FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

BT3.0, 802.11 B/G/N 1X1 HT20, GSM/850/1900MHZ, WCDMA850MHZ BAR PHONE

MODEL NUMBER: GT-S6012B

FCC ID: A3LGTS6012B

REPORT NUMBER: 12I14597-1

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

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

NVLAP LAB CODE 200065-0

Revision History

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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:	BT3.0, 802.11 b/g/n 1X1 HT20, GSM/850/1900MHz, WCDMA850MHz Bar phone
MODEL:	GT-S6012B
SERIAL NUMBER:	FJ-222-D (Conducted), FJ-222-A & FJ-222-B (Radiated)
DATE TESTED:	AUGUST 27TH - AUGUST 31ST, 2012

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

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:

TIM LEE
STAFF ENGINEER
UL CCS

Tested By:

STEVE AGUILAR
EMC TECHNICIAN
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, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

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

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 BT3.0, 802.11 b/g/n 1X1 HT20, GSM/850/1900MHz, WCDMA850MHz Bar phone.

The manufacturer of the radio module is Samsung Electronics Co., Ltd.

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	802.11b	17.47	55.85
2412 - 2462	802.11g	15.92	39.08
2412 - 2462	802.11n HT20	21.12	129.42

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an PIFA antenna, with a maximum gain of -2.7 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was S6012b.010.

5.5. WORST-CASE CONFIGURATION AND MODE

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

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that the X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
USB Travel Adapter	Samsung	ETAOU10EBE	SC3BB03HS/7-E	DoC
USB Travel Adapter	Samsung	ETAOU10EBE	SC2Z713PS/7-E	DoC
Headset	Samsung	EHS61ASFWE	FJ-222-A	N/A
Headset	Samsung	EHS61ASFWE	FJ-222-B	N/A

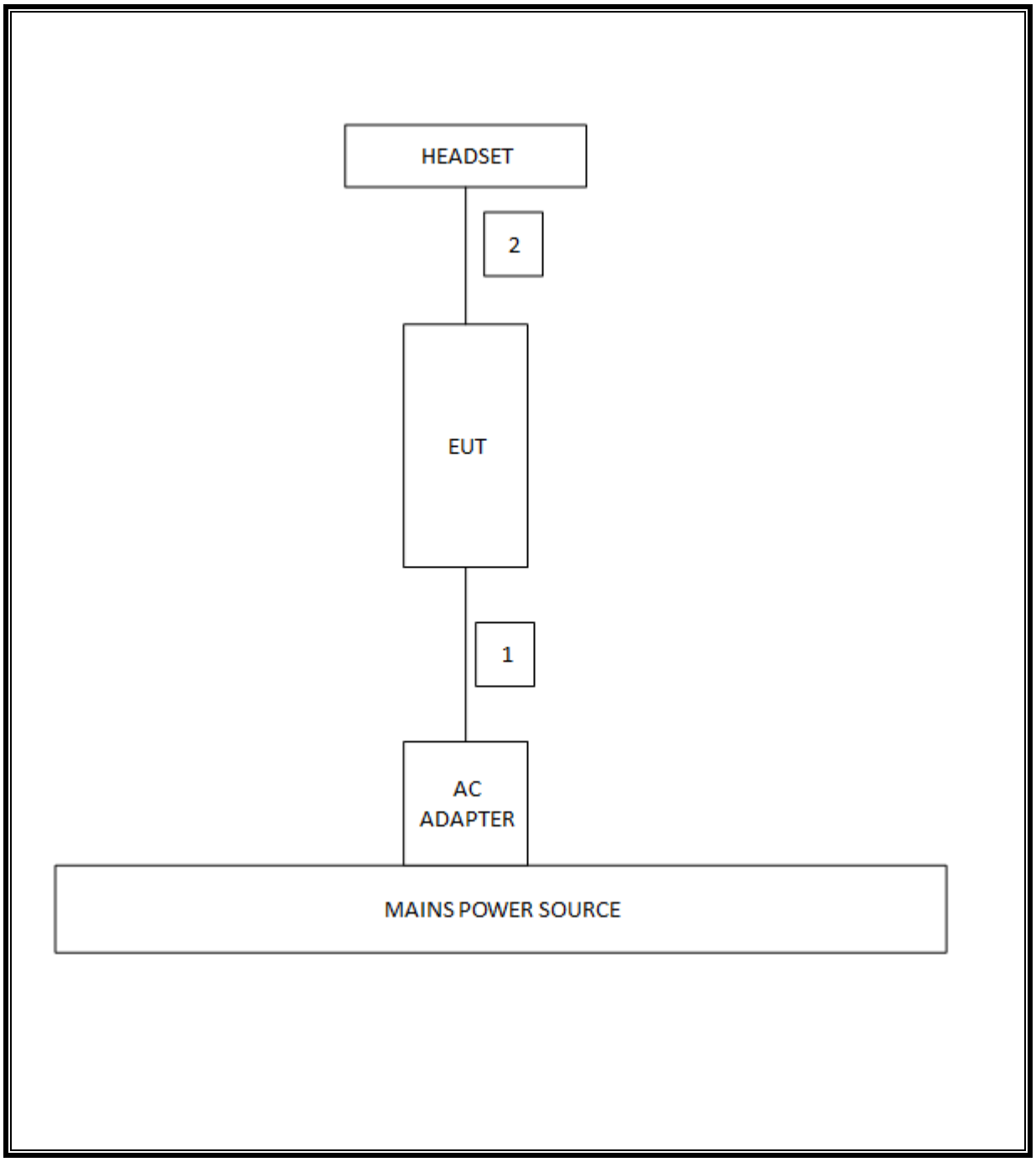
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Shielded	1.5m	N/A
2	Headset	1	Audio	Shielded	1.5m	N/A

TEST SETUP

The EUT is a stand-alone 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, 44 GHz	Agilent / HP	E4446A	C01159	4/9/2012	4/9/2013
P-Series single channel Power M	Agilent / HP	N1911A	--	7/27/2012	7/27/2013
Peak / Average Power Sensor	Agilent / HP	E9323A	--	7/26/2012	7/26/2013
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	9/2/2011	9/2/2012
Antenna, Horn, 18 GHz	EMCO	3115	C00872	9/20/2011	9/20/2012
Antenna Horn, 26.5 GHz	ARA	SWH-28	C01015	4/23/2012	4/23/2013
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	11/11/2011	11/11/2012
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	1/26/2012	1/26/2013
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	11/11/2011	11/11/2012
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	8/8/2012	8/8/2013
LISN, 30 MHz	FCC	50/250-25-2	C00626	12/13/2011	12/13/2012

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)

IC RSS-210 A8.2 (a)

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

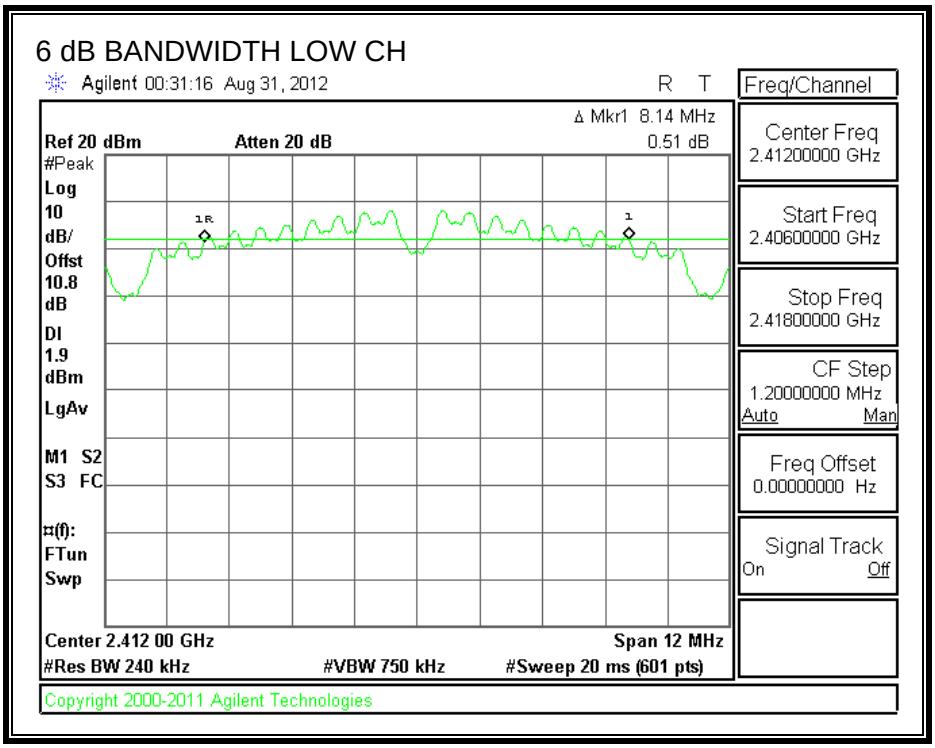
TEST PROCEDURE

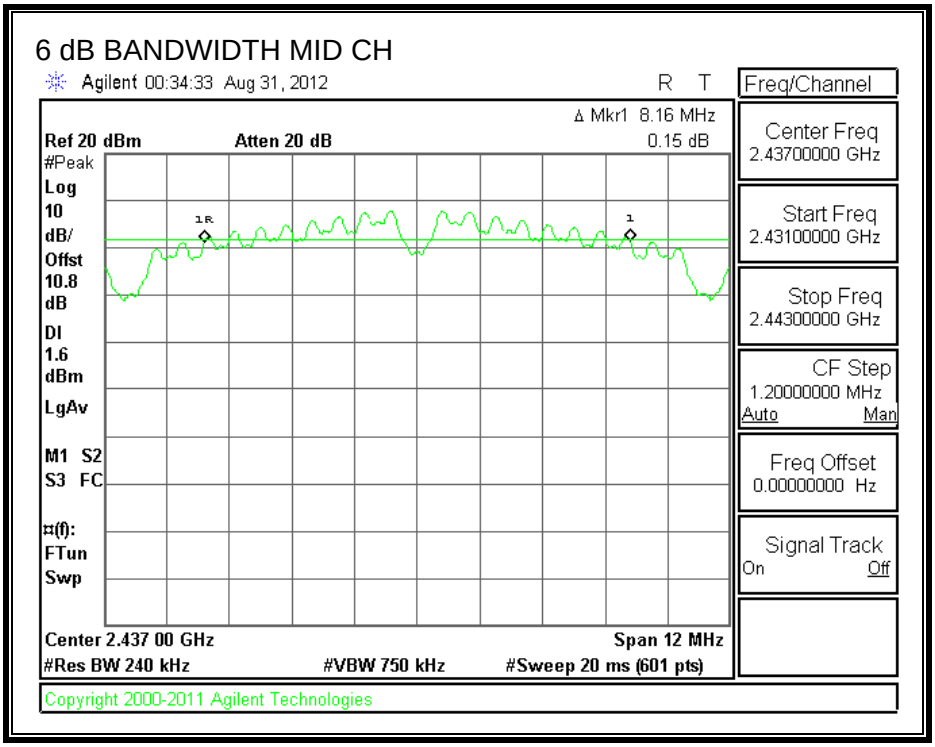
KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

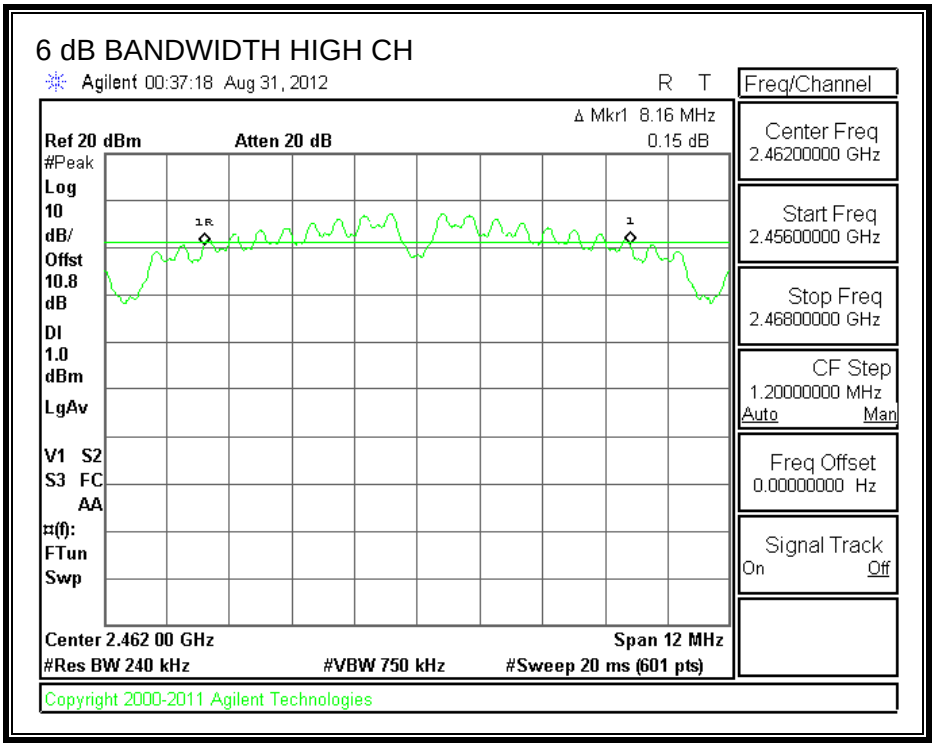
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	8.1400	0.5
Middle	2437	8.1600	0.5
High	2462	8.1600	0.5

6 dB BANDWIDTH







7.1.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

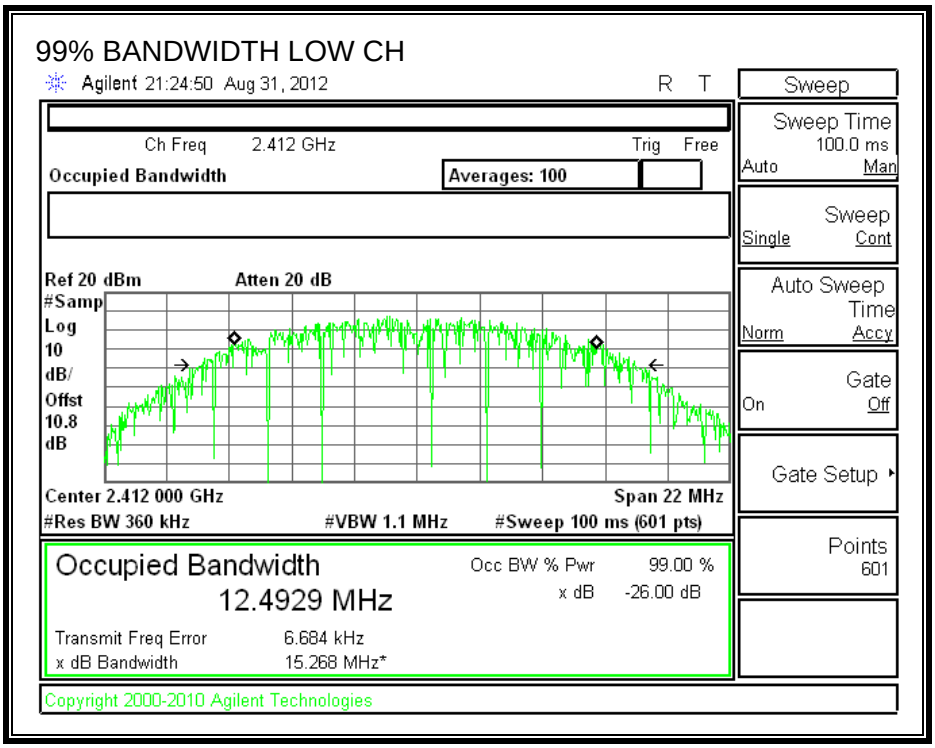
TEST PROCEDURE

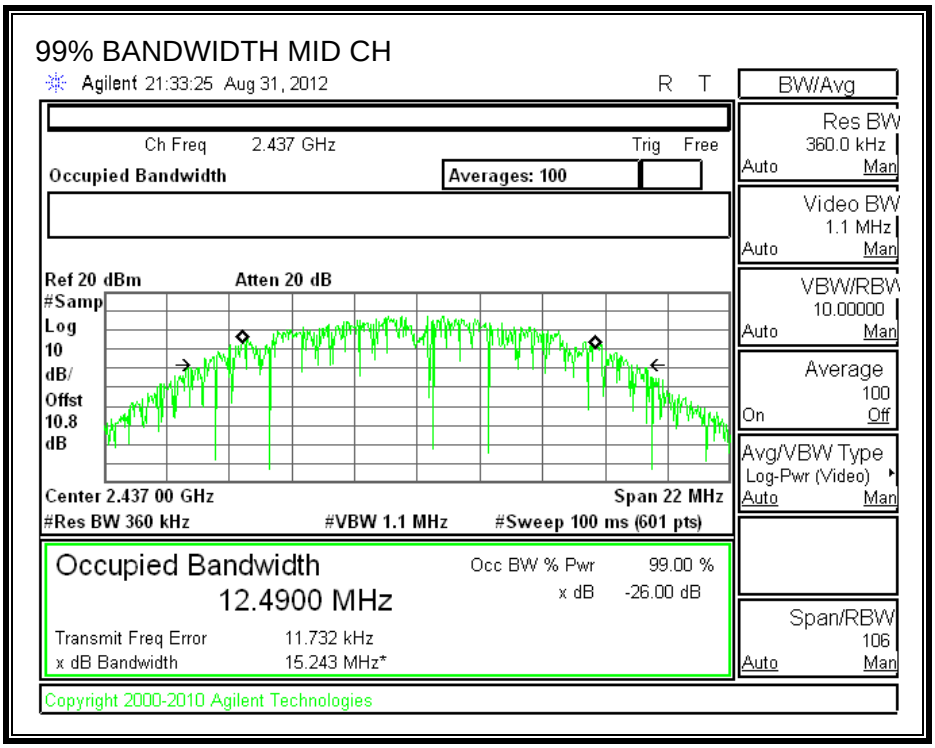
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

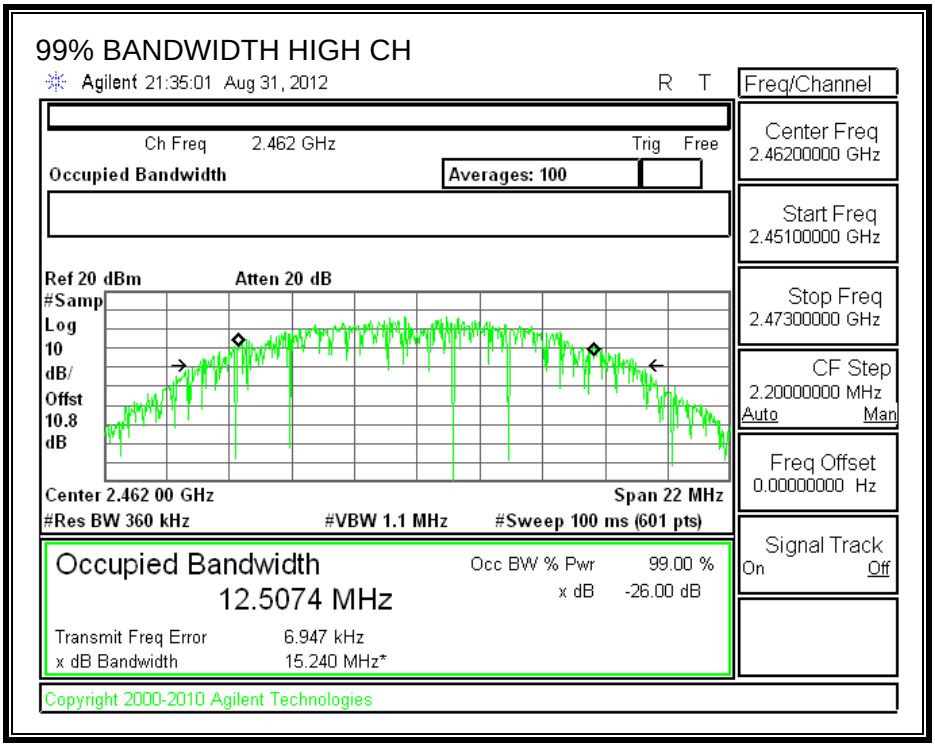
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	12.4929
Middle	2437	12.4900
High	2462	12.5074

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.

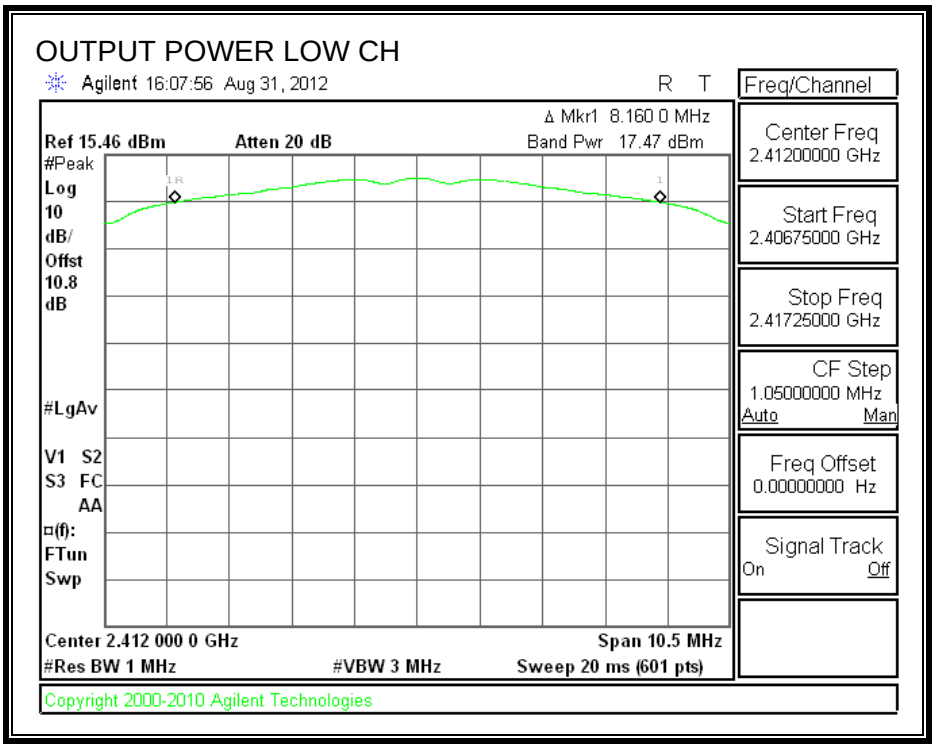
TEST PROCEDURE

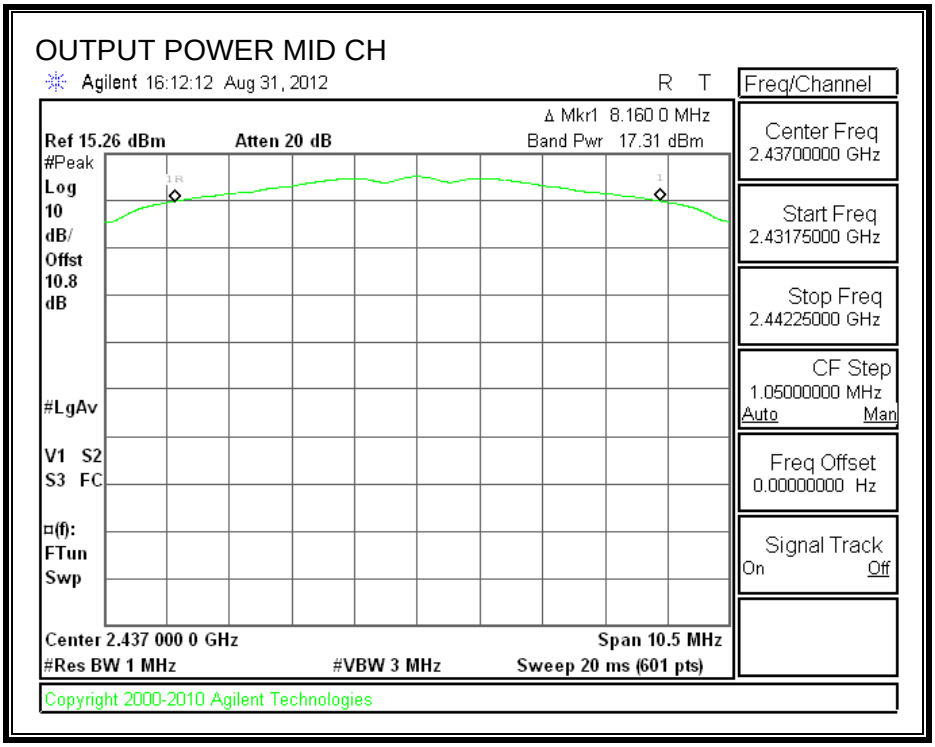
KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

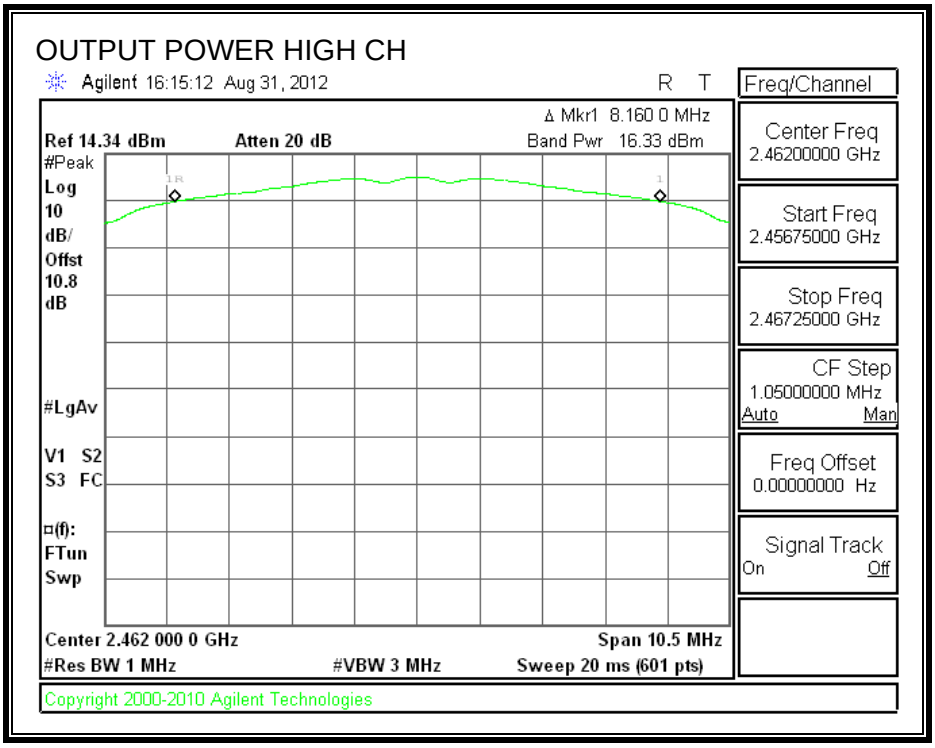
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2412	17.470	30	-12.530
Middle	2437	17.310	30	-12.690
High	2462	16.330	30	-13.670

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)	AV power (dBm)
Low	2412	14.8
Middle	2437	14.6
High	2462	13.9

7.1.5. 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.

