FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

GSM AND WCDMA PHONE WITH BLUETOOTH, NFC, AND WLAN

MODEL NUMBER: E960, LGE960, AND LG-E960

FCC ID: ZNFE960
IC: 2703C-E960

REPORT NUMBER: 12U14580-2

ISSUE DATE: AUGUST 23, 2012

Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC.
1000SYLVAN AVENUE
ENGLEWOOD CLIFFS, NEW JERSEY 07632

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

Rev.	Issue Date	Revisions	Revised By
--	08/23/2012	Initial Issue	T. LEE

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS, NEW JERSEY 07632

EUT DESCRIPTION: GSM AND WCDMA DUAL WITH BLUETOOTH, NFC, AND WLAN

MODEL: E960, LGE960, AND LG-E960

SERIAL NUMBER: 207KUU001162

DATE TESTED: AUGUST 14 ~ 24, 2012

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

UL 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:

TOM CHEN
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, 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 BT3.0, 802.11b/g/n 1x1 HT20, GSM/WCDMA 850/1900MHz, Bar Phone with HOTSPOTS and VOIP supported.

The manufacturer of the radio module is LG.

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	19.25	84.14
2412 - 2462	802.11g	20.62	115.35
2412 - 2462	802.11n HT20	20.49	111.94
5745-5825	802.11a	21.82	152.05
5745-5825	802.11n HT20	20.31	107.40

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Flexible PCB antenna, with a maximum gain of -0.76 dBi at 2.4GHz and -4.87 at 5.8 Ghz.

5.4. SOFTWARE AND FIRMWARE

The kernel version installed in the EUT during testing was 3.0.21 Jh.koo@fanta #1 SMP PREEMPT Tue Jul 17 13:18:23 KST 2012.

The Build number installed in the EUT during testing was geeb_att_us-eng 4.0.4 IMM76L b85552b7e test-keys.

5.5. MODIFICATIONS

A ferrite was added on the Charging Pad’s AC Adapter in order to pass 30-1000MHz emissions test. Ferrite: Manufacture: TDK, Serial Number: ZCAT 2035-0930.

5.6. MODEL DIFFERNECE

Models LGE960 and LG-E960 are identical to Model E960 except for model designation.

5.7. WORST-CASE CONFIGURATION AND MODE

For the fundamental investigation, since the EUT is a portable device that has three orientations; X, Y and Z orientations have been investigated, also with AC/DC adapter, and earphone, and the worst case was found to be at X orientation with AC adapter and earphone for both 2.4GHz and 5GHz band.

For Radiated Emissions below 1 GHz and Power line Conducted Emissions, the channel with the highest conducted output power was selected as a worst-case scenario.

Worst-case data rates based on base line measurement are:

For 11b mode: 1Mbps
For 11g mode: 6Mbps
For 11n HT20: MCS0
For 11a mode (5.8 GHz band): 6Mbps
For 11n HT20 (5.8 GHz band): MCS0

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

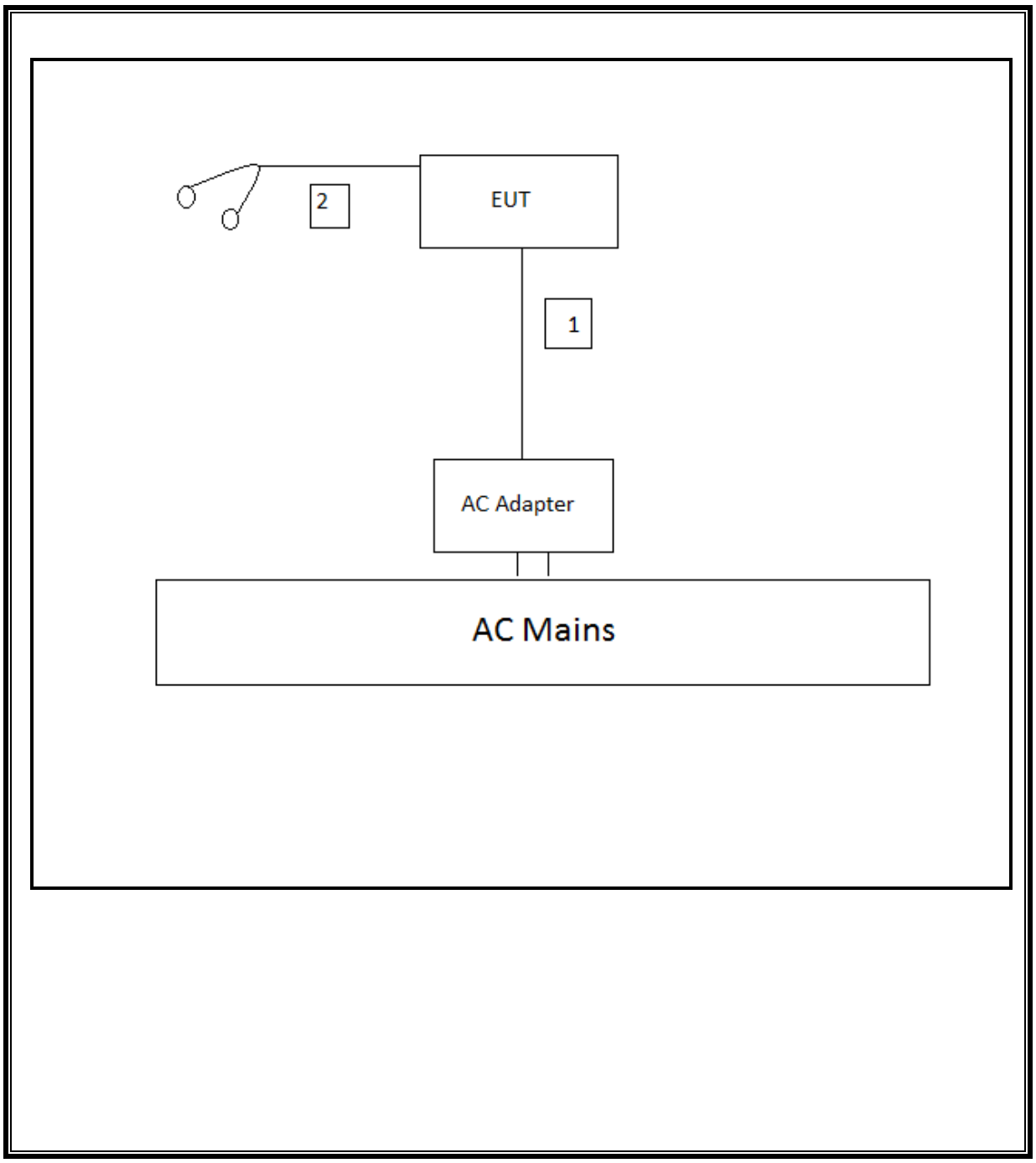
Support Equipment List			
Description	**Manufacturer**	**Model**	**Serial Number**
AC ADAPTER	LG ELECTRONICS	MCS-01WR	RA1Z0051473
HEADSET	LG ELECTRONICS	NA	N/A
AC ADAPTER	LG ELECTRONICS	WCA-D01WT	TA170000040
INDUCTIVE CHARGER	LG ELECTRONICS	WCP-700	A1106WP000029

I/O CABLES

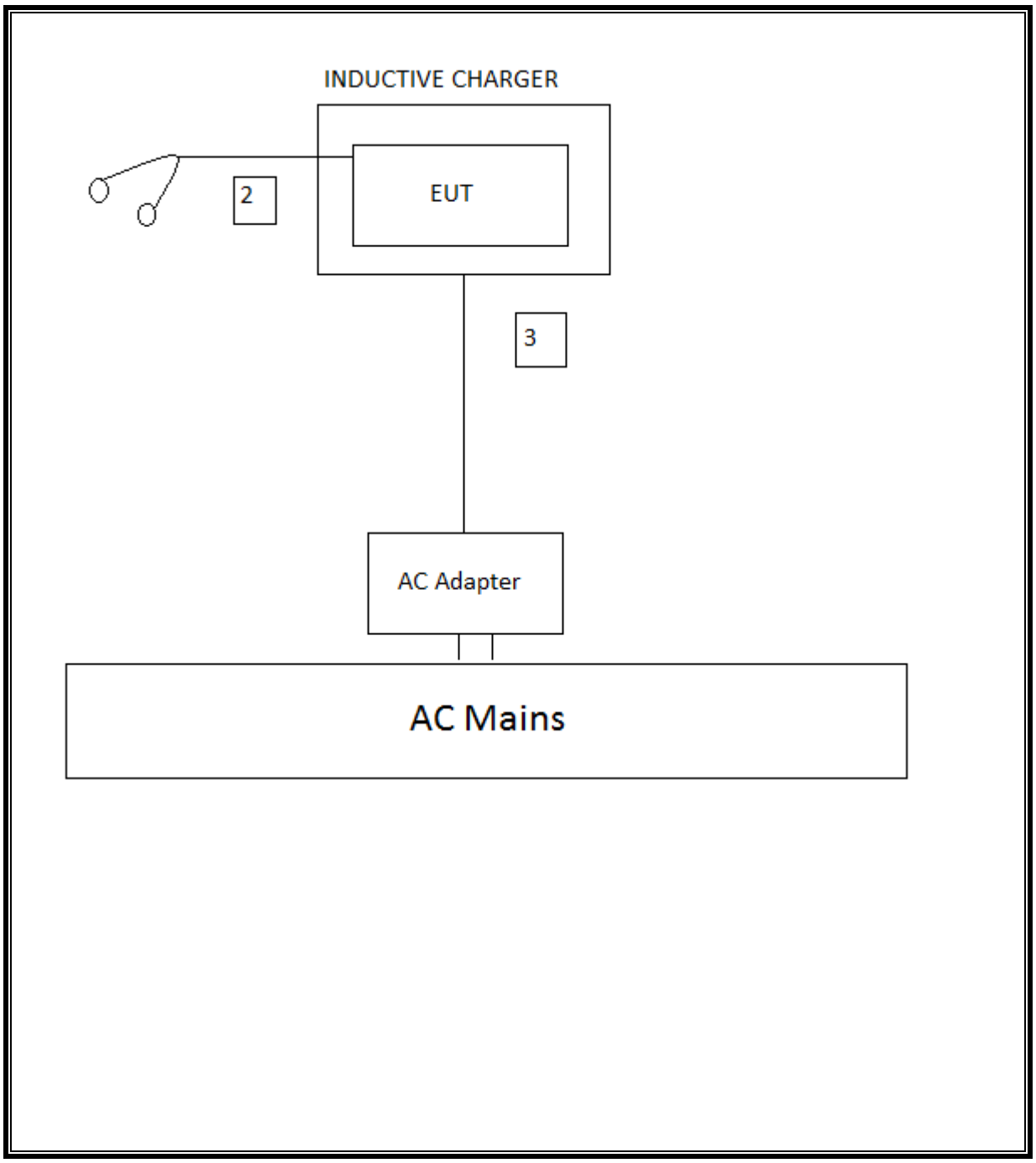
I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A
2	AUDIO	1	MINI JACK	UN-SHELDED	1.2m	N/A
3	DC	1	MINI JACK	UN-SHELDED	1.5m	N/A

TEST SETUP

SETUP DIAGRAM WITH USB CHARGER



SETUP DIAGRAM WITH INDUCTIVE CHARGER



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**
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	11/11/12
Antenna, Horn, 18 GHz	EMCO	3115	C00945	10/06/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	11/11/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	02/07/13
Horn Antenna, 26.5 GHz	ARA	MWH-1826/B	C00589	04/23/13
Horn Antenna, 40 GHz	ARA	MWH-2640/B	C00981	06/14/13
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	03/14/13
Reject Filter, 2.0-2.9 GHz	Micro-Tronics	BRM50702	N02684	CNR
High Pass Filter, 7.6 GHz	Micro-Tronics	HPM13195	N02682	CNR
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/15/12
E-Series Power Sensor 9 kHg~18 GHz	Agilent	E9304A	1260847C	05/23/13
P-Series single channel Power Meter	Agilent / HP	N1911A	C00963	07/27/13
Reject Filter, 5.725-5.825 GHz	Micro-Tronics	BRC13192	N02676	CNR
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRM50702	N02685	CNR
Highpass Filter, 7.6 GHz	Micro-Tronics	HPM13195	N02682	CNR
EMI Test Receiver, 30MHz	R & S	ESHS 20	N02396	08/19/13
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	12/13/12

7. ANTENNA PORT TEST RESULTS

7.1. 802.11b MODE IN THE 2.4 GHz BAND

7.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

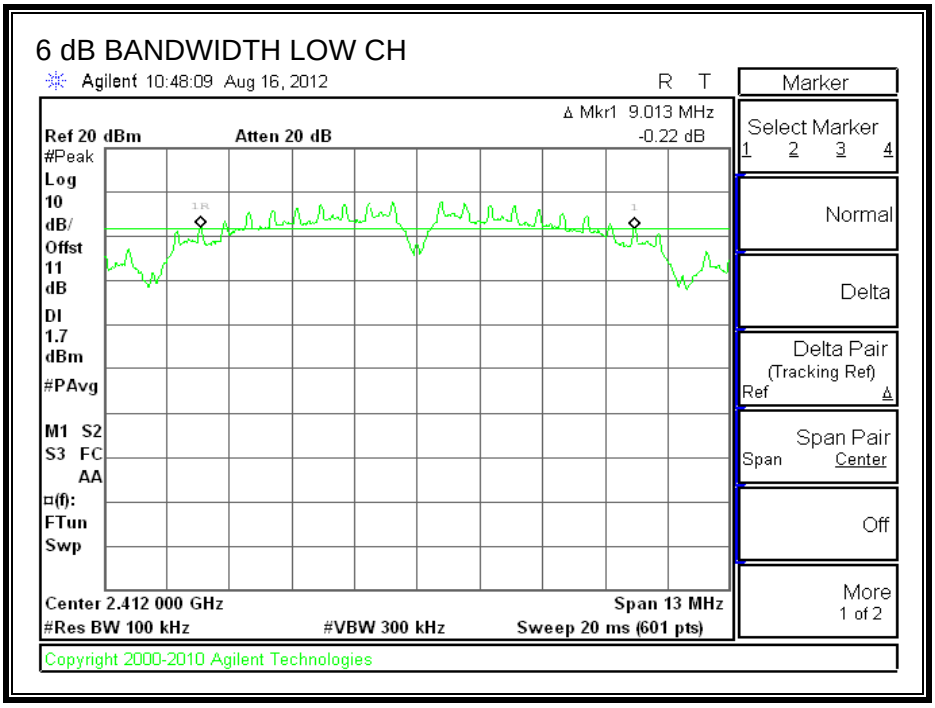
TEST PROCEDURE

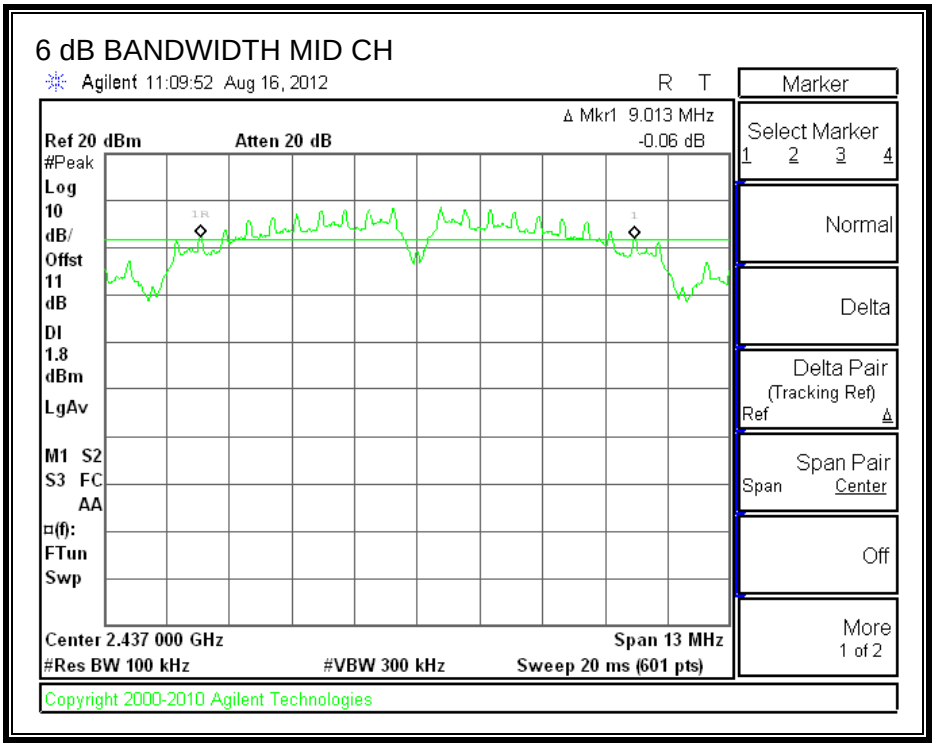
KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

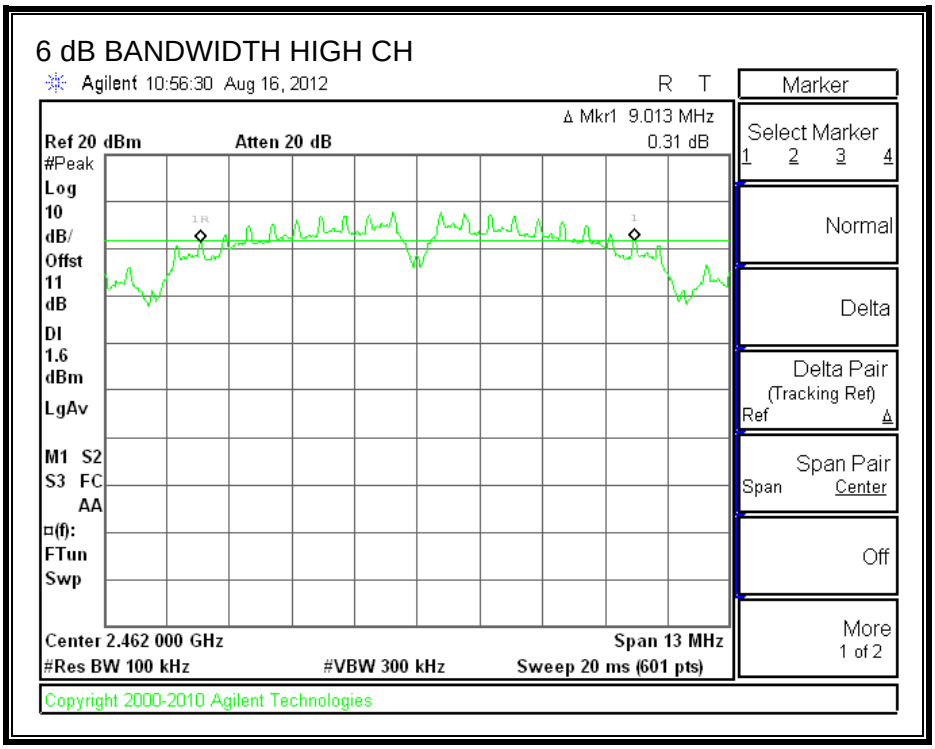
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	9.0130	0.5
Middle	2437	9.0130	0.5
High	2462	9.0130	0.5

6 dB BANDWIDTH







7.1.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

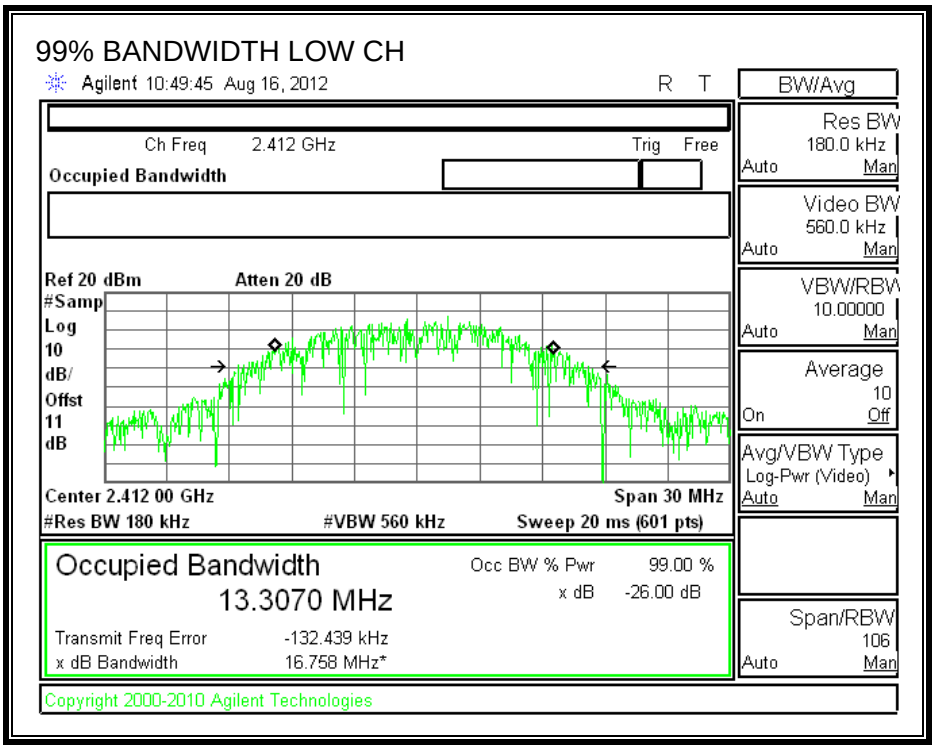
TEST PROCEDURE

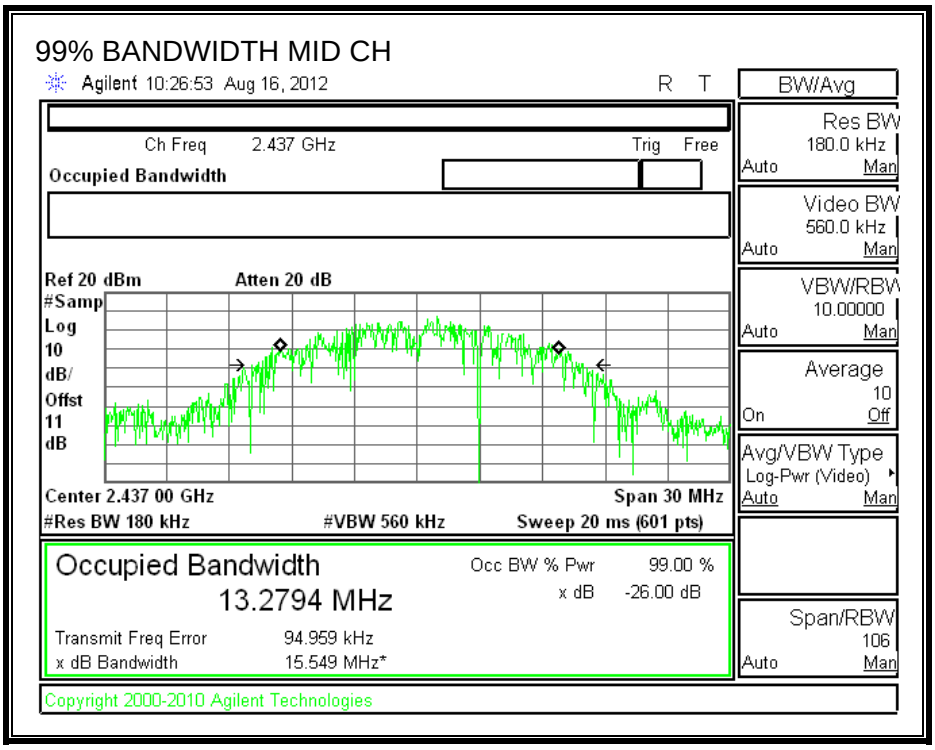
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

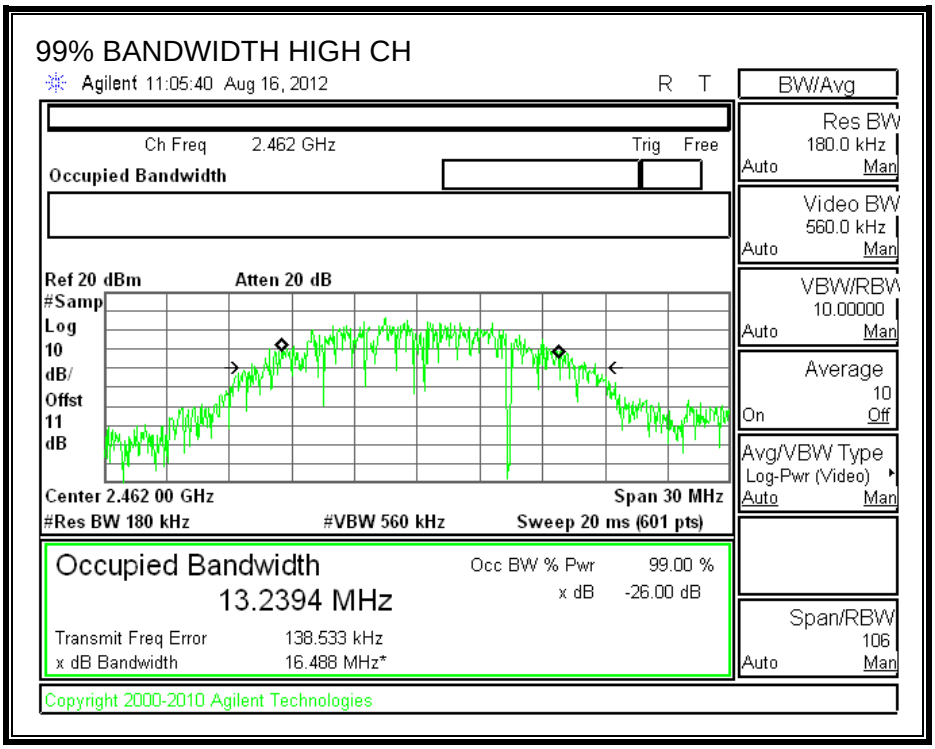
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	13.3070
Middle	2437	13.2794
High	2462	13.2394

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.

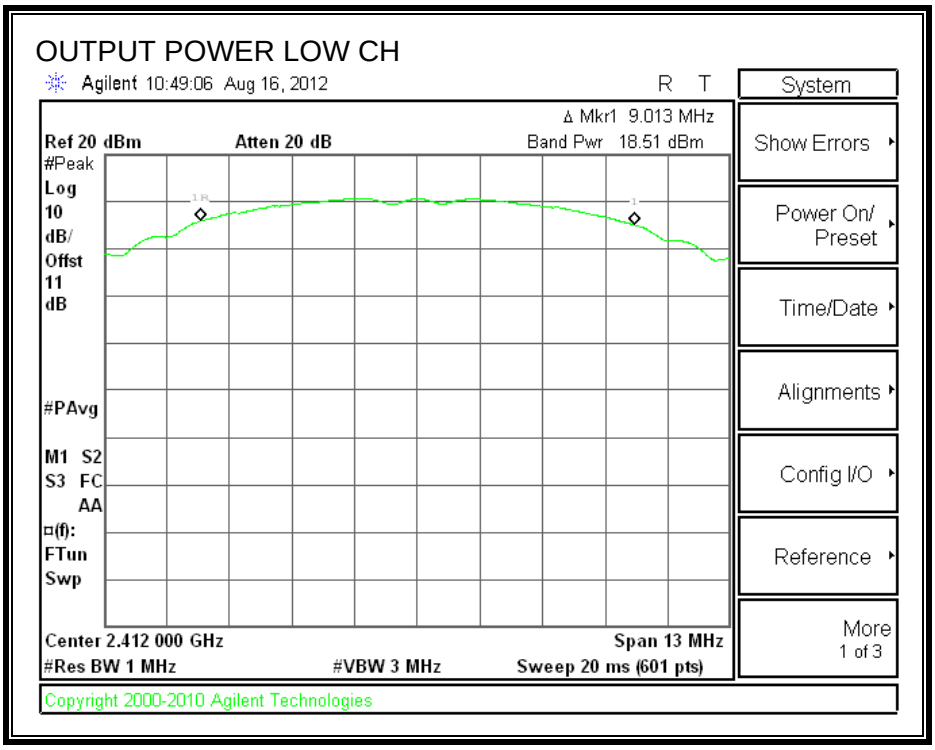
TEST PROCEDURE

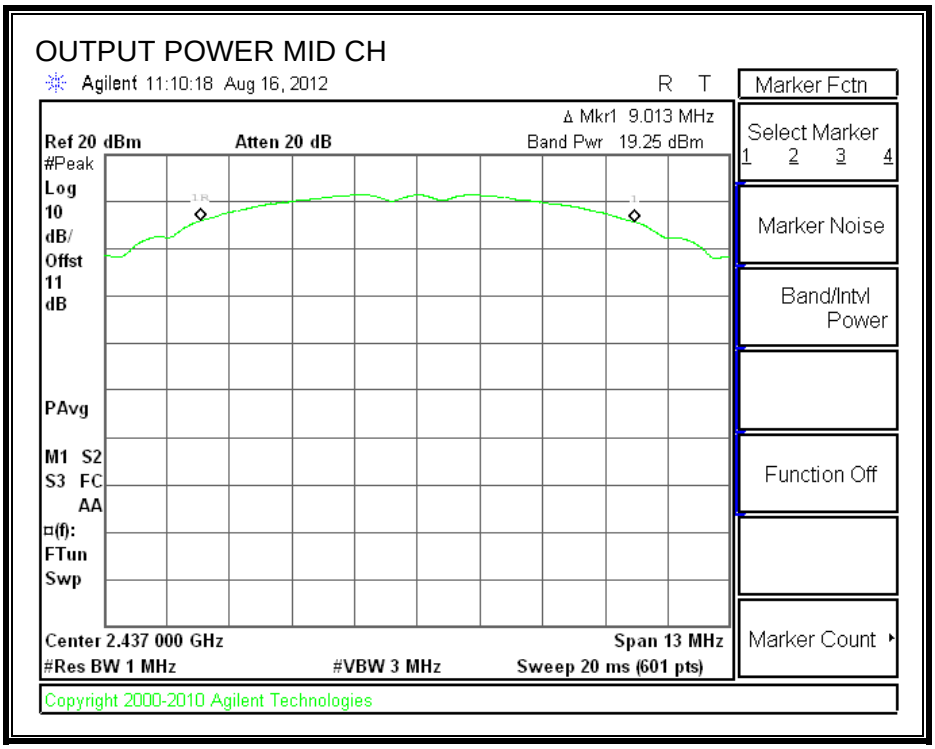
KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

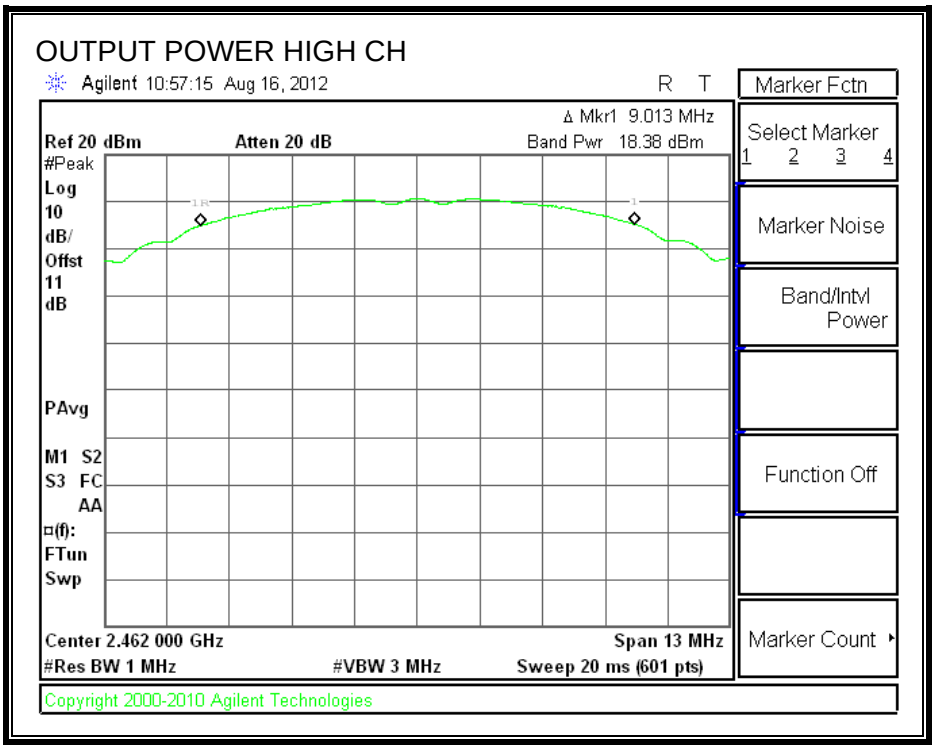
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2412	18.510	30	-11.490
Middle	2437	19.250	30	-10.750
High	2462	18.380	30	-11.620

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 dB (including 10 dB pad and 1 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	15.75
Middle	2437	15.68
High	2462	15.64

7.1.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

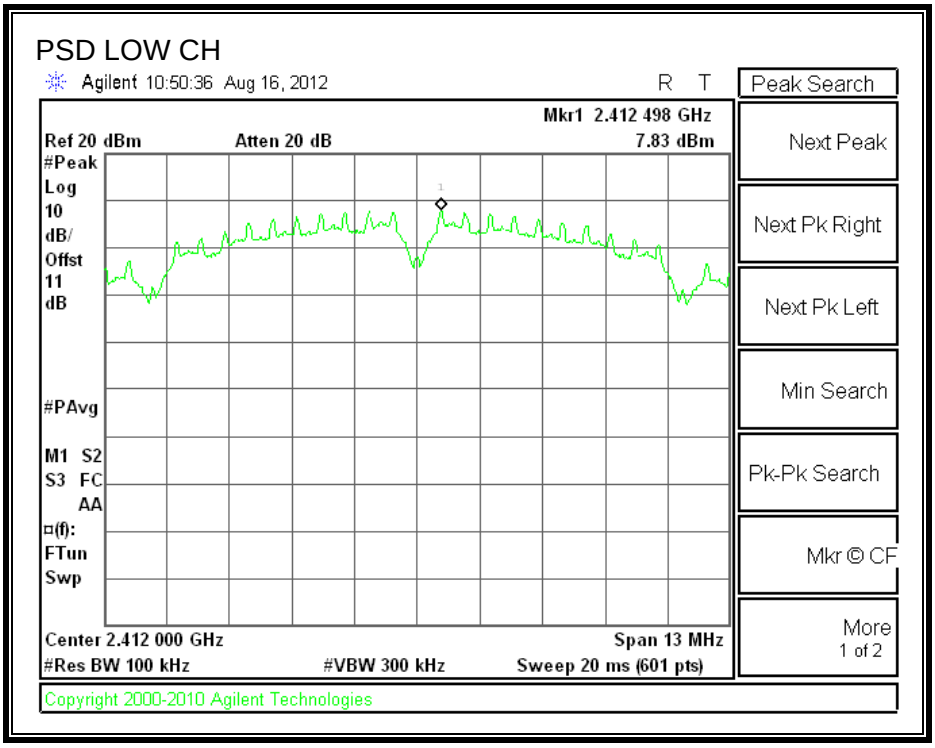
TEST PROCEDURE

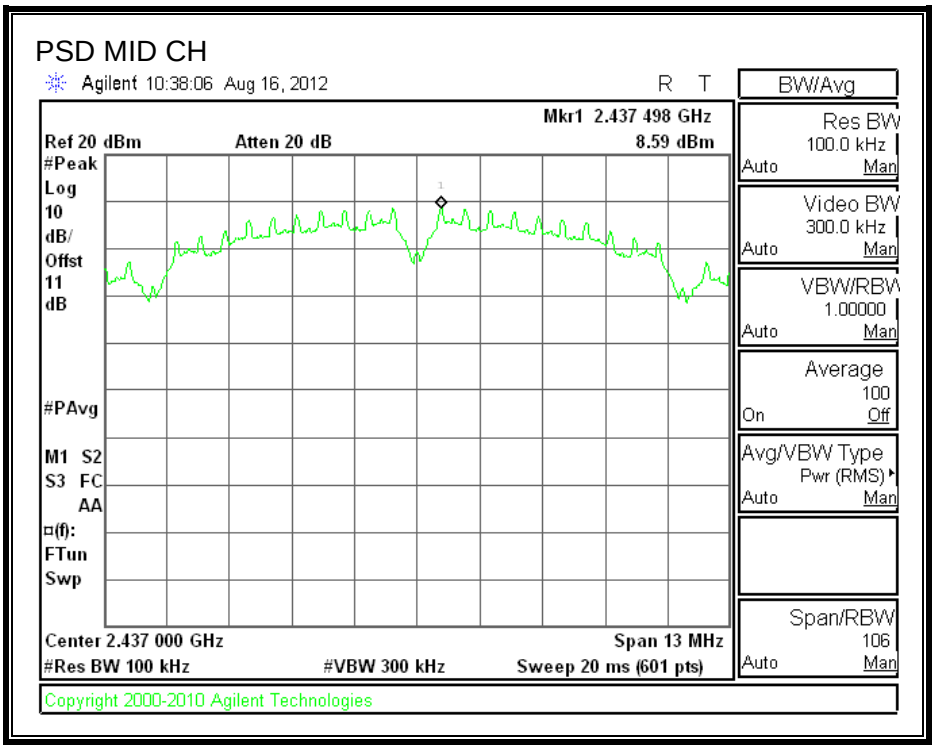
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012.

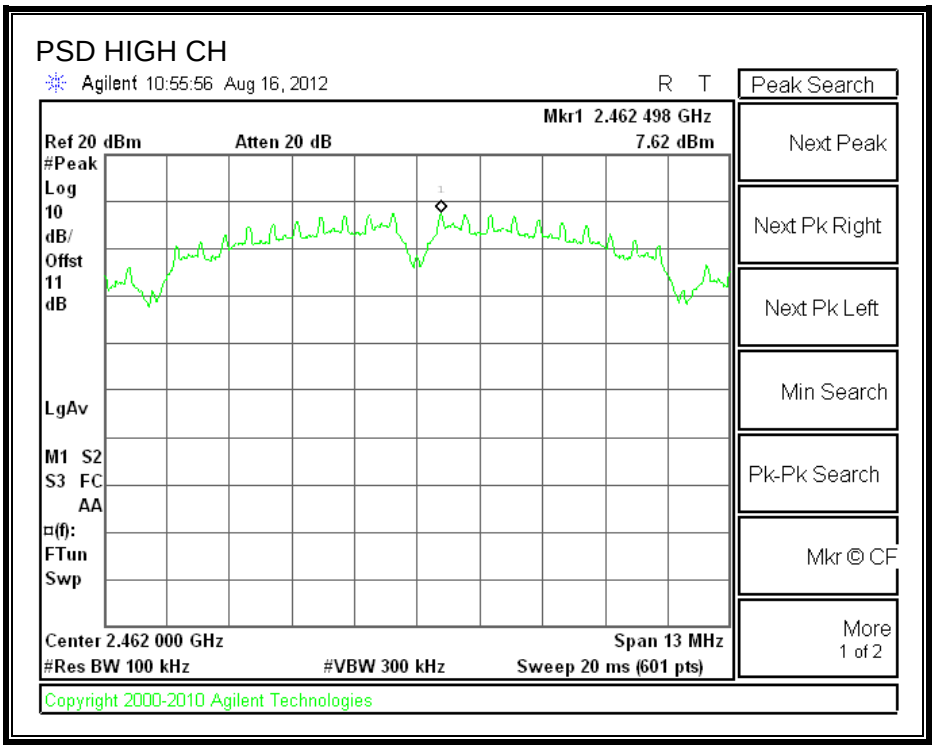
RESULTS

Channel	Frequency (MHz)	Analyzer Reading (dBm)	10log(3kHz/100kHz) (dB)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	7.83	-15.2	-7.37	8	-15.37
Middle	2437	8.59	-15.2	-6.61	8	-14.61
High	2462	7.62	-15.2	-7.58	8	-15.58

POWER SPECTRAL DENSITY







7.1.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

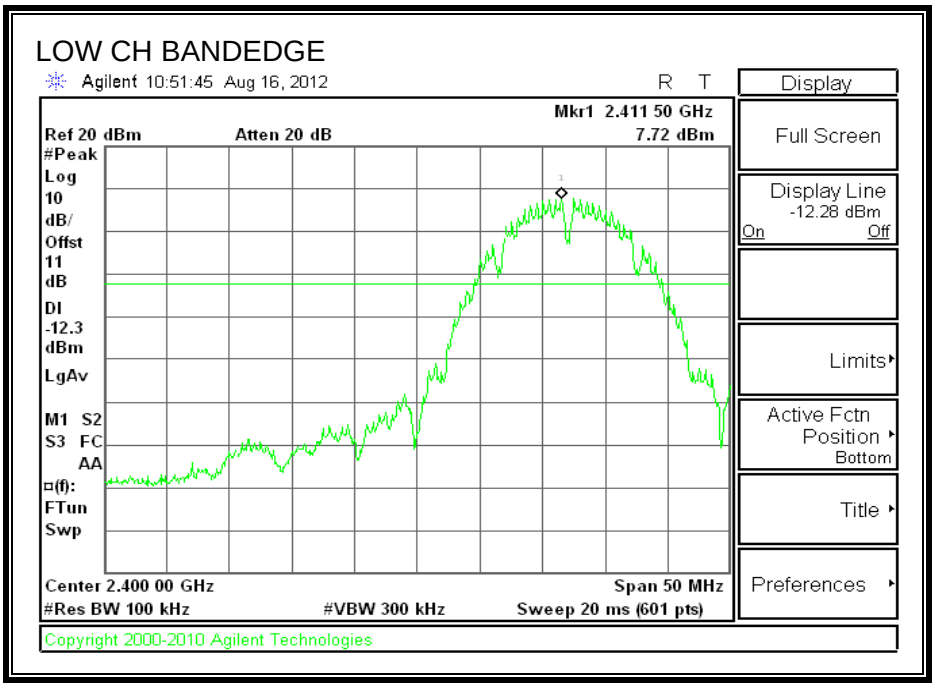
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

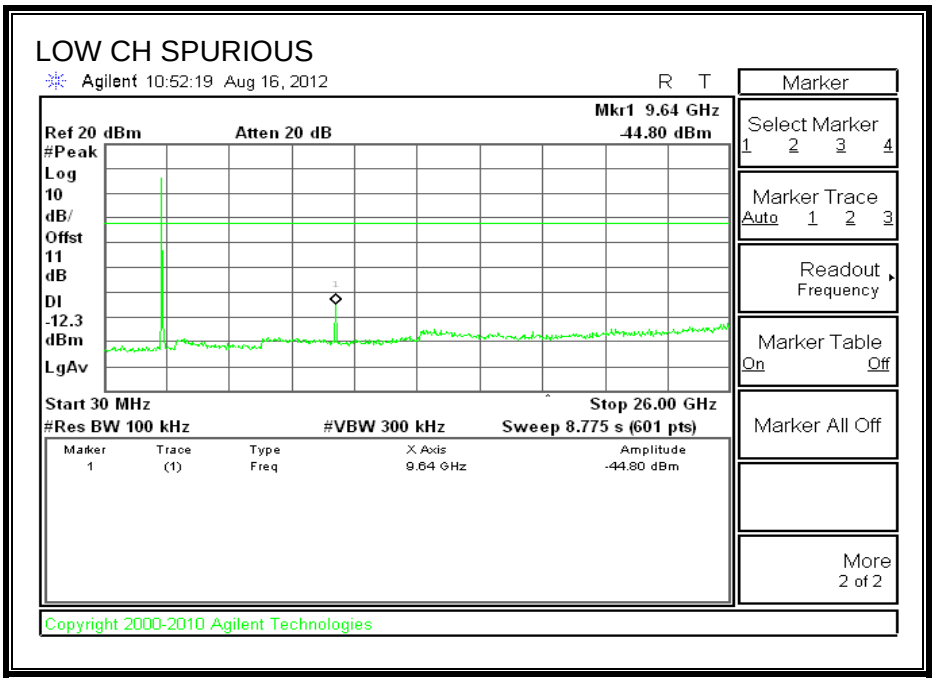
TEST PROCEDURE

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

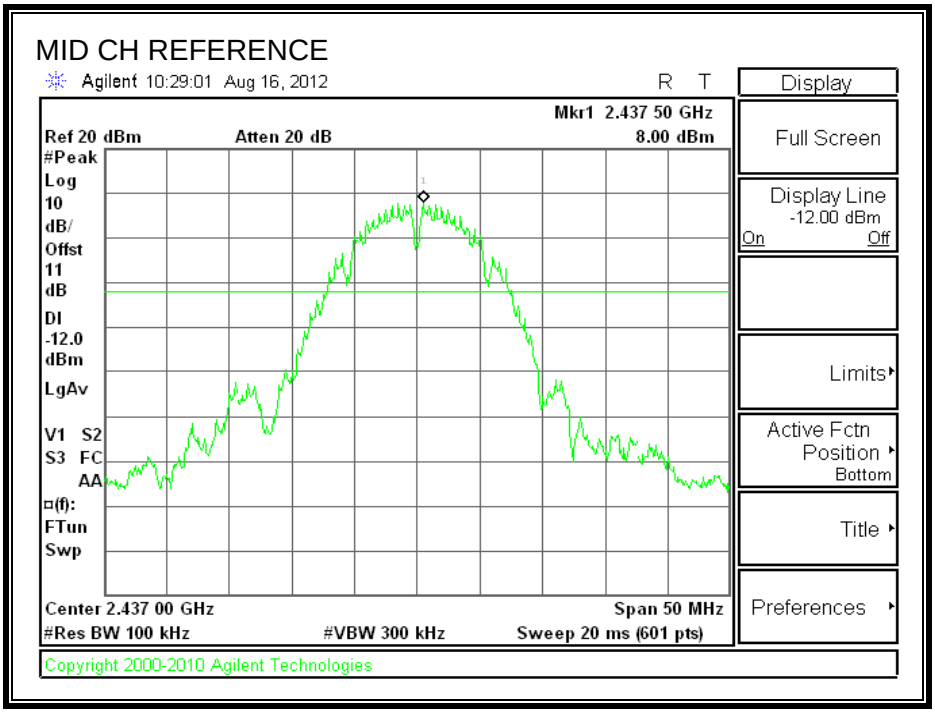
RESULTS

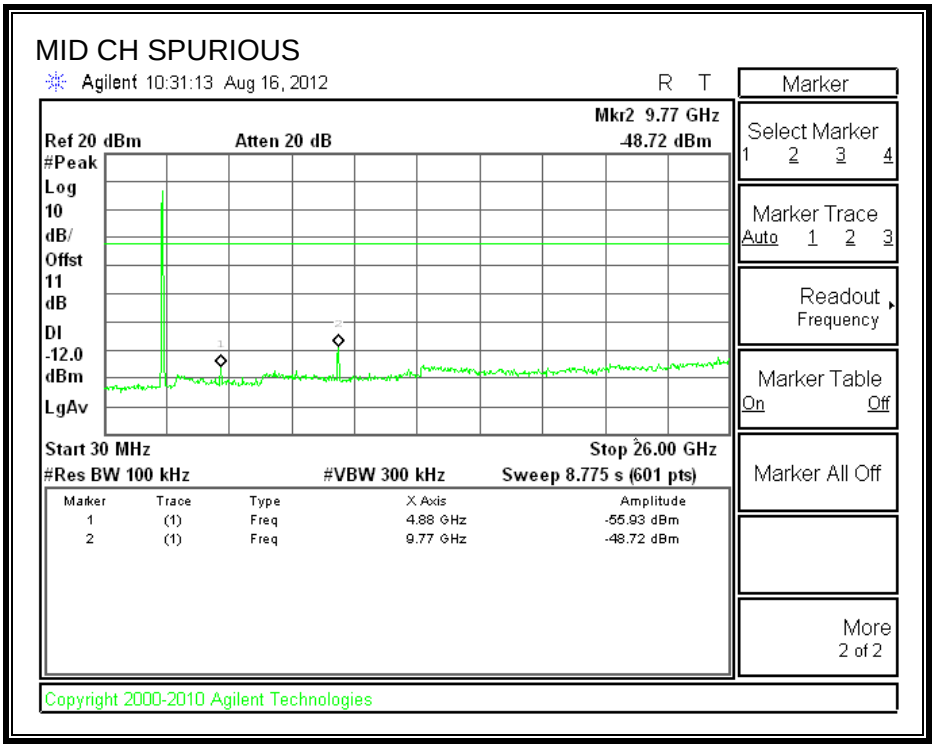
SPURIOUS EMISSIONS, LOW CHANNEL



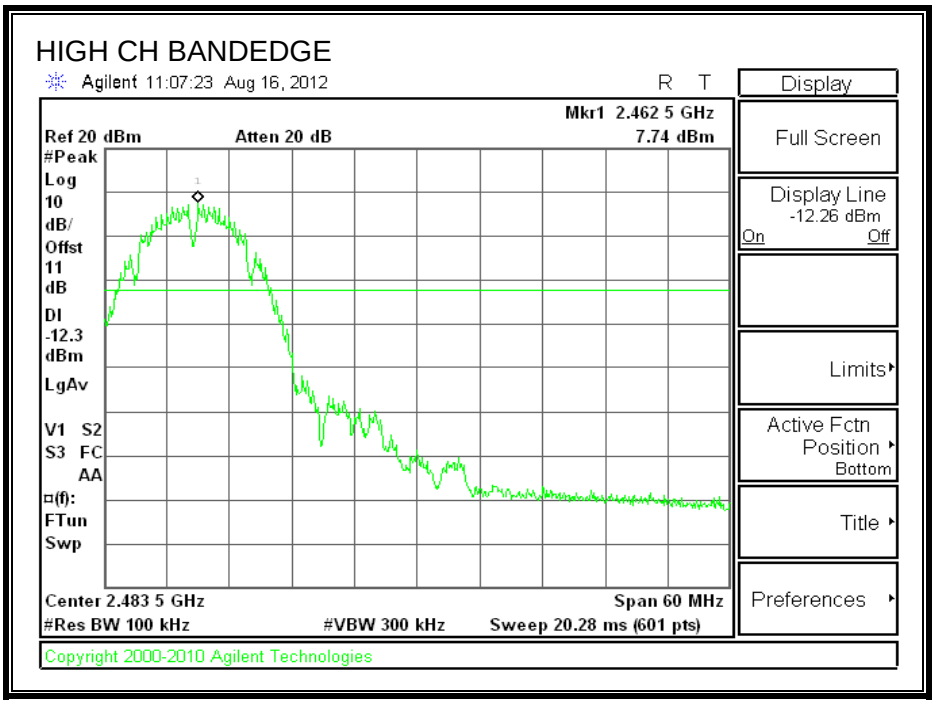


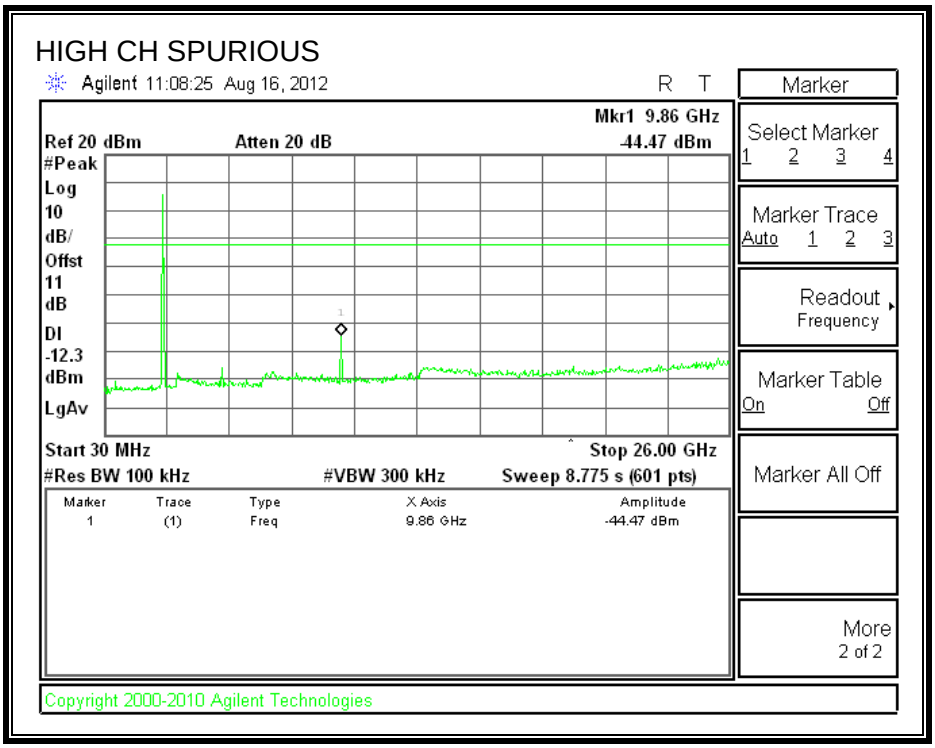
SPURIOUS EMISSIONS, MID CHANNEL





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.

