FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 7

CERTIFICATION TEST REPORT

FOR

Sonos Wireless Dock

MODEL NUMBER: WD100

FCC ID: SBVDK001
IC: 5373A-DK001

REPORT NUMBER: 10U13333-1, Revision B

ISSUE DATE: SEPTEMBER 17, 2010

Prepared for
SONOS, INC.
223 E, De La Guerra
Santa Barbara, CA 93101, U.S.A.

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	09/01/10	Initial Issue	F. Ibrahim
A	09/15/10	Revised EUT name.	Aliza Z.
B	09/15/10	Revised antenna gain in MPE section, and replaced RF conducted data with RX radiated data.	F. Ibrahim

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Sonos, Inc.
223 E. De La Guerra
Santa Barbara, CA 93101, U.S.A.

EUT DESCRIPTION: 802.11 g/n wireless docking station for streaming iPod music to Sonos systems

MODEL: WD100

SERIAL NUMBER: A81

DATE TESTED: August 10 to 16, 2010

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 7 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 2	Pass

Compliance Certification Services, Inc. (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 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by 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 CCS By:

FRANK IBRAHIM
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

WILLIAM ZHUANG
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 2, and RSS-210 Issue 7.

3. FACILITIES AND ACCREDITATION

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11g/n wireless docking station for streaming iPod music to Sonos systems.

The radio function is integrated on the PCB; the manufacturer of the PCB is Sonos, Inc.

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11g	27.70	588.84
2412 - 2462	802.11n HT20	28.86	769.13

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a permanently attached PIFA antenna, with a maximum gain of 1.41 dBi.

5.4. SOFTWARE AND FIRMWARE

The EUT test software is 14.2-30030-devmillington-201006031659 and the support equipment software is v3.3-Clash-GC1-Beta4-GC2-Alpha3

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power; therefore, radiated emissions below 1 GHz and power line conducted emissions were performed with the EUT set to the channel with highest output power.

EUT is a desktop unit; therefore, it was tested in desktop configuration.

The following data rates were used based on input from the manufacturer of the radio that these are the only data rates that will be used in real applications.

All final tests in the 802.11g mode were made at 24 Mb/s.
All final tests in the 802.11n HT20 mode were made at 26 Mb/s (MCS9).

For PPSD and Conducted Spurious an initial investigation was performed to compare testing individual chains versus using a combiner and the investigation showed that a combiner is worst-case; therefore, all final testing for PPSD and Conducted Spurious was performed using a combiner

5.6. DESCRIPTION OF TEST SETUP

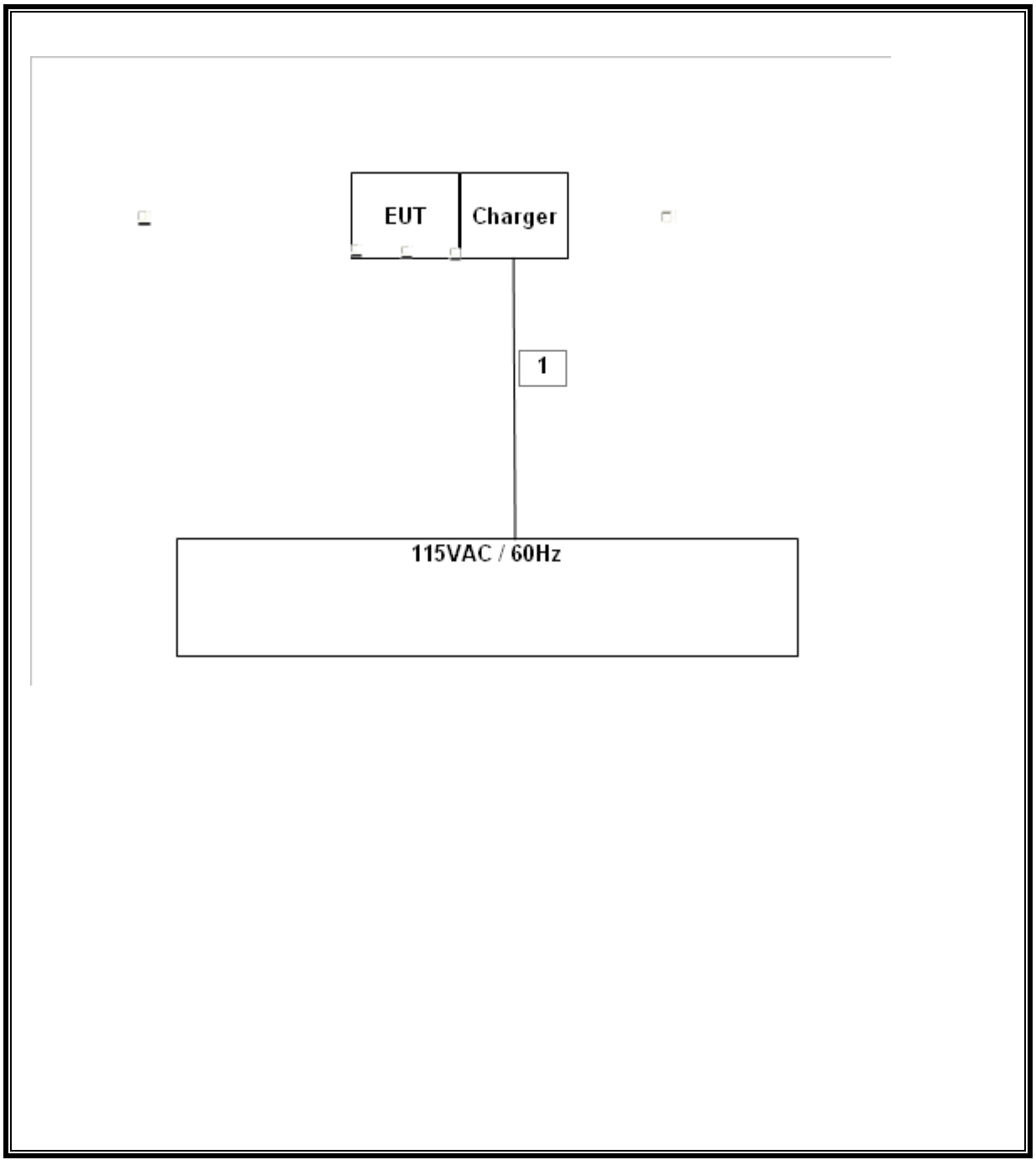
SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Wireless Music System	Sonos Inc.	CASBAH(DVT/PILOT)	1008 00-0E-58-60-06-A8-1	DoC
AC Adapter	Sonos Inc.	UL310-0520	A05-0146764	DoC

I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	DC	1	DC	Un-shielded	2m	NA

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**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01159	05/08/11
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/31/10
Antenna, Horn, 18 GHz	EMCO	3115	C00783	07/29/11
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	08/04/11
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/14/11
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	07/06/11
Peak Power Meter	Agilent / HP	E4416A	C00963	12/04/11
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/04/11
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/06/10
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	05/06/11
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRC13192	N02683	CNR

7. ANTENNA PORT TEST RESULTS

7.1. 802.11g MODE IN THE 2.4 GHz BAND

7.1.1. 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.

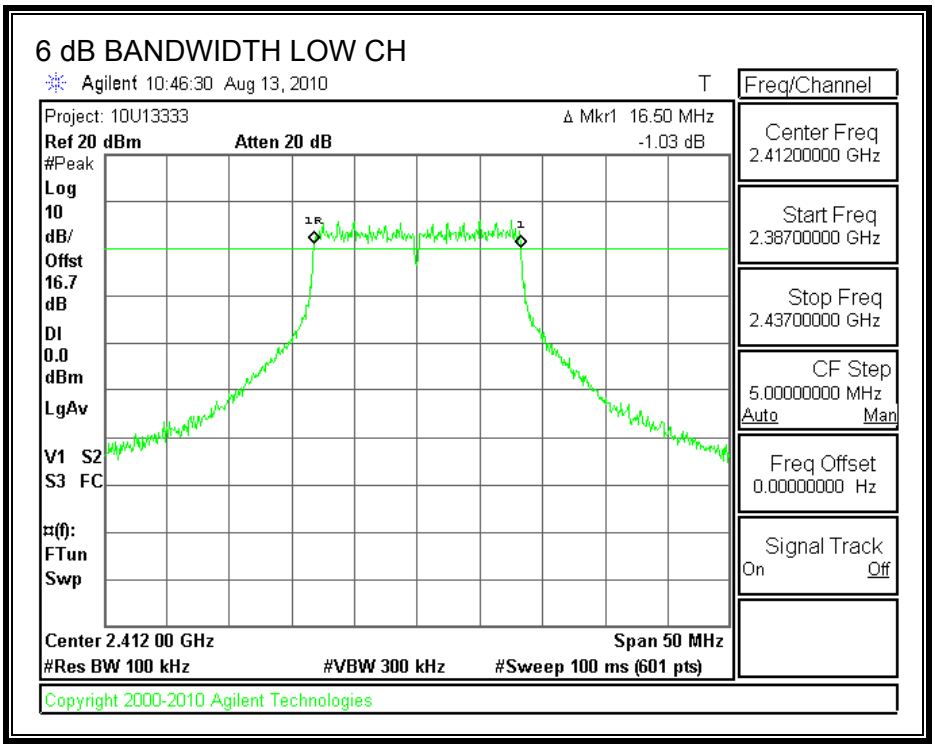
TEST PROCEDURE

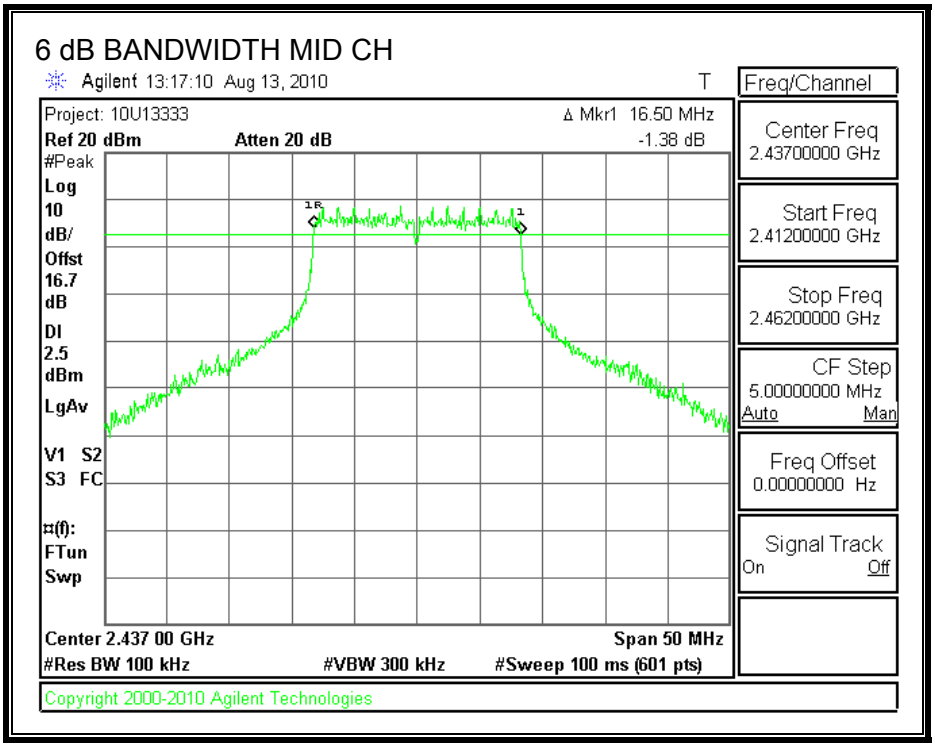
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

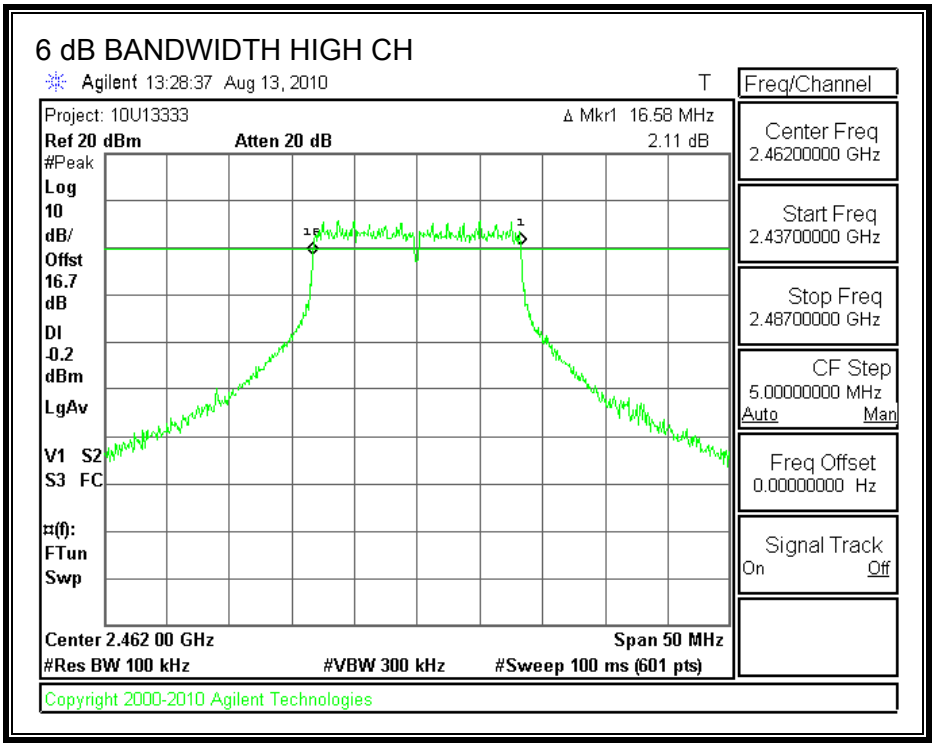
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.5	0.5
Middle	2437	16.5	0.5
High	2462	16.58	0.5

6 dB BANDWIDTH







7.1.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

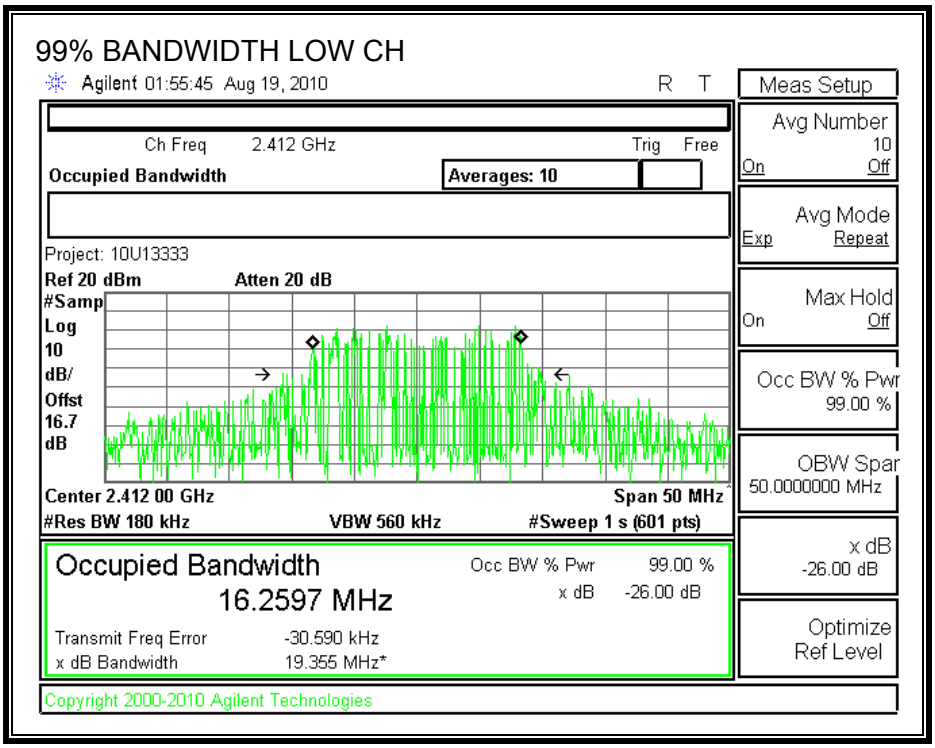
TEST PROCEDURE

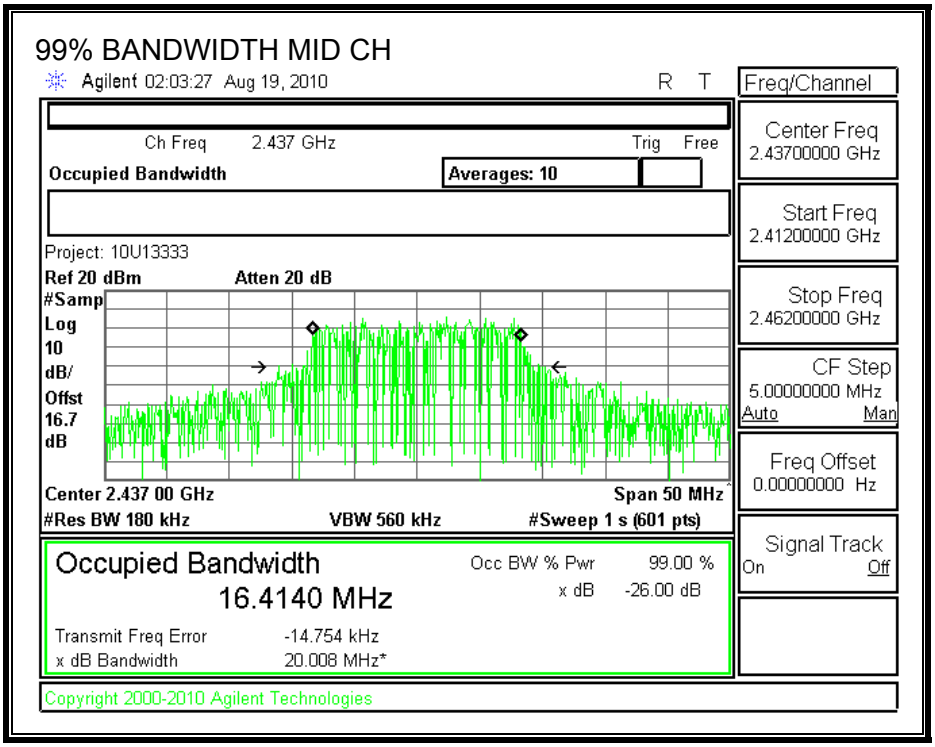
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

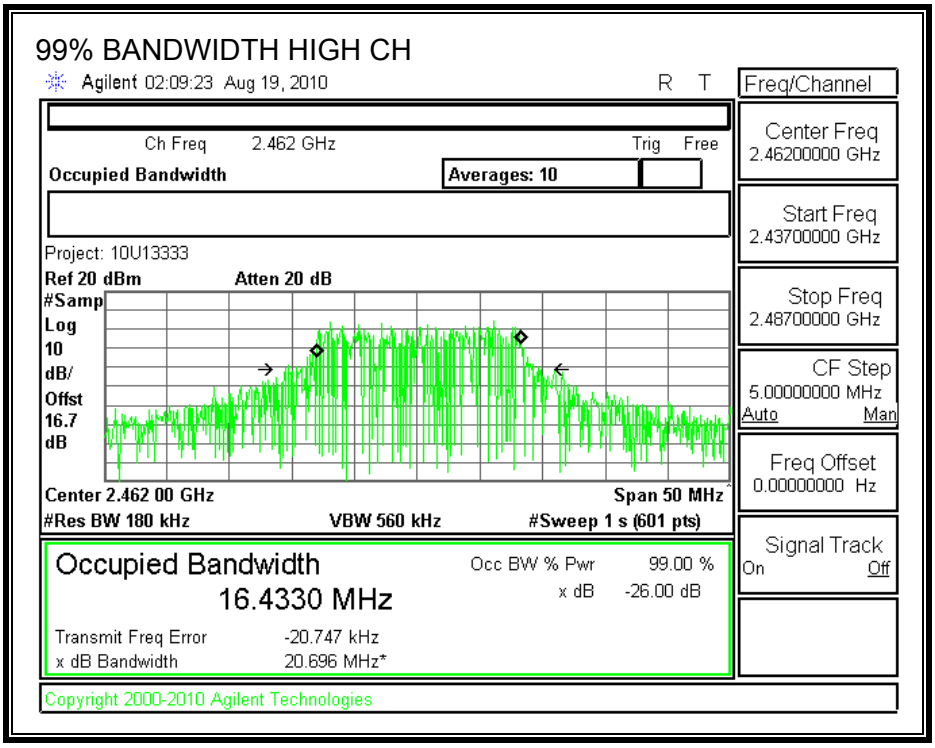
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.2597
Middle	2437	16.414
High	2462	16.433

