



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

Cellular/PCS GPRS/EDGE, AWS/PCS WCDMA Tablet with 802.11abgn, BT3.0

MODEL NUMBER: SGH-T869

FCC ID: A3LSGHT869

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Prepared for

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Rev.	Issue Date	Revisions	Revised By
--	10/06/11	Initial Issue	F. Ibrahim
A	10/17/11	Revised PK and AV power for all modes	F. Ibrahim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD
416, MAETAN 3-DONG, YEONGTONG-GU
SUWON CITY, GYEONGGI-DO 443-742, SOUTH KOREA

EUT DESCRIPTION: Cellular/PCS GPRS/EDGE, AWS/PCS WCDMA Tablet with
802.11abgn, BT3.0

MODEL: SGH-T869

SERIAL NUMBER: 001 AND 02058

DATE TESTED: AUGUST 30, 2011 – OCTOBER 14, 2011

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

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

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

Approved & Released For UL CCS By:

Tested By:



FRANK IBRAHIM
EMC SUPERVISOR
UL CCS



DAVID GARCIA
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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 a Cellular/PCS GPRS/EDGE, AWS/PCS WCDMA Tablet with 802.11abgn, BT3.0

The radio module is manufactured by Qualcomm.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

2400 to 2483.5 MHz Authorized Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	15.43	34.91
2412 - 2462	802.11g	19.56	90.36
2412 - 2462	802.11n HT20	20.03	100.69

5725 to 5850 MHz Authorized Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5745-5825	802.11a	17.54	56.75
5745-5825	802.11n HT20	17.65	58.21
5755-5795	802.11n HT40	17.85	60.95

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an 802.11 a/b/g/n and a Bluetooth antenna, with a maximum gain as stated in the table below:

Frequency	Eff. (%)	Ave. Gain (dBi)	Peak Gain (dBi)	Directivity (dBi)
2412 MHz	42	-3.80	0.12	3.92
2424 MHz	41	-3.90	0.12	4.02
2436 MHz	41	-3.86	0.28	4.14
2448 MHz	40	-3.97	0.31	4.28
2460 MHz	36	-4.39	-0.01	4.38
2472 MHz	40	-3.95	0.48	4.43
5180 MHz	52	-2.82	3.20	6.02
5305 MHz	60	-2.25	3.61	5.86
5430 MHz	60	-2.22	3.41	5.63
5555 MHz	54	-2.70	2.79	5.49
5680 MHz	28	-5.48	-0.12	5.36
5805 MHz	24	-6.24	-0.91	5.33

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Wifi : Firmware Rev 3.1.1.40.

The EUT driver software installed in the equipment during testing was WlanTest: HW REV1.2
SW : P6200.002.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power.

For the fundamental investigation, since the EUT is a portable device that has three orientations; therefore X, Y and Z orientations have been investigated, also with AC/DC adapter, and earphone, and the worst case was found to be at X orientation with AC Adapter.

Worst-case data rates used for the testing as provided by the client were as follows:

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

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	GB4943-2001	N/A	N/A

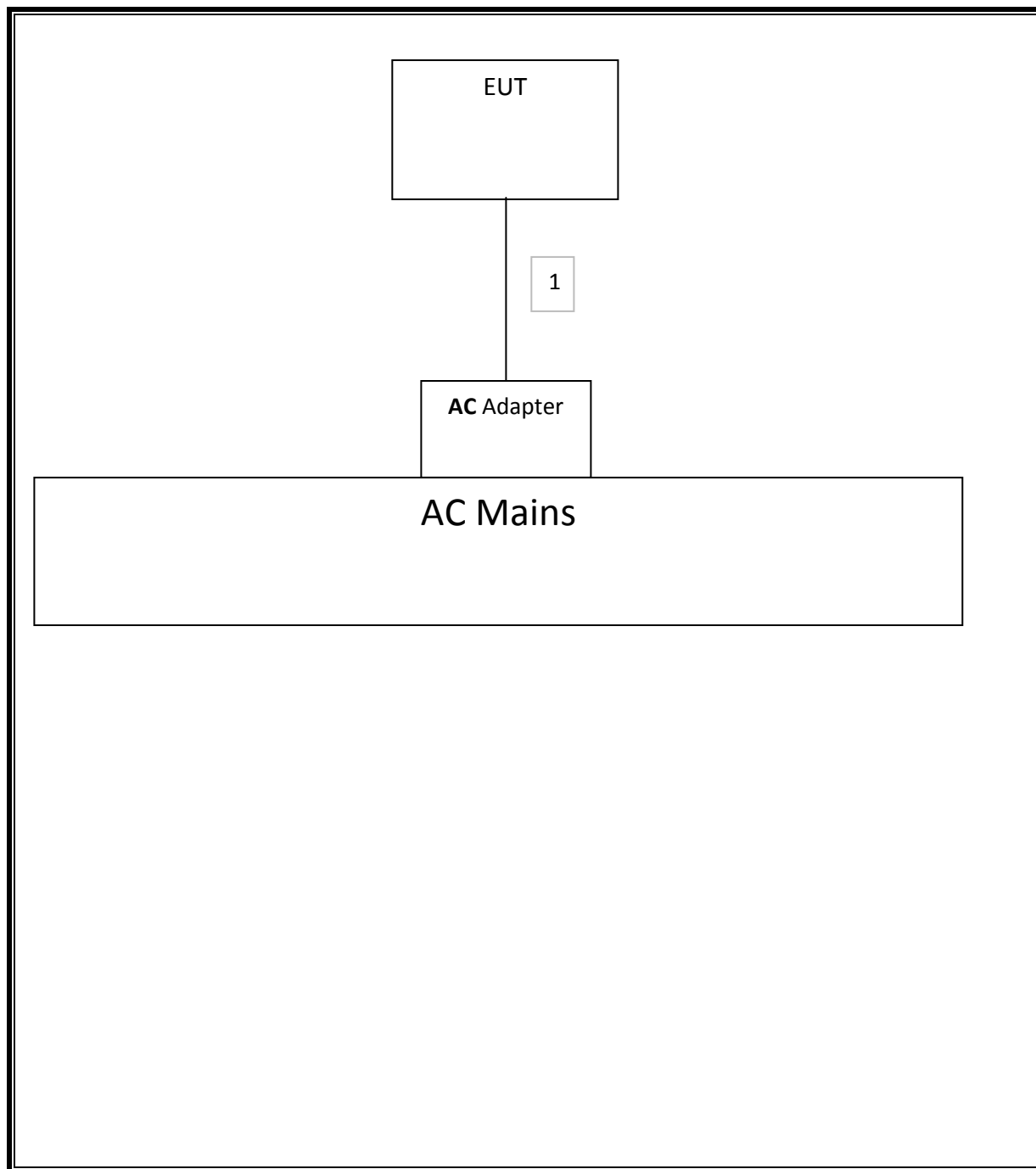
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	Mini USB	1	USB	shielded	1m	

TEST SETUP

The EUT is a standalone device.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	Asset	Cal Date	Cal Due
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01176	08/04/11	08/04/12
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	12/17/10	12/17/11
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	07/06/11	07/06/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/16/11	07/16/12
Antenna, Horn, 18 GHz	EMCO	3115	C00872	06/29/11	06/29/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	01/27/11	01/27/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	07/18/11	07/18/12
Power Meter	Agilent / HP	437B		07/28/11	07/28/12
Power Sensor, 18 GHz	Agilent / HP	8481A	N02782	07/29/11	07/29/13
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/10/10	11/10/11
Antenna, Horn, 26.5 GHz	ARA	MMH-1826/B	C00589	07/28/11	07/28/12
Antenna, Horn, 40 GHz	ARA	MMH-2640/B	C00981	06/14/11	06/14/12
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/02/11	08/02/12

7. ANTENNA PORT TEST RESULTS

7.1. 802.11b MODE IN THE 2.4 GHz BAND

7.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

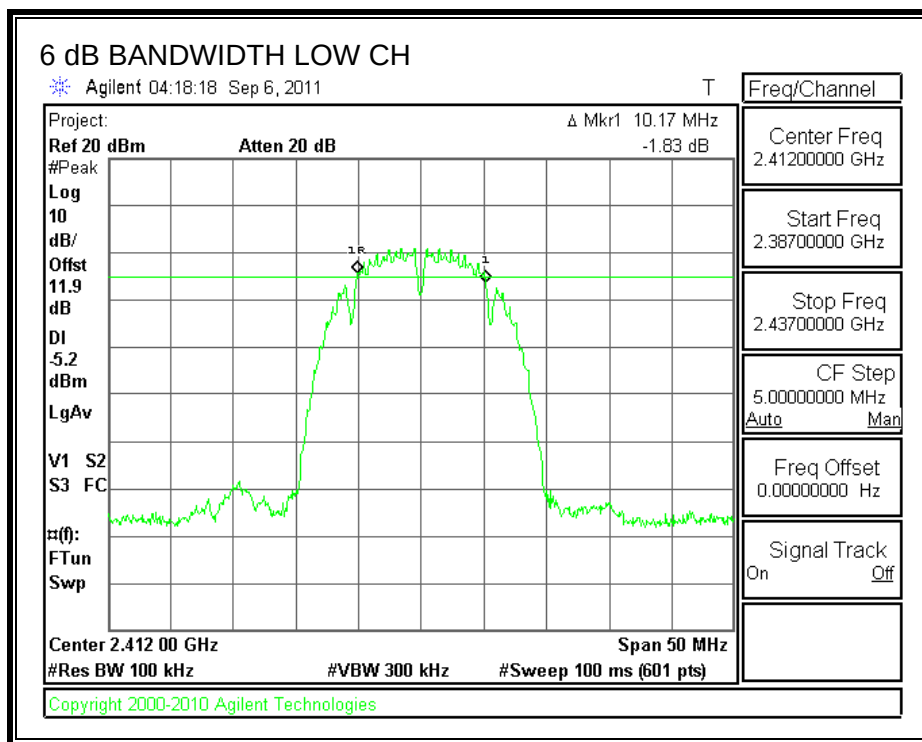
TEST PROCEDURE

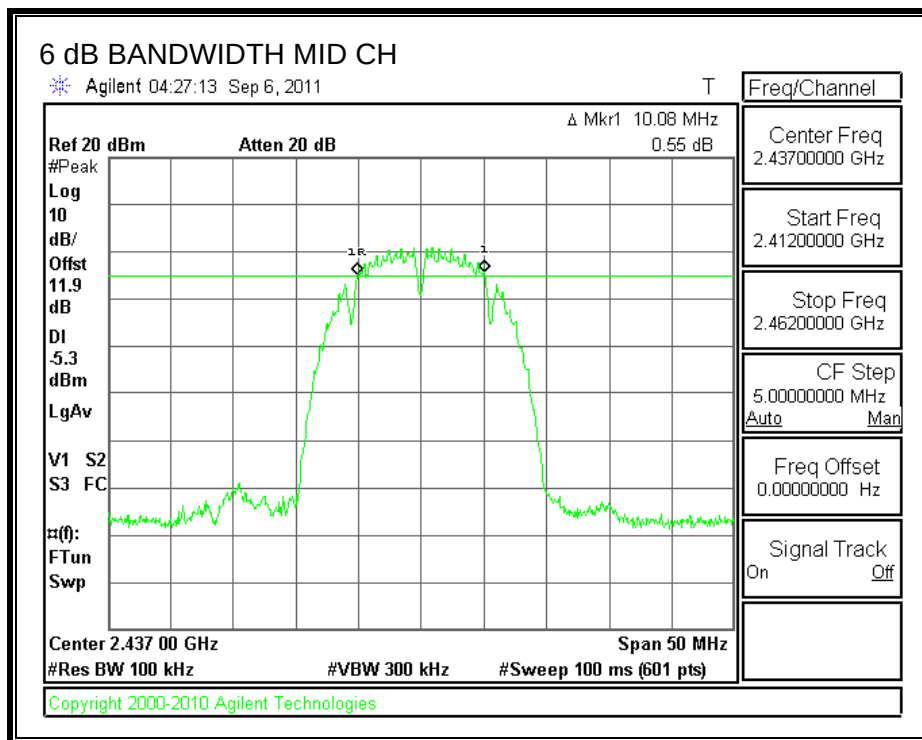
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

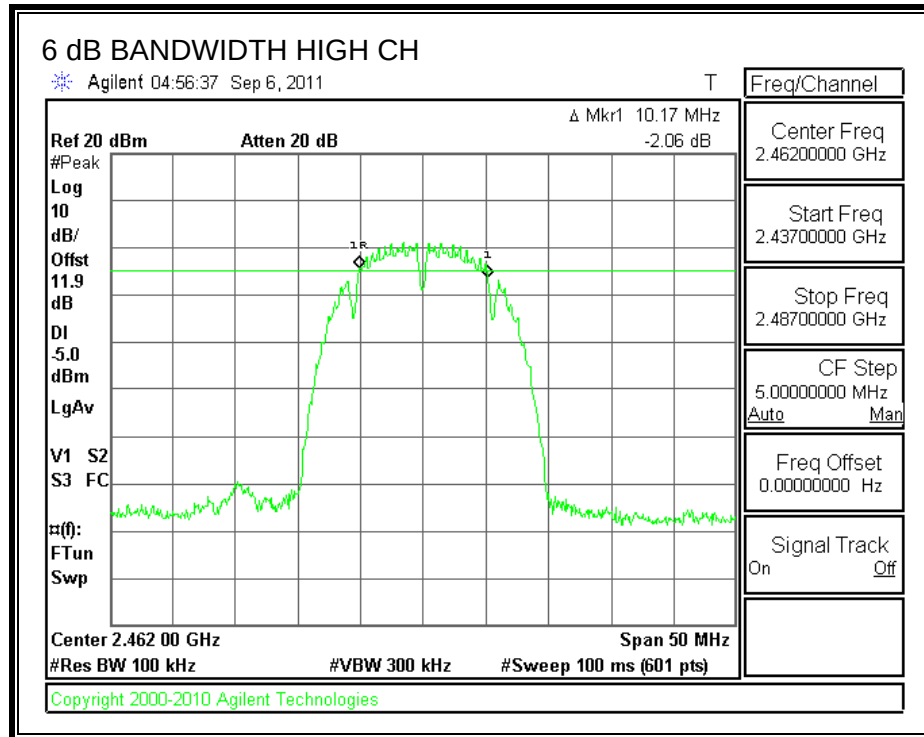
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	10.17	0.5
Middle	2437	10.08	0.5
High	2462	10.17	0.5

6 dB BANDWIDTH







7.1.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

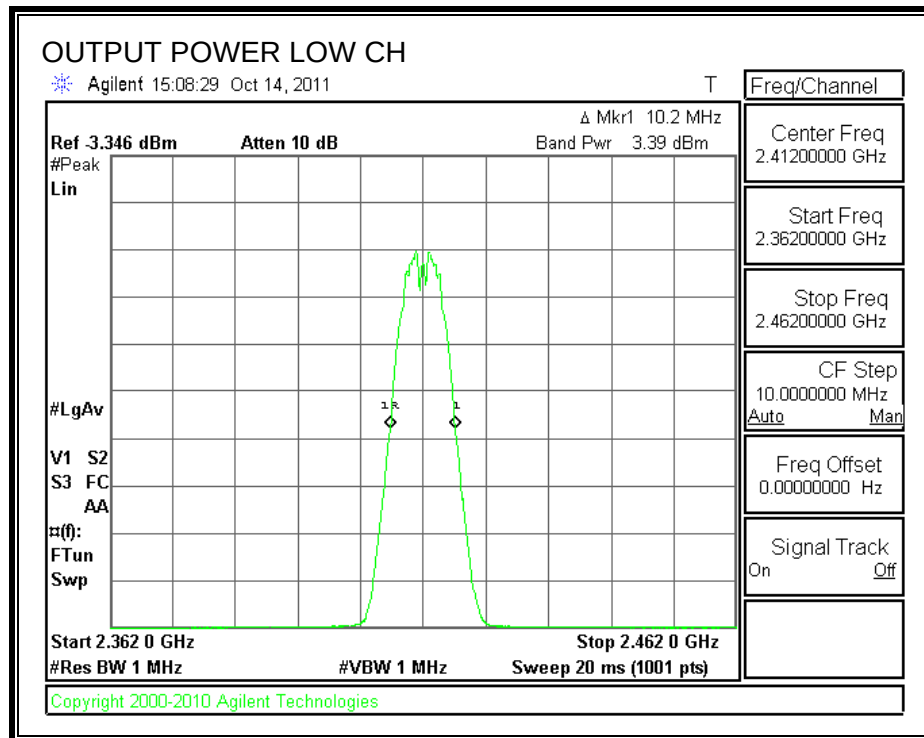
TEST PROCEDURE

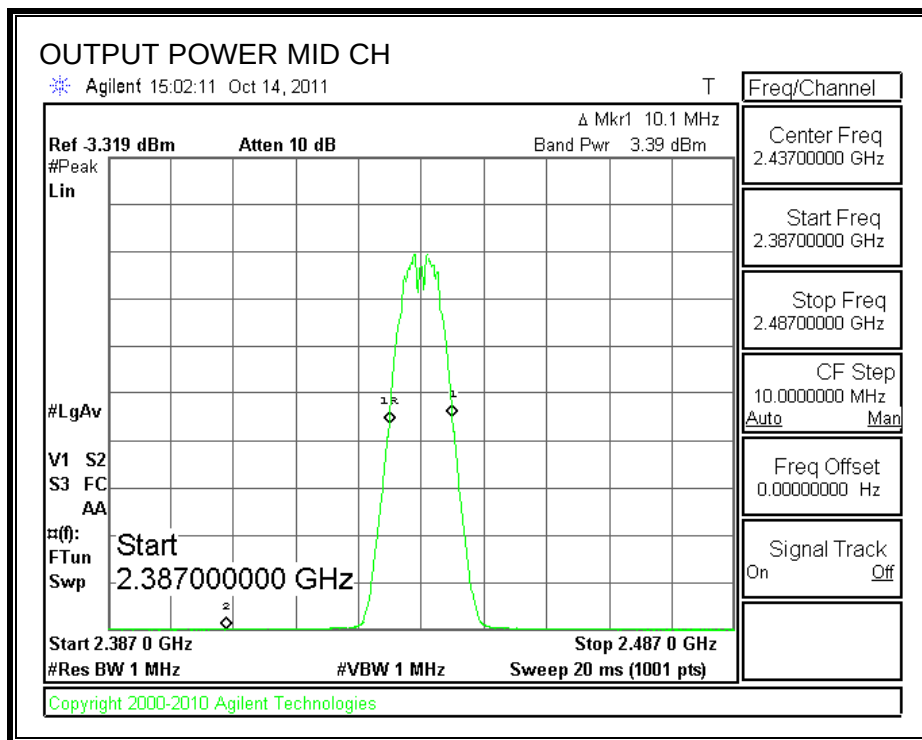
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

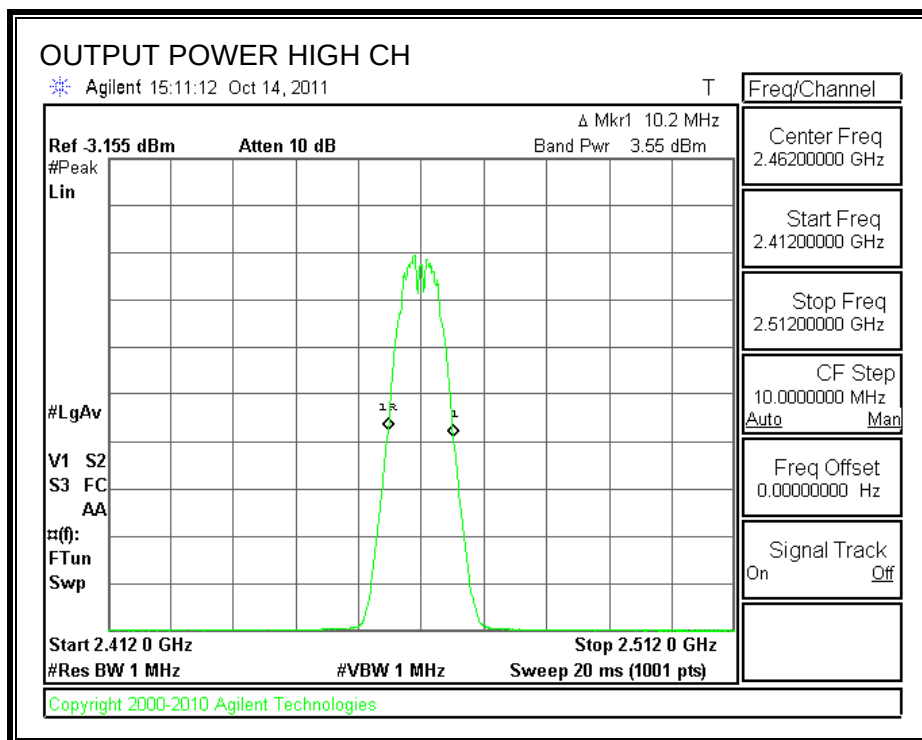
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	3.39	11.88	15.27	30	-14.73
Middle	2437	3.39	11.88	15.27	30	-14.73
High	2462	3.55	11.88	15.43	30	-14.57

OUTPUT POWER







7.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11.88 dB (including 10 dB pad and 1.88 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Frequency (MHz)	Power (dBm)
2412	12.67
2437	12.42
2462	12.55

7.1.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

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.

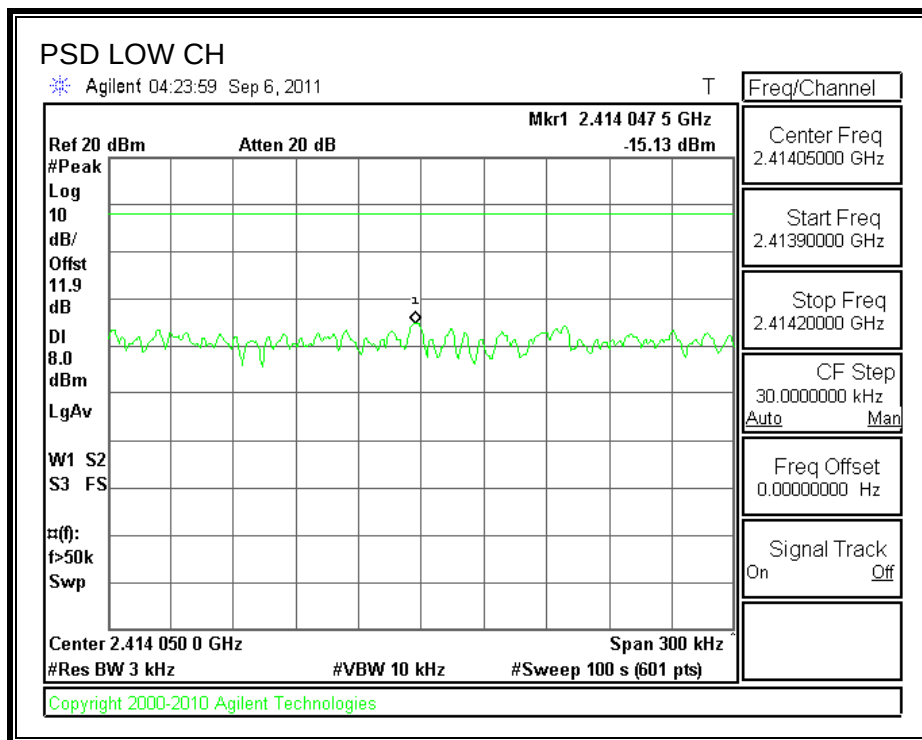
TEST PROCEDURE

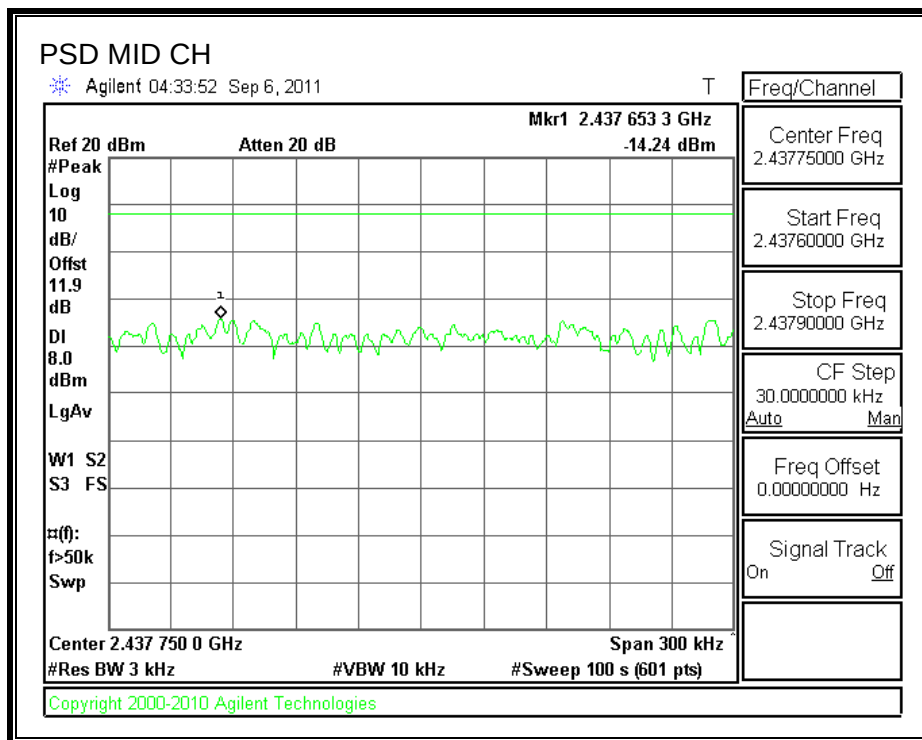
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

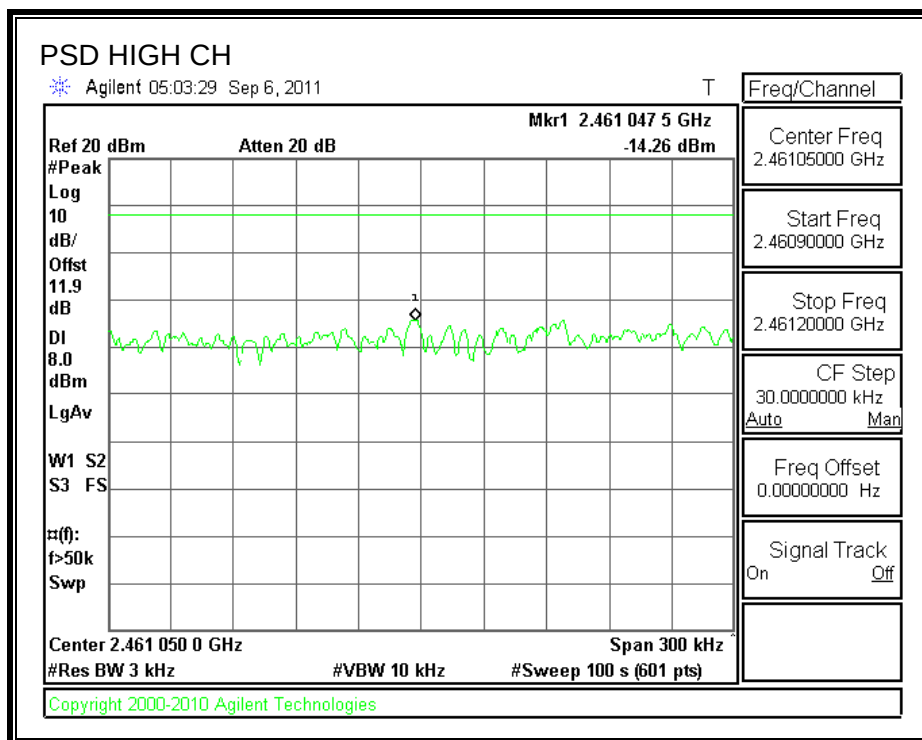
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-15.13	8	-23.13
Middle	2437	-14.24	8	-22.24
High	2462	-14.26	8	-22.26

POWER SPECTRAL DENSITY







7.1.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

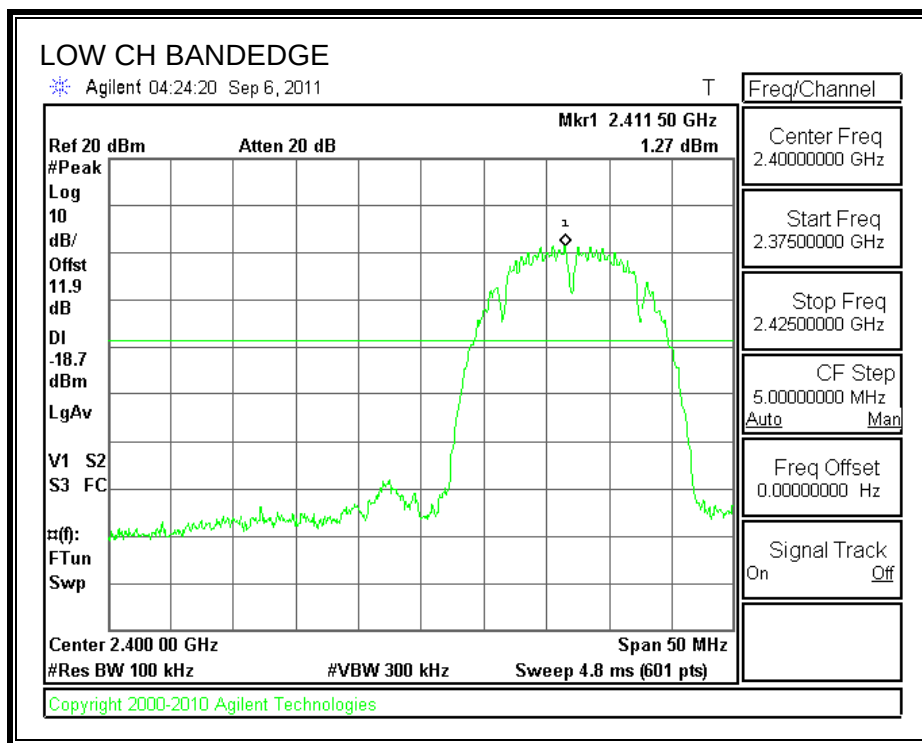
TEST PROCEDURE

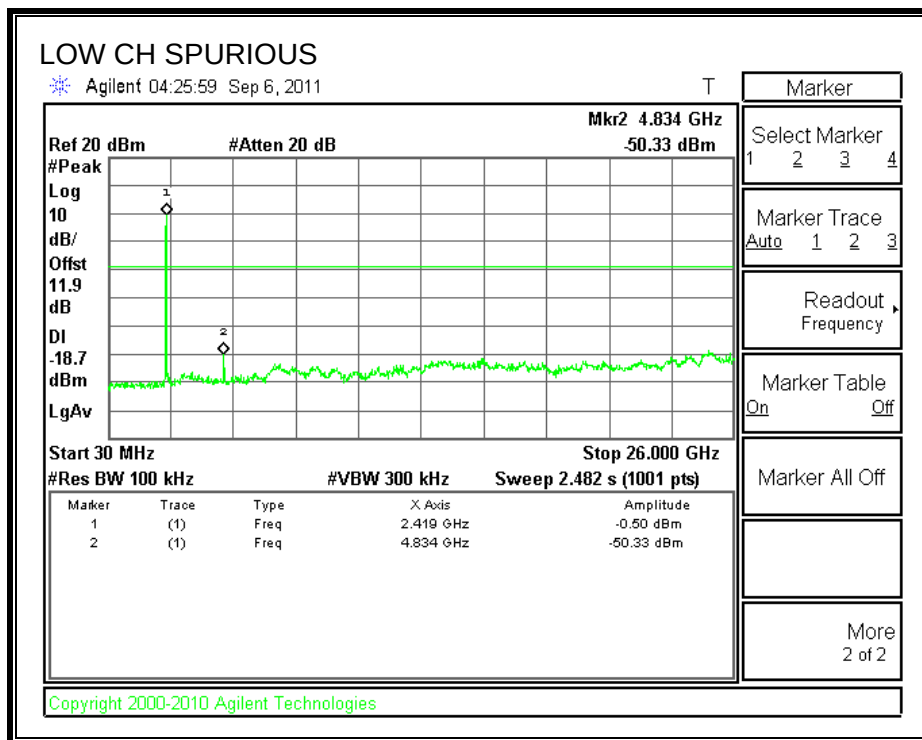
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