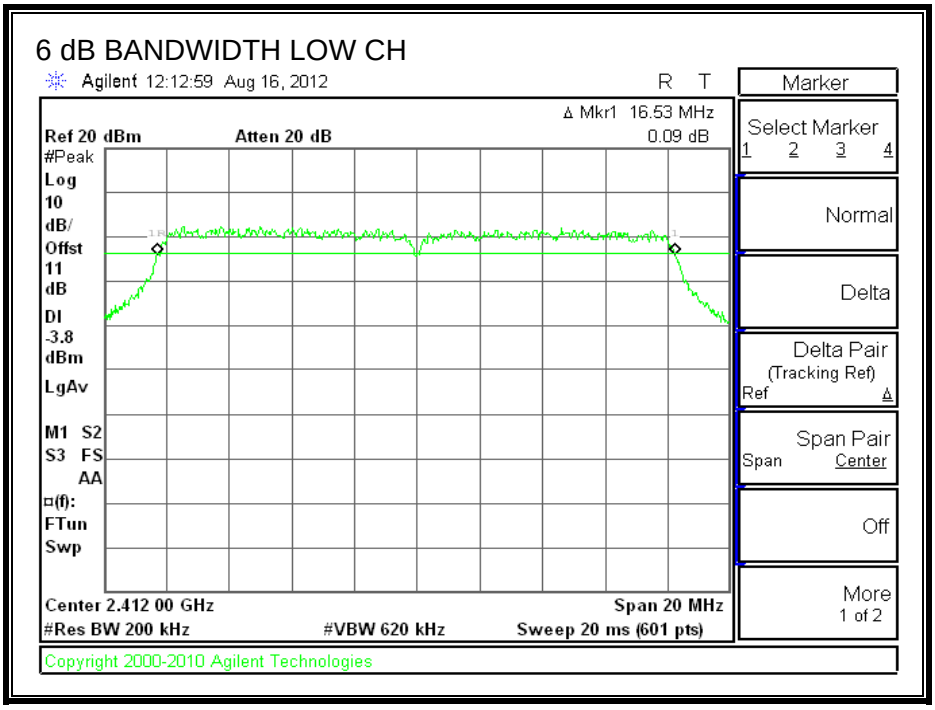
TEST PROCEDURE

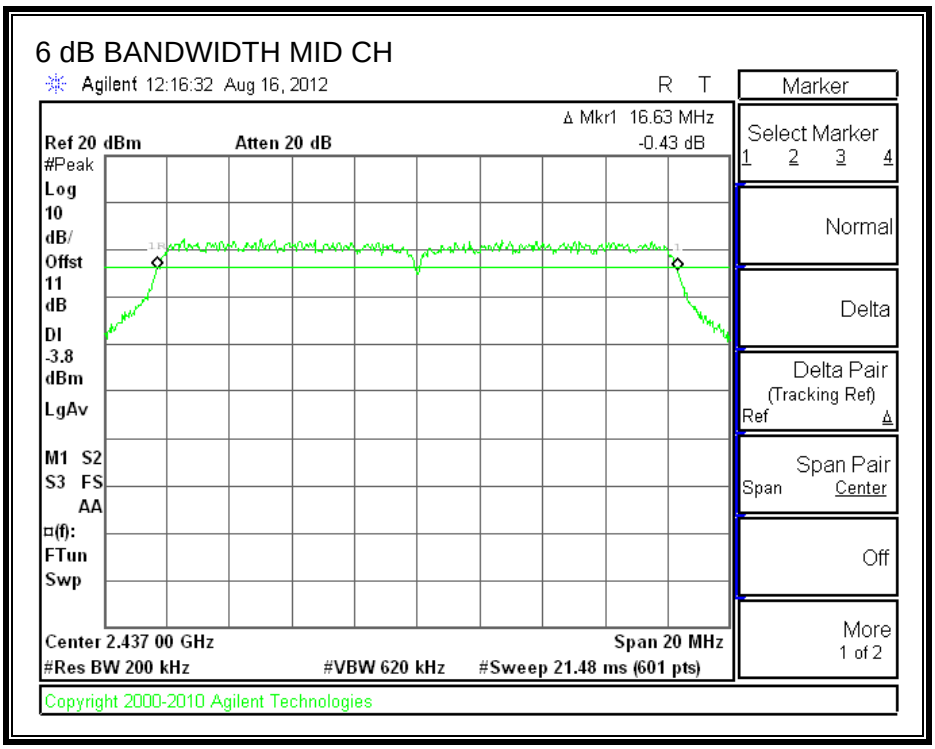
KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

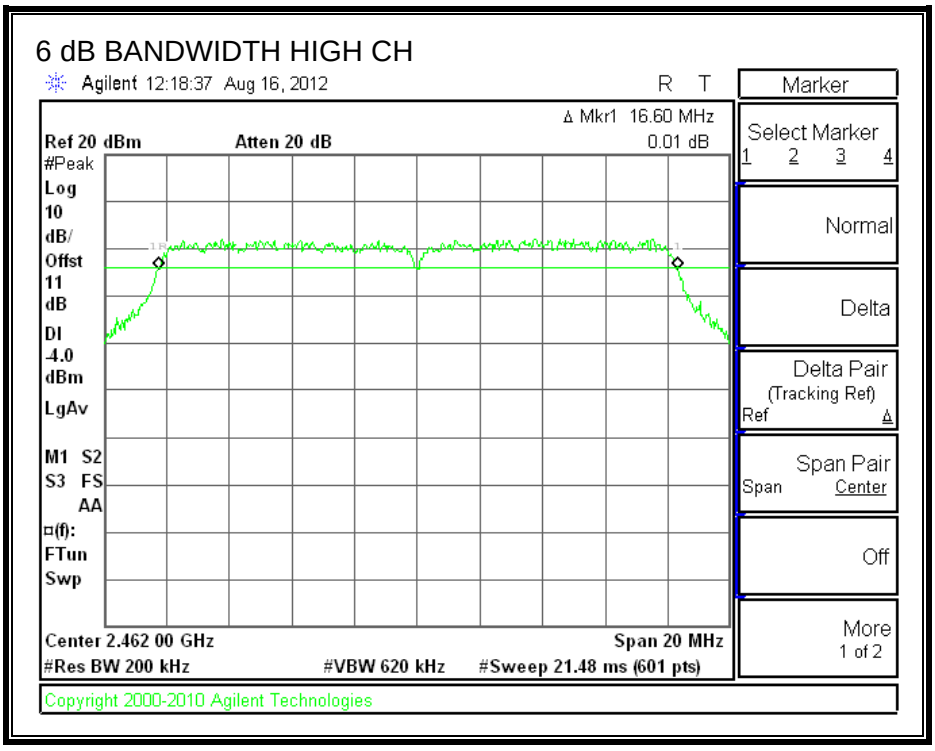
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.530	0.5
Middle	2437	16.630	0.5
High	2462	16.600	0.5

6 dB BANDWIDTH







7.2.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

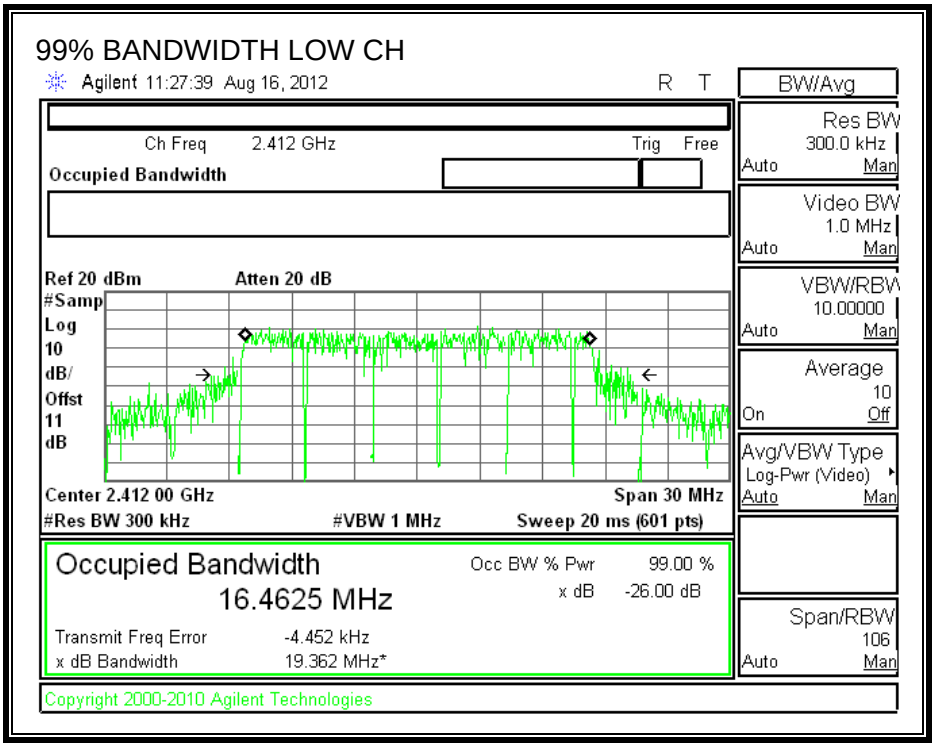
TEST PROCEDURE

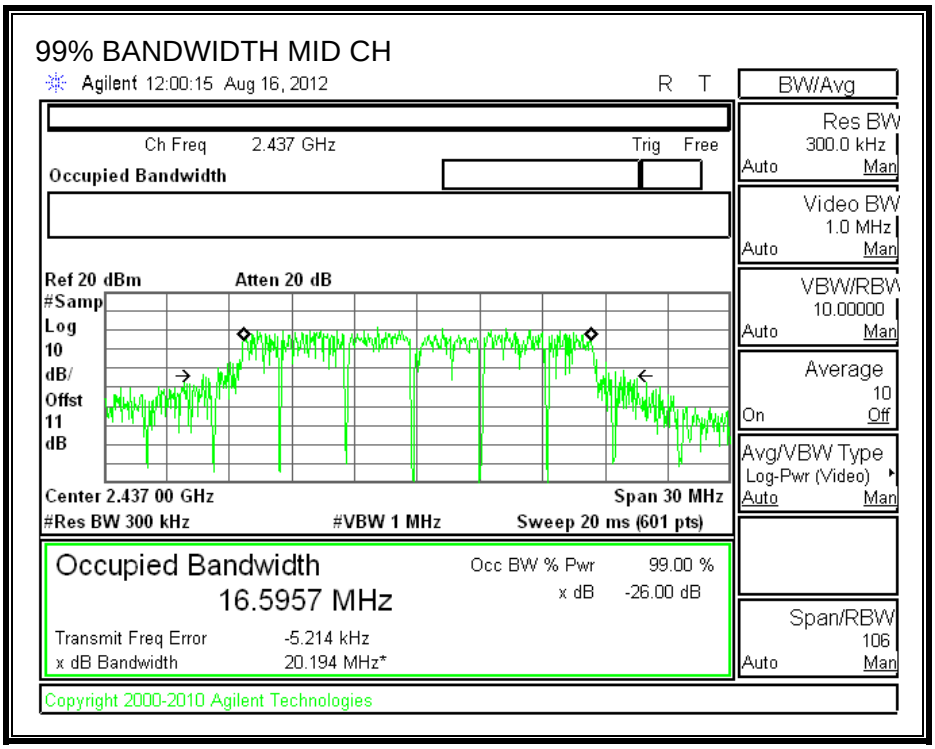
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

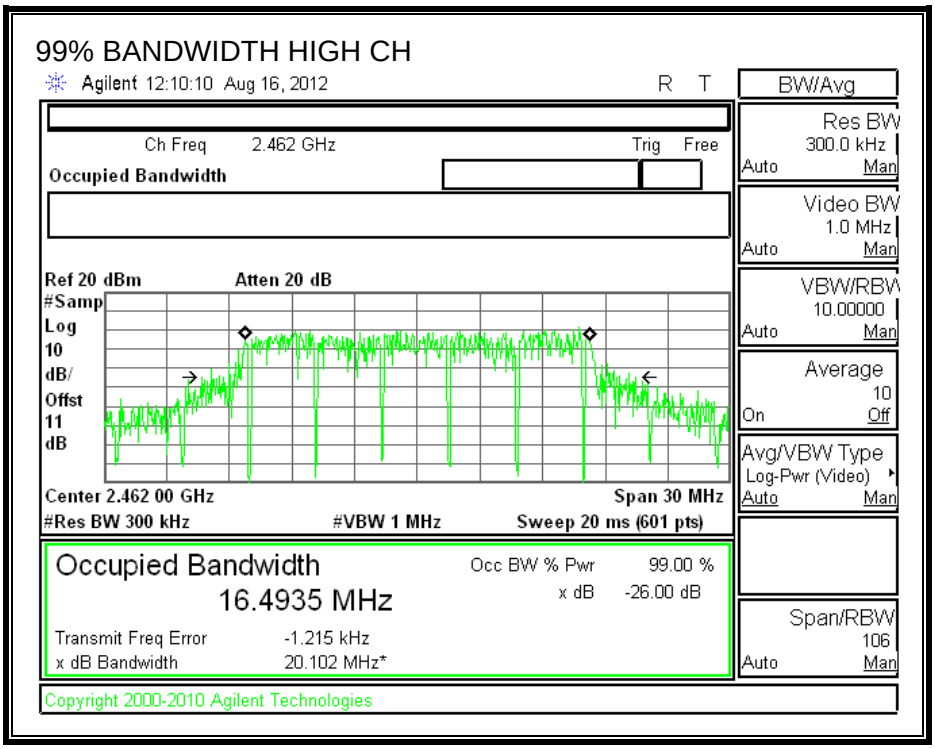
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.4625
Middle	2437	16.5957
High	2462	16.4935

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.

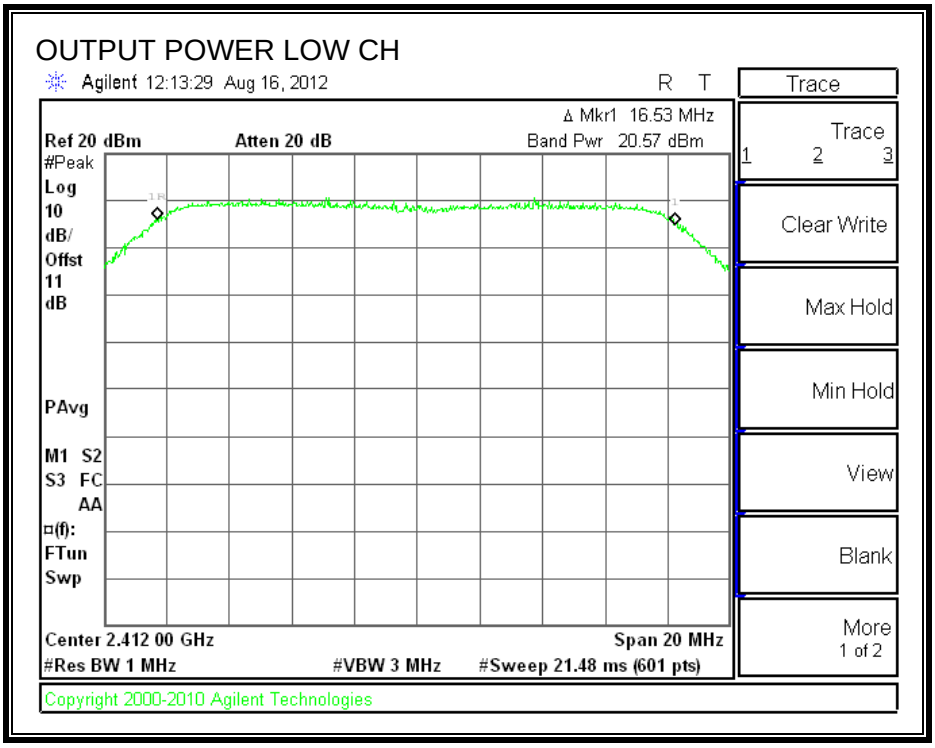
TEST PROCEDURE

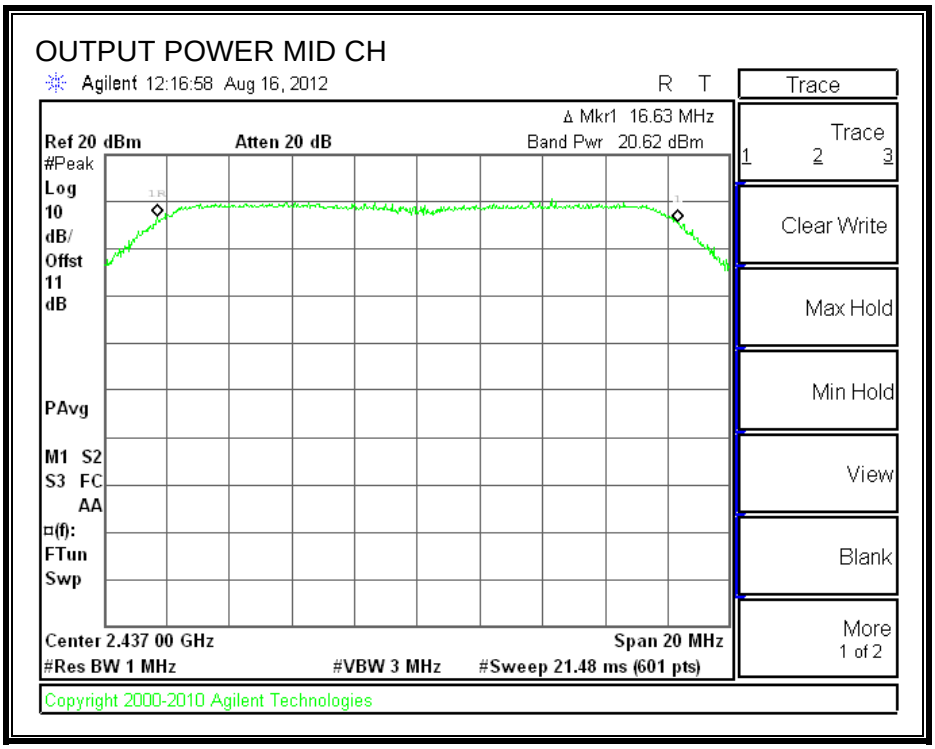
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012

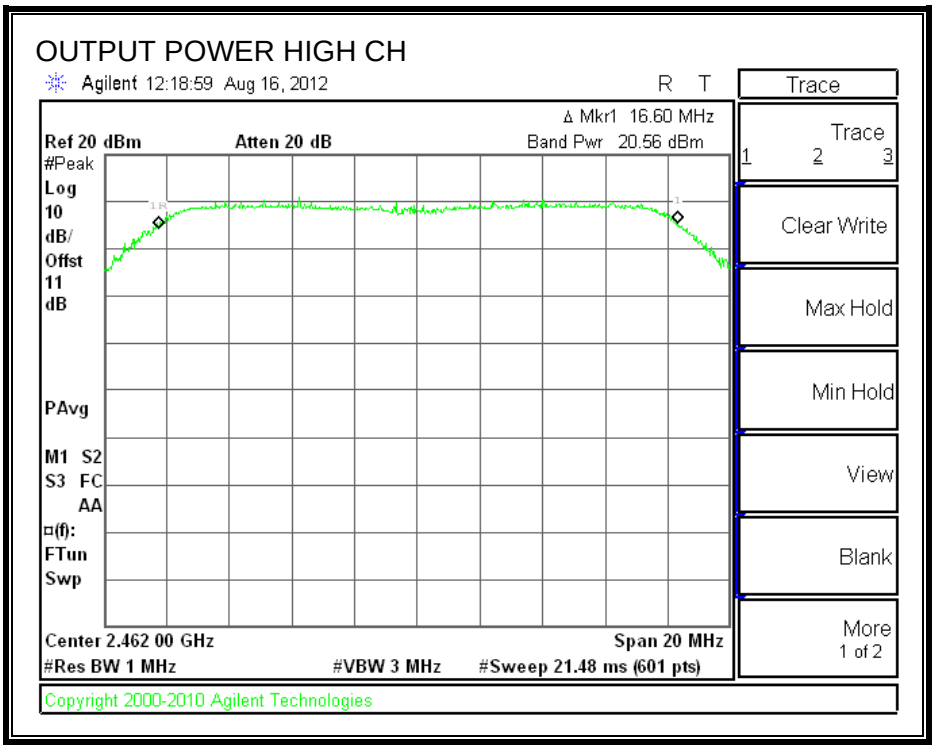
RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	20.57	30	-9.43
Middle	2437	20.62	30	-9.38
High	2462	20.56	30	-9.44

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 dB (including 10 dB pad and1 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	11.72
Middle	2437	12.00
High	2462	11.70

7.2.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

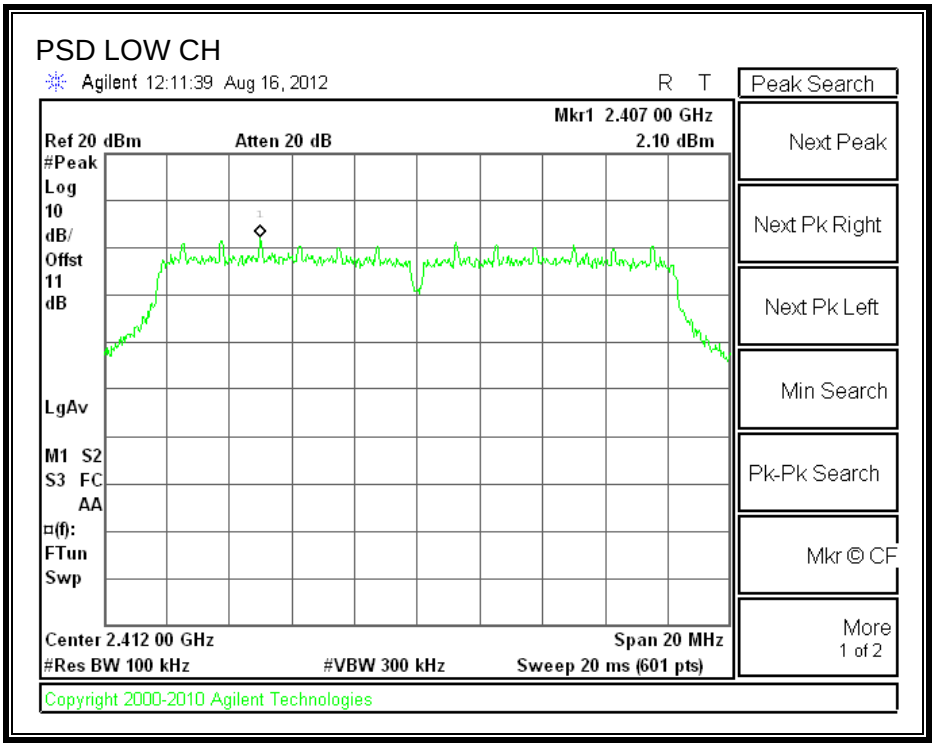
TEST PROCEDURE

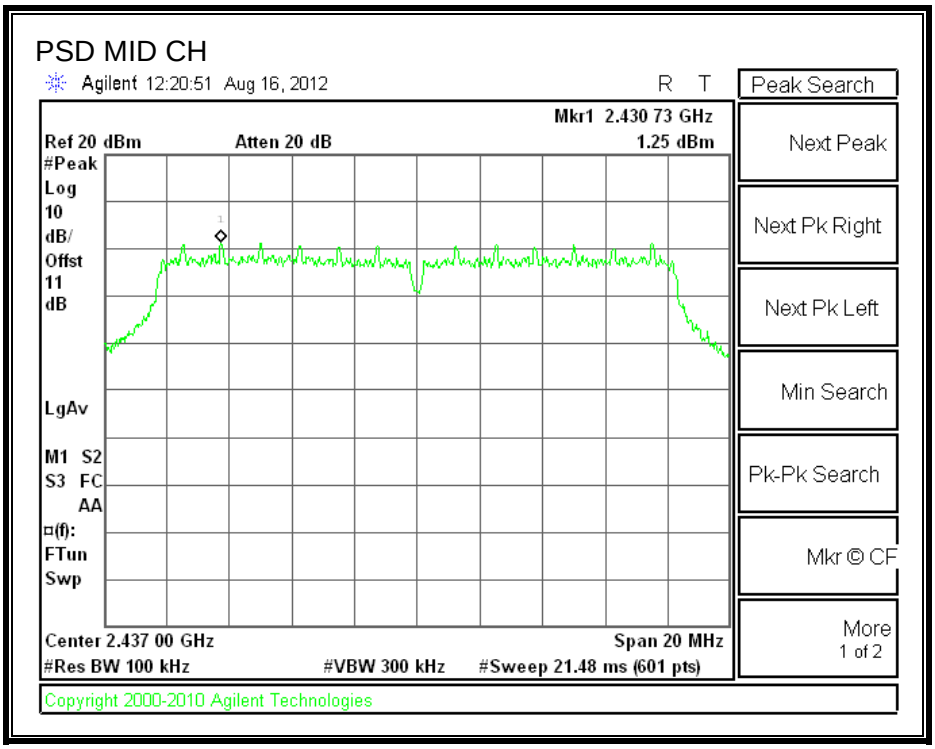
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012.

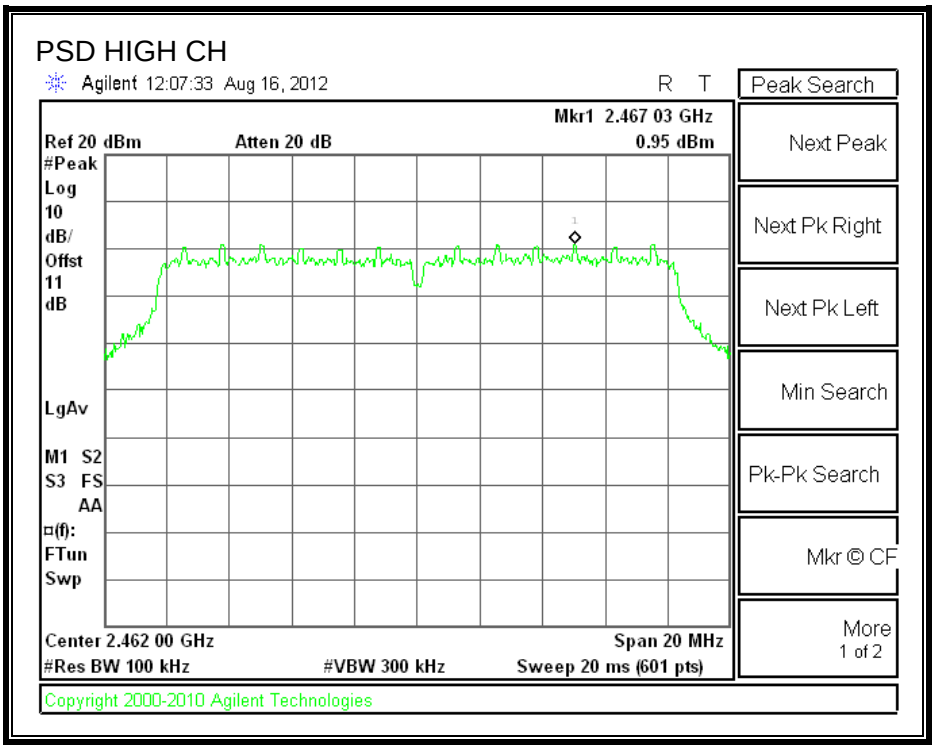
RESULTS

Channel	Frequency (MHz)	Analyzer Reading (dBm)	10log(3kHz/100kHz) (dB)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	2.10	-15.2	-13.10	8	-21.10
Middle	2437	1.25	-15.2	-13.95	8	-21.95
High	2462	0.95	-15.2	-14.25	8	-22.25

POWER SPECTRAL DENSITY







7.2.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

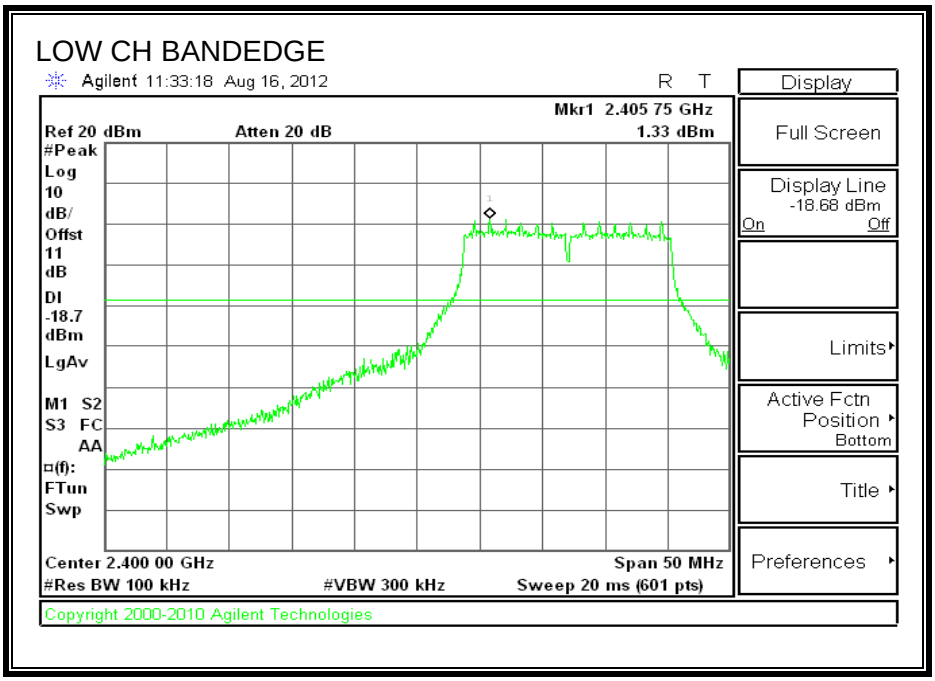
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

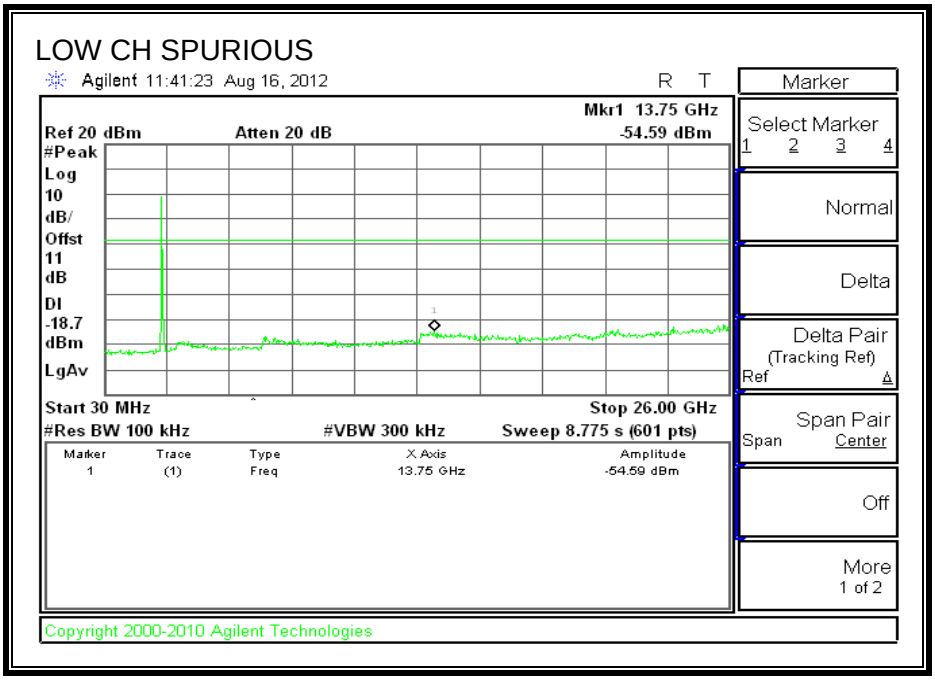
TEST PROCEDURE

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

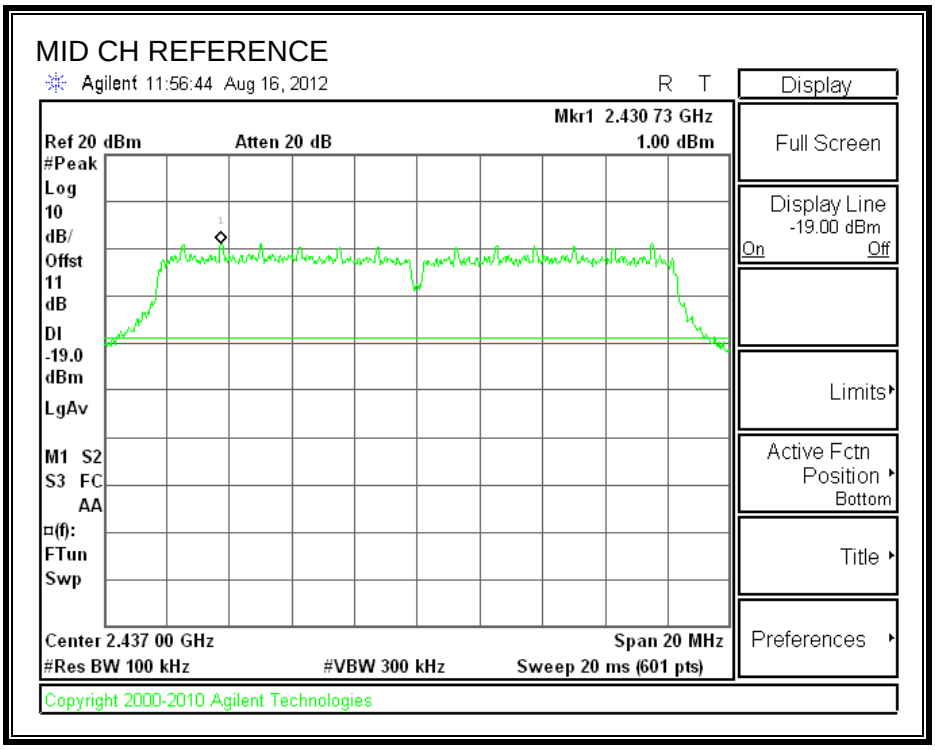
RESULTS

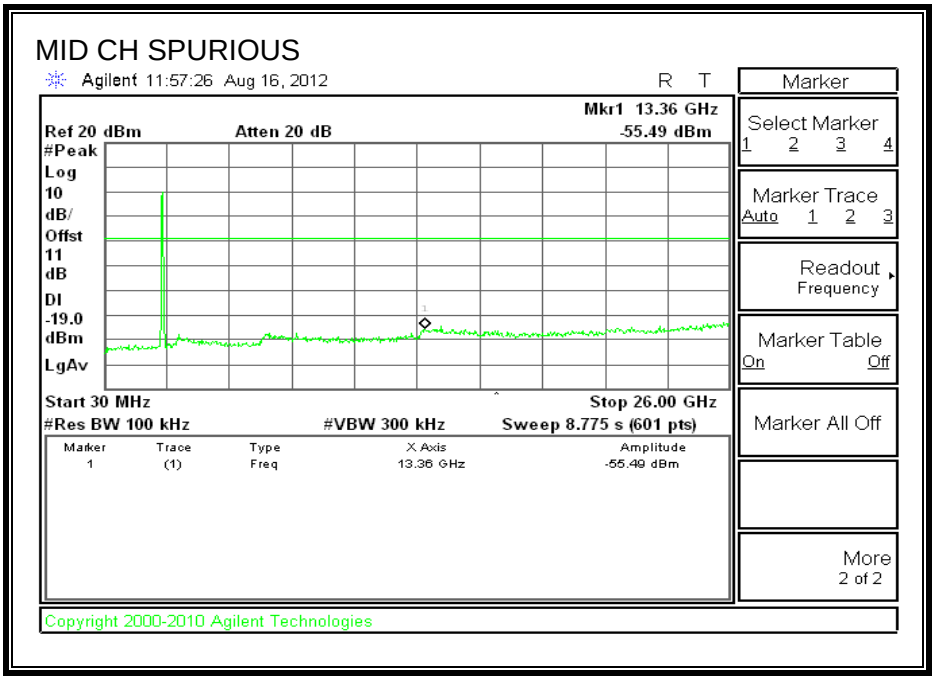
SPURIOUS EMISSIONS, LOW CHANNEL



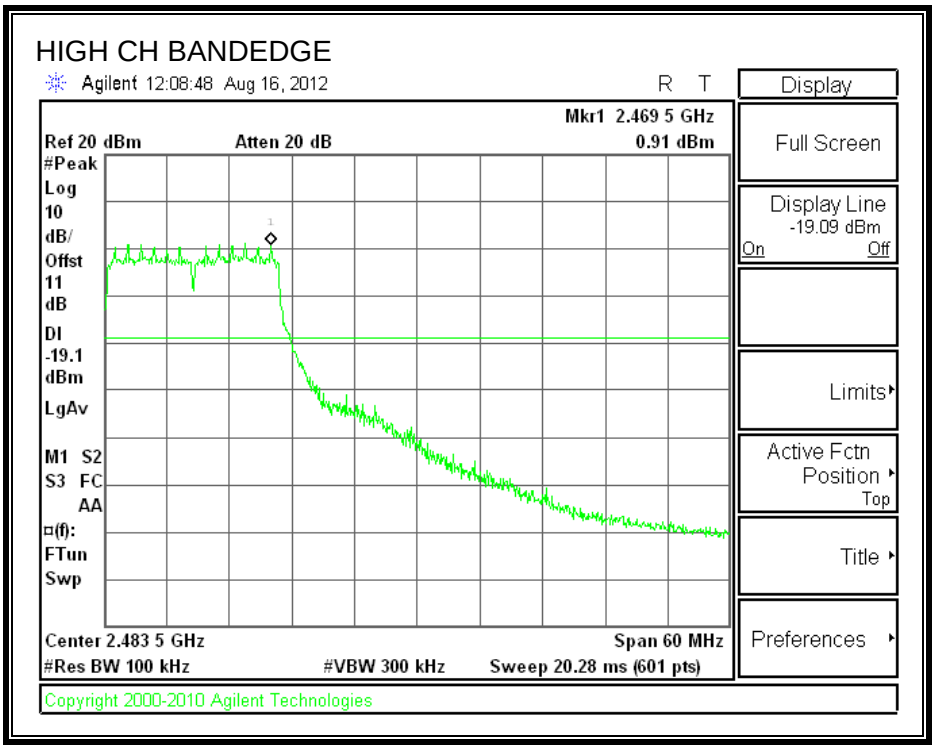


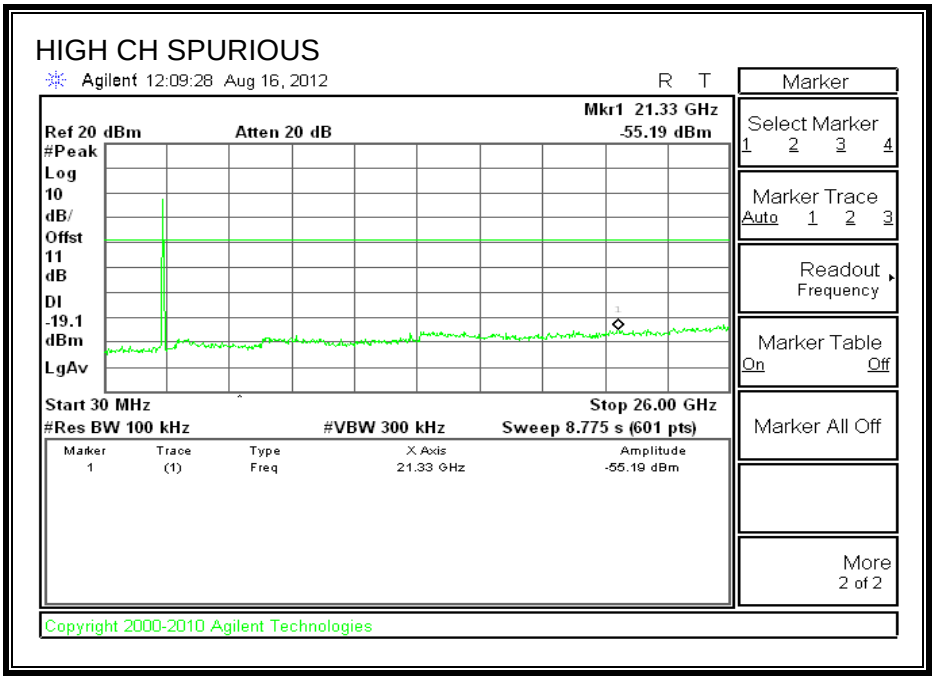
SPURIOUS EMISSIONS, MID CHANNEL





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.