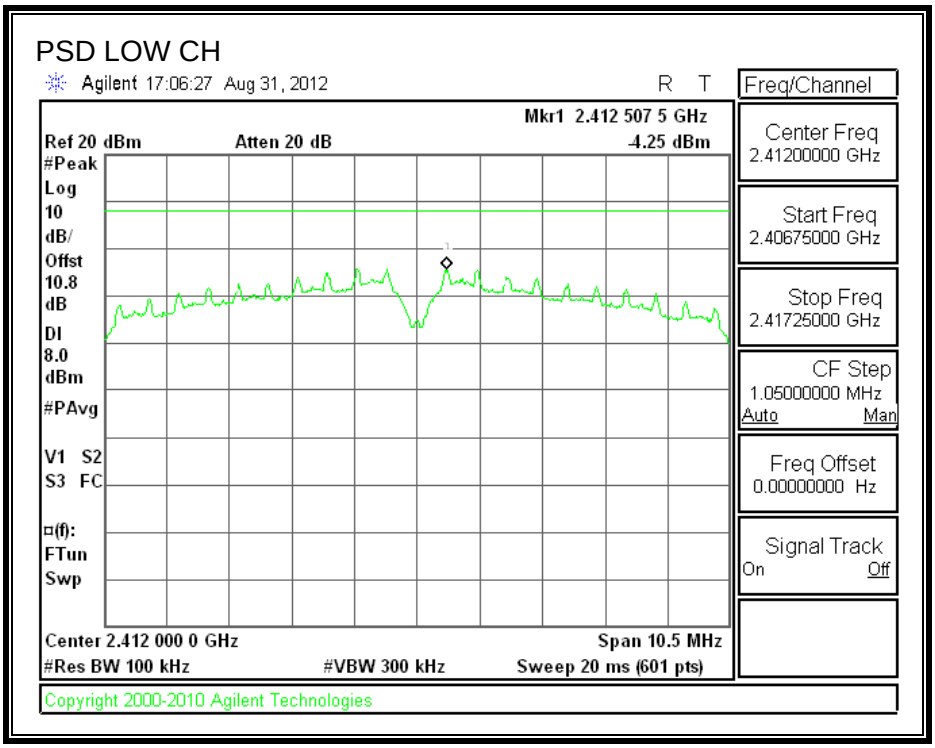
TEST PROCEDURE

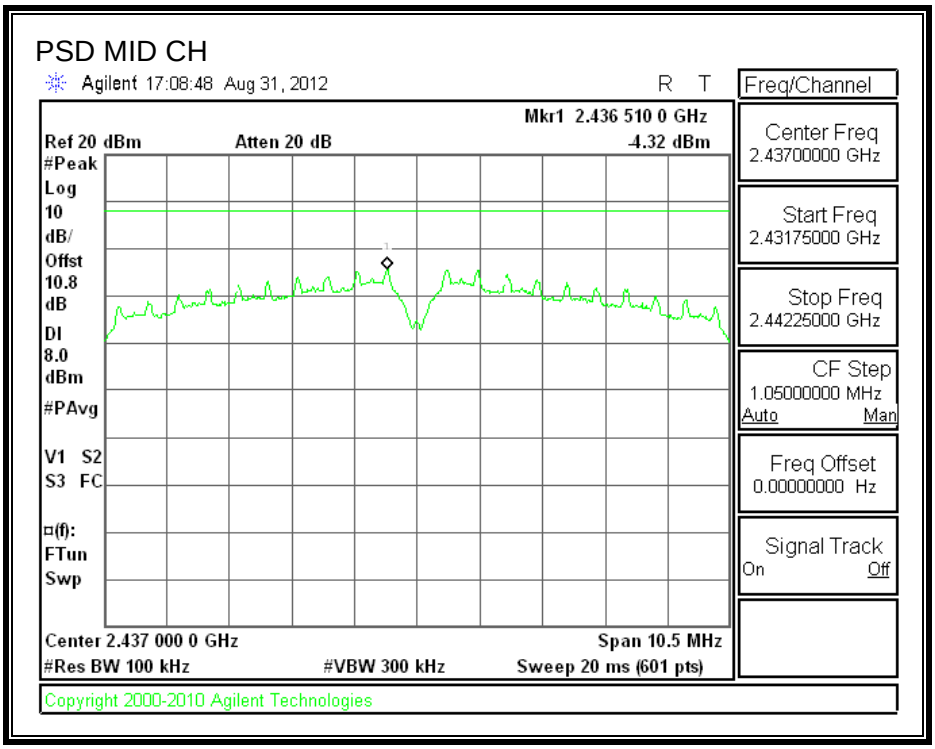
KDB 558074 D01 V01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”, dated 01/18/2012.

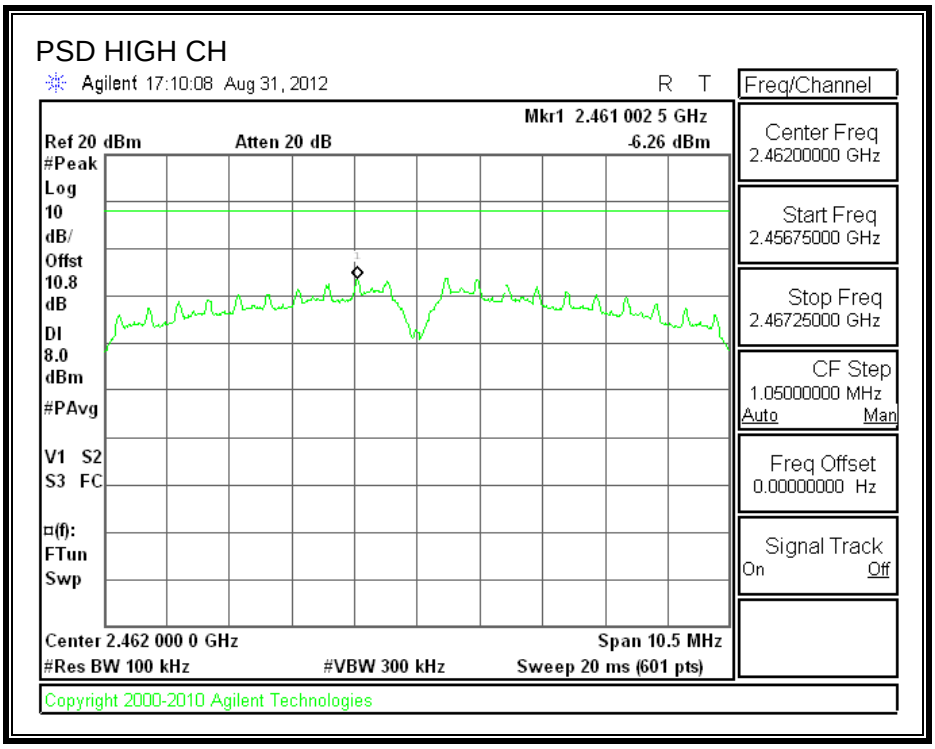
RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-4.25	8	-12.25
Middle	2437	-4.32	8	-12.32
High	2462	-6.26	8	-14.26

POWER SPECTRAL DENSITY







7.1.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

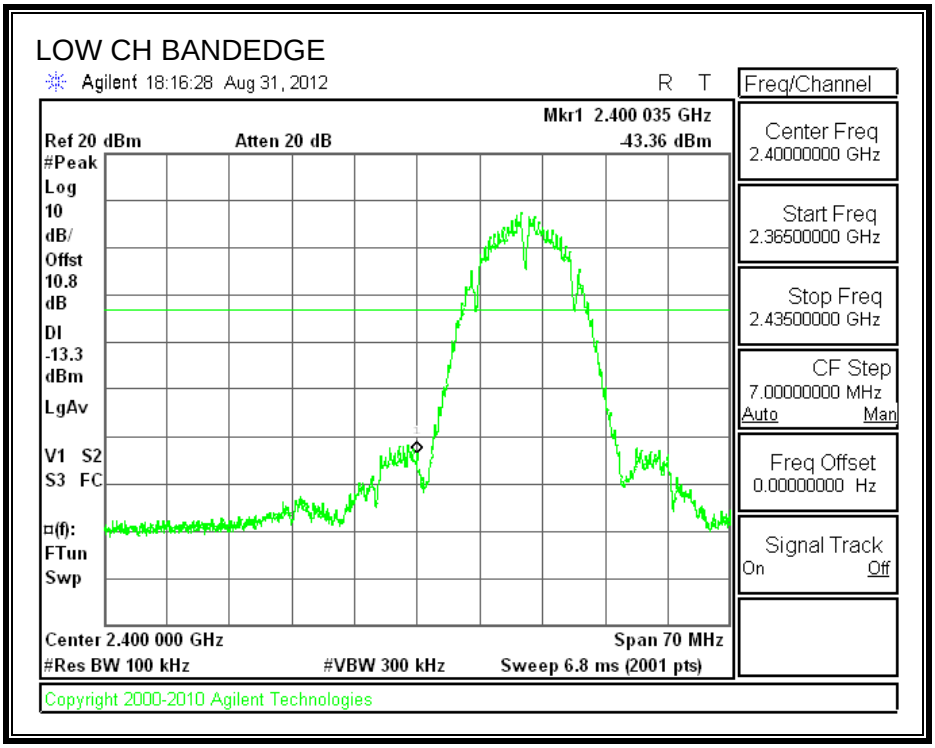
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

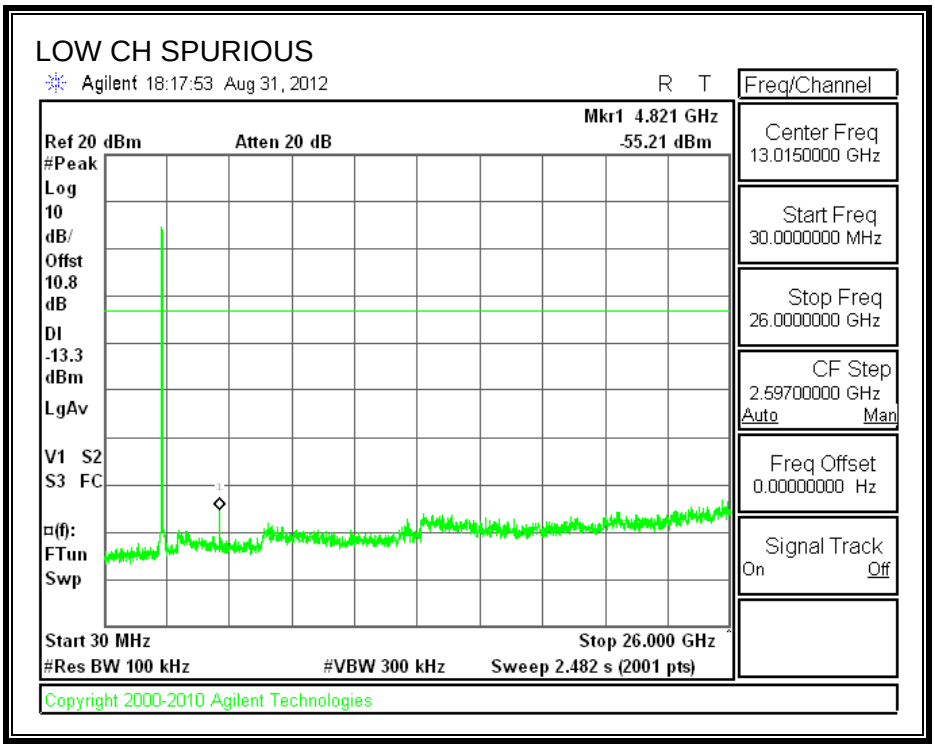
TEST PROCEDURE

KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

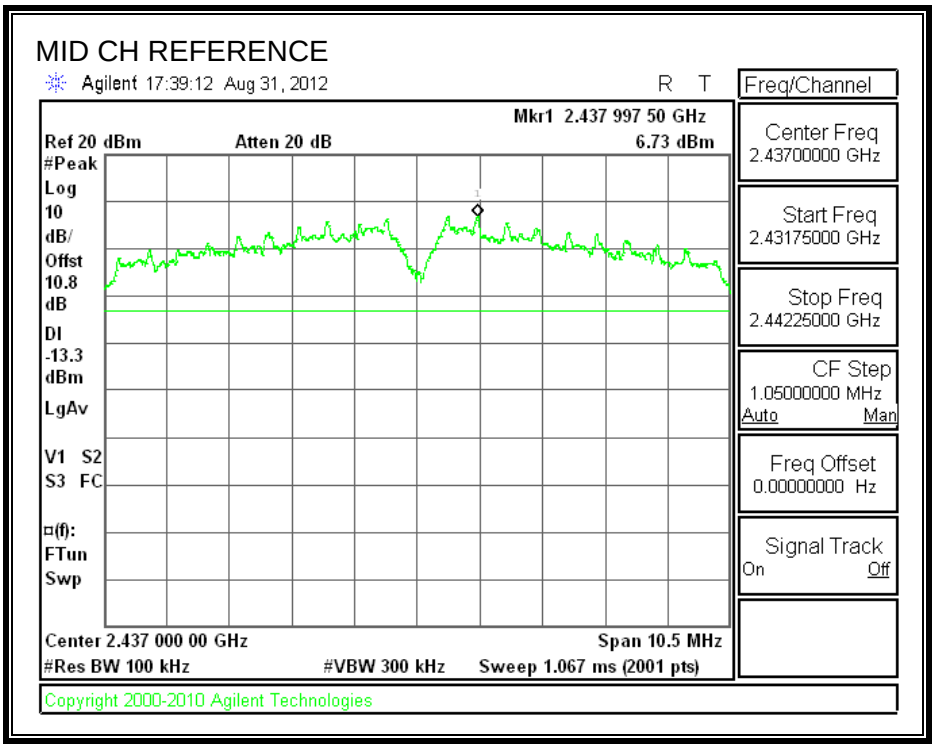
RESULTS

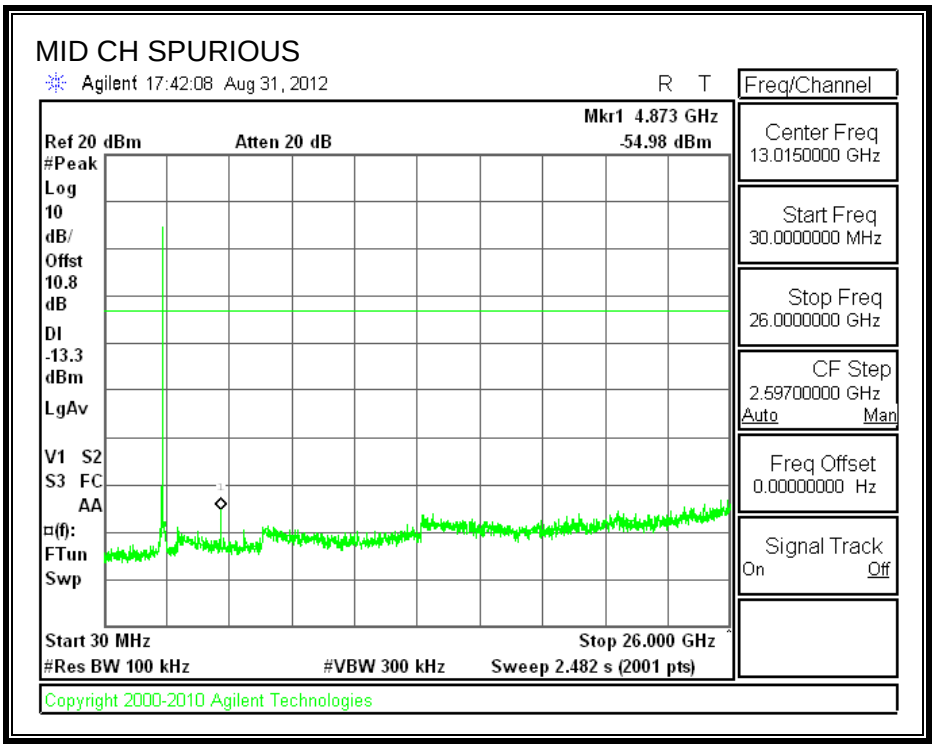
SPURIOUS EMISSIONS, LOW CHANNEL



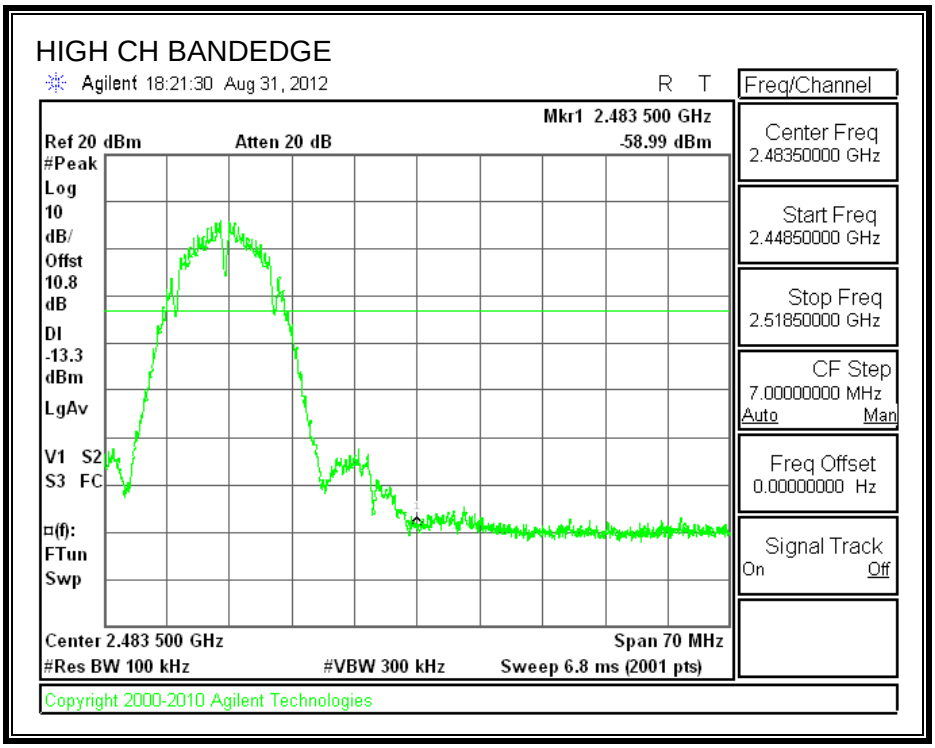


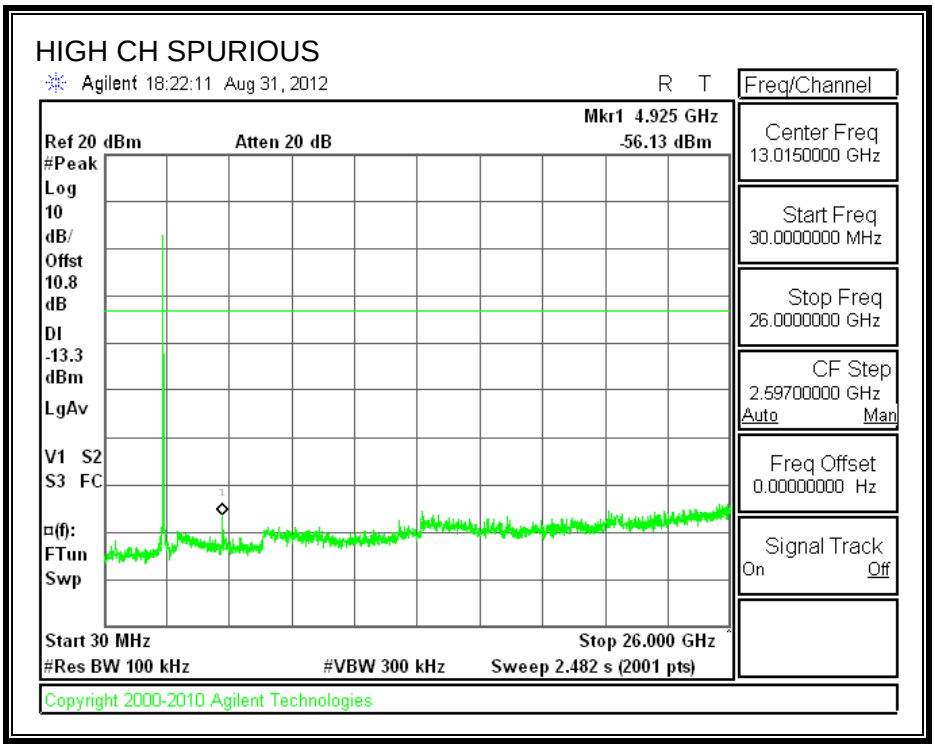
SPURIOUS EMISSIONS, MID CHANNEL





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)

IC RSS-210 A8.2 (a)

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

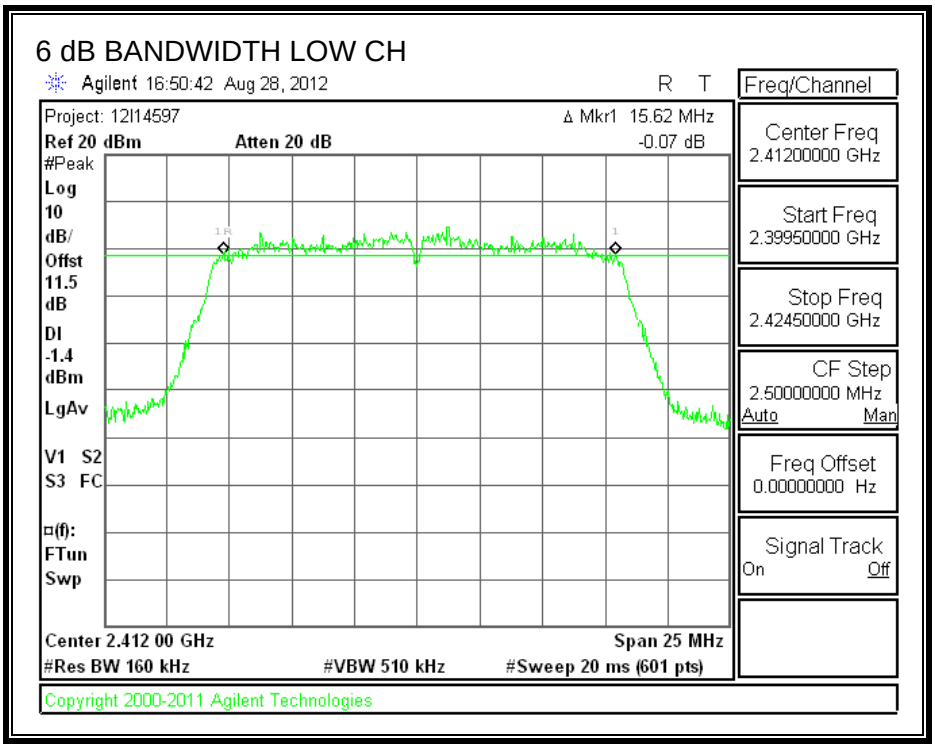
TEST PROCEDURE

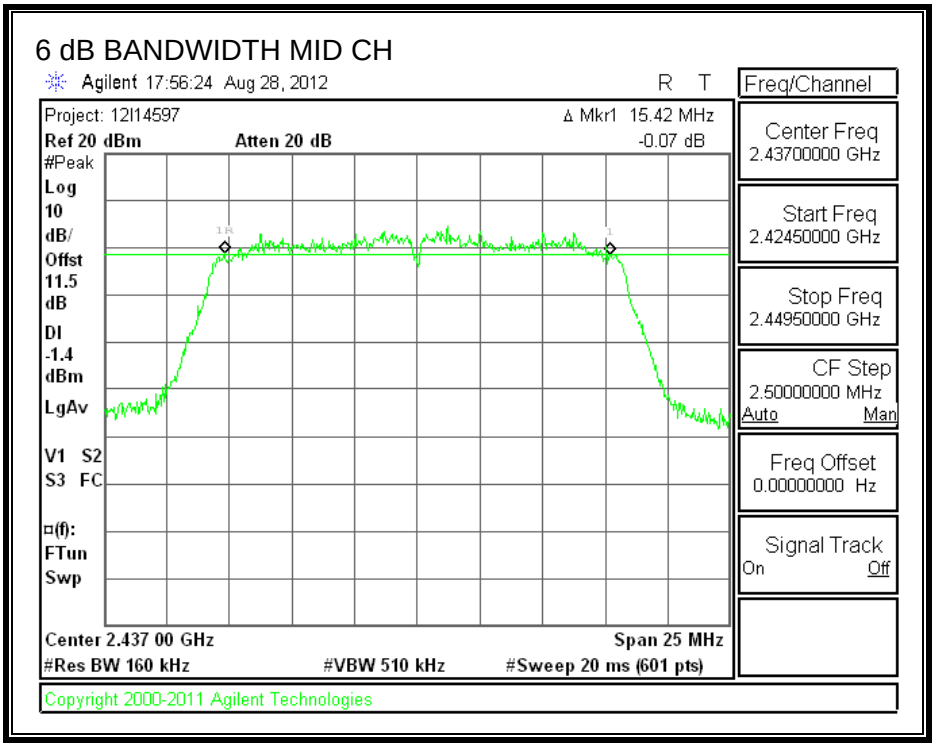
KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

