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

CERTIFICATION TEST REPORT

FOR

802.11a/b/g/n and Bluetooth Audio /Video Device

MODEL NUMBER: W2

FCC ID: A4R-W2
IC: 10395A-W2

REPORT NUMBER: 14U17400-1

ISSUE DATE: APRIL 28, 2014

Prepared for
GOOGLE
1600 AMPHITHEATRE PARKWAY
MOUNTAIN VIEW
CA, 94043, US

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

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	4/28/14	Initial Issue	F. de Anda

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: GOOGLE
1600 AMPHITHEATRE PARKWAY
MOUNTAIN VIEW, CA, 94043, US

EUT DESCRIPTION: 802.11a/b/g/n and Bluetooth Audio /Video Device

MODEL: W2

SERIAL NUMBER: Conducted: AD3Z1410029F
Radiated: AD3Z141002FC

DATE TESTED: APRIL 2 – APRIL11, 2014

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

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

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

Approved & Released For
UL Verification Services Inc. By:

FRANCISCO DE ANDA
PROJECT LEADER
UL Verification Services Inc.

Tested By:

J. VANG
EMC ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an Access Point (AP) set top box device that supports WLAN, Bluetooth and 4k media.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	19.52	89.54
2412 - 2462	802.11g	24.09	256.45
2412 - 2462	802.11n HT20	22.2	165.96
5745 - 5825	802.11a	25.05	319.89
5745 - 5825	802.11n HT20	23.32	214.78
5755 - 5795	802.11n HT40	24.11	257.63

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The EUT utilizes two PIFA antennas, with a maximum declared antenna gain as follows;

	Antenna peak gain (dBi)	
Band	Chain 0	Chain 1
2.4 GHz	4.4	3.6
5.8 GHz	4.4	3.6

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed in the HOST/SUPPORT equipment during testing was DUT LabTool Version 1.0.8.26.

The test utility software used during testing was WIFI Tool Version 1.0.8.26.

5.5. WORST-CASE CONFIGURATION AND MODE

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

The EUT was investigated in its normal operation position (X), all final radiated testing was performed with the EUT in this orientation.

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

802.11a mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0

Radiated emissions for EUT with antenna was performed and passed; therefore, antenna port spurious was not performed.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop PC	LENOVO	Thinkpad	R8-PCNFE	NA
AC-DC Adapter	LENOVO	42T4428	11S42T4428Z1ZF3G98A2Y7	DoC
Laptop MacBook Pro	APPLE	A1286	187512	DoC
AC-DC Adapter	APPLE	A1343	C0411820C6XDJ92AF	DoC

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	3 prong	UN-Shielded	1.8	None
2	DC	1	Barrel	UN-Shielded	1.5	None
3	DC	1	Barrel	UN-Shielded	1.5	None
4	USB Spliter Cable	1	Mini-USB	Shielded	1	N/A
5	Ethernet	1	CAT5	UN-Shielded	1	N/A

TEST SETUP

The EUT is connected to host laptop computers via LAN port and USB port, and setup to transmit continuously.

SETUP DIAGRAM FOR CONDUCTED PORT TESTS

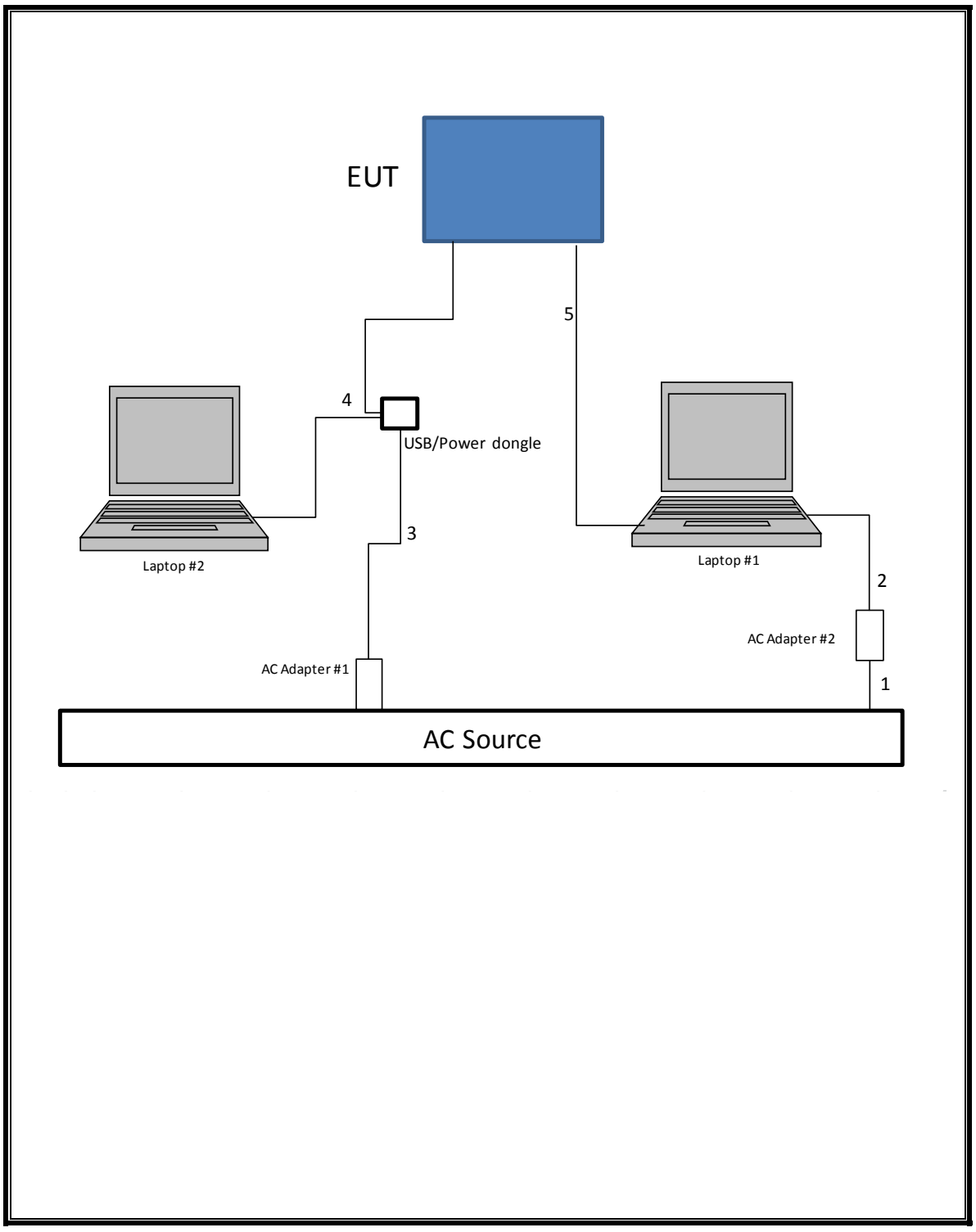
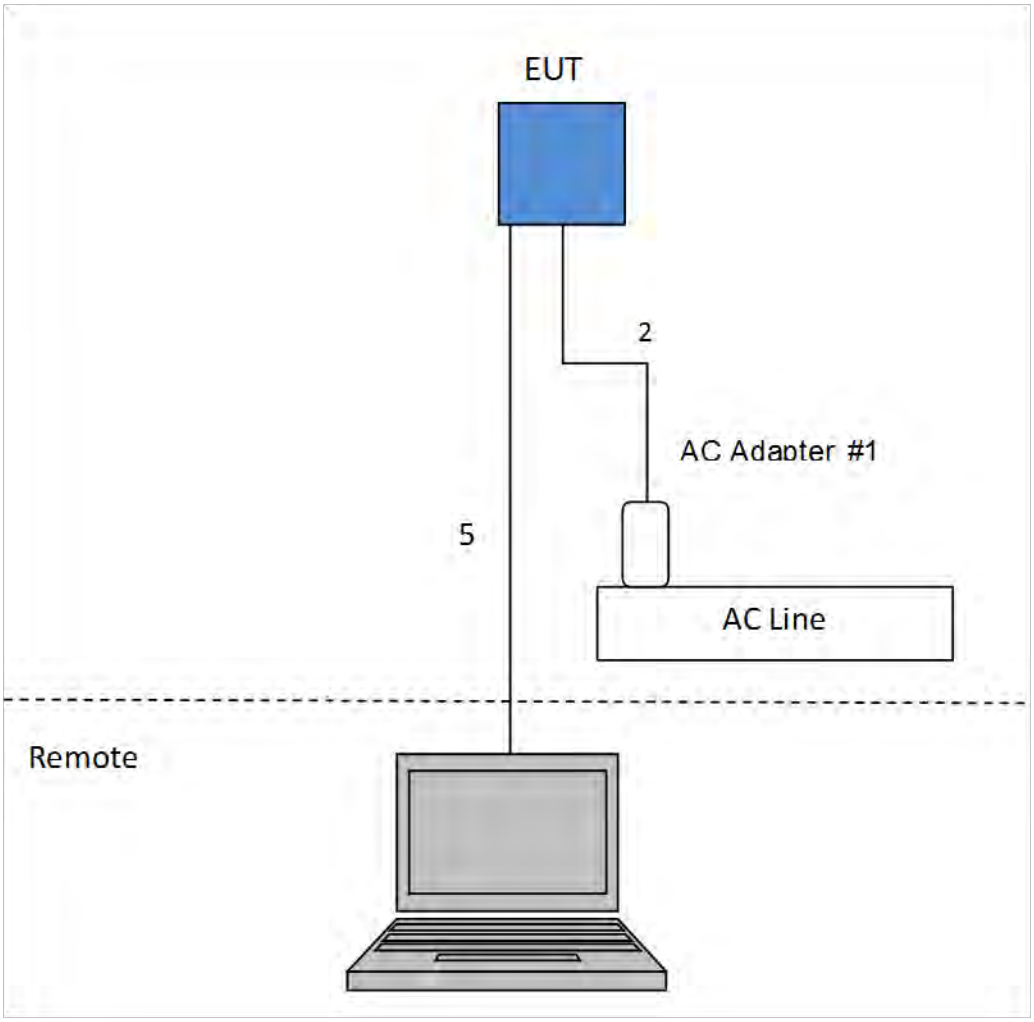


DIAGRAM FOR PORT RADIATED AND LINE CONDUCTED EMISSIONS TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
PXA Signal Analyzer	Agilent	N9030A-544	RENTAL	05/10/14
Single Channel PK Power Meter	Agilent	N1911A	F00024	03/07/15
Wideband Power Sensor, 30MHz video bandwidth	Agilent	N1921A	F00358	03/10/15
Spectrum Analyzer	Agilent	N9030A	F00128	03/12/15
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	04/28/14
Antenna, Horn, 18GHz	ETS Lindgren	3117		06/24/14
Preamp, 1000MHz	Sonoma	310N	N02891	12/30/14
RF PreAmplifier, 1-18GHz	Miteq	AFS42-00101800-25-S-42	F00354	08/24/14
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/17/15
EMI Test Receiver, 30 MHz	R & S	ESHS20	N02396	08/15/14
High Pass Filter, fc: 3.0GHz, 50 Ohms	Micro-Tronics	HPM17543	F00181	08/24/14
Low Pass Filter, fc: 5GHz, 50 Ohms	Micro-Tronics	LPS17541	F00175	08/24/14
High Pass Filter, fc: 6GHz, 50 Ohms	Micro-Tronics	HPS17542	F00179	08/24/14

7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

7.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b	1.000	1.000	1.000	100.00%	0.00	0.010
802.11g	1.000	1.000	1.000	100.00%	0.00	0.010
802.11n HT20	284.300	288.600	0.985	98.51%	0.00	0.010
5GHz Band						
802.11a	1.000	1.000	1.000	100.00%	0.00	0.010
802.11n HT20	1.437	1.443	0.996	99.58%	0.00	0.010
802.11n HT40	1.513	1.520	0.995	99.54%	0.00	0.010

7.2. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v03r01, Section 8.1.

Output Power: KDB 558074 D01 v03r01, Section 9.1.2.

Power Spectral Density: KDB 558074 D01 v03r01, Section 10.2.

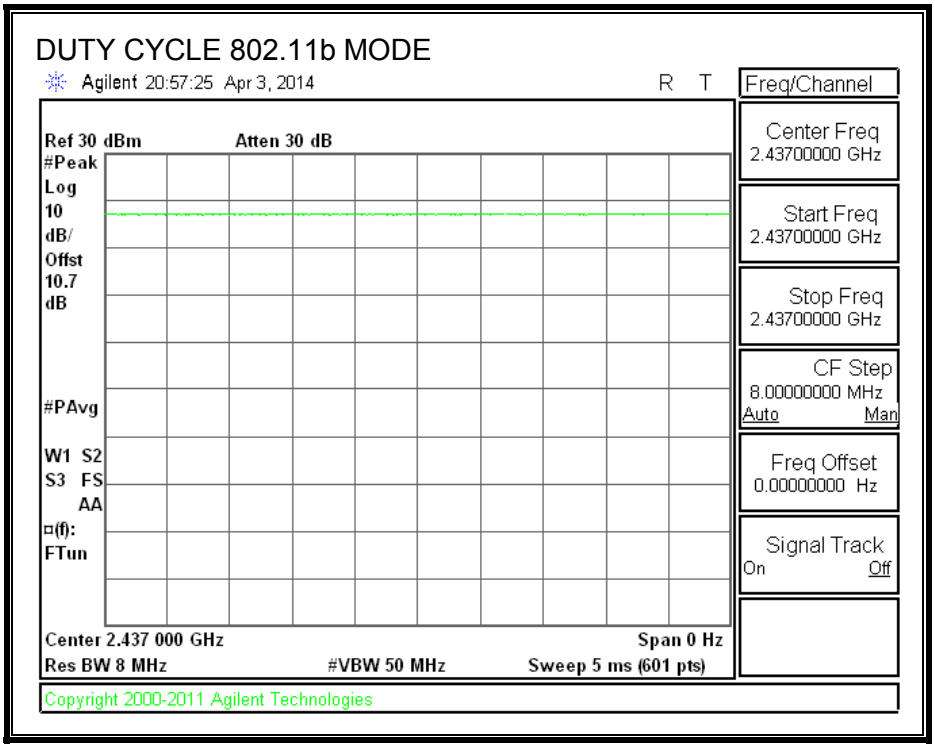
Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r01, Section 11.0.

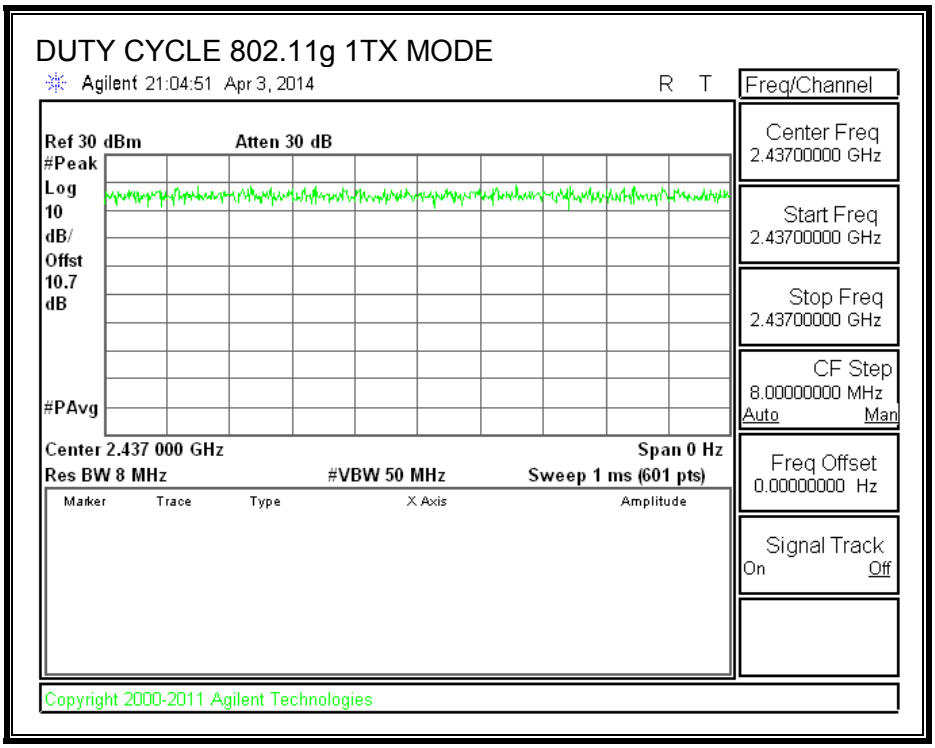
Out-of-band emissions in restricted bands: KDB 558074 D01 v03r01, Section 12.1.

Band-edge: KDB 558074 D01 v03r01, Section 13.2.

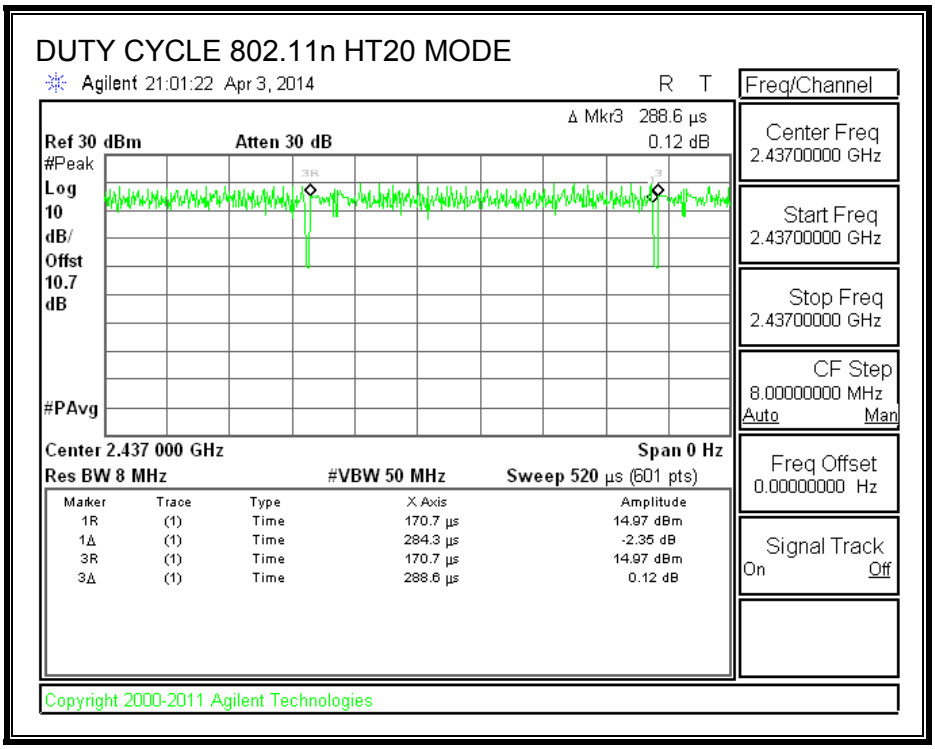
7.3. DUTY CYCLE PLOTS

2.4 GHz BAND



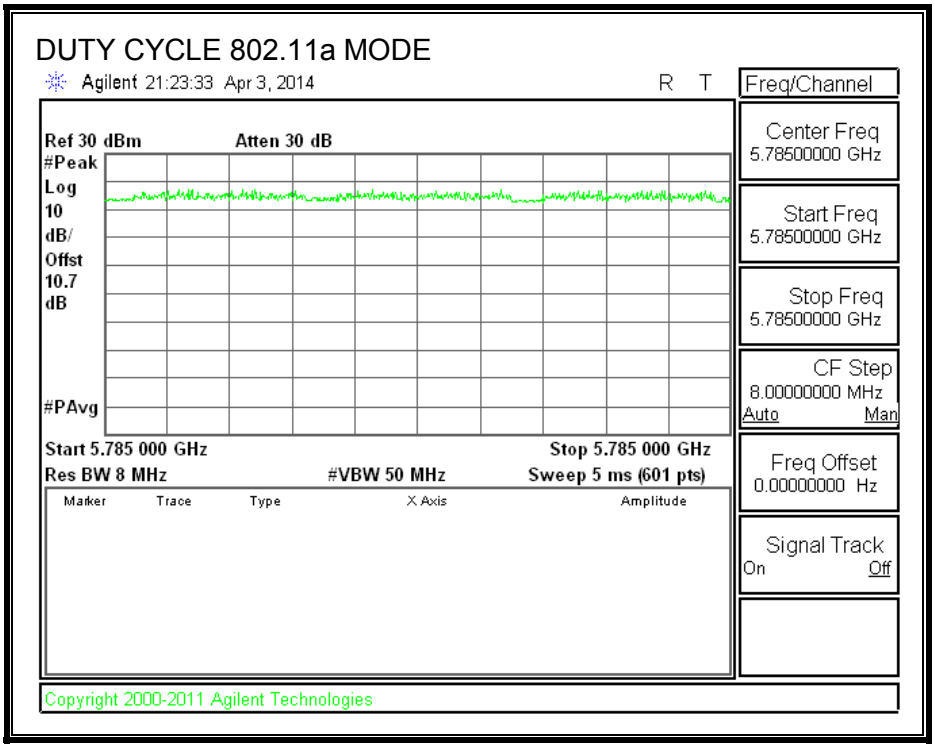


DUTY CYCLE 802.11n HT20 MODE

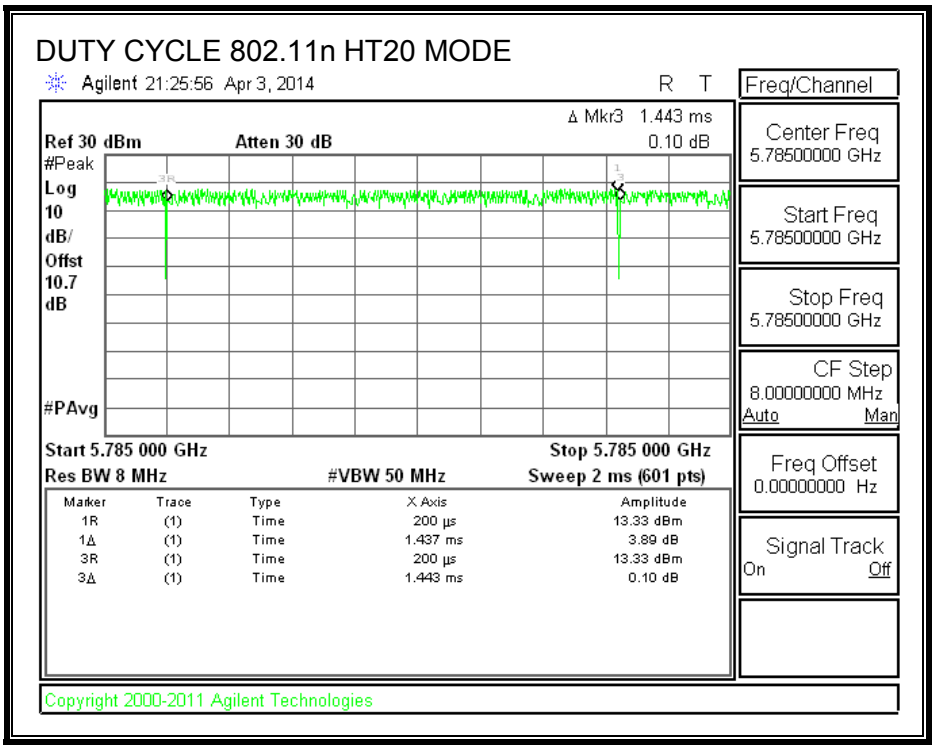


5 GHz BANDS

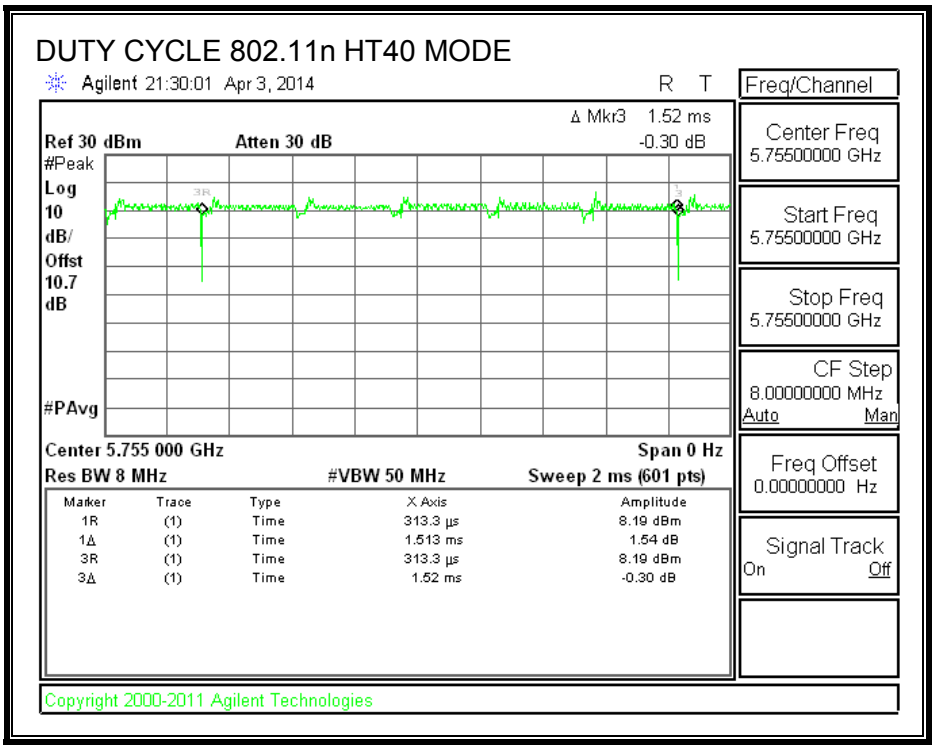
DUTY CYCLE 802.11a MODE



DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



8. ANTENNA PORT TEST RESULTS

8.1. 802.11b 2Tx CDD MODE IN THE 2.4 GHz BAND

8.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

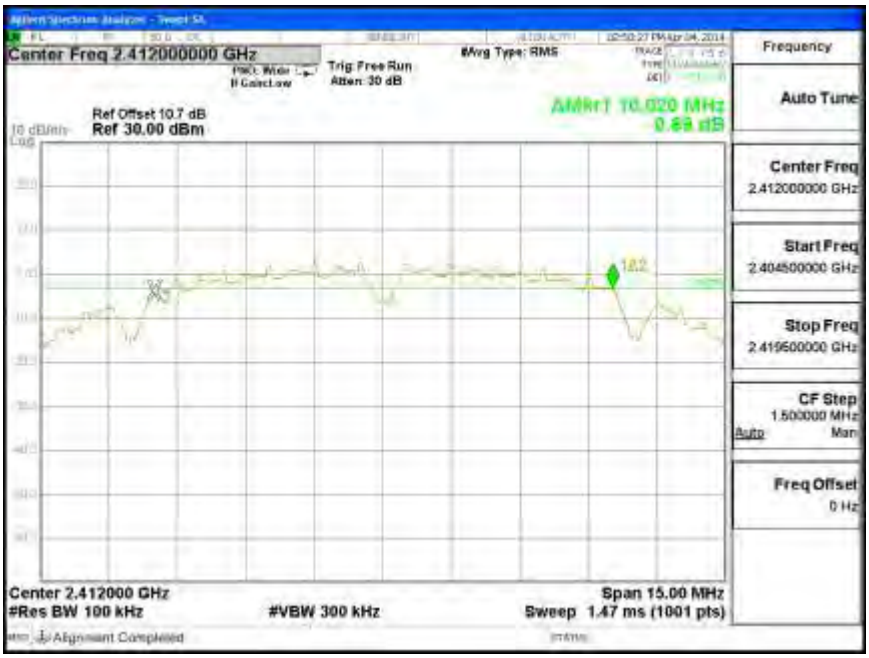
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	10.020	10.035	0.5
Mid	2437	10.035	9.990	0.5
High	2462	10.035	10.050	0.5

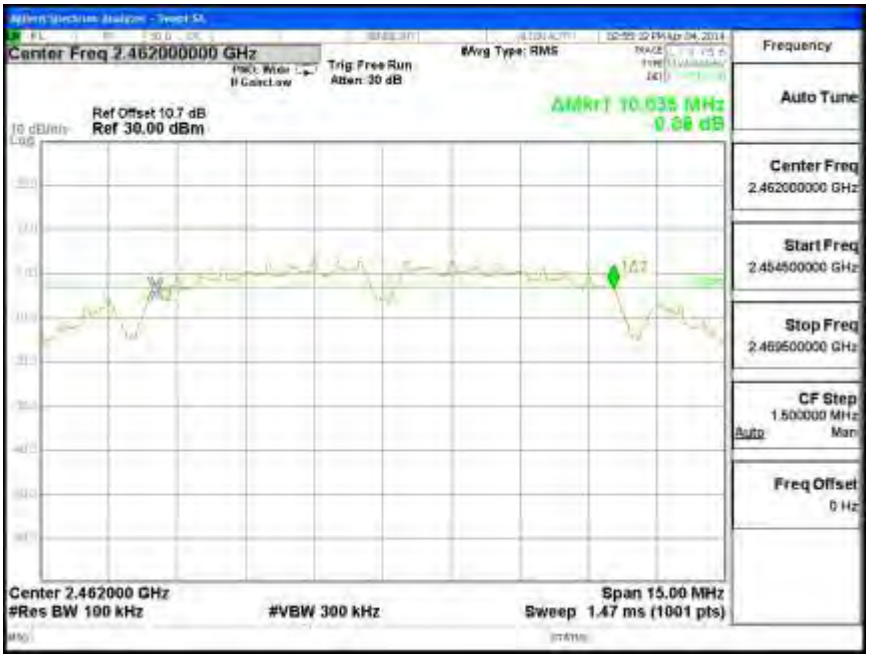
6 dB BANDWIDTH, Chain 0

6 dB BANDWIDTH Chain 0 LOW CH



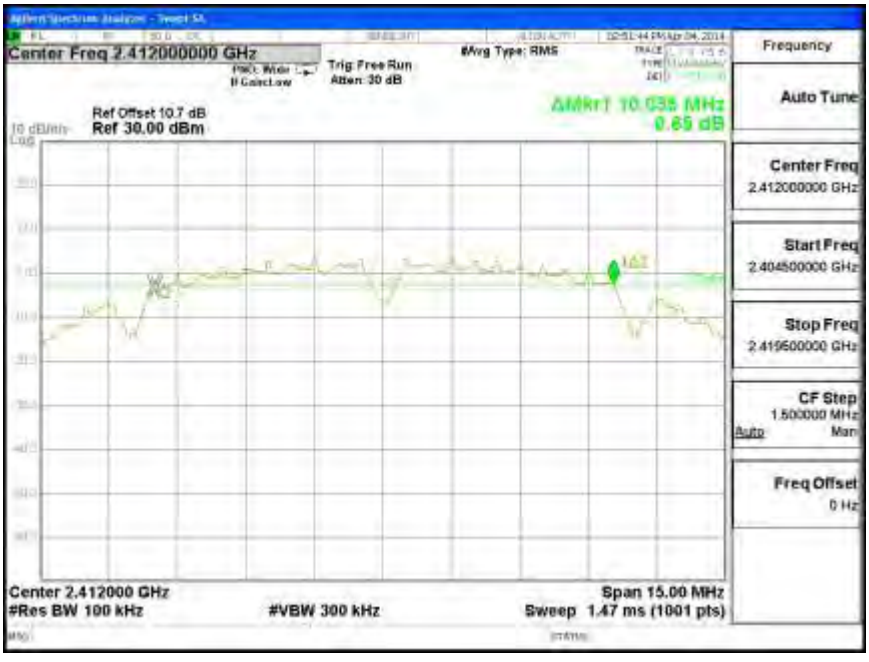
6 dB BANDWIDTH Chain 0 MID CH

6 dB BANDWIDTH Chain 0 HIGH CH

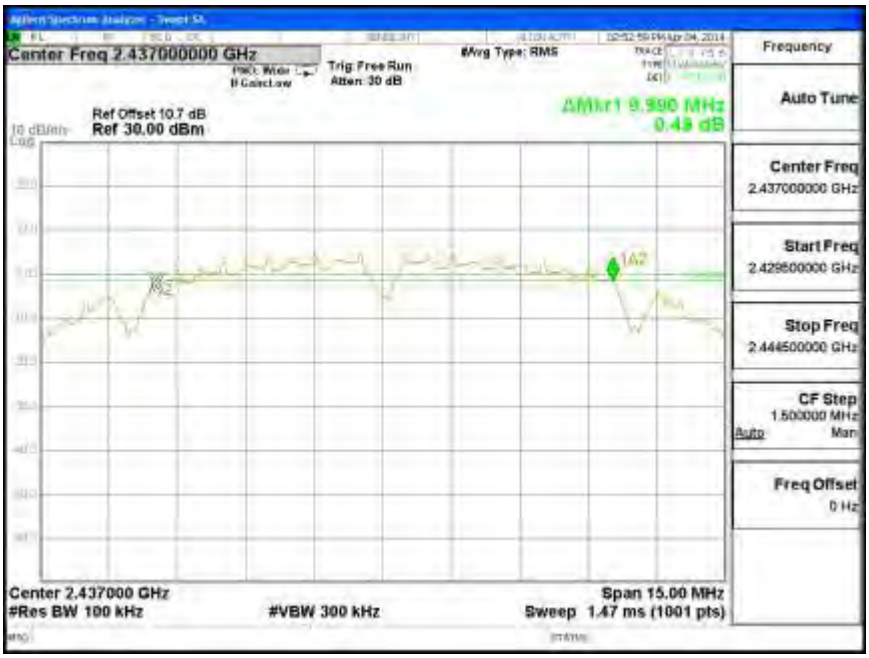


6 dB BANDWIDTH, Chain 1

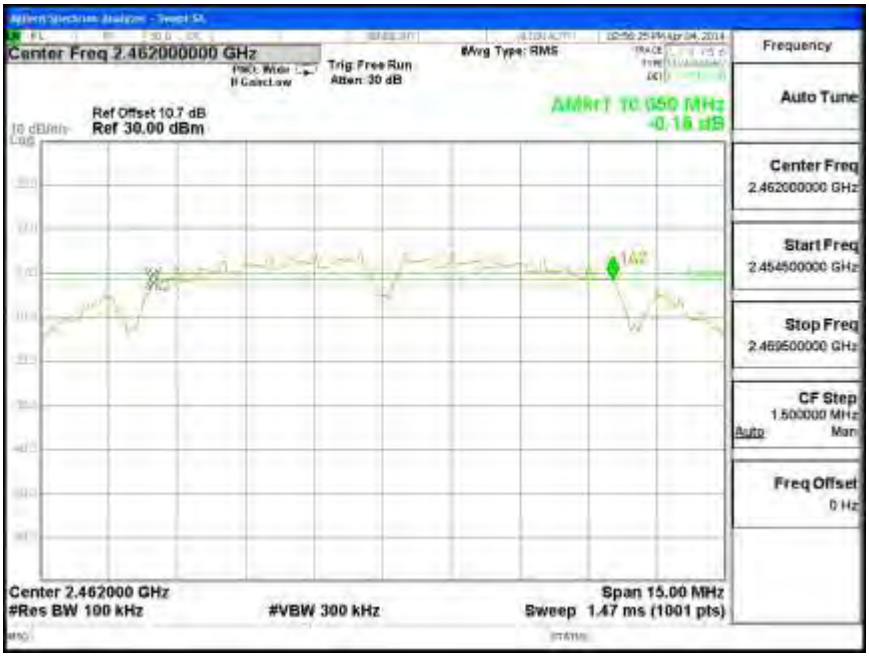
6 dB BANDWIDTH Chain 1 LOW CH



6 dB BANDWIDTH Chain 1 MID CH



6 dB BANDWIDTH Chain 1 HIGH CH



8.1.2. 99% BANDWIDTH

LIMITS

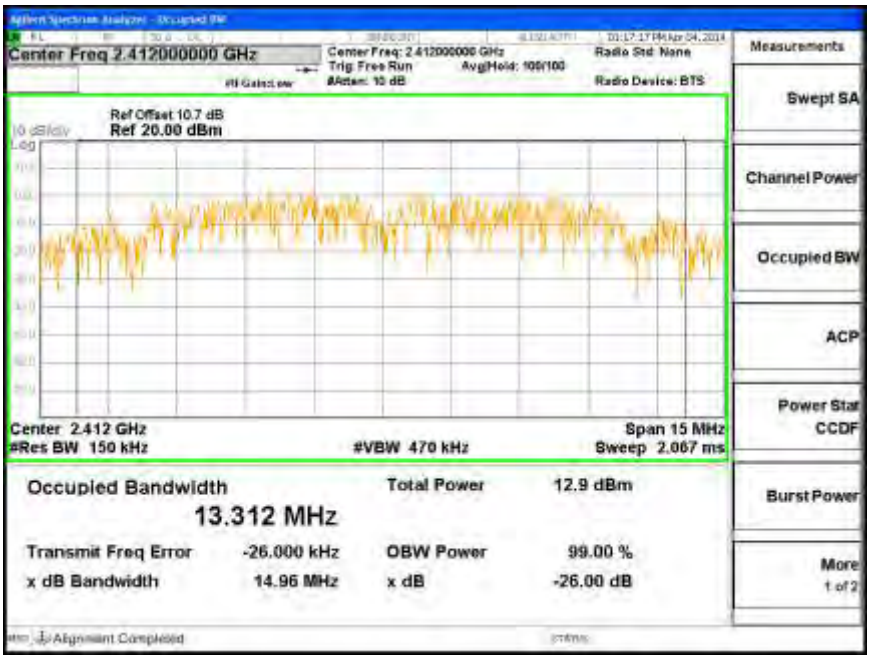
None; for reporting purposes only.

RESULTS

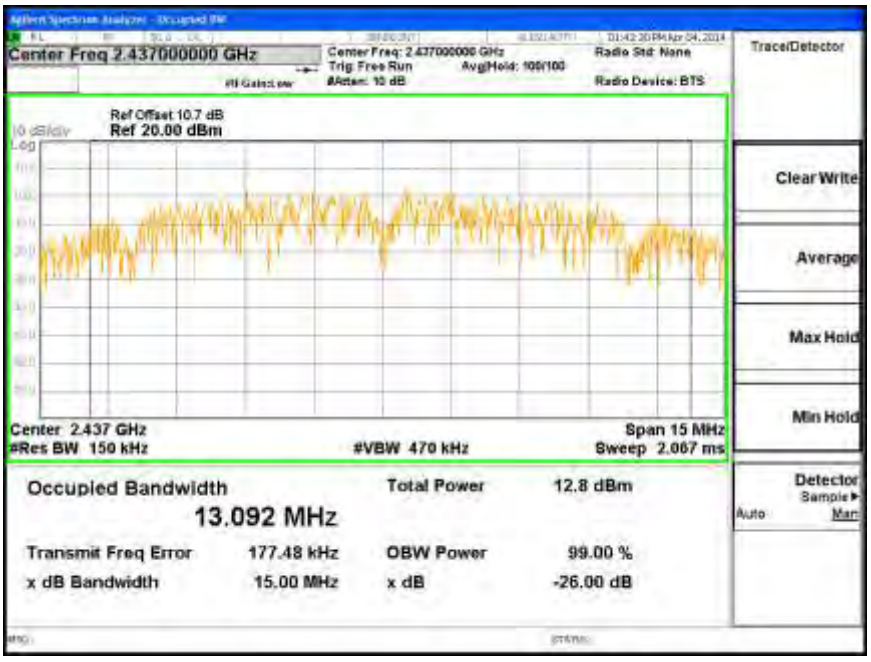
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	13.3120	13.2200
Mid	2437	13.0920	13.1050
High	2462	13.3300	13.0130

99% BANDWIDTH, Chain 0

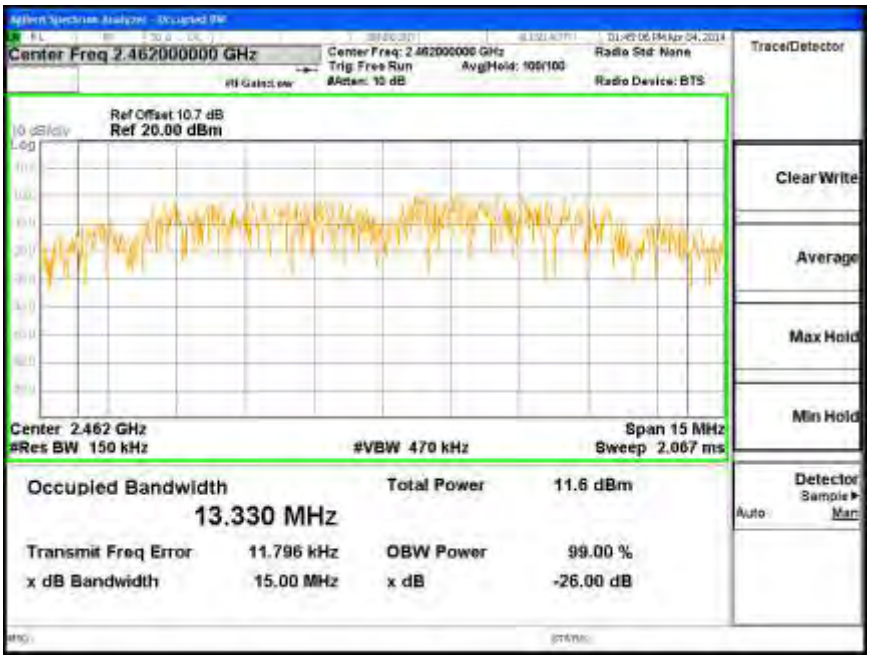
99% BANDWIDTH Chain 0 LOW CH



99% BANDWIDTH Chain 0 MID CH

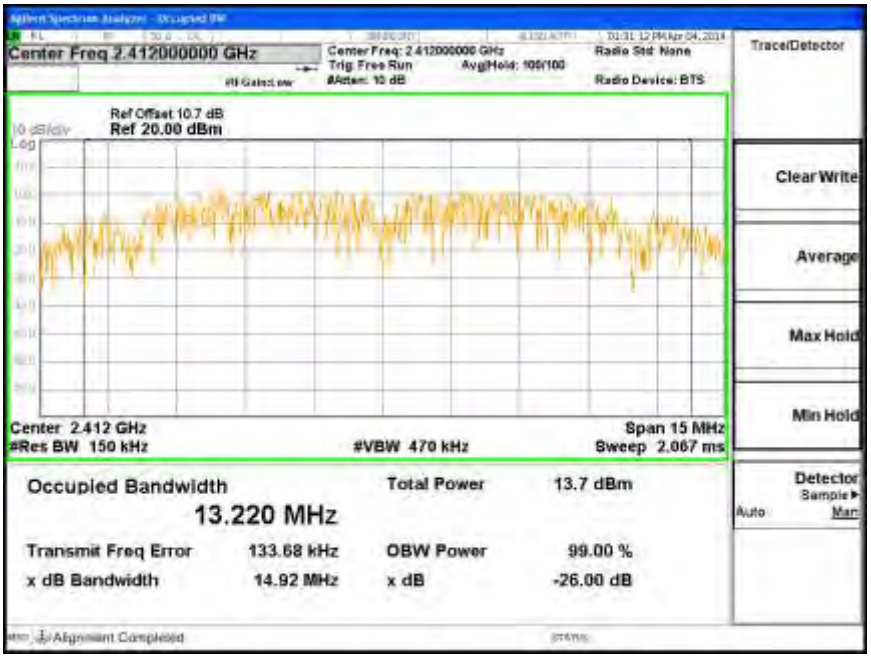


99% BANDWIDTH Chain 0 HIGH CH

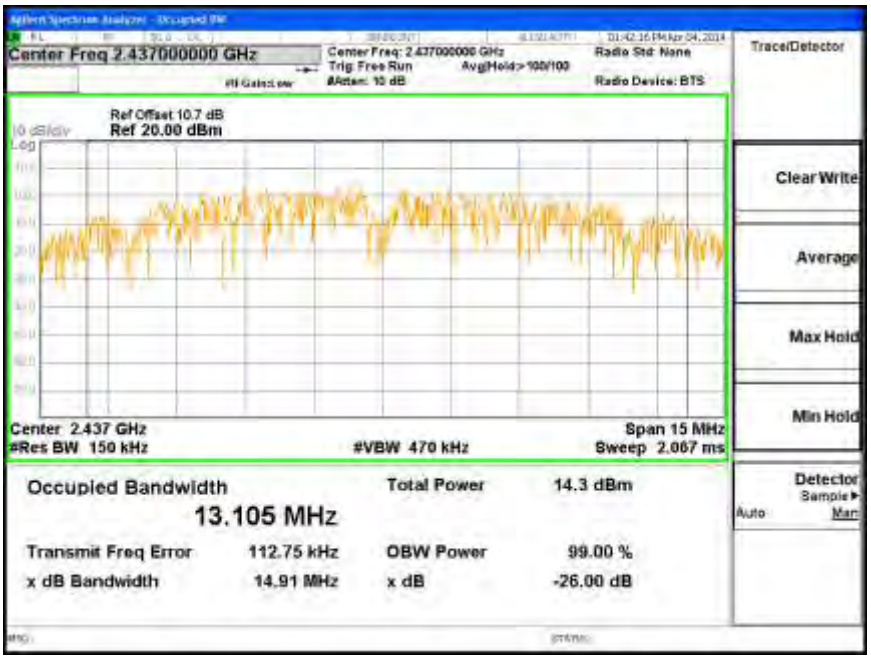


99% BANDWIDTH, Chain 1

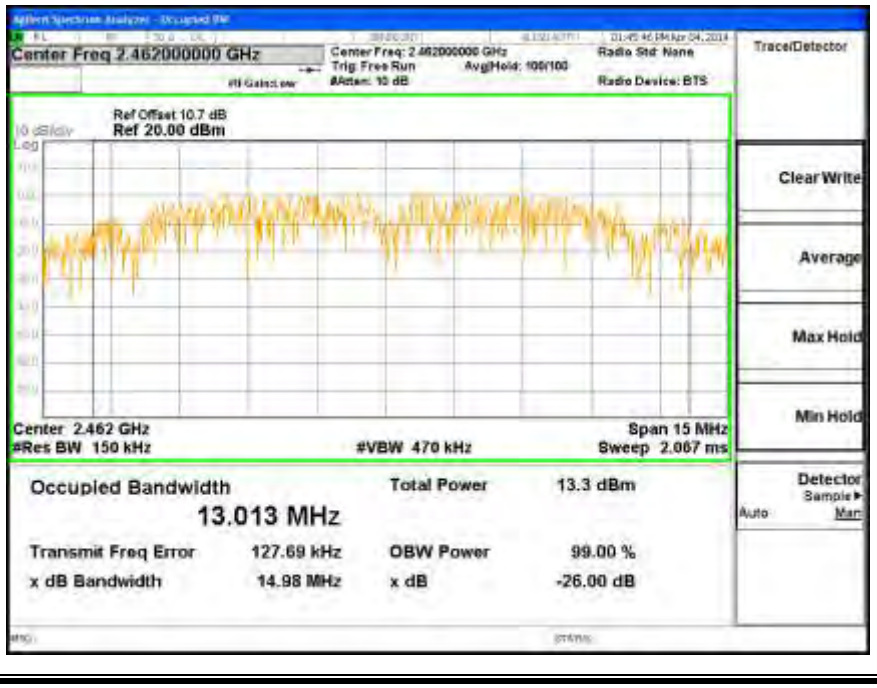
99% BANDWIDTH Chain 1 LOW CH



99% BANDWIDTH Chain 1 MID CH



99% BANDWIDTH Chain 1 HIGH CH



8.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	2412	13.17	13.88	16.55
Mid	2437	12.80	14.33	16.64
High	2462	12.72	14.44	16.67

8.1.4. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

Use this table for correlated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.40	3.60	7.02

RESULTS

Limits

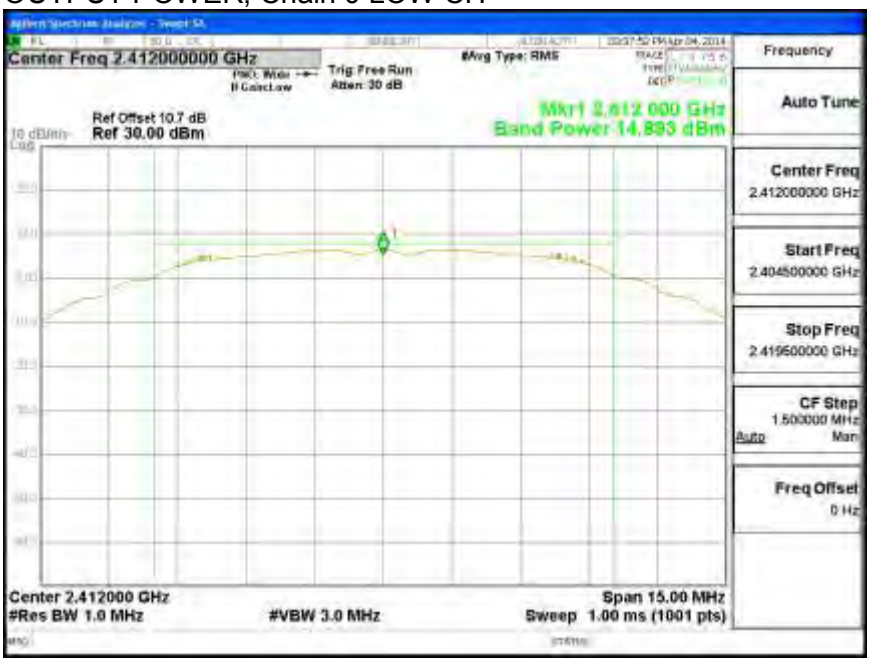
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	7.02	28.98	30	36	28.98
Mid	2437	7.02	28.98	30	36	28.98
High	2462	7.02	28.98	30	36	28.98

Results

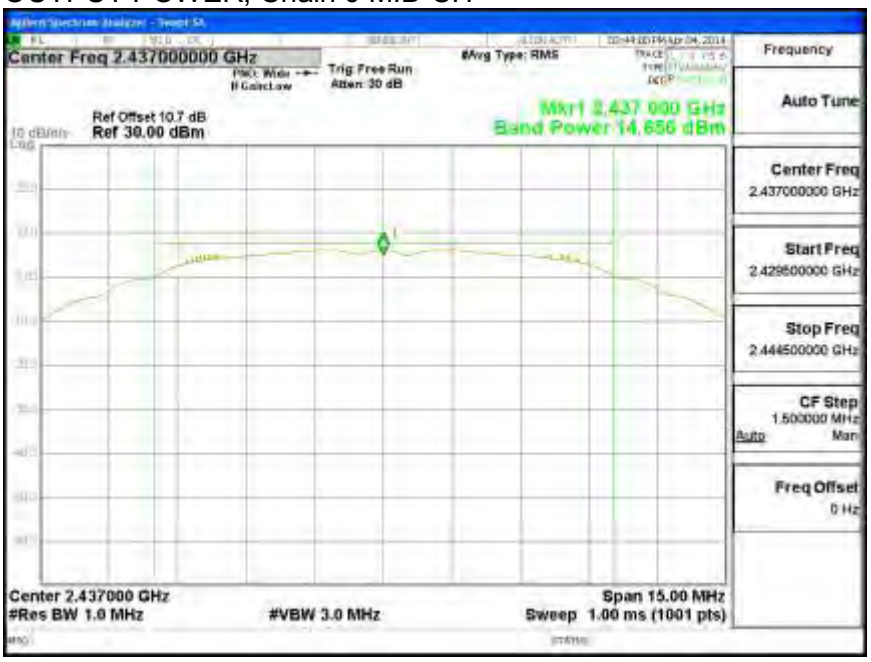
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	14.89	15.69	18.32	28.98	-10.66
Mid	2437	14.66	16.23	18.52	28.98	-10.46
High	2462	15.58	17.27	19.52	28.98	-9.46

OUTPUT POWER, Chain 0

OUTPUT POWER, Chain 0 LOW CH



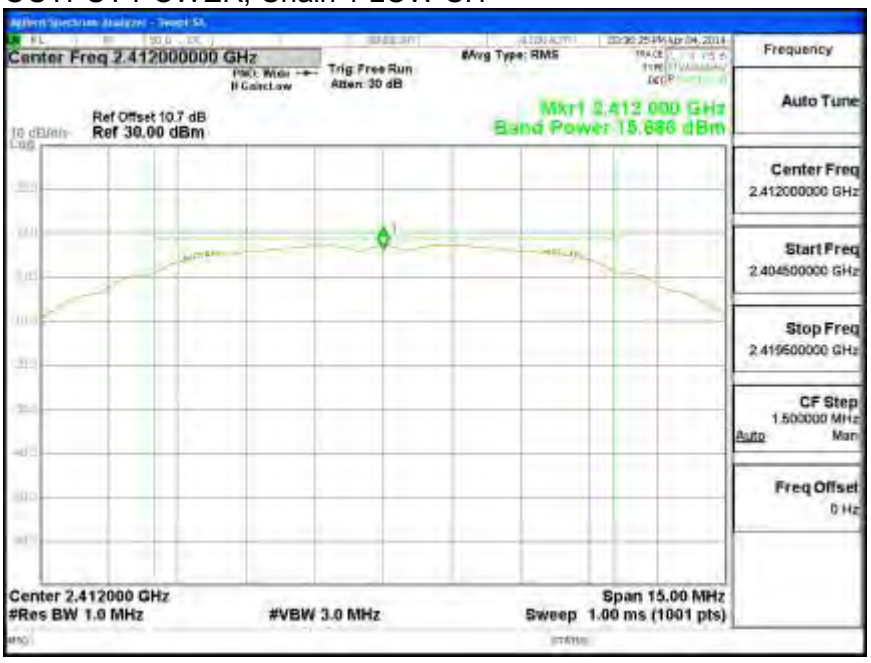
OUTPUT POWER, Chain 0 MID CH



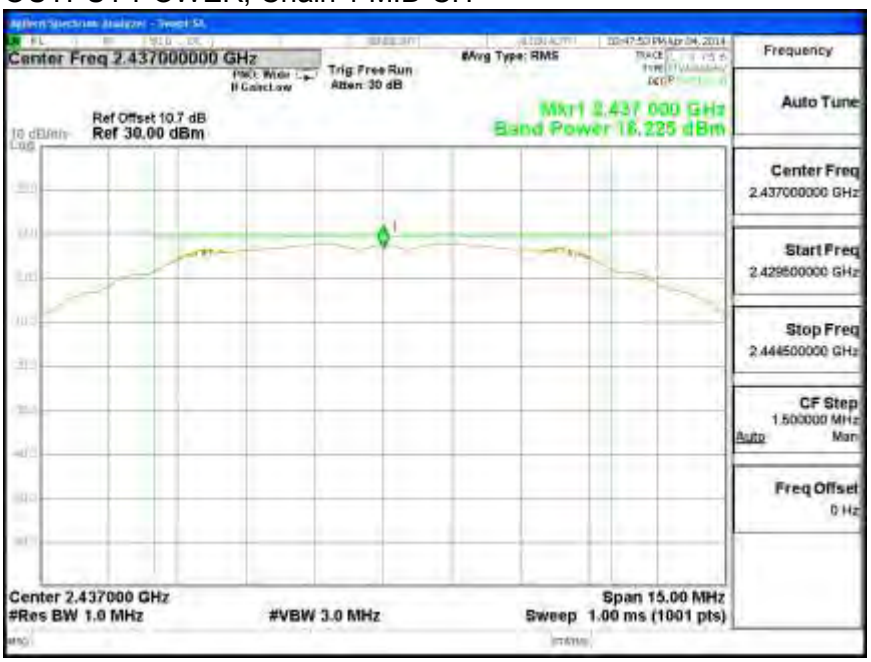
OUTPUT POWER, Chain 0 HIGH CH

OUTPUT POWER, Chain 1

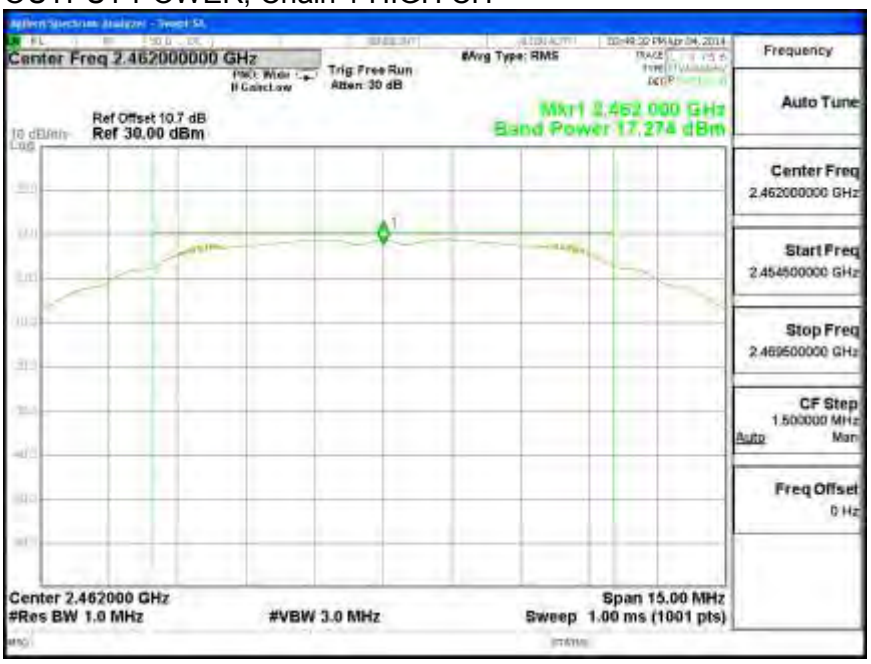
OUTPUT POWER, Chain 1 LOW CH



OUTPUT POWER, Chain 1 MID CH



OUTPUT POWER, Chain 1 HIGH CH



8.1.5. PSD

LIMITS

FCC §15.247

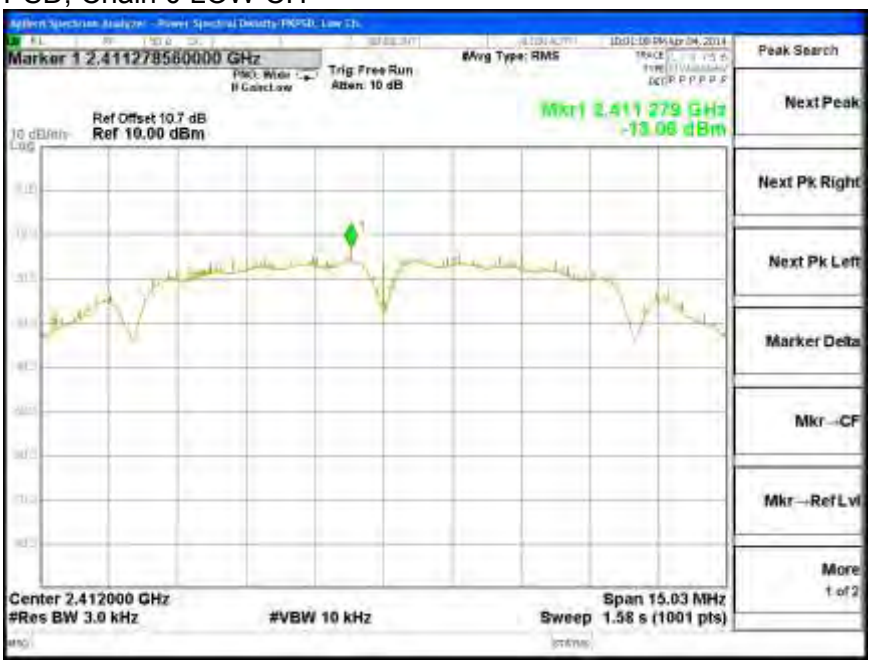
RESULTS

PSD Results

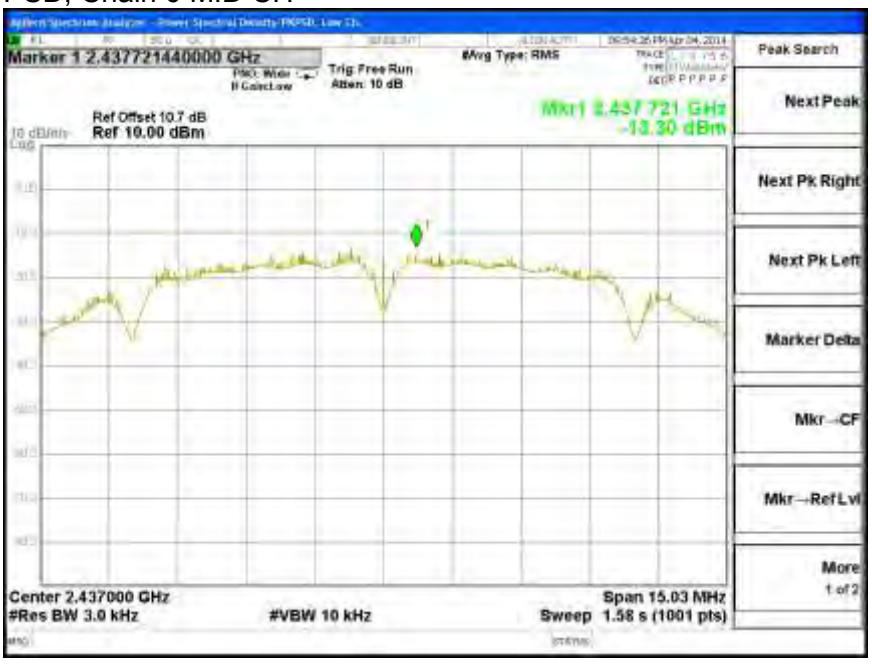
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-13.08	-12.70	-9.88	8.0	-17.9
Mid	2437	-13.30	-11.66	-9.39	8.0	-17.4
High	2462	-13.33	-11.70	-9.43	8.0	-17.4