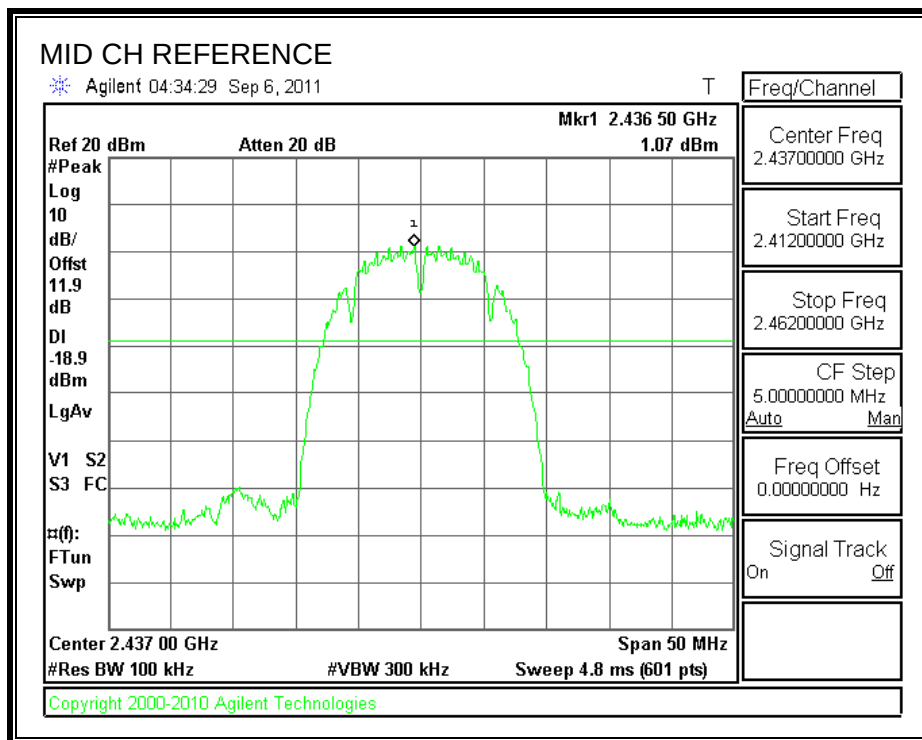
RESULTS

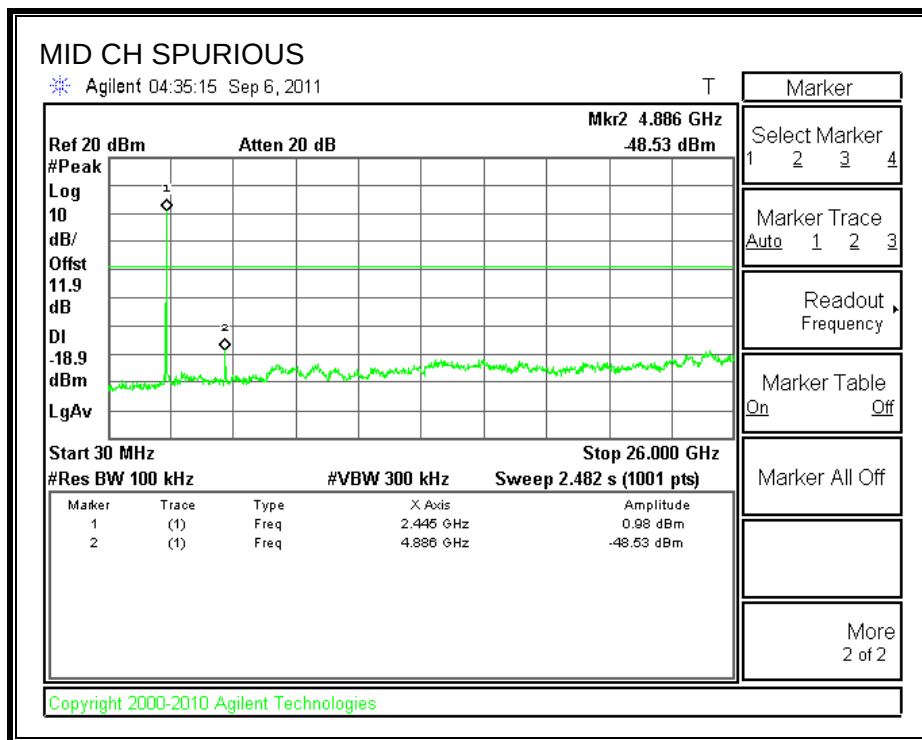
SPURIOUS EMISSIONS, LOW CHANNEL



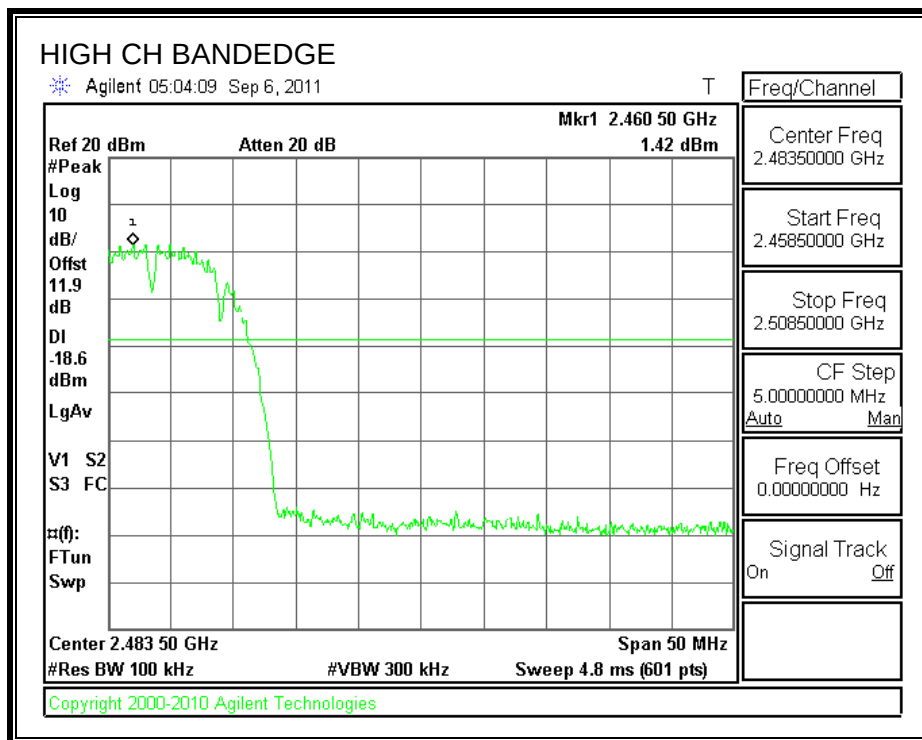


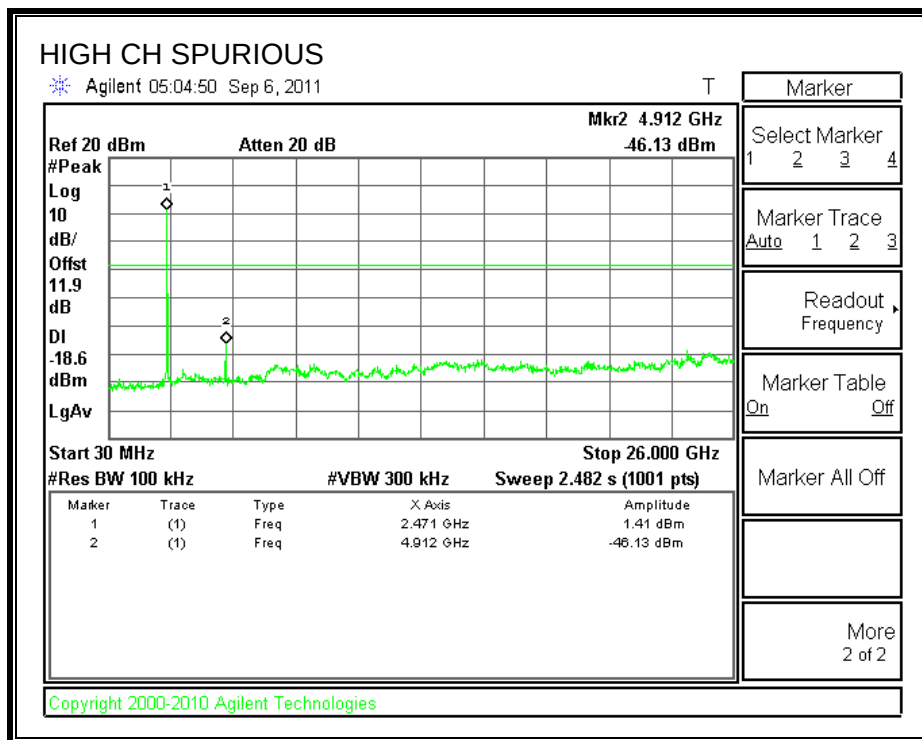
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.2. 802.11g MODE IN THE 2.4 GHz BAND

7.2.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

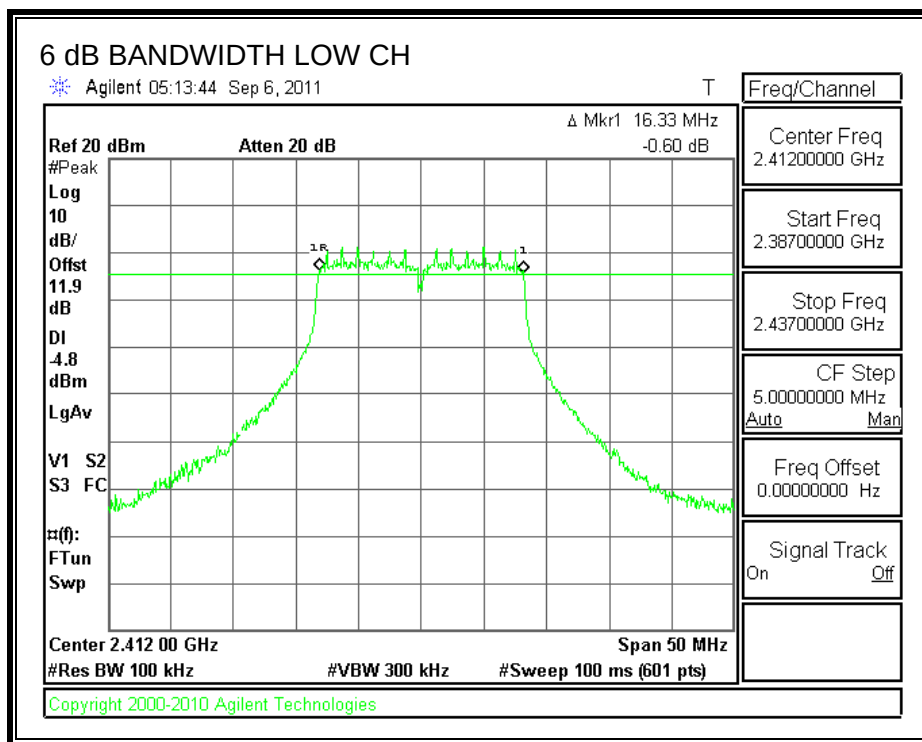
TEST PROCEDURE

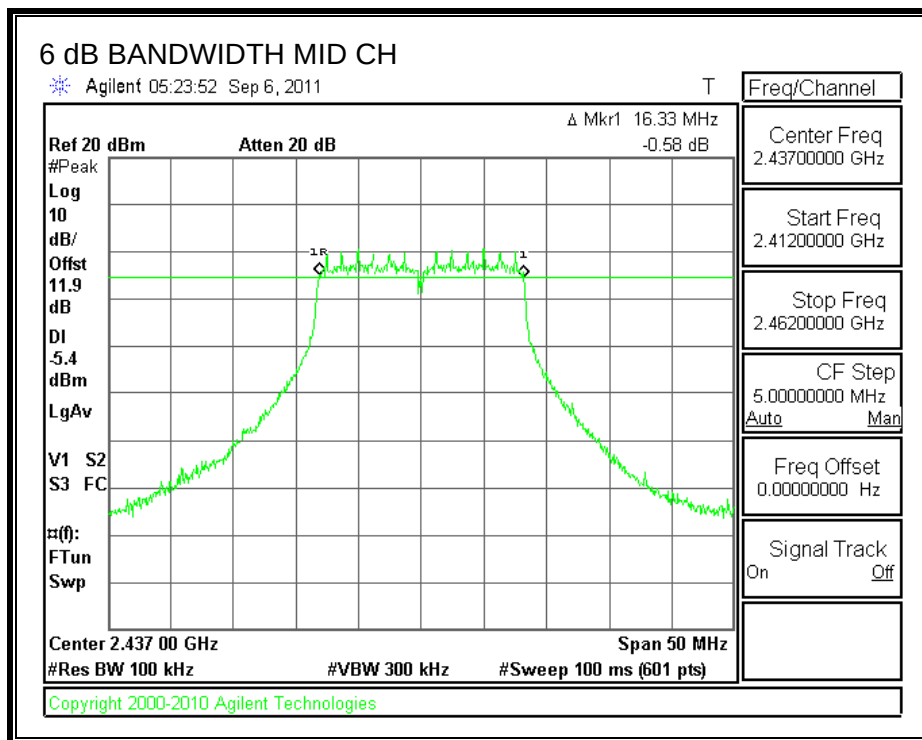
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

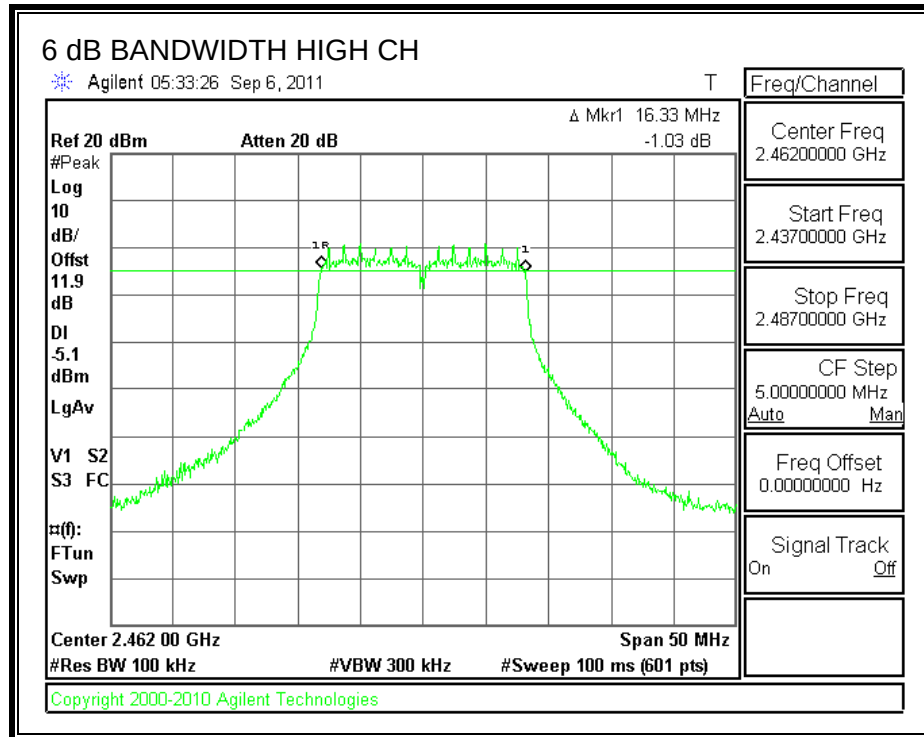
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.33	0.5
Middle	2437	16.33	0.5
High	2462	16.33	0.5

6 dB BANDWIDTH







7.2.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

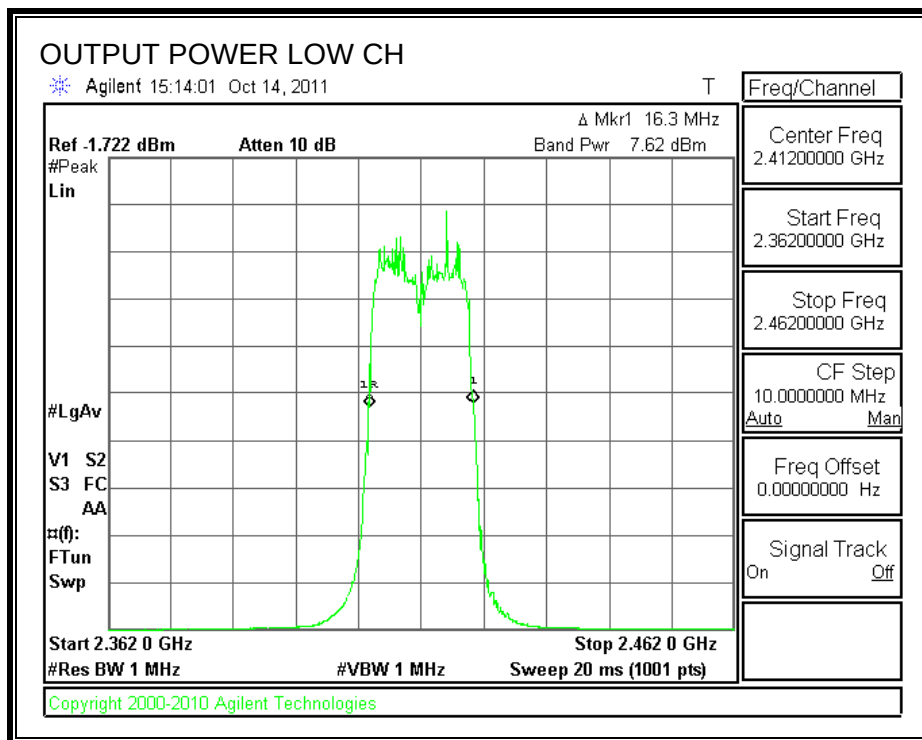
TEST PROCEDURE

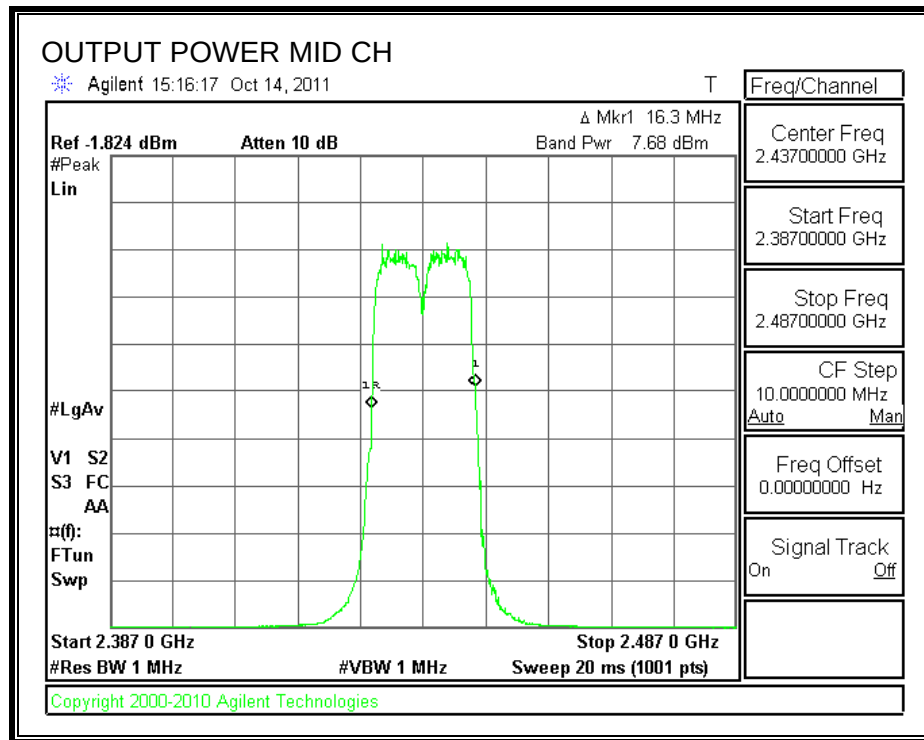
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

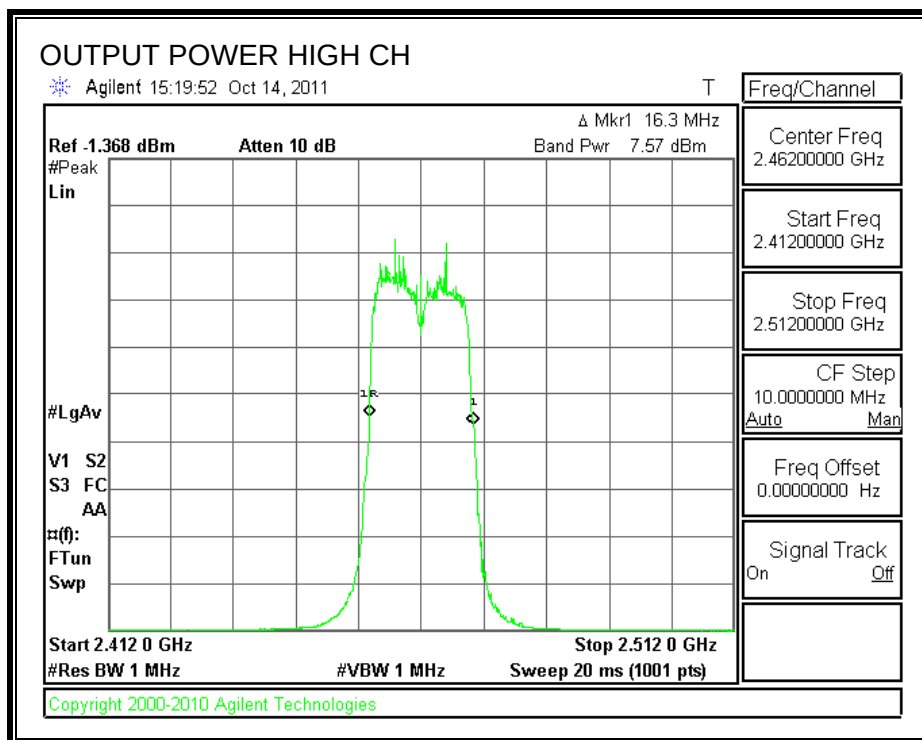
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	7.62	11.88	19.50	30	-10.50
Middle	2437	7.68	11.88	19.56	30	-10.44
High	2462	7.57	11.88	19.45	30	-10.55

OUTPUT POWER







7.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11.88 dB (including 10 dB pad and 1.88 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Frequency (MHz)	Power (dBm)
2412	11.64
2437	11.65
2462	11.94

7.2.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

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.

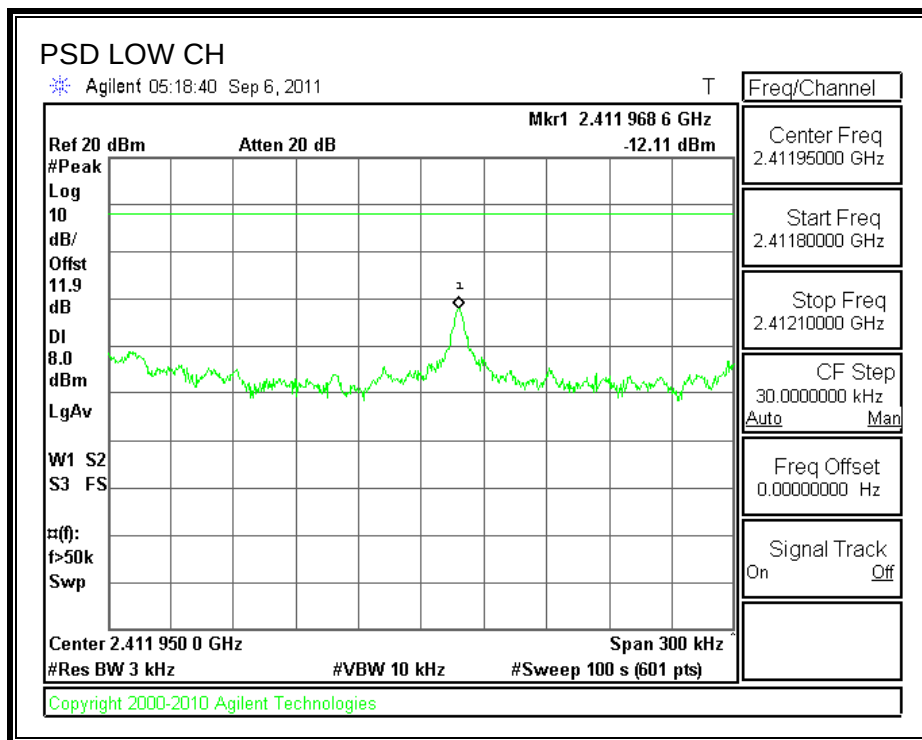
TEST PROCEDURE

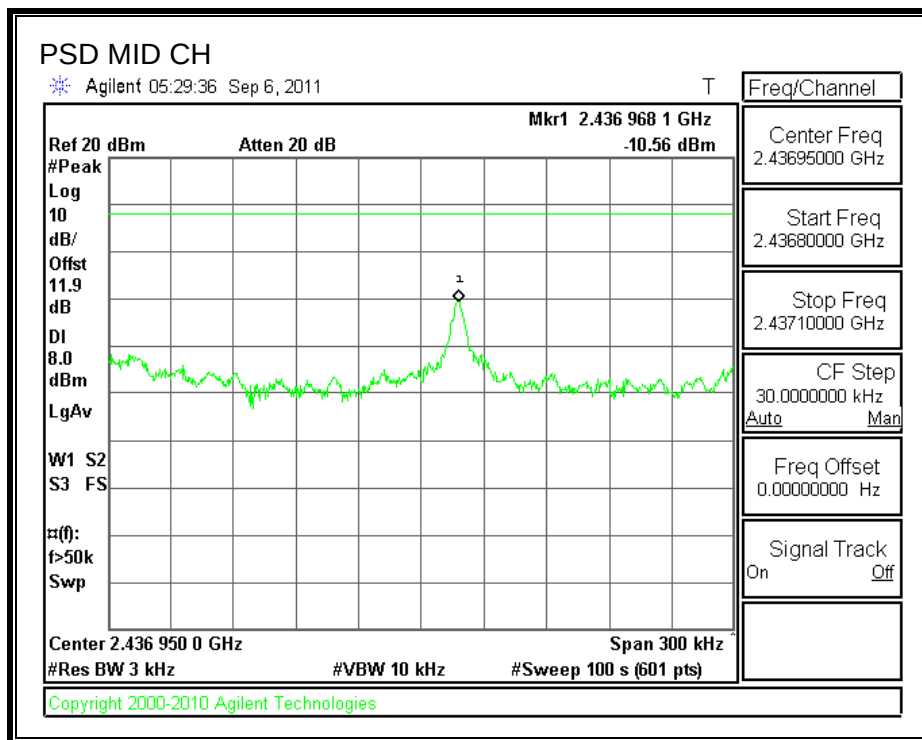
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

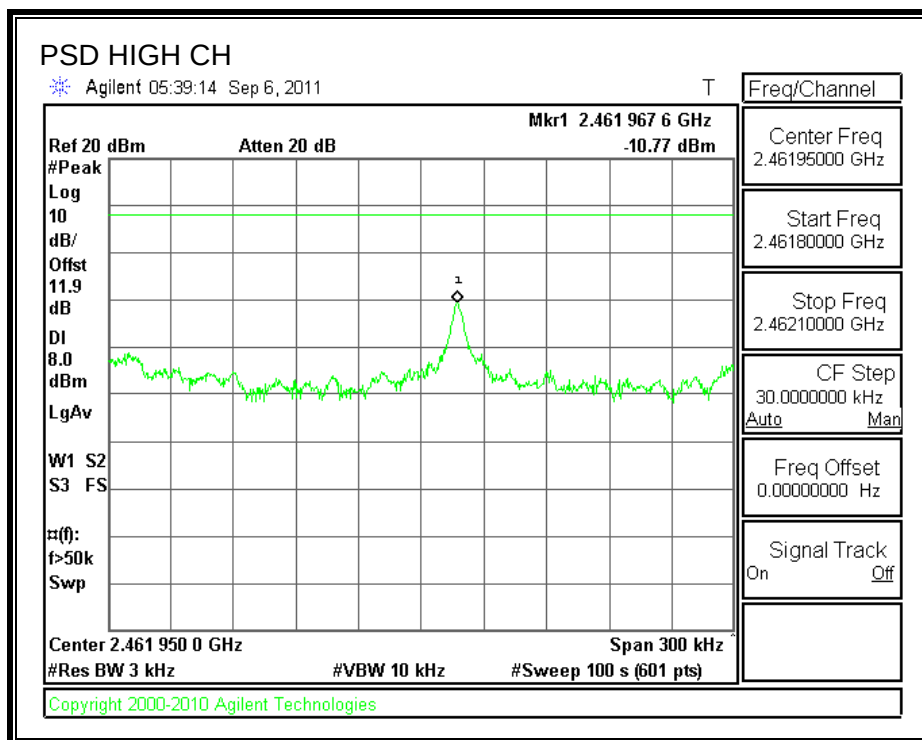
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-12.11	8	-20.11
Middle	2437	-10.56	8	-18.56
High	2462	-10.77	8	-18.77

POWER SPECTRAL DENSITY







7.2.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

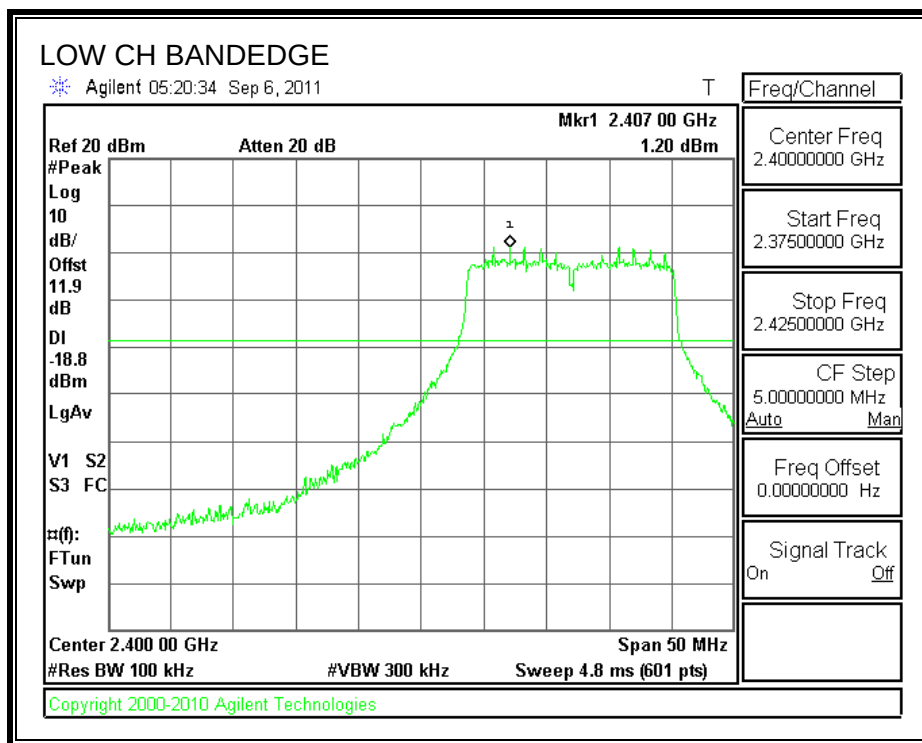
TEST PROCEDURE

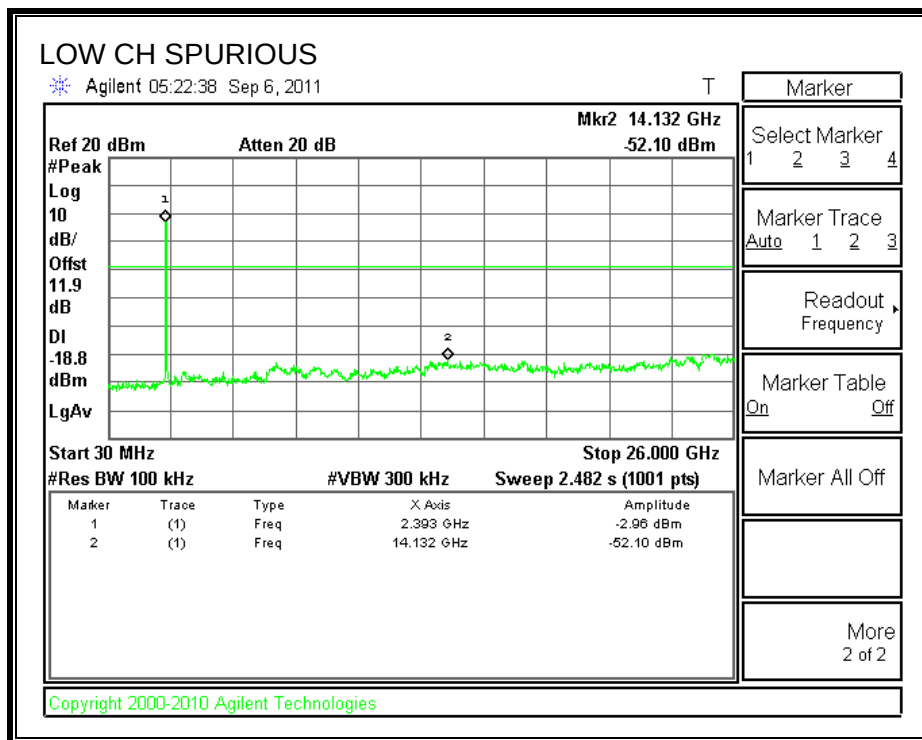
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The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

