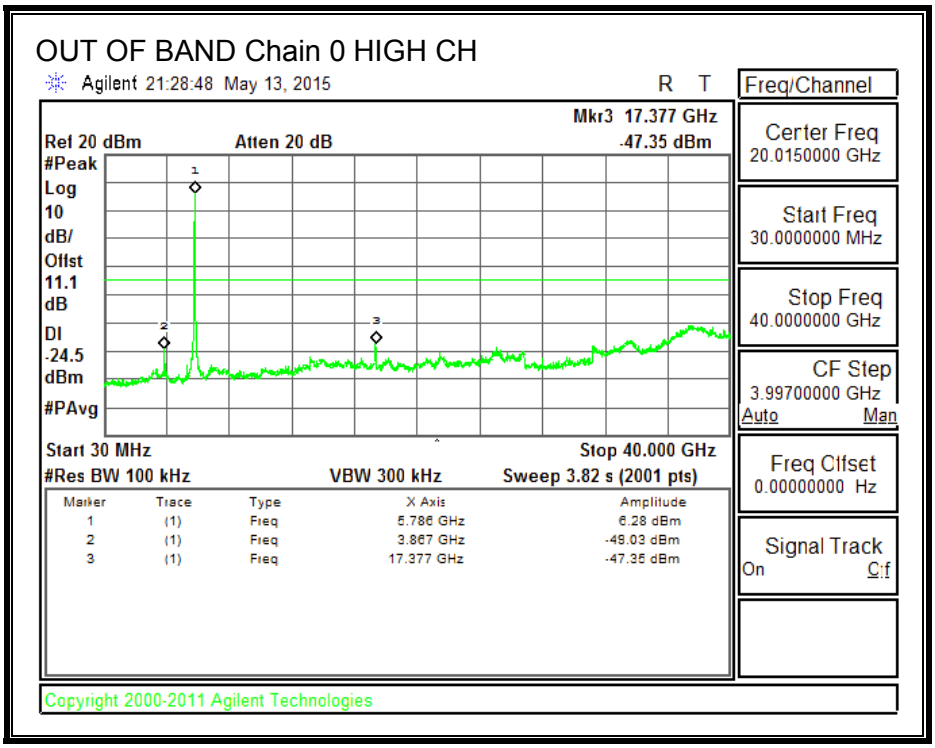


HIGH CHANNEL BANDEDGE, Chain 0

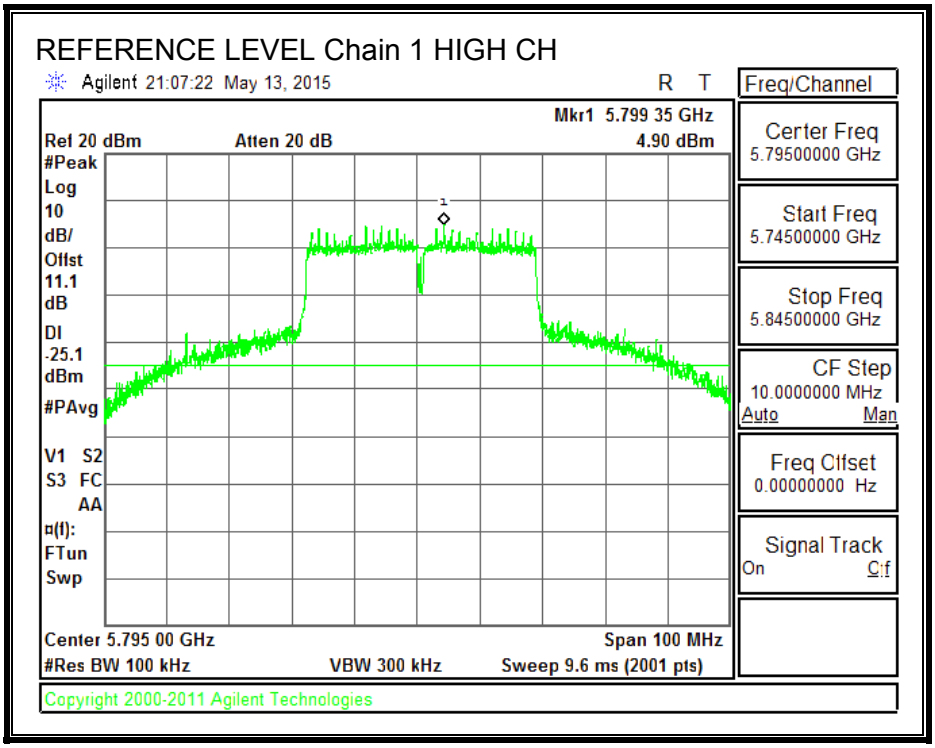


OUT-OF-BAND EMISSIONS, Chain 0

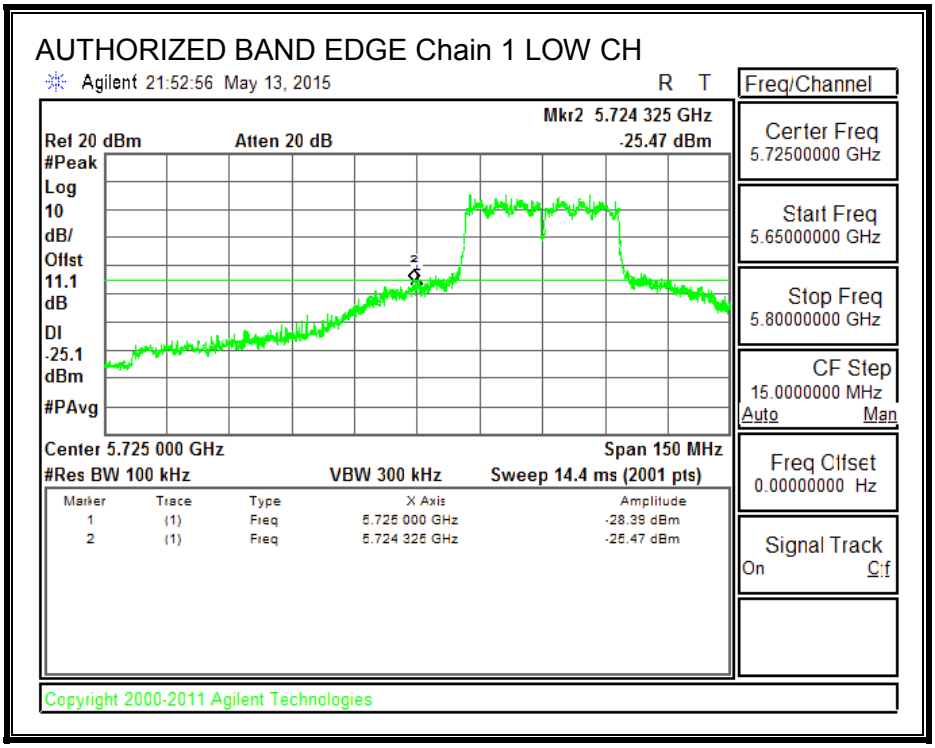




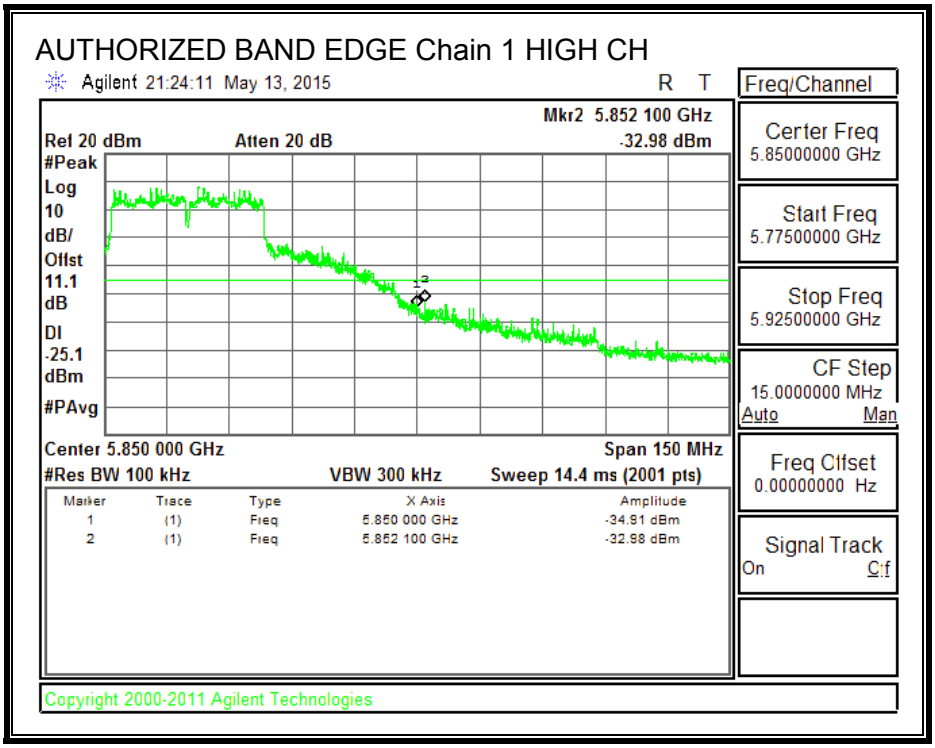
IN BAND REFERENCE LEVEL, Chain 1



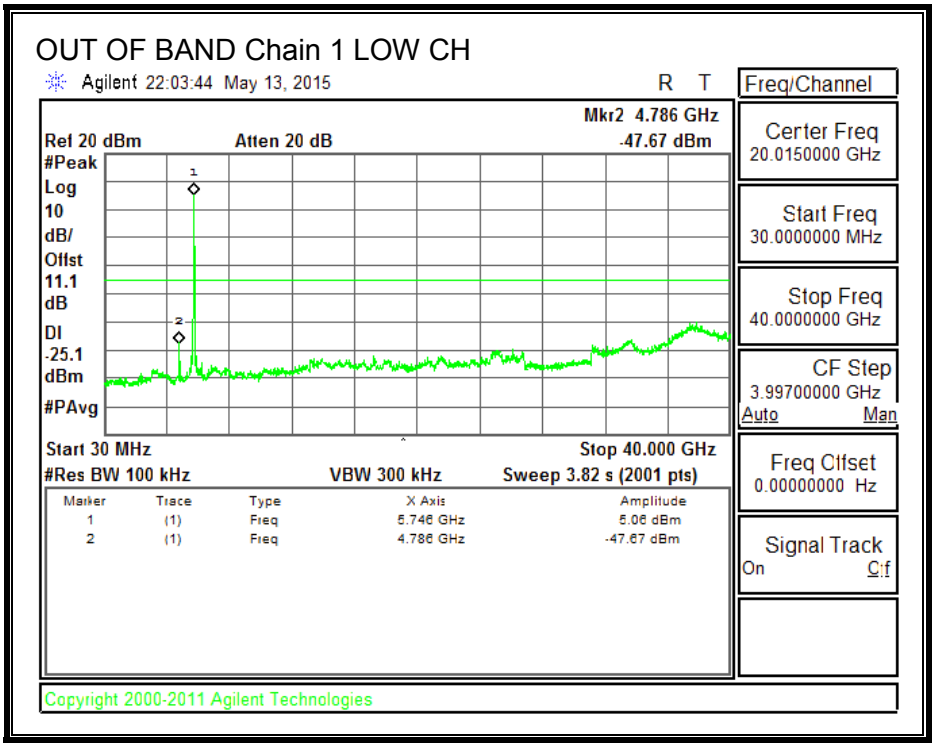
LOW CHANNEL BANDEDGE, Chain 1

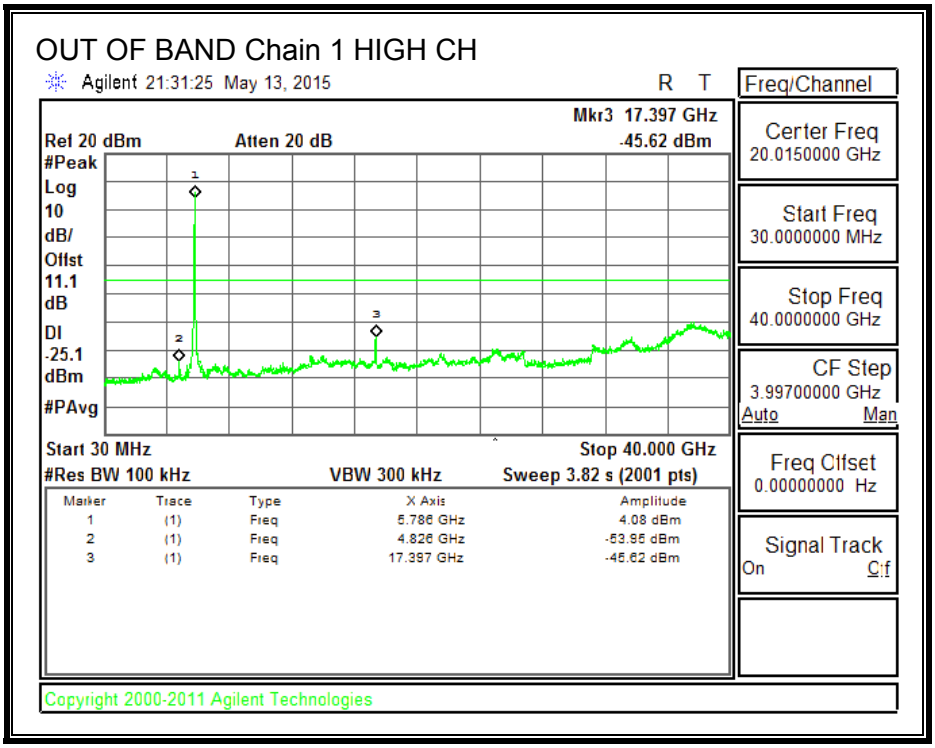


HIGH CHANNEL BANDEDGE, Chain 1

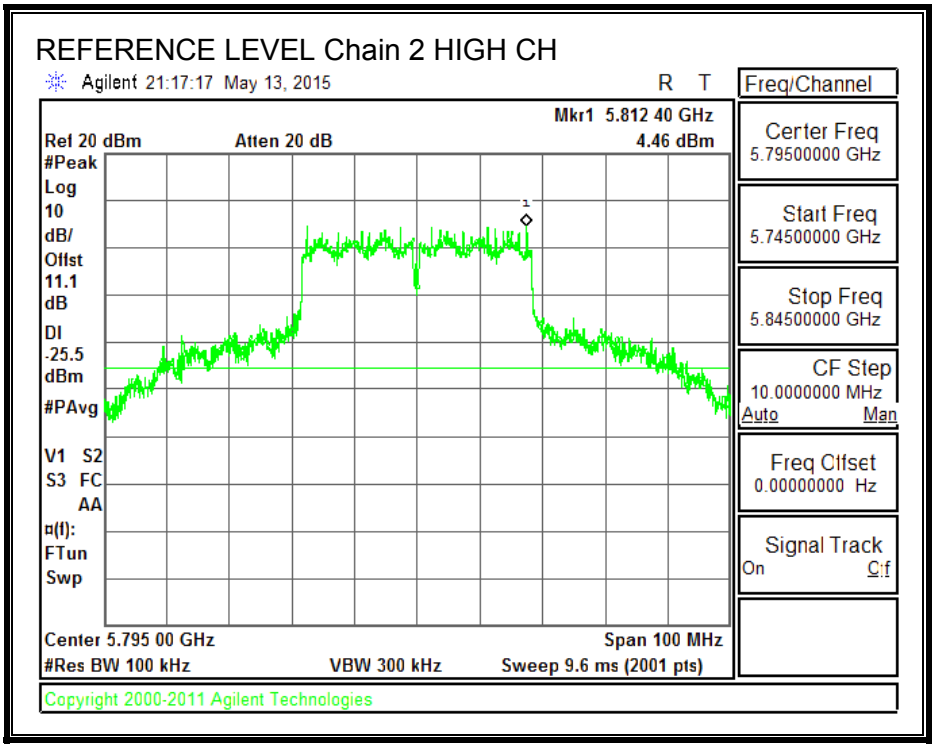


OUT-OF-BAND EMISSIONS, Chain 1

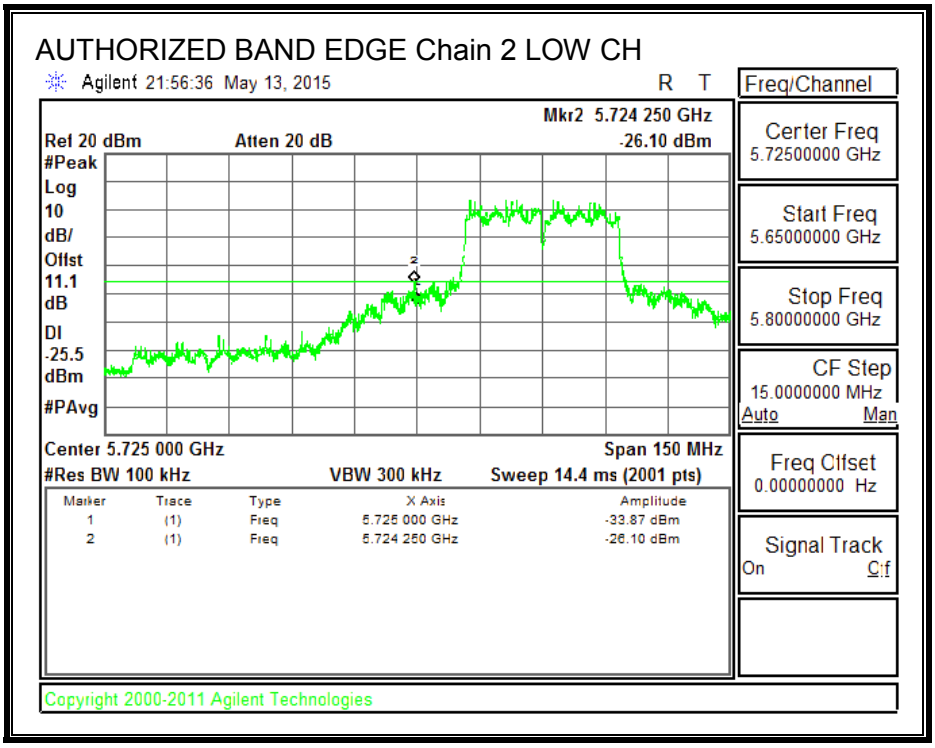




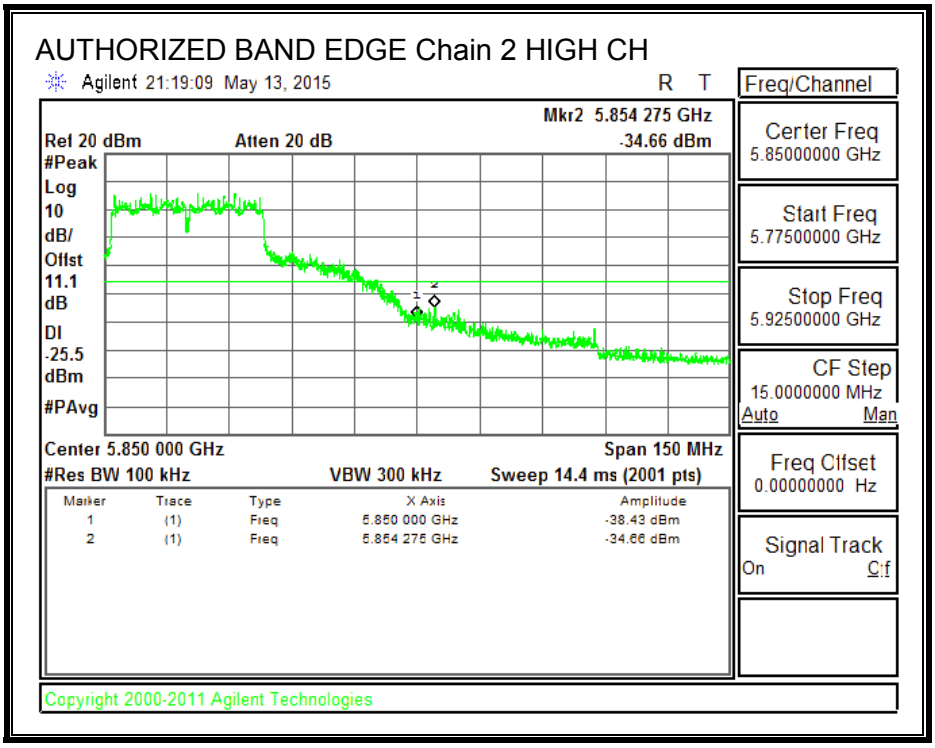
IN BAND REFERENCE LEVEL, Chain 2



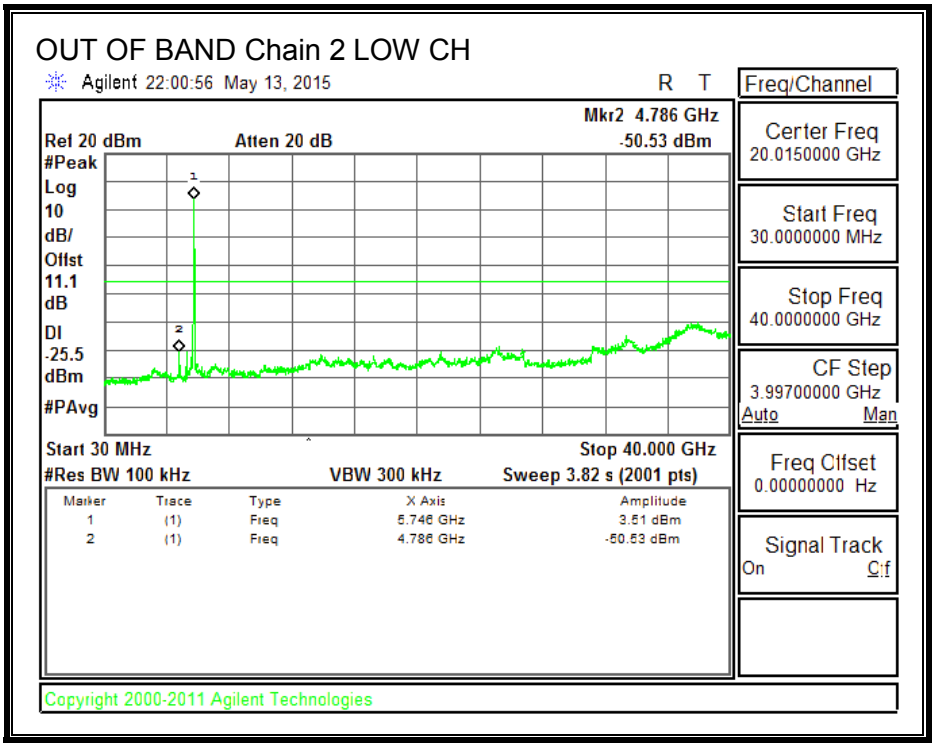