PSD, Chain 0

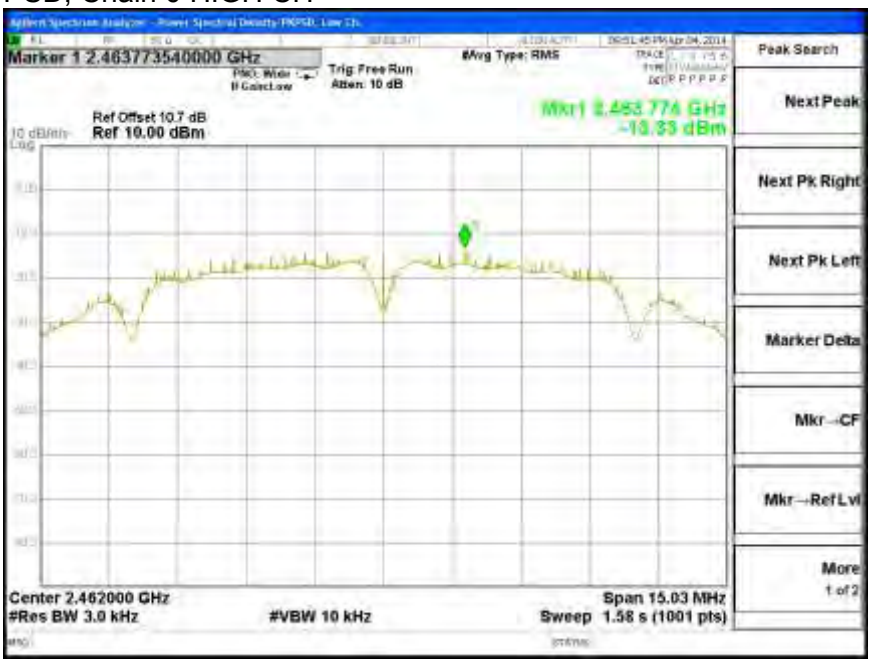
PSD, Chain 0 LOW CH



PSD, Chain 0 MID CH



PSD, Chain 0 HIGH CH



PSD, Chain 1

PSD, Chain 1 LOW CH

PSD, Chain 1 MID CH

PSD, Chain 1 HIGH CH

8.1.6. OUT-OF-BAND EMISSIONS

LIMITS

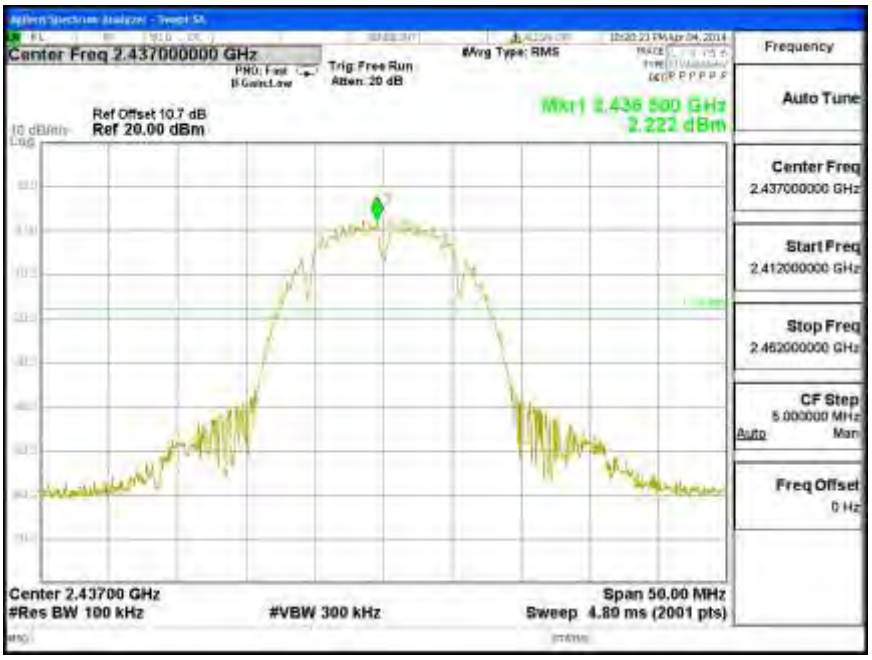
FCC §15.247 (d)

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

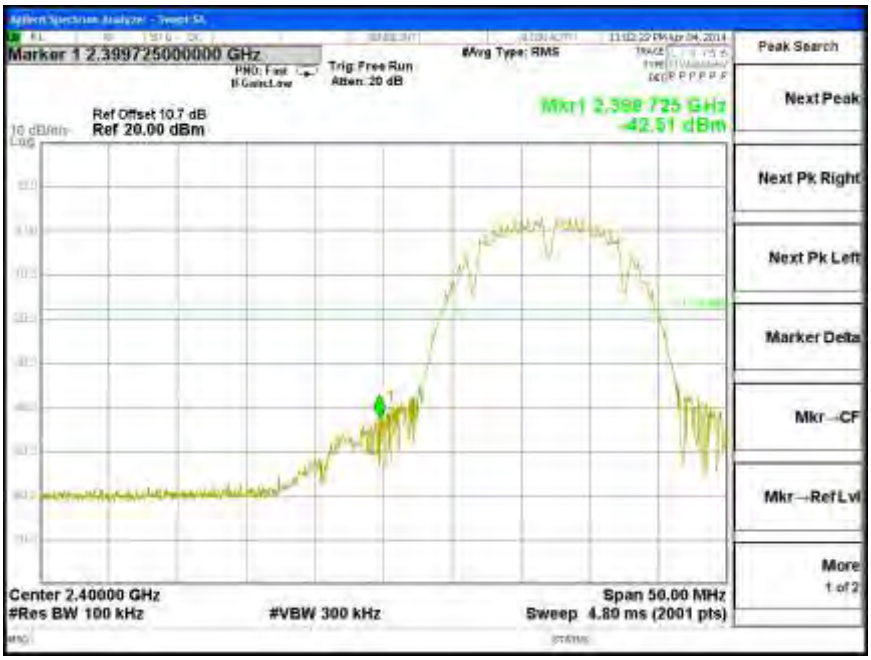
IN-BAND REFERENCE LEVEL, Chain 0

REFERENCE LEVEL Chain 0 MID CH



LOW CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 LOW CH

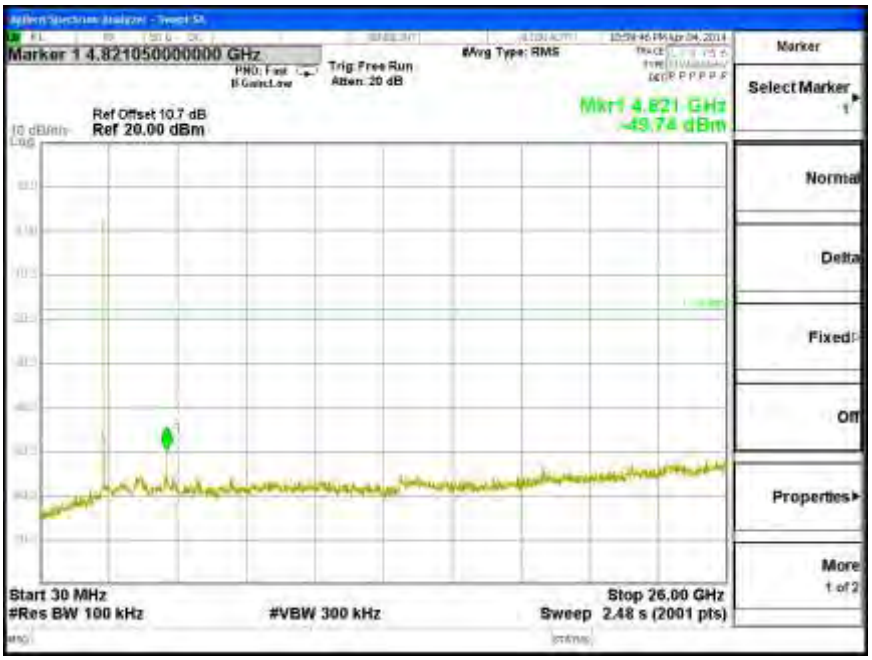


HIGH CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 HIGH CH

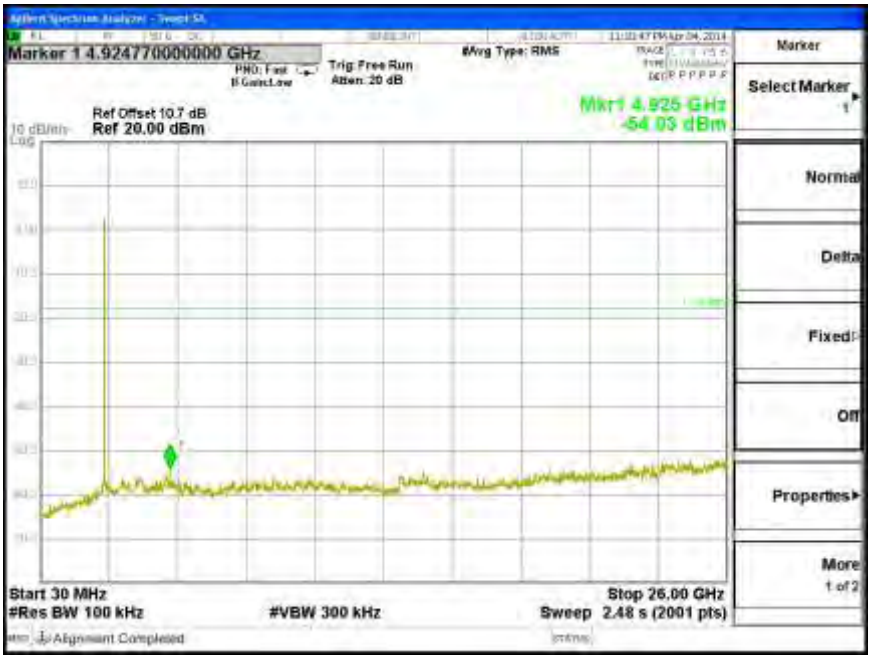
OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH



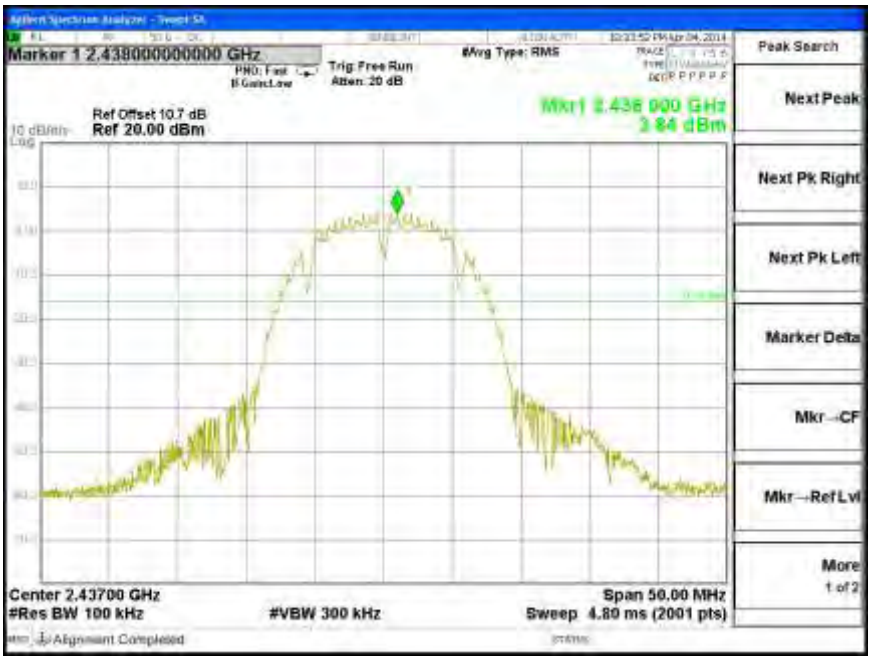
OUT OF BAND Chain 0 MID CH

OUT OF BAND Chain 0 HIGH CH



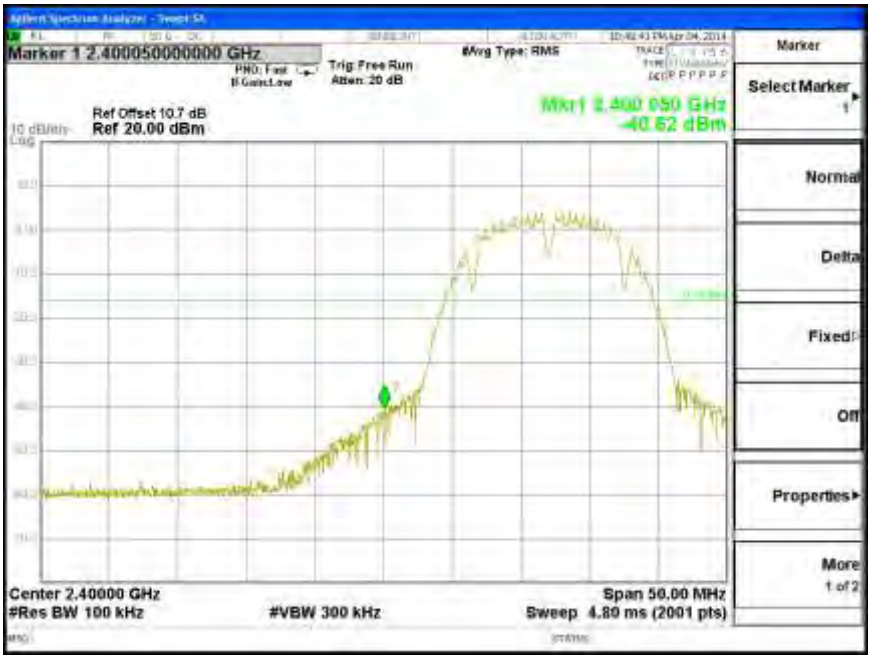
IN-BAND REFERENCE LEVEL, Chain 1

REFERENCE LEVEL Chain 1 MID CH



LOW CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 LOW CH

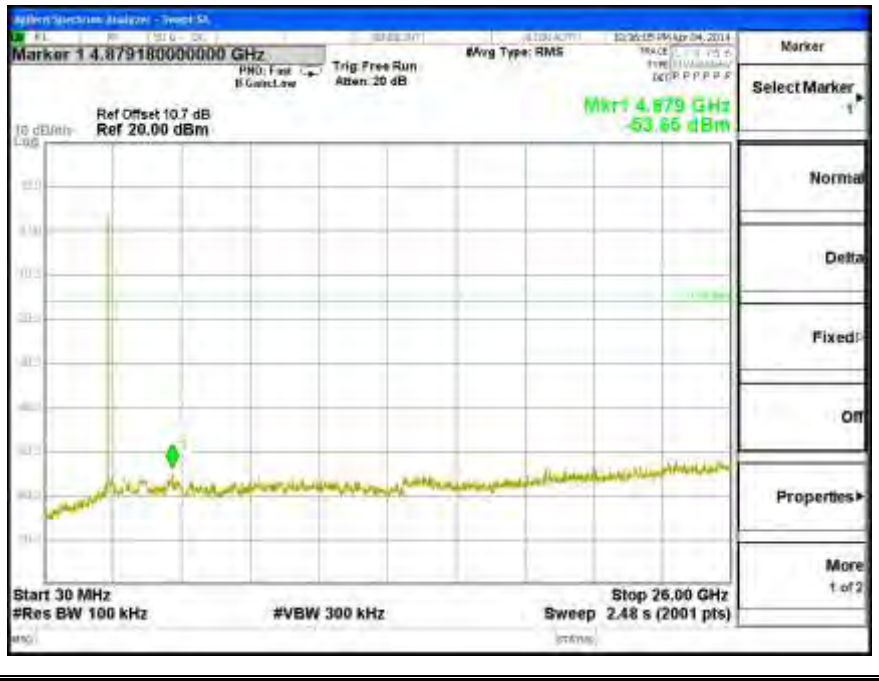


HIGH CHANNEL BANDEDGE, Chain 1

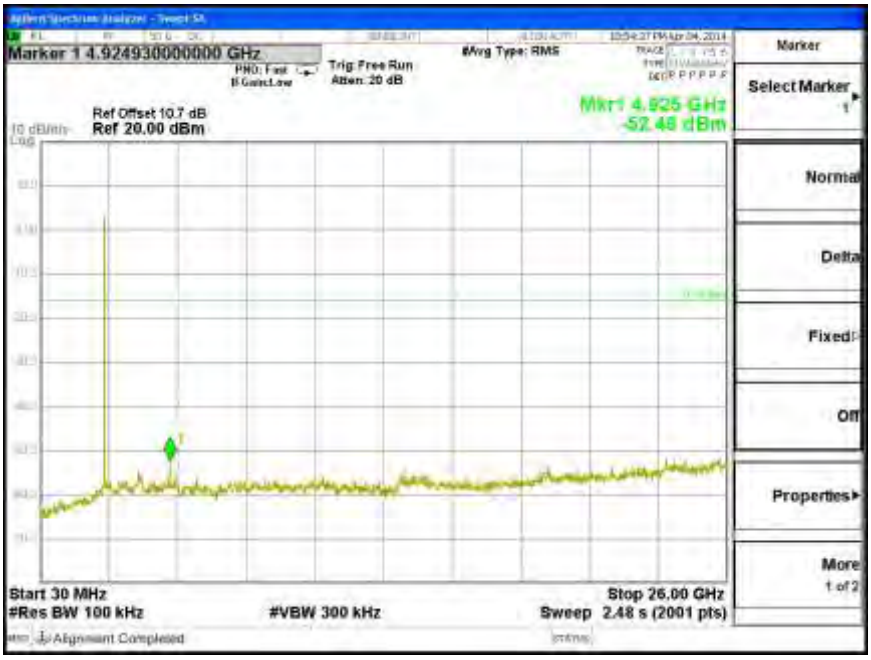
AUTHORIZED BAND EDGE Chain 1 HIGH CH

OUT OF BAND Chain 1 LOW CH

OUT OF BAND Chain 1 MID CH



OUT OF BAND Chain 1 HIGH CH



8.2. 802.11g 2Tx CDD 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.

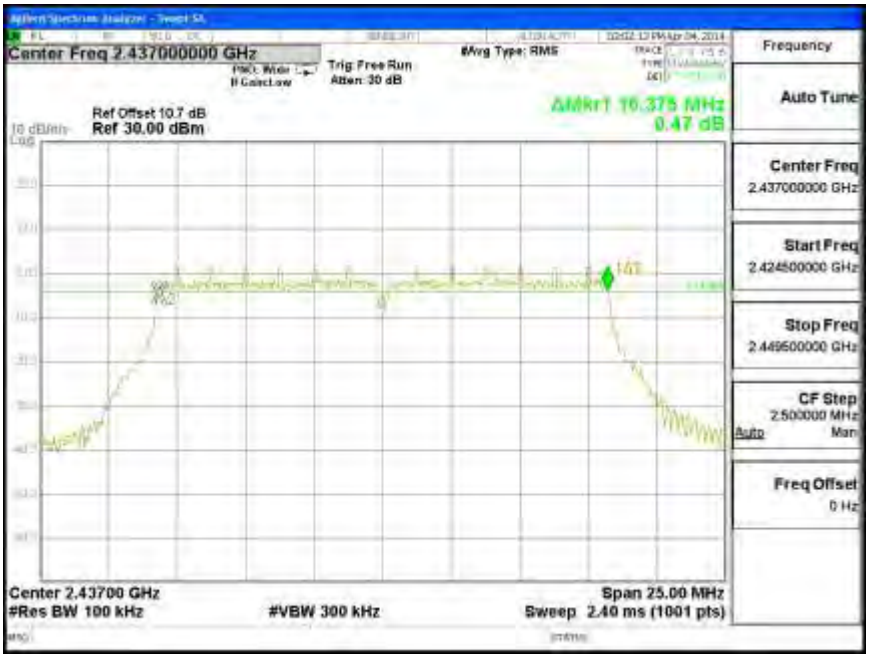
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	16.350	16.400	0.5
Mid	2437	16.375	16.400	0.5
High	2462	16.325	16.400	0.5

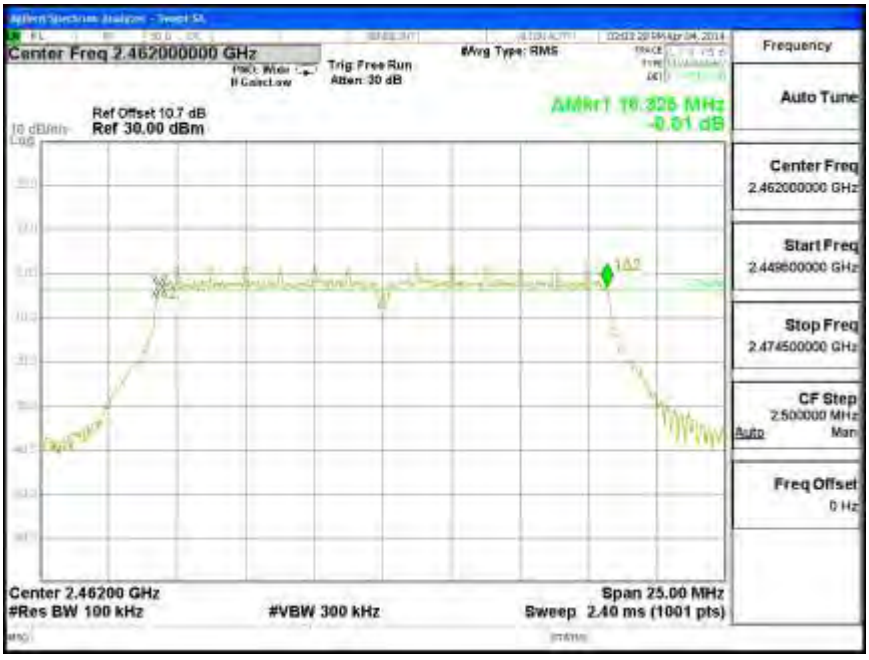
6 dB BANDWIDTH, Chain 0

6 dB BANDWIDTH Chain 0 LOW CH

6 dB BANDWIDTH Chain 0 MID CH

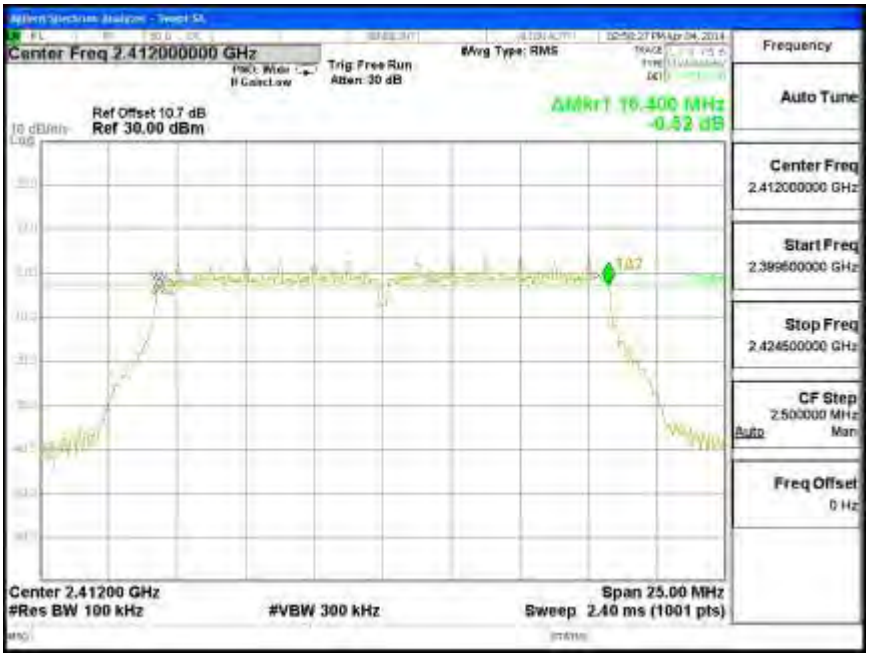


6 dB BANDWIDTH Chain 0 HIGH CH



6 dB BANDWIDTH, Chain 1

6 dB BANDWIDTH Chain 1 LOW CH



6 dB BANDWIDTH Chain 1 MID CH

6 dB BANDWIDTH Chain 1 HIGH CH

8.2.2. 99% BANDWIDTH

LIMITS

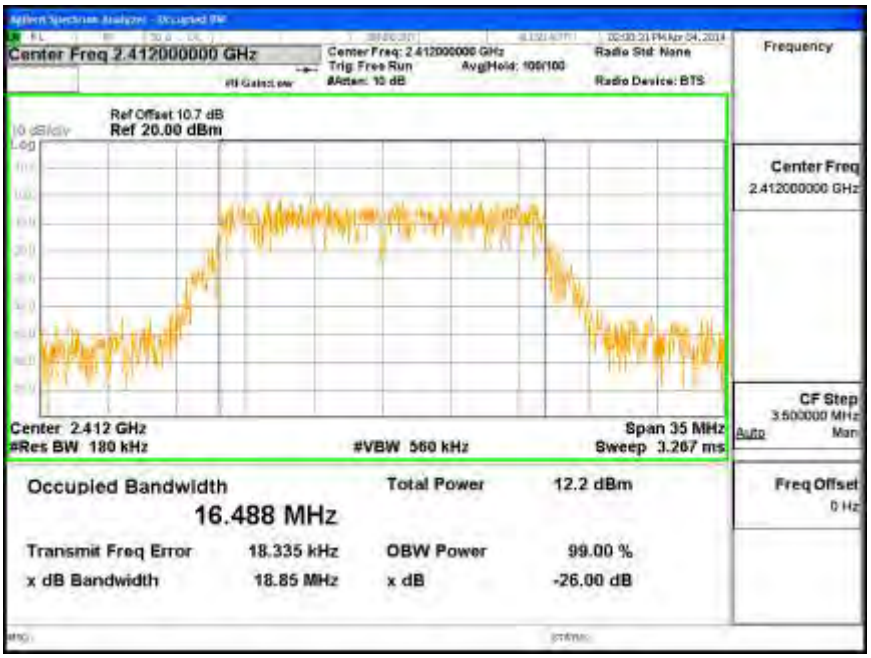
None; for reporting purposes only.

RESULTS

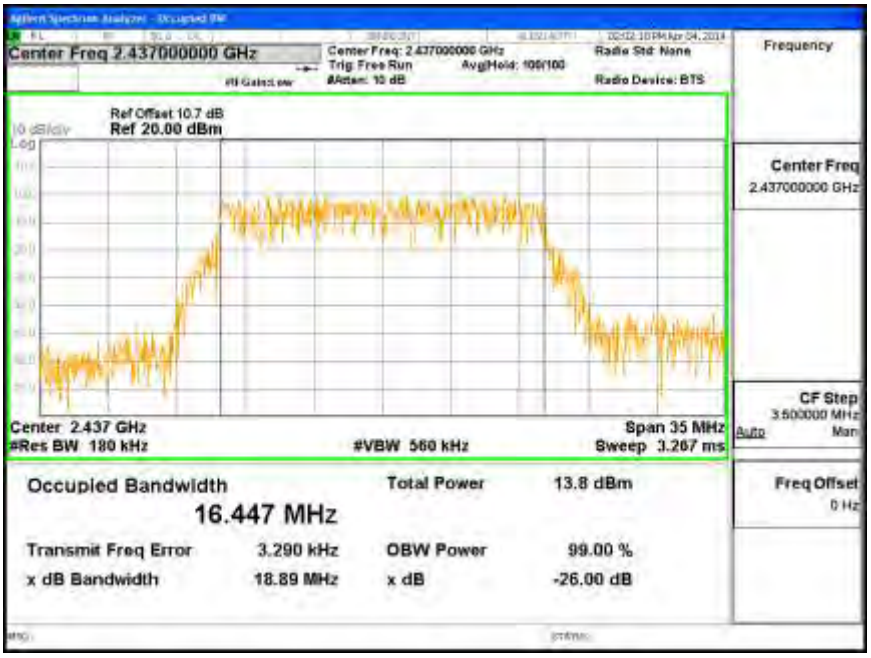
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	16.4880	16.4790
Mid	2437	16.4470	16.4450
High	2462	16.4300	16.4530

99% BANDWIDTH, Chain 0

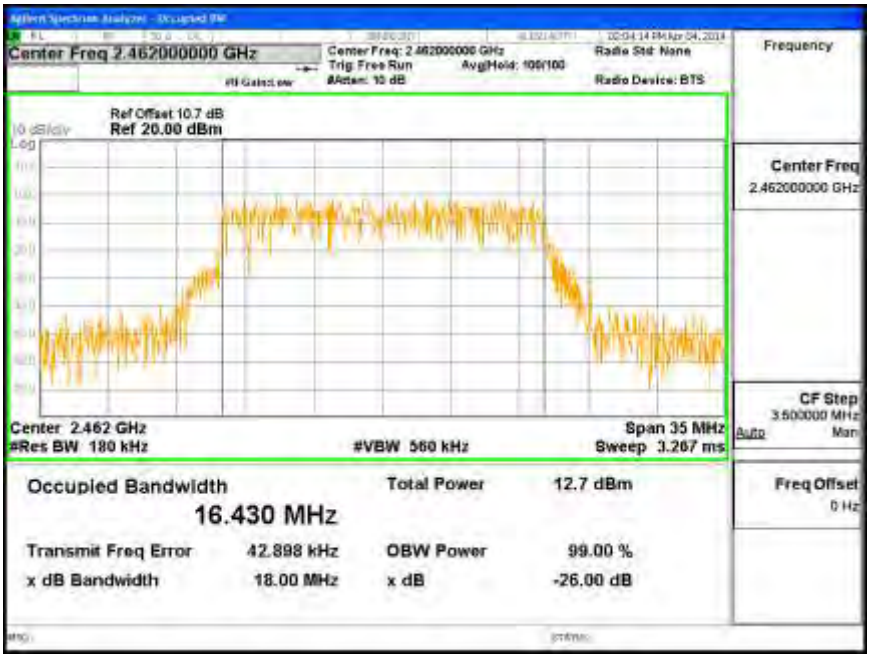
99% BANDWIDTH Chain 0 LOW CH



99% BANDWIDTH Chain 0 MID CH

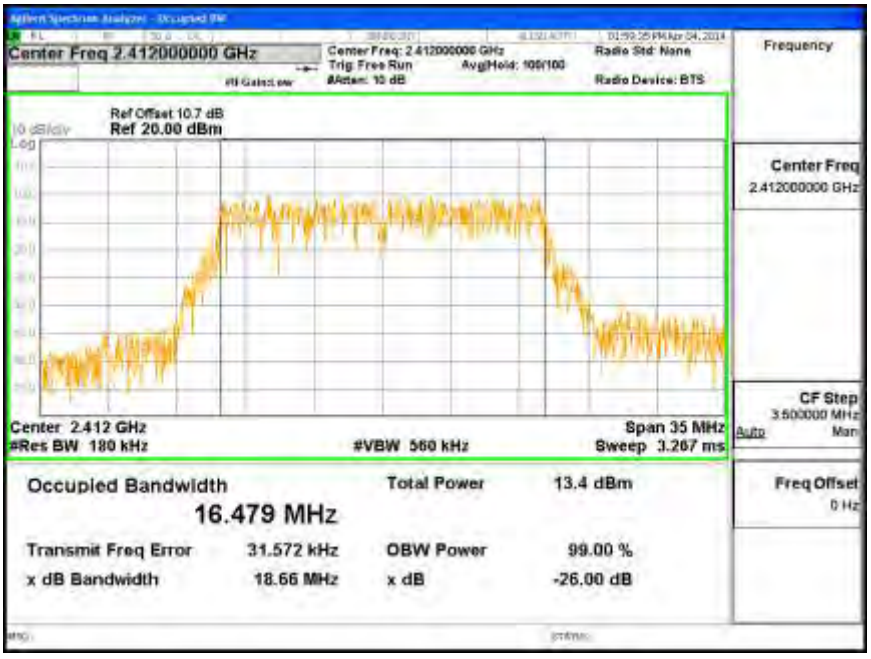


99% BANDWIDTH Chain 0 HIGH CH

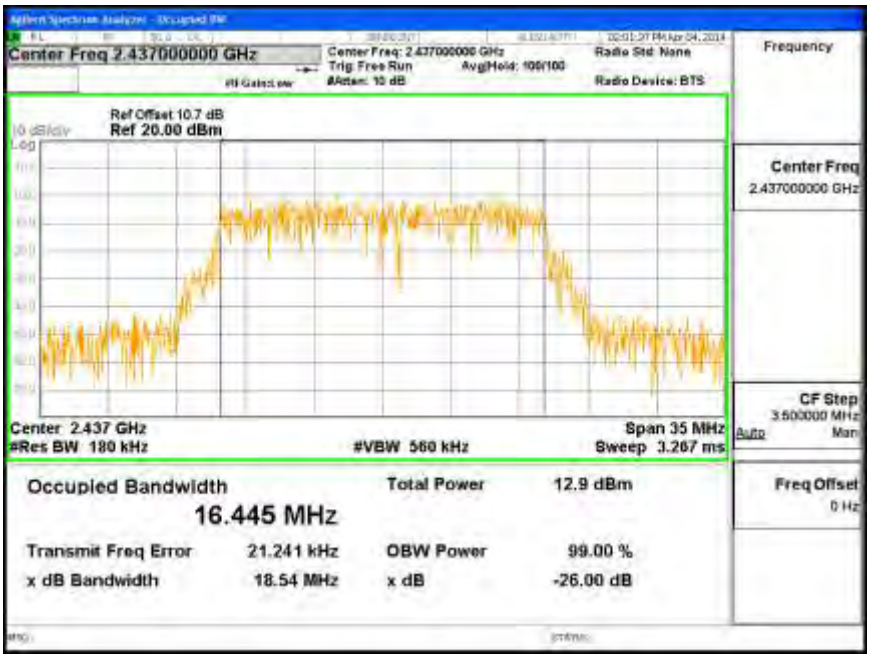


99% BANDWIDTH, Chain 1

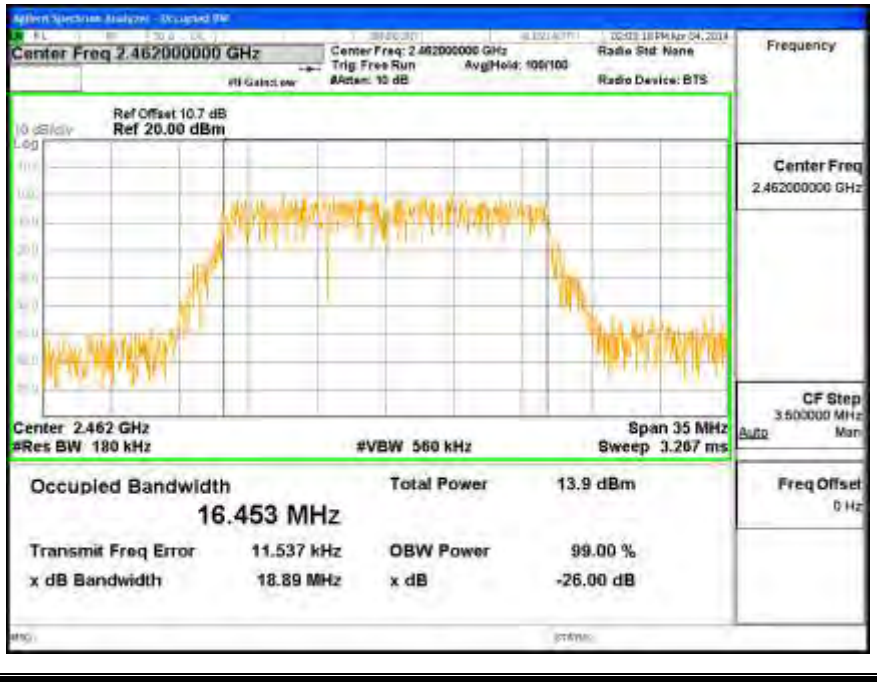
99% BANDWIDTH Chain 1 LOW CH



99% BANDWIDTH Chain 1 MID CH



99% BANDWIDTH Chain 1 HIGH CH



8.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	2412	12.53	13.82	16.23
Mid	2437	12.80	13.80	16.34
High	2462	12.78	13.94	16.41

8.2.4. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

Use this table for correlated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.40	3.60	7.02

RESULTS

Limits

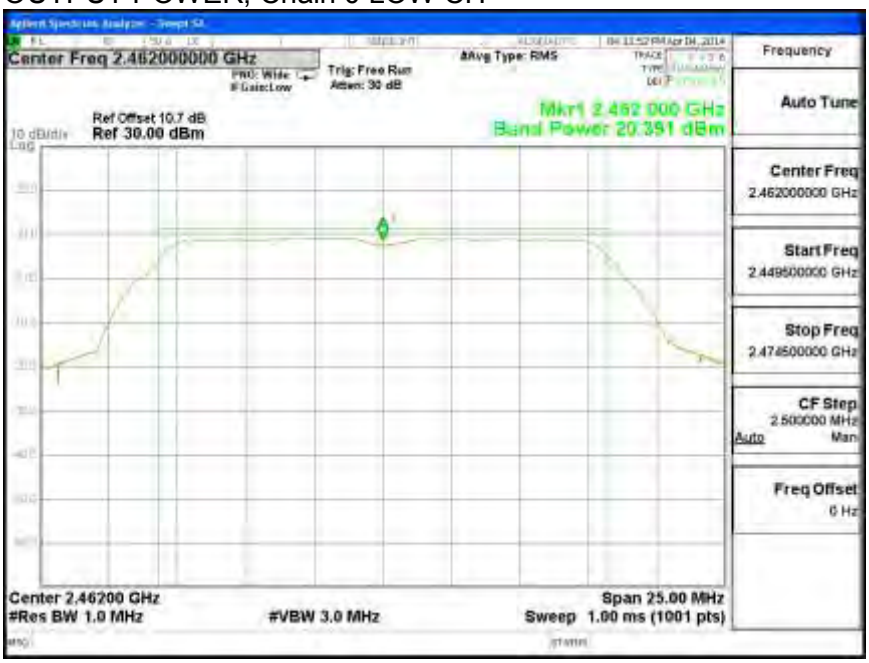
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	7.02	28.98	30	36	28.98
Mid	2437	7.02	28.98	30	36	28.98
High	2462	7.02	28.98	30	36	28.98

Results

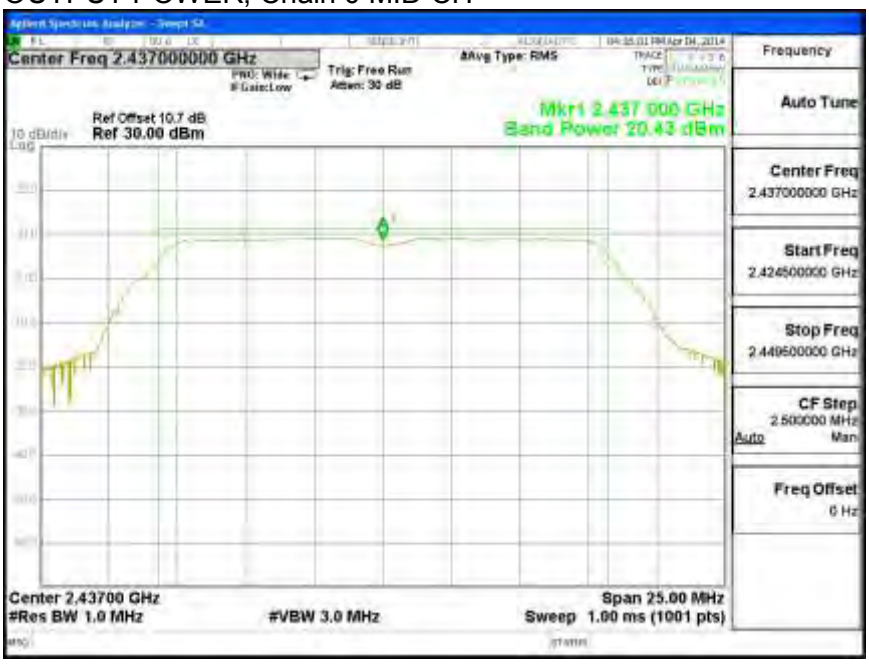
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	20.39	21.67	24.09	28.98	-4.89
Mid	2437	20.43	21.61	24.07	28.98	-4.91
High	2462	20.38	21.68	24.09	28.98	-4.89

OUTPUT POWER, Chain 0

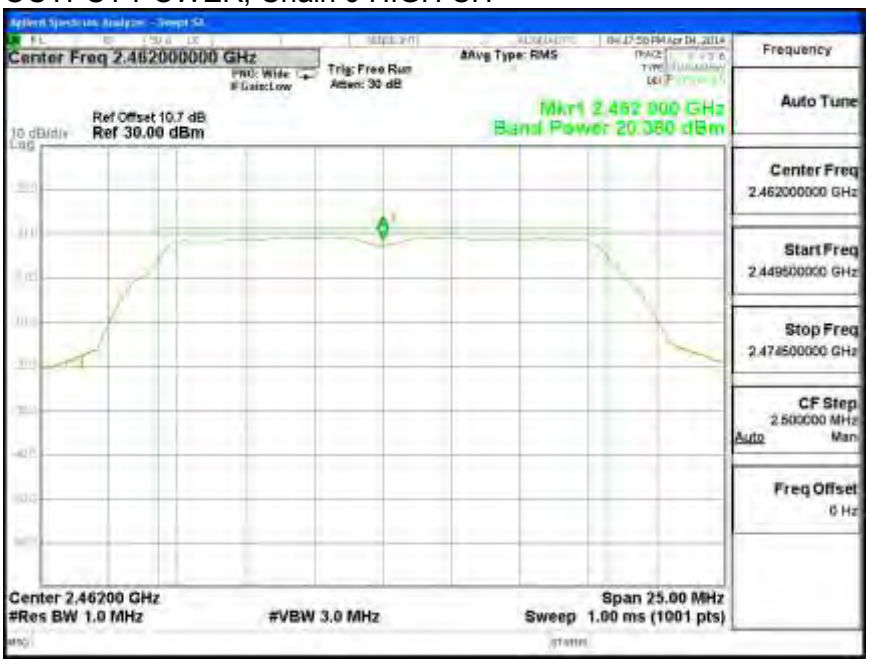
OUTPUT POWER, Chain 0 LOW CH



OUTPUT POWER, Chain 0 MID CH

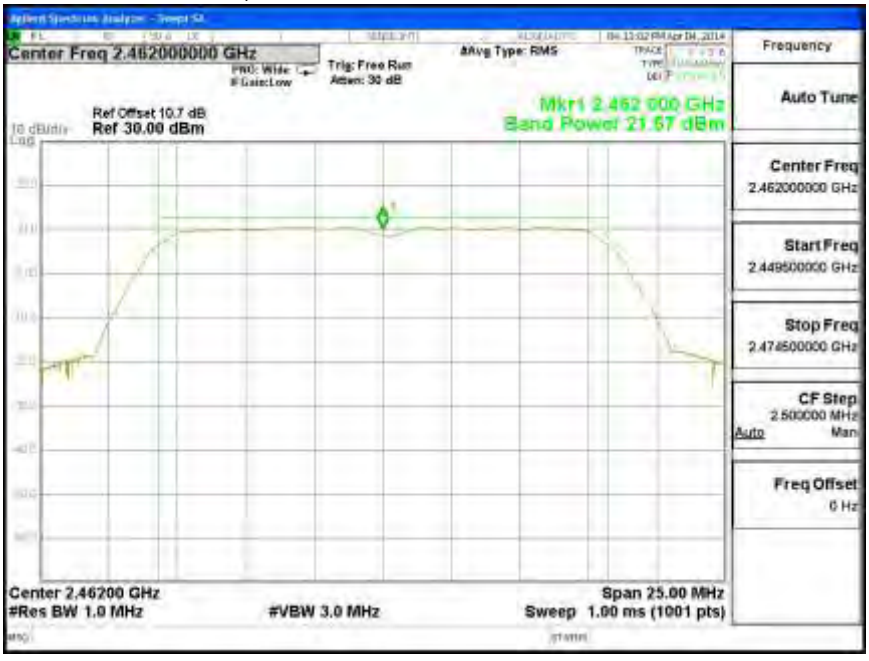


OUTPUT POWER, Chain 0 HIGH CH

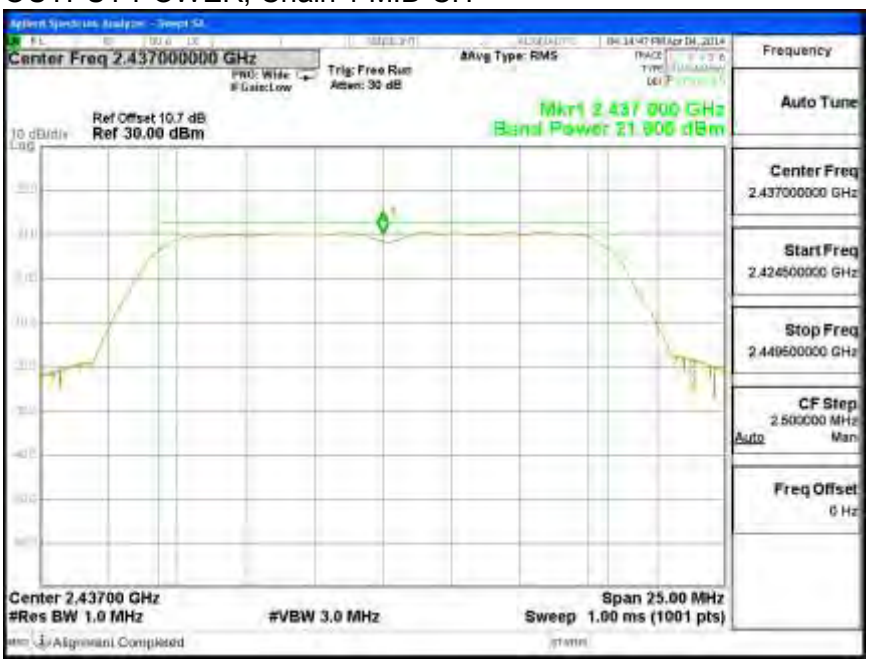


OUTPUT POWER, Chain 1

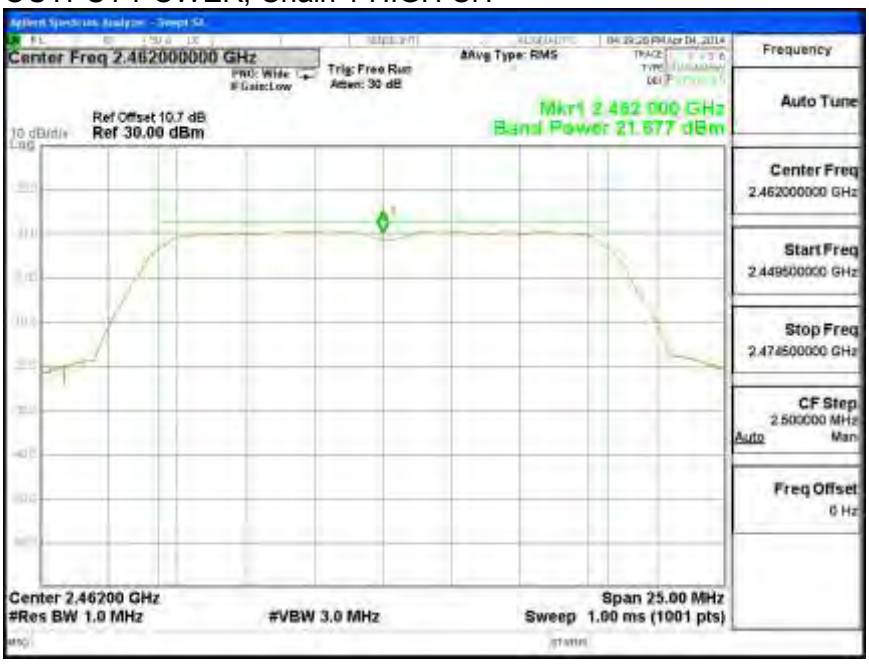
OUTPUT POWER, Chain 1 LOW CH



OUTPUT POWER, Chain 1 MID CH



OUTPUT POWER, Chain 1 HIGH CH



8.2.5. PSD

LIMITS

FCC §15.247

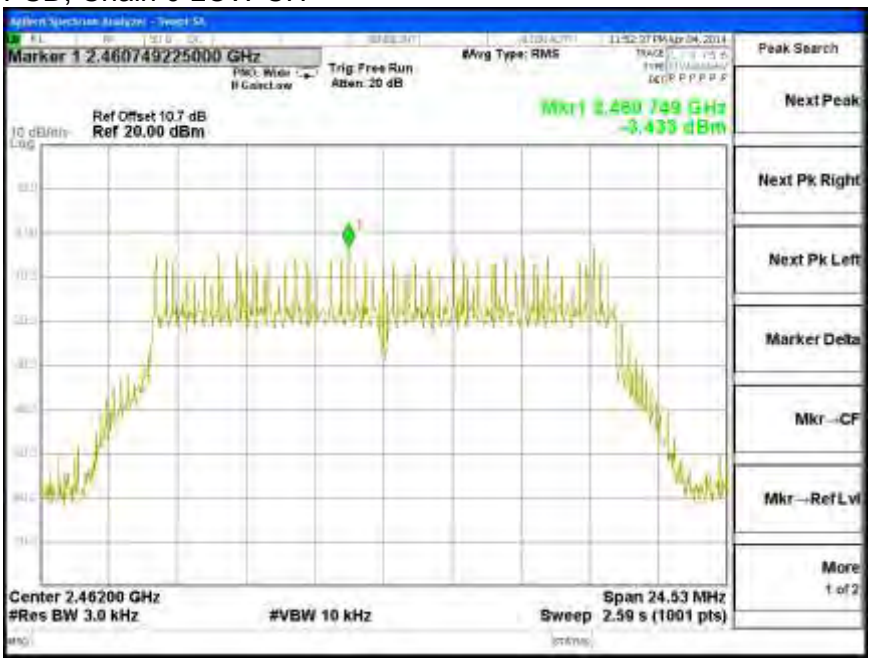
RESULTS

PSD Results

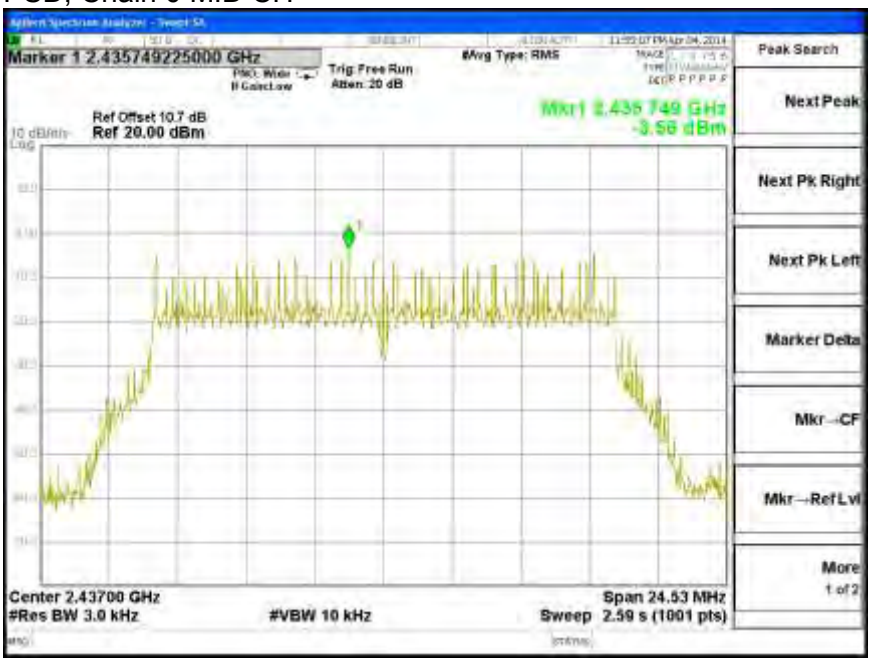
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-3.43	-1.57	0.61	8.0	-7.4
Mid	2437	-3.56	-1.61	0.53	8.0	-7.5
High	2462	-3.32	-2.85	-0.07	8.0	-8.1

PSD, Chain 0

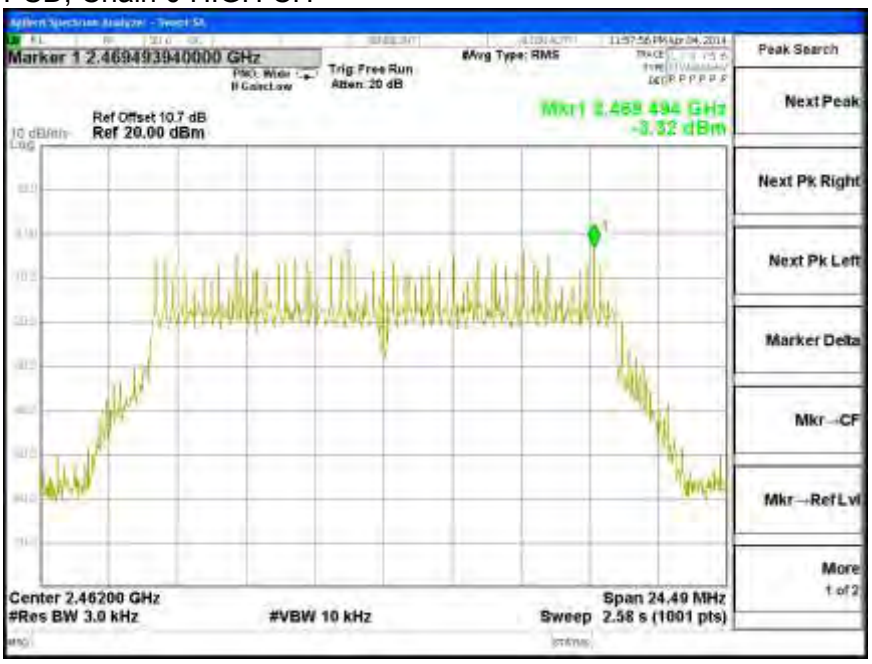
PSD, Chain 0 LOW CH



PSD, Chain 0 MID CH

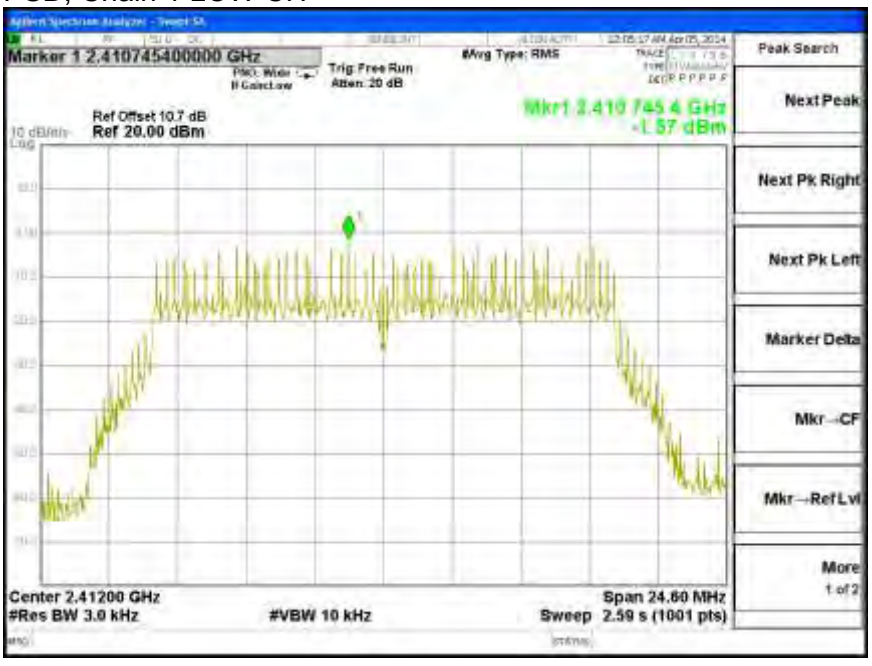


PSD, Chain 0 HIGH CH

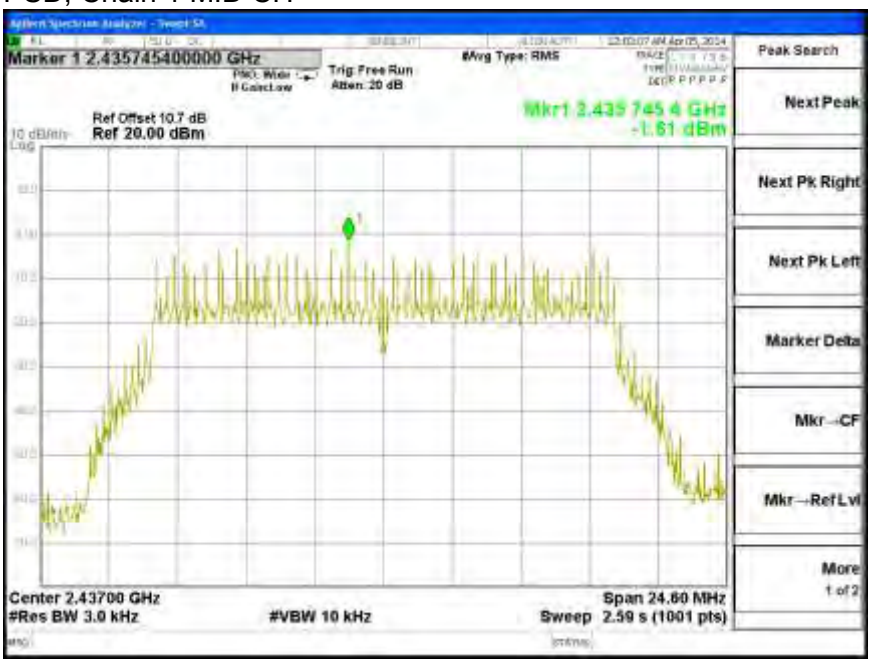


PSD, Chain 1

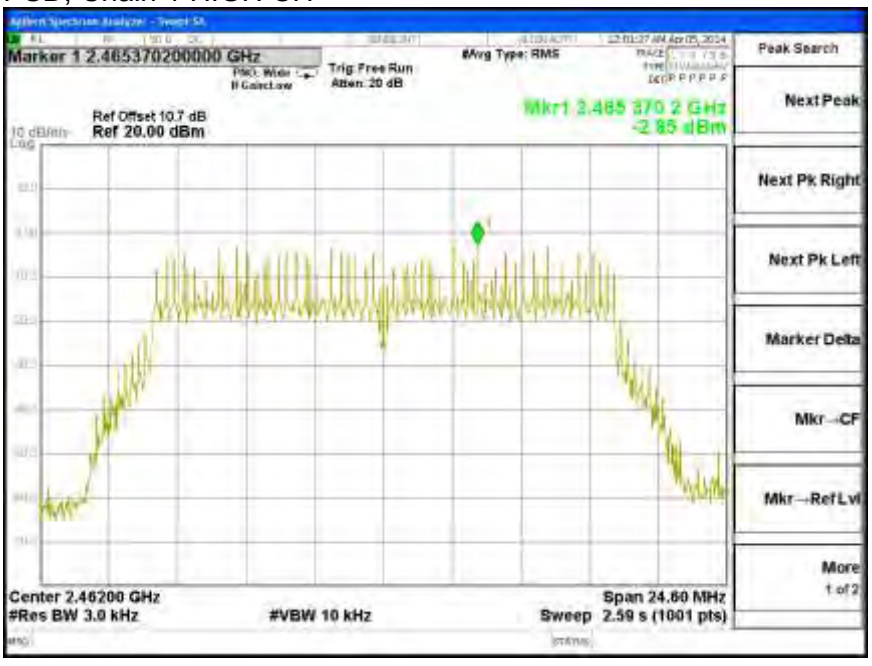
PSD, Chain 1 LOW CH



PSD, Chain 1 MID CH



PSD, Chain 1 HIGH CH



8.2.6. OUT-OF-BAND EMISSIONS

LIMITS

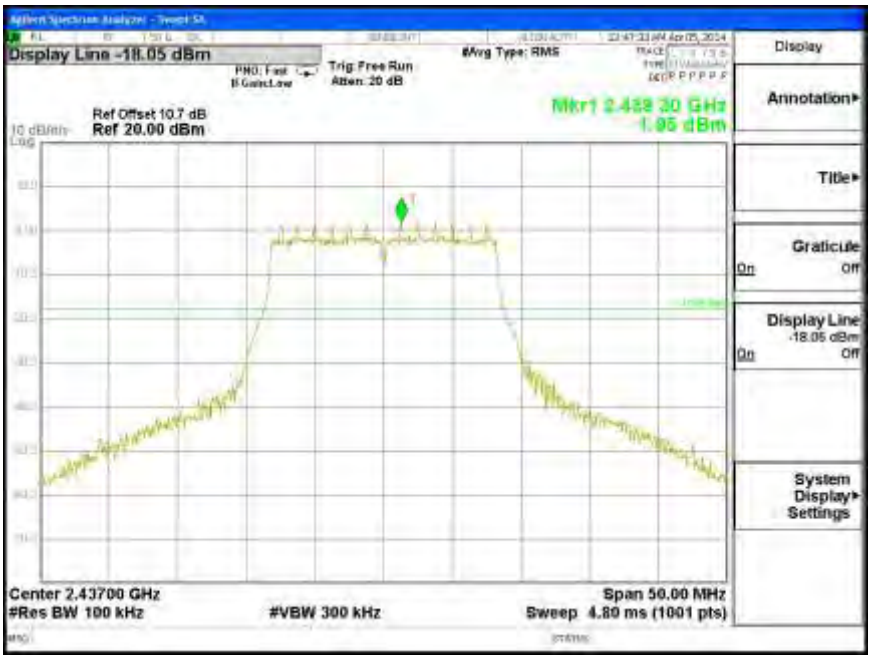
FCC §15.247 (d)