99% BANDWIDTH







7.1.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

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

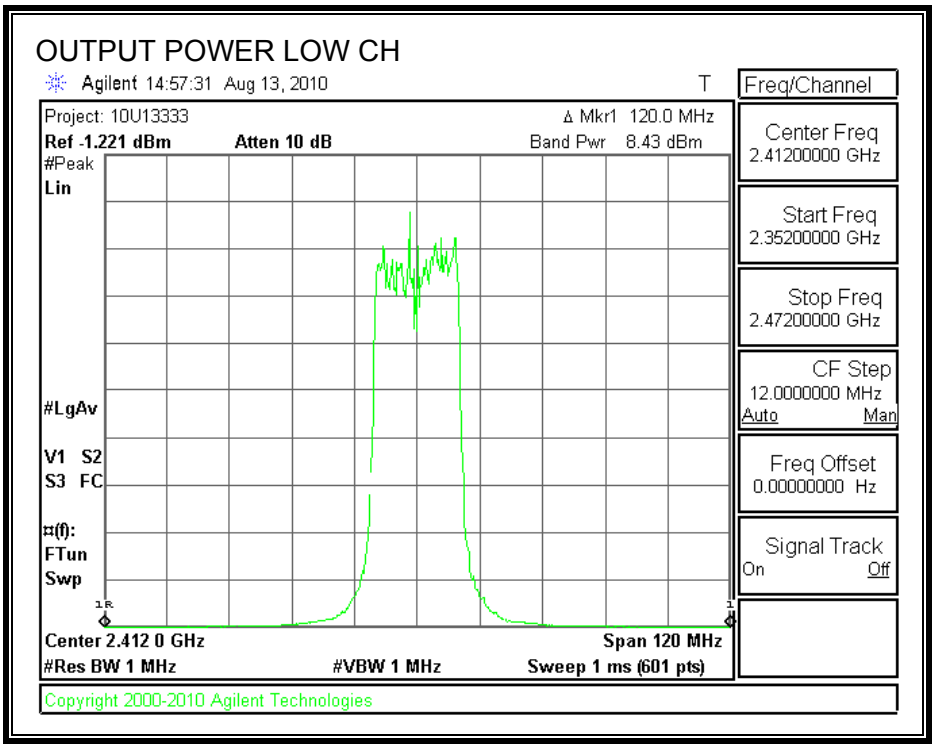
TEST PROCEDURE

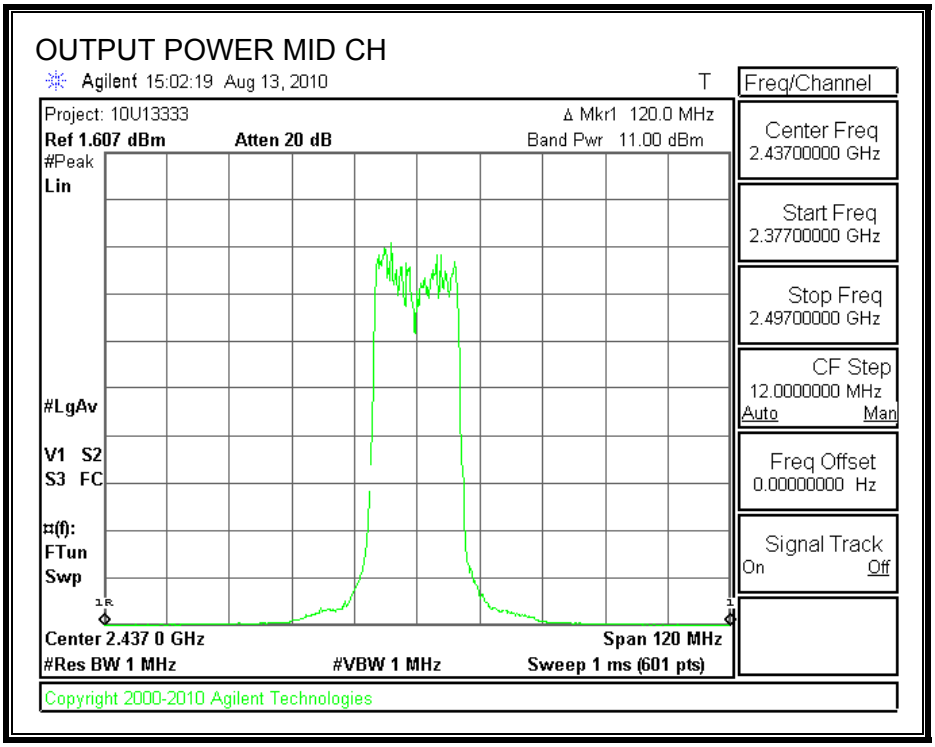
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

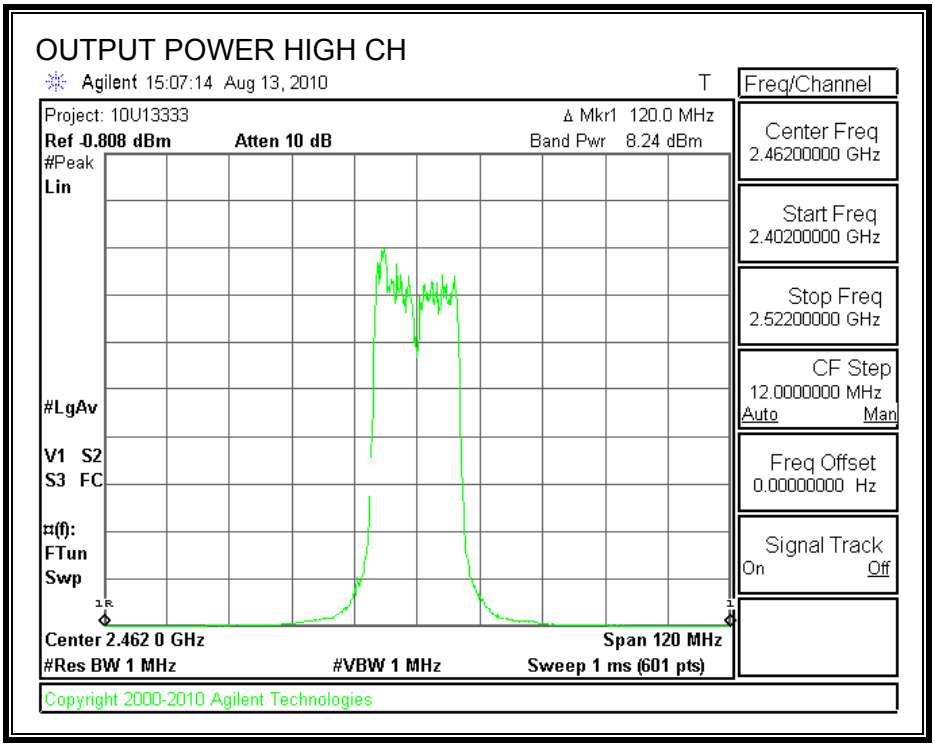
RESULTS

Channel	Frequency (MHz)	Spectrum Analyzer Reading (dBm)	Attenuator and Cable Offset (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	8.43	16.7	25.13	30	-4.87
Middle	2437	11.00	16.7	27.70	30	-2.30
High	2462	8.24	16.7	24.94	30	-5.06

OUTPUT POWER







7.1.4. 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 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Power (dBm)
Low	2412	16.90
Middle	2437	19.60
High	2462	16.80

7.1.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

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.

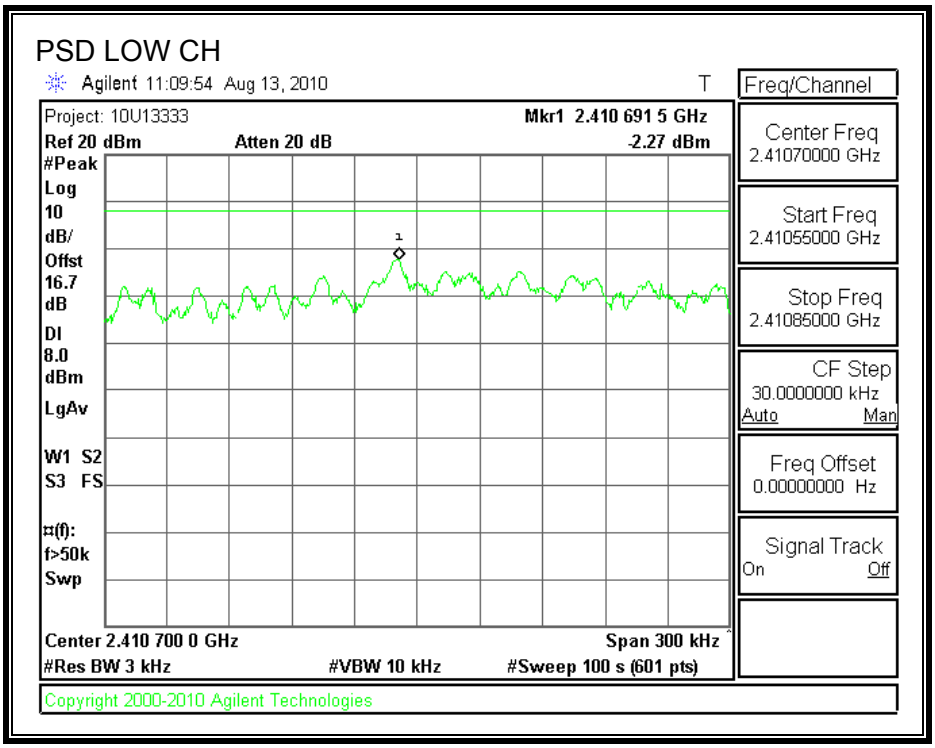
TEST PROCEDURE

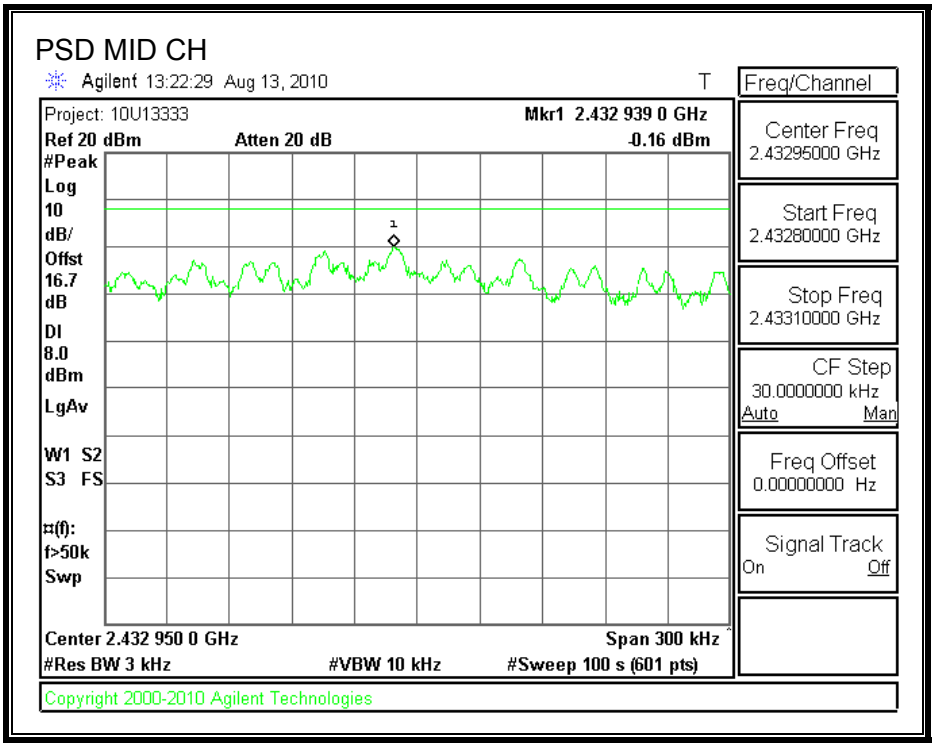
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

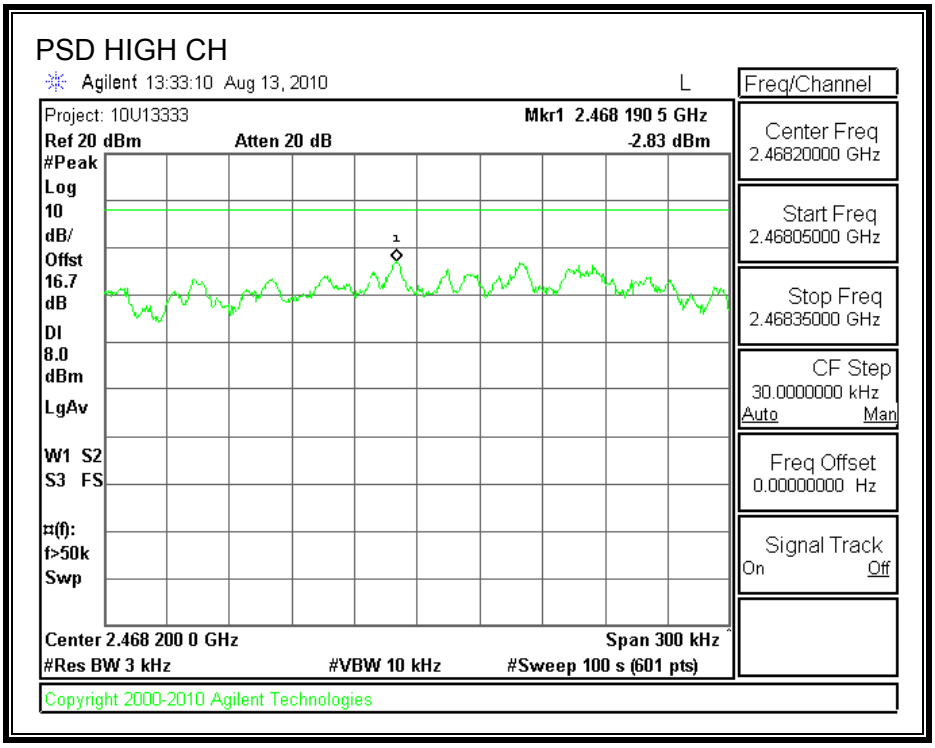
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-2.27	8	-10.27
Middle	2437	-0.16	8	-8.16
High	2462	-2.83	8	-10.83

POWER SPECTRAL DENSITY







7.1.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

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

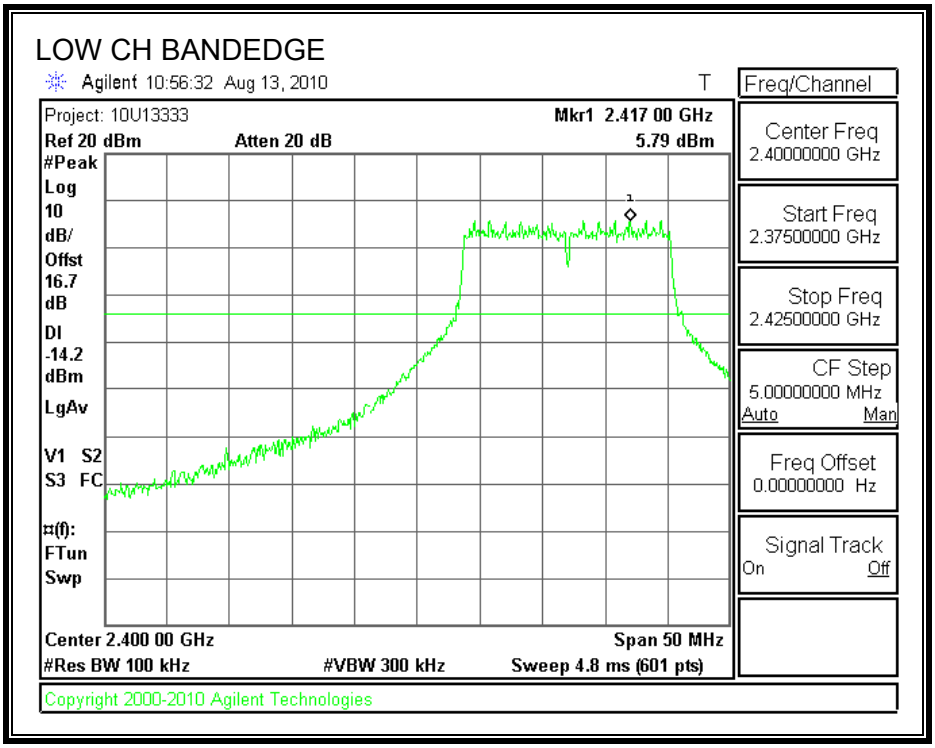
TEST PROCEDURE

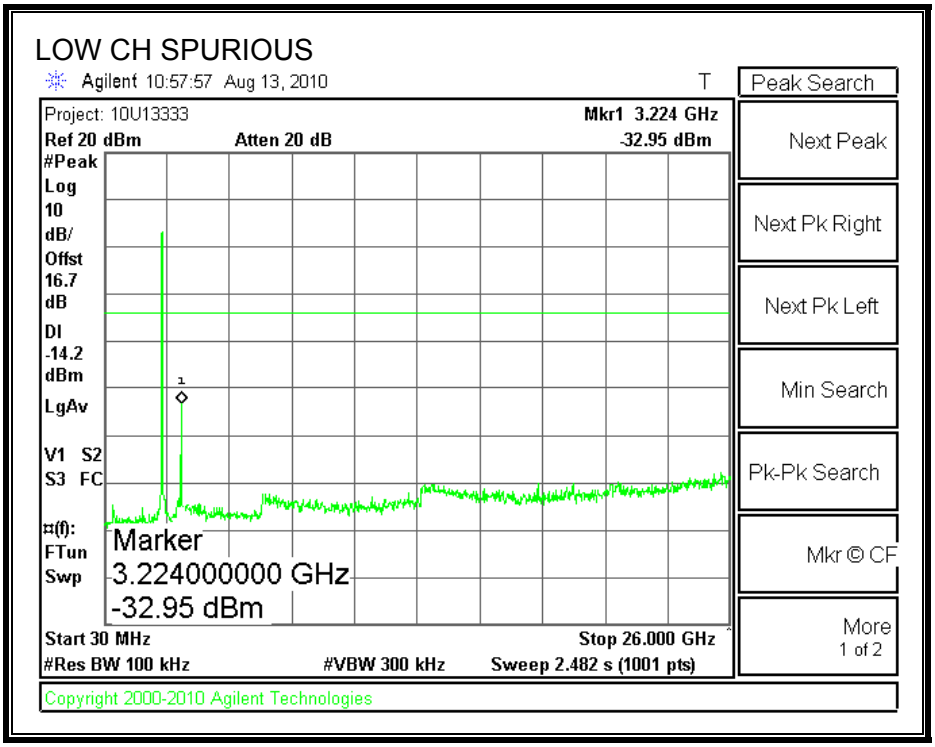
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