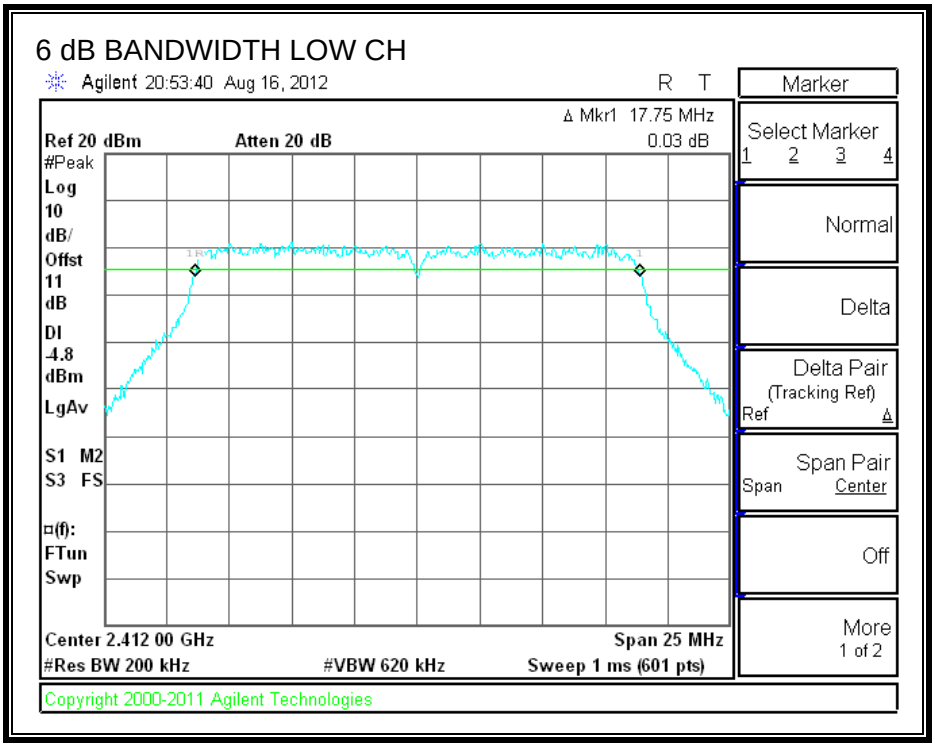
TEST PROCEDURE

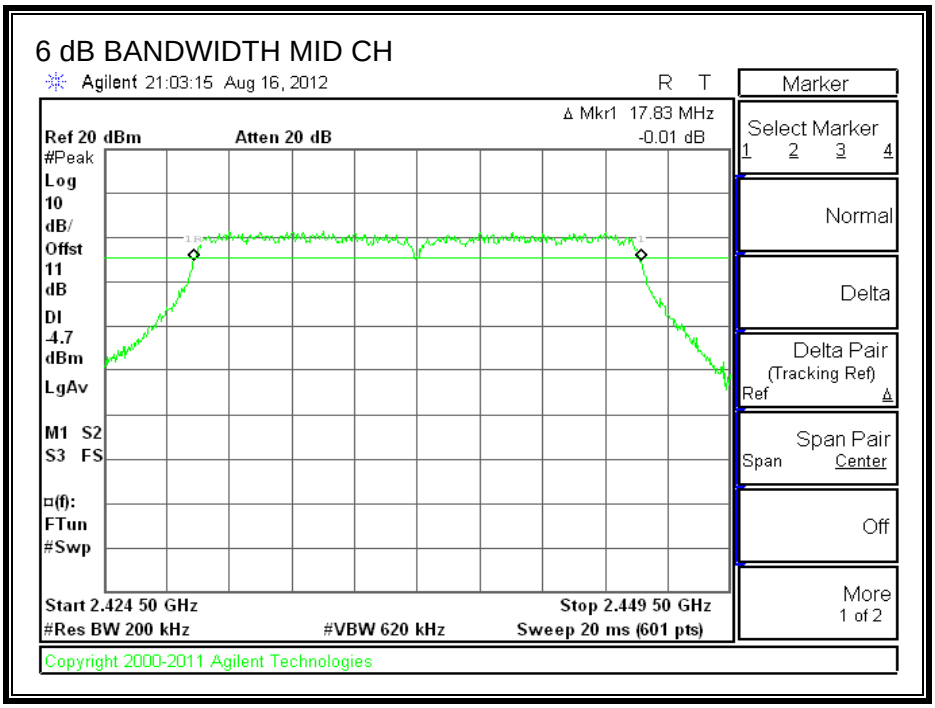
KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

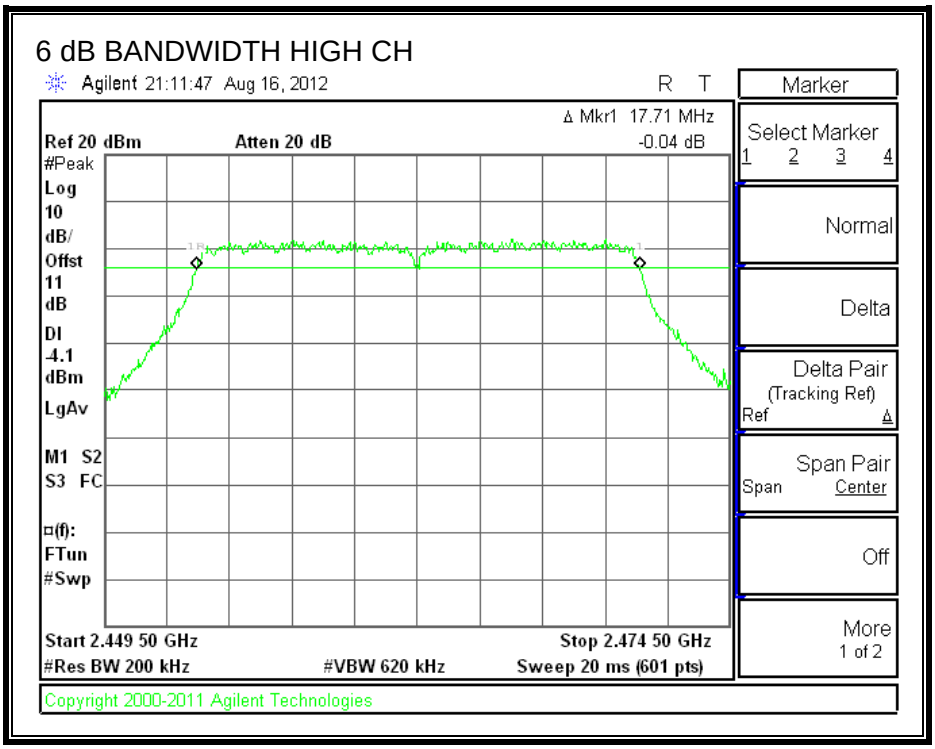
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.750	0.5
Middle	2437	17.830	0.5
High	2462	17.710	0.5

6 dB BANDWIDTH







7.3.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

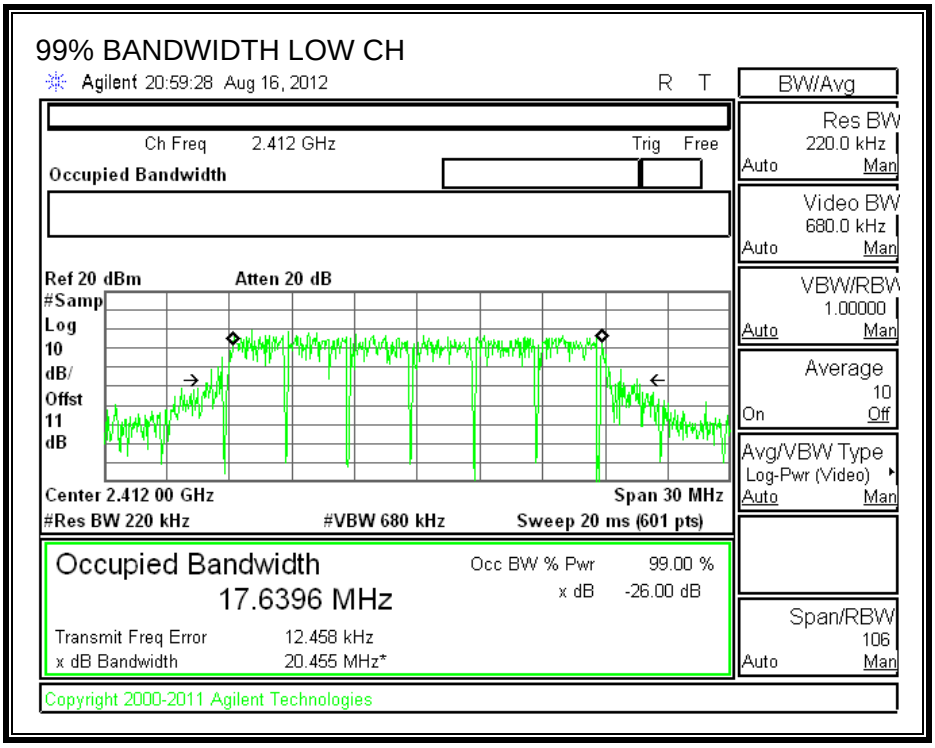
TEST PROCEDURE

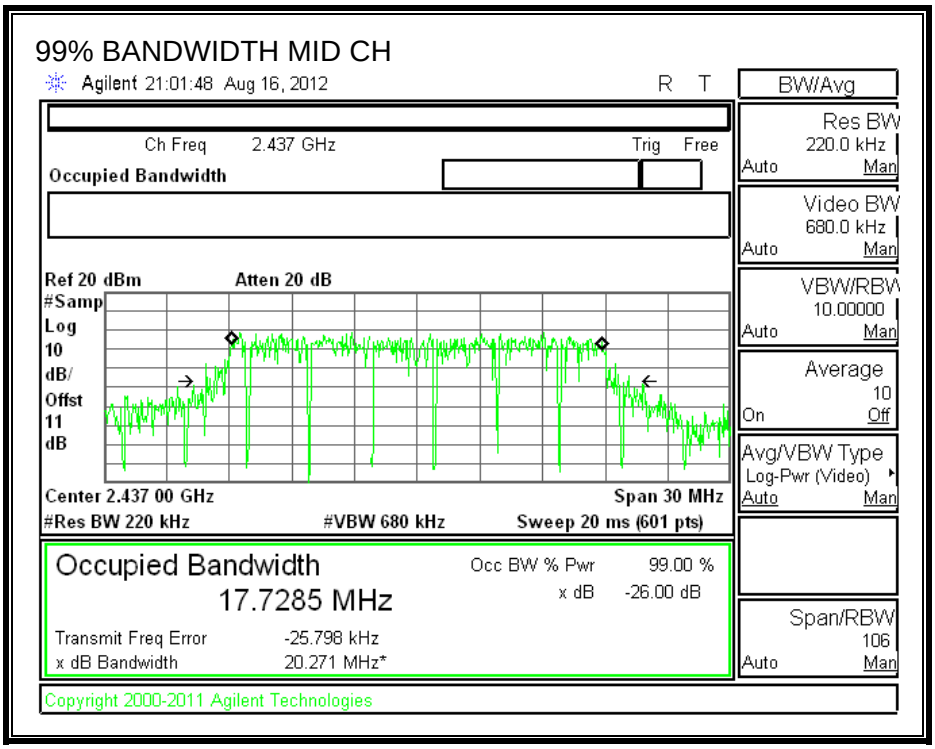
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

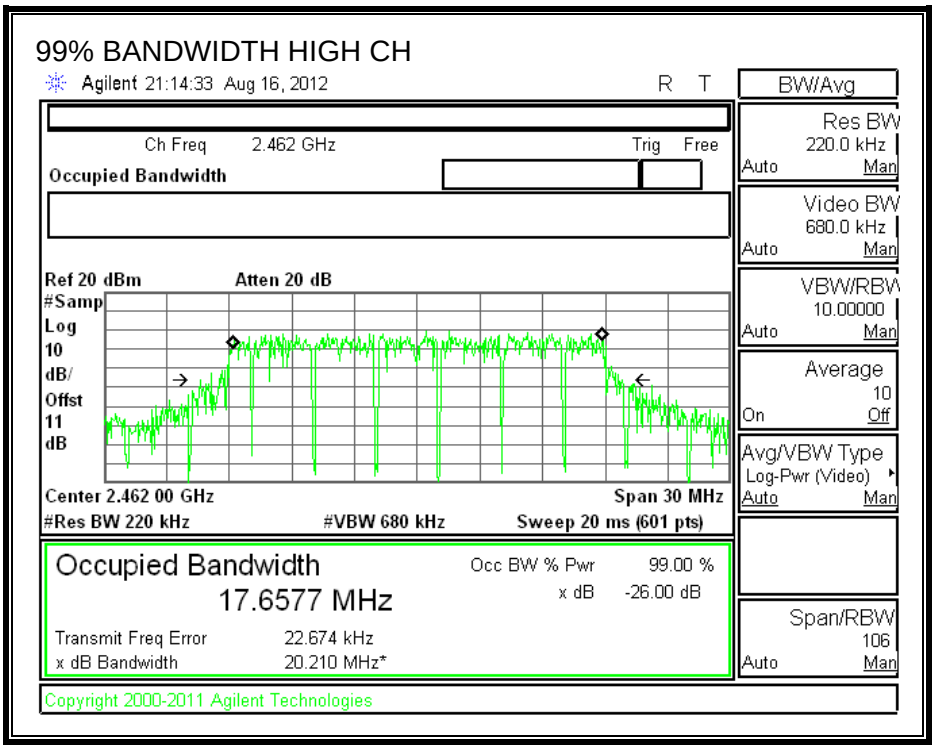
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.6396
Middle	2437	17.7285
High	2462	17.6577

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.

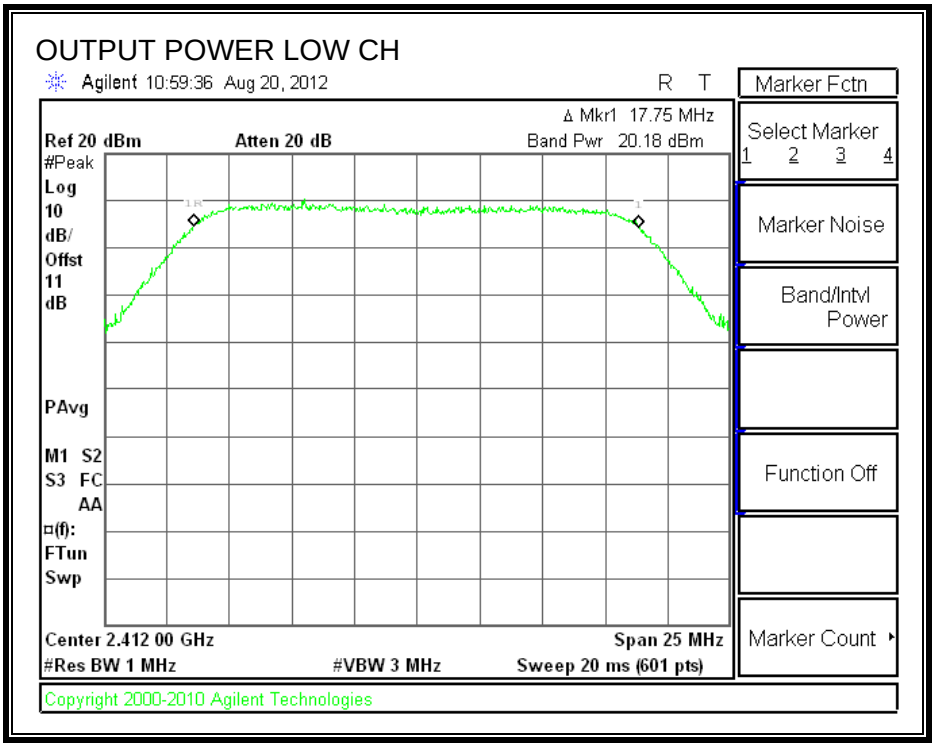
TEST PROCEDURE

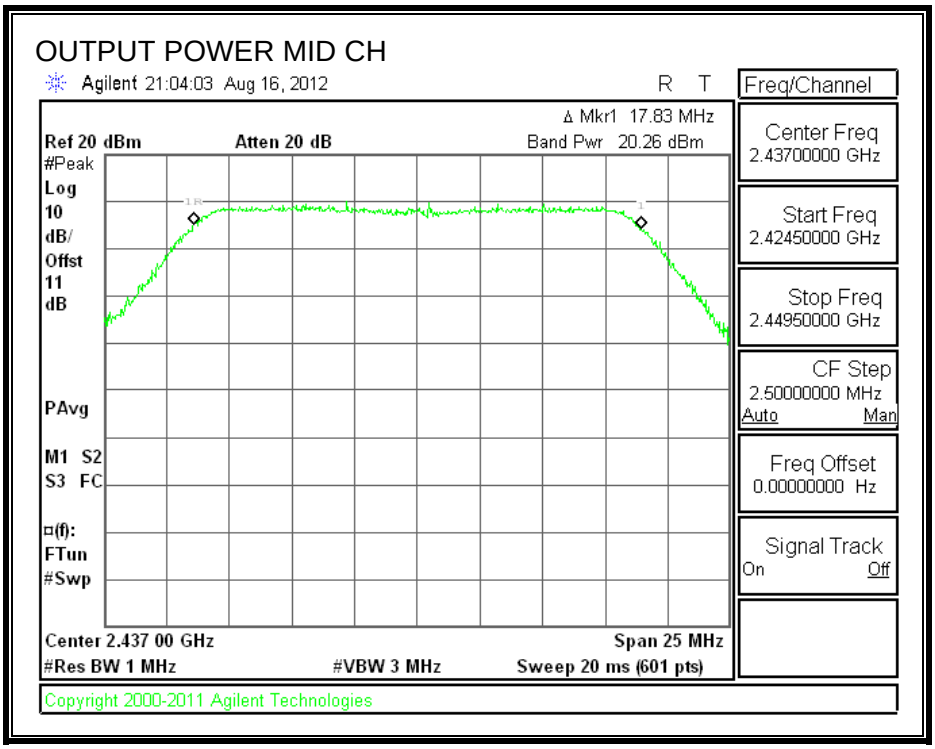
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012.

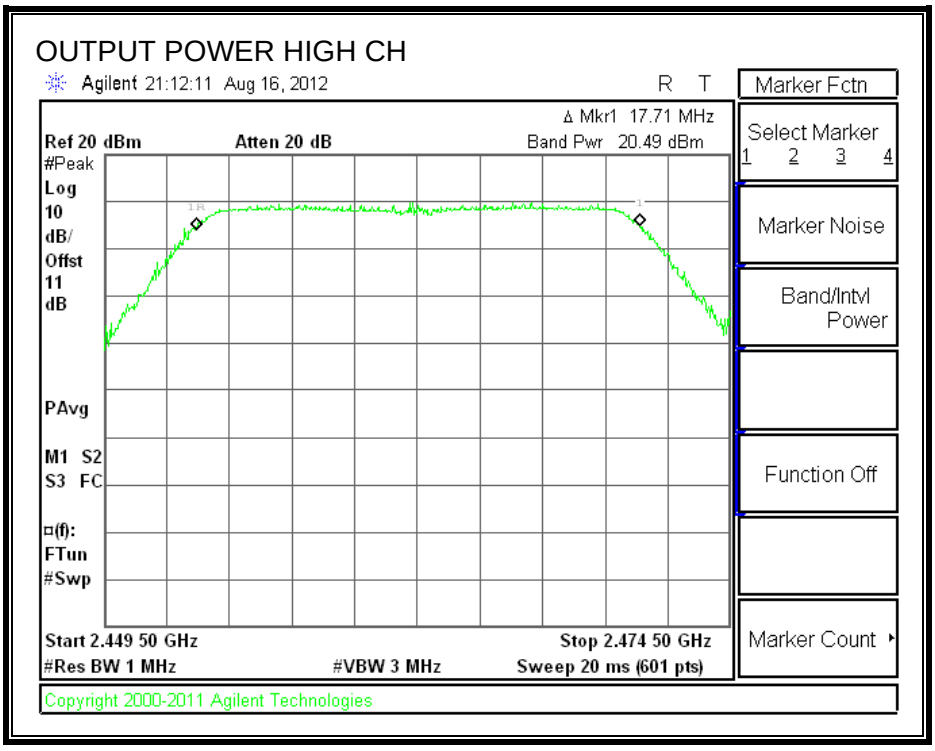
RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	20.18	30	-9.82
Middle	2437	20.26	30	-9.74
High	2462	20.49	30	-9.51

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 dB (including 10 dB pad and 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	10.83
Middle	2437	10.95
High	2462	11.08

7.3.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

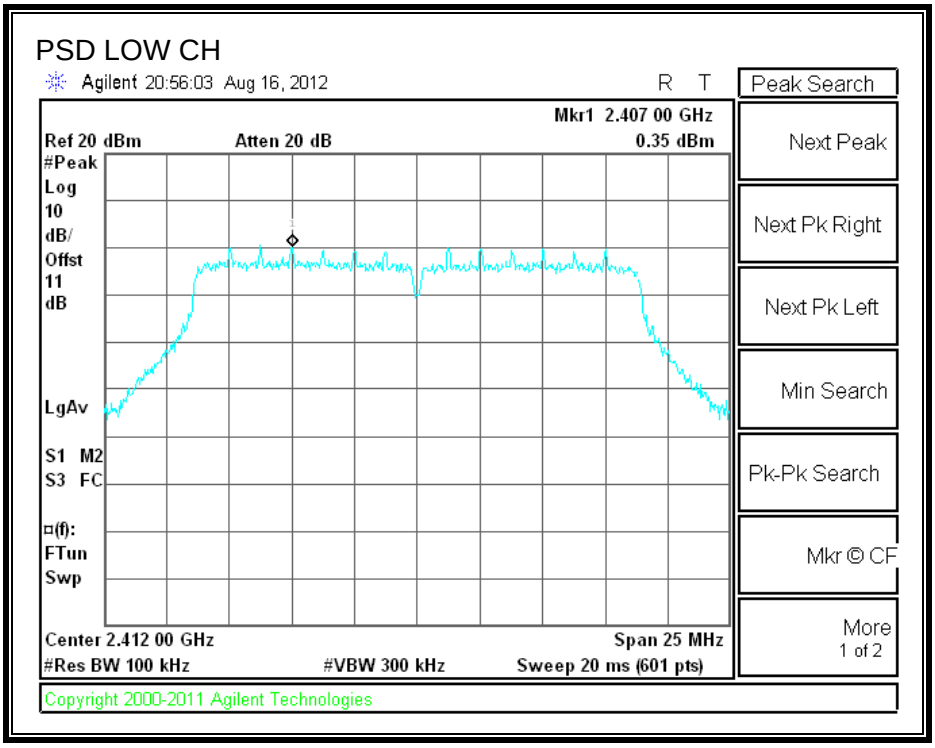
TEST PROCEDURE

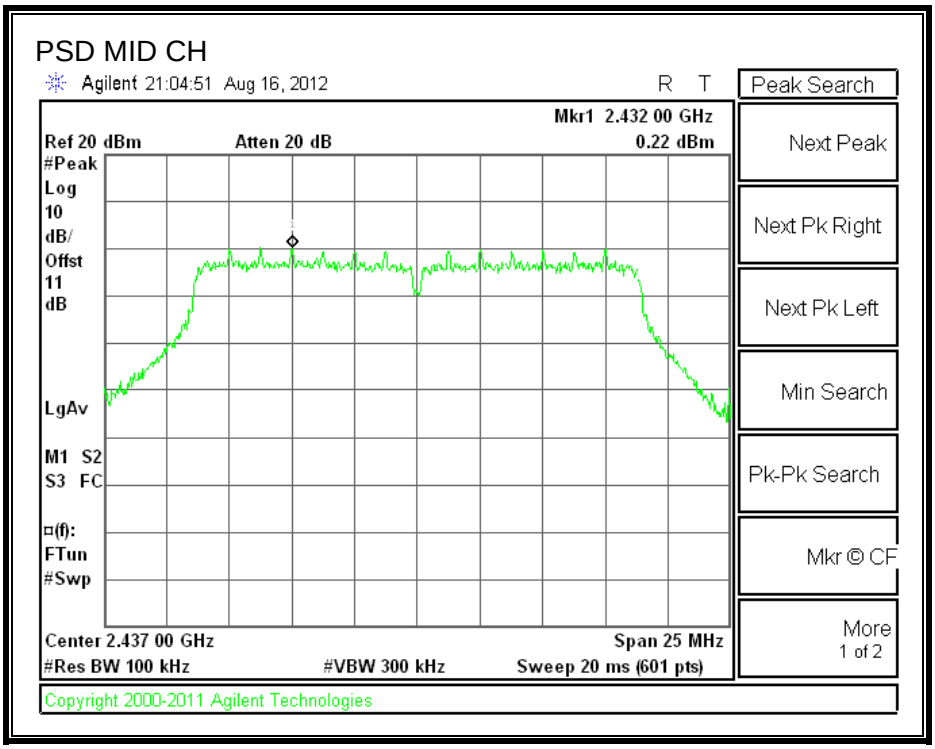
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012.

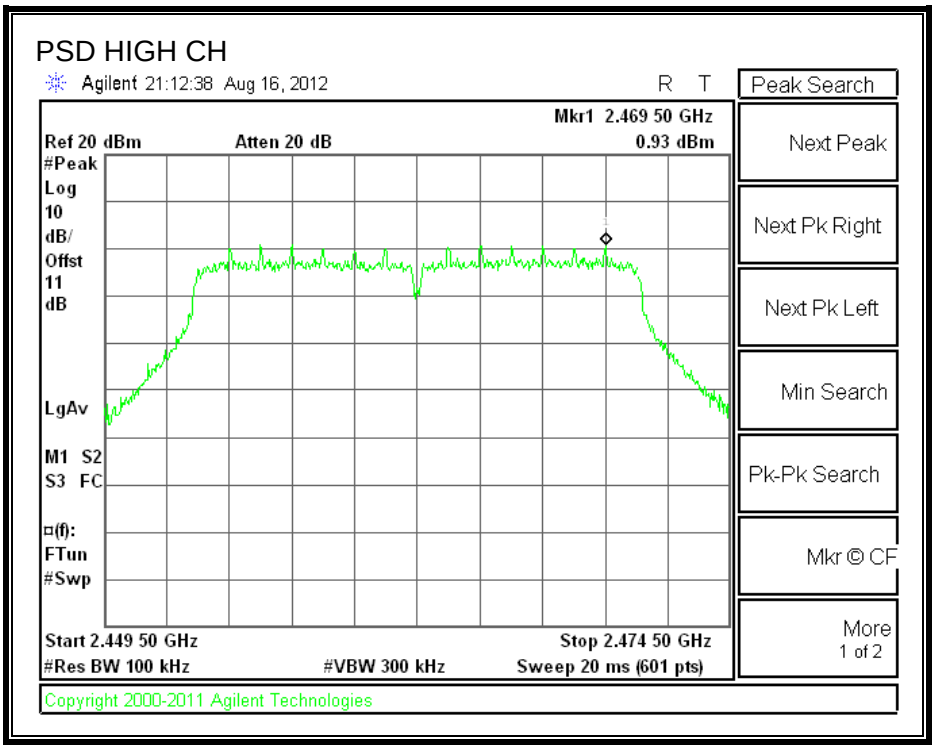
RESULTS

Channel	Frequency (MHz)	Analyzer Reading (dBm)	10log(3kHz/100kHz) (dB)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	0.35	-15.2	-14.85	8	-22.85
Middle	2437	0.22	-15.2	-14.98	8	-22.98
High	2462	0.93	-15.2	-14.27	8	-22.27

POWER SPECTRAL DENSITY







7.3.6. 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.

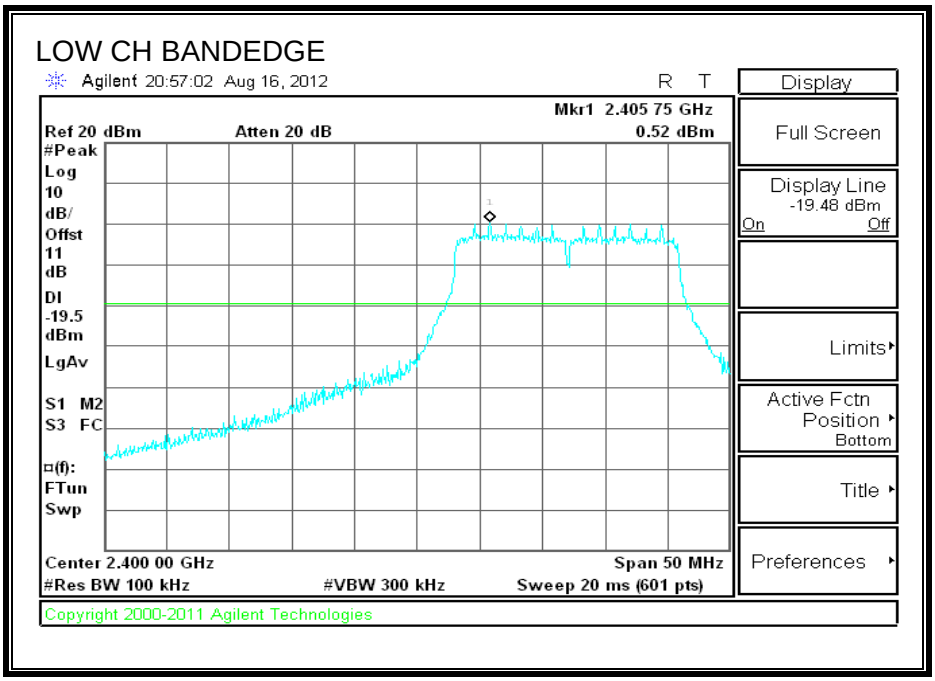
TEST PROCEDURE

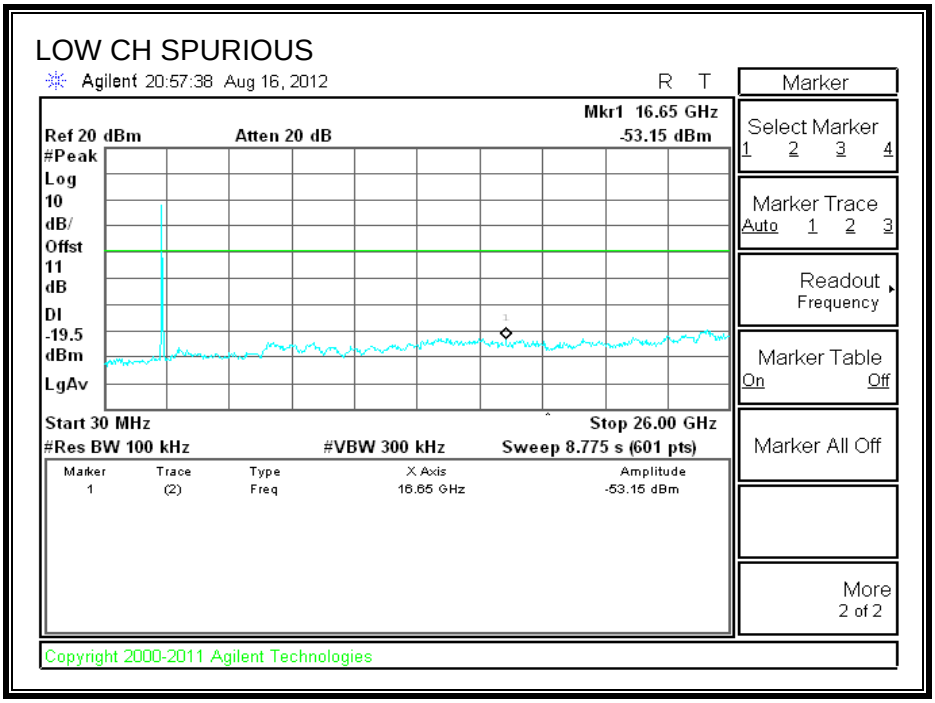
KDB 558074 D01 V01 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247”, dated 01/18/2012.

.

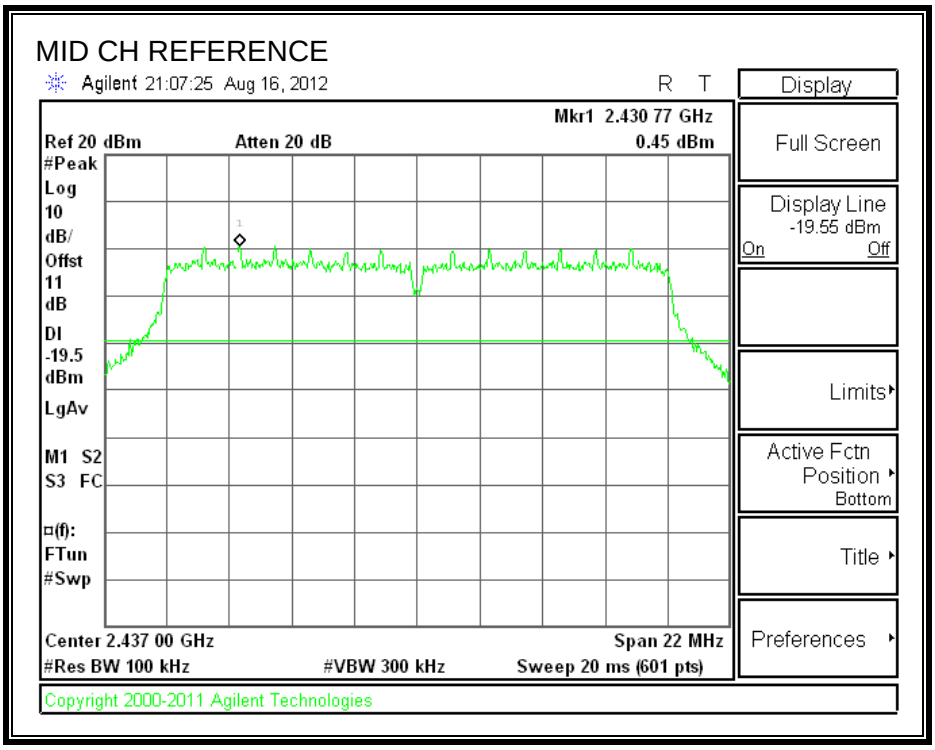
RESULTS

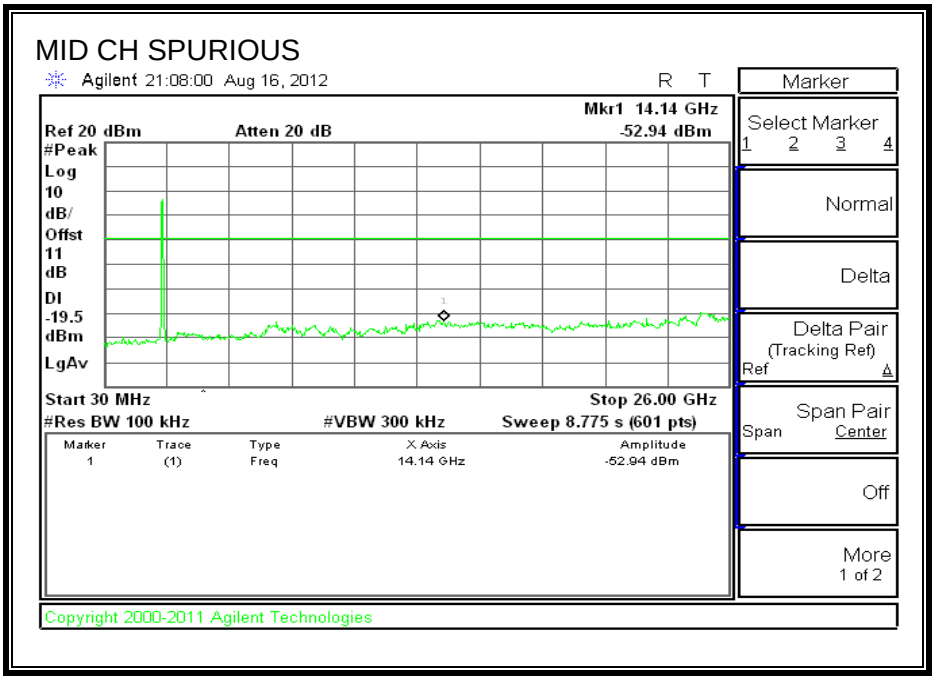
SPURIOUS EMISSIONS, LOW CHANNEL



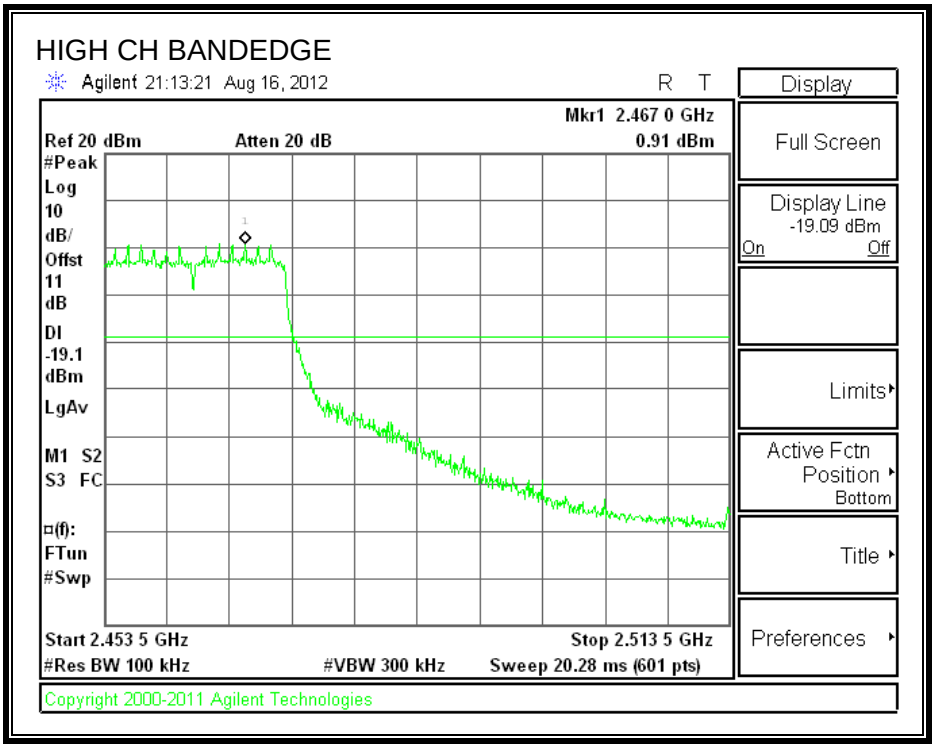


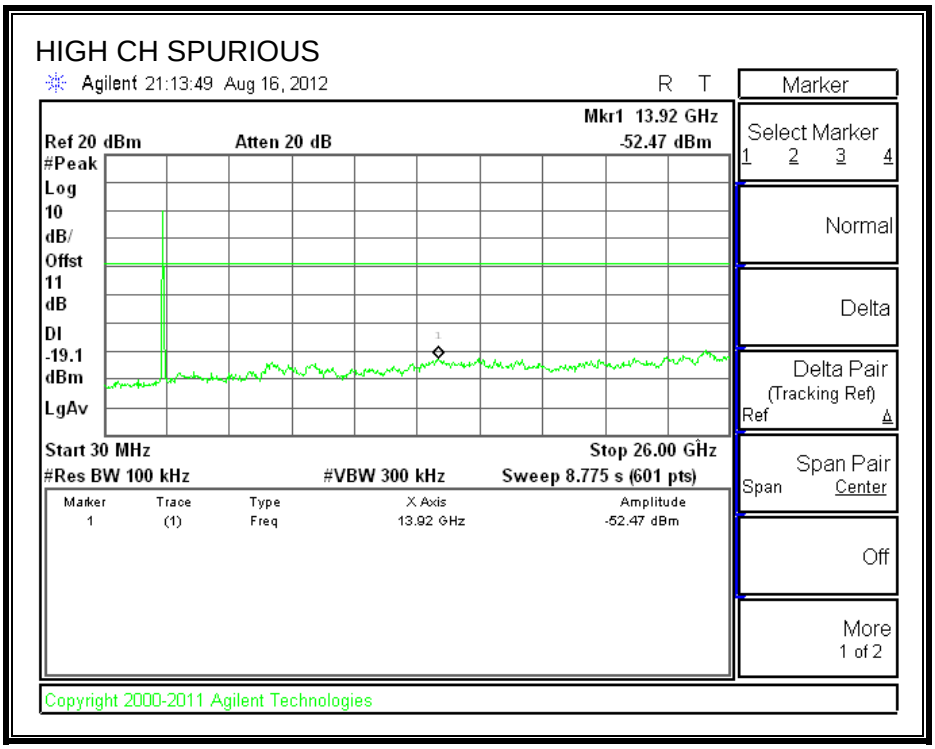
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.4. 802.11a MODE IN THE 5.8 GHz BAND

7.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

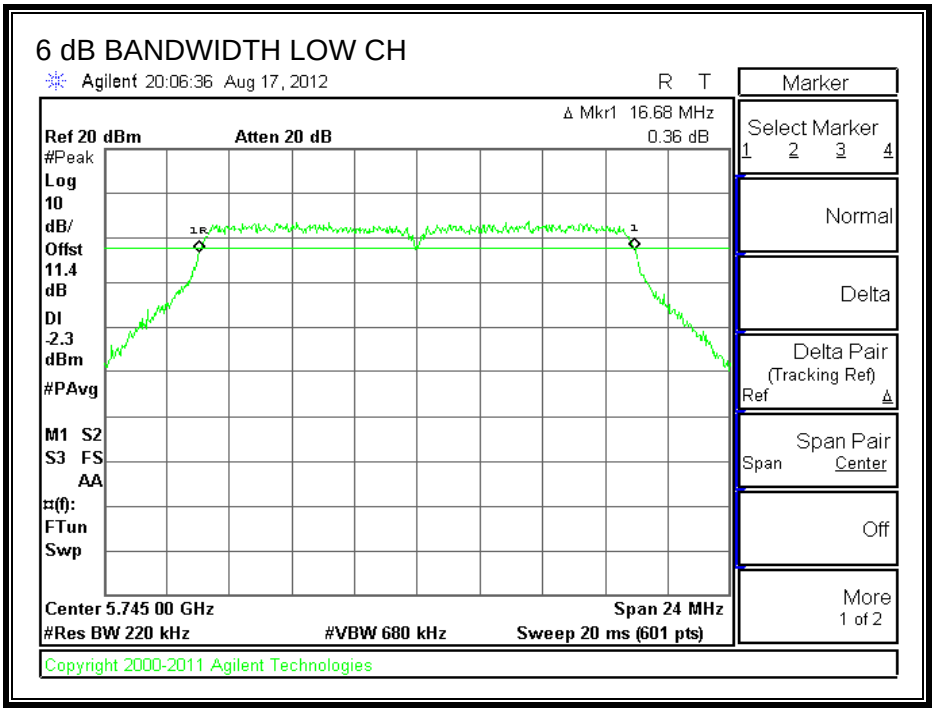
TEST PROCEDURE

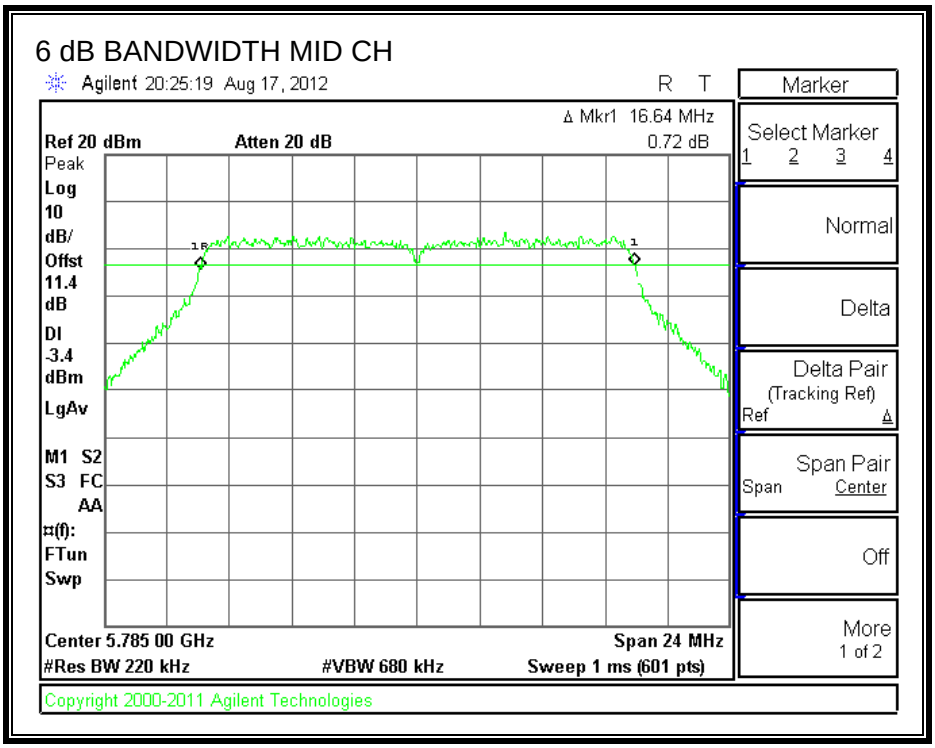
KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

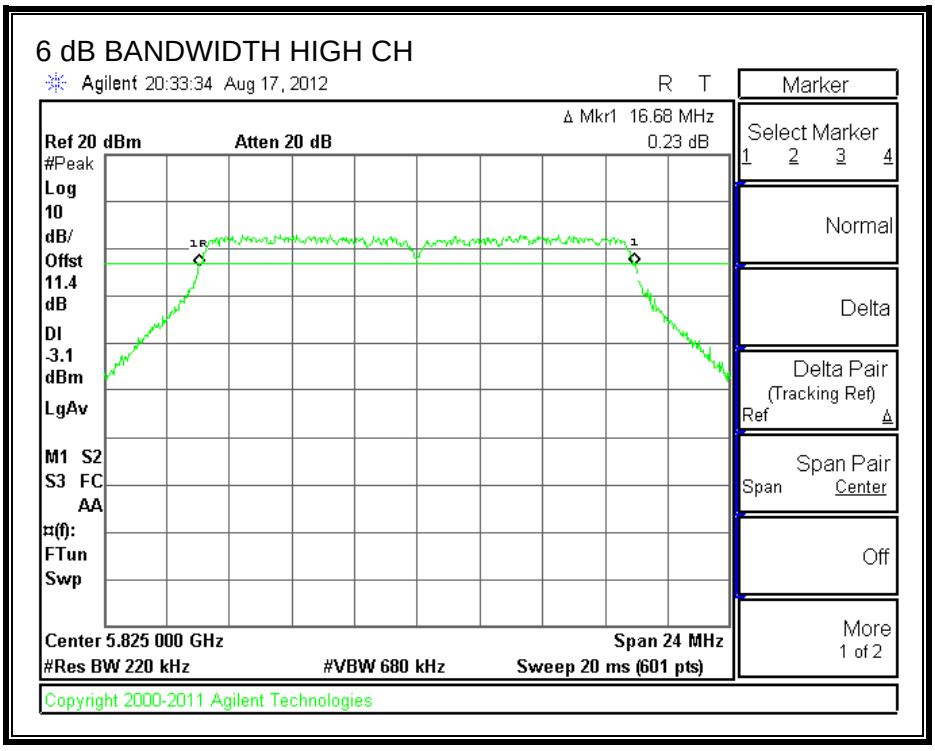
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.68	0.5
Middle	5785	16.64	0.5
High	5825	16.68	0.5

6 dB BANDWIDTH







7.4.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

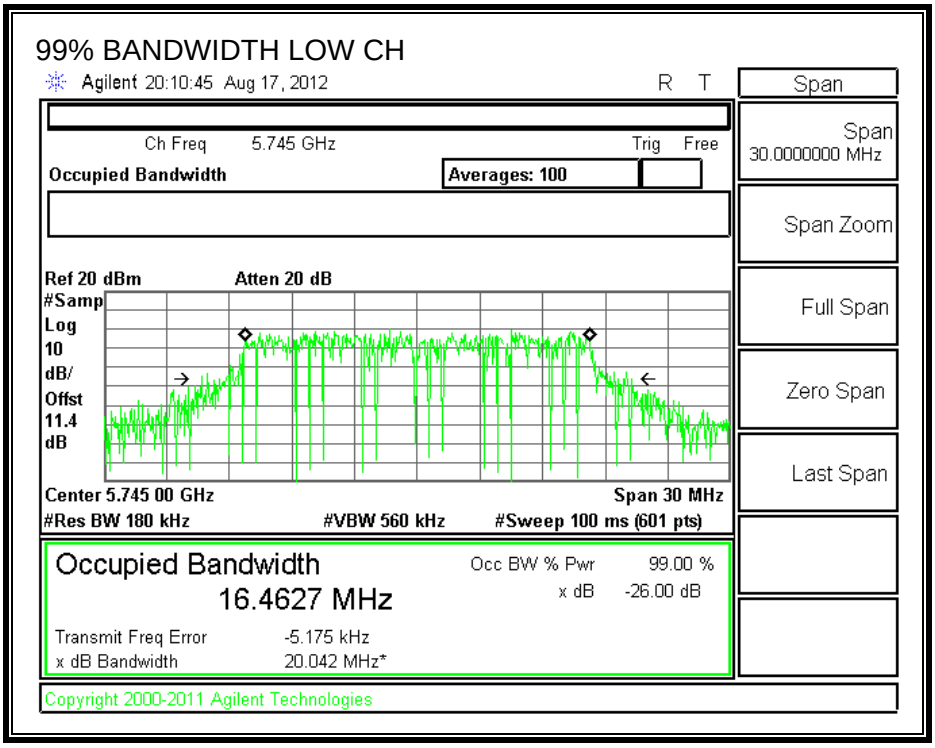
TEST PROCEDURE

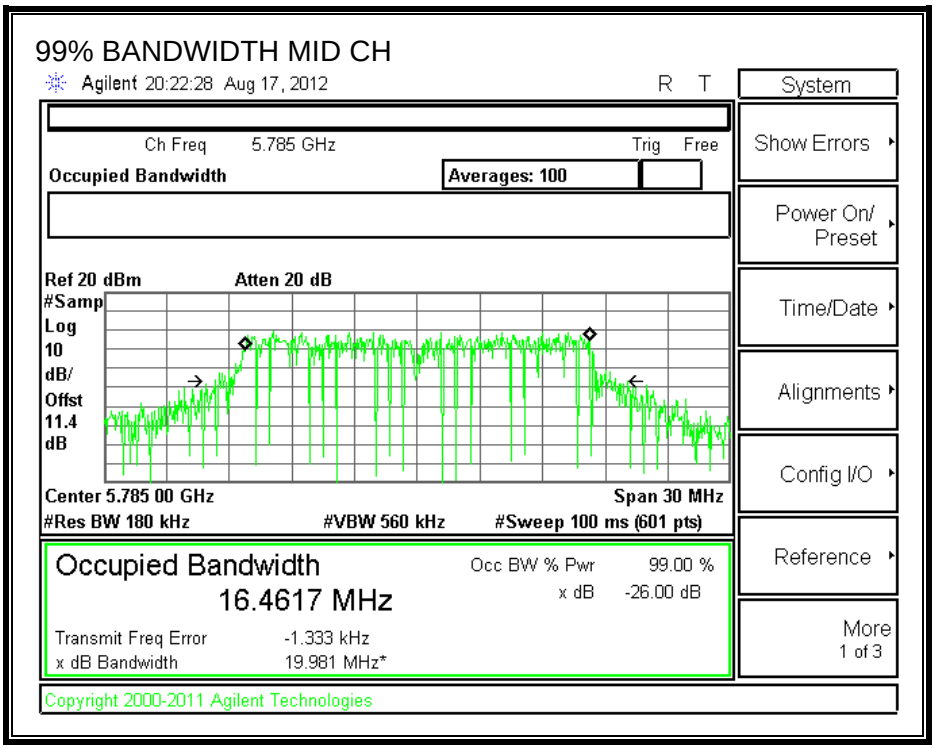
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

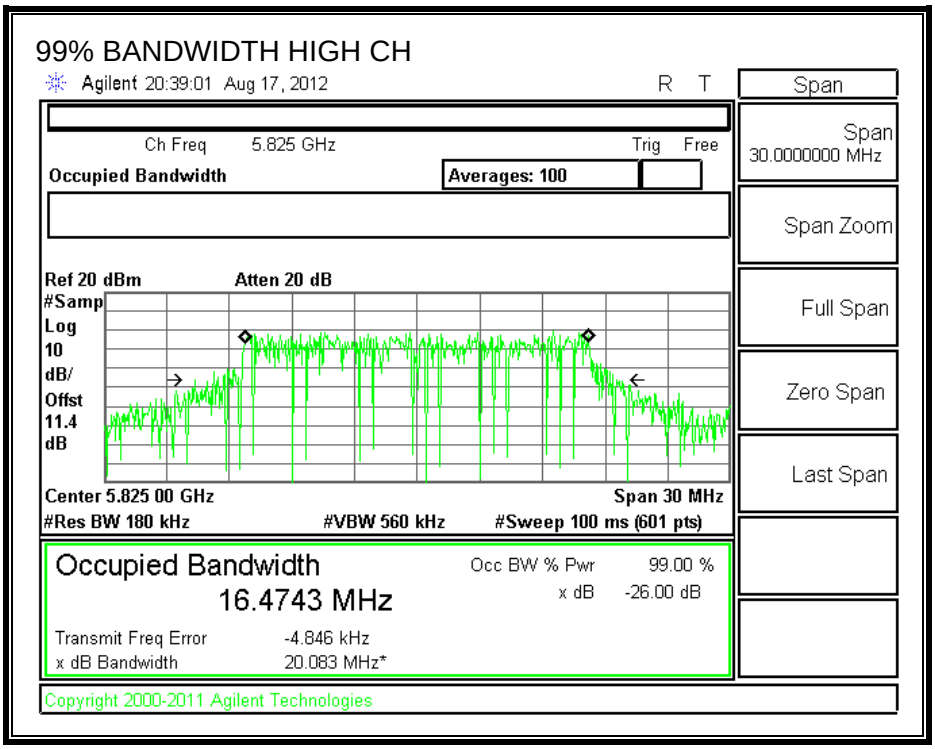
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.4627
Middle	5785	16.4617
High	5825	16.4743

99% BANDWIDTH







7.4.3. 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.