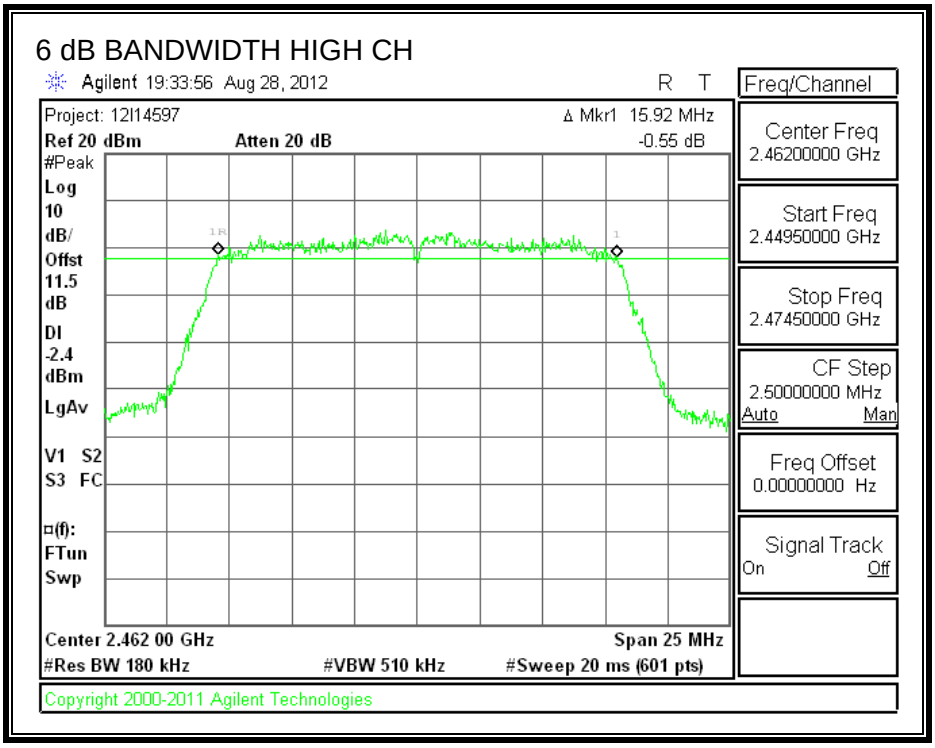
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	15.6200	0.5
Middle	2437	15.4200	0.5
High	2462	15.9200	0.5

6 dB BANDWIDTH







7.2.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

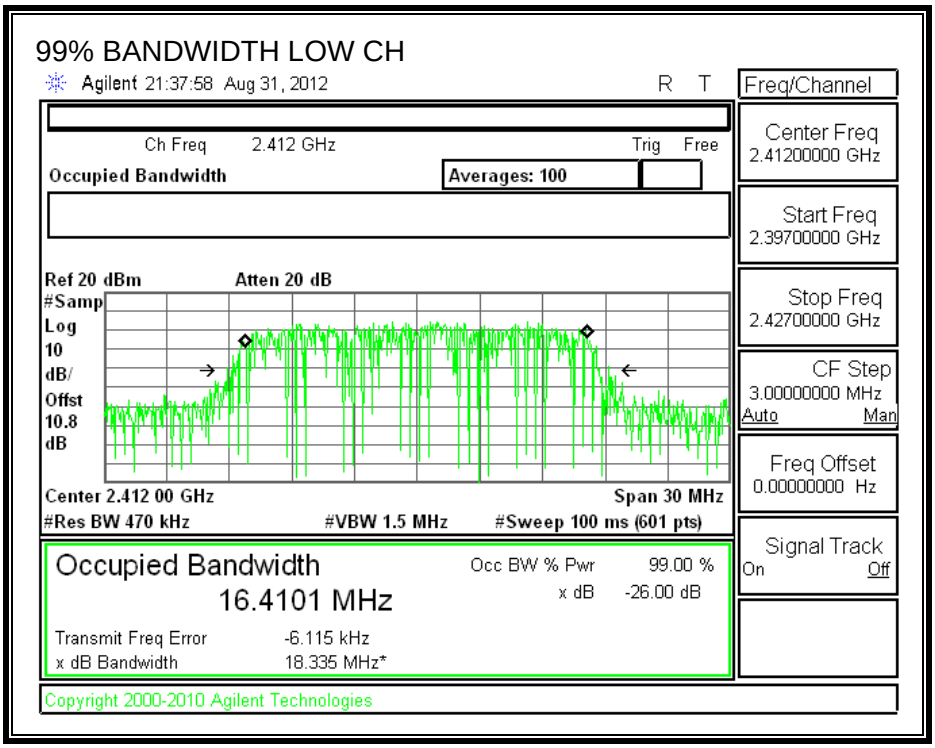
TEST PROCEDURE

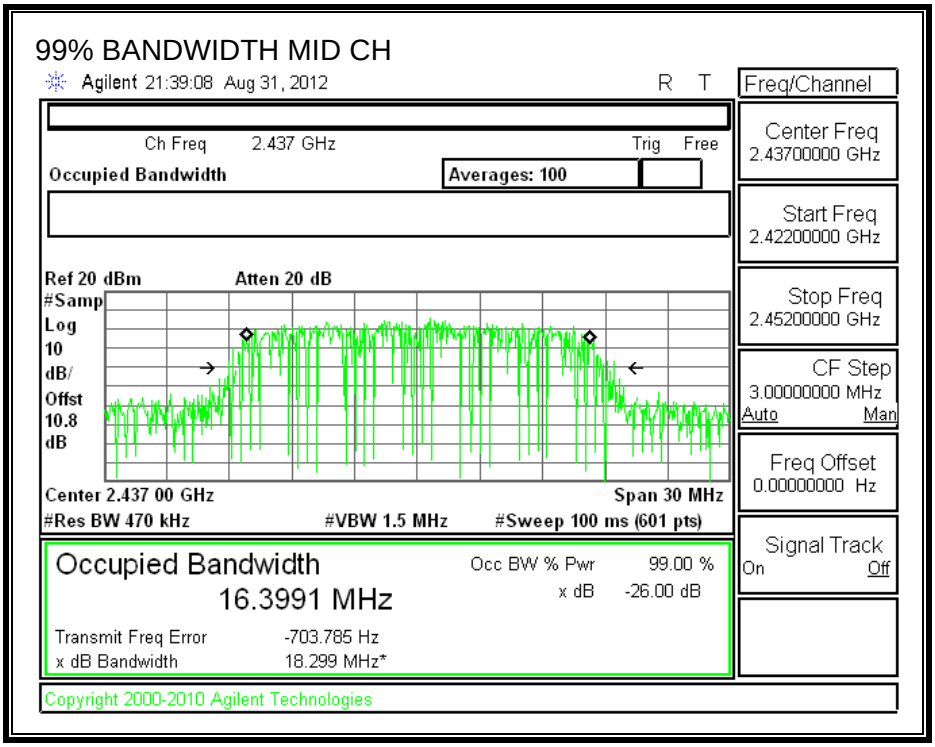
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

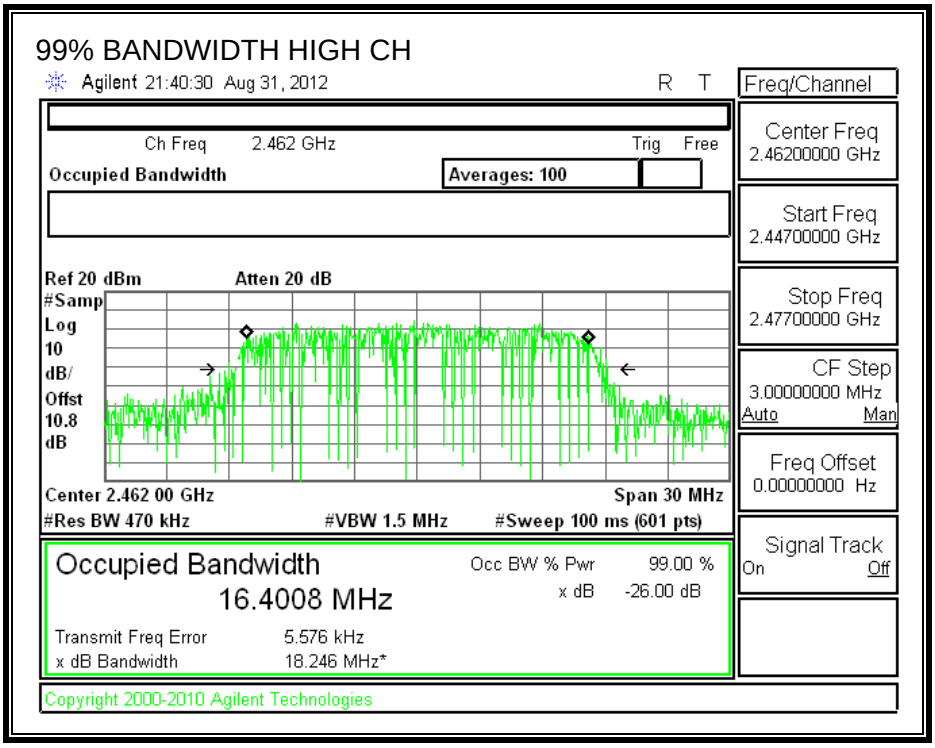
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.4101
Middle	2437	16.3991
High	2462	16.4008

99% BANDWIDTH







7.2.3. 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.

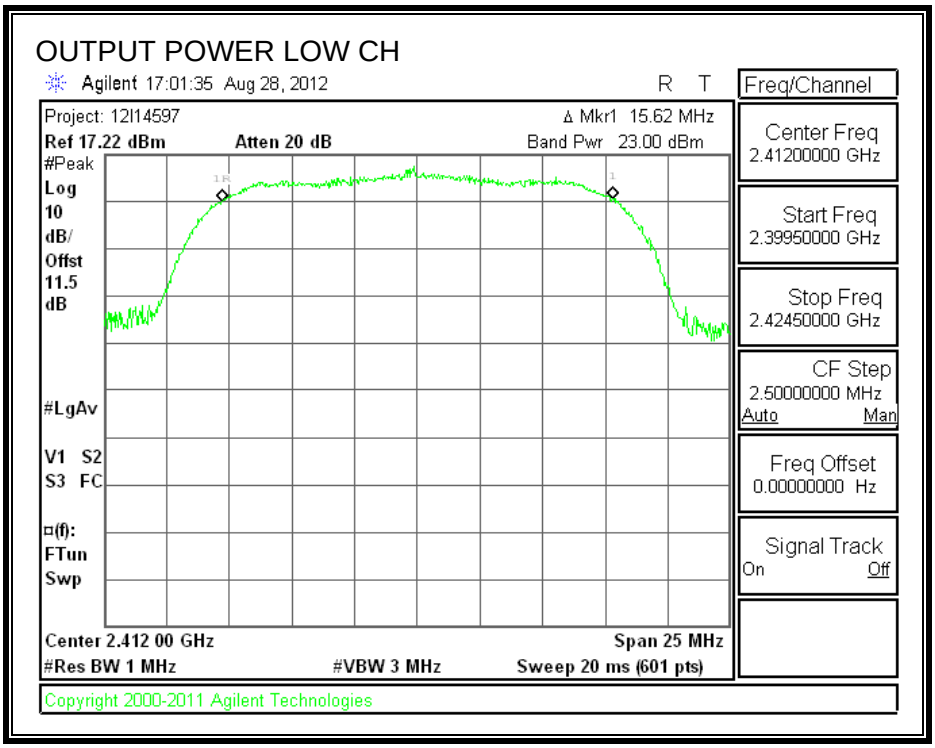
TEST PROCEDURE

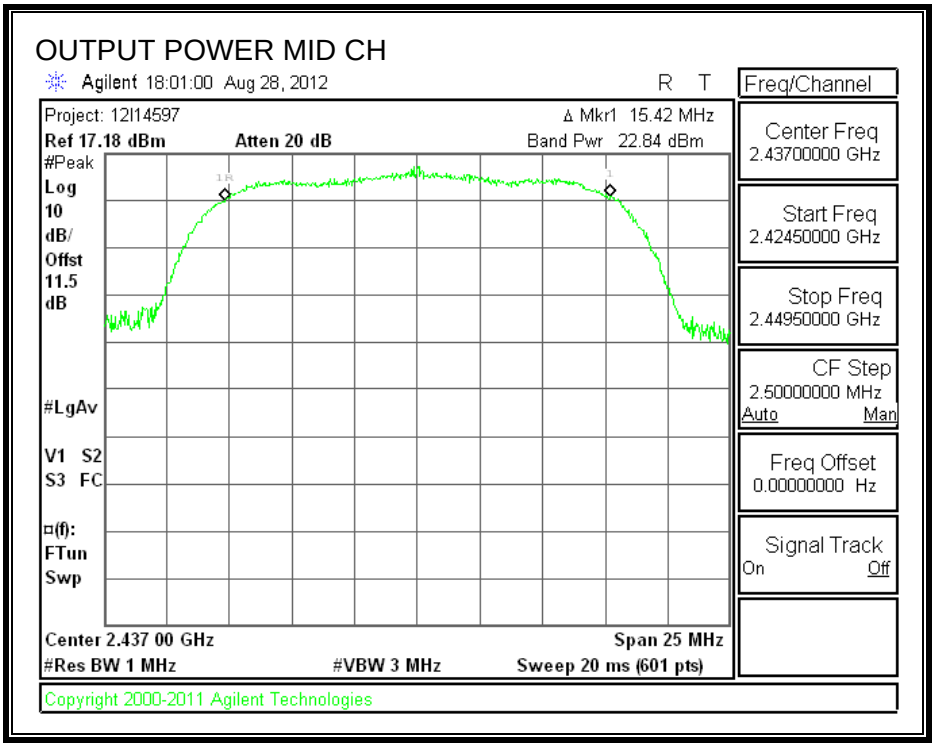
KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

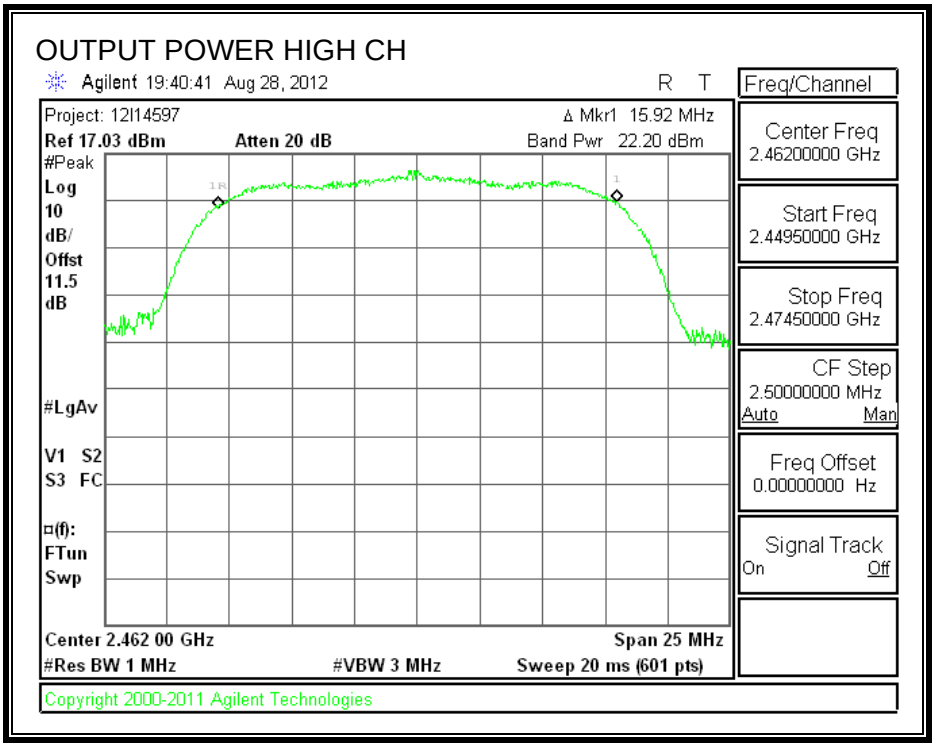
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	15.62	15.62	30	-14.38
Middle	2437	15.42	15.42	30	-14.58
High	2462	15.92	15.92	30	-14.08

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 1.5dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Power (dBm)
Low	2412	13.00
Middle	2437	12.70
High	2462	12.00

7.2.5. 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.

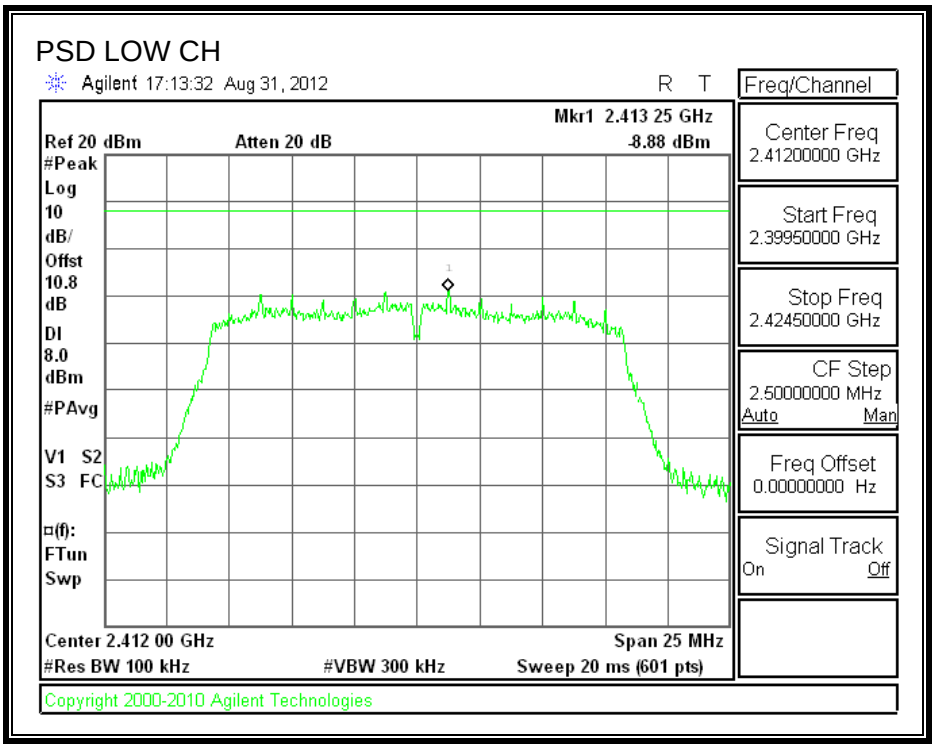
TEST PROCEDURE

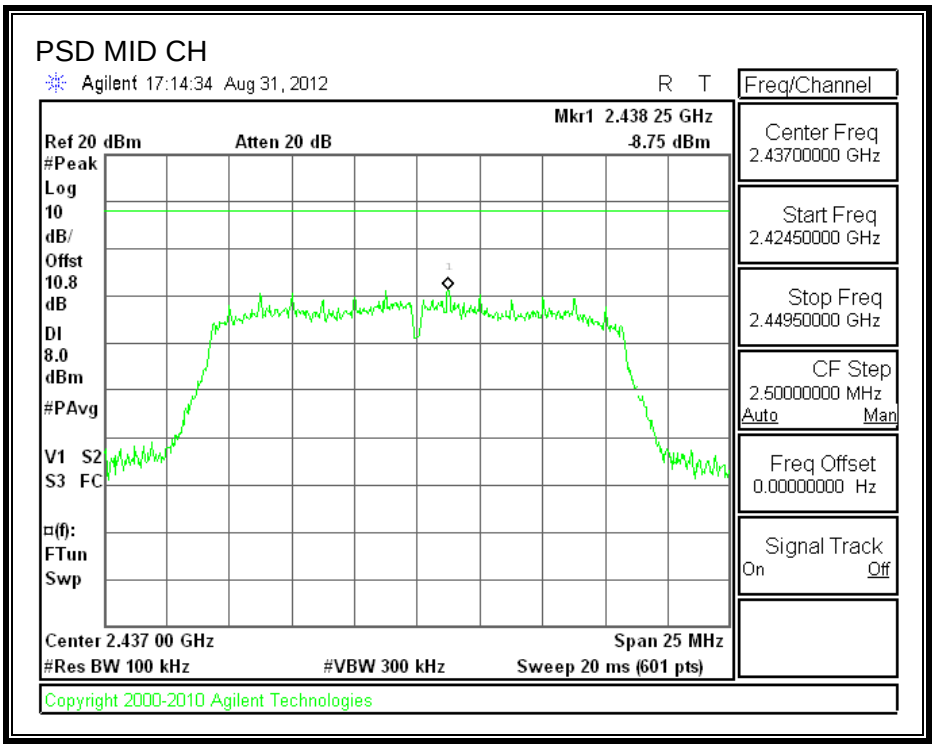
KDB 558074 D01 V01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”, dated 01/18/2012.