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

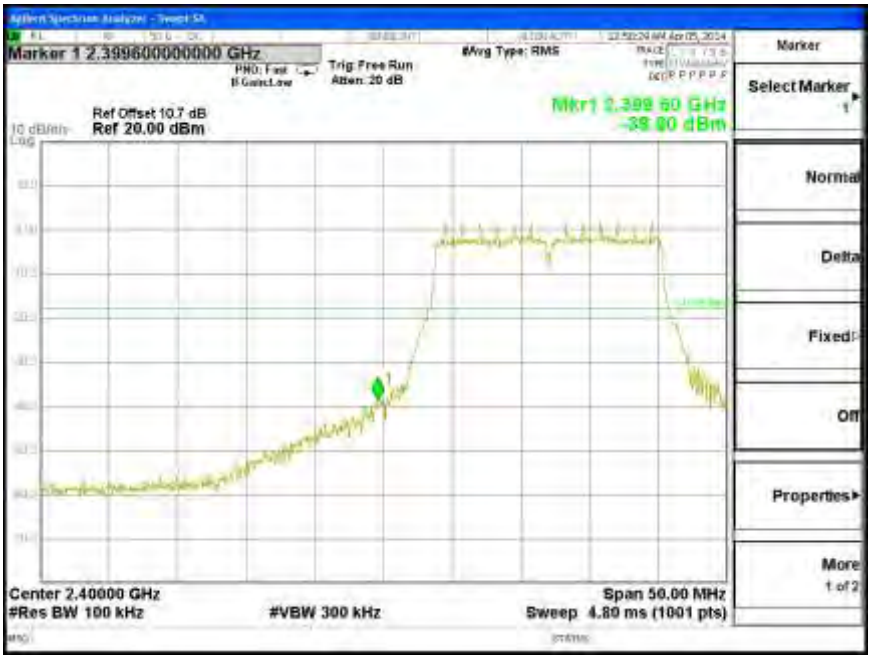
IN-BAND REFERENCE LEVEL, Chain 0

REFERENCE LEVEL Chain 0 MID CH



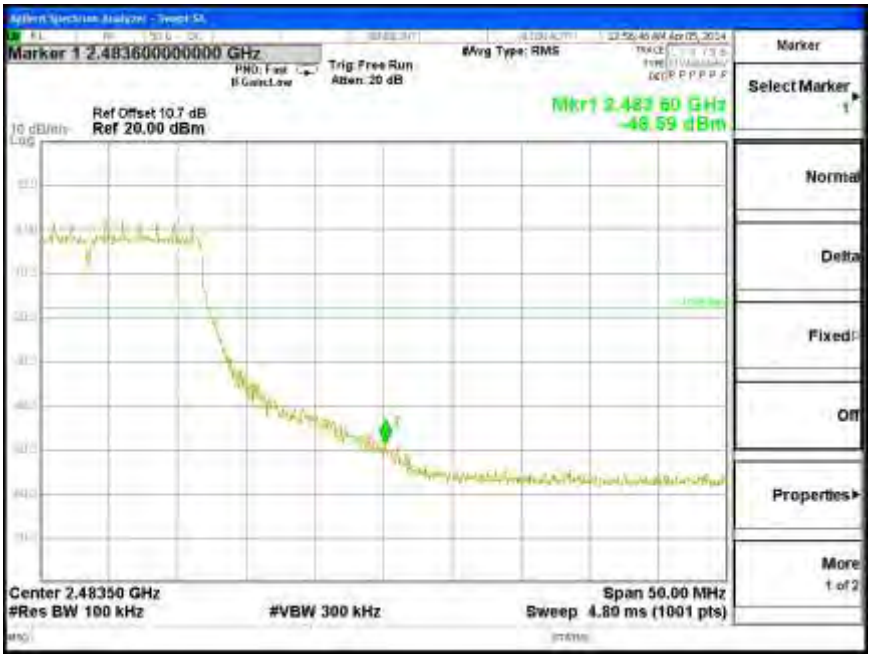
LOW CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 LOW CH



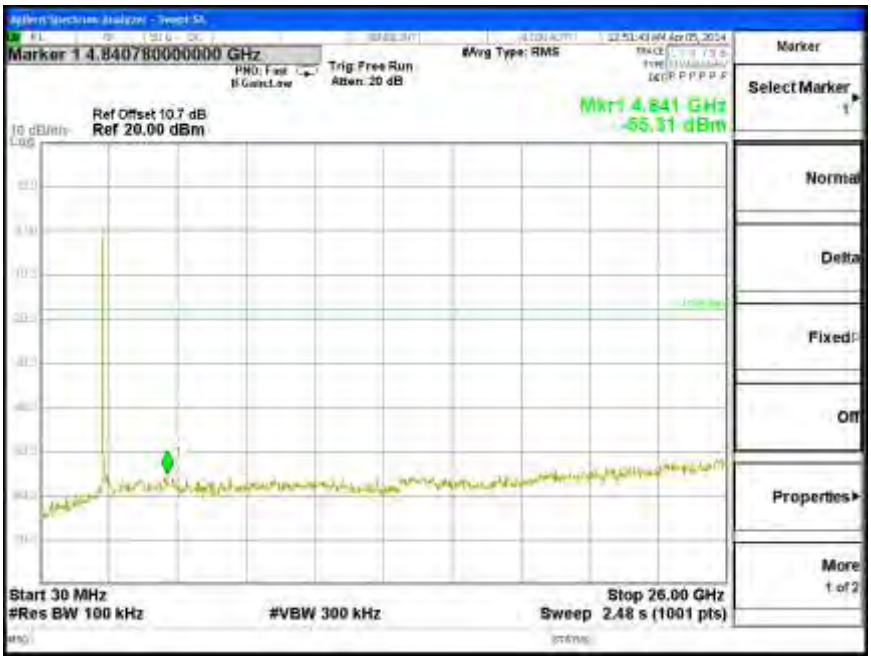
HIGH CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 HIGH CH



OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH

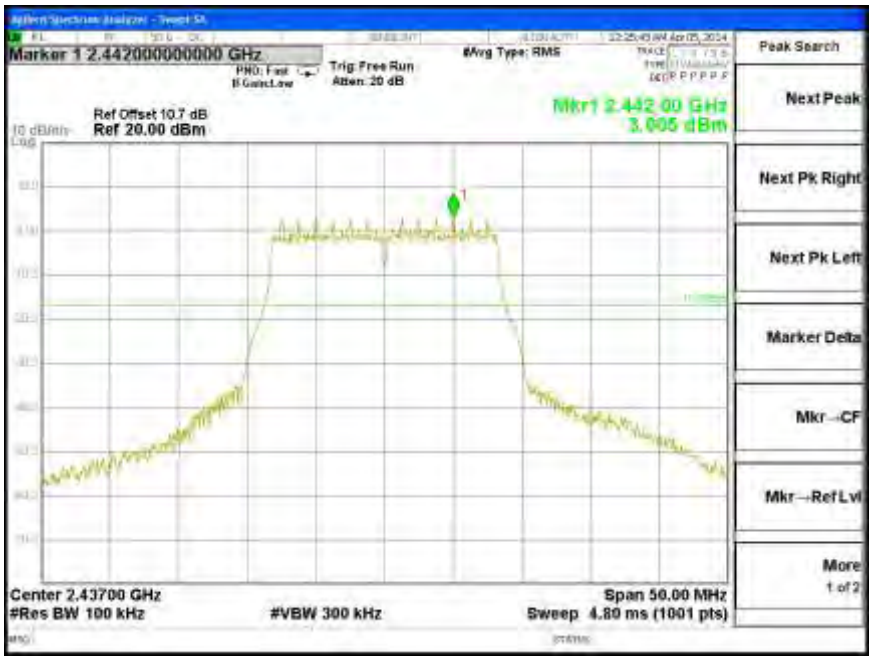


OUT OF BAND Chain 0 MID CH

OUT OF BAND Chain 0 HIGH CH

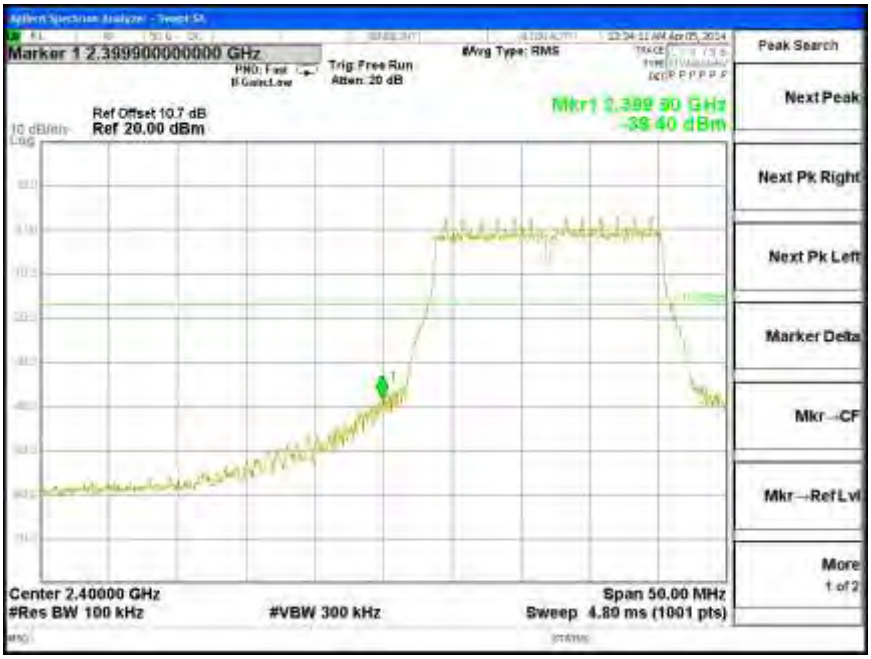
IN-BAND REFERENCE LEVEL, Chain 1

REFERENCE LEVEL Chain 1 MID CH



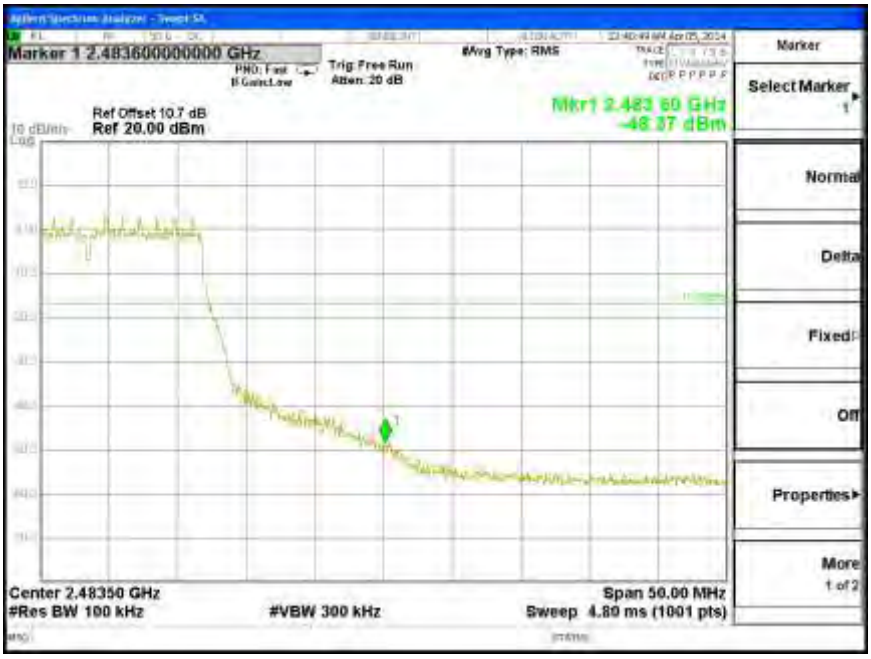
LOW CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 LOW CH



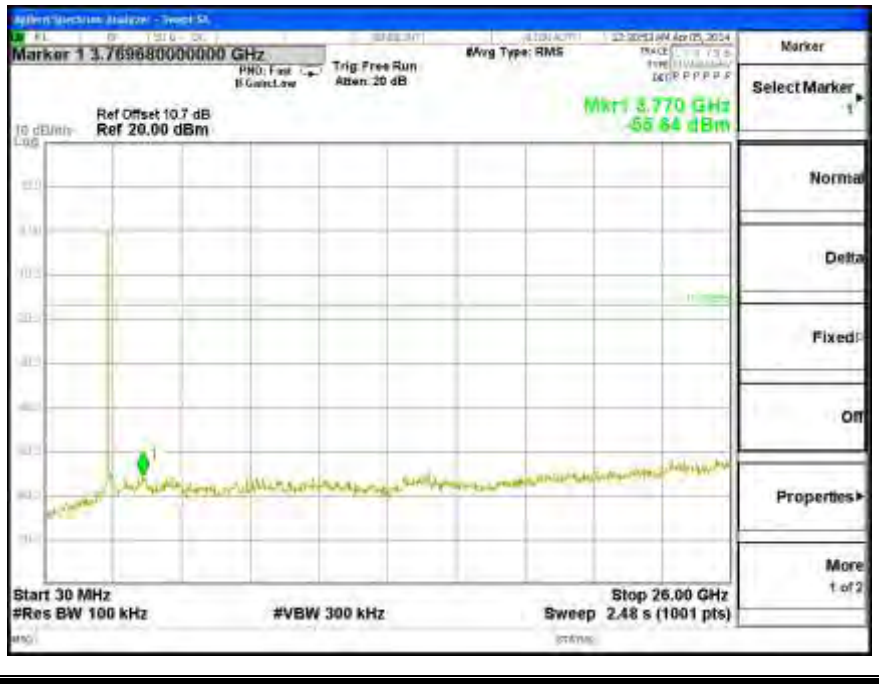
HIGH CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 HIGH CH

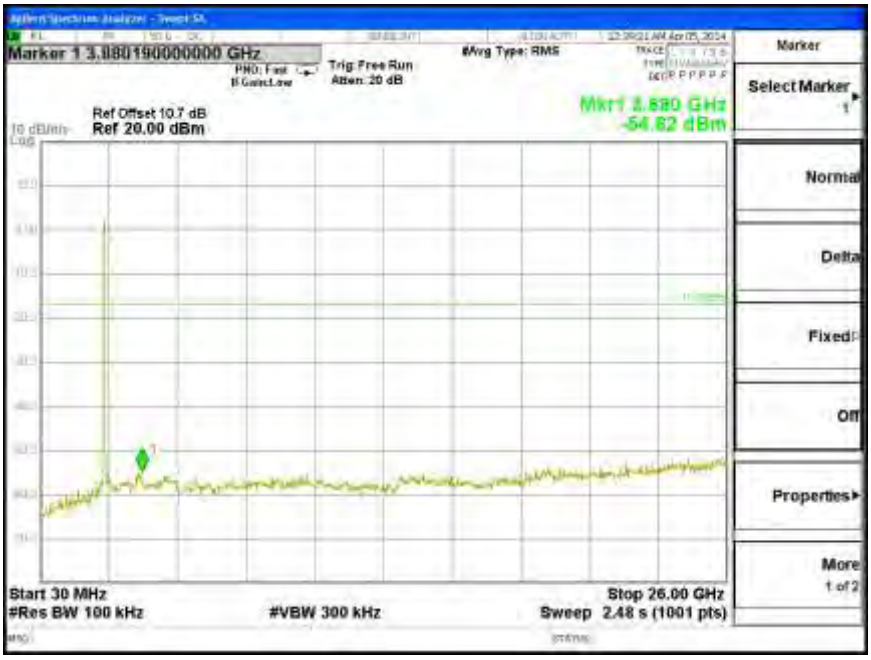


OUT OF BAND Chain 1 LOW CH

OUT OF BAND Chain 1 MID CH



OUT OF BAND Chain 1 HIGH CH



8.3. 802.11n HT20 2Tx CDD MODE IN THE 2.4 GHz BAND

8.3.1. 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)	Minimum Limit (MHz)
Low	2412	16.475	17.425	0.5
Mid	2437	16.000	17.425	0.5
High	2462	16.450	17.425	0.5

6 dB BANDWIDTH, Chain 0

6 dB BANDWIDTH Chain 0 LOW CH

6 dB BANDWIDTH Chain 0 MID CH

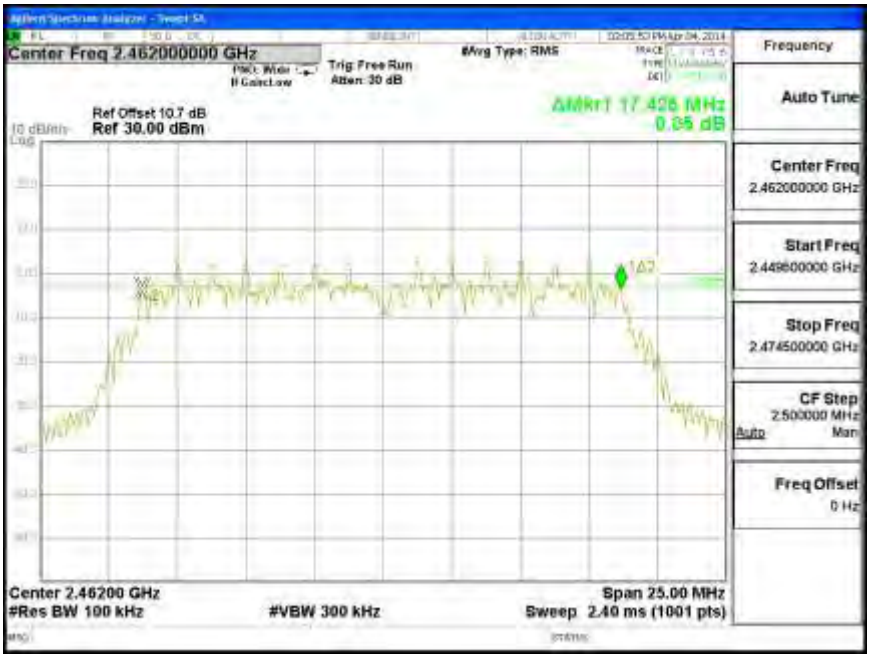
6 dB BANDWIDTH Chain 0 HIGH CH

6 dB BANDWIDTH, Chain 1

6 dB BANDWIDTH Chain 1 LOW CH

6 dB BANDWIDTH Chain 1 MID CH

6 dB BANDWIDTH Chain 1 HIGH CH



8.3.2. 99% BANDWIDTH

LIMITS

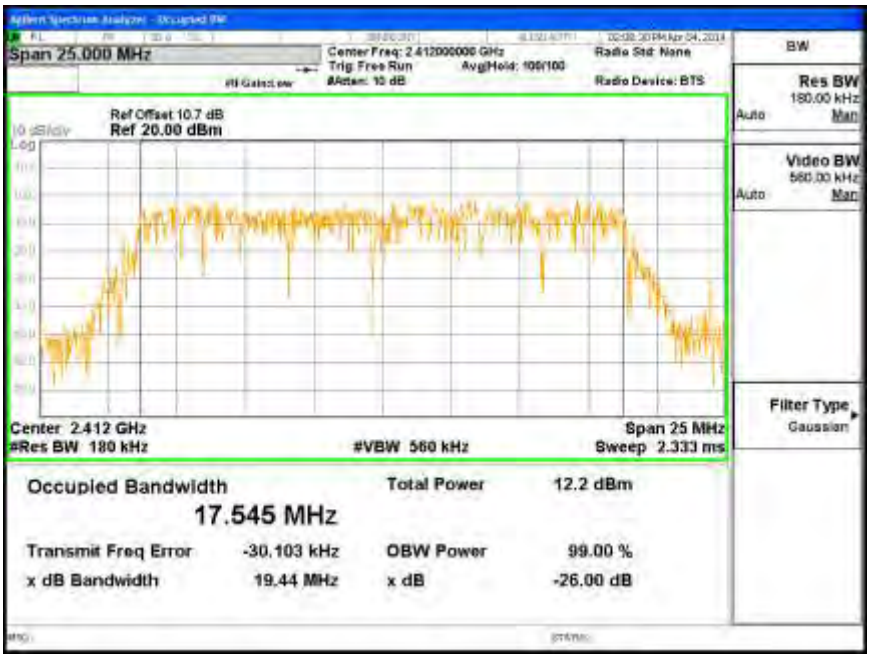
None; for reporting purposes only.

RESULTS

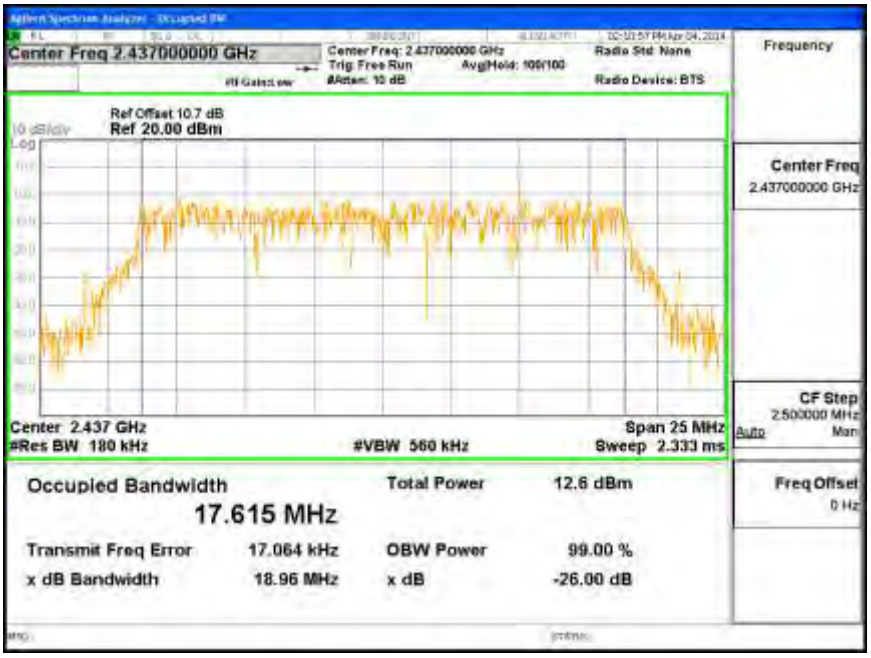
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	17.5450	17.6290
Mid	2437	17.6150	17.6250
High	2462	17.6080	17.6280

99% BANDWIDTH, Chain 0

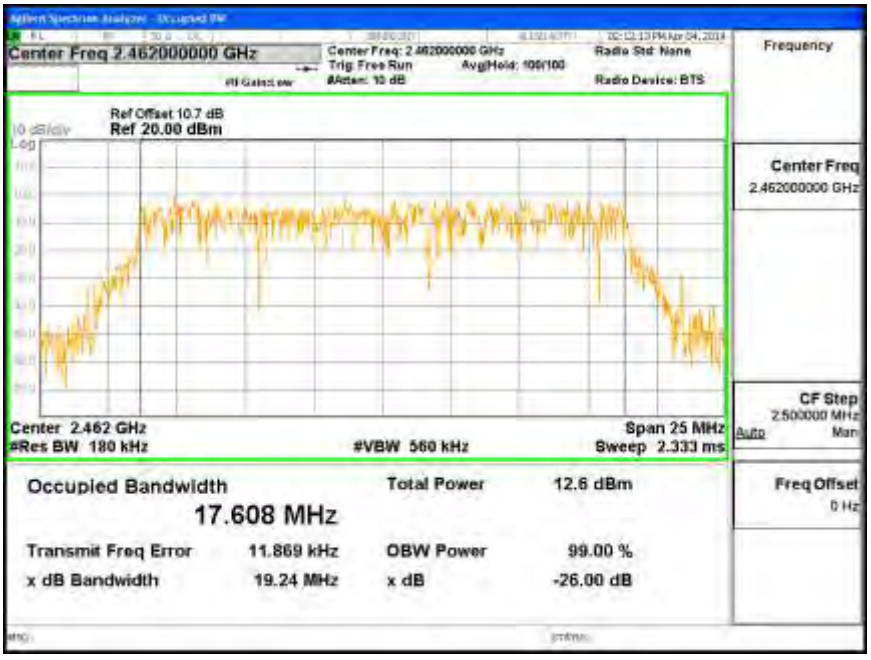
99% BANDWIDTH Chain 0 LOW CH



99% BANDWIDTH Chain 0 MID CH

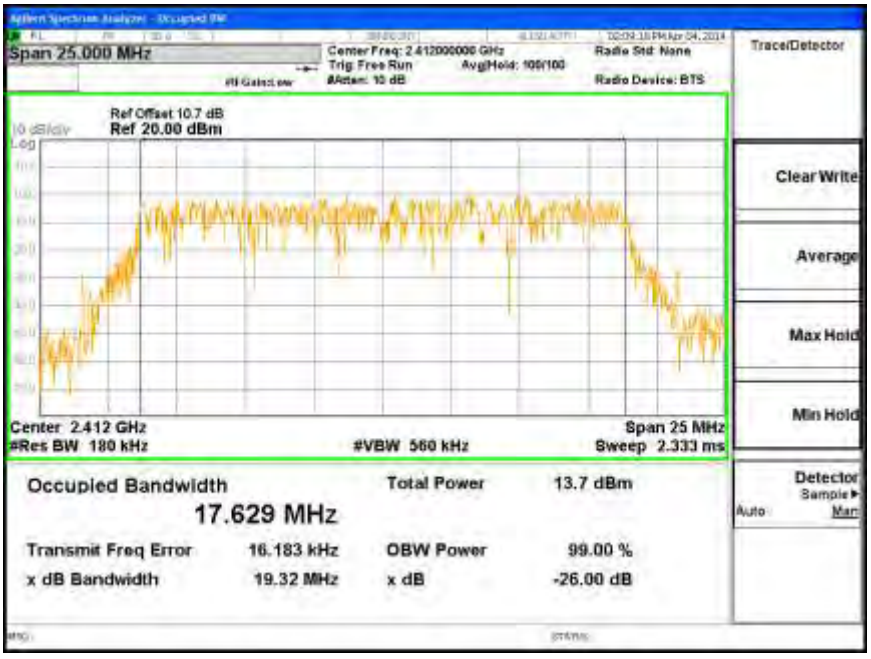


99% BANDWIDTH Chain 0 HIGH CH

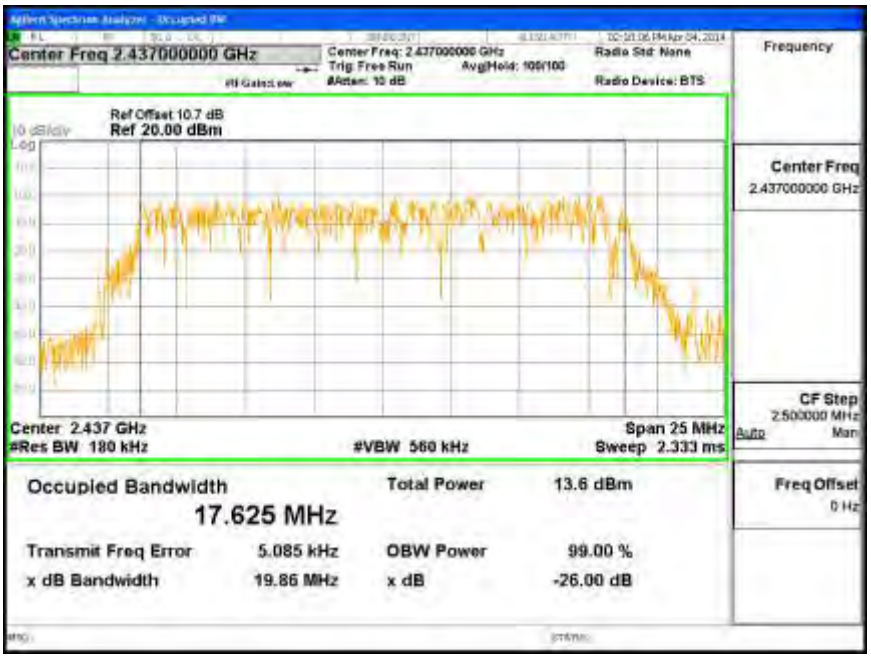


99% BANDWIDTH, Chain 1

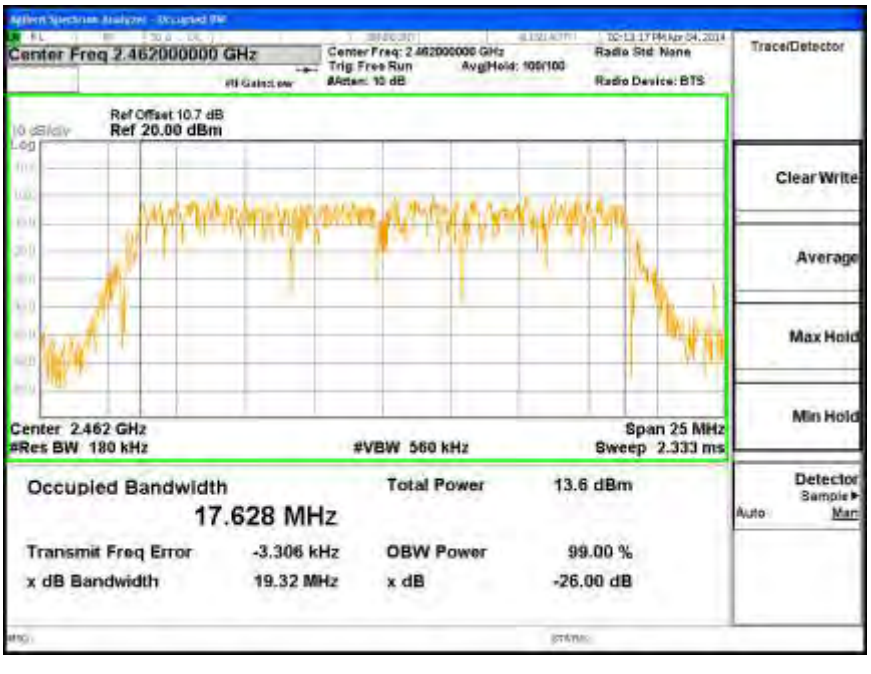
99% BANDWIDTH Chain 1 LOW CH



99% BANDWIDTH Chain 1 MID CH



99% BANDWIDTH Chain 1 HIGH CH



8.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	2412	12.37	13.93	16.23
Mid	2437	12.64	13.92	16.34
High	2462	12.58	13.98	16.35

8.3.4. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

Use this table for correlated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.40	3.60	7.02

RESULTS

Limits

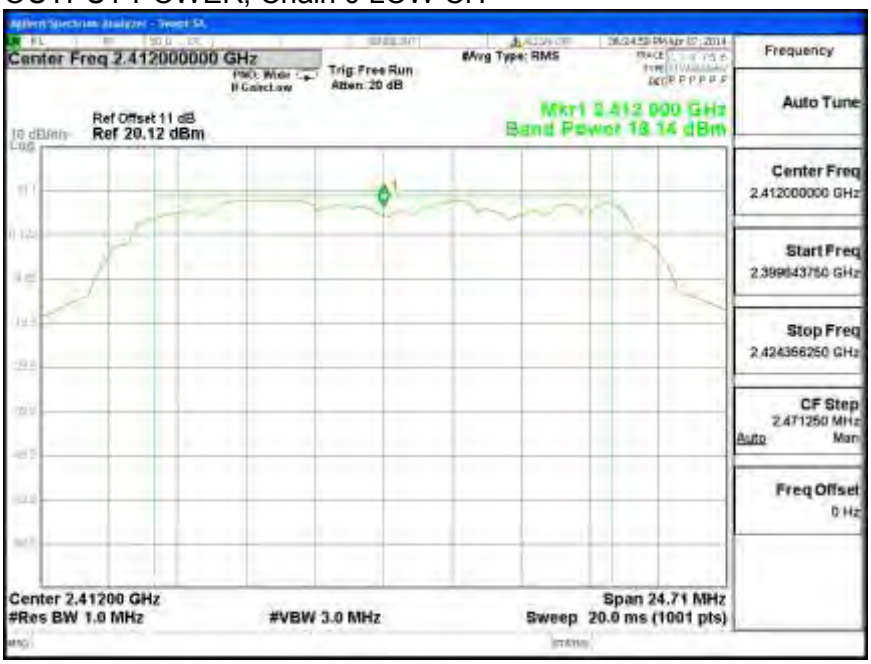
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	7.02	28.98	30	36	28.98
Mid	2437	7.02	28.98	30	36	28.98
High	2462	7.02	28.98	30	36	28.98

Results

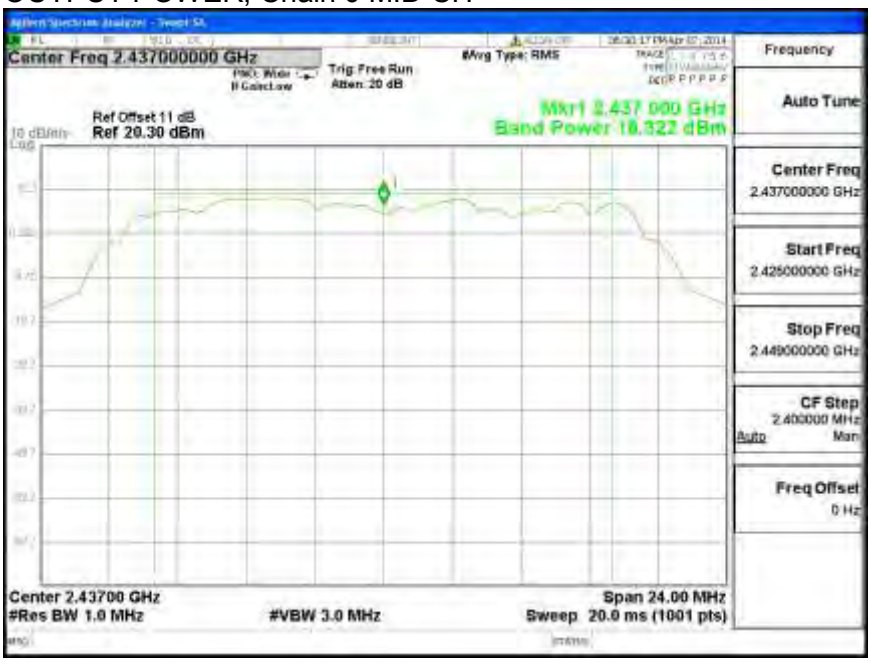
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	18.14	19.66	21.98	28.98	-7.00
Mid	2437	18.32	19.79	22.13	28.98	-6.85
High	2462	18.35	19.89	22.20	28.98	-6.78

OUTPUT POWER, Chain 0

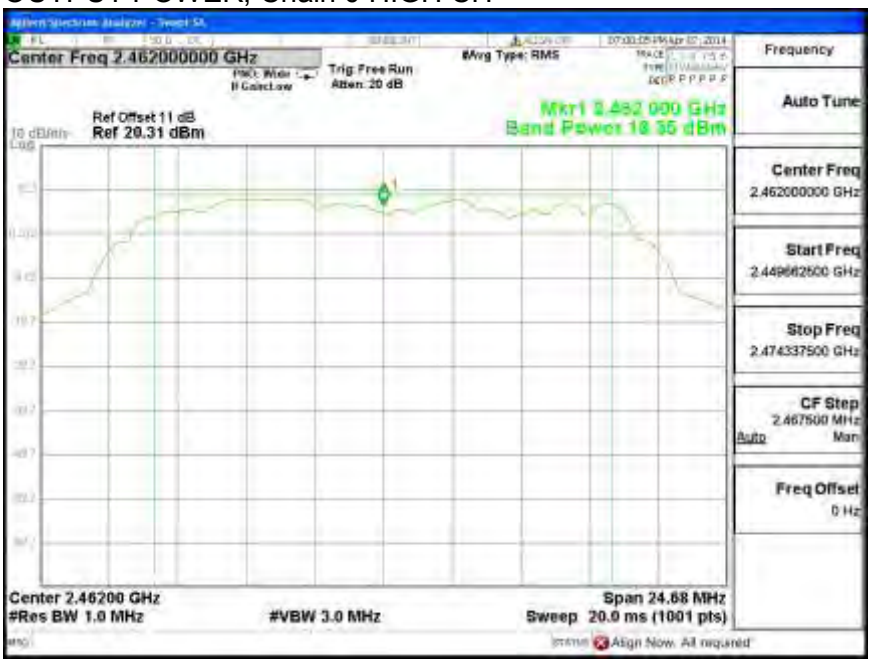
OUTPUT POWER, Chain 0 LOW CH



OUTPUT POWER, Chain 0 MID CH

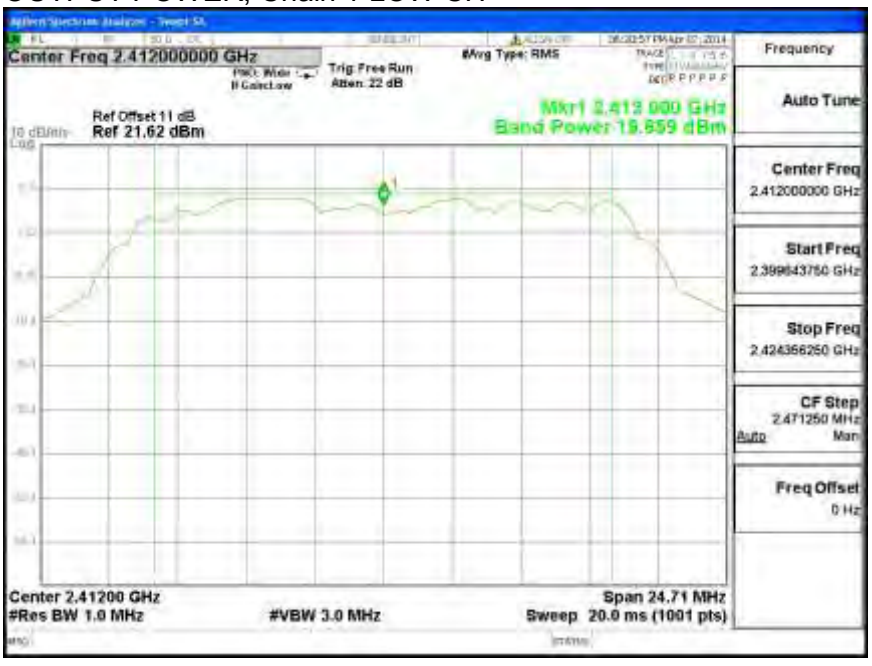


OUTPUT POWER, Chain 0 HIGH CH

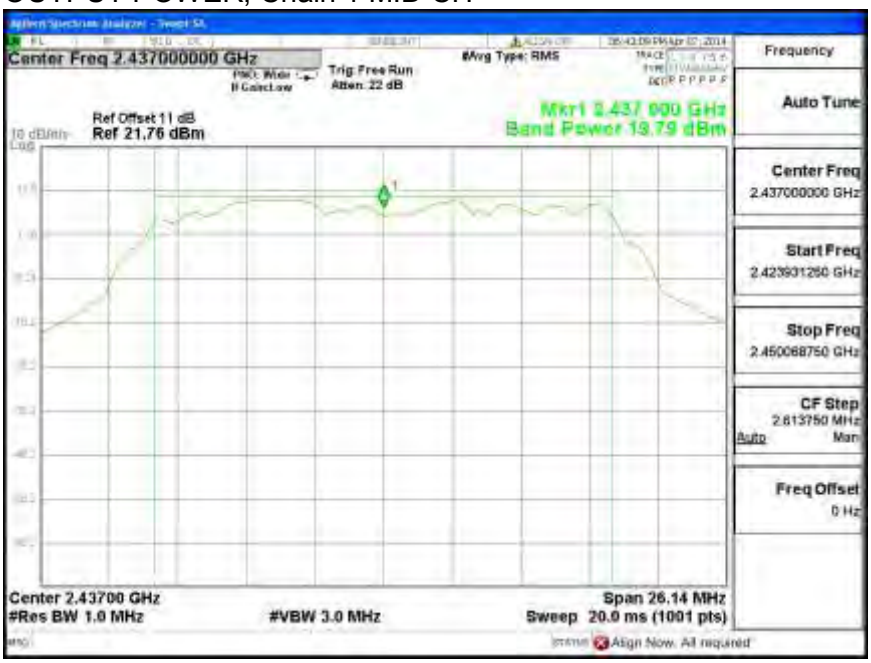


OUTPUT POWER, Chain 1

OUTPUT POWER, Chain 1 LOW CH



OUTPUT POWER, Chain 1 MID CH



OUTPUT POWER, Chain 1 HIGH CH

8.3.5. PSD

LIMITS

FCC §15.247

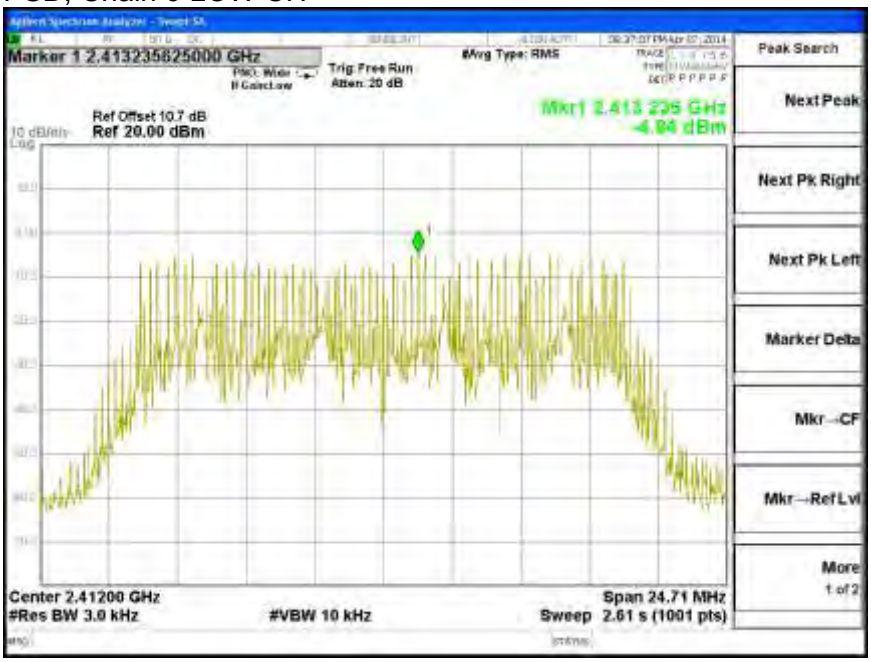
RESULTS

PSD Results

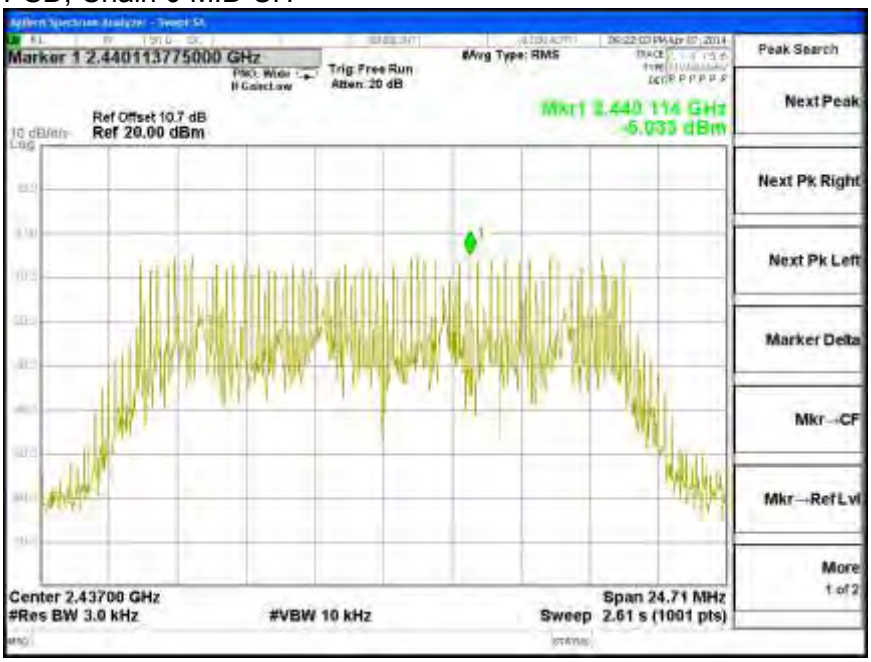
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-4.84	-2.33	-0.40	8.0	-8.4
Mid	2437	-5.03	-2.92	-0.84	8.0	-8.8
High	2462	-5.15	-3.40	-1.18	8.0	-9.2

PSD, Chain 0

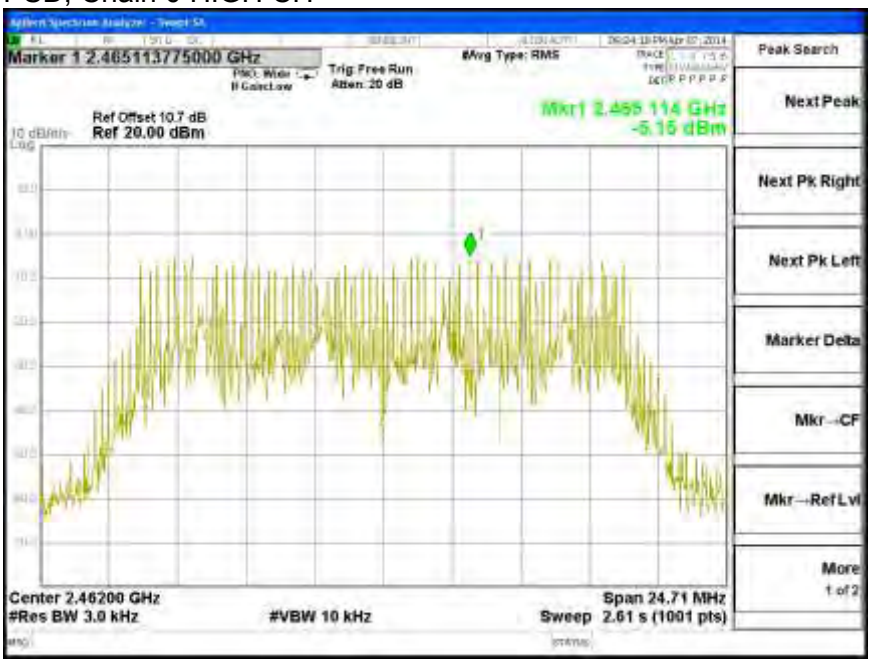
PSD, Chain 0 LOW CH



PSD, Chain 0 MID CH

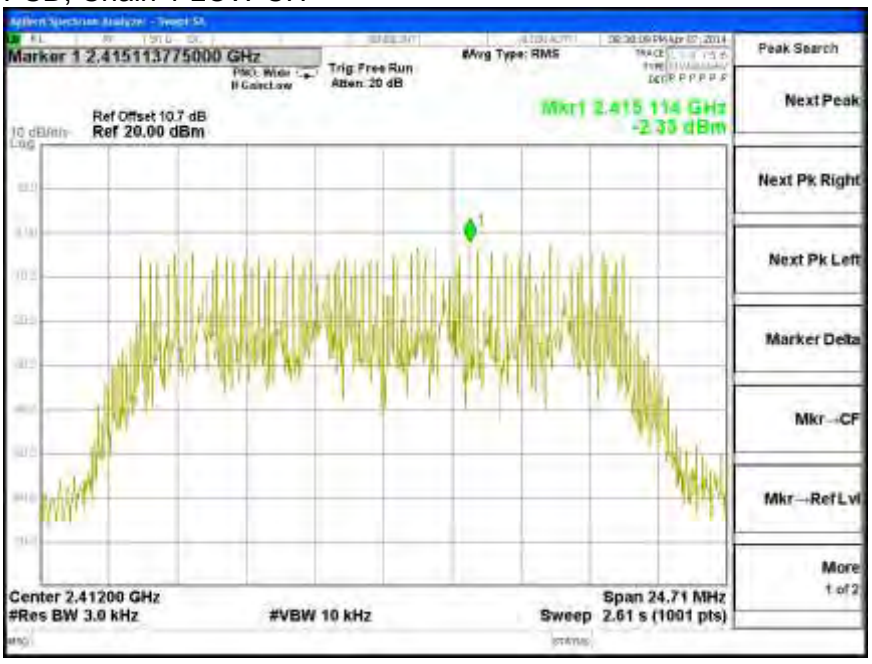


PSD, Chain 0 HIGH CH

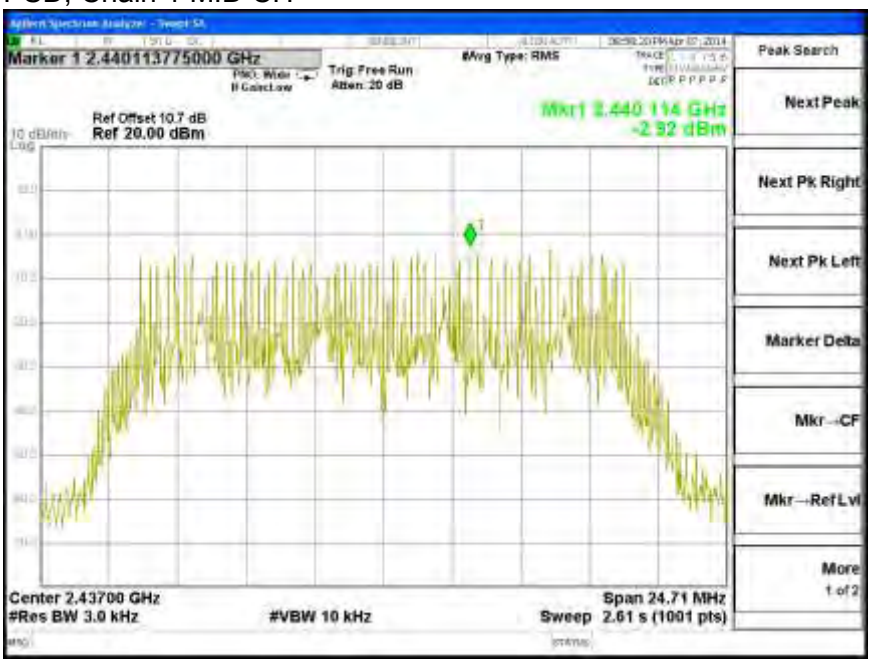


PSD, Chain 1

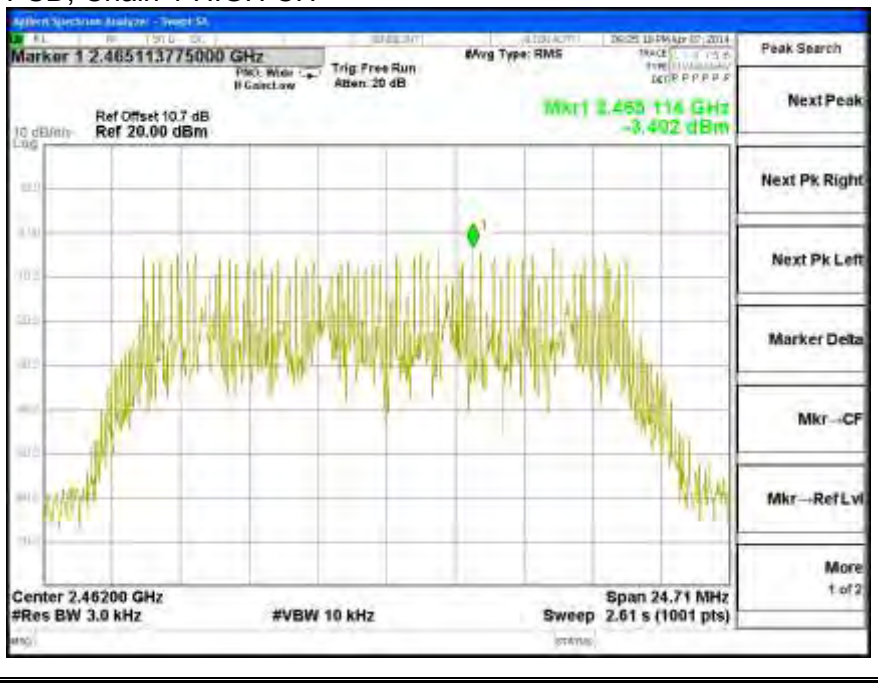
PSD, Chain 1 LOW CH



PSD, Chain 1 MID CH



PSD, Chain 1 HIGH CH



8.3.6. OUT-OF-BAND EMISSIONS

LIMITS

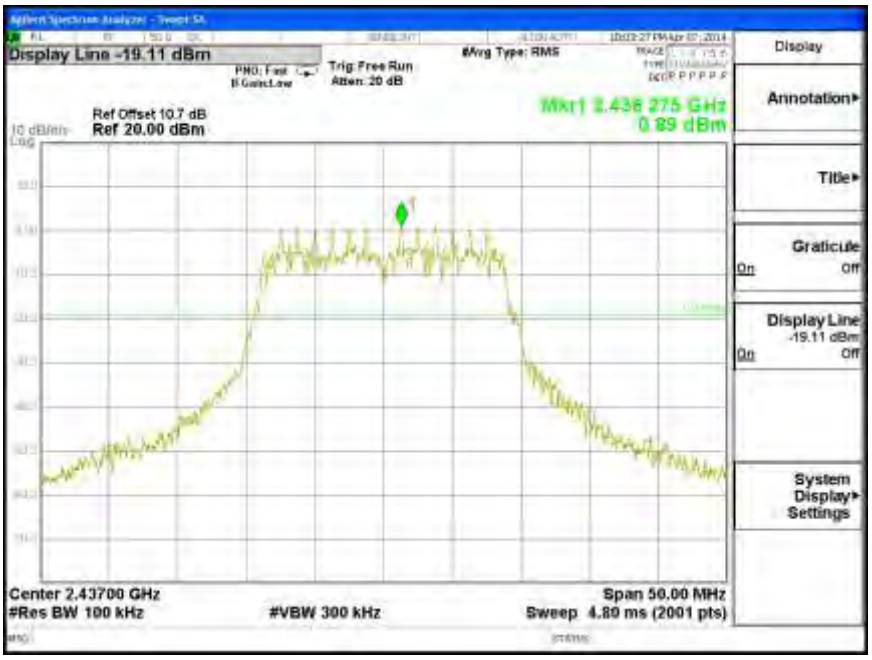
FCC §15.247 (d)

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

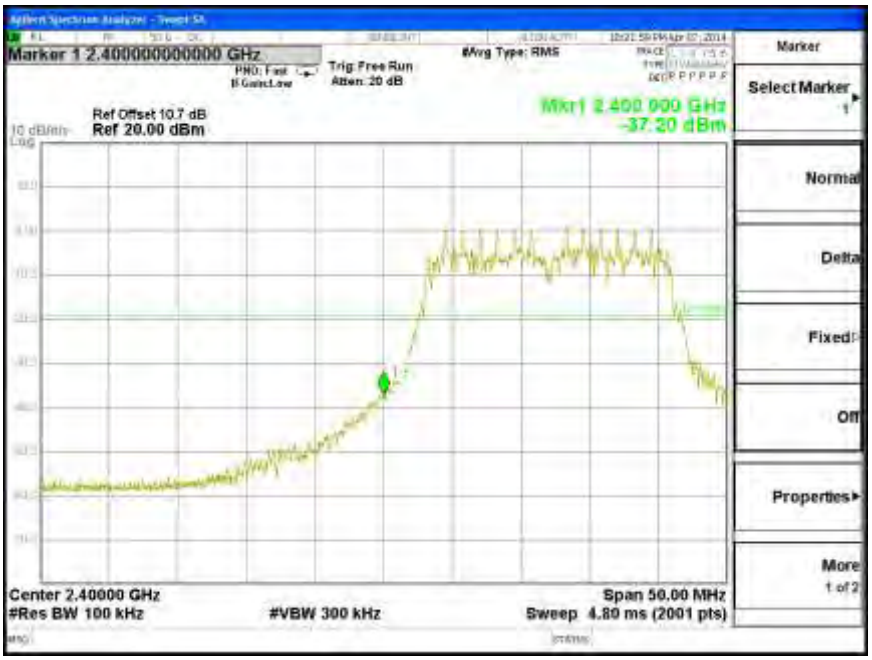
IN-BAND REFERENCE LEVEL, Chain 0

REFERENCE LEVEL Chain 0 MID CH



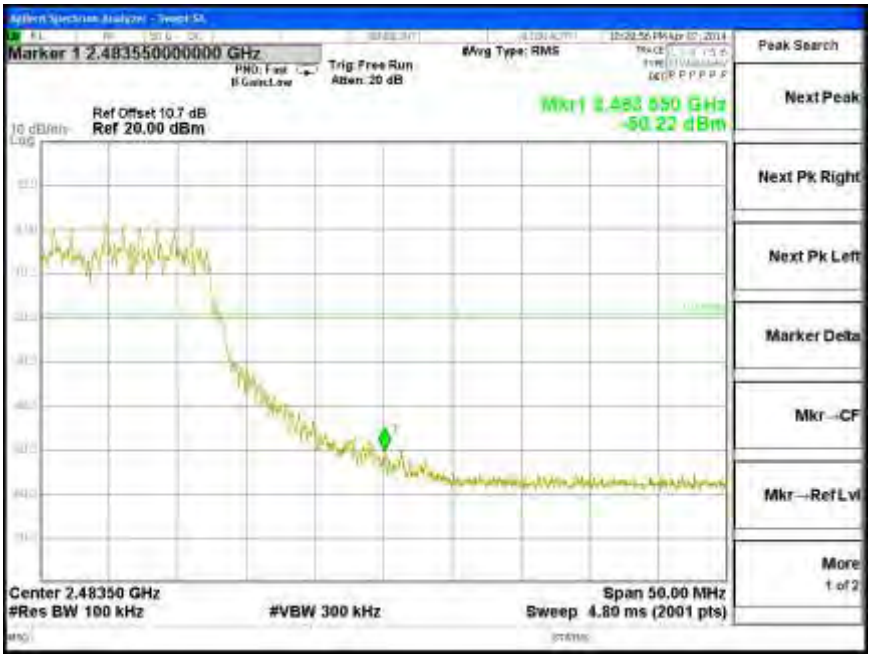
LOW CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 LOW CH



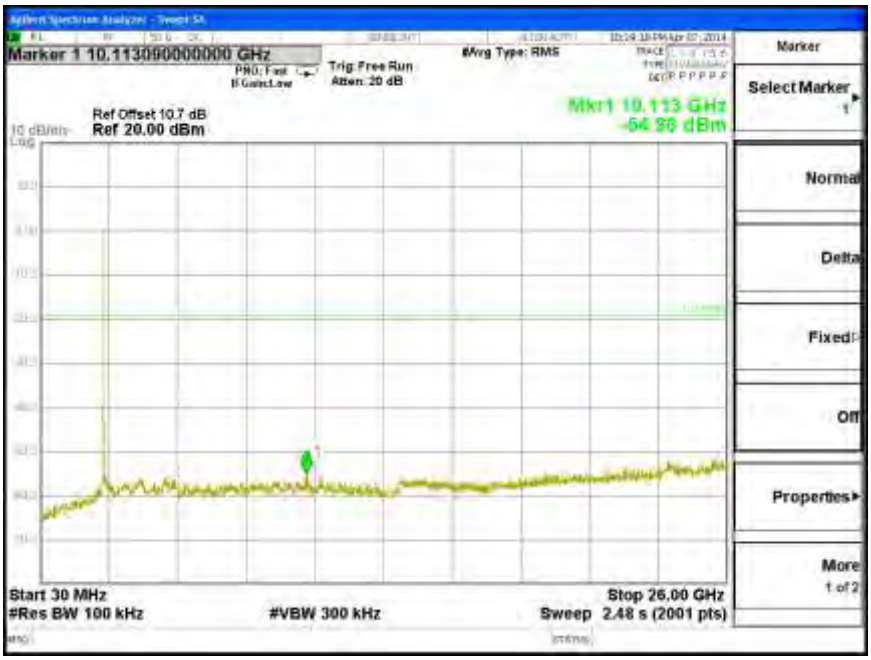
HIGH CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 HIGH CH