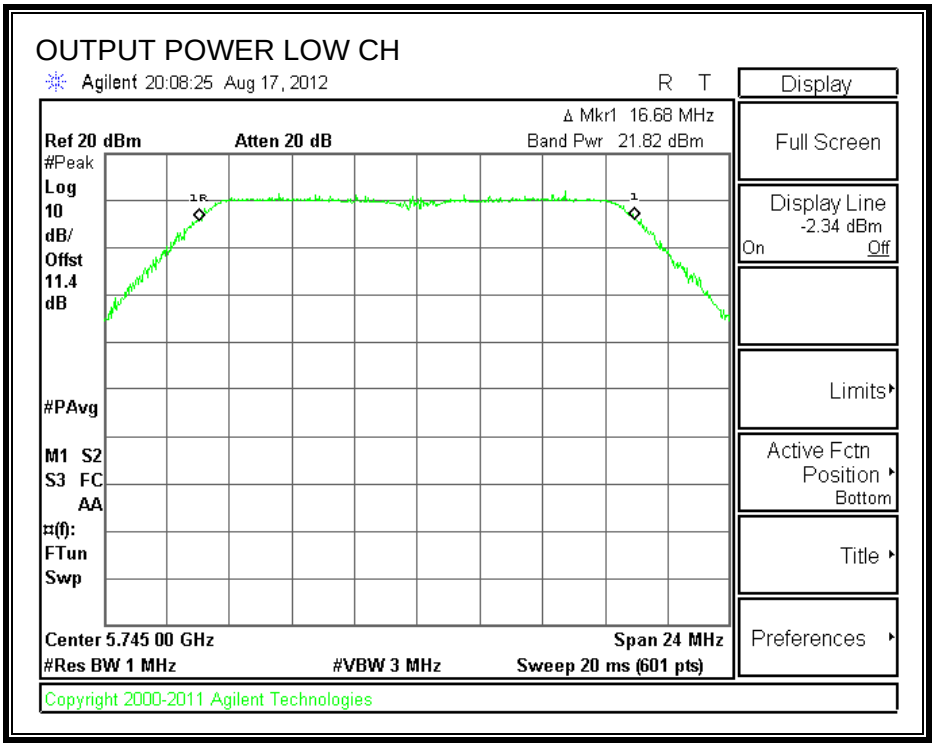
TEST PROCEDURE

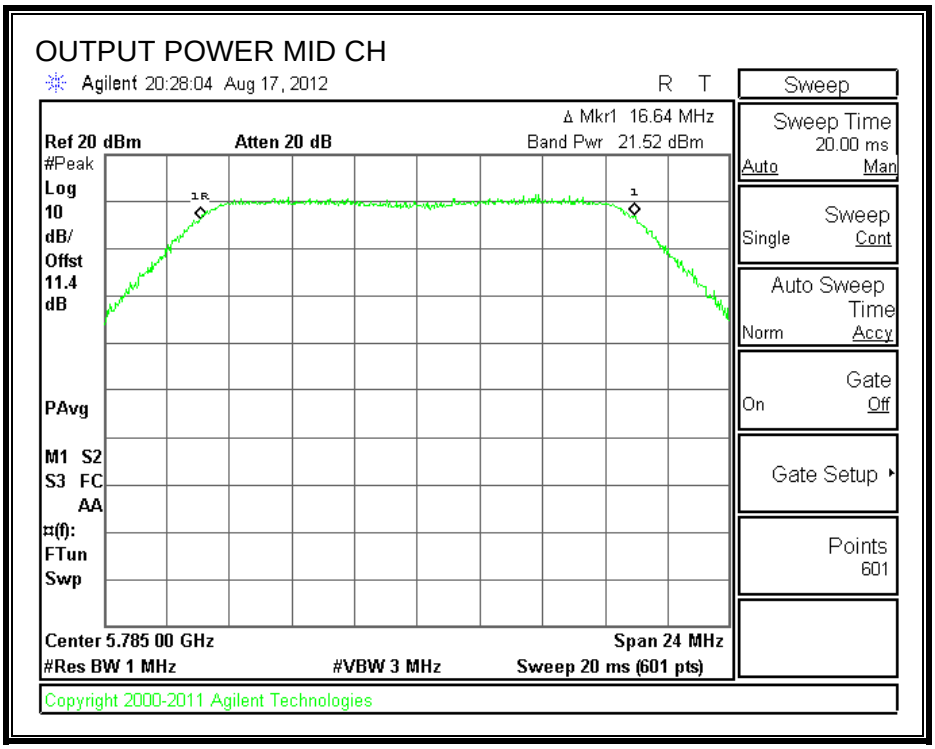
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012.

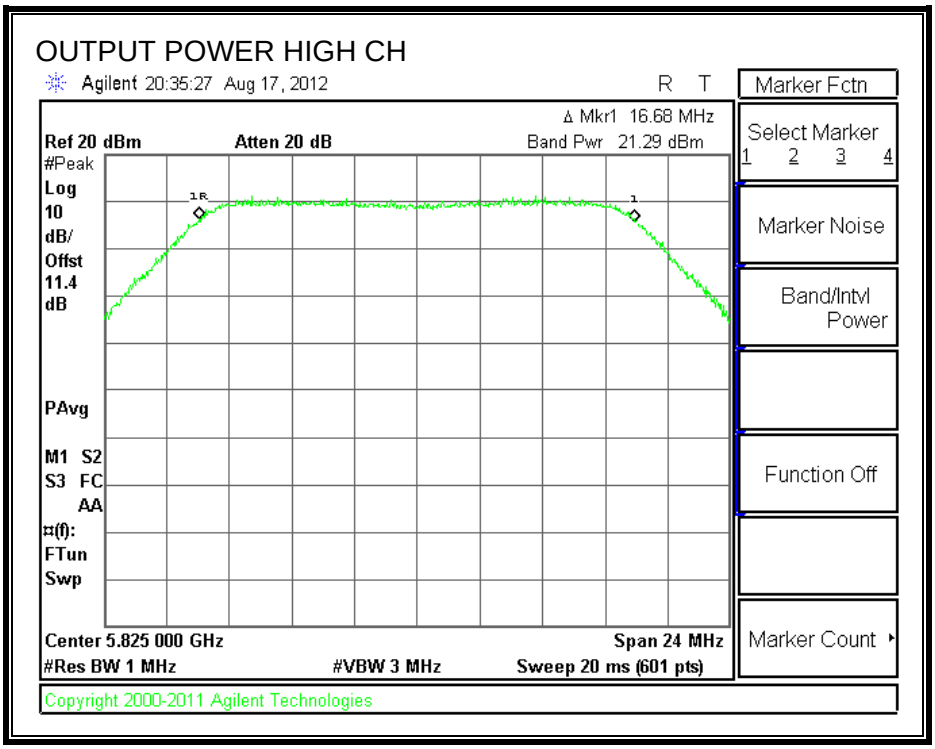
RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	5745	21.82	30	-8.18
Middle	5785	21.52	30	-8.48
High	5825	21.29	30	-8.71

OUTPUT POWER







7.4.4. 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 11.4 dB (including 10 dB pad and 1.4 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Power (dBm)
Low	5745	12.65
Middle	5785	12.49
High	5825	12.78

7.4.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

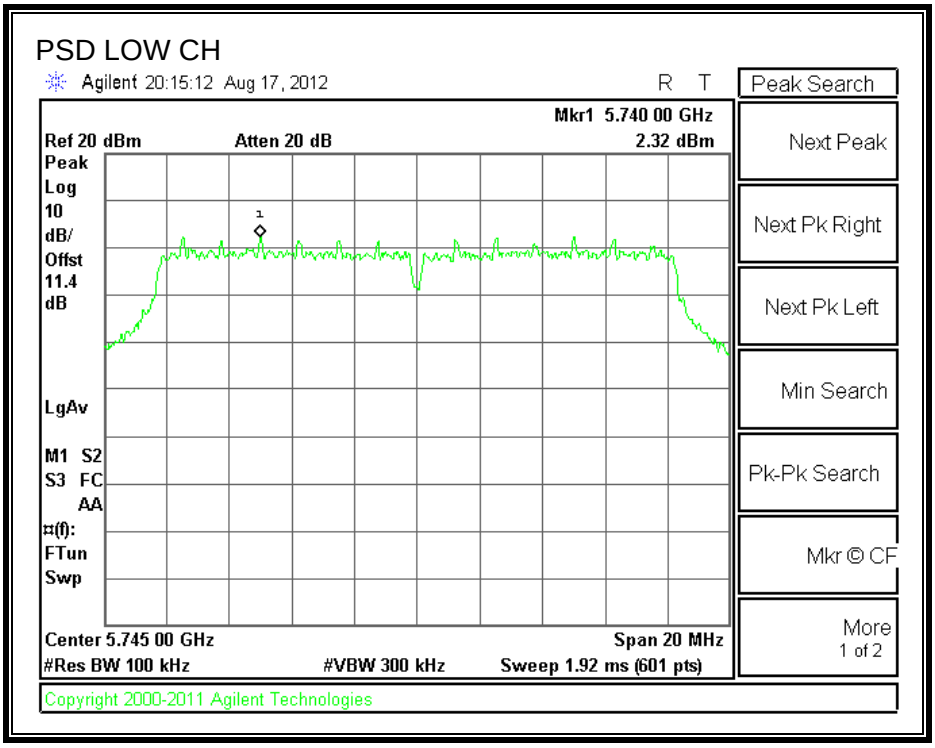
TEST PROCEDURE

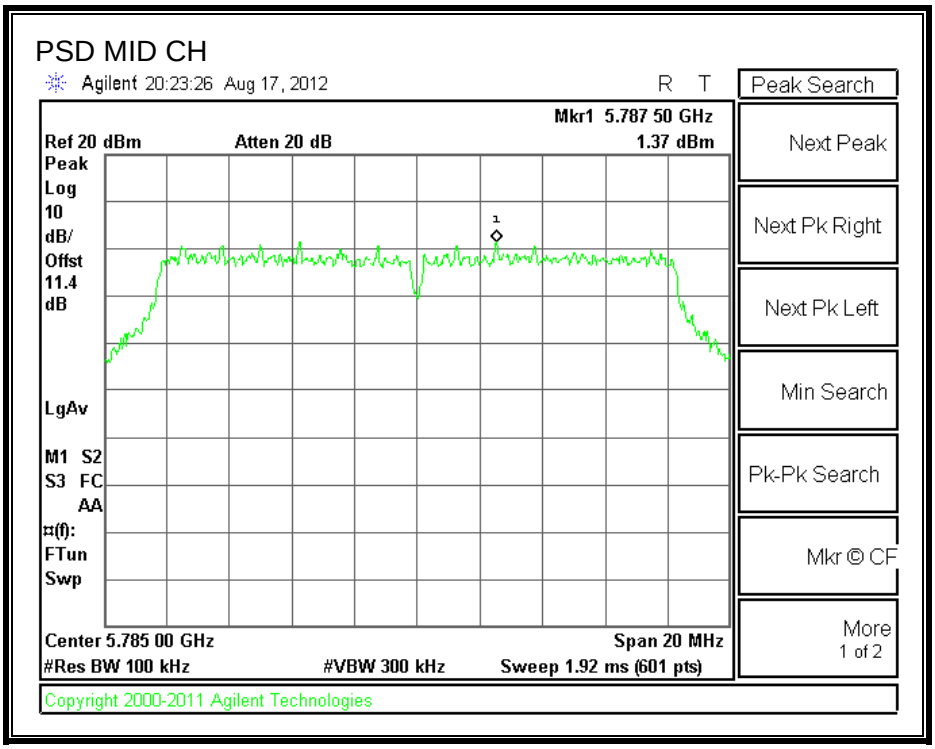
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012.

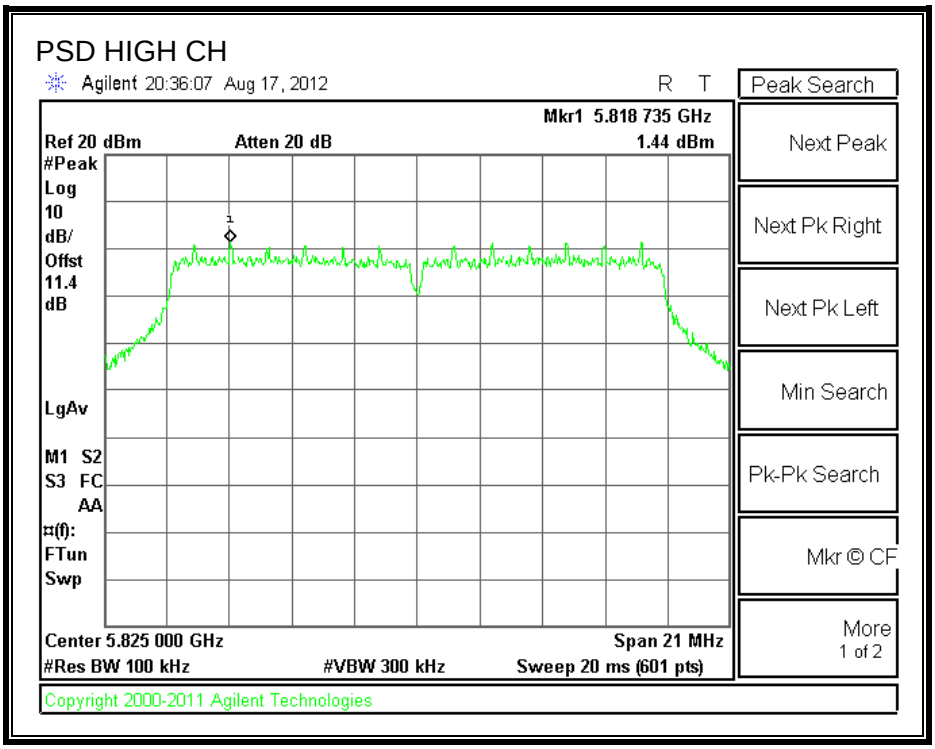
RESULTS

Channel	Frequency (MHz)	Analyzer Reading (dBm)	10log(3kHz/100kHz) (dB)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	2.32	-15.2	-12.88	8	-20.88
Middle	5785	1.37	-15.2	-13.83	8	-21.83
High	5825	1.44	-15.2	-13.76	8	-21.76

POWER SPECTRAL DENSITY







7.4.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

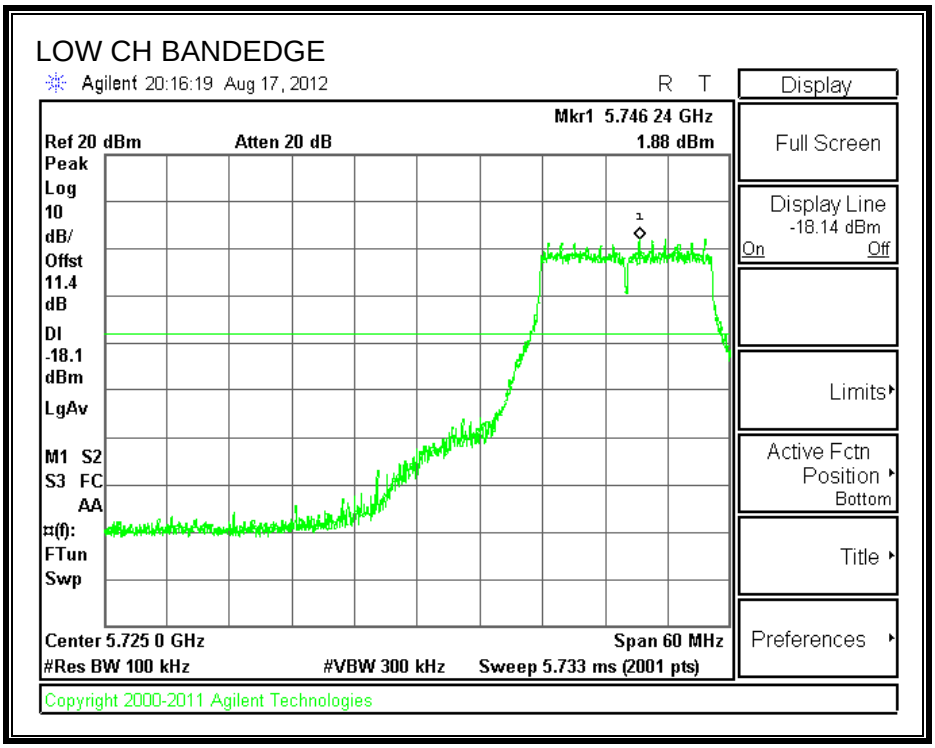
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

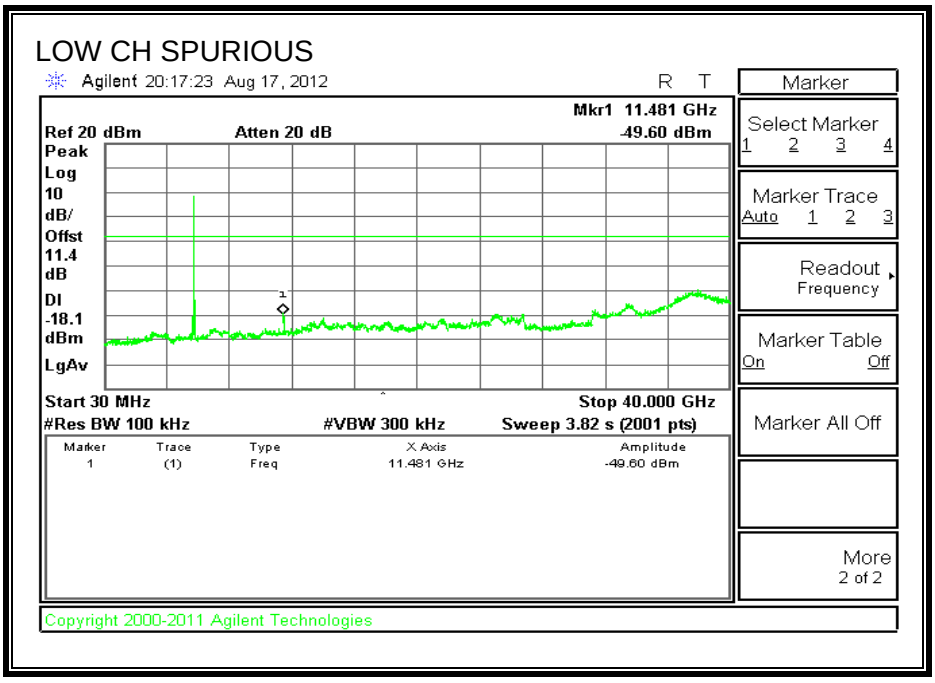
TEST PROCEDURE

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

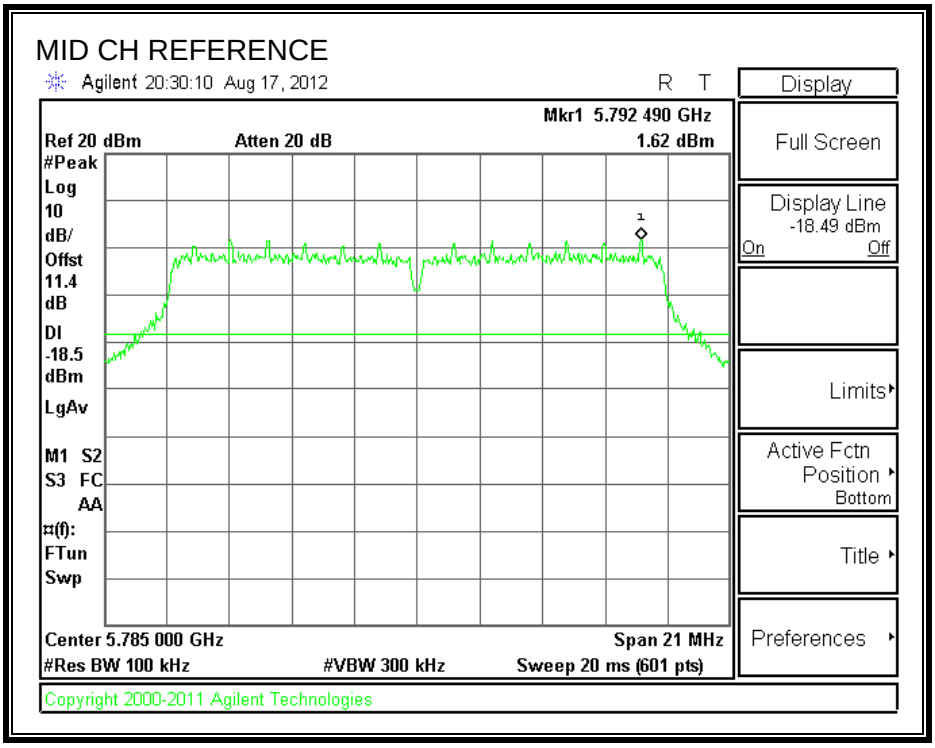
RESULTS

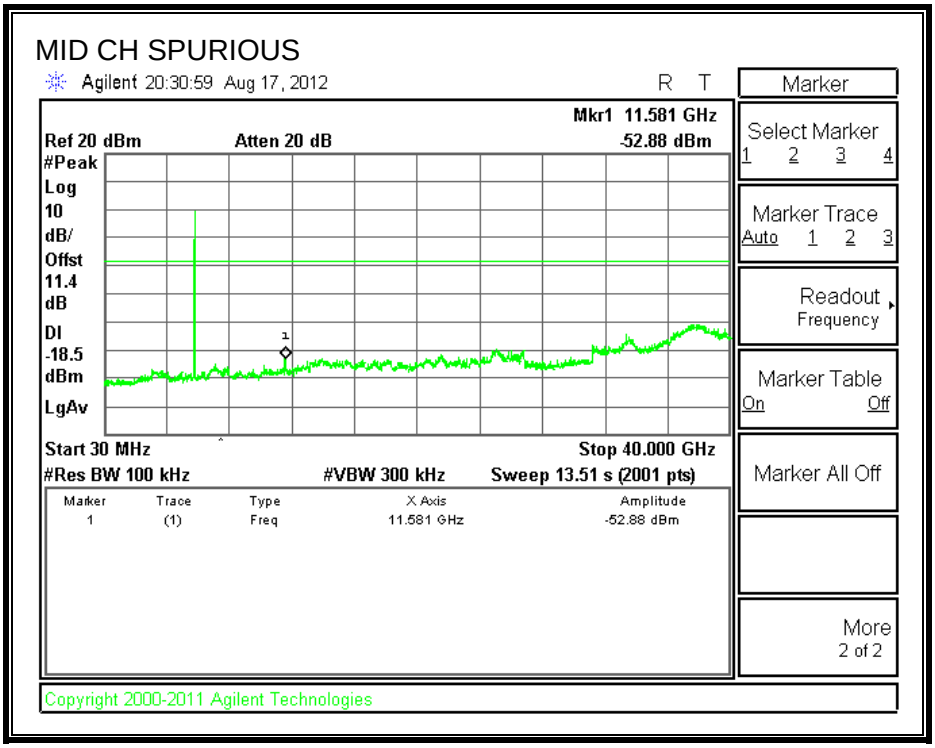
SPURIOUS EMISSIONS, LOW CHANNEL



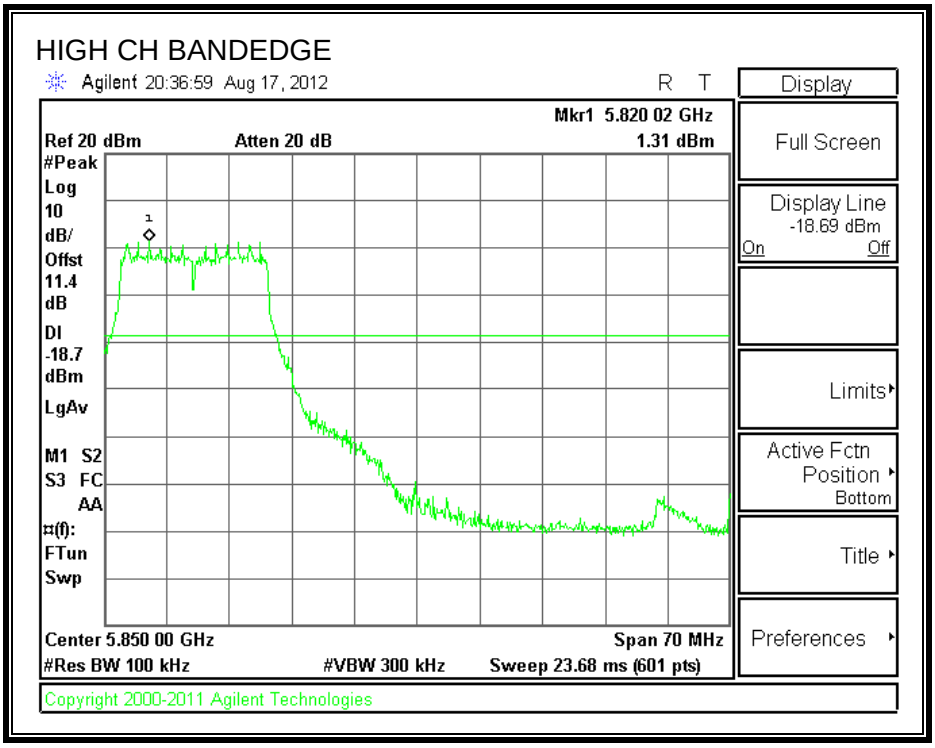


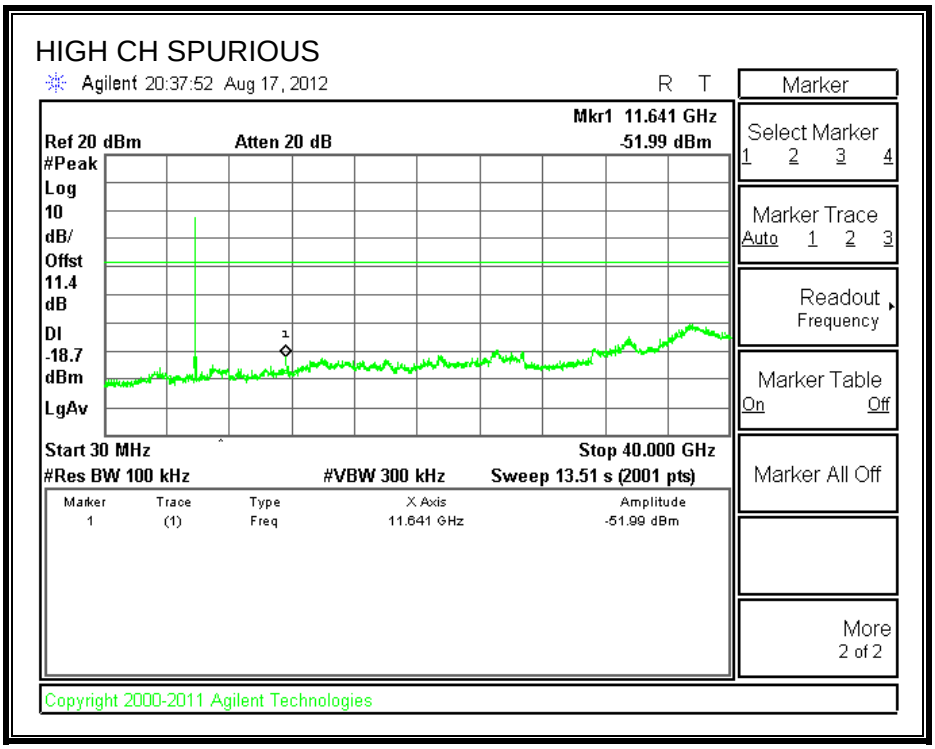
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





7.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

7.5.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

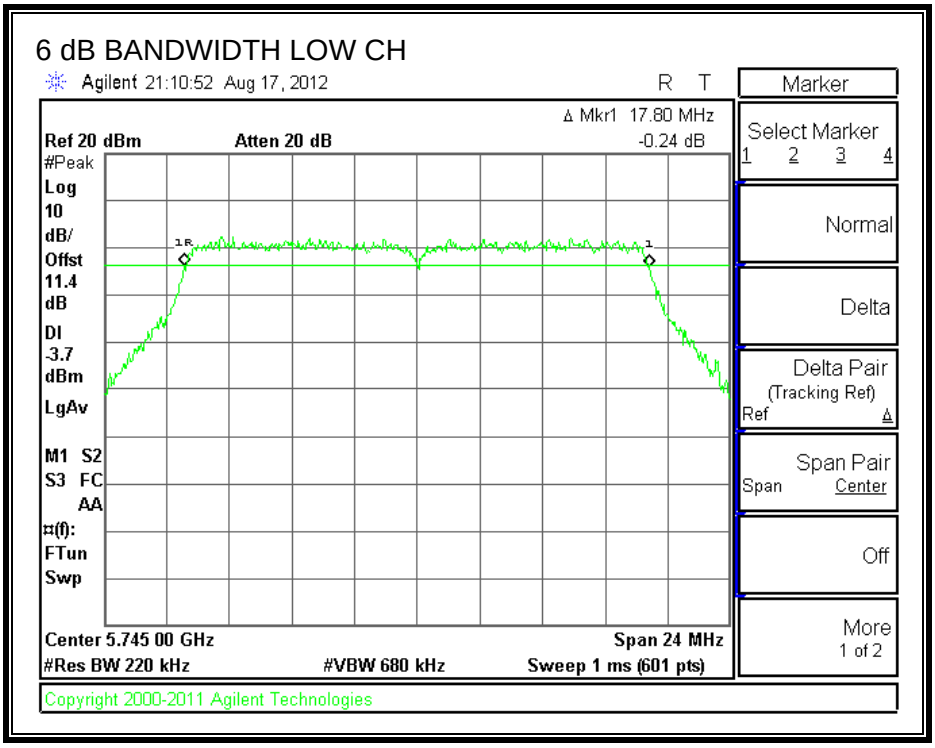
TEST PROCEDURE

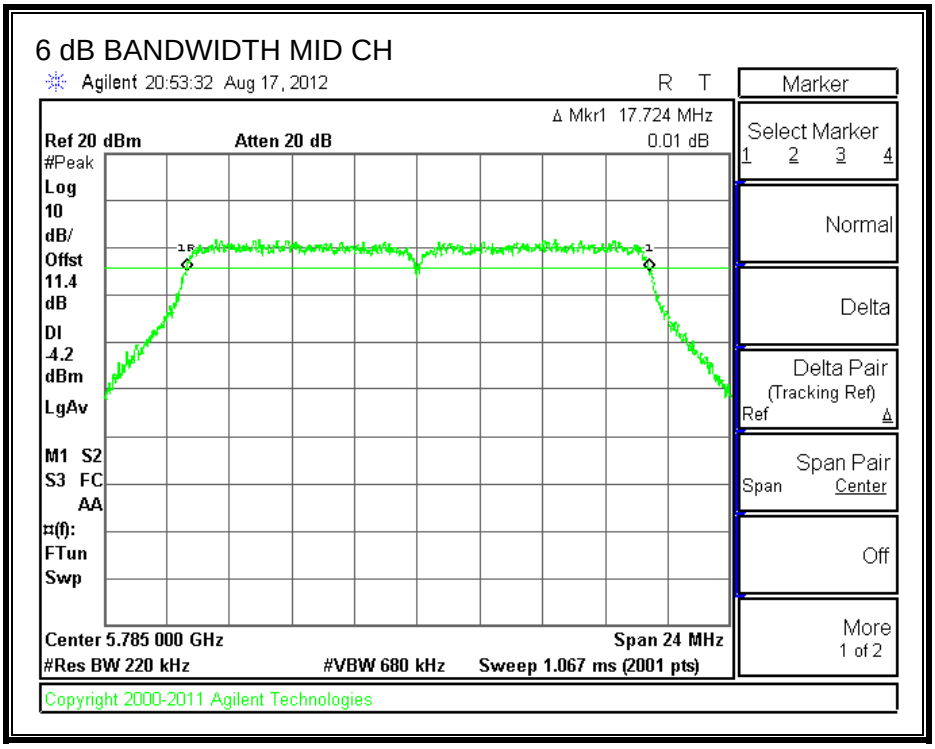
KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

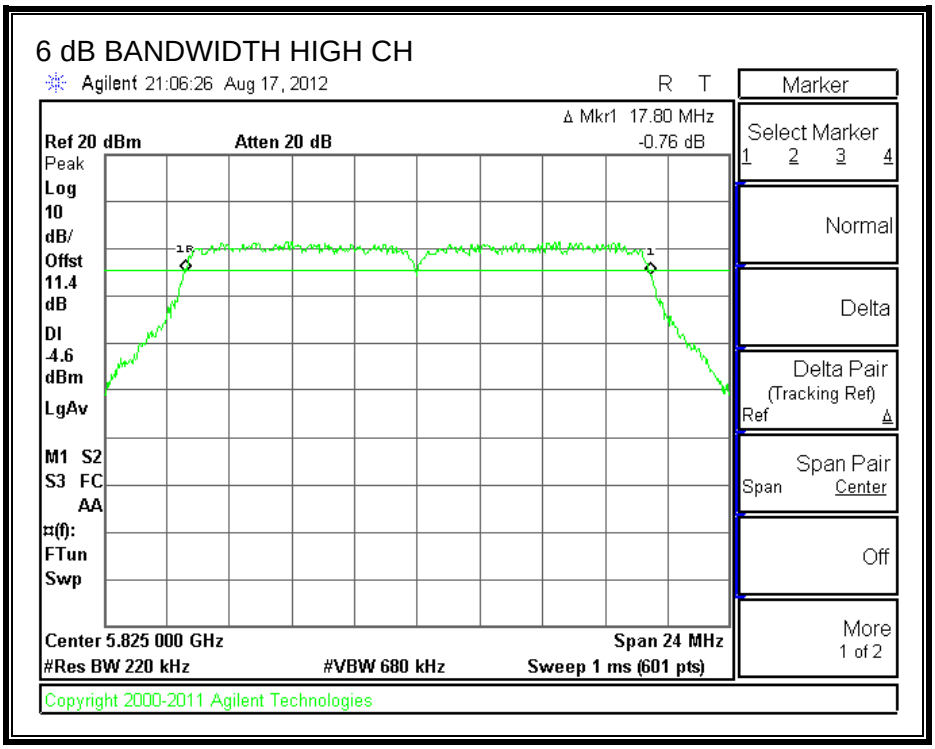
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.800	0.5
Middle	5785	17.724	0.5
High	5825	17.800	0.5

6 dB BANDWIDTH







7.5.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

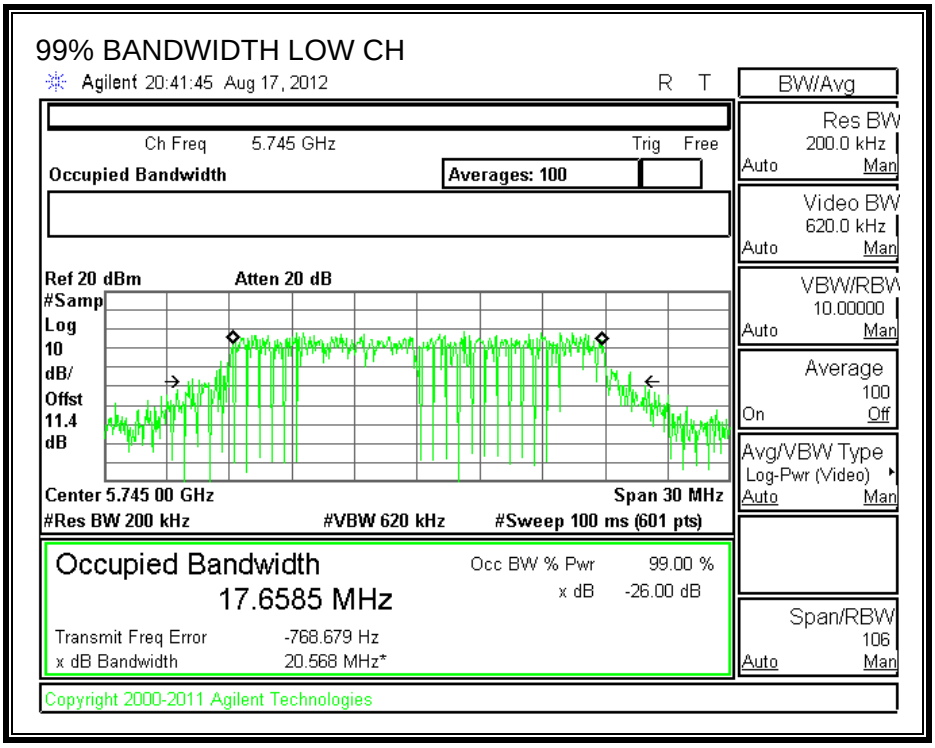
TEST PROCEDURE

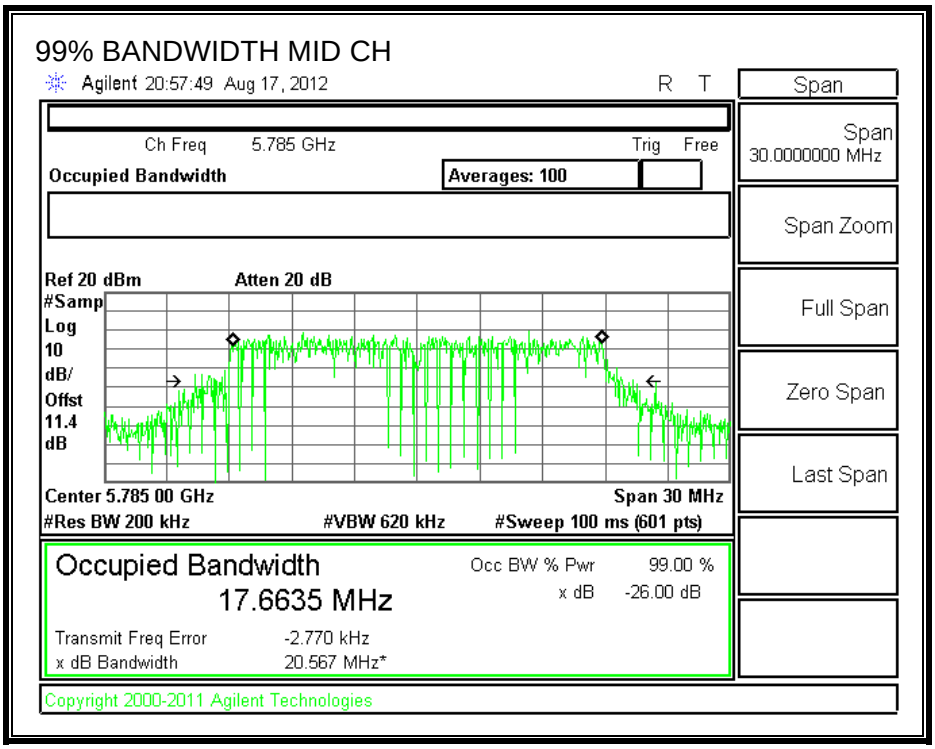
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

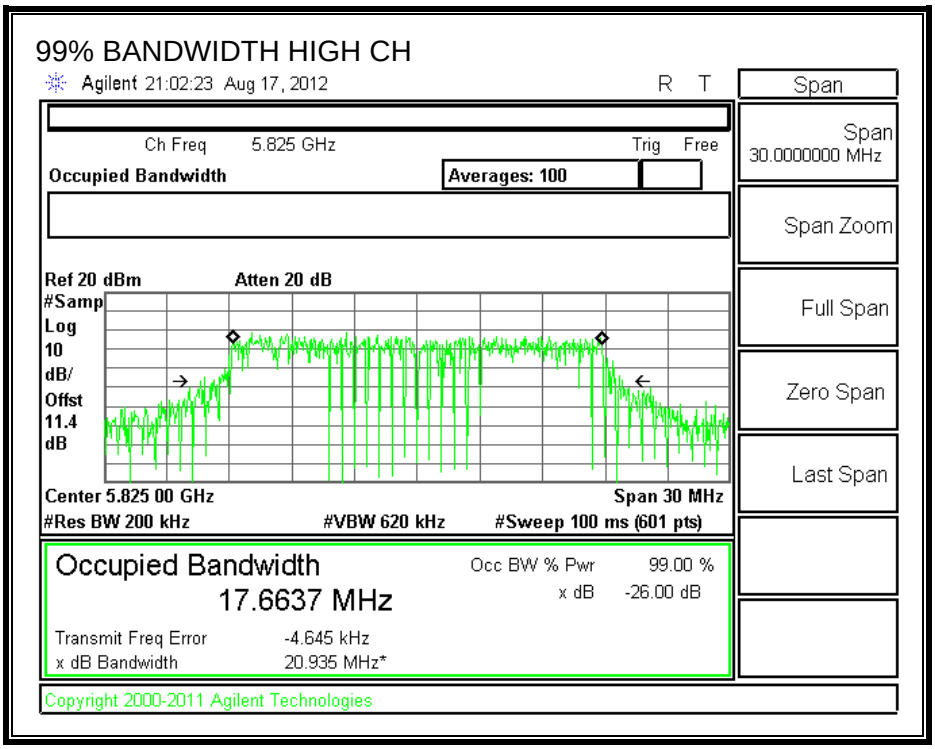
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.6585
Middle	5785	17.6635
High	5825	17.6637

99% BANDWIDTH







7.5.3. 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.