LOW CHANNEL BANDEDGE, Chain 2

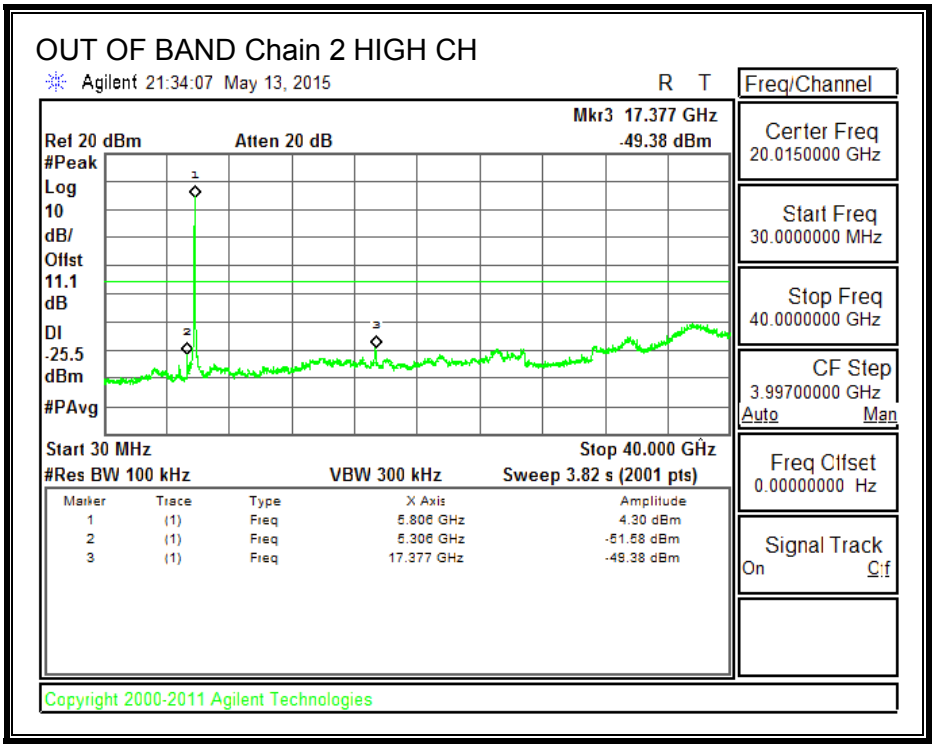


HIGH CHANNEL BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2





8.17. 802.11n HT40 TxBF 3TX MODE IN THE 5.8 GHz BAND

8.17.1. OUTPUT POWER

LIMITS

IC RSS-210 A8.4

For systems using digital modulation in the 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 and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
6.21	4.77	10.98

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	10.98	N/A	30	36	25.02
High	5795	10.98	N/A	30	36	25.02

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	16.54	16.28	16.22	21.12	25.02	-3.90
High	5795	19.41	18.89	19.09	23.91	25.02	-1.11