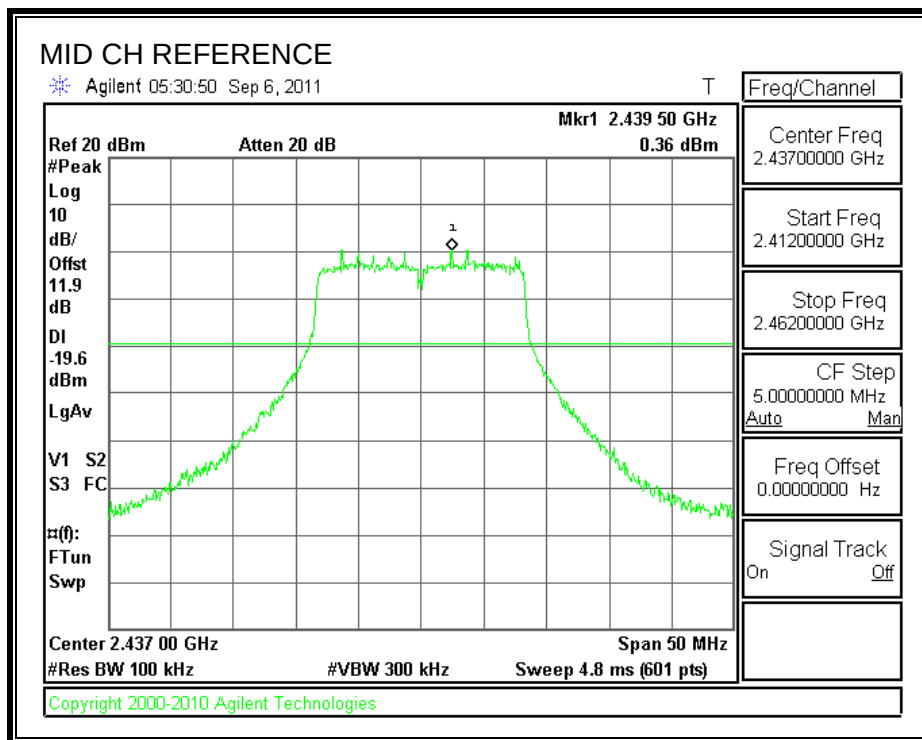
RESULTS

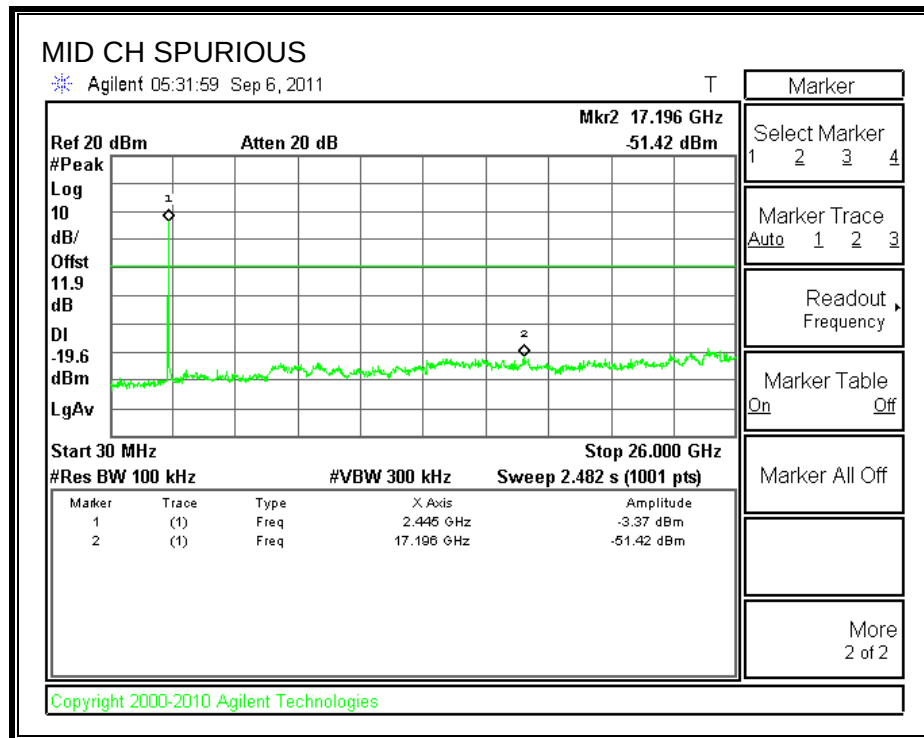
SPURIOUS EMISSIONS, LOW CHANNEL



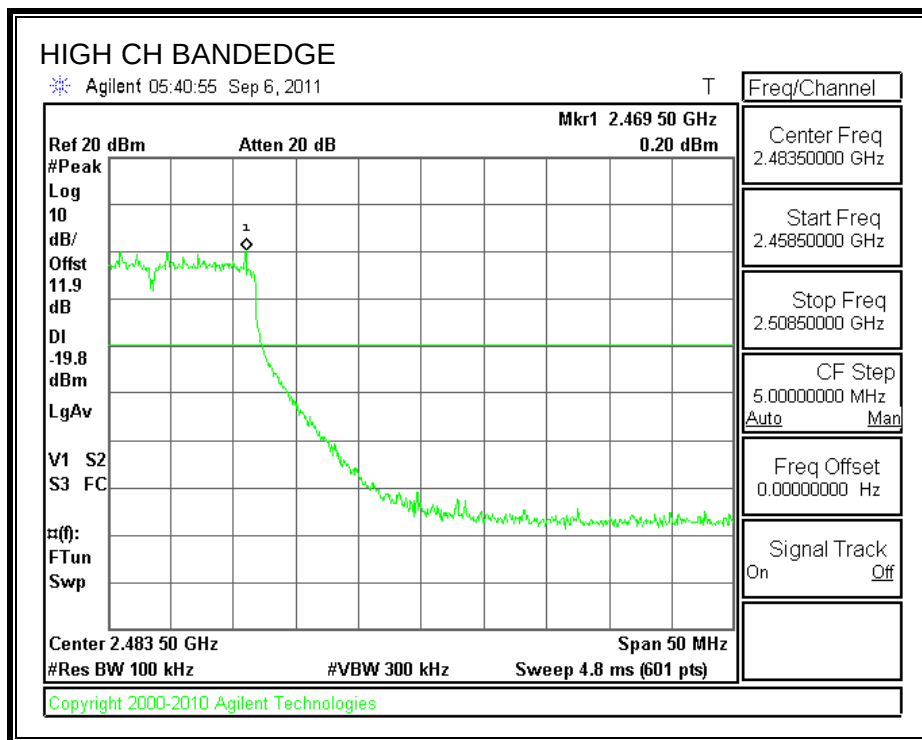


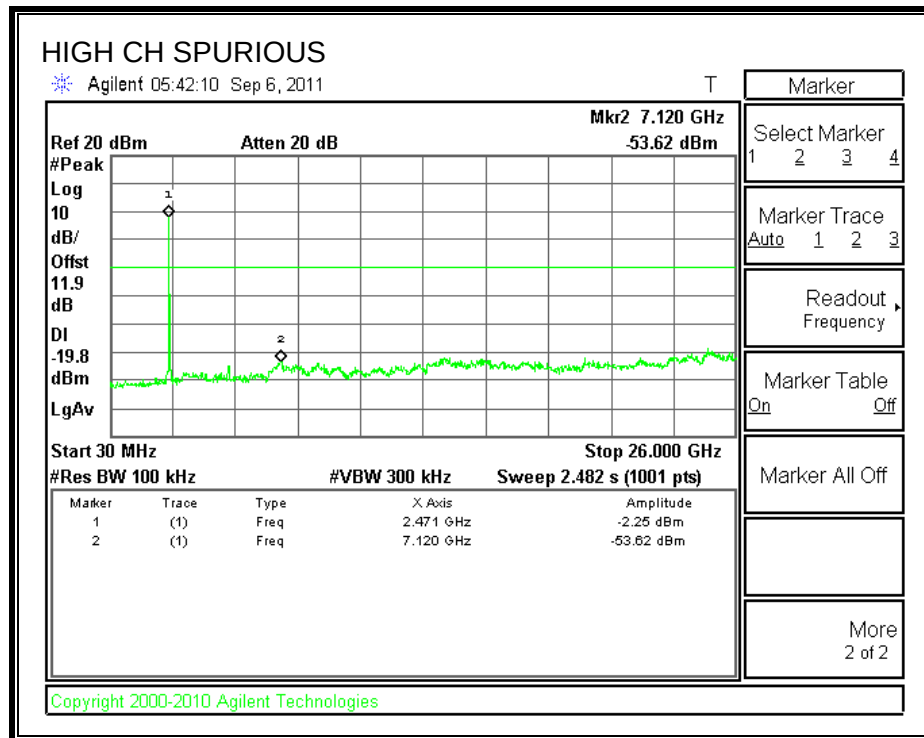
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

7.3.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

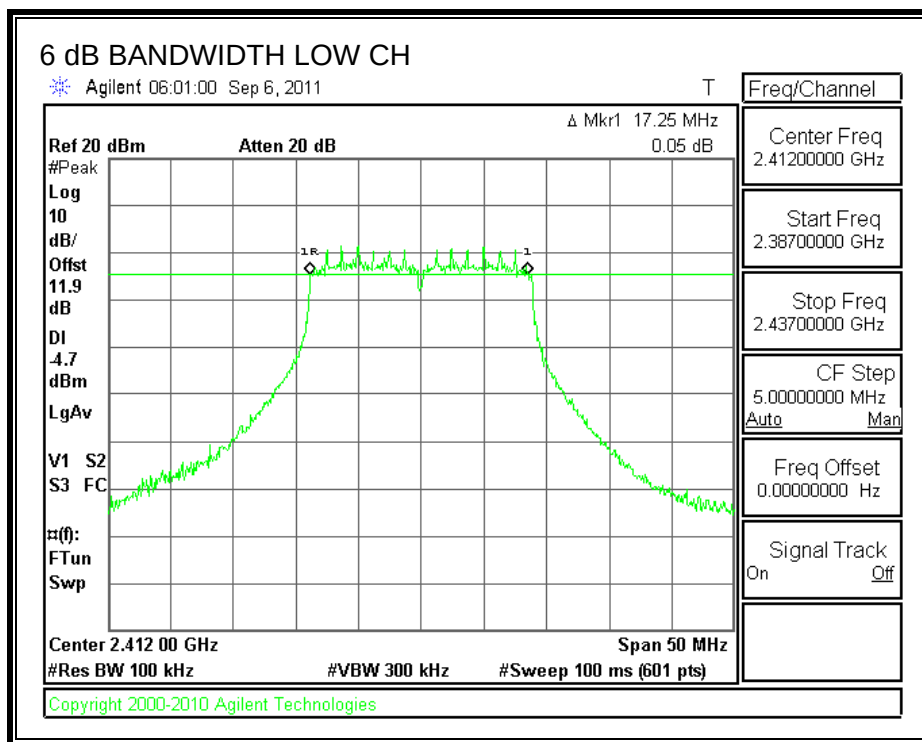
TEST PROCEDURE

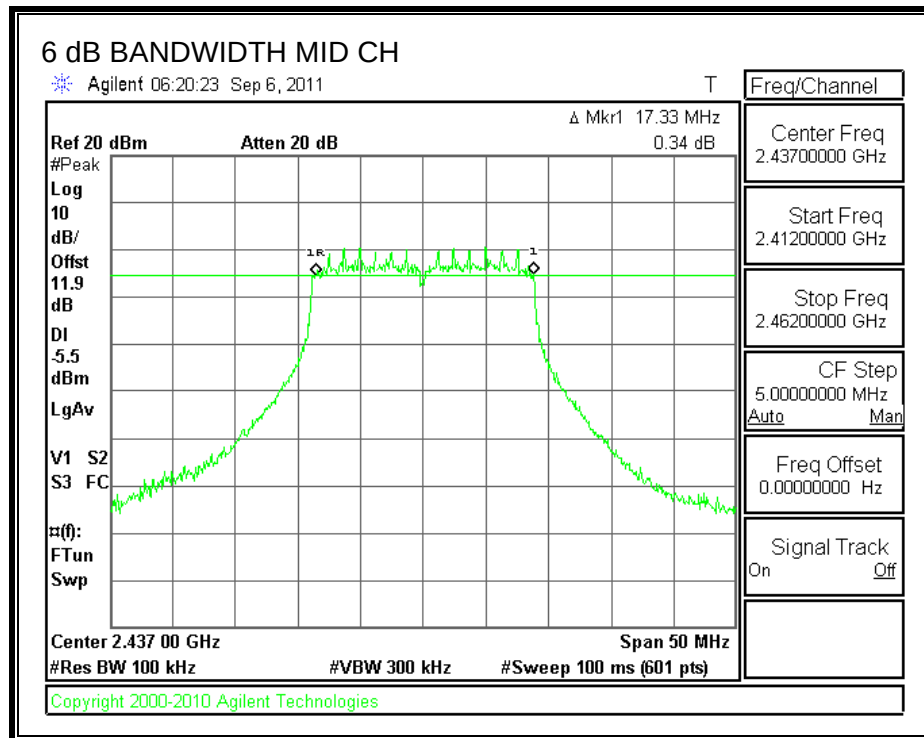
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

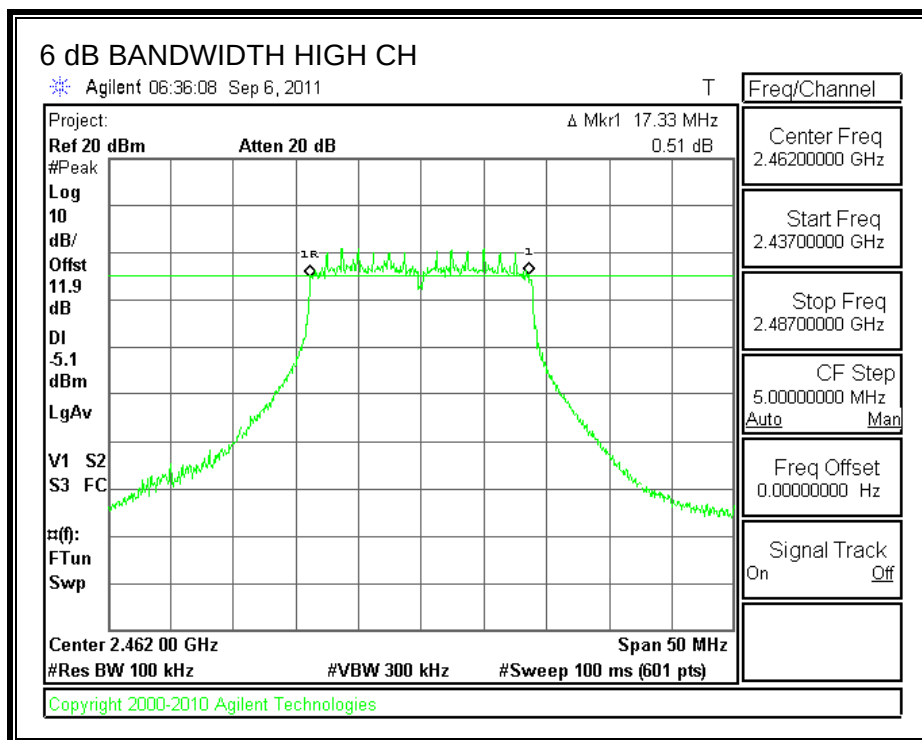
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.25	0.5
Middle	2437	17.33	0.5
High	2462	17.33	0.5

6 dB BANDWIDTH







7.3.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

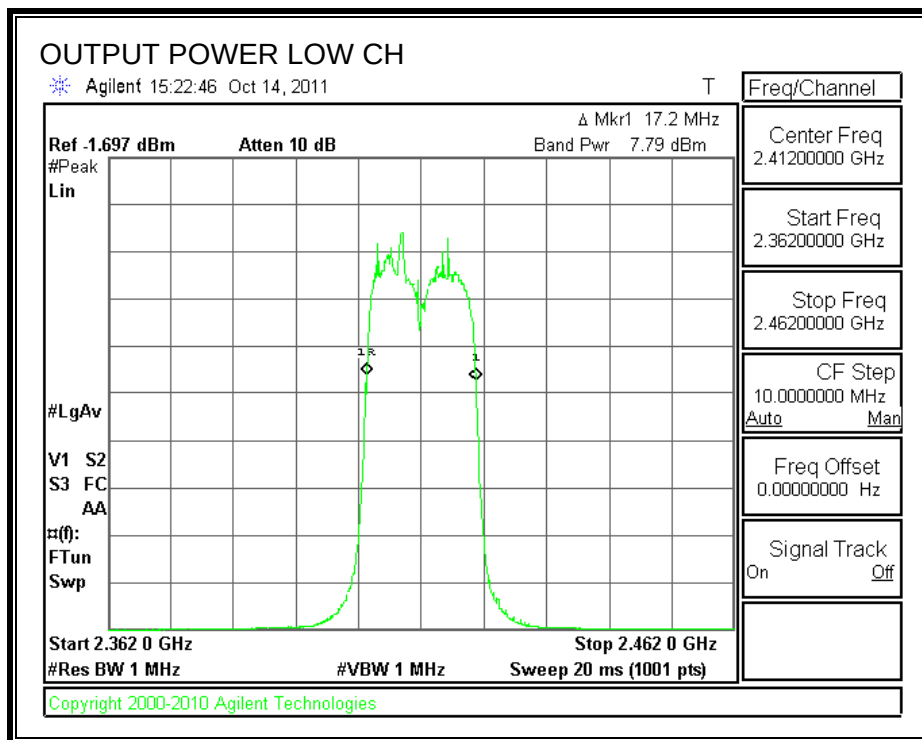
TEST PROCEDURE

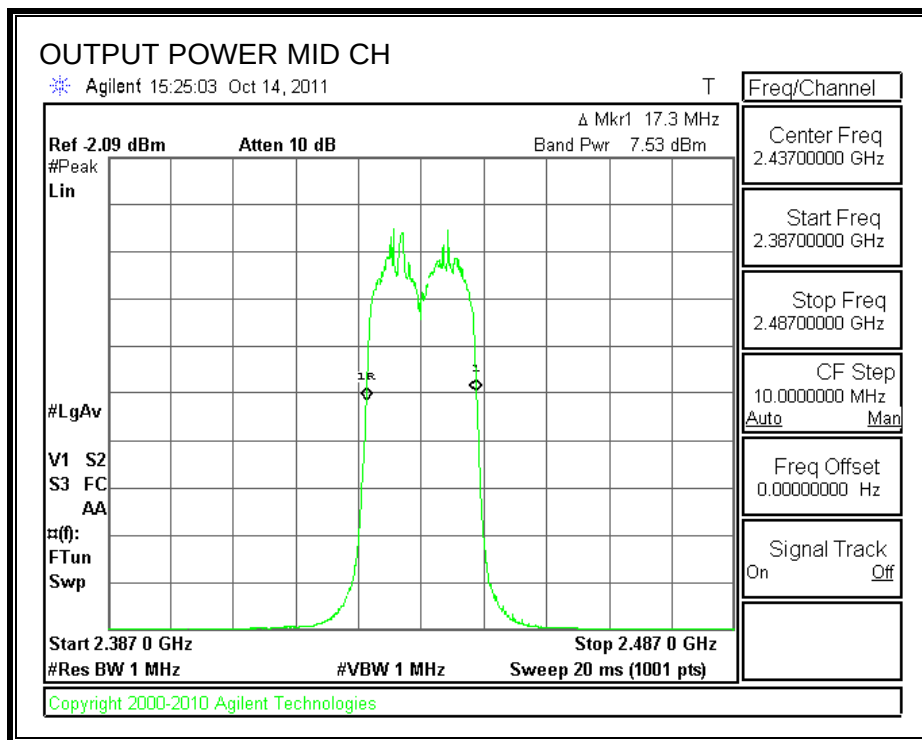
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

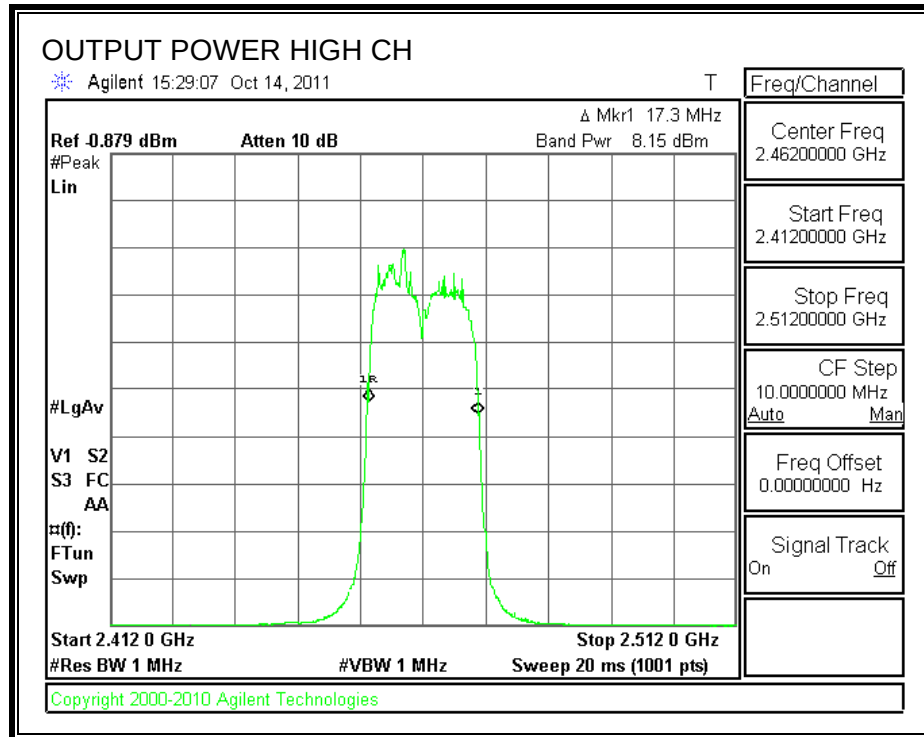
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	7.79	11.88	19.67	30	-10.33
Middle	2437	7.53	11.88	19.41	30	-10.59
High	2462	8.15	11.88	20.03	30	-9.97

OUTPUT POWER







7.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11.88 dB (including 10 dB pad and 1.88 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Frequency (MHz)	Power (dBm)
2412	11.91
2437	11.52
2462	12.25

7.3.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

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.

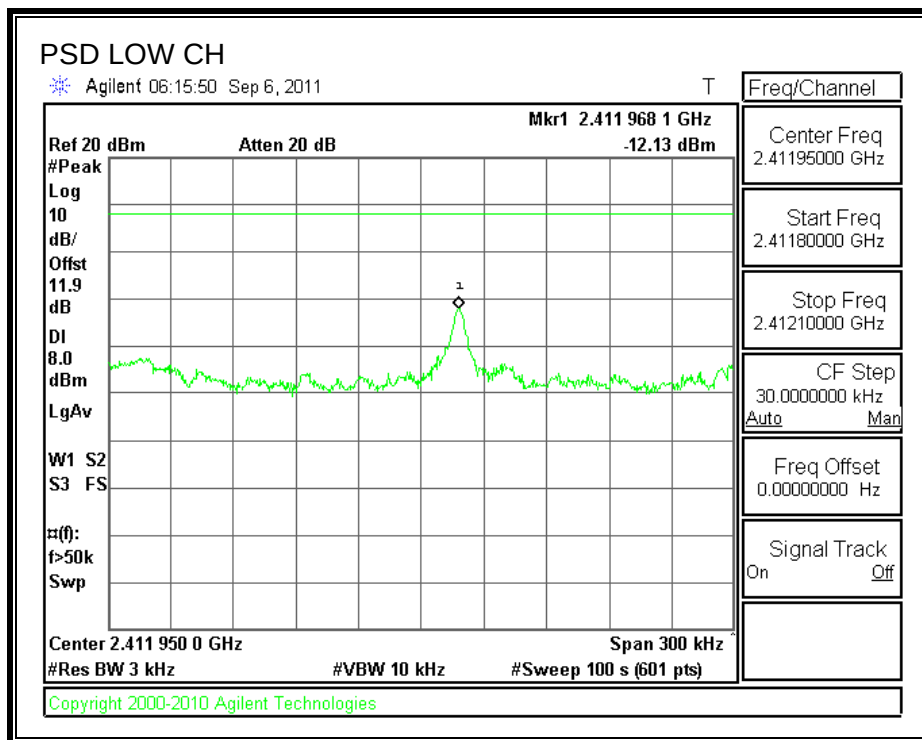
TEST PROCEDURE

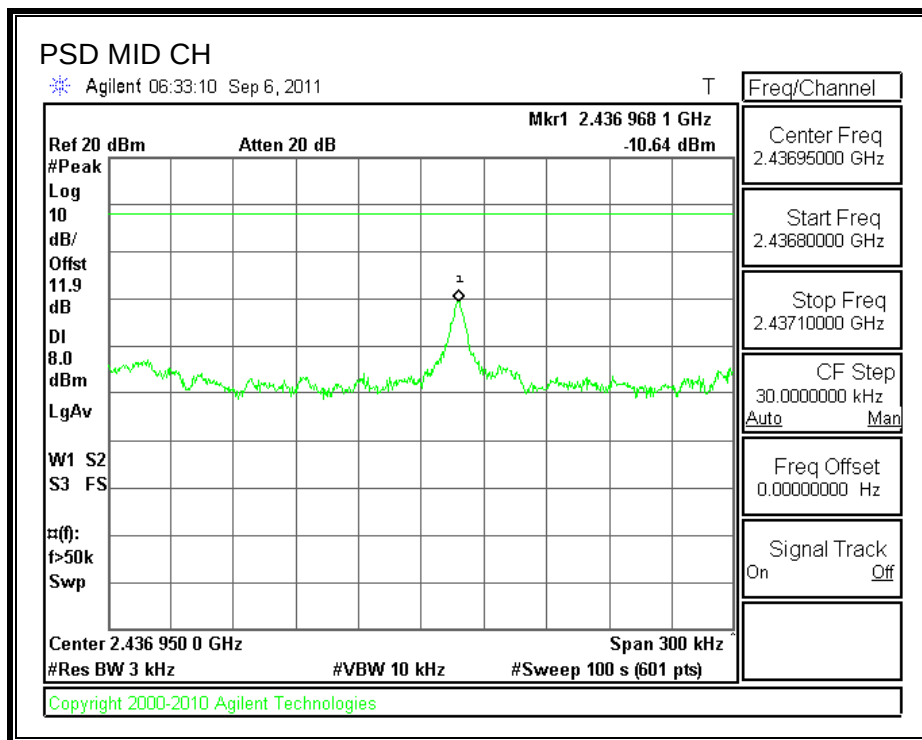
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

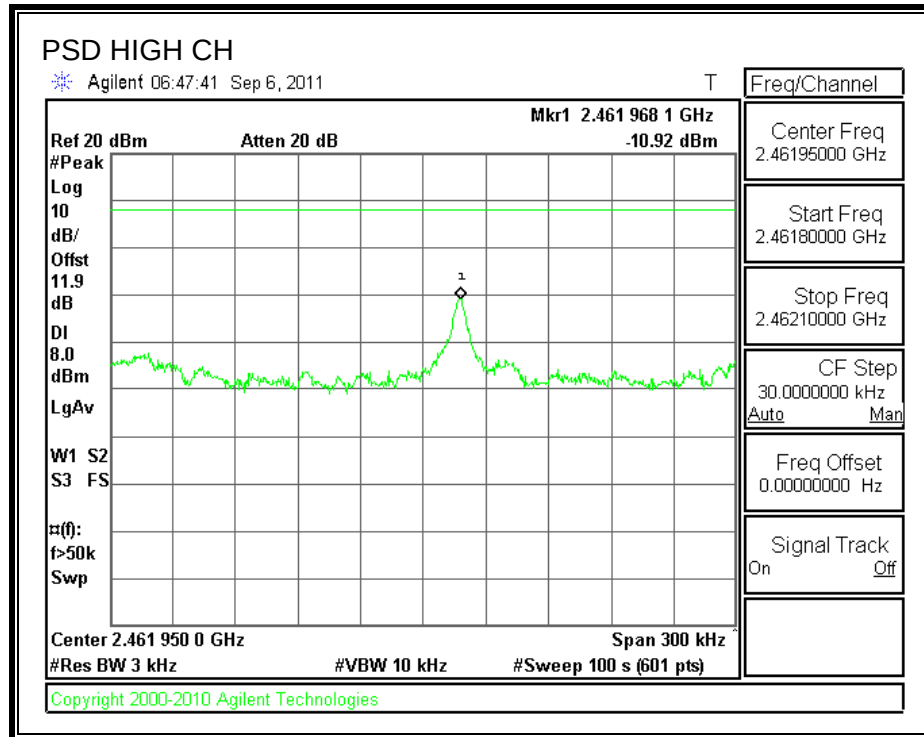
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-12.13	8	-20.13
Middle	2437	-10.64	8	-18.64
High	2462	-10.92	8	-18.92

POWER SPECTRAL DENSITY







7.3.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

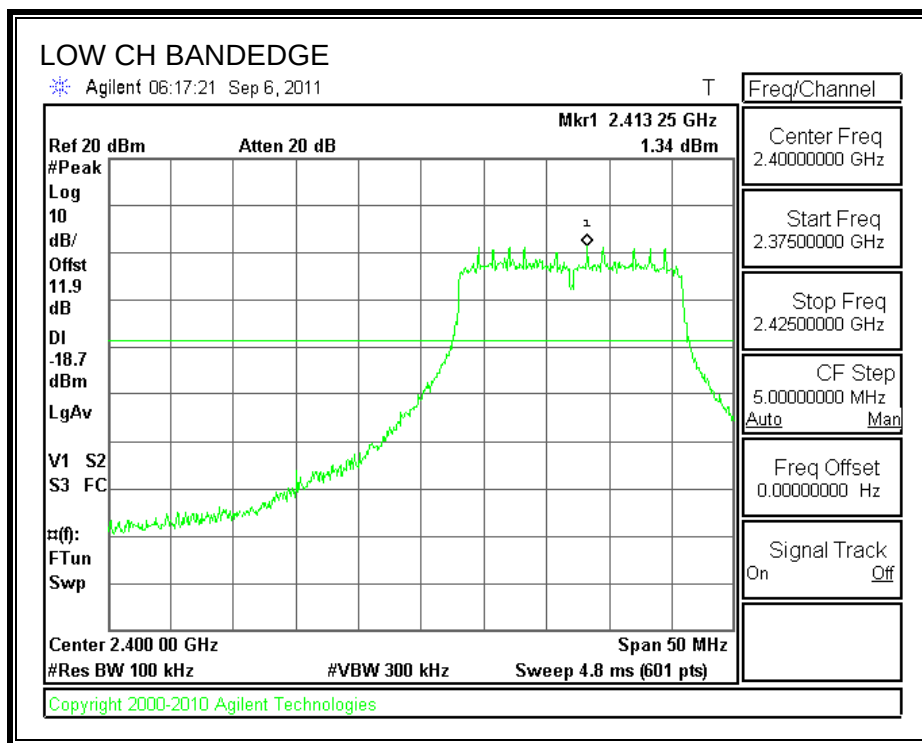
TEST PROCEDURE

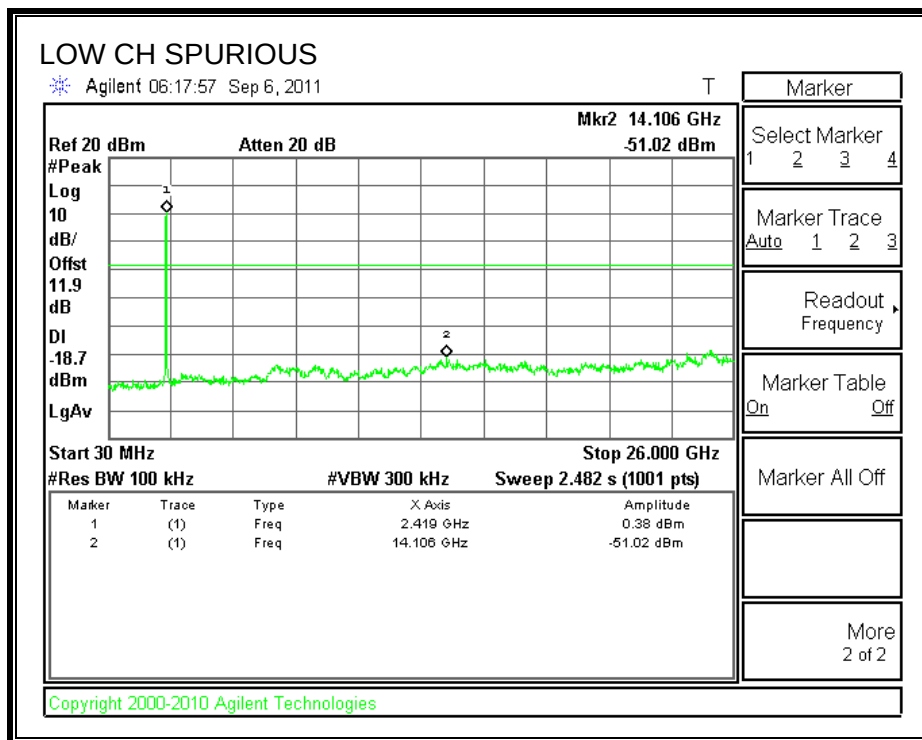
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

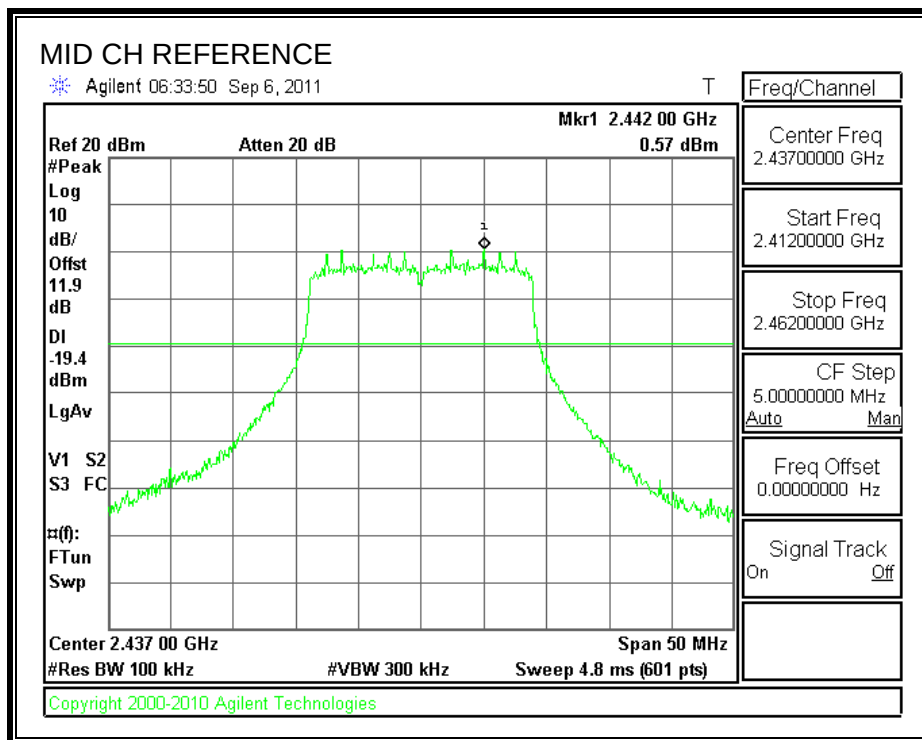
RESULTS

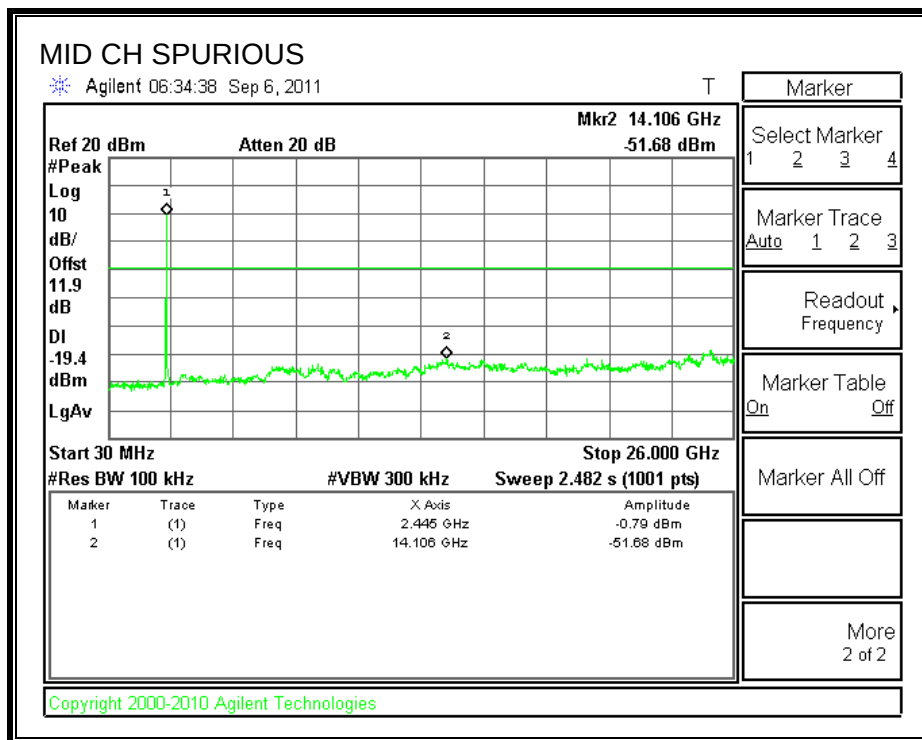
SPURIOUS EMISSIONS, LOW CHANNEL



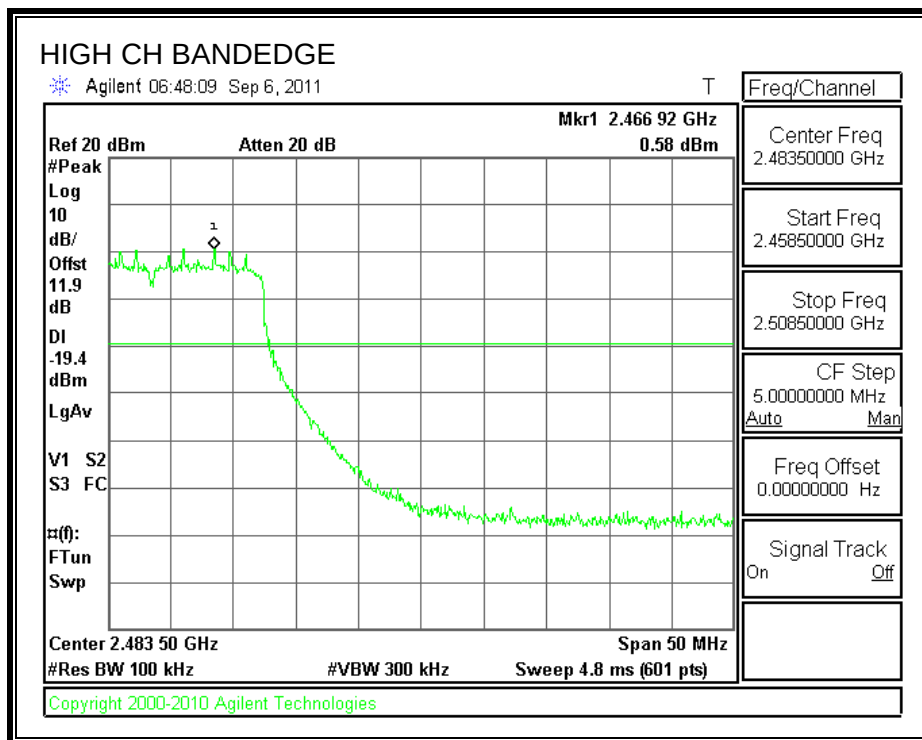


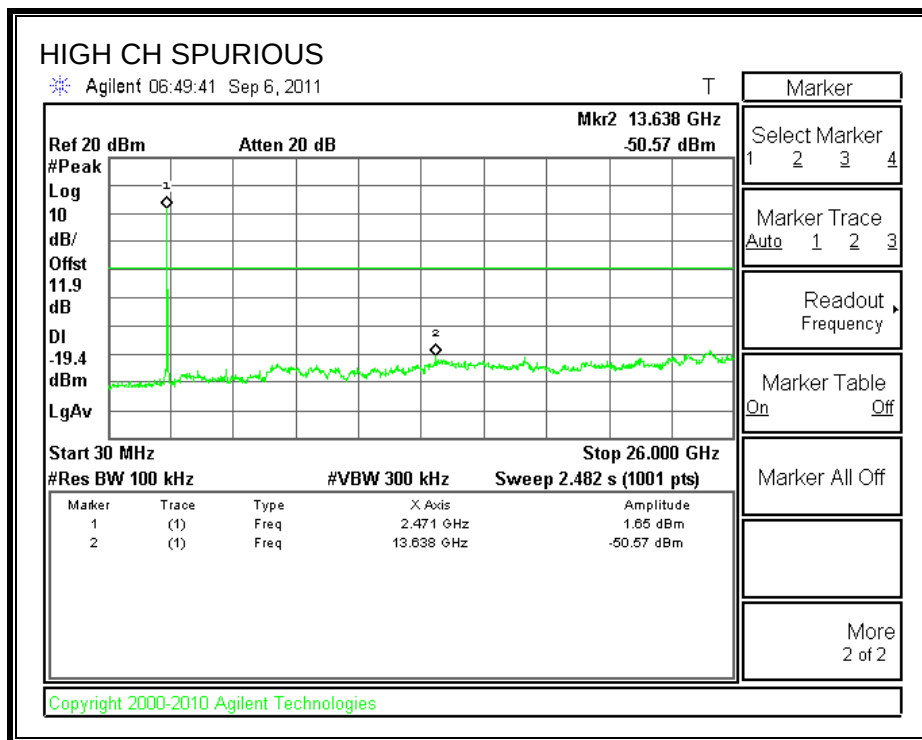
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.4. 802.11a MODE IN THE 5.8 GHz BAND