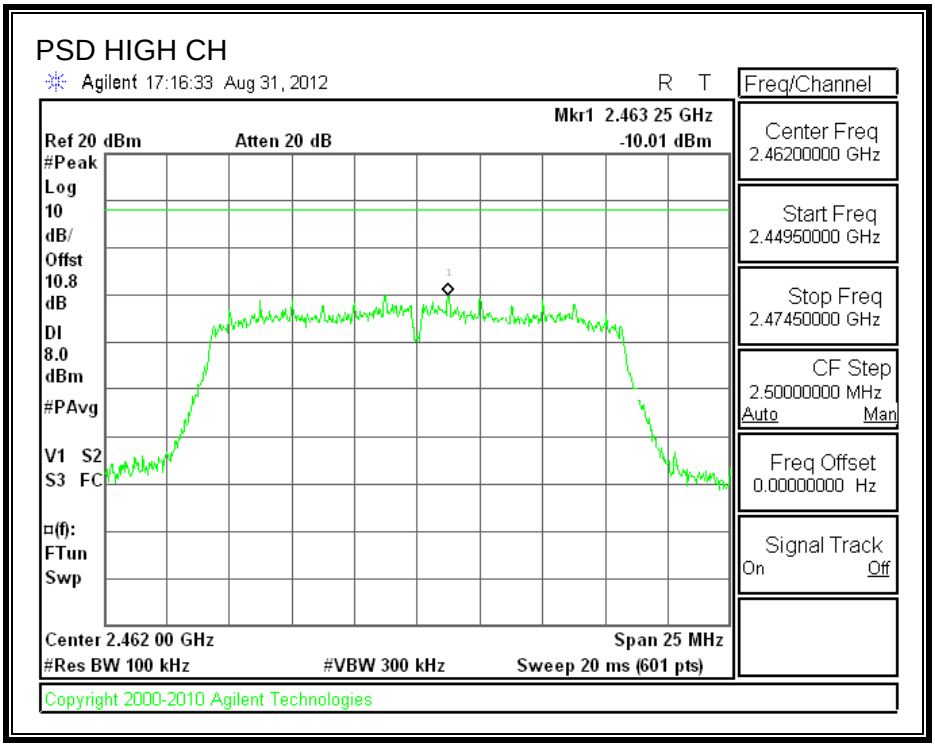
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.88	8	-16.88
Middle	2437	-8.75	8	-16.75
High	2462	-10.10	8	-18.10

POWER SPECTRAL DENSITY







7.2.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

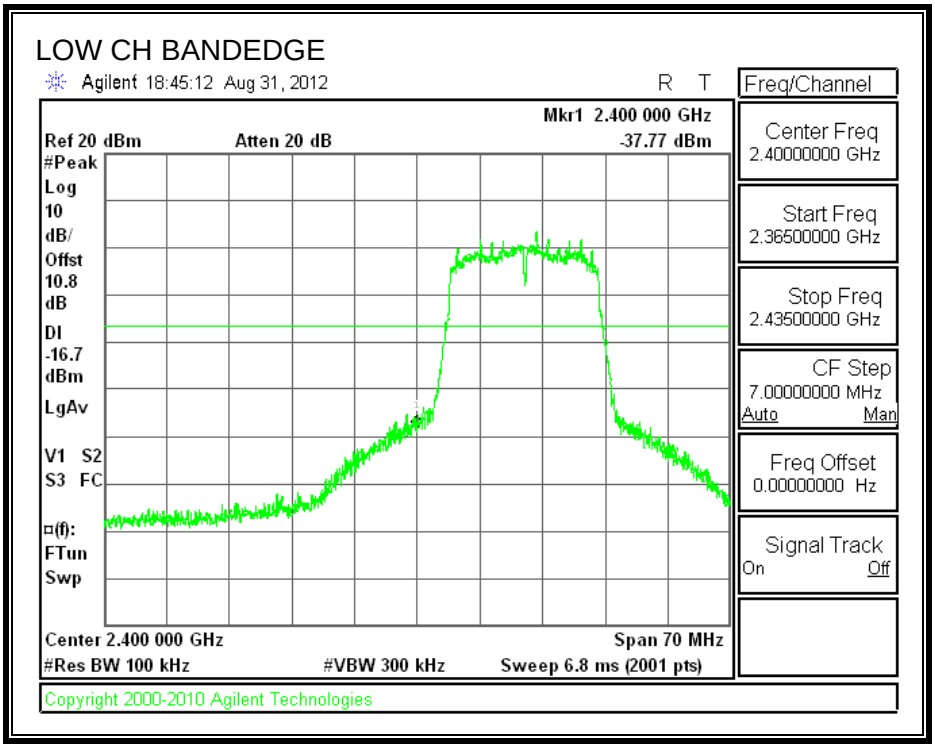
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

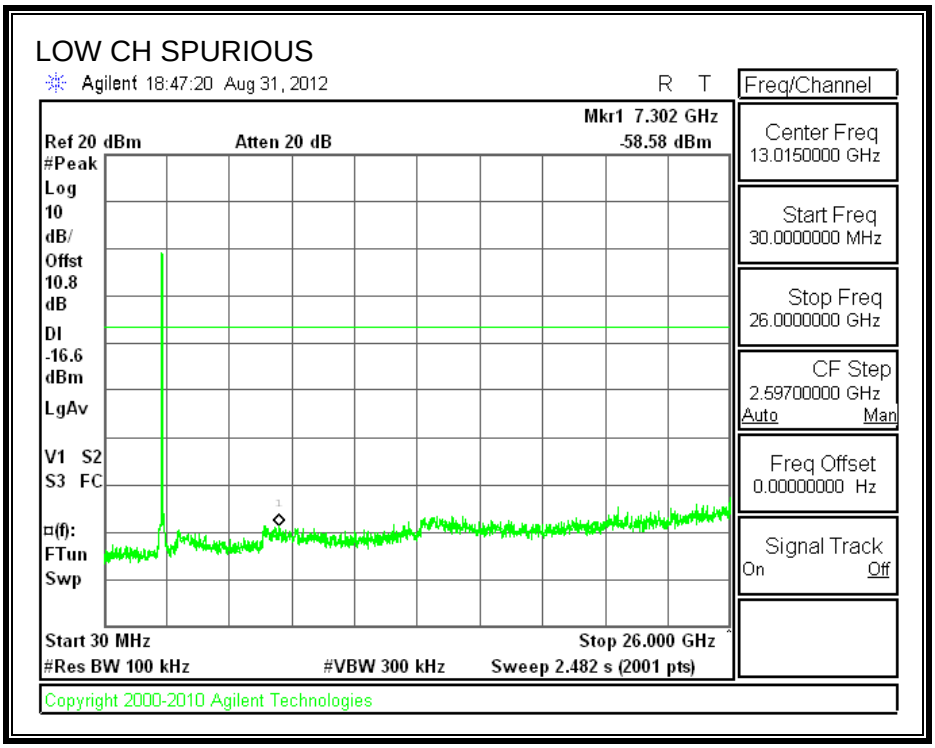
TEST PROCEDURE

KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

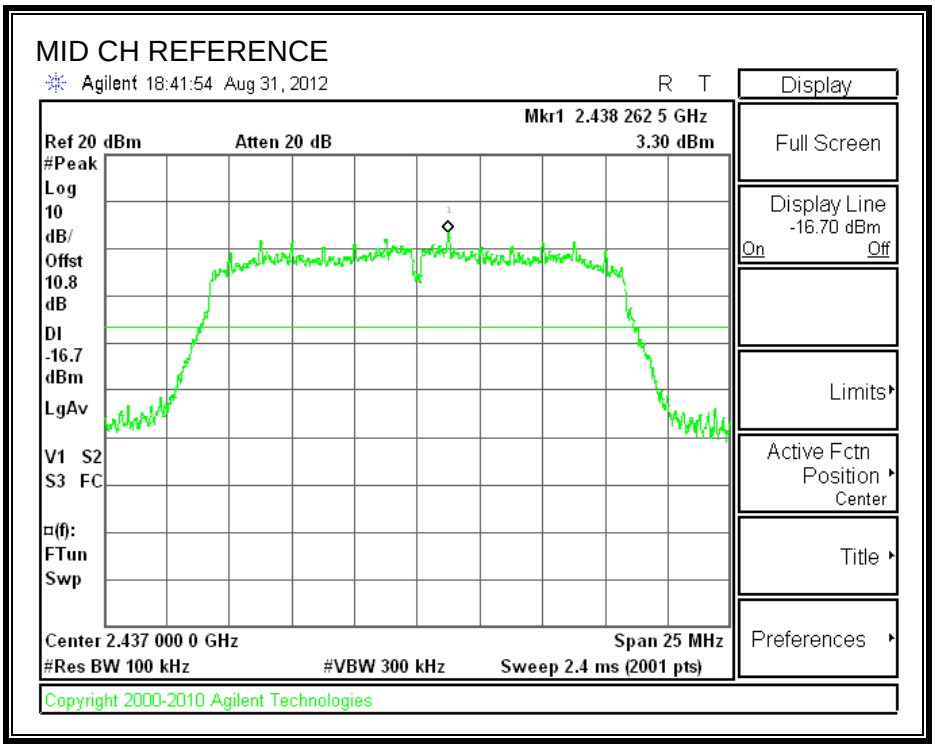
RESULTS

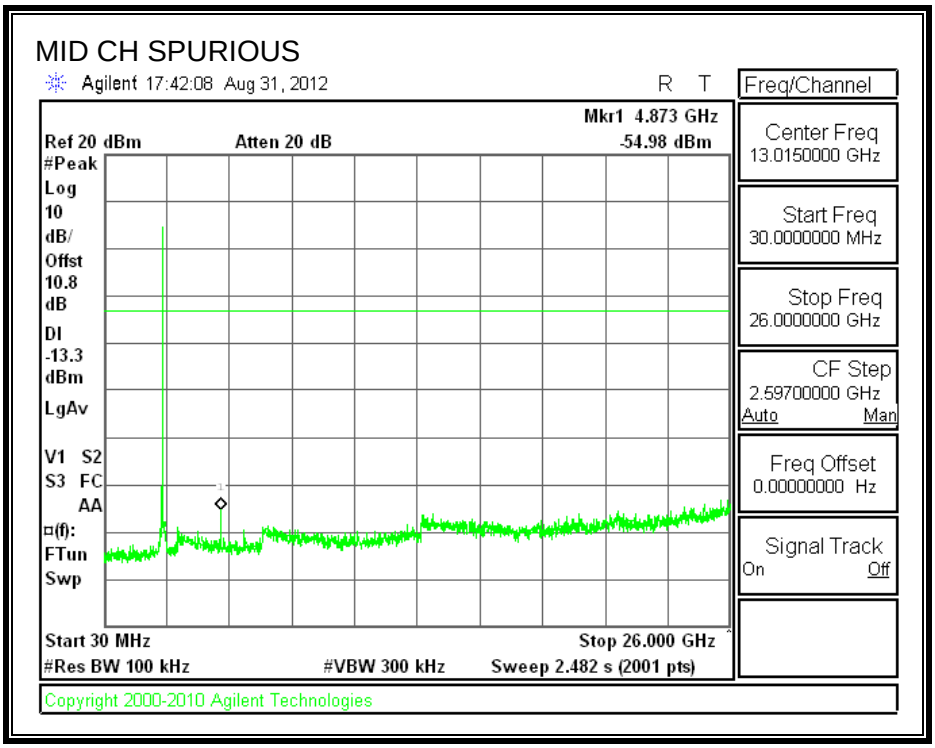
SPURIOUS EMISSIONS, LOW CHANNEL



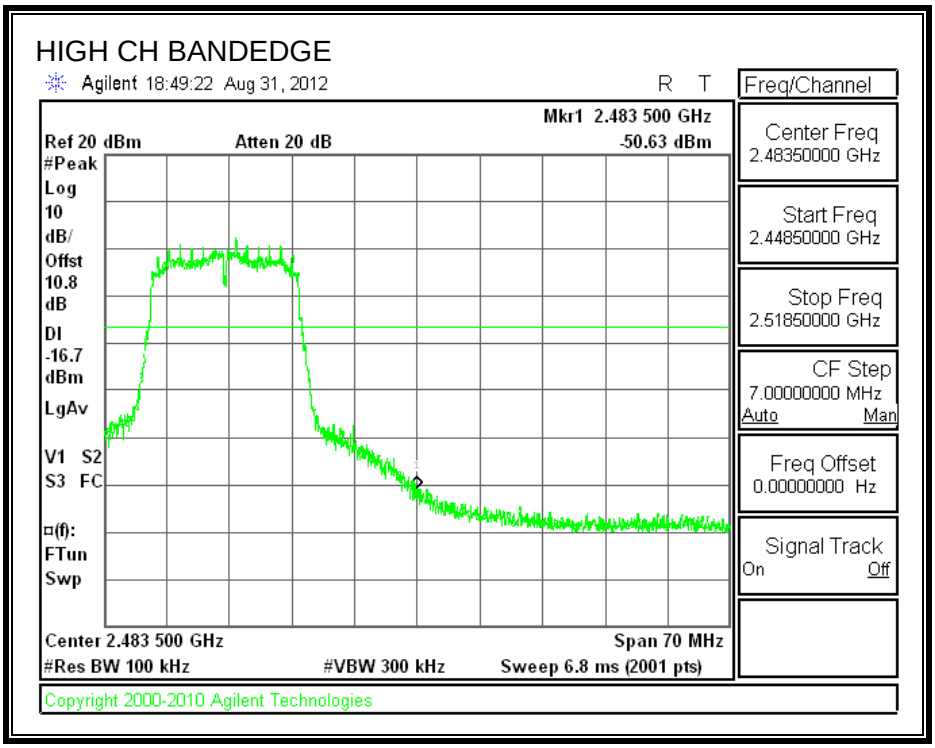


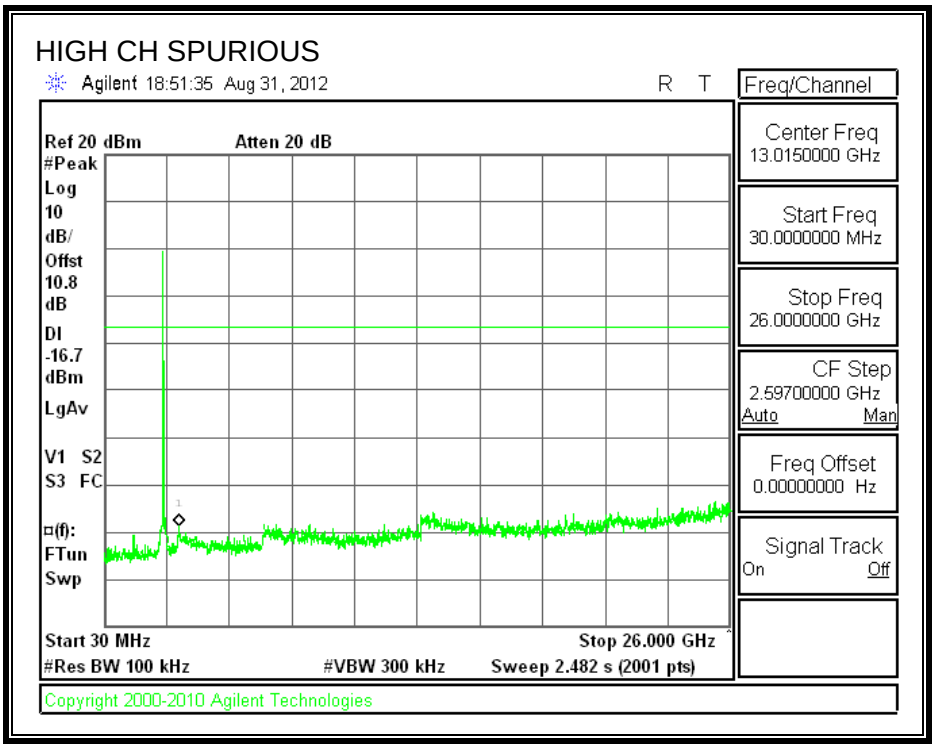
SPURIOUS EMISSIONS, MID CHANNEL





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)

IC RSS-210 A8.2 (a)

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

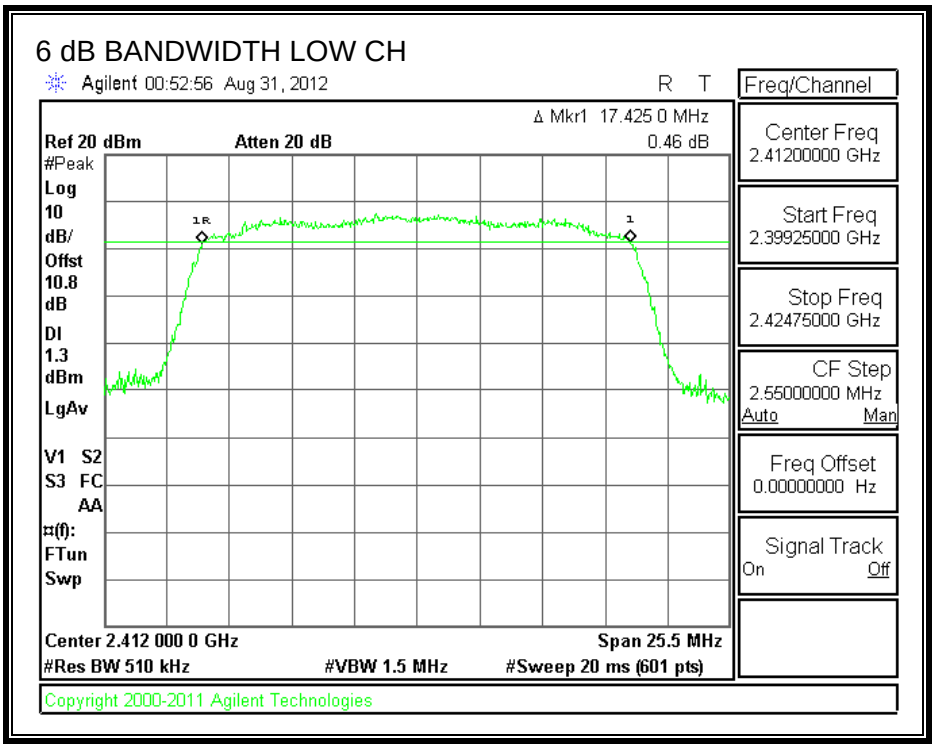
TEST PROCEDURE

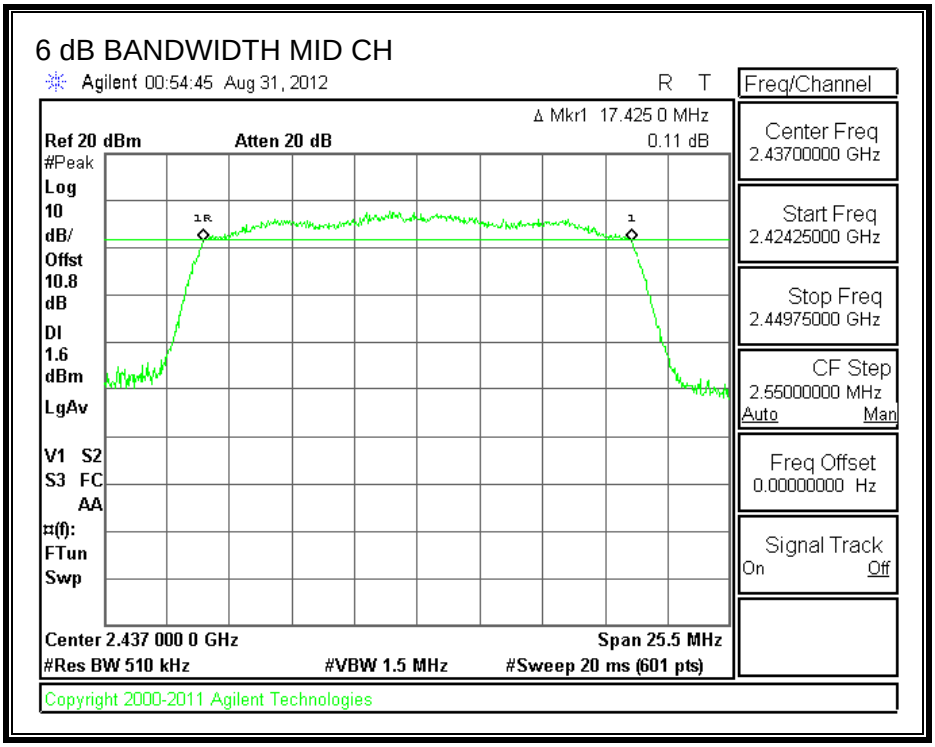
KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

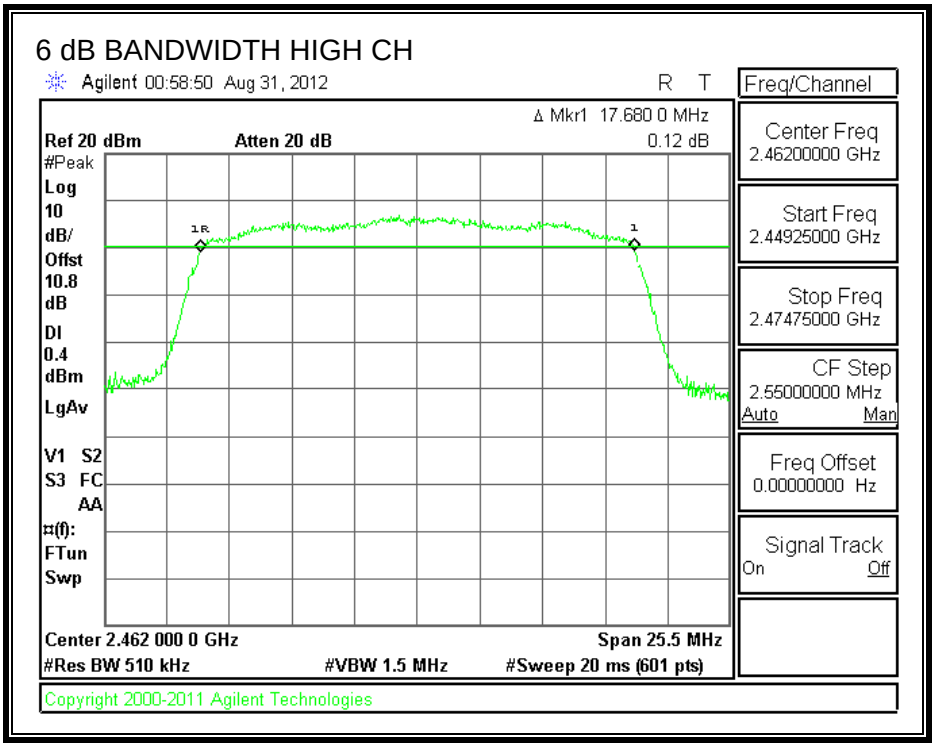
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.4250	0.5
Middle	2437	17.4250	0.5
High	2462	17.6800	0.5

6 dB BANDWIDTH







7.3.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

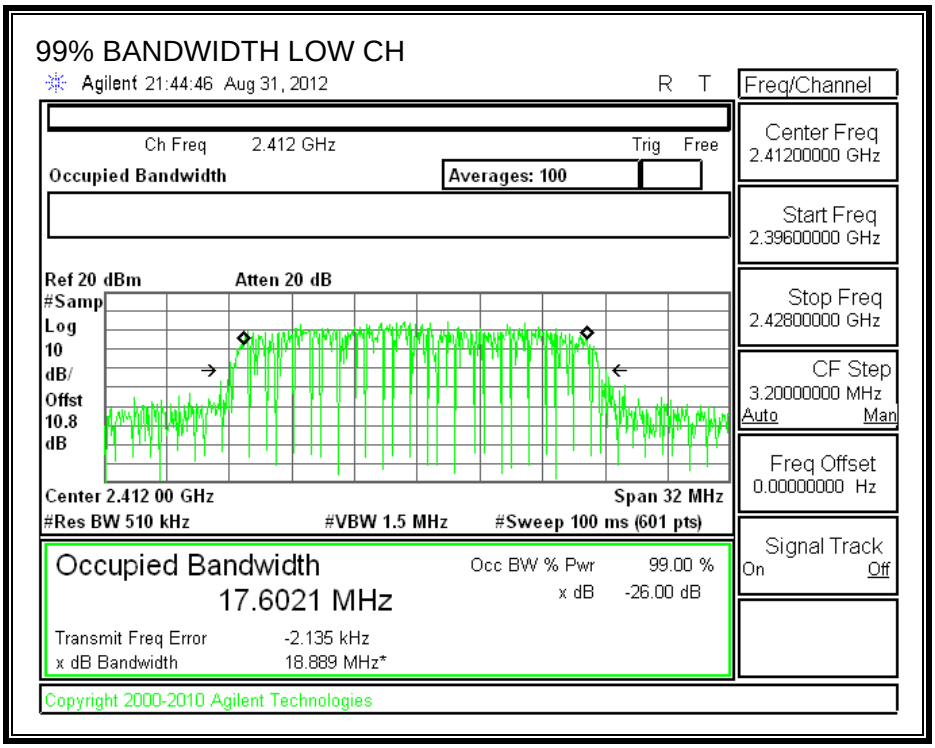
TEST PROCEDURE

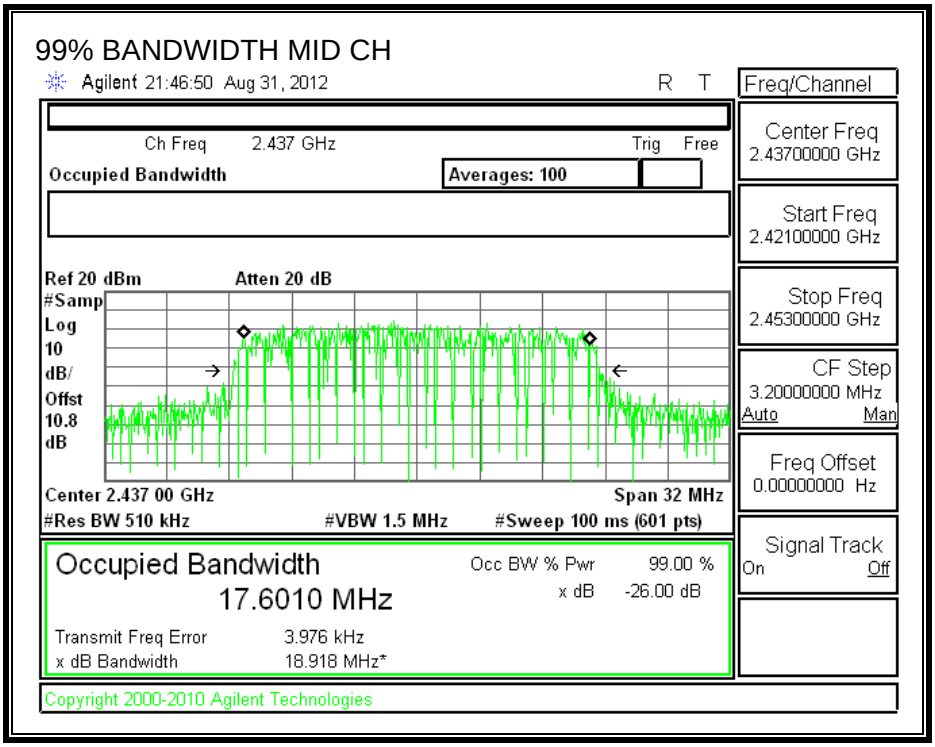
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

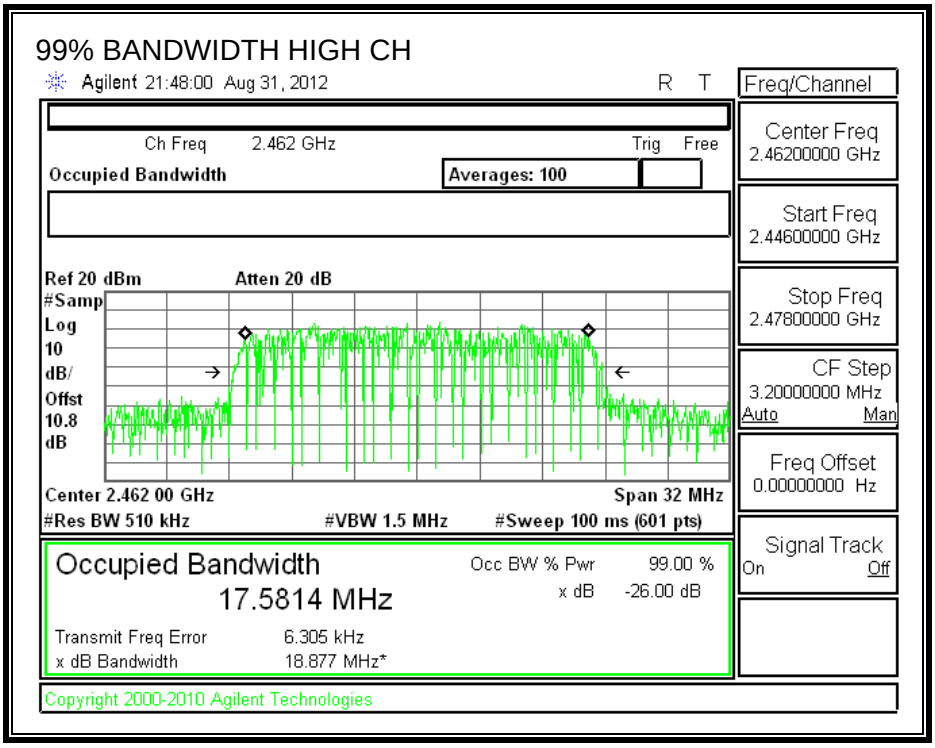
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.6021
Middle	2437	17.601
High	2462	17.5814

99% BANDWIDTH







7.3.3. 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.

