



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

CERTIFICATION TEST REPORT

FOR

802.11a/b/g/n 2x2 (HT20) Client Device

MODEL NUMBER: PLAY: 1 (Type 2)

**FCC ID: SBVRM009
IC: 5373A-RM009**

REPORT NUMBER: 14U17203-1, REVISION A

ISSUE DATE: MAY 15, 2014

**Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	04/28/14	Initial Issue	C. Pang
A	05/15/14	Address TCB'S Questions on page 6, 133 and Section 9.	C. Pang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SONOS, INC.
223 E. DE LA GUERRA STREET
SANTA BARBARA, CA, 93101, USA

EUT DESCRIPTION: 802.11a/b/g/n 2X2 HT20, DFS client device

MODEL: PLAY: 1(TYPE 2)

SERIAL NUMBER: 1312 B8-E9-37-58-24-E2-E (Conducted)
1312 B8-E9-37-58-33-7A-A (Radiated)

DATE TESTED: FEBRUARY 26 –MARCH 10 AND MAY 14, 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:

Tested By:



Chin Pang
Senior Engineer
UL Verification Services Inc.

Mona Hua
Lab 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:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

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 802.11a/b/g/n, 2x2, HT20, DFS client device.

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	28.84	765.60
2412 - 2462	802.11g	29.57	905.73
2412 - 2462	802.11n HT20	29.44	879.02
5745 - 5825	802.11n HT20	28.56	717.79

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes right and left dipole PCB construction antennas with a maximum gain of 2.85 dBi and 3.09dBi respectively.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Atheros Radio Test 2 (ART2-GUI).

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.

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

802.11b mode: 11 Mbps
802.11g mode: 24 Mbps
802.11n HT20mode: MCS9

The EUT was placed on normal orientation, standing position and all radiated emissions were performed with the EUT as shown on the setup photo.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	X201	R9-6KTFV	N/A
Laptop AC Adapter	Lenovo	ADLX65NCT2A	11S45N0323Z1ZH3B4HPD	N/A

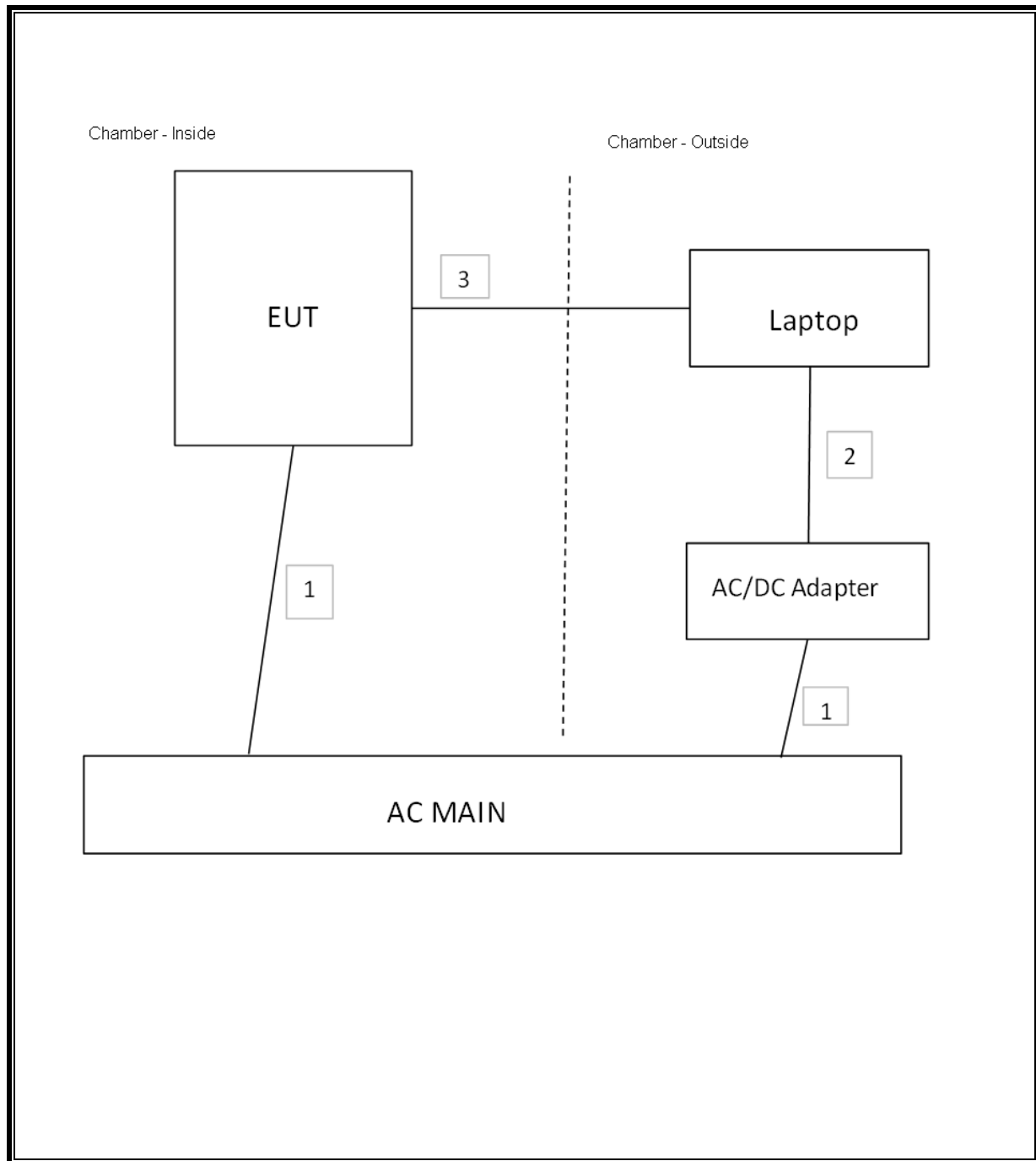
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	2	US 115V	Un-shielded	1.8m	N/A
2	DC	1	DC	Un-shielded	1.8m	N/A
3	Ethernet	1	RJ45	Un-shielded	1.5m	N/A

TEST SETUP

The EUT is connected to a laptop via an Ethernet cable during the tests and software exercised the radio card

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	Asset	Cal Due
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/24/14
Preamplifier, 1000 MHz	Sonoma	310N	N02891	12/30/14
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/26/14
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB3	F00027	03/07/15
Peak / Average Power Sensor	Agilent / HP	E9323A	F00158	03/06/15
P-Series single channel Power Meter	Agilent / HP	N1911A	F00026	04/03/15
Spectrum Analyzer, PXA, 3Hz to 50GHz	Agilent	N9030A	F00121	01/21/15
Spectrum Analyzer, 40 GHz	Agilent / HP	8564E	C00951	07/29/14
RF PreAmplifier, 1-18GHz	Miteq	AFS42-00101800 -25-S-42	F00353	08/24/14
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	F00194	06/28/14
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/17/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	F00092	09/09/14
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/20/14

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	0.918	0.963	0.953	95.33%	0.21	1.089
802.11g	0.355	0.406	0.874	87.44%	0.58	2.817
802.11n HT20	0.351	0.401	0.875	87.53%	0.58	2.849
5GHz Band						
802.11n HT20	1.296	1.479	0.876	87.63%	0.57	0.772

7.2. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v03r01, Section 8.2.

Output Power: KDB 558074 D01 v03r01, Section 9.1.1.

Power Spectral Density: KDB 558074 D01 v03r01Section 10.2.

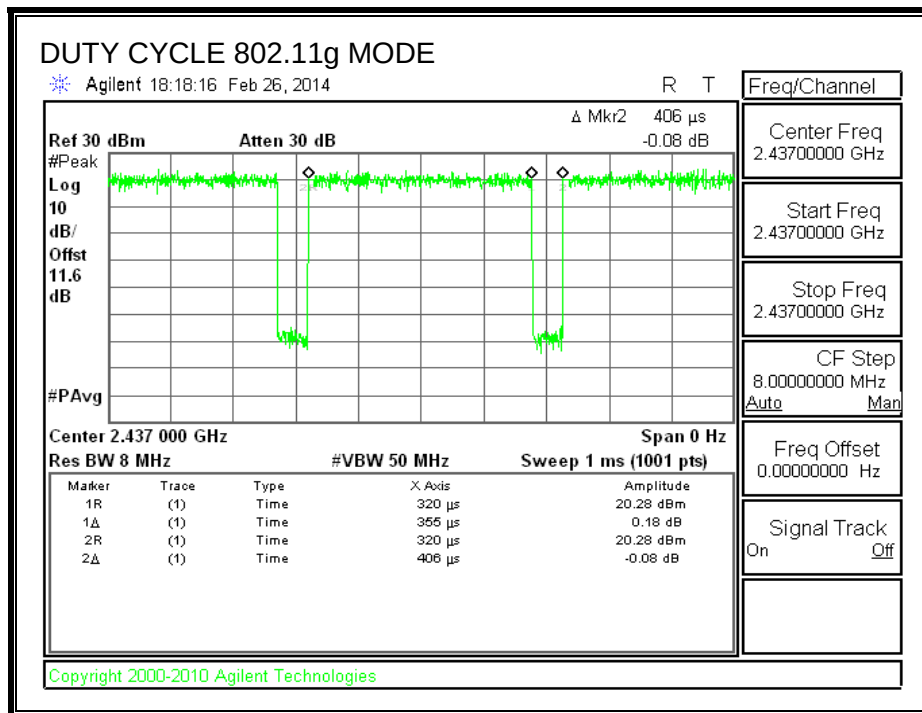
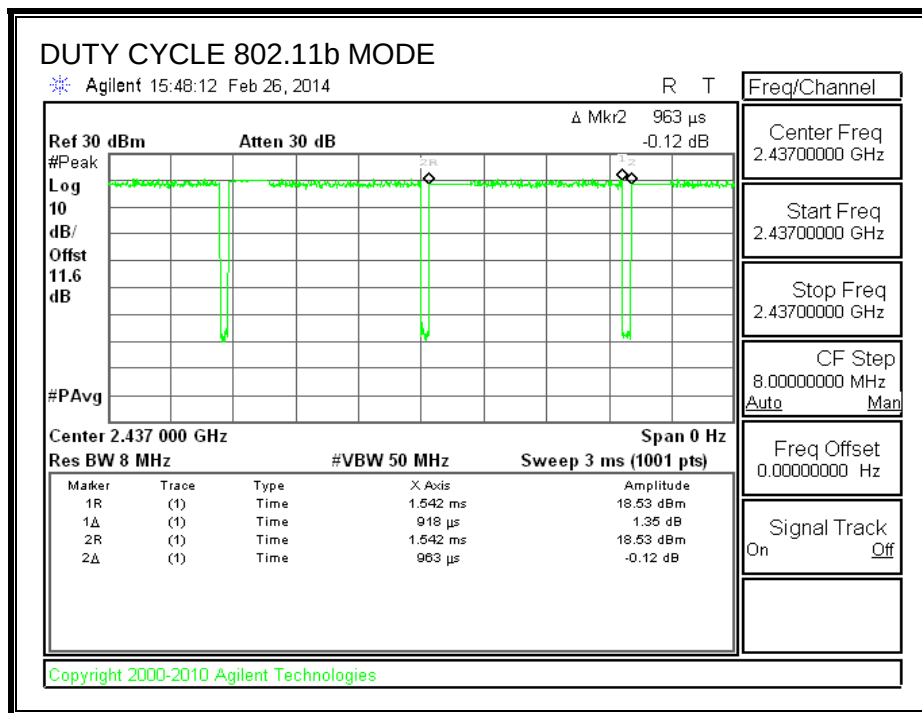
Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r01, Section 11.0.

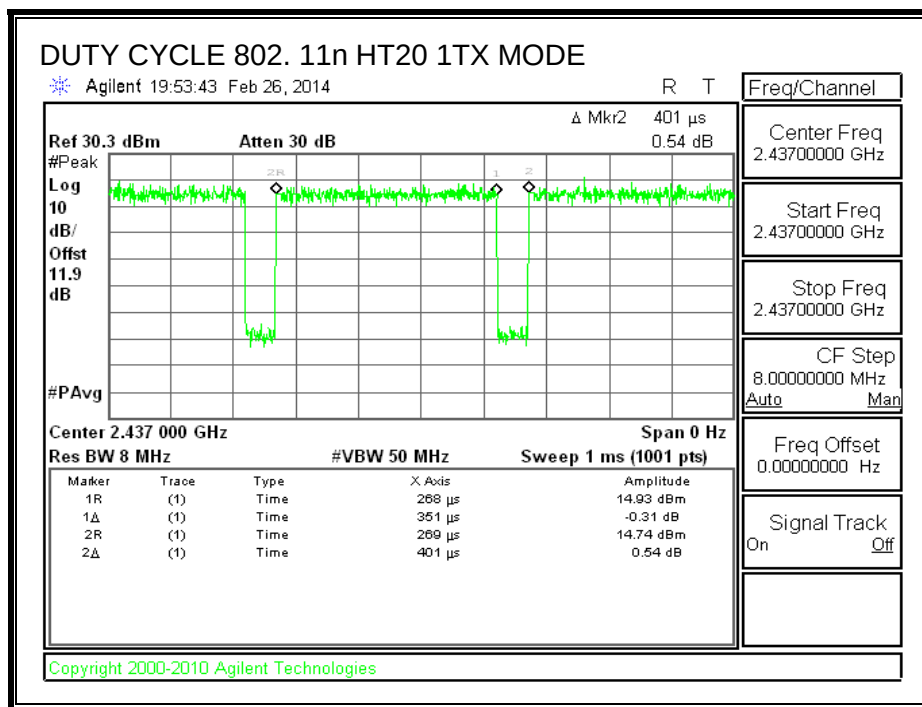
Out-of-band emissions in restricted bands: KDB 558074 D01 v03r01, Section 12.1.

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

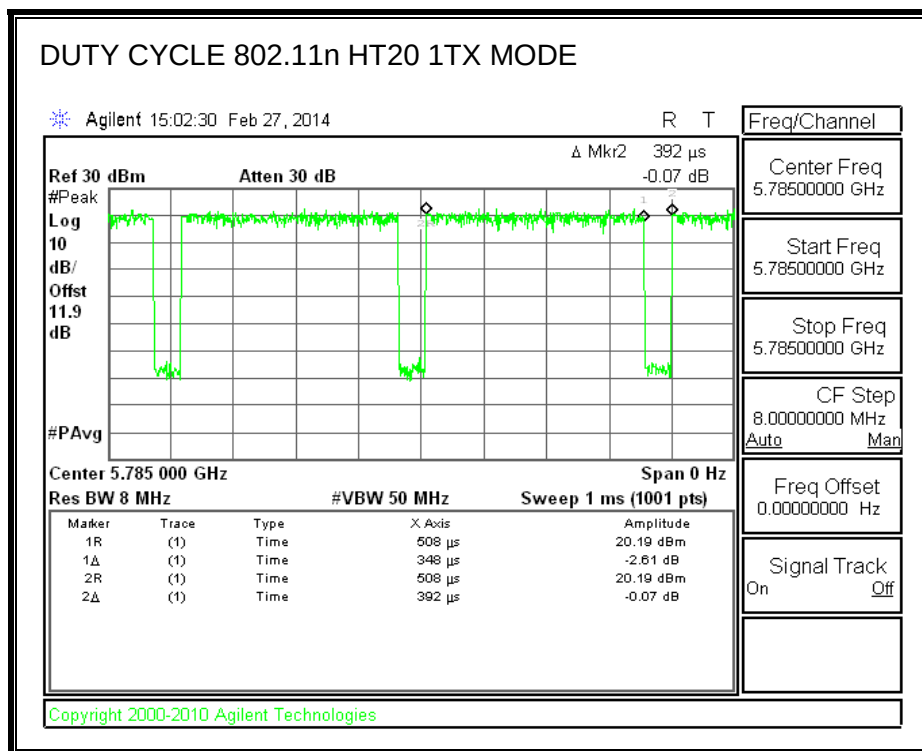
7.3. DUTY CYCLE PLOTS

2.4GHz BANDS





5.8 GHz BANDS



8. ANTENNA PORT TEST RESULTS

8.1. 802.11b MODE IN THE 2.4 GHz BAND

8.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

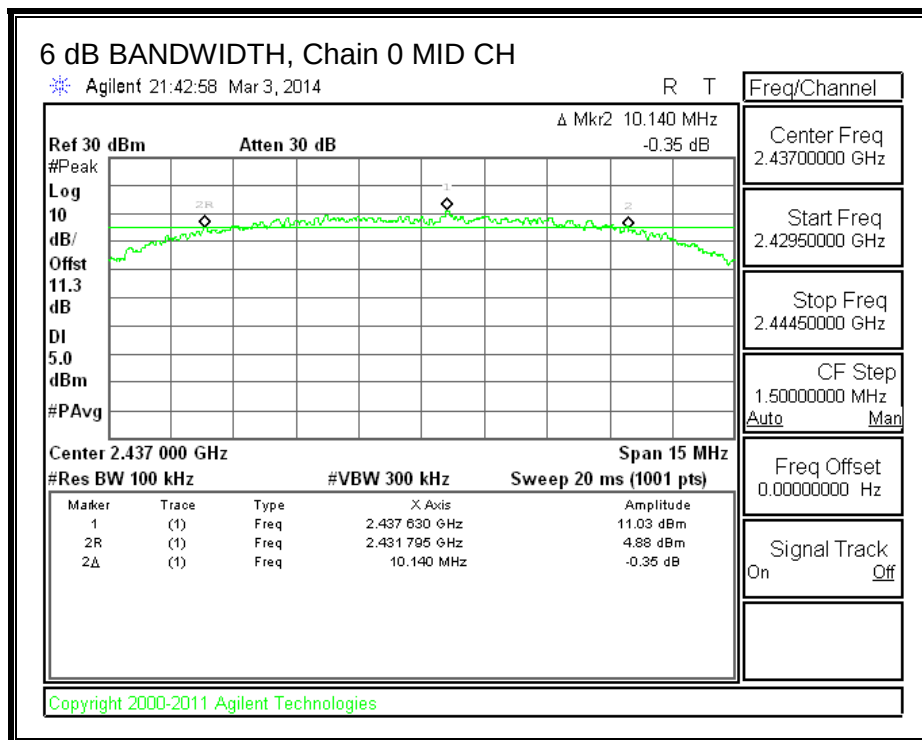
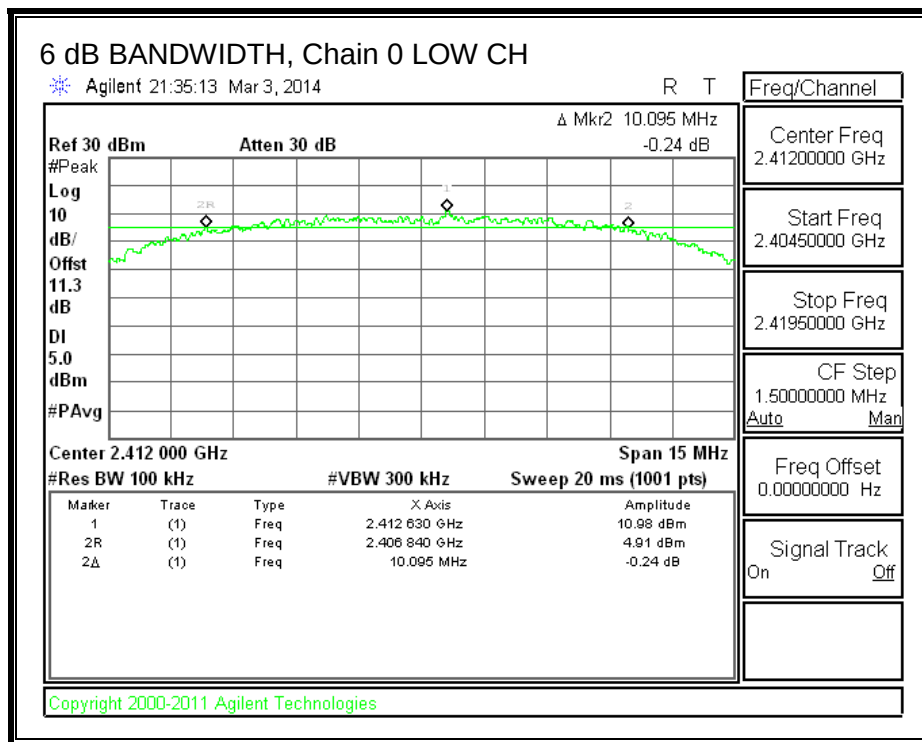
IC RSS-210 A8.2 (a)

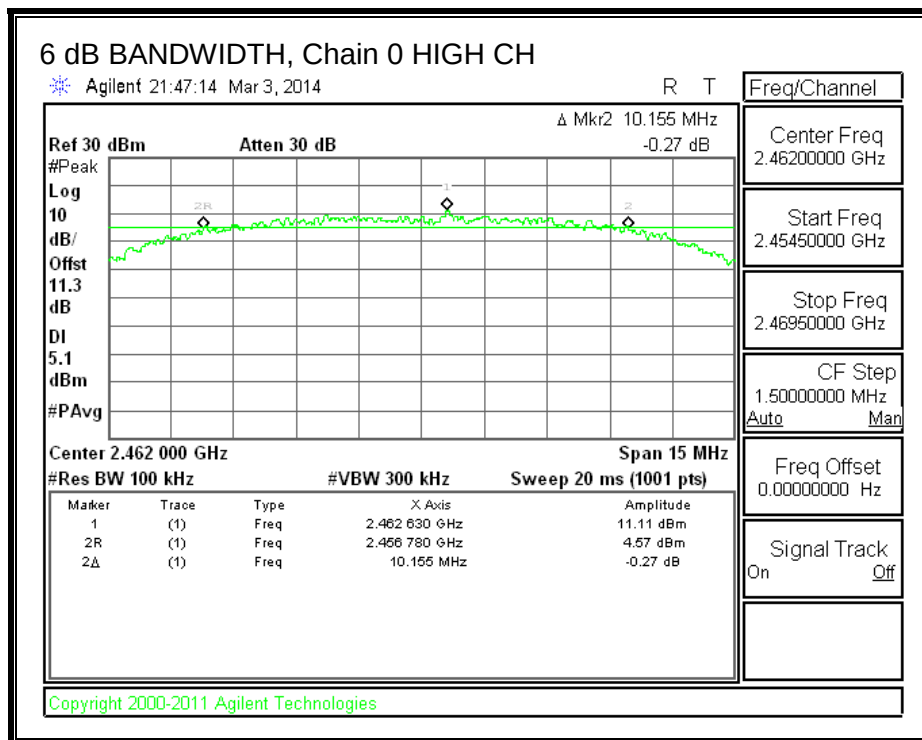
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

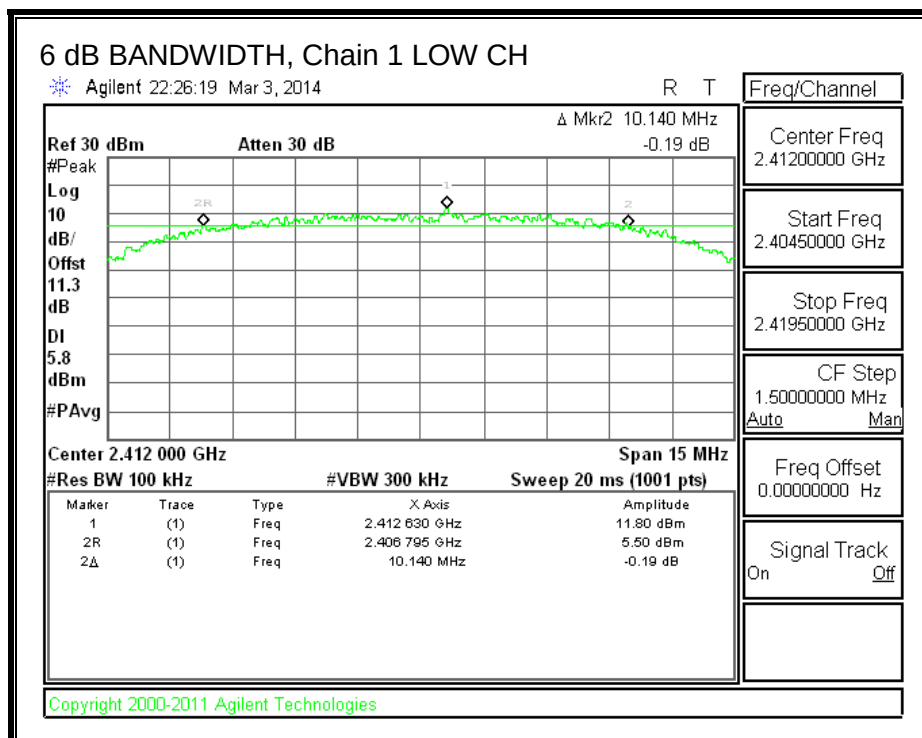
Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
2412	10.095	10.140	0.5
2437	10.140	10.140	0.5
2462	10.155	10.140	0.5

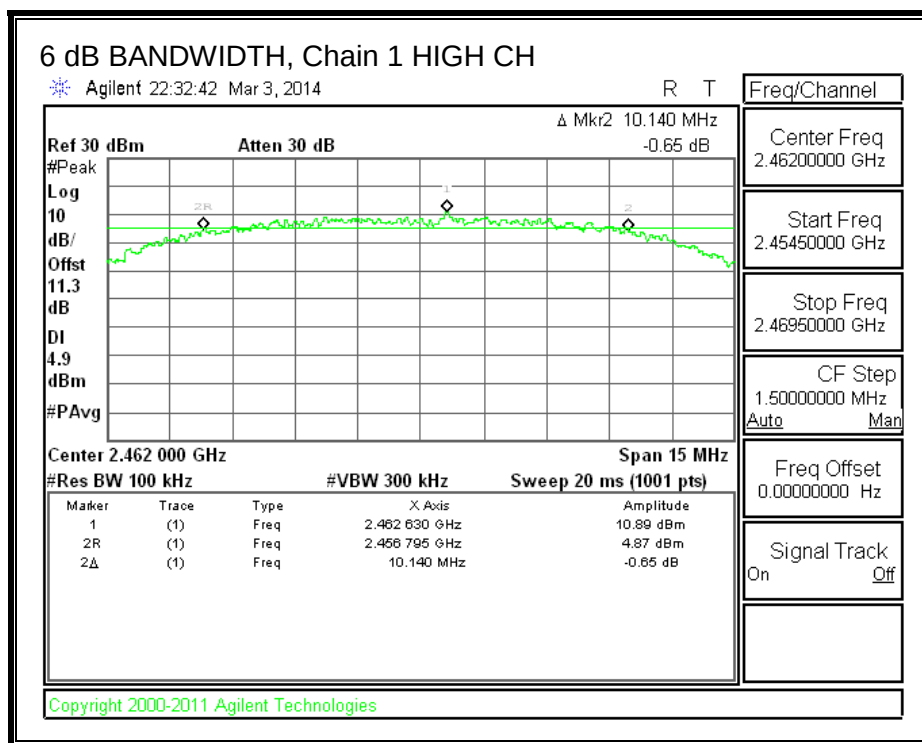
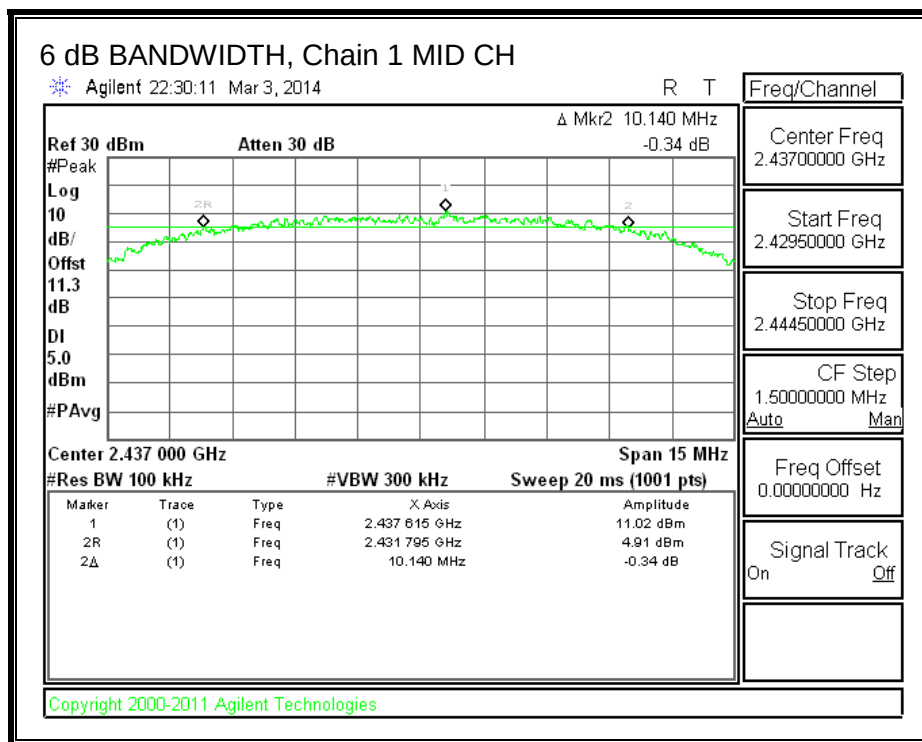
6 dB BANDWIDTH, Chain 0





6 dB BANDWIDTH, Chain 1





8.1.2. 99% BANDWIDTH

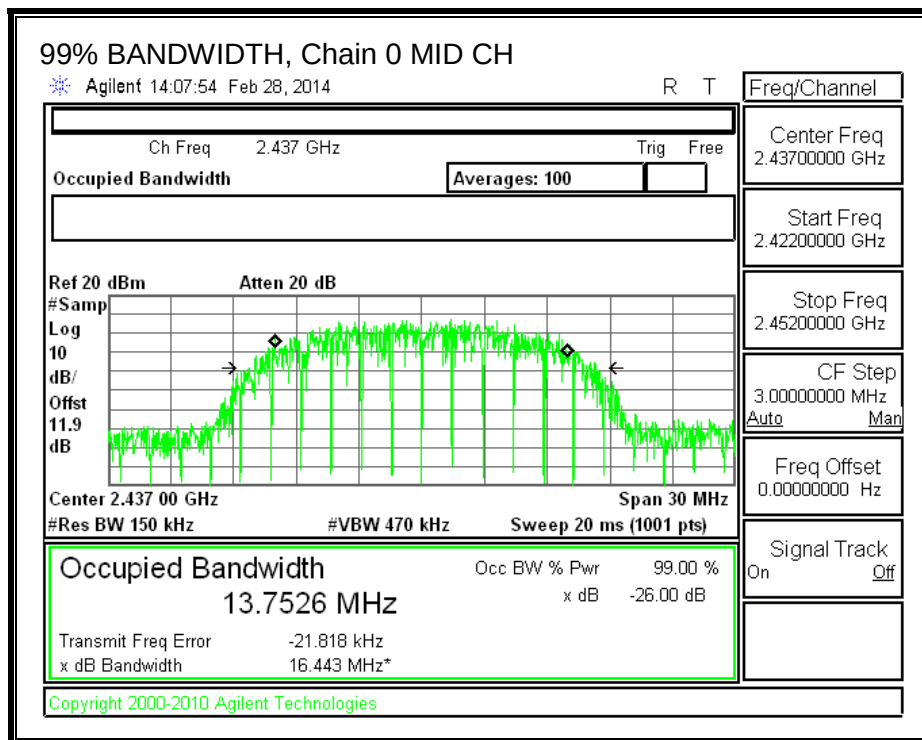
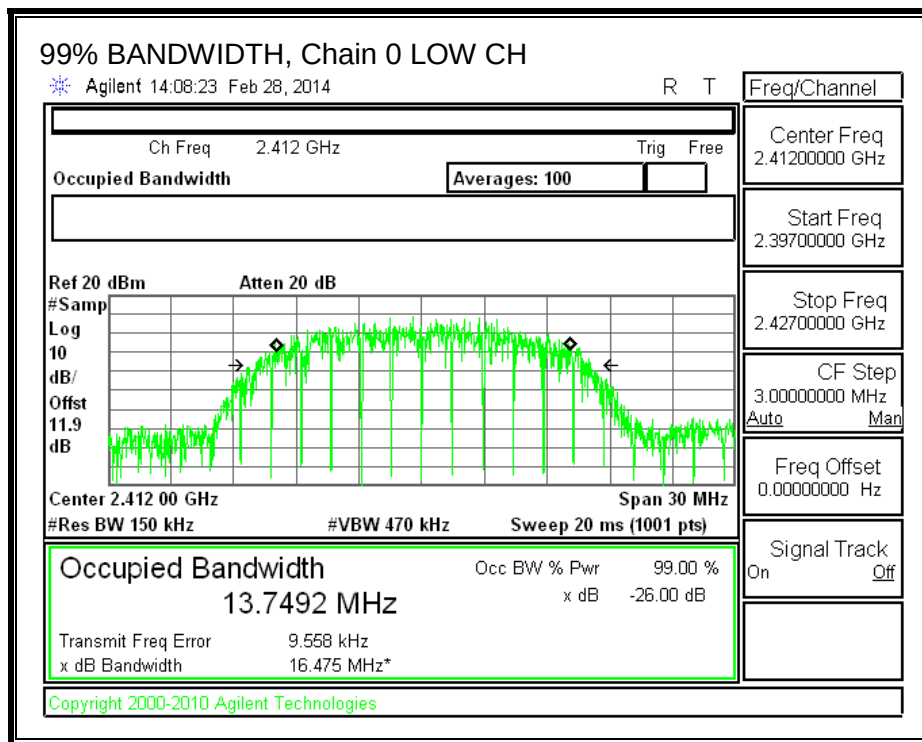
LIMITS

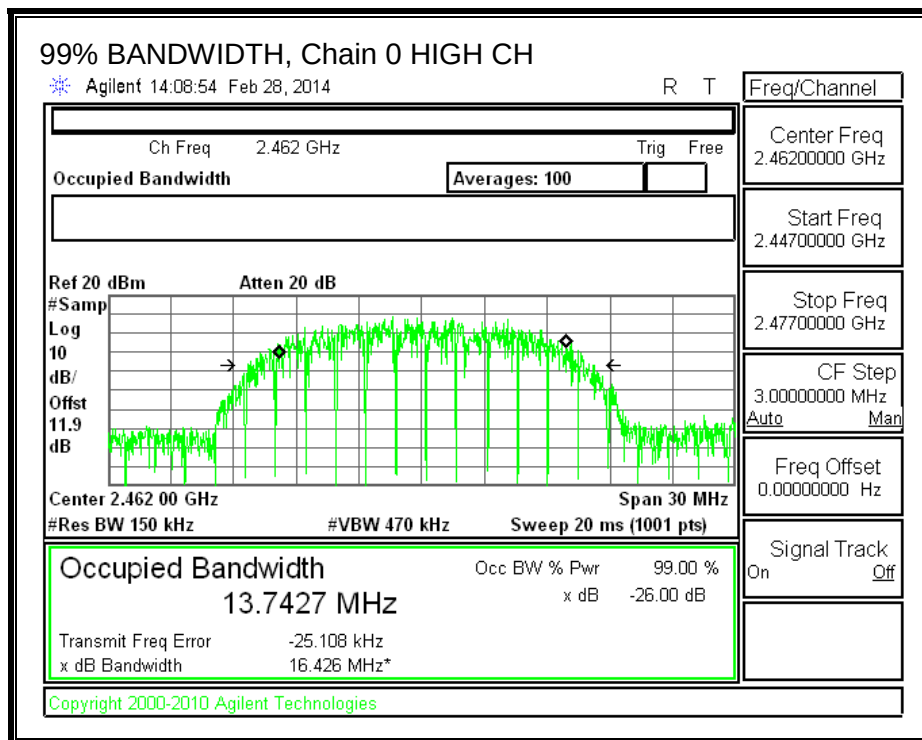
None; for reporting purposes only.

RESULTS

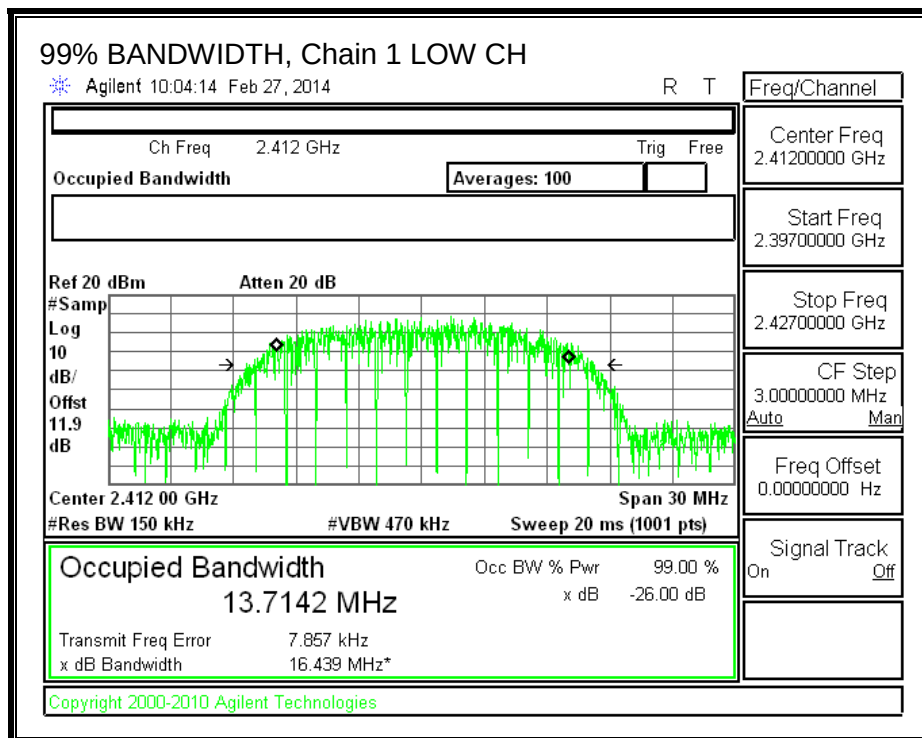
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	13.74	13.71
Mid	2437	13.75	13.72
High	2462	13.75	13.70

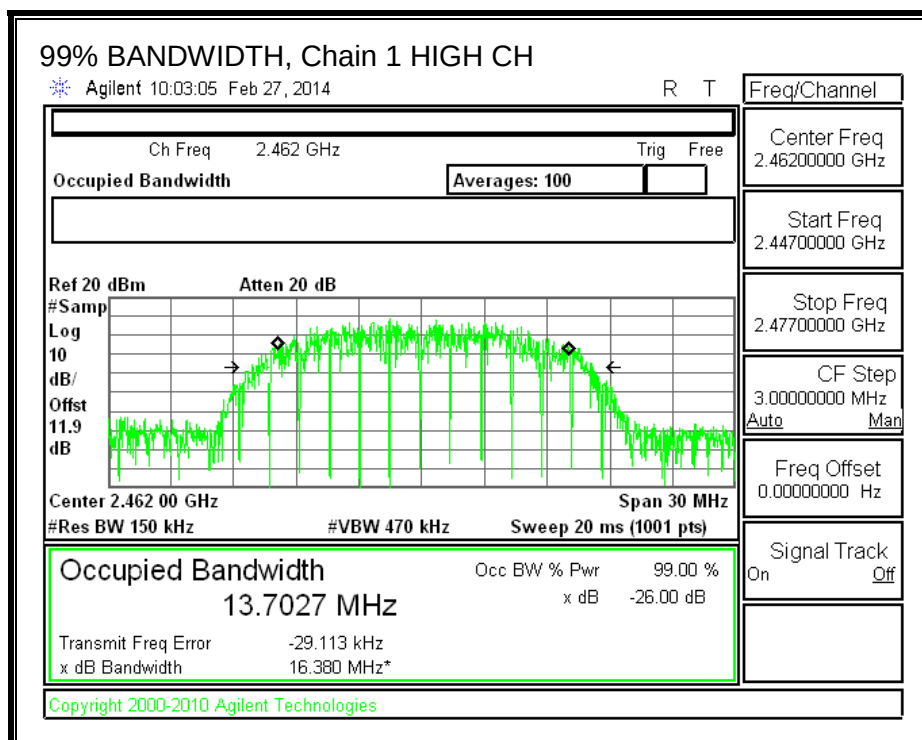
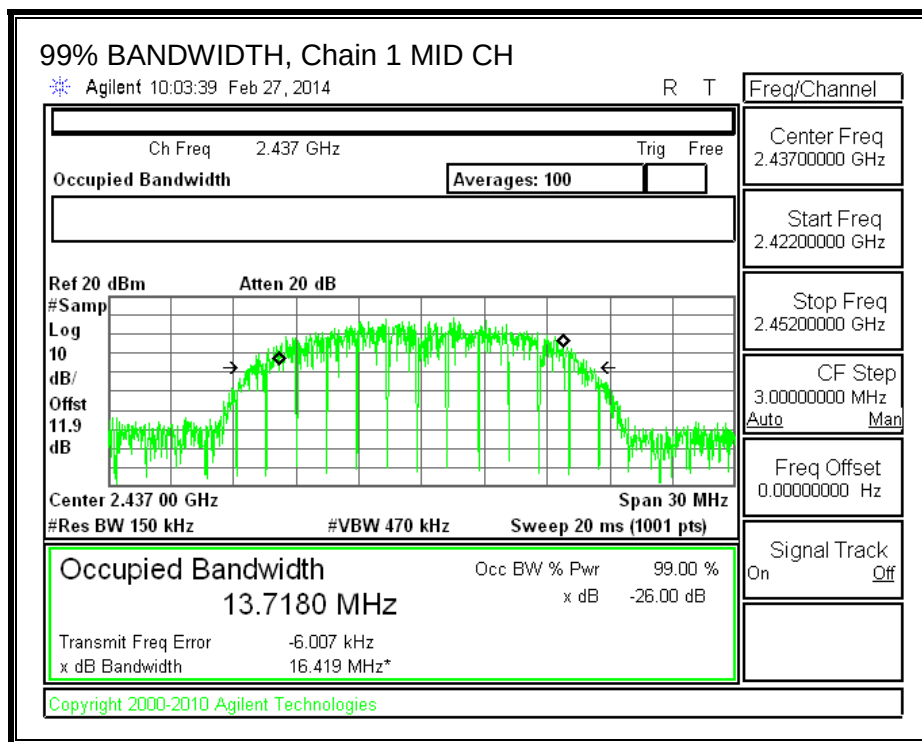
99% BANDWIDTH, Chain 0





99% BANDWIDTH, Chain 1





8.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.9 dB (including 10 dB pad and 1.9 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Power Setting

Channel	Frequency (MHz)	Chain 0, Art Power Setting	Chain 1, Art Power Setting
Low	2412	19	19
Mid	2437	19	19
High	2462	19	19

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	2412	18.54	18.95	21.76
Mid	2437	18.52	18.99	21.77
High	2462	18.59	18.73	21.67

8.1.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.85	3.09	2.97

RESULTS

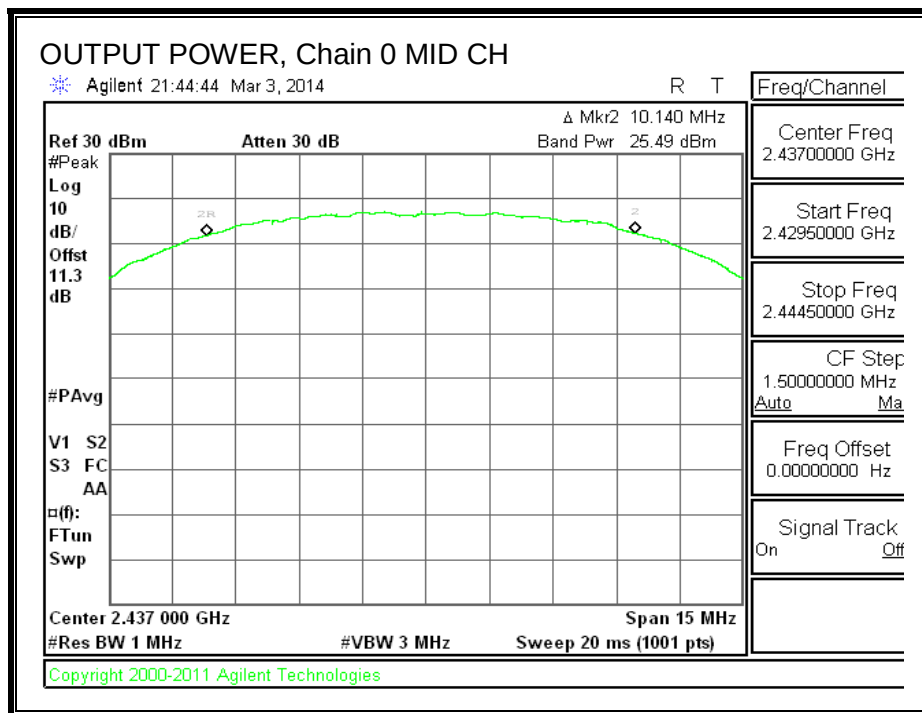
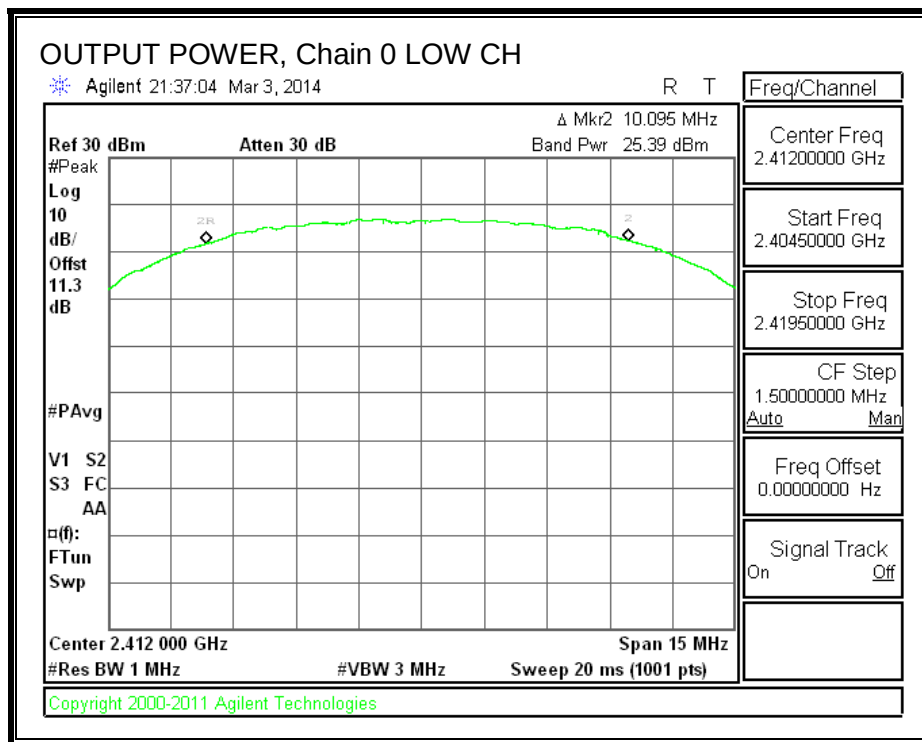
Limit