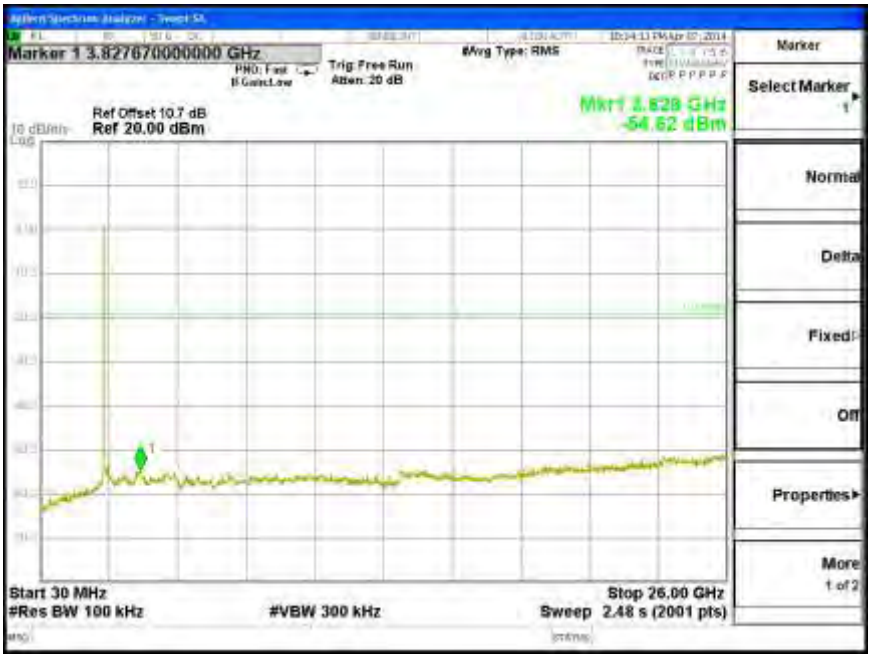


OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH



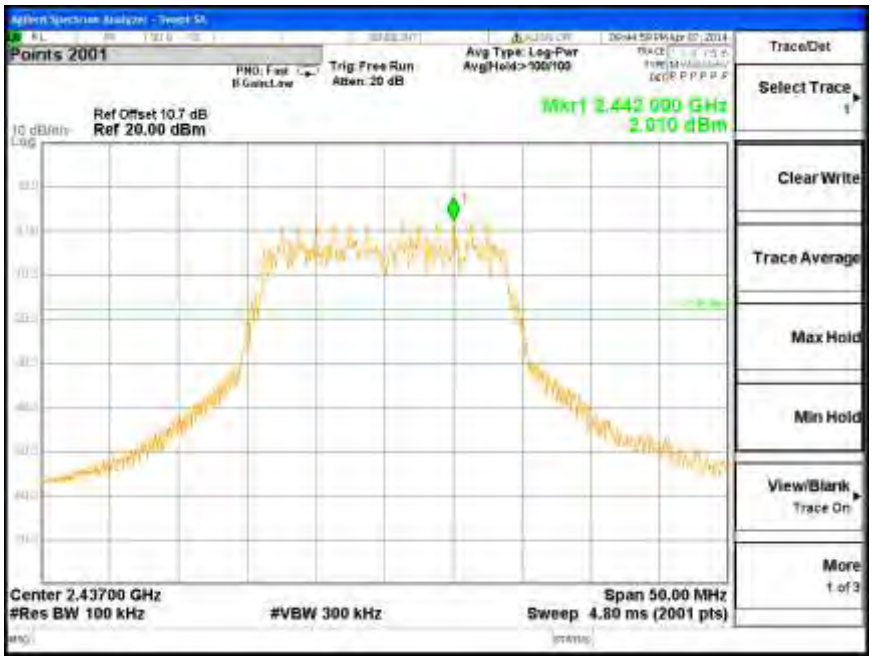
OUT OF BAND Chain 0 MID CH



OUT OF BAND Chain 0 HIGH CH

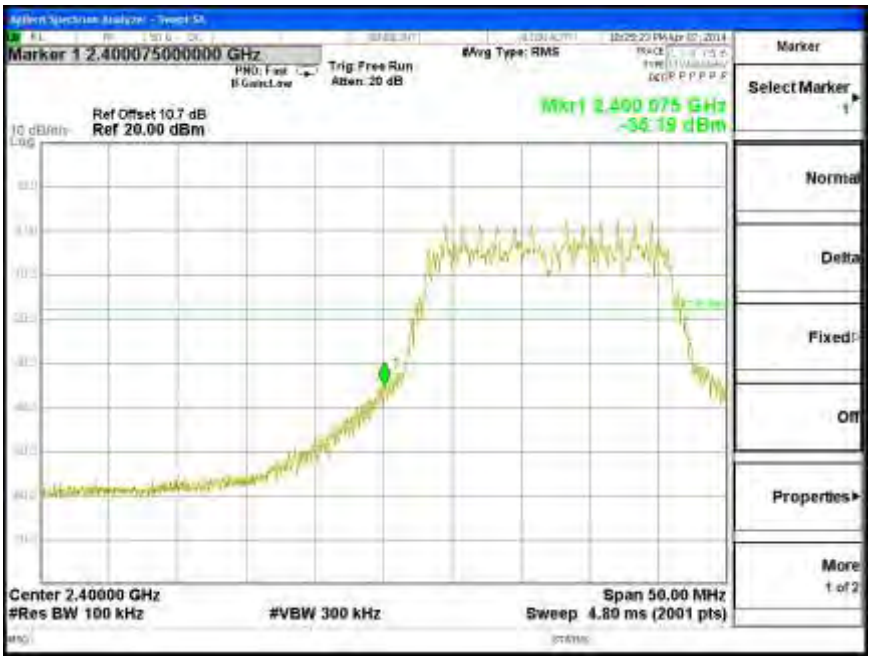
IN-BAND REFERENCE LEVEL, Chain 1

REFERENCE LEVEL Chain 1 MID CH



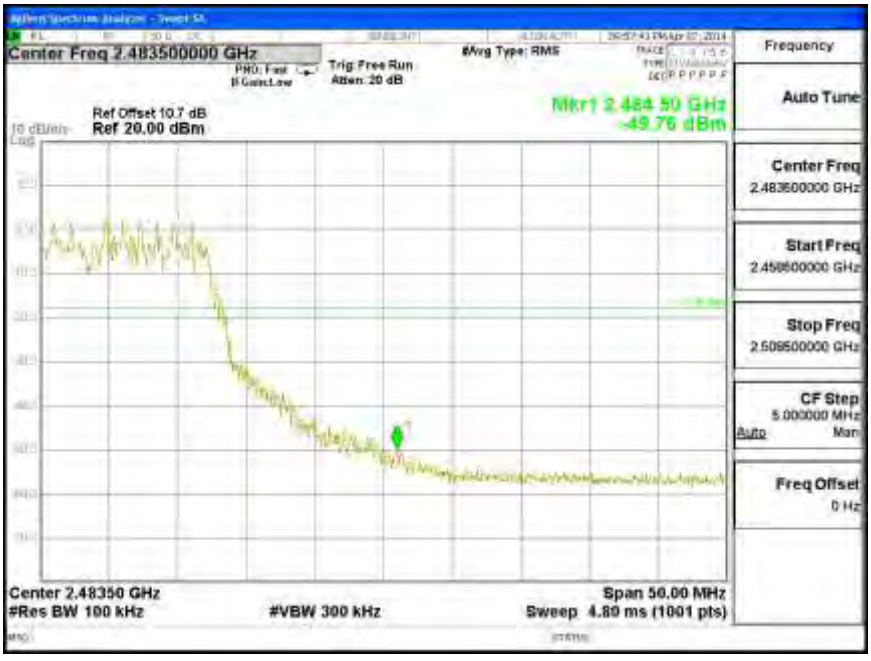
LOW CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 LOW CH

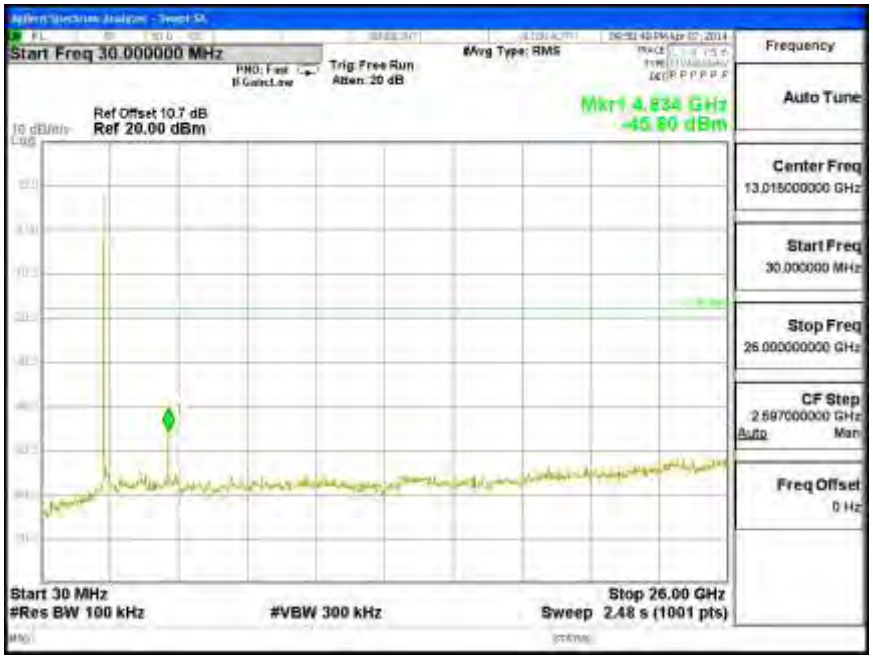


HIGH CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 HIGH CH



OUT OF BAND Chain 1 LOW CH



OUT OF BAND Chain 1 MID CH

OUT OF BAND Chain 1 HIGH CH

8.4. 802.11a 2Tx CDD MODE IN THE 5.8 GHz BAND

8.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

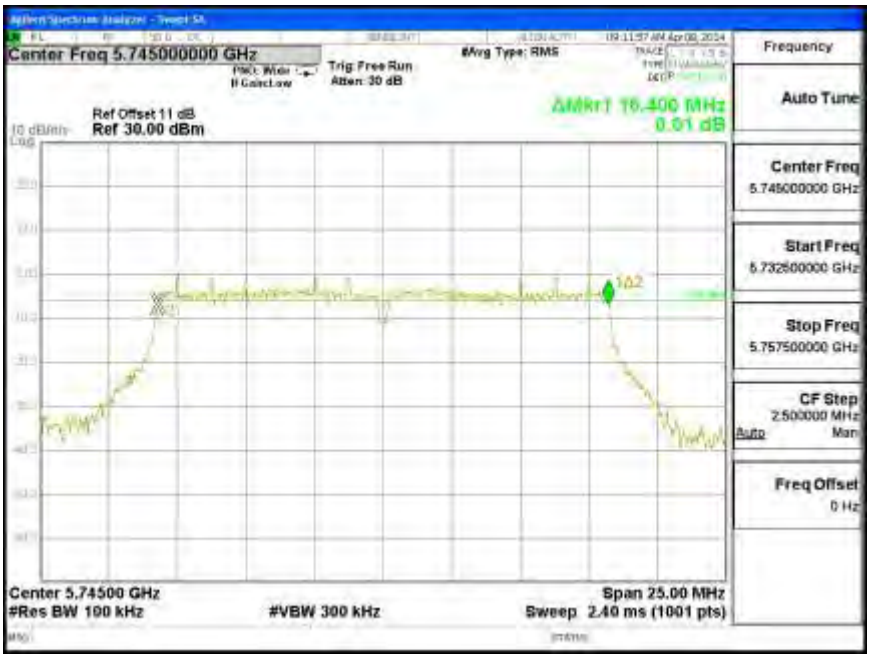
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	16.400	16.400	0.5
Mid	5785	16.350	16.350	0.5
High	5825	16.100	15.100	0.5

6 dB BANDWIDTH, Chain 0

6 dB BANDWIDTH Chain 0 LOW CH



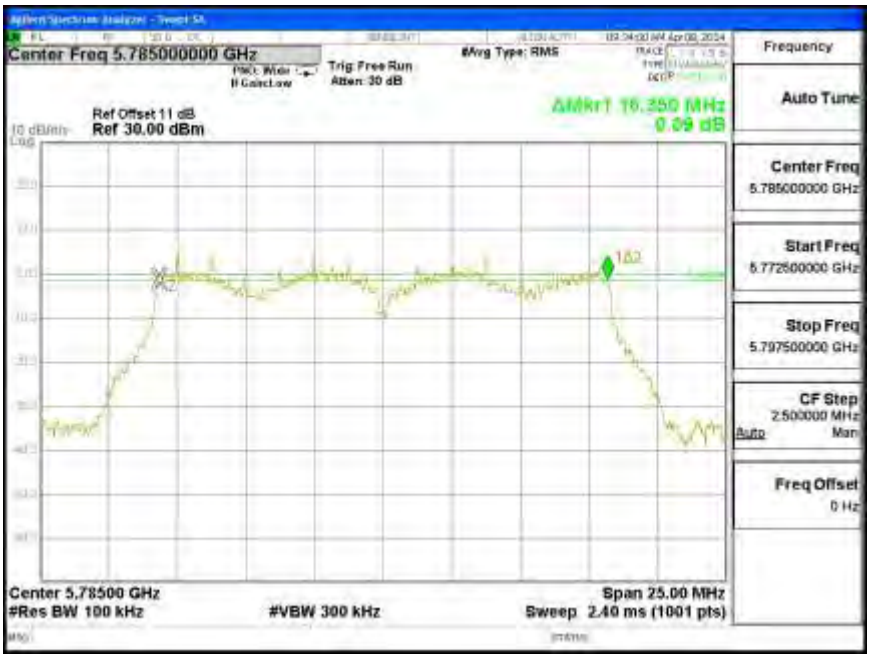
6 dB BANDWIDTH Chain 0 MID CH

6 dB BANDWIDTH Chain 0 HIGH CH

6 dB BANDWIDTH, Chain 1

6 dB BANDWIDTH Chain 1 LOW CH

6 dB BANDWIDTH Chain 1 MID CH



6 dB BANDWIDTH Chain 1 HIGH CH

8.4.2. 99% BANDWIDTH

LIMITS

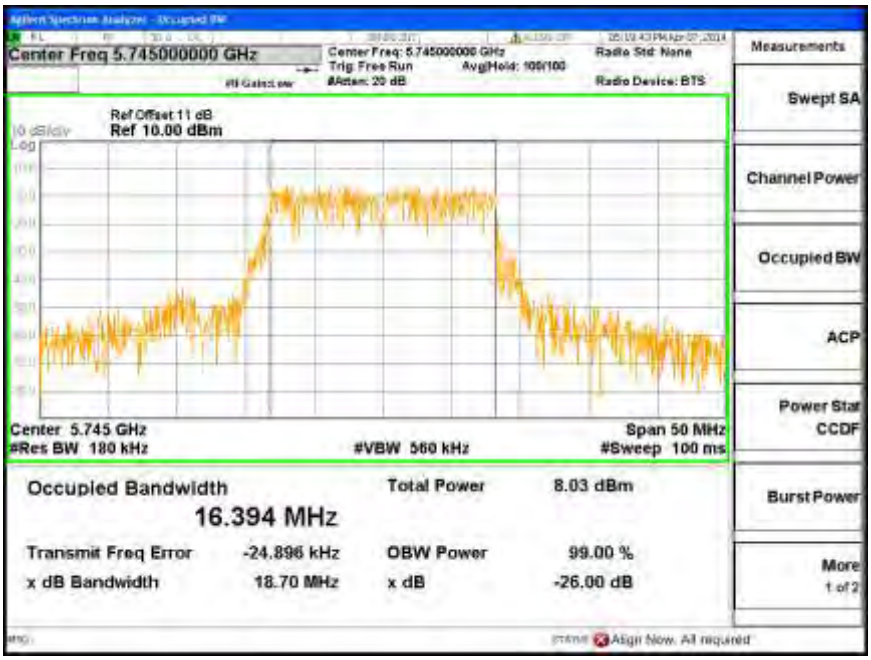
None; for reporting purposes only.

RESULTS

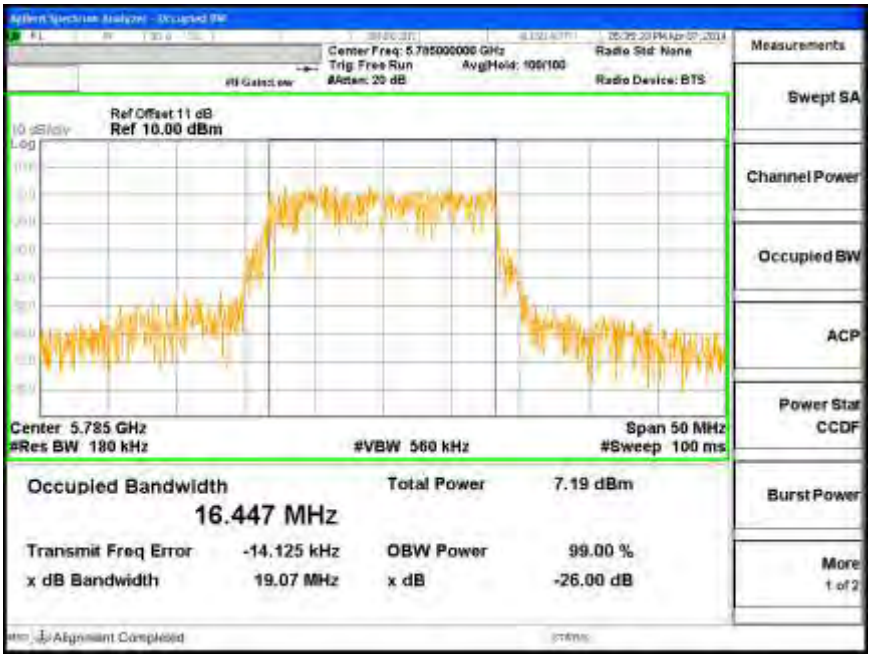
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	16.394	16.575
Mid	5785	16.447	16.410
High	5825	16.470	16.408

99% BANDWIDTH, Chain 0

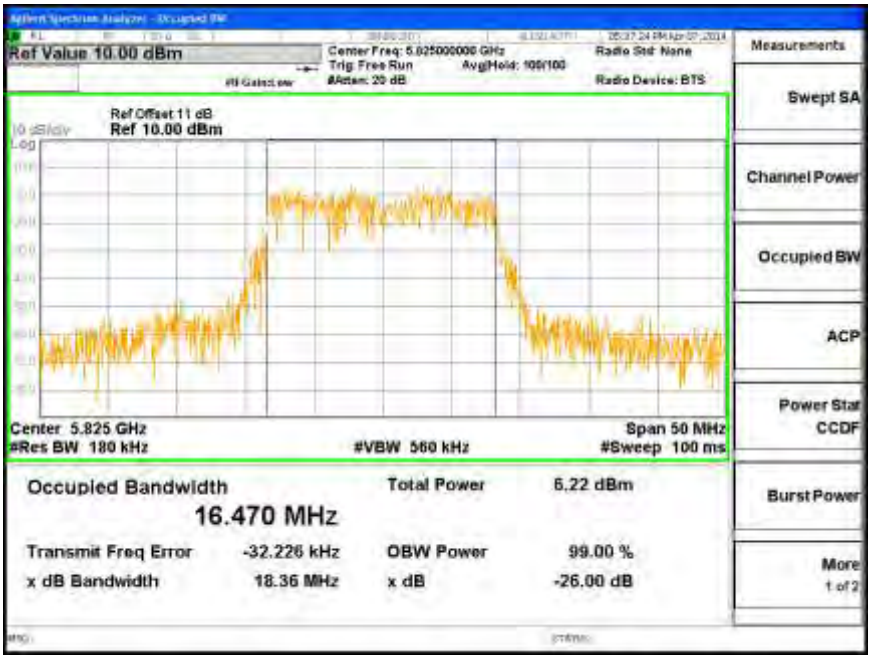
99% BANDWIDTH Chain 0 LOW CH



99% BANDWIDTH Chain 0 MID CH

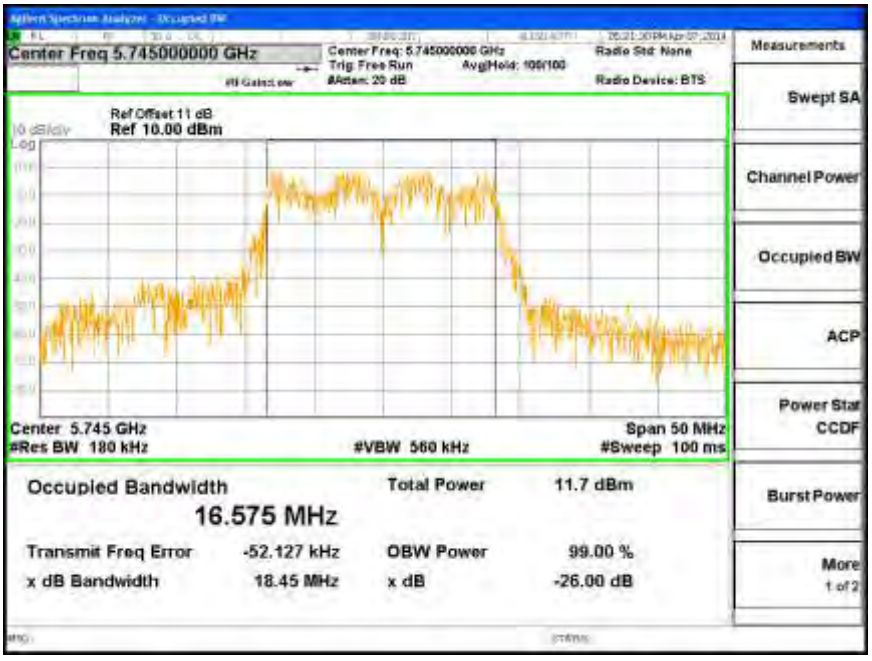


99% BANDWIDTH Chain 0 HIGH CH

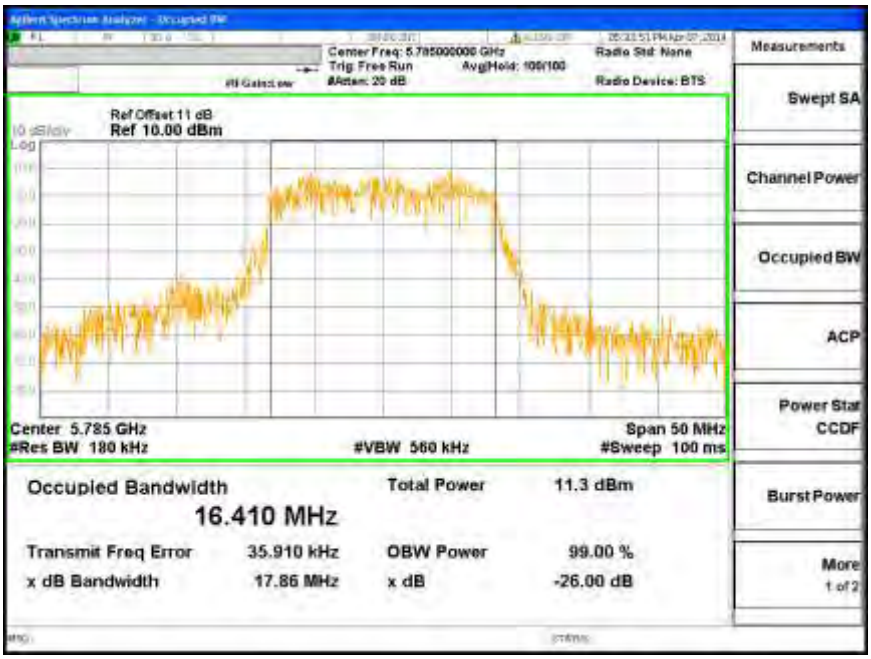


99% BANDWIDTH, Chain 1

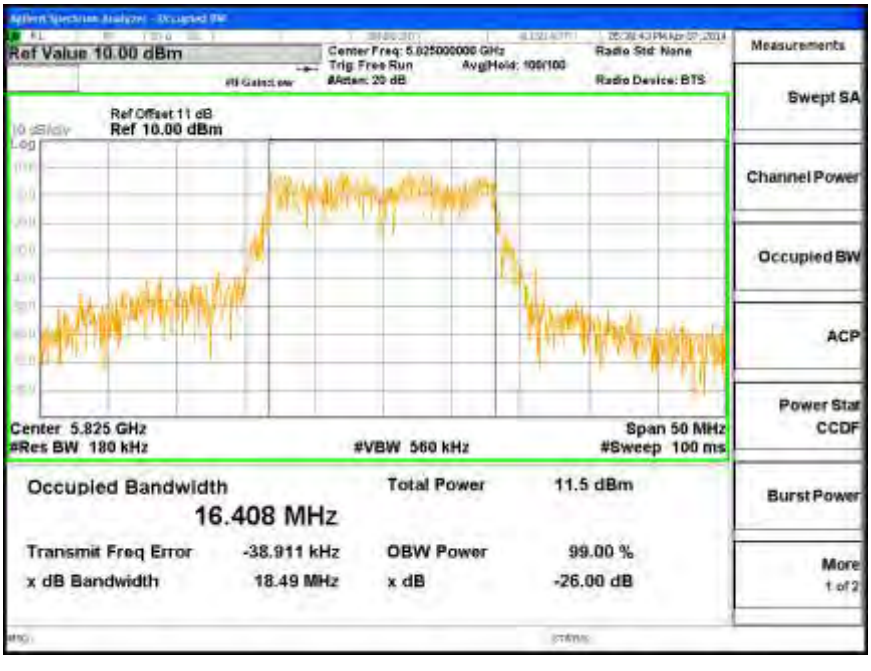
99% BANDWIDTH Chain 1 LOW CH



99% BANDWIDTH Chain 1 MID CH



99% BANDWIDTH Chain 1 HIGH CH



8.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5745	11.22	14.22	15.98
Mid	5785	9.70	13.70	15.16
High	5825	8.10	13.50	14.60

8.4.4. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

Use this table for correlated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.40	3.60	7.02

RESULTS

Limits

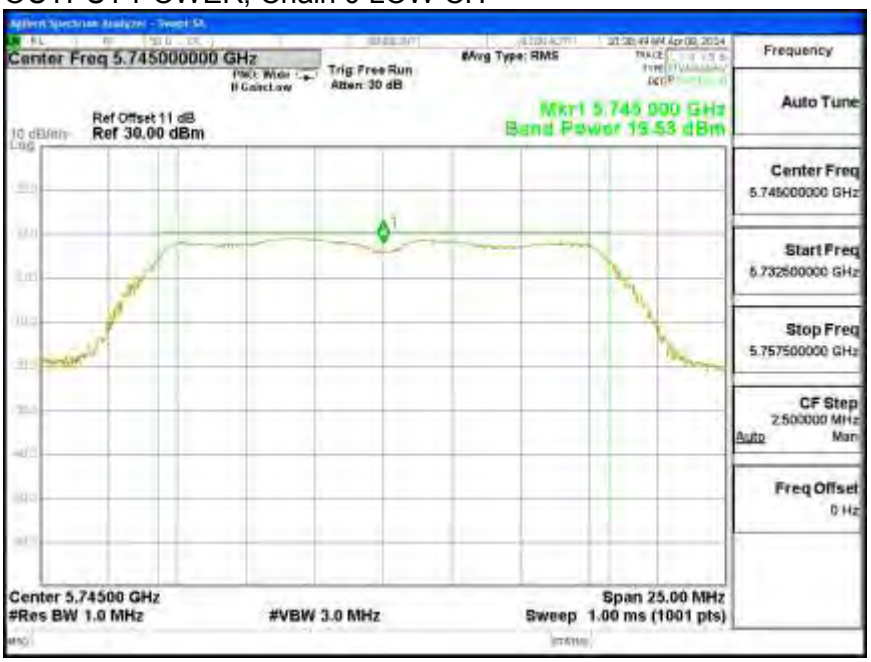
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5745	7.02	28.98	30	36	28.98
Mid	5785	7.02	28.98	30	36	28.98
High	5825	7.02	28.98	30	36	28.98

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	5745	19.53	23.61	25.05	28.98	-3.93
Mid	5785	17.65	21.53	23.02	28.98	-5.96
High	5825	15.56	20.06	20.06	28.98	-8.93

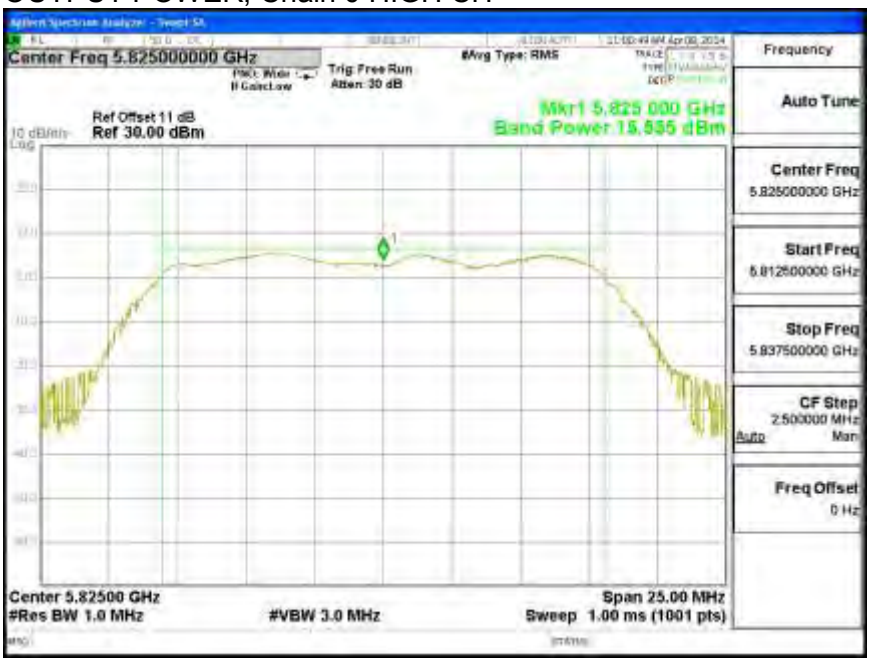
OUTPUT POWER, Chain 0

OUTPUT POWER, Chain 0 LOW CH



OUTPUT POWER, Chain 0 MID CH

OUTPUT POWER, Chain 0 HIGH CH

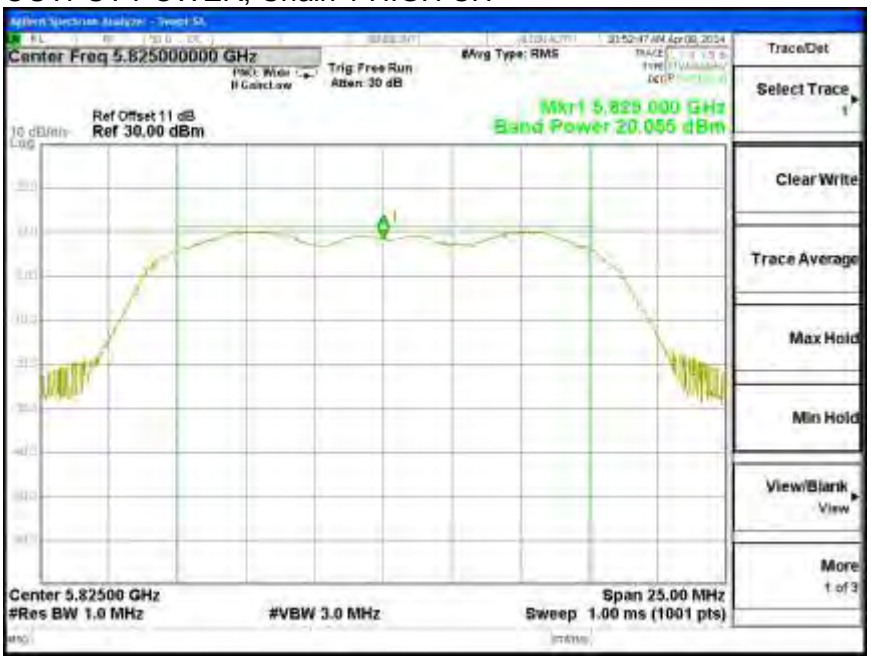


OUTPUT POWER, Chain 1

OUTPUT POWER, Chain 1 LOW CH

OUTPUT POWER, Chain 1 MID CH

OUTPUT POWER, Chain 1 HIGH CH



8.4.5. PSD

LIMITS

FCC §15.247

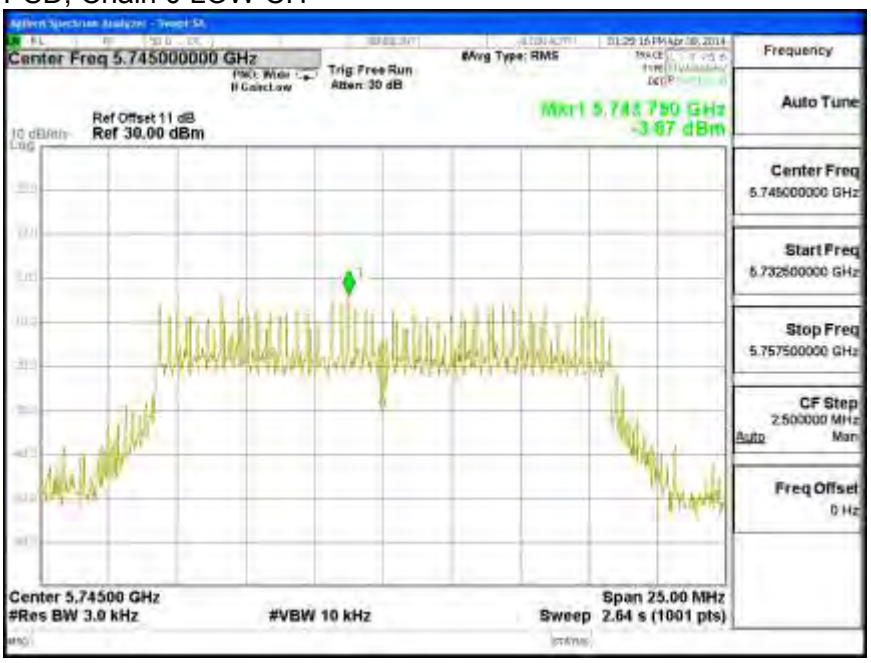
RESULTS

PSD Results

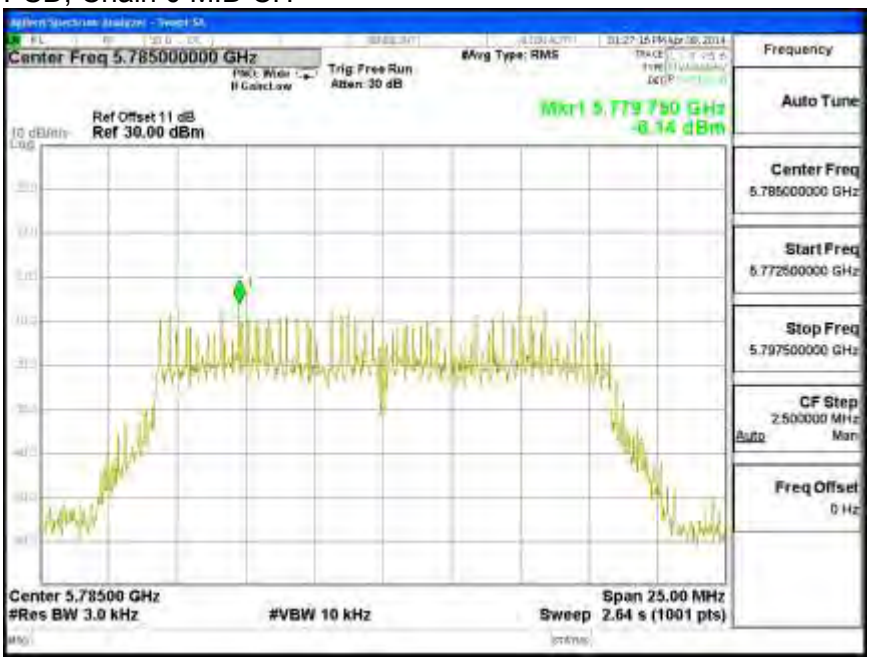
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-3.87	-0.05	1.46	8.0	-6.5
Mid	5785	-6.14	-2.05	-0.62	8.0	-8.6
High	5825	-5.55	-1.29	0.09	8.0	-7.9

PSD, Chain 0

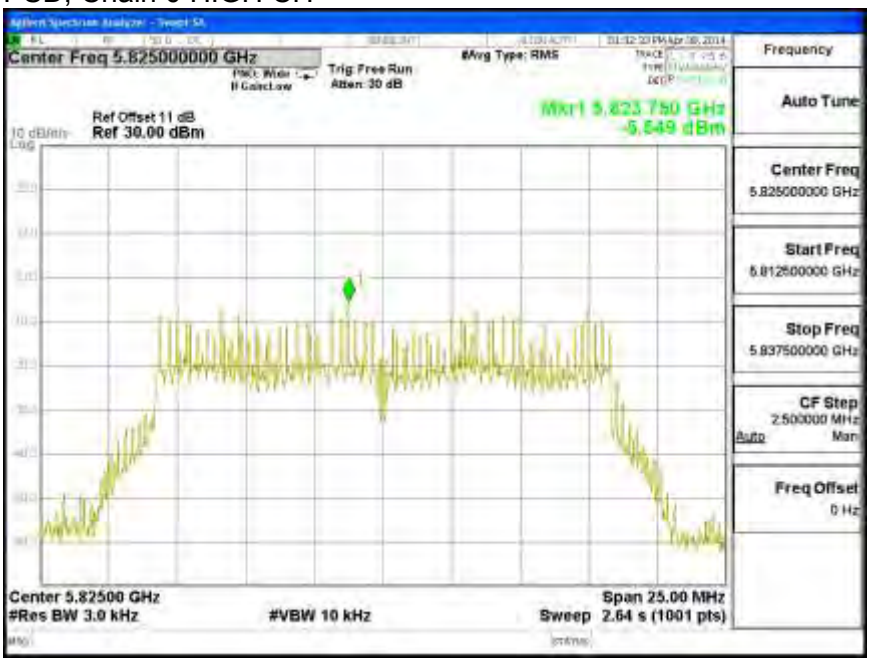
PSD, Chain 0 LOW CH



PSD, Chain 0 MID CH

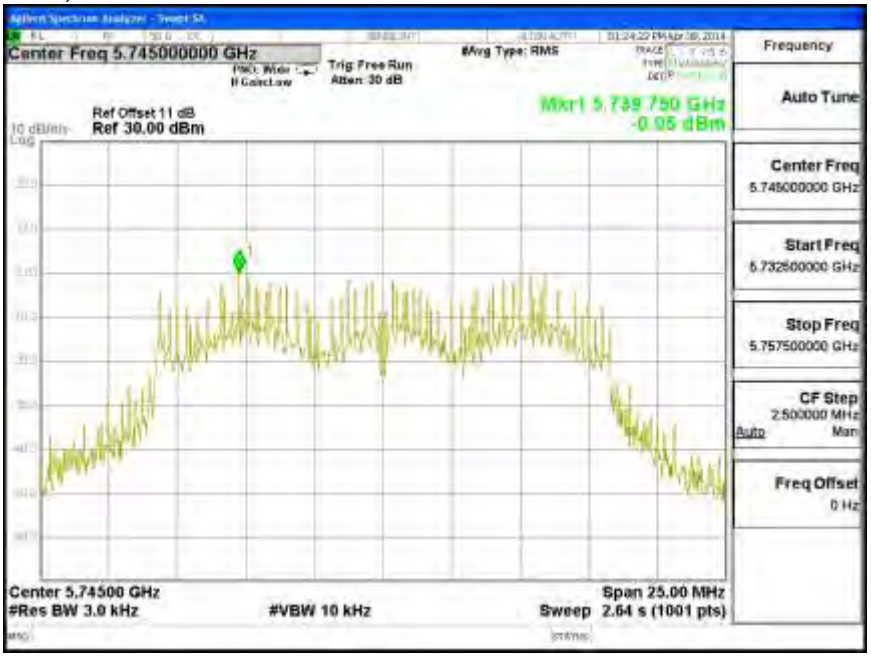


PSD, Chain 0 HIGH CH

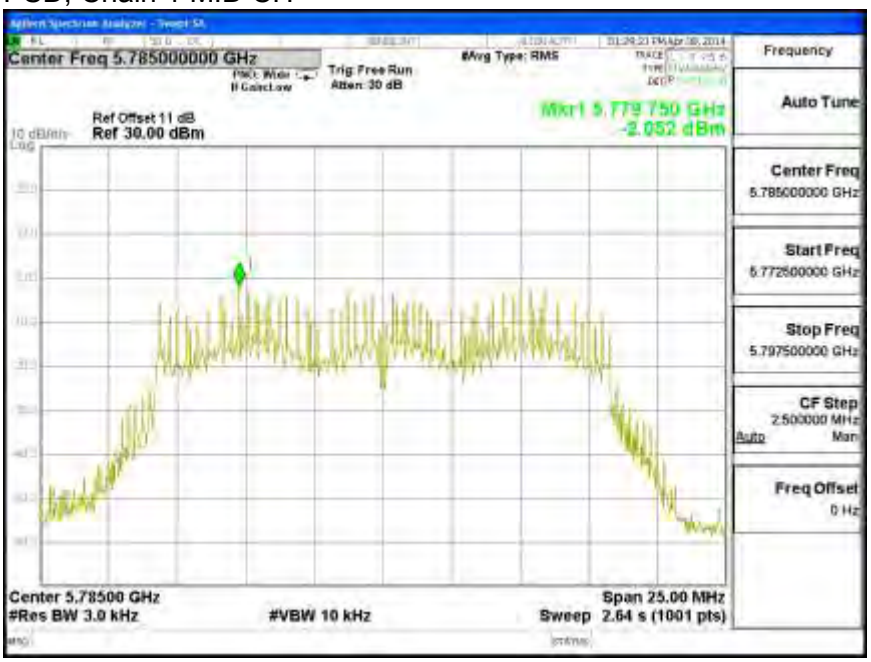


PSD, Chain 1

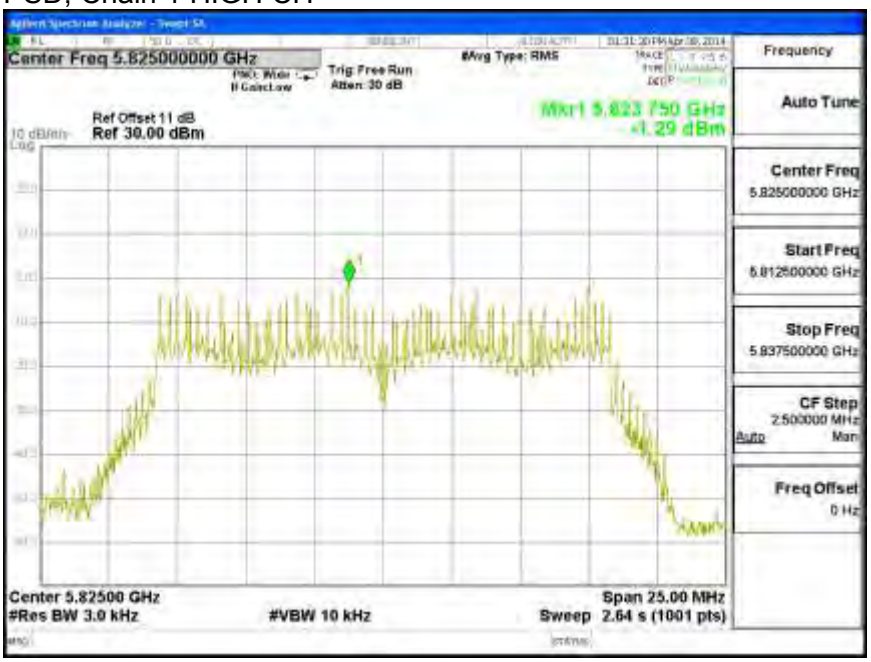
PSD, Chain 1 LOW CH



PSD, Chain 1 MID CH



PSD, Chain 1 HIGH CH



8.4.6. OUT-OF-BAND EMISSIONS

LIMITS

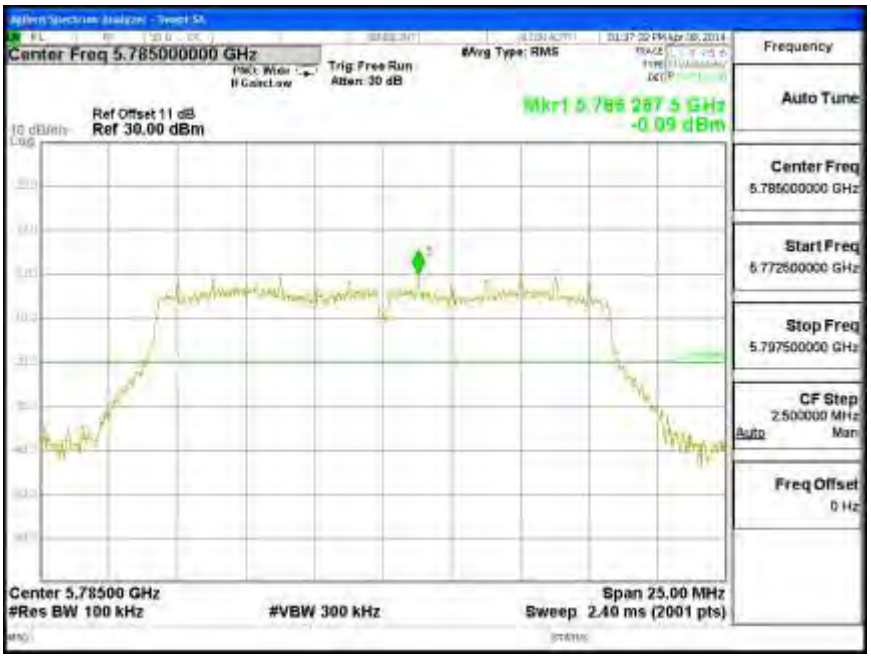
FCC §15.247 (d)

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

REFERENCE LEVEL Chain 0 MID CH

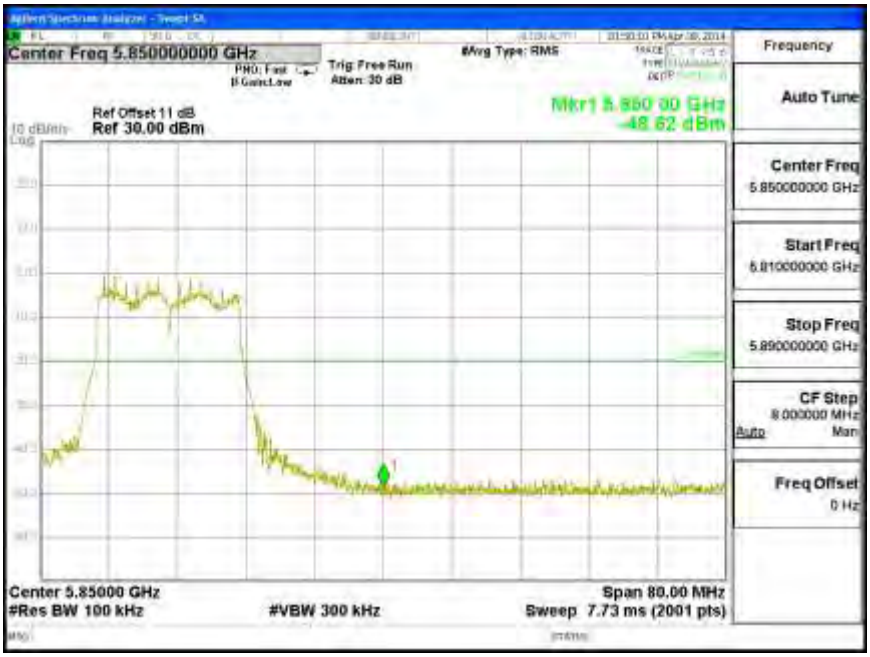


LOW CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 LOW CH

HIGH CHANNEL BANDEDGE, Chain 0

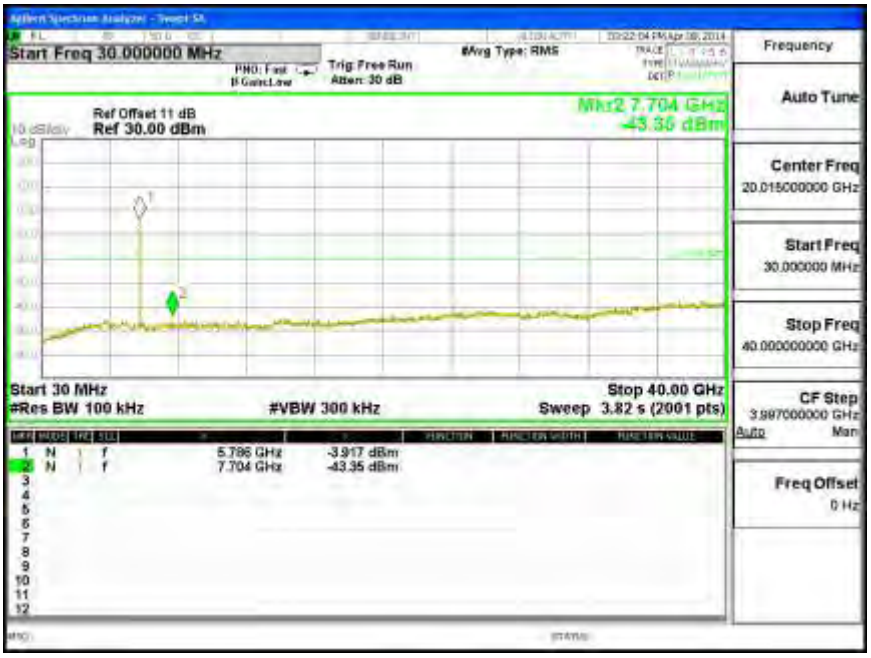
AUTHORIZED BAND EDGE Chain 0 HIGH CH



OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH

OUT OF BAND Chain 0 MID CH



OUT OF BAND Chain 0 HIGH CH

IN-BAND REFERENCE LEVEL, Chain 1

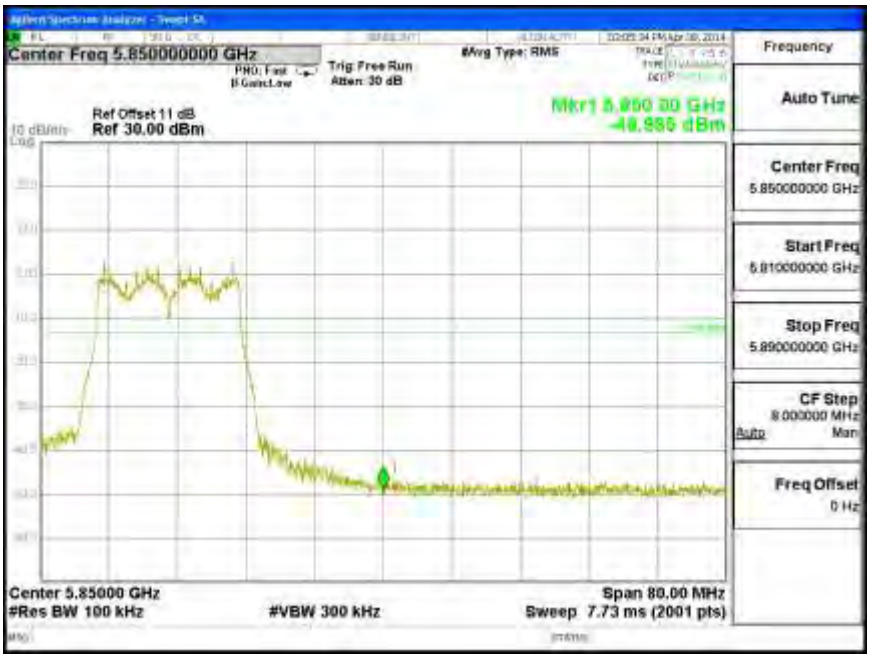
REFERENCE LEVEL Chain 1 MID CH

LOW CHANNEL BANDEDGE, Chain 1

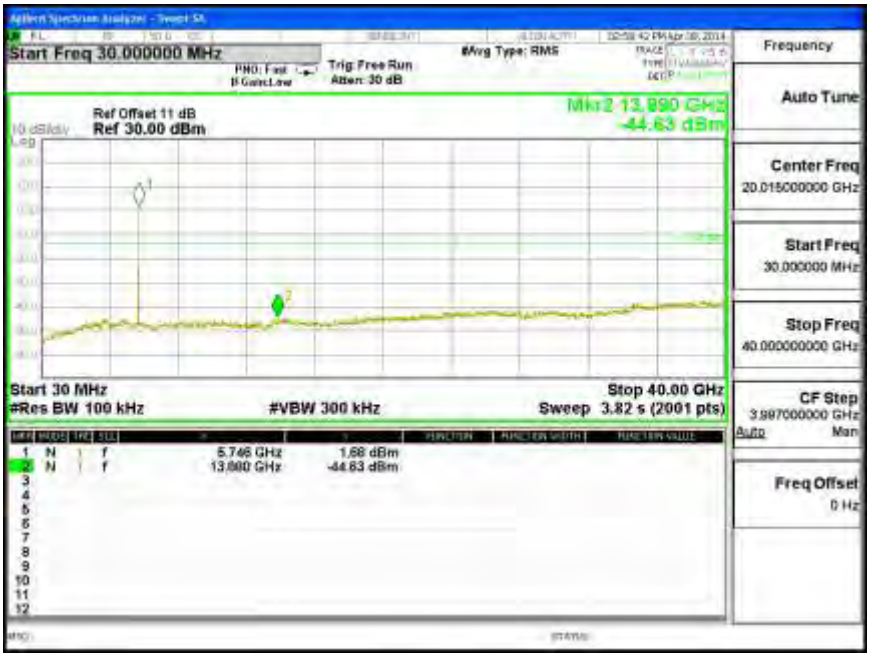
AUTHORIZED BAND EDGE Chain 1 LOW CH

HIGH CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 HIGH CH



OUT OF BAND Chain 1 LOW CH



OUT OF BAND Chain 1 MID CH

OUT OF BAND Chain 1 HIGH CH

8.5. 802.11n HT20 2Tx CDD MODE IN THE 5.8 GHz BAND

8.5.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

RESULTS

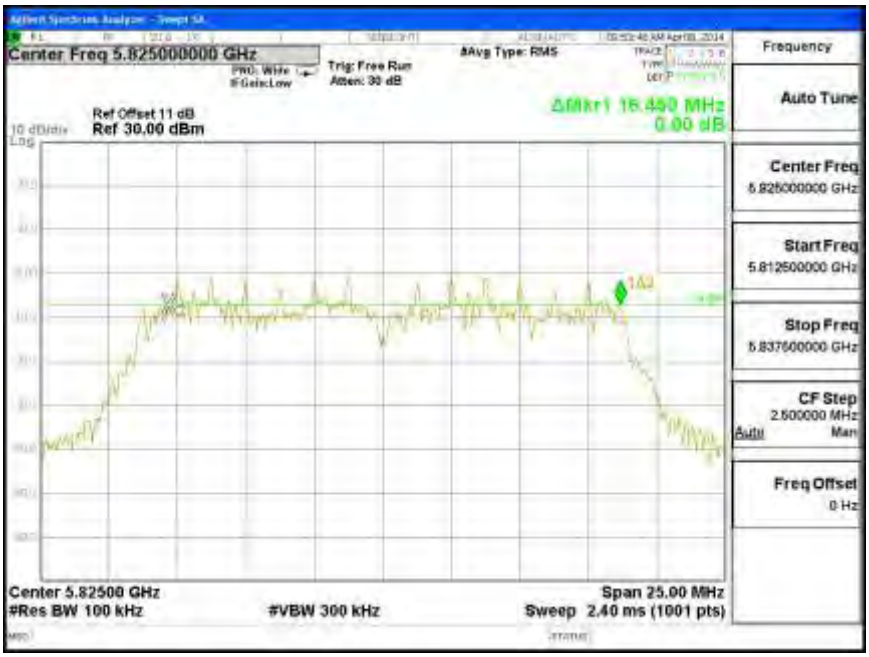
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	16.93	16.03	0.5
Mid	5785	16.33	16.33	0.5
High	5825	16.45	16.03	0.5

6 dB BANDWIDTH, Chain 0

6 dB BANDWIDTH Chain 0 LOW CH

6 dB BANDWIDTH Chain 0 MID CH

6 dB BANDWIDTH Chain 0 HIGH CH



6 dB BANDWIDTH, Chain 1

6 dB BANDWIDTH Chain 1 LOW CH

6 dB BANDWIDTH Chain 1 MID CH

6 dB BANDWIDTH Chain 1 HIGH CH

8.5.2. 99% BANDWIDTH

LIMITS

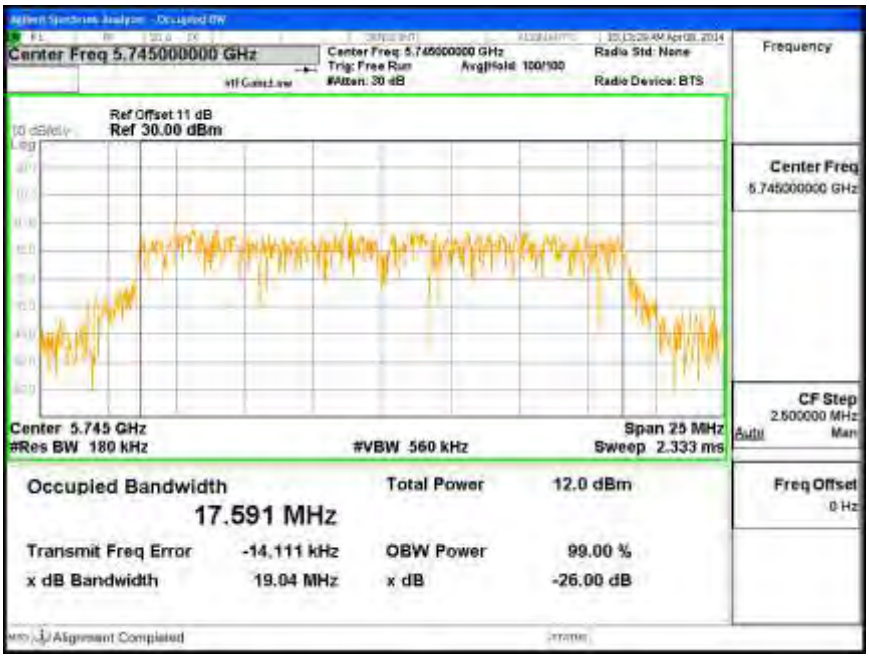
None; for reporting purposes only.