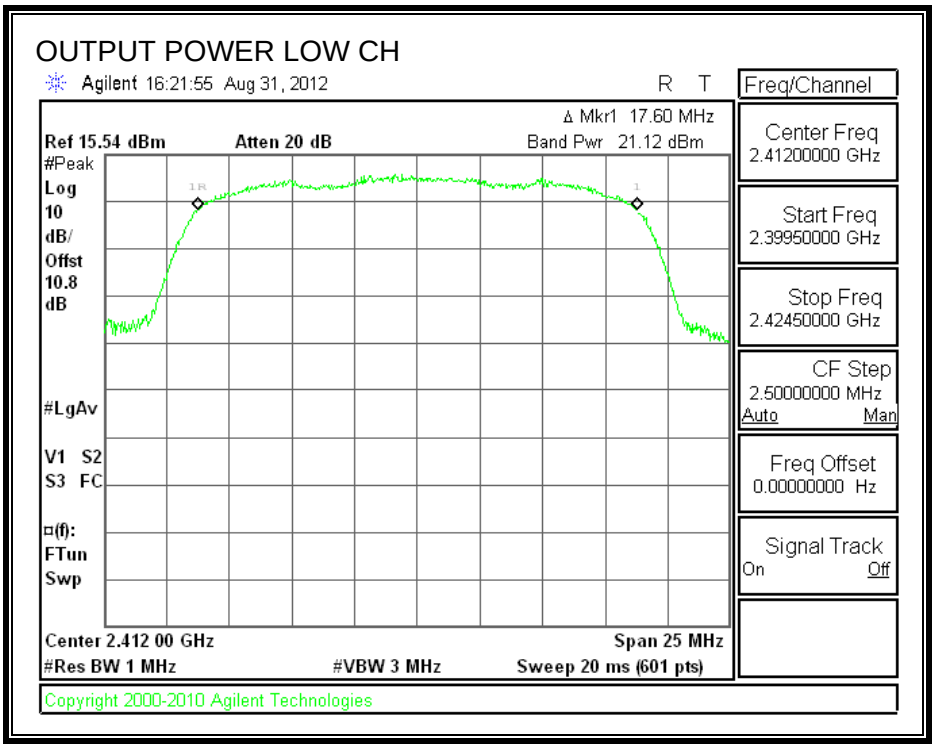
TEST PROCEDURE

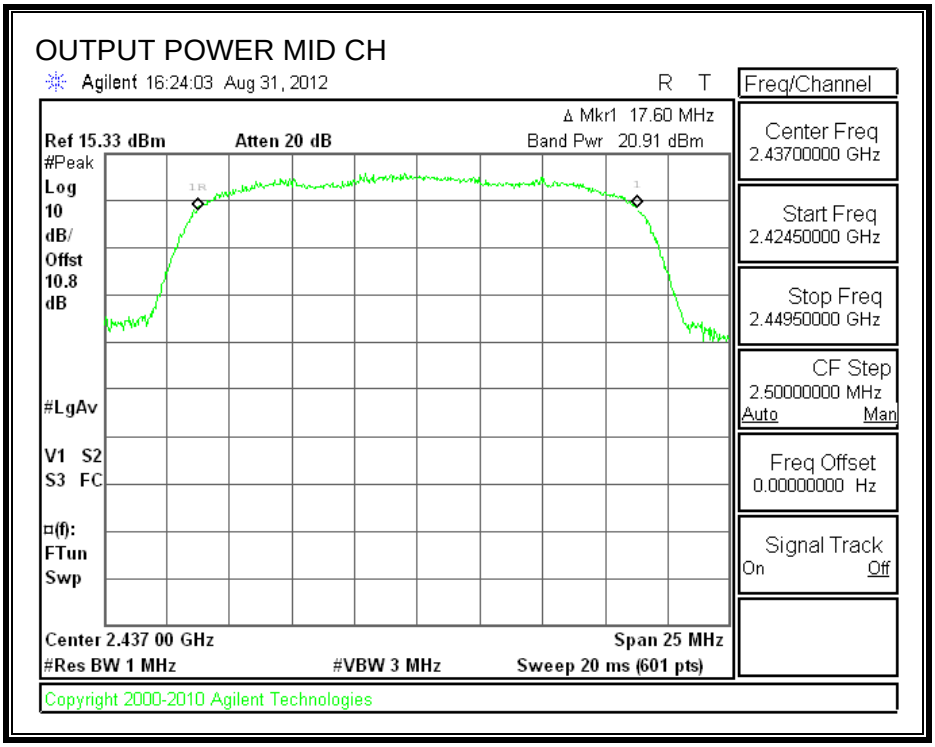
KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

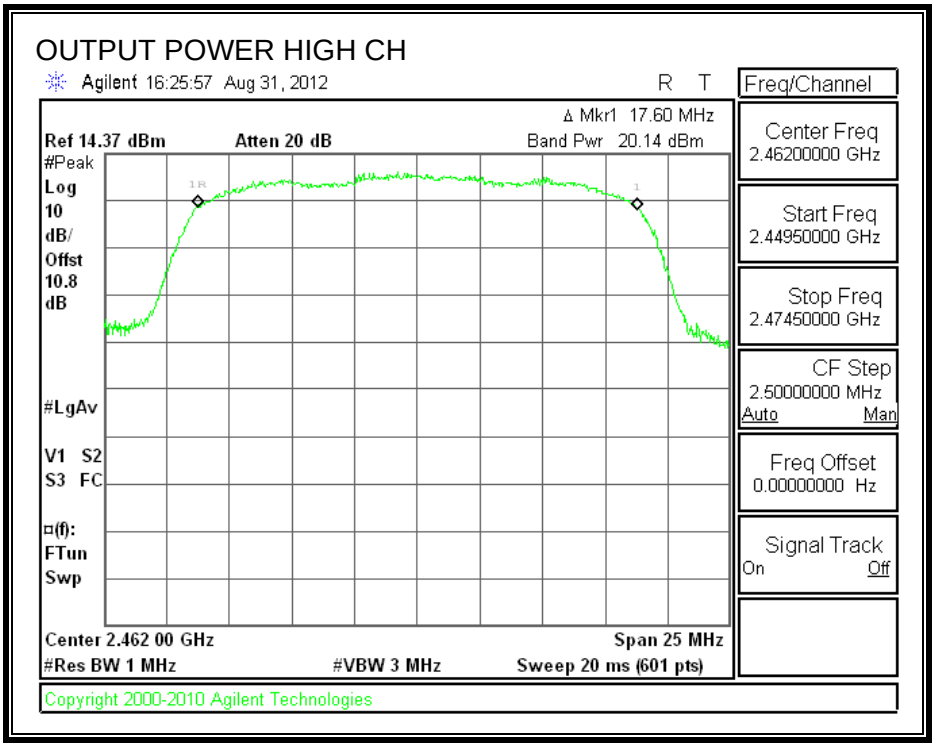
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	21.12	21.12	30	-8.88
Middle	2437	20.91	20.91	30	-9.09
High	2462	20.14	20.14	30	-9.86

OUTPUT POWER







7.3.4. 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 1.1 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	11.90
Middle	2437	11.70
High	2462	10.90

7.3.5. 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.

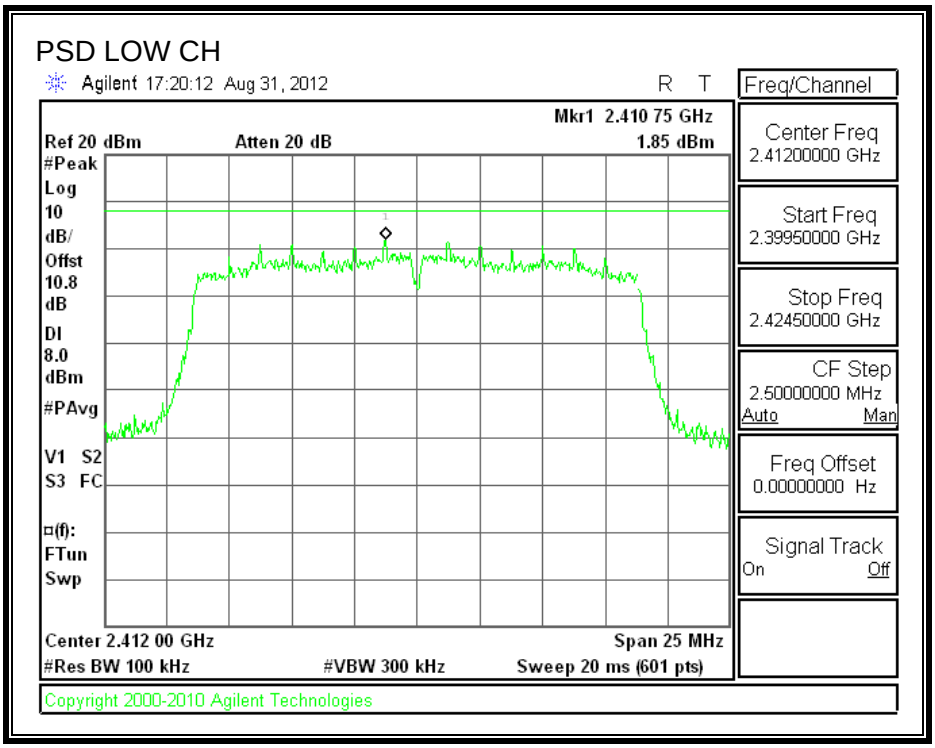
TEST PROCEDURE

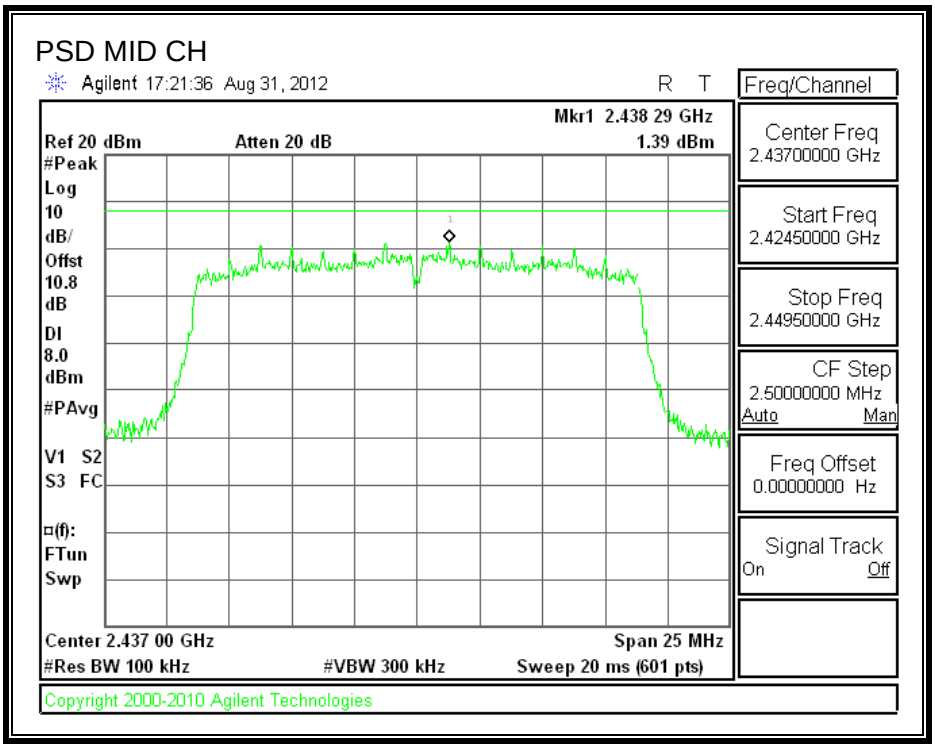
KDB 558074 D01 V01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”, dated 01/18/2012.

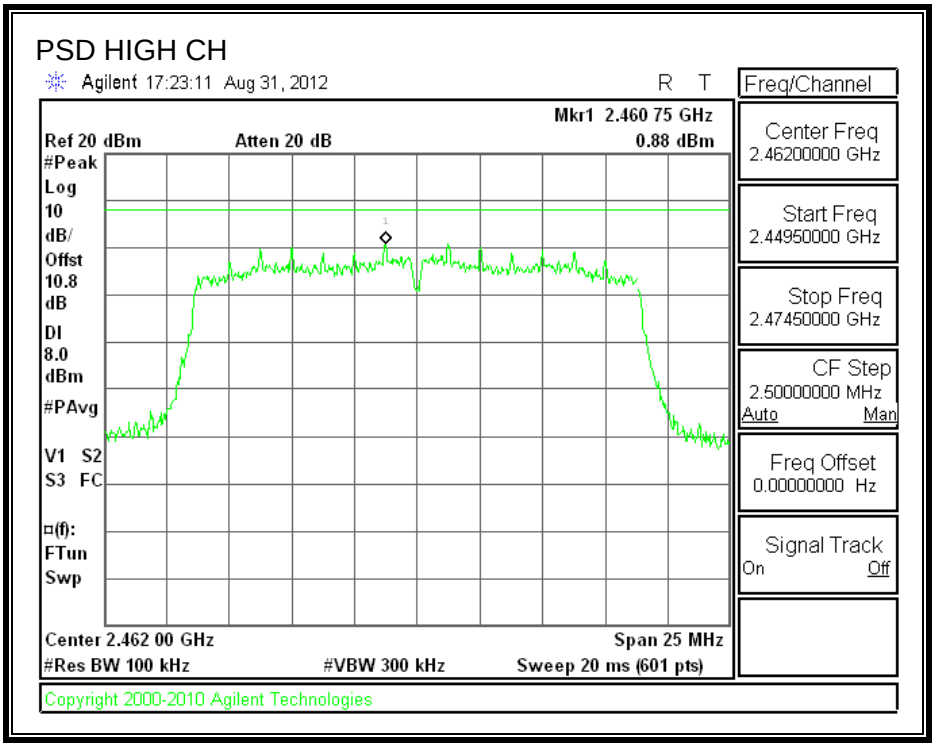
RESULTS

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	1.85	8	-6.15
Middle	2437	1.39	8	-6.61
High	2462	0.88	8	-7.12

POWER SPECTRAL DENSITY







7.3.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

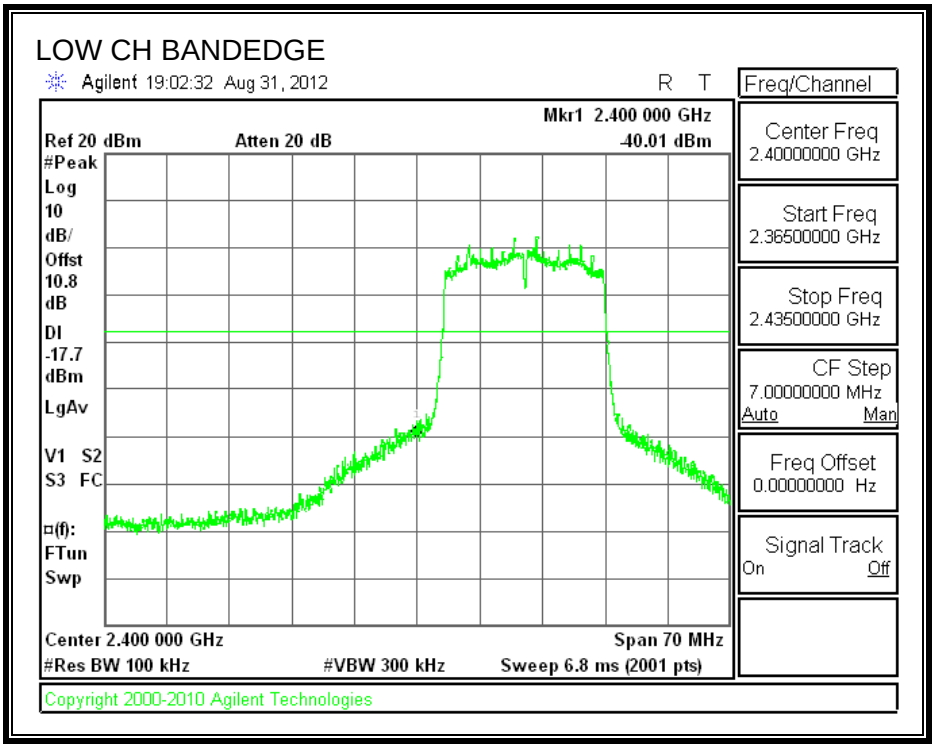
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

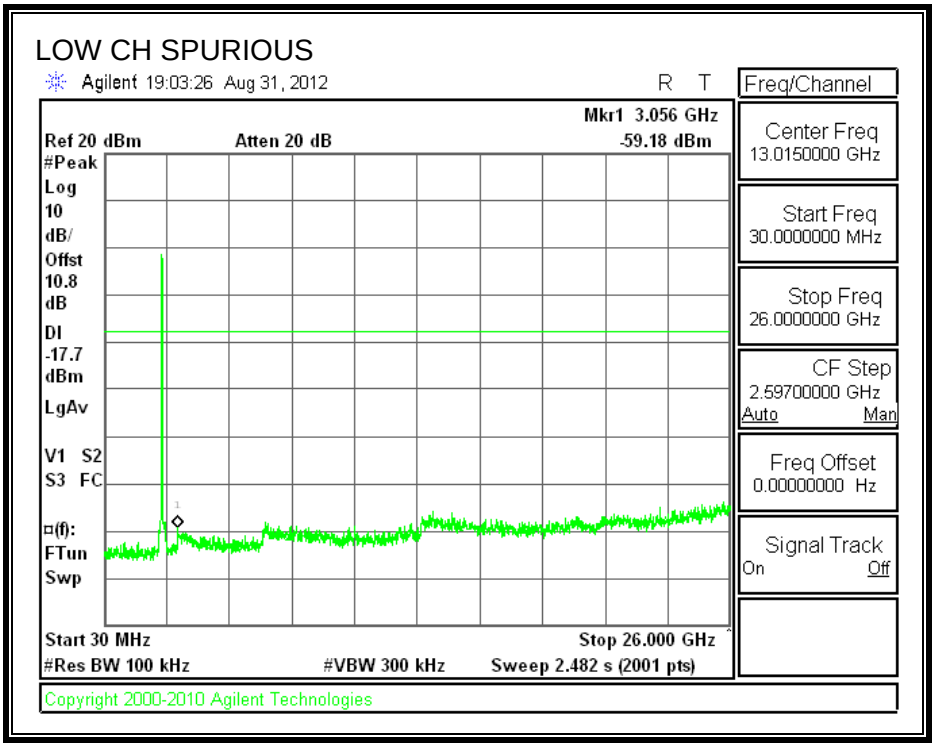
TEST PROCEDURE

KDB 558074 D01 v01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”.

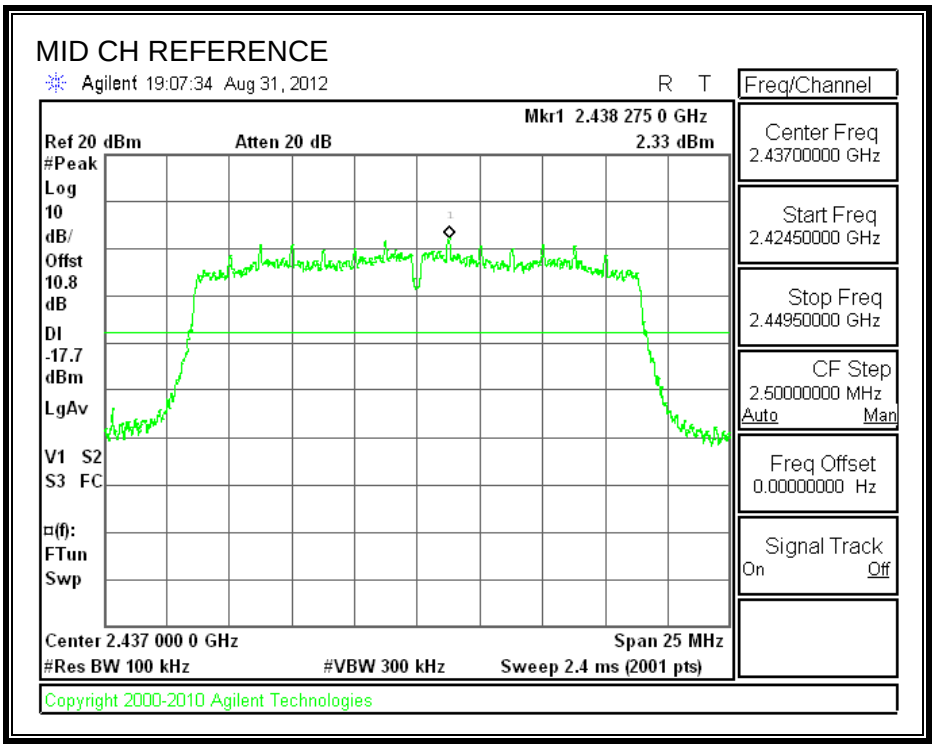
RESULTS

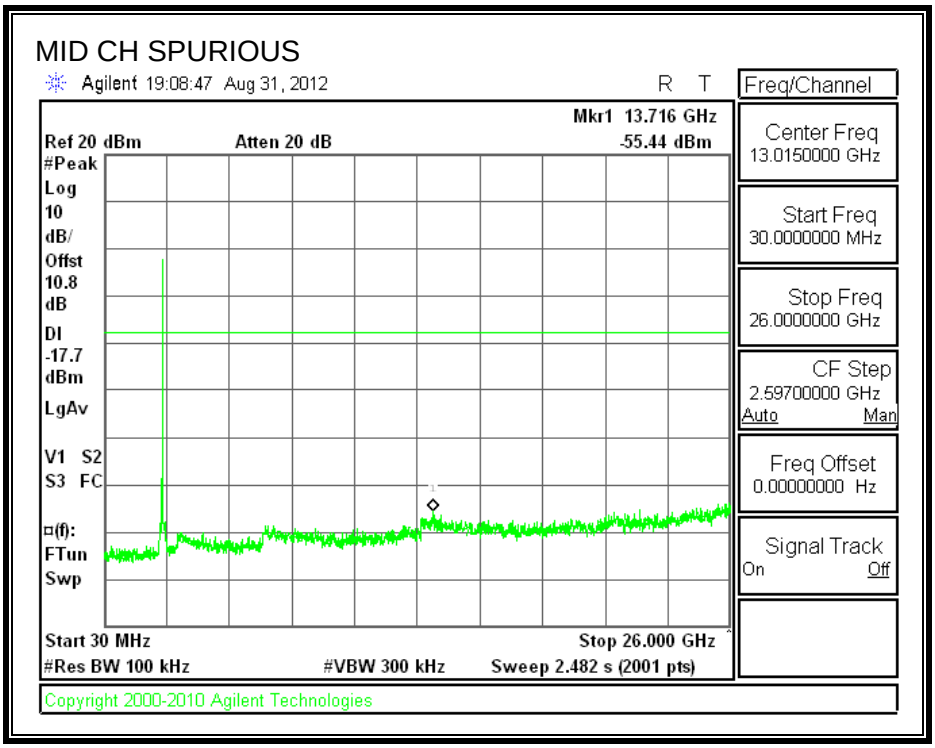
SPURIOUS EMISSIONS, LOW CHANNEL



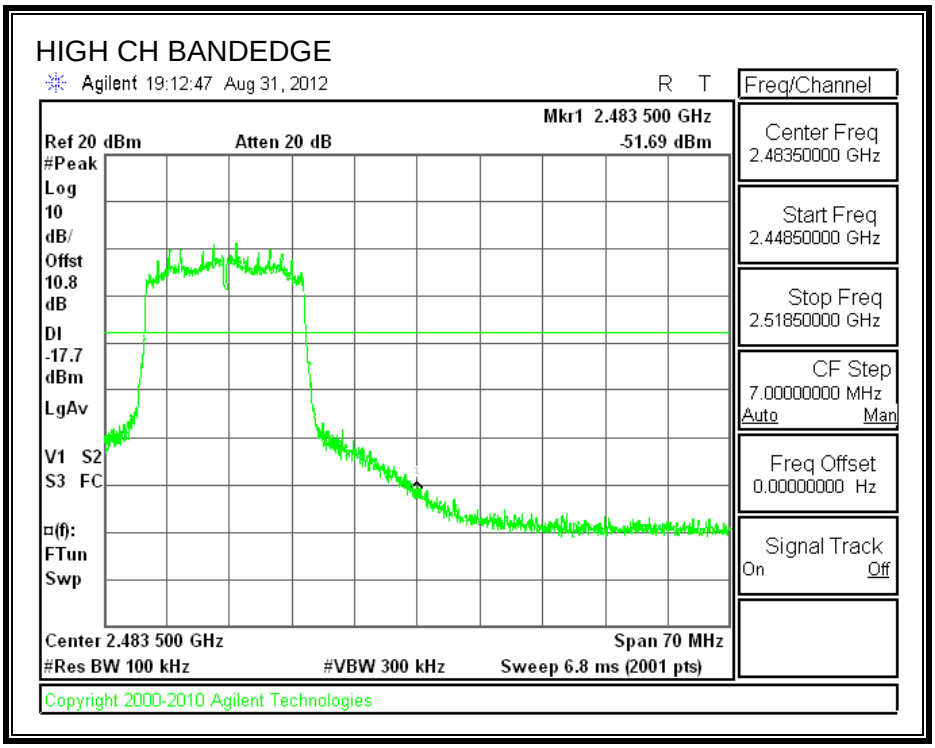


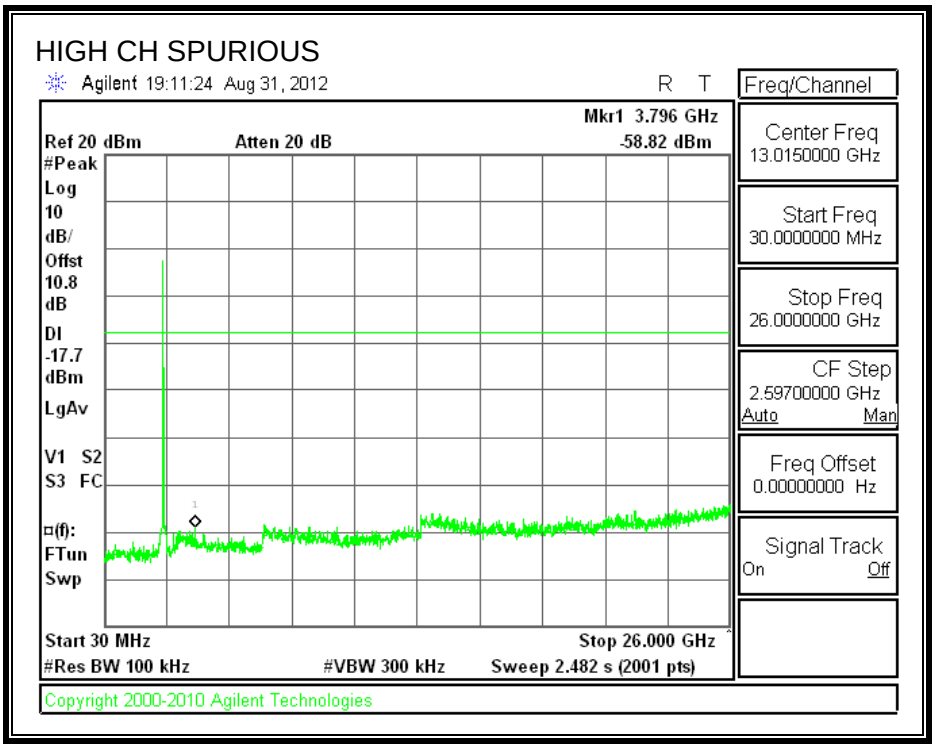
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





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.