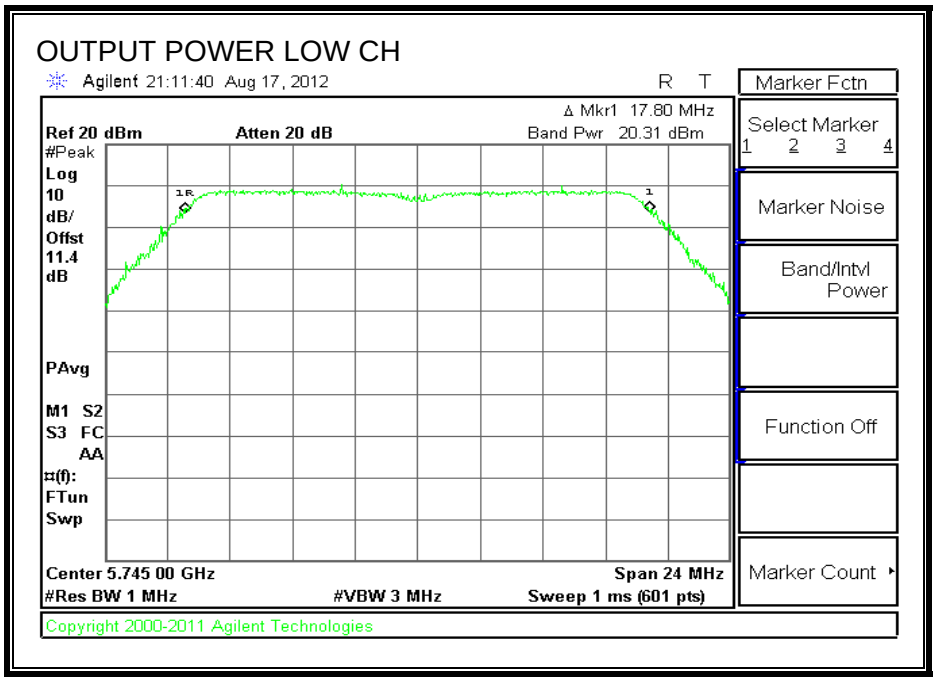
TEST PROCEDURE

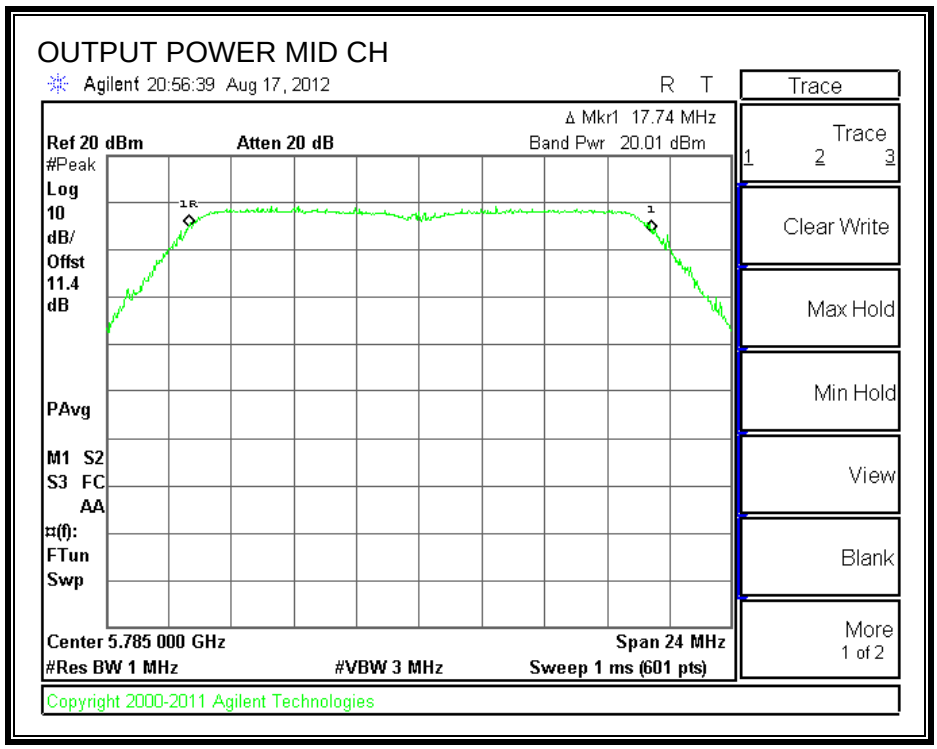
KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

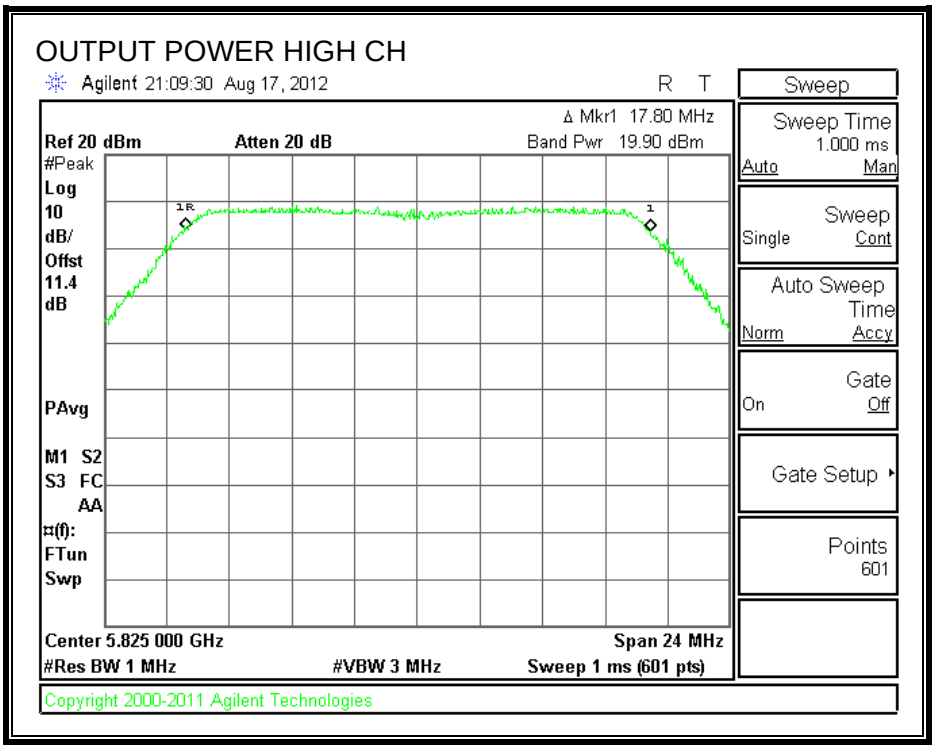
RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	5745	20.31	30	-9.69
Middle	5785	20.01	30	-9.99
High	5825	19.90	30	-10.10

OUTPUT POWER







7.5.4. 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 11.4dB (including 10 dB pad and 1.4 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Power (dBm)
Low	5745	11.61
Middle	5785	11.38
High	5825	11.45

7.5.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

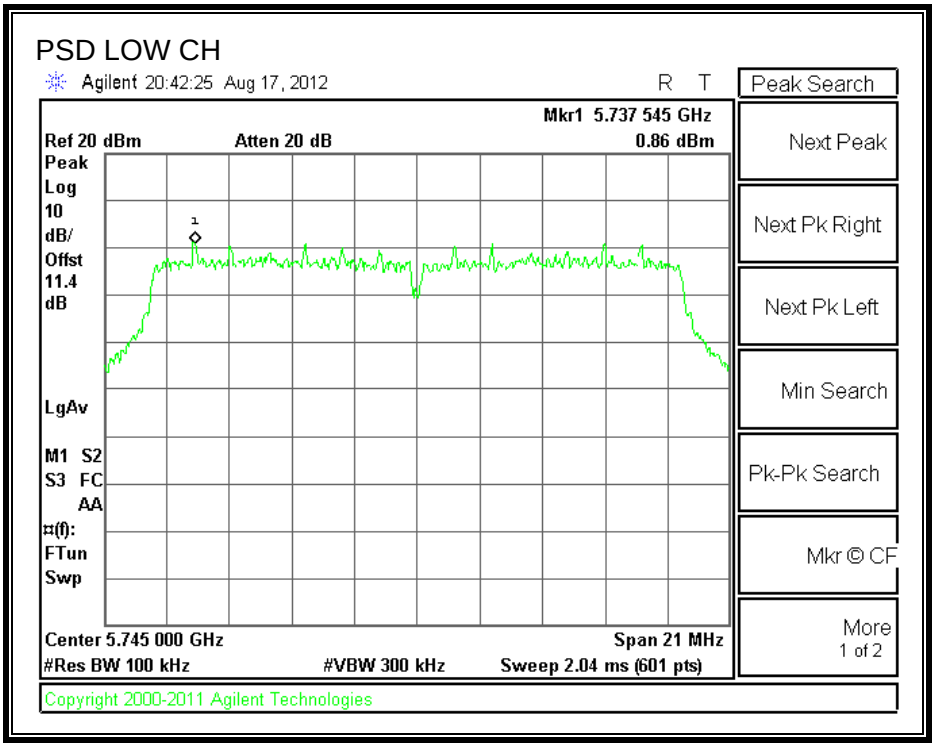
TEST PROCEDURE

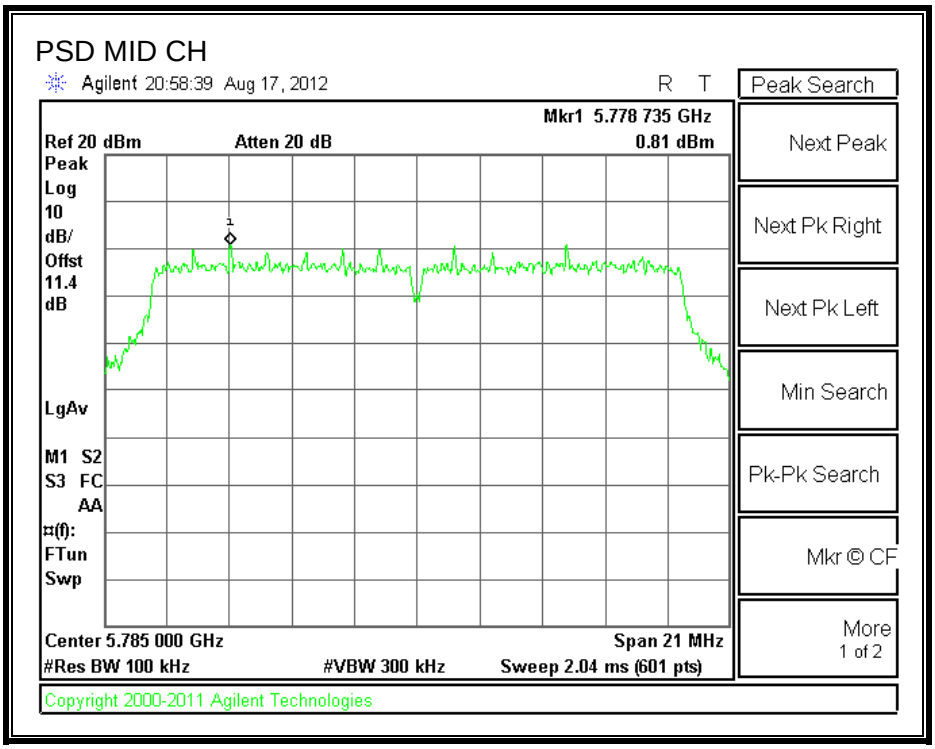
KDB 558074 D01 V01 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247", dated 01/18/2012.

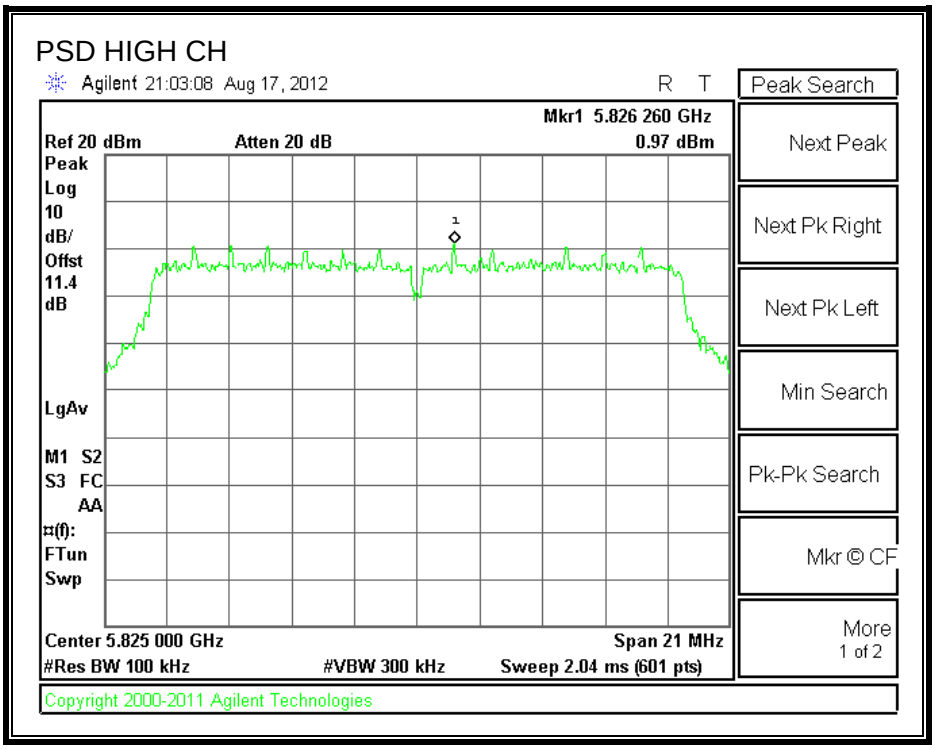
RESULTS

Channel	Frequency (MHz)	Analyzer Reading (dBm)	10log(3kHz/100kHz) (dB)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	0.86	-15.2	-14.34	8	-22.34
Middle	5785	0.81	-15.2	-14.39	8	-22.39
High	5825	0.97	-15.2	-14.23	8	-22.23

POWER SPECTRAL DENSITY







7.5.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

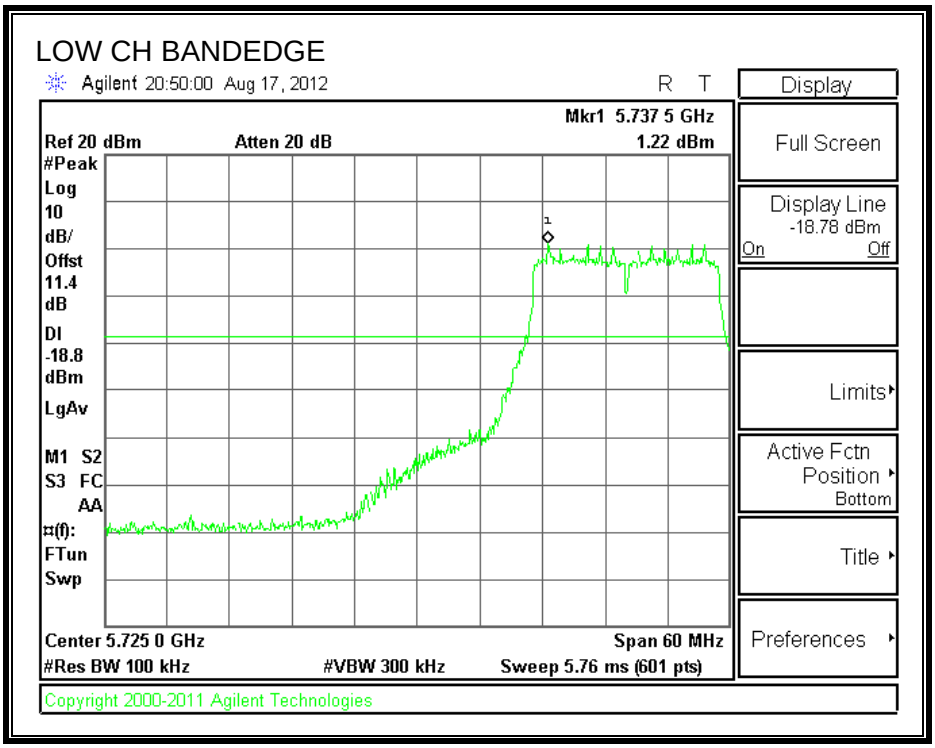
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

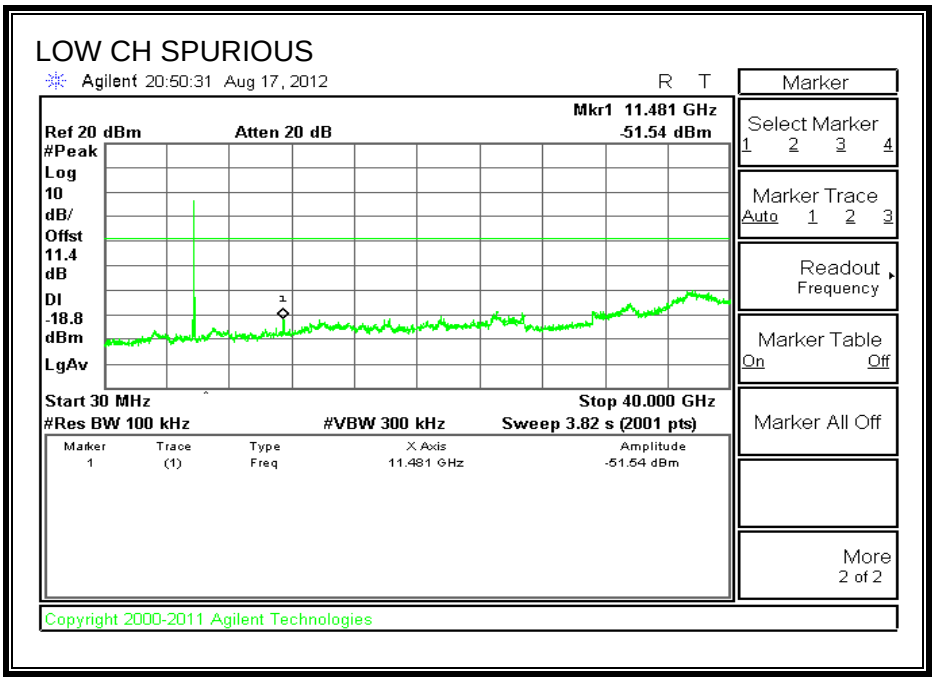
TEST PROCEDURE

KDB 558074 D01 DTS Meas Guidance v01, dated 1/18/2012:
"Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247."

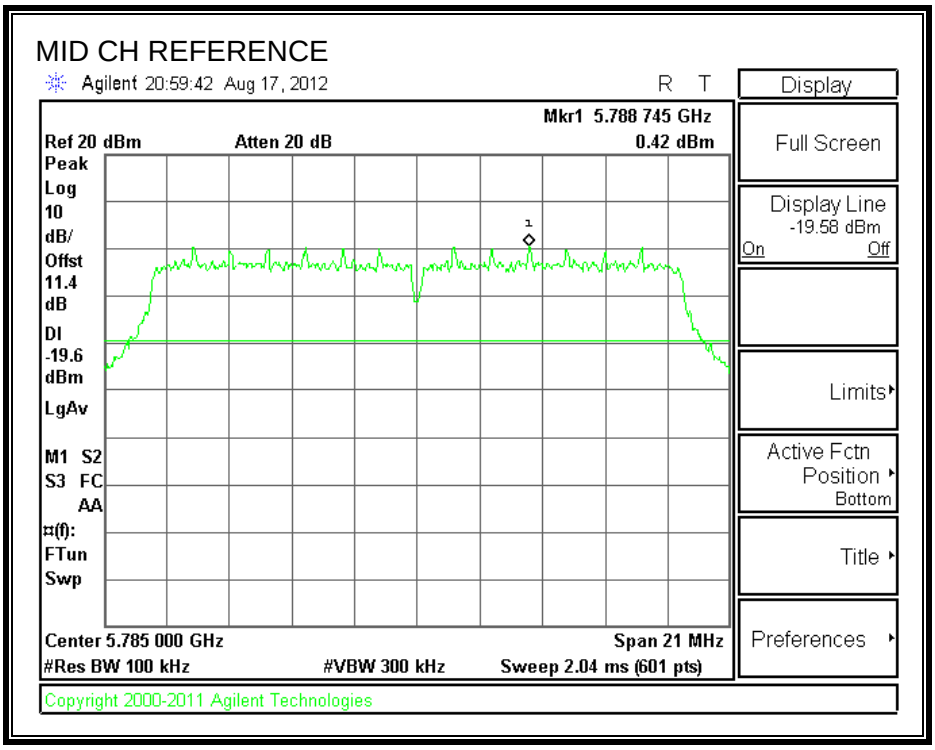
RESULTS

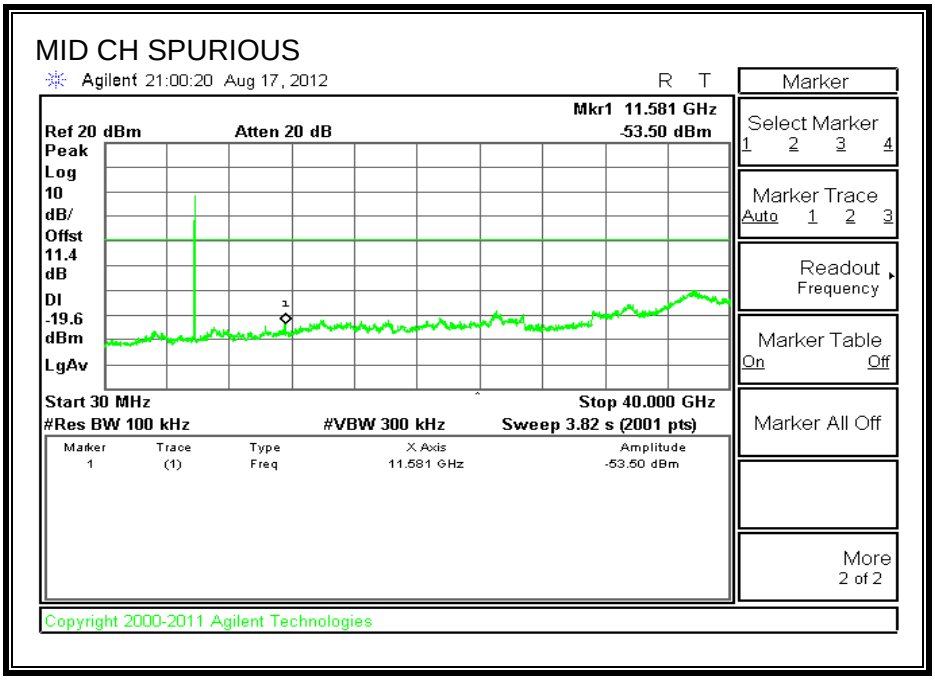
SPURIOUS EMISSIONS, LOW CHANNEL



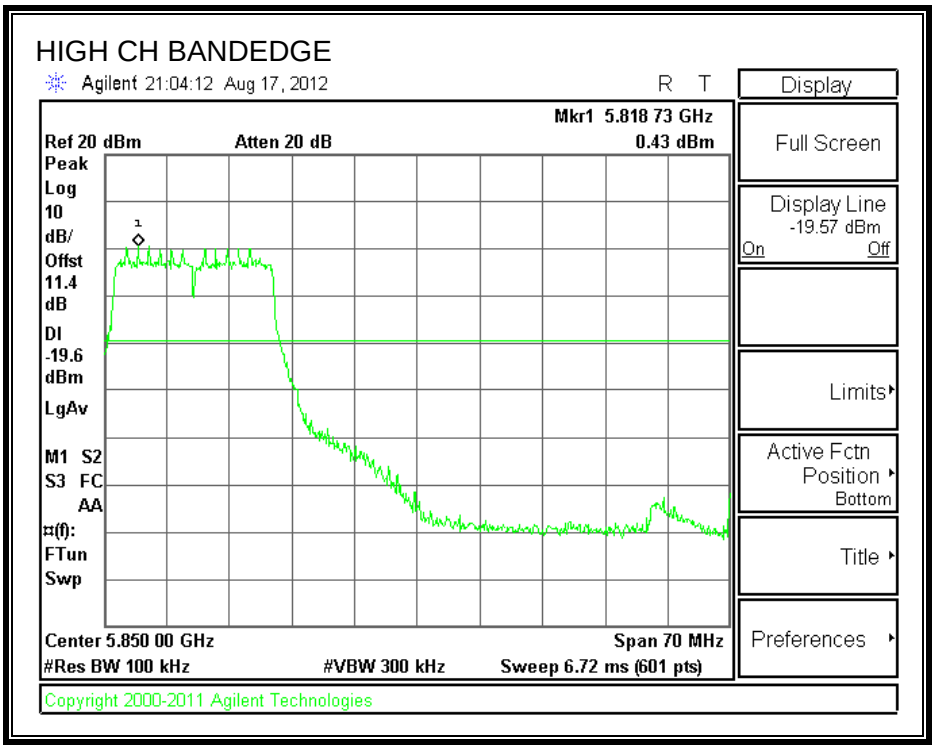


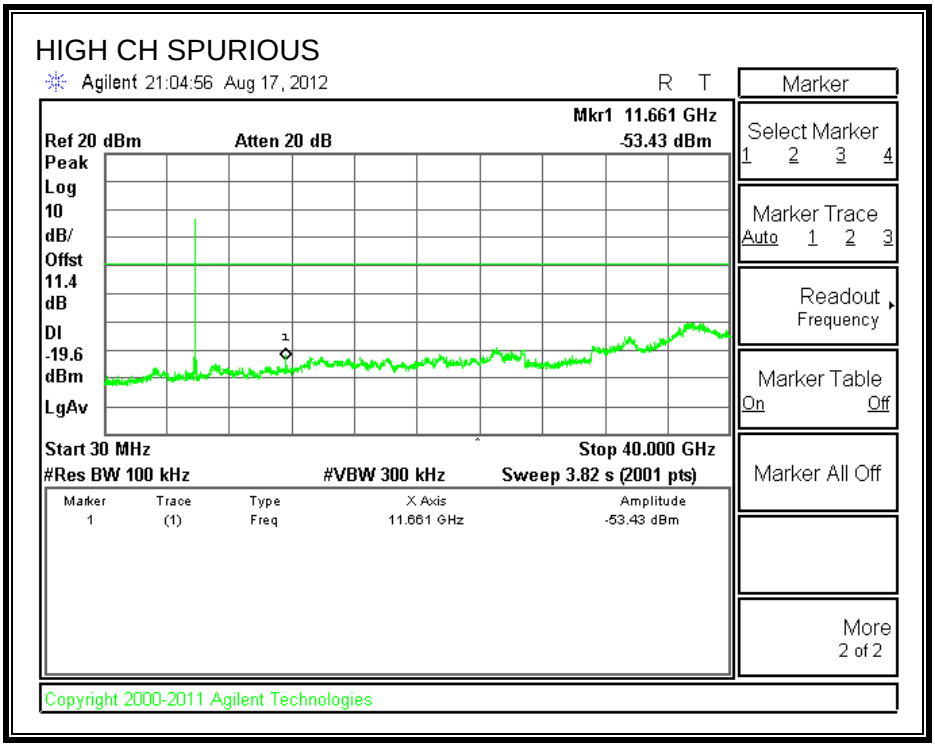
SPURIOUS EMISSIONS, MID CHANNEL





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.

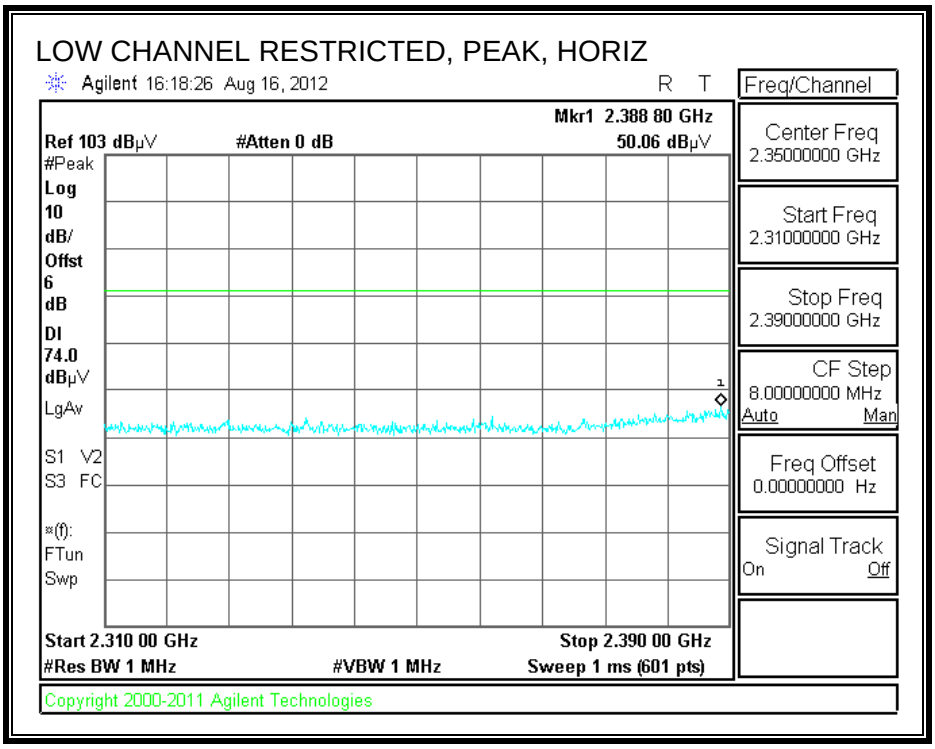
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

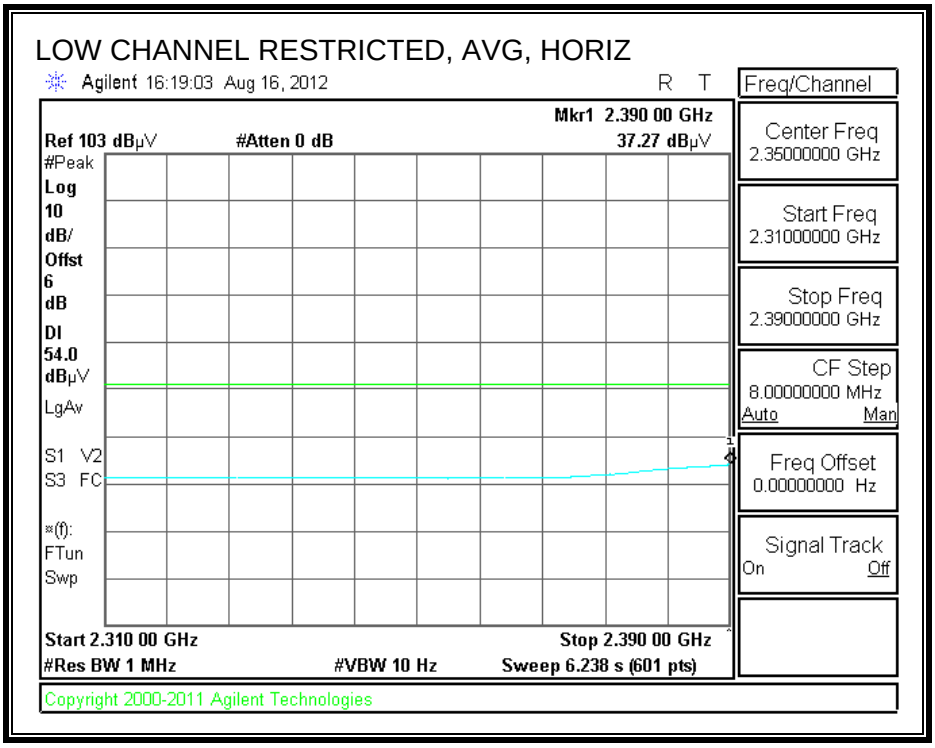
8.2. TRANSMITTER ABOVE 1 GHz

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

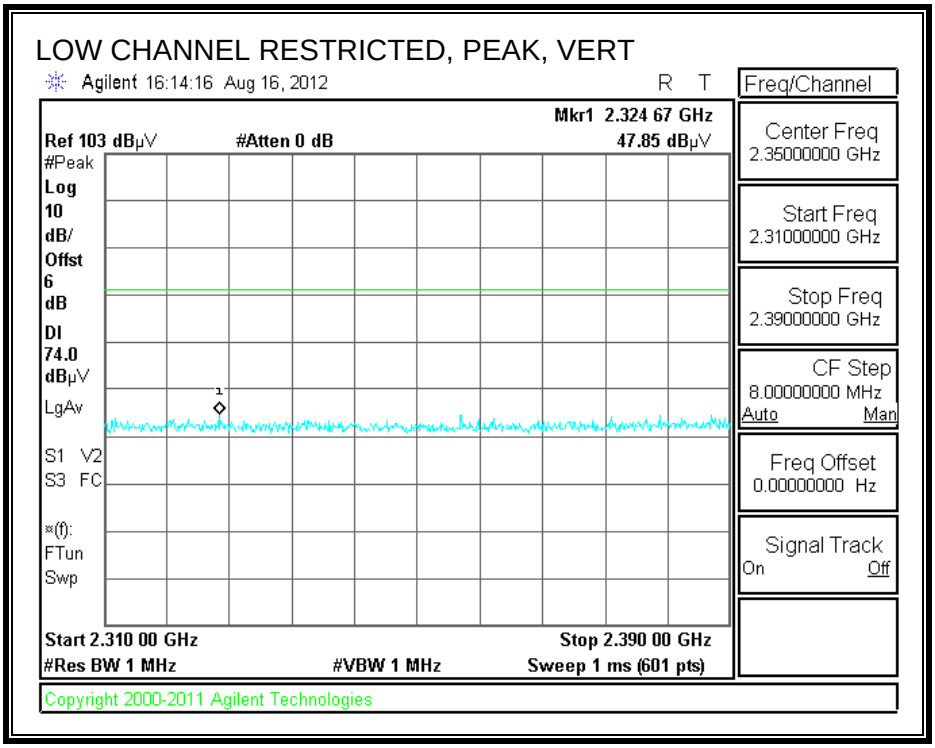
WITH USB Charger

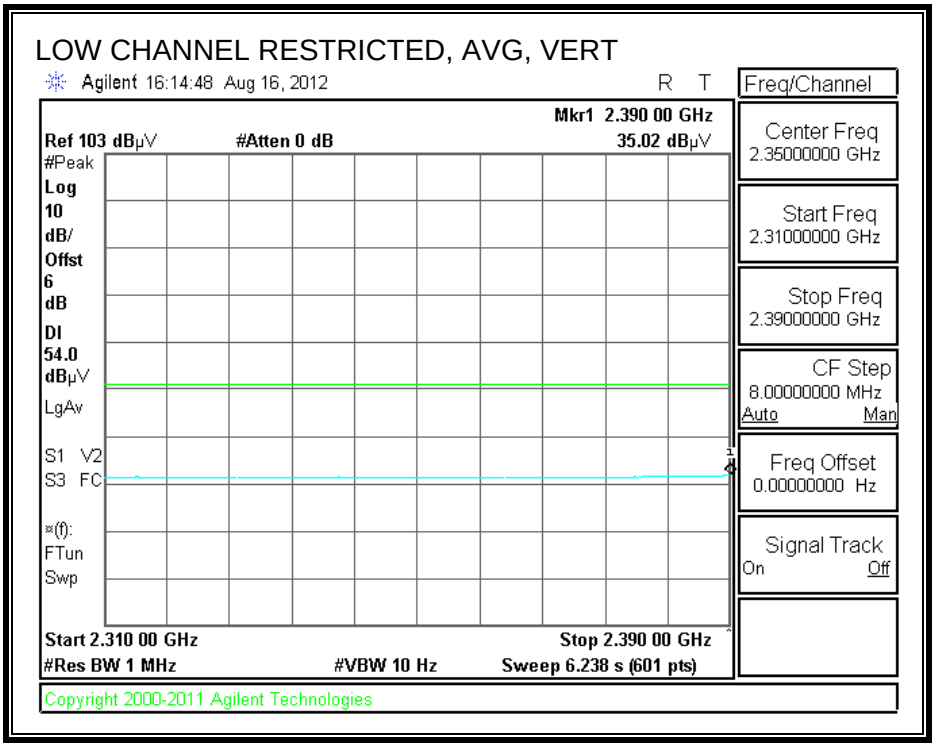
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



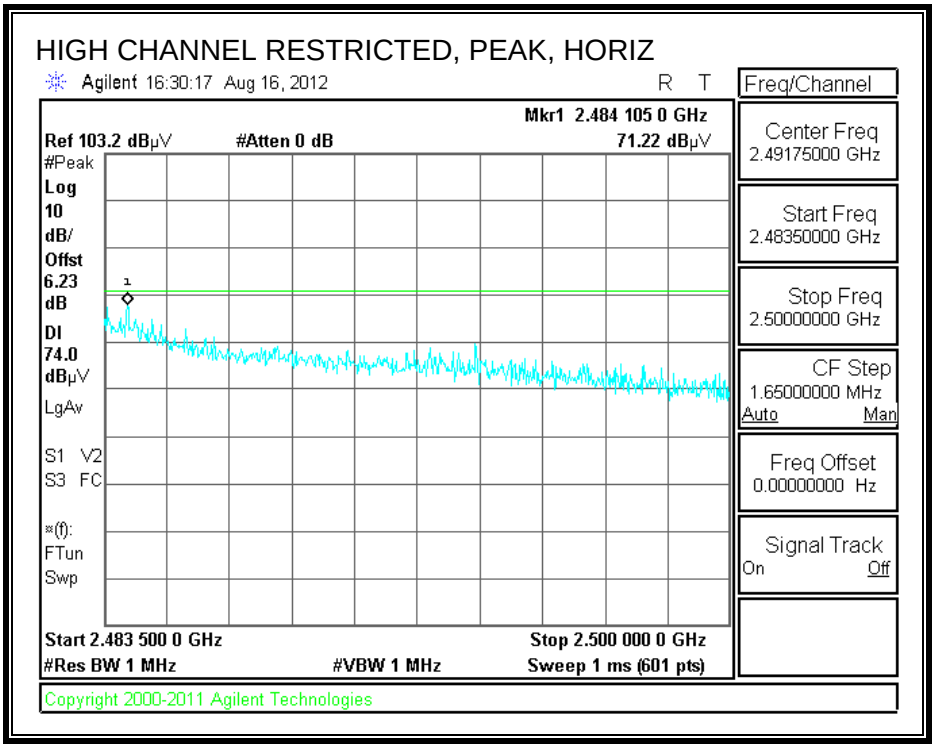


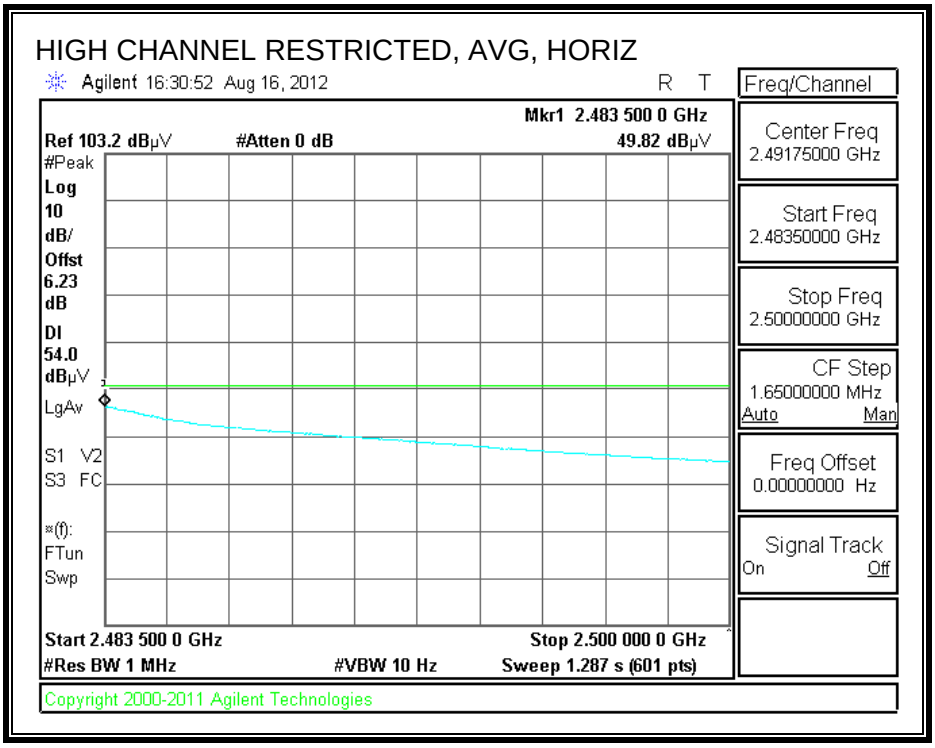
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



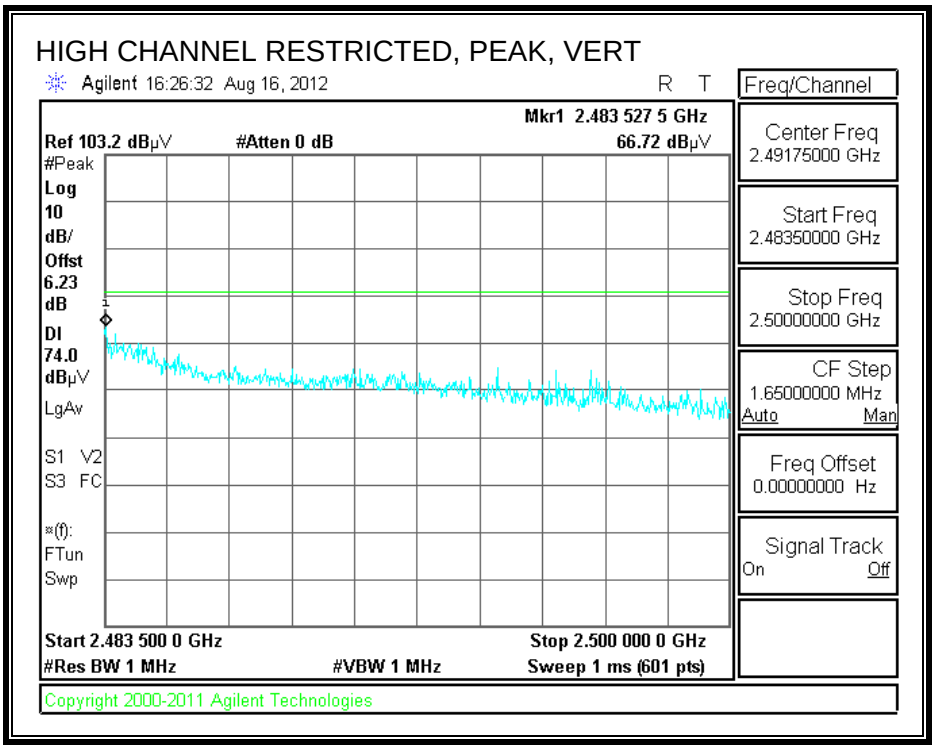


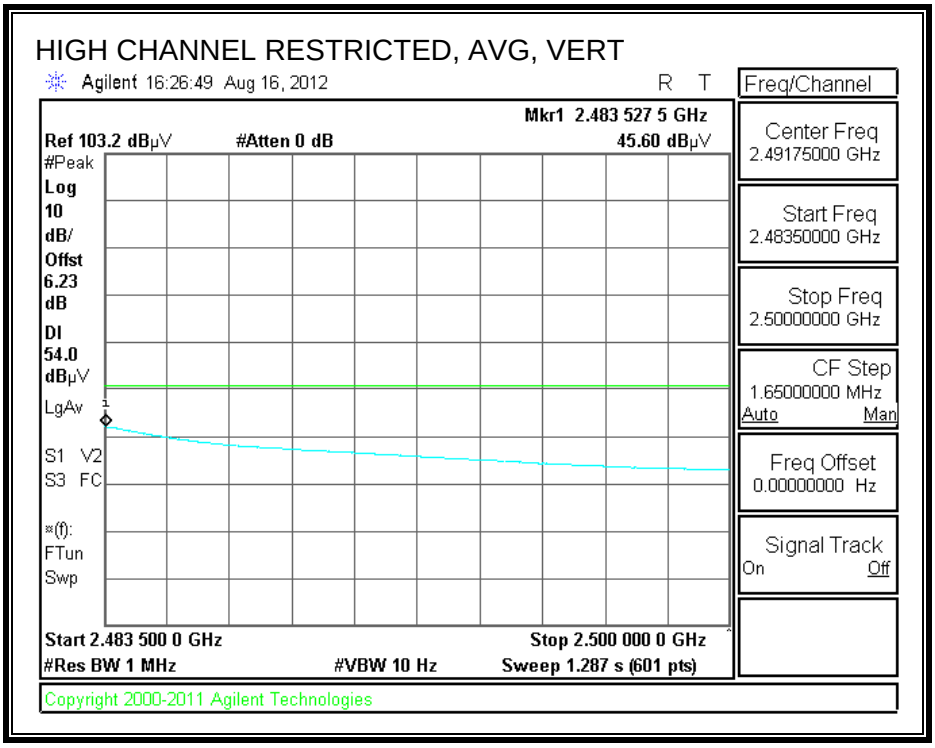
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber-A

Company: LG
Project #: 12U14580
Date: 8/20/2012
Test Engineer: Tony & Roy
Configuration: EUT with USB Charger (X Pos)
Mode: 802.11g, TX

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T73; S/N: 6717 @3m	T144 Miteq 3008A00931			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=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

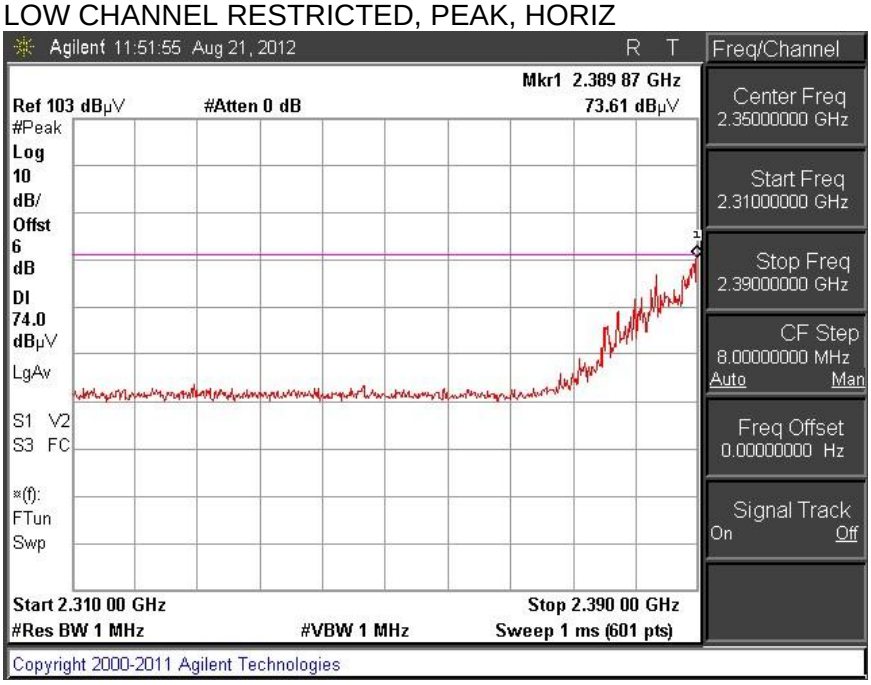
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
LOW CHANNEL, 2412MHz															
4.824	3.0	39.0	26.6	33.4	6.2	-35.5	0.0	0.0	43.2	30.7	74	54	-30.8	-23.3	V
12.060	3.0	39.0	26.7	39.3	11.3	-35.4	0.0	0.0	54.2	41.9	74	54	-19.8	-12.1	V
4.824	3.0	39.3	26.6	33.4	6.2	-35.5	0.0	0.0	43.4	30.7	74	54	-30.6	-23.3	H
12.060	3.0	39.0	26.8	39.3	11.3	-35.4	0.0	0.0	54.2	42.1	74	54	-19.8	-11.9	H
MID CHANNEL, 2437MHz															
4.874	3.0	39.0	26.3	33.5	6.2	-35.5	0.0	0.0	43.2	30.5	74	54	-30.8	-23.5	V
7.311	3.0	40.2	27.9	35.7	8.4	-35.4	0.0	0.0	48.8	36.5	74	54	-25.2	-17.5	V
12.185	3.0	39.5	27.2	39.3	11.3	-35.3	0.0	0.0	54.8	42.5	74	54	-19.2	-11.5	V
4.874	3.0	38.2	26.2	33.5	6.2	-35.5	0.0	0.0	42.4	30.5	74	54	-31.6	-23.5	H
7.311	3.0	40.3	27.9	35.7	8.4	-35.4	0.0	0.0	48.9	36.5	74	54	-25.1	-17.5	H
12.185	3.0	39.2	27.2	39.3	11.3	-35.3	0.0	0.0	54.5	42.5	74	54	-19.5	-11.5	H
HI CHANNEL, 2462MHz															
4.924	3.0	37.9	26.4	33.5	6.3	-35.5	0.0	0.0	42.3	30.7	74	54	-31.7	-23.3	V
7.386	3.0	39.1	27.6	35.8	8.4	-35.5	0.0	0.0	47.9	36.3	74	54	-26.1	-17.7	V
12.310	3.0	38.4	27.0	39.3	11.4	-35.3	0.0	0.0	53.8	42.4	74	54	-20.2	-11.6	V
4.924	3.0	39.7	26.4	33.5	6.3	-35.5	0.0	0.0	44.0	30.7	74	54	-30.0	-23.3	H
7.386	3.0	39.7	27.6	35.8	8.4	-35.5	0.0	0.0	48.5	36.4	74	54	-25.5	-17.6	H
12.310	3.0	37.7	27.0	39.3	11.4	-35.3	0.0	0.0	53.1	42.4	74	54	-20.9	-11.6	H