RESULTS

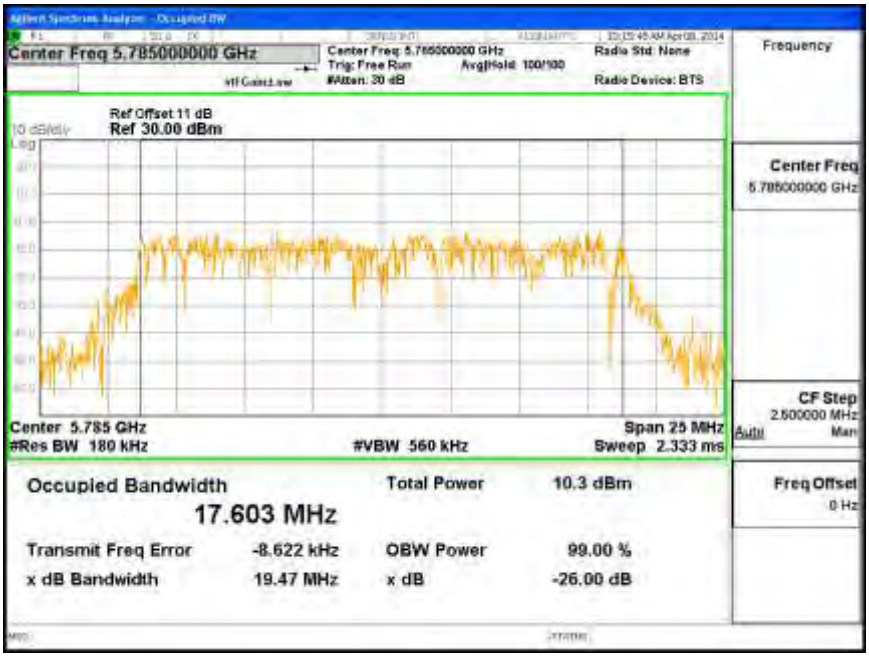
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	17.591	17.662
Mid	5785	17.603	17.620
High	5825	17.441	17.679

99% BANDWIDTH, Chain 0

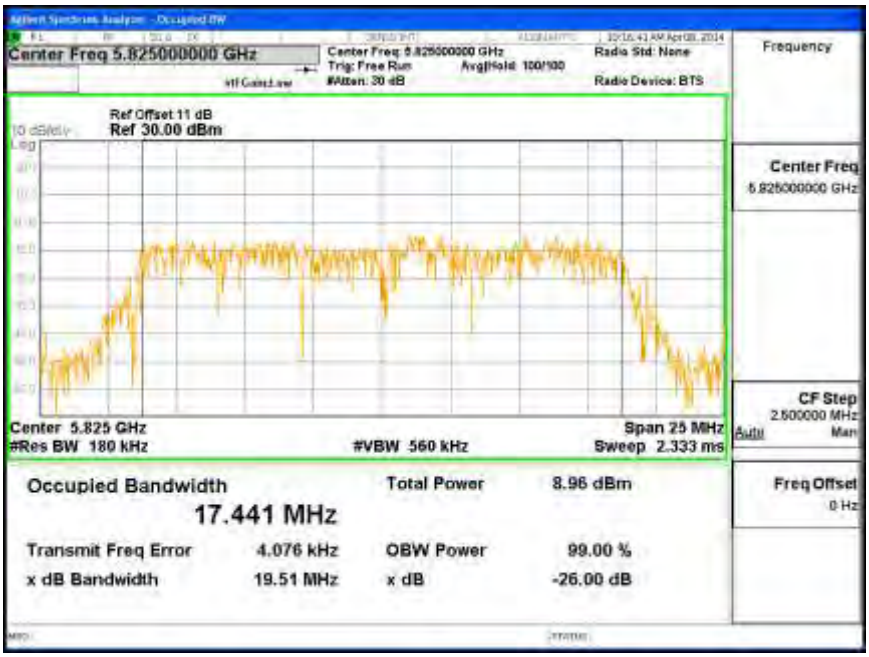
99% BANDWIDTH Chain 0 LOW CH



99% BANDWIDTH Chain 0 MID CH

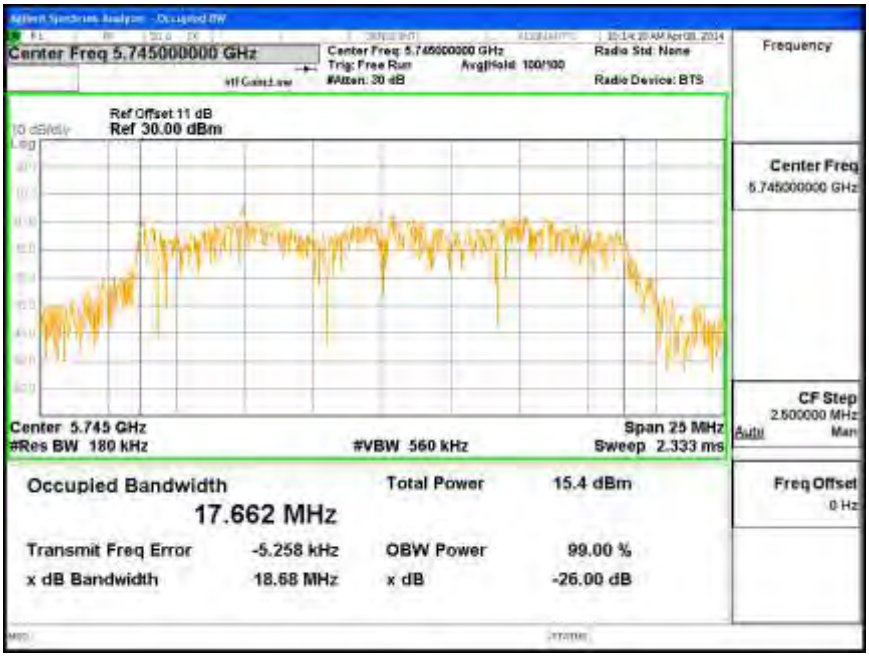


99% BANDWIDTH Chain 0 HIGH CH

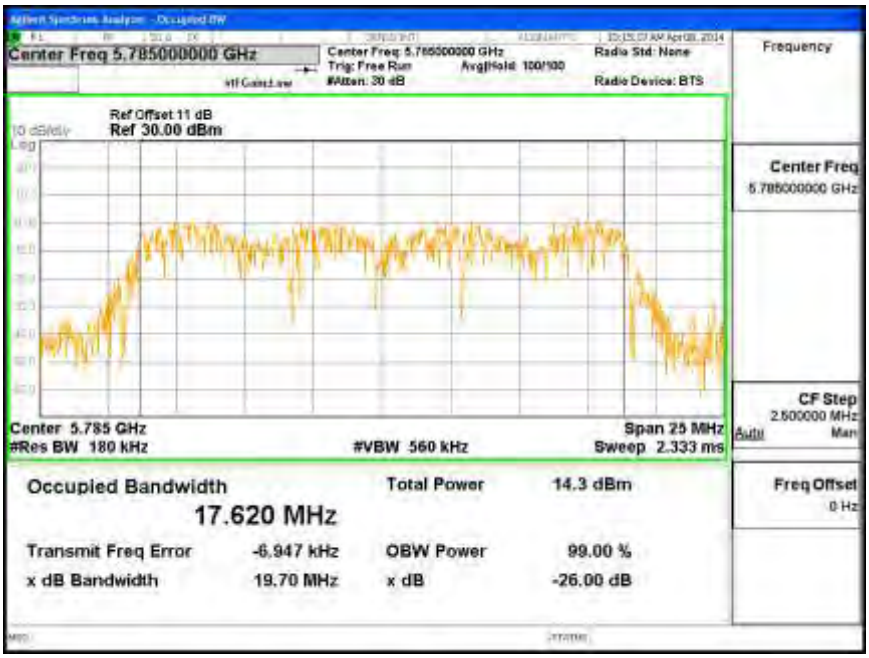


99% BANDWIDTH, Chain 1

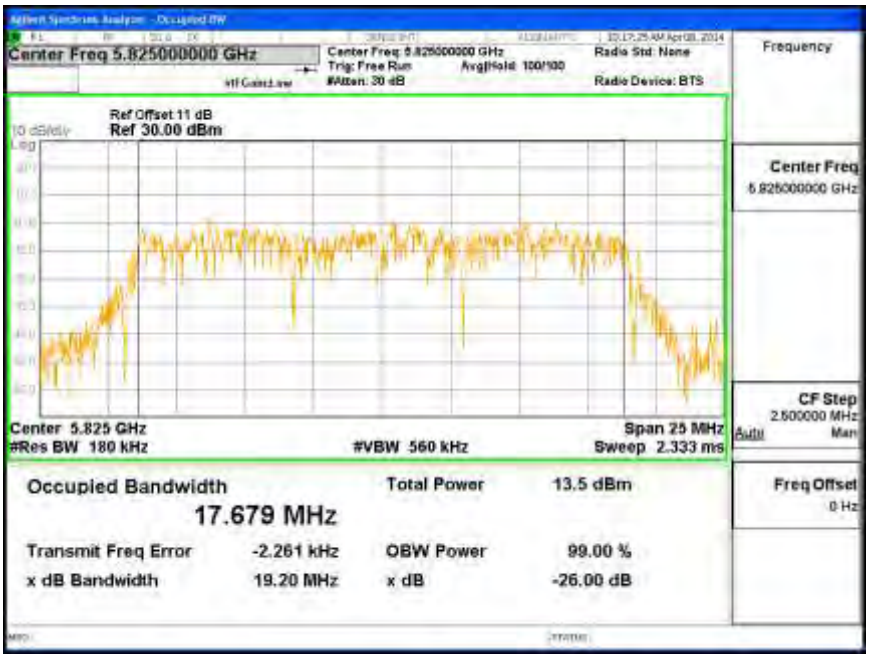
99% BANDWIDTH Chain 1 LOW CH



99% BANDWIDTH Chain 1 MID CH



99% BANDWIDTH Chain 1 HIGH CH



8.5.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5745	11.72	13.20	15.53
Mid	5785	10.16	13.20	14.95
High	5825	9.00	13.58	14.88

8.5.4. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

Use this table for correlated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.40	3.60	7.02

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	7.02	28.98	30	36	28.98
Mid	5785	7.02	28.98	30	36	28.98
High	5825	7.02	28.98	30	36	28.98

Results

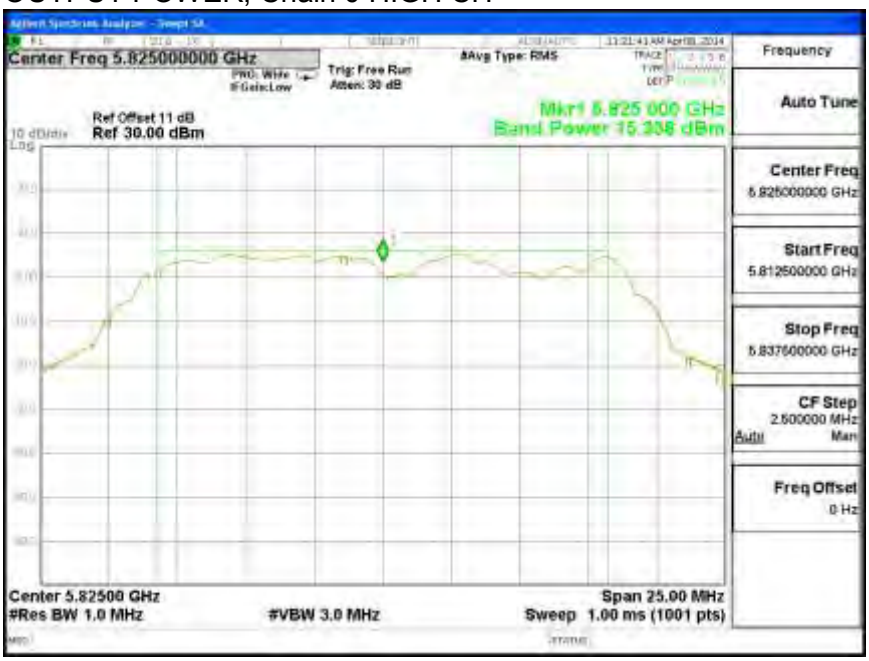
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	5745	18.21	21.71	23.32	28.98	-5.66
Mid	5785	16.53	20.13	21.70	28.98	-7.28
High	5825	15.34	20.03	21.30	28.98	-7.68

OUTPUT POWER, Chain 0

OUTPUT POWER, Chain 0 LOW CH

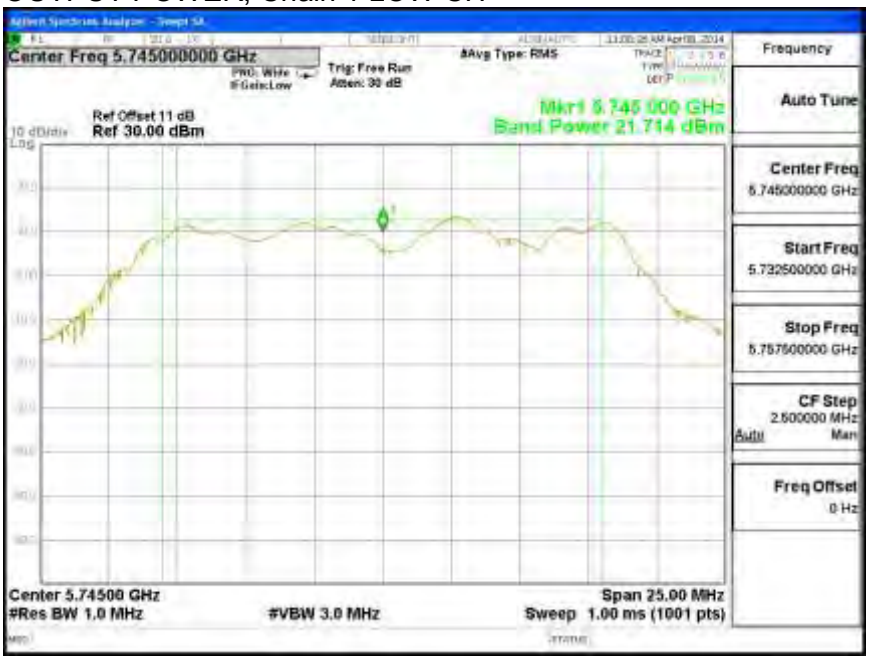
OUTPUT POWER, Chain 0 MID CH

OUTPUT POWER, Chain 0 HIGH CH

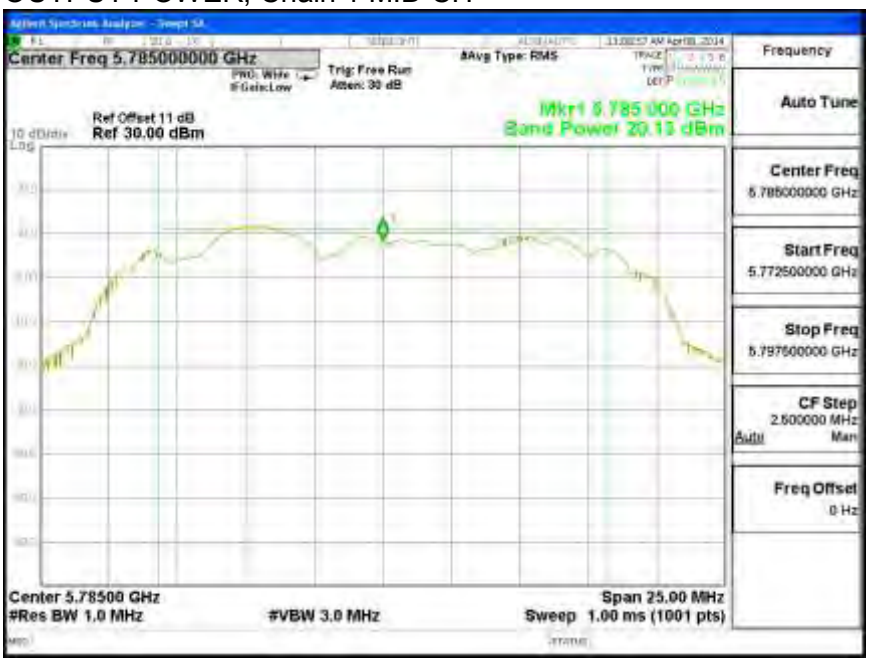


OUTPUT POWER, Chain 1

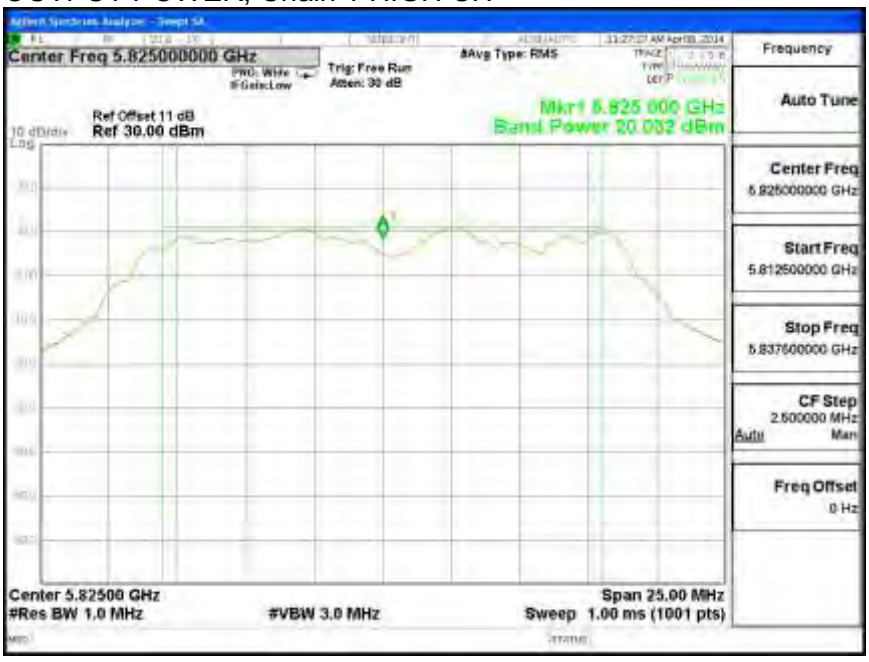
OUTPUT POWER, Chain 1 LOW CH



OUTPUT POWER, Chain 1 MID CH



OUTPUT POWER, Chain 1 HIGH CH



8.5.5. PSD

LIMITS

FCC §15.247

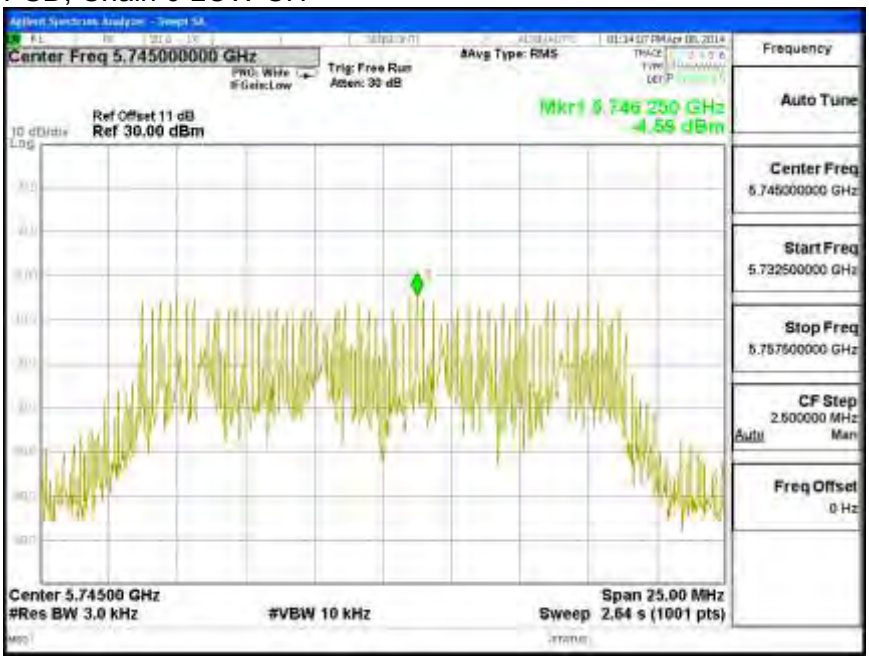
RESULTS

PSD Results

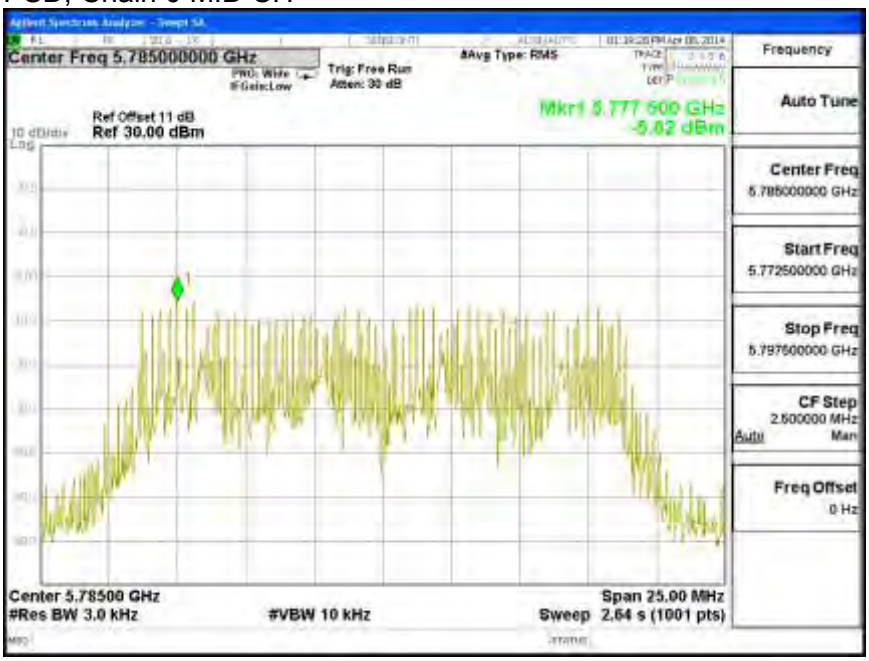
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-4.59	0.25	1.48	8.0	-6.5
Mid	5785	-5.62	-1.44	-0.04	8.0	-8.0
High	5825	-6.99	-2.33	-1.05	8.0	-9.1

PSD, Chain 0

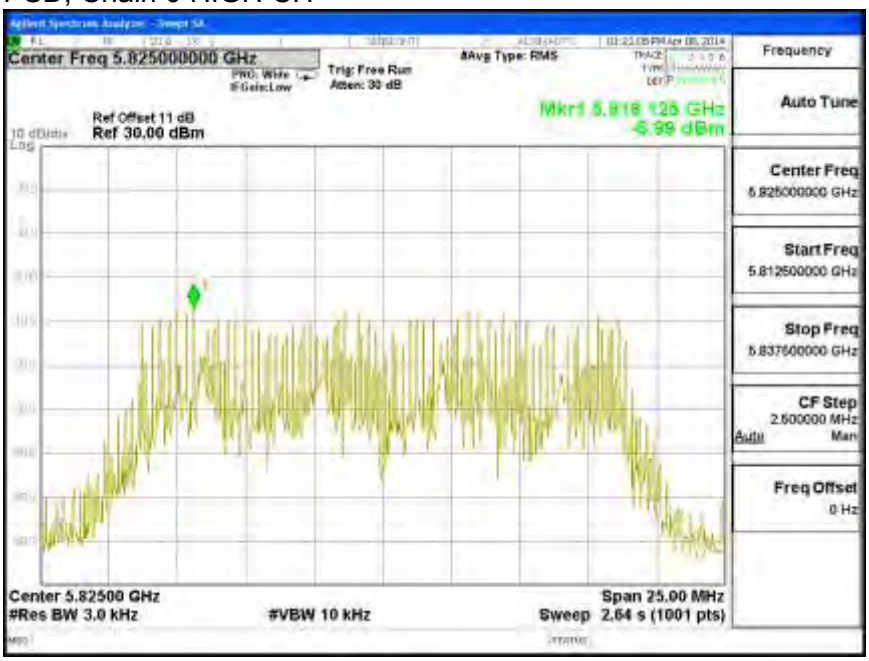
PSD, Chain 0 LOW CH



PSD, Chain 0 MID CH

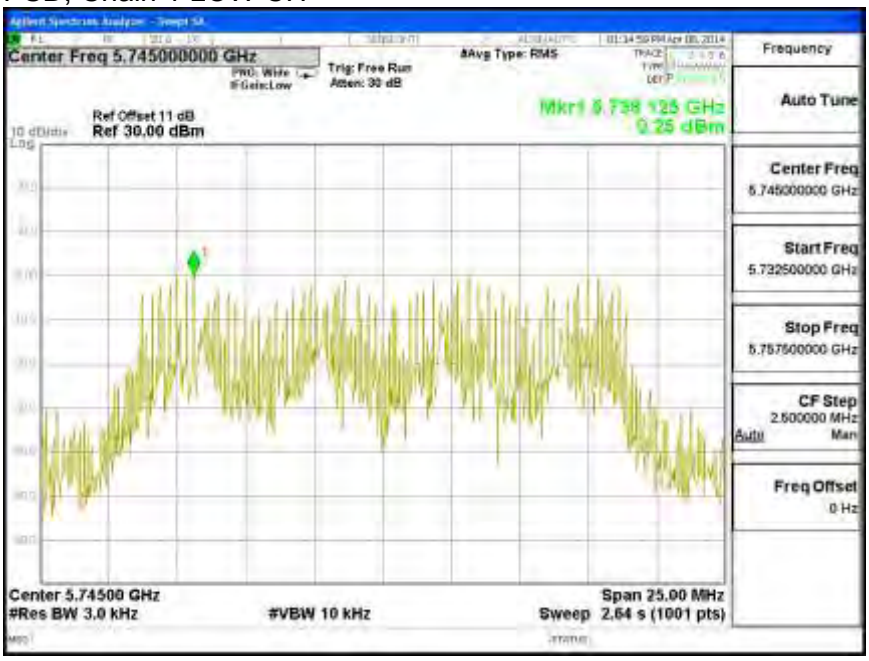


PSD, Chain 0 HIGH CH

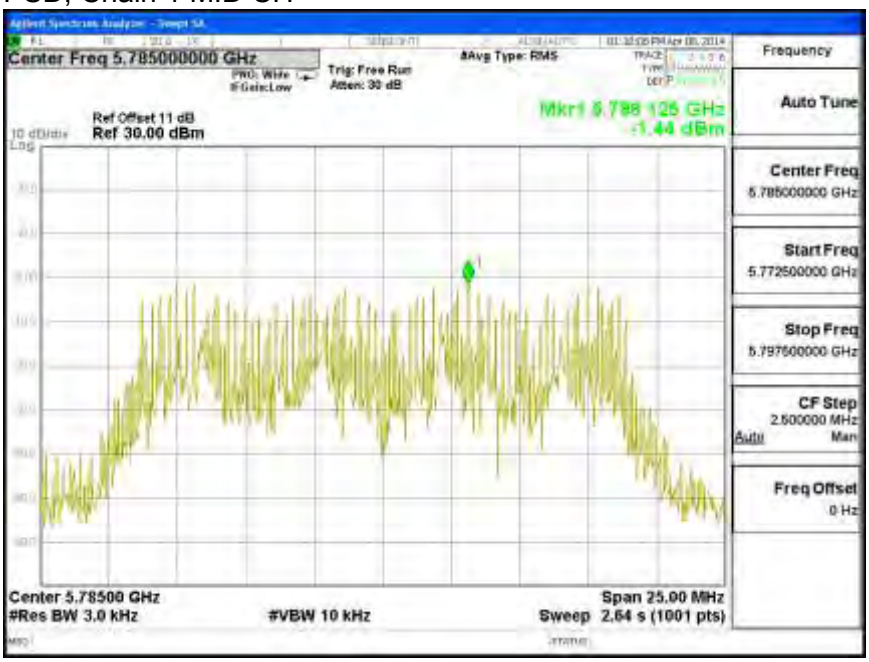


PSD, Chain 1

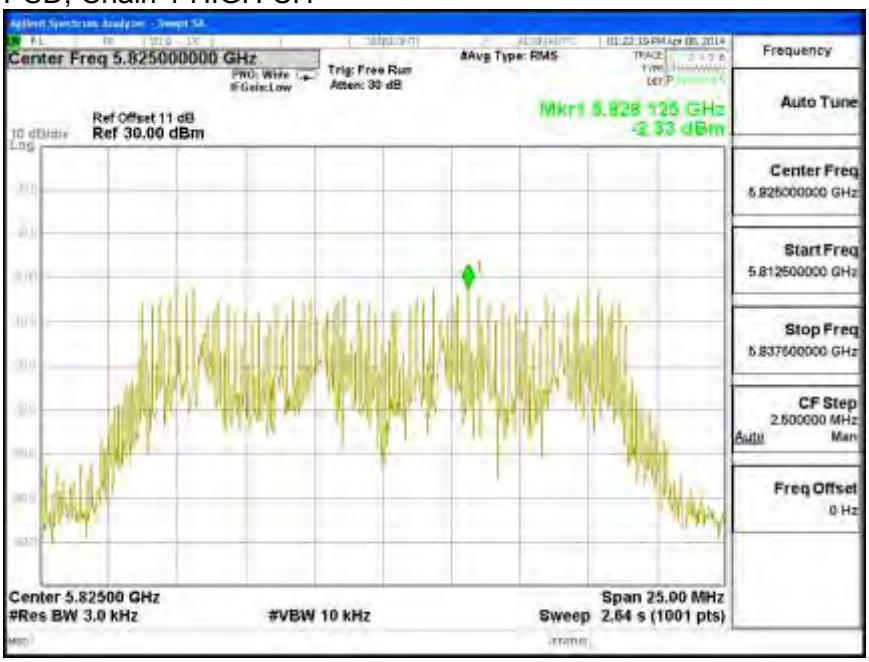
PSD, Chain 1 LOW CH



PSD, Chain 1 MID CH



PSD, Chain 1 HIGH CH



8.5.6. 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.

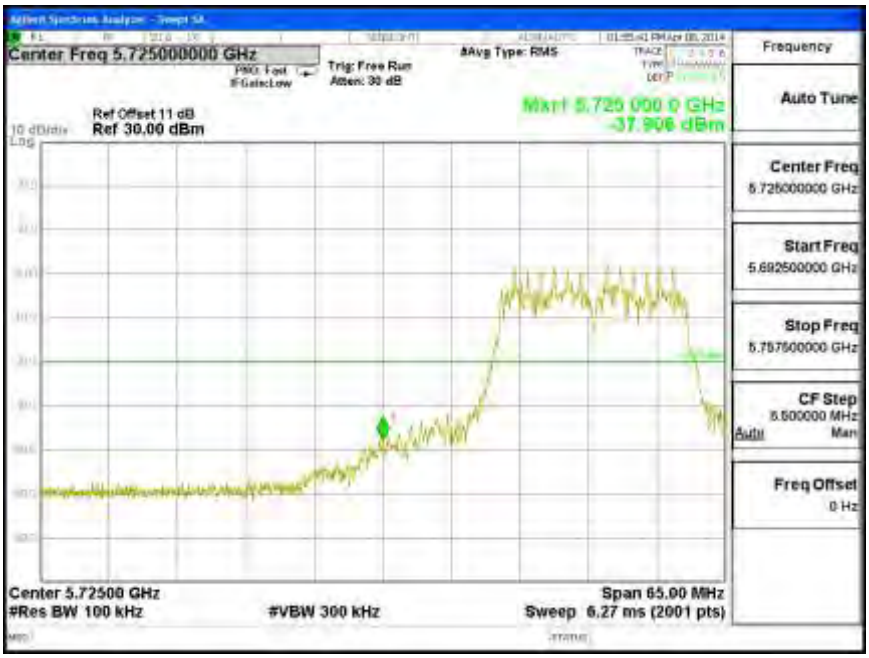
RESULTS

IN-BAND REFERENCE LEVEL, Chain 0

REFERENCE LEVEL Chain 0 MID CH

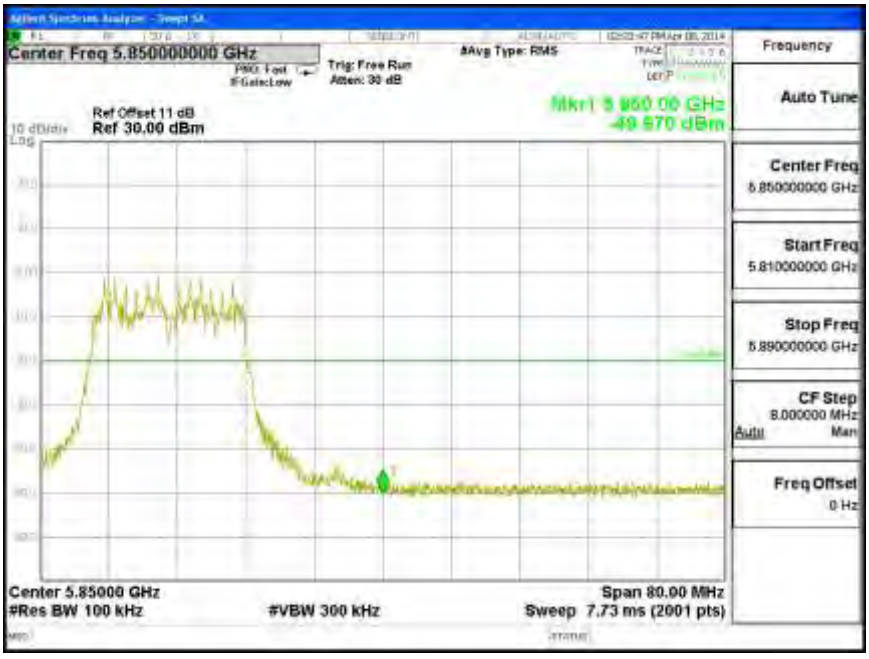
LOW CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 LOW CH



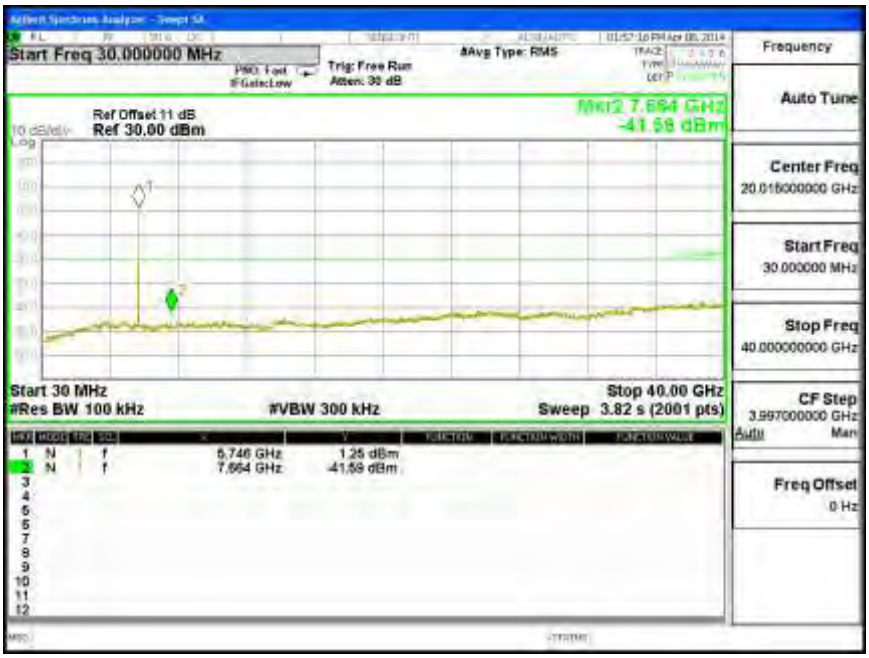
HIGH CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 HIGH CH



OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH

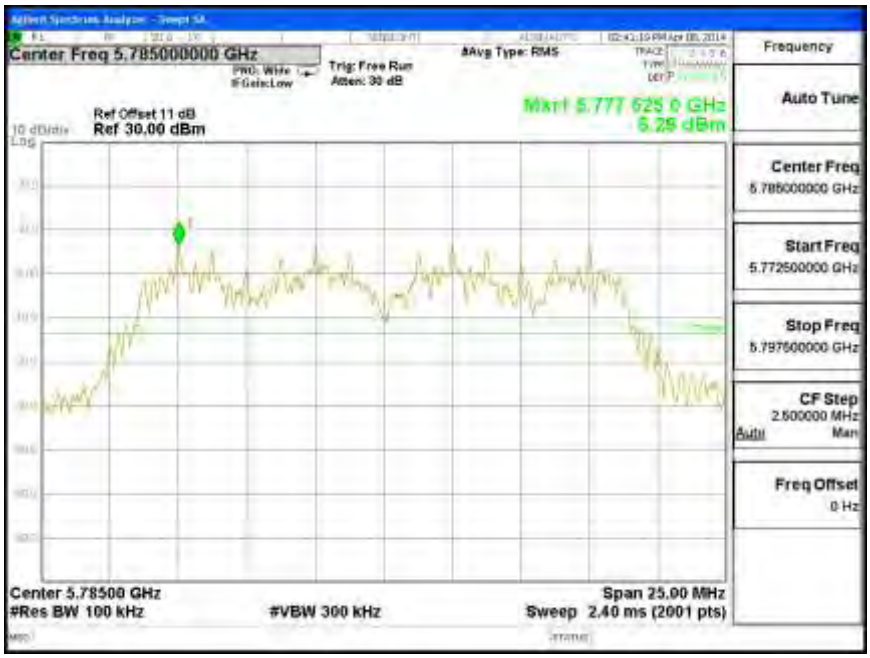


OUT OF BAND Chain 0 MID CH

OUT OF BAND Chain 0 HIGH CH

IN-BAND REFERENCE LEVEL, Chain 1

REFERENCE LEVEL Chain 1 MID CH

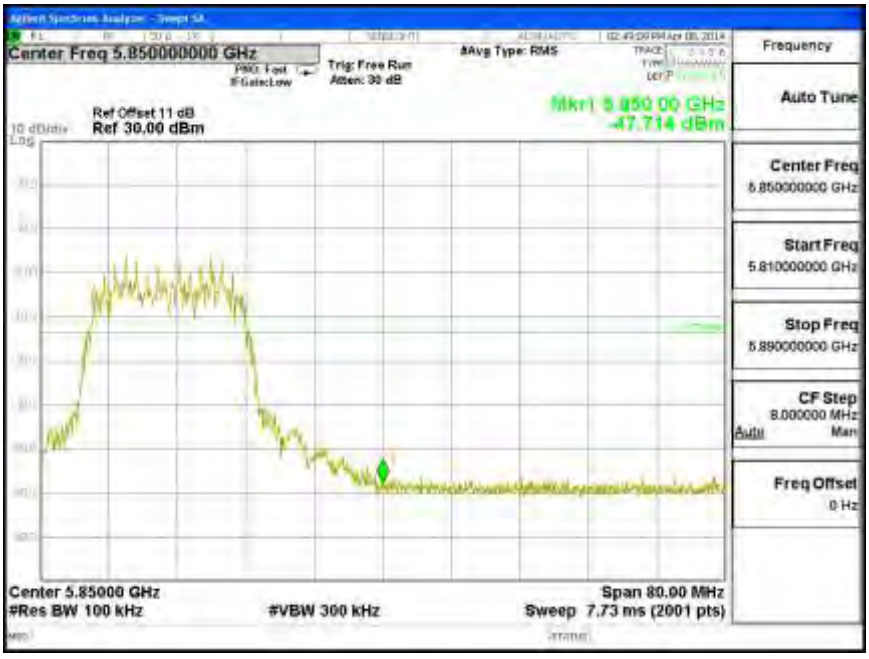


LOW CHANNEL BANDEDGE, Chain 1

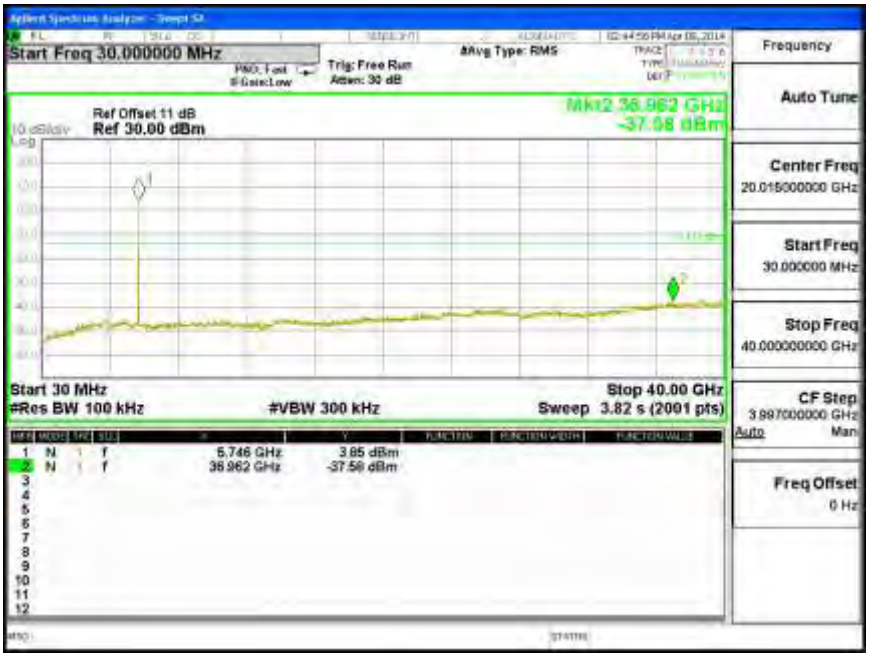
AUTHORIZED BAND EDGE Chain 1 LOW CH

HIGH CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 HIGH CH

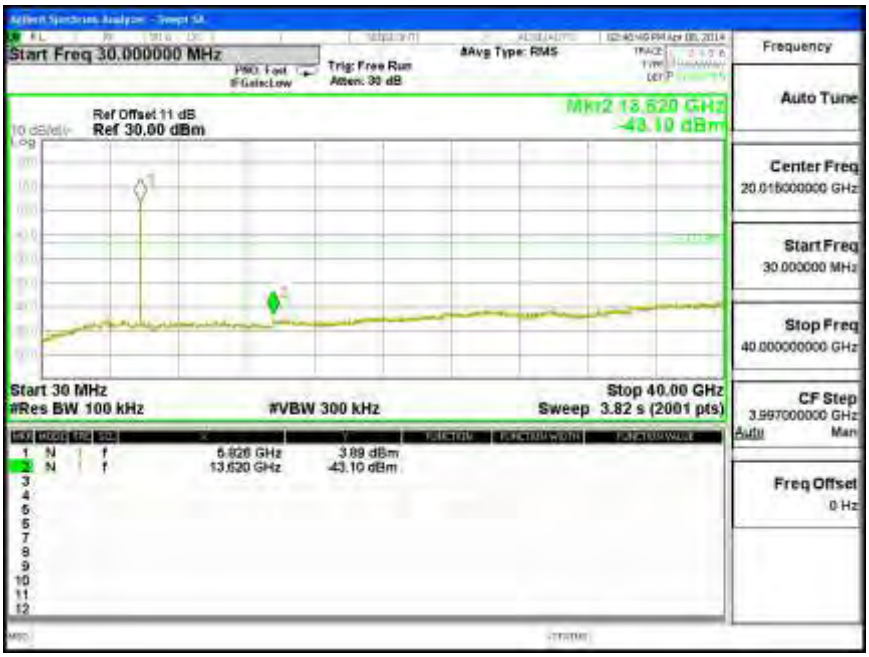


OUT OF BAND Chain 1 LOW CH



OUT OF BAND Chain 1 MID CH

OUT OF BAND Chain 1 HIGH CH



8.6. 802.11n HT40 2Tx CDD MODE IN THE 5.8 GHz BAND

8.6.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

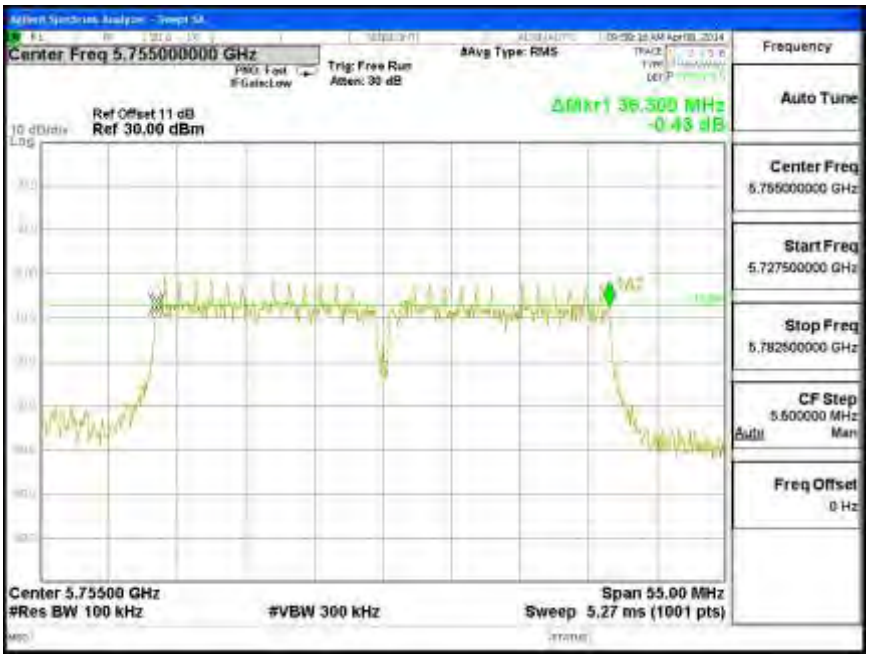
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

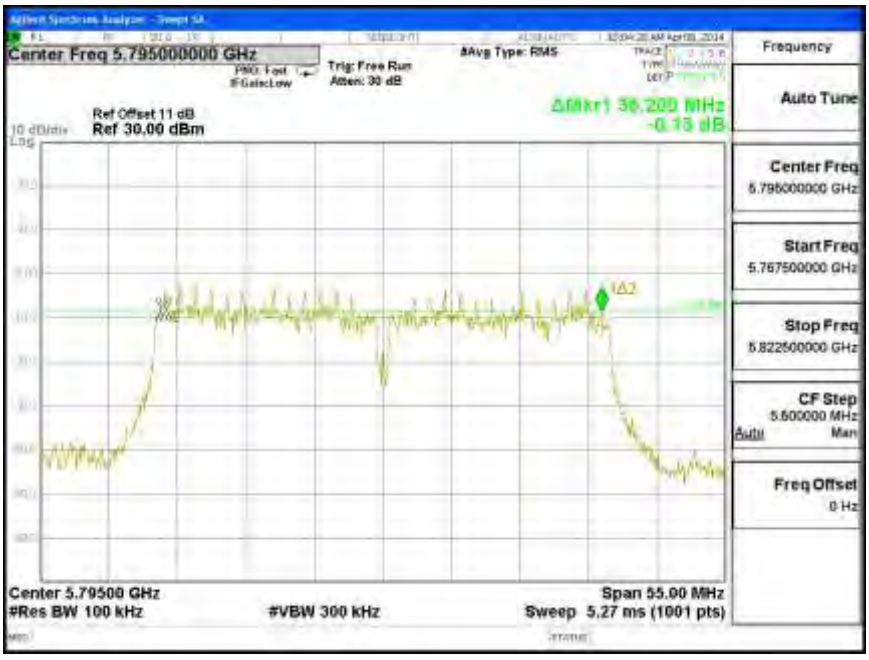
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5755	36.30	36.36	0.5
High	5795	35.20	35.09	0.5

6 dB BANDWIDTH, Chain 0

6 dB BANDWIDTH Chain 0 LOW CH

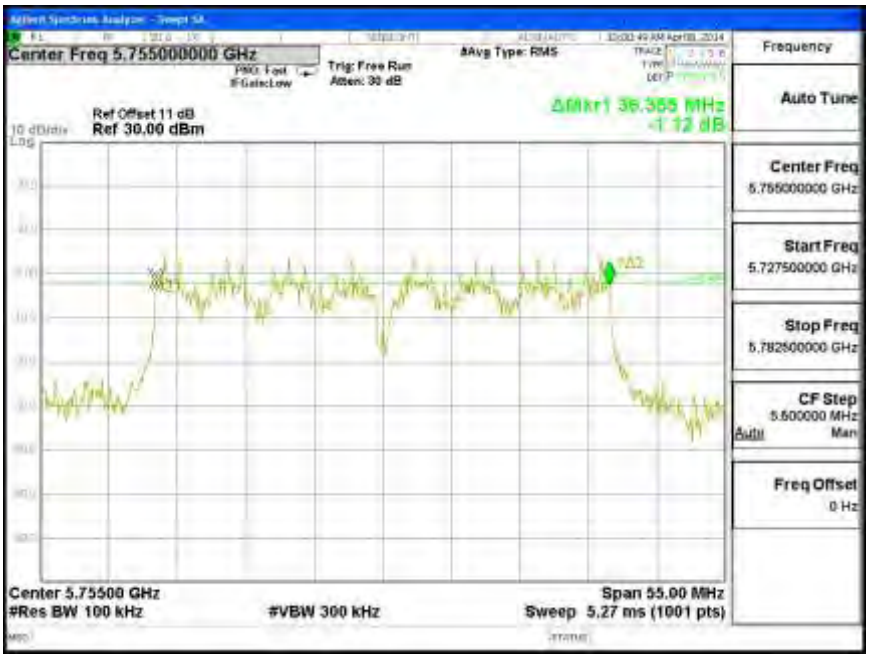


6 dB BANDWIDTH Chain 0 HIGH CH



6 dB BANDWIDTH, Chain 1

6 dB BANDWIDTH Chain 1 LOW CH



6 dB BANDWIDTH Chain 1 HIGH CH

8.6.2. 99% BANDWIDTH

LIMITS

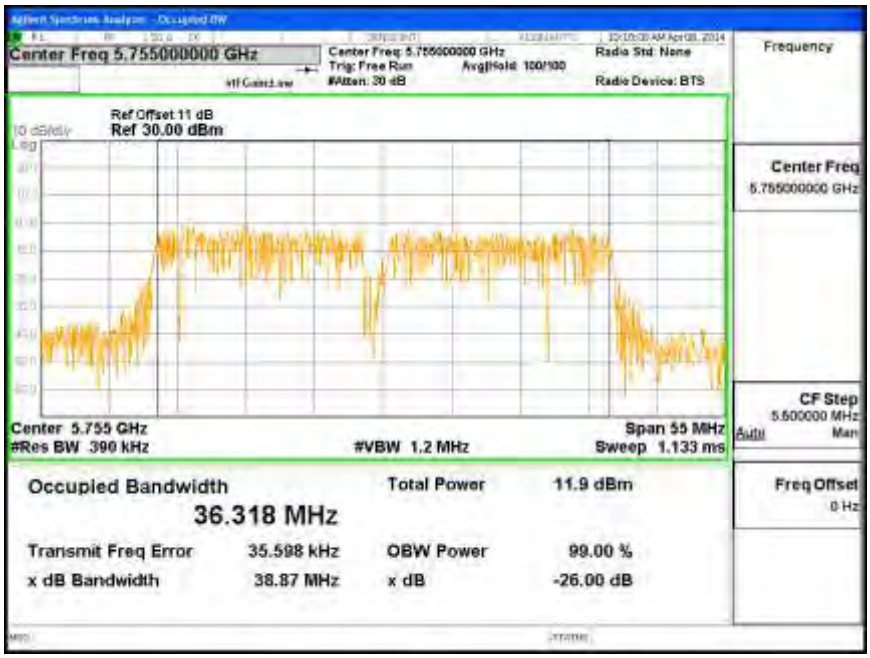
None; for reporting purposes only.

RESULTS

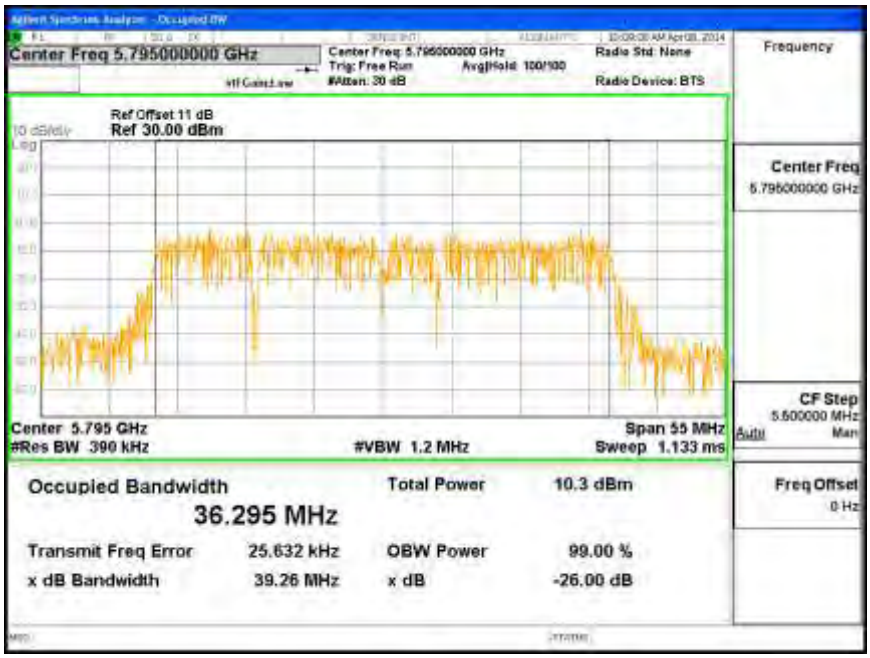
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5755	36.318	36.277
High	5795	36.295	36.320

99% BANDWIDTH, Chain 0

99% BANDWIDTH Chain 0 LOW CH

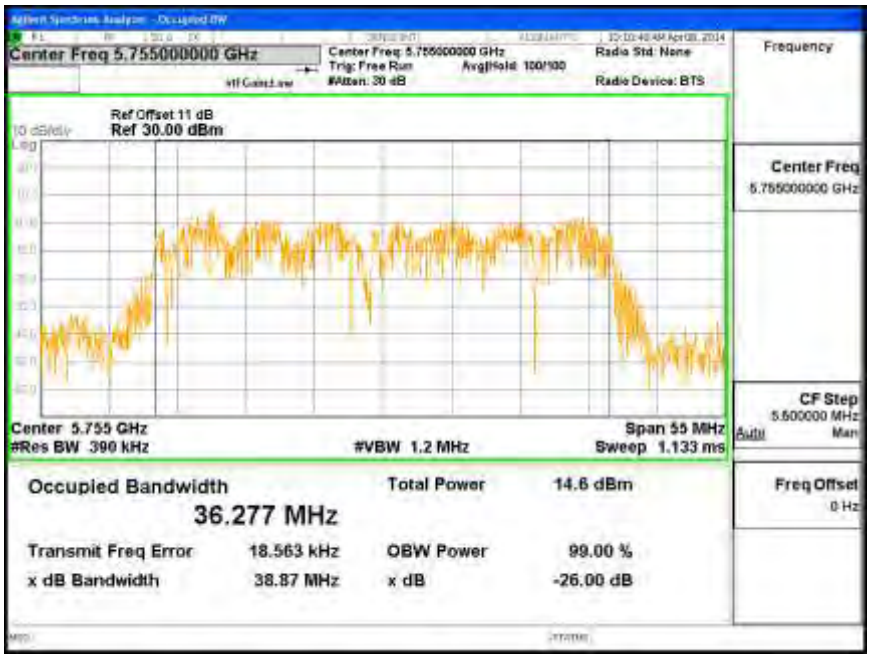


99% BANDWIDTH Chain 0 HIGH CH

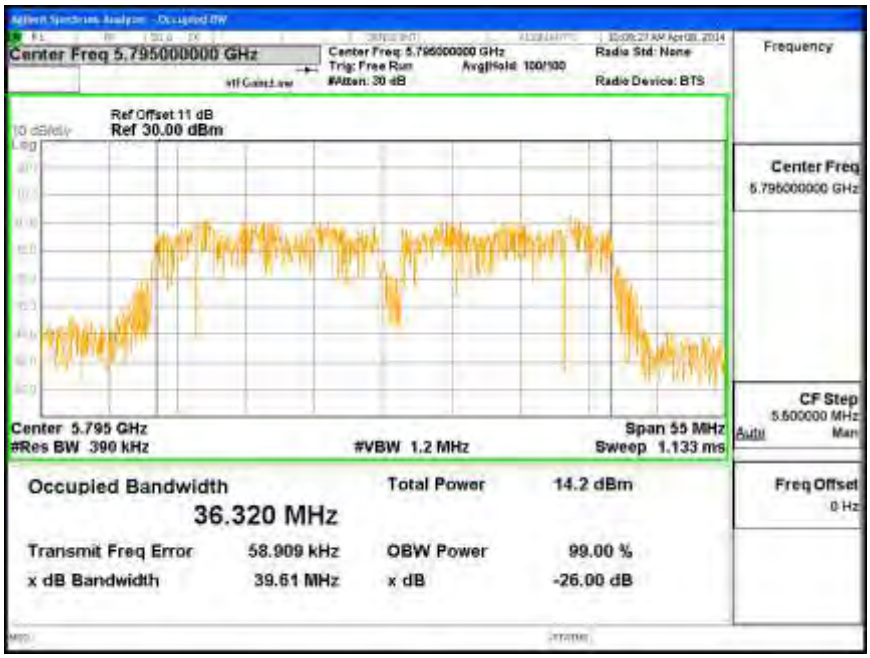


99% BANDWIDTH, Chain 1

99% BANDWIDTH Chain 1 LOW CH



99% BANDWIDTH Chain 1 HIGH CH



8.6.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5755	11.36	13.95	15.86
High	5795	9.81	13.21	14.84

8.6.4. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

Use this table for correlated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.40	3.60	7.02

RESULTS

Limits

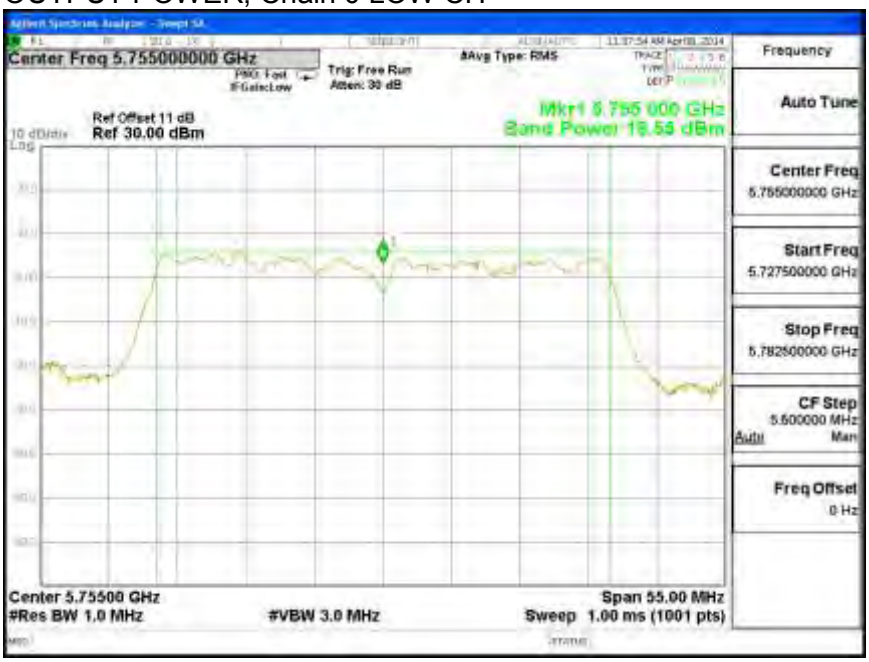
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5755	7.02	28.98	30	36	28.98
High	5795	7.02	28.98	30	36	28.98

Results

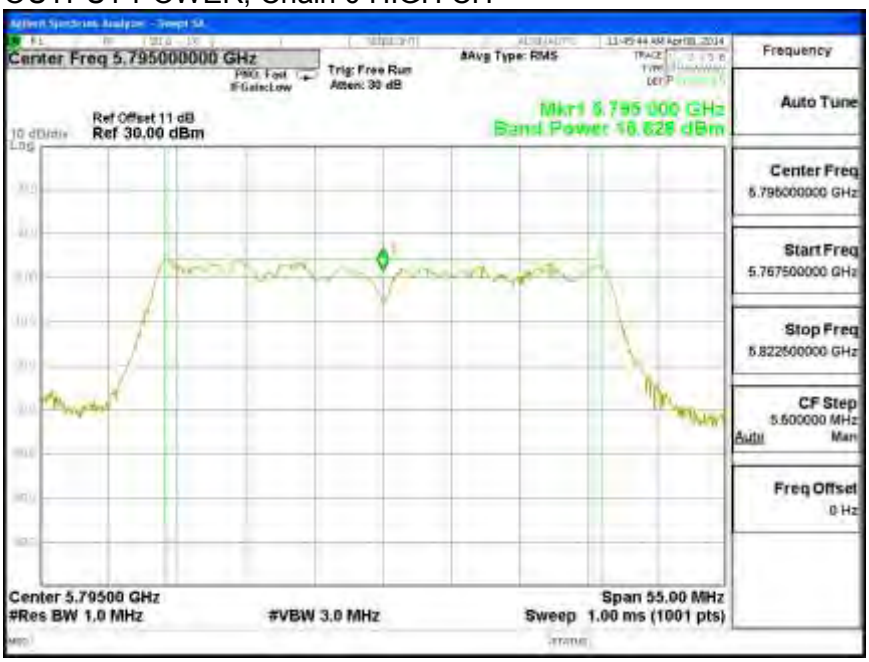
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	5755	18.55	22.69	24.11	28.98	-4.87
High	5795	16.63	20.85	22.24	28.98	-6.74

OUTPUT POWER, Chain 0

OUTPUT POWER, Chain 0 LOW CH



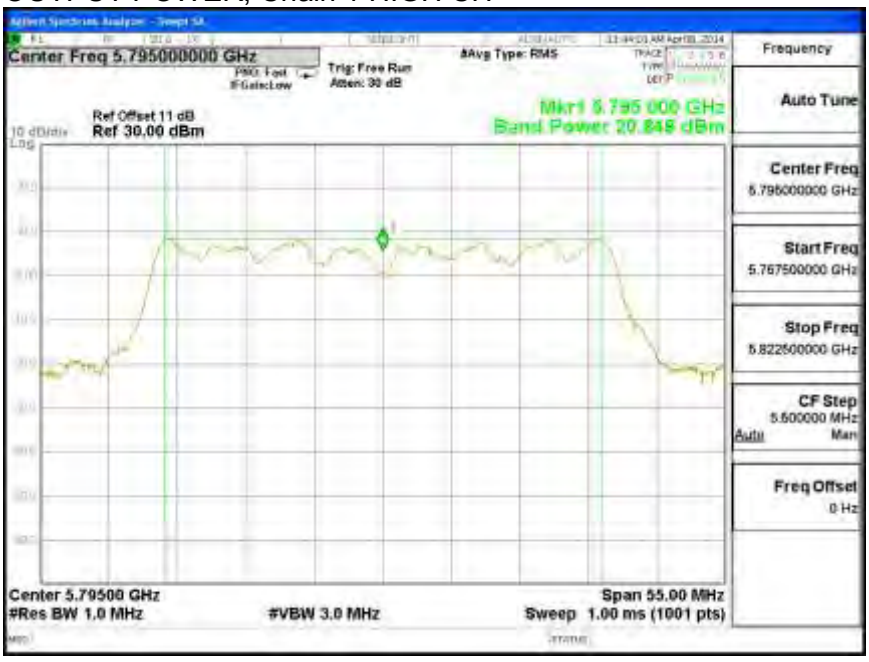
OUTPUT POWER, Chain 0 HIGH CH



OUTPUT POWER, Chain 1

OUTPUT POWER, Chain 1 LOW CH

OUTPUT POWER, Chain 1 HIGH CH



8.6.5. PSD

LIMITS

FCC §15.247

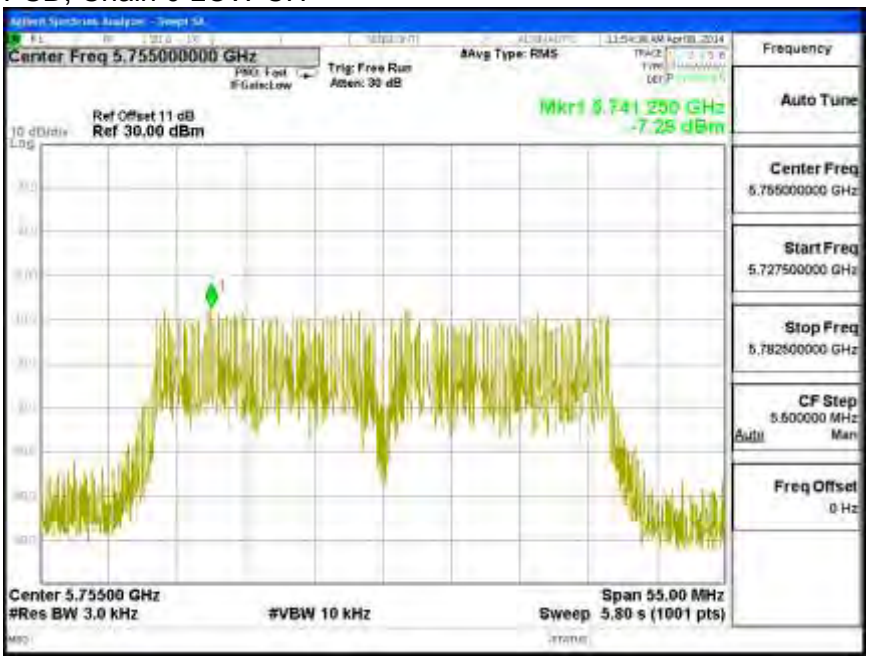
RESULTS

PSD Results

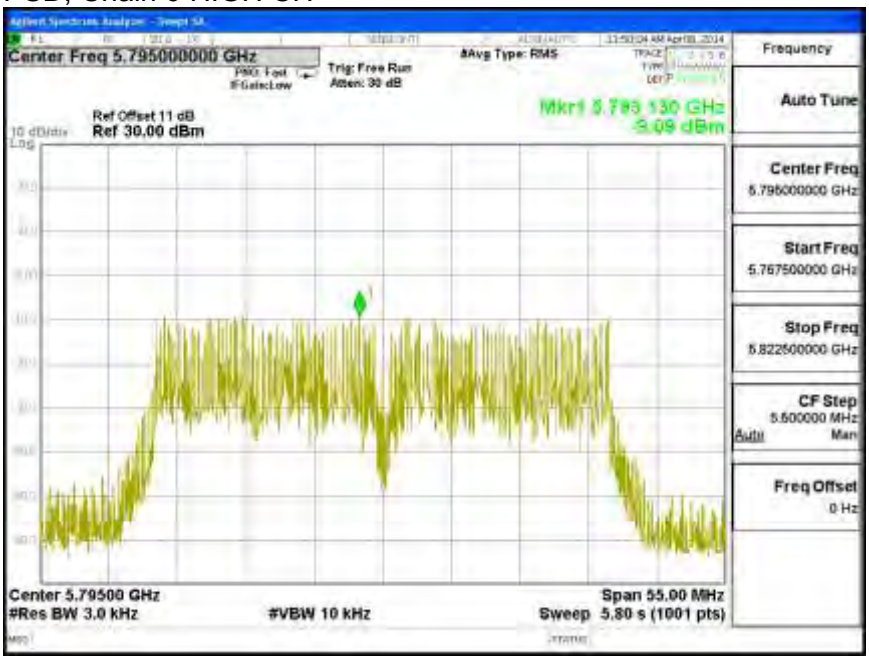
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-7.29	-3.67	-2.10	8.0	-10.1
High	5795	-9.09	-3.91	-2.76	8.0	-10.8

PSD, Chain 0

PSD, Chain 0 LOW CH

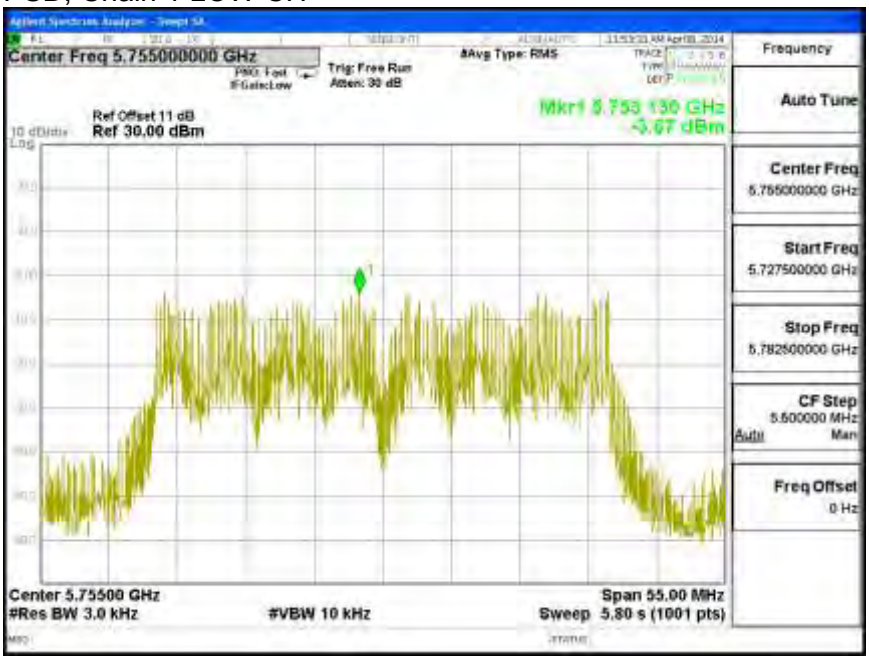


PSD, Chain 0 HIGH CH

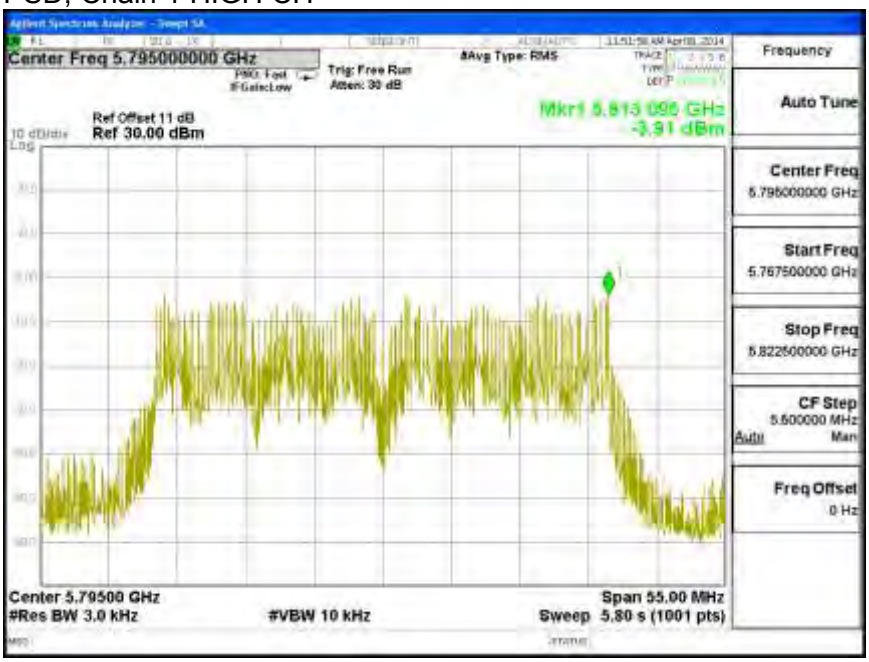


PSD, Chain 1

PSD, Chain 1 LOW CH



PSD, Chain 1 HIGH CH



8.6.6. 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.