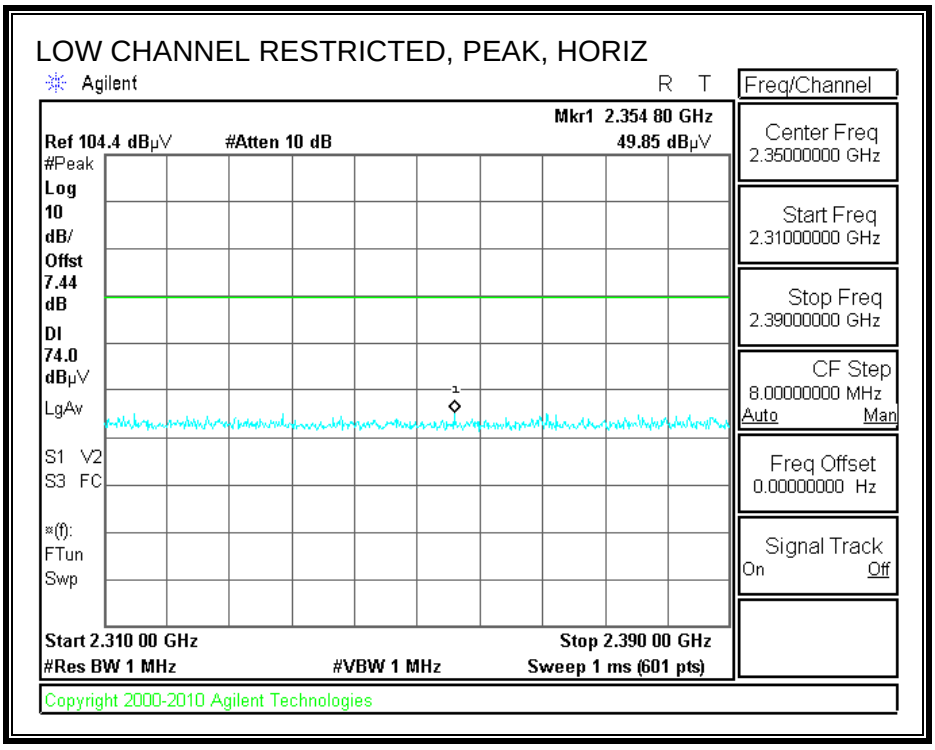
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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.

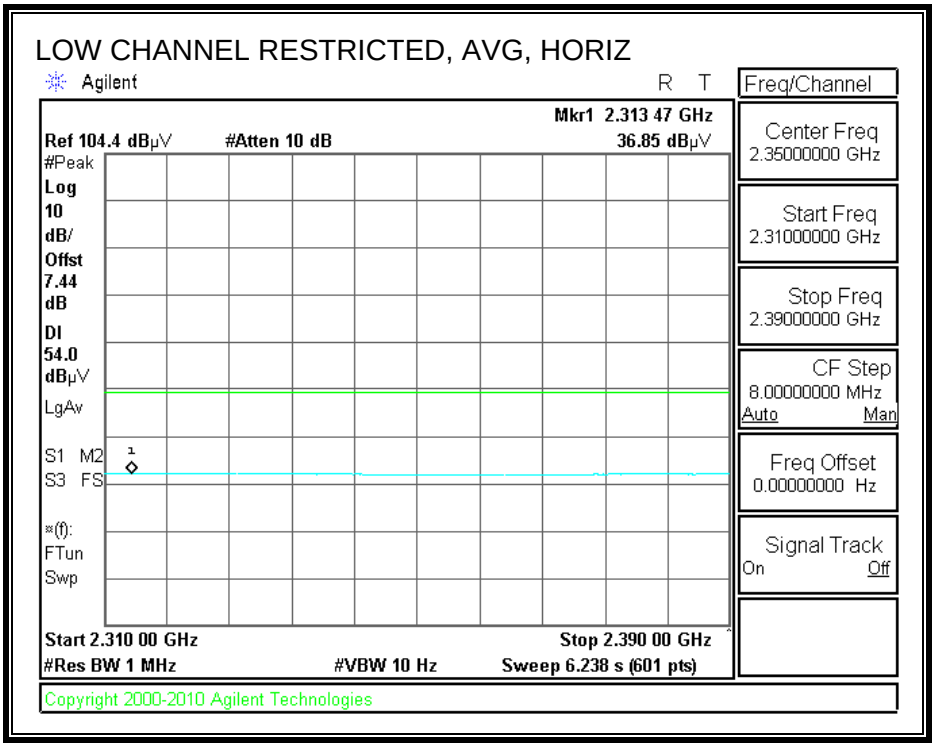
8.2. TRANSMITTER ABOVE 1 GHz

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

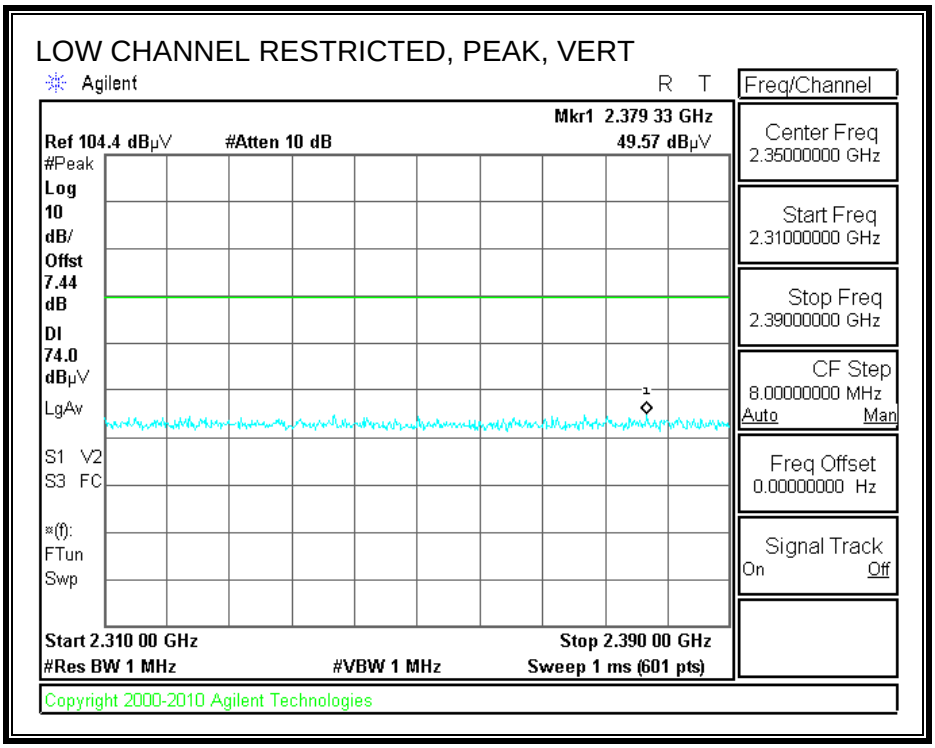
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

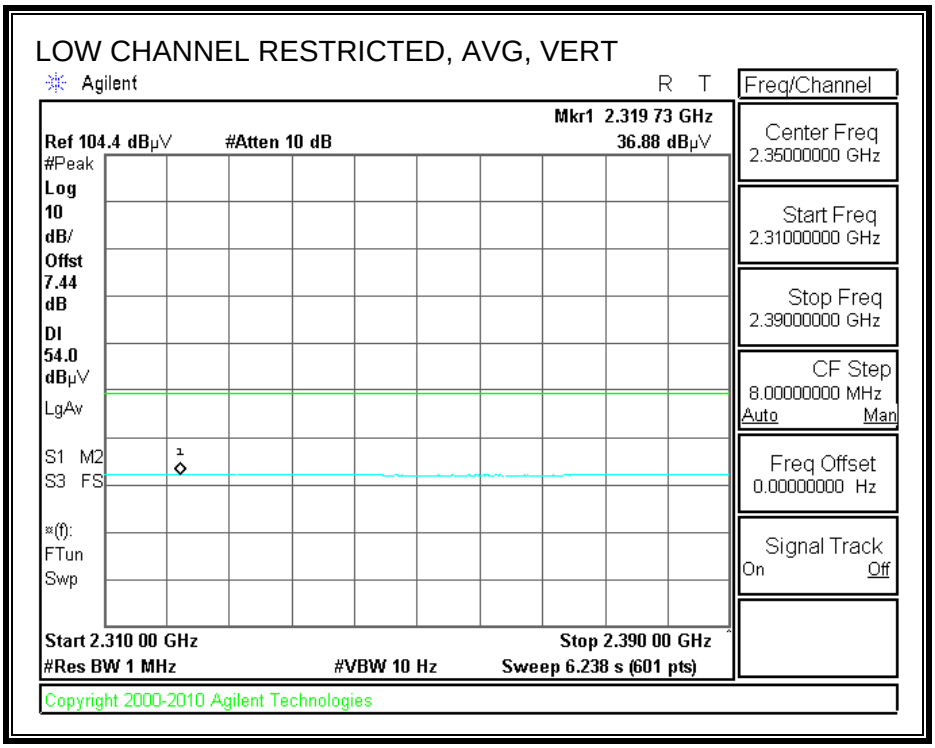


LOW CHANNEL RESTRICTED, AVG, HORIZ

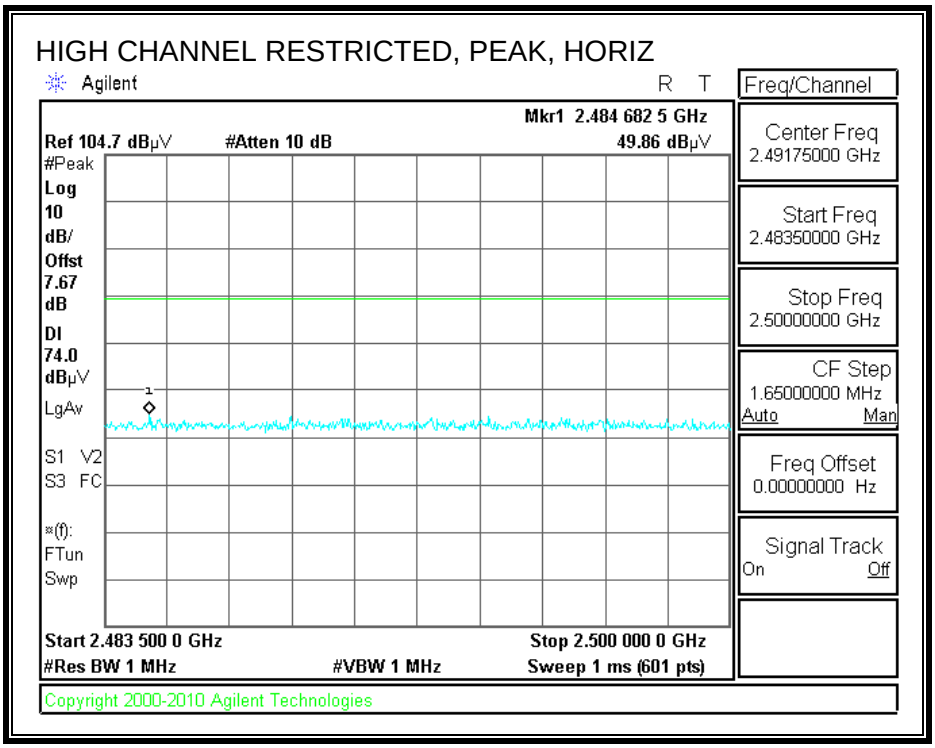


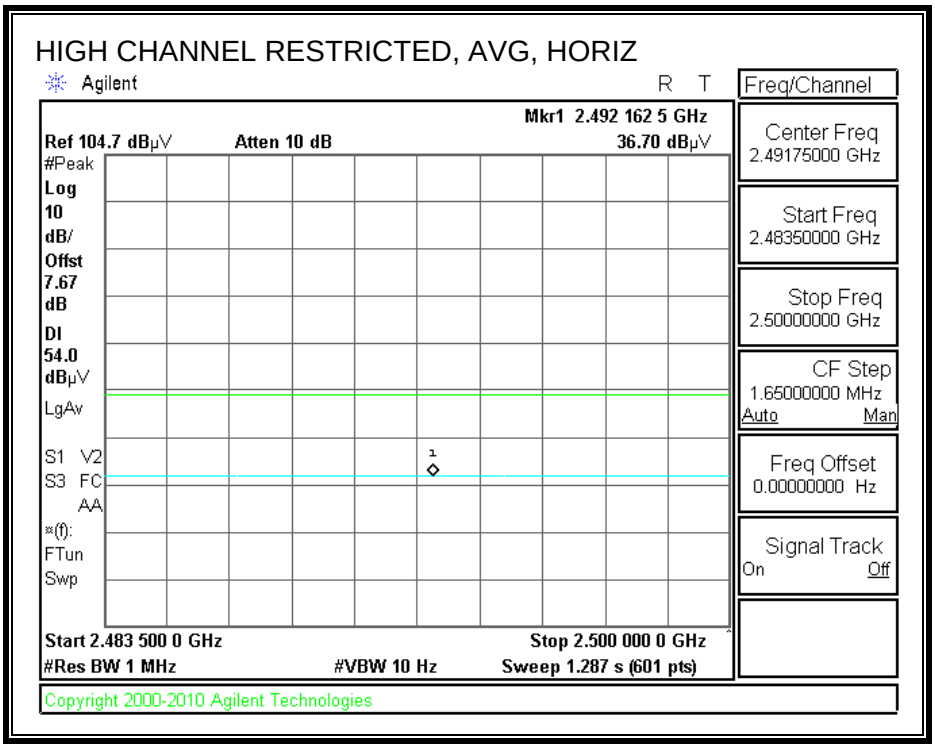
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



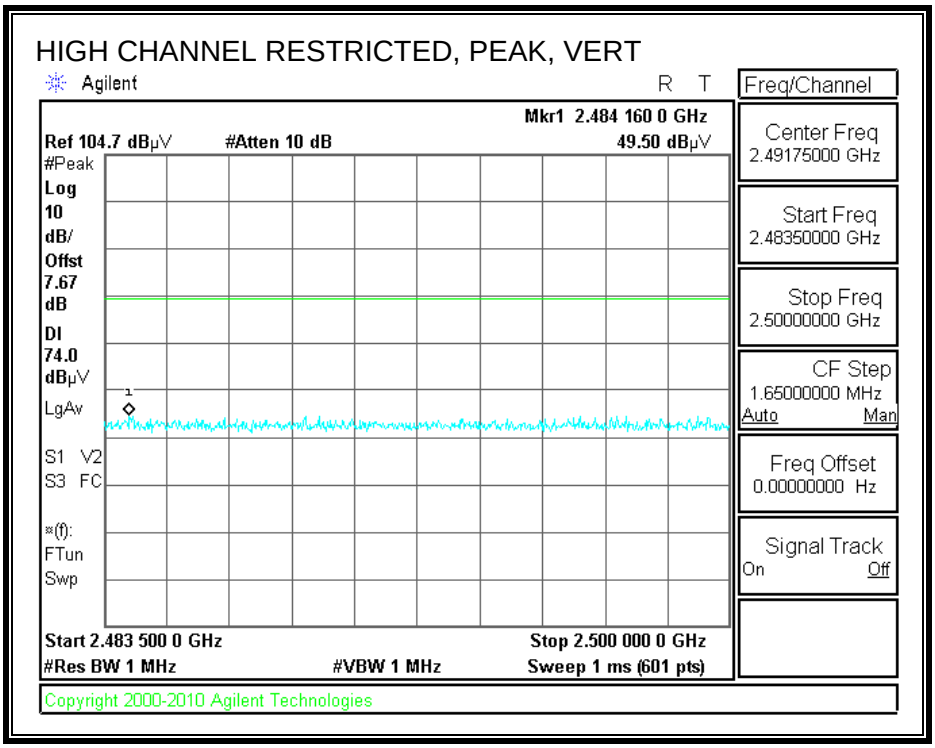


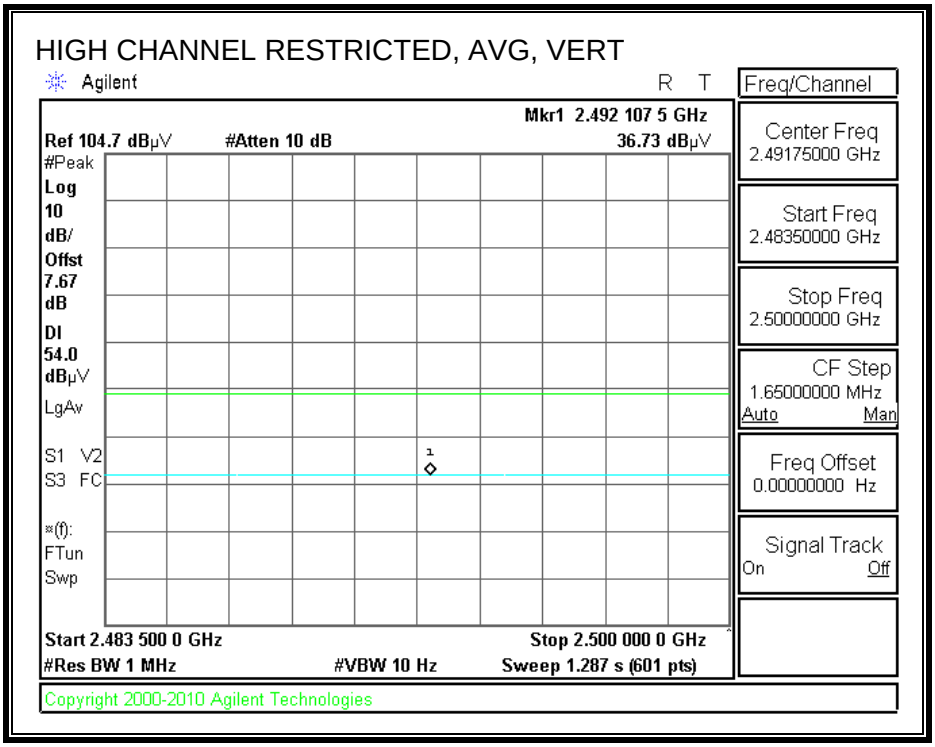
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: Samsung
Project #: 12I14597
Date: 8/29/2012
Test Engineer: S.Aguilar
Configuration: Worst Case. Adapter + Headphone
Mode: 11B Mode. 1Mbsp

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B			FCC 15.205

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW =1MHz, VBW=3MHz
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)
Low Channel (2412MHz)															
4.824	3.0	38.68	31.61	33.1	6.8	-34.1	0.0	0.0	44.5	37.5	74	54	-29.5	-16.5	H
4.824	3.0	42.52	38.08	33.1	6.8	-34.1	0.0	0.0	48.4	43.9	74	54	-25.6	-10.1	V
Mid Channel (2437MHz)															
4.874	3.0	39.22	30.90	33.2	6.8	-34.0	0.0	0.0	45.1	36.8	74	54	-28.9	-17.2	H
4.874	3.0	41.37	36.71	33.2	6.8	-34.0	0.0	0.0	47.3	42.6	74	54	-26.7	-11.4	V
7.311	3.0	35.48	22.70	36.3	9.1	-33.1	0.0	0.0	47.8	35.0	74	54	-26.2	-19.0	H
7.311	3.0	35.58	23.54	36.3	9.1	-33.1	0.0	0.0	47.9	35.8	74	54	-26.1	-18.2	V
High Channel (2462MHz)															
4.924	3.0	38.46	30.02	33.2	6.8	-34.0	0.0	0.0	44.5	36.0	74	54	-29.5	-18.0	H
4.924	3.0	42.37	37.73	33.2	6.8	-34.0	0.0	0.0	48.4	43.7	74	54	-25.6	-10.3	V