Rev. 11.10.11

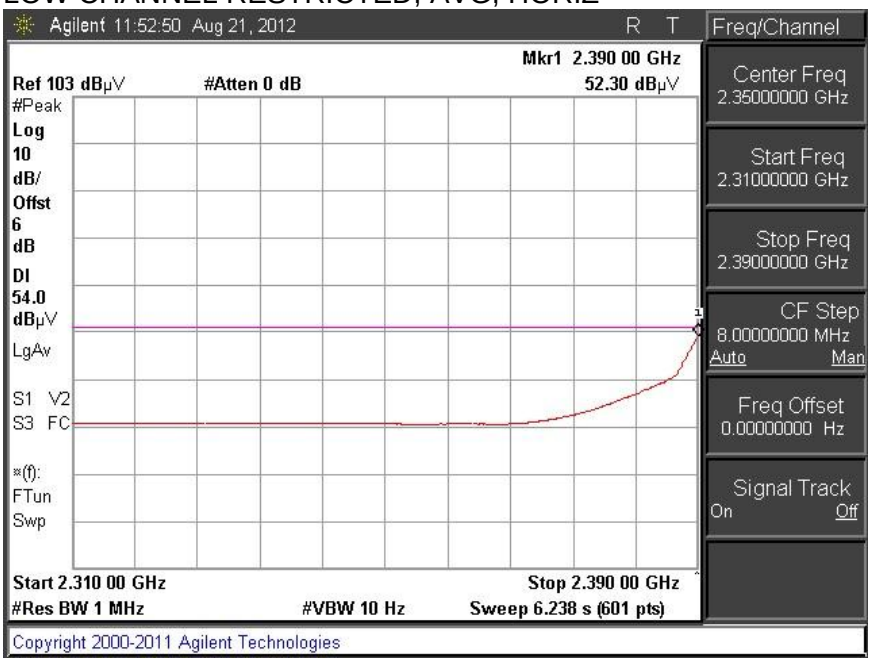
WITH INDUCTIVE Charger

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ

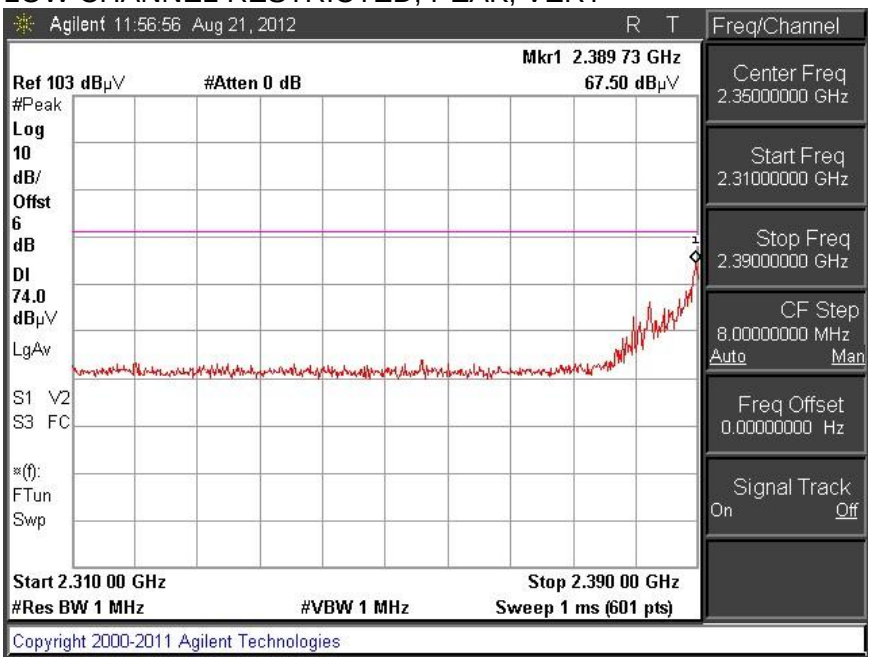


LOW CHANNEL RESTRICTED, AVG, HORIZ

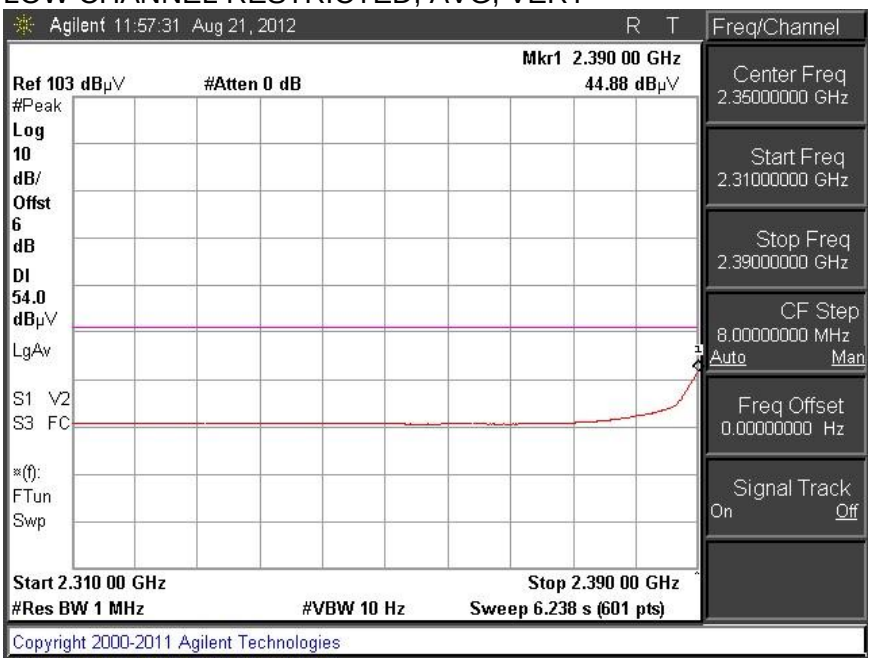


RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

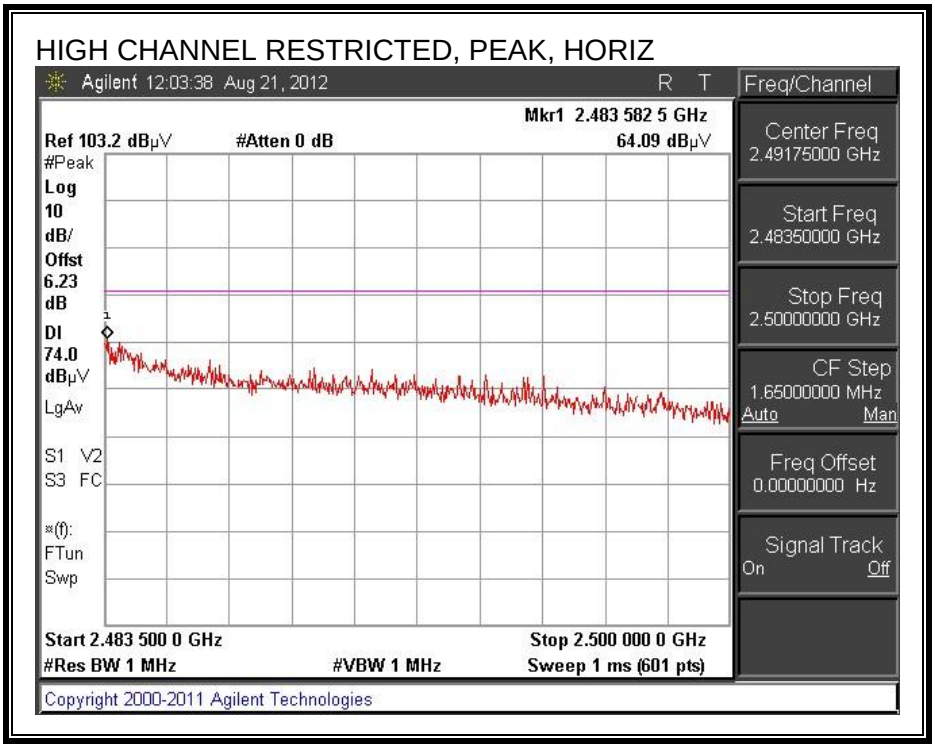
LOW CHANNEL RESTRICTED, PEAK, VERT



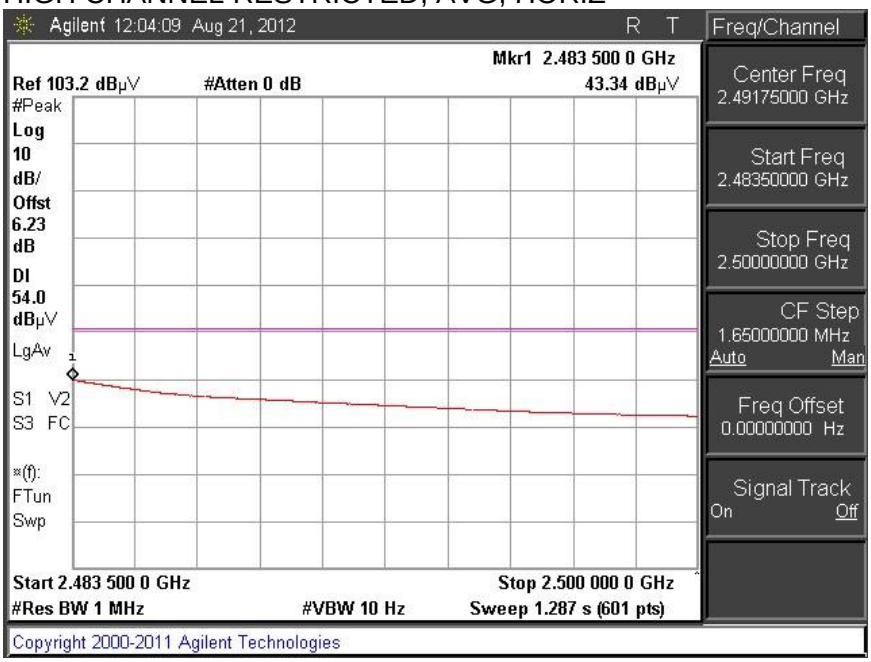
LOW CHANNEL RESTRICTED, AVG, VERT



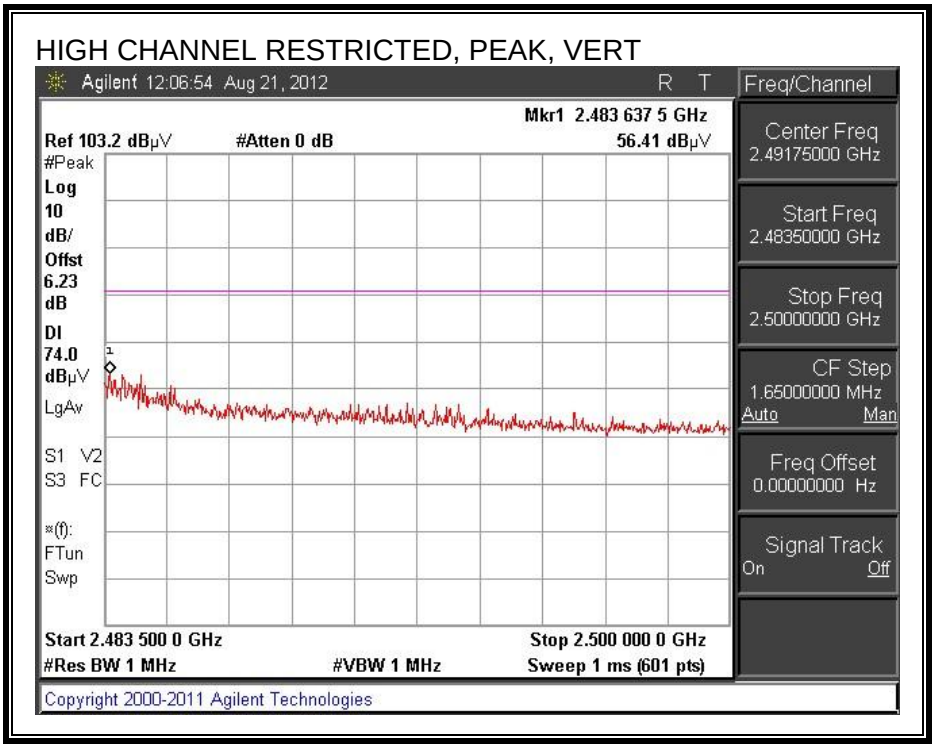
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



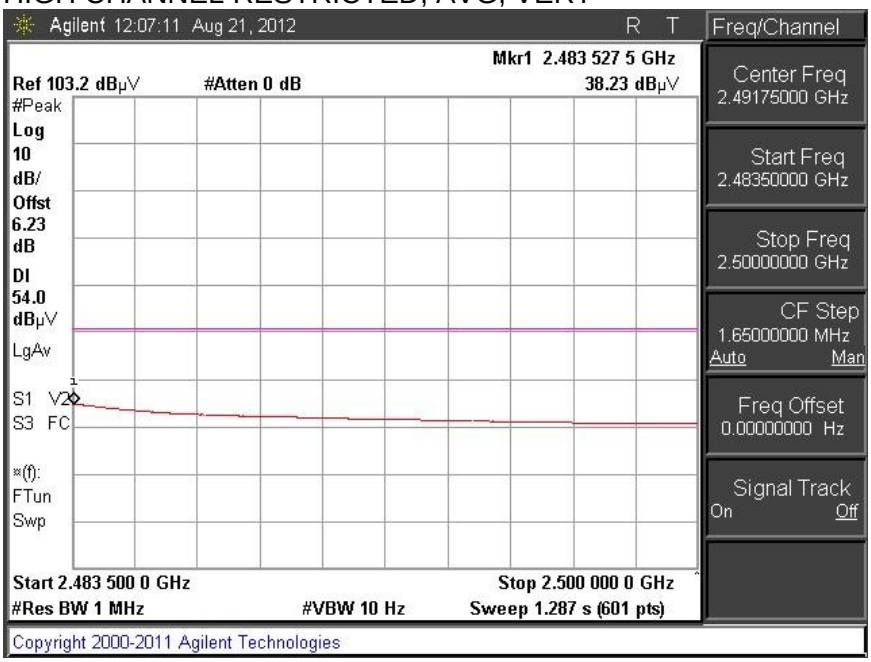
HIGH CHANNEL RESTRICTED, AVG, HORIZ



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



HIGH CHANNEL RESTRICTED, AVG, VERT



HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tony & Roy
Date: 08/22/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: 11g Tx Continuously

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

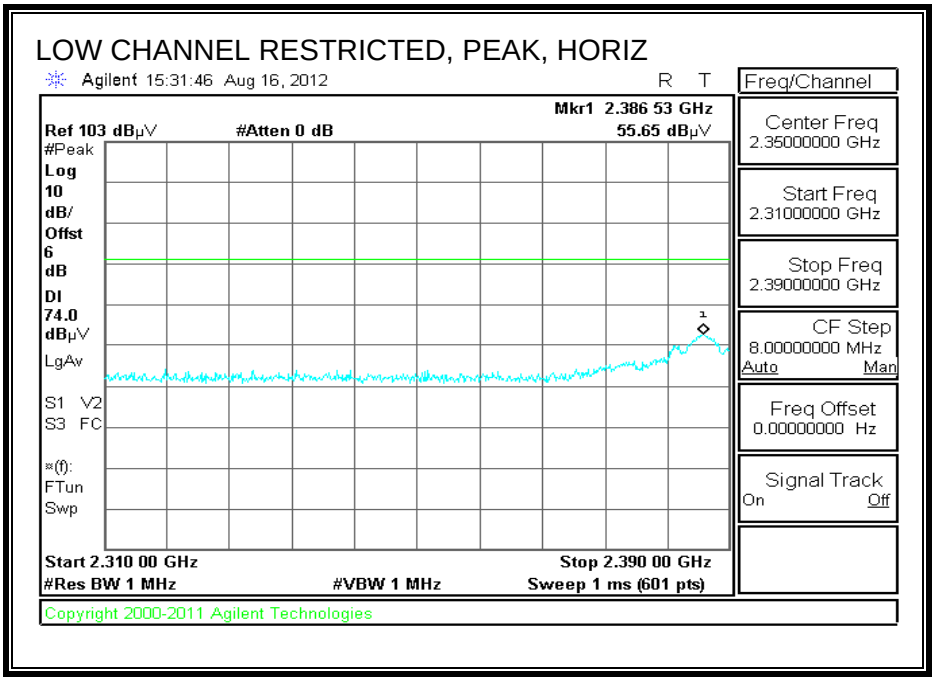
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Lo Chan, 2412MHz													
4.824	3.0	36.9	33.4	6.3	-35.5	0.0	0.0	41.1	74.0	-32.9	H	P	
4.824	3.0	24.5	33.4	6.3	-35.5	0.0	0.0	28.7	54.0	-25.3	H	A	
12.060	3.0	34.5	39.3	11.1	-35.4	0.0	0.0	49.5	74.0	-24.5	H	P	
12.060	3.0	21.9	39.3	11.1	-35.4	0.0	0.0	36.9	54.0	-17.1	H	A	
4.824	3.0	36.8	33.4	6.3	-35.5	0.0	0.0	41.0	74.0	-33.0	V	P	
4.824	3.0	24.6	33.4	6.3	-35.5	0.0	0.0	28.8	54.0	-25.2	V	A	
12.060	3.0	34.2	39.3	11.1	-35.4	0.0	0.0	49.2	74.0	-24.8	V	P	
12.060	3.0	21.9	39.3	11.1	-35.4	0.0	0.0	36.9	54.0	-17.1	V	A	
Mid Chan, 2437MHz													
4.874	3.0	36.4	33.5	6.3	-35.5	0.0	0.0	40.7	74.0	-33.3	H	P	
4.874	3.0	24.0	33.5	6.3	-35.5	0.0	0.0	28.3	54.0	-25.7	H	A	
7.311	3.0	35.8	35.7	8.5	-35.4	0.0	0.0	44.6	74.0	-29.4	H	P	
7.311	3.0	23.4	35.7	8.5	-35.4	0.0	0.0	32.2	54.0	-21.8	H	A	
12.185	3.0	35.0	39.3	11.1	-35.3	0.0	0.0	50.1	74.0	-23.9	H	P	
12.185	3.0	22.3	39.3	11.1	-35.3	0.0	0.0	37.3	54.0	-16.7	H	A	
4.874	3.0	36.4	33.5	6.3	-35.5	0.0	0.0	40.7	74.0	-33.3	V	P	
4.874	3.0	24.0	33.5	6.3	-35.5	0.0	0.0	28.3	54.0	-25.7	V	A	
7.311	3.0	35.4	35.7	8.5	-35.4	0.0	0.0	44.2	74.0	-29.8	V	P	
7.311	3.0	23.4	35.7	8.5	-35.4	0.0	0.0	32.2	54.0	-21.8	V	A	
12.185	3.0	34.8	39.3	11.1	-35.3	0.0	0.0	49.9	74.0	-24.1	V	P	
12.185	3.0	22.3	39.3	11.1	-35.3	0.0	0.0	37.3	54.0	-16.7	V	A	
Hi Chan, 2462MHz													
4.924	3.0	36.8	33.5	6.3	-35.5	0.0	0.0	41.2	74.0	-32.8	H	P	
4.924	3.0	24.3	33.5	6.3	-35.5	0.0	0.0	28.7	54.0	-25.3	H	A	
7.386	3.0	36.4	35.8	8.5	-35.5	0.0	0.0	45.3	74.0	-28.7	H	P	
7.386	3.0	23.5	35.8	8.5	-35.5	0.0	0.0	32.4	54.0	-21.6	H	A	
12.310	3.0	34.5	39.3	11.2	-35.3	0.0	0.0	49.7	74.0	-24.3	H	P	
12.310	3.0	22.2	39.3	11.2	-35.3	0.0	0.0	37.4	54.0	-16.7	H	A	
4.924	3.0	37.2	33.5	6.3	-35.5	0.0	0.0	41.6	74.0	-32.4	V	P	
4.924	3.0	24.5	33.5	6.3	-35.5	0.0	0.0	28.9	54.0	-25.1	V	A	
7.386	3.0	36.7	35.8	8.5	-35.5	0.0	0.0	45.7	74.0	-28.3	V	P	
7.386	3.0	23.6	35.8	8.5	-35.5	0.0	0.0	32.5	54.0	-21.5	V	A	
12.310	3.0	33.7	39.3	11.2	-35.3	0.0	0.0	48.8	74.0	-25.2	V	P	
12.310	3.0	22.2	39.3	11.2	-35.3	0.0	0.0	37.4	54.0	-16.6	V	A	

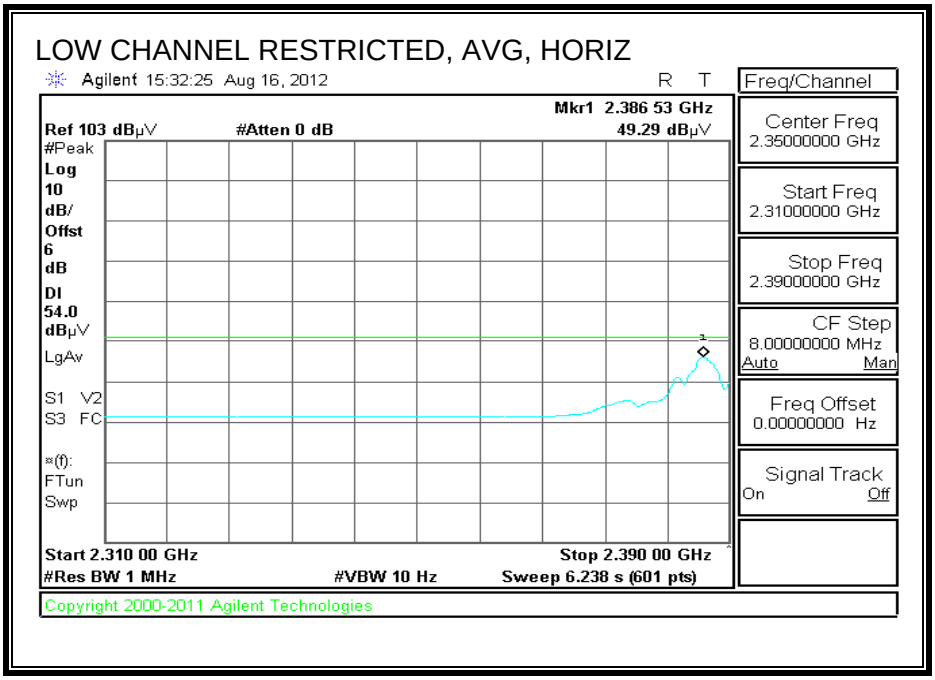
Note: No other emissions were detected above the system noise floor.

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

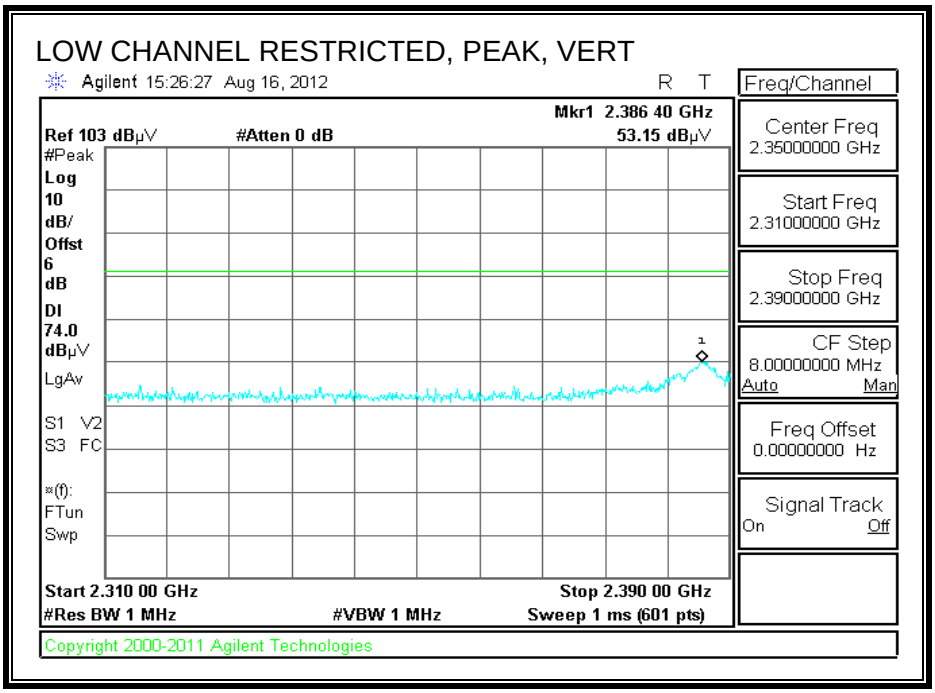
WITH USB CHARGER

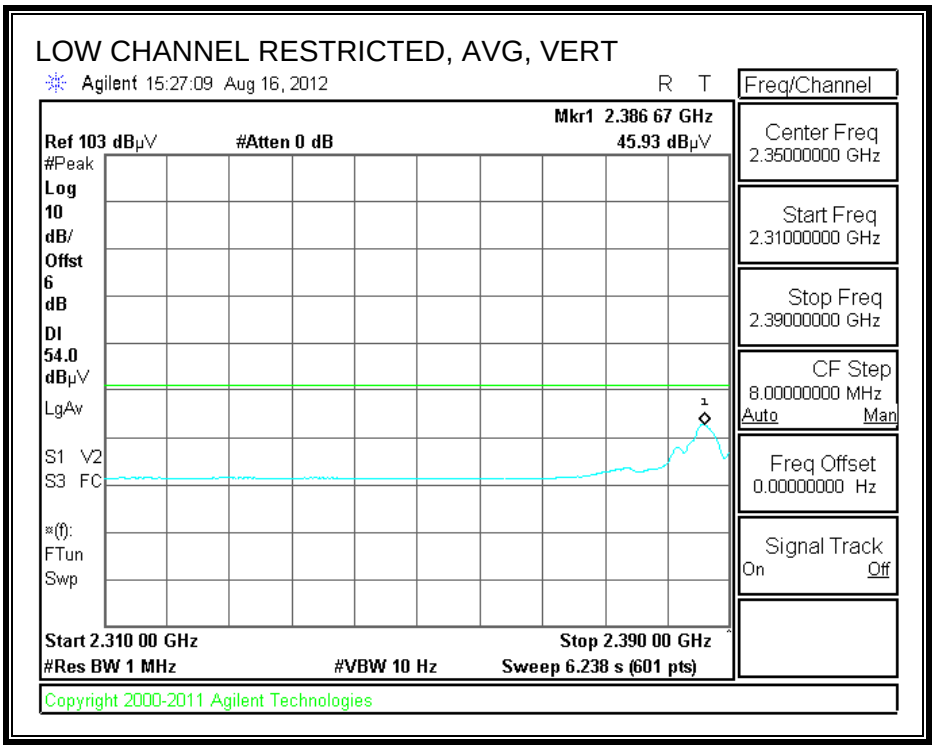
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



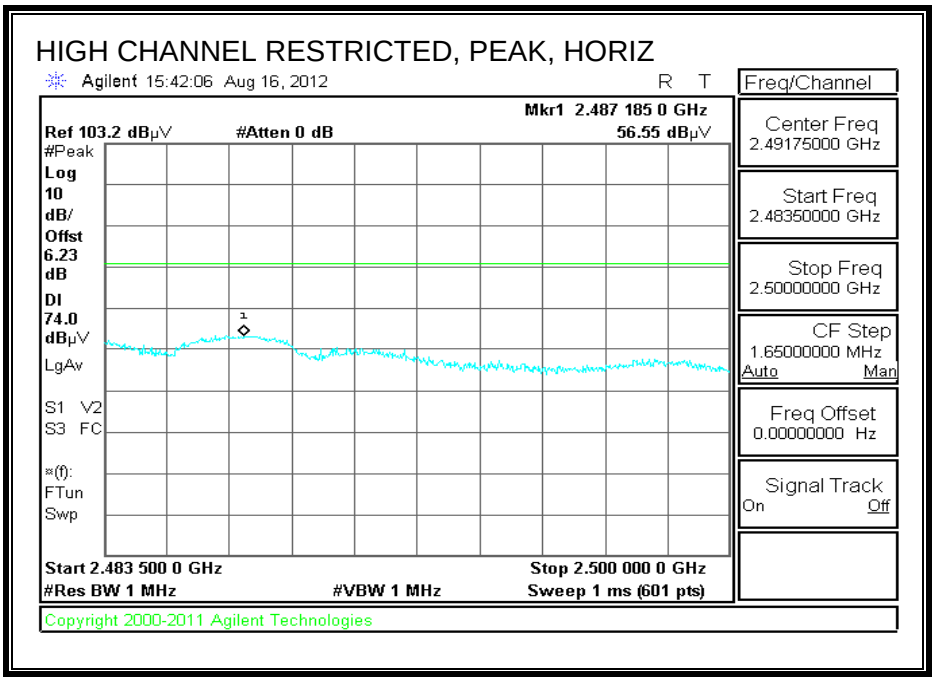


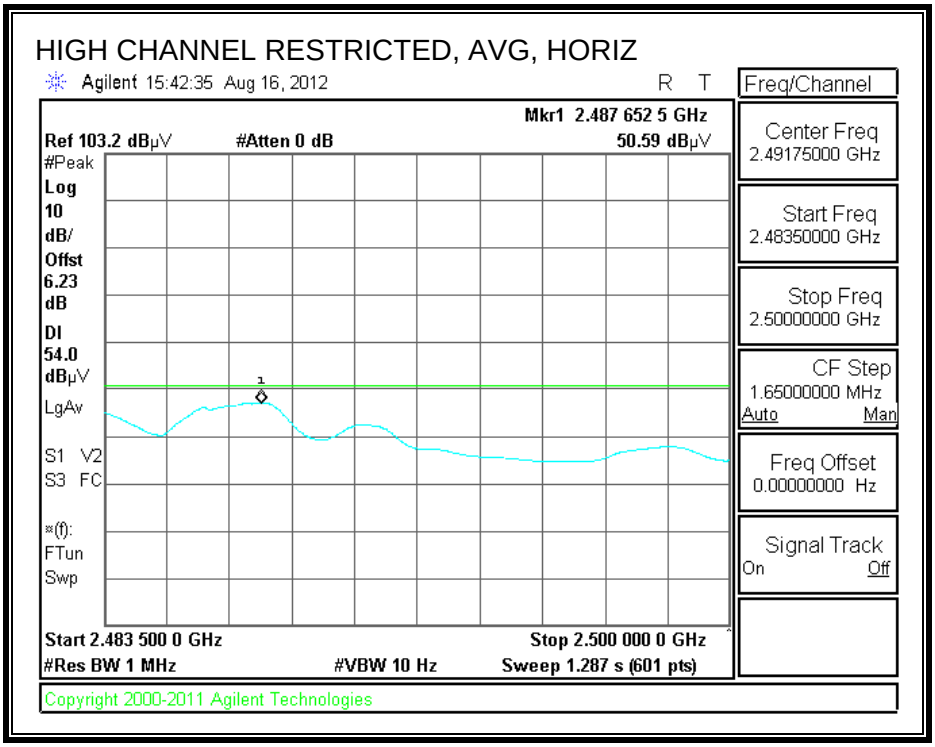
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



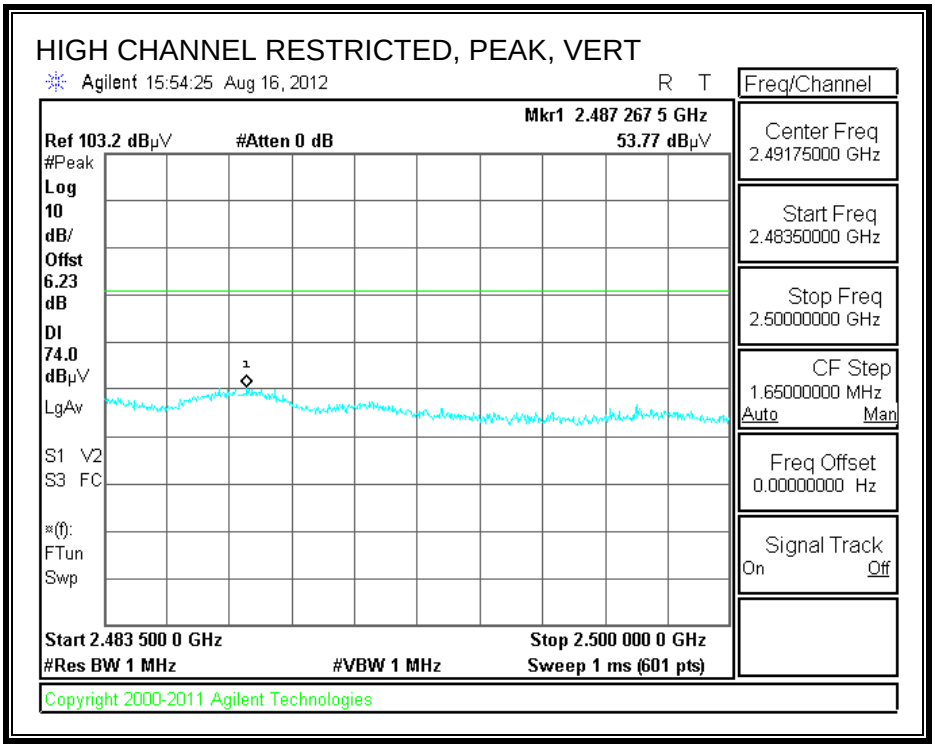


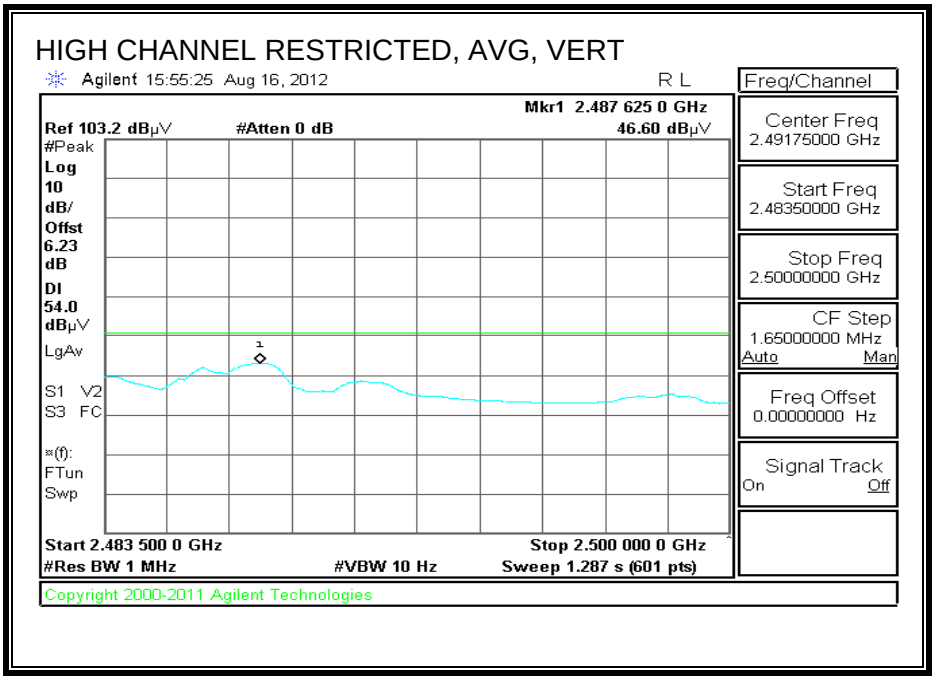
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber-A

Company: LG
Project #: 12U14580
Date: 8/17/2012
Test Engineer: Tony & Roy
Configuration: EUT with USB charger (X pos)
Mode: 802.11b, TX

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T73; S/N: 6717 @3m	T144 Miteq 3008A00931			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=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)
low channel, 2412MHz															
4.824	3.0	39.0	28.1	33.4	6.2	-35.5	0.0	0.0	43.1	32.3	74	54	-30.9	-21.7	H
12.060	3.0	38.6	27.0	39.3	11.3	-35.4	0.0	0.0	53.8	42.2	74	54	-20.2	-11.8	H
4.824	3.0	38.6	26.9	33.4	6.2	-35.5	0.0	0.0	42.8	31.1	74	54	-31.2	-22.9	V
12.060	3.0	38.3	27.1	39.3	11.3	-35.4	0.0	0.0	53.5	42.4	74	54	-20.5	-11.6	V
MID CHANNEL, 2437MHz															
4.874	3.0	39.4	29.6	33.5	6.2	-35.5	0.0	0.0	43.6	33.9	74	54	-30.4	-20.1	H
7.311	3.0	40.8	27.8	35.7	8.4	-35.4	0.0	0.0	49.4	36.4	74	54	-24.6	-17.6	H
12.185	3.0	39.4	27.1	39.3	11.3	-35.3	0.0	0.0	54.7	42.4	74	54	-19.3	-11.6	H
4.874	3.0	40.5	34.0	33.5	6.2	-35.5	0.0	0.0	44.7	38.2	74	54	-29.3	-15.8	V
7.311	3.0	40.7	30.7	35.7	8.4	-35.4	0.0	0.0	49.3	39.3	74	54	-24.7	-14.7	V
12.185	3.0	38.8	27.2	39.3	11.3	-35.3	0.0	0.0	54.1	42.5	74	54	-19.9	-11.5	V
HI CHANNEL, 2462MHz															
4.924	3.0	39.2	26.3	33.5	6.3	-35.5	0.0	0.0	43.5	30.6	74	54	-30.5	-23.4	H
7.386	3.0	40.0	27.6	35.8	8.4	-35.5	0.0	0.0	48.8	36.4	74	54	-25.2	-17.6	H
12.310	3.0	38.8	27.1	39.3	11.4	-35.3	0.0	0.0	54.2	42.5	74	54	-19.8	-11.5	H
4.924	3.0	39.4	26.4	33.5	6.3	-35.5	0.0	0.0	43.7	30.7	74	54	-30.3	-23.3	V
7.386	3.0	39.8	27.6	35.8	8.4	-35.5	0.0	0.0	48.6	36.4	74	54	-25.4	-17.6	V
12.310	3.0	38.4	27.1	39.3	11.4	-35.3	0.0	0.0	53.8	42.5	74	54	-20.2	-11.5	V

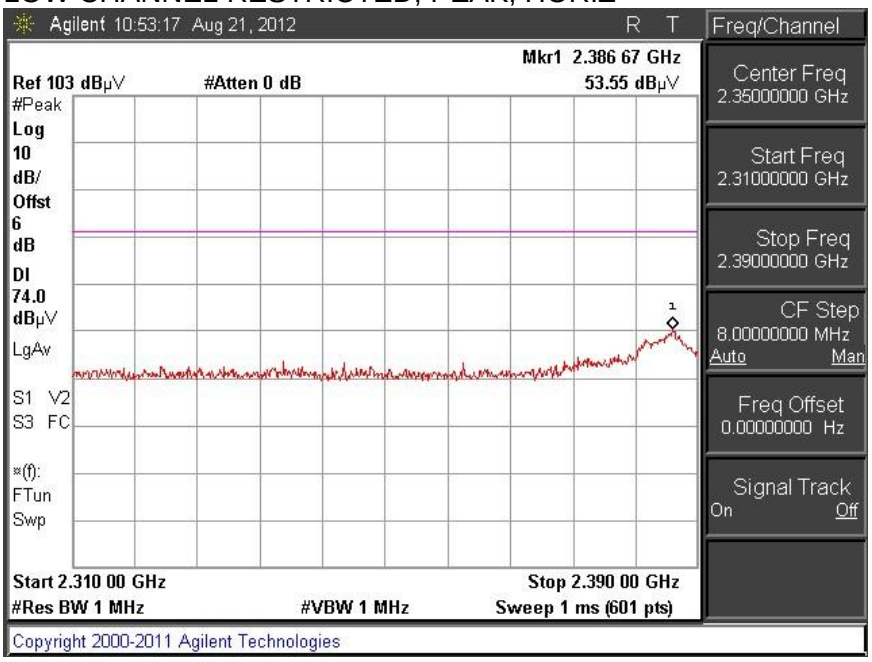
Rev. 10.24.11

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		

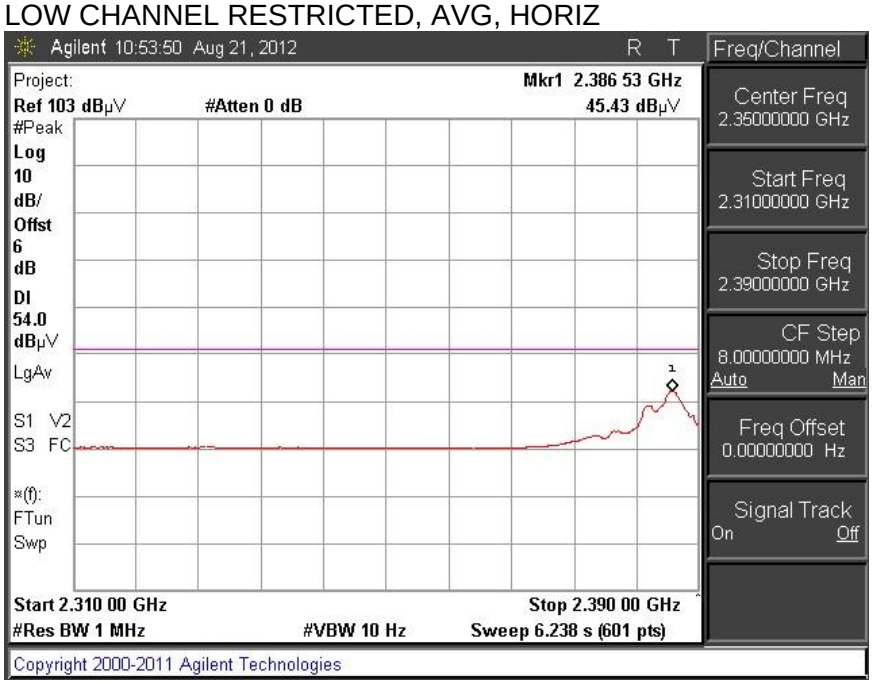
WITH INDUCTIVE CHARGER

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ

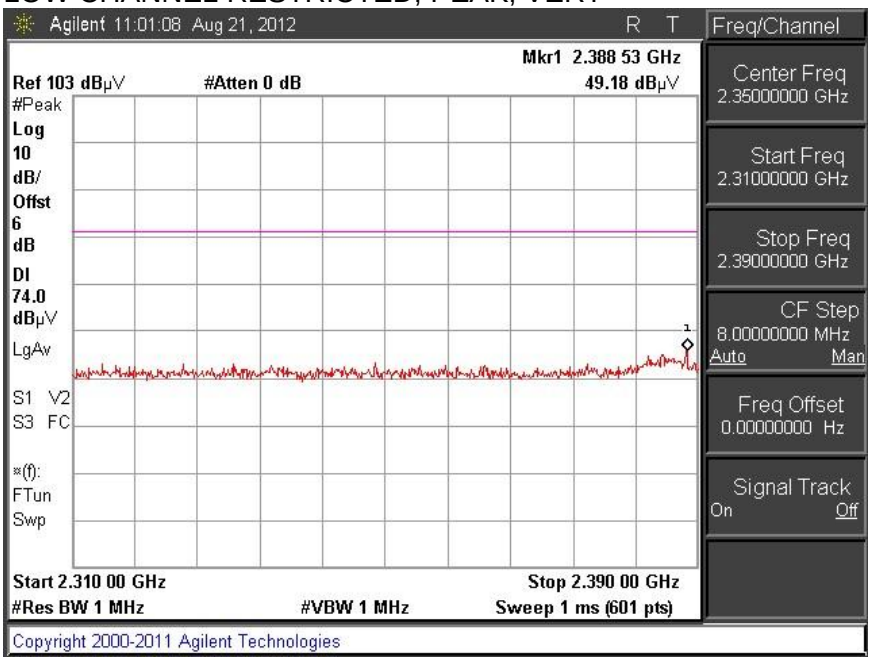


LOW CHANNEL RESTRICTED, AVG, HORIZ

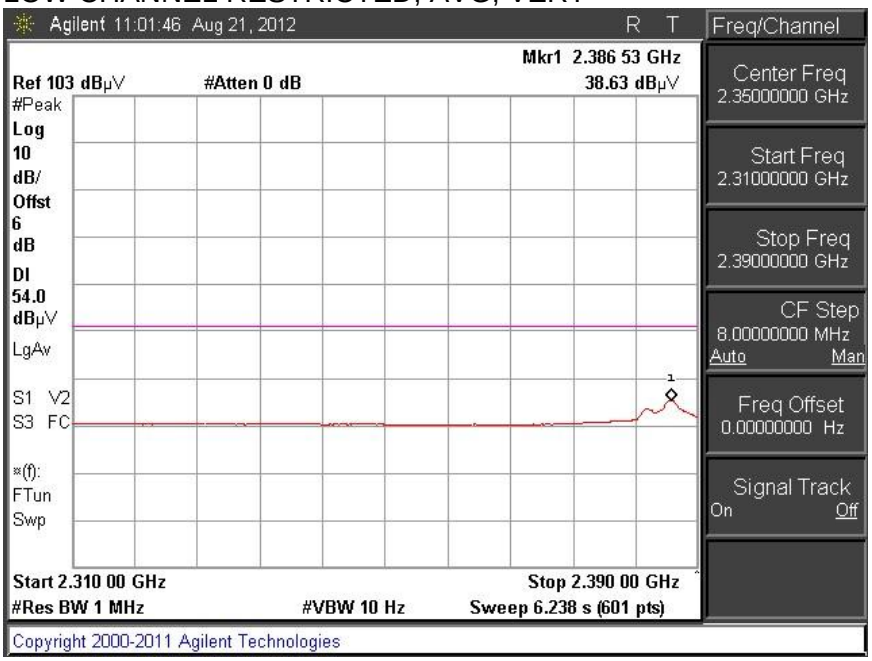


RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

LOW CHANNEL RESTRICTED, PEAK, VERT

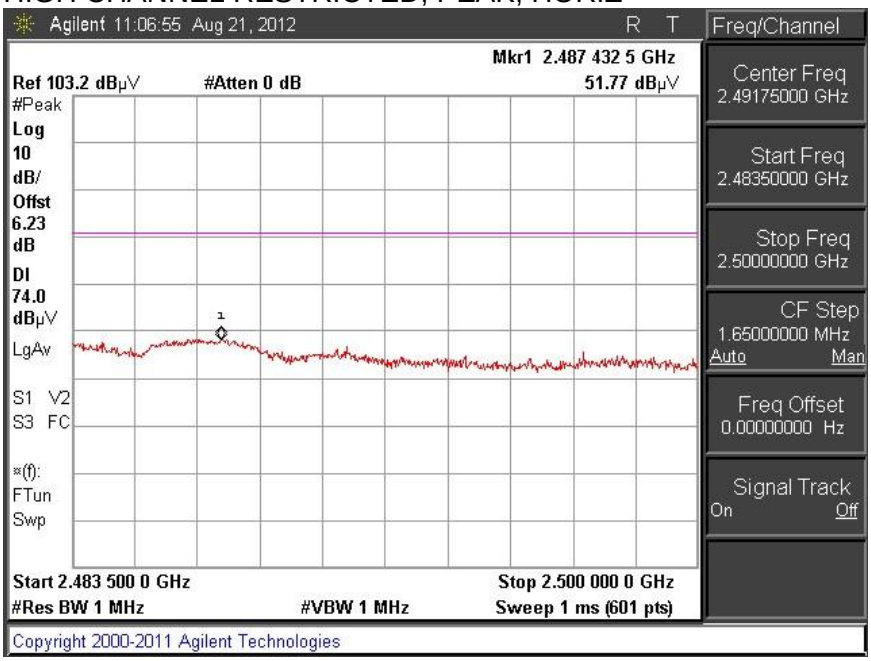


LOW CHANNEL RESTRICTED, AVG, VERT

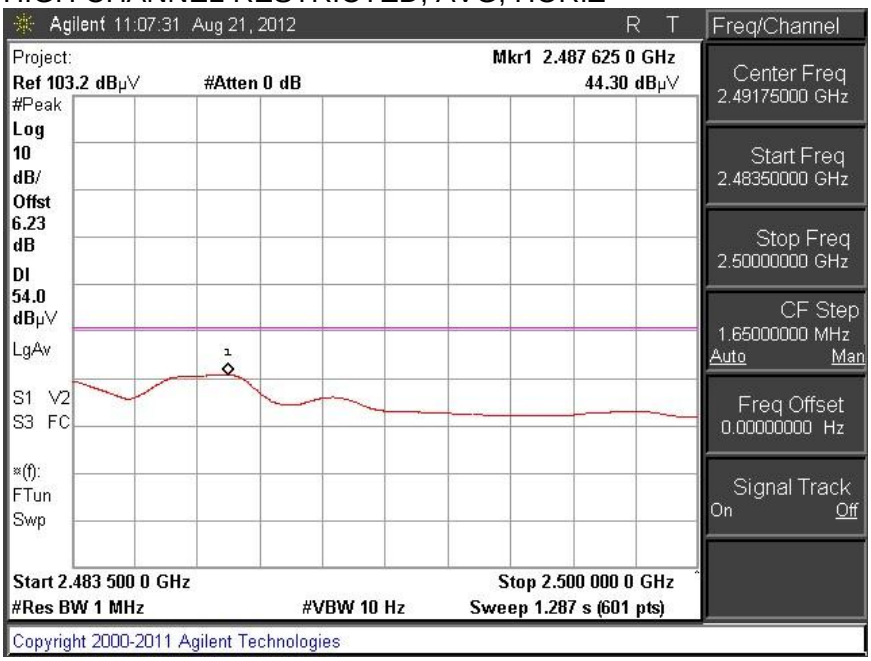


RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ

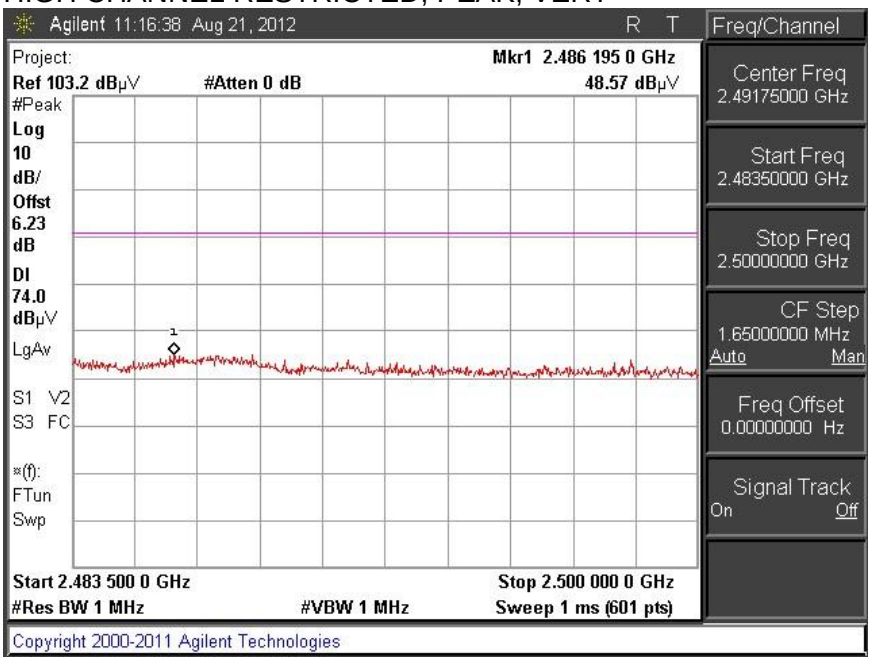


HIGH CHANNEL RESTRICTED, AVG, HORIZ

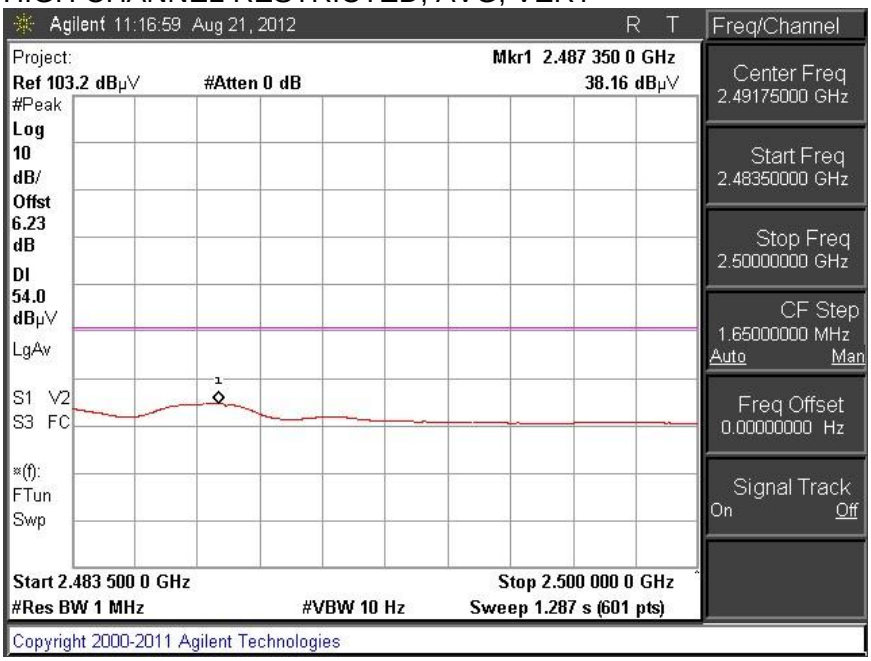


RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED, AVG, VERT



HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tony & Roy
Date: 08/22/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: 11b Tx Continuously