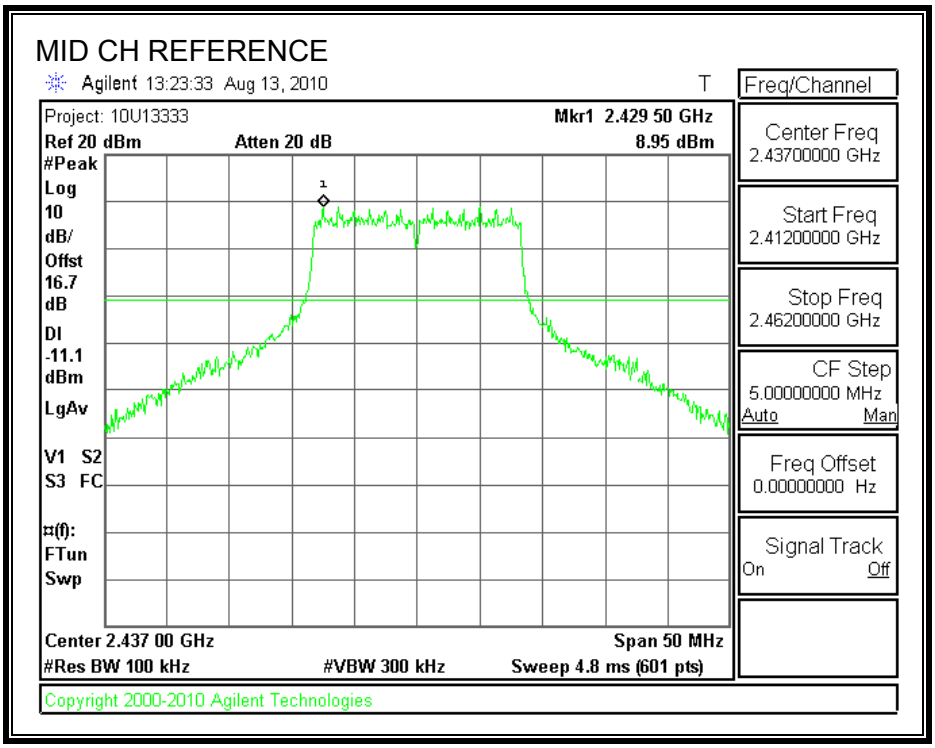
RESULTS

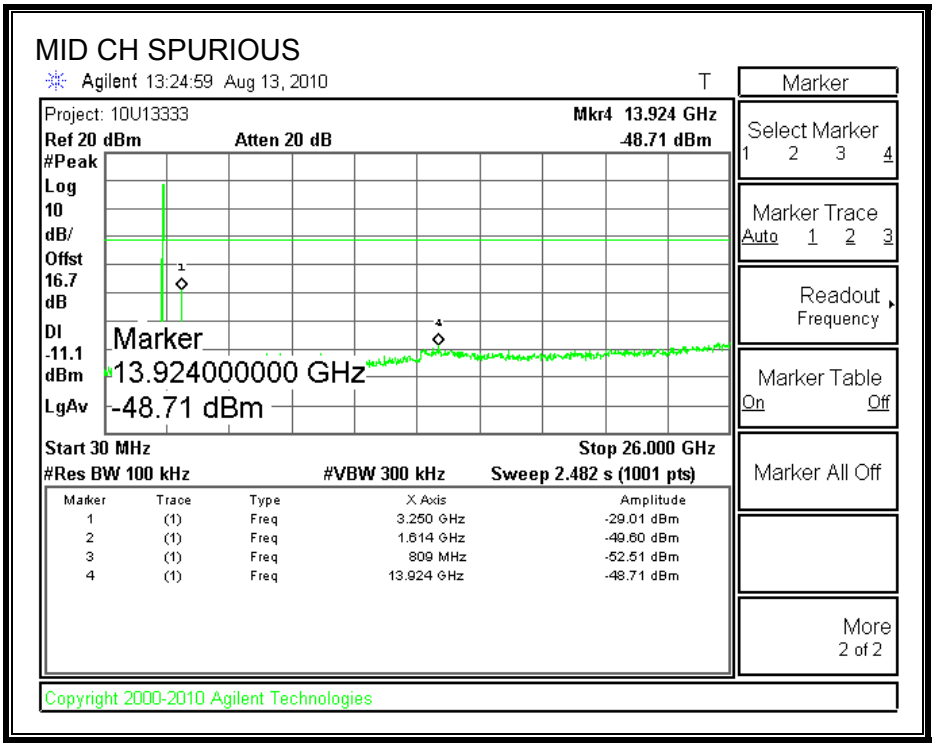
SPURIOUS EMISSIONS, LOW CHANNEL



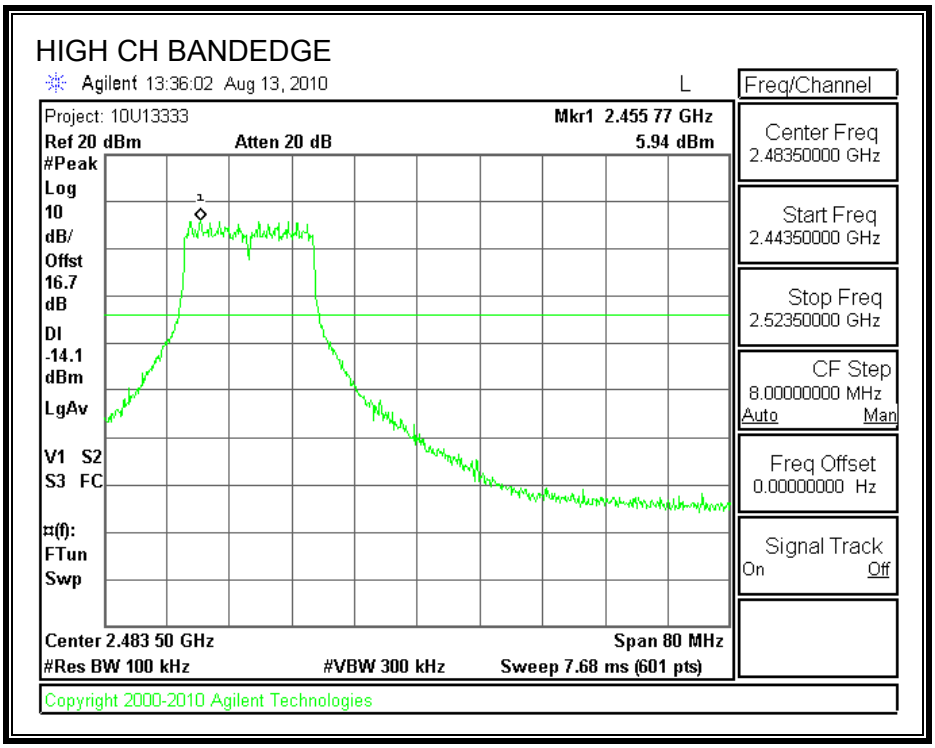


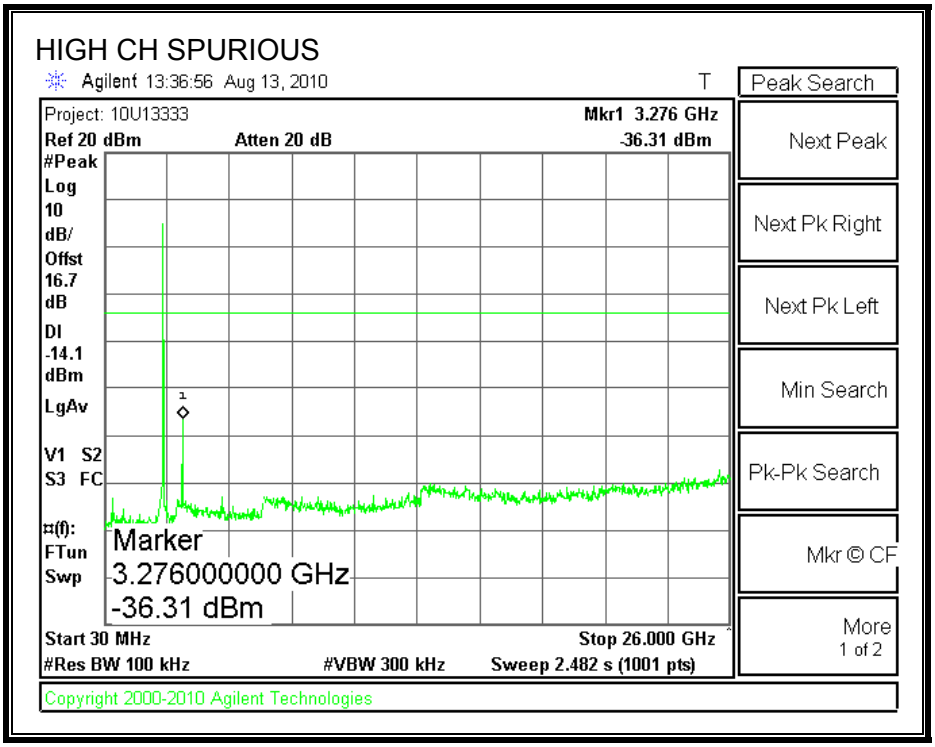
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.2. 802.11n HT20 MODE IN THE 2.4 GHz BAND

7.2.1. 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.

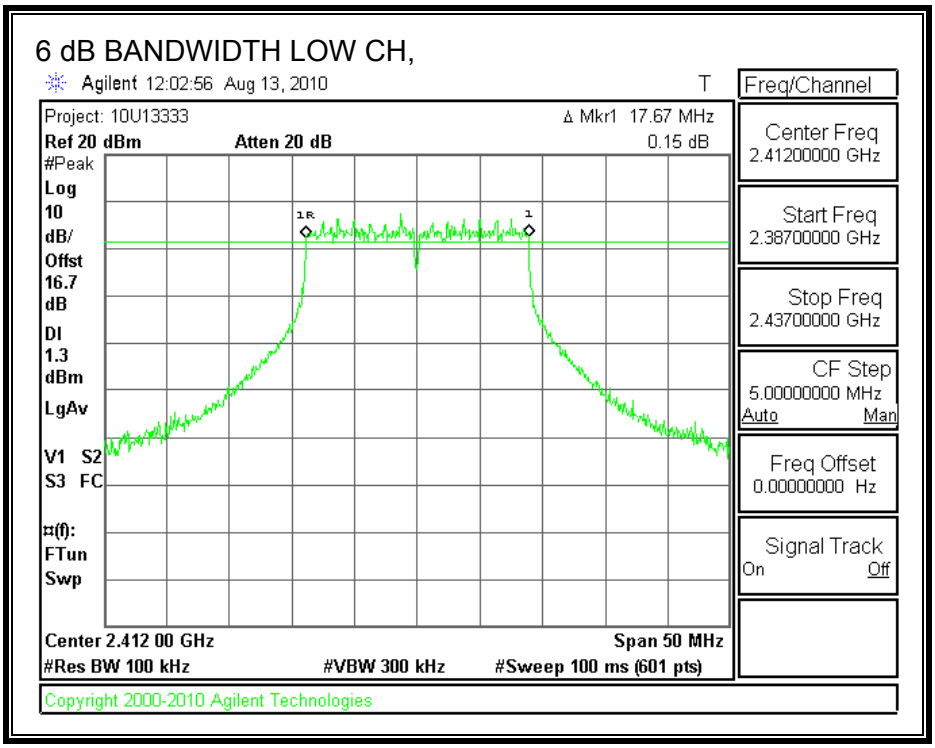
TEST PROCEDURE

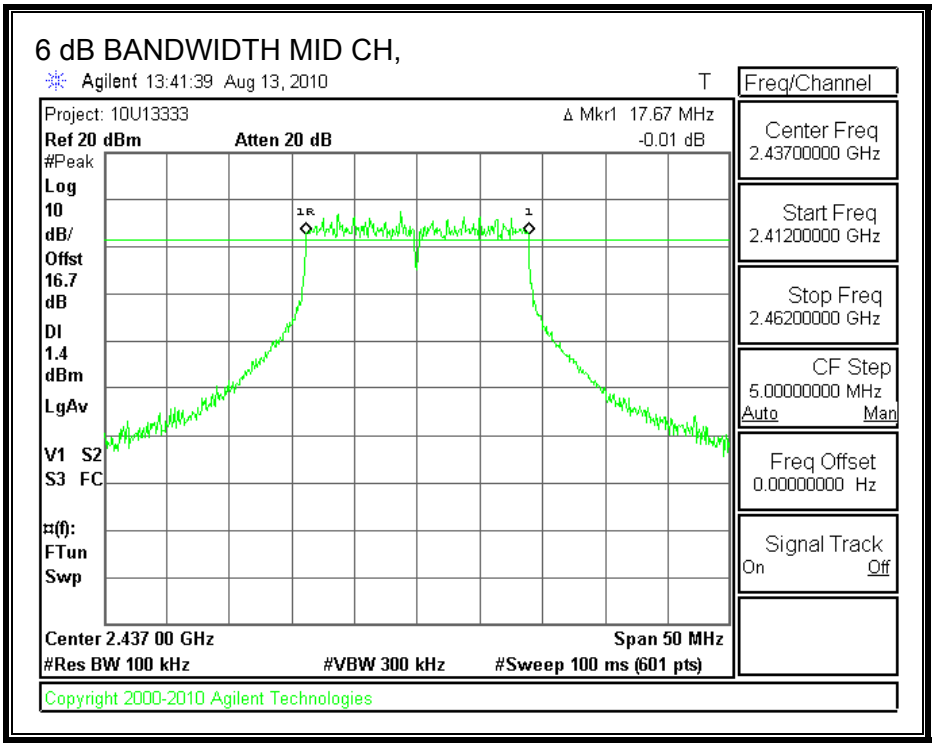
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

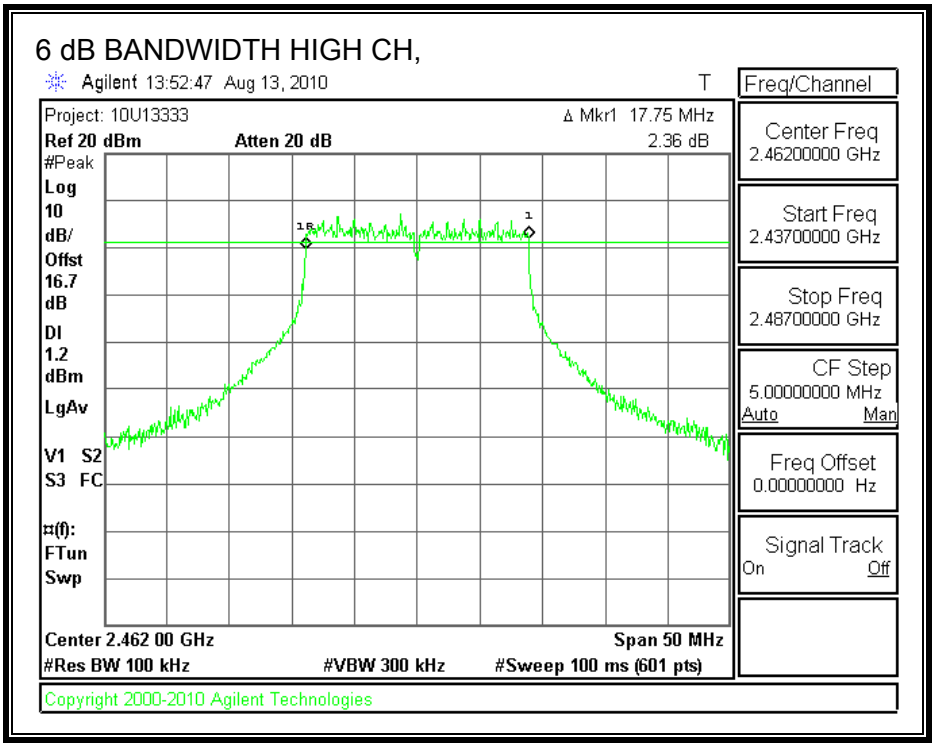
RESULTS

Channel	Frequency (MHz)	6 dB BW (MHz)	Minimum Limit (MHz)
Low	2412	17.67	0.5
Middle	2437	17.67	0.5
High	2462	17.75	0.5

6 dB BANDWIDTH,







7.2.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

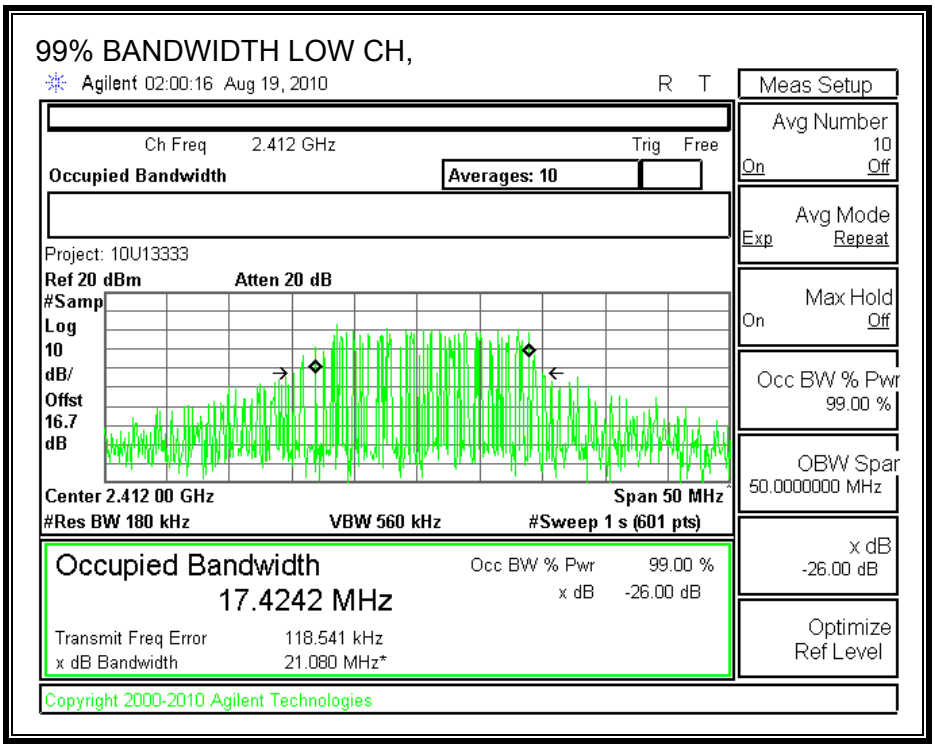
TEST PROCEDURE

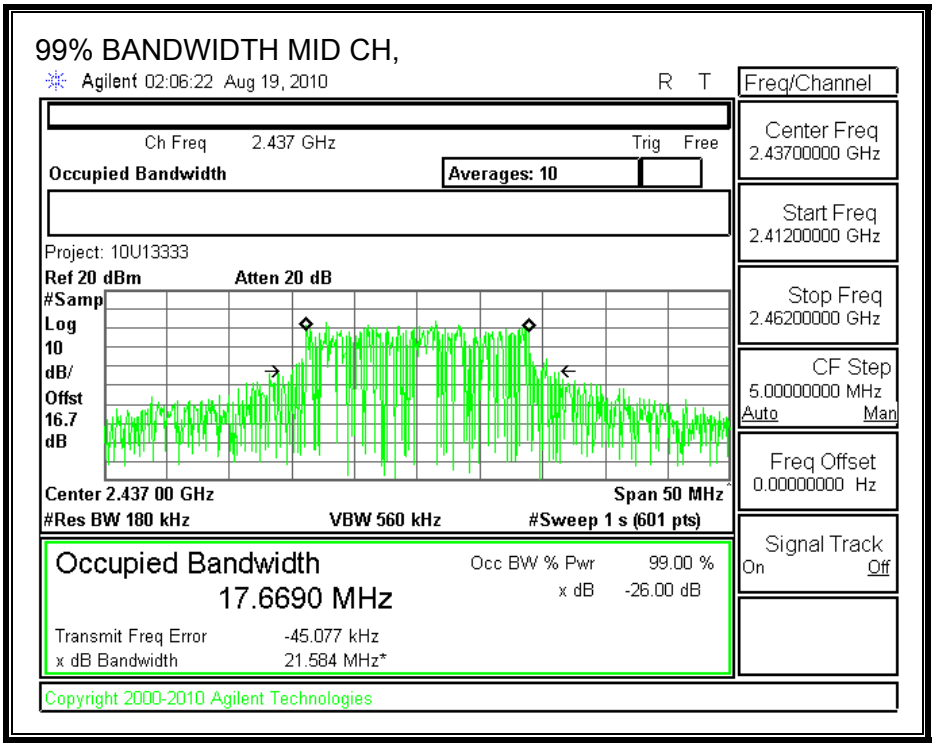
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

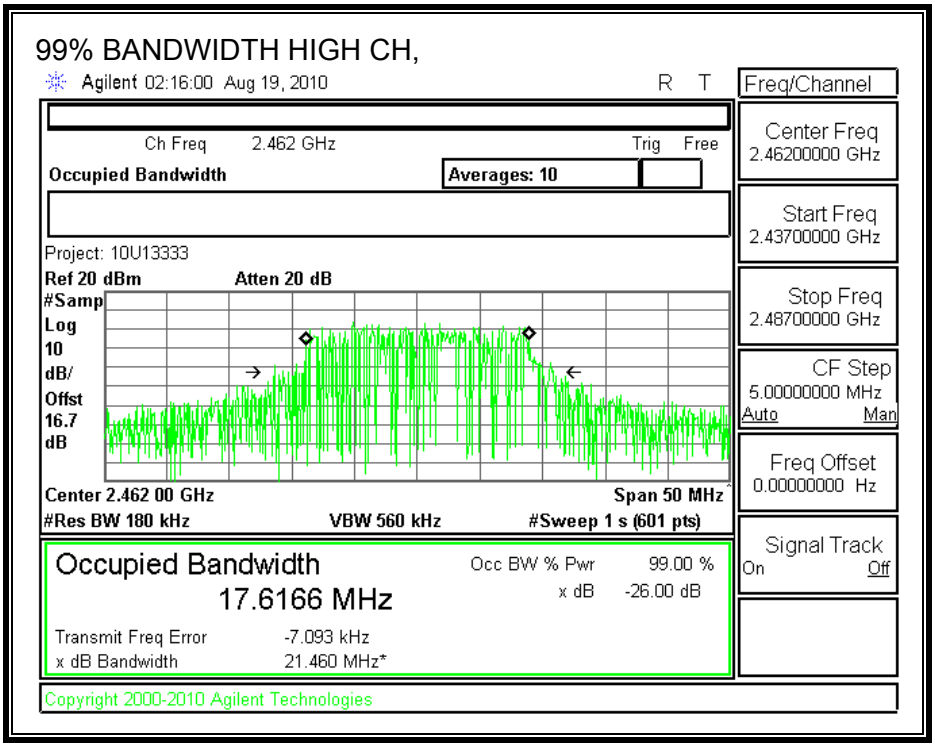
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.4242
Middle	2437	17.669
High	2462	17.6166