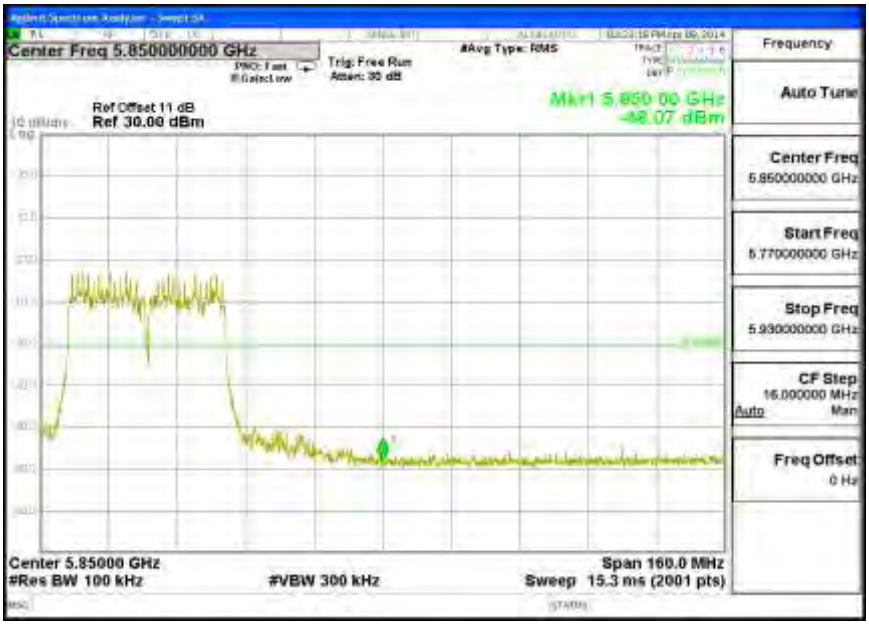
RESULTS

LOW CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 LOW CH

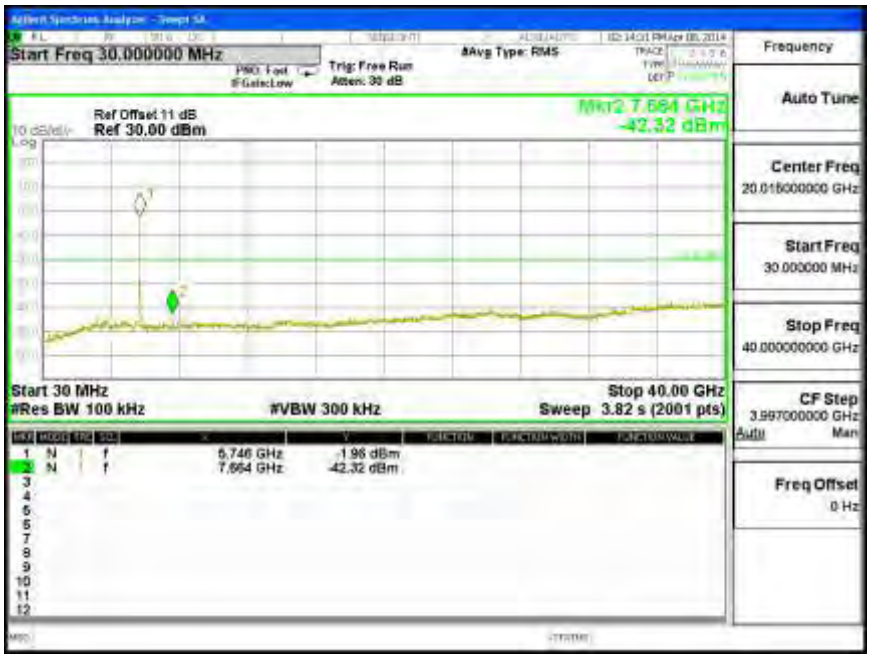
HIGH CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE Chain 0 HIGH CH

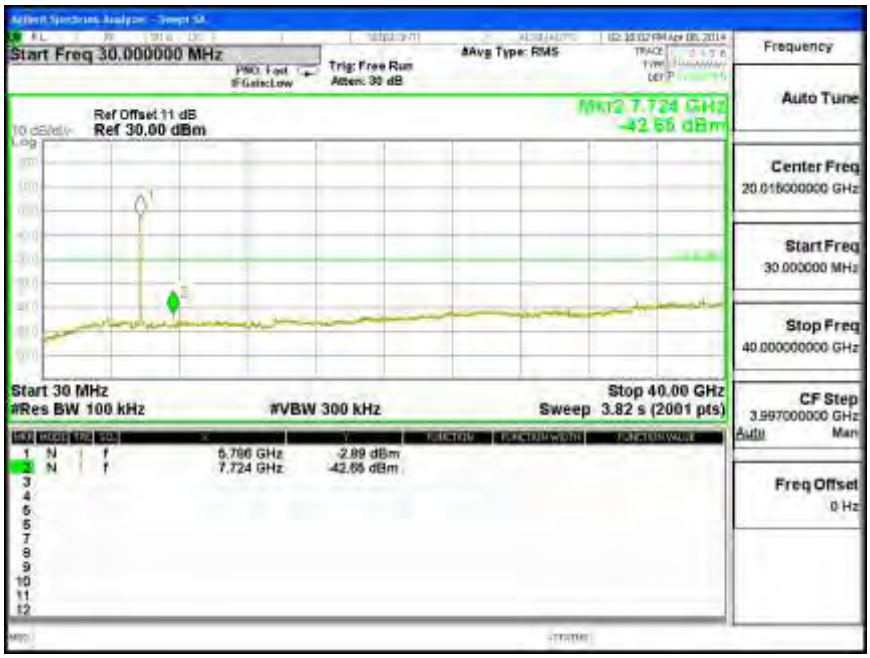


OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH

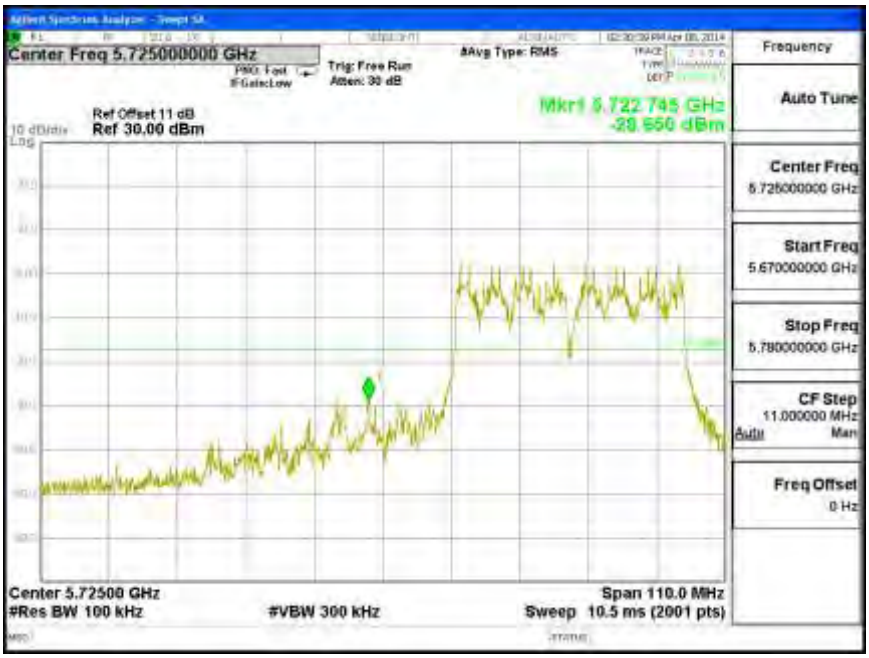


OUT OF BAND Chain 0 HIGH CH



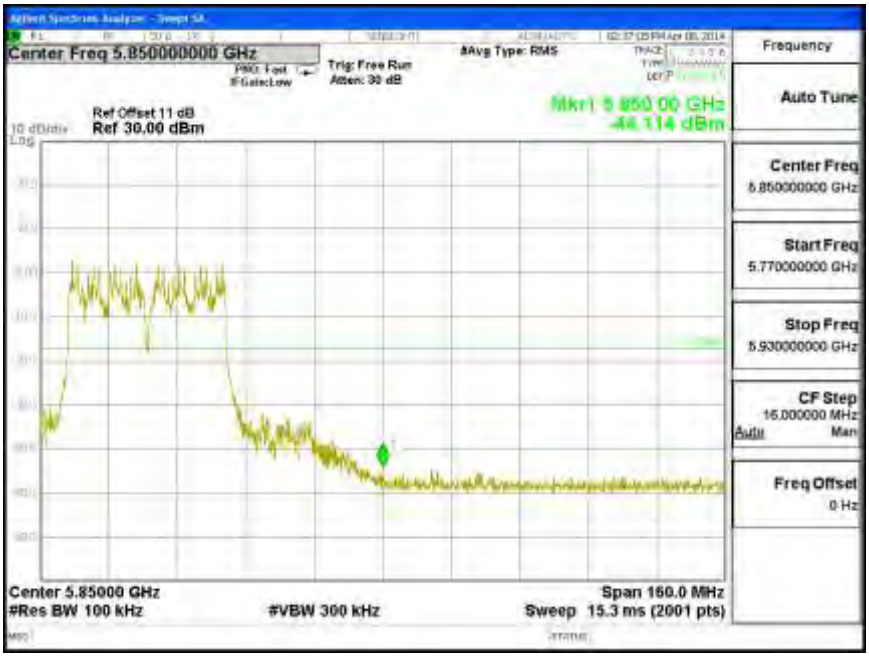
LOW CHANNEL BANDEDGE, Chain 1

AUTHORIZED BAND EDGE Chain 1 LOW CH

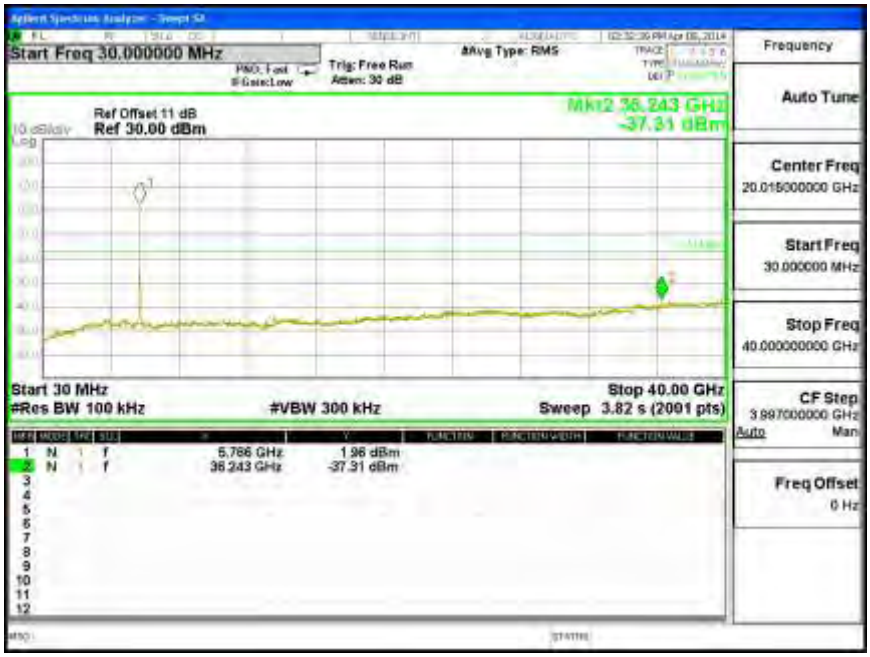


HIGH CHANNEL BANDEDGE, Chain 1

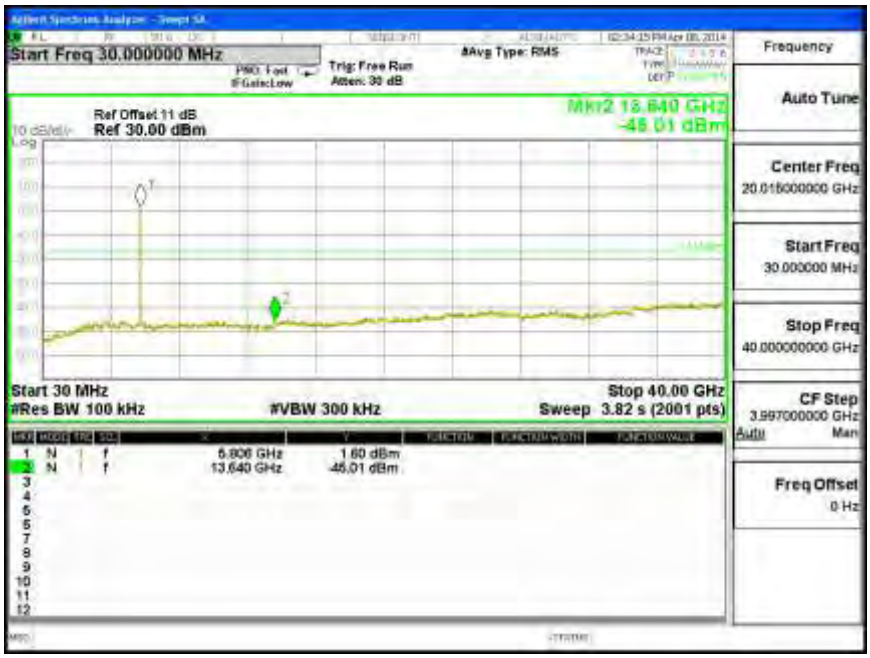
AUTHORIZED BAND EDGE Chain 1 HIGH CH



OUT OF BAND Chain 1 LOW CH



OUT OF BAND Chain 1 HIGH CH



9. RADIATED TEST RESULTS

9.1. TRANSMITTER ABOVE 1 GHz

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

TEST PROCEDURE

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

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

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

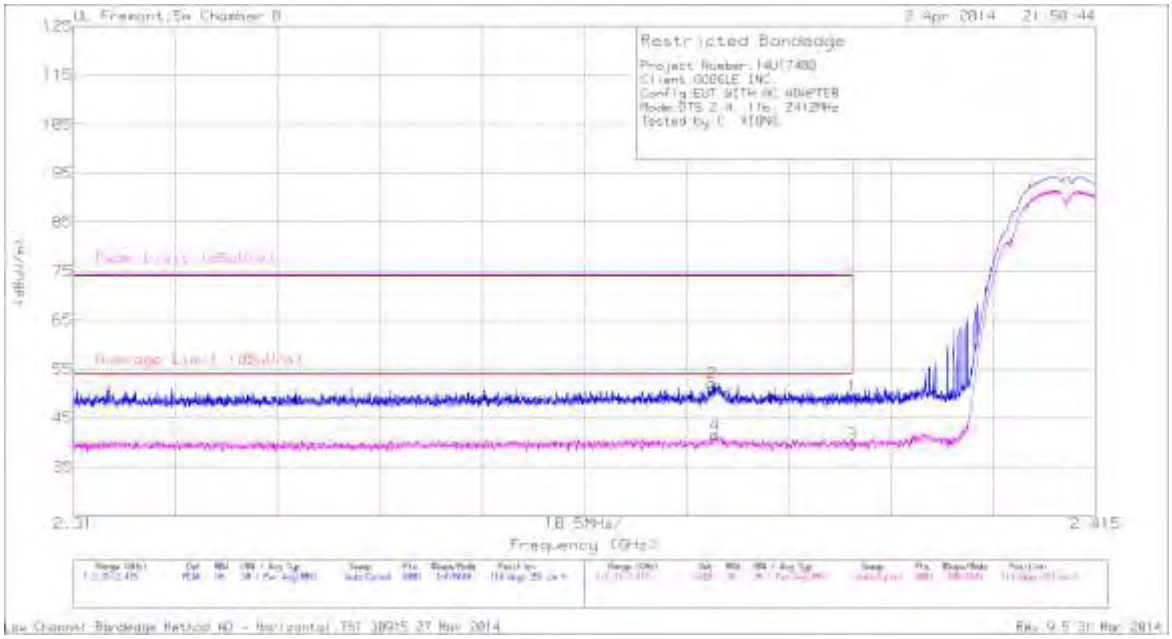
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

9.2. TX ABOVE 1 GHz 802.11b 2Tx CDD MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL PLOT



DATA

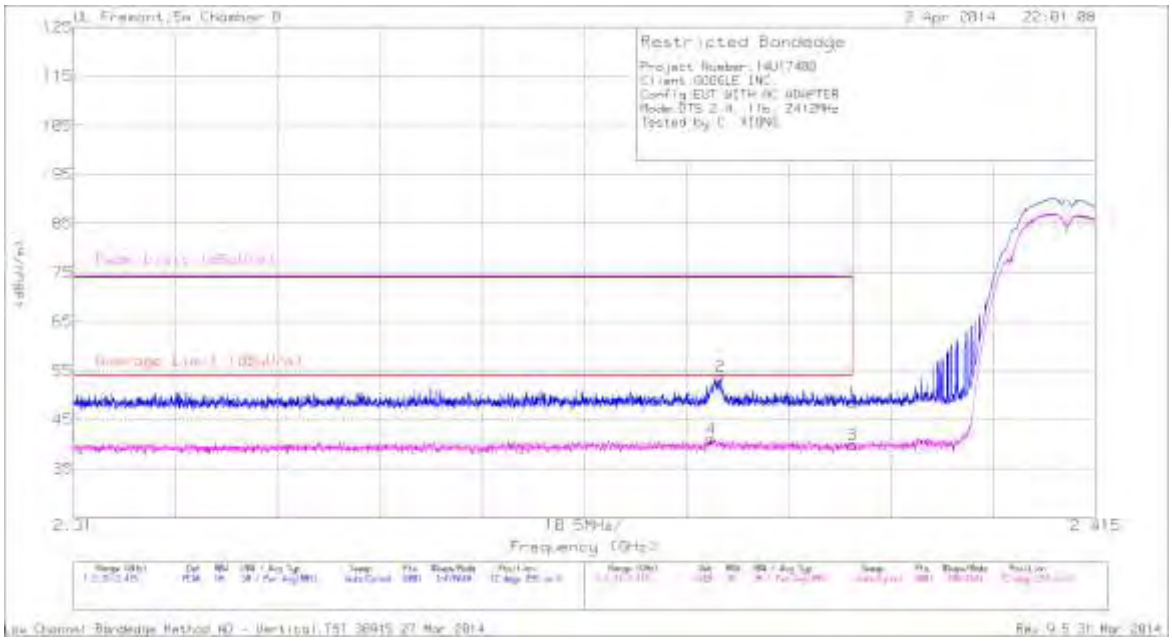
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.18	PK	32.1	-22.9	0	49.38	-	-	74	-24.62	114	251	H
2	* 2.376	42.9	PK	32	-22.8	0	52.1	-	-	74	-21.9	114	251	H
3	* 2.39	30.48	RMS	32.1	-22.9	0	39.68	54	-14.32	-	-	114	251	H
4	* 2.376	32.41	RMS	32	-22.9	0	41.51	54	-12.49	-	-	114	251	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

LOW CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.376	44.78	PK	32	-22.9	53.88	-	-	74	-20.12	72	255	V
4	* 2.376	31.9	RMS	32	-22.8	41.1	54	-12.9	-	-	72	255	V
1	* 2.39	39.18	PK	32.1	-22.9	48.38	-	-	74	-25.62	72	255	V
3	* 2.39	30.79	RMS	32.1	-22.9	39.99	54	-14.01	-	-	72	255	V

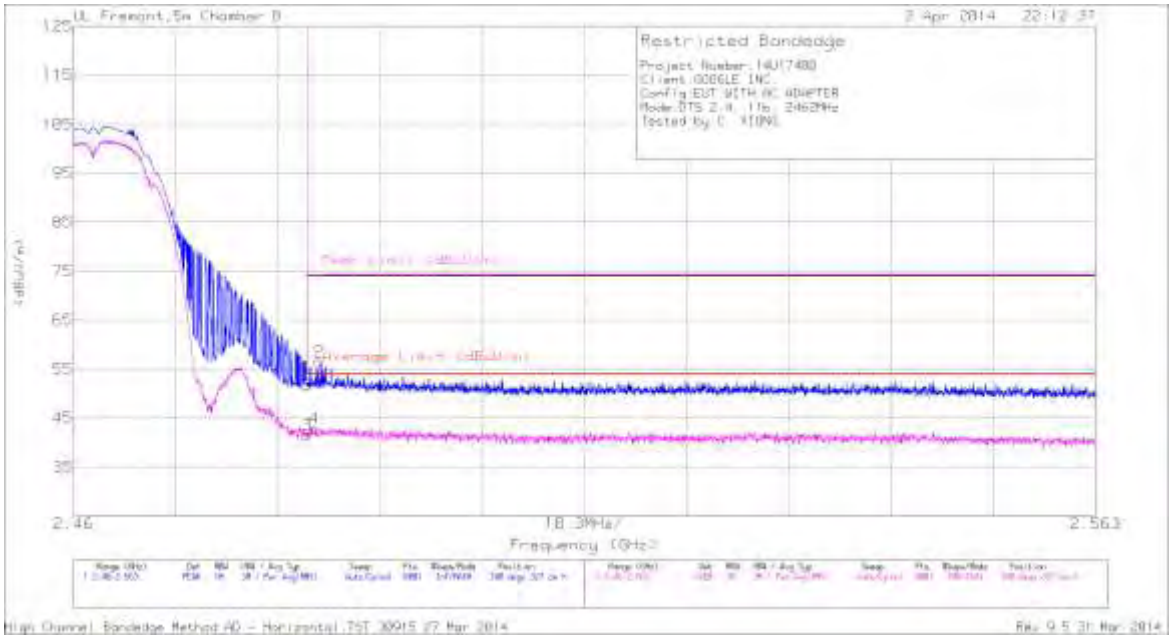
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

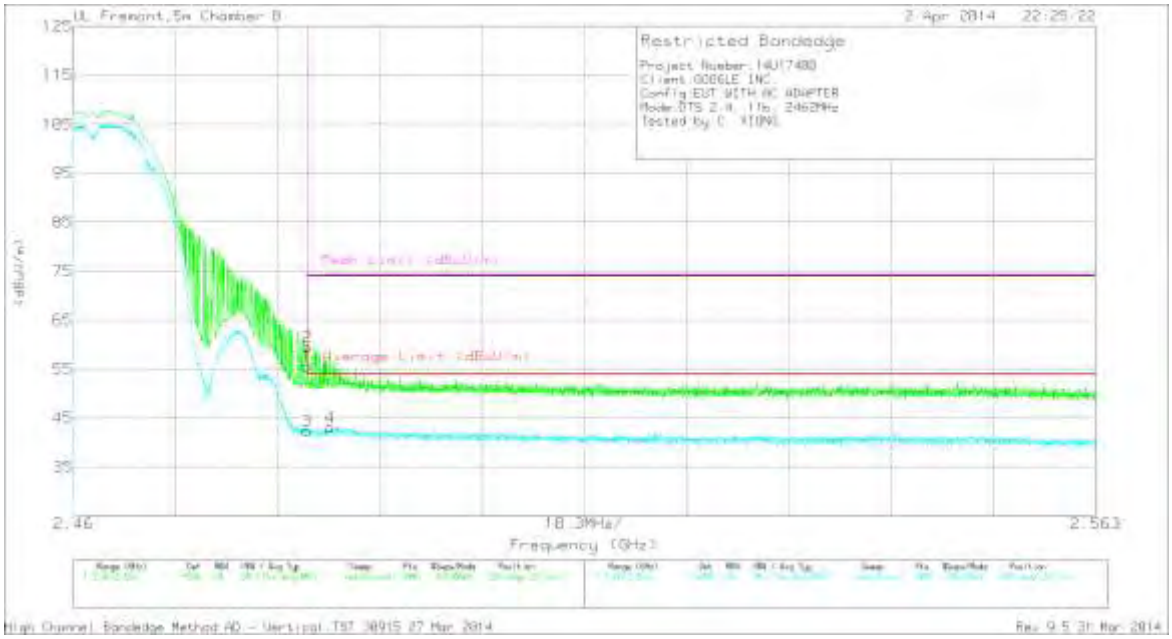
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.88	PK	32.4	-22.6	51.68	-	-	74	-22.32	340	327	H
3	* 2.484	31.69	RMS	32.4	-22.6	41.49	54	-12.51	-	-	340	327	H
4	* 2.484	33.2	RMS	32.4	-22.6	43	54	-11	-	-	340	327	H
2	* 2.485	46.7	PK	32.4	-22.6	56.5	-	-	74	-17.5	340	327	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/Pad (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	45.85	PK	32.4	-22.6	55.65	-	-	74	-18.35	265	331	V
2	* 2.484	49.73	PK	32.4	-22.6	59.53	-	-	74	-14.47	265	331	V
3	* 2.484	32.56	RMS	32.4	-22.6	42.36	54	-11.64	-	-	265	331	V
4	* 2.486	33.3	RMS	32.4	-22.6	43.1	54	-10.9	-	-	265	331	V

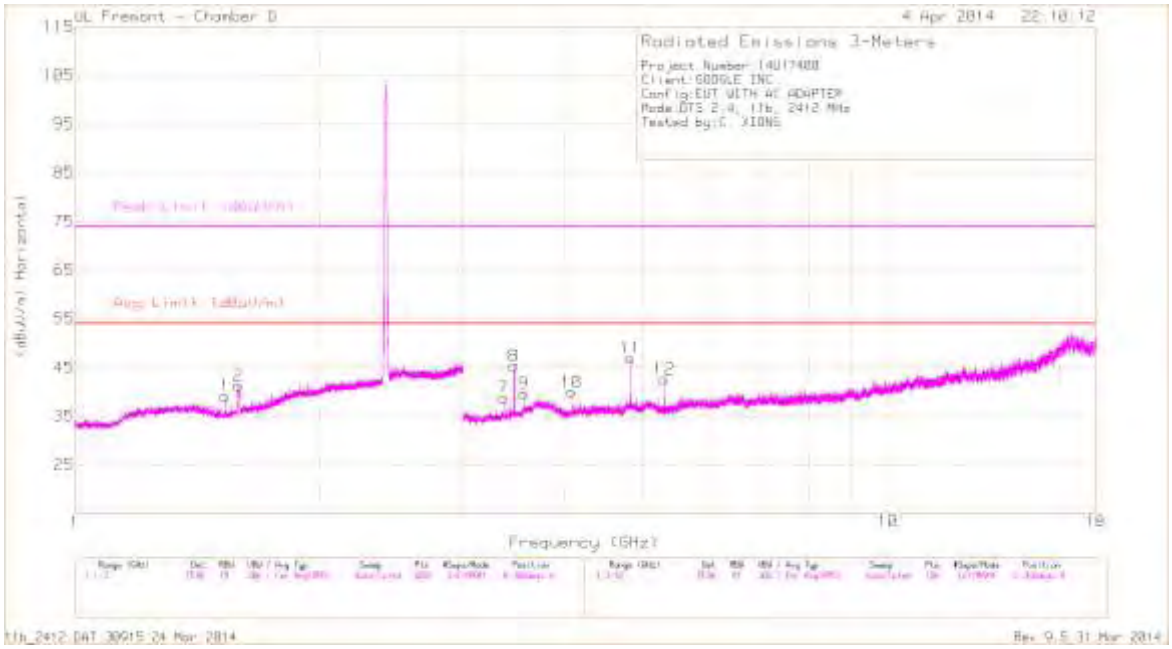
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

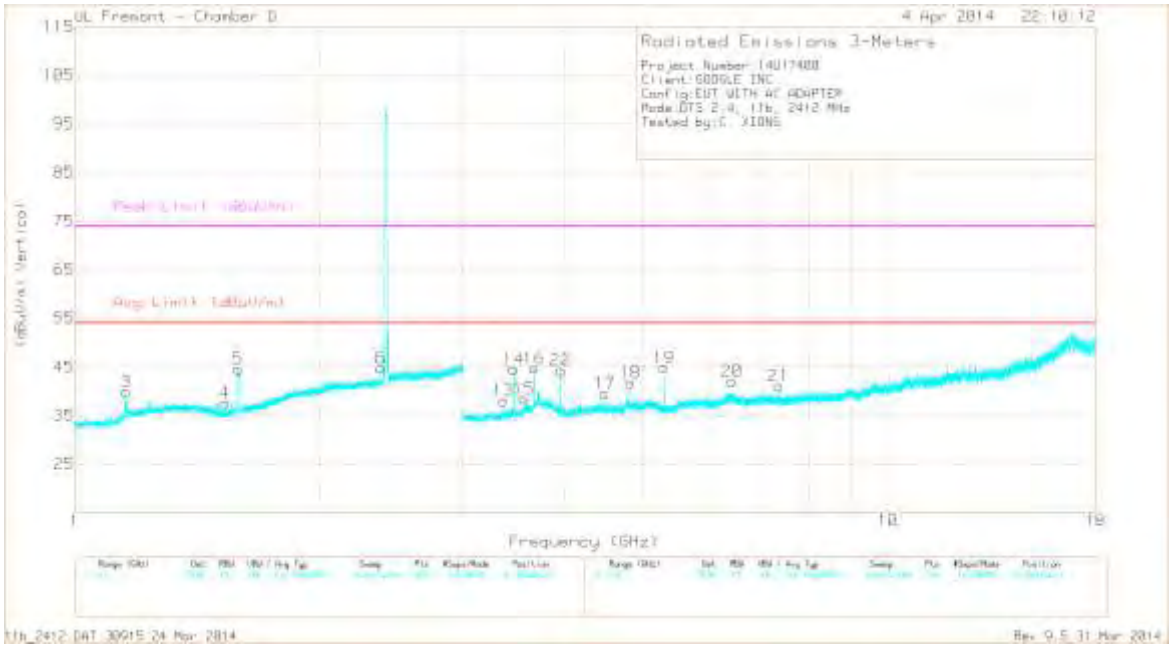
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
* 1.53	44.39	PK2	28.4	-26.3	0	46.49	-	-	74	-27.51	79	243	H
* 1.53	34.94	MAv1	28.4	-26.3	0	37.04	54	-16.96	-	-	79	243	H
* 1.591	49.8	PK2	28.5	-25.5	0	52.8	-	-	74	-21.2	130	252	H
* 1.594	36.29	MAv1	28.5	-25.4	0	39.39	54	-14.61	-	-	130	252	H
* 1.154	44.8	PK2	28.3	-26.8	0	46.3	-	-	74	-27.7	222	393	V
* 1.149	31.08	MAv1	28.2	-26.9	0	32.38	54	-21.62	-	-	222	393	V
* 1.53	43.41	PK2	28.4	-26.3	0	45.51	-	-	74	-28.49	8	366	V
* 1.53	33.08	MAv1	28.4	-26.3	0	35.18	54	-18.82	-	-	8	366	V
* 1.595	50.56	PK2	28.5	-25.4	0	53.66	-	-	74	-20.34	198	199	V
* 1.593	35.18	MAv1	28.5	-25.4	0	38.28	54	-15.72	-	-	198	199	V
* 2.374	41.46	PK2	32.1	-23.9	0	49.66	-	-	74	-24.34	227	176	V
* 2.367	30.57	MAv1	32.1	-23.9	0	38.77	54	-15.23	-	-	227	176	V
* 4.079	40.3	PK2	33.7	-28.8	0	45.2	-	-	74	-28.8	210	229	H
* 4.08	32.08	MAv1	33.7	-28.8	0	36.98	54	-17.02	-	-	210	229	H
* 4.824	41.79	PK2	34.1	-27.3	0	48.59	-	-	74	-25.41	128	196	H
* 4.824	36.81	MAv1	34.1	-27.3	0	43.61	54	-10.39	-	-	128	196	H
* 3.57	42.31	PK2	34.8	-28.5	0	48.61	-	-	74	-25.39	205	385	V
* 3.57	31.51	MAv1	34.8	-28.5	0	37.81	54	-16.19	-	-	205	385	V
* 3.672	39.83	PK2	34.9	-29.4	0	45.33	-	-	74	-28.67	31	199	V
* 3.672	30.17	MAv1	34.9	-29.4	0	35.67	54	-18.33	-	-	31	199	V
* 4.824	39.02	PK2	34.1	-27.3	0	45.82	-	-	74	-28.18	280	174	V
* 4.824	31.76	MAv1	34.1	-27.3	0	38.56	54	-15.44	-	-	280	174	V
* 7.344	37.24	PK2	35.6	-26.5	0	46.34	-	-	74	-27.66	268	162	V
* 7.343	25.87	MAv1	35.6	-26.5	0	34.97	54	-19.03	-	-	268	162	V
* 3.961	42.63	PK2	33.8	-29.3	0	47.13	-	-	74	-26.87	171	100	V
* 3.951	28.05	MAv1	33.9	-29.2	0	32.75	54	-21.25	-	-	171	100	V

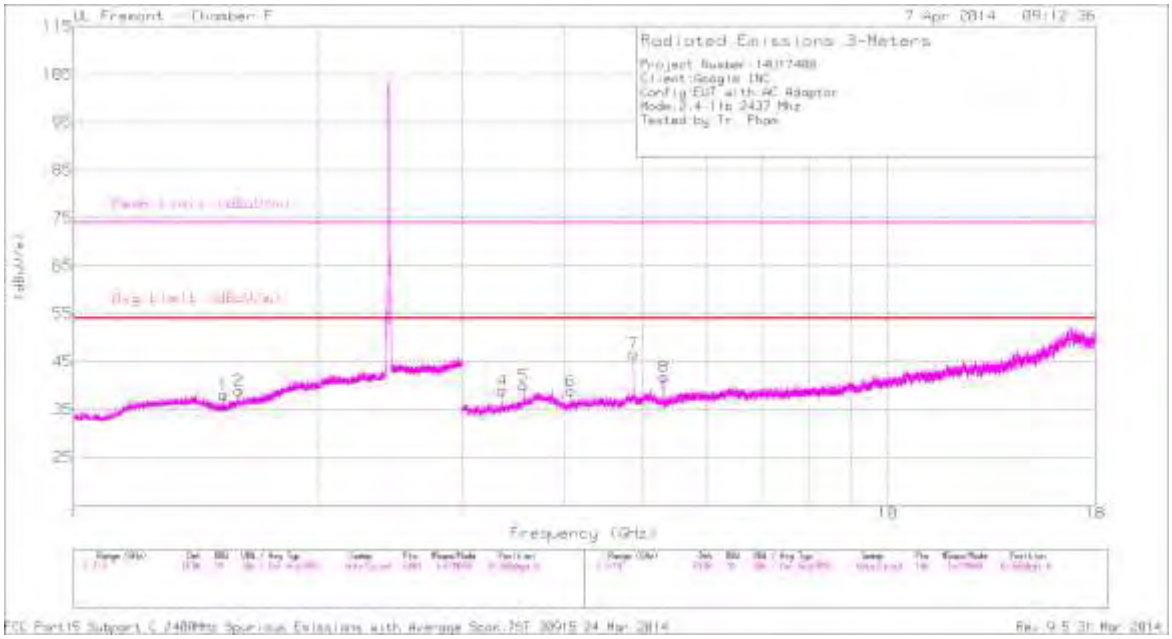
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

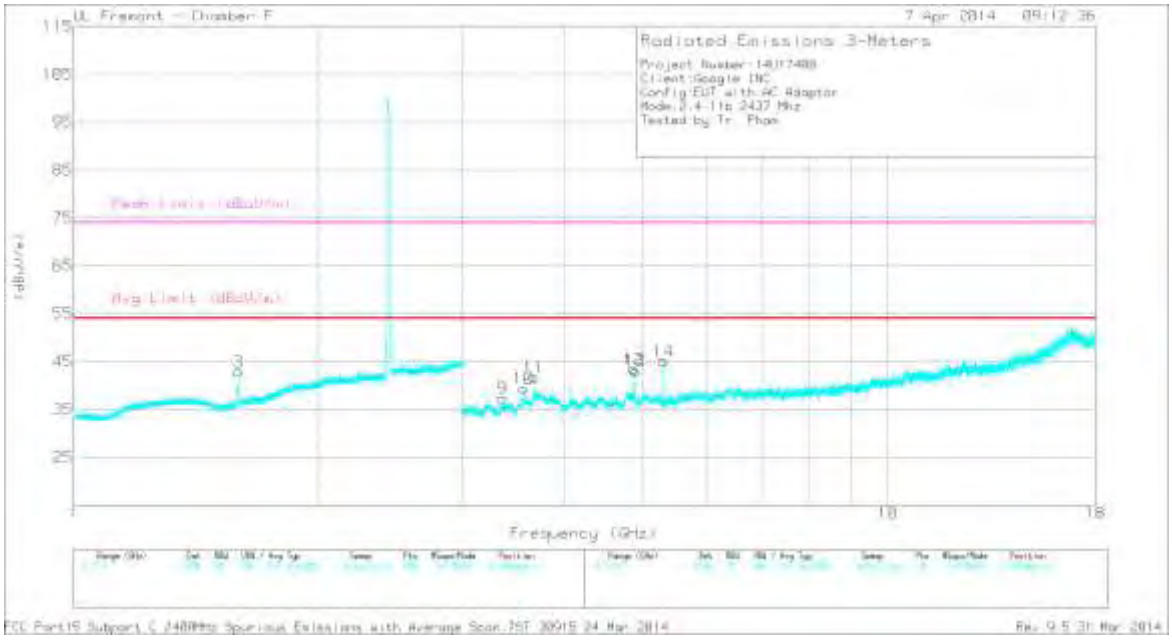
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	44.19	PK2	28.4	-26.3	46.29	-	-	74	-27.71	80	277	H
* 1.53	35.73	MAv1	28.4	-26.3	37.83	54	-16.17	-	-	80	277	H
* 1.596	46.47	PK2	28.5	-25.4	49.57	-	-	74	-24.43	261	197	H
* 1.596	32.62	MAv1	28.5	-25.4	35.72	54	-18.28	-	-	261	197	H
* 1.596	50.88	PK2	28.5	-25.4	53.98	-	-	74	-20.02	281	129	V
* 1.596	34.1	MAv1	28.5	-25.4	37.2	54	-16.8	-	-	281	129	V
* 3.57	41.64	PK2	34.8	-28.5	47.94	-	-	74	-26.06	73	383	H
* 3.57	32.59	MAv1	34.8	-28.5	38.89	54	-15.11	-	-	73	383	H
* 4.08	42.19	PK2	33.7	-28.8	47.09	-	-	74	-26.91	351	225	H
* 4.08	30	MAv1	33.7	-28.8	34.9	54	-19.1	-	-	351	225	H
* 4.874	43.44	PK2	34.2	-27.7	49.94	-	-	74	-24.06	245	250	H
* 4.874	38.36	MAv1	34.2	-27.7	44.86	54	-9.14	-	-	245	250	H
* 3.57	42.93	PK2	34.8	-28.5	49.23	-	-	74	-24.77	209	332	V
* 3.57	34.64	MAv1	34.8	-28.5	40.94	54	-13.06	-	-	209	332	V
* 3.672	47	PK2	34.9	-29.4	52.5	-	-	74	-21.5	26	362	V
* 3.672	33.32	MAv1	34.9	-29.4	38.82	54	-15.18	-	-	26	362	V
* 4.874	41.5	PK2	34.2	-27.7	48	-	-	74	-26	117	310	V
* 4.874	35.18	MAv1	34.2	-27.7	41.68	54	-12.32	-	-	117	310	V

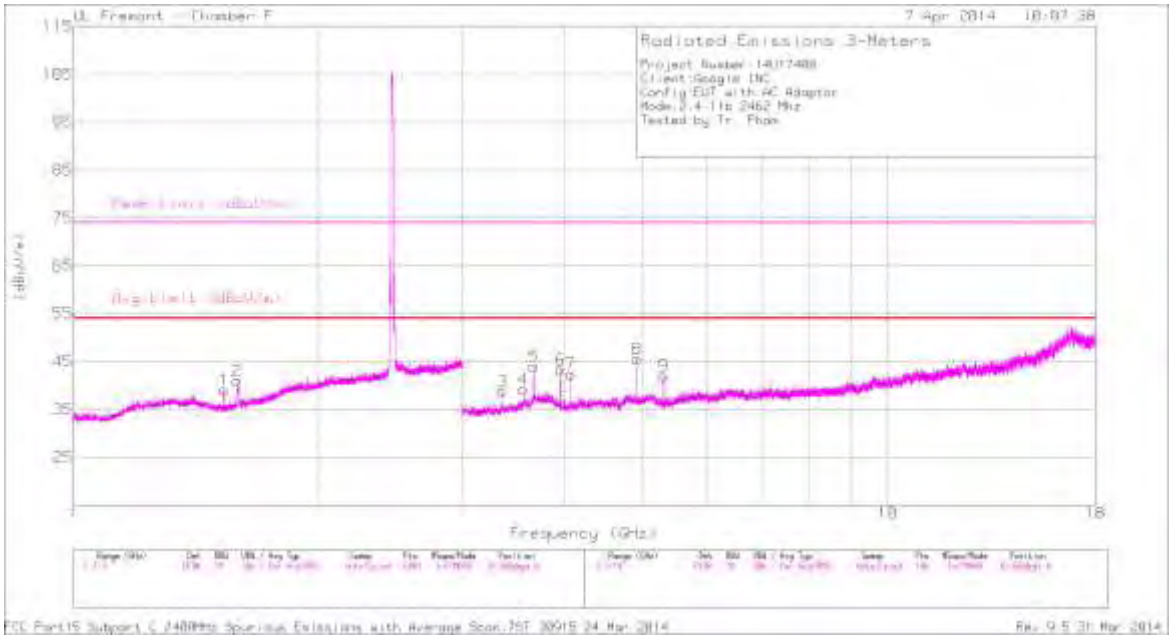
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

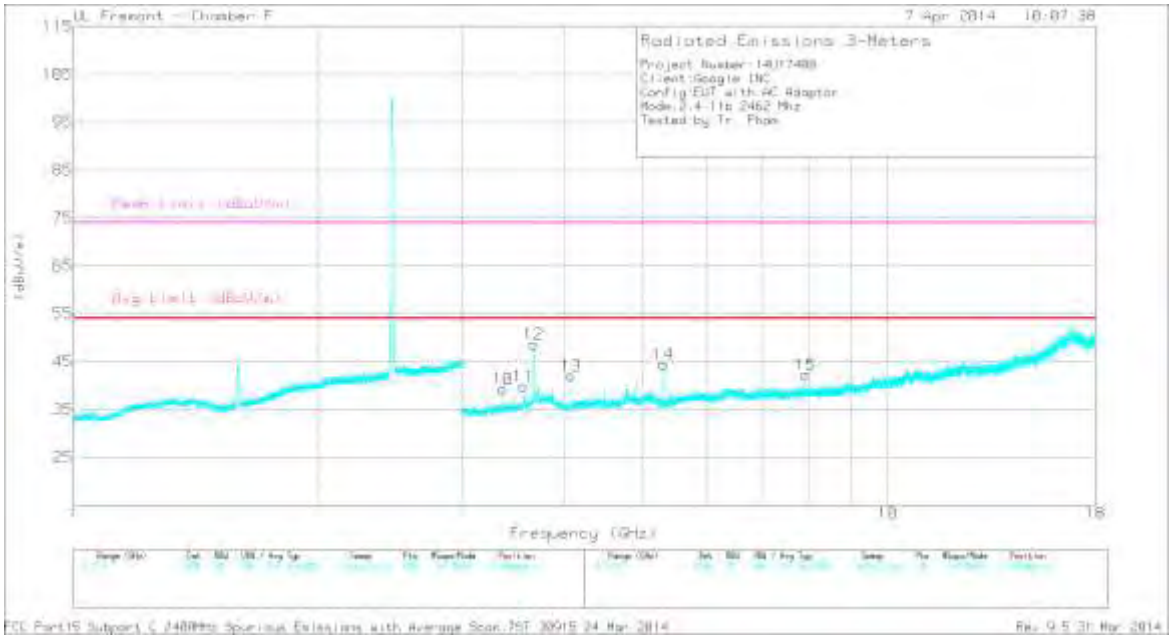
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	43.7	PK2	28.4	-26.3	45.8	-	-	74	-28.2	79	263	H
* 1.53	35.89	MAv1	28.4	-26.3	37.99	54	-16.01	-	-	79	263	H
* 1.589	46.45	PK2	28.5	-25.5	49.45	-	-	74	-24.55	5	244	H
* 1.589	32.27	MAv1	28.5	-25.5	35.27	54	-18.73	-	-	5	244	H
* 3.57	41.02	PK2	34.8	-28.5	47.32	-	-	74	-26.68	61	289	H
* 3.57	31.81	MAv1	34.8	-28.5	38.11	54	-15.89	-	-	61	289	H
* 3.672	43.48	PK2	34.9	-29.4	48.98	-	-	74	-25.02	242	197	H
* 3.672	29.74	MAv1	34.9	-29.4	35.24	54	-18.76	-	-	242	197	H
* 3.96	38.55	PK2	33.8	-29.3	43.05	-	-	74	-30.95	173	305	H
* 3.96	27.58	MAv1	33.8	-29.3	32.08	54	-21.92	-	-	173	305	H
* 4.081	44.11	PK2	33.7	-28.8	49.01	-	-	74	-24.99	358	227	H
* 4.081	30.14	MAv1	33.7	-28.8	35.04	54	-18.96	-	-	358	227	H
* 4.924	43.2	PK2	34.2	-29.1	48.3	-	-	74	-25.7	103	147	H
* 4.924	37.62	MAv1	34.2	-29.1	42.72	54	-11.28	-	-	103	147	H
* 3.57	42.43	PK2	34.8	-28.5	48.73	-	-	74	-25.27	196	387	V
* 3.57	33.84	MAv1	34.8	-28.5	40.14	54	-13.86	-	-	196	387	V
* 3.672	46.23	PK2	34.9	-29.4	51.73	-	-	74	-22.27	41	371	V
* 3.672	32.33	MAv1	34.9	-29.4	37.83	54	-16.17	-	-	41	371	V
* 4.08	43.7	PK2	33.7	-28.8	48.6	-	-	74	-25.4	254	241	V
* 4.08	30.36	MAv1	33.7	-28.8	35.26	54	-18.74	-	-	254	241	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

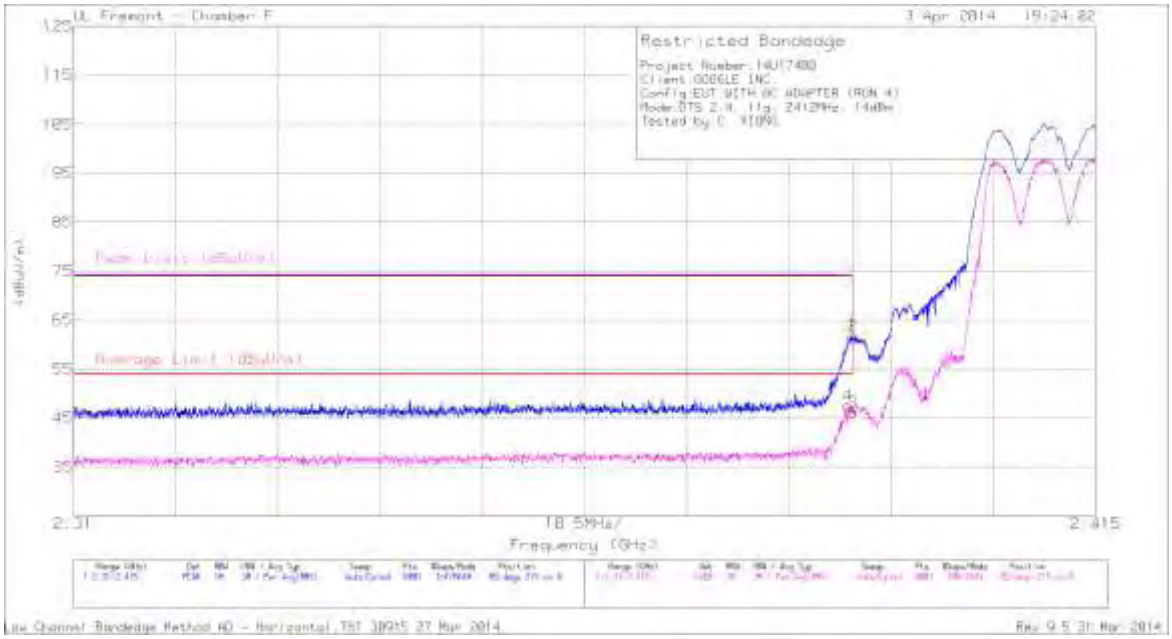
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.3. TX ABOVE 1 GHz 802.11g 2Tx CDD MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL PLOT



DATA

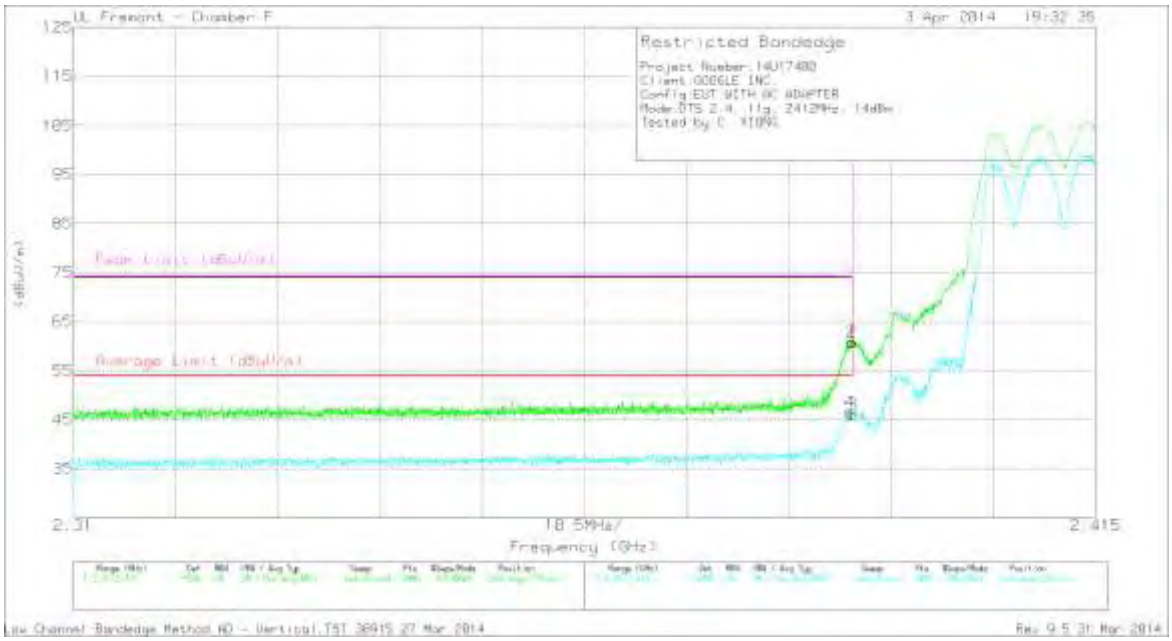
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	53.42	PK	32.2	-23.8	61.82	-	-	74	-12.18	89	215	H
2	* 2.39	53.42	PK	32.2	-23.8	61.82	-	-	74	-12.18	89	215	H
3	* 2.39	37.82	RMS	32.2	-23.8	46.22	54	-7.78	-	-	89	215	H
4	* 2.39	39.13	RMS	32.2	-23.8	47.53	54	-6.47	-	-	89	215	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

LOW CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (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	52.34	PK	32.2	-23.8	60.74	-	-	74	-13.26	244	274	V
2	* 2.39	52.61	PK	32.2	-23.8	61.01	-	-	74	-12.99	244	274	V
3	* 2.39	37.85	RMS	32.2	-23.8	46.25	54	-7.75	-	-	244	274	V
4	* 2.39	38.13	RMS	32.2	-23.8	46.53	54	-7.47	-	-	244	274	V

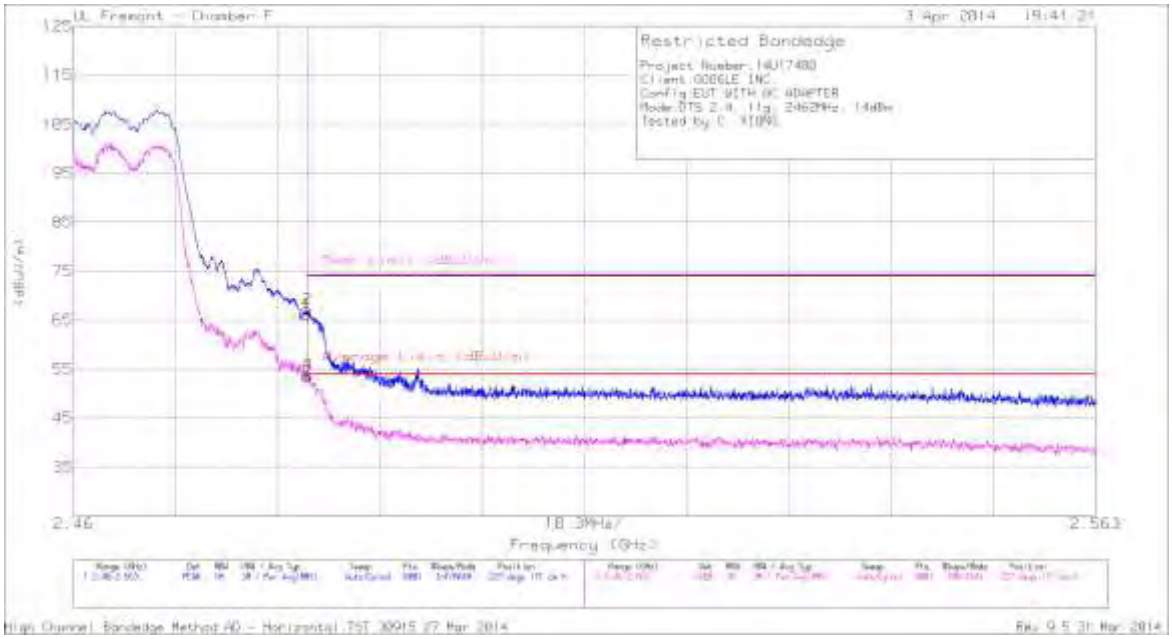
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