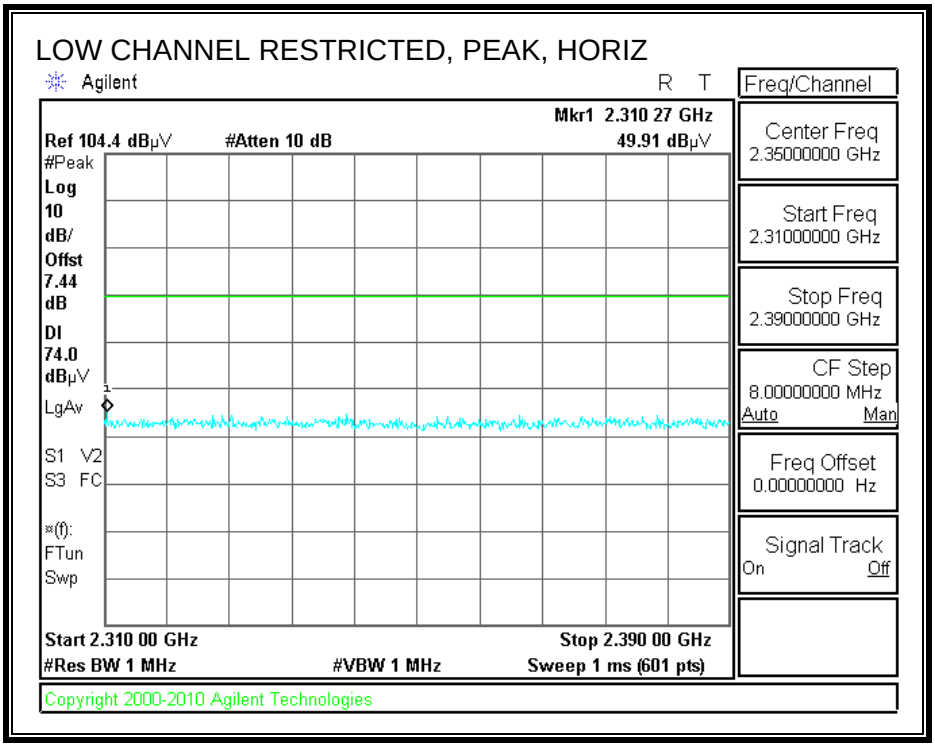
Rev. 11.10.11

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

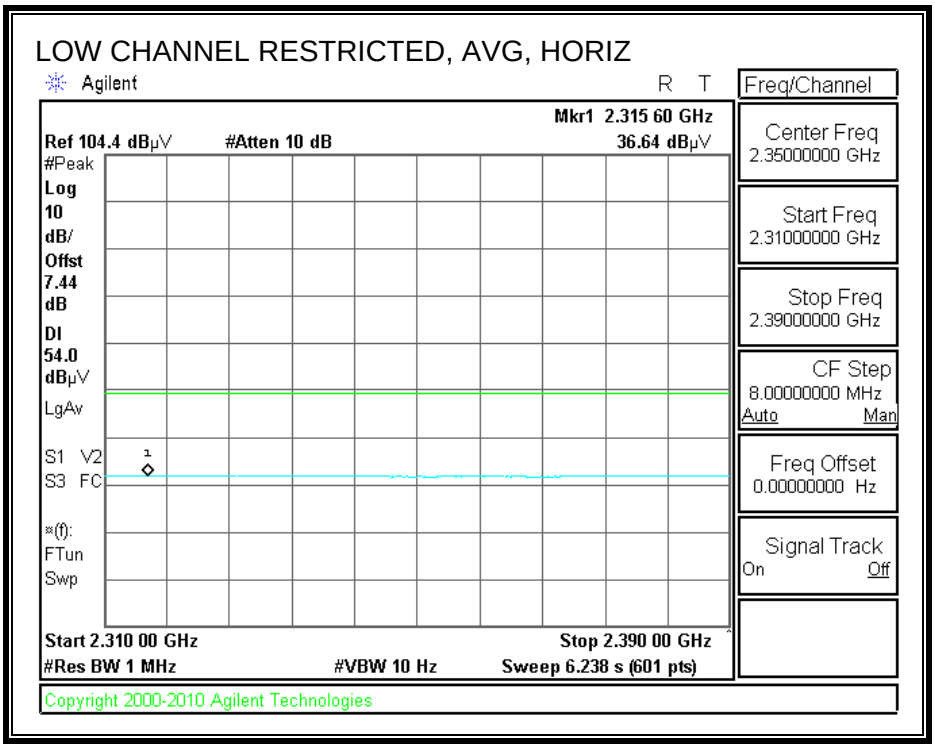
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field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

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

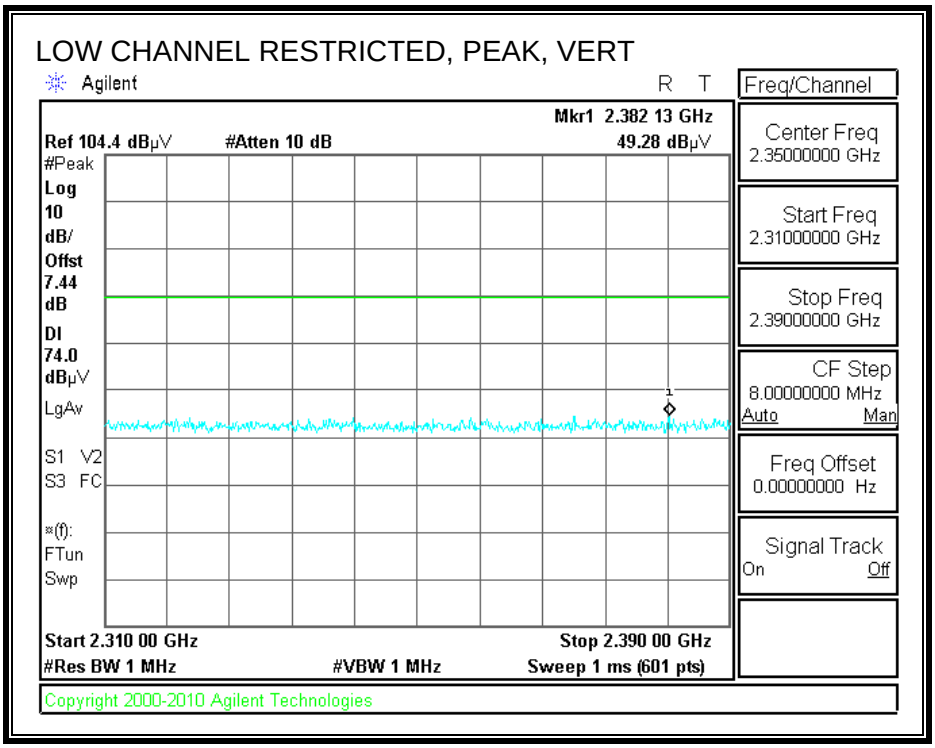
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



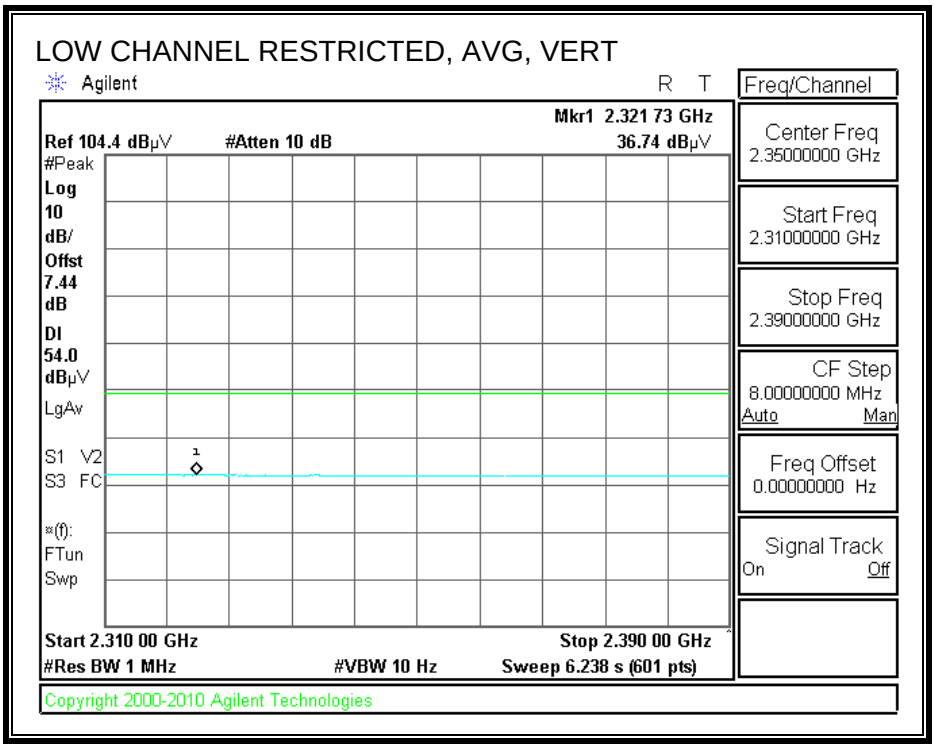
LOW CHANNEL RESTRICTED, AVG, HORIZ



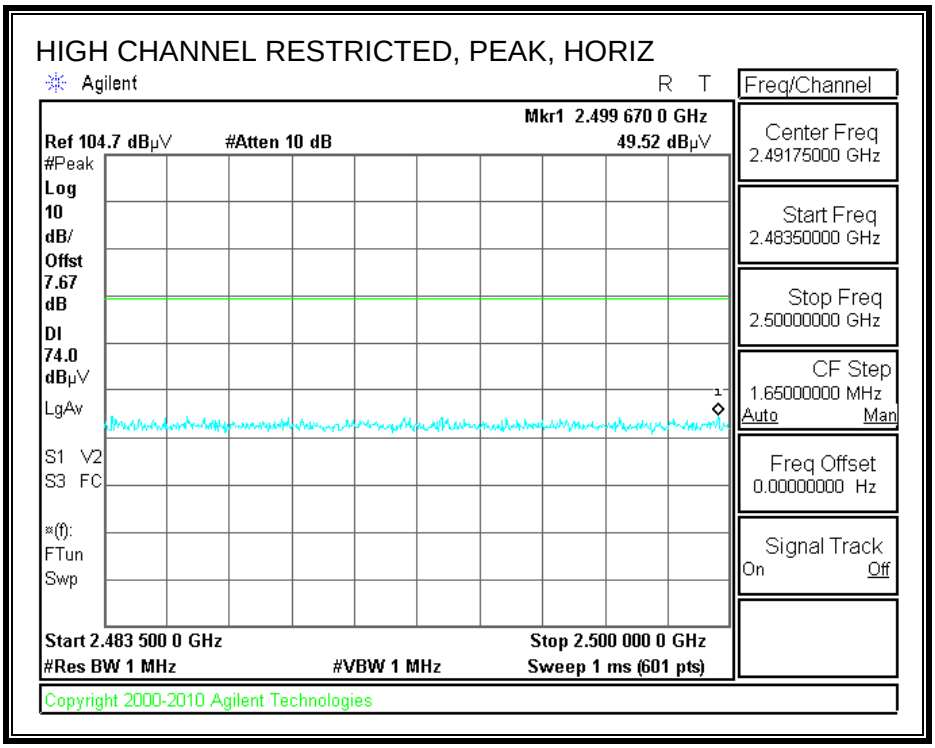
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



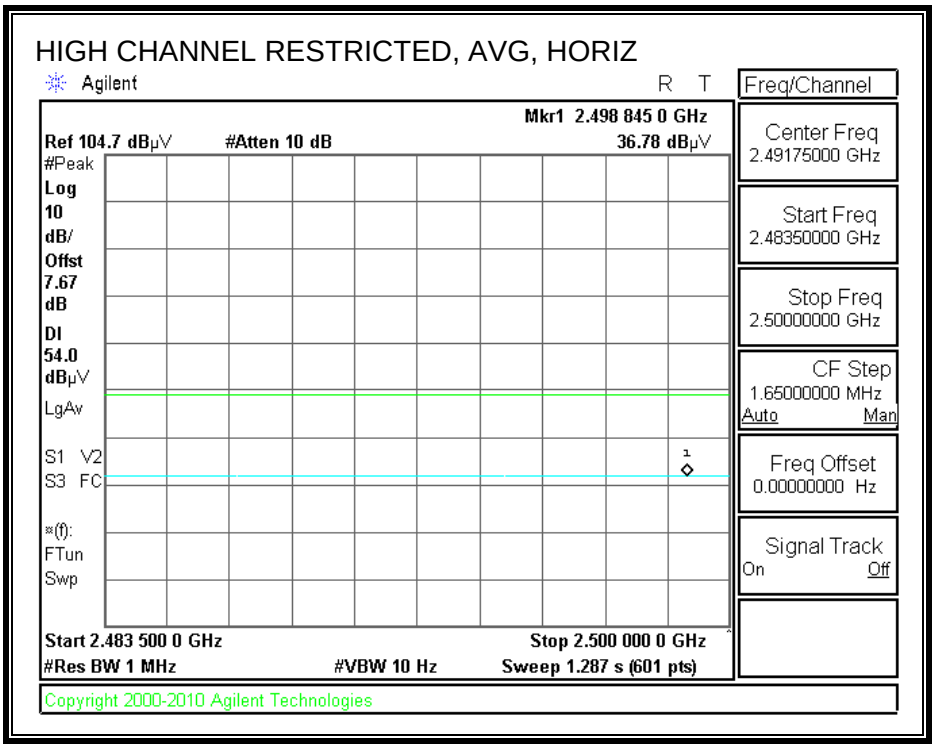
LOW CHANNEL RESTRICTED, AVG, VERT



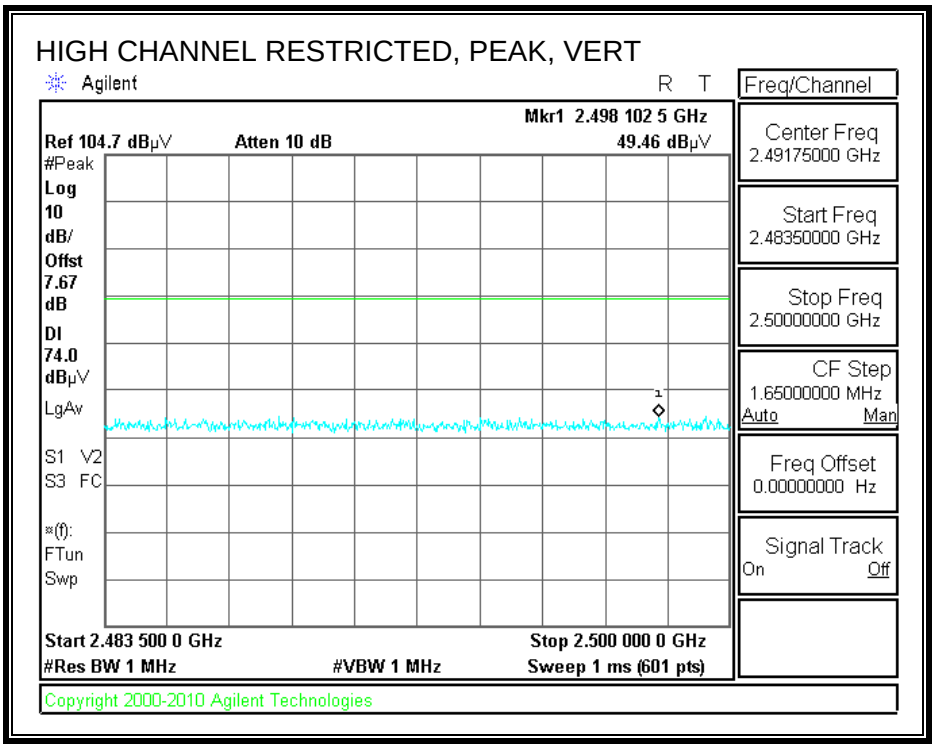
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



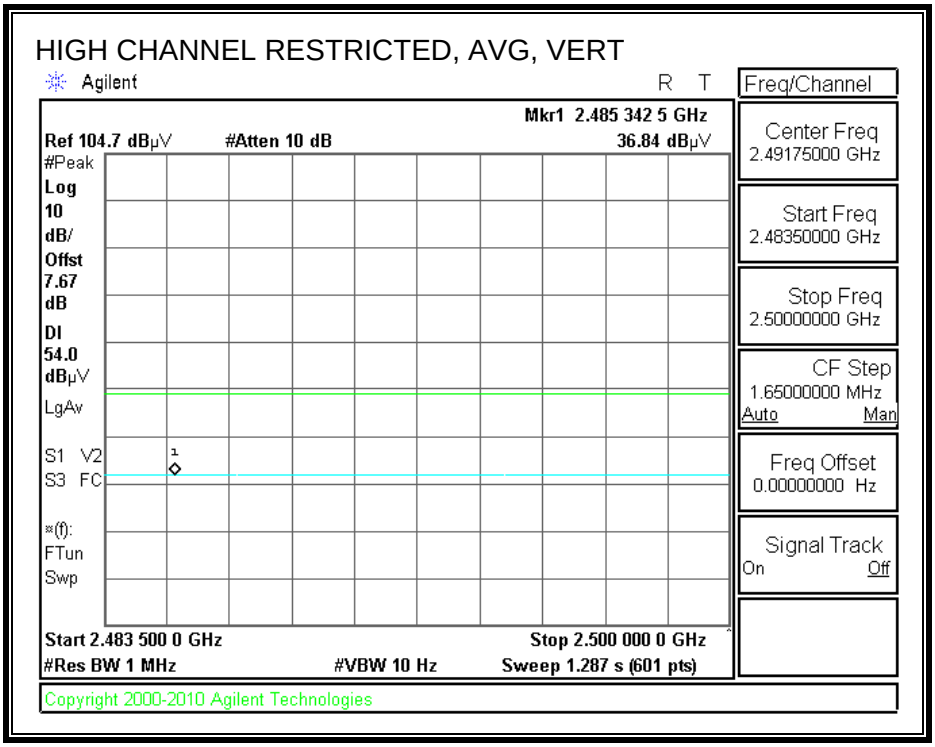
HIGH CHANNEL RESTRICTED, AVG, HORIZ



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



HIGH CHANNEL RESTRICTED, AVG, VERT



HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: Samsung
Project #: 12I14597
Date: 8/29/2012
Test Engineer: S.Aguilar
Configuration: Worst Case. Adapter + Headphone
Mode: 11G Mode. 6Mbsp

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B			FCC 15.205

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW =1MHz, VBW=3MHz
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)
Low Channel (2412MHz)															
4.824	3.0	37.19	24.58	33.1	6.8	-34.1	0.0	0.0	43.0	30.4	74	54	-31.0	-23.6	H
4.824	3.0	40.77	28.22	33.1	6.8	-34.1	0.0	0.0	46.6	34.1	74	54	-27.4	-19.9	V
Mid Channel (2437MHz)															
4.874	3.0	37.20	24.03	33.2	6.8	-34.0	0.0	0.0	43.1	30.0	74	54	-30.9	-24.0	H
4.874	3.0	41.44	27.88	33.2	6.8	-34.0	0.0	0.0	47.4	33.8	74	54	-26.6	-20.2	V
High Channel (2462MHz)															
4.924	3.0	36.31	23.41	33.2	6.8	-34.0	0.0	0.0	42.3	29.4	74	54	-31.7	-24.6	H
4.924	3.0	38.71	26.55	33.2	6.8	-34.0	0.0	0.0	44.7	32.6	74	54	-29.3	-21.4	V

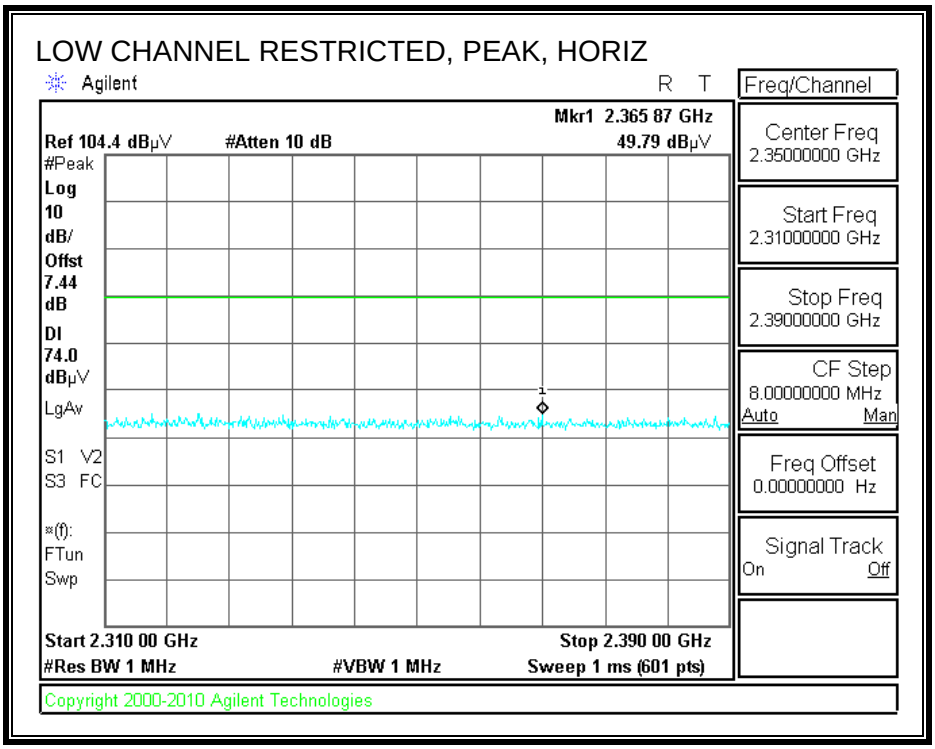
Rev. 11.10.11

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

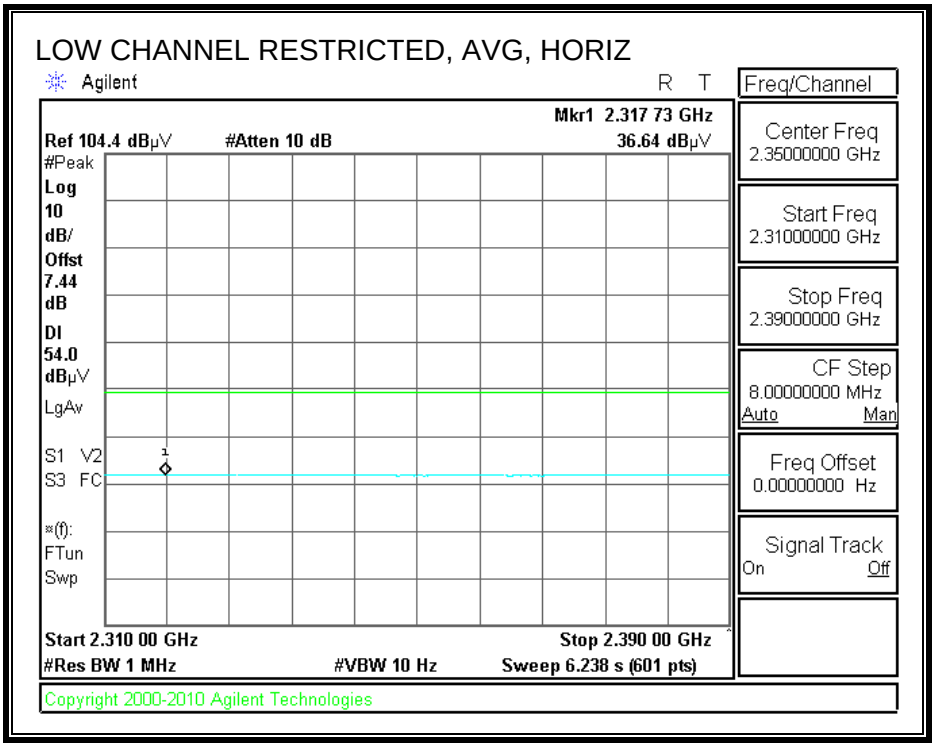
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field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

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

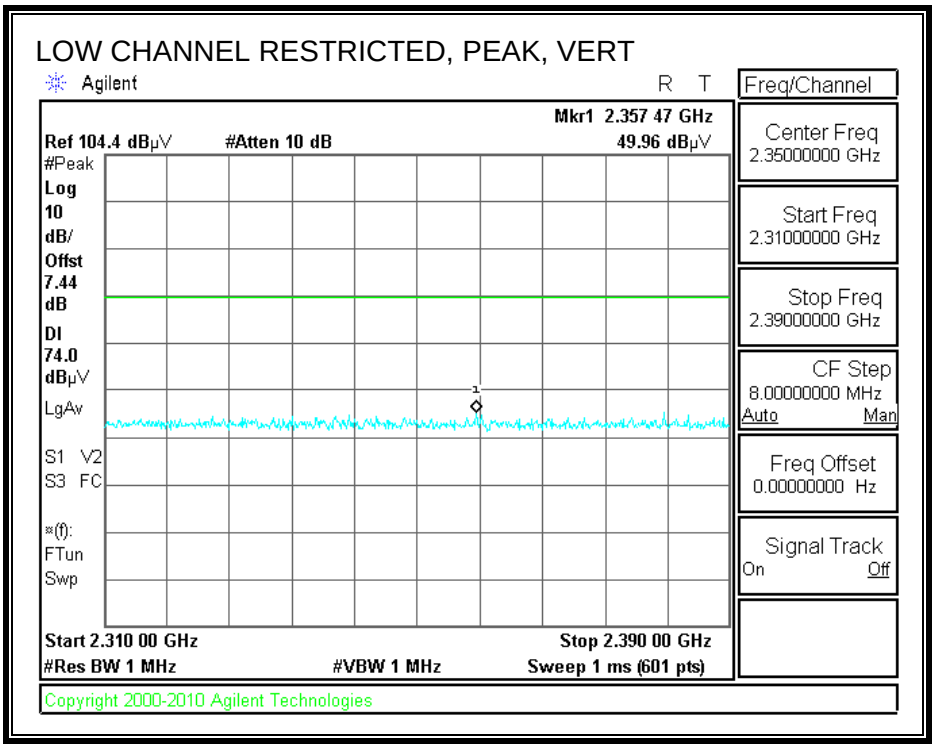
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