99% BANDWIDTH







7.2.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

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

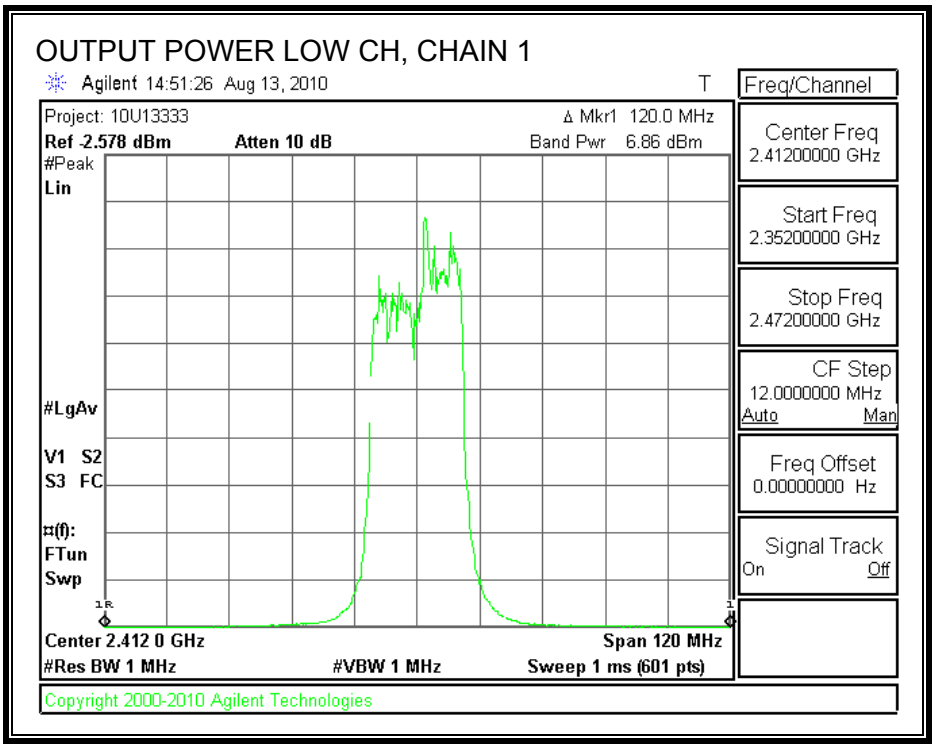
TEST PROCEDURE

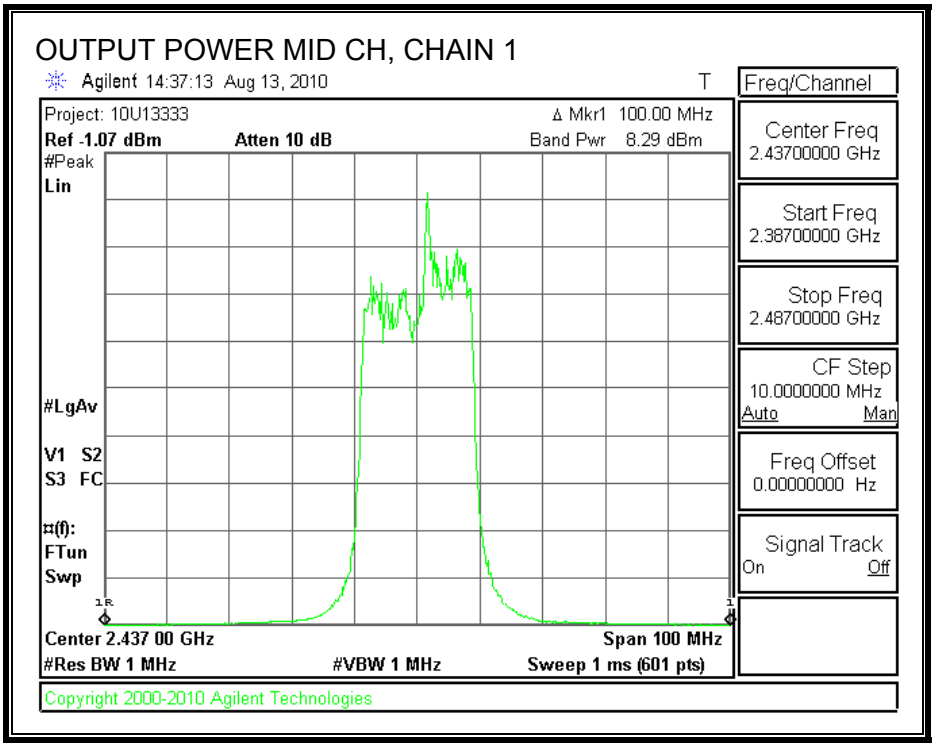
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

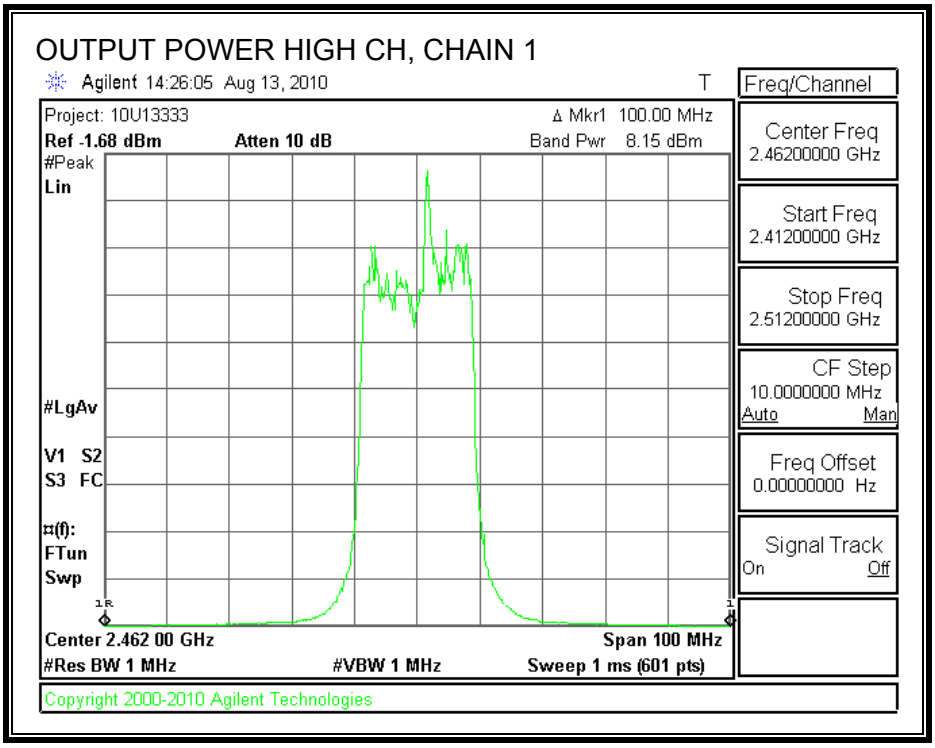
RESULTS

Channel	Frequency (MHz)	Limit (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Attenuator + Cable Offset (dB)	Total Power (dBm)	Margin (dB)
Low	2412	30.00	6.86	9.47	16.70	28.07	-1.93
Mid	2437	30.00	8.29	9.87	16.70	28.86	-1.14
High	2462	30.00	8.15	9.23	16.70	28.43	-1.57

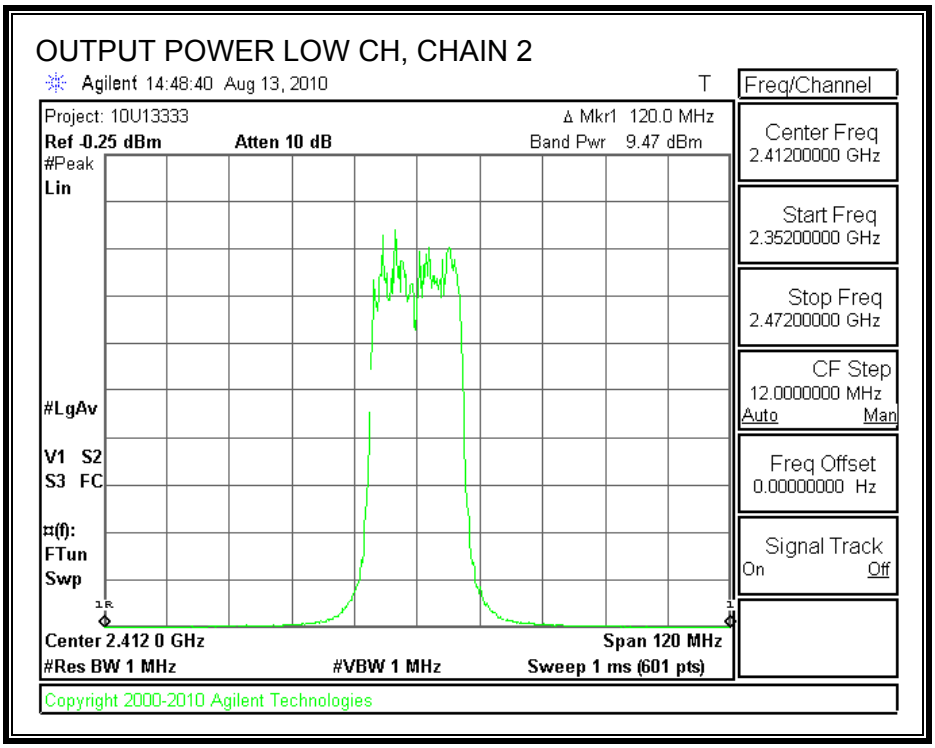
CHAIN 1 OUTPUT POWER

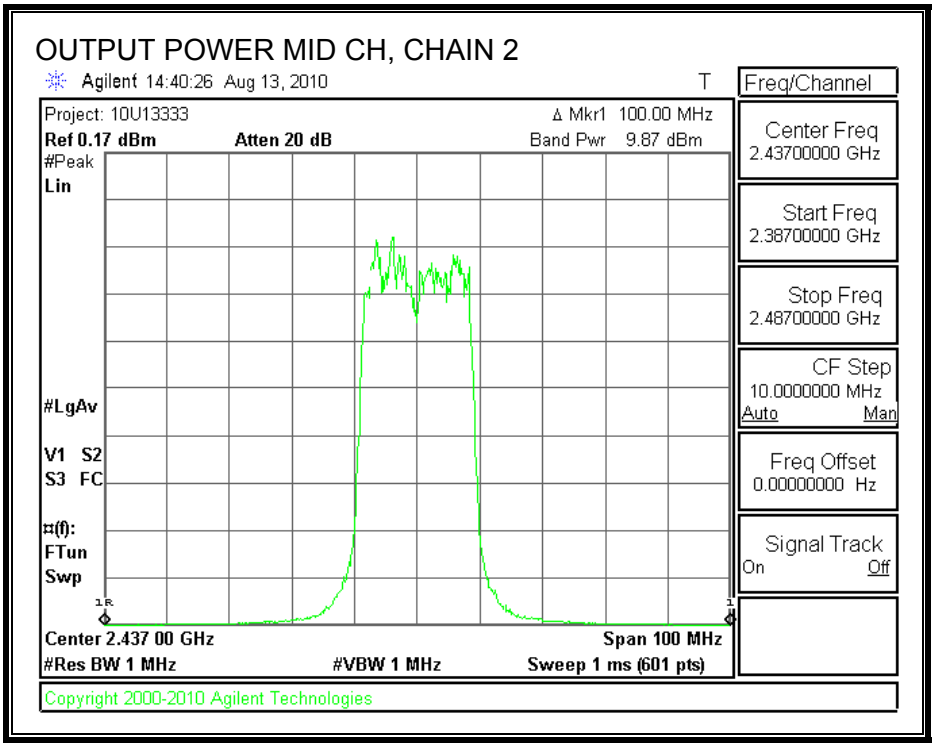


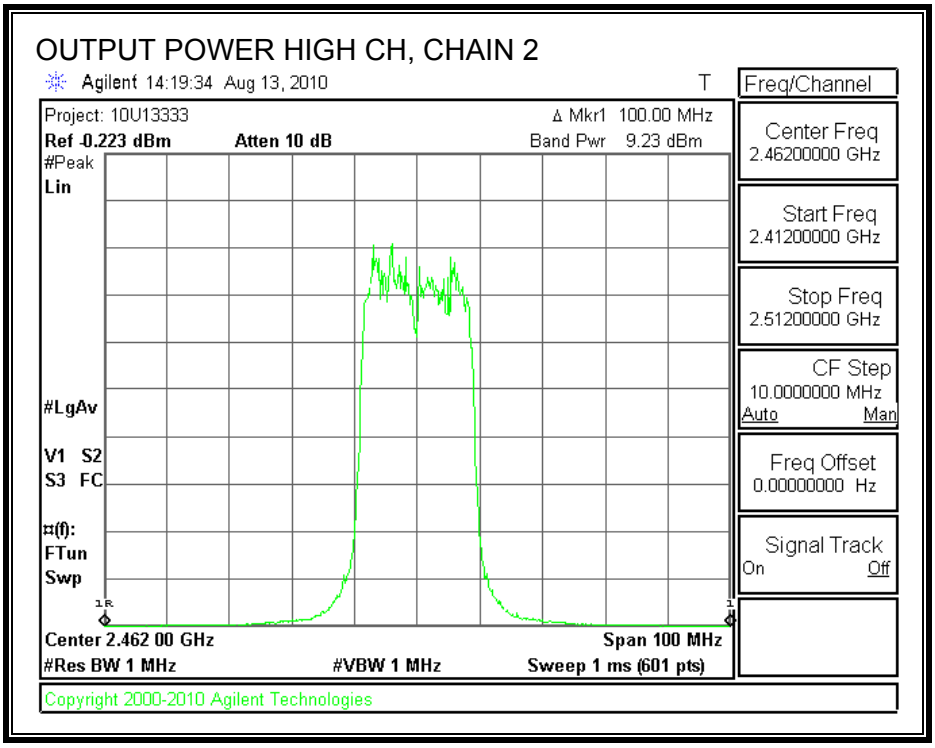




CHAIN 2 OUTPUT POWER







7.2.4. 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 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	2412	17.20	15.90	19.61
Middle	2437	17.60	16.30	20.01
High	2462	17.20	15.90	19.61

7.2.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

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.

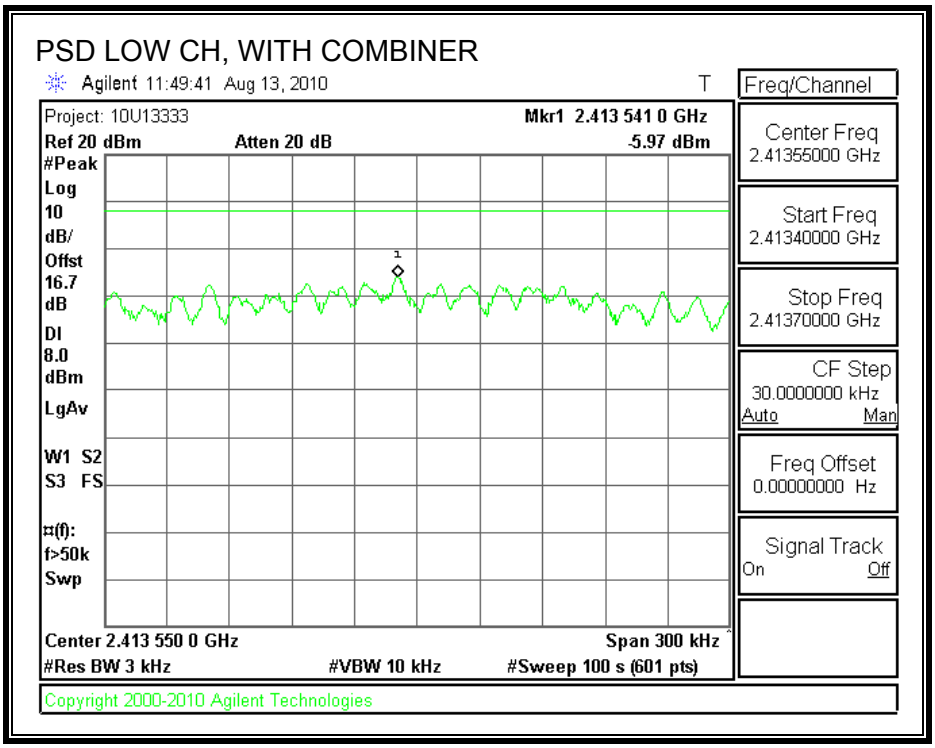
TEST PROCEDURE

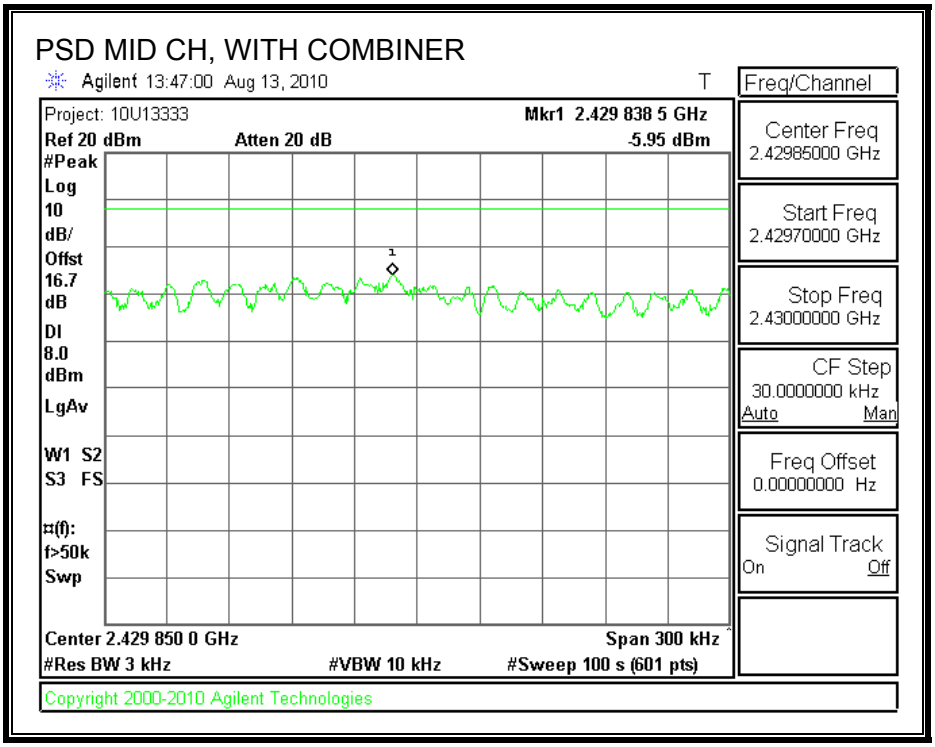
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