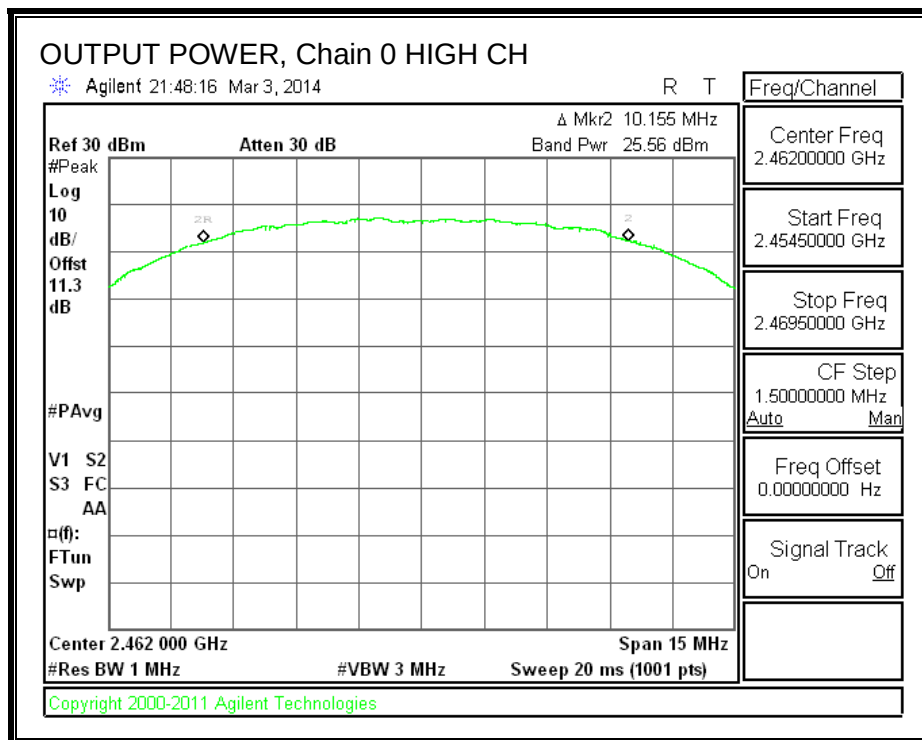
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.97	30.00	30	36	30.00
Mid	2437	2.97	30.00	30	36	30.00
High	2462	2.97	30.00	30	36	30.00

b mode

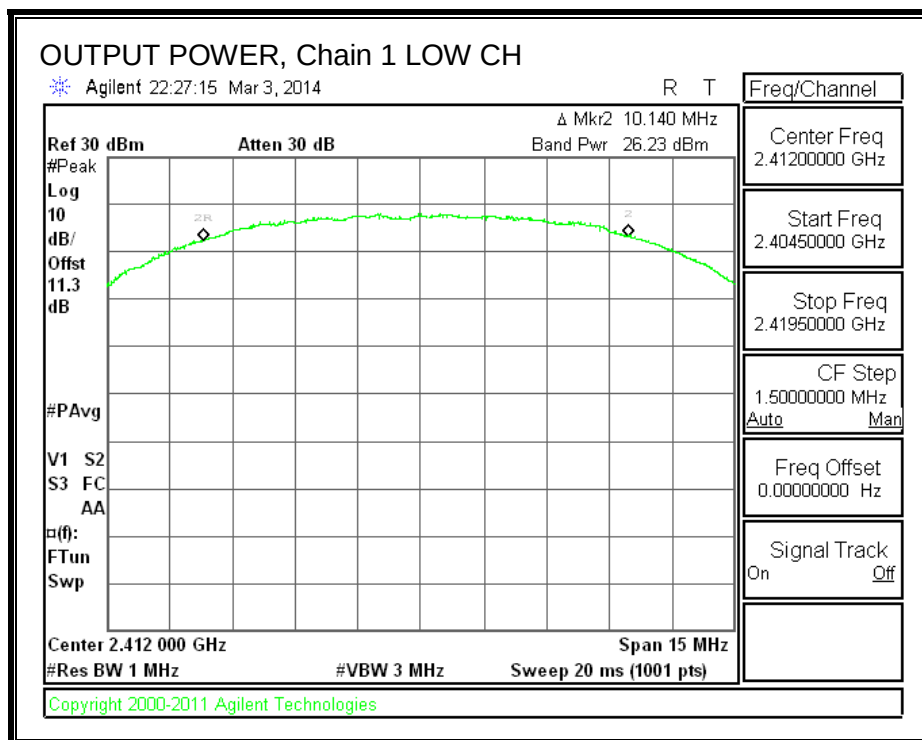
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	25.39	26.23	28.84	30.00	-1.16
Mid	2437	25.49	25.71	28.61	30.00	-1.39
High	2462	25.56	25.47	28.53	30.00	-1.47

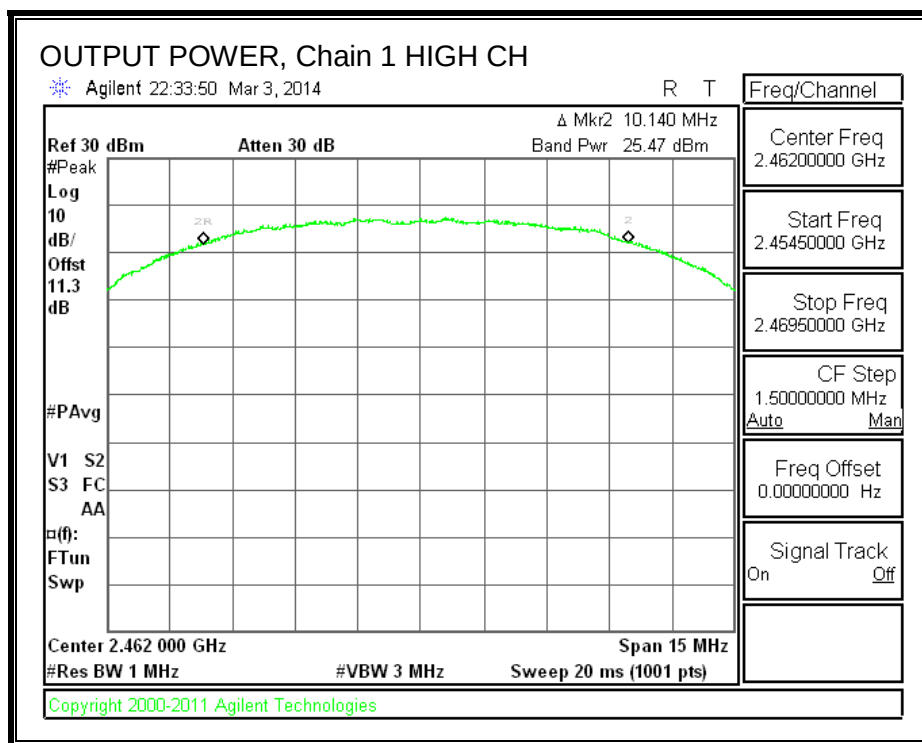
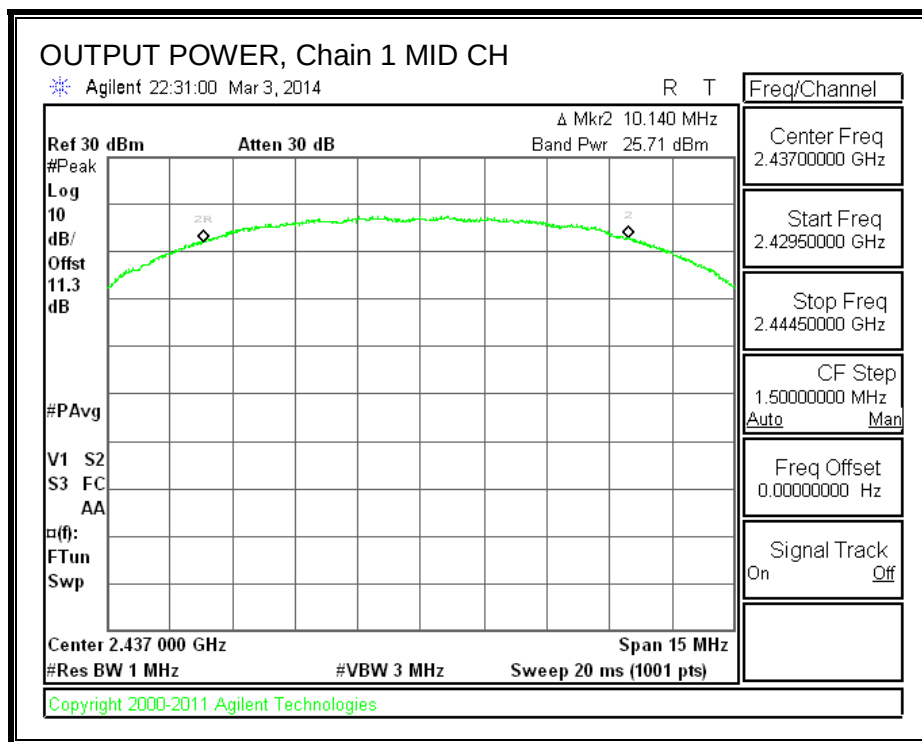
OUTPUT POWER, Chain 0





OUTPUT POWER, Chain 1





8.1.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

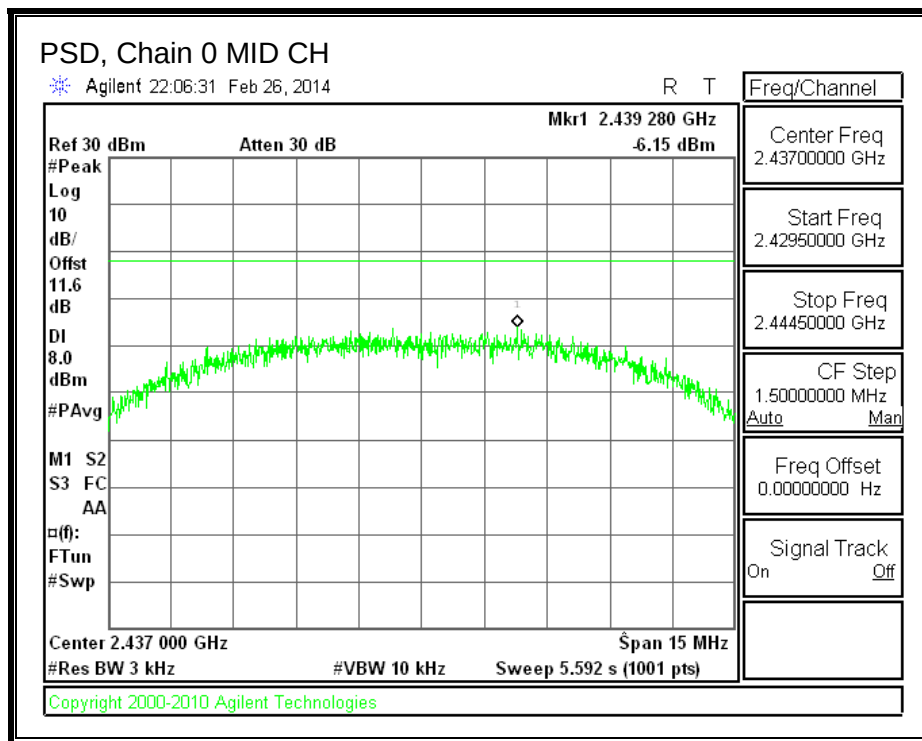
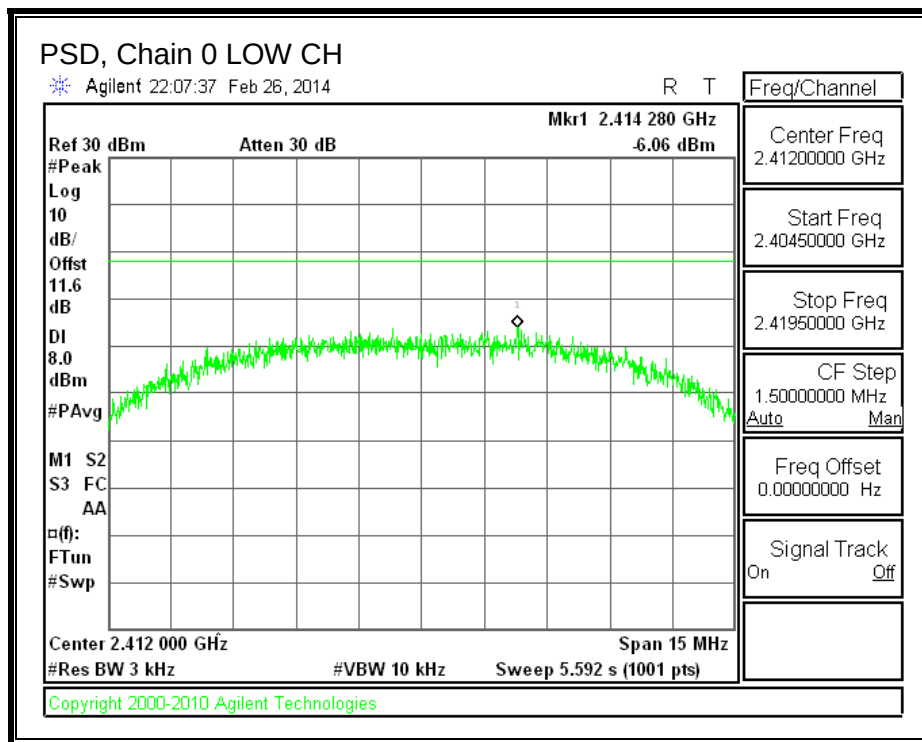
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

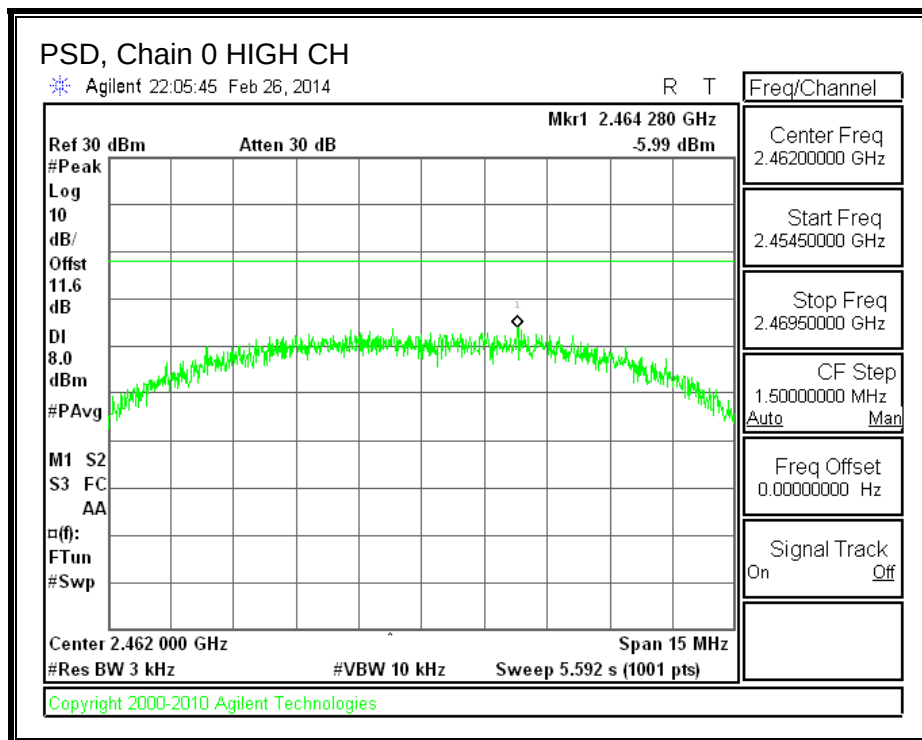
RESULTS

PSD Results

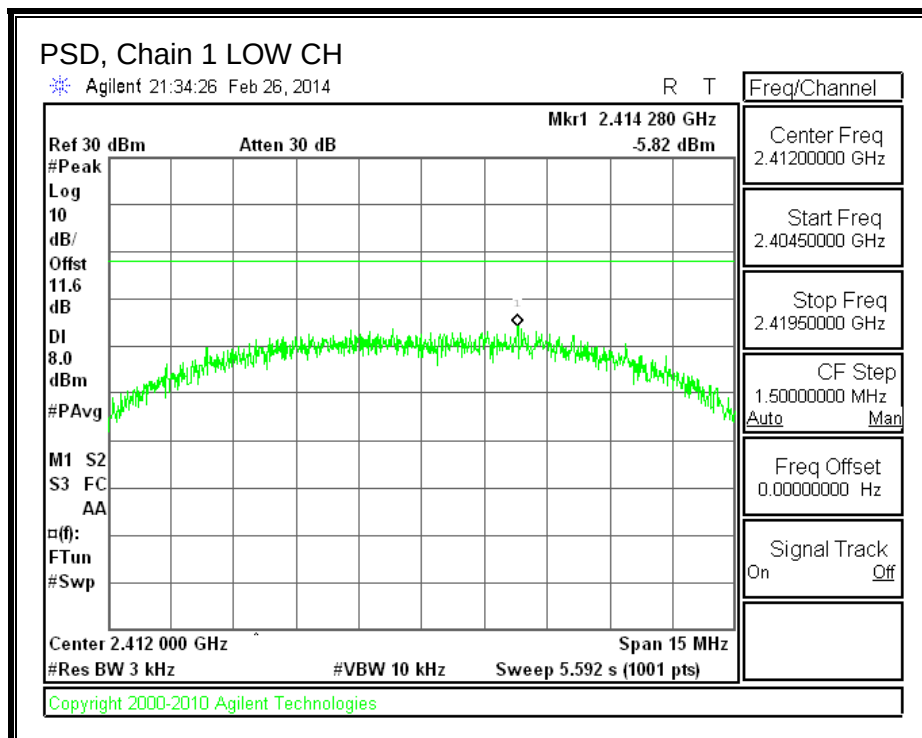
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-6.06	-5.82	-2.93	8.0	-10.9
Mid	2437	-6.15	-5.53	-2.82	8.0	-10.8
High	2462	-5.99	-5.92	-2.94	8.0	-10.9

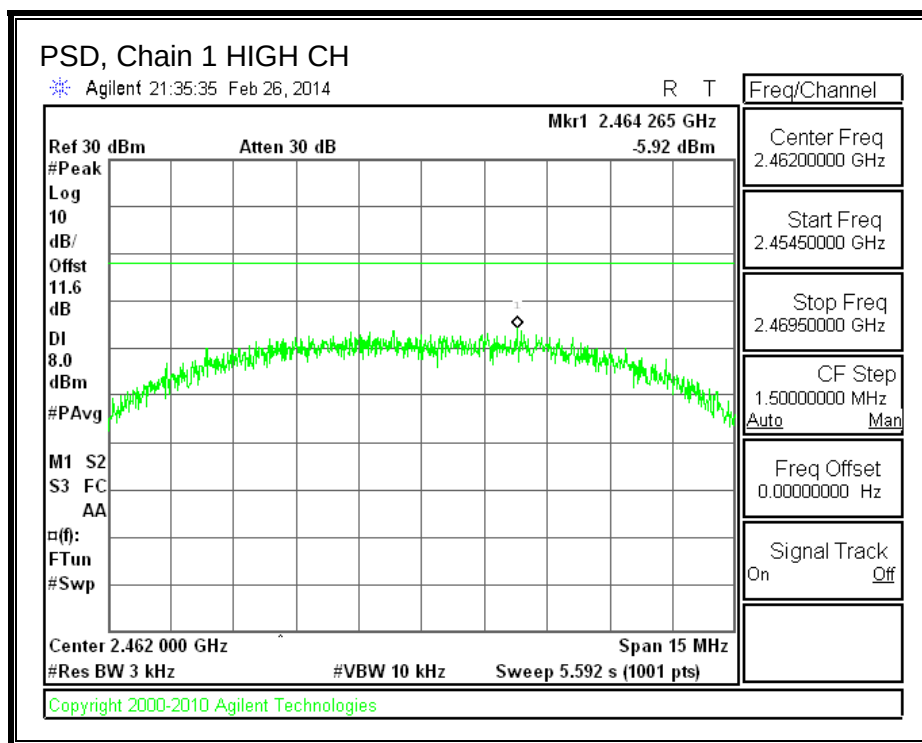
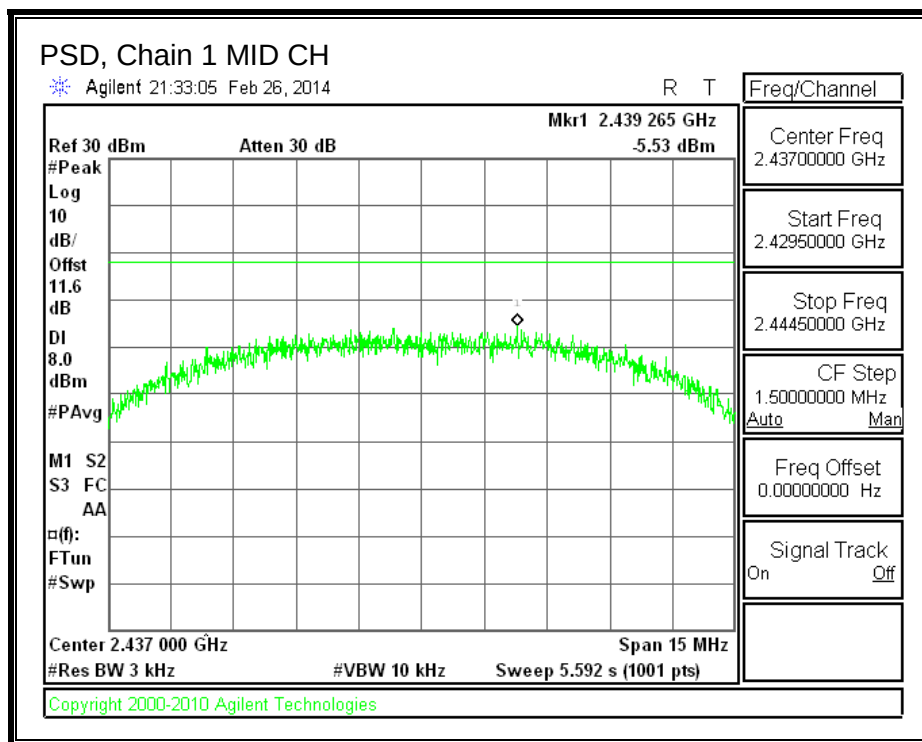
PSD, Chain 0





PSD, Chain 1





8.2. 802.11g MODE IN THE 2.4 GHz BAND

8.2.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

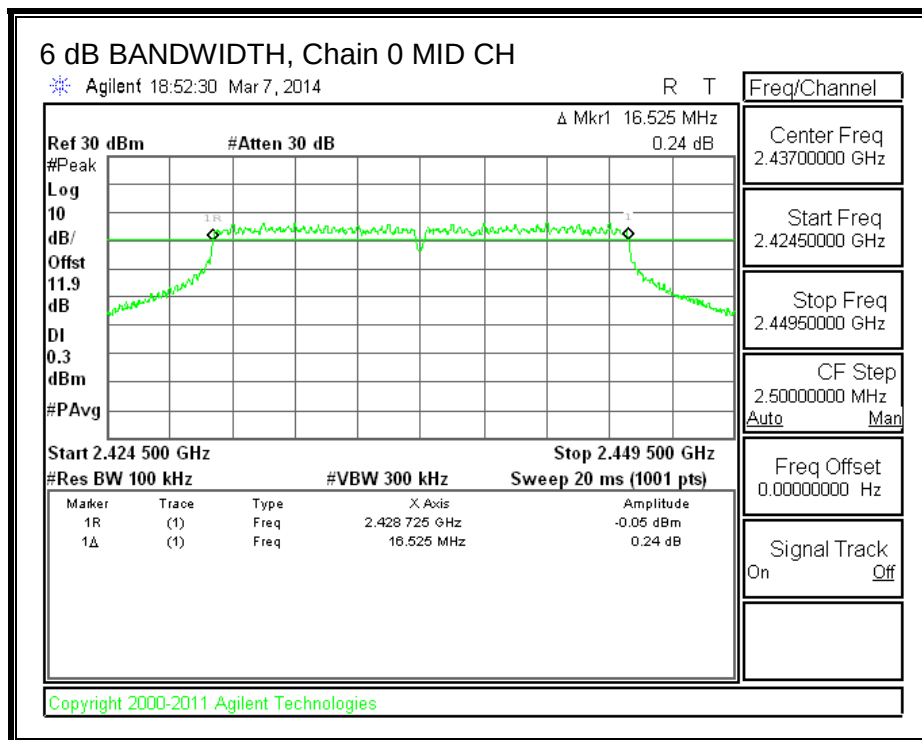
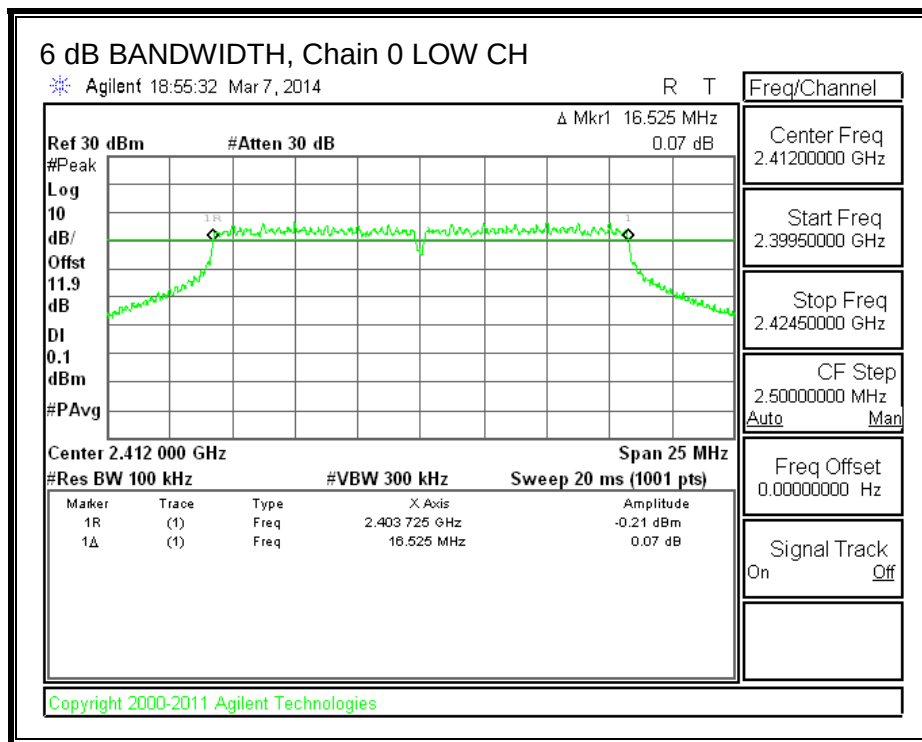
IC RSS-210 A8.2 (a)

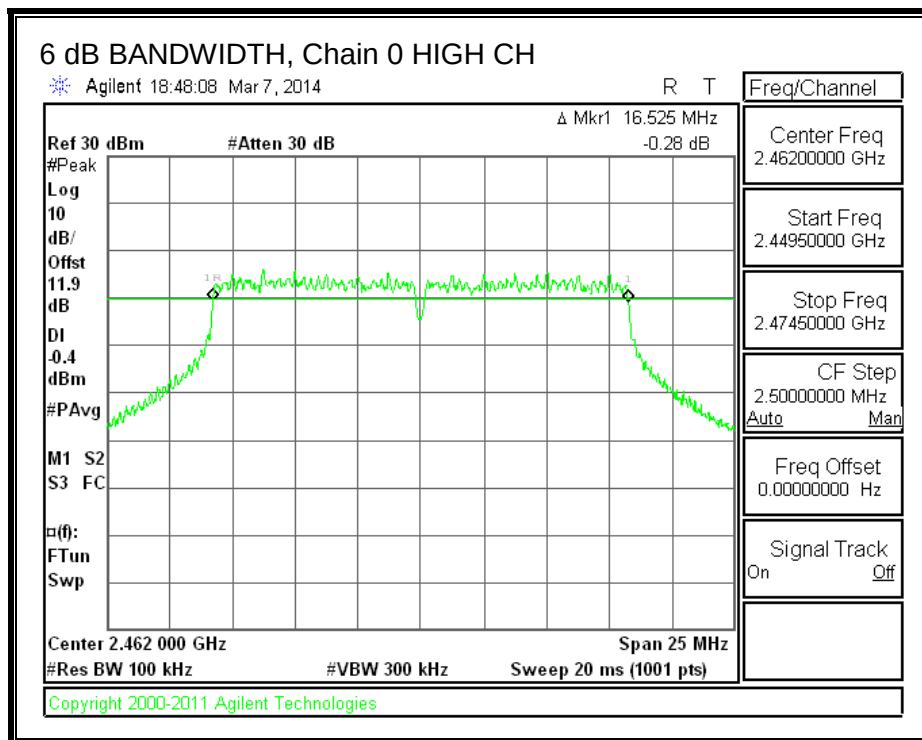
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

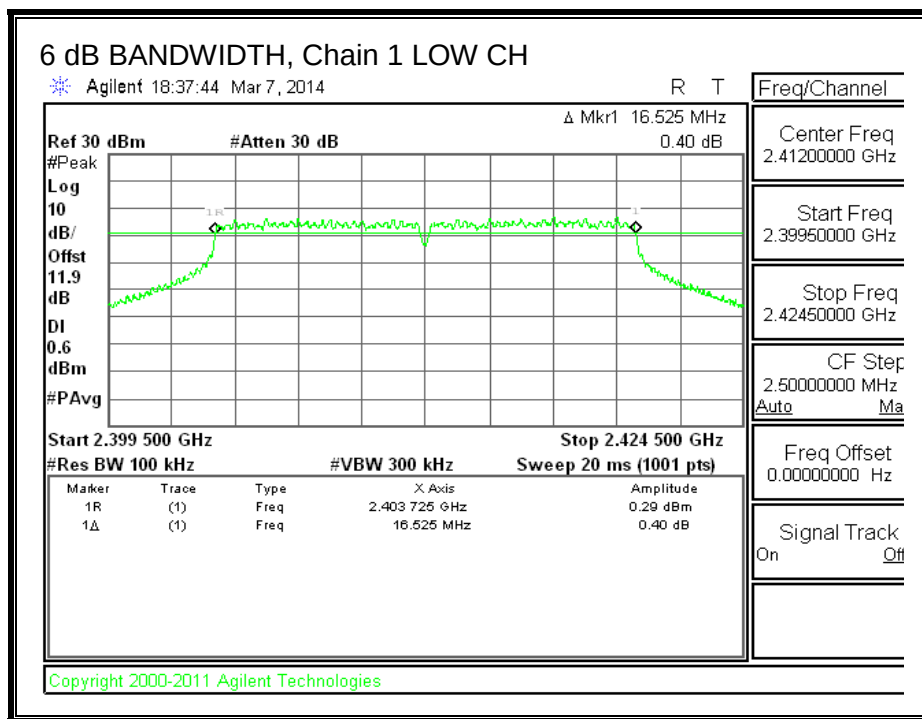
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	16.525	16.525	0.5
Mid	2437	16.525	16.575	0.5
High	2462	16.525	16.500	0.5

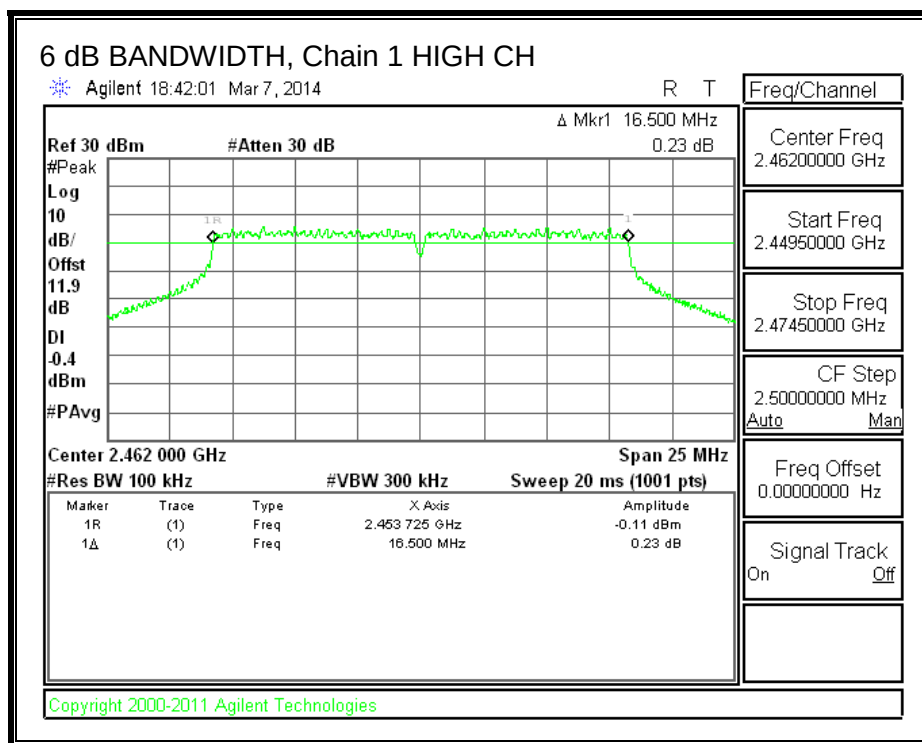
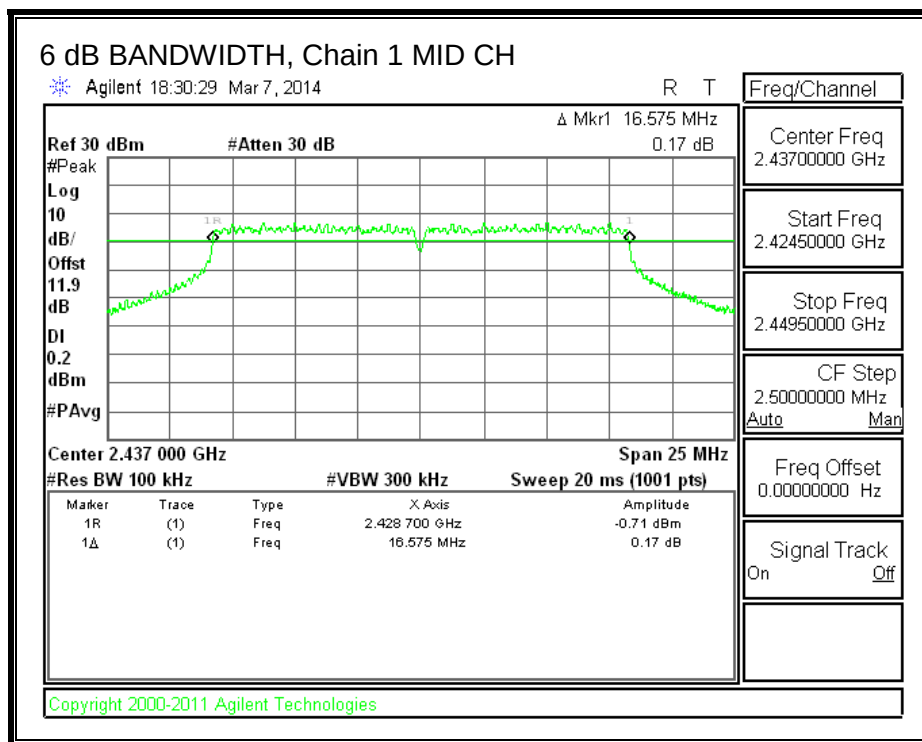
6 dB BANDWIDTH, Chain 0





6 dB BANDWIDTH, Chain 1





8.2.2. 99% BANDWIDTH

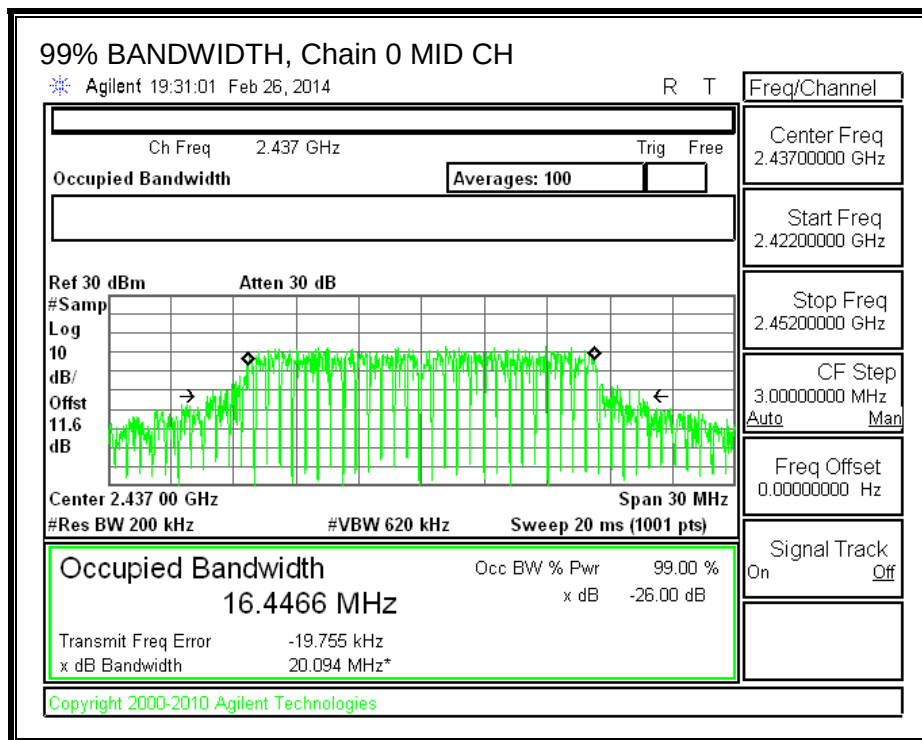
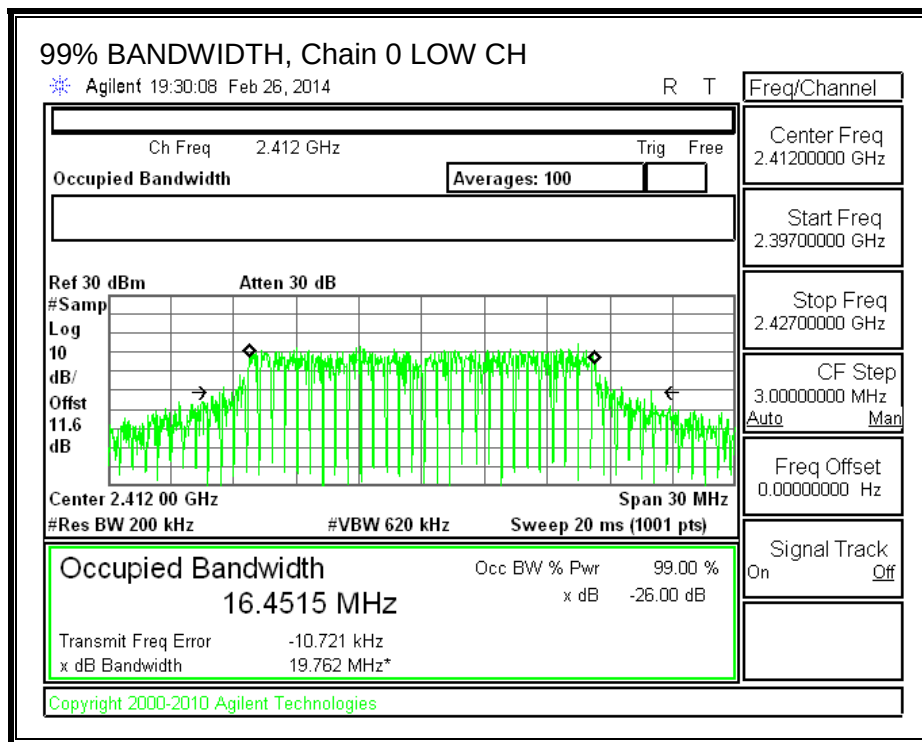
LIMITS

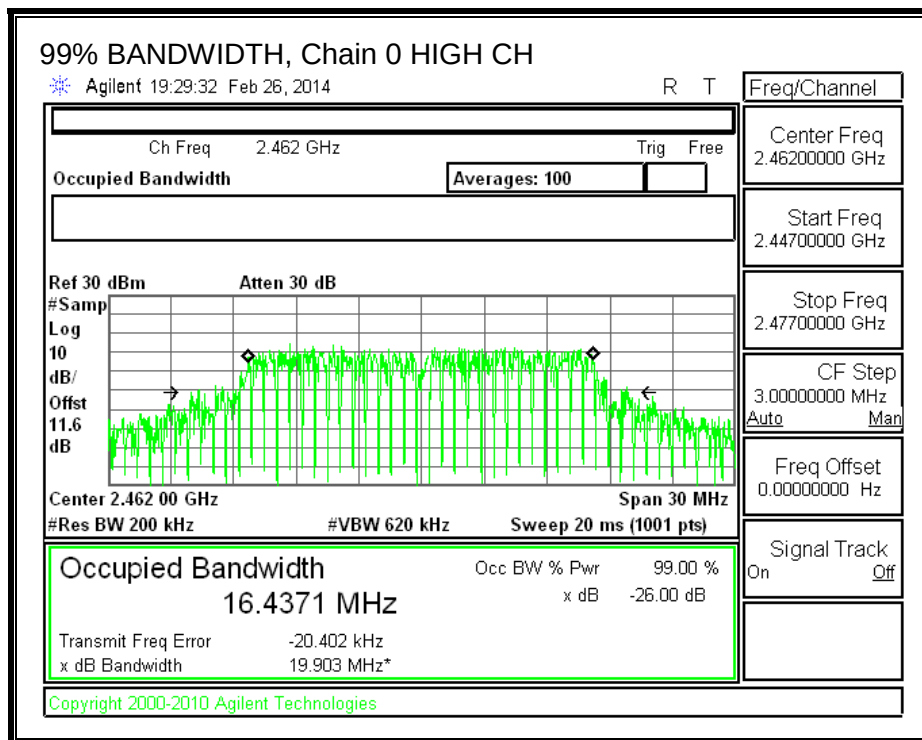
None; for reporting purposes only.