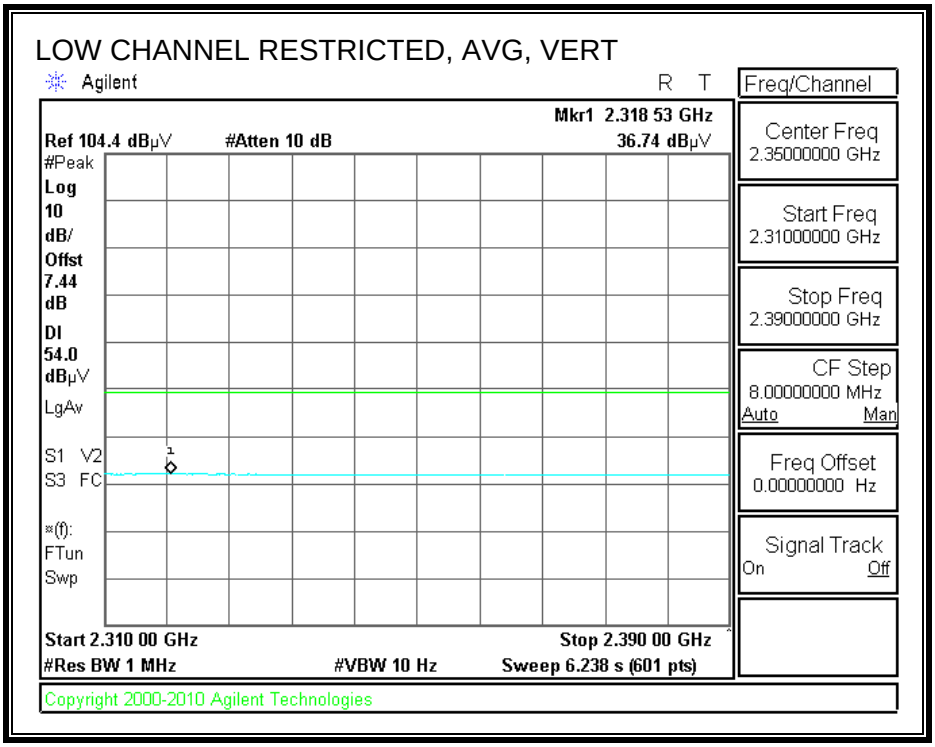
LOW CHANNEL RESTRICTED, AVG, HORIZ



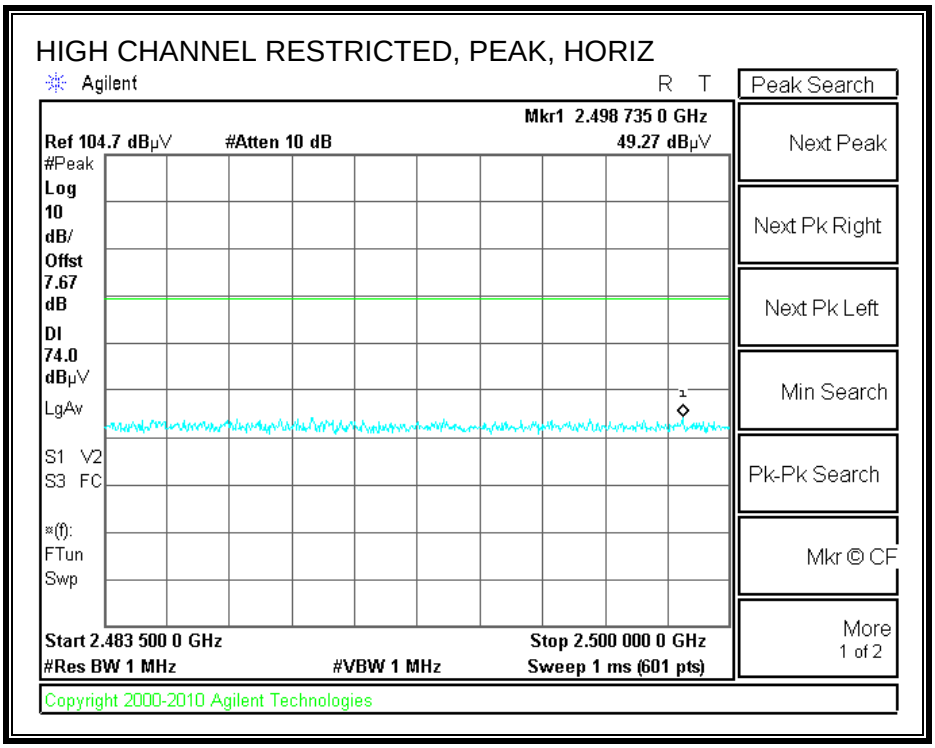
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



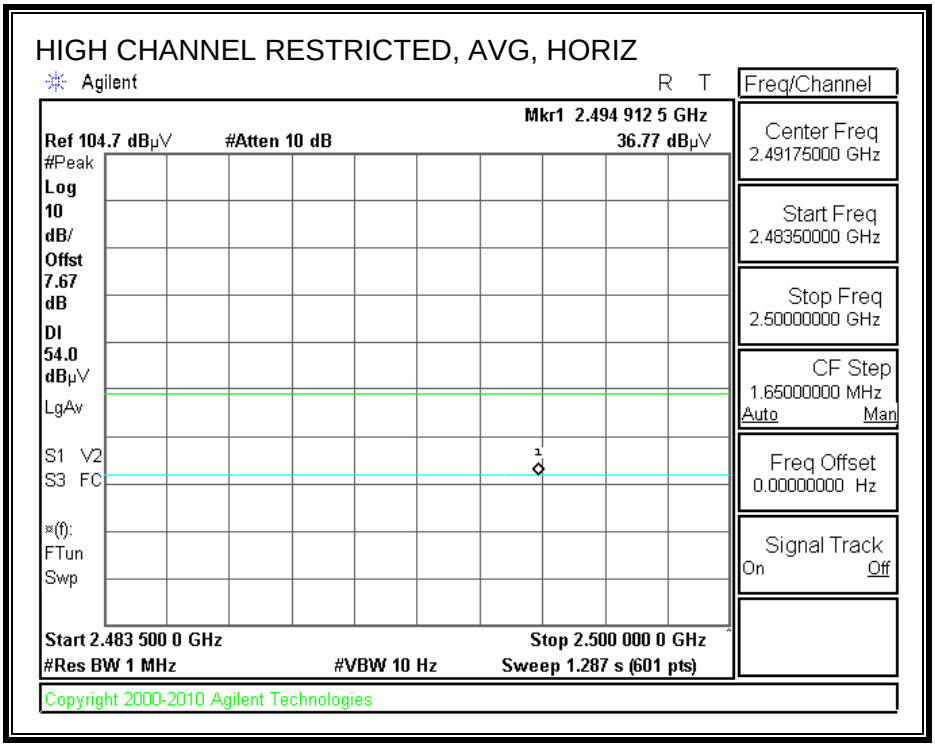
LOW CHANNEL RESTRICTED, AVG, VERT



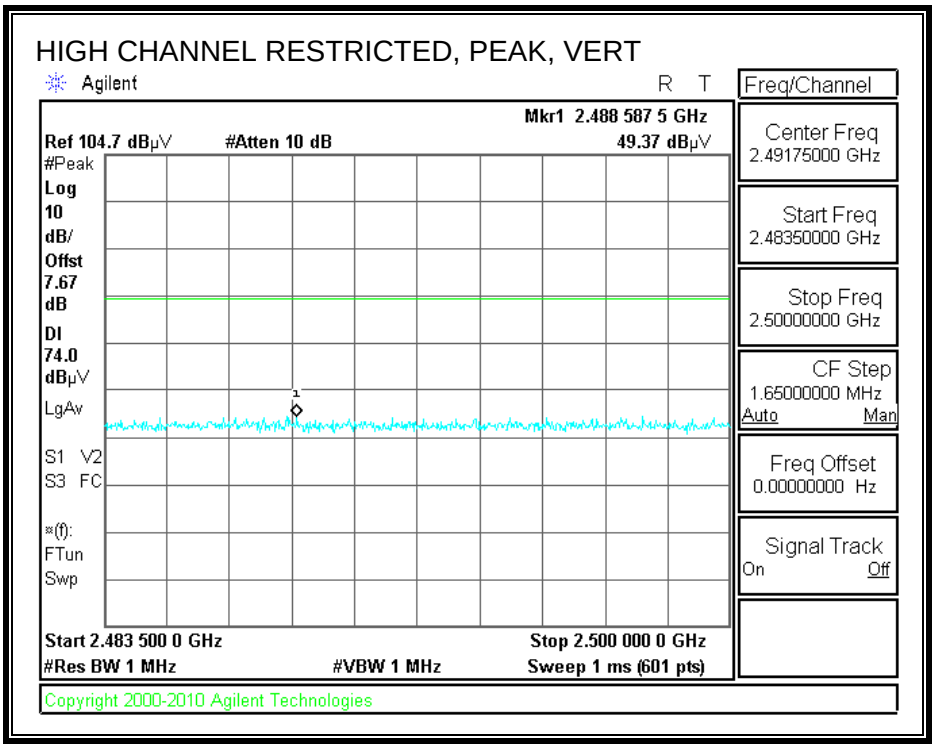
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

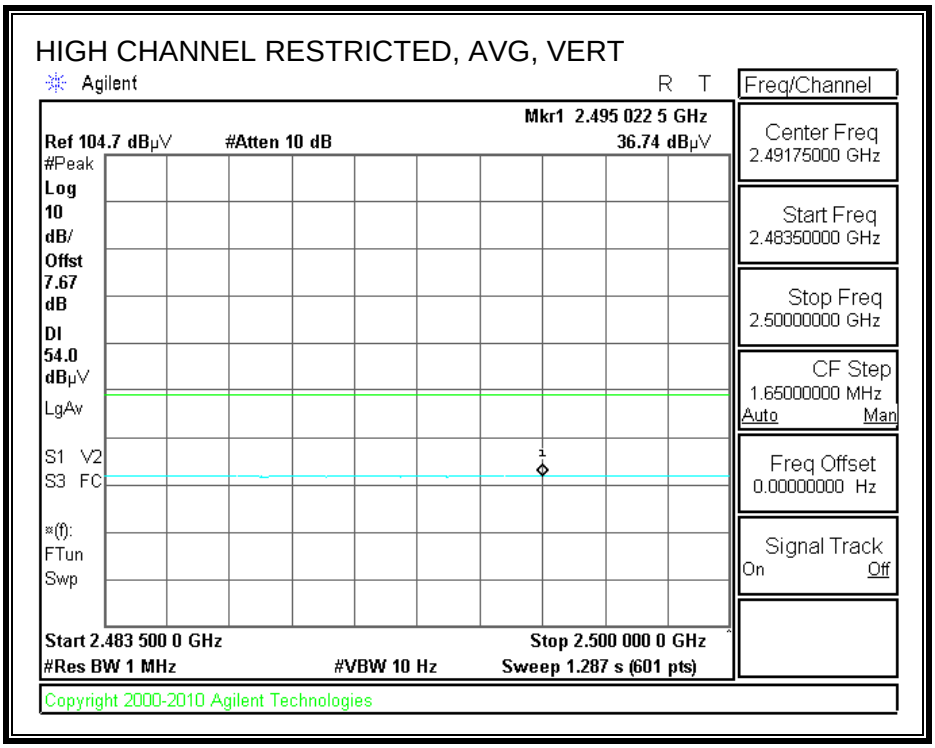


HIGH CHANNEL RESTRICTED, AVG, HORIZ



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: Samsung
Project #: 12I14597
Date: 8/29/2012
Test Engineer: S.Aguilar
Configuration: Worst Case. Adapter + Headphone
Mode: 11N Mode. 6.5Mbsp

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B			FCC 15.205

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW =1MHz, VBW=3MHz
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)
Low Channel (2412MHz)															
4.824	3.0	36.48	23.71	33.1	6.8	-34.1	0.0	0.0	42.3	29.6	74	54	-31.7	-24.4	H
4.824	3.0	38.72	27.04	33.1	6.8	-34.1	0.0	0.0	44.6	32.9	74	54	-29.4	-21.1	V
Mid Channel (2437MHz)															
4.874	3.0	36.61	23.82	33.2	6.8	-34.0	0.0	0.0	42.5	29.7	74	54	-31.5	-24.3	H
4.874	3.0	39.28	27.64	33.2	6.8	-34.0	0.0	0.0	45.2	33.6	74	54	-28.8	-20.4	V
High Channel (2462MHz)															
4.924	3.0	36.76	22.97	33.2	6.8	-34.0	0.0	0.0	42.8	29.0	74	54	-31.2	-25.0	H
4.924	3.0	37.64	25.12	33.2	6.8	-34.0	0.0	0.0	43.7	31.1	74	54	-30.3	-22.9	V

Rev. 11.10.11

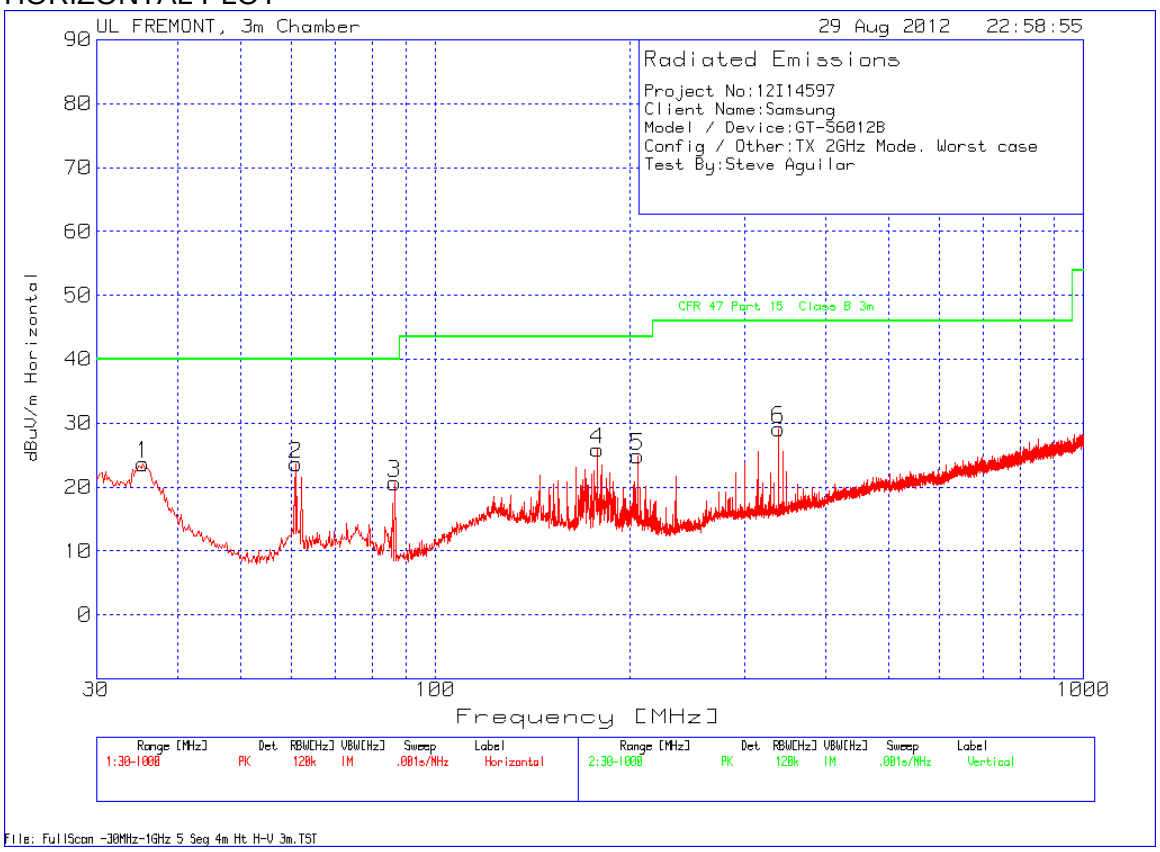
Note: No other emissions were detected above the system noise floor.

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		

8.3. WORST-CASE BELOW 1 GHz

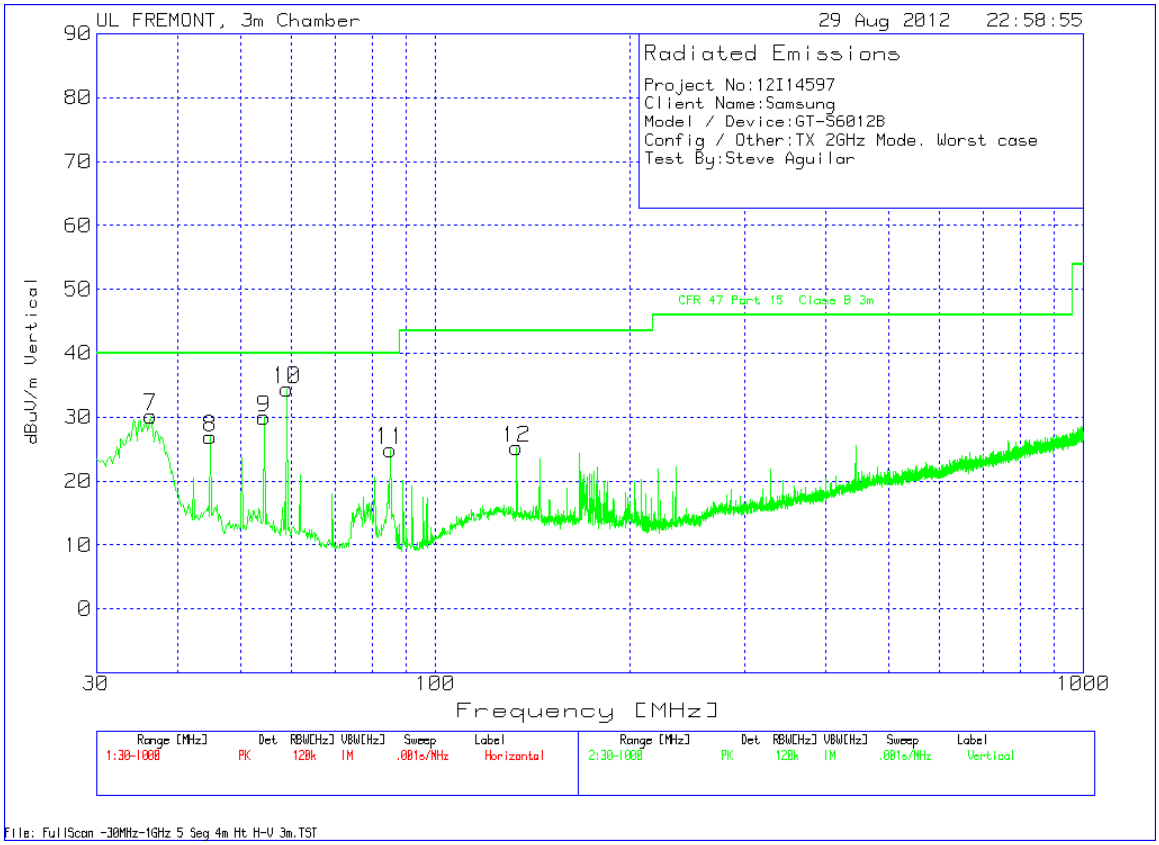
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

Company Name: Samsung
Project: 12I14597
Date: 8/29/2012
Model: GT-S6012B
Configuraiton: EUT + Adapter + Headset
Mode: 2 GHz , Worst Case
Tested by: S.Aguilar

Test Frequency [MHz]	Meter Reading [dB(µV)]	Detector	Pre Amp Factor [dB]	Antenna Factor [dB/m]	Corrected [dB(µV/m)]	Class C PK limit [dB(µV/m)]	QP Margin [dB]	Height [cm]	Polarity
Range 1 30 - 1000MHz									
35.4277	34.07	PK	-27.5	17.1	23.67	40	-16.33	201	Horz
61.0152	43.54	PK	-27.2	7.3	23.64	40	-16.36	201	Horz
86.6027	40.29	PK	-27	7.4	20.69	40	-19.31	201	Horz
177.9037	40.88	PK	-26	11	25.88	43.5	-17.62	201	Horz
205.2358	39.41	PK	-25.8	11.3	24.91	43.5	-18.59	99	Horz
338.9888	40.46	PK	-25.3	14	29.16	46	-16.84	99	Horz
Range 2 30 - 1000MHz									
36.3969	41.11	PK	-27.4	16.5	30.21	40	-9.79	100	Vert
44.9261	43.99	PK	-27.4	10.3	26.89	40	-13.11	100	Vert
54.4245	50.19	PK	-27.2	7	29.99	40	-10.01	200	Vert
59.0767	54.54	PK	-27.2	7.1	34.44	40	-5.56	100	Vert
85.2458	44.51	PK	-27	7.4	24.91	40	-15.09	301	Vert
133.5132	38.34	PK	-26.5	13.4	25.24	43.5	-18.26	200	Vert

PK - Peak detector
QP - Quasi-peak detector

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

ANSI C63.4

RESULTS

WORST EMISSIONS

Company Name:	Samsung
Project:	12I14597
Model:	GT-S6012B
Date:	8/29/2012
Configuraiton:	120VAC / 60 Hz
Mode:	2GHz TX mode Worst Case
Tested by:	Steve Aguilar

Line-L1 .15 - 30MHz

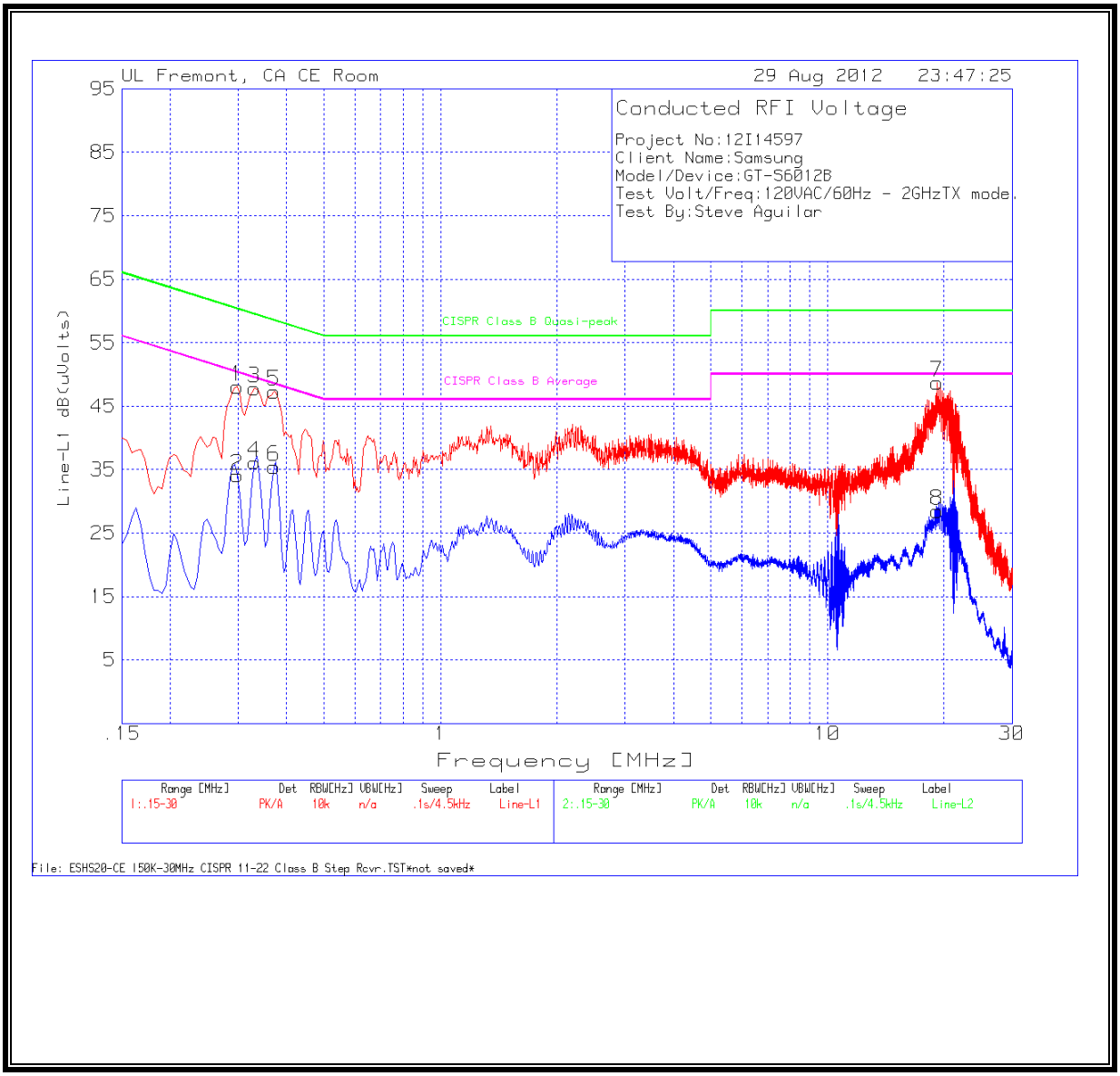
Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]	Av Margin [dB]
0.2985	47.99	PK	0.1	0	48.09	60.3	-12.21	-	-
0.2985	33.98	Av	0.1	0	34.08	-	-	50.3	-16.22
0.33	47.68	PK	0.1	0	47.78	59.5	-11.72	-	-
0.33	36.04	Av	0.1	0	36.14	-	-	49.5	-13.36
0.3705	47.25	PK	0.1	0	47.35	58.5	-11.15	-	-
0.3705	35.35	Av	0.1	0	35.45	-	-	48.5	-13.05
19.1985	48.33	PK	0.2	0.2	48.73	60	-11.27	-	-
19.1985	28.11	Av	0.2	0.2	28.51	-	-	50	-21.49

Line-L2 .15 - 30MHz

Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]	Av Margin [dB]
0.294	43.46	PK	0.1	0	43.56	60.4	-16.84	-	-
0.294	32.92	Av	0.1	0	33.02	-	-	50.4	-17.38
0.3435	43.01	PK	0.1	0	43.11	59.1	-15.99	-	-
0.3435	29.86	Av	0.1	0	29.96	-	-	49.1	-19.14
0.3705	42.64	PK	0.1	0	42.74	58.5	-15.76	-	-
0.3705	31.53	Av	0.1	0	31.63	-	-	48.5	-16.87
19.599	39.83	PK	0.3	0.2	40.33	60	-19.67	-	-
19.599	23.9	Av	0.3	0.2	24.4	-	-	50	-25.6

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

LINE 1 RESULTS



LINE 2 RESULTS