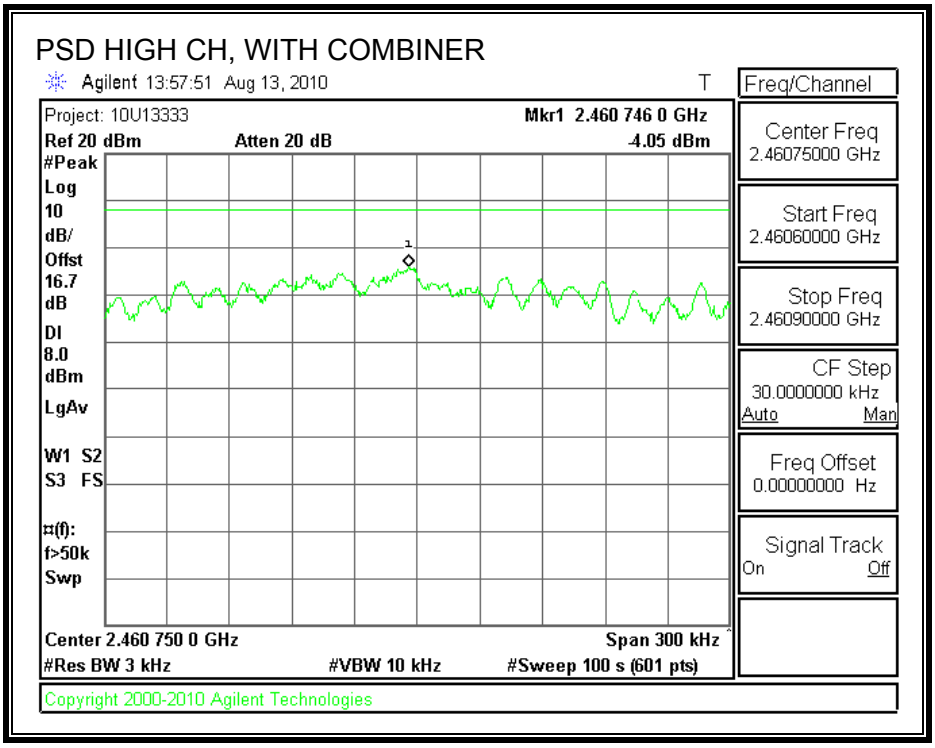
RESULTS

Channel	Frequency (MHz)	PSD with Combiner (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-5.97	8	-13.97
Middle	2437	-5.95	8	-13.95
High	2462	-4.05	8	-12.05

POWER SPECTRAL DENSITY, WITH COMBINER







7.2.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

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

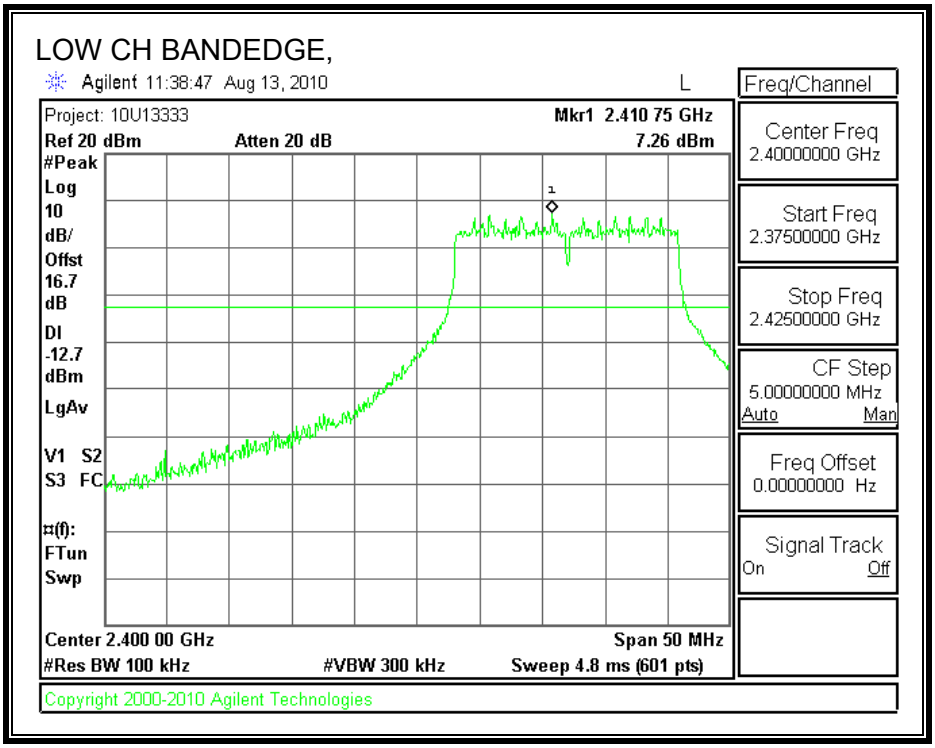
TEST PROCEDURE

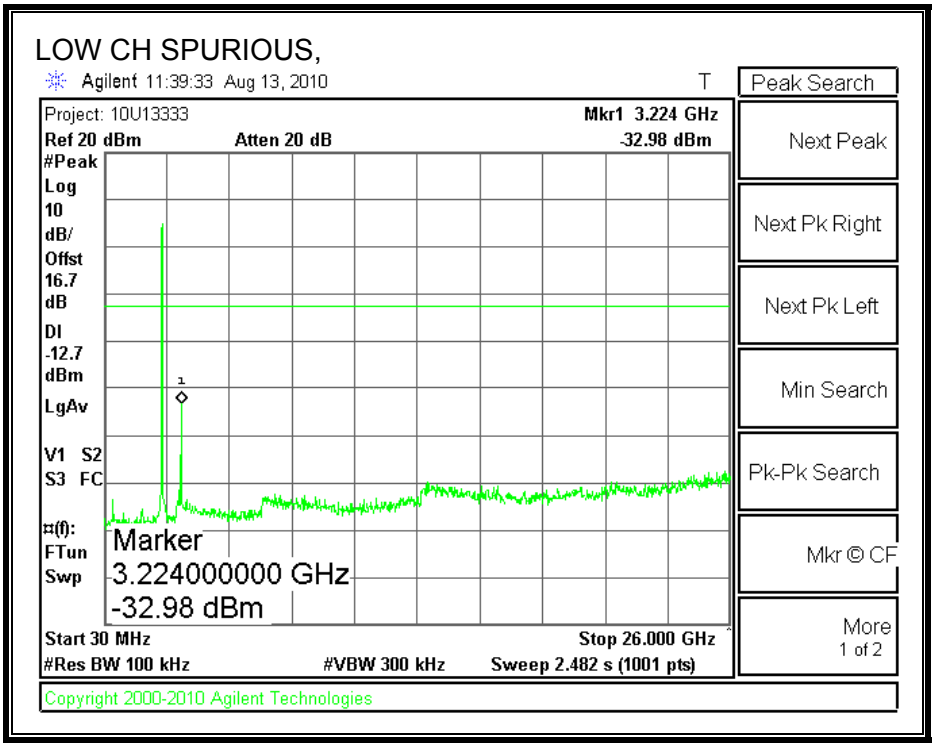
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

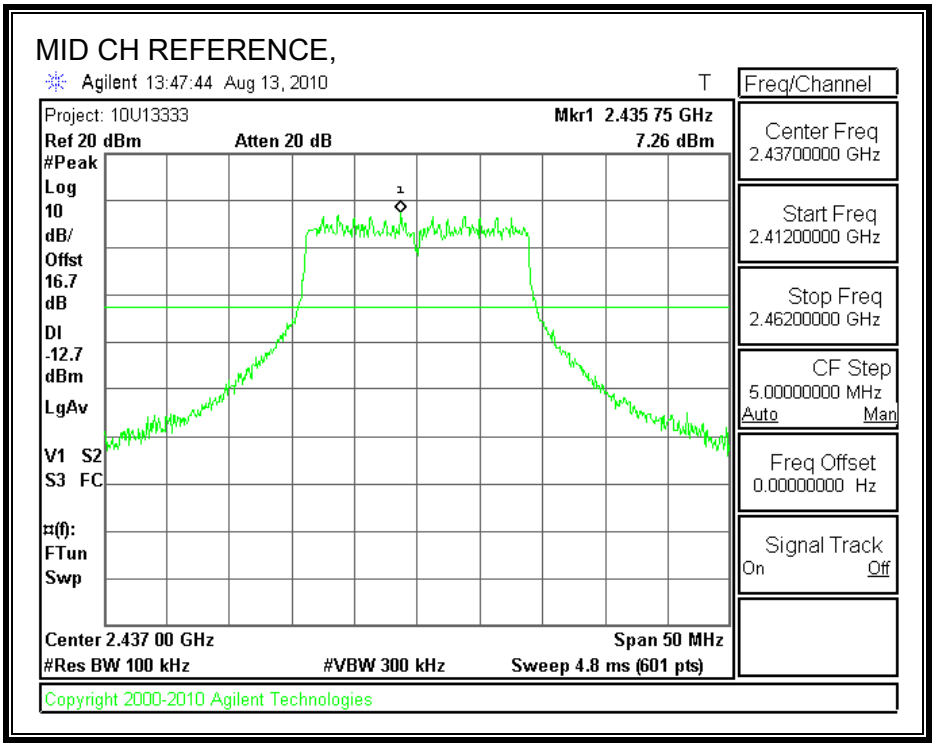
RESULTS

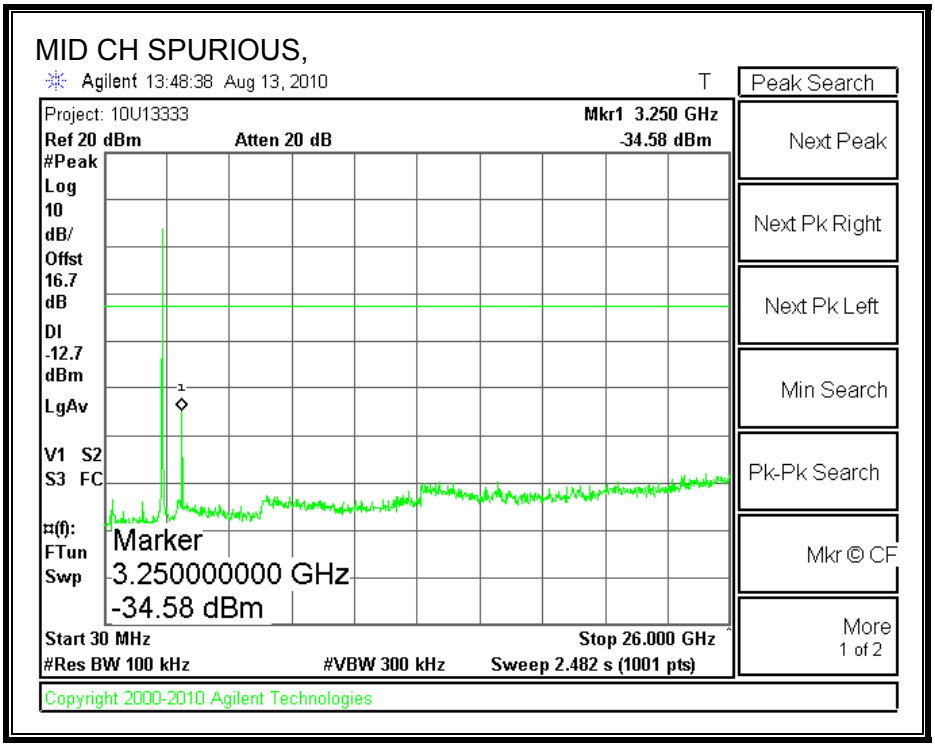
SPURIOUS EMISSIONS

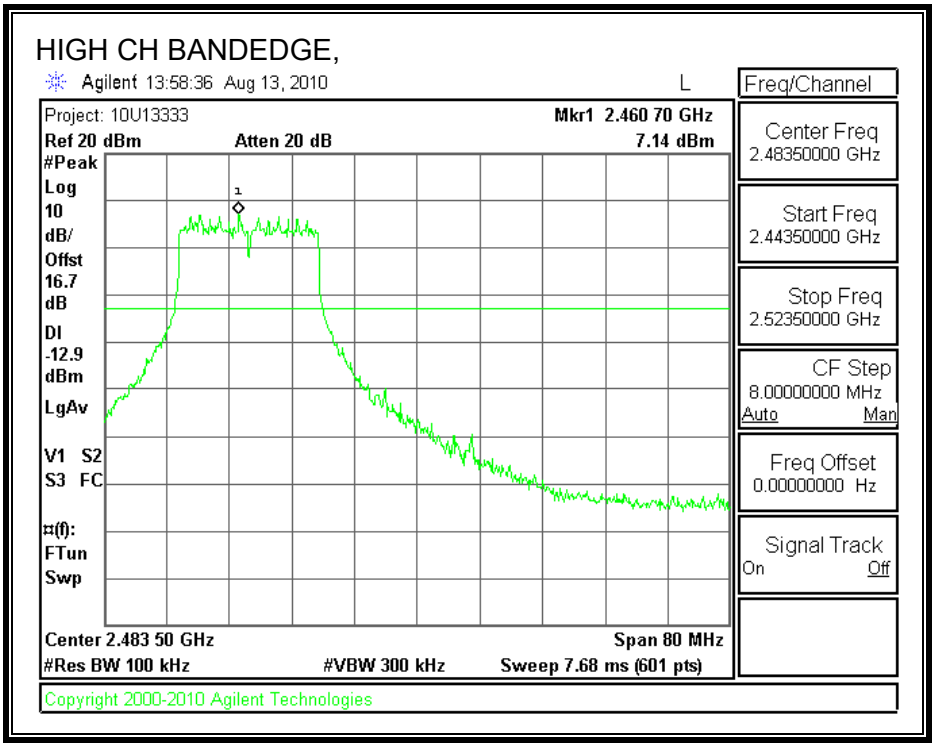


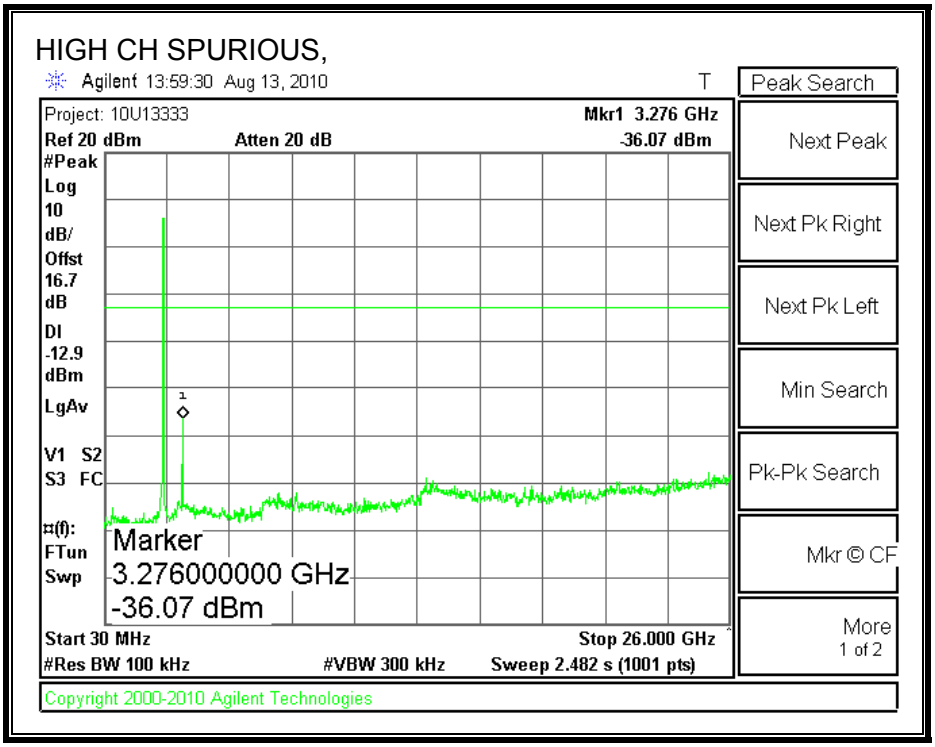


MID CH REFERENCE,









8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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

TEST PROCEDURE

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

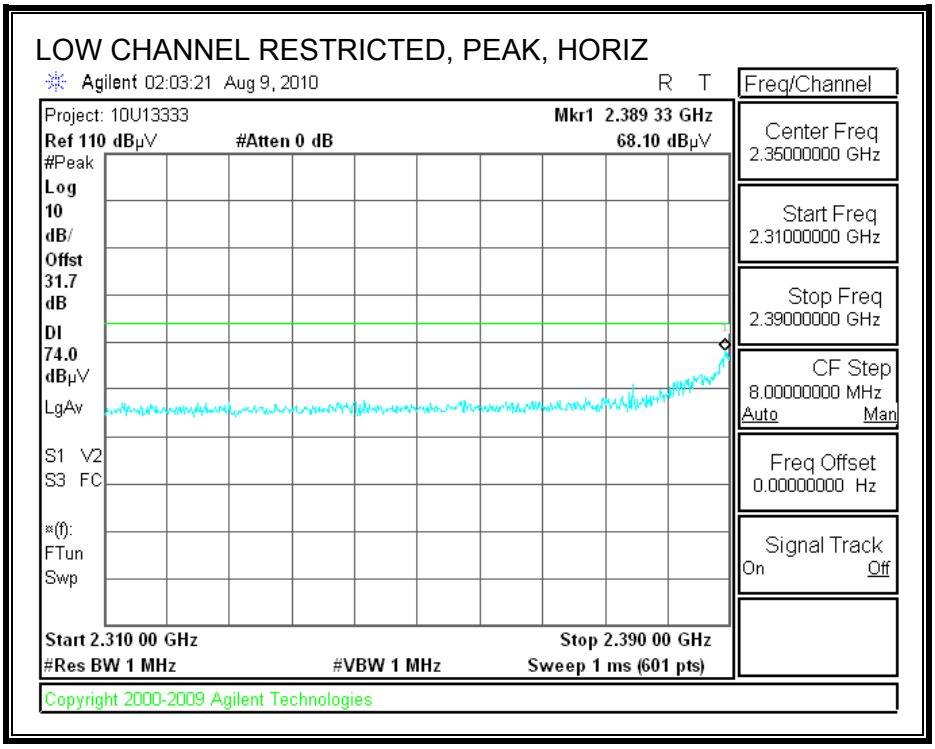
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

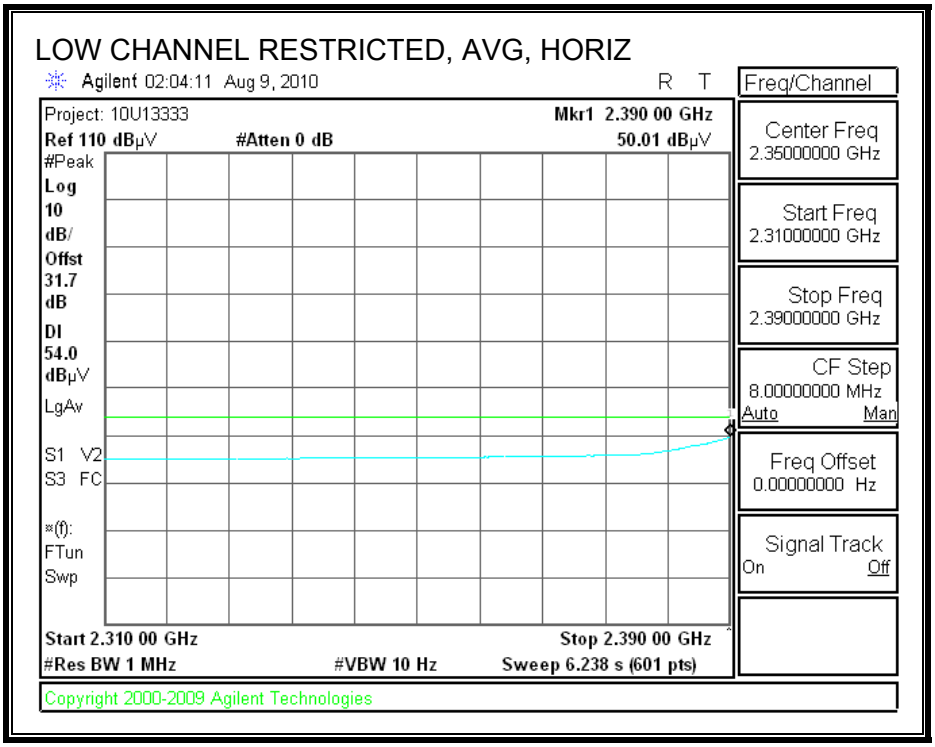
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