RESULTS

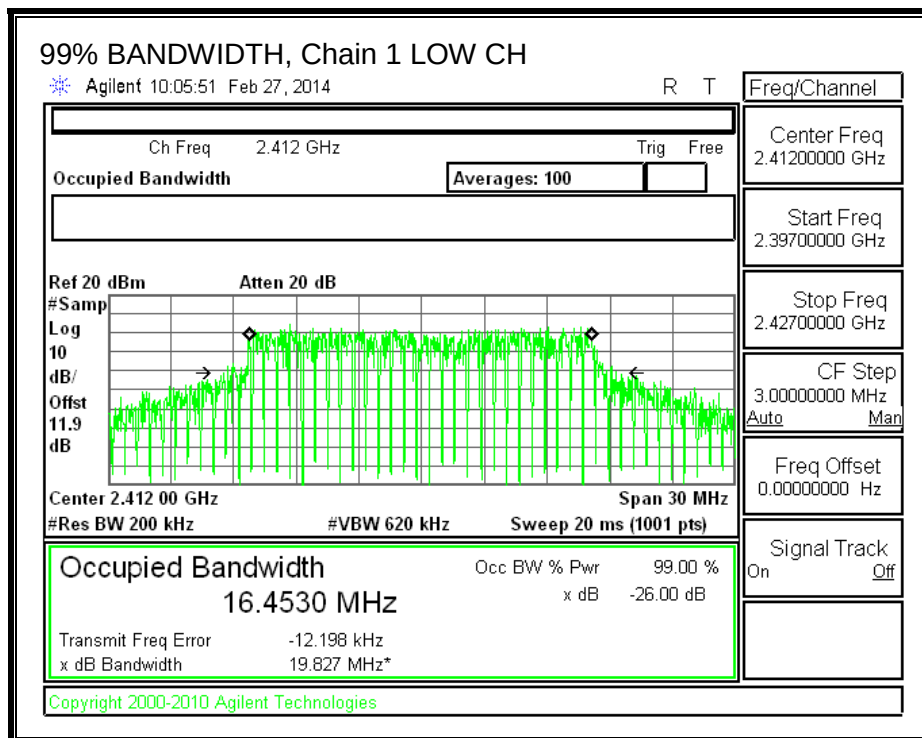
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	16.45	16.45
Mid	2437	16.45	16.44
High	2462	16.44	16.43

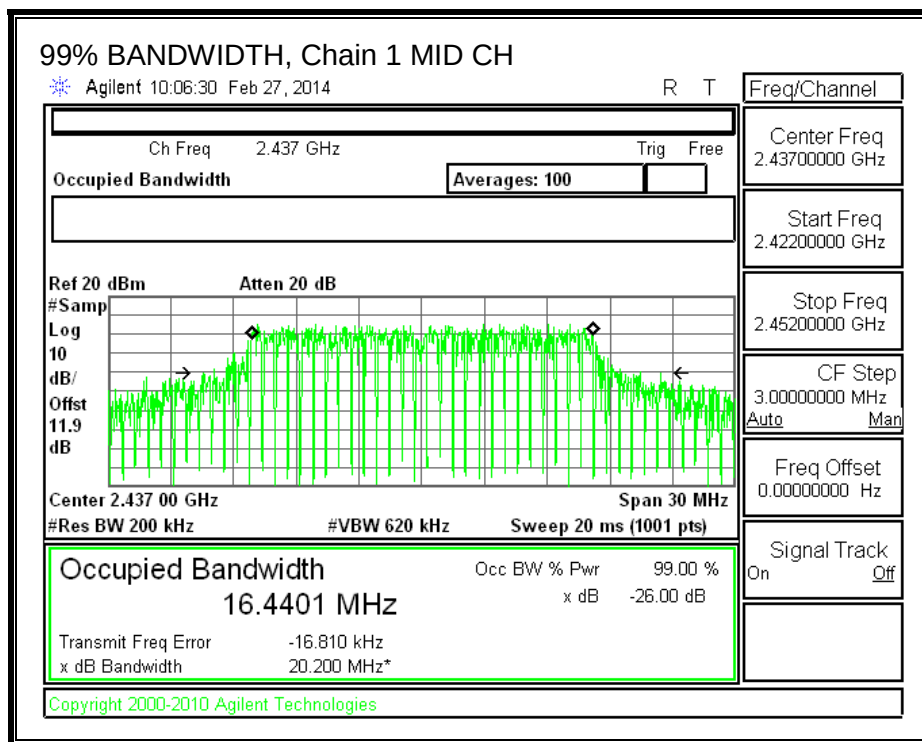
99% BANDWIDTH, Chain 0





99% BANDWIDTH, Chain 1





8.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.9 dB (including 10 dB pad and 1.9 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Power Setting

Channel	Frequency (MHz)	Chain 0 Art Power Setting	Chain 1 Art Power Setting
Low	2412	17.00	17.00
Mid	2437	17.50	17.50
High	2462	14.50	14.50

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	2412	16.90	17.23	20.08
Mid	2437	17.27	17.70	20.50
High	2462	14.20	14.94	17.60

8.2.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.85	3.09	2.97

RESULTS

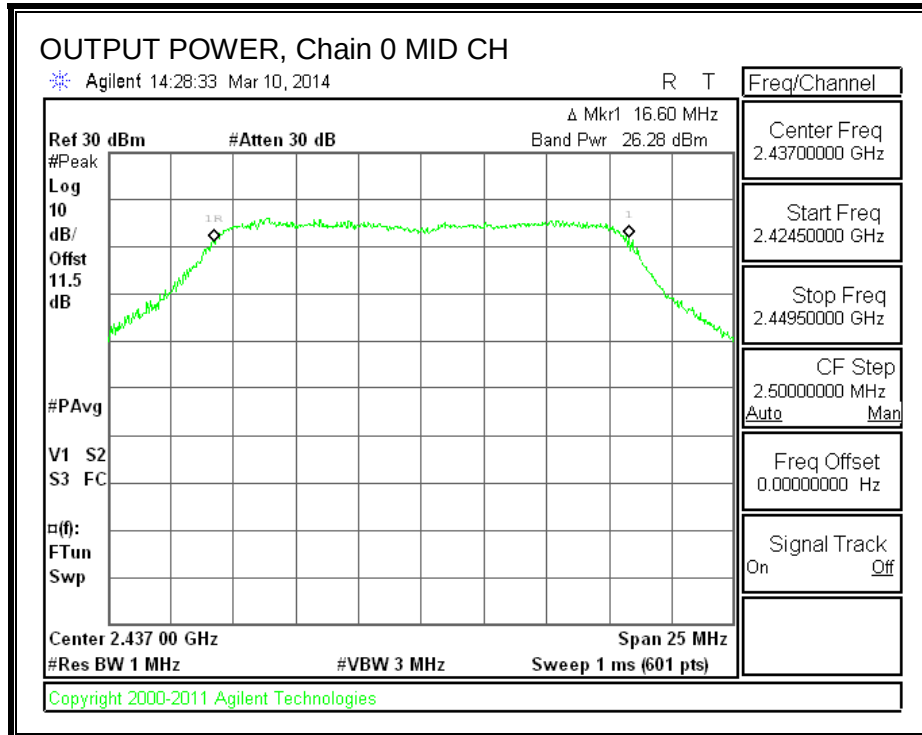
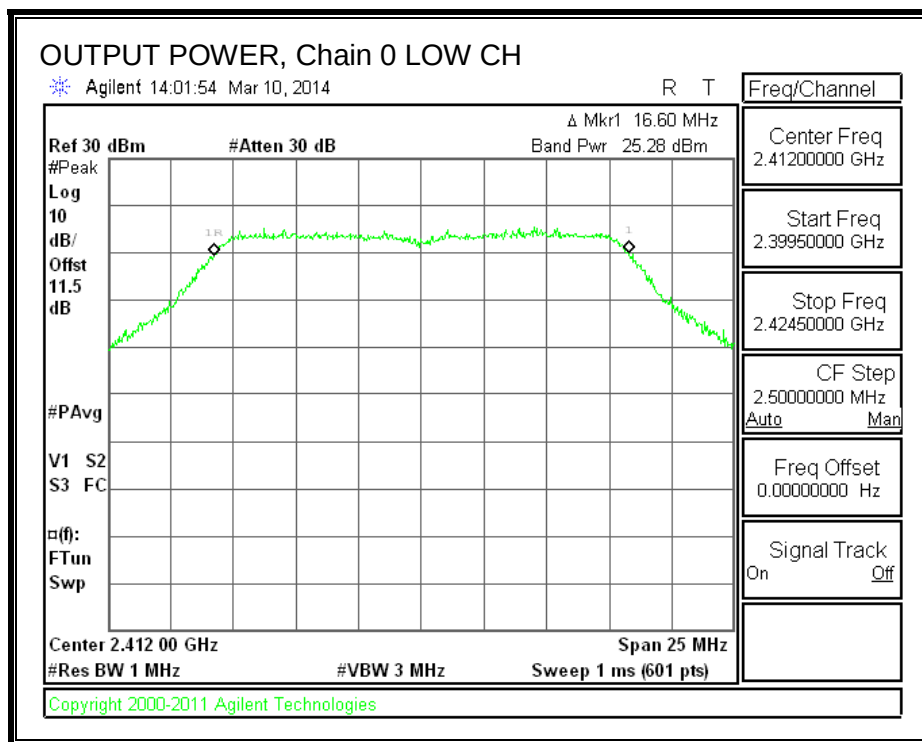
Limits

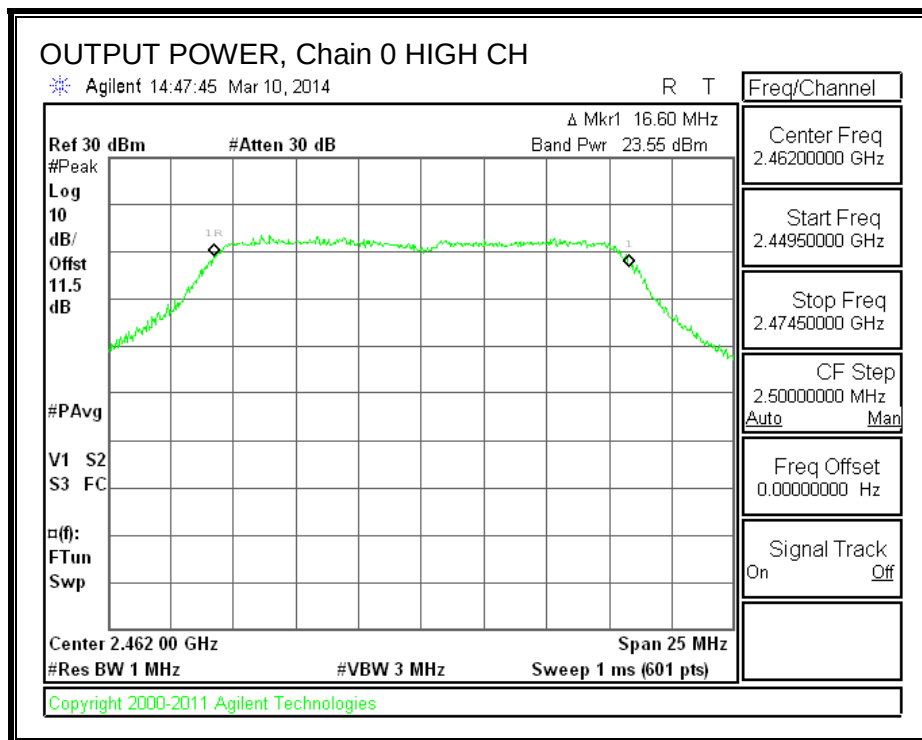
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.97	30.00	30	36	30.00
Mid	2437	2.97	30.00	30	36	30.00
High	2462	2.97	30.00	30	36	30.00

Results

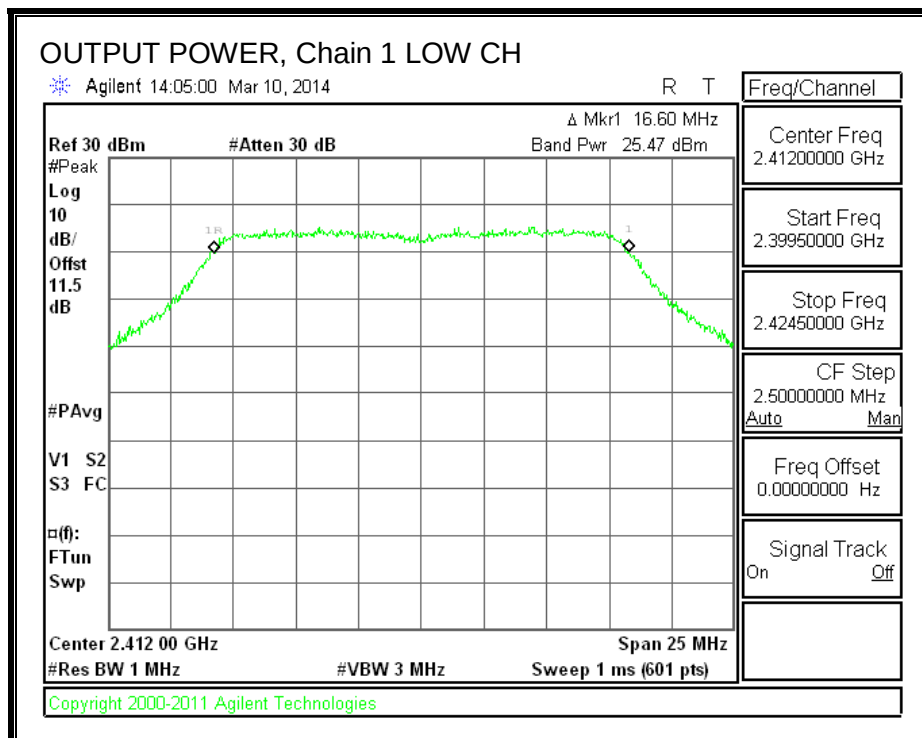
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	25.28	25.47	28.39	30.00	-1.61
Mid	2437	26.28	26.83	29.57	30.00	-0.43
High	2462	23.55	24.55	27.09	30.00	-2.91

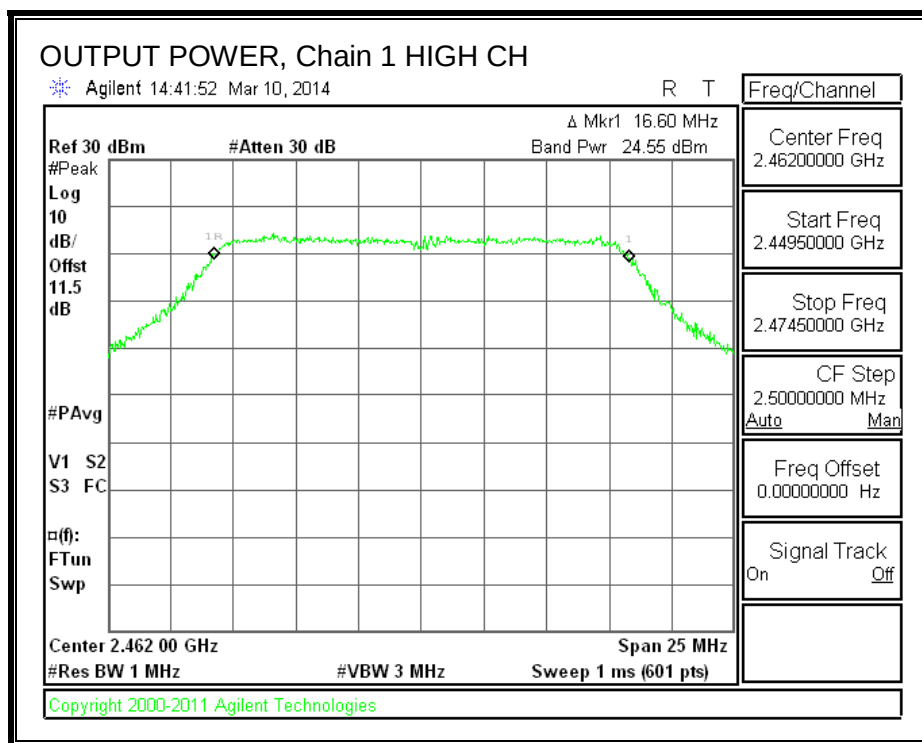
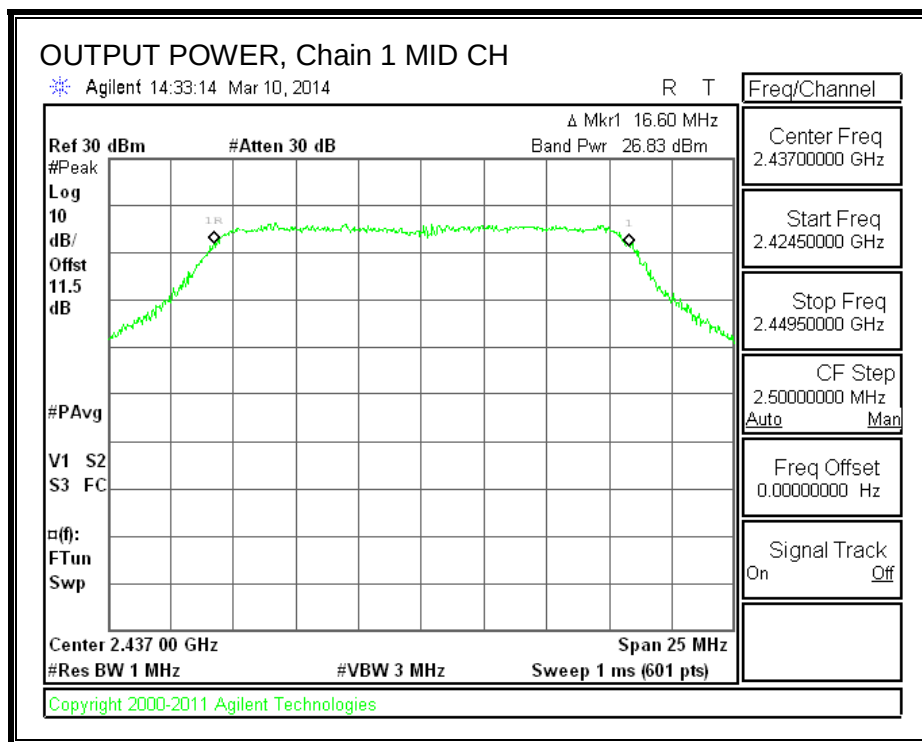
OUTPUT POWER, Chain 0





OUTPUT POWER, Chain 1





8.2.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

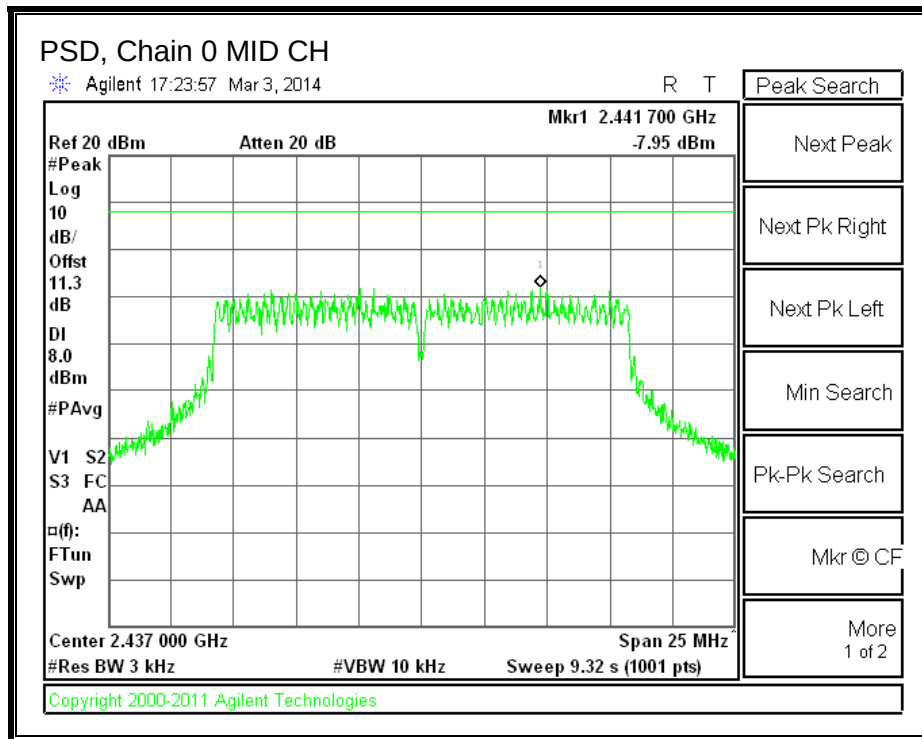
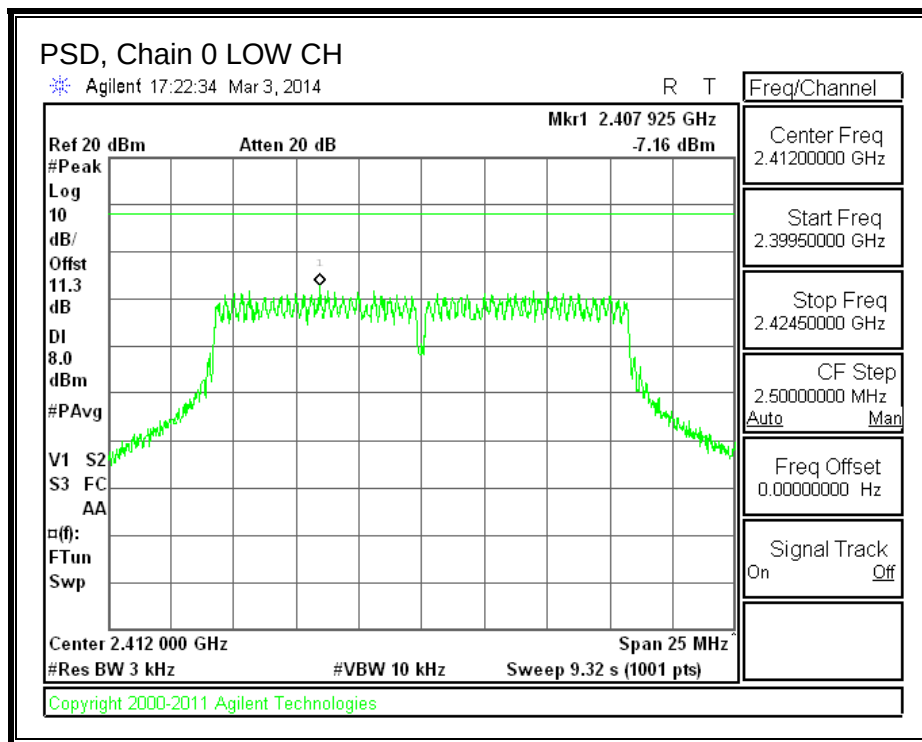
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

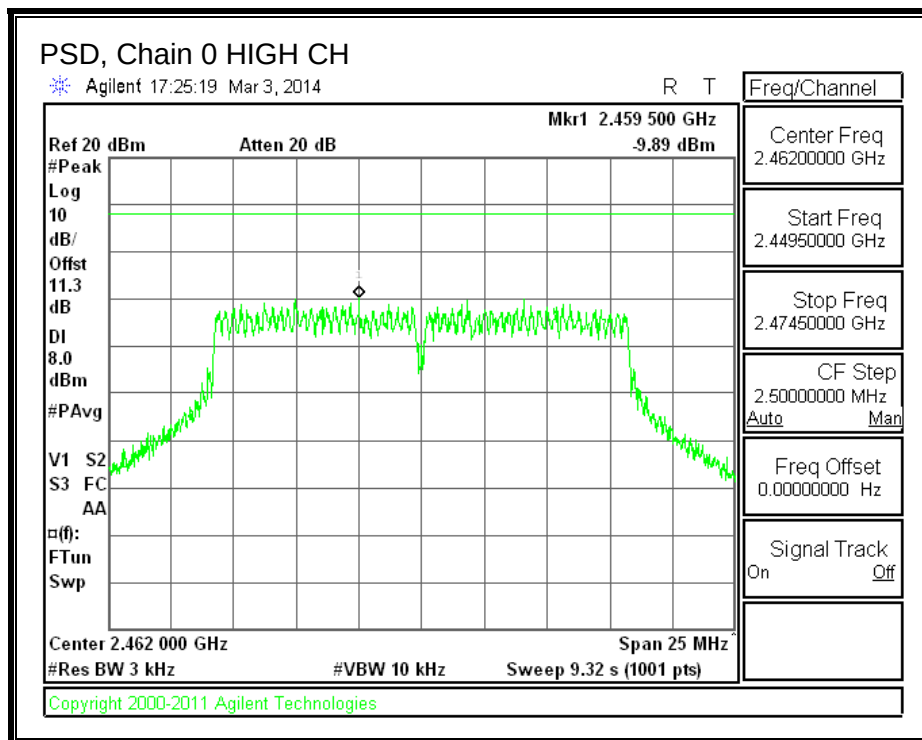
RESULTS

PSD Results

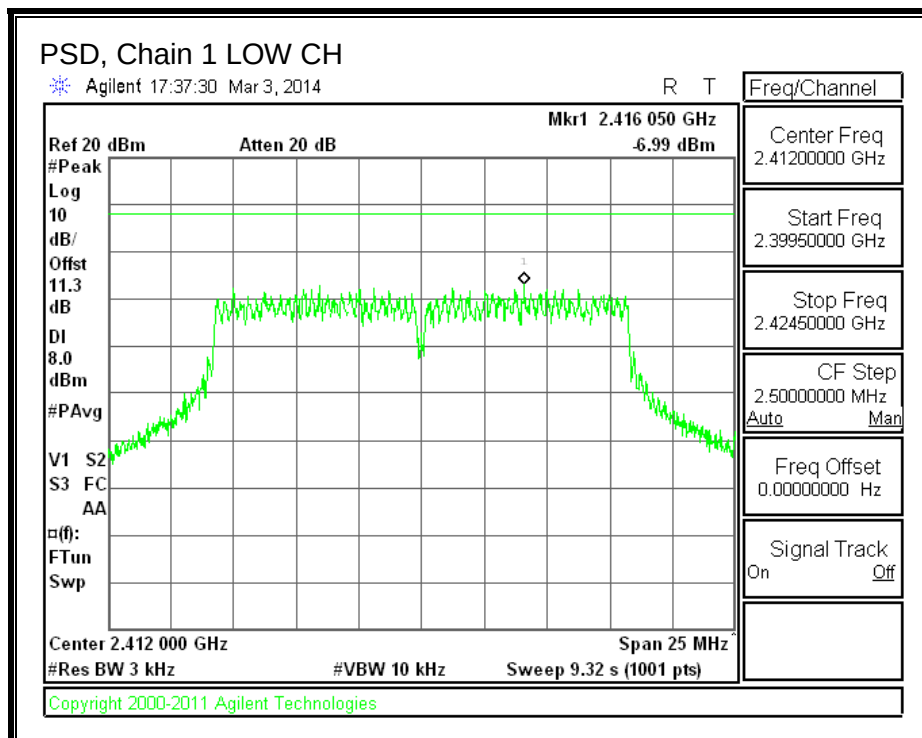
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-7.16	-6.99	-4.06	8.0	-12.1
Mid	2437	-7.95	-8.38	-5.15	8.0	-13.1
High	2462	-9.89	-9.87	-6.87	8.0	-14.9

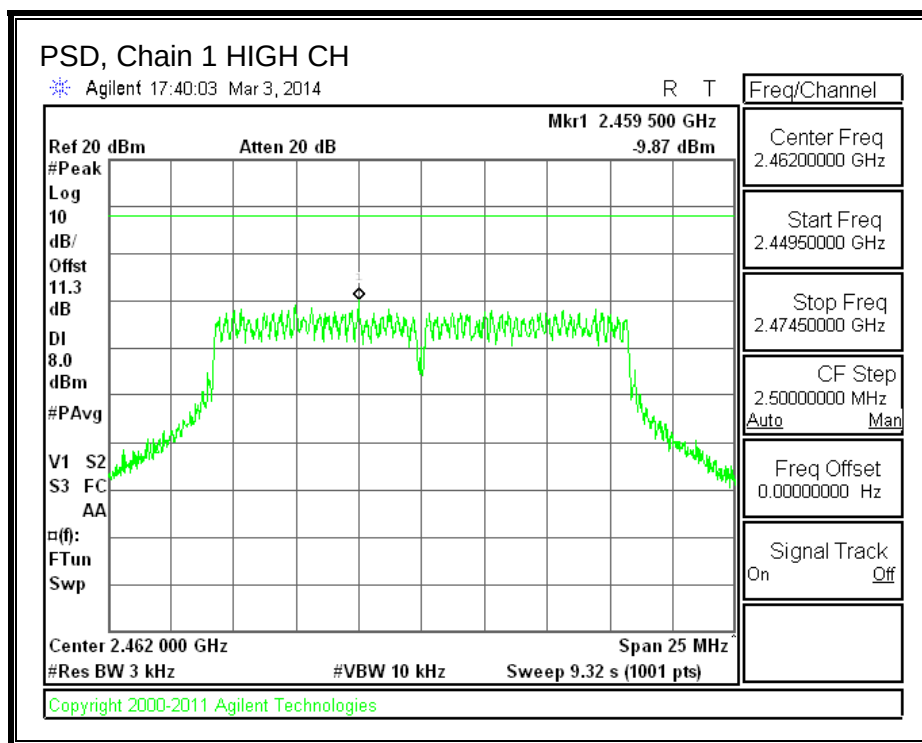
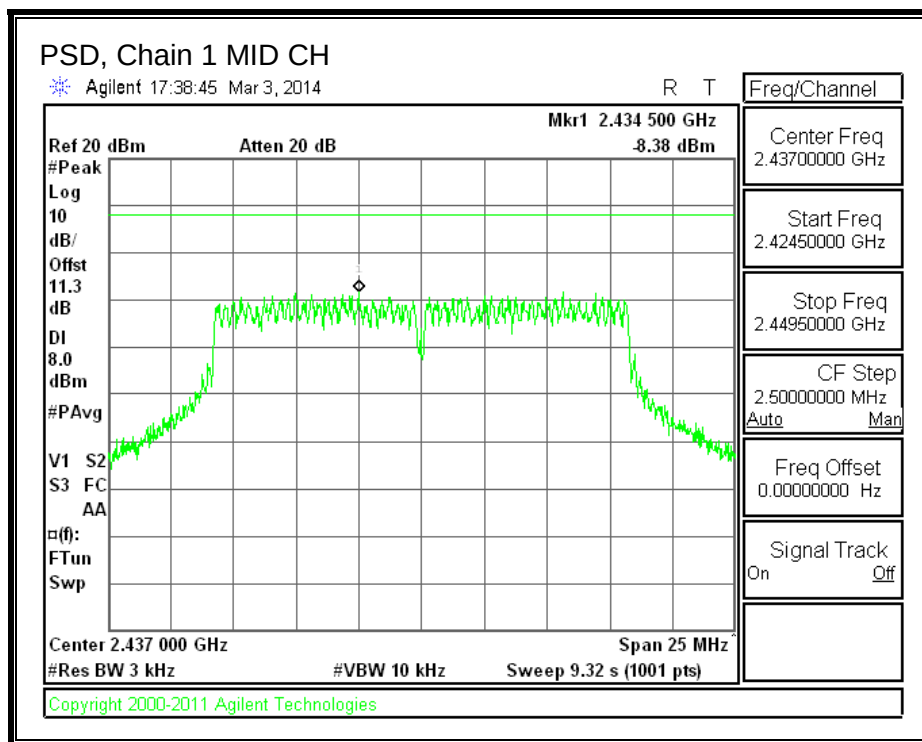
PSD, Chain 0





PSD, Chain 1





8.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

8.3.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

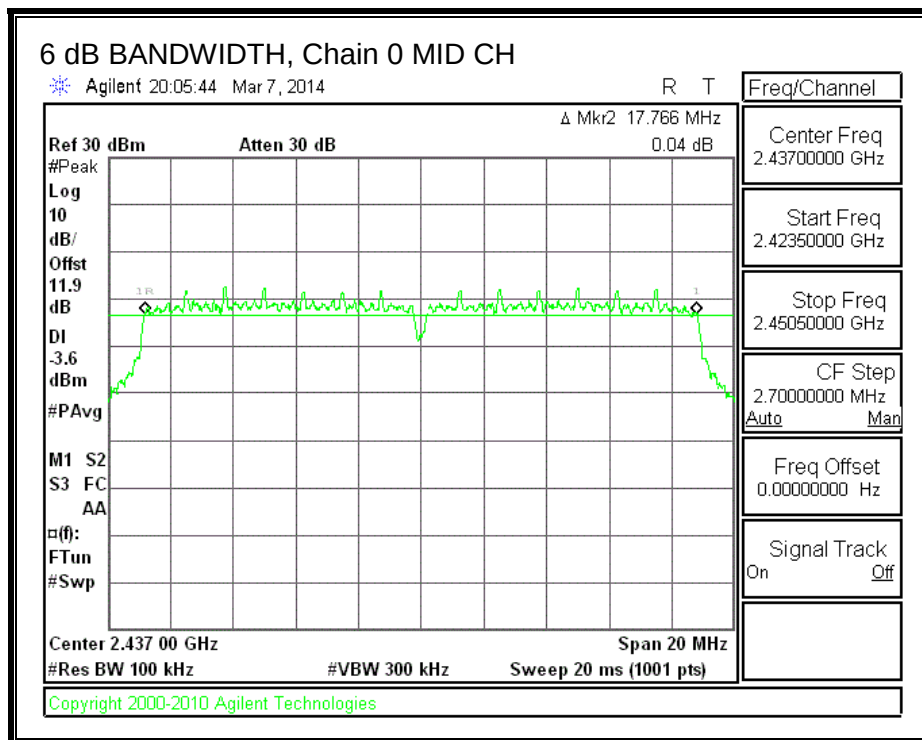
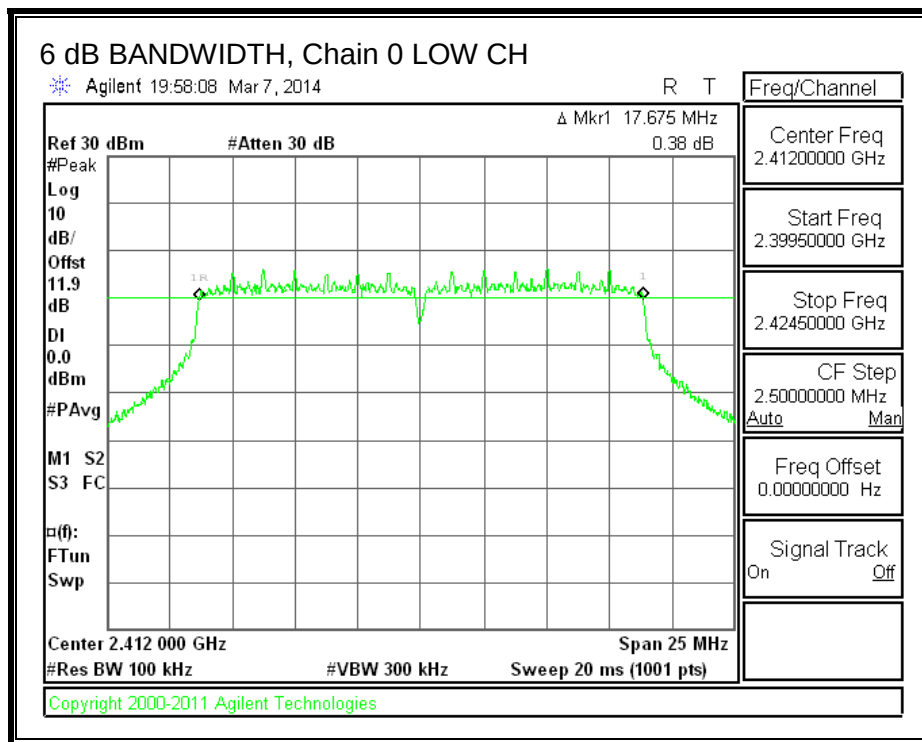
IC RSS-210 A8.2 (a)

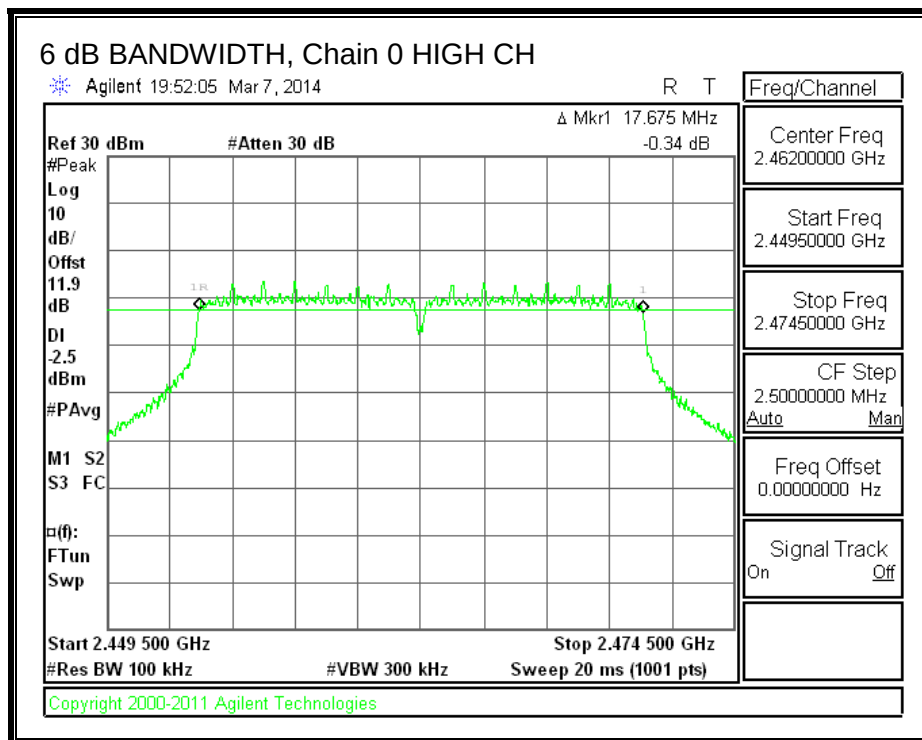
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

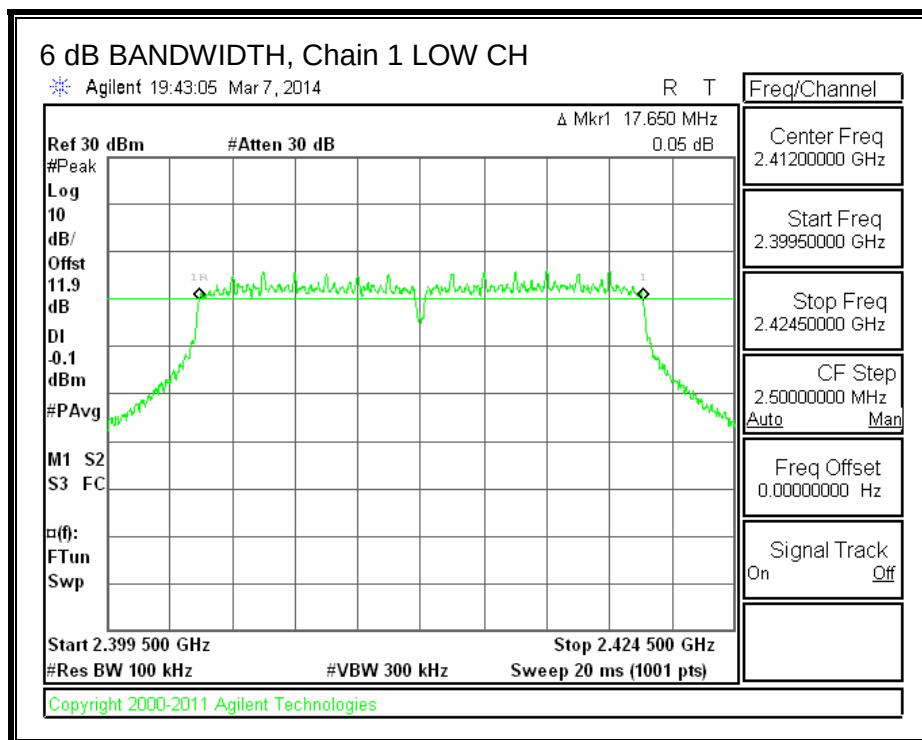
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	17.675	17.650	0.5
Mid	2437	17.700	17.725	0.5
High	2462	17.675	17.700	0.5

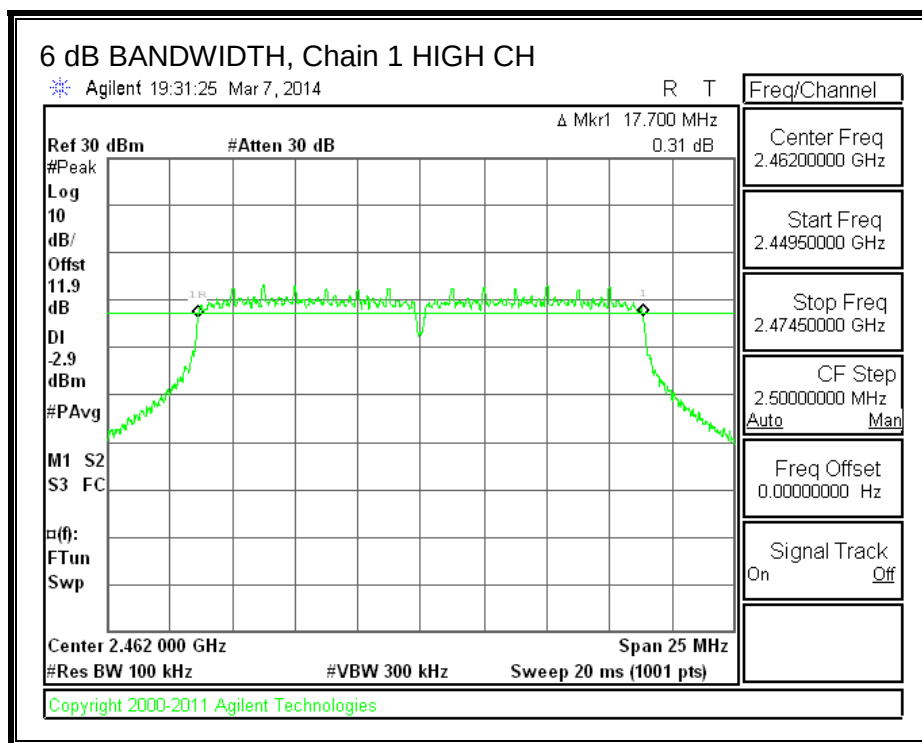
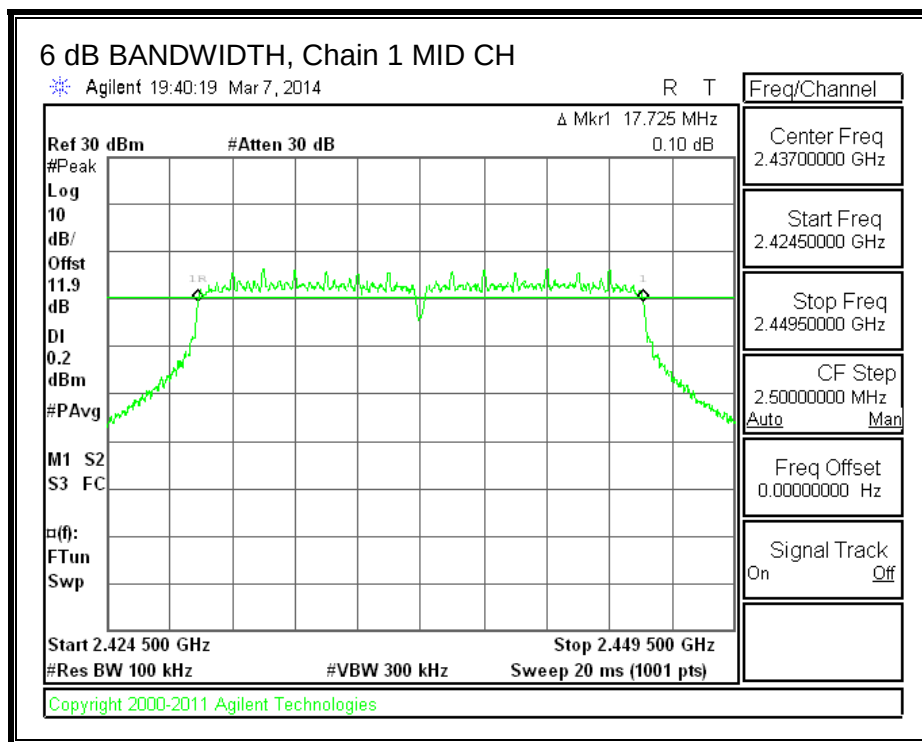
6 dB BANDWIDTH, Chain 0





6 dB BANDWIDTH, Chain 1





8.3.2. 99% BANDWIDTH

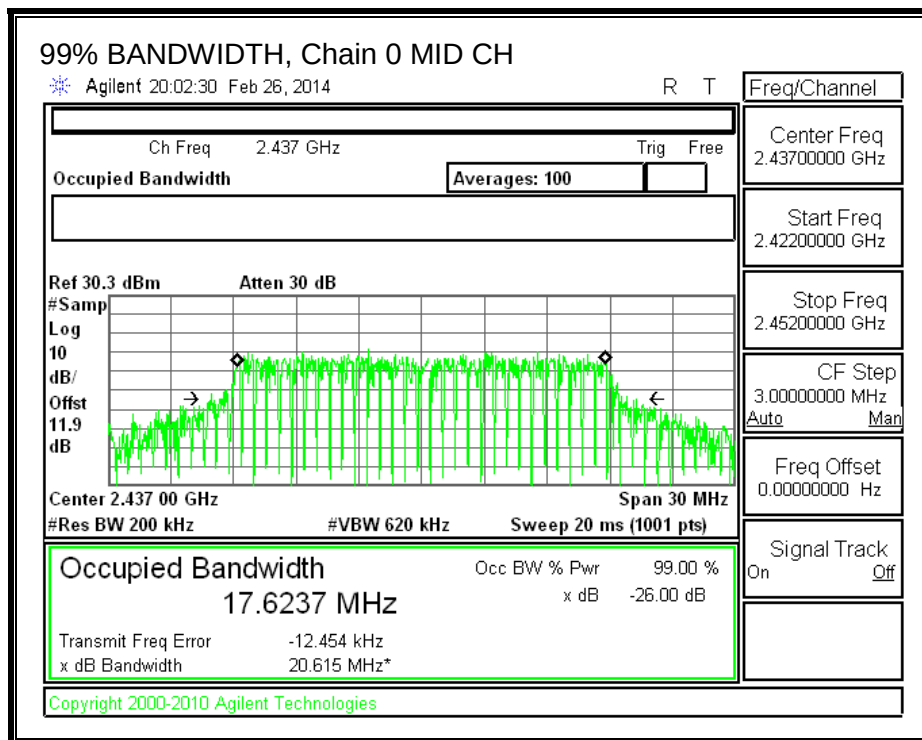
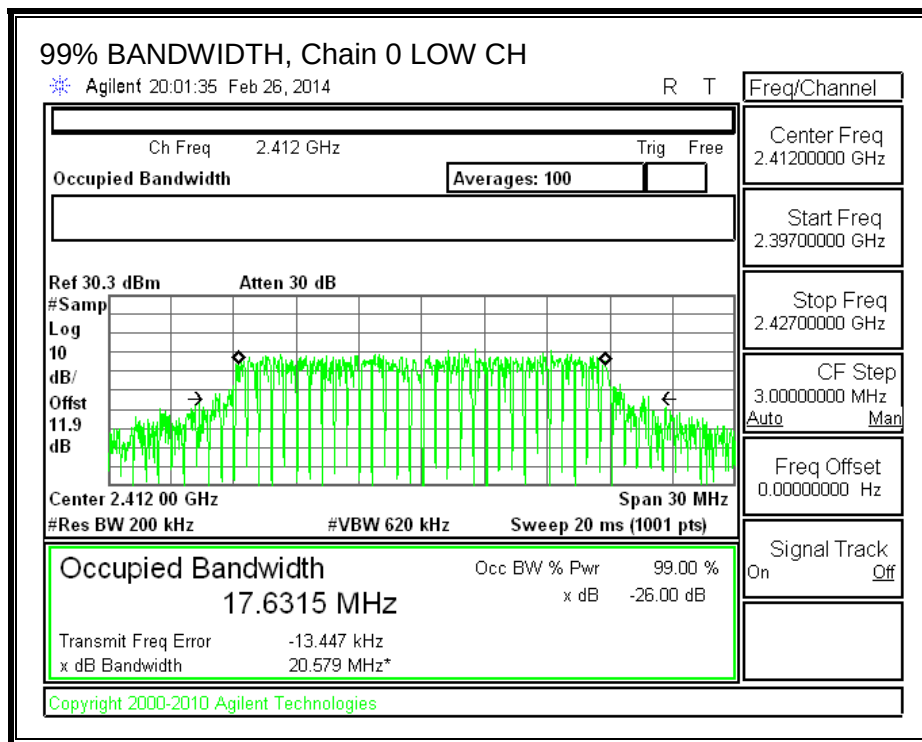
LIMITS

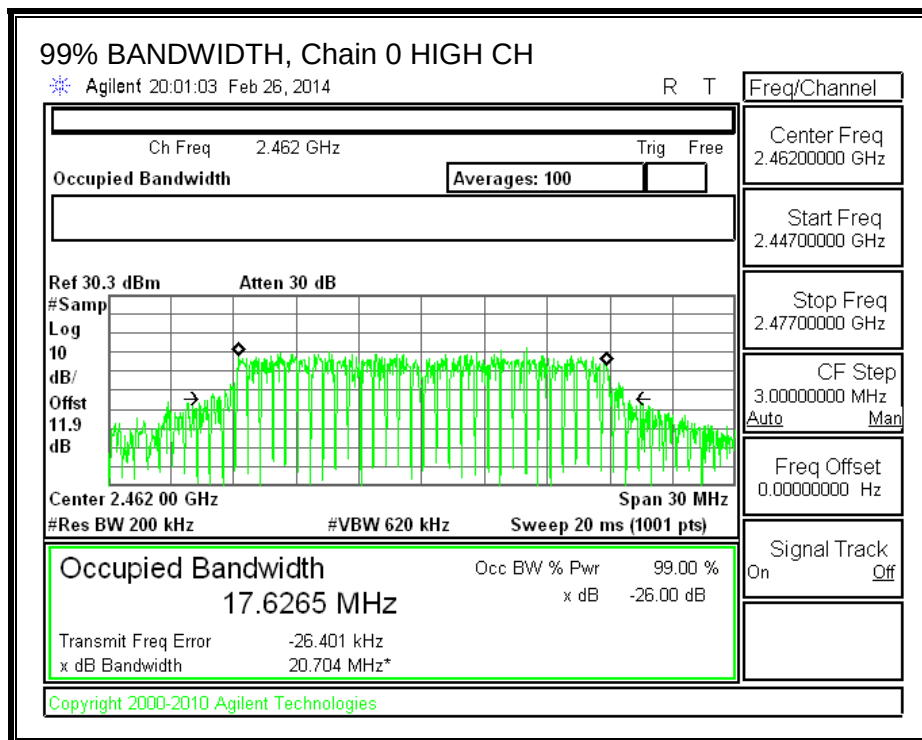
None; for reporting purposes only.