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

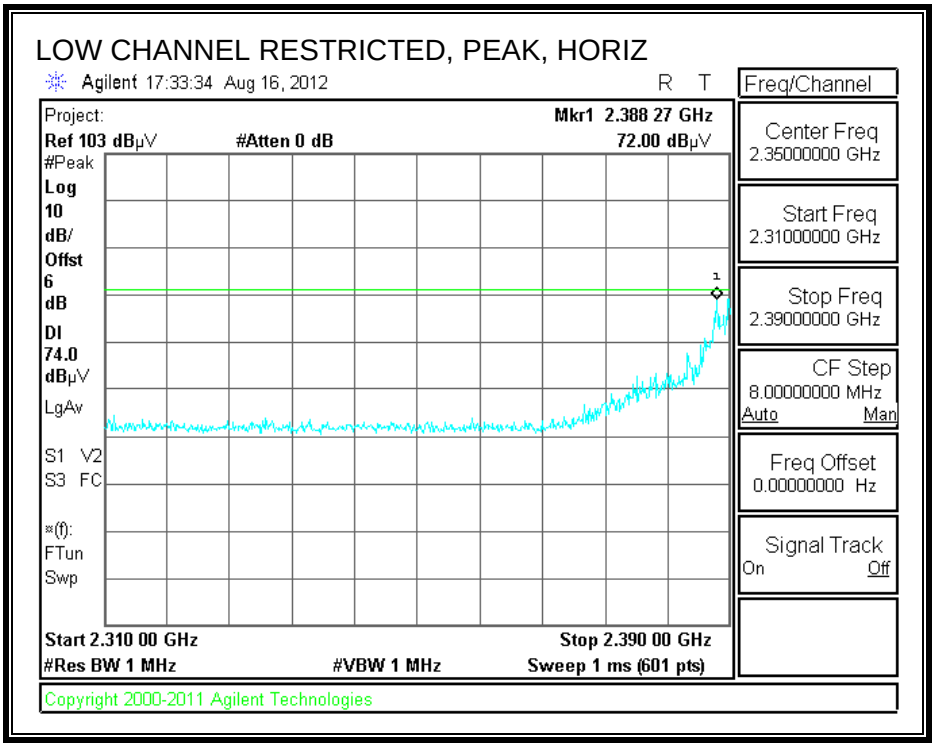
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Lo Chan, 2412MHz													
4.824	3.0	37.1	33.4	6.3	-35.5	0.0	0.0	41.3	74.0	-32.7	H	P	
4.824	3.0	24.3	33.4	6.3	-35.5	0.0	0.0	28.5	54.0	-25.5	H	A	
12.060	3.0	34.4	39.3	11.1	-35.4	0.0	0.0	49.4	74.0	-24.6	H	P	
12.060	3.0	21.8	39.3	11.1	-35.4	0.0	0.0	36.8	54.0	-17.2	H	A	
4.824	3.0	36.9	33.4	6.3	-35.5	0.0	0.0	41.1	74.0	-32.9	V	P	
4.824	3.0	24.4	33.4	6.3	-35.5	0.0	0.0	28.6	54.0	-25.4	V	A	
12.060	3.0	34.3	39.3	11.1	-35.4	0.0	0.0	49.3	74.0	-24.7	V	P	
12.060	3.0	21.8	39.3	11.1	-35.4	0.0	0.0	36.8	54.0	-17.2	V	A	
Mid Chan, 2437MHz													
4.874	3.0	37.2	33.5	6.3	-35.5	0.0	0.0	41.5	74.0	-32.5	H	P	
4.874	3.0	24.9	33.5	6.3	-35.5	0.0	0.0	29.2	54.0	-24.8	H	A	
7.311	3.0	35.8	35.7	8.5	-35.4	0.0	0.0	44.6	74.0	-29.4	H	P	
7.311	3.0	23.3	35.7	8.5	-35.4	0.0	0.0	32.1	54.0	-21.9	H	A	
12.185	3.0	35.9	39.3	11.1	-35.3	0.0	0.0	51.0	74.0	-23.0	H	P	
12.185	3.0	22.2	39.3	11.1	-35.3	0.0	0.0	37.3	54.0	-16.7	H	A	
4.874	3.0	37.9	33.5	6.3	-35.5	0.0	0.0	42.2	74.0	-31.8	V	P	
4.874	3.0	26.7	33.5	6.3	-35.5	0.0	0.0	31.0	54.0	-23.0	V	A	
7.311	3.0	35.7	35.7	8.5	-35.4	0.0	0.0	44.5	74.0	-29.5	V	P	
7.311	3.0	23.4	35.7	8.5	-35.4	0.0	0.0	32.2	54.0	-21.8	V	A	
12.185	3.0	34.5	39.3	11.1	-35.3	0.0	0.0	49.6	74.0	-24.4	V	P	
12.185	3.0	22.2	39.3	11.1	-35.3	0.0	0.0	37.2	54.0	-16.8	V	A	
Hi Chan, 2462MHz													
4.924	3.0	36.8	33.5	6.3	-35.5	0.0	0.0	41.2	74.0	-32.8	H	P	
4.924	3.0	24.2	33.5	6.3	-35.5	0.0	0.0	28.6	54.0	-25.4	H	A	
7.386	3.0	36.4	35.8	8.5	-35.5	0.0	0.0	45.3	74.0	-28.7	H	P	
7.386	3.0	23.5	35.8	8.5	-35.5	0.0	0.0	32.4	54.0	-21.6	H	A	
12.310	3.0	34.6	39.3	11.2	-35.3	0.0	0.0	49.8	74.0	-24.2	H	P	
12.310	3.0	22.1	39.3	11.2	-35.3	0.0	0.0	37.3	54.0	-16.7	H	A	
4.924	3.0	36.6	33.5	6.3	-35.5	0.0	0.0	41.0	74.0	-33.0	V	P	
4.924	3.0	24.3	33.5	6.3	-35.5	0.0	0.0	28.7	54.0	-25.3	V	A	
7.386	3.0	36.7	35.8	8.5	-35.5	0.0	0.0	45.6	74.0	-28.4	V	P	
7.386	3.0	23.5	35.8	8.5	-35.5	0.0	0.0	32.4	54.0	-21.6	V	A	
12.310	3.0	34.8	39.3	11.2	-35.3	0.0	0.0	50.0	74.0	-24.0	V	P	
12.310	3.0	22.1	39.3	11.2	-35.3	0.0	0.0	37.3	54.0	-16.7	V	A	

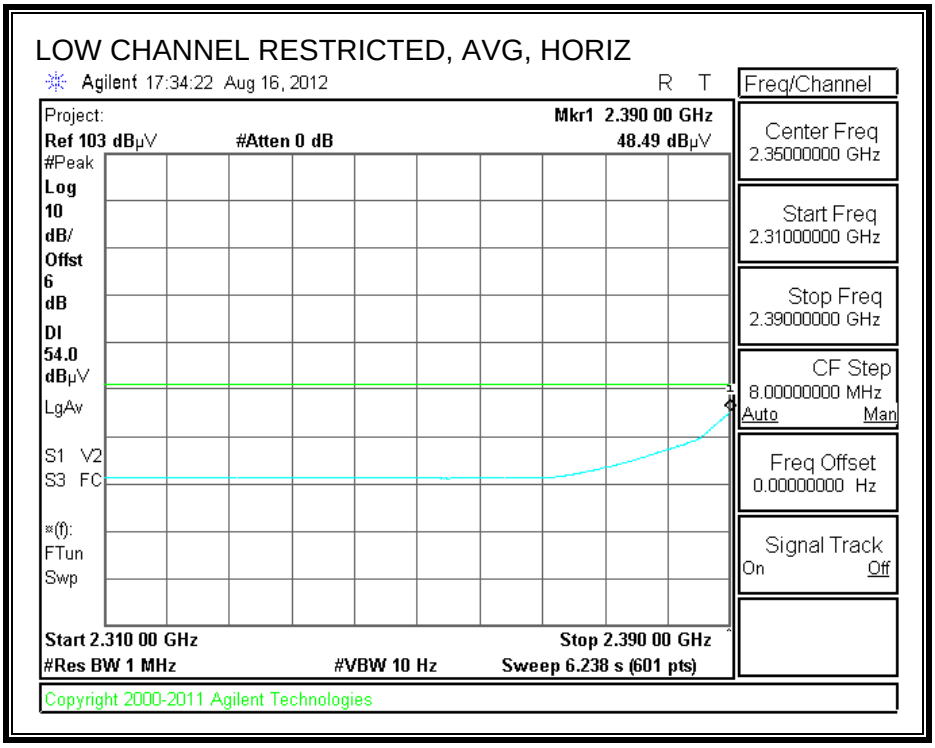
Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

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

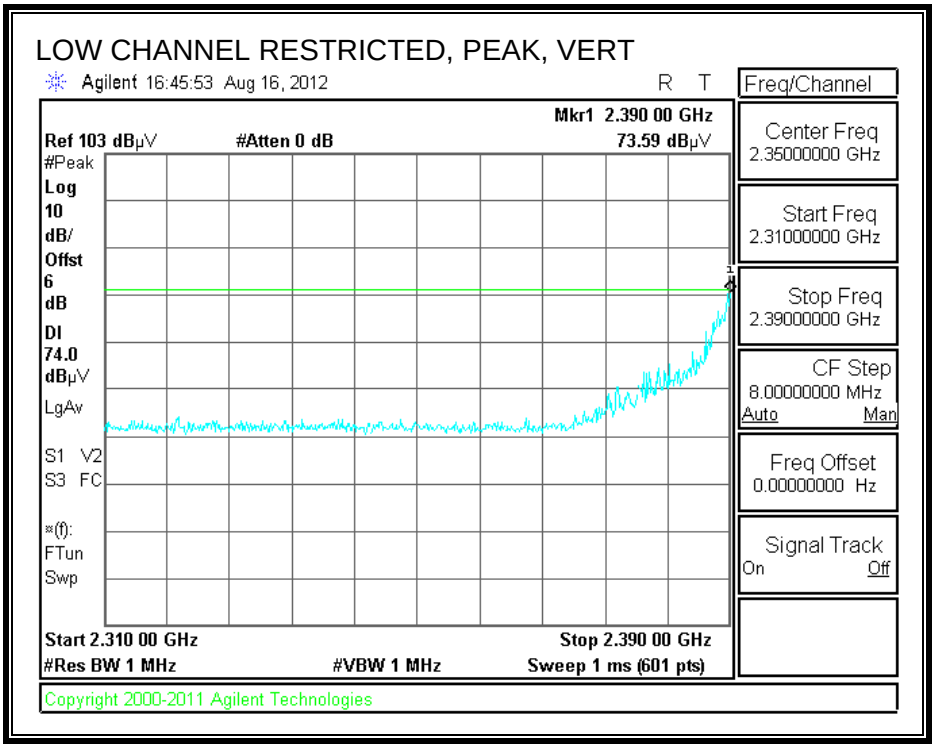
WITH USB Charger

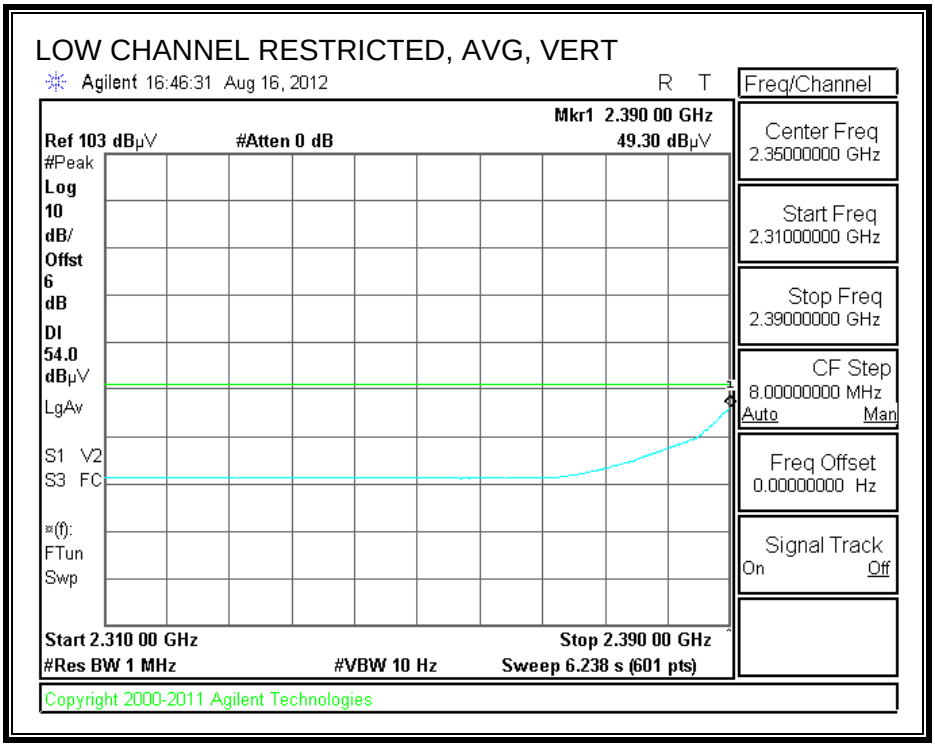
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



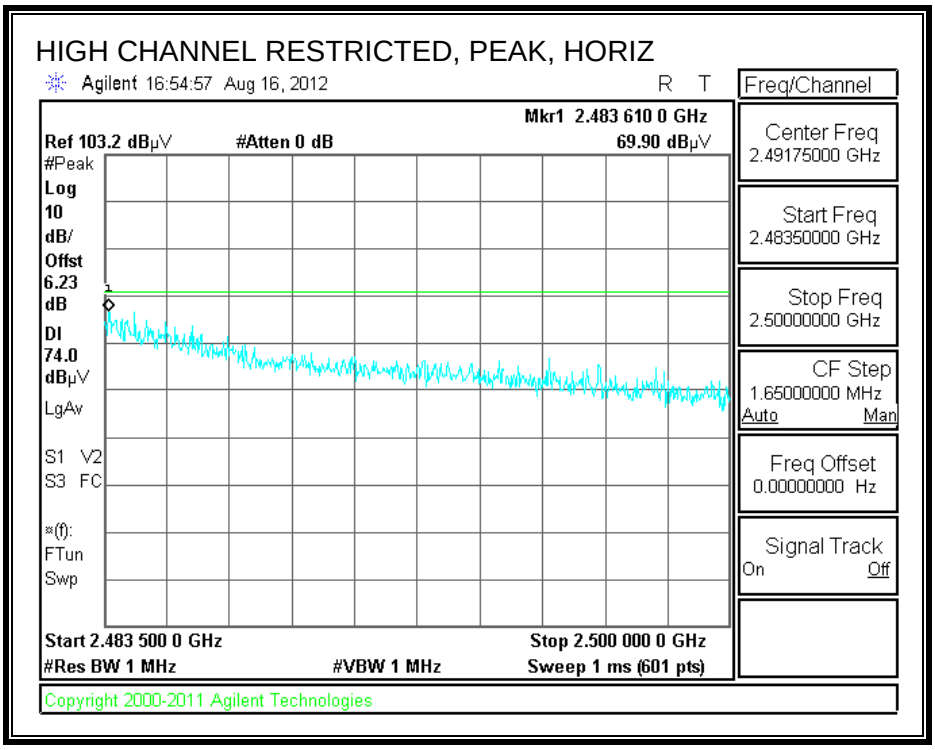


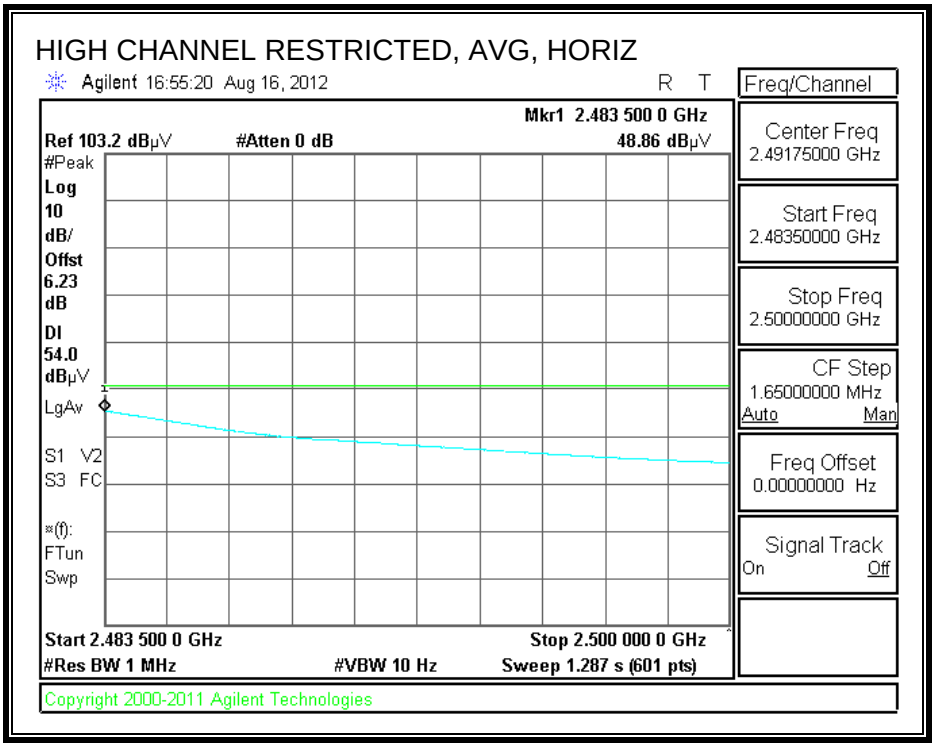
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



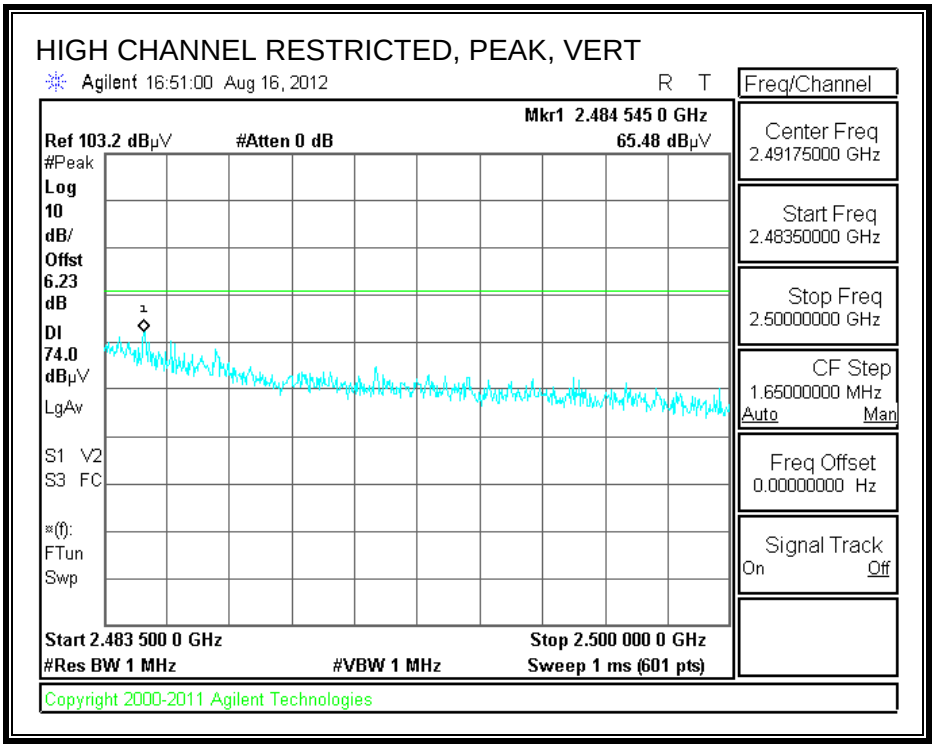


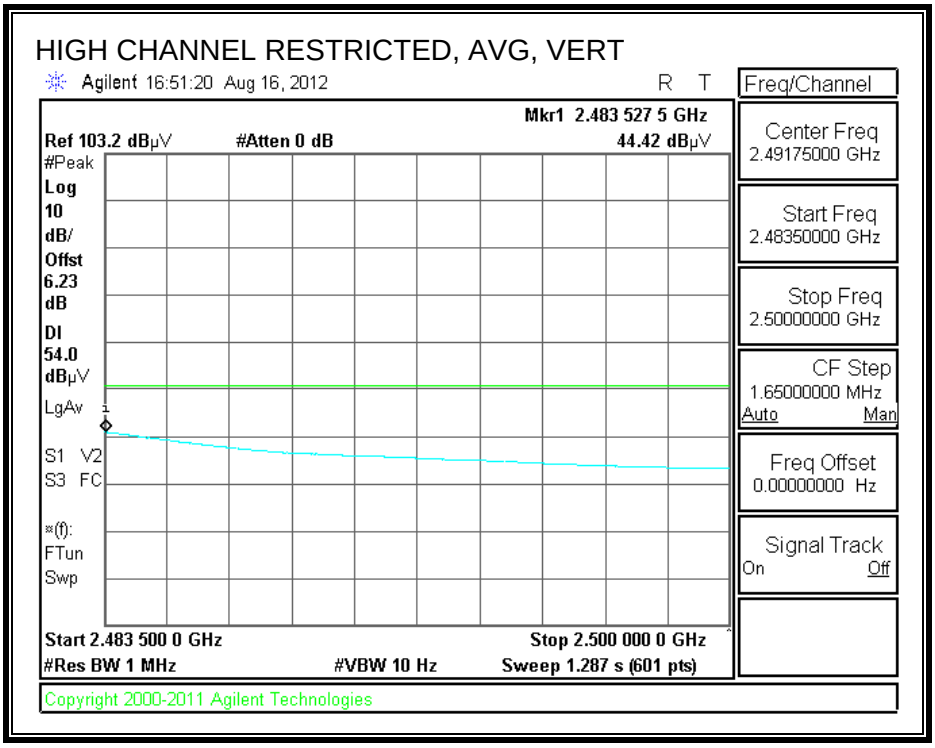
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tony & Roy
Date: 08/22/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: 11n Tx Continuously

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

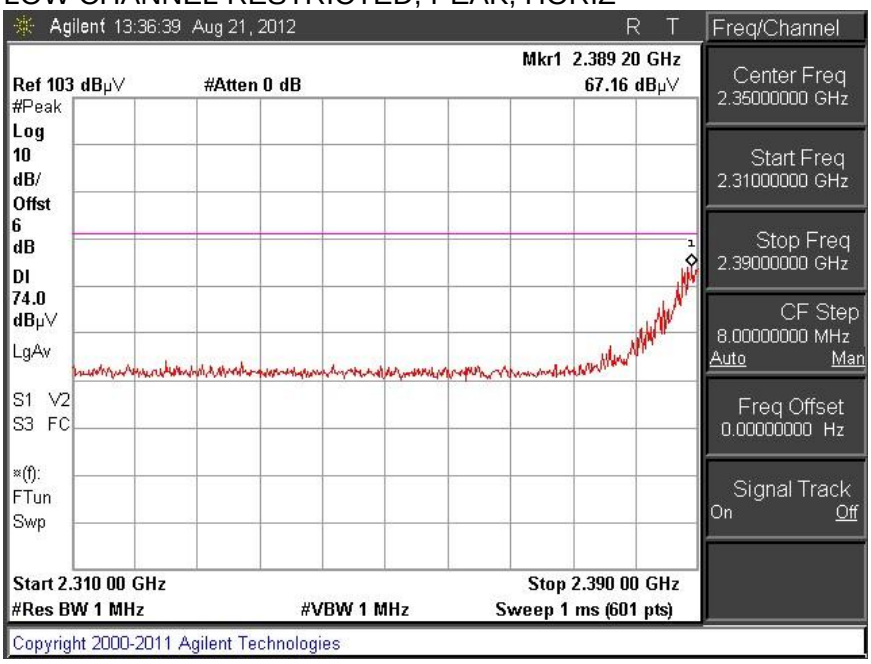
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Lo Chan, 2412MHz													
4.824	3.0	36.4	33.4	6.3	-35.5	0.0	0.0	40.6	74.0	-33.4	H	P	
4.824	3.0	24.0	33.4	6.3	-35.5	0.0	0.0	28.2	54.0	-25.8	H	A	
12.060	3.0	34.4	39.3	11.1	-35.4	0.0	0.0	49.4	74.0	-24.6	H	P	
12.060	3.0	21.6	39.3	11.1	-35.4	0.0	0.0	36.6	54.0	-17.4	H	A	
4.824	3.0	37.5	33.4	6.3	-35.5	0.0	0.0	41.7	74.0	-32.3	V	P	
4.824	3.0	24.3	33.4	6.3	-35.5	0.0	0.0	28.5	54.0	-25.5	V	A	
12.060	3.0	33.8	39.3	11.1	-35.4	0.0	0.0	48.8	74.0	-25.2	V	P	
12.060	3.0	21.7	39.3	11.1	-35.4	0.0	0.0	36.7	54.0	-17.3	V	A	
Mid Chan, 2437MHz													
4.874	3.0	36.5	33.5	6.3	-35.5	0.0	0.0	40.8	74.0	-33.2	H	P	
4.874	3.0	23.6	33.5	6.3	-35.5	0.0	0.0	27.9	54.0	-26.1	H	A	
7.311	3.0	35.4	35.7	8.5	-35.4	0.0	0.0	44.2	74.0	-29.8	H	P	
7.311	3.0	23.1	35.7	8.5	-35.4	0.0	0.0	31.9	54.0	-22.1	H	A	
12.185	3.0	34.2	39.3	11.1	-35.3	0.0	0.0	49.3	74.0	-24.7	H	P	
12.185	3.0	22.0	39.3	11.1	-35.3	0.0	0.0	37.1	54.0	-16.9	H	A	
4.874	3.0	36.2	33.5	6.3	-35.5	0.0	0.0	40.5	74.0	-33.5	V	P	
4.874	3.0	23.8	33.5	6.3	-35.5	0.0	0.0	28.1	54.0	-25.9	V	A	
7.311	3.0	35.8	35.7	8.5	-35.4	0.0	0.0	44.6	74.0	-29.4	V	P	
7.311	3.0	23.2	35.7	8.5	-35.4	0.0	0.0	32.0	54.0	-22.0	V	A	
12.185	3.0	34.5	39.3	11.1	-35.3	0.0	0.0	49.5	74.0	-24.5	V	P	
12.185	3.0	22.1	39.3	11.1	-35.3	0.0	0.0	37.1	54.0	-16.9	V	A	
Hi Chan, 2462MHz													
4.924	3.0	37.2	33.5	6.3	-35.5	0.0	0.0	41.5	74.0	-32.5	H	P	
4.924	3.0	24.1	33.5	6.3	-35.5	0.0	0.0	28.5	54.0	-25.5	H	A	
7.386	3.0	35.6	35.8	8.5	-35.5	0.0	0.0	44.5	74.0	-29.5	H	P	
7.386	3.0	23.3	35.8	8.5	-35.5	0.0	0.0	32.2	54.0	-21.8	H	A	
12.310	3.0	34.0	39.3	11.2	-35.3	0.0	0.0	49.2	74.0	-24.8	H	P	
12.310	3.0	22.0	39.3	11.2	-35.3	0.0	0.0	37.2	54.0	-16.8	H	A	
4.924	3.0	36.4	33.5	6.3	-35.5	0.0	0.0	40.8	74.0	-33.2	V	P	
4.924	3.0	24.2	33.5	6.3	-35.5	0.0	0.0	28.6	54.0	-25.4	V	A	
7.386	3.0	36.3	35.8	8.5	-35.5	0.0	0.0	45.2	74.0	-28.8	V	P	
7.386	3.0	23.4	35.8	8.5	-35.5	0.0	0.0	32.3	54.0	-21.7	V	A	
12.310	3.0	34.7	39.3	11.2	-35.3	0.0	0.0	49.9	74.0	-24.1	V	P	
12.310	3.0	22.0	39.3	11.2	-35.3	0.0	0.0	37.2	54.0	-16.8	V	A	

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

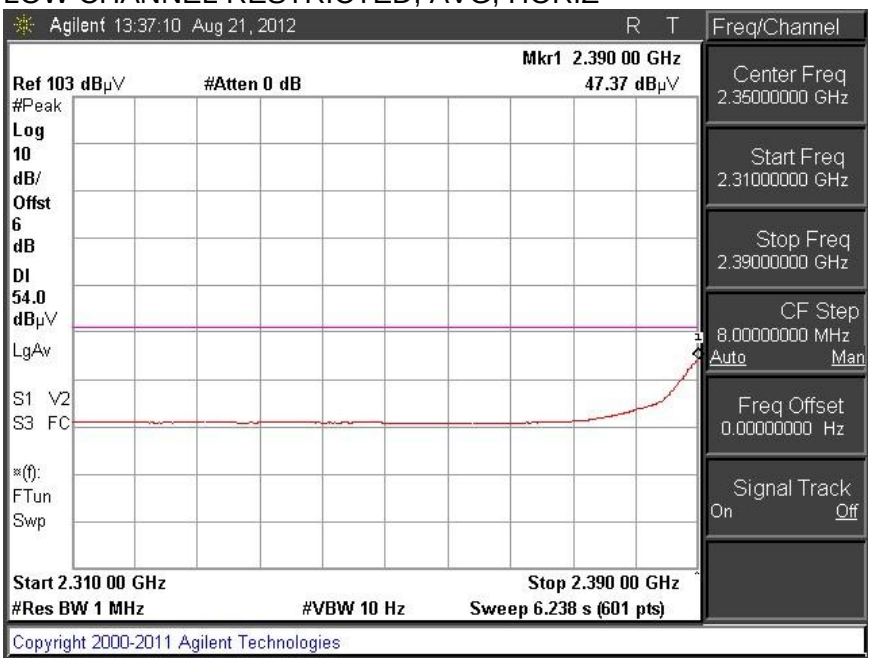
WITH INDUCTIVE Charger

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

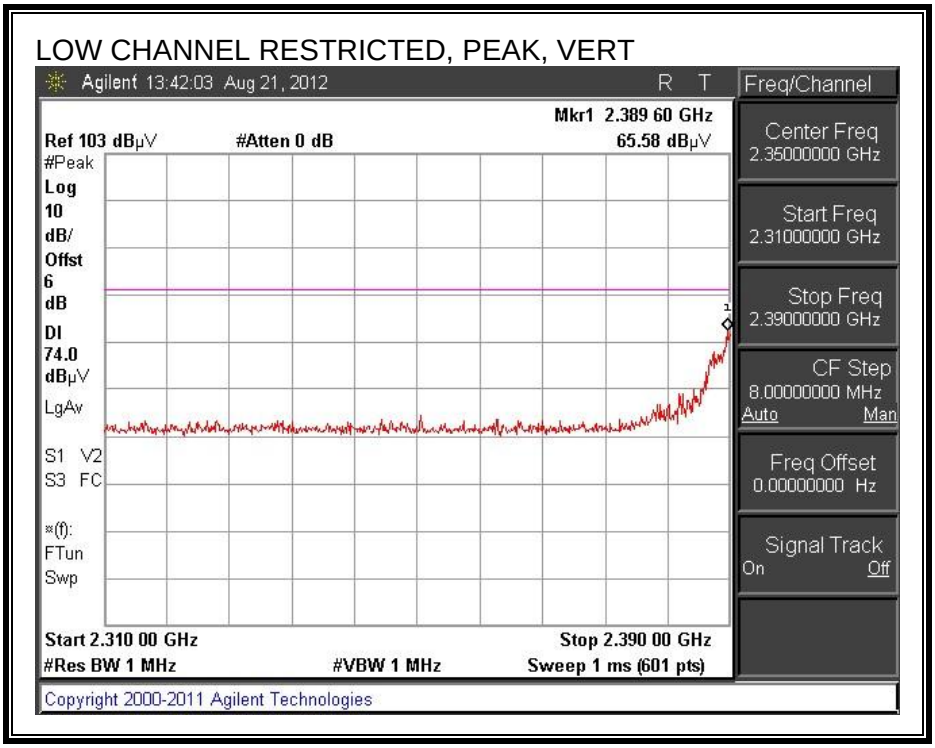
LOW CHANNEL RESTRICTED, PEAK, HORIZ



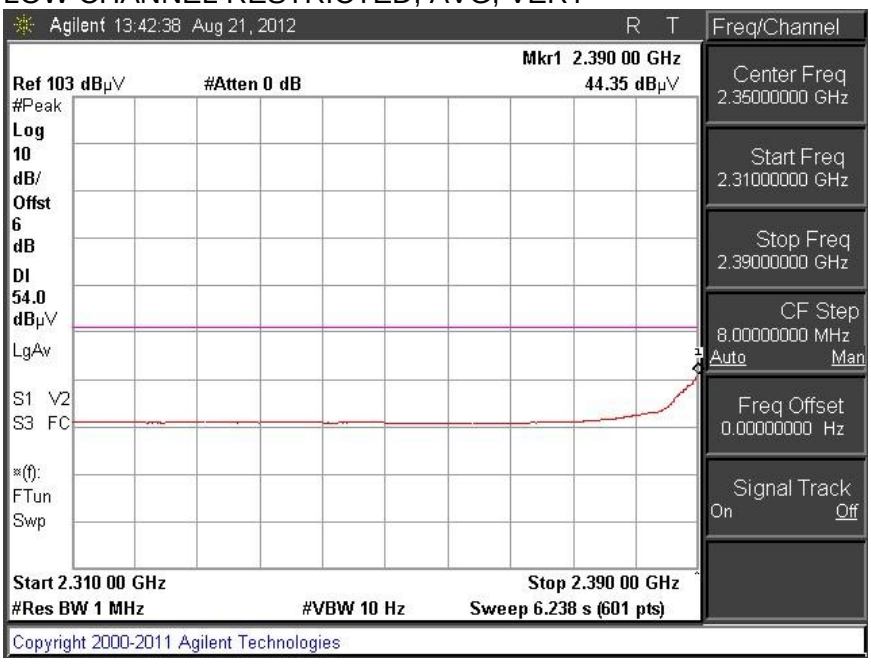
LOW CHANNEL RESTRICTED, AVG, HORIZ



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

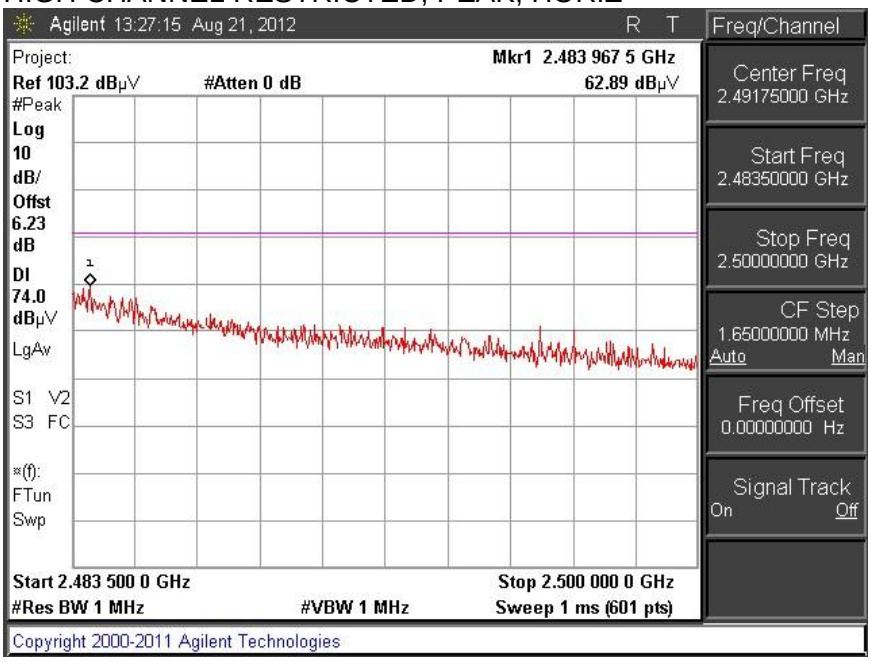


LOW CHANNEL RESTRICTED, AVG, VERT

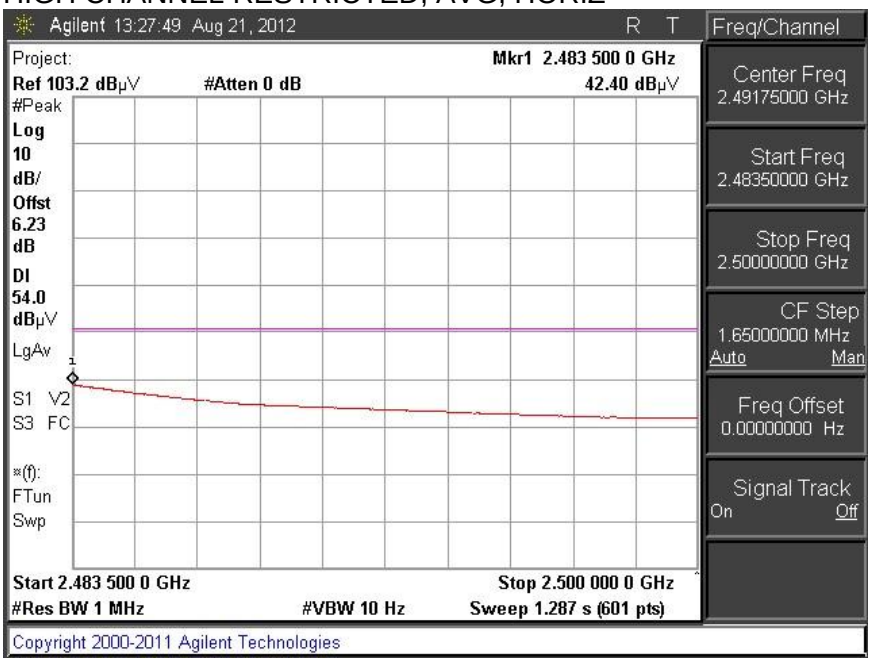


RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

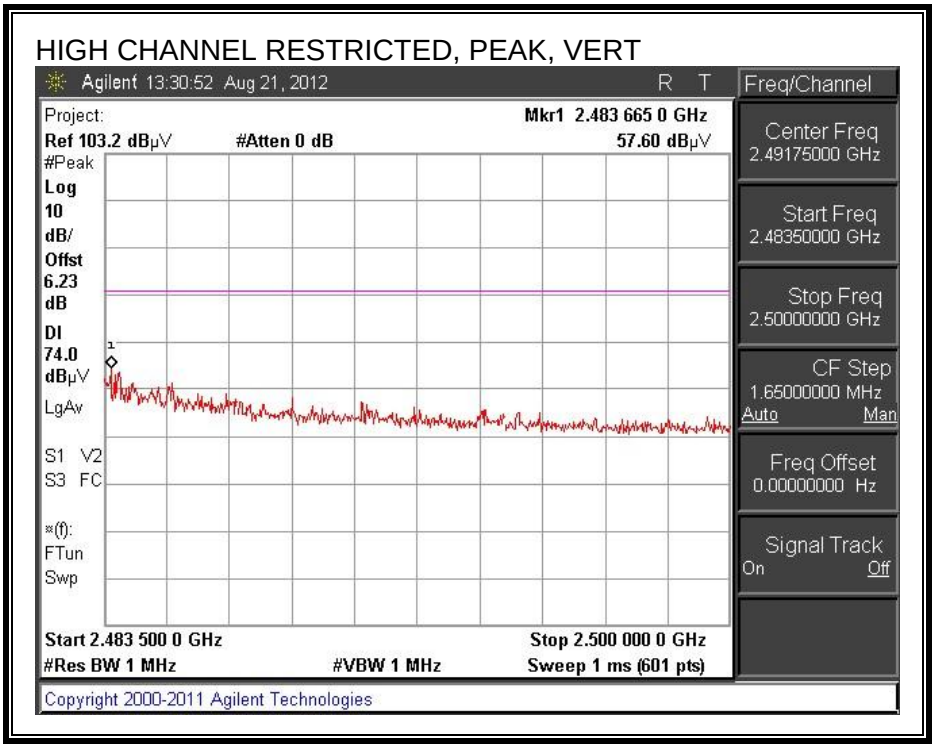
HIGH CHANNEL RESTRICTED, PEAK, HORIZ



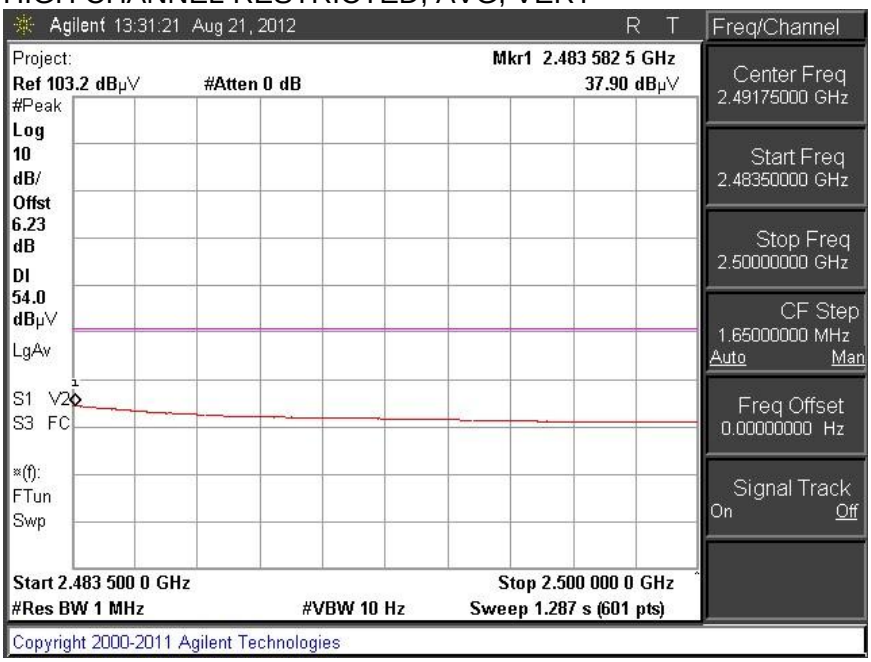
HIGH CHANNEL RESTRICTED, AVG, HORIZ



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



HIGH CHANNEL RESTRICTED, AVG, VERT



HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tony & Roy
Date: 08/21/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: 11n Tx Continuously

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Lo Chan, 2412MHz													
4.824	3.0	38.0	33.4	6.3	-35.5	0.0	0.0	42.2	74.0	-31.8	H	P	
4.824	3.0	24.9	33.4	6.3	-35.5	0.0	0.0	29.1	54.0	-24.9	H	A	
12.060	3.0	34.8	39.3	11.1	-35.4	0.0	0.0	49.8	74.0	-24.2	H	P	
12.060	3.0	22.0	39.3	11.1	-35.4	0.0	0.0	37.0	54.0	-17.0	H	A	
4.824	3.0	37.6	33.4	6.3	-35.5	0.0	0.0	41.8	74.0	-32.2	V	P	
4.824	3.0	25.0	33.4	6.3	-35.5	0.0	0.0	29.2	54.0	-24.8	V	A	
12.060	3.0	34.8	39.3	11.1	-35.4	0.0	0.0	49.8	74.0	-24.2	V	P	
12.060	3.0	22.0	39.3	11.1	-35.4	0.0	0.0	37.0	54.0	-17.0	V	A	
Mid Chan, 2437MHz													
4.874	3.0	36.6	33.5	6.3	-35.5	0.0	0.0	40.9	74.0	-33.1	H	P	
4.874	3.0	24.5	33.5	6.3	-35.5	0.0	0.0	28.8	54.0	-25.2	H	A	
7.311	3.0	35.8	35.7	8.5	-35.4	0.0	0.0	44.6	74.0	-29.4	H	P	
7.311	3.0	23.6	35.7	8.5	-35.4	0.0	0.0	32.4	54.0	-21.6	H	A	
12.185	3.0	34.7	39.3	11.1	-35.3	0.0	0.0	49.8	74.0	-24.2	H	P	
12.185	3.0	22.4	39.3	11.1	-35.3	0.0	0.0	37.5	54.0	-16.5	H	A	
4.874	3.0	36.6	33.5	6.3	-35.5	0.0	0.0	40.9	74.0	-33.1	V	P	
4.874	3.0	24.5	33.5	6.3	-35.5	0.0	0.0	28.7	54.0	-25.3	V	A	
7.311	3.0	36.7	35.7	8.5	-35.4	0.0	0.0	45.5	74.0	-28.5	V	P	
7.311	3.0	23.7	35.7	8.5	-35.4	0.0	0.0	32.5	54.0	-21.5	V	A	
12.185	3.0	34.9	39.3	11.1	-35.3	0.0	0.0	49.9	74.0	-24.1	V	P	
12.185	3.0	22.4	39.3	11.1	-35.3	0.0	0.0	37.5	54.0	-16.5	V	A	
Hi Chan, 2462MHz													
4.924	3.0	37.9	33.5	6.3	-35.5	0.0	0.0	42.3	74.0	-31.7	H	P	
4.924	3.0	24.9	33.5	6.3	-35.5	0.0	0.0	29.3	54.0	-24.7	H	A	
7.386	3.0	36.5	35.8	8.5	-35.5	0.0	0.0	45.4	74.0	-28.6	H	P	
7.386	3.0	23.8	35.8	8.5	-35.5	0.0	0.0	32.7	54.0	-21.3	H	A	
12.310	3.0	34.8	39.3	11.2	-35.3	0.0	0.0	50.0	74.0	-24.0	H	P	
12.310	3.0	22.3	39.3	11.2	-35.3	0.0	0.0	37.5	54.0	-16.5	H	A	
4.924	3.0	36.8	33.5	6.3	-35.5	0.0	0.0	41.2	74.0	-32.8	V	P	
4.924	3.0	24.9	33.5	6.3	-35.5	0.0	0.0	29.3	54.0	-24.7	V	A	
7.386	3.0	36.8	35.8	8.5	-35.5	0.0	0.0	45.7	74.0	-28.3	V	P	
7.386	3.0	23.8	35.8	8.5	-35.5	0.0	0.0	32.7	54.0	-21.3	V	A	
12.310	3.0	34.4	39.3	11.2	-35.3	0.0	0.0	49.6	74.0	-24.4	V	P	
12.310	3.0	22.3	39.3	11.2	-35.3	0.0	0.0	37.5	54.0	-16.5	V	A	