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

8.18. 802.11ac VHT80 1TX MODE IN THE 5.8 GHz BAND

8.18.1. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

This is SISO mode, AG is the highest (worst-case) = 6.21 dBi.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Mid	5775	6.21	N/A	30	36	29.79

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Mid	5775	18.36	18.36	29.79	-11.43

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

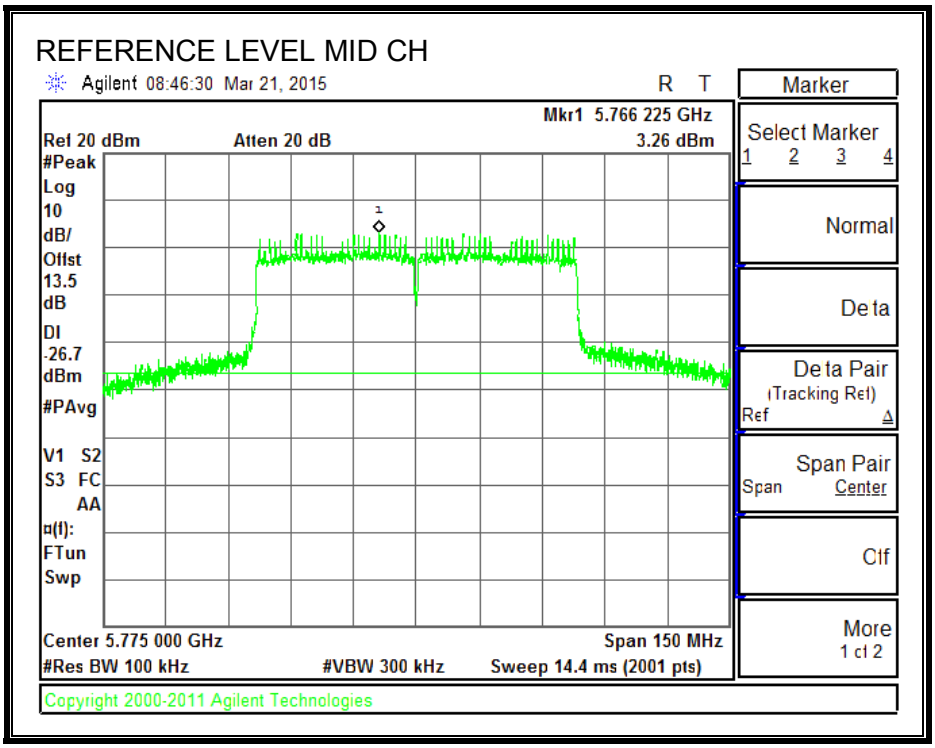
8.18.2. OUT-OF-BAND EMISSIONS

LIMITS

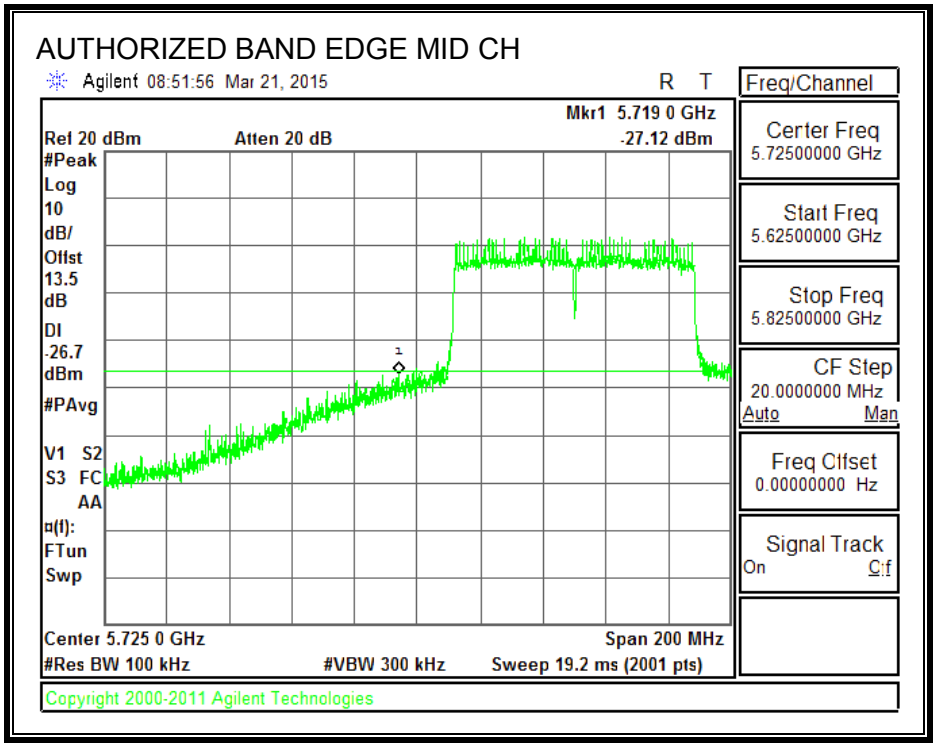
FCC §15.247 (d)

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.