RESULTS

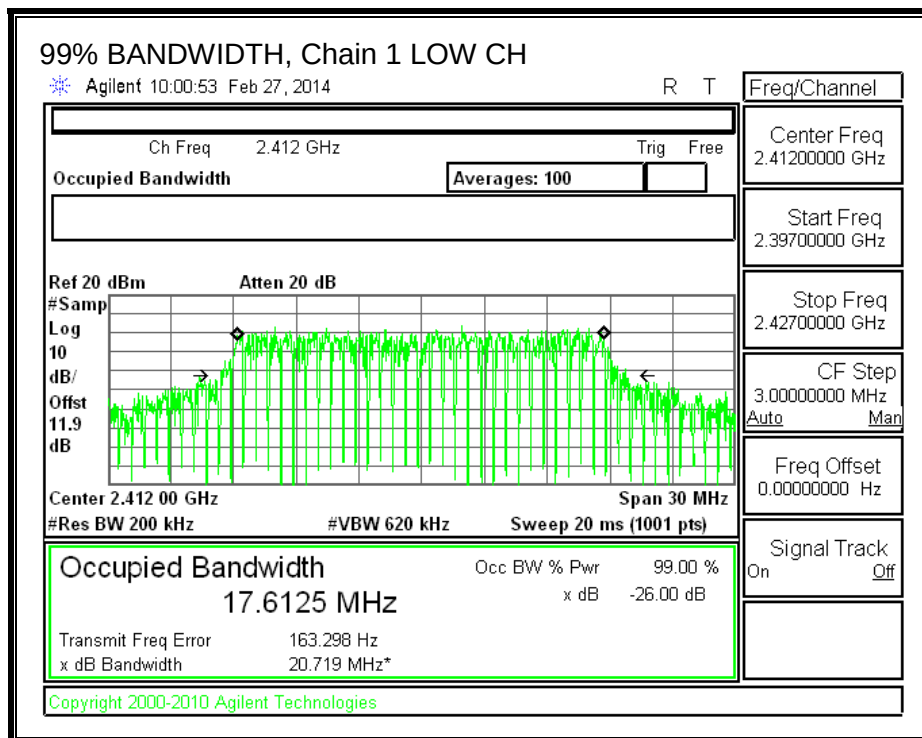
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	17.63	17.61
Mid	2437	17.62	17.63
High	2462	17.63	17.60

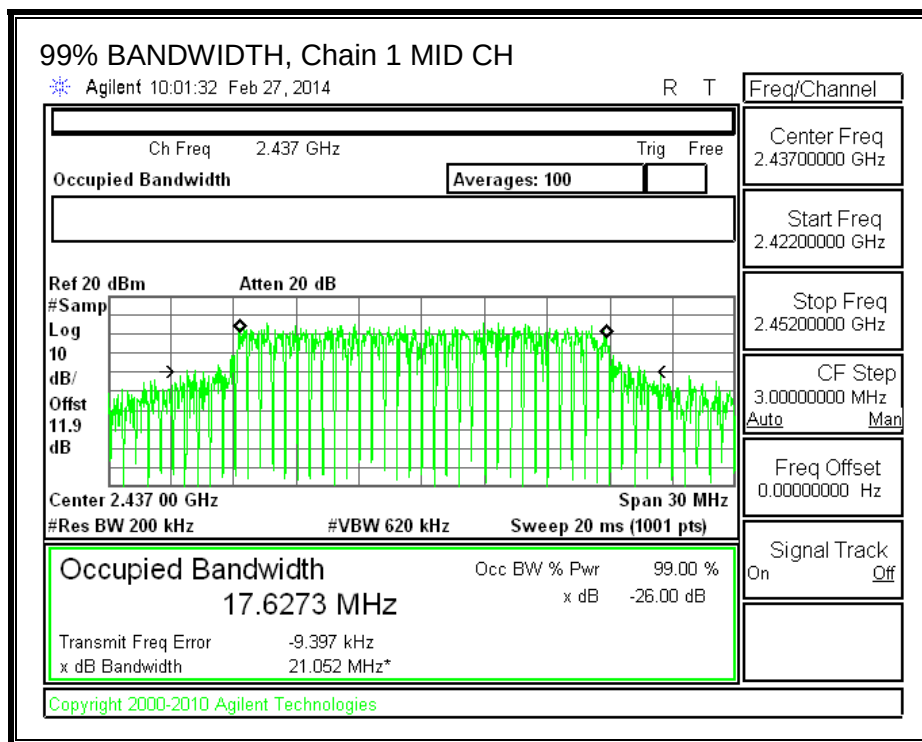
99% BANDWIDTH, Chain 0





99% BANDWIDTH, Chain 1





8.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.9 dB (including 10 dB pad and 1.9 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Power Setting

Channel	Frequency (MHz)	Chain 0, Art Power Setting	Chain 1, Art Power Setting
Low	2412	16.00	16.00
Mid	2437	17.00	17.00
High	2462	14.00	14.00

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	2412	15.80	16.20	19.01
Mid	2437	16.61	17.16	19.90
High	2462	13.94	14.10	17.03

8.3.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.85	3.09	2.97

RESULTS

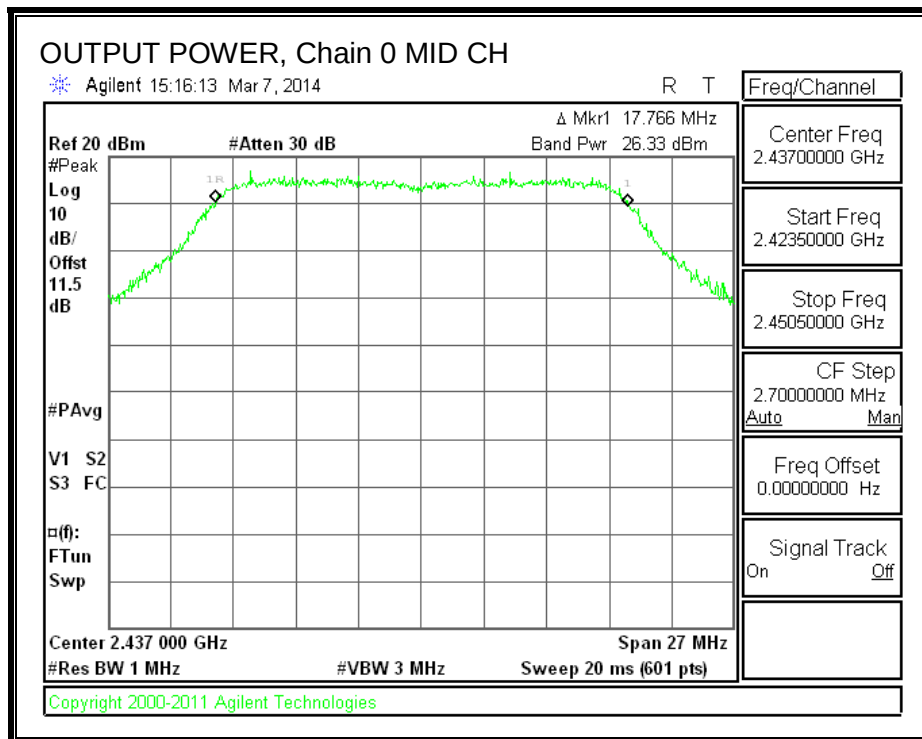
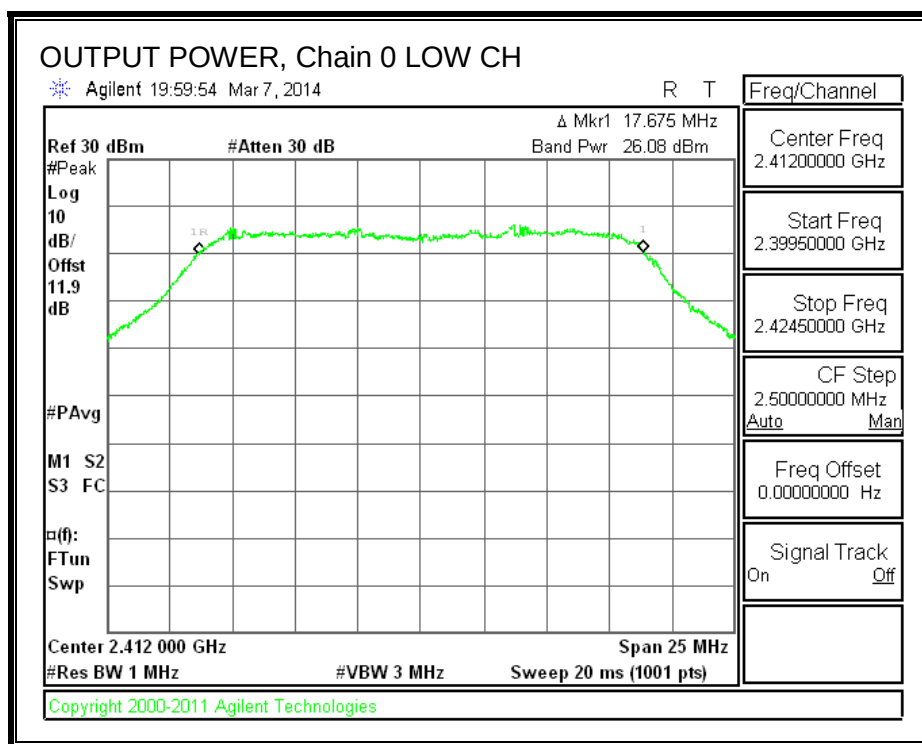
Limits

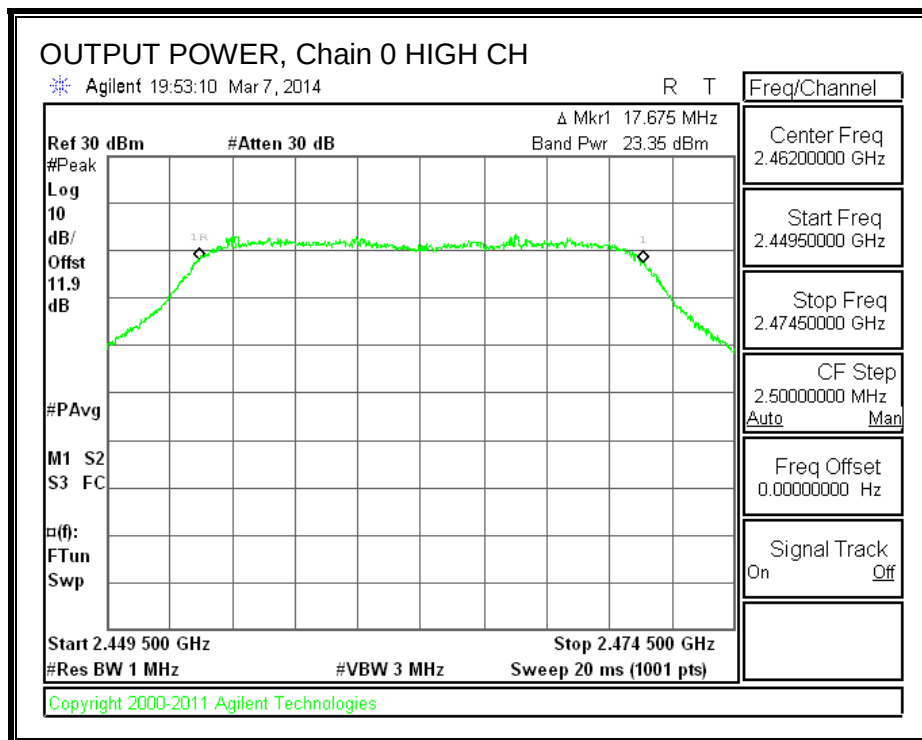
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.97	30.00	30	36	30.00
Mid	2437	2.97	30.00	30	36	30.00
High	2462	2.97	30.00	30	36	30.00

Results

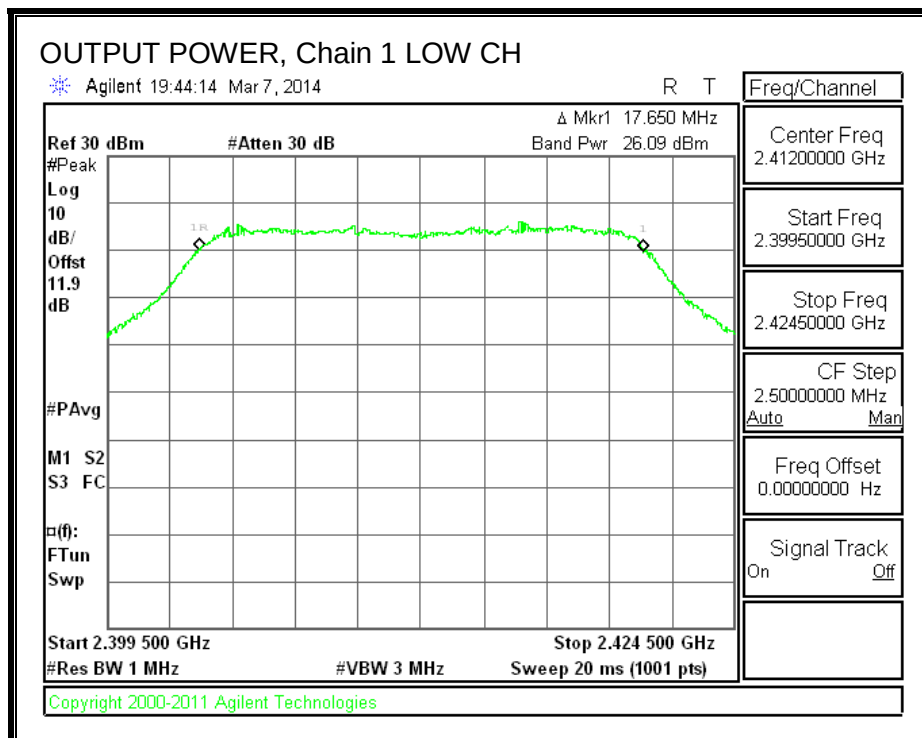
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	26.08	26.09	29.10	30.00	-0.90
Mid	2437	26.33	26.53	29.44	30.00	-0.56
High	2462	23.35	23.68	26.53	30.00	-3.47

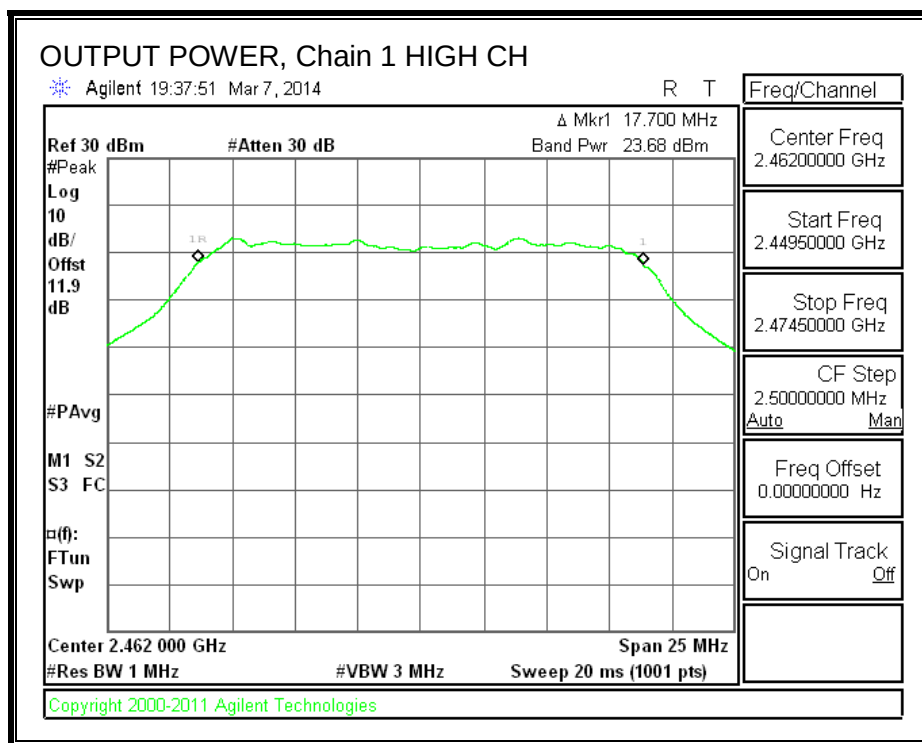
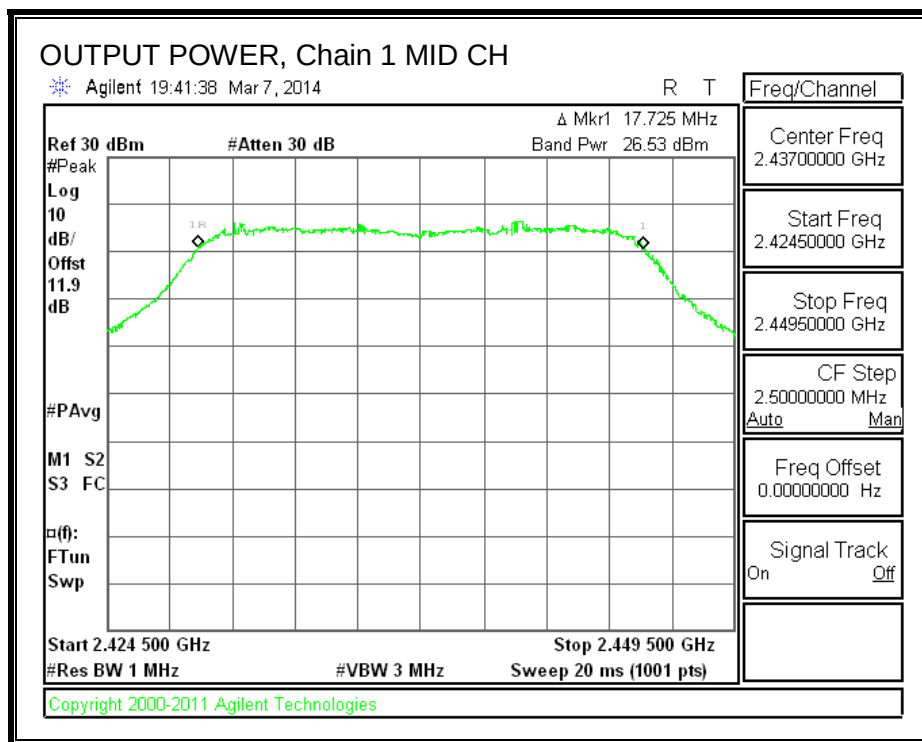
OUTPUT POWER, Chain 0





OUTPUT POWER, Chain 1





8.3.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

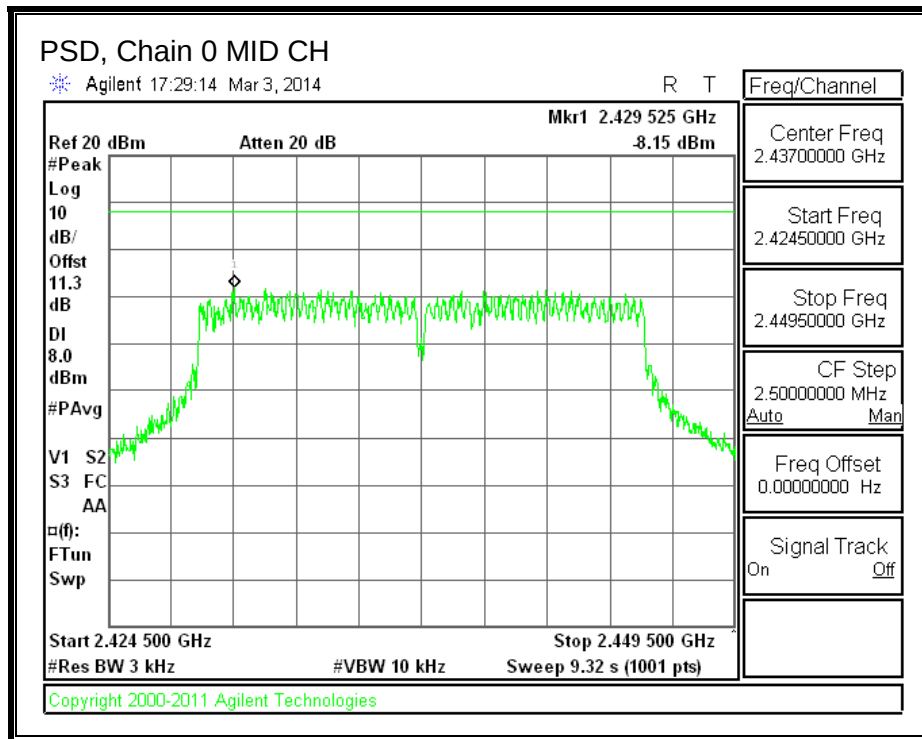
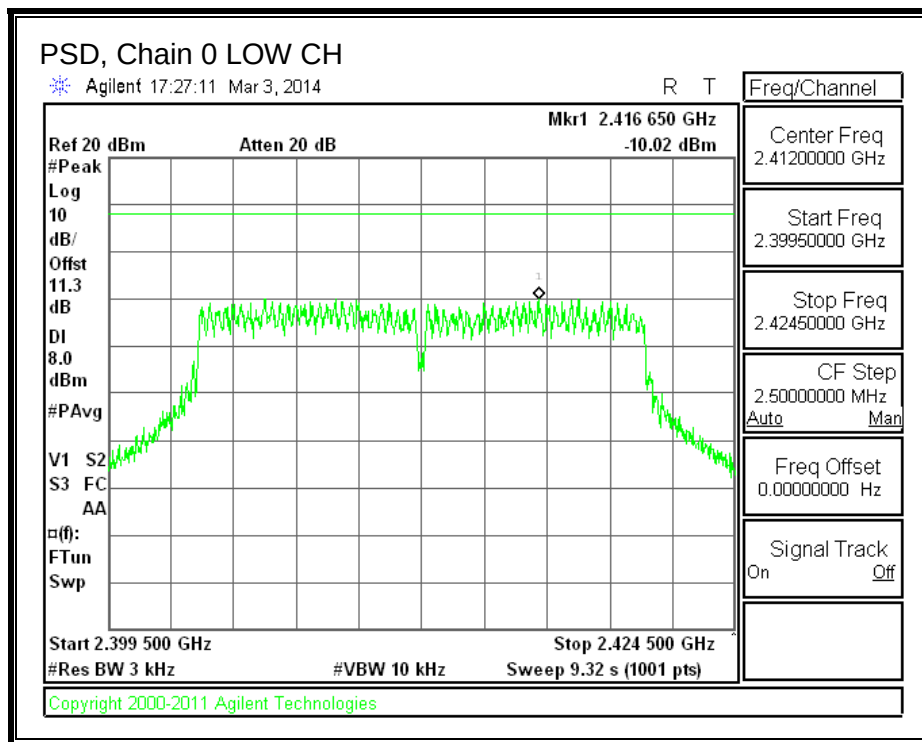
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

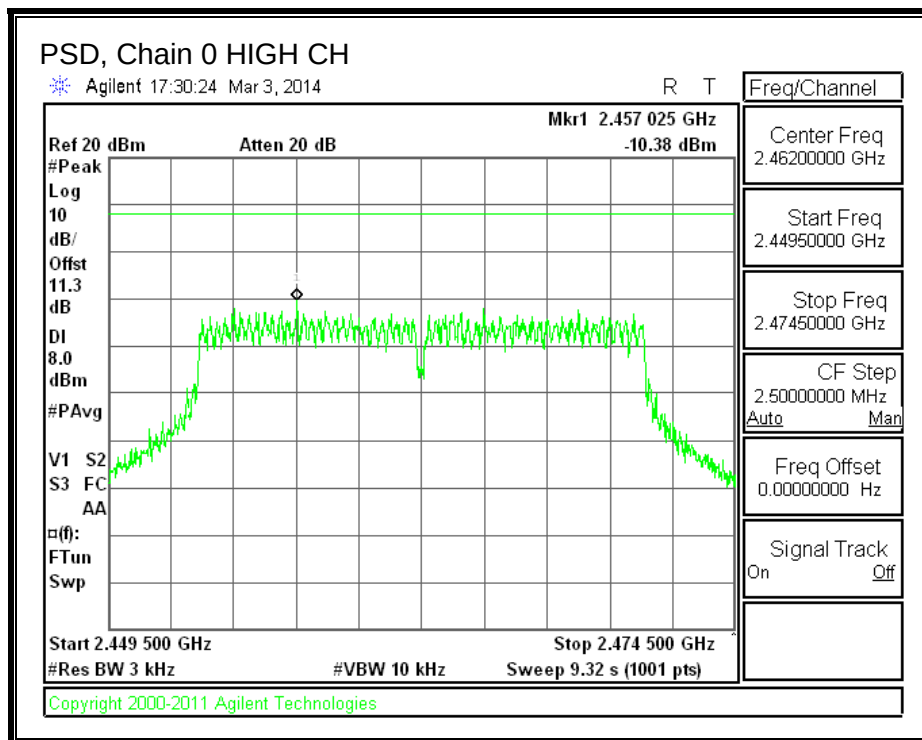
RESULTS

PSD Results

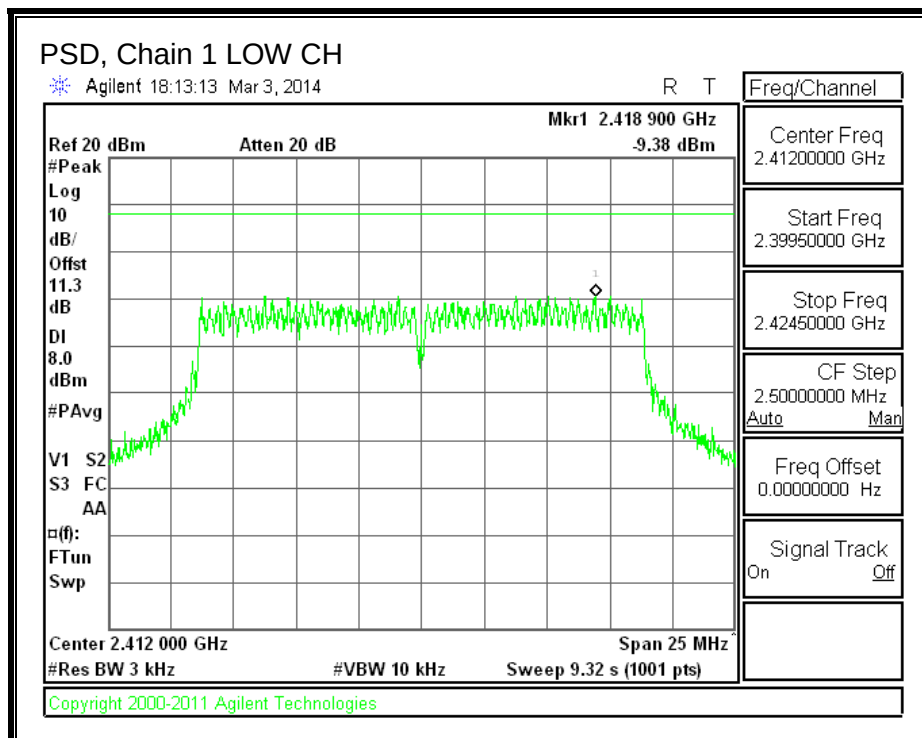
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-10.02	-9.38	-6.68	8.0	-14.7
Mid	2437	-8.15	-7.72	-4.92	8.0	-12.9
High	2462	-10.38	-11.12	-7.72	8.0	-15.7

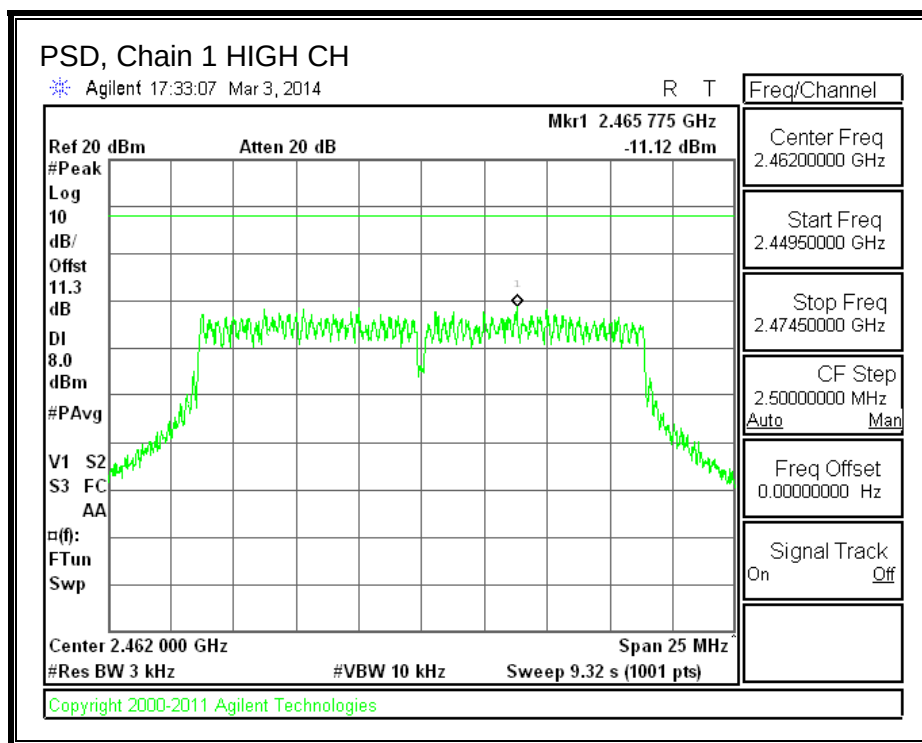
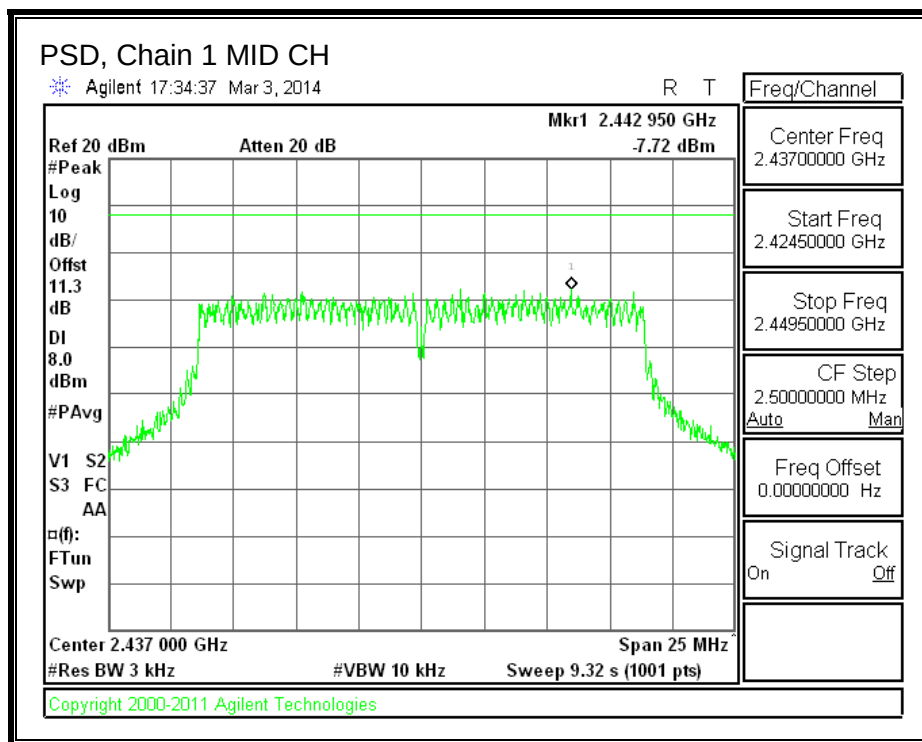
PSD, Chain 0





PSD, Chain 1





8.4. 802.11n HT20 MODE IN THE 5.8 GHz BAND

8.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

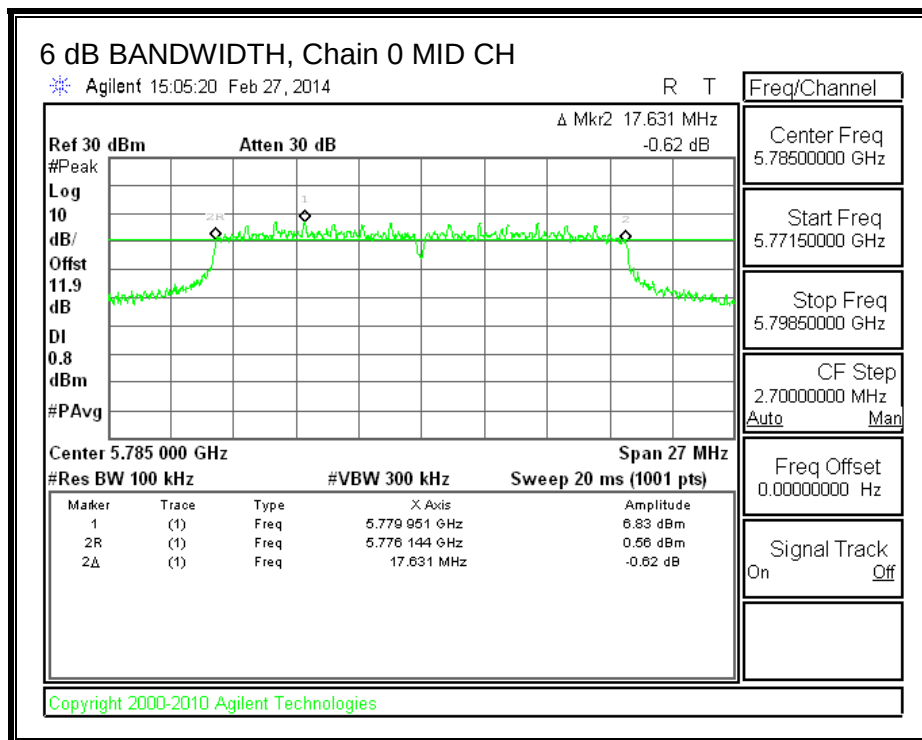
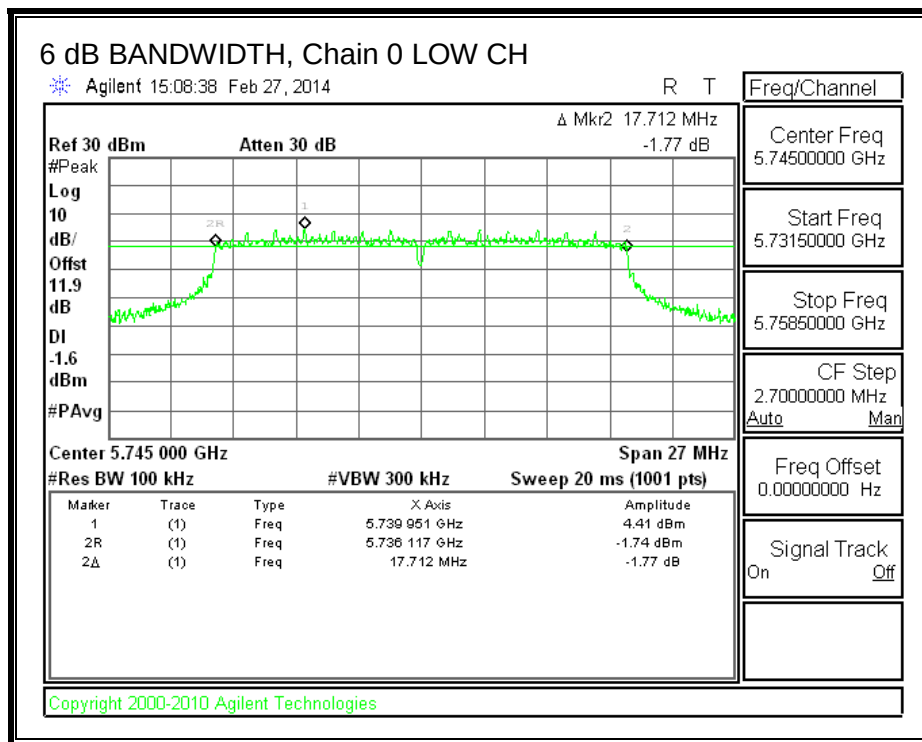
IC RSS-210 A8.2 (a)

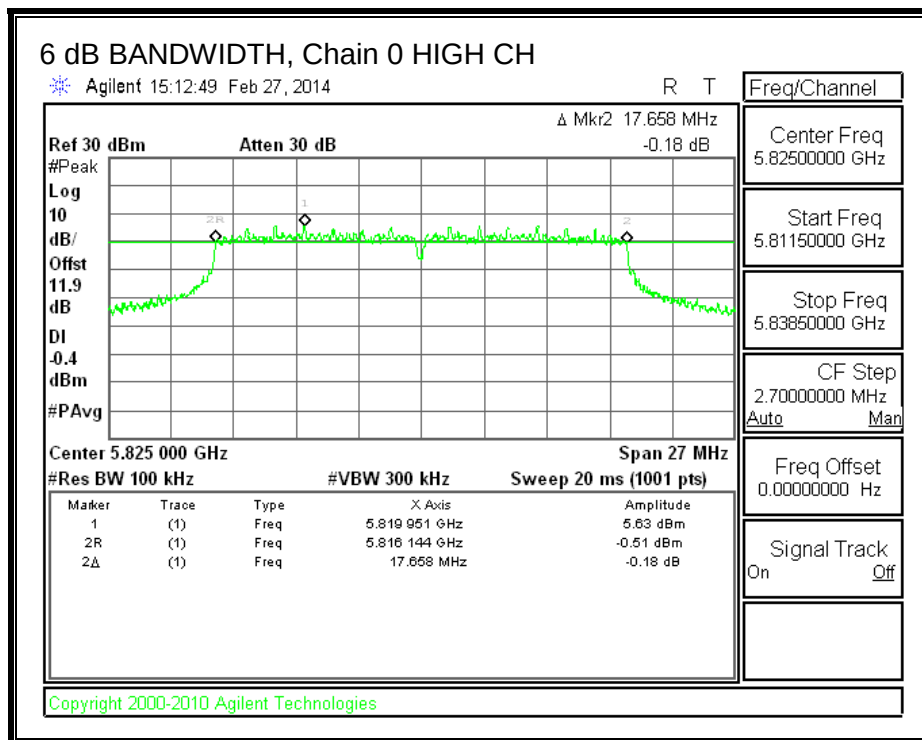
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

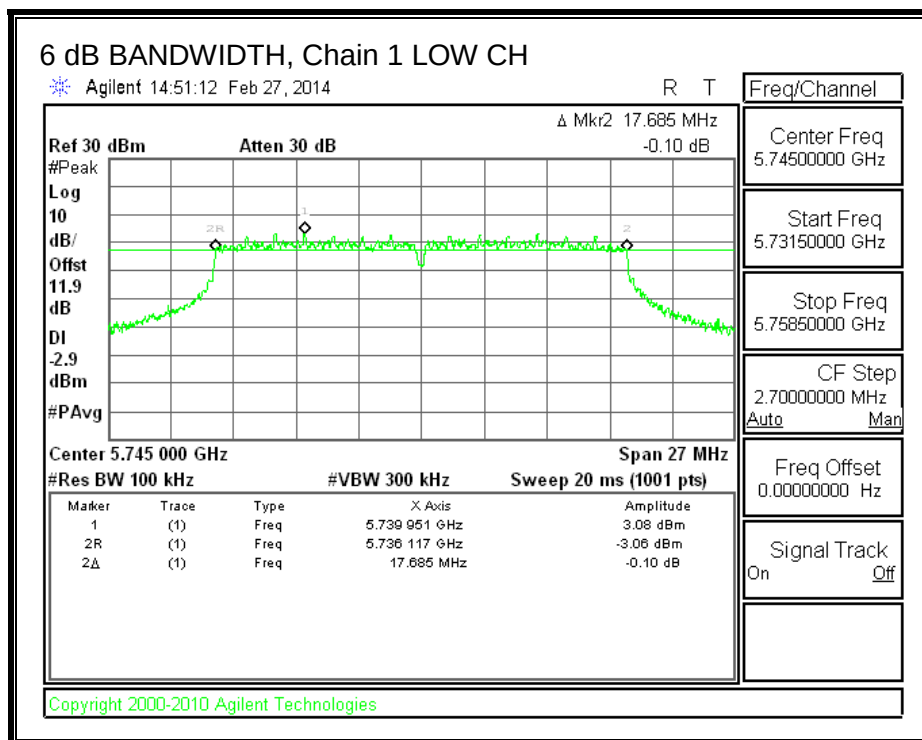
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	17.712	17.685	0.5
Mid	5785	17.631	16.929	0.5
High	5825	17.658	17.631	0.5

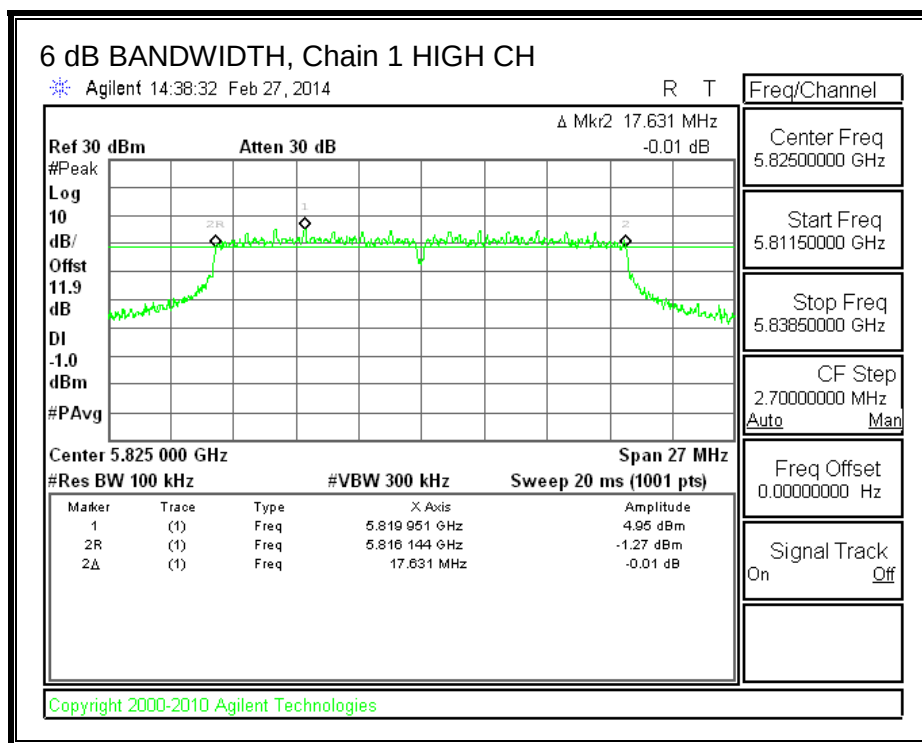
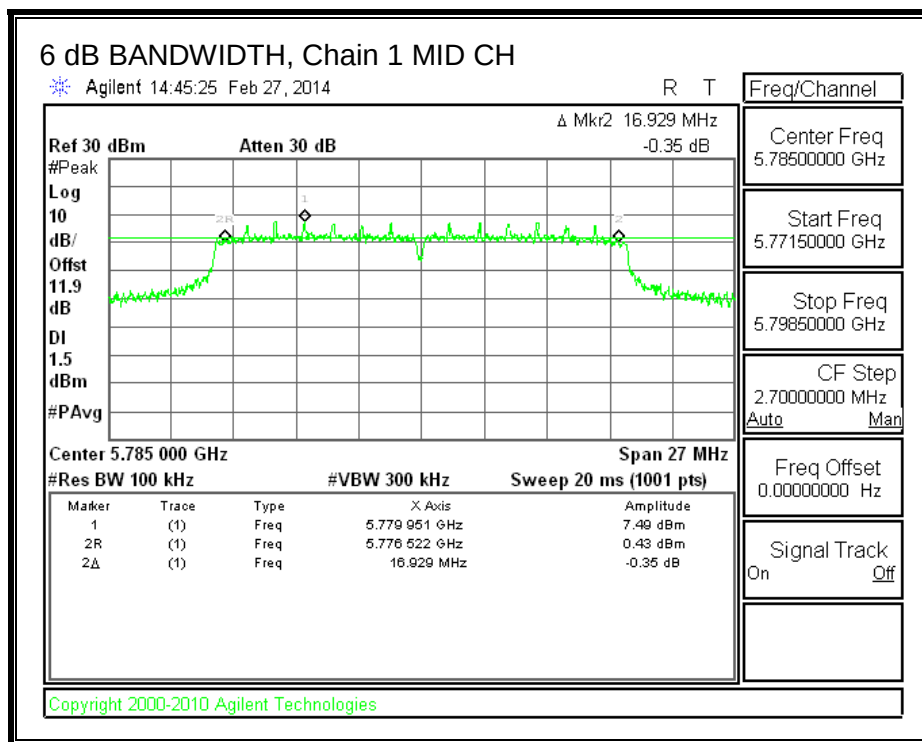
6 dB BANDWIDTH, Chain 0





6 dB BANDWIDTH, Chain 1





8.4.2. 99% BANDWIDTH

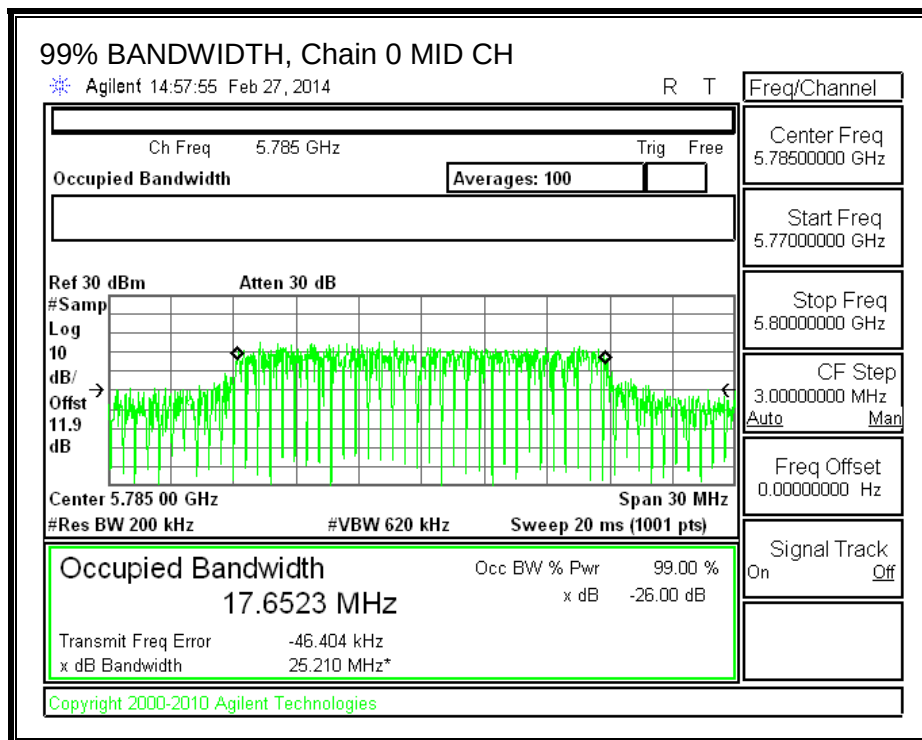
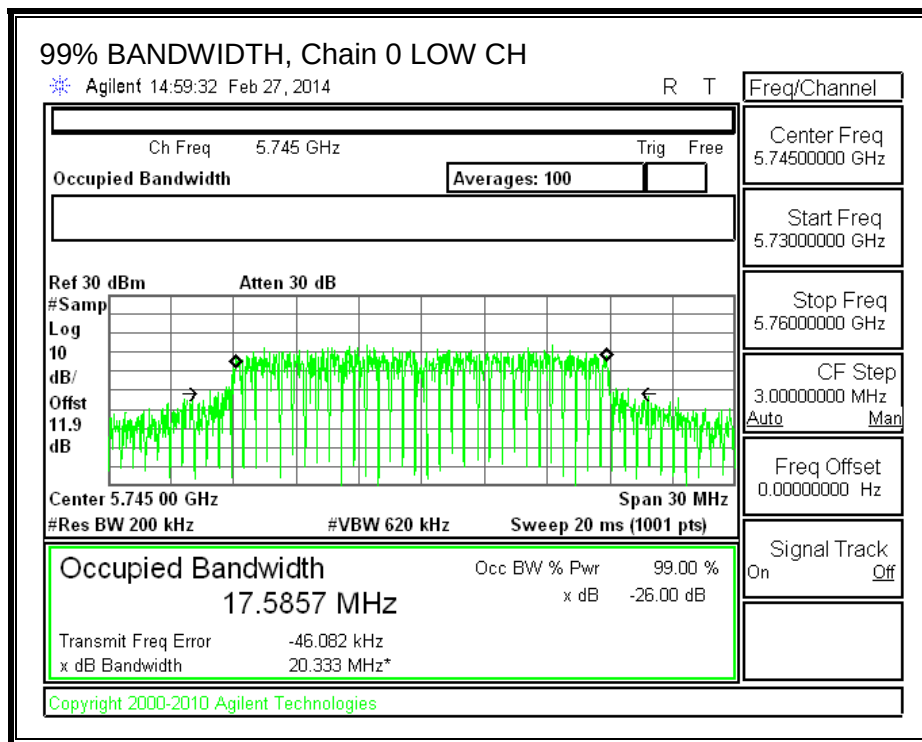
LIMITS

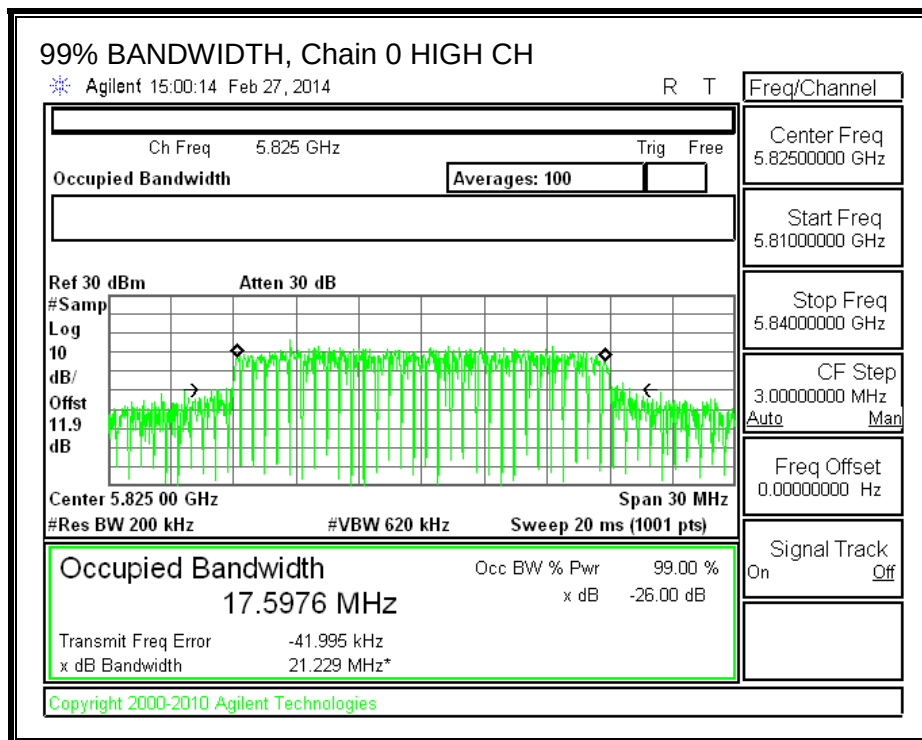
None; for reporting purposes only.