8.2. TRANSMITTER ABOVE 1 GHz

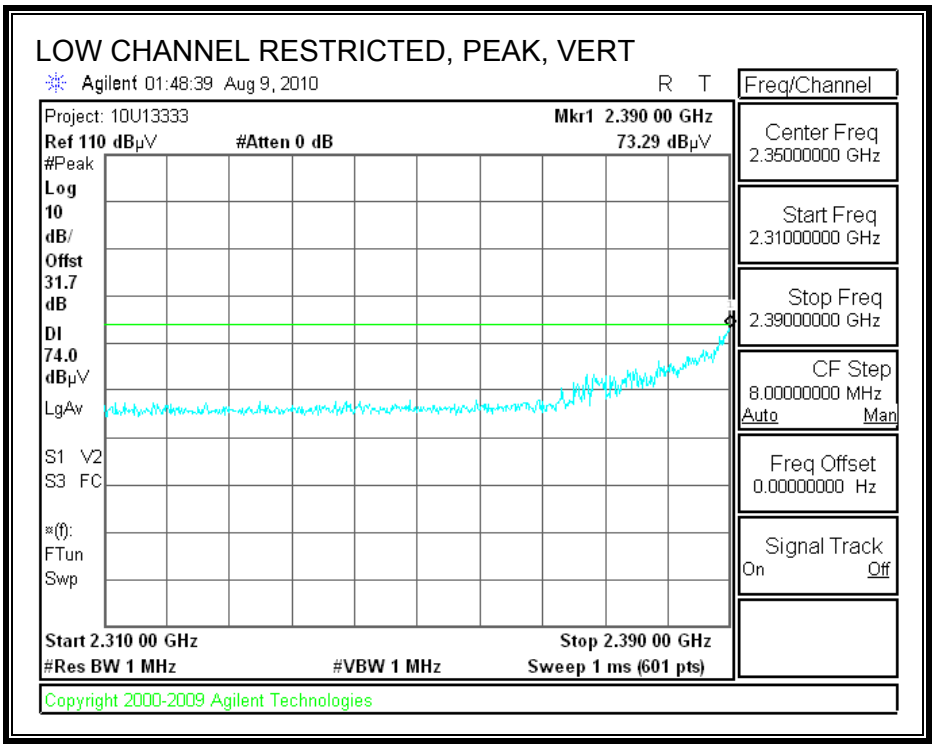
8.2.1. TX ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND

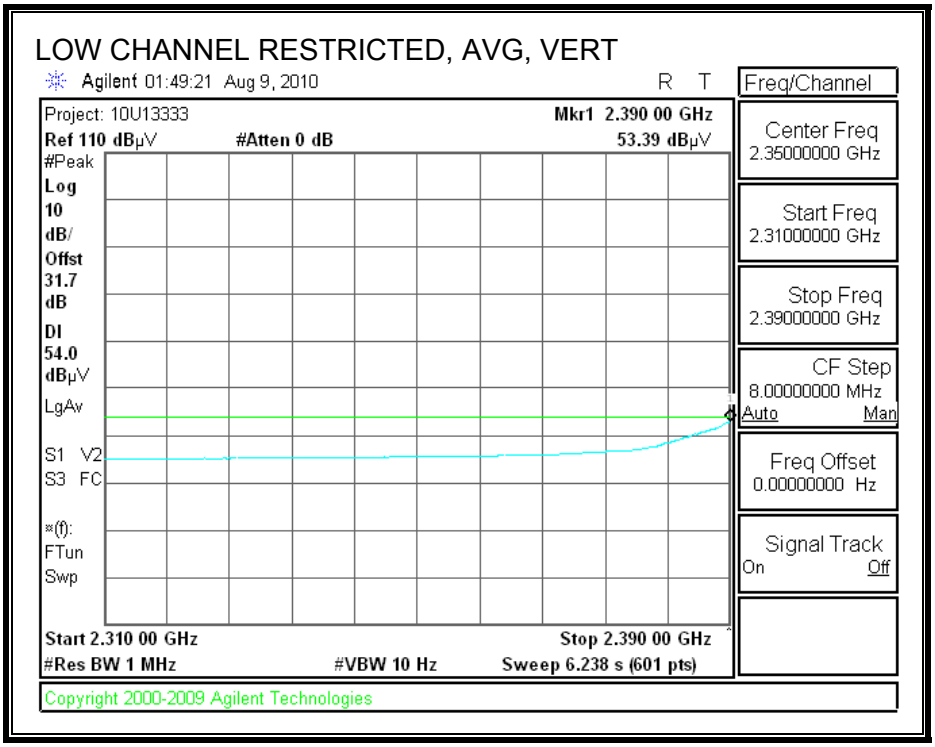
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



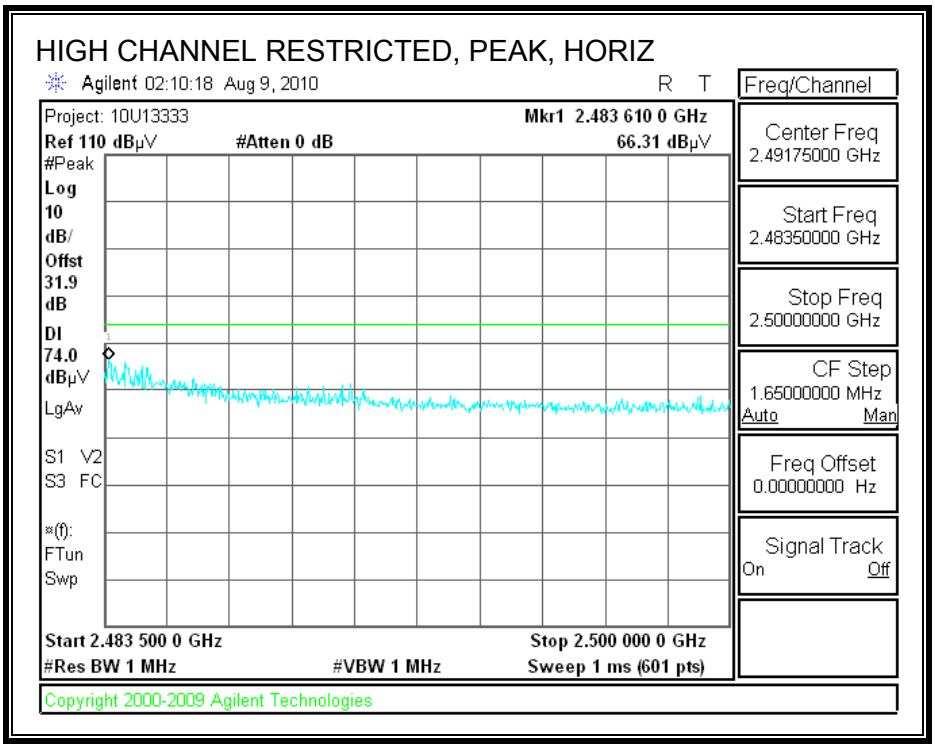


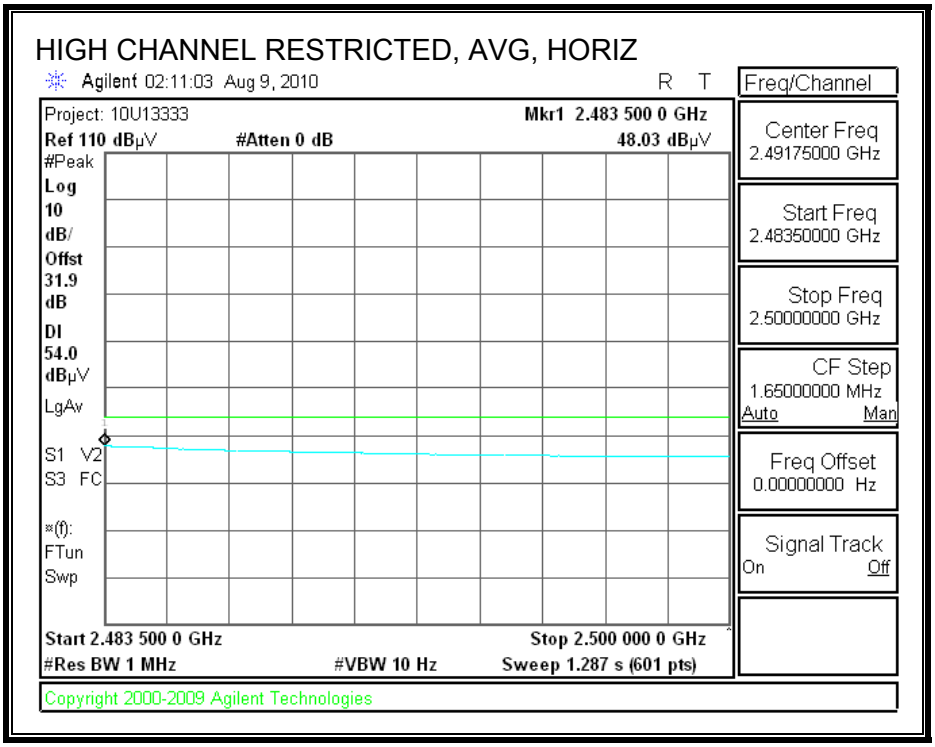
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



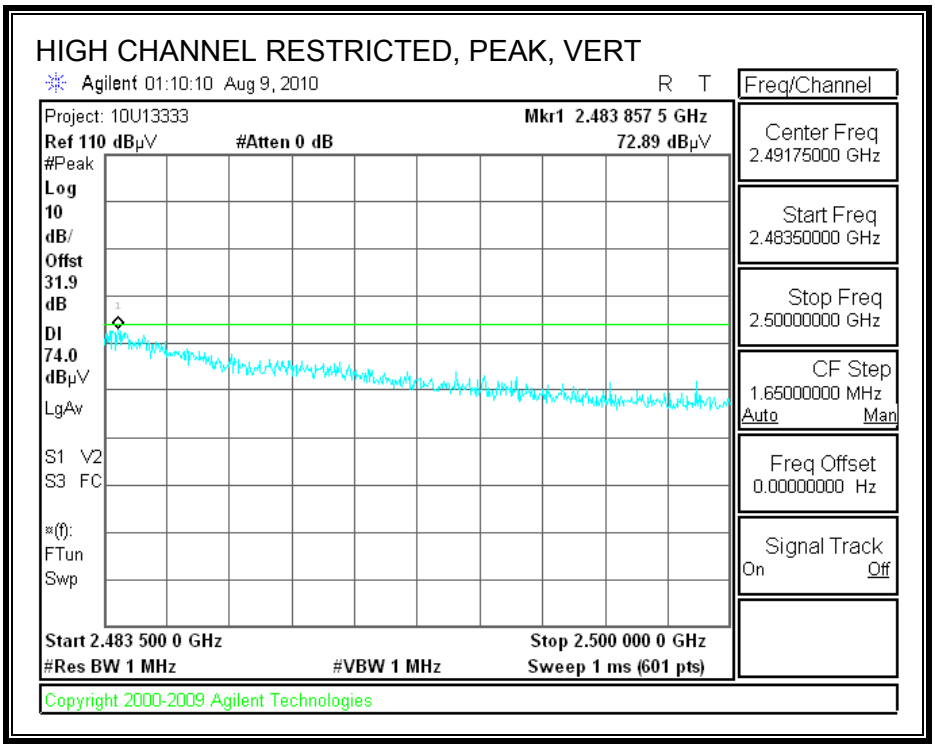


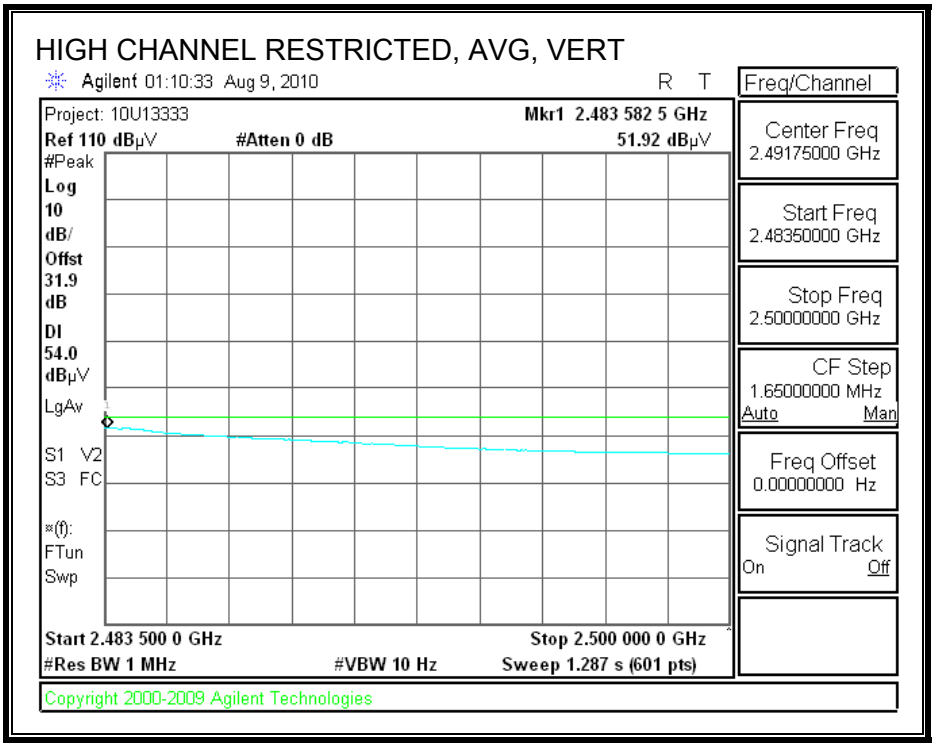
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 08/12/10
Project #: 10U13333
Company: Sonos, Inc.
EUT Description: 802.11 gn wireless docking station for streaming iPod music to Sonos systems
EUT M/N: EUT on Cradle (Charger)_S/N A81
Test Target: FCC 15.209
Mode Oper: Tx On_11g

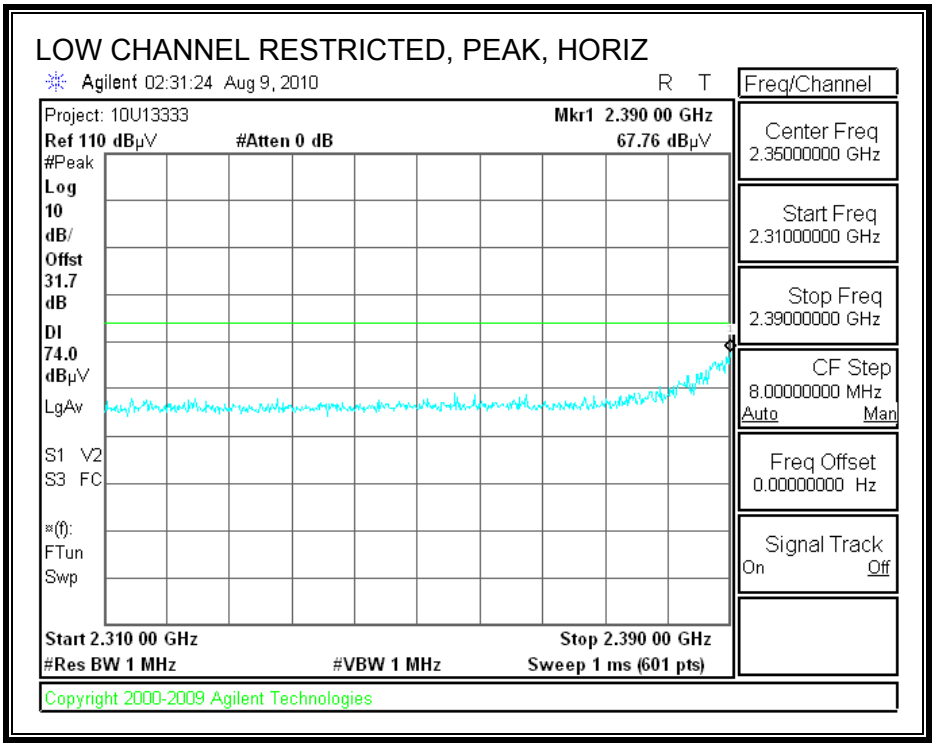
f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin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

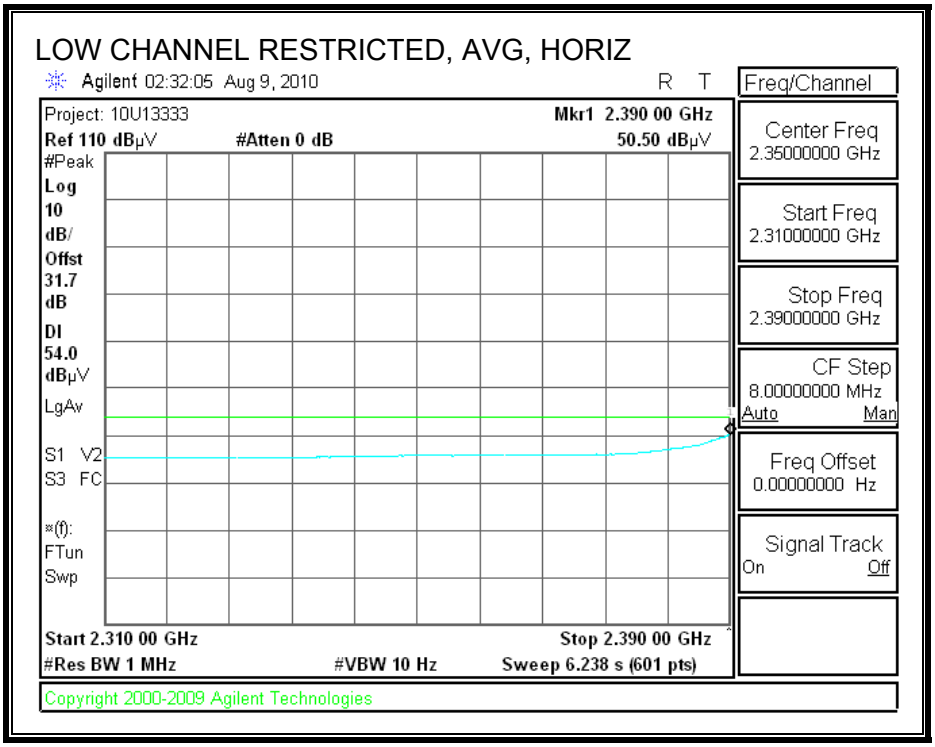
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Ch.															
3.216	3.0	58.1	30.2	4.5	-35.7	0.0	0.0	57.1	74.0	-16.9	V	P	135.0	208.0	
3.216	3.0	52.0	30.2	4.5	-35.7	0.0	0.0	51.0	54.0	-3.0	V	A	135.0	208.0	
3.216	3.0	61.6	30.5	4.5	-37.2	0.0	0.0	59.4	74.0	-14.6	H	P	135.0	208.0	
3.216	3.0	53.6	30.5	4.5	-37.2	0.0	0.0	51.4	54.0	-2.6	H	A	135.0	208.0	
4.824	3.0	47.1	33.0	5.8	-36.5	0.0	0.0	49.5	74.0	-24.5	V	P	199.6	219.2	
4.824	3.0	32.8	33.0	5.8	-36.5	0.0	0.0	35.2	54.0	-18.8	V	A	199.6	219.2	
4.824	3.0	45.4	33.0	5.8	-36.5	0.0	0.0	47.8	74.0	-26.2	H	P	199.1	204.7	
4.824	3.0	32.0	33.0	5.8	-36.5	0.0	0.0	34.3	54.0	-19.7	H	A	199.1	204.7	
7.236	3.0	37.6	35.2	7.2	-36.2	0.0	0.0	43.7	74.0	-30.3	H	P	147.0	318.4	
7.236	3.0	25.3	35.2	7.2	-36.2	0.0	0.0	31.5	54.0	-22.5	H	A	147.0	318.4	
7.236	3.0	39.5	35.2	7.2	-36.2	0.0	0.0	45.6	74.0	-28.4	V	P	110.4	229.8	
7.236	3.0	27.1	35.2	7.2	-36.2	0.0	0.0	33.2	54.0	-20.8	V	A	110.4	229.8	
Mid Ch.															
3.249	3.0	62.1	30.3	4.6	-35.7	0.0	0.0	61.2	74.0	-12.8	V	P	125.0	193.0	
3.249	3.0	54.7	30.3	4.6	-35.7	0.0	0.0	53.8	54.0	-0.2	V	A	125.0	193.0	
3.249	3.0	60.8	30.6	4.6	-37.2	0.0	0.0	58.7	74.0	-15.3	H	P	125.0	193.0	
3.249	3.0	53.8	30.6	4.6	-37.2	0.0	0.0	51.7	54.0	-2.3	H	A	125.0	193.0	
4.874	3.0	49.4	33.1	5.8	-36.5	0.0	0.0	51.8	74.0	-22.2	V	P	101.1	347.9	
4.874	3.0	35.2	33.1	5.8	-36.5	0.0	0.0	37.7	54.0	-16.3	V	A	101.1	347.9	
4.874	3.0	55.8	33.1	5.8	-36.5	0.0	0.0	58.3	74.0	-15.7	H	P	200.0	302.9	
4.874	3.0	40.5	33.1	5.8	-36.5	0.0	0.0	42.9	54.0	-11.1	H	A	200.0	302.9	
7.311	3.0	38.6	35.3	7.3	-36.2	0.0	0.0	44.9	74.0	-29.1	H	P	149.6	199.9	
7.311	3.0	26.1	35.3	7.3	-36.2	0.0	0.0	32.4	54.0	-21.6	H	A	149.6	199.9	
7.311	3.0	41.4	35.3	7.3	-36.2	0.0	0.0	47.8	74.0	-26.2	V	P	159.8	225.9	
7.311	3.0	27.7	35.3	7.3	-36.2	0.0	0.0	34.1	54.0	-19.9	V	A	159.8	225.9	
High Ch.															
3.283	3.0	58.5	30.3	4.6	-35.6	0.0	0.0	57.8	74.0	-16.2	V	P	122.0	188.0	
3.283	3.0	51.9	30.3	4.6	-35.6	0.0	0.0	51.2	54.0	-2.8	V	A	122.0	188.0	
3.283	3.0	56.7	30.6	4.6	-37.1	0.0	0.0	54.8	74.0	-19.2	H	P	122.0	188.0	
3.283	3.0	50.5	30.6	4.6	-37.1	0.0	0.0	48.6	54.0	-5.4	H	A	122.0	188.0	
4.924	3.0	50.3	33.1	5.9	-36.5	0.0	0.0	52.9	74.0	-21.1	V	P	111.4	342.0	
4.924	3.0	36.9	33.1	5.9	-36.5	0.0	0.0	39.4	54.0	-14.6	V	A	111.4	342.0	
4.924	3.0	56.0	33.1	5.9	-36.5	0.0	0.0	58.6	74.0	-15.4	H	P	199.2	304.2	
4.924	3.0	40.5	33.1	5.9	-36.5	0.0	0.0	43.0	54.0	-11.0	H	A	199.2	304.2	
7.386	3.0	37.1	35.4	7.3	-36.2	0.0	0.0	43.6	74.0	-30.4	H	P	187.4	310.5	
7.386	3.0	24.7	35.4	7.3	-36.2	0.0	0.0	31.2	54.0	-22.8	H	A	187.4	310.5	
7.386	3.0	37.1	35.4	7.3	-36.2	0.0	0.0	43.6	74.0	-30.4	V	P	132.4	49.0	
7.386	3.0	24.6	35.4	7.3	-36.2	0.0	0.0	31.1	54.0	-22.9	V	A	132.4	49.0	