7.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

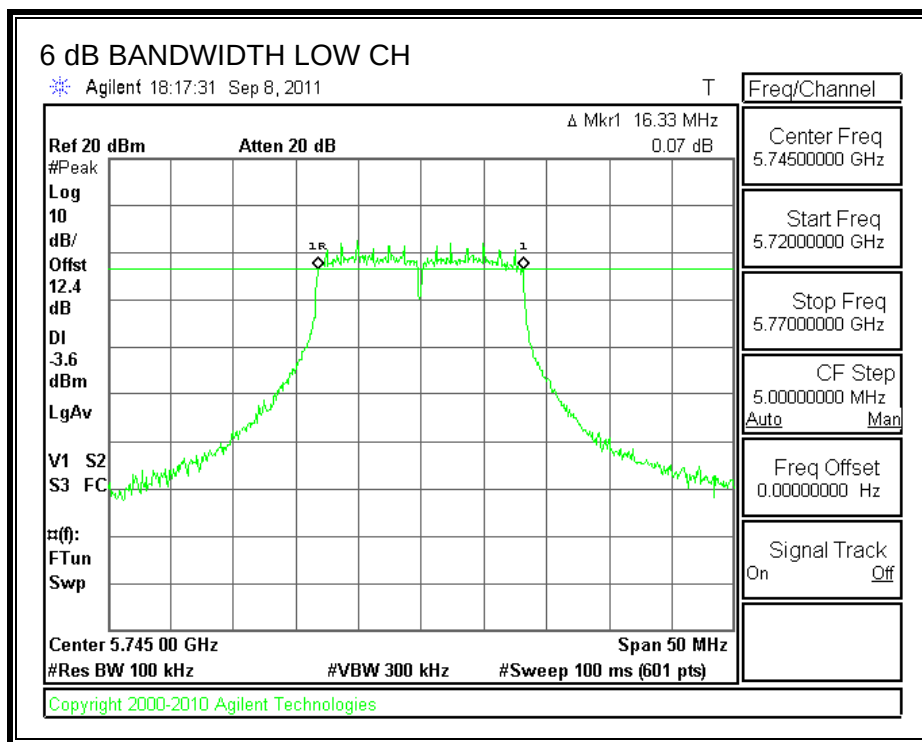
TEST PROCEDURE

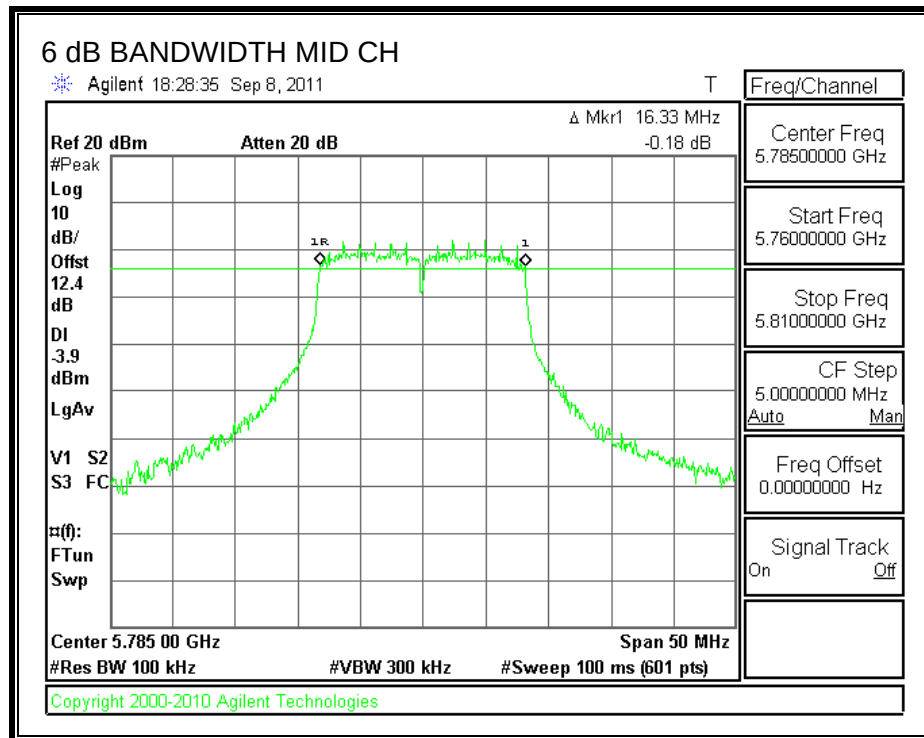
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

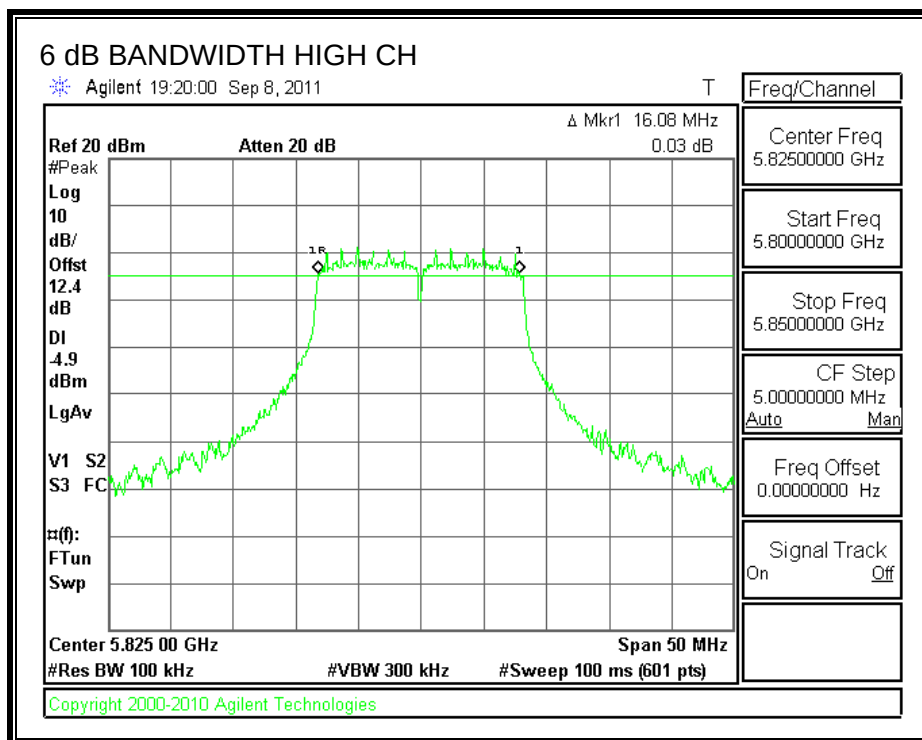
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.33	0.5
Middle	5785	16.33	0.5
High	5825	16.08	0.5

6 dB BANDWIDTH







7.4.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

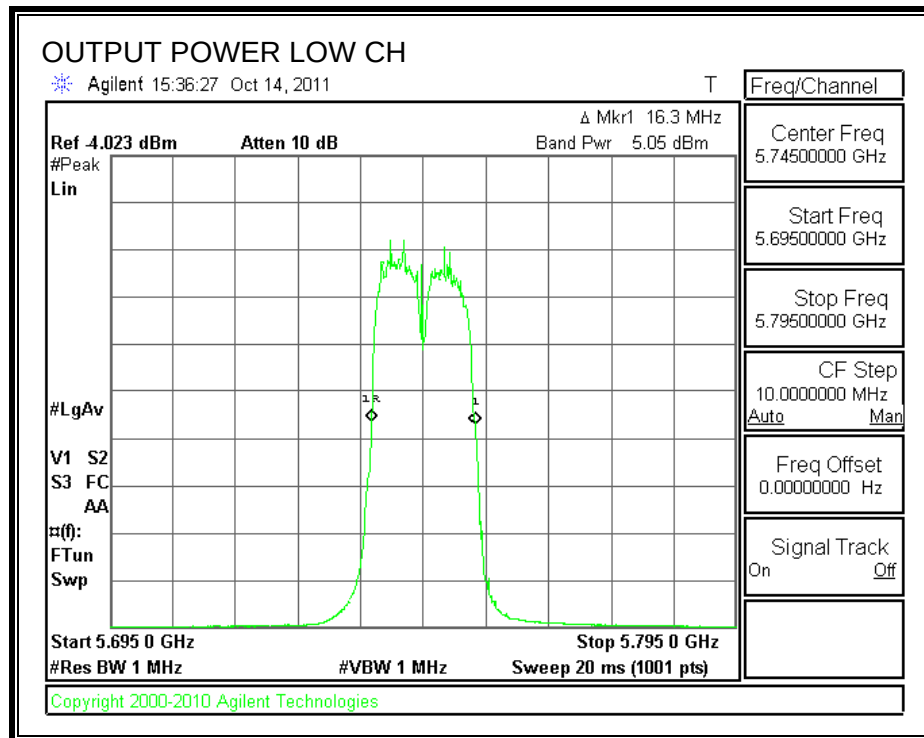
TEST PROCEDURE

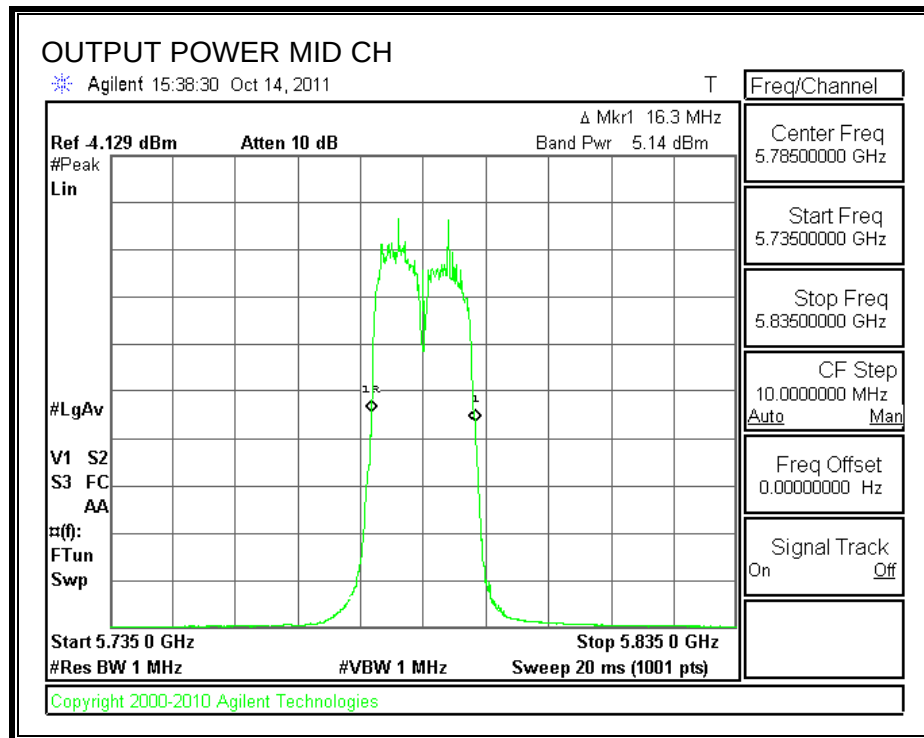
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

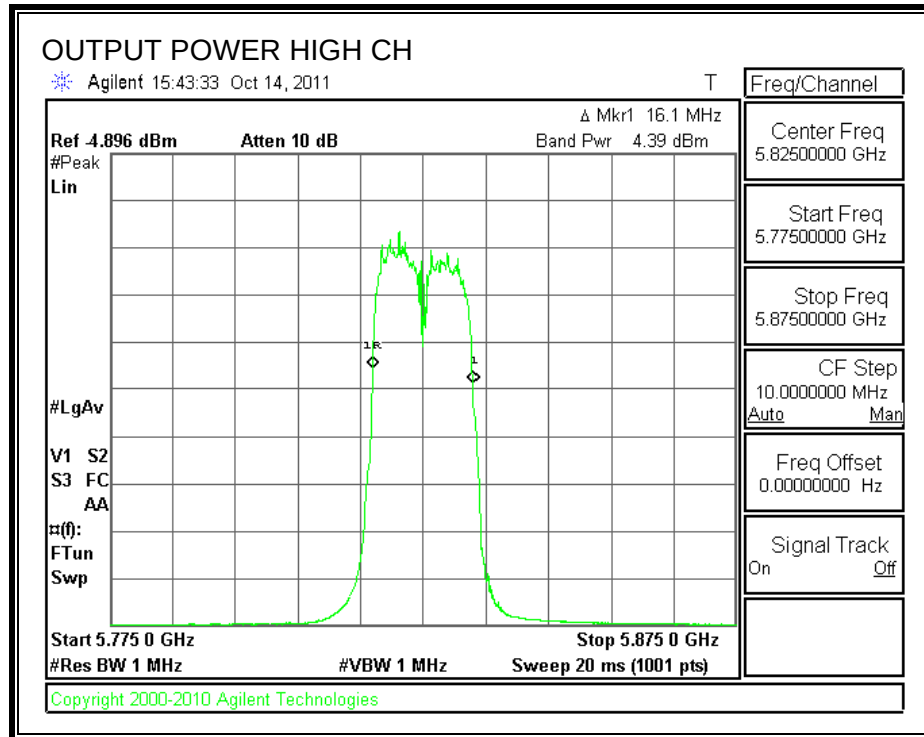
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	5745	5.05	12.4	17.45	30	-12.55
Middle	5785	5.14	12.4	17.54	30	-12.46
High	5825	4.39	12.4	16.79	30	-13.21

OUTPUT POWER







7.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 12.4 dB (including 10 dB pad and 2.4 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Frequency (MHz)	Power (dBm)
5745	9.17
5785	9.12
5825	8.87

7.4.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

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.

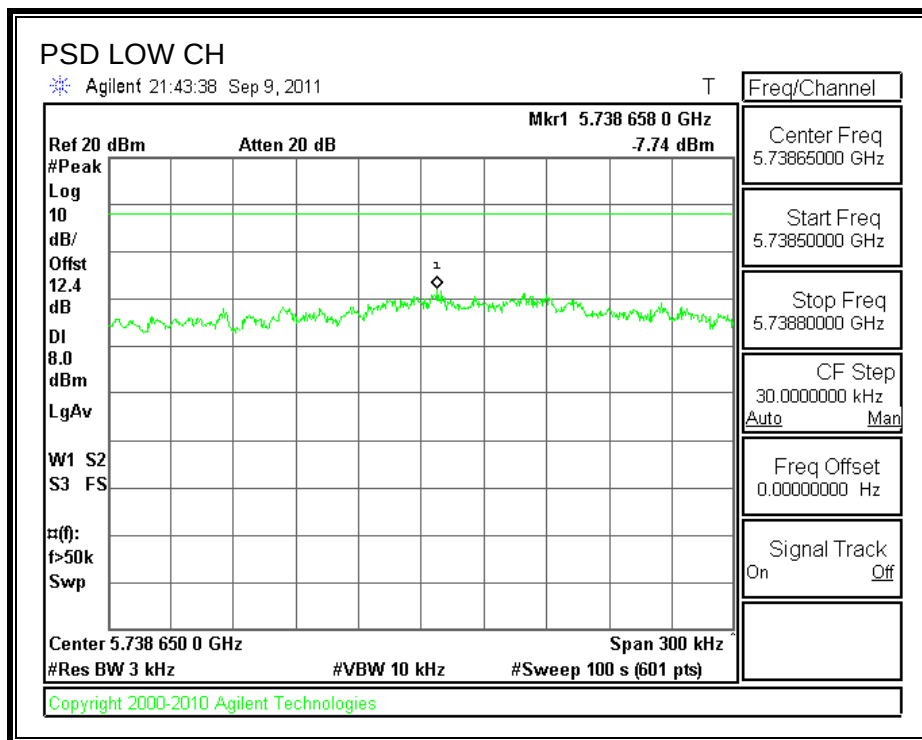
TEST PROCEDURE

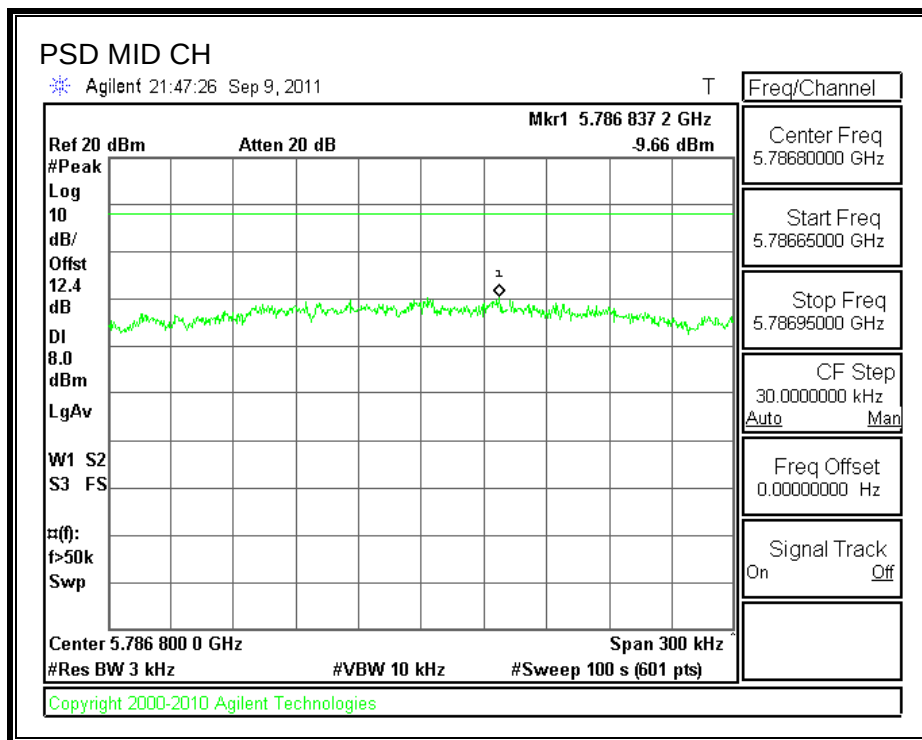
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

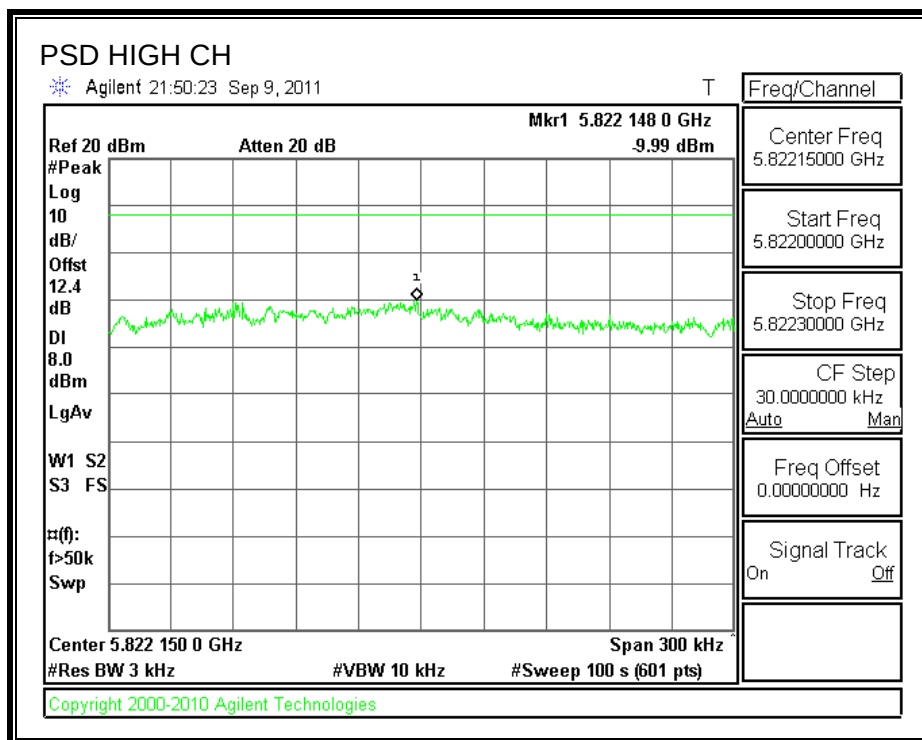
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-7.74	8	-15.74
Middle	5785	-9.66	8	-17.66
High	5825	-9.99	8	-17.99

POWER SPECTRAL DENSITY







7.4.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

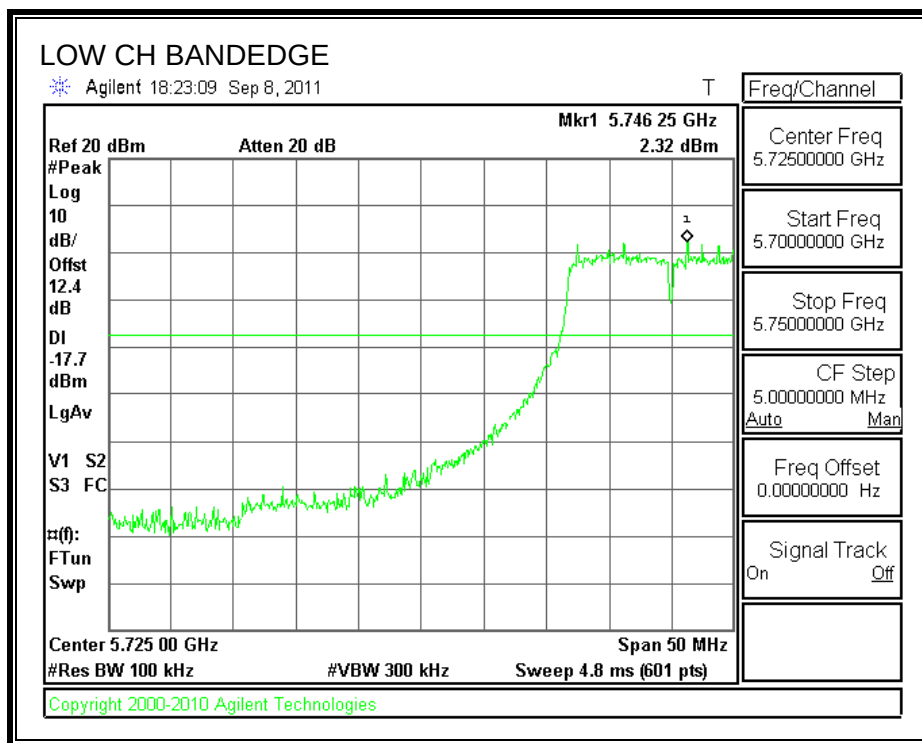
TEST PROCEDURE

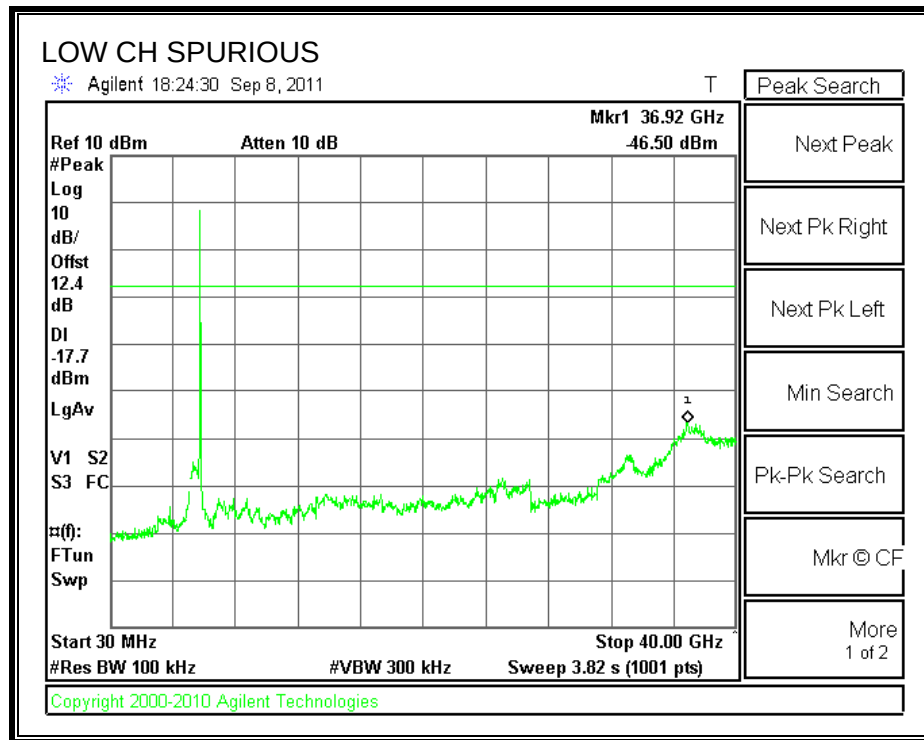
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

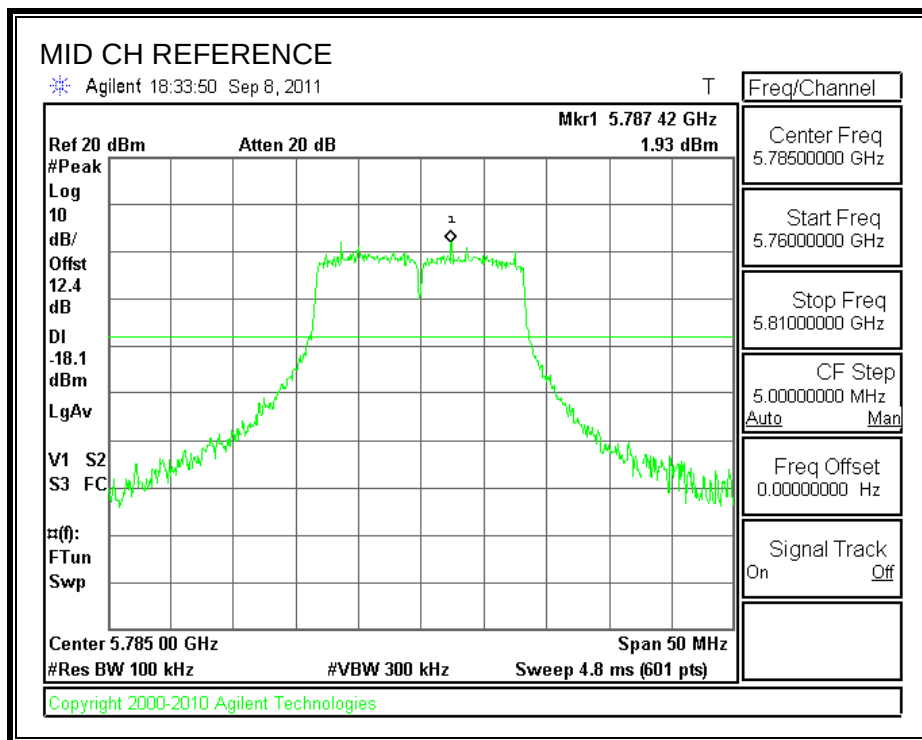
RESULTS

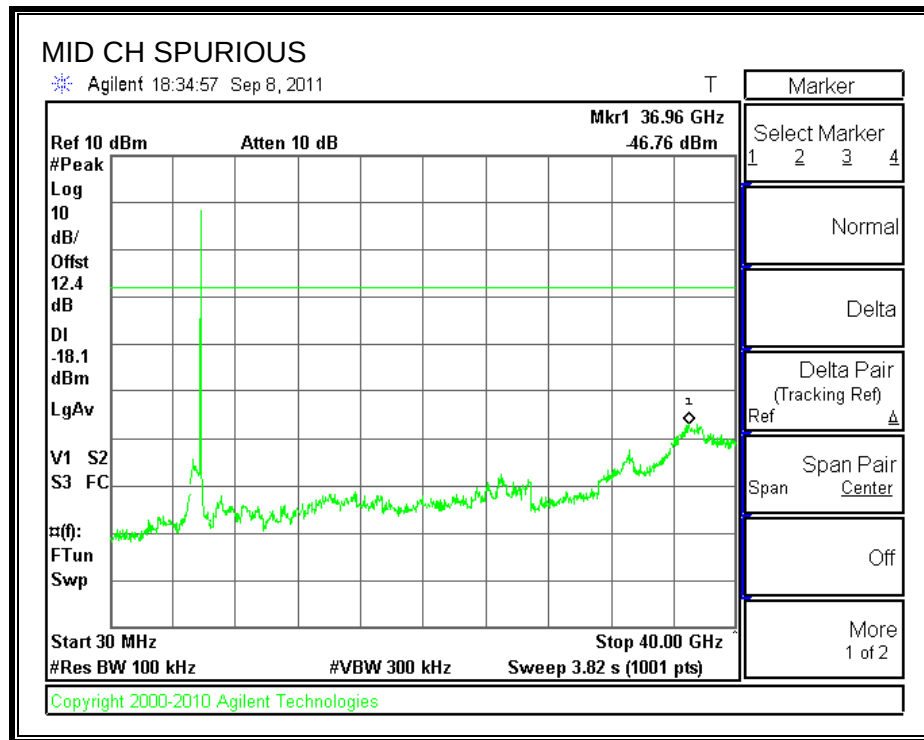
SPURIOUS EMISSIONS, LOW CHANNEL



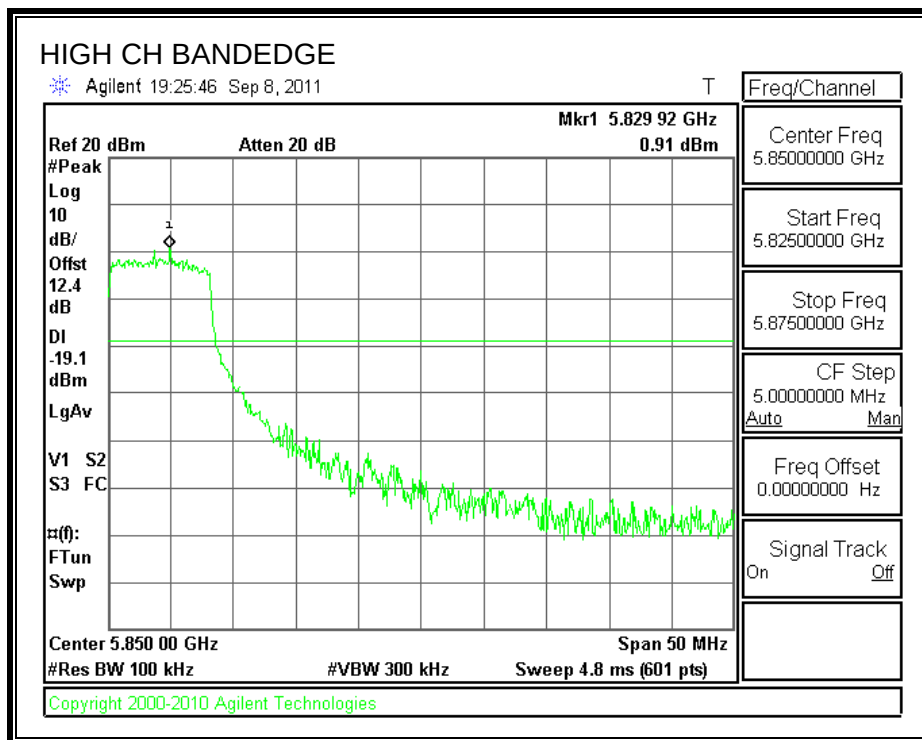


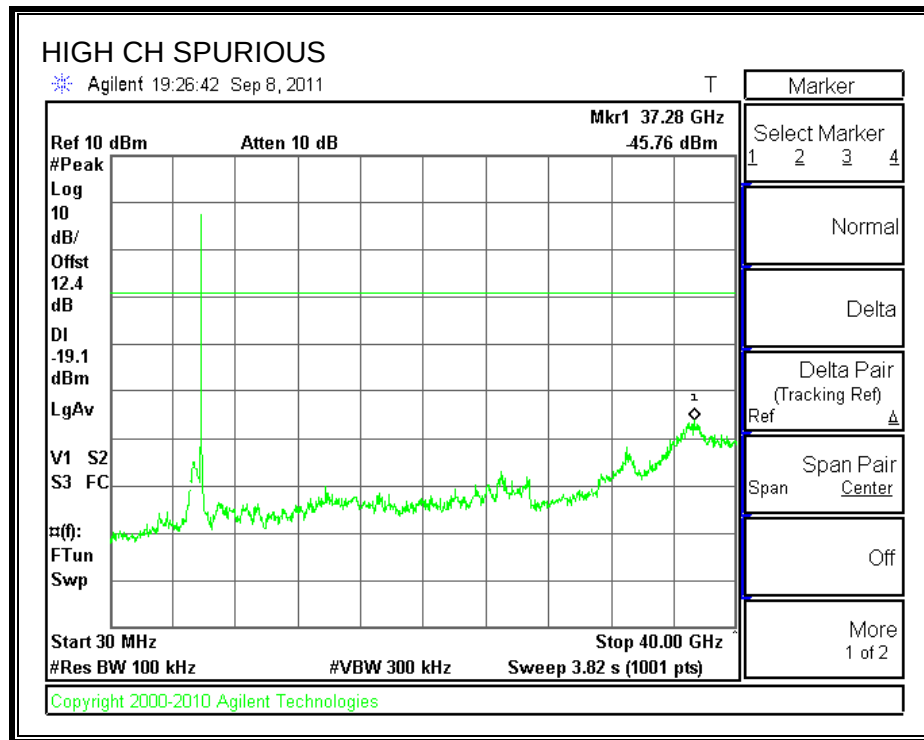
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