RESULTS

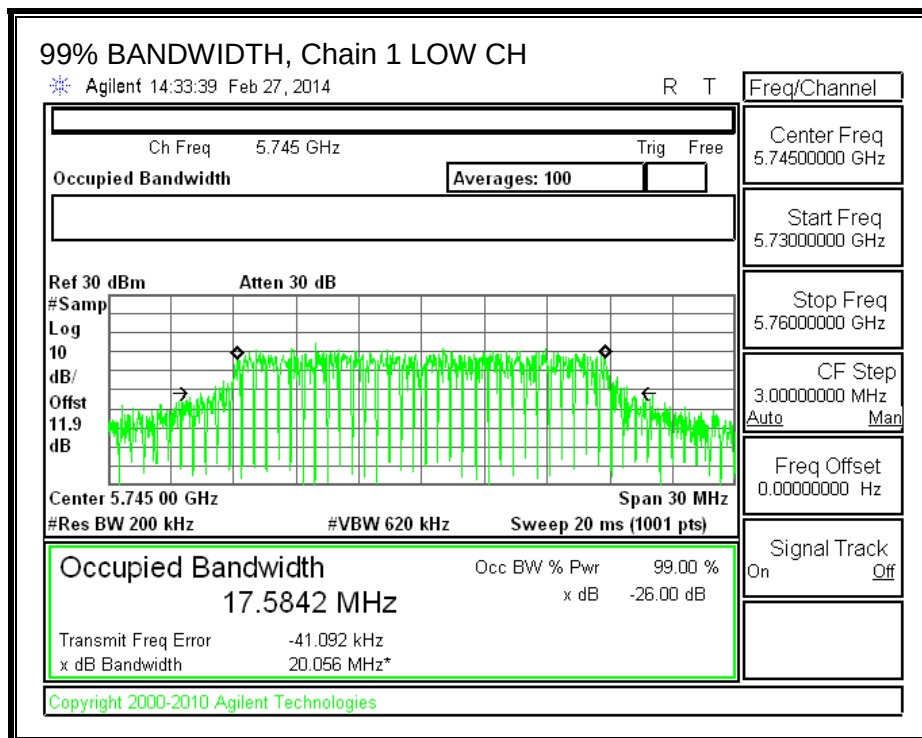
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	17.59	17.58
Mid	5785	17.65	17.68
High	5825	17.60	17.63

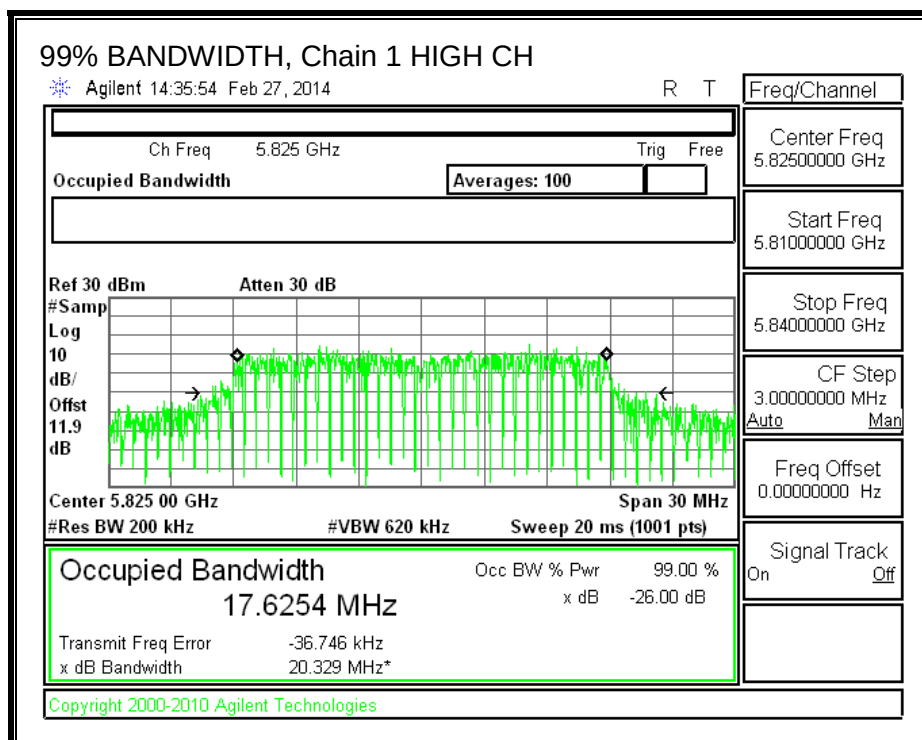
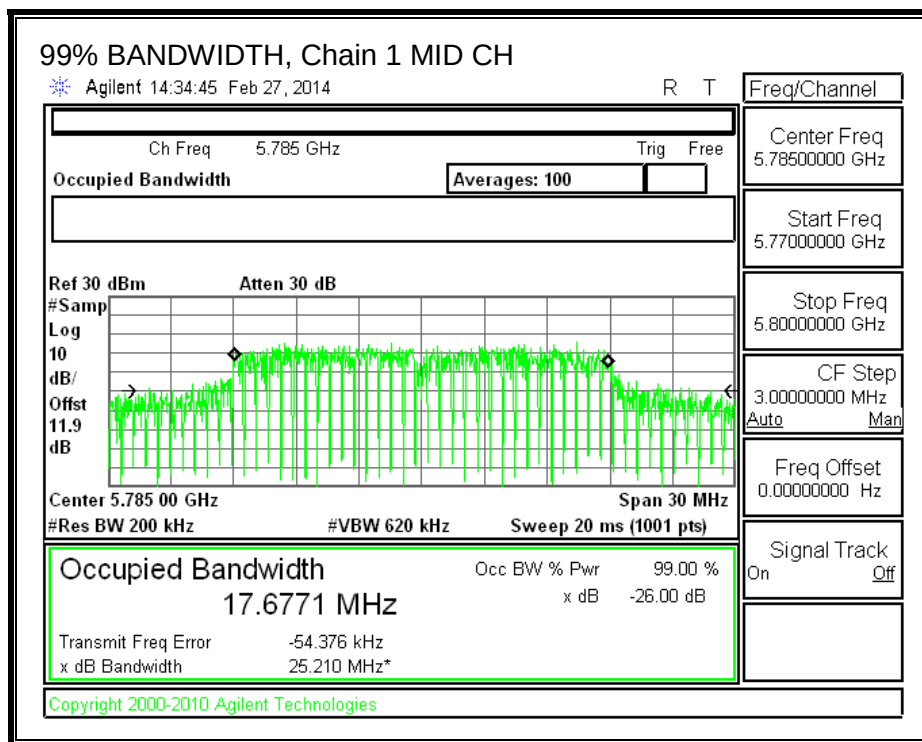
99% BANDWIDTH, Chain 0





99% BANDWIDTH, Chain 1





8.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.9 dB (including 10 dB pad and 1.9 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Power Setting

Channel	Frequency (MHz)	Chain 0, Art Power Setting	Chain 1, Art Power Setting
Low	5745	17.00	17.00
Mid	5785	18.00	18.00
High	5825	16.50	16.50

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5745	16.44	15.83	19.16
Mid	5785	17.02	17.19	20.12
High	5825	17.19	16.74	19.98

8.4.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.85	3.09	2.97

RESULTS

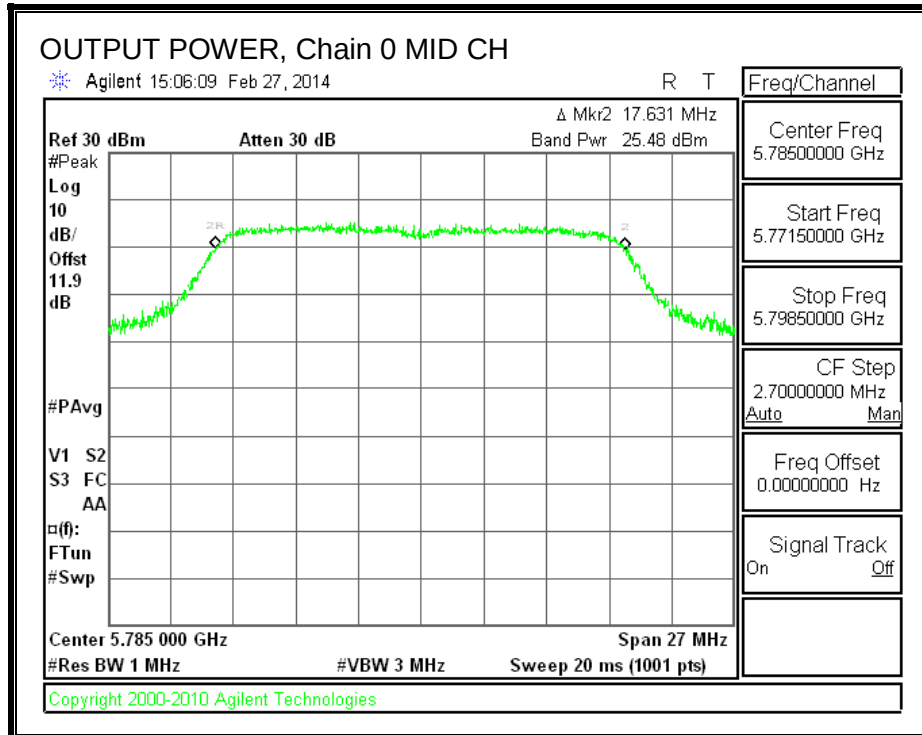
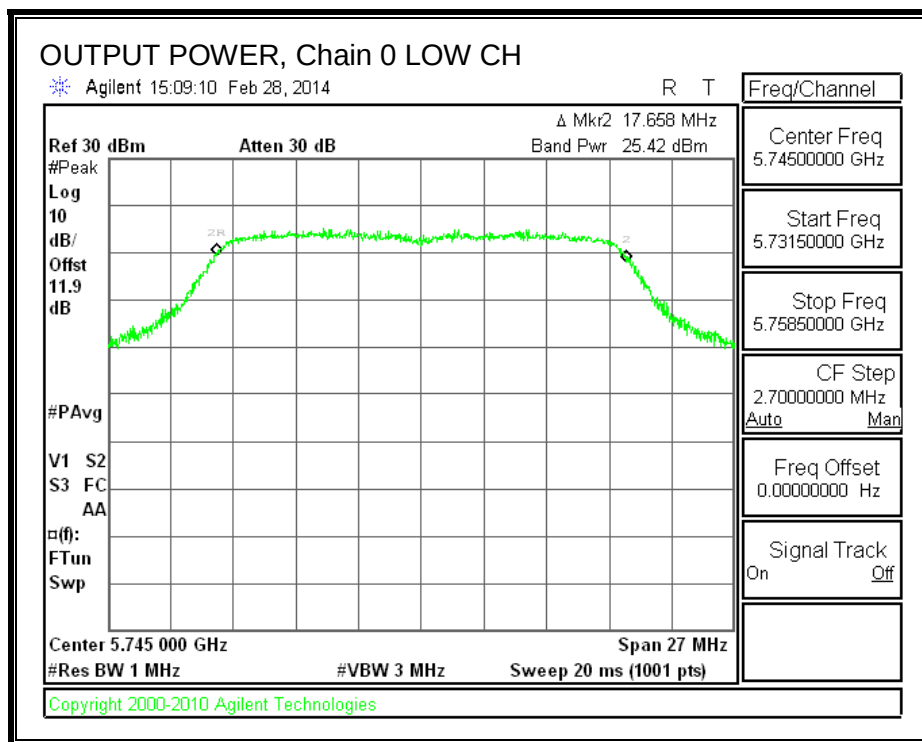
Limits

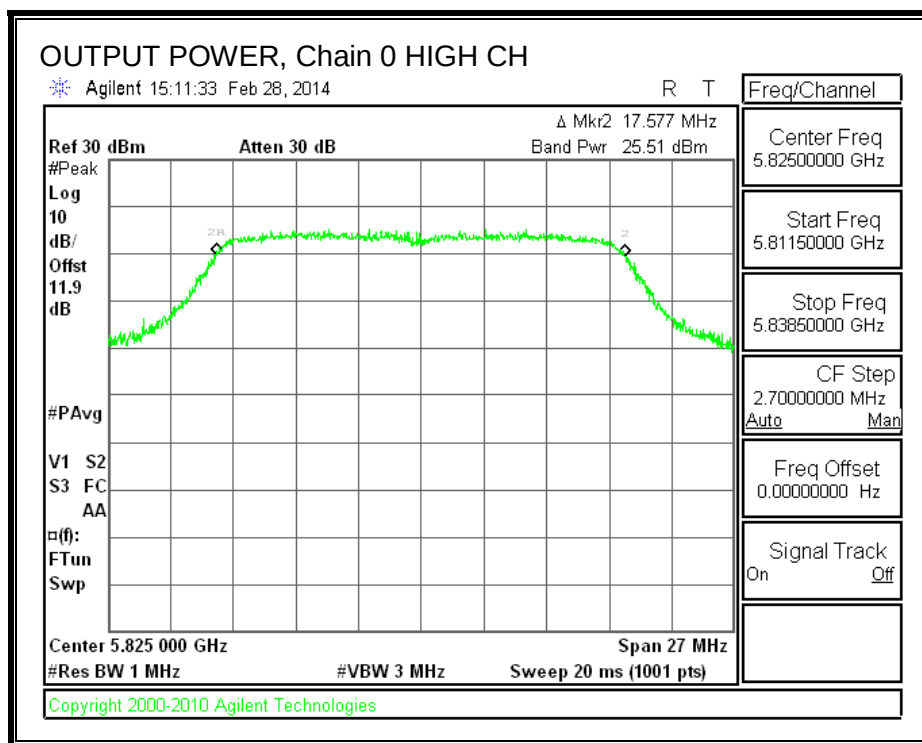
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5745	2.97	30.00	30	36	30.00
Mid	5785	2.97	30.00	30	36	30.00
High	5825	2.97	30.00	30	36	30.00

n mode

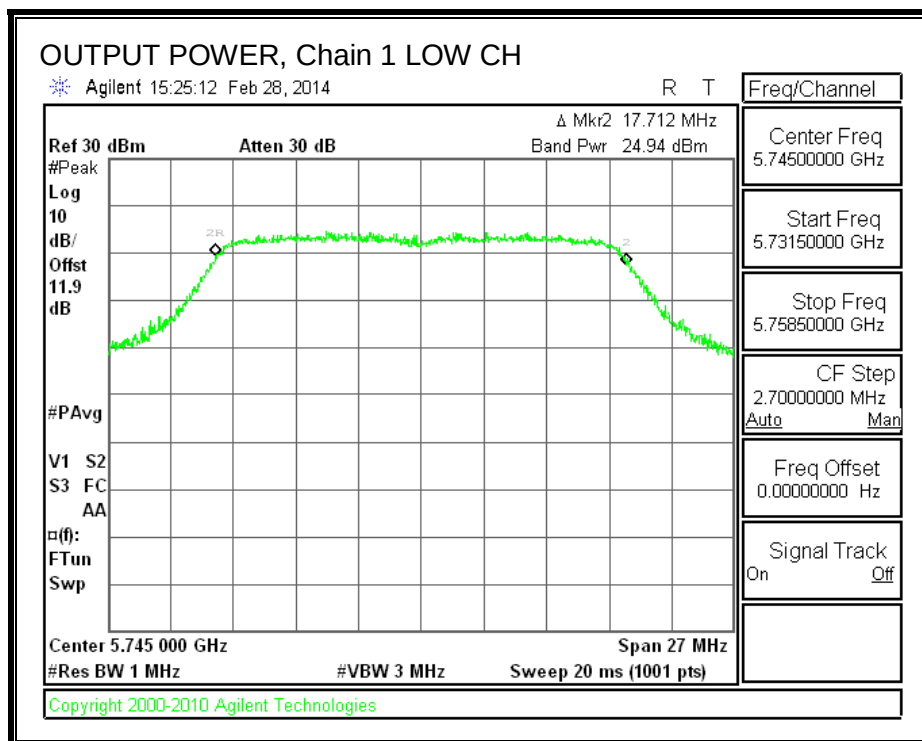
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	5745	25.42	24.94	28.20	30.00	-1.80
Mid	5785	25.48	25.32	28.41	30.00	-1.59
High	5825	25.51	25.58	28.56	30.00	-1.44

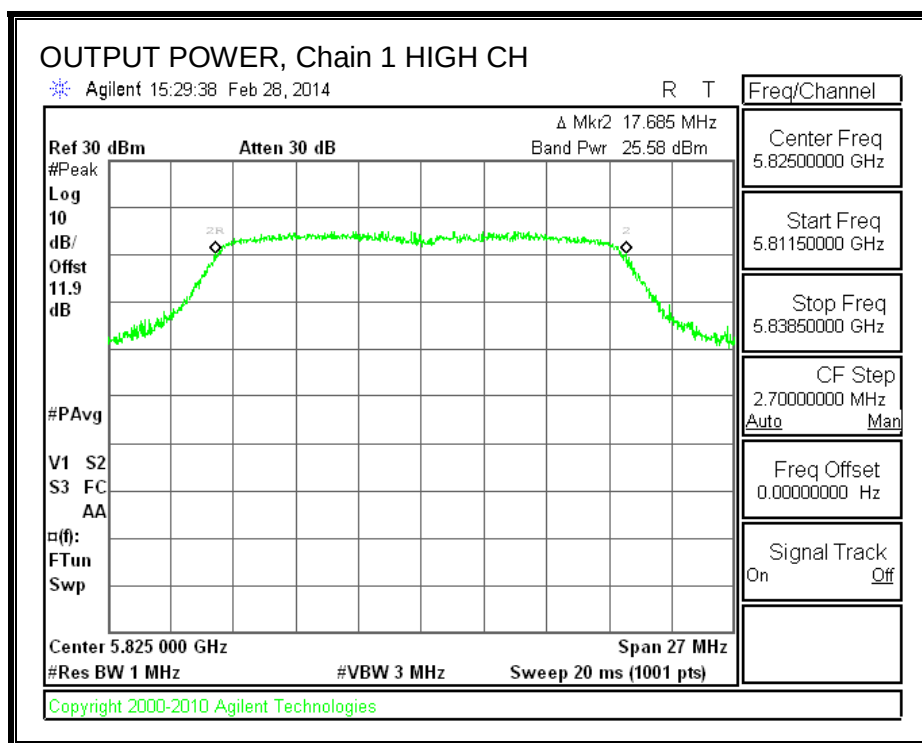
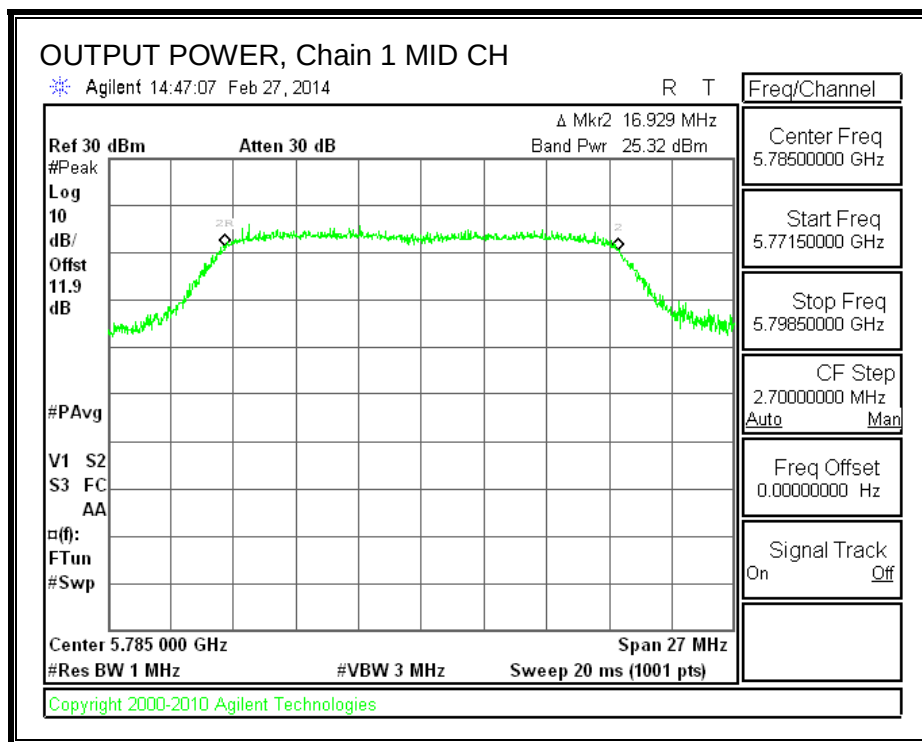
OUTPUT POWER, Chain 0





OUTPUT POWER, Chain 1





8.4.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

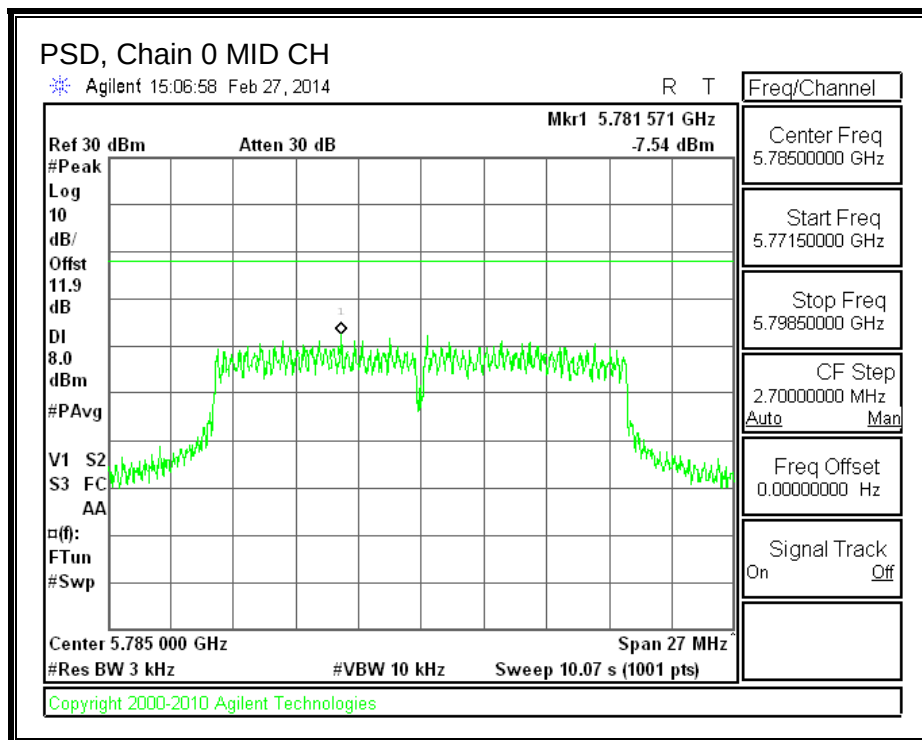
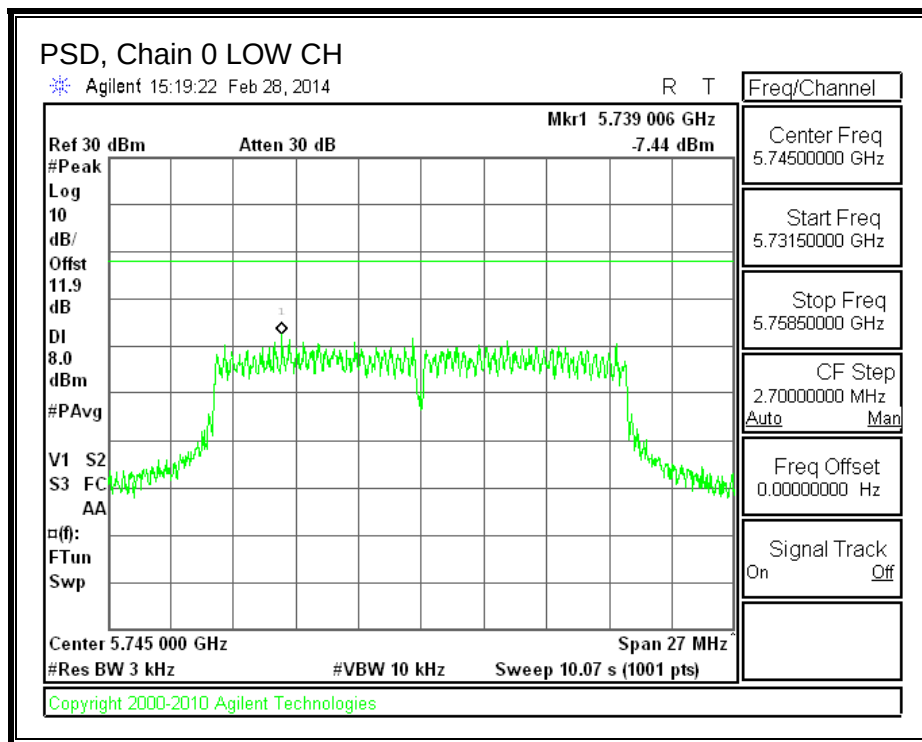
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

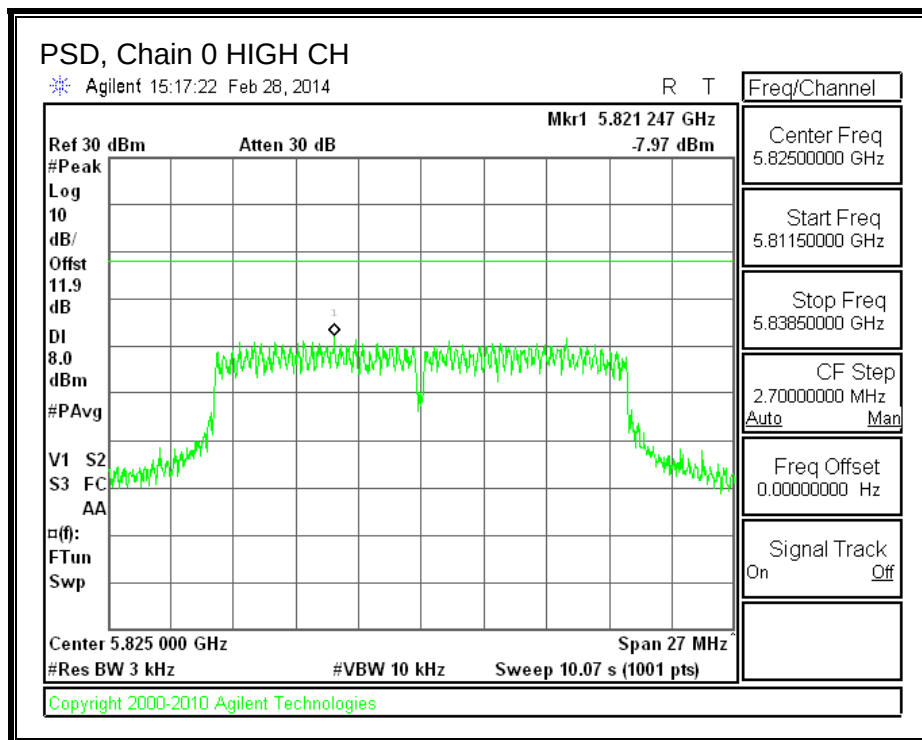
RESULTS

n mode

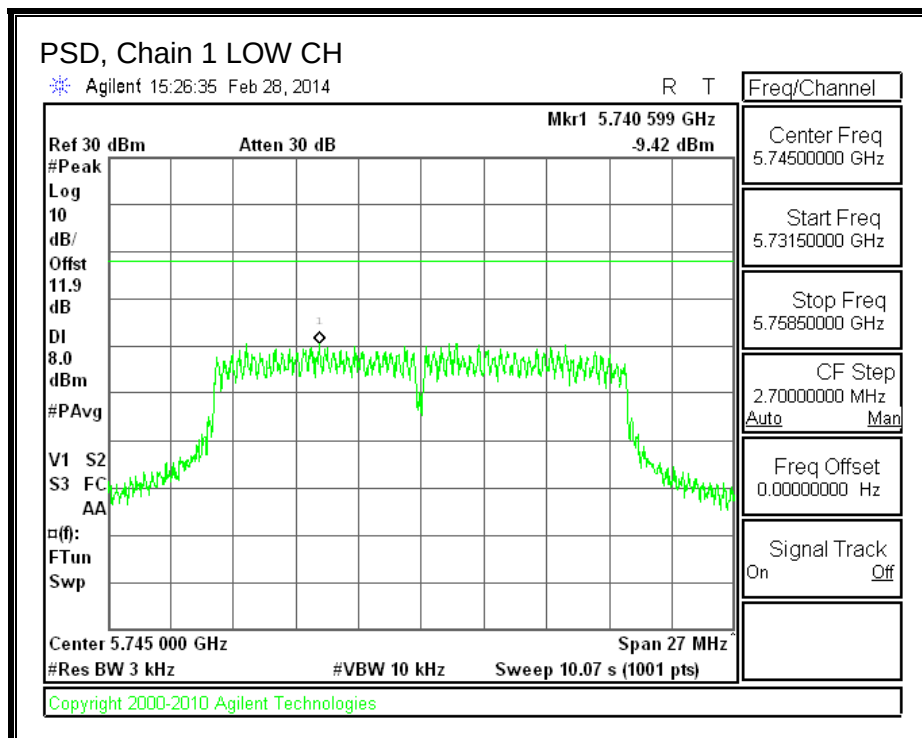
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-7.44	-9.42	-5.31	8.0	-13.3
Mid	5785	-7.54	-7.65	-4.58	8.0	-12.6
High	5825	-7.97	-6.61	-4.23	8.0	-12.2

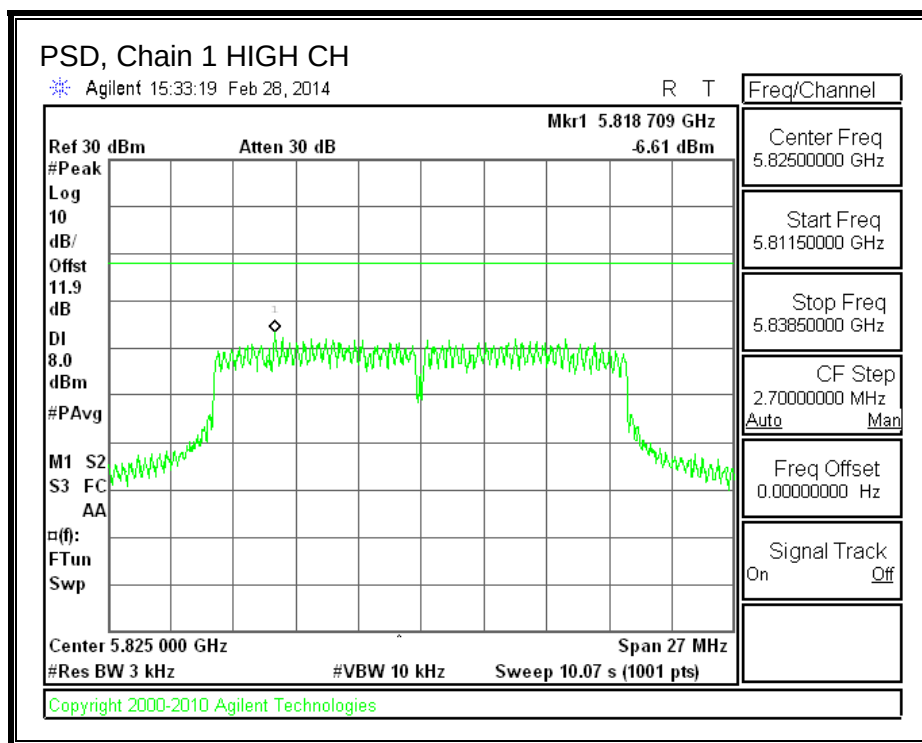
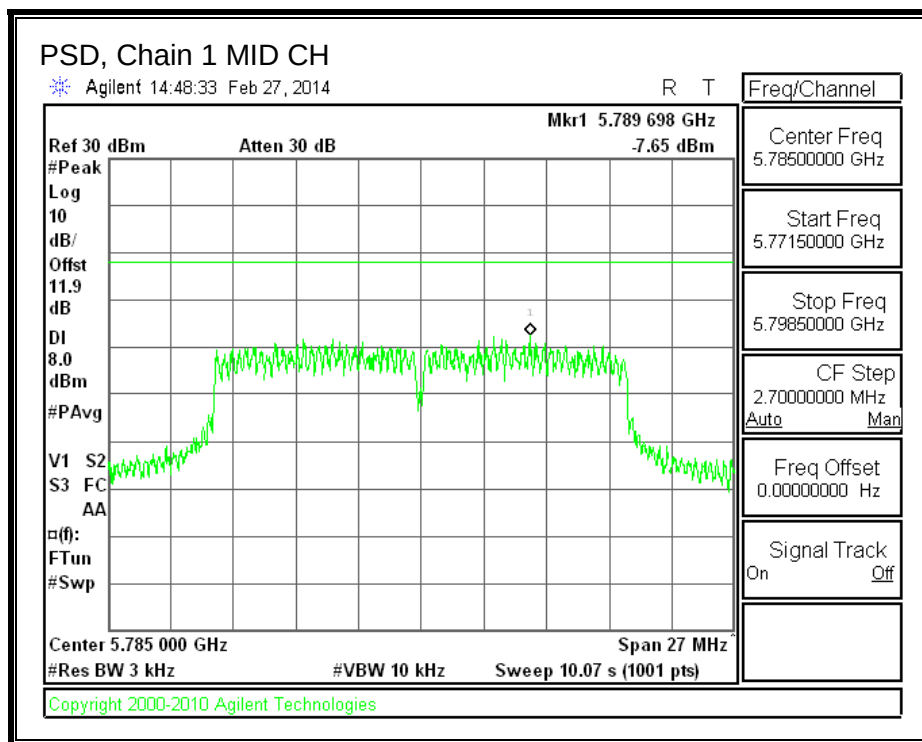
PSD, Chain 0





PSD, Chain 1





9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

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

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.

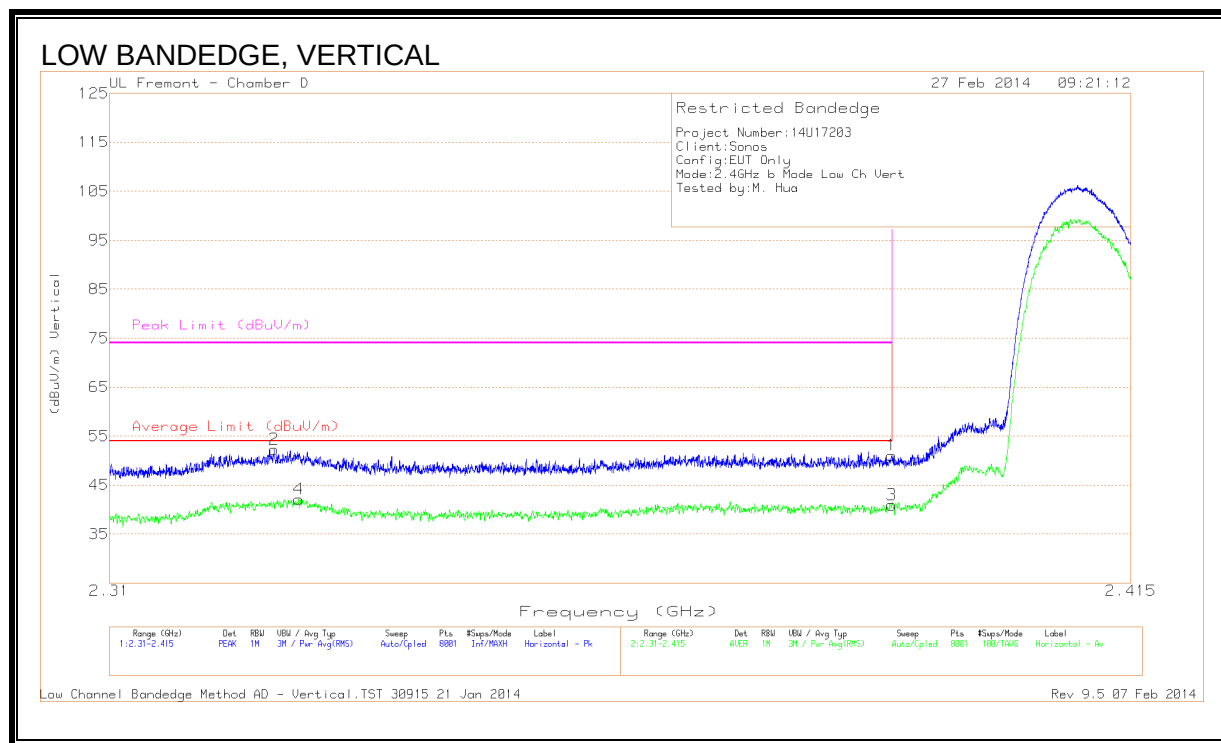
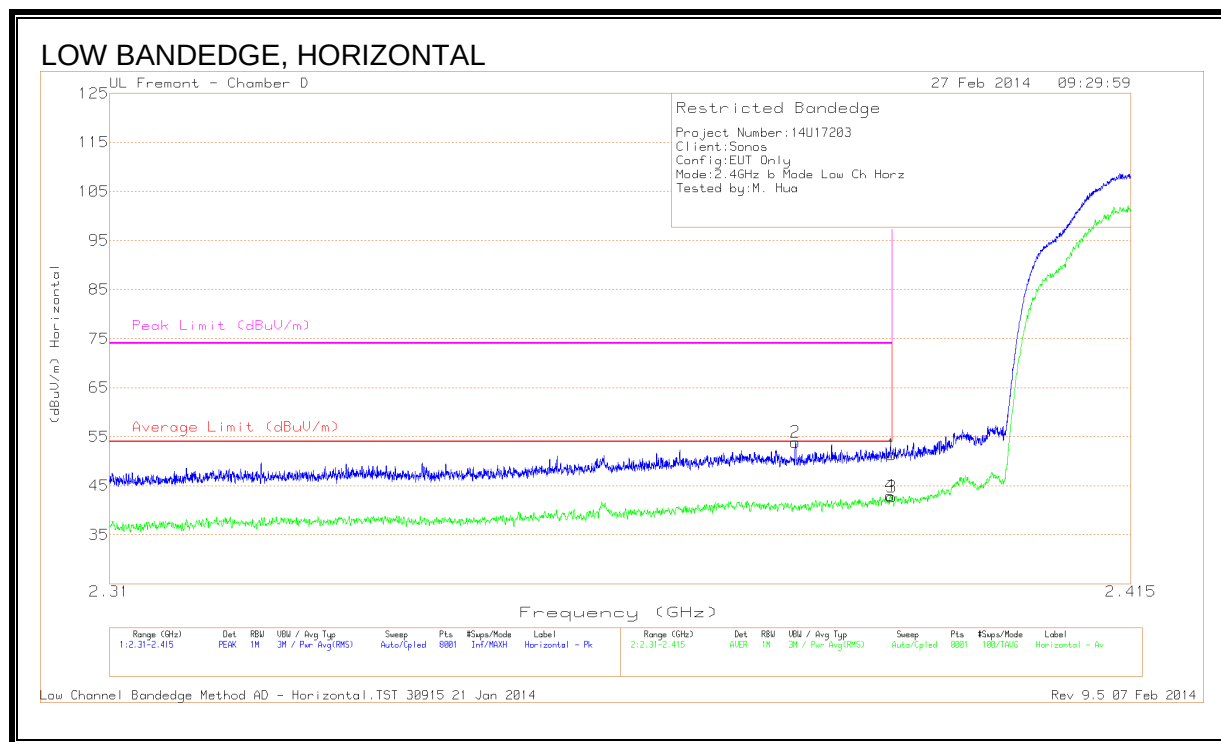
For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

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 MODE IN THE 2.4 GHz BAND



DATA

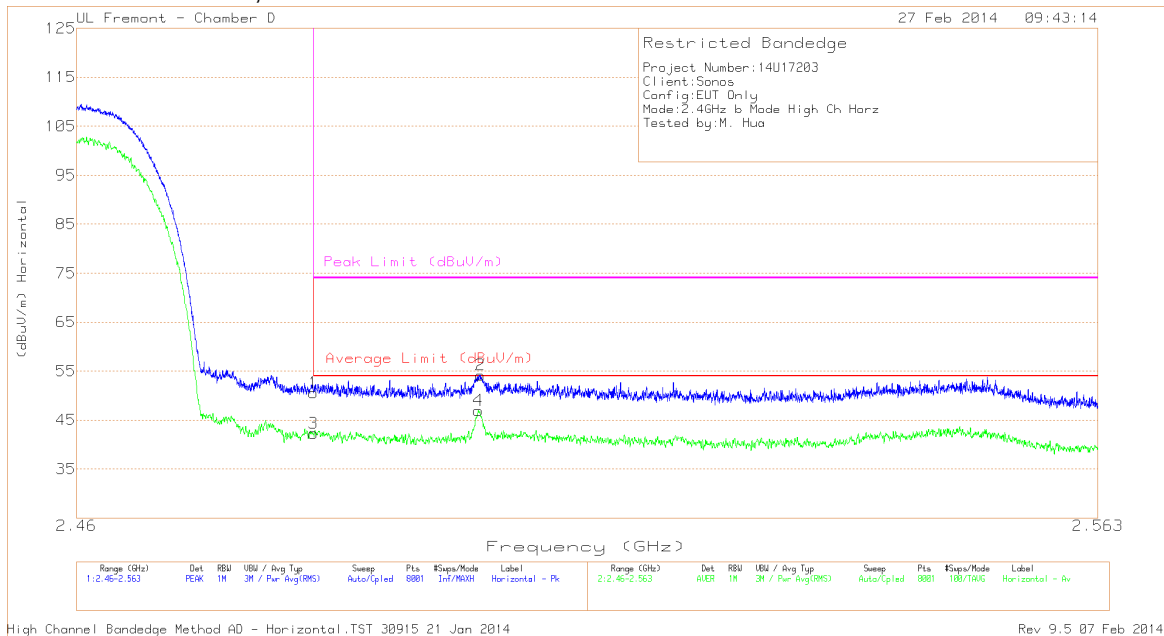
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Duty Cycle Factor	AF T712 (dB/m)	Amp/Cb I/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degrees)	Height (cm)	Polarity
1	2.390	40.45	PK	0	31.5	-20.6	51.35	--	--	74	-22.65	301	386	H
2	2.380	43.16	PK	0	31.4	-20.7	53.86	--	--	74	-20.14	301	386	H
3	2.390	31.83	RMS	0.21	31.5	-20.6	42.94	54	-11.06	--	--	301	386	H
4	2.390	32.07	RMS	0.21	31.5	-20.6	43.18	54	-10.82	--	--	301	386	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Duty Cycle Factor	AF T712 (dB/m)	Amp/Cb I/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degr)	Height (cm)	Polarity
1	2.390	40.18	PK	0	31.5	-20.6	51.08	--	--	74	-22.92	236	329	V
2	2.327	41.89	PK	0	31.1	-20.7	52.29	--	--	74	-21.71	236	329	V
3	2.390	30.03	RMS	0.21	31.5	-20.6	41.14	54	-12.86	--	--	236	329	V
4	2.329	31.75	RMS	0.21	31.1	-20.7	42.36	54	-11.64	--	--	236	329	V