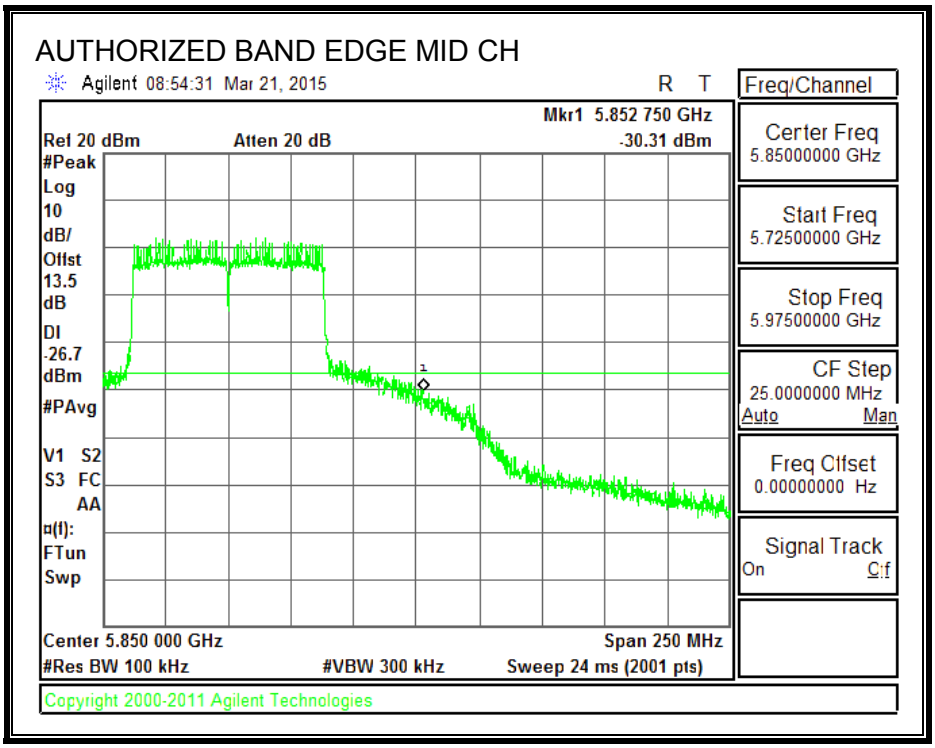
IN-BAND REFERENCE LEVEL



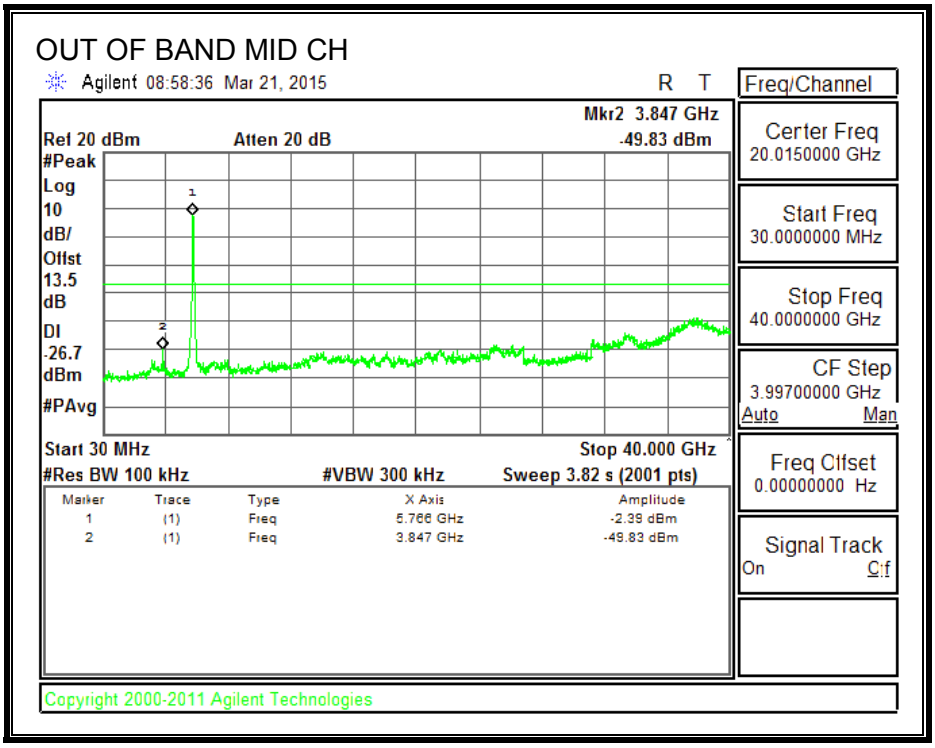
MID CHANNEL LOWER BANDEDGE



MID CHANNEL HIGHER BANDEDGE



OUT-OF-BAND EMISSIONS



8.19. 802.11ac VHT80 CDD 3TX MODE IN THE 5.8 GHz BAND

8.19.1. 6 dB BANDWIDTH

LIMITS

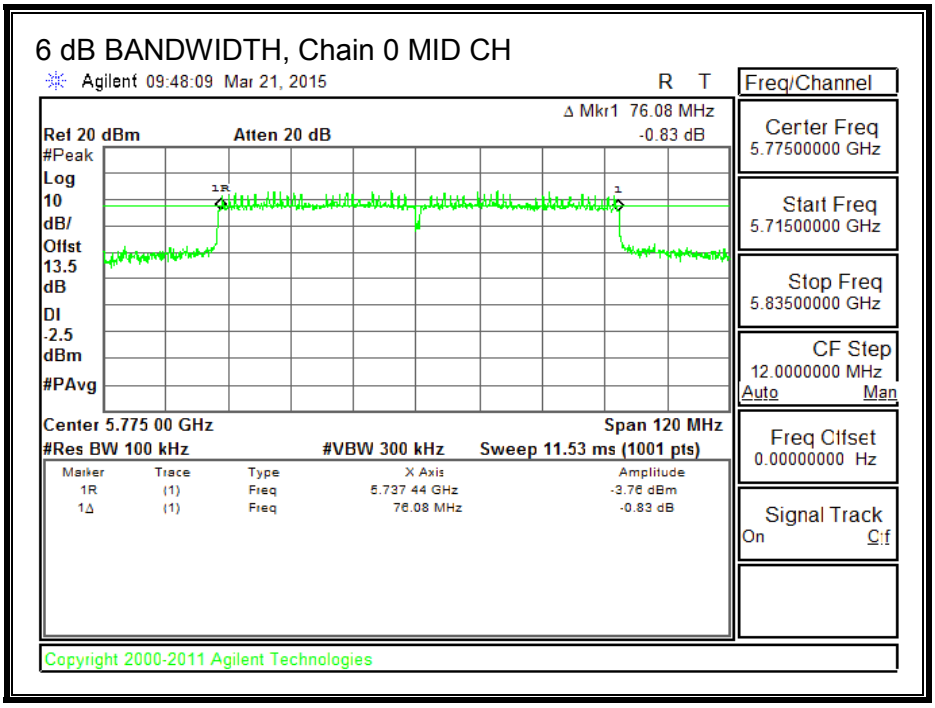
FCC §15.247 (a) (2)

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

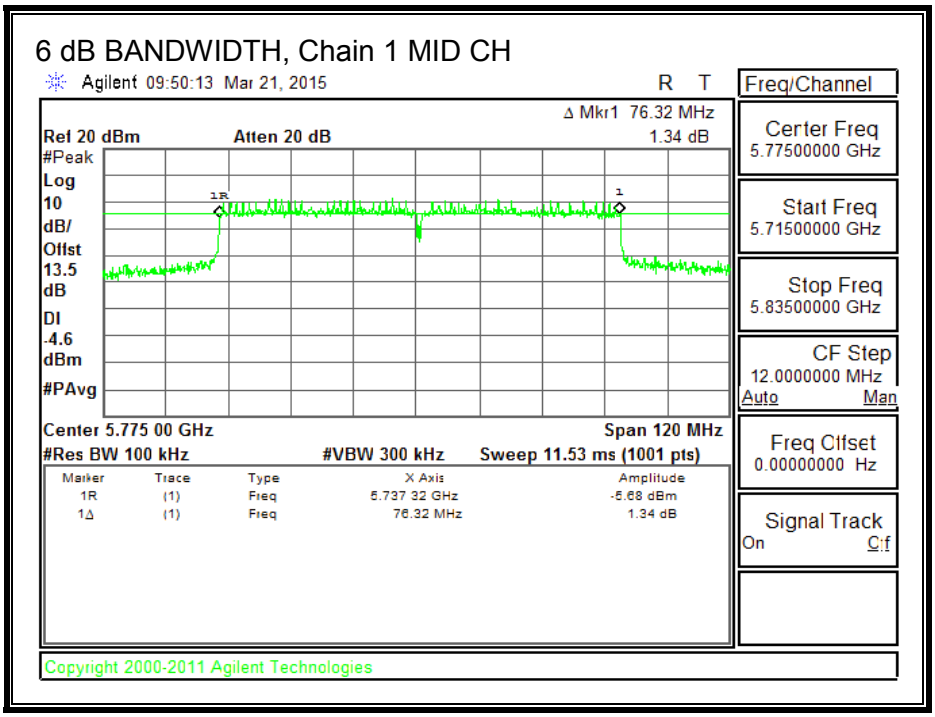
RESULTS

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	76.08	76.32	75.96	0.5

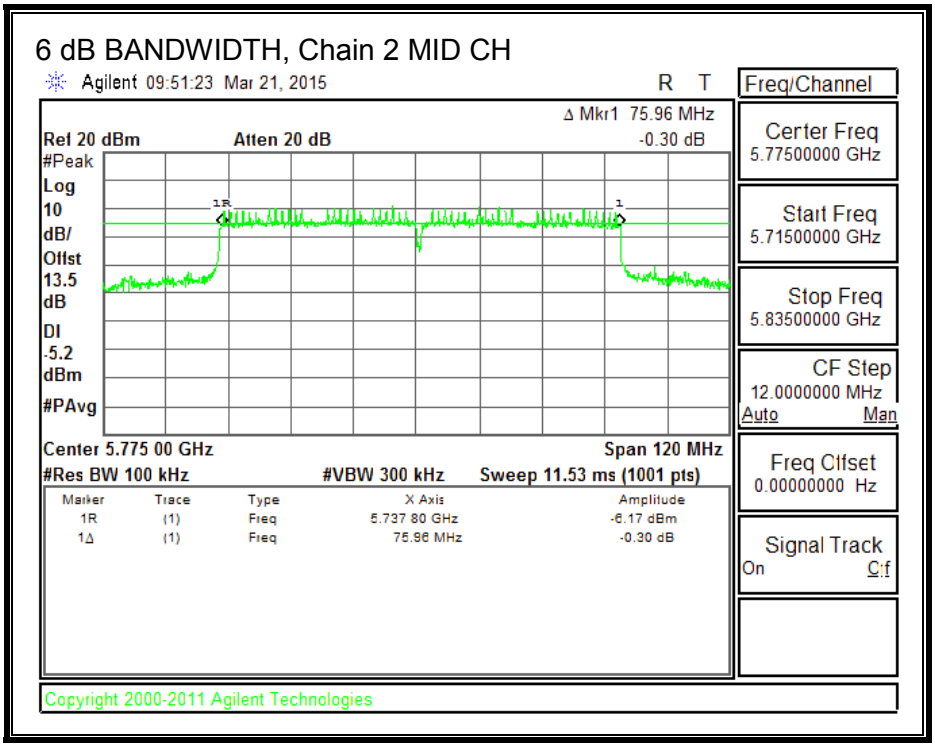
6 dB BANDWIDTH, Chain 0



6 dB BANDWIDTH, Chain 1



6 dB BANDWIDTH, Chain 2



8.19.2. OUTPUT POWER

LIMITS

FCC §15.247

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

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain, 6.21 dBi.

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Mid	5775	6.21	N/A	30	36	29.79

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	5775	16.05	16.53	16.51	21.14	29.79	-8.65

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

8.19.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4 (4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

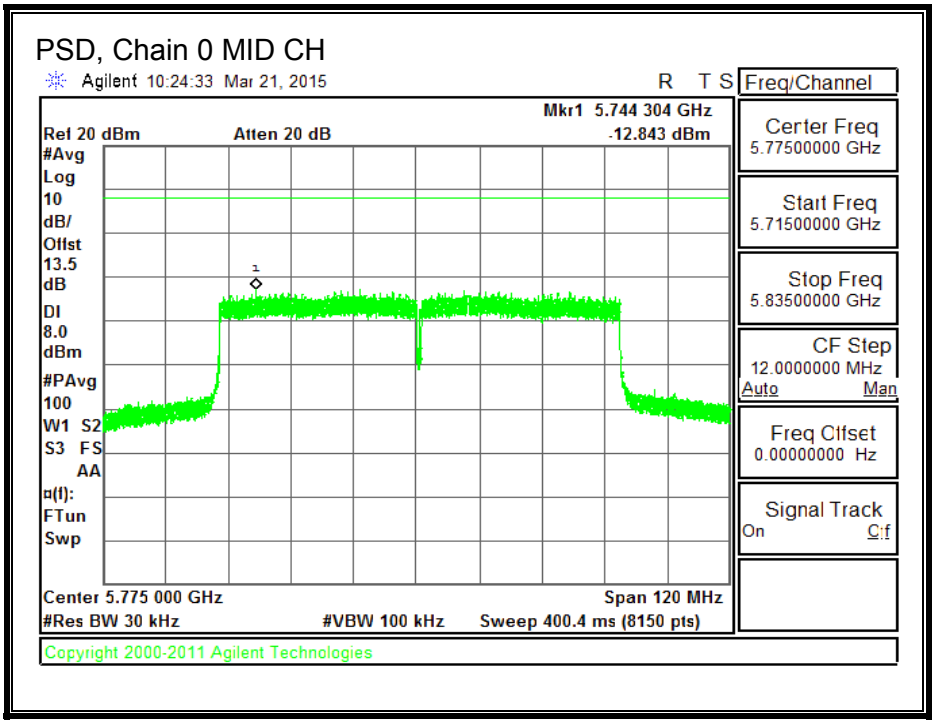
RESULTS

Duty Cycle CF (dB)	0.18	Included in Calculations of Corr'd PSD

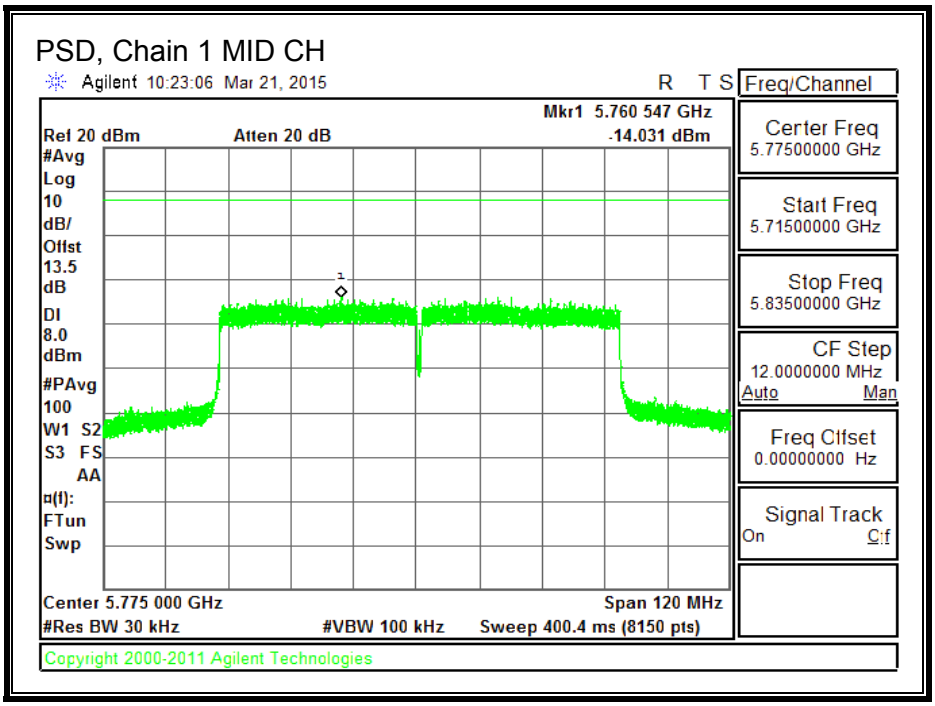
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Chain 2 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Mid	5775	-12.843	-14.031	-12.122	-7.98	8.0	-15.98