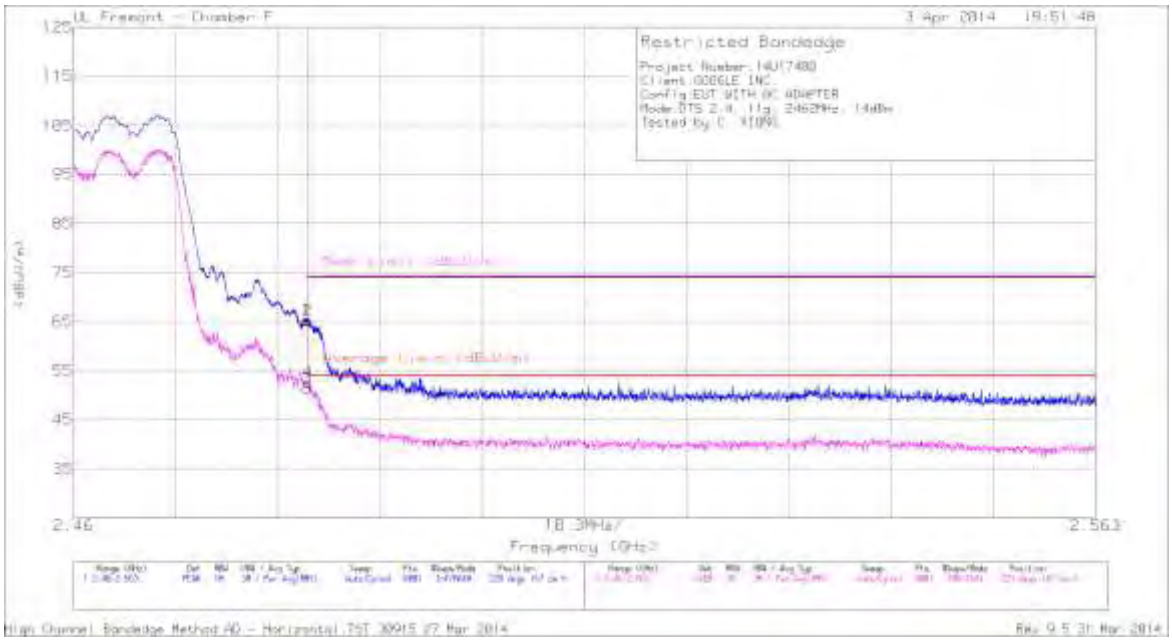
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	56.45	PK	32.6	-23	66.05	-	-	74	-7.95	227	171	H
2	* 2.484	57.75	PK	32.6	-23	67.35	-	-	74	-6.65	227	171	H
3	* 2.484	43.93	RMS	32.6	-23	53.53	54	-.47	-	-	227	171	H
4	* 2.484	44.15	RMS	32.6	-23	53.75	54	-.25	-	-	227	171	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (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	55.54	PK	32.6	-23	65.14	-	-	74	-8.86	229	167	H
2	* 2.484	55.76	PK	32.6	-23	65.36	-	-	74	-8.64	229	167	H
3	* 2.484	41.86	RMS	32.6	-23	51.46	54	-2.54	-	-	229	167	H
4	* 2.484	43.07	RMS	32.6	-23	52.67	54	-1.33	-	-	229	167	H

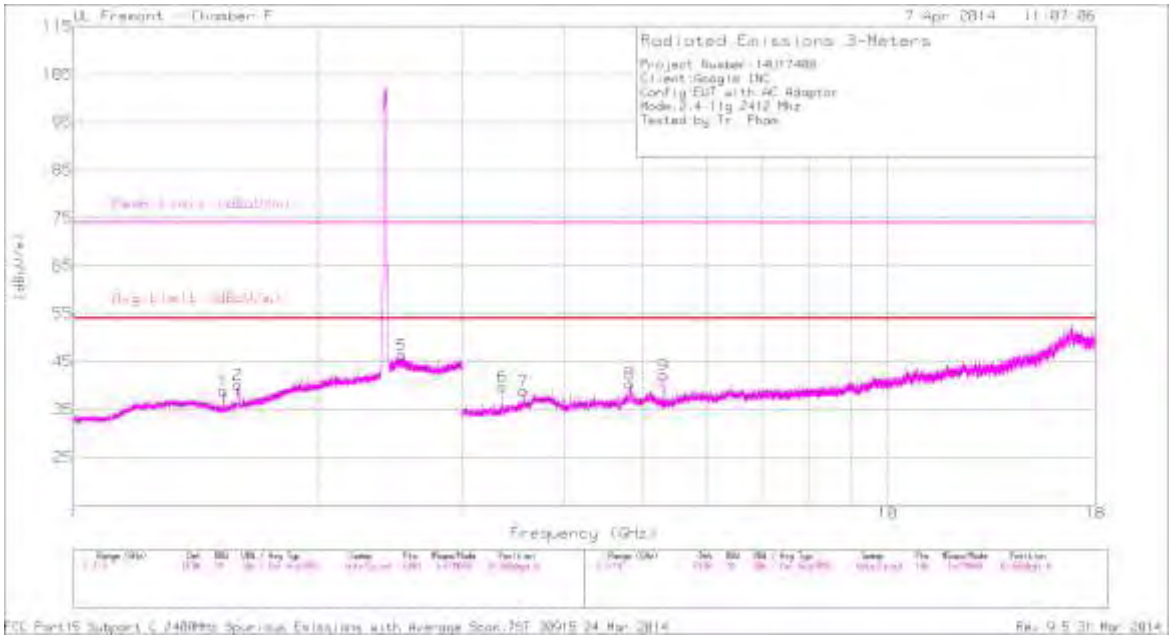
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

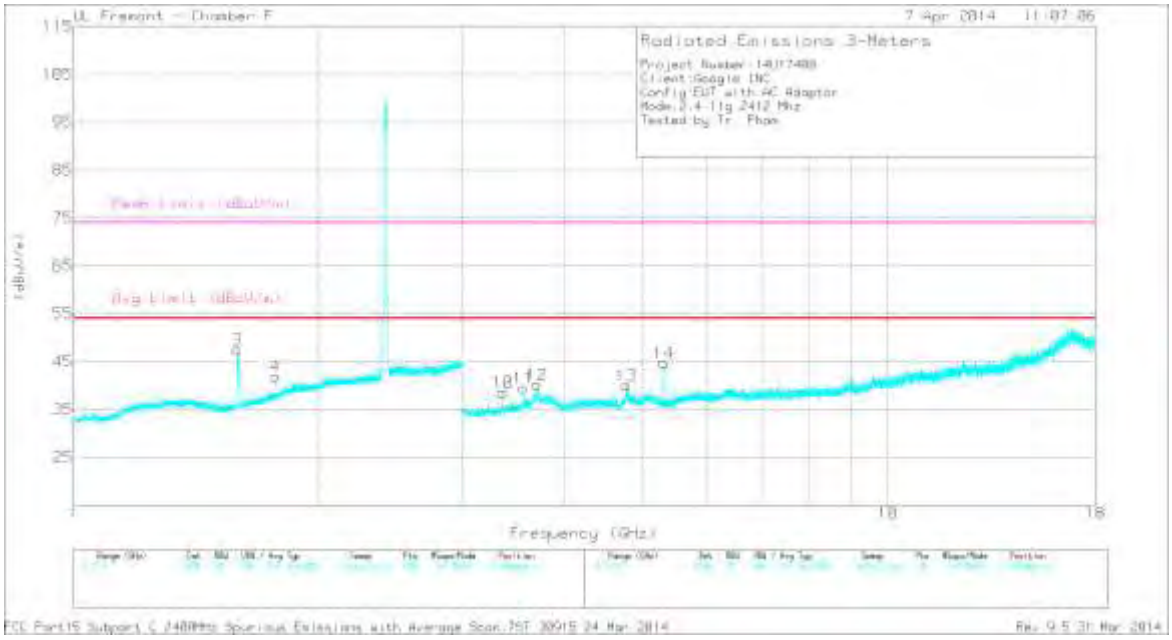
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	43.69	PK2	28.4	-26.3	45.79	-	-	74	-28.21	88	391	H
* 1.53	35.47	MAv1	28.4	-26.3	37.57	54	-16.43	-	-	88	391	H
* 1.59	48.16	PK2	28.5	-25.5	51.16	-	-	74	-22.84	197	194	H
* 1.591	33.13	MAv1	28.5	-25.5	36.13	54	-17.87	-	-	197	194	H
* 1.589	56.76	PK2	28.5	-25.5	59.76	-	-	74	-14.24	217	169	V
* 1.589	38.12	MAv1	28.5	-25.5	41.12	54	-12.88	-	-	217	169	V
* 3.569	40.61	PK2	34.8	-28.5	46.91	-	-	74	-27.09	242	250	H
* 3.57	30.86	MAv1	34.8	-28.5	37.16	54	-16.84	-	-	242	250	H
* 4.823	41.25	PK2	34.1	-27.3	48.05	-	-	74	-25.95	124	277	H
* 4.823	30.82	MAv1	34.1	-27.3	37.62	54	-16.38	-	-	124	277	H
* 3.57	41.41	PK2	34.8	-28.5	47.71	-	-	74	-26.29	182	278	V
* 3.57	32.43	MAv1	34.8	-28.5	38.73	54	-15.27	-	-	182	278	V
* 3.706	38.93	PK2	34.8	-29.4	44.33	-	-	74	-29.67	338	278	V
* 3.706	28.33	MAv1	34.8	-29.4	33.73	54	-20.27	-	-	338	278	V
* 4.772	40.65	PK2	34.1	-28.1	46.65	-	-	74	-27.35	229	226	V
* 4.771	29.09	MAv1	34.1	-28.2	34.99	54	-19.01	-	-	229	226	V

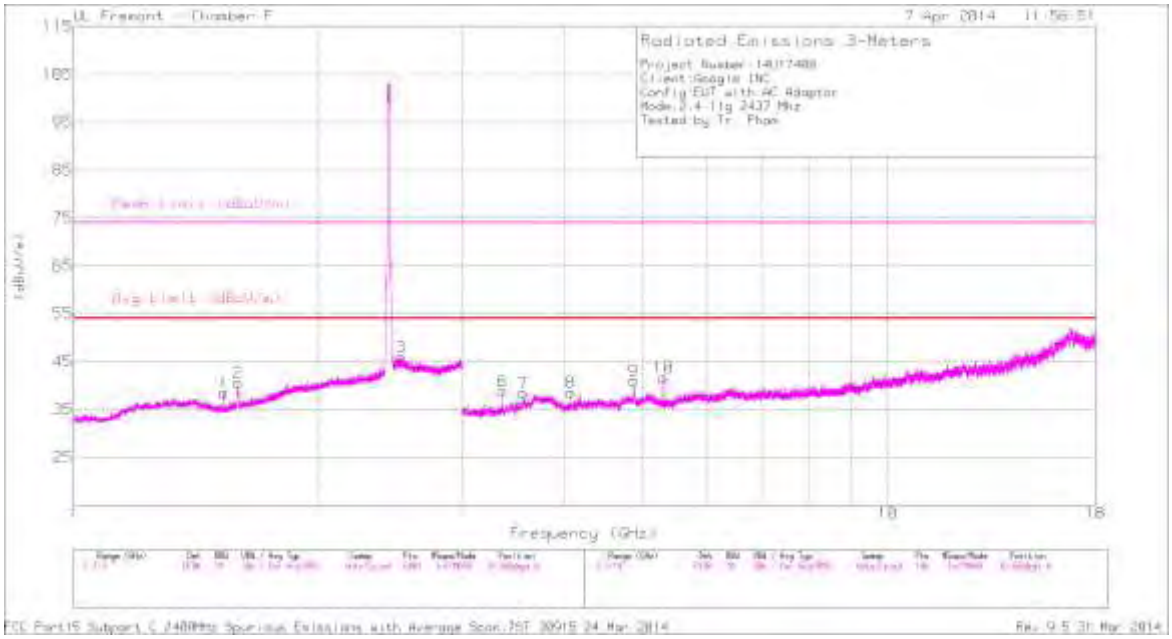
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

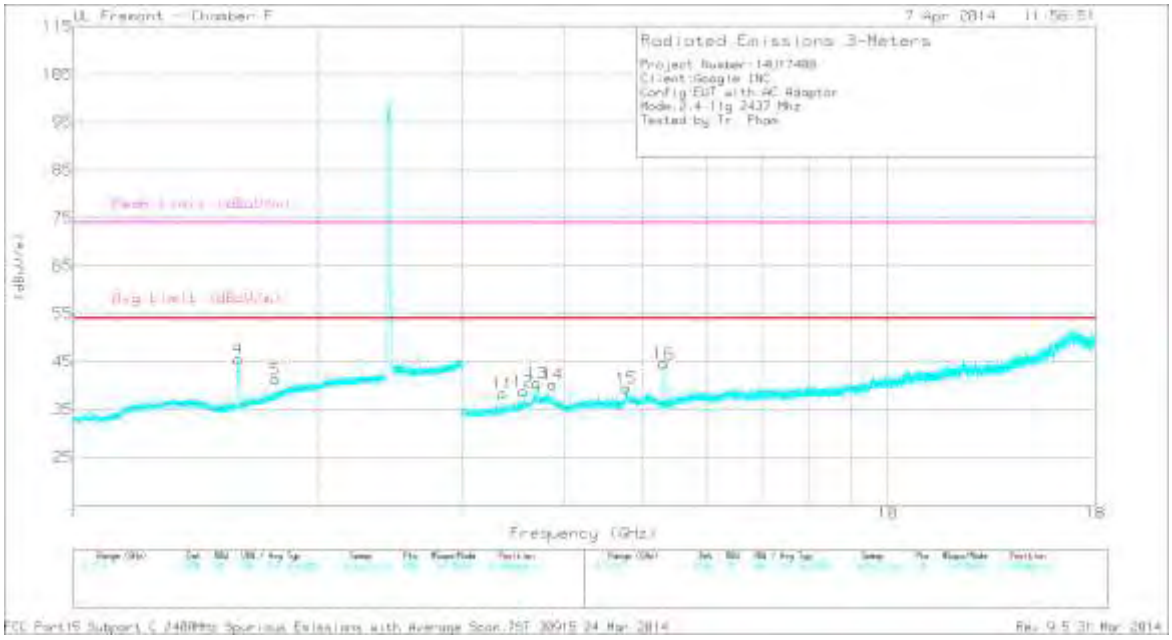
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	43.47	PK2	28.4	-26.3	45.57	-	-	74	-28.43	90	392	H
* 1.53	35.73	MAv1	28.4	-26.3	37.83	54	-16.17	-	-	90	392	H
* 1.594	48.61	PK2	28.5	-25.4	51.71	-	-	74	-22.29	199	167	H
* 1.593	33.48	MAv1	28.5	-25.4	36.58	54	-17.42	-	-	199	167	H
* 1.593	55.48	PK2	28.5	-25.4	58.58	-	-	74	-15.42	206	194	V
* 1.593	38.5	MAv1	28.5	-25.4	41.6	54	-12.4	-	-	206	194	V
* 3.57	41.29	PK2	34.8	-28.5	47.59	-	-	74	-26.41	82	382	H
* 3.57	32.59	MAv1	34.8	-28.5	38.89	54	-15.11	-	-	82	382	H
* 4.079	45.15	PK2	33.7	-28.8	50.05	-	-	74	-23.95	16	293	H
* 4.08	32.24	MAv1	33.7	-28.8	37.14	54	-16.86	-	-	16	293	H
* 4.872	39.91	PK2	34.2	-27.7	46.41	-	-	74	-27.59	85	176	H
* 4.872	29.51	MAv1	34.2	-27.7	36.01	54	-17.99	-	-	85	176	H
* 3.569	42	PK2	34.8	-28.5	48.3	-	-	74	-25.7	25	340	V
* 3.57	33.94	MAv1	34.8	-28.5	40.24	54	-13.76	-	-	25	340	V
* 3.708	40.7	PK2	34.8	-29.4	46.1	-	-	74	-27.9	197	125	V
* 3.709	29.91	MAv1	34.8	-29.4	35.31	54	-18.69	-	-	197	125	V
* 3.876	40.47	PK2	34.1	-29.3	45.27	-	-	74	-28.73	145	200	V
* 3.876	30.84	MAv1	34.1	-29.3	35.64	54	-18.36	-	-	145	200	V
* 4.774	40.37	PK2	34.1	-28.1	46.37	-	-	74	-27.63	227	125	V
* 4.774	29.35	MAv1	34.1	-28.1	35.35	54	-18.65	-	-	227	125	V

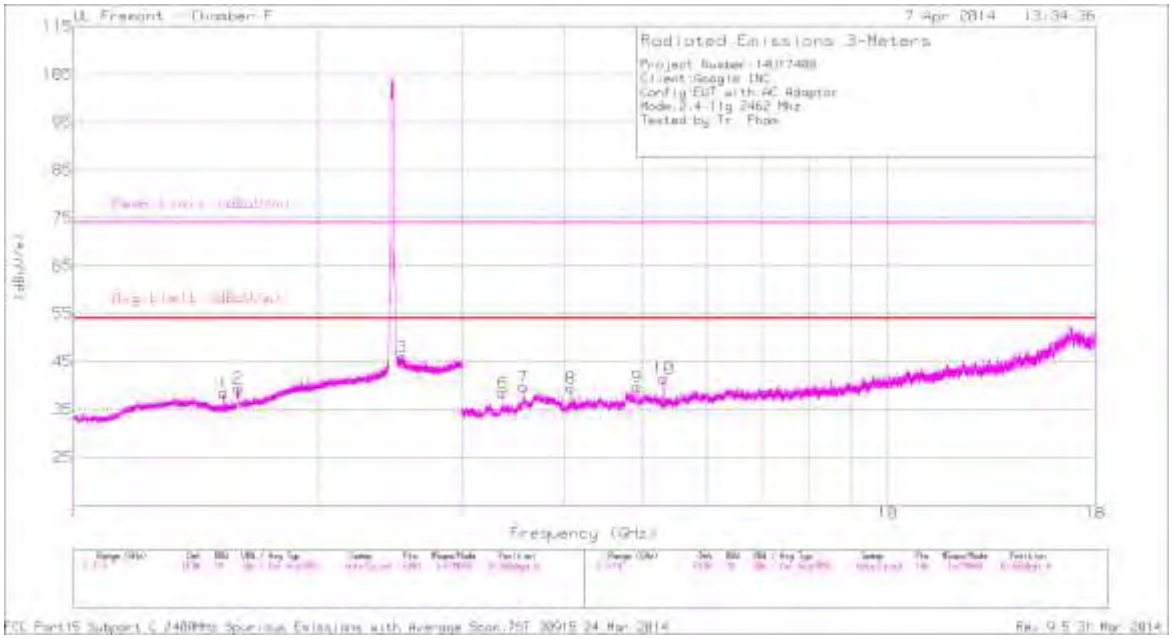
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

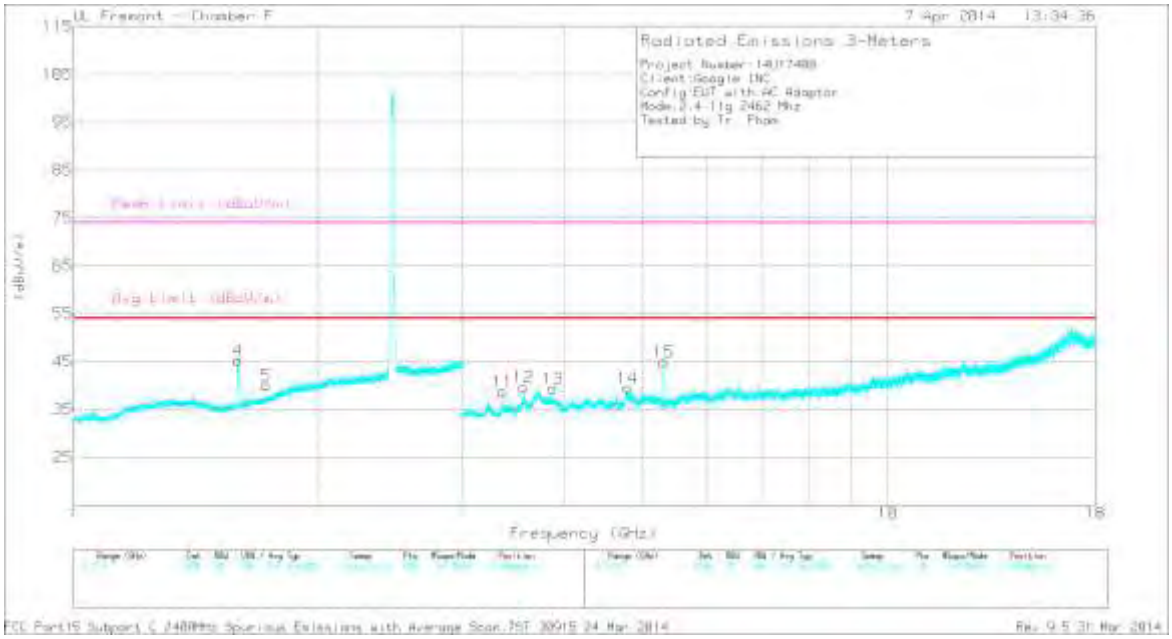
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	43.29	PK2	28.4	-26.3	45.39	-	-	74	-28.61	63	276	H
* 1.53	35.88	MAv1	28.4	-26.3	37.98	54	-16.02	-	-	63	276	H
* 1.593	47.26	PK2	28.5	-25.4	50.36	-	-	74	-23.64	123	143	H
* 1.593	32.64	MAv1	28.5	-25.4	35.74	54	-18.26	-	-	123	143	H
* 1.589	56.33	PK2	28.5	-25.5	59.33	-	-	74	-14.67	213	140	V
* 1.59	38.87	MAv1	28.5	-25.5	41.87	54	-12.13	-	-	213	140	V
* 3.569	41.01	PK2	34.8	-28.5	47.31	-	-	74	-26.69	78	400	H
* 3.57	32.42	MAv1	34.8	-28.5	38.72	54	-15.28	-	-	78	400	H
* 4.08	42.13	PK2	33.7	-28.8	47.03	-	-	74	-26.97	199	400	H
* 4.08	29.54	MAv1	33.7	-28.8	34.44	54	-19.56	-	-	199	400	H
* 4.923	39.67	PK2	34.2	-29.1	44.77	-	-	74	-29.23	177	391	H
* 4.924	29.49	MAv1	34.2	-29.1	34.59	54	-19.41	-	-	177	391	H
* 3.57	41.92	PK2	34.8	-28.5	48.22	-	-	74	-25.78	203	385	V
* 3.57	33.79	MAv1	34.8	-28.5	40.09	54	-13.91	-	-	203	385	V
* 3.876	39.67	PK2	34.1	-29.3	44.47	-	-	74	-29.53	230	341	V
* 3.876	29.37	MAv1	34.1	-29.3	34.17	54	-19.83	-	-	230	341	V
* 4.787	39.07	PK2	34.1	-27.8	45.37	-	-	74	-28.63	185	107	V
* 4.787	28.02	MAv1	34.1	-27.8	34.32	54	-19.68	-	-	185	107	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

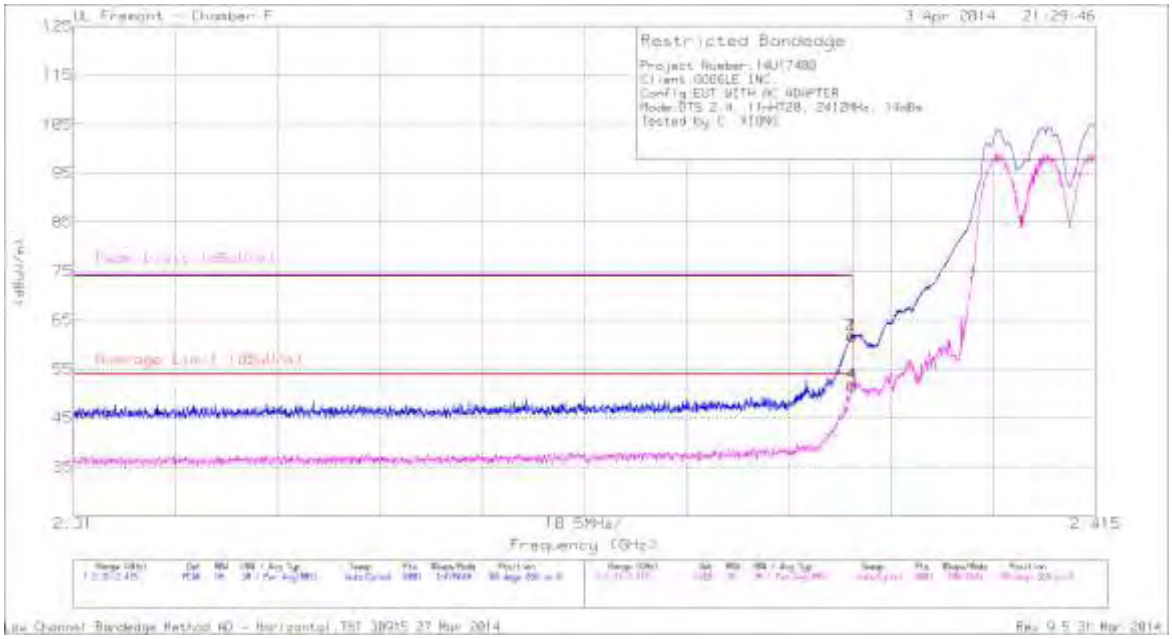
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.4. TX ABOVE 1 GHz 802.11n HT20 2Tx CDD MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL PLOT

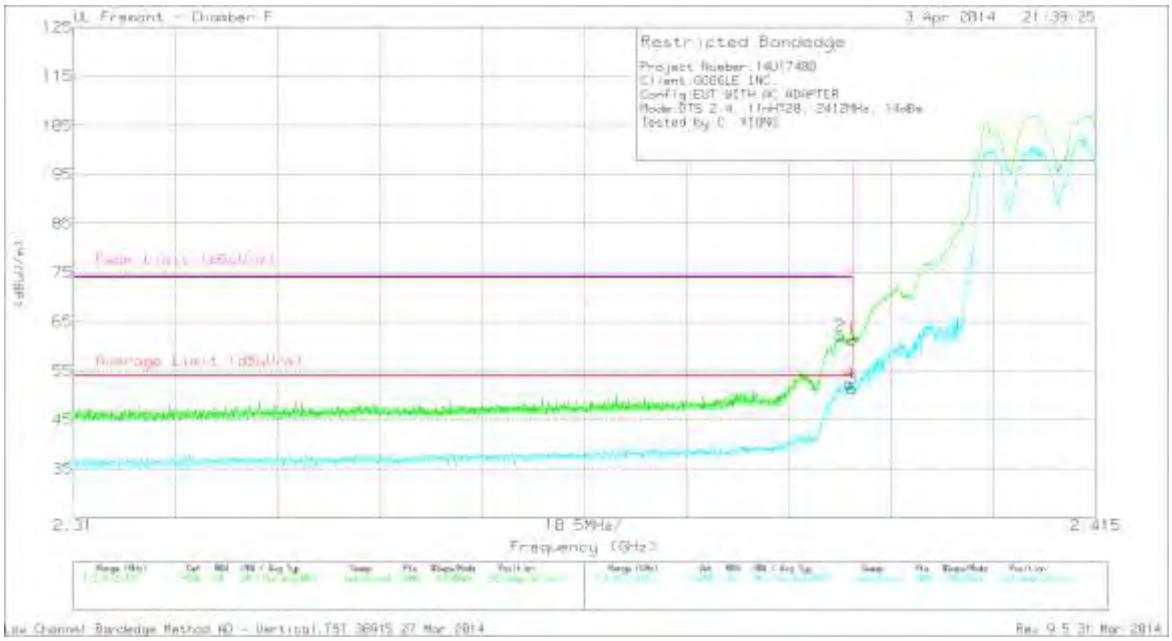


DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (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	53.2	PK	32.2	-23.8	61.6	-	-	74	-12.4	88	268	H
2	* 2.39	53.54	PK	32.2	-23.8	61.94	-	-	74	-12.06	88	268	H
3	* 2.39	42.92	RMS	32.2	-23.8	51.32	54	-2.68	-	-	88	268	H
4	* 2.39	43.53	RMS	32.2	-23.8	51.93	54	-2.07	-	-	88	268	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

LOW CHANNEL VERTICAL PLOT



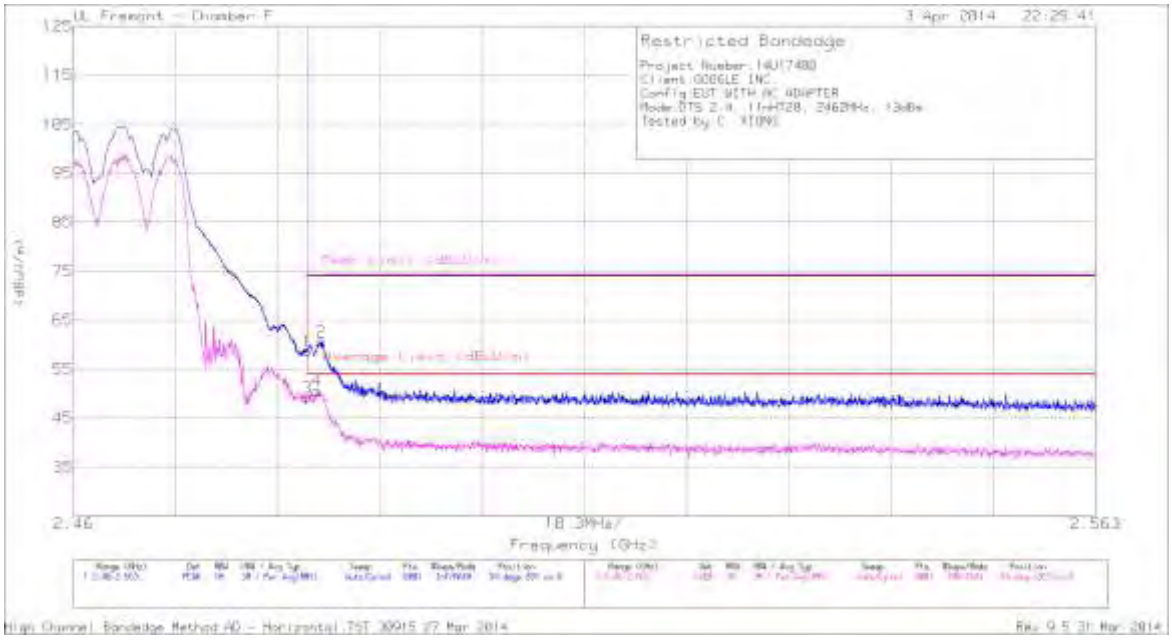
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	52.78	PK	32.2	-23.8	0	61.18	-	-	74	-12.82	262	341	V
2	* 2.389	53.8	PK	32.2	-23.8	0	62.2	-	-	74	-11.8	262	341	V
3	* 2.39	42.78	RMS	32.2	-23.8	.1	51.28	54	-2.72	-	-	262	341	V
4	* 2.39	43.87	RMS	32.2	-23.8	.1	52.37	54	-1.63	-	-	262	341	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

RESTRICTED BANDEDGE (LOW CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT

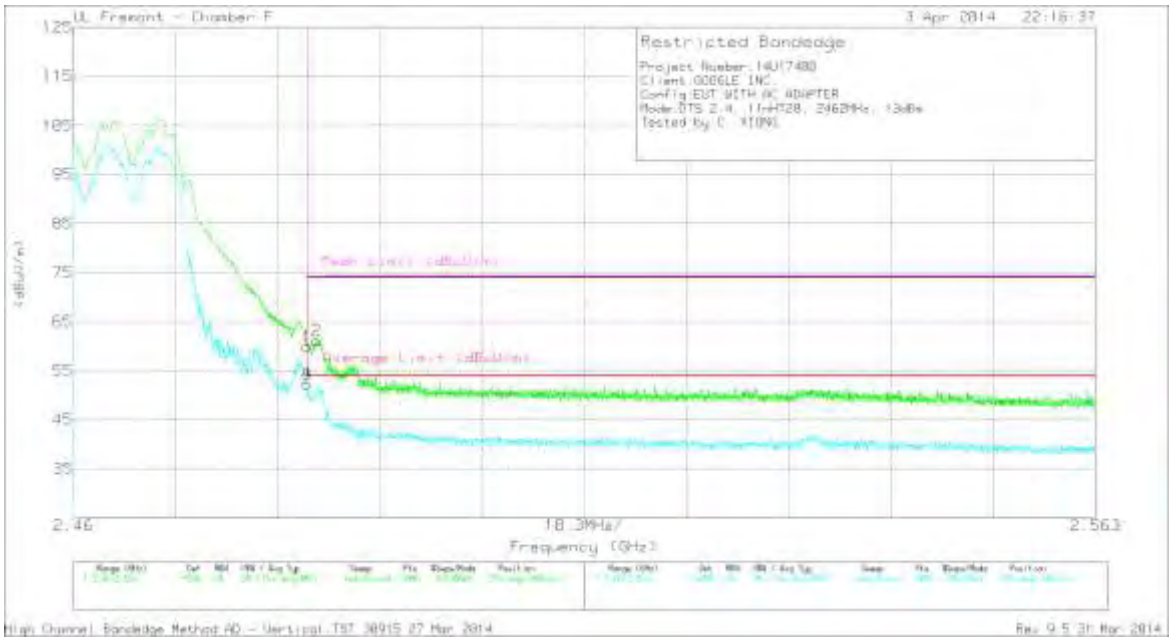


DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (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	48.98	PK	32.6	-23	58.58	-	-	74	-15.42	94	207	H
2	* 2.485	50.94	PK	32.6	-22.9	60.64	-	-	74	-13.36	94	207	H
3	* 2.484	39.6	RMS	32.6	-23	49.2	54	-4.8	-	-	94	207	H
4	* 2.485	40.81	RMS	32.6	-22.9	50.51	54	-3.49	-	-	94	207	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

HIGH CHANNEL VERTICAL PLOT



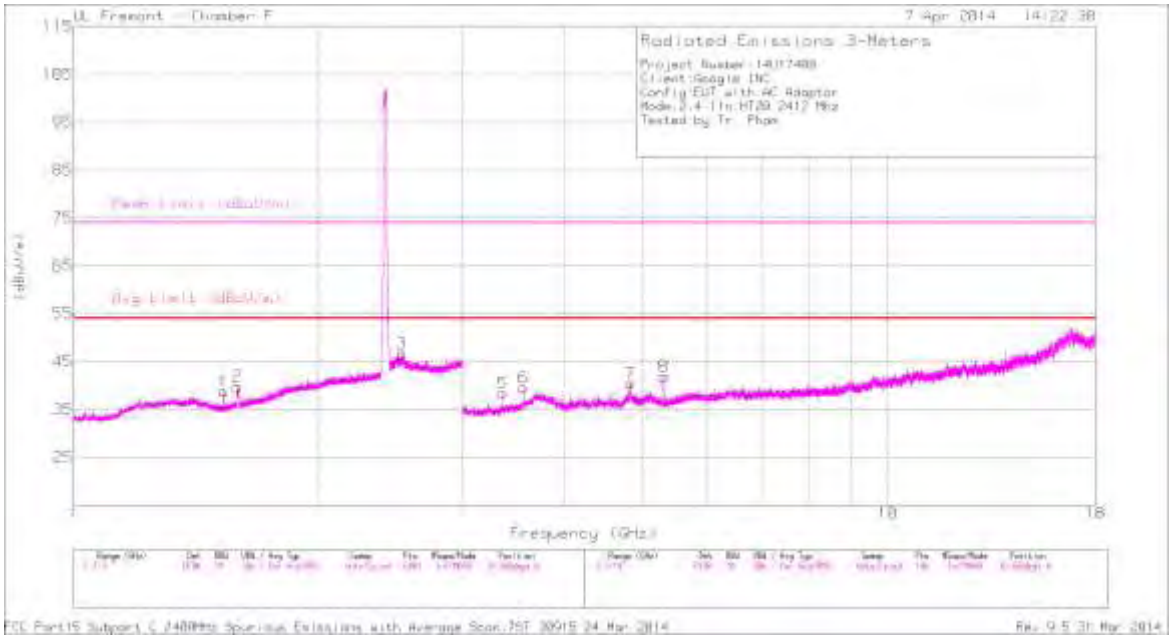
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	50.42	PK	32.6	-23	0	60.02	-	-	74	-13.98	256	400	V
2	* 2.485	51.36	PK	32.6	-22.9	0	61.06	-	-	74	-12.94	256	400	V
3	* 2.484	42.56	RMS	32.6	-23	.1	52.26	54	-1.74	-	-	256	400	V
4	* 2.484	42.56	RMS	32.6	-23	.1	52.26	54	-1.74	-	-	256	400	V

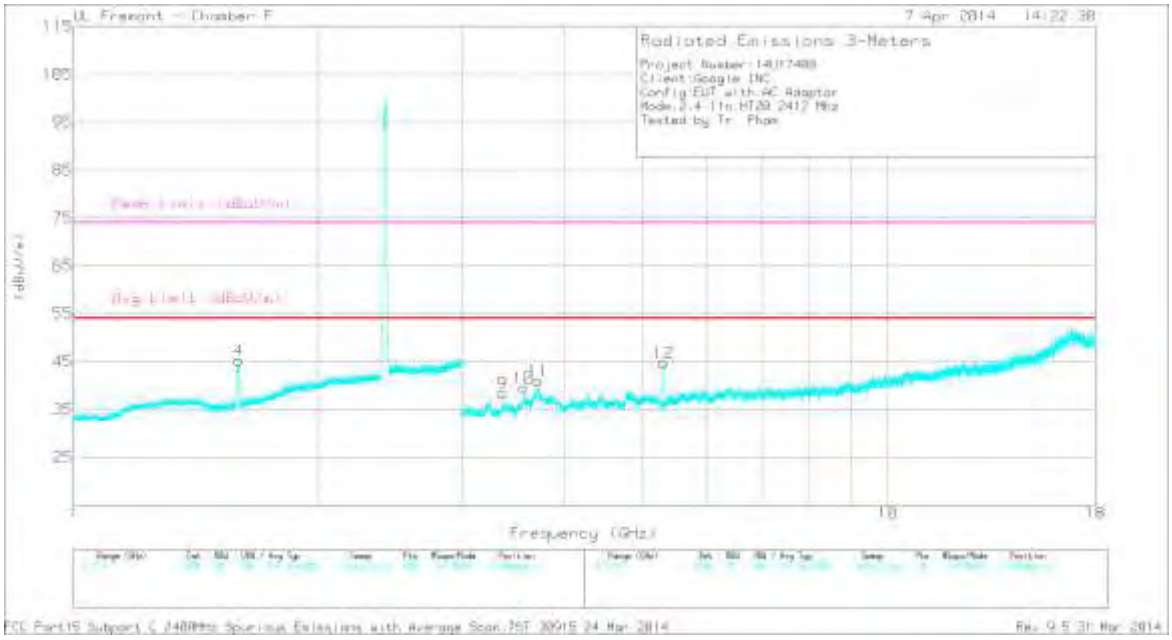
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	43.87	PK2	28.4	-26.3	45.97	-	-	74	-28.03	77	200	H
* 1.53	35.63	MAv1	28.4	-26.3	37.73	54	-16.27	-	-	77	200	H
* 1.589	49.34	PK2	28.5	-25.5	52.34	-	-	74	-21.66	165	204	H
* 1.59	33.43	MAv1	28.5	-25.5	36.43	54	-17.57	-	-	165	204	H
* 1.595	55.66	PK2	28.5	-25.4	58.76	-	-	74	-15.24	210	124	V
* 1.594	38.32	MAv1	28.5	-25.4	41.42	54	-12.58	-	-	210	124	V
* 3.57	41.8	PK2	34.8	-28.5	48.1	-	-	74	-25.9	64	400	H
* 3.57	33.3	MAv1	34.8	-28.5	39.6	54	-14.4	-	-	64	400	H
* 4.828	43.11	PK2	34.1	-27.3	49.91	-	-	74	-24.09	36	349	H
* 4.828	32.19	MAv1	34.1	-27.3	38.99	54	-15.01	-	-	36	349	H
* 3.57	41.53	PK2	34.8	-28.5	47.83	-	-	74	-26.17	31	352	V
* 3.57	33.53	MAv1	34.8	-28.5	39.83	54	-14.17	-	-	31	352	V
* 3.719	43.52	PK2	34.8	-29.6	48.72	-	-	74	-25.28	236	171	V
* 3.719	30.33	MAv1	34.8	-29.6	35.53	54	-18.47	-	-	236	171	V

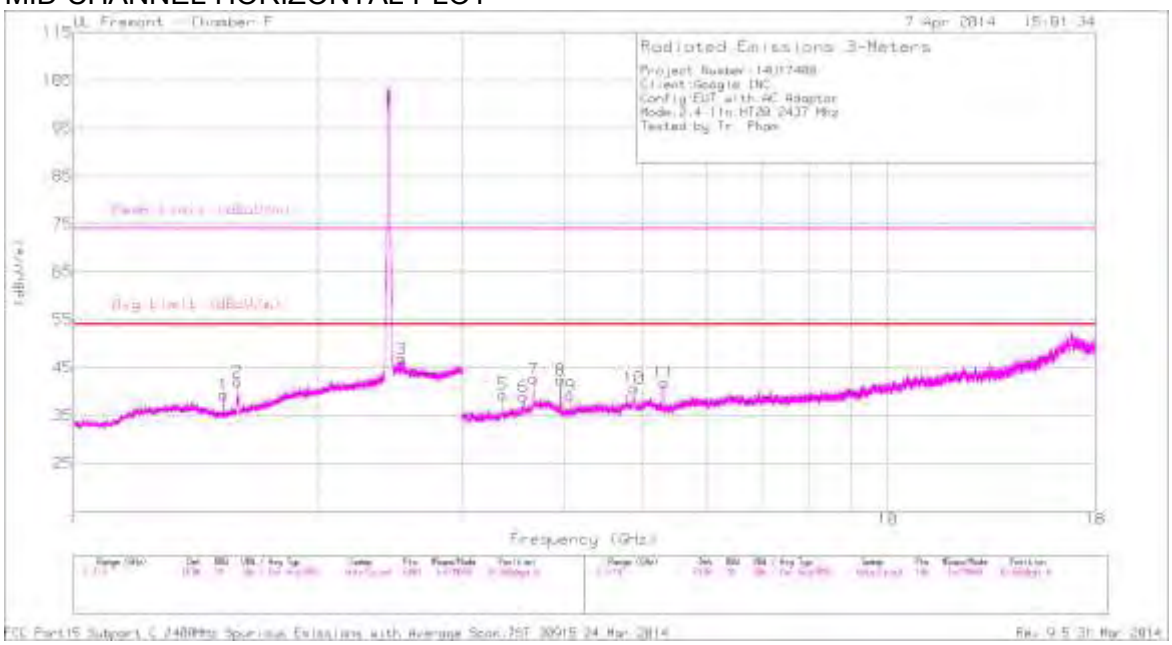
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

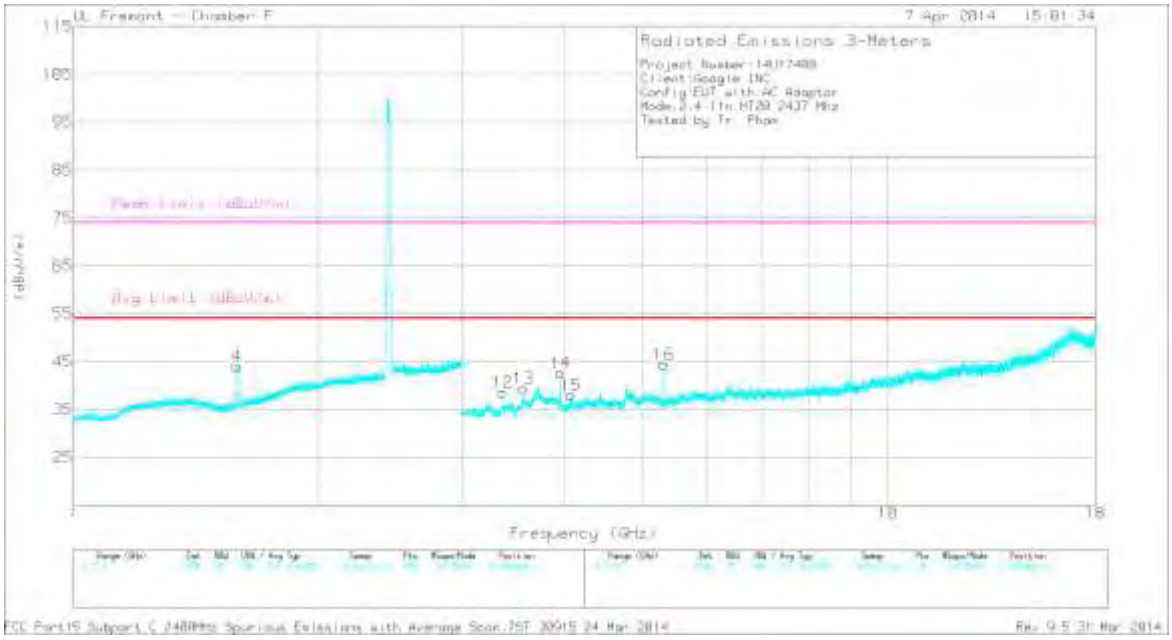
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	44.15	PK2	28.4	-26.3	46.25	-	-	74	-27.75	83	279	H
* 1.53	35.96	MAv1	28.4	-26.3	38.06	54	-15.94	-	-	83	279	H
* 1.59	45.35	PK2	28.5	-25.5	48.35	-	-	74	-25.65	328	268	H
* 1.591	31.72	MAv1	28.5	-25.5	34.72	54	-19.28	-	-	328	268	H
* 1.589	56.06	PK2	28.5	-25.5	59.06	-	-	74	-14.94	209	135	V
* 1.59	38.38	MAv1	28.5	-25.5	41.38	54	-12.62	-	-	209	135	V
* 3.57	42.19	PK2	34.8	-28.5	48.49	-	-	74	-25.51	66	389	H
* 3.57	33.23	MAv1	34.8	-28.5	39.53	54	-14.47	-	-	66	389	H
* 3.672	41.52	PK2	34.9	-29.4	47.02	-	-	74	-26.98	18	389	H
* 3.671	28.59	MAv1	34.9	-29.4	34.09	54	-19.91	-	-	18	389	H
* 3.959	37.97	PK2	33.8	-29.3	42.47	-	-	74	-31.53	145	115	H
* 3.96	27.89	MAv1	33.8	-29.3	32.39	54	-21.61	-	-	145	115	H
* 4.08	42.31	PK2	33.7	-28.8	47.21	-	-	74	-26.79	55	357	H
* 4.08	29.6	MAv1	33.7	-28.8	34.5	54	-19.5	-	-	55	357	H
* 4.879	44	PK2	34.2	-27.8	50.4	-	-	74	-23.6	54	345	H
* 4.879	32.46	MAv1	34.2	-27.8	38.86	54	-15.14	-	-	54	345	H
* 3.57	41.55	PK2	34.8	-28.5	47.85	-	-	74	-26.15	36	348	V
* 3.57	33.56	MAv1	34.8	-28.5	39.86	54	-14.14	-	-	36	348	V
* 3.959	38.53	PK2	33.8	-29.3	43.03	-	-	74	-30.97	33	123	V
* 3.96	27.83	MAv1	33.8	-29.3	32.33	54	-21.67	-	-	33	123	V
* 4.08	42.67	PK2	33.7	-28.8	47.57	-	-	74	-26.43	259	172	V
* 4.08	29.98	MAv1	33.7	-28.8	34.88	54	-19.12	-	-	259	172	V

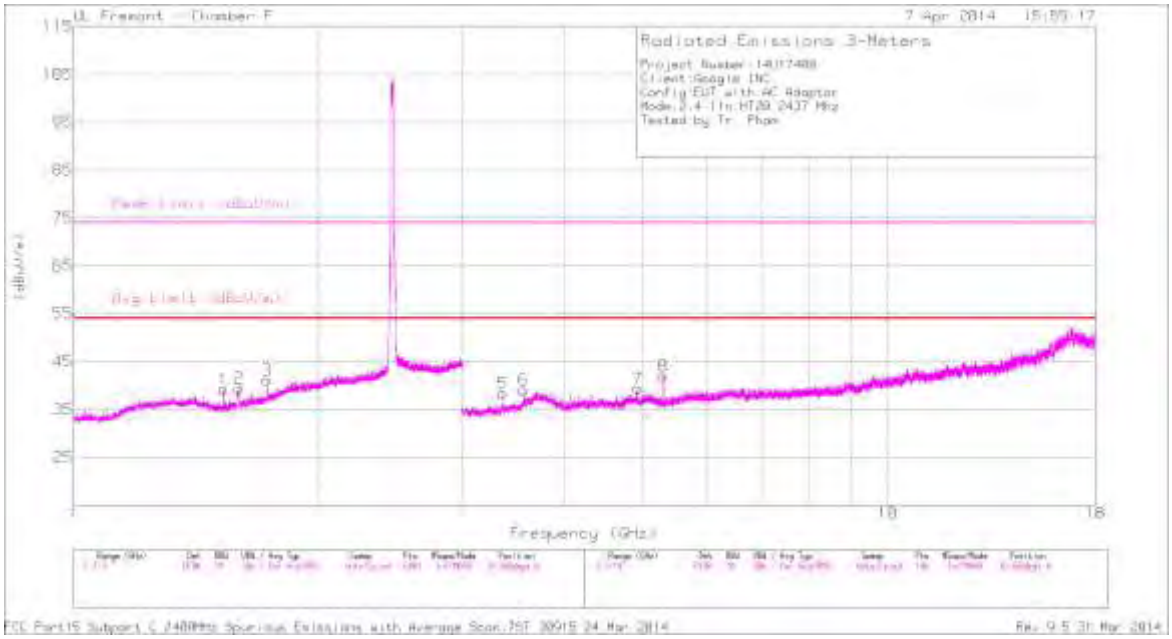
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

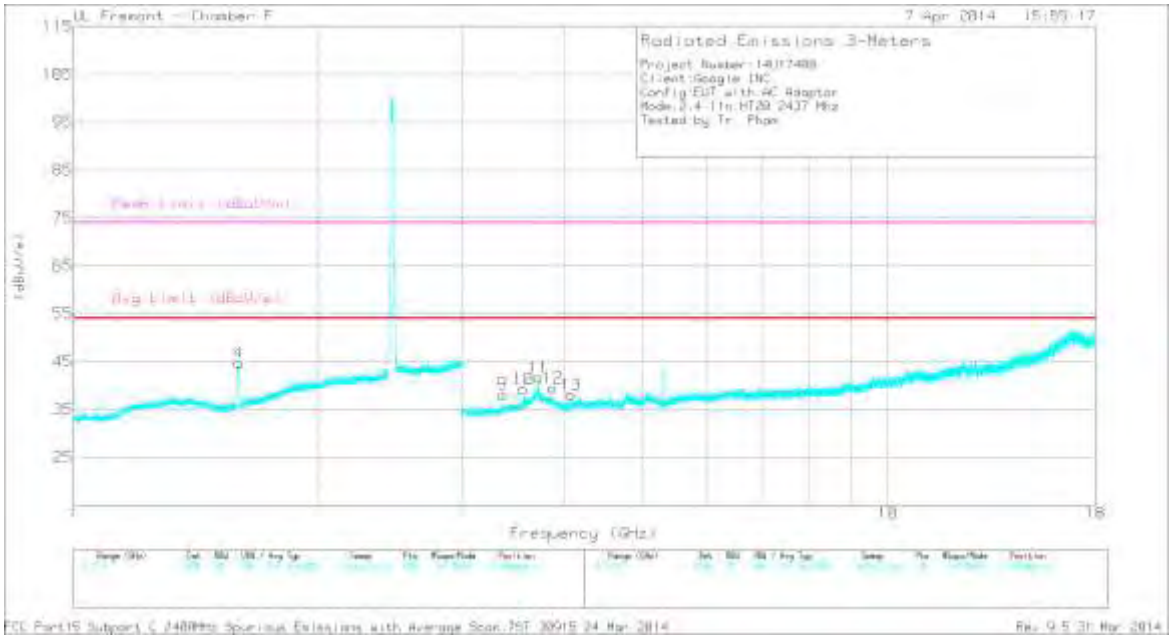
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	43.55	PK2	28.4	-26.3	45.65	-	-	74	-28.35	87	262	H
* 1.53	35.75	MAv1	28.4	-26.3	37.85	54	-16.15	-	-	87	262	H
* 1.596	47.17	PK2	28.5	-25.4	50.27	-	-	74	-23.73	91	207	H
* 1.596	31.62	MAv1	28.5	-25.4	34.72	54	-19.28	-	-	91	207	H
* 1.596	50.85	PK2	28.5	-25.4	53.95	-	-	74	-20.05	201	156	V
* 1.596	36.63	MAv1	28.5	-25.4	39.73	54	-14.27	-	-	201	156	V
* 3.57	42.72	PK2	34.8	-28.5	49.02	-	-	74	-24.98	68	307	H
* 3.57	33.2	MAv1	34.8	-28.5	39.5	54	-14.5	-	-	68	307	H
* 4.929	42.97	PK2	34.2	-29.1	48.07	-	-	74	-25.93	52	384	H
* 4.929	32.4	MAv1	34.2	-29.1	37.5	54	-16.5	-	-	52	384	H
* 3.57	41.63	PK2	34.8	-28.5	47.93	-	-	74	-26.07	203	378	V
* 3.57	33.81	MAv1	34.8	-28.5	40.11	54	-13.89	-	-	203	378	V
* 3.722	39.05	PK2	34.7	-29.5	44.25	-	-	74	-29.75	40	170	V
* 3.722	28.31	MAv1	34.7	-29.6	33.41	54	-20.59	-	-	40	170	V
* 3.876	40.78	PK2	34.1	-29.3	45.58	-	-	74	-28.42	142	181	V
* 3.876	30.79	MAv1	34.1	-29.3	35.59	54	-18.41	-	-	142	181	V
* 4.08	39.75	PK2	33.7	-28.8	44.65	-	-	74	-29.35	304	181	V
* 4.08	28.48	MAv1	33.7	-28.8	33.38	54	-20.62	-	-	304	181	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

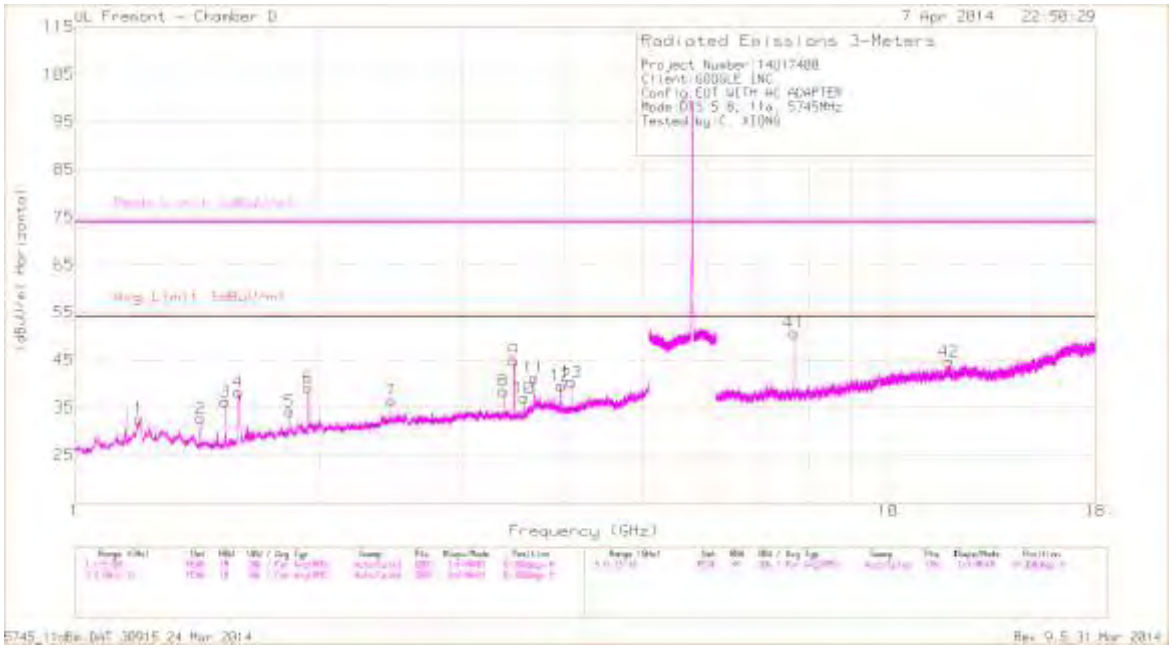
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

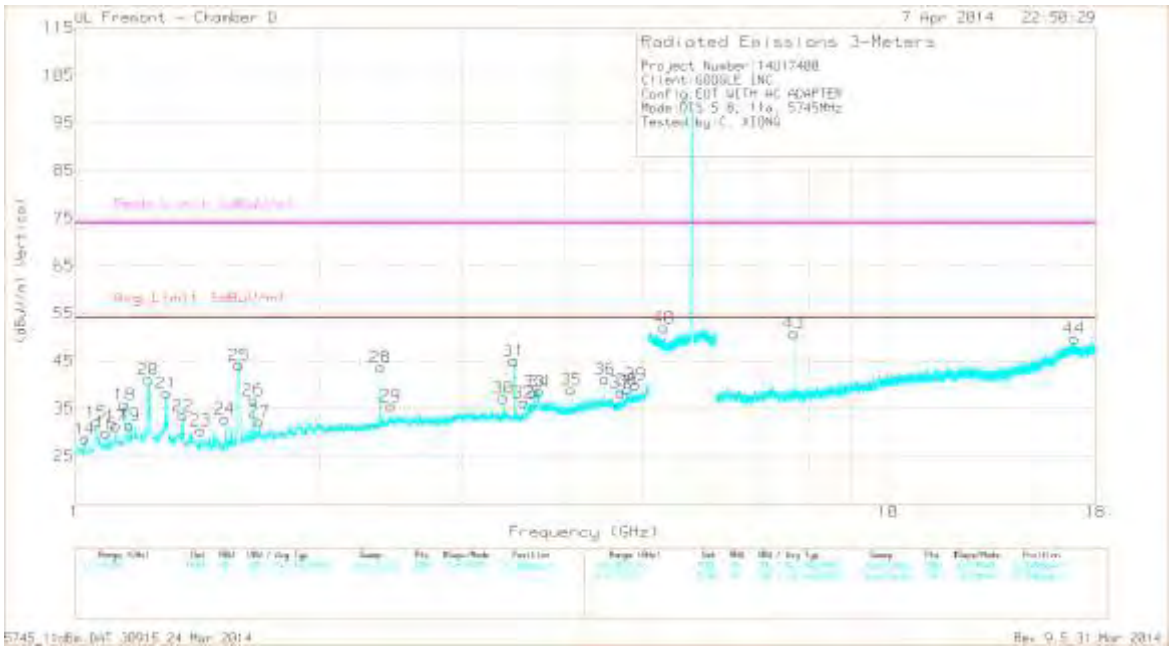
9.5. TX ABOVE 1 GHz 802.11a 2Tx CDD MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