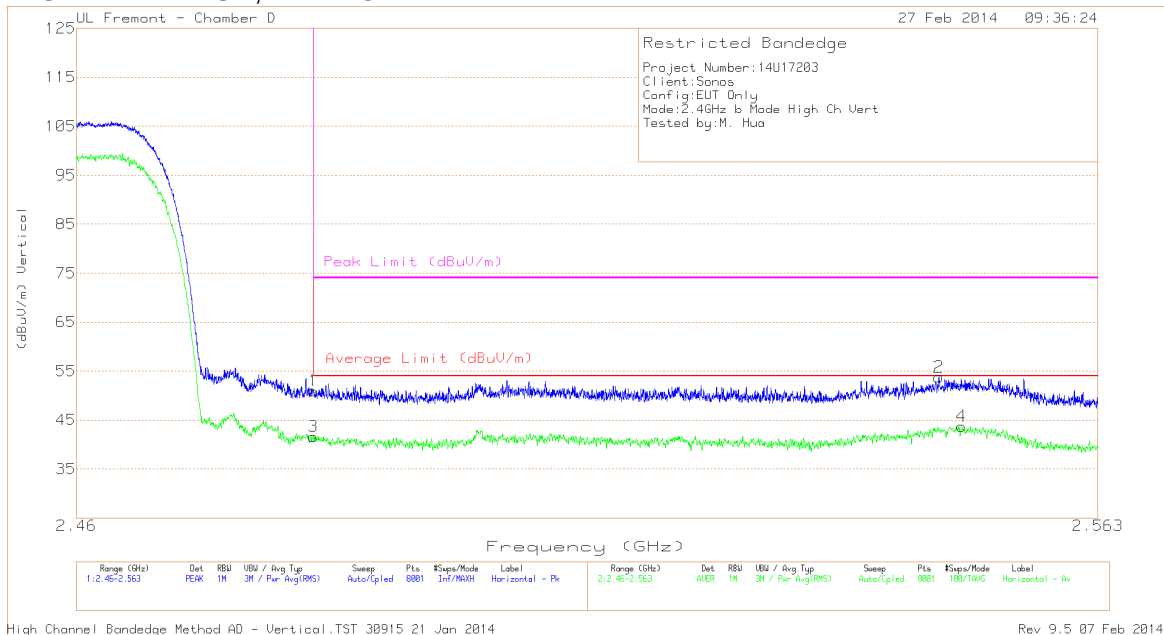
PK - Peak detector

RMS - RMS detection

HIGH BANDEDGE, HORIZONTAL



HIGH BANDEDGE, VERTICAL



DATA

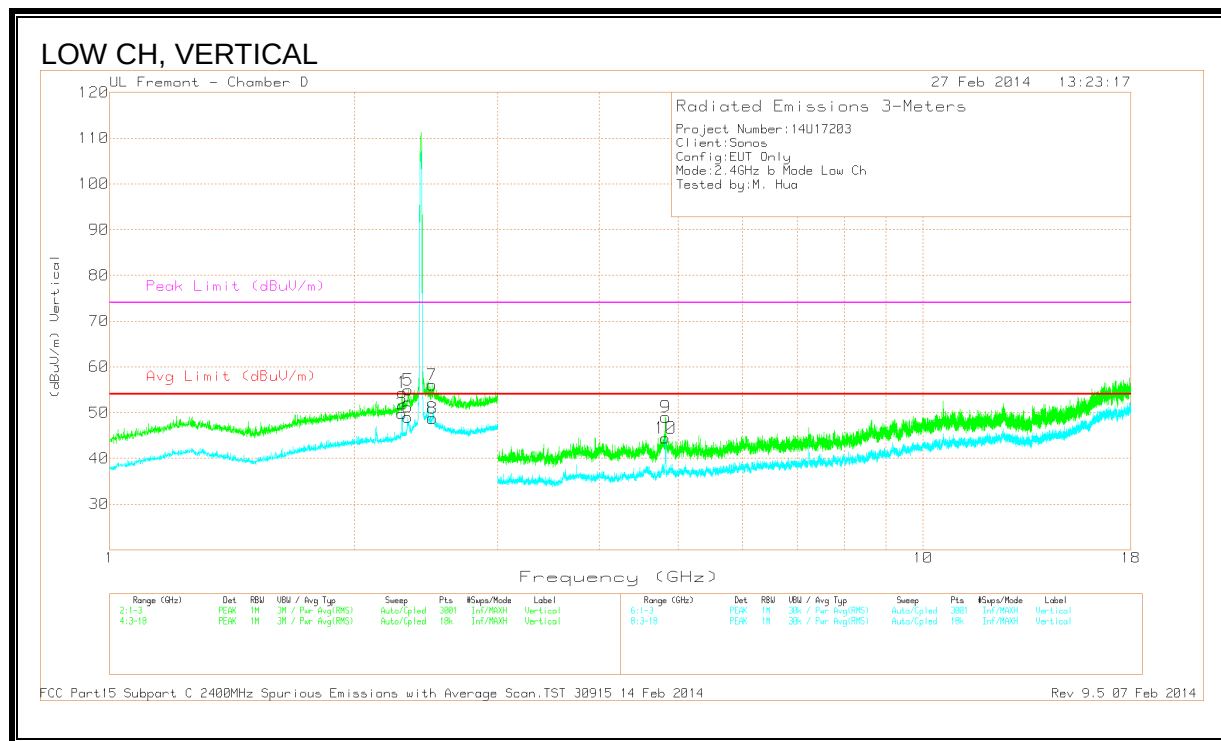
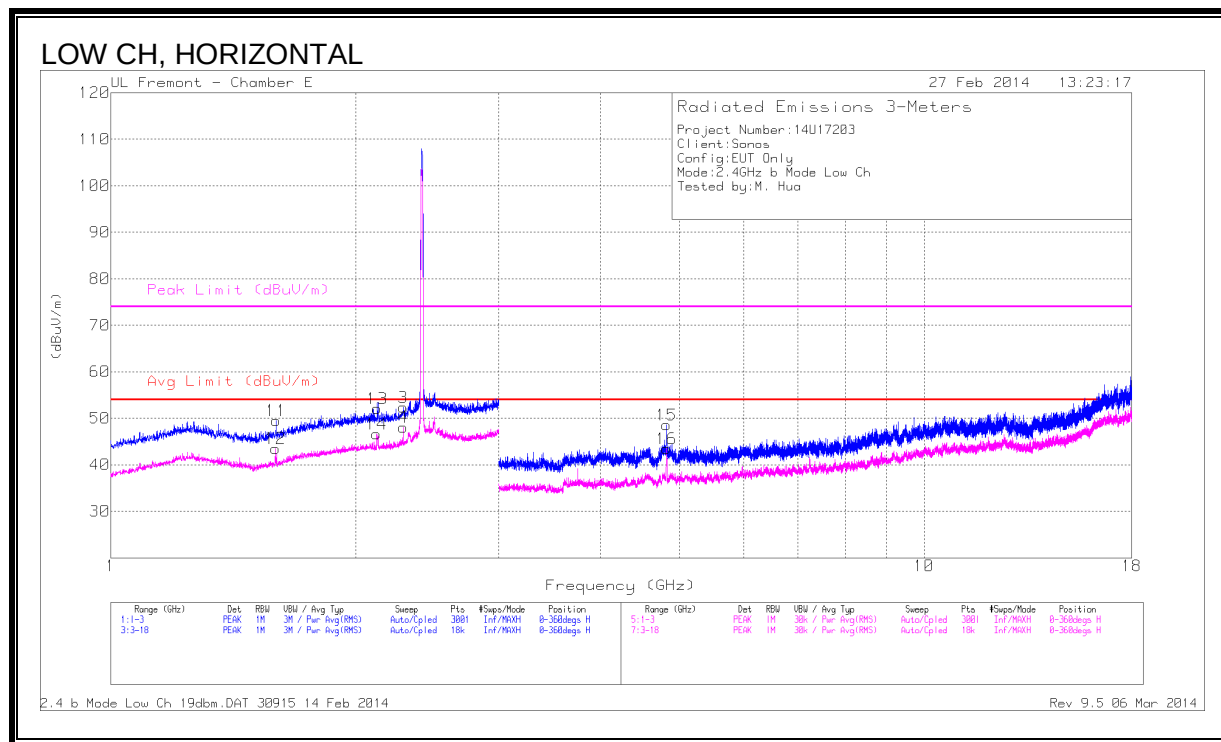
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Duty Cycle Factor	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	39.05	PK	0	32.1	-20.6	50.55	--	--	74	-23.45	159	199	H
2	2.500	42.77	PK	0	32.2	-20.8	54.17	--	--	74	-19.83	159	199	H
3	2.484	30.78	RMS	0.21	32.1	-20.6	42.49	54	-11.51	--	--	159	199	H
4	2.500	35.54	RMS	0.21	32.2	-20.8	47.15	54	-6.85	--	--	159	199	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Duty Cycle Factor	AF T712 (dB/m)	Amp/Cbl/Filtr/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	39.45	PK	0	32.1	-20.6	50.95	--	--	74	-23.05	128	235	V
2	2.547	42.09	PK	0	32.1	-20.4	53.79	--	--	74	-20.21	128	235	V
3	2.484	30.13	RMS	0.21	32.1	-20.6	41.84	54	-12.16	--	--	128	235	V
4	2.549	31.91	RMS	0.21	32.1	-20.3	43.92	54	-10.08	--	--	128	235	V

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fitr/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	* 2.288	45.34	PK2	30.8	-20.8	55.34	--	--	74	-18.66	241	238	V
2	* 2.288	37.44	MAv1	30.8	-20.8	47.44	54	-6.56	--	--	241	238	V
3	* 2.288	44.49	PK2	30.8	-20.8	54.49	--	--	74	-19.51	160	120	H
4	* 2.288	36.74	MAv1	30.8	-20.8	46.74	54	-7.26	--	--	160	120	H
5	* 2.327	45.39	PK2	31.1	-20.7	55.79	--	--	74	-18.21	175	232	V
6	* 2.327	34.02	MAv1	31.1	-20.7	44.42	54	-9.58	--	--	175	232	V
7	* 2.494	43.92	PK2	32.2	-20.8	55.32	--	--	74	-18.68	226	344	V
8	* 2.494	33.97	MAv1	32.2	-20.8	45.37	54	-8.63	--	--	226	344	V
9	* 4.825	42.22	PK	33.5	-26.7	49.02	--	--	74	-24.98	0-360	201	V
10	* 4.825	37.62	Avg	33.5	-26.7	44.42	54	-9.58	--	--	0-360	100	V
11	* 1.597	43.32	PK	27.9	-21.7	49.52	--	--	74	-24.48	0-360	201	H
12	* 1.594	37.42	Avg	27.8	-21.7	43.52	54	-10.48	--	--	0-360	201	H
13	2.127	42.18	PK	30.6	-20.7	52.08	--	--	--	--	0-360	201	H
14	2.123	36.73	Avg	30.7	-20.8	46.63	--	--	--	--	0-360	201	H
15	* 4.824	41.75	PK	33.5	-26.7	48.55	--	--	74	-25.45	0-360	201	H
16	* 4.823	36.69	Avg	33.5	-26.7	43.49	54	-10.51	--	--	0-360	201	H

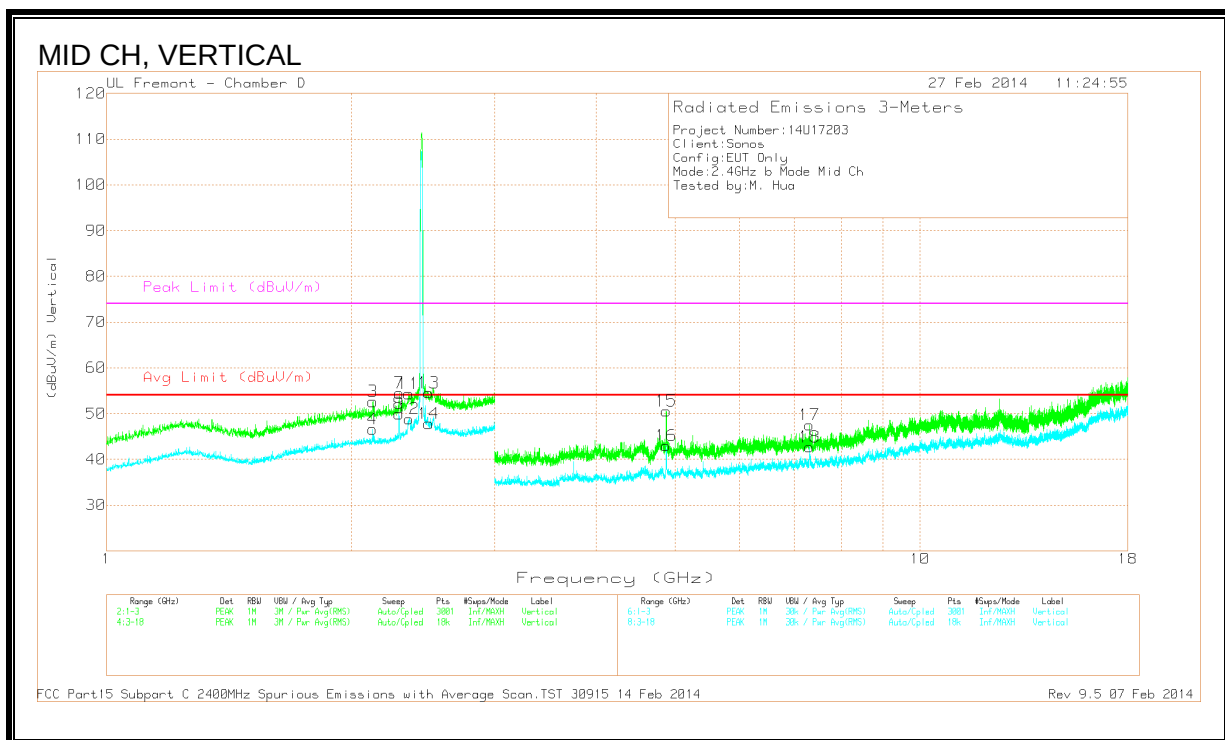
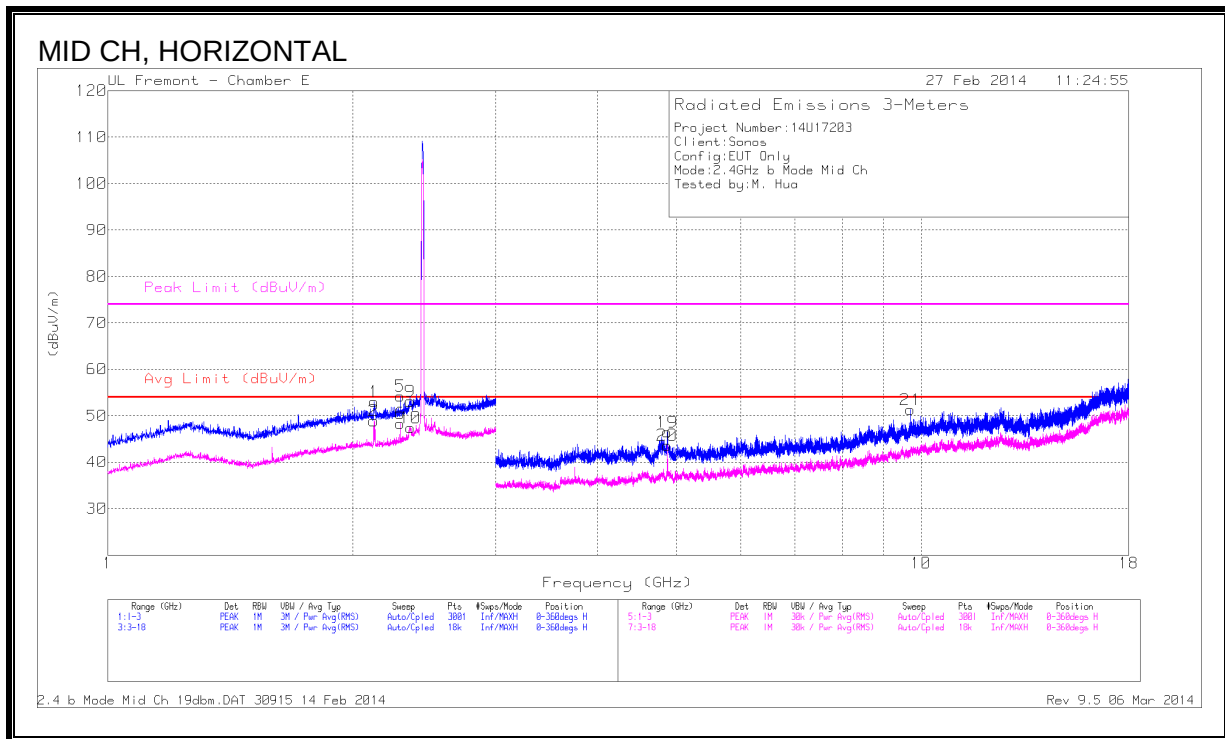
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fitr/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	2.125	43.15	PK	30.6	-20.7	53.05	--	--	--	--	0-360	201	H
2	2.125	39.02	Avg	30.7	-20.8	48.92	--	--	--	--	0-360	201	H
3	2.125	42.73	PK	30.6	-20.7	52.63	--	--	--	--	0-360	201	V
4	2.125	36.72	Avg	30.7	-20.8	46.62	--	--	--	--	0-360	201	V
5	* 2.288	45.06	PK2	30.8	-20.8	55.06	--	--	74	-18.94	153	232	H
6	* 2.288	38.13	MAv1	30.8	-20.8	48.13	54	-5.87	--	--	153	232	H
7	* 2.288	45.01	PK2	30.8	-20.8	55.01	--	--	74	-18.99	65	199	V
8	* 2.288	37.80	MAv1	30.8	-20.8	47.8	54	-6.20	--	--	65	199	V
9	* 2.355	42.62	PK	31.3	-20.8	53.12	--	--	74	-20.88	0-360	201	H
10	* 2.355	36.95	Avg	31.3	-20.8	47.45	54	-6.55	--	--	0-360	100	H
11	* 2.351	44.78	PK2	31.2	-20.8	55.18	--	--	74	-18.82	189	116	V
12	* 2.351	34.36	MAv1	31.3	-20.8	44.86	54	-9.14	--	--	189	116	V
13	* 2.489	43.14	PK	32.1	-20.7	54.54	--	--	74	-19.46	0-360	100	V
14	* 2.489	36.42	Avg	32.1	-20.7	47.82	54	-6.18	--	--	0-360	201	V
15	* 4.875	43.95	PK	33.5	-26.9	50.55	--	--	74	-23.45	0-360	201	V
16	* 4.875	36.42	Avg	33.5	-26.9	43.02	54	-10.98	--	--	0-360	100	V
17	* 7.312	37.24	PK	35.1	-24.8	47.54	--	--	74	-26.46	0-360	100	V
18	* 7.312	32.39	Avg	35.1	-24.8	42.69	54	-11.31	--	--	0-360	201	V
19	* 4.876	39.87	PK	33.5	-26.9	46.47	--	--	74	-27.53	0-360	201	H
20	* 4.873	37.04	Avg	33.5	-26.9	43.64	54	-10.36	--	--	0-360	201	H
21	9.707	36.33	PK	36.4	-21.4	51.33	--	--	--	--	0-360	201	H

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

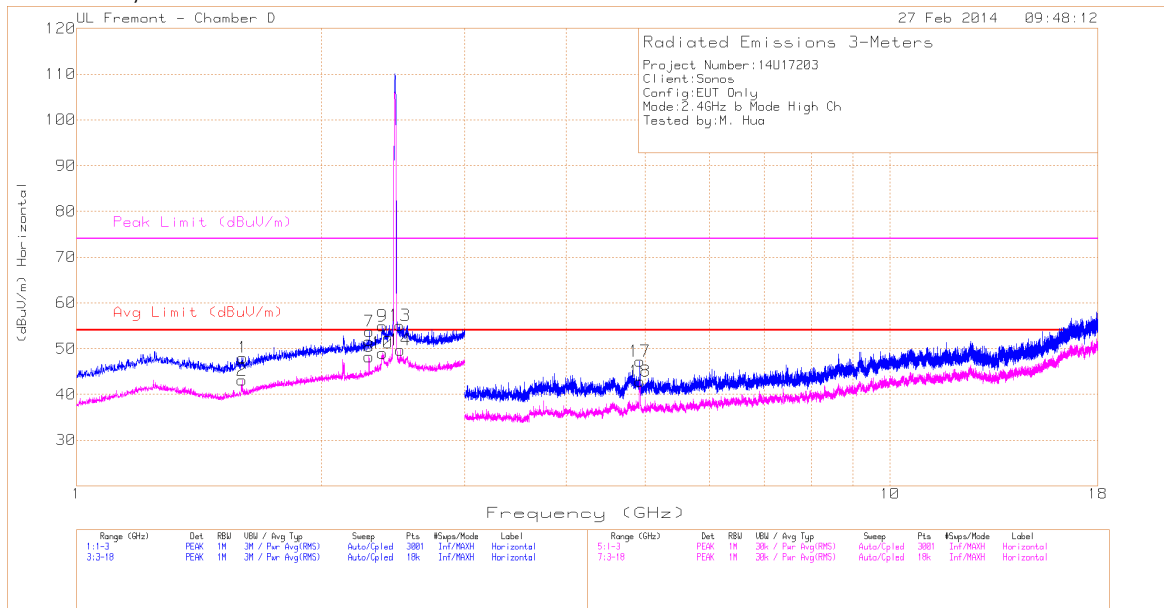
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

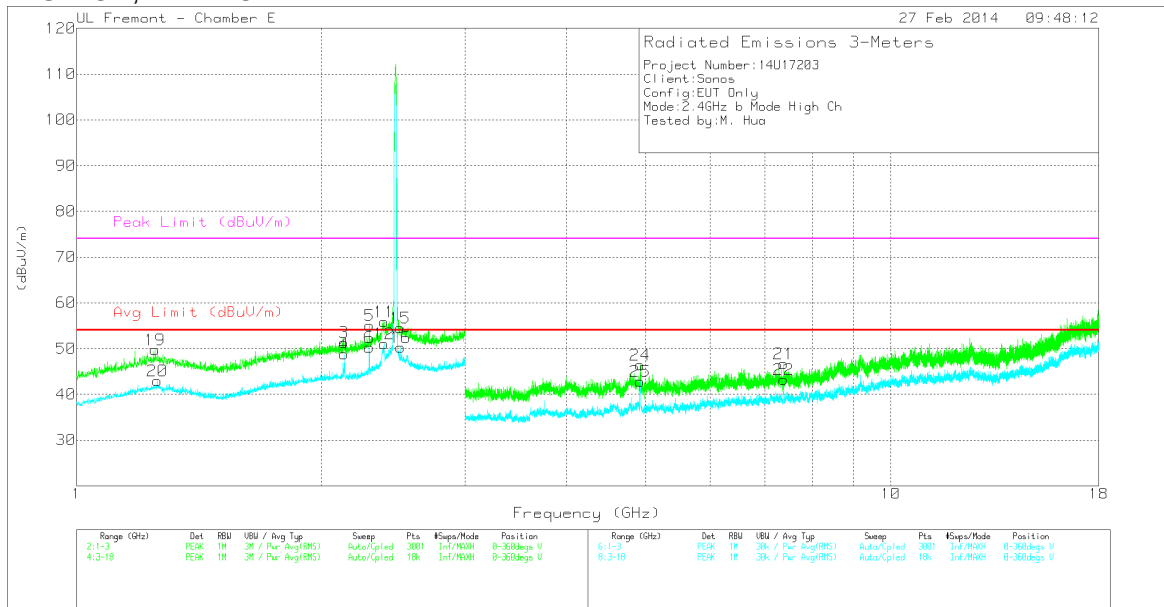
HIGH CH, HORIZONTAL



FCC Part15 Subpart C 2400MHz Spurious Emissions with Average Scan.TST 30915 14 Feb 2014

Rev 9.5 07 Feb 2014

HIGH CH, VERTICAL



2.4 b Mode High Ch 19dbm.DAT 30915 14 Feb 2014

Rev 9.5 06 Mar 2014

DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fitr/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	* 1.597	41.86	PK	27.9	-21.7	48.06	--	--	74	-25.94	0-360	201	H
2	* 1.597	36.92	Avg	27.9	-21.7	43.12	54	-10.88	--	--	0-360	201	H
3	2.131	41.68	PK	30.6	-20.9	51.38	--	--	--	--	0-360	201	V
4	2.131	39.08	Avg	30.6	-20.9	48.78	--	--	--	--	0-360	201	V
5	* 2.288	44.66	PK2	30.8	-20.8	54.66	--	--	74	-19.34	176	134	V
6	* 2.288	36.85	MAv1	30.8	-20.8	46.85	54	-7.15	--	--	176	134	V
7	* 2.288	44.49	PK2	30.8	-20.8	54.49	--	--	74	-19.51	78	346	H
8	* 2.288	36.42	MAv1	30.8	-20.8	46.42	54	-7.58	--	--	78	346	H
9	* 2.375	46.83	PK2	31.4	-20.7	57.53	--	--	74	-16.47	160	265	H
10	* 2.375	36.69	MAv1	31.4	-20.7	47.39	54	-6.61	--	--	160	265	H
11	* 2.385	46.96	PK2	31.5	-20.6	57.86	--	--	74	-16.14	228	210	V
12	* 2.385	36.08	MAv1	31.5	-20.6	46.98	54	-7.02	--	--	228	210	V
13	* 2.500	45.58	PK2	32.2	-20.8	56.98	--	--	74	-17.02	193	103	H
14	*2.500	34.46	MAv1	32.2	-20.8	45.86	54	-8.14	--	--	193	103	H
15	*2.500	45.54	PK2	32.2	-20.7	57.04	--	--	74	-16.96	219	195	V
16	*2.500	35.25	MAv1	32.2	-20.8	46.65	54	-7.35	--	--	219	195	V
17	* 4.925	41.60	PK	33.5	-27.9	47.2	--	--	74	-26.80	0-360	201	H
18	* 4.925	37.26	Avg	33.5	-27.9	42.86	54	-11.14	--	--	0-360	201	H
19	* 1.248	42.25	PK	29.6	-22.1	49.75	--	--	74	-24.25	0-360	100	V
20	* 1.257	35.61	Avg	29.5	-22.1	43.01	54	-10.99	-	-	0-360	100	V
21	* 7.384	36.81	PK	35.2	-25.3	46.71	--	--	74	-27.29	0-360	201	V
22	* 7.384	33.31	Avg	35.2	-25.3	43.21	54	-10.79	--	--	0-360	201	V
23	1.994	41.12	PK	30.7	-21.1	50.72	--	--	--	--	0-360	201	H
24	* 4.925	40.79	PK	33.5	-27.9	46.39	--	--	74	-27.61	0-360	201	V
25	* 4.924	37.14	Avg	33.5	-27.8	42.84	54	-11.16	--	--	0-360	201	V

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

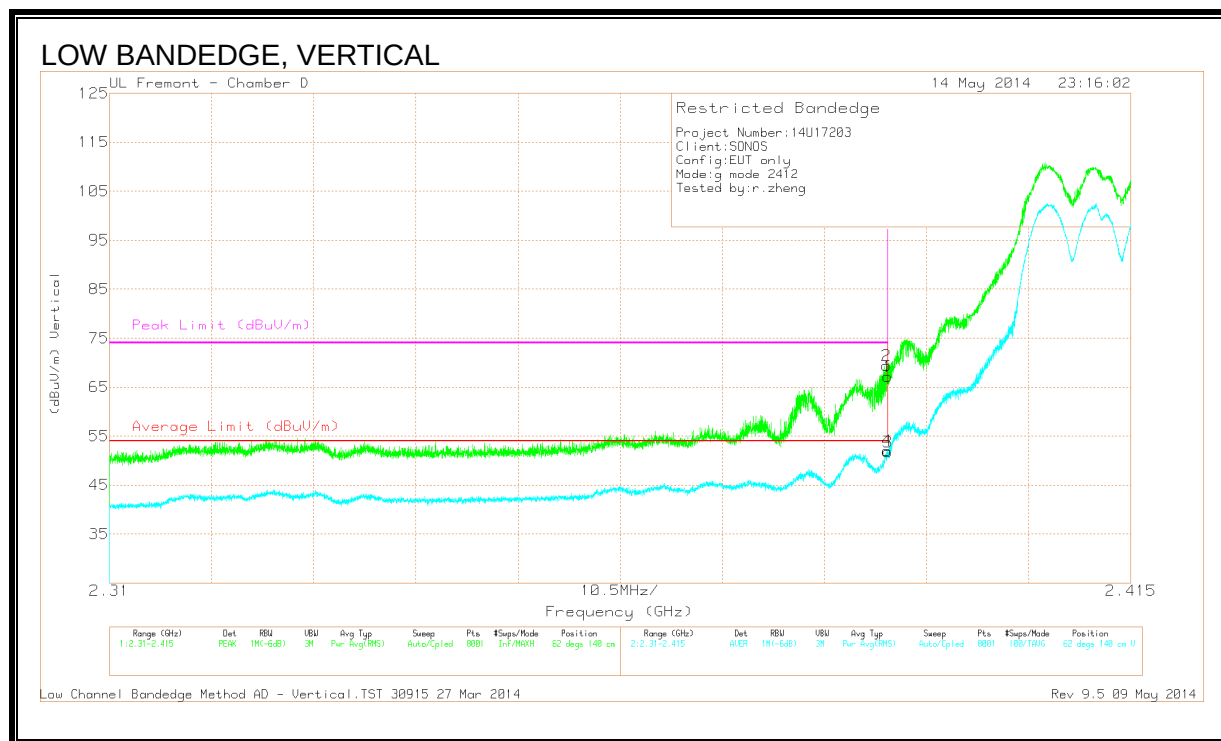
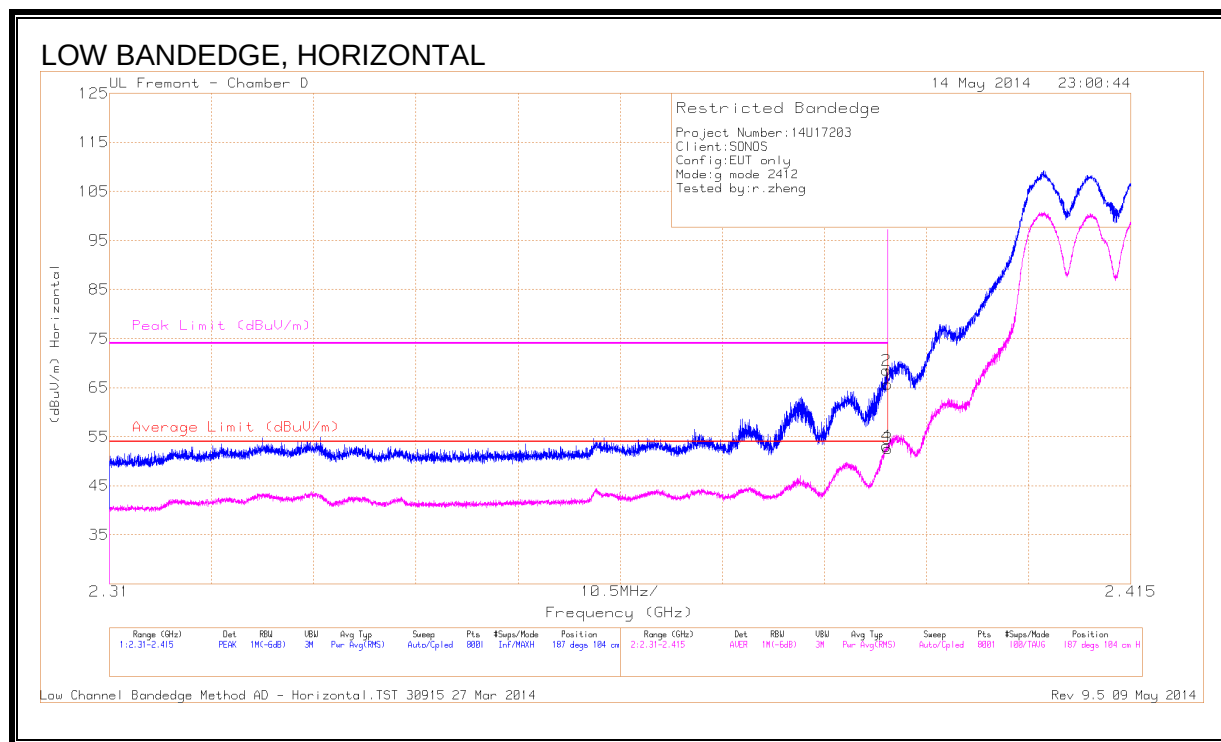
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Fitr/ 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	54.84	PK	31.5	-20.6	0	65.74	-	-	74	-8.26	187	104	H
2	* 2.39	57.68	PK	31.5	-20.6	0	68.58	-	-	74	-5.42	187	104	H
3	* 2.39	41.09	RMS	31.5	-20.6	.6	52.59	54	-1.41	-	-	187	104	H
4	* 2.39	41.59	RMS	31.5	-20.6	.6	53.09	54	-.91	-	-	187	104	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Fitr/ 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	56.23	PK	31.5	-20.6	0	67.13	-	-	74	-6.87	62	140	V
2	* 2.39	58.46	PK	31.5	-20.6	0	69.36	-	-	74	-4.64	62	140	V
3	* 2.39	40.3	RMS	31.5	-20.6	.6	51.8	54	-2.2	-	-	62	140	V
4	* 2.39	40.52	RMS	31.5	-20.6	.6	52.02	54	-1.98	-	-	62	140	V

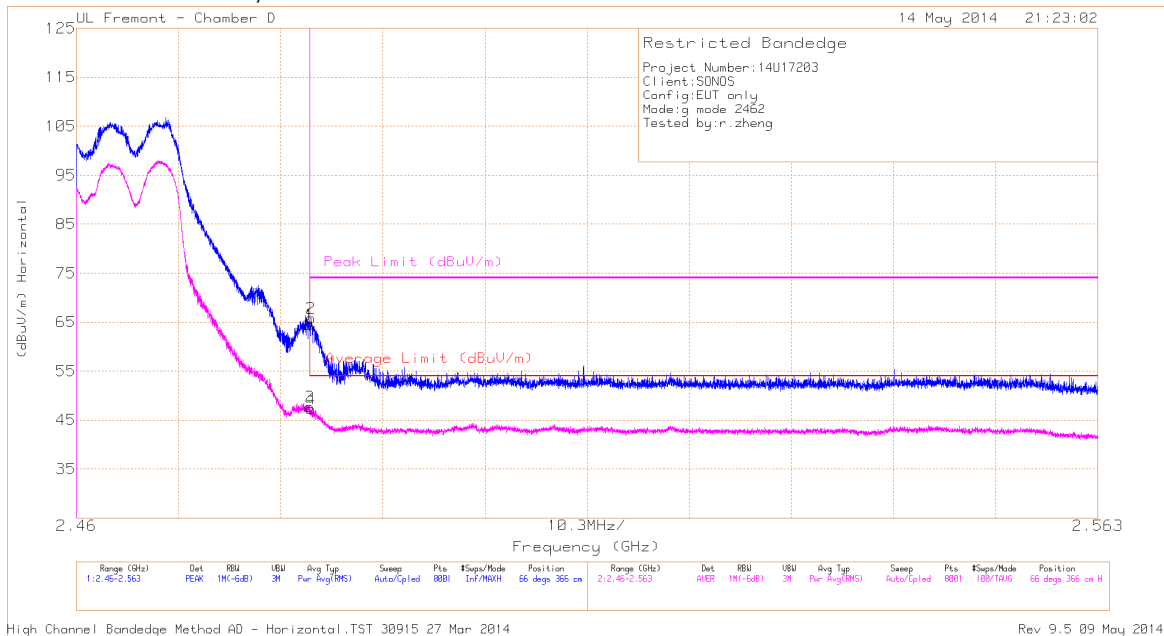
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

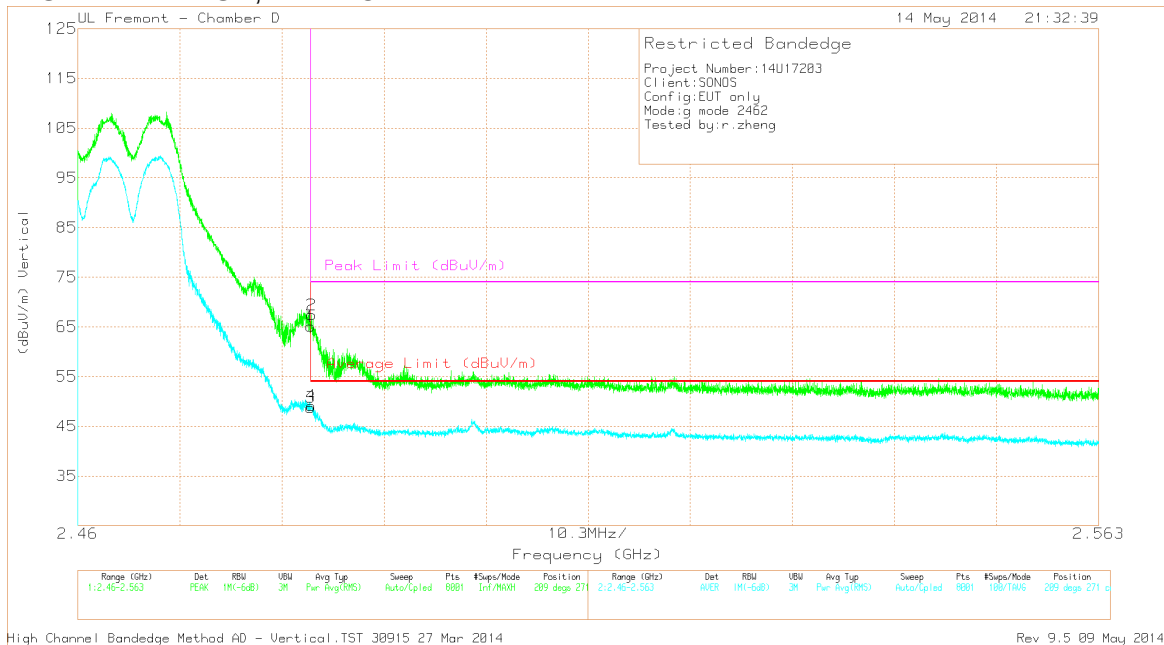
RMS - RMS detection

Rev 9.5 09 May 2014

HIGH BANDEDGE, HORIZONTAL



HIGH BANDEDGE, VERTICAL



DATA

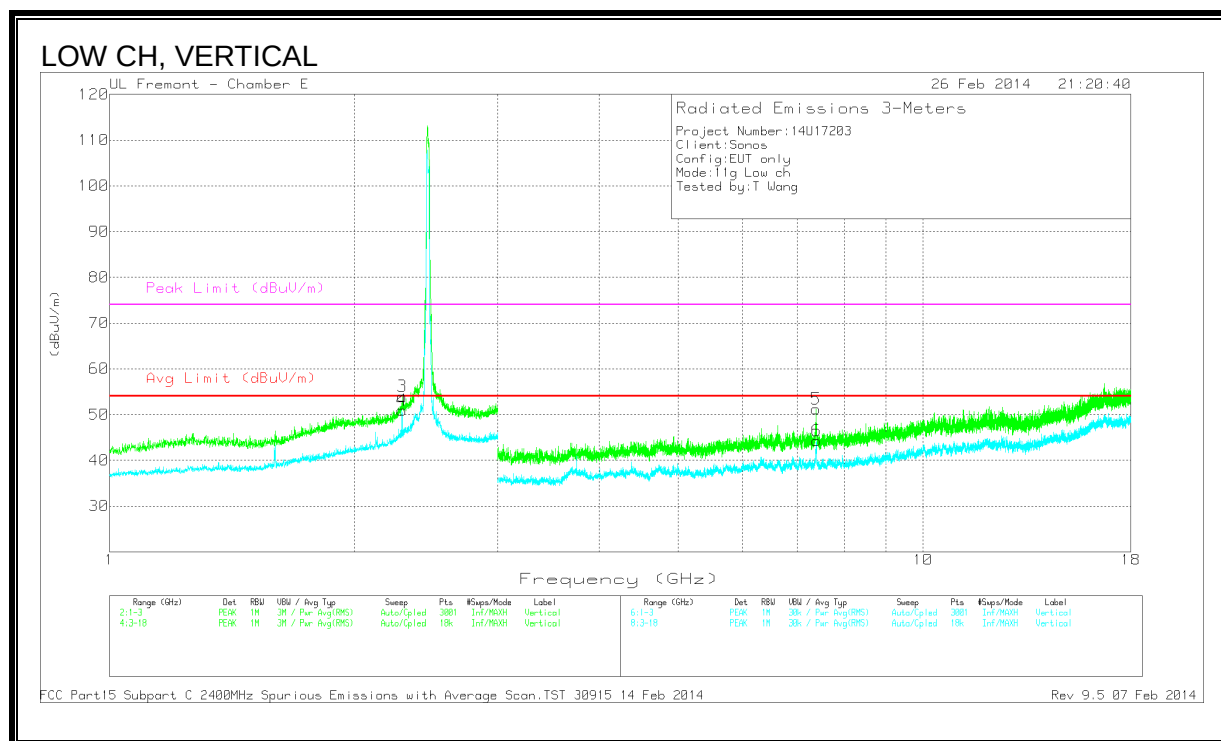
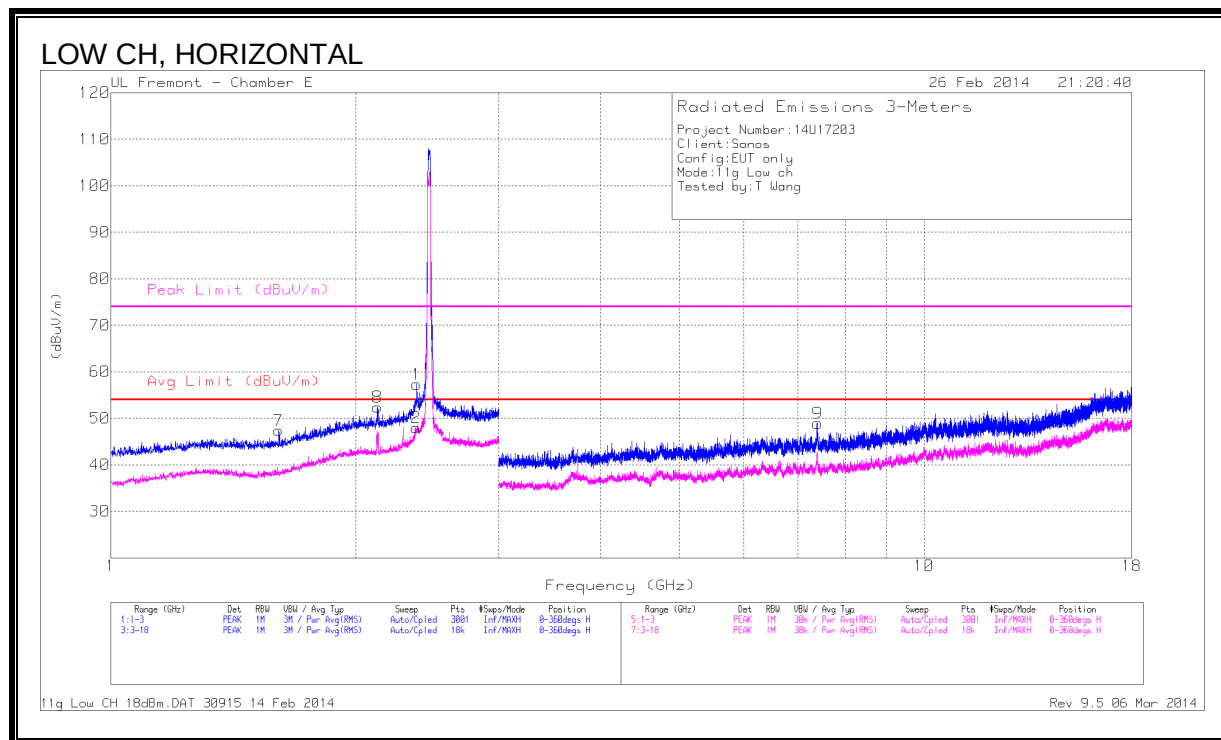
Marker	Frequency(GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	52.91	PK	32.1	-20.6	0	64.41	-	-	74	-9.59	66	366	H
2	* 2.484	54.33	PK	32.1	-20.6	0	65.83	-	-	74	-8.17	66	366	H
3	* 2.484	35.56	RMS	32.1	-20.6	.6	47.66	54	-6.34	-	-	66	366	H
4	* 2.484	35.18	RMS	32.1	-20.6	.6	47.28	54	-6.72	-	-	66	366	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/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	53.62	PK	32.1	-20.6	0	65.12	-	-	74	-8.88	209	271	V
2	* 2.484	55.94	PK	32.1	-20.6	0	67.44	-	-	74	-6.56	209	271	V
3	* 2.484	36.7	RMS	32.1	-20.6	.6	48.8	54	-5.2	-	-	209	271	V
4	* 2.484	37.06	RMS	32.1	-20.6	.6	49.16	54	-4.84	-	-	209	271	V

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Filt/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	* 2.378	49.70	PK	32.6	-25.0	57.30	--	--	74	-16.7	0-360	101	H
2	* 2.378	40.29	Avg	32.6	-24.9	47.99	54	-6.01	--	--	0-360	199	H
3	* 2.288	49.89	PK2	32.5	-25.1	57.29	--	--	74	-16.71	278	196	V
4	* 2.288	42.68	MAv1	32.5	-25.1	50.08	54	-3.92	--	--	278	196	V
5	* 7.386	42.59	PK	35.8	-27.2	51.19	--	--	74	-22.81	0-360	200	V
6	* 7.386	35.82	Avg	35.8	-27.3	44.32	54	-9.68	--	--	0-360	101	V
7	* 1.609	44.87	PK	29.1	-26.6	47.37	54	-6.63	74	-26.63	0-360	101	H
8	2.128	45.4	PK	32.1	-25.1	52.4	--	--	--	--	0-360	200	H
9	* 7.397	43.52	PK2	35.8	-27.4	51.92	--	--	74	-22.08	267	178	H
10	* 7.397	35.52	MAv1	35.8	-27.4	43.92	54	-10.08	--	--	267	178	H