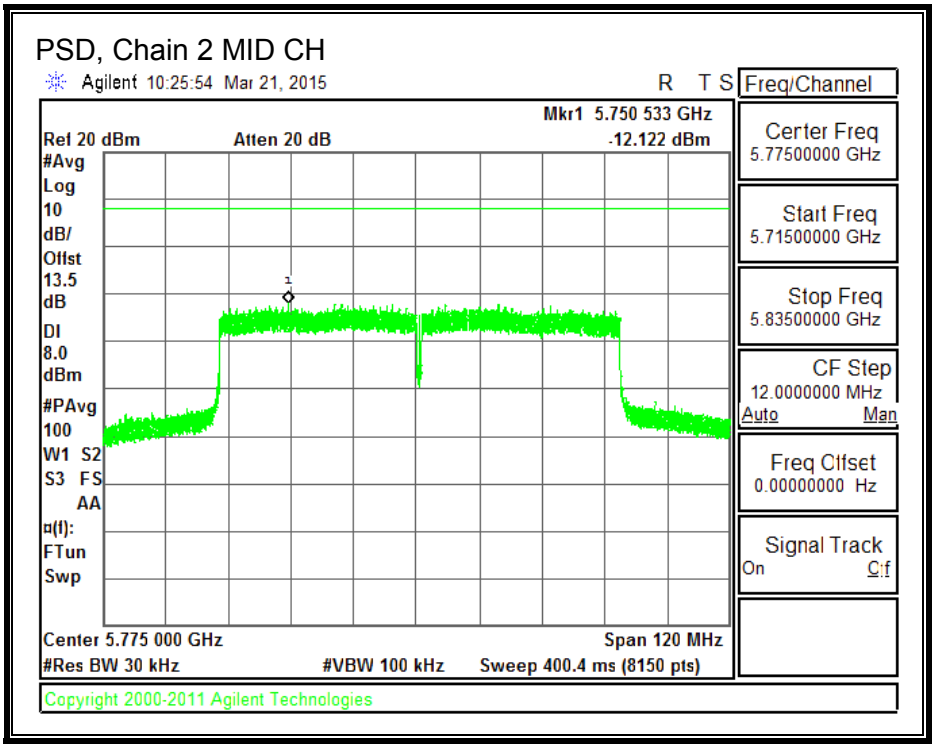
PSD, Chain 0



PSD, Chain 1



PSD, Chain 2



8.19.4. OUT-OF-BAND EMISSIONS

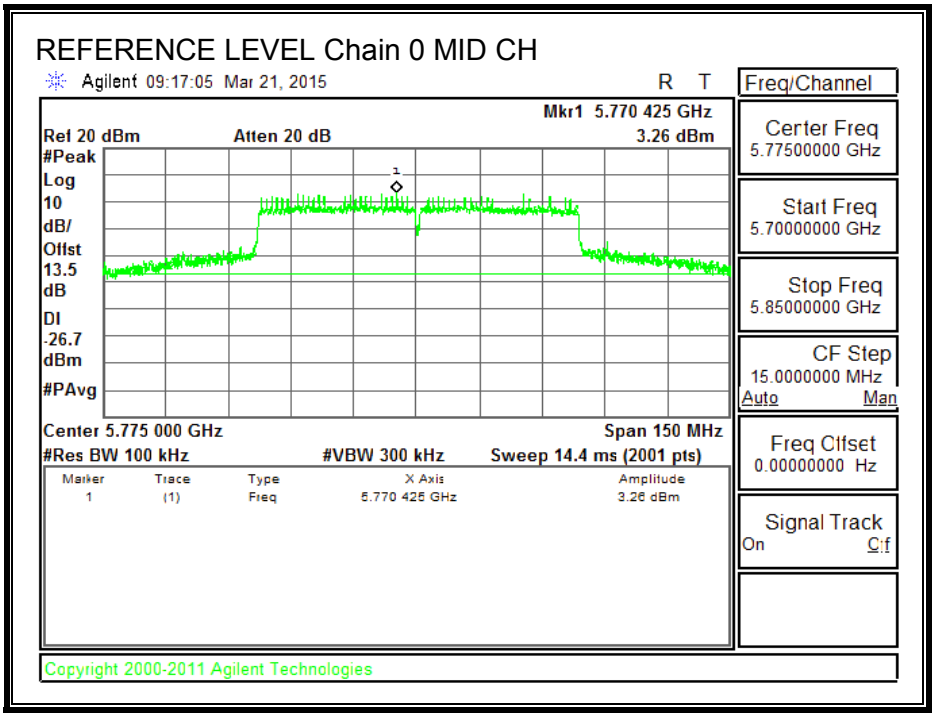
LIMITS

FCC §15.247 (d)

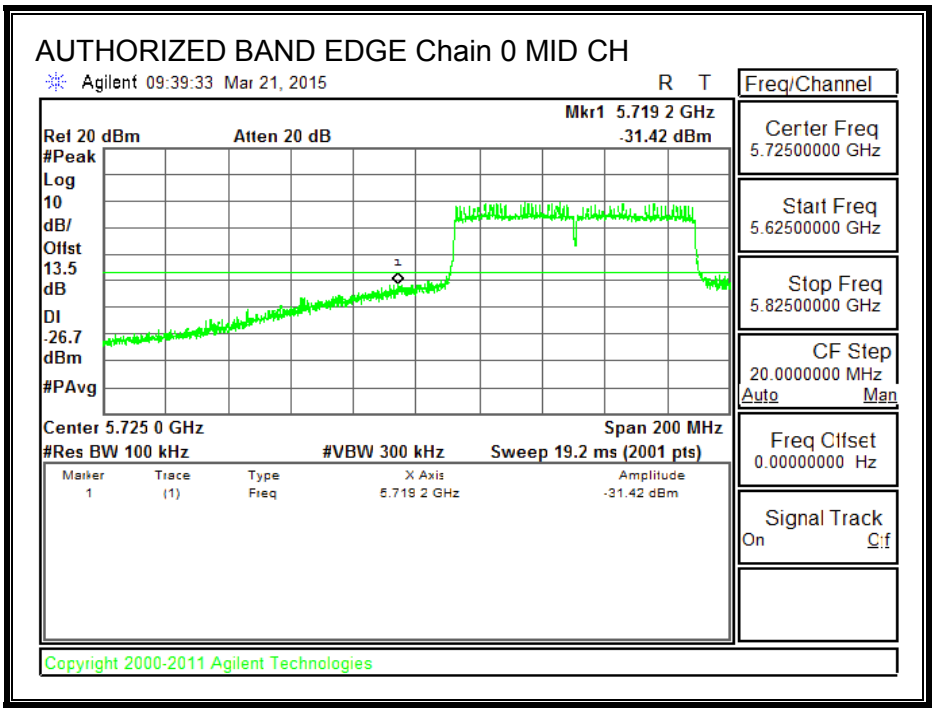
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