7.5.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

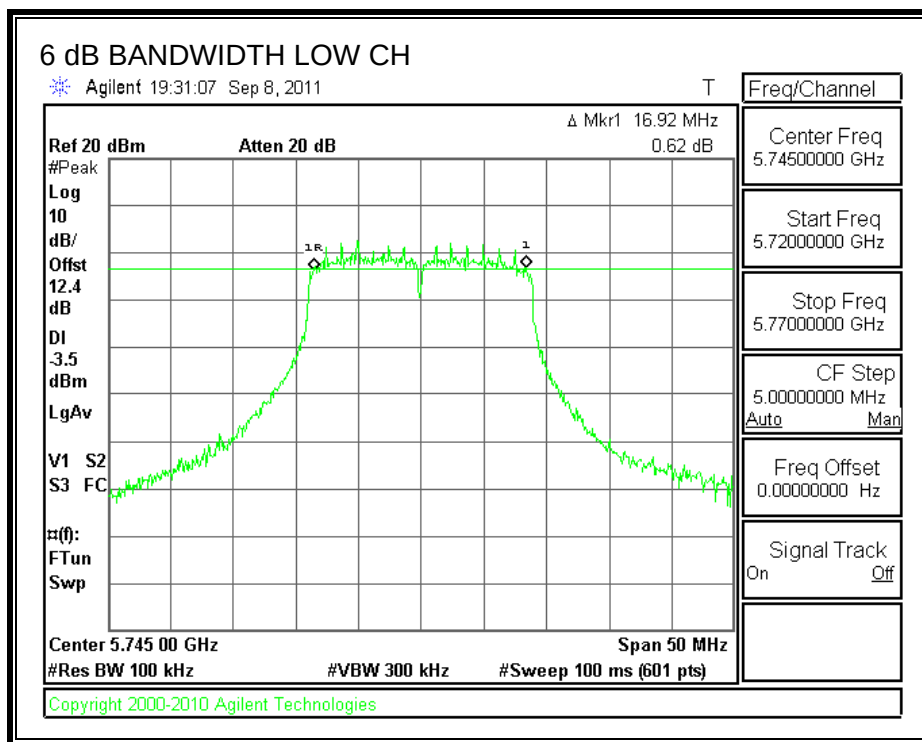
TEST PROCEDURE

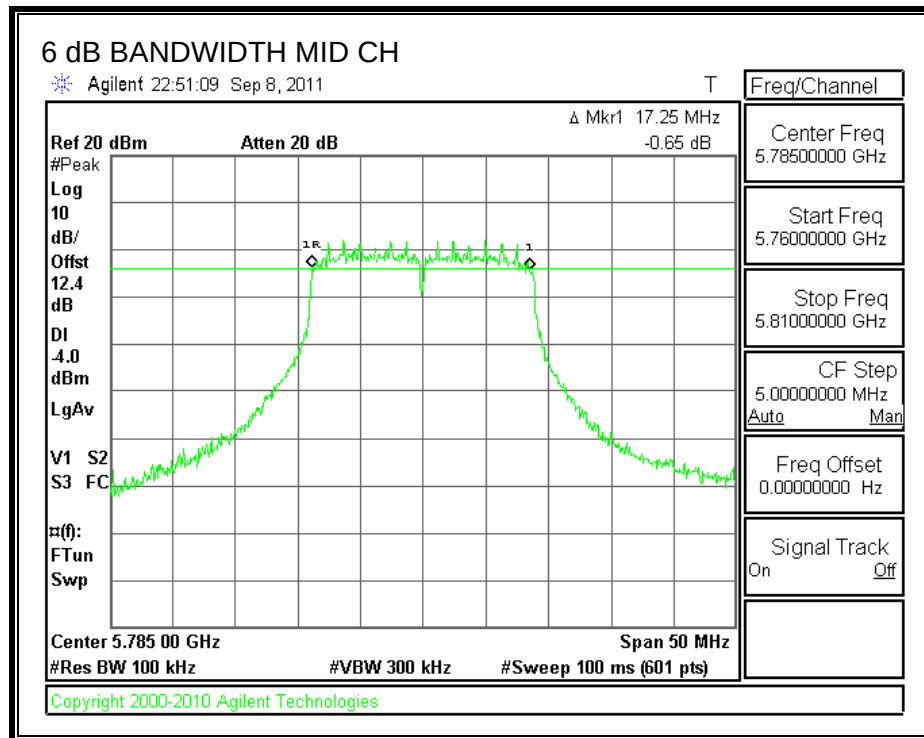
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

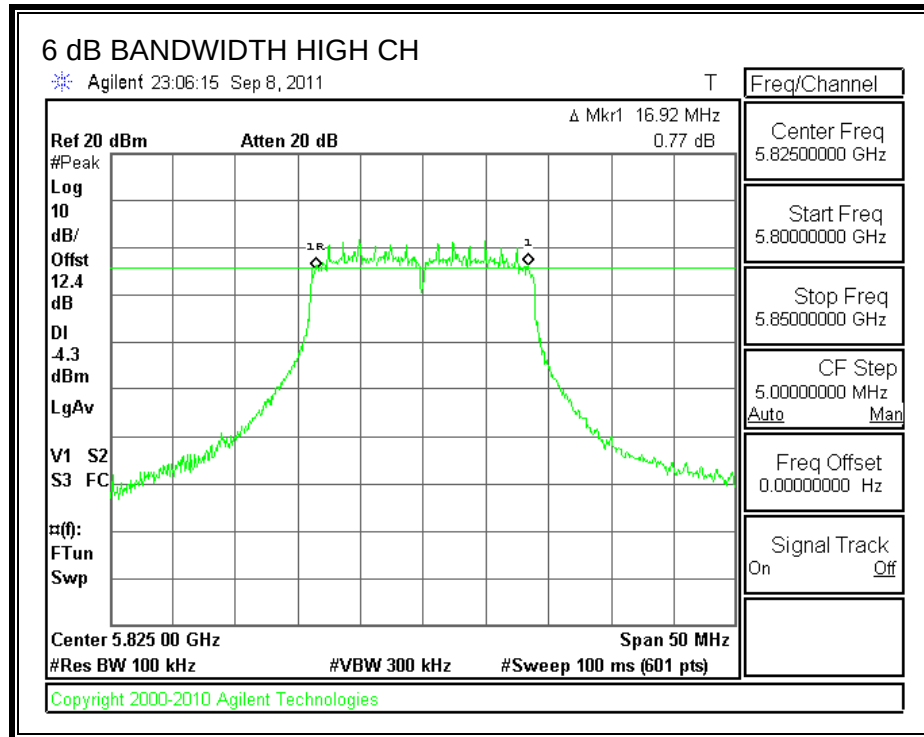
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.92	0.5
Middle	5785	17.25	0.5
High	5825	16.92	0.5

6 dB BANDWIDTH







7.5.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

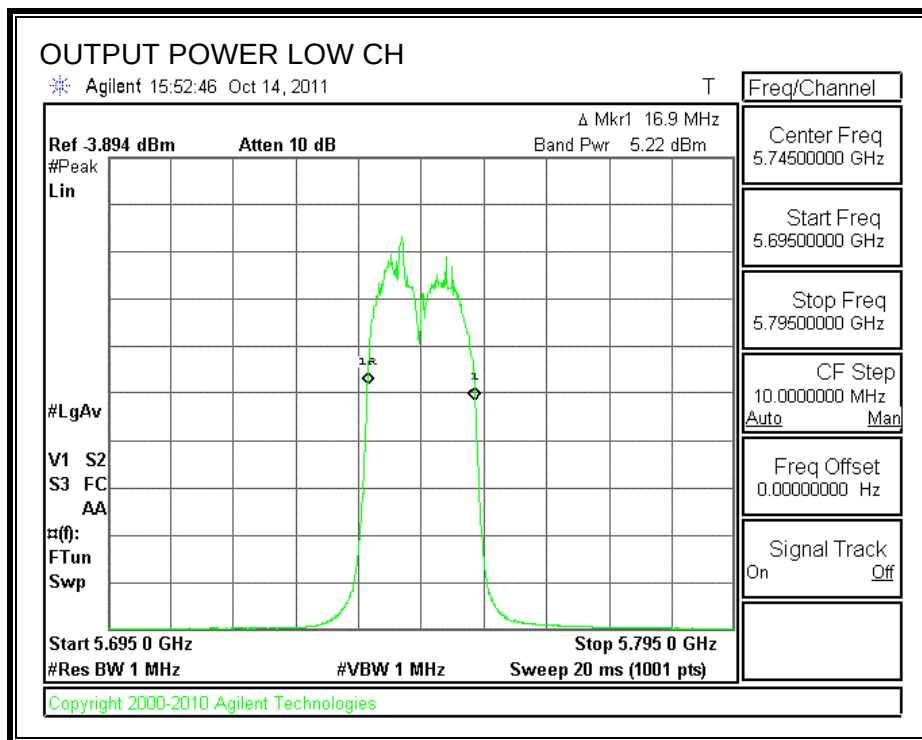
TEST PROCEDURE

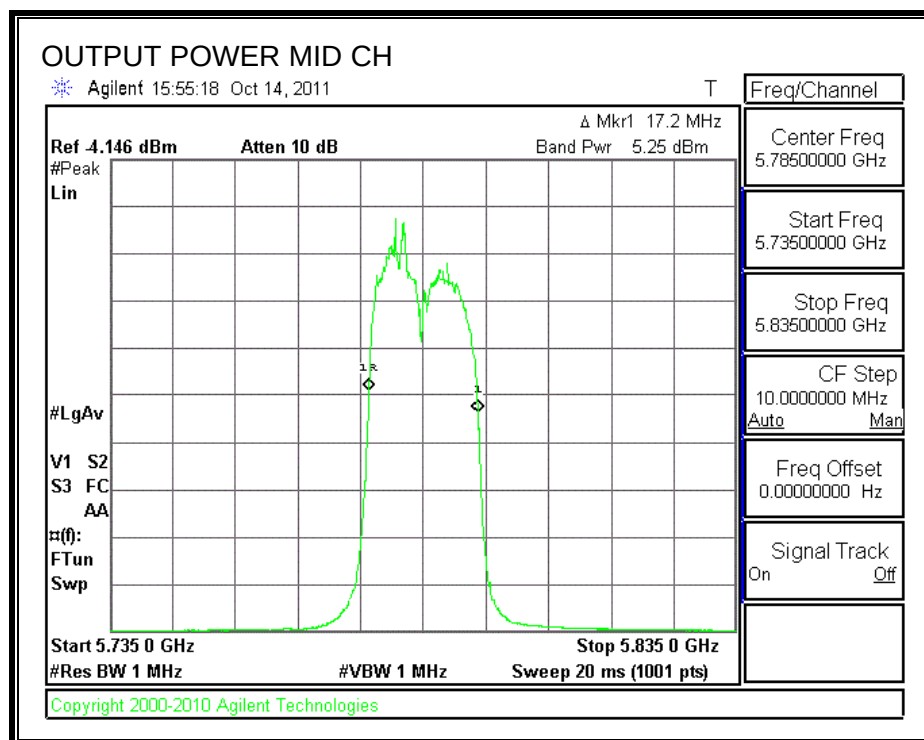
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

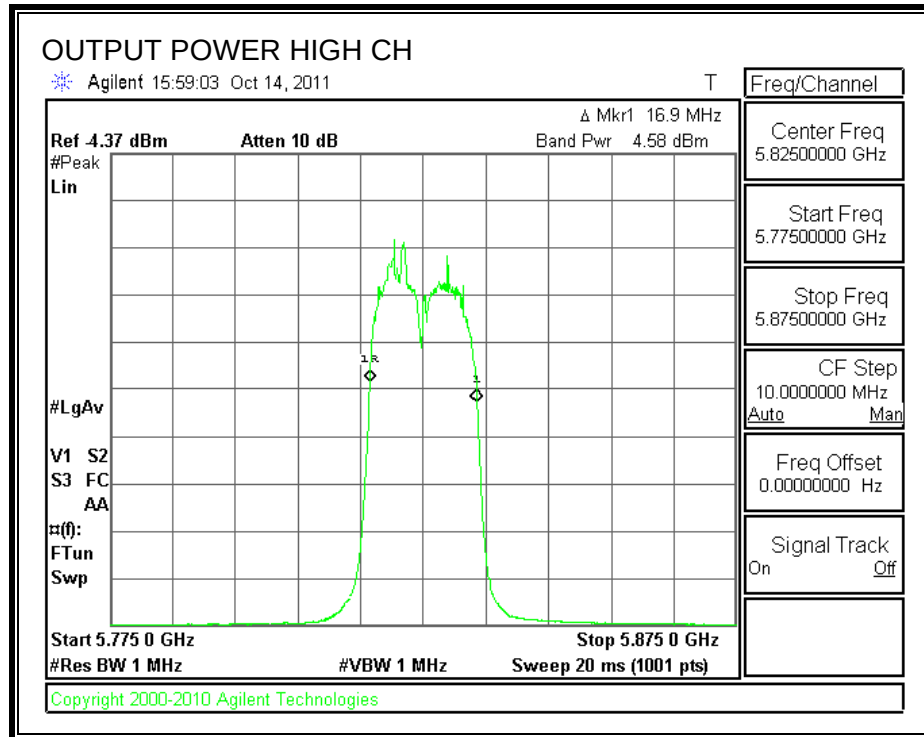
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	5745	5.22	12.4	17.62	30	-12.38
Middle	5785	5.25	12.4	17.65	30	-12.35
High	5825	4.58	12.4	16.98	30	-13.02

OUTPUT POWER







7.5.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 12.4 dB (including 10 dB pad and 2.4 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Frequency (MHz)	Power (dBm)
5745	9.29
5785	9.09
5825	8.54

7.5.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

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.

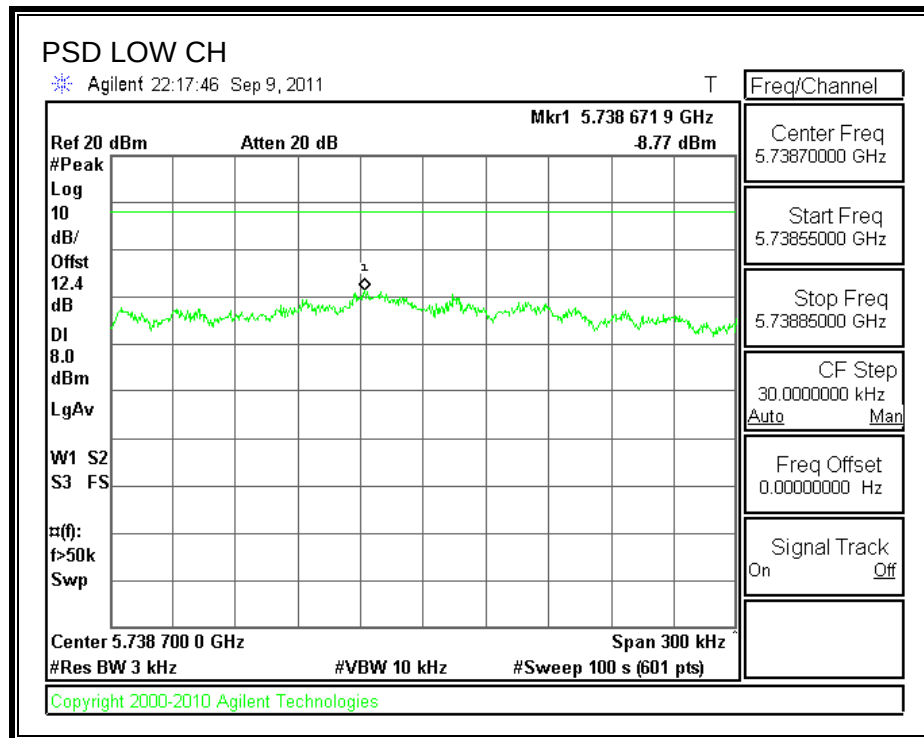
TEST PROCEDURE

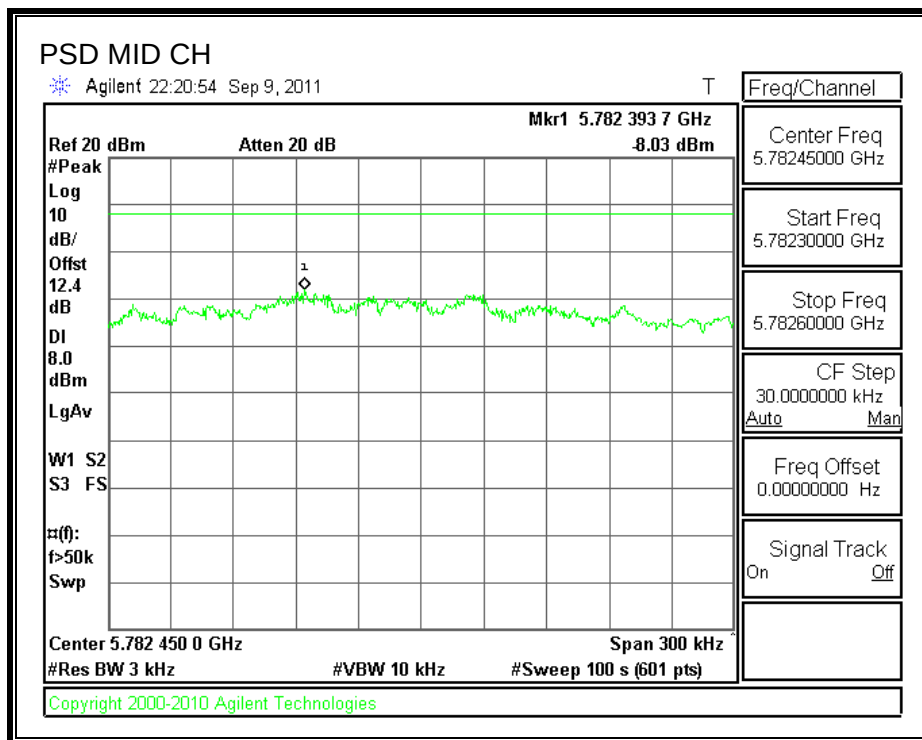
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

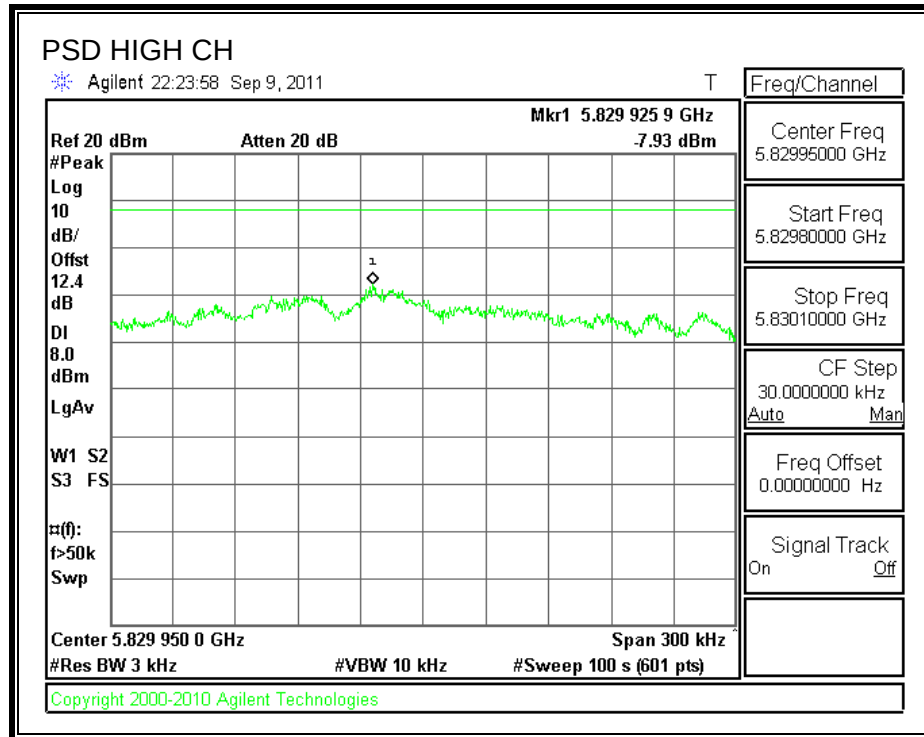
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-8.77	8	-16.77
Middle	5785	-8.03	8	-16.03
High	5825	-7.93	8	-15.93

POWER SPECTRAL DENSITY







7.5.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

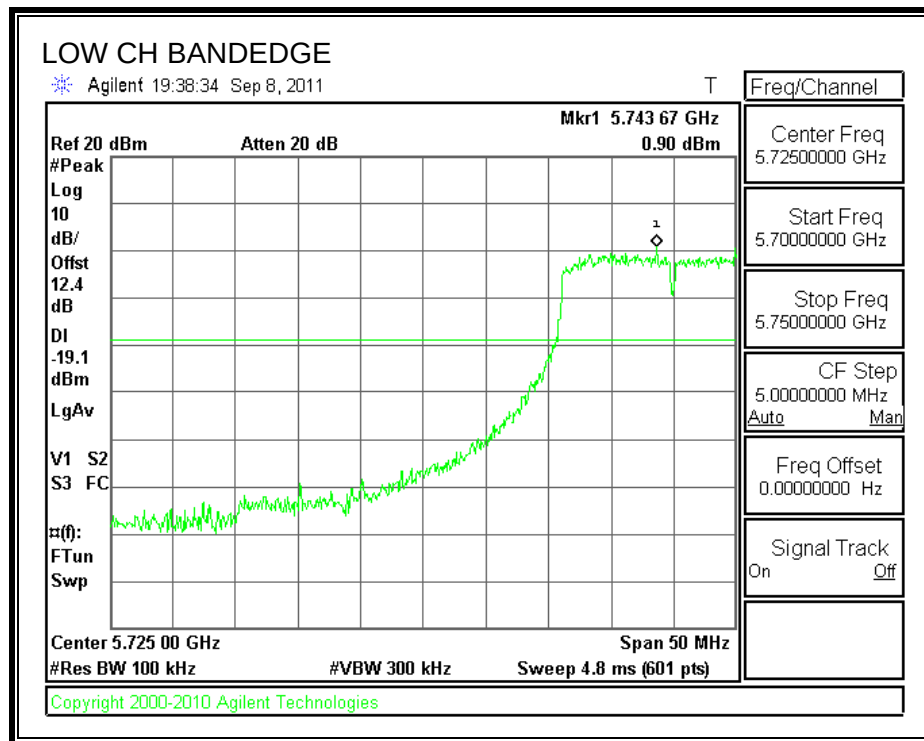
TEST PROCEDURE

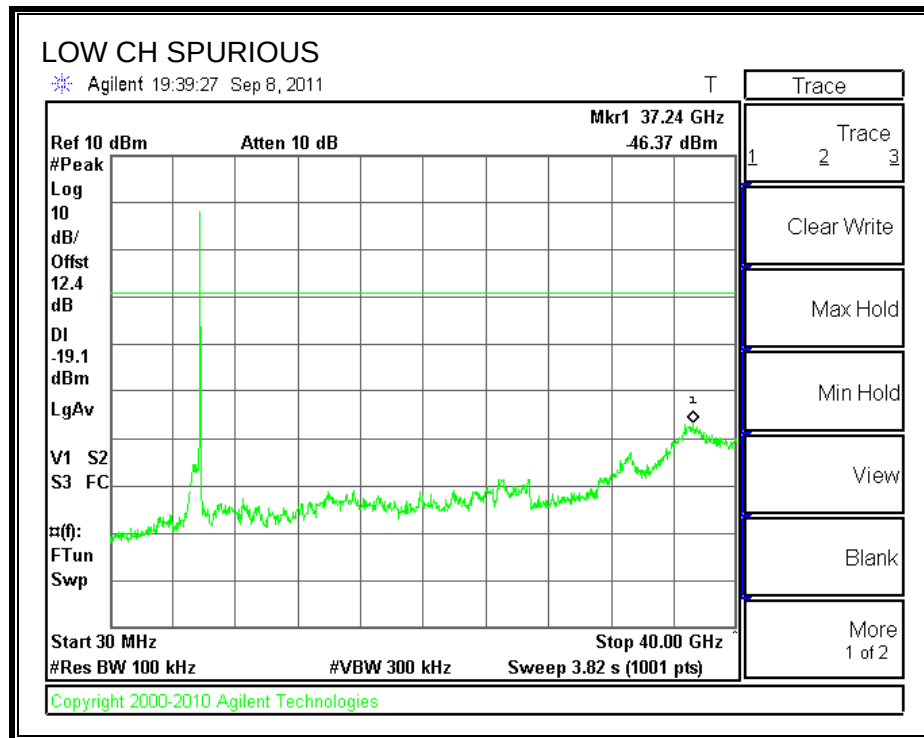
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

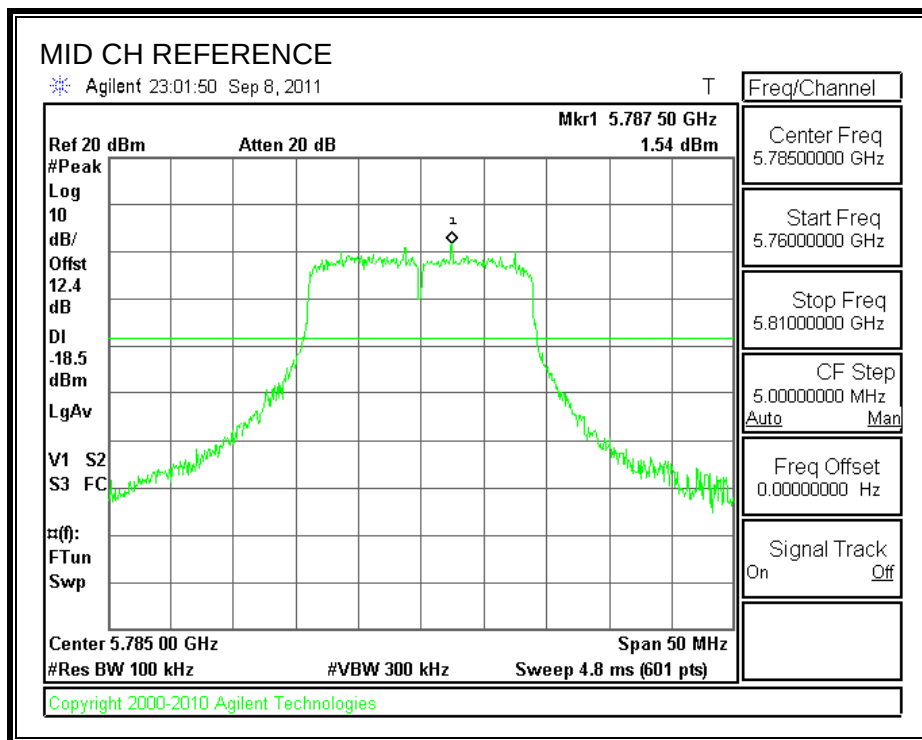
RESULTS

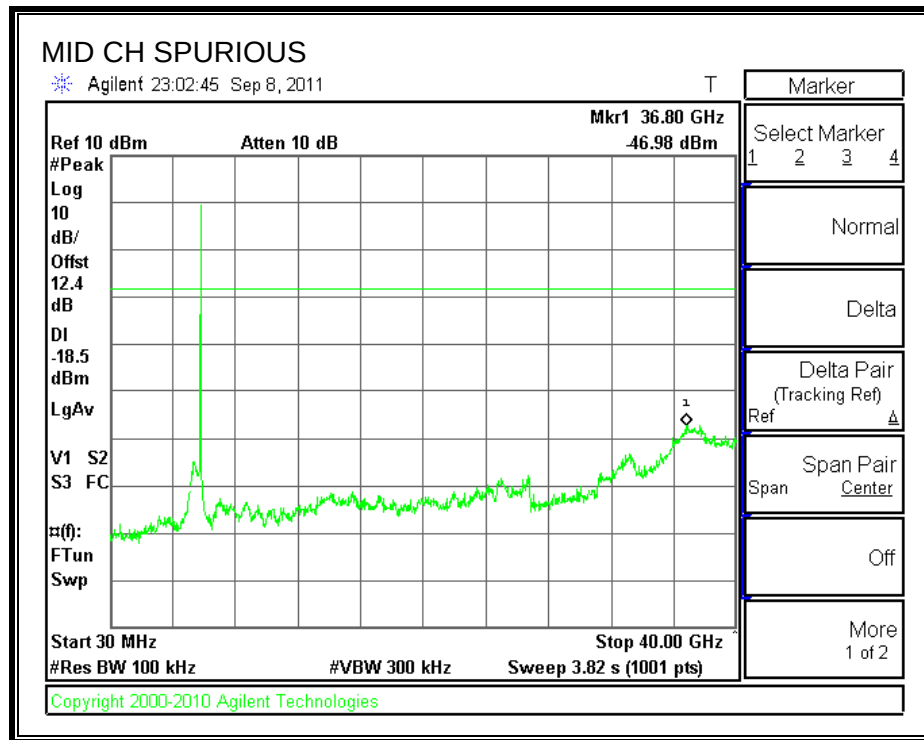
SPURIOUS EMISSIONS, LOW CHANNEL



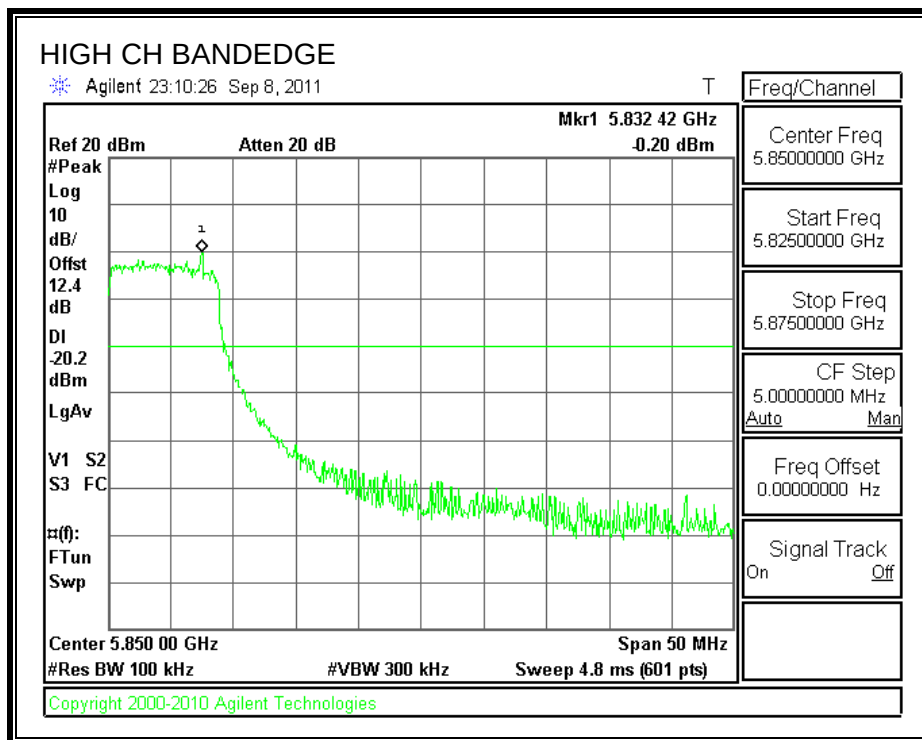


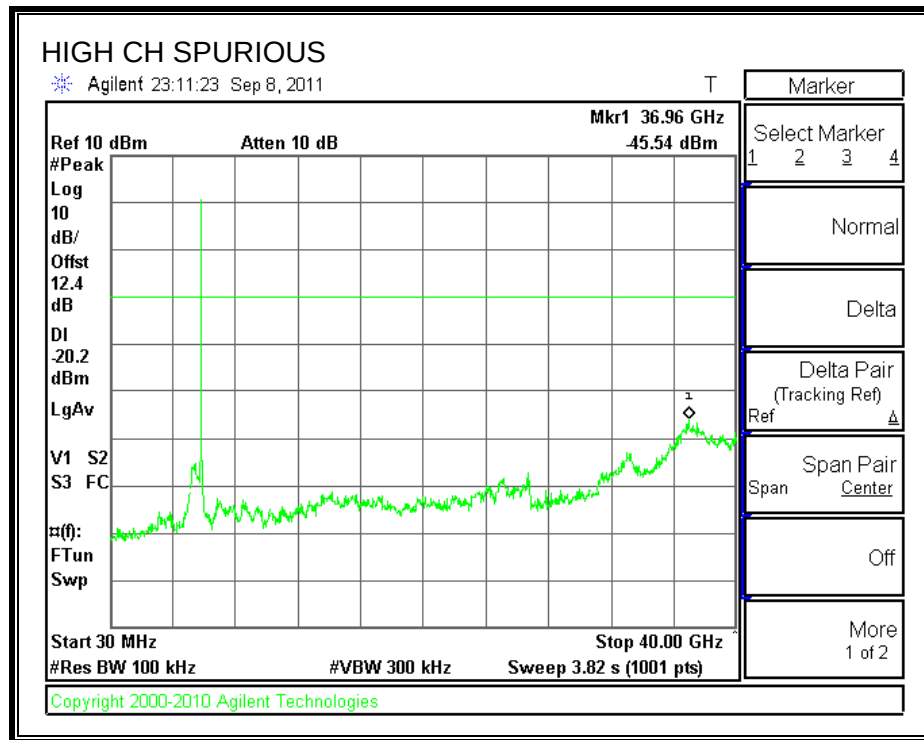
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