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

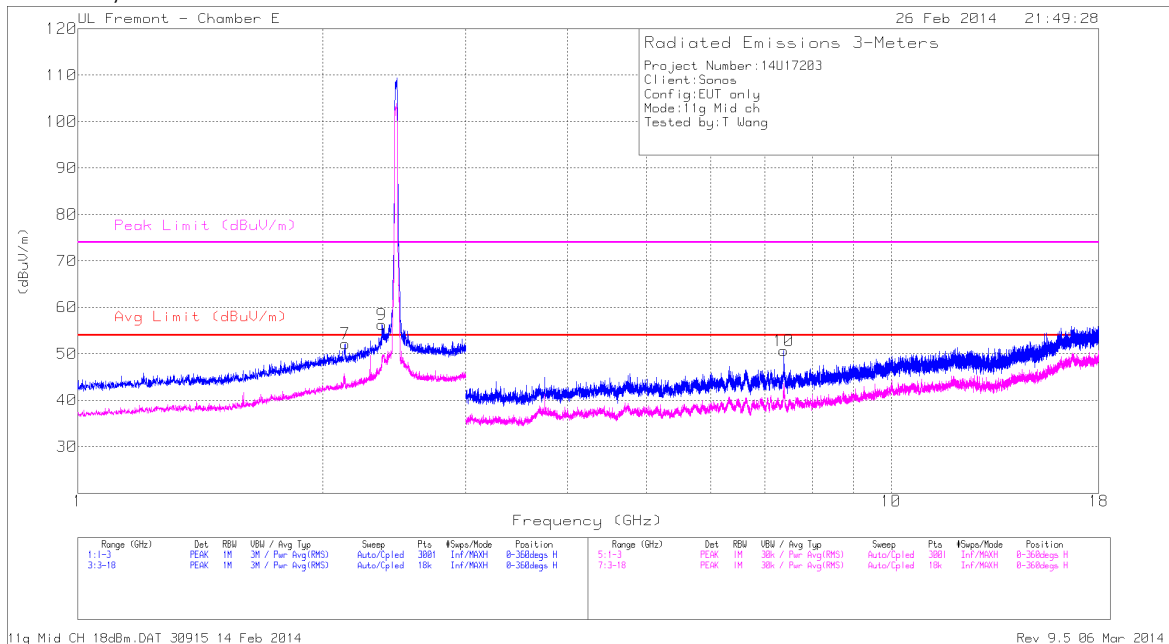
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

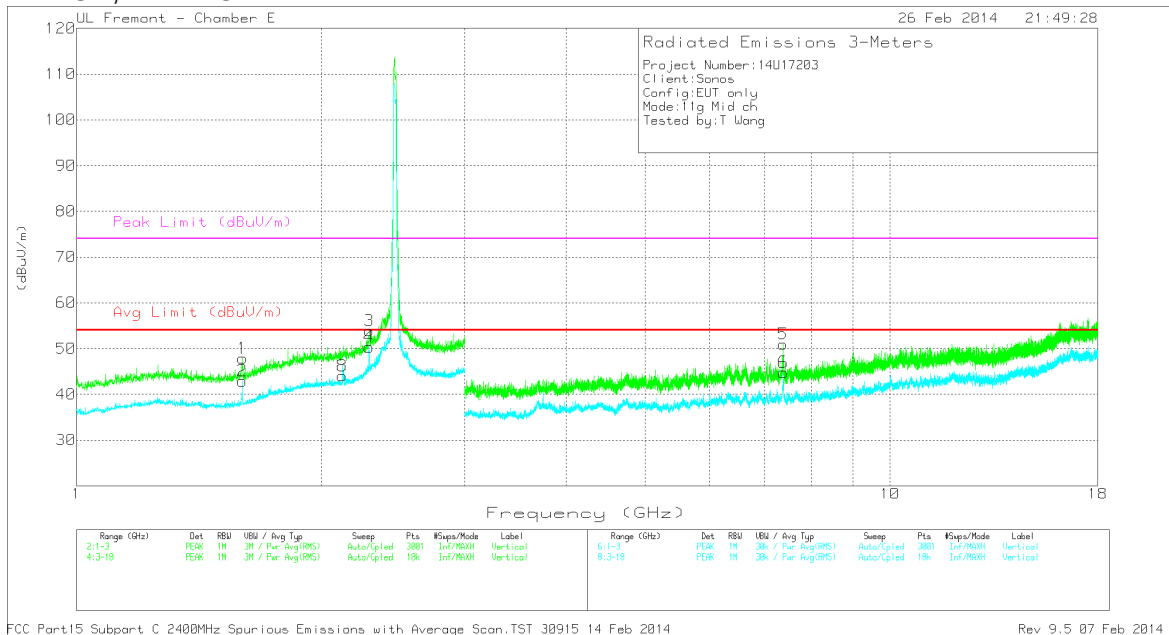
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CH, HORIZONTAL



MID CH, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fitr/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	* 1.600	45.29	PK	29.1	-26.5	47.89	--	--	74	-26.11	0-360	200	V
2	* 1.600	40.33	Avg	29.1	-26.5	42.93	54	-11.07	--	--	0-360	200	V
3	* 2.288	49.85	PK2	32.5	-25.1	57.25	--	--	74	-16.75	276	195	V
4	* 2.288	41.70	MAv1	32.5	-25.1	49.10	54	-4.90	--	--	276	195	V
5	* 7.386	42.37	PK	35.8	-27.2	50.97	--	--	74	-23.03	0-360	101	V
6	* 7.386	36.27	Avg	35.8	-27.3	44.77	54	-9.23	--	--	0-360	200	V
7	2.133	45.33	PK	32.1	-25.3	52.13	--	--	--	--	0-360	199	H
8	2.133	37.12	Avg	32.1	-25.2	44.02	--	--	--	--	0-360	200	V
9	* 2.367	48.46	PK2	32.6	-24.8	56.26	--	--	74	-17.74	262	161	H
10	* 2.367	40.46	MAv1	32.6	-24.8	48.26	54	-6.74	--	--	262	161	H
11	* 7.38	42.06	PK2	35.8	-27.2	50.66	-	-	74	-23.34	257	199	H
12	* 7.38	36.06	MAv1	35.8	-27.2	44.66	54	-9.34	--	--	257	199	H

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

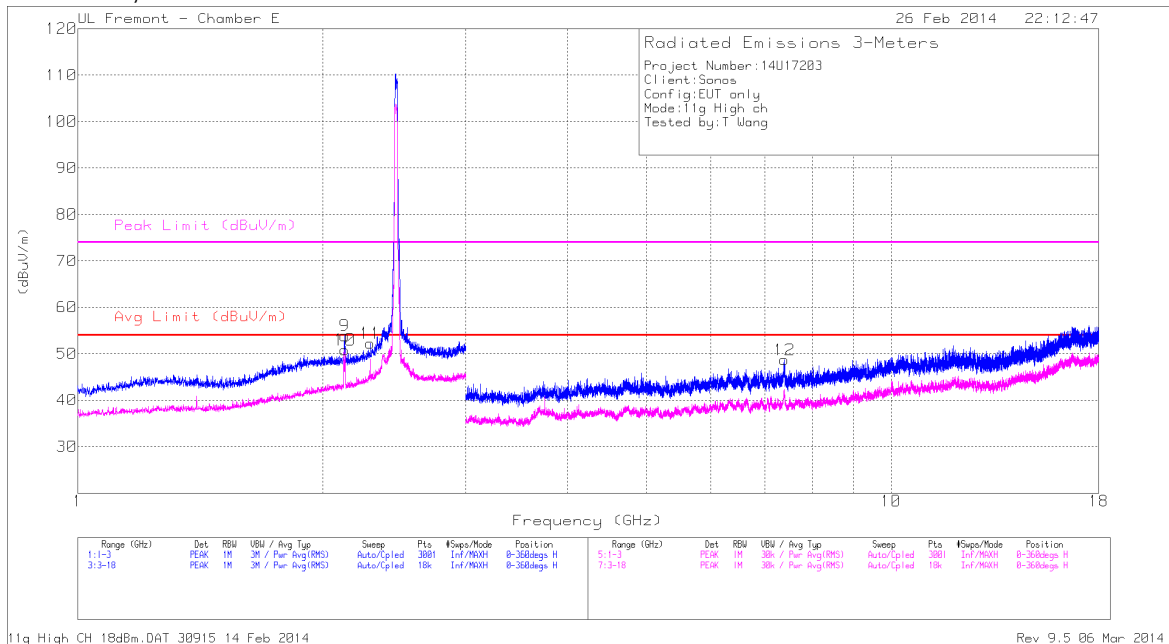
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

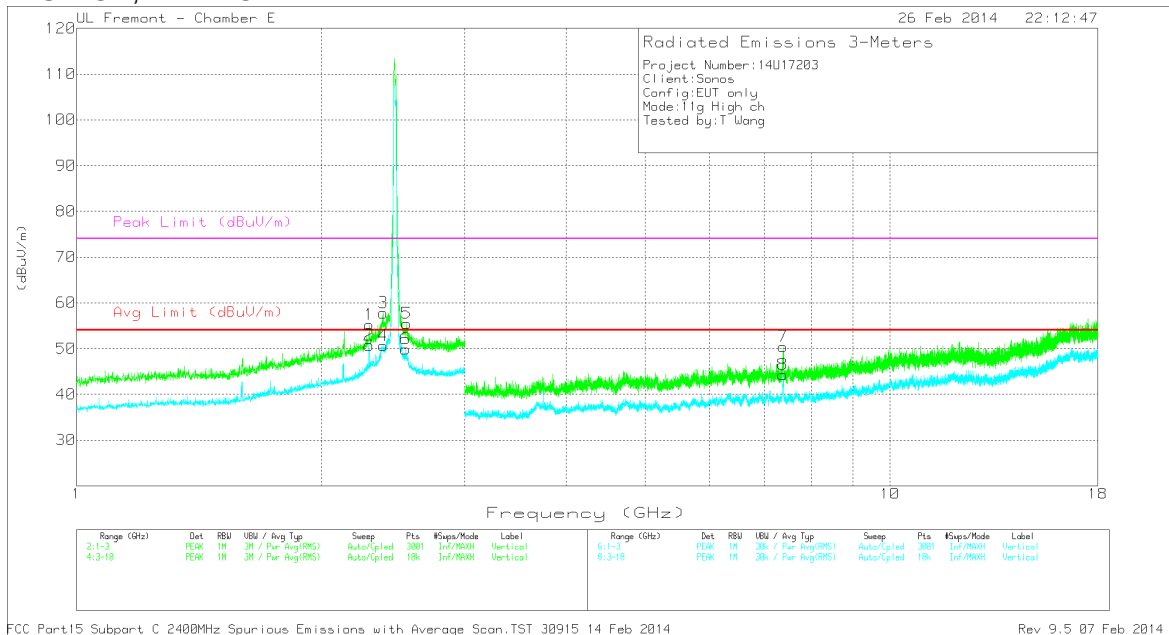
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CH, HORIZONTAL



HIGH CH, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fitr/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	* 2.288	49.28	PK2	32.5	-25.1	56.68	--	--	74	-17.32	280	164	V
2	* 2.288	42.00	MAv1	32.5	-25.1	49.40	54	-4.60	--	--	280	164	V
3	* 2.380	52.11	PK2	32.6	-25.0	59.71	--	--	74	-14.29	260	219	V
4	* 2.380	41.00	MAv1	32.6	-24.9	48.70	54	-5.30	--	--	260	219	V
5	2.545	47.30	PK	32.7	-24.5	55.50	--	--	--	--	0-360	200	V
6	2.535	41.62	Avg	32.7	-24.4	49.92	--	--	--	--	0-360	200	V
7	* 7.387	41.85	PK	35.8	-27.2	50.45	--	--	74	-23.55	0-360	200	V
8	* 7.387	35.72	Avg	35.8	-27.2	44.32	54	-9.68	--	--	0-360	101	V
9	2.131	46.99	PK	32.1	-25.2	53.89	--	--	--	--	0-360	200	H
10	2.131	43.95	Avg	32.1	-25.2	50.85	--	--	--	--	0-360	199	H
11	* 2.289	44.86	PK2	32.5	-25.1	52.26	--	--	74	-21.74	273	235	H
12	* 2.289	38.86	MAv1	32.5	-25.1	46.26	54	-7.74	--	--	273	235	H
13	* 7.396	39.19	PK	35.8	-27.3	47.69	--	--	74	-25.31	0-360	101	H

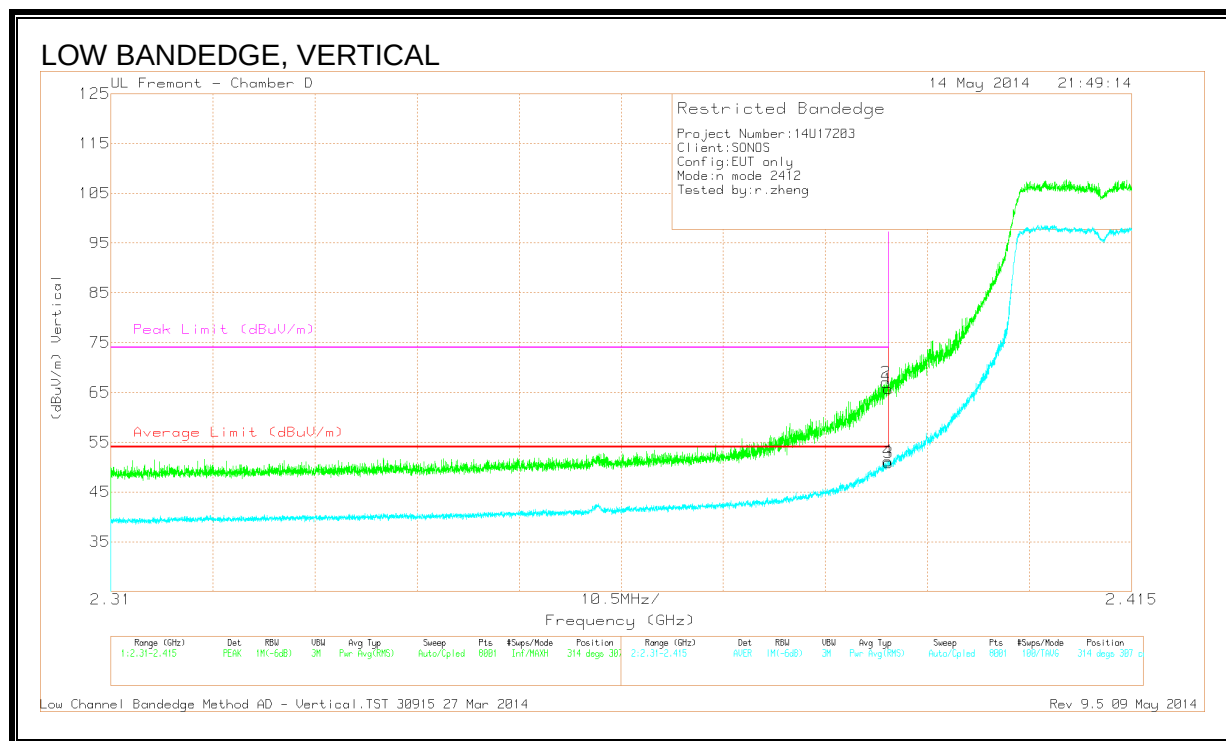
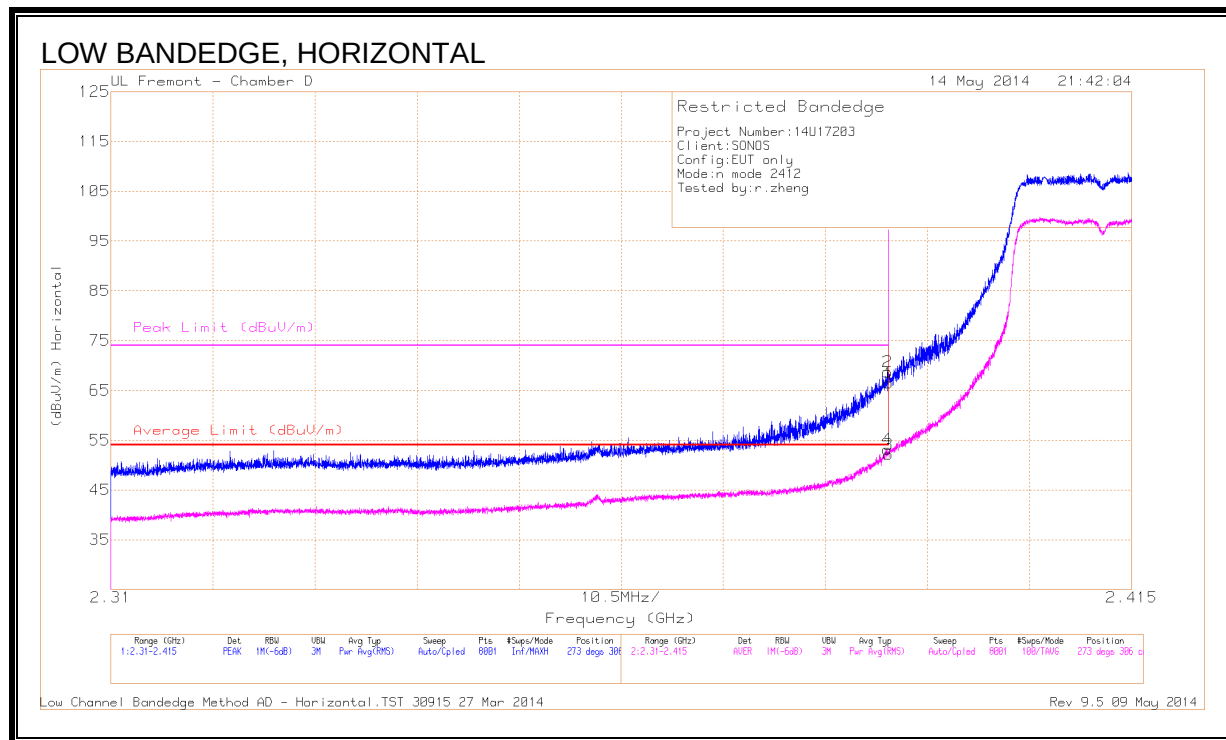
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

MAv1 - KDB558074 Option 1 Maximum RMS Average

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



DATA

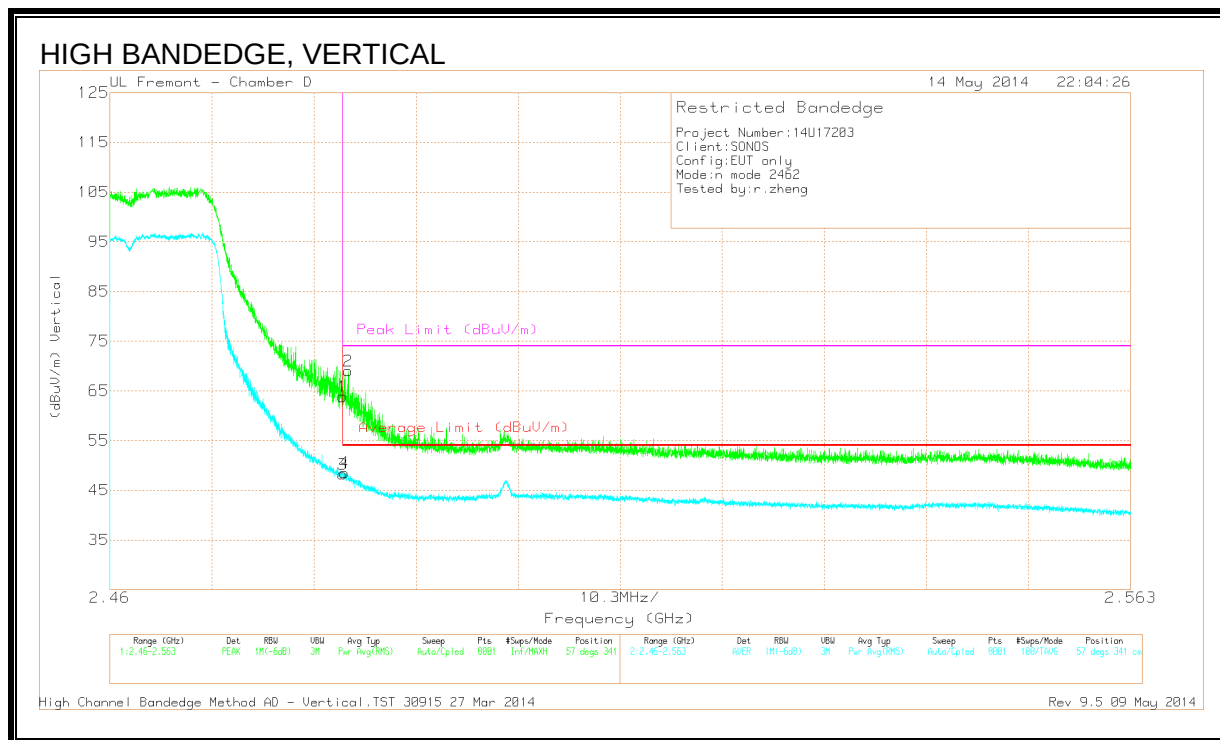
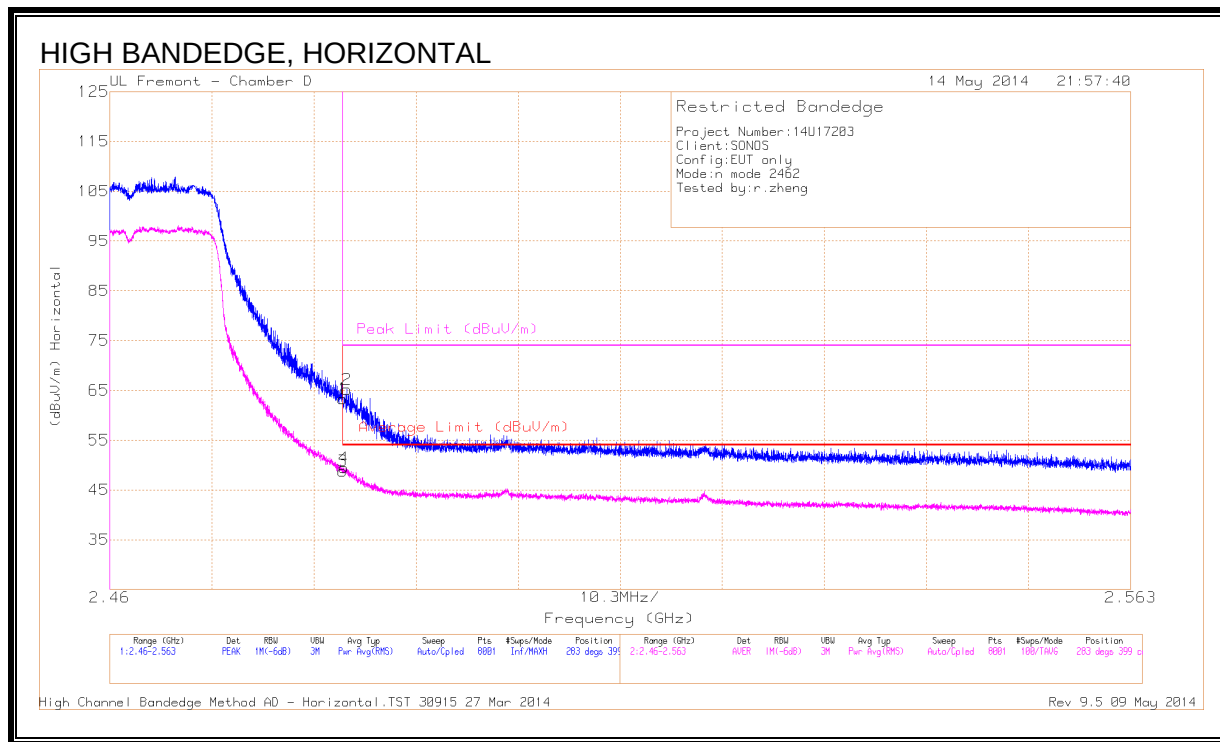
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	55.53	PK	31.5	-20.6	0	66.43	-	-	74	-7.57	273	306	H
2	* 2.39	57.82	PK	31.5	-20.6	0	68.72	-	-	74	-5.28	273	306	H
3	* 2.39	40.67	RMS	31.5	-20.6	.6	52.17	54	-1.83	-	-	273	306	H
4	* 2.39	41.66	RMS	31.5	-20.6	.6	53.16	54	-.84	-	-	273	306	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/ 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	54.79	PK	31.5	-20.6	0	65.69	-	-	74	-8.31	314	307	V
2	* 2.39	56.12	PK	31.5	-20.6	0	67.02	-	-	74	-6.98	314	307	V
3	* 2.39	39.39	RMS	31.5	-20.6	.6	50.89	54	-3.11	-	-	314	307	V
4	* 2.39	39.7	RMS	31.5	-20.6	.6	51.2	54	-2.8	-	-	314	307	V

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

PK - Peak detector

RMS - RMS detection



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/ 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	51.8	PK	32.1	-20.6	0	63.3	-	-	74	-10.7	283	399	H
2	* 2.484	53.69	PK	32.1	-20.6	0	65.19	-	-	74	-8.81	283	399	H
3	* 2.484	36.71	RMS	32.1	-20.6	.6	48.81	54	-5.19	-	-	283	399	H
4	* 2.484	37.38	RMS	32.1	-20.6	.6	49.48	54	-4.52	-	-	283	399	H

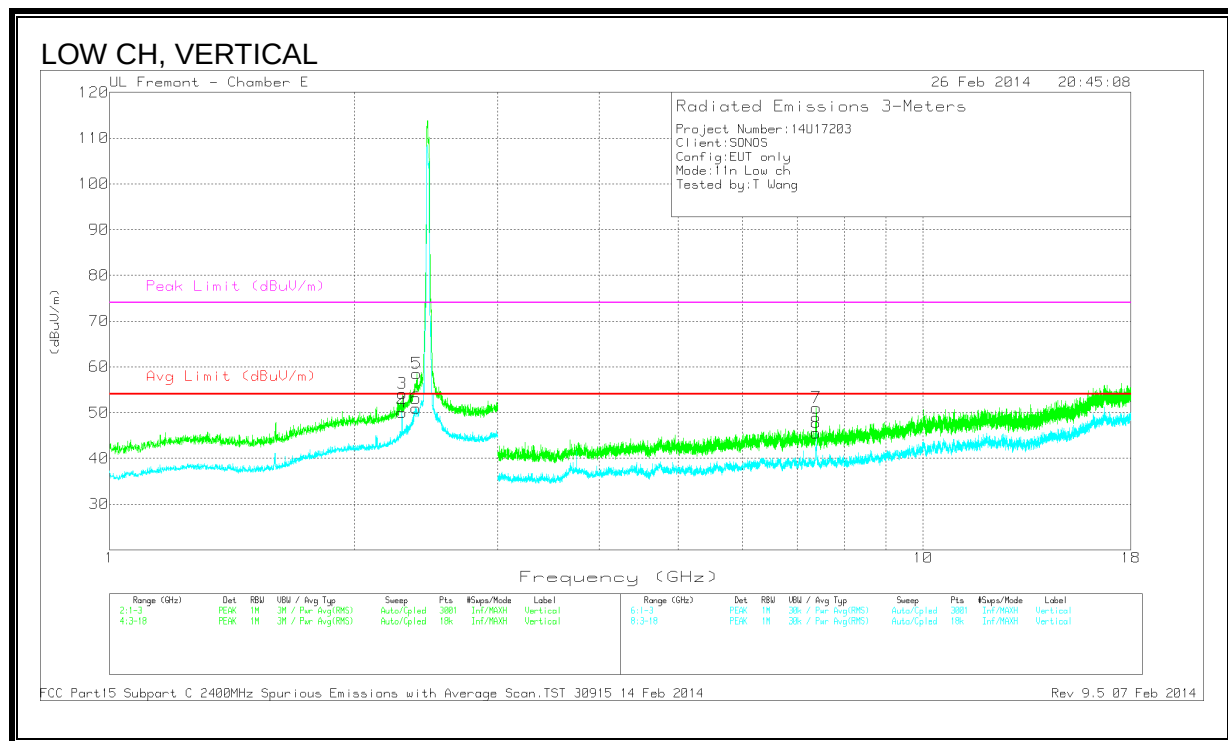
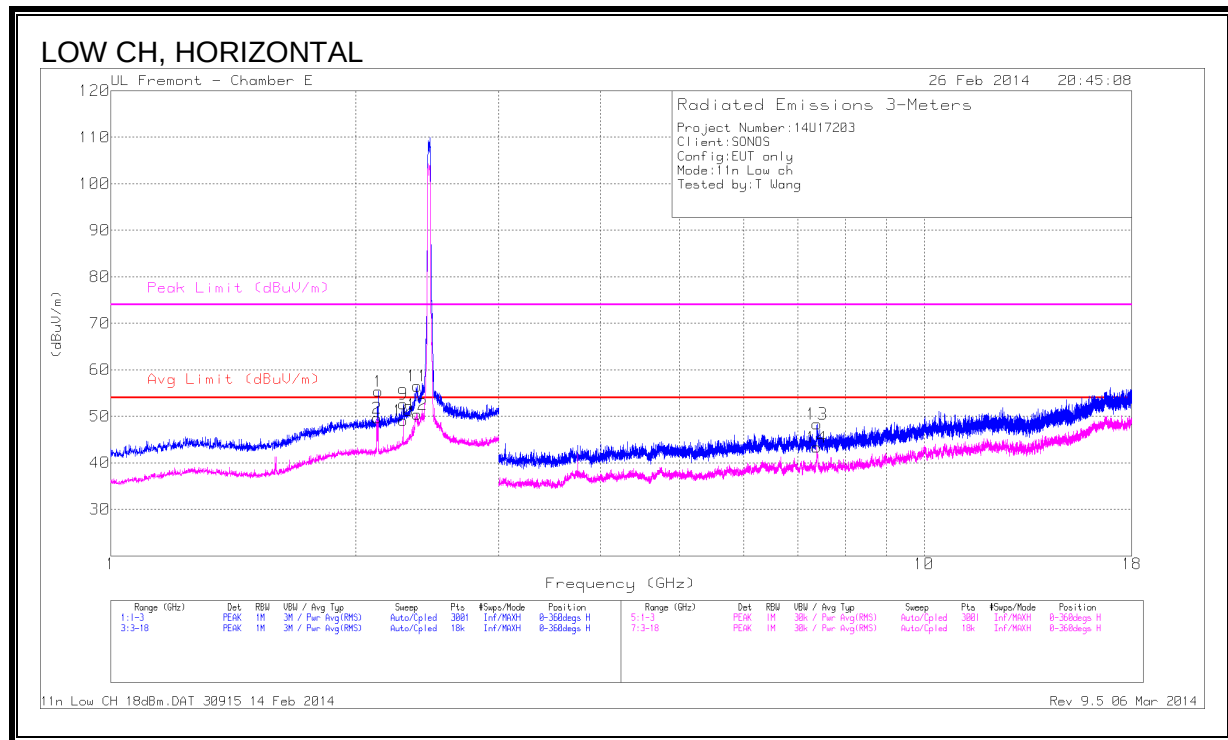
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	52.35	PK	32.1	-20.6	0	63.85	-	-	74	-10.15	57	341	V
2	* 2.484	57.5	PK	32.1	-20.6	0	69	-	-	74	-5	57	341	V
3	* 2.484	36.12	RMS	32.1	-20.6	.6	48.22	54	-5.78	-	-	57	341	V
4	* 2.484	36.42	RMS	32.1	-20.6	.6	48.52	54	-5.48	-	-	57	341	V

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

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fitr/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	2.132	48.49	PK	32.1	-25.2	55.39	--	--	--	--	0-360	199	H
2	2.132	42.60	Avg	32.1	-25.1	49.60	--	--	--	--	0-360	199	H
3	* 2.288	48.43	PK2	32.5	-25.1	55.83	--	--	74	-18.17	276	187	V
4	* 2.288	41.55	MAv1	32.5	-25.1	48.95	54	-5.05	--	--	276	187	V
5	* 2.376	53.60	PK2	32.6	-24.9	61.30	--	--	74	-12.70	270	222	V
6	* 2.376	42.38	MAv1	32.6	-24.9	50.08	54	-3.92	--	--	270	222	V
7	* 7.390	42.53	PK	35.8	-27.3	51.03	--	--	74	-22.97	0-360	101	V
8	* 7.390	37.08	Avg	35.8	-27.3	45.58	54	-8.42	--	--	0-360	101	V
9	* 2.289	45.29	PK2	32.5	-25.1	52.69	--	--	74	-21.31	245	227	H
10	* 2.288	37.68	MAv1	32.5	-25.1	45.08	54	-8.92	--	--	245	227	H
11	* 2.381	48.92	PK2	32.6	-25	56.52	--	--	74	-17.48	264	232	H
12	* 2.381	36.78	MAv1	32.6	-25	44.38	54	-9.62	--	--	264	232	H
13	* 7.385	38.74	PK	35.8	-27.2	47.34	--	--	74	-25.66	0-360	199	H
14	* 7.377	34.74	Avg	35.8	-27.2	43.34	54	-10.66	--	--	0-360	199	H

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

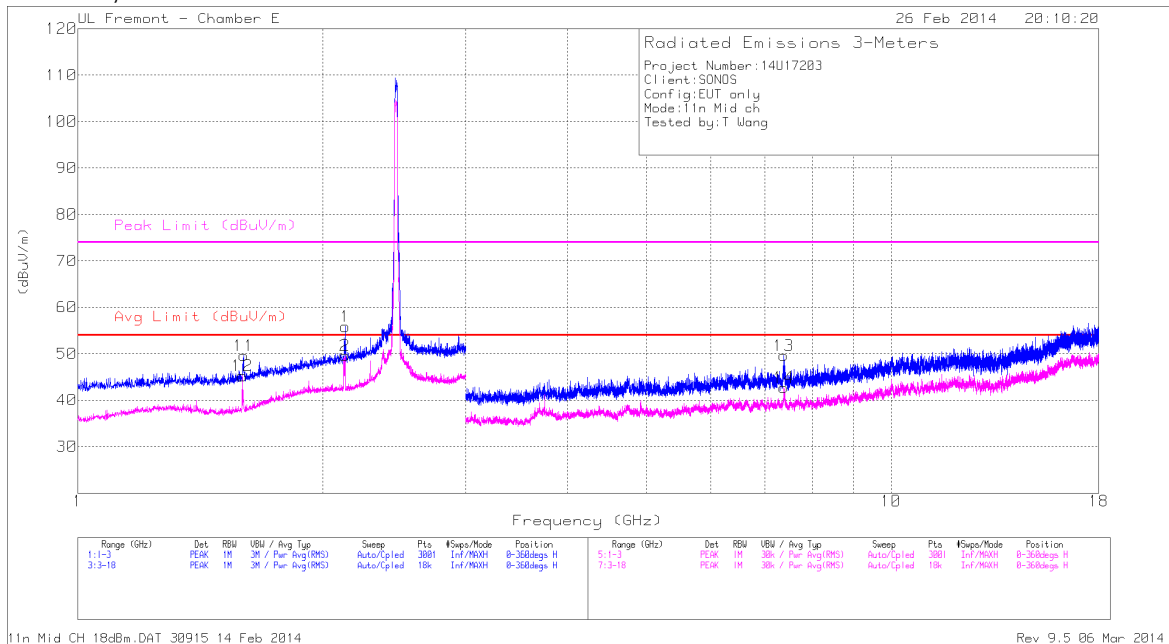
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

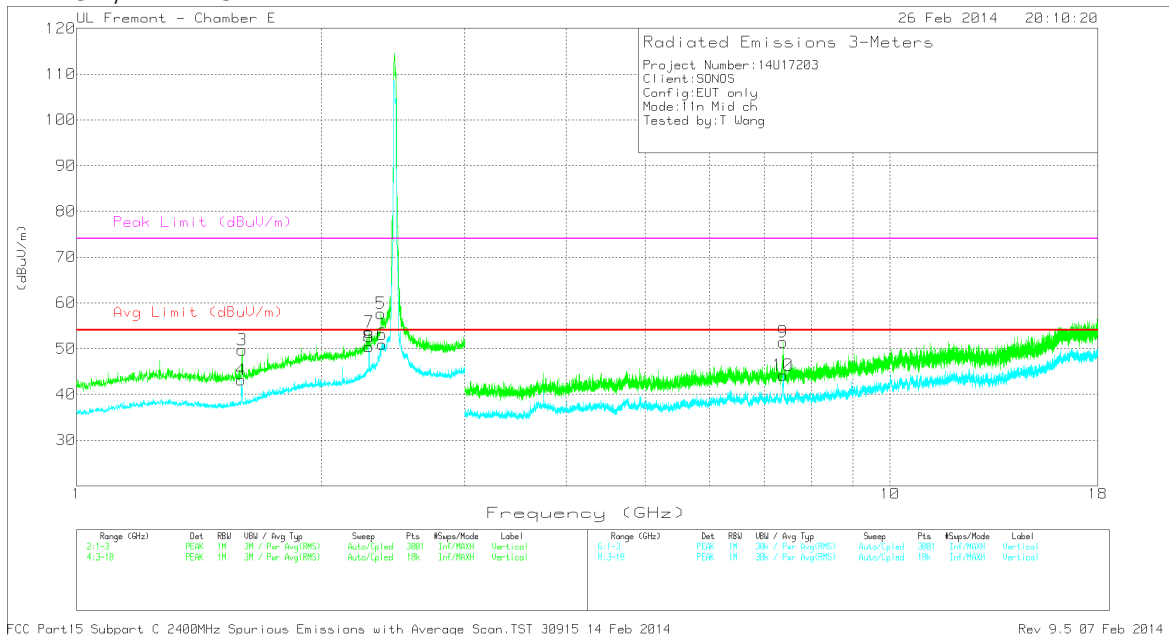
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CH, HORIZONTAL



MID CH, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fitr/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	2.134	49.06	PK	32.1	-25.3	55.86	--	--	--	--	0-360	199	H
2	2.134	42.73	Avg	32.1	-25.2	49.63	--	--	--	--	0-360	199	H
3	* 1.598	47.21	PK	29.0	-26.5	49.71	-	-	74	-24.29	0-360	200	V
4	* 1.598	40.67	Avg	29.0	-26.5	43.17	54	-10.83	--	--	0-360	200	V
5	* 2.374	51.54	PK2	32.6	-24.9	59.24	--	--	74	-14.76	272	194	V
6	* 2.374	40.58	MAv1	32.6	-25.0	48.18	54	-5.82	--	--	272	194	V
7	* 2.288	48.58	PK2	32.5	-25.1	55.98	--	--	74	-18.02	281	188	V
8	* 2.288	41.07	MAv1	32.5	-25.1	48.47	54	-5.53	--	--	281	188	V
9	* 7.388	42.92	PK	35.8	-27.3	51.42	--	--	74	-22.58	0-360	200	V
10	* 7.388	35.55	Avg	35.8	-27.2	44.15	54	-9.85	--	--	0-360	200	V
11	* 1.6	47	PK	29.1	-26.5	49.6	--	--	74	-24.4	0-360	199	H
12	* 1.593	42.76	Avg	29	-26.5	45.26	54	-8.74	--	--	0-360	199	H
13	* 7.378	41.02	PK	35.8	-27.2	49.62	--	--	74	-24.38	0-360	199	H
14	* 7.376	34.02	Avg	35.8	-27.1	42.72	54	-11.28	--	--	0-360	199	H

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

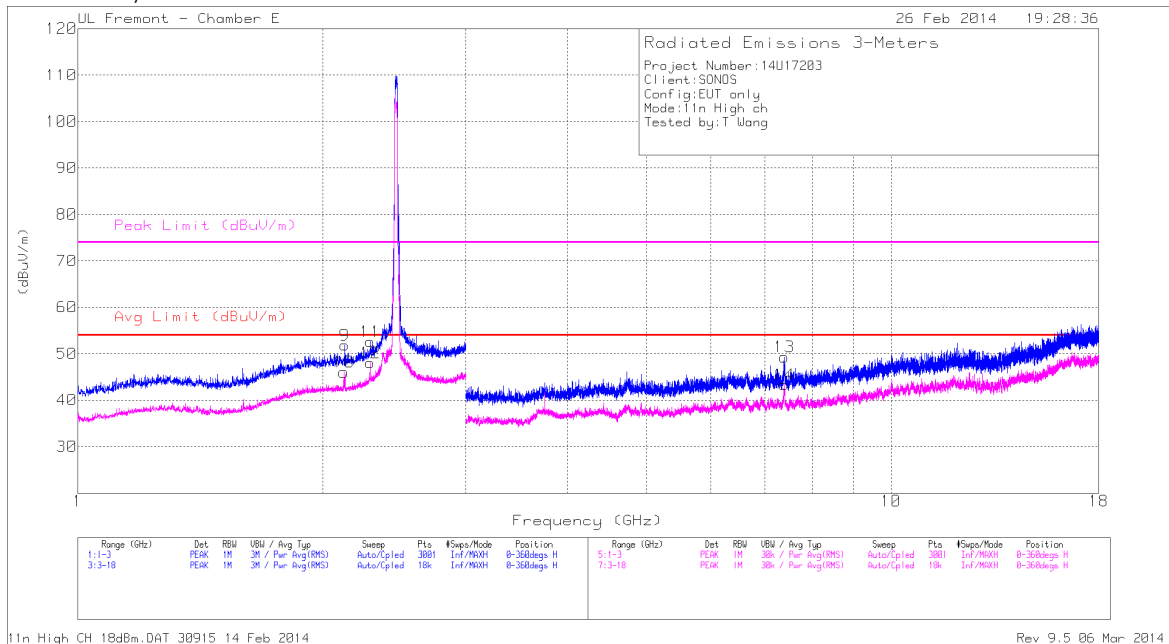
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

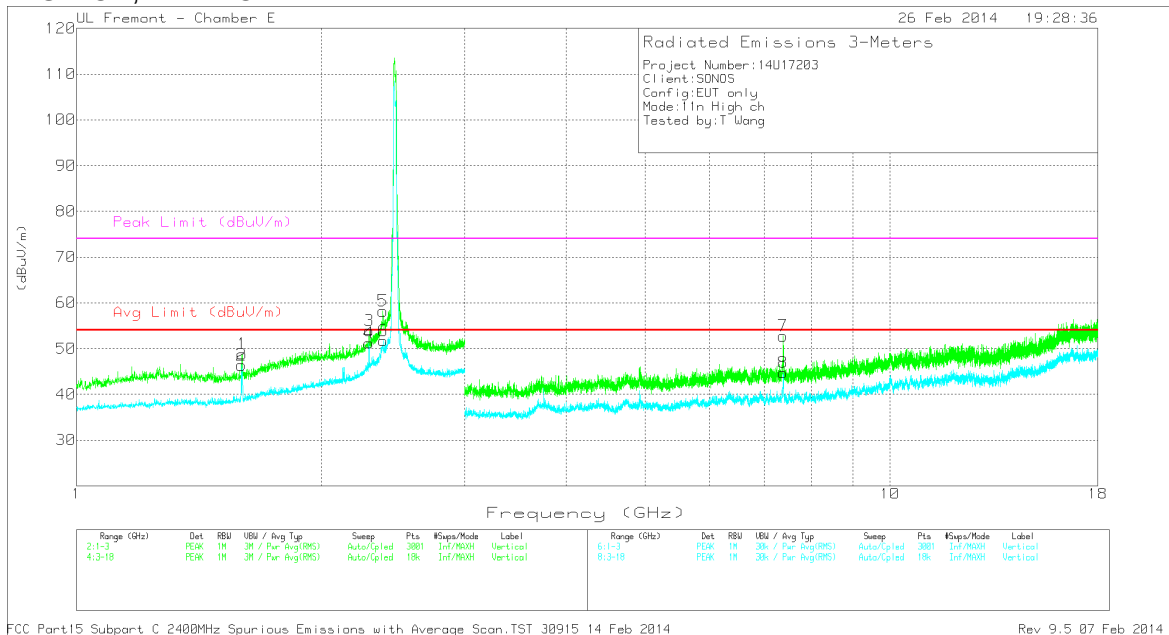
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CH, HORIZONTAL



HIGH CH, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 1.598	46.37	PK	29.0	-26.5	48.87	--	--	74	-25.13	0-360	101	V
2	* 1.598	43.89	Avg	29.0	-26.5	46.39	54	-7.61	--	--	0-360	200	V
3	* 2.288	49.28	PK2	32.5	-25.1	56.68	--	--	74	-17.32	280	164	V
4	* 2.288	42.24	MAv1	32.5	-25.1	49.64	54	-4.36	--	--	280	164	V
5	* 2.380	52.11	PK2	32.6	-25.0	59.71	--	--	74	-14.29	260	219	V
6	* 2.380	41.30	MAv1	32.6	-24.9	49.00	54	-5.00	--	--	260	219	V
7	* 7.386	44.17	PK	35.8	-27.2	52.77	--	--	74	-21.23	0-360	101	V
8	* 7.386	36.15	Avg	35.8	-27.2	44.75	54	-9.25	--	--	0-360	101	V
9	2.13	44.96	PK	32.1	-25.2	51.86	--	--	--	--	0-360	199	H
10	2.124	39.05	PK	32.1	-25.1	46.05	--	--	--	--	0-360	199	H
11	* 2.289	45.24	PK	32.5	-25.1	52.64	--	--	74	-21.36	0-360	199	H
12	* 2.288	40.05	Avg	32.5	-25.1	47.45	54	-6.55	-	-	0-360	199	H
13	* 7.394	40.81	PK	35.8	-27.3	49.31	--	--	74	-24.69	0-360	199	H
14	* 7.386	34.72	Avg	35.8	-27.2	43.32	54	-10.68	--	--	0-360	199	H

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

PK - Peak detector

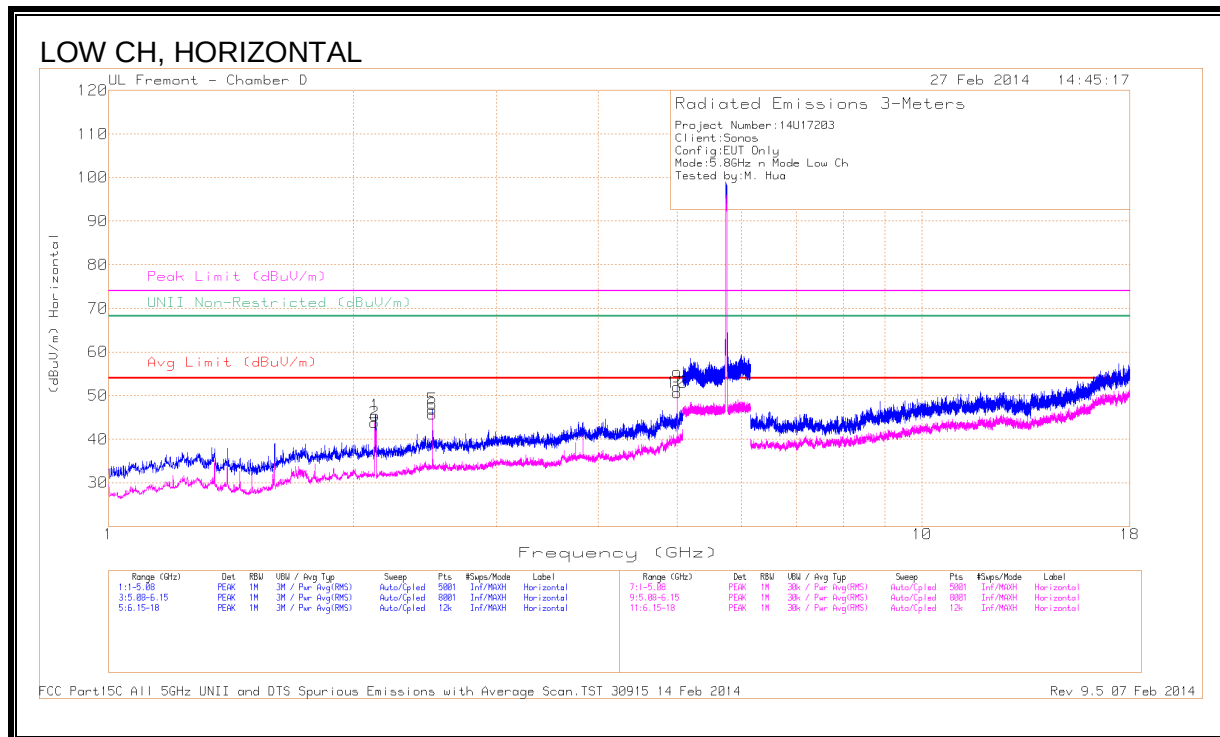
Avg - Video bandwidth < Resolution bandwidth