DATA

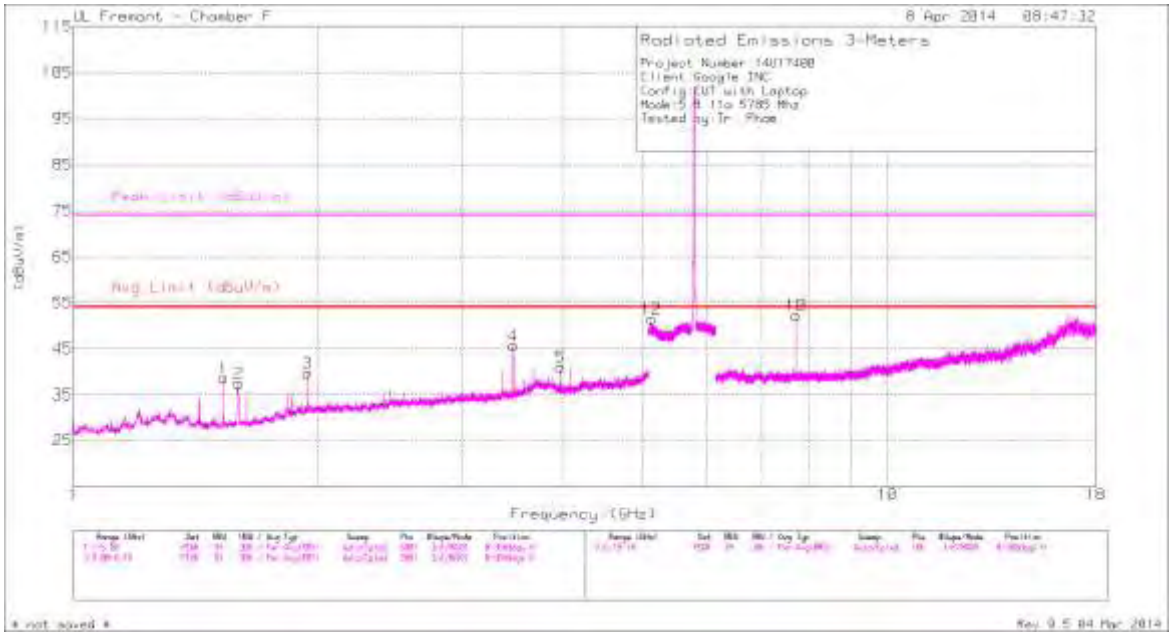
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.569	41.95	PK2	32.4	-29	45.35	-	-	74	-28.65	0	303	H
* 3.57	32.17	MAv1	32.4	-29	35.57	54	-18.43	-	-	0	303	H
* 3.672	40.81	PK2	32.6	-28.5	44.91	-	-	74	-29.09	186	256	H
* 3.672	28.32	MAv1	32.6	-28.5	32.42	54	-21.58	-	-	186	256	H
* 3.956	38.32	PK2	32.9	-28.6	42.62	-	-	74	-31.38	63	336	H
* 3.961	27.22	MAv1	32.9	-28.7	31.42	54	-22.58	-	-	63	336	H
* 4.082	41.19	PK2	32.9	-28.1	45.99	-	-	74	-28.01	3	282	H
* 4.08	31.36	MAv1	32.9	-28.1	36.16	54	-17.84	-	-	3	282	H
* 2.377	39.57	PK2	31.4	-30.4	40.57	-	-	74	-33.43	282	299	V
* 2.376	27.98	MAv1	31.4	-30.4	28.98	54	-25.02	-	-	282	299	V
* 3.57	41.19	PK2	32.4	-29	44.59	-	-	74	-29.41	178	270	V
* 3.57	31.49	MAv1	32.4	-29	34.89	54	-19.11	-	-	178	270	V
* 3.672	39.43	PK2	32.6	-28.5	43.53	-	-	74	-30.47	337	338	V
* 3.672	29.98	MAv1	32.6	-28.5	34.08	54	-19.92	-	-	337	338	V
* 3.721	42.61	PK2	32.7	-28.7	46.61	-	-	74	-27.39	218	249	V
* 3.719	29.4	MAv1	32.7	-28.6	33.5	54	-20.5	-	-	218	249	V
* 4.082	38.92	PK2	32.9	-28.1	43.72	-	-	74	-30.28	261	164	V
* 4.08	29.45	MAv1	32.9	-28.1	34.25	54	-19.75	-	-	261	164	V
* 4.693	38.54	PK2	33.5	-27.2	44.84	-	-	74	-29.16	356	211	V
* 4.692	28.09	MAv1	33.5	-27.2	34.39	54	-19.61	-	-	356	211	V
* 4.896	38.05	PK2	33.5	-26.5	45.05	-	-	74	-28.95	317	144	V
* 4.896	27.46	MAv1	33.5	-26.5	34.46	54	-19.54	-	-	317	144	V
* 7.66	44	PK2	35.1	-24.9	54.2	-	-	74	-19.8	148	152	H
* 7.66	40.99	MAv1	35.1	-24.9	51.19	54	-2.81	-	-	148	152	H
* 11.88	34.59	PK2	38.1	-21.8	50.89	-	-	74	-23.11	185	202	H
* 11.883	23.13	MAv1	38.1	-21.8	39.43	54	-14.57	-	-	185	202	H
* 7.66	42.75	PK2	35.1	-24.9	52.95	-	-	74	-21.05	215	199	V
* 7.66	39.13	MAv1	35.1	-24.9	49.33	54	-4.67	-	-	215	199	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

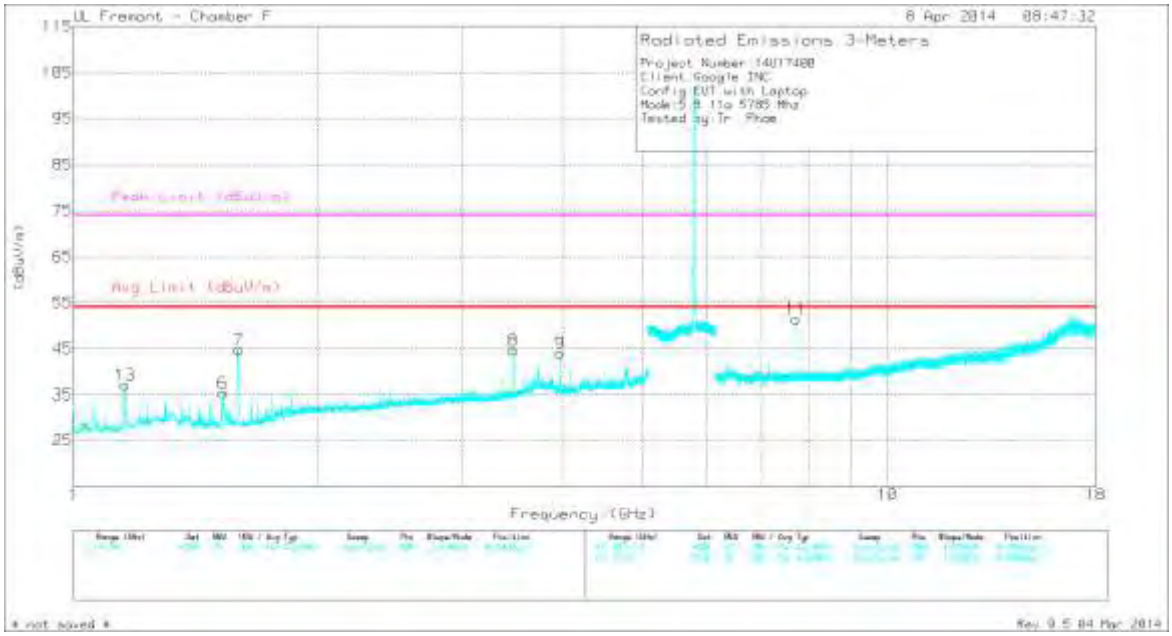
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	46.73	PK2	28.4	-31.7	43.43	-	-	74	-30.57	56	279	H
* 1.53	39.66	MAv1	28.4	-31.7	36.36	54	-17.64	-	-	56	279	H
* 1.596	51.39	PK2	28.5	-31.6	48.29	-	-	74	-25.71	230	242	H
* 1.595	37.51	MAv1	28.5	-31.6	34.41	54	-19.59	-	-	230	242	H
* 3.961	38.66	PK2	33.8	-29.5	42.96	-	-	74	-31.04	157	321	H
* 3.96	28.07	MAv1	33.8	-29.5	32.37	54	-21.63	-	-	157	321	H
* 1.53	44.67	PK2	28.4	-31.7	41.37	-	-	74	-32.63	328	357	V
* 1.53	36.56	MAv1	28.4	-31.7	33.26	54	-20.74	-	-	328	357	V
* 1.595	57.19	PK2	28.5	-31.6	54.09	-	-	74	-19.91	189	111	V
* 1.596	43.15	MAv1	28.5	-31.6	40.05	54	-13.95	-	-	189	111	V
* 3.96	38.75	PK2	33.8	-29.5	43.05	-	-	74	-30.95	144	304	V
* 3.959	28	MAv1	33.8	-29.5	32.3	54	-21.7	-	-	144	304	V
* 1.157	49.49	PK2	28.3	-32.4	45.39	-	-	74	-28.61	206	346	V
* 1.157	33.82	MAv1	28.3	-32.4	29.72	54	-24.28	-	-	206	346	V
* 5.127	41.78	PK2	34.4	-19.3	56.88	-	-	74	-17.12	225	169	H
* 5.127	31.28	MAv1	34.4	-19.3	46.38	54	-7.62	-	-	225	169	H
* 7.713	45.04	PK2	35.6	-25.4	55.24	-	-	74	-18.76	143	224	H
* 7.713	41.78	MAv1	35.6	-25.4	51.98	54	-2.02	-	-	143	224	H
* 7.714	44.47	PK2	35.6	-25.4	54.67	-	-	74	-19.33	209	199	V
* 7.713	39.79	MAv1	35.6	-25.4	49.99	54	-4.01	-	-	209	199	V

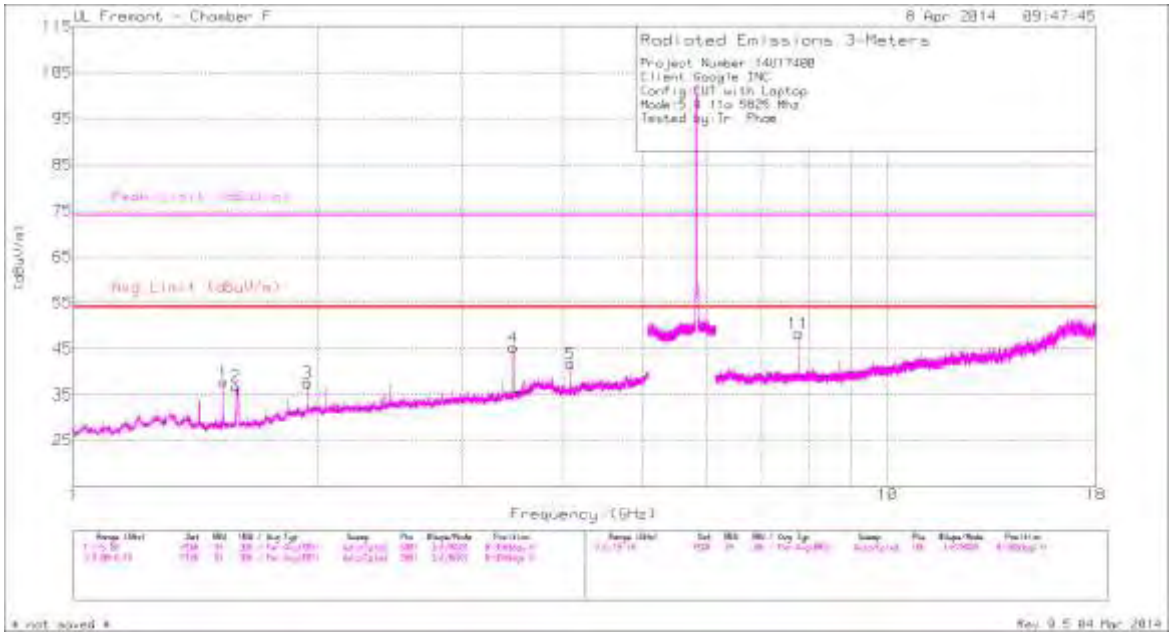
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

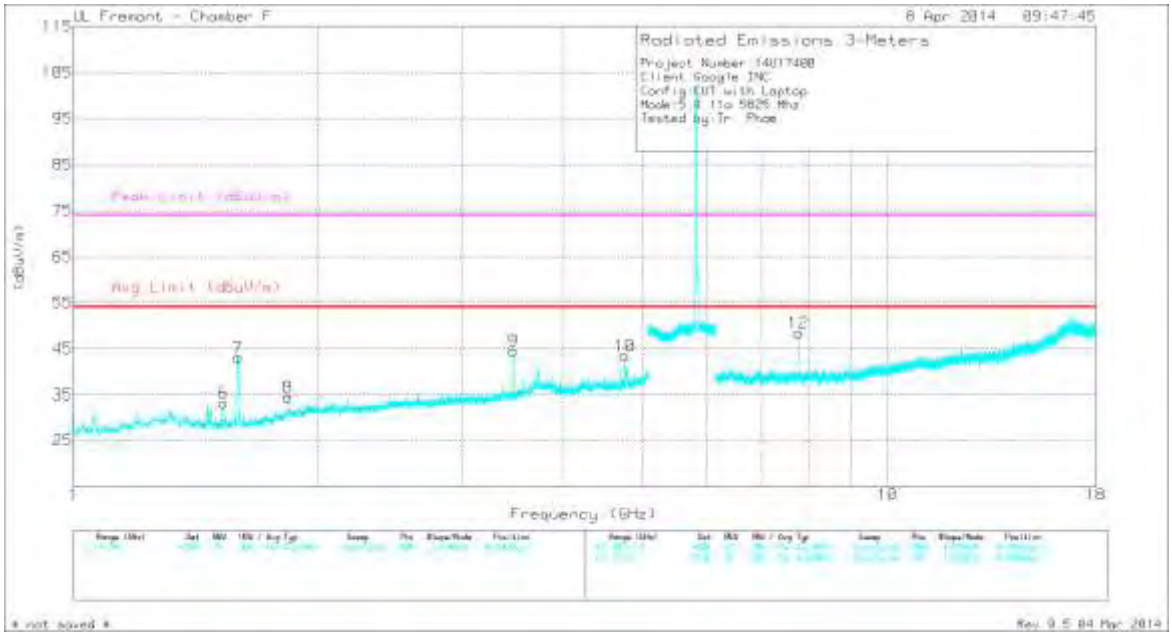
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	46.2	PK2	28.4	-31.7	42.9	-	-	74	-31.1	53	263	H
* 1.53	41.19	MAv1	28.4	-31.7	37.89	54	-16.11	-	-	53	263	H
* 1.584	43.26	PK2	28.5	-31.5	40.26	-	-	74	-33.74	108	270	H
* 1.584	29.34	MAv1	28.5	-31.5	26.34	54	-27.66	-	-	108	270	H
* 4.08	38.68	PK2	33.7	-28.5	43.88	-	-	74	-30.12	280	192	H
* 4.08	28.89	MAv1	33.7	-28.5	34.09	54	-19.91	-	-	280	192	H
* 1.53	44.6	PK2	28.4	-31.7	41.3	-	-	74	-32.7	123	376	V
* 1.53	36.27	MAv1	28.4	-31.7	32.97	54	-21.03	-	-	123	376	V
* 4.752	37.7	PK2	34.1	-27.7	44.1	-	-	74	-29.9	339	306	V
* 4.752	27.32	MAv1	34.1	-27.7	33.72	54	-20.28	-	-	339	306	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

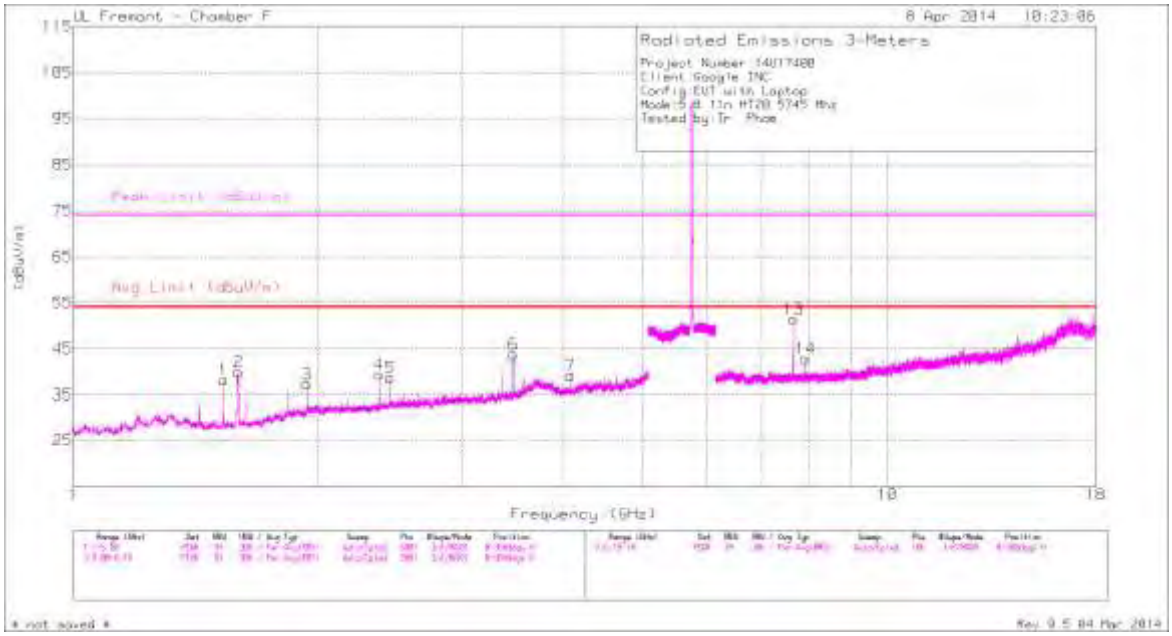
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

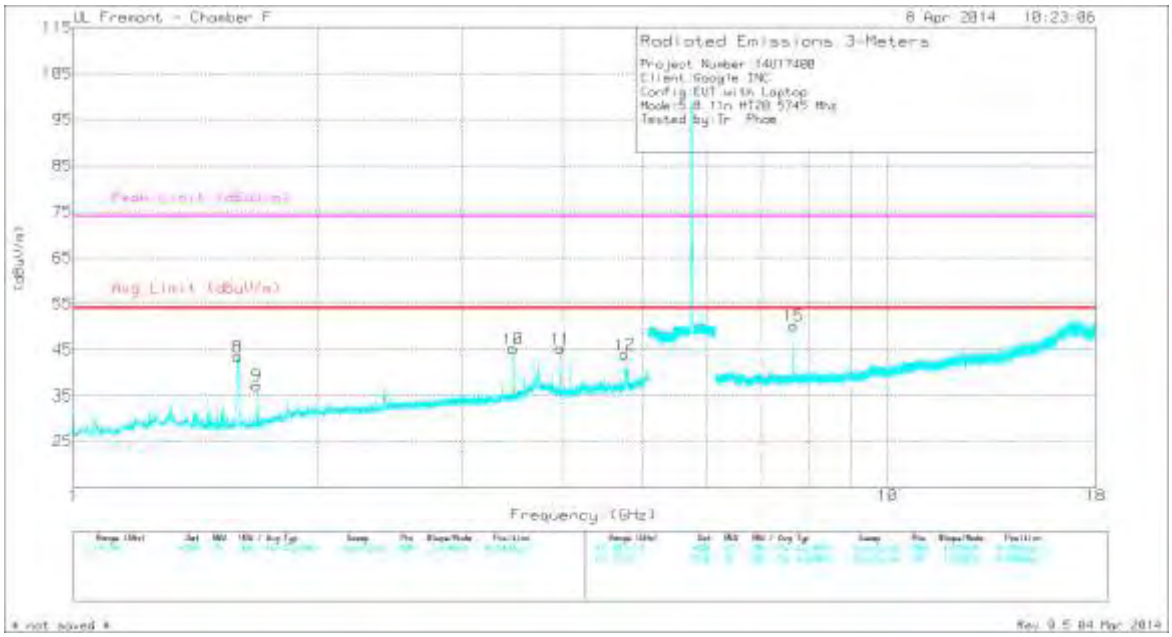
9.6. TX ABOVE 1 GHz 802.11n HT20 2Tx CDD MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	46.65	PK2	28.4	-31.7	43.35	-	-	74	-30.65	67	203	H
* 1.53	39.92	MAv1	28.4	-31.7	36.62	54	-17.38	-	-	67	203	H
* 1.595	54.47	PK2	28.5	-31.6	51.37	-	-	74	-22.63	187	205	H
* 1.595	38.49	MAv1	28.5	-31.6	35.39	54	-18.61	-	-	187	205	H
* 2.376	43.76	PK2	32.1	-30.9	44.96	-	-	74	-29.04	2	203	H
* 2.376	28.5	MAv1	32.1	-30.9	29.7	54	-24.3	-	-	2	203	H
* 4.079	43.92	PK2	33.7	-28.5	49.12	-	-	74	-24.88	357	174	H
* 4.08	31.33	MAv1	33.7	-28.5	36.53	54	-17.47	-	-	357	174	H
* 1.591	58.85	PK2	28.5	-31.6	55.75	-	-	74	-18.25	217	183	V
* 1.591	42.32	MAv1	28.5	-31.6	39.22	54	-14.78	-	-	217	183	V
* 1.679	45.59	PK2	29.1	-31.9	42.79	-	-	74	-31.21	210	230	V
* 1.679	29.56	MAv1	29.1	-31.9	26.76	54	-27.24	-	-	210	230	V
* 4.752	40.96	PK2	34.1	-27.7	47.36	-	-	74	-26.64	224	119	V
* 4.752	27.4	MAv1	34.1	-27.7	33.8	54	-20.2	-	-	224	119	V
* 7.66	46.11	PK2	35.6	-26	55.71	-	-	74	-18.29	141	258	H
* 7.66	42.97	MAv1	35.6	-26	52.57	54	-1.43	-	-	141	258	H
* 7.66	45.28	PK2	35.6	-26	54.88	-	-	74	-19.12	206	201	V
* 7.66	41.21	MAv1	35.6	-26	50.81	54	-3.19	-	-	206	201	V

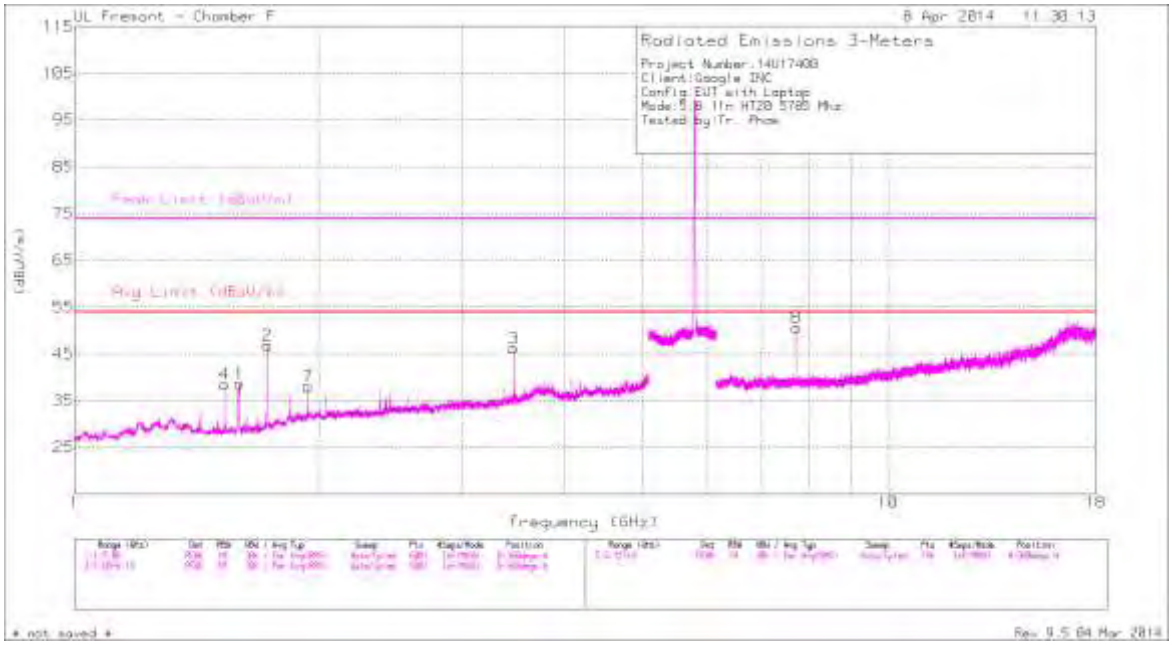
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

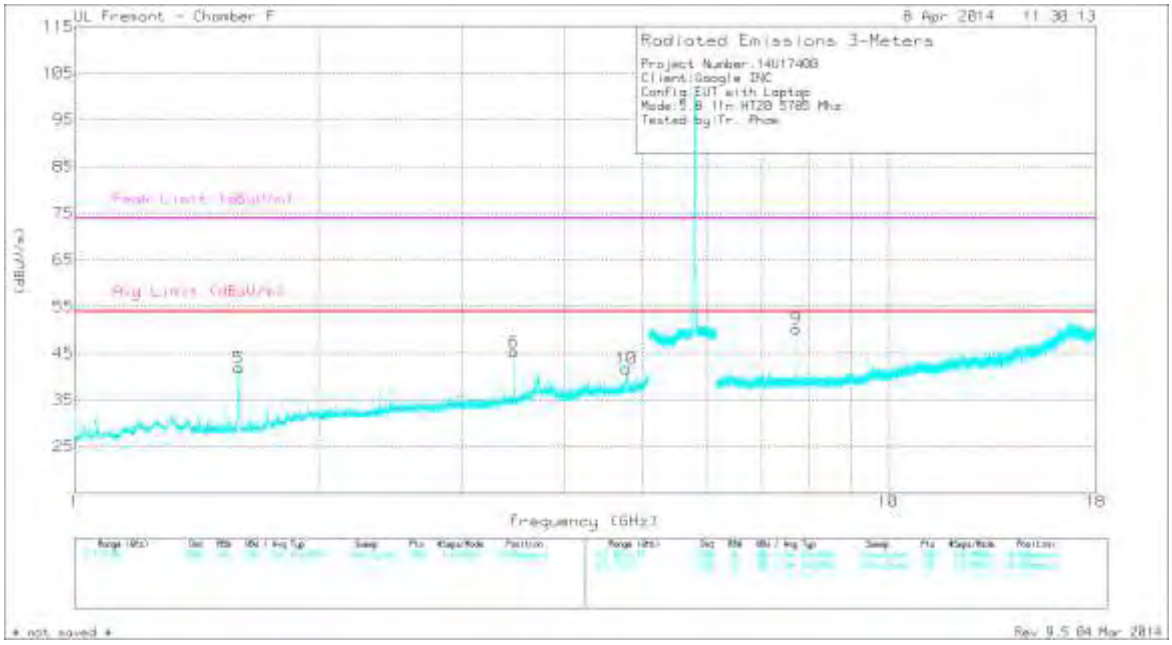
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.596	50.43	PK2	28.5	-31.6	47.33	-	-	74	-26.67	128	122	H
* 1.595	35.85	MAv1	28.5	-31.6	32.75	54	-21.25	-	-	128	122	H
* 1.53	47.1	PK2	28.4	-31.7	43.8	-	-	74	-30.2	62	280	H
* 1.53	40.41	MAv1	28.4	-31.7	37.11	54	-16.89	-	-	62	280	H
* 1.594	58.85	PK2	28.5	-31.6	55.75	-	-	74	-18.25	191	225	V
* 1.594	41.15	MAv1	28.5	-31.6	38.05	54	-15.95	-	-	191	225	V
* 4.766	42.55	PK2	34.1	-27.4	49.25	-	-	74	-24.75	219	109	V
* 4.767	30.45	MAv1	34.1	-27.3	37.25	54	-16.75	-	-	219	109	V
* 7.713	45.11	PK2	35.6	-25.4	55.31	-	-	74	-18.69	141	209	H
* 7.713	41.82	MAv1	35.6	-25.4	52.02	54	-1.98	-	-	141	209	H
* 7.714	43.09	PK2	35.6	-25.4	53.29	-	-	74	-20.71	198	212	V
* 7.713	38.88	MAv1	35.6	-25.4	49.08	54	-4.92	-	-	198	212	V

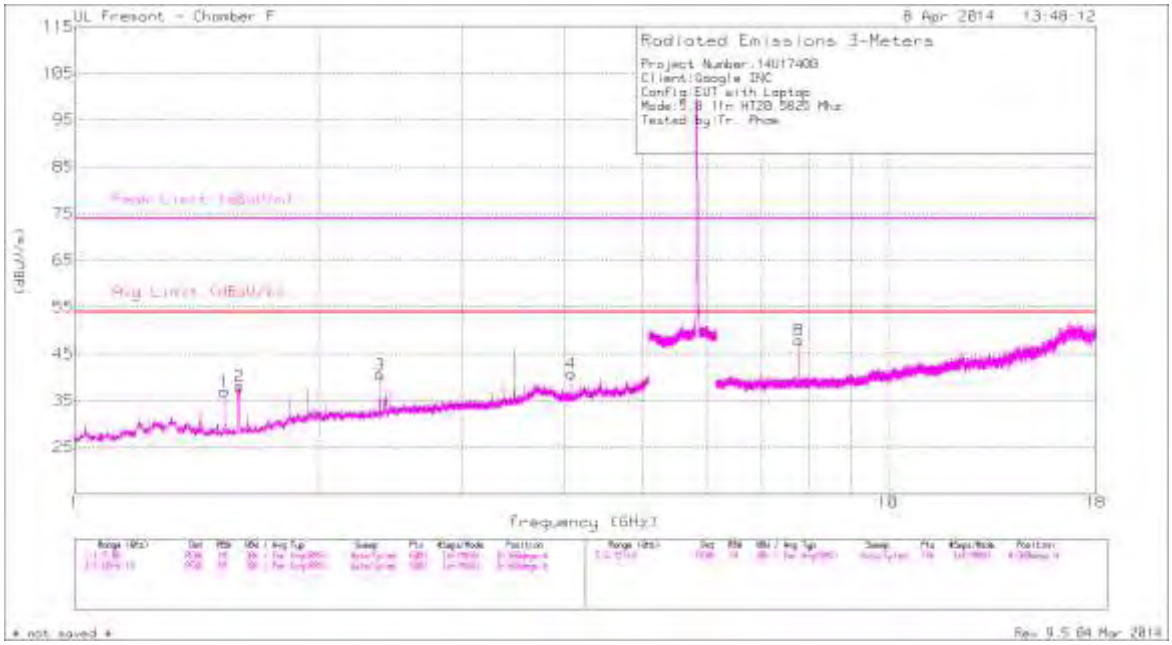
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

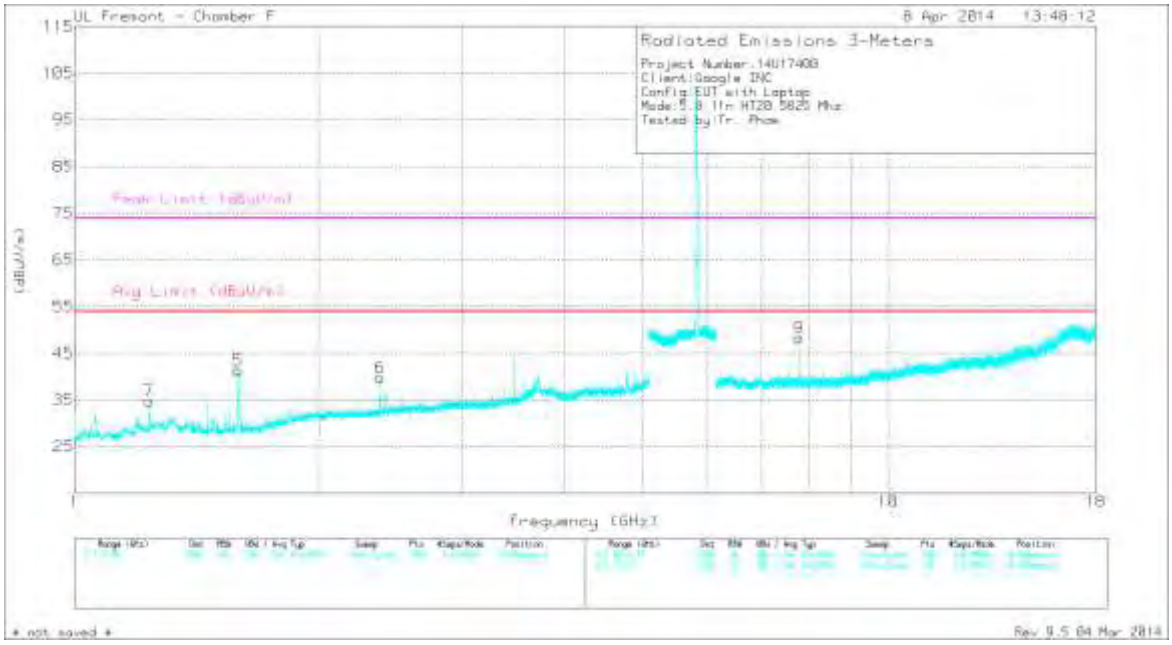
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	46.61	PK2	28.4	-31.7	43.31	-	-	74	-30.69	59	279	H
* 1.53	40.65	MAv1	28.4	-31.7	37.35	54	-16.65	-	-	59	279	H
* 1.596	51.48	PK2	28.5	-31.6	48.38	-	-	74	-25.62	114	268	H
* 1.596	34.96	MAv1	28.5	-31.6	31.86	54	-22.14	-	-	114	268	H
* 1.595	51.11	PK2	28.5	-31.6	48.01	-	-	74	-25.99	114	268	H
* 1.596	35.08	MAv1	28.5	-31.6	31.98	54	-22.02	-	-	114	268	H
* 2.376	41.01	PK2	32.1	-30.9	42.21	-	-	74	-31.79	223	191	H
* 2.377	28.61	MAv1	32.1	-30.9	29.81	54	-24.19	-	-	223	191	H
* 2.376	39.14	PK2	32.1	-30.9	40.34	-	-	74	-33.66	223	191	H
* 2.376	28.87	MAv1	32.1	-30.9	30.07	54	-23.93	-	-	223	191	H
* 4.08	43.38	PK2	33.7	-28.5	48.58	-	-	74	-25.42	37	251	H
* 4.08	30.03	MAv1	33.7	-28.5	35.23	54	-18.77	-	-	37	251	H
* 1.59	59.89	PK2	28.5	-31.6	56.79	-	-	74	-17.21	182	251	V
* 1.589	41.4	MAv1	28.5	-31.6	38.3	54	-15.7	-	-	182	251	V
* 2.377	39.16	PK2	32.1	-30.9	40.36	-	-	74	-33.64	171	251	V
* 2.376	28.65	MAv1	32.1	-30.9	29.85	54	-24.15	-	-	171	251	V
* 1.237	43.18	PK2	29.4	-32.3	40.28	-	-	74	-33.72	300	223	V
* 1.235	29.44	MAv1	29.3	-32.3	26.44	54	-27.56	-	-	300	223	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

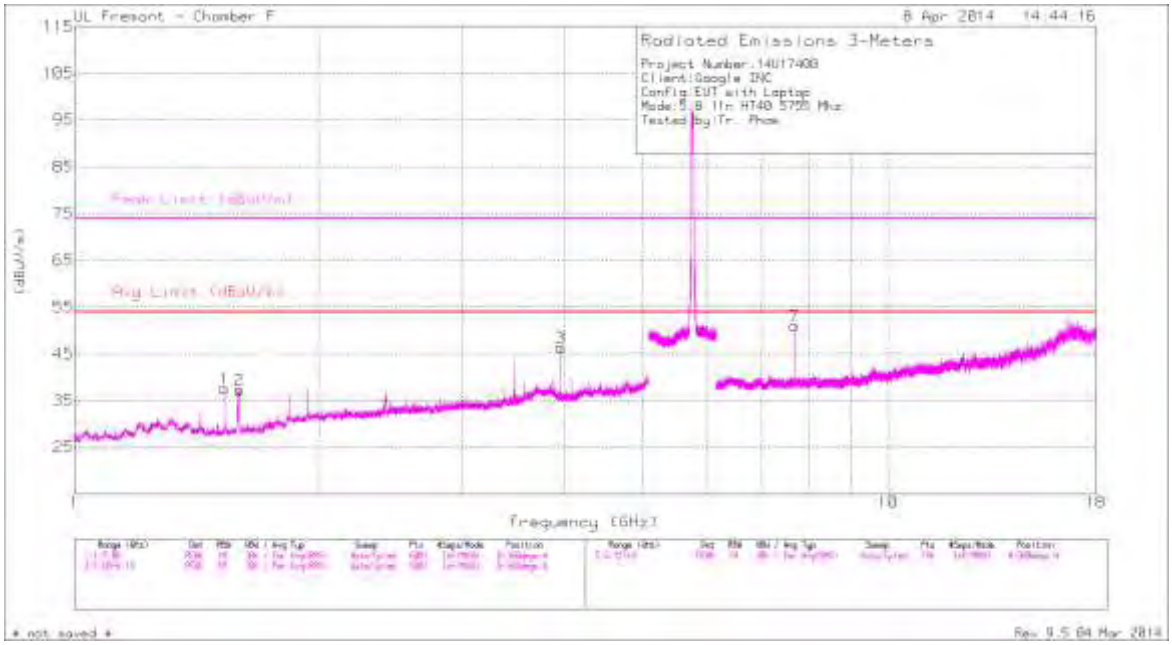
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

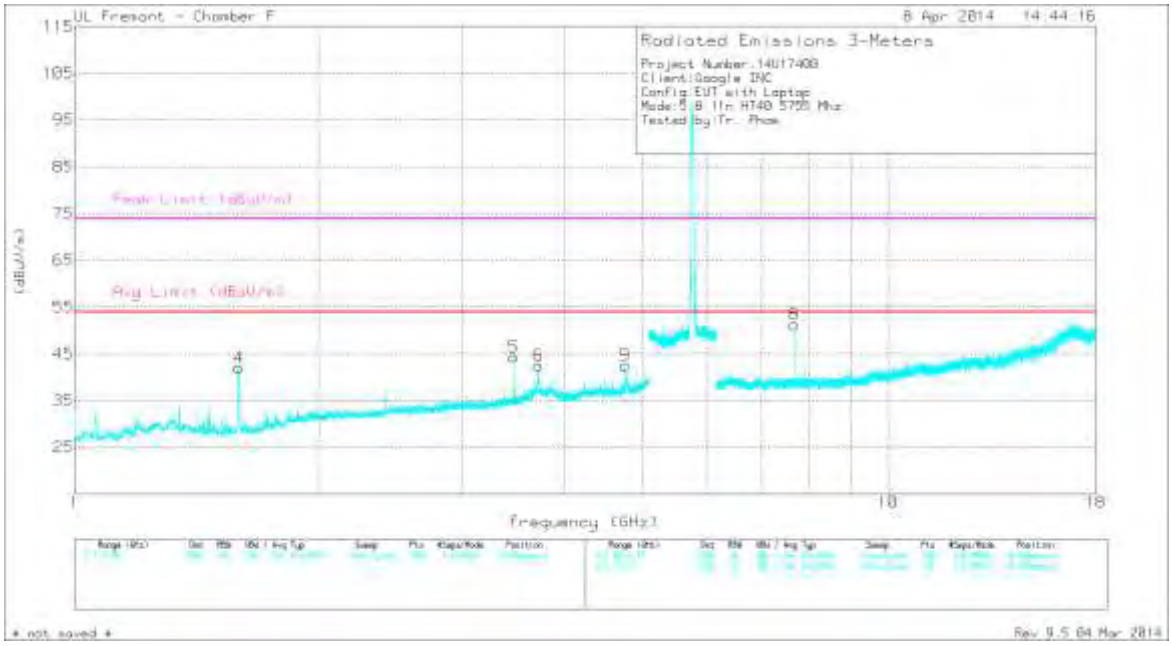
9.7. TX ABOVE 1 GHz 802.11n HT40 2Tx CDD MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



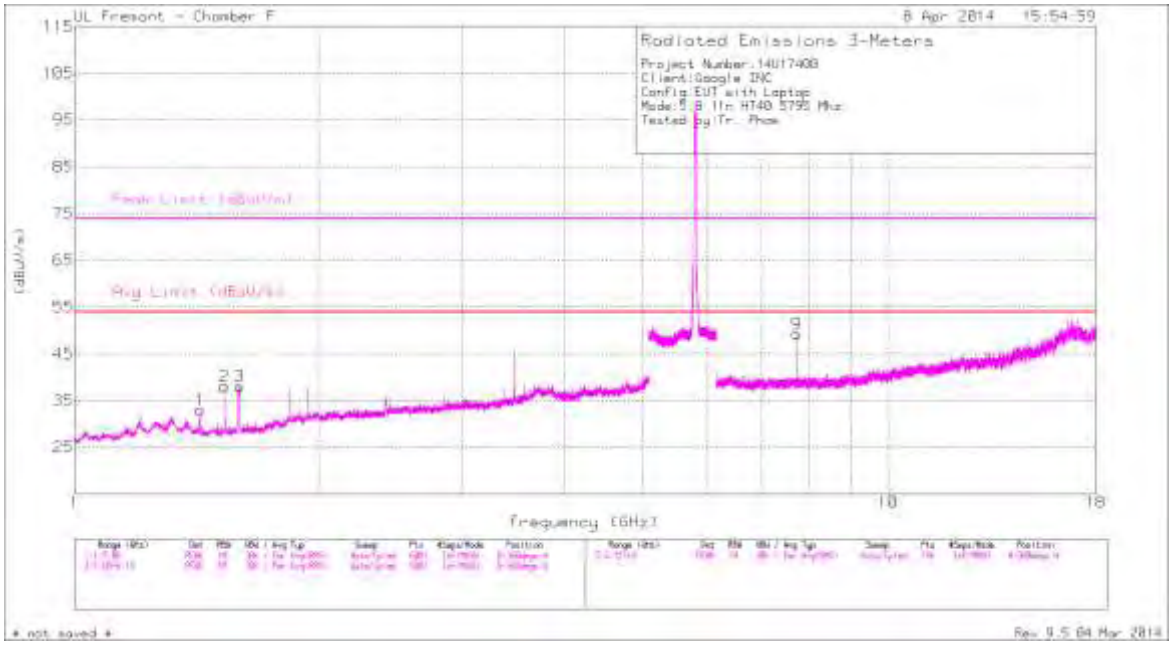
DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	46.67	PK2	28.4	-31.7	43.37	-	-	74	-30.63	64	277	H
* 1.53	40.12	MAv1	28.4	-31.7	36.82	54	-17.18	-	-	64	277	H
* 1.595	54.2	PK2	28.5	-31.6	51.1	-	-	74	-22.9	229	190	H
* 1.595	37.15	MAv1	28.5	-31.6	34.05	54	-19.95	-	-	229	190	H
* 3.96	40.98	PK2	33.8	-29.5	45.28	-	-	74	-28.72	218	127	H
* 3.959	27.94	MAv1	33.8	-29.5	32.24	54	-21.76	-	-	218	127	H
* 1.593	61.08	PK2	28.5	-31.6	57.98	-	-	74	-16.02	180	238	V
* 1.592	42.14	MAv1	28.5	-31.6	39.04	54	-14.96	-	-	180	238	V
* 3.718	43.9	PK2	34.8	-29.2	49.5	-	-	74	-24.5	201	197	V
* 3.718	31.01	MAv1	34.8	-29.2	36.61	54	-17.39	-	-	201	197	V
* 4.752	38.43	PK2	34.1	-27.7	44.83	-	-	74	-29.17	41	197	V
* 4.752	27.27	MAv1	34.1	-27.7	33.67	54	-20.33	-	-	41	197	V
* 7.673	46.08	PK2	35.6	-25.7	55.98	-	-	74	-18.02	138	169	H
* 7.673	43.05	MAv1	35.6	-25.7	52.95	54	-1.05	-	-	138	169	H
* 7.673	44.66	PK2	35.6	-25.7	54.56	-	-	74	-19.44	210	200	V
* 7.673	41.32	MAv1	35.6	-25.7	51.22	54	-2.78	-	-	210	200	V

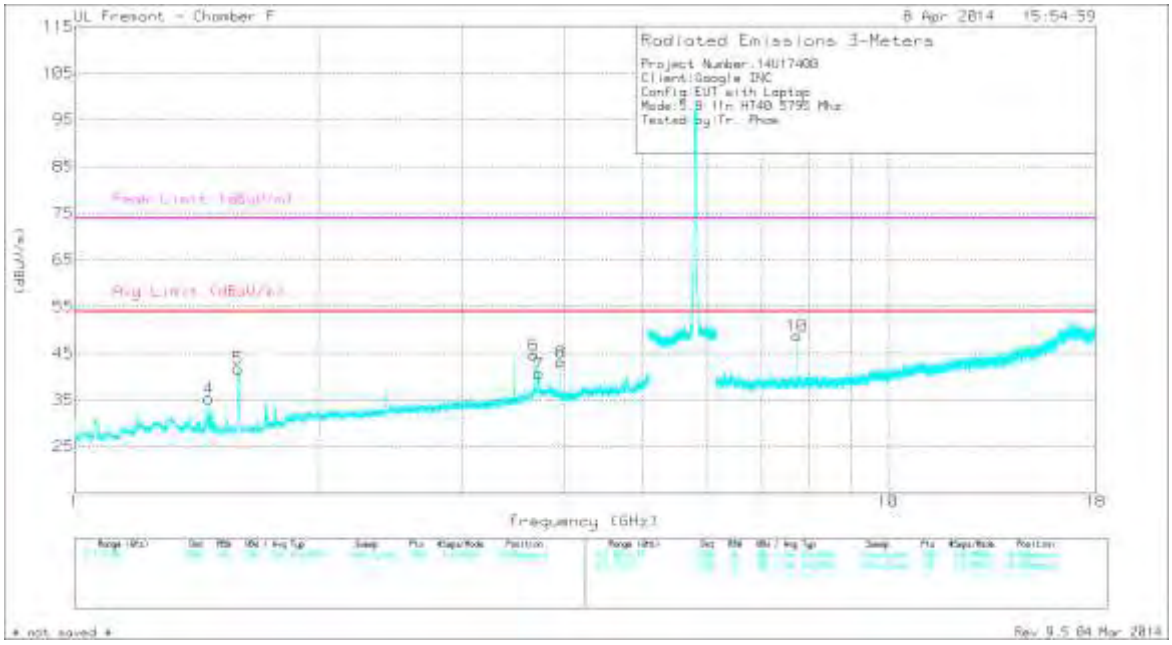
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

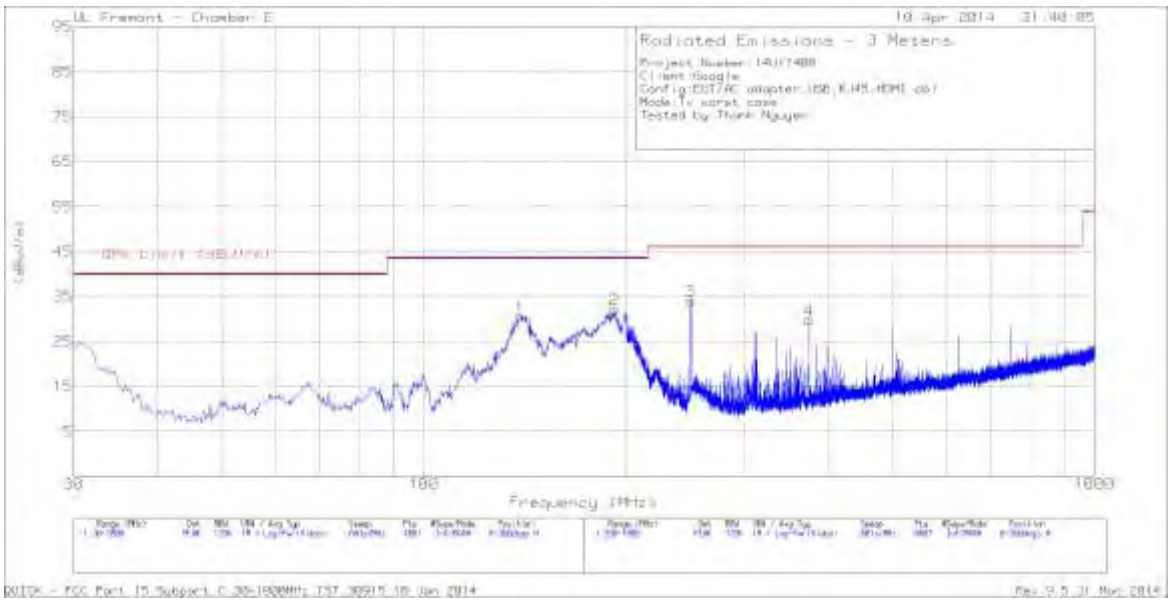
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.53	46.36	PK2	28.4	-31.7	43.06	-	-	74	-30.94	60	263	H
* 1.53	40.04	MAv1	28.4	-31.7	36.74	54	-17.26	-	-	60	263	H
* 1.596	53.78	PK2	28.5	-31.6	50.68	-	-	74	-23.32	225	192	H
* 1.595	36.89	MAv1	28.5	-31.6	33.79	54	-20.21	-	-	225	192	H
* 1.462	53.81	PK2	28.7	-32.1	50.41	-	-	74	-23.59	201	174	V
* 1.463	31.21	MAv1	28.7	-32.1	27.81	54	-26.19	-	-	201	174	V
* 1.596	59.31	PK2	28.5	-31.6	56.21	-	-	74	-17.79	215	181	V
* 1.593	41.42	MAv1	28.5	-31.6	38.32	54	-15.68	-	-	215	181	V
* 3.672	46.02	PK2	34.9	-29.5	51.42	-	-	74	-22.58	179	239	V
* 3.672	28.86	MAv1	34.9	-29.5	34.26	54	-19.74	-	-	179	239	V
* 3.718	42.23	PK2	34.8	-29.2	47.83	-	-	74	-26.17	207	194	V
* 3.718	30.27	MAv1	34.8	-29.2	35.87	54	-18.13	-	-	207	194	V
* 3.96	42.9	PK2	33.8	-29.5	47.2	-	-	74	-26.8	46	234	V
* 3.96	27.92	MAv1	33.8	-29.5	32.22	54	-21.78	-	-	46	234	V
* 7.727	43.89	PK2	35.6	-25.5	53.99	-	-	74	-20.01	141	194	H
* 7.727	40.89	MAv1	35.6	-25.5	50.99	54	-3.01	-	-	141	194	H
* 7.727	42.45	PK2	35.6	-25.5	52.55	-	-	74	-21.45	213	109	V
* 7.727	39.16	MAv1	35.6	-25.5	49.26	54	-4.74	-	-	213	109	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

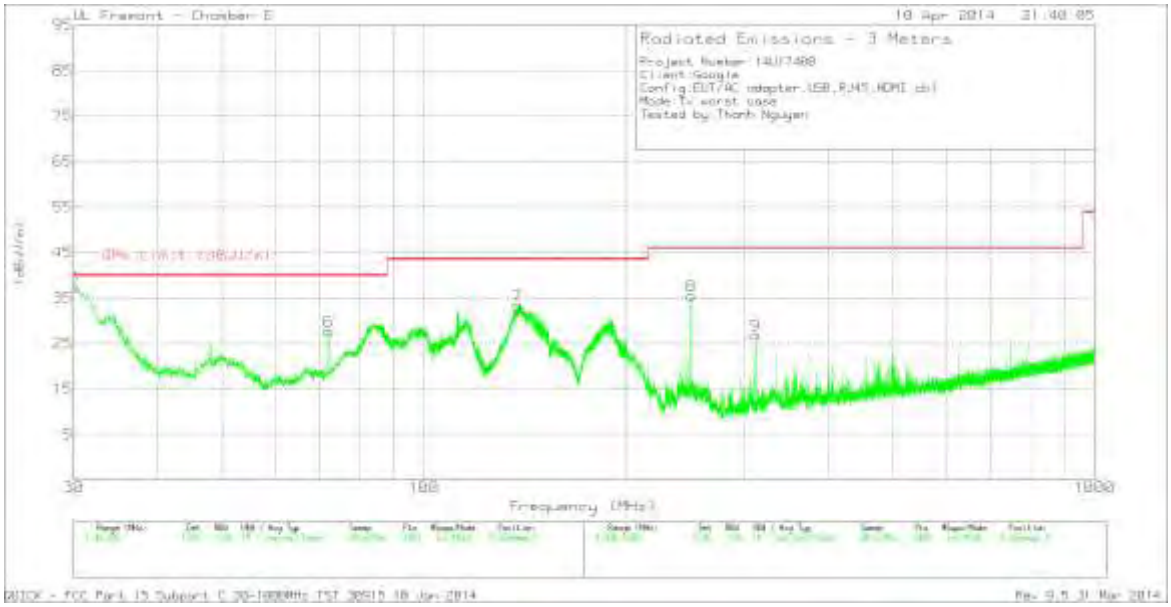
9.8. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
30.4424	44.93	QP	21.1	-31.8	34.23	40	-5.77	342	107	V
139.6425	46.31	QP	13	-31.1	28.21	43.52	-15.31	149	203	H
30.0425	47.79	PK	21.4	-31.8	37.39	40	-2.61	0-360	100	V
71.99	51.15	PK	8.1	-31.5	27.75	40	-12.25	0-360	100	V
138.8825	48.64	PK	13.1	-31.1	30.64	43.52	-12.88	0-360	100	H
192.475	51.7	PK	11.3	-30.8	32.2	43.52	-11.32	0-360	100	H
311.9	43.46	PK	13.7	-30.3	26.86	46.02	-19.16	0-360	100	V
375.0775	44.74	PK	15	-30	29.74	46.02	-16.28	0-360	100	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

QP - Quasi-Peak detector
PK - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

* Decreases with the logarithm of the frequency.

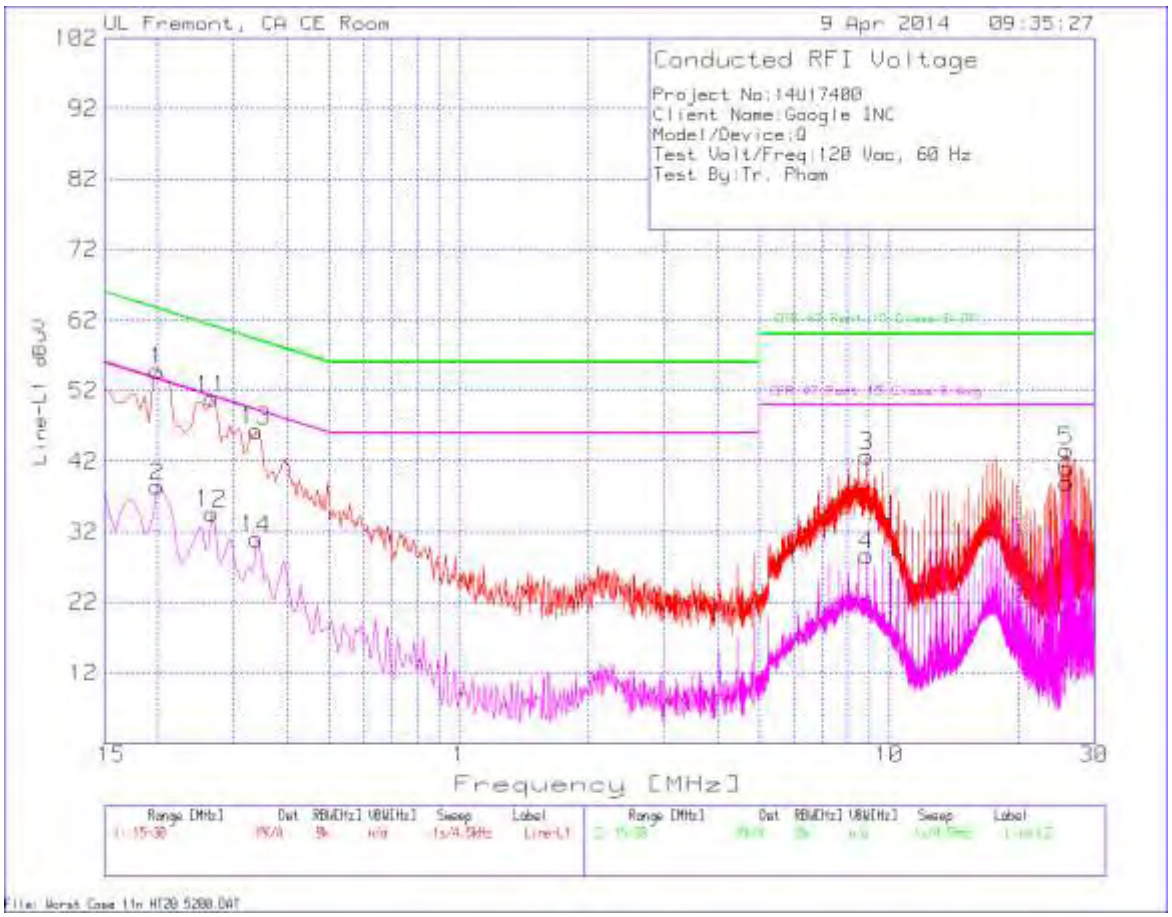
TEST PROCEDURE

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

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

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

LINE 1 RESULTS



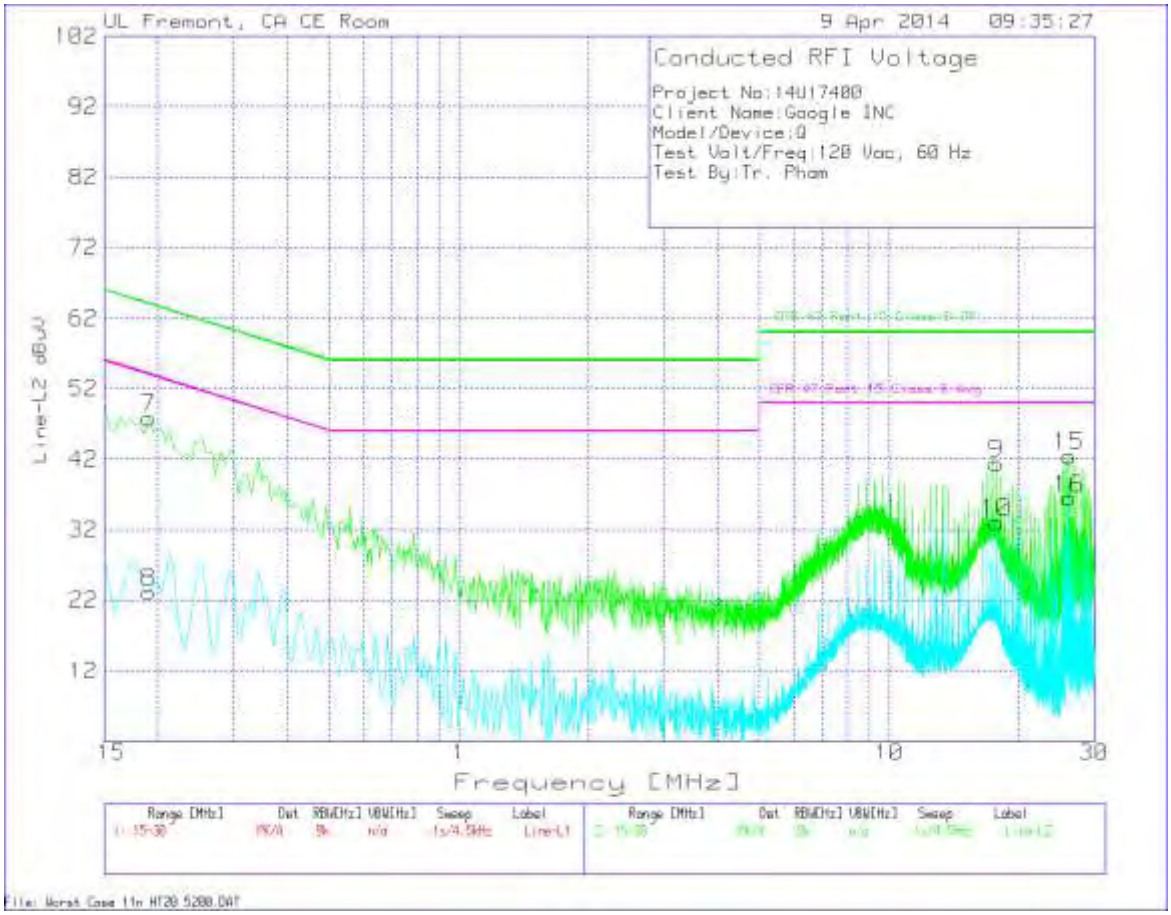
RESULTS

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin to Limit (dB)	CFR 47 Part 15 Class B Avg	Margin to Limit (dB)
1	.1995	53.87	PK	.9	0	54.77	63.6	-8.83	--	--
2	.1995	37.48	Av	.9	0	38.38	--	--	53.6	-15.22
11	.267	50.28	PK	.6	0	50.88	61.2	-10.32	--	--
12	.267	33.92	Av	.6	0	34.52	--	--	51.2	-16.68
13	.339	45.76	PK	.5	0	46.26	59.2	-12.94	--	--
14	.339	30.51	Av	.5	0	31.01	--	--	49.2	-18.19
3	8.8665	42.39	PK	.2	.1	42.69	60	-17.31	--	--
4	8.8665	28.39	Av	.2	.1	28.69	--	--	50	-21.31
5	25.809	42.93	PK	.3	.3	43.53	60	-16.47	--	--
6	25.809	38.41	Av	.3	.3	39.01	--	--	50	-10.99

LINE 2 RESULTS



RESULTS

Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin to Limit (dB)	CFR 47 Part 15 Class B Avg	Margin to Limit (dB)
7	.1905	46.77	PK	1.1	0	47.87	64	-16.13	--	--
8	.1905	22.06	Av	1.1	0	23.16	--	--	54	-30.84
9	17.7405	40.91	PK	.3	.2	41.41	60	-18.59	--	--
10	17.7405	32.49	Av	.3	.2	32.99	--	--	50	-17.01
15	26.2095	41.88	PK	.3	.3	42.48	60	-17.52	--	--
16	26.2095	35.84	Av	.3	.3	36.44	--	--	50	-13.56