7.6.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

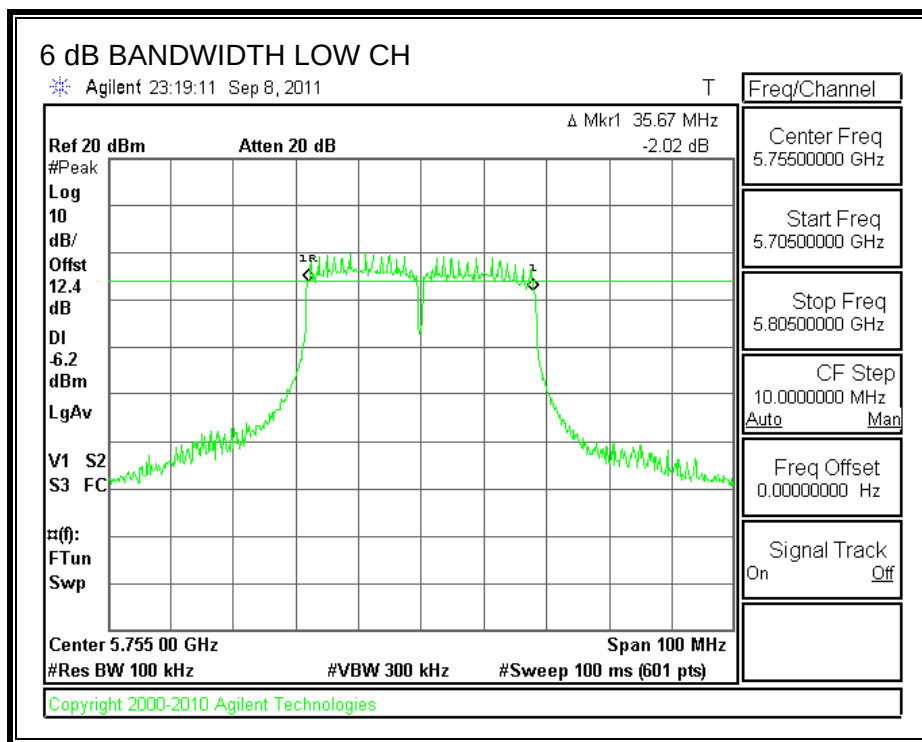
TEST PROCEDURE

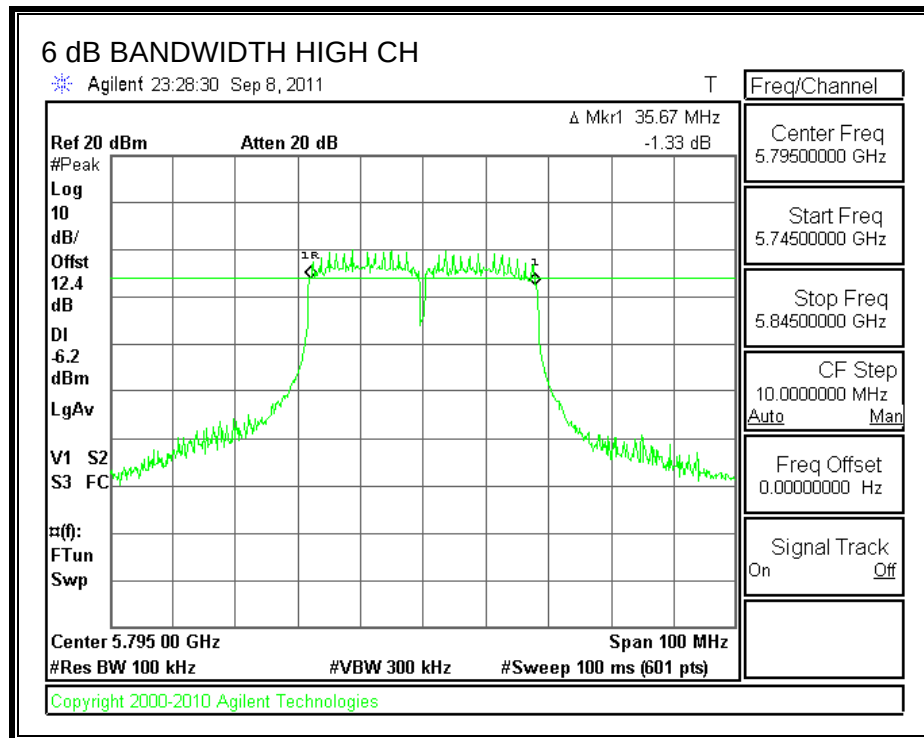
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.67	0.5
High	5795	35.67	0.5

6 dB BANDWIDTH





7.6.2. OUTPUT POWER

LIMITS

FCC §15.247 (b)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

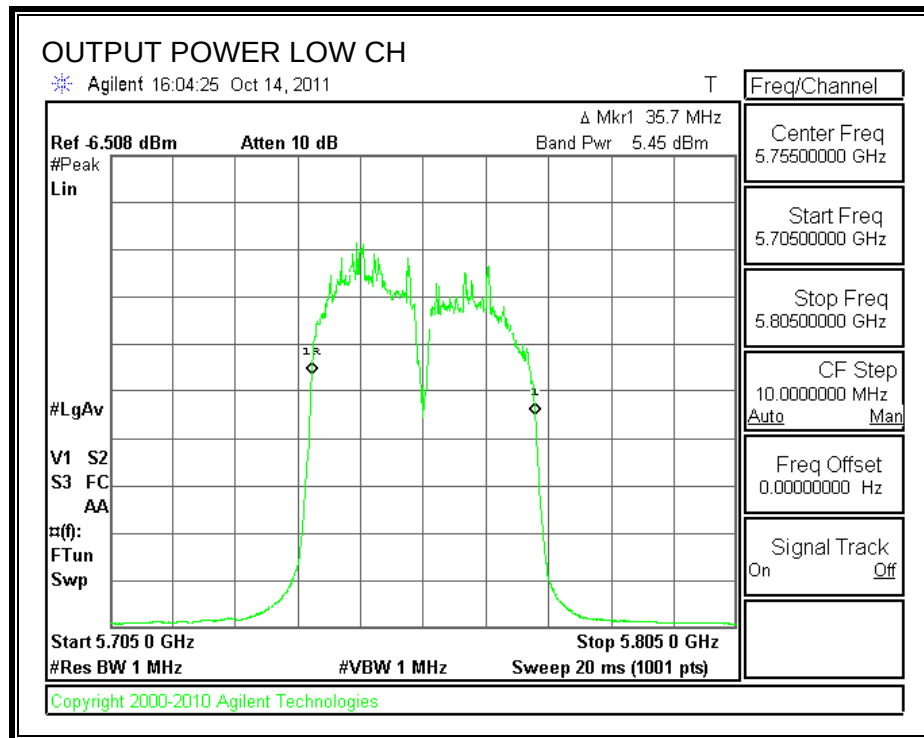
TEST PROCEDURE

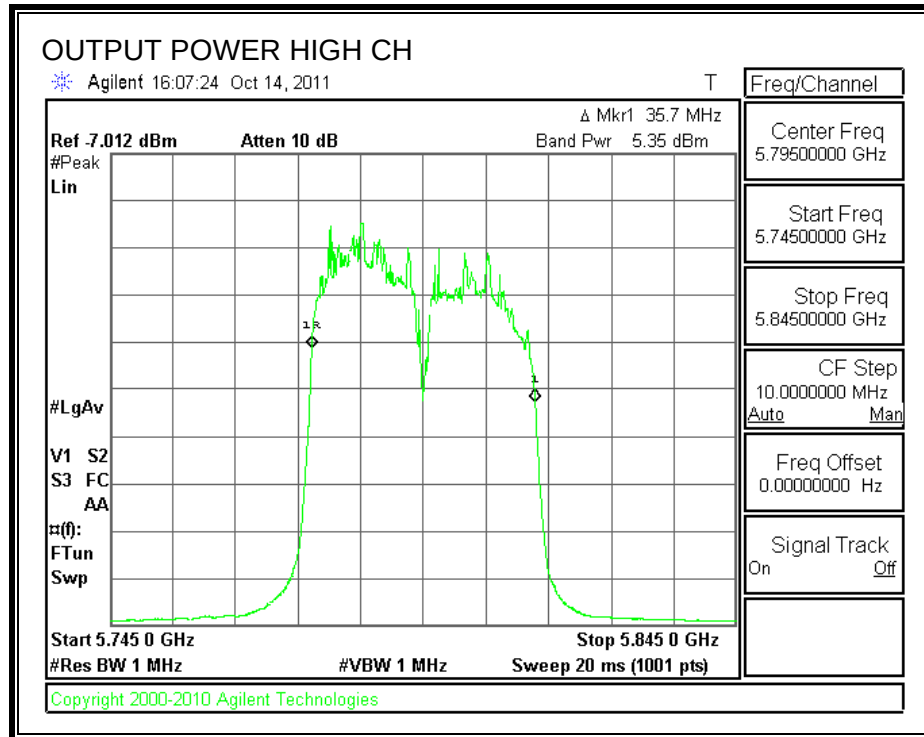
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	5755	5.45	12.4	17.85	30	-12.15
High	5795	5.35	12.4	17.75	30	-12.25

OUTPUT POWER





7.6.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 12.4 dB (including 10 dB pad and 2.4 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Frequency (MHz)	Power (dBm)
5755	9.46
5795	9.44

7.6.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

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.

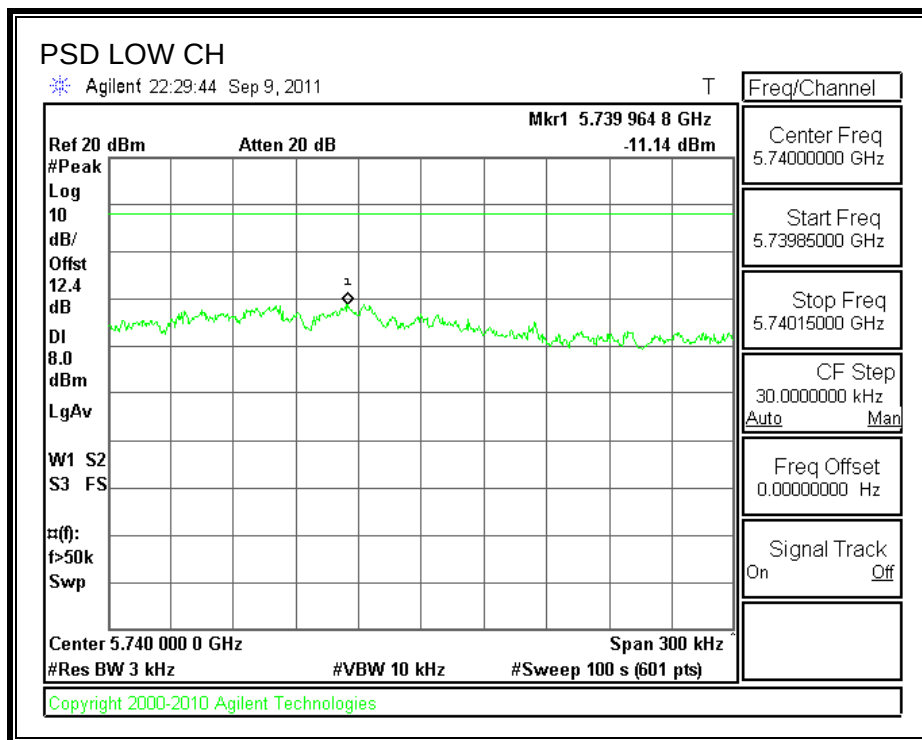
TEST PROCEDURE

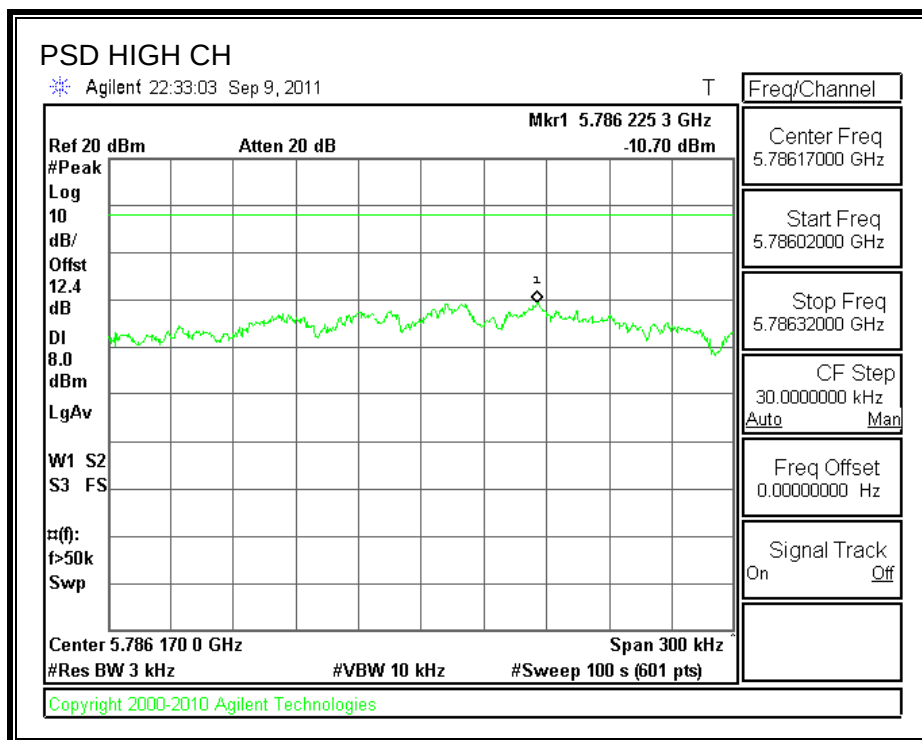
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-11.14	8	-19.14
High	5795	-10.70	8	-18.70

POWER SPECTRAL DENSITY





7.6.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

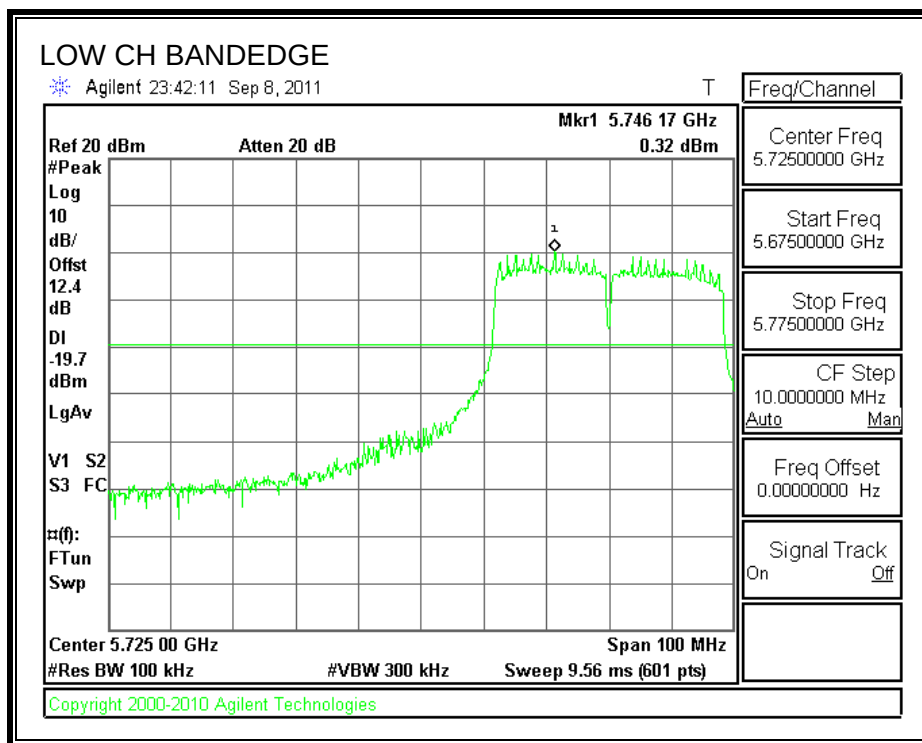
TEST PROCEDURE

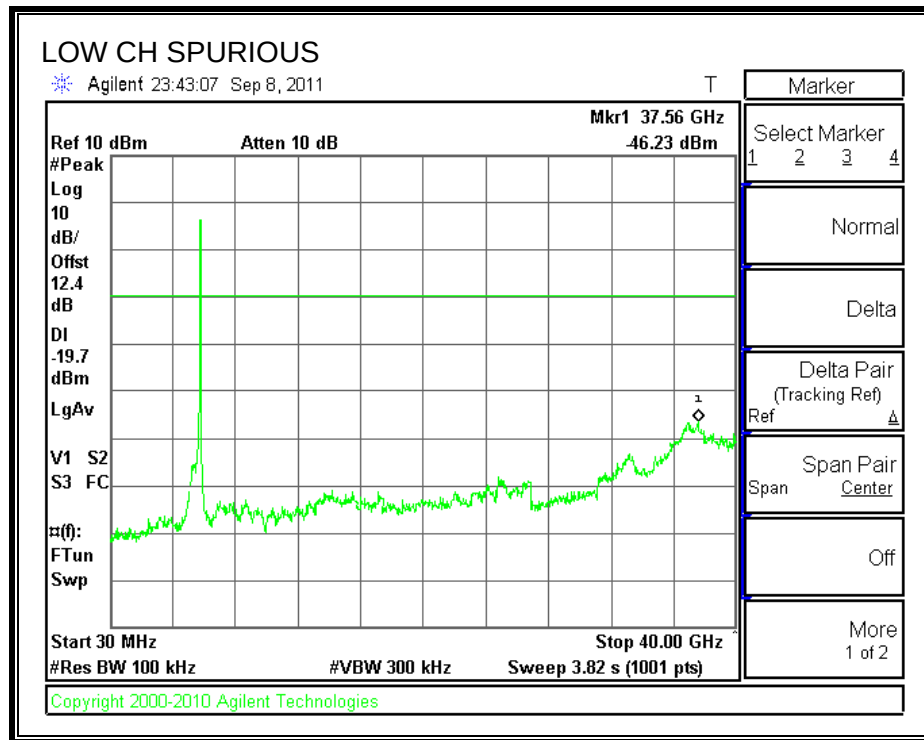
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

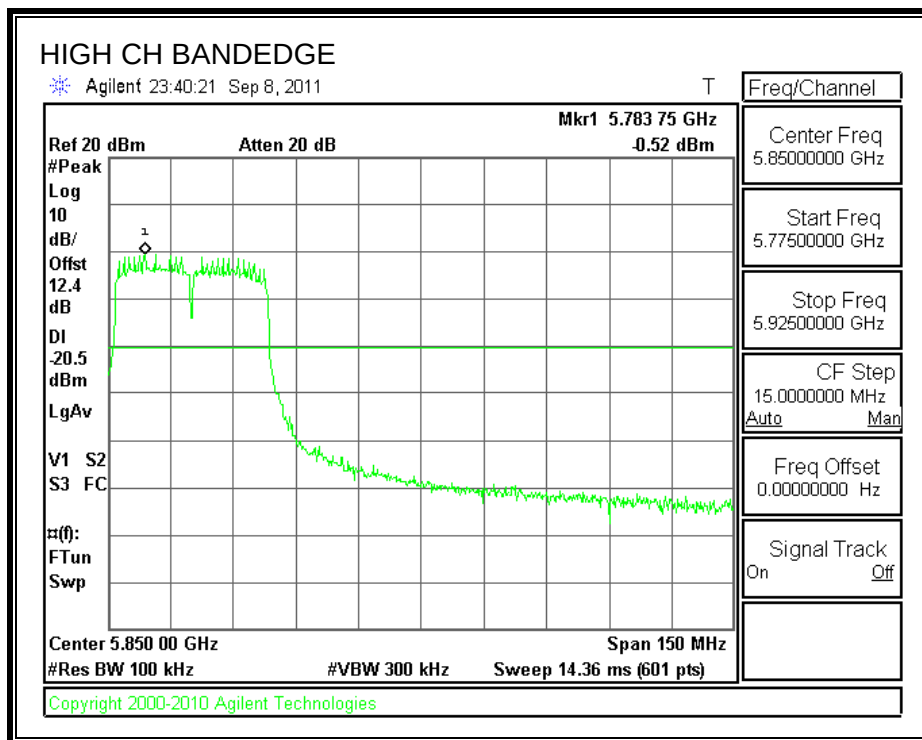
RESULTS

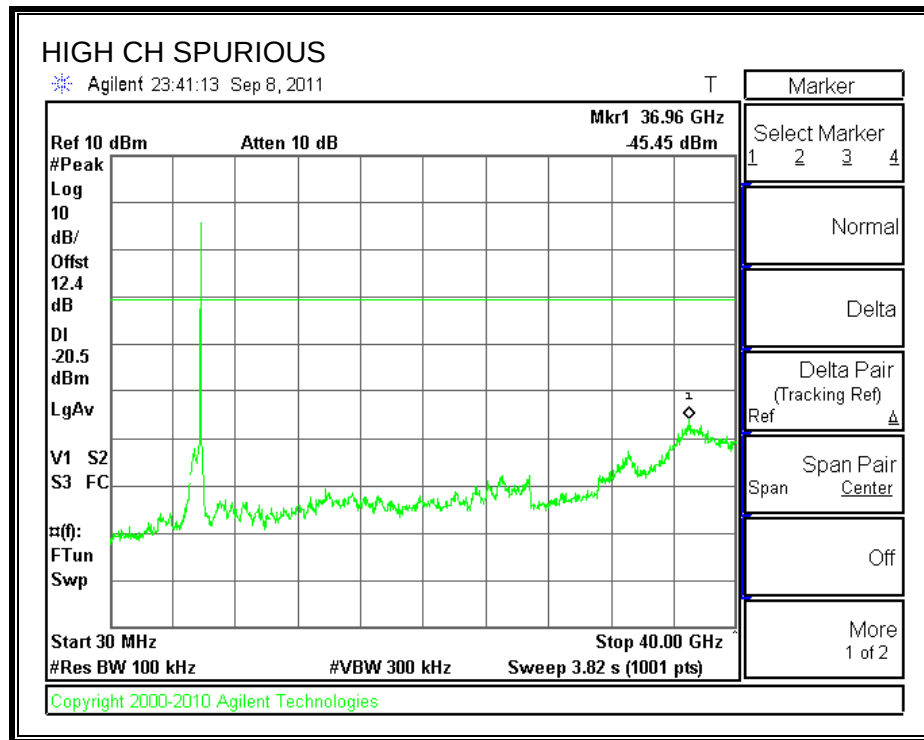
SPURIOUS EMISSIONS, LOW CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

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. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

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, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

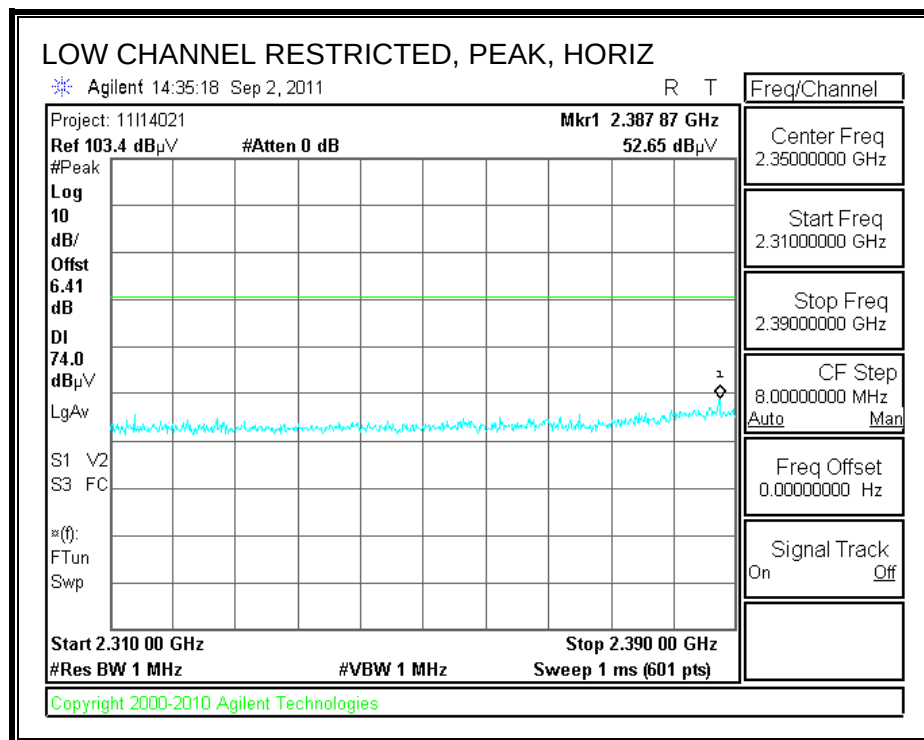
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

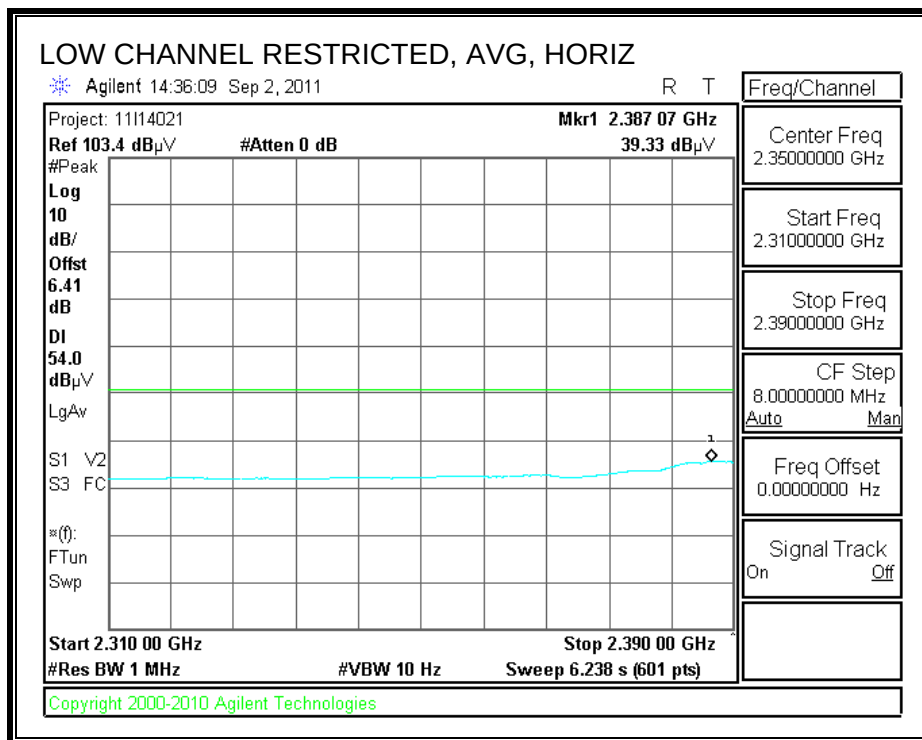
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

8.2. TRANSMITTER ABOVE 1 GHz

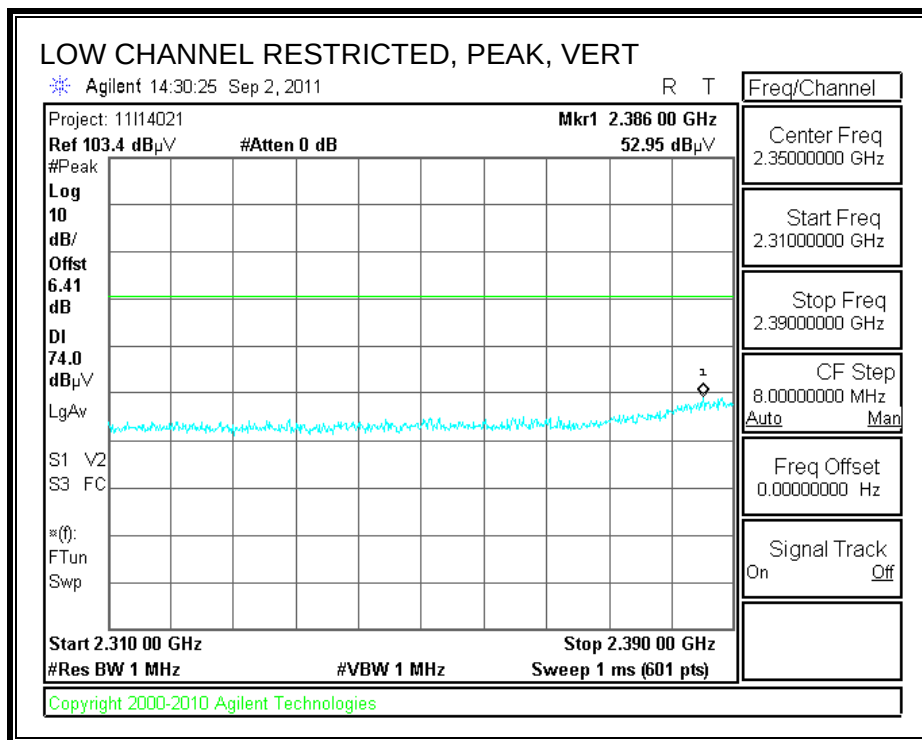
8.2.1. TX ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND

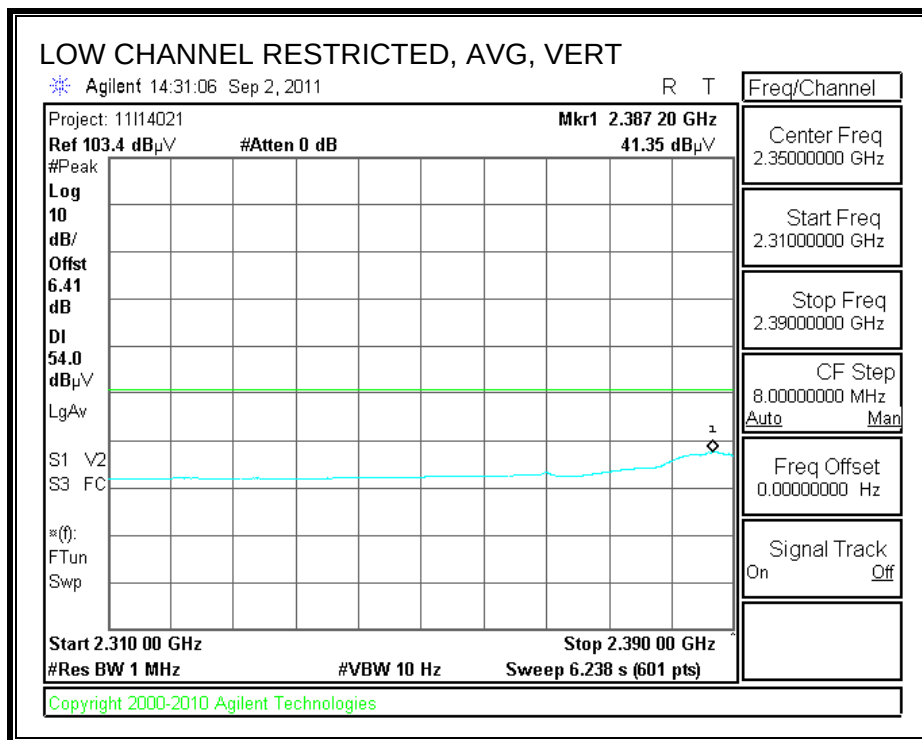
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



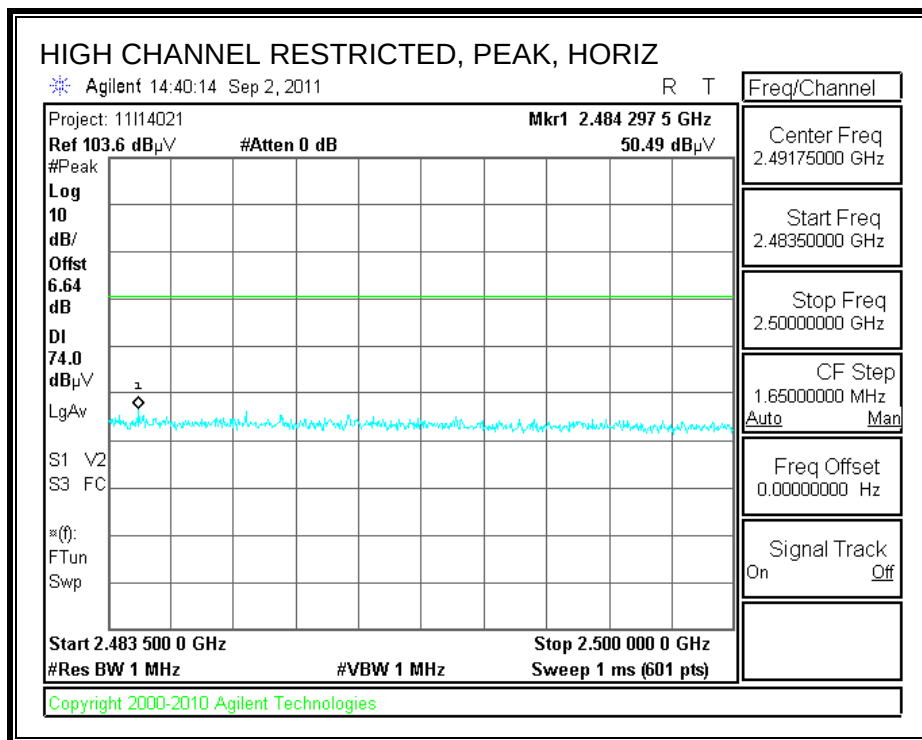


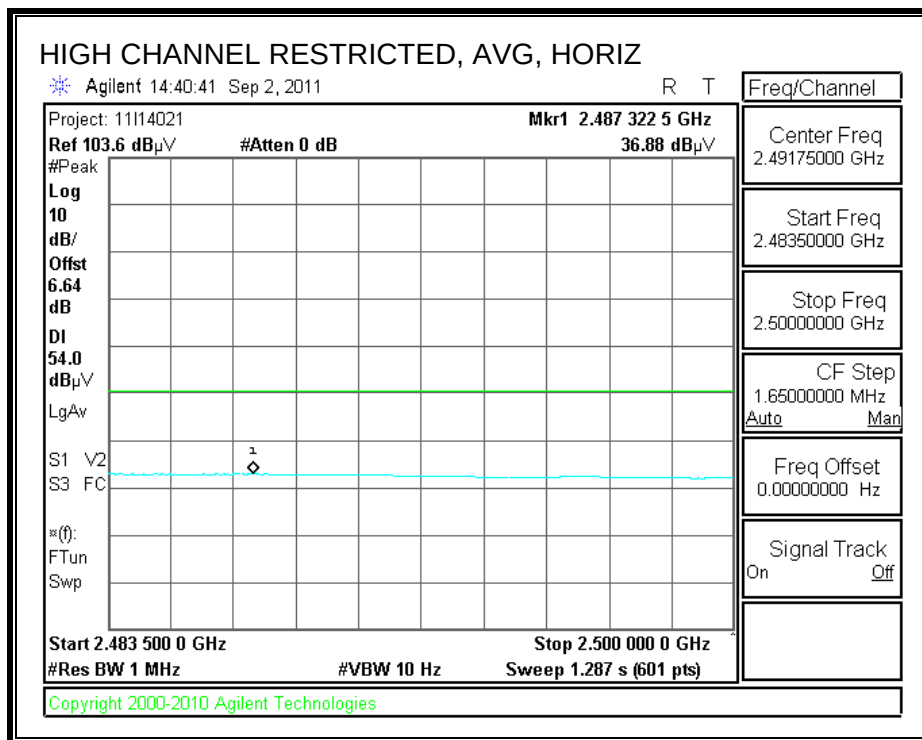
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