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

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

EUT WITH USB CHARGER

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Chin Pang
Date: 08/18/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: 5.8GHz, HT20 mode, TX
Configuration: EUT with USB Charger and earphone

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Ch, 5745MHz													
11.490	3.0	36.5	38.8	10.5	-35.5	0.0	0.7	51.0	74.0	-23.0	V	P	
11.490	3.0	28.1	38.8	10.5	-35.5	0.0	0.7	42.6	54.0	-11.4	V	A	
11.490	3.0	37.9	38.8	10.5	-35.5	0.0	0.7	52.4	74.0	-21.6	H	P	
11.490	3.0	28.4	38.8	10.5	-35.5	0.0	0.7	42.9	54.0	-11.1	H	A	
Mid Ch, 5785MHz													
11.570	3.0	36.3	38.9	10.6	-35.5	0.0	0.7	51.0	74.0	-23.0	V	P	
11.570	3.0	28.5	38.9	10.6	-35.5	0.0	0.7	43.1	54.0	-10.9	V	A	
11.570	3.0	39.1	38.9	10.6	-35.5	0.0	0.7	53.7	74.0	-20.3	H	P	
11.570	3.0	28.0	38.9	10.6	-35.5	0.0	0.7	42.6	54.0	-11.4	H	A	
High Ch, 5825MHz													
11.650	3.0	36.6	39.0	10.7	-35.5	0.0	0.7	51.5	74.0	-22.5	V	P	
11.650	3.0	28.2	39.0	10.7	-35.5	0.0	0.7	43.1	54.0	-11.0	V	A	
11.650	3.0	40.6	39.0	10.7	-35.5	0.0	0.7	55.5	74.0	-18.5	H	P	
11.650	3.0	29.2	39.0	10.7	-35.5	0.0	0.7	44.1	54.0	-9.9	H	A	

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

EUT WITH INDUCTIVE CHARGER

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Chin Pang
Date: 08/18/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: HT20, 5.8GHz, TX
Confighuration: EUT with Inductive Charger

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Ch, 5745MHz													
11.490	3.0	36.7	38.8	10.5	-35.5	0.0	0.7	51.3	74.0	-22.7	V	P	
11.490	3.0	27.2	38.8	10.5	-35.5	0.0	0.7	41.7	54.0	-12.3	V	A	
11.490	3.0	35.0	38.8	10.5	-35.5	0.0	0.7	49.5	74.0	-24.5	H	P	
11.490	3.0	25.2	38.8	10.5	-35.5	0.0	0.7	39.7	54.0	-14.3	H	A	
Mid ch, 5785MHz													
11.570	3.0	36.4	38.9	10.6	-35.5	0.0	0.7	51.1	74.0	-22.9	V	P	
11.570	3.0	26.9	38.9	10.6	-35.5	0.0	0.7	41.5	54.0	-12.5	V	A	
11.570	3.0	34.7	38.9	10.6	-35.5	0.0	0.7	49.3	74.0	-24.7	H	P	
11.570	3.0	24.9	38.9	10.6	-35.5	0.0	0.7	39.6	54.0	-14.4	H	A	
High Ch, 5825MHz													
11.650	3.0	36.4	39.0	10.7	-35.5	0.0	0.7	51.3	74.0	-22.7	V	P	
11.650	3.0	26.9	39.0	10.7	-35.5	0.0	0.7	41.8	54.0	-12.2	V	A	
11.650	3.0	35.1	39.0	10.7	-35.5	0.0	0.7	50.0	74.0	-24.0	H	P	
11.650	3.0	25.3	39.0	10.7	-35.5	0.0	0.7	40.2	54.0	-13.8	H	A	

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

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

EUT WITH USB CHARGER

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Chin Pang
Date: 08/18/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: 5.8GHz, a mode, TX
Configuration: EUT with USB Charger and Earphone

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Ch, 5745MHz													
11.490	3.0	37.5	38.8	10.5	-35.5	0.0	0.7	52.0	74.0	-22.0	V	P	
11.490	3.0	25.9	38.8	10.5	-35.5	0.0	0.7	40.5	54.0	-13.5	V	A	
11.490	3.0	42.3	38.8	10.5	-35.5	0.0	0.7	56.8	74.0	-17.2	H	P	
11.490	3.0	30.6	38.8	10.5	-35.5	0.0	0.7	45.1	54.0	-8.9	H	A	
Mid Ch, 5785MHz													
11.570	3.0	37.5	38.9	10.6	-35.5	0.0	0.7	52.2	74.0	-21.8	V	P	
11.570	3.0	27.7	38.9	10.6	-35.5	0.0	0.7	42.4	54.0	-11.6	V	A	
11.570	3.0	39.2	38.9	10.6	-35.5	0.0	0.7	53.9	74.0	-20.1	H	P	
11.570	3.0	29.8	38.9	10.6	-35.5	0.0	0.7	44.5	54.0	-9.5	H	A	
High Ch, 5825MHz													
11.650	3.0	35.7	39.0	10.7	-35.5	0.0	0.7	50.5	74.0	-23.5	V	P	
11.650	3.0	27.8	39.0	10.7	-35.5	0.0	0.7	42.6	54.0	-11.4	V	A	
11.650	3.0	39.2	39.0	10.7	-35.5	0.0	0.7	54.0	74.0	-20.0	H	P	
11.650	3.0	28.8	39.0	10.7	-35.5	0.0	0.7	43.7	54.0	-10.3	H	A	

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

EUT WITH INDUCTIVE CHARGER

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Chin Pang
Date: 08/18/12
Project #: 12U14580
Company: LG
Test Target: FCC 15.247
Mode Oper: a mode, 5.8GHz, TX
Configuration: EUT with Inductive Charger

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

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
Low Ch, 5745MHz													
11.490	3.0	35.4	38.8	10.5	-35.5	0.0	0.7	49.9	74.0	-24.1	V	P	
11.490	3.0	26.3	38.8	10.5	-35.5	0.0	0.7	40.8	54.0	-13.2	V	A	
11.490	3.0	36.5	38.8	10.5	-35.5	0.0	0.7	51.0	74.0	-23.0	H	P	
11.490	3.0	25.3	38.8	10.5	-35.5	0.0	0.7	39.8	54.0	-14.2	H	A	
Mid Ch, 5785MHz													
11.570	3.0	35.9	38.9	10.6	-35.5	0.0	0.7	50.6	74.0	-23.4	V	P	
11.570	3.0	25.8	38.9	10.6	-35.5	0.0	0.7	40.5	54.0	-13.5	V	A	
11.570	3.0	34.9	38.9	10.6	-35.5	0.0	0.7	49.6	74.0	-24.4	H	P	
11.570	3.0	24.9	38.9	10.6	-35.5	0.0	0.7	39.6	54.0	-14.4	H	A	
High Ch, 5825MHz													
11.650	3.0	37.8	39.0	10.7	-35.5	0.0	0.7	52.7	74.0	-21.4	V	P	
11.650	3.0	27.7	39.0	10.7	-35.5	0.0	0.7	42.6	54.0	-11.4	V	A	
11.650	3.0	35.2	39.0	10.7	-35.5	0.0	0.7	50.0	74.0	-24.0	H	P	
11.650	3.0	25.4	39.0	10.7	-35.5	0.0	0.7	40.3	54.0	-13.7	H	A	

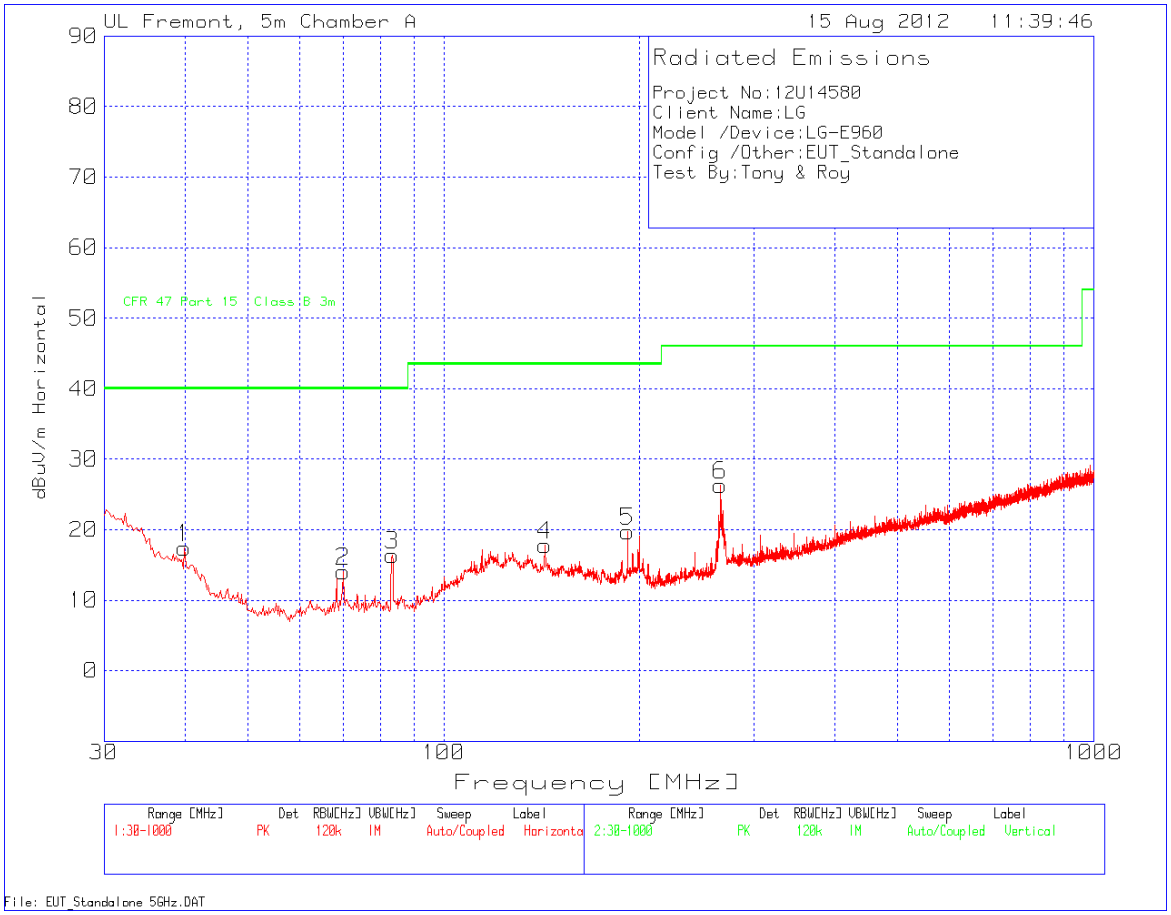
Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

8.3. WORST-CASE BELOW 1 GHz

EUT STAND ALONE

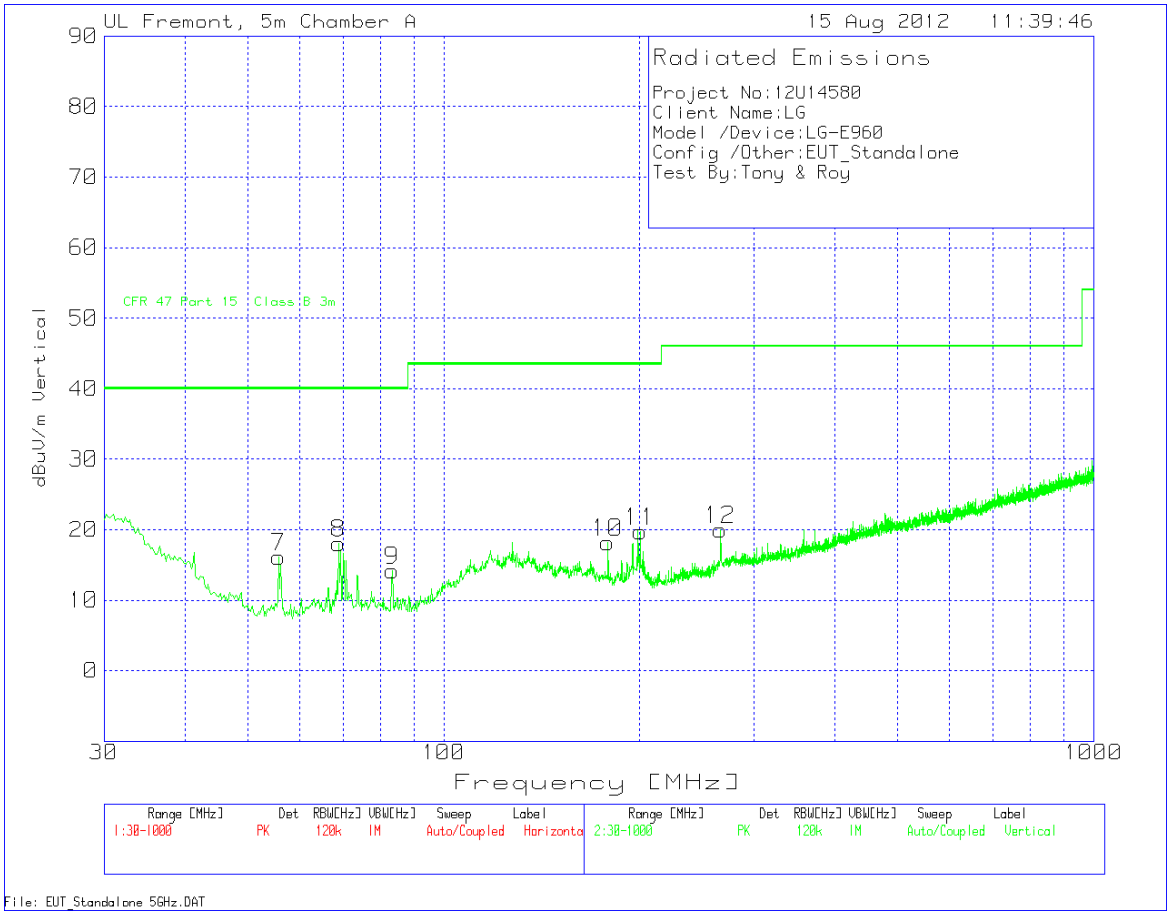
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

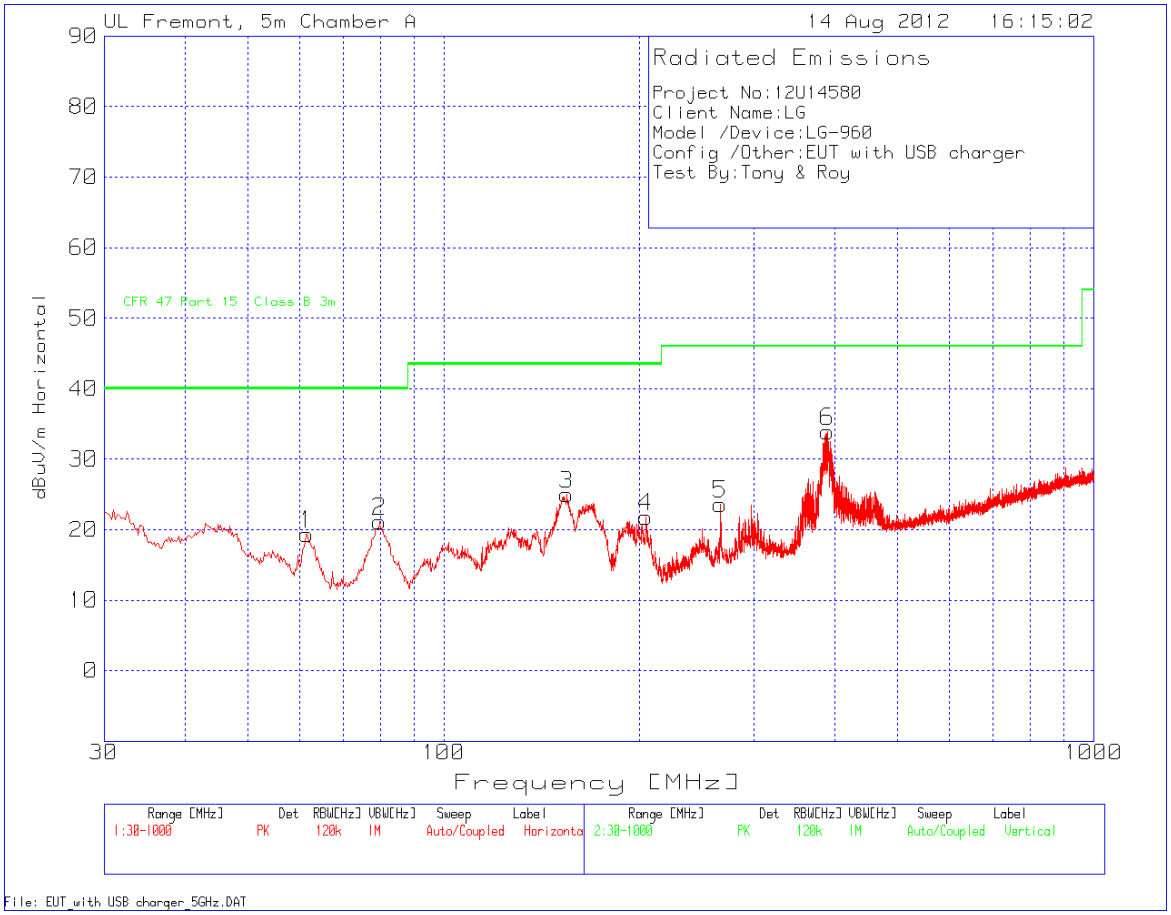
Project No:	12U14580
Client Name:	LG
Model /Device:	LG-E960
Config /Other:	EUT_Standalone
Test By:	Tony & Roy

Test Frequency	Meter Reading	Detector	T122 Sunol Bilog.TXT (dB)	5mB Amp Path 30-1000MHz (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
39.8861	32.72	PK	13.9	-29.2	17.42	40	-22.58	Horz
69.9321	34.65	PK	8.2	-28.8	14.05	40	-25.95	Horz
83.3074	37.38	PK	7.7	-28.7	16.38	40	-23.62	Horz
143.0116	33.04	PK	12.9	-28.1	17.84	43.5	-25.66	Horz
191.8605	35.97	PK	11.5	-27.7	19.77	43.5	-23.73	Horz
266.6847	40.43	PK	12.9	-27	26.33	46	-19.67	Horz
55.7814	37.94	PK	7.2	-29	16.14	40	-23.86	Vert
68.9628	38.87	PK	8.1	-28.9	18.07	40	-21.93	Vert
83.3074	35.25	PK	7.7	-28.7	14.25	40	-25.75	Vert
178.8729	34.84	PK	11.2	-27.8	18.24	43.5	-25.26	Vert
200.7774	34.84	PK	12.5	-27.6	19.74	43.5	-23.76	Vert
266.6847	34.11	PK	12.9	-27	20.01	46	-25.99	Vert

WITH USB Charger

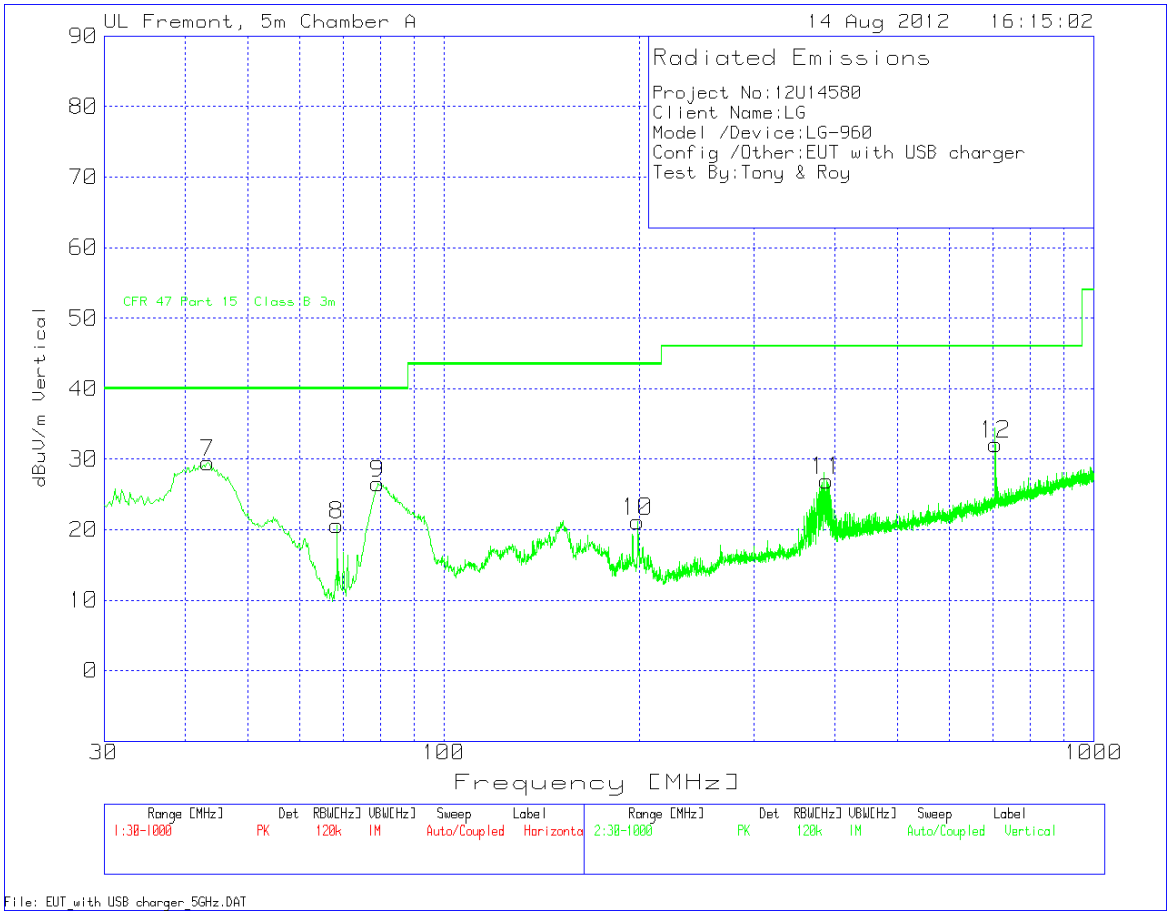
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

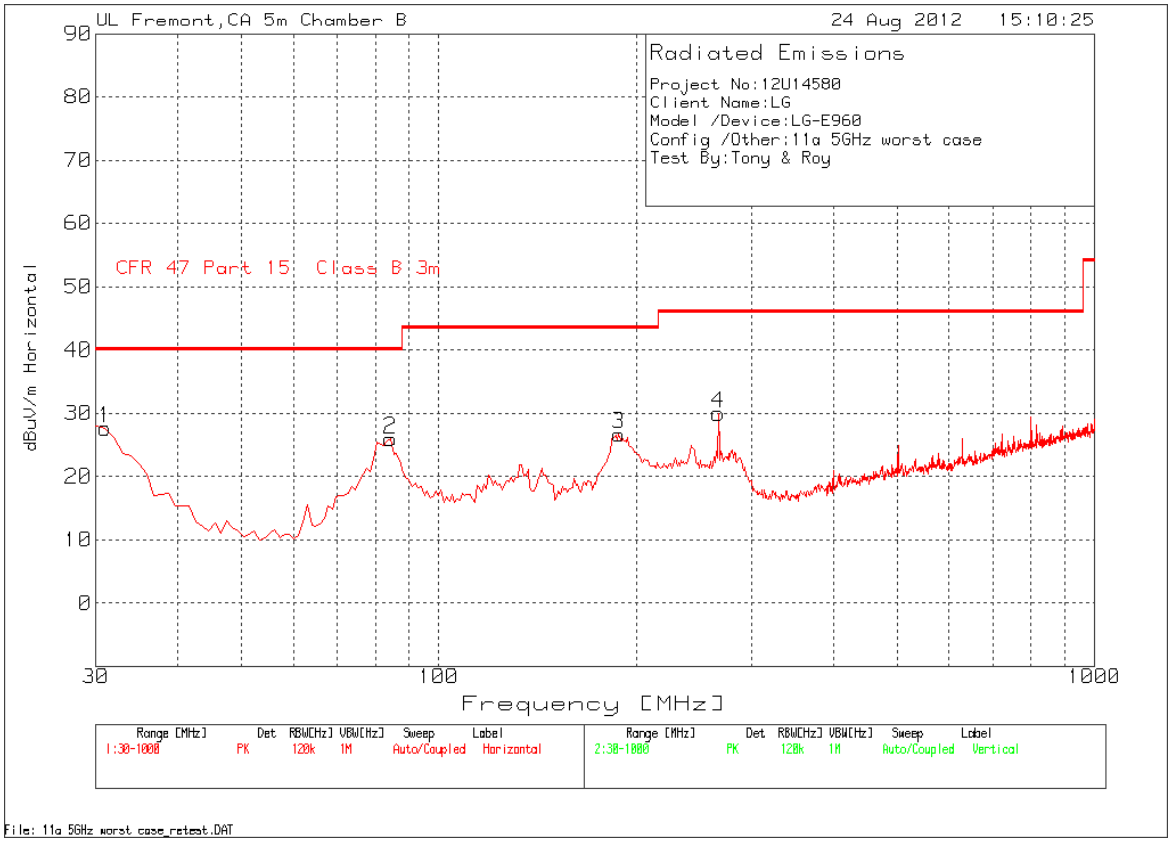
Project No:		12U14580						
Client Name:		LG						
Model /Device:		LG-960						
Config /Other:		EUT with USB charger						
Test By:		Tony & Roy						

Test Frequency	Meter Reading	Detector	T122 Sunol Bilog.TXT (dB)	5mB Amp Path 30-1000MHz (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
61.5967	40.67	PK	7.6	-28.9	19.37	40	-20.63	Horz
79.6243	42.1	PK	7.8	-28.8	21.1	40	-18.9	Horz
154.8361	40.46	PK	12.5	-28	24.96	43.5	-18.54	Horz
204.6543	38.3	PK	11.1	-27.6	21.8	43.5	-21.7	Horz
266.6847	37.74	PK	12.9	-27	23.64	46	-22.36	Horz
389.97	45.7	PK	15.1	-26.9	33.9	46	-12.1	Horz
43.3753	47.37	PK	11.3	-29.2	29.47	40	-10.53	Vert
68.5751	41.45	PK	8.1	-28.9	20.65	40	-19.35	Vert
79.2366	47.41	PK	7.9	-28.8	26.51	40	-13.49	Vert
199.0328	36.04	PK	12.7	-27.6	21.14	43.5	-22.36	Vert
387.8377	38.81	PK	15.1	-26.9	27.01	46	-18.99	Vert
706.9065	37.89	PK	20.3	-26.1	32.09	46	-13.91	Vert

WITH INDUCTIVE Charger

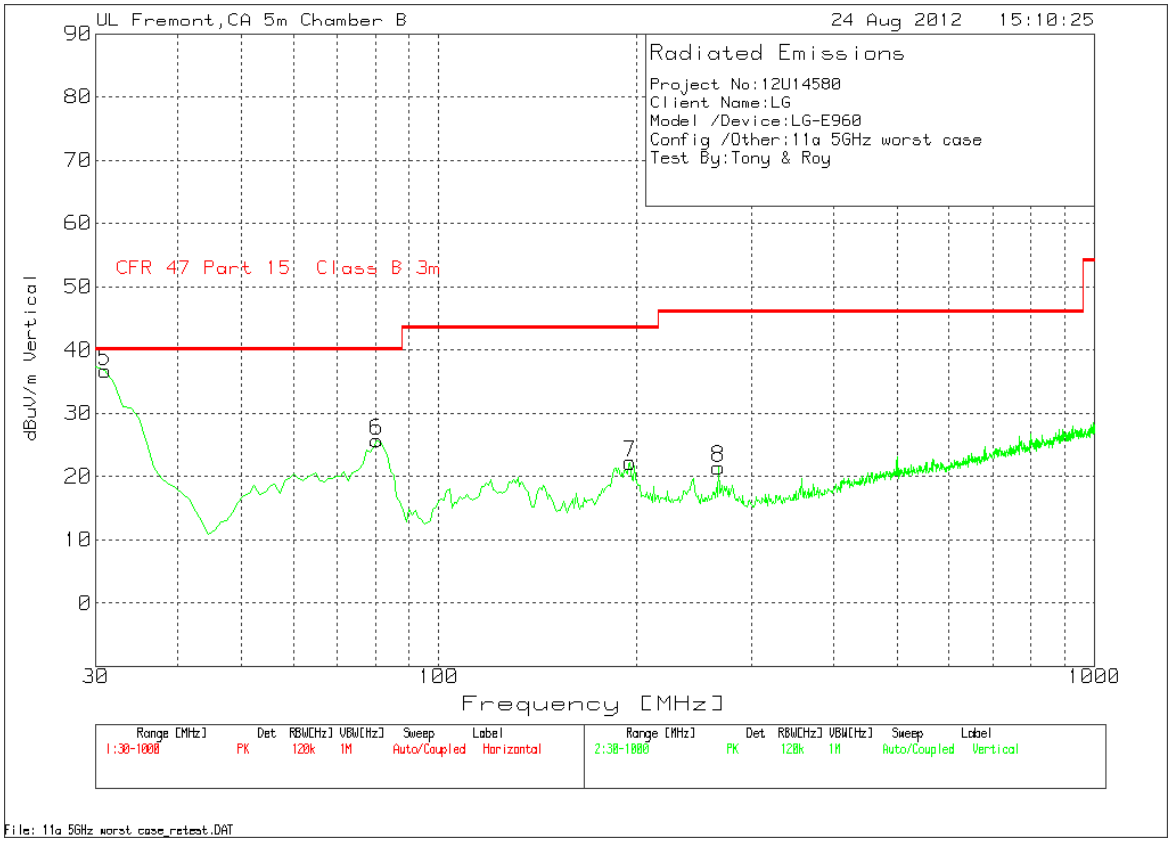
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

Project No:	12U14580
Client Name:	LG
Model /Device:	LG-E960
Config /Other:	EUT with Inductive Charger
Test By:	Tony & Roy
Test Date:	8/24/12

Test Frequency	Meter Reading	Detector	T122 Sunol Bilog.TXT (dB)	5mB Amp Path 30-1000MHz (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Height [cm]	Polarity
30.97	36.22	PK	20.7	-29.3	27.62	40	-12.38	200	Horz
84.32	46.91	PK	7.7	-28.7	25.91	40	-14.09	200	Horz
188.11	43.15	PK	11.2	-27.7	26.65	43.5	-16.85	100	Horz
266.68	44.09	PK	12.9	-27	29.99	46	-16.01	100	Horz
30.97	45.31	PK	20.7	-29.3	36.71	40	-3.29	100	Vert
80.44	46.6	PK	7.8	-28.7	25.7	40	-14.3	200	Vert
195.87	37.72	PK	12.1	-27.6	22.22	43.5	-21.28	200	Vert
266.68	35.5	PK	12.9	-27	21.4	46	-24.6	100	Vert

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector
CAV - CISPR Average detector
RMS - RMS detection
CRMS - CISPR RMS detection
Text File: EUT_with Inductive charger_5GHz.TXT
File: EUT_with Inductive charger_5GHz.DAT

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

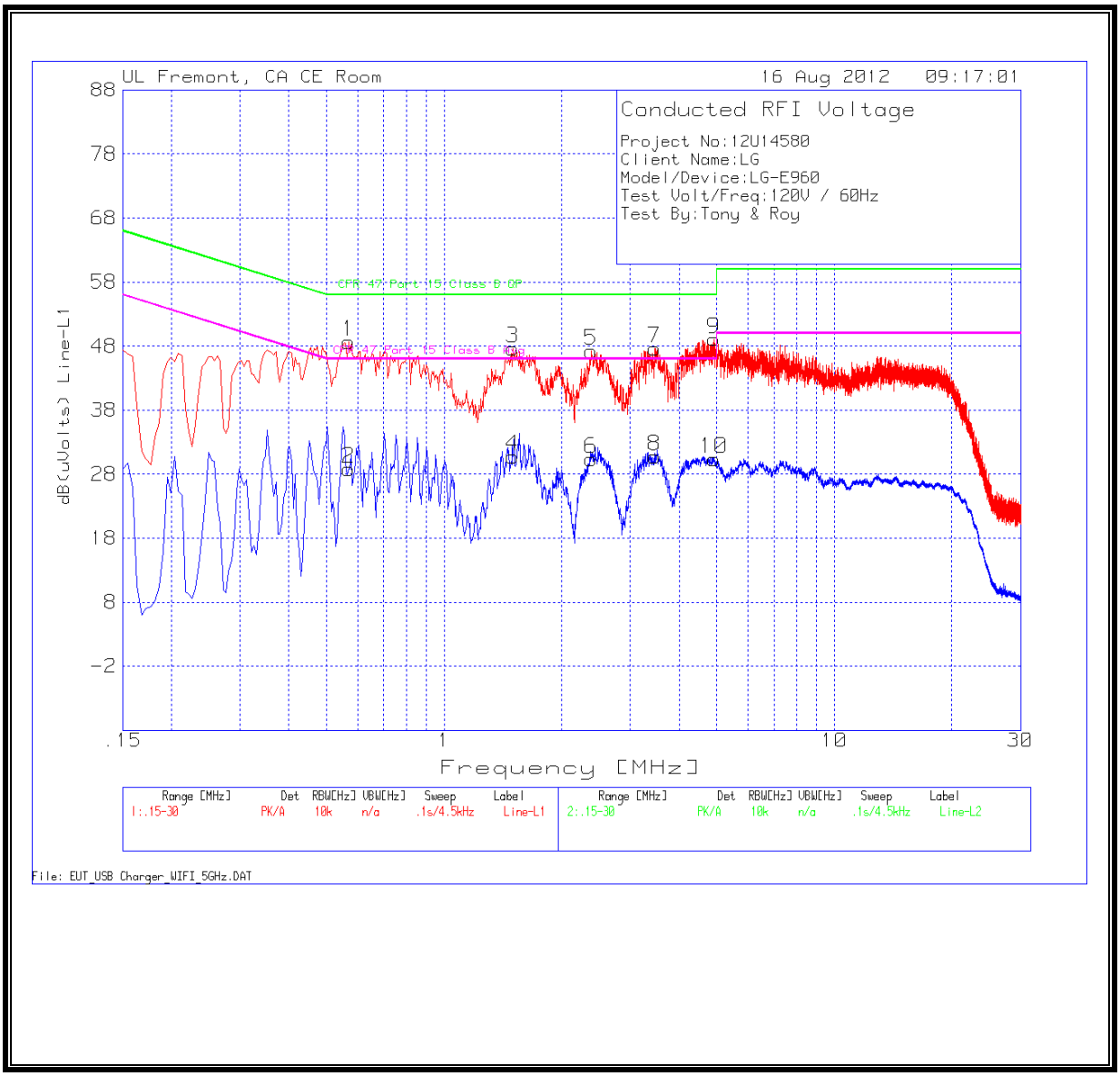
RESULTS

WITH USB Charger

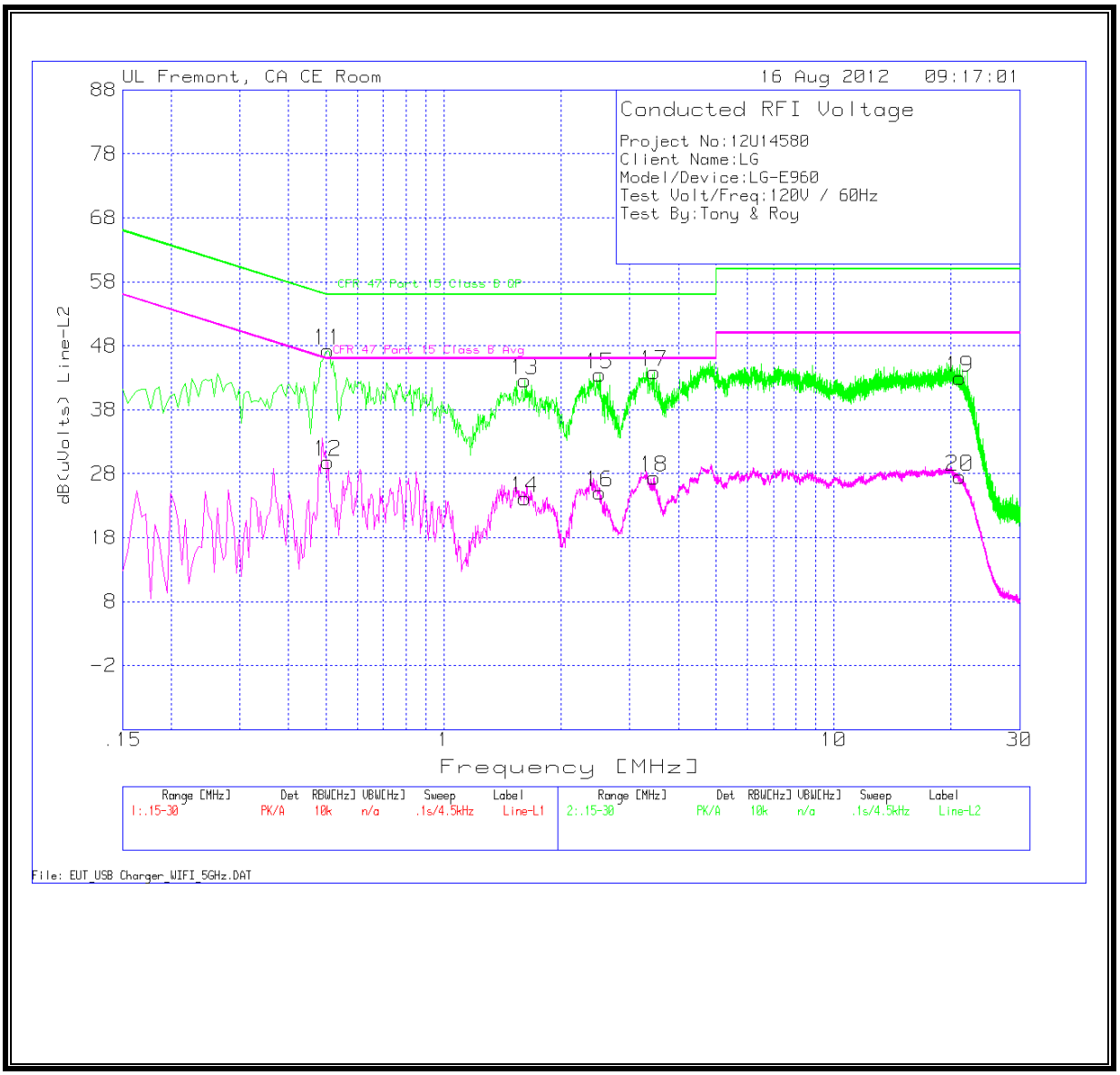
6 WORST EMISSIONS

Project No:12U14580									
Client Name:LG									
Model/Device:LG-E960									
Test Volt/Freq:120V / 60Hz									
Test By:Tony & Roy									
Line-L1 .15 - 30MHz									
Test Frequ	Meter Rea	Detector	T24 IL L1.T	LC Cables	dB(uVolts	CFR 47 Par	Margin	CFR 47 Par	Margin
0.5685	48.56	PK	0.1	0	48.66	56	-7.34	-	-
0.5685	28.72	Av	0.1	0	28.82	-	-	46	-17.18
1.5	47.43	PK	0.1	0.1	47.63	56	-8.37	-	-
1.5	30.55	Av	0.1	0.1	30.75	-	-	46	-15.25
2.3775	47.09	PK	0.1	0.1	47.29	56	-8.71	-	-
2.3775	30.17	Av	0.1	0.1	30.37	-	-	46	-15.63
3.462	47.4	PK	0.1	0.1	47.6	56	-8.4	-	-
3.462	30.58	Av	0.1	0.1	30.78	-	-	46	-15.22
4.92	48.92	PK	0.1	0.1	49.12	56	-6.88	-	-
4.92	30.15	Av	0.1	0.1	30.35	-	-	46	-15.65
Line-L2 .15 - 30MHz									
Test Frequ	Meter Rea	Detector	T24 IL L2.T	LC Cables	dB(uVolts	CFR 47 Par	Margin	CFR 47 Par	Margin
0.5055	47.19	PK	0.1	0	47.29	56	-8.71	-	-
0.5055	29.73	Av	0.1	0	29.83	-	-	46	-16.17
1.617	42.47	PK	0.1	0.1	42.67	56	-13.33	-	-
1.617	23.93	Av	0.1	0.1	24.13	-	-	46	-21.87
2.508	43.35	PK	0.1	0.1	43.55	56	-12.45	-	-
2.508	24.87	Av	0.1	0.1	25.07	-	-	46	-20.93
3.4575	43.75	PK	0.1	0.1	43.95	56	-12.05	-	-
3.4575	27.26	Av	0.1	0.1	27.46	-	-	46	-18.54
21.039	42.5	PK	0.3	0.2	43	60	-17	-	-
21.039	27.04	Av	0.3	0.2	27.54	-	-	50	-22.46

LINE 1 RESULTS



LINE 2 RESULTS

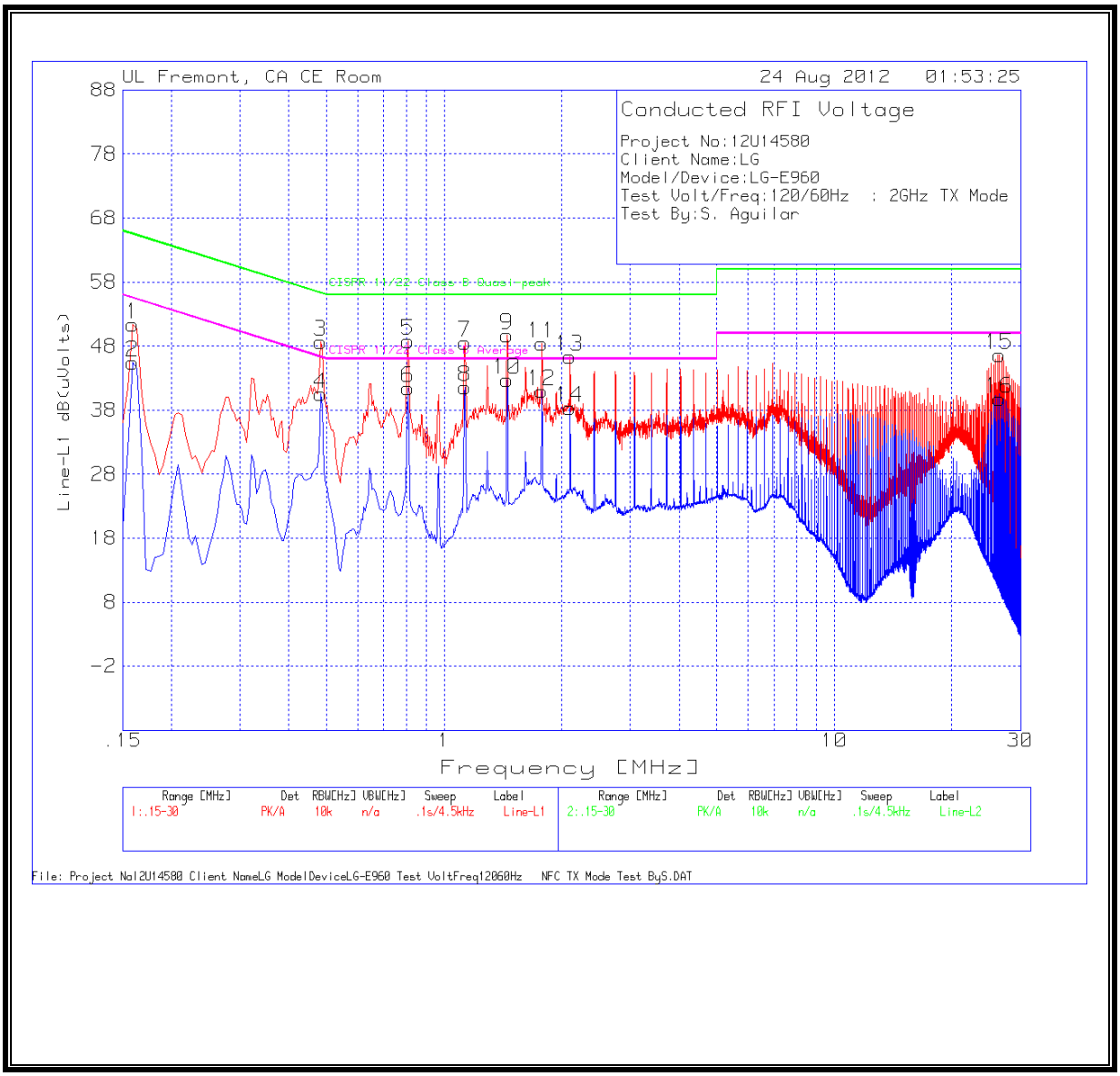


WITH INDUCTIVE Charger

6 WORST EMISSIONS

Project No:12U14580									
Client Name:LG									
Model/Device:LG-E960									
Test Volt/Freq:120/60Hz : 2GHz TX Mode									
Test By:S. Aguilar									
Line-L1 .15 - 30MHz									
Test Frequ	Meter Rea	Detector	T24 IL L1.T	LC Cables	dB(uVolts	CISPR 11/2	Margin	CISPR 11/2	Margin
0.159	51.33	PK	0.1	0	51.43	65.5	-14.07	-	-
0.159	45.33	Av	0.1	0	45.43	-	-	55.5	-10.07
0.483	48.58	PK	0.1	0	48.68	56.3	-7.62	-	-
0.483	40.39	Av	0.1	0	40.49	-	-	46.3	-5.81
0.807	48.74	PK	0.1	0	48.84	56	-7.16	-	-
0.807	41.33	Av	0.1	0	41.43	-	-	46	-4.57
1.131	48.41	PK	0.1	0	48.51	56	-7.49	-	-
1.131	41.45	Av	0.1	0	41.55	-	-	46	-4.45
1.4505	49.54	PK	0.1	0.1	49.74	56	-6.26	-	-
1.4505	42.54	Av	0.1	0.1	42.74	-	-	46	-3.26
1.779	48.26	PK	0.1	0.1	48.46	56	-7.54	-	-
1.779	40.8	Av	0.1	0.1	41	-	-	46	-5
2.103	46.12	PK	0.1	0.1	46.32	56	-9.68	-	-
2.103	38.2	Av	0.1	0.1	38.4	-	-	46	-7.6
26.5065	45.84	PK	0.5	0.3	46.64	60	-13.36	-	-
26.5065	38.99	Av	0.5	0.3	39.79	-	-	50	-10.21
Line-L2 .15 - 30MHz									
Test Frequ	Meter Rea	Detector	T24 IL L2.T	LC Cables	dB(uVolts	CISPR 11/2	Margin	CISPR 11/2	Margin
0.159	45.85	PK	0.1	0	45.95	65.5	-19.55	-	-
0.159	38.53	Av	0.1	0	38.63	-	-	55.5	-16.87
0.483	45.64	PK	0.1	0	45.74	56.3	-10.56	-	-
0.483	34.74	Av	0.1	0	34.84	-	-	46.3	-11.46
0.807	44.2	PK	0.1	0	44.3	56	-11.7	-	-
0.807	35.29	Av	0.1	0	35.39	-	-	46	-10.61
1.131	45.56	PK	0.1	0.1	45.76	56	-10.24	-	-
1.131	35.85	Av	0.1	0.1	36.05	-	-	46	-9.95
1.455	45.15	PK	0.1	0.1	45.35	56	-10.65	-	-
1.455	36.29	Av	0.1	0.1	36.49	-	-	46	-9.51
1.779	43.94	PK	0.1	0.1	44.14	56	-11.86	-	-
1.779	34.73	Av	0.1	0.1	34.93	-	-	46	-11.07
2.103	41.35	PK	0.1	0.1	41.55	56	-14.45	-	-
2.103	32.02	Av	0.1	0.1	32.22	-	-	46	-13.78
26.5155	40.2	PK	0.5	0.3	41	60	-19	-	-
26.5155	36.61	Av	0.5	0.3	37.41	-	-	50	-12.59

LINE 1 RESULTS



LINE 2 RESULTS