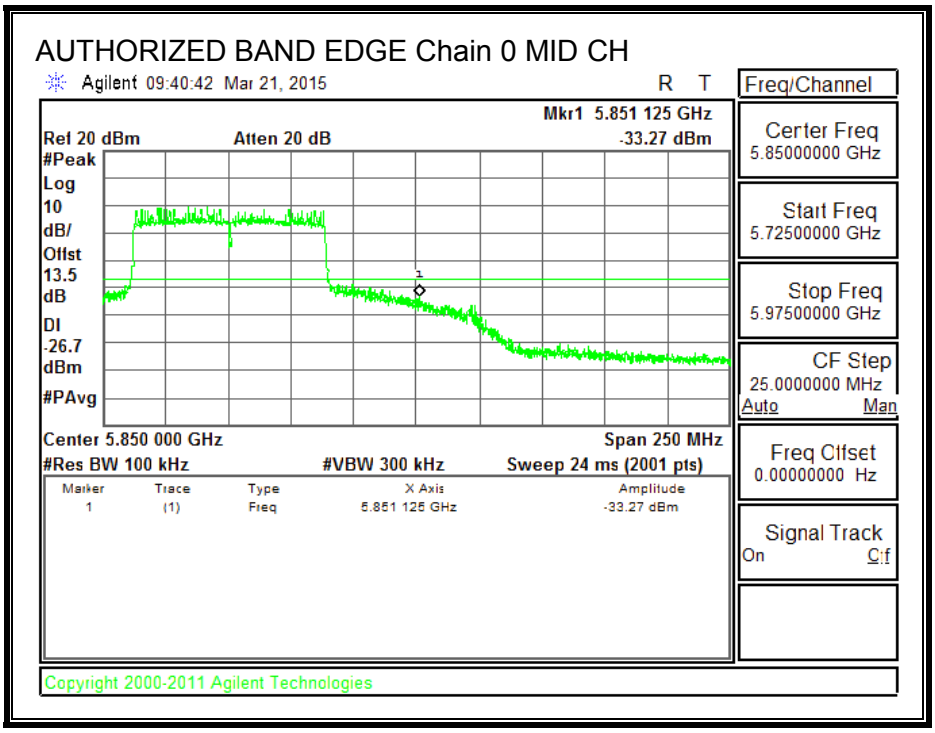
IN BAND REFRENCE LEVEL, Chain 0



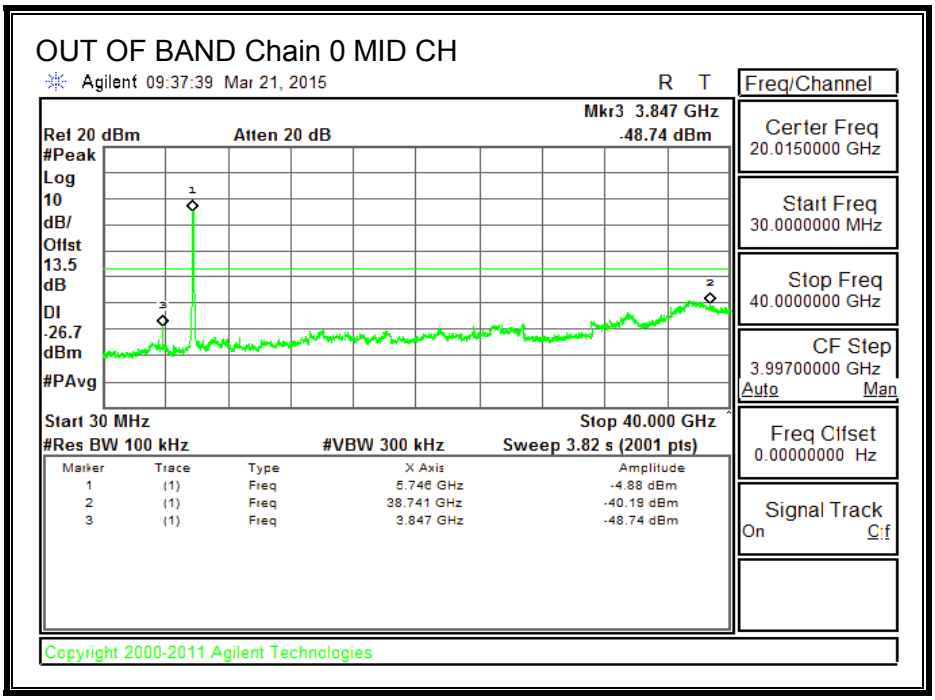
MID CHANNEL LOWER BANDEDGE, Chain 0



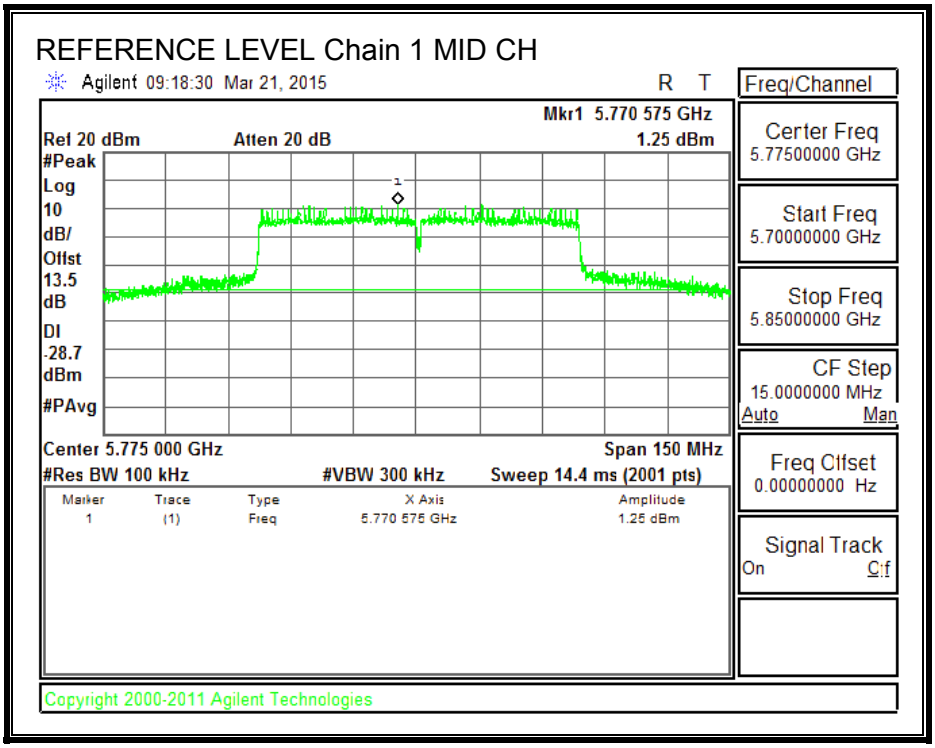
MID CHANNEL HIGHER BANDEDGE, Chain 0



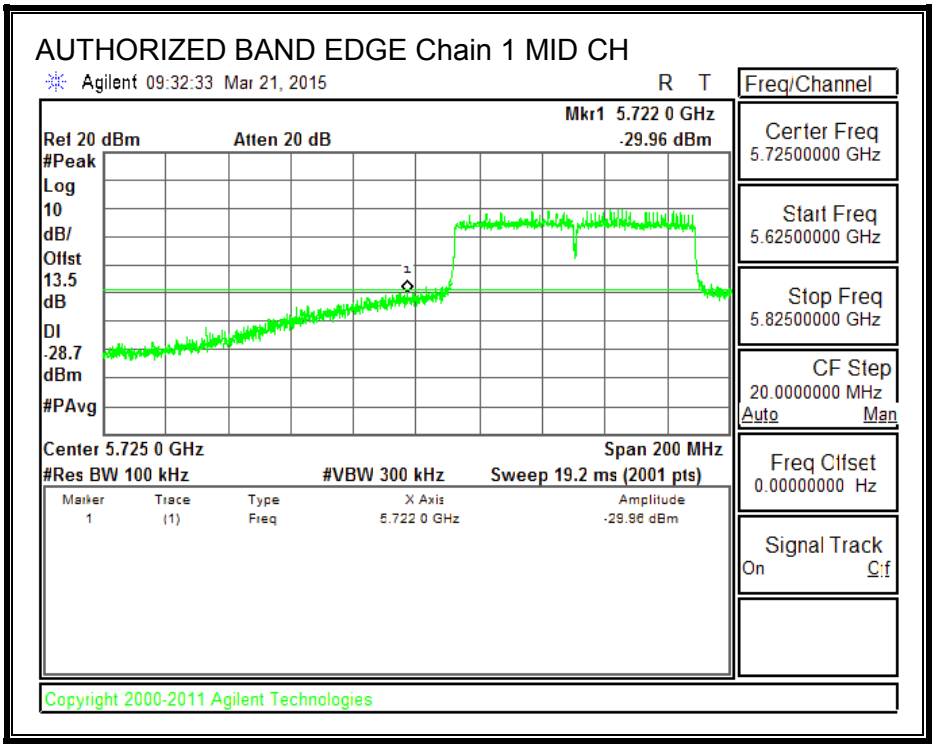
OUT-OF-BAND EMISSIONS, Chain 0



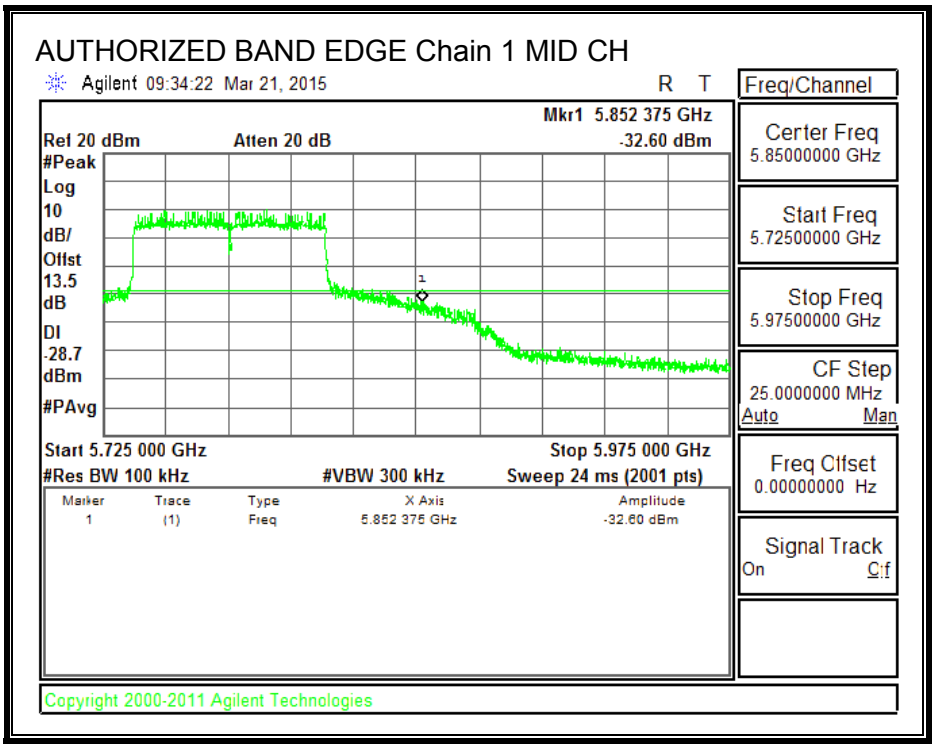
IN BAND REFRENCE LEVEL, Chain 1



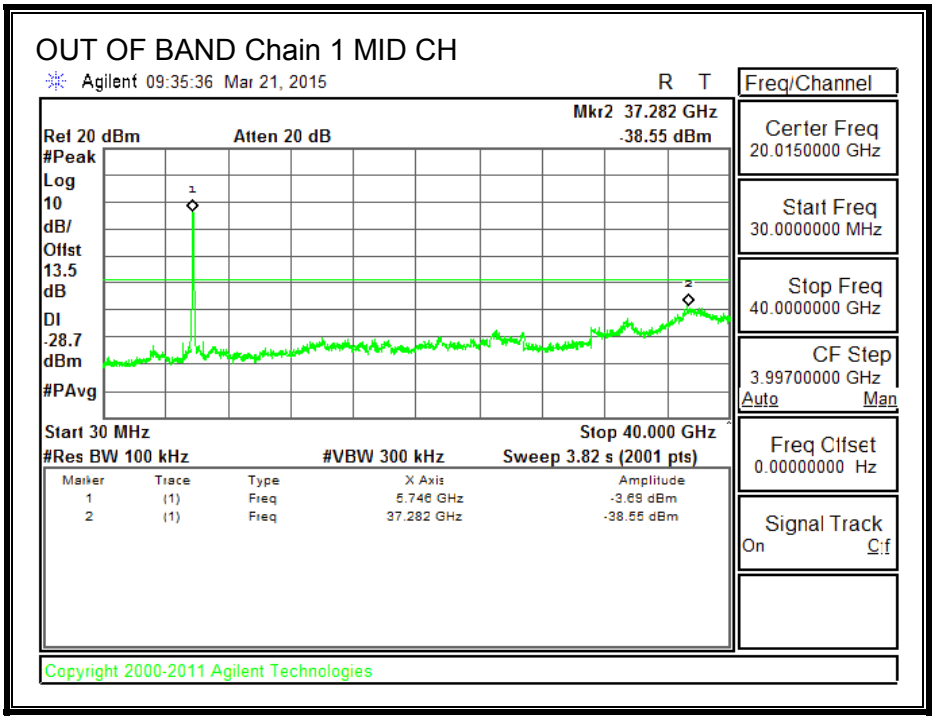
MID CHANNEL LOWER BANDEDGE, Chain 1



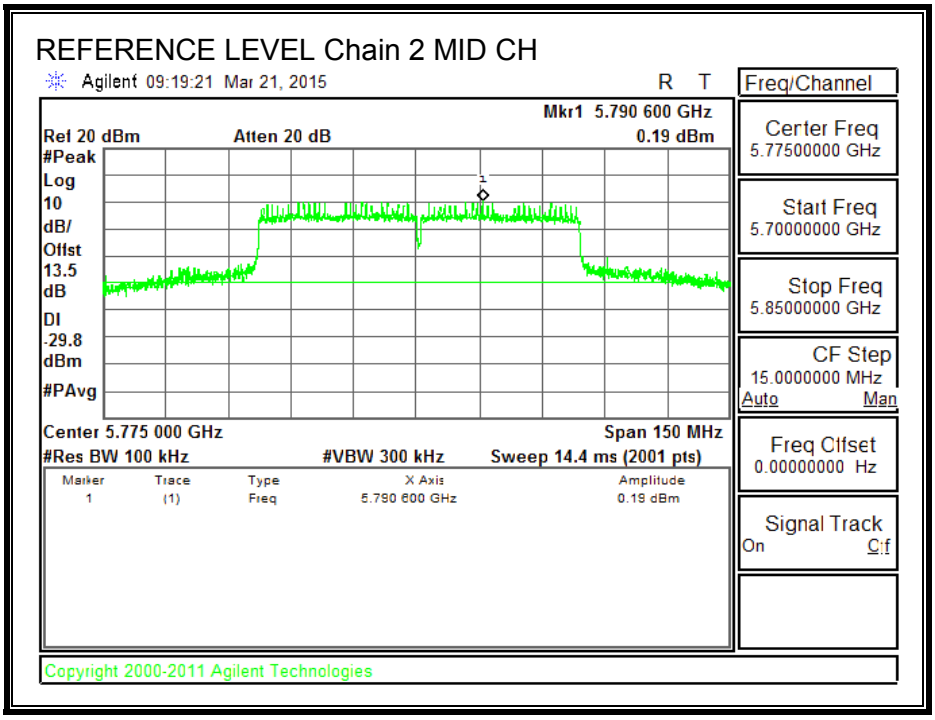
MID CHANNEL HIGHER BANDEDGE, Chain 1



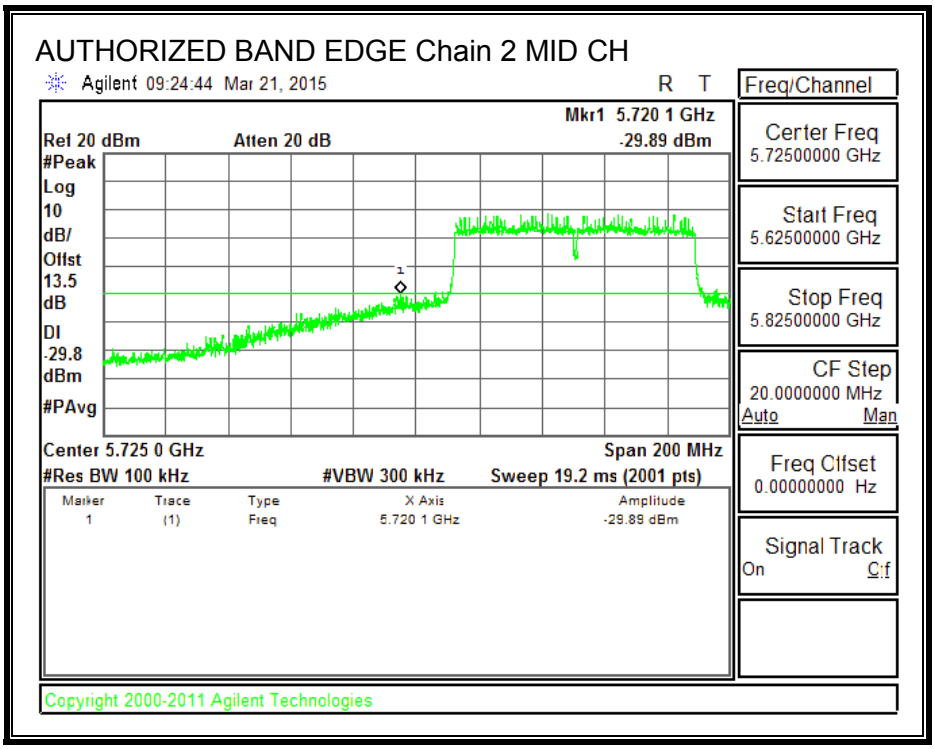
OUT-OF-BAND EMISSIONS, Chain 1



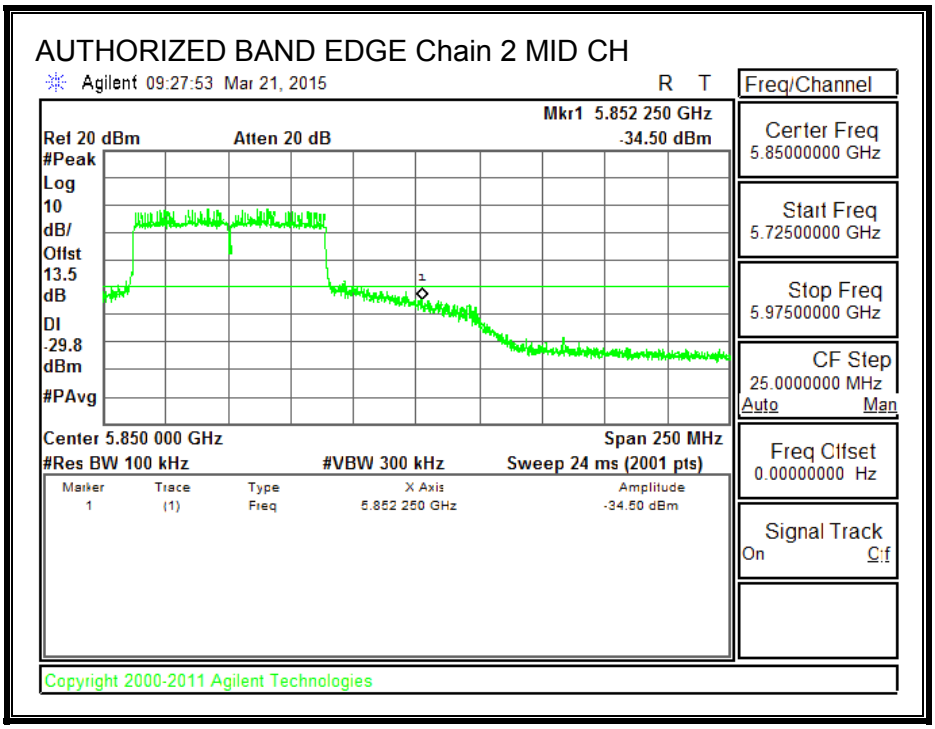
IN BAND REFRENCE LEVEL, Chain 2



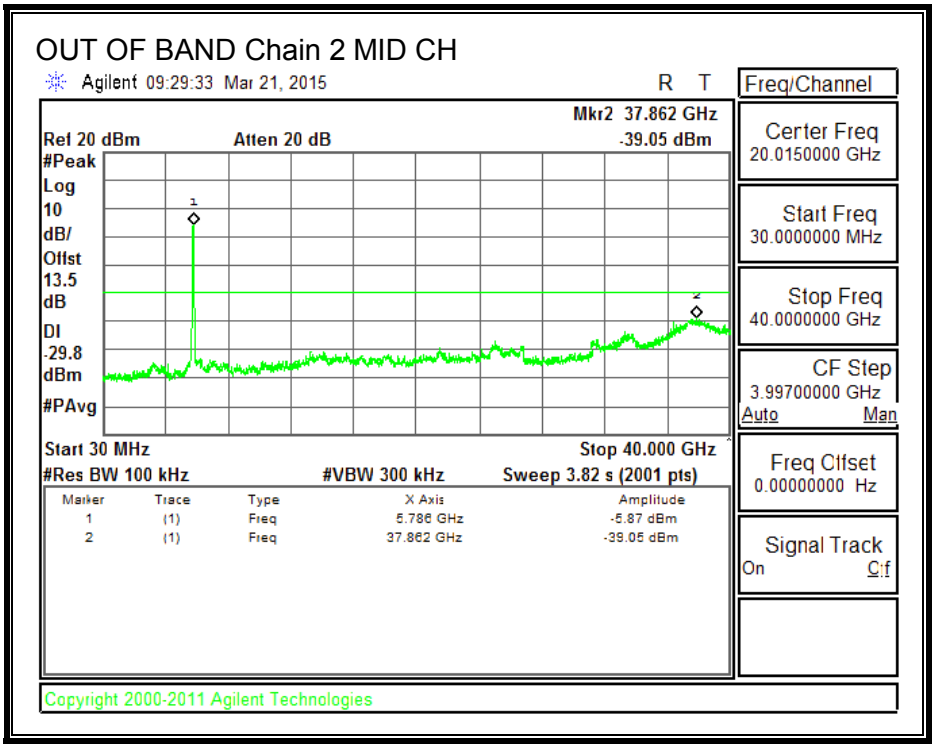
MID CHANNEL LOWER BANDEDGE, Chain 2



MID CHANNEL HIGHER BANDEDGE, Chain 2



OUT-OF-BAND EMISSIONS, Chain 2



8.20. 802.11ac VHT80 TxBF 3TX MODE IN THE 5.8 GHz BAND

8.20.1. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
6.21	4.77	10.98

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Mid	5775	10.98	N/A	30	36	25.02