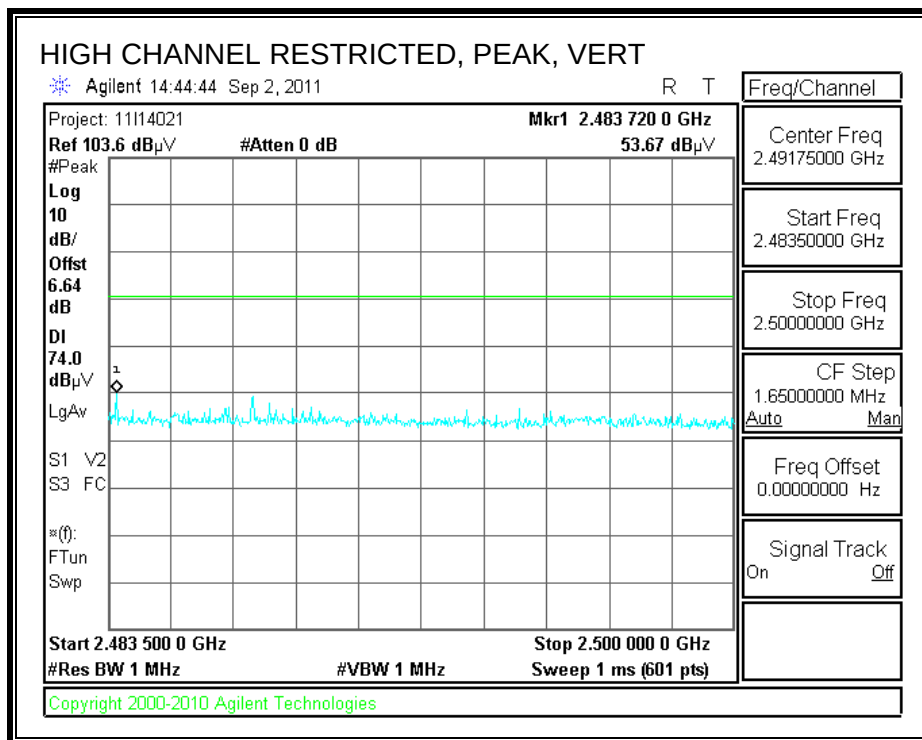


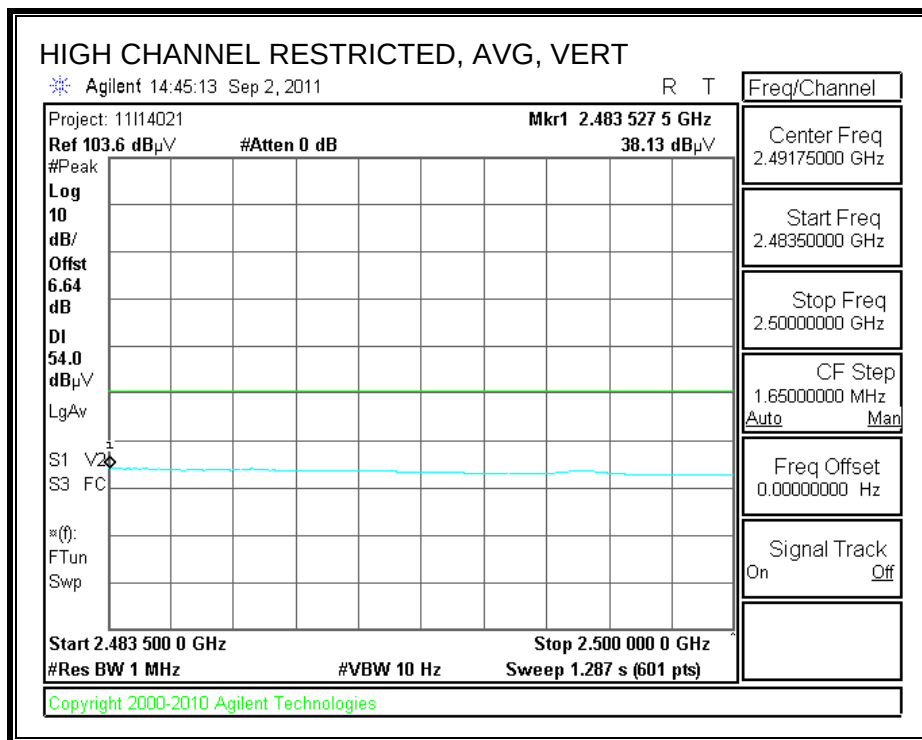
RESTRICTED BANEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: David Garcia
Date: 08/31/11
Project #: 11I14017
Company: Samsung
Test Target: FCC 15.247
Mode Oper: Tx, 11b

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

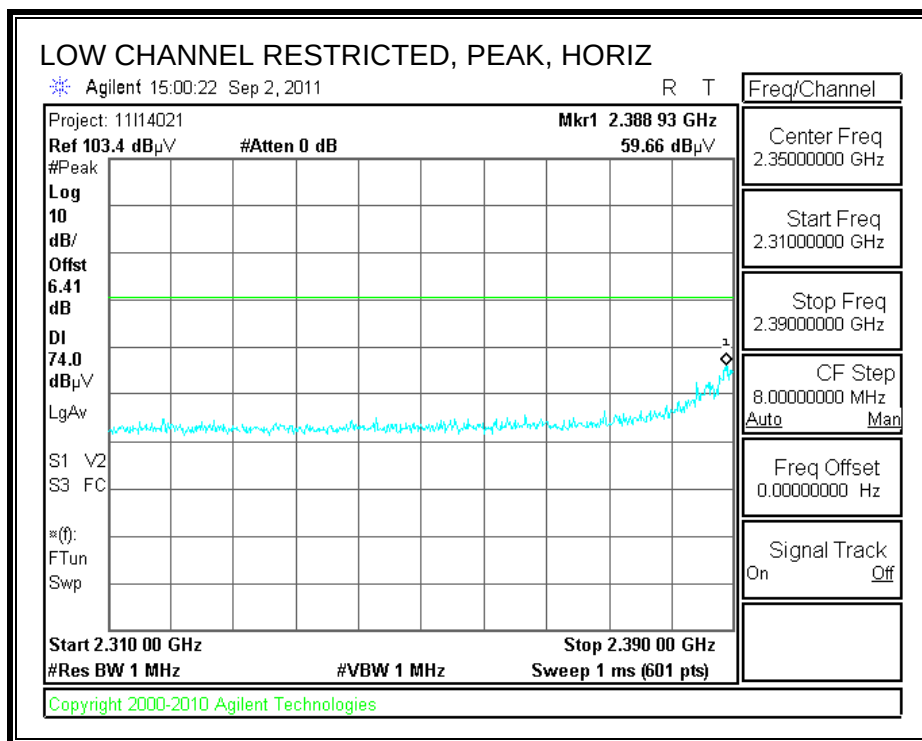
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Channel: 2412 MHz													
4.824	3.0	36.1	33.9	6.8	-34.1	0.0	0.0	42.7	74.0	-31.3	H	P	
4.824	3.0	24.1	33.9	6.8	-34.1	0.0	0.0	30.7	54.0	-23.3	H	A	
7.236	3.0	34.7	36.5	9.1	-33.2	0.0	0.0	47.2	74.0	-26.8	H	P	
7.236	3.0	22.3	36.5	9.1	-33.2	0.0	0.0	34.8	54.0	-19.2	H	A	
4.824	3.0	37.3	33.9	6.8	-34.1	0.0	0.0	43.9	74.0	-30.1	V	P	
4.824	3.0	28.8	33.9	6.8	-34.1	0.0	0.0	35.4	54.0	-18.6	V	A	
7.236	3.0	34.7	36.5	9.1	-33.2	0.0	0.0	47.1	74.0	-26.9	V	P	
7.236	3.0	22.4	36.5	9.1	-33.2	0.0	0.0	34.8	54.0	-19.2	V	A	
Mid Channel: 2437 MHz													
4.874	3.0	38.6	33.9	6.8	-34.0	0.0	0.0	45.3	74.0	-28.7	H	P	
4.874	3.0	31.7	33.9	6.8	-34.0	0.0	0.0	38.4	54.0	-15.6	H	A	
7.311	3.0	35.2	36.6	9.1	-33.1	0.0	0.0	47.7	74.0	-26.3	H	P	
7.311	3.0	22.8	36.6	9.1	-33.1	0.0	0.0	35.4	54.0	-18.6	H	A	
4.874	3.0	37.6	33.9	6.8	-34.0	0.0	0.0	44.3	74.0	-29.7	V	P	
4.874	3.0	29.8	33.9	6.8	-34.0	0.0	0.0	36.5	54.0	-17.5	V	A	
7.311	3.0	36.7	36.6	9.1	-33.1	0.0	0.0	49.2	74.0	-24.8	V	P	
7.311	3.0	22.9	36.6	9.1	-33.1	0.0	0.0	35.4	54.0	-18.6	V	A	
High Channel: 2462 MHz													
4.924	3.0	40.9	34.0	6.8	-34.0	0.0	0.0	47.7	74.0	-26.3	H	P	
4.924	3.0	36.5	34.0	6.8	-34.0	0.0	0.0	43.3	54.0	-10.7	H	A	
7.386	3.0	35.6	36.6	9.1	-33.1	0.0	0.0	48.2	74.0	-25.8	H	P	
7.386	3.0	23.2	36.6	9.1	-33.1	0.0	0.0	35.9	54.0	-18.1	H	A	
4.924	3.0	40.3	34.0	6.8	-34.0	0.0	0.0	47.1	74.0	-26.9	V	P	
4.924	3.0	35.3	34.0	6.8	-34.0	0.0	0.0	42.1	54.0	-11.9	V	A	
7.386	3.0	37.7	36.6	9.1	-33.1	0.0	0.0	50.3	74.0	-23.7	V	P	
7.386	3.0	24.4	36.6	9.1	-33.1	0.0	0.0	37.1	54.0	-16.9	V	A	

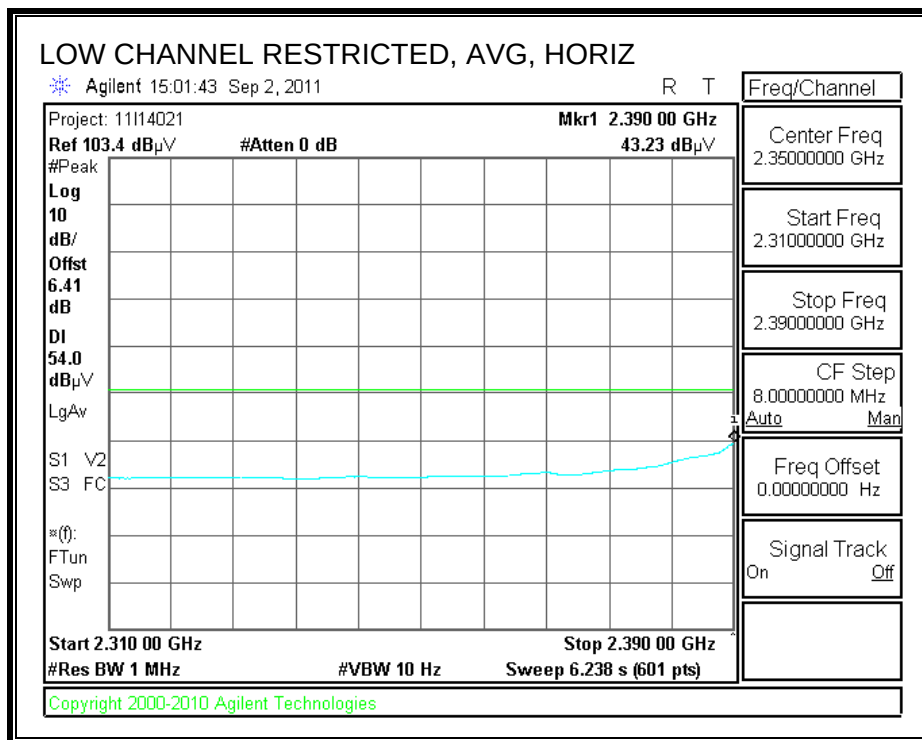
Rev. 4.1.2.7

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

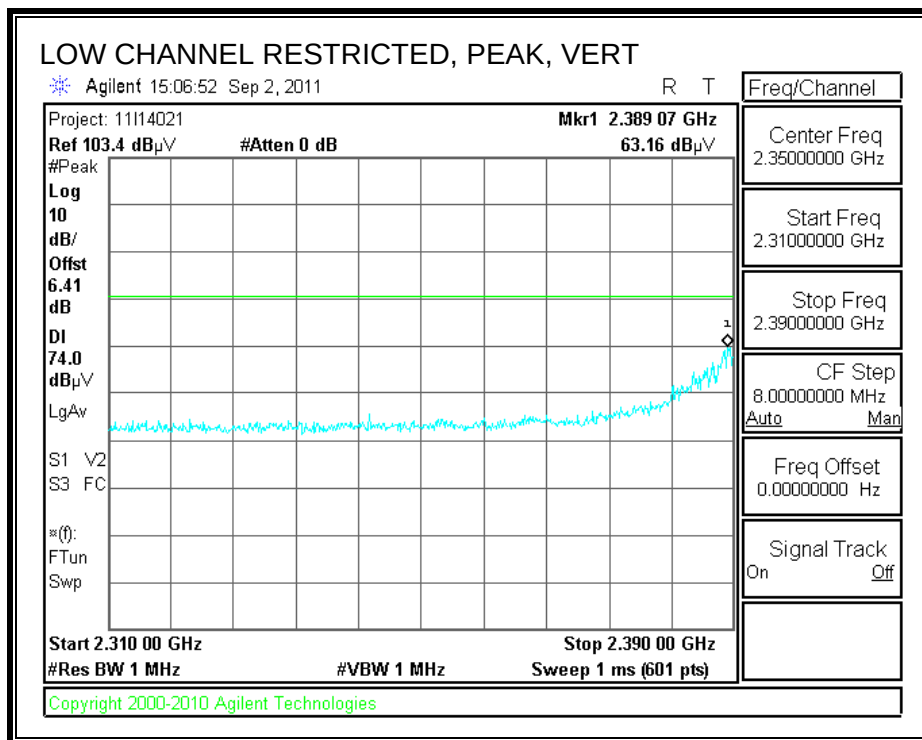
8.2.2. TX ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND

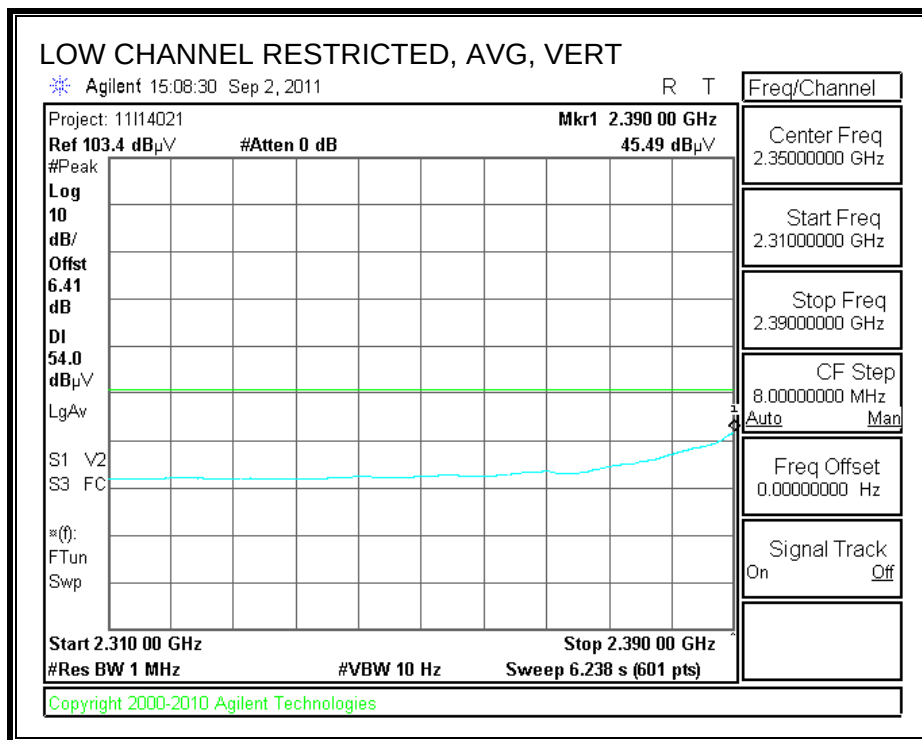
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



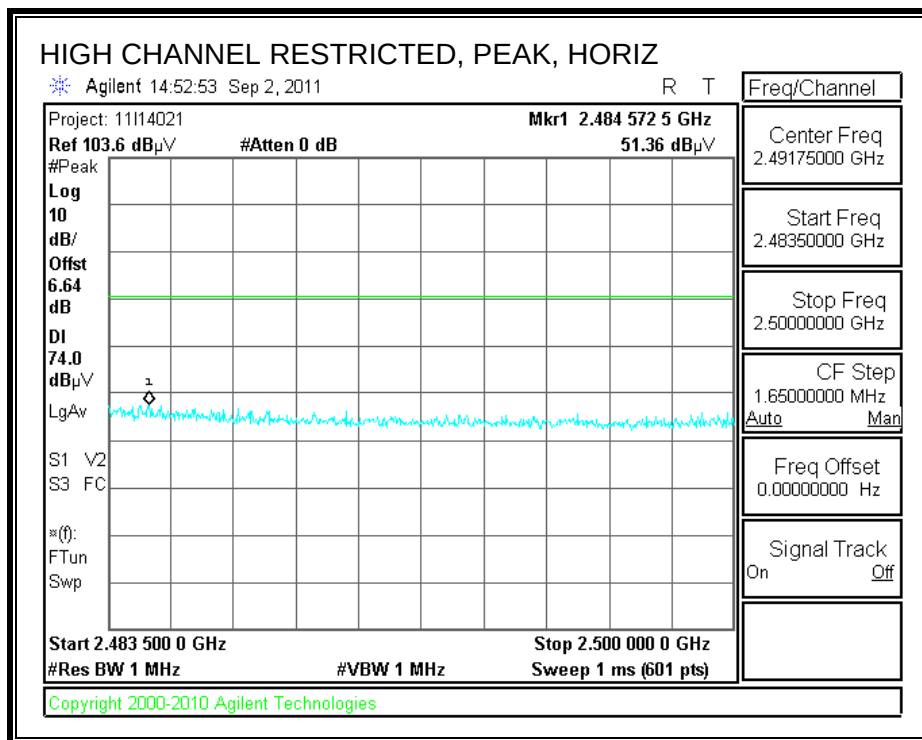


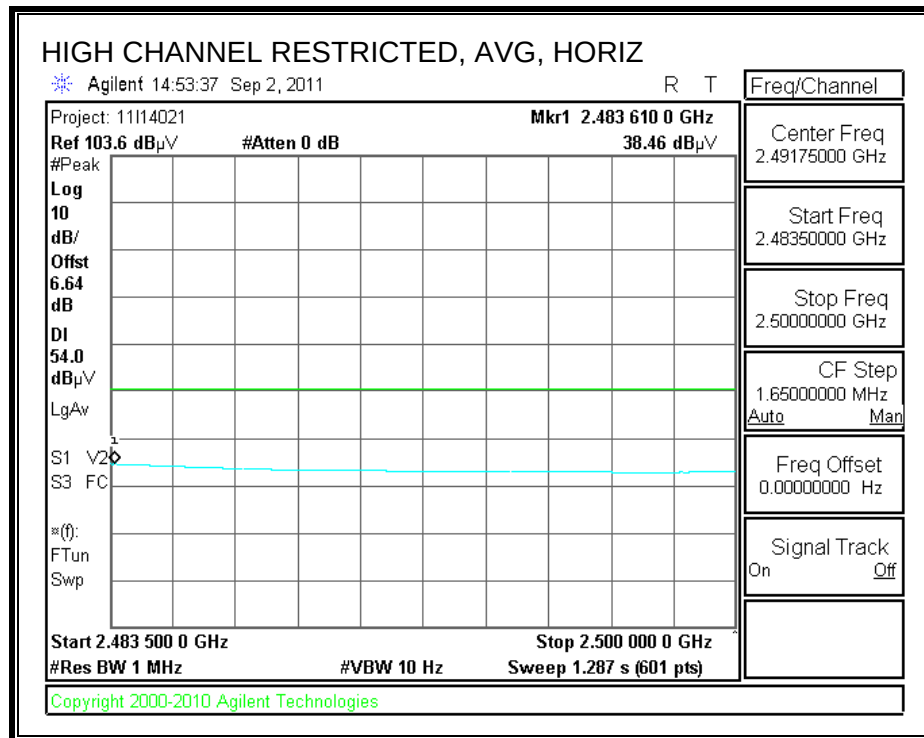
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



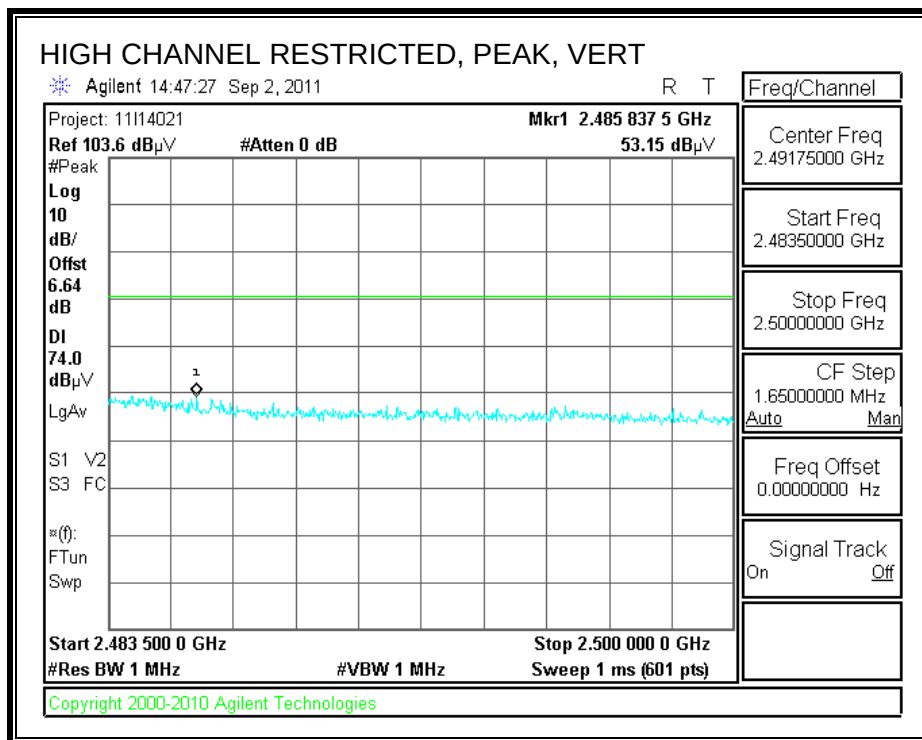


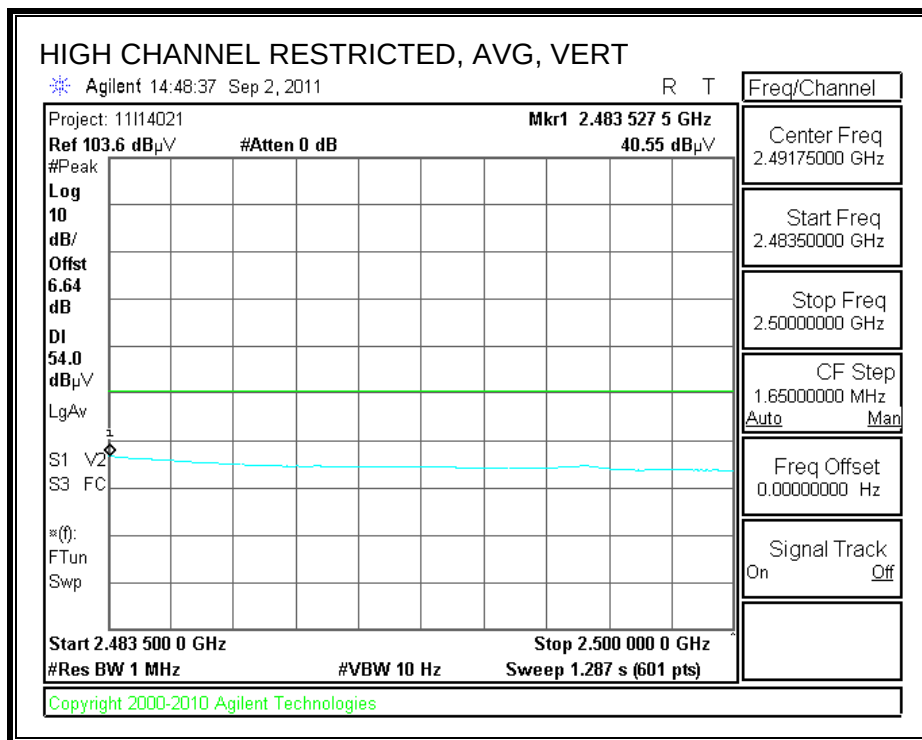
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: David Garcia
Date: 08/31/11
Project #: 11I14017
Company: Samsung
Test Target: FCC 15.247
Mode Oper: Tx, 11g

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

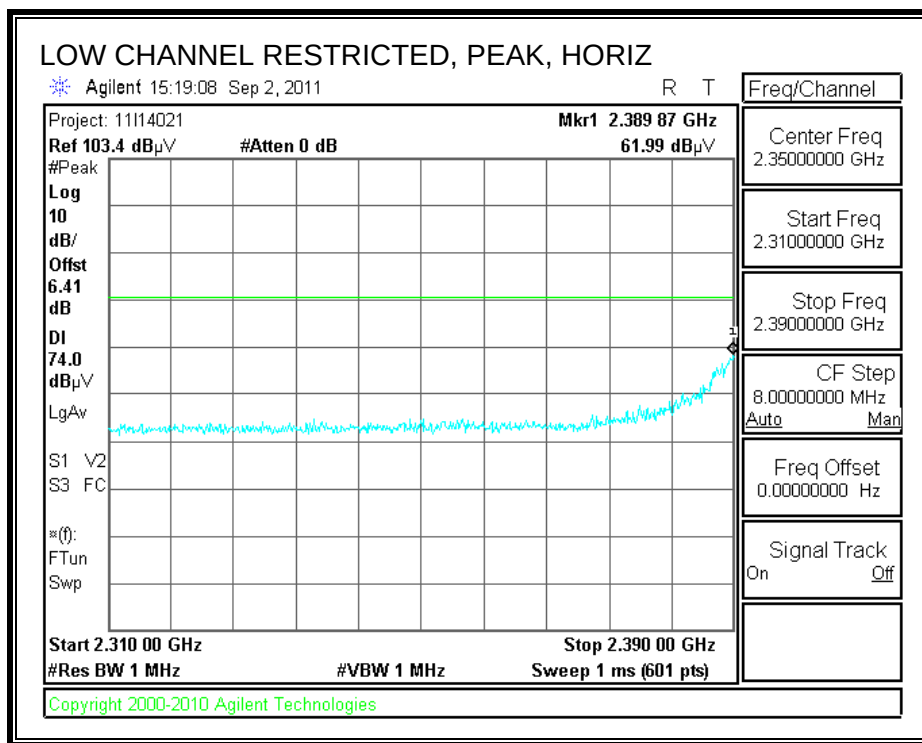
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filtr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Channel: 2412 MHz													
4.824	3.0	36.8	33.9	6.8	-34.1	0.0	0.0	43.4	74.0	-30.6	H	P	
4.824	3.0	24.0	33.9	6.8	-34.1	0.0	0.0	30.6	54.0	-23.4	H	A	
7.236	3.0	34.5	36.5	9.1	-33.2	0.0	0.0	46.9	74.0	-27.1	H	P	
7.236	3.0	22.3	36.5	9.1	-33.2	0.0	0.0	34.7	54.0	-19.3	H	A	
4.824	3.0	37.2	33.9	6.8	-34.1	0.0	0.0	43.8	74.0	-30.2	V	P	
4.824	3.0	24.6	33.9	6.8	-34.1	0.0	0.0	31.2	54.0	-22.8	V	A	
7.236	3.0	34.7	36.5	9.1	-33.2	0.0	0.0	47.2	74.0	-26.8	V	P	
7.236	3.0	22.4	36.5	9.1	-33.2	0.0	0.0	34.8	54.0	-19.2	V	A	
Mid Channel: 2437 MHz													
4.874	3.0	37.9	33.9	6.8	-34.0	0.0	0.0	44.6	74.0	-29.4	H	P	
4.874	3.0	24.9	33.9	6.8	-34.0	0.0	0.0	31.6	54.0	-22.4	H	A	
7.311	3.0	35.0	36.6	9.1	-33.1	0.0	0.0	47.6	74.0	-26.4	H	P	
7.311	3.0	22.9	36.6	9.1	-33.1	0.0	0.0	35.4	54.0	-18.6	H	A	
4.874	3.0	37.4	33.9	6.8	-34.0	0.0	0.0	44.1	74.0	-29.9	V	P	
4.874	3.0	24.5	33.9	6.8	-34.0	0.0	0.0	31.2	54.0	-22.8	V	A	
7.311	3.0	35.1	36.6	9.1	-33.1	0.0	0.0	47.6	74.0	-26.4	V	P	
7.311	3.0	22.9	36.6	9.1	-33.1	0.0	0.0	35.4	54.0	-18.6	V	A	
High Channel: 2462 MHz													
4.924	3.0	37.3	34.0	6.8	-34.0	0.0	0.0	44.1	74.0	-29.9	H	P	
4.924	3.0	24.8	34.0	6.8	-34.0	0.0	0.0	31.6	54.0	-22.4	H	A	
7.386	3.0	35.4	36.6	9.1	-33.1	0.0	0.0	48.1	74.0	-25.9	H	P	
7.386	3.0	23.2	36.6	9.1	-33.1	0.0	0.0	35.8	54.0	-18.2	H	A	
4.924	3.0	39.4	34.0	6.8	-34.0	0.0	0.0	46.2	74.0	-27.8	V	P	
4.924	3.0	26.1	34.0	6.8	-34.0	0.0	0.0	32.9	54.0	-21.1	V	A	
7.386	3.0	36.0	36.6	9.1	-33.1	0.0	0.0	48.7	74.0	-25.3	V	P	
7.386	3.0	23.7	36.6	9.1	-33.1	0.0	0.0	36.4	54.0	-17.6	V	A	

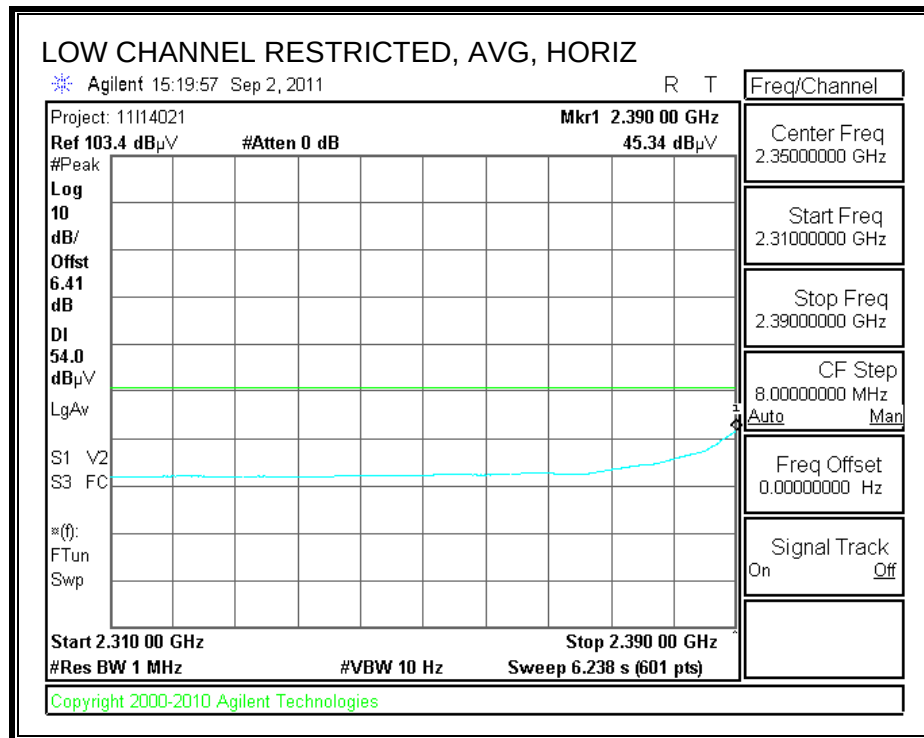
Rev. 4.1.2.7

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

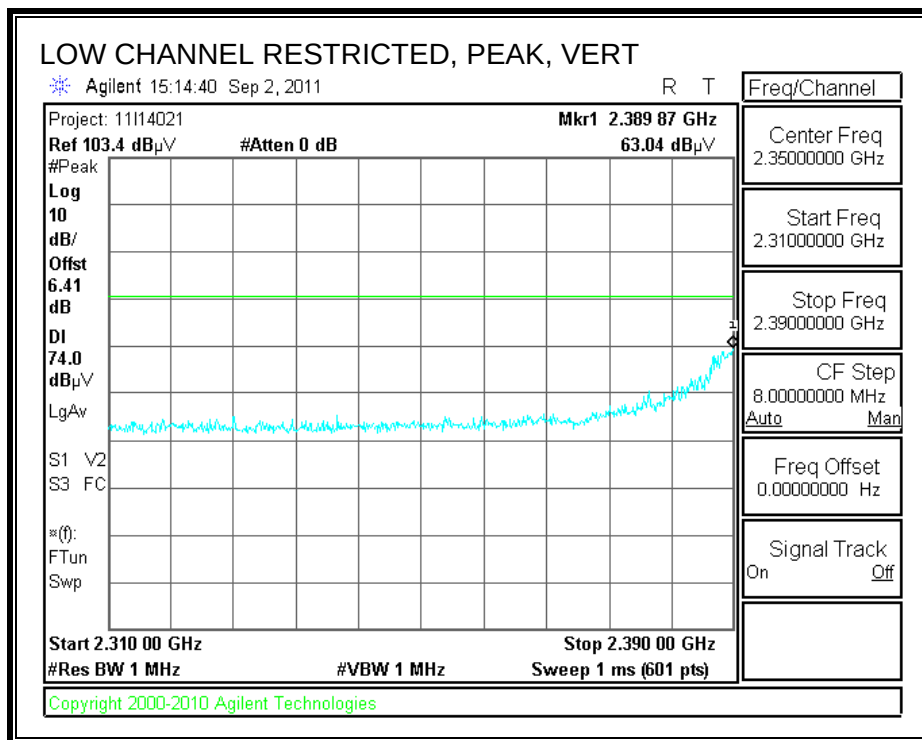
8.2.3. TX ABOVE 1 GHz FOR 802.11n HT20 MODE IN THE 2.4 GHz BAND