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

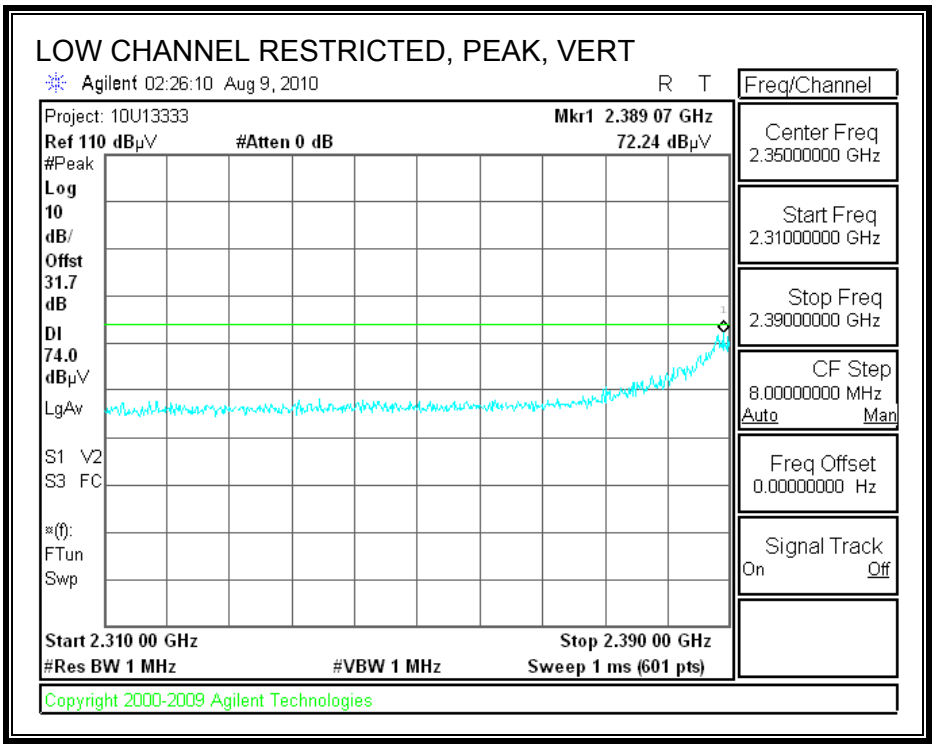
8.2.2. TX ABOVE 1 GHz FOR 802.11n HT20 MODE IN THE 2.4 GHz BAND

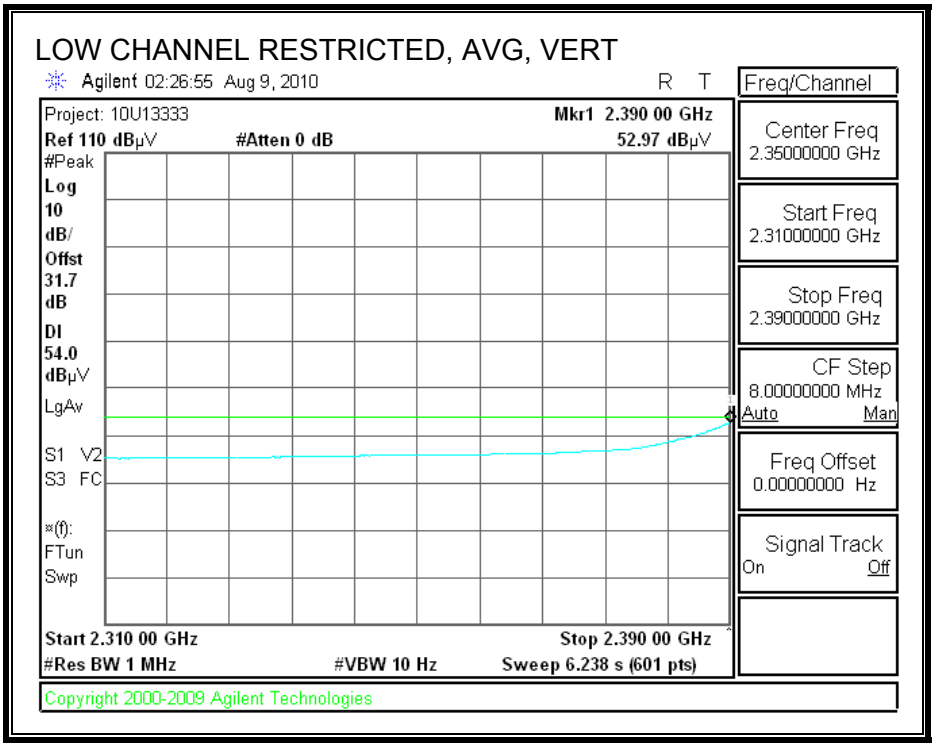
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



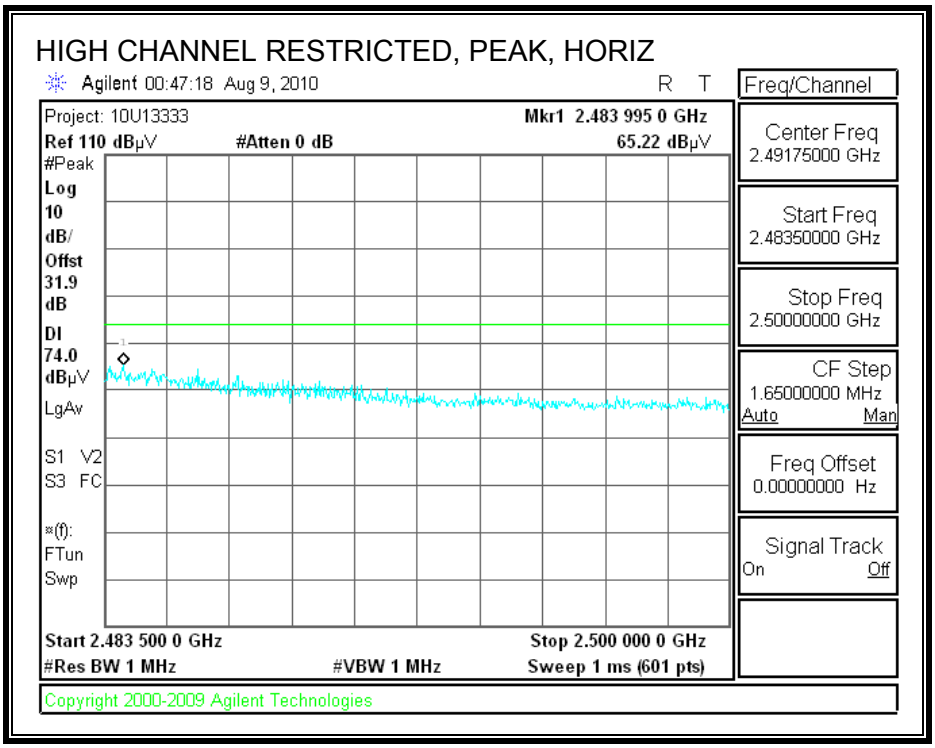


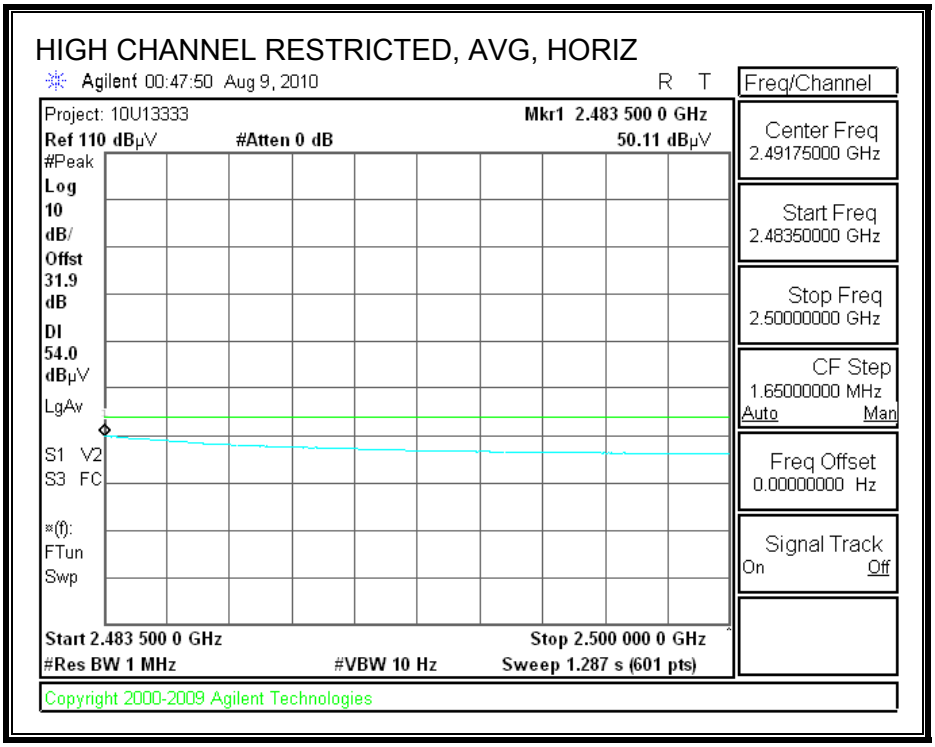
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



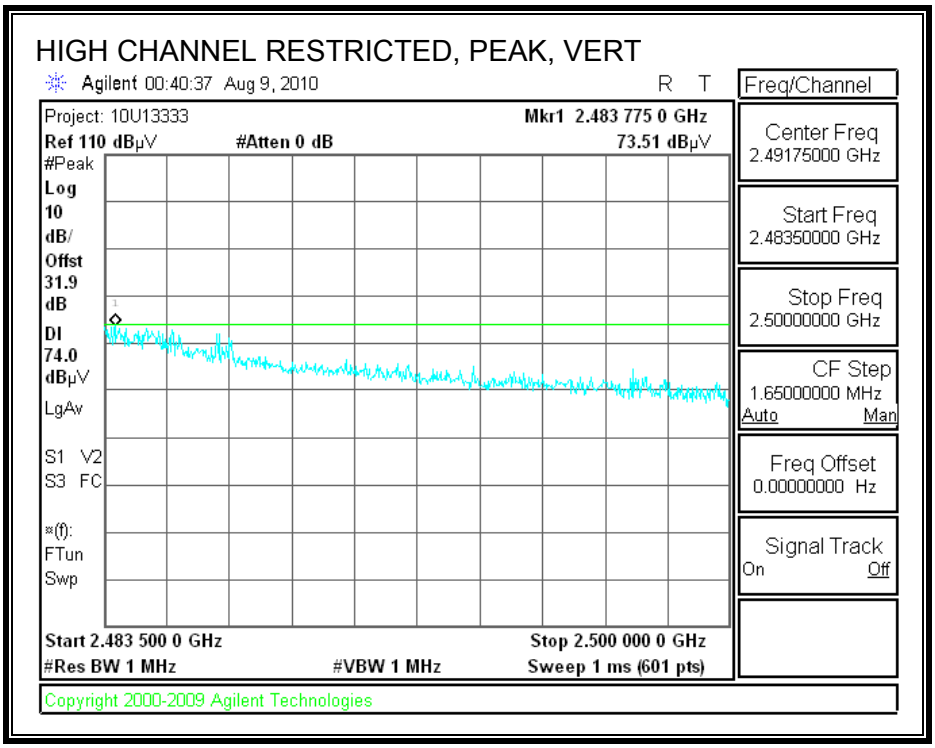


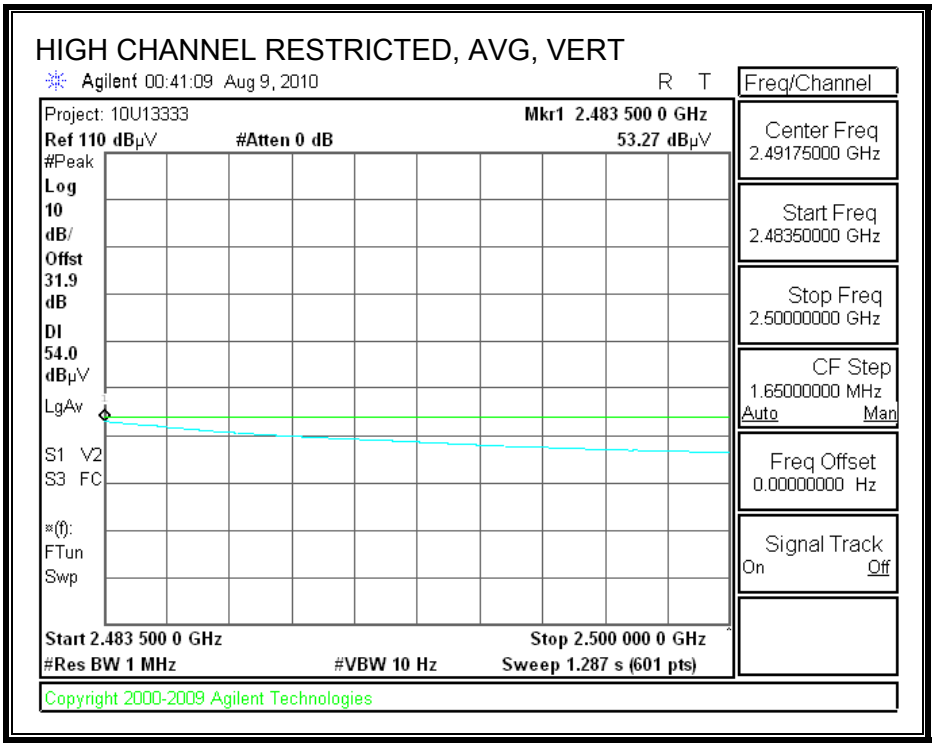
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 08/12/10
Project #: 10U13333
Company: Sonos, Inc.
EUT Description: 802.11 gn wireless docking station for streaming iPod music to Sonos systems
EUT M/N: EUT on Cradle (Charger)_S/N A81
Test Target: FCC 15.209
Mode Oper: Tx On_11n HT20 Mode

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Ch.															
3.216	3.0	63.5	30.2	4.5	-35.7	0.0	0.0	62.5	74.0	-11.5	V	P	155.0	156.0	
3.216	3.0	54.4	30.2	4.5	-35.7	0.0	0.0	53.4	54.0	-0.6	V	A	155.0	156.0	
3.216	3.0	62.5	30.5	4.5	-37.2	0.0	0.0	60.3	74.0	-13.7	H	P	155.0	156.0	
3.216	3.0	55.7	30.5	4.5	-37.2	0.0	0.0	53.5	54.0	-0.5	H	A	155.0	156.0	
4.824	3.0	45.5	33.0	5.8	-36.5	0.0	0.0	47.9	74.0	-26.1	V	P	196.8	345.2	
4.824	3.0	31.8	33.0	5.8	-36.5	0.0	0.0	34.2	54.0	-19.8	V	A	196.8	345.2	
4.824	3.0	50.3	33.0	5.8	-36.5	0.0	0.0	52.7	74.0	-21.3	H	P	183.7	290.3	
4.824	3.0	34.7	33.0	5.8	-36.5	0.0	0.0	37.1	54.0	-16.9	H	A	183.7	290.3	
7.236	3.0	38.7	35.2	7.2	-36.2	0.0	0.0	44.9	74.0	-29.1	H	P	143.6	118.9	
7.236	3.0	26.1	35.2	7.2	-36.2	0.0	0.0	32.3	54.0	-21.7	H	A	143.6	118.9	
7.236	3.0	41.2	35.2	7.2	-36.2	0.0	0.0	47.4	74.0	-26.6	V	P	152.9	142.4	
7.236	3.0	28.2	35.2	7.2	-36.2	0.0	0.0	34.4	54.0	-19.6	V	A	152.9	142.4	
Mid Ch.															
3.249	3.0	62.4	30.3	4.6	-35.7	0.0	0.0	61.5	74.0	-12.5	V	P	116.0	225.0	
3.249	3.0	54.8	30.3	4.6	-35.7	0.0	0.0	53.9	54.0	-0.1	V	A	116.0	225.0	
3.249	3.0	60.3	30.6	4.6	-37.2	0.0	0.0	58.2	74.0	-15.8	H	P	116.0	225.0	
3.249	3.0	53.5	30.6	4.6	-37.2	0.0	0.0	51.5	54.0	-2.5	H	A	116.0	225.0	
4.874	3.0	49.6	33.1	5.8	-36.5	0.0	0.0	52.1	74.0	-21.9	V	P	197.6	344.5	
4.874	3.0	34.6	33.1	5.8	-36.5	0.0	0.0	37.1	54.0	-16.9	V	A	197.6	344.5	
4.874	3.0	55.1	33.1	5.8	-36.5	0.0	0.0	57.5	74.0	-16.5	H	P	175.9	302.5	
4.874	3.0	39.0	33.1	5.8	-36.5	0.0	0.0	41.5	54.0	-12.5	H	A	175.9	302.5	
7.311	3.0	38.6	35.3	7.3	-36.2	0.0	0.0	44.9	74.0	-29.1	H	P	184.9	188.7	
7.311	3.0	25.2	35.3	7.3	-36.2	0.0	0.0	31.5	54.0	-22.5	H	A	184.9	188.7	
7.311	3.0	36.9	35.3	7.3	-36.2	0.0	0.0	43.2	74.0	-30.8	V	P	131.9	353.2	
7.311	3.0	25.1	35.3	7.3	-36.2	0.0	0.0	31.5	54.0	-22.5	V	A	131.9	353.2	
High Ch.															
3.283	3.0	60.1	30.3	4.6	-35.6	0.0	0.0	59.4	74.0	-14.6	V	P	132.0	254.0	
3.283	3.0	52.4	30.3	4.6	-35.6	0.0	0.0	51.7	54.0	-2.3	V	A	132.0	254.0	
3.283	3.0	58.1	30.6	4.6	-37.1	0.0	0.0	56.1	74.0	-17.9	H	P	132.0	254.0	
3.283	3.0	51.7	30.6	4.6	-37.1	0.0	0.0	49.7	54.0	-4.3	H	A	132.0	254.0	
4.924	3.0	51.8	33.1	5.9	-36.5	0.0	0.0	54.4	74.0	-19.6	V	P	194.0	349.2	
4.924	3.0	36.4	33.1	5.9	-36.5	0.0	0.0	38.9	54.0	-15.1	V	A	194.0	349.2	
4.924	3.0	56.9	33.1	5.9	-36.5	0.0	0.0	59.4	74.0	-14.6	H	P	199.6	295.1	
4.924	3.0	41.0	33.1	5.9	-36.5	0.0	0.0	43.5	54.0	-10.5	H	A	199.6	295.1	
7.386	3.0	37.4	35.4	7.3	-36.2	0.0	0.0	43.9	74.0	-30.1	H	P	197.2	213.4	
7.386	3.0	24.8	35.4	7.3	-36.2	0.0	0.0	31.3	54.0	-22.7	H	A	197.2	213.4	
7.386	3.0	38.3	35.4	7.3	-36.2	0.0	0.0	44.8	74.0	-29.2	V	P	140.1	240.1	
7.386	3.0	25.3	35.4	7.3	-36.2	0.0	0.0	31.8	54.0	-22.2	V	A	140.1	240.1	