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	5775	16.05	16.53	16.51	21.14	25.02	-3.88

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

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

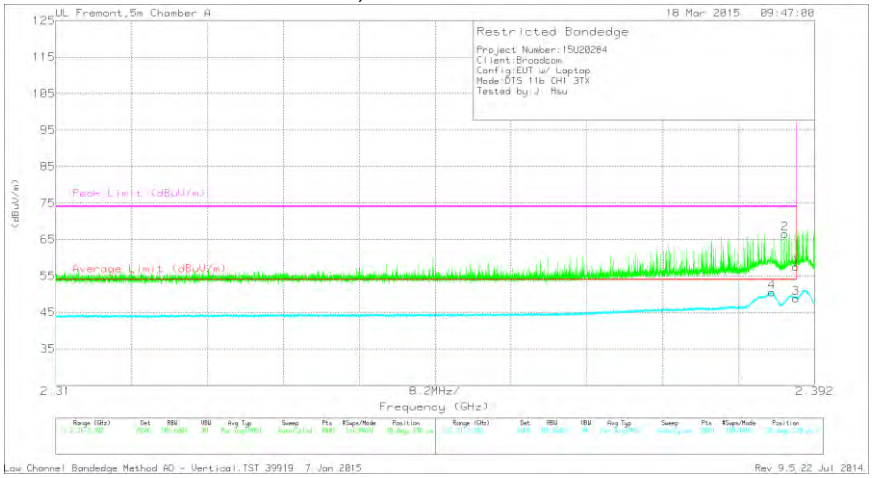
FCC §15.205 and §15.209

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

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

RESTRICTED BANDEDGE (CHANNEL 1)

CHANNEL1 RESTRICTED, VERT



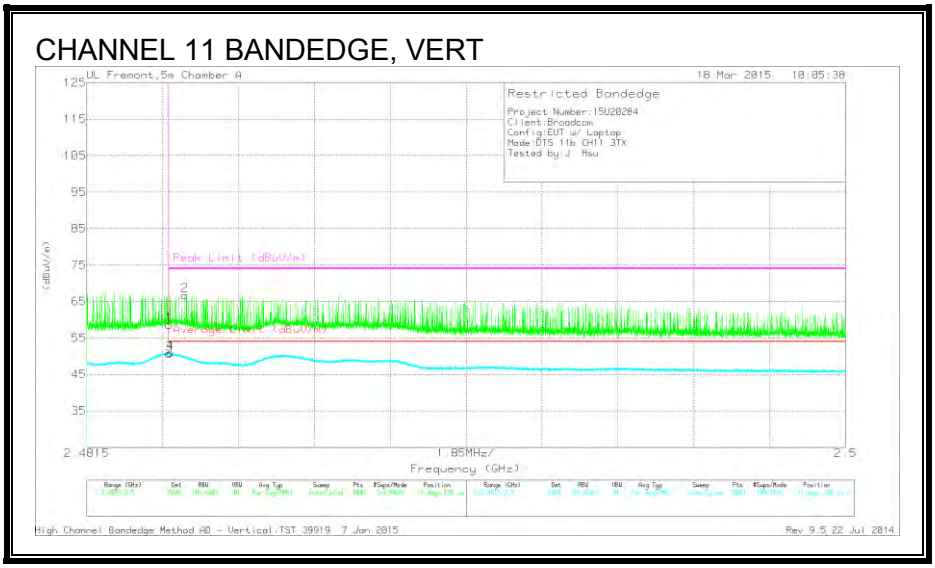
Trace Markers

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

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 11)



Trace Markers

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

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 12)

CHANNEL 12 BANDEDGE, VERT

Trace Markers

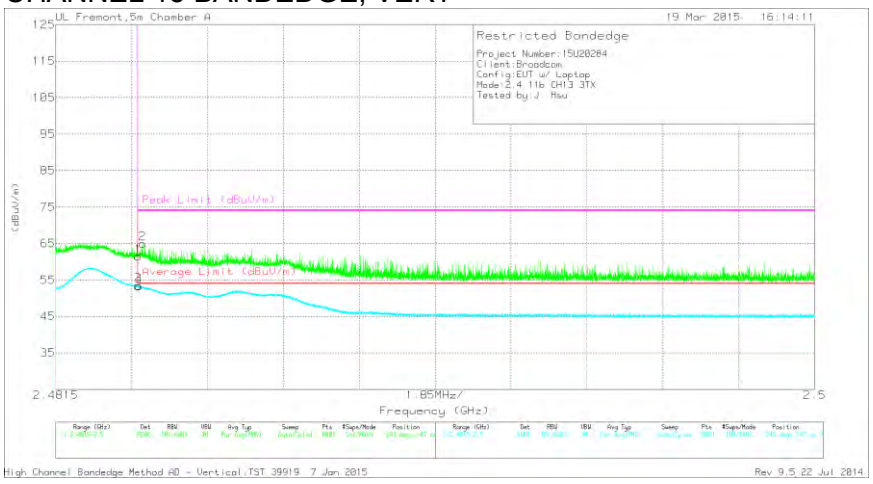
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	24.46	PK	32.1	5.9	62.46	-	-	74	-11.54	242	106	V
2	* 2.484	28.18	PK	32.1	5.9	66.18	-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