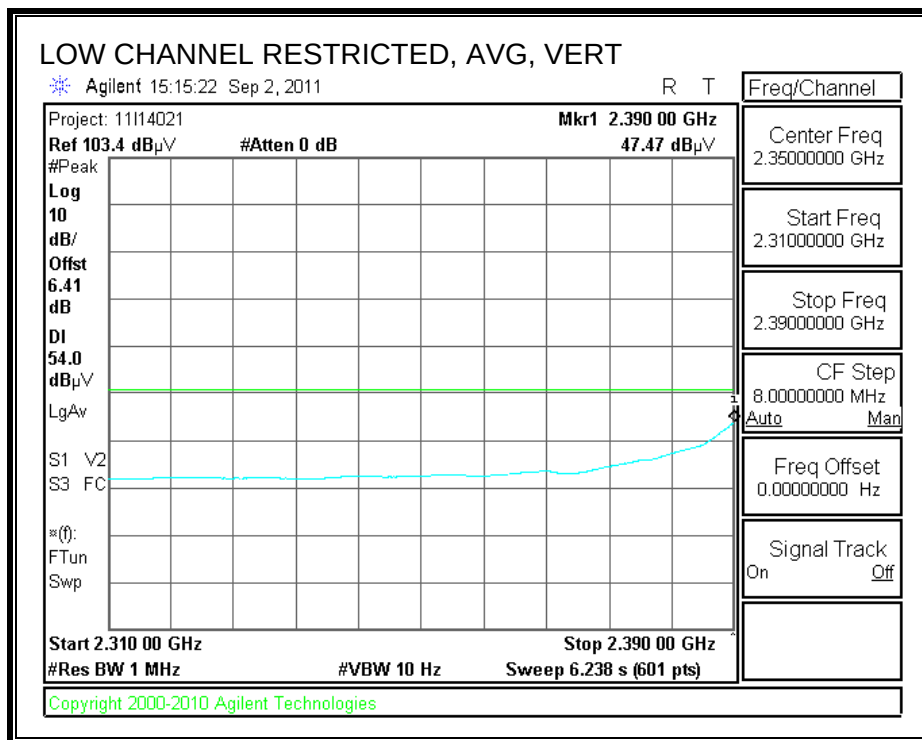
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



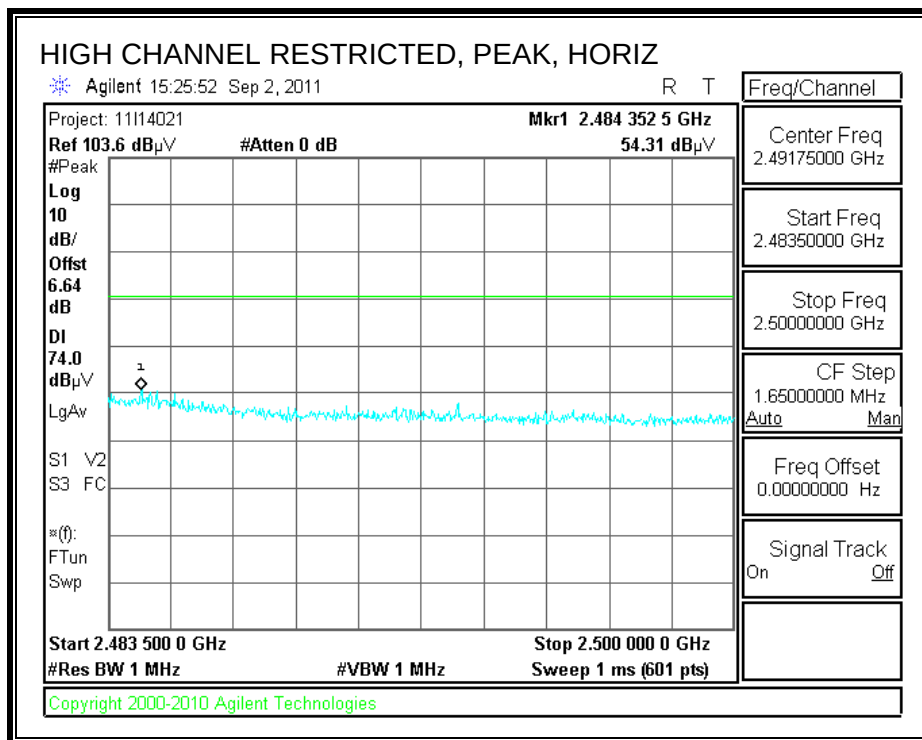


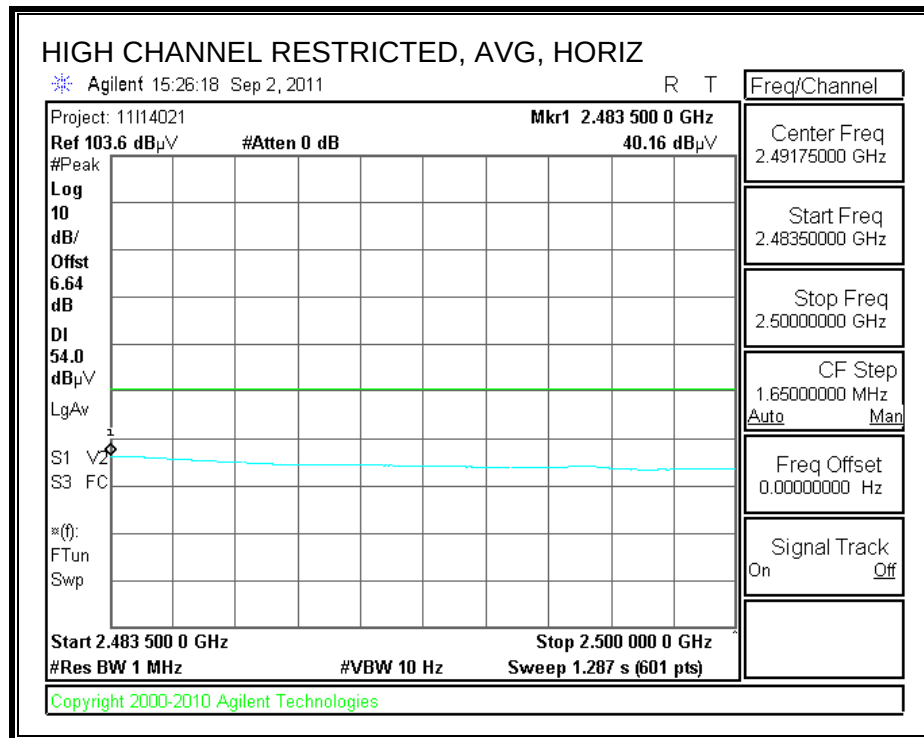
RESTRICTED BANEDGE (LOW CHANNEL, VERTICAL)



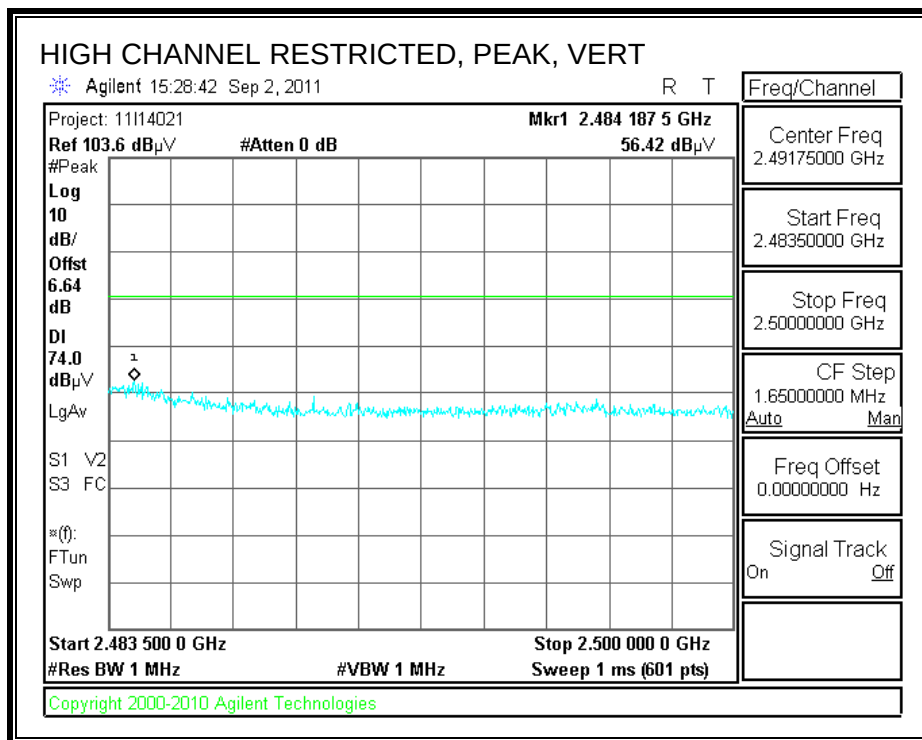


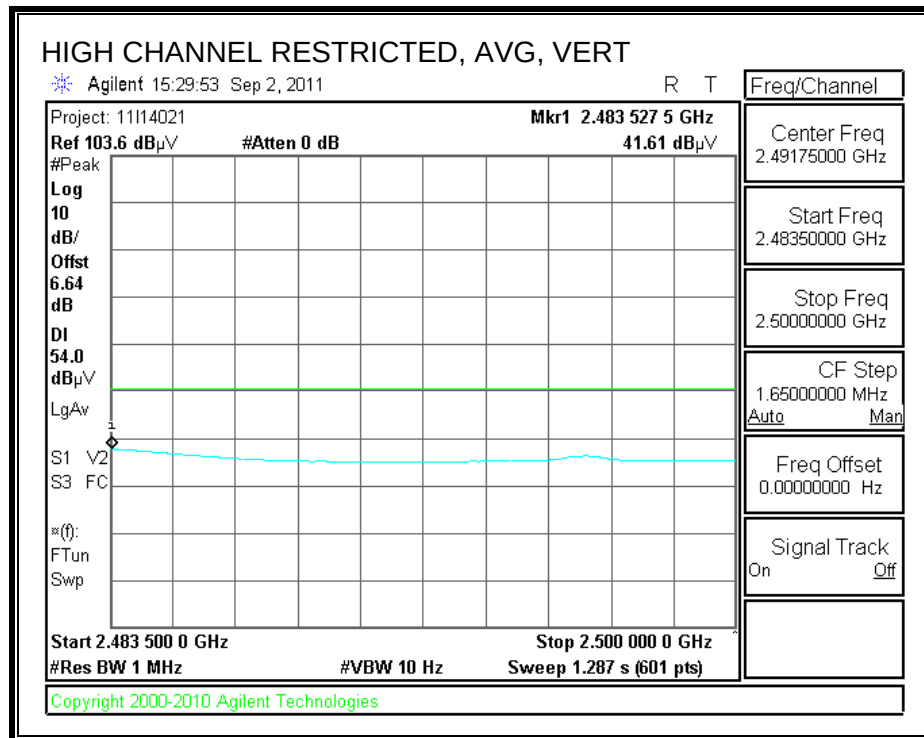
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: David Garcia
Date: 08/31/11
Project #: 11I14017
Company: Samsung
Test Target: FCC 15.247
Mode Oper: Tx, 11n HT20 MCS0

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Channel: 2412 MHz													
4.824	3.0	36.2	33.9	6.8	-34.1	0.0	0.0	42.8	74.0	-31.2	H	P	
4.824	3.0	23.9	33.9	6.8	-34.1	0.0	0.0	30.5	54.0	-23.5	H	A	
7.236	3.0	34.8	36.5	9.1	-33.2	0.0	0.0	47.2	74.0	-26.8	H	P	
7.236	3.0	22.2	36.5	9.1	-33.2	0.0	0.0	34.6	54.0	-19.4	H	A	
4.824	3.0	36.4	33.9	6.8	-34.1	0.0	0.0	43.0	74.0	-31.0	V	P	
4.824	3.0	24.4	33.9	6.8	-34.1	0.0	0.0	31.1	54.0	-22.9	V	A	
7.236	3.0	34.5	36.5	9.1	-33.2	0.0	0.0	46.9	74.0	-27.1	V	P	
7.236	3.0	22.4	36.5	9.1	-33.2	0.0	0.0	34.8	54.0	-19.2	V	A	
Mid Channel: 2437 MHz													
4.874	3.0	37.1	33.9	6.8	-34.0	0.0	0.0	43.8	74.0	-30.2	H	P	
4.874	3.0	24.7	33.9	6.8	-34.0	0.0	0.0	31.4	54.0	-22.6	H	A	
7.311	3.0	35.7	36.6	9.1	-33.1	0.0	0.0	48.3	74.0	-25.7	H	P	
7.311	3.0	22.8	36.6	9.1	-33.1	0.0	0.0	35.4	54.0	-18.6	H	A	
4.874	3.0	37.0	33.9	6.8	-34.0	0.0	0.0	43.7	74.0	-30.3	V	P	
4.874	3.0	24.4	33.9	6.8	-34.0	0.0	0.0	31.1	54.0	-22.9	V	A	
7.311	3.0	35.8	36.6	9.1	-33.1	0.0	0.0	48.3	74.0	-25.7	V	P	
7.311	3.0	22.8	36.6	9.1	-33.1	0.0	0.0	35.4	54.0	-18.6	V	A	
High Channel: 2462 MHz													
4.924	3.0	36.6	34.0	6.8	-34.0	0.0	0.0	43.4	74.0	-30.6	H	P	
4.924	3.0	24.6	34.0	6.8	-34.0	0.0	0.0	31.4	54.0	-22.6	H	A	
7.386	3.0	35.9	36.6	9.1	-33.1	0.0	0.0	48.6	74.0	-25.4	H	P	
7.386	3.0	23.1	36.6	9.1	-33.1	0.0	0.0	35.8	54.0	-18.2	H	A	
4.924	3.0	38.8	34.0	6.8	-34.0	0.0	0.0	45.6	74.0	-28.4	V	P	
4.924	3.0	25.8	34.0	6.8	-34.0	0.0	0.0	32.6	54.0	-21.4	V	A	
7.386	3.0	36.6	36.6	9.1	-33.1	0.0	0.0	49.3	74.0	-24.7	V	P	
7.386	3.0	23.7	36.6	9.1	-33.1	0.0	0.0	36.3	54.0	-17.7	V	A	

Rev. 4.1.2.7

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

8.2.4. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 09/07/11
Project #: 11I14017
Company: Samsung
Test Target:
Mode Oper: Tx On , 5.8 GHz, a Mode, Worst Position Y

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Ch.													
11.490	3.0	35.3	38.7	10.7	-35.5	0.0	0.7	49.9	74.0	-24.1	V	P	
11.490	3.0	22.7	38.7	10.7	-35.5	0.0	0.7	37.3	54.0	-16.7	V	A	
11.490	3.0	34.9	38.7	10.7	-35.5	0.0	0.7	49.5	74.0	-24.5	H	P	
11.490	3.0	22.7	38.7	10.7	-35.5	0.0	0.7	37.3	54.0	-16.7	H	A	
Mid Ch.													
11.570	3.0	34.6	38.8	10.8	-35.5	0.0	0.7	49.3	74.0	-24.7	V	P	
11.570	3.0	22.6	38.8	10.8	-35.5	0.0	0.7	37.4	54.0	-16.6	V	A	
11.570	3.0	35.0	38.8	10.8	-35.5	0.0	0.7	49.7	74.0	-24.3	H	P	
11.570	3.0	22.6	38.8	10.8	-35.5	0.0	0.7	37.4	54.0	-16.6	H	A	
High Ch.													
11.650	3.0	35.1	38.8	10.9	-35.5	0.0	0.7	50.0	74.0	-24.0	V	P	
11.650	3.0	22.8	38.8	10.9	-35.5	0.0	0.7	37.6	54.0	-16.4	V	A	
11.650	3.0	35.3	38.8	10.9	-35.5	0.0	0.7	50.2	74.0	-23.8	H	P	
11.650	3.0	22.8	38.8	10.9	-35.5	0.0	0.7	37.7	54.0	-16.3	H	A	

Rev. 4.1.2.7

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

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

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 09/07/11
Project #: 11I14017
Company: Samsung
Test Target:
Mode Oper: Tx On , 5.8 GHz, HT20 Mode, Worst Position Y

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Ch.													
11.490	3.0	35.8	38.7	10.7	-35.5	0.0	0.7	50.5	74.0	-23.5	V	P	
11.490	3.0	22.8	38.7	10.7	-35.5	0.0	0.7	37.4	54.0	-16.6	V	A	
11.490	3.0	35.5	38.7	10.7	-35.5	0.0	0.7	50.2	74.0	-23.8	H	P	
11.490	3.0	22.7	38.7	10.7	-35.5	0.0	0.7	37.3	54.0	-16.7	H	A	
Mid Ch.													
11.570	3.0	35.1	38.8	10.8	-35.5	0.0	0.7	49.8	74.0	-24.2	V	P	
11.570	3.0	23.0	38.8	10.8	-35.5	0.0	0.7	37.8	54.0	-16.2	V	A	
11.570	3.0	34.6	38.8	10.8	-35.5	0.0	0.7	49.4	74.0	-24.6	H	P	
11.570	3.0	22.4	38.8	10.8	-35.5	0.0	0.7	37.1	54.0	-16.9	H	A	
High Ch.													
11.650	3.0	35.5	38.8	10.9	-35.5	0.0	0.7	50.3	74.0	-23.7	V	P	
11.650	3.0	22.8	38.8	10.9	-35.5	0.0	0.7	37.7	54.0	-16.3	V	A	
11.650	3.0	35.3	38.8	10.9	-35.5	0.0	0.7	50.1	74.0	-23.9	H	P	
11.650	3.0	23.0	38.8	10.9	-35.5	0.0	0.7	37.8	54.0	-16.2	H	A	

Rev. 4.1.2.7

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

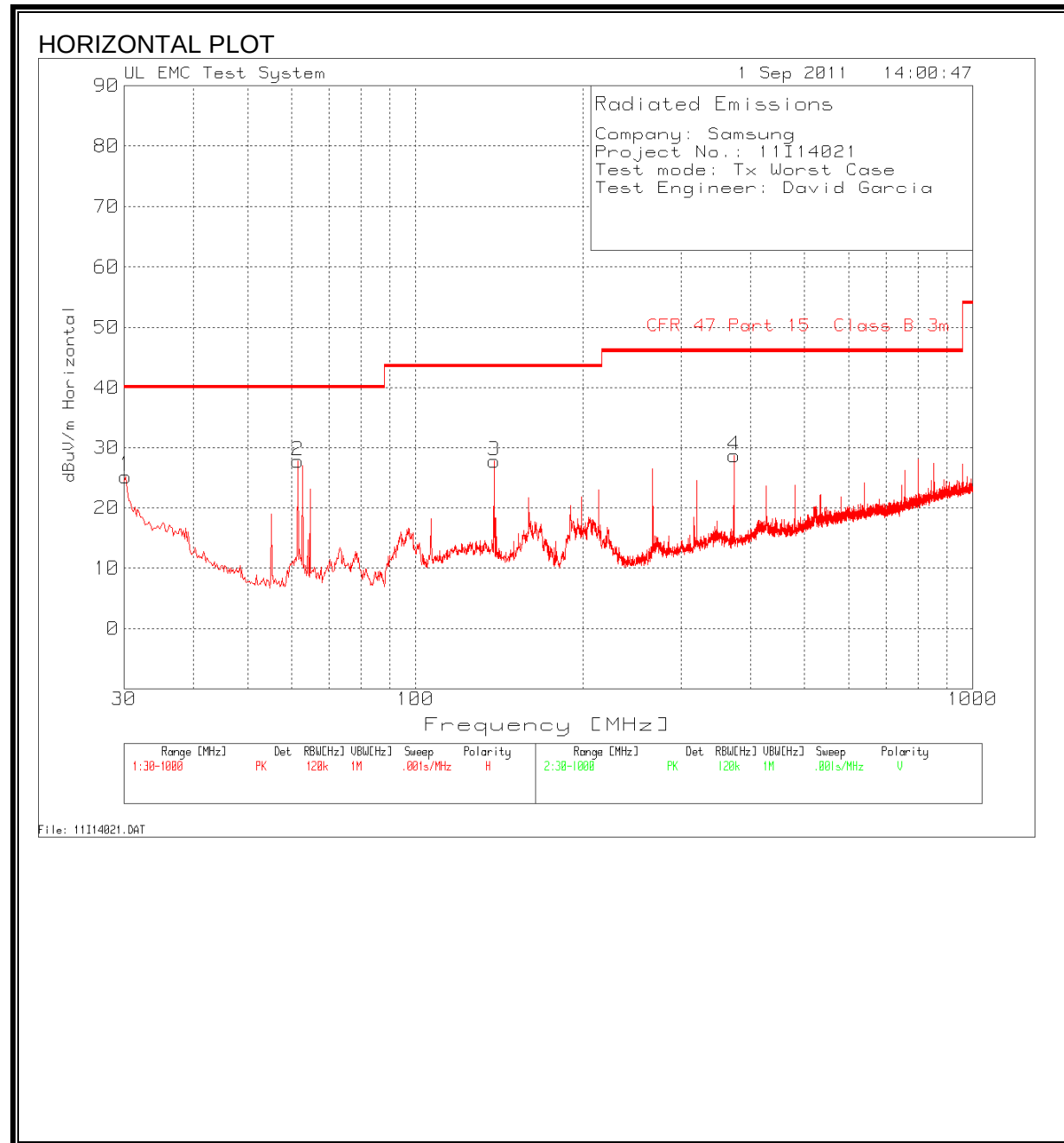
8.2.6. TX ABOVE 1 GHz FOR 802.11n HT40 MODE IN THE 5.8 GHz BAND

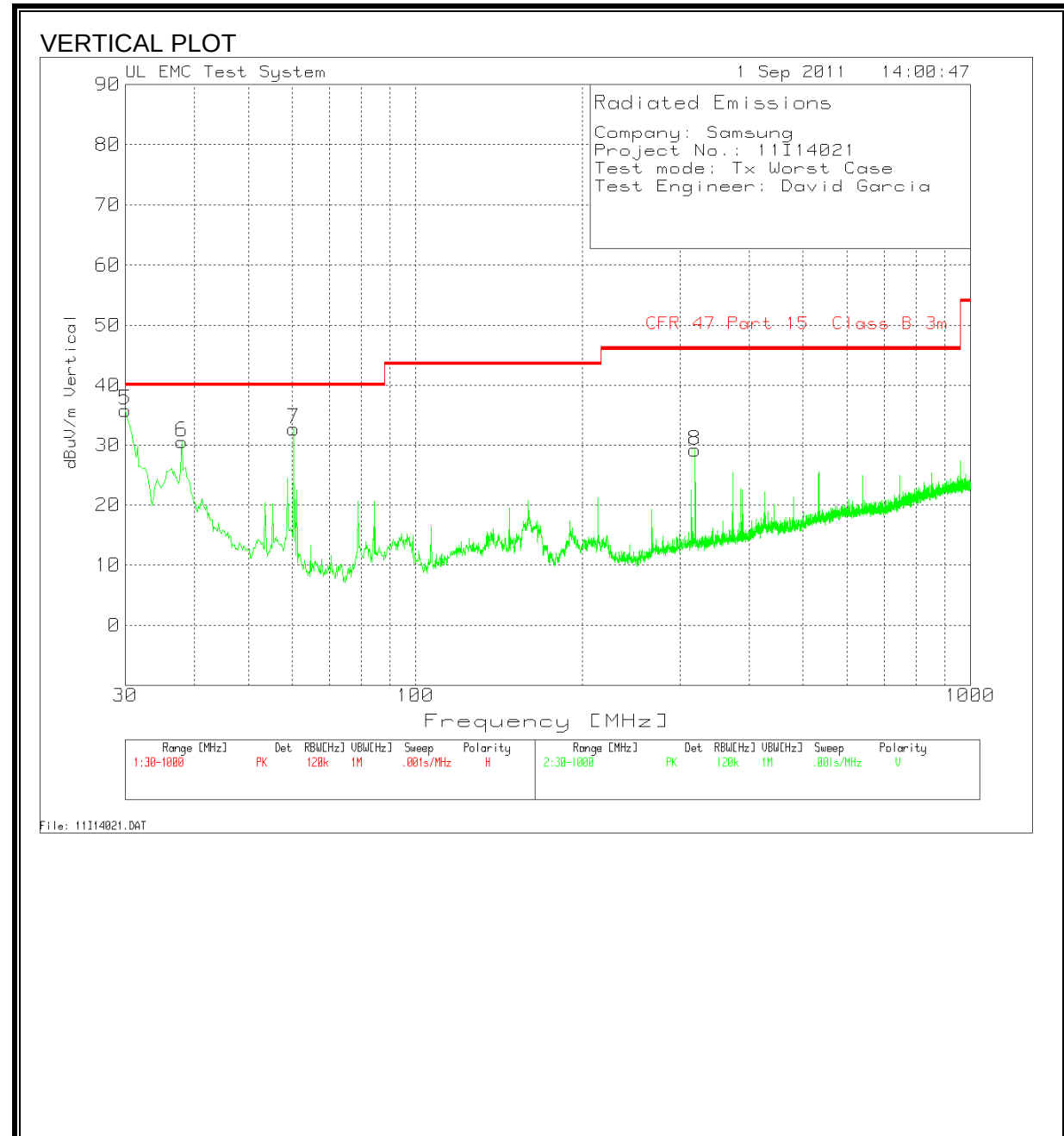
HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		William Zhuang											
Date:		09/08/11											
Project #:		11I14017											
Company:		Samsung											
Test Target:													
Mode Oper:		Tx On , 5.8 GHz, HT40 Mode, Worst Position Y											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
Low Ch. 5755 MHz													
11.510	3.0	35.0	38.8	10.7	-35.5	0.0	0.7	49.7	74.0	-24.3	V	P	
11.510	3.0	22.8	38.8	10.7	-35.5	0.0	0.7	37.5	54.0	-16.5	V	A	
11.510	3.0	34.5	38.8	10.7	-35.5	0.0	0.7	49.1	74.0	-24.9	H	P	
11.510	3.0	22.8	38.8	10.7	-35.5	0.0	0.7	37.5	54.0	-16.5	H	A	
High Ch. 5795 MHz													
11.590	3.0	35.2	38.8	10.8	-35.5	0.0	0.7	50.0	74.0	-24.0	V	P	
11.590	3.0	22.6	38.8	10.8	-35.5	0.0	0.7	37.4	54.0	-16.6	V	A	
11.590	3.0	35.1	38.8	10.8	-35.5	0.0	0.7	49.9	74.0	-24.1	H	P	
11.590	3.0	22.6	38.8	10.8	-35.5	0.0	0.7	37.4	54.0	-16.6	H	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

8.3. WORST-CASE BELOW 1 GHz

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





HORIZONTAL AND VERTICAL DATA

Company: Samsung										
Project No.: 11I14017										
Test mode: Tx Worst Case										
Test Engineer: David Garcia										
Test	Meter		3m below	3m T15	3m Bilog		CFR 47 Part			
Frequency	Reading	Detector	1GHz	PreAmp	T185 below		15 Class B			
			Cable.TXT	below	1GHz.TXT		3m	Margin	Height [cm]	Polarity
			[dB]	1GHz.TXT	[dB]	dBuV/m				
30.1938	33.02	PK	0.6	-28.3	19.9	25.22	40	-14.78	99	Horz
61.5967	47.05	PK	0.9	-28.2	8	27.75	40	-12.25	99	Horz
138.3593	41.28	PK	1.2	-27.9	13.2	27.78	43.5	-15.72	176	Horz
373.2994	39.8	PK	2	-27.7	14.6	28.7	46	-17.3	99	Horz
30	43.58	PK	0.6	-28.3	20	35.88	40	-4.12	101	Vert
37.9476	42.96	PK	0.7	-28.2	15.1	30.56	40	-9.44	101	Vert
60.4337	52.15	PK	0.9	-28.2	7.9	32.75	40	-7.25	176	Vert
319.2166	41.02	PK	1.8	-27.4	13.8	29.22	46	-16.78	176	Vert

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

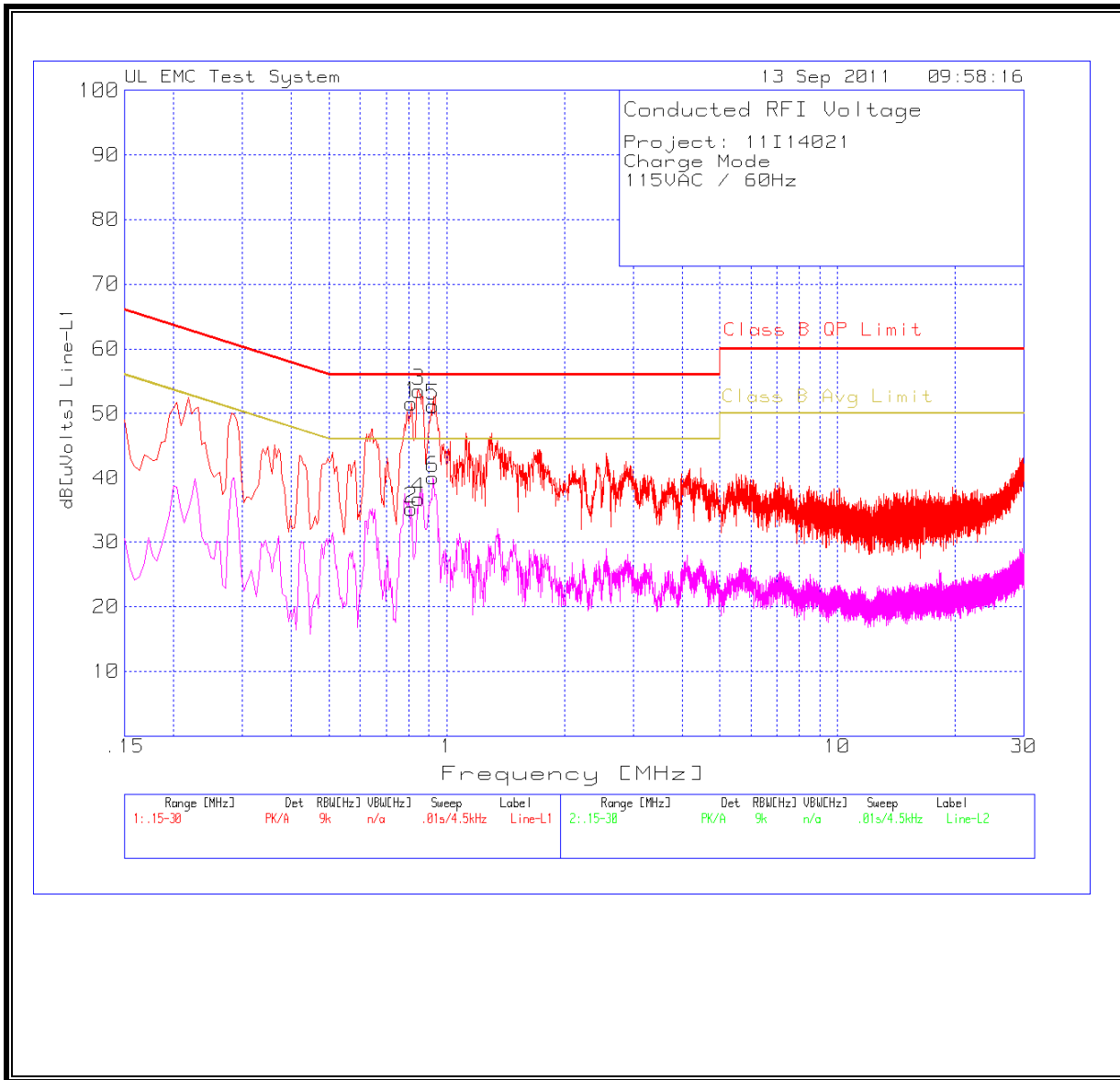
Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

6 WORST EMISSIONS

Project: 11I14021									
Charge Mode									
115VAC / 60Hz									
Line-L1 .15 - 30MHz									
Test Freq. (MHz)	Meter Reading	Detector	LISN [dB]	Conducted Emission Cable [dB]	Correct Reading (dBuVolts)	Class B Quasi-peak Limit	Quasi- Peak Margin	Class B Average Limit	Average Margin
0.8115	51.54	PK	0	0	51.54	56	-4.46	--	--
0.8115	35.11	Av	0	0	35.11	--	--	46	-10.89
0.8475	53.52	PK	0	0	53.52	56	-2.48	--	--
0.8475	36.63	Av	0	0	36.63	--	--	46	-9.37
0.9195	51.23	PK	0	0	51.23	56	-4.77	--	--
0.9195	40.01	Av	0	0	40.01	--	--	--	--
Line-L2 .15 - 30MHz									
Test Freq. (MHz)	Meter Reading	Detector	LISN [dB]	Conducted Emission Cable [dB]	Correct Reading (dBuVolts)	Class B Quasi-peak Limit	Quasi- Peak Margin	Class B Average	Average Margin
0.816	48.88	PK	0	0	48.88	56	-7.12	--	--
0.816	30.08	Av	0	0	30.08	--	--	46	-15.92
0.843	50.32	PK	0	0	50.32	56	-5.68	--	--
0.843	32.36	Av	0	0	32.36	--	--	46	-13.64
0.924	49.07	PK	0	0	49.07	56	-6.93	--	--
0.924	33.95	Av	0	0	33.95	--	--	46	-12.05

LINE 1 RESULTS



LINE 2 RESULTS