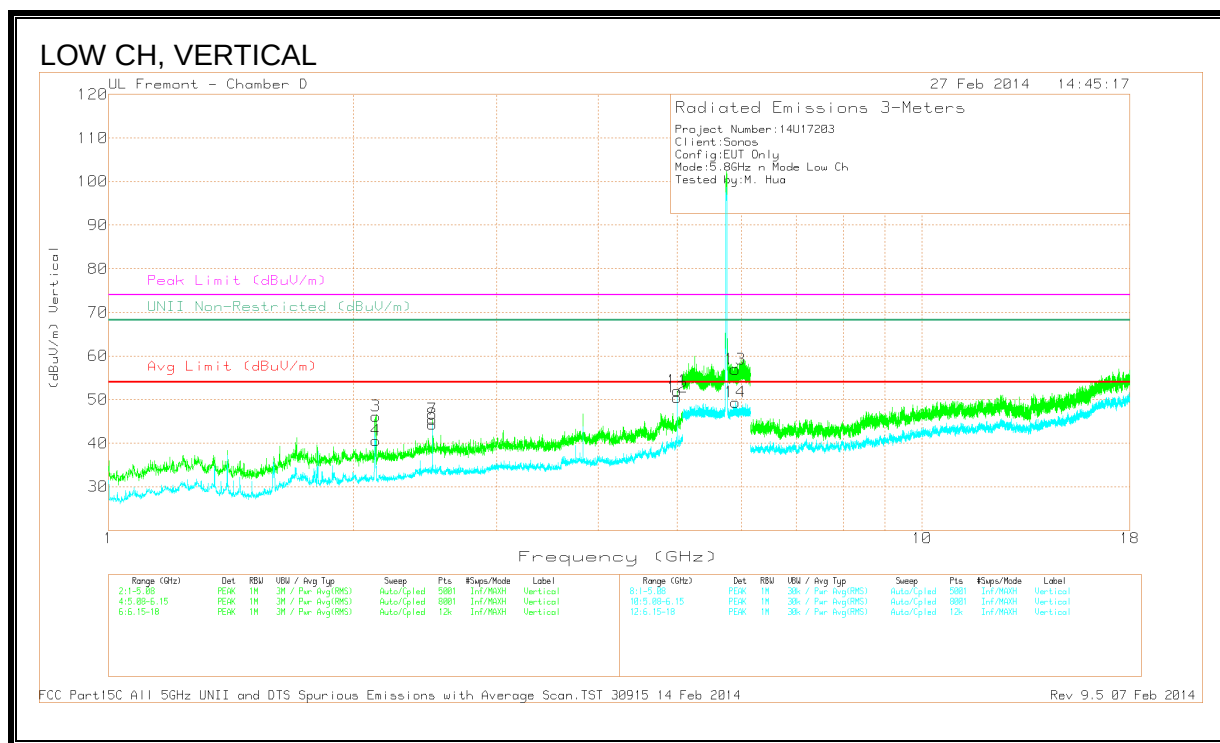
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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

HARMONICS AND SPURIOUS EMISSIONS





DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fitr/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	2.126	45.59	PK	30.6	-30.7	45.49	--	--	--	--	0-360	201	H
2	2.126	43.9	Avg	30.7	-30.8	43.8	--	--	--	--	0-360	201	H
3	2.130	46.39	PK	30.6	-30.8	46.19	--	--	--	--	0-360	201	V
4	2.130	40.81	Avg	30.6	-30.8	40.61	--	--	--	--	0-360	201	V
5	2.501	45.00	PK	32.2	-30.3	46.90	--	--	--	--	0-360	100	H
6	2.501	43.85	Avg	32.2	-30.3	45.75	--	--	--	--	0-360	100	H
7	2.501	43.53	PK	32.2	-30.3	45.43	--	--	--	--	0-360	201	V
8	2.501	42.46	Avg	32.2	-30.3	44.36	--	--	--	--	0-360	201	V
9	* 5.000	46.24	PK2	33.5	-26.4	53.34	--	--	74	-20.66	124	119	H
10	* 5.000	41.55	MAv1	33.5	-26.5	48.55	54	-5.45	-	-	124	119	H
11	* 5.000	47.86	PK2	33.5	-26.5	54.86	-	-	74	-19.14	228	122	V
12	* 5.000	43.3	MAv1	33.5	-26.5	50.3	54	-3.70	--	--	228	122	V
13	5.893	39.36	PK	34.4	-16.8	56.96	--	--	--	--	0-360	201	V
14	5.893	31.80	Avg	34.4	-16.8	49.40	--	--	--	--	0-360	201	V

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

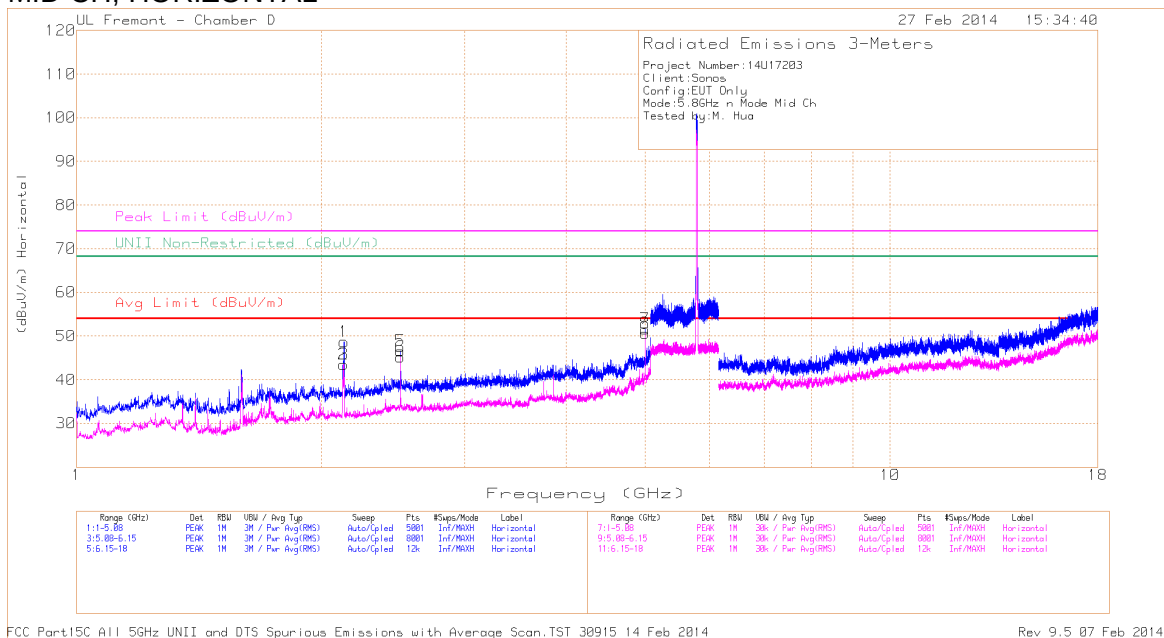
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

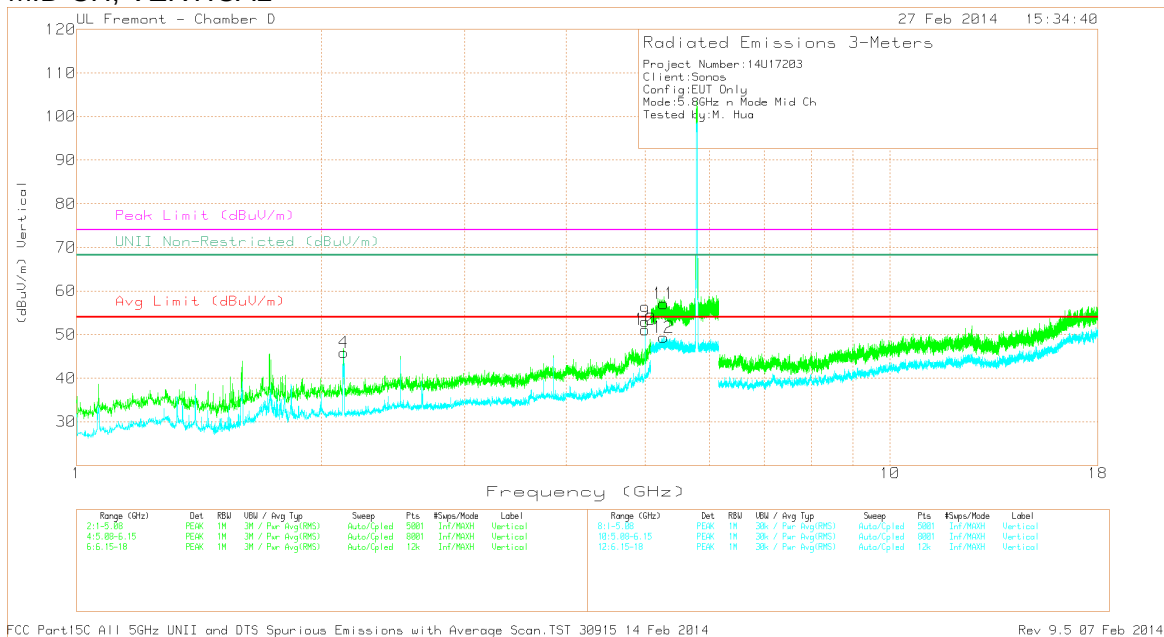
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CH, HORIZONTAL



MID CH, VERTICAL



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fitr/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	2.132	49.03	PK	30.6	-30.9	48.73	--	--	--	--	0-360	100	H
2	2.129	43.75	Avg	30.6	-30.8	43.55	--	--	--	--	0-360	201	H
3	2.129	43.75	Avg	30.6	-30.8	43.55	--	--	--	--	0-360	201	H
4	2.131	46.10	Avg	30.6	-30.8	45.9	--	--	--	--	0-360	201	V
5	*2.500	44.71	PK	32.2	-30.3	46.61	--	--	74	-27.39	0-360	100	H
6	* 2.500	43.34	Avg	32.2	-30.3	45.24	54	-8.76	--	--	0-360	100	H
7	* 5.000	43.25	PK2	33.5	-26.5	50.25	--	--	74	-23.75	175	196	H
8	* 5.000	35.85	MAv1	33.5	-26.5	42.85	54	-11.15	--	--	175	196	H
9	* 5.000	48.17	PK2	33.5	-26.5	55.17	--	--	74	-18.83	228	119	V
10	* 5.000	43.34	MAv1	33.5	-26.5	50.34	54	-3.66	--	--	228	119	V
11	5.267	40.91	PK	33.8	-17.6	57.11	--	--	--	--	0-360	100	V
12	5.267	33.18	Avg	33.8	-17.6	49.38	--	--	--	--	0-360	100	V

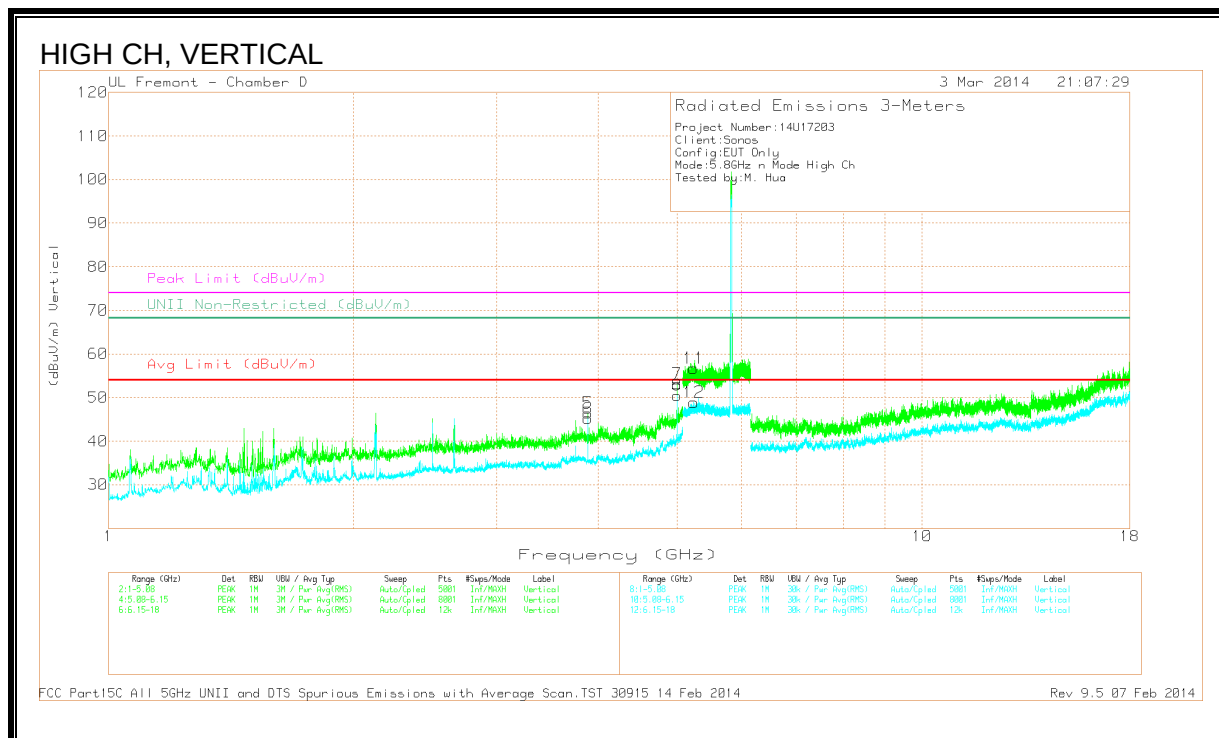
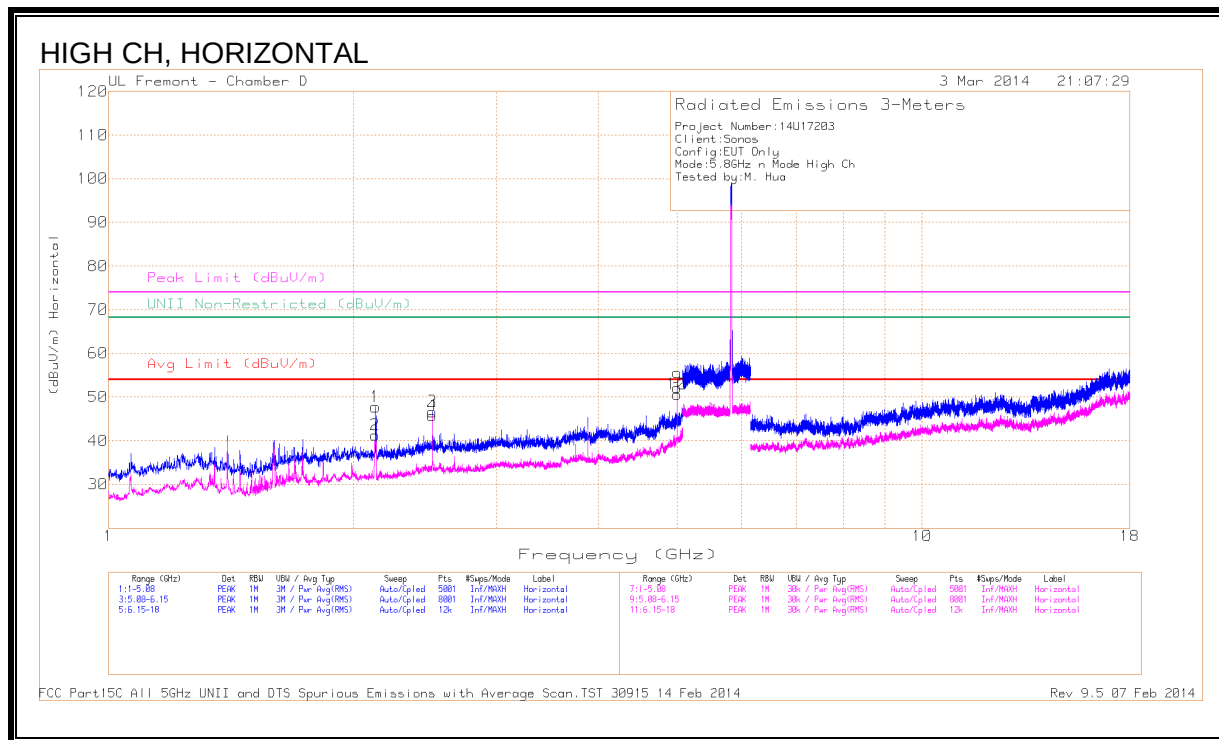
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Fitr/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	2.129	47.98	PK	30.6	-30.8	47.78	--	--	--	--	0-360	201	H
2	2.129	41.52	Avg	30.6	-30.8	41.32	--	--	--	--	0-360	201	H
3	* 2.500	44.77	PK	32.2	-30.3	46.67	--	--	74	-27.33	0-360	100	H
4	* 2.500	43.87	Avg	32.2	-30.3	45.77	54	-8.23	--	--	0-360	100	H
5	* 3.884	42.23	PK	32.8	-28.6	46.43	--	--	--	-27.57	0-360	201	V
6	* 3.884	41.05	Avg	32.8	-28.6	45.25	54	-8.75	--	--	0-360	201	V
7	* 5.000	47.18	PK2	33.5	-26.4	54.28	--	--	74	-19.72	37	265	V
8	* 5.000	42.25	MAV1	33.5	-26.5	49.25	54	-4.75	--	--	37	265	V
9	* 5.000	48.46	PK2	33.5	-26.5	55.46	--	--	74	-18.54	262	163	H
10	* 5.000	43.39	MAV1	33.5	-26.5	50.39	54	-3.61	--	--	262	163	H
11	5.239	40.60	PK	33.8	-17.7	56.70	--	--	--	--	0-360	201	V
12	5.239	32.79	Avg	33.8	-17.7	48.89	--	--	--	--	0-360	201	V

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

PK - Peak detector

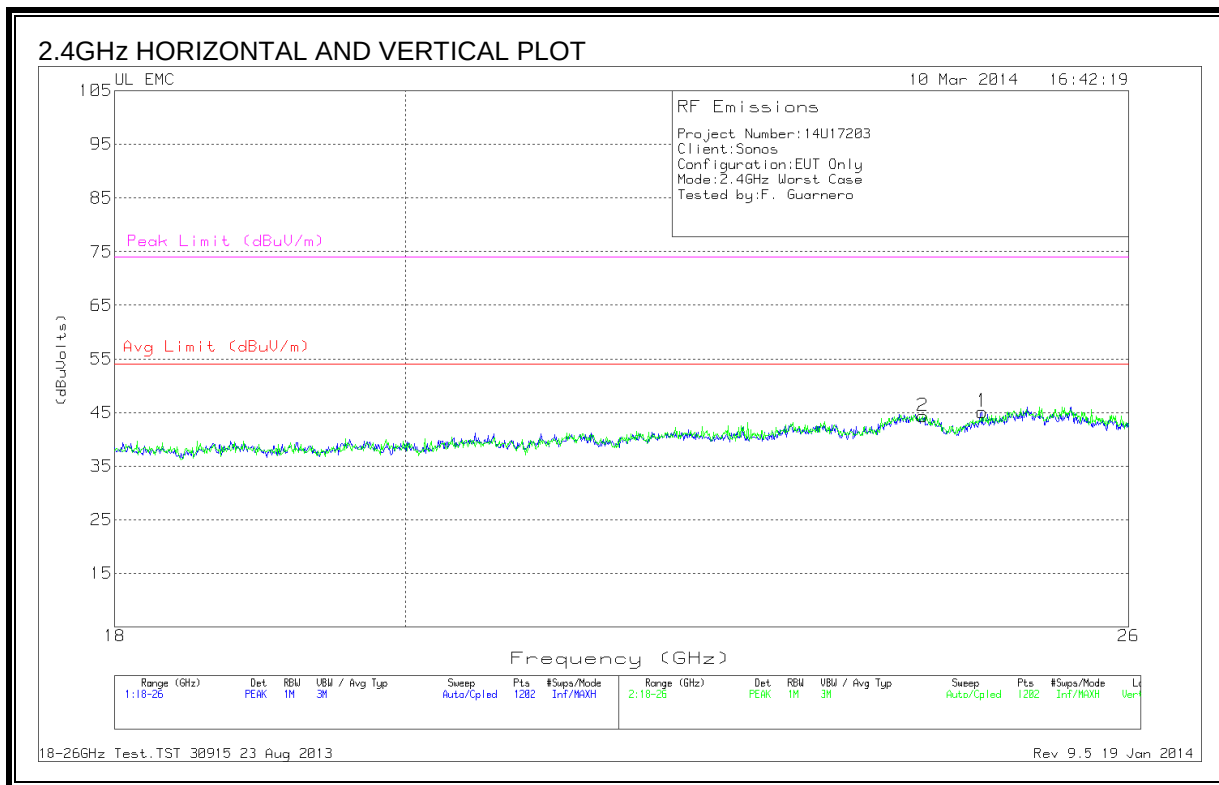
Avg - Video bandwidth < Resolution bandwidth

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

9.6. TRANSMITTER ABOVE 18 GHz

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION)

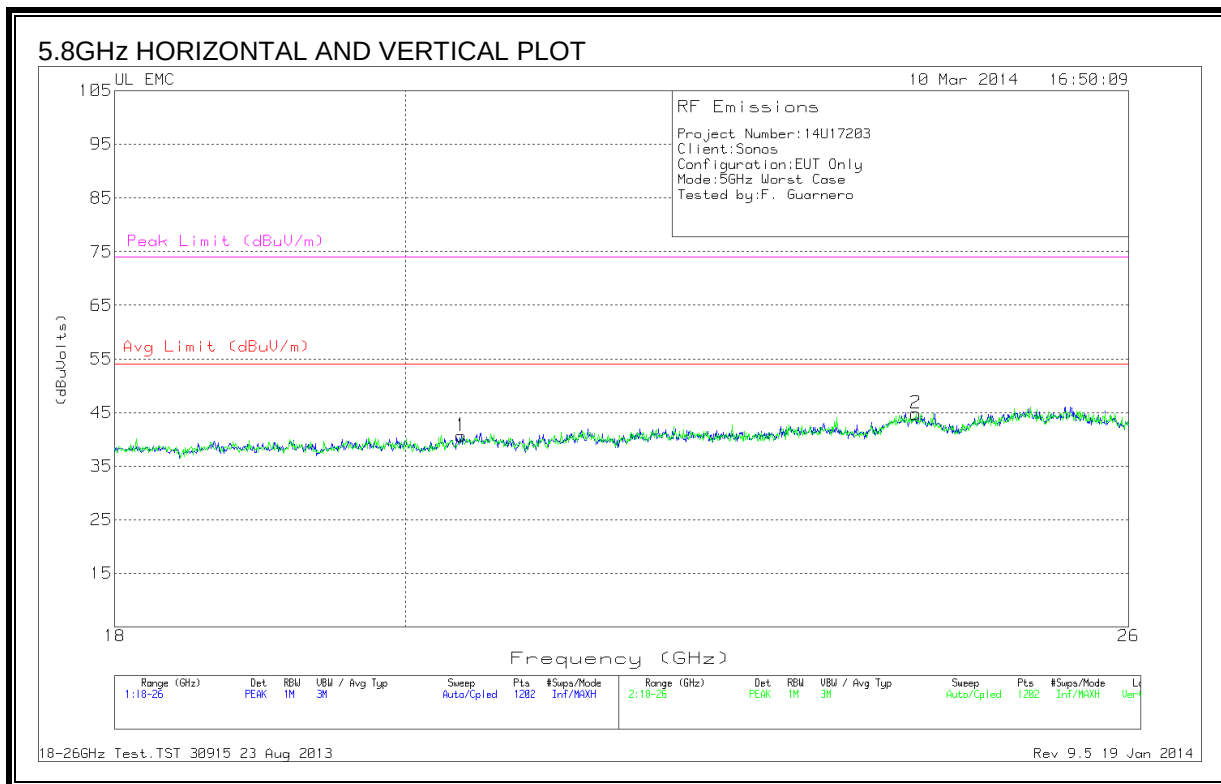


DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T89 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	24.654	43.57	PK	33.9	-22.8	-9.5	45.17	54	-8.83	74	-28.83
2	24.128	42.83	PK	33.7	-22.7	-9.5	44.33	54	-9.67	74	-29.67

PK - Peak detector

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION)

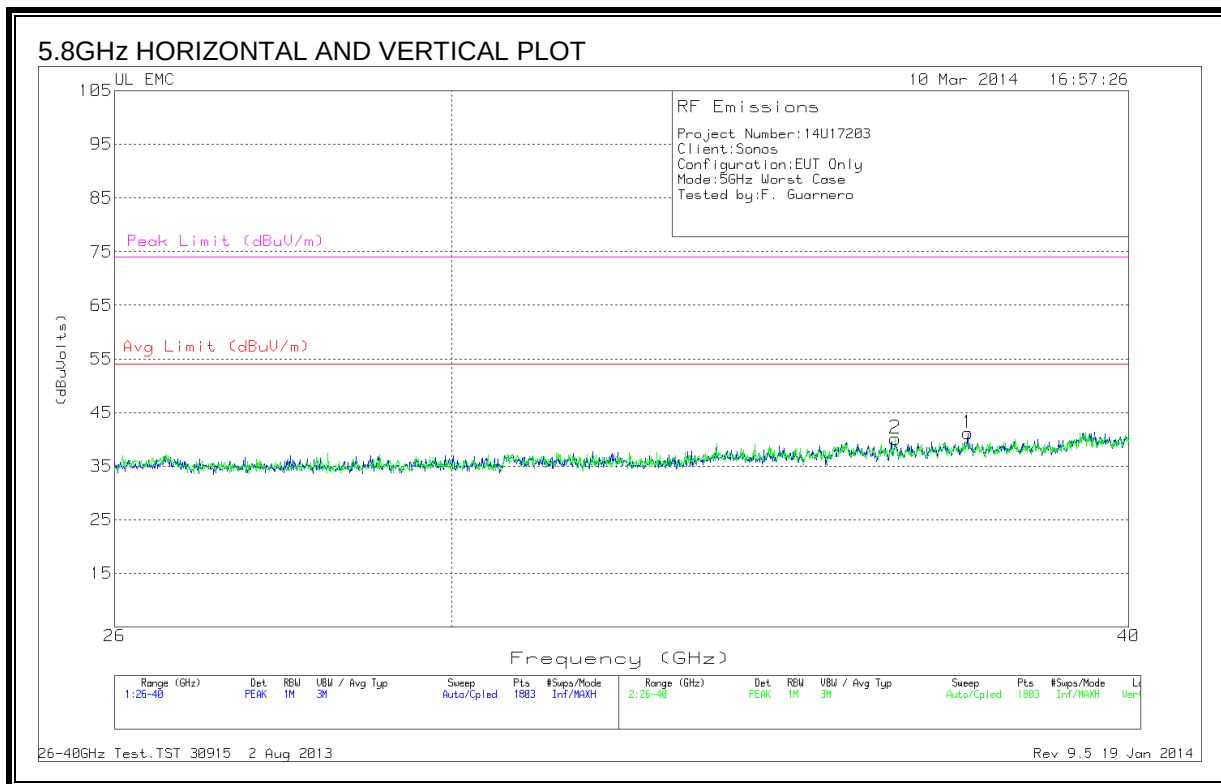


DATA

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T89 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	20.411	40.97	PK	32.8	-23.6	-9.5	40.67	54	-13.33	74	-33.33
2	24.068	43.33	PK	33.6	-22.6	-9.5	44.83	54	-9.167	74	-29.167

PK - Peak detector

SPURIOUS EMISSIONS 26 TO 40 GHz (WORST-CASE CONFIGURATION)



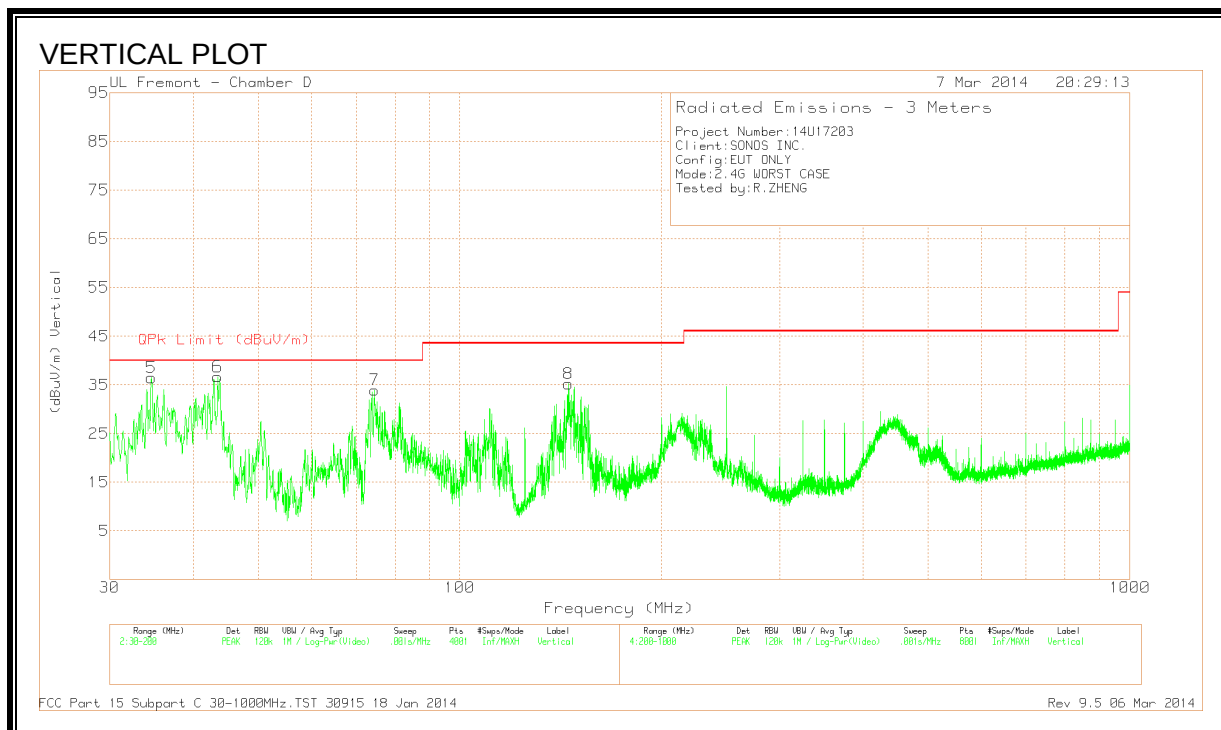
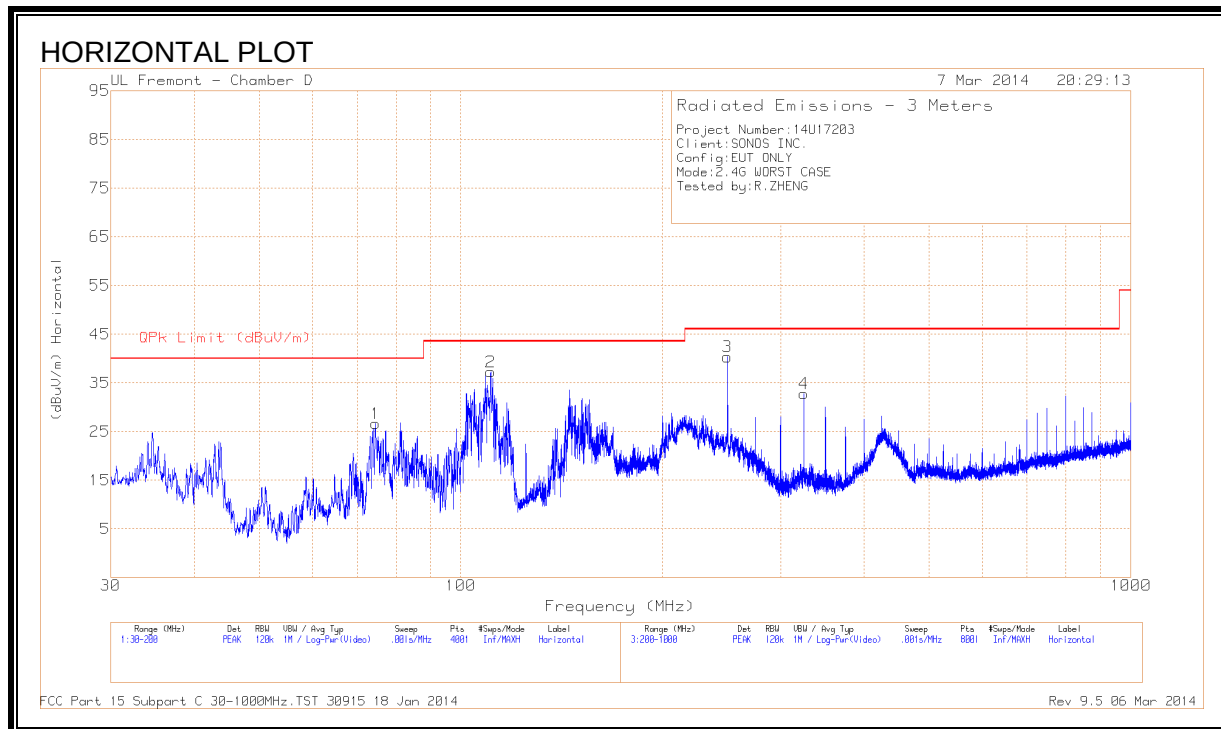
DATA

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	37.358	51.07	PK	37.3	-37.7	-9.5	41.17	54	-12.83	74	-32.83
2	36.224	50.17	PK	37.2	-37.7	-9.5	40.17	54	-13.83	74	-33.83

PK - Peak detector

9.7. WORST-CASE BELOW 1 GHz

2.4GHz SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



DATA

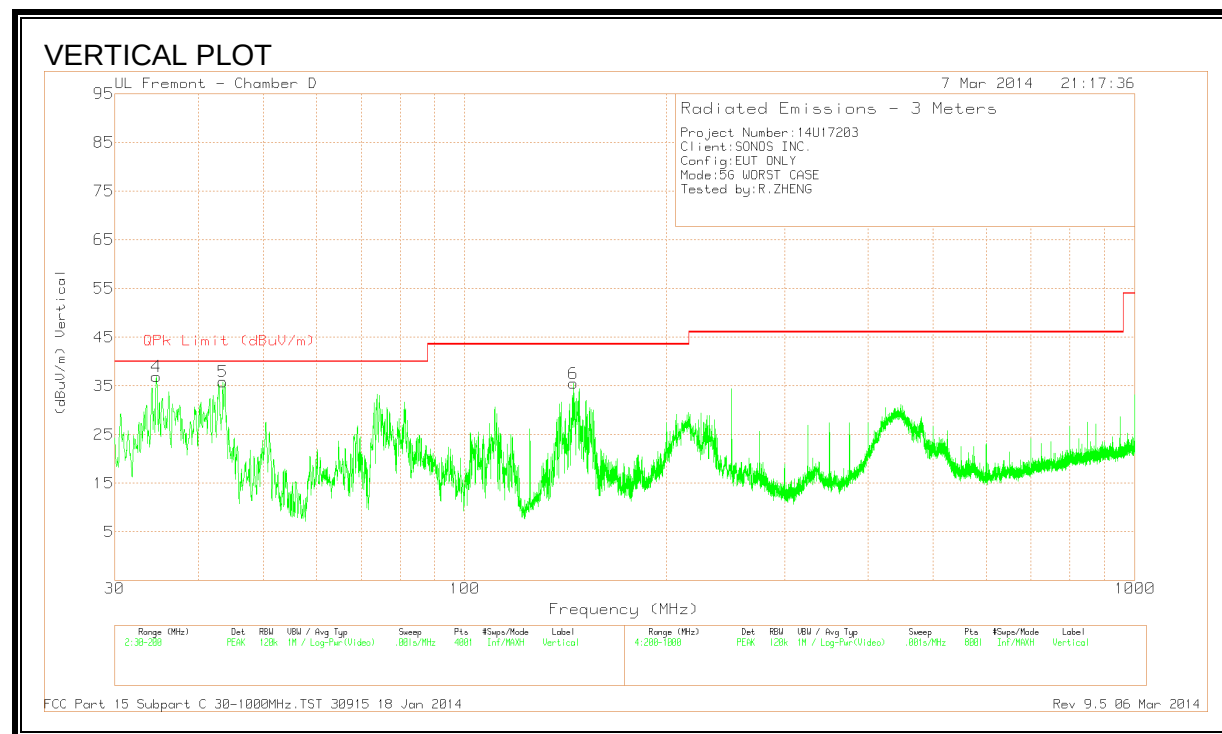
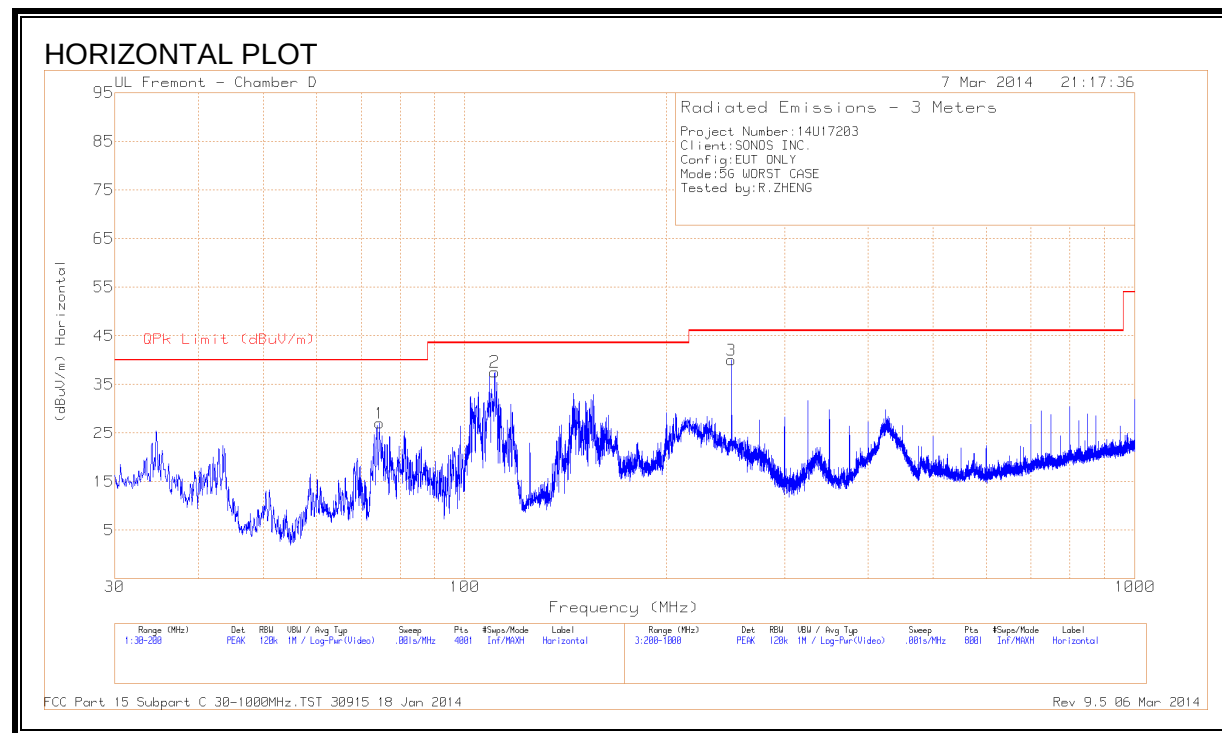
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 dB/m	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 74.54	50.14	PK	8.2	-31.7	26.64	40	-13.36	0-360	301	H
2	* 110.7925	55.87	PK	12.7	-31.3	37.27	43.52	-6.25	0-360	301	H
3	* 250	59.46	QP	11.5	-30.4	40.56	46.02	-5.46	70	125	H
4	* 325	49.19	PK	13.9	-30.3	32.79	46.02	-13.23	0-360	99	H
5	34.6418	48.57	QP	17.9	-31.8	34.67	40	-5.33	325	106	V
6	43.4725	54.19	QP	11.5	-31.7	33.99	40	-6.01	170	118	V
7	* 74.5825	57.46	PK	8.2	-31.7	33.96	40	-6.04	0-360	100	V
8	145.26	53.92	PK	12.6	-31.3	35.22	43.52	-8.3	0-360	100	V

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

PK - Peak detector

QP - Quasi-Peak detector

5.8GHz SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 dB/m	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 74.54	50.5	PK	8.2	-31.7	27	40	-13	0-360	301	H
2	* 110.7925	52.55	QP	12.7	-31.3	33.95	43.52	-9.57	84	196	H
3	* 250	58.92	PK	11.5	-30.4	40.02	46.02	-6	0-360	100	H
4	34.6325	48.43	QP	17.9	-31.8	34.53	40	-5.47	114	108	V
5	43.515	54.69	QP	11.4	-31.7	34.39	40	-5.61	168	110	V
6	145.26	54.19	PK	12.6	-31.3	35.49	43.52	-8.03	0-360	100	V

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

PK - Peak detector

QP - Quasi-Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10-2009.

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

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

RESULTS

6 WORST EMISSIONS

Line-L1 .15 - 30MHz

Trace Markers

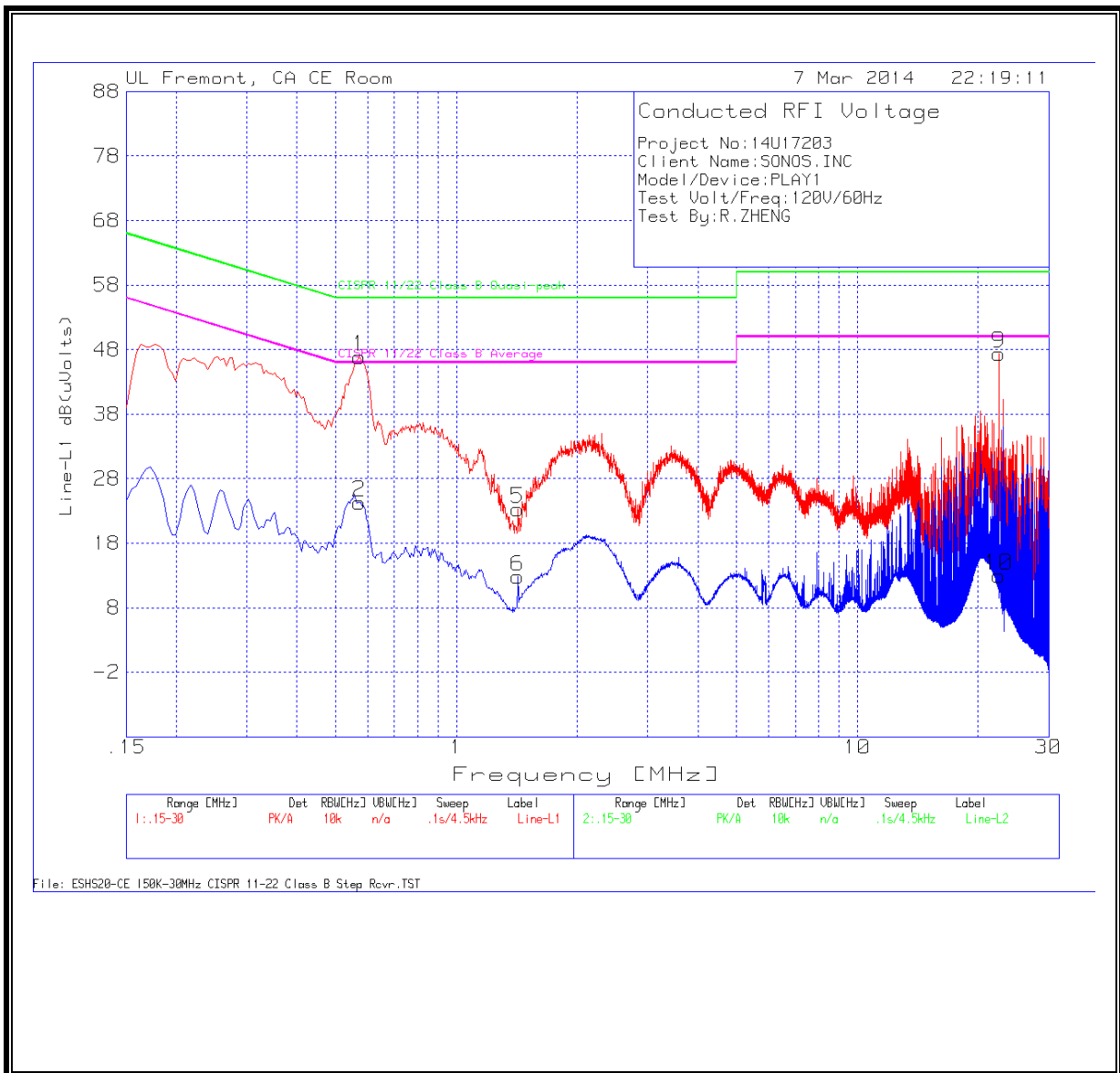
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
1	.573	46.56	PK	.3	0	46.86	56	-9.14	-	-
2	.573	24.04	Av	.3	0	24.34	-	-	46	-21.66
5	1.4235	22.97	PK	.2	.1	23.27	56	-32.73	-	-
6	1.4235	12.48	Av	.2	.1	12.78	-	-	46	-33.22
9	22.5465	46.9	PK	.3	.2	47.4	60	-12.6	-	-
10	22.5465	12.48	Av	.3	.2	12.98	-	-	50	-37.02

Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
3	.573	47.6	PK	.3	0	47.9	56	-8.1	-	-
4	.573	25.66	Av	.3	0	25.96	-	-	46	-20.04
7	1.419	24.96	PK	.2	.1	25.26	56	-30.74	-	-
8	1.419	12.95	Av	.2	.1	13.25	-	-	46	-32.75
13	23.127	39.34	PK	.3	.2	39.84	60	-20.16	-	-
14	23.127	35.2	Av	.3	.2	35.7	-	-	50	-14.3
11	23.19	31.32	PK	.3	.2	31.82	60	-28.18	-	-
12	23.19	31.32	PK	.3	.2	31.82	60	-28.18	-	-

LINE 1 RESULTS



LINE 2 RESULTS