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

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL 13)

CHANNEL 13 BANDEDGE, VERT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	23.44	PK	32.1	5.9	61.44	-	-	74	-12.56	243	147	V
2	* 2.484	26.92	PK	32.1	5.9	64.92	-	-	74	-9.08	243	147	V
3	* 2.484	15.46	RMS	32.1	5.9	53.46	54	-.54	-	-	243	147	V
4	* 2.484	15.33	RMS	32.1	5.9	53.33	54	-.67	-	-	243	147	V

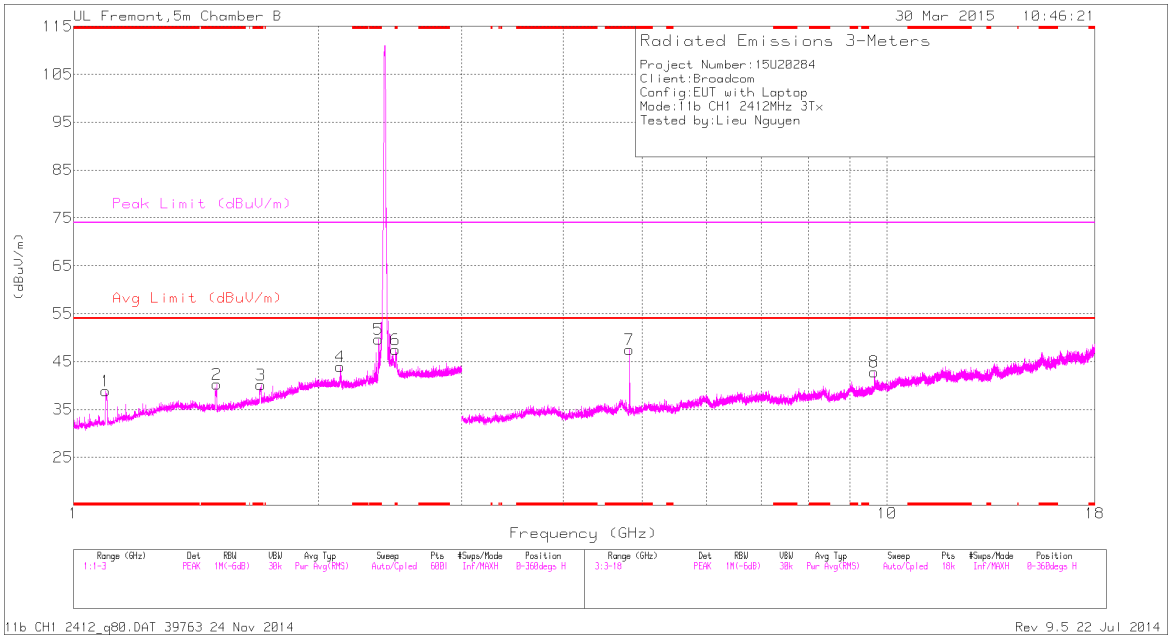
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK - Peak detector
RMS - RMS detection

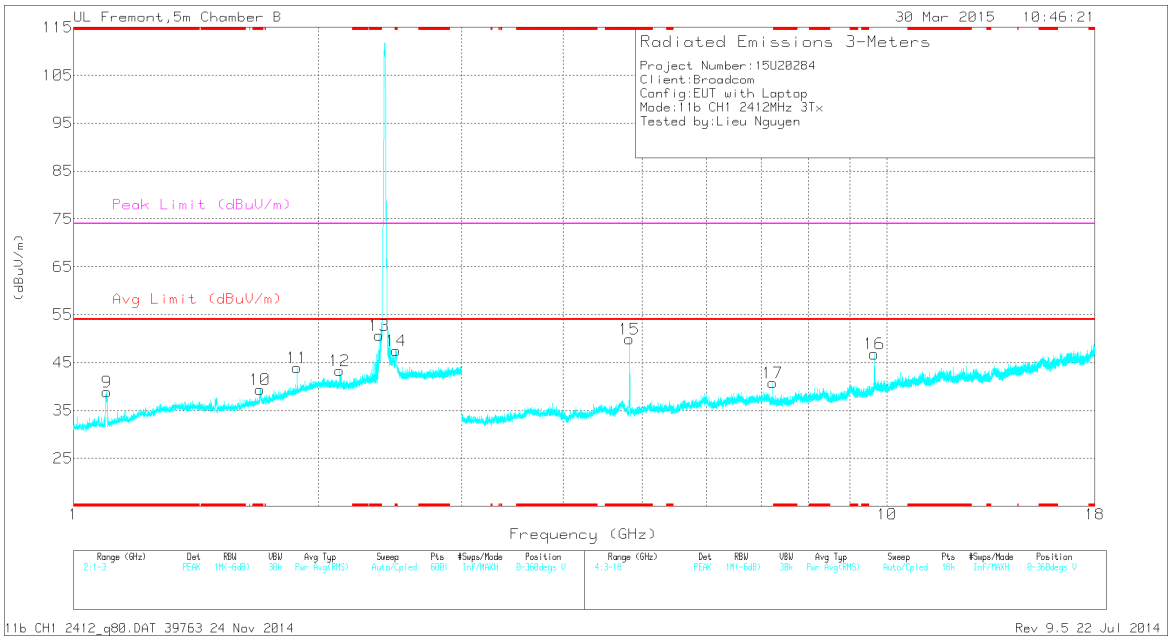
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

HORIZONTAL



VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.094	37.43	PK2	27.6	-22.9	0	42.13	-	-	74	-31.87	278	182	H
	* 1.096	24.22	MAv1	27.6	-23	0	28.82	54	-25.18	-	-	278	182	H
2	* 1.499	37.45	PK2	28.6	-21.4	0	44.65	-	-	74	-29.35	269	151	H
	* 1.499	24.69	MAv1	28.6	-21.4	0	31.89	54	-22.11	-	-	269	151	H
3	* 1.698	36.86	PK2	29.7	-21.2	0	45.36	-	-	74	-28.64	2	137	H
	* 1.701	24.93	MAv1	29.8	-21.3	0	33.43	54	-20.57	-	-	2	137	H
5	* 2.373	52.33	PK2	31.9	-20.9	0	63.33	-	-	74	-10.67	142	187	H
	* 2.374	29.83	MAv1	31.9	-20.9	0	40.83	54	-13.17	-	-	142	187	H
6	* 2.49	43.86	PK2	32.5	-20.9	0	55.46	-	-	74	-18.54	152	266	H
	* 2.49	33.55	MAv1	32.5	-20.9	0	45.15	54	-8.85	-	-	152	266	H
9	* 1.098	36.48	PK2	27.6	-22.9	0	41.18	-	-	74	-32.82	324	259	V
	* 1.099	24.18	MAv1	27.6	-22.8	0	28.98	54	-25.02	-	-	324	259	V
10	* 1.697	36.88	PK2	29.7	-21.2	0	45.38	-	-	74	-28.62	118	150	V
	* 1.697	24.91	MAv1	29.7	-21.2	0	33.41	54	-20.59	-	-	118	150	V
13	* 2.374	53.85	PK2	31.9	-20.9	0	64.85	-	-	74	-9.15	192	189	V
	* 2.374	30.96	MAv1	31.9	-20.9	0	41.96	54	-12.04	-	-	192	189	V
14	* 2.49	45.53	PK2	32.5	-20.9	0	57.13	-	-	74	-16.87	194	174	V
	* 2.49	35.01	MAv1	32.5	-20.9	0	46.61	54	-7.39	-	-	194	174	V
7	* 4.824	50.52	PK2	34.3	-29.7	0	55.12	-	-	74	-18.88	165	243	H
	* 4.824	47.89	MAv1	34.3	-29.7	0	52.49	54	-1.51	-	-	165	243	H
15	* 4.824	48.45	PK2	34.3	-29.7	0	53.05	-	-	74	-20.95	341	103	V
	* 4.824	44.97	MAv1	34.3	-29.7	0	49.57	54	-4.43	-	-	341	103	V
11	1.882	33.48	PK	31.6	-21.1	0	43.98	-	-	-	-	0-360	199	V
12	2.124	32.65	PK	31.6	-20.9	0	43.35	-	-	-	-	0-360	199	V
4	2.125	33.28	PK	31.6	-20.9	0	43.98	-	-	-	-	0-360	101	H
17	7.237	33.32	PK	35.3	-27.8	0	40.82	-	-	-	-	0-360	101	V
8	9.648	29.97	PK	36.7	-23.8	0	42.87	-	-	-	-	0-360	199	H
16	9.648	33.91	PK	36.7	-23.8	0	46.81	-	-	-	-	0-360	101	V

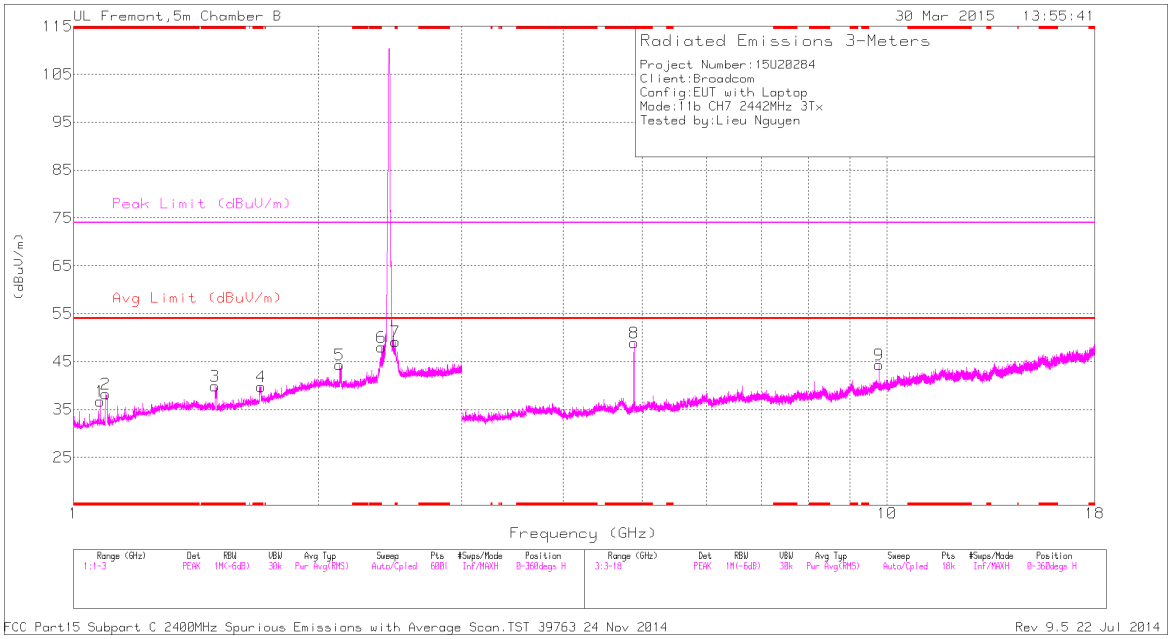
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

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

PK - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL

HORIZONTAL



VERTICAL