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

8.3. RADIATED EMISSIONS BELOW 1 GHz

DATA

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

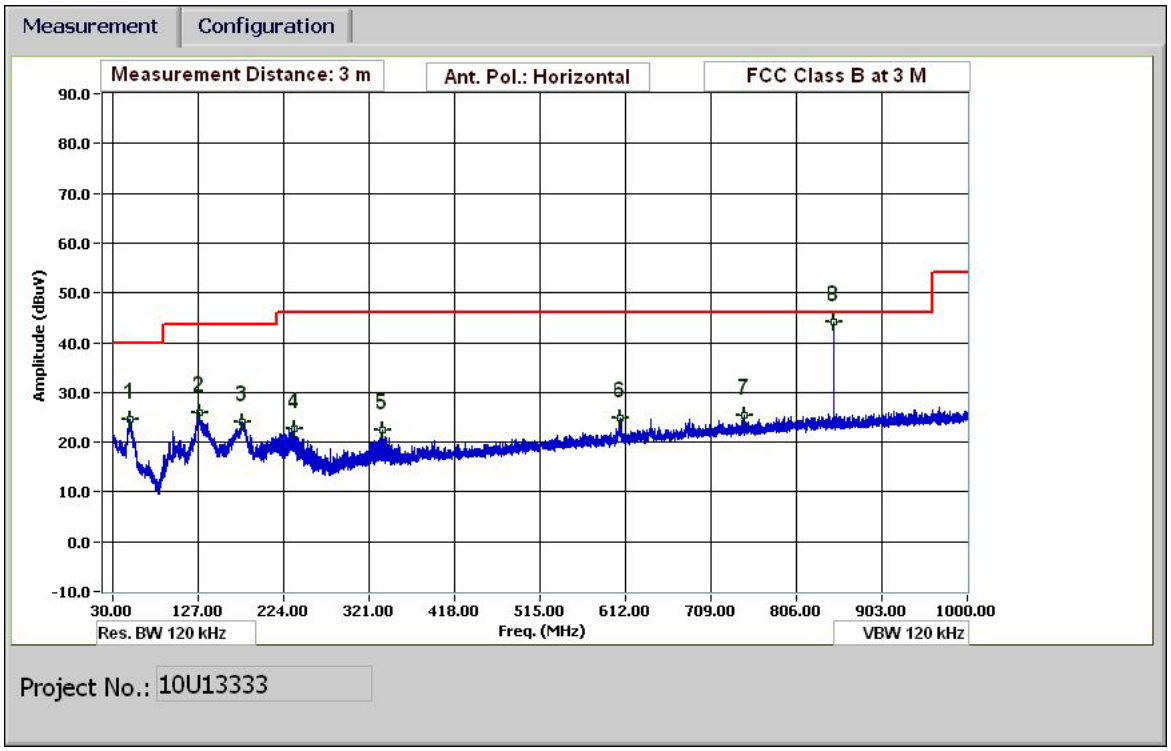
Test Engr: William Zhuang
Date: 08/12/10
Project #: 10U13333
Company: Sonos, Inc.
EUT Description: 802.11 gn wireless docking station for streaming iPod music to Sonos systems
EUT M/N: EUT on Cradle (Charger)_S/N A81
Test Target: FCC Class B
Mode Oper: Tx On, Worst case

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

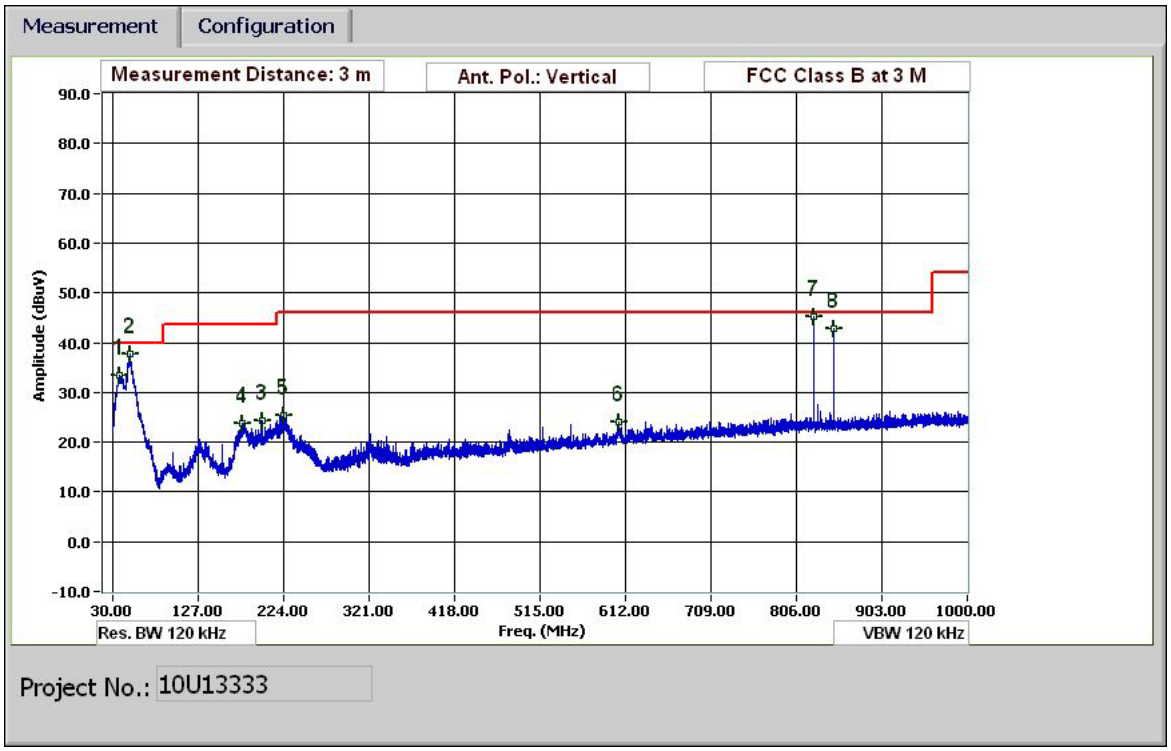
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
49.801	3.0	44.0	8.5	0.6	28.4	0.0	0.0	24.7	40.0	-15.3	H	P	100.0	0 - 360	
129.124	3.0	39.5	13.6	1.1	28.3	0.0	0.0	25.8	43.5	-17.7	H	P	100.0	0 - 360	
177.366	3.0	40.2	10.8	1.2	28.2	0.0	0.0	23.9	43.5	-19.6	H	P	100.0	0 - 360	
235.688	3.0	37.8	11.9	1.3	28.2	0.0	0.0	22.8	46.0	-23.2	H	P	100.0	0 - 360	
336.133	3.0	34.9	14.0	1.6	28.1	0.0	0.0	22.4	46.0	-23.6	H	P	100.0	0 - 360	
605.664	3.0	31.5	18.5	2.3	27.5	0.0	0.0	24.8	46.0	-21.2	H	P	100.0	0 - 360	
747.270	3.0	29.9	20.2	2.5	27.3	0.0	0.0	25.3	46.0	-20.7	H	P	100.0	0 - 360	
848.794	3.0	47.7	21.4	2.7	27.6	0.0	0.0	44.2	46.0	-1.8	H	P	100.0	0 - 360	
37.680	3.0	45.4	15.8	0.6	28.4	0.0	0.0	33.4	40.0	-6.6	V	P	100.0	0 - 360	
49.201	3.0	56.6	8.8	0.6	28.4	0.0	0.0	37.6	40.0	-2.4	V	P	100.0	0 - 360	
177.126	3.0	40.2	10.7	1.2	28.2	0.0	0.0	23.8	43.5	-19.7	V	P	100.0	0 - 360	
199.087	3.0	39.4	11.9	1.2	28.2	0.0	0.0	24.4	43.5	-19.1	V	P	100.0	0 - 360	
224.408	3.0	40.5	11.9	1.3	28.2	0.0	0.0	25.4	46.0	-20.6	V	P	100.0	0 - 360	
604.104	3.0	30.8	18.5	2.2	27.5	0.0	0.0	24.0	46.0	-22.0	V	P	100.0	0 - 360	
825.513	3.0	49.0	21.2	2.7	27.5	0.0	0.0	45.4	46.0	-0.6	V	P	100.0	0 - 360	
848.674	3.0	46.2	21.4	2.7	27.6	0.0	0.0	42.8	46.0	-3.2	V	P	100.0	0 - 360	

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

HORIZONTAL PLOT



VERTICAL PLOT



8.4. RECEIVER ABOVE 1 GHz

8.4.1. RX ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Sonos
Project #: 10U13333
Date: 9/16/2010
Test Engineer: William Zhuang
Configuration: EUT on Charger
Mode: Rx On, g Mode, Mid Ch

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T59; S/N: 3245 @3m	T145 Agilent 3008A0056			RX RSS 210

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.201	3.0	55.2	46.1	24.7	2.6	-36.0	0.0	0.0	46.5	37.4	74	54	-27.5	-16.6	V
1.335	3.0	52.7	36.8	25.2	2.8	-35.9	0.0	0.0	44.7	28.9	74	54	-29.3	-25.1	V
1.464	3.0	52.7	36.8	25.6	2.9	-35.8	0.0	0.0	45.5	29.6	74	54	-28.5	-24.4	V
1.201	3.0	54.5	42.9	24.7	2.6	-36.0	0.0	0.0	45.8	34.2	74	54	-28.2	-19.8	H
1.335	3.0	50.1	39.5	25.2	2.8	-35.9	0.0	0.0	42.1	31.5	74	54	-31.9	-22.5	H
1.468	3.0	53.6	37.9	25.7	2.9	-35.8	0.0	0.0	46.4	30.7	74	54	-27.6	-23.3	H

Rev. 07.22.09

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

8.4.2. RX ABOVE 1 GHz FOR 802.11n MODE IN THE 2.4 GHz BAND

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Sonos
Project #: 10U13333
Date: 9/16/2010
Test Engineer: William Zhuang
Configuration: EUT on Charger
Mode: Rx On, n Mode, Mid Ch

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T59; S/N: 3245 @3m	T145 Agilent 3008A0056			RX RSS 210

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.332	3.0	52.9	41.8	25.2	2.8	-35.9	0.0	0.0	45.0	33.8	74	54	-29.0	-20.2	V
1.467	3.0	51.1	40.3	25.7	2.9	-35.8	0.0	0.0	43.8	33.1	74	54	-30.2	-20.9	V
1.334	3.0	52.6	38.2	25.2	2.8	-35.9	0.0	0.0	44.6	30.3	74	54	-29.4	-23.7	H
1.467	3.0	50.2	36.1	25.7	2.9	-35.8	0.0	0.0	42.9	28.8	74	54	-31.1	-25.2	H

Rev. 07.22.09

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

8.5. 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

ANSI C63.4

RESULTS

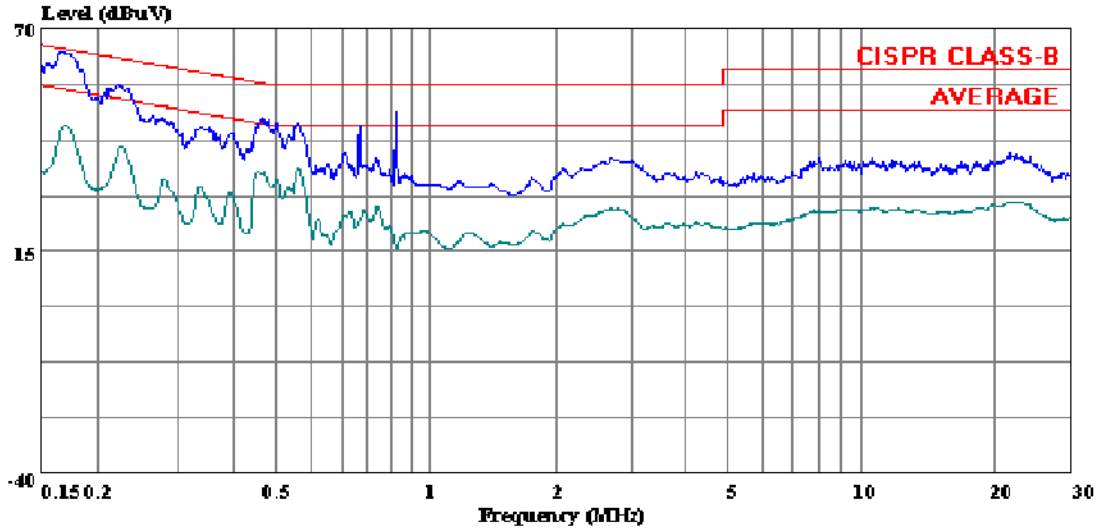
6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA									
Freq.	Reading			Closs	Limit	FCC_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.17	64.10	--	46.27	0.00	65.06	55.06	-0.96	-8.79	L1
0.22	56.31	--	41.07	0.00	62.74	52.74	-6.43	-11.67	L1
0.92	49.34	--	21.24	0.00	56.00	46.00	-6.66	-24.76	L1
0.16	63.42	--	45.04	0.00	65.31	55.31	-1.89	-10.27	L2
0.22	58.09	--	37.26	0.00	62.93	52.93	-4.84	-15.67	L2
0.49	47.81	--	37.19	0.00	56.18	46.18	-8.37	-8.99	L2
6 Worst Data									

LINE 1 RESULTS

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 7 File#: 10U13333-LC.EMI Date: 08-16-2010 Time: 09:15:15



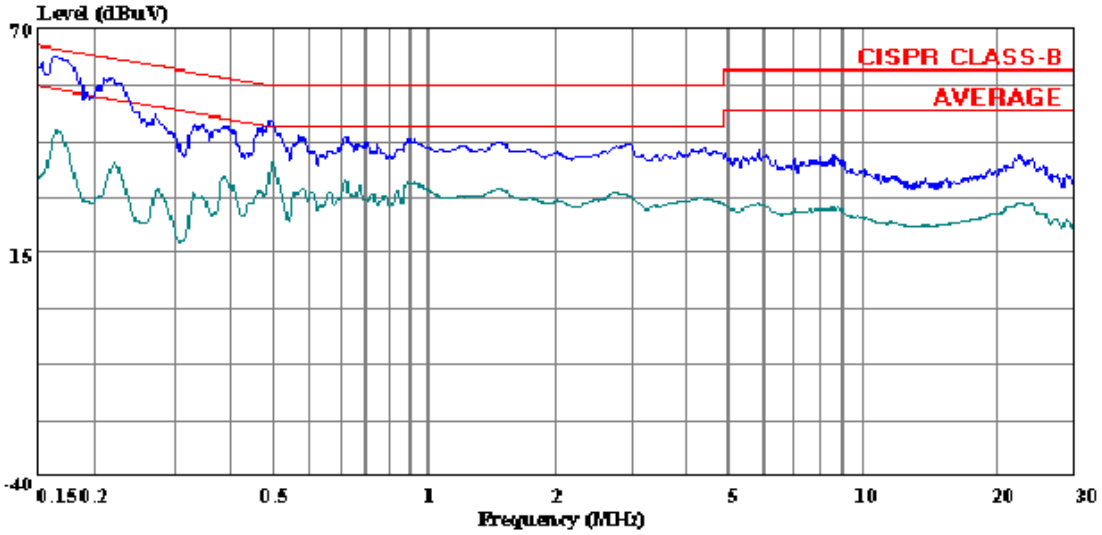
Trace: 5 Ref Trace:

Condition: CISPR CLASS-B
Test Operator: : William Zhuang
Project #: : 10U13333
Company: : Sonos Inc.
EUT Description:: 802.11 gn wireless docking station iPod
Model: : S/N A81
Configuration: : EUT on charger
Mode: : TX , Mid Ch.
Target: : FCC Class B
Voltage: : 115V / 60Hz
: L1: Peak (Blue); Average (Green)

LINE 2 RESULTS

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 14 File#: 10U13333-LC.EMI Date: 08-16-2010 Time: 09:23:32



Trace: 12 Ref Trace:

Condition: CISPR CLASS-B
Test Operator: : William Zhuang
Project #: : 10U13333
Company: : Sonos Inc.
EUT Description:: 802.11 gn wireless docking station iPod
Model: : S/N A81
Configuration: : EUT on charger
Mode: : TX , Mid Ch.
Target: : FCC Class B
Voltage: : 115V / 60Hz
: L2: Peak (Blue); Average (Green)

9. MAXIMUM PERMISSIBLE EXPOSURE

FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

IC RULES

IC Safety Code 6, Section 2.2.1 (a) A person other than an RF and microwave exposed worker shall not be exposed to electromagnetic radiation in a frequency band listed in Column 1 of Table 5, if the field strength exceeds the value given in Column 2 or 3 of Table 5, when averaged spatially and over time, or if the power density exceeds the value given in Column 4 of Table 5, when averaged spatially and over time.

Table 5
Exposure Limits for Persons Not Classed As RF and Microwave Exposed Workers (Including the General Public)

1 Frequency (MHz)	2 Electric Field Strength; rms (V/m)	3 Magnetic Field Strength; rms (A/m)	4 Power Density (W/m^2)	5 Averaging Time (min)
0.003–1	280	2.19		6
1–10	$280/f$	$2.19/f$		6
10–30	28	$2.19/f$		6
30–300	28	0.073	2*	6
300–1 500	$1.585f^{0.5}$	$0.0042f^{0.5}$	$f/150$	6
1 500–15 000	61.4	0.163	10	6
15 000–150 000	61.4	0.163	10	$616\,000/f^{1.2}$
150 000–300 000	$0.158f^{0.5}$	$4.21 \times 10^{-4}f^{0.5}$	$6.67 \times 10^{-5}f$	$616\,000/f^{1.2}$

* Power density limit is applicable at frequencies greater than 100 MHz.

Notes: 1. Frequency, f, is in MHz.
2. A power density of 10 W/m^2 is equivalent to 1 mW/cm^2.
3. A magnetic field strength of 1 A/m corresponds to 1.257 microtesla (μT) or 12.57 milligauss (mG).

EQUATIONS

Power density is given by:

S = EIRP / (4 * Pi * D^2)

where

S = Power density in W/m^2
EIRP = Equivalent Isotropic Radiated Power in W
D = Separation distance in m

Power density in units of W/m^2 is converted to units of mWc/m^2 by dividing by 10.

Distance is given by:

D = SQRT (EIRP / (4 * Pi * S))

where

D = Separation distance in m
EIRP = Equivalent Isotropic Radiated Power in W
S = Power density in W/m^2

For multiple colocated transmitters operating simultaneously in frequency bands where the limit is identical, the total power density is calculated using the total EIRP obtained by summing the Power * Gain product (in linear units) of each transmitter.

Total EIRP = (P1 * G1) + (P2 * G2) + ... + (Pn * Pn)

where

Px = Power of transmitter x
Gx = Numeric gain of antenna x

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations.

LIMITS

From FCC §1.1310 Table 1 (B), the maximum value of S = 1.0 mW/cm^2

From IC Safety Code 6, Section 2.2 Table 5 Column 4, S = 10 W/m^2

RESULTS

Band	Mode	Separation Distance (m)	Output Power (dBm)	Antenna Gain (dBi)	IC Power Density (W/m^2)	FCC Power Density (mW/cm^2)
2.4 GHz	WLAN 11g	0.20	27.70	1.41	1.62	0.162
2.4 GHz	WLAN 11n	0.20	28.86	1.41	2.12	0.212